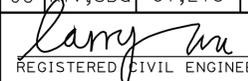
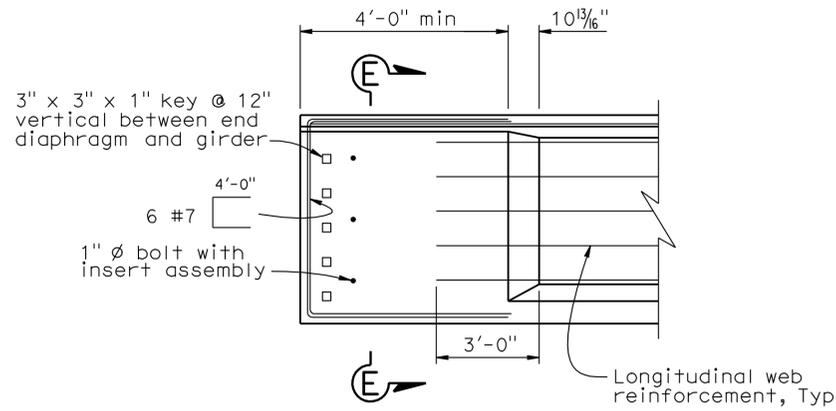
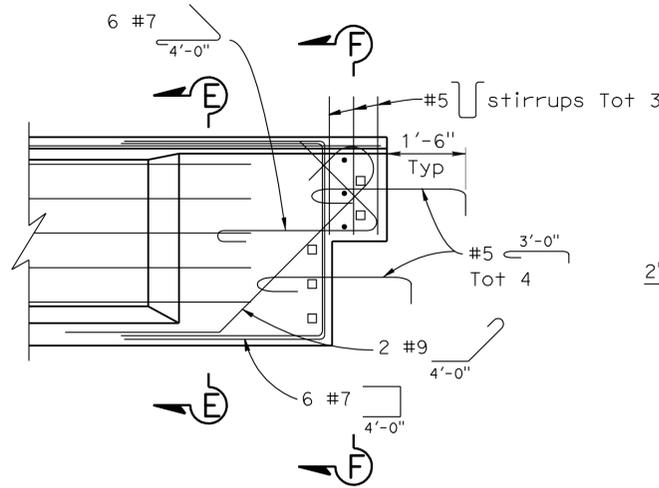


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1401	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

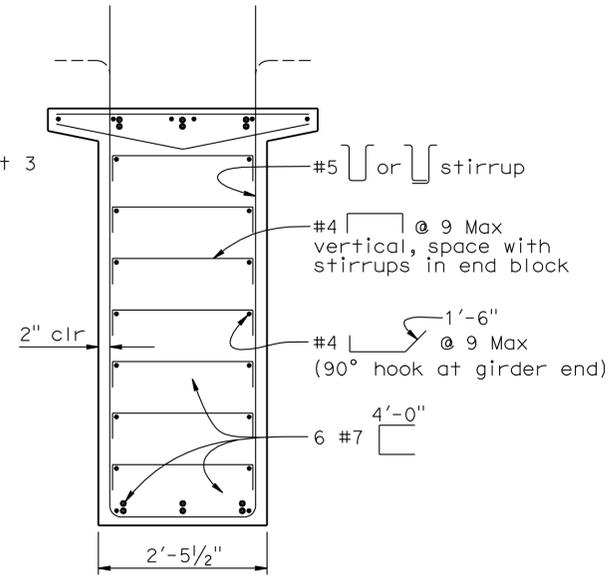


**END BLOCK - AT ABUTMENT**



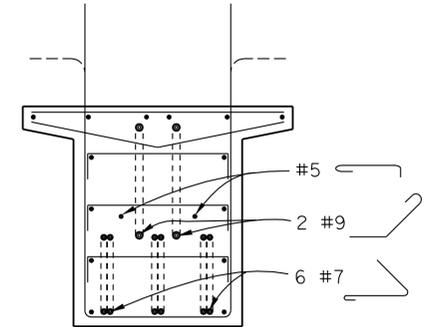
**END BLOCK - AT BENT**

NOTE:  
For details shown but not noted, see "End Block - At Abutment".



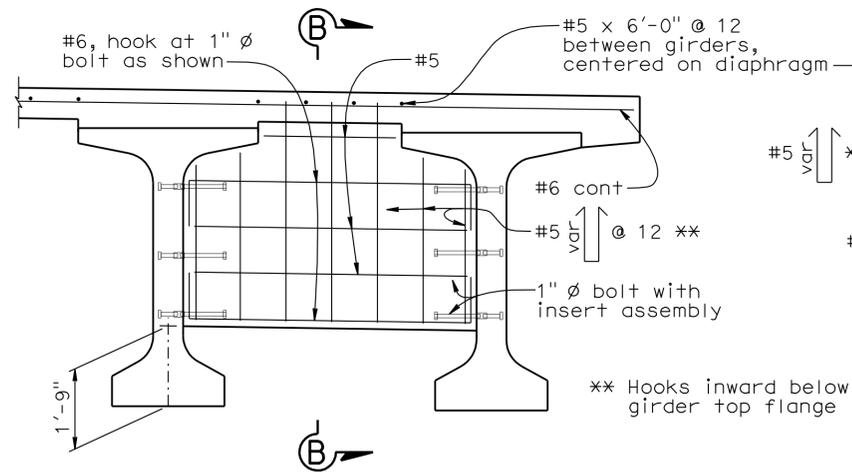
**SECTION E-E**

NOTE:  
For details shown but not noted, see Typical Girder Section on "PC/PS BULB-TEE GIRDER DETAILS NO.1" sheet.



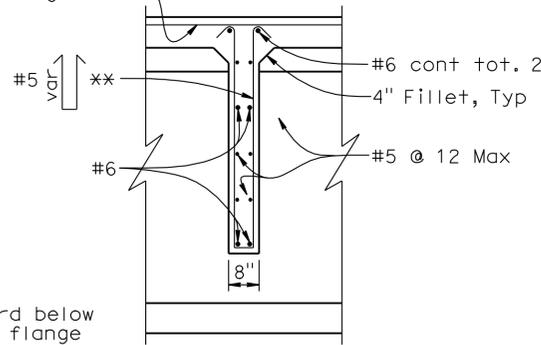
**SECTION F-F**

NOTE:  
For details shown but not noted, see Section E-E.



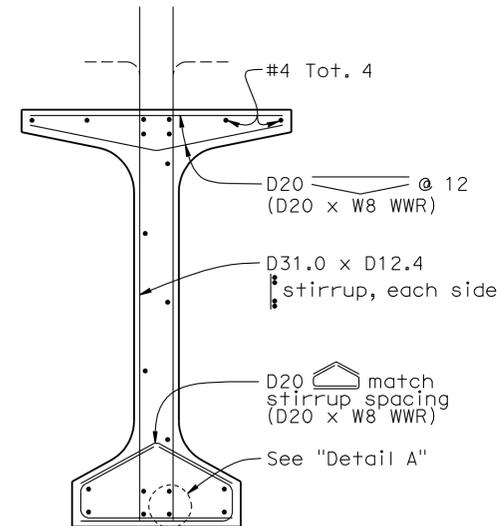
**INTERMEDIATE DIAPHRAGM**

NOTES:  
1. For intermediate diaphragm locations, see "GIRDER LAYOUT" sheets.  
2. For Insert Assembly details, see "PC/PS BULB-TEE GIRDER DETAILS NO. 1" sheet



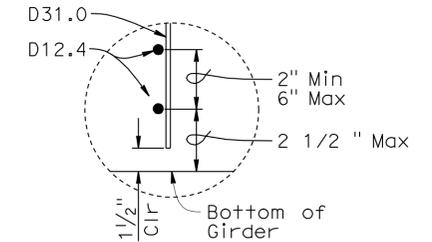
**SECTION B-B**

NOTE:  
Diaphragm may be vertical or normal to deck grade



**WELDED WIRE REINFORCEMENT (WWR) ALTERNATIVE**

NOTES:  
1. For details shown but not noted, see Typical Girder Section on "PC/PS BULB-TEE GIRDER DETAILS NO. 1" sheet.  
2. W8 WWR not shown.



**DETAIL A**

NOTES:  
1. Bottom of stirrup WWR detail shown, top similar.  
2. Longitudinal wire area shall be 40% or greater of vertical deformed wire's area.

NO SCALE

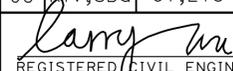
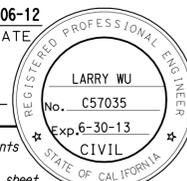
DESIGN	BY A. McPhee	CHECKED C. Duan
DETAILS	BY Y. Tang	CHECKED C. Duan
QUANTITIES	BY A. McPhee	CHECKED F. Chen

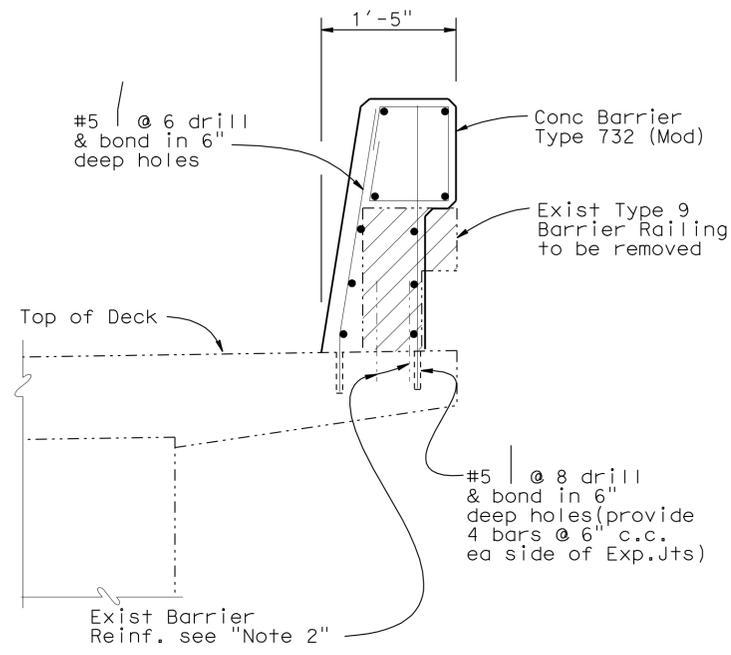
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 10

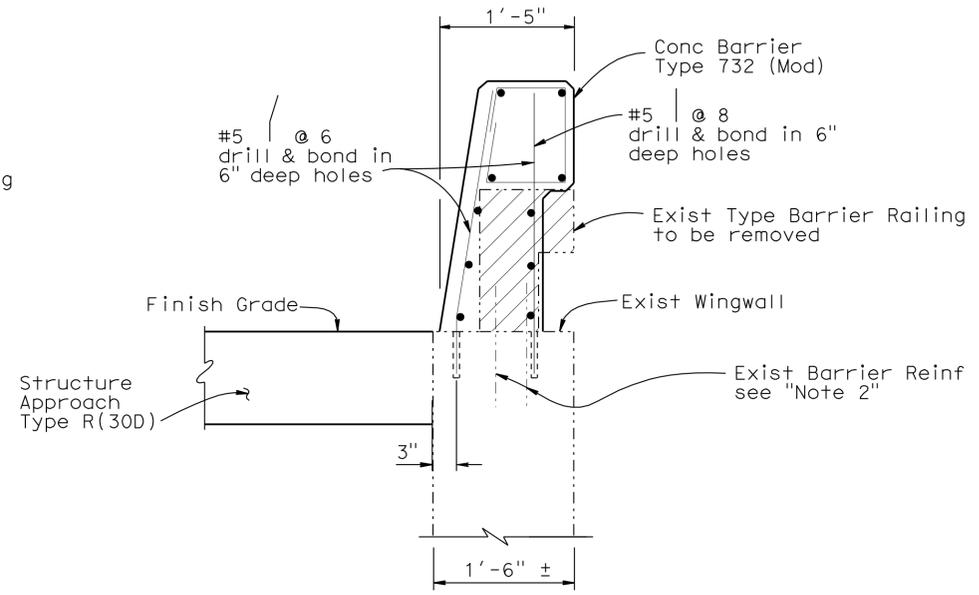
BRIDGE NO.	54-0479L
POST MILE	4.03

I-215/I-10 SEPARATION LT (WIDEN)  
PC/PS BULB-TEE GIRDER DETAILS NO. 2

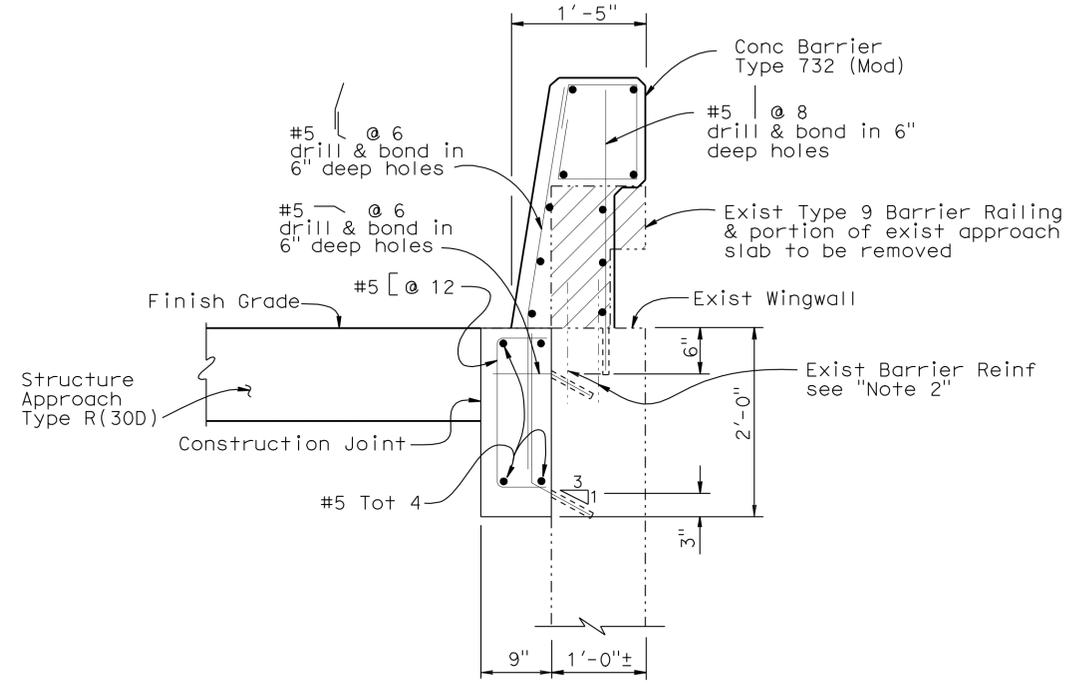
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08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1402	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



**BARRIER ON BRIDGE DECK**  
No Scale



**BARRIER ON EXISTING WINGWALL (ABUTMENT 1)**  
No Scale



**BARRIER ON EXISTING WINGWALL (ABUTMENT 3)**  
No Scale

- NOTES:**
- For barrier details not shown, see B11-55
  - Where exist barrier railing reinforcement will have required concrete cover in new barrier, exist barrier reinforcement may remain; where concrete cover is not available, cut reinforcement 1" below exist concrete surface and patch with epoxy or grout.
  - Locations of drilled holes shown in the plans are approximate. Prior to placing holes in concrete, the contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars (except as noted). Final hole locations are subject to the approval of the Engineer.

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

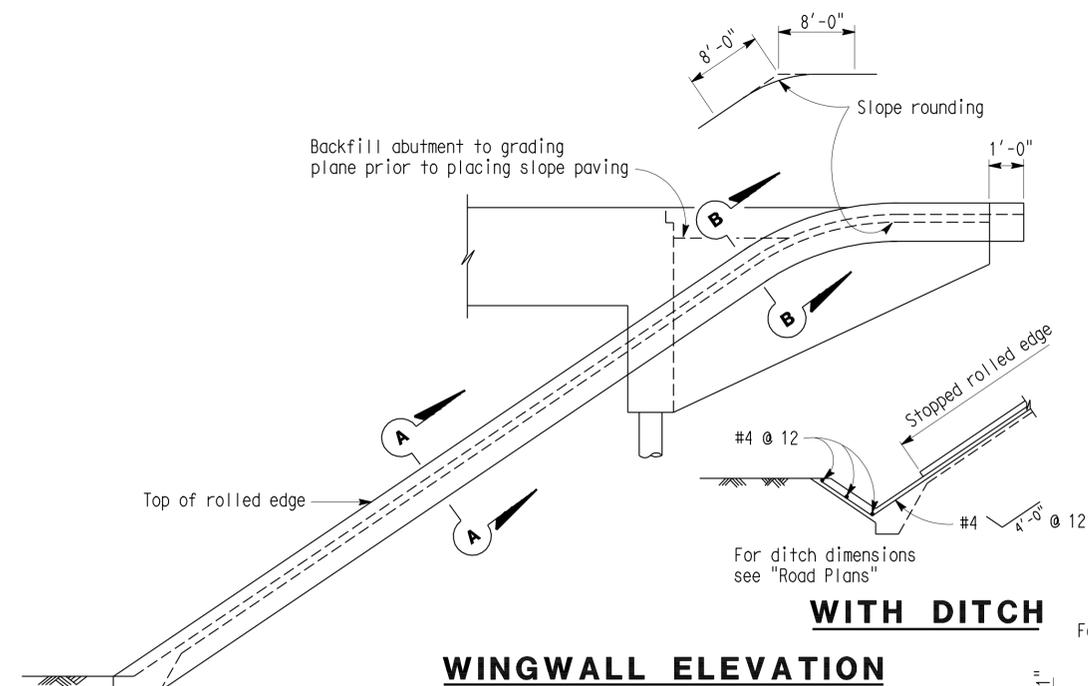
DESIGN BY A. McPhee CHECKED C. Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>I-215/I-10 SEPARATION LT (WIDEN)</b> <b>CONCRETE BARRIER TYPE 732 (MOD)</b>				
			54-0479L					
			POST MILE					
DETAILS BY Y. Tang CHECKED C. Duan			4.03					
QUANTITIES BY A. McPhee CHECKED F. Chen								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 9-22-11 11-17-11	SHEET OF 16 28

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
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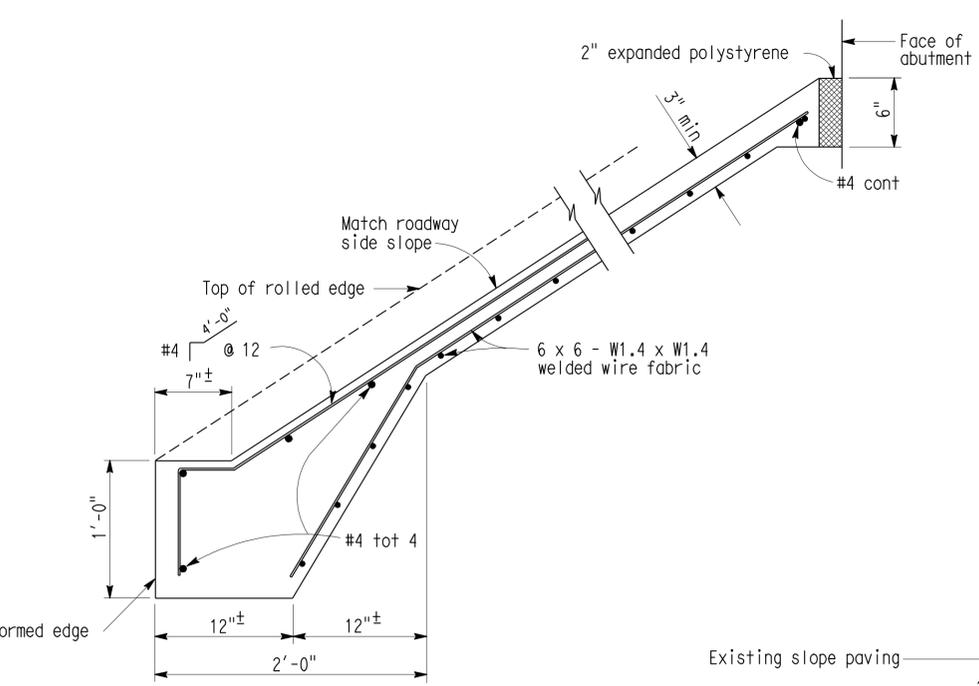
REGISTERED CIVIL ENGINEER **LARRY WU** DATE **4-06-12**  
 PLANS APPROVAL DATE **4-16-12**  
 No. **C57035**  
 Exp. **6-30-13**  
 CIVIL ENGINEER  
 STATE OF CALIFORNIA

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.

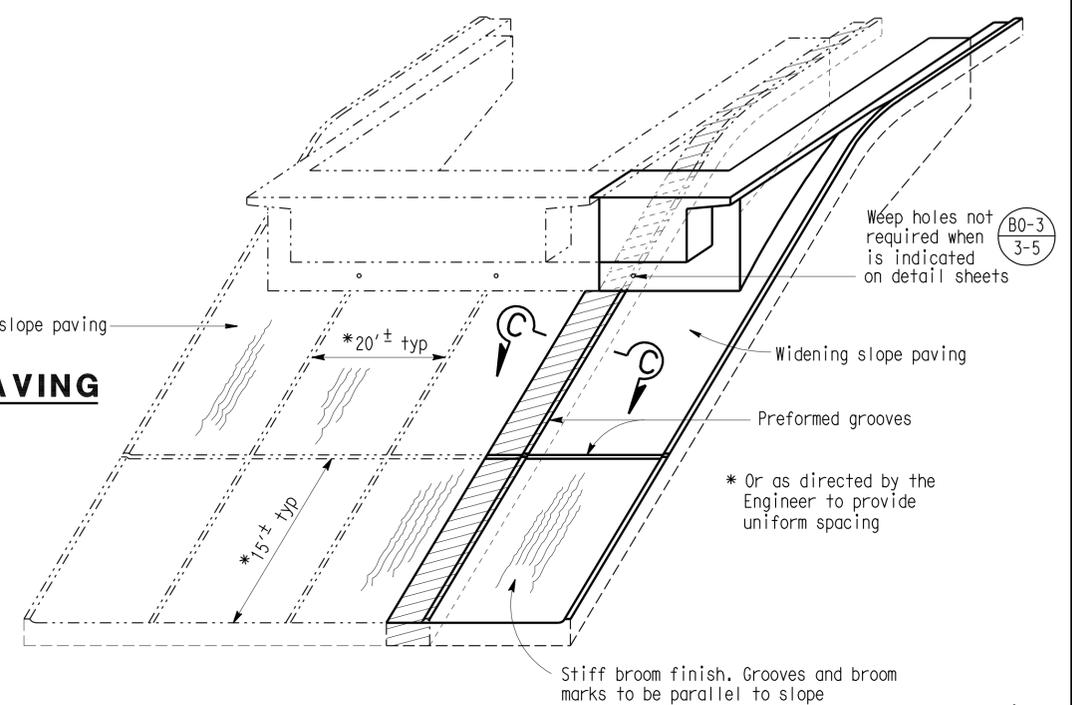
To get to the Caltrans web site, go to: <http://www.dot.ca.gov>



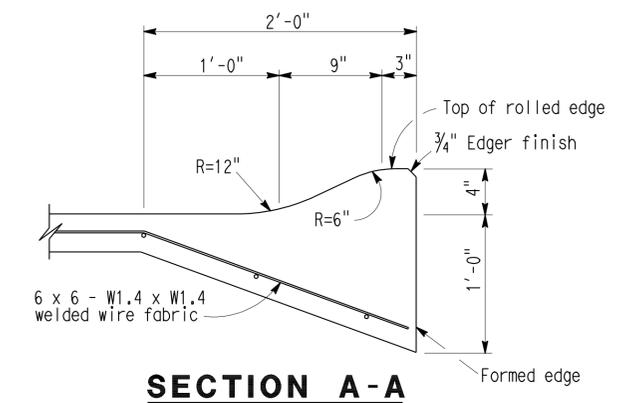
**WINGWALL ELEVATION**



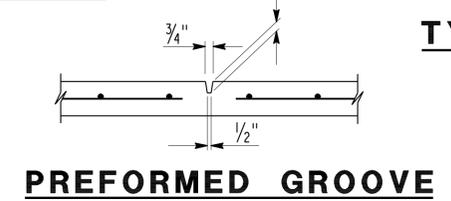
**TYPICAL SECTION - CONCRETE PAVING**



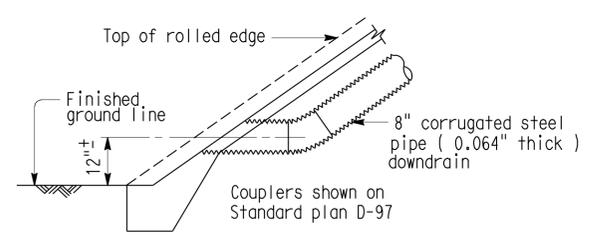
**PICTORIAL VIEW OF TYPICAL INSTALLATION**



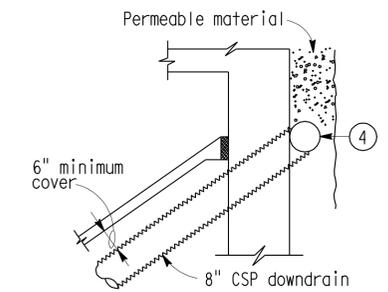
**SECTION A-A**



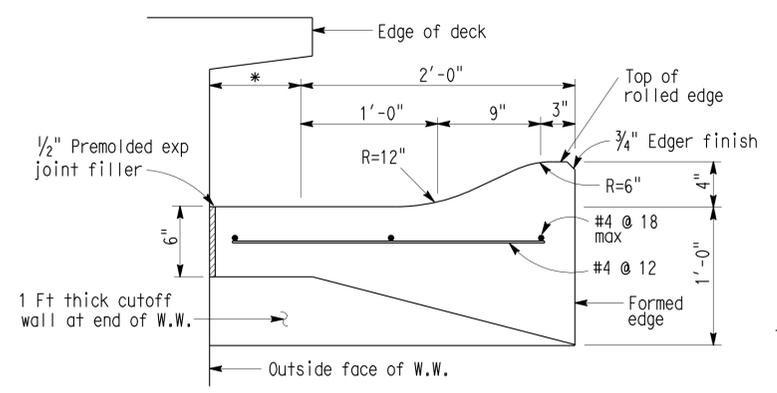
**PREFORMED GROOVE**



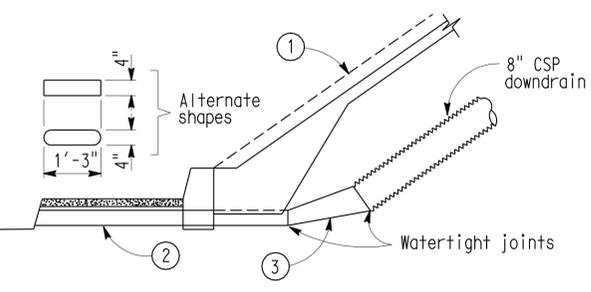
**TYPICAL - NO CURB**



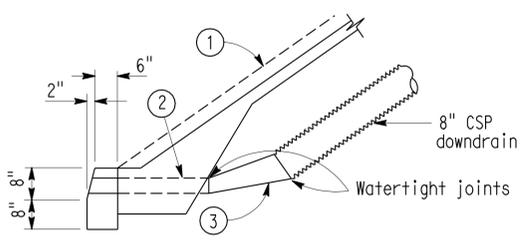
**TYPICAL - DRAIN CONNECTION**



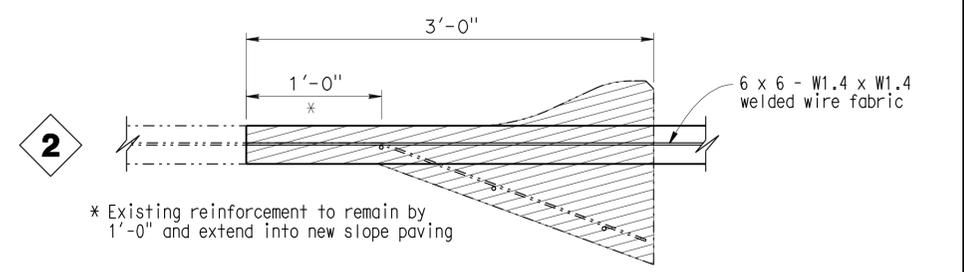
**SECTION B-B**



**TYPICAL - WITH SIDEWALK**



**TYPICAL - WITH CURB**



**SECTION C-C**

**DRAINAGE DETAILS**

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

(B0-3 3-5)

- 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.

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

STANDARD DRAWING				RELEASED BY
RELEASE DATE	DESIGN	BY	CHECKED	Susan Hida OFFICE CHIEF
FILE NO. <b>xs4-210</b>	DETAILS	BY <b>D. Wooten</b>	CHECKED	
	SUBMITTED	BY <b>Dan Adams</b>	DRAWING DATE <b>6/07</b>	

- ◇ Modified Details
- ◇ Added Detail

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 54-0479L  
POST MILE 4.03

**I-215/I-10 SEPARATION LT (WIDEN)**  
**SLOPE PAVING - FULL SLOPE**

DS OSD 2147A (CADD) (REV. 4/07)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 3589  
PROJECT NUMBER & PHASE: 08000005061

CONTRACT NO.: 08-0M9401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-16-11 10-28-11	17	28

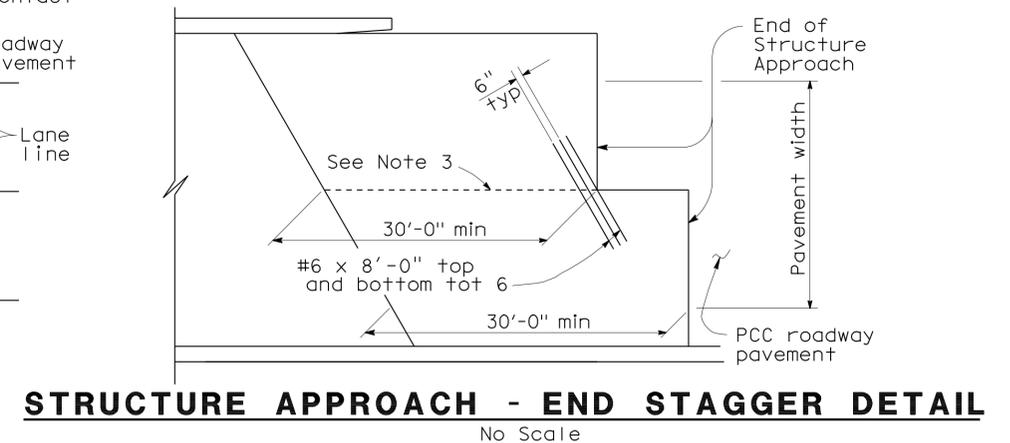
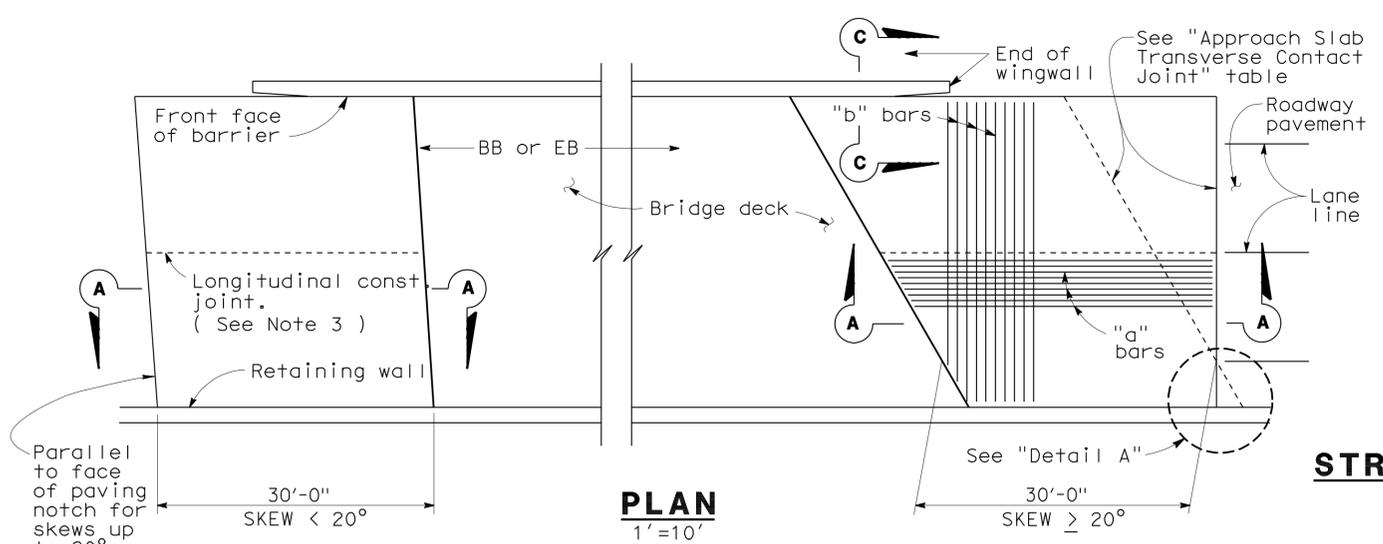
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USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 11:51

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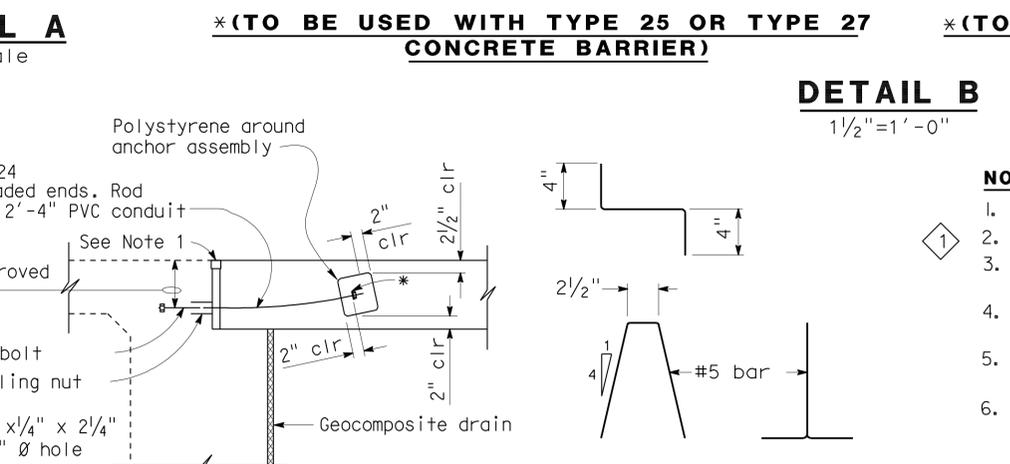
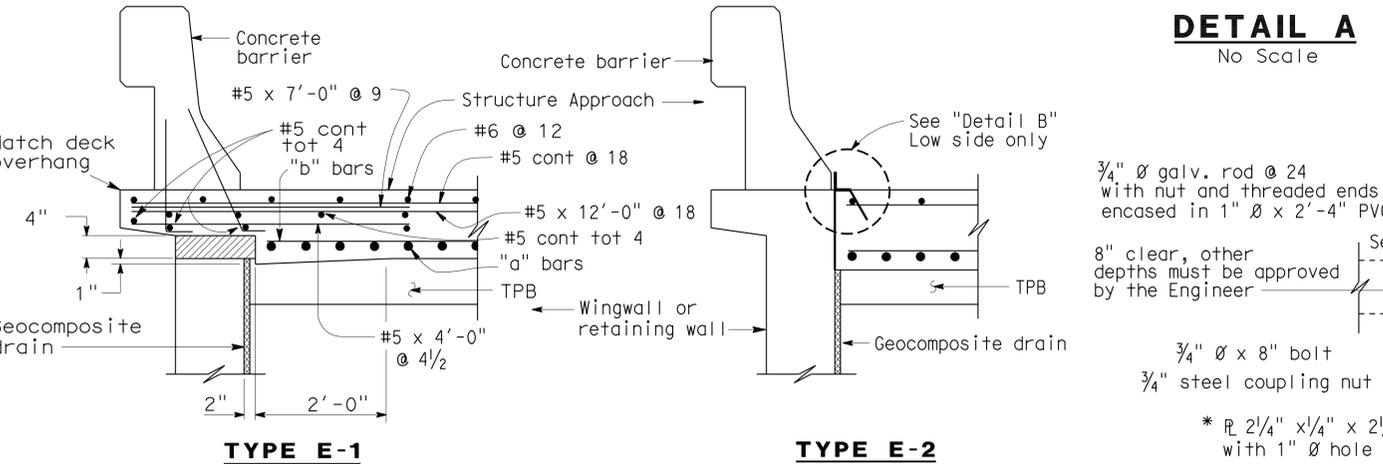
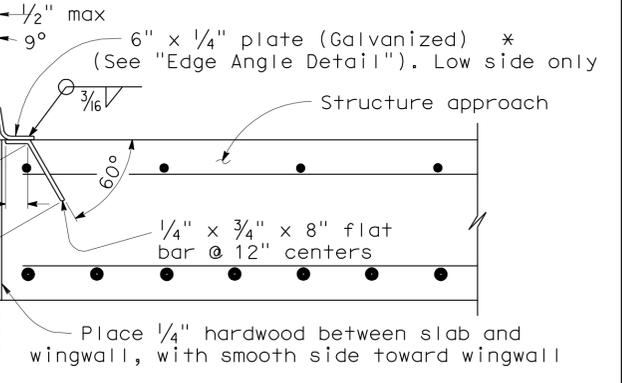
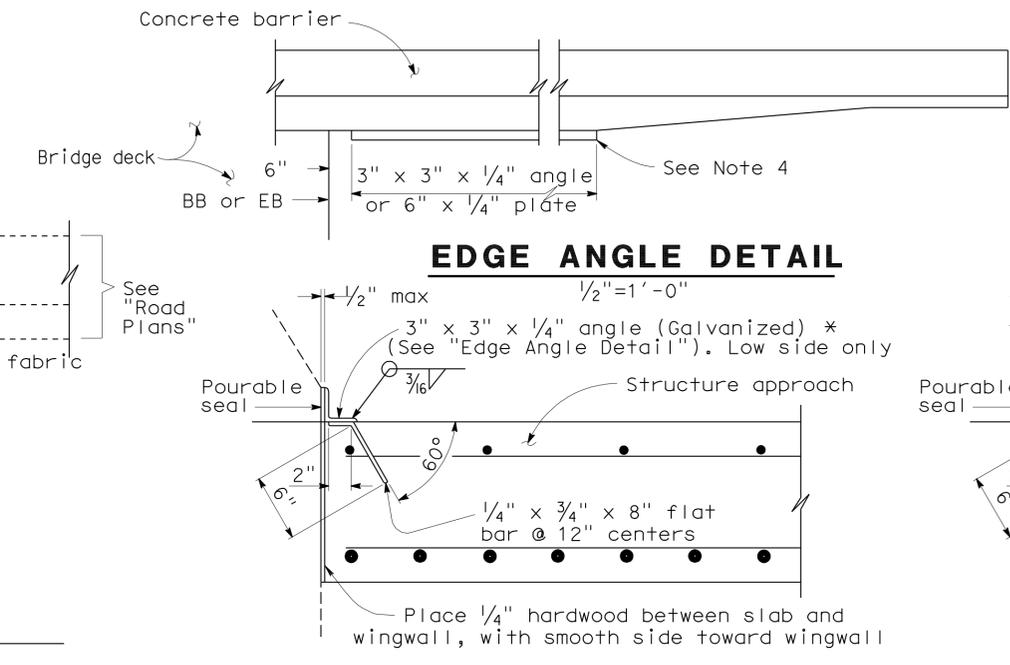
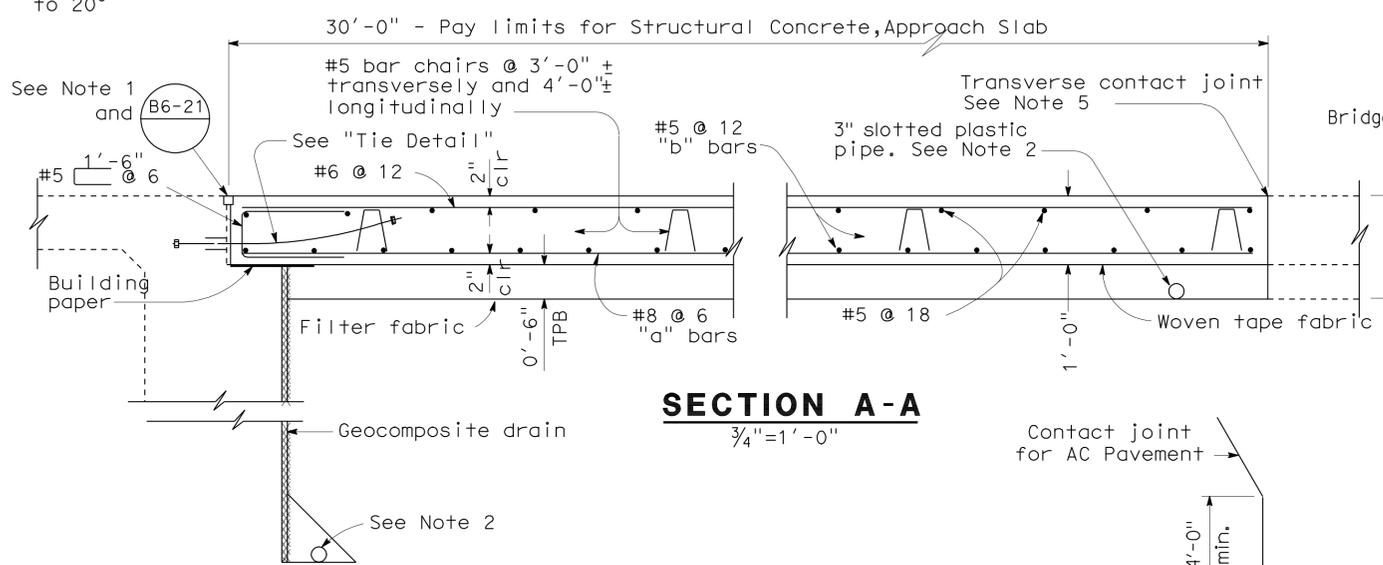
LARRY WU  
 REGISTERED CIVIL ENGINEER  
 DATE 4-06-12  
 PLANS APPROVAL DATE 4-16-12  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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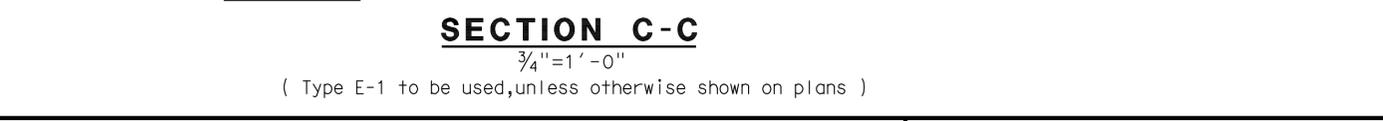


**APPROACH SLAB TRANSVERSE CONTACT JOINT**

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



- NOTES:**
- For details not noted or shown, see Structure Plans.
  - For drainage details, see "ABUTMENT DETAILS NO. 2" 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**

FILE NO. **xs3-180e**

APPROVED BY **M. Ho**  
RESPONSIBLE TECHNICAL SPECIALIST

RELEASED BY **O. Alcantara**  
RESPONSIBLE OFFICE CHIEF

APPROVAL DATE **8-12-08**

RELEASE DATE **8-12-08**

1 Note revised

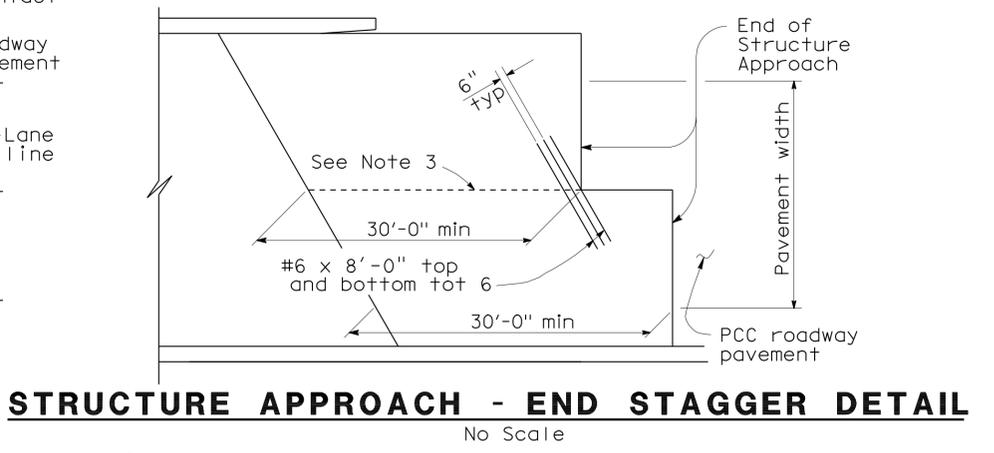
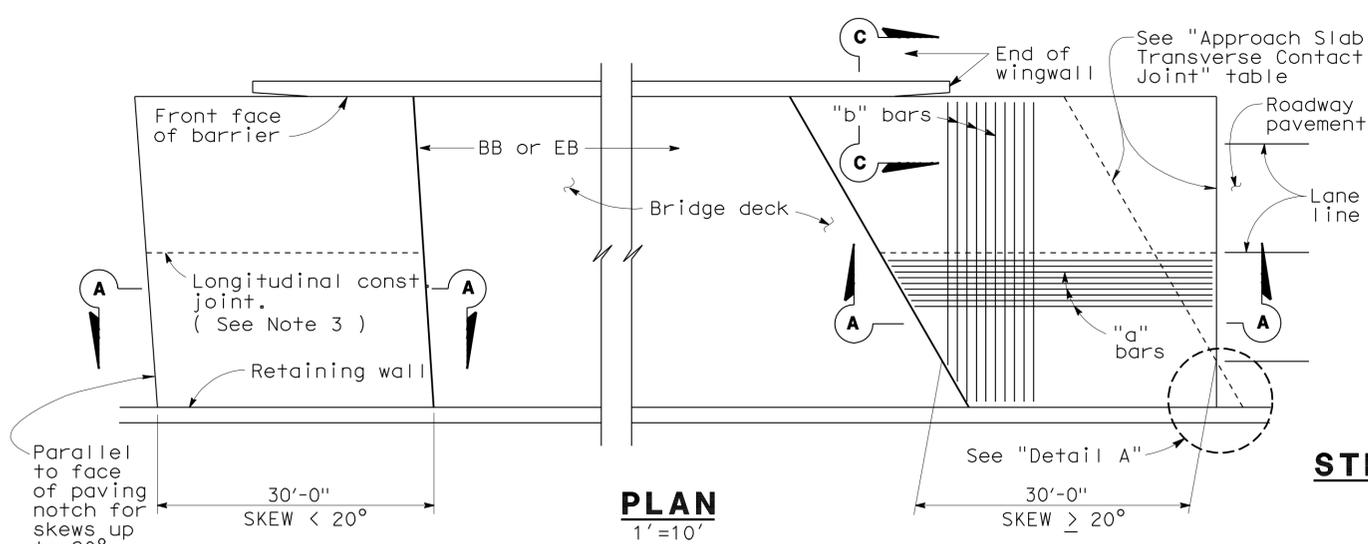
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

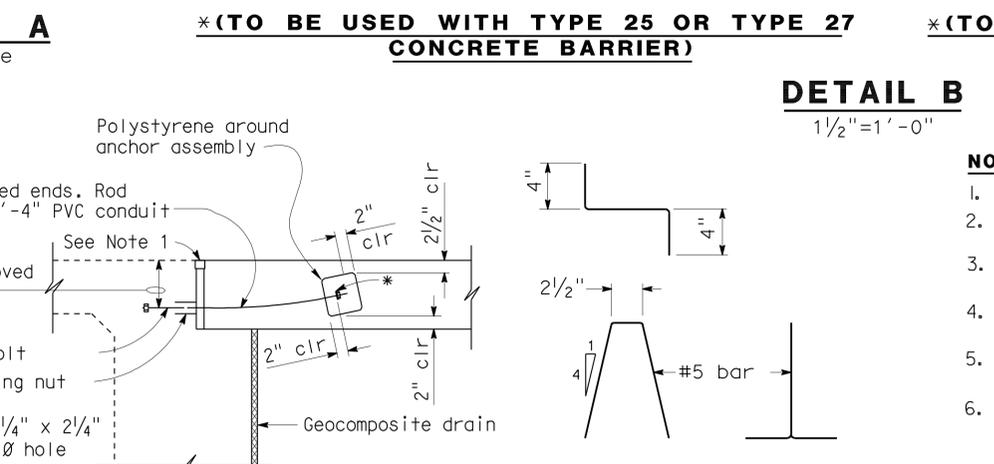
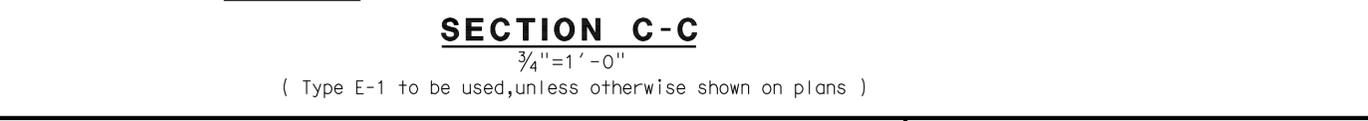
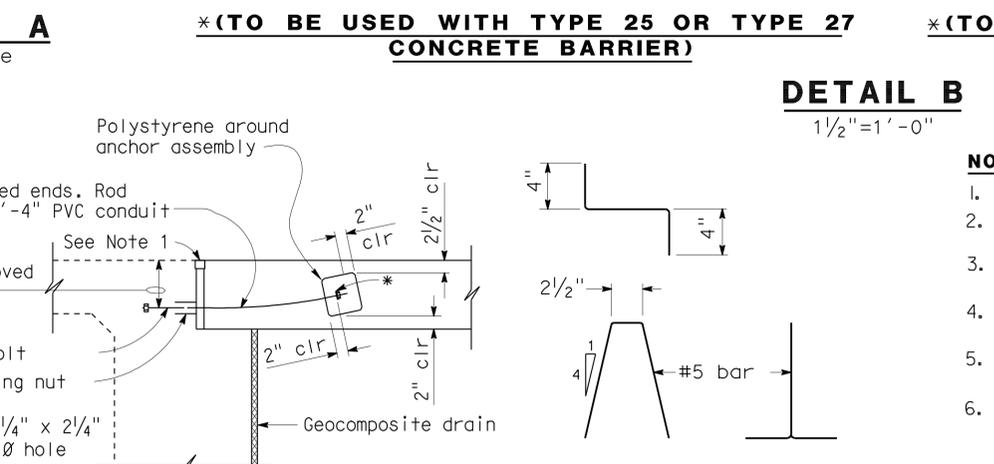
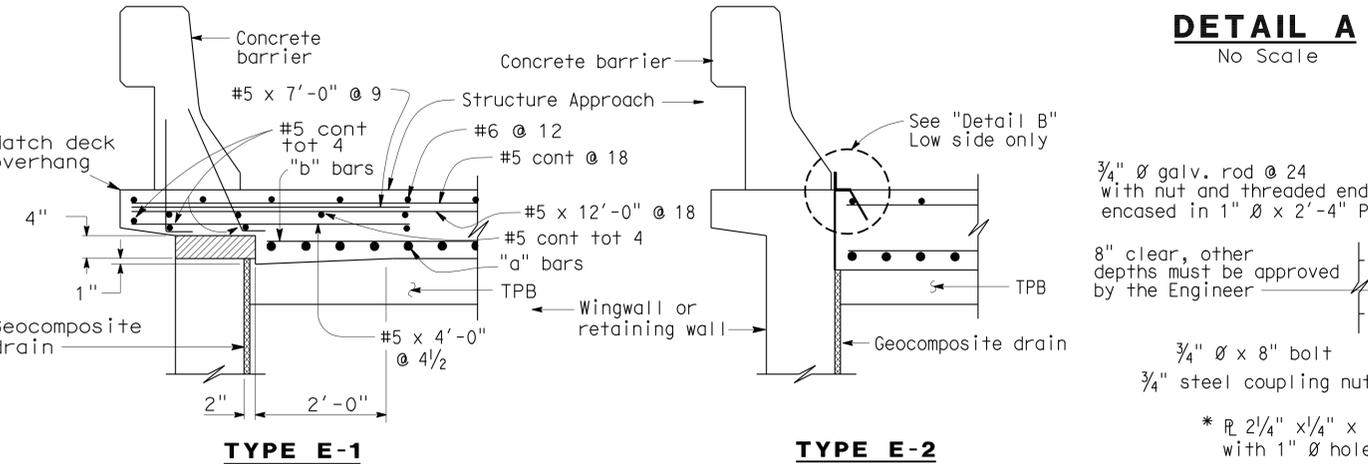
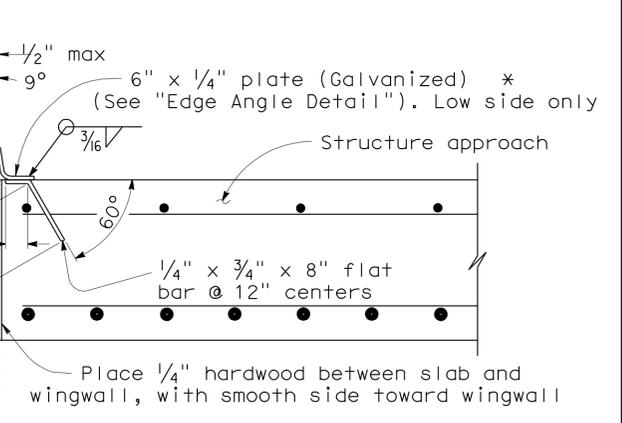
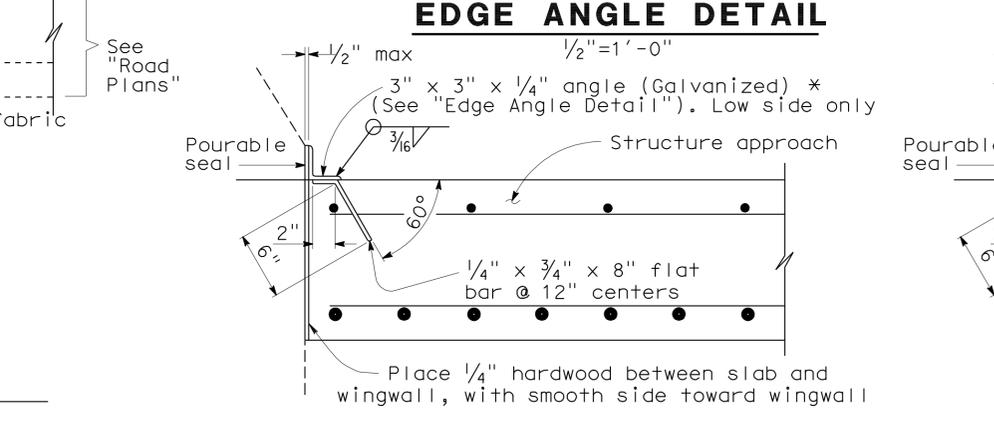
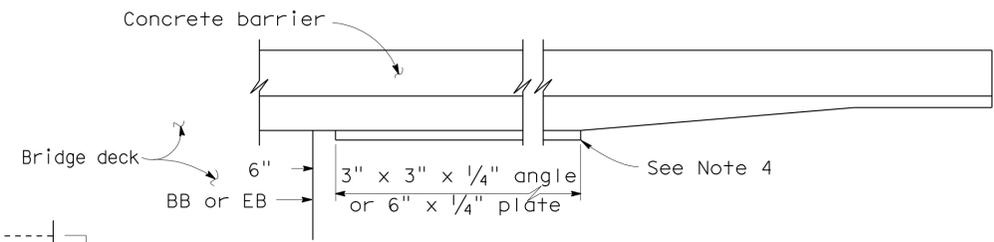
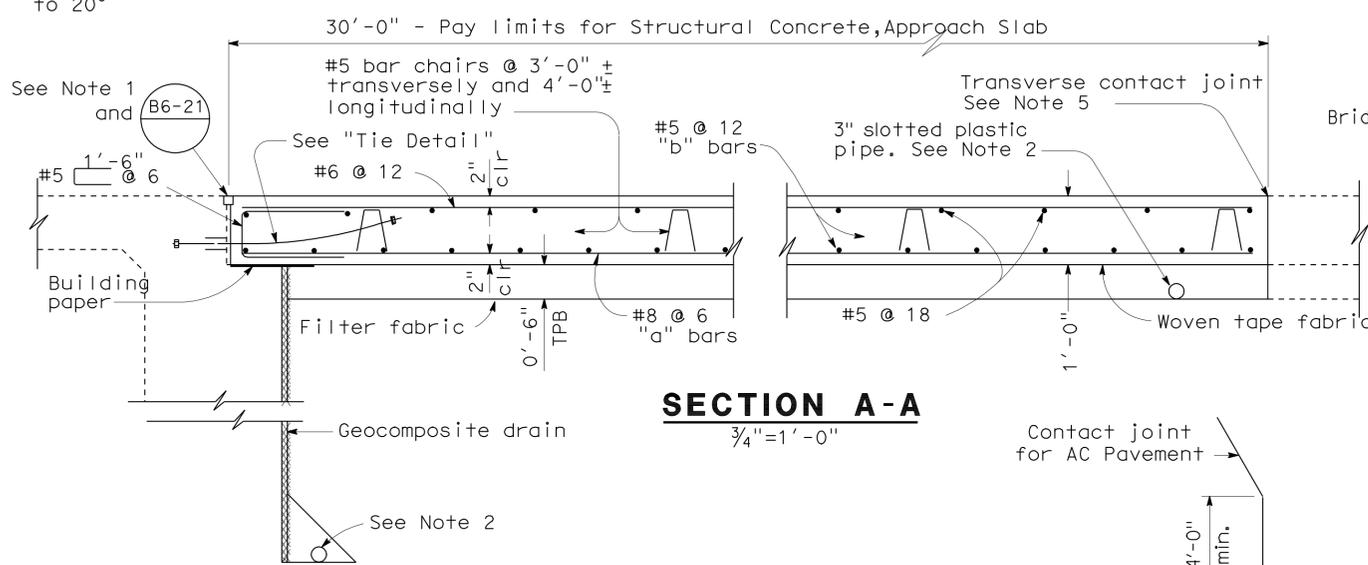
BRIDGE NO. 54-0479L  
POST MILE 4.03

**I-215/I-10 SEPARATION LT (WIDEN)**

**STRUCTURE APPROACH TYPE N(30D)**



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



- 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.

STANDARD DRAWING		
FILE NO. <b>xs3-180e</b>	APPROVED BY <b>M. Ho</b> RESPONSIBLE TECHNICAL SPECIALIST	RELEASED BY <b>O. Alcantara</b> RESPONSIBLE OFFICE CHIEF
APPROVAL DATE <b>8-12-08</b>		RELEASE DATE <b>8-12-08</b>

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 54-0479L POST MILE 4.03
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I-215/I-10 SEPARATION LT (WIDEN)	
STRUCTURE APPROACH TYPE N(30D)	

**BENCH MARK**

SUHV605

Fd: PK/CT Washer/ Concrete Pad  
 139.802 Lt @ NB Rte 215  
 Sta 221+84.863  
 N 1 846 361.211  
 E 6 774 608.986  
 Elev 998.310

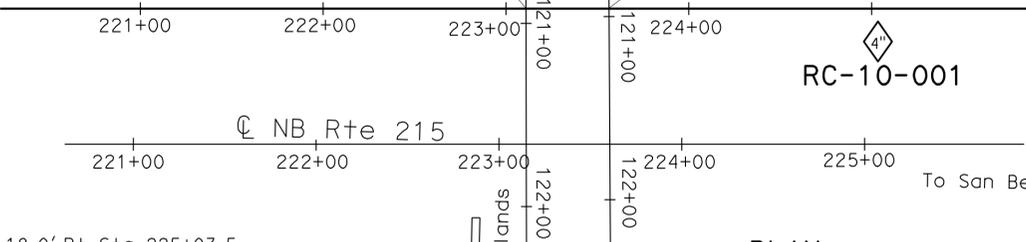
← To Riverside



223+11.050 "A1CON2" Line =  
 120+92.401 LOL EB Rte 10

223+56.397 "A1CON2" Line =  
 120+96.151 LOL WB Rte 10

☉ SB Rte 215 = "A1CON2" Line



**PLAN**  
 1" = 50'

**Notes:**

1. Groundwater was measured in Borings RC-10-001 during the 2010 subsurface investigation.
2. Additional subsurface information and groundwater information is available in the attached As-Built LOTB sheets.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1406	1743

12-19-11 DATE

PROFESSIONAL GEOLOGIST

Hector Valencia  
 No. 7776  
 Exp. 2/29/12

4-16-12 PLANS APPROVAL DATE

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

1000	998.9'	RC-10-001	1000
990	23 1.4	SILTY SAND (SM); light olive brown; changes from dry to moist; fine SAND; little fines; (FILL). Poorly-graded SAND with SILT (SP-SM); dense; light olive gray; moist; fine SAND; few fine and coarse GRAVEL; (FILL). -very dense.	990
980	47 1.4		980
970	38 1.4	SILTY SAND (SM) moderately interlayered with moderate layers (30%) of Poorly-graded SAND with SILT (SP-SM). SAND (SM); very dense; olive; moist; fine SAND; some fines. SAND (SP-SM); very dense; olive; moist; fine SAND; few fine and coarse GRAVEL; (FILL).	970
960	45 1.4	Poorly-graded SAND with COBBLES (SP); very dense; light yellowish brown; moist; fine SAND; few fine and coarse GRAVEL; 5% IGNEOUS COBBLE, 3"; very hard.	960
950	60 1.4	SILTY SAND (SM) thickly interbedded with thin layers (10%) of Elastic SILT (MH). SAND (SM); medium dense; olive; moist; fine SAND; some fines. SILT (MH); olive; moist.	950
940	8 1.4	Poorly-graded SAND (SP); medium dense; light olive gray; moist; mostly fine SAND; trace fine and coarse GRAVEL. -few fine and coarse GRAVEL and 5% IGNEOUS COBBLE, 3"; very hard. -very dense.	940
930	17 1.4	Poorly-graded SAND with SILT (SP-SM); very dense; olive gray; moist; mostly fine SAND; few fine and coarse GRAVEL.	930
920	31 1.4	Fat CLAY (CH) thinly bedded with thin interbeds (20%) of Poorly-graded SAND (SP). CLAY (CH); stiff; bluish gray and brownish yellow; moist; PP= 1.3 tsf. SAND (SP); medium dense; light yellowish brown; moist; fine SAND.	920
910	7 1.4	Poorly-graded SAND (SP) moderately interbedded with thin interbeds of SANDY SILT (ML). SAND (SP); very dense; light olive gray and light yellowish brown; moist; mostly fine SAND; trace fine and coarse GRAVEL. SILT (ML); very dense; light yellowish brown; moist; little fine SAND. -thin interbed of Fat CLAY (CH); stiff; olive; moist; PP=1.5 tsf. -moderate thick interbed of Well-graded SAND (SW); very dense light olive gray; moist; from fine to coarse SAND.	910
900	41 1.4	Poorly-graded SAND (SP); very dense; light olive gray; moist; mostly fine SAND; few fine and coarse GRAVEL. -few medium to coarse SAND.	900
890	64 1.4	-no medium and coarse SAND; no GRAVEL. Poorly-graded SAND with GRAVEL and COBBLES (SP); very dense; light olive gray; moist; mostly fine SAND; little fine and coarse GRAVEL; 10% IGNEOUS COBBLES, 3"; hard.	890
880	46 1.4	Well-graded SAND with GRAVEL and COBBLES (SW); very dense; light olive gray and light yellow brown; moist; from fine to coarse SAND; some fine and coarse GRAVEL; 20% IGNEOUS COBBLES, 4"; very hard.	880
	49/6 1.4	-no COBBLES.	
	50/3 1.4	Well-graded GRAVEL with SAND and COBBLES (GW); olive gray; moist; little from fine to coarse SAND; 30% IGNEOUS COBBLES, 4"; very hard.	
	49/6 1.4	Fat CLAY with SAND (CH); very stiff; brown; moist; from fine to coarse SAND; PP= 3.0 tsf. Elastic SILT with SAND (MH) thickly bedded with moderate interbeds (30%) of SILT with SAND (ML); very stiff; light olive brown; moist; fine SAND; PP= 2.0 tsf.	
	84 1.4	Poorly-graded SAND with SILT (SP-SM); very dense; light olive brown; moist; fine SAND; few fines.	
	64 1.4	Lean CLAY with SAND (CL); hard; brown; moist; little from fine to coarse SAND; trace fine GRAVEL; PP ≥ 4.5 tsf.	
	32 1.4		
	33 1.4		
	37 1.4		
	37 1.4		

GWS Elev 911.3  
 11-18-10

10-14-10  
 Terminated at Elev 877.4'  
 ERI = 97%

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

<b>ENGINEERING SERVICES</b>		<b>MATERIALS AND GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b>		<b>DIVISION OF ENGINEERING SERVICES</b>		<b>BRIDGE NO.</b>		<b>I-215/I-10 SEPARATION LT (WIDEN)</b>	
FUNCTIONAL SUPERVISOR		DRAWN BY: C. Christian/ F. Nguyen 9/11		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		54-0479 L		<b>LOG OF TEST BORINGS 1 OF 9</b>	
NAME: M. Desalvatore		CHECKED BY: F. De Haro		FIELD INVESTIGATION BY: H. Valencia		<b>DESIGN BRANCH X</b>		POST MILE			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401		REVISION DATES	
				0 1 2 3				DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET OF	
				FILE => 540479121fb20.dgn						20 28	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1407	1743

**Hector Valencia**  
 PROFESSIONAL GEOLOGIST  
 No. 7776  
 Exp. 2/29/12  
 DATE 12-19-11  
 PLANS APPROVAL DATE 4-16-12

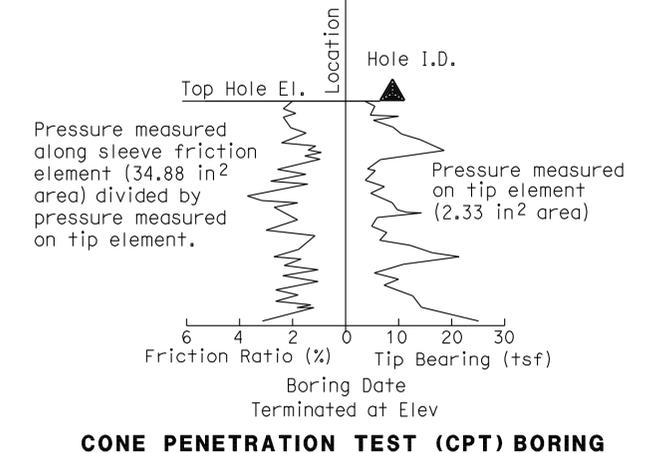
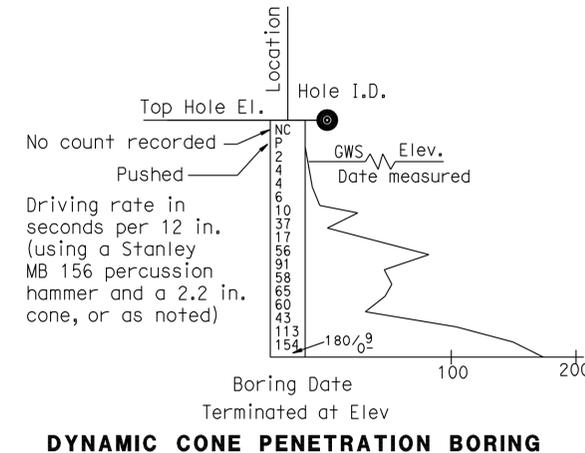
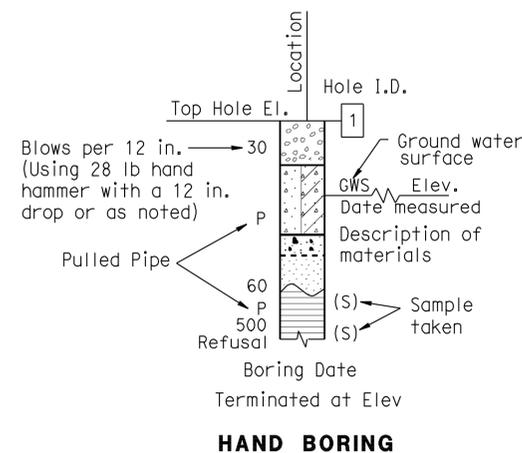
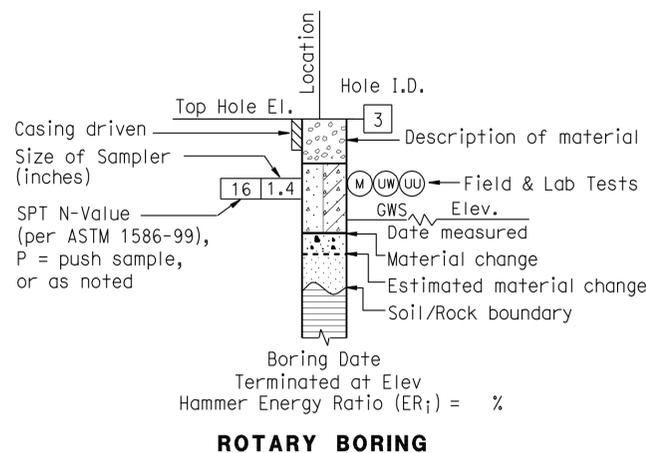
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

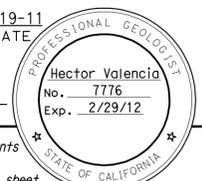
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring (hollow or solid stem bucket)
	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	P	Rotary percussion boring (air)
	R	Rotary drilled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

Note: Size in inches.

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



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1408	1743


 12-19-11 DATE  
 4-16-12 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.

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

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

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

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

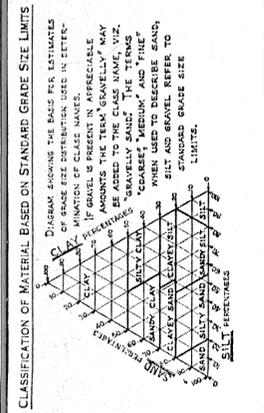
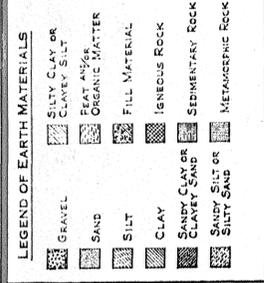
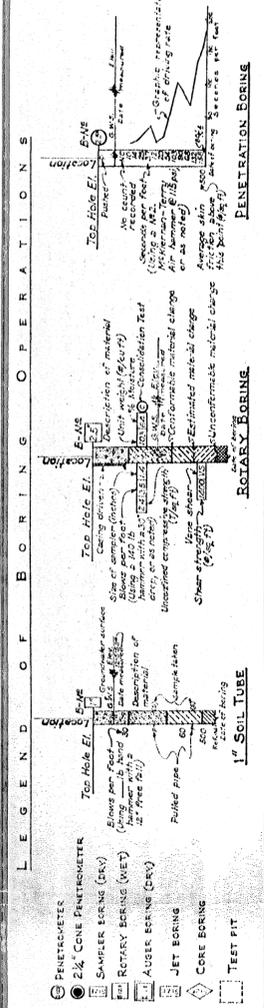
PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

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

ENGINEERING SERVICES	MATERIALS AND GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH X	BRIDGE NO. 54-0479 L	I-215/I-10 SEPARATION LT (WIDEN)	
				POST MILE 4.03		LOG OF TEST BORINGS 3 OF 9
PREPARED BY: F. Nguyen 9/11		UNIT: 3643 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 22 OF 28

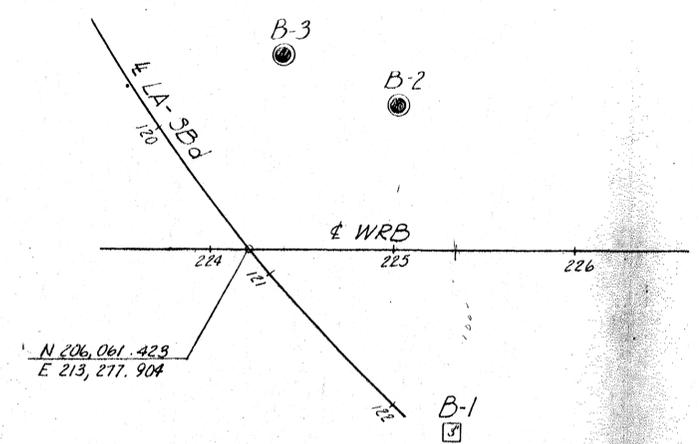
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3  
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LEGEND OF BORINGS

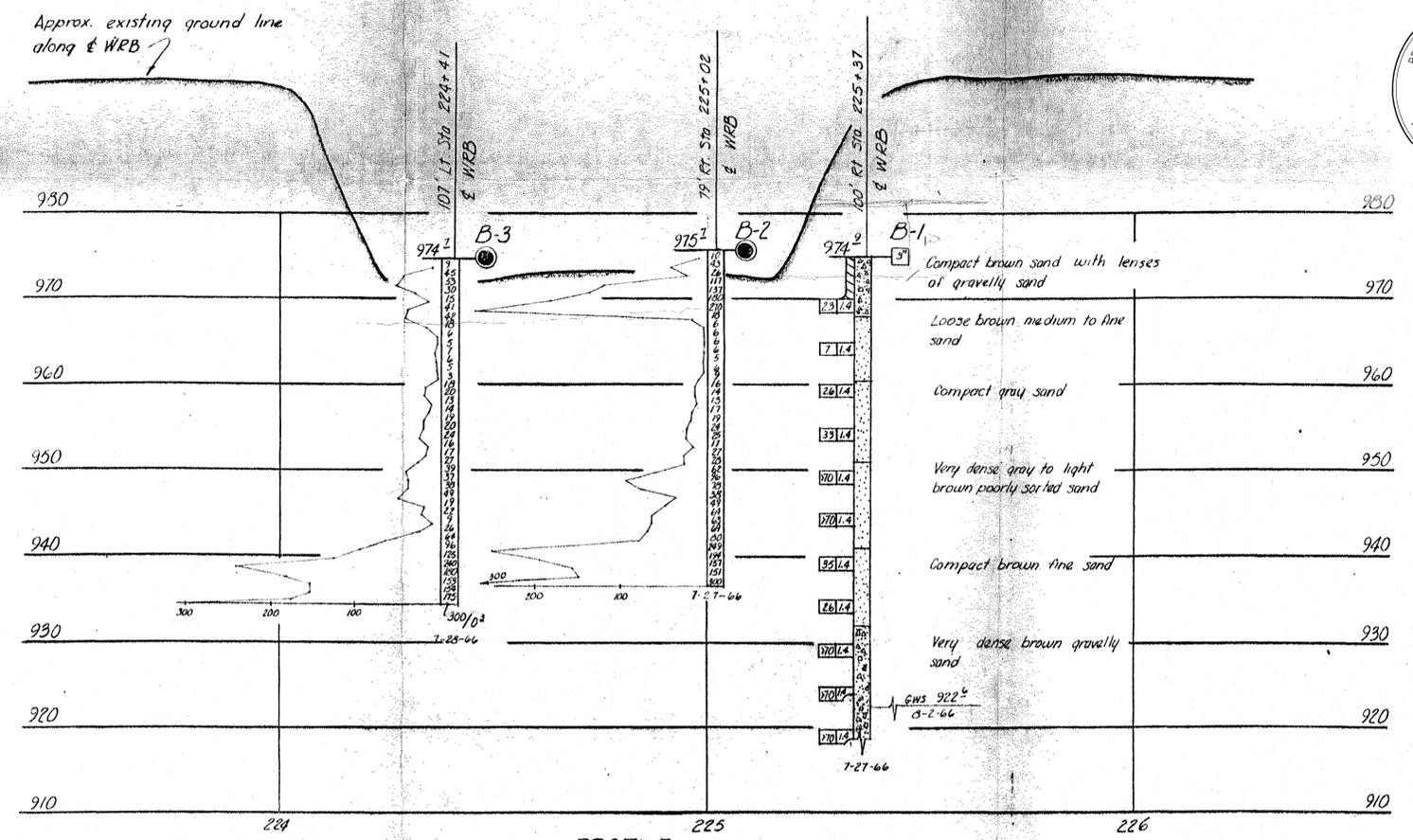


NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

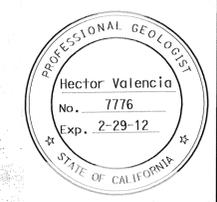
**BENCH MARK**  
 BM# 23-A-58 Elev 993.06  
 Setting pin on Redlands Br Conn. Br 54'  
 Rt & Imp WRB Sta 224+18



**PLAN**  
 Scale 1" = 50'



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



**DIVISION OF ENGINEERING SERVICES - MATERIALS AND 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. It does not attest to the accuracy or validity of the information contained in 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
08	Riv,Sbd	91,215	21.5/21.7,43.2/45.2,0.0/5.1	1409	1743

UNIT: 3643 CONTRACT No. 08-0M9401 BRIDGE No. 54-0479 L  
 PROJ. No. & PHASE: 0800005061 08-0M9401 54-0479 L

VERT DATUM: NGVD29 CONVERSION: NAVD88 = NGVD29 + 2.3 Sheet of  
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

TO ACCOMPANY PLANS DATED 4-16-12

**GEOLOGY**

STATE OF CALIFORNIA  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**ROUTE 15 SOUTH BOUND/10 WEST BOUND SEPARATION (WIDEN)**

**LOG OF TEST BORINGS**

SCALE As Noted BRIDGE 54-479 L FILL DRAWING





DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Sbd	15			

BRIDGE ENGINEER REGISTERED CIVIL ENGINEER NO. 530  
DATE APPROVED \_\_\_\_\_

### BENCH MARK

- BM# 12A-56 Elev. 973.98  
Chis. X on SE corner DJ, 92' Lt. Sta 117+48  
± Imp. N. Rdbd.
- BM# 13-A-56 Elev. 974.87  
Chis. X on S. corner PCC endwall 35' Lt. Sta 125+60  
± Imp. S. Rdbd.
- BM# 23-A-58 Elev. 993.06  
Settling pin on Redlands Br Conn Br. 54' RA  
± Imp. WRB Sta. 224+18.
- BM# 23-B-58 Elev. 998.37  
SE anchor bolt of electroliner 68' Lt. ± Imp.  
ERB Sta. 225+82.

**DIVISION OF ENGINEERING SERVICES - MATERIALS AND 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. It does not attest to the accuracy or validity of the information contained in 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
08	Riv, Sbd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1412	1743

PROFESSIONAL GEOLOGIST  
No. 7776  
Exp. 2-29-12

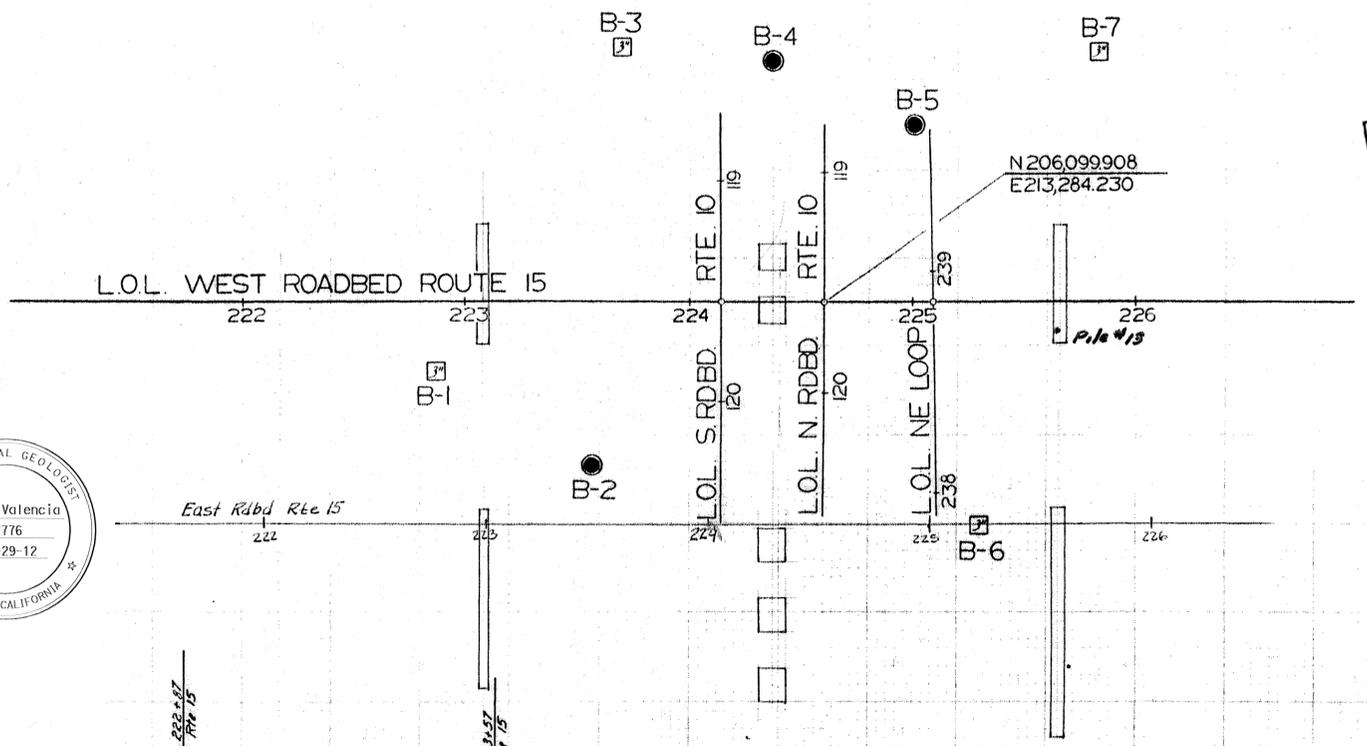
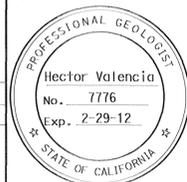
*Hector Valencia*  
12-19-11  
DATE

**I-215/1-10 SEPARATION LT (WIDEN)**  
**LOG OF TEST BORINGS 7 OF 9**

UNIT: 3643 CONTRACT No. 08-0M9401 BRIDGE No. 54-0479 L  
PROJ. No. & PHASE: 08000005061

VERT DATUM: NGVD29 CONVERSION: NAVD88 = NGVD29 + 2.3 Sheet of

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



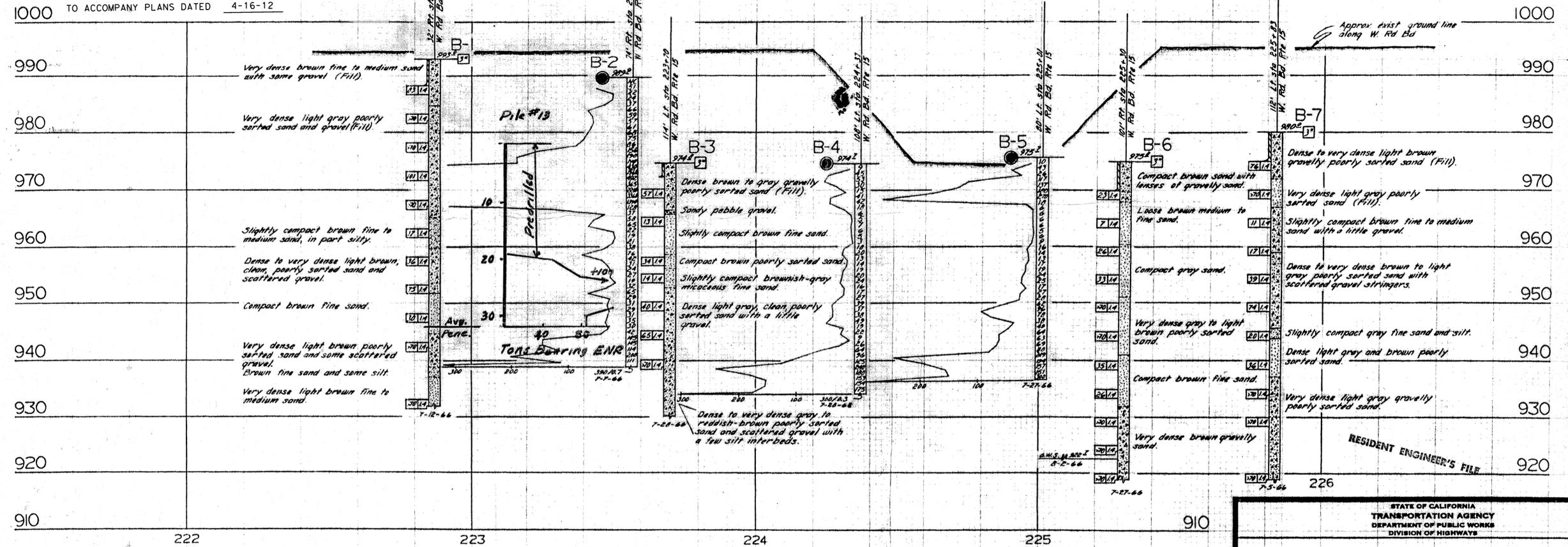
**PLAN**

Scale: 1" = 40'

Design Pile Loading	70 T
Pile type	12" Square P/S Conc.
No. of Piles	121
LF (Plans)	4810
LF (As Built)	4210
Hammer	Kobe K-22 & Vulcan O8

**PROFILE**

Scale: Vert. 1" = 10'  
Horiz. 1" = 20'



**LEGEND OF OPERATIONS**

**LEGEND OF BORING**

**LEGEND OF PENETRATION BORING**

**LEGEND OF SOIL TUBE**

**LEGEND OF TEST PIT**

**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.**

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

**ROUTE 15/10 SEPARATION**

**LOG OF TEST BORINGS**

BRIDGE NO. 54-479 L	POST MILE 0.1	DRAWING NO.	SHEET OF
REVISION DATES		(PRELIMINARY STAGE ONLY)	

WO 086501

Discard prints bearing earlier revision dates

FILENAME => 5404791z1tb26.tif



Also SBd-26

12

Design Pile Loading 45 Ton  
 Type Pile Raymond step taper  
 Diameter Tip 8" Butt 15 1/2"  
 Total Number Piles 23  
 Lineal ft Piles "As Built" 512.5  
 Lineal ft Piles Called for on Plans 765.0  
 Hammer Vulcan No. 1

H.C. Mann  
 SB-RVCR-E

DIVISION OF ENGINEERING SERVICES - MATERIALS AND GEOTECHNICAL SERVICES

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DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
08	Riv, SBd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1414	1743

DATE: 12-19-11

**I-215/1-10 SEPARATION LT (WIDEN)**  
**LOG OF TEST BORINGS 9 OF 9**

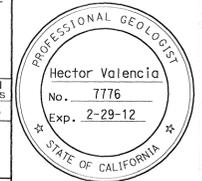
UNIT:	CONTRACT No.	BRIDGE No.
3643	08-0M9401	54-0479 L

PROJ. No. & PHASE: 08000005061

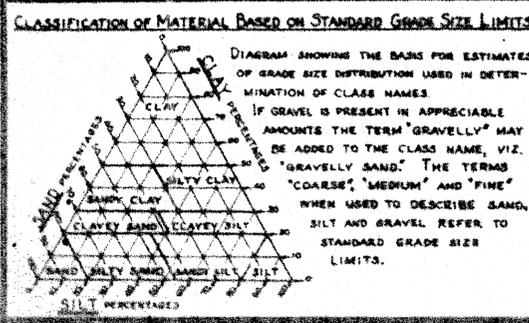
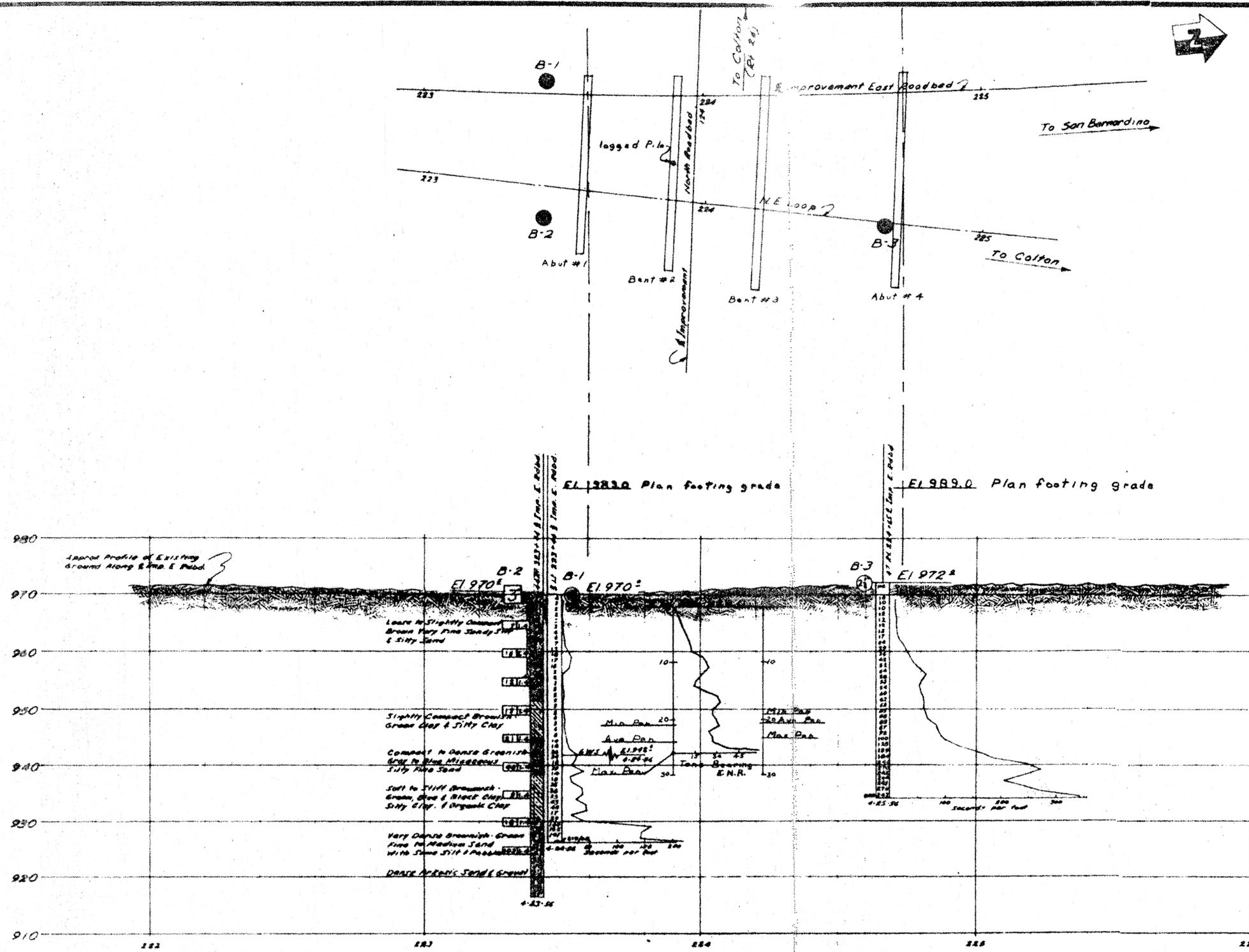
VERT DATUM: NAVD29 CONVERSION: NAVD88 = NAVD29 + 2.3

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

TO ACCOMPANY PLANS DATED 4-16-12



B.M. 24 10.55  
 Not in road way and ACC obstruction  
 Dr. logs No. 14-375, 1 2R 770158400  
 P.O.R. & Team H. Pineda  
 El. 976.30



**LEGEND OF EARTH MATERIALS**

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

**LEGEND OF BORING OPERATIONS**

- PLAN OF ANY BORING
- PENETROMETER
- 2 1/2" CONE PENETROMETER
- SAMPLER BORING (DRY)
- ROTARY BORING (WET)
- AIRER BORING (DRY)
- JET BORING
- CORE BORING
- TEST PIT

Includes diagrams for 'Top Hole El. Location' and 'Penetration Borings' with detailed annotations on sampling methods and data recording.

**NOTES**

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans. 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  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

7215 → 10

**ROUTE 43 NB/ROUTE 26 WB SEPARATION**

**LOG OF TEST BORINGS**

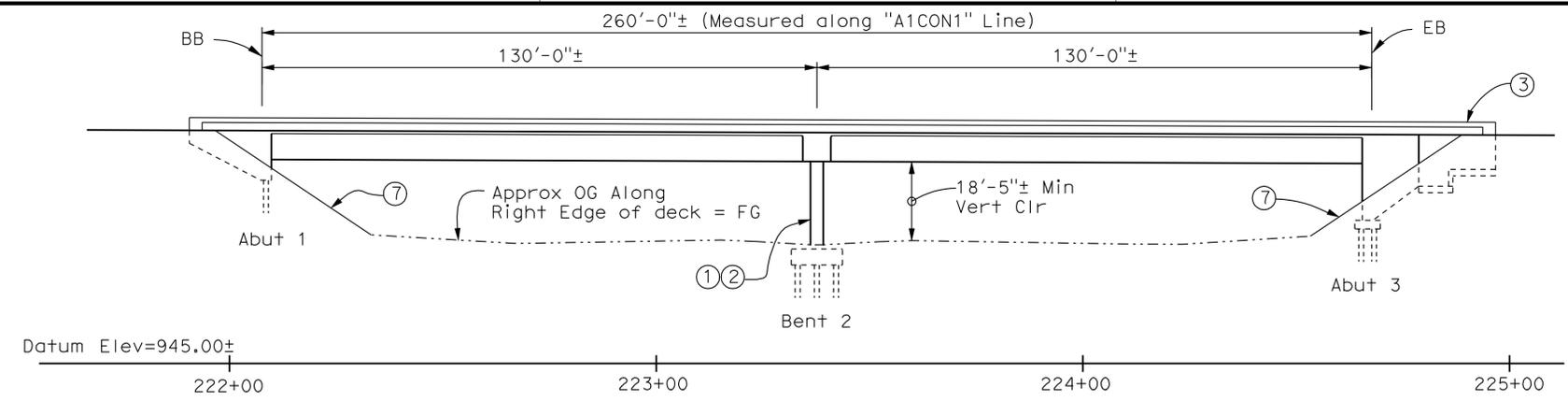
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08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1415	1743

REGISTERED CIVIL ENGINEER  
 LARRY WU  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

4-06-12 DATE  
 4-16-12 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.

### RETROFIT CODE

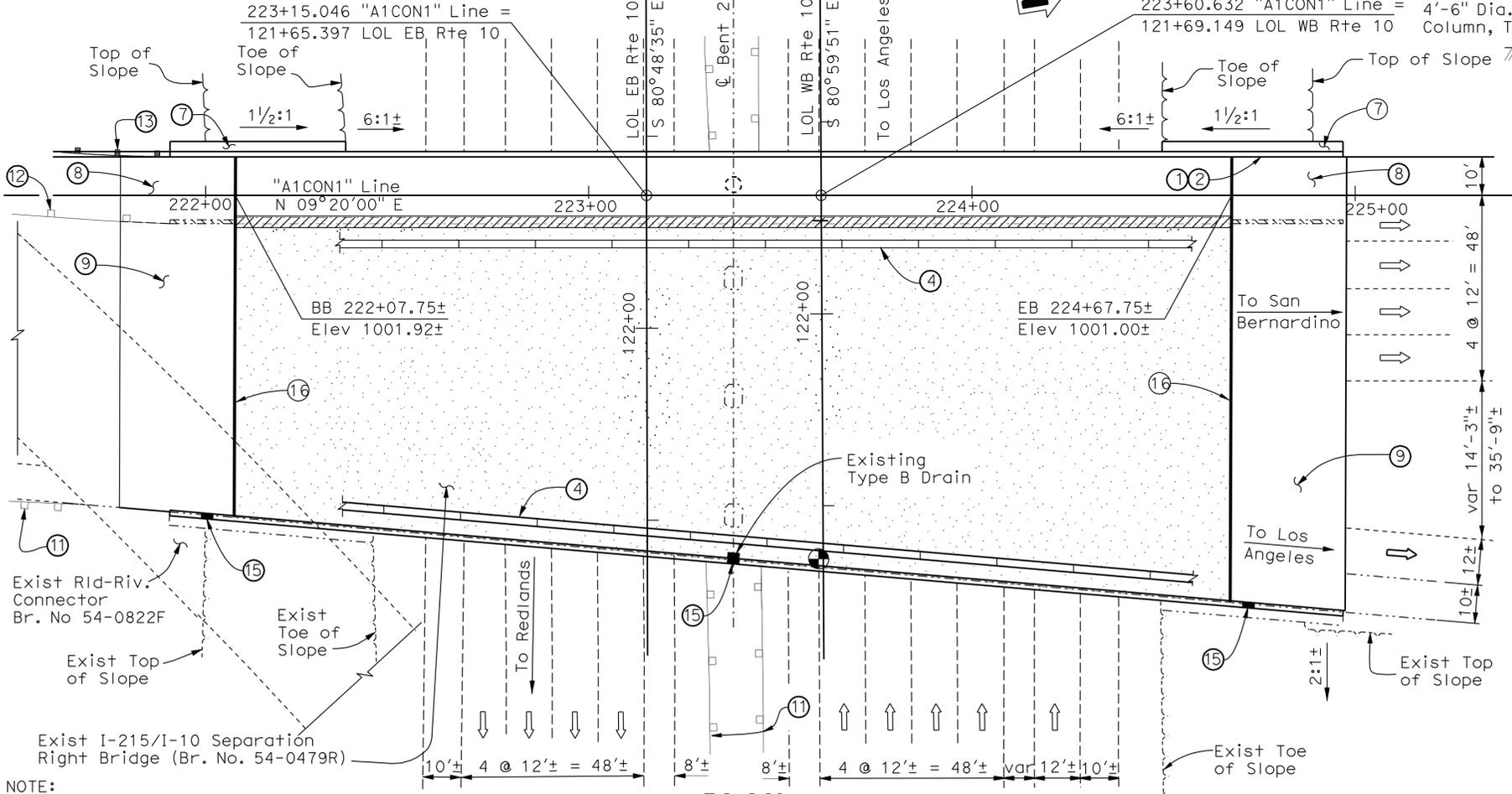
- ⬡ Bent Cap/Girder Retrofit (FRP)
- ⬡ Column Retrofit (FRP)



- NOTES:**
- ① Paint "Br No 54-0479R"
  - ② Paint "Interstate 215/10 Sep"
  - ③ Conc Barrier, Type 732
  - ④ Temporary Railing Type K, see "Road Plans"
  - ⑤ Remove Existing Type 9 Barrier Railing
  - ⑥ Remove Existing Overhang
  - ⑦ Slope Paving
  - ⑧ Structure Approach, Type N(30D)

- MIRROR ELEVATION**  
1" = 20'
- ⑨ Structure Approach, Type R(30D)
  - ⑩ Conc Barrier, Type 732 (Mod)
  - ⑪ Existing MBGR, see "Road Plans"
  - ⑫ Remove Existing MBGR, see "Road Plans"
  - ⑬ MBGR, see "Road Plans"
  - ⑭ Match Existing Cross Slope
  - ⑮ Scupper
  - ⑯ New & Replaced Joint Seal (MR=1")

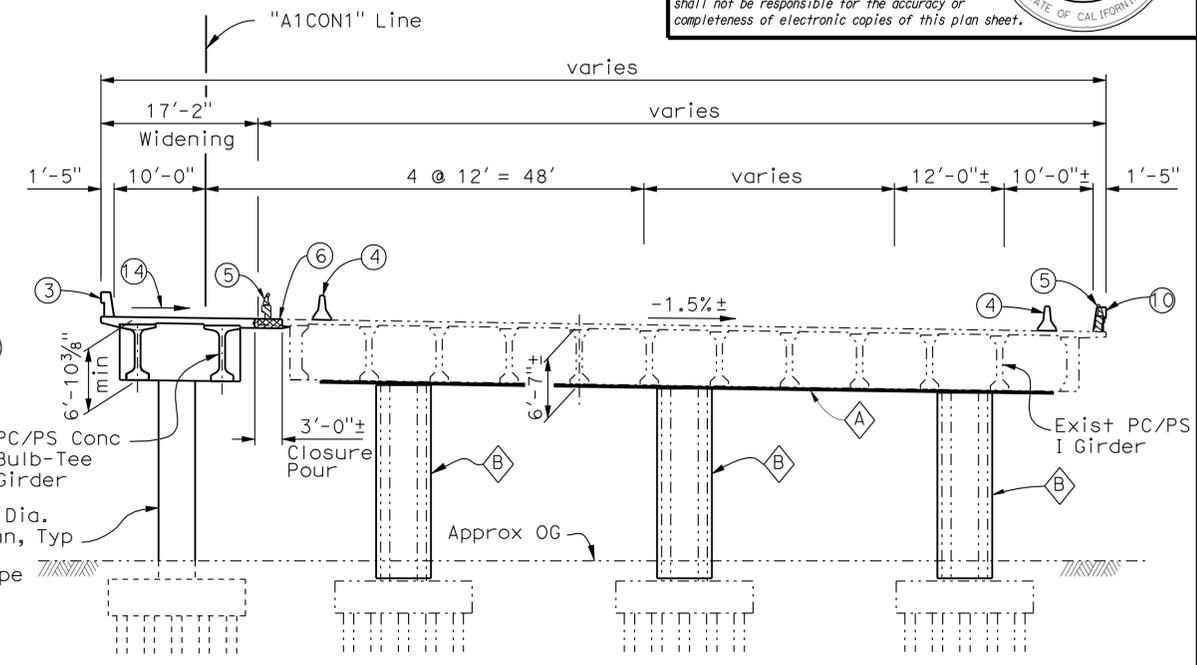
- LEGEND**
- Point of Minimum Vertical Clearance
  - ➔ Direction of Traffic
  - Indicates Existing Structure
  - ▨ Indicates Existing Bridge Removal (Portion)
  - ▨ Indicates Closure Pour
  - ▨ Indicates Limits of Clean & Treat Bridge Deck with Methacrylate



**PLAN**  
1" = 20'

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

For General Notes, Index to Plans and Pile Data Table, see "INDEX TO PALNS" sheet



**TYPICAL SECTION**  
1" = 10'

### QUANTITIES

PREPARE CONCRETE BRIDGE DECK SURFACE	22,211	SQFT
BRIDGE REMOVAL (PORTION), LOCATION C	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	152	CY
STRUCTURE BACKFILL (BRIDGE)	138	CY
AGGREGATE BASE (APPROACH SLAB)	20	CY
FURNISH STEEL PILING (HP 10 X 57)	408	LF
DRIVE STEEL PILE (HP 10 X 57)	10	EA
FURNISH STEEL PILING (HP 14 X 89)	556	LF
DRIVE STEEL PILE (HP 14 X 89)	13	EA
STRUCTURAL CONCRETE, BRIDGE FOOTING	46	CY
STRUCTURAL CONCRETE, BRIDGE	255	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	38	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	201	CY
DRILL AND BOND DOWEL	13	LF
FURNISH PRECAST PRESTRESSED CONCRETE BULB-TEE GIRDER (120'-130')	4	EA
ERECT PRECAST PRESTRESSED CONCRETE GIRDER	4	EA
JOINT SEAL (MR 1")	216	LF
BAR REINFORCING STEEL (BRIDGE)	71,316	LB
TREAT BRIDGE DECK	22,211	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	222	GAL
COMPOSITE COLUMN CASING	645	SQFT
FIBER REINFORCED POLYMER STRIP	1,862	SQFT
SLOPE PAVING (CONCRETE)	17	CY
CONCRETE BARRIER (TYPE 732 MODIFIED)	308	LF
CONCRETE BARRIER (TYPE 732)	308	LF

Daniel T. Adams  
DESIGN ENGINEER

DESIGN	BY L. Wu/A. McPhee	CHECKED C. Duan
DETAILS	BY Y. Tang	CHECKED C. Duan
QUANTITIES	BY A. McPhee	CHECKED F. Chen

LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
LAYOUT	BY A. McPhee
SPECIFICATIONS	BY J. Corrado

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
BRIDGE NO. 54-0479R  
POST MILE 4.03  
DESIGN BRANCH 10

I-215/I-10 SEPARATION RT (WIDEN)  
GENERAL PLAN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1416	1743

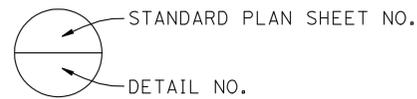
LARRY WU  
 REGISTERED CIVIL ENGINEER  
 4-06-12 DATE  
 4-16-12 PLANS APPROVAL DATE  
 LARRY WU No. C57035 Exp. 6-30-13 CIVIL  
 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA  
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# INDEX TO PLANS

Sheet No.	Title
1	GENERAL PLAN
2	INDEX TO PLANS
3	FOUNDATION PLAN
4	ABUTMENT 1 LAYOUT
5	ABUTMENT 3 LAYOUT
6	ABUTMENT DETAILS NO. 1
7	ABUTMENT DETAILS NO. 2
8	BENT LAYOUT
9	BENT DETAILS
10	BENT CAP / GIRDER RETROFIT DETAILS
11	COLUMN RETROFIT DETAILS
12	TYPICAL SECTION
13	GIRDER LAYOUT
14	PC/PS BULB-TEE GIRDER DETAILS NO. 1
15	PC/PS BULB-TEE GIRDER DETAILS NO. 2
16	CONCRETE BARRIER TYPE 732 (MOD)
17	SLOPE PAVING - FULL SLOPE
18	STRUCTURE APPROACH TYPE N (30D)
19	STRUCTURE APPROACH TYPE R (30D)
20	LOG OF TEST BORINGS (1 OF 9)
21	LOG OF TEST BORINGS (2 OF 9)
22	LOG OF TEST BORINGS (3 OF 9)
23	LOG OF TEST BORINGS (4 OF 9)
24	LOG OF TEST BORINGS (5 OF 9)
25	LOG OF TEST BORINGS (6 OF 9)
26	LOG OF TEST BORINGS (7 OF 9)
27	LOG OF TEST BORINGS (8 OF 9)
28	LOG OF TEST BORINGS (9 OF 9)

## STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
A62-C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B3-1	RETAINING WALL TYPE 1 H=4' THROUGH 30'
B3-8	RETAINING WALL DETAILS No. 1
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
B7-8	DECK DRAINAGE DETAILS
B11-55	CONCRETE BARRIER TYPE 732



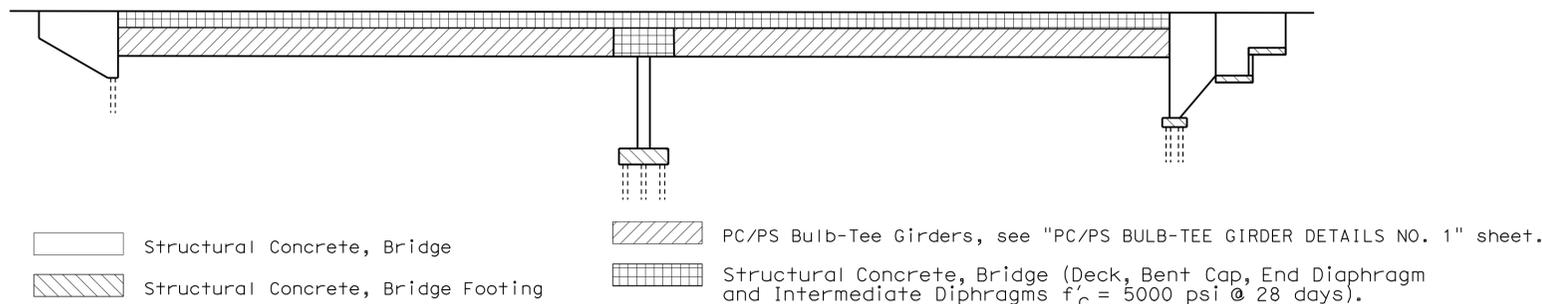
## GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

**DESIGN:** AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4th Edition with California Amendments, Preface dated Sept. 2010.  
**SEISMIC DESIGN:** Caltrans Seismic Design Criteria (SDC) Version 1.6, November, 2010.  
**DEAD LOAD:** Includes 35 Psf for future wearing surface.  
**LIVE LOADING:** HL93 and permit design load.  
**SEISMIC LOADING:** Soil Profile:  $V_{s30} = 919$  ft/s  
 Moment Magnitude:  $M_{max} = 7.5$   
 Peak Ground Acceleration: 0.83g

## PILE DATA TABLE

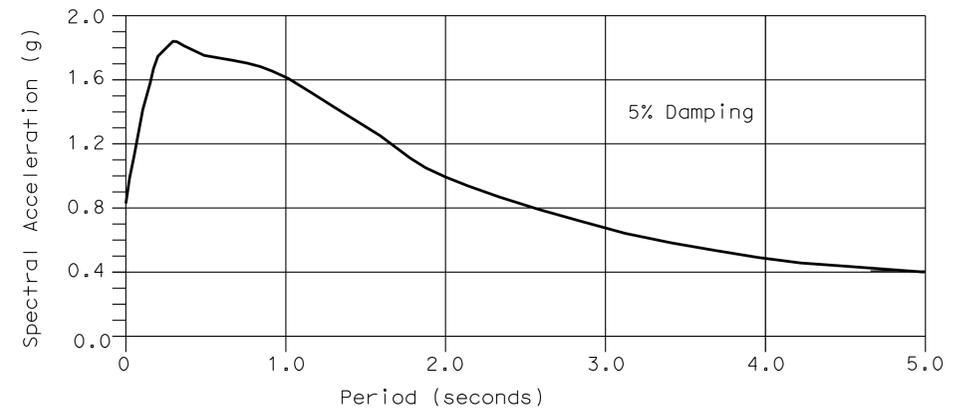
Locations	Pile Type	Required Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance (kips)
		Compression	Tension			
Abutment 1	HP 10X57 "H"-Piles	280	0	946.0 (a)	946.0	280
Bent 2	HP 14x89 "H"-Piles	360	185	925.0 (a) 930.0 (b)	925.0	360
Abutment 3	HP 10X57 "H"-Piles	280	0	942.0 (a)	942.0	280

NOTE: Design Tip Elevations is controlled by: (a) Compression, (b) Tension



## CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE



## ACCELERATION RESPONSE SPECTRUM

**REINFORCED CONCRETE:**  $f_y = 60$  ksi  
 $f'_c = 4000$  psi, unless otherwise noted  
 $n = 9$   
**PRESTRESSED CONCRETE:** See "Prestressing Notes" on "PC/PS BULB-TEE GIRDER DETAILS NO. 1" sheet.

DESIGN	BY A. McPhee	CHECKED C. Duan
DETAILS	BY Y. Tang	CHECKED C. Duan
QUANTITIES	BY A. McPhee	CHECKED F. Chen

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 10**

BRIDGE NO.	54-0479R
POST MILE	4.03

**I-215/I-10 SEPARATION RT (WIDEN)**

**INDEX TO PLANS**

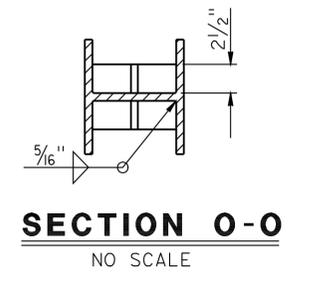
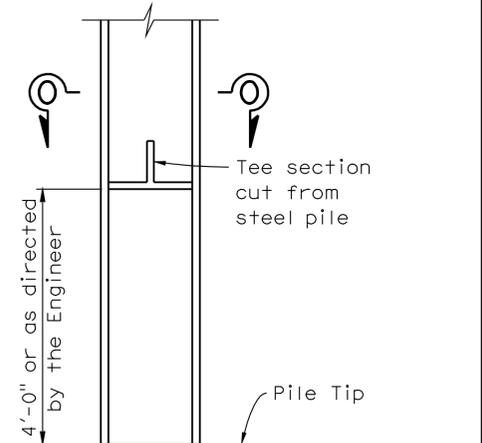
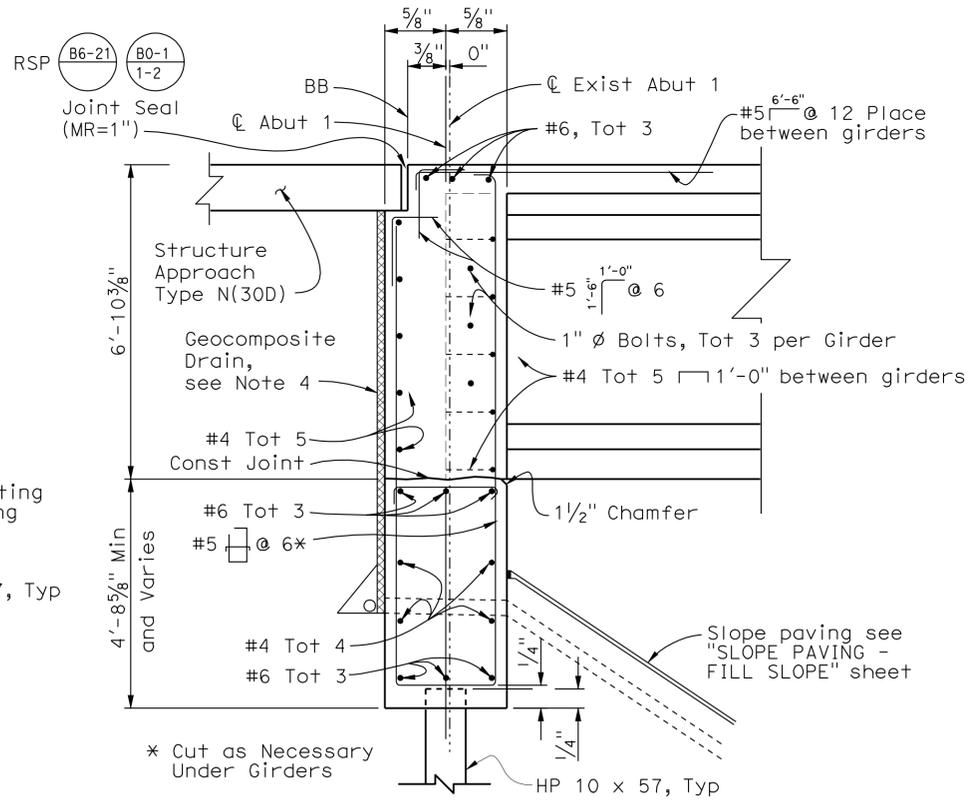
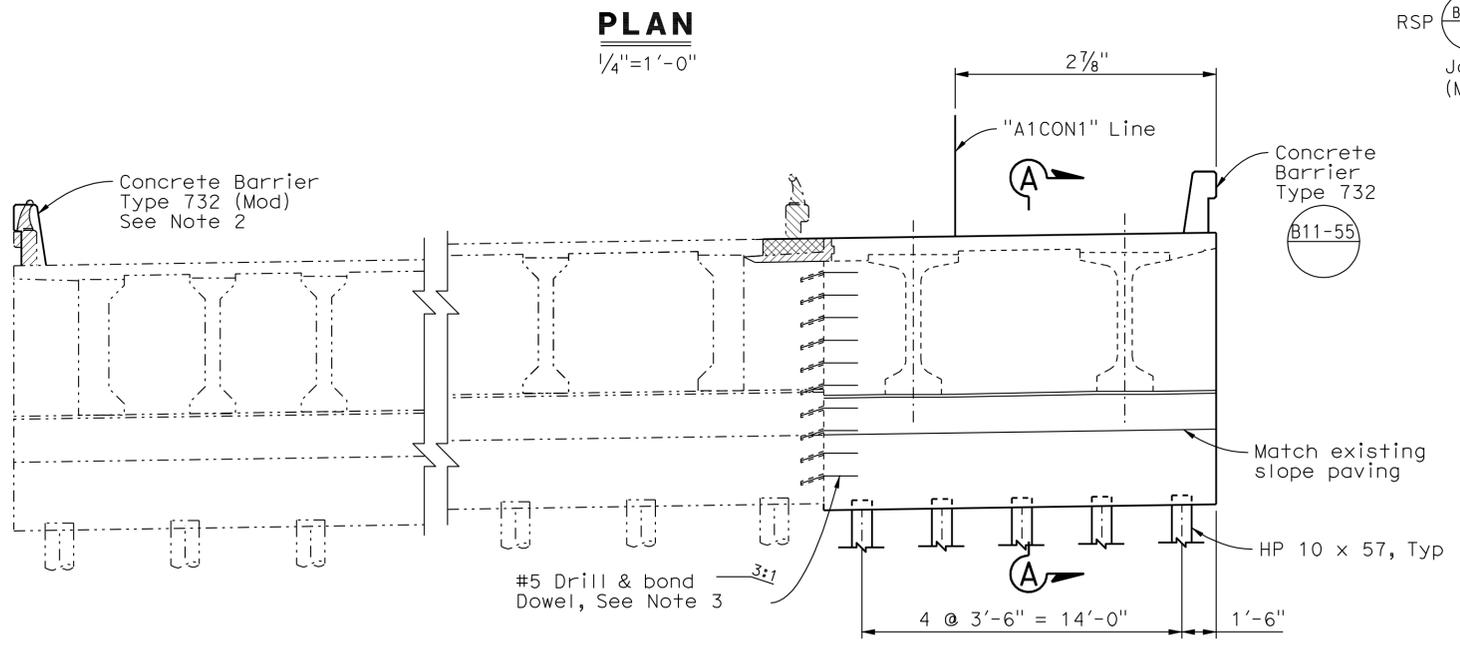
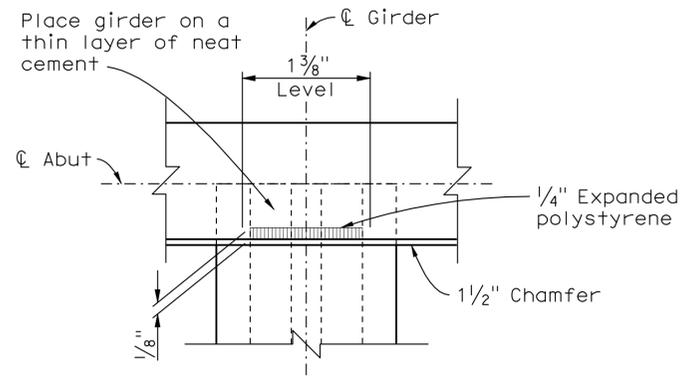
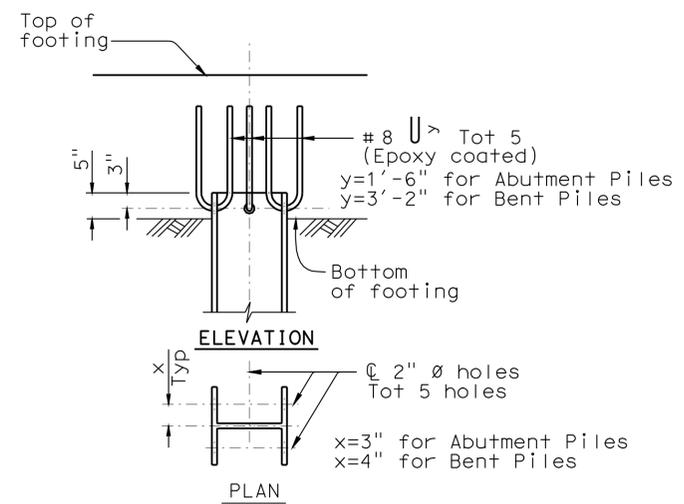
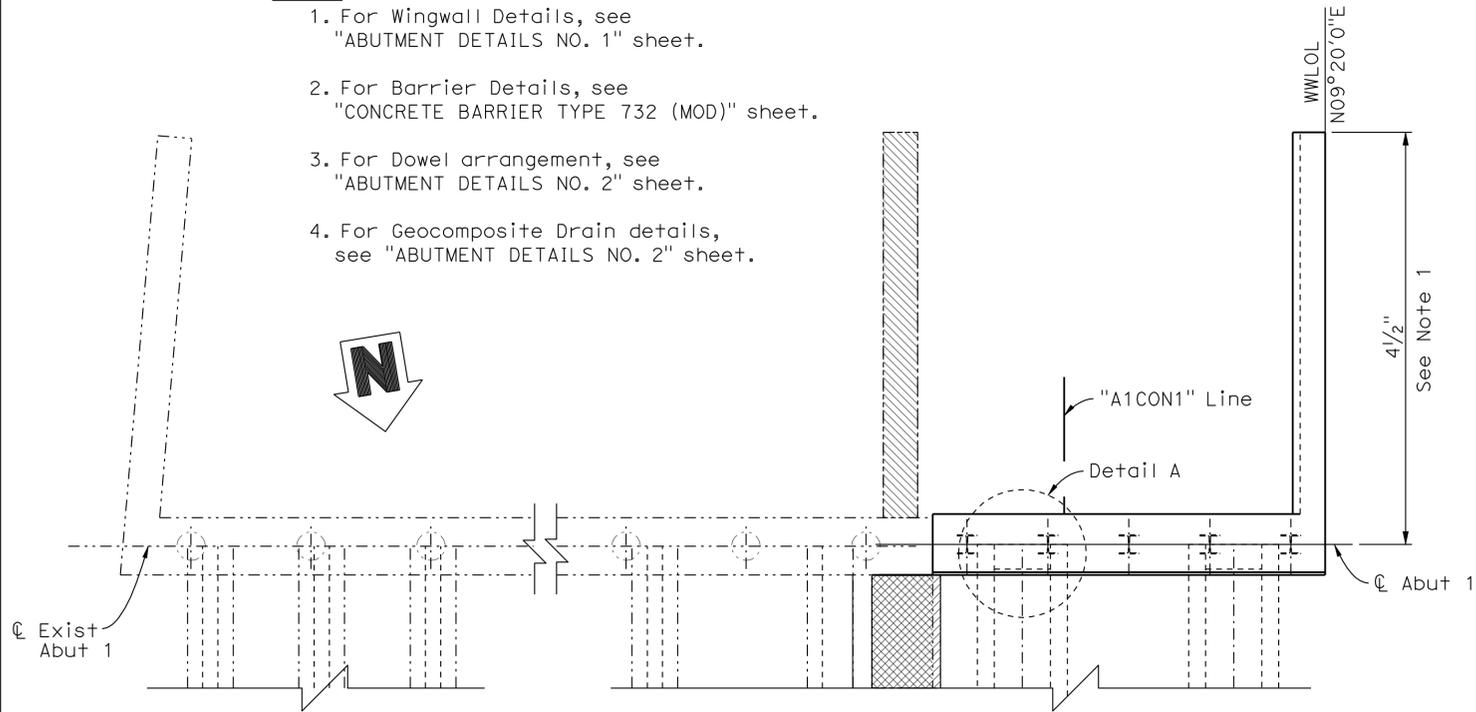


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1418	1743

LARRY WU  
 REGISTERED CIVIL ENGINEER  
 4-06-12 DATE  
 4-16-12 PLANS APPROVAL DATE  
 LARRY WU No. C57035 Exp. 6-30-13 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.

**NOTES:**

1. For Wingwall Details, see "ABUTMENT DETAILS NO. 1" sheet.
2. For Barrier Details, see "CONCRETE BARRIER TYPE 732 (MOD)" sheet.
3. For Dowel arrangement, see "ABUTMENT DETAILS NO. 2" sheet.
4. For Geocomposite Drain details, see "ABUTMENT DETAILS NO. 2" sheet.



**LEGEND**

- Indicates New Construction
- - - Indicates Existing Structure
- ▨ Indicates Existing Bridge Removal
- ▩ Indicates Deck Closure Pour
- ▧ Indicates Expanded Polystyrene

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

DESIGN	BY A. McPhee	CHECKED C. Duan
DETAILS	BY Y. Tang	CHECKED C. Duan
QUANTITIES	BY A. McPhee	CHECKED F. Chen

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 10**

BRIDGE NO. 54-0479R  
POST MILE 4.03

**I-215/I-10 SEPARATION RT (WIDEN)**  
**ABUTMENT 1 LAYOUT**

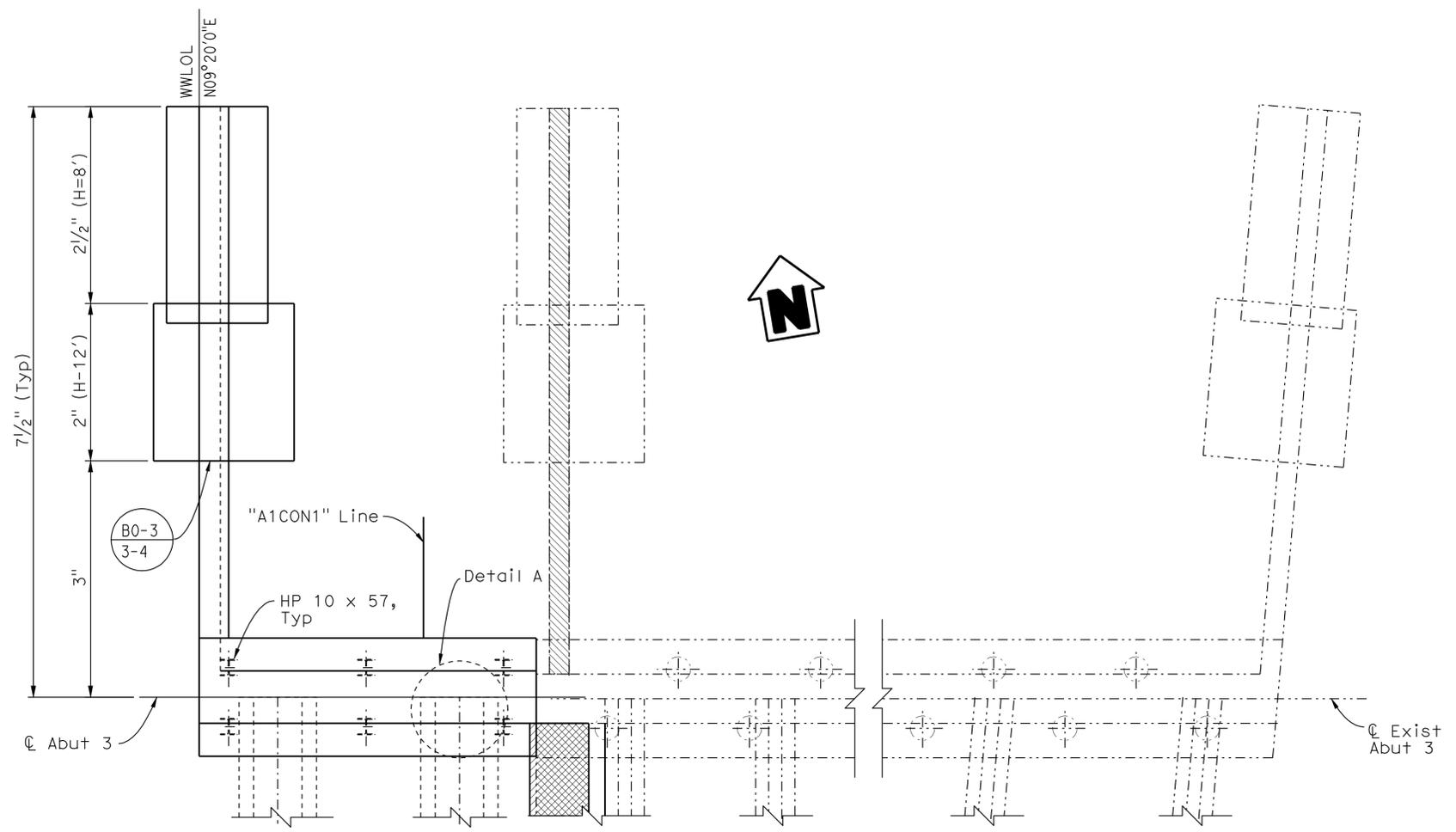
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1419	1743

REGISTERED CIVIL ENGINEER **Larry Wu** DATE **4-06-12**  
 PLANS APPROVAL DATE **4-16-12**  
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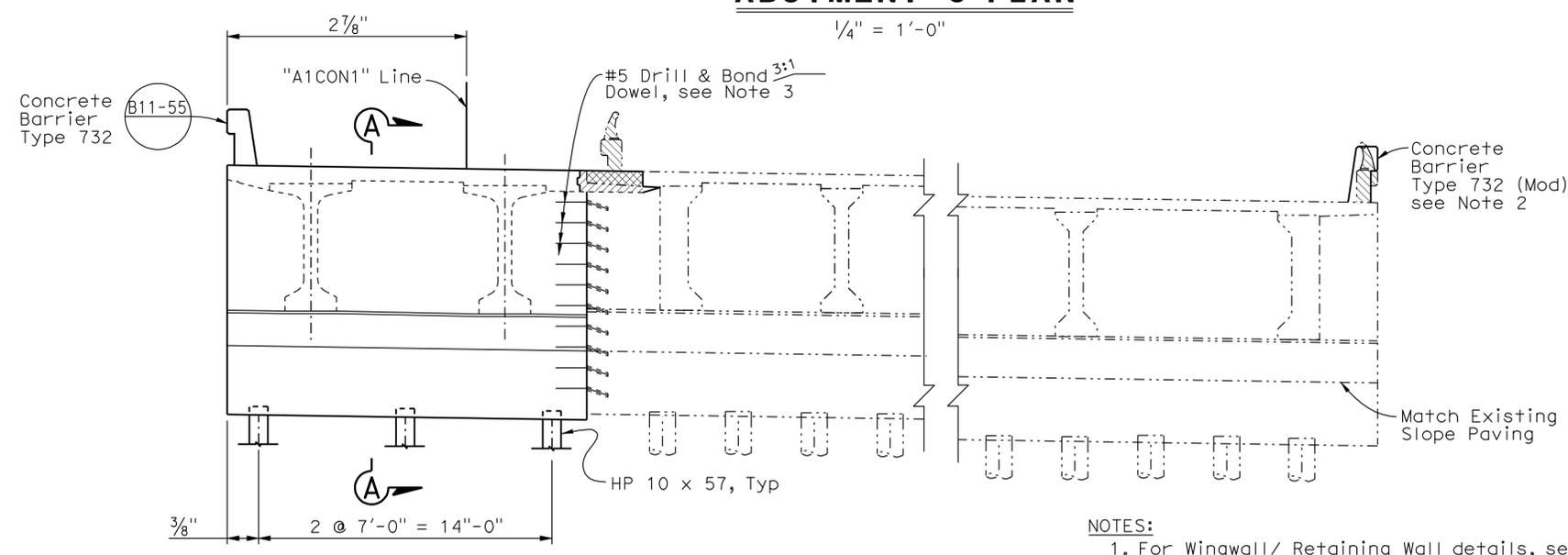
REGISTERED PROFESSIONAL ENGINEER  
**LARRY WU**  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

**LEGEND**

- Indicates New Structure
- - - Indicates Existing Structure
- ▨ Indicates Existing Bridge Removal
- ▩ Indicates Closure Pour



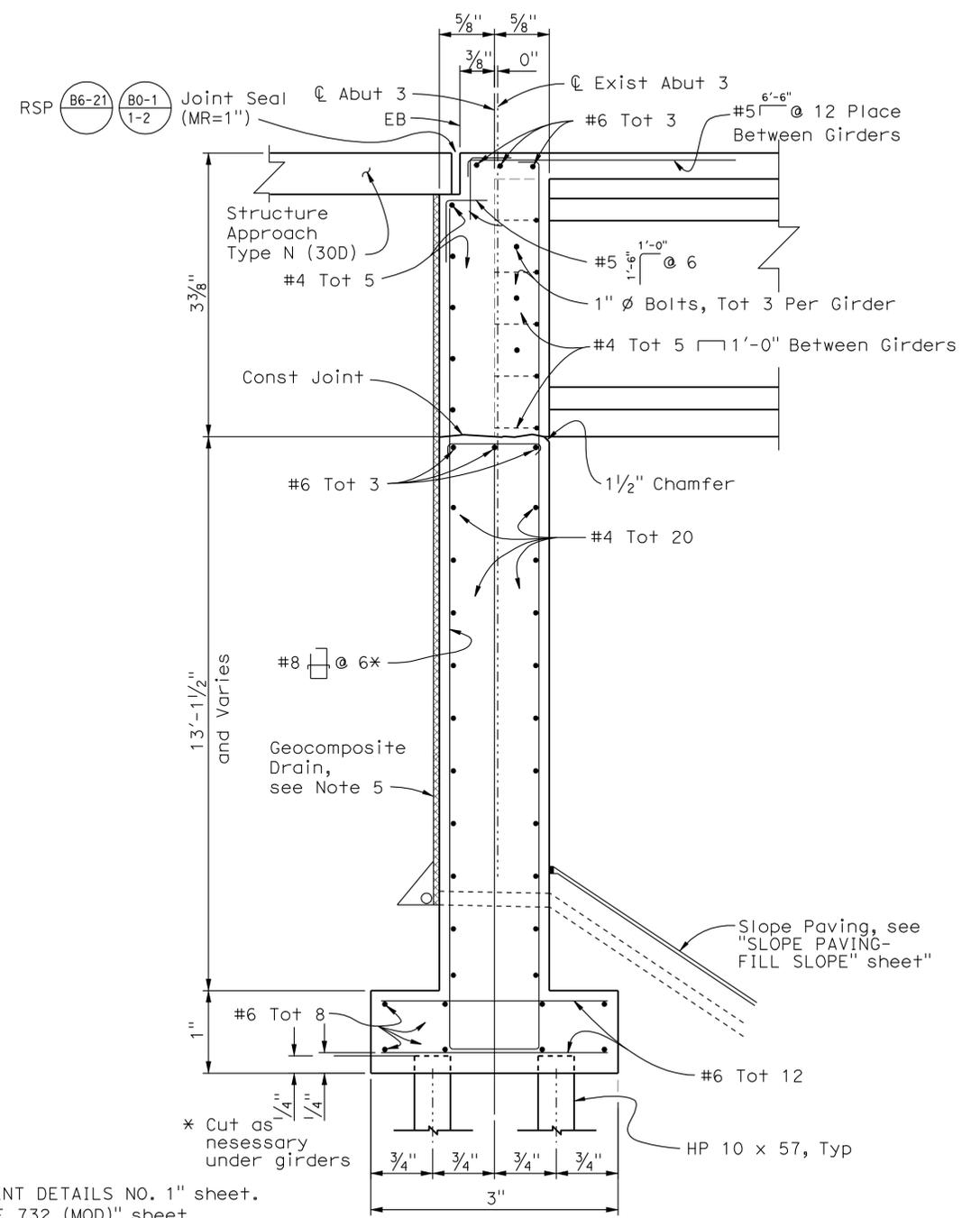
**ABUTMENT 3 PLAN**  
1/4" = 1'-0"



**ABUTMENT 3 ELEVATION**  
1/4" = 1'-0"

**NOTES:**

1. For Wingwall/ Retaining Wall details, see "ABUTMENT DETAILS NO. 1" sheet.
2. For Barrier details, see "CONCRETE BARRIER TYPE 732 (MOD)" sheet.
3. For Drill and Bond Dowel Arrangement, see ABUTMENT DETAILS NO. 2" sheet.
4. For Detail A and Steel Pile Anchor details, see "ABUTMENT 1 LAYOUT" sheet.
5. For Geocomposite Drain details, see "ABUTMENT DETAILS NO. 2" sheet.



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

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

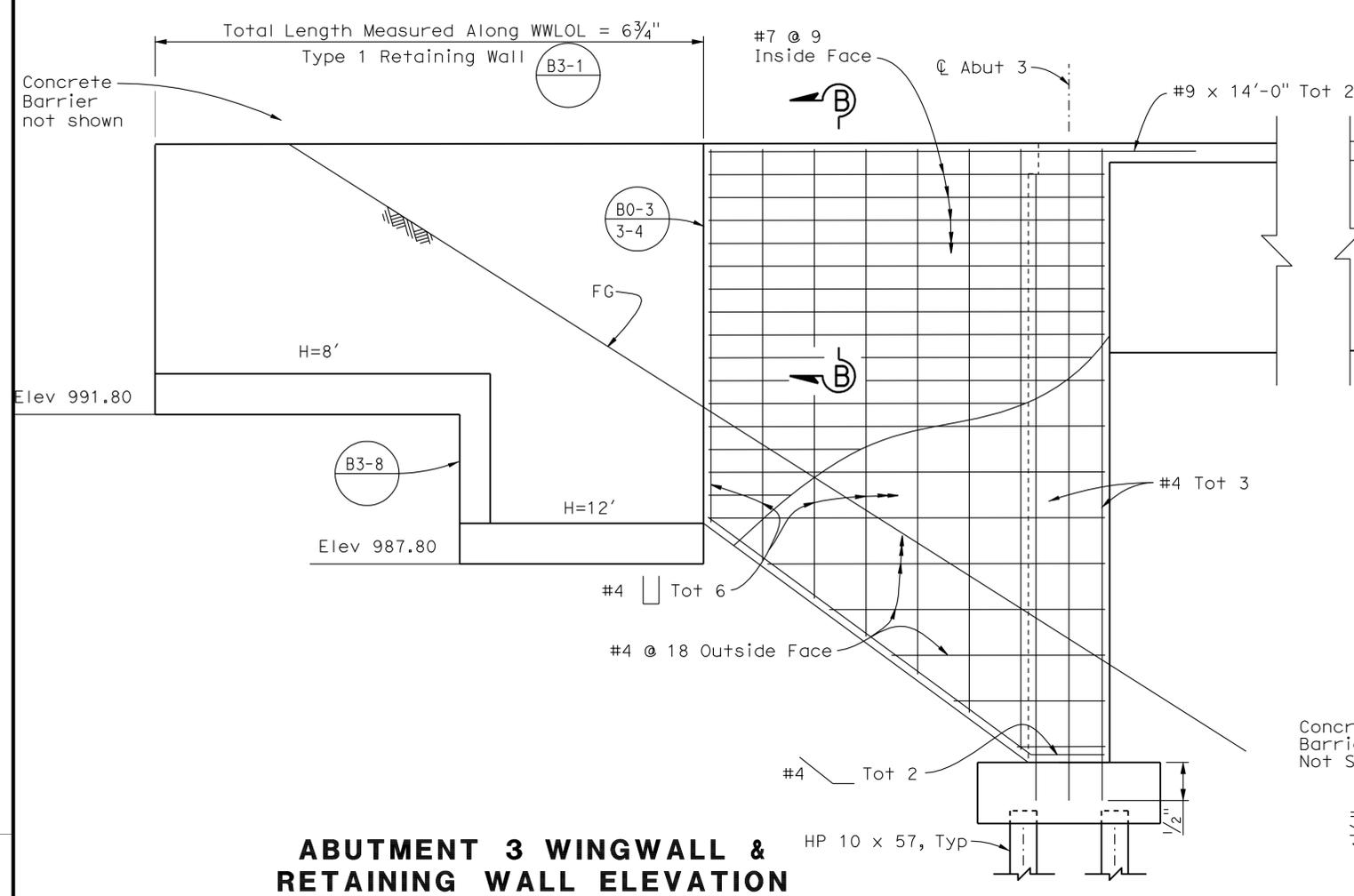
DESIGN BY A. McPhee CHECKED C. Duan DETAILS BY Y. Tang CHECKED C. Duan QUANTITIES BY A. McPhee CHECKED F. Chen	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0479R POST MILE 4.03	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>ABUTMENT 3 LAYOUT</b>
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401
	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 3-10-11	SHEET 5 OF 28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1420	1743

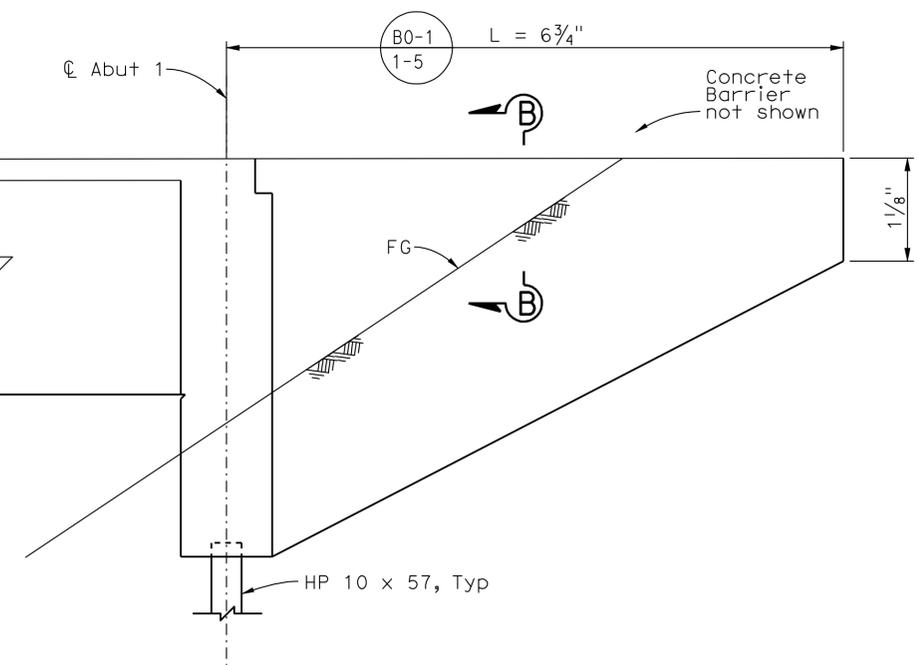
REGISTERED CIVIL ENGINEER  
 LARRY WU  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

4-06-12  
 DATE  
 4-16-12  
 PLANS APPROVAL DATE

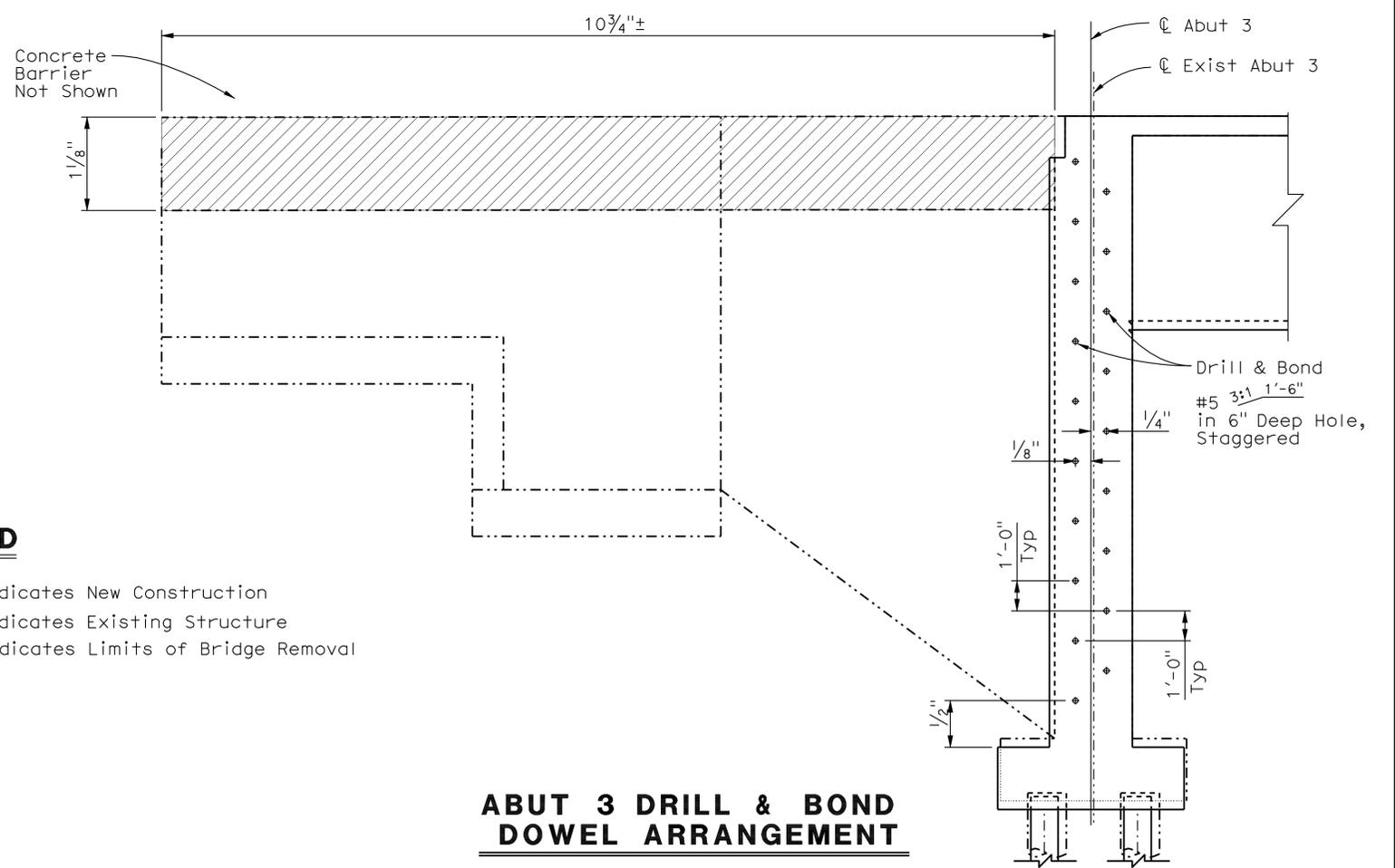
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



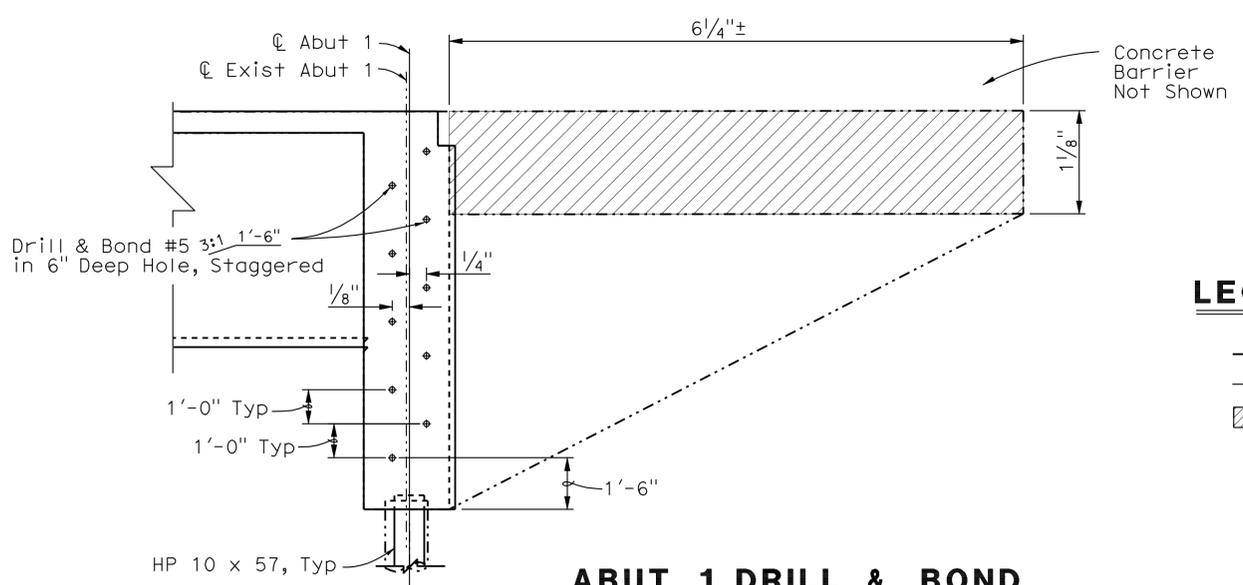
**ABUTMENT 3 WINGWALL & RETAINING WALL ELEVATION**  
 $\frac{3}{8}'' = 1'-0''$



**ABUTMENT 1 WINGWALL**  
 $\frac{3}{8}'' = 1'-0''$



**ABUT 3 DRILL & BOND DOWEL ARRANGEMENT**



**ABUT 1 DRILL & BOND DOWEL ARRANGEMENT**  
 $\frac{3}{8}'' = 1'-0''$

**LEGEND**

- Indicates New Construction
- - - Indicates Existing Structure
- ▨ Indicates Limits of Bridge Removal

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

DESIGN	BY A. McPhee	CHECKED C. Duan	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>ABUTMENT DETAILS NO. 1</b>
DETAILS	BY Y. Tang	CHECKED C. Duan			54-0479R	
QUANTITIES	BY A. McPhee	CHECKED F. Chen			POST MILE 4.03	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401 DISREGARD PRINTS BEARING EARLIER REVISION DATES

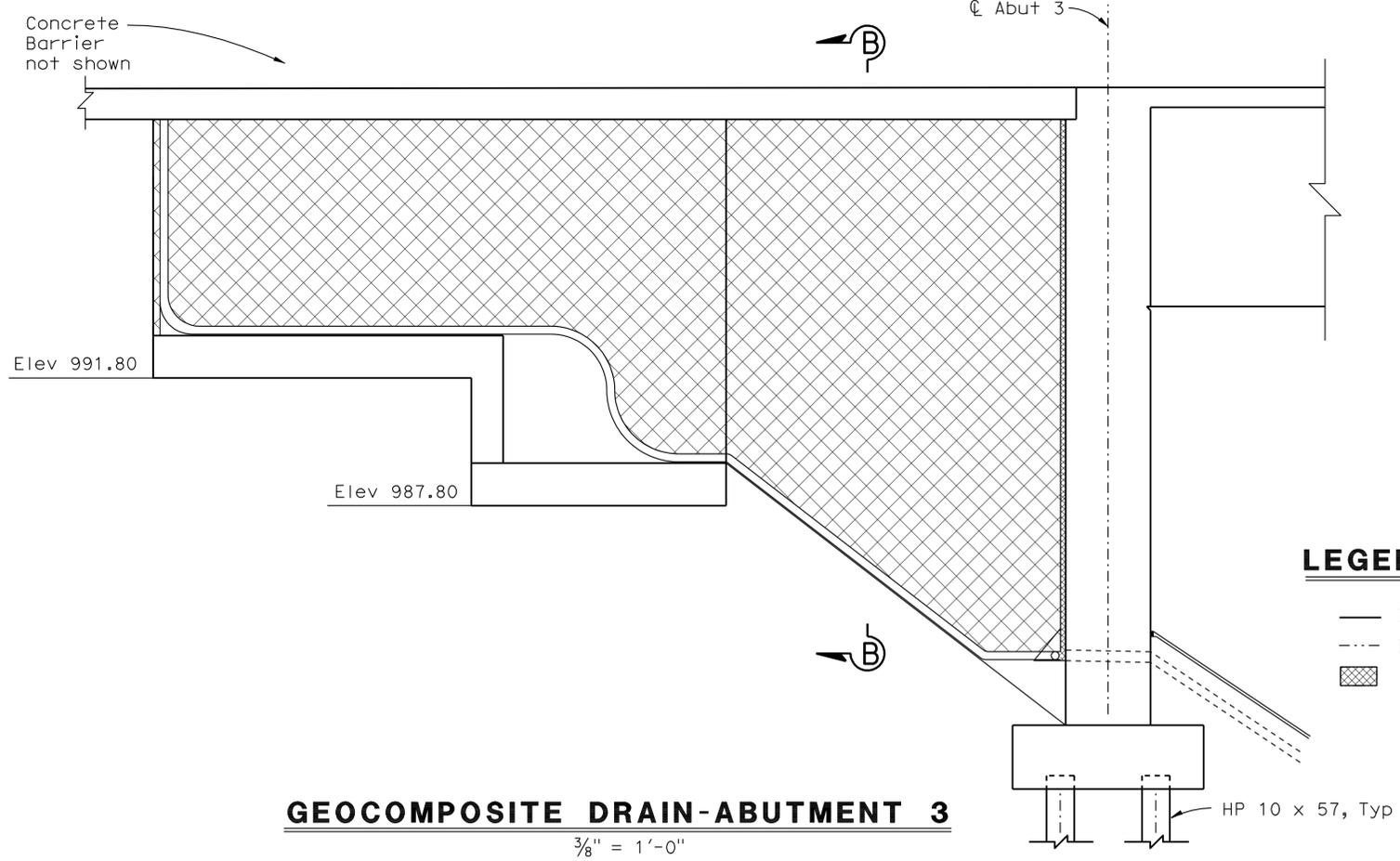
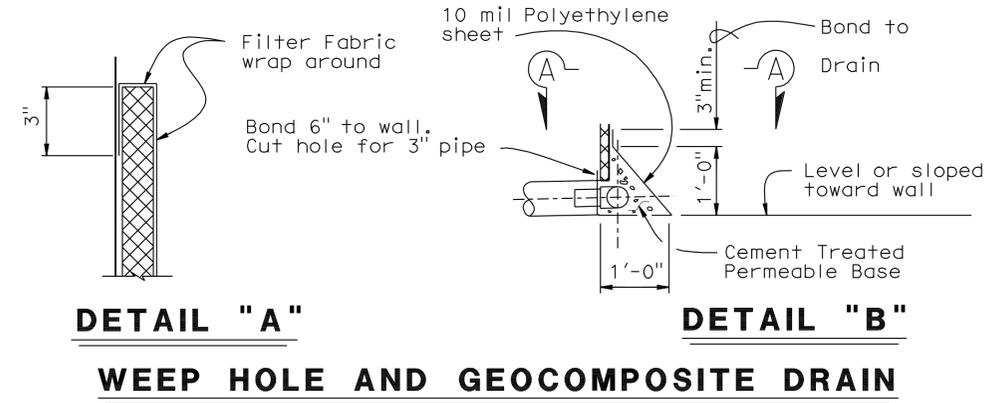
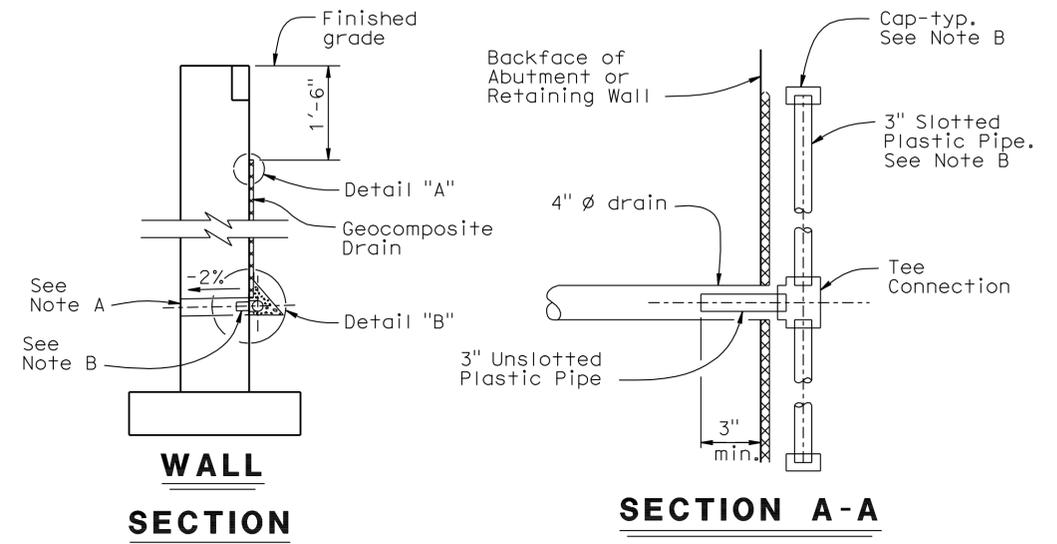
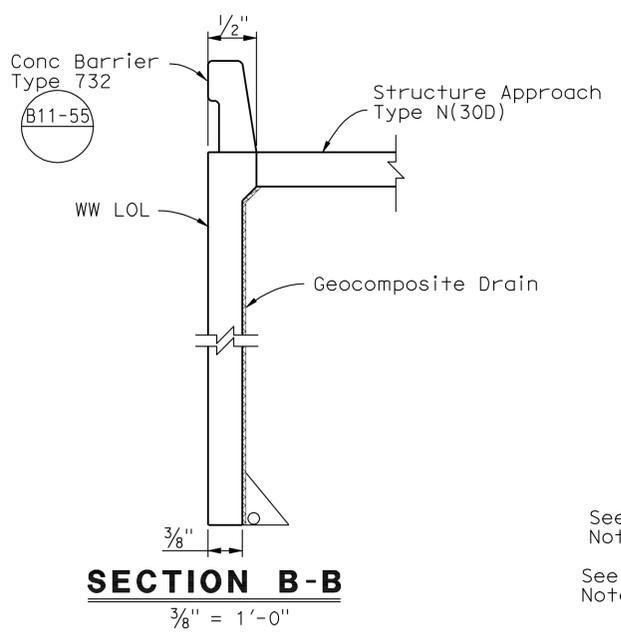
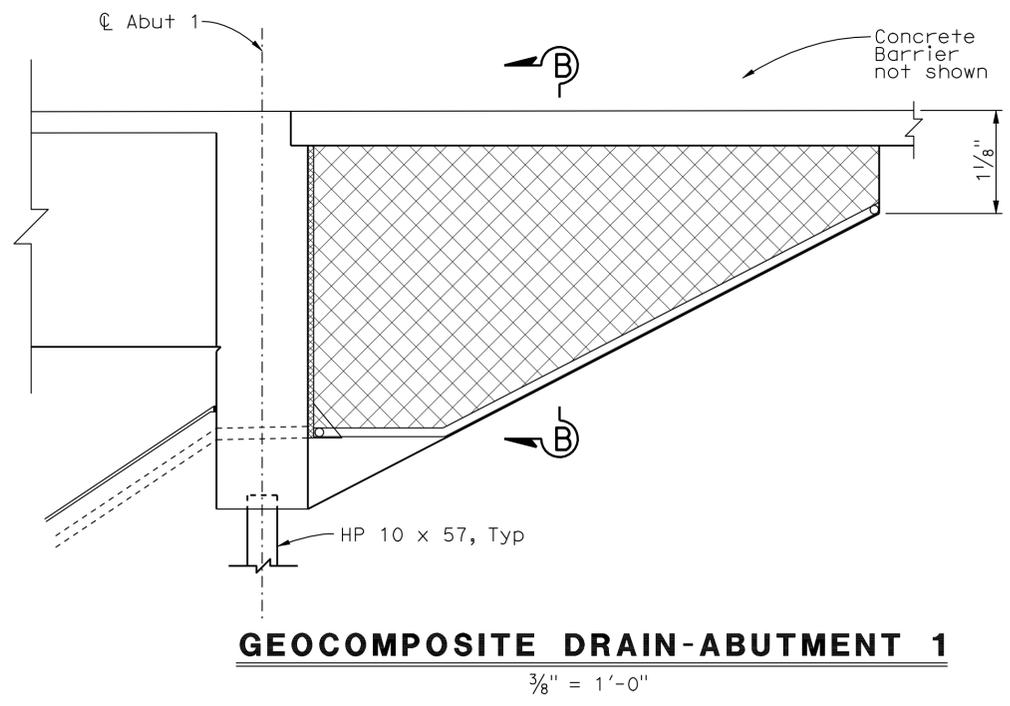
REVISION DATES	SHEET	OF
3-28-11 3-29-11 11-04-11	6	28

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 1:34:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1421	1743

REGISTERED CIVIL ENGINEER **LARRY WU** DATE **4-06-12**  
 PLANS APPROVAL DATE **4-16-12**  
 No. **C57035**  
 Exp. **6-30-13**  
 REGISTERED PROFESSIONAL ENGINEER **LARRY WU**  
 STATE OF CALIFORNIA  
 CIVIL

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**LEGEND**

- Indicates New Construction
- - - Indicates Existing Structure
- ▨ Indicates Geocomposite Drain

ALTERNATIVE TO BRIDGE DETAIL  $\frac{BO-3}{3-1}$

**NOTES:**

- 4"  $\phi$  drains at intermediate sag points and at 25' max center to center. Exposed wall drains shall be located 3"  $\pm$  above finished grade.
- Geocomposite drain, cement treated permeable base, and 3"  $\phi$  slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4"  $\phi$  drain.
- Connect the low end of plastic pipe to the main outlet pipe as applicable.

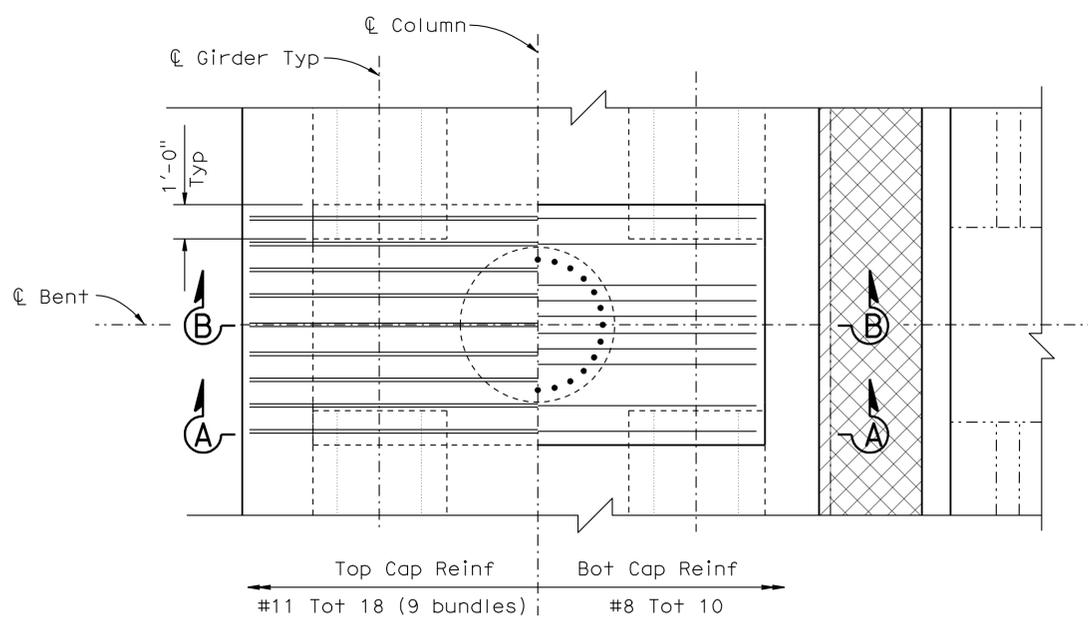
**NOTE:**  
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY A. McPhee CHECKED C. Duan DETAILS BY Y. Tang CHECKED C. Duan QUANTITIES BY A. McPhee CHECKED F. Chen	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0479R POST MILE 4.03	<b>I-215/I/10 SEPARATION RT (WIDEN)</b> <b>ABUTMENT DETAILS NO. 2</b>
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 4-13-11, 7-27-12, 11-30-11 SHEET 7 OF 28
	FILE => 540479rfdt07.dgn			

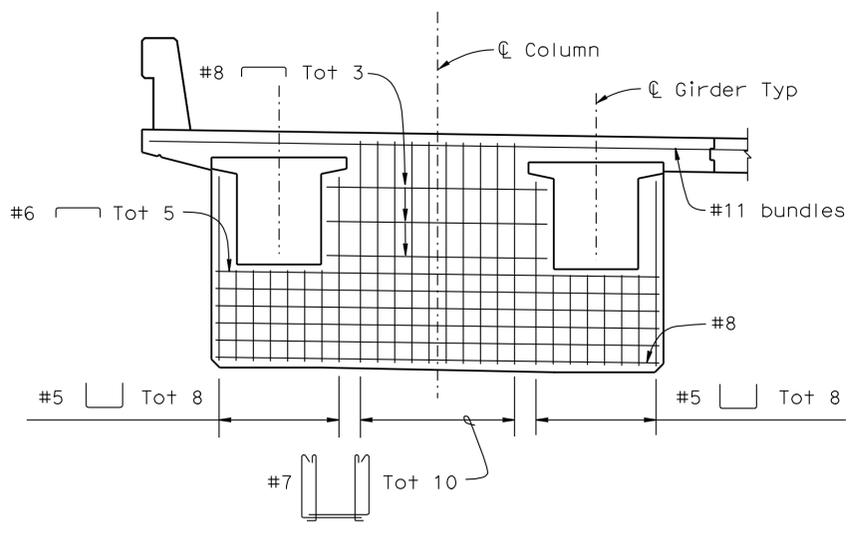
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7 43.2/45.2, 0.0/5.1	1422	1743

REGISTERED CIVIL ENGINEER **LARRY WU** DATE **4-06-12**  
 PLANS APPROVAL DATE **4-16-12**  
 No. **C57035**  
 Exp. **6-30-13**  
 CIVIL  
 STATE OF CALIFORNIA

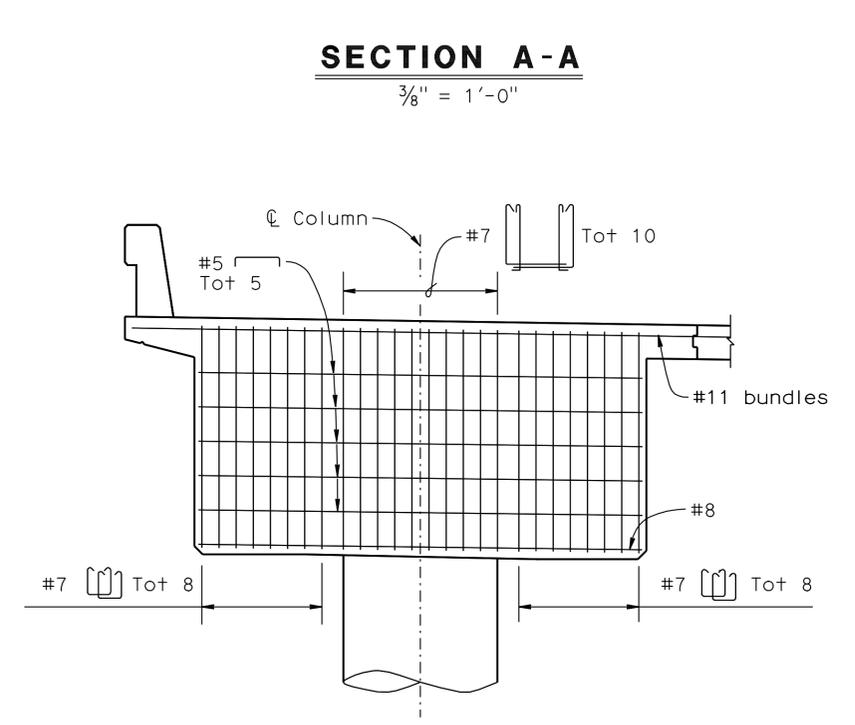
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*



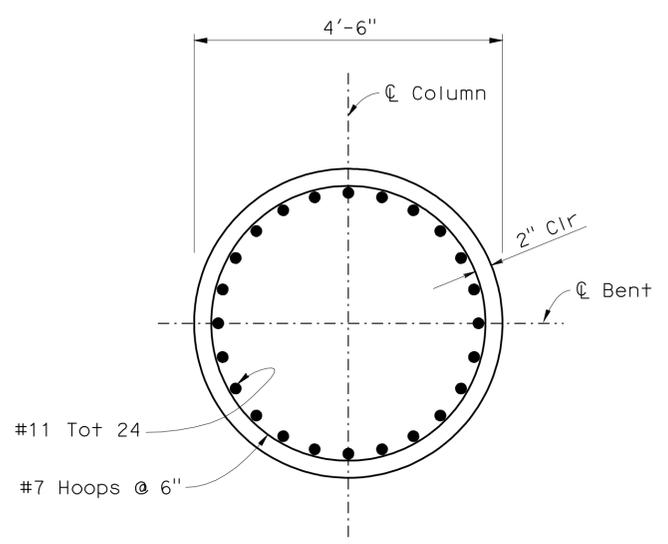
**PLAN**  
3/8" = 1'-0"



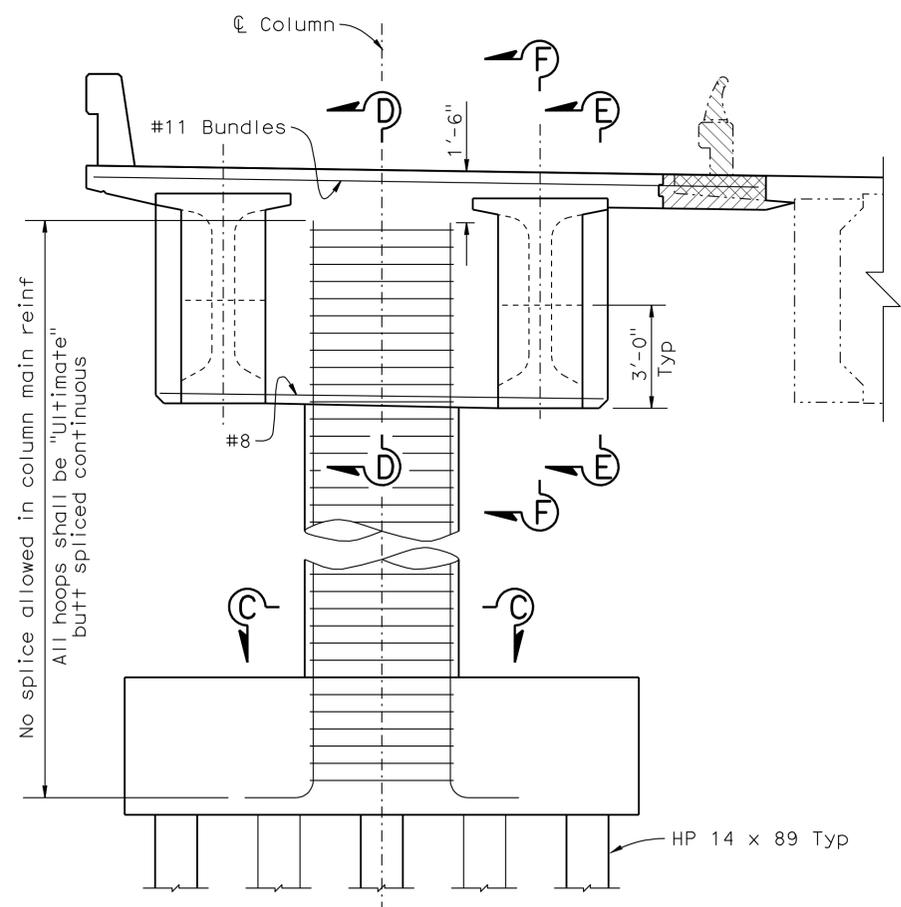
**SECTION A-A**  
3/8" = 1'-0"



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



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

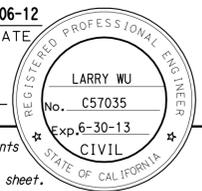


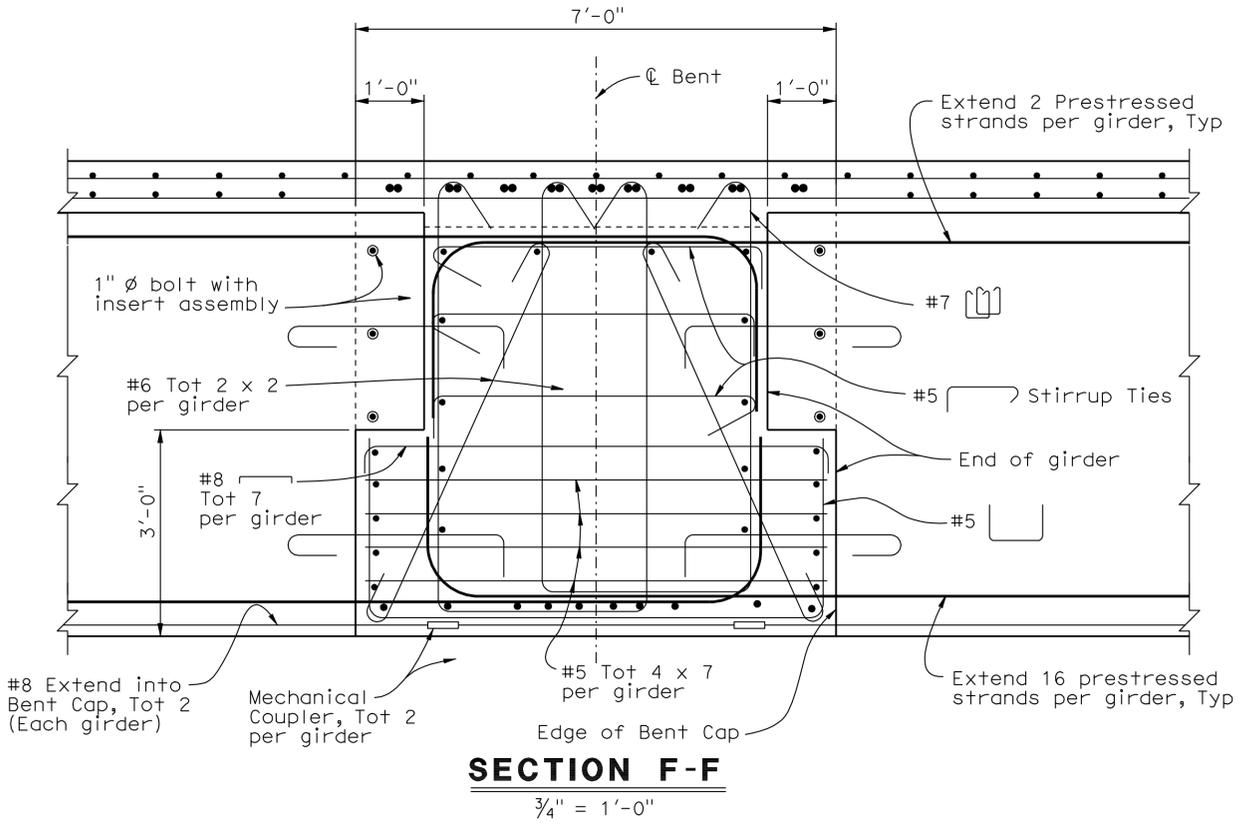
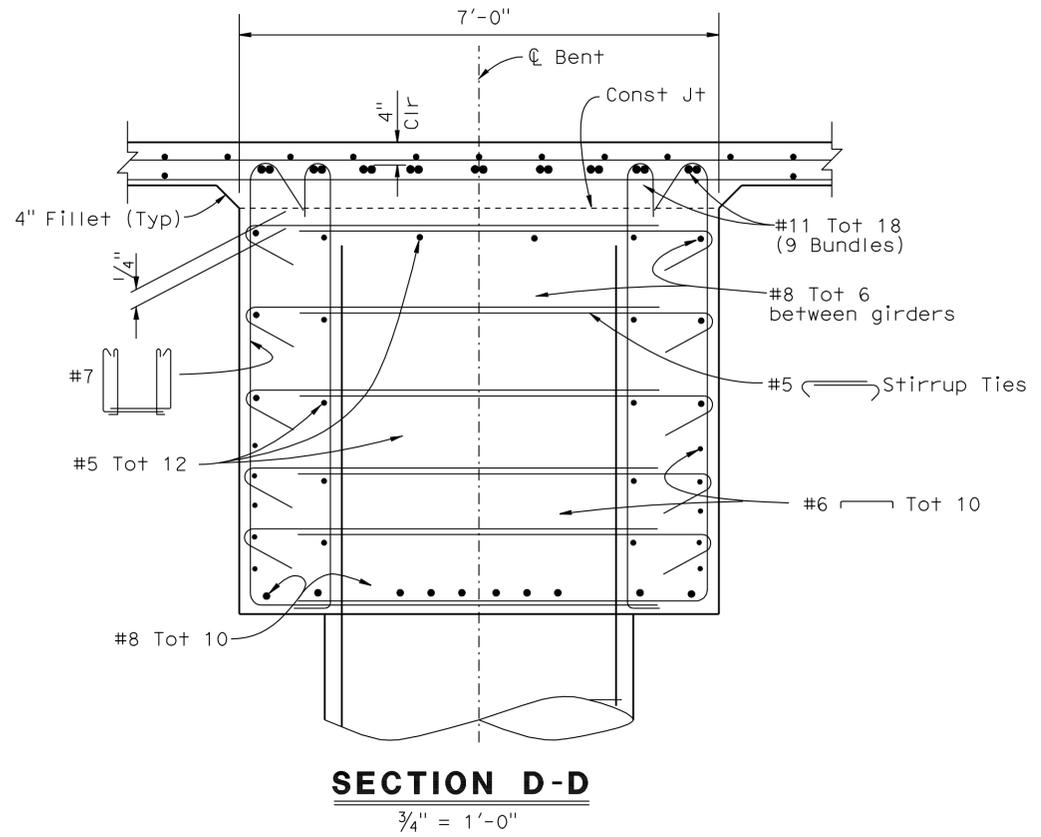
**ELEVATION**  
3/8" = 1'-0"

- LEGEND**
- Indicates New Construction
  - Indicates Existing Structure
  - ▨ Indicates Bridge Removal
  - ▩ Indicates Closure Pour

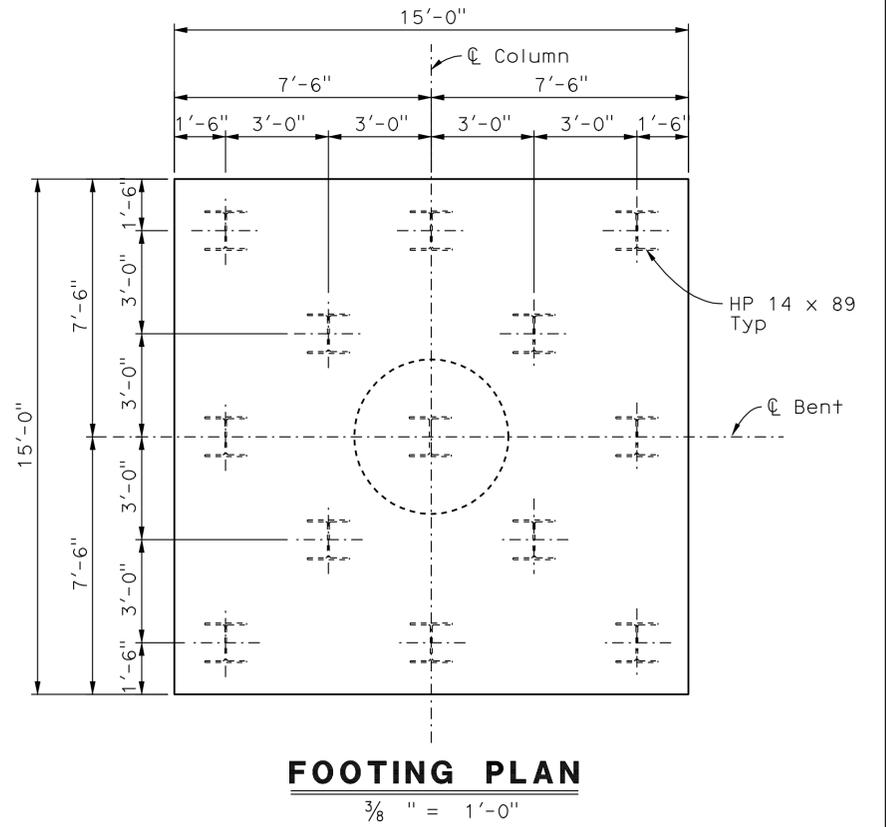
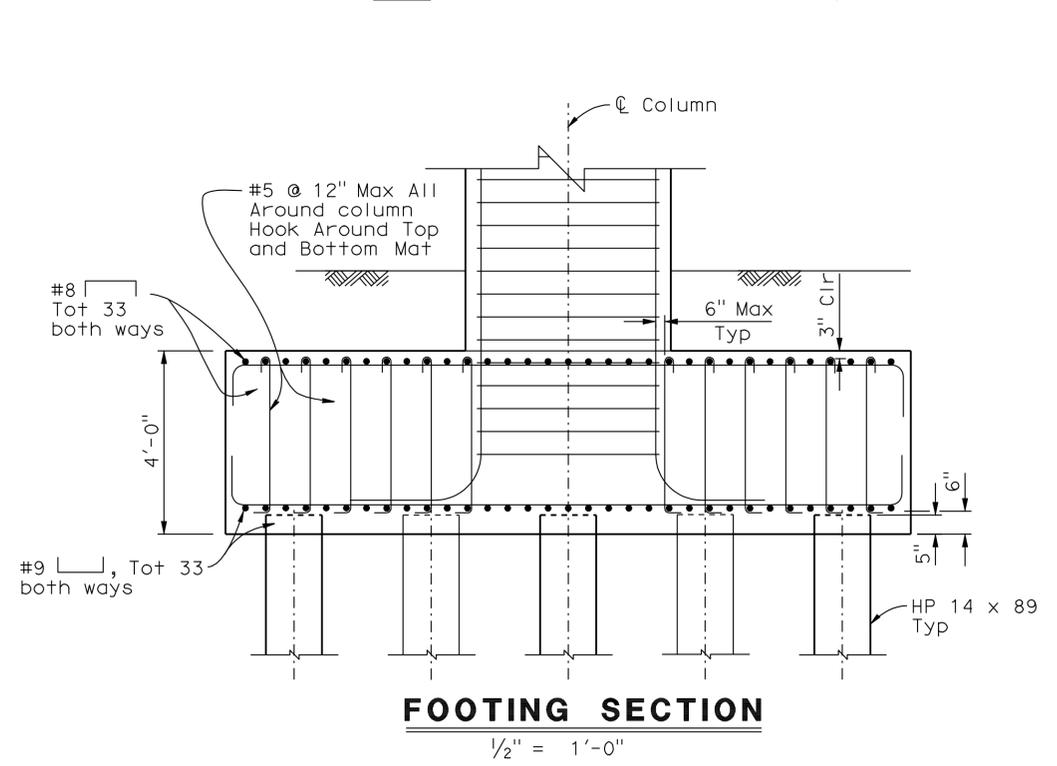
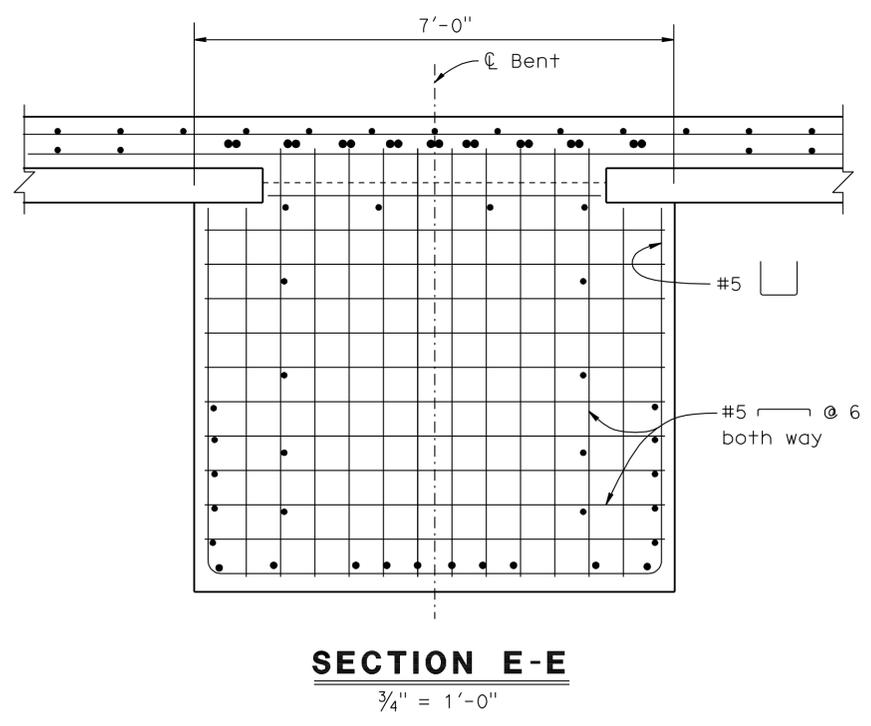
**NOTE:**  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY A. McPhee CHECKED C. Duan DETAILS BY Y. Tang CHECKED C. Duan QUANTITIES BY A. McPhee CHECKED F. Chen	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0479R	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>BENT LAYOUT</b>	
			POST MILE 4.03		
			UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-28-11 11-21-11	SHEET OF 8 28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1423	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<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>					



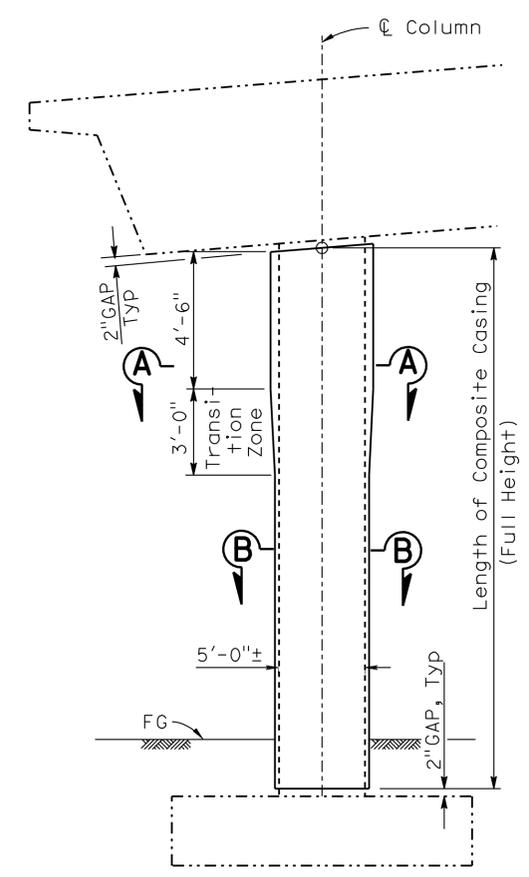
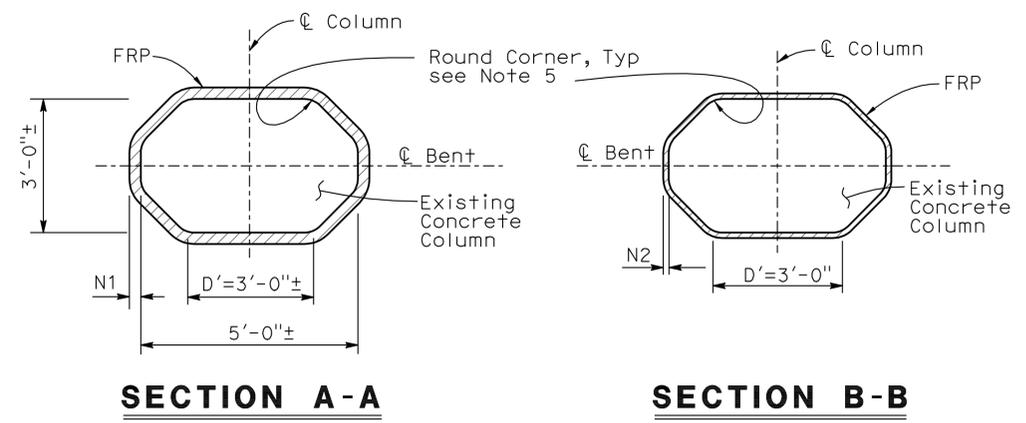
NOTE: For details shown but not noted, see "Section D-D".



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

DESIGN BY A. McPhee CHECKED C. Duan DETAILS BY Y. Tang CHECKED C. Duan QUANTITIES BY A. McPhee CHECKED F. Chen	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0479R POST MILE 4.03	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>BENT DETAILS</b>
	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES SHEET 9 OF 28
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	FILE => 540479rhdtd19.dgn	DATE PLOTTED => 18-APR-2012 USERNAME => 8124486





CARBON FRP SYSTEM 5, 8		
RECTANGULAR COLUMN, NUMBER OF LAYERS (Min)		
COLUMN WIDTH = D'	N1	N2
36"	12	6

CARBON FRP SYSTEM 9		
RECTANGULAR COLUMN, NUMBER OF LAYERS (Min)		
COLUMN WIDTH = D'	N1	N2
36"	8	4

**LEGEND:**

- - - - - Indicates existing structure  
 \_\_\_\_\_ Indicates new construction  
 N1, N2 Denotes minimum number of layers inside the plastic hinge zone and outside the plastic hinge zone

**CARBON FRP SYSTEM NOTES:**

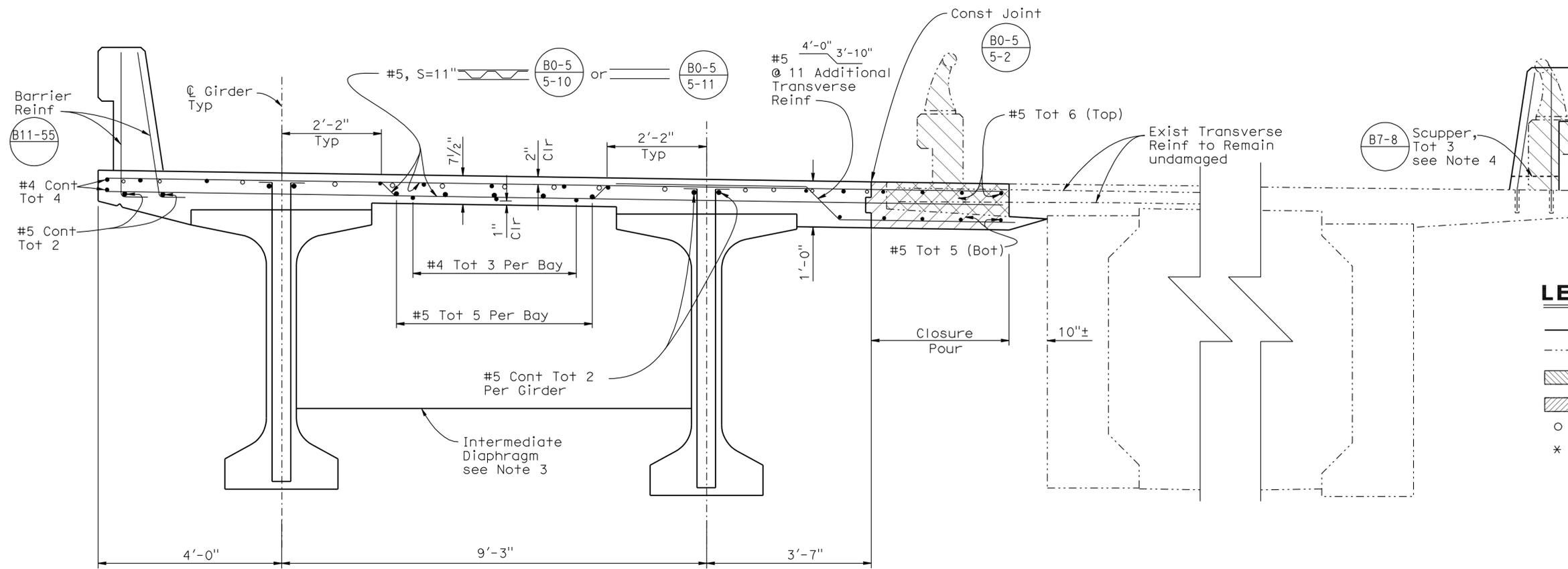
- For all subsequent notes, surfaces shall be defined as the surface to receive the composite. Fabric refers to the unidirectional or bi-directional fiber. Fiber Reinforced Polymer (FRP) composite is Carbon fiber and Epoxy resin
- All surfaces shall be prepared for bonding by means of abrasive blasting or grinding
- All surfaces shall be cleaned by hand or by oil-free compressed air. All surfaces shall be free of moisture, oils, loose material, debris, or dust
- All cutting of fabrics, mixing of epoxy, and wetting out of fabric and handling, shall be done in a manner to ensure that the composite materials are free of moisture, oils, debris or dust
- For non-circular columns remove any sharp corners/edges to a 1 1/2" radius minimum
- A primer coat of epoxy shall be applied to the surface and allowed to cure for a minimum of one hour
- Surfaces shall be free of voids, protrusions, and sharp edges. Any voids or uneven surfaces shall be filled with a thickened epoxy
- Carbon composite system used shall be selected from a list of Caltrans Prequalified composite systems
- Fabric shall be completely saturated prior to application to the surface. Excess resin shall be removed. No dry fiber placement is allowed, unless fabric used has removable backing or procedure has been approved by prequalification
- The composite casing shall adhere firmly to the existing column surfaces
- Detail/feather all fabric edges, including termination points, edges and seams with a thickened epoxy. Detailing/feathering shall extend a minimum of 6"
- Each composite section shall be wrapped using continuous fabric not less than 2'-0" in height. All wraps of continuous weave shall be terminated a minimum of 12" past the starting point of the initial wrap. Subsequent wraps shall be started (butted) at the ending point of the last wrap
- The casing thickness shall taper evenly over the full length of the transition zone
- For non-circular columns use number of layers specified in the "RECTANGULAR COLUMN" table
- Existing non-circular column surfaces shall be straight or slightly convexed outward at all areas, otherwise, the surface shall be filled with thickened epoxy
- Minimum number of layers for Carbon System is based on minimum effective fiber layer thickness of 0.0065 inches for Carbon FRP System 5 and 8. Fewer number of layers can be installed as shown in Carbon FRP System 9 for effectively thicker (fiber) layers provided that on equivalent stiffness is maintained to match those of Carbon FRP System 5 and 8.

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

NO SCALE

DESIGN BY A. McPhee CHECKED C. Duan DETAILS BY Y. Tang CHECKED C. Duan QUANTITIES BY A. McPhee CHECKED F. Chen	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0479R POST MILE 4.03	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>COLUMN RETROFIT DETAILS</b>
	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES SHEET 11 OF 28
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1426	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12 PLANS APPROVAL DATE					
<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>					



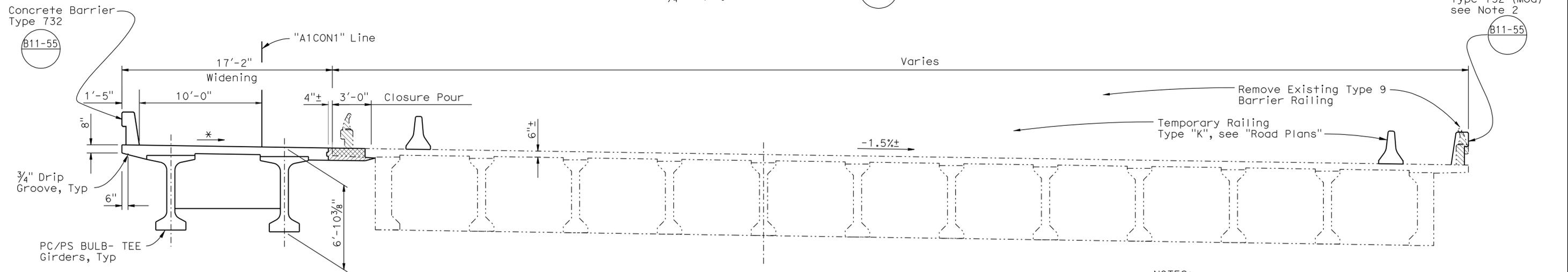
**PART TYPICAL SECTION**

3/4" = 1'-0"



**LEGEND**

- Indicates New Structure
- - - Indicates Existing Structure
-  Indicates Bridge Removal
-  Indicates Closure Pour
- o Indicates Additional Deck Reinf, see Note 1
- \* Match Existing Cross Slope



**TYPICAL SECTION**

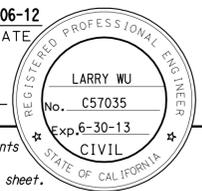
1/4" = 1'-0"

**NOTE:**  
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**NOTES:**

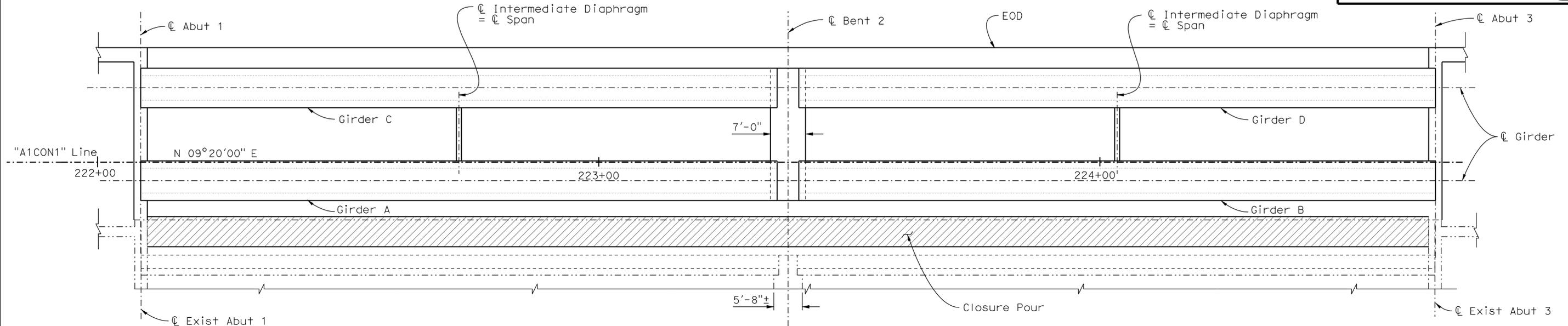
1. For Additional Deck Reinf, see "GIRDER LAYOUT" sheet.
2. For Modified Barrier Details, see "CONCRETE BARRIER TYPE 732 (MOD)" sheet.
3. For Intermediate Diaphragm Details, see "PC/PS BULB-TEE GIRDER DETAILS NO. 2" sheet.
4. For Scupper Locations, see "GENERAL PLAN" sheet.

DESIGN BY A. McPhee CHECKED C. Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>TYPICAL SECTION</b>
			54-0479R	
			POST MILE	
DETAILS BY Y. Tang CHECKED C. Duan			4.03	
QUANTITIES BY A. McPhee CHECKED F. Chen				

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1427	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<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>					

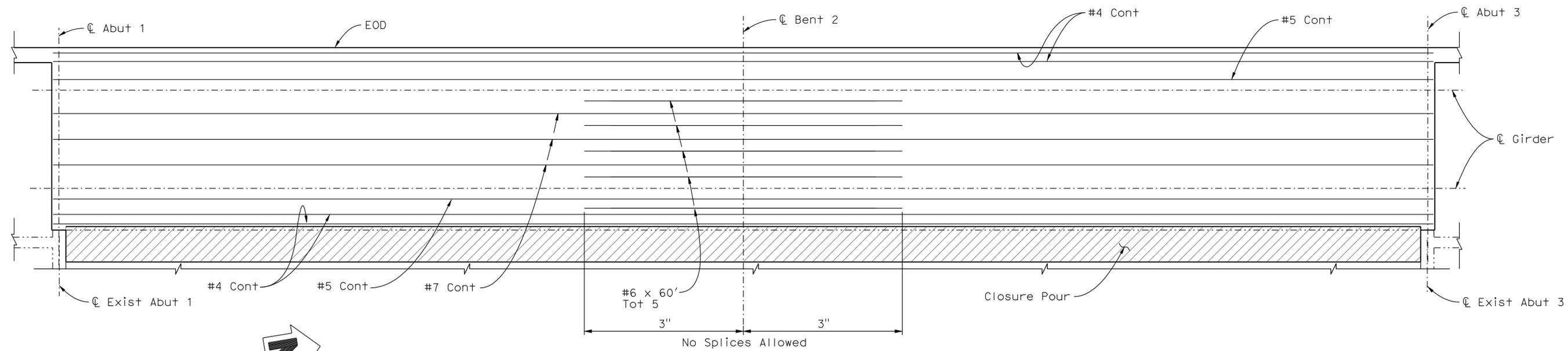
**LEGEND**

- Indicates New Structure
- - - Indicates Existing Structure
- ▨ Indicates Closure Pour



**GIRDER LAYOUT**

Horiz 1" = 10'-0"  
 Vert 1" = 5'-0"



**ADDITIONAL TOP DECK REINFORCEMENT**

Horiz 1" = 10'-0"  
 Vert 1" = 5'-0"

NOTE:  
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STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN BY A. McPhee CHECKED C. Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0479R	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>GIRDER LAYOUT</b>	
	DETAILS BY Y. Tang CHECKED C. Duan		PROJECT NUMBER & PHASE: 08000005061	POST MILE 4.03		REVISION DATES 7-28-11 9-26-11 11-21-11
	QUANTITIES BY A. McPhee CHECKED F. Chen		CONTRACT NO.: 08-0M9401	SHEET OF 13 28		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

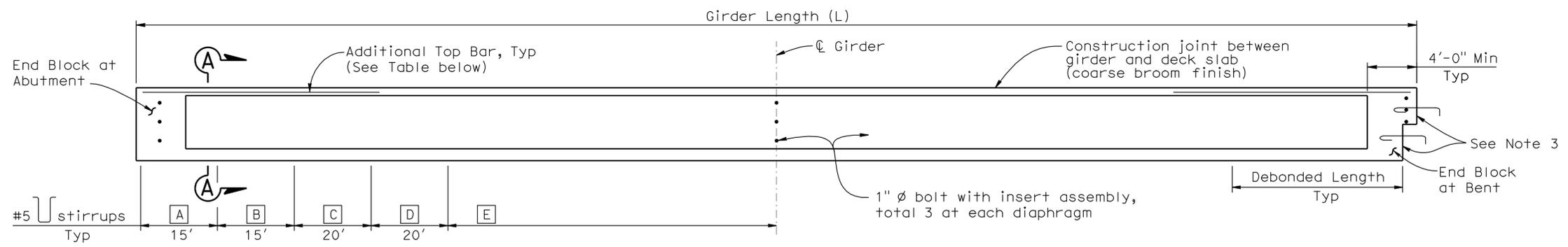


UNIT: 3589  
 PROJECT NUMBER & PHASE: 08000005061

CONTRACT NO.: 08-0M9401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

7-28-11	9-26-11	11-21-11	13	28
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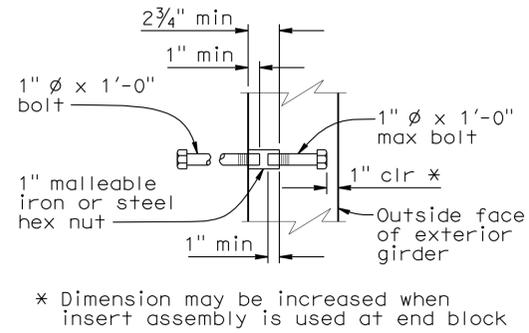


Location	A	B	C	D	E
Girder A, B, C and D	#5 @ 6"	#5 @ 9"	#5 @ 9"	#5 @ 9"	#5 @ 12"

### GIRDER ELEVATION

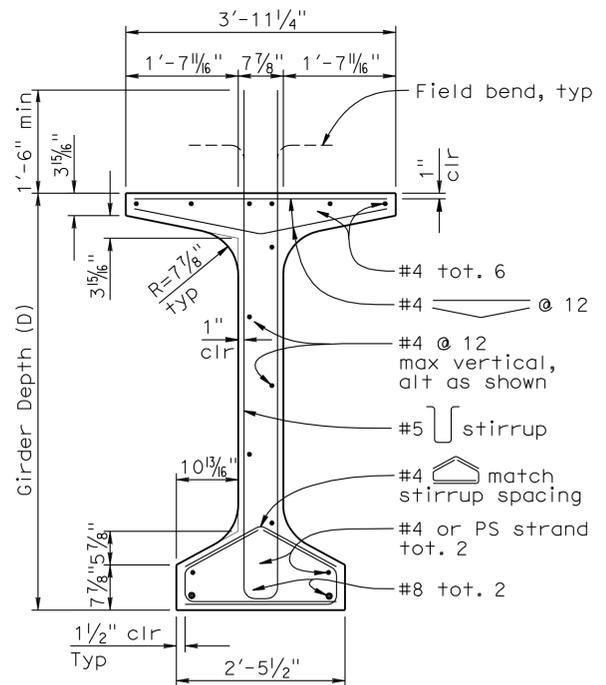
- NOTES**
- For End Block details, see "PC/PS BULB-TEE GIRDER DETAILS NO.2" sheet.
  - Girder ends to be cast such that a level surface is provided at bearing pads.
  - Roughen surface by on amplitude of 1/4"

Location	Girder Length (L)	Girder Depth (D)	Number of 0.6" $\phi$ Strands	Jacking Force (P) (44 kips/strand)	Concrete Strength (ksi)		Midspan Dead Load Deflection (in)		Additional Top Bar (each end)
					f'ci	f'c	Deck	Rail	
Girders A, B, C and D	126'-8"	6'-7/8"	36	1584 kips	4.5	6.0	1.45	0.06	#8 x 25' tot. 8



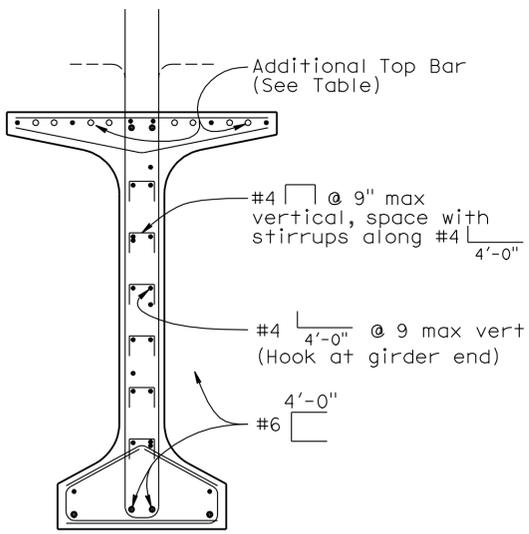
### INSERT ASSEMBLY

- ### PRESTRESSING NOTES
- The Jacking Force (P) is the jacking force required at the point of control along the span. The jacking force does not include any fabrication specific losses.
  - The maximum tensile stress in the prestressing steel upon release shall not exceed 75 percent of the specified minimum ultimate tensile strength of the prestressing steel.
  - The maximum temporary tensile stress (jacking stress) in the prestressing steel shall not exceed 80 percent of the specified minimum ultimate tensile strength of the prestressing steel.
  - Concrete strength:  
f'ci is at time of initial stressing.  
f'c is at 28 days.
  - Deflection components are informational and will be used to set screed line elevations.
  - Screed line elevations for deck concrete will be determined by the Engineer.
  - Prestressing strand shall be 270 ksi low relaxation.



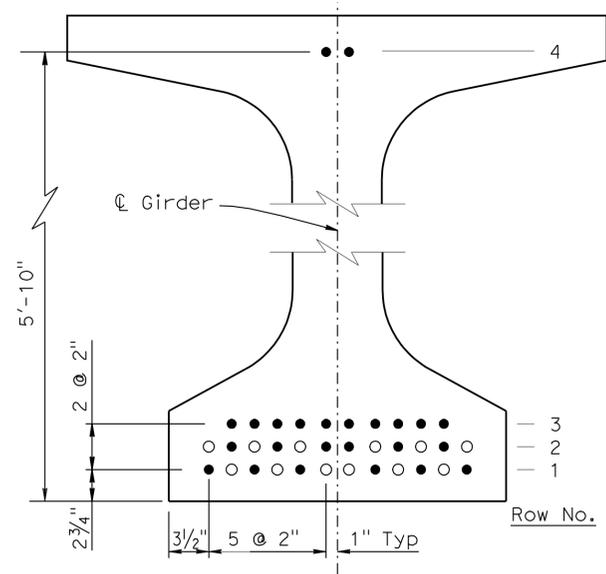
### TYPICAL GIRDER SECTION

Note: For "Welded Wire Reinforcement (WWR) Alternative", see "PC/PS BULB-TEE GIRDER DETAILS NO. 2" sheet.



### SECTION A-A

Note: For details shown but not noted, see "Typical Girder Section" detail.



### STRAND TEMPLATE & DEBONDING PATTERN

Girders A, B, C and D			
Row No.	Total No. of Strands	No. of Debonded Strands	Debonded Length
4	2	0	0
3	10	0	0
2	12	6	5'
1	12	6	2 x 20' 2 x 15' 2 x 10'

- Denotes continuously bonded strand location
- Denotes allowable debonded strand location

### PRESTRESS STRAND NOTES

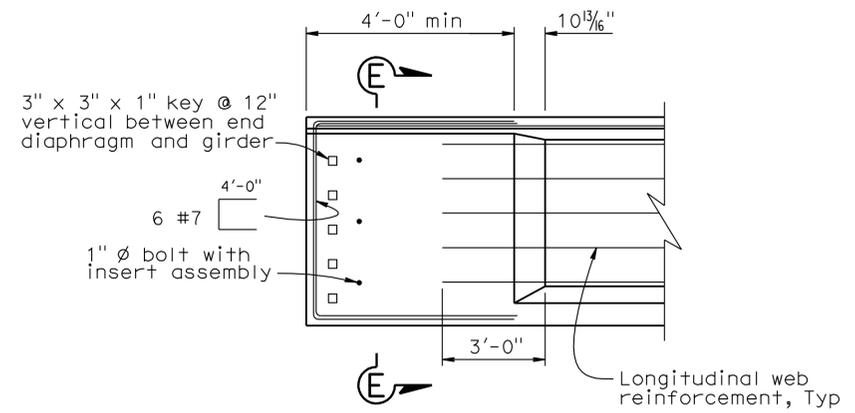
- Strands shall be placed as low as possible in the strand template and symmetrical about  $\phi$  Girder.
- No more than 33% of the total number of strands or 50% of the strands per horizontal row may be debonded.
- Strand locations may be adjusted as approved by the Engineer.

NO SCALE

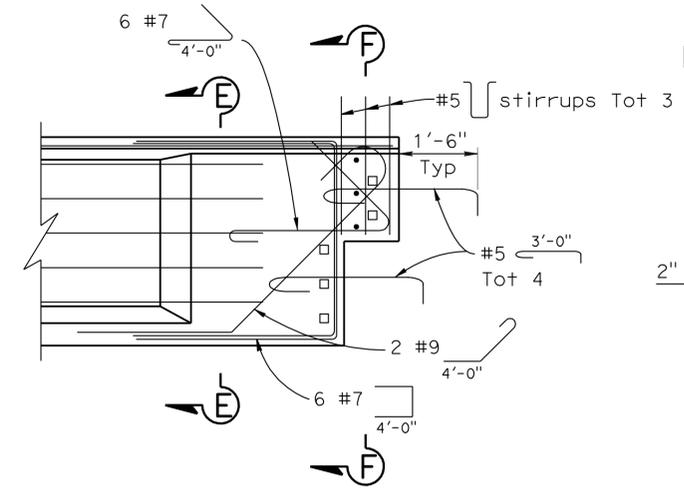
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1429	1743

LARRY WU  
 REGISTERED CIVIL ENGINEER  
 4-06-12 DATE  
 4-16-12 PLANS APPROVAL DATE  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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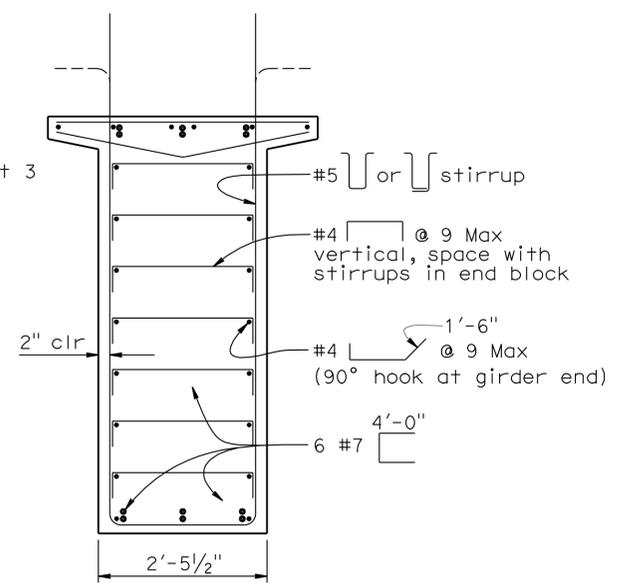
**END BLOCK - AT ABUTMENT**



**END BLOCK - AT BENT**

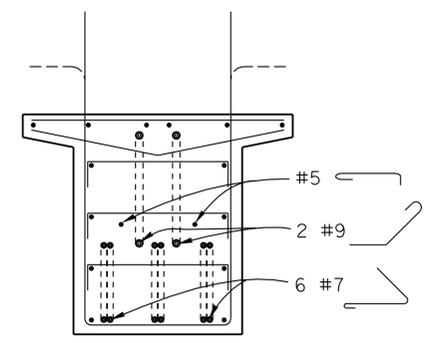
NOTE:  
For details shown but not noted, see "End Block - At Abutment".

Note  
For "Girder Elevation" and "Typical Girder Section", see "PC/PS BULB-TEE GIRDER" sheet.



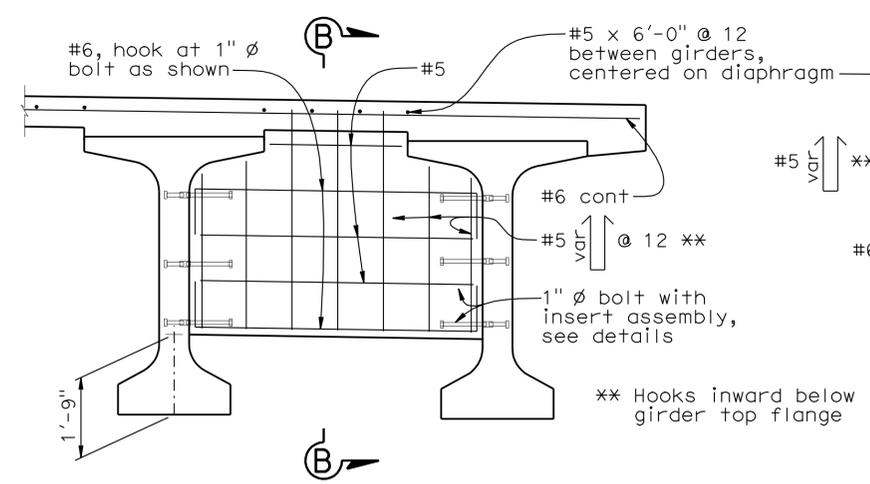
**SECTION E-E**

NOTE:  
For details shown but not noted, see Typical Girder Section on "PC/PS BULB-TEE GIRDER DETAILS NO.1" sheet.



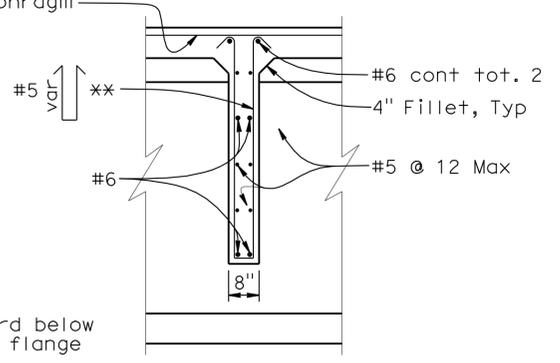
**SECTION F-F**

NOTE:  
For details shown but not noted, see Section E-E.



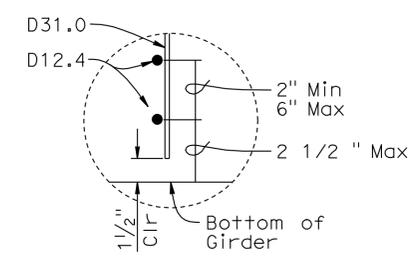
**INTERMEDIATE DIAPHRAGM**

Note: For intermediate diaphragm locations, see "GIRDER LAYOUT" sheets.



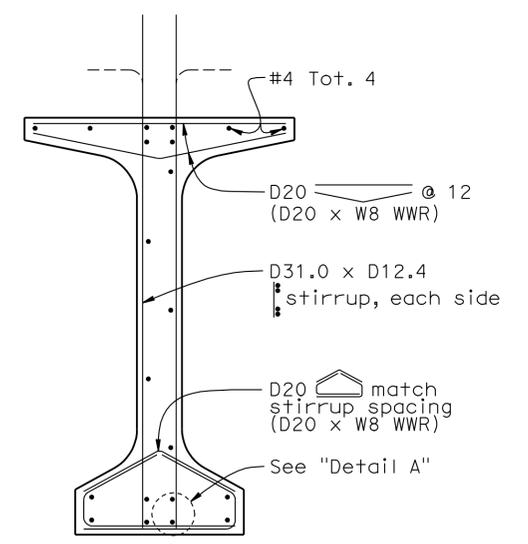
**SECTION B-B**

Note: Diaphragm may be vertical or normal to deck grade



**DETAIL A**

NOTES  
1. Bottom of stirrup WWR detail shown, top similar.  
2. Longitudinal wire area shall be 40% or greater of vertical deformed wire's area.



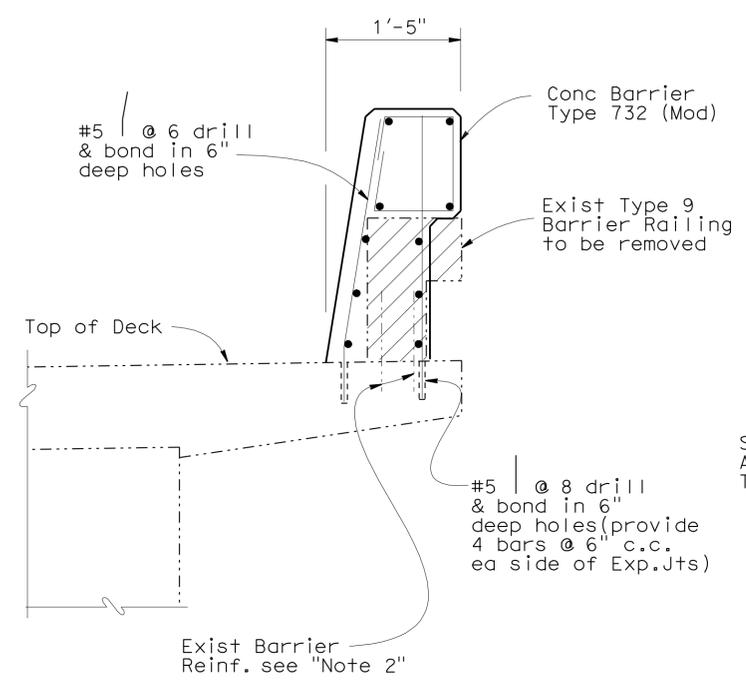
**WELDED WIRE REINFORCEMENT (WWR) ALTERNATIVE**

NOTES  
1. For details shown but not noted, see Typical Girder Section on "PC/PS BULB-TEE GIRDER DETAILS NO. 1" sheet.  
2. W8 WWR not shown.

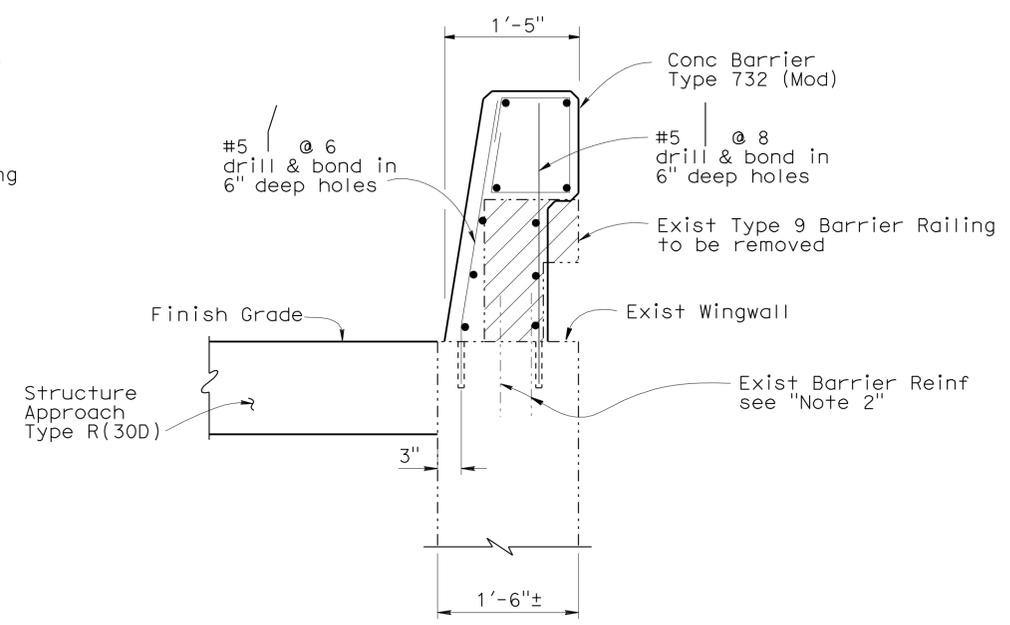
NO SCALE

DESIGN BY A. McPhee CHECKED C. Duan DETAILS BY Y. Tang CHECKED C. Duan QUANTITIES BY A. McPhee CHECKED F. Chen	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-0479R POST MILE 4.03	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>PC/PS BULB-TEE GIRDER DETAILS NO. 2</b>
	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	SHEET 15 OF 28	REVISION DATES: 4-14-11, 11-08-11, 3-19-12
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3	UNIT: 3589	DISREGARD PRINTS BEARING EARLIER REVISION DATES

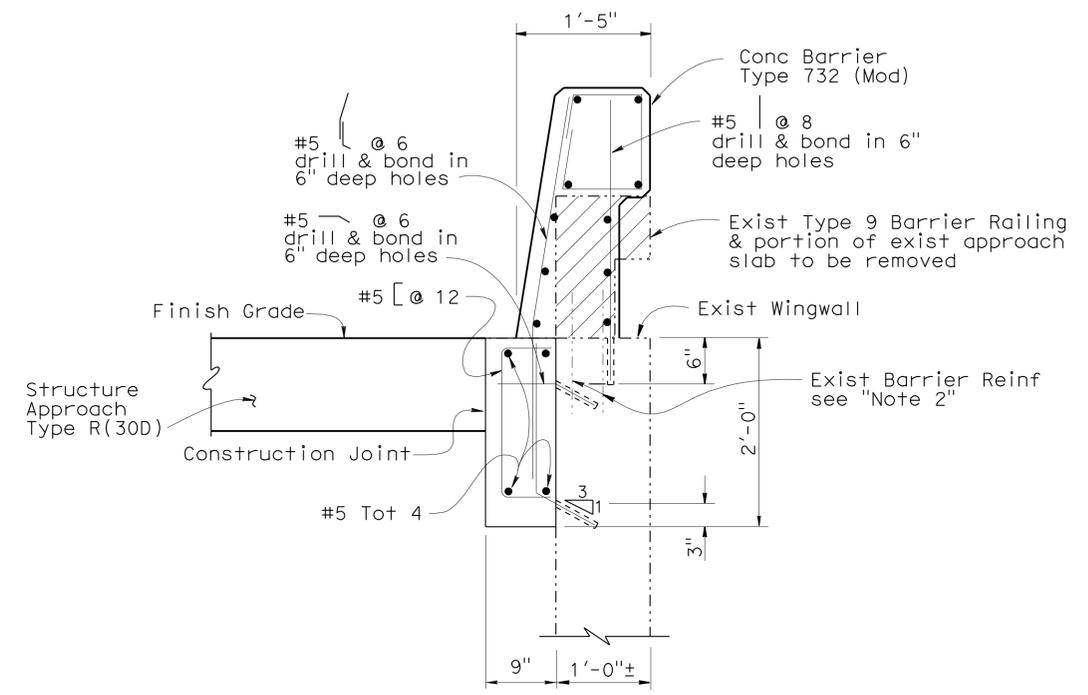
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08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1430	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



**BARRIER ON BRIDGE DECK**  
No Scale



**BARRIER ON EXISTING WINGWALL (ABUTMENT 1)**  
No Scale



**BARRIER ON EXISTING WINGWALL (ABUTMENT 3)**  
No Scale

- NOTES:**
- For barrier details not shown, see B11-55
  - Where exist barrier railing reinforcement will have required concrete cover in new barrier, exist barrier reinforcement may remain; where concrete cover is not available, cut reinforcement 1" below exist concrete surface and patch with epoxy or grout.
  - Locations of drilled holes shown in the plans are approximate. Prior to placing holes in concrete, the contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars (except as noted). Final hole locations are subject to the approval of the Engineer.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY A. McPhee	CHECKED C. Duan	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>I-215/I-10 SEPARATION RT (WIDEN)</b> <b>CONCRETE BARRIER TYPE 732 (MOD)</b>
	DETAILS	BY Y. Tang	CHECKED C. Duan			54-0479R	
	QUANTITIES	BY A. McPhee	CHECKED F. Chen			POST MILE 4.03	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				UNIT: 3589	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES
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				FILE => 540479rncb1d116.dgn		REVISION DATES	
						9-26-11	11-08-11
						16	28

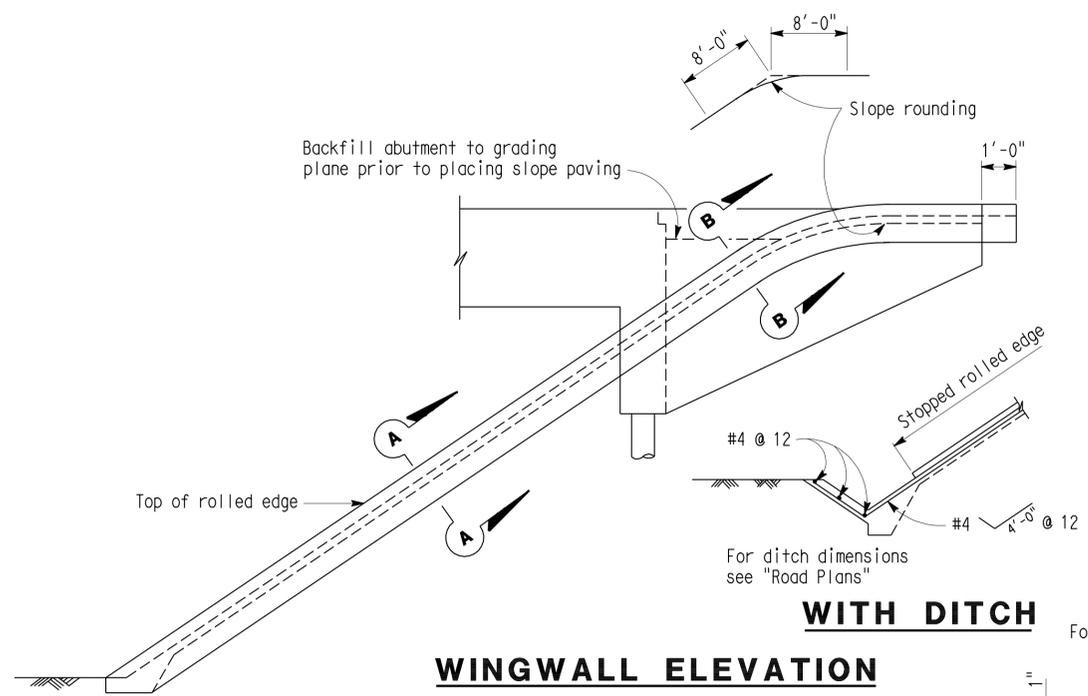
USERNAME => 8124486 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 13:09

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
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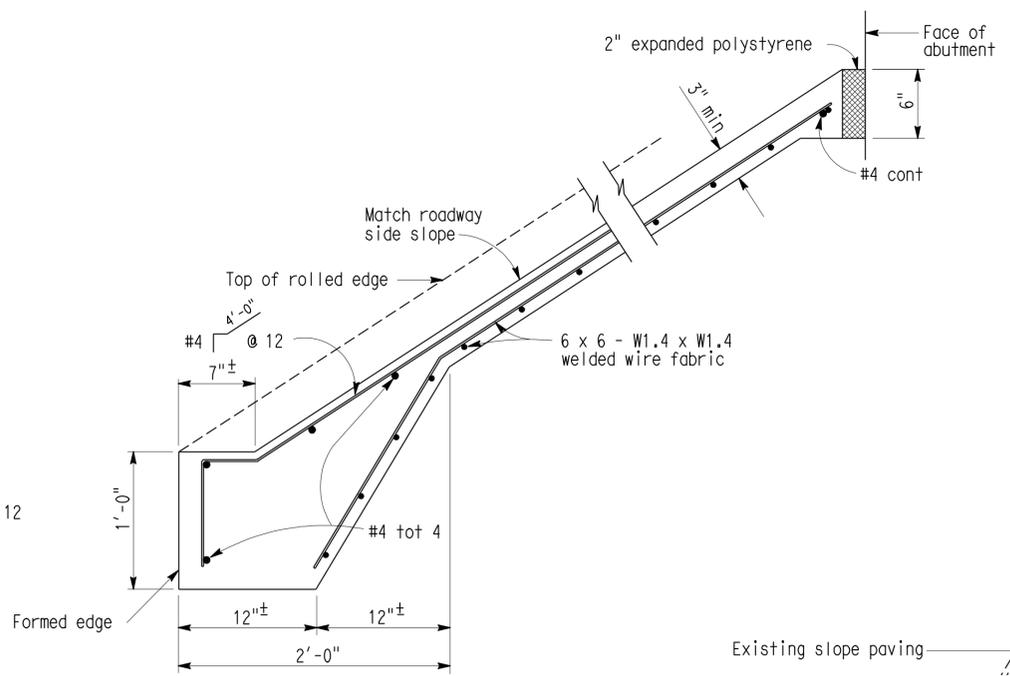
REGISTERED CIVIL ENGINEER **LARRY WU** DATE **4-06-12**  
 PLANS APPROVAL DATE  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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.

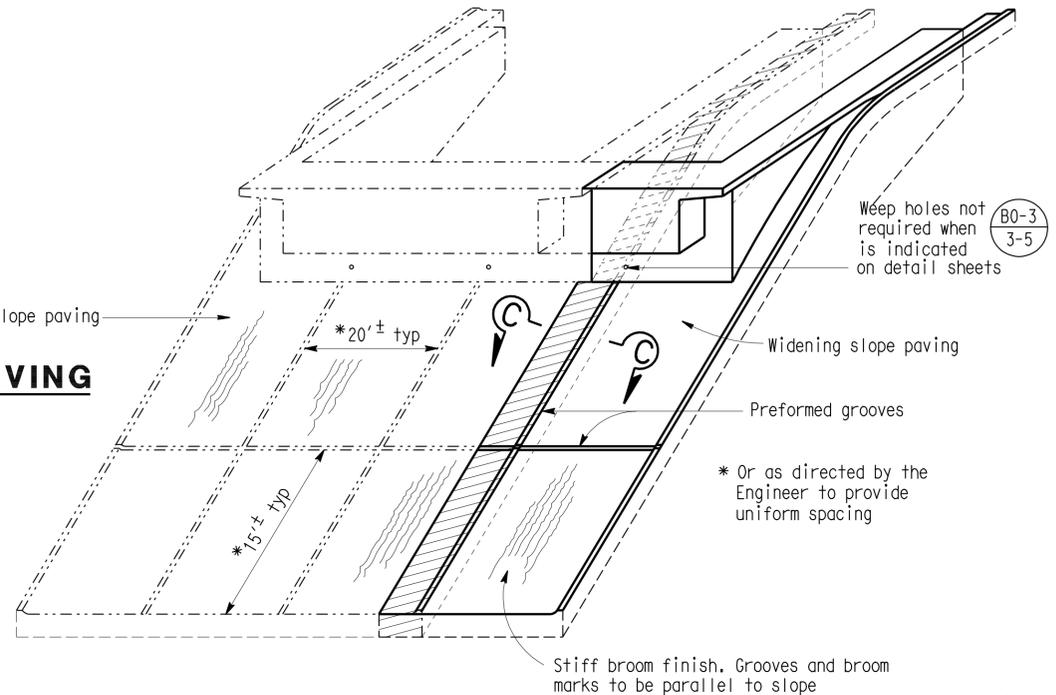
To get to the Caltrans web site, go to: <http://www.dot.ca.gov>



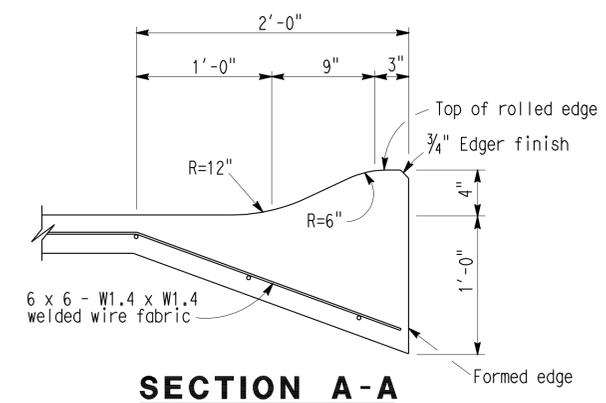
**WINGWALL ELEVATION**



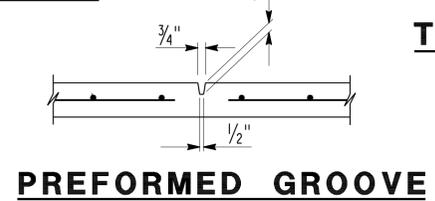
**TYPICAL SECTION - CONCRETE PAVING**



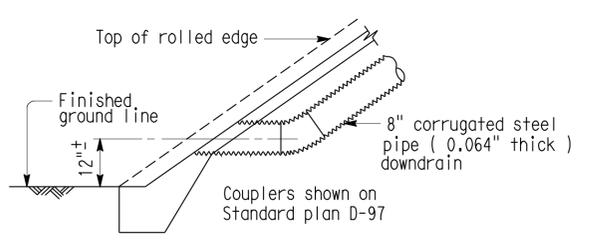
**PICTORIAL VIEW OF TYPICAL INSTALLATION**



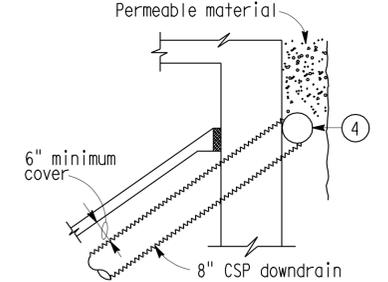
**SECTION A-A**



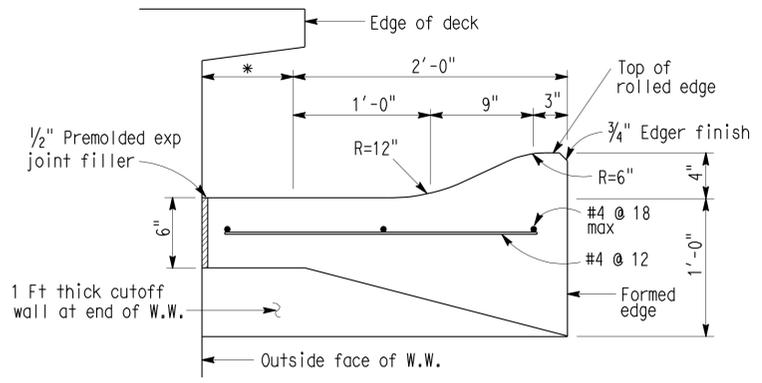
**PREFORMED GROOVE**



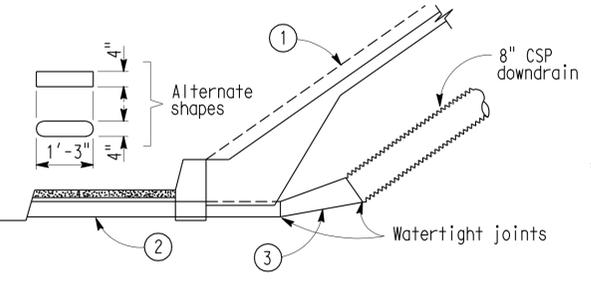
**TYPICAL - NO CURB**



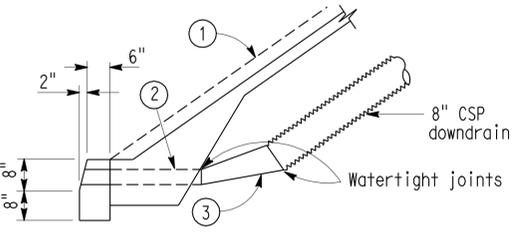
**TYPICAL - DRAIN CONNECTION**



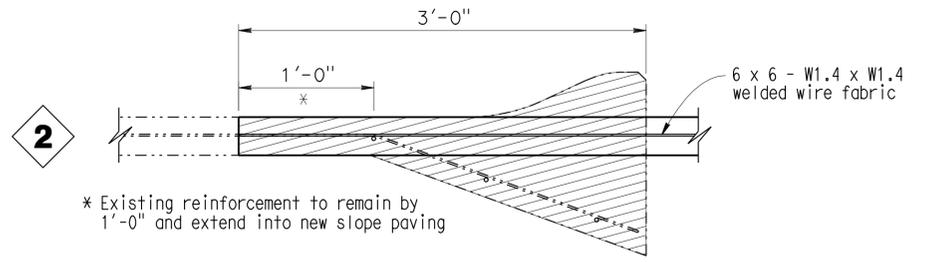
**SECTION B-B**



**TYPICAL - WITH SIDEWALK**



**TYPICAL - WITH CURB**



**SECTION C-C**

**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.

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

STANDARD DRAWING				RELEASED BY
RELEASE DATE	DESIGN	BY	CHECKED	Susan Hida OFFICE CHIEF
FILE NO. <b>xs4-210</b>	DETAILS	BY <b>D. Wooten</b>	CHECKED	
	SUBMITTED	BY <b>Dan Adams</b>	DRAWING DATE <b>6/07</b>	

- ① Modified Details
- ② Added Detail

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

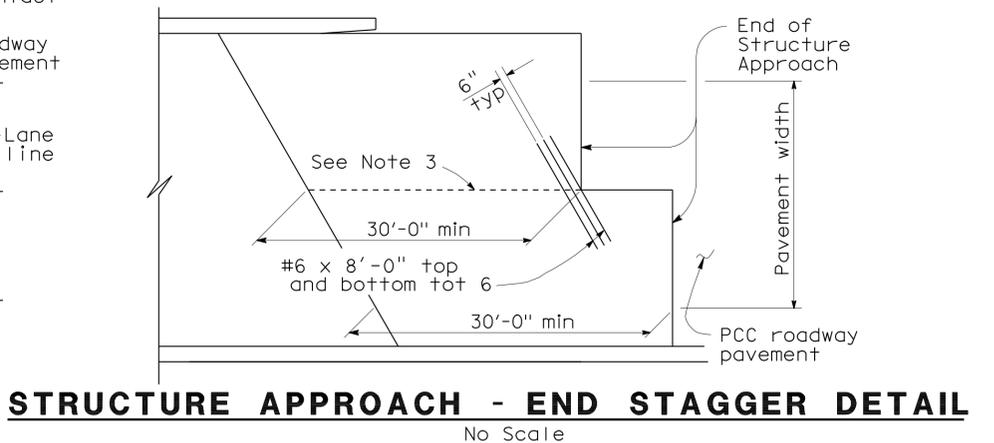
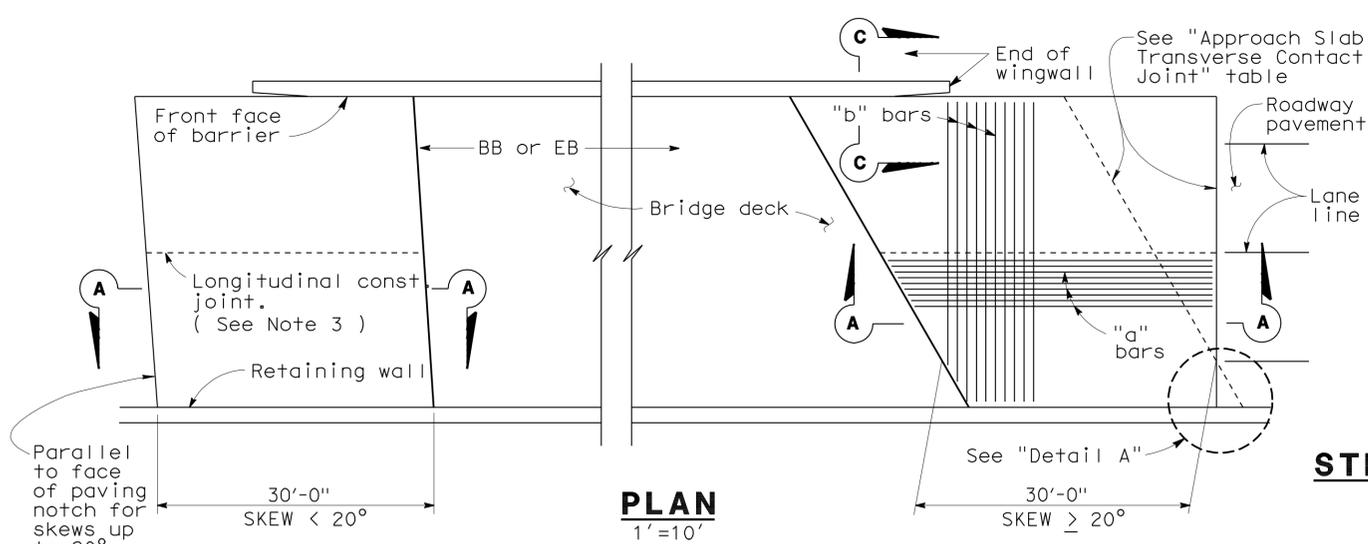
BRIDGE NO. 54-0479R  
POST MILE 4.03

**I-215/I-10 SEPARATION RT (WIDEN)**  
**SLOPE PAVING - FULL SLOPE**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1432	1743

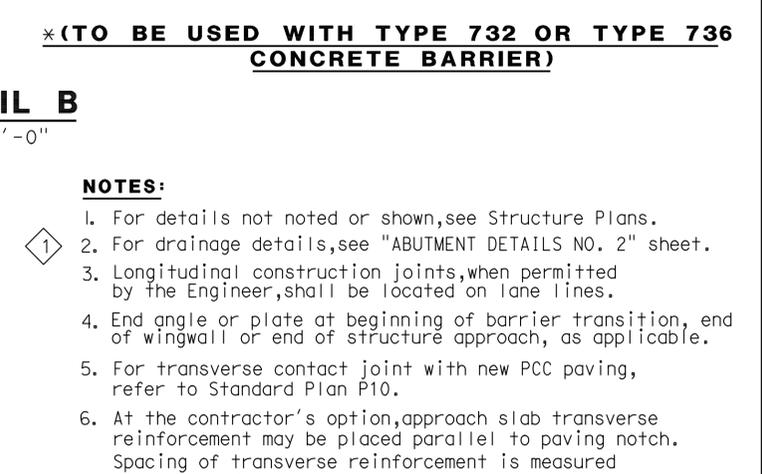
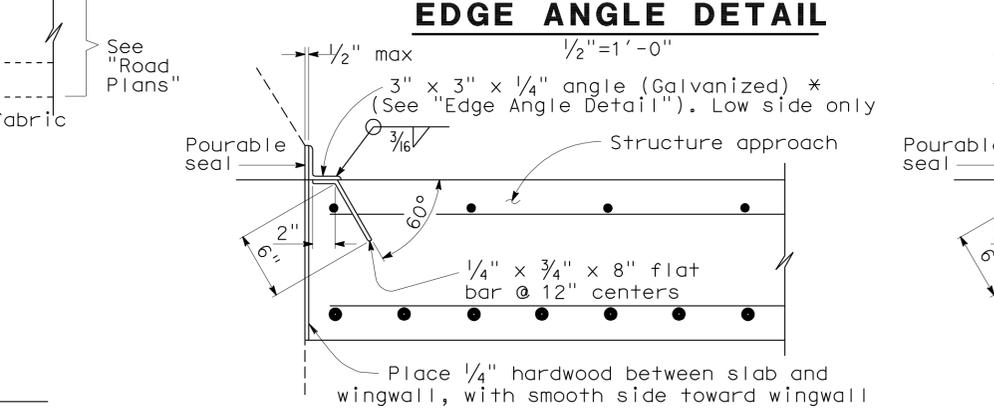
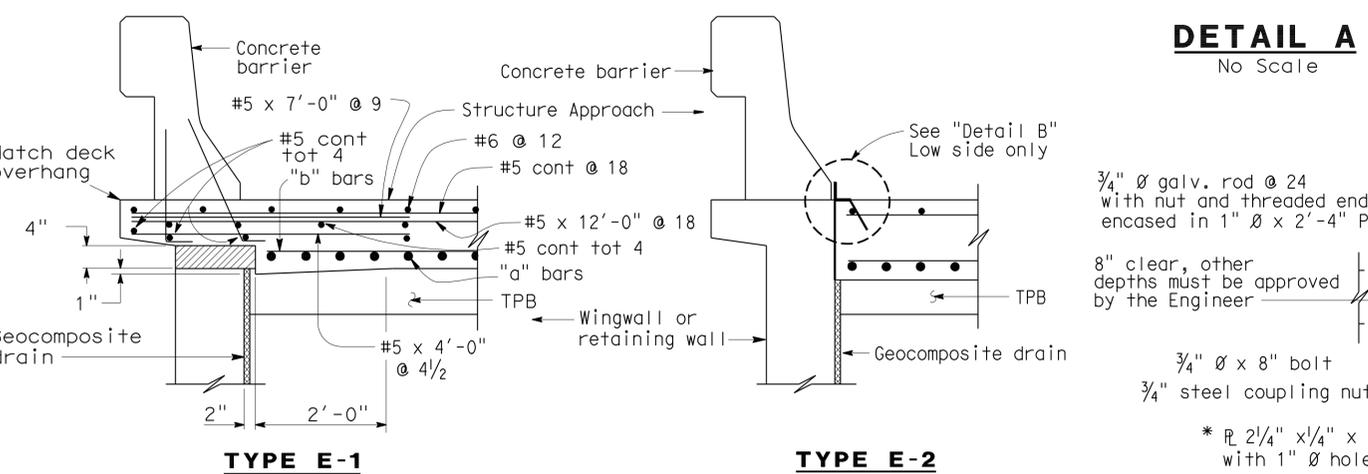
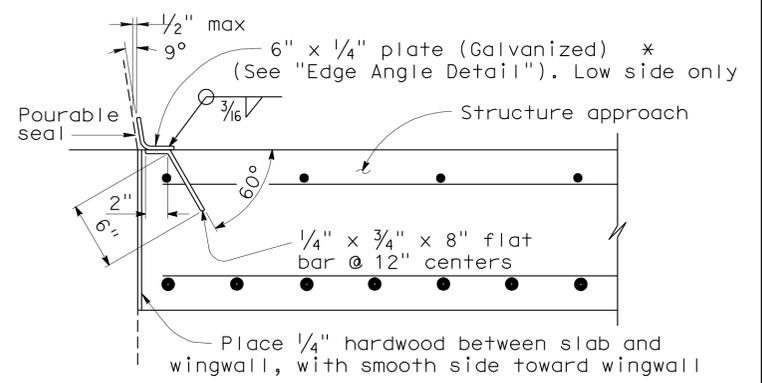
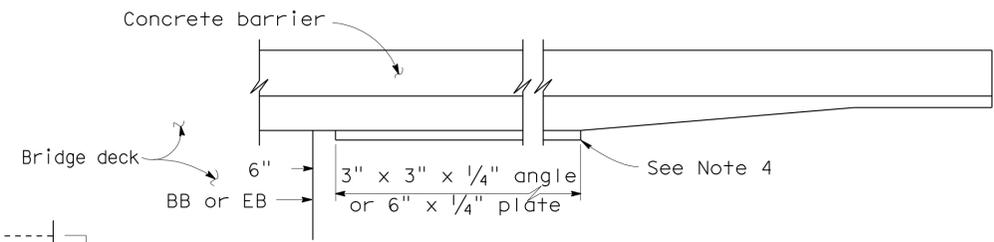
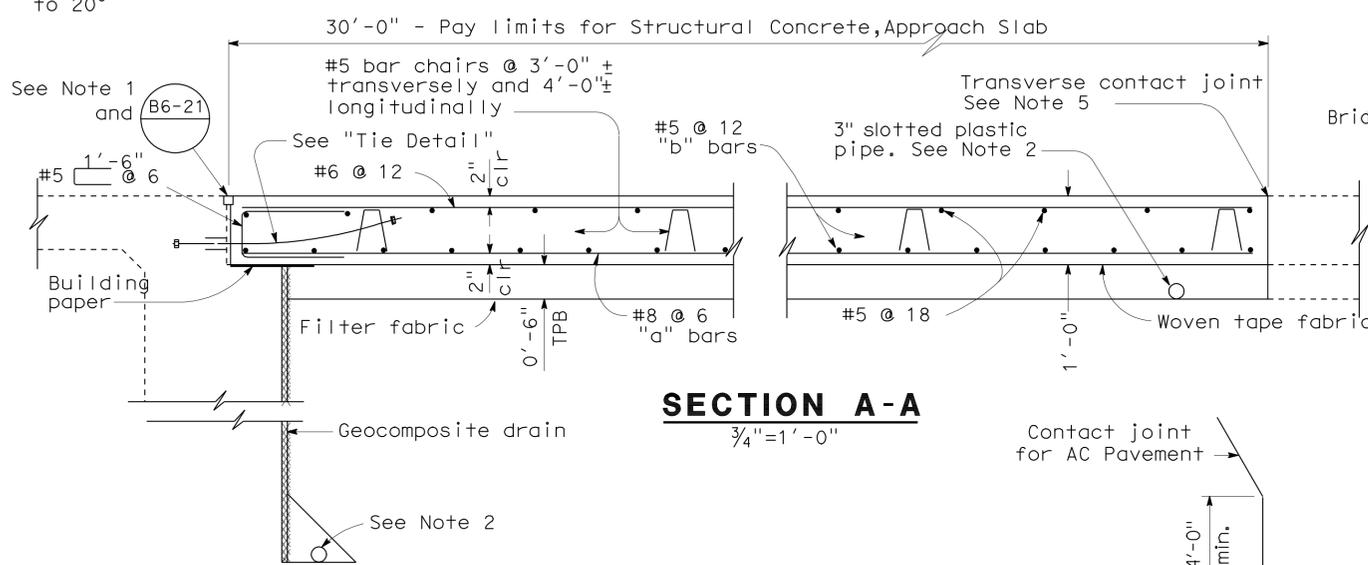
LARRY WU  
 REGISTERED CIVIL ENGINEER  
 DATE 4-06-12  
 PLANS APPROVAL DATE 4-16-12  
 No. C50735  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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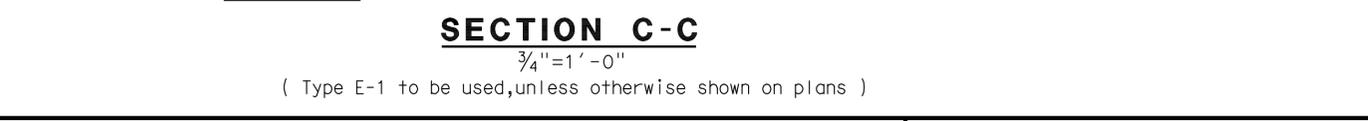


**APPROACH SLAB TRANSVERSE CONTACT JOINT**

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



- NOTES:**
- For details not noted or shown, see Structure Plans.
  - For drainage details, see "ABUTMENT DETAILS NO. 2" 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**

FILE NO. <b>xs3-180e</b>	APPROVED BY <b>M. Ho</b> RESPONSIBLE TECHNICAL SPECIALIST	RELEASED BY <b>O. Alcantara</b> RESPONSIBLE OFFICE CHIEF
APPROVAL DATE <b>8-12-08</b>	RELEASE DATE <b>8-12-08</b>	

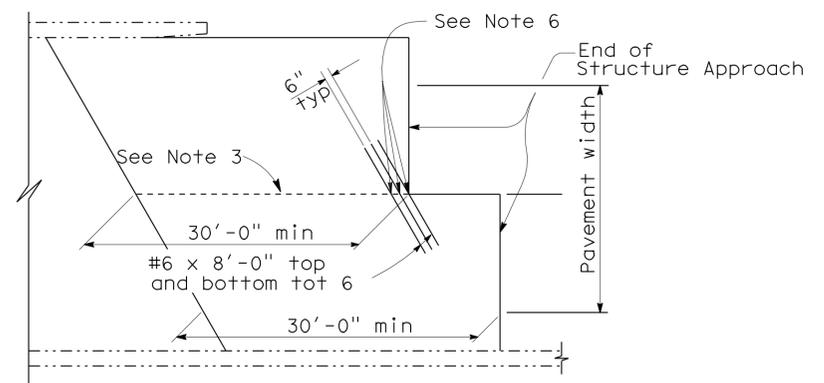
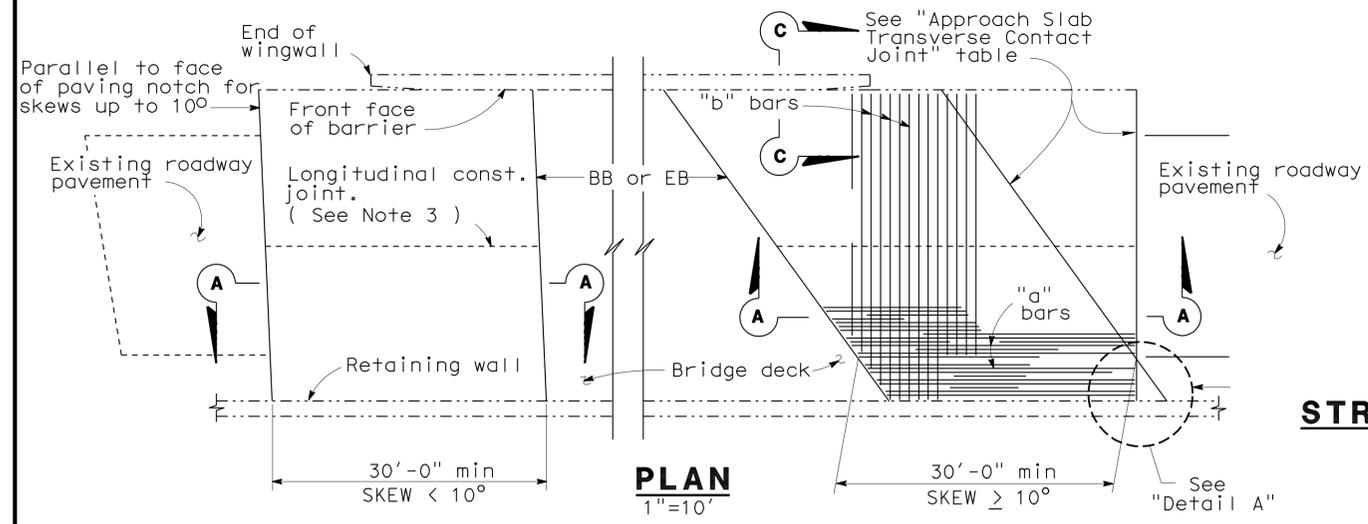
Note revised  
 STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING SERVICES  
 BRIDGE NO. 54-0479R  
 POST MILE 4.21  
 UNIT: 3589  
 PROJECT NUMBER & PHASE: 08000005061  
 CONTRACT NO.: 08-0M9401

**I-215/I-10 SEPARATION RT (WIDEN)**  
**STRUCTURE APPROACH TYPE N(30D)**  
 REVISION DATES  
 SHEET 18 OF 28

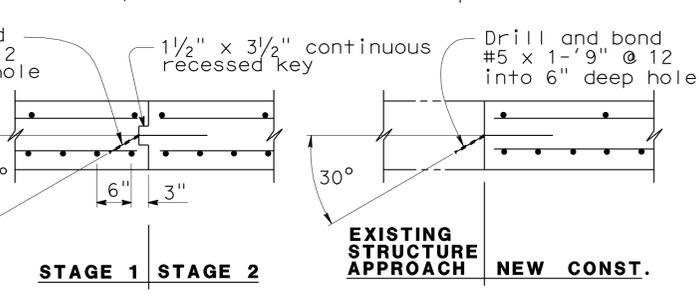
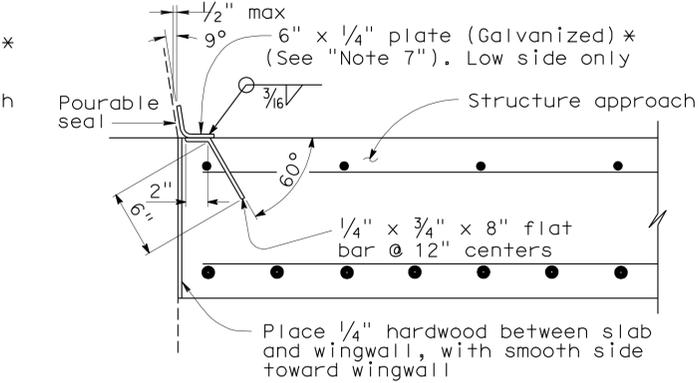
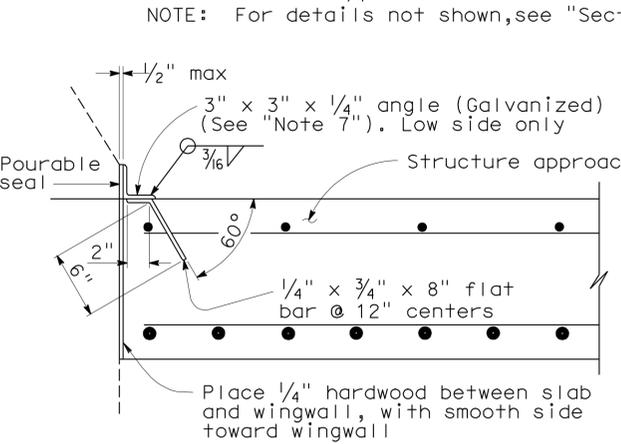
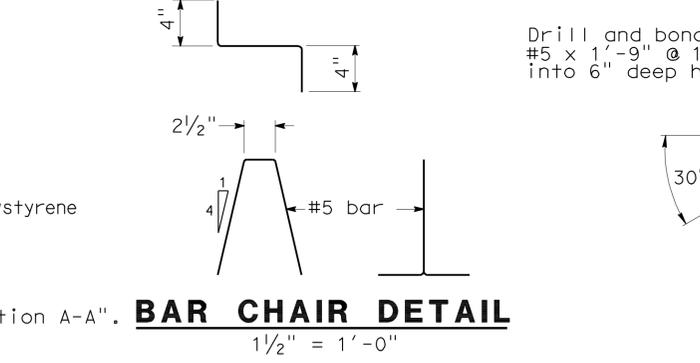
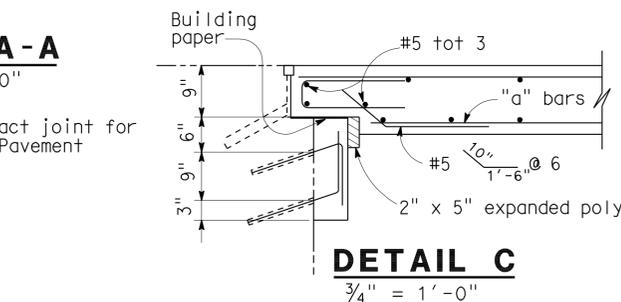
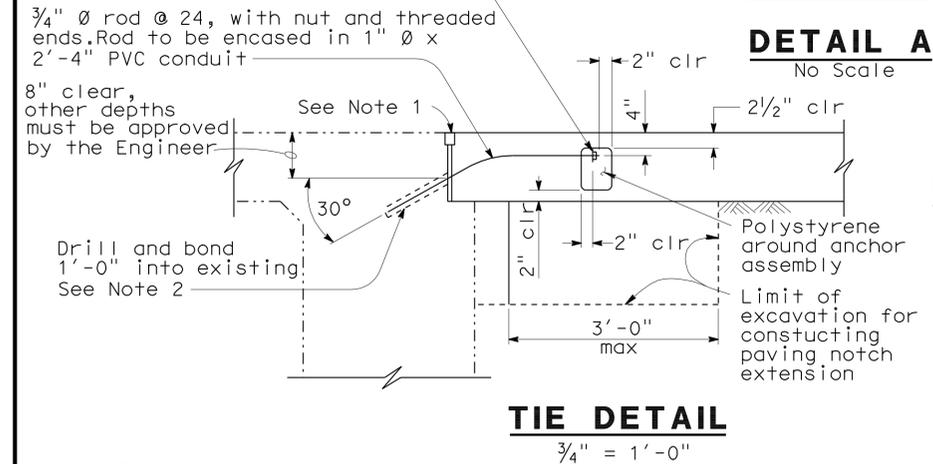
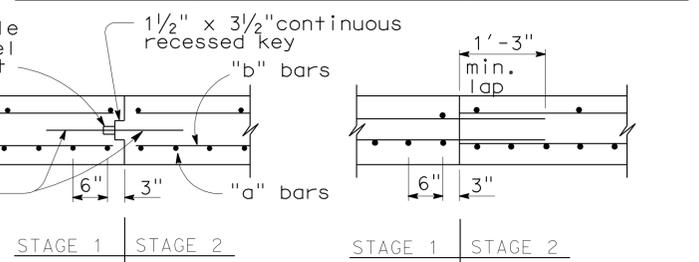
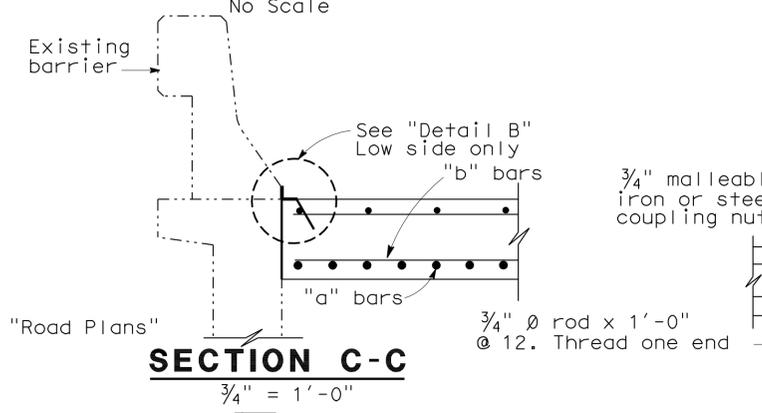
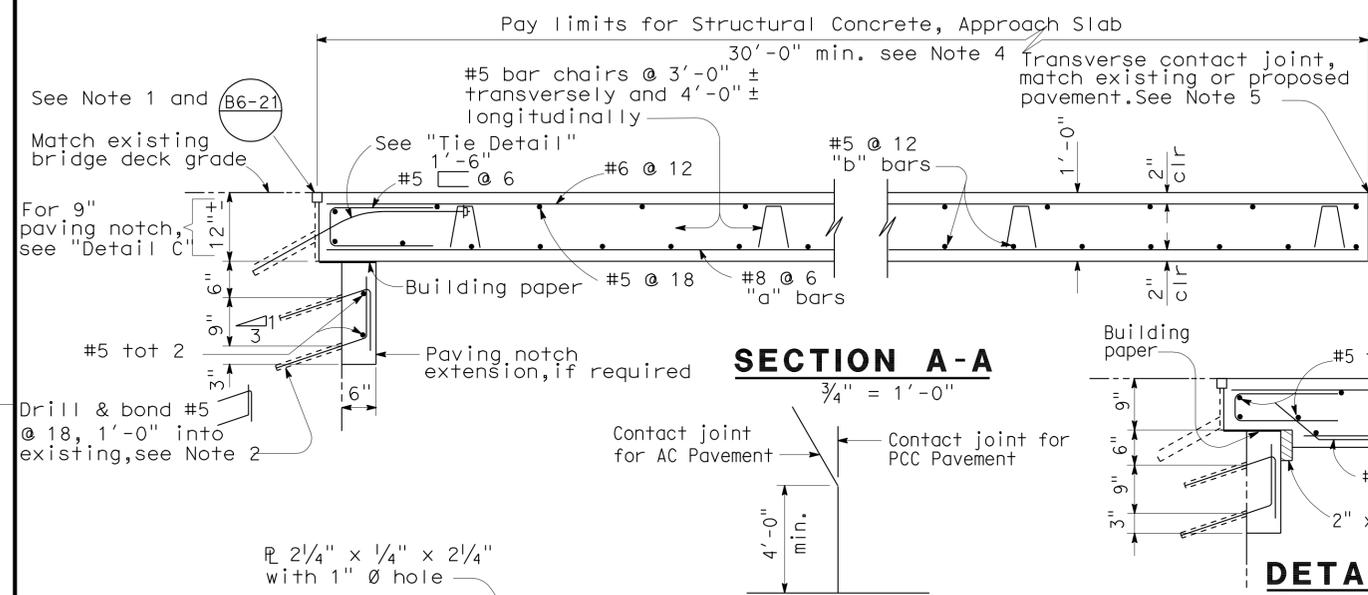
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1433	1743

LARRY WU  
 REGISTERED CIVIL ENGINEER  
 DATE: 4-06-12  
 PLANS APPROVAL DATE: 4-16-12  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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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



**LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES**

- 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.

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

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

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

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

BRIDGE NO. 54-0479R  
POST MILE 4.21

**I-215/I-10 SEPARATION RT (WIDEN)**  
**STRUCTURE APPROACH TYPE R(30D)**

UNIT: 3589	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 19	OF 28
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**BENCH MARK**

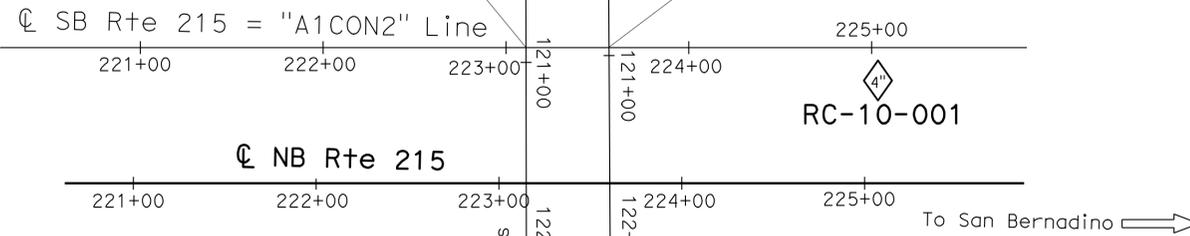
SUHV605

Fd: PK/CT Washer/ Concrete Pad  
 139.802 Lt @ NB Rte 215  
 Sta 221+84.863  
 N 1 846 361.211  
 E 6 774 608.986  
 Elev 998.310

← To Riverside



223+11.050 "A1CON2" Line = 120+92.401 LOL EB Rte 10  
 223+56.397 "A1CON2" Line = 120+96.151 LOL WB Rte 10



**PLAN**

1" = 50'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1434	1743

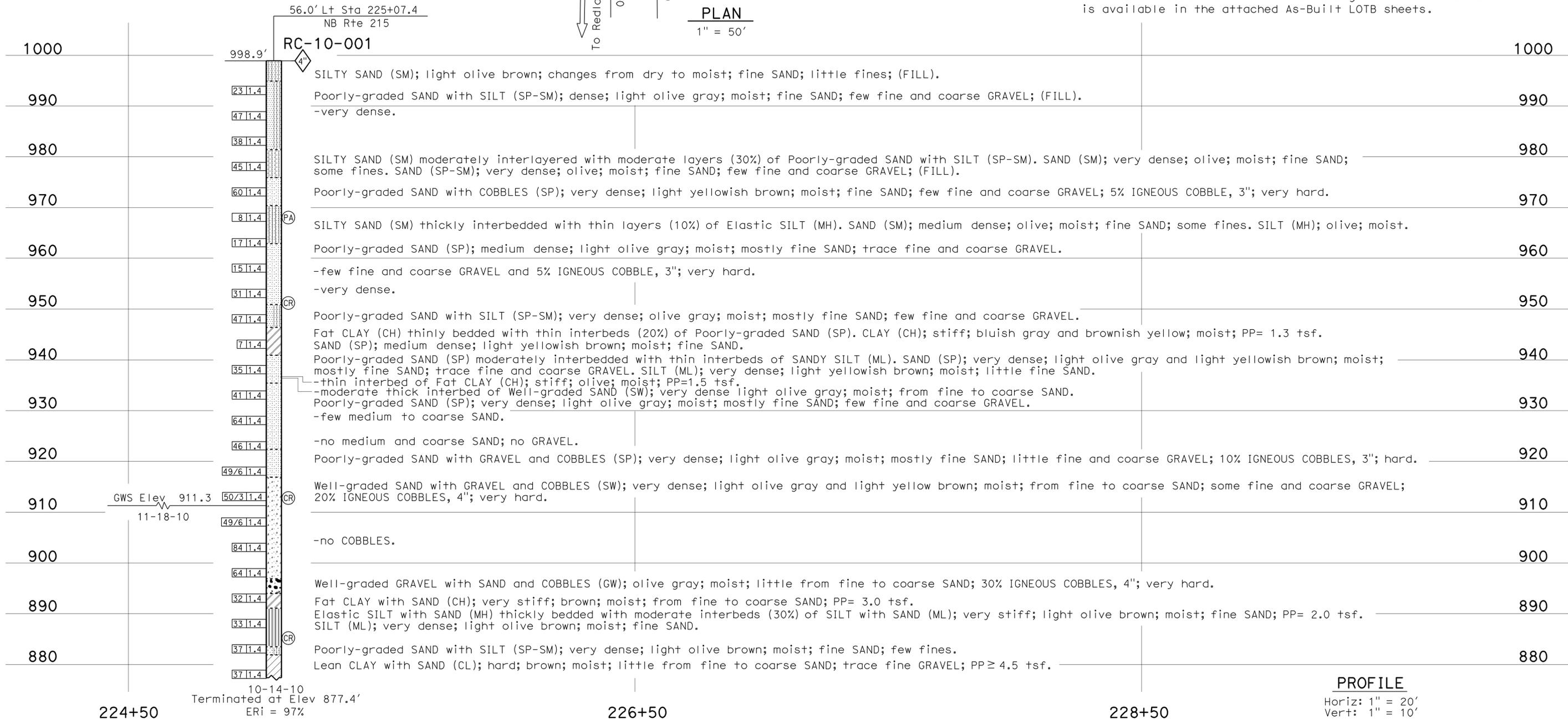
PROFESSIONAL GEOLOGIST: *Hector Valencia*  
 DATE: 12-19-11  
 PLANS APPROVAL DATE: 4-16-12  
 No. 7776  
 Exp. 2/29/12  
 STATE OF CALIFORNIA

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

**Notes:**

1. Groundwater was measured in Borings RC-10-001 during the 2010 subsurface investigation.
2. Additional subsurface information and groundwater information is available in the attached As-Built LOTB sheets.



**PROFILE**

Horiz: 1" = 20'  
 Vert: 1" = 10'

<b>ENGINEERING SERVICES</b>		<b>MATERIALS AND GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b>		<b>DIVISION OF ENGINEERING SERVICES</b>		<b>BRIDGE NO.</b>		<b>I-215/I-10 SEPARATION RT (WIDEN)</b>	
FUNCTIONAL SUPERVISOR		DRAWN BY: C. Christian/ F. Nguyen 9/11		FIELD INVESTIGATION BY:		STRUCTURE DESIGN		54-0479 R		<b>LOG OF TEST BORINGS 1 OF 9</b>	
NAME: M. Desalvatore		CHECKED BY: F. De Haro		H. Valencia		<b>DESIGN BRANCH X</b>		POST MILE			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		UNIT: 3643		PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401	
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								12-08-11 12-15-11		20 28	

FILE => 540479r21fb20.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1435	1743

**Hector Valencia**  
 PROFESSIONAL GEOLOGIST  
 No. 7776  
 Exp. 2/29/12  
 DATE 12-19-11  
 PLANS APPROVAL DATE 4-16-12

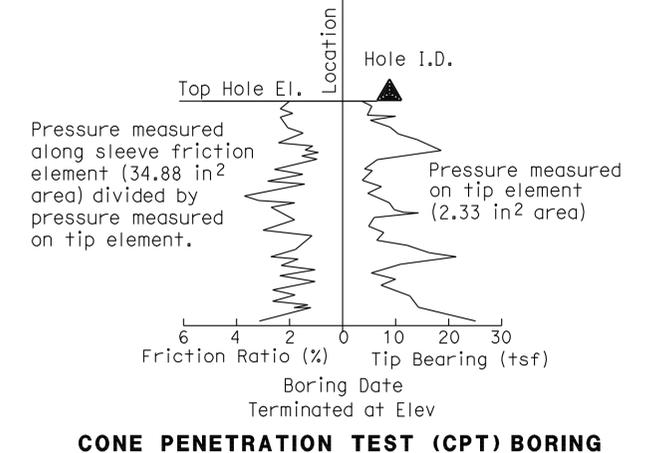
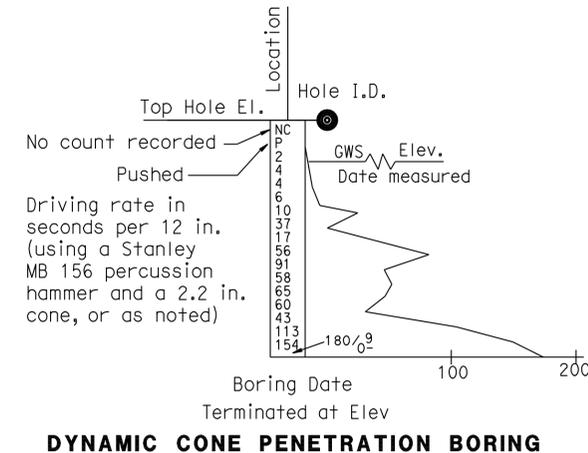
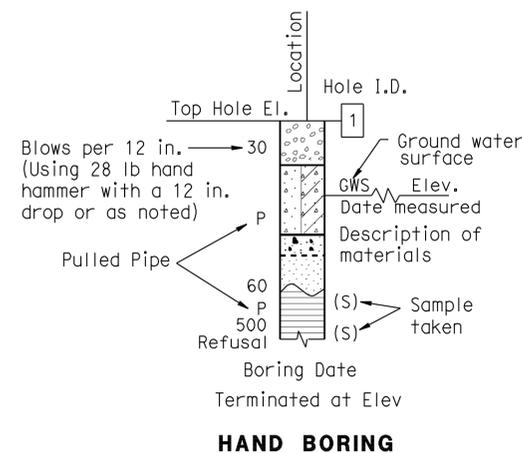
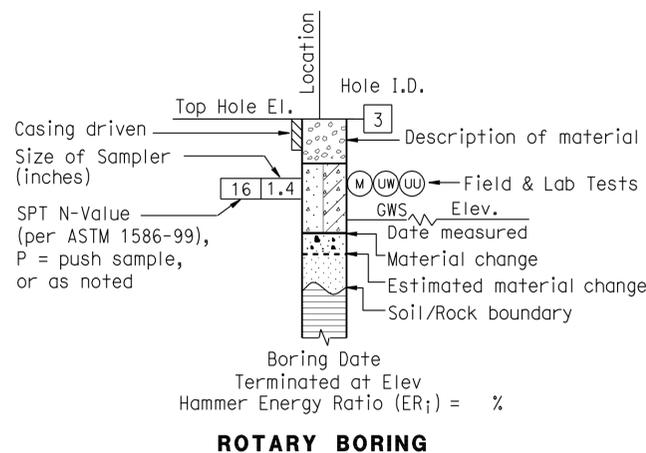
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

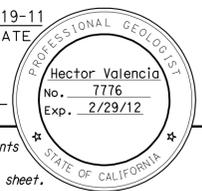
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring (hollow or solid stem bucket)
	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	P	Rotary percussion boring (air)
	R	Rotary drilled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

Note: Size in inches.

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



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1436	1743


 12-19-11  
 DATE  
 PROFESSIONAL GEOLOGIST  
 4-16-12  
 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.

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 Lean CLAY with GRAVEL SANDY lean CLAY
	Poorly-graded GRAVEL		SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
	Poorly-graded GRAVEL with SAND		SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY
	Well-graded GRAVEL with SILT		SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
	Well-graded GRAVEL with SILT and SAND		SILT SILT with SAND SILT with GRAVEL SANDY SILT
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY
	Poorly-graded GRAVEL with SILT		SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
	Poorly-graded GRAVEL with SILT and SAND		ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT
	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)		SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
	Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY
	SILTY GRAVEL		SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
	SILTY GRAVEL with SAND		Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT
	CLAYEY GRAVEL		SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	CLAYEY GRAVEL with SAND		ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY
	SILTY, CLAYEY GRAVEL		SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
	SILTY, CLAYEY GRAVEL with SAND		ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT
	Well-graded SAND		SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	Well-graded SAND with GRAVEL		ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL
	Poorly-graded SAND		SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	Poorly-graded SAND with GRAVEL		ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL with SAND
	Well-graded SAND with SILT		GRAVELLY ORGANIC SOIL with SAND
	Well-graded SAND with SILT and GRAVEL		ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT
	Well-graded SAND with CLAY (or SILTY CLAY)		SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY
	Poorly-graded SAND with SILT		SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
	Poorly-graded SAND with SILT and GRAVEL		ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT
	Poorly-graded SAND with CLAY (or SILTY CLAY)		SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL
	SILTY SAND		SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	SILTY SAND with GRAVEL		ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT
	CLAYEY SAND		SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	CLAYEY SAND with GRAVEL		ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL
	SILTY, CLAYEY SAND		SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	SILTY, CLAYEY SAND with GRAVEL		ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT
	PEAT		SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL

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

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

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

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

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

ENGINEERING SERVICES	MATERIALS AND GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-0479 L	I-215/I-10 SEPARATION RT (WIDEN)
				POST MILE 4.03	
PREPARED BY: F. Nguyen 9/11		UNIT: 3643	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	FILE => 540479r21fb22.dgn	REVISION DATES	SHEET 22 OF 28



**BENCH MARK**  
 BM\*13-A-56 Elev. 974.87  
 Chis. X on S. corner P.C.C. endwall 35' Lt. Sta. 125+60  
 & Imp. S. Rdbd.

LEGEND OF BORING OPERATIONS

**1" SOIL TUBE**  
 Penetration Boring  
 Rotary Boring  
 Auger Boring  
 Jet Boring  
 Core Boring  
 Test Pit

**2 1/2" CORE PENETROMETER**  
 Sampler Boring (S.B.)  
 Retary Boring (R.B.)  
 Auger Boring (A.B.)  
 Jet Boring (J.B.)  
 Core Boring (C.B.)  
 Test Pit (T.P.)

**SOIL TUBE**  
 Penetration Boring  
 Rotary Boring  
 Auger Boring  
 Jet Boring  
 Core Boring  
 Test Pit

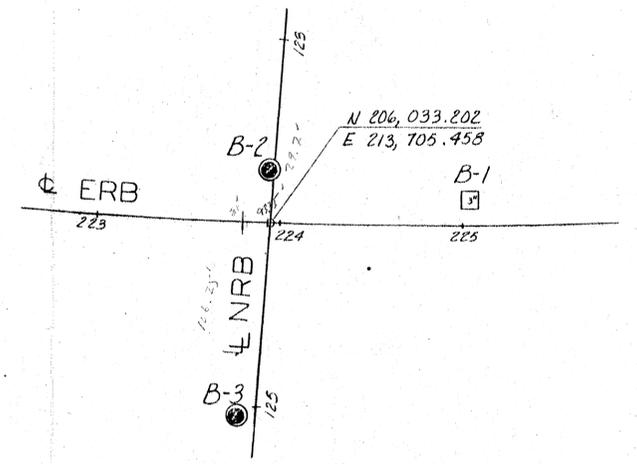
**LEGEND OF EARTH MATERIALS**

SLY. CLAY OR CLAYEY SILT	ORGANIC MATTER	IGNEOUS ROCK	SEMI-METAMORPHIC ROCK
CLAYEY SAND	FILL MATERIAL	METAMORPHIC ROCK	
GRAVEL	SANDY CLAY OR CLAYEY SAND		
SAND	SANDY SILT OR SILTY SAND		
SILT			
CLAY			

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

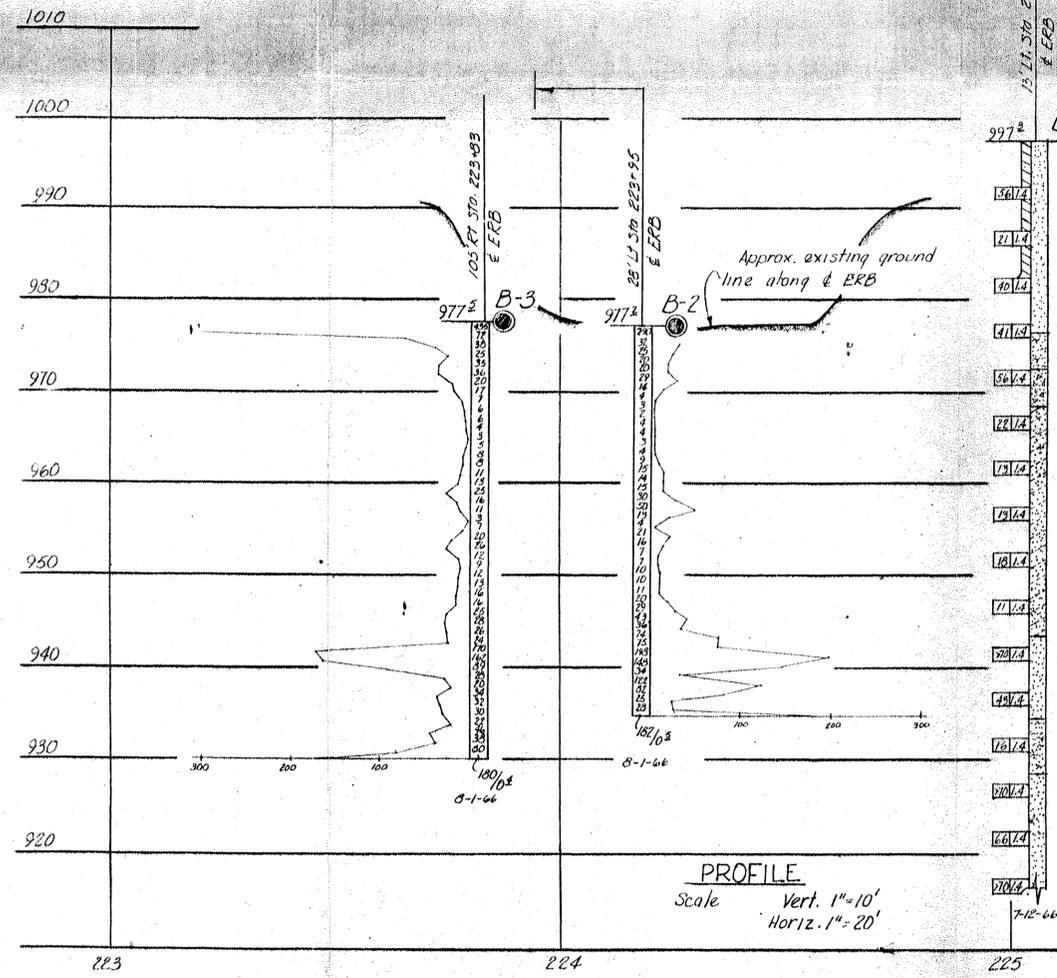
DIVERSITY IN THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES. IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE USED TO DESCRIBE SANDS, SILTS, AND CLAYS. "COARSE", "MEDIUM", AND "FINE" WHEN USED TO DESCRIBE SANDS, SILTS AND GRAVEL REFER TO 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.



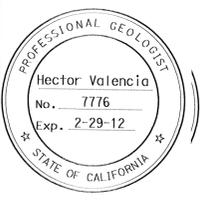
**PLAN**  
 Scale 1"=50'

NO GROUND WATER ENCOUNTERED DURING THIS INVESTIGATION BY BRIDGE DEPT. GEOLOGY SECTION DATE Aug. 1966



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

DIVISION OF ENGINEERING SERVICES - MATERIALS AND 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. It does not attest to the accuracy or validity of the information contained in 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
08	Riv,Sbd	91,215	21.5/21.7,43.2/45.2,0.0/5.1	1438	1743
Hector Valencia			12-19-11		
PROFESSIONAL GEOLOGIST			DATE		
<b>I-215/1-10 SEPARATION RT (WIDEN)</b>					
<b>LOG OF TEST BORINGS 5 OF 9</b>					
UNIT: 3643		CONTRACT No. 08-0M9401		BRIDGE No. 54-0479 R	
PROJ. No. & PHASE: 0800005061		CONVERSION: NAVD88 = NGVD29 + 2.3		Sheet of	
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA					



TO ACCOMPANY PLANS DATED 4-16-12

960  
 Compact to dense gray sand

950  
 Dense gray sand with organic material  
 Dense gray gravelly poorly sorted sand

940  
 Slightly compact to compact brown stratified sand and silty fine sand

930  
 Dense to very dense brown fine sand

920  
 Slightly compact dark gray (organic) fine sand  
 Dense to very dense brown poorly sorted sand

**GEOLOGY**

STATE OF CALIFORNIA  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**ROUTE 15 NORTH BOUND/10 WEST BOUND SEPARATION**

**LOG OF TEST BORINGS**

SCALE As Noted BRIDGE 54-479 R FILE DRAWING

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBD	1015	21.5/21.7, 43.2/45.2, 0.0/5.1	350	400

DIVISION OF ENGINEERING SERVICES - MATERIALS AND GEOTECHNICAL SERVICES

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DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
08	Riv, SBD	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1439	1743

PROF. *Hector Valencia* 12-19-11 DATE  
PROFESSIONAL GEOLOGIST

**I-215/I-10 SEPARATION RT (WIDEN)**  
**LOG OF TEST BORINGS 6 OF 9**

UNIT: 3643	CONTRACT No. 08-0M9401	BRIDGE No. 54-0479 R
PROJ. No. & PHASE: 08000005061	08-0M9401	54-0479 R

VERT DATUM: NGVD29 CONVERSION: NAVD88 = NGVD29 + 2.3 Sheet of

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



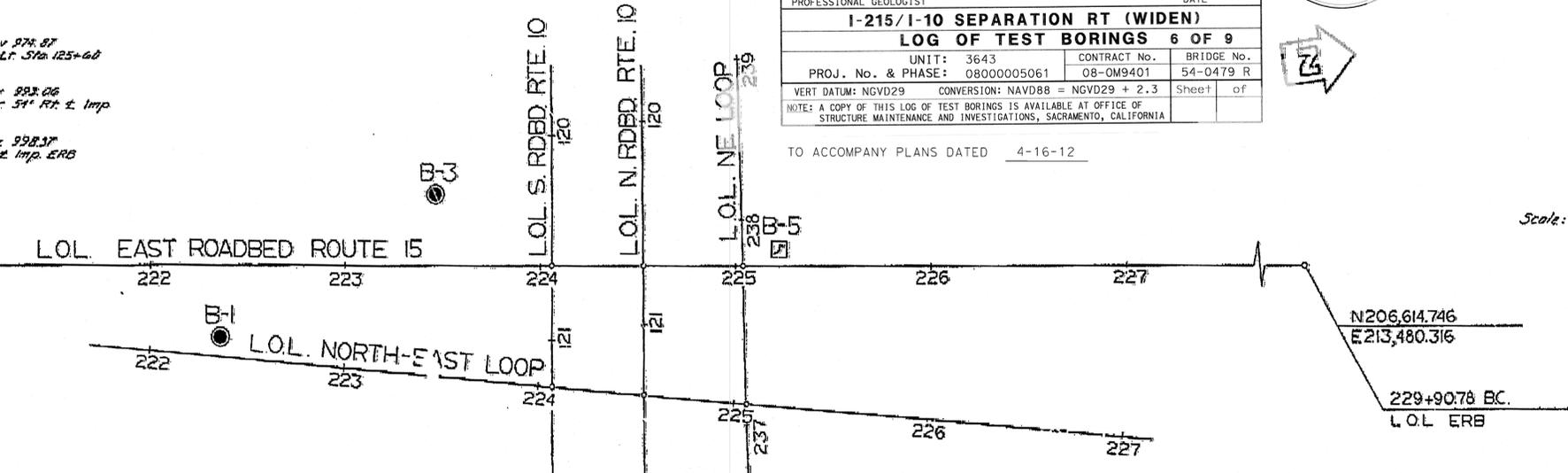
*James Elston*  
DESIGN SECTION SUPERVISOR REGISTERED CIVIL ENGINEER NO. 1111  
DATE APPROVED: November 24, 1989

**BENCH MARK**

BM# 13-A-56 Elev. 974.87  
Chis. X on S. corner FCC endwall 35' Lt. Sta. 125+60  
E. Imp. S. Rd. Bd.

BM# 23-A-58 Elev. 983.06  
Settling pin on Redlands Br. Conn. Br. 54' Rt. E. Imp.  
W.R.B. Sta. 224+18.

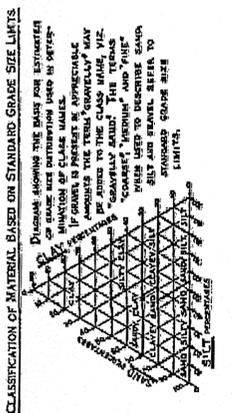
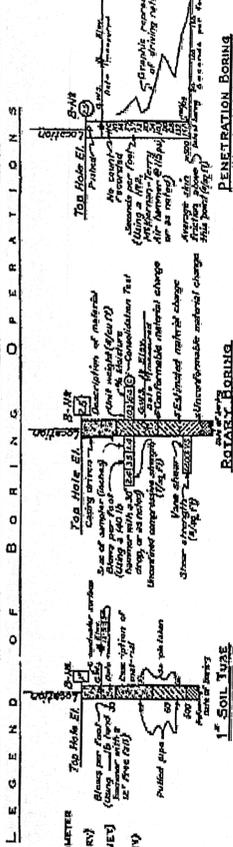
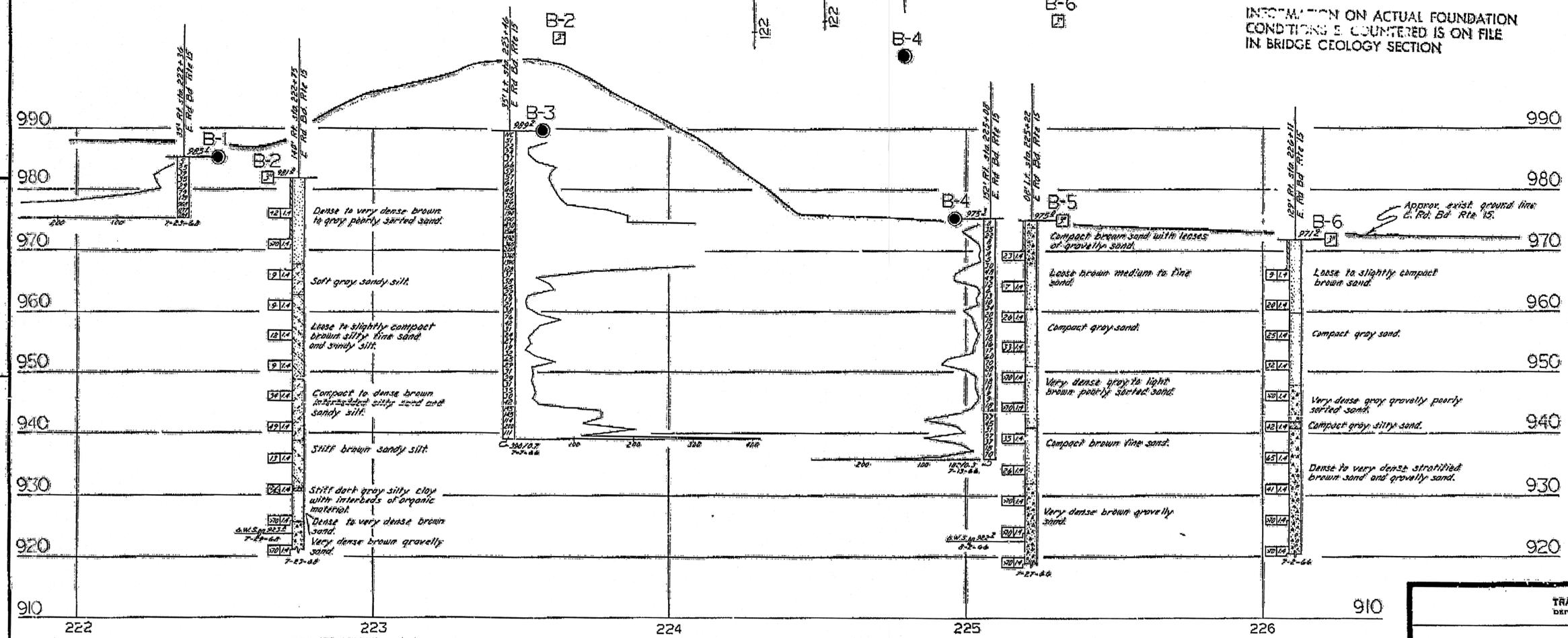
BM# 23-B-58 Elev. 998.37  
SE anchor bolt of electricier 68' Lt. E. Imp. ERB  
Sta. 225+02.



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

**PROFILE**

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



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 PLANS**  
Contract No. 08-096504  
Date Completed 4-2-73  
Document No. 2299

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

**ROUTE 15/ROUTE 10 SEPARATION**  
**LOG OF TEST BORINGS**

BRIDGE NO. 54-479 R	POST MILE 01	DRAWING NO.	SHEET 12 OF 12
WO 096501 CU 0201		REVISION DATES	(PRELIMINARY STAGE ONLY)

Discard prints bearing earlier revision dates



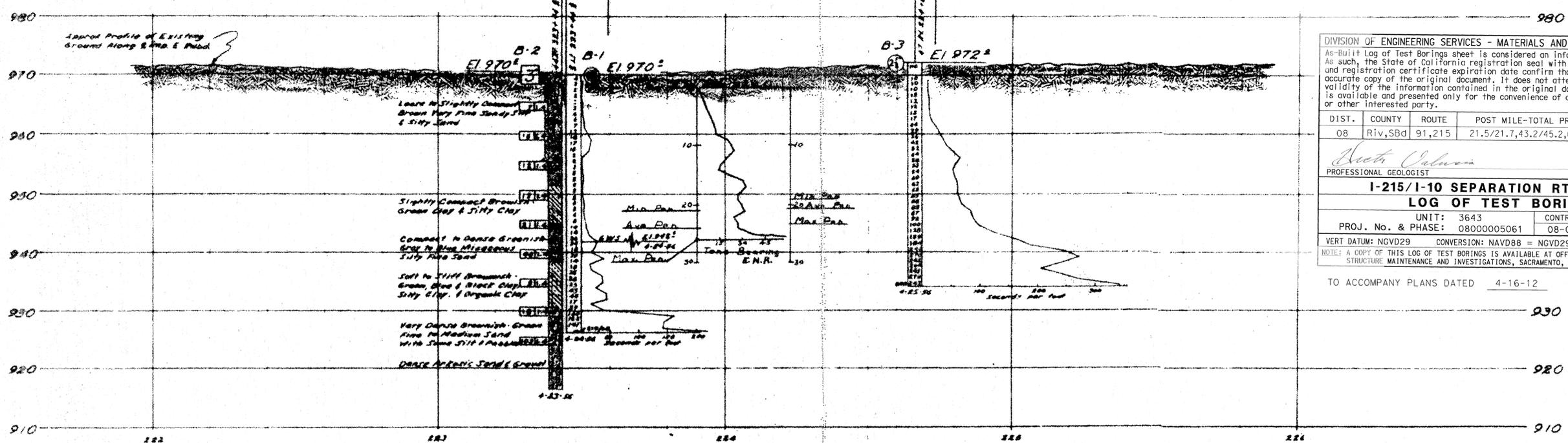
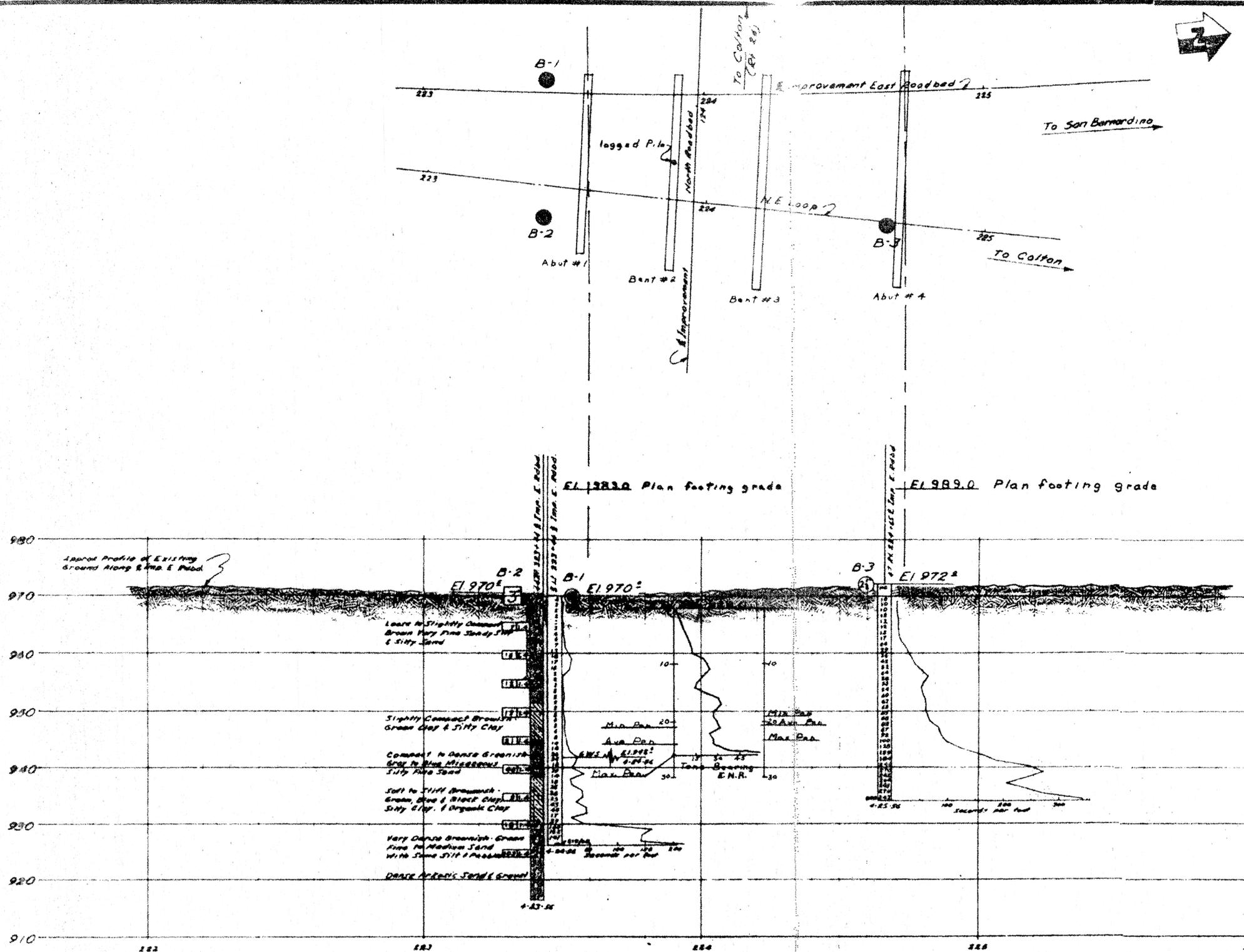


12

Design Pile Loading 45 Ton  
 Type Pile Raymond step taper  
 Diameter Tip 8" Butt 15 1/2"  
 Total Number Piles 23  
 Lineal ft. Piles "As Built" 512.5  
 Lineal ft. Piles Called for on Plans 765.0  
 Hammer Vulcan No. 1

H.C. Mass  
 S.B. 8VCR-1

BRIDGE DEPARTMENT

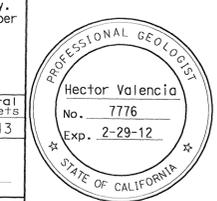


DIVISION OF ENGINEERING SERVICES - MATERIALS AND GEOTECHNICAL SERVICES

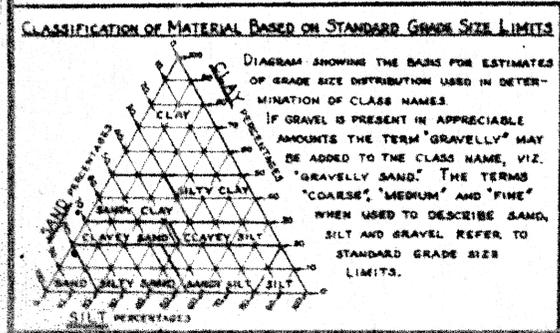
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DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
08	Riv, SBD	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1442	1743

Date: 12-19-11  
 Date: 12-19-11  
**I-215/I-10 SEPARATION RT (WIDEN)**  
**LOG OF TEST BORINGS 9 OF 9**  
 UNIT: 3643 CONTRACT No. 08-0M9401 BRIDGE No. 54-0479 R  
 PROJ. No. & PHASE: 08000005061  
 VERT DATUM: NGVD29 CONVERSION: NAVD88 = NGVD29 + 2.3 Sheet of  
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

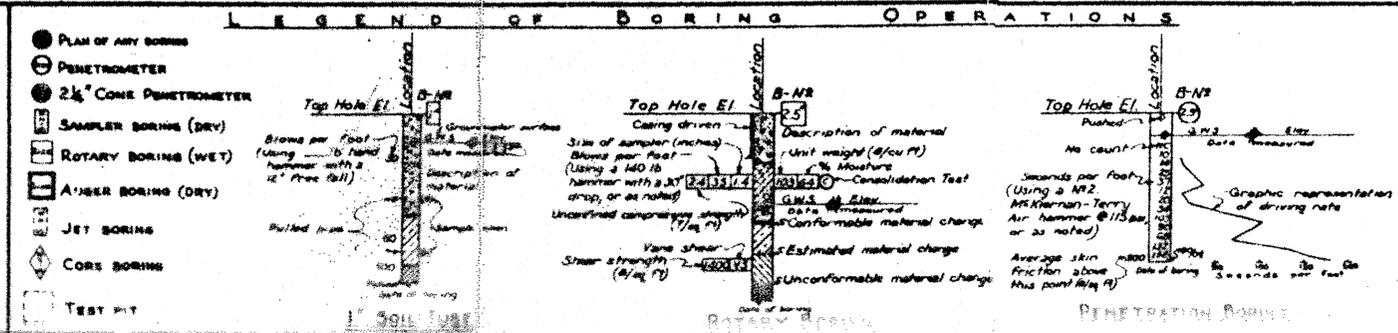


B.M. 82 16.58  
 Not in line with A.C.C. observation  
 or logs No. 58-375, 2 on Sta. 188+00  
 A.C.C. & 1 inch N. Road  
 EL 975.30



**LEGEND OF EARTH MATERIALS**

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



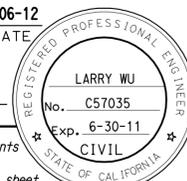
**NOTES**

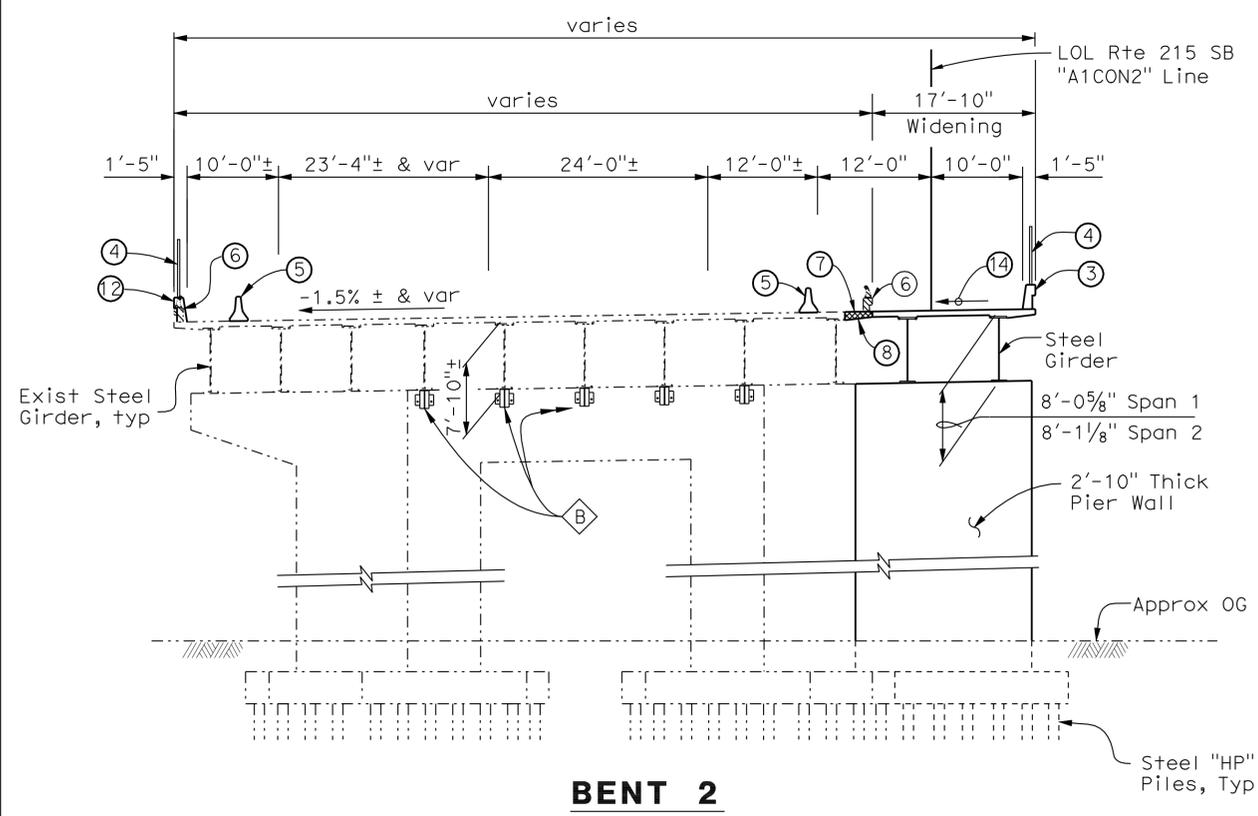
The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans. Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

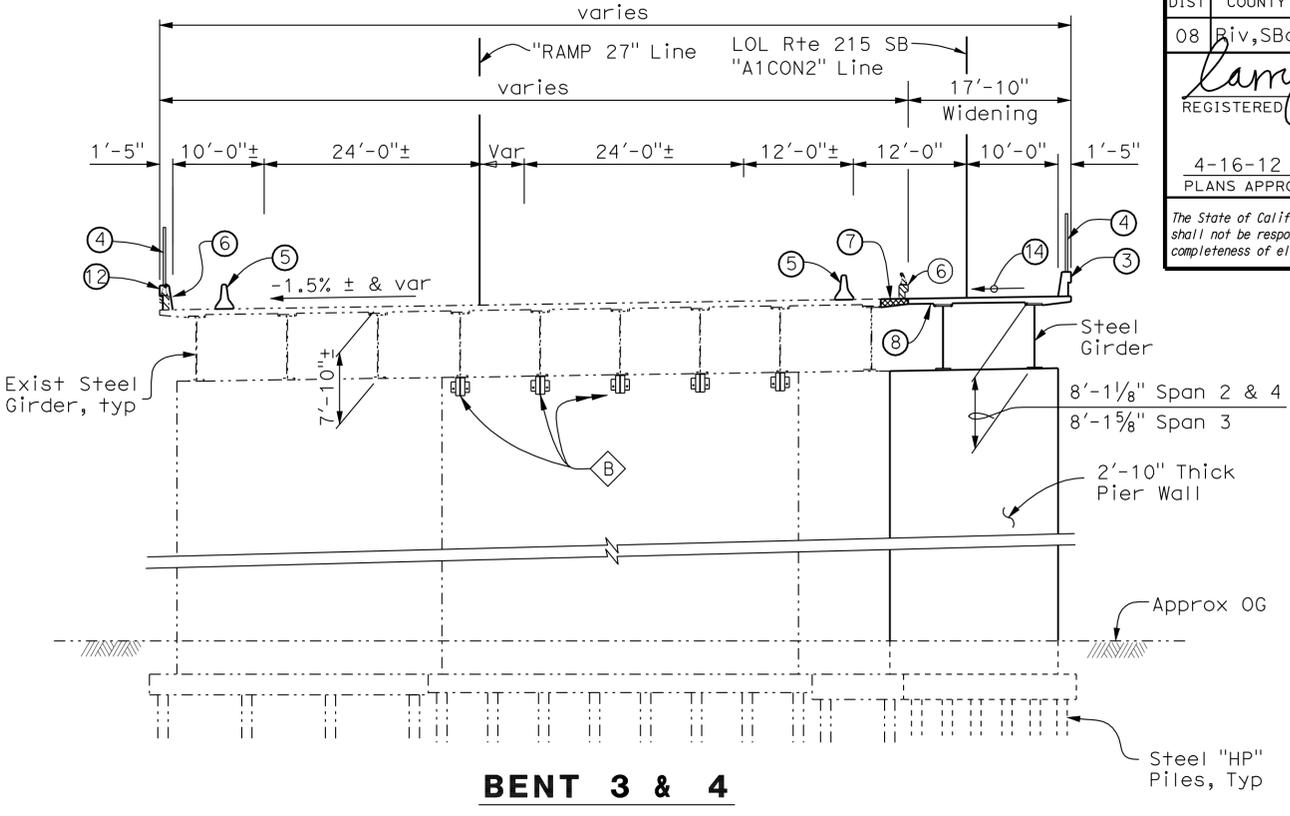
7215 710  
**ROUTE 43 NB/ROUTE 26 WB SEPARATION**  
**LOG OF TEST BORINGS**



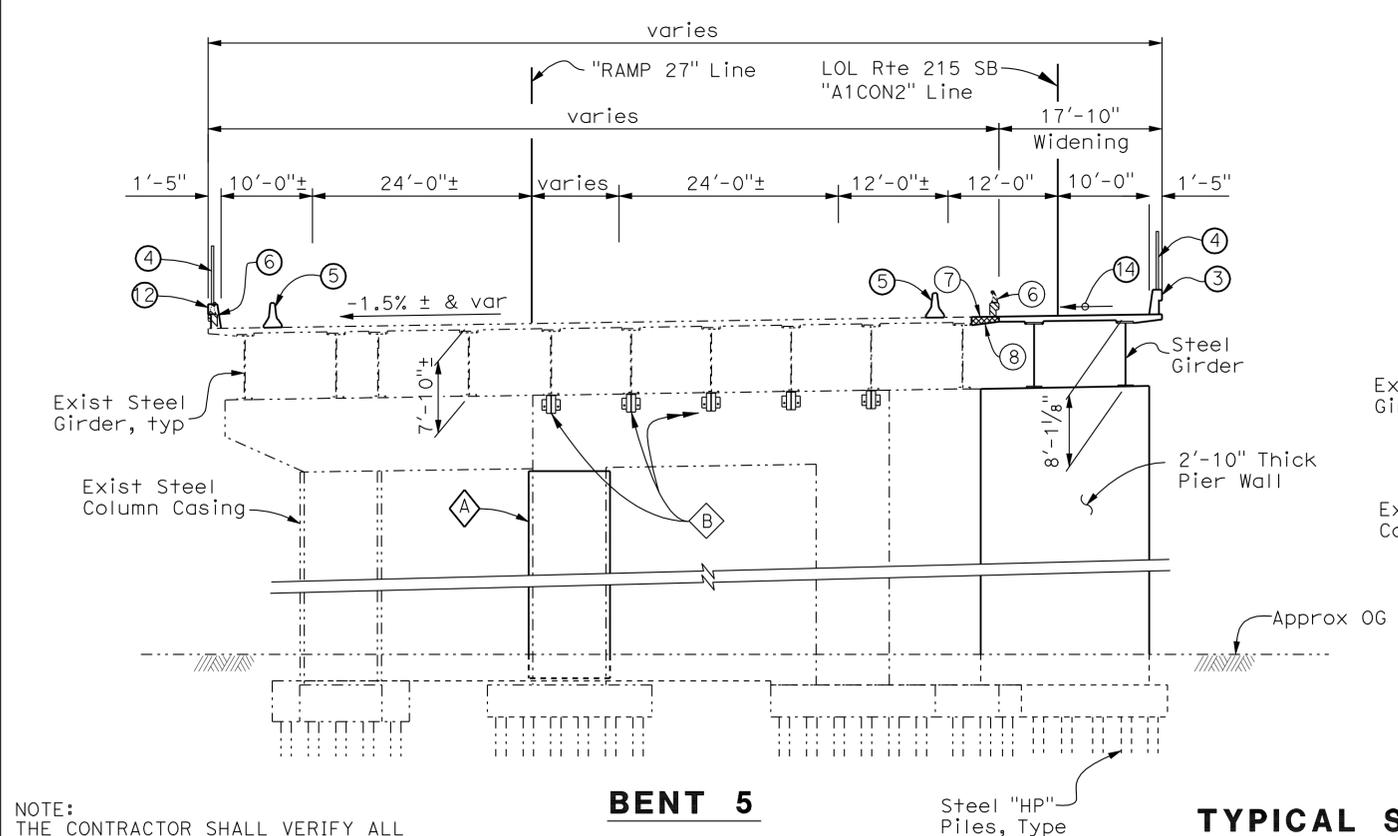
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1444	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



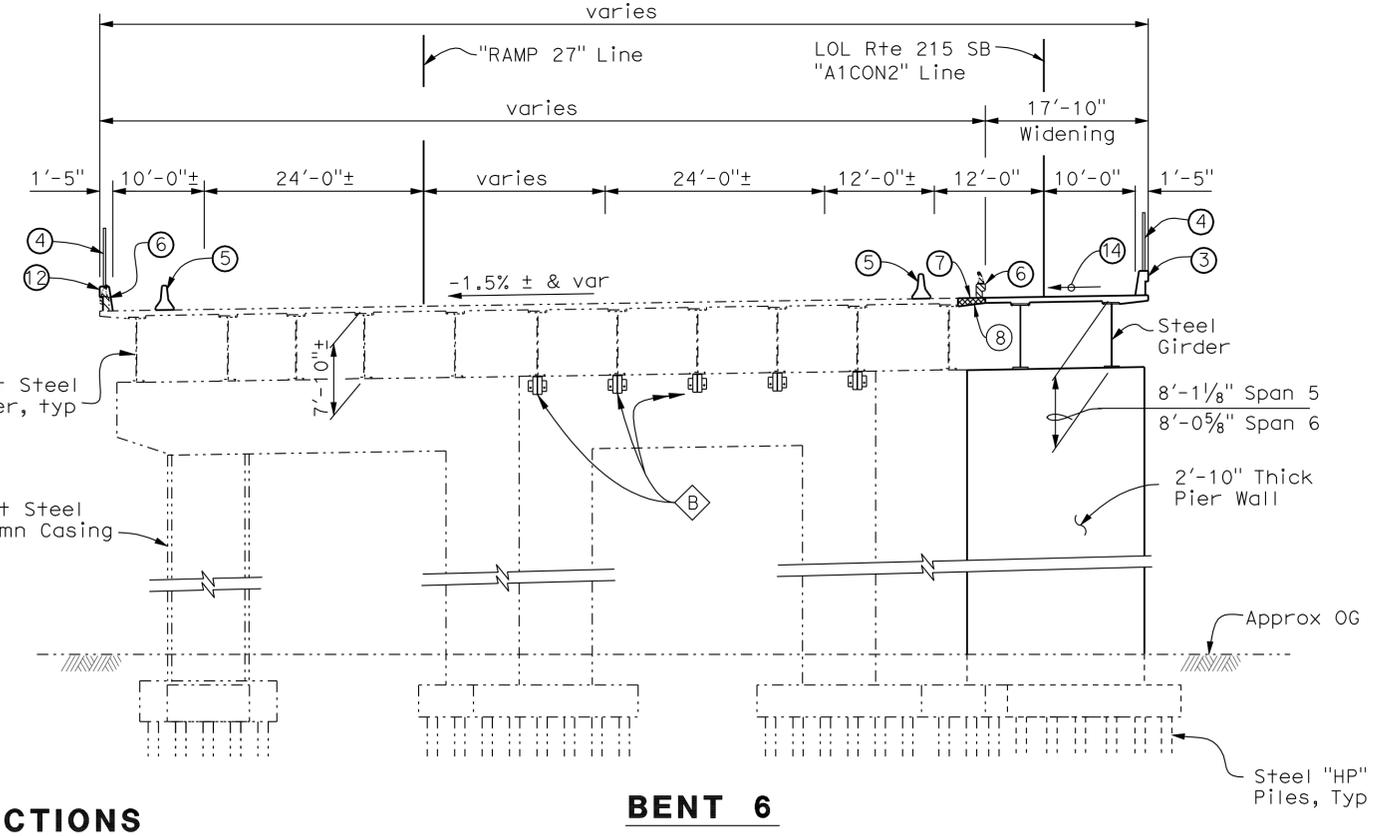
**BENT 2**



**BENT 3 & 4**



**BENT 5**



**BENT 6**

**TYPICAL SECTIONS**  
1" = 10'

**RETROFIT CODE**

-  Column Steel Casing (Class P/F) Retrofit
-  Bumper Restrainer

For Notes and Legend see "GENERAL PLAN NO. 1" sheet

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

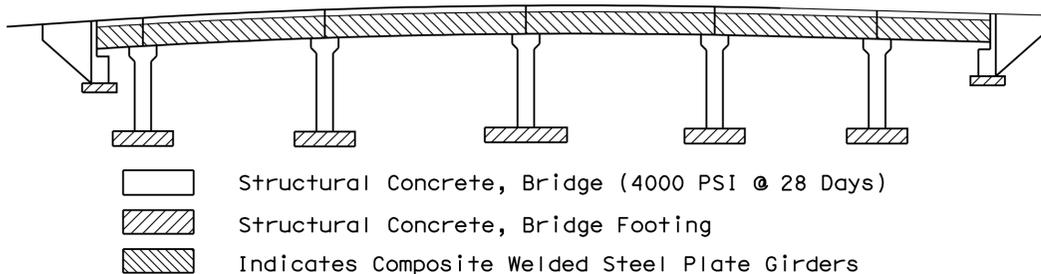
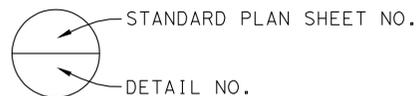
DANIEL T. ADAMS DESIGN ENGINEER	DESIGN	BY R. Stiltz	CHECKED J. Szabo	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	54-0482R	<b>COLTON-LOMA LINDA OH LT (WIDEN)</b> <b>GENERAL PLAN NO. 2</b>		
	DETAILS	BY D. Wooten/ Y. Tang	CHECKED J. Szabo	LAYOUT	BY R. Stiltz			CHECKED J. Szabo	POST MILE		3.72	
	QUANTITIES	BY R. Stiltz	CHECKED J. Szabo	SPECIFICATIONS	BY J. Corrado			PLANS AND SPECS COMPARED	J. Corrado			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401		DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12-08-11 1-28-12 3-07-12	SHEET 2 OF 42

**INDEX TO PLANS**

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2	GENERAL PLAN NO. 2	29
3	INDEX TO PLANS	30
4	FOUNDATION PLAN NO. 1	31
5	FOUNDATION PLAN NO. 2	32
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7	ABUTMENT 7 LAYOUT	34
8	ABUTMENT DETAILS NO. 1	35
9	ABUTMENT DETAILS NO. 2	36
10	ABUTMENT DETAILS NO. 3	37
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12	BENT 2 LAYOUT	39
13	BENT 3 LAYOUT	40
14	BENT 4 LAYOUT	41
15	BENT 5 LAYOUT	42
16	BENT 6 LAYOUT	
17	BENT DETAILS	
18	TYPICAL SECTION	
19	GIRDER LAYOUT NO. 1	
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21	GIRDER DETAILS NO. 1	
22	GIRDER DETAILS NO. 2	
23	GIRDER DETAILS NO. 3	
24	STEEL GIRDER SHOP SPLICE & STUD CONNECTOR DETAILS	
25	STEEL GIRDER TRANSVERSE STIFFENER DETAILS	
26	STRUCTURE DRAINAGE DETAILS NO. 1	
27	STRUCTURE DRAINAGE DETAILS NO. 2	

**STANDARD PLANS DATED MAY 2006**

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL-BRIDGE
BO-1	BRIDGE DETAILS
BO-3	BRIDGE DETAILS
BO-5	BRIDGE DETAILS
BO-13	BRIDGE DETAILS
B2-5	PILE DETAILS CLASS 90 AND CLASS140
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
B11-52	CHAINLINK RAILING TYPE 7
B11-55	CONCRETE BARRIER TYPE 732



**CONCRETE STRENGTH AND TYPE LIMITS**

No Scale

PILE DATA TABLE						
Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance Required (kips)
		Compression	Tension			
Abut 1	HP 10 x 57 "H" Pile	250	0	927.0 (a)	927.0	250
Bents 2	HP 14 x 89 "H" Pile	300	195	905.0 (a) 907.0 (b)	905.0	264
Bents 3	HP 14 x 89 "H" Pile	320	190	911.0 (a) 915.0 (b)	911.0	320
Bents 4	HP 14 x 89 "H" Pile	350	180	909.0 (a) 916.0 (b)	909.0	350
Bents 5	HP 14 x 89 "H" Pile	330	190	912.0 (a) 917.0 (b)	912.0	330
Bents 6	HP 14 x 89 "H" Pile	320	180	912.0 (a) 917.0 (b)	912.0	320
Abut 7	HP 10 x 57 "H" Pile	260	0	927.0 (a)	927.0	260

NOTE: Design tip elevations are controlled by: (a) Compression, (b) tension.

QUANTITIES

	LUMP	SUM
BRIDGE REMOVAL (PORTION), LOCATION D		
STRUCTURE EXCAVATION (BRIDGE)	580	CY
STRUCTURE BACKFILL (BRIDGE)	334	CY
AGGREGATE BASE (APPROACH SLAB)	18	CY
FURNISH STEEL PILING (HP 10 X 57)	726	LF
DRIVE STEEL PILE (HP 10 X 57)	12	EA
FURNISH STEEL PILING (HP 14 X 89)	3,875	LF
DRIVE STEEL PILE (HP 14 X 89)	80	EA
STRUCTURAL CONCRETE, BRIDGE FOOTING	185	CY
STRUCTURAL CONCRETE, BRIDGE	911	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	50	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	177	CY
DRILL AND BOND DOWEL	512	LF
CLEAN EXPANSION JOINT	417	LF
CORE CONCRETE (1 3/4")	142	LF
JOINT SEAL (MR 1/2")	93	LF
JOINT SEAL (MR 1")	94	LF
JOINT SEAL (MR 1 1/2")	549	LF
BAR REINFORCING STEEL (BRIDGE)	277,925	LB
ASPHALT MEMBRANE WATERPROOFING	178	SQFT
COLUMN CASING	7,953	LB
FURNISH STRUCTURAL STEEL (BRIDGE)	667,147	LB
ERECT STRUCTURAL STEEL (BRIDGE)	667,147	LB
CLEAN AND PAINT STRUCTURAL STEEL		LUMP SUM
SPOT BLAST CLEAN AND PAINT UNDERCOAT	416	SQFT
MISCELLANEOUS METAL (RESTRAINER)	56,055	LB
BRIDGE DECK DRAINAGE SYSTEM	5,381	LB
CHAIN LINK RAILING (TYPE 7)	1,571	LF
CONCRETE BARRIER (TYPE 732 MODIFIED)	786	LF
CONCRETE BARRIER (TYPE 732)	786	LF

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1445	1743

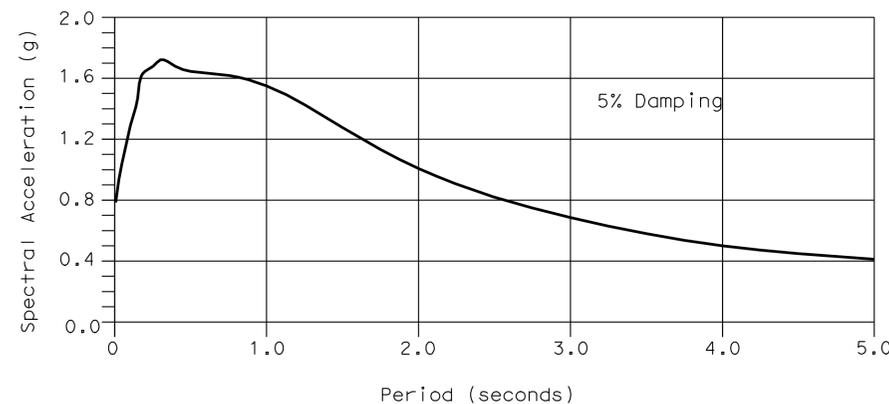
*Larry Wu*  
REGISTERED CIVIL ENGINEER  
DATE: 4-06-12  
PLANS APPROVAL DATE: 4-16-12

REGISTERED PROFESSIONAL ENGINEER  
LARRY WU  
No. C57035  
Exp. 6-30-13  
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 BRIDGE DESIGN SPECIFICATIONS, 4th Edition and the California Amendments, preface dated Sept. 2010.
- SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC) Version 1.6, November, 2010
- DEAD LOAD: Includes 35 Psf for future wearing surface.
- LIVE LOADING: HL93 and permit design load.
- SEISMIC LOADING: Soil Profile: Vs30 = 853 ft/s  
Moment Magnitude: Mmax = 6.5  
Peak Ground Acceleration: 0.78g



**ACCELERATION RESPONSE SPECTRUM**

- REINFORCED CONCRETE:  $f_y = 60 \text{ ksi}$   $f'_c = 3.6 \text{ ksi}$   $n = 8$
- STRUCTURAL STEEL (New Construction):
- For shrurtwral steel  $f_y = 50 \text{ ksi}$  (ASTM A709) Grade 50, unless otherwise noted.
  - Unless noted otherwise, HS bolts, including nuts and washers shall be  $\frac{7}{8}$ "  $\phi$  ASTM A325X for slip critical connections "SC Class B" Type 1 Bolts with bolt heads toward the outside or the underside of the bridge.
  - Electrodes shall be E70XX unless noted otherwise.

STRUCTURAL STEEL (Existing structure):  $f_y = 39 \text{ Ksi}$

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten / G. Hallstrom	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 10

BRIDGE NO.	54-0482L
POST MILE	3.72

COLTON-LOMA LINDA OH LT (WIDEN)  
INDEX TO PLANS

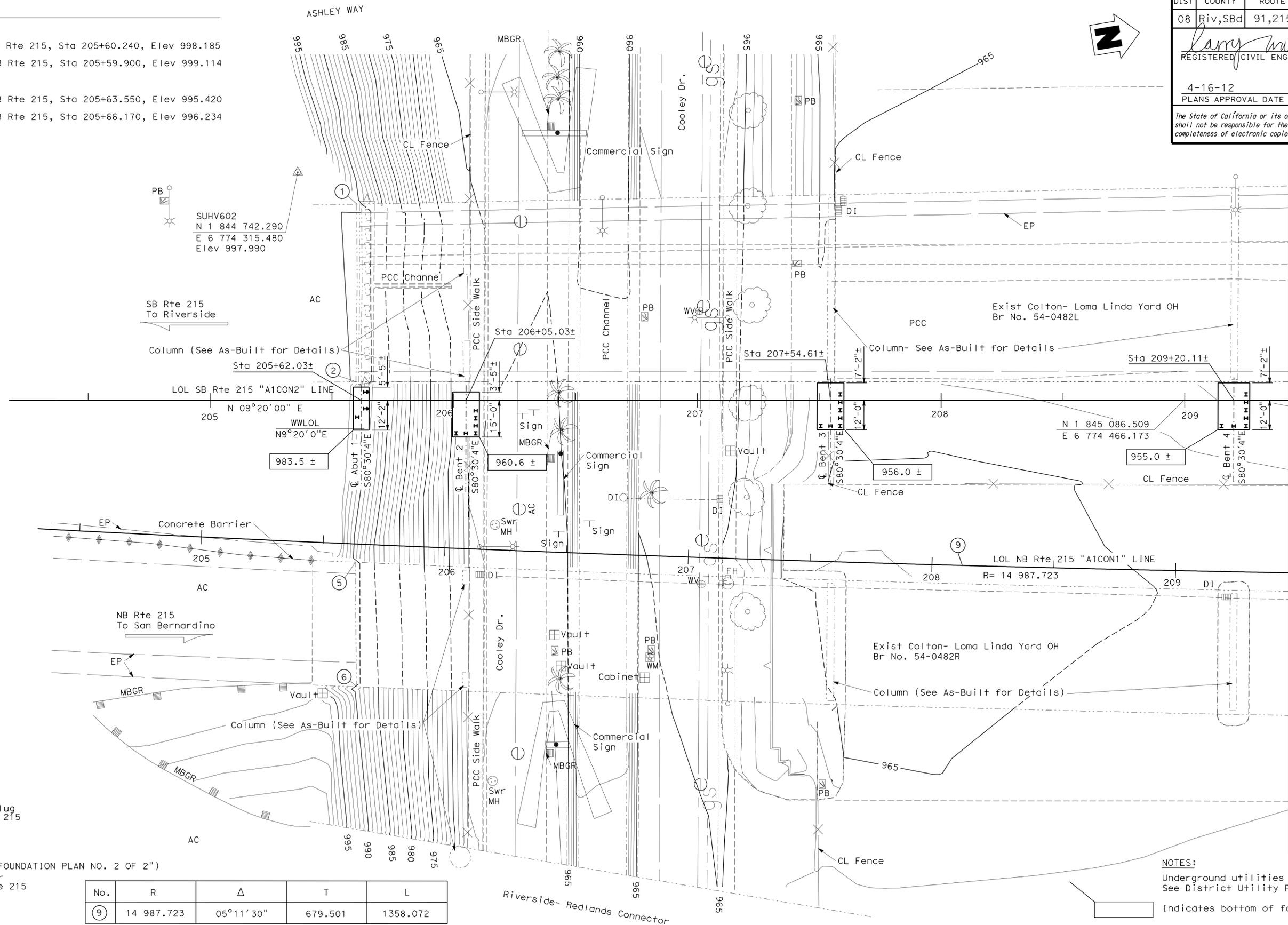
- Bridge Location
- Left Bridge
- ① - 80.390 Lt.  $\odot$  SB Rte 215, Sta 205+60.240, Elev 998.185
  - ② - 7.650 Lt.  $\odot$  SB Rte 215, Sta 205+59.900, Elev 999.114
- Right Bridge
- ⑤ - 7.540 Rt.  $\odot$  NB Rte 215, Sta 205+63.550, Elev 995.420
  - ⑥ - 58.370 Rt.  $\odot$  NB Rte 215, Sta 205+66.170, Elev 996.234

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7 43,2/45,2,0,0/5.1	1446	1743

REGISTERED CIVIL ENGINEER LARRY WU  
 No. C057035  
 Exp. 6-30-13  
 CIVIL

4-06-12 DATE  
 4-16-12 PLANS APPROVAL DATE

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**SURVEY CONTROL**  
 PRHV602  
 Fnd PD: 1" IP/CT plug  
 93.370 Lt.  $\odot$  SB Rte 215  
 Sta 205+35.980  
 N 1 844 742.290  
 E 6 774 315.480  
 Elev 997.990

PRHV601 (shown on "FOUNDATION PLAN NO. 2 OF 2")  
 Fnd PD: PK/ Washer  
 128.600 Lt.  $\odot$  SB Rte 215  
 Sta 213+28.340  
 N 1 845 529.870  
 E 6 774 409.220  
 Elev 997.130

No.	R	$\Delta$	T	L
⑨	14 987.723	05°11'30"	679.501	1358.072

**NOTES:**  
 Underground utilities as shown are approximate. See District Utility Plans for Details.  
 Indicates bottom of footing elevation

<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN BY R. Stiltz	CHECKED J. Szabo	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0482L	<b>COLTON- LOMA LINDA OH LT (WIDEN)</b> <b>FOUNDATION PLAN NO. 1 OF 2</b>
SCALE: 1"=20'	VERT. DATUM: NAVD83	PHOTOGRAMMETRY AS OF: X	DETAILS BY G. Hallstrom	CHECKED J. Szabo	POST MILE 3.72				
ALIGNMENT TIES Dist. Traverse Sheet	DRAFTED BY C. Pham	CHECKED BY T. Phung/ C. Stewart	QUANTITIES BY R. Stiltz	CHECKED J. Szabo	REVISION DATES: 08/23/11, 12/20/11, 02/09/12				

UNIT: 3647  
 PROJECT NUMBER & PHASE: 08000005061  
 CONTRACT NO.: 08-0M9401

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

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 08/23/11, 12/20/11, 02/09/12

SHEET 4 OF 42

Bridge Location

Left Bridge

- ③ -118.260 Lt. C Rte 215, Sta 213+09.620, Elev 997.722
- ④ - 7.430 Lt. C Rte 215, Sta 213+09.350, Elev 1002.106

Right Bridge

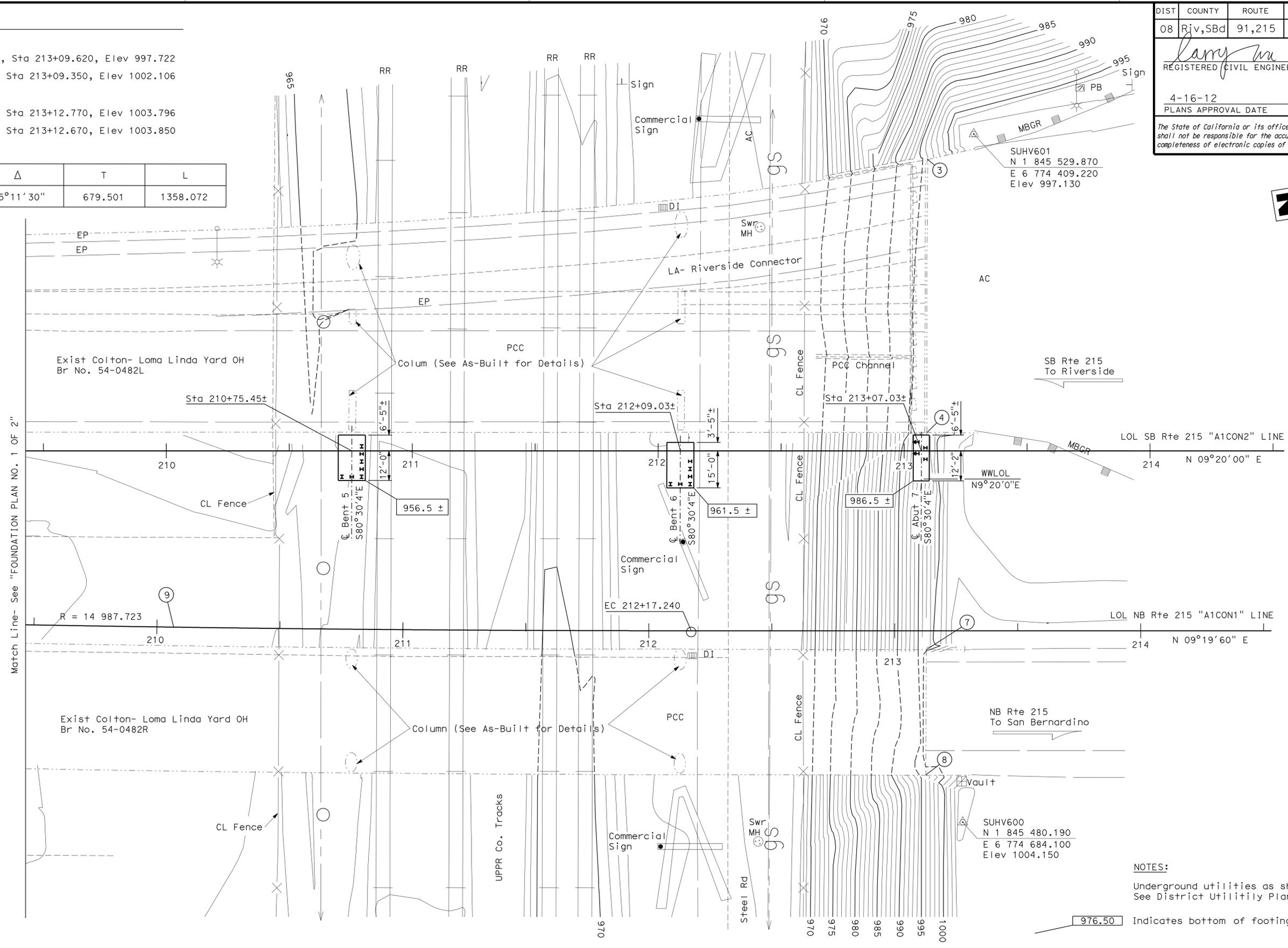
- ⑦ - 7.730 Rt. C Rte 215, Sta 213+12.770, Elev 1003.796
- ⑧ -58.470 Rt. C Rte 215, Sta 213+12.670, Elev 1003.850

No.	R	Δ	T	L
⑨	14 987.723	05°11'30"	679.501	1358.072

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1447	1743

LARRY WU  
 REGISTERED CIVIL ENGINEER  
 DATE 4-06-12  
 PLANS APPROVAL DATE 4-16-12  
 No. C057035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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**SURVEY CONTROL**  
 PRHV601  
 Fnd PD: PK/ Washer  
 128.600 Lt. C SB Rte 215  
 Sta 213+28.340  
 N 1 845 529.870  
 E 6 774 409.220  
 Elev 997.130  
 PRHV600  
 Fnd PD: 1" IP/ CT Plug  
 150.700 Rt. C SB Rte 215  
 Sta 213+23.890  
 N 1 845 480.190  
 E 6 774 684.100  
 Elev 1004.150

**NOTES:**  
 Underground utilities as shown are approximate.  
 See District Utility Plans for more Details.

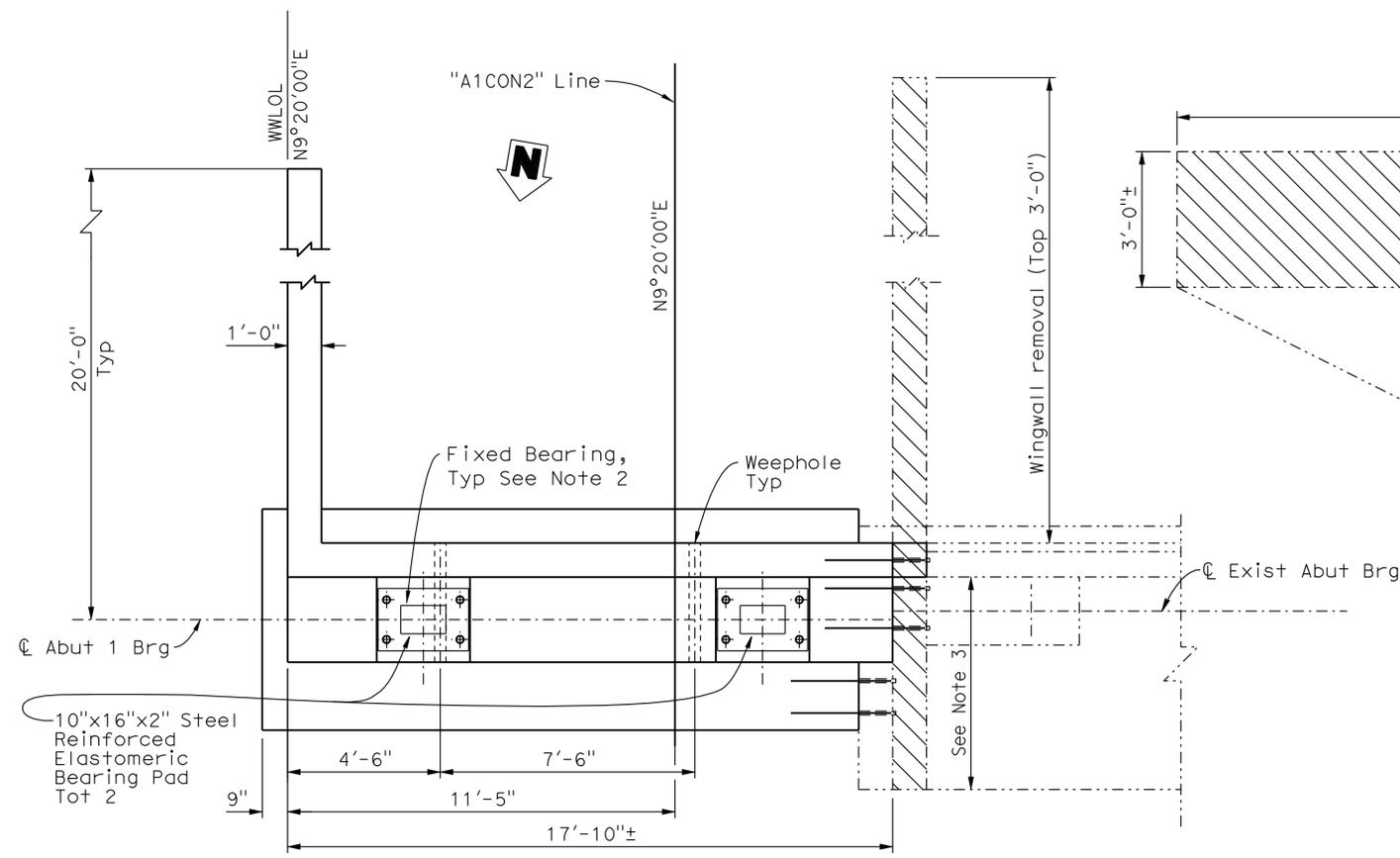
<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN BY R. Stiltz CHECKED J. Szabo		<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>		BRIDGE NO. 54-0482L POST MILE 3.72		<b>COLTON- LOMA LINDA OH LT (WIDEN)</b> <b>FOUNDATION PLAN NO. 2 OF 2</b>	
SCALE VERT. DATUM NAVD88 1"=20'		PHOTOGRAMMETRY AS OF: X SURVEYED BY D8		CHECKED BY T. Phung/C. Stewart CHECKED BY E. Viagar		DETAILS BY G. Hallstrom CHECKED J. Szabo		QUANTITIES BY R. Stiltz CHECKED J. Szabo		UNIT: 3647 PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401 DISREGARD PRINTS BEARING EARLIER REVISION DATES	
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3		REVISION DATES: 08/23/11, 12/28/11, 02-09-12		SHEET 5 OF 42	

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1448	1743

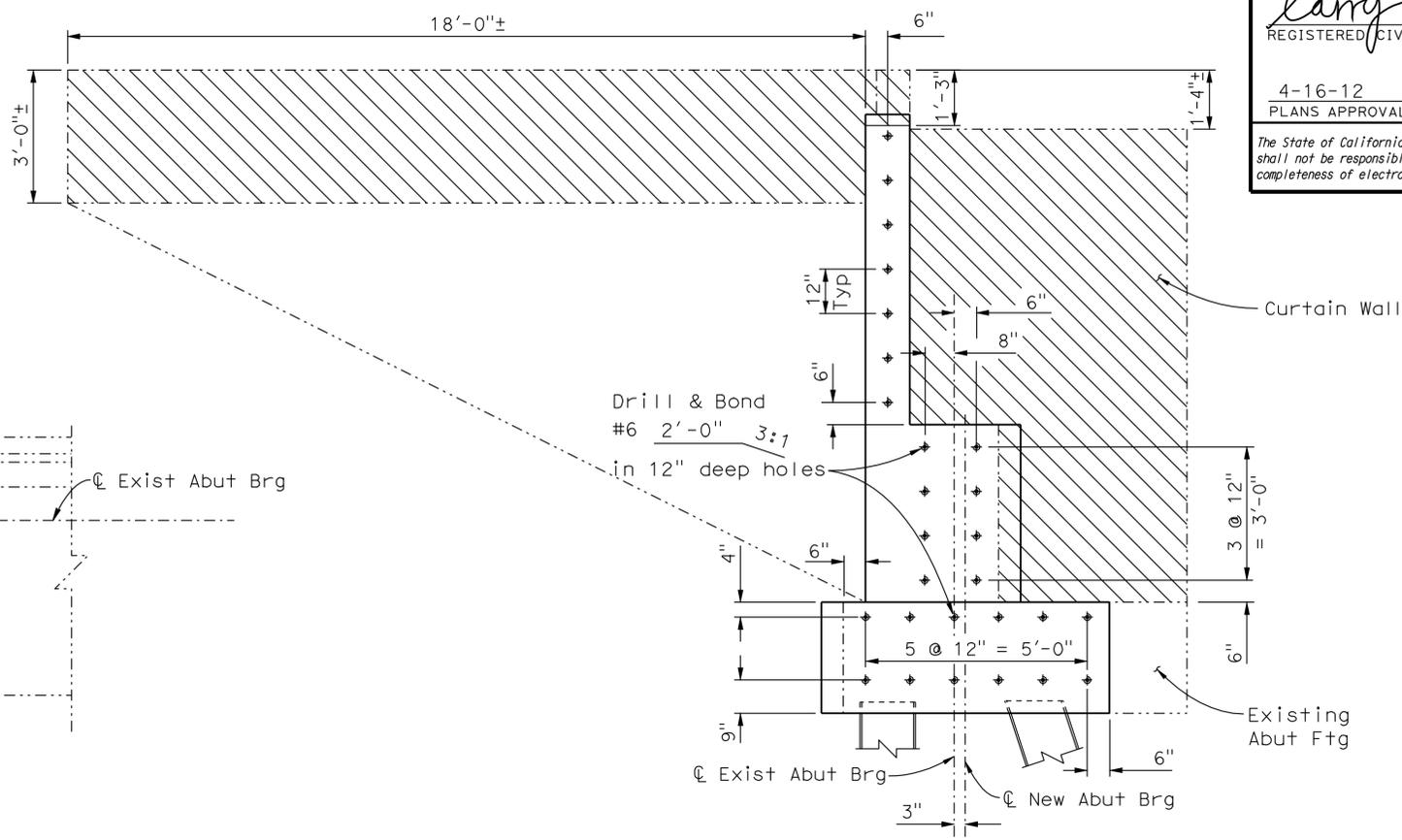
LARRY WU  
 REGISTERED CIVIL ENGINEER  
 DATE 4-06-12  
 PLANS APPROVAL DATE 4-16-12  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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**PLAN**

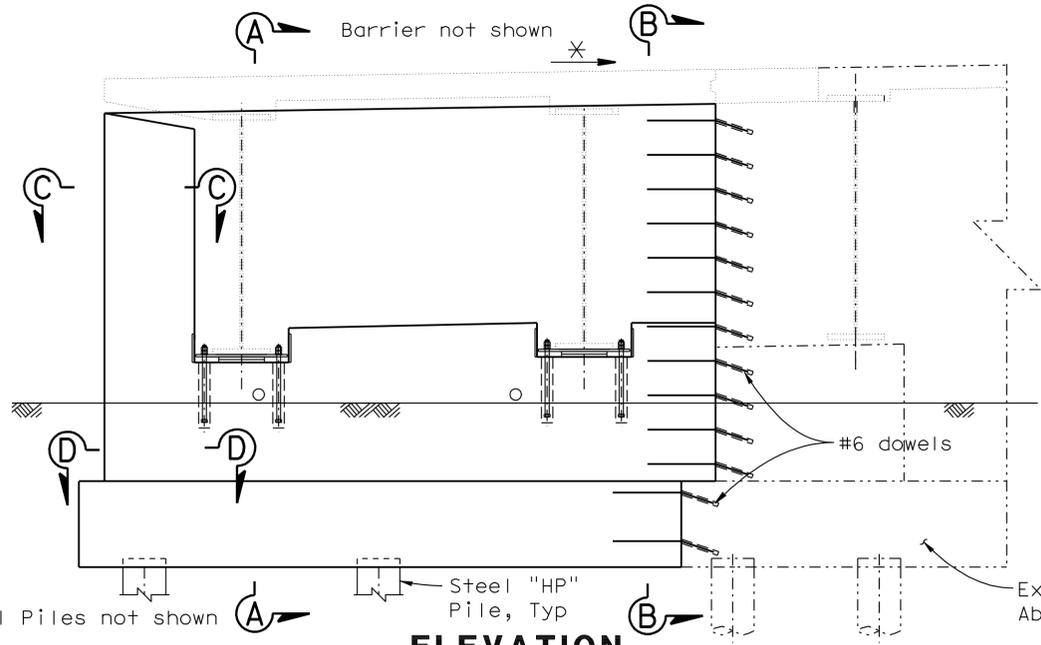
3/8" = 1'-0"



DRILL & BOND DOWEL ARRANGEMENT

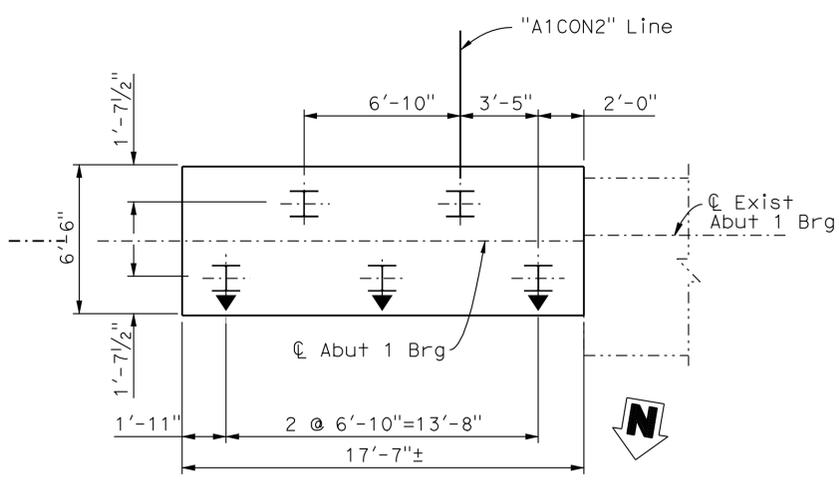
**SECTION B-B**

1/2" = 1'-0"



**ELEVATION**

3/8" = 1'-0"



**ABUTMENT 1 PILE LAYOUT**

1/4" = 1'-0"

**LEGEND:**

- Indicates new construction
- - - Indicates existing structure
- ▨ Indicates limits of bridge removal
- \* Match existing cross slope
- ⌋ Indicates Steel "HP" vertical pile
- ⌋ Indicates Steel "HP" battered pile

**NOTES:**

1. For Section A-A, Section C-C, & Section D-D, see "ABUTMENT DETAILS NO. 1" sheet.
2. For Bearing details, see "ABUTMENT DETAILS NO. 2" sheet.
3. Curtain Wall removal (full height).

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

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten/G. Hallstrom	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

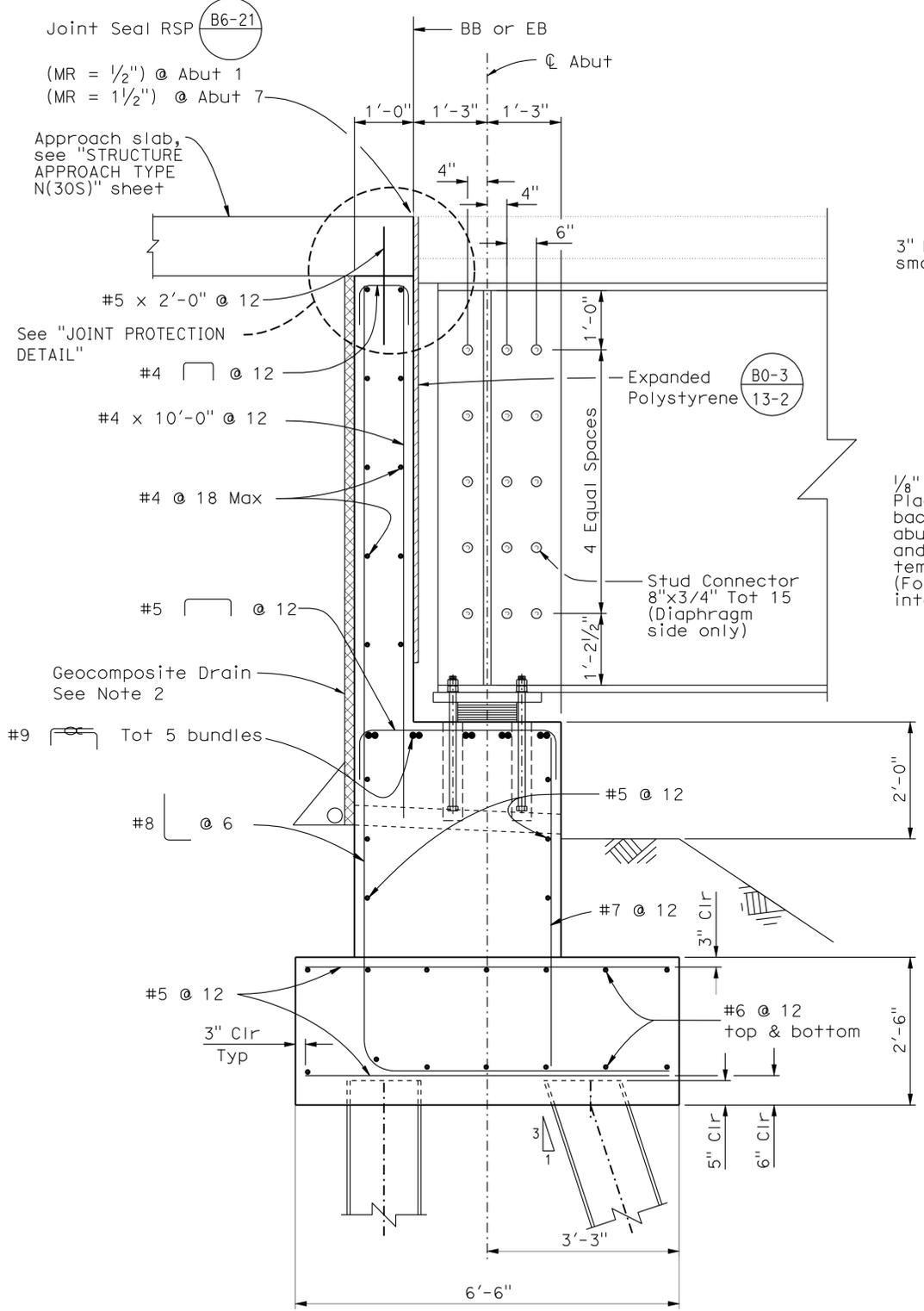
DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 10**

BRIDGE NO.	54-0482L
POST MILE	3.72

**COLTON-LOMA LINDA OH LT (WIDEN)**  
**ABUTMENT 1 LAYOUT**

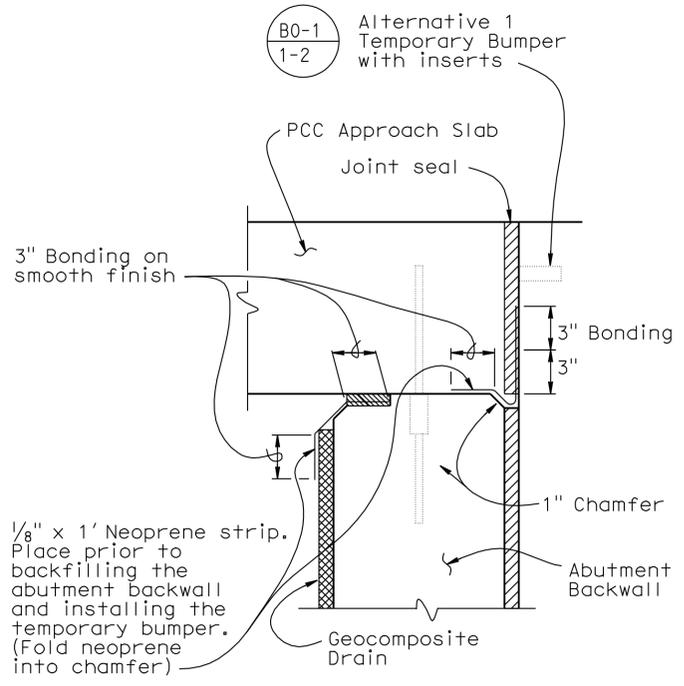


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1450	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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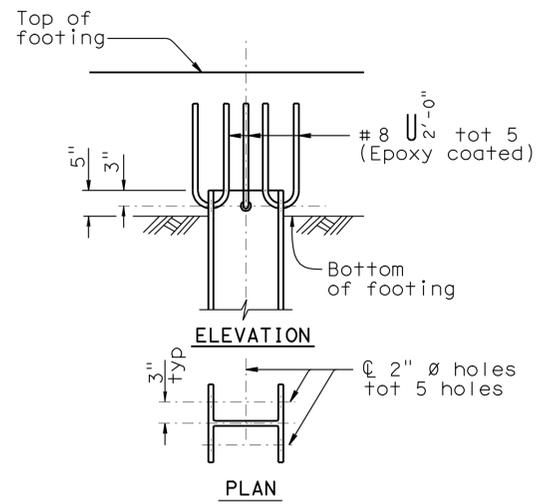


Abut 7 shown, Abut 1 similar  
**SECTION A-A**  
 $\frac{3}{4}'' = 1'-0''$

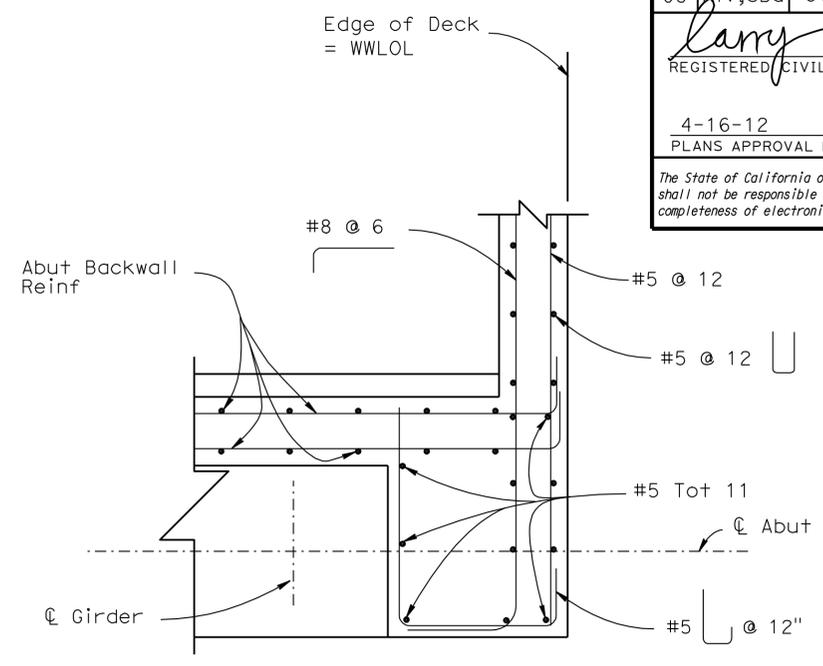
**NOTE:**  
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



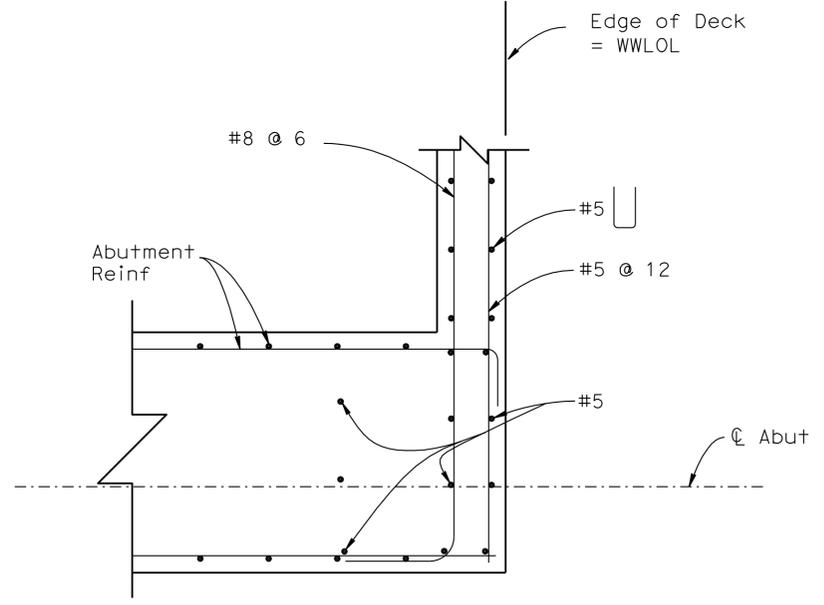
**JOINT PROTECTION DETAIL**  
 No Scale



**ABUTMENT STEEL PILE ANCHOR**  
 NO SCALE



Abut 7 shown, Abut 1 similar  
**SECTION C-C**  
 $\frac{3}{4}'' = 1'-0''$



Abut 7 shown, Abut 1 similar  
**SECTION D-D**  
 $\frac{3}{4}'' = 1'-0''$

- NOTES:**
- For location of Section A-A, Section C-C, and Section D-D, see "ABUTMENT 1 LAYOUT" and "ABUTMENT 7 LAYOUT" sheets.
  - For Geocomposite Drain details, see "ABUTMENT DETAILS NO. 4" sheet.

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten/G. Hallstrom	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

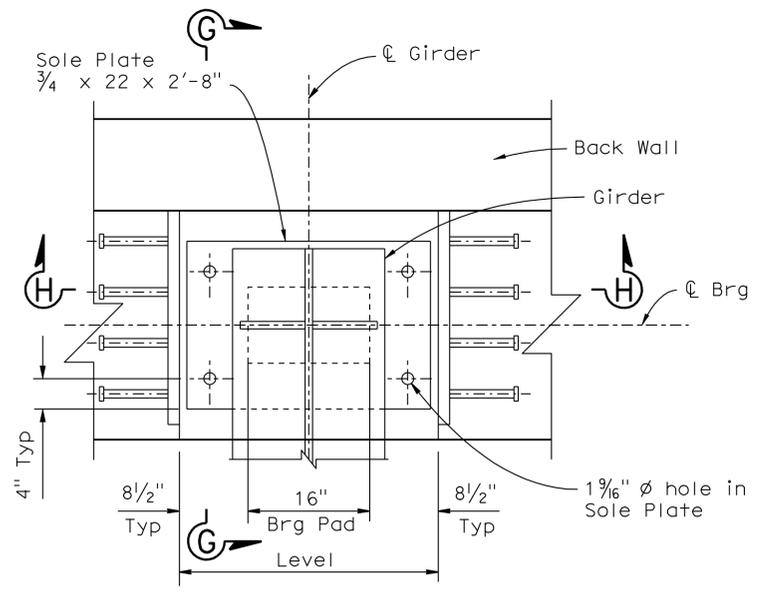
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 10**

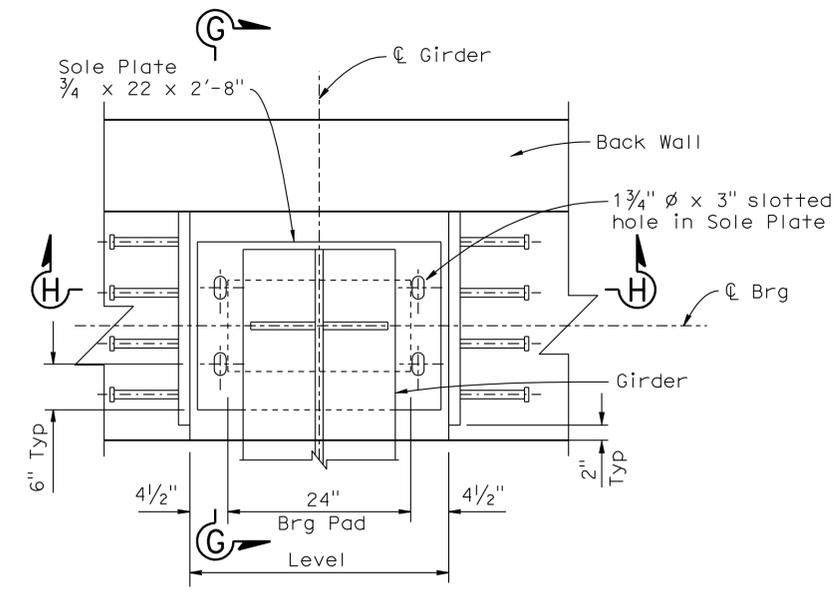
BRIDGE NO.	54-0482L
POST MILE	3.72

**COLTON-LOMA LINDA OH LT (WIDEN)**  
**ABUTMENT DETAILS NO. 1**

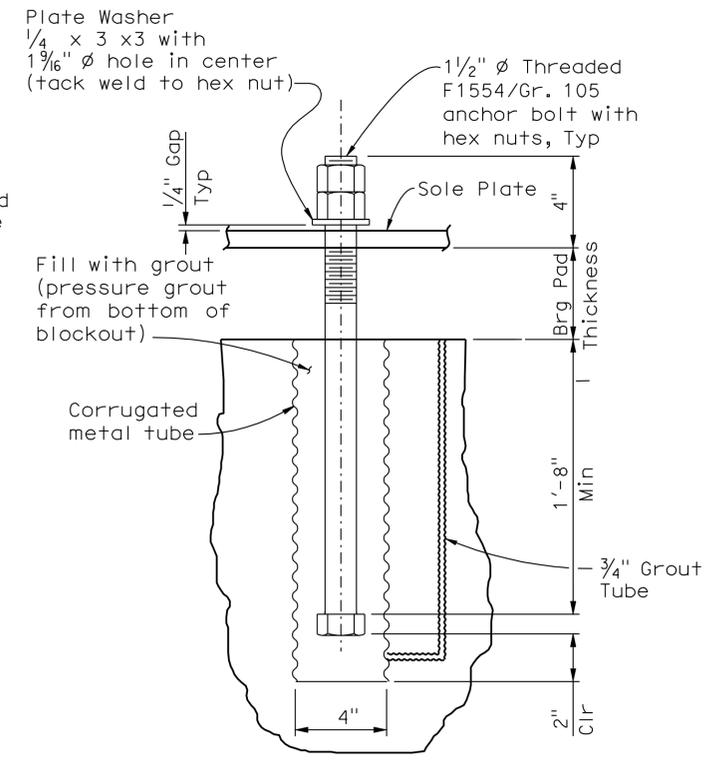
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1451	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



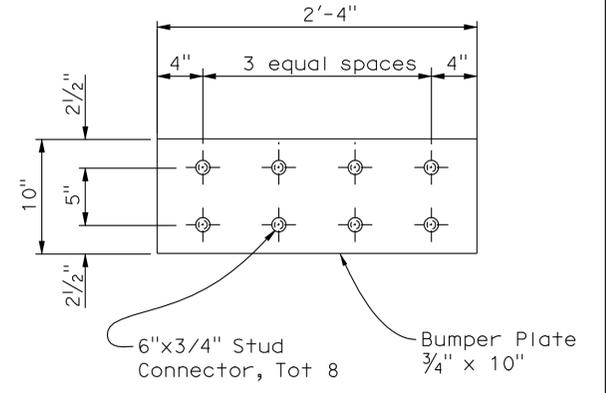
**PLAN-FIXED BEARING (Abut 1)**  
1' = 1'-0"



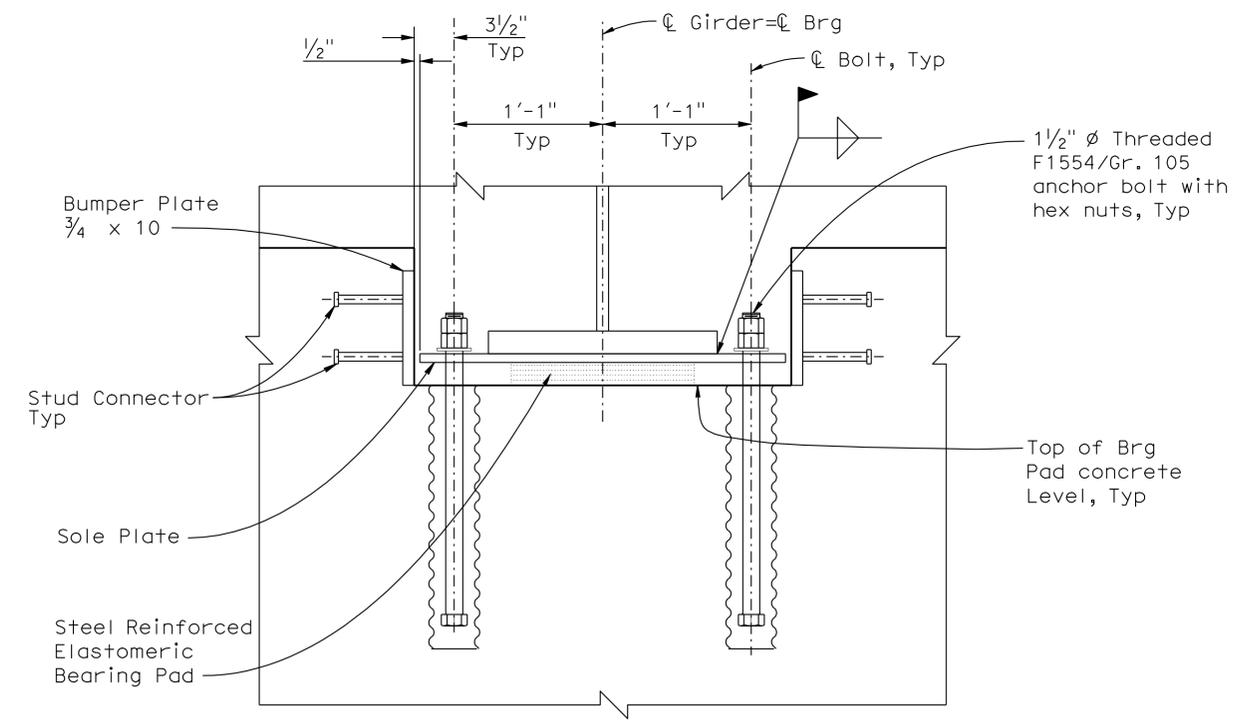
**PLAN-EXPANSION BEARING (Abut 7)**  
1' = 1'-0"



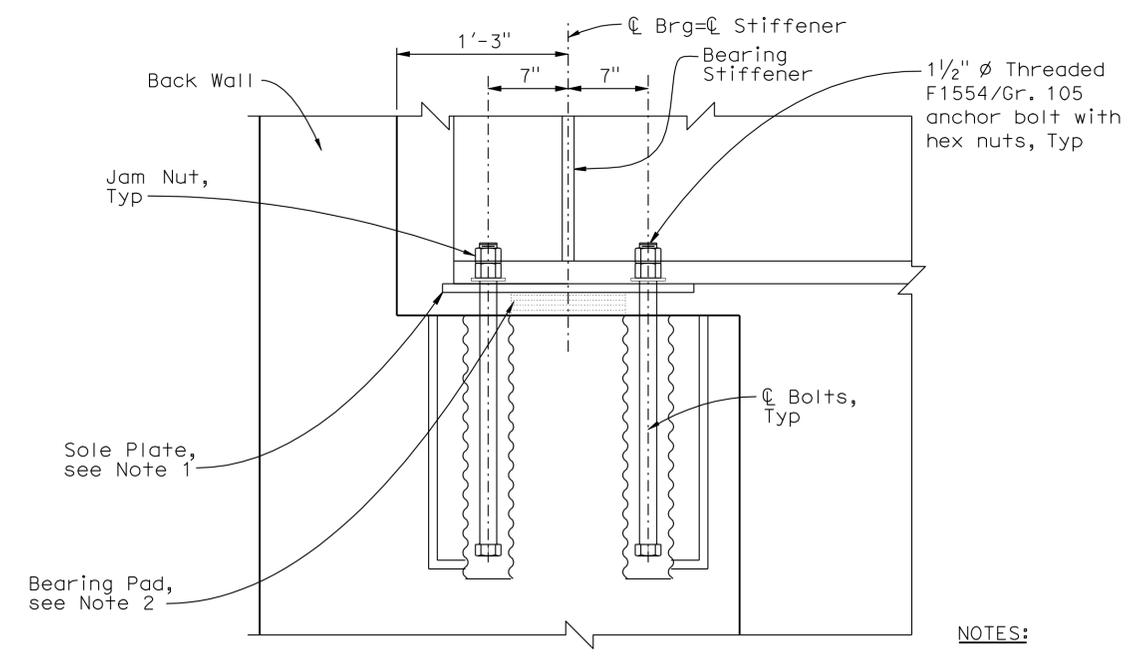
**ANCHOR BOLT BLOCKOUT**  
3" = 1'-0"



**ELEVATION BUMPER PLATE DETAIL**  
1/2" = 1'-0"



NOTE: Fixed Bearing shown Expansion Bearing similar.  
**SECTION H-H**  
1/2" = 1'-0"



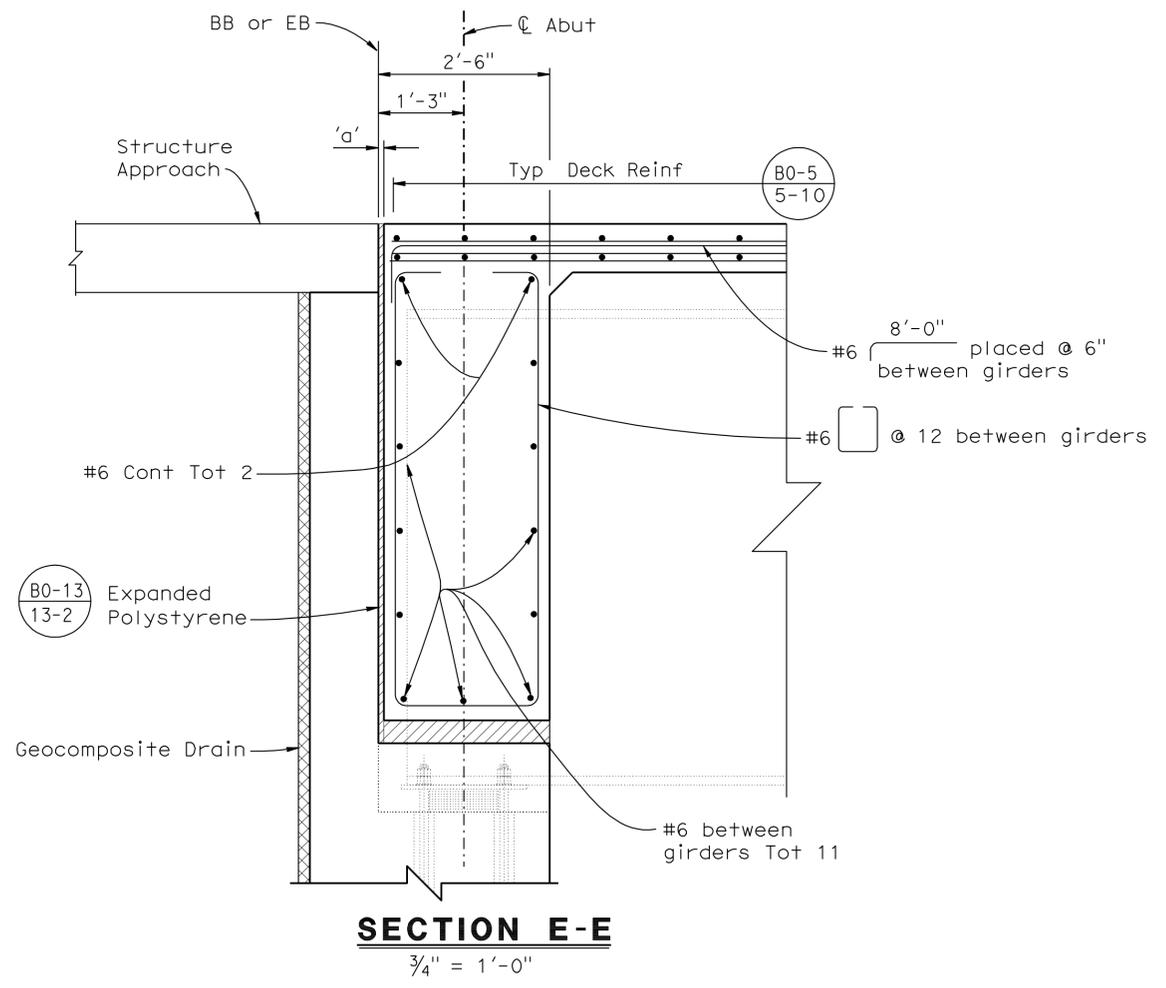
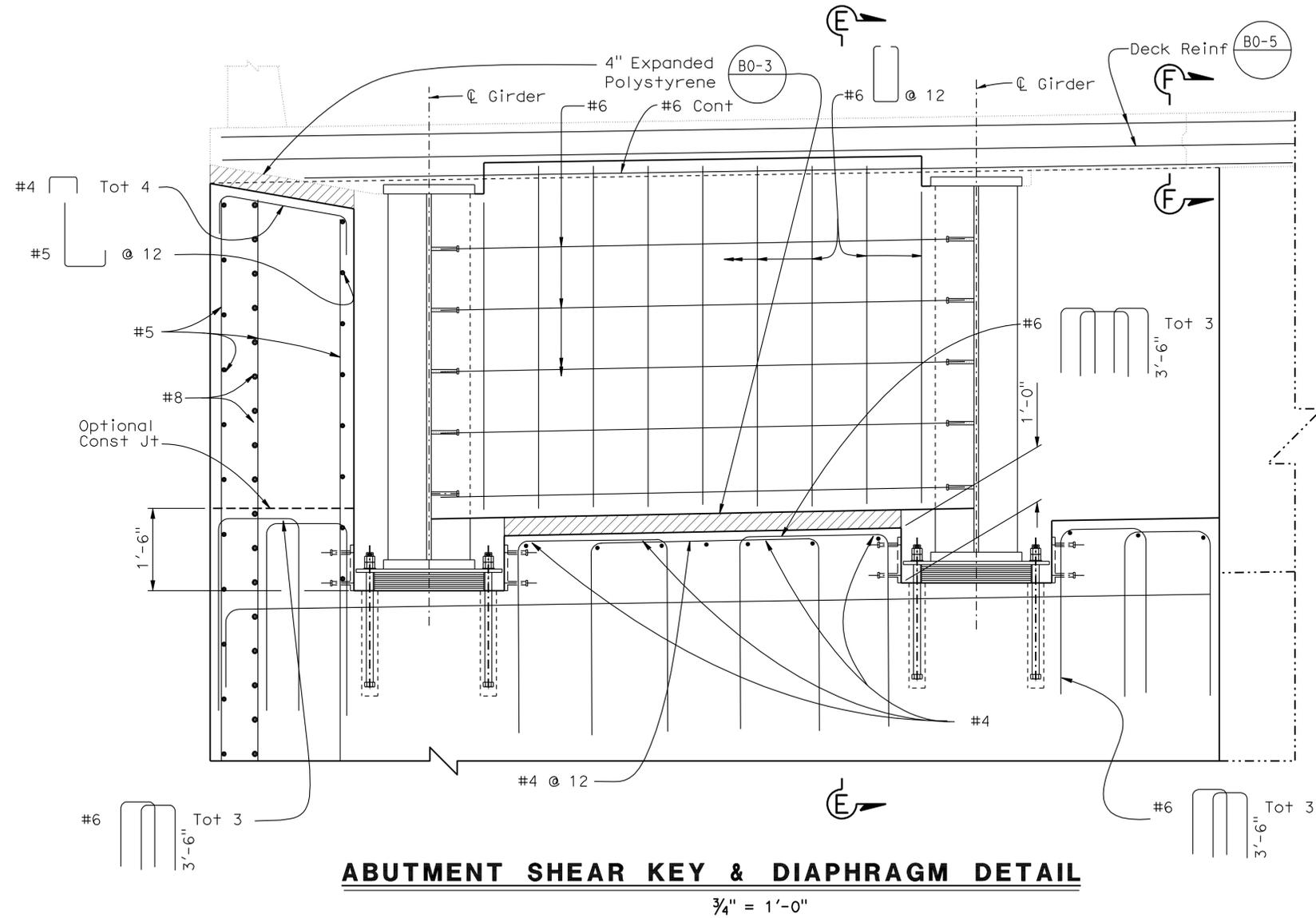
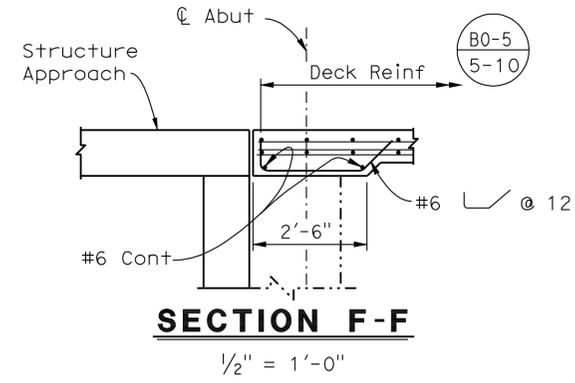
NOTE: Fixed Bearing shown Expansion Bearing similar.  
**SECTION G-G**  
1/2" = 1'-0"

- NOTES:**
- If a girder has a grade of 1% or more, bevel the Sole Plate to provide a level bearing plane.
  - Steel Reinforced Elastomeric Bearing Pad shall be placed on a level surface. Bearing Pads shall be affixed to the top of concrete using epoxy.

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

DESIGN BY R. Stiltz CHECKED J. Szabo DETAILS BY D. Wooten/G. Hallstrom CHECKED J. Szabo QUANTITIES BY R. Stiltz CHECKED J. Szabo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0482L POST MILE 3.72	<b>COLTON-LOMA LINDA OH LT (WIDEN)</b> <b>ABUTMENT DETAILS NO. 2</b>
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES
	FILE => 5404821fadt209.dgn	REVISION DATES 3-07-12	SHEET OF 9 42	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1452	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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NOTE:  
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 BEFORE ORDERING OR FABRICATING  
 ANY MATERIAL.

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten/G. Hallstrom	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

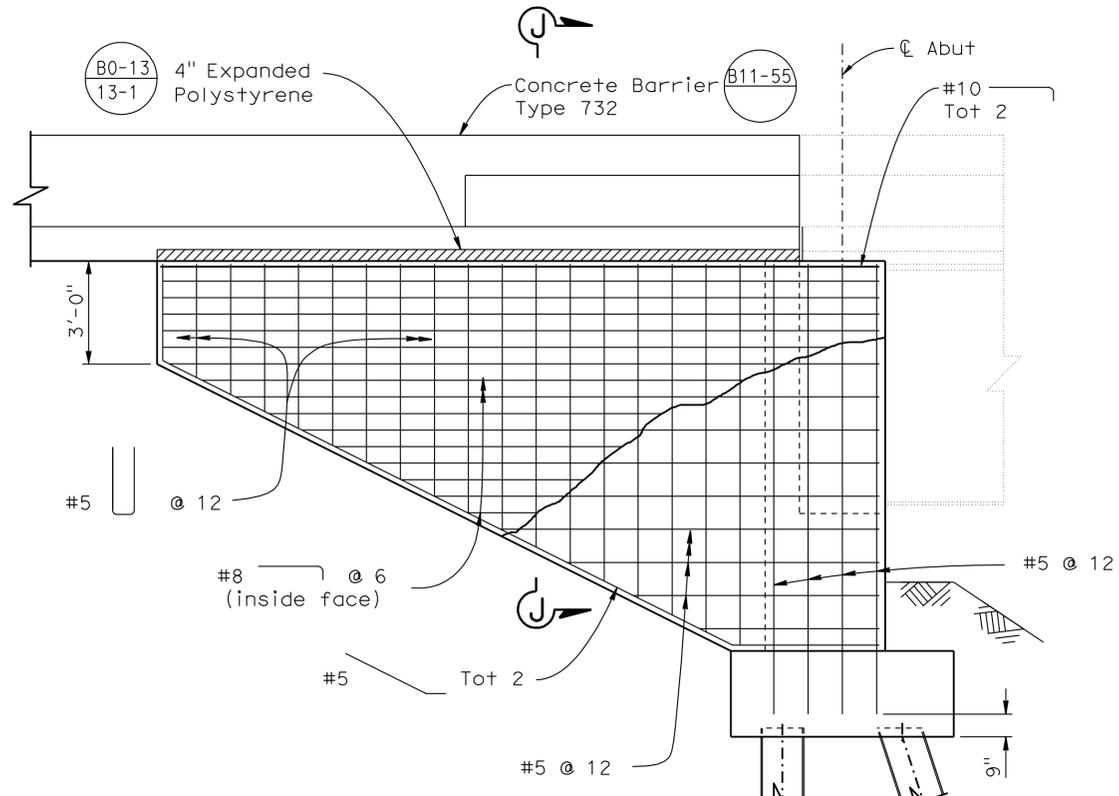
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 10**

BRIDGE NO.	54-0482L
POST MILE	3.72

**COLTON-LOMA LINDA OH LT (WIDEN)**  
**ABUTMENT DETAILS NO. 3**

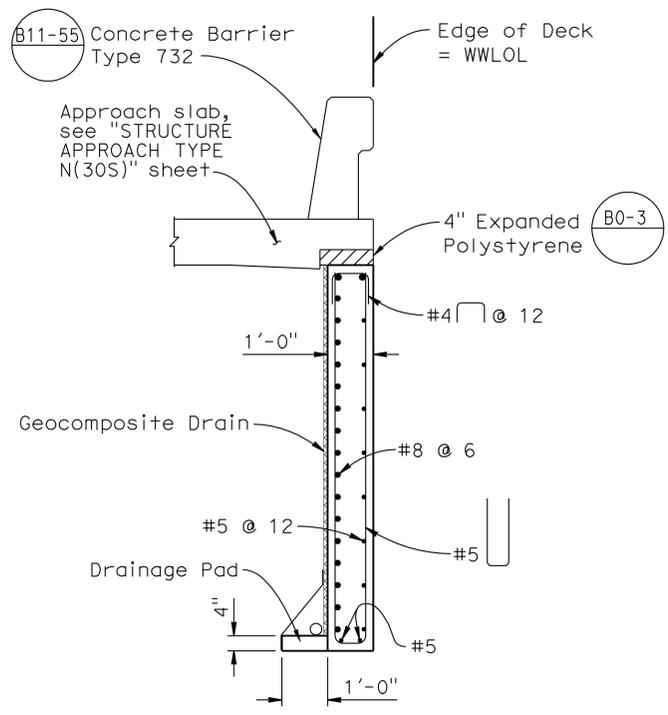
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1453	1743
			4-06-12	DATE	
4-16-12			PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



Abutment 1 shown, Abutment 7 similar

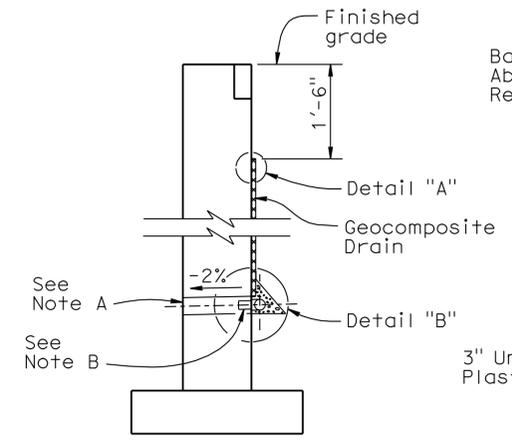
**WINGWALL ELEVATION**

3/8" = 1'-0"



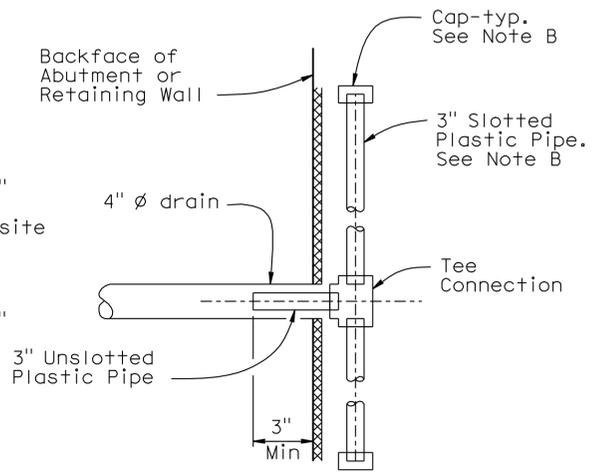
**SECTION J-J**

1/2" = 1'-0"

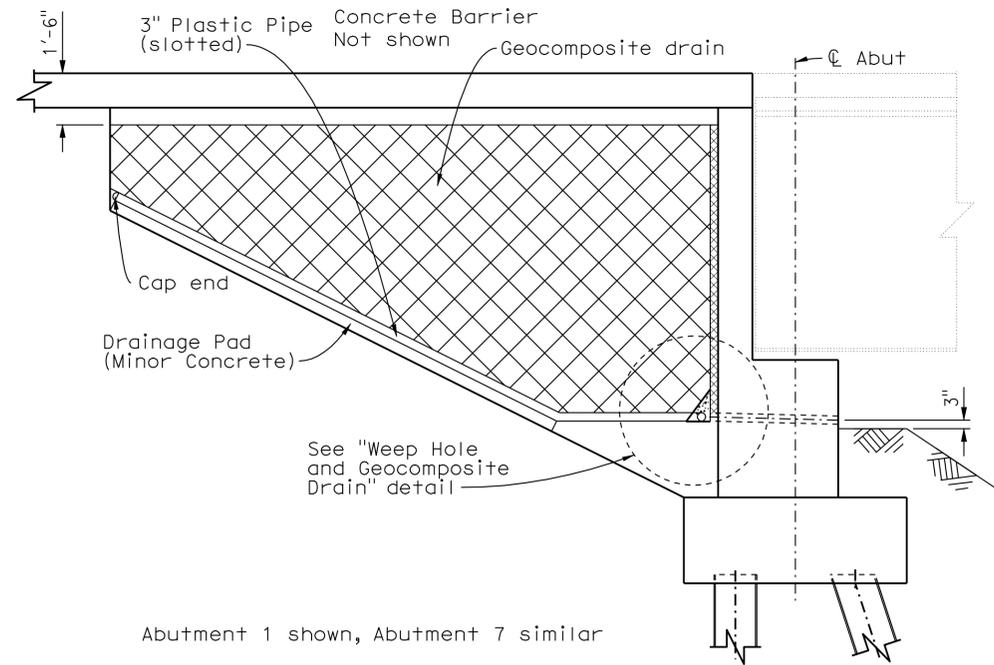


**WALL SECTION**

**SECTION**



**SECTION K-K**

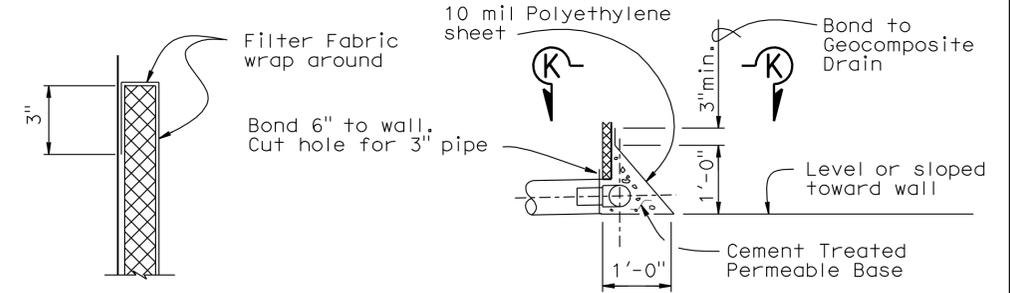


Abutment 1 shown, Abutment 7 similar

**WINGWALL ELEVATION  
GEOCOMPOSITE DRAIN**

3/8" = 1'-0"

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



**DETAIL "A"**

**DETAIL "B"**

**WEEP HOLE AND GEOCOMPOSITE DRAIN**

ALTERNATIVE TO BRIDGE DETAIL

**NOTES:**

- A. 4"  $\phi$  drains at intermediate sag points and at 20' max center to center. Exposed wall drains shall be located 3"± above finished grade.
- B. Geocomposite drain, cement treated permeable base, and 3"  $\phi$  slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4"  $\phi$  drain.
- C. Connect the low end of plastic pipe to the main outlet pipe as applicable.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY R. Stiltz	CHECKED J. Szabo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-0482L	COLTON-LOMA LINDA OH LT (WIDEN) ABUTMENT DETAILS NO. 4
	DETAILS	BY D. Wooten	CHECKED J. Szabo			POST MILE	3.72	
	QUANTITIES	BY R. Stiltz	CHECKED J. Szabo			UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3		3-07-12		



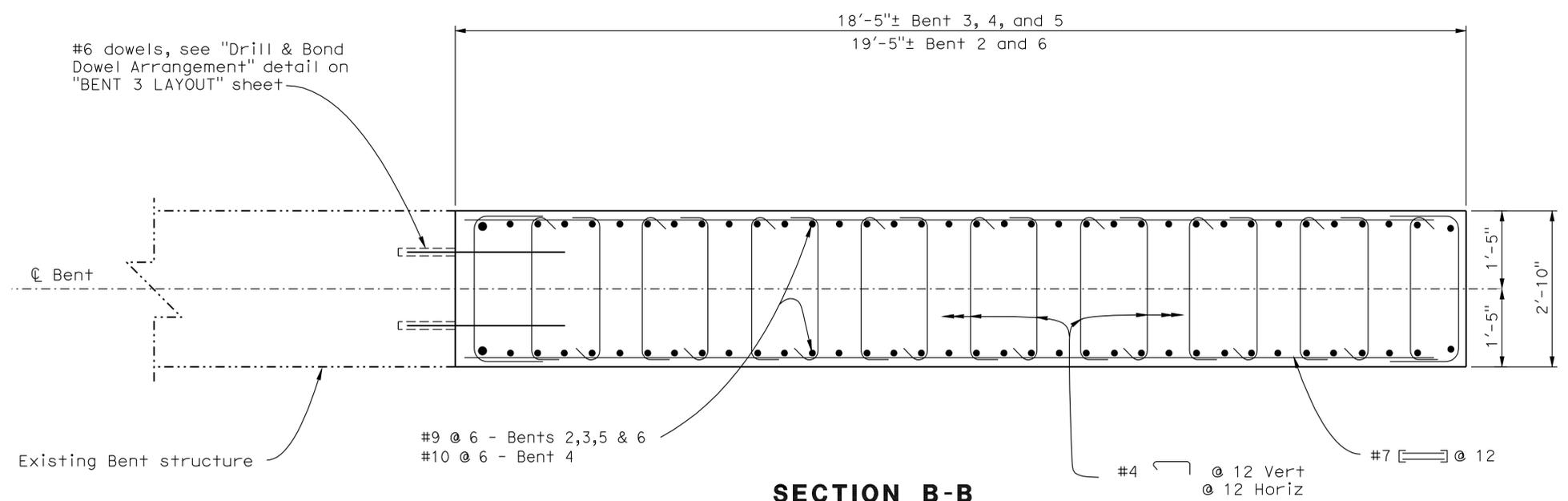








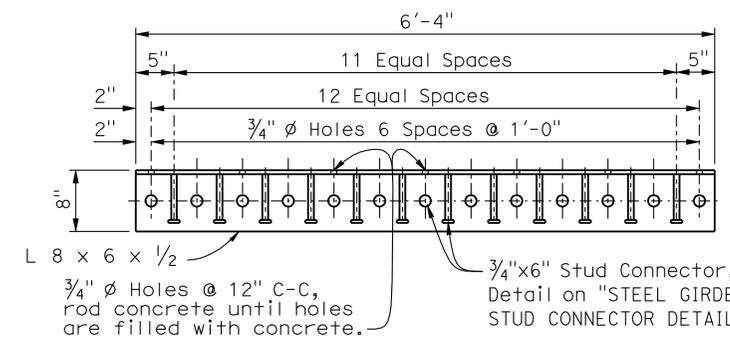
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1459	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12			PLANS APPROVAL DATE		
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**SECTION B-B**

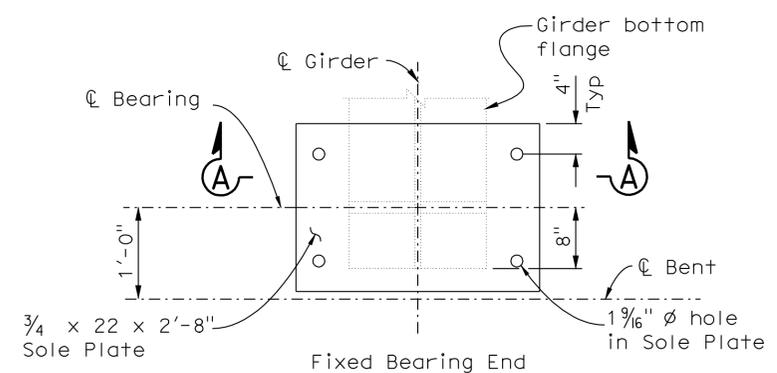
3/4" = 1'-0"

NOTE: Bent 3 shown, other Bents similar.



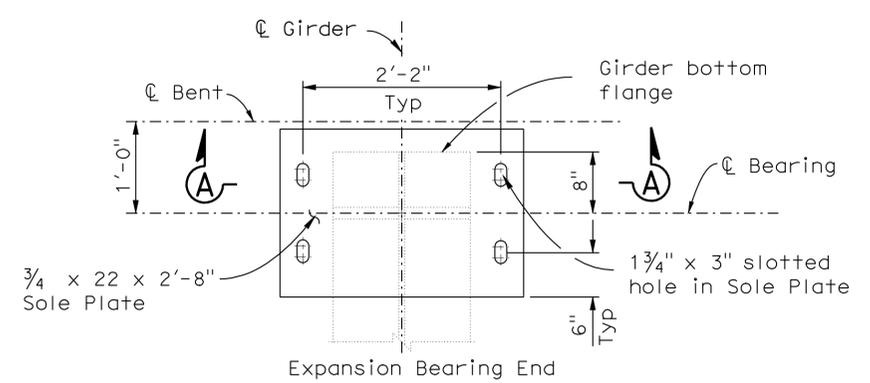
**GUARD ANGLE DETAIL**

1" = 1'-0"



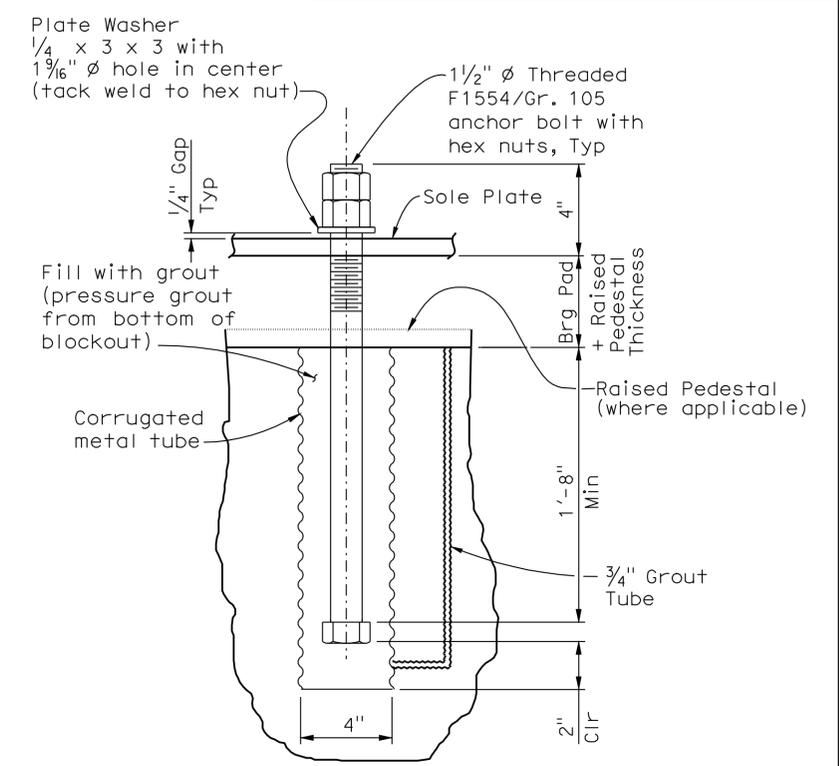
**DETAIL 2**

1" = 1'-0"



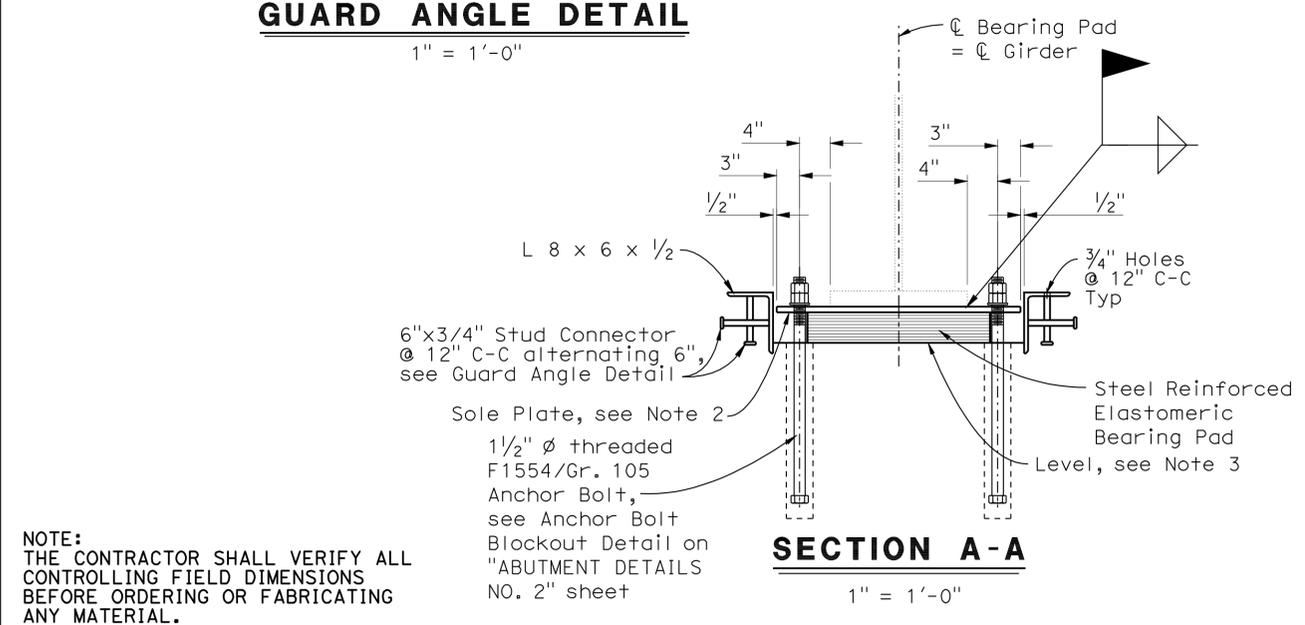
**DETAIL 1**

1" = 1'-0"



**ANCHOR BOLT BLOCKOUT AT BENTS**

3" = 1'-0"



**SECTION A-A**

1" = 1'-0"

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

**NOTES:**

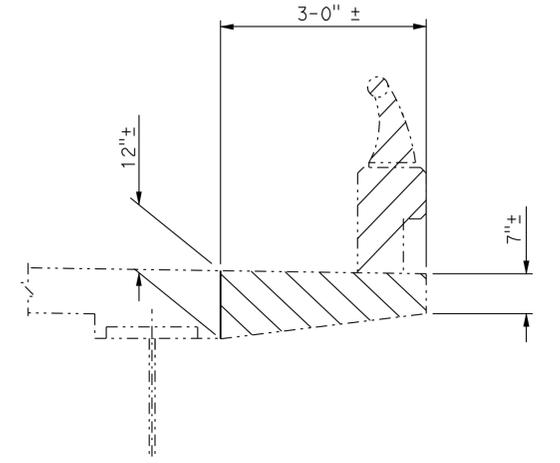
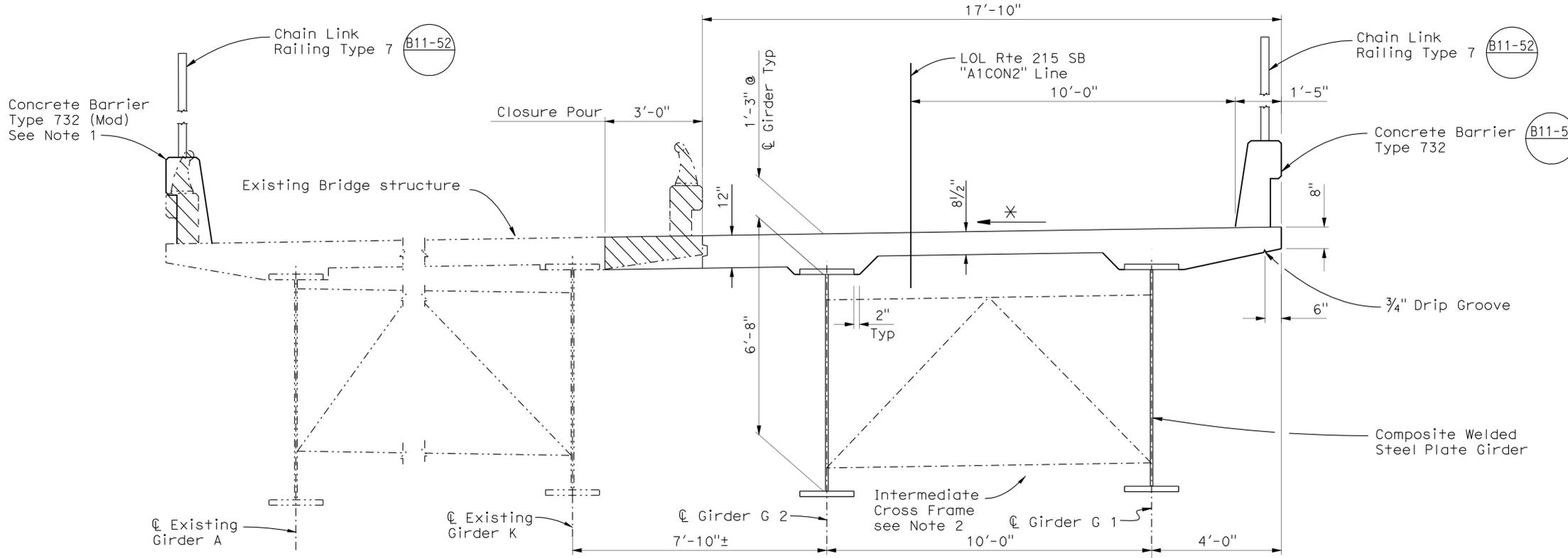
- For location of Section B-B, see "BENT 2 LAYOUT", "BENT 3 LAYOUT", "BENT 4 LAYOUT", "BENT 5 LAYOUT", and "BENT 6 LAYOUT" sheets.
- If a girder has a grade of 1% or more, bevel the sole plate to provide a level bearing plane.
- Bearing Pads shall be placed on a level surface and affixed to the top of concrete using epoxy.

**LEGEND:**

- Indicates new construction
- - - - - Indicates existing structure

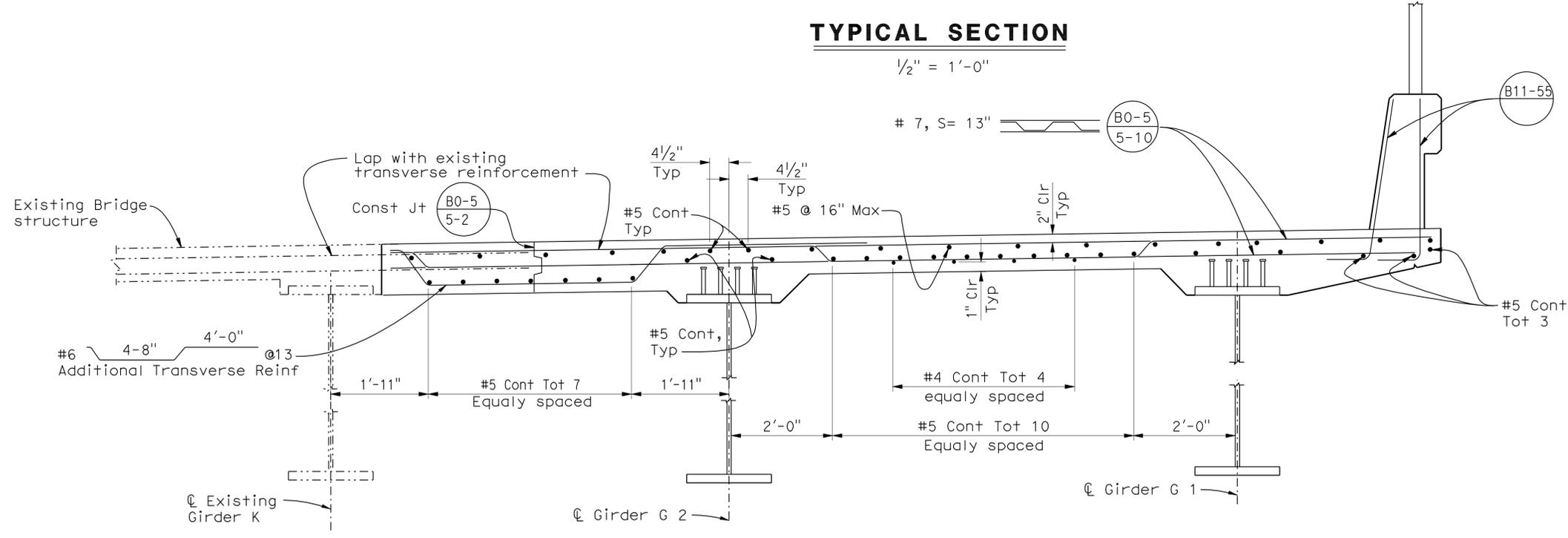
DESIGN	BY R. Stiltz	CHECKED J. Szabo	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>COLTON-LOMA LINDA OH LT (WIDEN)</b> <b>BENT DETAILS</b>				
DETAILS	BY D. Wooten/G. Hallstrom	CHECKED J. Szabo			54-0482L					
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo			POST MILE 3.72					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES				
				0	1	2	3	REVISION DATES	SHEET 17	OF 42
				FILE => 5404821hbd1117.dgn		3-07-12				

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1460	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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**TYPICAL SECTION**

1/2" = 1'-0"



**PART TYPICAL SECTION**

3/4" = 1'-0"

**EXISTING OVERHANG & BARRIER REMOVAL DETAILS**

3/4" = 1'-0"

**NOTES:**

- For modified barrier details, see "MISCELLANEOUS DETAILS" sheet
- For intermediate cross frame details, see "GIRDER DETAILS NO. 5" sheet

**LEGEND:**

- Indicates new construction
- - - - - Indicates existing structure
- ▨ Indicates limits of bridge removal
- \* Match existing cross slope

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

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 10**

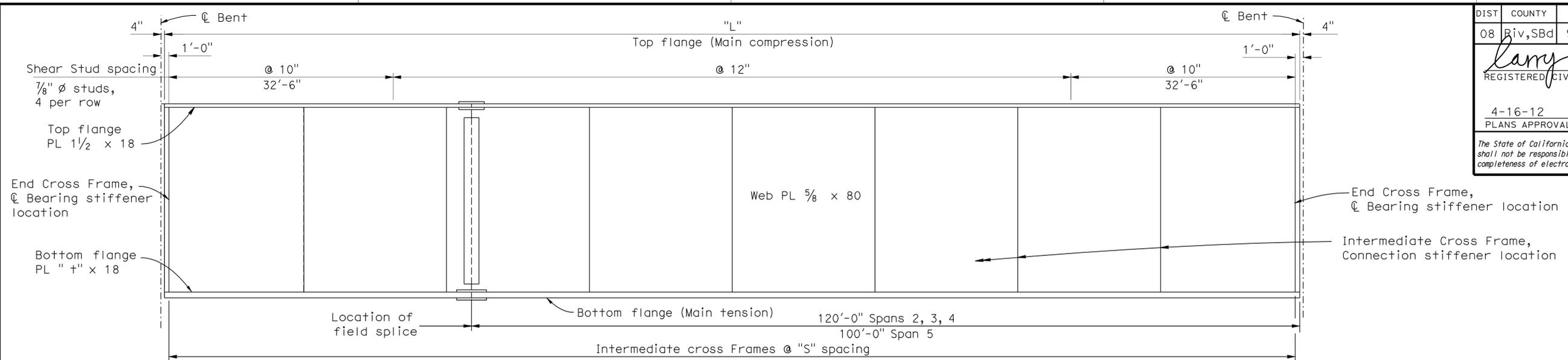
BRIDGE NO.	54-0482L
POST MILE	3.72

**COLTON-LOMA LINDA OH LT (WIDEN)**  
**TYPICAL SECTION**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1461	1743

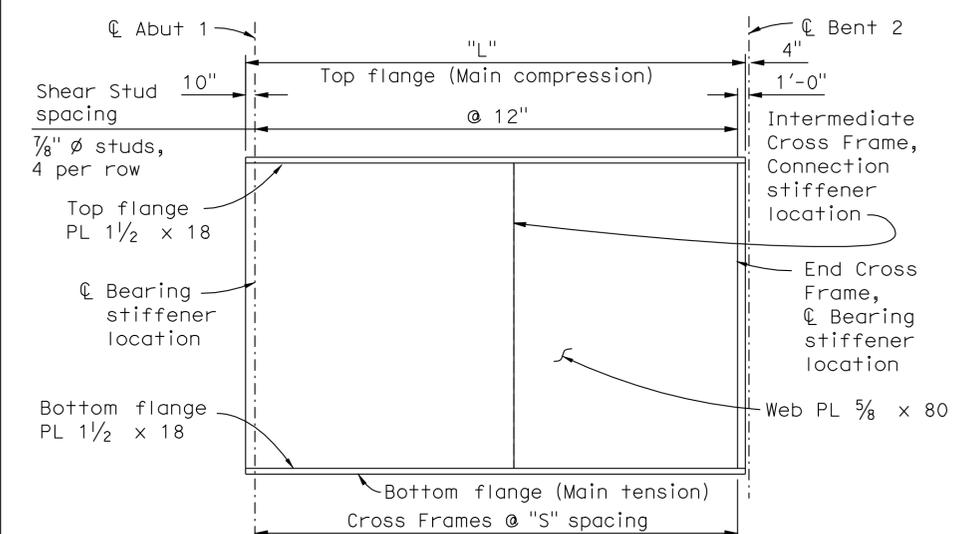
REGISTERED CIVIL ENGINEER **LARRY WU** DATE **4-06-12**  
 PLANS APPROVAL DATE **4-16-12**  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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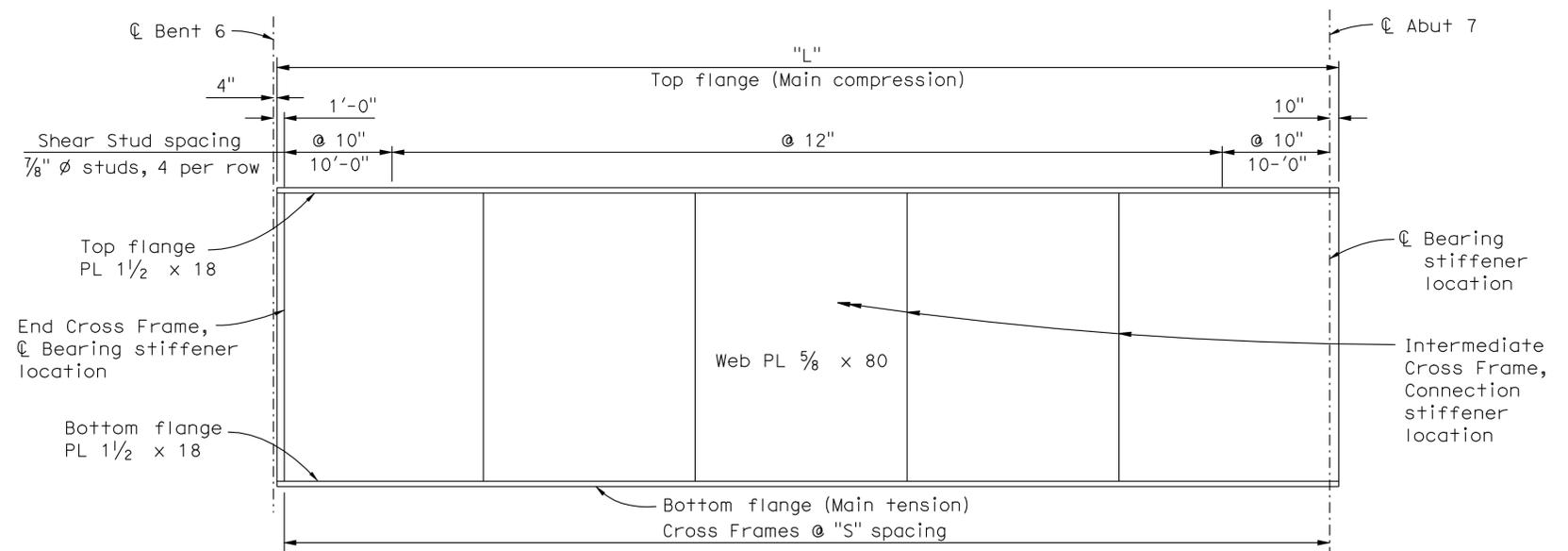
**TYPICAL GIRDER ELEVATION**

Vert. = 1/2" = 1'-0"  
 Horiz. = 1/8" = 1'-0"  
 (SPAN 3 SHOWN, SPANS 2, 4 & 5 SIMILAR)



**TYPICAL GIRDER ELEVATION**

Vert. = 1/2" = 1'-0"  
 Horiz. = 1/8" = 1'-0"  
 (SPAN 1)



**TYPICAL GIRDER ELEVATION**

Vert. = 1/2" = 1'-0"  
 Horiz. = 1/8" = 1'-0"  
 (SPAN 6)

**GIRDER LAYOUT DIMENSIONING TABLE**

Span #	Girder Length "L"	Bottom Flange Thickness "t"	No. of Intermediate Cross Frames "n"	Cross Frame Spacing "S"
Span 1	43.50 ft ±	1.5 in	1	21.00 ft ±
Span 2	148.92 ft ±	2.0 in	5	24.49 ft ±
Span 3	164.83 ft ±	2.5 in	7	20.35 ft ±
Span 4	154.66 ft ±	2.0 in	6	21.81 ft ±
Span 5	132.91 ft ±	2.0 in	5	21.82 ft ±
Span 6	98.50 ft ±	1.5 in	4	19.40 ft ±

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

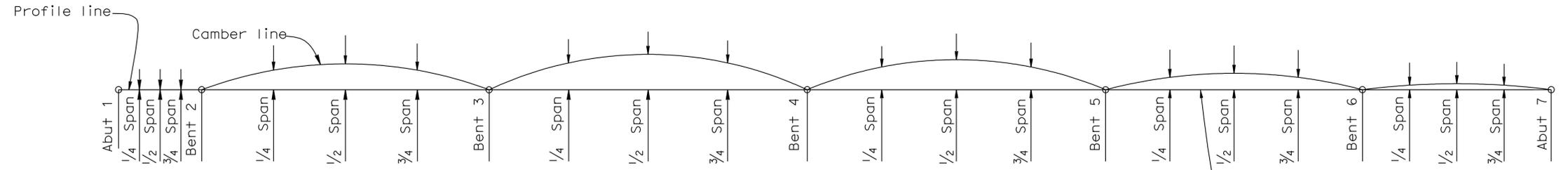
- NOTES:
- For End Cross Frame details, see "GIRDER DETAILS NO. 1" sheet.
  - For Intermediate Cross Frame details, see "GIRDER DETAILS NO. 2" sheet.
  - For Girder Splice Plate details, see "GIRDER DETAILS NO. 3" sheet.

DESIGN	BY R. Stiltz	CHECKED J. Szabo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-0482L	COLTON-LOMA LINDA OH LT (WIDEN) GIRDER LAYOUT NO. 1
	DETAILS BY D. Wooten / Y. Tang	CHECKED J. Szabo			POST MILE 3.72	
	QUANTITIES BY R. Stiltz	CHECKED J. Szabo				

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS  
 UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401  
 DISREGARD PRINTS BEARING EARLIER REVISION DATES

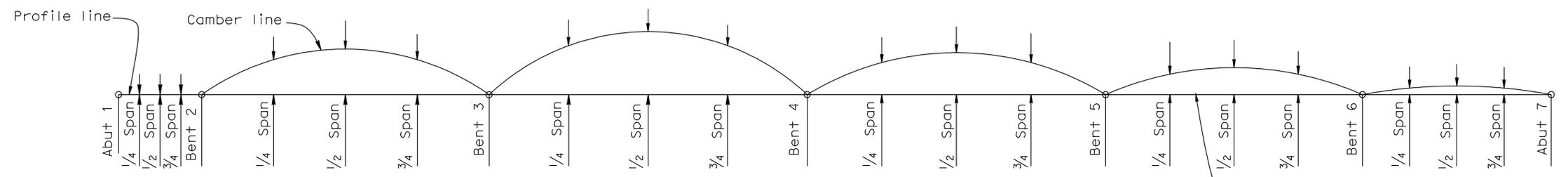
REVISION DATES	SHEET	OF
1-28-12 3-07-12	19	42

FILE => 54048211g\_1c19.dgn



**HEADER CAMBER (HC) DIAGRAM**

Adjust header grades to "HC" curve. Shown before the start of any concrete deck placing and after erection of all girders that influence deflections.



**WEB CAMBER (WC) DIAGRAM**

Fabricate girder web to "WC" curve shown when performing fabrication in a no-load condition.

**CAMBER DIAGRAM**

UNIT: INCHES

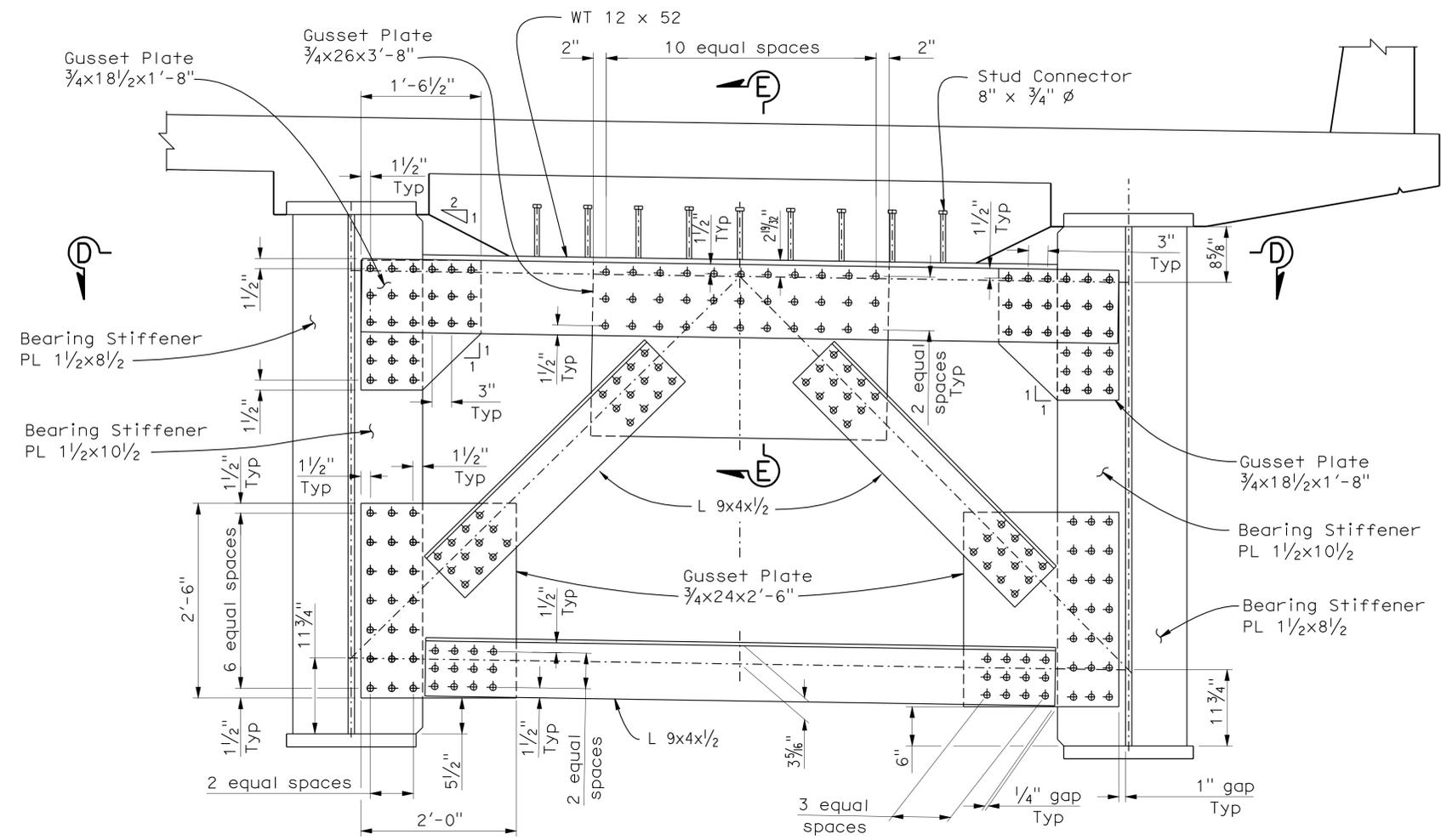
SPAN POINT	SPAN 1					SPAN 2					SPAN 3					SPAN 4					SPAN 5					SPAN 6						
	0.0	1/4	1/2	3/4	1.0	0.0	1/4	1/2	3/4	1.0	0.0	1/4	1/2	3/4	1.0	0.0	1/4	1/2	3/4	1.0	0.0	1/4	1/2	3/4	1.0	0.0	1/4	1/2	3/4	1.0		
1. Deck Dead Load	0	0	0	0	0	0	2.23	3.16	2.23	0	0	3.03	4.31	3.03	0	0	2.59	3.68	2.59	0	0	1.42	2.01	1.42	0	0	0	0.51	0.73	0.51	0	
2. Barrier	0	0	0	0	0	0	0.05	0.07	0.05	0	0	0.07	0.10	0.07	0	0	0.05	0.08	0.05	0	0	0	0.03	0.04	0.03	0	0	0	0.01	0.01	0.01	0
3. Deck Shrinkage	0	0	0	0	0	0	0.22	0.32	0.22	0	0	0.30	0.43	0.30	0	0	0.26	0.37	0.26	0	0	0	0.14	0.20	0.14	0	0	0	0.05	0.07	0.05	0
4. Gird Dead Load	0	0	0	0	0	0	0.81	1.15	0.81	0	0	1.18	1.69	1.18	0	0	0.94	1.33	0.94	0	0	0	0.51	0.73	0.51	0	0	0	0.17	0.24	0.17	0
5. Vertical Curve	Vertical curve camber values are to match existing bridge deck elevations. Contractor shall field measure; Engineer to verify.																															
HC = 1+2+3	0	0	0	0	0	0	2.50	3.55	2.50	0	0	3.44	4.84	3.44	0	0	2.90	4.13	2.90	0	0	1.59	2.25	1.59	0	0	0	0.57	0.81	0.57	0	
WC = 1+2+3+4+5	Contractor to provide; Engineer to verify.																															

NOTE:  
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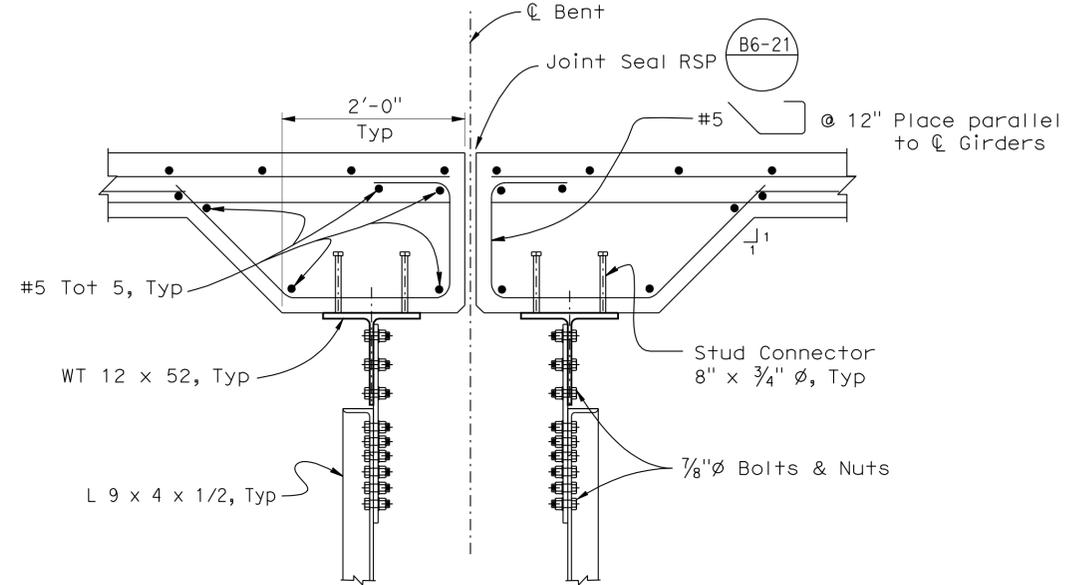
DESIGN	BY	R. Stiltz	CHECKED	J. Szabo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-0482L	COLTON-LOMA LINDA OH LT (WIDEN) GIRDER LAYOUT NO. 2	
	DETAILS	BY	D. Wooten / Y. Tang	CHECKED			J. Szabo	POST MILE		3.72
	QUANTITIES	BY	R. Stiltz	CHECKED			J. Szabo			

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3  
 UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401  
 DISREGARD PRINTS BEARING EARLIER REVISION DATES  
 REVISION DATES: 1-27-12 3-07-12 SHEET 20 OF 42

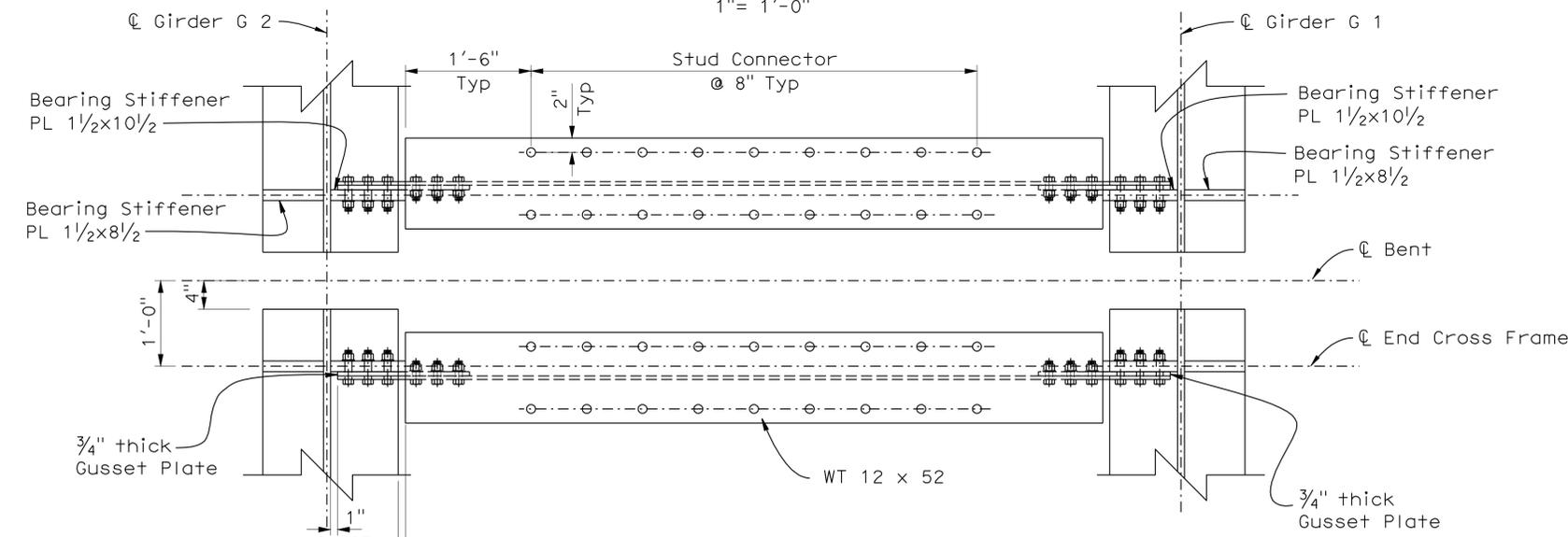
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1463	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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**END CROSS FRAME**  
1" = 1'-0"



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



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

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

NOTE:  
For Moment Rating (MR) of Joint Seal, see Joint Seal Table on "MISCELLANEOUS DETAILS" sheet.

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten / Y. Tang	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

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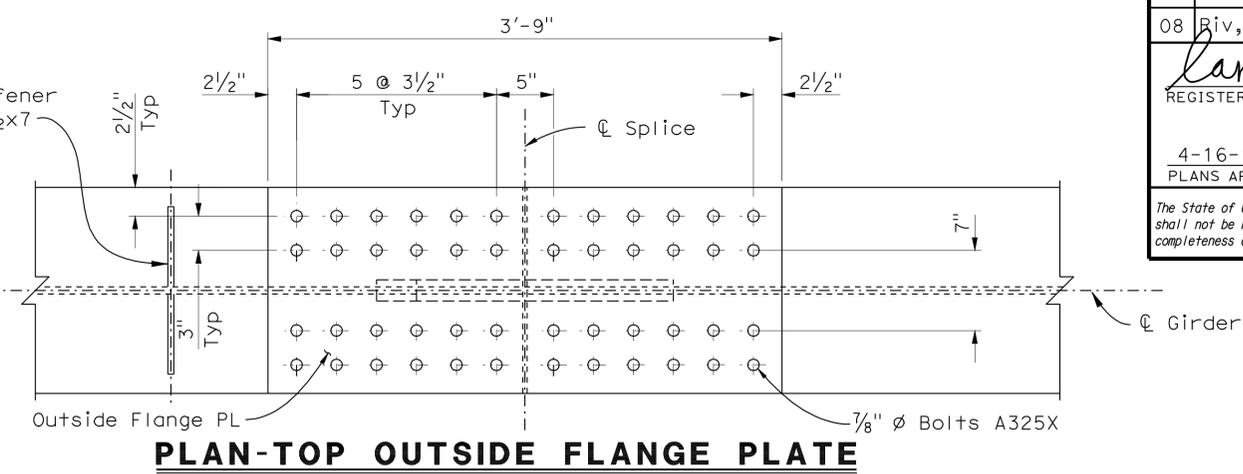
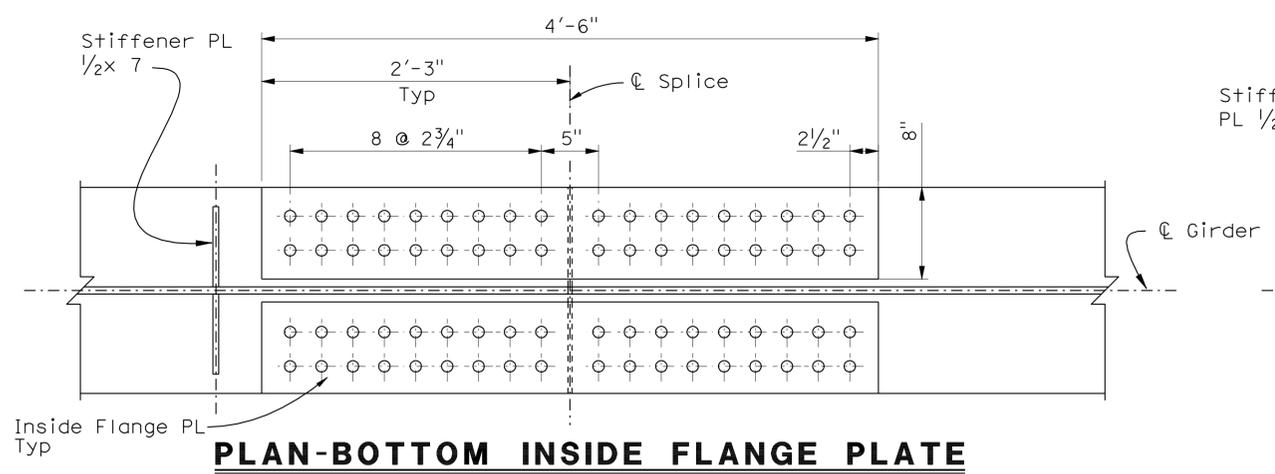
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 10**

BRIDGE NO.	54-0482L
POST MILE	3.72

**COLTON-LOMA LINDA OH LT (WIDEN)**  
**GIRDER DETAILS NO. 1**

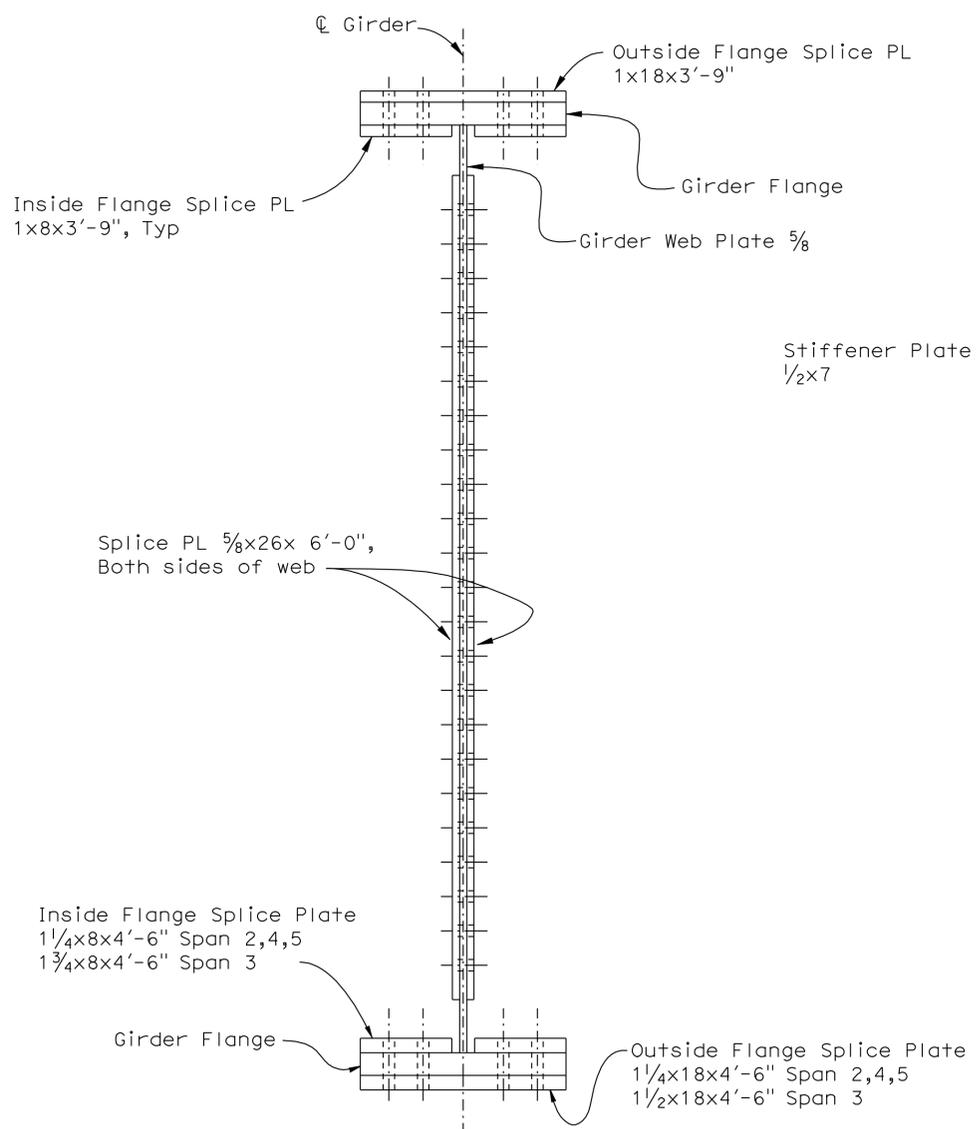


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1465	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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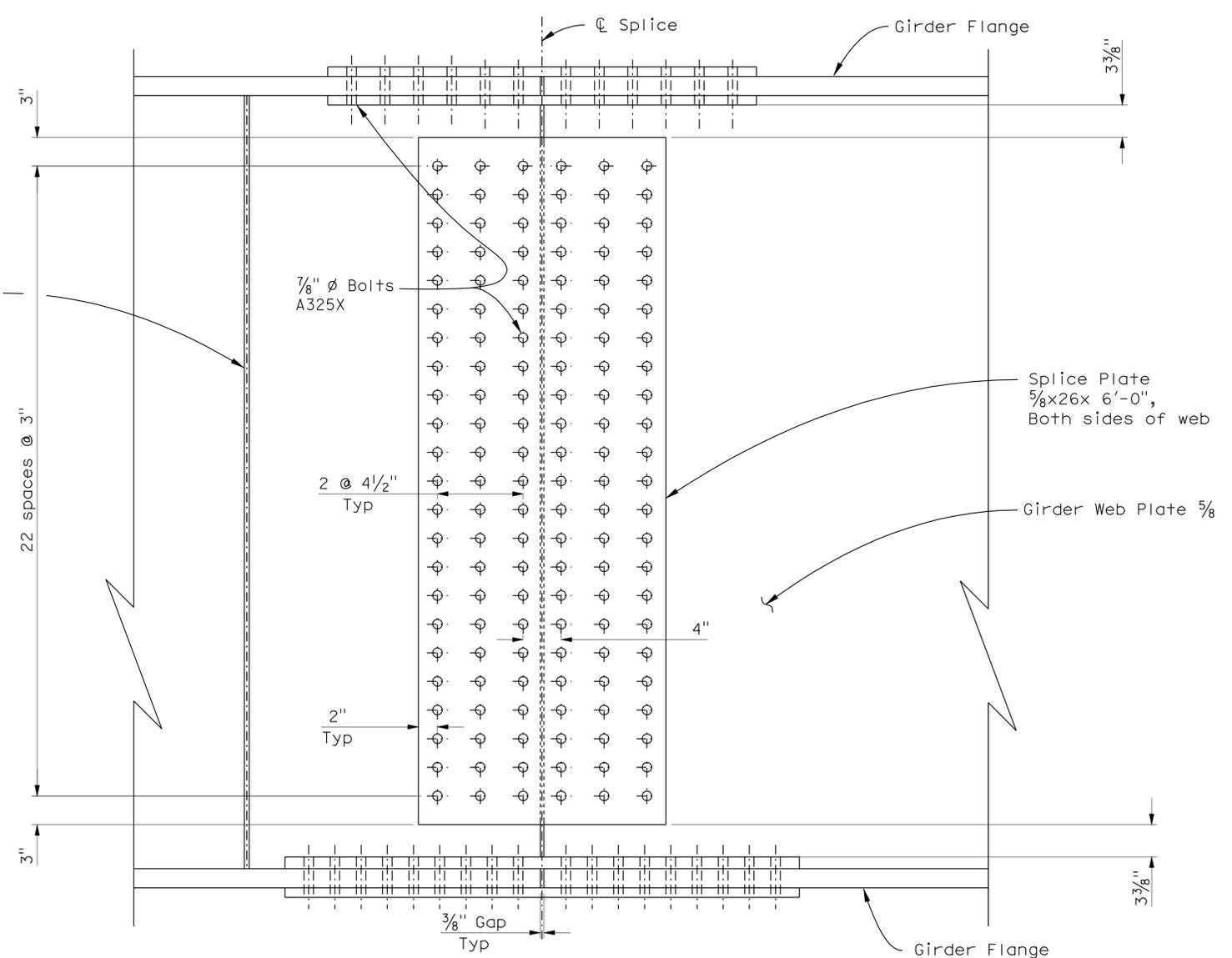


**PLAN-BOTTOM INSIDE FLANGE PLATE**

**PLAN-TOP OUTSIDE FLANGE PLATE**



**SECTION**



**SPLICE PLATE DETAIL**

**ELEVATION**

**NOTE:**  
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1 1/2" = 1'-0"

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten / Y. Tang	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

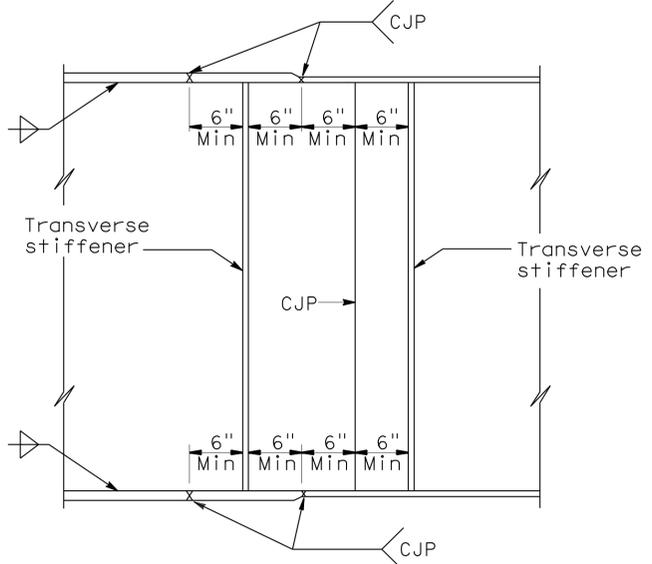
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 10**

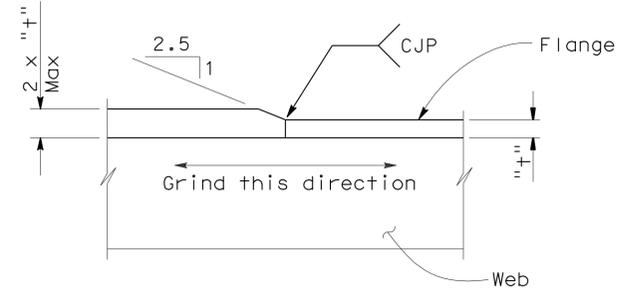
BRIDGE NO.	54-0482L
POST MILE	3.72

**COLTON-LOMA LINDA OH LT (WIDEN)**  
**GIRDER DETAILS NO. 3**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1466	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<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>					



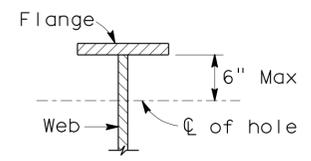
**GIRDER SHOP SPLICE**



**FLANGE THICKNESS**

**NOTES:**

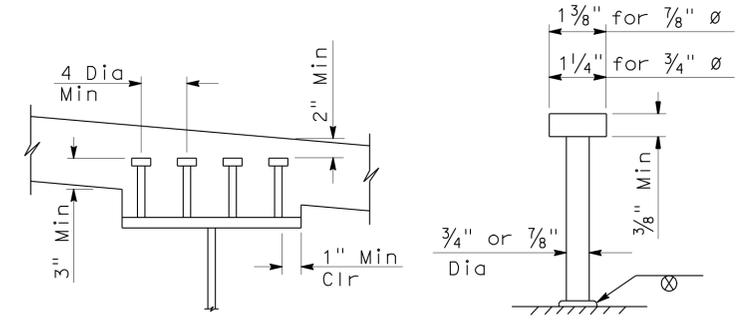
- Alternative girder splices may be permitted subject to approval by the Engineer.
- Web splices:  
Grind all weld surfaces flush on the exterior face of exterior girders.
- Flange splices:  
Grind all weld surfaces flush on tension flanges.  
Grind all weld surfaces flush on compression flanges when required for non-destructive testing (NDT).  
Grind all exterior weld surfaces flush on all bottom compression flanges.



1" Max diameter hole at 4' ± Min spacing to be used for falsework support when specified by the Contractor. Contractor to determine location, size and spacing.

2" Max diameter hole to be drilled where lighting conduit passes through girder web. For location and size of hole see "Road Plans".

**HOLES FOR CONDUIT AND FALSEWORK**



Lengths of studs to be determined by the Contractor, minimum length is 6".  
Alternative types of shear connectors may be permitted subject to approval by the Engineer.

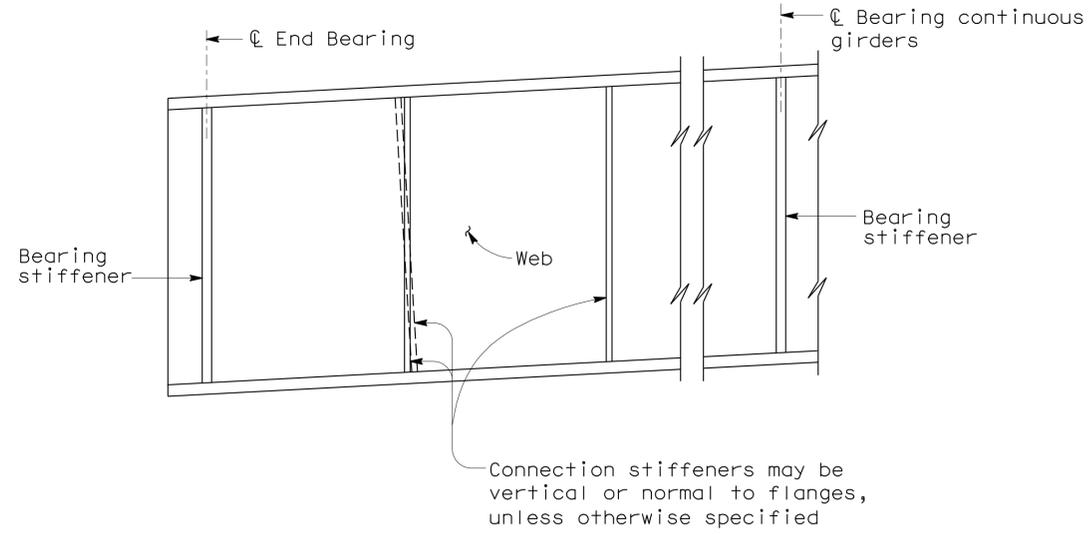
**STUD CONNECTOR**

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

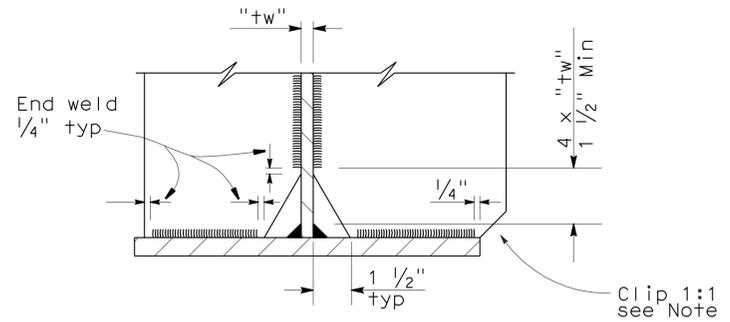
NO SCALE

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY R. Stiltz	CHECKED J. Szabo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>COLTON-LOMA LINDA OH LT (WIDEN)</b> <b>STEEL GIRDER SHOP SPLICE AND STUD CONNECTOR DETAILS</b>		
	DETAILS	BY D. Wooten	CHECKED J. Szabo			54-0482L			
	QUANTITIES	BY R. Stiltz	CHECKED J. Szabo			POST MILE 3.72			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3589	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	REVISION DATES	SHEET 24 OF 42
							DISREGARD PRINTS BEARING EARLIER REVISION DATES	3-01-12	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1467	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<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>					



**TRANSVERSE STIFFENERS**



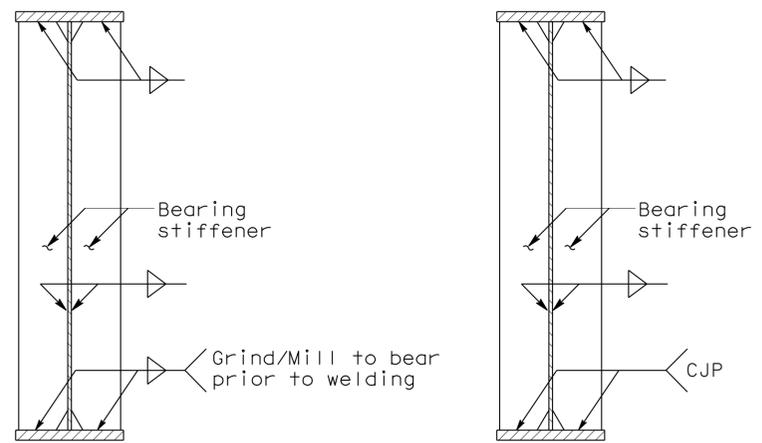
**COPE AND WELDING DETAIL**

Note : Omit clip at bottom flange when less than 2"

**NOTES:**

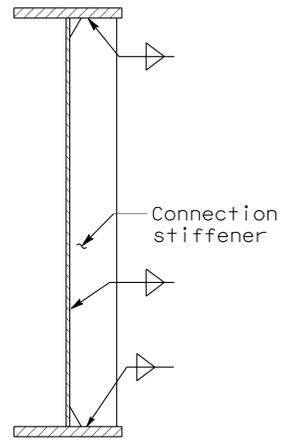
- Under full dead load as shown on the camber diagram, girder ends and bearing stiffeners shall be vertical except they may be normal to grade for grades less than 2 percent.
- For Bearing Stiffeners which have Cross Frames or Diaphragms attached, use Bearing Stiffener details.
- For stiffener sizes see "GIRDER DETAILS NO. 1" and "GIRDER DETAILS NO. 2" sheets.
- Fillet Weld size to be minimum size from Project Specifications unless otherwise shown on Project Plan sheets.

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



**ALTERNATIVE 1                      ALTERNATIVE 2**

**BEARING STIFFENER**



**WELDED CONNECTION CONNECTION STIFFENER**

Cross Frame not shown  
Girder G2 stiffener shown, Girder G1 stiffener similar.

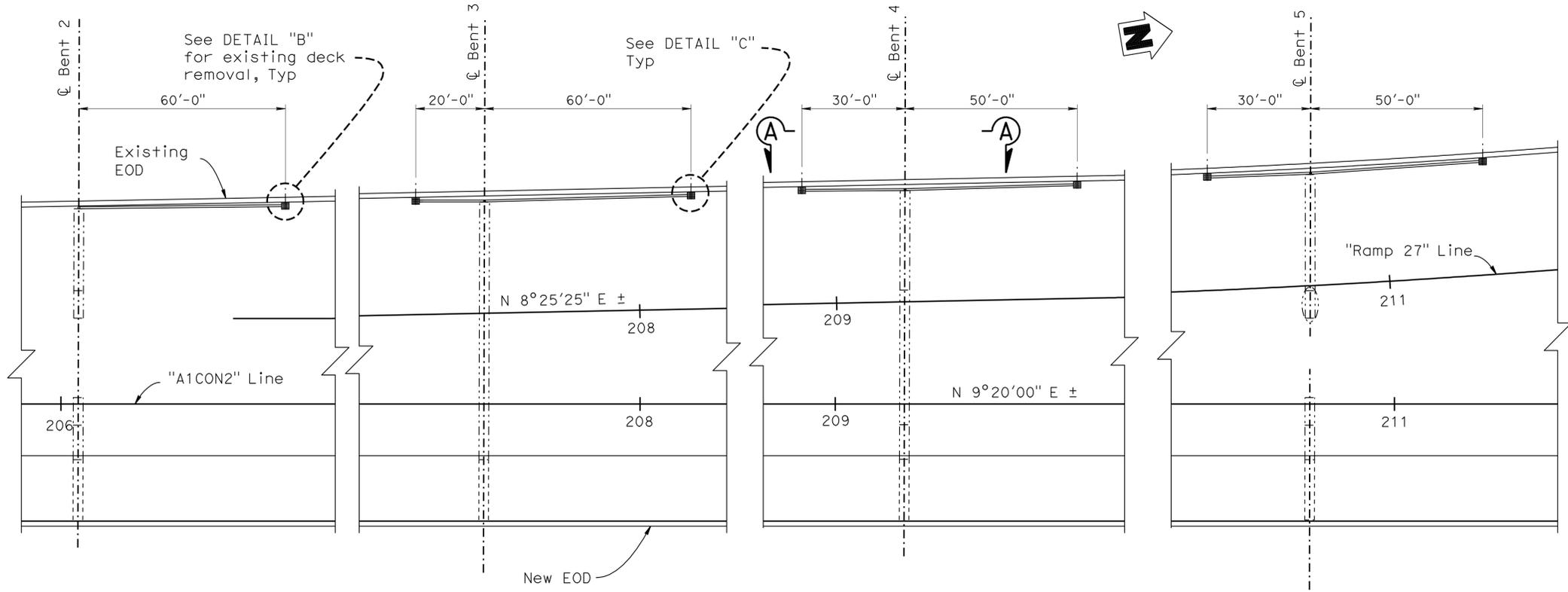
**NOTES:**

- For stiffener sizes see Project Plan sheets.
- Fillet Weld size to be minimum size from Project Specifications unless otherwise shown on Project Plan sheets.
- See Project Plan sheets for locations where bolted connection is required.

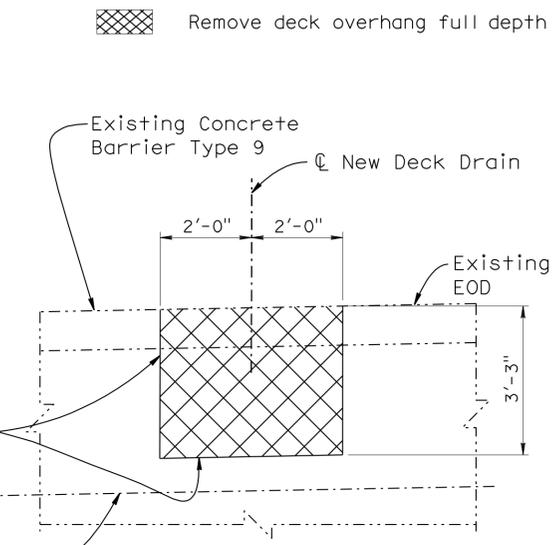
NO SCALE

DESIGN	BY	R. Stiltz	CHECKED	J. Szabo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-0482L	COLTON-LOMA LINDA OH LT (WIDEN) STEEL GIRDER TRANSVERSE STIFFENER DETAILS	
	DETAILS	BY	D. Wooten	CHECKED			J. Szabo	POST MILE		3.72
	QUANTITIES	BY	R. Stiltz	CHECKED			J. Szabo			

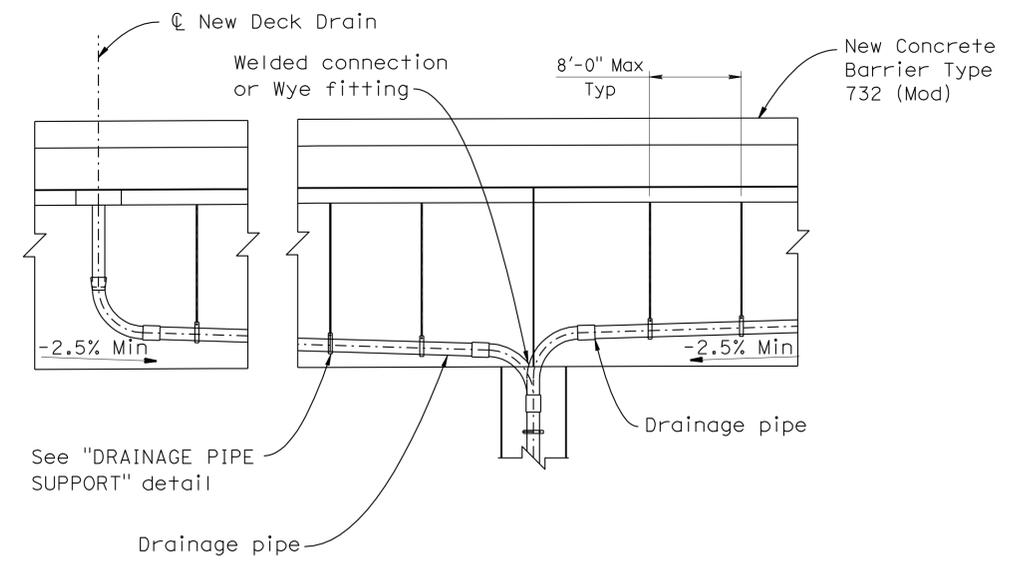
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1468	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



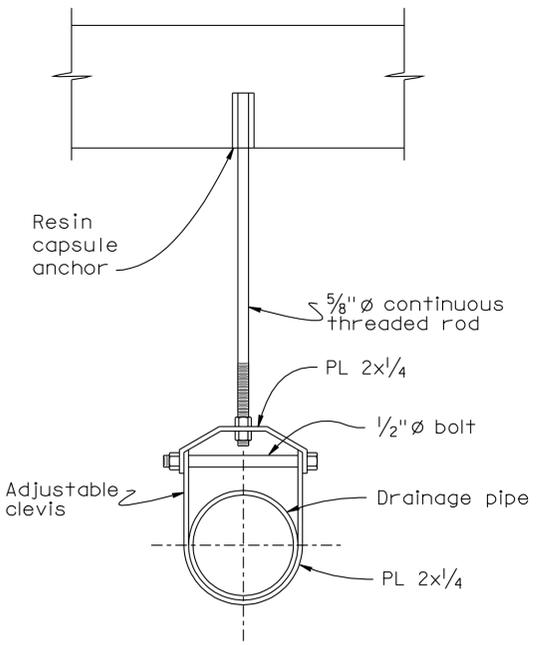
**PLAN DECK-DRAIN LAYOUT**  
1" = 20'-0"



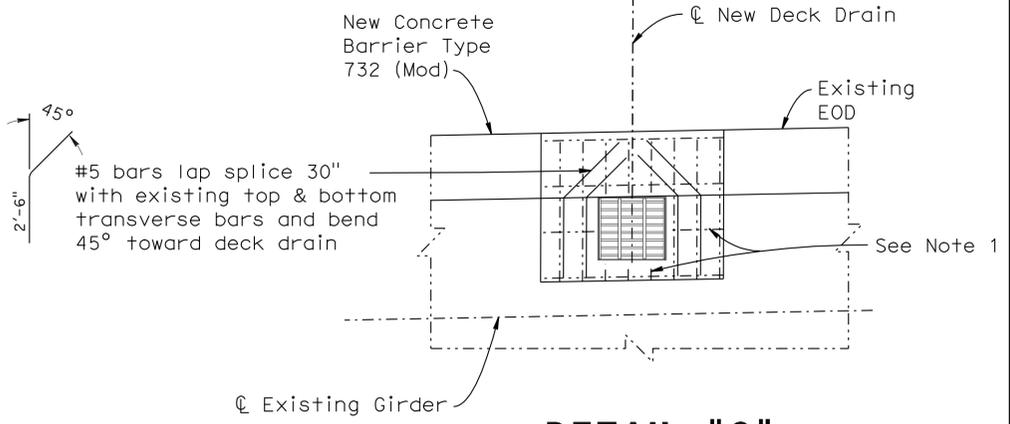
**DETAIL "B"**  
1/2" = 1'-0"



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



**DRAINAGE PIPE SUPPORT**  
No Scale



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

NOTE:  
1. Cut longitudinal and transverse reinforcement as required for new deck drain

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

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

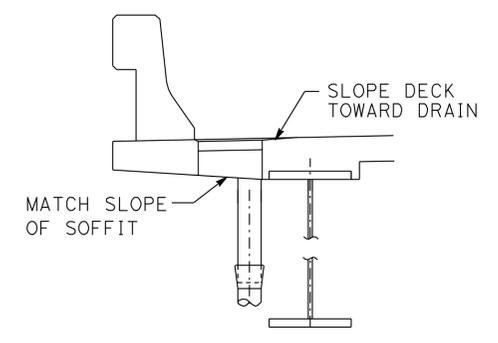
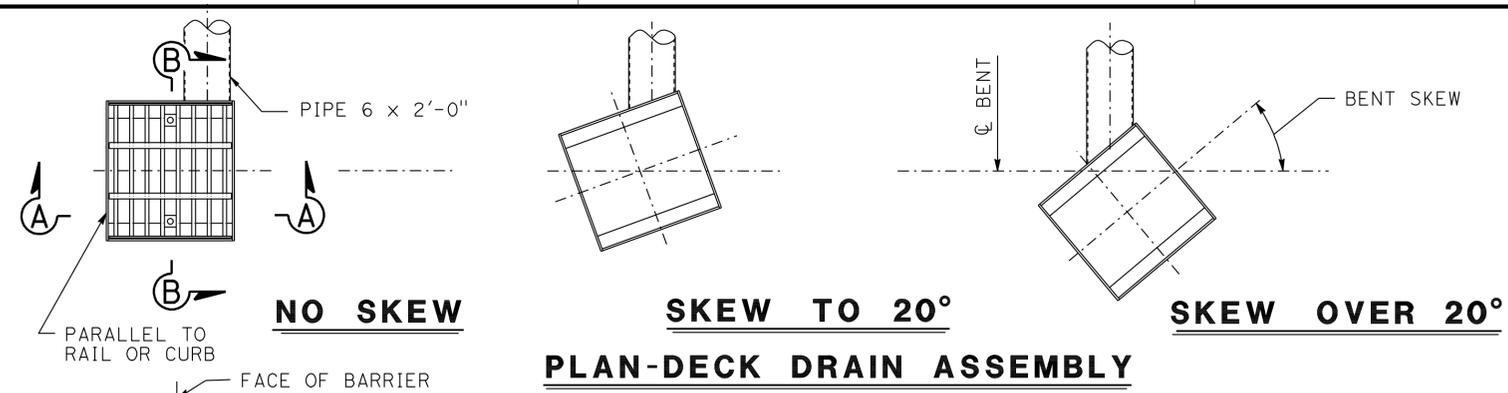
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 10

BRIDGE NO.	54-0482L
POST MILE	3.72

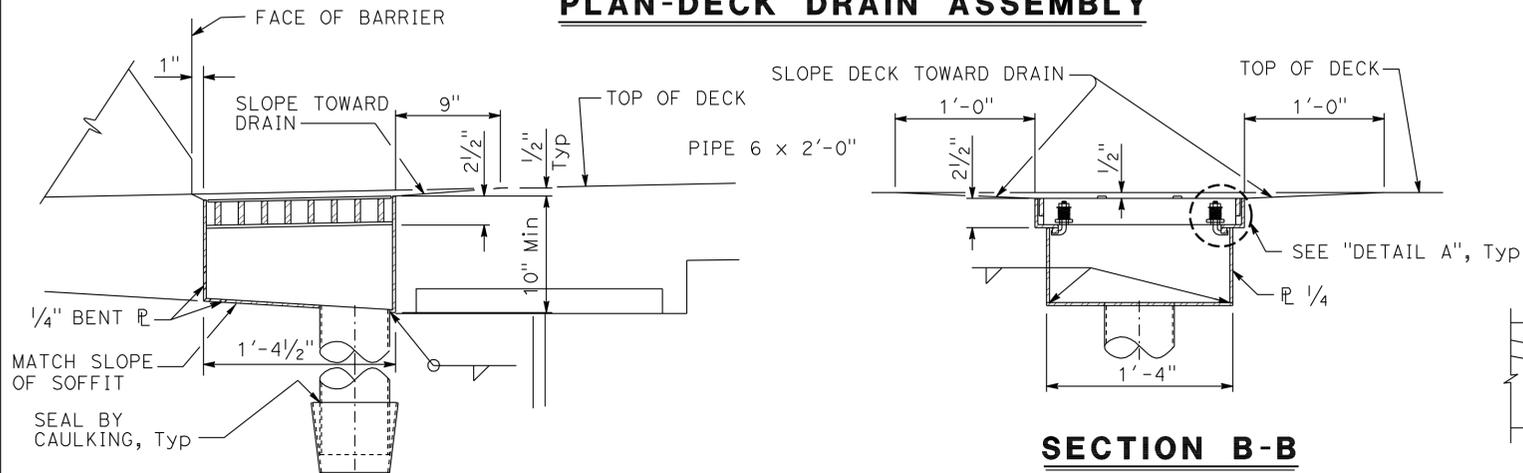
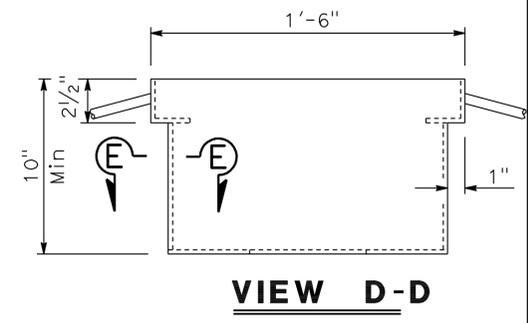
**COLTON-LOMA LINDA OH LT (WIDEN)**  
**STRUCTURE DRAINAGE DETAILS NO. 1**

DATE PLOTTED => 18-APR-2012 1:35:51 USERNAME => s124496

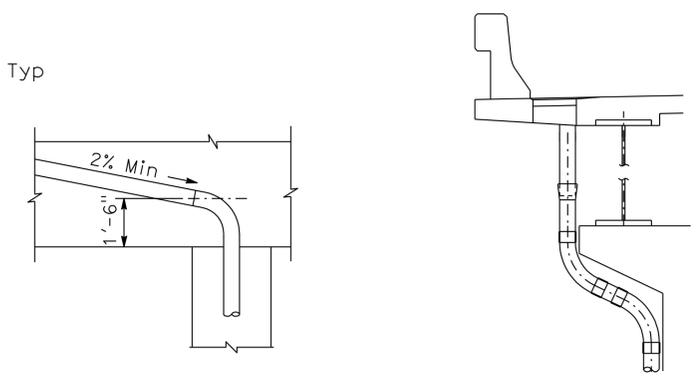
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1469	1743
			4-06-12	DATE	
REGISTERED CIVIL ENGINEER			4-16-12	PLANS APPROVAL DATE	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



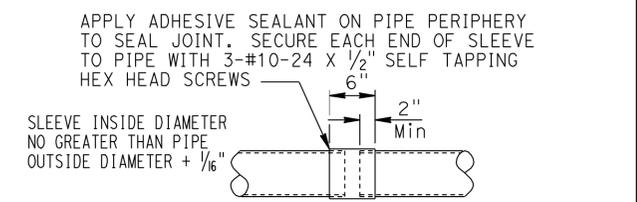
**DRAIN FLUSH W/ OVERHANG**  
**ELEVATION-DECK DRAIN LOCATIONS**



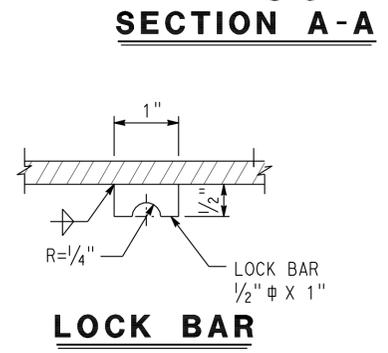
**SECTION B-B**  
**DECK DRAIN ASSEMBLY DETAIL**



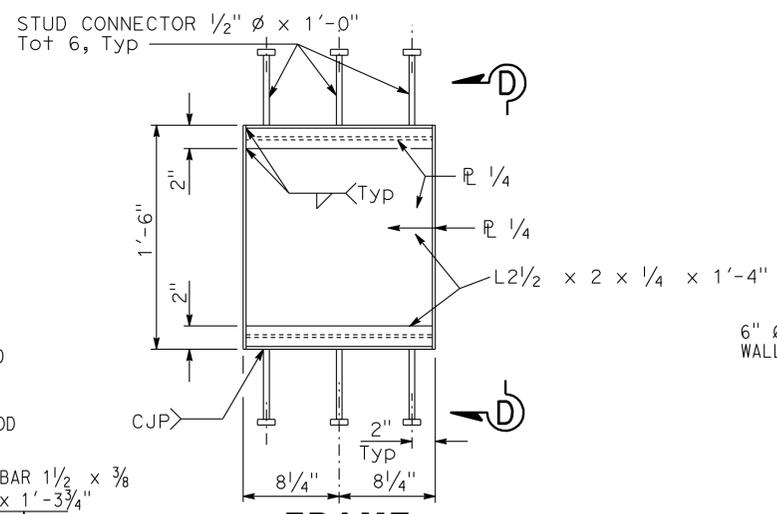
**VERTICAL**      **HORIZONTAL**  
**DRAIN PIPE ALIGNMENT**



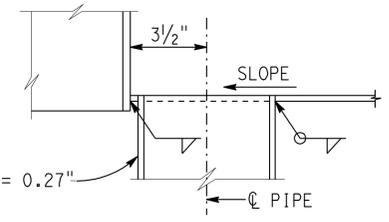
**SLEEVE CONNECTION**



**LOCK BAR**

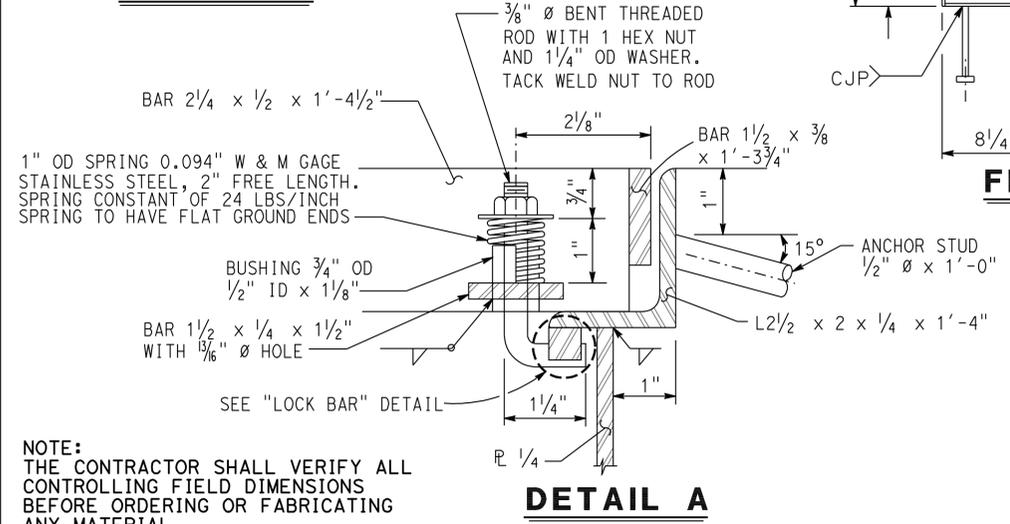


**FRAME**



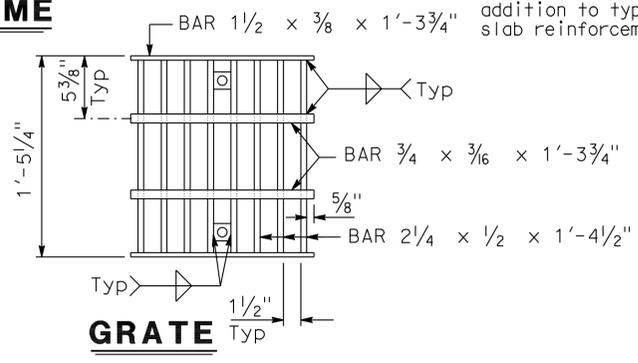
**PIPE SECTION**

NOTE: Galvanize deck drain assembly after fabrication. Reinforcement shown at drains is to be placed in addition to typical slab reinforcement. Typical slab reinforcement not shown.

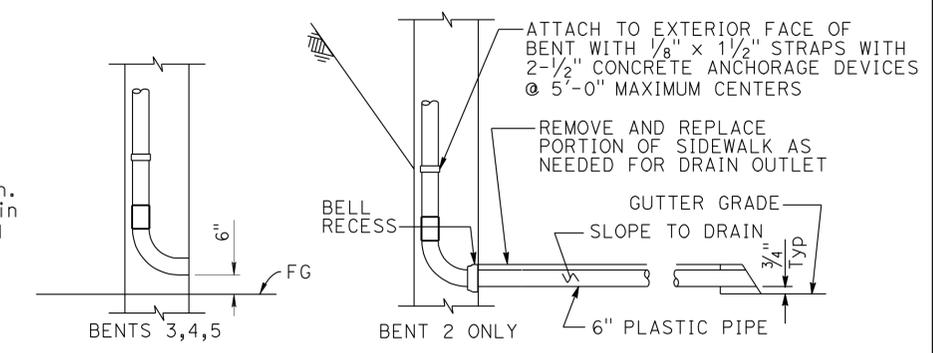


**DETAIL A**

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



**GRATE**



**DRAIN OUTLET**

NOTE: All pipe to be NPS 6 x 0.135" welded steel pipe except as noted and galvanized if not encased in concrete. Fittings and bends shall have a minimum wall thickness of 1/8". All joints or connections to be butt welded or connected by a steel pipe sleeve and to be smooth throughout inside of pipe except as noted. All bends to be on 1'-6" minimum radius measured along centerline of pipe. All bends to be supported by suitable galvanized hangers @ 10'-0" maximum spacing throughout. Galvanize deck drain assembly after fabrication.

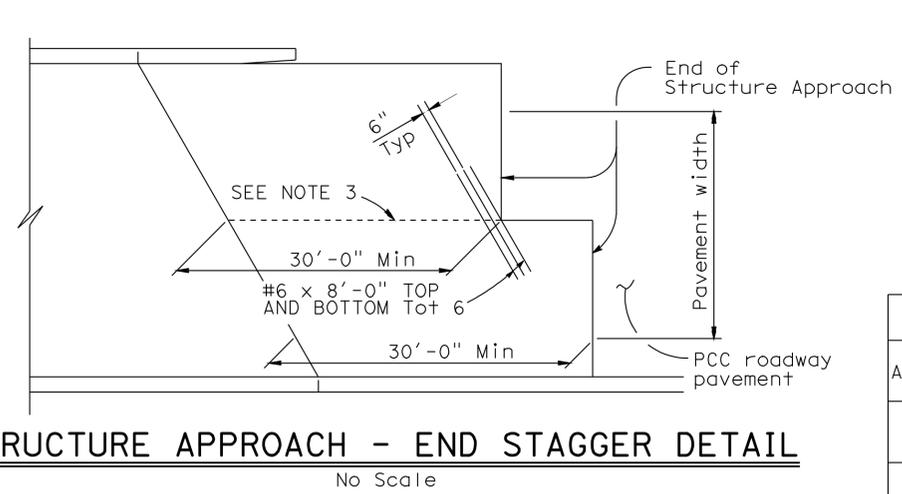
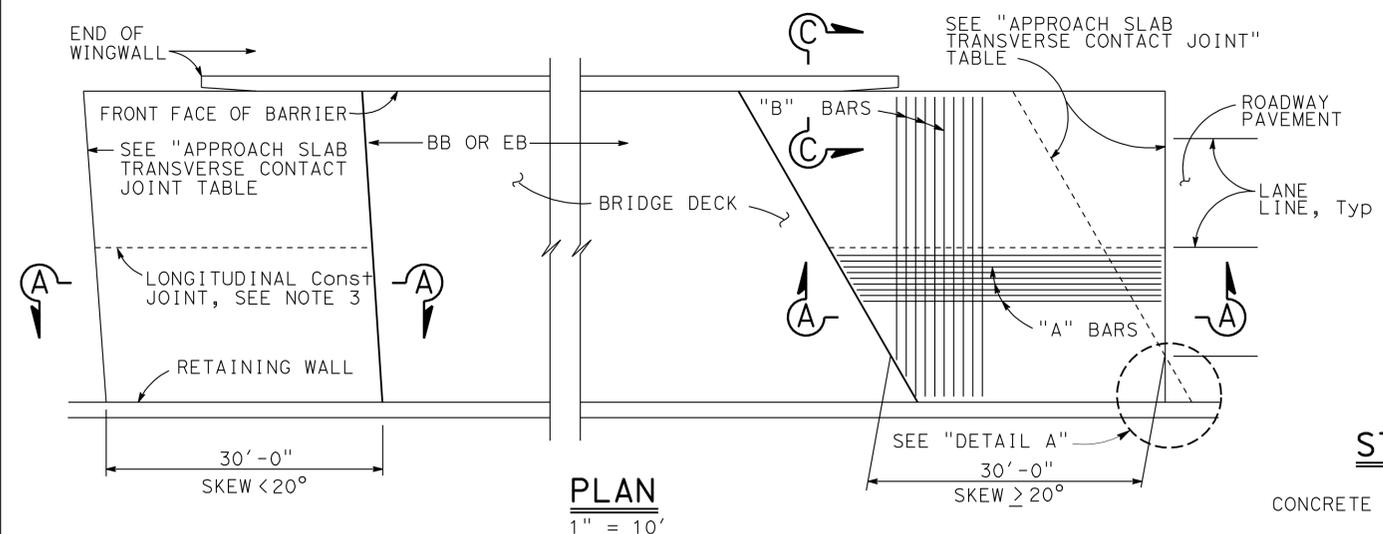
NO SCALE

DESIGN	BY R. Stiltz	CHECKED J. Szabo	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>COLTON-LOMA LINDA OH LT (WIDEN)</b> <b>STRUCTURE DRAINAGE DETAILS NO.2</b>
DETAILS	BY D. Wooten	CHECKED J. Szabo			54-0482L	
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo			POST MILE 3.72	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES SHEET OF
			0 1 2 3		3-01-12	27 42

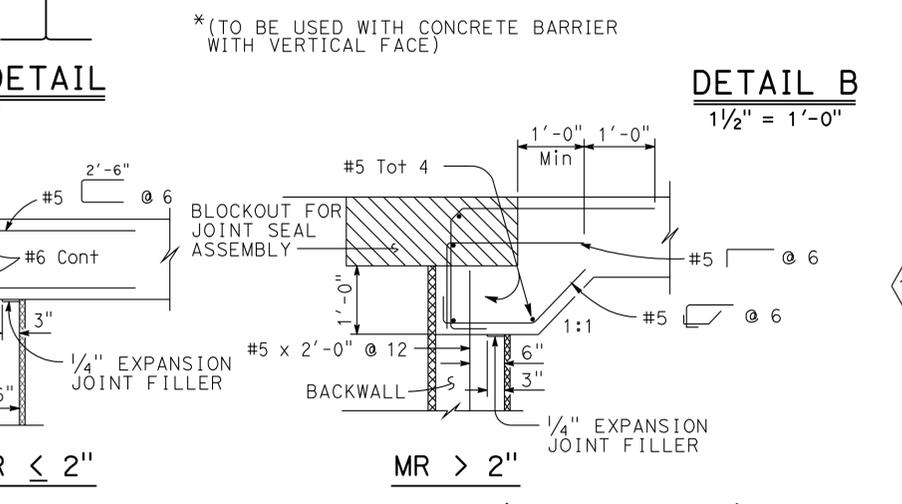
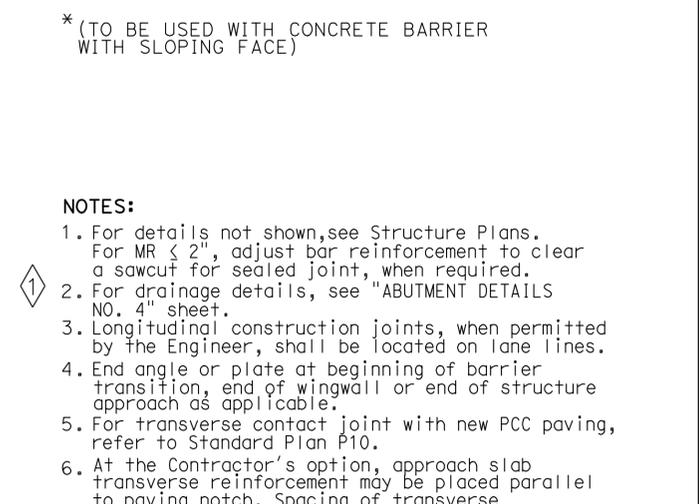
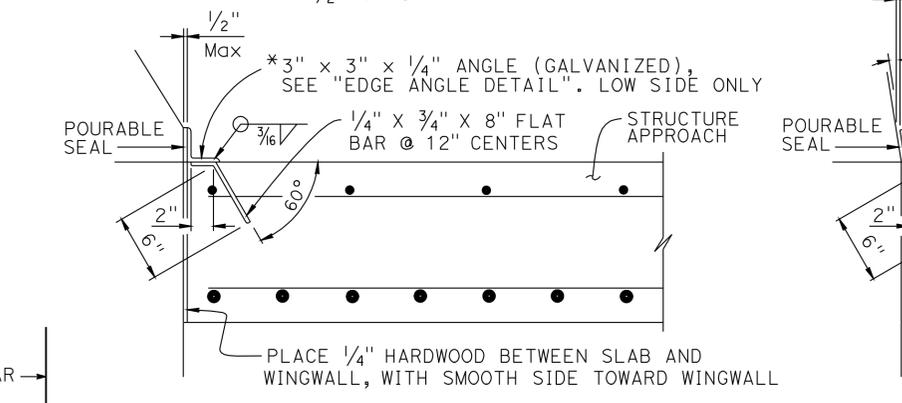
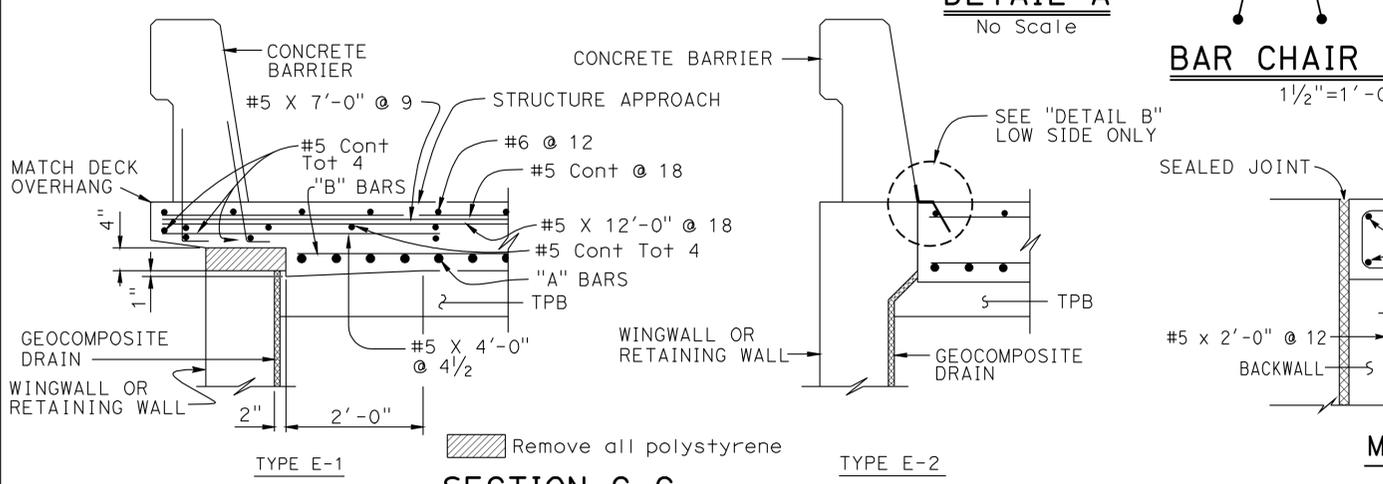
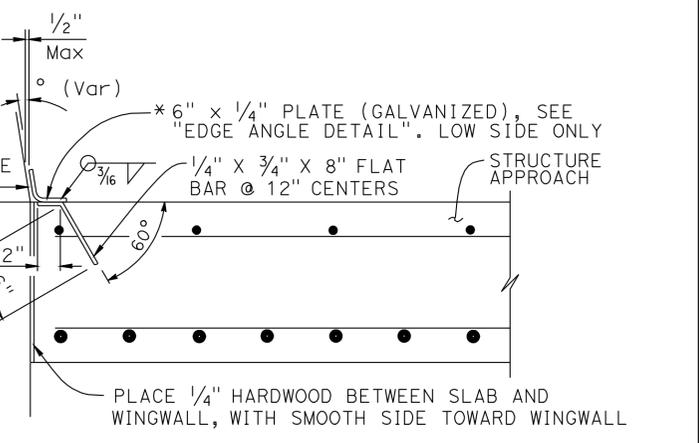
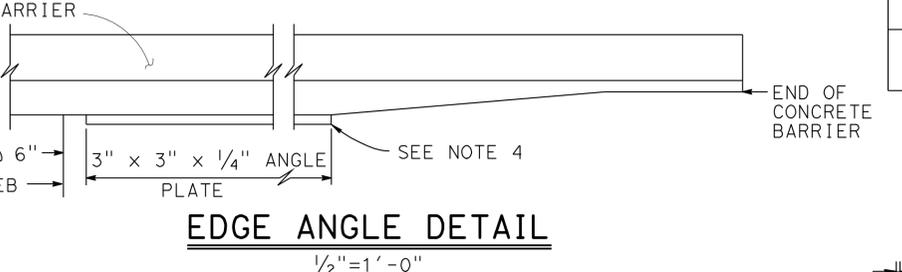
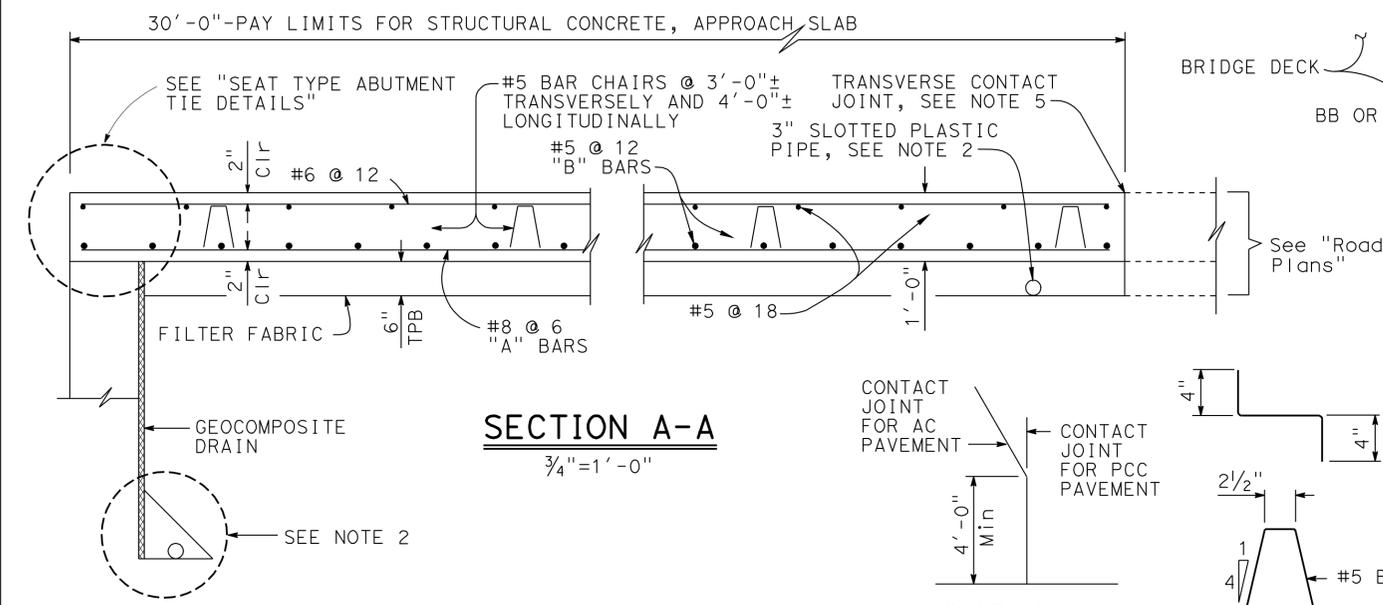
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1470	1743

LARRY WU  
 REGISTERED CIVIL ENGINEER  
 DATE 4-06-12  
 PLANS APPROVAL DATE 4-16-12  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

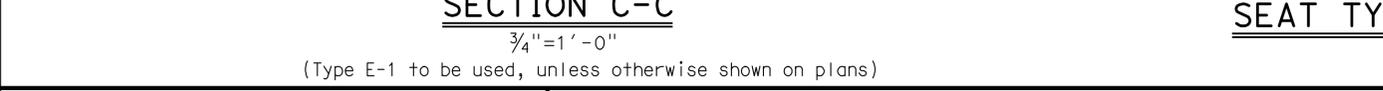
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
20° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE



- 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 "ABUTMENT DETAILS NO. 4" 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.



**SPECIAL DETAILS**

REVISED STANDARD DRAWING  
 FILE NO. **xs3-120**  
 APPROVAL DATE July 2011

Revised Note

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING SERVICES

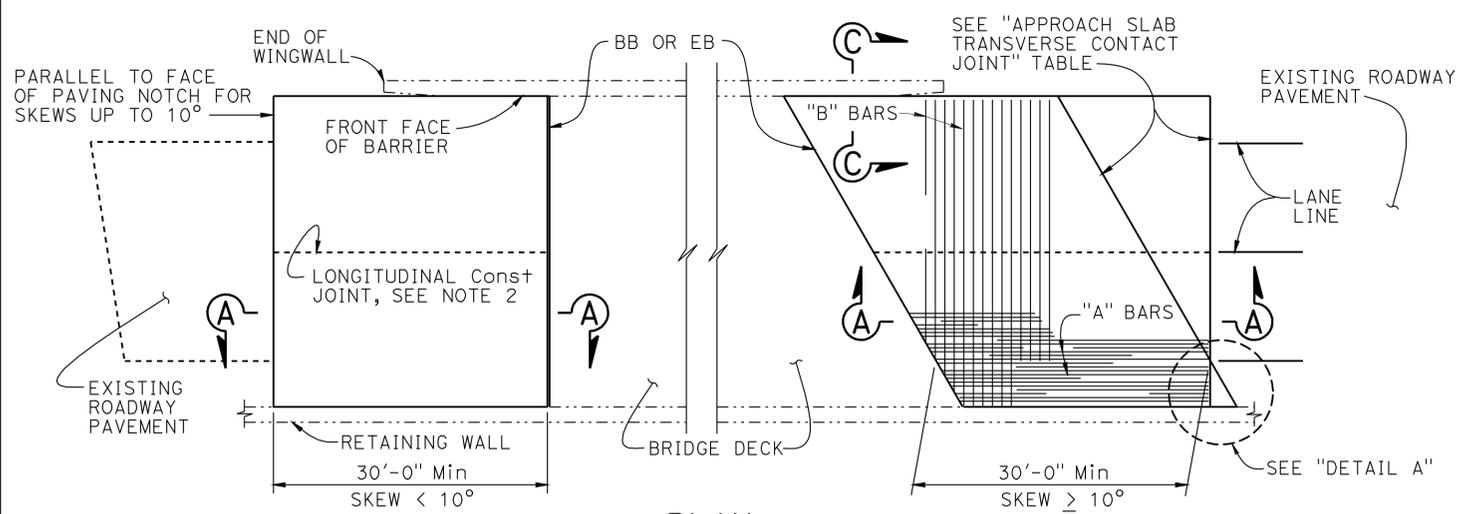
BRIDGE NO. 54-0482L  
 POST MILE 3.72  
**COLTON-LOMA LINDA OH LT (WIDEN)**  
**STRUCTURE APPROACH TYPE N(30S)**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1471	1743

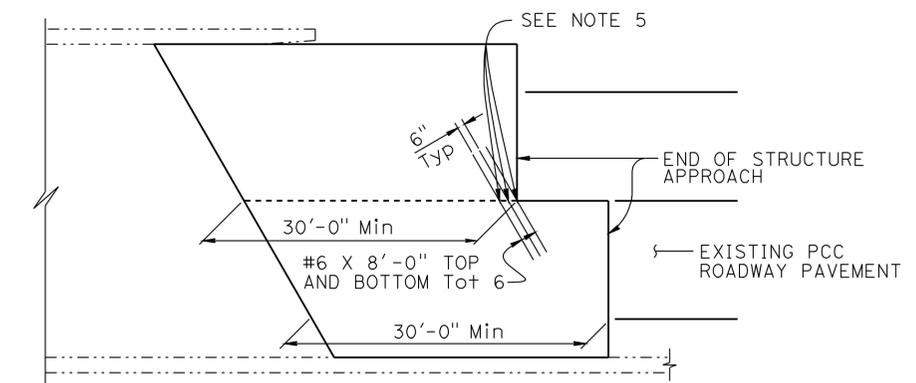
REGISTERED CIVIL ENGINEER  
 LARRY WU  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

4-06-12 DATE  
 4-16-12 PLANS APPROVAL DATE

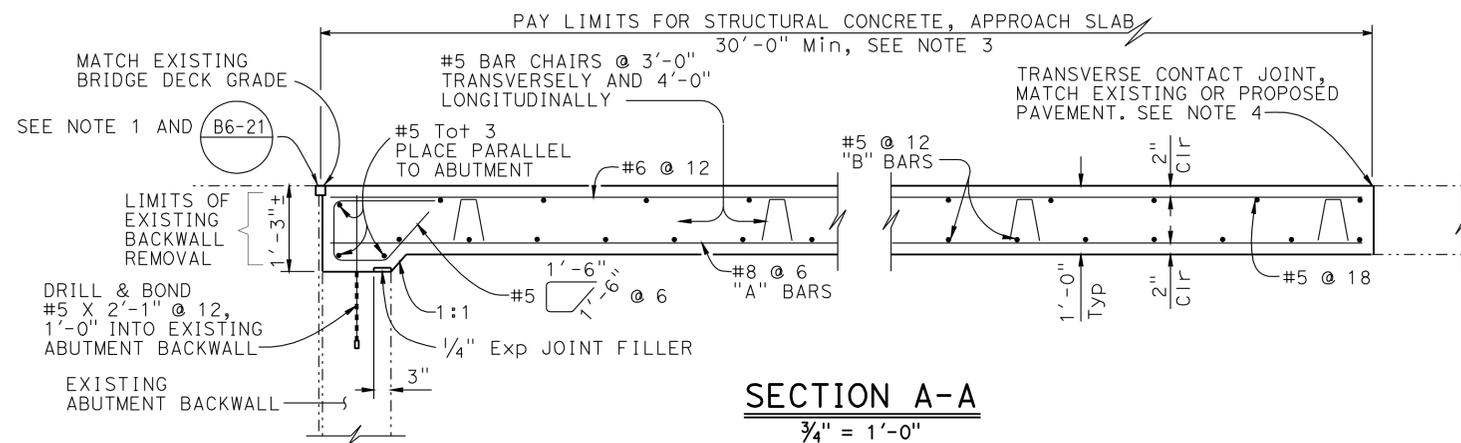
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



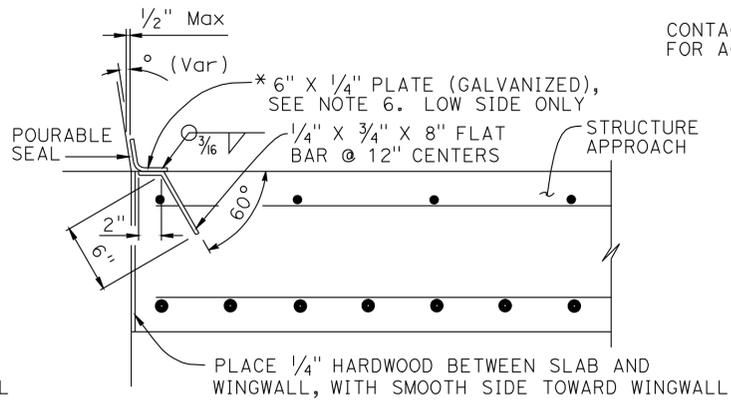
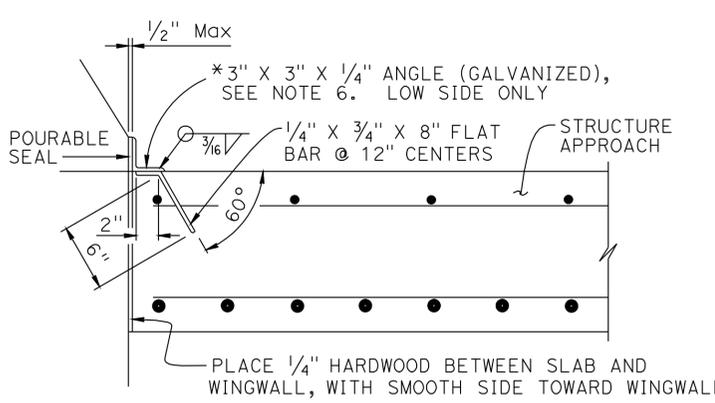
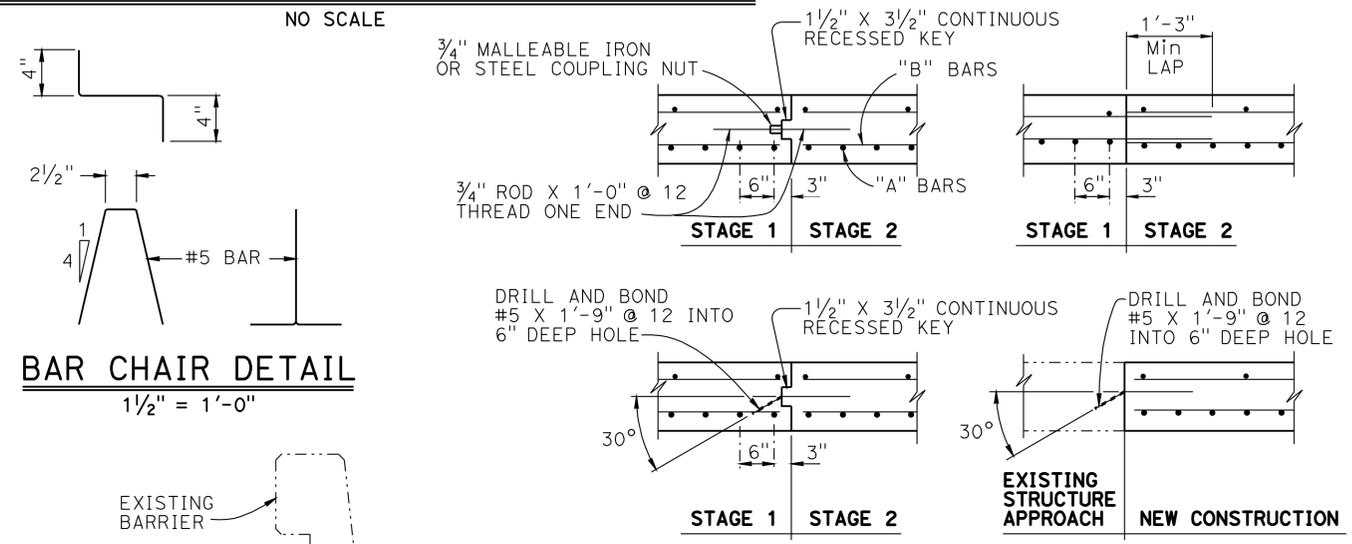
**PLAN**  
1" = 10'



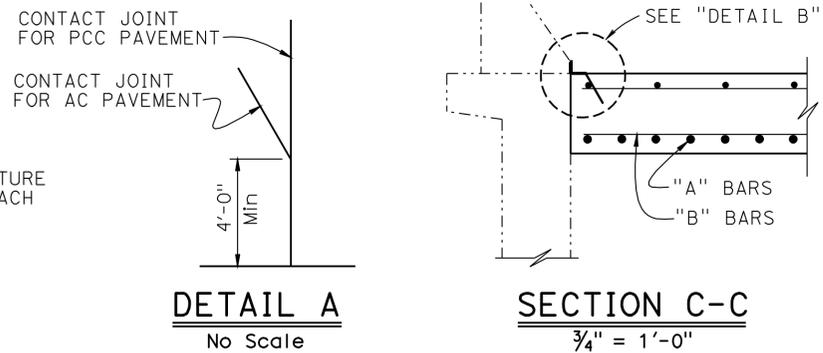
**STRUCTURE APPROACH - END STAGGER DETAIL**  
NO SCALE



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



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



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
10° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE

- NOTES:
- Sealed joint, for MR 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

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

STANDARD DRAWING

FILE NO. **xs3-130**

APPROVAL DATE July 2011

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

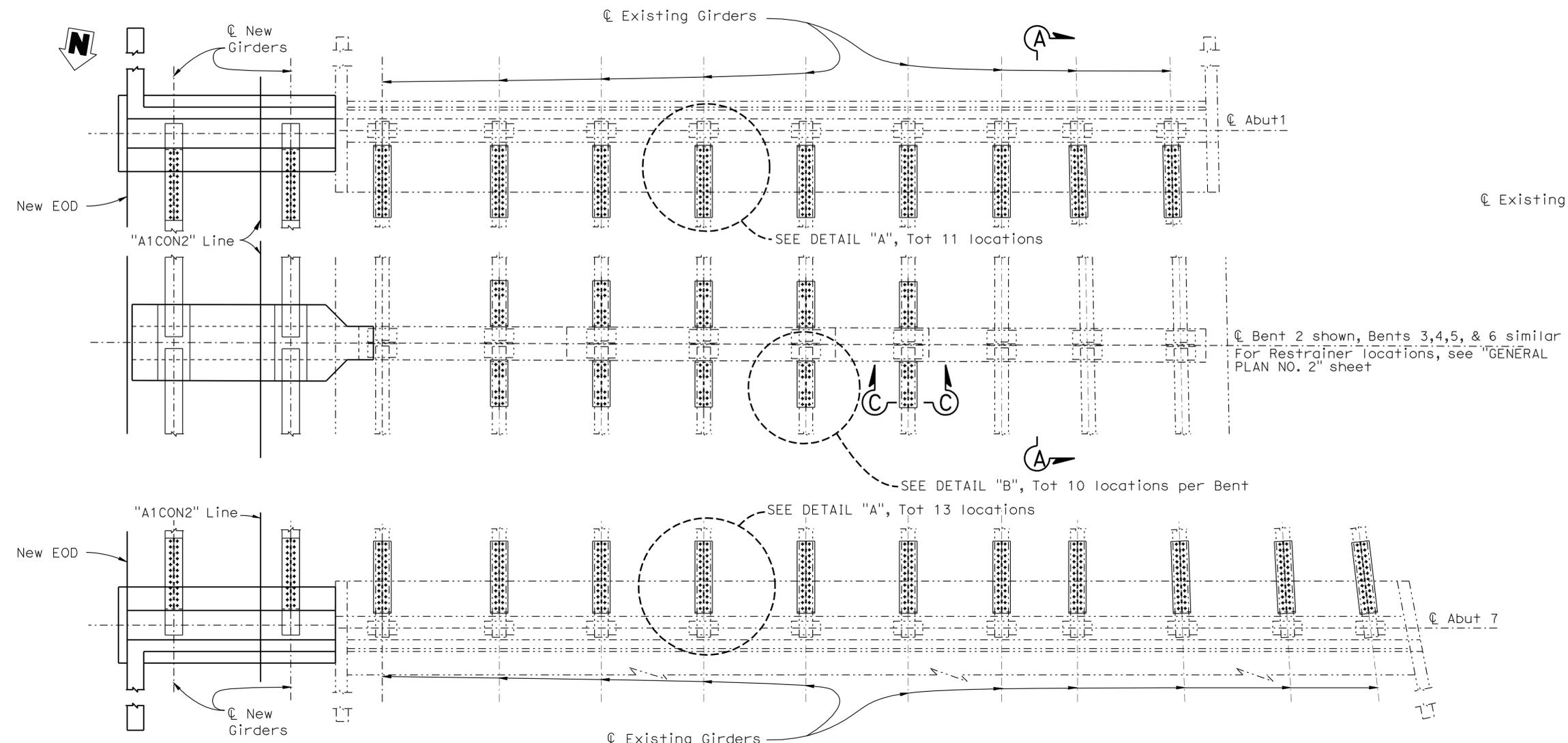
BRIDGE NO. 54-0482L  
POST MILE 3.72

COLTON-LOMA LINDA OH LT (WIDEN)  
STRUCTURE APPROACH TYPE R(30S)

REVISION DATES

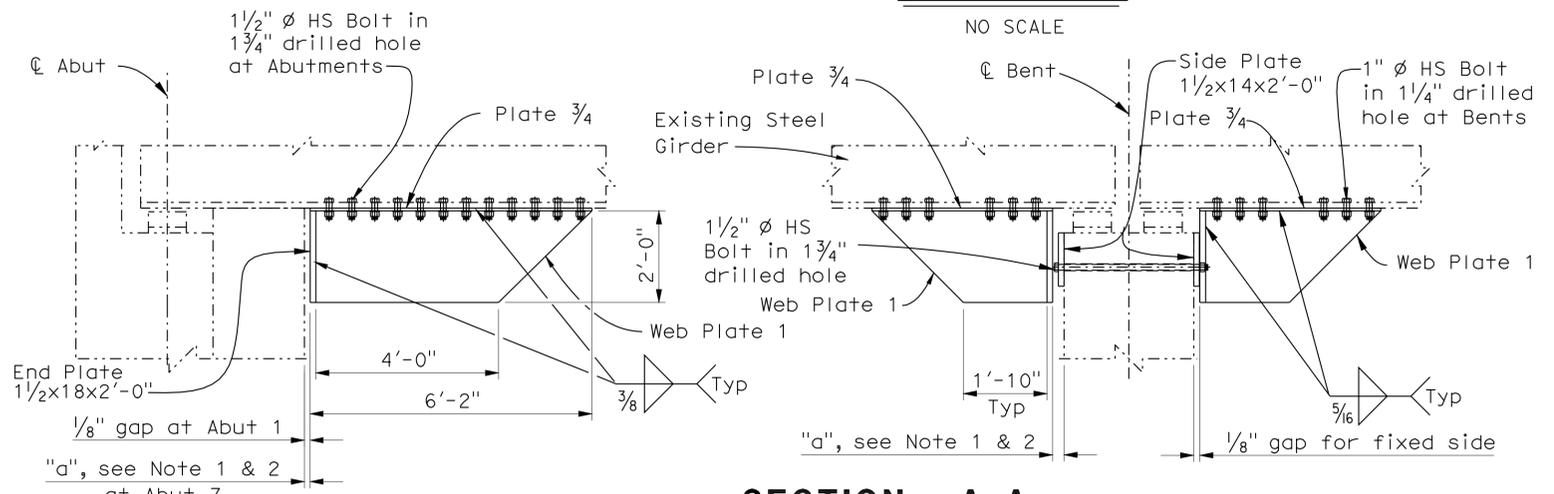
SHEET 29 OF 42

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1472	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12			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.					
					



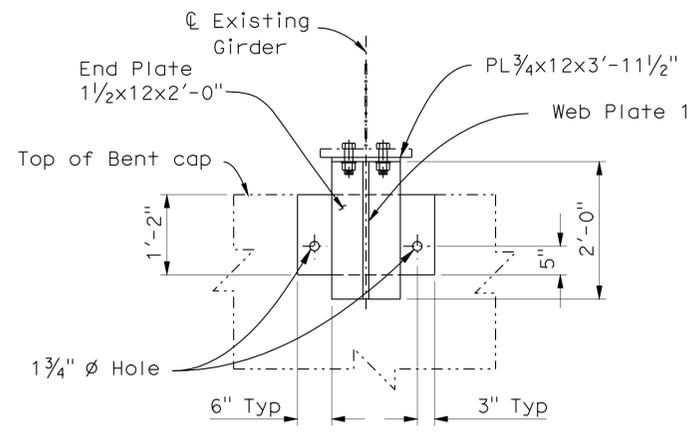
**PART PLAN**

NO SCALE



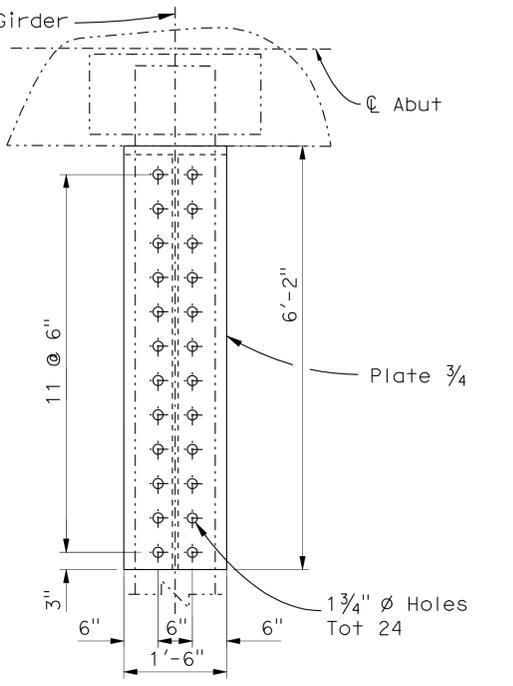
**SECTION A-A**

1/2" = 1'-0"



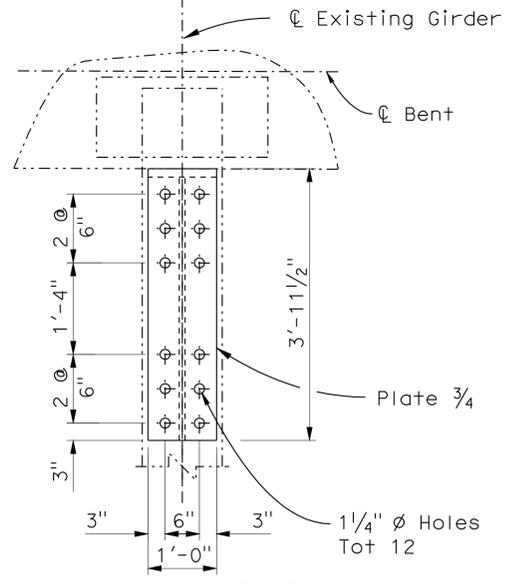
**SECTION C-C**

3/4" = 1'-0"



**DETAIL "A"**

3/4" = 1'-0"



**DETAIL "B"**

3/4" = 1'-0"

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

NOTES:  
1. For "a" dimension, see RSP B6-21  
2. See Joint Seal Table on "MISCELLANEOUS DETAILS" sheet.

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY D. Wooten/G. Hallstrom	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 10**

BRIDGE NO.	54-0482L
POST MILE	3.72

**COLTON-LOMA LINDA OH LT (WIDEN)**  
**BUMPER RESTRAINER DETAILS**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1473	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12 PLANS APPROVAL DATE					
<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>					

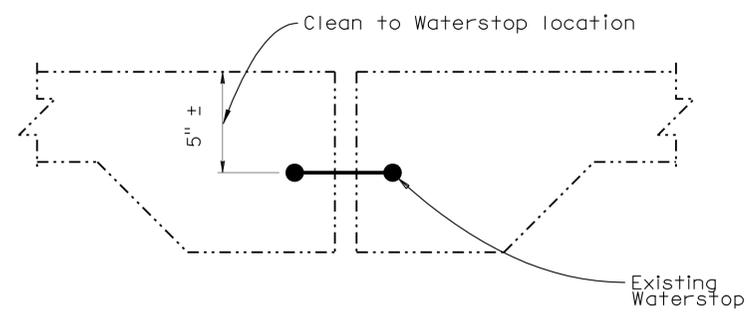
JOINT SEAL TABLE						
LOCATION	JOINT SEAL TYPE	MINIMUM "MR" (in)	MINIMUM "W1" (in) *	APPROXIMATE LENGTH (CLEAN JOINT)	APPROXIMATE LENGTH (FT) NEW JOINT	EXISTING WATERSTOP
Abut 1	A	1/2	*	N/A	93.4	N/A
Bent 2	B	1	*	73.8	94.2	YES
Bent 3	B	1 1/2	*	76.7	97.1	YES
Bent 4	B	1 1/2	*	80.0	100.4	YES
Bent 5	B	1 1/2	*	84.7	105.1	YES
Bent 6	B	1 1/2	*	94.5	114.9	YES
Abut 7	B	1 1/2	*	N/A	131.3	N/A

\* To be provided by the engineer, see Note B.

The following notes apply to JOINT SEAL TYPE B:

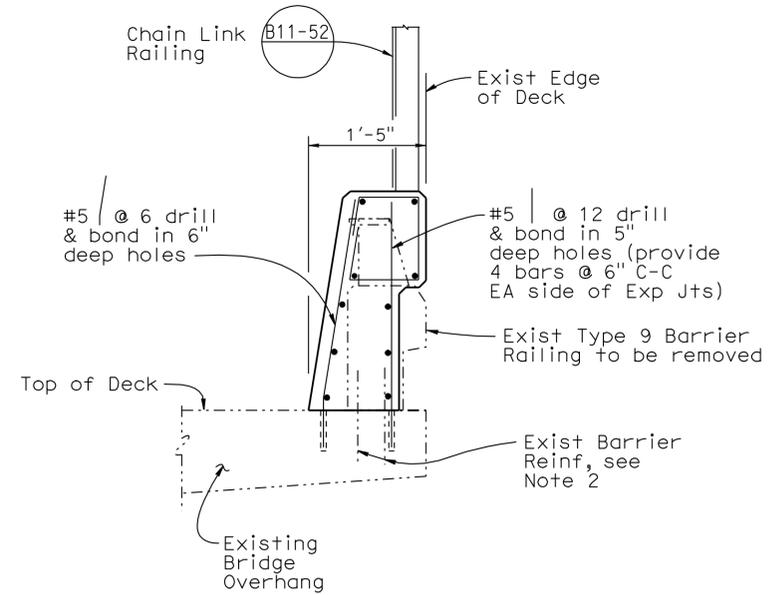
- A) Seal must satisfy both minimum Movement Rating (MR) and minimum W1 requirements.
- B) Minimum W1 is the calculated maximum width of the joint based on field measurements. After the joints have been cleaned, minimum W1 is to be recalculated by the Engineer.
- C) W1 shall be the smaller of the values determined as follows:
  - a) 0.85 times the manufacturer's designed minimum uncompressed width of the seal.
  - b) The width of the seal on the third successive test cycle of the pressure deflection test, when compressed to an average pressure of 3.0 PSI.
- D) Bend Type B joint seal 6 inches up into curb or rail on the low side of the deck where deck joint matches curb or rail joint.

For details not shown see RSP 



**EXISTING JOINT SEAL AT BENTS**  
no scale

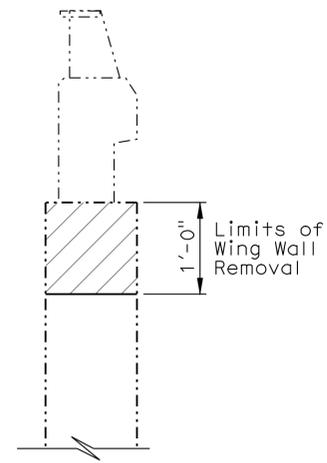
NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



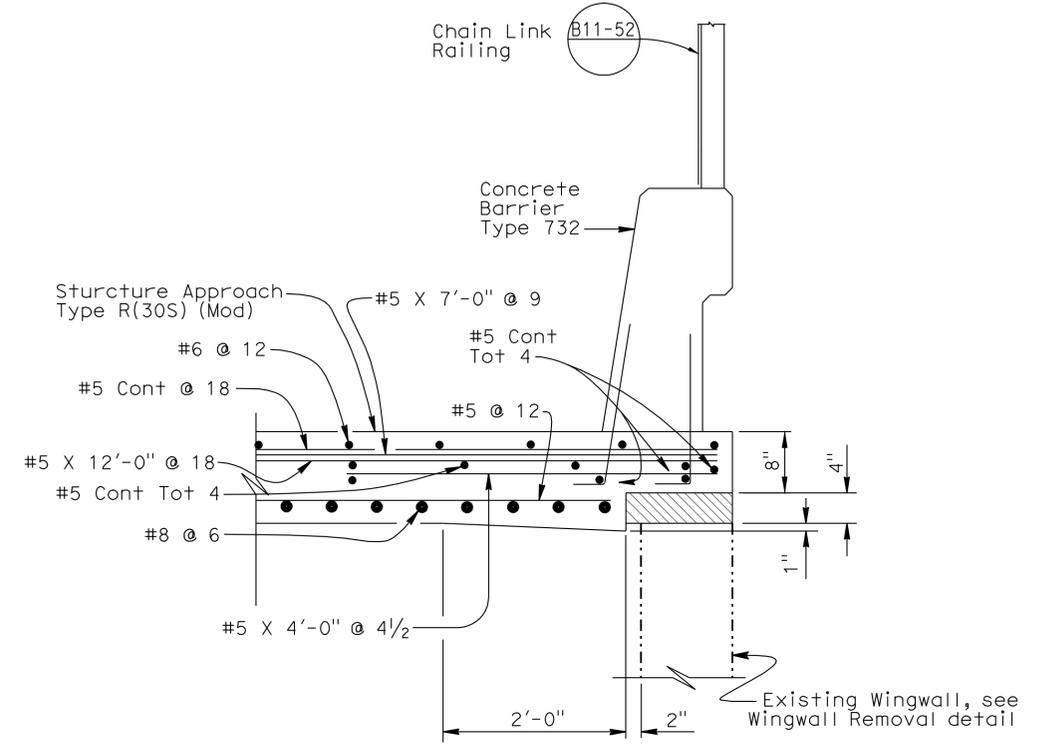
**CONCRETE BARRIER TYPE 732(MOD)**

NOTES:

1. For details not shown, see 
2. Where Exist barrier railing reinforcement will have required concrete cover in new barrier, Exist barrier reinforcement may remain; where concrete cover is not available, cut reinforcement 1" below Exist concrete surface and patch with epoxy or grout.
3. Locations of drilled holes shown in the plans are approximate. Prior to placing holes in concrete, the contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars (except as noted). Final hole locations are subject to the approval of the Engineer.



**WINGWALL REMOVAL**  
1" = 1'-0"



 Remove all polystyrene

NOTE: For details not shown, see "STRUCTURE APPROACH TYPE R(30S)" sheet.

**STRUCTURE APPROACH TYPE R (30S) (MOD)**

1" = 1'-0"

**LEGEND:**

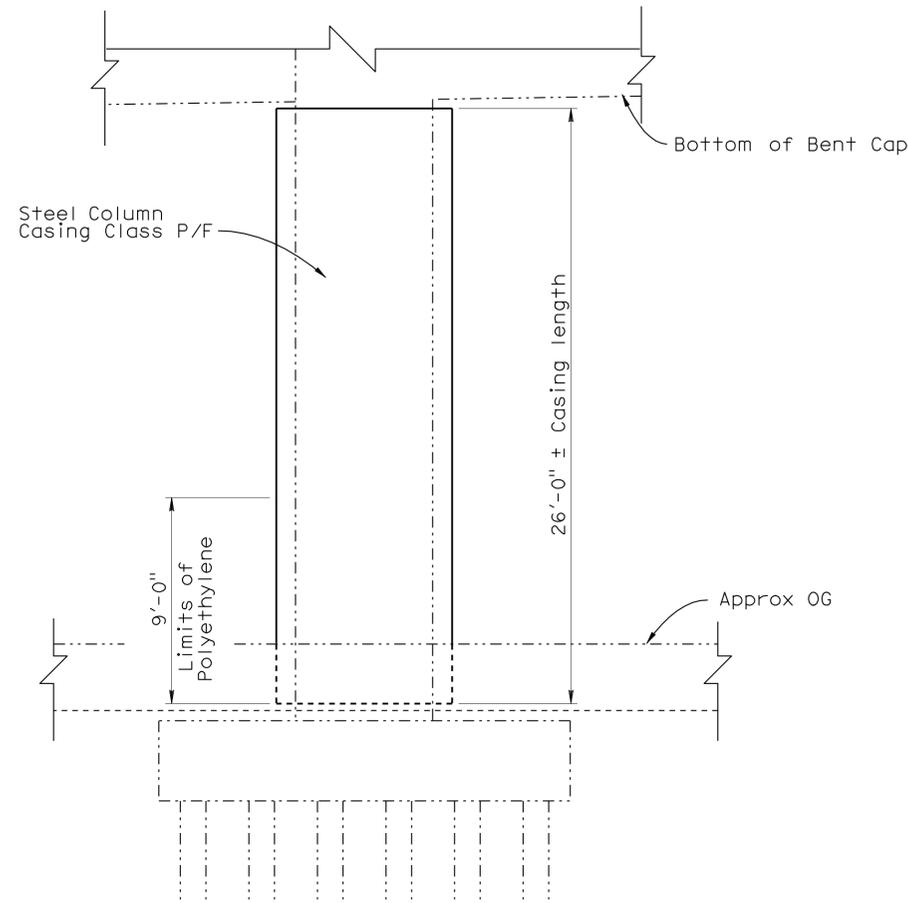
-  Indicates new construction
-  Indicates existing structure
-  Indicates concrete removal

DESIGN BY R. Stiltz CHECKED J. Szabo DETAILS BY D. Wooten/G. Hallstrom CHECKED J. Szabo QUANTITIES BY R. Stiltz CHECKED J. Szabo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0482L POST MILE 3.72	<b>COLTON-LOMA LINDA OH LT (WIDEN)</b> <b>MISCELLANEOUS DETAILS</b>	
	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 3-07-12
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	FILE => 540482lum1sct+131.dgn	SHEET 31 OF 42	DATE PLOTTED => 18-APR-2012 USERNAME => s124486	TIME PLOTTED => 13:52

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1474	1743

REGISTERED CIVIL ENGINEER **LARRY WU** DATE **4-06-12**  
 PLANS APPROVAL DATE **4-16-12**  
 No. **C57035**  
 Exp. **6-30-13**  
 CIVIL  
 STATE OF CALIFORNIA

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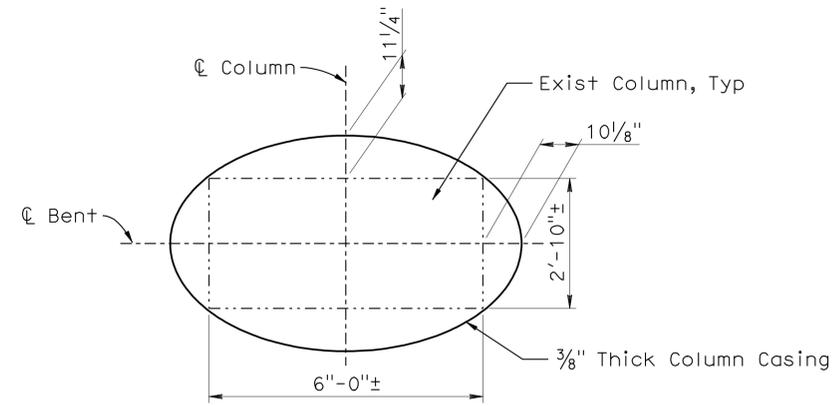
**ELEVATION**

1/4" = 1'-0"

**NOTE:**

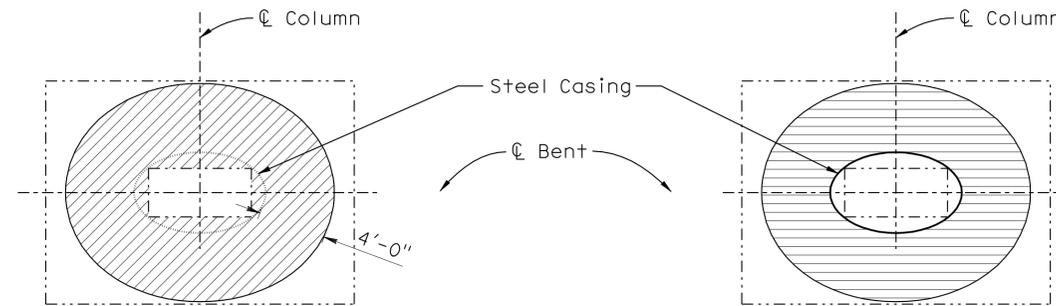
For column casing details not shown, see "COLUMN CASING - STEEL" sheet.

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

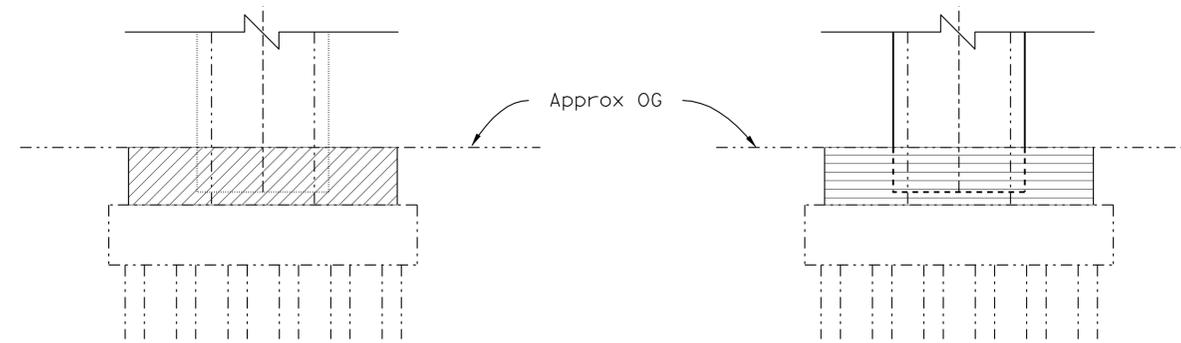


**COLUMN CASING DETAIL**

1/2" = 1'-0"



**PLAN**



**ELEVATION**

**STRUCTURE EXCAVATION**

**STRUCTURE BACKFILL**

**LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION & BACKFILL**

3/16" = 1'-0"

**LEGEND:**

- Indicates existing structure
- ▨ Indicates Structure Excavation
- ▨ Indicates Structure Backfill

DESIGN	BY R. Stiltz	CHECKED J. Szabo
DETAILS	BY Y. Tang	CHECKED J. Szabo
QUANTITIES	BY R. Stiltz	CHECKED J. Szabo

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

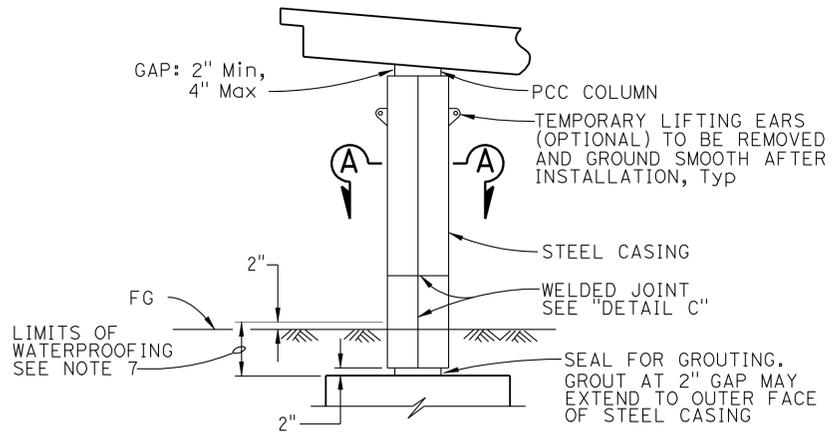
DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 10**

BRIDGE NO.	54-0482L
POST MILE	3.72

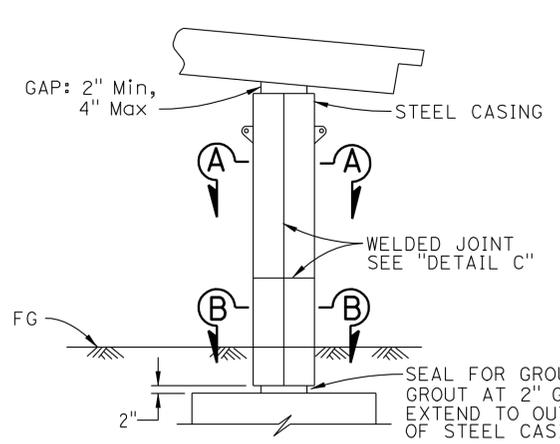
**COLTON-LOMA LINDA OH LT (WIDEN)**

**COLUMN RETROFIT DETAILS**

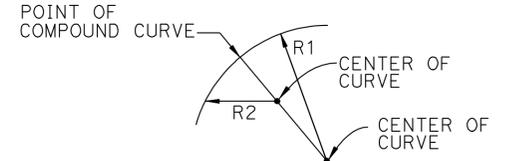
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1475	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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**CLASS F COLUMN**

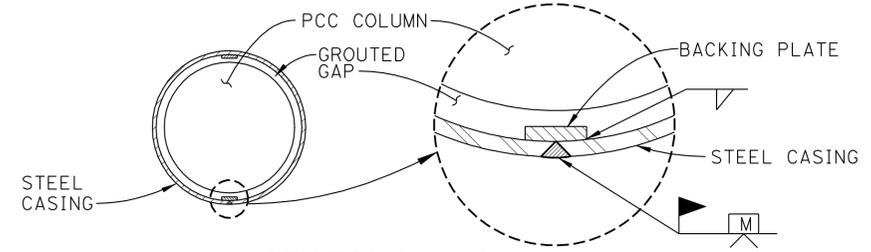


**CLASS P/F COLUMN**



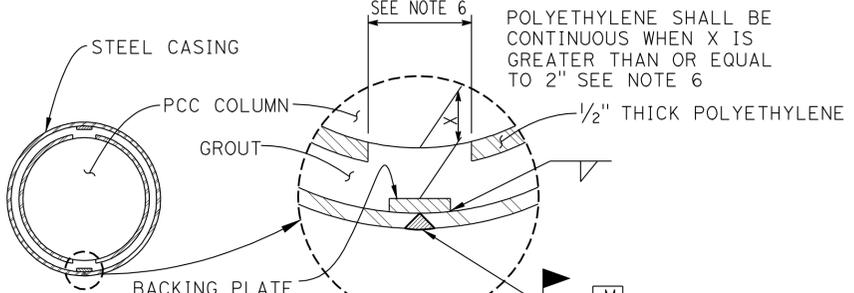
**ELLIPTICAL CASING DETAIL CLASS F AND P/F COLUMN**

RADII R1 AND R2 TO BE DETERMINED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ENGINEER



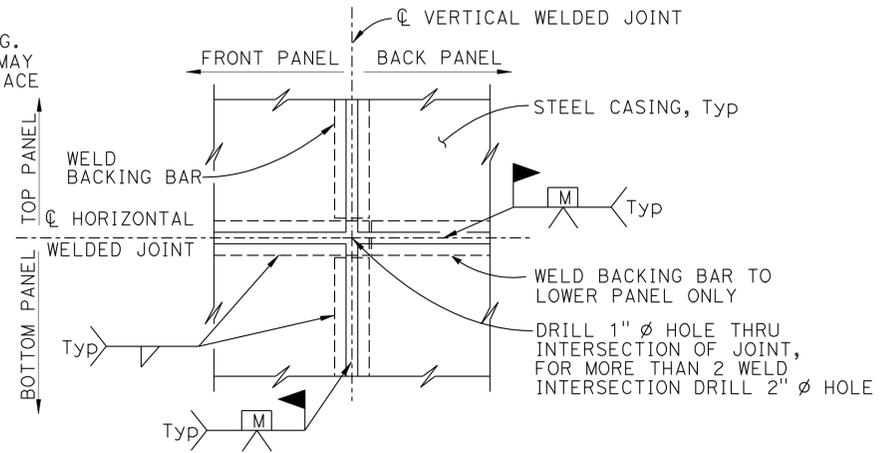
**SECTION A-A**

MINIMUM INSIDE DIAMETER OF STEEL CASING = 1 1/2" GREATER THAN NOMINAL COLUMN DIAMETER FOR CLASS F AND 2 1/2" FOR CLASS P/F



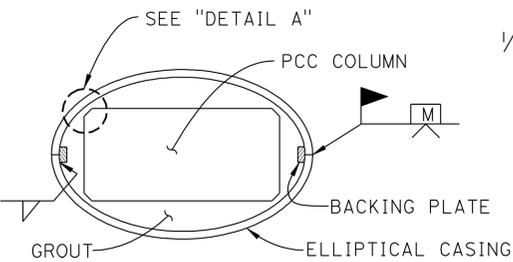
**SECTION B-B**

MINIMUM INSIDE DIAMETER OF STEEL CASING = 2 1/2" GREATER THAN NOMINAL COLUMN DIAMETER FOR CLASS P/F

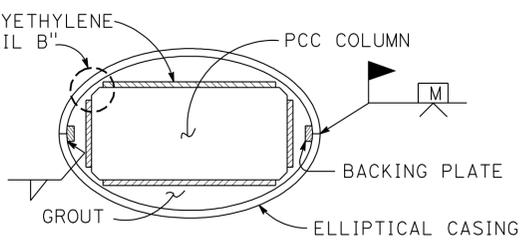


**(TWO WELD INTERSECTION JOINT) DETAIL C**

**ROUND COLUMN**



**SECTION A-A**

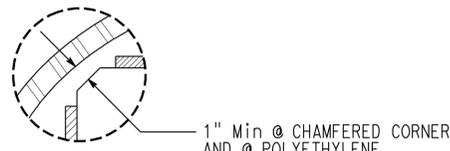


**SECTION B-B**

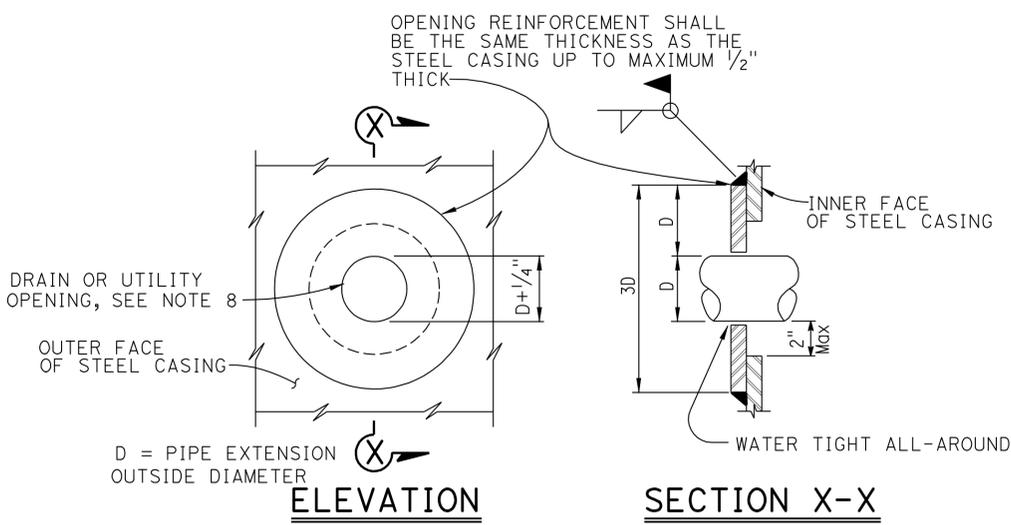
**RECTANGULAR COLUMN**



**DETAIL A**



**DETAIL B**



**CASING OPENING**

NOTE: OPENING REINFORCEMENT REQUIRED FOR DRAIN OR UTILITY OPENINGS LARGER THAN 4"

**NOTES:**

- For varying thickness, steel casing inside surface to remain flush. Minimum clearance from PCC column to casing shall be maintained
- Appropriate injection nozzles to be provided on casing, but removed and ground flush following completion of grouting operation
- All voids between steel casing and polyethylene (Class P/F), and steel casing and PCC column (Class F) to be filled with grout
- Location and number of vertical and horizontal welds to be determined by the Contractor and subject to the approval of the Engineer. The location of casing welds are for illustration. No skip welds allowed
- Circular steel casing to be 1/4" thick minimum for casings with a 4'-4" diameter or less; all other steel casings to be 3/8" thick unless noted differently on contract plans. Backing plates to be the same thickness as casing up to maximum 3/8" thick
- Contractor shall remove 12" polyethylene strip behind backing plate if backing plate is closer than 2" from face of column
- Waterproof limits for steel casings. Typical for Class "F" and "P/F"
- For pipe extensions, opening shall be no more than 1/4" greater than the pipe extension diameter. For other openings, the opening diameter to be determined by the Engineer

NO SCALE

REVISED STANDARD DRAWING	
FILE NO. <b>xs7-010</b>	APPROVAL DATE <u>July 2011</u>

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES
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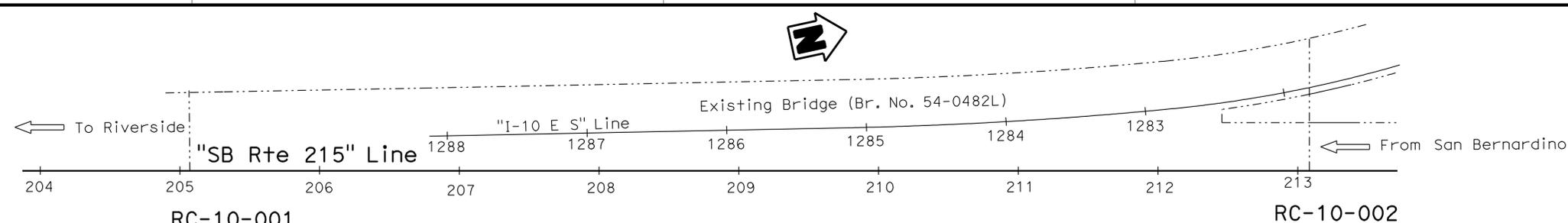
BRIDGE NO. 54-0482L	<b>COLTON-LOMA LINDA OH LT (WIDEN)</b>
POST MILE 3.72	
<b>COLUMN CASING - STEEL</b>	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1476	1743

12-19-11  
 PROFESSIONAL GEOLOGIST  
 HECTOR VALENCIA  
 No. 7776  
 Exp. 2-29-12  
 STATE OF CALIFORNIA

4-16-12  
 PLANS APPROVAL DATE

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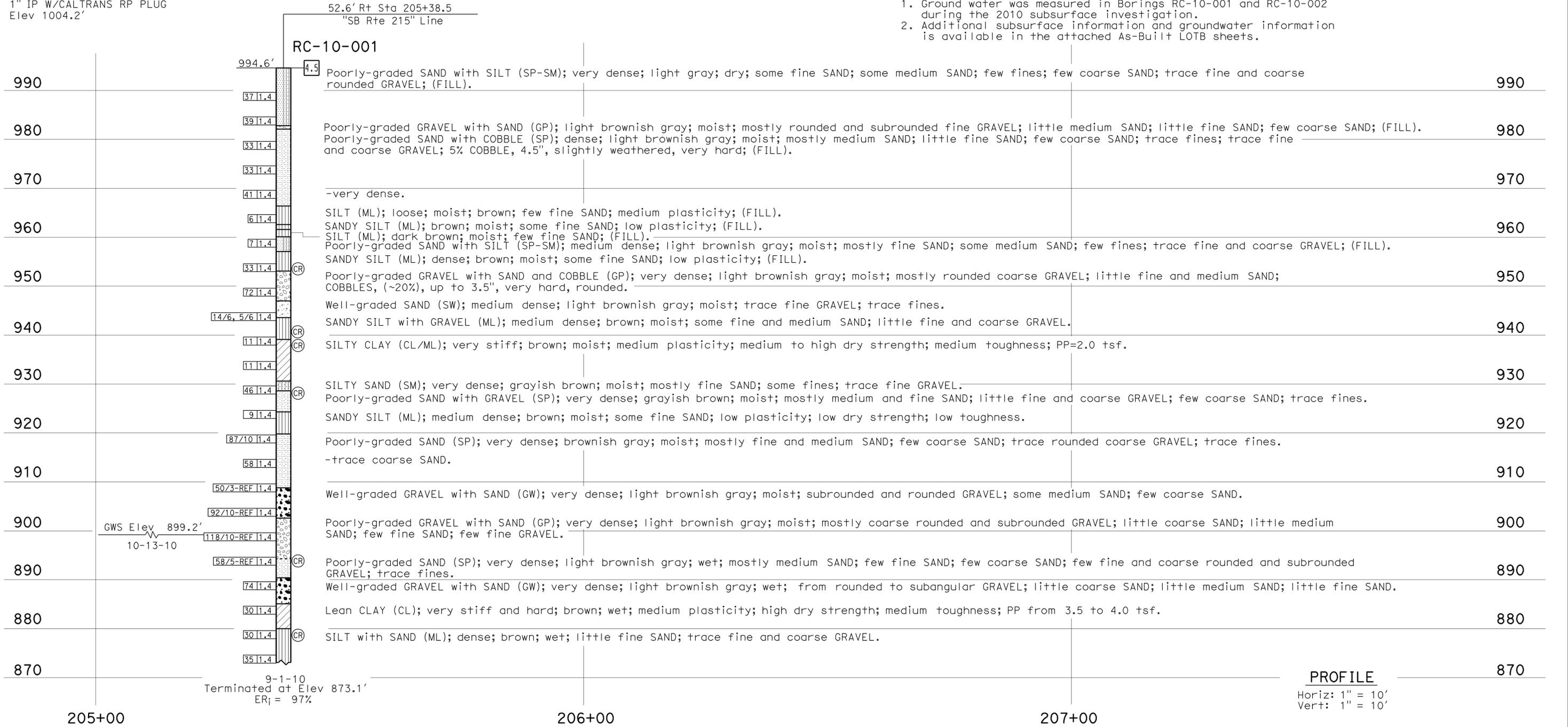


**BENCH MARK**  
 PNO 600  
 N 1845480.19  
 E 6774684.10  
 1" IP W/CALTRANS RP PLUG  
 Elev 1004.2'

**PLAN**  
 1" = 50'

- Note:**
- Ground water was measured in Borings RC-10-001 and RC-10-002 during the 2010 subsurface investigation.
  - Additional subsurface information and groundwater information is available in the attached As-Built LOTB sheets.

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



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

<b>ENGINEERING SERVICES</b>		<b>MATERIALS AND GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b>		<b>DIVISION OF ENGINEERING SERVICES</b>		<b>COLTON-LOMA LINDA YARD OH LT (WIDEN)</b>	
FUNCTIONAL SUPERVISOR		DRAWN BY: W. Tang 09/11		DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 54-0482L		LOG OF TEST BORINGS 1 OF 9	
NAME: M. DeSalvatore		CHECKED BY: F. De Haro		FIELD INVESTIGATION BY: J. Klamecki		POST MILE 3.7		REVISION DATES	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 08000005061		SHEET 34 OF 42	
				CONTRACT NO.: 08-0M9401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		12-14-11 12-16-11	

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 13:52



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1478	1743

**Hector Valencia**  
 PROFESSIONAL GEOLOGIST  
 No. 7776  
 Exp. 2-29-12  
 4-16-12  
 PLANS APPROVAL DATE

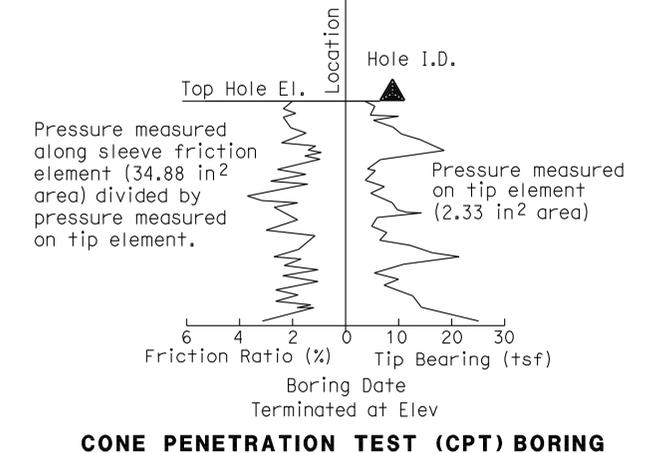
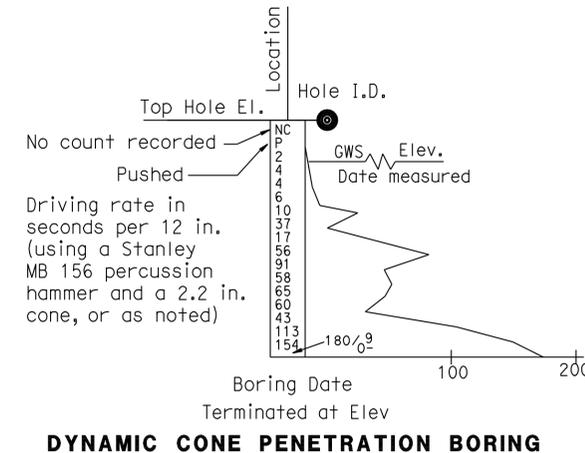
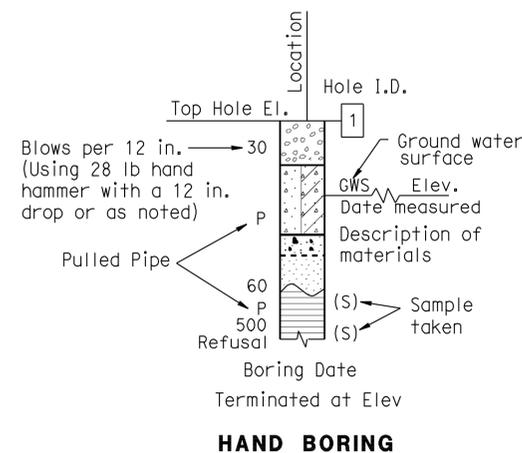
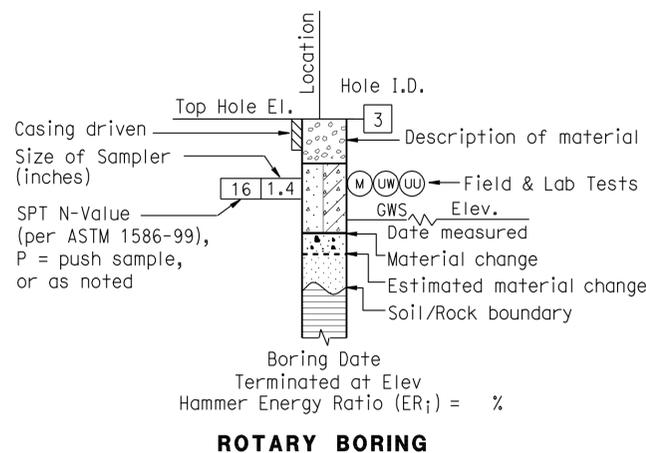
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

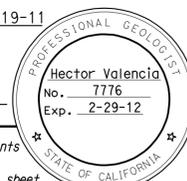
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring (hollow or solid stem bucket)
	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	P	Rotary percussion boring (air)
	R	Rotary drilled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

Note: Size in inches.

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



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1479	1743


 12-19-11  
 PROFESSIONAL GEOLOGIST  
 4-16-12  
 PLANS APPROVAL DATE  
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GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		CL		Lean CLAY
	Well-graded GRAVEL with SAND				Lean CLAY with SAND
	Poorly-graded GRAVEL		CL		Lean CLAY with GRAVEL
	Poorly-graded GRAVEL with SAND				SANDY lean CLAY
	Well-graded GRAVEL with SILT		CL-ML		SILTY CLAY
	Well-graded GRAVEL with SILT and SAND				SILTY CLAY with SAND
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		CL-ML		SILTY CLAY with GRAVEL
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SANDY SILTY CLAY
	Poorly-graded GRAVEL with SILT		ML		SILT
	Poorly-graded GRAVEL with SILT and SAND				SILT with SAND
	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)		ML		SILT with GRAVEL
	Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SANDY SILT
	SILTY GRAVEL		OL		ORGANIC lean CLAY
	SILTY GRAVEL with SAND				ORGANIC lean CLAY with SAND
	CLAYEY GRAVEL		OL		ORGANIC lean CLAY with GRAVEL
	CLAYEY GRAVEL with SAND				SANDY ORGANIC lean CLAY
	SILTY, CLAYEY GRAVEL		OL		ORGANIC SILT
	SILTY, CLAYEY GRAVEL with SAND				ORGANIC SILT with SAND
	Well-graded SAND		CH		Fat CLAY
	Well-graded SAND with GRAVEL				Fat CLAY with SAND
	Poorly-graded SAND		CH		Fat CLAY with GRAVEL
	Poorly-graded SAND with GRAVEL				SANDY fat CLAY
	Well-graded SAND with SILT		MH		Elastic SILT
	Well-graded SAND with SILT and GRAVEL				Elastic SILT with SAND
	Well-graded SAND with CLAY (or SILTY CLAY)		MH		Elastic SILT with GRAVEL
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				SANDY elastic SILT
	Poorly-graded SAND with SILT		MH		SANDY elastic SILT with GRAVEL
	Poorly-graded SAND with SILT and GRAVEL				GRAVELLY elastic SILT
	Poorly-graded SAND with CLAY (or SILTY CLAY)		OH		ORGANIC fat CLAY
	Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				ORGANIC fat CLAY with SAND
	SILTY SAND		OH		ORGANIC fat CLAY with GRAVEL
	SILTY SAND with GRAVEL				GRAVELLY ORGANIC fat CLAY
	CLAYEY SAND		OH		ORGANIC elastic SILT
	CLAYEY SAND with GRAVEL				ORGANIC elastic SILT with GRAVEL
	SILTY, CLAYEY SAND		OH		SANDY ORGANIC elastic SILT
	SILTY, CLAYEY SAND with GRAVEL				SANDY ORGANIC elastic SILT with GRAVEL
	PEAT		OL/OH		ORGANIC SOIL
	COBBLES				ORGANIC SOIL with SAND
	COBBLES and BOULDERS		OL/OH		ORGANIC SOIL with GRAVEL
	BOULDERS				SANDY ORGANIC SOIL
					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
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(UC)	Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)

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

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

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

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

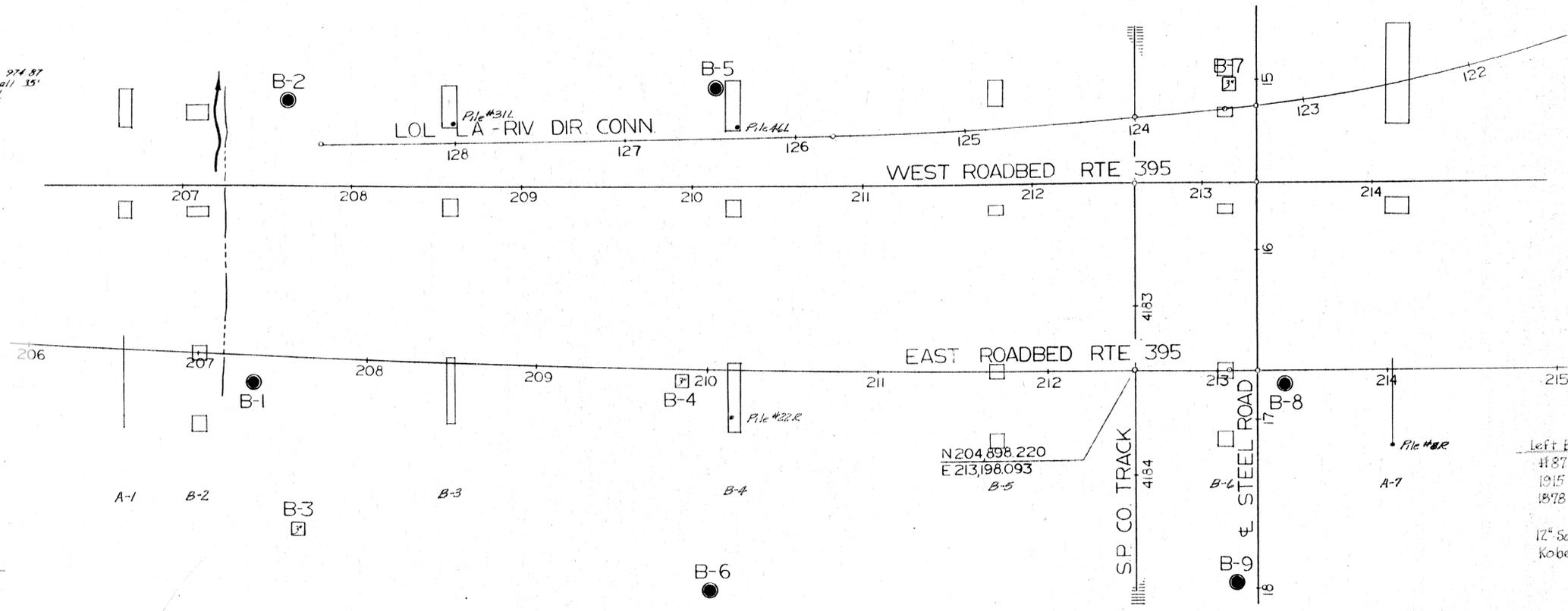
ENGINEERING SERVICES	MATERIALS AND GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-0482L	COLTON-LOMA LINDA YARD OH LT (WIDEN)
				POST MILE 3.7	
PREPARED BY: F. Nguyen		UNIT: 3643	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	FILE => 540482121fb437.dgn	REVISION DATES	SHEET 37 OF 42

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 13:52

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Sbd	395			

BRIDGE ENGINEER REGISTERED CIVIL ENGINEER NO. 1985  
DATE APPROVED: \_\_\_\_\_

**BENCH MARK**  
BM # 13-A-56 Elev. 974.87  
Chis. V on S. Corner P.C.C. Endwall 35'  
L.P. Sta. 125+60 & Imp. S. Road.



**PLAN**  
Scale: 1" = 40'

Left Br.	Rt. Br.	No. of Piles
1187	116	LF (Plan)
1915	3140	LF (As Built)
1878	3047	Design Pile Loading
70'		Pile type
12" Square P's Conc.		Hammer
Kobe K-22		<b>PROFILE</b>

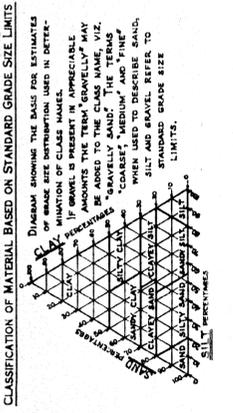
Scale: Vert: 1" = 10'  
Horiz: 1" = 30'

DIVISION OF ENGINEERING SERVICES - MATERIALS AND 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. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

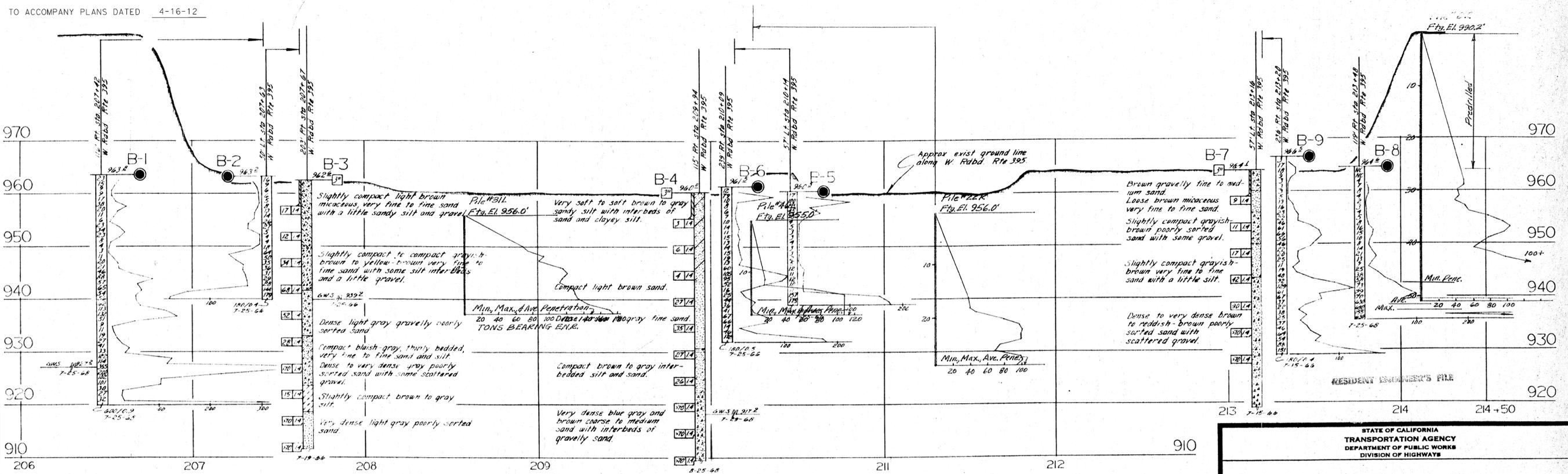
DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
08	Riv, Sbd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1480	1743
UNIT: 3643 CONTRACT No. 08-0M9401 BRIDGE No. 54-0482L PROJ. No. & PHASE: 08000005061 08-0M9401 54-0482L VERT DATUM: NGVD29 CONVERSION: NAVD88 = NGVD29 + 2.0 ft SHEET 39 OF 43					

- PHENOMETER
- 2 1/2" CONE POINT
- 2 1/2" SAMPLER BORING
- ROTARY BORING
- AUGER BORING
- JET BORING
- TEST PIT

- 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



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

**COLTON-LOMA LINDA YARD OVERHEAD**

**LOG OF TEST BORINGS**

BRIDGE NO. 54-482 L.R.	POST MILE 3.7	DRAWING NO.	SHEET OF
REVISION DATES		(PRELIMINARY STAGE ONLY)	

BRIDGE DEPARTMENT  
ENGINEERING GEOLOGY SECTION

WO 096501

Discard prints bearing earlier revision dates

FILENAME => 5404821211b538.tif

**BENCH MARK**  
BM 21-A-59 Elev. 999.76  
Settling pin on curb over bridge  
about 5.5' Lt. sta 205+82 4 Imp. WRB.

**DIVISION OF ENGINEERING SERVICES - MATERIALS AND GEOTECHNICAL SERVICES**  
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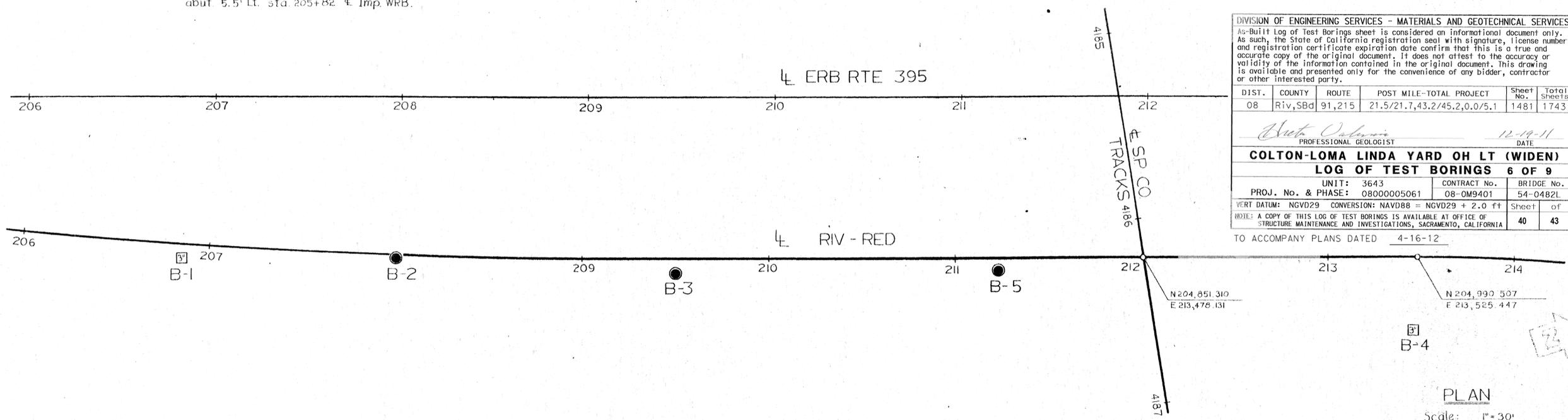
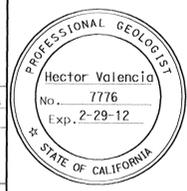
DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1481	1743

*Hector Valencia*  
PROFESSIONAL GEOLOGIST DATE: 12-19-11

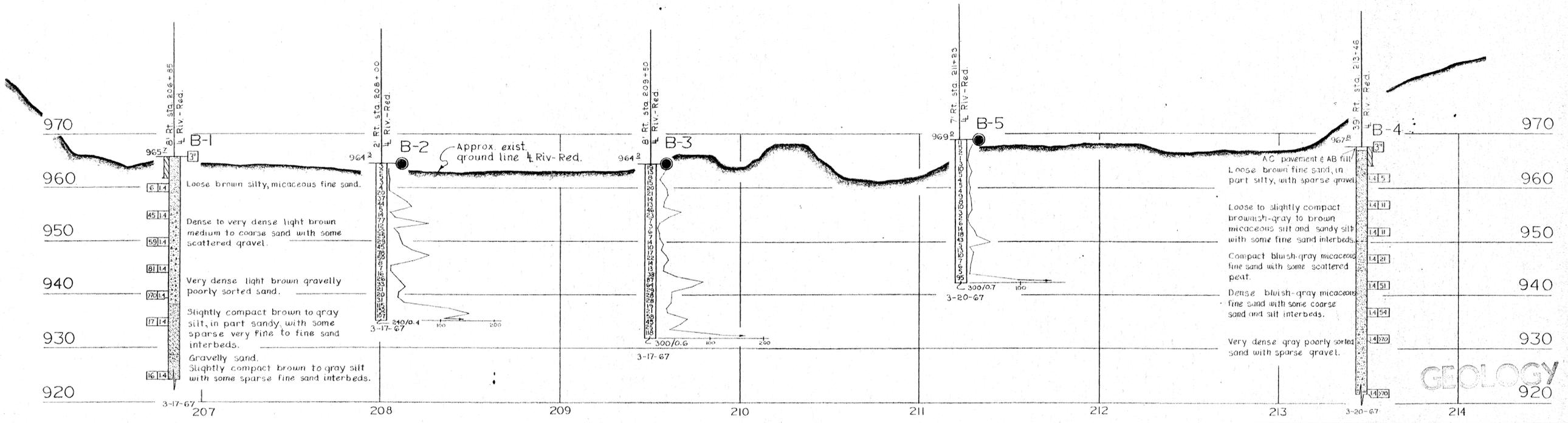
**COLTON-LOMA LINDA YARD OH LT (WIDEN)**  
**LOG OF TEST BORINGS 6 OF 9**

UNIT:	3643	CONTRACT No.:	BRIDGE No.:
PROJ. No. & PHASE:	08000005061	08-0M9401	54-0482L

VERT DATUM: NAVD29 CONVERSION: NAVD88 = NAVD29 + 2.0 ft Sheet 40 of 43  
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA  
TO ACCOMPANY PLANS DATED 4-16-12



**PLAN**  
Scale: 1" = 30'  
**PROFILE**  
Scale: Vert. 1" = 10'  
Horiz. 1" = 30'



AC pavement & AB fill  
Loose brown fine sand, in part silty, with sparse gravel

Loose to slightly compact brownish-gray to brown micaceous silt and sandy silt with some fine sand interbeds.

Compact bluish-gray micaceous fine sand with some scattered peat.

Dense bluish-gray micaceous fine sand with some coarse sand and silt interbeds.

Very dense gray poorly sorted sand with sparse gravel.

**LEGEND**

**LEGEND OF EARTH MATERIALS**

- SILTY CLAY OR CLAYEY SILT
- PEAT
- 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 PERCENTAGE OF GRAVEL, SAND, SILT, AND CLAY. IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TEST GRAVELLY MAY BE ADDED TO THE CLASS NAME, I.E., GRAVELLY SAND, GRAVELLY SILT, GRAVELLY CLAY, SANDY CLAY, CLAYEY SAND, CLAYEY SILT, SANDY SILT, SANDY CLAY, CLAYEY SAND, CLAYEY SILT, SANDY SILT, SANDY CLAY, CLAYEY SAND, CLAYEY SILT.

BRIDGE DEPARTMENT  
ENGINEERING GEOLOGY SECTION

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.

NO GROUND WATER ENCOUNTERED DUE TO THIS INVESTIGATION BY BRIDGE DEPT. GEOLOGY SECTION DATE MAR. 1967.

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF HIGHWAYS

**COLTON-LOMA LINDA YARD OH**

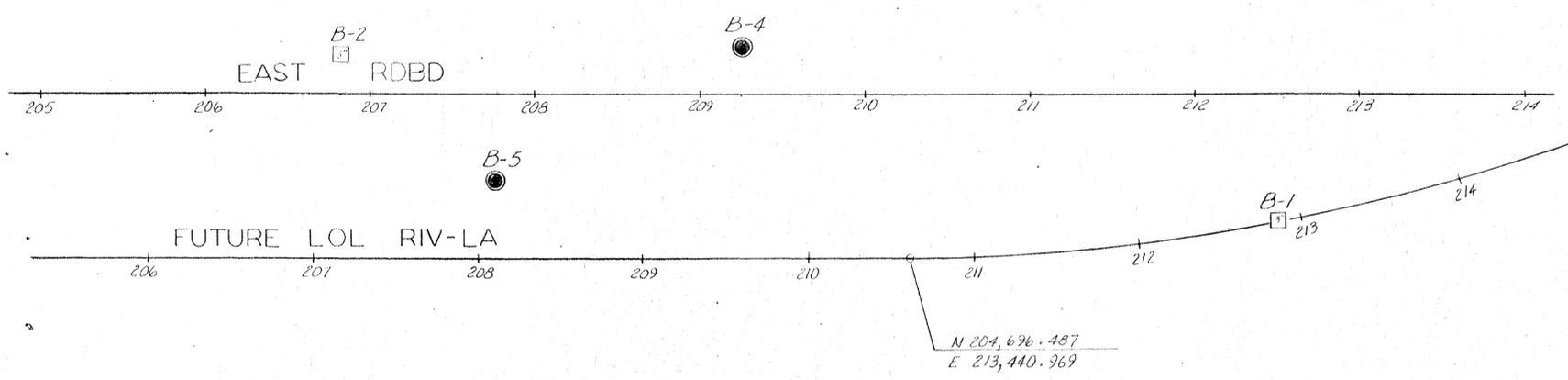
**LOG OF TEST BORINGS**

SCALE AS NOTED	BRIDGE 54-482 QR	FILE	DRAWING
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DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
08	Sbd	395	3.7		

**BENCH MARK**  
 BM# 13-A-56 Elev 974.87  
 Chis. X on S. corner PCC endwall 35' Lt.  
 Sta. 125+60 & Imp. S. Rdbd.



**PLAN**  
 Scale 1"=50'

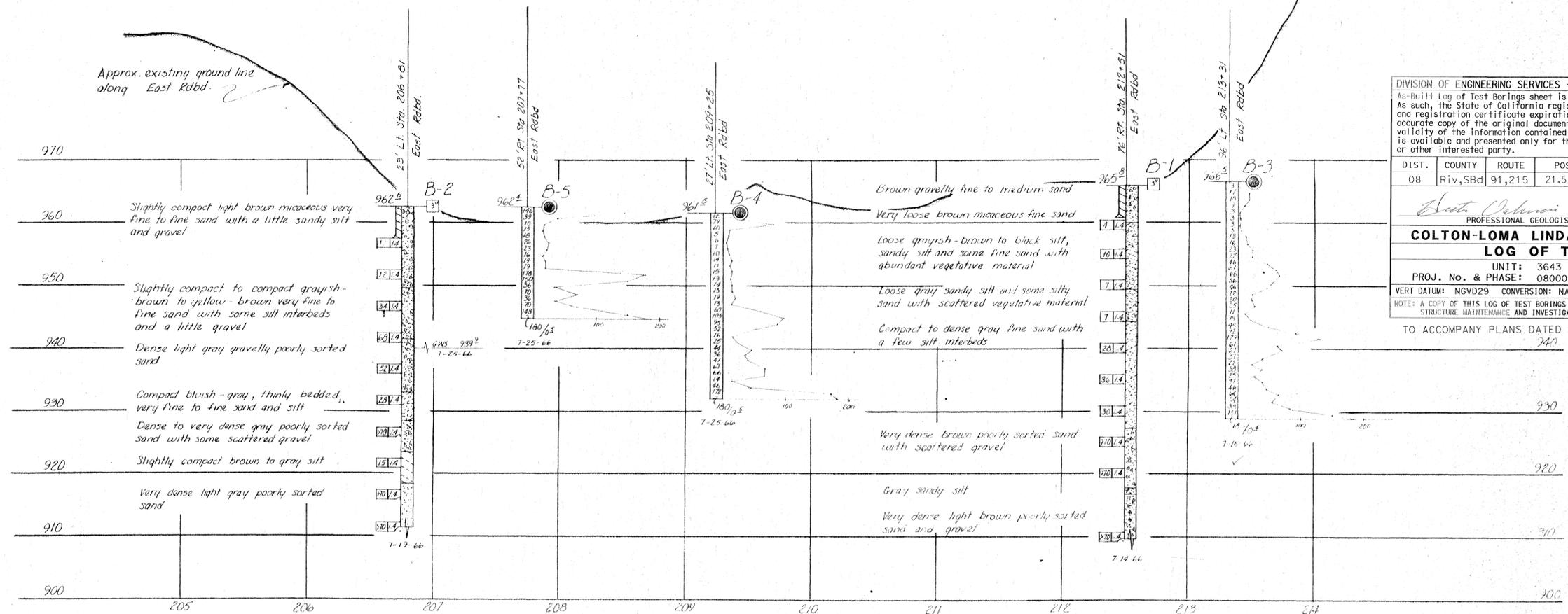


**DIVISION OF ENGINEERING SERVICES - MATERIALS AND GEOTECHNICAL SERVICES**  
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DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
08	Riv,Sbd	91,215	21.5/21.7,43.2/45.2,0.0/5.1	1483	1743

*Hector Valencia* 12-19-11  
 PROFESSIONAL GEOLOGIST DATE  
**COLTON-LOMA LINDA YARD OH LT (WIDEN)**  
**LOG OF TEST BORINGS 8 OF 9**  
 UNIT: 3643 CONTRACT No. 08-0M9401 BRIDGE No. 54-0482L  
 PROJ. No. & PHASE: 0800005061  
 VERT DATUM: NCGD29 CONVERSION: NAVD88 = NCGD29 + 2.0 ft Sheet 42 of 43  
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

TO ACCOMPANY PLANS DATED 4-16-12



**PROFILE**  
 Scale Vert. 1"=10'  
 Horiz. 1"=50'

LEGEND OF BORING OPERATIONS

**1" SOIL TUBE**  
 PENETROMETER  
 2 1/2" CONE PENETROMETER  
 SAMPLER BORING (SMB)  
 RETRIEVAL BORING (REB)  
 AUGER BORING (AB)  
 JET BORING  
 CORE BORING  
 TEST PIT

**LEGEND OF EARTH MATERIALS**

GRAVEL	SILT CLAY OR CLAYEY SILT	SEDIMENTARY ROCK
SAND	CLAY	METAMORPHIC ROCK
SILT	SANDY CLAY OR CLAYEY SAND	
CLAY	SANDY SILT OR SILTY SAND	
	IGNEOUS ROCK	
	ORGANIC MATERIAL	
	FILL MATERIAL	
	ORGANIC WATER	

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

Diagram showing the relationship between soil classification systems (ASTM, AASHTO, USCS, UCPS) based on percentage of sand, silt, and clay.

**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.

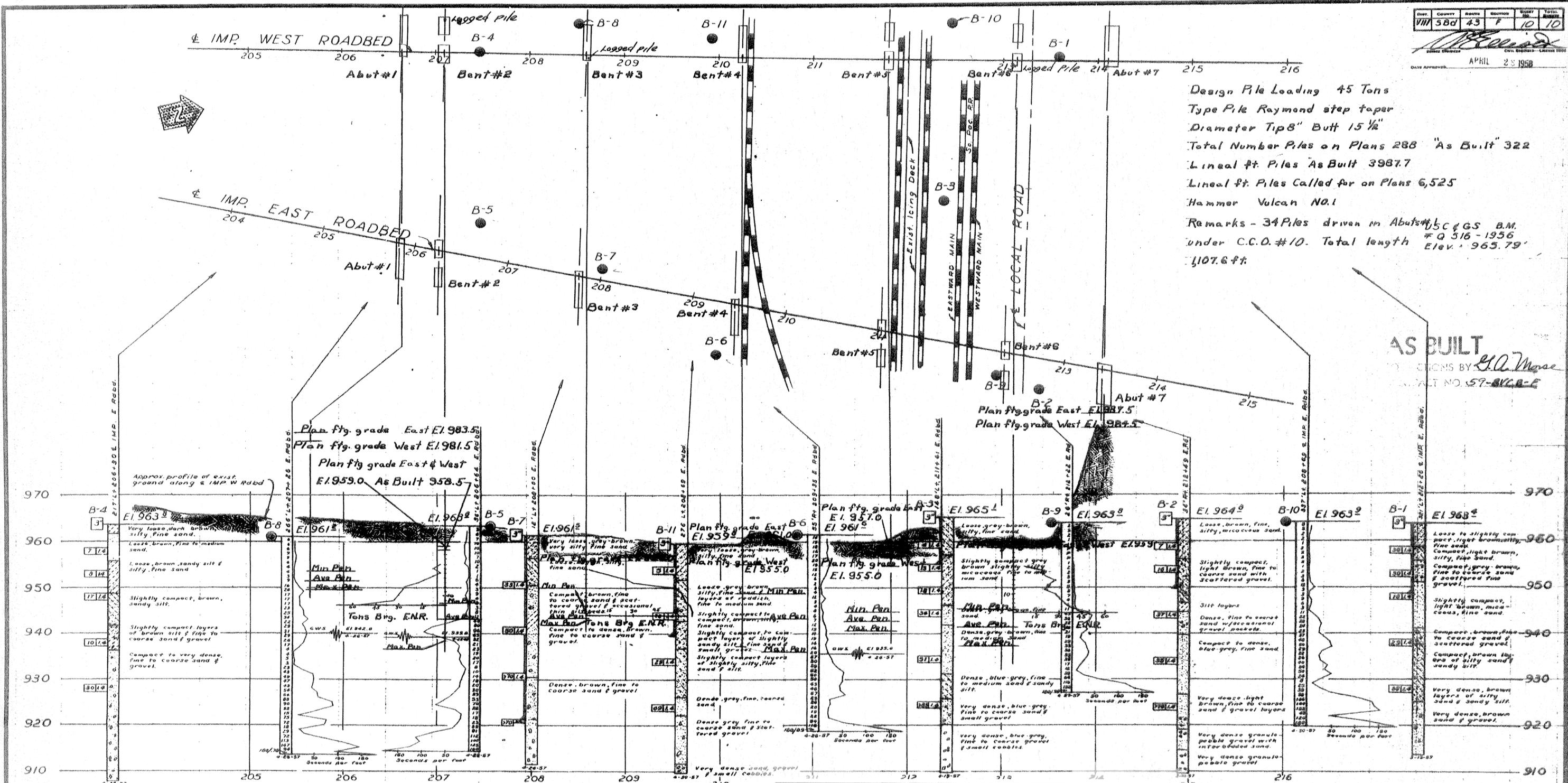
**GEOLOGY**

STATE OF CALIFORNIA  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**COLTON LOMA LINDA YARD OVERHEAD (WIDEN)**  
**LOG OF TEST BORINGS**

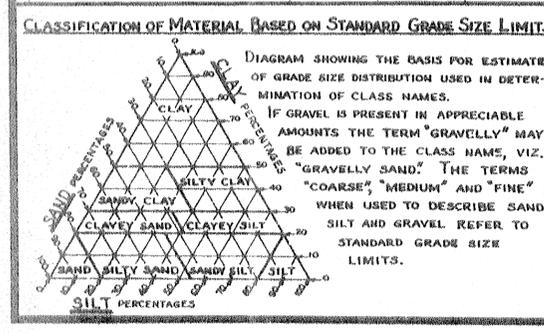
Scale As Noted BRIDGE 54-432 R FILE DRAWING

BRIDGE DEPARTMENT



Design Pile Loading 45 Tons  
 Type Pile Raymond step taper  
 Diameter Tip 8" Butt 15 1/2"  
 Total Number Piles on Plans 288 "As Built" 322  
 Lineal Ft. Piles "As Built" 3987.7  
 Lineal Ft. Piles Called for on Plans 6,525  
 Hammer Vulcan No. 1  
 Remarks - 34 Piles driven in Abutments & G.S. B.M. under C.C.O. #10. Total length 70 516 - 1956  
 1107.6 ft.

AS BUILT  
 CORRECTIONS BY G.A. Morse  
 PLAN NO. 57-812-E



**LEGEND OF EARTH MATERIALS**

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

**LEGEND**

PLAN OF ANY BORING	TOP MATE EL.
PENETROMETER	Blows per Foot (Using 14 lb hand hammer with a 12" free fall)
2 1/2" CONE PENETROMETER	Pulled pipe
SAMPLER BORING (DRY)	Groundwater
ROTARY BORING (WET)	DATE OF BORING
AUGER BORING (DRY)	DESCRIPTION OF MATERIAL
JET BORING	DATE OF BORING
CORE BORING	DATE OF BORING
TEST PIT	DATE OF BORING

**DIVISION OF ENGINEERING SERVICES - MATERIALS AND GEOTECHNICAL SERVICES**

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DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
08	Riv, Sbd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1484	1743

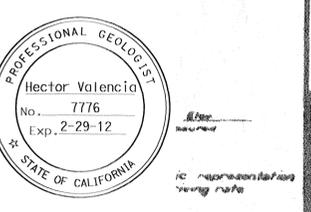
PROF. GEOLOGIST  
 Hector Valencia  
 No. 7776  
 Exp. 2-29-12

DATE: 12-19-11

**COLTON-LOMA LINDA YARD OH LT (WIDEN)**  
**LOG OF TEST BORINGS 9 OF 9**

UNIT:	3643	CONTRACT No.:	BRIDGE No.:
PROJ. No. & PHASE:	0800005061	08-0M9401	54-0482L
VERT DATUM:	NGVD29	CONVERSION:	NAVD88 = NGVD29 + 2.0 ft
NOTE:	A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA		
	43		43

TO ACCOMPANY PLANS DATED 4-16-12



**NOTES**

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans.  
 Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**COLTON-LOMA LINDA YARD O.H.**

**LOG OF TEST BORINGS**

Horiz. 1"=50'  
 Scale Vert. 1"=10'  
 BRIDGE 54-482 L FILE F-54 DRAWING C-4164-10

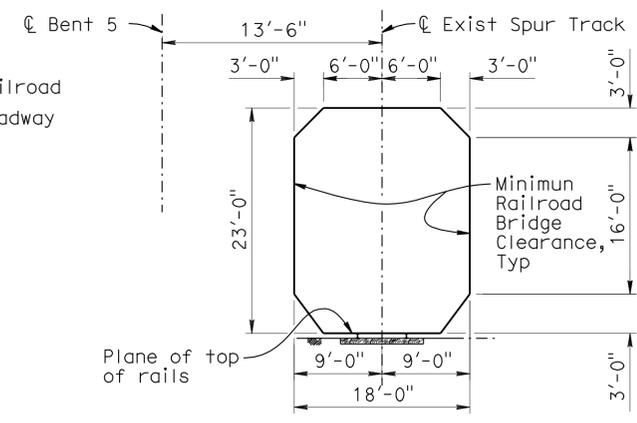
PREL. DRAWING NO. P. 4164

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1485	1743
REGISTERED CIVIL ENGINEER LARRY WU No. C57035 Exp. 6-30-13 CIVIL STATE OF CALIFORNIA			4-06-12	DATE	
4-16-12			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.					

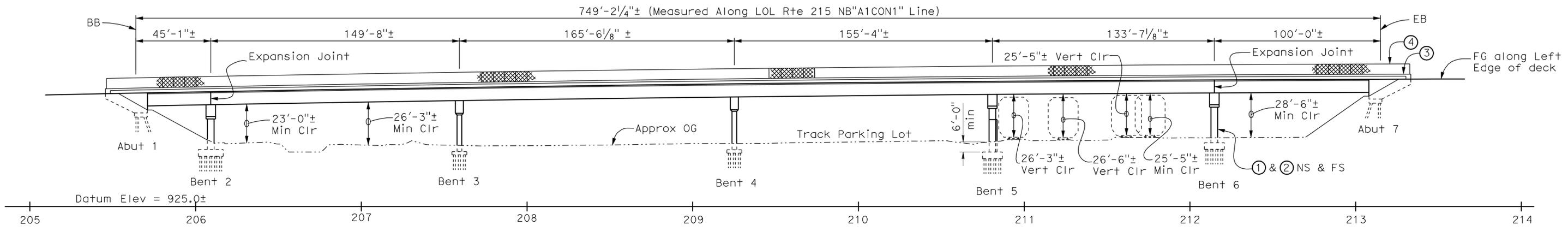
- NOTES:**
- Paint "BR. NO. 54-0482R"
  - Paint "COLTON-LOMA LINDA YARD OH"
  - Conc Barrier, Type 732
  - Chain Link Railing, Type 7
  - Temporary Railing Type K, see "Roadway Plans"
  - Remove existing Type 9 Barrier Railing
  - Remove existing Overhang and existing drainage inlets
  - Closure Pour
  - Existing MBGR, see "Roadway Plans"
  - Remove existing MBGR, see "Roadway Plans"
  - MBGR, see "Roadway Plans"
  - Match existing Grade and Cross Slope
  - Remove existing concrete and expansion fingers, replace with Joint Seal Assembly
  - Drainage Inlet, Type D-2
  - Approach Slab, Type N (30D)
  - Approach Slab, Type R (30D)
  - New Seat Extenders at widening
  - Cable Restrainers
  - Conc Barrier, Type 732 (Mod)

- LEGEND**
- Point of minimum vertical clearance over Railroad
  - Point of minimum vertical clearance over Roadway
  - Direction of Traffic
  - Indicates New Construction
  - Indicates Existing Structure
  - Indicates Existing Bridge Removal (Portion)
  - Indicates Closure Pour

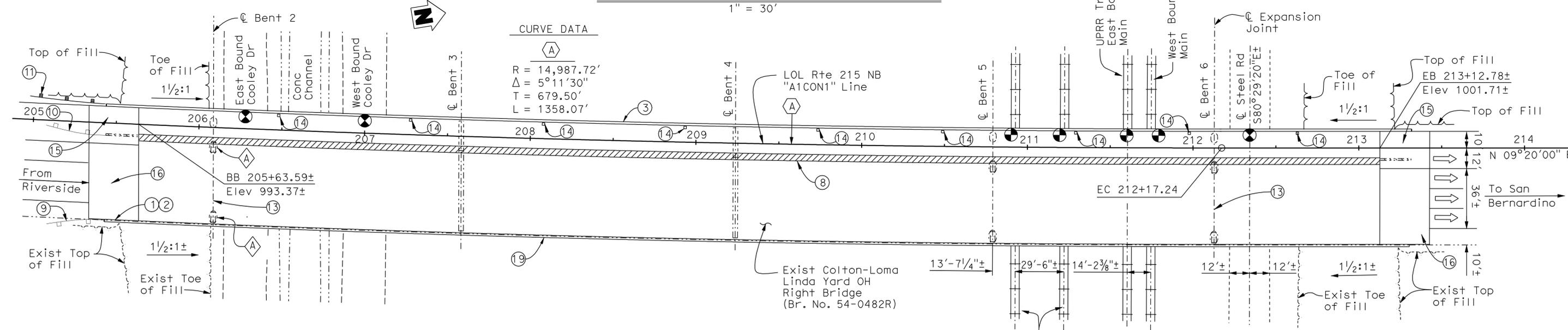
- RETROFIT CODE**
- Column Steel Casing (Class F) Retrofit
  - Footing Retrofit
  - Seat Extender Retrofit



**MINIMUM TEMPORARY CONSTRUCTION CLEARANCE**  
NO SCALE



**DEVELOPED MIRROR ELEVATION**



**PLAN**  
1" = 30'

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

For Typical Sections and General Notes, see "GENERAL PLAN NO. 2" sheet.  
For Quantities, Index to Plans, and Pile Data Table, see "INDEX TO PLANS" sheet.

DESIGN ENGINEER <b>DANIEL T. ADAMS</b>	DESIGN	BY J. Szabo	CHECKED R. Stitiz	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	54-0482R	<b>COLTON-LOMA LINDA OH RT (WIDEN)</b> <b>GENERAL PLAN NO.1</b>		
	DETAILS	BY D. Wooten/G. Hallstrom	CHECKED R. Stitiz	LAYOUT	BY J. Szabo			CHECKED R. Stitiz	POST MILE		3.72	
	QUANTITIES	BY J. Szabo	CHECKED R. Stitiz	SPECIFICATIONS	BY J. Corrado			PLANS AND SPECS COMPARED	J. Corrado		UNIT: 3589	PROJECT NUMBER & PHASE: 0800000506

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1486	1743

REGISTERED CIVIL ENGINEER  
 LARRY WU  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

4-06-12 DATE  
 4-16-12 PLANS APPROVAL DATE

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**RETROFIT CODE**

- ◊ A Column Steel Casing (Class F) Retrofit
- ◊ B Footing Retrofit
- ◊ C Seat Extender Retrofit

**GENERAL NOTES  
LOAD AND RESISTANCE FACTOR DESIGN**

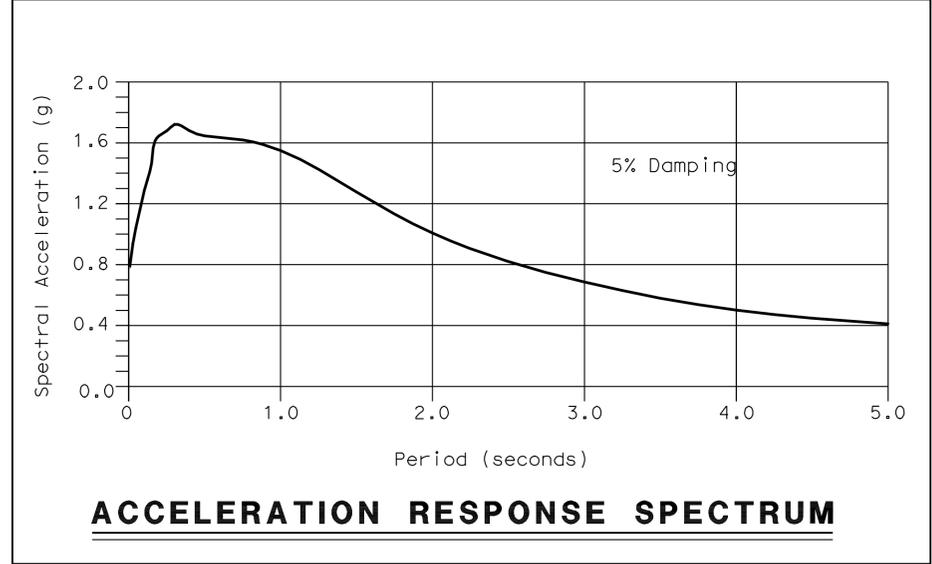
DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4th Edition and the California Amendments, preface dated Sept. 2010.

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC) Version 1.6, November, 2010

DEAD LOAD: Includes 35 Psf for future wearing surface.

LIVE LOADING: HL93 and permit design load.

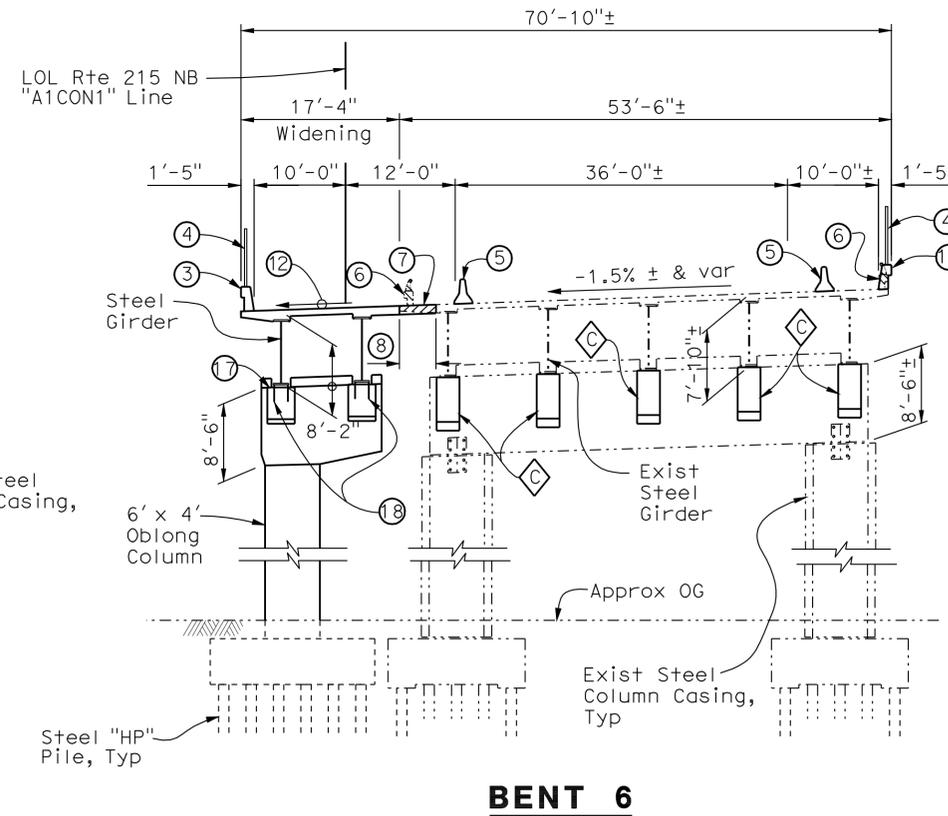
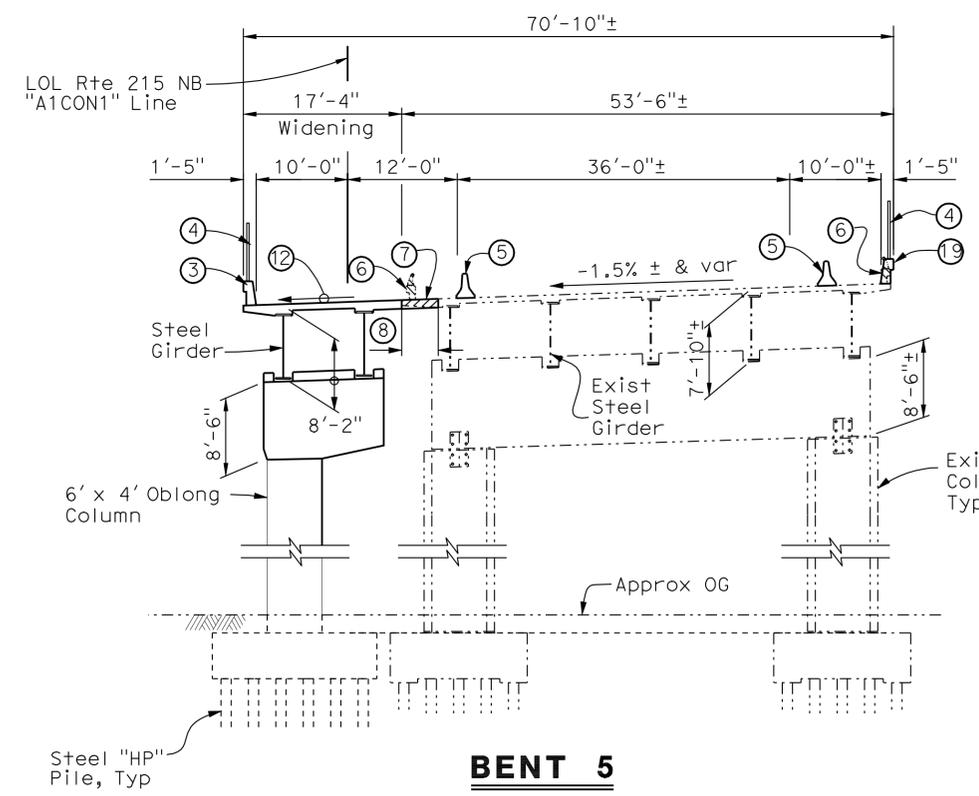
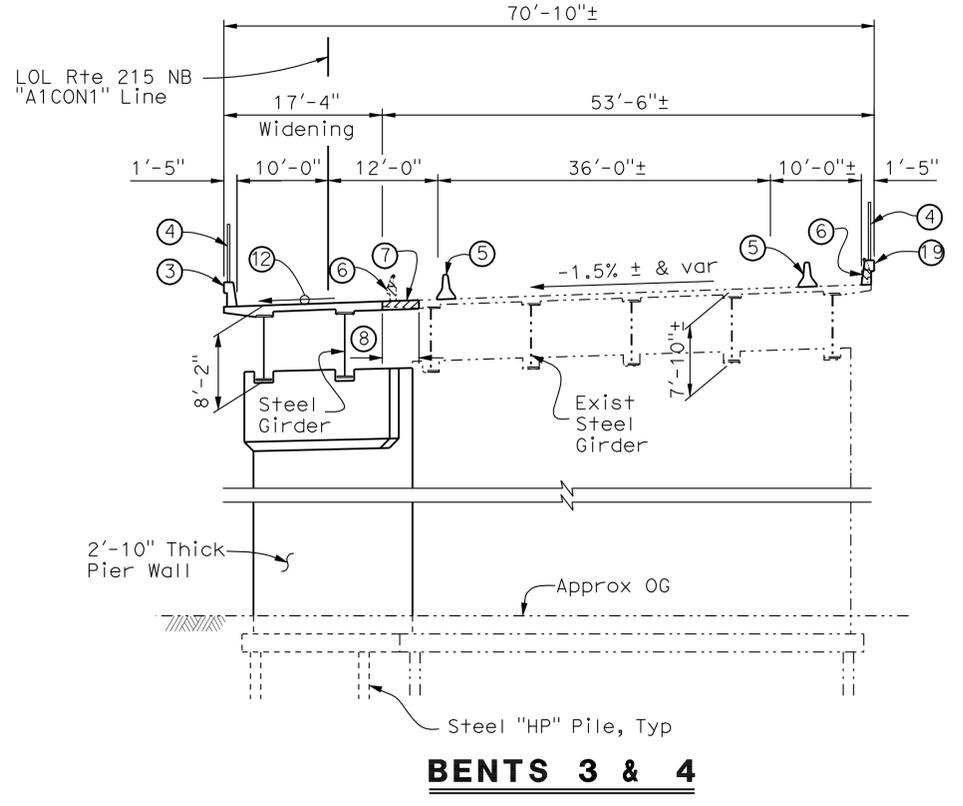
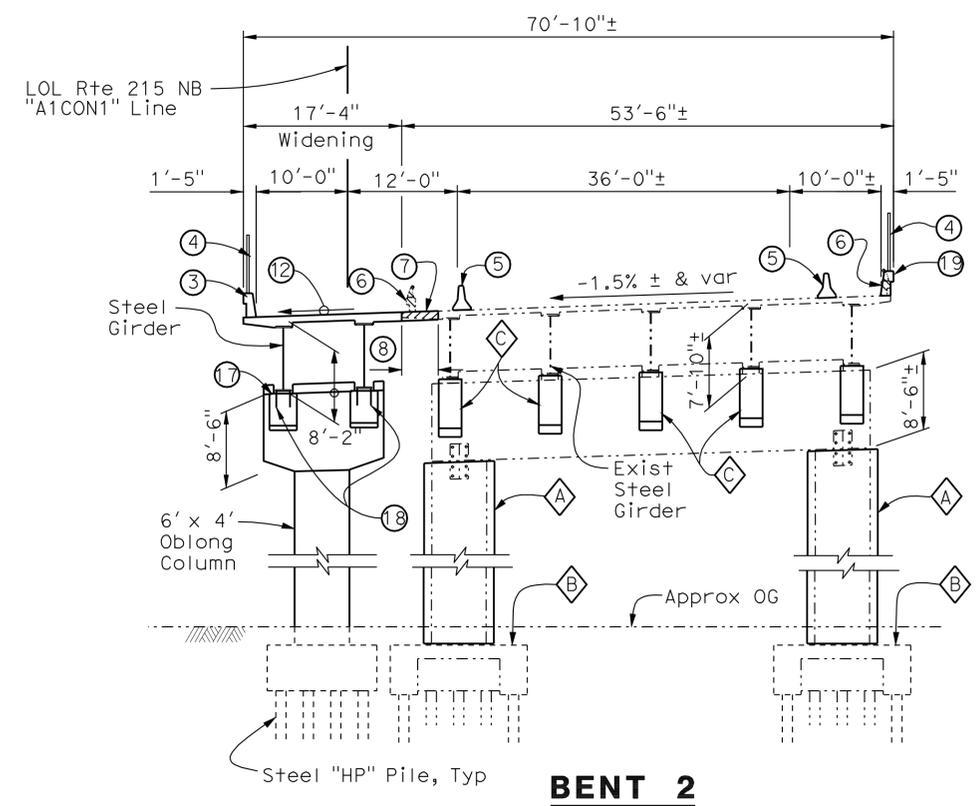
SEISMIC LOADING: Soil Profile: Vs30 = 853 ft/s Moment Magnitude: Mmax = 6.5 Peak Ground Acceleration: 0.78g



REINFORCED CONCRETE:  $f'_c = 60$  ksi  
 $f'_y = 3600$  psi @ 28 Days  
 $n = 8$

STRUCTURAL STEEL (New construction):  $f_y =$  ASTM A709 Grade 50, unless otherwise noted

STRUCTURAL STEEL (Existing structure):  $f_y = 39$  Ksi



**TYPICAL SECTIONS**

1" = 10'

For Notes and Legend, see "GENERAL PLAN NO. 1" sheet

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

DANIEL T. ADAMS DESIGN ENGINEER	DESIGN	BY J. Szabo	CHECKED R. Stiltz	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-0482R	COLTON-LOMA LINDA OH RT (WIDEN) GENERAL PLAN NO. 2	
	DETAILS	BY D. Wooten/G. Hallstrom/Y. Tang	CHECKED R. Stiltz	LAYOUT	BY J. Szabo			CHECKED R. Stiltz	POST MILE		3.72
	QUANTITIES	BY J. Szabo	CHECKED R. Stiltz	SPECIFICATIONS	BY J. Corrado			PLANS AND SPECS COMPARED J. Corrado	UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506		CONTRACT NO.: 08-0M9401

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

DISREGARD PRINTS BEARING EARLIER REVISION DATES

1-12-12

**INDEX TO PLANS**

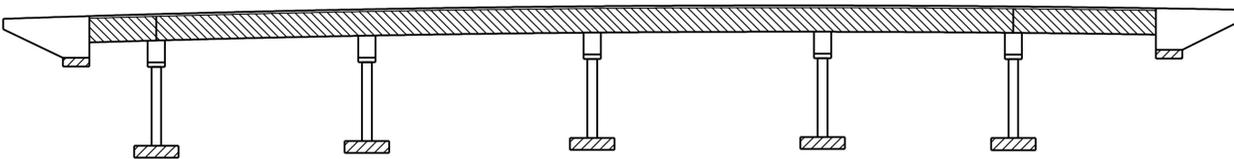
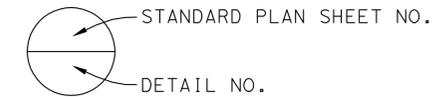
SHEET NO.	TITLE	SHEET NO.	TITLE
1	GENERAL PLAN NO. 1	38	GIRDER DETAILS NO. 12
2	GENERAL PLAN NO. 2	39	GIRDER DETAILS NO. 13
3	INDEX TO PLANS	40	STEEL GIRDER SHOP SPLICE & STUD CONNECTION DETAILS
4	FOUNDATION PLAN NO. 1	41	STEEL GIRDER TRANSVERSE STIFFENER DETAILS
5	FOUNDATION PLAN NO. 2	42	DRAIN DETAILS NO. 1
6	ABUTMENT LAYOUT	43	DRAIN DETAILS NO. 2
7	ABUTMENT DETAILS NO. 1	44	DRAIN DETAILS NO. 3
8	ABUTMENT DETAILS NO. 2	45	STRUCTURE APPROACH (TYPE N)
9	ABUTMENT DETAILS NO. 3	46	STRUCTURE APPROACH (TYPE R)
10	ABUTMENT DETAILS NO. 4	47	CONCRETE BARRIER TYPE 732 (MOD)
11	BENT 2 LAYOUT	48	COLUMN CASING - STEEL
12	BENT 3 & 4 LAYOUT	49	RETROFIT LAYOUT NO. 1
13	BENT 5 & 6 LAYOUT	50	RETROFIT LAYOUT NO. 2
14	BENT DETAILS NO. 1	51	RETROFIT DETAILS NO. 1
15	BENT DETAILS NO. 2	52	RETROFIT DETAILS NO. 2
16	BENT DETAILS NO. 3	53	RETROFIT DETAILS NO. 3
17	BENT DETAILS NO. 4	54	RETROFIT DETAILS NO. 4
18	BENT DETAILS NO. 5	55	RETROFIT DETAILS NO. 5
19	TYPICAL SECTION	56	RETROFIT DETAILS NO. 6
20	CAMBER DIAGRAM	57	RETROFIT DETAILS NO. 7
21	DECK REINFORCEMENT	58	RETROFIT DETAILS NO. 8
22	JOINT SEAL ASSEMBLY	59	LOG OF TEST BORINGS 1 OF 9
23	GIRDER LAYOUT NO. 1	60	LOG OF TEST BORINGS 2 OF 9
24	GIRDER LAYOUT NO. 2	61	LOG OF TEST BORINGS 3 OF 9
25	GIRDER LAYOUT NO. 3	62	LOG OF TEST BORINGS 4 OF 9
26	GIRDER LAYOUT NO. 4	63	LOG OF TEST BORINGS 5 OF 9
27	GIRDER DETAILS NO. 1	64	LOG OF TEST BORINGS 6 OF 9
28	GIRDER DETAILS NO. 2	65	LOG OF TEST BORINGS 7 OF 9
29	GIRDER DETAILS NO. 3	66	LOG OF TEST BORINGS 8 OF 9
30	GIRDER DETAILS NO. 4	67	LOG OF TEST BORINGS 9 OF 9
31	GIRDER DETAILS NO. 5		
32	GIRDER DETAILS NO. 6		
33	GIRDER DETAILS NO. 7		
34	GIRDER DETAILS NO. 8		
35	GIRDER DETAILS NO. 9		
36	GIRDER DETAILS NO. 10		
37	GIRDER DETAILS NO. 11		

**QUANTITIES**

BRIDGE REMOVAL (PORTION), LOCATION E	LUMP SUM
STRUCTURE EXCAVATION (BRIDGE)	540 CY
STRUCTURE BACKFILL (BRIDGE)	231 CY
AGGREGATE BASE (APPROACH SLAB)	11 CY
FURNISH STEEL PILING (HP 10 X 57)	724 LF
DRIVE STEEL PILE (HP 10 X 57)	12 EA
FURNISH STEEL PILING (HP 14 X 89)	5,689 LF
DRIVE STEEL PILE (HP 14 X 89)	112 EA
STRUCTURAL CONCRETE, BRIDGE FOOTING	204 CY
STRUCTURAL CONCRETE, BRIDGE	942 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	46 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	106 CY
PAVING NOTCH EXTENSION	78 LF
DRILL AND BOND DOWEL	676 LF
DRILL AND BOND DOWEL (CHEMICAL ADHESIVE)	40 EA
JOINT SEAL (MR 1/2")	71 LF
JOINT SEAL (MR 1")	71 LF
JOINT SEAL ASSEMBLY (MR 4")	138 LF
BAR REINFORCING STEEL (BRIDGE)	307,540 LB
ASPHALT MEMBRANE WATERPROOFING	279 SQFT
COLUMN CASING	9,648 LB
FURNISH STRUCTURAL STEEL (BRIDGE)	874,461 LB
ERECT STRUCTURAL STEEL (BRIDGE)	874,461 LB
CLEAN AND PAINT STRUCTURAL STEEL	LUMP SUM
SPOT BLAST CLEAN AND PAINT UNDERCOAT	83 SQFT
MISCELLANEOUS METAL (RESTRAINER)	1,301 LB
BRIDGE DECK DRAINAGE SYSTEM	11,150 LB
CHAIN LINK RAILING (TYPE 7)	1,572 LF
CONCRETE BARRIER (TYPE 732 MODIFIED)	786 LF
CONCRETE BARRIER (TYPE 732)	787 LF

**STANDARD PLANS DATED MAY 2006**

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL-BRIDGE
BO-1	BRIDGE DETAILS
BO-3	BRIDGE DETAILS
BO-5	BRIDGE DETAILS
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
BO7-6	DECK DRAINS TYPES D-1 AND D-2
B11-52	CHAINLINK RAILING TYPE 7
B11-55	CONCRETE BARRIER TYPE 732
T-3	TEMPORARY RAILING (TYPE K)



- Structural Concrete, Bridge (4000 PSI @ 28 Days)
- Structural Concrete, Bridge Footing
- Indicates Composite Welded Steel Plate Girders

**CONCRETE STRENGTH AND TYPE LIMITS**

No Scale

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance Required (kips)
		Compression	Tension			
Abut 1	HP 10 x 57 "H" Pile	270	0	925.0 (a)	925.0 (a)	270
Bent 2	HP 14 x 89 "H" Pile	320	180	903.0 (a) 909.0 (b)	903.0	320
Bent 2 (Lt) (Retrofit)	HP 14 x 89 "H" Pile	350	195	900.0 (a) 907.0 (b)	900.0	350
Bent 2 (Rt) (Retrofit)	HP 14 x 89 "H" Pile	350	195	900.0 (a) 907.0 (b)	900.0	350
Bent 3	HP 14 x 89 "H" Pile	320	180	911.0 (a) 916.0 (b)	911.0	320
Bent 4	HP 14 x 89 "H" Pile	320	185	911.0 (a) 915.0 (b)	911.0	320
Bent 5	HP 14 x 89 "H" Pile	360	170	910.0 (a) 917.0 (b)	910.0	360
Bent 6	HP 14 x 89 "H" Pile	360	170	910.0 (a) 917.0 (b)	910.0	360
Abut 7	HP 10 x 57 "H" Pile	260	0	927.0 (a)	927.0	260

NOTE: Design tip elevations are controlled by: (a) Compression, (b) Tension

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

DESIGN	BY J. Szabo	CHECKED R. Stiltz
DETAILS	BY D. Wooten	CHECKED J. Szabo
QUANTITIES	BY J. Szabo	CHECKED R. Stiltz

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 10

BRIDGE NO.  
54-0482R  
POST MILE  
3.72

COLTON-LOMA LINDA OH RT (WIDEN)

INDEX TO PLANS

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

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 3589  
PROJECT NUMBER & PHASE: 0800000506

CONTRACT NO.: 08-0M9401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF  
3-28-12 3 67

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1487	1743

Larry Wu  
REGISTERED CIVIL ENGINEER  
4-06-12 DATE  
4-16-12 PLANS APPROVAL DATE  
LARRY WU  
No. C57035  
Exp. 6-30-13  
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.

- Bridge Location
- Left Bridge
- ① - 80.390 Lt. C SB Rte 215, Sta 205+60.240, Elev 998.185
  - ② - 7.650 Lt. C SB Rte 215, Sta 205+59.900, Elev 999.114
- Right Bridge
- ⑤ - 7.540 Rt. C NB Rte 215, Sta 205+63.550, Elev 995.420
  - ⑥ - 58.370 Rt. C NB Rte 215, Sta 205+66.170, Elev 996.234

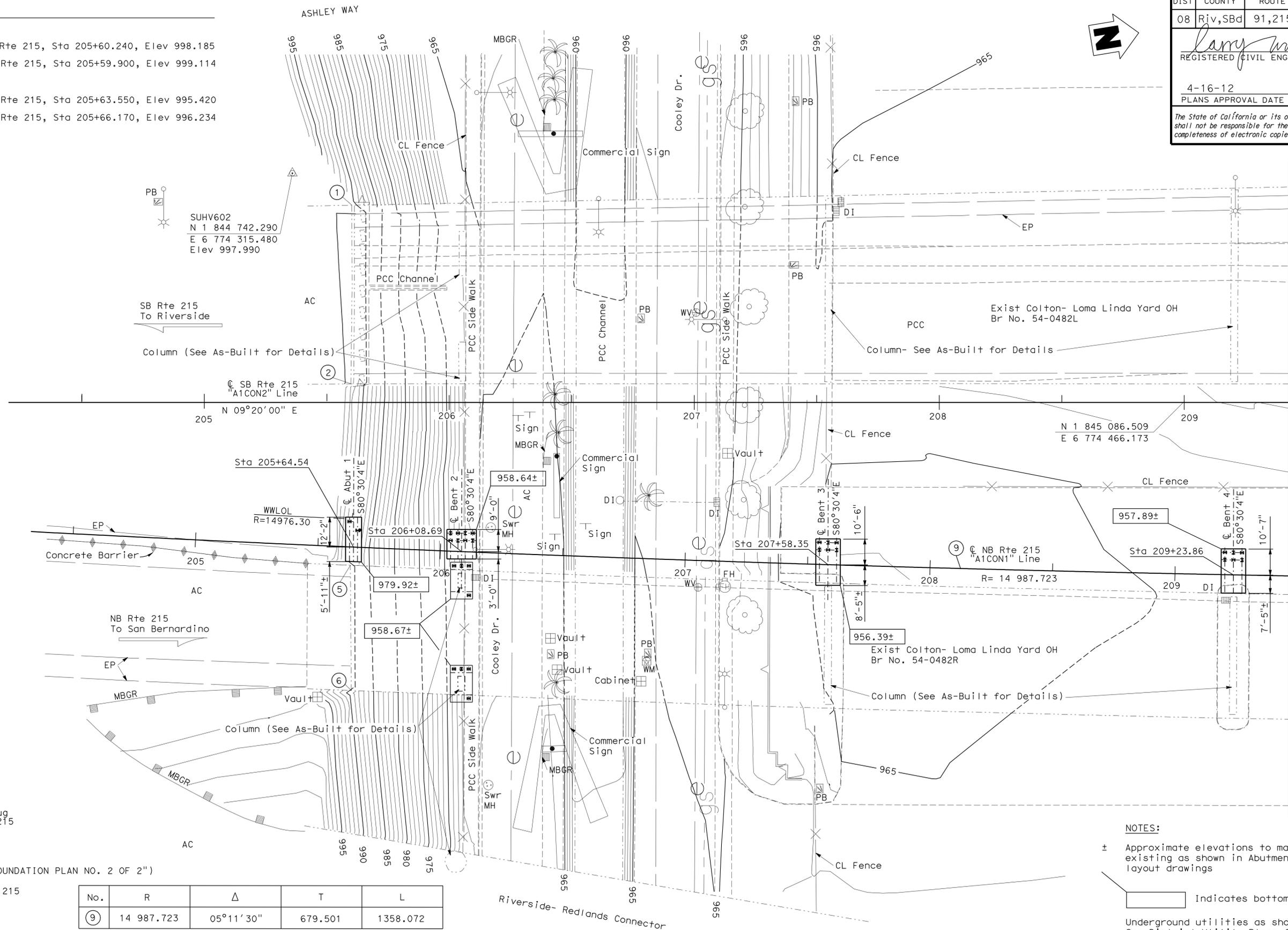
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7 43.2/45.2, 0.0/5.1	1488	1743

REGISTERED CIVIL ENGINEER DATE 4-06-12

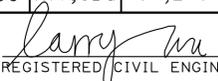
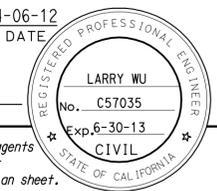
4-16-12 PLANS APPROVAL DATE

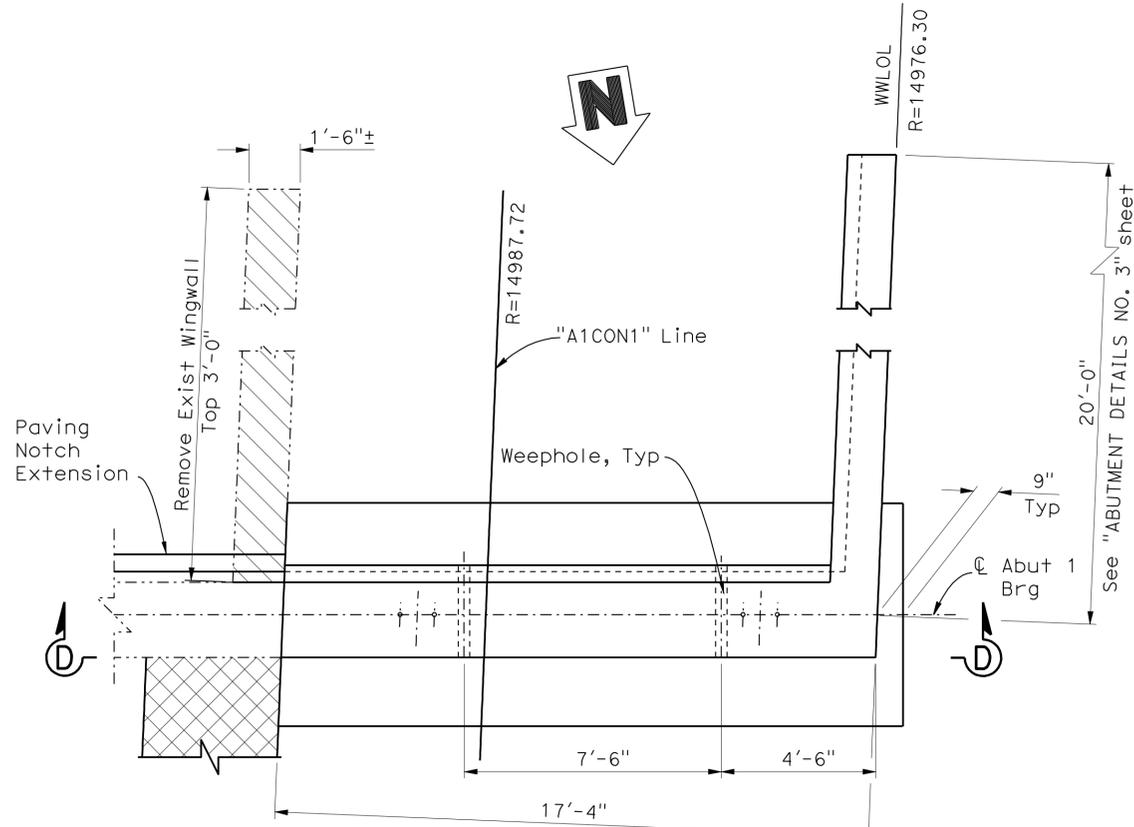
LARRY WU  
No. C057035  
Exp. 6-30-13  
CIVIL

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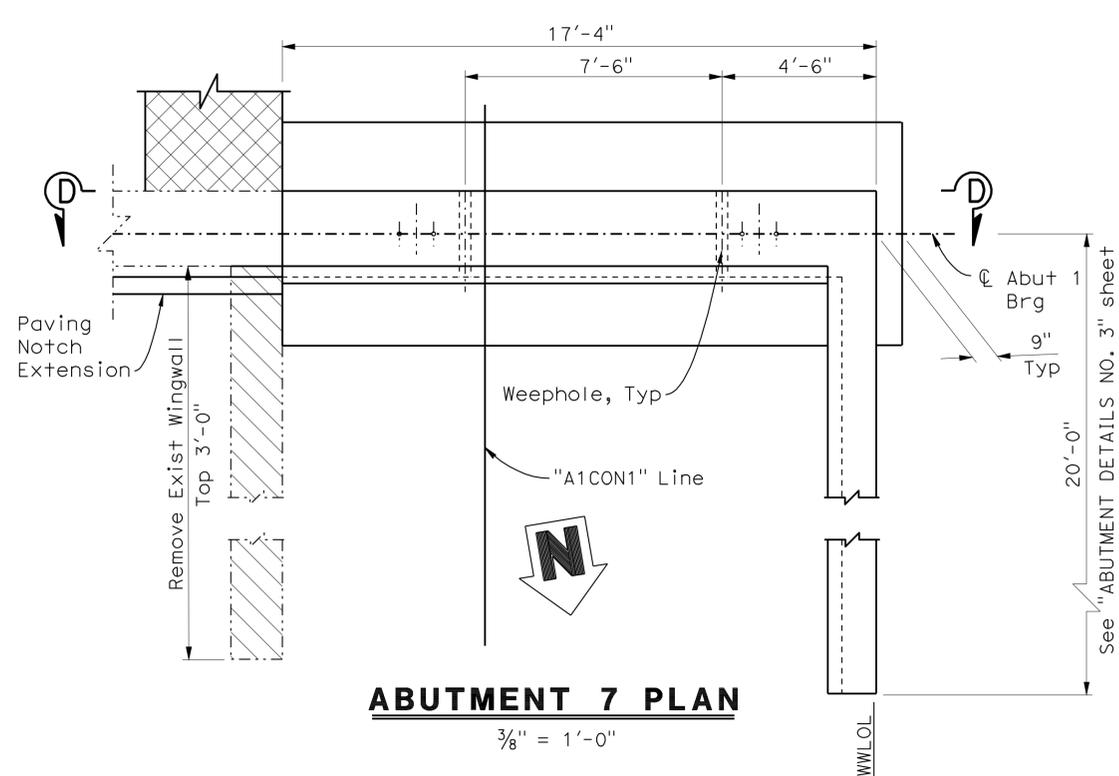




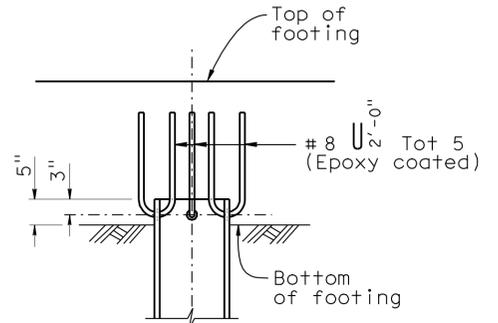
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1490	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12			PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					
					



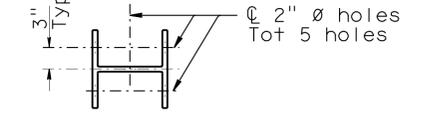
**ABUTMENT 1 PLAN**  
3/8" = 1'-0"



**ABUTMENT 7 PLAN**  
3/8" = 1'-0"



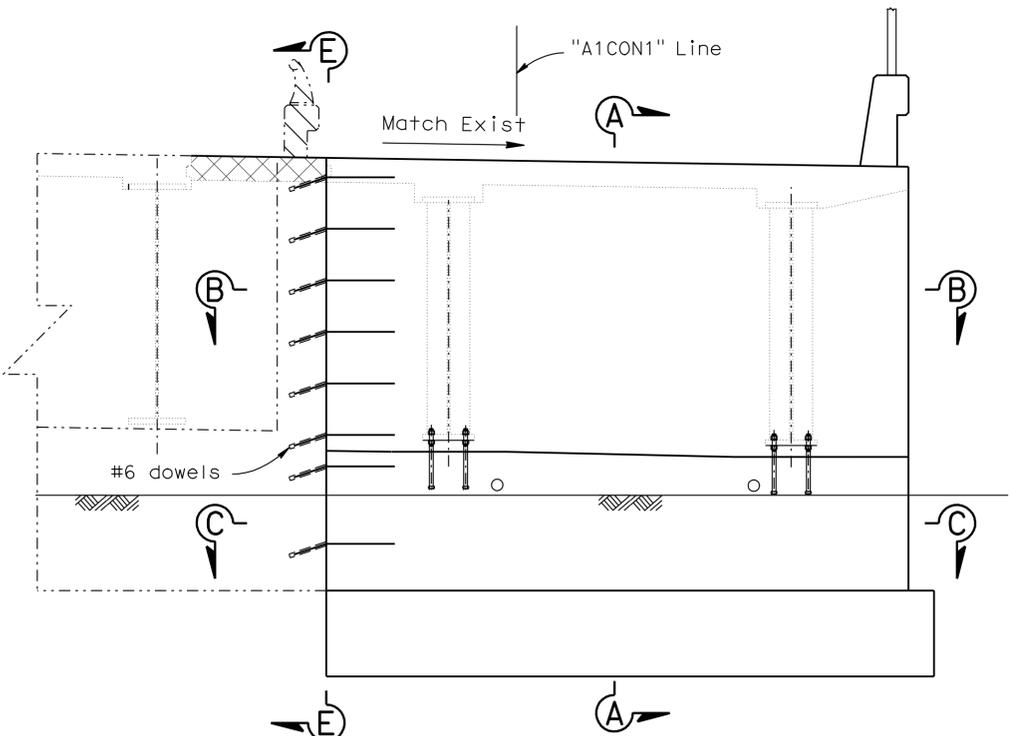
**ELEVATION**



**PLAN**

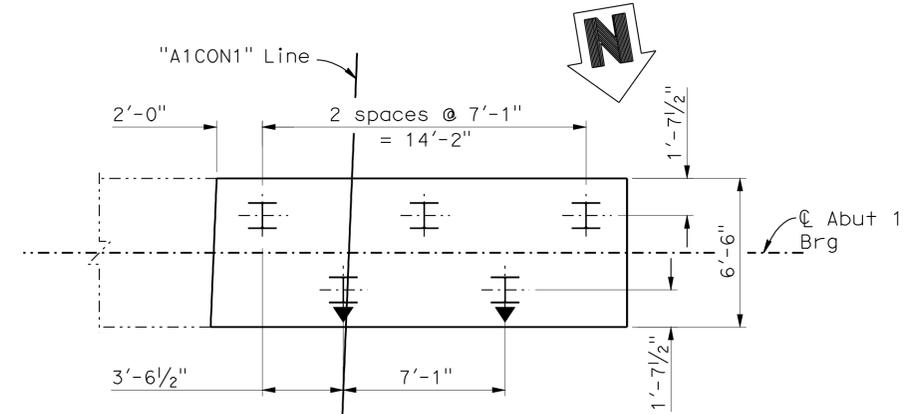
**ABUTMENT STEEL PILE ANCHOR**

NO SCALE

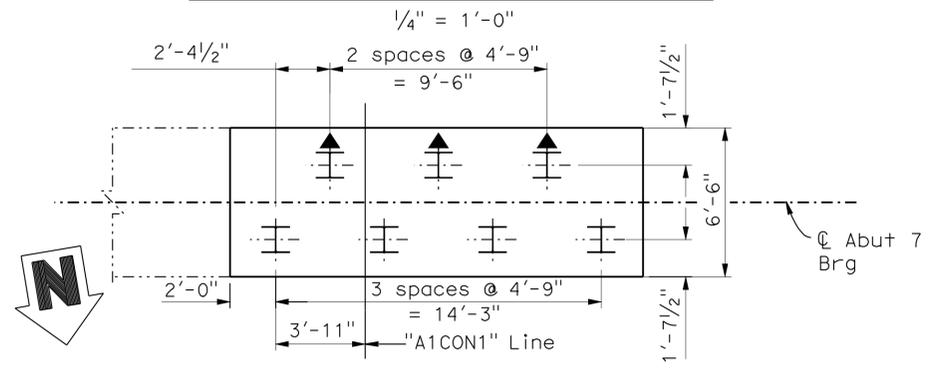


**ELEVATION**  
3/8" = 1'-0"

ABUTMENT 1 SHOWN, ABUTMENT 7 SIMILAR



**ABUTMENT 1 PILE LAYOUT**  
1/4" = 1'-0"



**ABUTMENT 7 PILE LAYOUT**  
1/4" = 1'-0"

**LEGEND:**

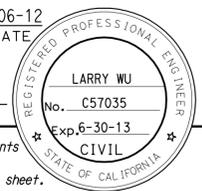
- Indicates new construction
- - - Indicates existing structure
- ▨ Indicates limits of existing bridge removal portion
- ▩ Indicates deck closure pour
- ↑ Indicates vertical pile
- ↓ Indicates 3:1 battered pile

**NOTES:**

1. For Section A-A, Section B-B, and Section C-C, see "ABUTMENT DETAILS NO. 1" sheet
2. For Section D-D and Section E-E, see "ABUTMENT DETAILS NO. 2" sheet

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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY J. Szabo	CHECKED R. Stiltz	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	54-0482R	<b>COLTON-LOMA LINDA OH RT (WIDEN)</b> <b>ABUTMENT LAYOUT</b>			
	DETAILS	BY D. Wooten	CHECKED J. Szabo			POST MILE	3.72				
	QUANTITIES	BY J. Szabo	CHECKED R. Stiltz			CONTRACT NO.:	08-0M9401				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506		CONTRACT NO.: 08-0M9401		DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 1-25-12	SHEET 6	OF 67

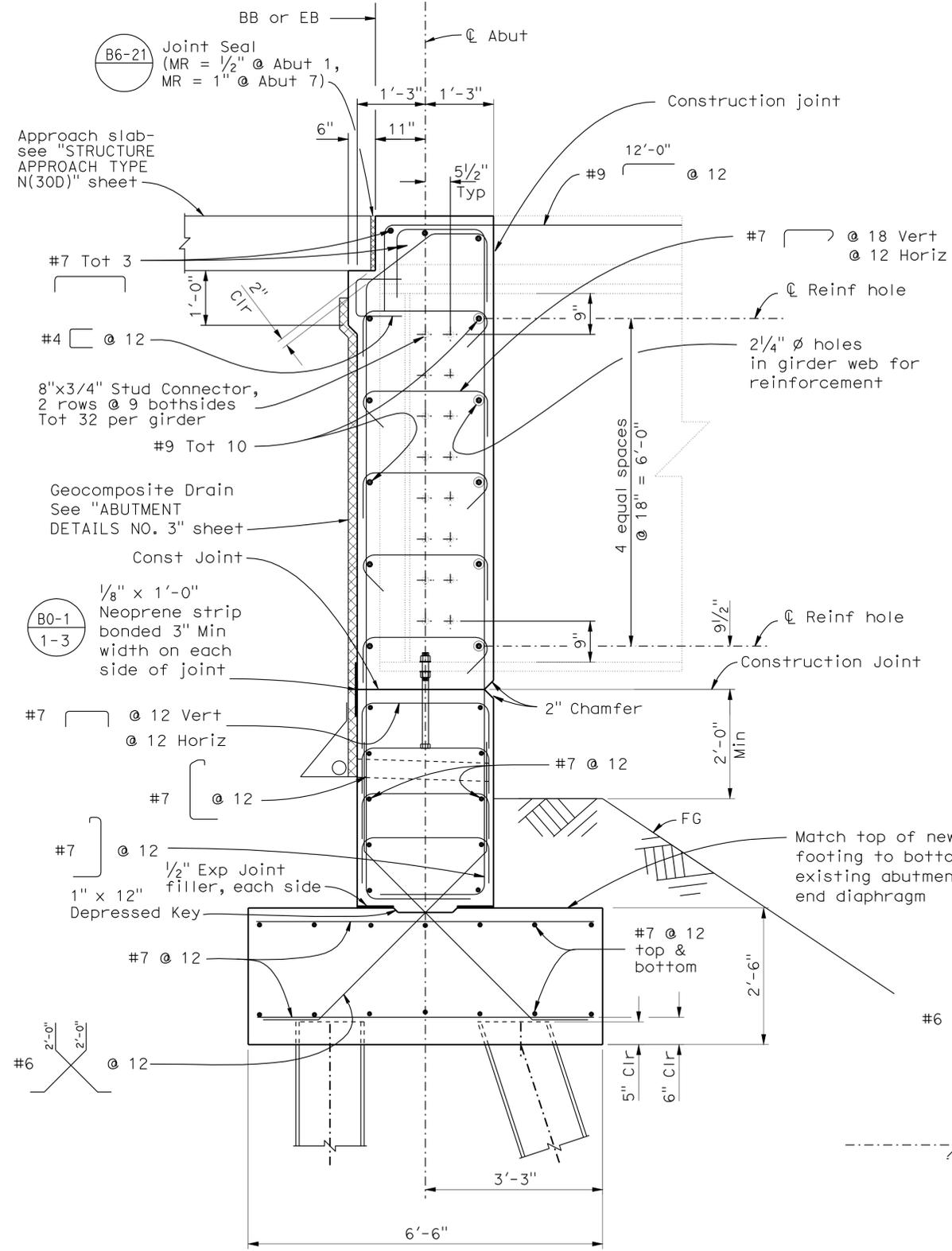
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1491	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

**LEGEND:**

- Indicates new construction
- Indicates existing structure

**NOTE:**

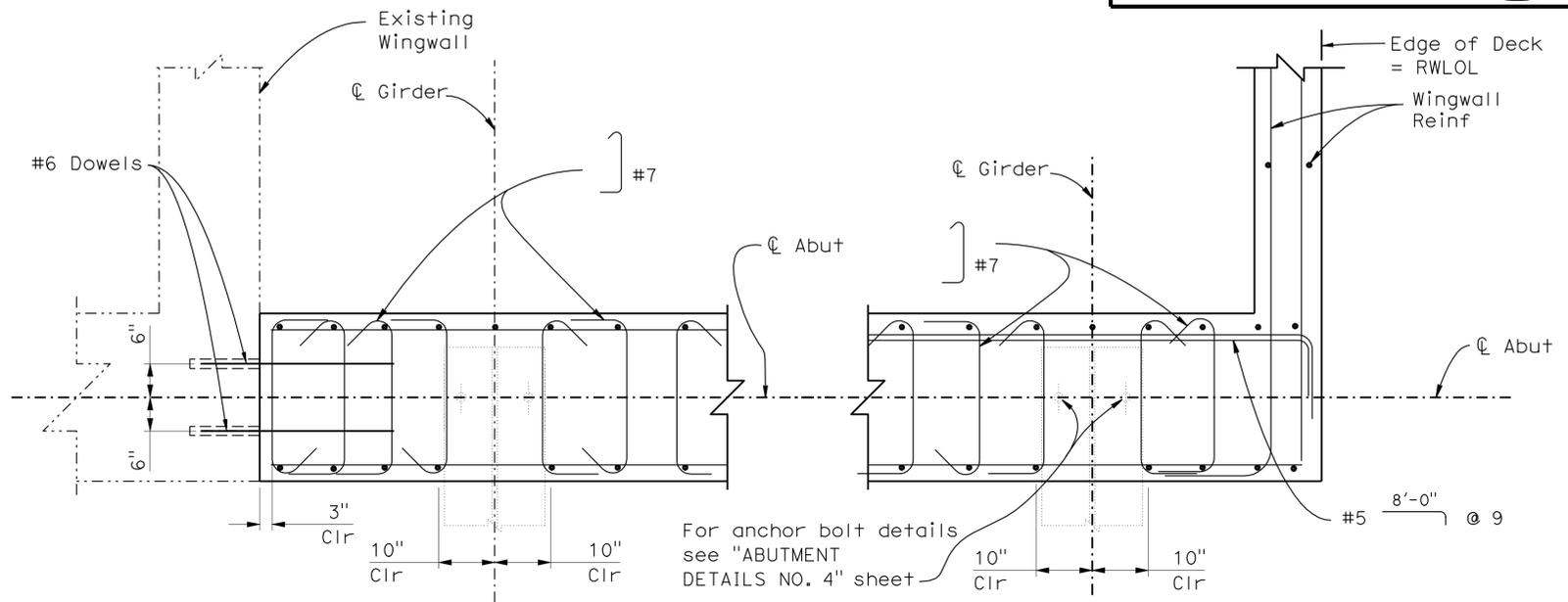
For location of Section A-A, Section B-B, and Section C-C, see "ABUTMENT LAYOUT" sheet.



**SECTION A-A**

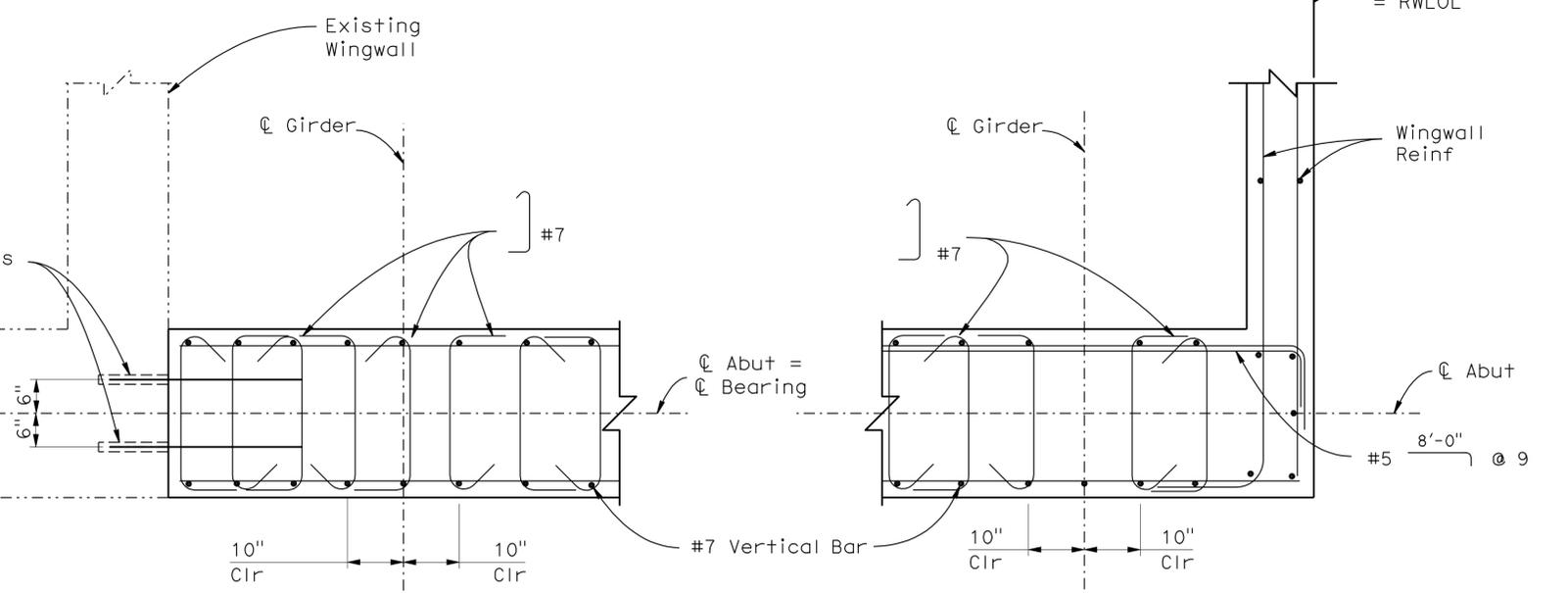
3/4" = 1'-0"

Note: Abutment 1 shown, Abutment 7 similar



**SECTION B-B**

3/4" = 1'-0"



**SECTION C-C**

3/4" = 1'-0"

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

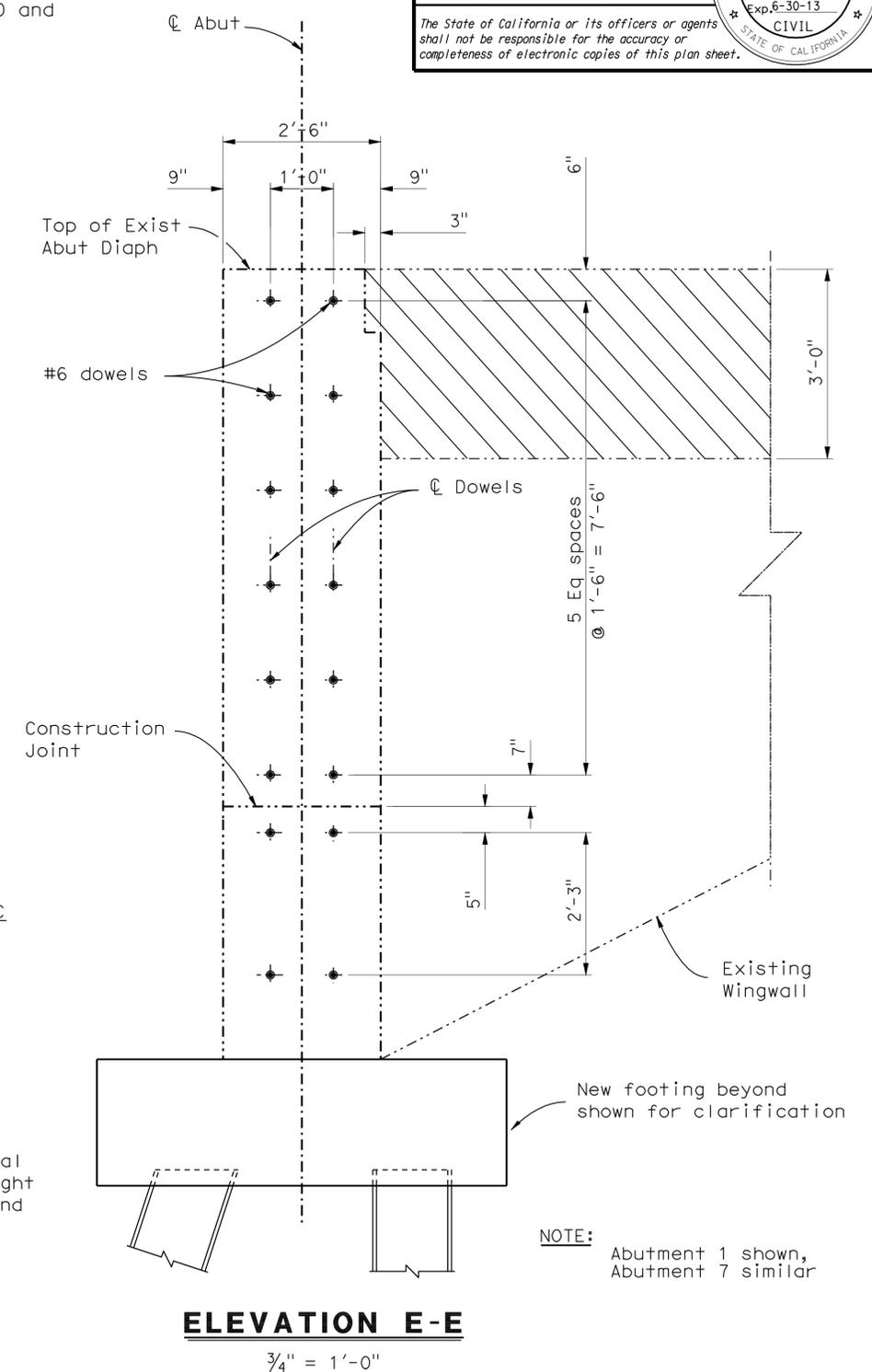
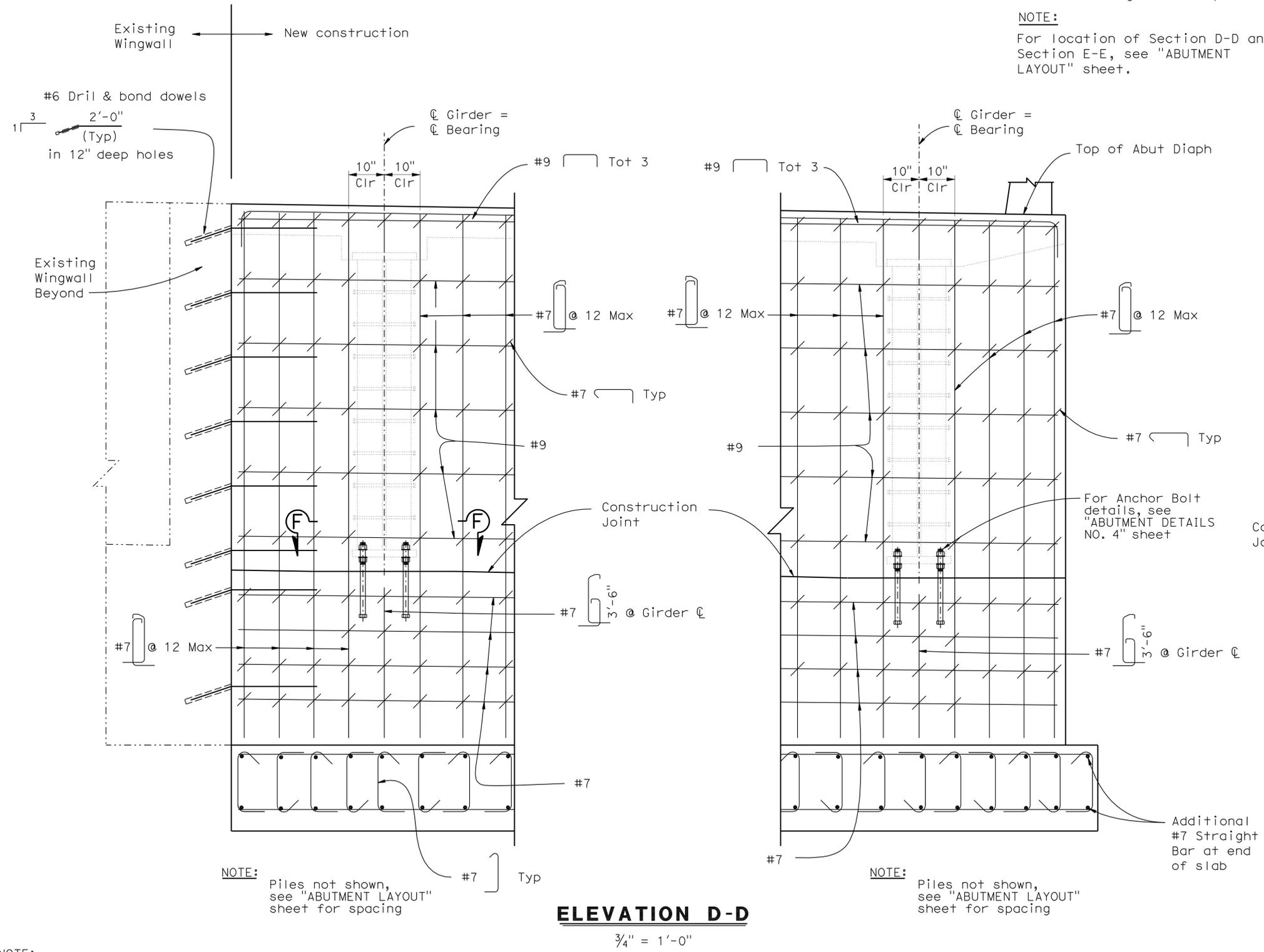
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY J. Szabo	CHECKED R. Stiltz	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	54-0482R	<b>COLTON-LOMA LINDA OH RT (WIDEN)</b> <b>ABUTMENT DETAILS NO. 1</b>
	DETAILS	BY D. Wooten	CHECKED J. Szabo			POST MILE	3.72	
	QUANTITIES	BY J. Szabo	CHECKED R. Stiltz			UNIT: 3589	PROJECT NUMBER & PHASE: 0800000506	

USERNAME => 8124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 13:56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1492	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<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>					

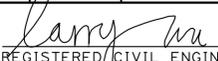
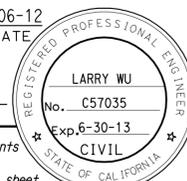
**LEGEND:**  
 ————— Indicates new construction  
 - - - - - Indicates existing structure  
 // // // // // Indicates limits of existing bridge removal portion

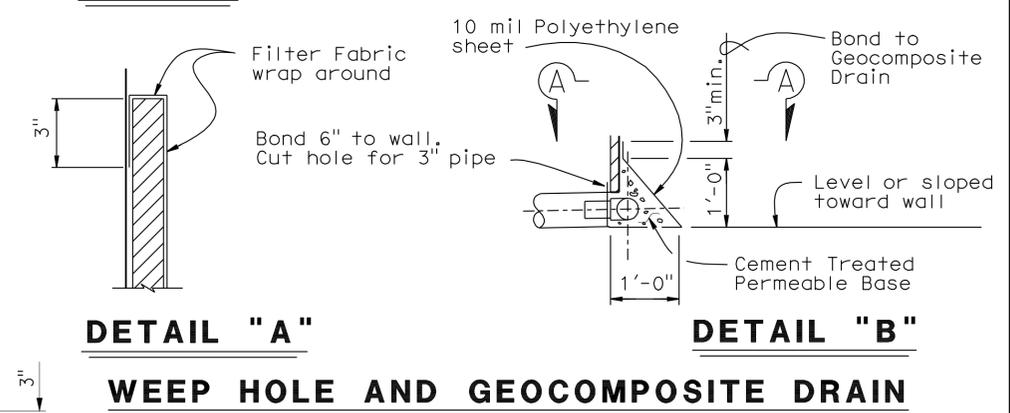
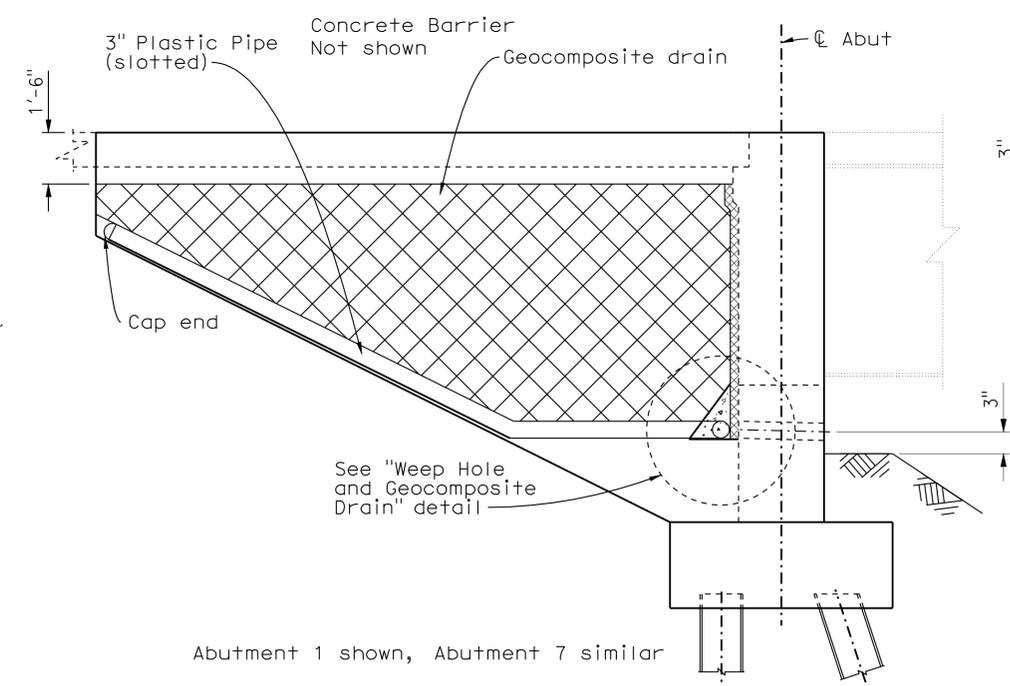
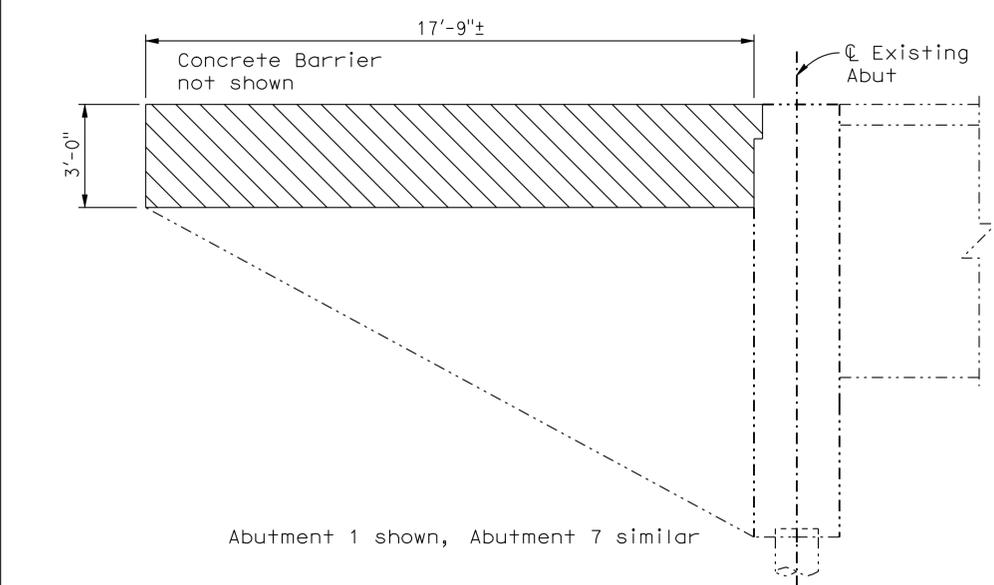
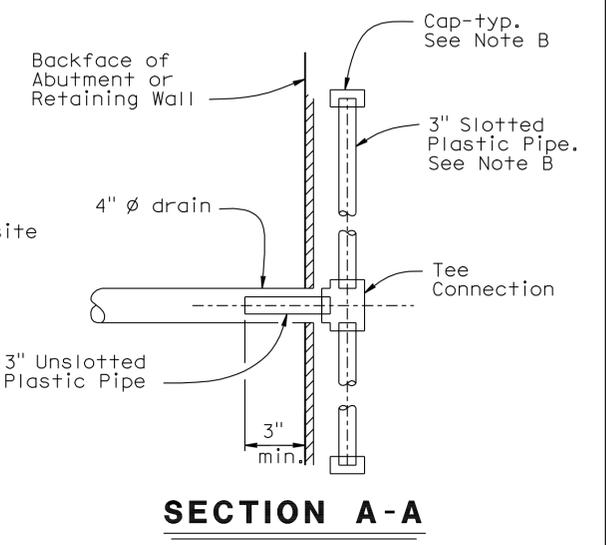
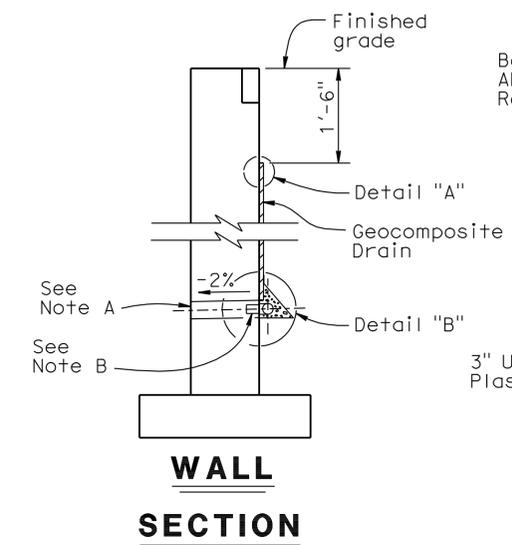
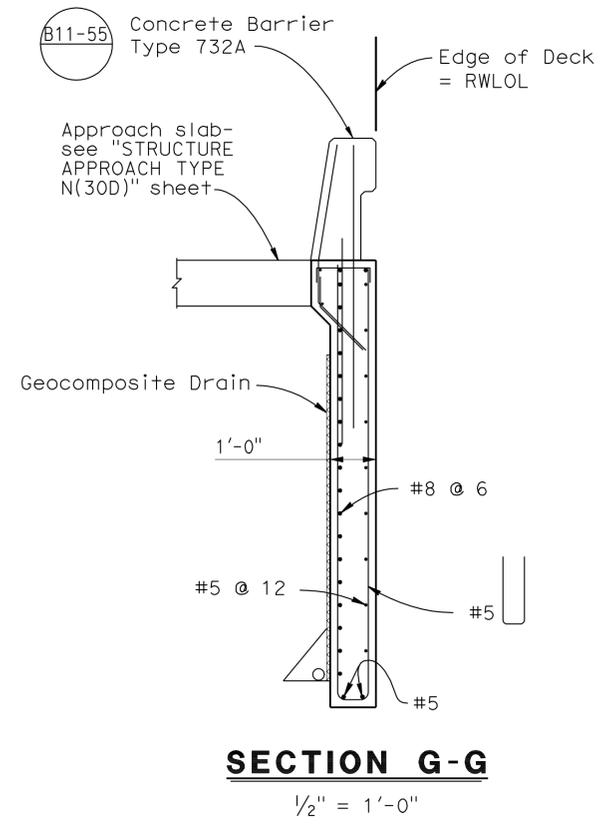
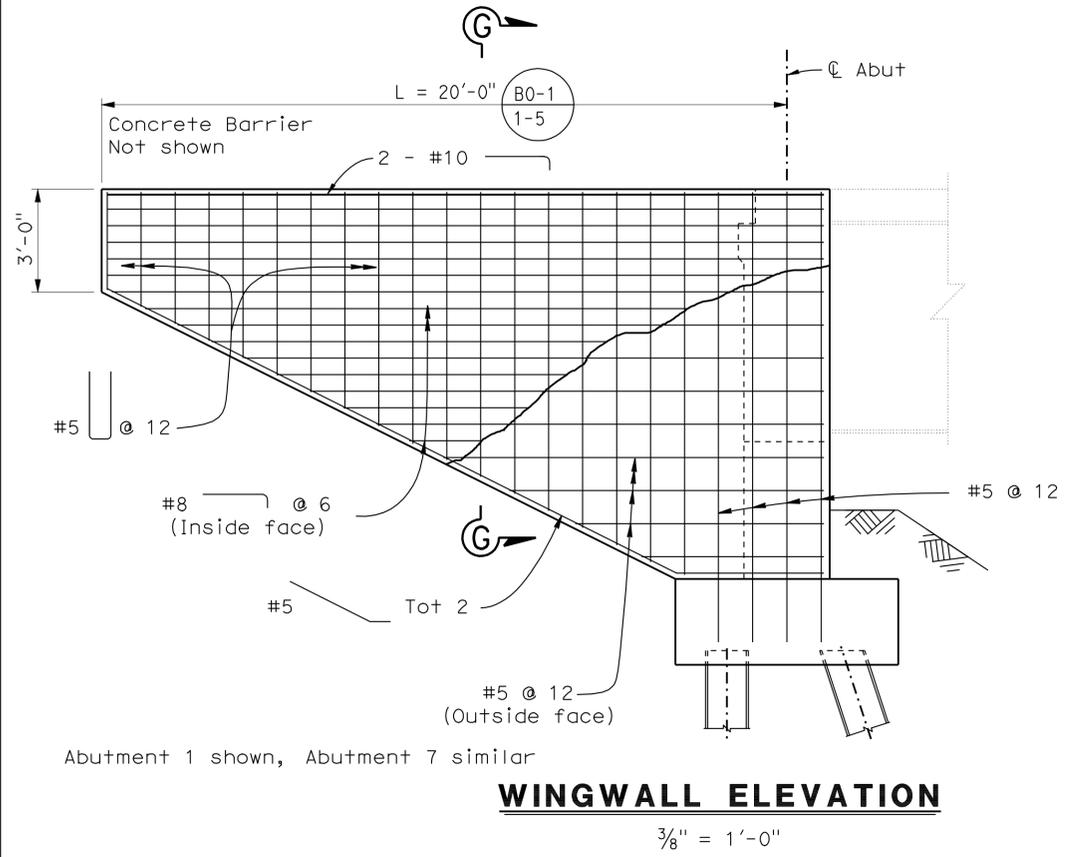
**NOTE:**  
 For location of Section D-D and Section E-E, see "ABUTMENT LAYOUT" sheet.



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

DESIGN BY J. Szabo DETAILS BY D. Wooten QUANTITIES BY J. Szabo	CHECKED R. Stiltz CHECKED J. Szabo CHECKED R. Stiltz	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO. 54-0482R	<b>COLTON-LOMA LINDA OH RT (WIDEN)</b> <b>ABUTMENT DETAILS NO. 2</b>		
				POST MILE 3.72			
				UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506 CONTRACT NO.: 08-0M9401			
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3					DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 1-25-12	SHEET OF 8 67

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1493	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12 PLANS APPROVAL DATE					
<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>					



- ALTERNATIVE TO BRIDGE DETAIL BO-3  
3-1
- NOTES:**
- 4" Ø drains at intermediate sag points and at 25' max center to center. Exposed wall drains shall be located 3"± above finished grade.
  - Geocomposite drain, cement treated permeable base, and 3"Ø slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4" Ø drain.
  - Connect the low end of plastic pipe to the main outlet pipe as applicable.

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

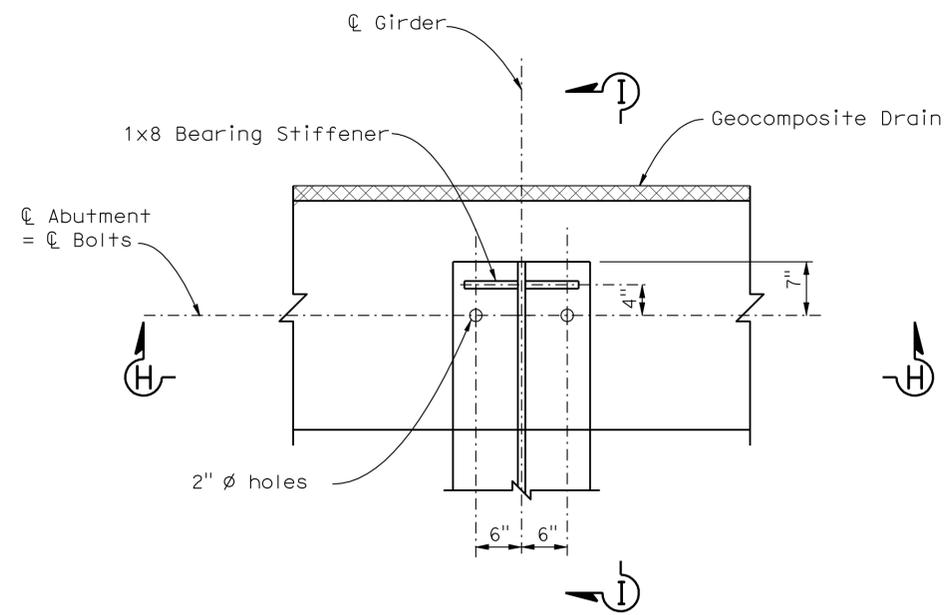
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY J. Szabo	CHECKED R. Stiltz	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-0482R	COLTON-LOMA LINDA OH RT (WIDEN) ABUTMENT DETAILS NO.3
	DETAILS	BY D. Wooten	CHECKED J. Szabo			POST MILE	3.72	
	QUANTITIES	BY J. Szabo	CHECKED R. Stiltz			UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506	CONTRACT NO.: 08-0M9401	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

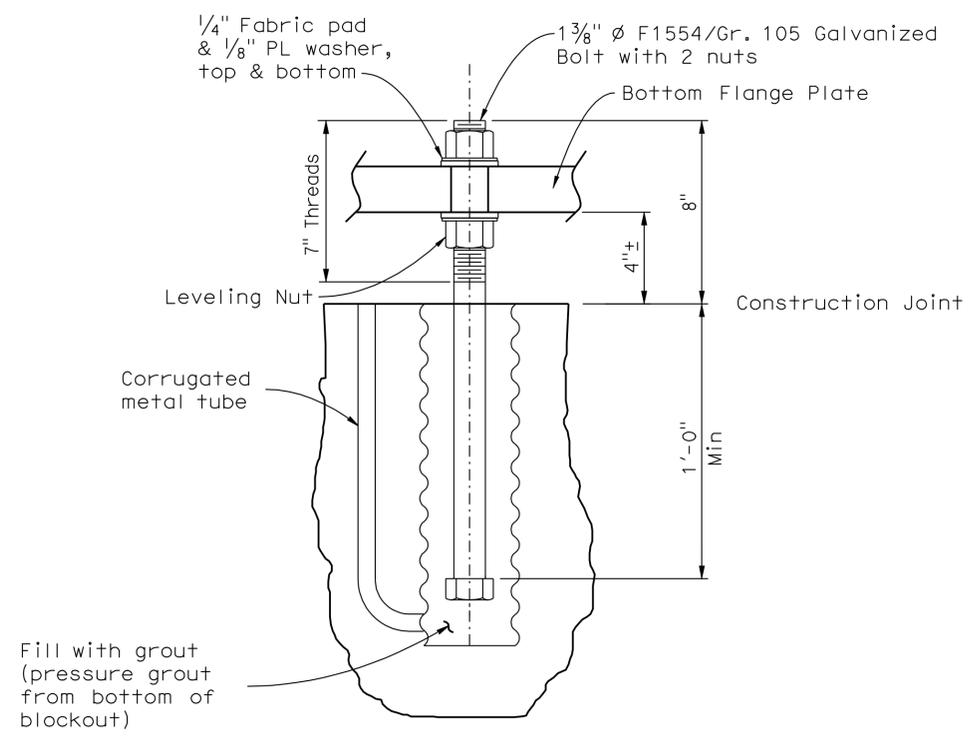
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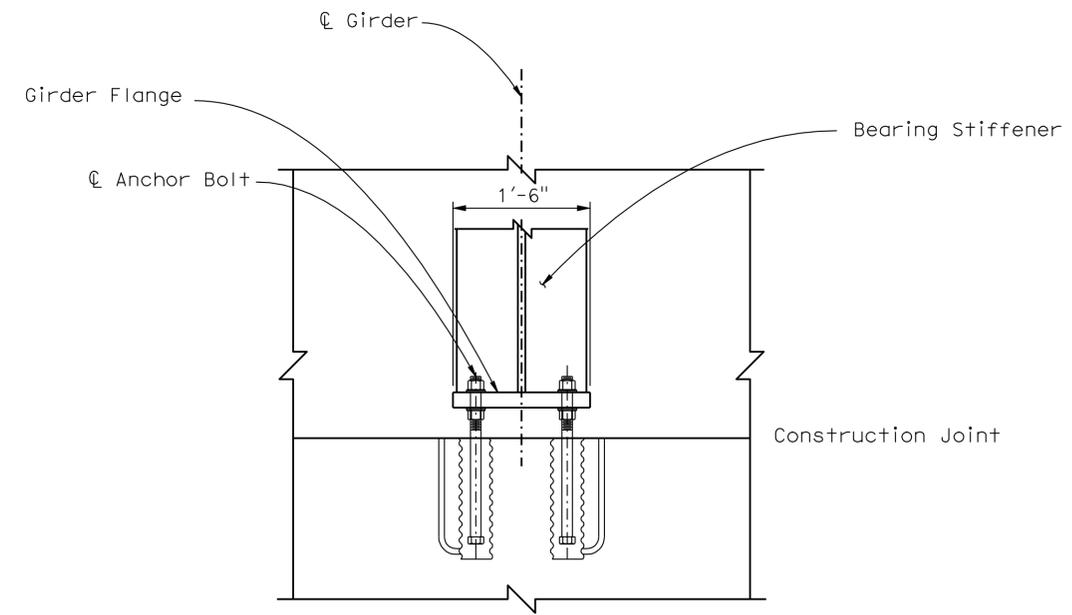
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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4-16-12 PLANS APPROVAL DATE					
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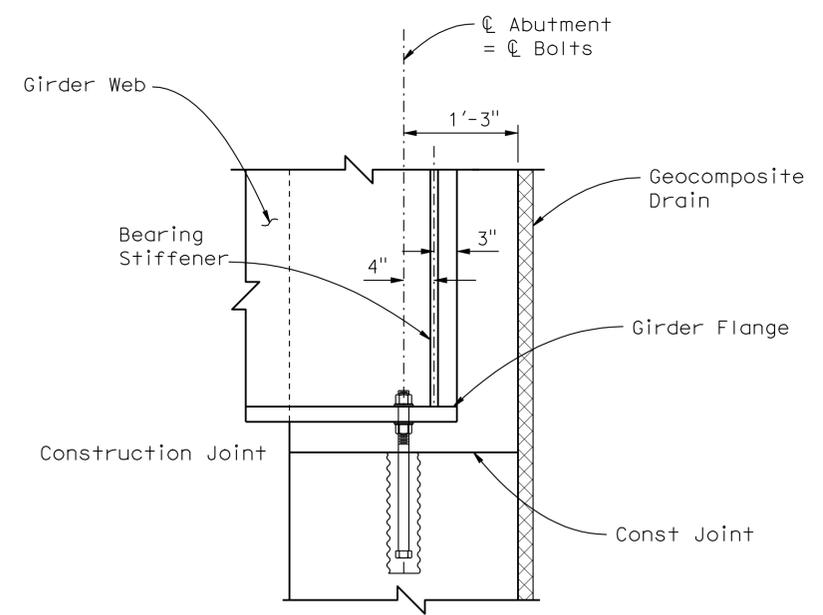
**PLAN F-F**  
1" = 1'-0"



**TYPICAL ANCHOR BOLT**  
3" = 1'-0"



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



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

**ANCHOR BOLT DETAILS**

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

DESIGN	BY J. Szabo	CHECKED R. Stiltz	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>COLTON-LOMA LINDA OH RT (WIDEN)</b> <b>ABUTMENT DETAILS NO. 4</b>				
DETAILS	BY D. Wooten	CHECKED J. Szabo			54-0482R					
QUANTITIES	BY J. Szabo	CHECKED R. Stiltz			POST MILE 3.72					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES				
				0	1	2	3	REVISION DATES	SHEET	OF
								1-25-12	10	67

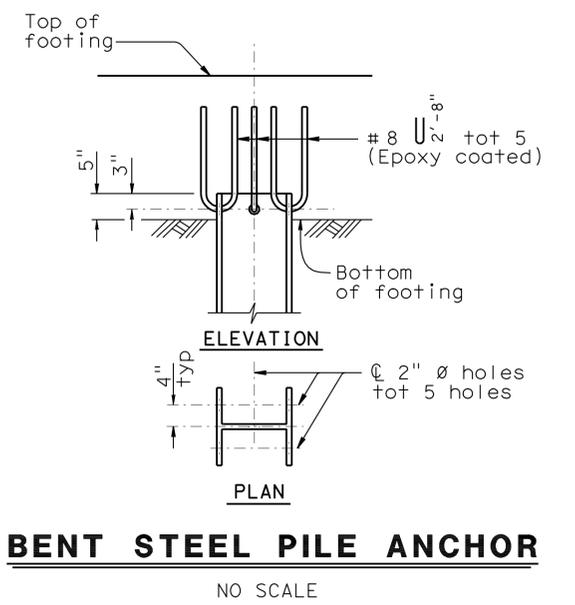
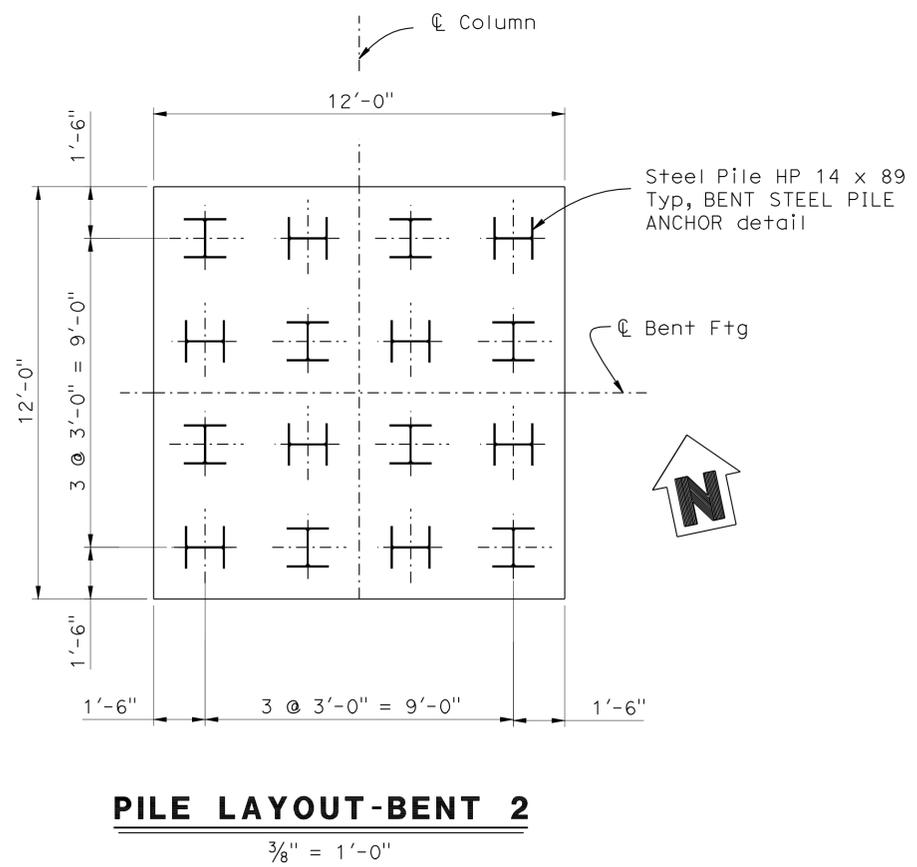
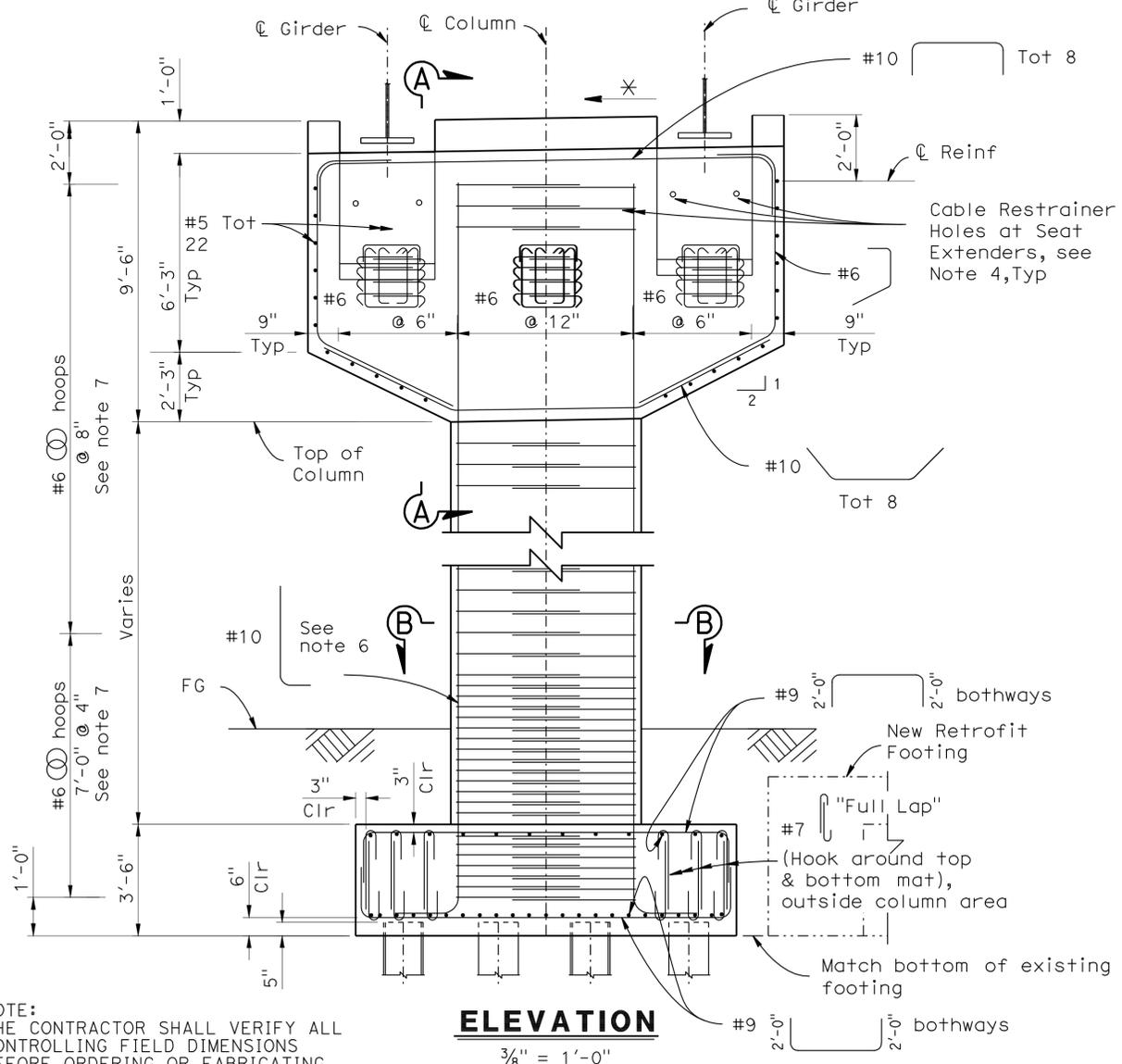
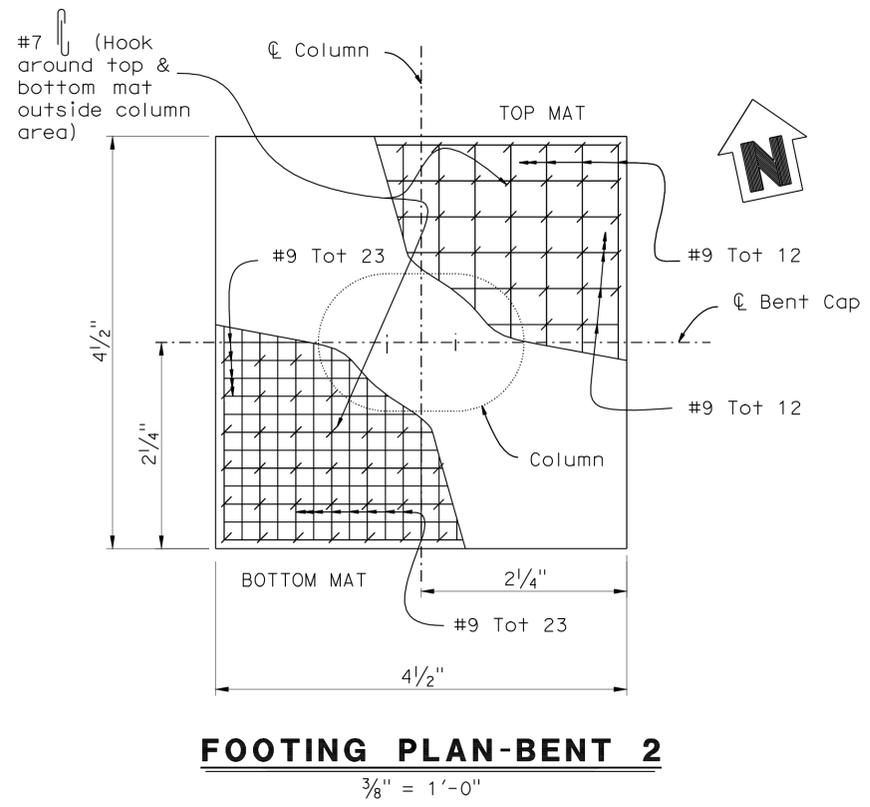
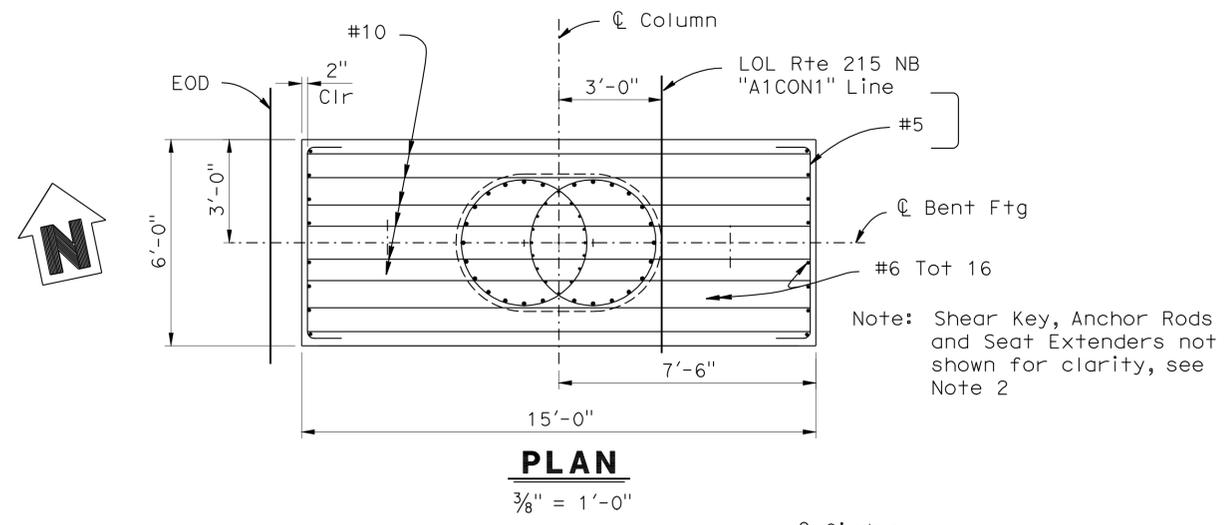
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1495	1743

LARRY WU  
 REGISTERED CIVIL ENGINEER  
 DATE: 4-06-12  
 PLANS APPROVAL DATE: 4-16-12

LARRY WU  
 No. C57035  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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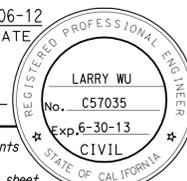
- LEGEND:**
- Indicates new construction
  - - - - - Indicates existing structure
  - ⊥ Indicates vertical pile
  - \* Match to deck cross slope above
- NOTES:**
- For "SECTION A-A & SECTION B-B", see "BENT DETAILS NO.1" sheet
  - For Shear Key details, see "BENT DETAILS NO.3" sheet
  - For Girder Bearing Pad & Sole Plates at top of Bent Cap, see "BENT DETAILS NO.3 & 5" sheets
  - For Cable Restrainer details, see "GIRDER DETAILS NO.11" sheet
  - For Drain Pipe arrangement, see "DRAIN DETAILS NO.2" sheet
  - No splices allowed in column main reinforcing
  - All hoops are "Ultimate" butt spliced continuous

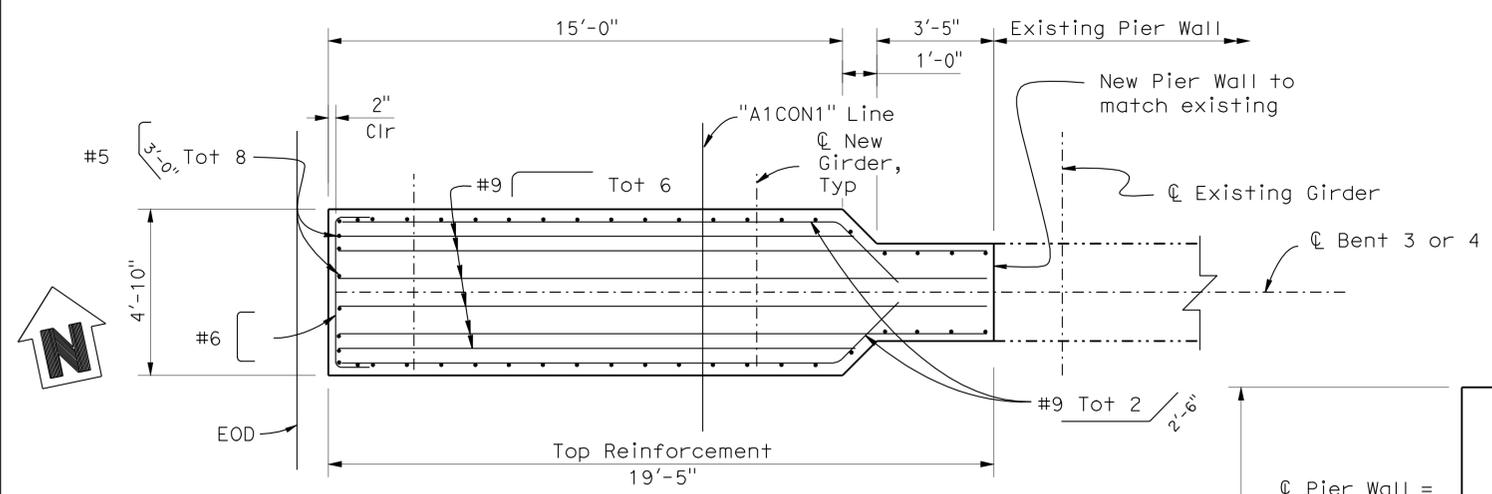
NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	BY J. Szabo	CHECKED R. Stiltz	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	<b>COLTON-LOMA LINDA OH RT (WIDEN)</b> <b>BENT 2 LAYOUT</b>
DETAILS	BY D. Wooten	CHECKED J. Szabo			54-0482R	
QUANTITIES	BY J. Szabo	CHECKED R. Stiltz			POST MILE 3.72	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506 CONTRACT NO.: 08-0M9401 DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
	11	67

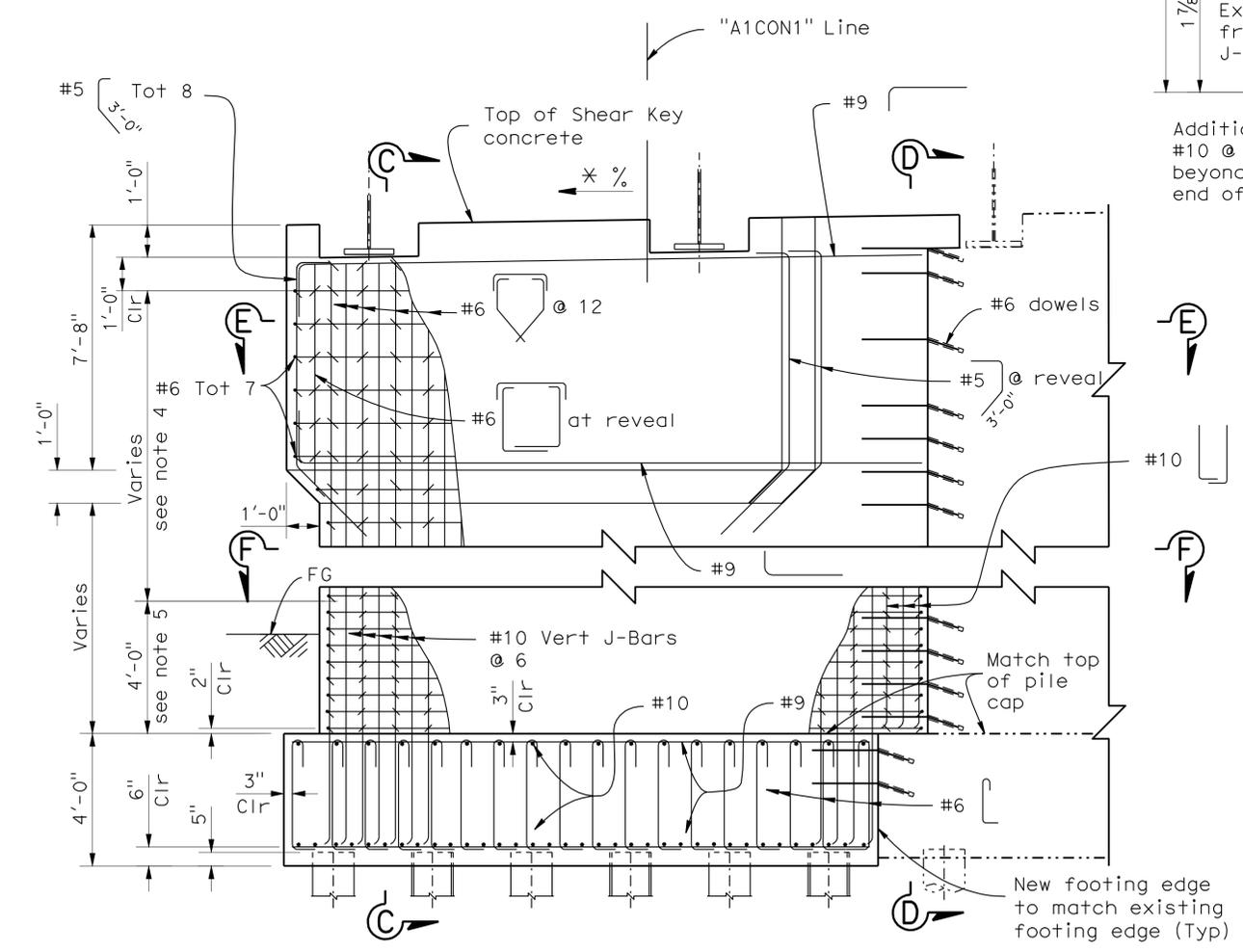
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1496	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



Note: Shear Key and Anchor Rods not shown for clarity, see Note 2 & 3

**PLAN-BENTS 3 & 4**

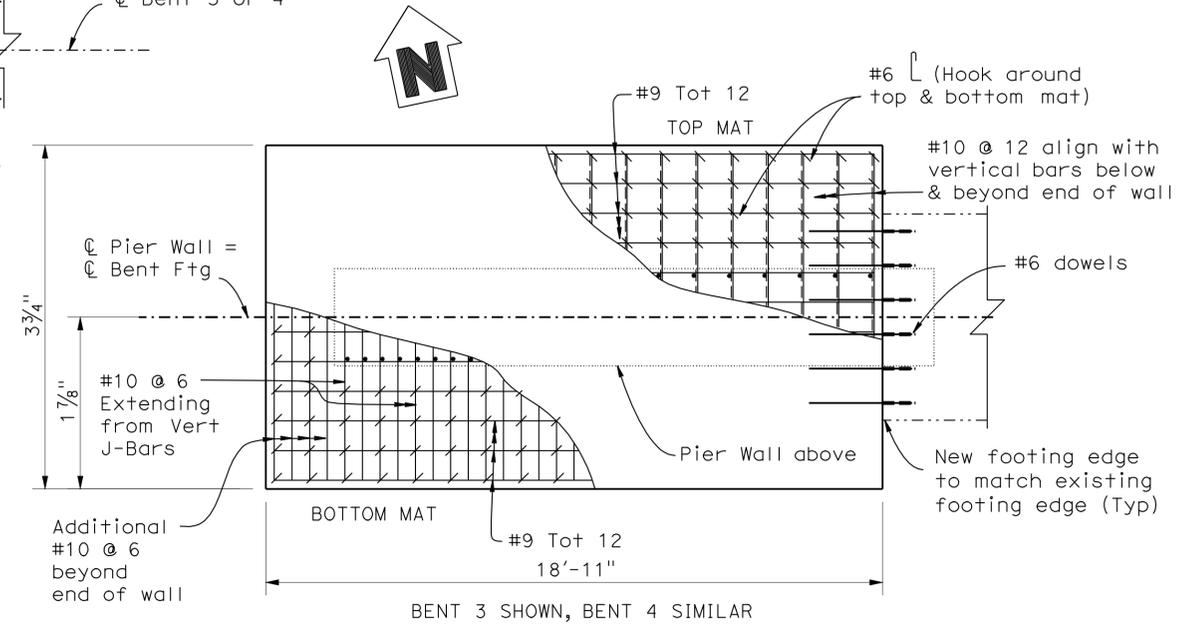
$\frac{3}{8}'' = 1'-0''$



**ELEVATION-BENTS 3 & 4**

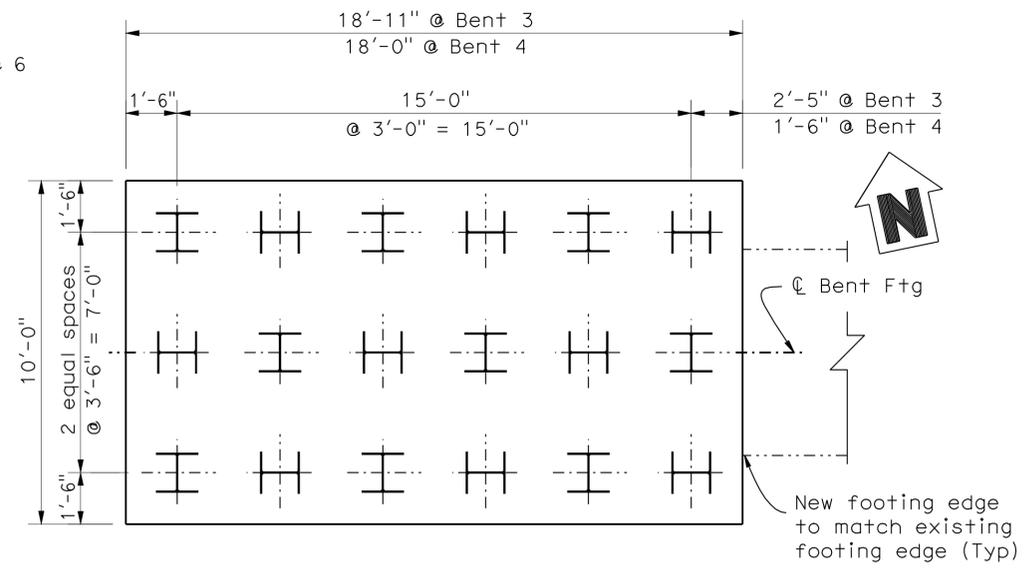
$\frac{3}{8}'' = 1'-0''$

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



**FOOTING PLAN**

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



**PILE LAYOUT-BENTS 3 & 4**

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

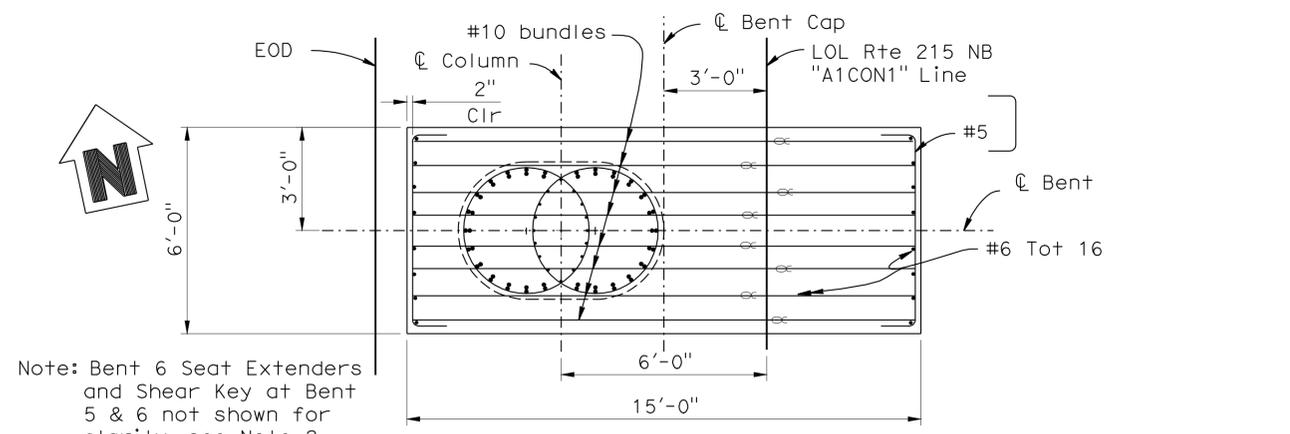
- LEGEND:**
- Indicates new construction
  - - - Indicates existing structure
  - ⊥ Indicates vertical pile
  - \* Match to Deck Cross Slope above
- NOTES:**
1. For SECTIONS C-C, D-D, E-E & F-F see "BENT DETAILS NO.2" sheet
  2. For Shear Key details, see "BENT DETAILS NO.4" sheet
  3. For Girder Bearing Pad & Sole Plates at top of Bent Cap, see "BENT DETAILS NO.3 & 5" sheets
  4. #6 cross ties @ 12" vertically and 12" horizontally, see SECTION C-C, E-E, & F-F of "BENT DETAILS NO.2" sheet
  5. #6 cross ties @ 6" vertically and 12" horizontally in plastic zone of pier wall, see SECTION C-C, E-E & F-F of "BENT DETAILS NO.2" sheet
  6. For Steel Pile Anchor Detail, see "BENT 2 LAYOUT" sheet
  7. For Drain Pipe arrangement at Bent 4, see "DRAIN DETAILS NO.2" sheet.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	DESIGN	BY J. Szabo	CHECKED R. Stiltz	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	54-0482R	<b>COLTON-LOMA LINDA OH RT (WIDEN)</b> <b>BENT 3 &amp; 4 LAYOUT</b>
	DETAILS	BY D. Wooten	CHECKED J. Szabo		POST MILE	3.72	
	QUANTITIES	BY J. Szabo	CHECKED R. Stiltz		UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506	CONTRACT NO.: 08-0M9401	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1497	1743

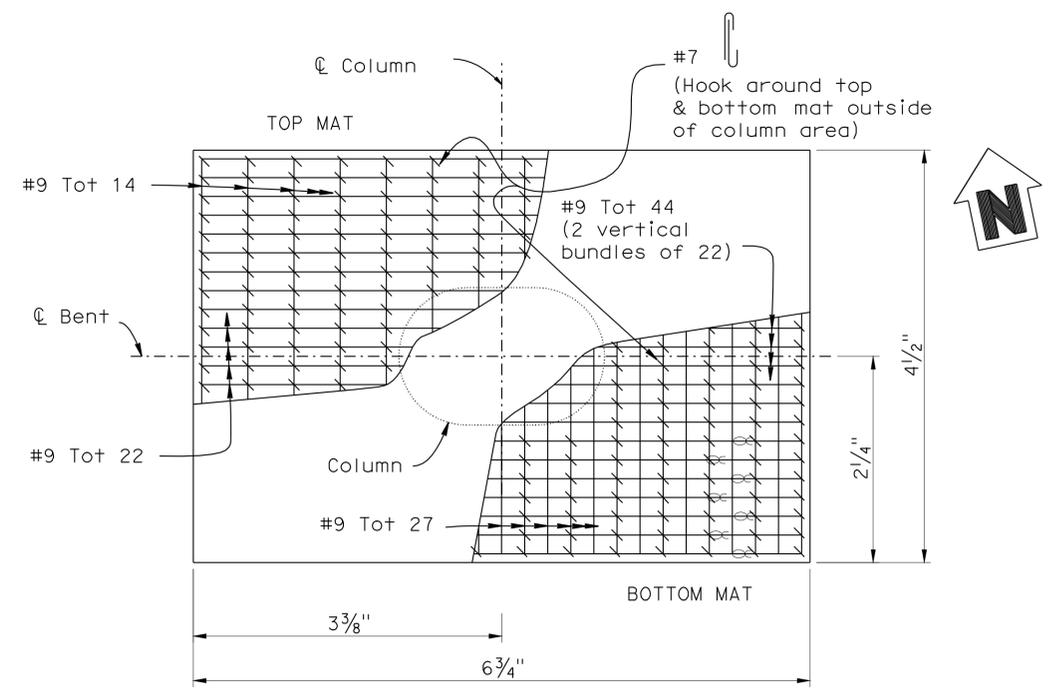
REGISTERED CIVIL ENGINEER **LARRY WU** DATE 4-06-12  
 PLANS APPROVAL DATE 4-16-12  
 No. C57035 Exp. 6-30-13  
 CIVIL ENGINEER STATE OF CALIFORNIA

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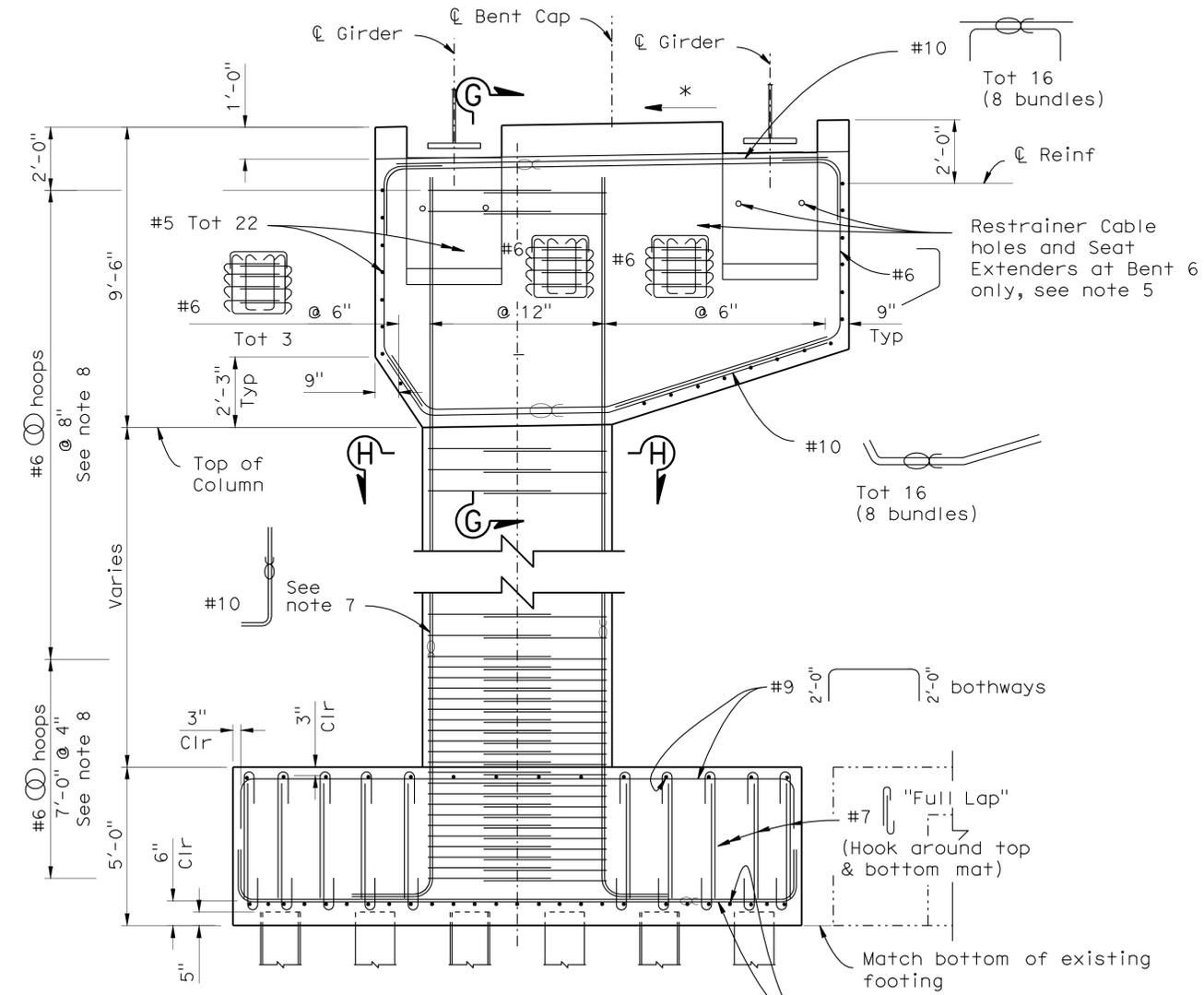


Note: Bent 6 Seat Extenders and Shear Key at Bent 5 & 6 not shown for clarity, see Note 2

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

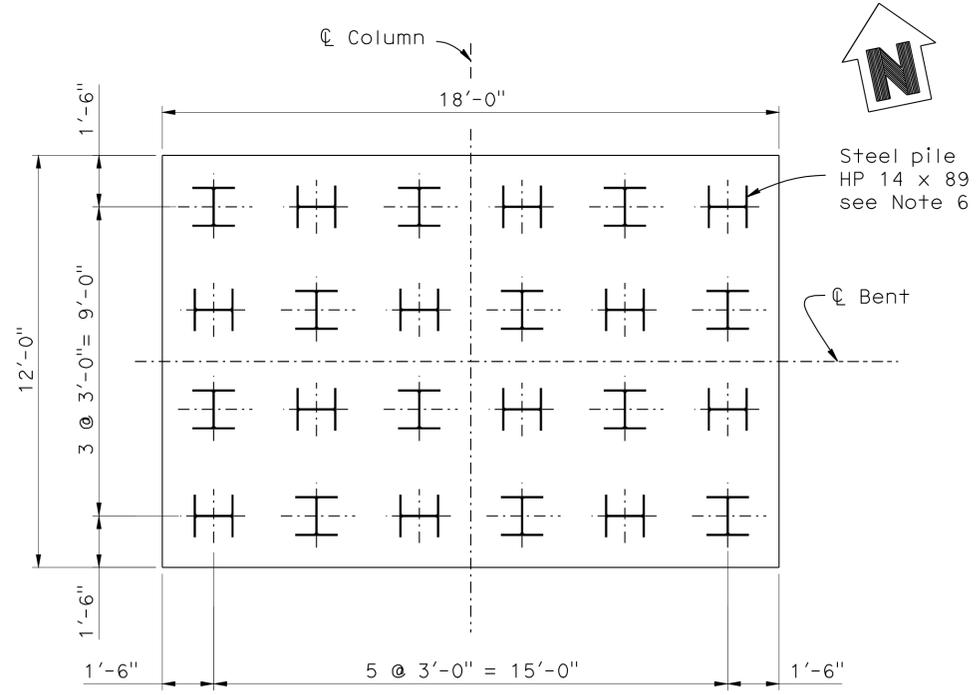


**FOOTING PLAN-BENTS 5 & 6**  
3/8" = 1'-0"



**ELEVATION**  
3/8" = 1'-0"

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



**PILE LAYOUT-BENT 5 & 6**  
3/8" = 1'-0"

- LEGEND:**
- Indicates new construction
  - - - - - Indicates existing structure
  - ⊗ Indicates bundled bar
  - ⊥ Indicates vertical pile
  - \* Match deck to cross slope above

- NOTES:**
- For "SECTION G-G & SECTION H-H", see "BENT DETAILS NO.1" sheet
  - For Shear Key details, see "BENT DETAILS NO.3" sheet
  - For Girder Bearing Pad & Sole Plates at top of Bent Cap, see "BENT DETAILS NO.3 & 5" sheets
  - For Cable Restrainer details, see "GIRDER DETAIL NO.12" sheet
  - For Steel Pile Anchor details, see "BENT 2 LAYOUT" sheet.
  - For Drain Pipe arrangement at Bent 6, see "DRAIN DETAILS NO.2" sheet.
  - No splices allowed in column main reinforcing
  - All hoops are "Ultimate" butt spliced continuous

DESIGN	BY J. Szabo	CHECKED R. Stiltz
DETAILS	BY D. Wooten	CHECKED J. Szabo
QUANTITIES	BY J. Szabo	CHECKED R. Stiltz

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 10**

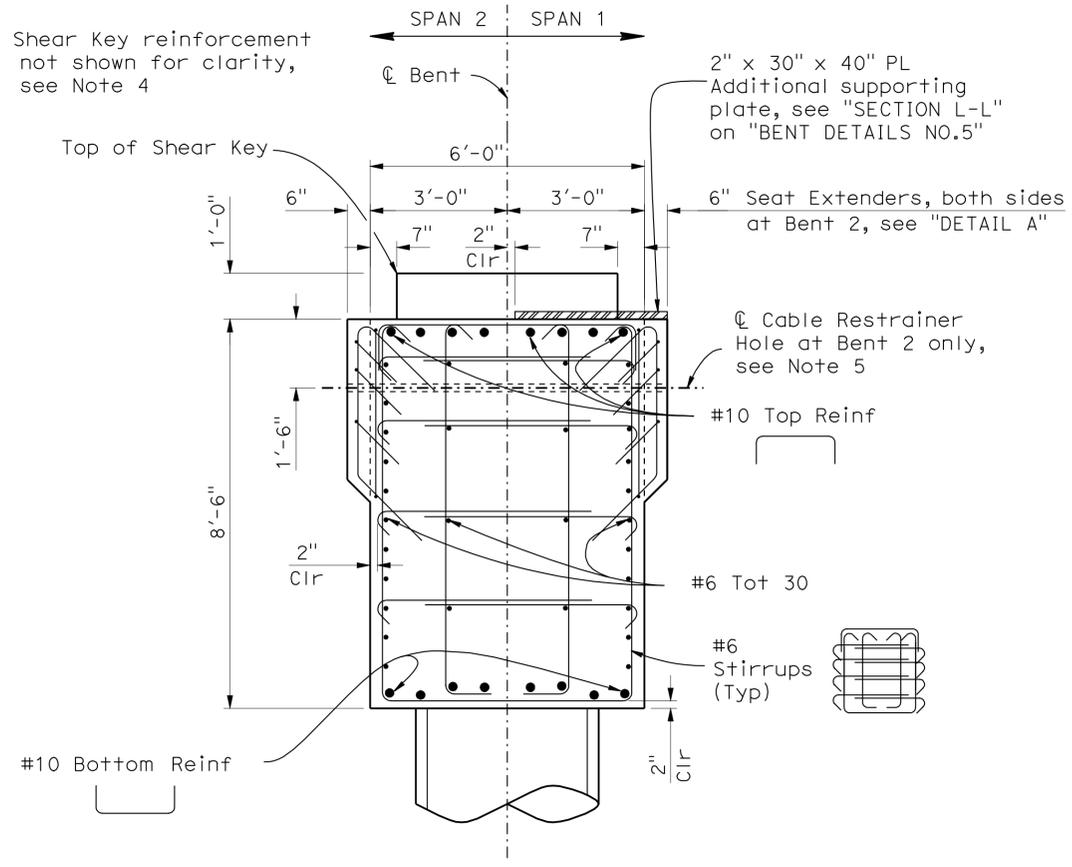
BRIDGE NO.	54-0482R
POST MILE	3.72

**COLTON-LOMA LINDA OH RT (WIDEN)**  
**BENT 5 & 6 LAYOUT**

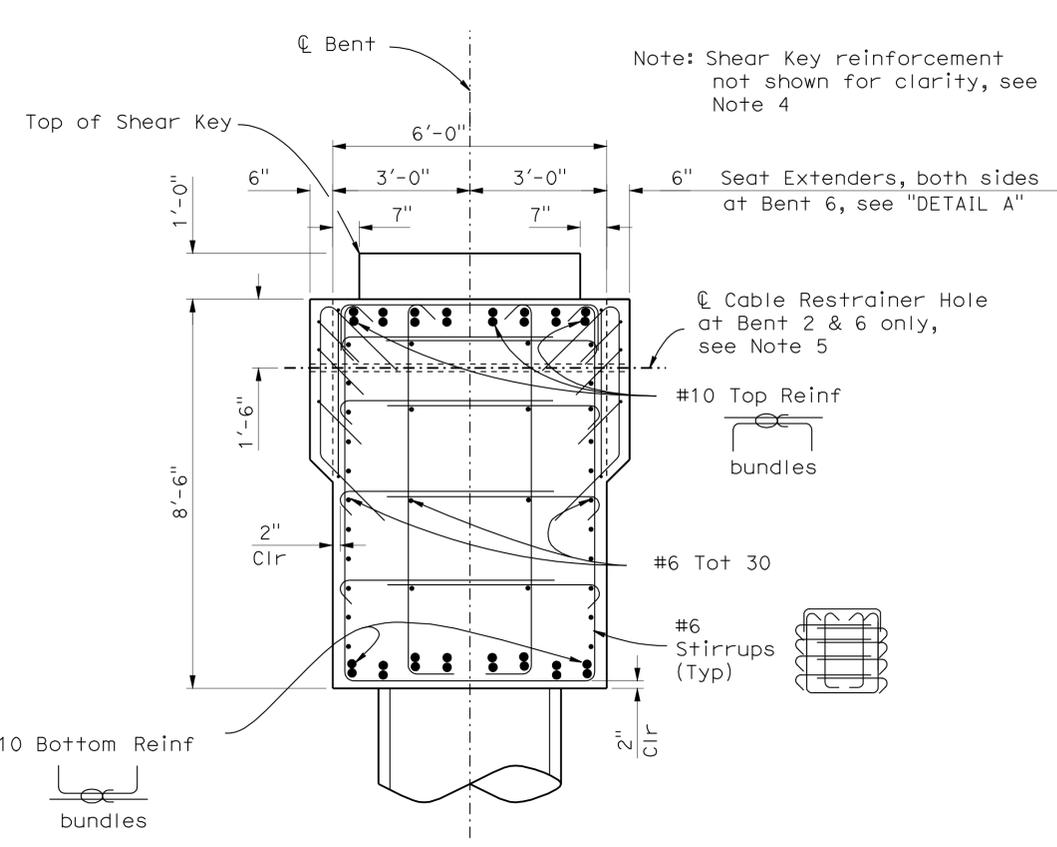
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1498	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12			PLANS APPROVAL DATE		
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Note: Shear Key reinforcement not shown for clarity, see Note 4

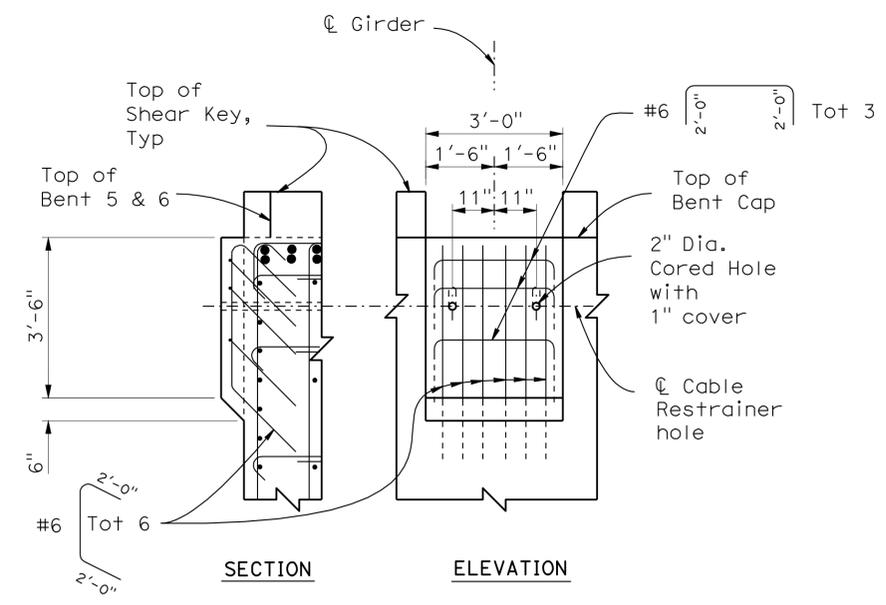


**SECTION A-A**  
1/2" = 1'-0"

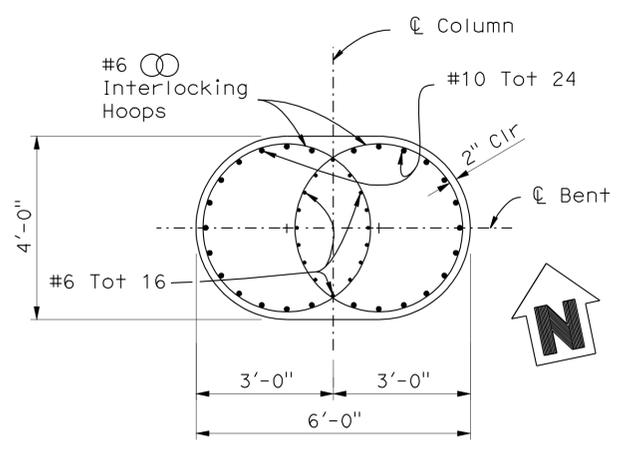


**SECTION G-G**  
1/2" = 1'-0"

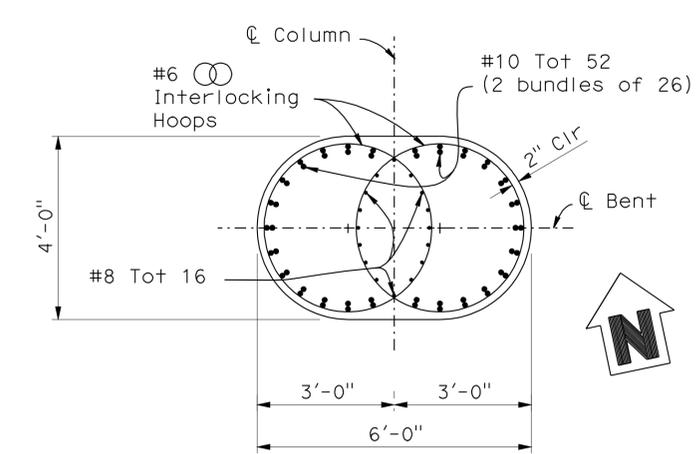
- Notes:
1. For location of "SECTIONS A-A & B-B", see "BENT 2 LAYOUT" sheet
  2. For location of "SECTIONS G-G & H-H", see "BENT 5 & 6 LAYOUT" sheet
  3. For Shear Key details, see "BENT DETAILS NO.3" sheet
  4. For Cable Restrainer details, see "GIRDER DETAIL NO.12" sheet



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



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



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

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

DESIGN	BY J. Szabo	CHECKED R. Stiltz
DETAILS	BY D. Wooten	CHECKED
QUANTITIES	BY J. Szabo	CHECKED R. Stiltz

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 10**

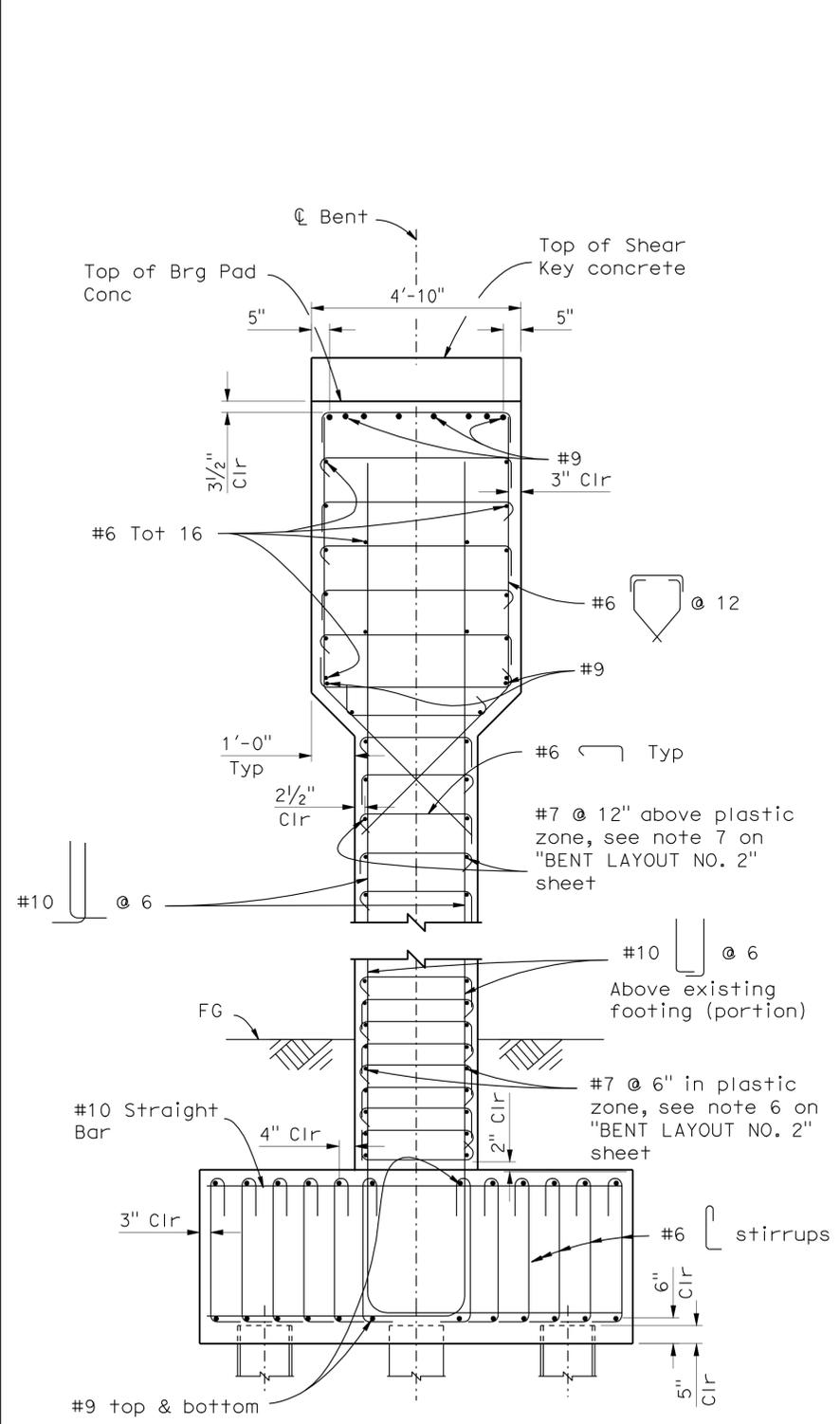
BRIDGE NO.	54-0482R
POST MILE	3.72

**COLTON-LOMA LINDA OH RT (WIDEN)**  
**BENT DETAILS NO.1**

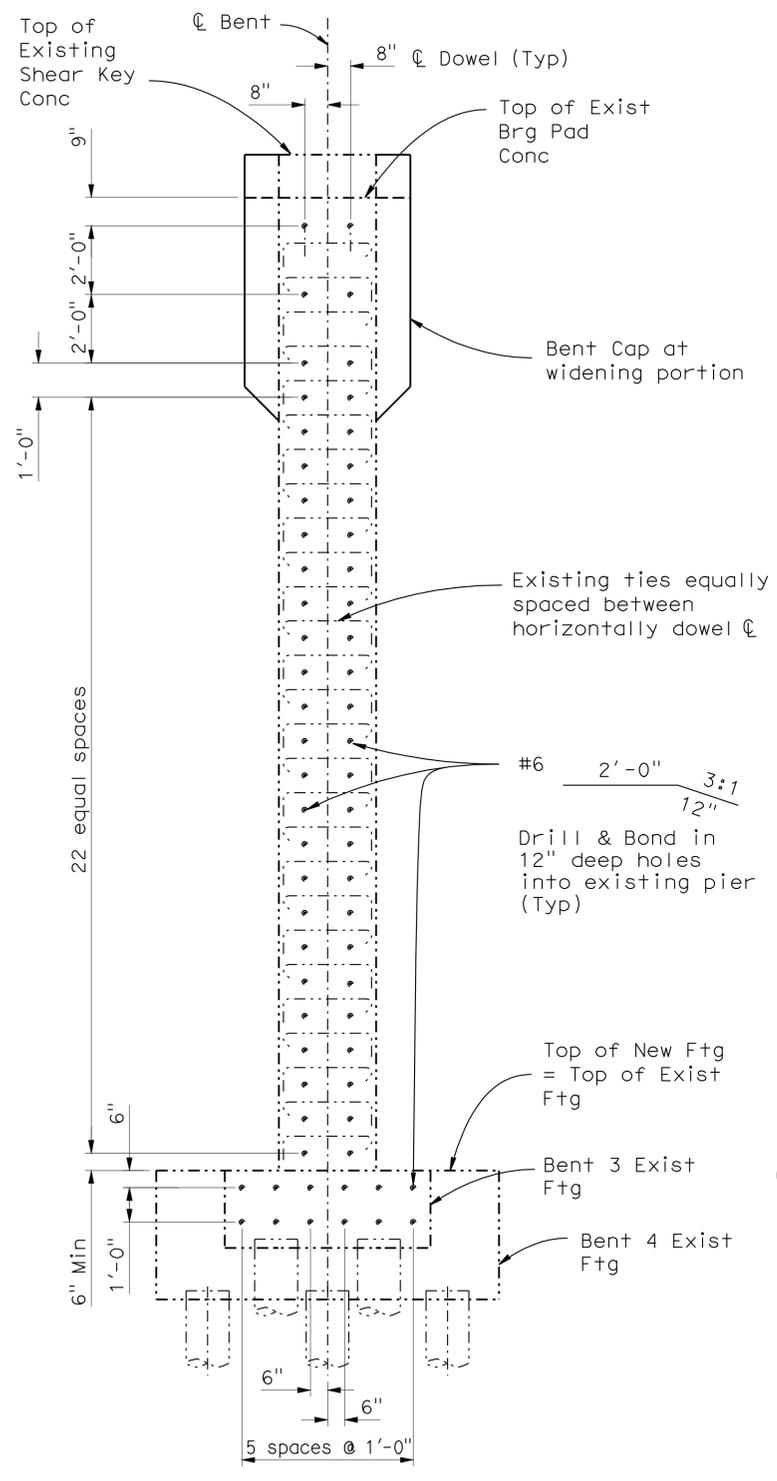
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1499	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

**LEGEND:**

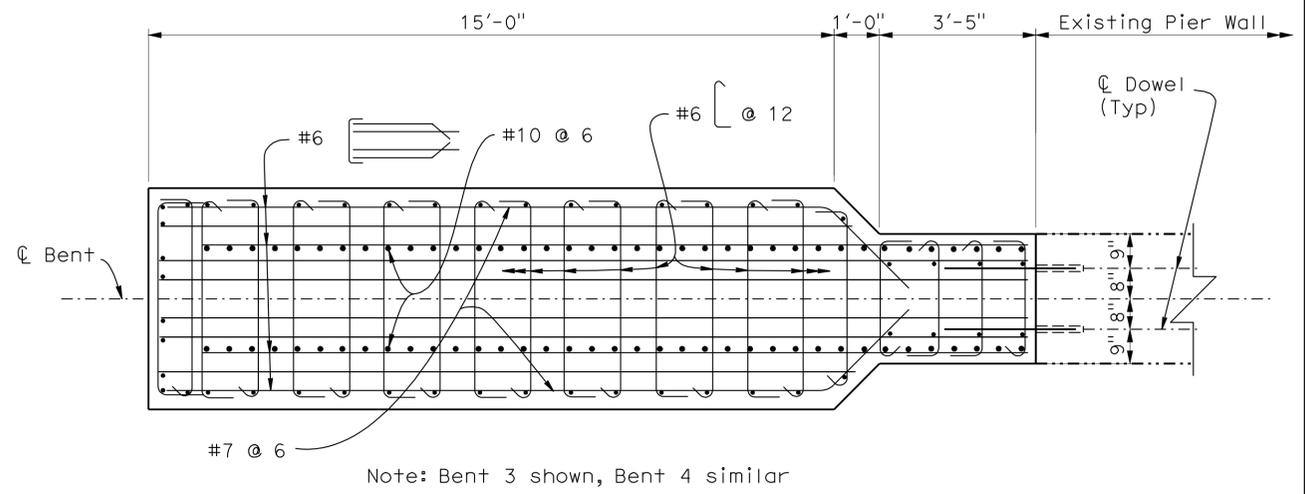
- Indicates new construction
- - - - - Indicates existing structure
- ..... Indicates structure above



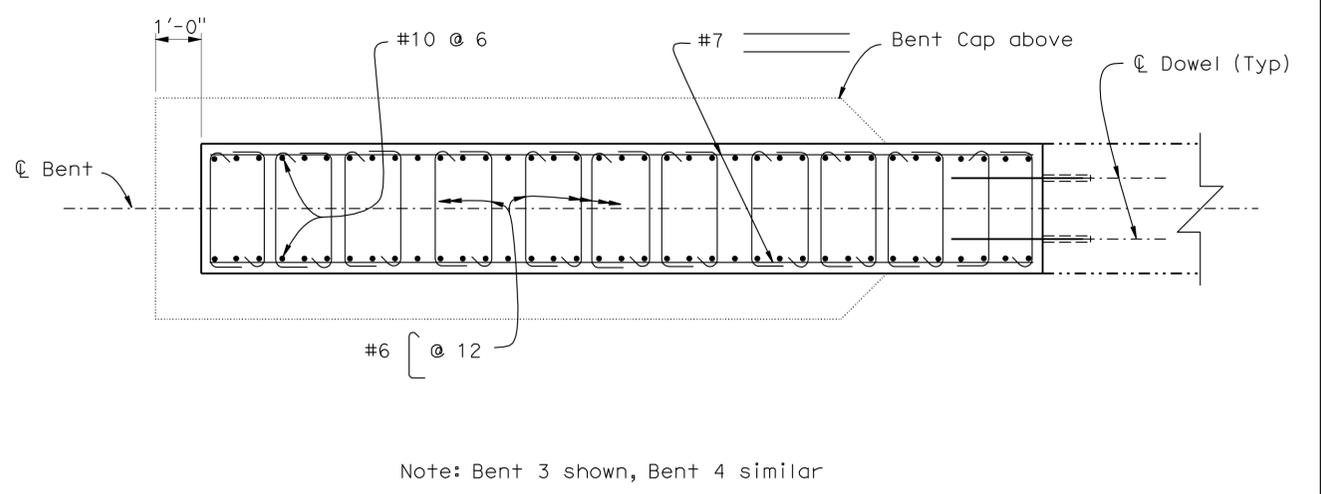
**SECTION C-C**  
1/2" = 1'-0"



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



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



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

NOTE:  
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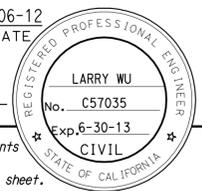
DESIGN	BY J. Szabo	CHECKED R. Stiltz
DETAILS	BY D. Wooten	CHECKED J. Szabo
QUANTITIES	BY J. Szabo	CHECKED R. Stiltz

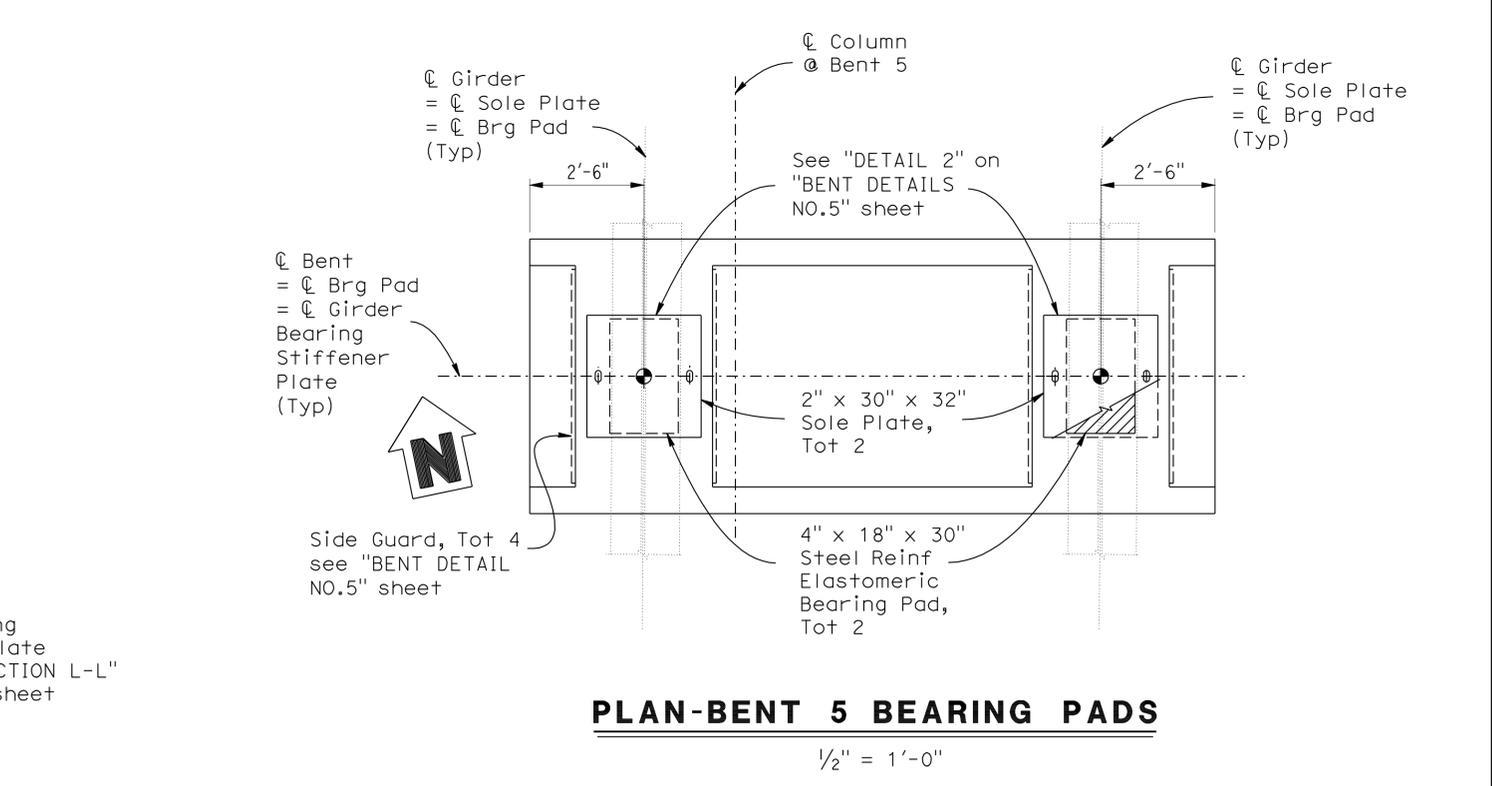
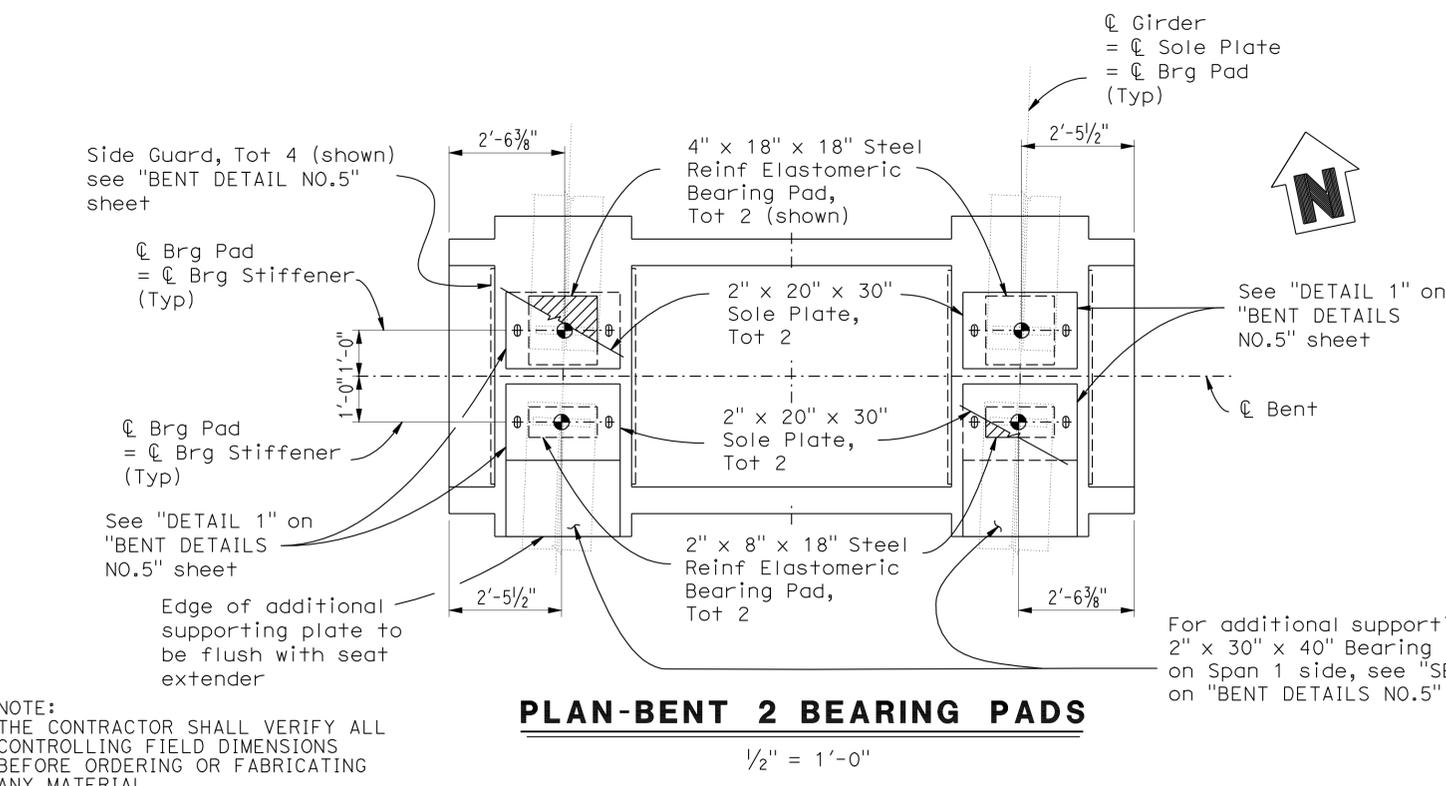
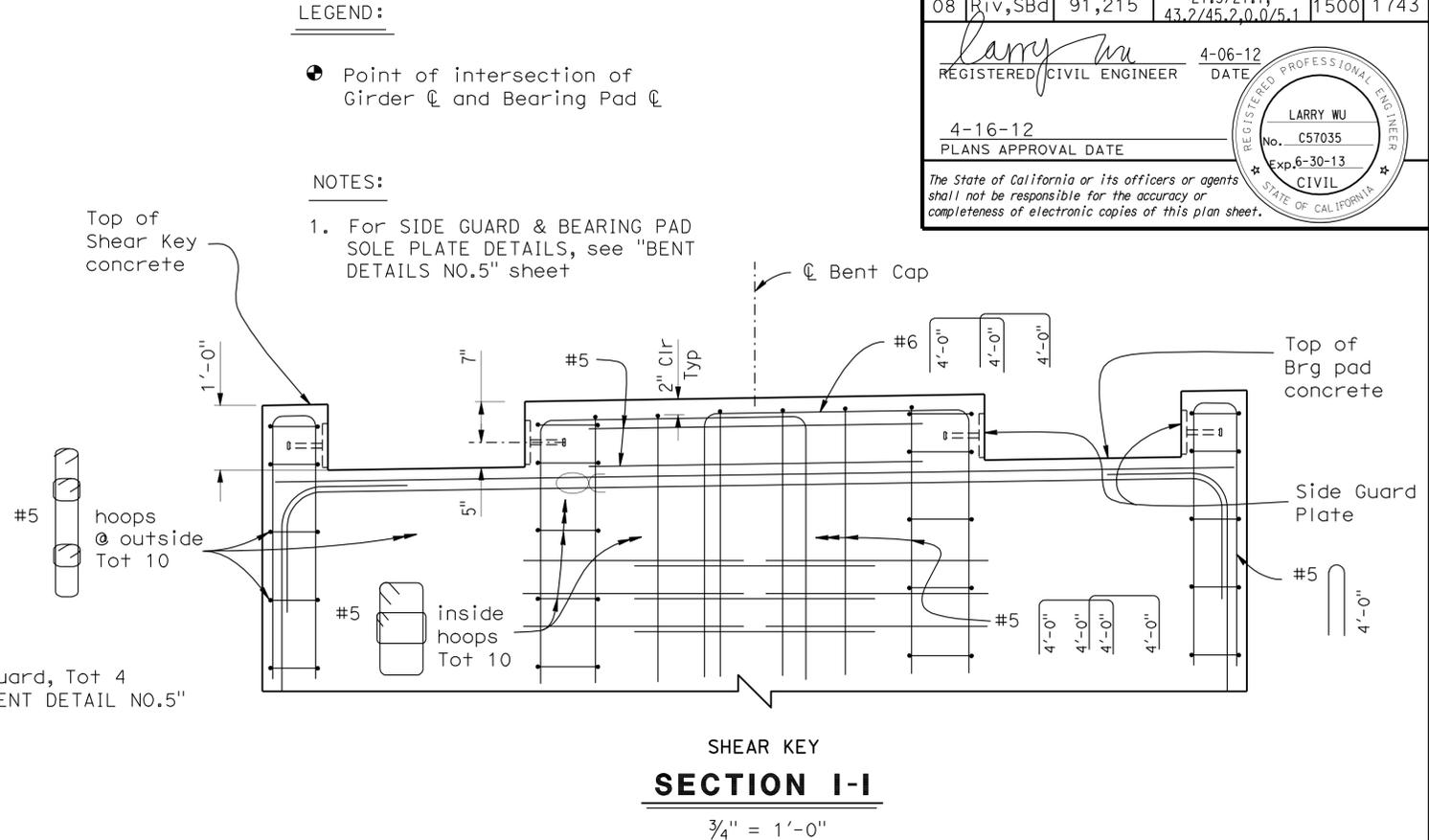
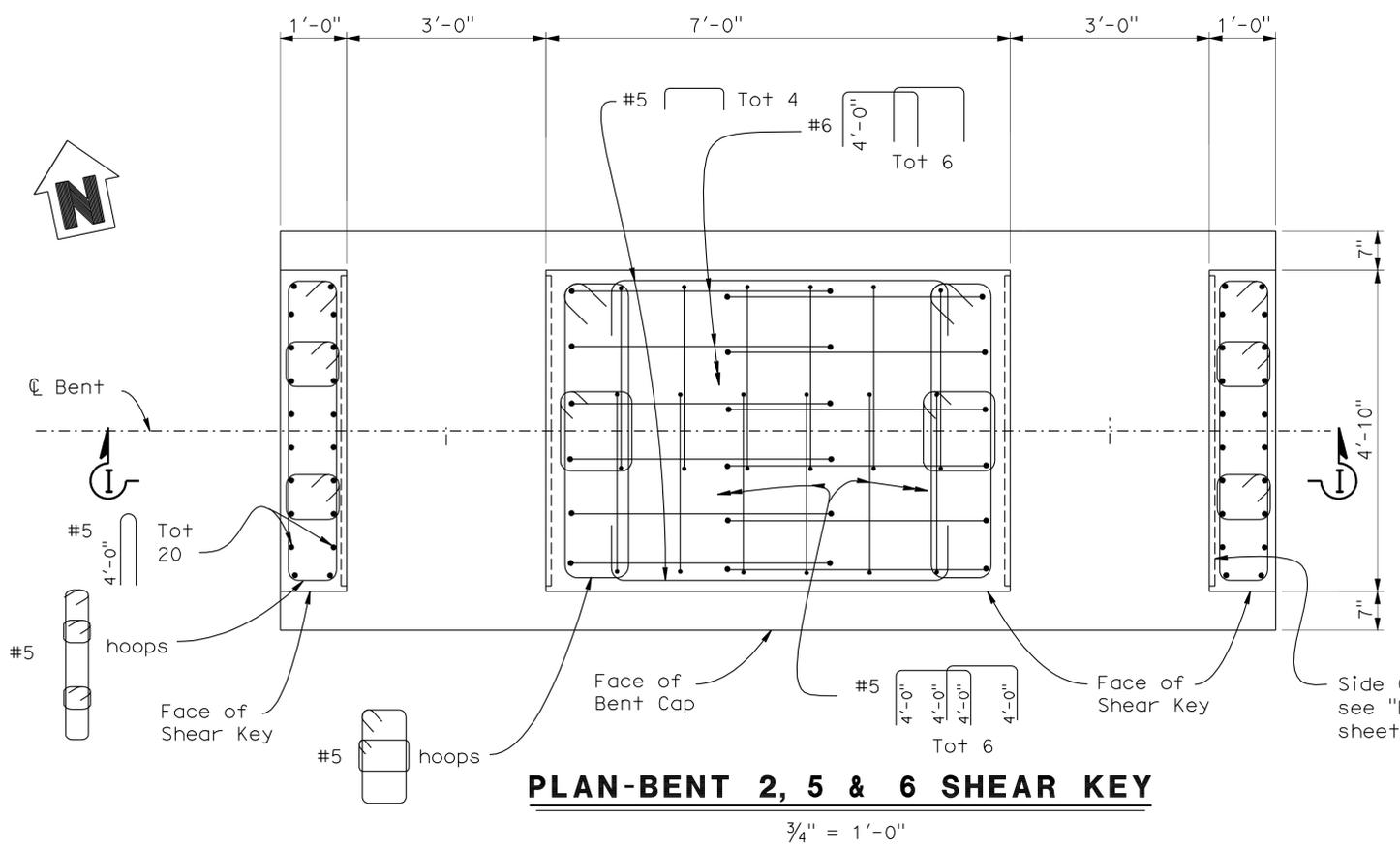
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 10**

BRIDGE NO.	54-0482R
POST MILE	3.72

**COLTON-LOMA LINDA OH RT (WIDEN)**  
**BENT DETAILS NO.2**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1500	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12 PLANS APPROVAL DATE					
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NOTE:  
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STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	DESIGN	BY J. Szabo	CHECKED R. Stiltz	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 10</b>	BRIDGE NO.	54-0482R	<b>COLTON-LOMA LINDA OH RT (WIDEN)</b> <b>BENT DETAILS NO.3</b>	
	DETAILS	BY D. Wooten	CHECKED J. Szabo		POST MILE	3.72		
	QUANTITIES	BY J. Szabo	CHECKED R. Stiltz		UNIT: 3589	PROJECT NUMBER & PHASE: 0800000506		CONTRACT NO.: 08-0M9401
							REVISION DATES	SHEET 16 OF 67