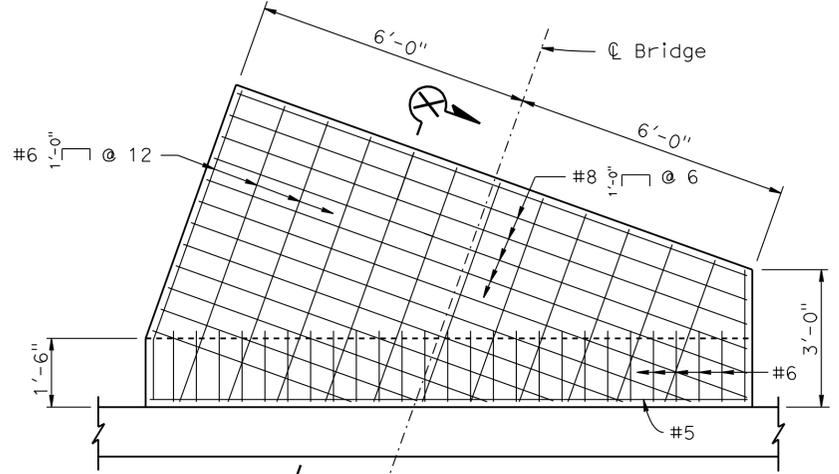
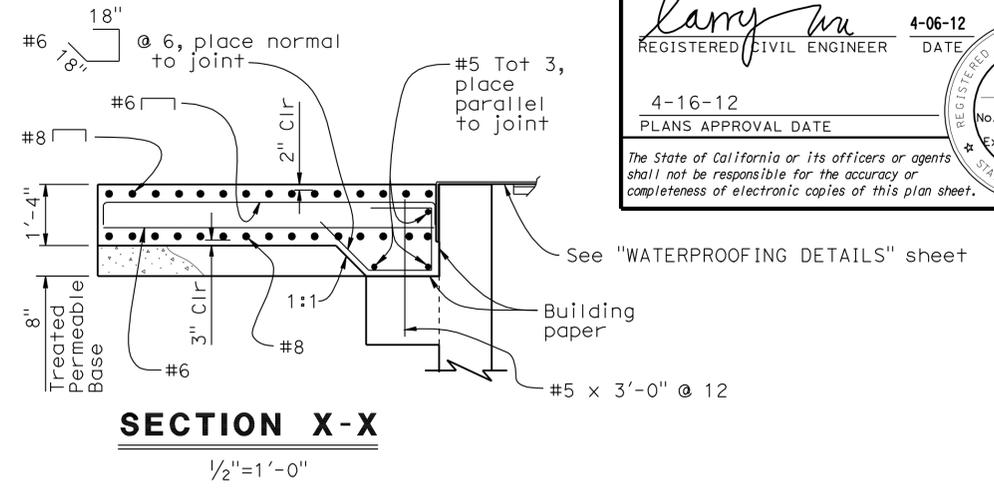
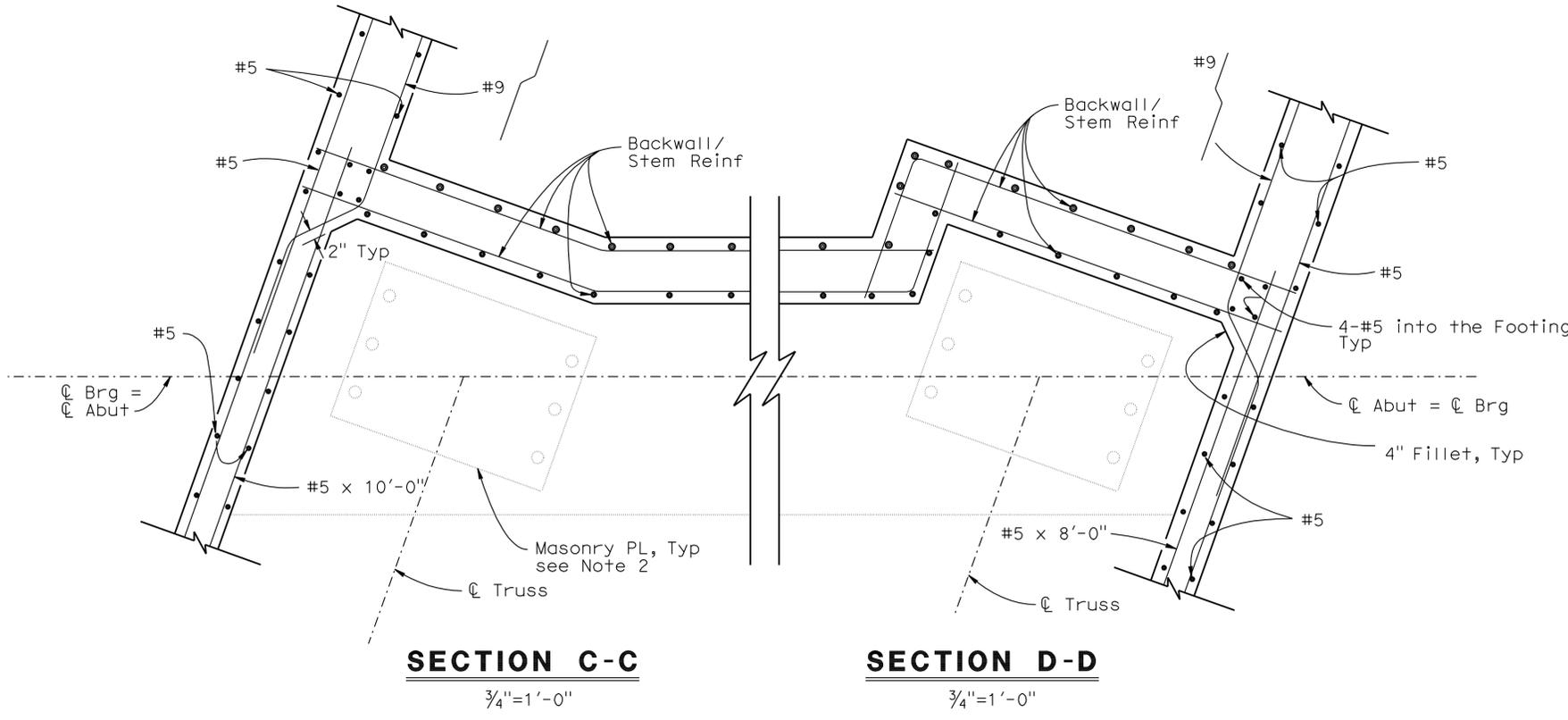
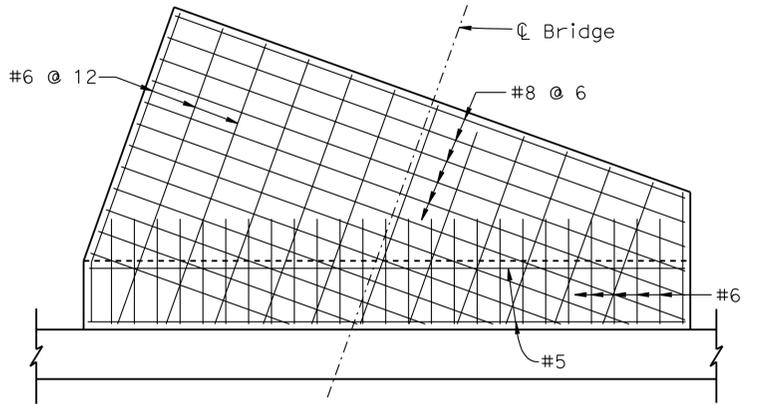


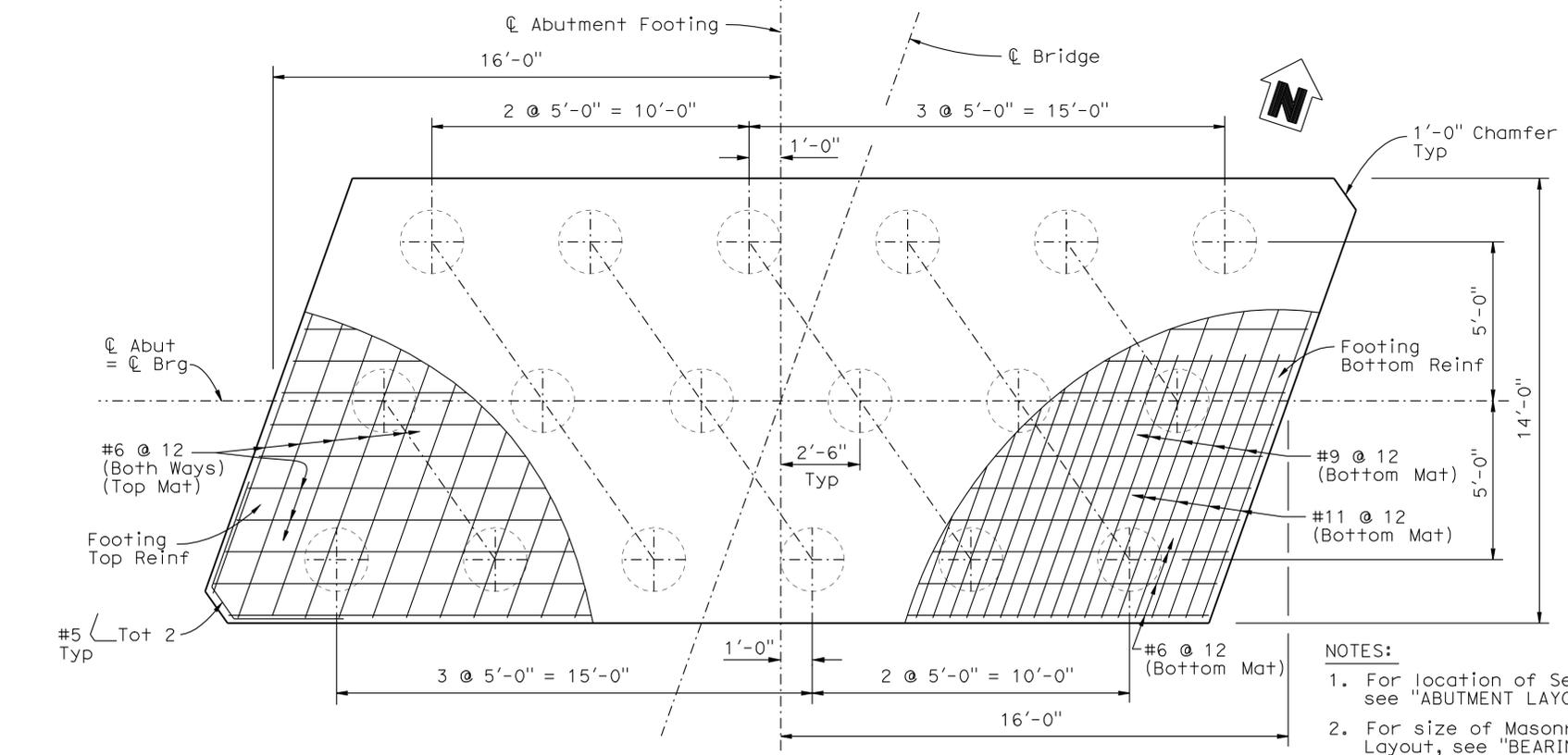
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1601	1743
 REGISTERED CIVIL ENGINEER			DATE 4-06-12		
PLANS APPROVAL DATE 4-16-12					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



APRON SLAB-TOP REINFORCEMENT
1/2"=1'-0"



APRON SLAB-BOTTOM REINFORCEMENT
1/2"=1'-0"

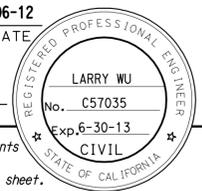


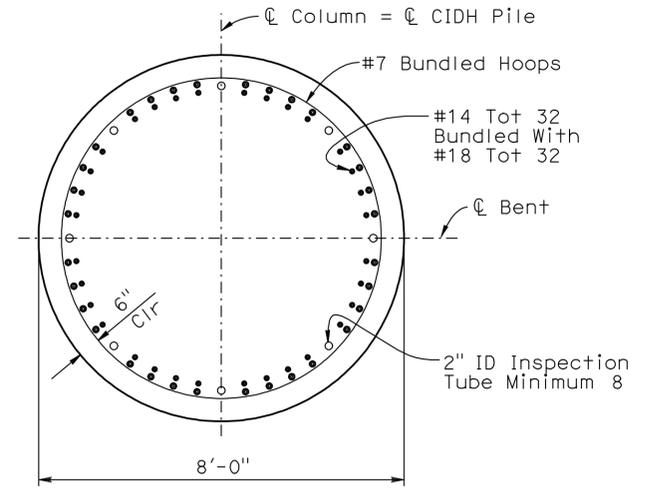
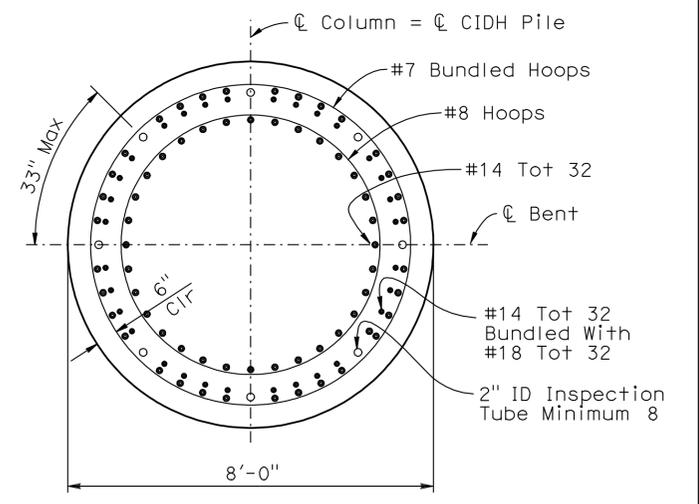
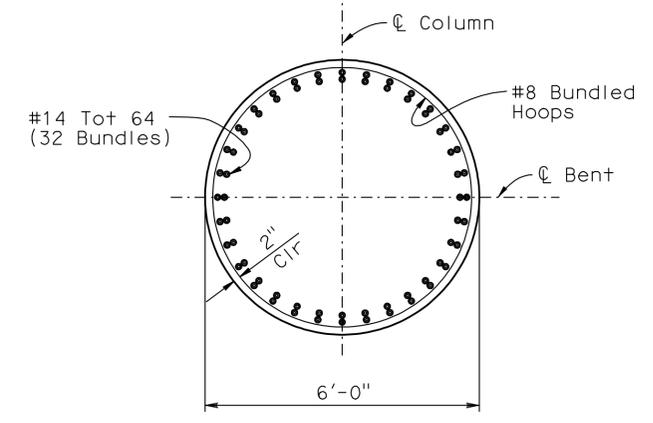
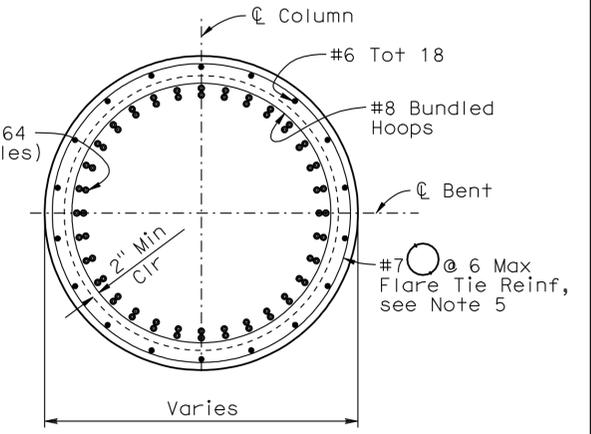
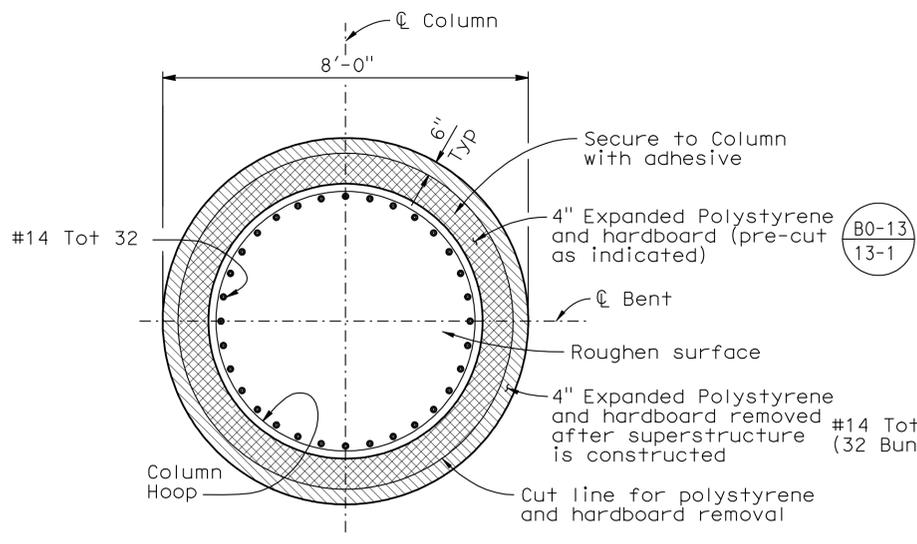
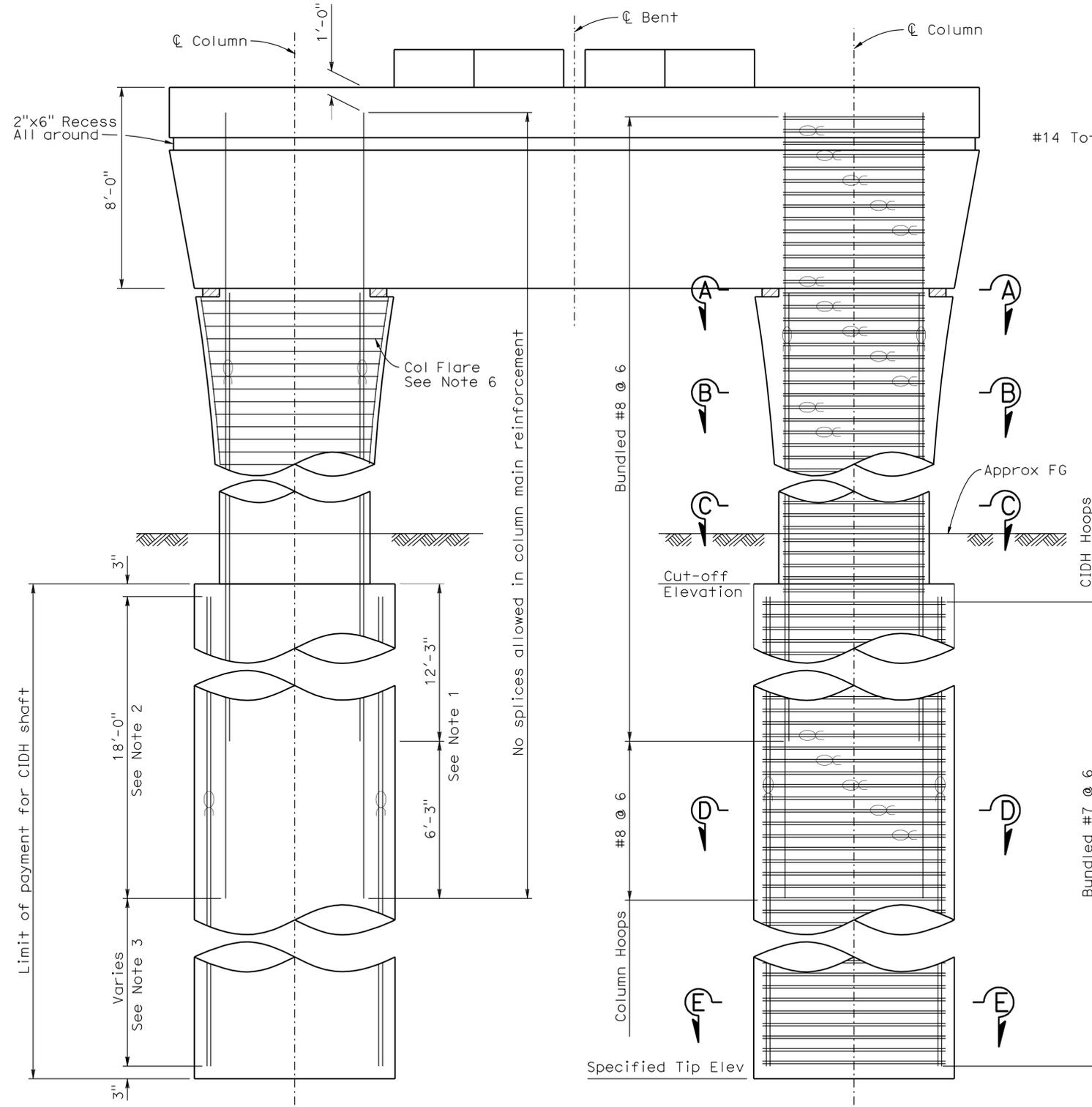
FOOTING & PILE LAYOUT
3/8"=1'-0"

- NOTES:**
- For location of Section C-C & Section D-D, see "ABUTMENT LAYOUT" sheet.
 - For size of Masonry Plate and Anchorage Layout, see "BEARING DETAILS" sheet.
 - For detail of Footing Reinf, see Section A-A on "ABUTMENT DETAILS NO. 1" sheet.
 - Abutment 1 shown, Abutment 3 similar.

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 L. Wu	CHECKED BY B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 ABUTMENT DETAILS NO. 2
	DETAILS BY Y. Tang	CHECKED BY B. Addiespurger			R.R. MILE POST 5.90	
	QUANTITIES BY T. Sanderson	CHECKED BY A. McPhee			LINE SEG. 7602	
			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 8-08-11 3-15-12 5-16-12 SHEET 8 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	1602	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>					



- NOTES:**
1. Alternate cut-off lengths of main column Reinf.
 2. No splices allowed in main shaft Reinf.
 3. Only staggered "Ultimate" butt splices allowed in main shaft Reinf.
 4. All hoops are "Ultimate" butt spliced continuous.
 5. Splice Flare Tie Reinforcement with mechanical couplers. Stagger location of couplers.
 6. For Column Flare details, see "BENT DETAILS NO. 2" sheet.

LEGEND

 Denotes Bundled bars

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

DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY Y. Tang	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

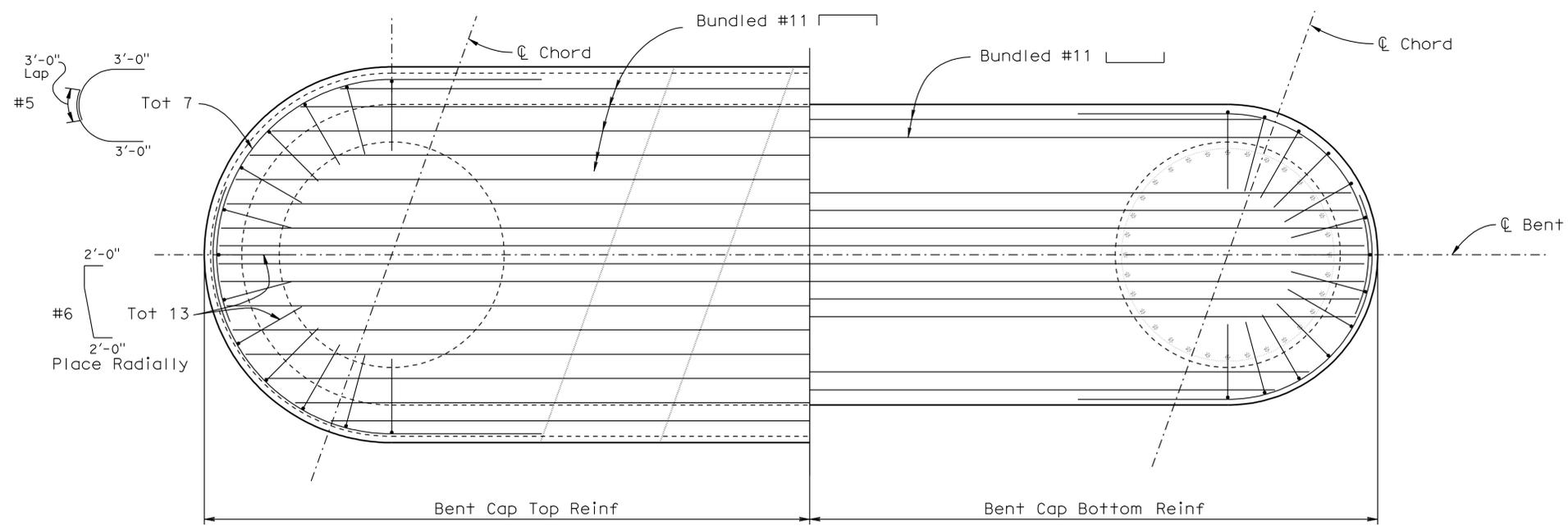
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.
54-1304
 R.R. MILE POST
5.90
 LINE SEG. 7602

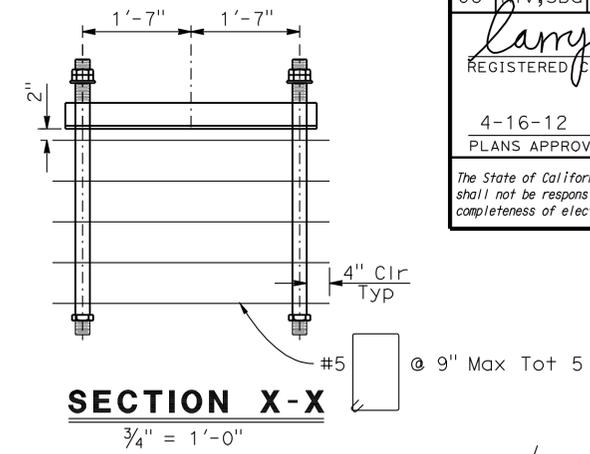
HIGHGROVE UNDERPASS #1
BENT LAYOUT

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	1603	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>					



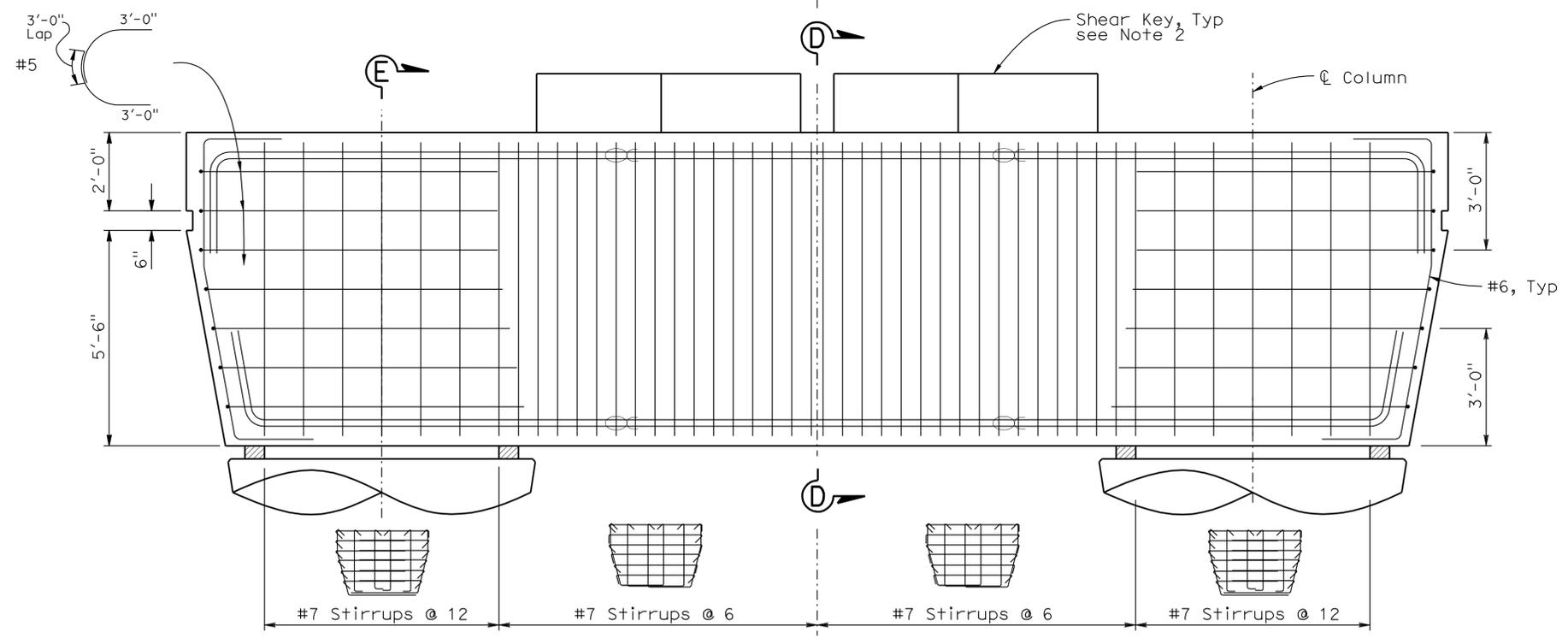
BENT CAP REINFORCEMENT - PLAN

1/2" = 1'-0"



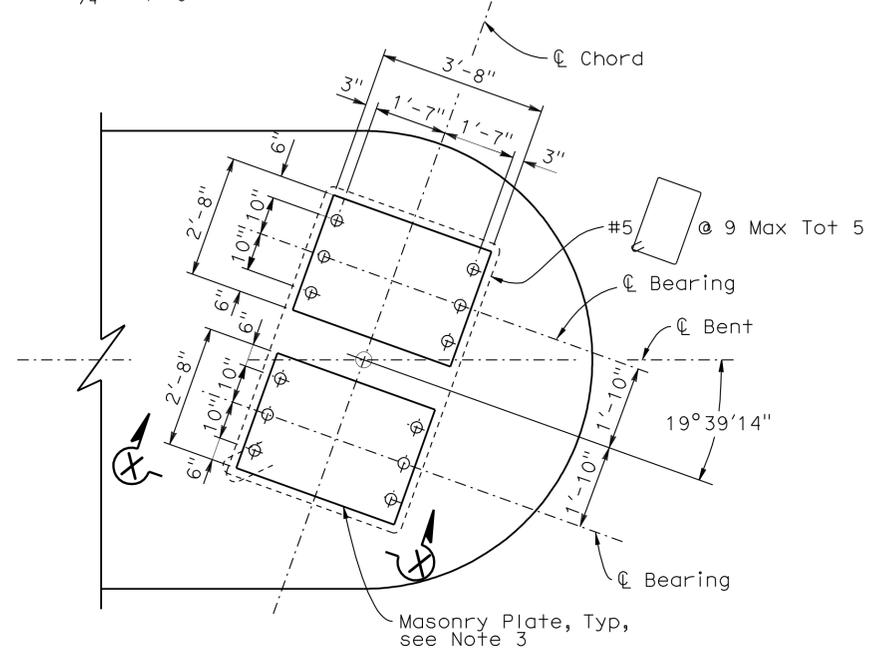
SECTION X-X

3/4" = 1'-0"



BENT CAP REINFORCEMENT - ELEVATION

1/2" = 1'-0"



ANCHOR BOLT LAYOUT

1/2" = 1'-0"

NOTES:

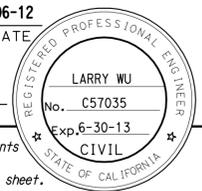
1. For Section D-D & Section E-E, see "BENT DETAILS NO. 2" sheet.
2. For Shear Key details, see "BENT DETAILS NO. 2" sheet.
3. For size of Masonry plate, see "BEARING DETAILS" sheet.

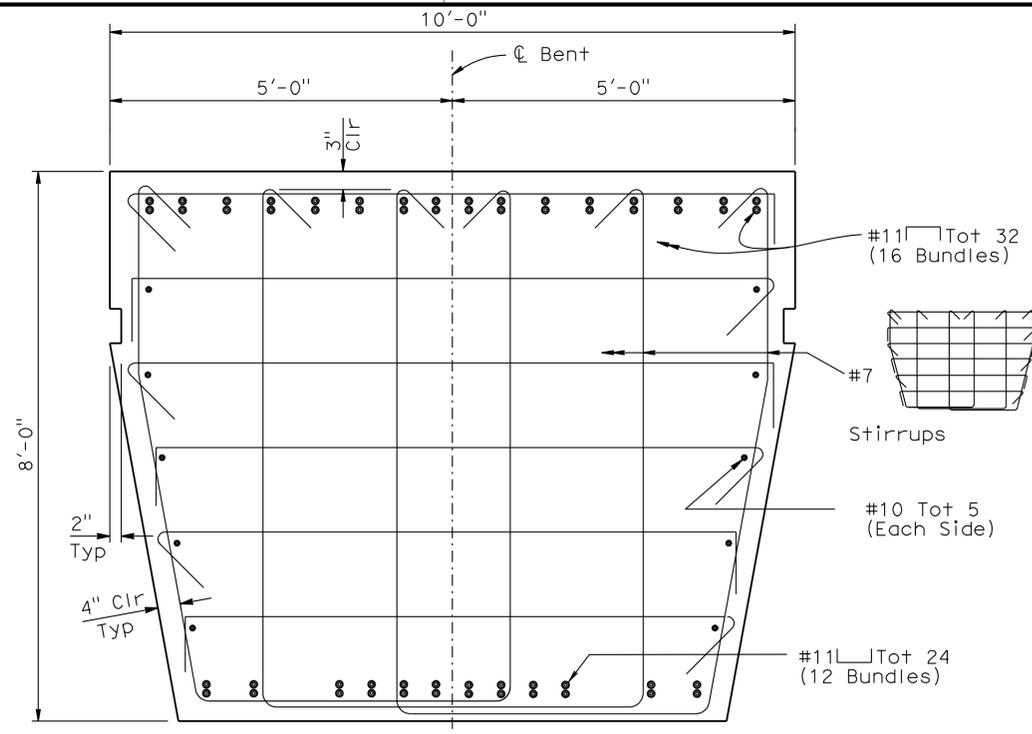
LEGEND

 Indicate bundled bars

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

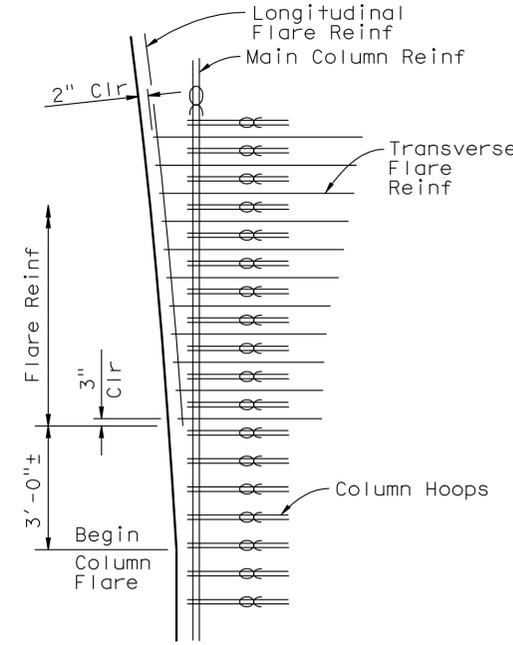
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #1 BENT DETAILS NO. 1		
	DETAILS	BY Y. Tang	CHECKED B. Addiespurger			54-1304			
	QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			R.R. MILE POST 5.90 LINE SEG. 7602			
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 7-27-11 5-01-12 3-28-12	SHEET 10	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	1604	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>					



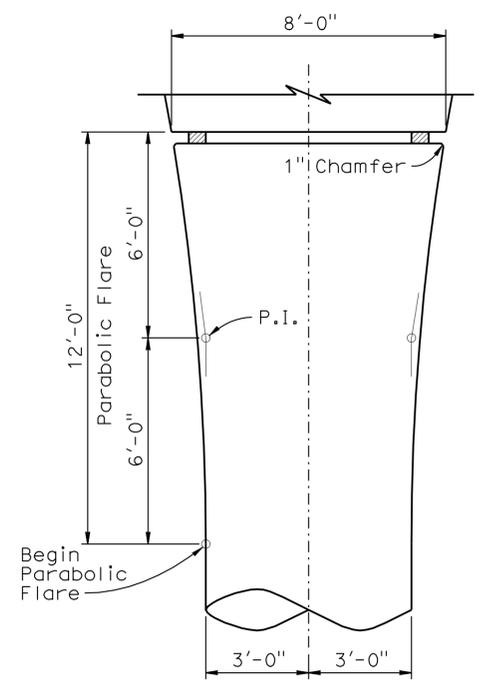
SECTION D-D

3/4" = 1'-0"



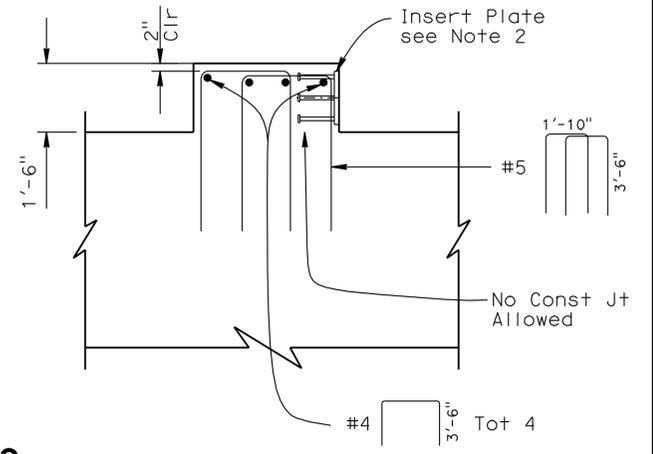
COLUMN FLARE REINFORCEMENT DETAIL

NO SCALE



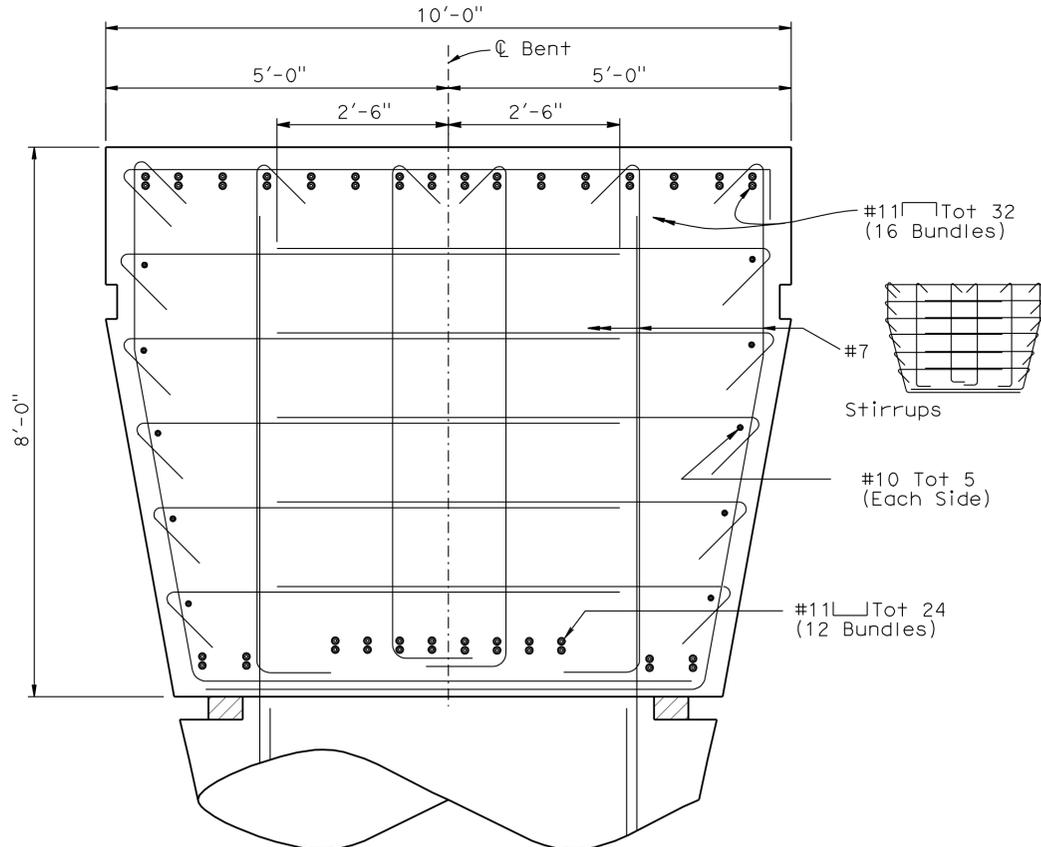
COLUMN GEOMETRICS

3/8" = 1'-0"



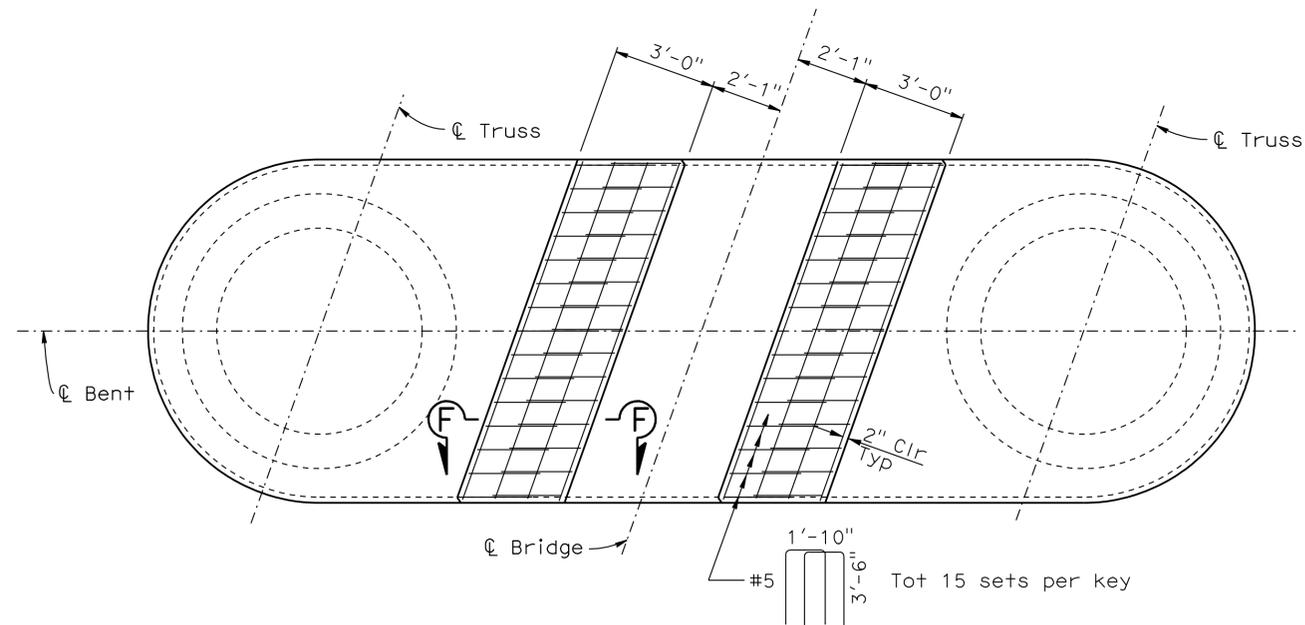
SECTION F-F

1/2" = 1'-0"



SECTION E-E

3/4" = 1'-0"



SHEAR KEY - PLAN

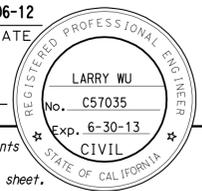
3/8" = 1'-0"

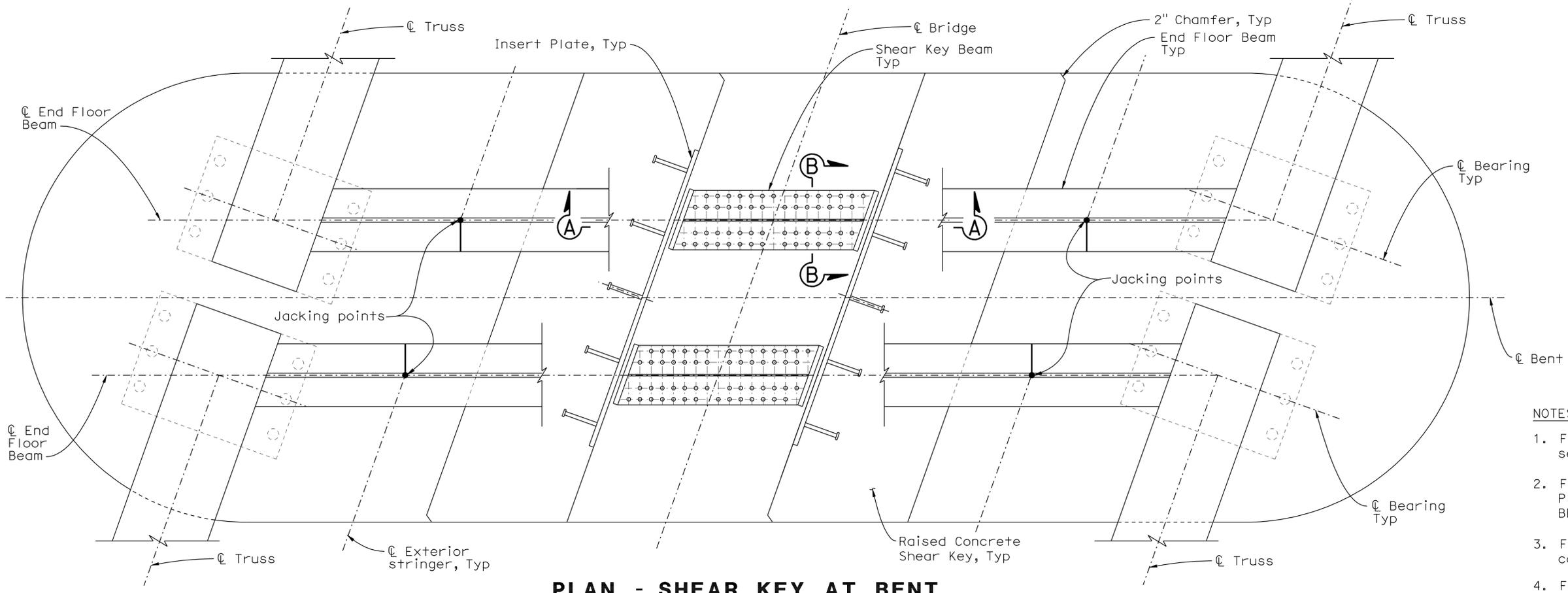
NOTES:

1. For location of Section D-D & Section E-E, see "BENT DETAILS NO. 1" sheet.
2. For Details of Insert Plate, see "SHEAR KEY BEAM DETAILS" sheet.

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

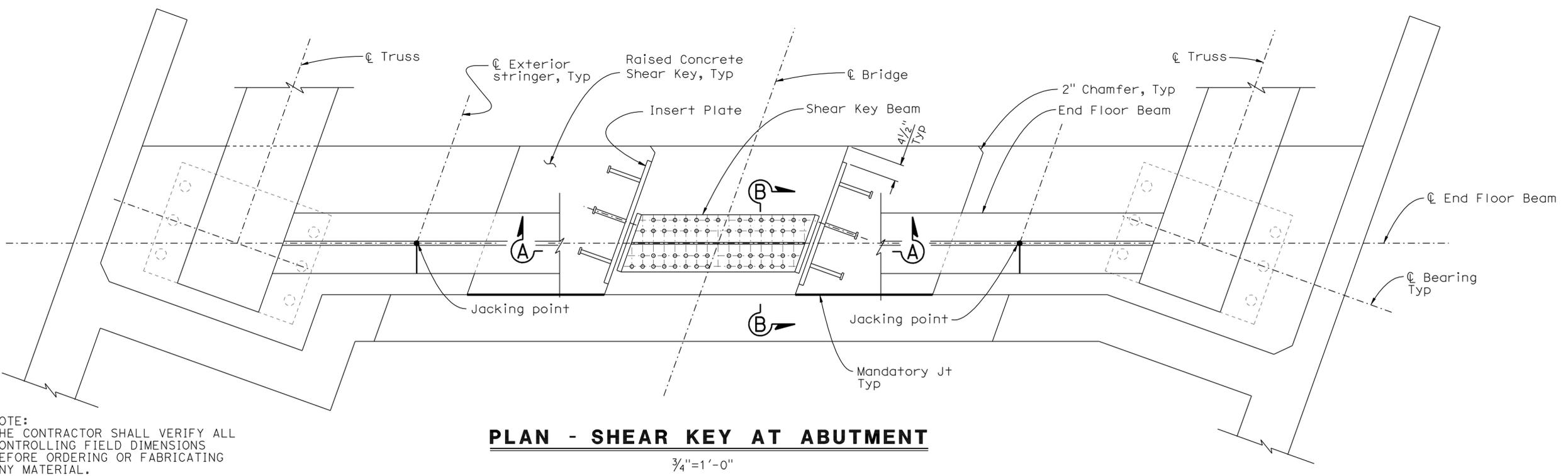
DESIGN BY: L. Wu CHECKED BY: B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 BENT DETAILS NO. 2
			R.R. MILE POST 5.90 LINE SEG. 7602	
DETAILS BY: Y. Tang CHECKED BY: B. Addiespurger	UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 7-28-11 3-29-12 5-01-12
QUANTITIES BY: T. Sanderson CHECKED BY: A. McPhee	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	FILE => 541304hbd11.dgn	SHEET 11 OF 42	USERNAME => s124486 DATE PLOTTED => 14-JUN-2012 TIME PLOTTED => 06:00

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	1605	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 - SHEAR KEY AT BENT
 $\frac{3}{4}'' = 1' - 0''$

- NOTES:
1. For Section A-A & Section B-B, see "SHEAR KEY BEAM DETAILS" sheet.
 2. For Shear Key Beam and Insert Plate details, see "SHEAR KEY BEAM DETAILS" sheet.
 3. Floor Beam connections and stringer connections not shown for clarity.
 4. For Jacking Point location and Jacking stiffener details, see "TRUSS DETAILS NO. 2" sheet.



PLAN - SHEAR KEY AT ABUTMENT
 $\frac{3}{4}'' = 1' - 0''$

NOTE:
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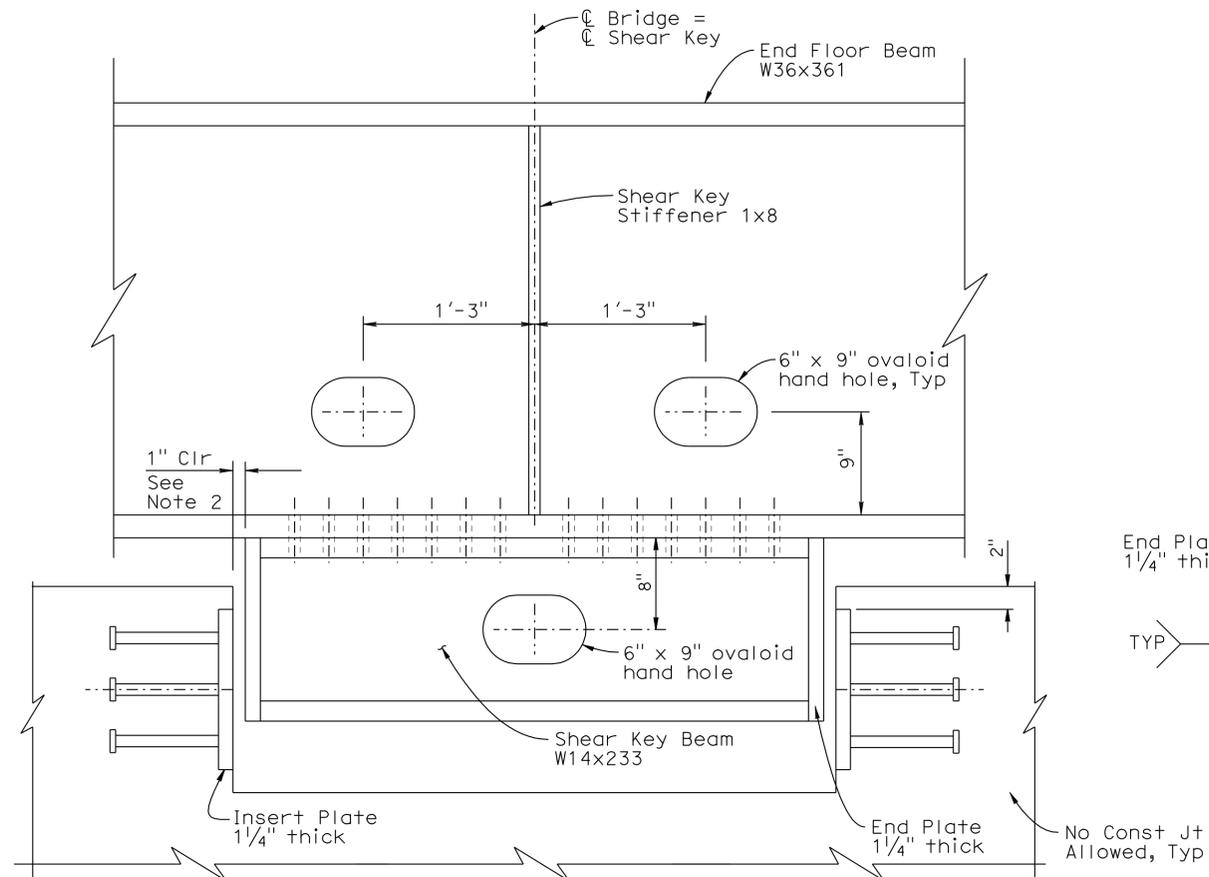
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY G. Hallstrom	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

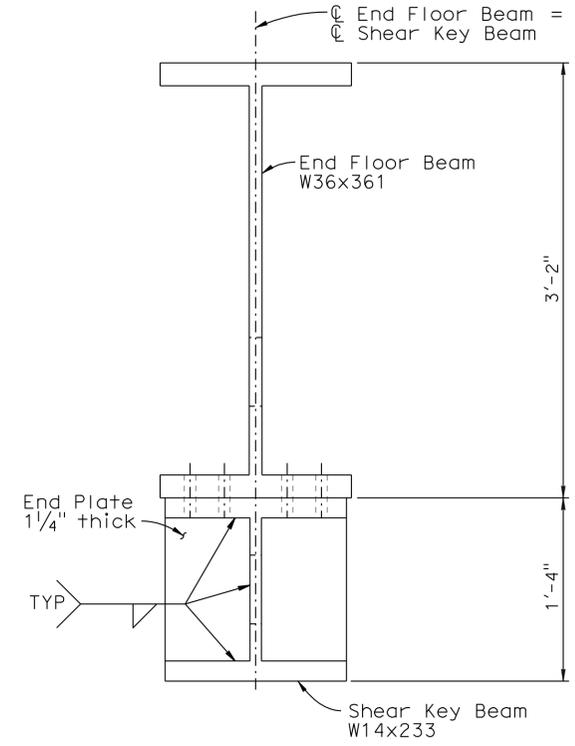
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	54-1304
R.R. MILE POST	5.90
LINE SEG.	7602

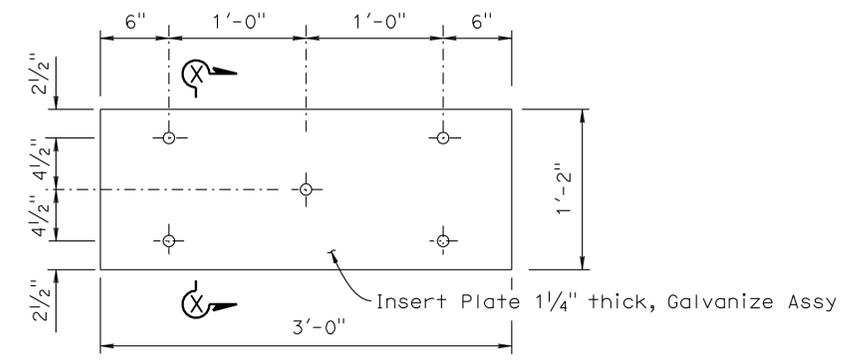
HIGHGROVE UNDERPASS #1
SHEAR KEY BEAM LAYOUT



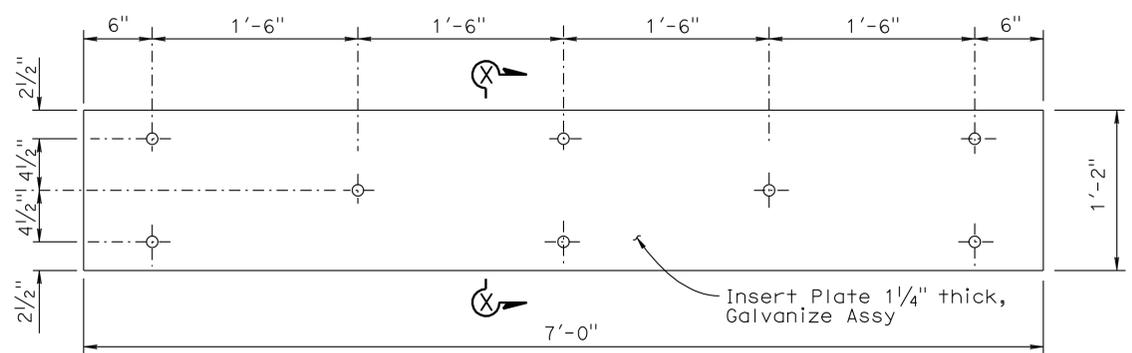
SECTION A-A
1/2"=1'-0"



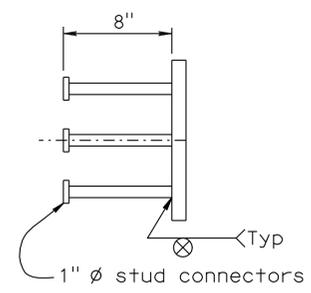
SECTION B-B
1/2"=1'-0"



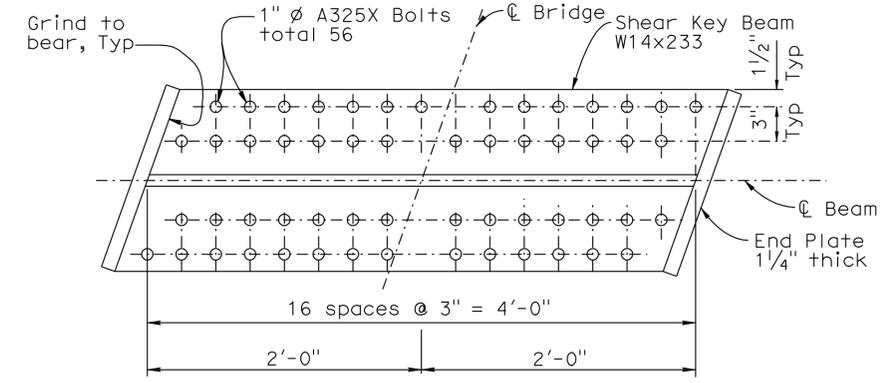
INSERT PLATE DETAIL - AT ABUTMENT
1/2"=1'-0"



INSERT PLATE DETAIL - AT BENT
1/2"=1'-0"



SECTION X-X
1/2"=1'-0"



SHEAR KEY BEAM DETAIL
1/2"=1'-0"

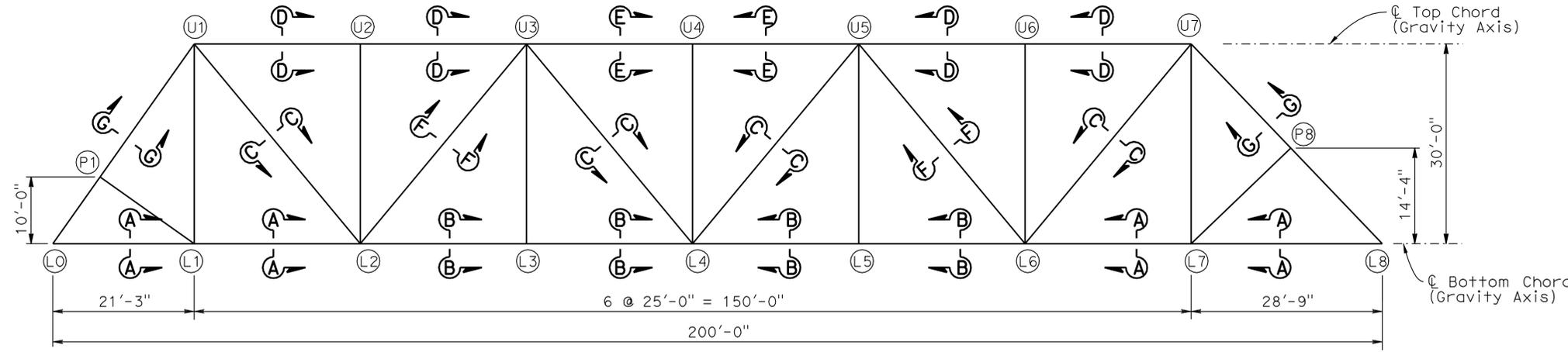
- NOTES:
- For location of Section A-A & Section B-B, see "SHEAR KEY BEAM LAYOUT" sheet.
 - Gap measured normal to Insert Plate and End Plate

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

DESIGN	BY	L. Wu	CHECKED	B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1304	HIGHGROVE UNDERPASS #1 SHEAR KEY BEAM DETAILS	
	DETAILS	BY	G. Hallstrom	CHECKED			B. Addiespurger	R.R. MILE POST		5.90
	QUANTITIES	BY	T. Sanderson	CHECKED			A. McPhee	LINE SEG. 7602		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)						UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 13 OF 42

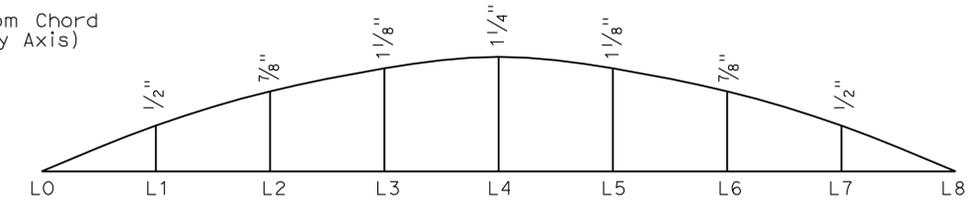
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1607	1743

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.



FRONT TRUSS ELEVATION

$\frac{3}{32}'' = 1'-0''$

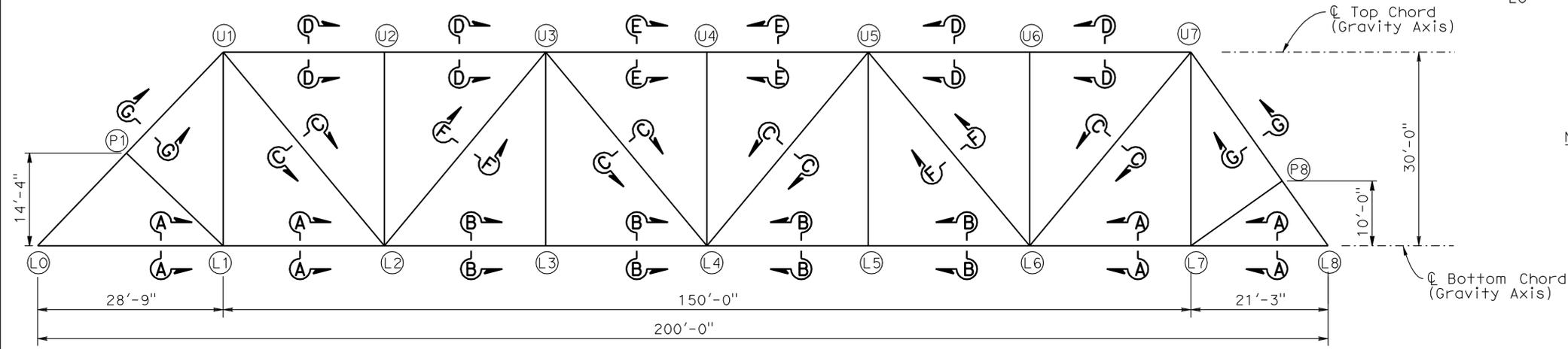


TRUSS CAMBER DIAGRAM

NO SCALE

NOTES:

1. Camber calculated for dead load plus a uniform load of 1500 lb/ft on each truss.
2. Method of camber fabrication to be shown on shop drawings.



REAR TRUSS ELEVATION

$\frac{3}{32}'' = 1'-0''$

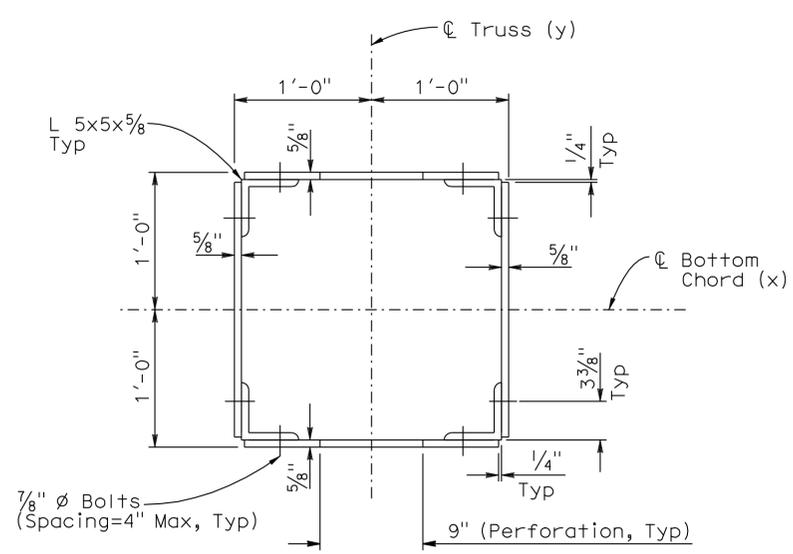
NOTE: For Truss Member Sections, see "TRUSS DETAILS NO. 1" sheet.

Member	DL (kips)	LL (kips)		Impact (kips)		WL(±) (kips)	LF (±)	Fatigue load range (kips)	EQ (±) (kips)	Design Load			Gross Section	Gross Area (in ²)	Net Area (in ²)	Allowable Stress Ratio	Actual Stress Ratio	Fracture Critical Member	Allowable Fatigue Stress Range (ksi)	Actual Fatigue Stress Range (ksi)	
		Tension	Comp.	Tension	Comp.					P(kips)	M _x (k-ft)	M _y (k-ft)									
Chord	U1U3 & U5U7	-523	0	-539	0	-118	32	1	0	105	-1180	53	132	□ Top & Bottom PL 7/8x23, Perforated, 2-Web PL 7/8x22 1/4 (D-D)	79.19	79.19	1.00	0.920	NO	N/A	N/A
	U3U4 & U4U5	-730	1	-743	0	-162	18	1	0	160	-1635	31	71	□ Top & Bottom PL 1 1/8x23, Perforated, 2-Web PL 1 1/8x21 3/4 (E-E)	100.69	100.69	1.00	0.880	NO	N/A	N/A
	L0L2 & L6L8	259	276	0	60	0	116	157	315	499	868	280	165	□ Top & Bottom PL 5/8x22 1/4, Perforated, 2-Web PL 5/8x22 1/4, 4-L5x5x5/8 (A-A)	79.07	51.50	1.00	0.699	YES	16.00	13.08
Diagonal	L2L4 & L4L6	499	512	-1	112	0	174	89	586	658	1123	89	194	□ Top & Bottom PL 7/8x21 3/4, Perforated, 2-Web PL 7/8x21 3/4, 4-L5x5x5/8 (B-B)	99.57	63.80	1.00	0.738	YES	16.00	15.90
	L0U1 & U7L8	-547	1	-575	0	-126	77	1	0	153	-1326	558	100	□ Top & Bottom PL 1 1/4x23, Perforated, 2-Web PL 1 1/4x21 1/2 (G-G)	111.25	111.25	1.00	0.858	NO	N/A	N/A
	U1L2 & L6U7	410	455	-8	99	-2	38	0	529	69	964	217	34	□ Top & Bottom PL 5/8x22 1/4, Perforated, 2-Web PL 5/8x22 1/4, 4-L5x5x5/8 (C-C)	79.07	43.19	1.00	0.758	YES	16.00	13.38
Vertical	L2U3 & U5L6	-265	45	-323	10	-71	12	0	0	41	-671	198	28	□ Top & Bottom PL 3/4x23, Perforated, 2-Web PL 3/4x22 1/2 (F-F)	54.75	54.75	1.00	0.703	NO	N/A	N/A
	U3L4 & L4U5	106	221	-95	48	-21	14	1	361	34	390	155	33	□ Top & Bottom PL 5/8x22 1/4, Perforated, 2-Web PL 5/8x22 1/4, 4-L5x5x5/8 (C-C)	79.07	43.19	1.00	0.347	YES	16.00	9.13
	U1L1 & U7L7	85	141	-1	51	0	2	0	162	9	279	32	66	I Top & Bottom PL 3/4x18, 1-Web PL 1/2x22 1/2	38.25	31.50	1.00	0.408	YES	16.00	6.00
	U2L2 & U6L6	10	5	0	1	0	2	0	6	6	18	24	69	I Top & Bottom PL 3/4x18, 1-Web PL 1/2x22 1/2	38.25	31.50	1.00	0.201	NO	N/A	N/A
U3L3 & U5L5	82	139	-1	50	0	0	0	160	8	272	21	38	I Top & Bottom PL 3/4x18, 1-Web PL 1/2x22 1/2	38.25	31.50	1.00	0.392	YES	16.00	5.93	
U4L4	12	5	0	1	0	1	0	6	6	19	17	22	I Top & Bottom PL 3/4x18, 1-Web PL 1/2x22 1/2	38.25	31.50	1.00	0.169	NO	N/A	N/A	

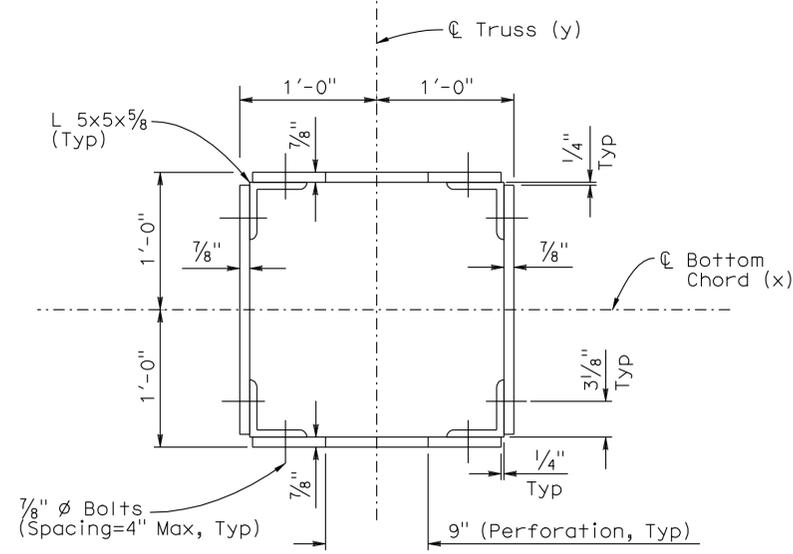
DESIGN BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 SCHEMATIC LAYOUT / STRESS SHEET
DETAILS BY Y. Tang	CHECKED B. Addiespurger		R.R. MILE POST 5.90	
QUANTITIES BY T. Sanderson	CHECKED A. McPhee		LINE SEG. 7602	

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

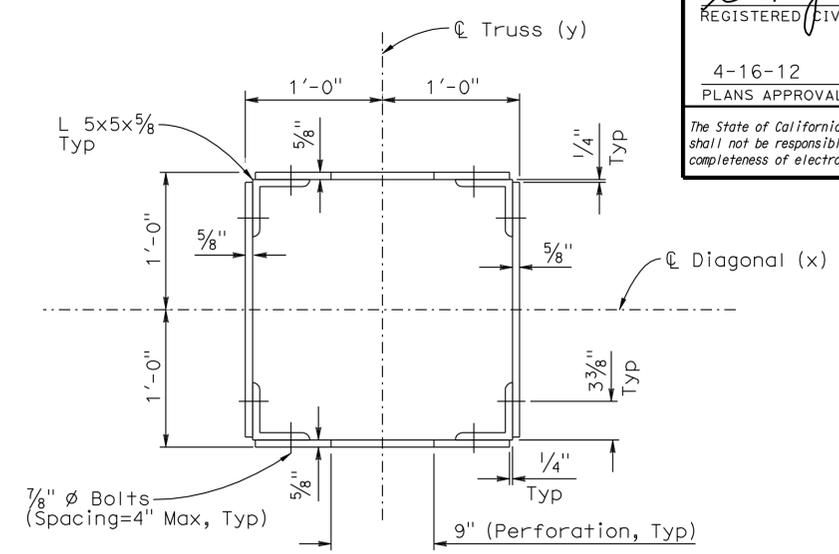
REVISION DATES	SHEET	OF
7-2-11	14	42



(Lower Chord: L0-L2 & L6-L8)
(FCM)
SECTION A-A
1/2" = 1'-0"

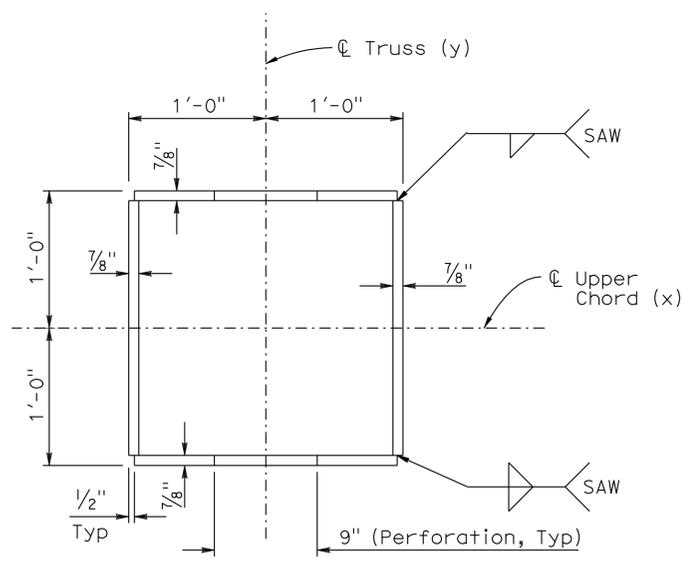


(Lower Chord: L2-L6)
(FCM)
SECTION B-B
1/2" = 1'-0"

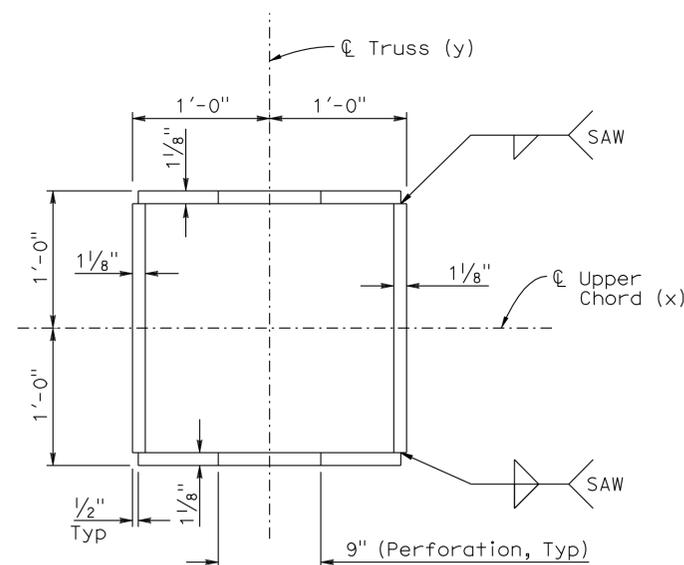


(Diagonal: U1-L2 & U7-L6)
(Diagonal: U3-L4 & L4-U5)
(FCM)
SECTION C-C
1/2" = 1'-0"

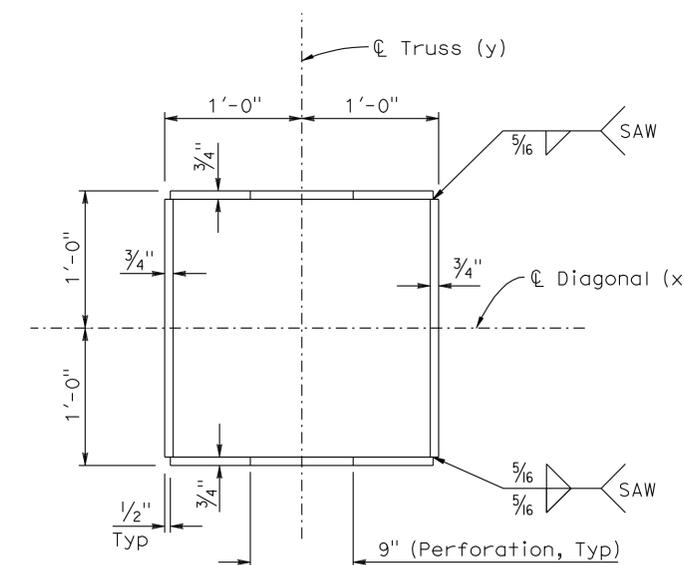
- NOTES:**
1. For location of all sections, see "SCHEMATIC LAYOUT/STRESS SHEET" sheet.
 2. For Perforation details, see "TRUSS DETAILS NO. 3" sheet.
 3. FCM: Fracture Critical Member
 4. SAW: Submerged Arc Welding



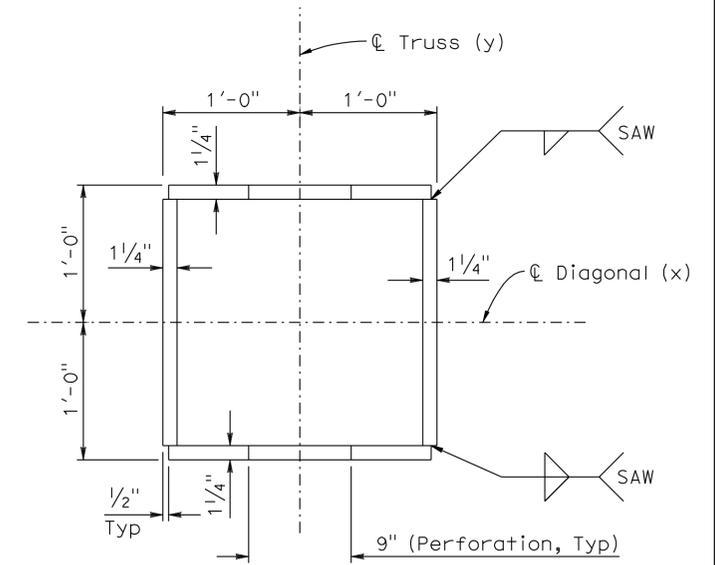
(Upper Chord: U1-U3 & U5-U7)
SECTION D-D
1/2" = 1'-0"



(Upper Chord: U3-U4 & U4-U5)
SECTION E-E
1/2" = 1'-0"



(Diagonal: L2-U3 & U5-L6)
SECTION F-F
1/2" = 1'-0"



(Diagonal: L0-U1 & U7-L8)
SECTION G-G
1/2" = 1'-0"

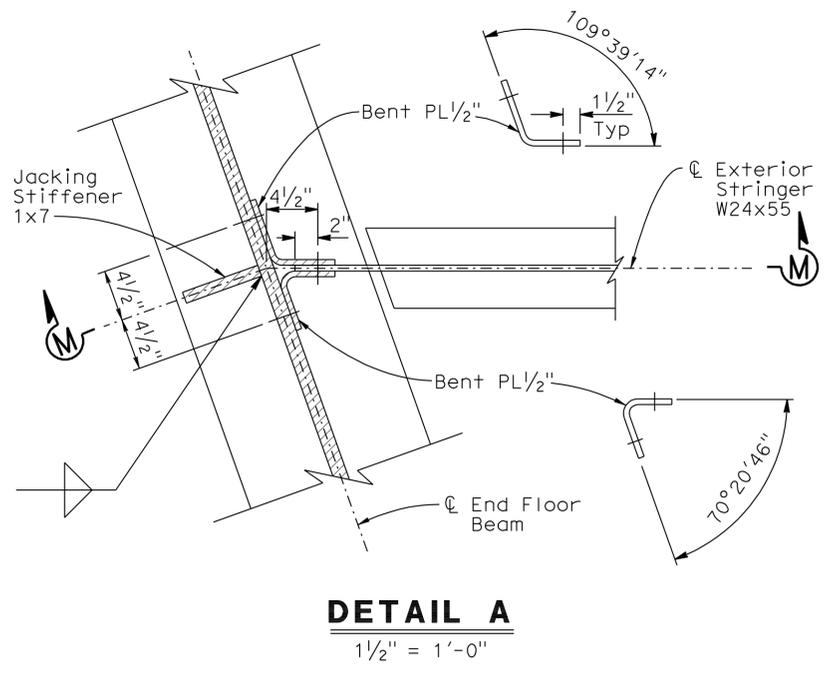
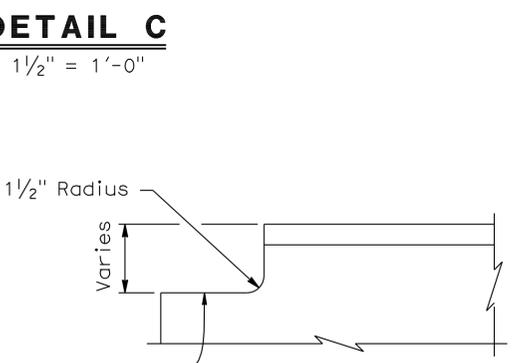
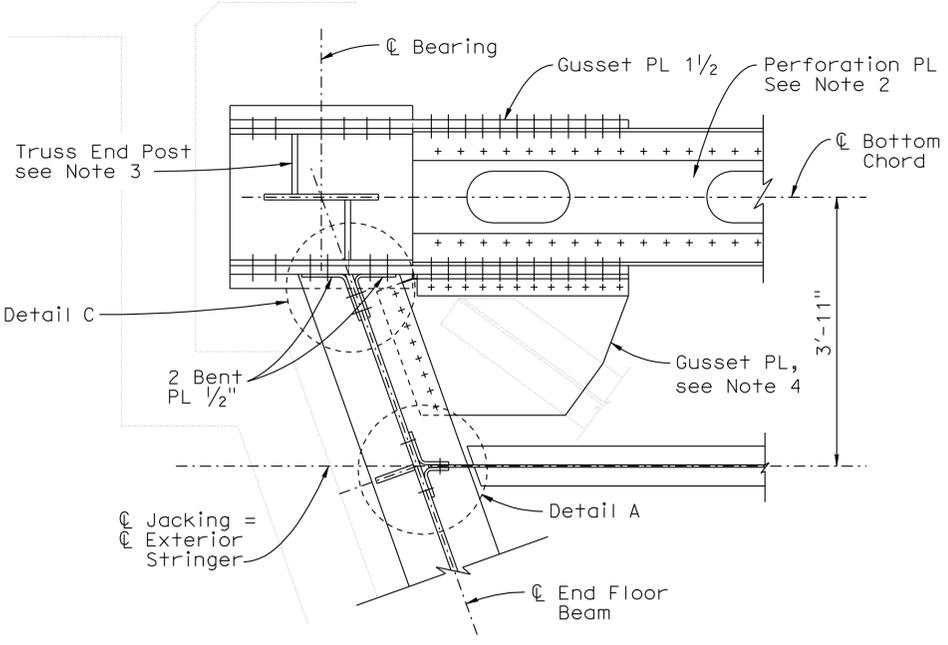
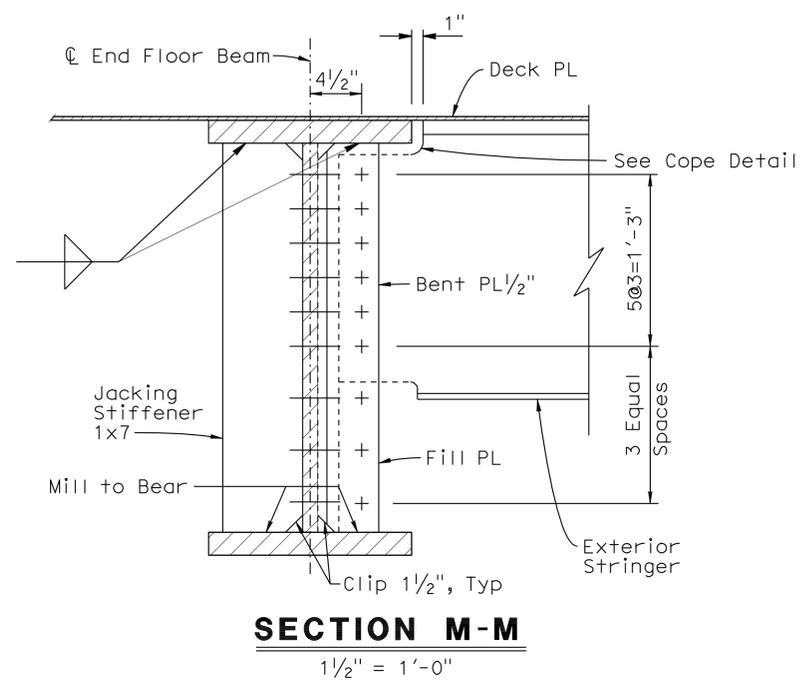
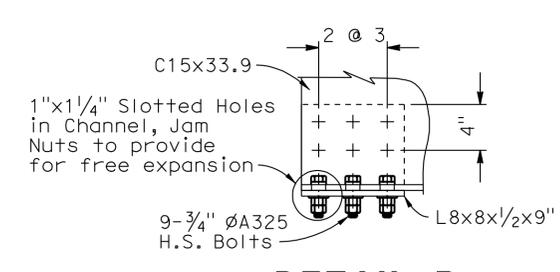
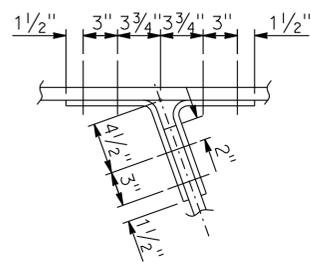
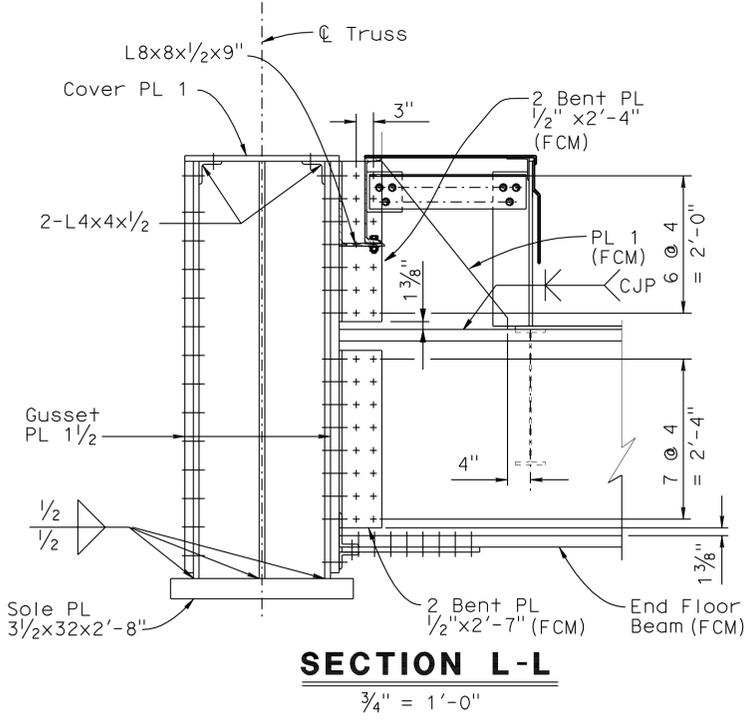
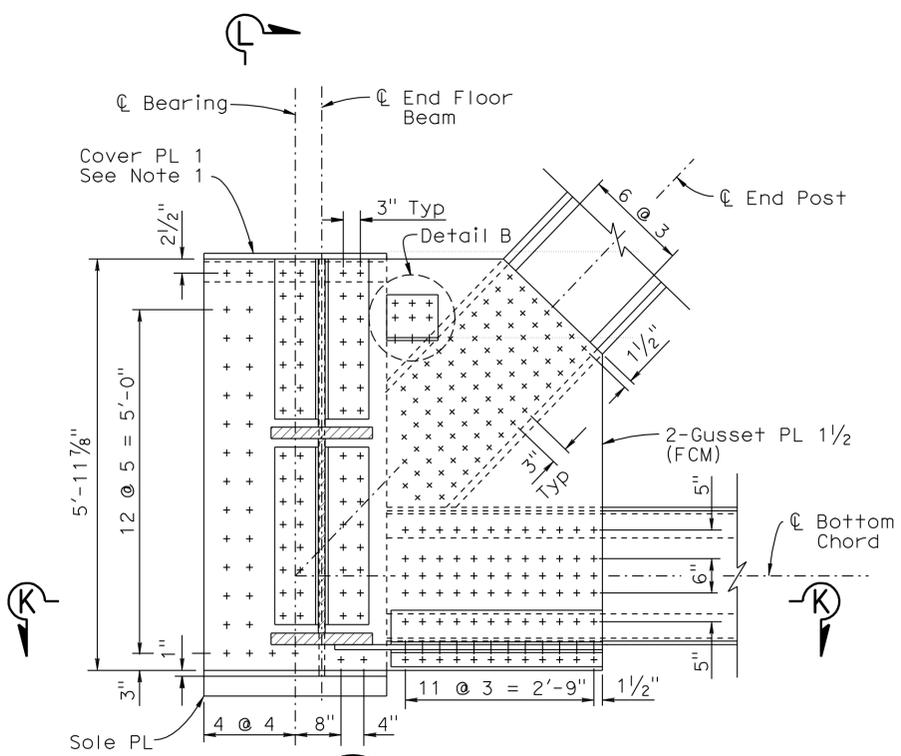
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	BY	L. Wu	CHECKED	B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1304	HIGHGROVE UNDERPASS #1		
	DETAILS	BY	Y. Tang	CHECKED			B. Addiespurger	R.R. MILE POST		5.90	TRUSS DETAILS NO. 1
	QUANTITIES	BY	T. Sanderson	CHECKED			A. McPhee	LINE SEG. 7602			
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 15 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	1609	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.					

NOTES:

1. For Cover Plate Details see "TRUSS DETAILS NO. 3" sheet.
2. For Perforation Detail, see "TRUSS DETAILS NO. 3" sheet.
3. For End Post Detail, see "TRUSS DETAILS NO. 3" sheet.
4. For connection of Gusset Plate, see "BOTTOM LATERAL BRACING DETAILS NO. 1" sheet.
5. All bolts edge distance 1/2" unless otherwise shown.
6. FCM: Fracture Critical Member

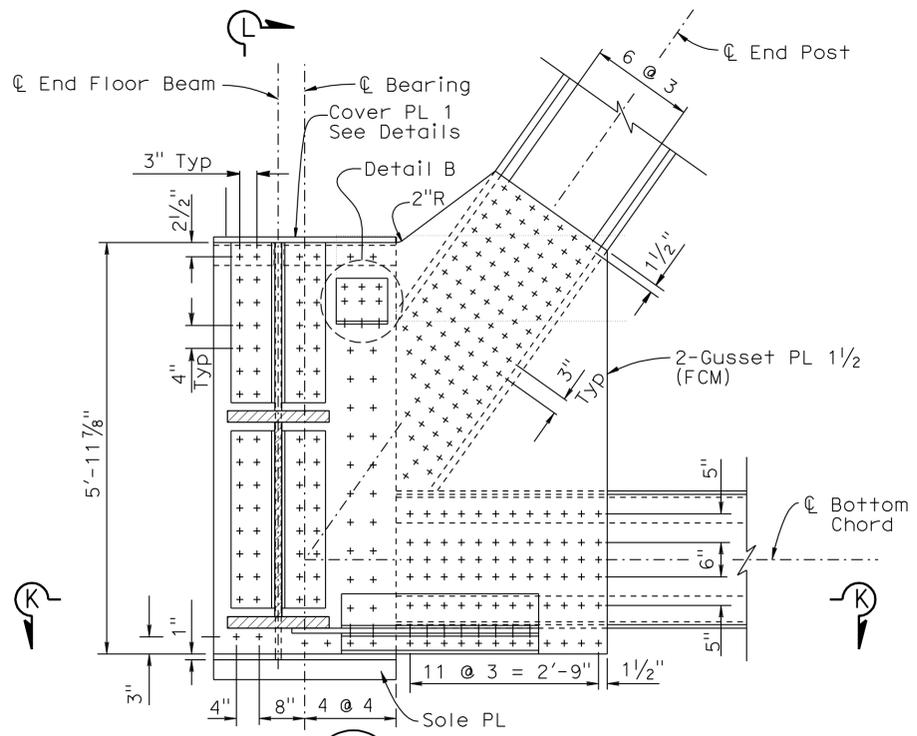


NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

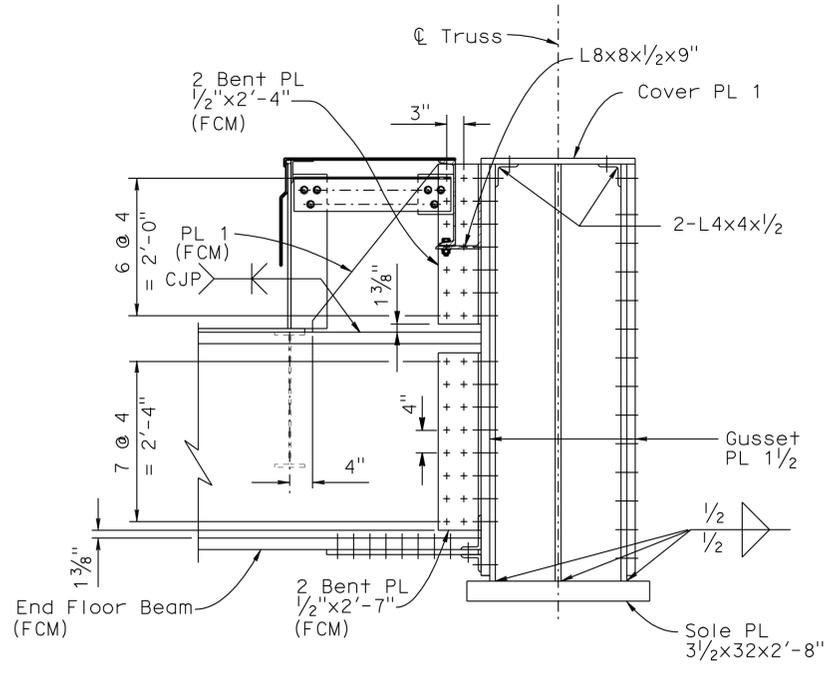
Cut Surfaces shall be Shaped Smooth and Notch Free with a Degree of Surface Roughness not to exceed A.N.S.I. 250. All Grinding shall be in the Direction parallel to the Beam Web.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 TRUSS DETAILS NO. 2		
	DETAILS	BY Y. Tang	CHECKED B. Addiespurger			R.R. MILE POST 5.90			
	QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			LINE SEG. 7602			
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 7-21-11 5-14-12 3-25-12	SHEET 16	OF 42

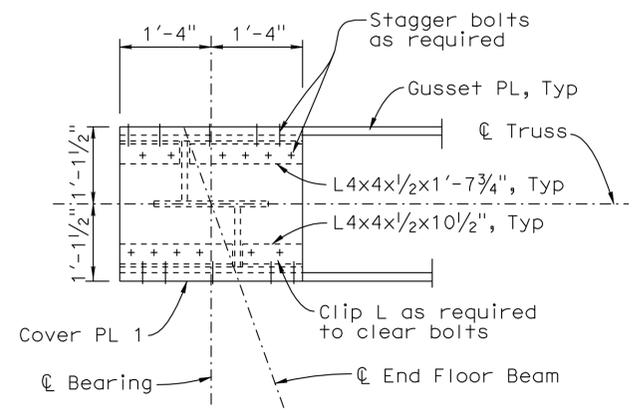
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1610	1743
			4-06-12	DATE	
REGISTERED CIVIL ENGINEER			DATE		
4-16-12			PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					
					



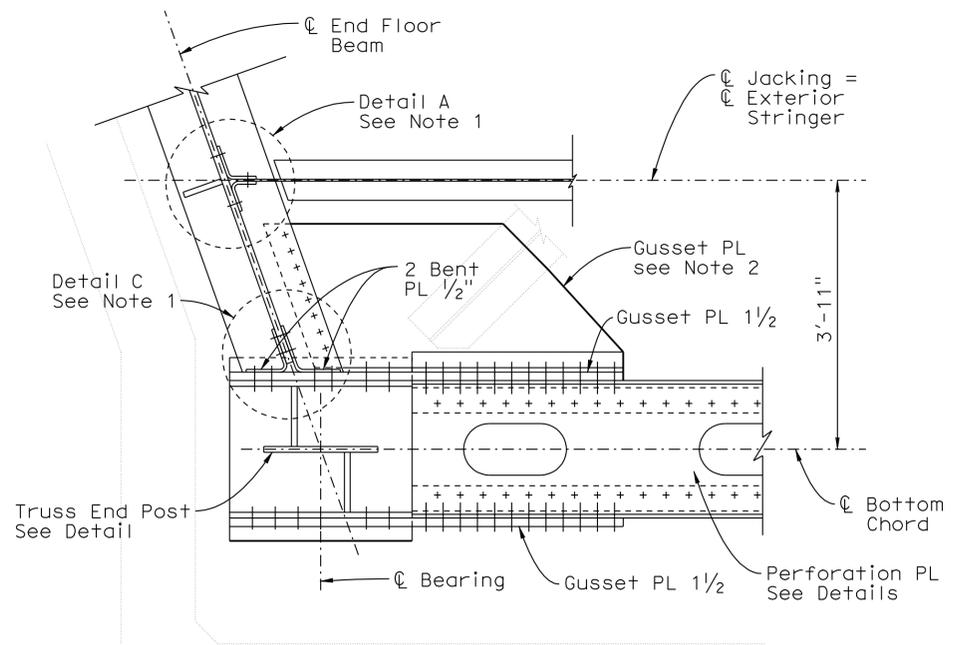
MIRROR ELEVATION - LO (FRONT TRUSS)
 $\frac{3}{4}'' = 1'-0''$



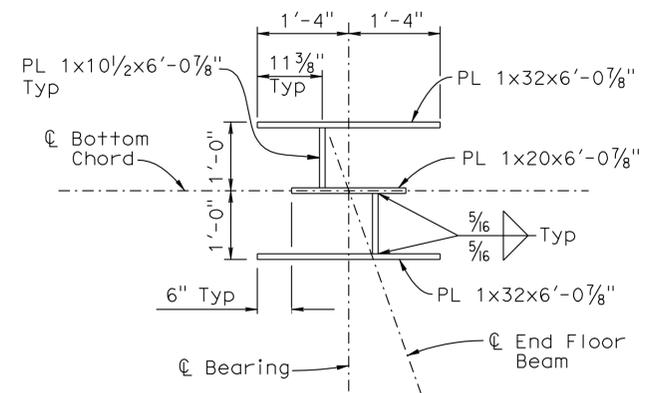
SECTION L-L
 $\frac{3}{4}'' = 1'-0''$



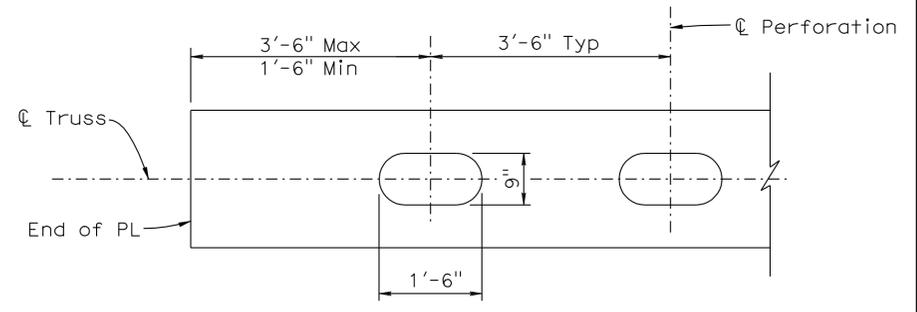
COVER PLATE DETAILS
 $\frac{3}{4}'' = 1'-0''$



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



END POST DETAIL
 $\frac{3}{4}'' = 1'-0''$



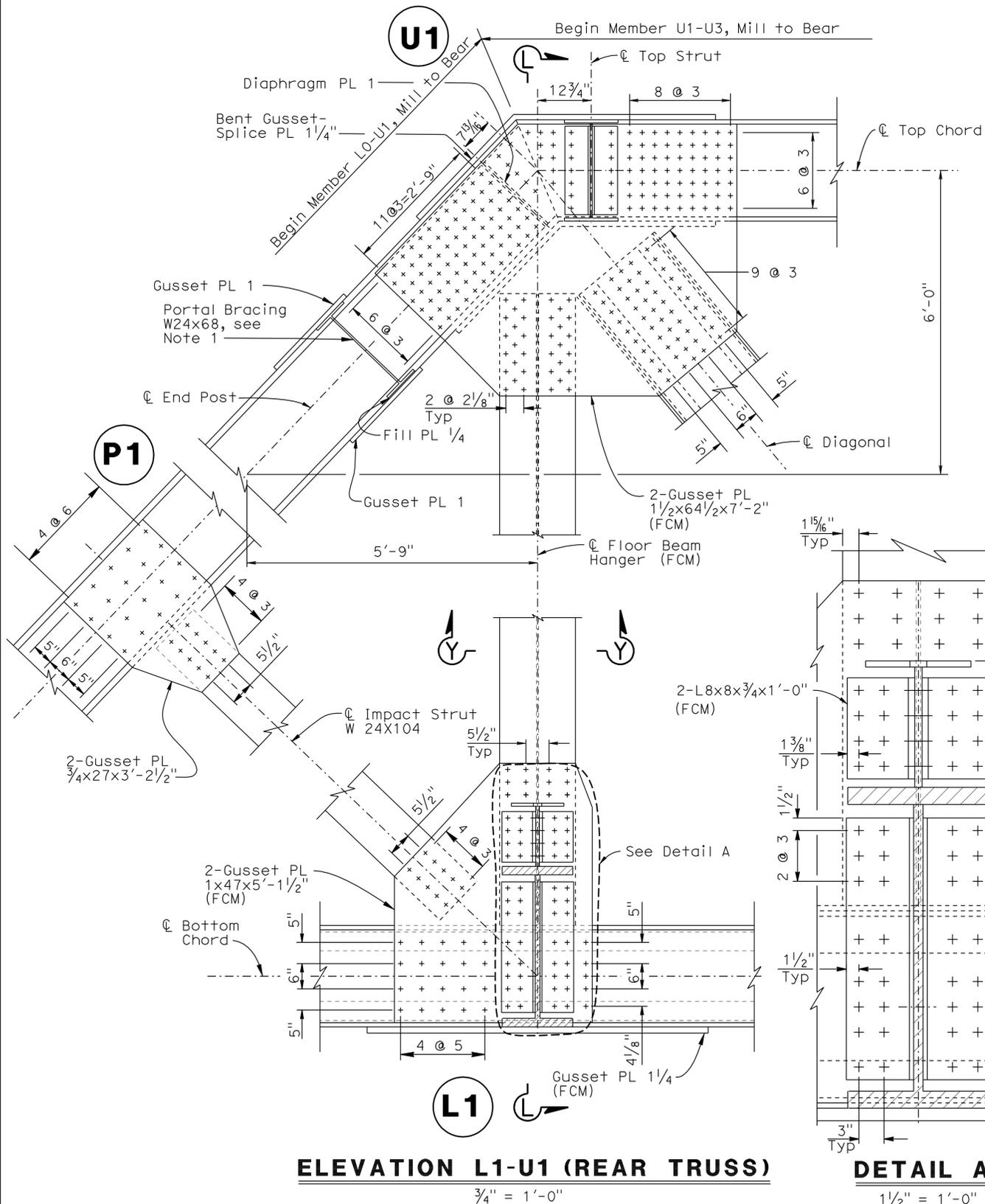
PERFORATION DETAIL
 $\frac{3}{4}'' = 1'-0''$

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

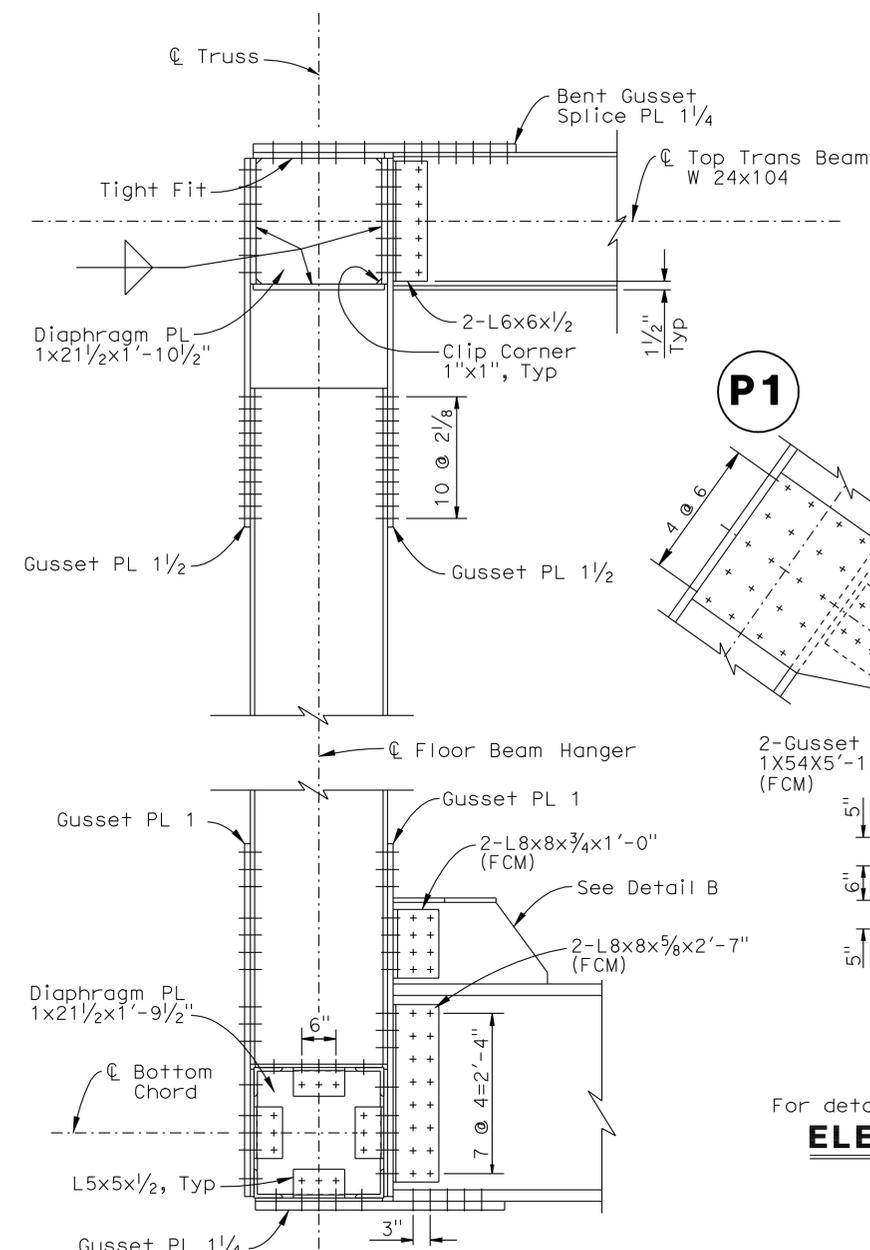
- NOTES:
1. For Detail A, Detail B, and Detail C, see "TRUSS DETAILS NO. 2" sheet.
 2. For connection of Gusset Plate, see "BOTTOM LATERAL BRACING DETAILS NO. 2" sheet.
 3. All bolts edge distance 1/2" unless otherwise shown.
 4. FCM: Fracture Critical Member

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #1 TRUSS DETAILS NO. 3						
	DETAILS	BY Y. Tang	CHECKED B. Addiespurger			54-1304							
	QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			R.R. MILE POST 5.90 LINE SEG. 7602							
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <td>REVISION DATES</td> <td>SHEET</td> <td>OF</td> </tr> <tr> <td>7-21-11</td> <td>17</td> <td>42</td> </tr> </table>	REVISION DATES	SHEET	OF	7-21-11	17	42
REVISION DATES	SHEET	OF											
7-21-11	17	42											

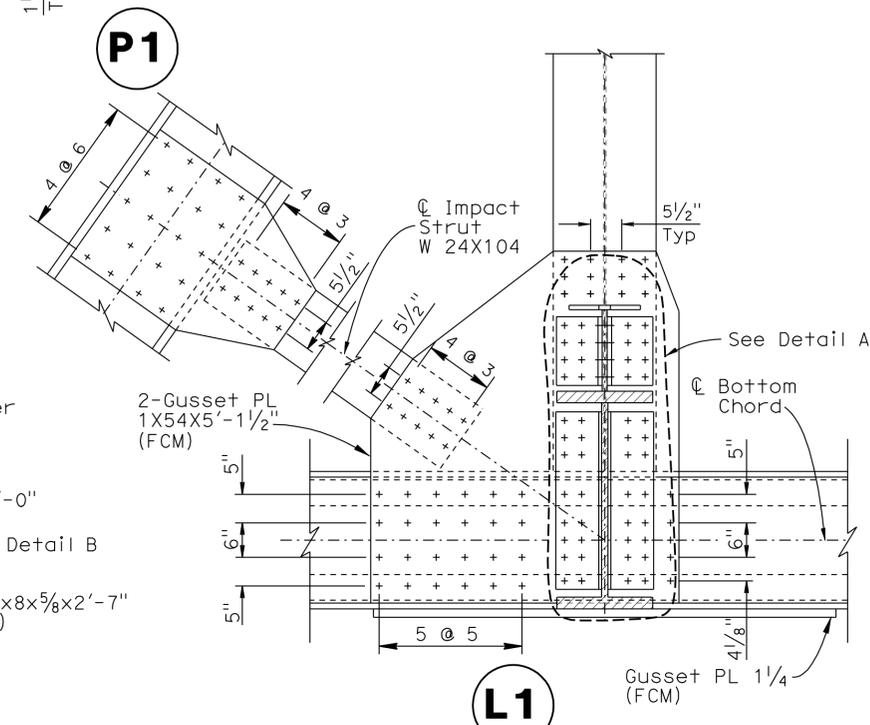
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, Sbd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1611	1743
			4-06-12	REGISTERED PROFESSIONAL ENGINEER	
			4-16-12	PLANS APPROVAL DATE	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



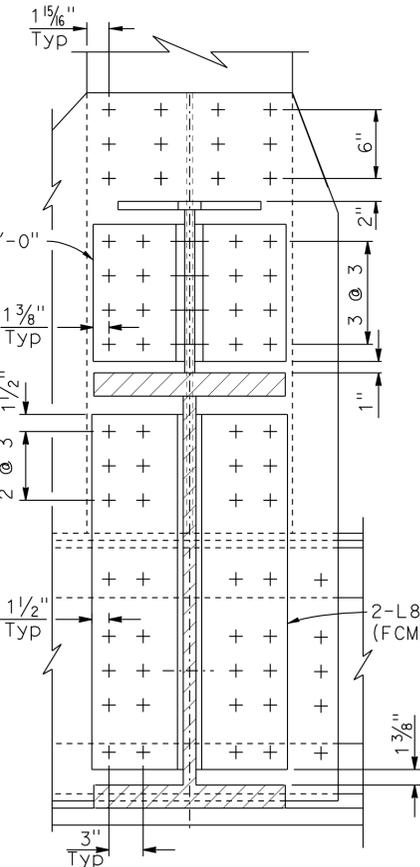
ELEVATION L1-U1 (REAR TRUSS)
3/4" = 1'-0"



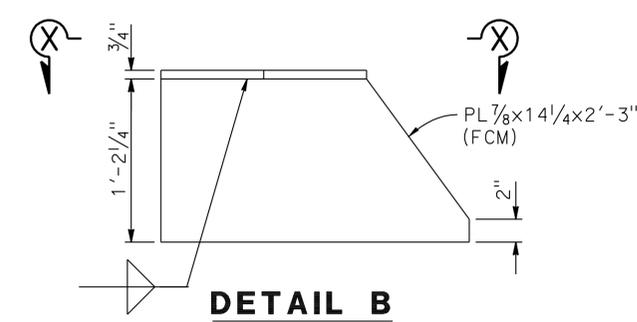
SECTION L-L
3/4" = 1'-0"



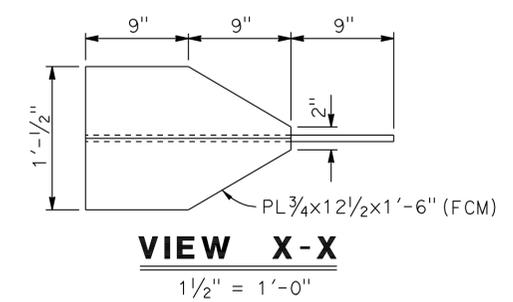
ELEVATION L1 (FRONT TRUSS)
3/4" = 1'-0"



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



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

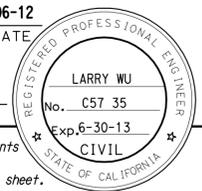


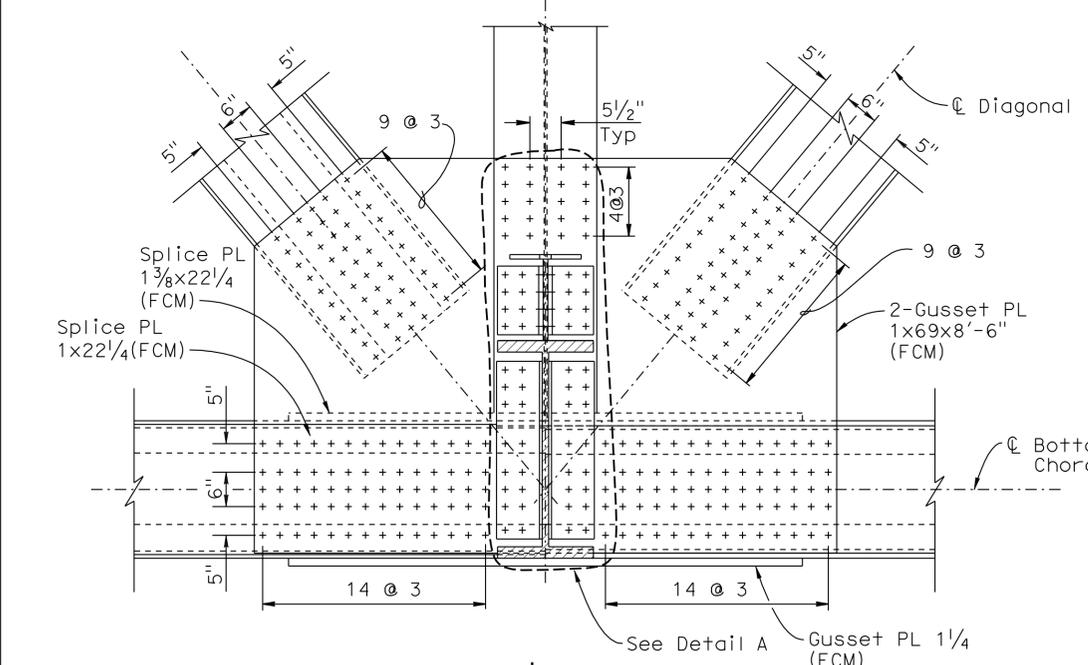
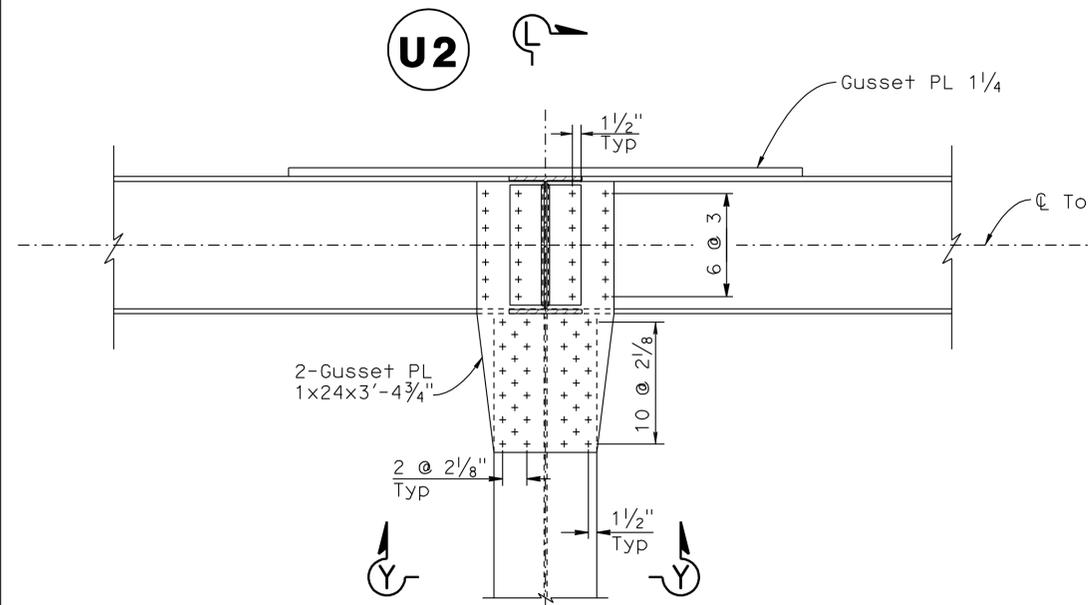
VIEW X-X
1 1/2" = 1'-0"

- NOTES:
- For Portal Bracing Details, see "TOP LATERAL BRACING NO. 1" and "TOP LATERAL BRACING NO. 2" sheets.
 - For Section Y-Y, see "TRUSS DETAILS NO. 7" sheet.
 - All bolts edge distance 1 1/2", unless otherwise shown.
 - FCM: Fracture Critical Member

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

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #1 TRUSS DETAILS NO. 4
DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addiespurger			54-1304	
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			R.R. MILE POST 5.90 LINE SEG. 7602	
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	FILE => 541304mtrussdt18.dgn	REVISION DATES	SHEET 18 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	1612	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>					

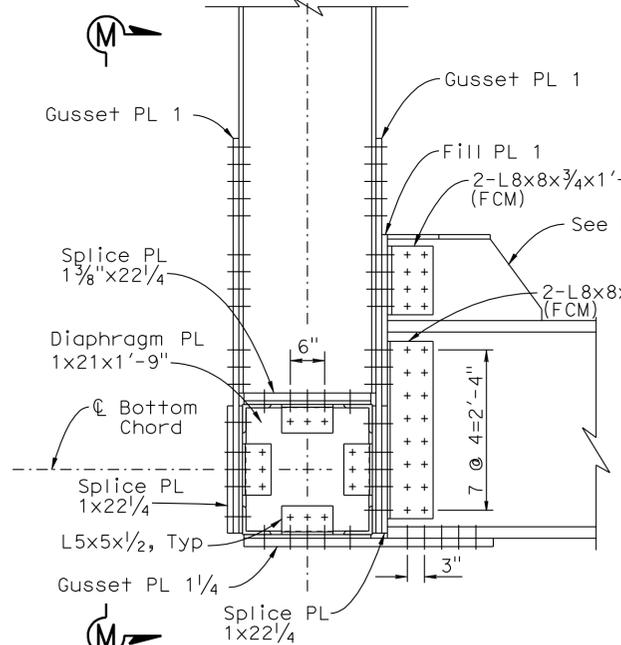
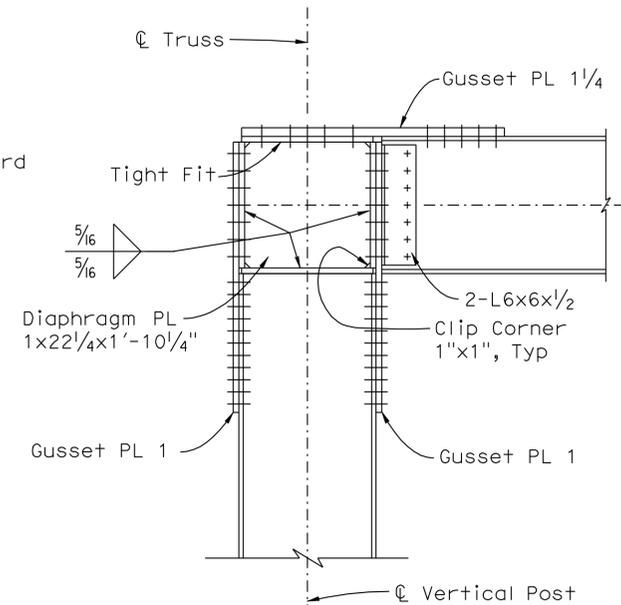


L2

ELEVATION - L2-U2 (REAR TRUSS)

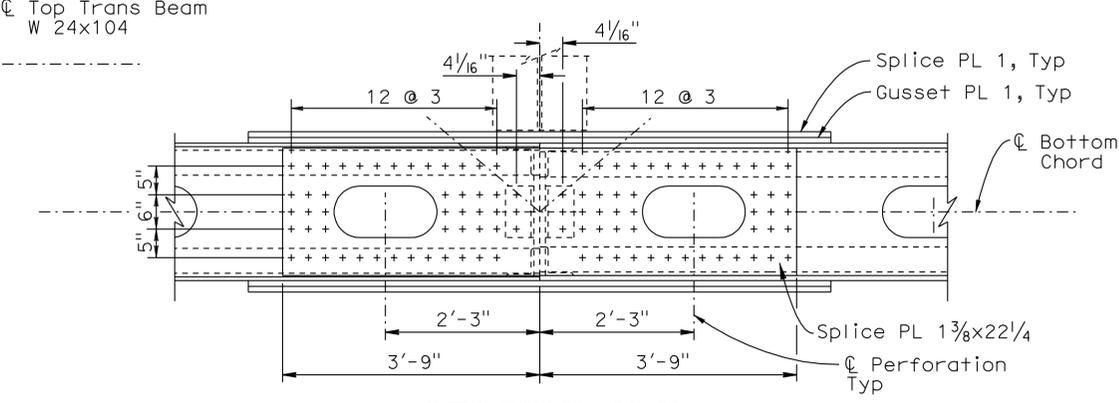
3/4" = 1'-0"

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



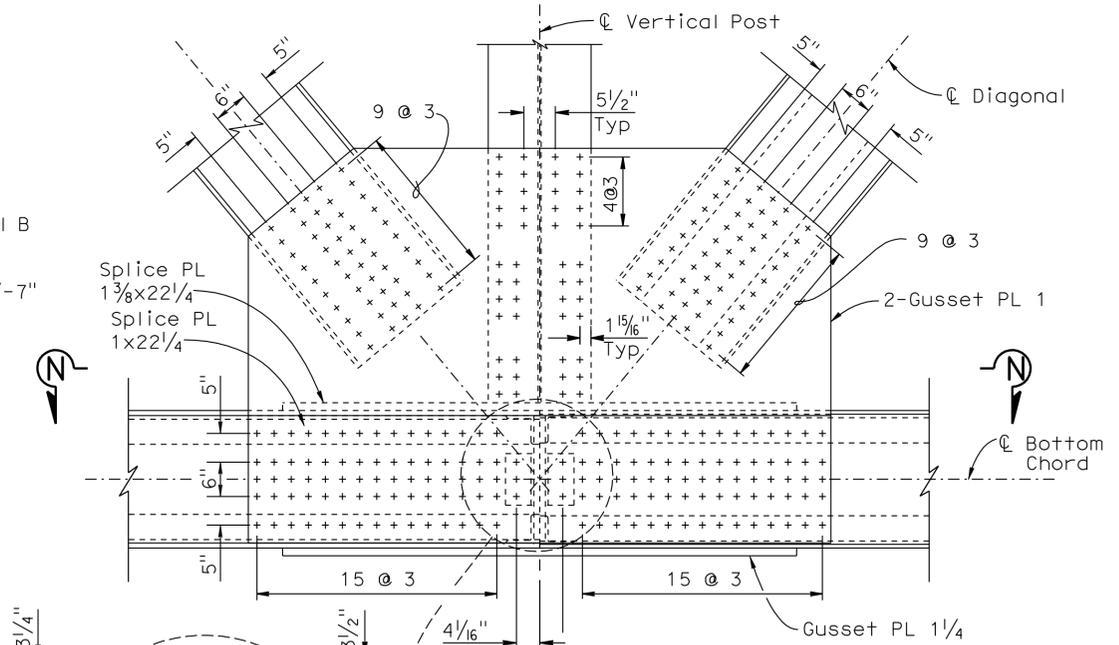
SECTION L-L

3/4" = 1'-0"



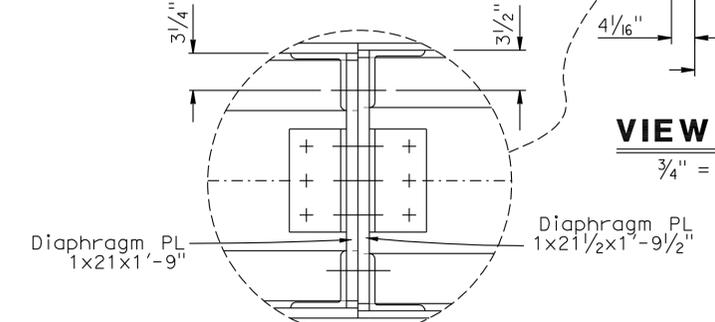
SECTION N-N

3/4" = 1'-0"



VIEW M-M

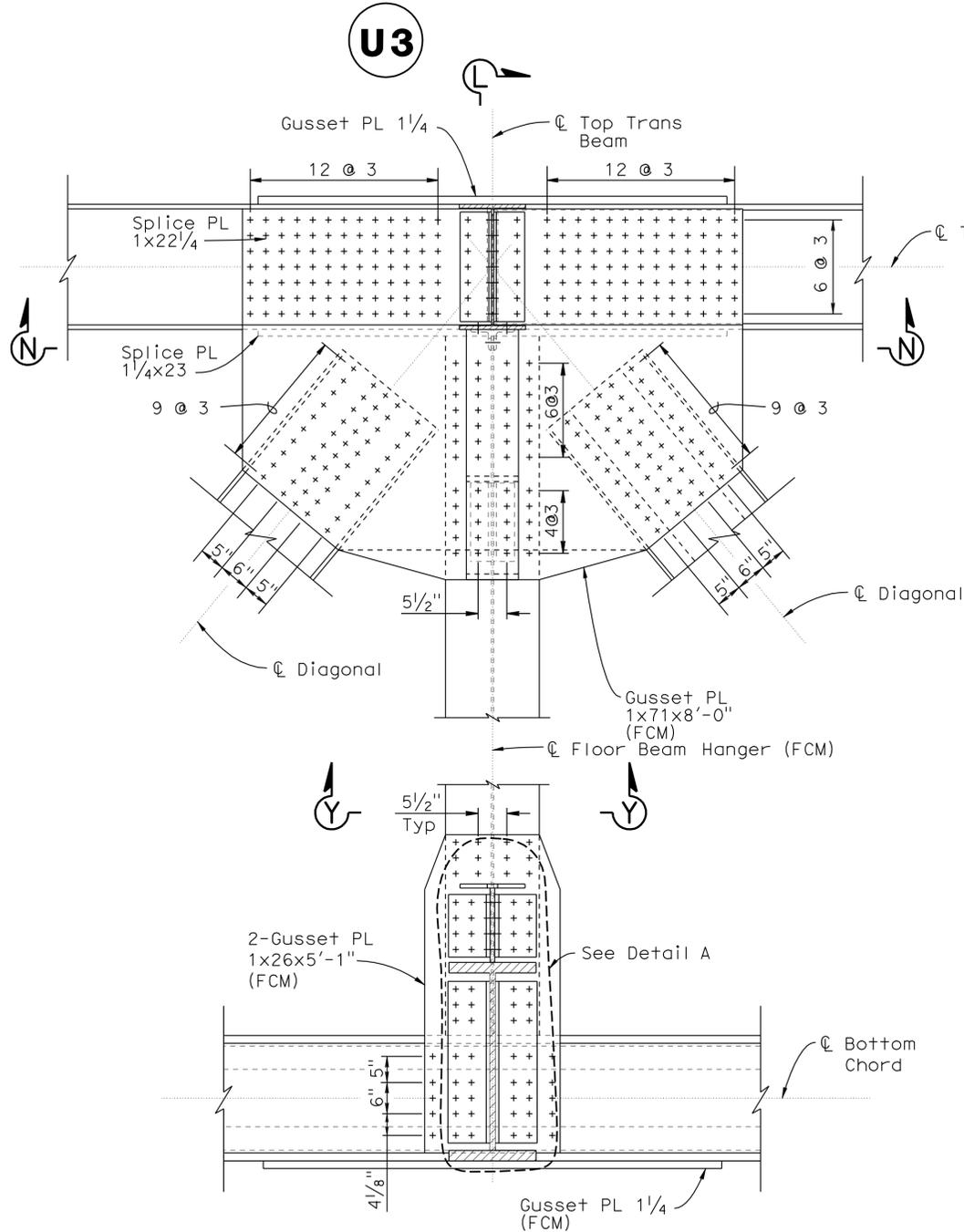
3/4" = 1'-0"



- NOTES:
- For Detail A and Detail B, see "TRUSS DETAILS NO. 4" sheet.
 - For Section Y-Y, see "TRUSS DETAILS NO. 7" sheet.
 - All bolts edge distance 1 1/2" unless otherwise shown.
 - FCM: Fracture Critical Member

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #1 TRUSS DETAILS NO. 5				
DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addiespurger			54-1304					
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			R.R. MILE POST 5.90 LINE SEG. 7602					
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	OF
								7-21-11	6-01-12	4-05-12
									19	42

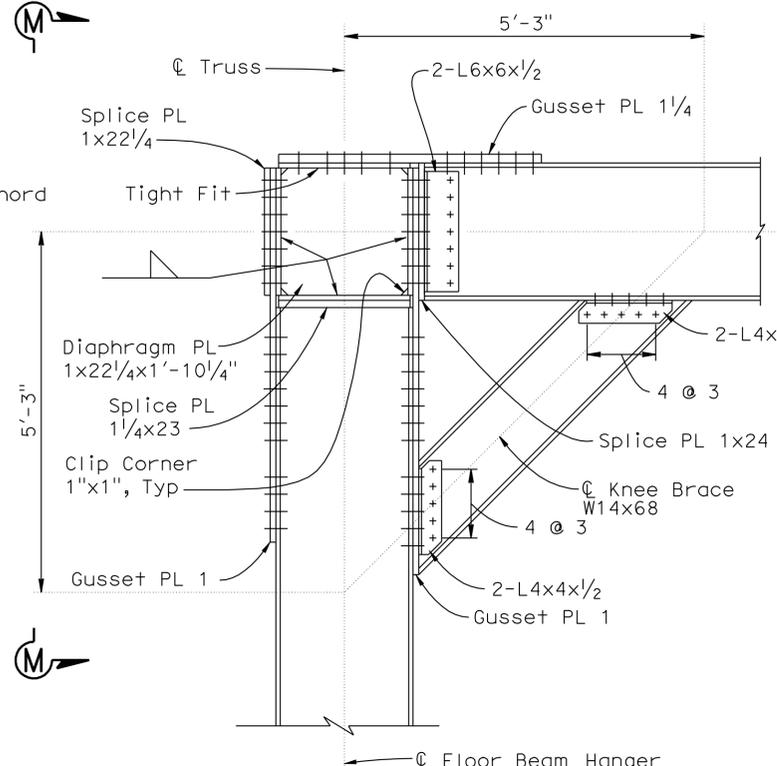
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1613	1743
			4-06-12	REGISTERED PROFESSIONAL ENGINEER	
			4-16-12	PLANS APPROVAL DATE	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



L3

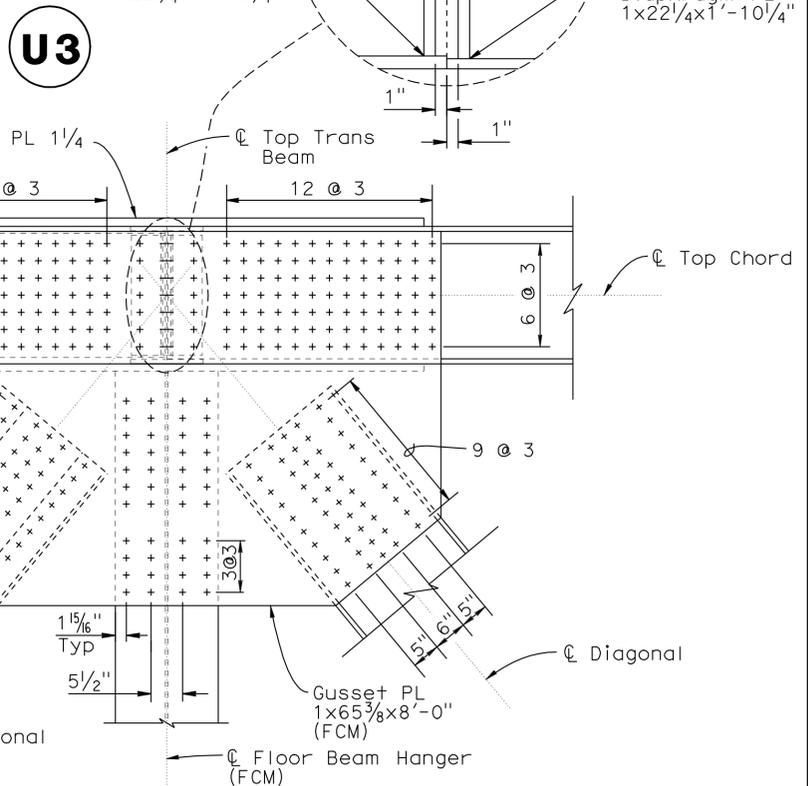
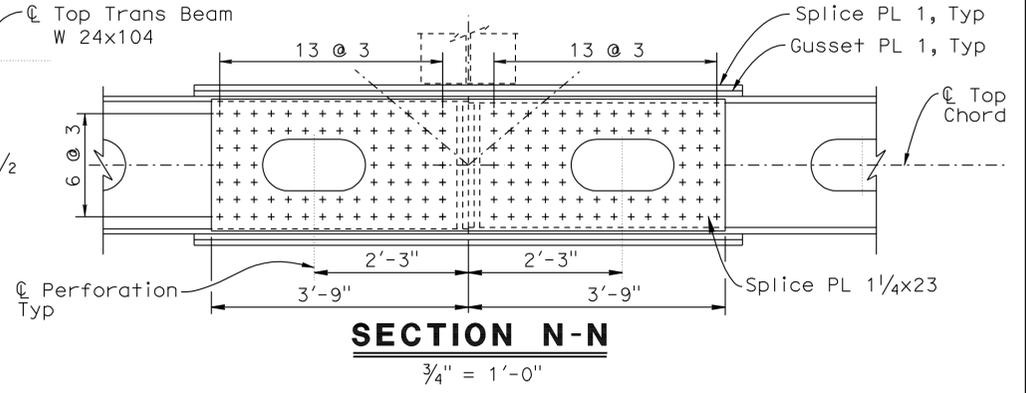
ELEVATION - L3-U3

3/4" = 1'-0"



SECTION M-M

3/4" = 1'-0"



SECTION M-M

3/4" = 1'-0"

- NOTES:**
1. For Detail A and Detail B, see "TRUSS DETAILS NO. 4" sheet.
 2. For Section Y-Y, see "TRUSS DETAILS NO. 7" sheet.
 2. All bolts edge distance 1 1/2", unless otherwise shown.
 3. FCM: Fracture Critical Member

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

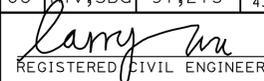
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY Y. Tang	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

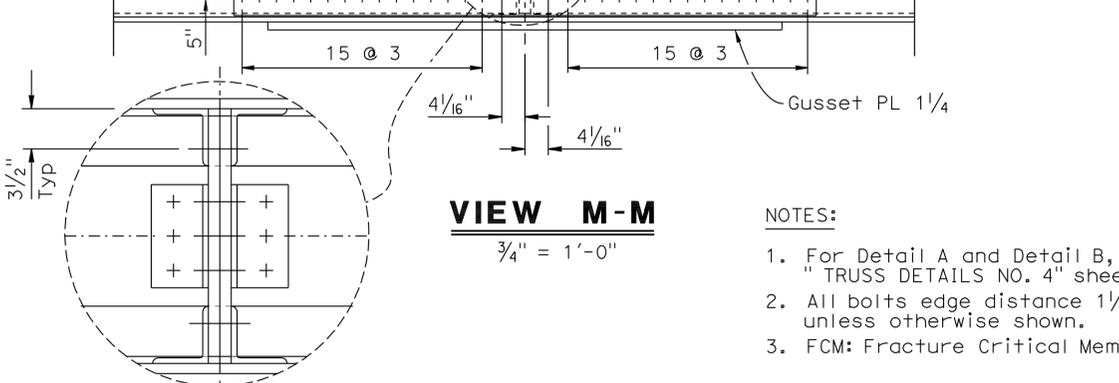
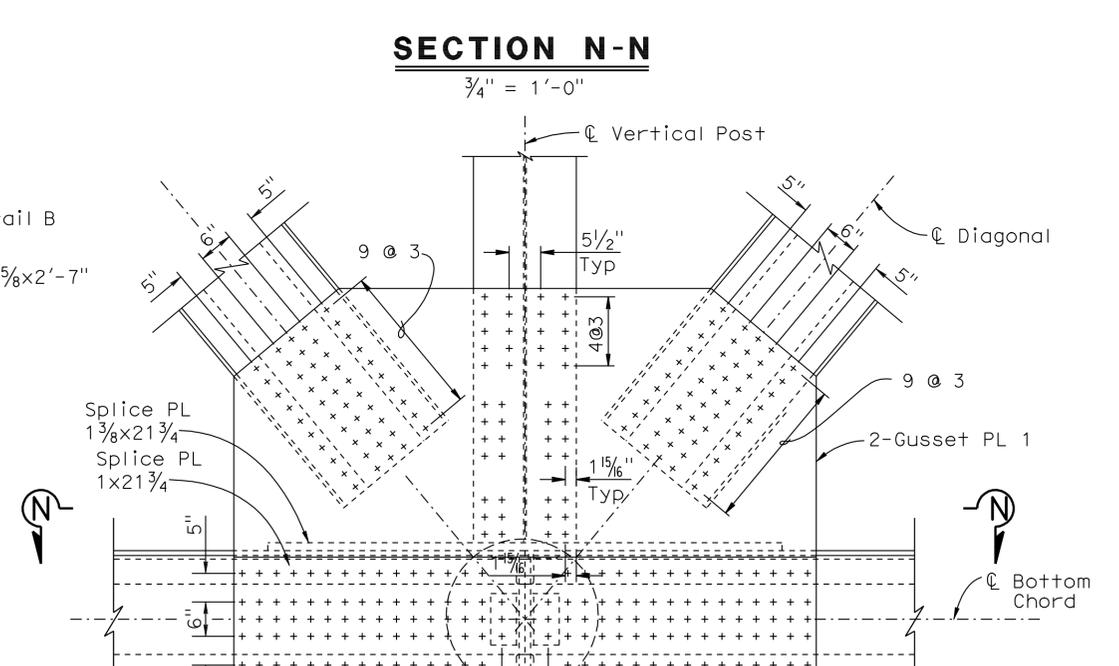
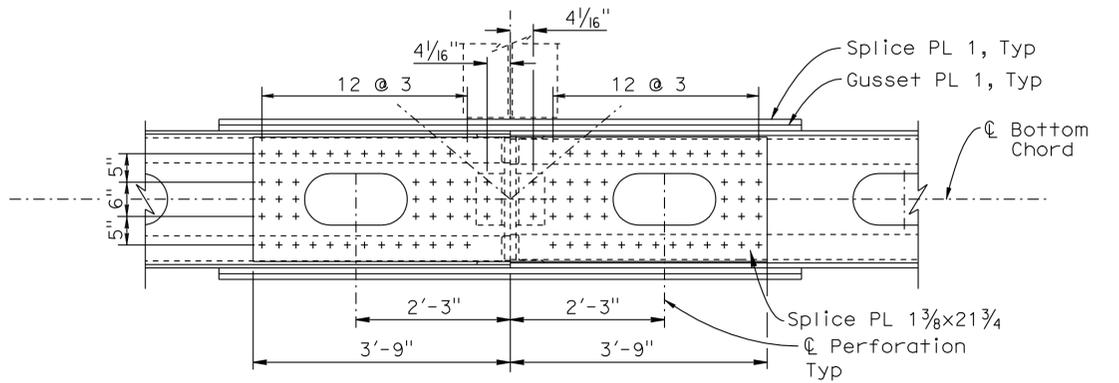
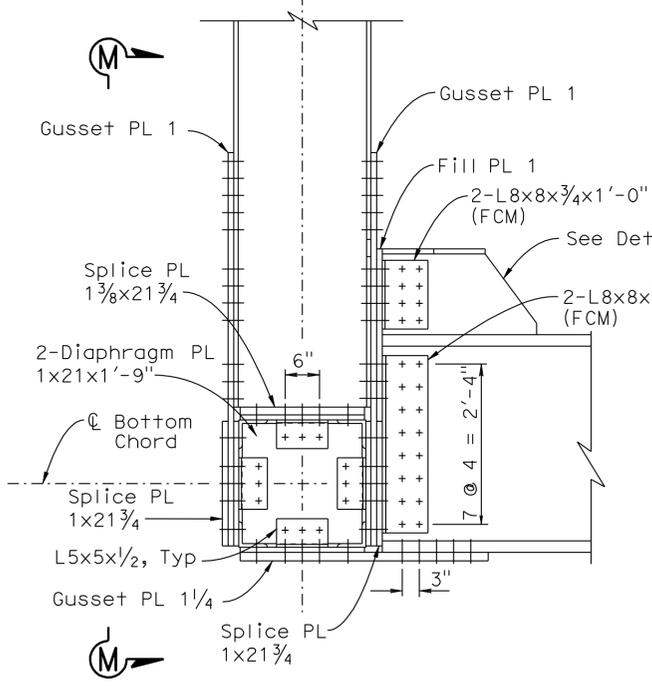
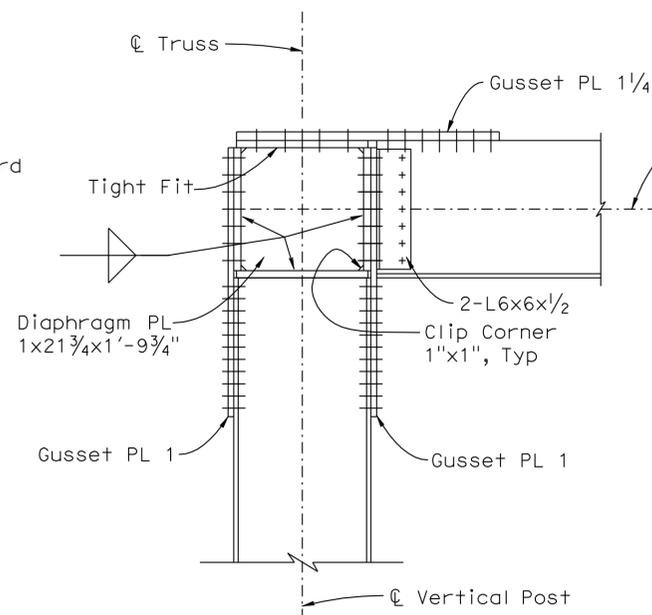
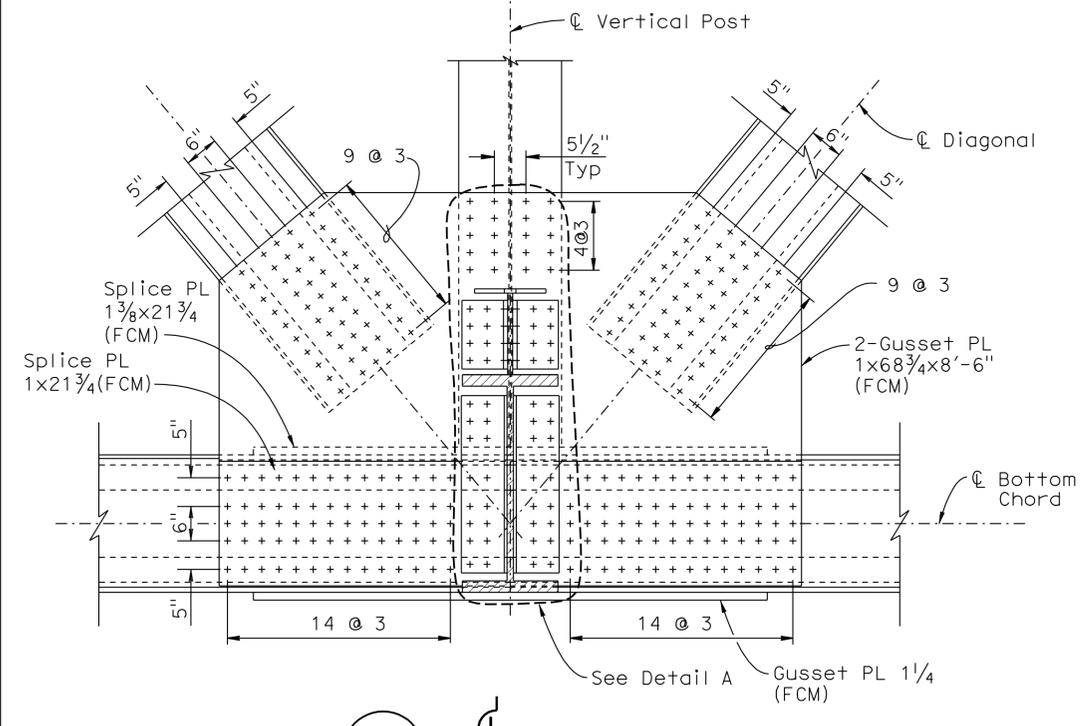
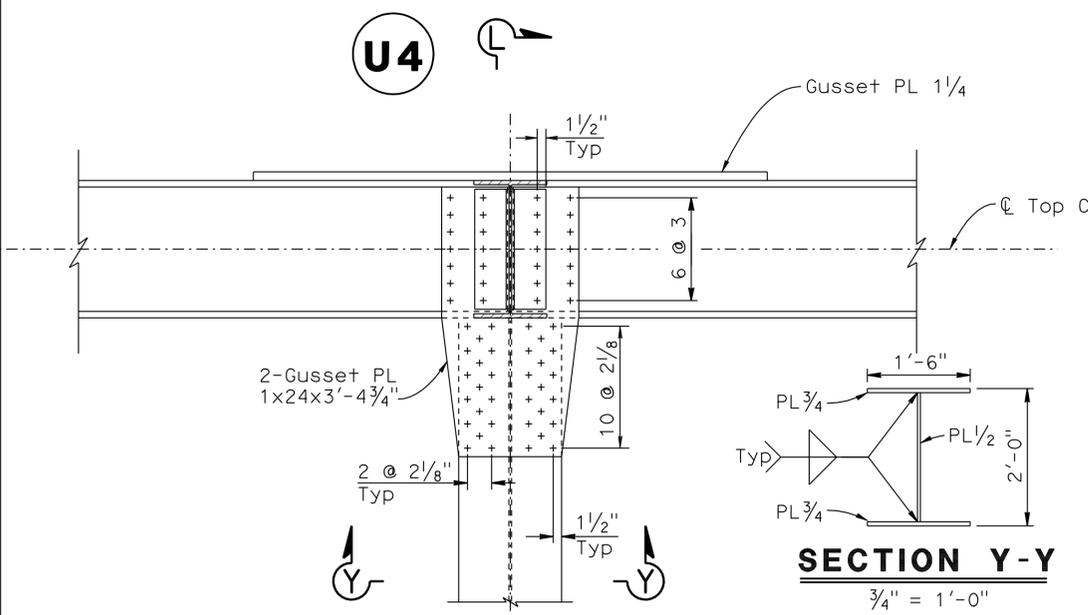
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	54-1304
R.R. MILE POST	5.90
LINE SEG.	7602

HIGHGROVE UNDERPASS #1
TRUSS DETAILS NO. 6

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	1614	1743
			4-06-12		
REGISTERED CIVIL ENGINEER			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>					

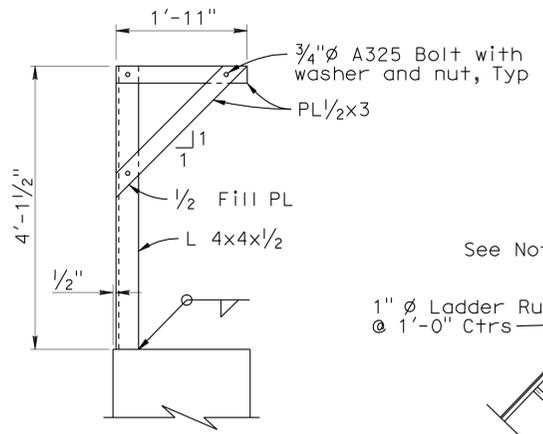


NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

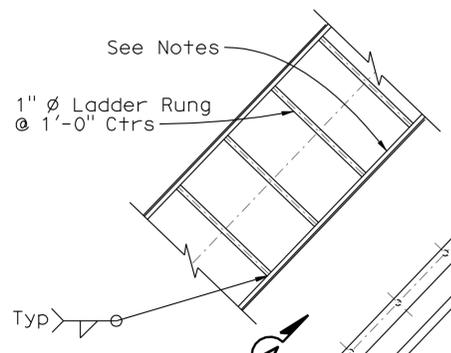
- NOTES:
1. For Detail A and Detail B, see " TRUSS DETAILS NO. 4" sheet.
 2. All bolts edge distance 1/2" unless otherwise shown.
 3. FCM: Fracture Critical Member

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 TRUSS DETAILS NO. 7
DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addiespurger			R.R. MILE POST 5.90	
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			LINE SEG. 7602	
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	7-2-11	6-01-12	3-7-12
				SHEET 21	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	1615	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>					

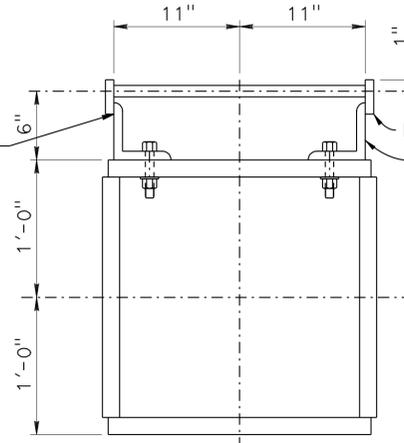
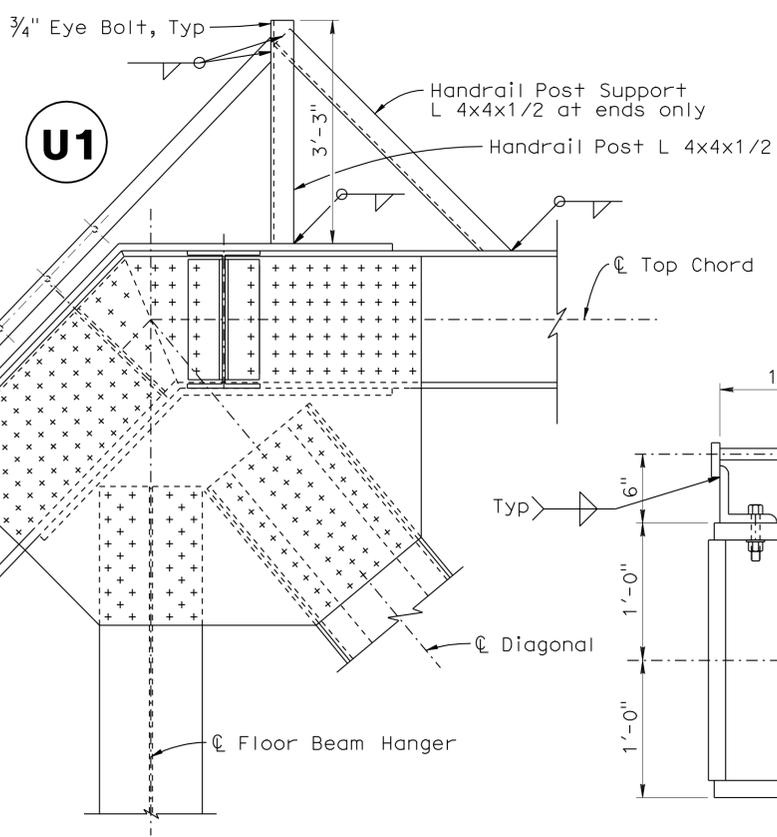


SECTION C-C
3/4" = 1'-0"

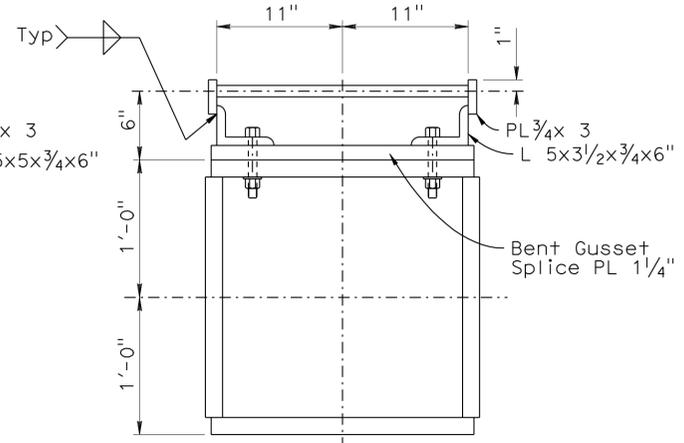


NOTES:

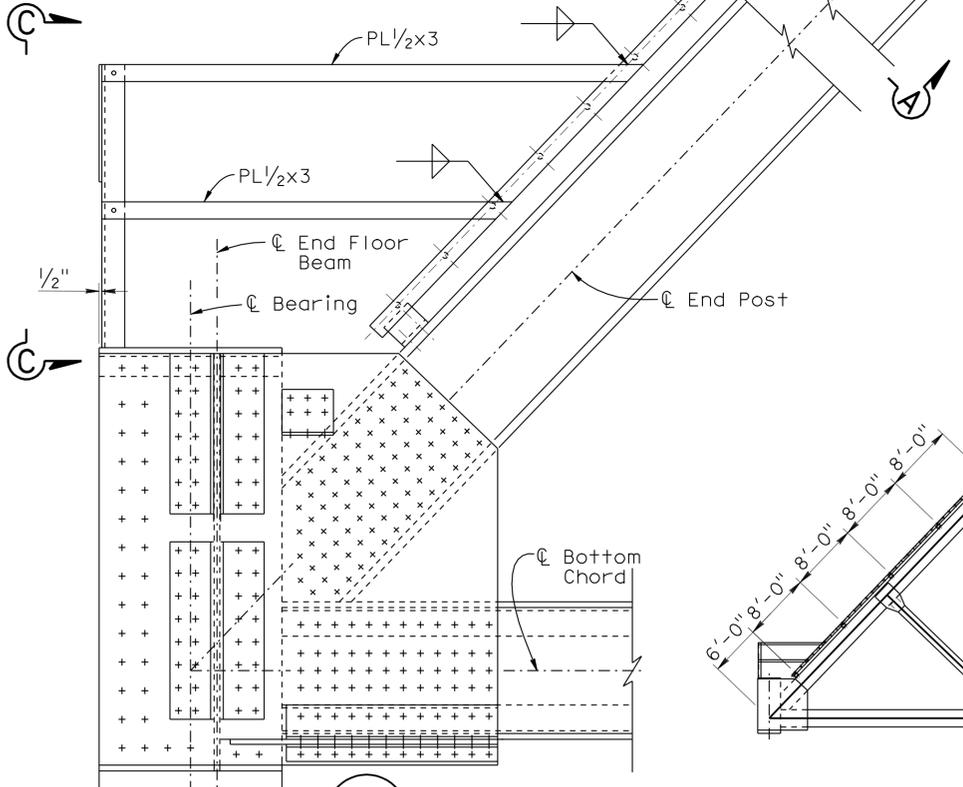
1. Ladders to be placed on both ends of both trusses on members L0-U1 and L8-U7.
2. The ladders shall also have the Dyna-Glide Ladder Climbing System with automatic pass-through manufactured by MSA or approved equal. The ladder climbing system shall be installed in accordance with the manufacturer's recommendations with details approved by the engineer.
3. The ladder rungs shall have a skid resistance coating that is described further in the additional special conditions in the manufacturer's manual.
4. The ladder shall be galvanized after fabrication.



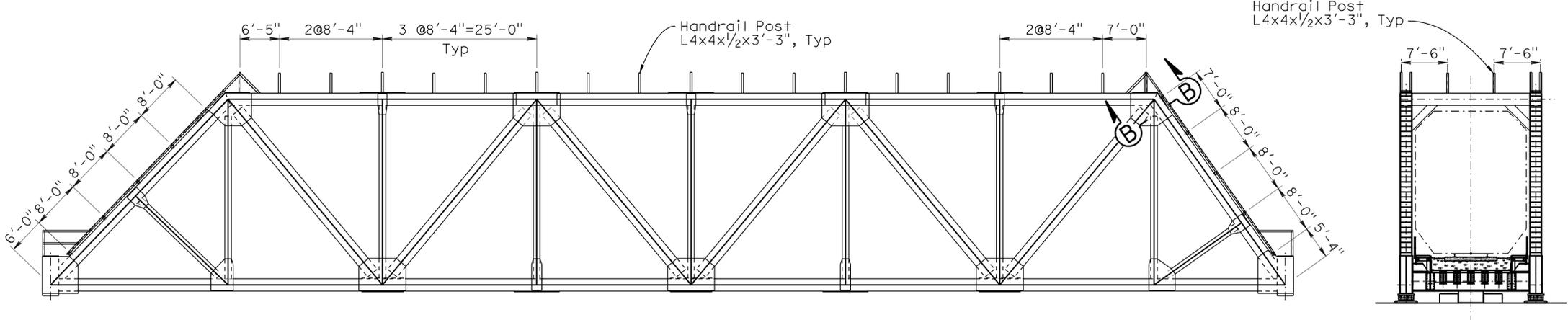
SECTION A-A
1 1/2" = 1'-0"



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



ELEVATION - L0 U1 (REAR TRUSS)
3/4" = 1'-0"



SCHEMATIC LAYOUT - LADDER & HANDRAIL POST
3/32" = 1'-0"

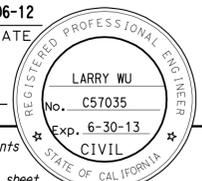
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY G. Hallstrom	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

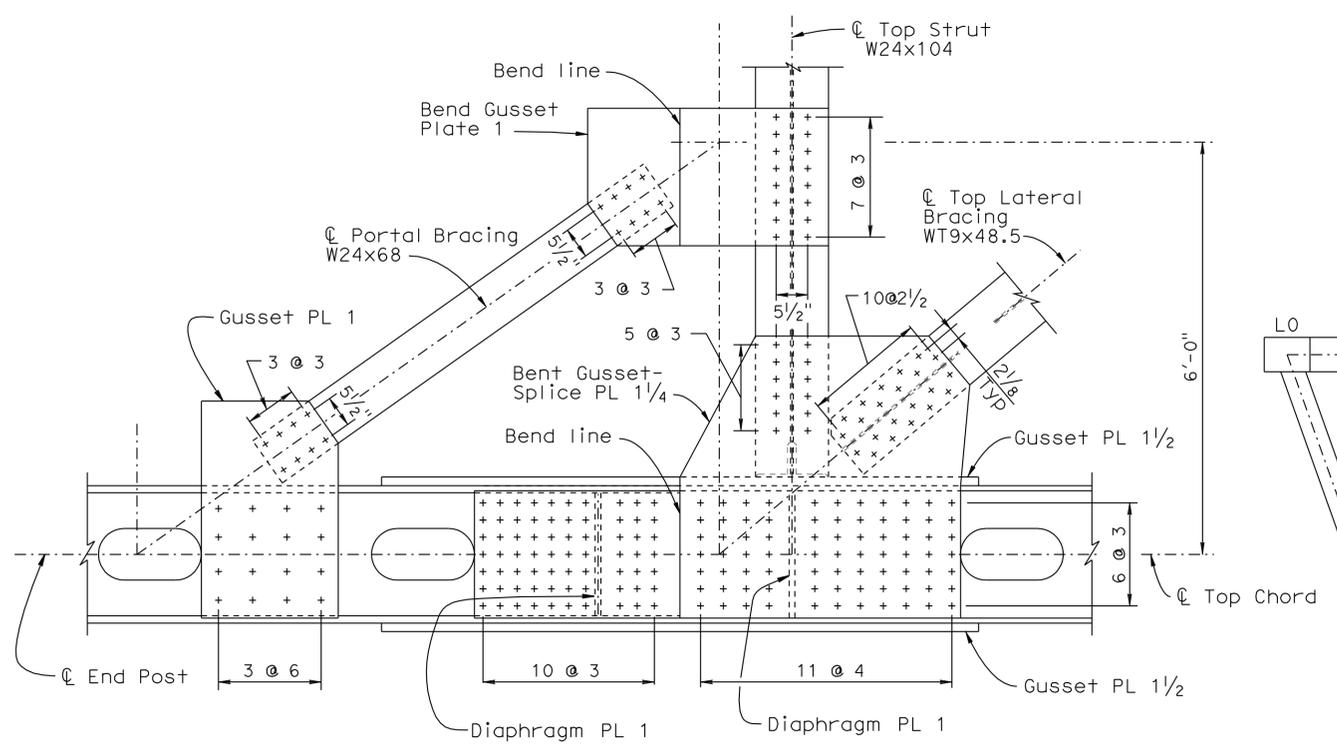
BRIDGE NO.	54-1304
R.R. MILE POST	5.90
LINE SEG.	7602

HIGHGROVE UNDERPASS #1
TRUSS DETAILS NO. 8

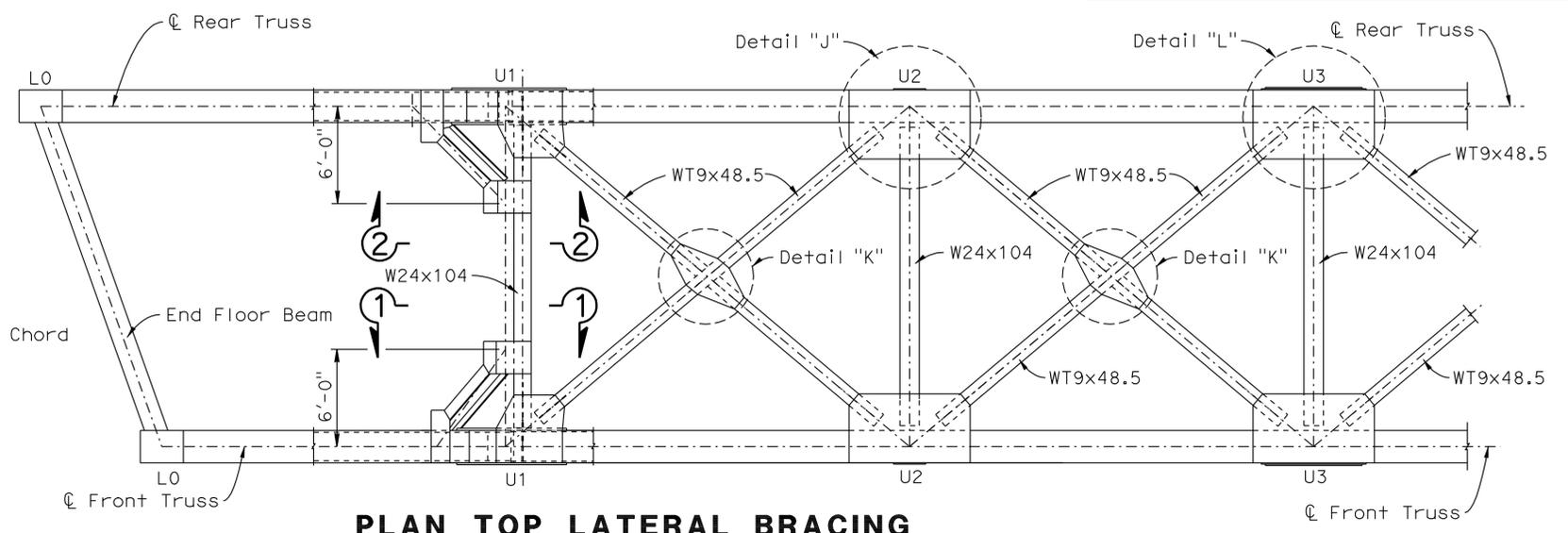
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1616	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

NOTES:

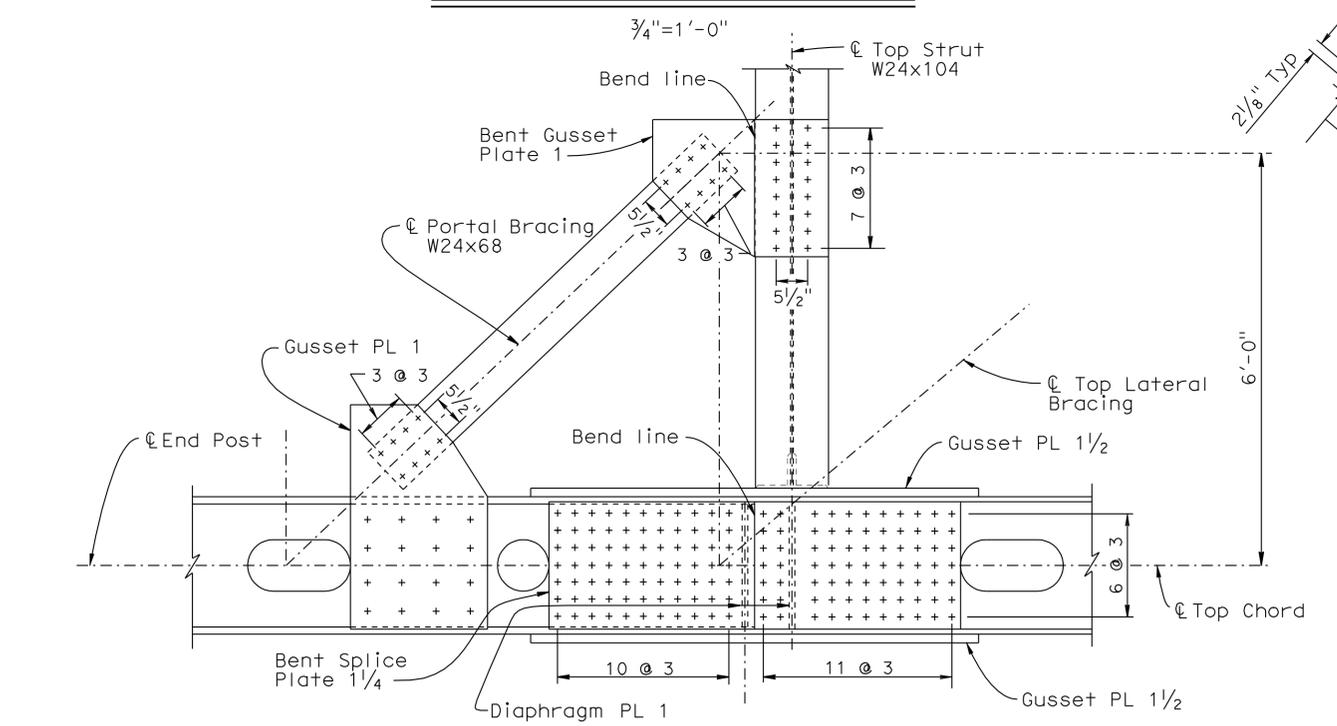
1. For View 2-2, Detail J, and Detail L, see "TOP LATERAL BRACING NO. 2" sheet.
2. All bolts edge distance 1 1/2" unless otherwise shown.
3. FCM: Fracture Critical Member



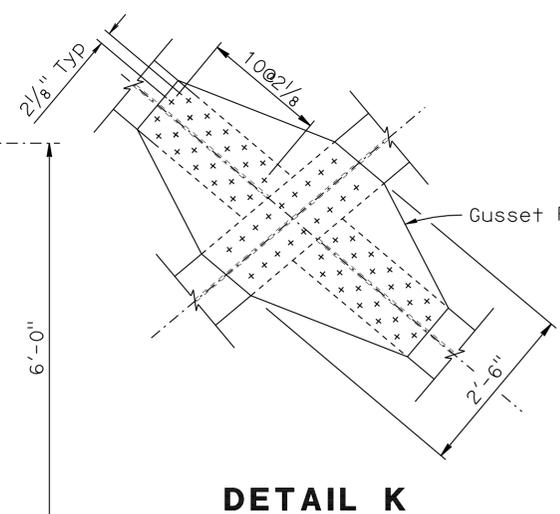
VIEW X-X (DEVELOPED)



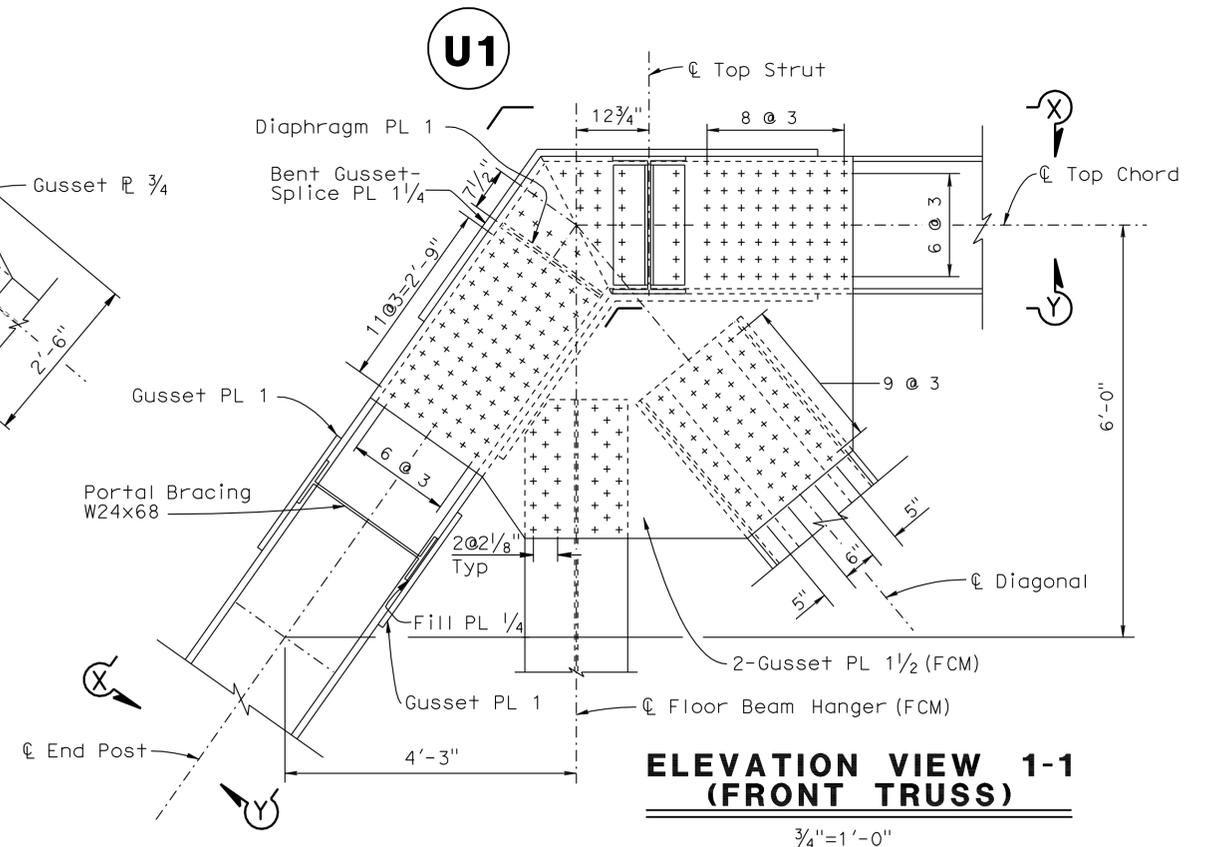
PLAN TOP LATERAL BRACING



VIEW Y-Y (DEVELOPED)



DETAIL K

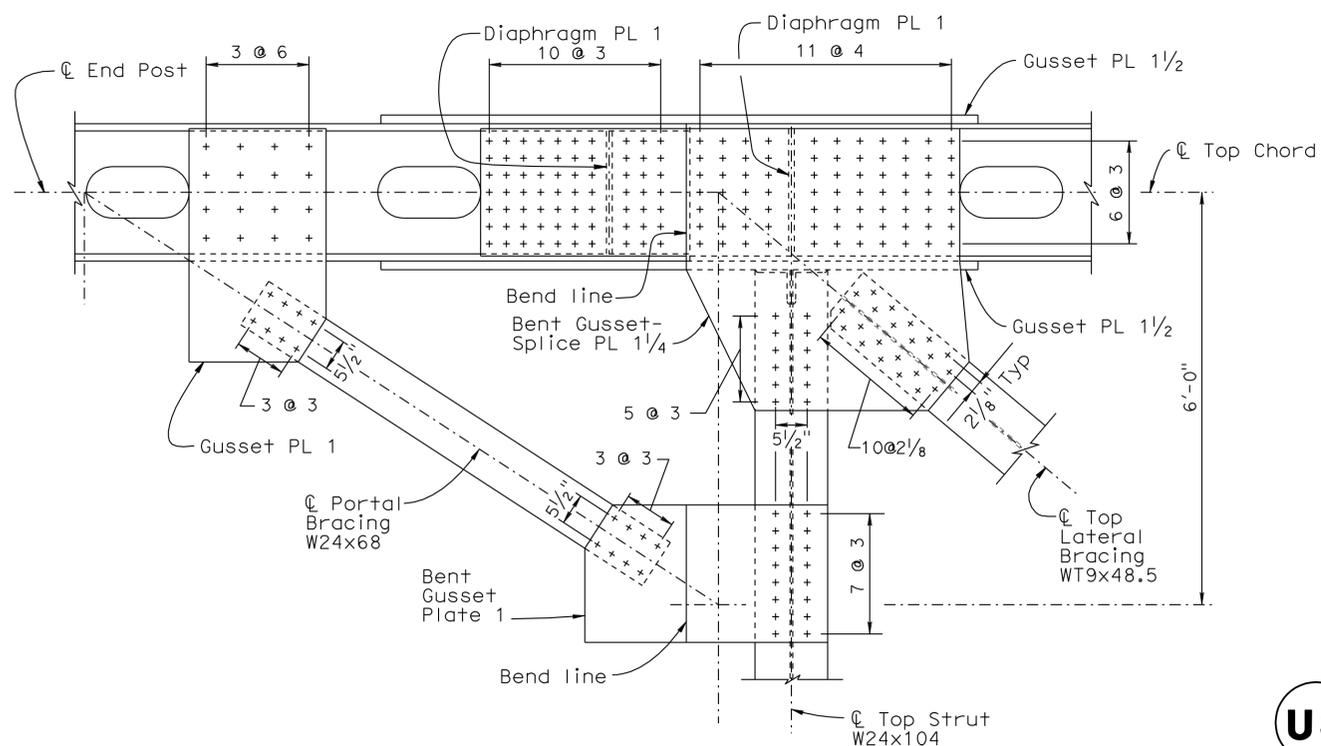


ELEVATION VIEW 1-1 (FRONT TRUSS)

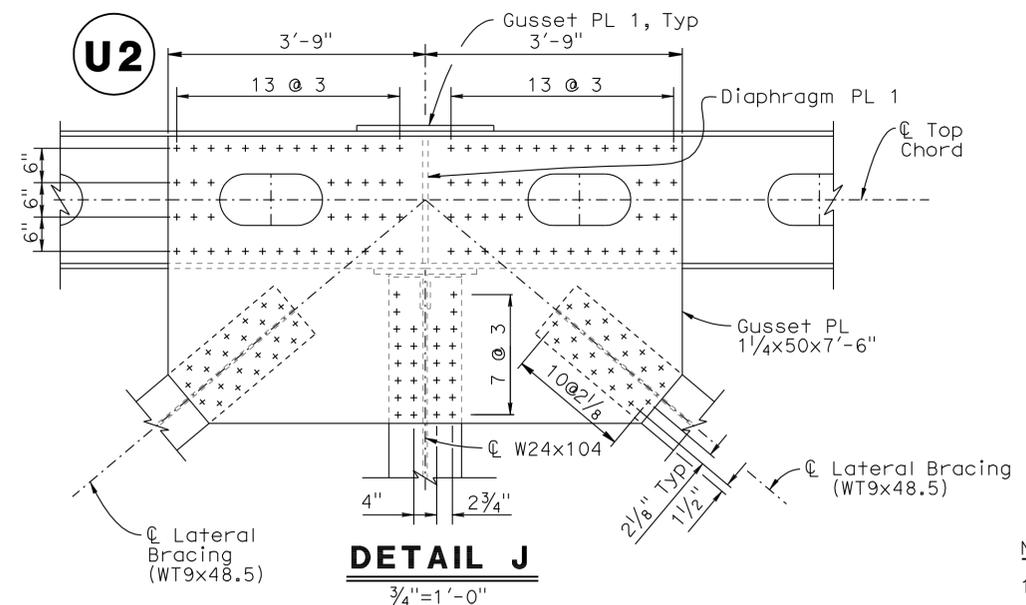
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY L. Wu CHECKED B. Addiespurger DETAILS BY G. Hallstrom CHECKED B. Addiespurger QUANTITIES BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 TOP LATERAL BRACING NO. 1
			R.R. MILE POST 5.90	
			LINE SEG. 7602	
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 11-15-11 12-21-11 2-23-12	SHEET OF 23 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	1617	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.					

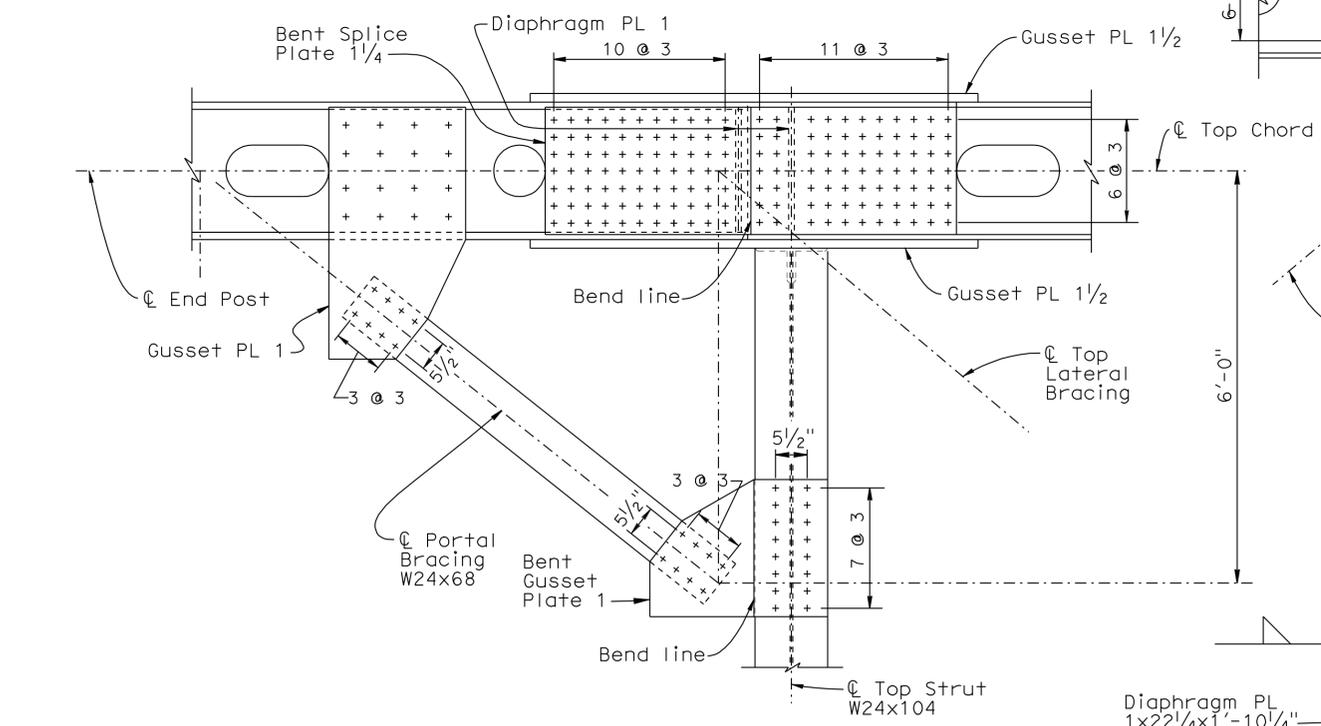


VIEW J-J (DEVELOPED)
3/4"=1'-0"

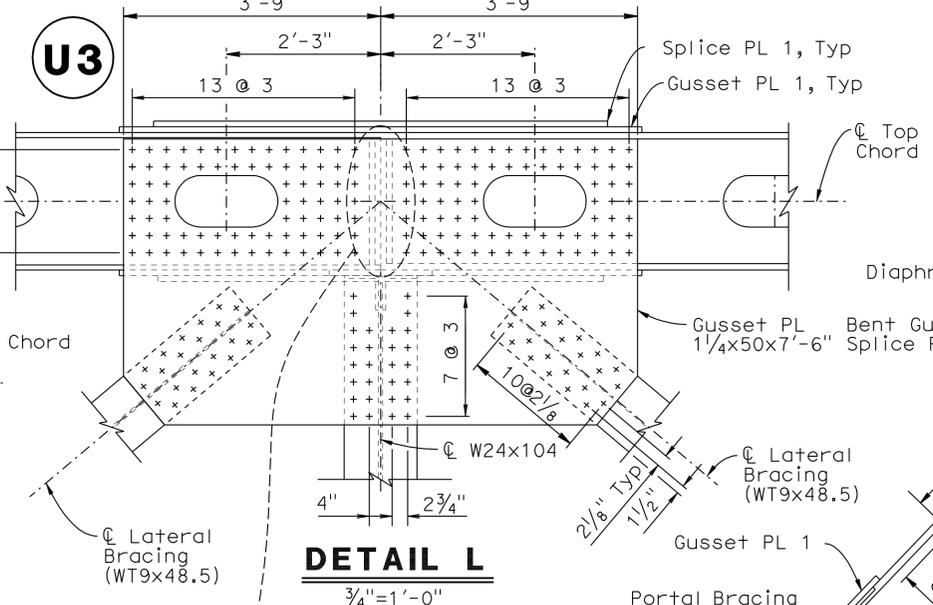


DETAIL J
3/4"=1'-0"

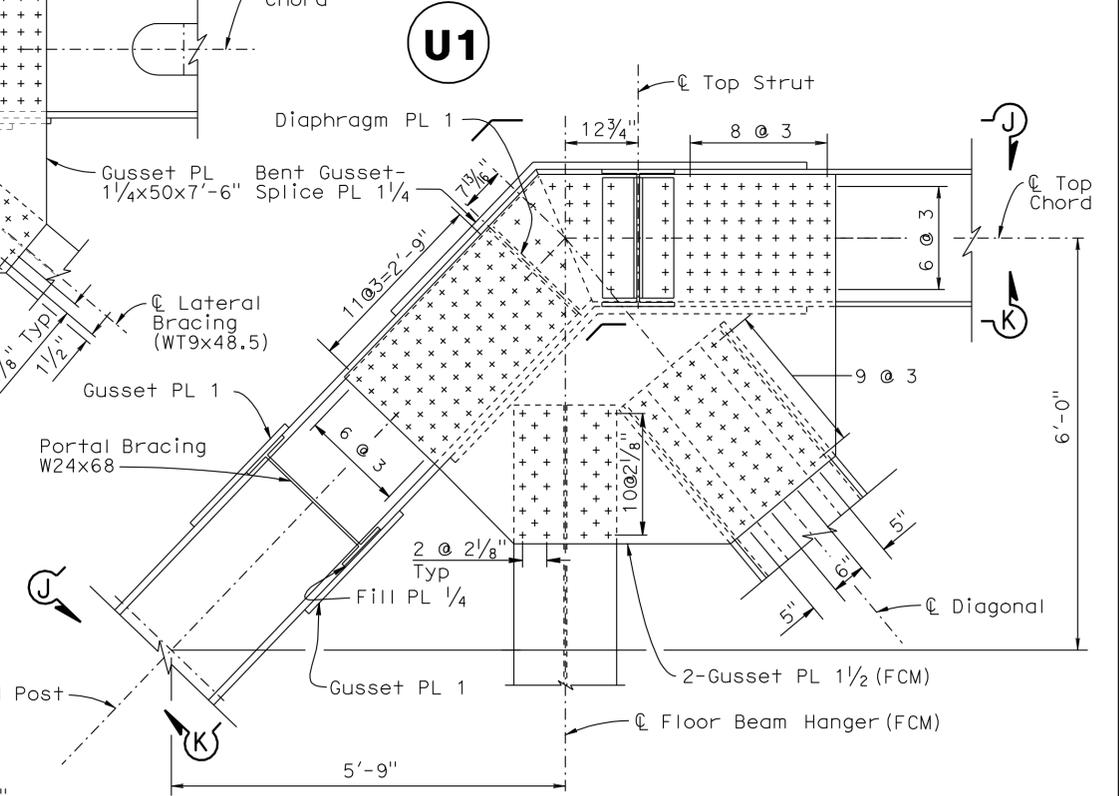
- NOTES:**
1. For location of Elevation View 2-2, Detail J, and Detail L, see "TOP LATERAL BRACING NO. 1" sheet.
 2. All bolts edge distance 1 1/2" unless otherwise shown.
 3. FCM: Fracture Critical Member



VIEW K-K (DEVELOPED)
3/4"=1'-0"



DETAIL L
3/4"=1'-0"



ELEVATION VIEW 2-2 (REAR TRUSS)
3/4"=1'-0"

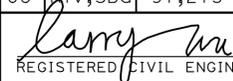
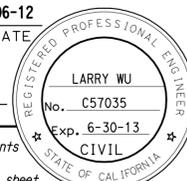
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

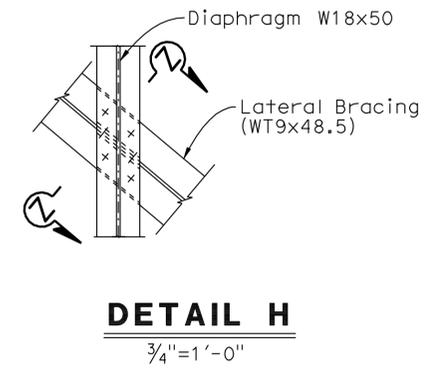
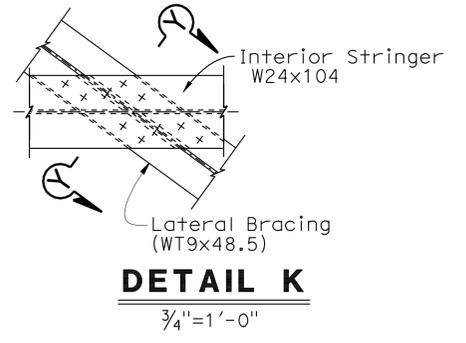
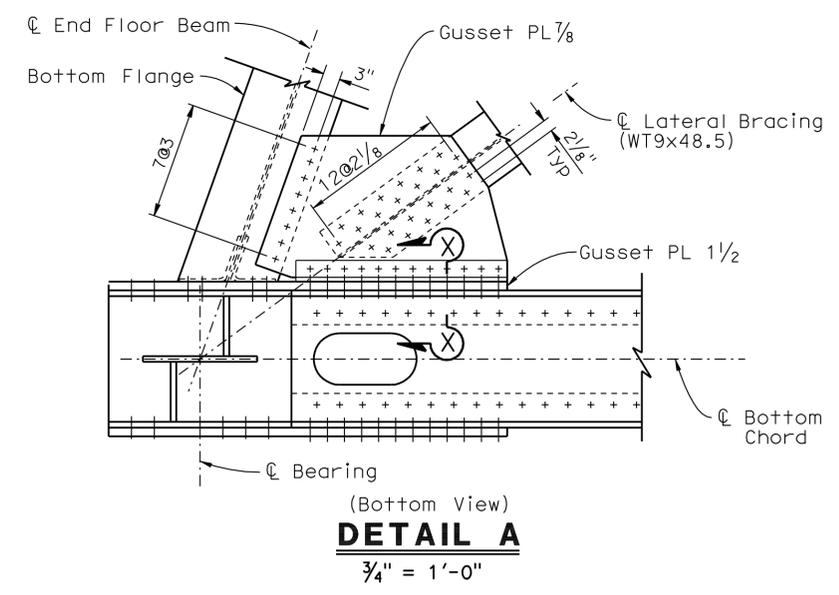
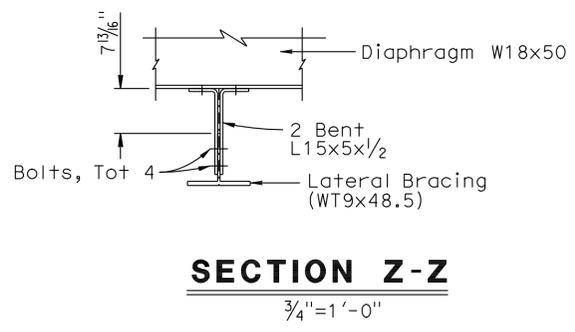
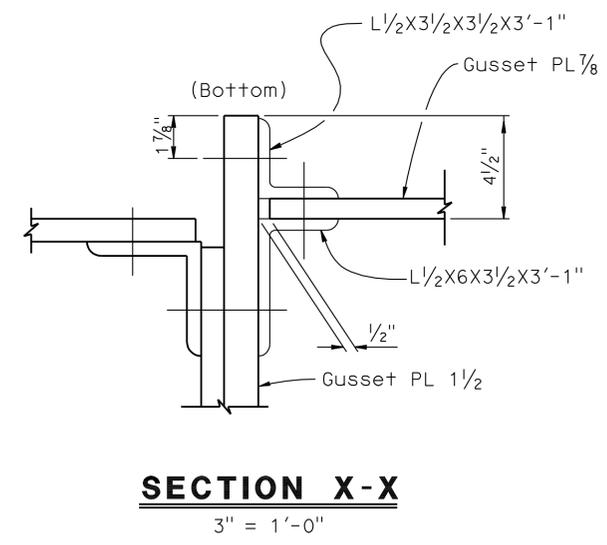
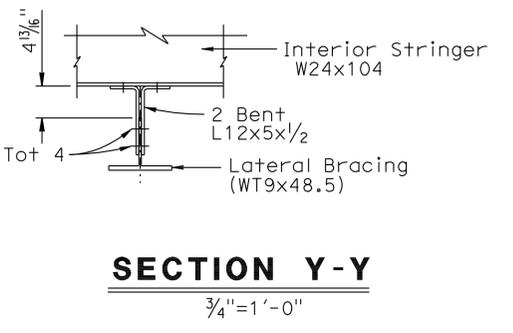
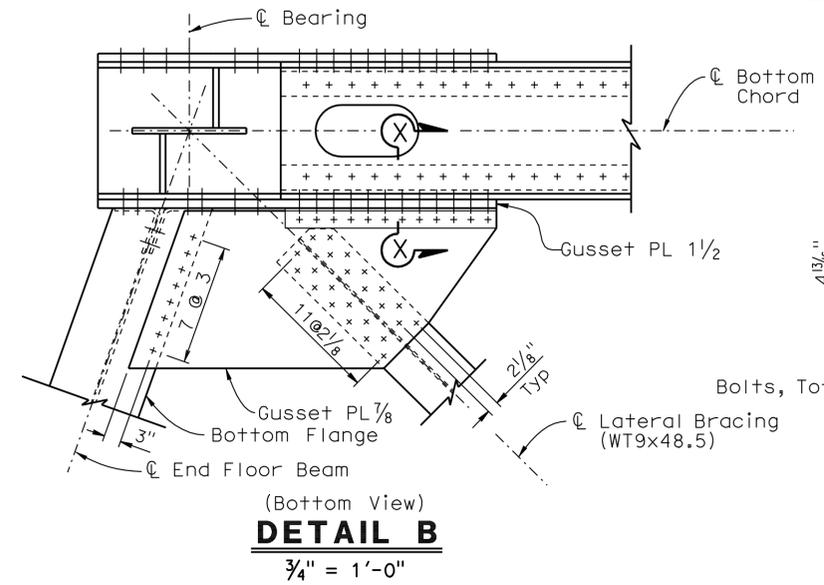
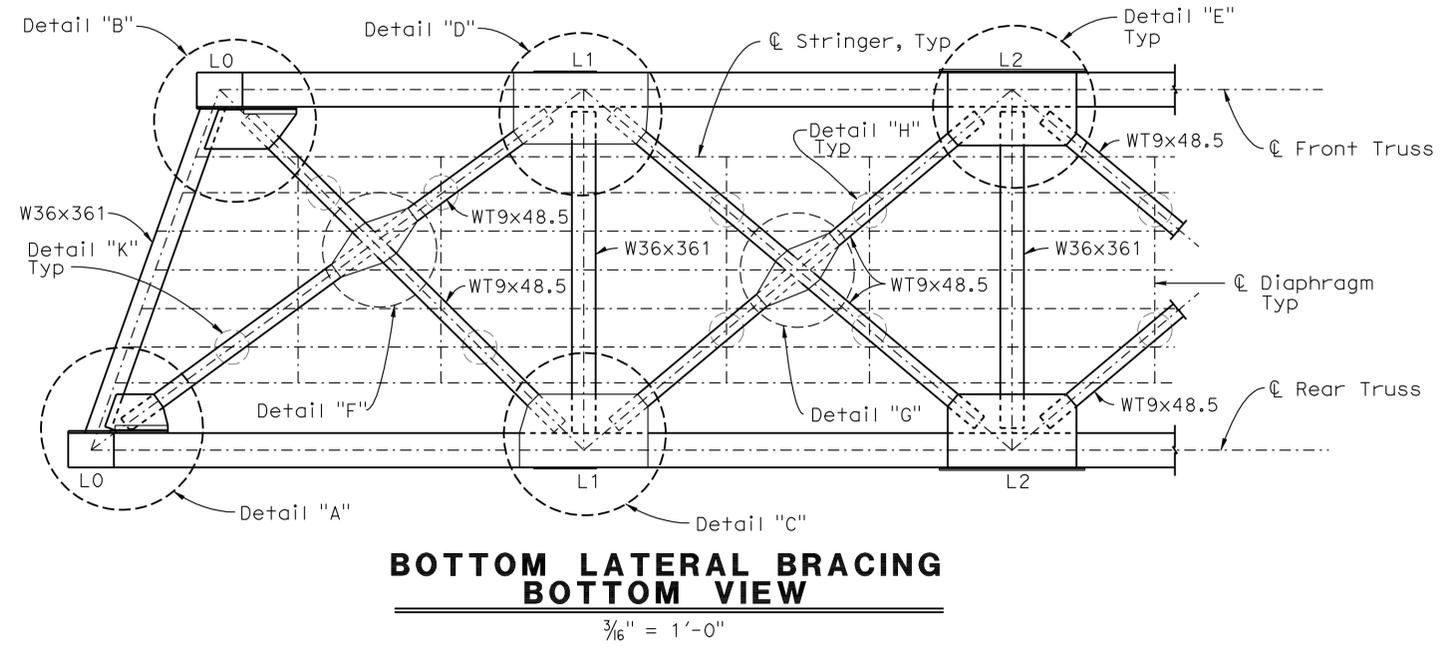
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY G. Hallstrom	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.
54-1304
R.R. MILE POST
5.90
LINE SEG. 7602
HIGHGROVE UNDERPASS #1
TOP LATERAL BRACING 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	1618	1743
			4-06-12		
REGISTERED CIVIL ENGINEER			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>					

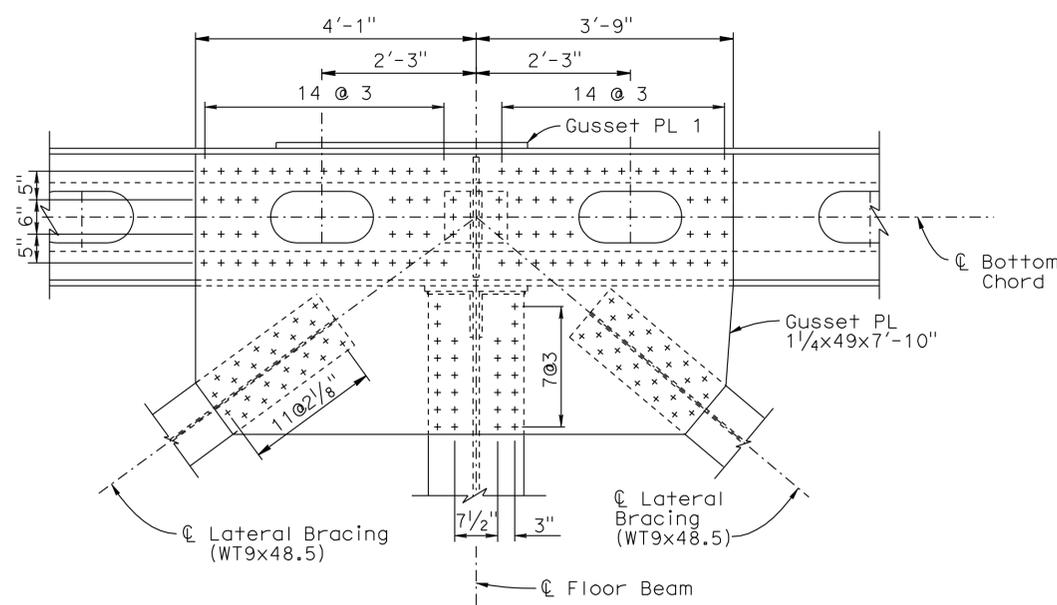


- NOTES:**
1. For Detail C, Detail D, Detail E, Detail F, and Detail G, see "BOTTOM LATERAL BRACING NO. 2" sheet.
 2. Detail H and Detail K are as viewed from the top of structure.
 3. All bolts edge distance 1/2" unless otherwise shown.

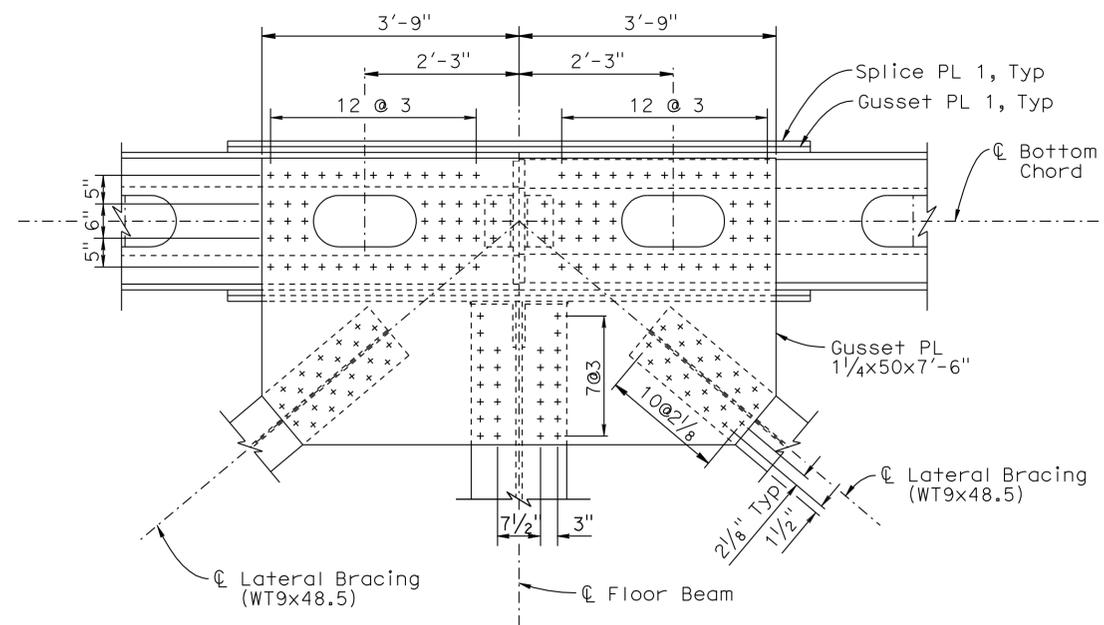
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	BY	L. Wu	CHECKED	B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1304	HIGHGROVE UNDERPASS #1 BOTTOM LATERAL BRACING NO. 1						
	DETAILS	BY	Y. Tang/G. Hallstrom	CHECKED			B. Addiespurger	R.R. MILE POST		5.90					
QUANTITIES	BY	T. Sanderson	CHECKED	A. McPhee	UNIT: 3589	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF				
					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	7-08-11	10-01-11	12-01-11	4-05-12	25	42

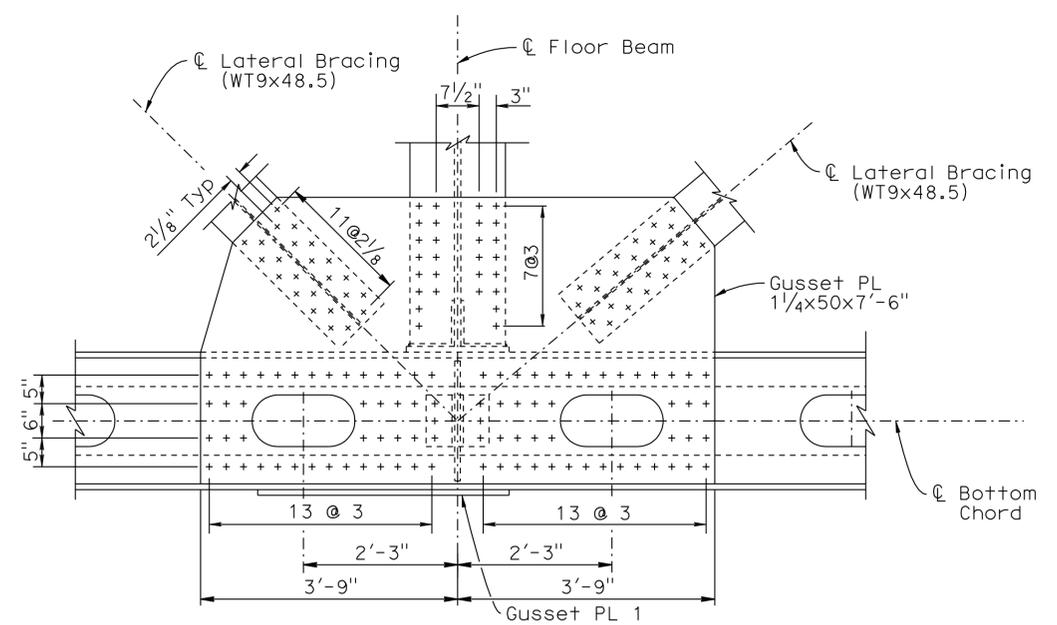
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1619	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



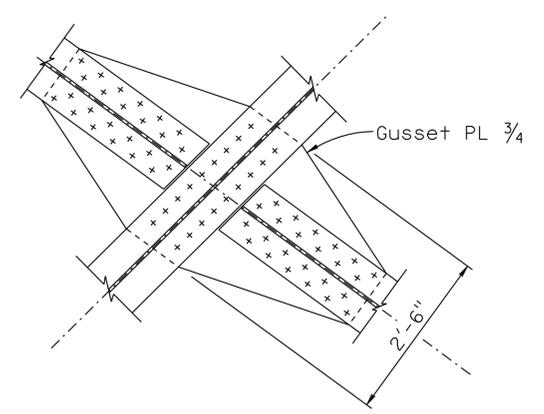
(Bottom View)
DETAIL D
3/4"=1'-0"



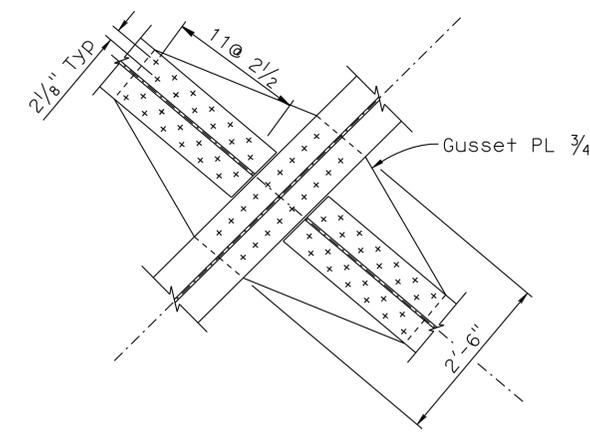
(Bottom View)
DETAIL E
3/4"=1'-0"



(Bottom View)
DETAIL C
3/4"=1'-0"



DETAIL F
3/4"=1'-0"

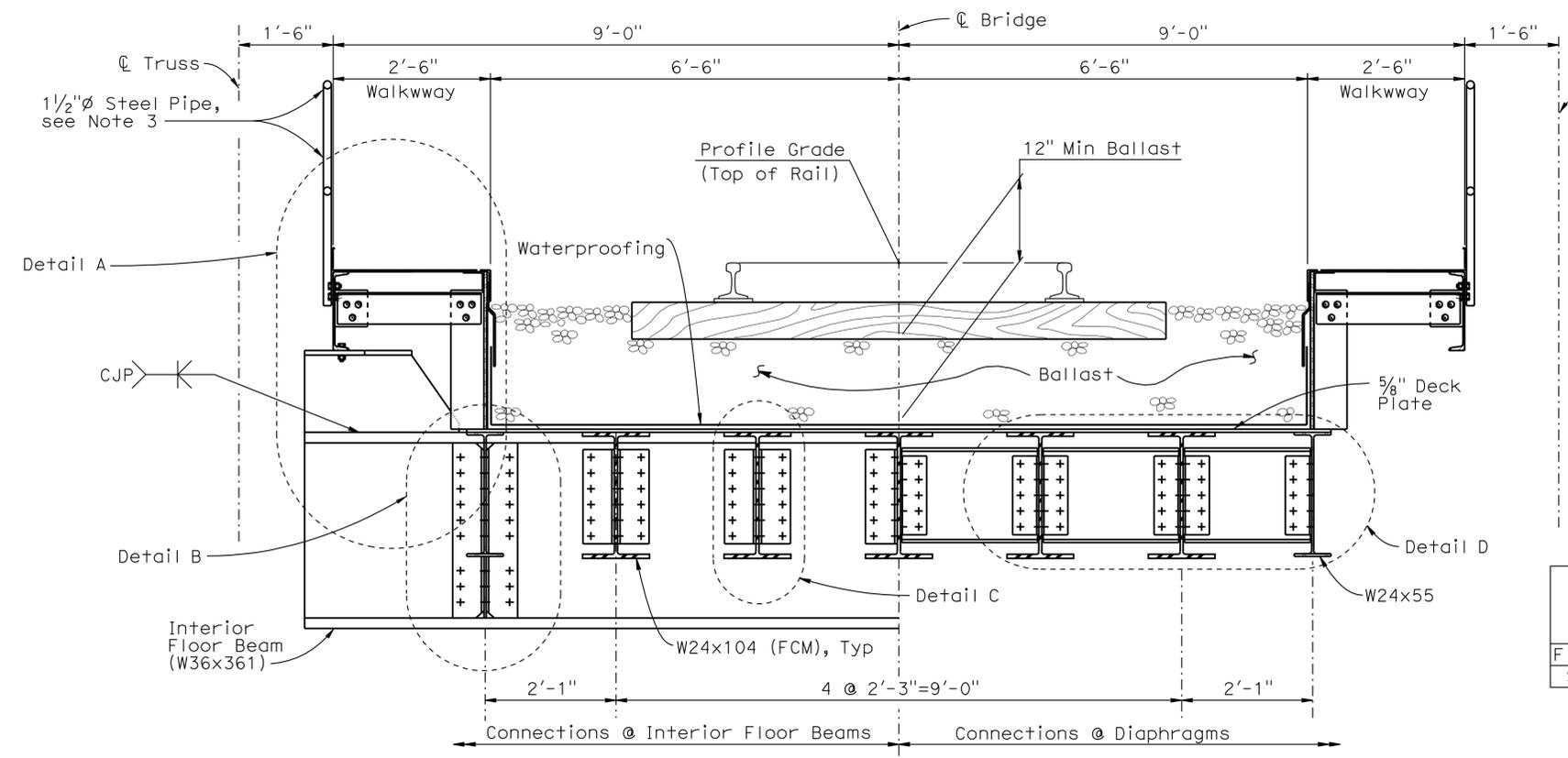


DETAIL G
3/4"=1'-0"

- NOTES:
1. For location of Detail C, Detail D, Detail E, Detail F, and Detail G, see "BOTTOM LATERAL BRACING NO. 1" sheet.
 2. All bolts edge distance 1 1/2" unless otherwise shown.
 3. Detail C, Detail D, and Detail E, are as viewed from the bottom of structure.
 4. Detail F and Detail G, are as viewed from the top of structure.

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

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 BOTTOM LATERAL BRACING NO. 2
DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addiespurger			R.R. MILE POST 5.90	
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			LINE SEG. 7602	
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
				7/08/11	2/23/12	4/06/12
				26	42	



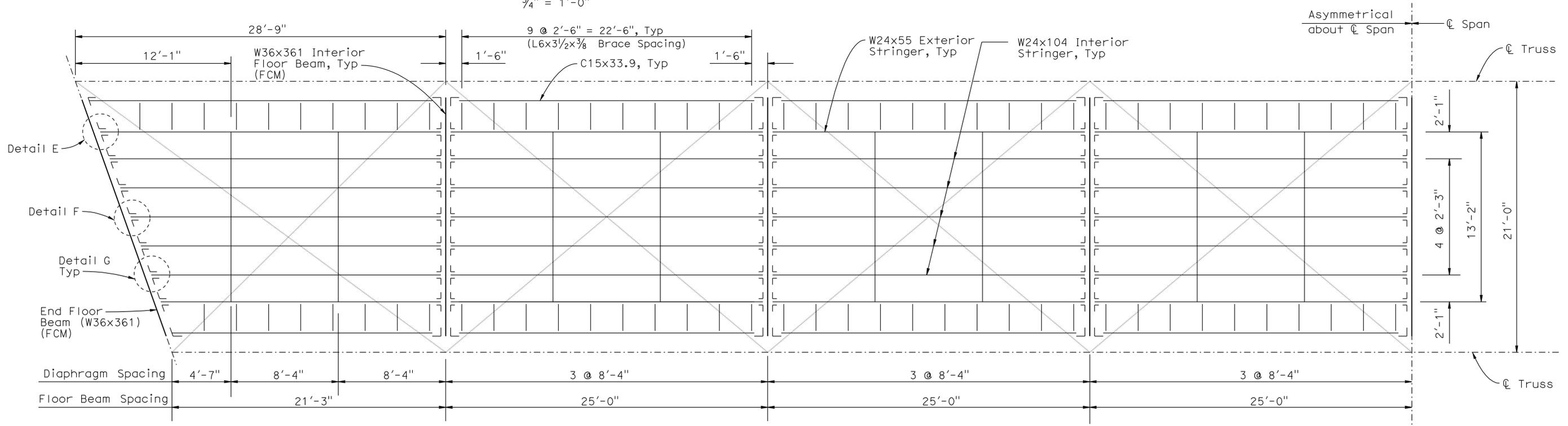
NOTES:

1. For Detail A, Detail D, Detail F, and Detail G, see "FLOOR SYSTEM DETAILS NO. 1" sheet.
2. For Detail B and Detail C, see "FLOOR SYSTEM DETAILS NO. 2" sheet.
3. For steel pipe connection detail, see "WALKWAY AND HANDRAIL DETAILS" sheet.
4. FCM: Fracture Critical Member.
5. For Detail E, see Detail A on "TRUSS DETAILS NO. 2" sheet.

Member	DL (K-ft)	LL (K-ft)	Impact (K-ft)	Fatigue Load Range (K-ft)	Design Load (K-ft)	Section	Allowable Stress (ksi)	Actual Stress (ksi)	Allowable Fatigue Stress Range (ksi)	Actual Fatigue Stress Range (ksi)
Floor Beam	487	1391	556	1630	2434	W36x361	27.50	21.84	24.00	14.62
Stringer	76	233	110	272	420	W24x104	27.50	19.75	24.00	12.77

TYPICAL INTERIOR FLOOR BEAM SECTION

3/4" = 1'-0"



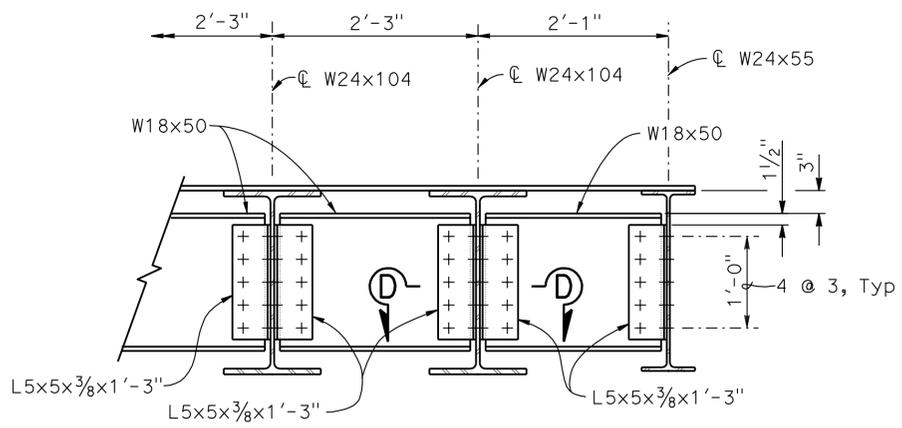
FLOOR SYSTEM PLAN

1/4" = 1'-0"

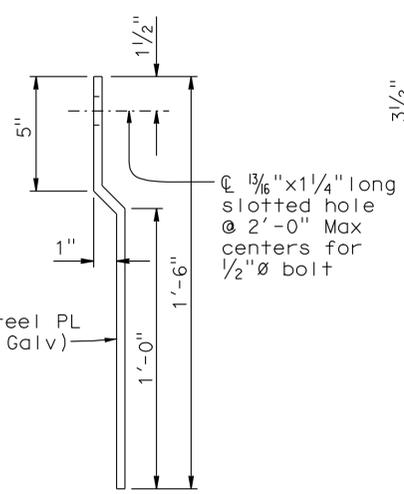
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY L. Wu CHECKED B. Addiespurger DETAILS BY Y. Tang CHECKED B. Addiespurger QUANTITIES BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 FLOOR SYSTEM		
			R.R. MILE POST 5.90			
			LINE SEG. 7602			
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 7-27-11 7-28-12 4-05-12	SHEET 27 OF 42

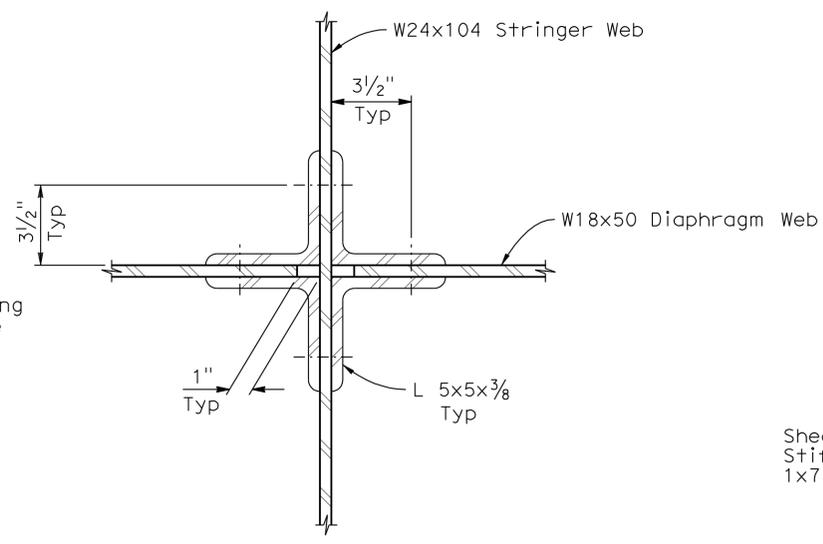
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1621	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



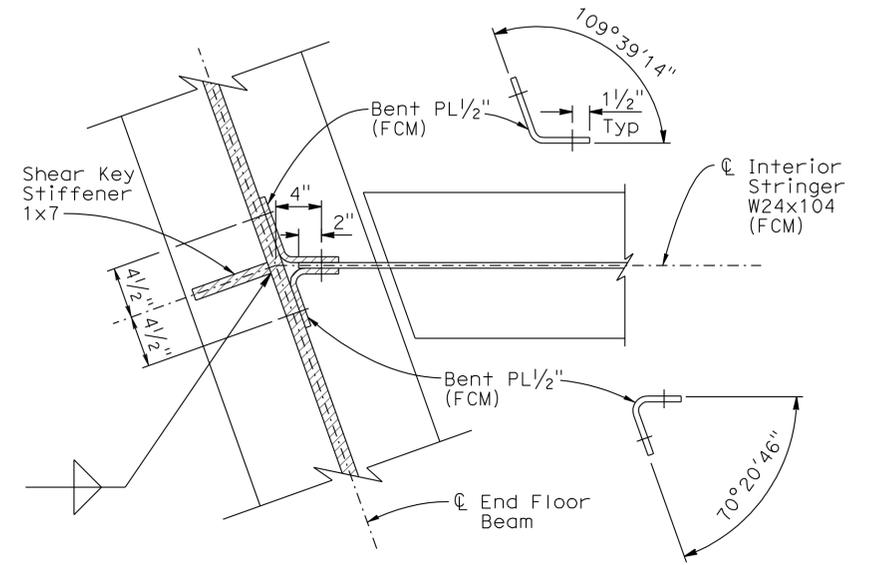
DETAIL D
1" = 1'-0"



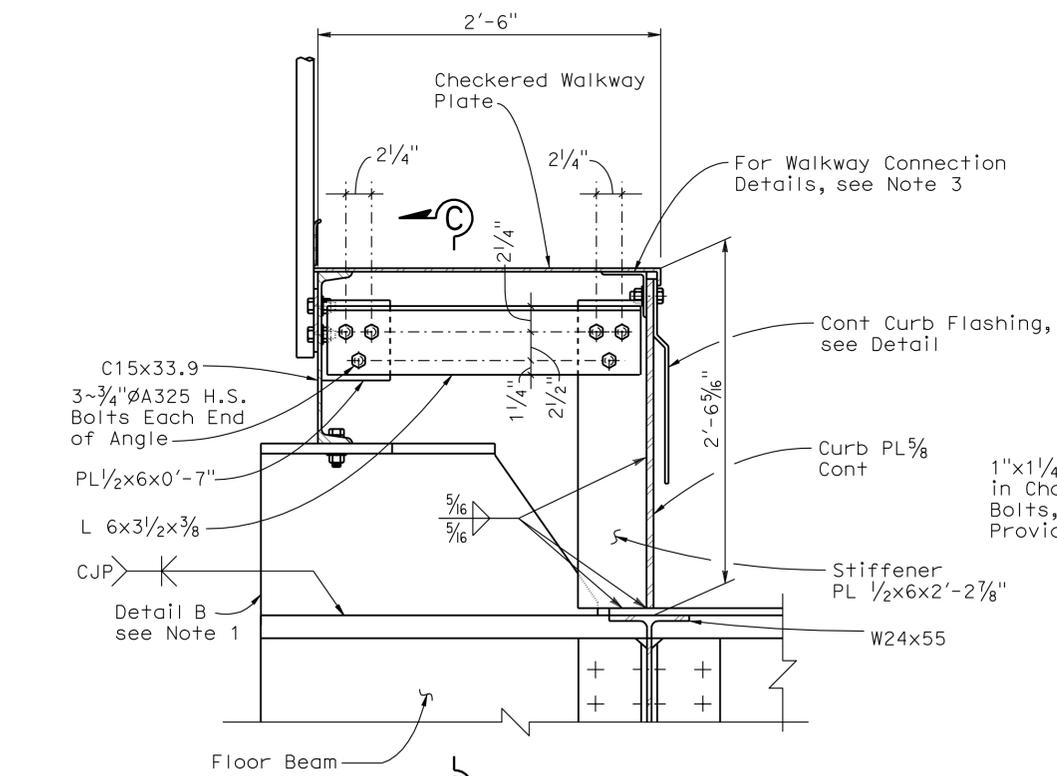
CURB FLASHING DETAIL
3" = 1'-0"



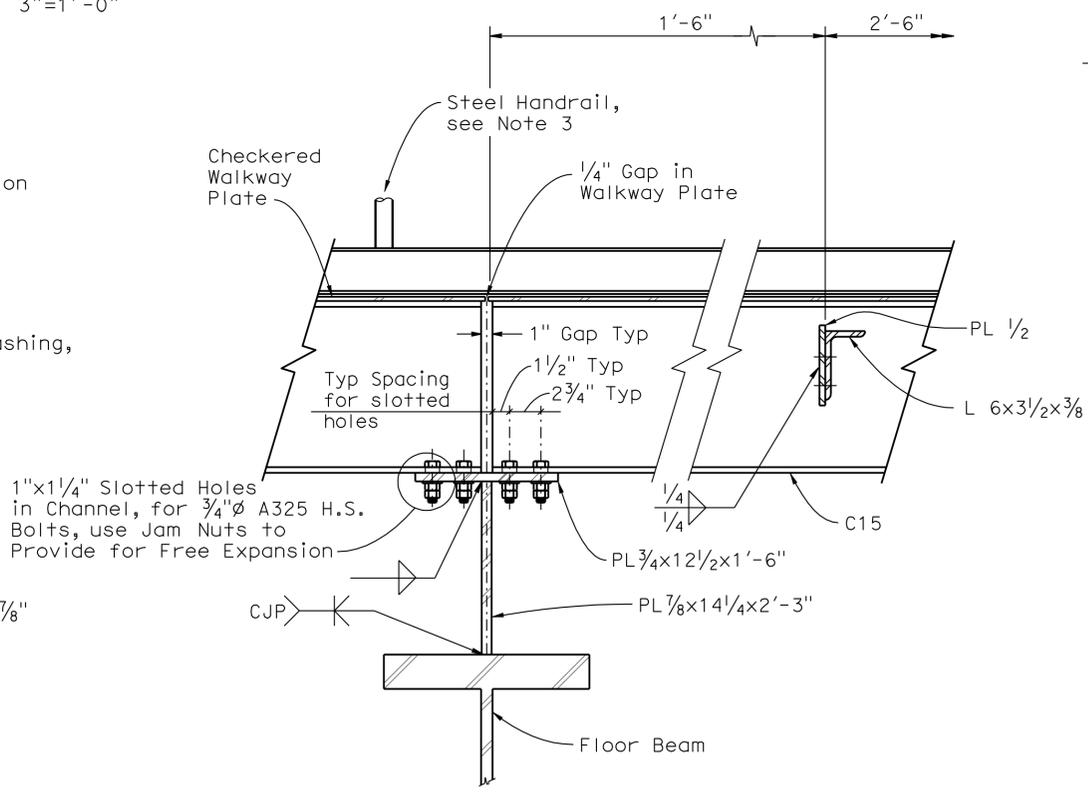
SECTION D-D
3" = 1'-0"



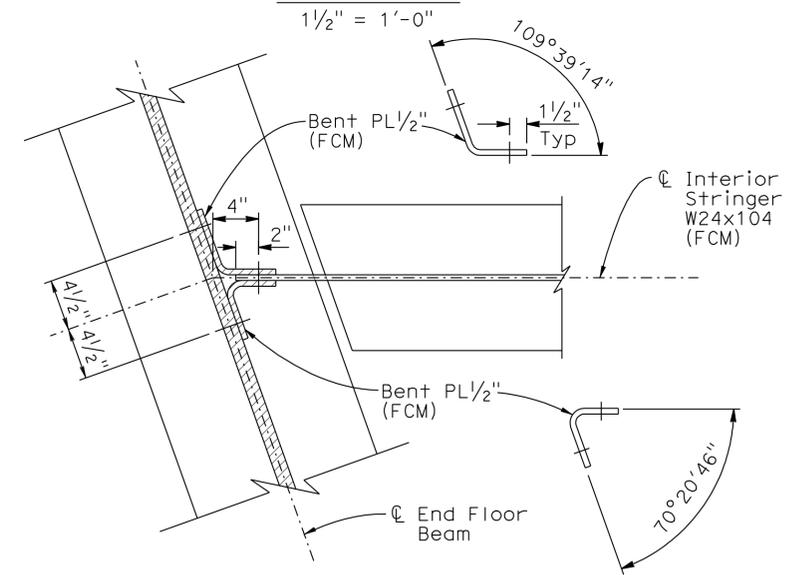
DETAIL F
1/2" = 1'-0"



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



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

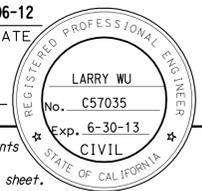


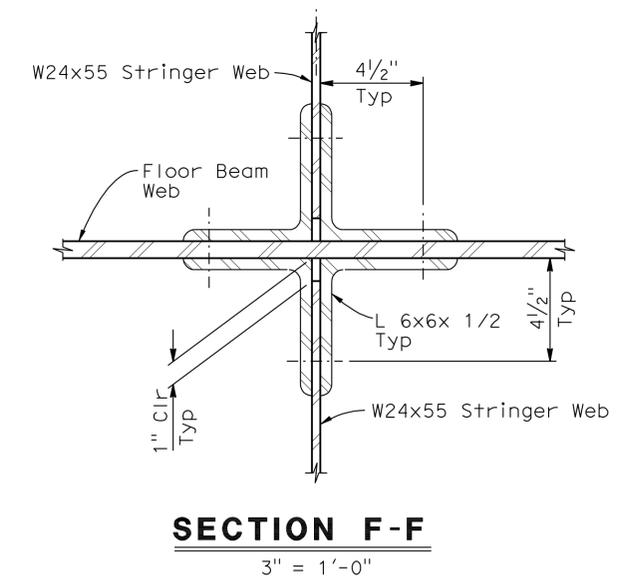
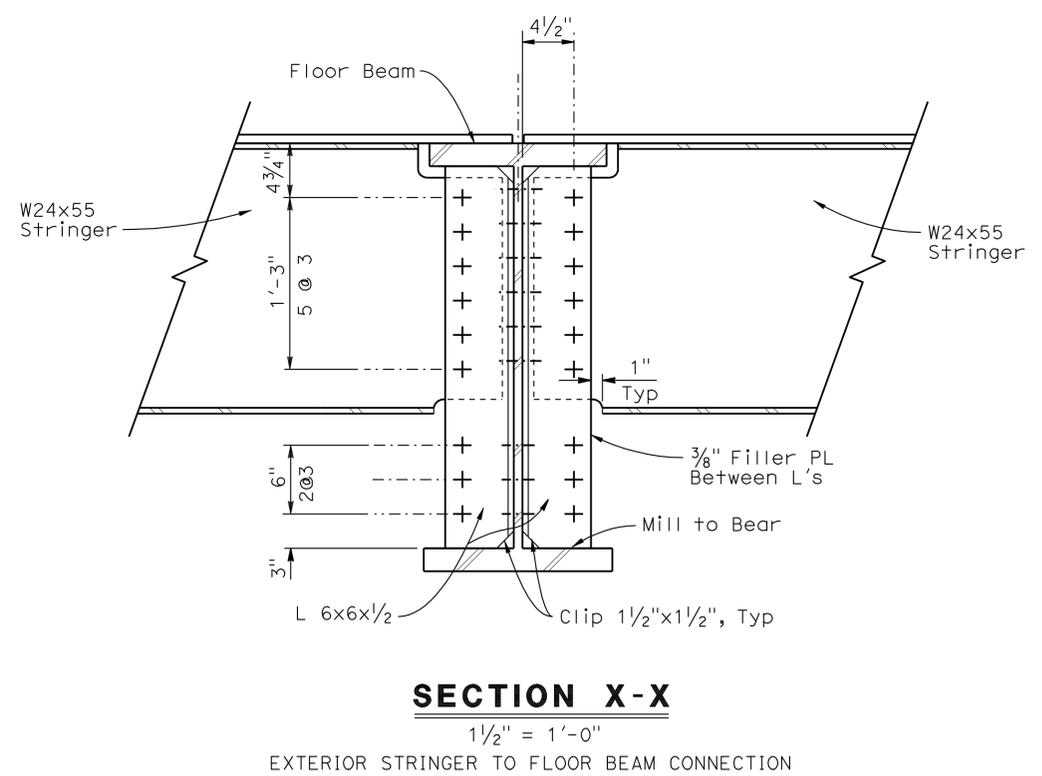
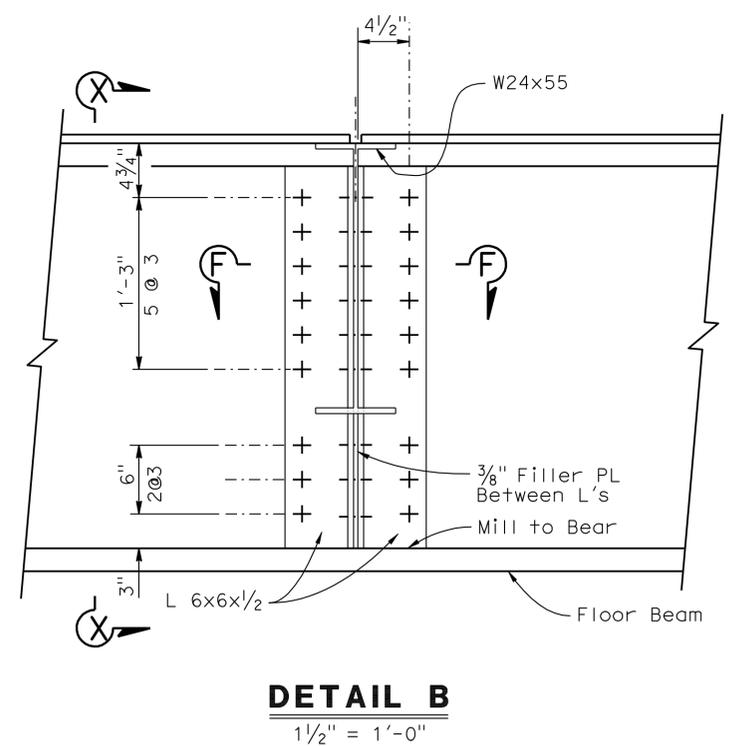
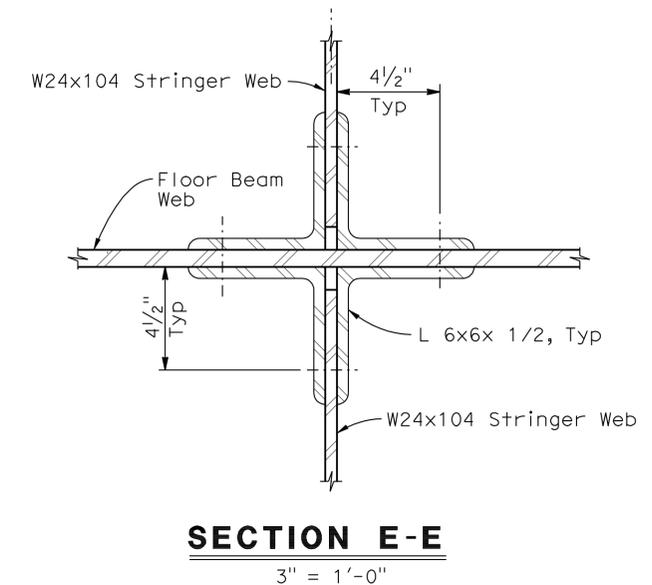
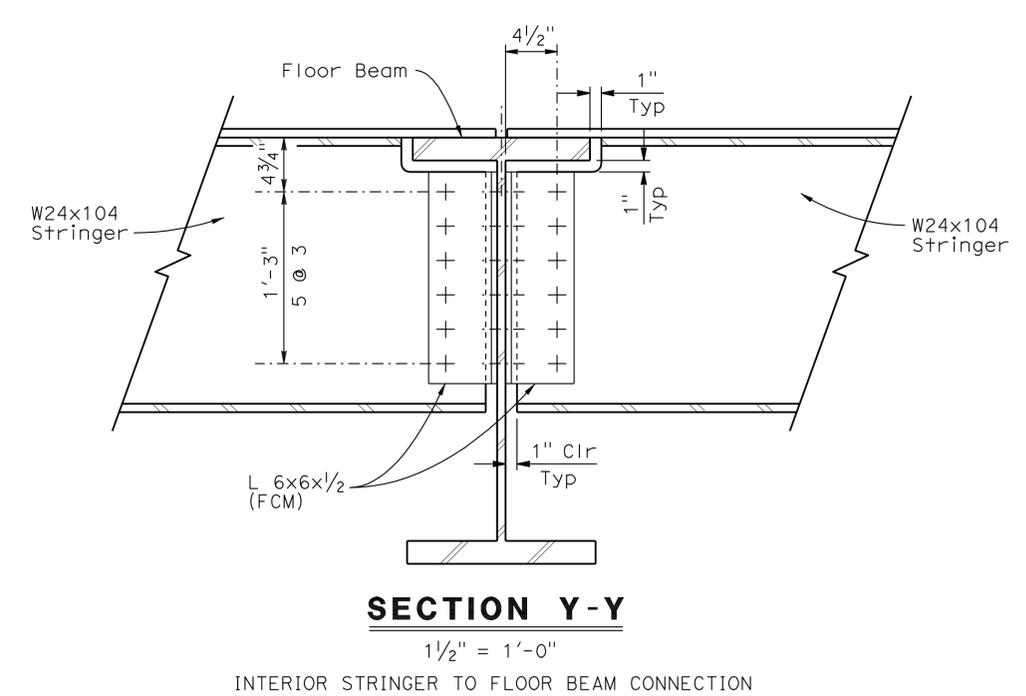
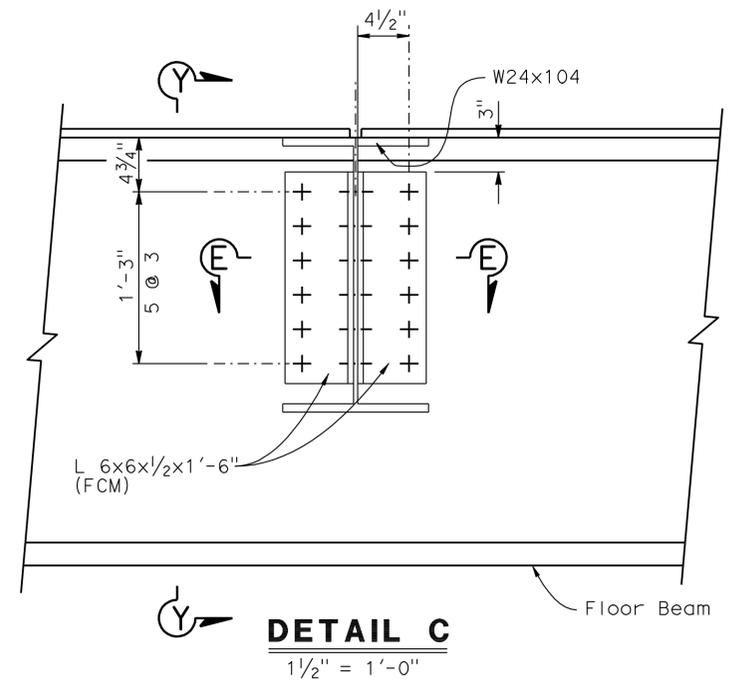
DETAIL G
1/2" = 1'-0"

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

- NOTES:**
- For Detail B, see "TRUSS DETAILS NO. 4" sheet.
 - For location of Detail A, Detail D, Detail F and Detail G, see "FLOOR SYSTEM" sheet.
 - For details, see "WALKWAY AND HANDRAIL DETAILS" sheet.
 - All bolts edge distance 1/2" unless otherwise shown.
 - FCM: Fracture Critical Member.

DESIGN BY L. Wu CHECKED B. Addiespurger DETAILS BY Y. Tang/ G. Hallstrom CHECKED B. Addiespurger QUANTITIES BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 FLOOR SYSTEM DETAILS NO. 1		
			R.R. MILE POST 5.90			
			LINE SEG. 7602			
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 7-21-11 9-18-11 10-9-11 4-06-12	SHEET 28 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	1622	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>					

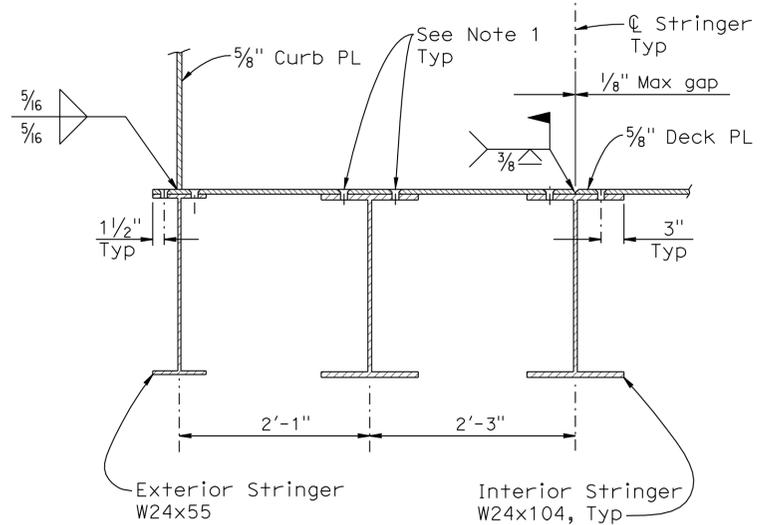


- NOTES:**
- For location of Detail B and Detail C, see "FLOOR SYSTEM" sheet.
 - Floor Beam bottom flange to conform to requirements for FCM.
 - All bolts edge distance 1 1/2" unless otherwise shown.
 - FCM: Fracture Critical Member

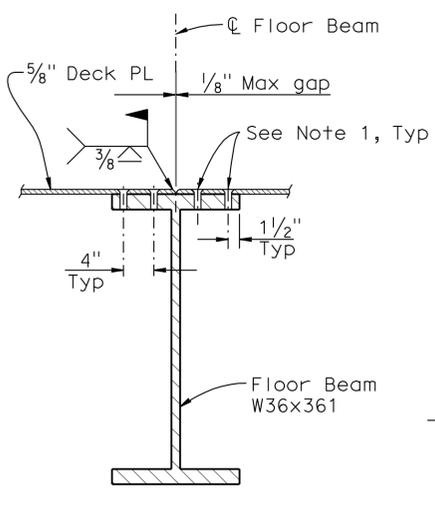
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY L. Wu CHECKED B. Addiespurger	BY Y. Tang/G. Hallstrom CHECKED B. Addiespurger	BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 FLOOR SYSTEM DETAILS NO. 2
					R.R. MILE POST 5.90	
					LINE SEG. 7602	
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 29 OF 42

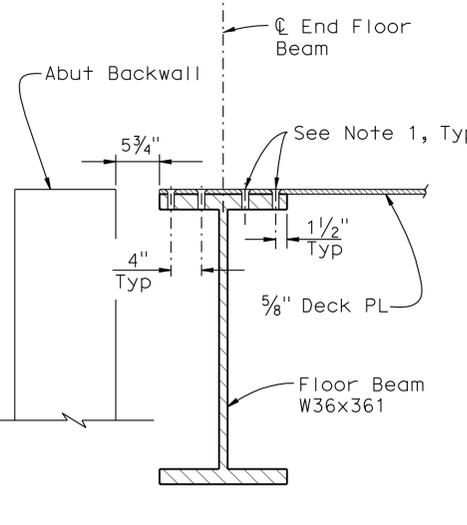
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1623	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



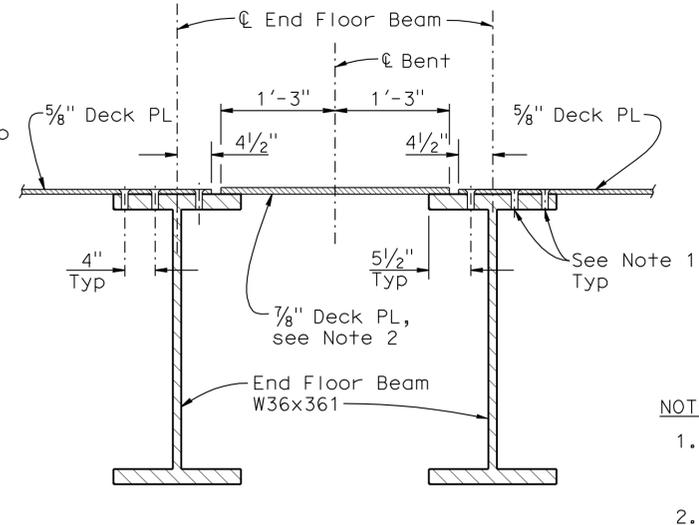
SECTION A-A
1" = 1'-0"



SECTION B-B
1" = 1'-0"

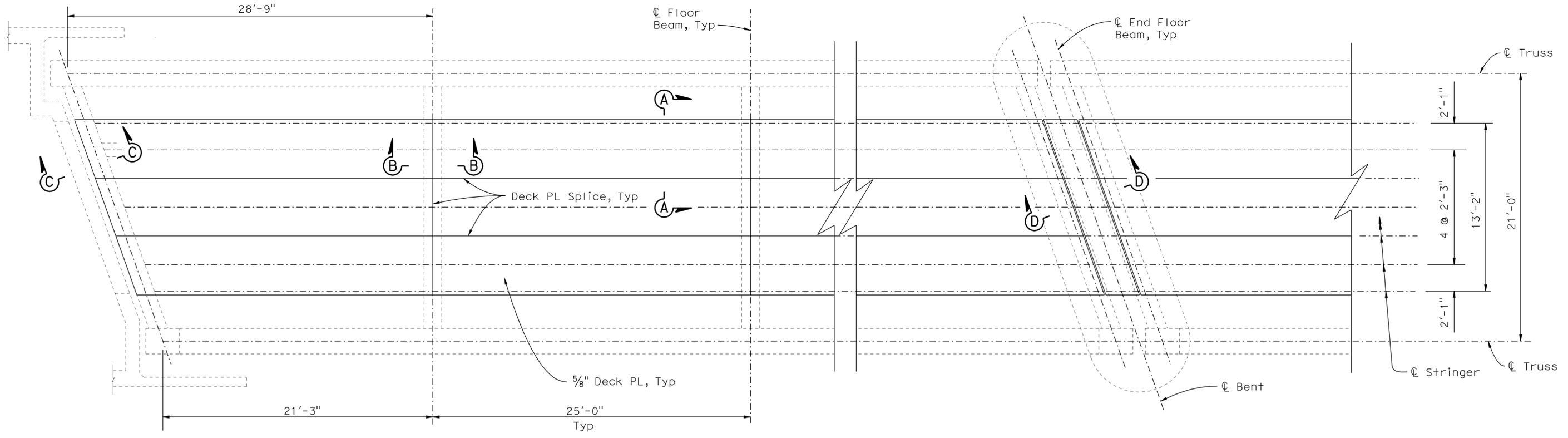


SECTION C-C
1" = 1'-0"



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

- NOTES:**
- 7/8" ø Countersunk Bolts (ASTM A449) spaced @ 6" C-C Max along Stringer or Floor Beam.
 - Do not bolt or weld Deck Plate to top flange of End Floor Beams at C of Bent.



PARTIAL PLAN - DECK PLATE
1/4" = 1'-0"

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

DESIGN	BY L. Wu	CHECKED B. Addlespurger
DETAILS	BY G. Hallstrom	CHECKED B. Addlespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

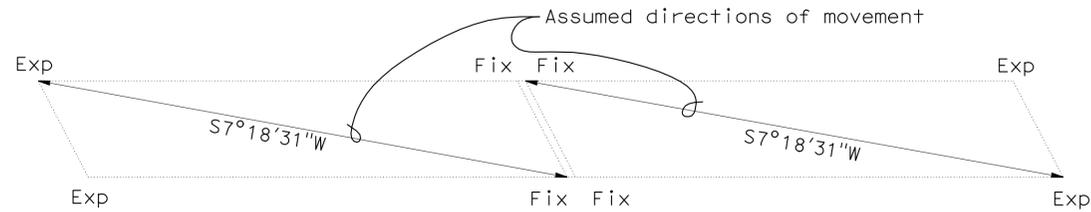
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.
54-1304
R.R. MILE POST
5.90
LINE SEG. 7602

HIGHGROVE UNDERPASS #1
DECK PLATE DETAILS

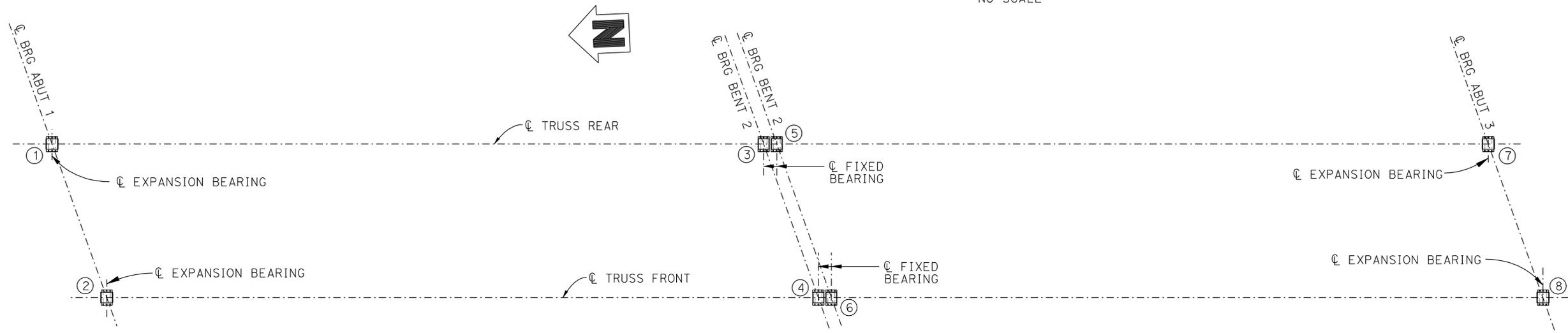
TABLE FOR PLATE SETTING DATA-EXPANSION BEARINGS POSITION OF SOLE PLATE RELATIVE TO BASE PLATES

TEMP @ TIME OF SETTING	20°F	70°F	120°F
SPAN ADJUSTMENT ALONG C WEB TOWARDS BENT 2	+3/4"	0"	-3/4"



SLOTTED HOLE ORIENTATION

NO SCALE



MASONRY PLATE AND ANCHOR BOLT LAYOUT

NO SCALE

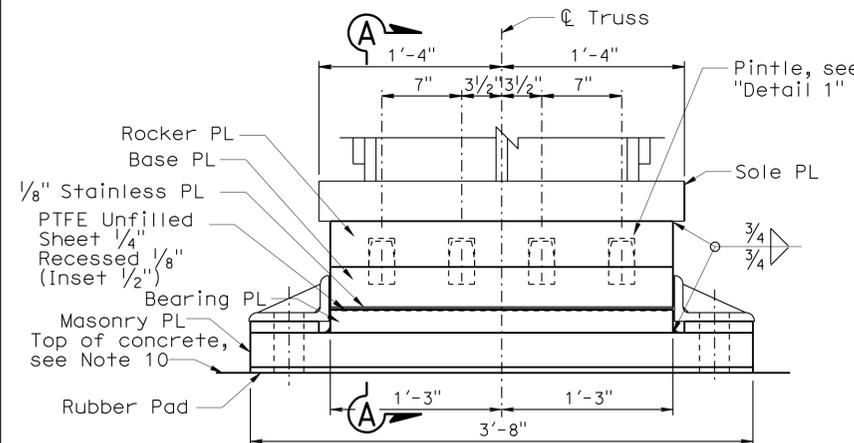
CONCRETE ELEVATION AT BOTTOM OF BEARING		
LOCATIONS		ELEVATIONS
FRONT TRUSS	Abut 1	934.98
	Bent 2	935.71
	Abut 3	935.31
REAR TRUSS	Abut 1	934.98
	Bent 2	935.71
	Abut 3	935.31

BEARING REACTION						
LOAD	FIXED BEARING (BENT) (3) (6)			EXPANSION BEARING (ABUTMENT) (1) (8)		
	F _v (kips)	F _{long} (kips)	F _{trans} (kips)	F _v (kips)	F _{long} (kips)	F _{trans} (kips)
DL	510	5	20	420	0	10
LL+I	690	20	30	580	0	20
WL	90	230	100	90	0	100
LF	20	170	10	20	0	10
EQ	190	840	380	200	0	320
LOAD	FIXED BEARING (BENT) (4) (5)			EXPANSION BEARING (ABUTMENT) (2) (7)		
	F _v (kips)	F _{long} (kips)	F _{trans} (kips)	F _v (kips)	F _{long} (kips)	F _{trans} (kips)
DL	420	5	20	510	0	10
LL+I	580	15	5	690	0	10
WL	80	230	70	100	0	220
LF	20	200	10	20	0	15
EQ	170	920	210	210	0	700

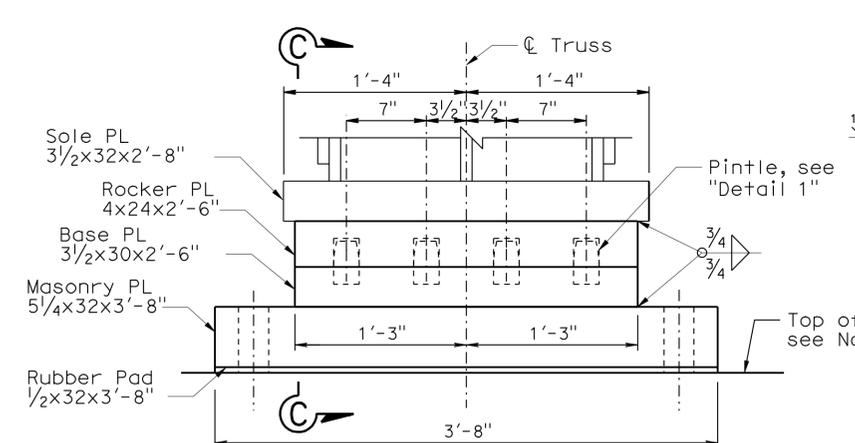
NOTES:

- The welding operation shall be performed at an ambient temperature between 55°F to 85°F
- If grouting is performed after welding sole plate to flange plate, then grout should be placed at the ambient temperature requirement of Note 1.
- Slotted holes in Masonry Plate for expansion bearings shall be oriented parallel to assumed direction of movement.
- Anchorage method shown on "BEARING DETAILS" Sheet.
- All bearings shall be marked prior to shipping. The marks shall indicate the bearing location and direction on the bridge, and a direction arrow that points up station. All marks shall be permanent and visible after the bearing is installed.

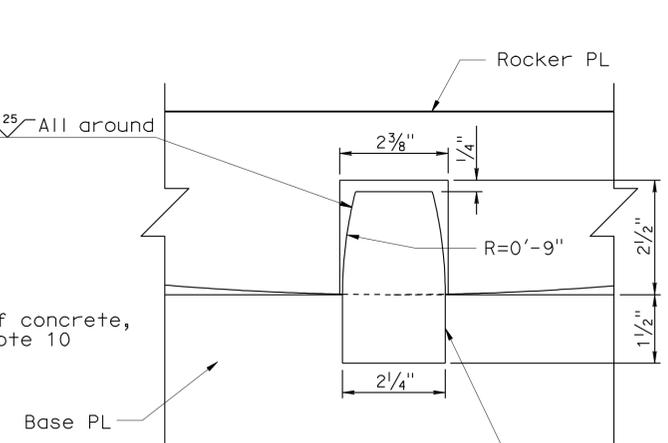
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1625	1743
REGISTERED CIVIL ENGINEER <i>Larry Wu</i> DATE 4-06-12			REGISTERED PROFESSIONAL ENGINEER No. C57035 Exp. 6-30-13 CIVIL STATE OF CALIFORNIA		
4-16-12 PLANS APPROVAL DATE					
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.					



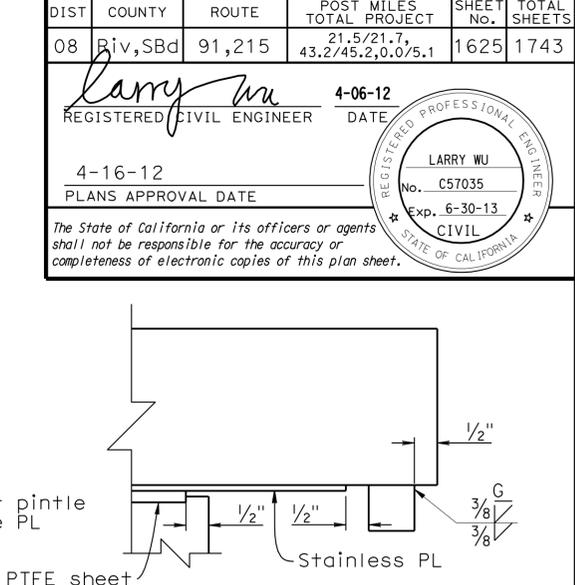
EXPANSION BEARING (ABUTMENT)



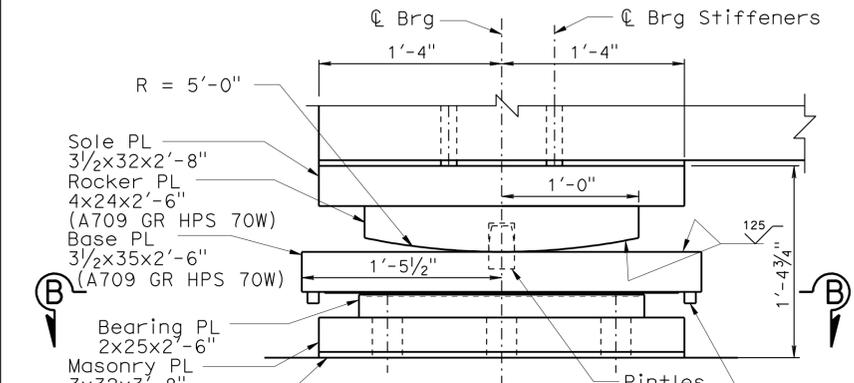
FIXED BEARING (BENT)



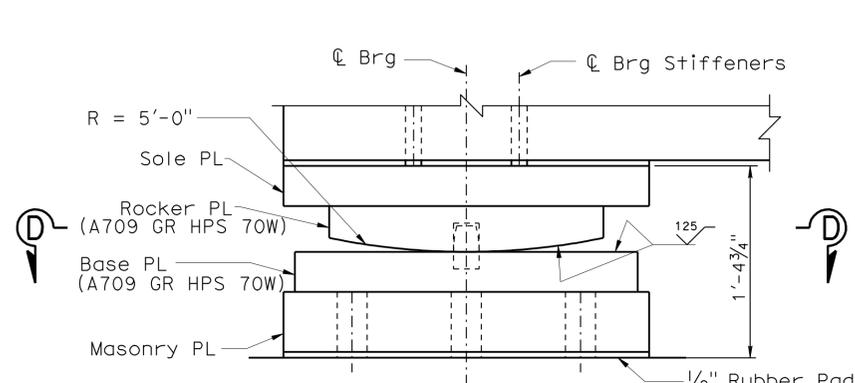
DETAIL 1



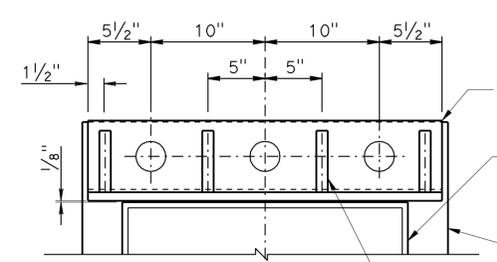
DETAIL 2



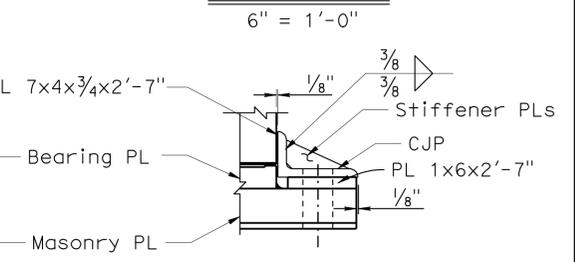
SECTION A-A



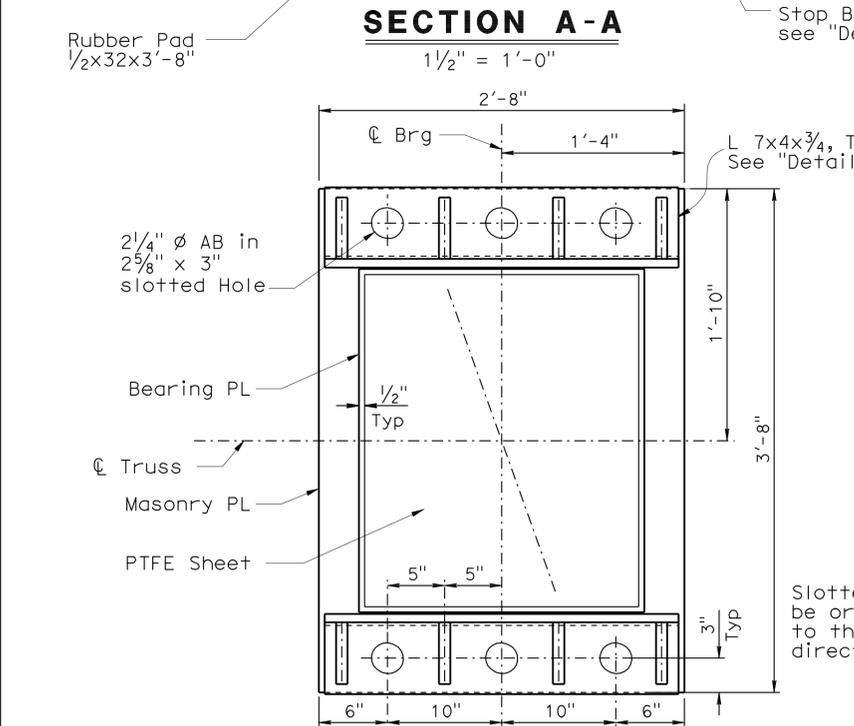
SECTION C-C



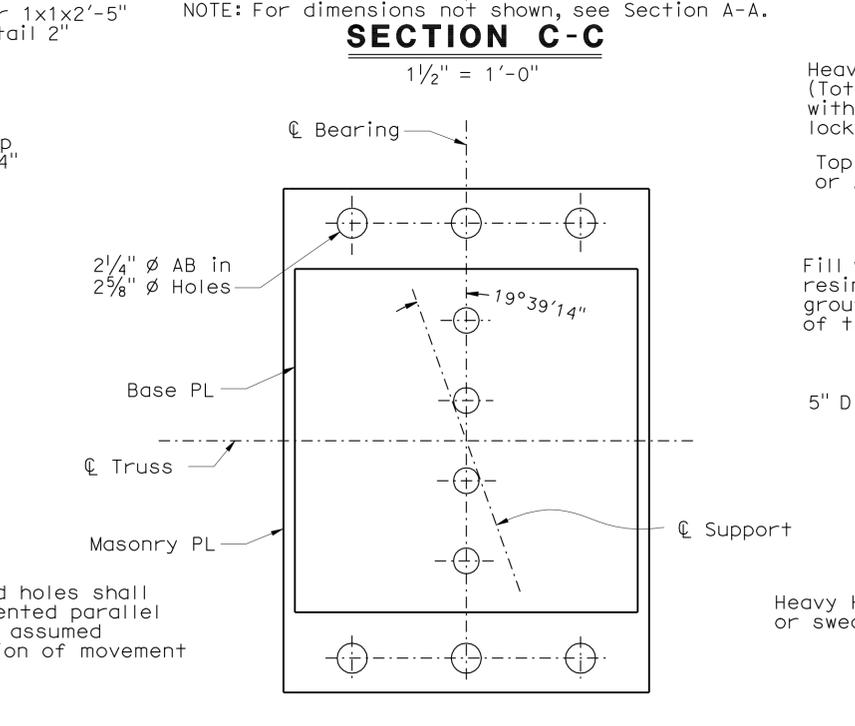
PLAN



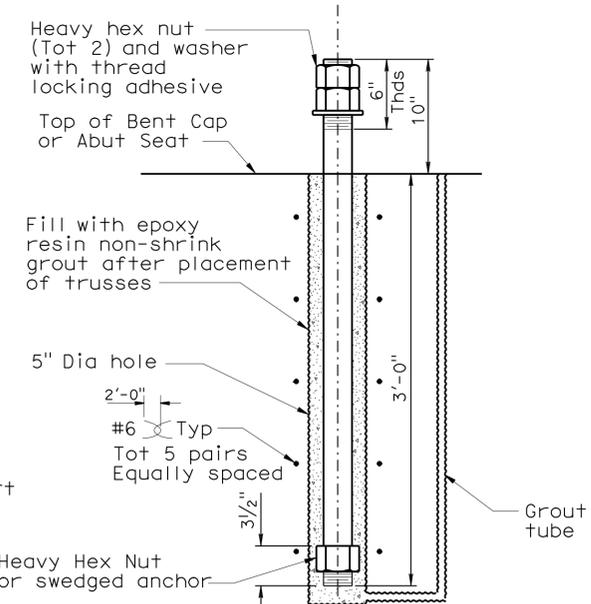
SECTION



BRG PL VIEW B-B



BASE PL VIEW D-D



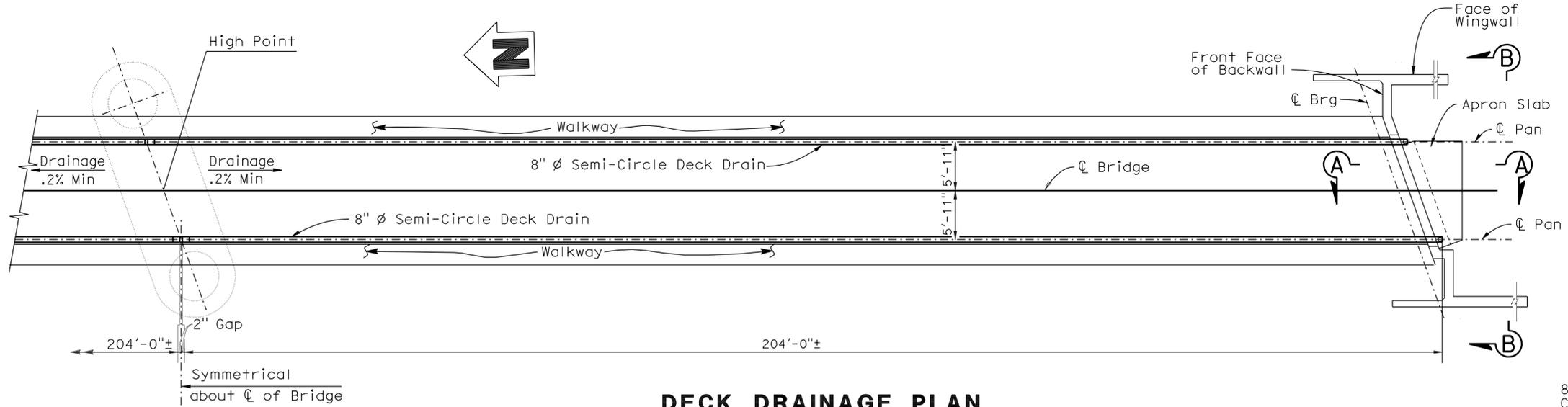
ANCHOR ROD DETAIL 3

- NOTES:**
- All material shall conform to ASTM A709 Gr50W unless otherwise noted.
 - All weld assemblies shall be stress relieved after fabrication in accordance with bridge welding code AWS D1.5.
 - Fabrication tolerances, packing, handling, storage, and installation of bearings shall conform to AREMA Manual, Chapter 15 Part 11.
 - Steel including anchor rods and nuts shall be painted per specifications.
 - Pintles shall conform to ASTM A354 BD, Anchor Rods shall conform to ASTM F1554 Gr 105, and nuts shall conform to ASTM A563 DH heavy hex.
 - PTFE sheet shall conform to AREMA Chapter 15, Sections 10.5 and 11.4.
 - Stainless steel sliding surface shall conform to AREMA Chapter 15, Section 10.5.
 - Rubber pad shall be natural rubber with Shore A hardness 50 and shall conform to AREMA Chapter 15, Section 10.6.
 - Sole plate to bottom chord connection may be field welded.
 - Concrete surface under Rubber Pad to be ground to a smooth level plane to give even bearing.
 - The minimum dead load for friction coefficient proof test shall be 400kips. The maximum vertical load for compression proof test shall be 1200kips.

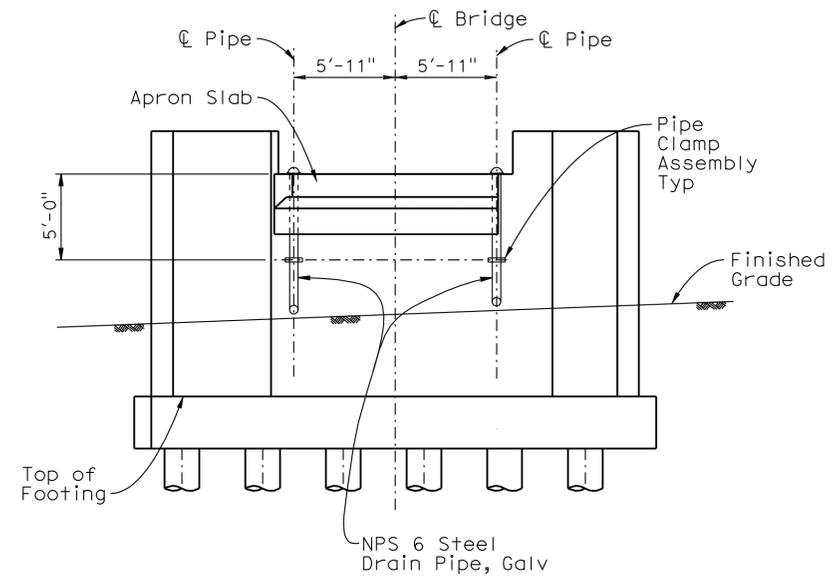
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1 BEARING DETAILS
DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addiespurger			R.R. MILE POST 5.90	
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			LINE SEG. 7602	
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 7-28-11 1-24-12 3-28-12 4-06-12 SHEET 32 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	1626	1743
REGISTERED CIVIL ENGINEER <i>Larry Wu</i> DATE 4-06-12			REGISTERED PROFESSIONAL ENGINEER LARRY WU No. C57035 Exp. 6-30-13 CIVIL STATE OF CALIFORNIA		
PLANS APPROVAL DATE 4-16-12					
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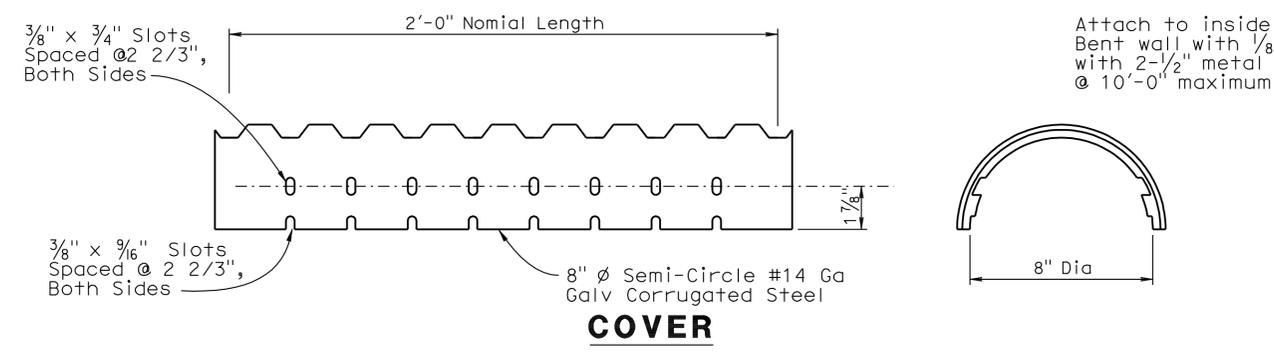


DECK DRAINAGE PLAN
NO SCALE

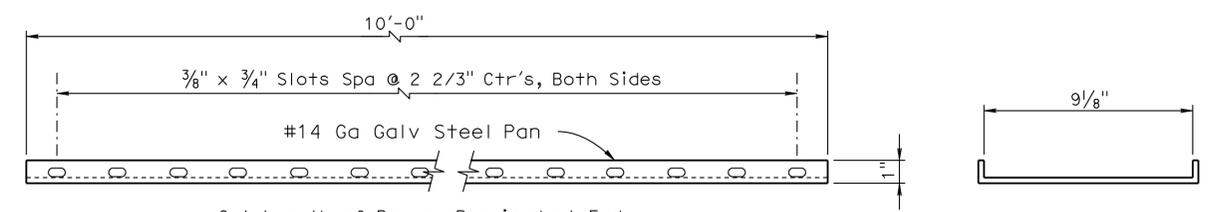


SECTION B-B
3/16" = 1'-0"

Abutment 3 Shown, Abutment 1 Similar

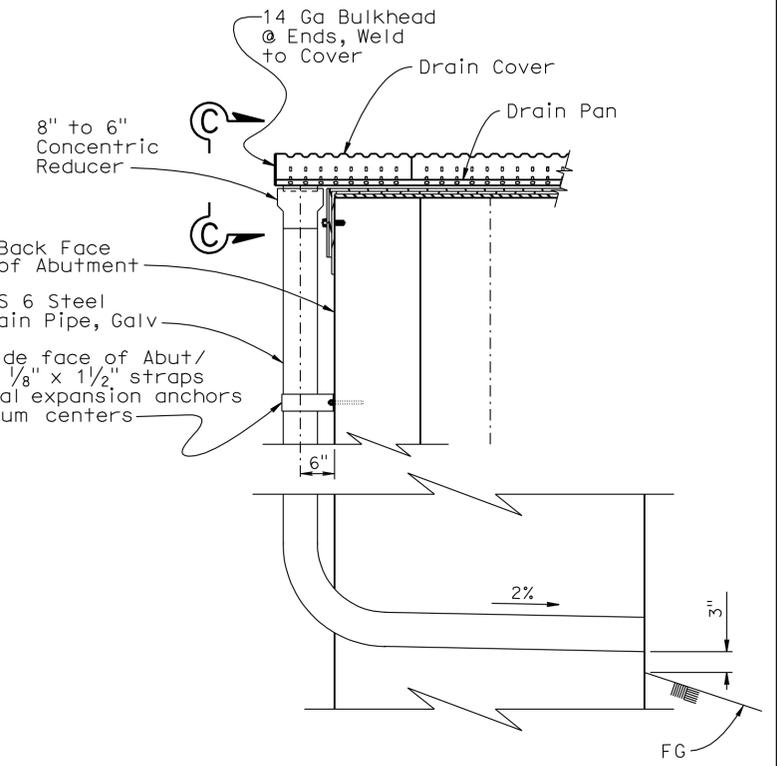


COVER

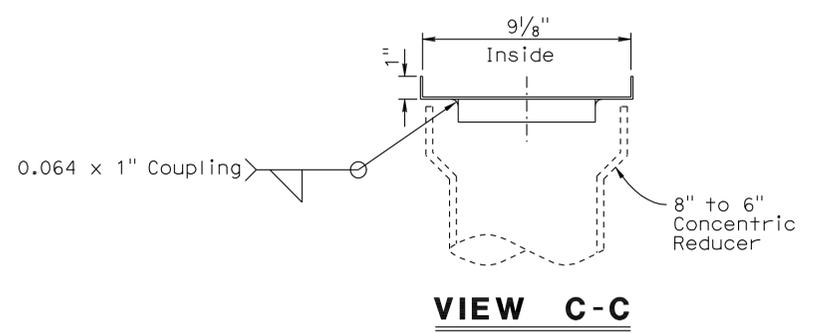


BOTTOM PAN

DECK DRAIN DETAILS
3" = 1'-0"



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



VIEW C-C

NOTES:

- Deck drain Covers, Bottom Pans, Collars, Outlet Stubs, and All Necessary Connections and Fasteners to be Galvanized.
- Place Bottom Pans End to End and Lap Cover Sections One Corrugation.
- For Waterproofing Details, see "WATERPROOFING DETAILS" sheet.
- All Dimensions are to be Taken Along C Pipe or Pan.

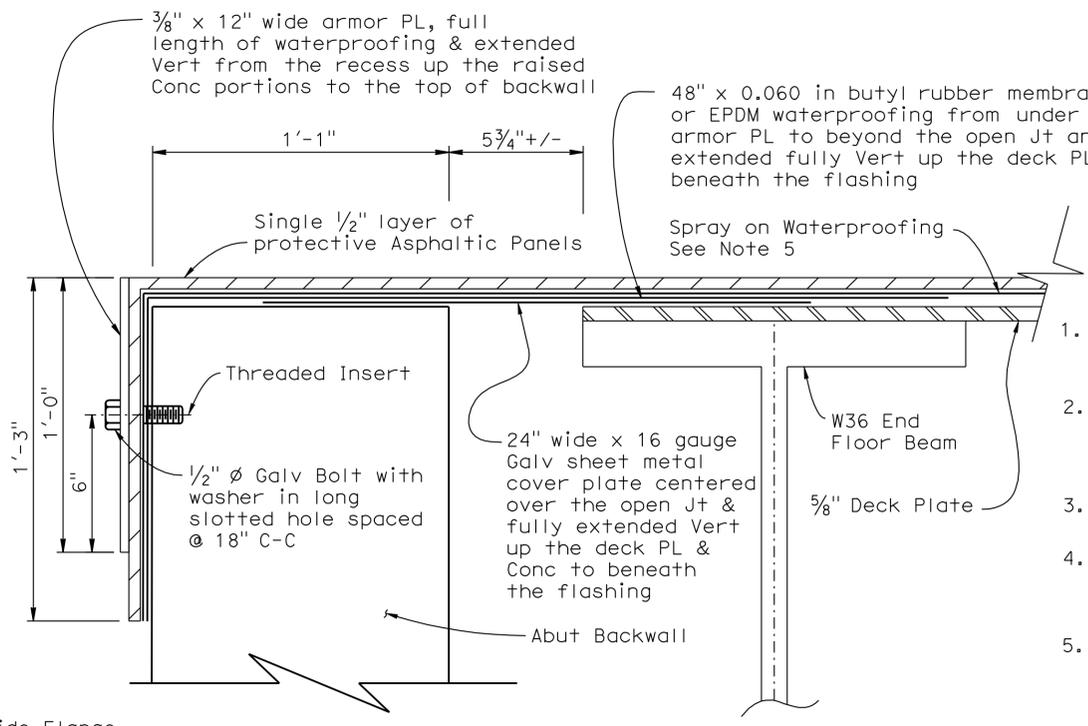
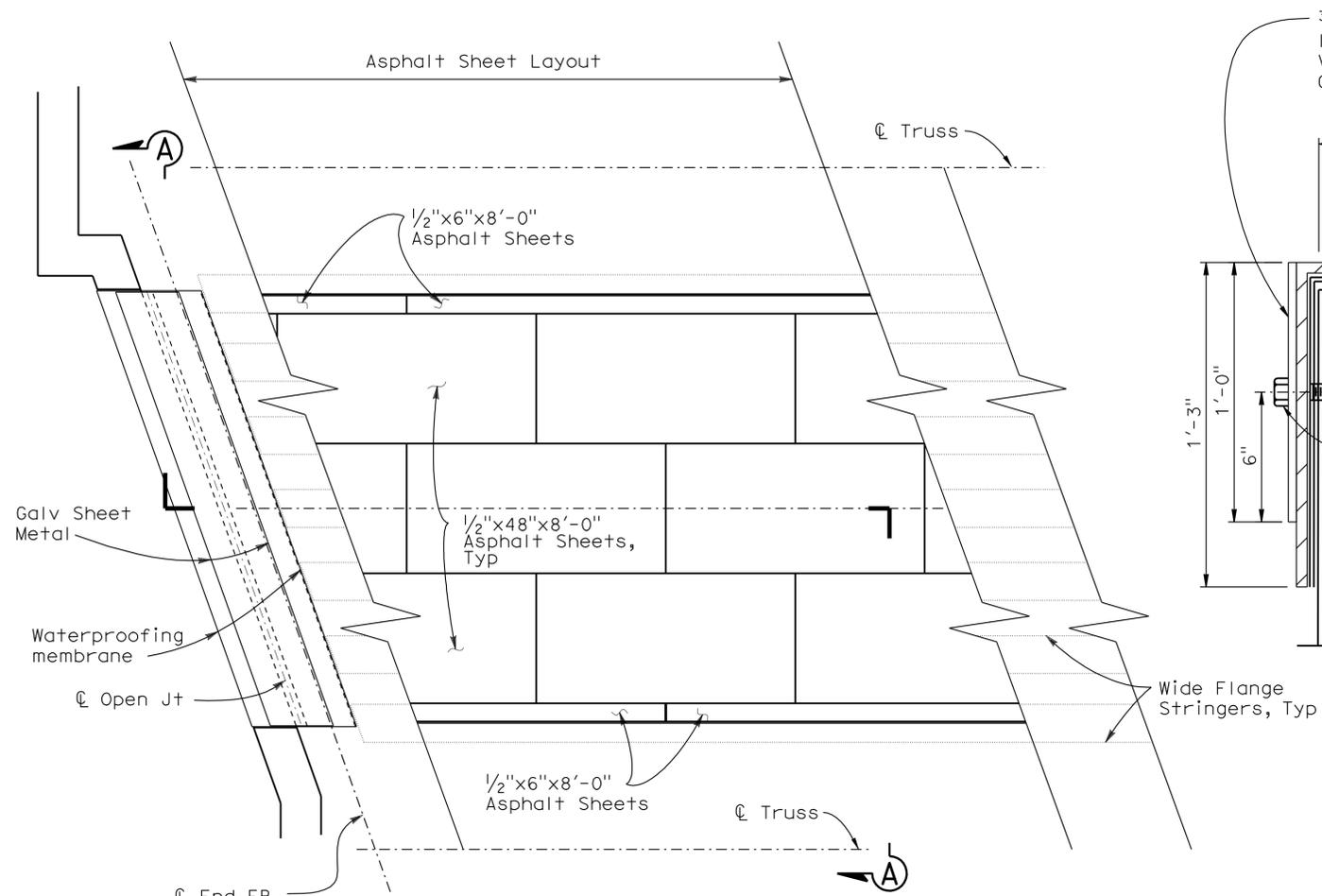
DESIGN	BY L. Wu	CHECKED B. Addlespurger
DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addlespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

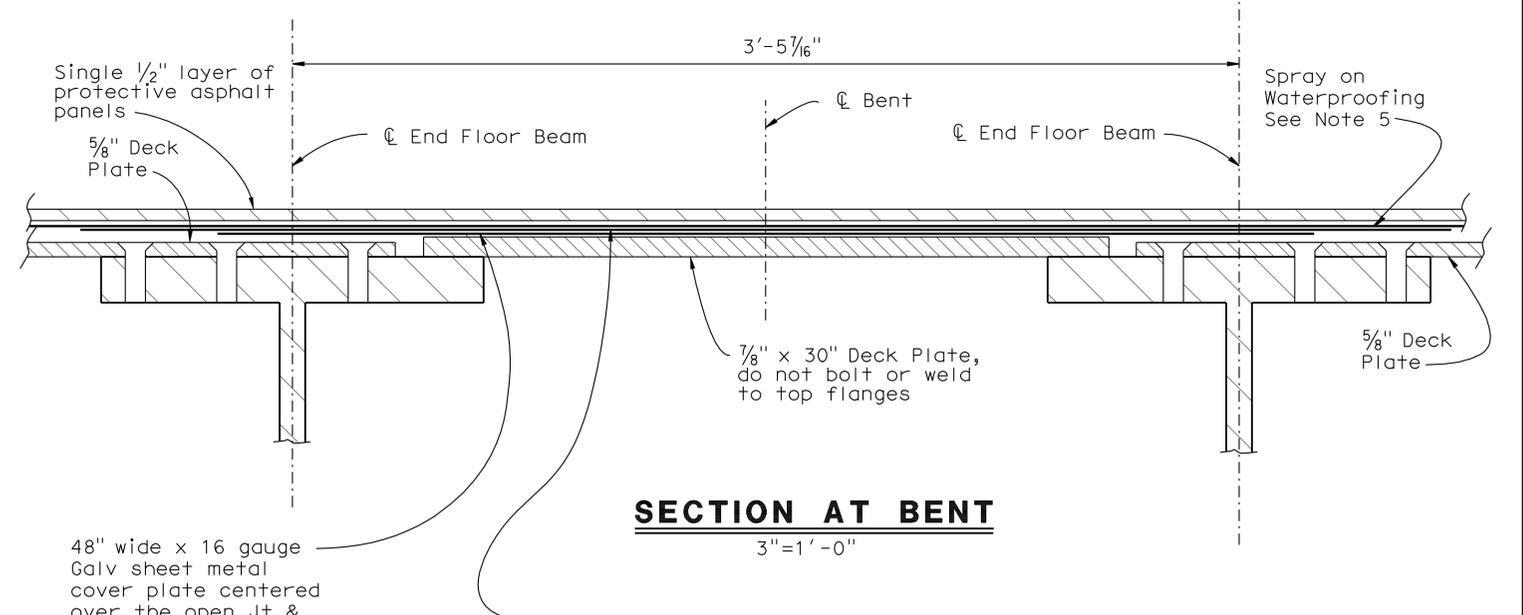
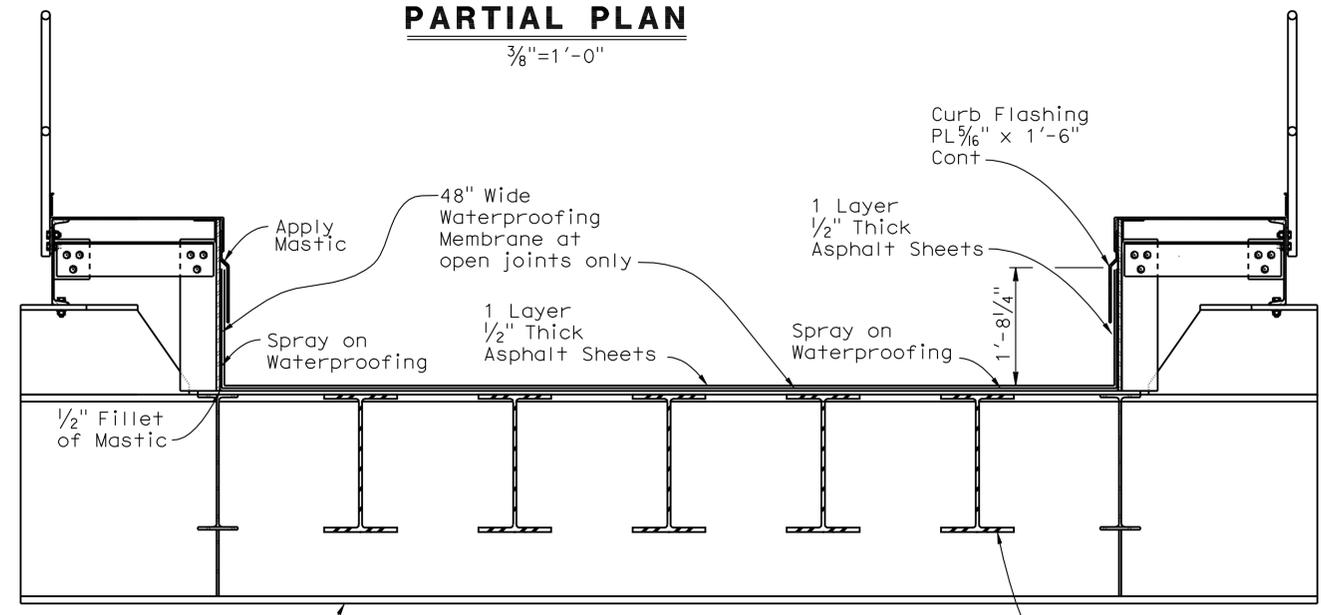
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
BRIDGE NO. 54-1304
R.R. MILE POST 5.90
LINE SEG. 7602

HIGHGROVE UNDERPASS #1
DRAINAGE 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	1627	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>					



- NOTES:
- Asphalt Panels should be placed as soon as possible after the completion of Membrane Application, but not more than five days later.
 - All Panels shall be bonded to the Membrane and to each other with a complete coat of Semi-Mastic. Asphalt Panels shall be placed while the bond coat is still tacky.
 - All Joints between panels shall be laid tight and sealed with Semi-Mastic.
 - Place ballast on deck as soon as possible after Asphalt Panels and Deck Drains have been installed.
 - Waterproofing system shall be 120 mil acrylic based, cold spray applied seamless waterproofing membrane as manufactured by Stirling-Lloyd, 420 Sackett Road, New Haven, Conn 06473, (203) 561-9448. At the option of the Contractor, a similar spray applied system manufactured by Bridge Preservation, LLC, Kansas City, Mo 64171, (816) 561-9996, may be used. Contractor shall submit detailed application procedures, material specifications, and shop drawings for all waterproofing details for approval.



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

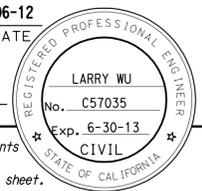
DESIGN	BY L. Wu	CHECKED B. Addlespurger
DETAILS	BY Y. Tang	CHECKED B. Addlespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

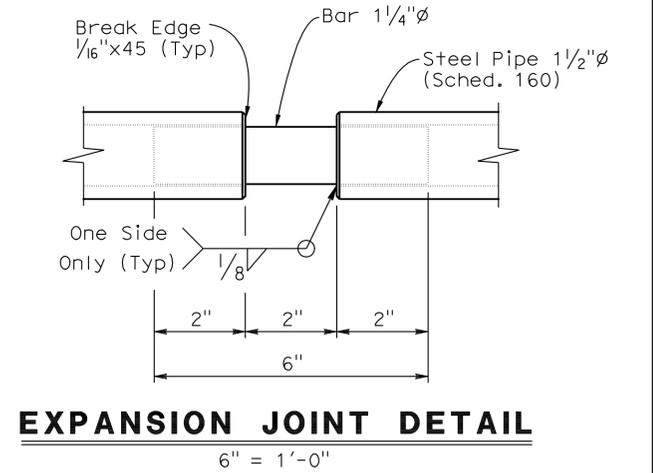
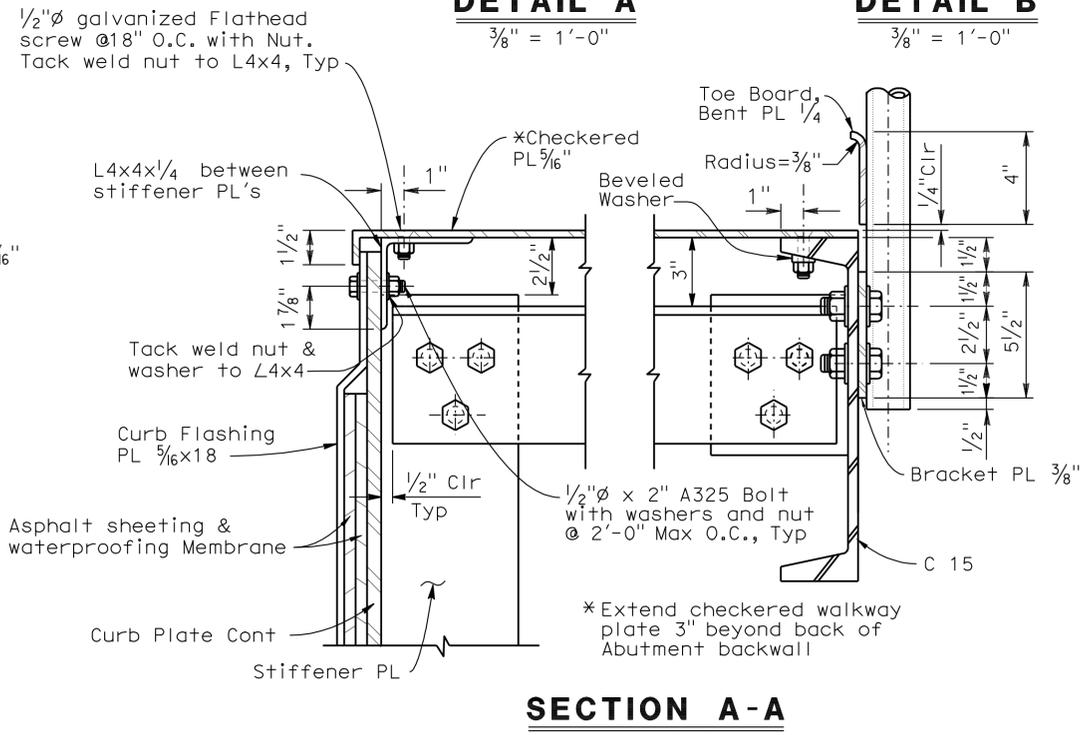
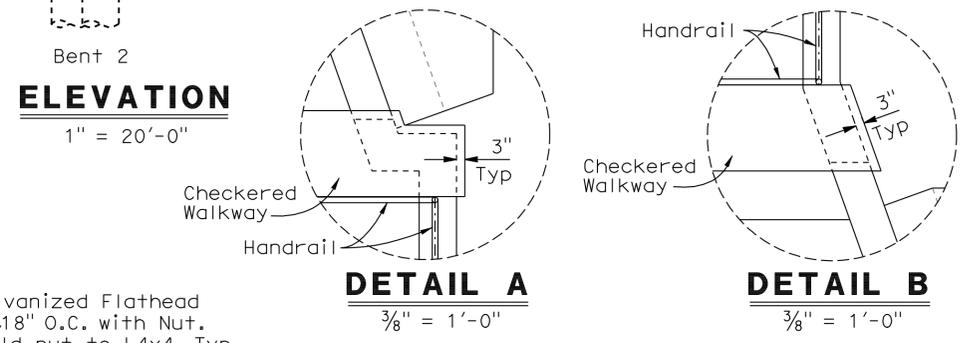
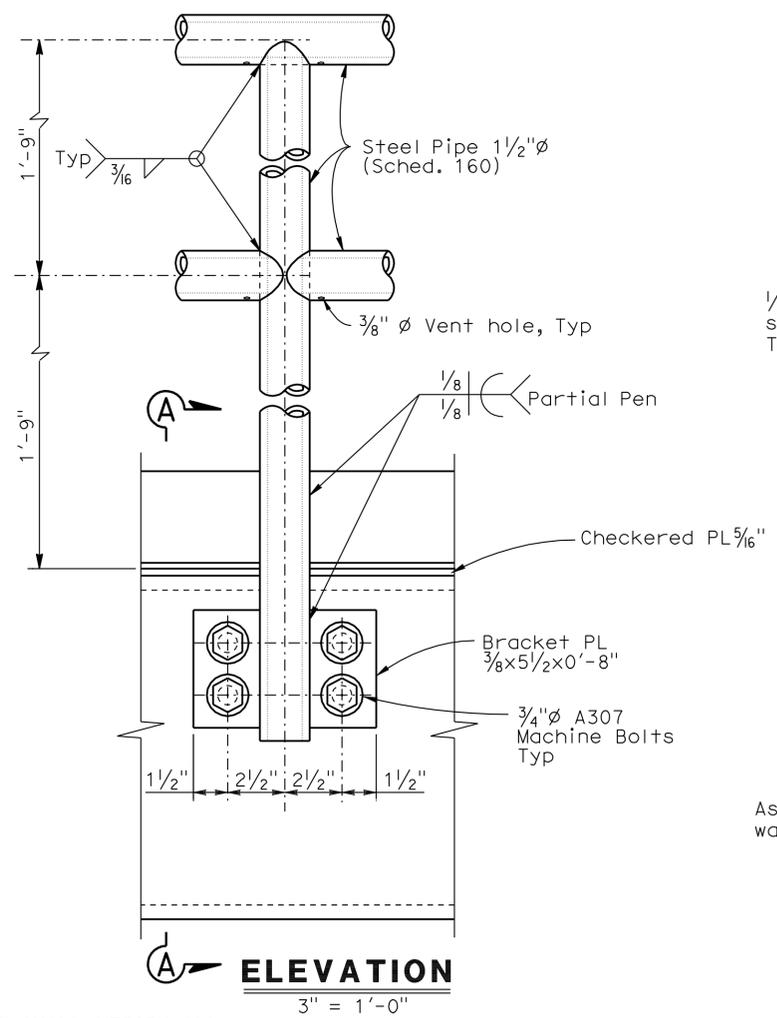
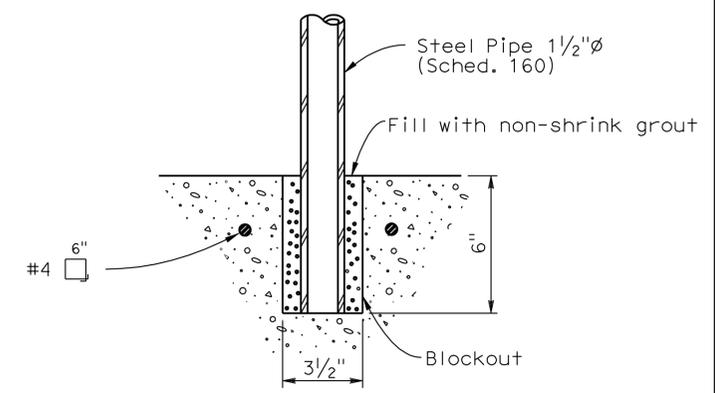
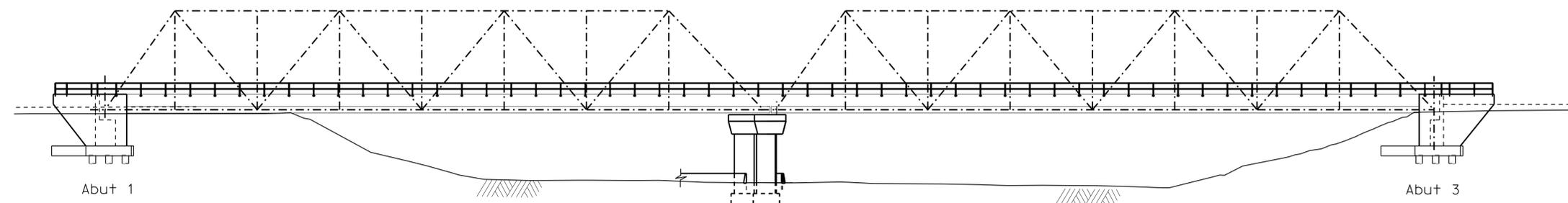
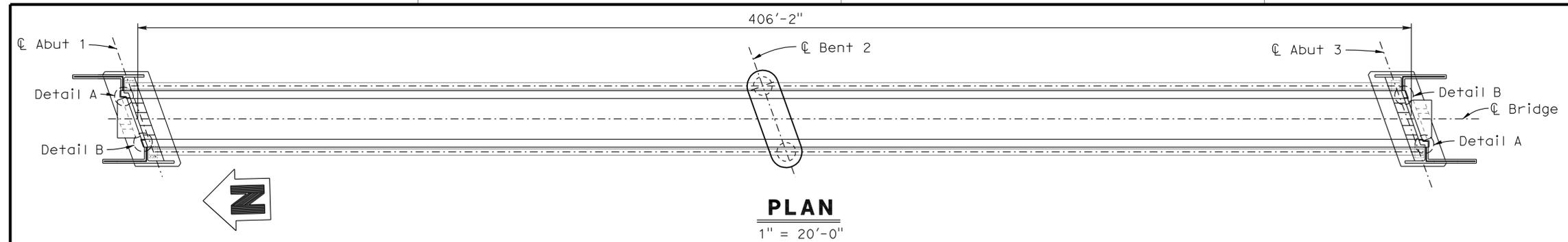
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	54-1304
R.R. MILE POST	5.90
LINE SEG. 7602	

HIGHGROVE UNDERPASS #1
WATERPROOFING 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	1628	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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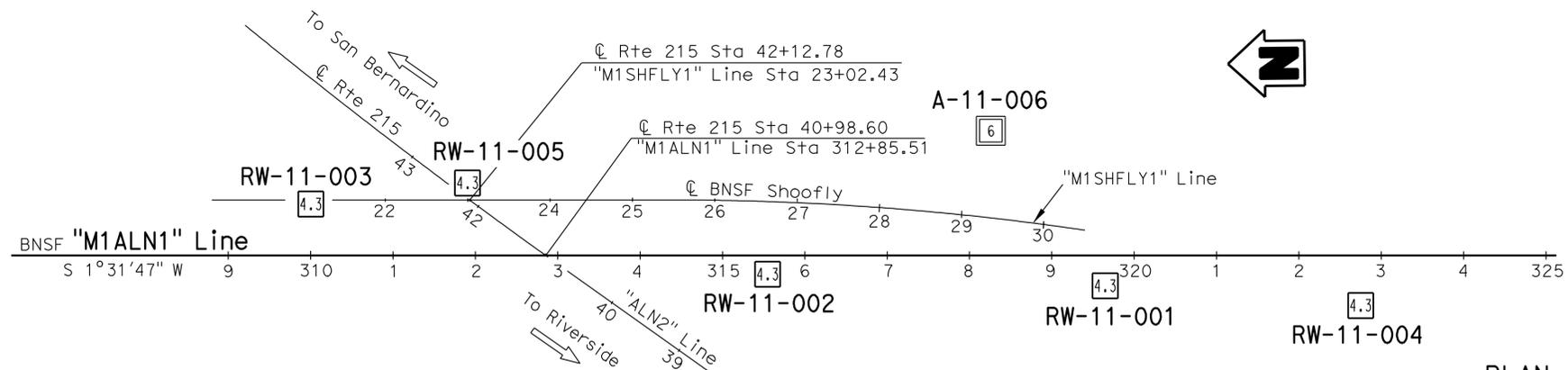
- HANDRAIL NOTES:**
1. Posts shall be perpendicular to the grade of the walkway.
 2. Maximum post spacing shall be 7'-6".
 3. Structural steel pipe shall be ASTM A-53 Grade B, or A-501. Structural steel plate shall be ASTM A-36, or equal.
 4. All structural steel pipe and plate for handrail, walkway plate brackets, A-307 bolts and washers shall be hot-dipped galvanized (per ASTM A-123) after fabrication.

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

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #1 WALKWAY AND HANDRAIL DETAILS				
DETAILS	BY Y. Tang	CHECKED B. Addiespurger			54-1304					
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			R.R. MILE POST 5.90 LINE SEG. 7602					
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-M09401	DISREGARD PRINTS BEARING EARLIER REVISION DATES				
				0	1	2	3	REVISION DATES	SHEET	OF
								7-2-11 4-06-12	35	42

BENCH MARK

PNO 630
 N 1,832,297.50
 E 6,763,657.81
 1" IP W/CALTRANS RP PLUG
 Elev 938.24'
 Vertical Datum: NAVD88



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	1629	1743

1-18-12
 PROFESSIONAL GEOLOGIST
 HECTOR VALENCIA
 No. 7776
 Exp. 2-28-14
 PLANS APPROVAL DATE

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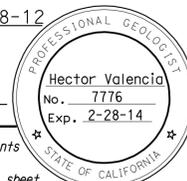
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).



6-29-11
 Terminated at Elev 809.2'
 Eri = 74%

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10		BRIDGE NO. 54-1304 POST MILE 0.60		HIGHGROVE UNDERPASS #1 LOG OF TEST BORINGS 1 OF 7	
FUNCTIONAL SUPERVISOR NAME: M. DeSalvatore		DRAWN BY: W. Tang 09/11 CHECKED BY: S. Logeswaran		FIELD INVESTIGATION BY: H. Valencia		UNIT: 3643 PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		REVISION DATES		SHEET 36 OF 42		DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 07:06 USERNAME => s124496	

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

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	1630	1743
			1-18-12		
			PROFESSIONAL GEOLOGIST		
			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>					

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

83.0' Lt Sta 311+92.0
"M1ALN1" Line

RW-11-005

920	918.6'	4.3' ASPHALT CONCRETE (3").	920
910	16 1.4	SILTY SAND with GRAVEL (SM); gray; dry; fine and medium SAND; some fines; little fine GRAVEL; (FILL). CLAYEY SAND (SC); medium dense; brown; moist; fine and medium SAND; some fines; few fine GRAVEL.	910
900	57 1.4	CLAYEY SAND with GRAVEL (SC) thickly bedded with scattered moderately thick interbeds of elastic SILT with SAND (MH). SAND (SC); very dense; brown; moist; from fine to coarse SAND; some fines; little fine and coarse GRAVEL. SILT (MH); hard; brown; moist; little fine SAND; PP=4.0 tsf.	900
890	59 1.4	SILT with SAND (ML); very dense; brown; moist; little fine SAND.	890
880	57 1.4	SILTY SAND (SM); very dense; brown moist; mostly fine and medium SAND; some fines; few fine and coarse GRAVEL; few coarse SAND.	880
870	79 1.4	SILTY SAND (SM); very dense; light yellowish brown; moist; from fine to coarse SAND; little fines; few fine and coarse GRAVEL.	870
860	64 1.4	Poorly-graded SAND (SP); very dense; light yellowish brown; moist; mostly fine SAND; few fine and coarse GRAVEL; trace fines; trace medium and coarse SAND.	860
850	60 1.4	Fat CLAY (CH); hard; light olive brown; moist; few fine SAND; PP=2.5 to 3.5 tsf.	850
840	48 1.4	Poorly-graded SAND (SP) thickly bedded with scattered thin interbeds of Lean CLAY (CL). SAND (SP); very dense; light olive brown; moist; fine SAND; trace fines; few fine gravel. CLAY (CL); from very stiff to hard; light olive brown; moist; PP=3.0 to 4.0 tsf.	840
830	91 1.4	Well-graded SAND with GRAVEL (SW); very dense; light olive brown; moist; little fine and coarse GRAVEL; trace fines.	830
820	49 1.4	SILTY SAND (SM); very dense; light olive brown; moist; fine SAND; some fines.	820
810	50/4 1.4	SILTY SAND with GRAVEL (SM); very dense; light olive brown; moist; from fine to coarse SAND; little fines; little fine and coarse GRAVEL.	810
800	52/6 1.4	-mostly fine and medium SAND.	800
790	68 1.4	-mostly from fine to coarse SAND.	790
780	62/6 1.4	-scattered (~10%) moderately thick zones with some fine and coarse GRAVEL.	780
770	50/3 1.4	GWS Elev 807.2' 10-13-11	770
760	50/6 1.4		760
	50/6 1.4		
	53/6 1.4		
	50/3 1.4		
	50/2 1.4		
	50/3 1.4		
	50/4 1.4		
	50/1 1.4		
	50/3 1.4		
	50/4 1.4		
	50/3 1.4		

PROFILE

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

311+50

7-14-11
Terminated at Elev 757.8'
ERi = 74%

312+50

313+50

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		HIGHGROVE UNDERPASS #1	
FUNCTIONAL SUPERVISOR		DRAWN BY: W. Tang 09/11		FIELD INVESTIGATION BY:		STRUCTURE DESIGN		54-1304		LOG OF TEST BORINGS 2 OF 7	
NAME: M. DeSalvatore		CHECKED BY: S. Logeswaran		H. Valencia		DESIGN BRANCH 10		POST MILE			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		UNIT: 3643		0.60		REVISION DATES	
						PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401		SHEET OF	
						DISREGARD PRINTS BEARING EARLIER REVISION DATES		01-09-12 01-13-12		37 42	

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 07:06

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

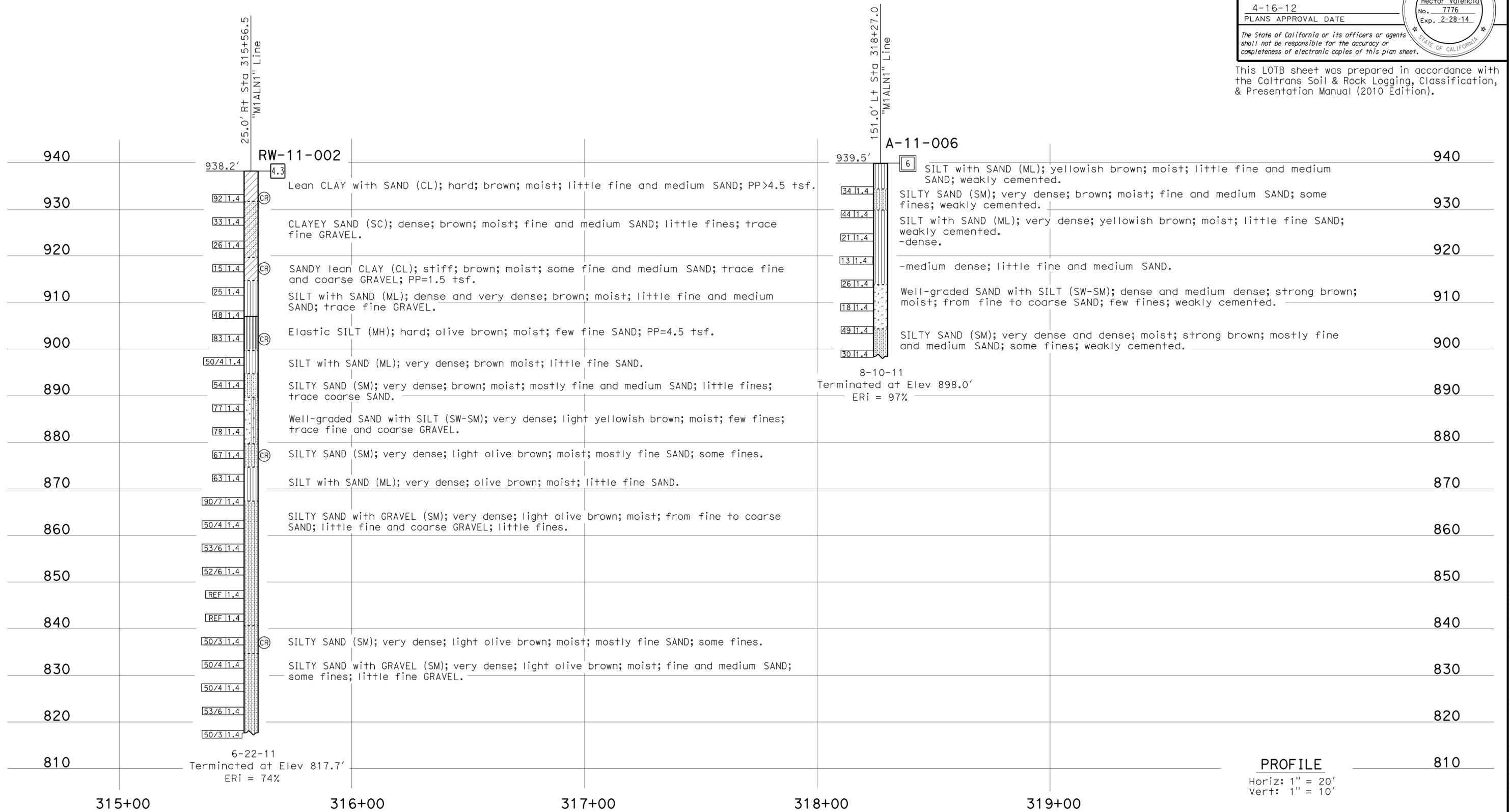
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1631	1743

1-18-12
PROFESSIONAL GEOLOGIST
Hector Valencia
No. 7776
Exp. 2-28-14
STATE OF CALIFORNIA

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).



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

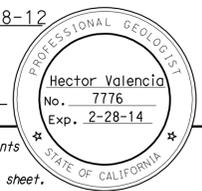
ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		HIGHGROVE UNDERPASS #1	
FUNCTIONAL SUPERVISOR		DRAWN BY: W. Tang 09/11		FIELD INVESTIGATION BY:		STRUCTURE DESIGN		54-1304		LOG OF TEST BORINGS 3 OF 7	
NAME: M. DeSalvatore		CHECKED BY: S. Logeswaran		H. Valencia / M. Wilson		DESIGN BRANCH 10		POST MILE			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		UNIT: 3643		0.60		CONTRACT NO.: 08-0M9401	
						PROJECT NUMBER & PHASE: 08000005061		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
										SHEET OF	
										38 42	

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 07:06

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	1632	1743

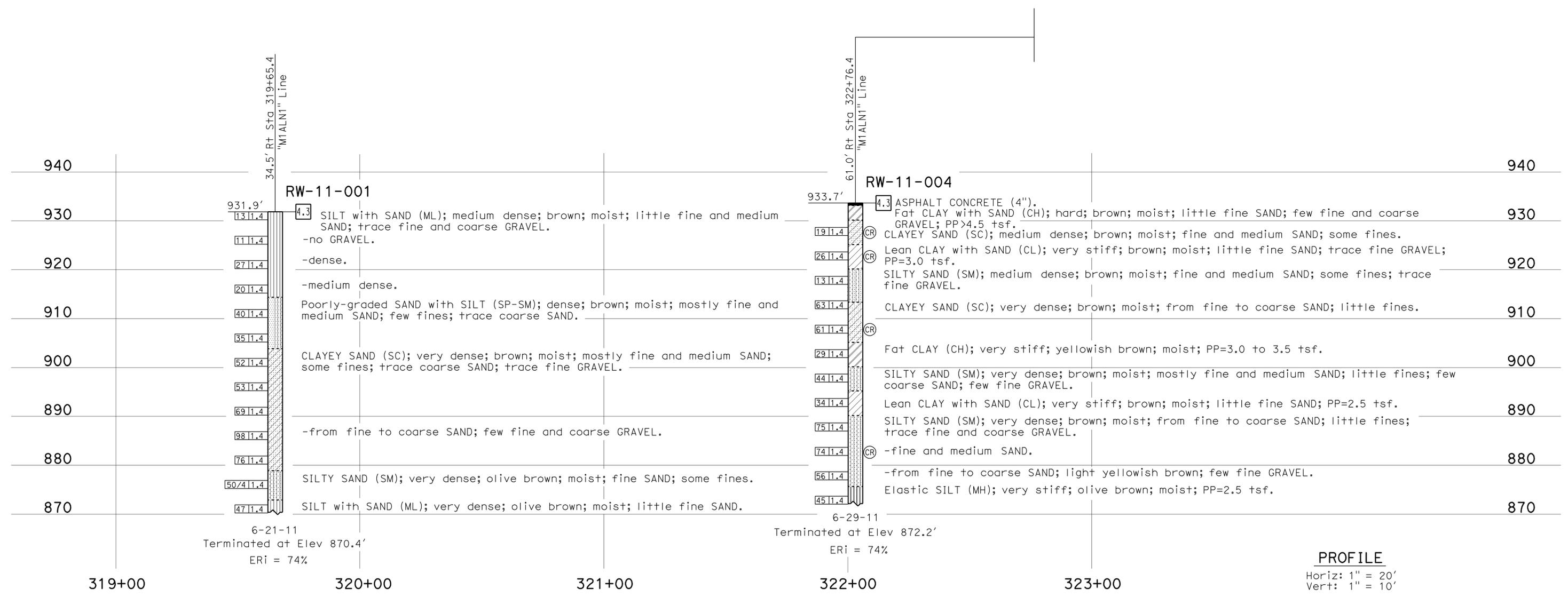
1-18-12
 PROFESSIONAL GEOLOGIST
 4-16-12
 PLANS APPROVAL DATE

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

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



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

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10		HIGHGROVE UNDERPASS #1 LOG OF TEST BORINGS 4 OF 7	
FUNCTIONAL SUPERVISOR NAME: M. DeSalvatore	DRAWN BY: W. Tang 09/11 CHECKED BY: S. Logeswaran	FIELD INVESTIGATION BY: H. Valencia		BRIDGE NO. 54-1304 POST MILE 0.60		UNIT: 3643 PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401	
065 CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 01-10-12 01-13-12	
				0 1 2 3		SHEET 39		OF 42	

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 07:06
 FILE => 541304z1+b39.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	1633	1743

Hector Valencia
 PROFESSIONAL GEOLOGIST
 1-18-12
 4-16-12
 PLANS APPROVAL DATE

No. 7776
 Exp. 2-28-14
 STATE OF CALIFORNIA

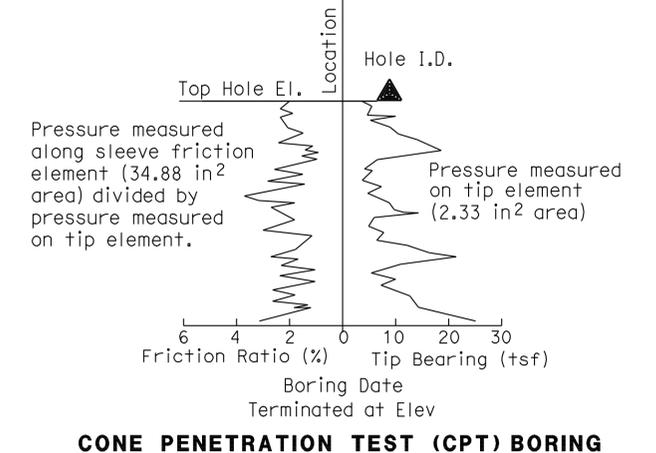
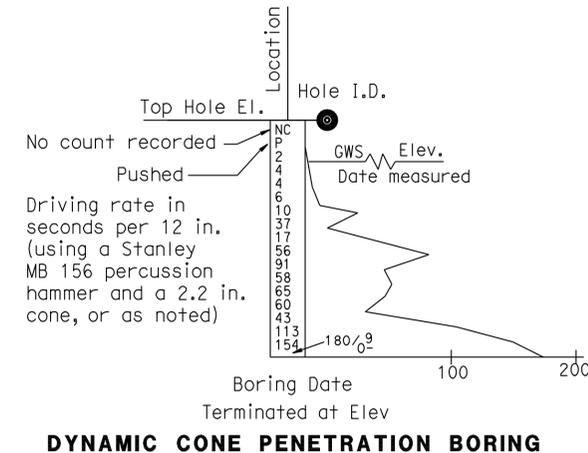
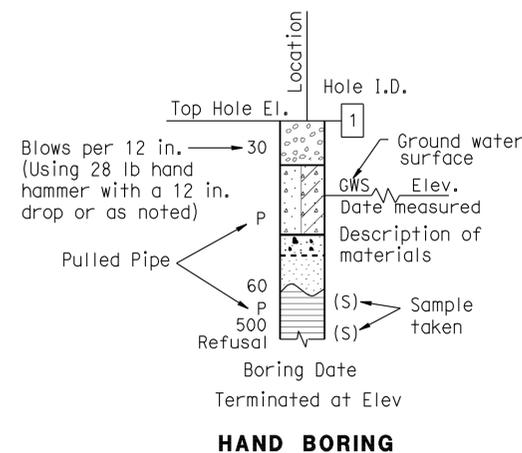
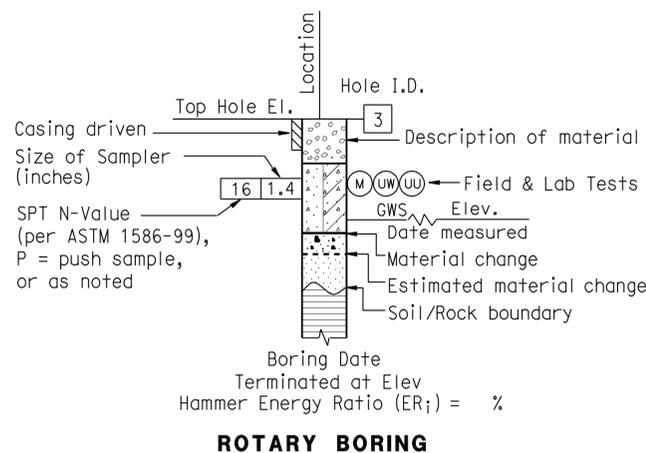
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

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	1634	1743

1-18-12
PROFESSIONAL GEOLOGIST

4-16-12
PLANS APPROVAL DATE

Hector Valencia
No. 7776
Exp. 2-28-14
PROFESSIONAL GEOLOGIST
STATE OF CALIFORNIA

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

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

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

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

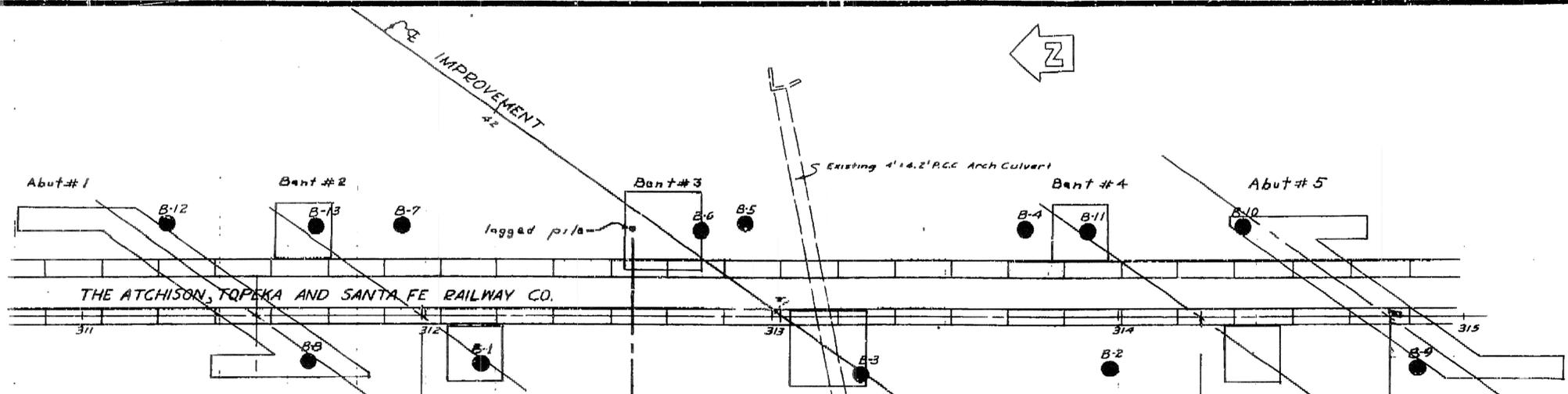
PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

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

ENGINEERING SERVICES	MATERIALS AND GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1304	HIGHGROVE UNDERPASS #1
				POST MILE 0.60	
PREPARED BY: W. Tang 09/11		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 => 541304z1+b41.dgn	REVISION DATES	SHEET 41 OF 42

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 07:06

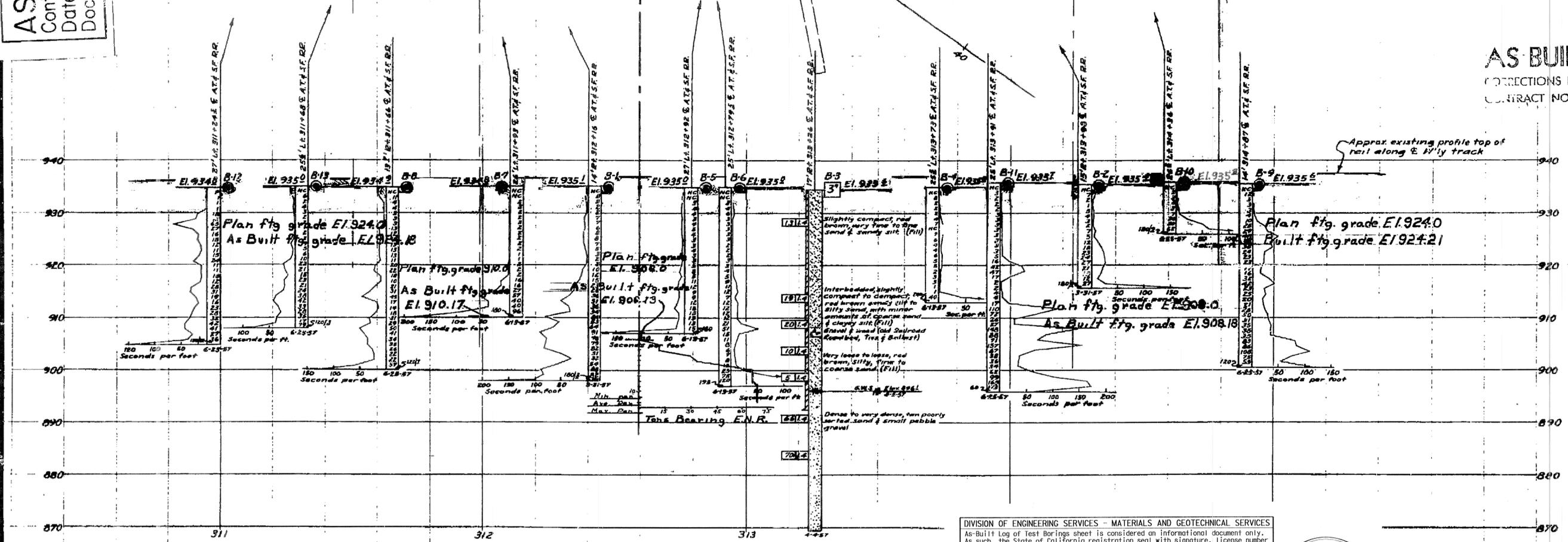
AS BUILT PLANS
 Contract No. 57-8VCE
 Date Completed _____
 Document No. 8000766



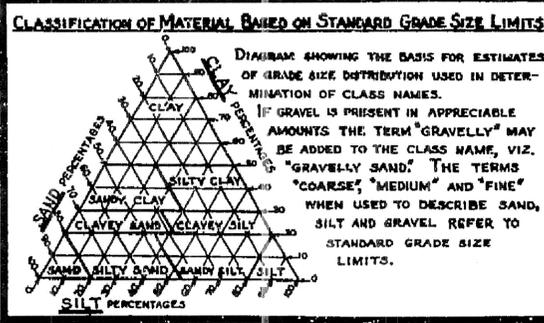
Design Pile Loading 45 Tons
 Type Pile Raymond step taper
 Diameter Tip 8" Butt 15 1/2"
 Total Number Piles 72
 Lineal ft. Piles "As Built" 889.7
 Lineal ft. Piles Called for on Plans 585
 Hammer Vulcan NO. 1
 Remarks:
 Lineal ft. of piles increased to 1170 @ 0.74

BRIDGE DEPARTMENT

AS BUILT
 CORRECTIONS BY *H.C. Moore*
 CONTRACT NO. 57-8VCE-F

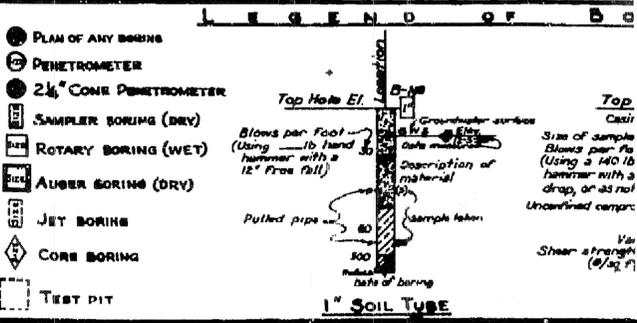


B.M. U.S.C. & S.S. 2443 1949
 Std. cross slide 0.7' from
 along the AT&SF RR.
 from Highgrove, in W. 1/4
 of 1/4 of P.C.C. culvert
 canal. Elev. 933.62.



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



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	1635	1743

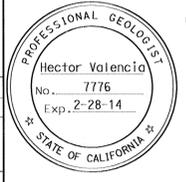
Hector Valencia 1-18-12
 PROFESSIONAL GEOLOGIST DATE

HIGHGROVE UNDERPASS #1
LOG OF TEST BORINGS 7 OF 7

UNIT: 3643	CONTRACT No. 08-0M9401	BRIDGE No. 54-1304
PROJ. No. & PHASE: 08000005061		
VERT DATUM: NGVD29	CONVERSION: NAVD88 = NGVD29 + 2.5 ft	Sheet of 42 of 42

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



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.

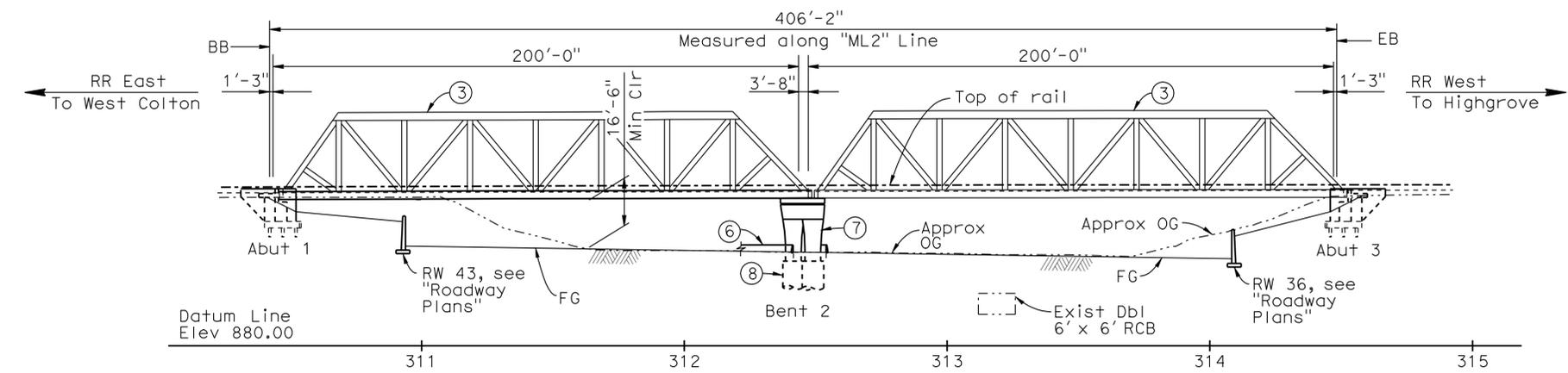
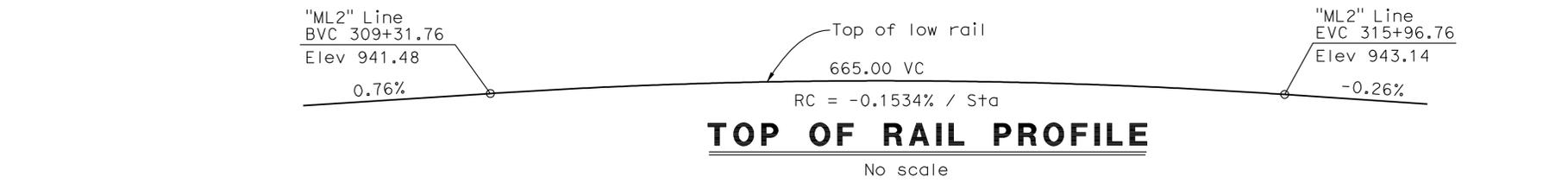
STATE OF CALIFORNIA
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF HIGHWAYS

HIGHGROVE UNDERPASS
LOG OF TEST BORINGS

HORIZ 1"=20'
 SCALE VERT 1"=10'

BRIDGE 54-518 FILE 54 DRAWING 24858-10

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	1636	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12			PLANS APPROVAL DATE		
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ELEVATION
1" = 30'

LEGEND:

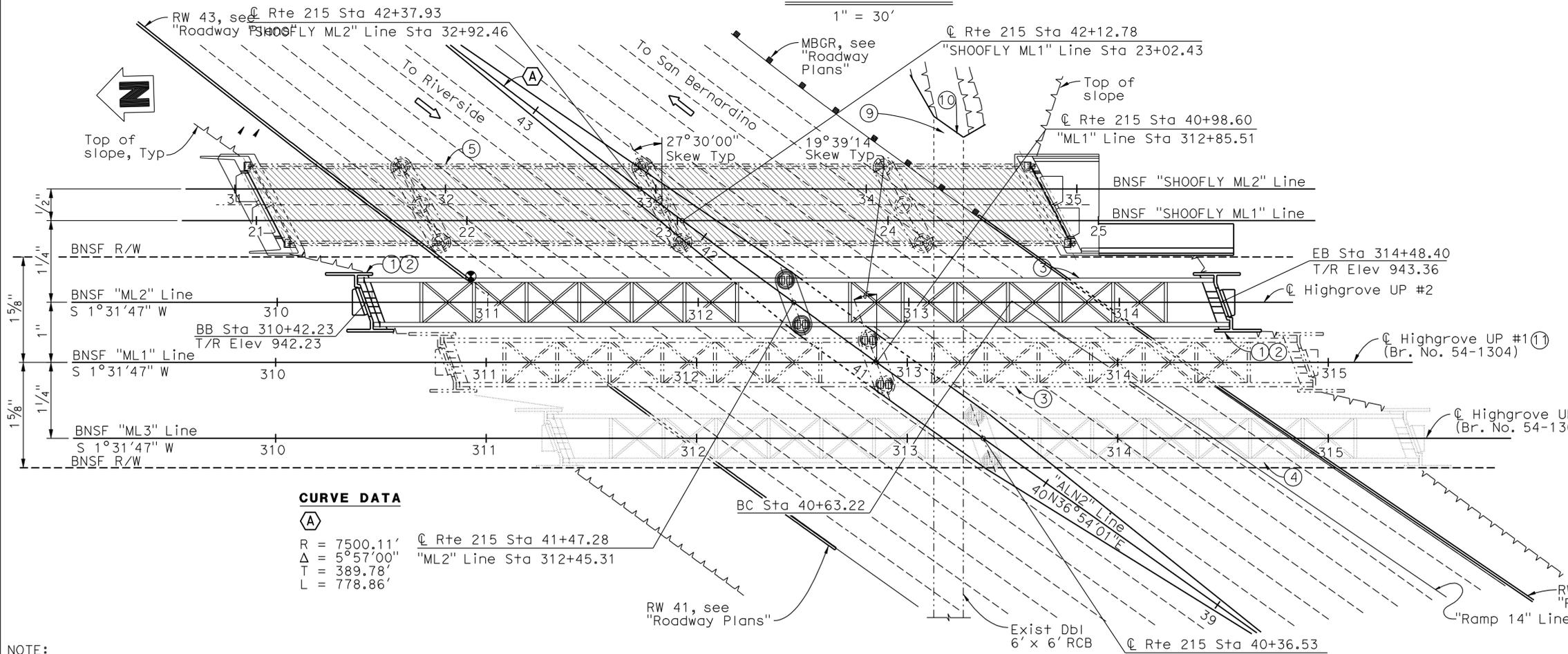
- Indicates new construction
- Indicates existing structure
- ▨ Limits of bridge removal after construction of Replacement Bridges.
- ⊗ Point of minimum vertical clearance
- ➔ Indicates Direction of Traffic

NOTES:

- ① Paint "BR. NO. 54-1305"
- ② Paint "HIGHGROVE UP #2"
- ③ Steel Through Truss, Replacement Structure
- ④ BNSF "ML3" Construction (for future Track)
- ⑤ Steel Through Girder, Highgrove UP (Shoofly)
- ⑥ Concrete Barrier Type 60E, see "Roadway Plans"
- ⑦ 6'-0" Dia Column
- ⑧ 8'-0" Dia CIDH Shaft
- ⑨ RCB Extension
- ⑩ Grand Terrace Storm Drain
- ⑪ For details of Highgrove UP #1 and Highgrove UP #3, see separate structure plans

ABBREVIATIONS:

- BNSF Burlington Northern and Santa Fe Railway (Bridge Owner)
- UP Underpass
- R/W Right of Way
- T/R Top of Rail



PLAN
1" = 30'

CURVE DATA

A	R = 7500.11'	℄ Rte 215 Sta 41+47.28
	Δ = 5°57'00"	"ML2" Line Sta 312+45.31
	T = 389.78'	
	L = 778.86'	

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

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

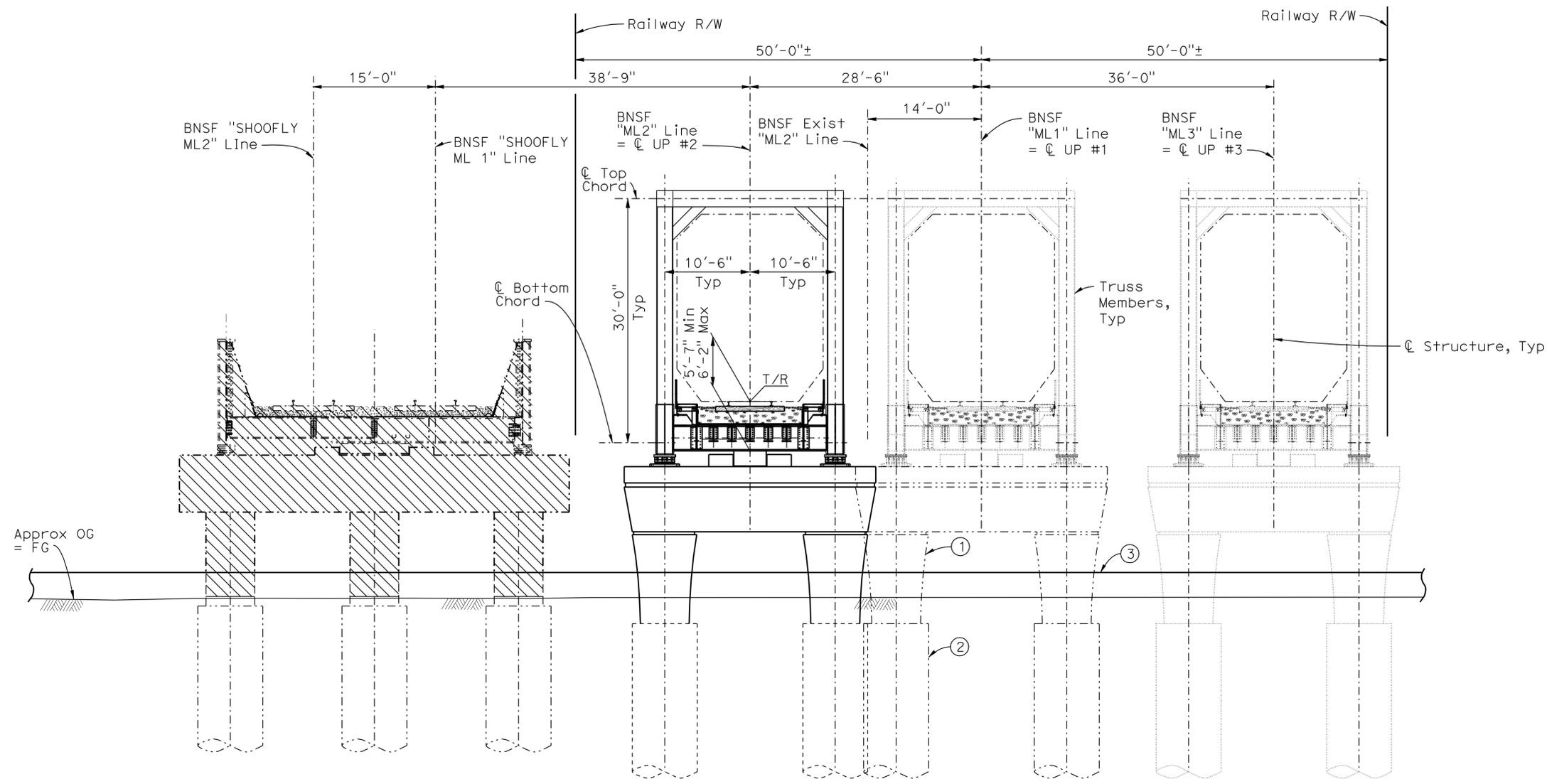
DESIGN BY: L. Wu	CHECKED B. Addlespurger	LFD = RC ASD = STEEL	LIVE LOADING: AREMA COOPER E-80 AND ALTERNATIVE LIVE LOAD	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #2 GENERAL PLAN NO. 1
						54-1305	
DETAILS BY: G. Hallstrom	CHECKED B. Addlespurger	LAYOUT BY: L. Wu	CHECKED B. Addlespurger	PROJECT NUMBER & PHASE: 08000005061		R.R. MILE POST	CONTRACT NO.: 08-0M9401
QUANTITIES BY: T. Sanderson	CHECKED A. McPhee	SPECIFICATIONS BY: J. Corrado	PLANS AND SPECS COMPARED J. Corrado	UNIT: 3589		5.89	DISREGARD PRINTS BEARING EARLIER REVISION DATES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				PROJECT NUMBER & PHASE: 08000005061		LINE SEG. 7602	REVISION DATES
STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)				CONTRACT NO.: 08-0M9401		1	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	1637	1743

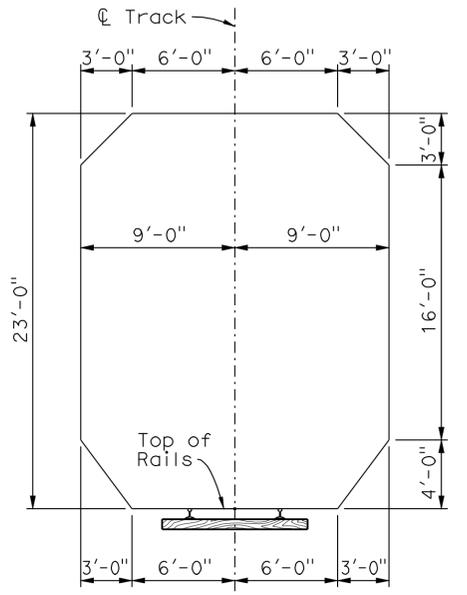
Larry Wu
REGISTERED CIVIL ENGINEER DATE 4-06-12
4-16-12
PLANS APPROVAL DATE

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

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TYPICAL SECTION
1/8" = 1'-0"



MINIMUM RAILWAY BRIDGE CLEARANCES
3/16" = 1'-0"

PILE DATA TABLE

Location	Pile Type	Design Loading (WSD) (kips)		Nominal Resistance (kips)		Cut-off Elevations (ft)	Design Tip Elevation (ft)	Specified Tip Elevation (ft)
		Compression	Tension	Compression	Tension			
Abut 1	24" CIDH	200	0	200	0	924.0	894.0 (a)	894.0
Bent 2	96" CICH	2400	0	2400	0	915.0	822.0 (a)	822.0
Abut 3	24" CIDH	200	0	200	0	924.9	887.0 (a)	887.0

NOTE: Design tip elevations are controlled by the following demands: (a) Compression

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

QUANTITIES

BRIDGE REMOVAL, LOCATION C	LUMP SUM	
STRUCTURE EXCAVATION (BRIDGE)	625	CY
STRUCTURE BACKFILL (BRIDGE)	271	CY
PERVIOUS BACKFILL MATERIAL	21	CY
24" CAST-IN-DRILLED-HOLE CONCRETE PILING	1,222	LF
96" CAST-IN-DRILLED-HOLE CONCRETE PILING	186	LF
STRUCTURAL CONCRETE, BRIDGE FOOTING	100	CY
STRUCTURAL CONCRETE, BRIDGE BEARING	288	CY
BAR REINFORCING STEEL (BRIDGE)	8	EA
WATERPROOFING AND COVER	270,738	LB
FURNISH STRUCTURAL STEEL (BRIDGE)	6,859	SQFT
ERECT STRUCTURAL STEEL (BRIDGE)	1,918,493	LB
CLEAN AND PAINT STRUCTURAL STEEL	1,918,493	LB
MISCELLANEOUS METAL (BRIDGE)	LUMP SUM	
BRIDGE DECK DRAINAGE SYSTEM	27,955	LB
PIPE HANDRAILING	2,722	LB
	812	LF

LEGEND:

- Indicates new construction
- Indicates existing structure
- ▨ Indicates bridge removal after construction of Replacement Bridges

NOTES:

- ① 6'-0" Dia Column
- ② 8'-0" Dia CIDH Shaft
- ③ Concrete Barrier Type 60E, see "Roadway Plans"

ABBREVIATIONS:

- BNSF Burlington Northern and Santa Fe Railway (Bridge Owner)
- UP Underpass
- R/W Right of Way
- T/R Top of Rail

DESIGN	BY L. Wu	CHECKED B. Addlespurger	LFD = RC ASD = STEEL	LIVE LOADING: AREMA COOPER E-80 AND ALTERNATIVE LIVE LOAD
DETAILS	BY G. Hallstrom/Y. Tang	CHECKED B. Addlespurger	LAYOUT	BY L. Wu
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee	SPECIFICATIONS	BY J. Corrado

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
BRIDGE NO. 54-1305
R.R. MILE POST 5.89
LINE SEG. 7602

HIGHGROVE UNDERPASS #2
GENERAL PLAN NO. 2

INDEX TO PLANS

Sheet No.	Title
1.	GENERAL PLAN NO. 1
2.	GENERAL PLAN NO. 2
3.	INDEX TO PLANS
4.	FOUNDATION PLAN NO. 1
5.	FOUNDATION PLAN NO. 2
6.	ABUTMENT LAYOUT
7.	ABUTMENT DETAILS NO. 1
8.	ABUTMENT DETAILS NO. 2
9.	BENT LAYOUT
10.	BENT DETAILS NO. 1
11.	BENT DETAILS NO. 2
12.	SHEAR KEY BEAM LAYOUT
13.	SHEAR KEY BEAM DETAILS
14.	SCHEMATIC LAYOUT / STRESS SHEET
15.	TRUSS DETAILS NO. 1
16.	TRUSS DETAILS NO. 2
17.	TRUSS DETAILS NO. 3
18.	TRUSS DETAILS NO. 4
19.	TRUSS DETAILS NO. 5
20.	TRUSS DETAILS NO. 6
21.	TRUSS DETAILS NO. 7
22.	TRUSS DETAILS NO. 8
23.	TOP LATERAL BRACING NO. 1
24.	TOP LATERAL BRACING NO. 2
25.	BOTTOM LATERAL BRACING NO. 1
26.	BOTTOM LATERAL BRACING NO. 2
27.	FLOOR SYSTEM
28.	FLOOR SYSTEM DETAILS NO. 1
29.	FLOOR SYSTEM DETAILS NO. 2
30.	DECK PLATE DETAILS
31.	BEARING LAYOUT
32.	BEARING DETAILS
33.	DRAINAGE DETAILS
34.	WATERPROOF DETAILS
35.	WALKWAY AND HANDRAIL DETAILS
36.	LOG OF TEST BORINGS SHEET 1 OF 7
37.	LOG OF TEST BORINGS SHEET 2 OF 7
38.	LOG OF TEST BORINGS SHEET 3 OF 7
39.	LOG OF TEST BORINGS SHEET 4 OF 7
40.	LOG OF TEST BORINGS SHEET 5 OF 7
41.	LOG OF TEST BORINGS SHEET 6 OF 7
42.	LOG OF TEST BORINGS SHEET 7 OF 7

GENERAL NOTES

- DESIGN:
- "MANUAL FOR RAILWAY ENGINEERING" AREMA 2010 EDITION, Chapter 8 & Chapter 15
 - BNSF RAILWAY-UNION PACIFIC RAILROAD, "GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS" - 2007
 - STEEL CONSTRUCTION MANUAL-AISC 13th EDITION
 - BRIDGE DESIGN SPECIFICATIONS" LFD VERSION, APRIL 2000 (1996 16th Edition AASHTO with Interims and Revisions by CALTRANS)
- SEISMIC DESIGN:
- Caltrans Seismic Design Criteria (SDC) Version 1.6, November, 2010
 "MANUAL FOR RAILWAY ENGINEERING" AREMA 2010 EDITION, Chapter 9
- LIVE LOADING:
- COOPER E-80 with Diesel Impact and Alternate Live Load
- SEISMIC LOADING:
- AREMA Peak Rock Acceleration (PRA): Level 1 PRA= 0.33g
 Level 2 PRA=0.58g, Level 3 PRA= 0.91g

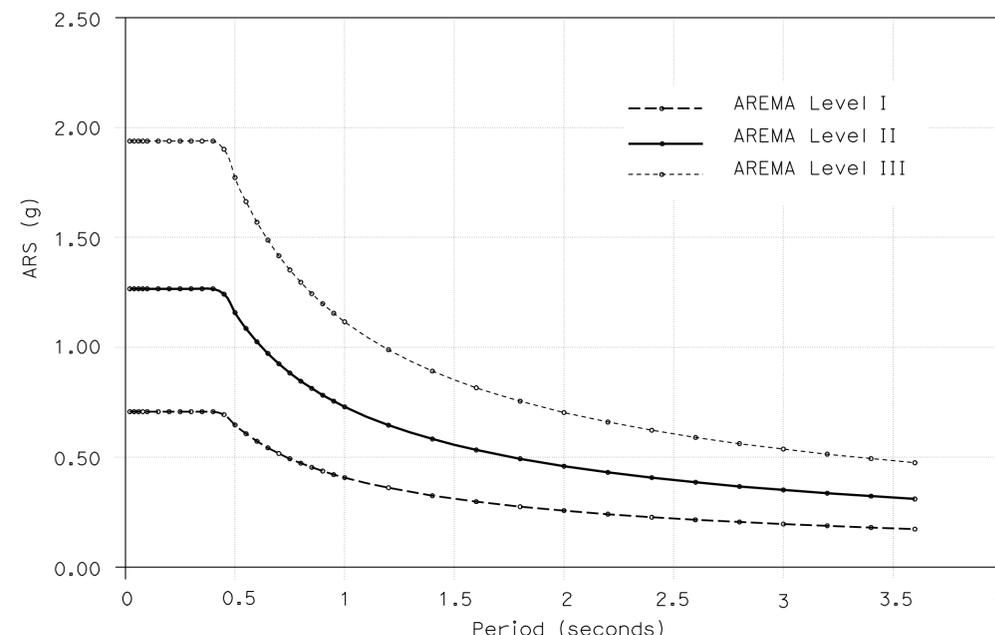
NOTE:
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1638	1743

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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REINFORCED CONCRETE:

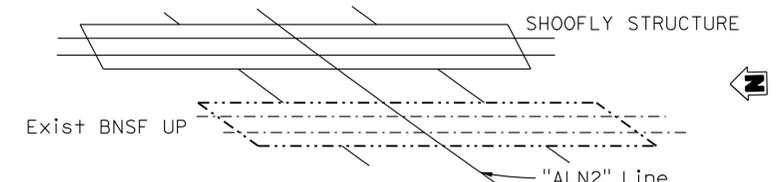
Load Factor Design
 $f_c = 4,500$ psi
 $f_y = 60,000$ psi
 $n = 8$

STRUCTURAL STEEL:

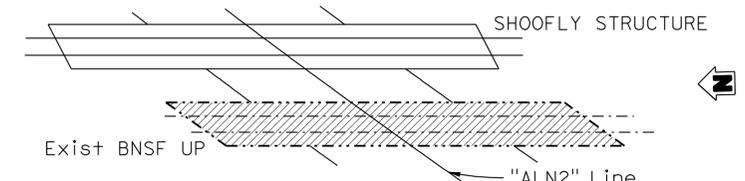
Allowable Stress Design
 1. For ASTM Designation of steel members, see Table below:

Members	Material
All Truss Members / Connection	ASTM A709 Grade 50W (50WF for FCM)
Floor Beam / Connection	ASTM A709 Grade 50W (50WF for FCM)
Stringer / Bracing Assy	ASTM A709 Grade 50W (50WF for FCM)
Deck Plate	ASTM A709 Grade 36 (Painted)
Walkway Checkered Plate	ASTM A709 Grade 36 (Galvanized)
Walkway Support Components	ASTM A709 Grade 36 (Painted)
Bearing Anchor Rod	ASTM F1554 Grade 105
Bearing Pintles	ASTM A354 BD
Bearing Rocker Plate/Base Plate	ASTM A709 Grade HPS 70W
Ladder Assy & Handrail Post	ASTM A709 Grade 36 (Galvanized)

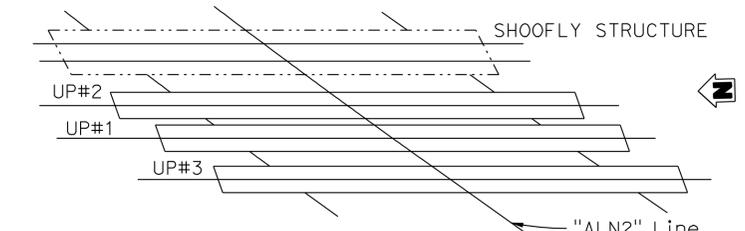
- Unless noted otherwise, HS bolts, including nuts and washers shall be 1" \emptyset ASTM A325X Type 3 Bolts with bolt heads toward the outside or the underside of the bridge.
- All bolted parts shall be prepared for Class A slip critical contact surfaces according to AREMA.
- Electrodes shall be E70XX unless noted otherwise.



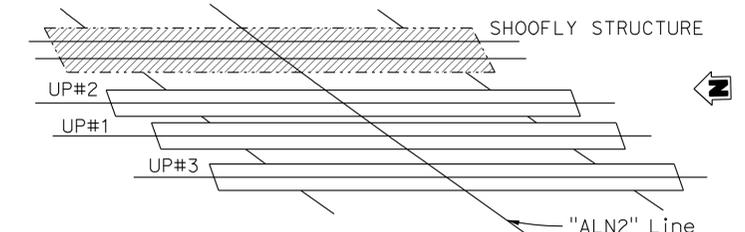
STAGE 1 - CONSTRUCT SHOOFLY STRUCTURE
 No Scale



STAGE 2 - REMOVE EXISTING UNDERPASS
 No Scale



STAGE 3 - CONSTRUCT UP#1, #2, #3
 No Scale

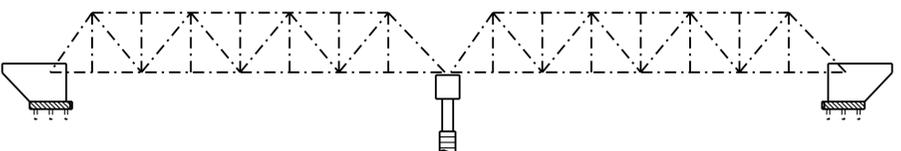
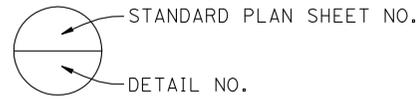


STAGE 4 - REMOVE SHOOFLY
 No Scale

CONSTRUCTION STAGES

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)
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL-BRIDGE SURCHARGE AND WALL
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL-BRIDGE
B0-3	BRIDGE DETAILS
B0-13	BRIDGE DETAILS
B2-3	16" AND 24" CAST-IN-DRILLED-HOLE CONCRETE PILE
B7-6	DECK DRAINS TYPES D-1 AND D-2
B11-47	CABLE RAILING



- Structural Concrete, Bridge
- Structural Concrete, Bridge Footing ($f_c=4,000$ psi)
- CIDH Pile ($f_c=4,000$ psi)

CONCRETE STRENGTH AND TYPE LIMITS

No Scale

DESIGN	BY	L. Wu	CHECKED	B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1305	HIGHGROVE UNDERPASS #2 INDEX TO PLANS	
	DETAILS	BY	Y. Tang/G. Hallstrom	CHECKED			B. Addiespurger	R.R. MILE POST		5.89
	QUANTITIES	BY	T. Sanderson	CHECKED			A. McPhee	LINE SEG. 7602		

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
2-08-11	3	42

FILE => 541305a1tp03.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1639	1743

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

4-16-12
 PLANS APPROVAL DATE

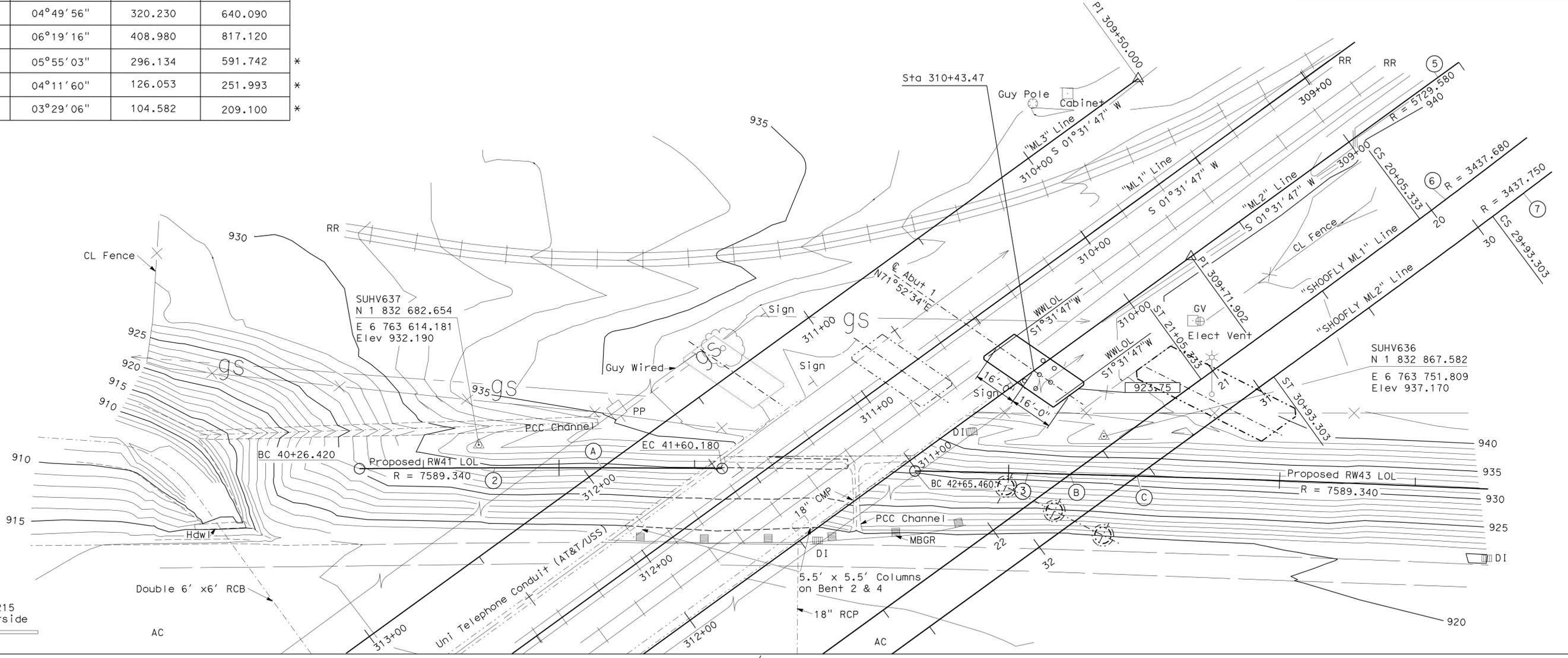
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Bridge Location
Paving Notch are buried.

No.	R	Δ	T	L
①	7500.110	05°56'60"	389.780	778.860
②	7589.340	01°00'35"	66.880	133.760
③	7589.340	04°49'56"	320.230	640.090
④	7406.420	06°19'16"	408.980	817.120
⑤	5729.580	05°55'03"	296.134	591.742 *
⑥	3437.680	04°11'60"	126.053	251.993 *
⑦	3437.750	03°29'06"	104.582	209.100 *

* Part of Spiral

- Ⓐ 311+94.210 "ML3" Line =
41+15.780 Proposed RW41 LOL
- Ⓑ 21+64.880 "SHOOFLY ML1" Line =
43+22.740 Proposed RW43 LOL
- Ⓒ 31+55.510 "SHOOFLY ML2" Line =
43+47.41 Proposed RW43 LOL



SURVEY CONTROL
 SUHV637
 PD: 1" IP/ Caltrans Plug
 91.110 Lt. @ Rte 215
 Sta 41+06.400
 N 1 832 682.654
 E 6 763 614.181
 Elev 932.190
 SUHV636
 PD: 1" IP/ Caltrans Plug
 96.940 Lt. @ Rte 215
 Sta 43+34.000
 N 1 832 867.582
 E 6 763 751.809
 Elev 937.170

- LEGEND:**
- TS: Point of change from tangent to spiral
 - SC: Point of change from spiral to circle
 - CS: Point of change from circle to spiral
 - ST: Point of change from TS to any point on the spiral
 - XXX.XX Indicates bottom of footing elevation

NOTE:

- Underground utilities as shown are approximate. See District Utility Plans for details.
- For abbreviation of Spiral Notation, see LEGEND.

PRELIMINARY INVESTIGATION SECTION				DESIGN BY L. Wu	CHECKED B. Addlespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 FOUNDATION PLAN NO. 1	
SCALE 1"=20'	VERT. DATUM NAVD83	PHOTOGRAMMETRY AS OF: X	DETAILS BY G. Hallstrom	CHECKED B. Addlespurger	R.R. MILE POST 5.89					
ALIGNMENT TIES Dist. Traverse Sheet	SURVEYED BY T. Phung/ C. Stewart	CHECKED BY X	QUANTITIES BY T. Sanderson	CHECKED D. Azzam	LINE SEG. 7602					
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3647	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0m9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES: 09/16/11, 11/11/11, 03/30/12	SHEET 4 OF 42

USERNAME => s124496 DATE PLOTTED => 14-JUN-2012 TIME PLOTTED => 06:03

Bridge Location
Paving Notch are buried.

No.	R	Δ	T	L
①	7500.110	05°56'60"	389.780	778.860
②	7589.340	01°00'35"	66.880	133.760
③	7589.340	04°49'56"	320.230	640.090
④	7406.420	06°19'16"	408.980	817.120
⑧	8595.230	00°58'54"	73.629	147.255
⑨	3437.680	04°25'02"	132.579	265.026
⑩	3437.680	04°24'60"	132.562	264.993

* Part of Spiral

- Ⓓ 40+36.530 @ Rte 215 =
313+36.080 "ML3" Line
- Ⓔ 40+98.600 @ Rte 215 =
312+85.510 "ML1" Line
- Ⓕ 41+47.280 @ Rte 215 =
312+45.310 "ML2" Line
- Ⓖ 42+12.780 @ Rte 215 =
23+02.420 "SHOOFLY ML1" Line

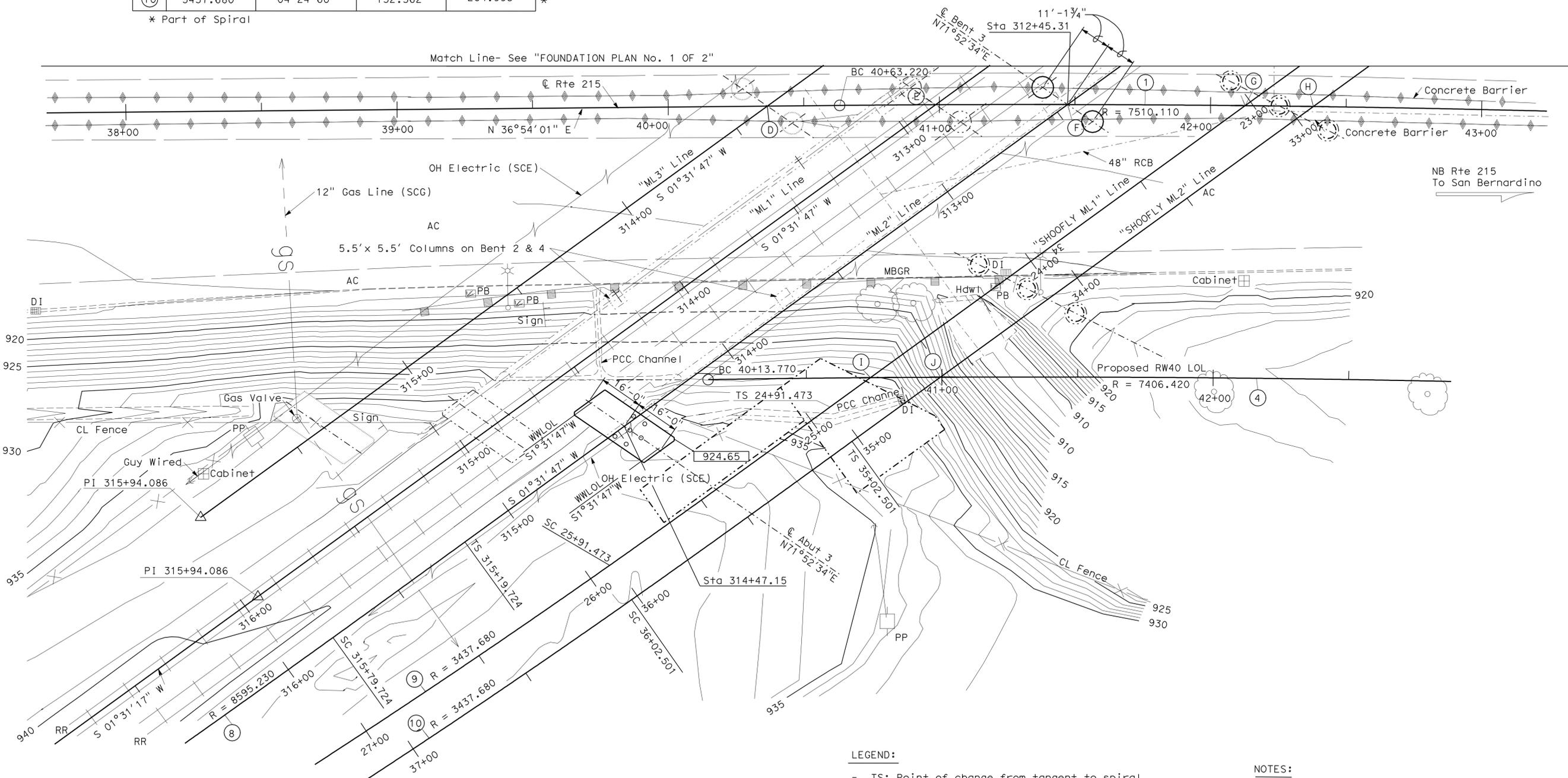
- Ⓗ 42+37.930 @ Rte 215 =
32+92.450 "SHOOFLY ML2" Line
- Ⓘ 24+73.050 "SHOOFLY ML1" Line =
40+73.640 Proposed RW40 LOL
- Ⓙ 34+62.280 "SHOOFLY ML2" Line =
40+99.440 Proposed RW40 LOL

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1640	1743

Larry Wu
 REGISTERED CIVIL ENGINEER
 No. C57035
 Exp. 6-30-13
 CIVIL

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

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- LEGEND:**
- TS: Point of change from tangent to spiral
 - SC: Point of change from spiral to circle
 - CS: Point of change from circle to spiral
 - ST: Point of change from TS to any point on the spiral
 - XXX.XX Indicates bottom of footing elevation

- NOTES:**
- Underground utilities as shown are approximate. See District Utility Plans for details.
 - For abbreviation of Spiral Notation, see LEGEND.

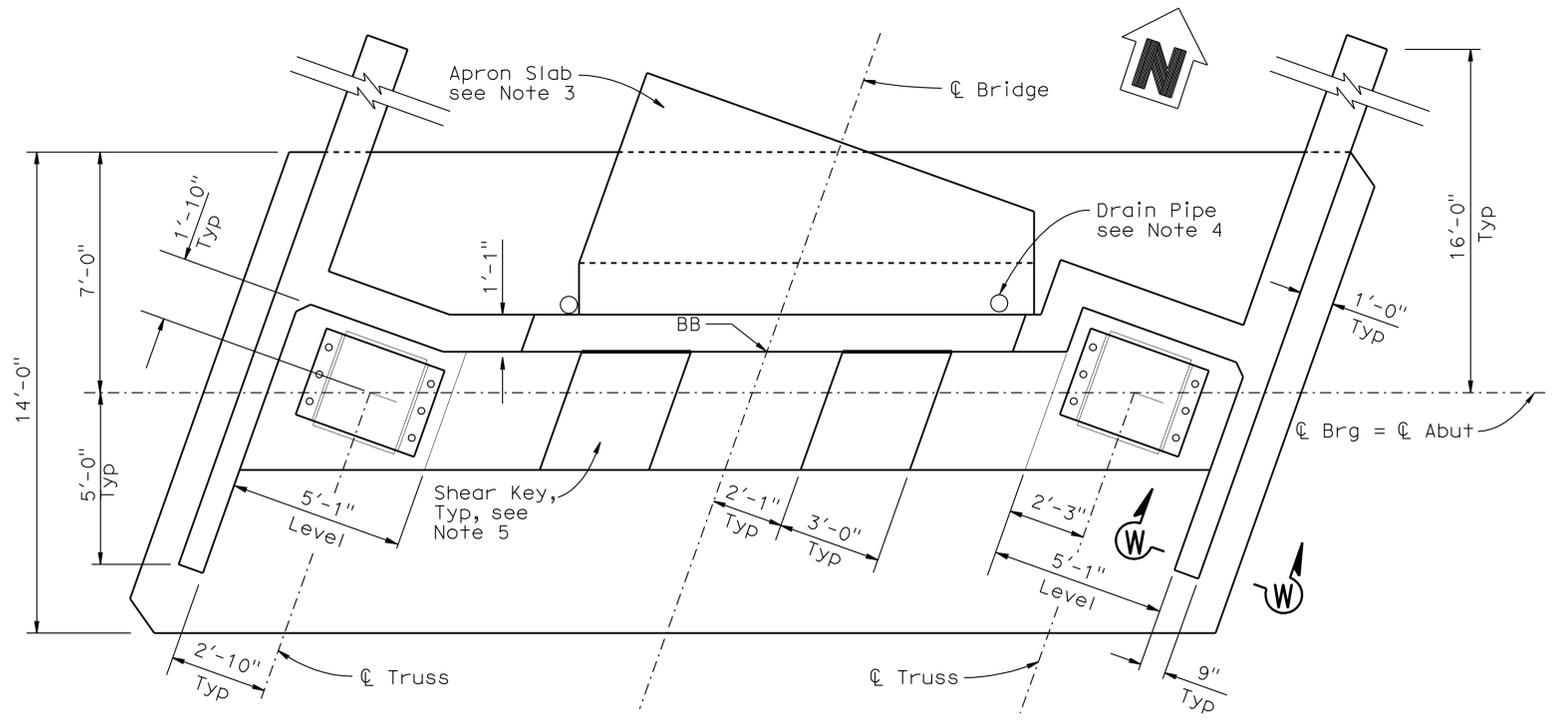
SURVEY CONTROL
See "FOUNDATION PLAN No. 1 OF 2"

PRELIMINARY INVESTIGATION SECTION				DESIGN BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 FOUNDATION PLAN NO. 2
SCALE 1"=20'	VERT. DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	DETAILS BY G. Hallstrom	CHECKED B. Addiespurger	R.R. MILE POST 5.89				
ALIGNMENT TIES Dist. Traverse Sheet	SURVEYED BY T. Phung / C. Stewart	CHECKED BY X	QUANTITIES BY T. Sanderson	CHECKED D. Azzam	LINE SEG. 7602				

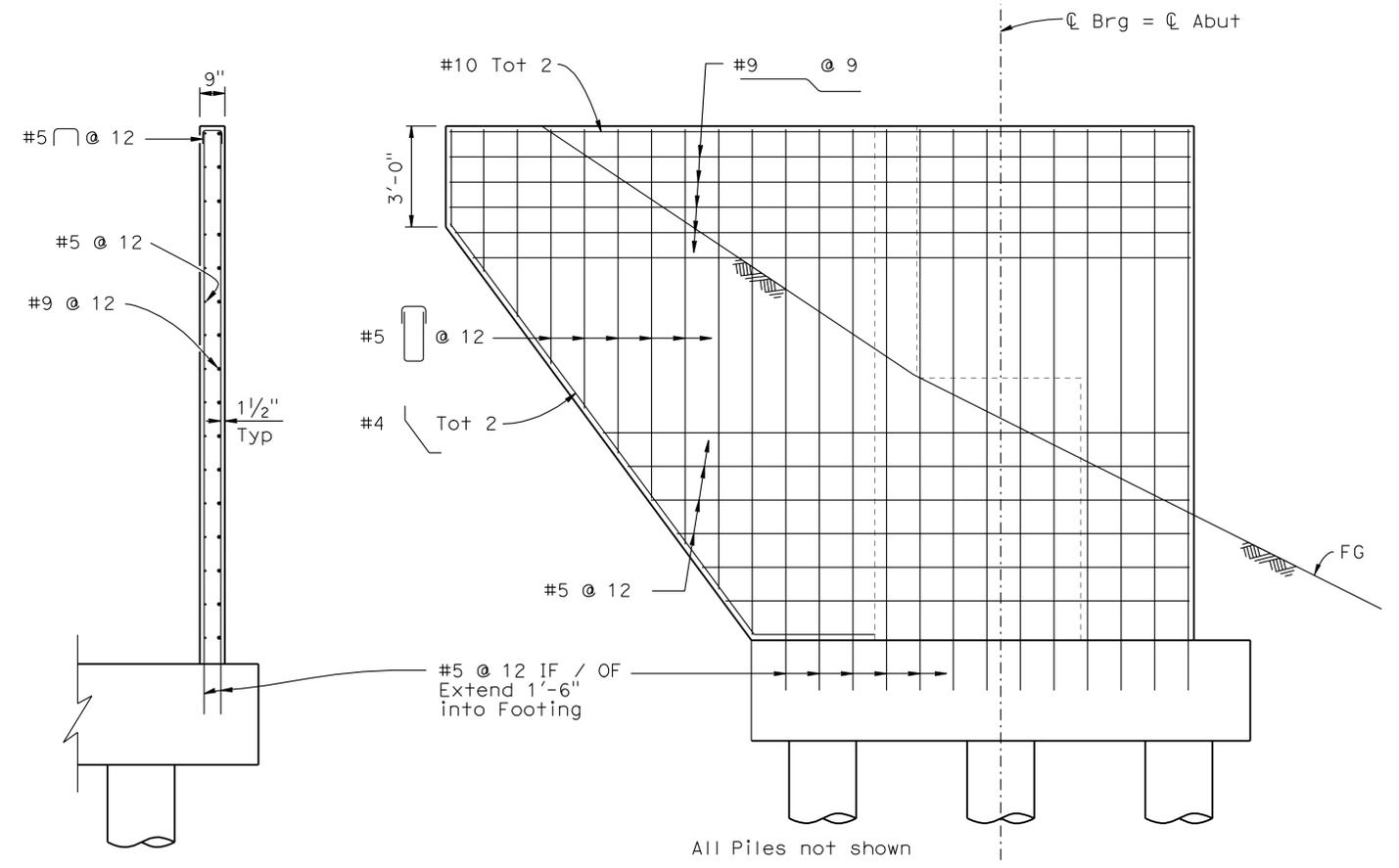
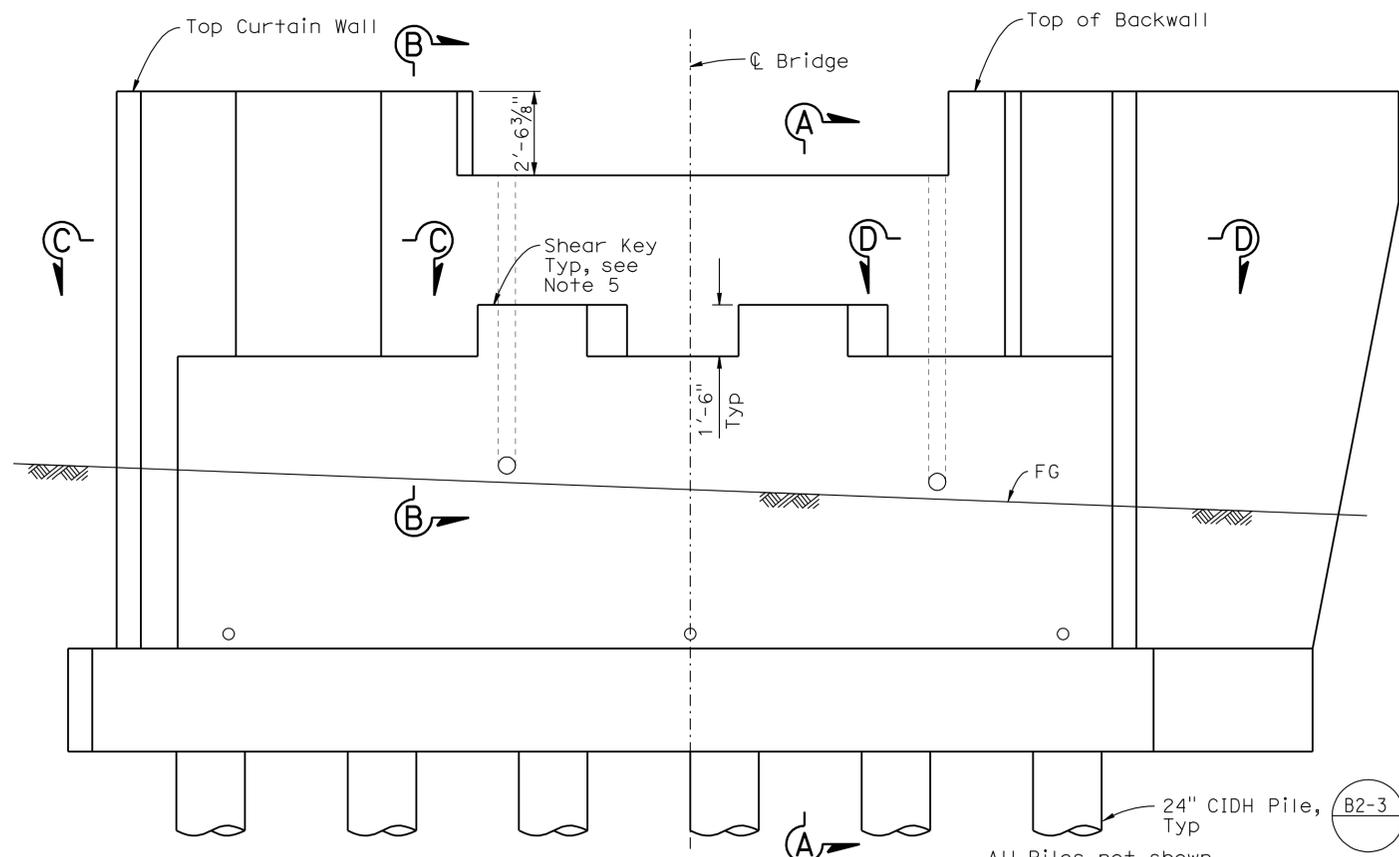
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
 UNIT: 3647 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401
 DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
03/30/12	5	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	1641	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>					



- NOTES:
1. For Section A-A, Section B-B & Shear Key Details, see "ABUTMENT DETAILS NO. 1" sheet.
 2. For Section C-C, Section D-D, Footing and Pile Layout, see "ABUTMENT DETAILS NO. 2" sheet.
 3. For Apron Slab details, see "ABUTMENT DETAILS NO. 2" sheet.
 4. For Drain Pipe details, see "DRAINAGE DETAILS" sheet.
 5. For Shear Key details, see "ABUTMENT DETAILS NO. 1" sheet.
 6. Abutment 1 shown, Abutment 3 reverse identical.

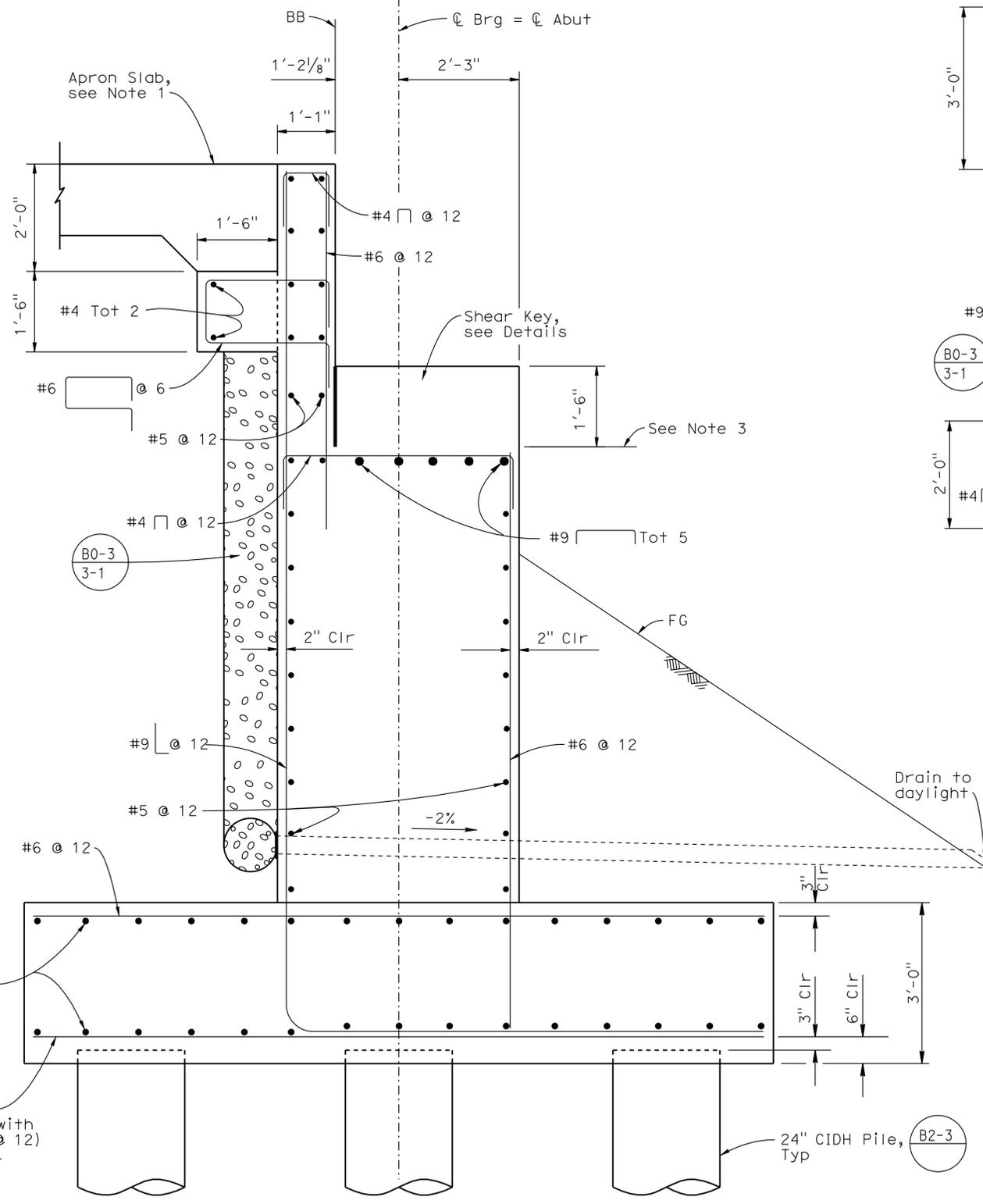


NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

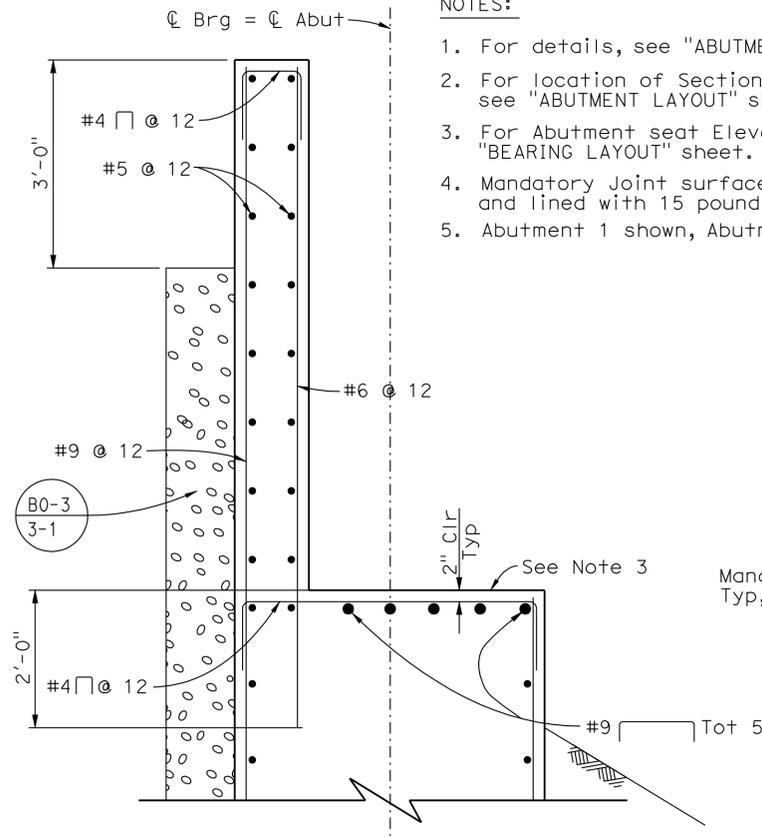
DESIGN BY L. Wu CHECKED B. Addiespurger DETAILS BY Y. Tang CHECKED B. Addiespurger QUANTITIES BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305 R.R. MILE POST 5.89 LINE SEG. 7602	HIGHGROVE UNDERPASS #2 ABUTMENT LAYOUT	REVISION DATES 8-08-11 5-08-12 5-14-12 SHEET 6 OF 42
	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	DATE PLOTTED => 14-JUN-2012 TIME PLOTTED => 06:03 USERNAME => s124496
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)				

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	1642	1743
REGISTERED CIVIL ENGINEER			DATE	LARRY WU	
4-16-12			PLANS APPROVAL DATE	4-06-12	
No. C57035			LARRY WU		
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:
- For details, see "ABUTMENT DETAILS NO. 2" sheet.
 - For location of Section A-A & Section B-B, see "ABUTMENT LAYOUT" sheet.
 - For Abutment seat Elevation, see "BEARING LAYOUT" sheet.
 - Mandatory Joint surface to be smooth finished and lined with 15 pound construction paper.
 - Abutment 1 shown, Abutment 3 similar.

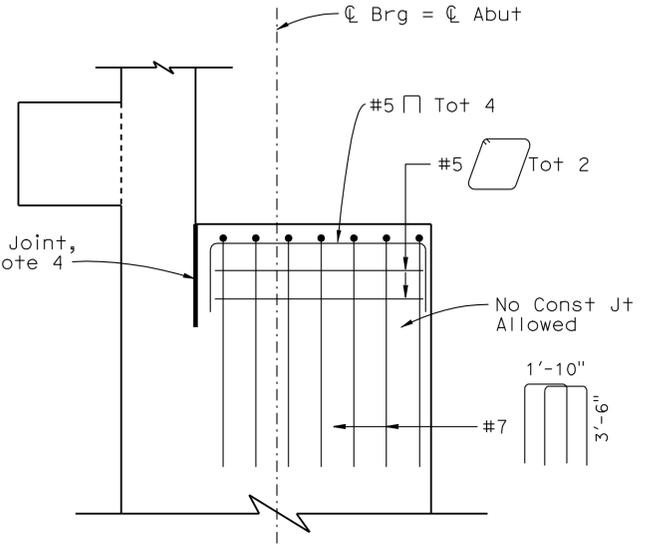


SECTION A-A
3/4" = 1'-0"



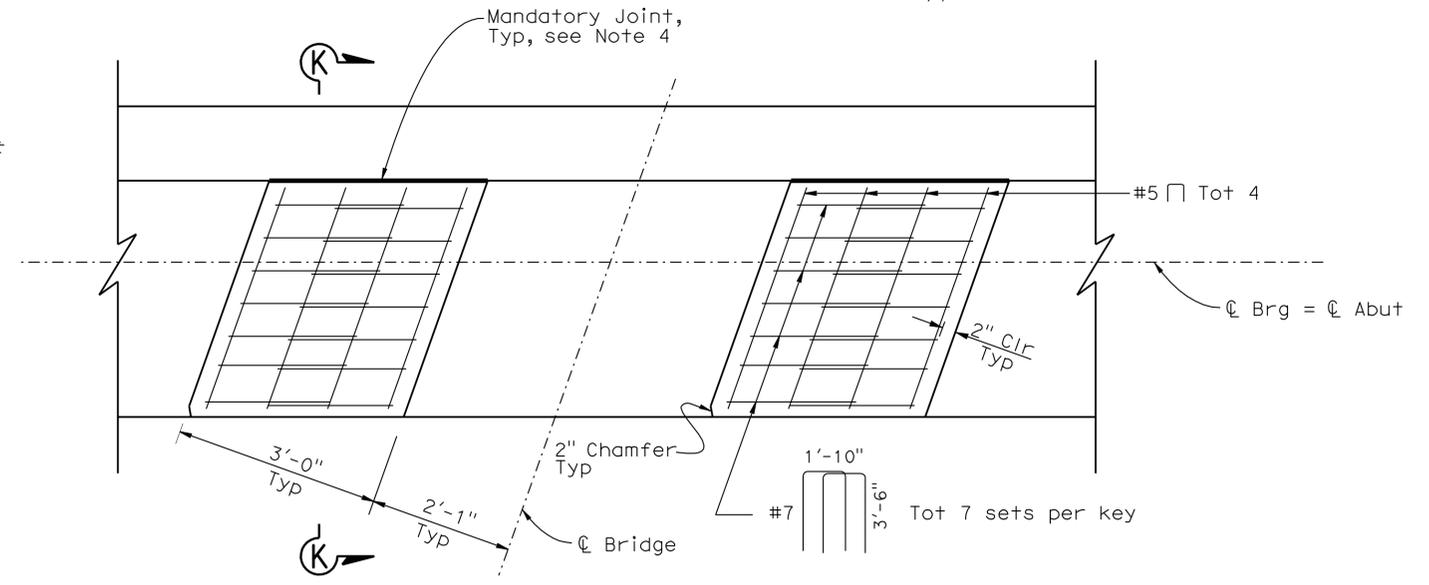
(For Details not shown, see Section A-A)

SECTION B-B
3/4" = 1'-0"



(For Details not shown, see Section A-A)

SECTION K-K
3/4" = 1'-0"

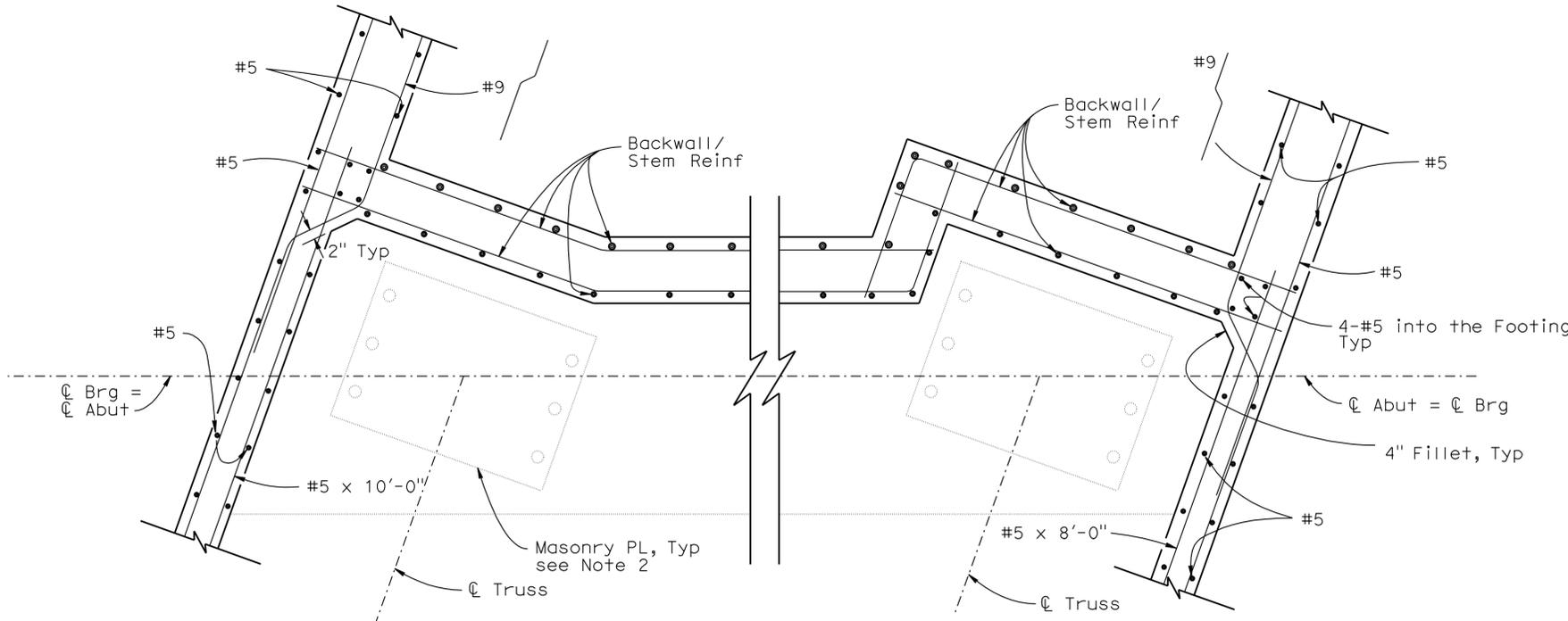


SHEAR KEY - PLAN
3/4" = 1'-0"

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

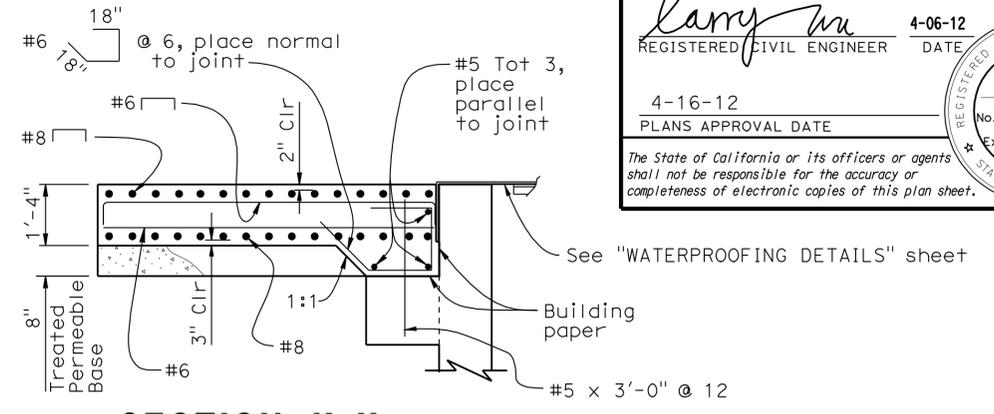
DESIGN	BY	L. Wu	CHECKED	B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1305	HIGHGROVE UNDERPASS #2 ABUTMENT DETAILS NO. 1	
	DETAILS	BY	Y. Tang	CHECKED			B. Addiespurger	R.R. MILE POST		5.89
	QUANTITIES	BY	T. Sanderson	CHECKED			A. McPhee	LINE SEG. 7602		
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 7 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	1643	1743
 REGISTERED CIVIL ENGINEER			DATE 4-06-12		
PLANS APPROVAL DATE 4-16-12					
<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>					

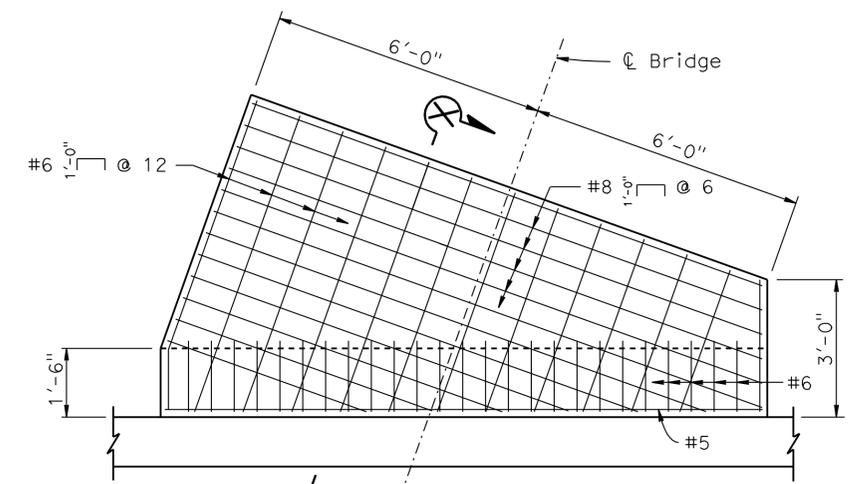


SECTION C-C
3/4"=1'-0"

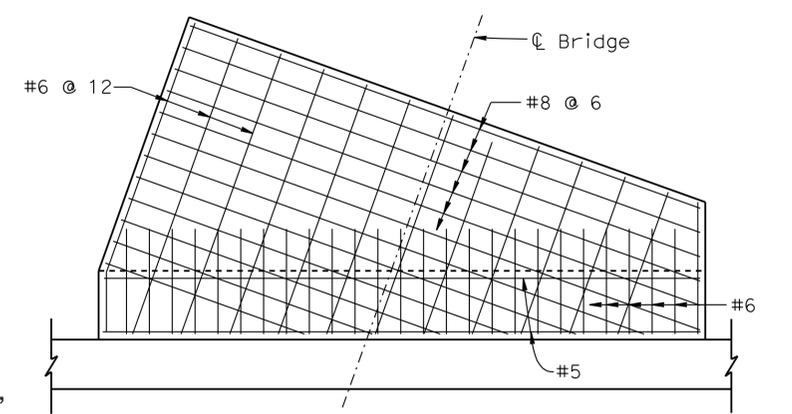
SECTION D-D
3/4"=1'-0"



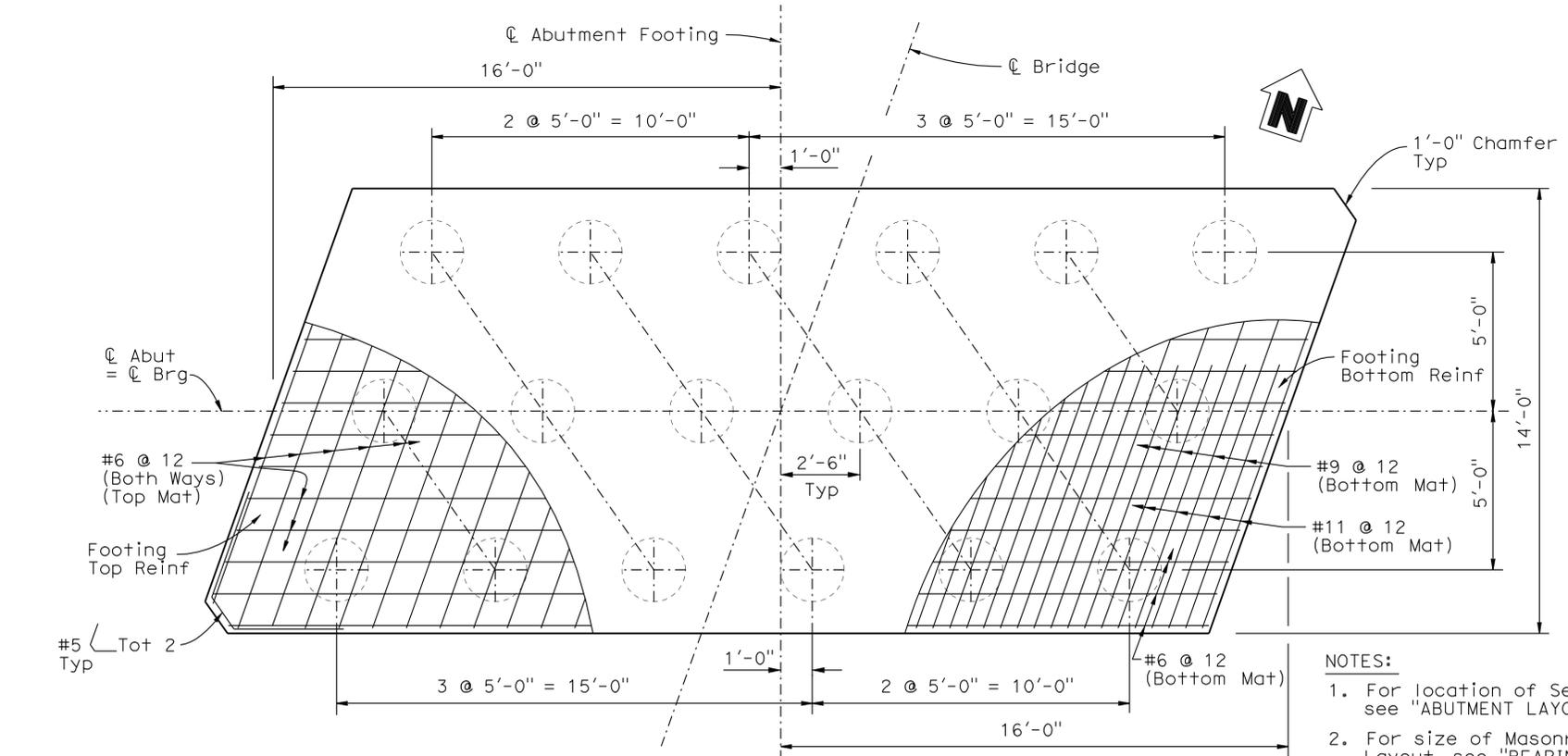
SECTION X-X
1/2"=1'-0"



APRON SLAB-TOP REINFORCEMENT
1/2"=1'-0"



APRON SLAB-BOTTOM REINFORCEMENT
1/2"=1'-0"

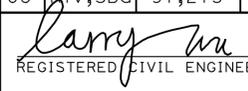


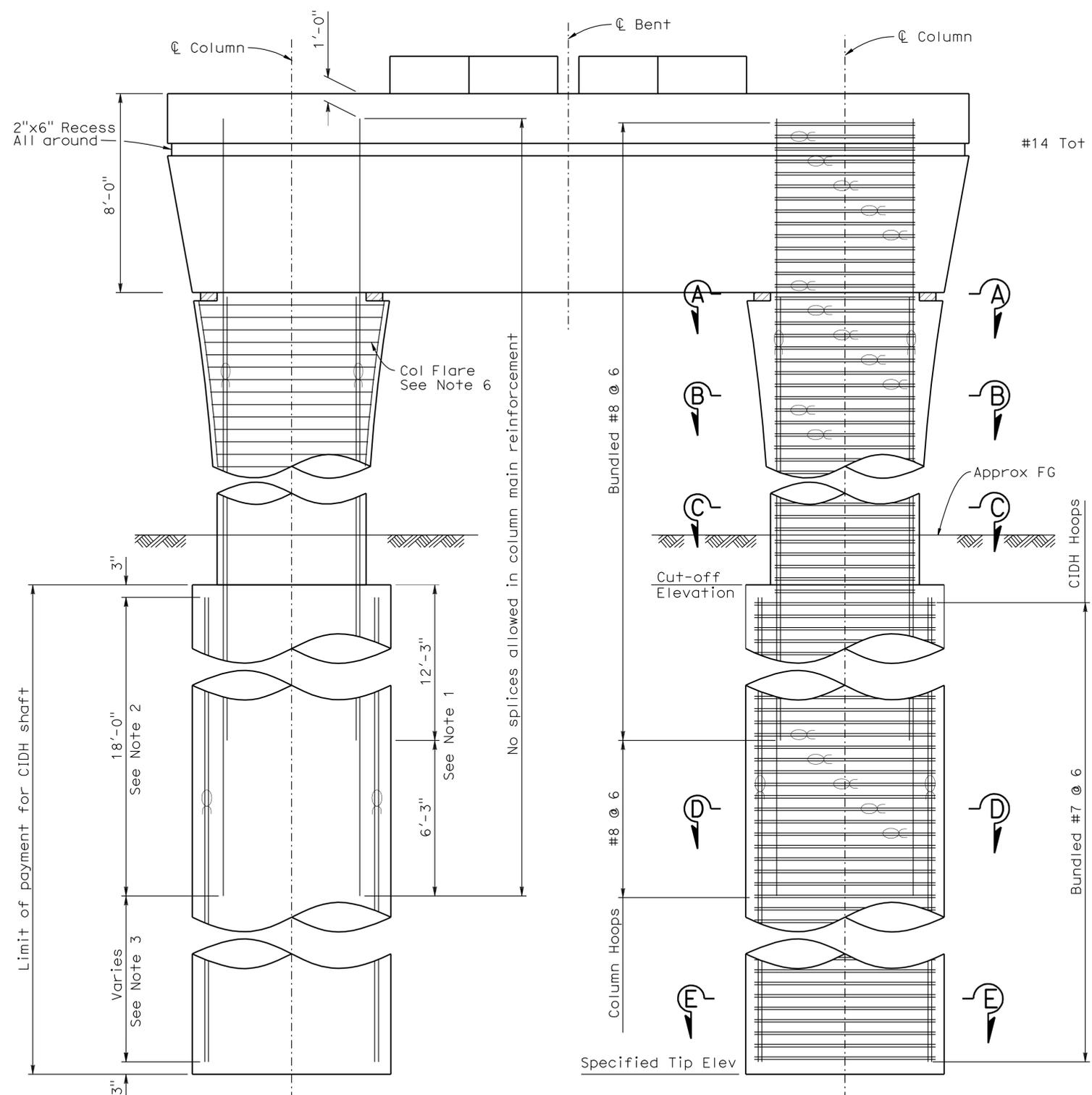
FOOTING & PILE LAYOUT
3/8"=1'-0"

- NOTES:**
- For location of Section C-C & Section D-D, see "ABUTMENT LAYOUT" sheet.
 - For size of Masonry Plate and Anchorage Layout, see "BEARING DETAILS" sheet.
 - For detail of Footing Reinf, see Section A-A on "ABUTMENT DETAILS NO. 1" sheet.
 - Abutment 1 shown, Abutment 3 similar.

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

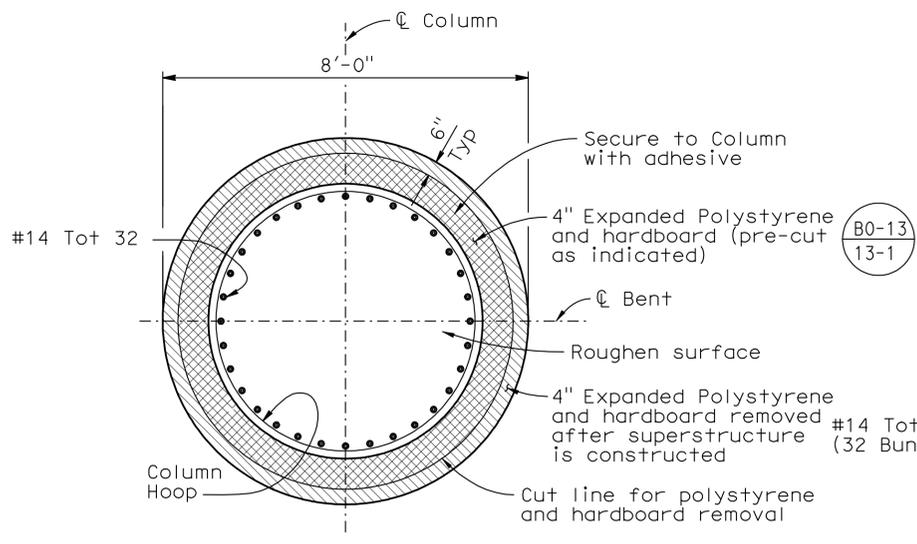
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN BY L. Wu	CHECKED BY B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 ABUTMENT DETAILS NO. 2
	DETAILS BY Y. Tang	CHECKED BY B. Addiespurger			R.R. MILE POST 5.89	
	QUANTITIES BY T. Sanderson	CHECKED BY A. McPhee			LINE SEG. 7602	
			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 8-08-11 3-15-12 5-16-12
						SHEET OF 8 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	1644	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>					

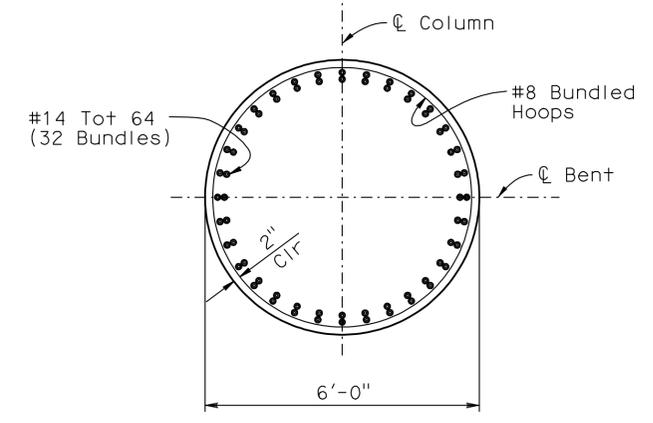


ELEVATION
3/8" = 1'-0"

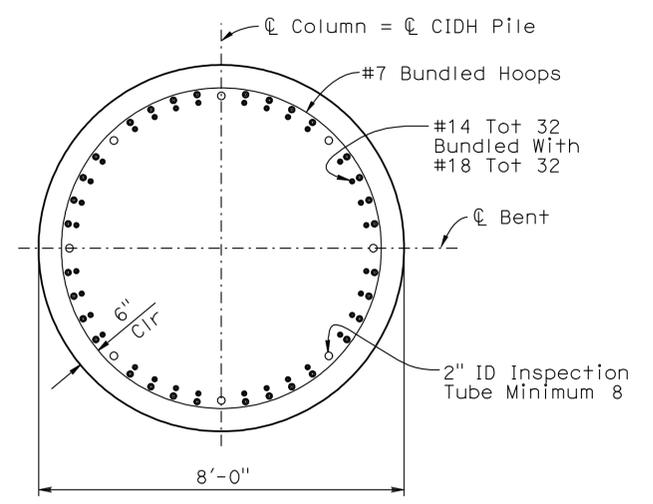
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



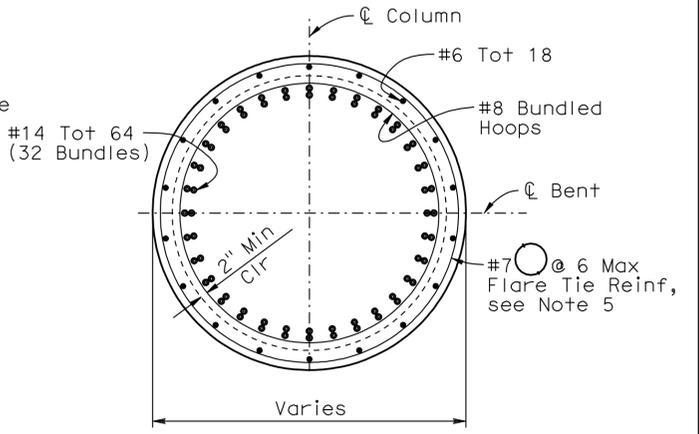
SECTION A-A
1/2" = 1'-0"



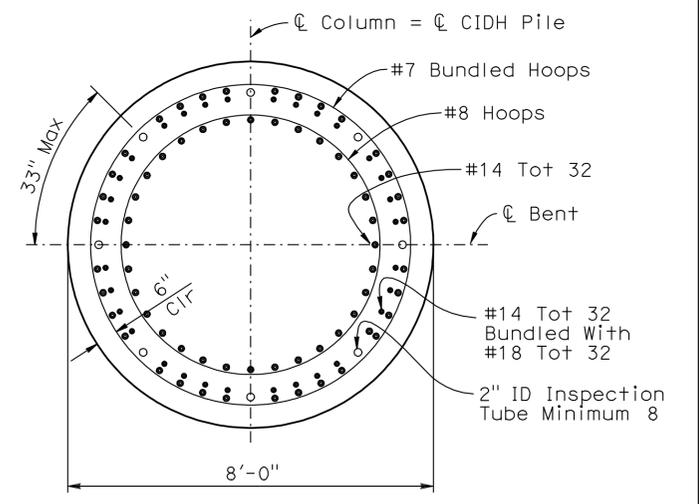
SECTION B-B
1/2" = 1'-0"



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



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



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

- NOTES:
1. Alternate cut-off lengths of main column Reinf.
 2. No splices allowed in main shaft Reinf.
 3. Only staggered "Ultimate" butt splices allowed in main shaft Reinf.
 4. All hoops are "Ultimate" butt spliced continuous.
 5. Splice Flare Tie Reinforcement with mechanical couplers. Stagger location of couplers.
 6. For Column Flare details, see "BENT DETAILS NO. 2" sheet.

LEGEND

 Denotes Bundled bars

DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY Y. Tang	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

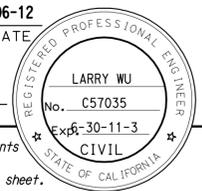
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

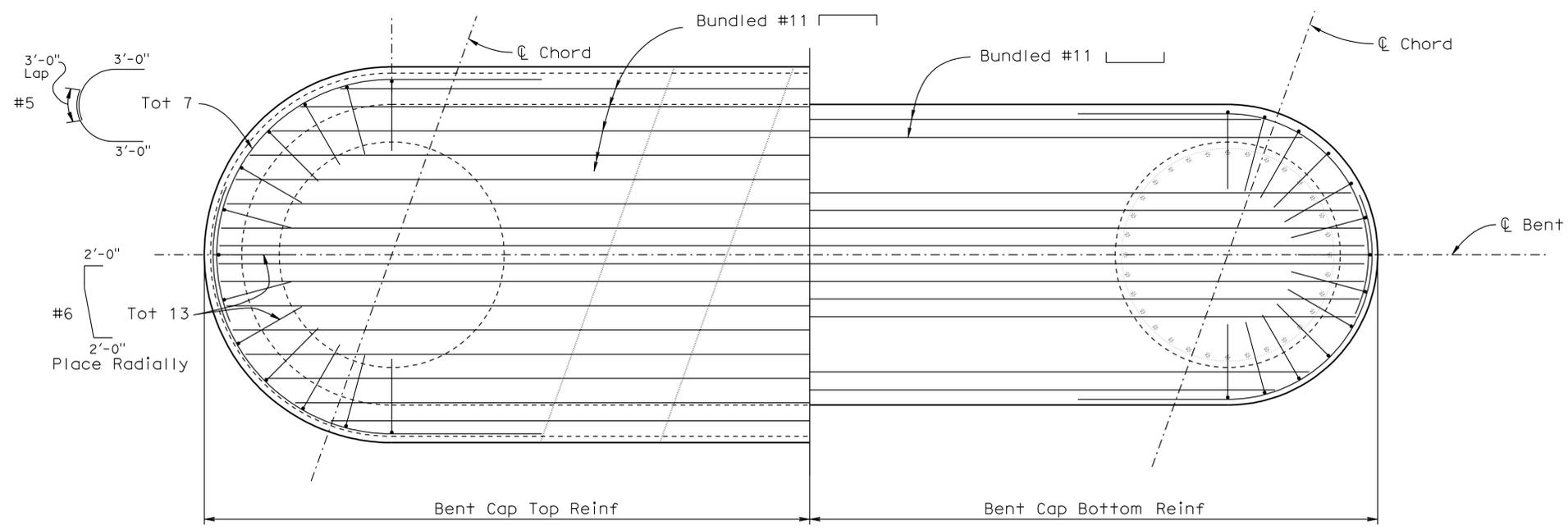
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	54-1305
R.R. MILE POST	5.89
LINE SEG. 7602	

HIGHGROVE UNDERPASS #2
BENT LAYOUT

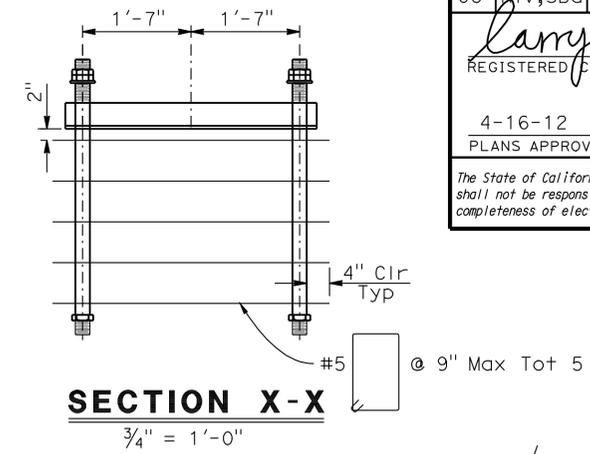
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1645	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



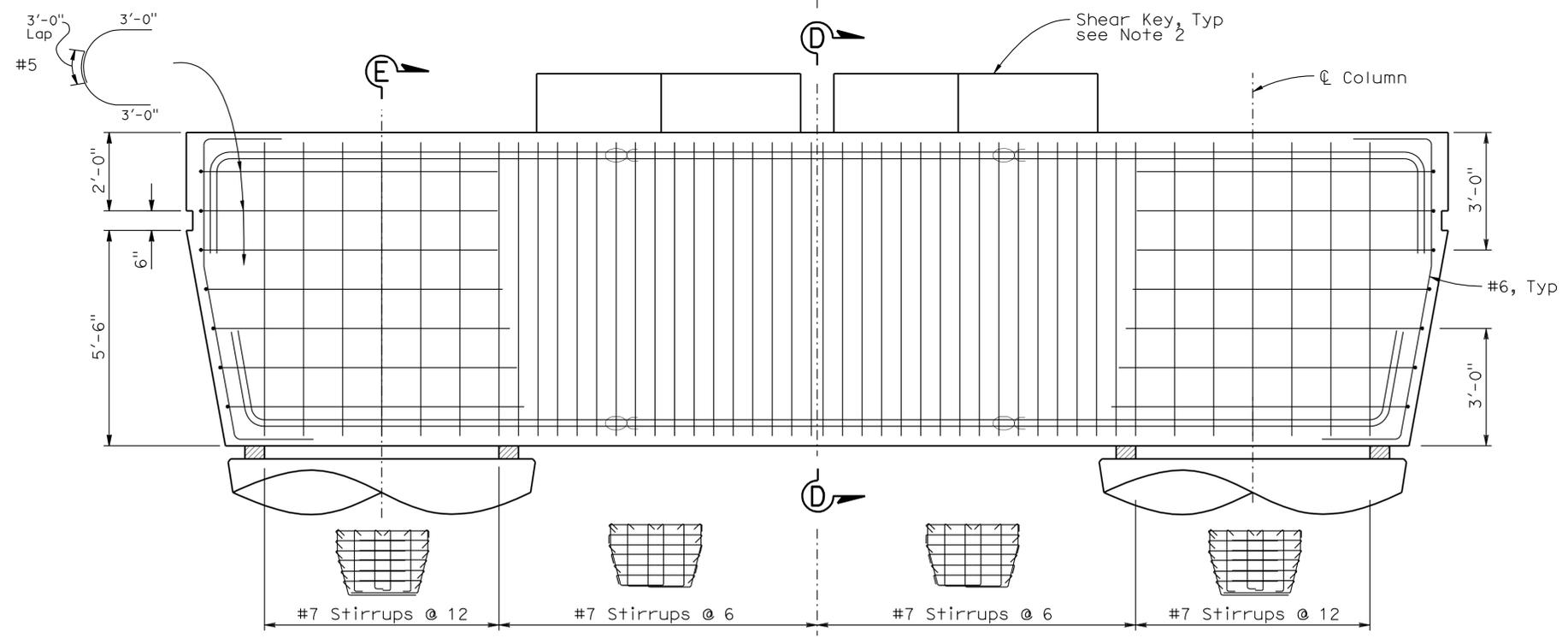
BENT CAP REINFORCEMENT - PLAN

1/2" = 1'-0"



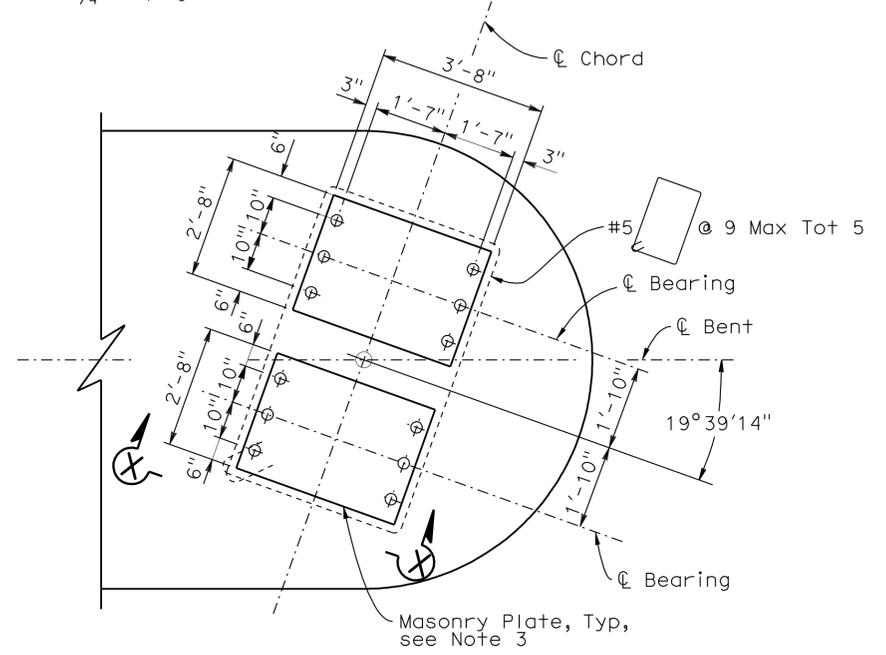
SECTION X-X

3/4" = 1'-0"



BENT CAP REINFORCEMENT - ELEVATION

1/2" = 1'-0"



ANCHOR BOLT LAYOUT

1/2" = 1'-0"

NOTES:

1. For Section D-D & Section E-E, see "BENT DETAILS NO. 2" sheet.
2. For Shear Key details, see "BENT DETAILS NO. 2" sheet.
3. For size of Masonry plate, see "BEARING DETAILS" sheet.

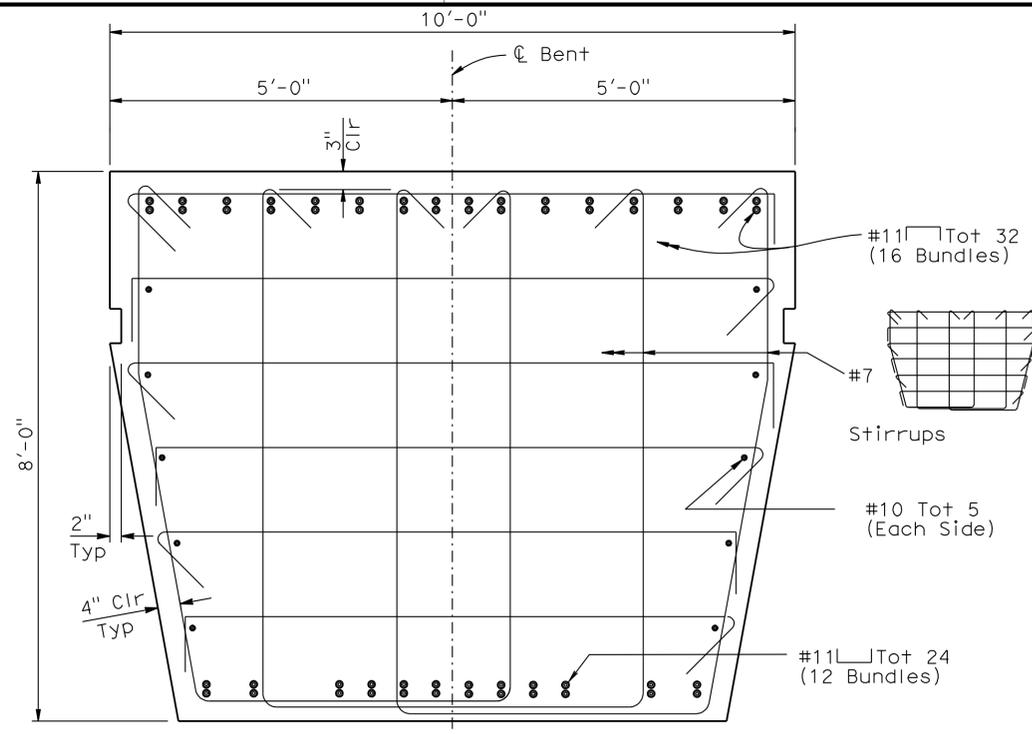
LEGEND

 Indicate bundled bars

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

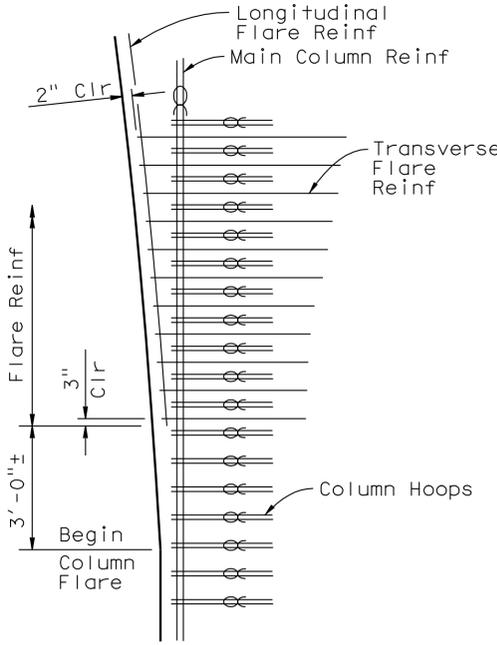
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1305	HIGHGROVE UNDERPASS #2 BENT DETAILS NO. 1		
	DETAILS	BY Y. Tang	CHECKED B. Addiespurger			R.R. MILE POST	5.89			
	QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			LINE SEG. 7602	7602			
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 7-27-11 5-01-12 3-28-12	SHEET 10	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	1646	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>					



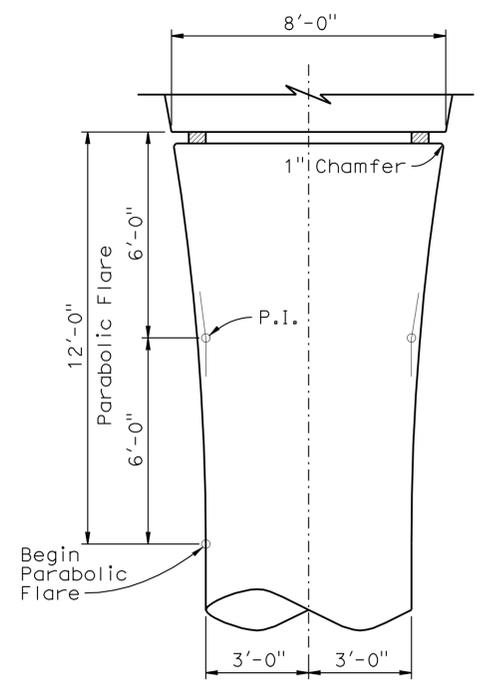
SECTION D-D

3/4" = 1'-0"



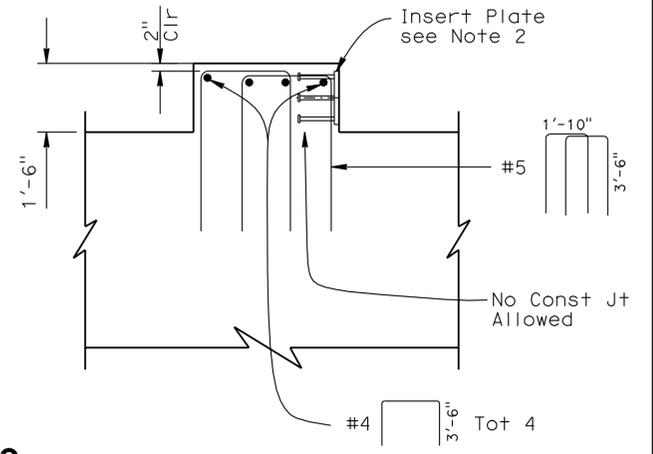
COLUMN FLARE REINFORCEMENT DETAIL

NO SCALE



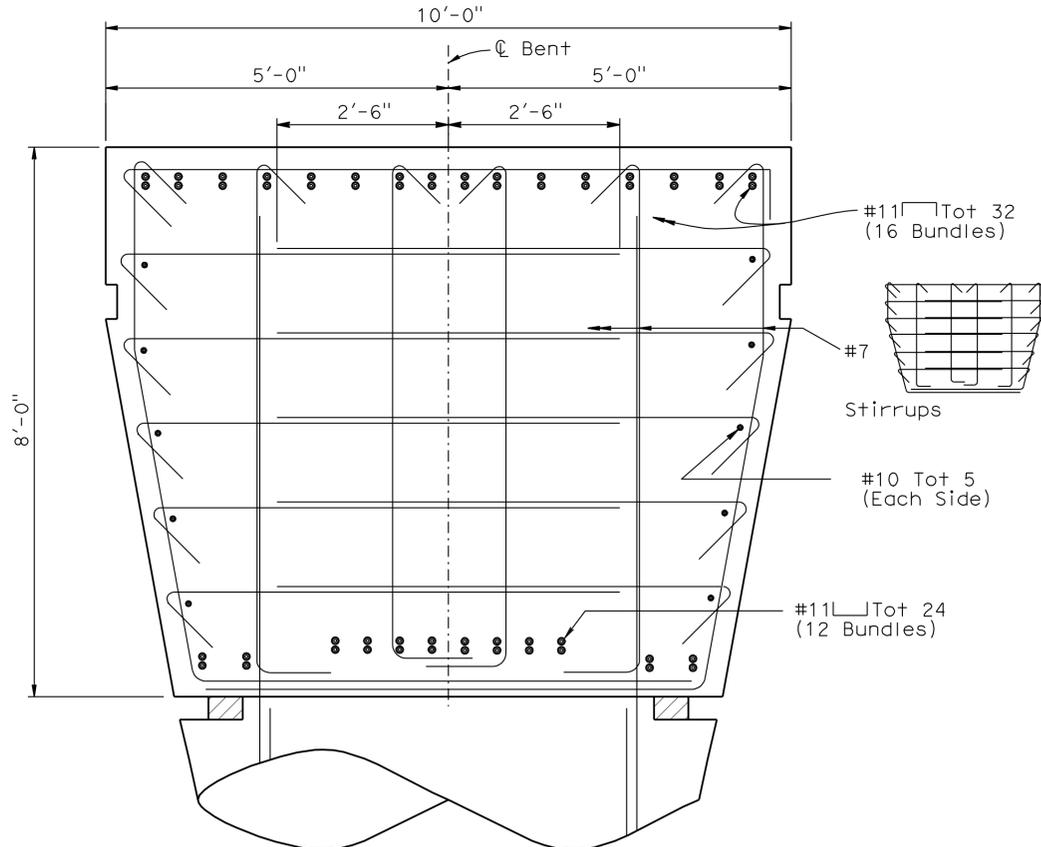
COLUMN GEOMETRICS

3/8" = 1'-0"



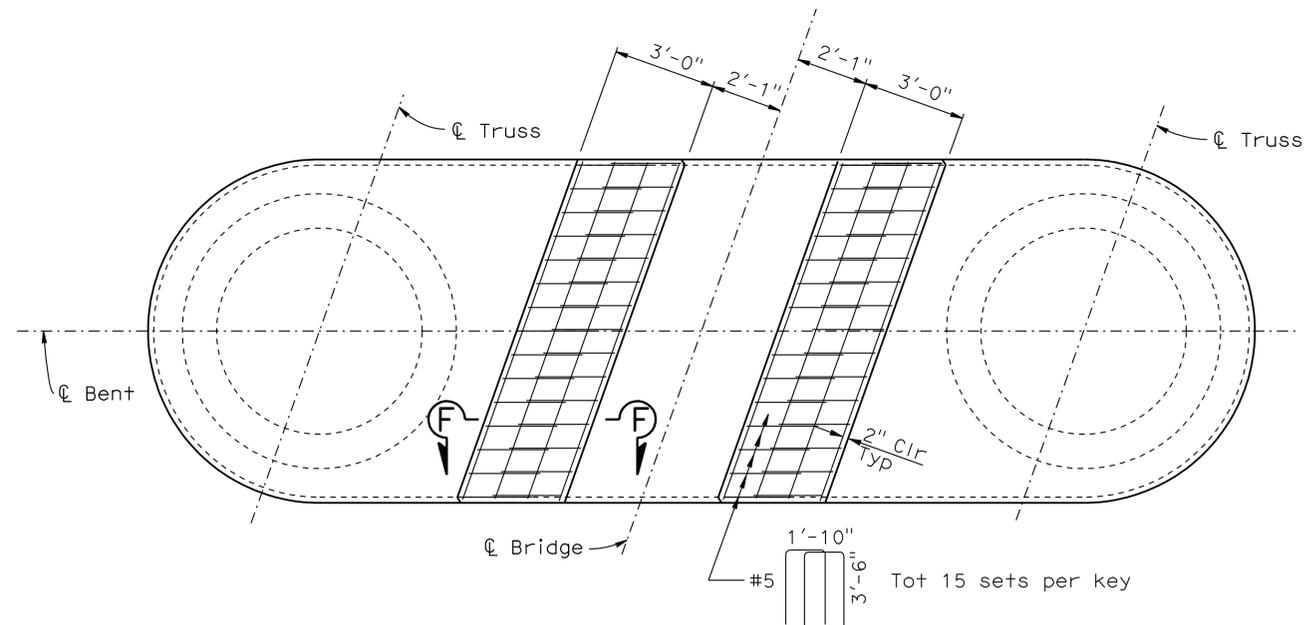
SECTION F-F

1/2" = 1'-0"



SECTION E-E

3/4" = 1'-0"



SHEAR KEY - PLAN

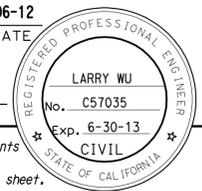
3/8" = 1'-0"

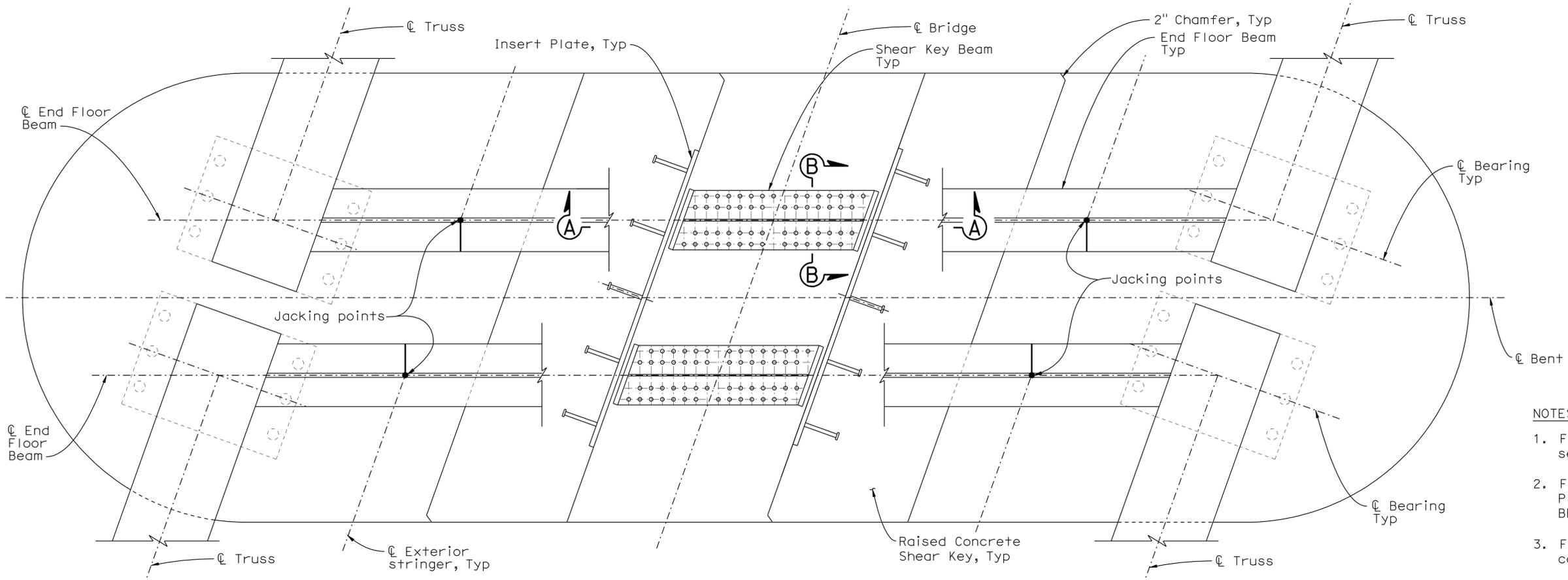
NOTES:

1. For location of Section D-D & Section E-E, see "BENT DETAILS NO. 1" sheet.
2. For Details of Insert Plate, see "SHEAR KEY BEAM DETAILS" sheet.

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

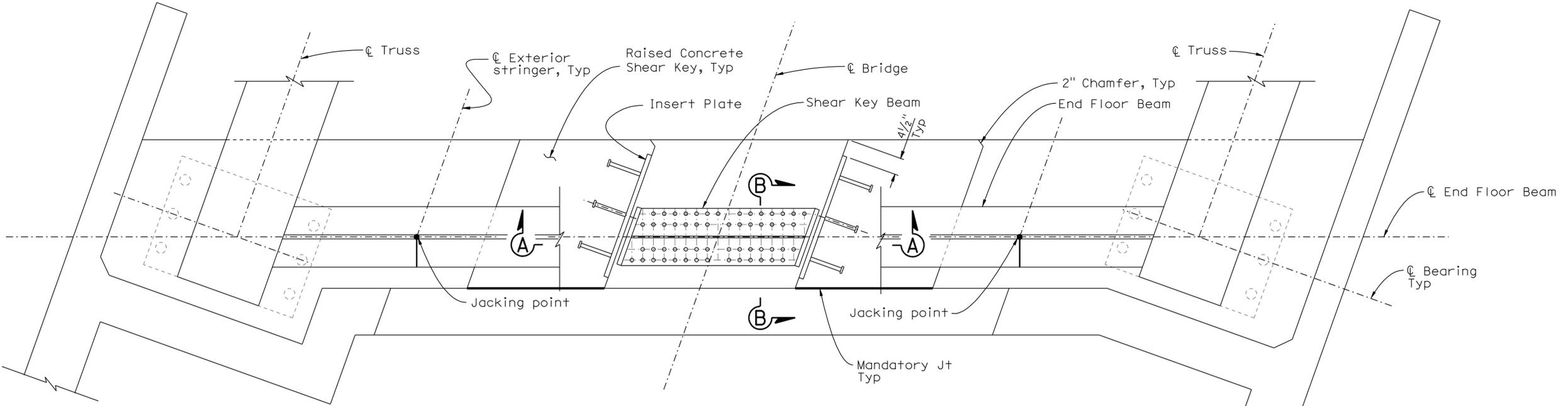
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN BY L. Wu CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 BENT DETAILS NO. 2
	DETAILS BY Y. Tang CHECKED B. Addiespurger		DESIGN BRANCH 10	R.R. MILE POST 5.89	
	QUANTITIES BY T. Sanderson CHECKED A. McPhee		PROJECT NUMBER & PHASE: 08000005061	LINE SEG. 7602	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 3589 CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 7-28-11 3-29-12 5-01-12
0 1 2 3			SHEET 11 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	1647	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12			PLANS APPROVAL DATE		
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PLAN - SHEAR KEY AT BENT
 $\frac{3}{4}'' = 1' - 0''$

- NOTES:
1. For Section A-A & Section B-B, see "SHEAR KEY BEAM DETAILS" sheet.
 2. For Shear Key Beam and Insert Plate details, see "SHEAR KEY BEAM DETAILS" sheet.
 3. Floor Beam connections and stringer connections not shown for clarity.
 4. For Jacking Point location and Jacking stiffener details, see "TRUSS DETAILS NO. 2" sheet.



PLAN - SHEAR KEY AT ABUTMENT
 $\frac{3}{4}'' = 1' - 0''$

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

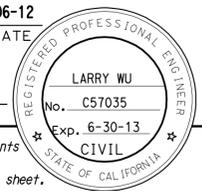
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY G. Hallstrom	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

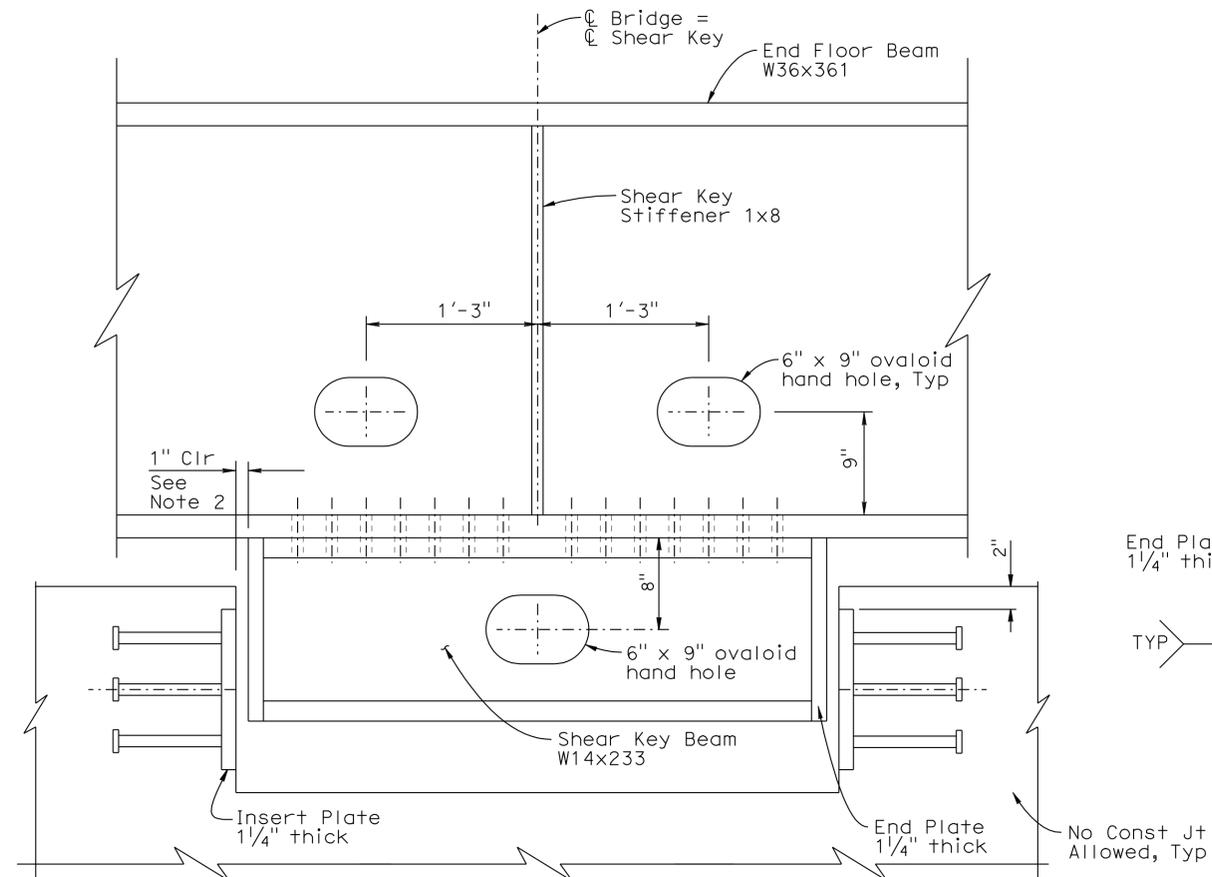
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10

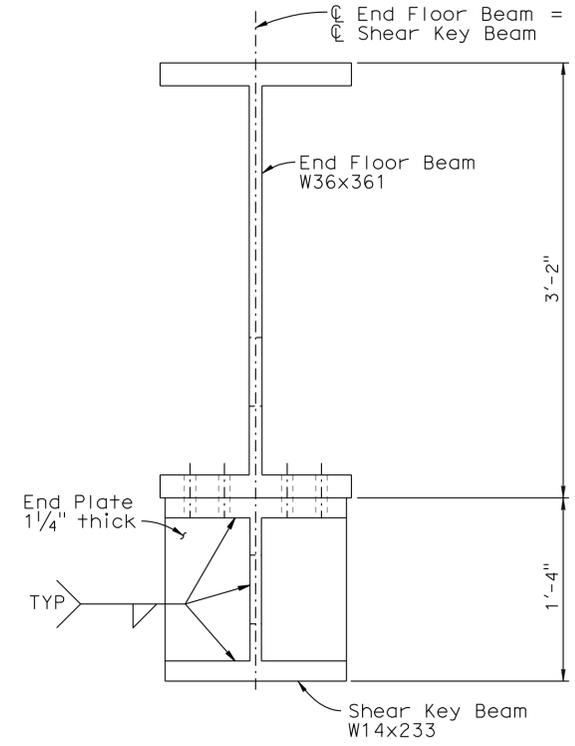
BRIDGE NO.	54-1305
R.R. MILE POST	5.89
LINE SEG.	7602

HIGHGROVE UNDERPASS #2
SHEAR KEY BEAM LAYOUT

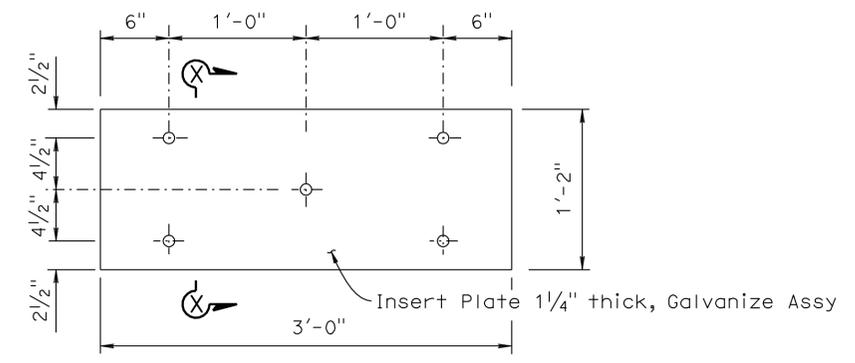
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1648	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



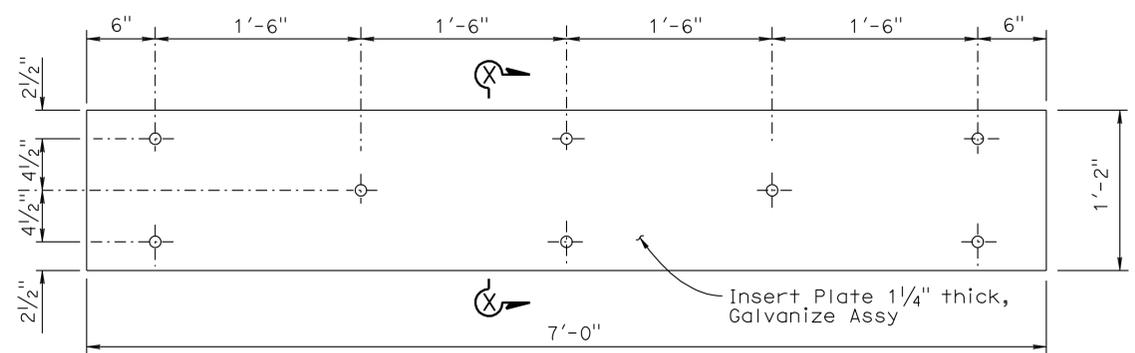
SECTION A-A
1/2"=1'-0"



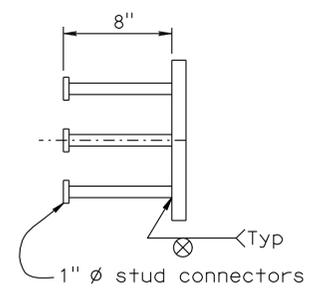
SECTION B-B
1/2"=1'-0"



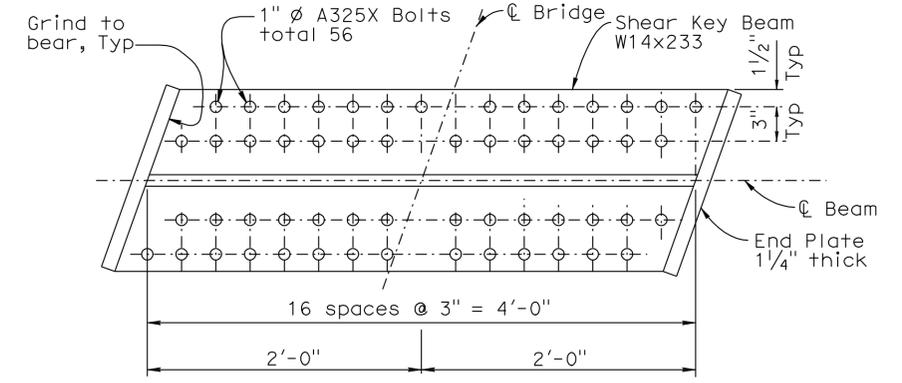
INSERT PLATE DETAIL - AT ABUTMENT
1/2"=1'-0"



INSERT PLATE DETAIL - AT BENT
1/2"=1'-0"



SECTION X-X
1/2"=1'-0"



SHEAR KEY BEAM DETAIL
1/2"=1'-0"

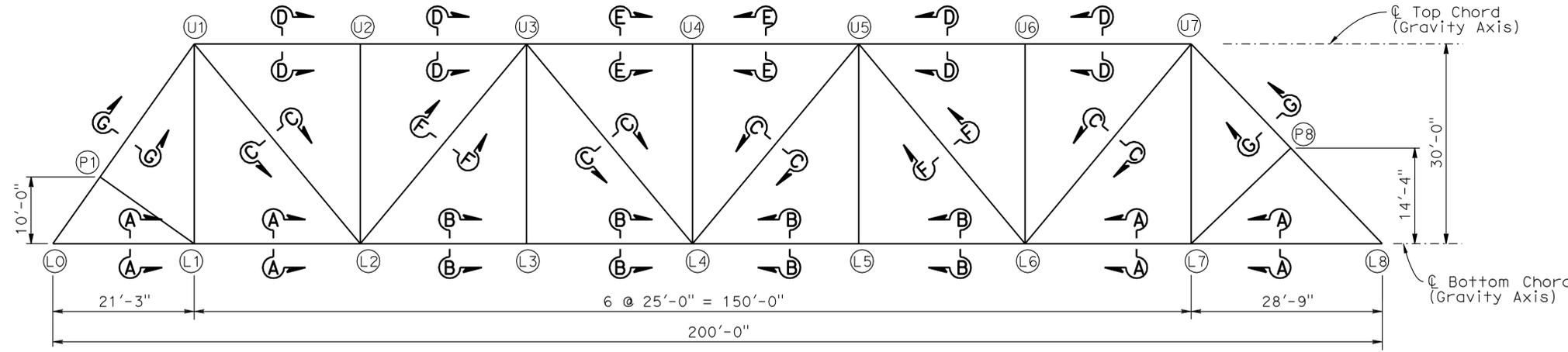
- NOTES:
1. For location of Section A-A & Section B-B, see "SHEAR KEY BEAM LAYOUT" sheet.
 2. Gap measured normal to Insert Plate and End Plate

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

DESIGN BY L. Wu CHECKED B. Addiespurger DETAILS BY G. Hallstrom CHECKED B. Addiespurger QUANTITIES BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 SHEAR KEY BEAM DETAILS		
			R.R. MILE POST 5.89			
			LINE SEG. 7602			
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 10-19-11 2-28-12 5-01-12	SHEET 13 OF 42

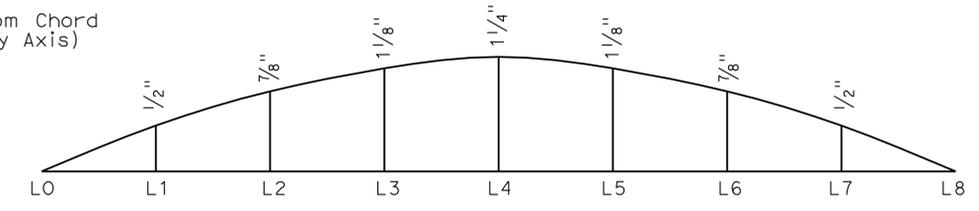
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1649	1743

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.



FRONT TRUSS ELEVATION

$\frac{3}{32}'' = 1'-0''$

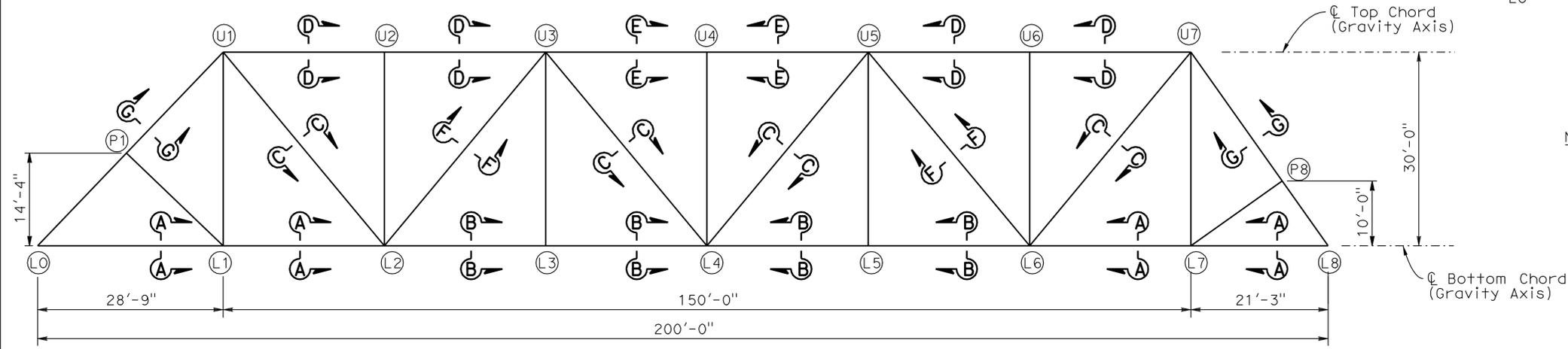


TRUSS CAMBER DIAGRAM

NO SCALE

NOTES:

1. Camber calculated for dead load plus a uniform load of 1500 lb/ft on each truss.
2. Method of camber fabrication to be shown on shop drawings.



REAR TRUSS ELEVATION

$\frac{3}{32}'' = 1'-0''$

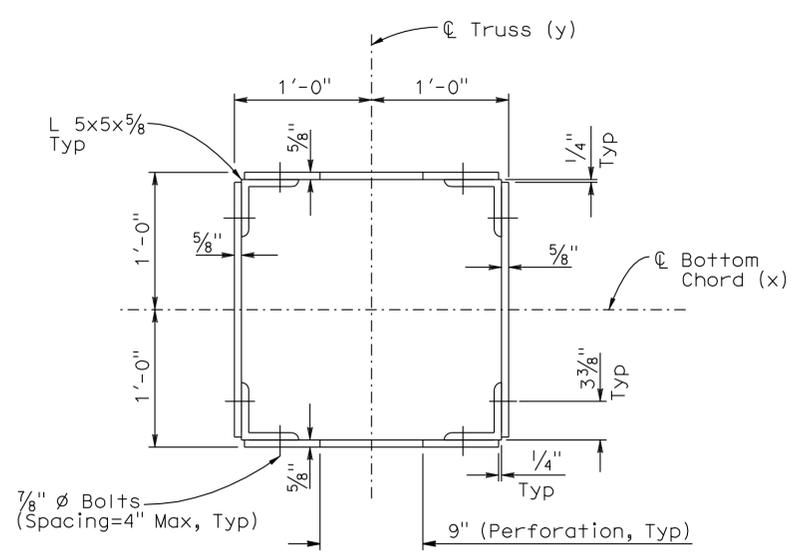
NOTE: For Truss Member Sections, see "TRUSS DETAILS NO. 1" sheet.

Member	DL (kips)	LL (kips)		Impact (kips)		WL(±) (kips)	LF (±)	Fatigue load range (kips)	EQ (±) (kips)	Design Load			Gross Section	Gross Area (in ²)	Net Area (in ²)	Allowable Stress Ratio	Actual Stress Ratio	Fracture Critical Member	Allowable Fatigue Stress Range (ksi)	Actual Fatigue Stress Range (ksi)	
		Tension	Comp.	Tension	Comp.					P(kips)	M _x (k-ft)	M _y (k-ft)									
Chord	U1U3 & U5U7	-523	0	-539	0	-118	32	1	0	105	-1180	53	132	Top & Bottom PL 7/8x23, Perforated, 2-Web PL 7/8x22 1/4 (D-D)	79.19	79.19	1.00	0.920	NO	N/A	N/A
	U3U4 & U4U5	-730	1	-743	0	-162	18	1	0	160	-1635	31	71	Top & Bottom PL 1 1/8x23, Perforated, 2-Web PL 1 1/8x21 3/4 (E-E)	100.69	100.69	1.00	0.880	NO	N/A	N/A
	L0L2 & L6L8	259	276	0	60	0	116	157	315	499	868	280	165	Top & Bottom PL 5/8x22 1/4, Perforated, 2-Web PL 5/8x22 1/4, 4-L5x5x5/8 (A-A)	79.07	51.50	1.00	0.699	YES	16.00	13.08
Diagonal	L2L4 & L4L6	499	512	-1	112	0	174	89	586	658	1123	89	194	Top & Bottom PL 7/8x21 3/4, Perforated, 2-Web PL 7/8x21 3/4, 4-L5x5x5/8 (B-B)	99.57	63.80	1.00	0.738	YES	16.00	15.90
	L0U1 & U7L8	-547	1	-575	0	-126	77	1	0	153	-1326	558	100	Top & Bottom PL 1 1/4x23, Perforated, 2-Web PL 1 1/4x21 1/2 (G-G)	111.25	111.25	1.00	0.858	NO	N/A	N/A
	U1L2 & L6U7	410	455	-8	99	-2	38	0	529	69	964	217	34	Top & Bottom PL 5/8x22 1/4, Perforated, 2-Web PL 5/8x22 1/4, 4-L5x5x5/8 (C-C)	79.07	43.19	1.00	0.758	YES	16.00	13.38
Vertical	L2U3 & U5L6	-265	45	-323	10	-71	12	0	0	41	-671	198	28	Top & Bottom PL 3/4x23, Perforated, 2-Web PL 3/4x22 1/2 (F-F)	54.75	54.75	1.00	0.703	NO	N/A	N/A
	U3L4 & L4U5	106	221	-95	48	-21	14	1	361	34	390	155	33	Top & Bottom PL 5/8x22 1/4, Perforated, 2-Web PL 5/8x22 1/4, 4-L5x5x5/8 (C-C)	79.07	43.19	1.00	0.347	YES	16.00	9.13
	U1L1 & U7L7	85	141	-1	51	0	2	0	162	9	279	32	66	Top & Bottom PL 3/4x18, 1-Web PL 1/2x22 1/2	38.25	31.50	1.00	0.408	YES	16.00	6.00
	U2L2 & U6L6	10	5	0	1	0	2	0	6	6	18	24	69	Top & Bottom PL 3/4x18, 1-Web PL 1/2x22 1/2	38.25	31.50	1.00	0.201	NO	N/A	N/A
U3L3 & U5L5	82	139	-1	50	0	0	0	160	8	272	21	38	Top & Bottom PL 3/4x18, 1-Web PL 1/2x22 1/2	38.25	31.50	1.00	0.392	YES	16.00	5.93	
U4L4	12	5	0	1	0	1	0	6	6	19	17	22	Top & Bottom PL 3/4x18, 1-Web PL 1/2x22 1/2	38.25	31.50	1.00	0.169	NO	N/A	N/A	

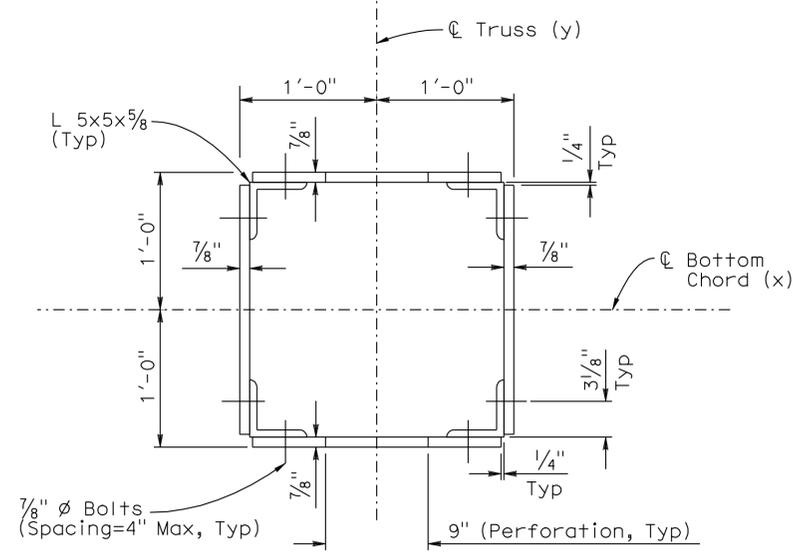
DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #2 SCHEMATIC LAYOUT / STRESS SHEET
DETAILS	BY Y. Tang	CHECKED B. Addiespurger			54-1305	
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			R.R. MILE POST 5.89 LINE SEG. 7602	

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: 7-21-11, 4-28-12, 5-31-12
 SHEET 14 OF 42

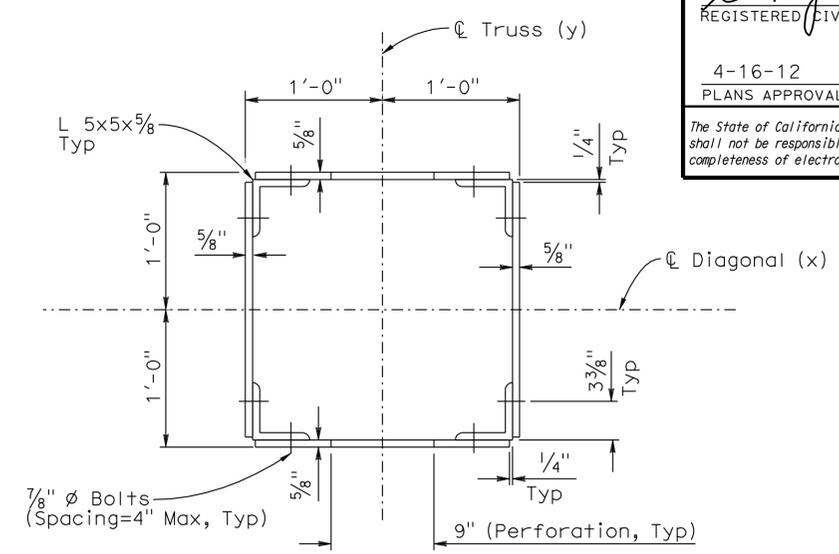
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1650	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



(Lower Chord: L0-L2 & L6-L8)
(FCM)
SECTION A-A
1/2" = 1'-0"

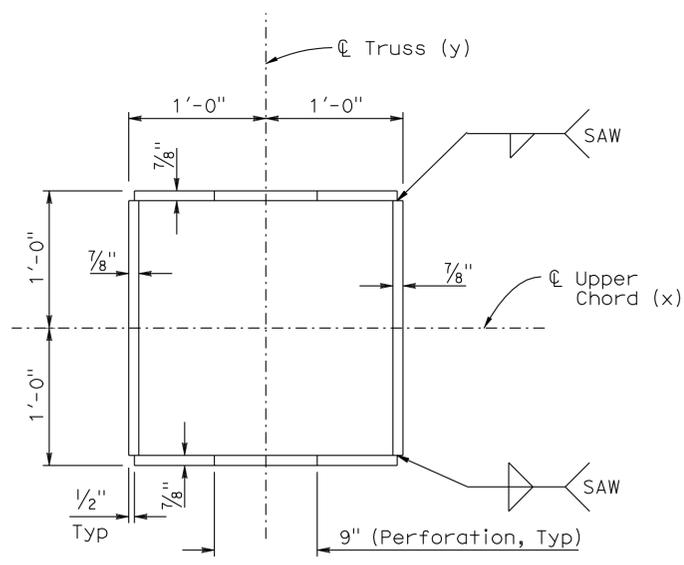


(Lower Chord: L2-L6)
(FCM)
SECTION B-B
1/2" = 1'-0"

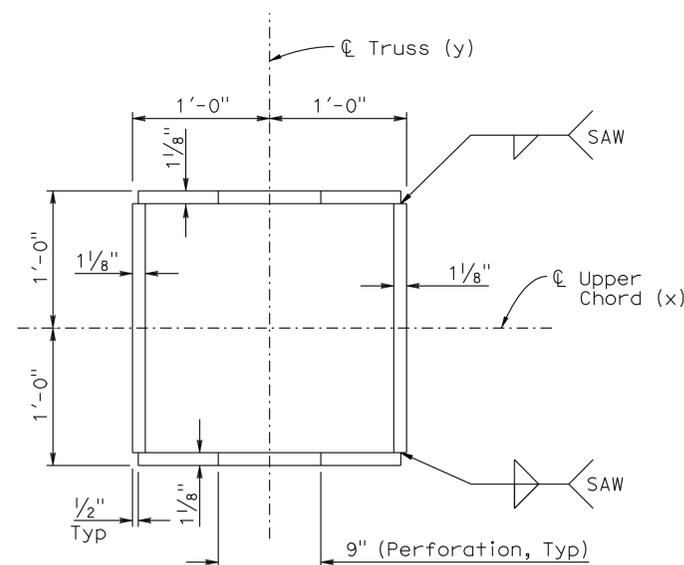


(Diagonal: U1-L2 & U7-L6)
(Diagonal: U3-L4 & L4-U5)
(FCM)
SECTION C-C
1/2" = 1'-0"

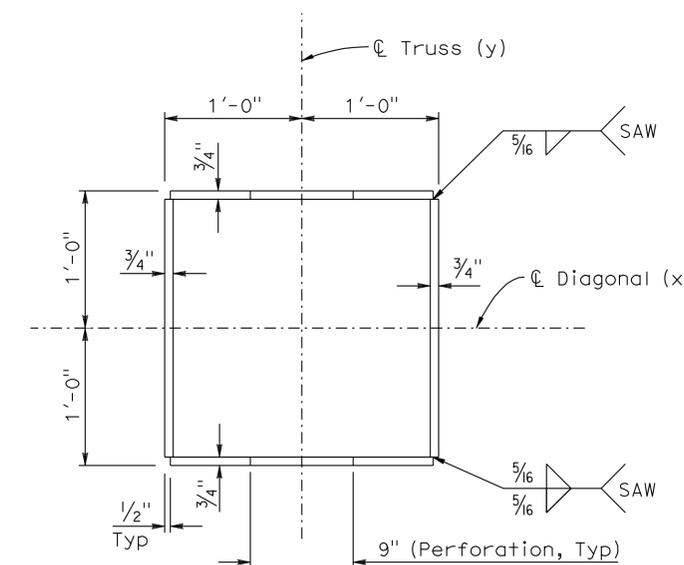
- NOTES:**
1. For location of all sections, see "SCHEMATIC LAYOUT/STRESS SHEET" sheet.
 2. For Perforation details, see "TRUSS DETAILS NO. 3" sheet.
 3. FCM: Fracture Critical Member
 4. SAW: Submerged Arc Welding



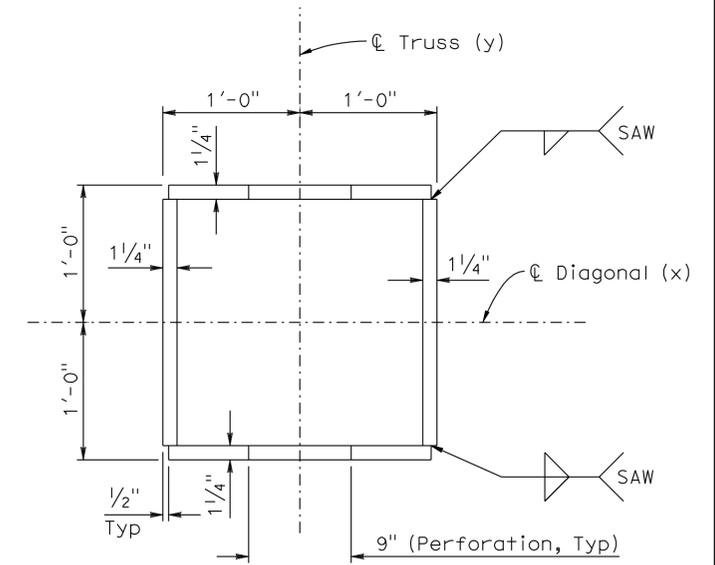
(Upper Chord: U1-U3 & U5-U7)
SECTION D-D
1/2" = 1'-0"



(Upper Chord: U3-U4 & U4-U5)
SECTION E-E
1/2" = 1'-0"



(Diagonal: L2-U3 & U5-L6)
SECTION F-F
1/2" = 1'-0"



(Diagonal: L0-U1 & U7-L8)
SECTION G-G
1/2" = 1'-0"

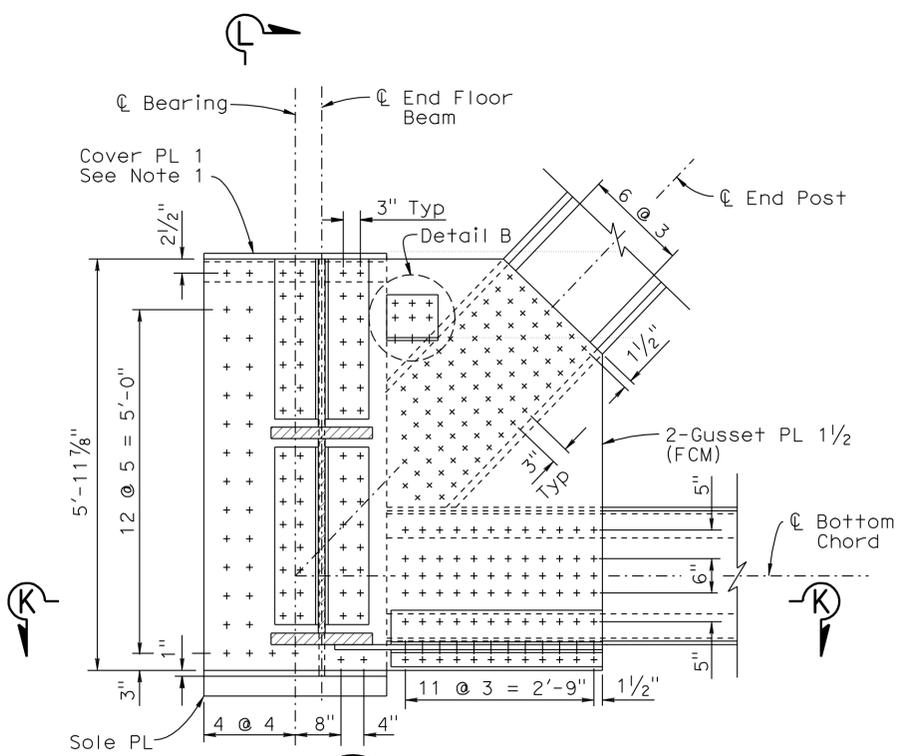
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN BY L. Wu CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 TRUSS DETAILS NO. 1
	DETAILS BY Y. Tang CHECKED B. Addiespurger			R.R. MILE POST 5.89	
	QUANTITIES BY T. Sanderson CHECKED A. McPhee			LINE SEG. 7602	
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 15 OF 42

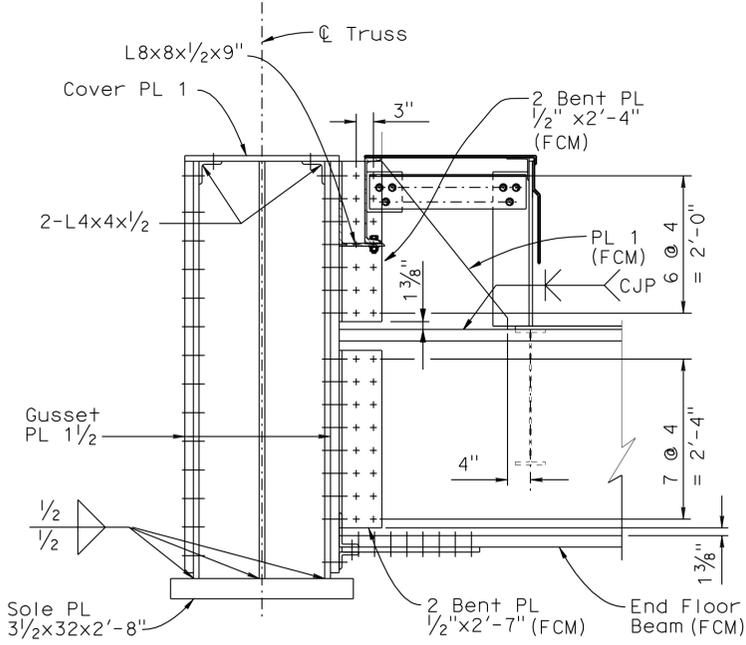
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1651	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					

NOTES:

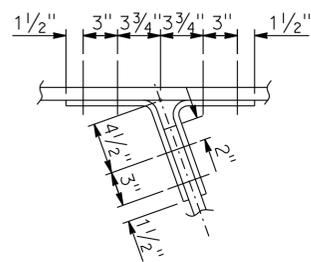
1. For Cover Plate Details see "TRUSS DETAILS NO. 3" sheet.
2. For Perforation Detail, see "TRUSS DETAILS NO. 3" sheet.
3. For End Post Detail, see "TRUSS DETAILS NO. 3" sheet.
4. For connection of Gusset Plate, see "BOTTOM LATERAL BRACING DETAILS NO. 1" sheet.
5. All bolts edge distance 1/2" unless otherwise shown.
6. FCM: Fracture Critical Member



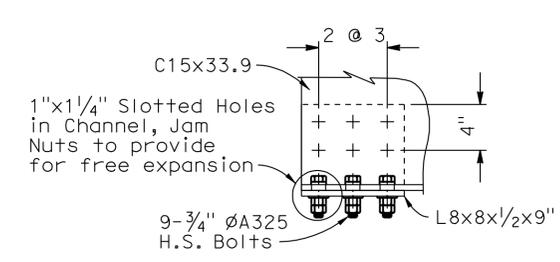
ELEVATION - LO (REAR TRUSS)
 3/4" = 1'-0"



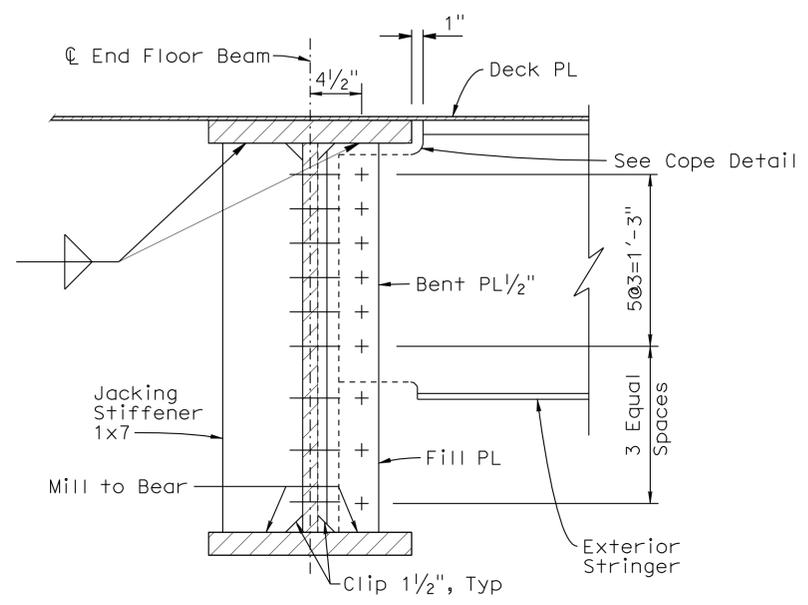
SECTION L-L
 3/4" = 1'-0"



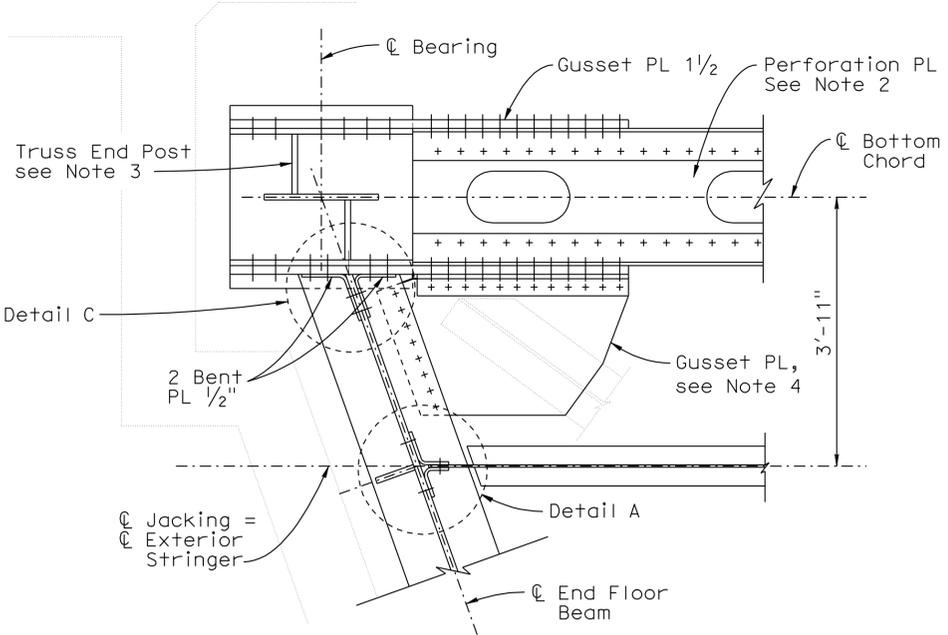
DETAIL C
 1 1/2" = 1'-0"



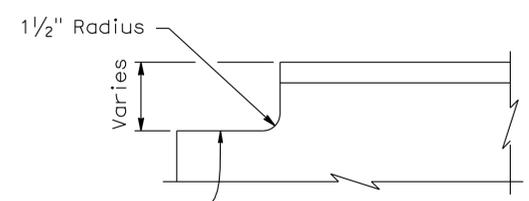
DETAIL B
 1 1/2" = 1'-0"



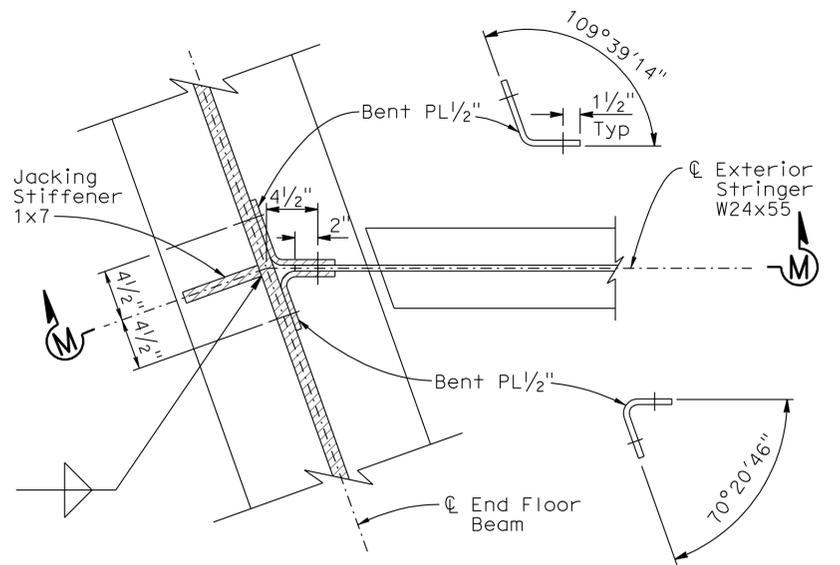
SECTION M-M
 1 1/2" = 1'-0"



SECTION K-K
 3/4" = 1'-0"



COPE DETAIL
 1 1/2" = 1'-0"



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

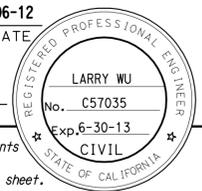
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

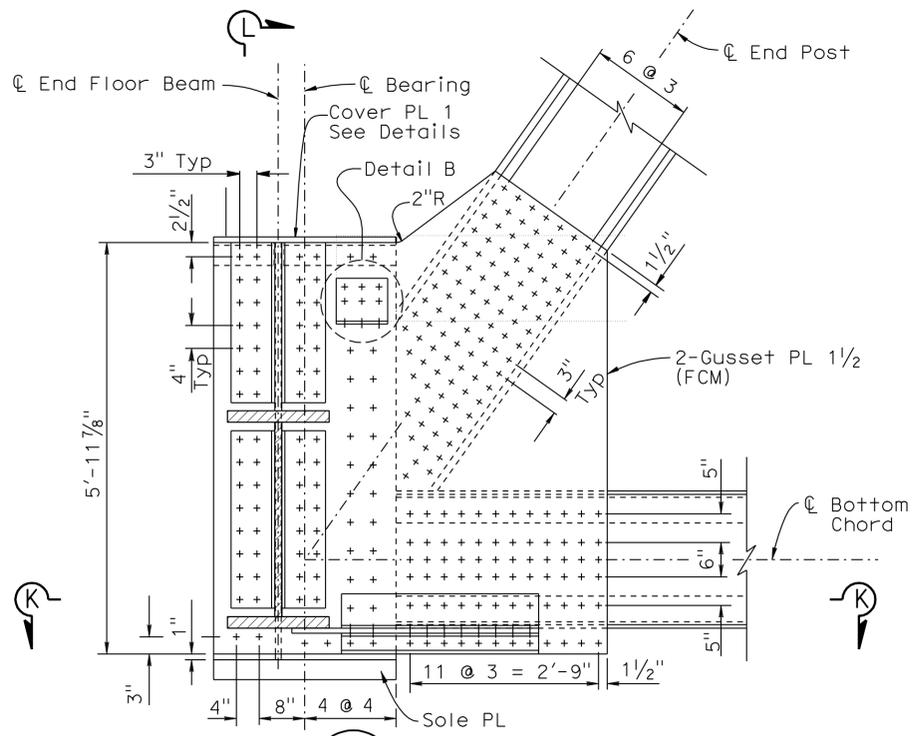
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY Y. Tang	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

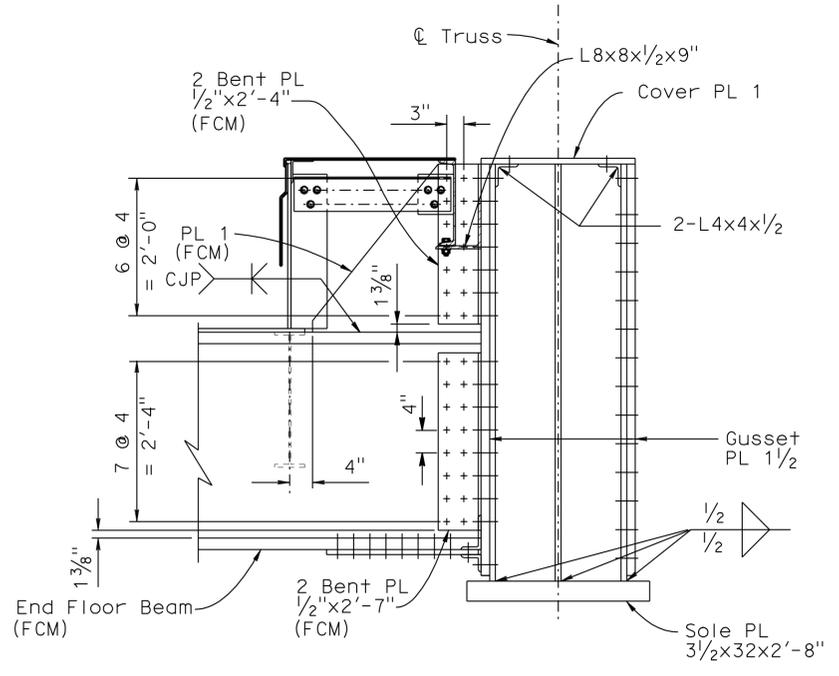
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.
54-1305
 R.R. MILE POST
5.89
 LINE SEG. 7602
HIGHGROVE UNDERPASS #2
TRUSS DETAILS NO. 2

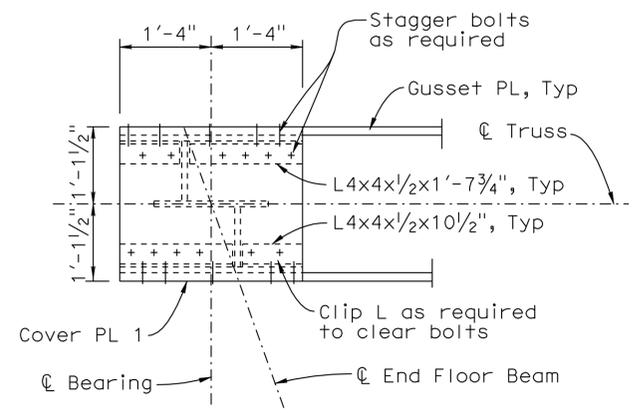
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1652	1743
			4-06-12		
REGISTERED CIVIL ENGINEER			DATE		
4-16-12			PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					
					



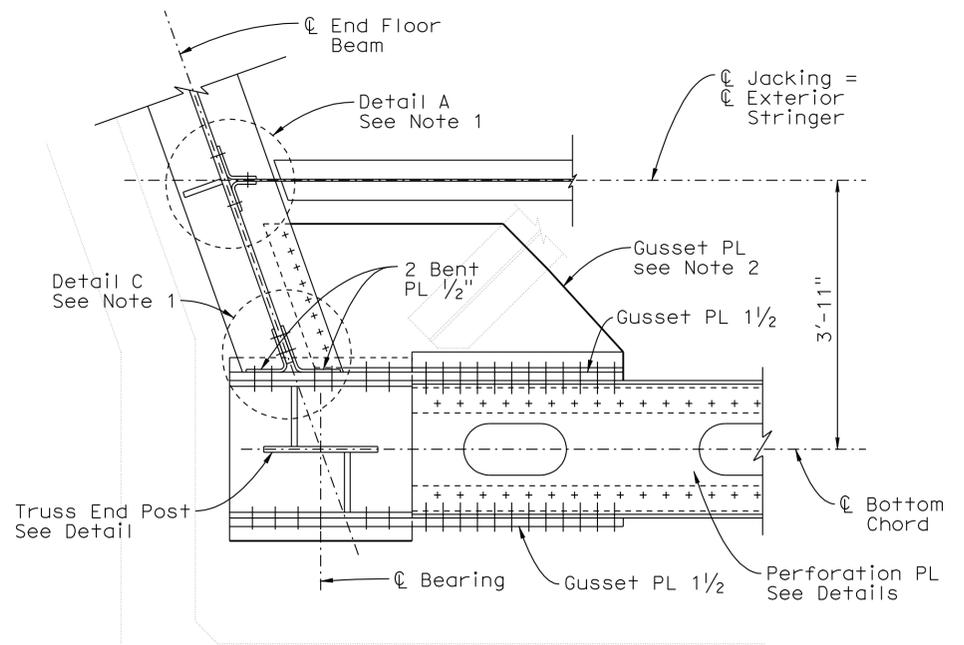
MIRROR ELEVATION - LO (FRONT TRUSS)
 $\frac{3}{4}'' = 1'-0''$



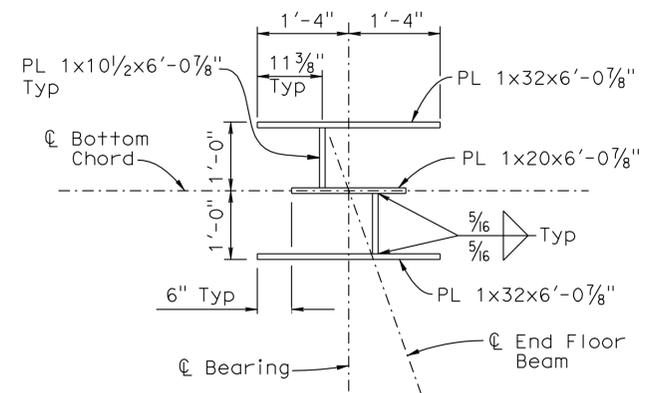
SECTION L-L
 $\frac{3}{4}'' = 1'-0''$



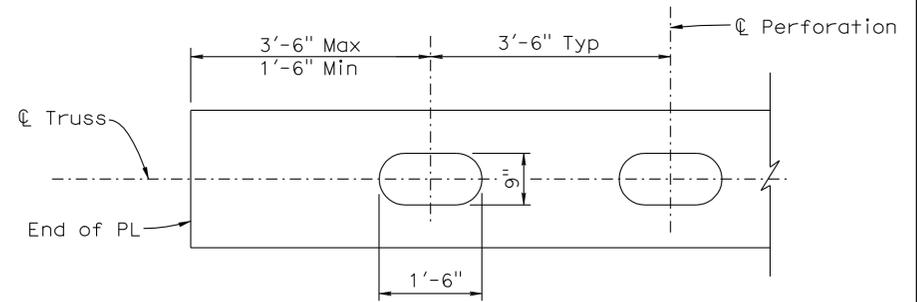
COVER PLATE DETAILS
 $\frac{3}{4}'' = 1'-0''$



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



END POST DETAIL
 $\frac{3}{4}'' = 1'-0''$



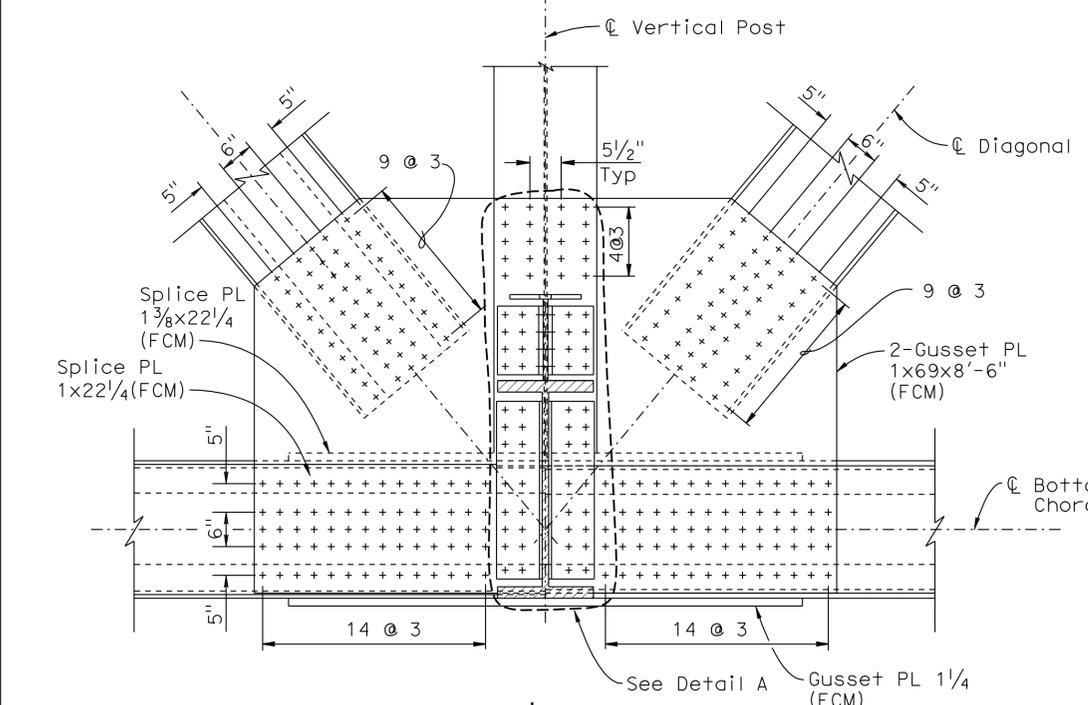
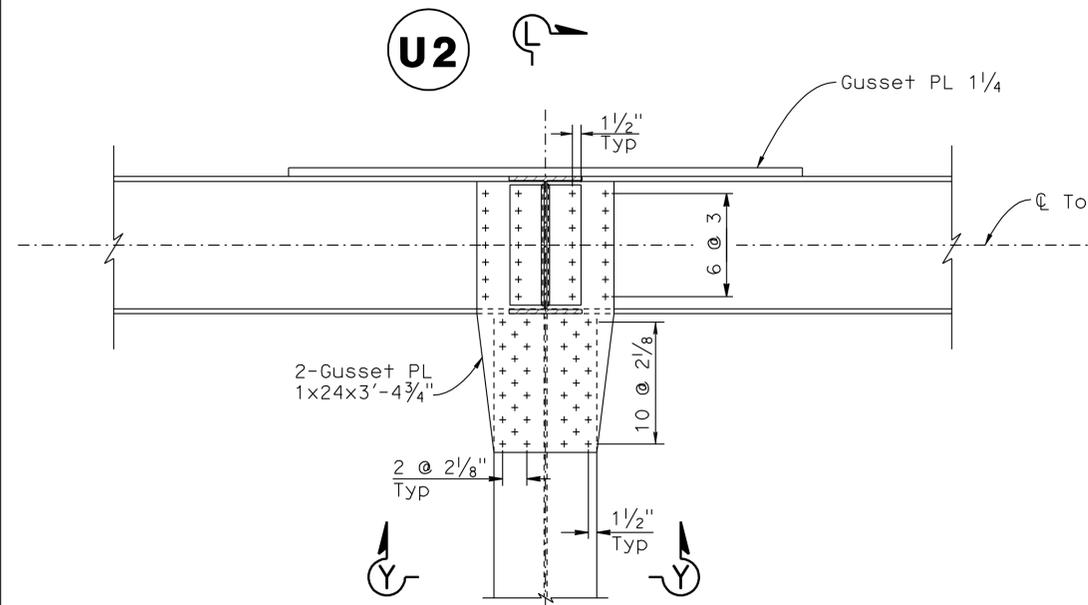
PERFORATION DETAIL
 $\frac{3}{4}'' = 1'-0''$

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

- NOTES:
1. For Detail A, Detail B, and Detail C, see "TRUSS DETAILS NO. 2" sheet.
 2. For connection of Gusset Plate, see "BOTTOM LATERAL BRACING DETAILS NO. 2" sheet.
 3. All bolts edge distance 1/2" unless otherwise shown.
 4. FCM: Fracture Critical Member

DESIGN	BY	L. Wu	CHECKED	B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1305	HIGHGROVE UNDERPASS #2 TRUSS DETAILS NO. 3	
	DETAILS	BY	Y. Tang	CHECKED			B. Addiespurger	R.R. MILE POST		5.89
	QUANTITIES	BY	T. Sanderson	CHECKED			A. McPhee	LINE SEG. 7602		5.89
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 17 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	1654	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>					

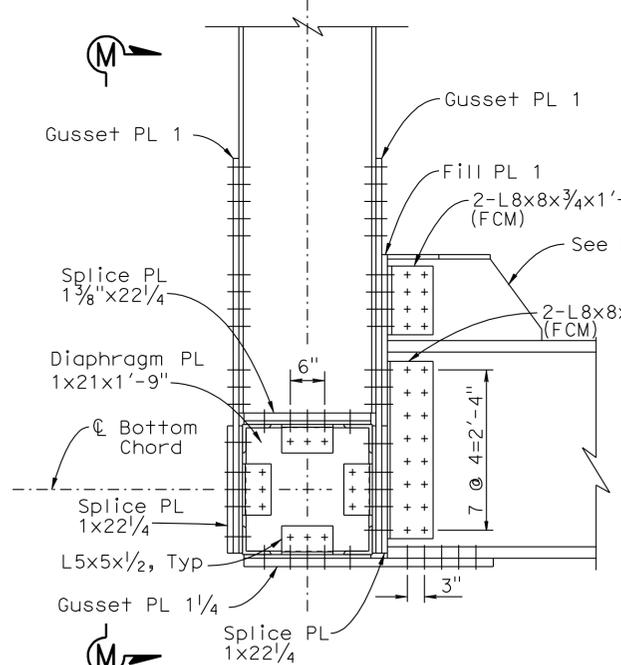
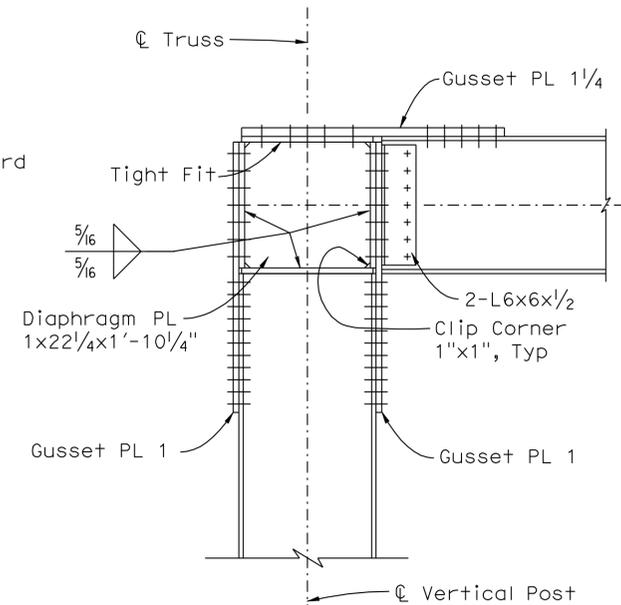


L2

ELEVATION - L2-U2 (REAR TRUSS)

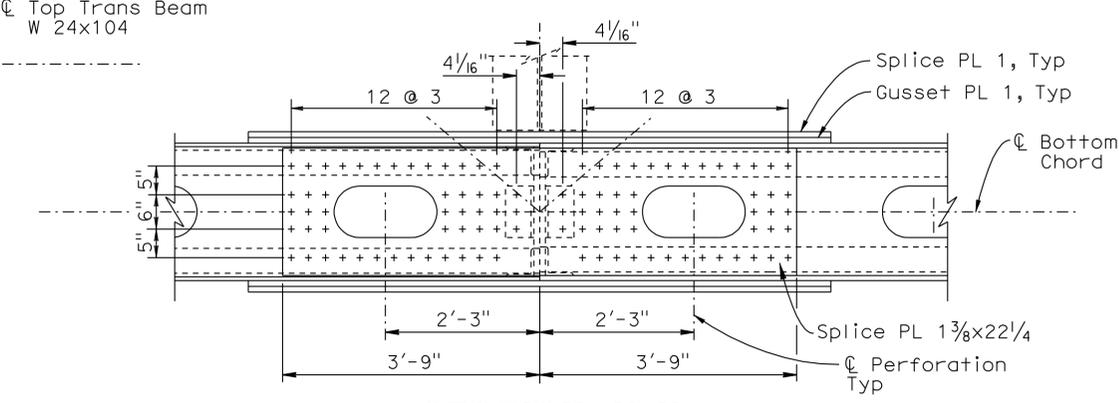
3/4" = 1'-0"

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



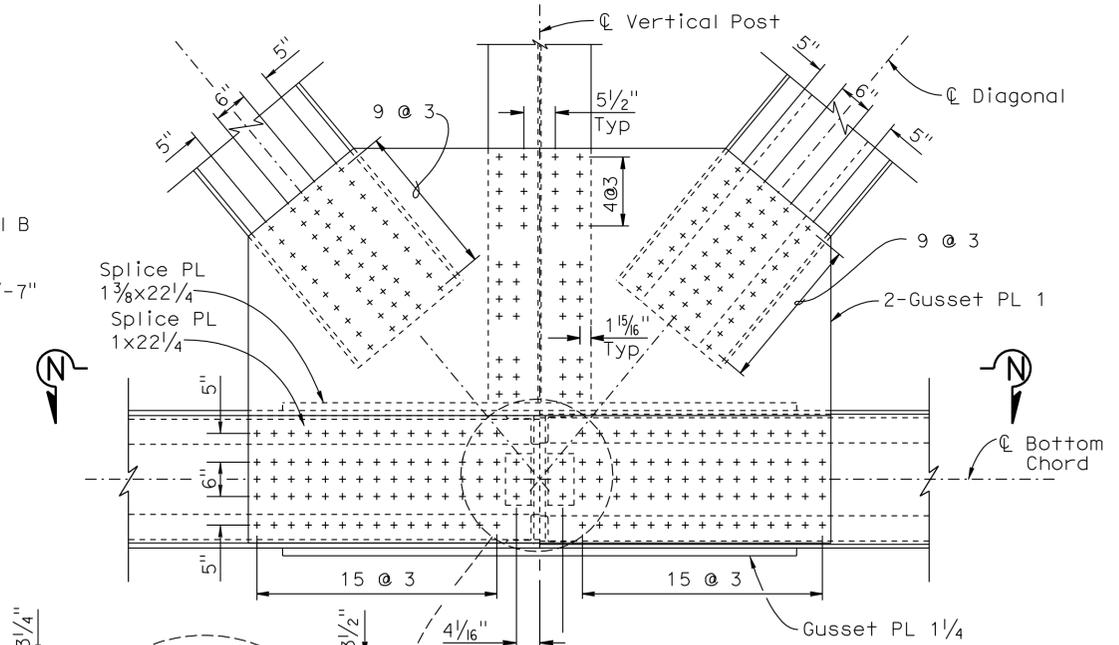
SECTION L-L

3/4" = 1'-0"



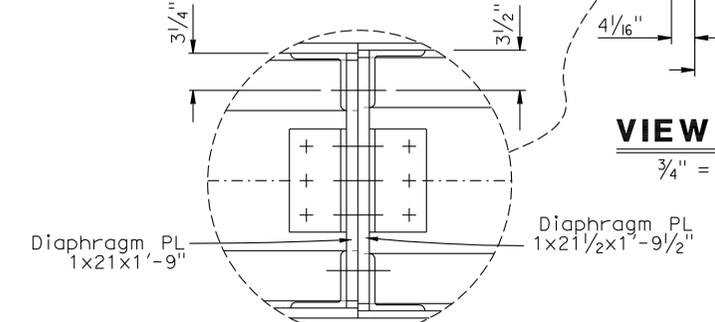
SECTION N-N

3/4" = 1'-0"



VIEW M-M

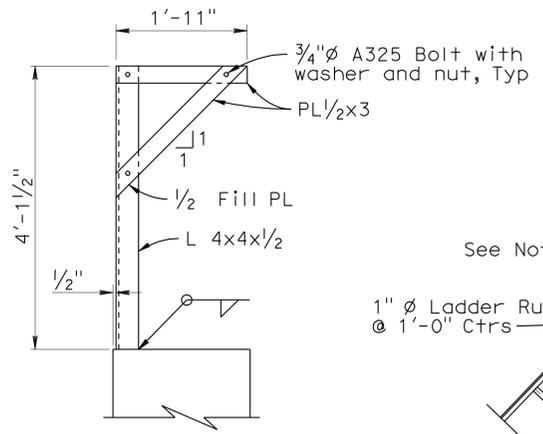
3/4" = 1'-0"



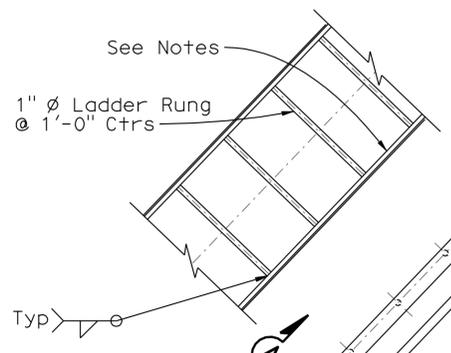
- NOTES:
- For Detail A and Detail B, see "TRUSS DETAILS NO. 4" sheet.
 - For Section Y-Y, see "TRUSS DETAILS NO. 7" sheet.
 - All bolts edge distance 1 1/2" unless otherwise shown.
 - FCM: Fracture Critical Member

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #2 TRUSS DETAILS NO. 5				
DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addiespurger			54-1305					
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			R.R. MILE POST 5.89 LINE SEG. 7602					
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	OF
						7-21-11	6-01-12	4-05-12	19	42

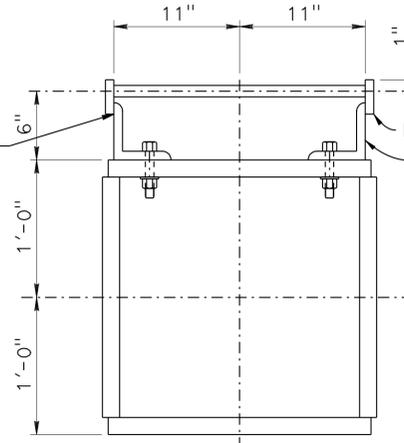
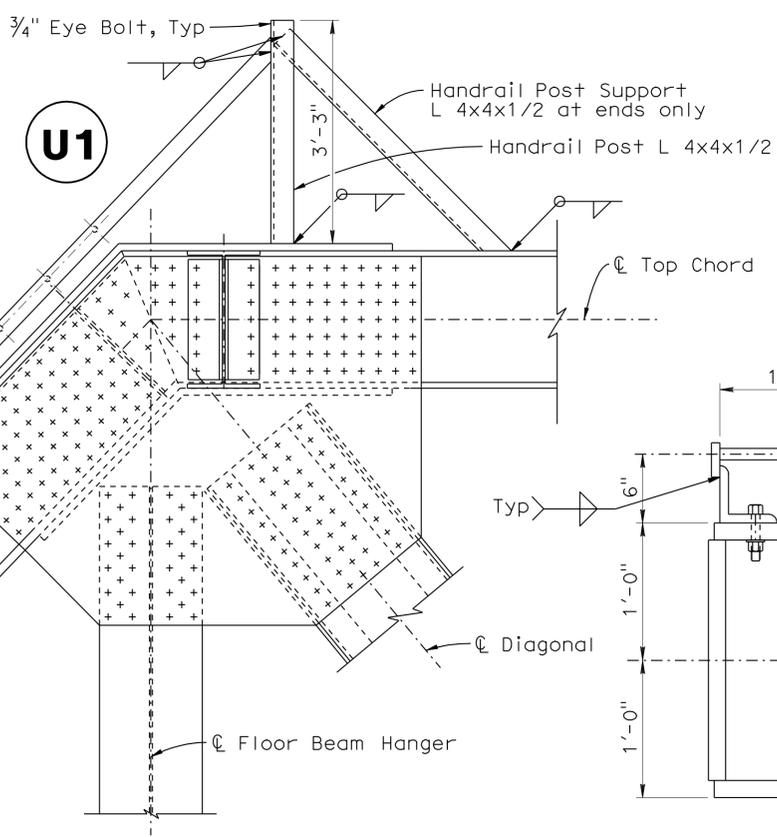
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1657	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



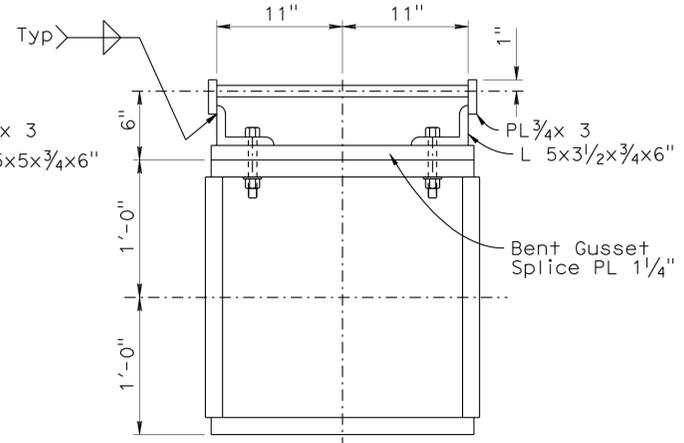
SECTION C-C
3/4" = 1'-0"



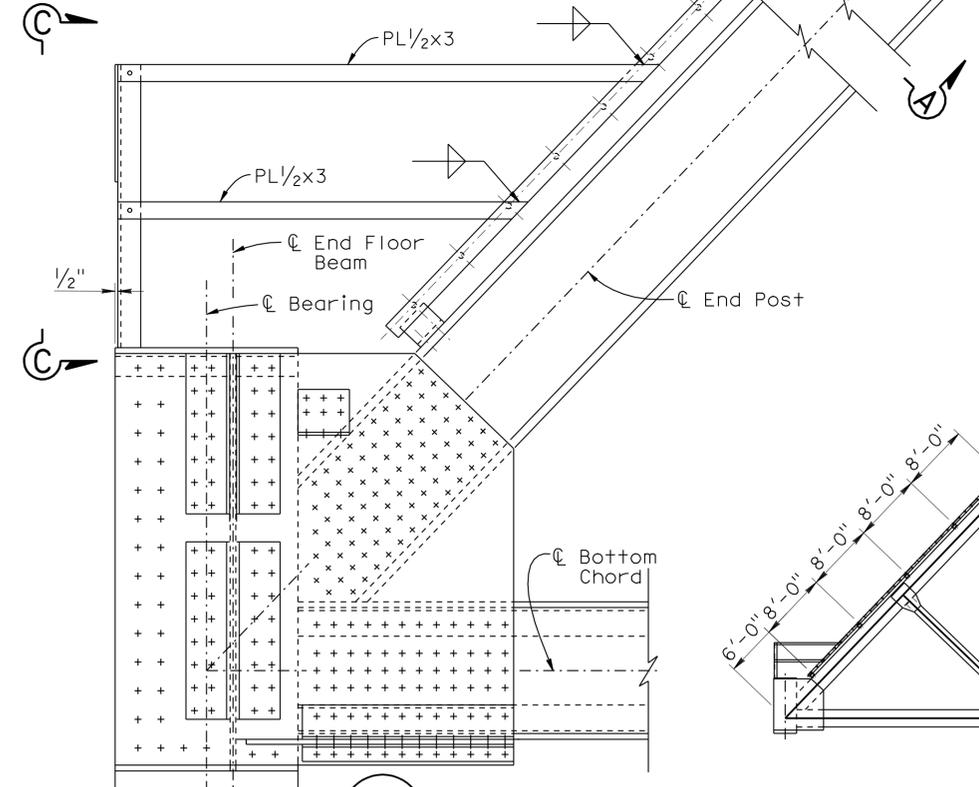
- NOTES:**
- Ladders to be placed on both ends of both trusses on members L0-U1 and L8-U7.
 - The ladders shall also have the Dyna-Glide Ladder Climbing System with automatic pass-through manufactured by MSA or approved equal. The ladder climbing system shall be installed in accordance with the manufacturer's recommendations with details approved by the engineer.
 - The ladder rungs shall have a skid resistance coating that is described further in the additional special conditions in the manufacturer's manual.
 - The ladder shall be galvanized after fabrication.



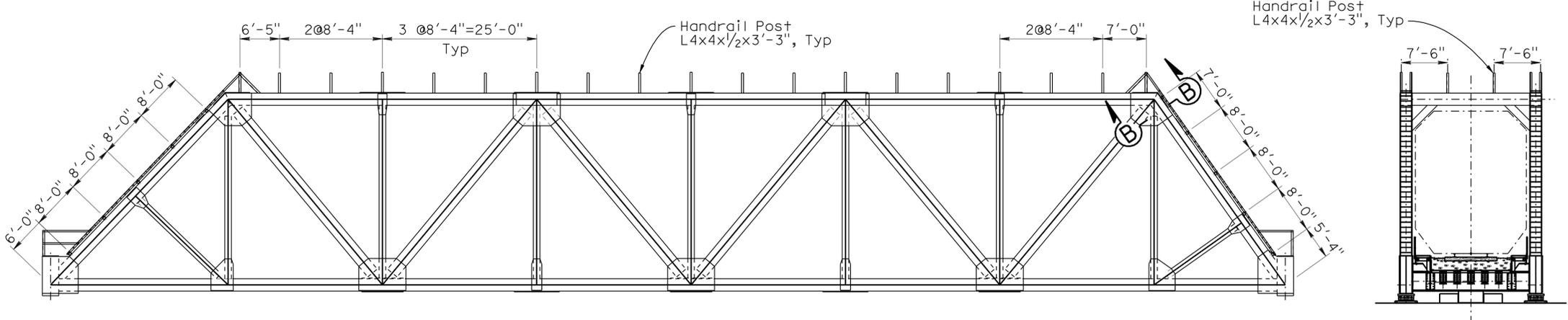
SECTION A-A
1/2" = 1'-0"



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



ELEVATION - L0 U1 (REAR TRUSS)
3/4" = 1'-0"



SCHEMATIC LAYOUT - LADDER & HANDRAIL POST
3/32" = 1'-0"

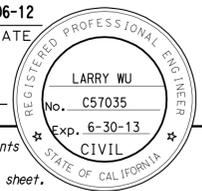
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY G. Hallstrom	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

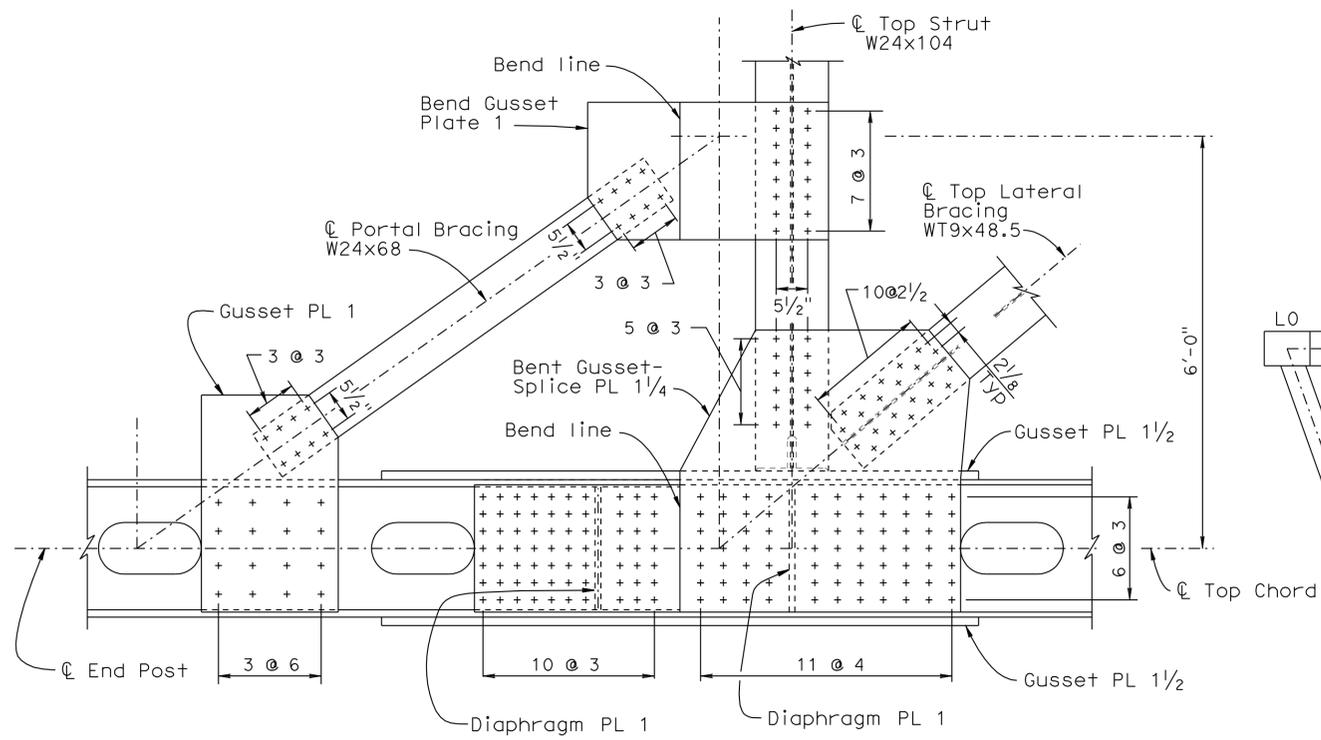
BRIDGE NO.	54-1305
R.R. MILE POST	5.89
LINE SEG.	7602

HIGHGROVE UNDERPASS #2
TRUSS DETAILS NO. 8

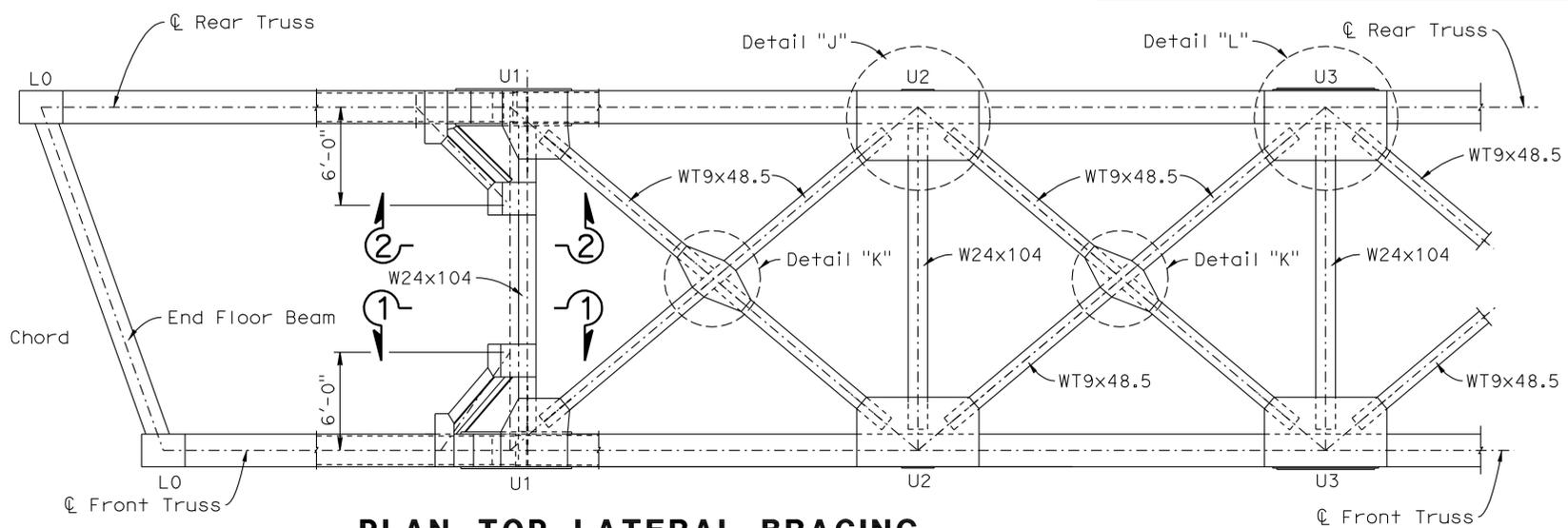
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1658	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

NOTES:

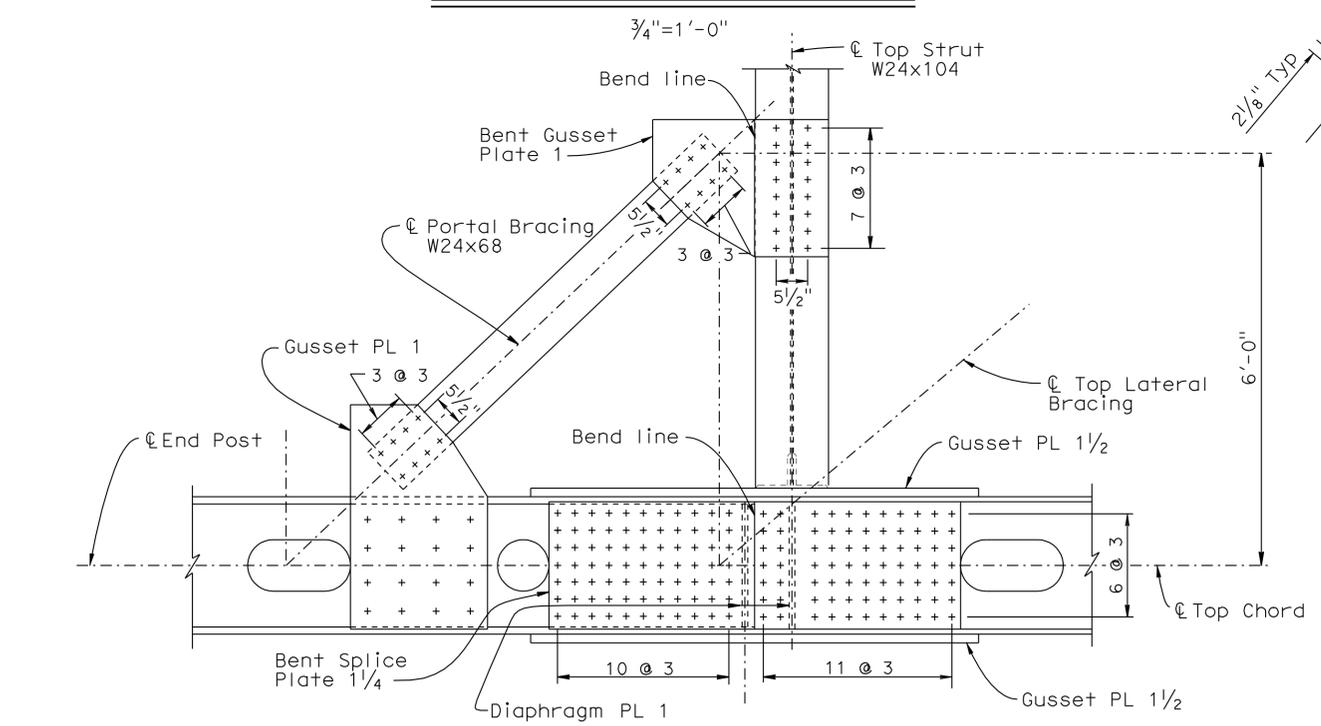
1. For View 2-2, Detail J, and Detail L, see "TOP LATERAL BRACING NO. 2" sheet.
2. All bolts edge distance 1 1/2" unless otherwise shown.
3. FCM: Fracture Critical Member



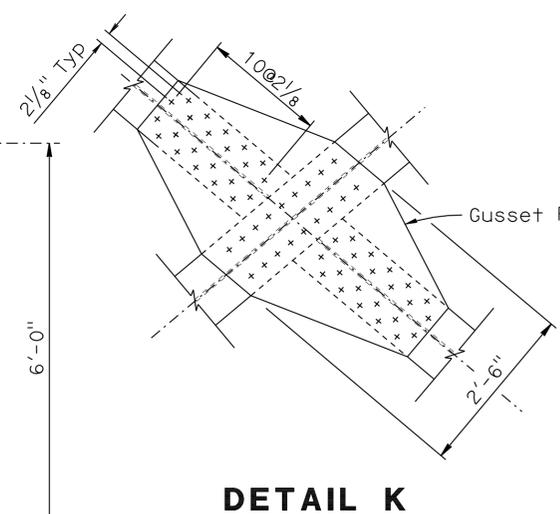
VIEW X-X (DEVELOPED)
3/4"=1'-0"



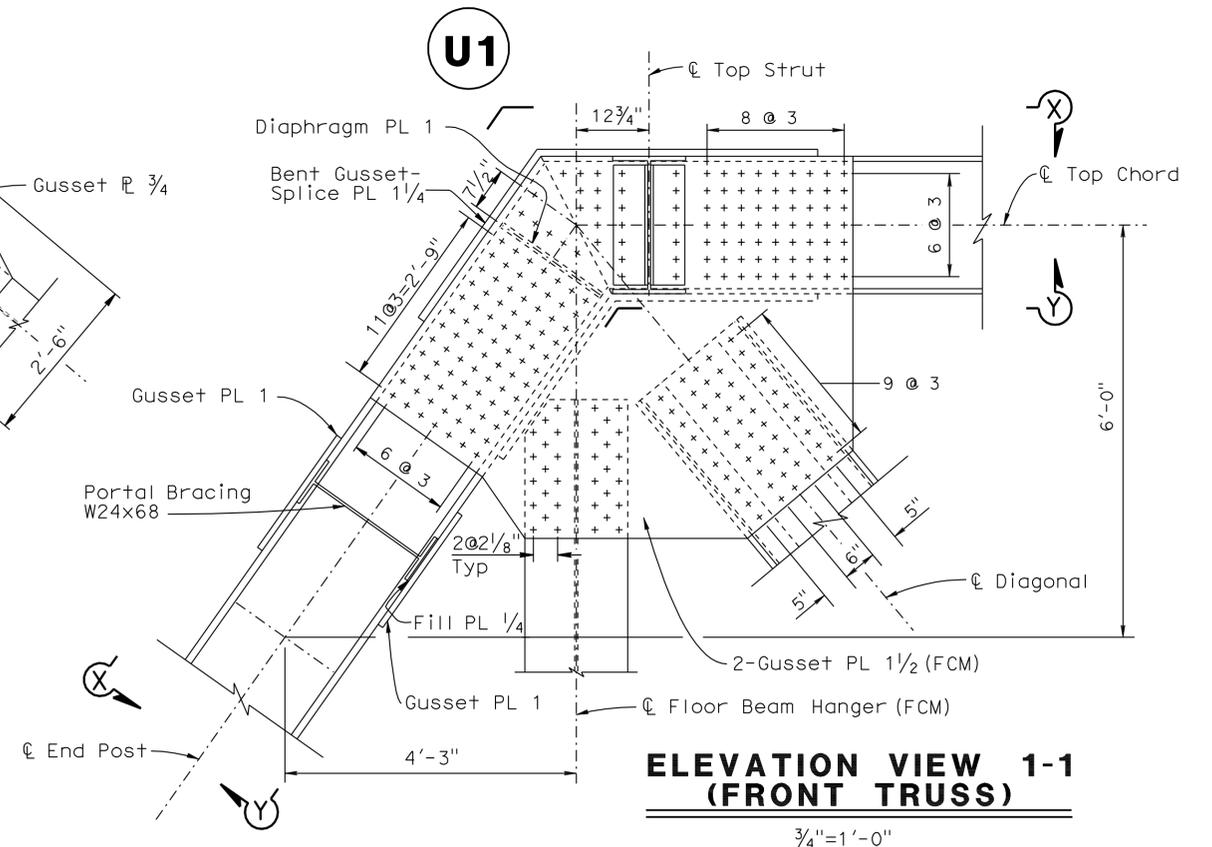
PLAN TOP LATERAL BRACING
3/16"=1'-0"



VIEW Y-Y (DEVELOPED)
3/4"=1'-0"



DETAIL K
3/4"=1'-0"

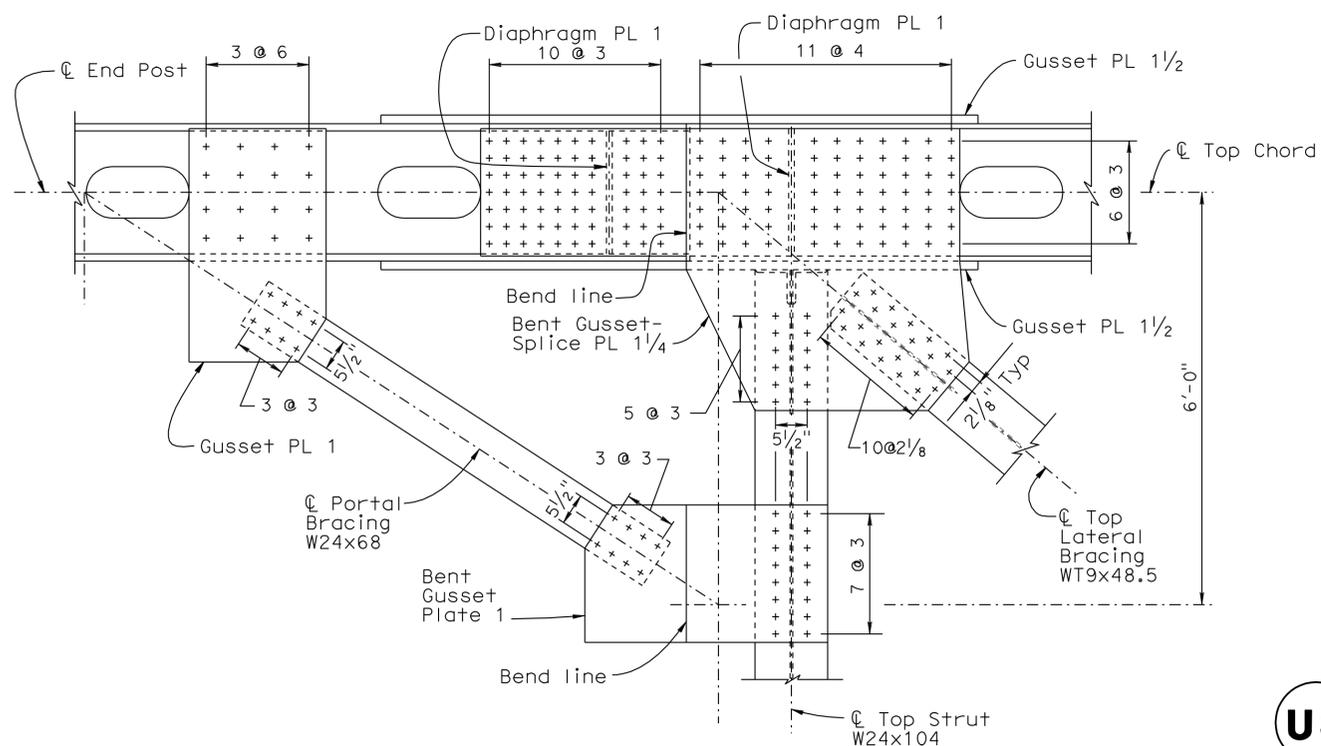


ELEVATION VIEW 1-1 (FRONT TRUSS)
3/4"=1'-0"

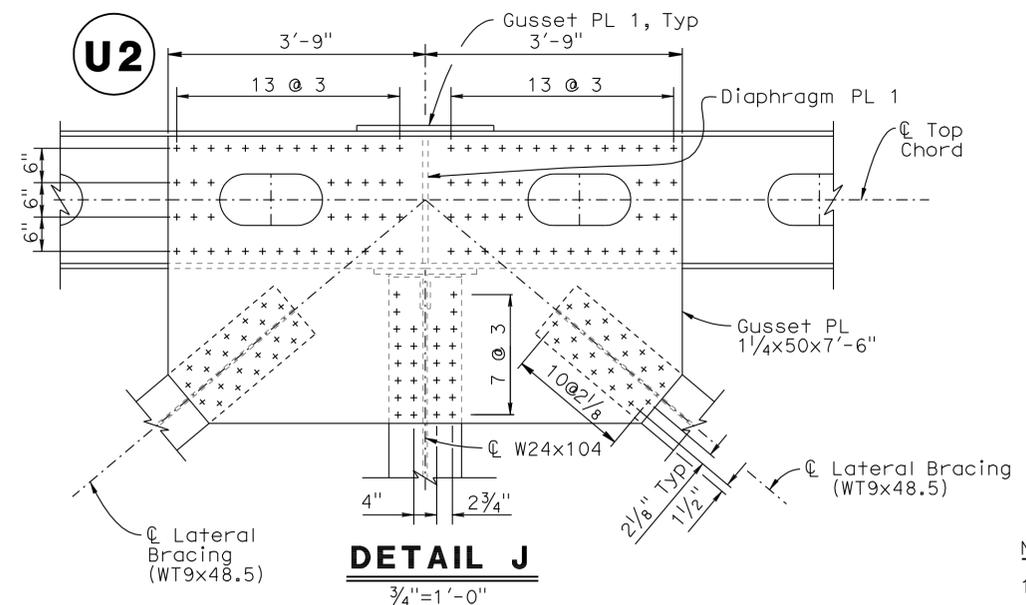
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1305	HIGHGROVE UNDERPASS #2 TOP LATERAL BRACING NO. 1			
	DETAILS	BY G. Hallstrom	CHECKED B. Addiespurger			R.R. MILE POST	5.89				
	QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			LINE SEG. 7602					
UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061					CONTRACT NO.: 08-0M9401		DISREGARD PRINTS BEARING EARLIER REVISION DATES				
REVISION DATES: 11-15-11, 12-21-11, 12-28-11, 2-23-12								SHEET	23	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	1659	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.					

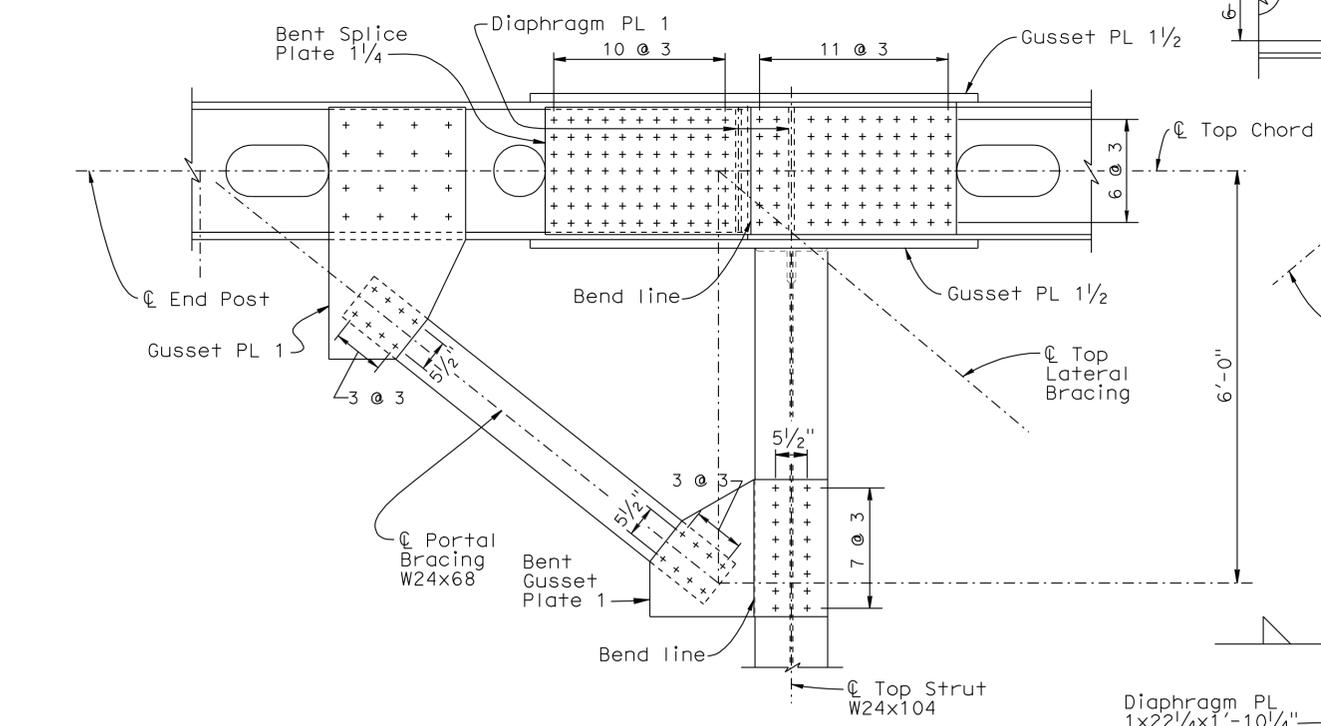


VIEW J-J (DEVELOPED)
3/4"=1'-0"

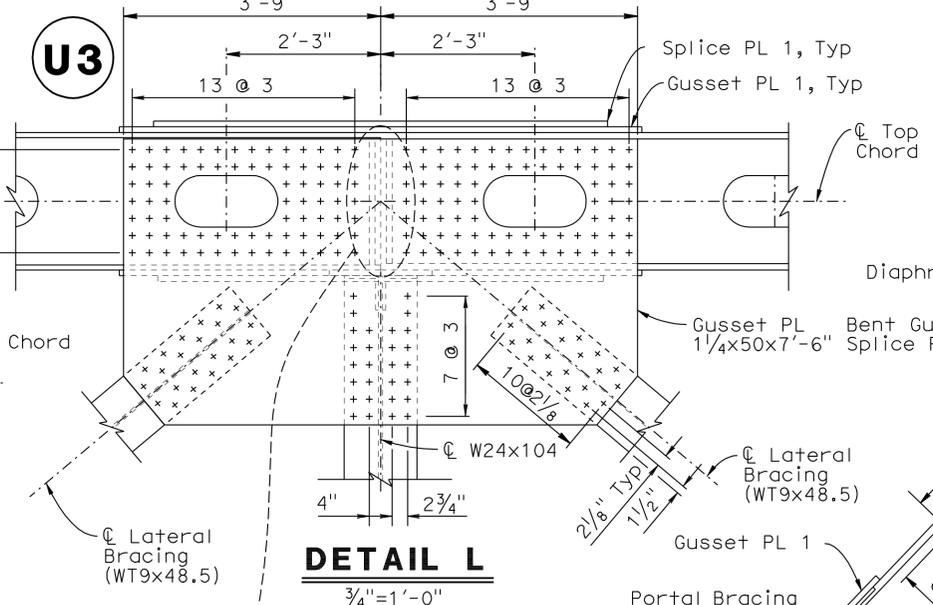


DETAIL J
3/4"=1'-0"

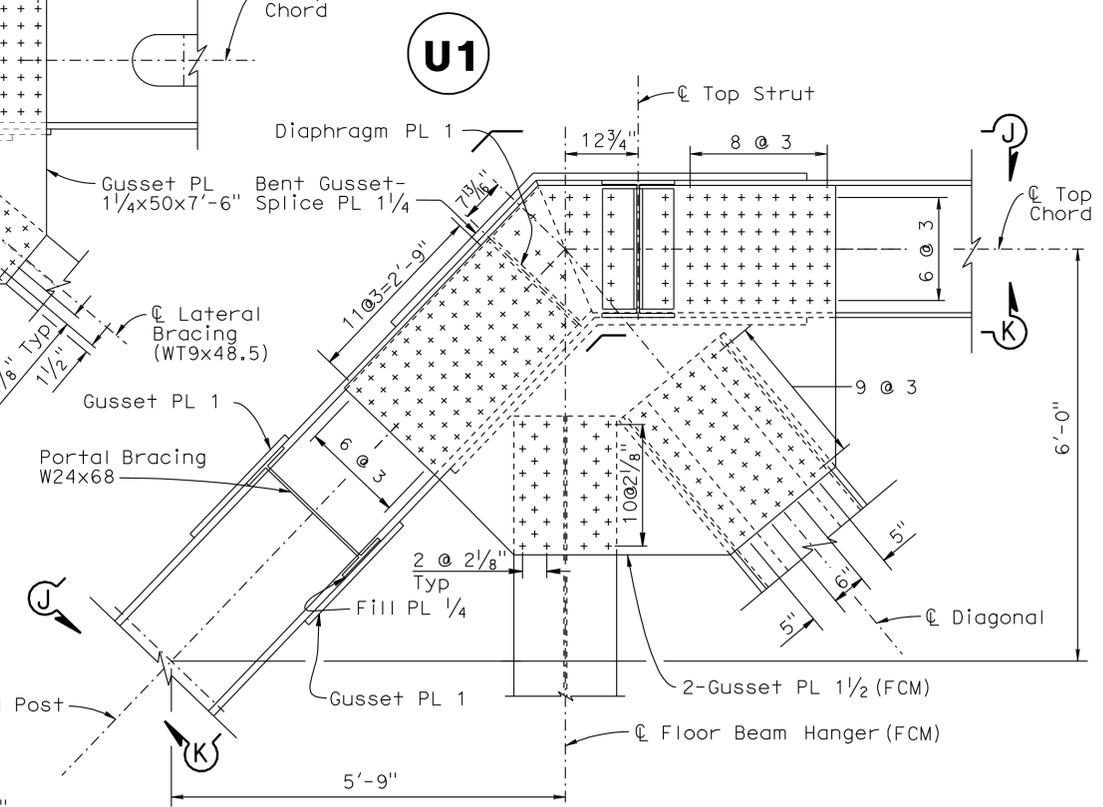
- NOTES:**
- For location of Elevation View 2-2, Detail J, and Detail L, see "TOP LATERAL BRACING NO. 1" sheet.
 - All bolts edge distance 1 1/2" unless otherwise shown.
 - FCM: Fracture Critical Member



VIEW K-K (DEVELOPED)
3/4"=1'-0"



DETAIL L
3/4"=1'-0"



ELEVATION VIEW 2-2 (REAR TRUSS)
3/4"=1'-0"

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

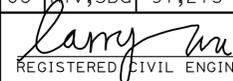
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY G. Hallstrom	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

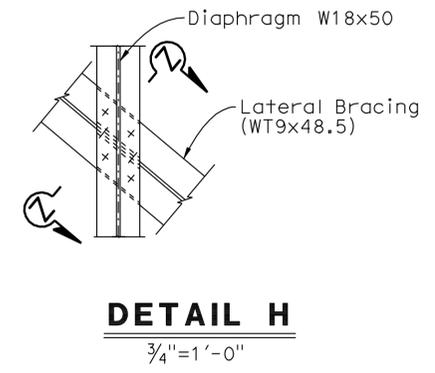
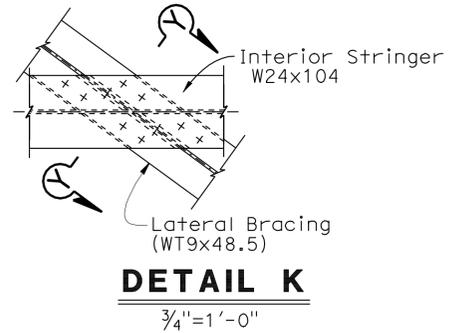
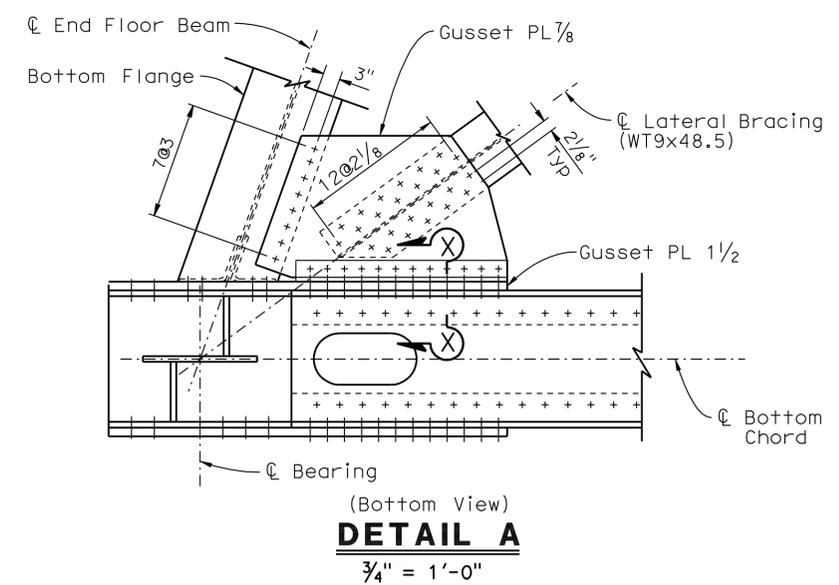
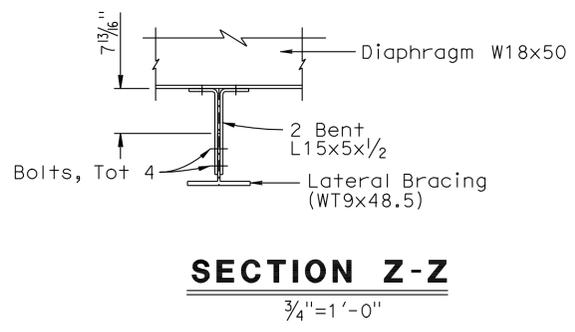
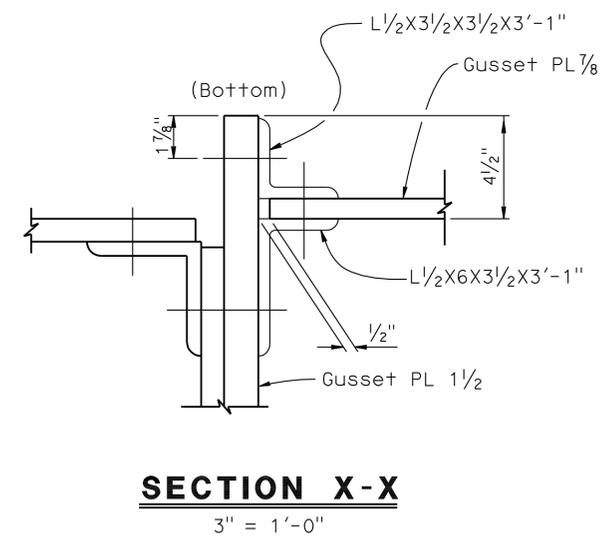
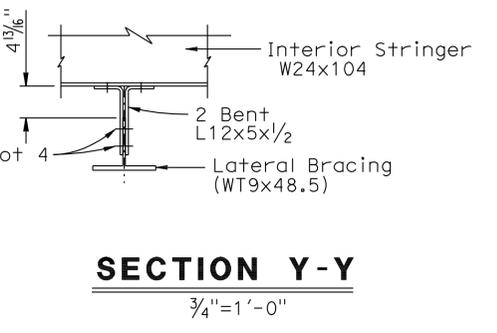
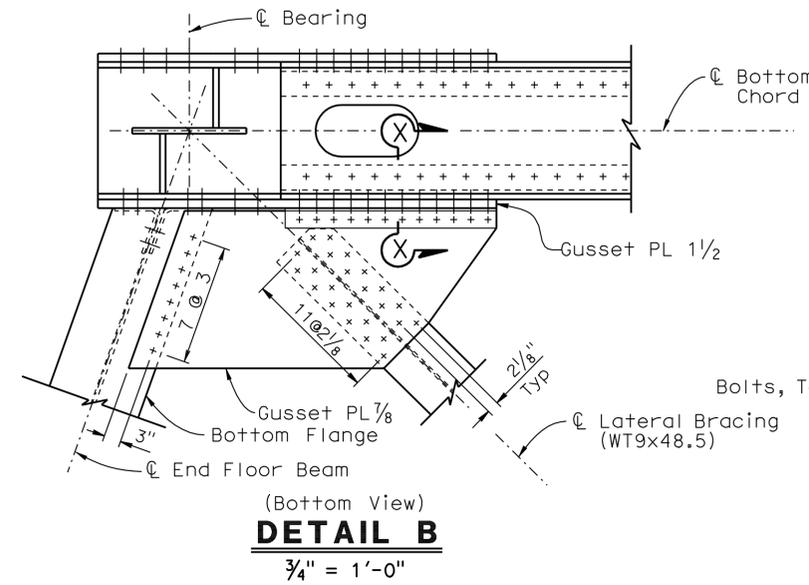
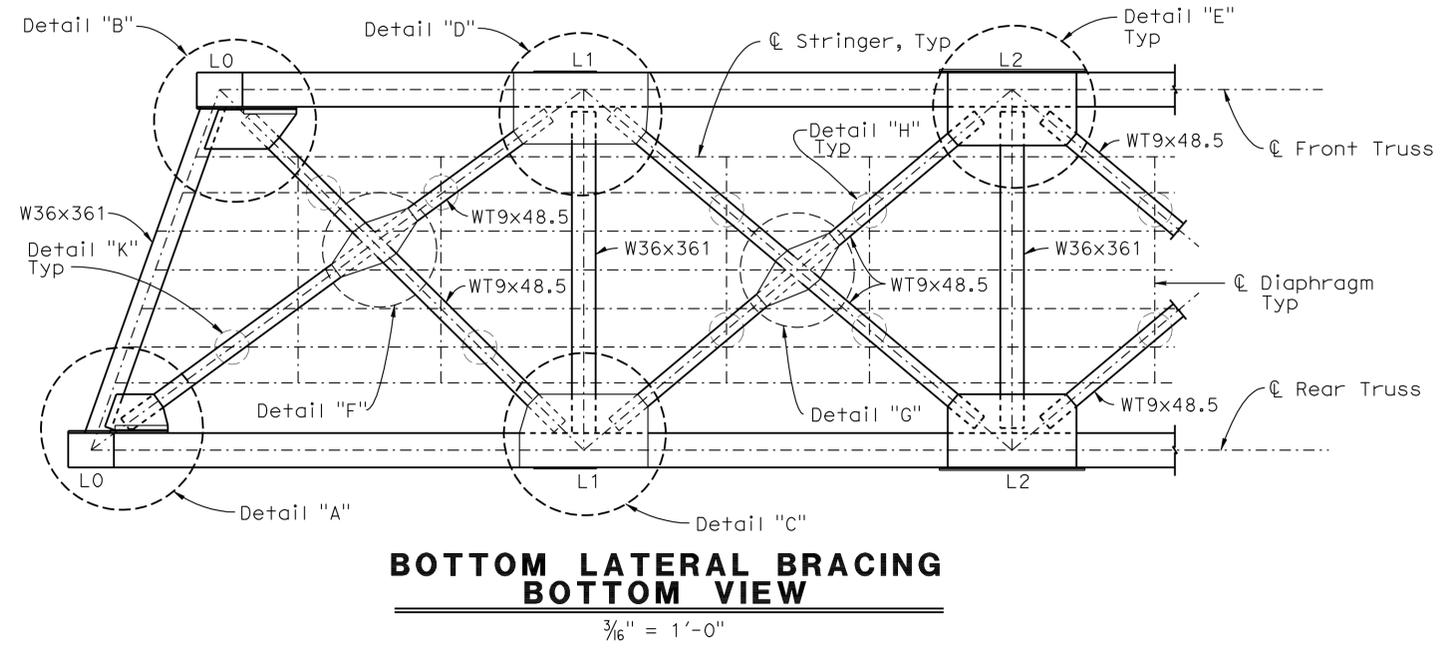
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	54-1305
R.R. MILE POST	5.89
LINE SEG.	7602

HIGHGROVE UNDERPASS #2
TOP LATERAL BRACING NO. 2

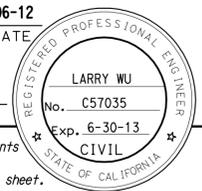
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1660	1743
			4-06-12	REGISTERED CIVIL ENGINEER DATE	
4-16-12			PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					

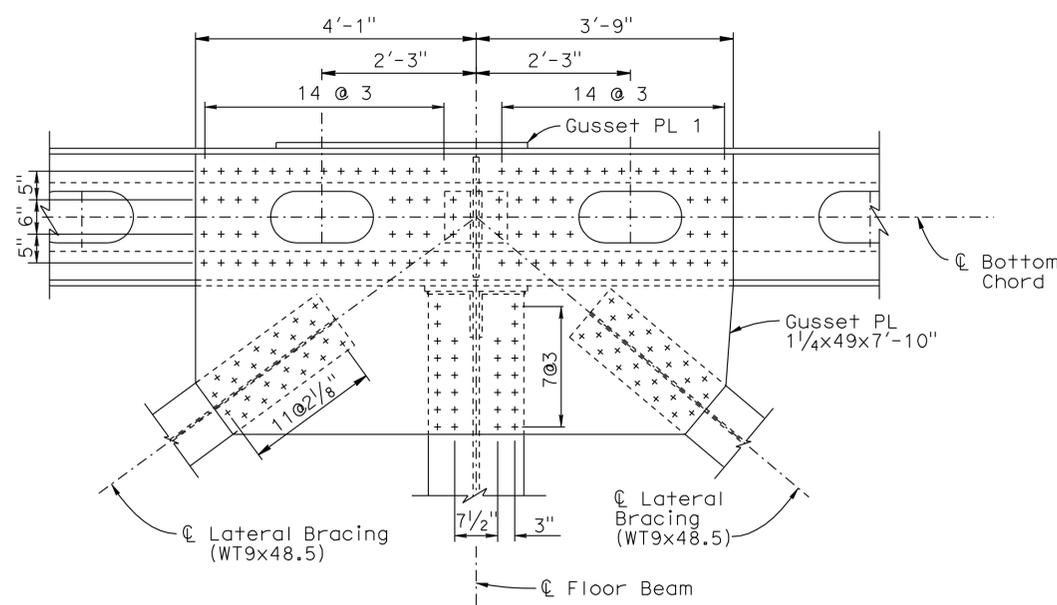


- NOTES:**
1. For Detail C, Detail D, Detail E, Detail F, and Detail G, see "BOTTOM LATERAL BRACING NO. 2" sheet.
 2. Detail H and Detail K are as viewed from the top of structure.
 3. All bolts edge distance 1/2" unless otherwise shown.

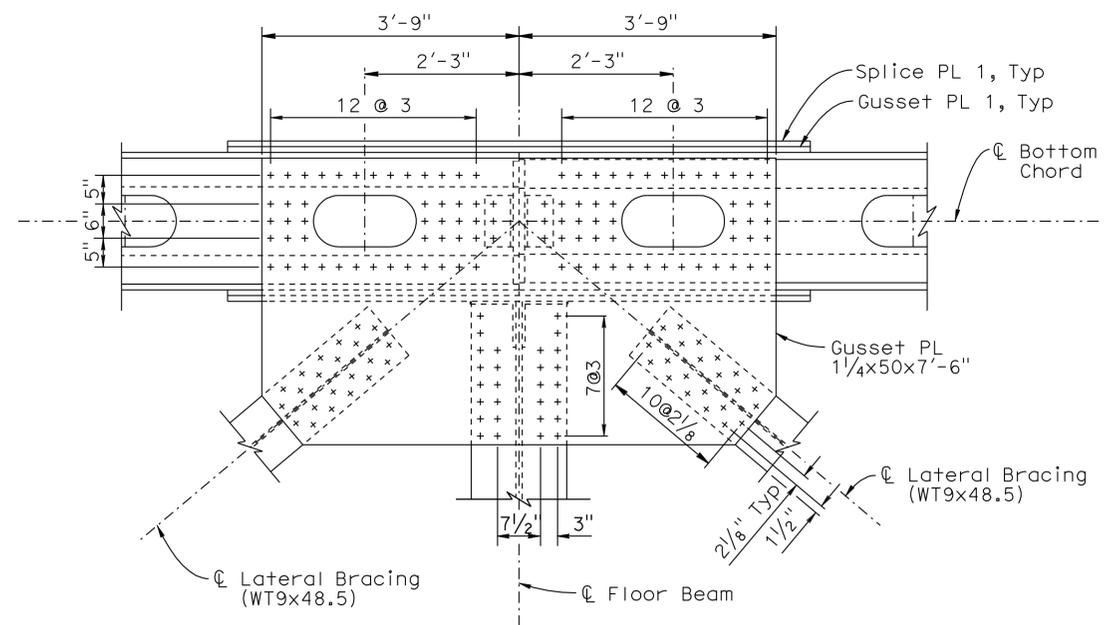
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 BOTTOM LATERAL BRACING NO. 1
	DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addiespurger			R.R. MILE POST 5.89	
	QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			LINE SEG. 7602	
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 25 OF 42

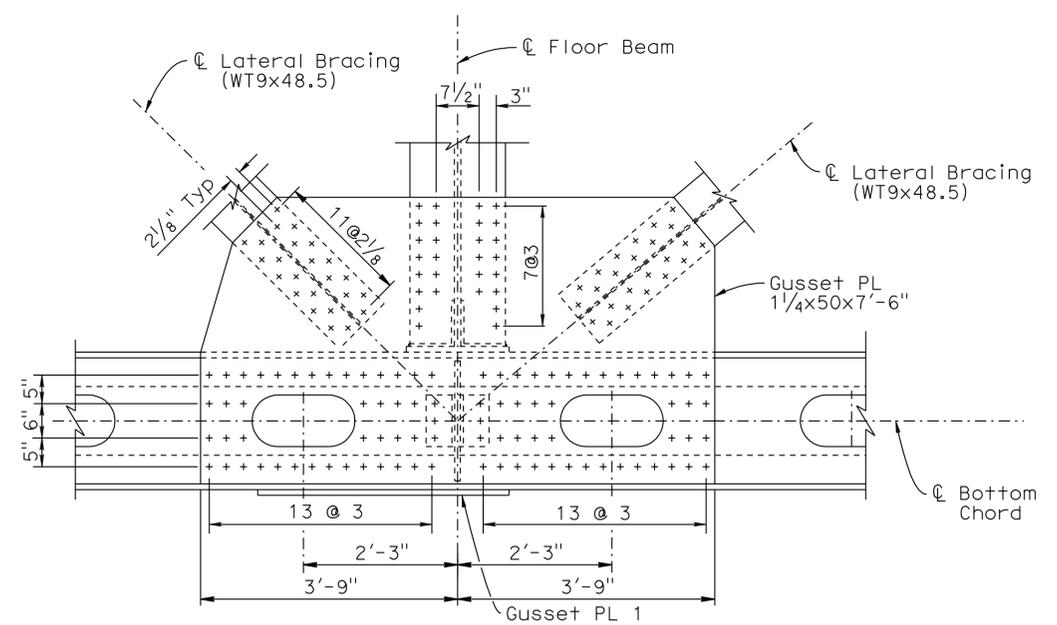
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1661	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



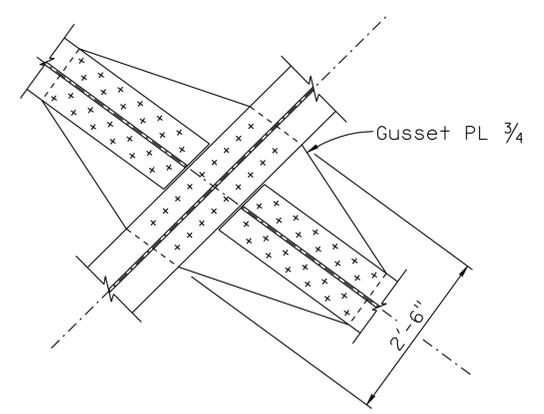
(Bottom View)
DETAIL D
3/4"=1'-0"



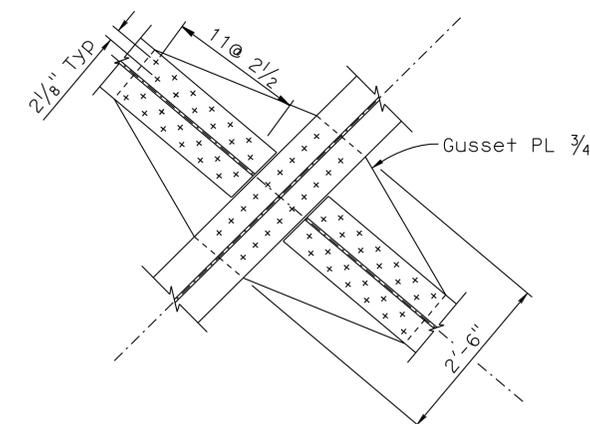
(Bottom View)
DETAIL E
3/4"=1'-0"



(Bottom View)
DETAIL C
3/4"=1'-0"



DETAIL F
3/4"=1'-0"



DETAIL G
3/4"=1'-0"

- NOTES:
1. For location of Detail C, Detail D, Detail E, Detail F, and Detail G, see "BOTTOM LATERAL BRACING NO. 1" sheet.
 2. All bolts edge distance 1 1/2" unless otherwise shown.
 3. Detail C, Detail D, and Detail E, are as viewed from the bottom of structure.
 4. Detail F and Detail G, are as viewed from the top of structure.

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 L. Wu CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 BOTTOM LATERAL BRACING NO. 2	
	DETAILS BY Y. Tang/G. Hallstrom CHECKED B. Addiespurger		PROJECT NUMBER & PHASE: 08000005061	R.R. MILE POST 5.89		SHEET OF 26 42
	QUANTITIES BY T. Sanderson CHECKED A. McPhee		UNIT: 3589 CONTRACT NO.: 08-0M9401	LINE SEG. 7602		REVISION DATES 7/08/11 2-23-12 4-06-12

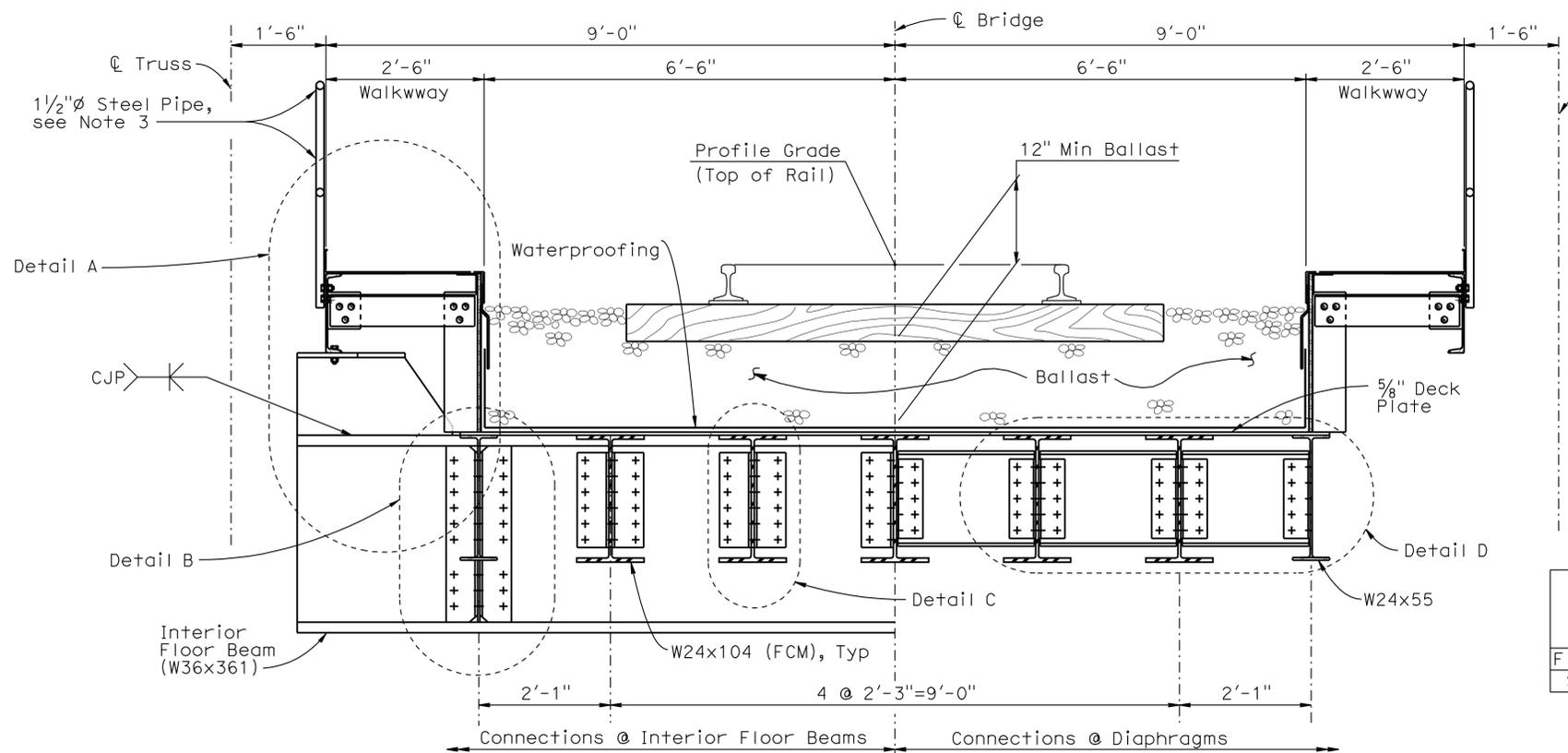
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 3589
PROJECT NUMBER & PHASE: 08000005061
CONTRACT NO.: 08-0M9401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

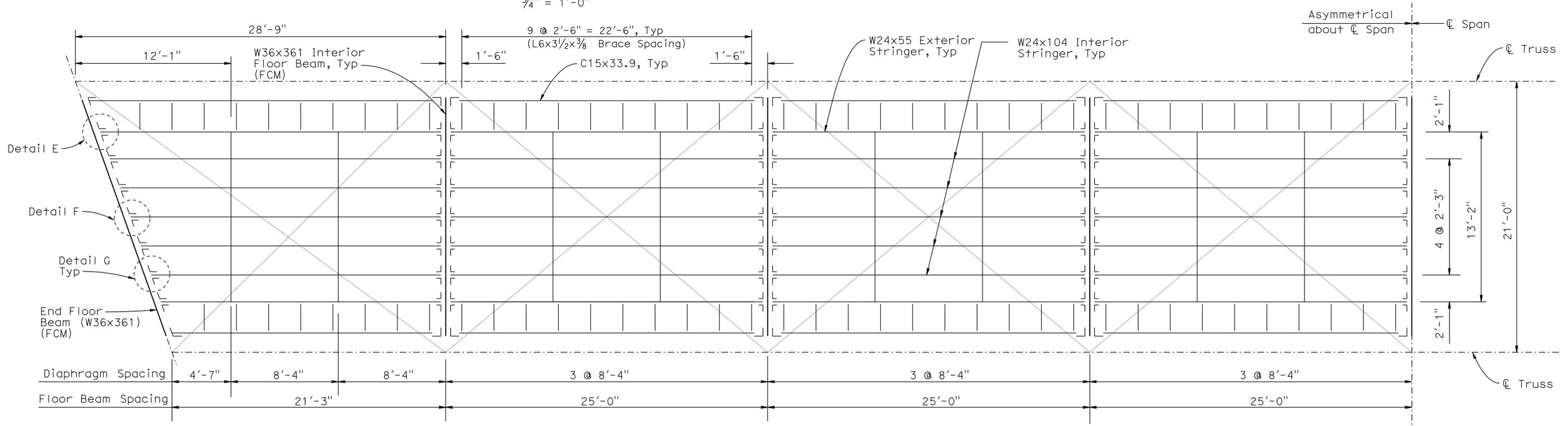
7/08/11	2-23-12	4-06-12	26	42
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- NOTES:**
- For Detail A, Detail D, Detail F, and Detail G, see "FLOOR SYSTEM DETAILS NO. 1" sheet.
 - For Detail B and Detail C, see "FLOOR SYSTEM DETAILS NO. 2" sheet.
 - For steel pipe connection detail, see "WALKWAY AND HANDRAIL DETAILS" sheet.
 - FCM: Fracture Critical Member.
 - For Detail E, see Detail A on "TRUSS DETAILS NO. 2" sheet.

Member	DL (K-ft)	LL (K-ft)	Impact (K-ft)	Fatigue Load Range (K-ft)	Design Load (K-ft)	Section	Allowable Stress (ksi)	Actual Stress (ksi)	Allowable Fatigue Stress Range (ksi)	Actual Fatigue Stress Range (ksi)
Floor Beam	487	1391	556	1630	2434	W36x361	27.50	21.84	24.00	14.62
Stringer	76	233	110	272	420	W24x104	27.50	19.75	24.00	12.77

TYPICAL INTERIOR FLOOR BEAM SECTION
 $\frac{3}{4}'' = 1'-0''$



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

FLOOR SYSTEM PLAN
 $\frac{1}{4}'' = 1'-0''$

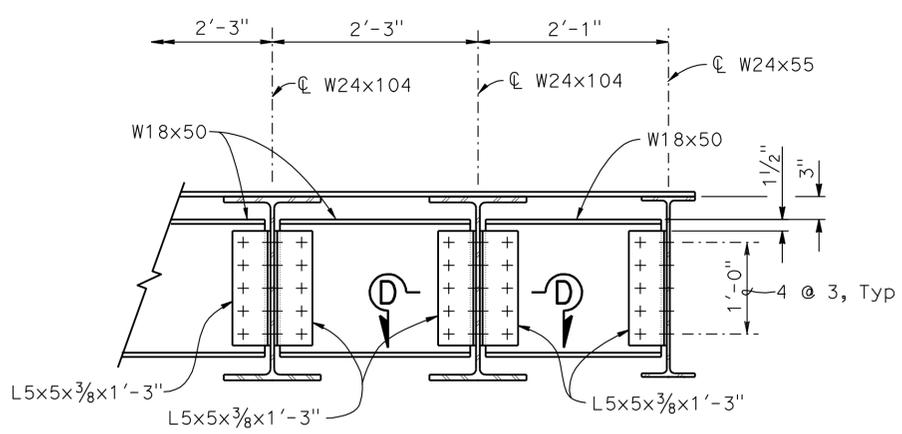
DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY Y. Tang	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

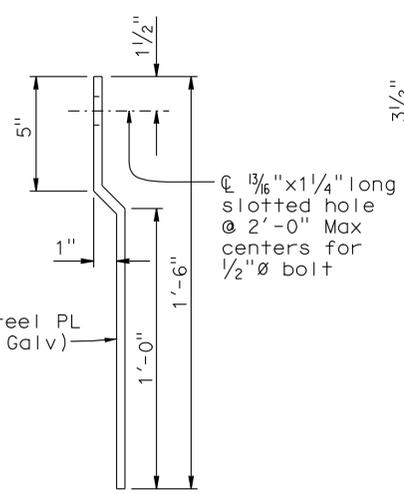
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10
 BRIDGE NO. 54-1305
 R.R. MILE POST 5.89
 LINE SEG. 7602

HIGHGROVE UNDERPASS #2
FLOOR SYSTEM

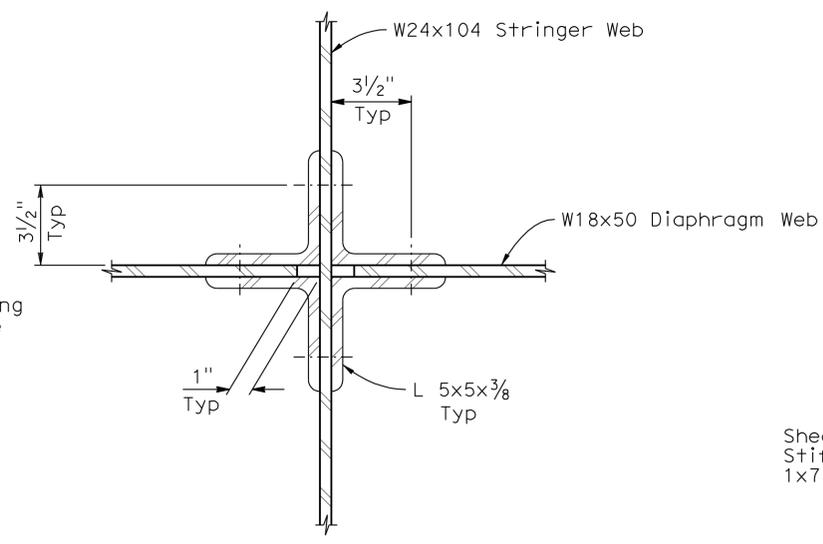
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1663	1743
 REGISTERED CIVIL ENGINEER			4-06-12	DATE	
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



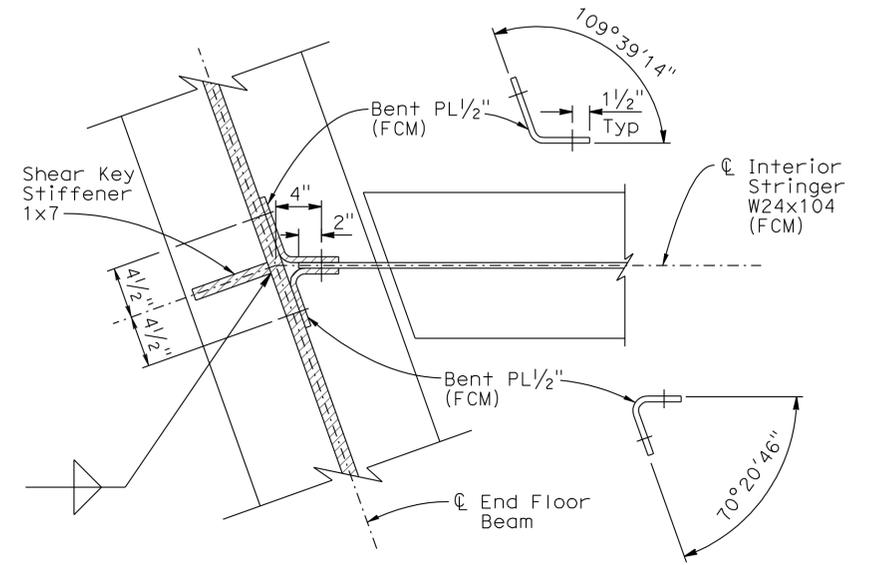
DETAIL D
1" = 1'-0"



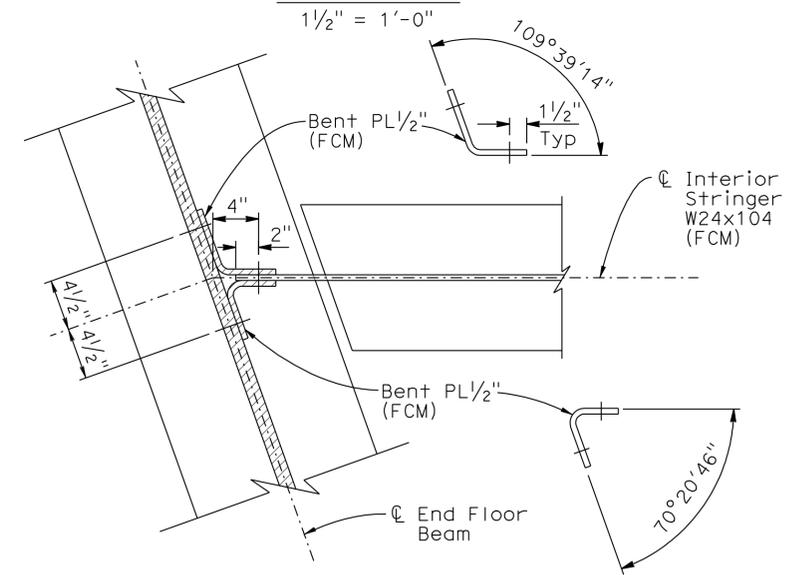
CURB FLASHING DETAIL
3" = 1'-0"



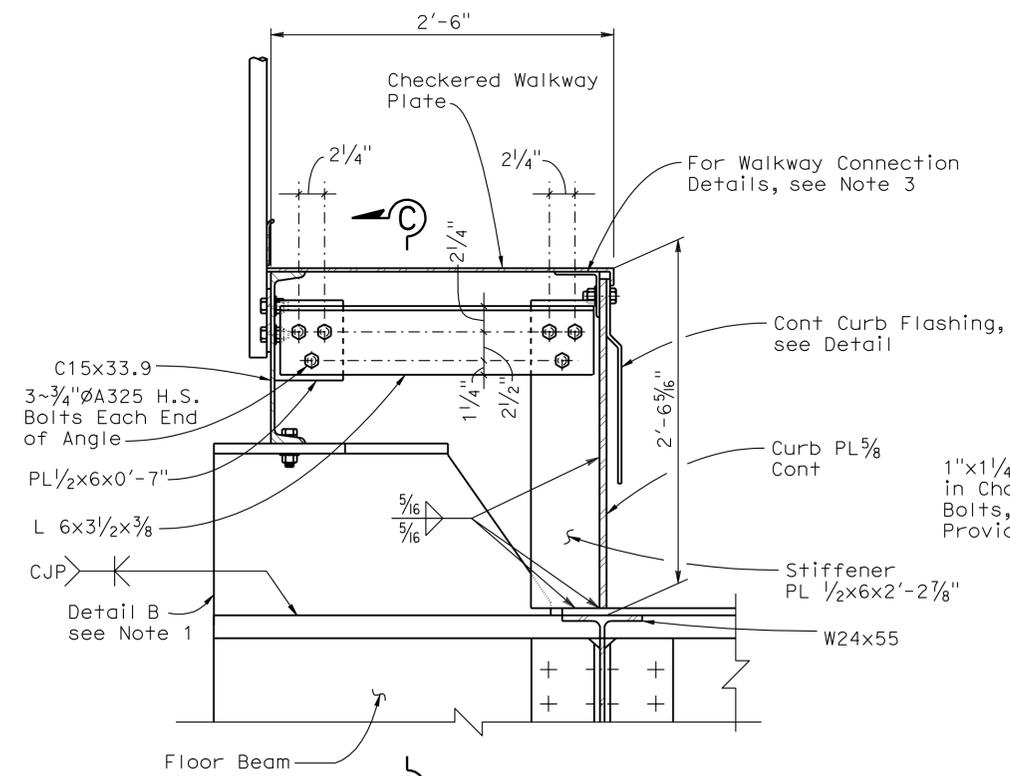
SECTION D-D
3" = 1'-0"



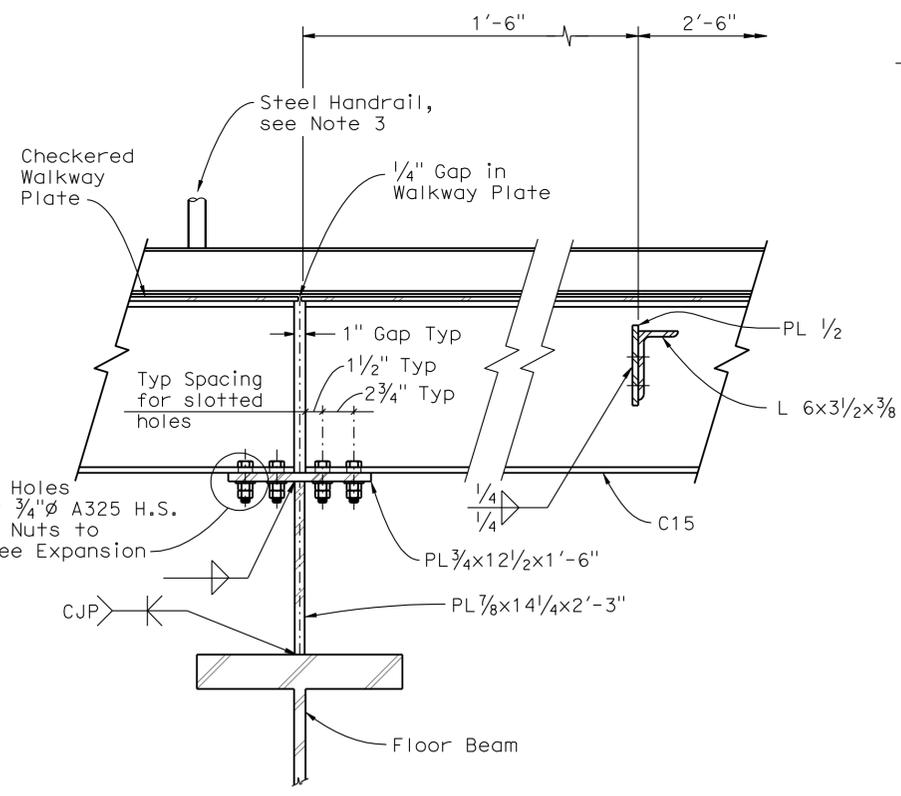
DETAIL F
1/2" = 1'-0"



DETAIL G
1/2" = 1'-0"



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



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

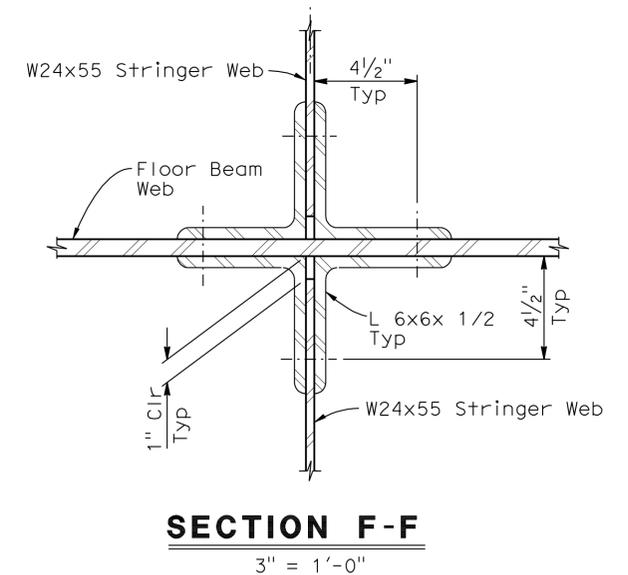
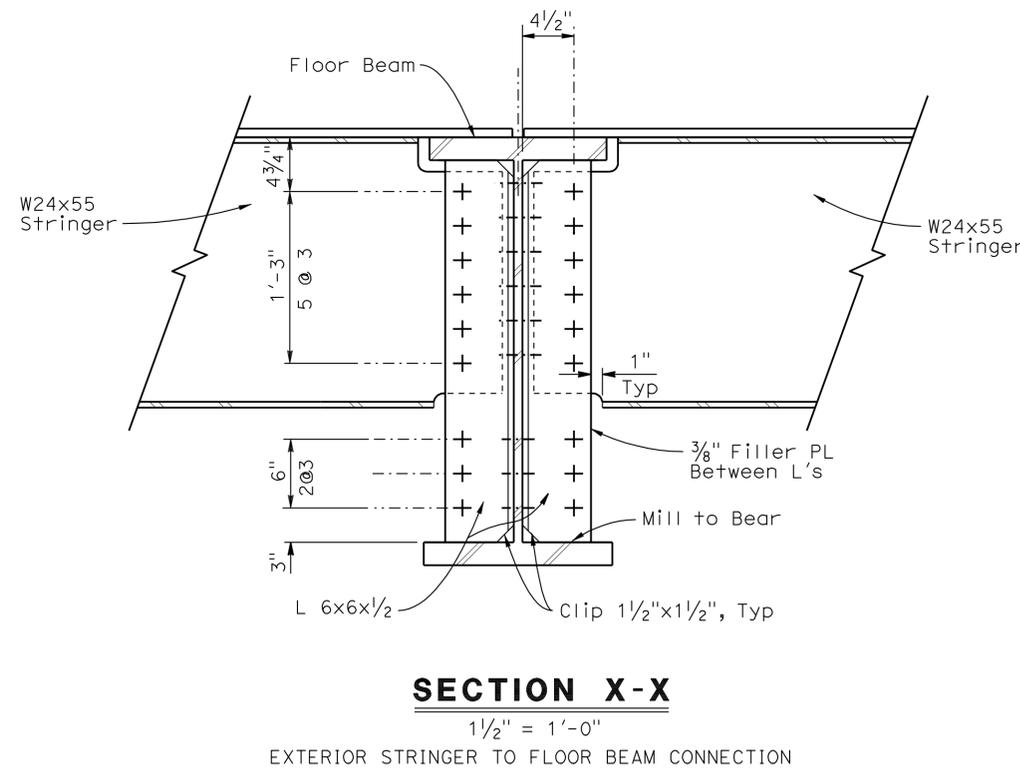
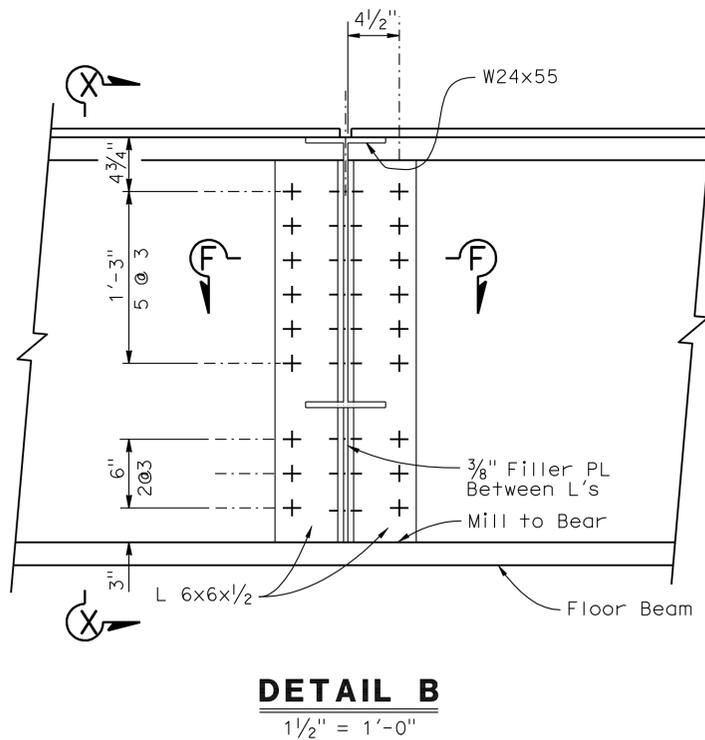
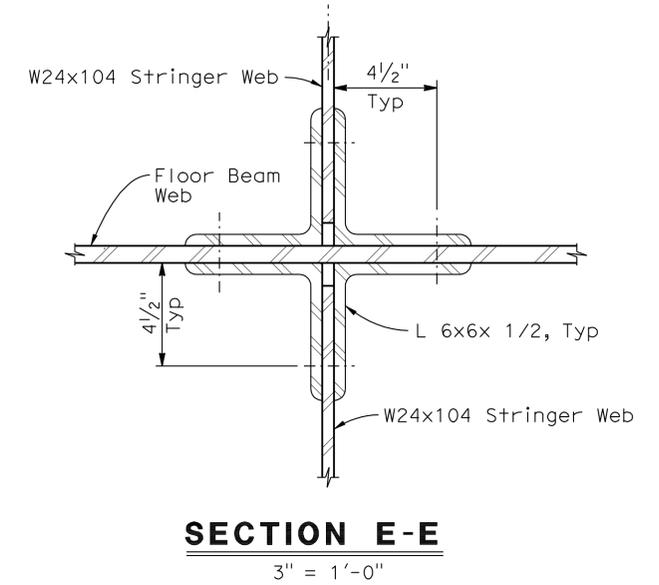
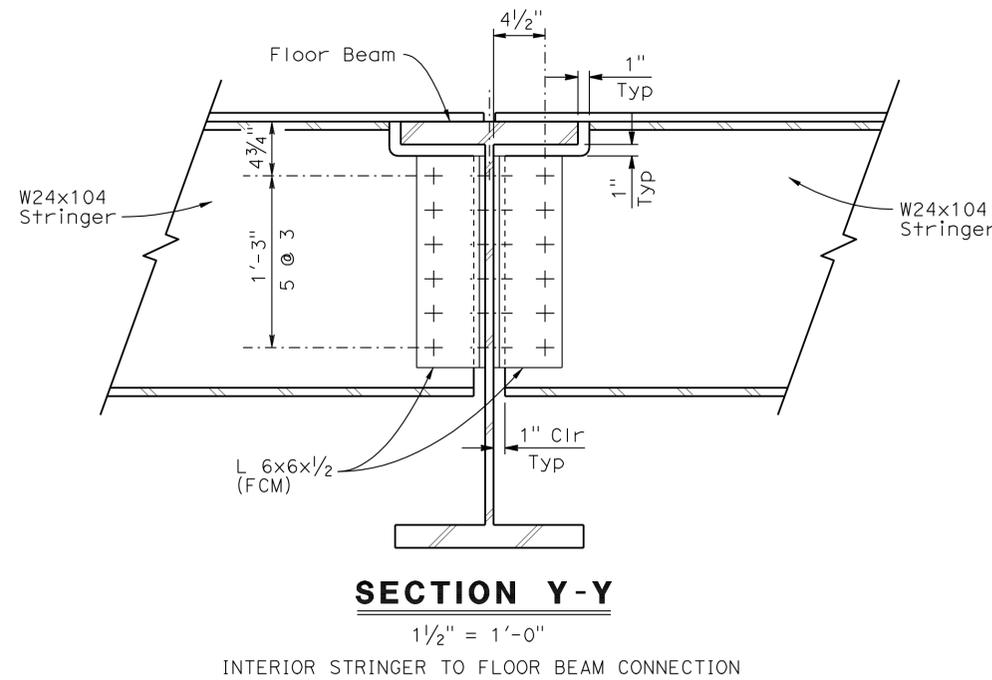
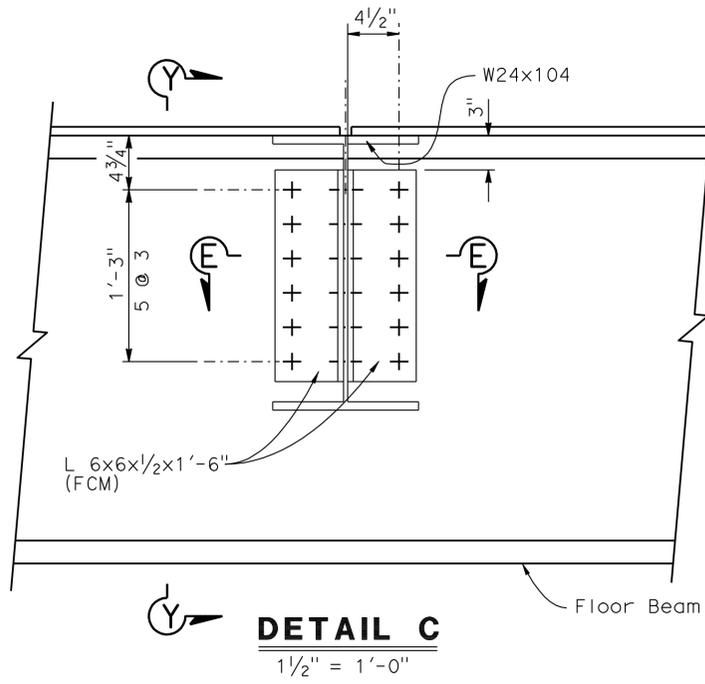
NOTES:

1. For Detail B, see "TRUSS DETAILS NO. 4" sheet.
2. For location of Detail A, Detail D, Detail F and Detail G, see "FLOOR SYSTEM" sheet.
3. For details, see "WALKWAY AND HANDRAIL DETAILS" sheet.
4. All bolts edge distance 1/2" unless otherwise shown.
5. FCM: Fracture Critical Member.

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

DESIGN BY L. Wu CHECKED B. Addiespurger DETAILS BY Y. Tang/ G. Hallstrom CHECKED B. Addiespurger QUANTITIES BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 FLOOR SYSTEM DETAILS NO. 1
			R.R. MILE POST 5.89	
			LINE SEG. 7602	
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: 7-21-11, 9-18-11, 10-9-11, 4-06-12 SHEET 28 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	1664	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>					



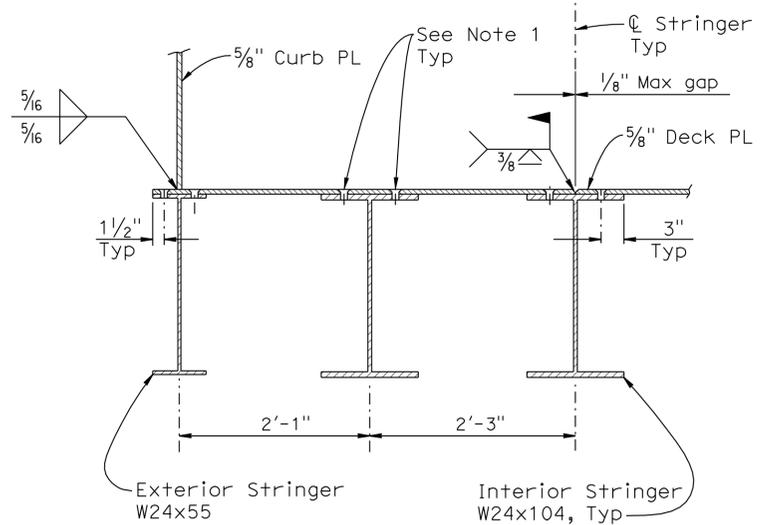
NOTES:

- For location of Detail B and Detail C, see "FLOOR SYSTEM" sheet.
- Floor Beam bottom flange to conform to requirements for FCM.
- All bolts edge distance 1 1/2" unless otherwise shown.
- FCM: Fracture Critical Member

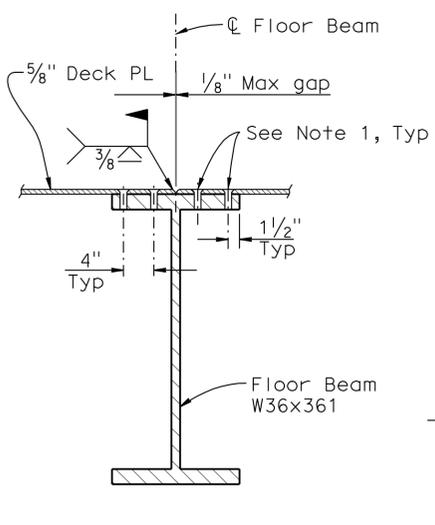
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY L. Wu CHECKED B. Addiespurger	BY Y. Tang/G. Hallstrom CHECKED B. Addiespurger	BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #2 FLOOR SYSTEM DETAILS NO. 2
					54-1305	
					R.R. MILE POST	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061	BRIDGE NO. 54-1305 R.R. MILE POST 5.89 LINE SEG. 7602	CONTRACT NO.: 08-0M9401
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)				DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 7-22-11 9-28-11 10-9-11 2-23-12	SHEET 29 OF 42

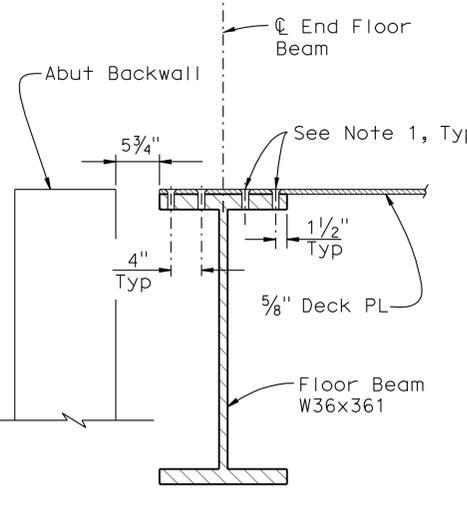
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1665	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



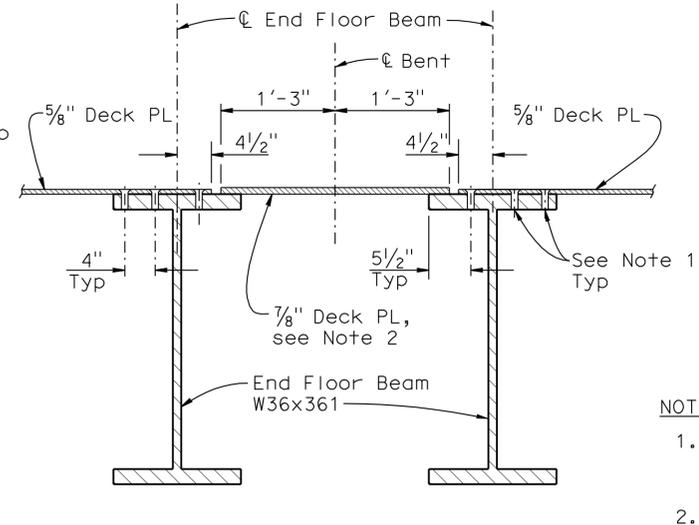
SECTION A-A
1" = 1'-0"



SECTION B-B
1" = 1'-0"

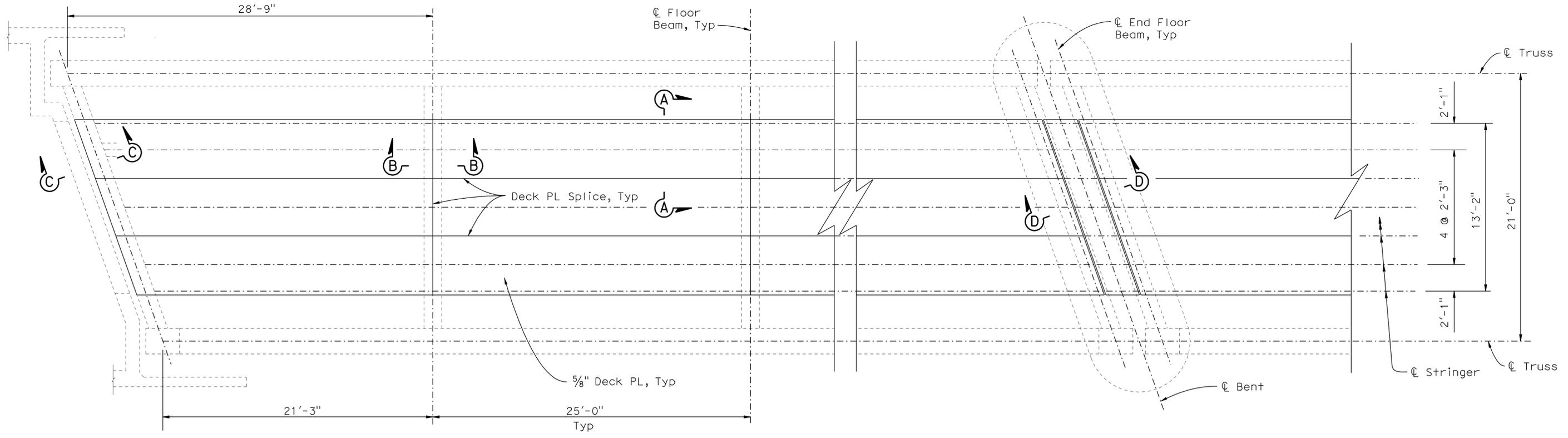


SECTION C-C
1" = 1'-0"



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

- NOTES:**
- 7/8" ø Countersunk Bolts (ASTM A449) spaced @ 6" C-C Max along Stringer or Floor Beam.
 - Do not bolt or weld Deck Plate to top flange of End Floor Beams at C of Bent.



PARTIAL PLAN - DECK PLATE
1/4" = 1'-0"

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

DESIGN	BY L. Wu	CHECKED B. Addiespurger
DETAILS	BY G. Hallstrom	CHECKED B. Addiespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

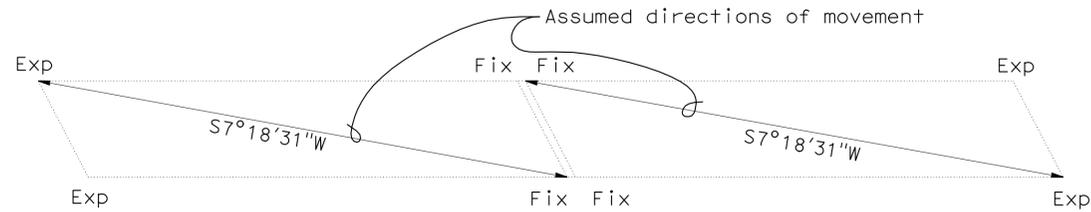
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.
54-1305
R.R. MILE POST
5.89
LINE SEG. 7602

HIGHGROVE UNDERPASS #2
DECK PLATE DETAILS

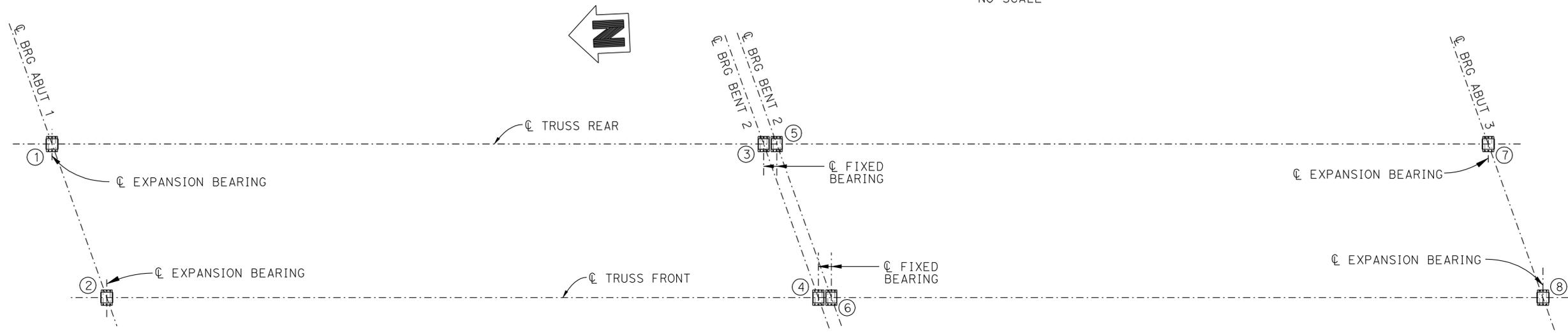
TABLE FOR PLATE SETTING DATA-EXPANSION BEARINGS POSITION OF SOLE PLATE RELATIVE TO BASE PLATES

TEMP @ TIME OF SETTING	20°F	70°F	120°F
SPAN ADJUSTMENT ALONG C WEB TOWARDS BENT 2	+3/4"	0"	-3/4"



SLOTTED HOLE ORIENTATION

NO SCALE



MASONRY PLATE AND ANCHOR BOLT LAYOUT

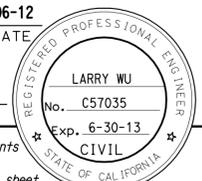
NO SCALE

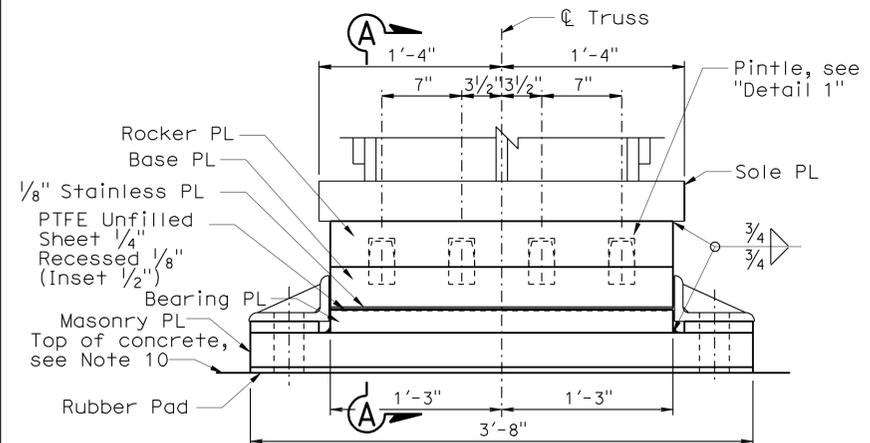
CONCRETE ELEVATION AT BOTTOM OF BEARING		
LOCATIONS		ELEVATIONS
FRONT TRUSS	Abut 1	934.98
	Bent 2	935.66
	Abut 3	935.25
REAR TRUSS	Abut 1	934.75
	Bent 2	935.66
	Abut 3	935.25

BEARING REACTION						
LOAD	FIXED BEARING (BENT) (3) (6)			EXPANSION BEARING (ABUTMENT) (1) (8)		
	F _v (kips)	F _{long} (kips)	F _{trans} (kips)	F _v (kips)	F _{long} (kips)	F _{trans} (kips)
DL	510	5	20	420	0	10
LL+I	690	20	30	580	0	20
WL	90	230	100	90	0	100
LF	20	170	10	20	0	10
EQ	190	840	380	200	0	320
LOAD	FIXED BEARING (BENT) (4) (5)			EXPANSION BEARING (ABUTMENT) (2) (7)		
	F _v (kips)	F _{long} (kips)	F _{trans} (kips)	F _v (kips)	F _{long} (kips)	F _{trans} (kips)
DL	420	5	20	510	0	10
LL+I	580	15	5	690	0	10
WL	80	230	70	100	0	220
LF	20	200	10	20	0	15
EQ	170	920	210	210	0	700

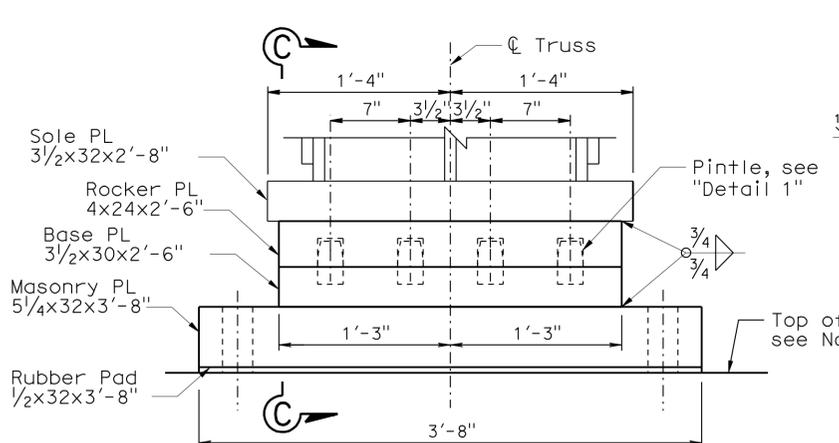
NOTES:

- The welding operation shall be performed at an ambient temperature between 55°F to 85°F
- If grouting is performed after welding sole plate to flange plate, then grout should be placed at the ambient temperature requirement of Note 1.
- Slotted holes in Masonry Plate for expansion bearings shall be oriented parallel to assumed direction of movement.
- Anchorage method shown on "BEARING DETAILS" Sheet.
- All bearings shall be marked prior to shipping. The marks shall indicate the bearing location and direction on the bridge, and a direction arrow that points up station. All marks shall be permanent and visible after the bearing is installed.

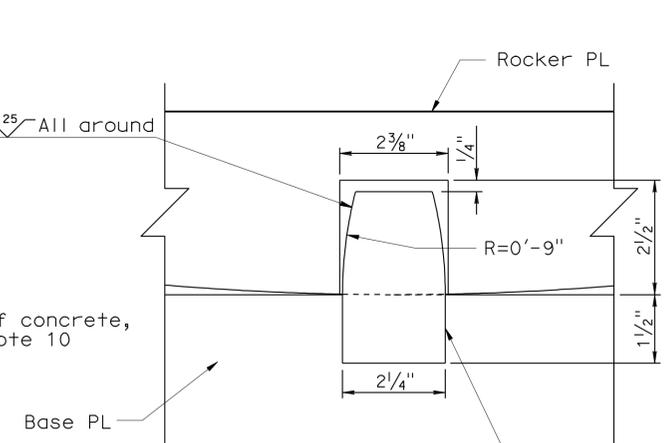
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1667	1743
 REGISTERED CIVIL ENGINEER DATE 4-06-12					
4-16-12 PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



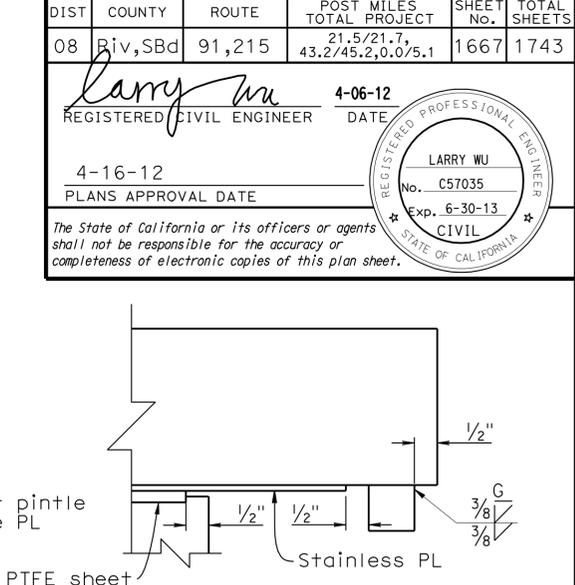
EXPANSION BEARING (ABUTMENT)
1/2" = 1'-0"



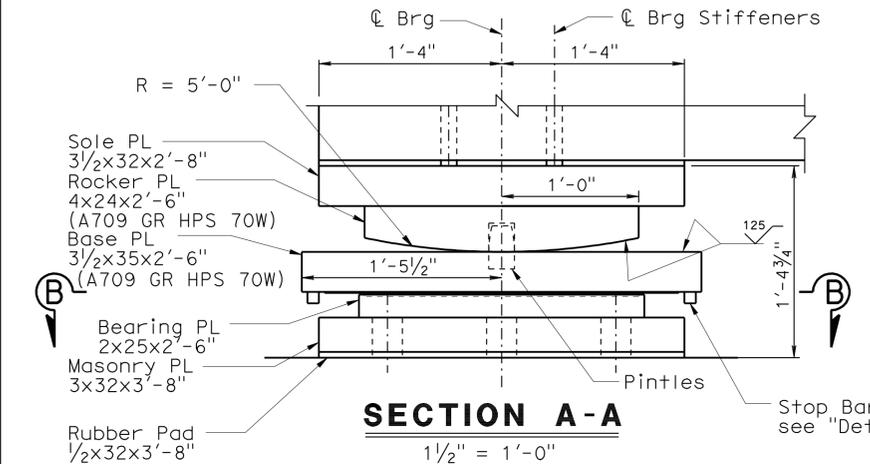
FIXED BEARING (BENT)
1/2" = 1'-0"



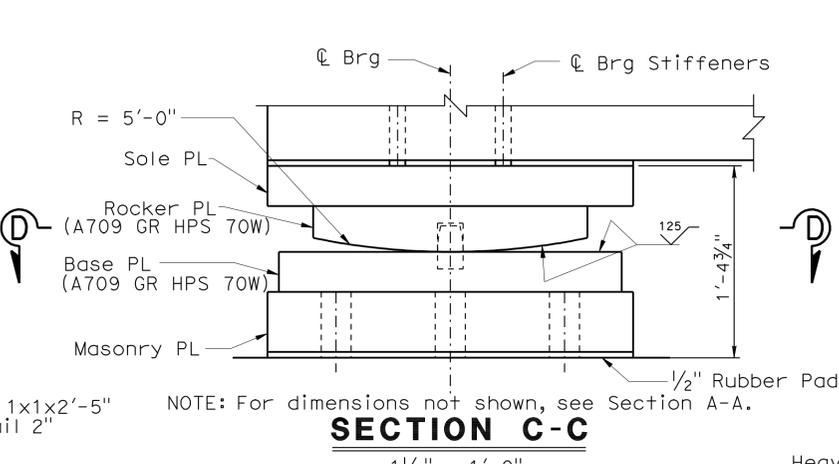
DETAIL 1
6" = 1'-0"



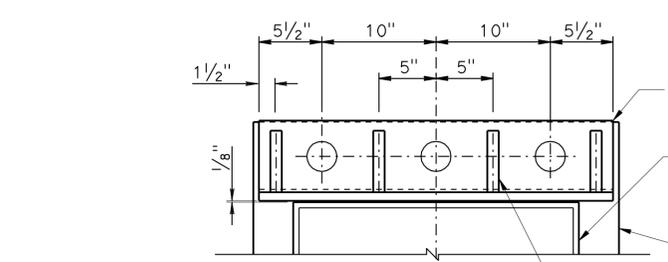
DETAIL 2
6" = 1'-0"



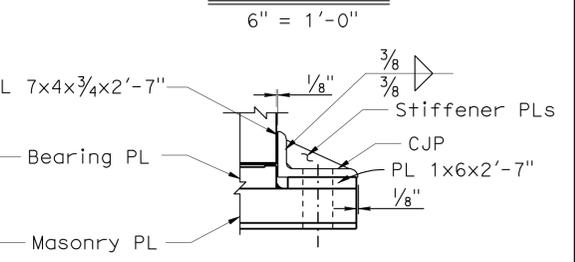
SECTION A-A
1/2" = 1'-0"



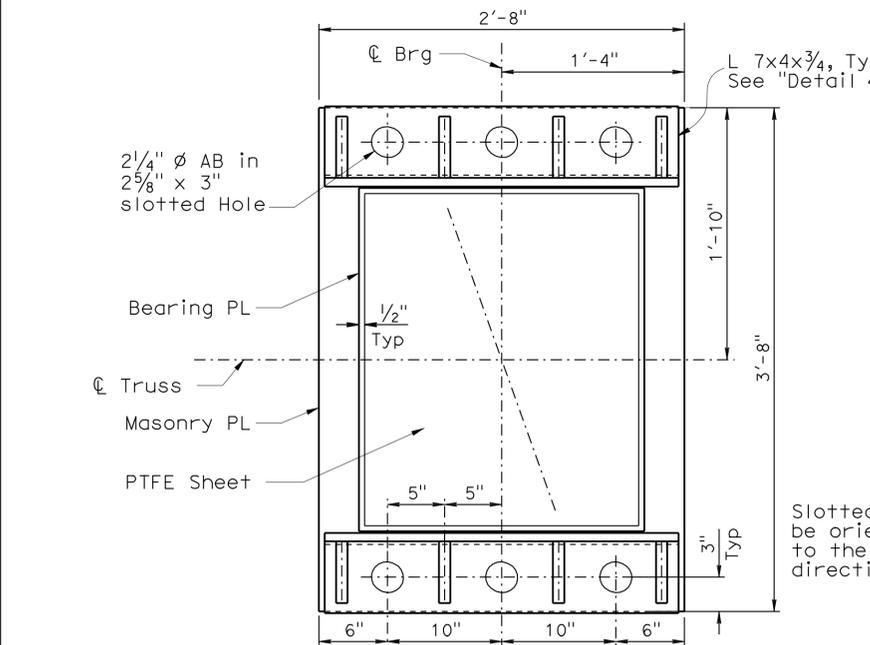
SECTION C-C
1/2" = 1'-0"



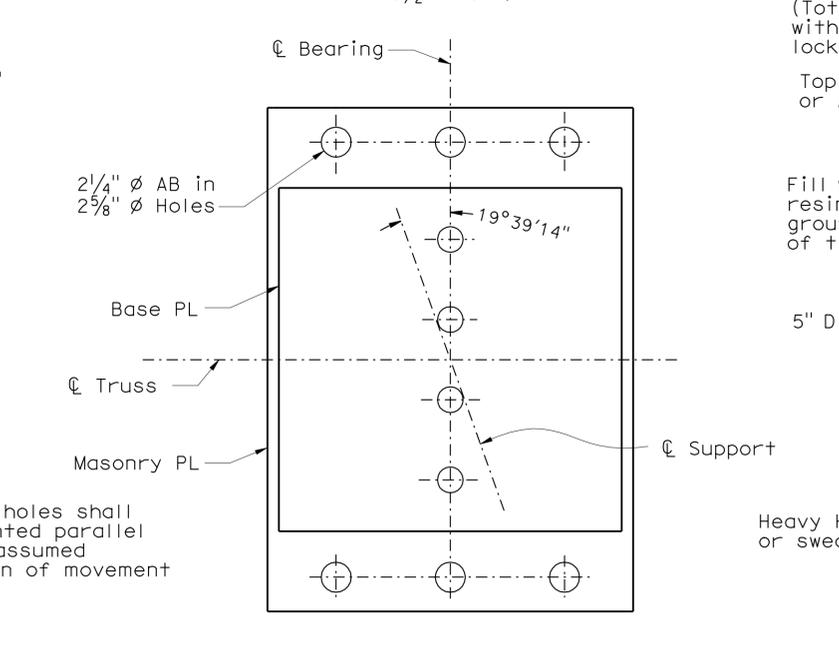
PLAN



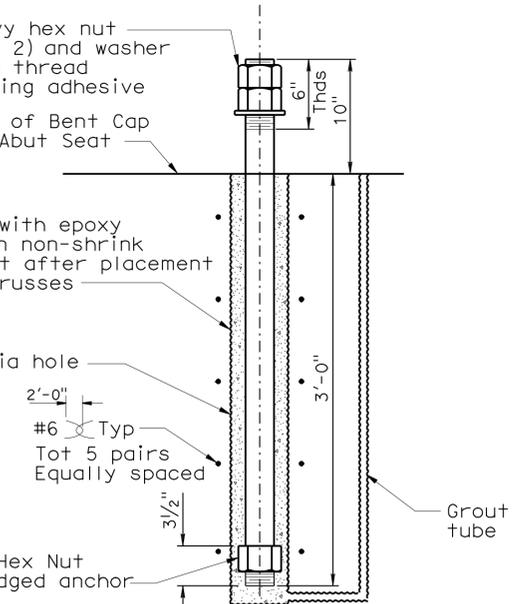
SECTION



BRG PL VIEW B-B
1/2" = 1'-0"



BASE PL VIEW D-D
1/2" = 1'-0"



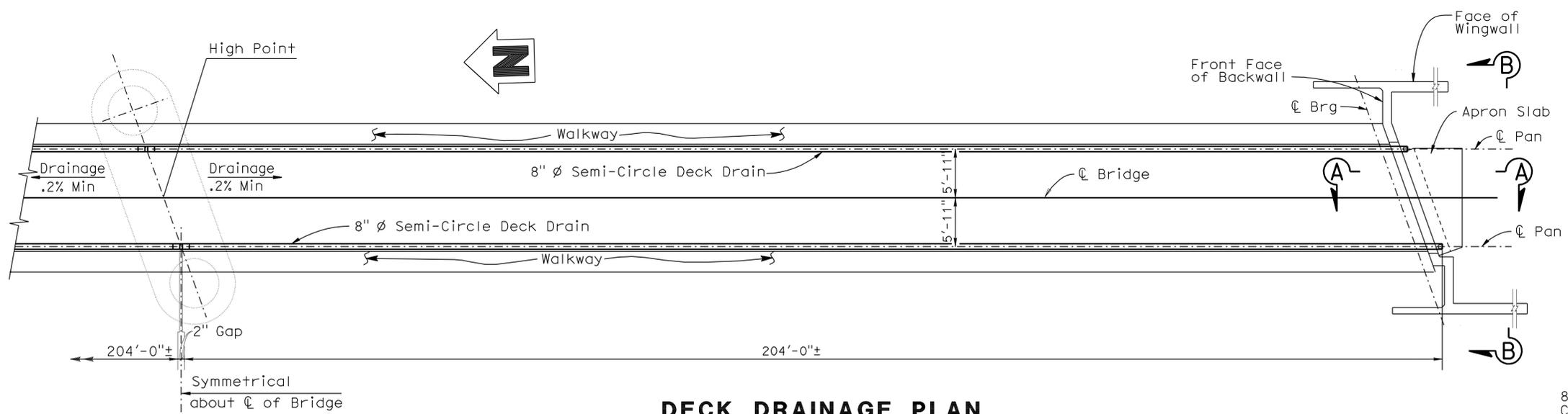
ANCHOR ROD DETAIL 3
1/2" = 1'-0"

- NOTES:**
- All material shall conform to ASTM A709 Gr50W unless otherwise noted.
 - All weld assemblies shall be stress relieved after fabrication in accordance with bridge welding code AWS D1.5.
 - Fabrication tolerances, packing, handling, storage, and installation of bearings shall conform to AREMA Manual, Chapter 15 Part 11.
 - Steel including anchor rods and nuts shall be painted per specifications.
 - Pintles shall conform to ASTM A354 BD, Anchor Rods shall conform to ASTM F1554 Gr 105, and nuts shall conform to ASTM A563 DH heavy hex.
 - PTFE sheet shall conform to AREMA Chapter 15, Sections 10.5 and 11.4.
 - Stainless steel sliding surface shall conform to AREMA Chapter 15, Section 10.5.
 - Rubber pad shall be natural rubber with Shore A hardness 50 and shall conform to AREMA Chapter 15, Section 10.6.
 - Sole plate to bottom chord connection may be field welded.
 - Concrete surface under Rubber Pad to be ground to a smooth level plane to give even bearing.
 - The minimum dead load for friction coefficient proof test shall be 400kips. The maximum vertical load for compression proof test shall be 1200kips.

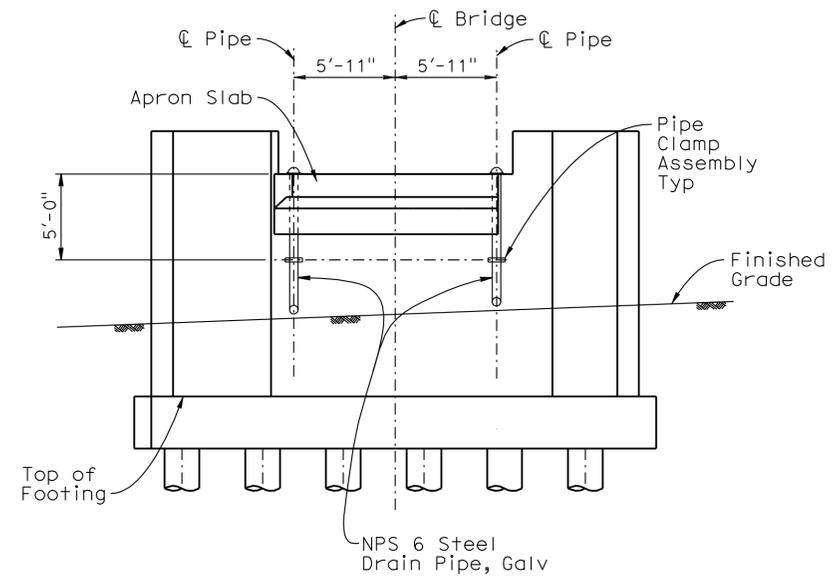
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 BEARING DETAILS
DETAILS	BY Y. Tang/G. Hallstrom	CHECKED B. Addiespurger			R.R. MILE POST 5.89	
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			LINE SEG. 7602	
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
				7-24-11	32	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	1668	1743
LARRY WU REGISTERED CIVIL ENGINEER DATE: 4-06-12			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.					
REGISTERED PROFESSIONAL ENGINEER LARRY WU No. C57035 Exp. 6-30-13 CIVIL STATE OF CALIFORNIA					

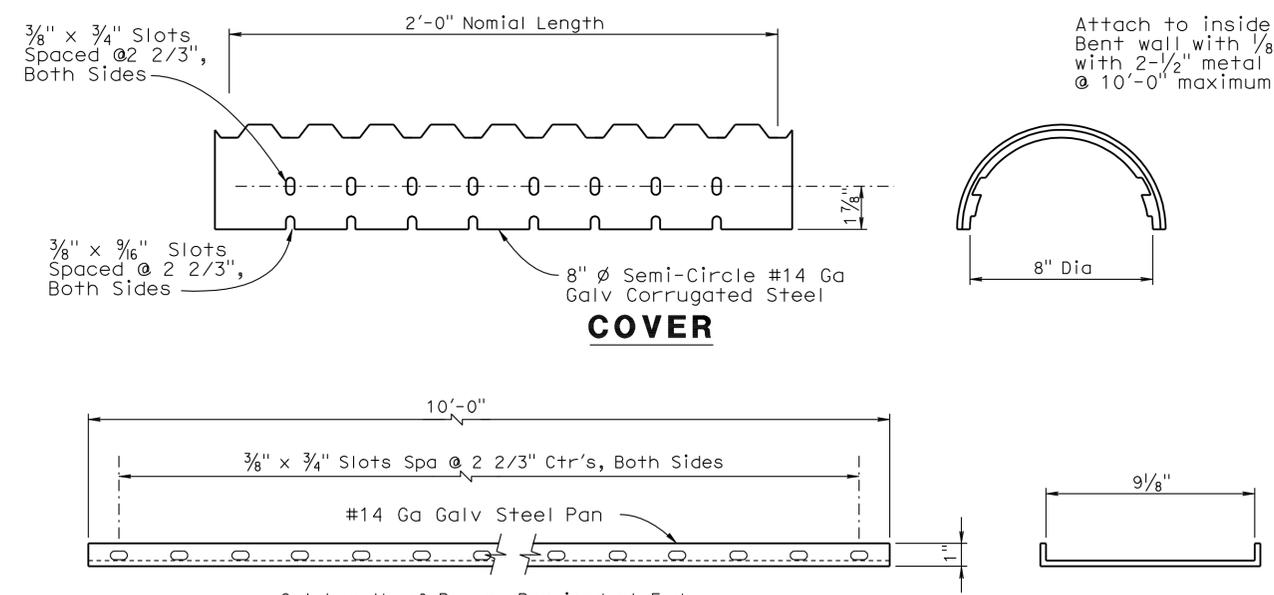


DECK DRAINAGE PLAN
NO SCALE



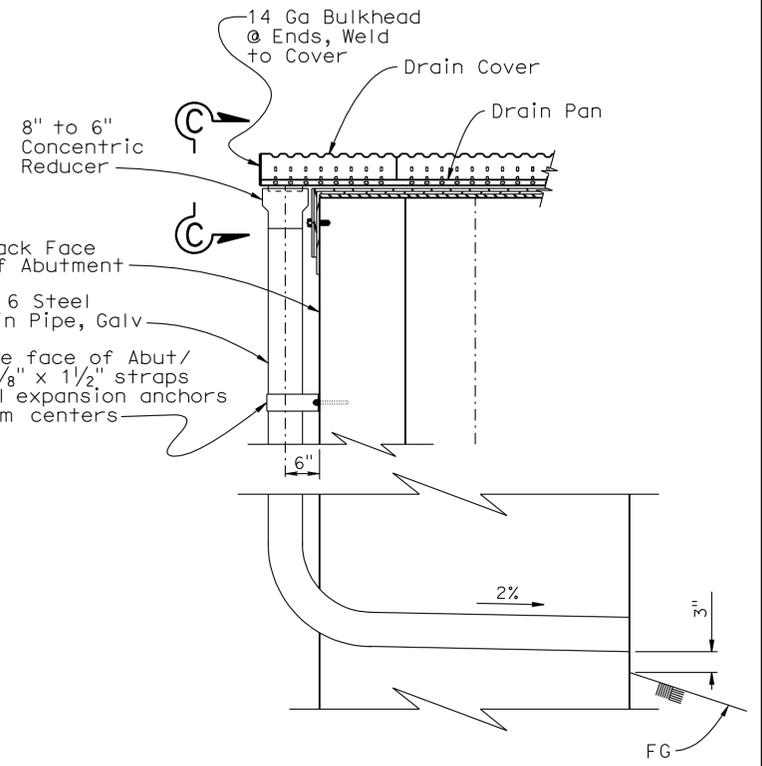
SECTION B-B
3/16" = 1'-0"

Abutment 3 Shown, Abutment 1 Similar

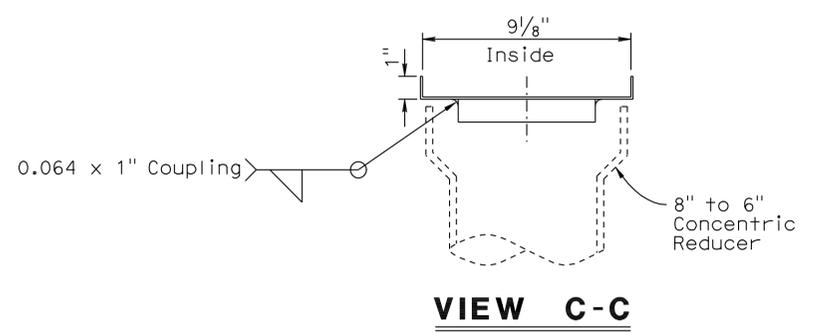


BOTTOM PAN
3" = 1'-0"

DECK DRAIN DETAILS



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



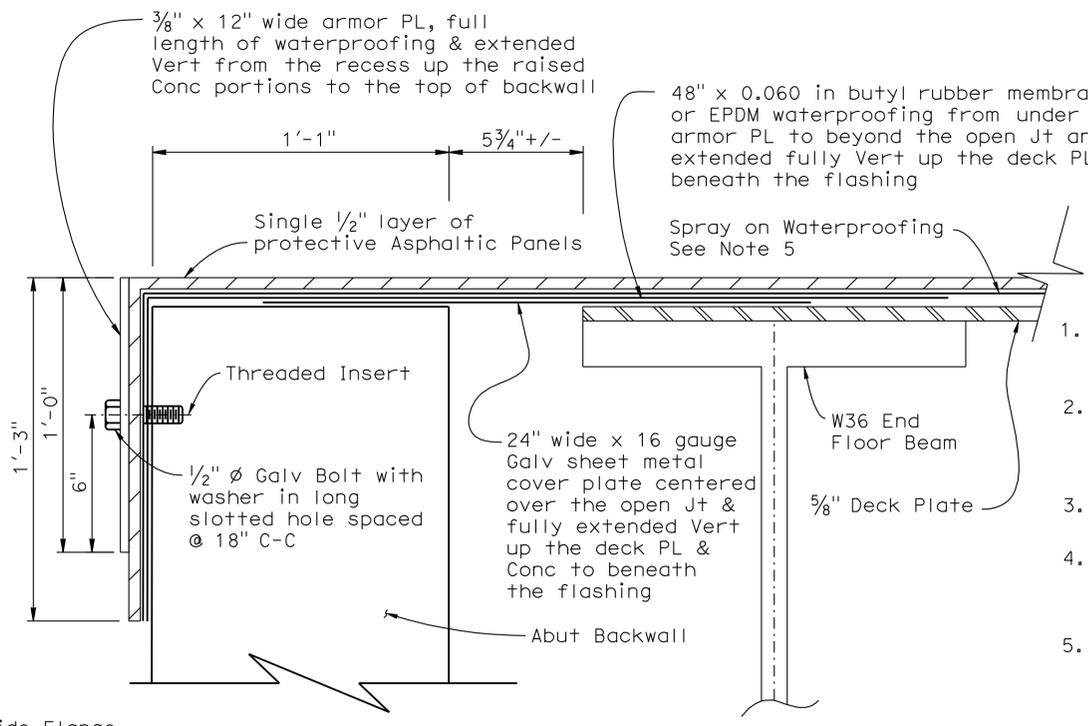
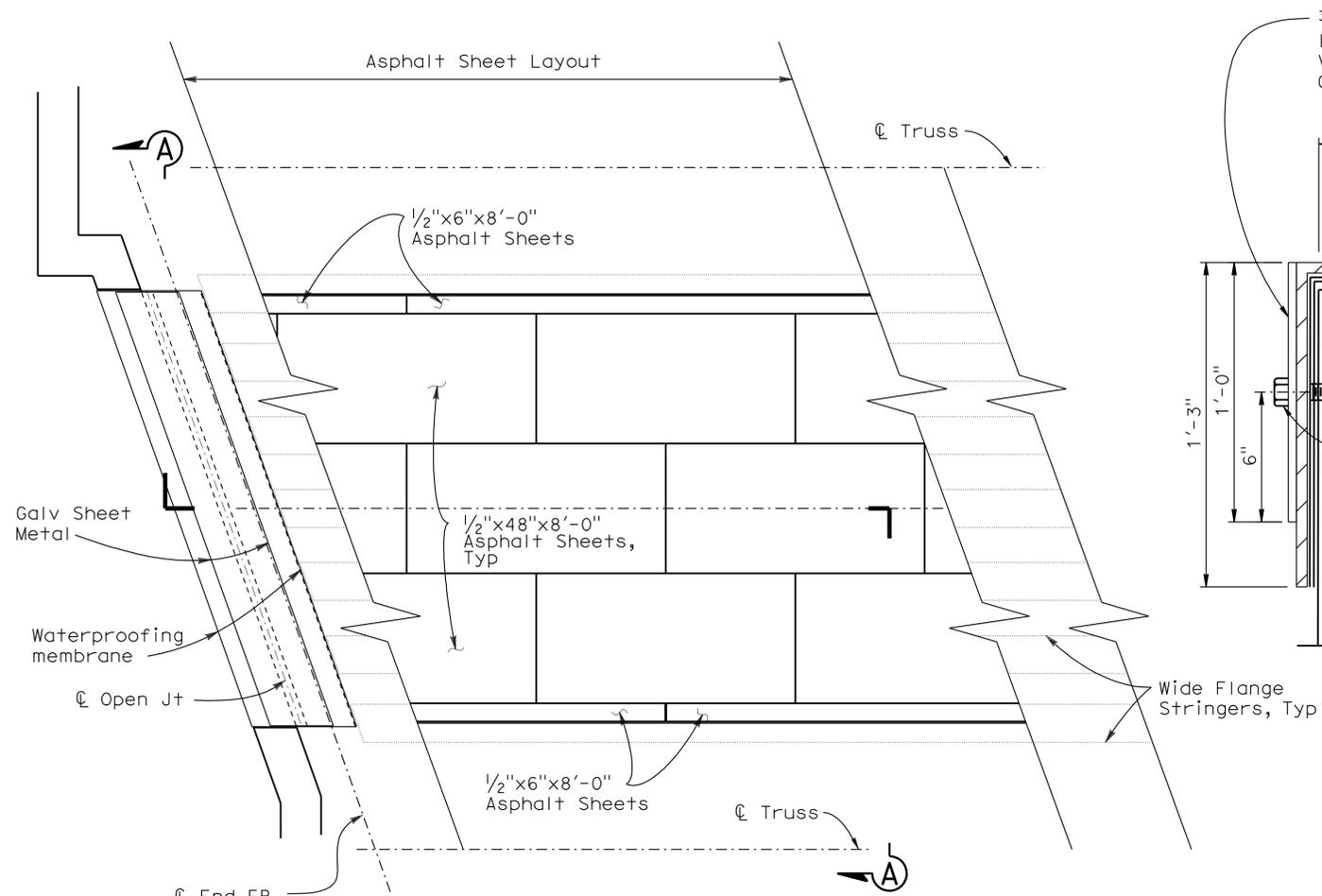
VIEW C-C

NOTES:

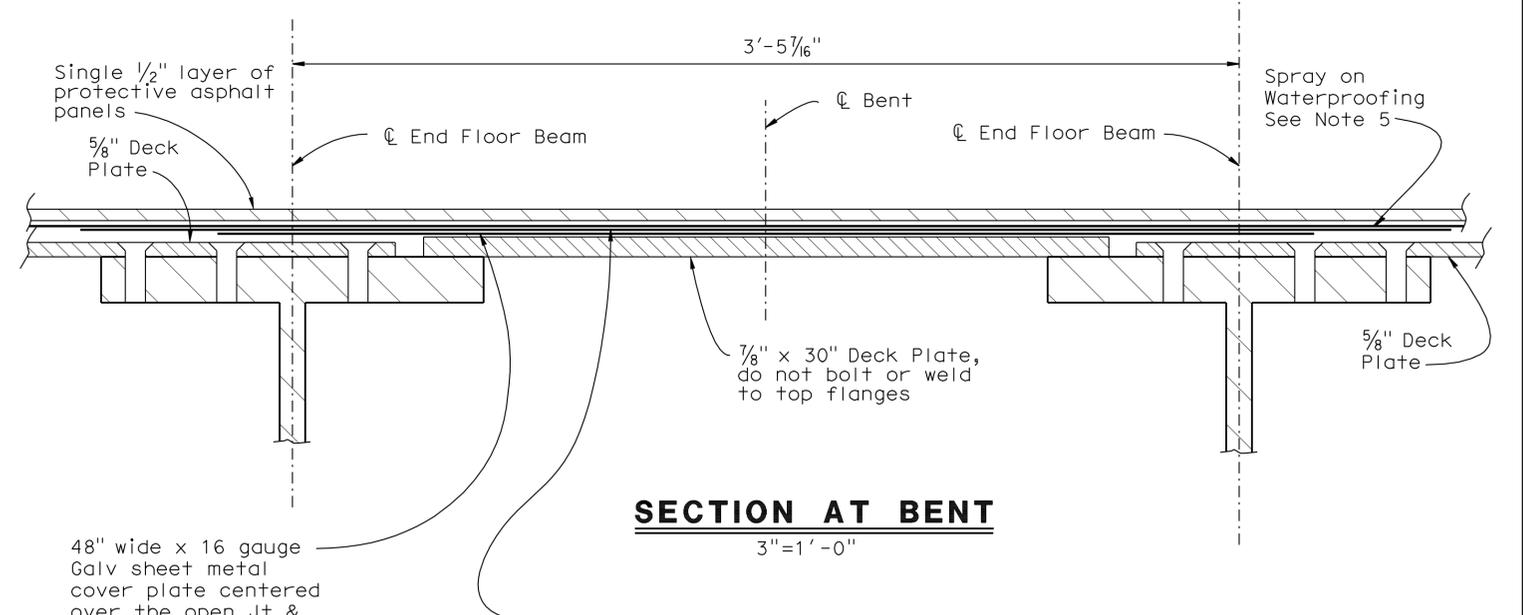
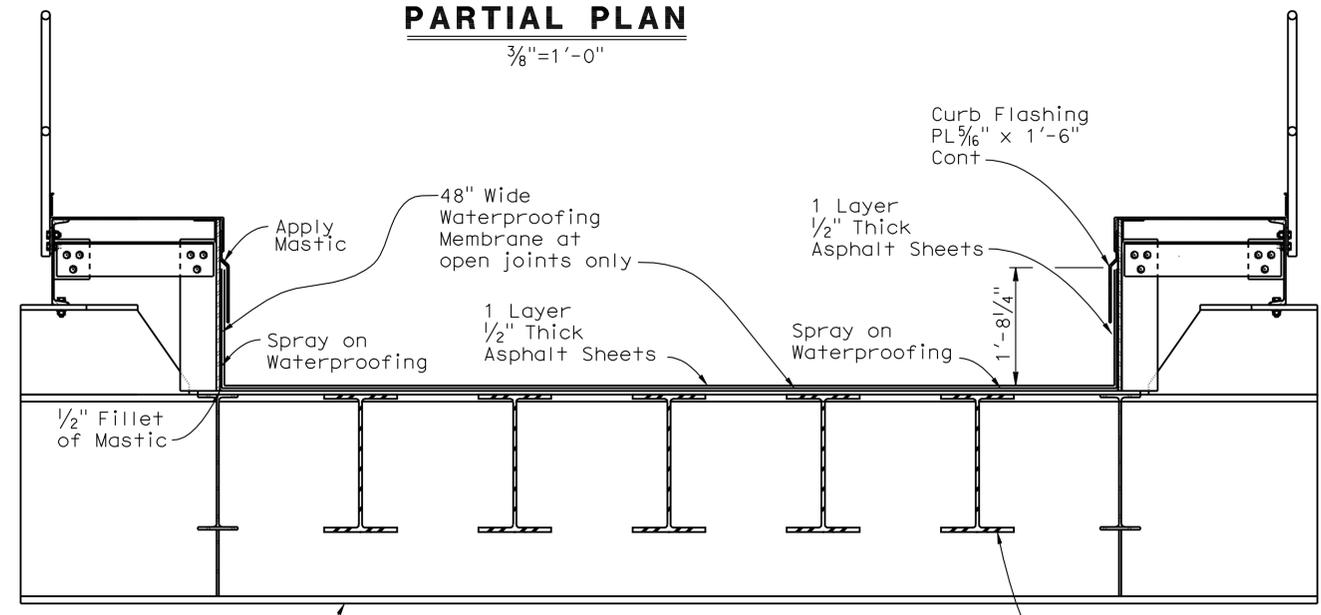
- Deck drain Covers, Bottom Pans, Collars, Outlet Stubs, and All Necessary Connections and Fasteners to be Galvanized.
- Place Bottom Pans End to End and Lap Cover Sections One Corrugation.
- For Waterproofing Details, see "WATERPROOFING DETAILS" sheet.
- All Dimensions are to be Taken Along Centerline of Pipe or Pan.

DESIGN BY L. Wu CHECKED B. Addlespurger DETAILS BY Y. Tang/G. Hallstrom CHECKED B. Addlespurger QUANTITIES BY T. Sanderson CHECKED A. McPhee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2 DRAINAGE DETAILS		
			R.R. MILE POST 5.89			
			LINE SEG. 7602			
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 7/13/11 5-14-12 4/26/12	SHEET OF 33 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	1669	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>					



- NOTES:**
- Asphalt Panels should be placed as soon as possible after the completion of Membrane Application, but not more than five days later.
 - All Panels shall be bonded to the Membrane and to each other with a complete coat of Semi-Mastic. Asphalt Panels shall be placed while the bond coat is still tacky.
 - All Joints between panels shall be laid tight and sealed with Semi-Mastic.
 - Place ballast on deck as soon as possible after Asphalt Panels and Deck Drains have been installed.
 - Waterproofing system shall be 120 mil acrylic based, cold spray applied seamless waterproofing membrane as manufactured by Stirling-Lloyd, 420 Sackett Road, New Haven, Conn 06473, (203) 561-9448. At the option of the Contractor, a similar spray applied system manufactured by Bridge Preservation, LLC, Kansas City, Mo 64171, (816) 561-9996, may be used. Contractor shall submit detailed application procedures, material specifications, and shop drawings for all waterproofing details for approval.



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

DESIGN	BY L. Wu	CHECKED B. Addlespurger
DETAILS	BY Y. Tang	CHECKED B. Addlespurger
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee

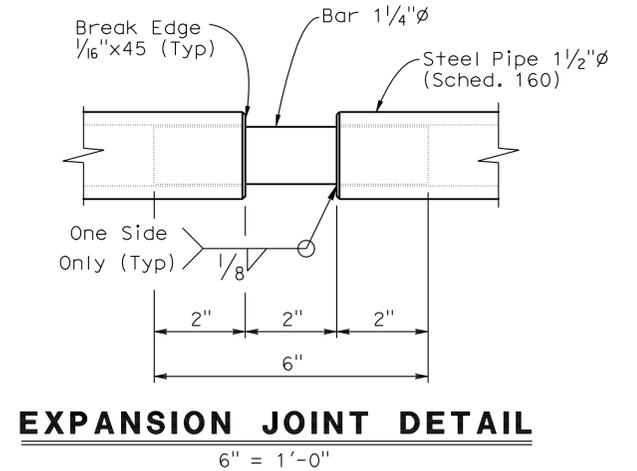
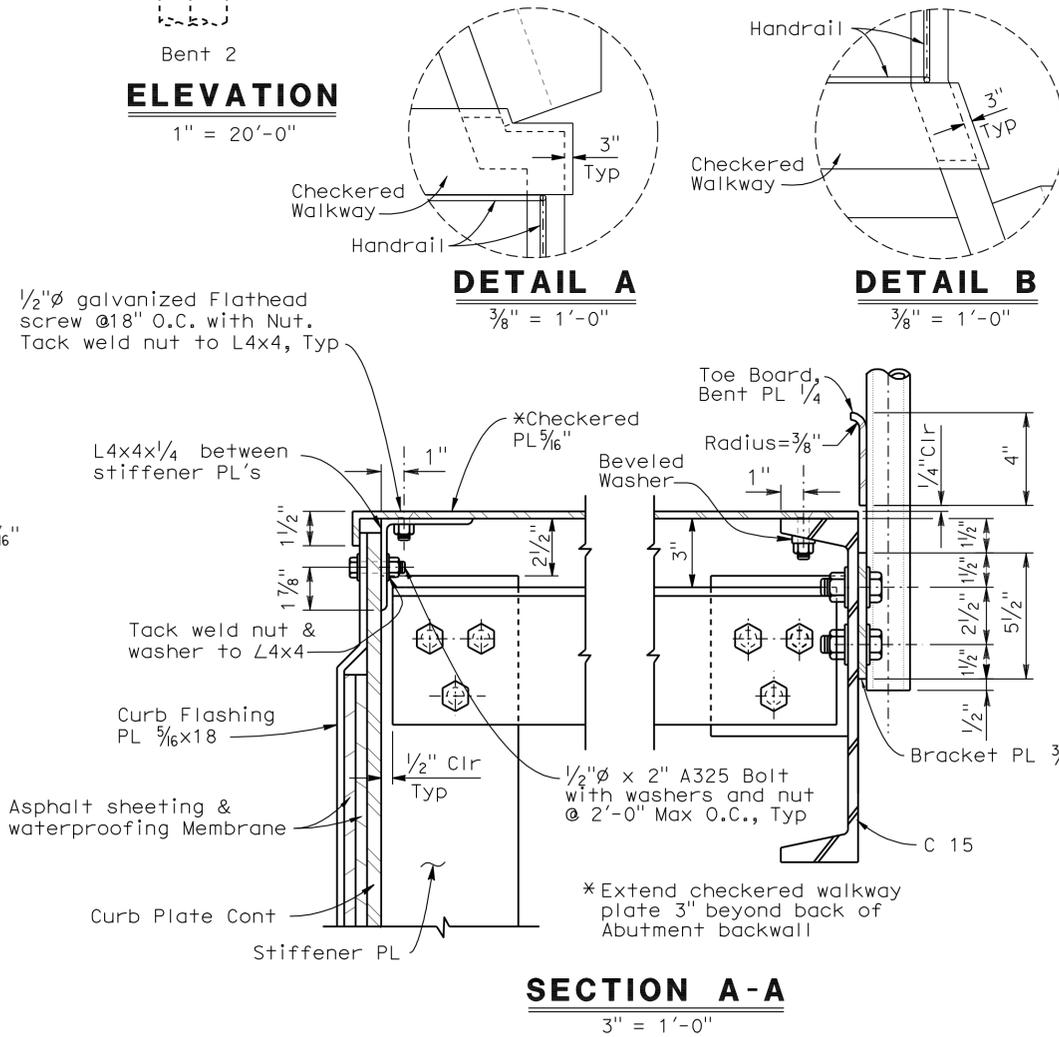
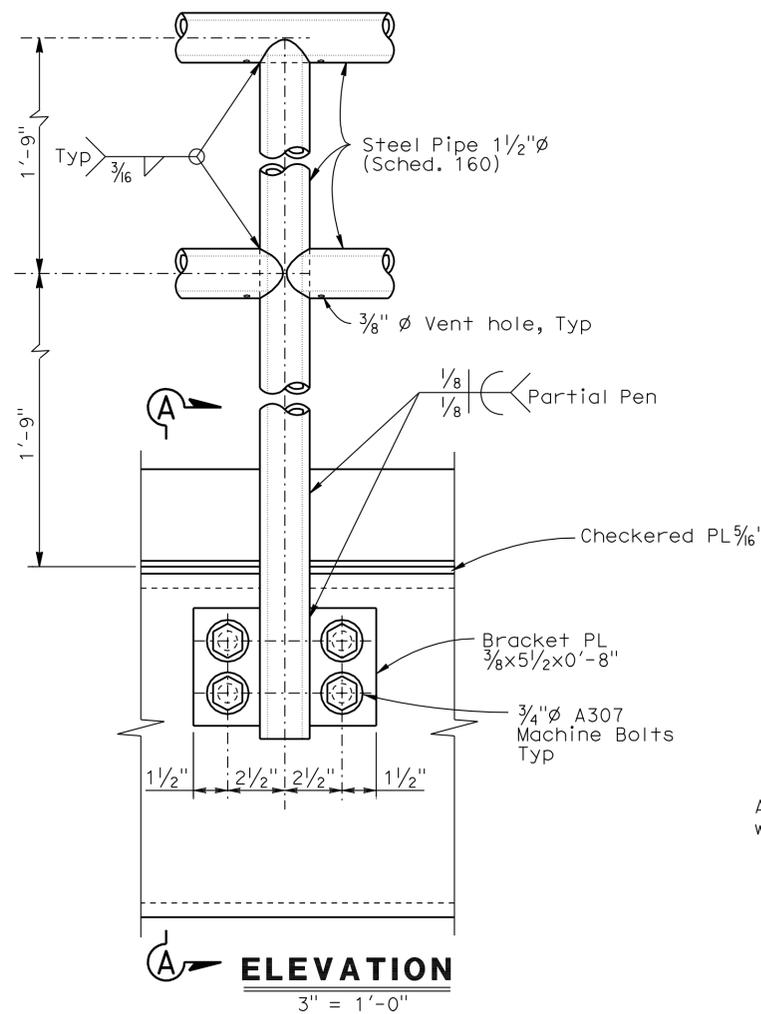
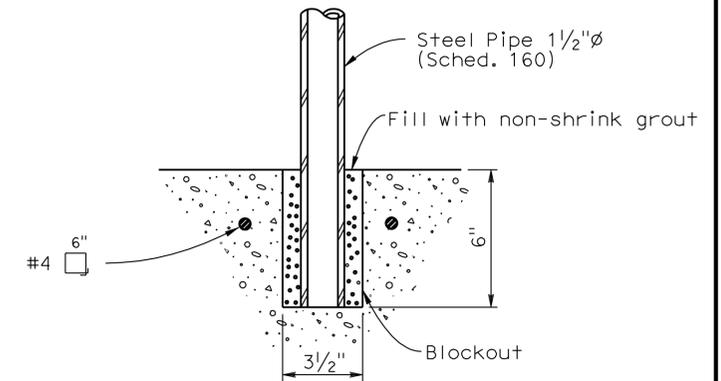
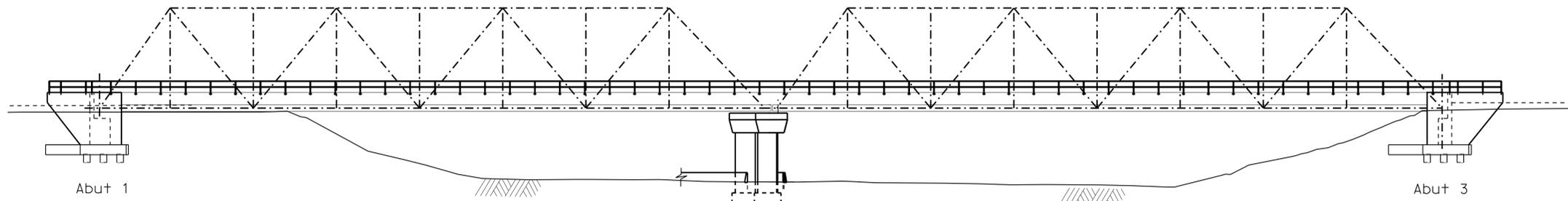
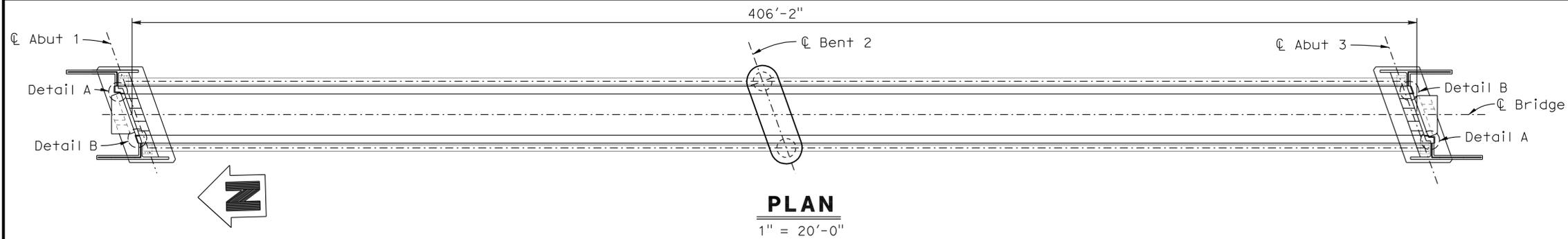
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	54-1305
R.R. MILE POST	5.89
LINE SEG. 7602	

HIGHGROVE UNDERPASS #2
WATERPROOFING 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	1670	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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HANDRAIL NOTES:

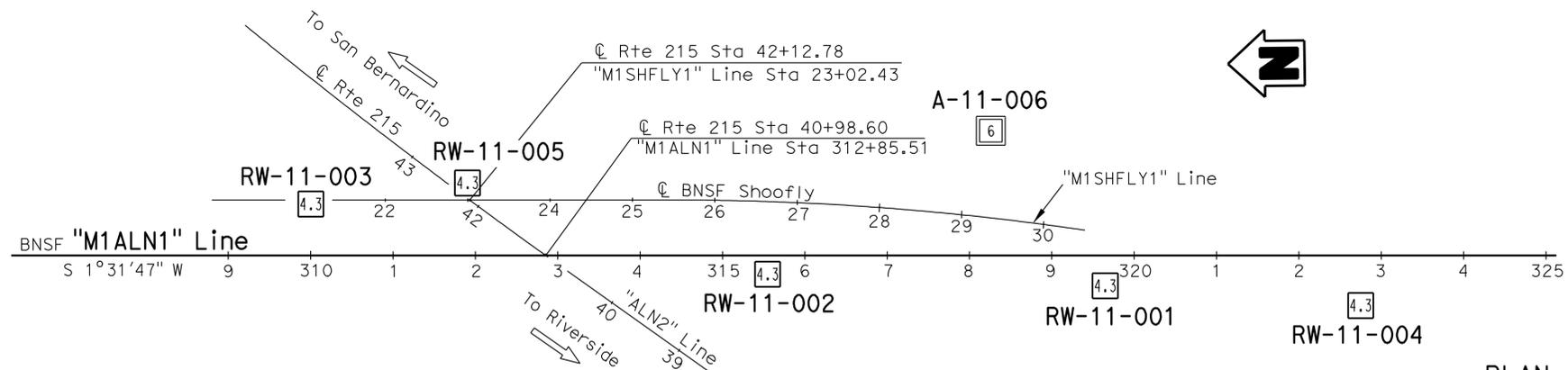
1. Posts shall be perpendicular to the grade of the walkway.
2. Maximum post spacing shall be 7'-6".
3. Structural steel pipe shall be ASTM A-53 Grade B, or A-501. Structural steel plate shall be ASTM A-36, or equal.
4. All structural steel pipe and plate for handrail, walkway plate brackets, A-307 bolts and washers shall be hot-dipped galvanized (per ASTM A-123) after fabrication.

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

DESIGN	BY L. Wu	CHECKED B. Addiespurger	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UNDERPASS #2 WALKWAY AND HANDRAIL DETAILS					
DETAILS	BY Y. Tang	CHECKED B. Addiespurger			54-1305						
QUANTITIES	BY T. Sanderson	CHECKED A. McPhee			R.R. MILE POST 5.89 LINE SEG. 7602						
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-M09401	DISREGARD PRINTS BEARING EARLIER REVISION DATES					
				0	1	2	3	REVISION DATES	SHEET	OF	
								7-2-11	4-06-12	35	42

BENCH MARK

PNO 630
 N 1,832,297.50
 E 6,763,657.81
 1" IP W/CALTRANS RP PLUG
 Elev 938.24'
 Vertical Datum: NAVD88



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	1671	1743

1-18-12
 PROFESSIONAL GEOLOGIST
 HECTOR VALENCIA
 No. 7776
 Exp. 2-28-14
 STATE OF CALIFORNIA

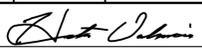
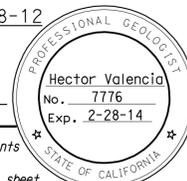
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).



6-29-11
 Terminated at Elev 809.2'
 Eri = 74%

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		HIGHGROVE UNDERPASS #2	
FUNCTIONAL SUPERVISOR		DRAWN BY: W. Tang 09/11		FIELD INVESTIGATION BY:		BRIDGE NO.		54-1305	
NAME: M. DeSalvatore		CHECKED BY: S. Logeswaran		H. Valencia		R.R. MILE POST		5.89	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		UNIT: 3643		CONTRACT NO.: 08-0M9401	
						PROJECT NUMBER & PHASE: 08000005061		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
						REVISION DATES		SHEET 36 OF 42	

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

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	1672	1743
			1-18-12		
PROFESSIONAL GEOLOGIST			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.		

83.0' Lt Sta 311+92.0
"M1ALN1" Line

RW-11-005

920	918.6'	4.3' ASPHALT CONCRETE (3").	920
910	16 1.4	SILTY SAND with GRAVEL (SM); gray; dry; fine and medium SAND; some fines; little fine GRAVEL; (FILL). CLAYEY SAND (SC); medium dense; brown; moist; fine and medium SAND; some fines; few fine GRAVEL.	910
900	57 1.4	CLAYEY SAND with GRAVEL (SC) thickly bedded with scattered moderately thick interbeds of elastic SILT with SAND (MH). SAND (SC); very dense; brown; moist; from fine to coarse SAND; some fines; little fine and coarse GRAVEL. SILT (MH); hard; brown; moist; little fine SAND; PP=4.0 tsf.	900
890	59 1.4	SILT with SAND (ML); very dense; brown; moist; little fine SAND.	890
880	57 1.4	SILTY SAND (SM); very dense; brown moist; mostly fine and medium SAND; some fines; few fine and coarse GRAVEL; few coarse SAND.	880
870	79 1.4	SILTY SAND (SM); very dense; light yellowish brown; moist; from fine to coarse SAND; little fines; few fine and coarse GRAVEL.	870
860	64 1.4	Poorly-graded SAND (SP); very dense; light yellowish brown; moist; mostly fine SAND; few fine and coarse GRAVEL; trace fines; trace medium and coarse SAND.	860
850	60 1.4	Fat CLAY (CH); hard; light olive brown; moist; few fine SAND; PP=2.5 to 3.5 tsf.	850
840	48 1.4	Poorly-graded SAND (SP) thickly bedded with scattered thin interbeds of Lean CLAY (CL). SAND (SP); very dense; light olive brown; moist; fine SAND; trace fines; few fine gravel. CLAY (CL); from very stiff to hard; light olive brown; moist; PP=3.0 to 4.0 tsf.	840
830	91 1.4	Well-graded SAND with GRAVEL (SW); very dense; light olive brown; moist; little fine and coarse GRAVEL; trace fines.	830
820	49 1.4	SILTY SAND (SM); very dense; light olive brown; moist; fine SAND; some fines.	820
810	50/4 1.4	SILTY SAND with GRAVEL (SM); very dense; light olive brown; moist; from fine to coarse SAND; little fines; little fine and coarse GRAVEL.	810
800	52/6 1.4	-mostly fine and medium SAND.	800
790	68 1.4	-mostly from fine to coarse SAND.	790
780	62/6 1.4	-scattered (~10%) moderately thick zones with some fine and coarse GRAVEL.	780
770	50/3 1.4	GWS Elev 807.2' 10-13-11	770
760	50/6 1.4		760
	50/6 1.4		
	53/6 1.4		
	50/3 1.4		
	50/2 1.4		
	50/1 1.4		
	50/3 1.4		
	50/4 1.4		
	50/3 1.4		

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

311+50

7-14-11
Terminated at Elev 757.8'
ERi = 74%

312+50

313+50

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10		BRIDGE NO. 54-1305 R.R. MILE POST 5.89 LINE SEG. 7602		HIGHGROVE UNDERPASS #2 LOG OF TEST BORINGS 2 OF 7	
FUNCTIONAL SUPERVISOR NAME: M. DeSalvatore	DRAWN BY: W. Tang 09/11	FIELD INVESTIGATION BY: H. Valencia		PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401		REVISION DATES		SHEET 37	OF 42
065 CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		DISREGARD PRINTS BEARING EARLIER REVISION DATES		01-09-12 01-13-12		FILE => 541305z1+b37.dgn	

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 07:29

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

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	1673	1743

Hector Valencia 1-18-12
 PROFESSIONAL GEOLOGIST
 4-16-12
 PLANS APPROVAL DATE

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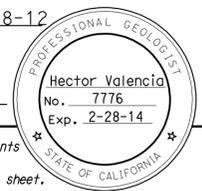
PROFILE
 Horiz: 1" = 20'
 Vert: 1" = 10'

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		HIGHGROVE UNDERPASS #2	
FUNCTIONAL SUPERVISOR		DRAWN BY: W. Tang 09/11		DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 54-1305		LOG OF TEST BORINGS 3 OF 7	
NAME: M. DeSalvatore		CHECKED BY: S. Logeswaran		FIELD INVESTIGATION BY: H. Valencia / M. Wilson		R.R. MILE POST 5.89		REVISION DATES	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 08000005061		SHEET 38 OF 42	
				CONTRACT NO.: 08-0M9401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		01-10-12 01-13-12	

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	1674	1743

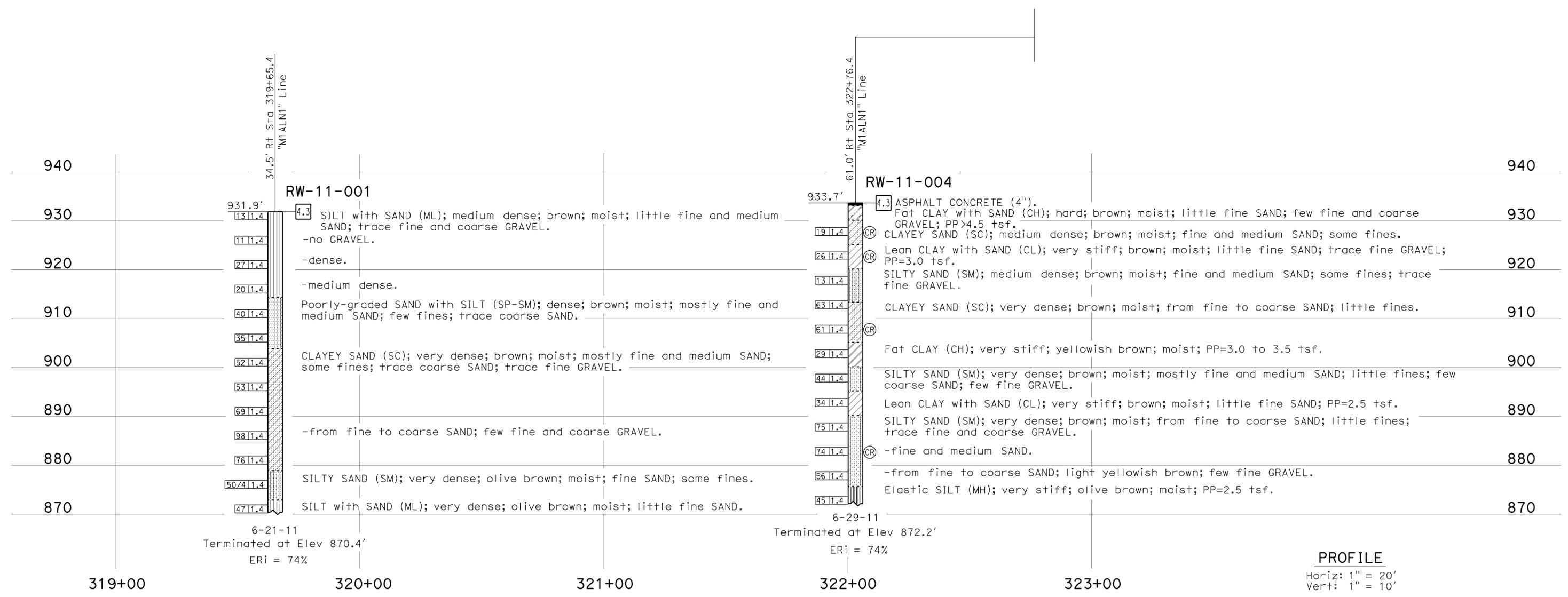
1-18-12
 PROFESSIONAL GEOLOGIST
 4-16-12
 PLANS APPROVAL DATE

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.



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

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



ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10		HIGHGROVE UNDERPASS #2 LOG OF TEST BORINGS 4 OF 7	
FUNCTIONAL SUPERVISOR NAME: M. DeSalvatore	DRAWN BY: W. Tang 09/11 CHECKED BY: S. Logeswaran	FIELD INVESTIGATION BY: H. Valencia		BRIDGE NO. 54-1305 R.R. MILE POST 5.89 LINE SEG. 7602		UNIT: 3643 PROJECT NUMBER & PHASE: 08000005061		CONTRACT NO.: 08-0M9401	
065 CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 01-10-12 01-13-12	
				0 1 2 3				SHEET 39 OF 42	

USERNAME => s124496 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 07:29

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	1675	1743

1-18-12
 PROFESSIONAL GEOLOGIST
 4-16-12
 PLANS APPROVAL DATE

Hector Valencia
 No. 7776
 Exp. 2-28-14

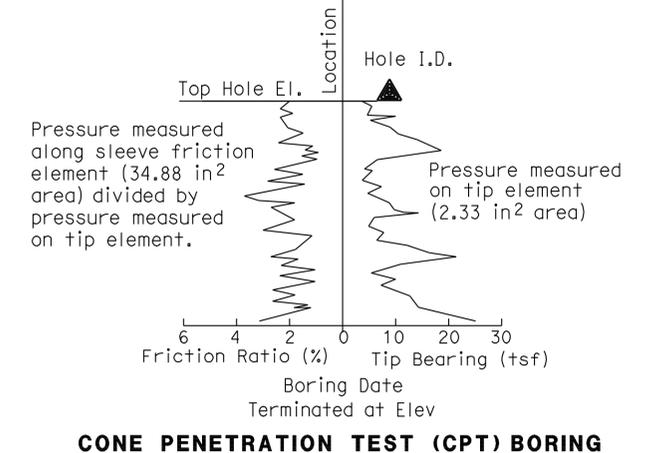
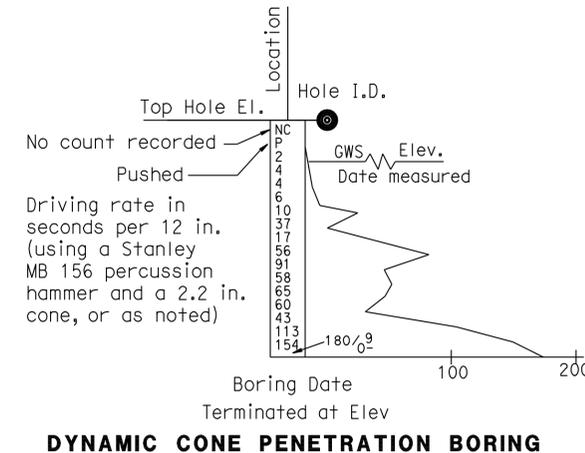
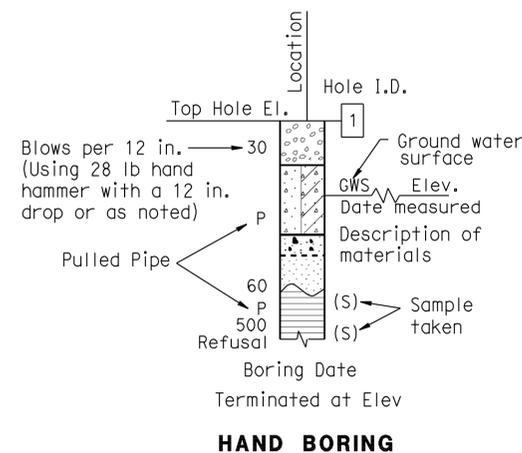
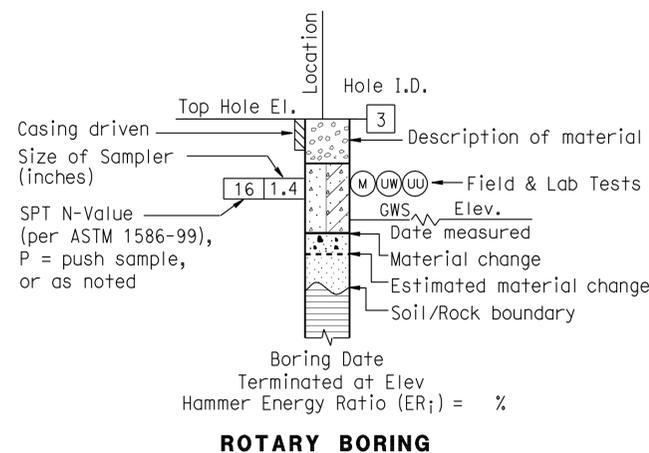
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

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	1676	1743

1-18-12
 PROFESSIONAL GEOLOGIST
 HECTOR VALENCIA
 No. 7776
 Exp. 2-28-14
 STATE OF CALIFORNIA
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GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	GW		CL		Lean CLAY
	GW-GM				Lean CLAY with SAND
	GP		CL		Lean CLAY with GRAVEL
	GP-GM				SANDY lean CLAY
	GW-GM		CL-ML		SILTY CLAY
	GW-GC				SILTY CLAY with GRAVEL
	GW-GC		CL-ML		SANDY SILTY CLAY
	GP-GC				SANDY SILTY CLAY with GRAVEL
	GP-GM		ML		SILT
	GP-GC				SILT with SAND
	GM		OL		ORGANIC lean CLAY
	GC				ORGANIC lean CLAY with SAND
	GC		OL		ORGANIC lean CLAY with GRAVEL
	GC-GM				SANDY ORGANIC lean CLAY
	GC-GM		OL		ORGANIC SILT
	SW				ORGANIC SILT with SAND
	SW		CH		Fat CLAY
	SP				Fat CLAY with GRAVEL
	SP		CH		SANDY fat CLAY
	SW-SM				SANDY fat CLAY with GRAVEL
	SW-SM		MH		Elastic SILT
	SW-SC				Elastic SILT with SAND
	SW-SC		MH		Elastic SILT with GRAVEL
	SP-SM				SANDY elastic SILT
	SP-SM		OH		ORGANIC fat CLAY
	SP-SC				ORGANIC fat CLAY with SAND
	SM		OH		ORGANIC fat CLAY with GRAVEL
	SC				GRAVELLY ORGANIC fat CLAY
	SC		OH		ORGANIC elastic SILT
	SC-SM				ORGANIC elastic SILT with GRAVEL
	SC-SM		OH		SANDY ORGANIC elastic SILT
	PT				GRAVELLY ORGANIC elastic SILT
	PT		OL/OH		ORGANIC SOIL
					ORGANIC SOIL with SAND
			OL/OH		ORGANIC SOIL with GRAVEL
					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 ₆₀ (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

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

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

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

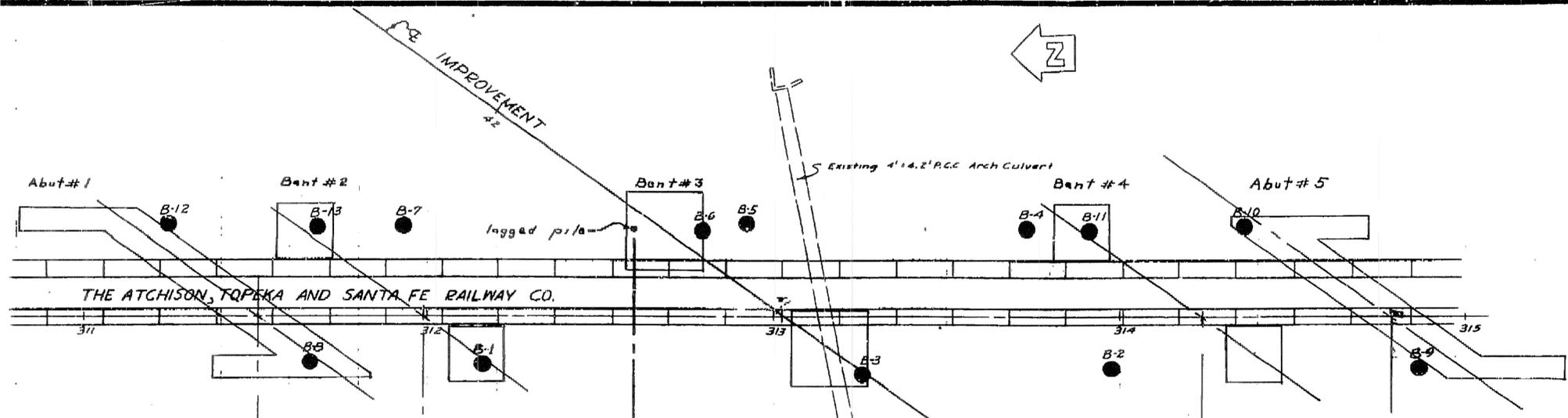
ENGINEERING SERVICES	MATERIALS AND GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1305	HIGHGROVE UNDERPASS #2
				R.R. MILE POST 5.89	
PREPARED BY: W. Tang 09/11	UNIT: 3643 PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	REVISION DATES	SHEET 41 OF 42	

GS LOTB SOIL LEGEND ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

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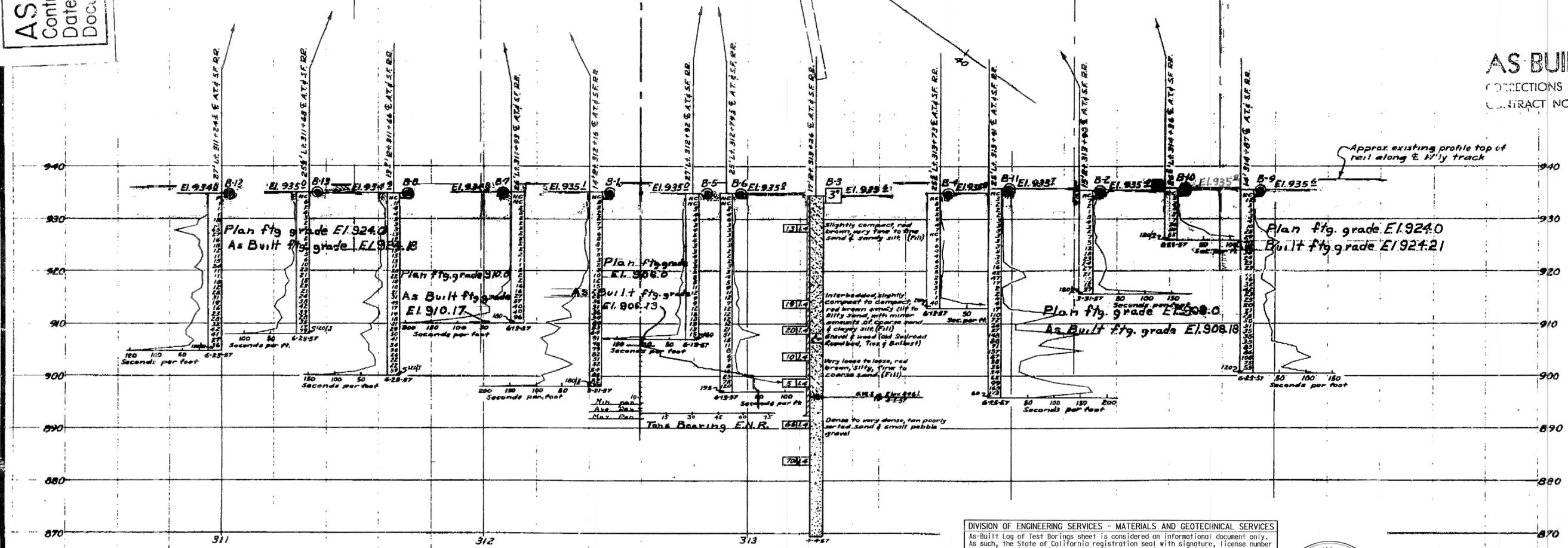
AS BUILT PLANS
 Contract No. 57-8VCE
 Date Completed _____
 Document No. 2000766



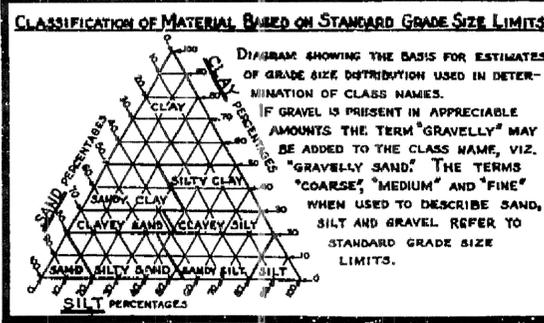
Design Pile Loading 45 Tons
 Type Pile Raymond step taper
 Diameter Top 8" Butt 15 1/2"
 Total Number Piles 72
 Lineal ft. Piles "As Built" 889.7
 Lineal ft. Piles Called for on Plans 585
 Hammer Vulcan NO. 1
 Remarks:
 Lineal ft. of piles increased to 1170 C.C.O. #14

AS BUILT
 CORRECTIONS BY *H.A. Moore*
 CONTRACT NO. 59-8VCE-F

BRIDGE DEPARTMENT

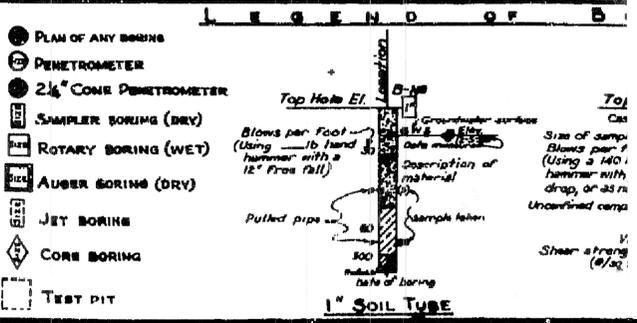


B.M. U.S.C. # 25 2443 1949
 Sta. across side of RR
 along the AT&SF RR
 from Highgrove, in N.W. 1/4
 of 1/4 of R.C.C. culvert
 Elev. 933.62



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



DIVISION OF ENGINEERING SERVICES - MATERIALS AND GEOTECHNICAL SERVICES

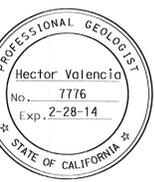
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to 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	1677	1743

UNIT: 3643
 PROJ. No. & PHASE: 08000005061
 CONVERSION: NAVD88 = NGVD29 + 2.5 ft
 CONTRACT No.: 08-0M9401
 BRIDGE No.: 54-1305
 SHEET of

DATE: 1-18-12
 DATE OF BORING: 4-16-12

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



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

HIGHGROVE UNDERPASS

LOG OF TEST BORINGS

HORIZ 1"=20'
SCALE VERT 1"=10'

BRIDGE 54-518

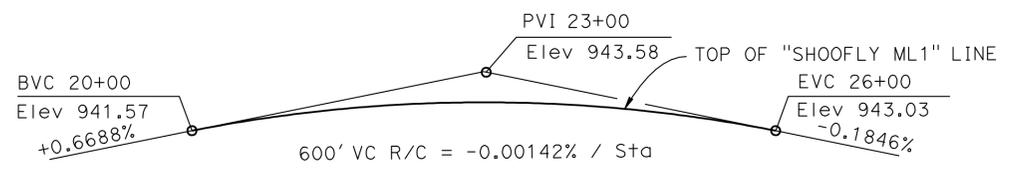
FILE 54-1305-10

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	1678	1743

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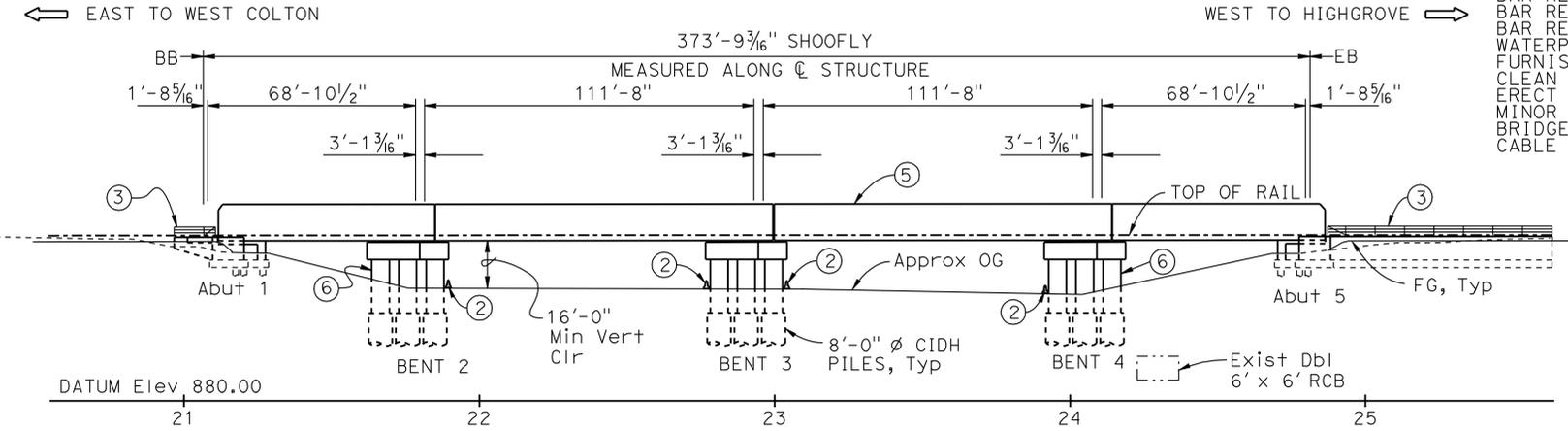
QUANTITIES

BRIDGE REMOVAL, LOCATION B	LUMP	SUM
BRIDGE REMOVAL, LOCATION D	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	1,007	CY
STRUCTURE EXCAVATION (RETAINING WALL)	424	CY
STRUCTURE BACKFILL (BRIDGE)	620	CY
STRUCTURE BACKFILL (RETAINING WALL)	390	CY
PERVIOUS BACKFILL MATERIAL	73	CY
24" CAST-IN-DRILLED-HOLE CONCRETE PILING	3,187	LF
96" CAST-IN-DRILLED-HOLE CONCRETE PILING	603	LF
STRUCTURAL CONCRETE, BRIDGE FOOTING	223	CY
STRUCTURAL CONCRETE, BRIDGE	735	CY
STRUCTURAL CONCRETE, RETAINING WALL	153	CY
STRUCTURAL CONCRETE, APRON SLAB	33	CY
BEARING	16	EA
BAR REINFORCING STEEL (BRIDGE)	603,897	LB
BAR REINFORCING STEEL (RETAINING WALL)	22,276	LB
BAR REINFORCING STEEL (APRON SLAB)	7,776	LB
WATERPROOFING AND COVER	12,737	SOFT
FURNISH STRUCTURAL STEEL (BRIDGE)	2,634,075	LB
CLEAN AND PAINT STRUCTURAL STEEL	LUMP	SUM
ERECT STRUCTURAL STEEL (BRIDGE)	2,634,075	LB
MINOR CONCRETE (GUTTER)	104	LF
BRIDGE DECK DRAINAGE SYSTEM	3,736	LB
CABLE RAILING	163	LF



TOP OF RAIL PROFILE

NO SCALE



ELEVATION

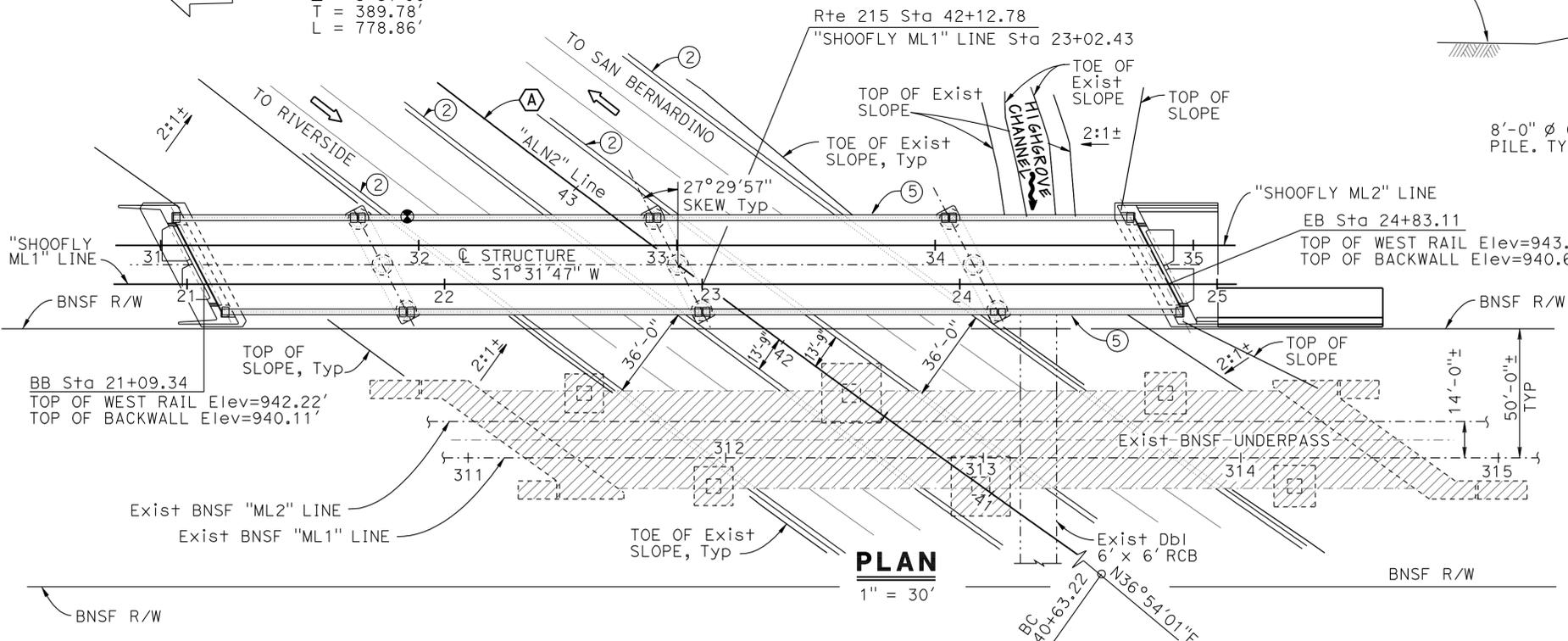
1" = 30'

CURVE DATA

R = 7500.11'
 Δ = 5° 57' 00"
 T = 389.78'
 L = 778.86'

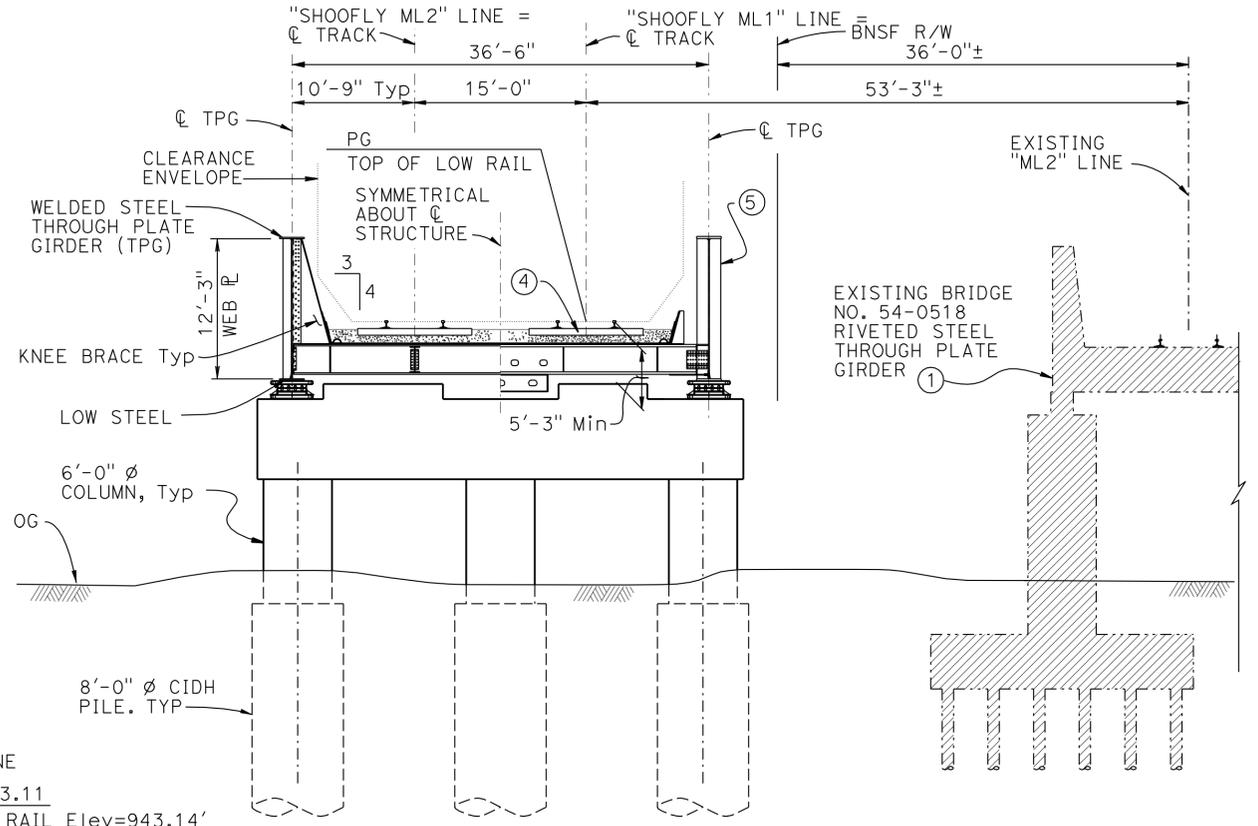
ABBREVIATIONS:

BNSF Burlington Northern and Santa Fe Railway (Bridge Owner)
 UP Underpass
 R/W Right of Way



PLAN

1" = 30'



TYPICAL SECTION

1/8" = 1'-0"

LEGEND:

- NOTES:
- ① Existing underpass is to remain operational during construction of shoofly underpass
 - ② K-Rail, see "ROAD PLANS"
 - ③ Cable Railing
 - ④ Ballast and track work, see "ROAD PLANS"
 - ⑤ Clean and paint structural steel
 - ⑥ Paint "Br No. 54-1306"
 - ⑦ For additional curve data, see "FOUNDATION PLAN" sheet, and "ROAD PLANS"
- Indicates new construction
 - - - Indicates existing structure
 - ▨ Limits of Bridge Removal
 - Point of minimum vertical clearance
 - ← Indicates direction of traffic
 - Indicates direction of flow
- For "General Notes", "Index to Plans", "Standard Plans", and "Pile Data", see "INDEX TO PLANS" Sheet.

DESIGN ENGINEER DANIEL T. ADAMS	DESIGN	BY B. Addlespurger	CHECKED L. WU	LOAD & FACTOR DESIGN	LIVE LOADING: AREMA COOPER E-80 and ALTERNATIVE LIVE LOAD	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1306
	DETAILS	BY G. Hallstrom	CHECKED L. WU	LAYOUT	BY B. Addlespurger			R.R. MILE POST	5.88
	QUANTITIES	BY B. Addlespurger	CHECKED R. Anderson	SPECIFICATIONS	BY J. Corrado			LINE SEG. 7602	

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: 3-09-11, 7-14-11, 3-29-12

SHEET 1 OF 49

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10) FILE => 541306agp01.dgn

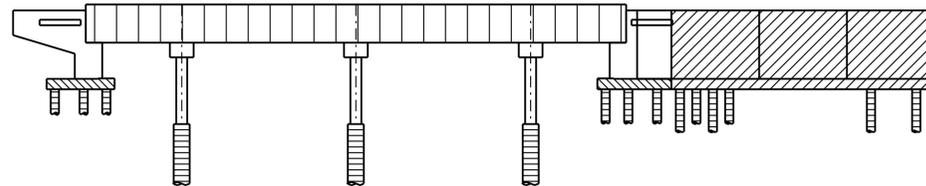
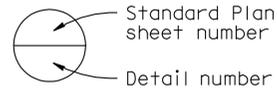
INDEX TO PLANS

SHEET NO. TITLE

1. GENERAL PLAN
2. INDEX TO PLANS
3. FOUNDATION PLAN NO. 1
4. FOUNDATION PLAN NO. 2
5. ABUTMENT 1 LAYOUT
6. ABUTMENT 5 LAYOUT
7. ABUTMENT 1 FOOTING LAYOUT
8. ABUTMENT 5 FOOTING LAYOUT
9. ABUTMENT 5 FOOTING REINFORCEMENT
10. ABUTMENT DETAILS NO. 1
11. ABUTMENT DETAILS NO. 2
12. ABUTMENT DETAILS NO. 3
13. ABUTMENT DETAILS NO. 4
14. RETAINING WALL LAYOUT
15. RETAINING WALL DETAILS
16. APRON SLAB DETAILS
17. BENT LAYOUT
18. BENT DETAILS NO. 1
19. BENT DETAILS NO. 2
20. BENT DETAILS NO. 3
21. COLUMN DETAILS
22. SHEAR KEY BEAM LAYOUT
23. SHEAR KEY BEAM DETAILS
24. TYPICAL SECTION
25. GIRDER LAYOUT NO.1 (SHORT SPANS)
26. GIRDER LAYOUT NO.2 (LONG SPANS)
27. GIRDER DETAILS NO. 1
28. GIRDER DETAILS NO. 2
29. GIRDER DETAILS NO. 3
30. GIRDER DETAILS NO. 4
31. END FLOOR BEAM DETAILS NO. 1 (SHORT SPANS)
32. END FLOOR BEAM DETAILS NO. 2 (SHORT SPANS)
33. END FLOOR BEAM DETAILS NO. 3 (SHORT SPANS)
34. END FLOOR BEAM DETAILS NO. 4 (LONG SPANS)
35. LATERAL BRACING DETAILS NO. 1
36. LATERAL BRACING DETAILS NO. 2
37. DECK PLATING LAYOUT
38. DECK PLATING DETAILS
39. BEARING LAYOUT
40. BEARING DETAILS
41. DECK DRAINAGE AND LAYOUT DETAILS
42. BRIDGE REMOVAL
43. LOG OF TEST BORINGS 1 OF 7
44. LOG OF TEST BORINGS 2 OF 7
45. LOG OF TEST BORINGS 3 OF 7
46. LOG OF TEST BORINGS 4 OF 7
47. LOG OF TEST BORINGS 5 OF 7
48. LOG OF TEST BORINGS 6 OF 7
49. LOG OF TEST BORINGS 7 OF 7

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)
- A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL-BRIDGE SURCHARGE AND WALL
- A62C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL-BRIDGE
- B0-3 BRIDGE DETAILS
- B2-3 16" AND 24" CAST-IN-DRILLED-HOLE CONCRETE PILE
- B3-8 RETAINING WALL DETAILS NO. 1
- B3-9 RETAINING WALL DETAILS NO. 2
- B7-6 DECK DRAINS TYPES D-1 AND D-2
- B11-47 CABLE RAILING



- Structural Concrete, Bridge (fc'=4,000psi)
- Structural Concrete, Bridge Footing (fc'=4,000psi)
- Structural Concrete, Retaining Wall (fc'=4,000psi)
- CIDH Pile (fc'=4,000psi)
- Welded Steel Through Plate Girders

CONCRETE STRENGTH AND TYPE LIMITS

No Scale

PILE DATA TABLE

Location	Pile Type	Design Loading (WSD)		Nominal Resistance		Cut-off Elevations (ft)	Design Tip Elevation (ft)	Specified Tip Elevation (ft)
		Compression	Tension	Compression	Tension			
Abut 1	24" CIDH	180	0	200	0	925.75	894.0 (1)	894.0
BENT 2	96" CIDH	1375	0	1375	0	918.3	857.0 (1)	857.0
BENT 3	96" CIDH	1605	0	1605	0	916.5	847.0 (1)	847.0
BENT 4	96" CIDH	1375	0	1375	0	914.5	845.0 (1)	845.0
Abut 5	24" CIDH	180	0	200	0	925.75	887.0 (1)	887.0
Abut 5 Retaining Wall	24" CIDH	135	0	140	0	925.75	886.0 (1)	886.0

NOTE: Design tip elevations are controlled by the following demands: (1) Compression

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	1679	1743

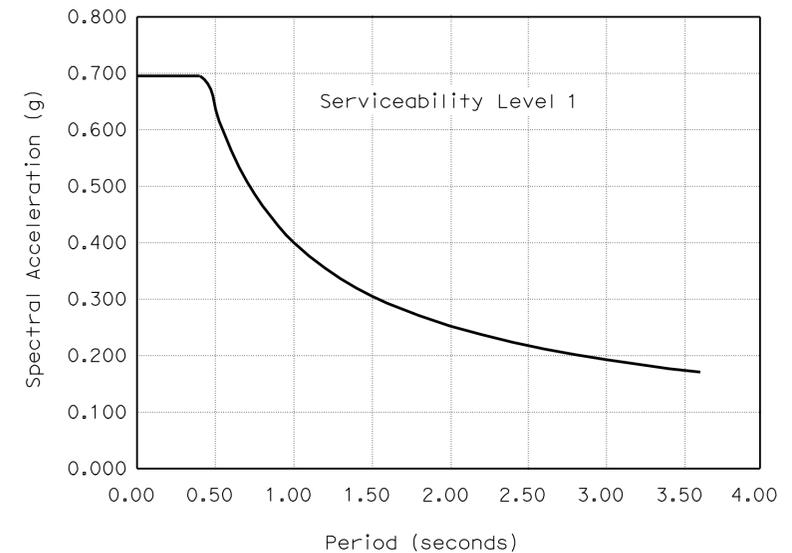
REGISTERED CIVIL ENGINEER LARRY WU
 No. C57035
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA

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

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GENERAL NOTES

- DESIGN: 1. "MANUAL FOR RAILWAY ENGINEERING" AREMA 2010 EDITION
 2. BNSF RAILWAY-UNION PACIFIC RAILROAD, "GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS" - 2007
 3. STEEL CONSTRUCTION MANUAL-AISC 13th EDITION
 4. BRIDGE WELDING CODE AWS D1.5-2008
 5. BRIDGE DESIGN SPECIFICATIONS" LFD VERSION, APRIL 2000 (1996 16th Edition AASHTO with Interims and Revisions by CALTRANS)
- SEISMIC DESIGN: AREMA Chapter 9, Seismic design for railway structures
- LIVE LOADING: COOPER E-80 with Diesel Impact and Alternate Live Load
- SHORING: All shoring shall conform to BNSF/UPRR Guidelines for Temporary Shoring
- SEISMIC LOADING: AREMA Peak Rock Acceleration: Level 1, PRA = 0.33g



REINFORCED CONCRETE: Load Factor Design
 fy = 60,000 psi n = 8.04

STRUCTURAL STEEL: Allowable Stress Design
 1. For ASTM Designation of steel members, see Table below:

Members	Material
TPG Members, Stiffeners & Splices	ASTM A709 Grade 50 (50F for FCM)
Floor Beam / Connection	ASTM A709 Grade 50 (50F for FCM)
Ballast Brackets/Bracing Assy	ASTM A709 Grade 50 (50F for FCM)
Deck Plate	ASTM A709 Grade 36
Bearing Anchor Rod	ASTM F1554 Grade 105
Bearing Pintles	ASTM A354 BD
Bearing Rocker Plate/Base Plate	ASTM A709 Grade HPS 70W

2. Unless noted otherwise, HS bolts, including nuts and washers shall be 7/8" Ø ASTM A325X for slip critical connections "SC Class B" Type 1 Bolts with bolt heads toward the outside or the underside of the bridge.

3. Electrodes shall be E70XX unless noted otherwise.

DESIGN	BY B. Addlespurger	CHECKED L. Wu
DETAILS	BY G. Hallstrom/J. Chlubna	CHECKED L. Wu
QUANTITIES	BY B. Addlespurger	CHECKED R. Anderson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 BRIDGE NO. 54-1306
 R.R. MILE POST 5.88
 LINE SEG. 7602

HIGHGROVE UP (SHOOFLY)

INDEX TO PLANS

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
8	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1681	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.					

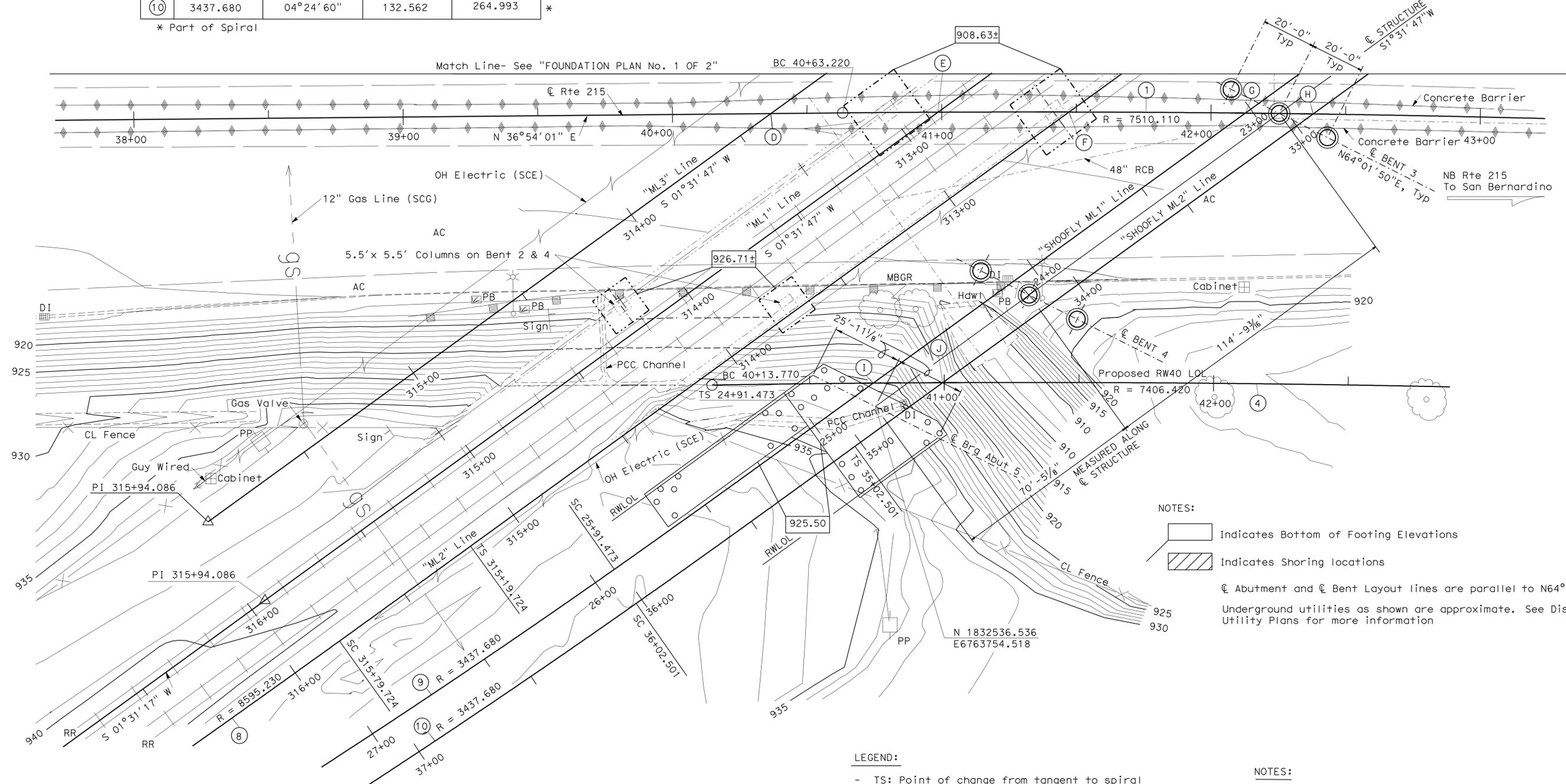


Bridge Location
Paving Notch are buried.

No.	R	Δ	T	L
①	7500.110	05°57'00"	389.780	778.860
②	7589.340	01°00'35"	66.880	133.760
③	7589.340	04°49'56"	320.230	640.090
④	7406.420	06°19'16"	408.980	817.120
⑧	8595.230	00°58'54"	73.629	147.255
⑨	3437.680	04°25'02"	132.579	265.026
⑩	3437.680	04°24'60"	132.562	264.993

* Part of Spiral

- Ⓓ 40+36.530 @ Rte 215 = 313+36.080 "ML3" Line
- Ⓔ 40+98.600 @ Rte 215 = 312+85.510 "ML1" Line
- Ⓕ 41+47.280 @ Rte 215 = 312+45.310 "ML2" Line
- Ⓖ 42+12.780 @ Rte 215 = 23+02.420 "SHOOFLY ML1" Line
- Ⓗ 42+37.930 @ Rte 215 = 32+92.450 "SHOOFLY ML2" Line
- Ⓘ 24+73.050 "SHOOFLY ML1" Line = 40+73.640 Proposed RW40 LOL
- Ⓙ 34+62.280 "SHOOFLY ML2" Line = 40+99.440 Proposed RW40 LOL



- NOTES:**
- Indicates Bottom of Footing Elevations
 - ▨ Indicates Shoring locations
 - ⊕ Abutment and ⊕ Bent Layout lines are parallel to N64°01'50"E
 - Underground utilities as shown are approximate. See District Utility Plans for more information

- LEGEND:**
- TS: Point of change from tangent to spiral
 - SC: Point of change from spiral to circle
 - CS: Point of change from circle to spiral
 - ST: Point of change from TS to any point on the spiral

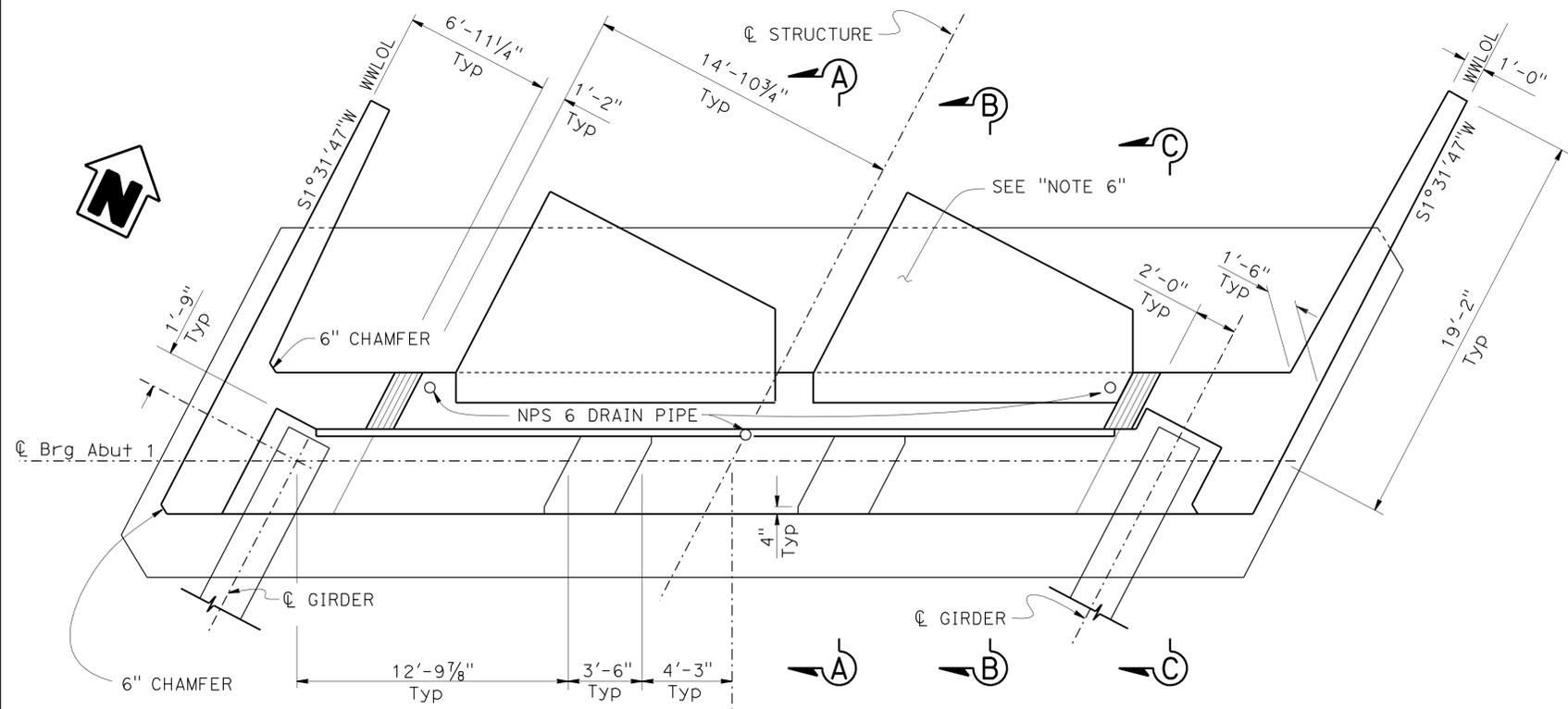
- NOTES:**
- Underground utilities as shown are approximate. See District Utility Plans for details.
 - For abbreviation of Spiral Notation, see LEGEND.

SURVEY CONTROL
See "FOUNDATION PLAN No. 1 OF 2"

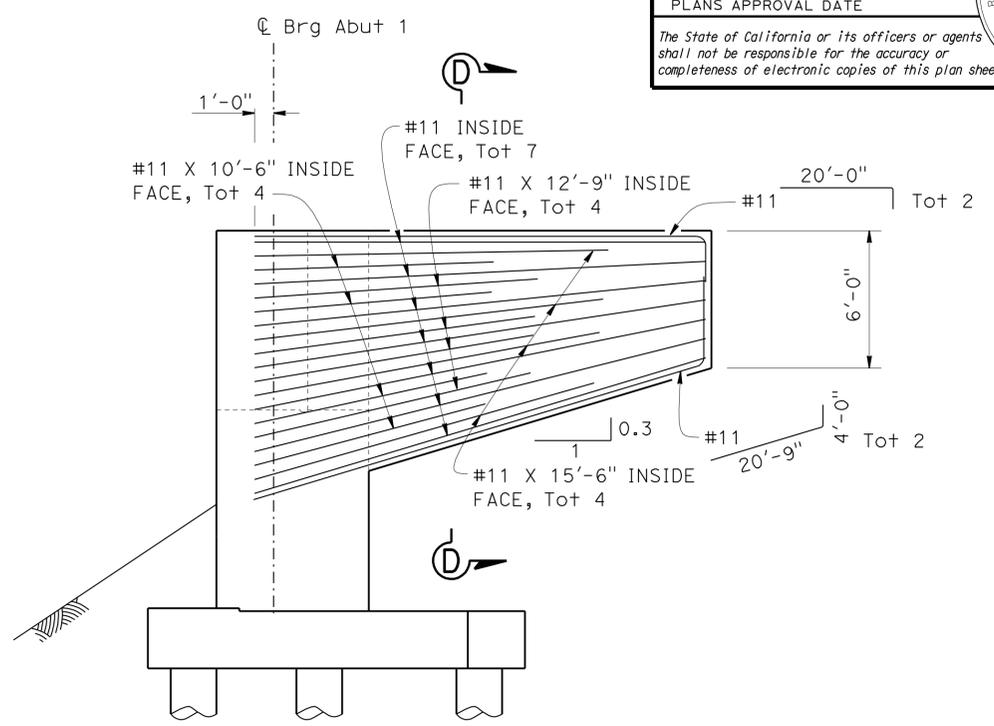
PRELIMINARY INVESTIGATION SECTION				DESIGN BY B Addiespurger	CHECKED Larry Wu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1306	HIGHGROVE UP (SHOOFLY) FOUNDATION PLAN NO. 2			
SCALE VERT. DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	DETAILS BY B Addiespurger	CHECKED Larry Wu	R.R. MILE POST 5.88								
ALIGNMENT TIES Dist. Traverse Sheet	DRAFTED BY C. Pham	QUANTITIES BY B Addiespurger	CHECKED Renee Anderson	LINE SEG. 7602								
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3647	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES		
						0	1	2	3	REVISION DATES	SHEET 4	OF 49

USERNAME => s124496 DATE PLOTTED => 14-JUN-2012 TIME PLOTTED => 06:09

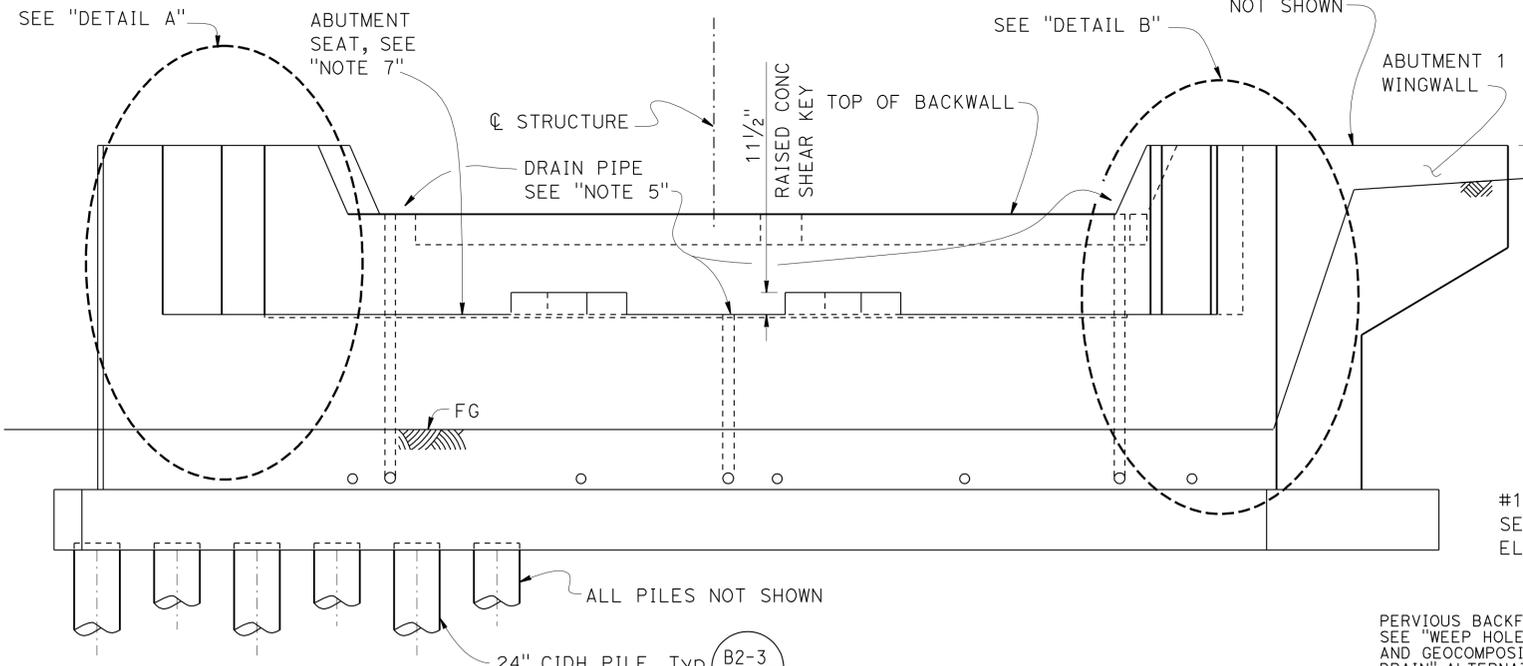
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08	Riv, SBd	91,215	21.5/21.7, 43.2/45.2, 0.0/5.1	1682	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



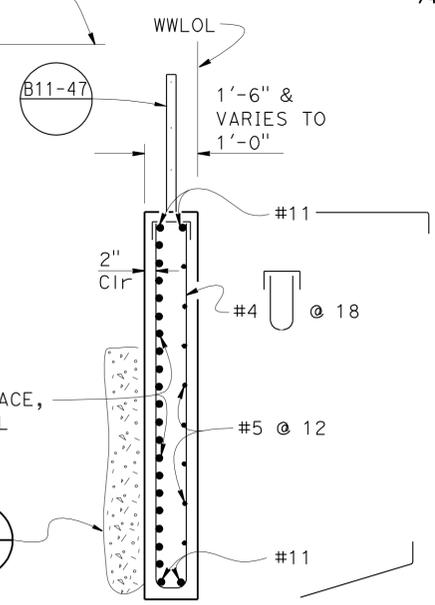
PLAN
1/4" = 1'-0"



WINGWALL ELEVATION
1/4" = 1'-0"



ELEVATION
1/4" = 1'-0"

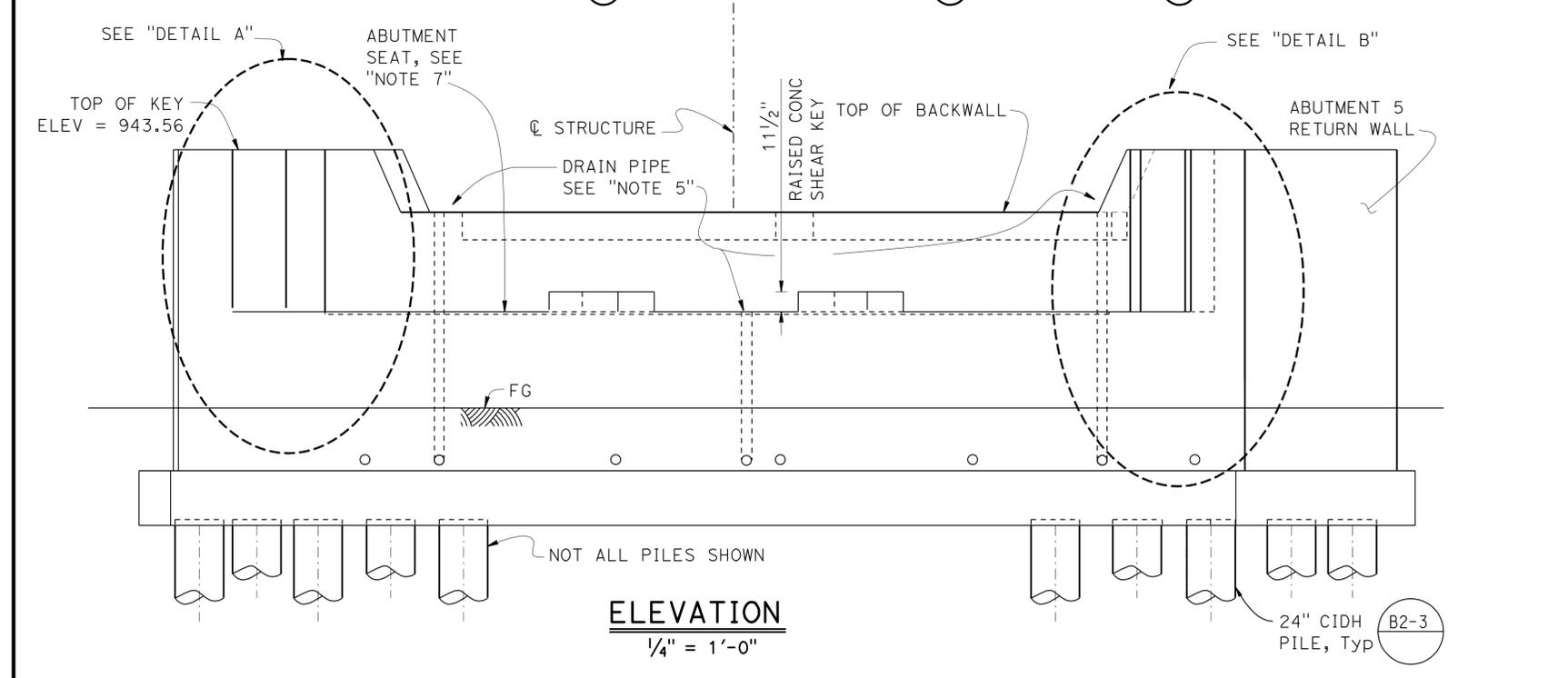
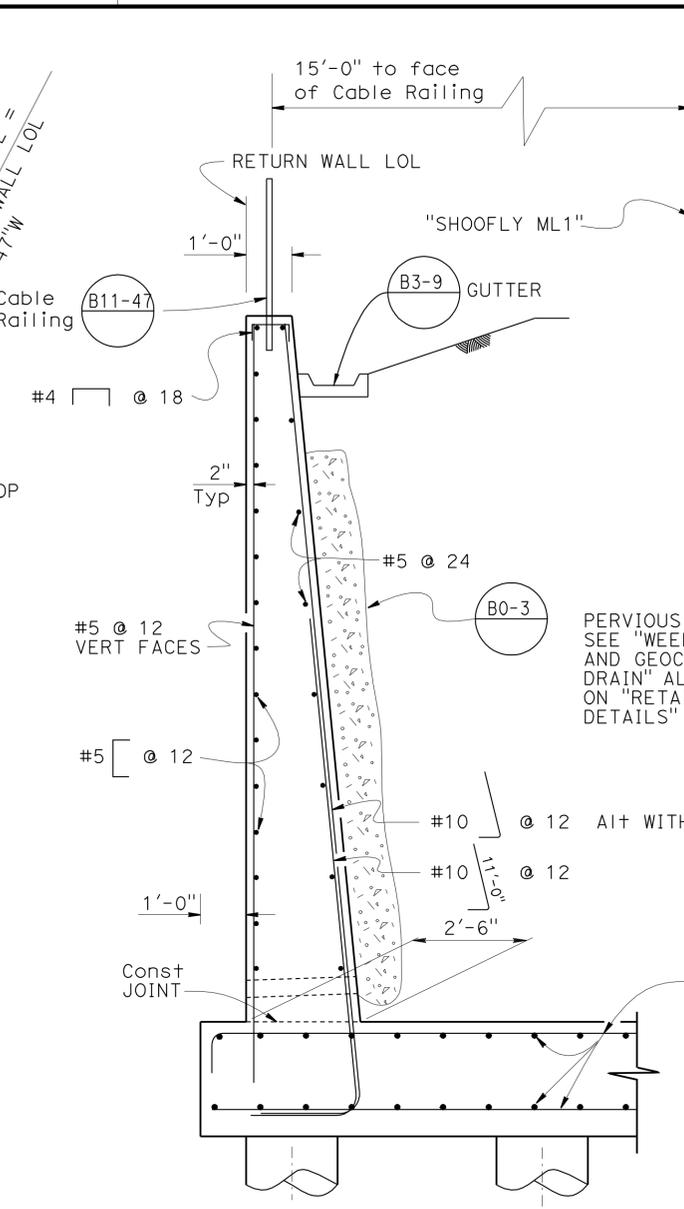
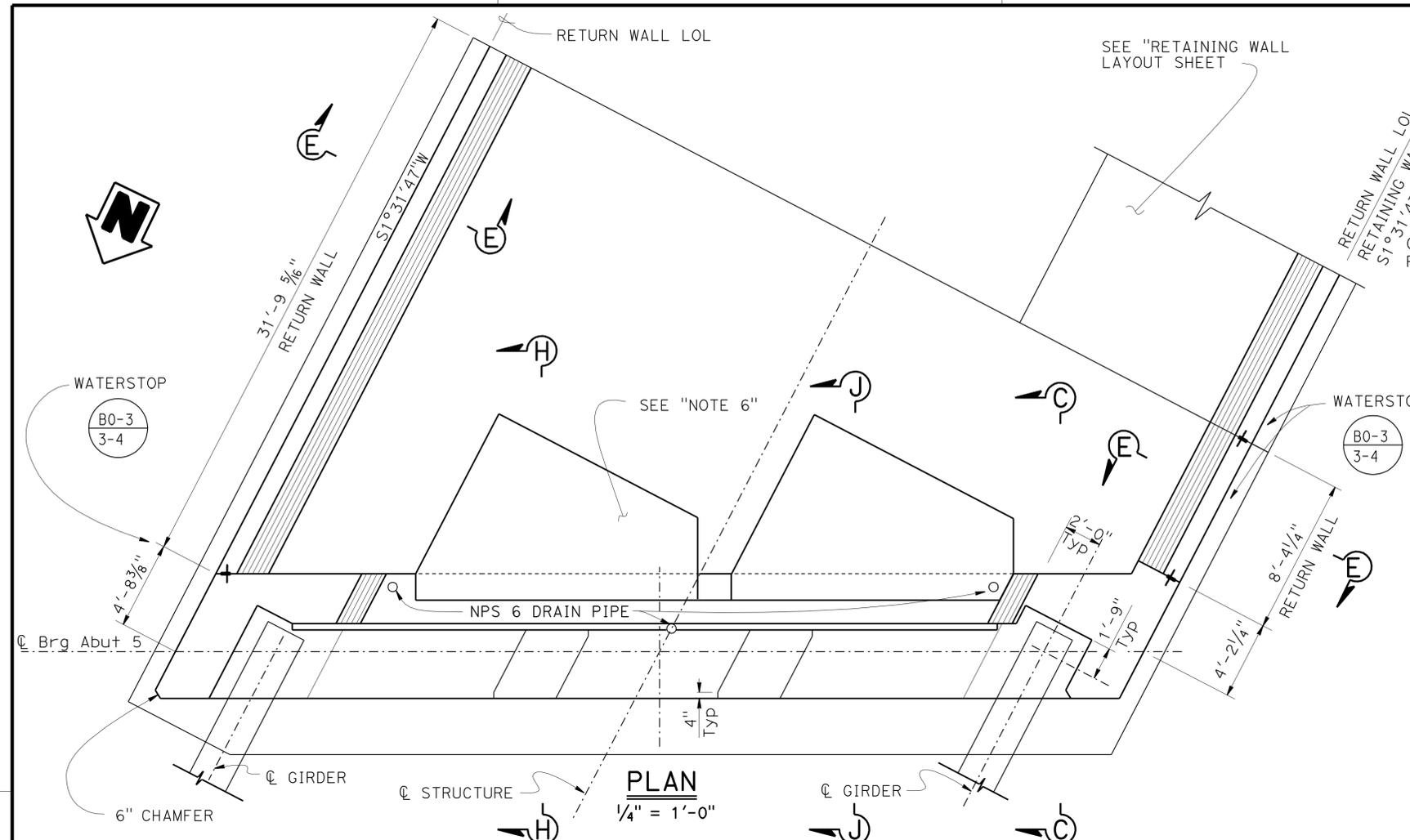


SECTION D-D
1/2" = 1'-0"

- NOTES:
- For "SECTION A-A", "SECTION B-B" and "SECTION C-C", see "ABUTMENT DETAILS NO. 1" sheet
 - For "DETAIL A", see "ABUTMENT DETAILS NO. 2" sheet
 - For "DETAIL B", see "ABUTMENT DETAILS NO. 3" sheet
 - For "ABUTMENT 1 FOOTING AND PILE LAYOUT", see "ABUTMENT 1 FOOTING LAYOUT" sheet
 - For Drainage Details, see "DECK DRAINAGE LAYOUT AND DETAILS" sheet
 - For Apron Slab Details, see "APRON SLAB DETAILS" sheet
 - For abutment seat elevations, see "BEARING LAYOUT" sheet

DESIGN BY B. Addlespurger CHECKED Larry Wu		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 54-1306	HIGHGROVE UP (SHOOFLY) ABUTMENT 1 LAYOUT		
DETAILS BY Janie Chlubna CHECKED Larry Wu				R.R. MILE POST 5.88			
QUANTITIES BY B. Addlespurger CHECKED Renee Anderson				LINE SEG. 7602			
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 12-22-11 1-12-12 3-30-12	SHEET OF 5 49

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	1683	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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- NOTES:
- For "SECTION H-H", "SECTION J-J" & "SECTION C-C", see "ABUTMENT DETAILS NO. 1" sheet.
 - For "DETAIL A", see "ABUTMENT DETAILS NO. 2" sheet.
 - For "DETAIL B", see "ABUTMENT DETAILS NO. 3" sheet.
 - For "ABUTMENT 5 FOOTING AND PILE LAYOUT", see "ABUTMENT 5 FOOTING LAYOUT" sheet.
 - For Drainage Details, see "DECK DRAINAGE LAYOUT AND DETAILS" sheet.
 - For Apron Slab Details, see "APRON SLAB DETAILS" sheet.
 - For abutment seat elevations, see "BEARING LAYOUT" sheet.
 - For details not shown, see "ABUTMENT 1 LAYOUT" sheet.

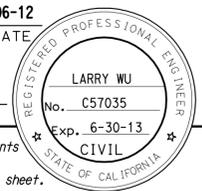
DESIGN BY B. Addlespurger CHECKED Larry Wu DETAILS BY Janie Chlubna CHECKED Larry Wu QUANTITIES BY B. Addlespurger CHECKED Renee Anderson	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 54-1306 R.R. MILE POST 5.88 LINE SEG. 7602	HIGHGROVE UP (SHOOFLY) ABUTMENT 5 LAYOUT	
				DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10
				UNIT: 3589 PROJECT NUMBER & PHASE: 08000005061 CONTRACT NO.: 08-0M9401

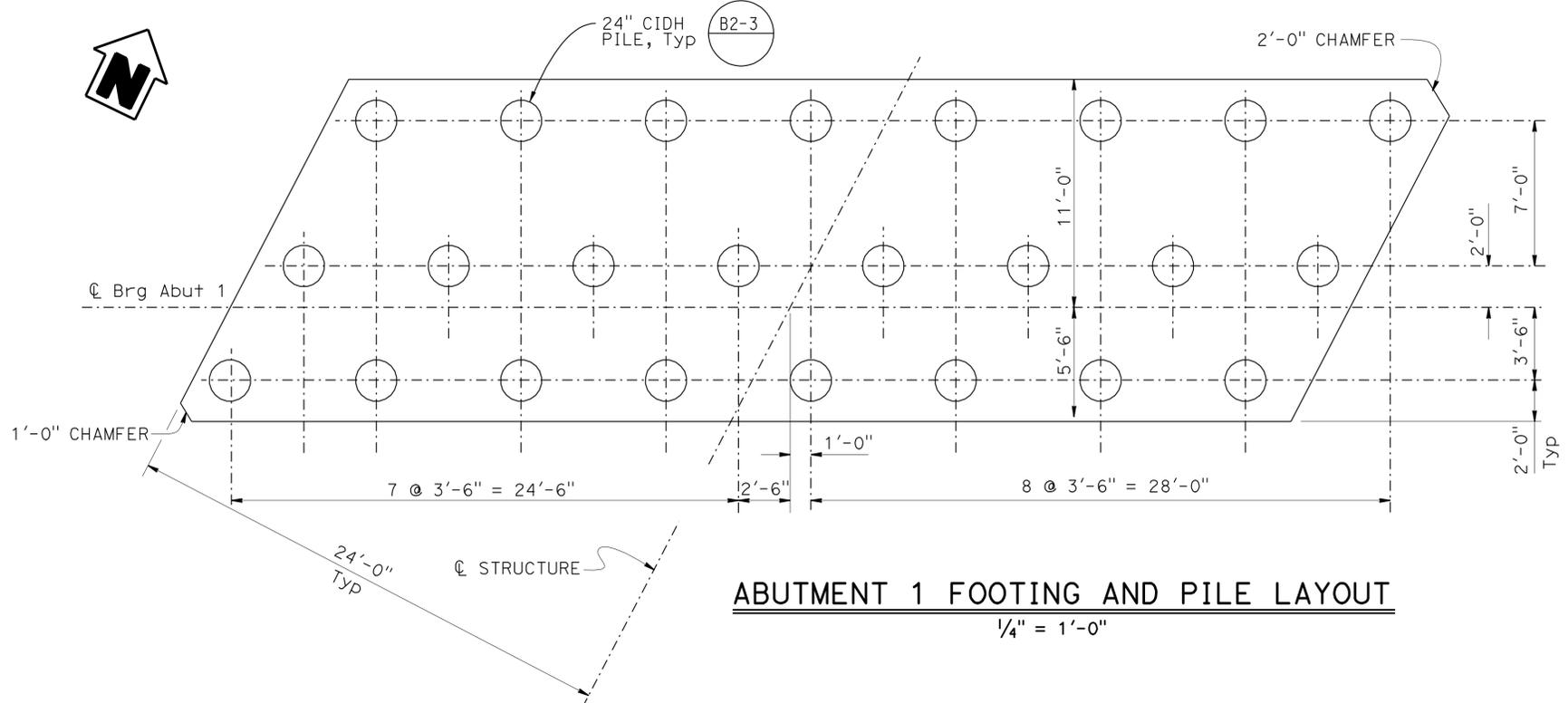
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DISREGARD PRINTS BEARING EARLIER REVISION DATES

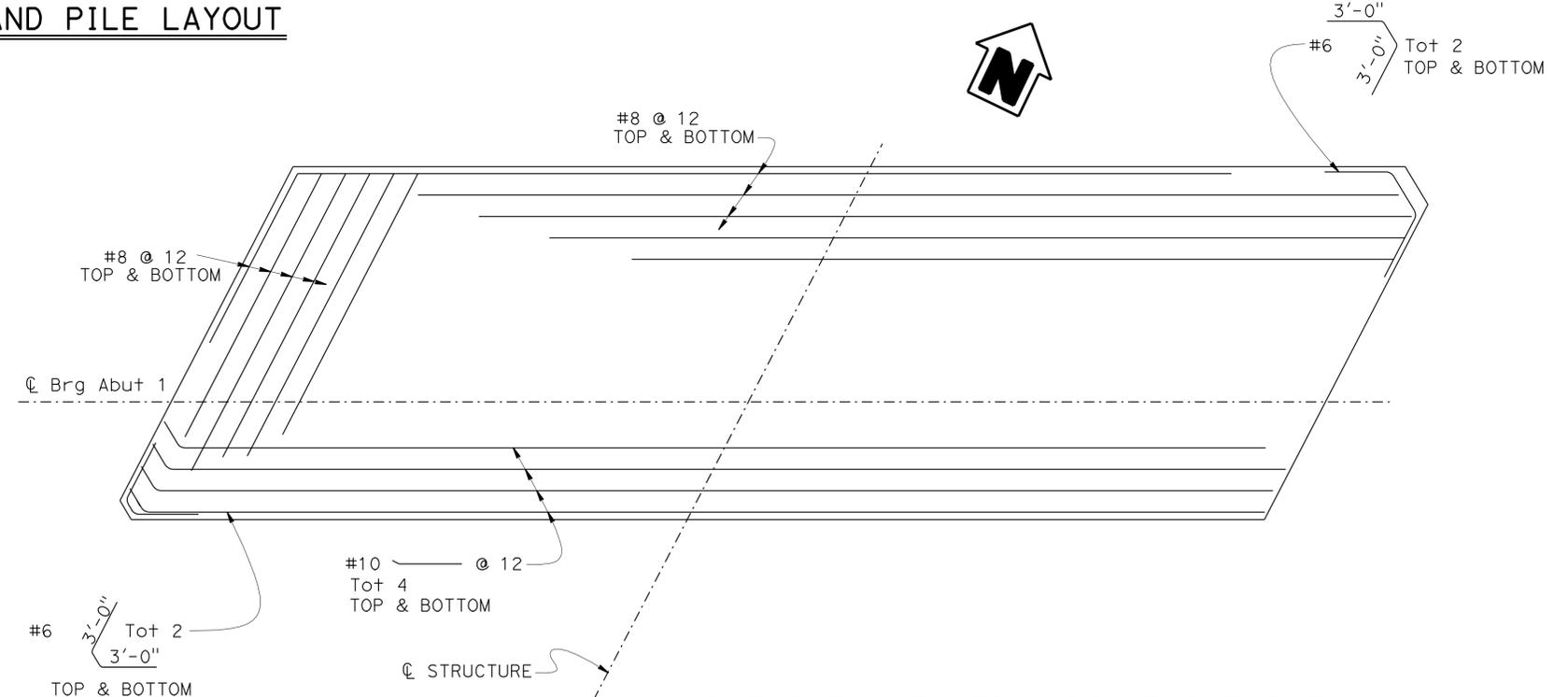
REVISION DATES	SHEET	OF
12-14-11 1-12-12 7-18-12 3-30-12	6	49

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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	1684	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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ABUTMENT 1 FOOTING AND PILE LAYOUT
 1/4" = 1'-0"



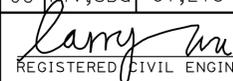
ABUTMENT 1 FOOTING REINFORCEMENT
 1/4" = 1'-0"

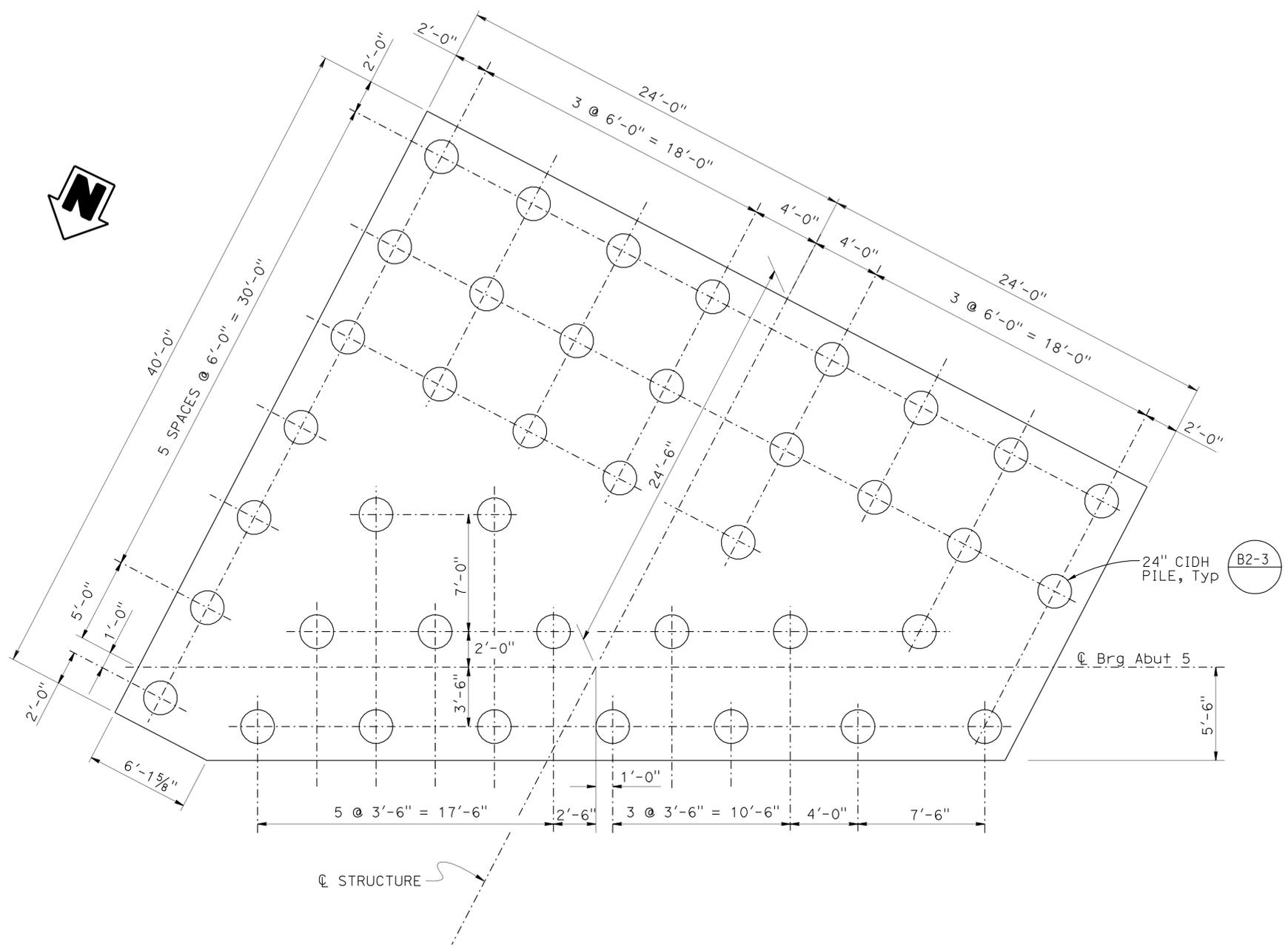
DESIGN	BY B Addlespurger	CHECKED Larry Wu
DETAILS	BY Janie Chlubna	CHECKED Larry Wu
QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO. 54-1306
 R.R. MILE POST 5.88
 LINE SEG. 7602
HIGHGROVE UP (SHOOFLY)
ABUTMENT 1 FOOTING 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	1685	1743
			4-06-12	REGISTERED CIVIL ENGINEER DATE	
4-16-12			PLANS APPROVAL DATE		
					
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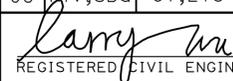
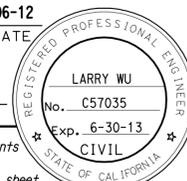


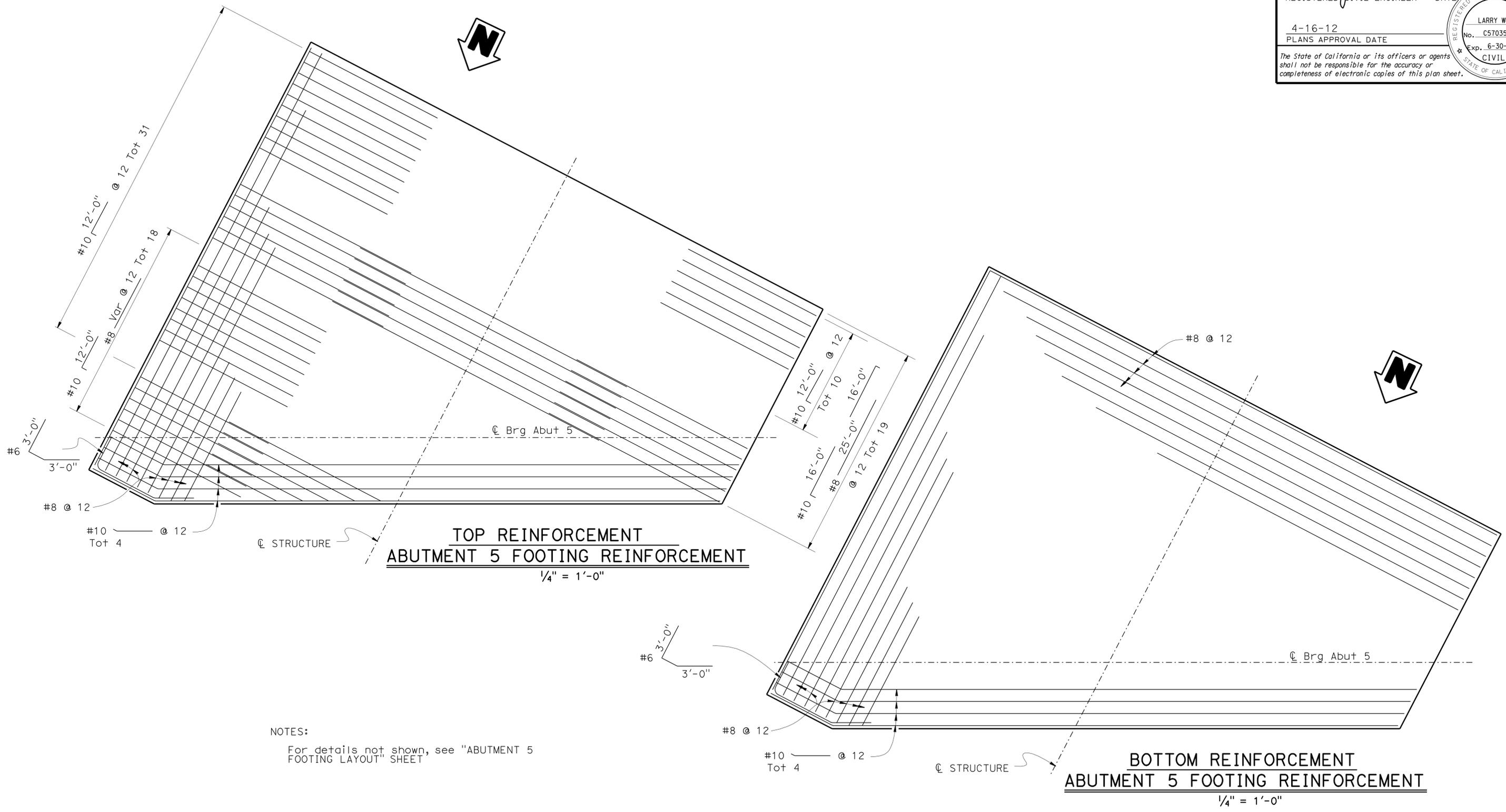
ABUTMENT 5 FOOTING AND PILE LAYOUT
 1/4" = 1'-0"

NOTES:
 For Abutment 5 Footing Reinforcement, see "ABUTMENT 5 FOOTING REINFORCEMENT" sheet

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY B Addlespurger	CHECKED Larry Wu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UP (SHOOFLY) ABUTMENT 5 FOOTING LAYOUT	
	DETAILS	BY Janie Chlubna	CHECKED Larry Wu			54-1306		
	QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson			R.R. MILE POST 5.88 LINE SEG. 7602		
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 12-14-11 1-18-12 3-30-12	SHEET 8 OF 49

USERNAME => s124486 DATE PLOTTED => 18-APR-2012 TIME PLOTTED => 08:06

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	1686	1743
			4-06-12		
REGISTERED CIVIL ENGINEER			DATE		
4-16-12			PLANS APPROVAL DATE		
					
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NOTES:
 For details not shown, see "ABUTMENT 5 FOOTING LAYOUT" SHEET

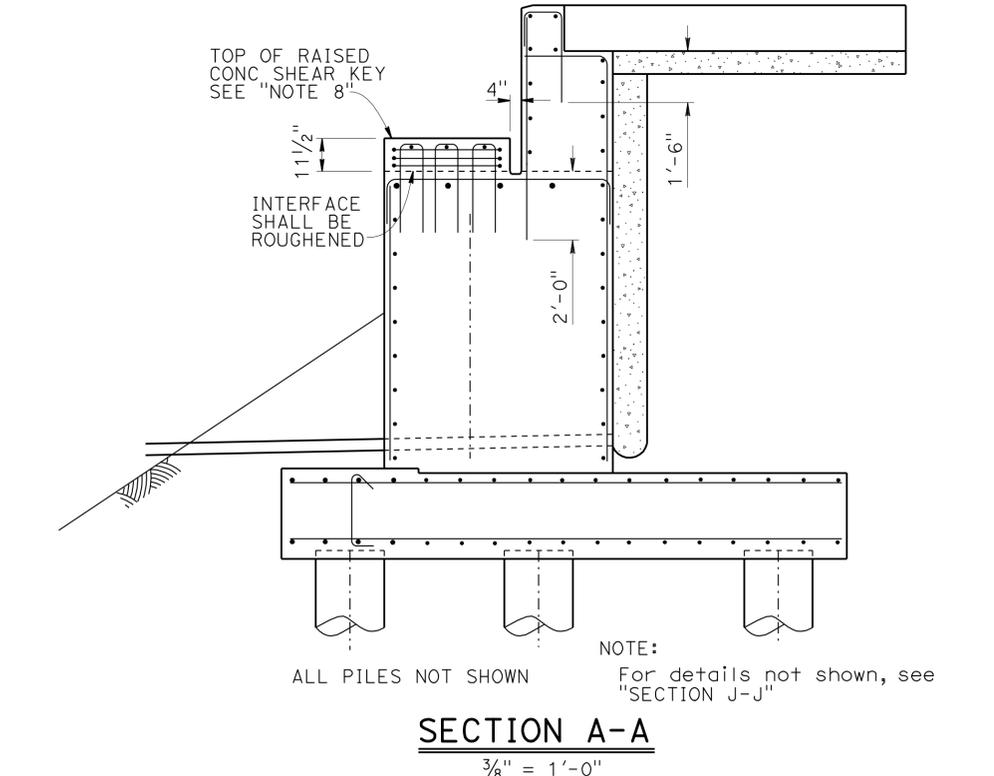
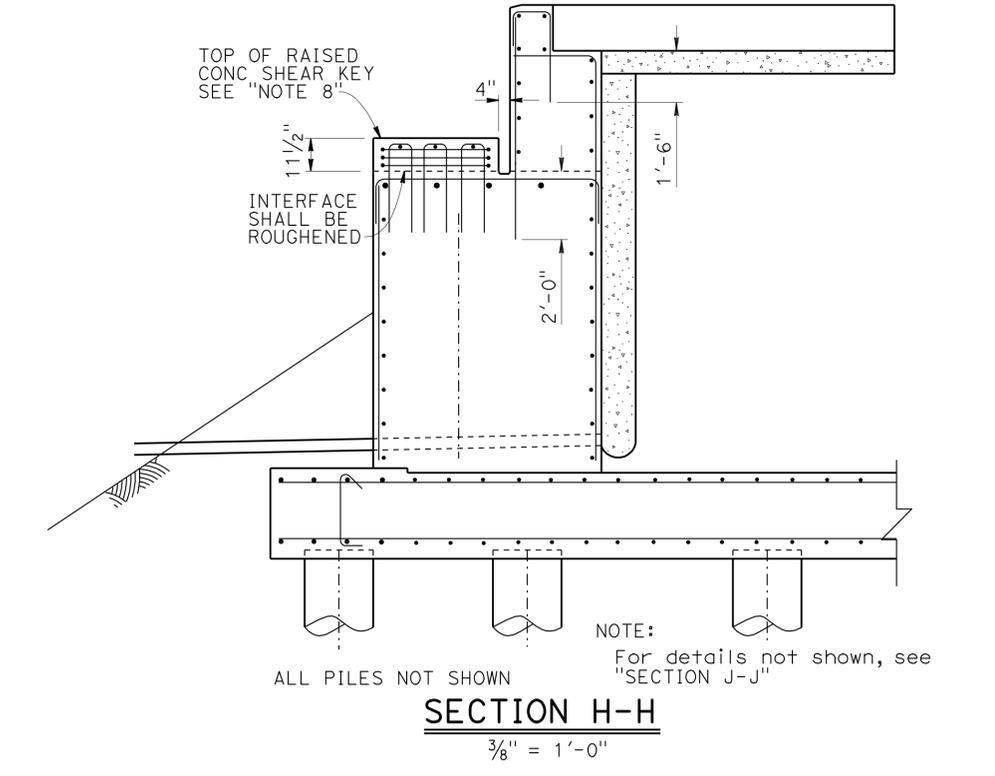
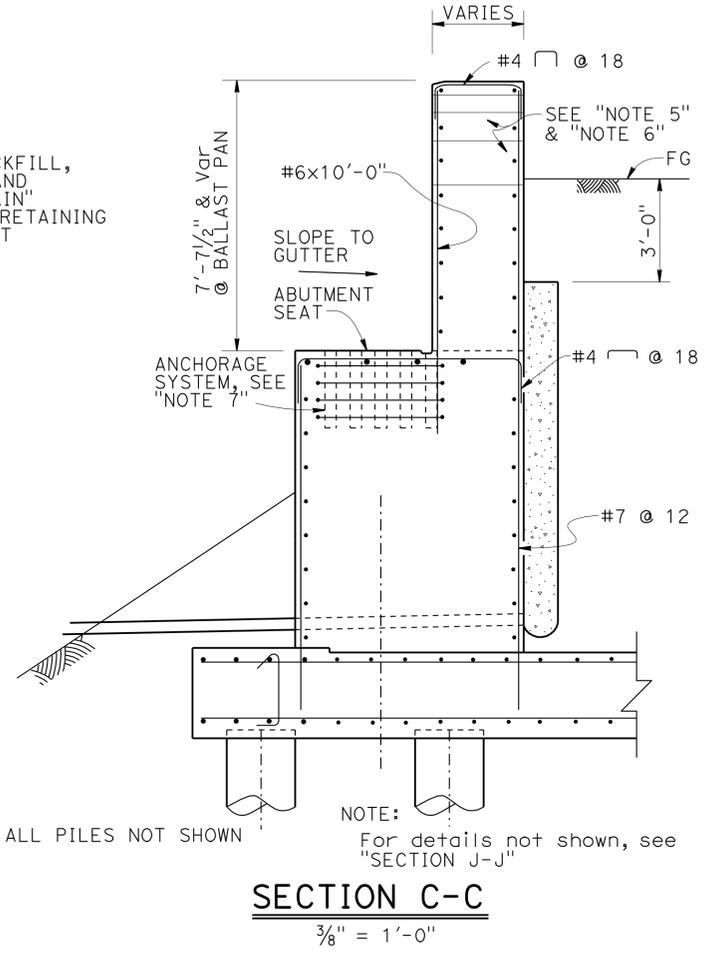
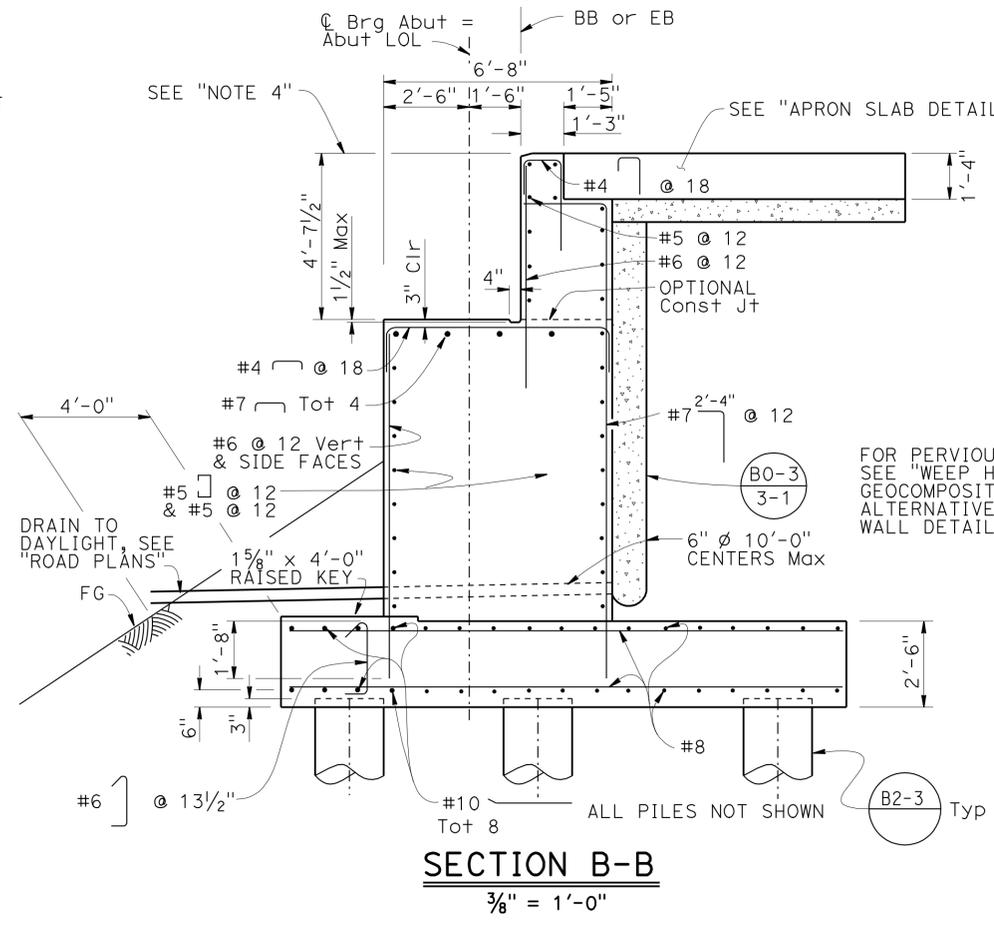
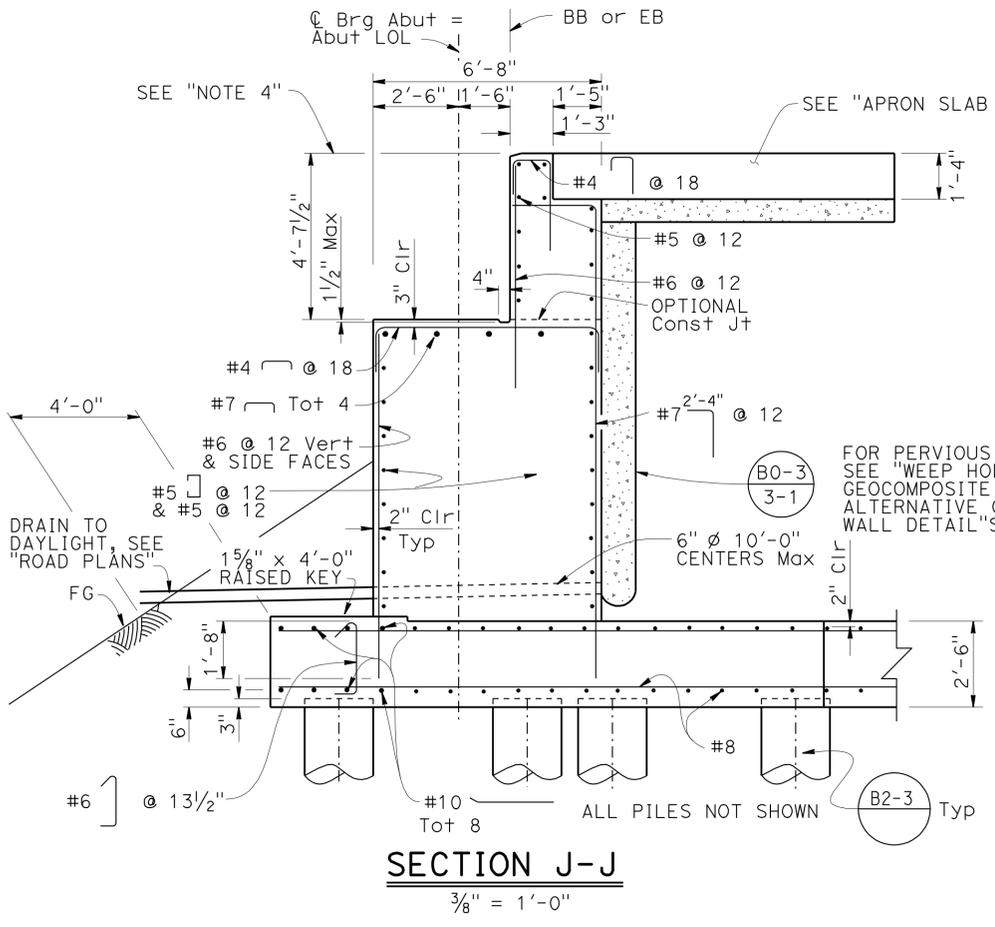
DESIGN	BY B Addlespurger	CHECKED Larry Wu
DETAILS	BY Janie Chlubna	CHECKED Larry Wu
QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO. 54-1306
 R.R. MILE POST 5.88
 LINE SEG. 7602
HIGHGROVE UP (SHOOFLY)
ABUTMENT 5 FOOTING REINFORCEMENT

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	1687	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.					
					



- NOTES:
- For Abutment 1 Footing Layout and Reinforcement, see "ABUTMENT 1 FOOTING LAYOUT" sheet.
 - For Abutment 5 Footing Layout, see "ABUTMENT 5 FOOTING LAYOUT" sheet.
 - For Abutment 5 Footing Reinforcement, see "ABUTMENT 5 FOOTING REINFORCEMENT" sheet.
 - Top of Back Wall to be at same Elev as top of floor beams after erection, and Const before deck PL is placed.
 - See "SECTION F-F" on "ABUTMENT DETAILS NO. 2" sheet.
 - See "SECTION G-G" on "ABUTMENT DETAILS NO. 3" sheet.
 - See "ABUTMENT DETAILS NO. 4" sheet for Shear Key and Anchorage information.
 - For location of Section A-A, B-B, and C-C, see "ABUTMENT 1 LAYOUT" sheet.
 - For location of Sections H-H, J-J and C-C, see "ABUTMENT 5 LAYOUT" sheet.

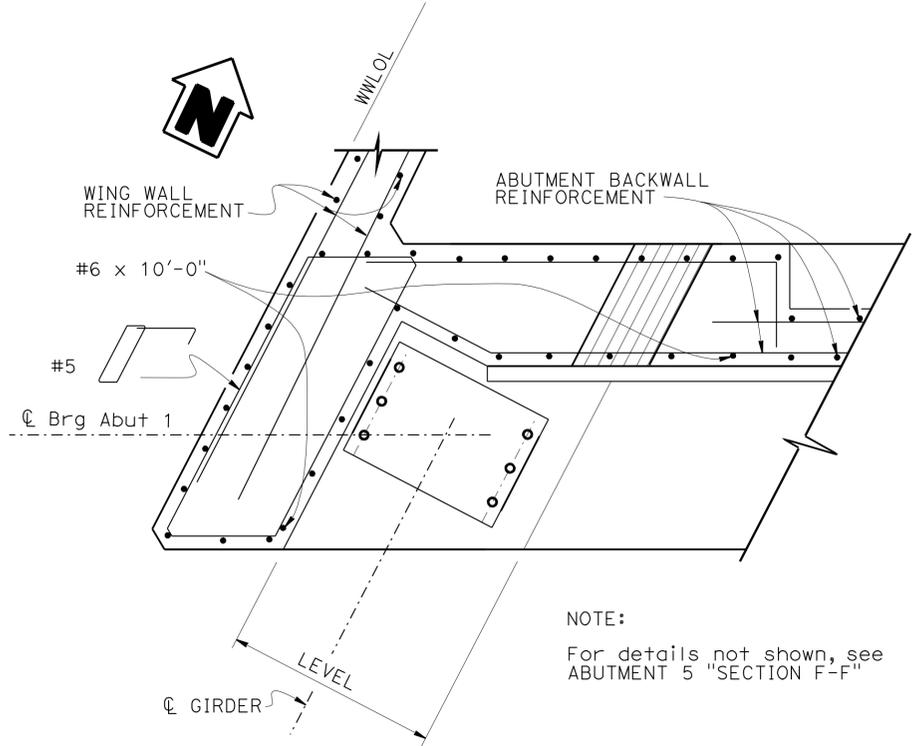
DESIGN	BY B Addlespurger	CHECKED Larry Wu
DETAILS	BY Janie Chlubna	CHECKED Larry Wu
QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	54-1306	HIGHGROVE UP (SHOOFLY) ABUTMENT DETAILS NO. 1
R.R. MILE POST	5.88	
LINE SEG.	7602	

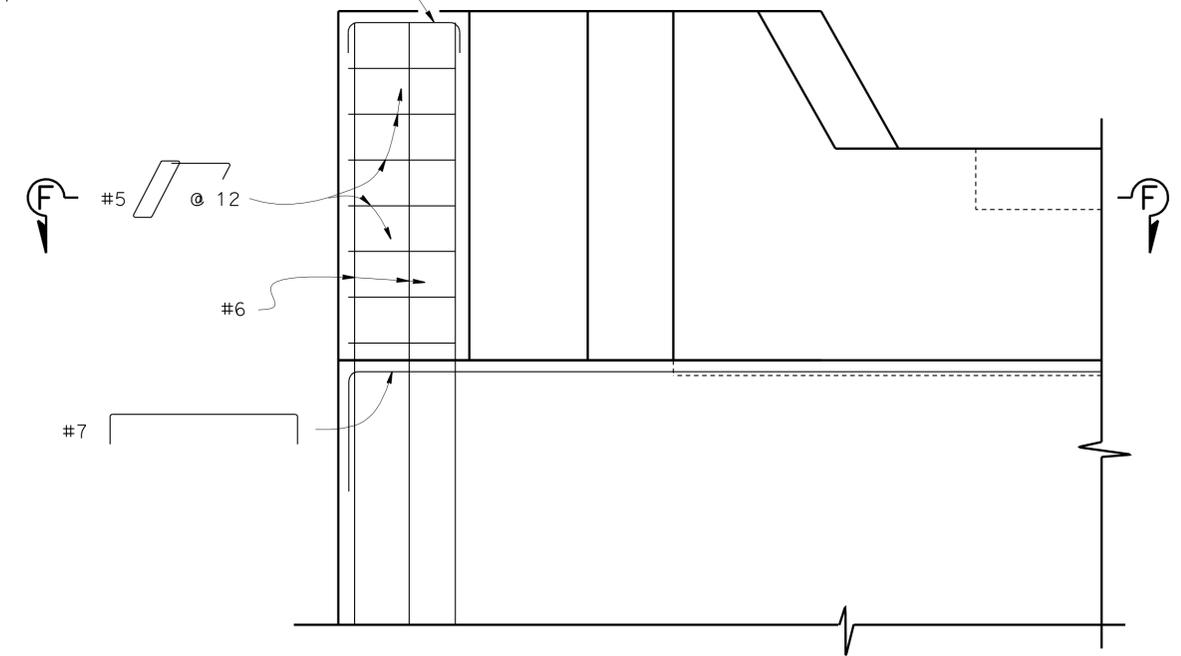
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 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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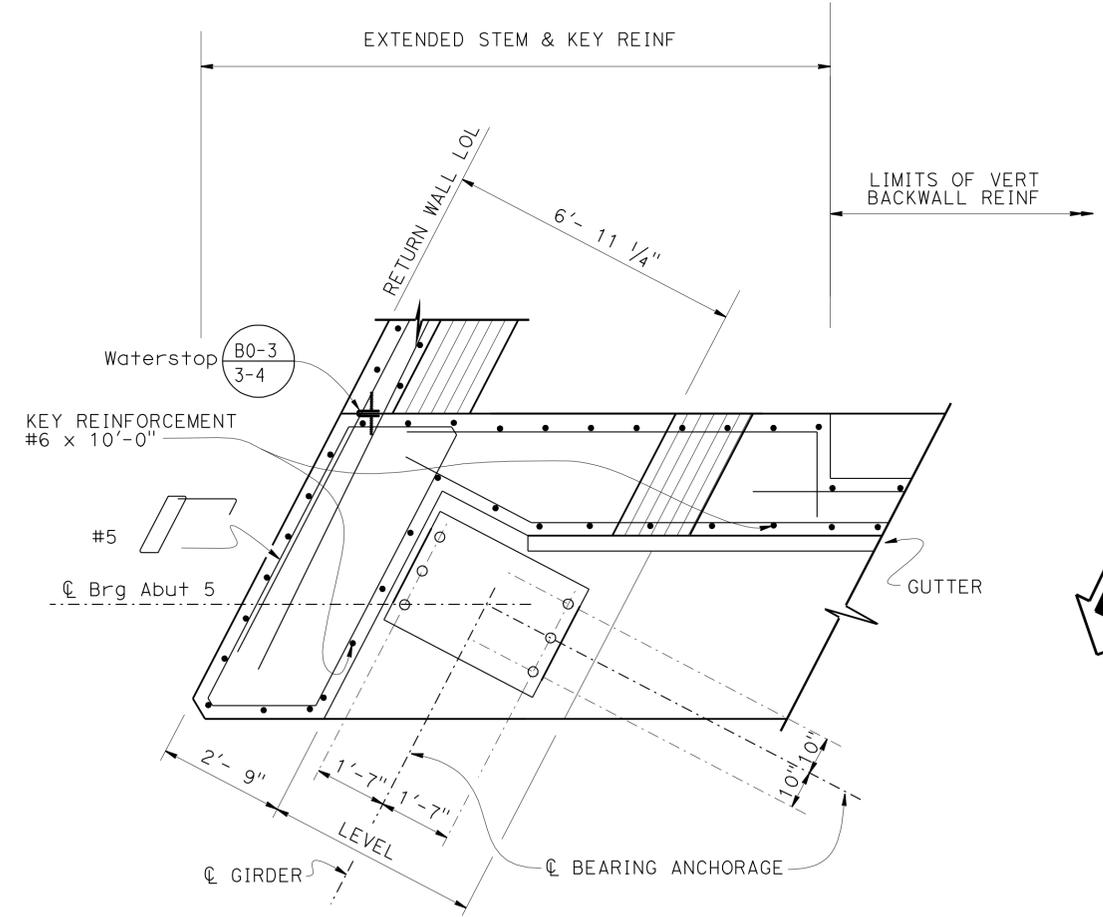
NOTE:
For details not shown, see
ABUTMENT 5 "SECTION F-F"

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

6 - #4 Var evenly parallel to CL BRG



OBTUSE CORNER EXTERIOR KEY
DETAIL A
1/2" = 1'-0"



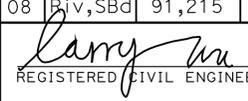
ABUTMENT 5
SECTION F-F
1/2" = 1'-0"

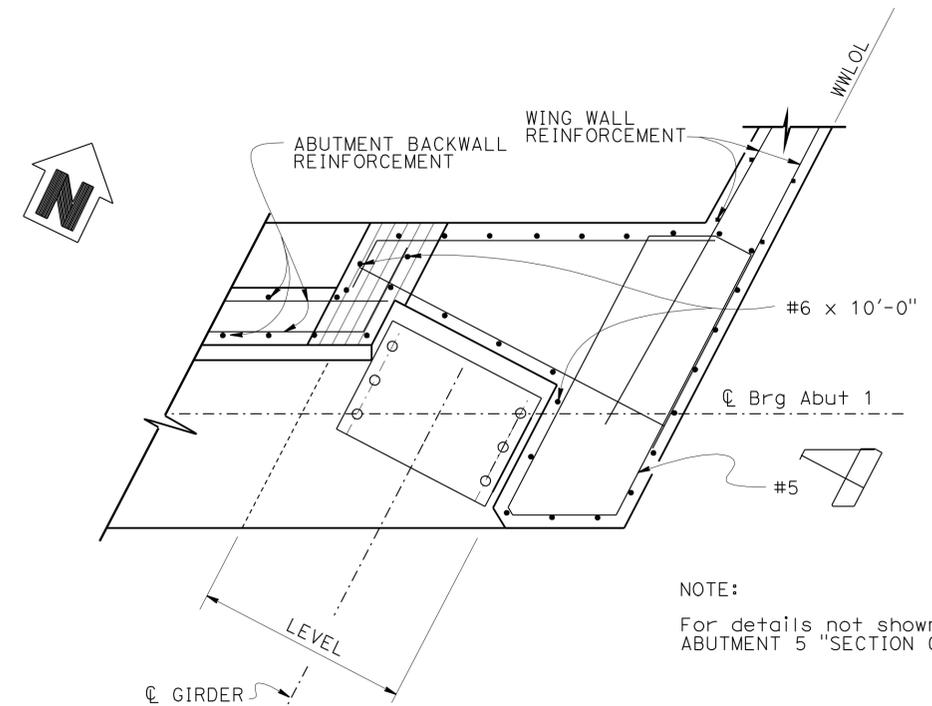
DESIGN	BY B Addlespurger	CHECKED Larry Wu
DETAILS	BY Janie Chlubna	CHECKED Larry Wu
QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

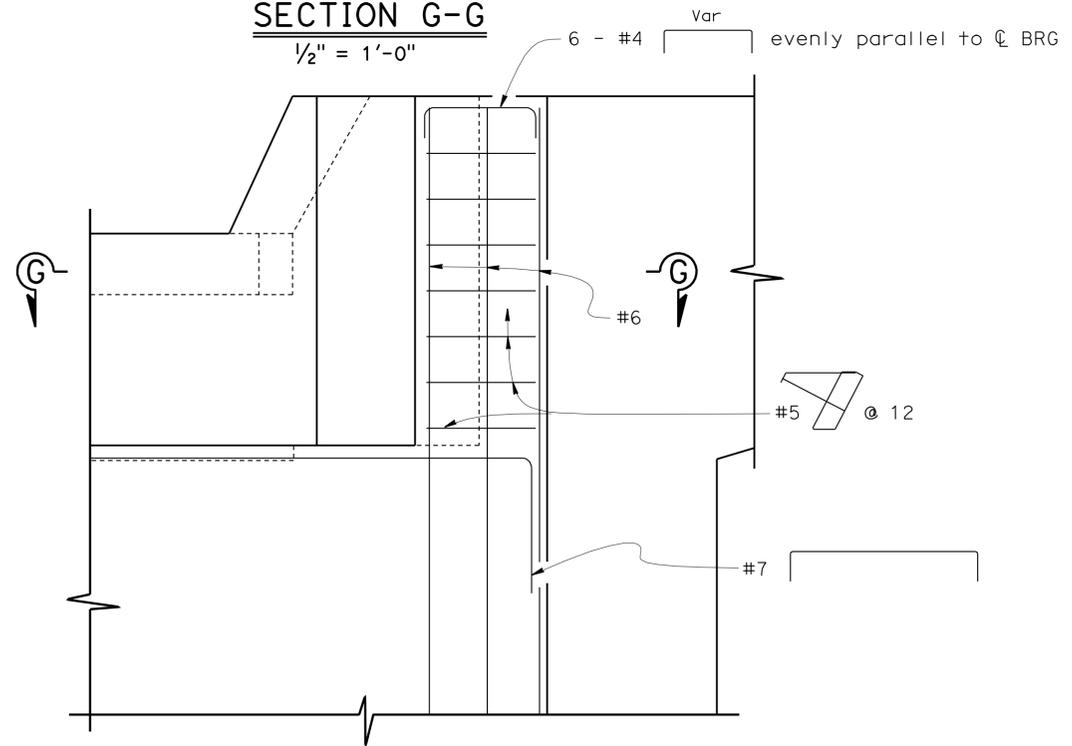
BRIDGE NO. 54-1306
R.R. MILE POST 5.88
LINE SEG. 7602
HIGHGROVE UP (SHOOFLY)
ABUTMENT DETAILS NO. 2

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	1689	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
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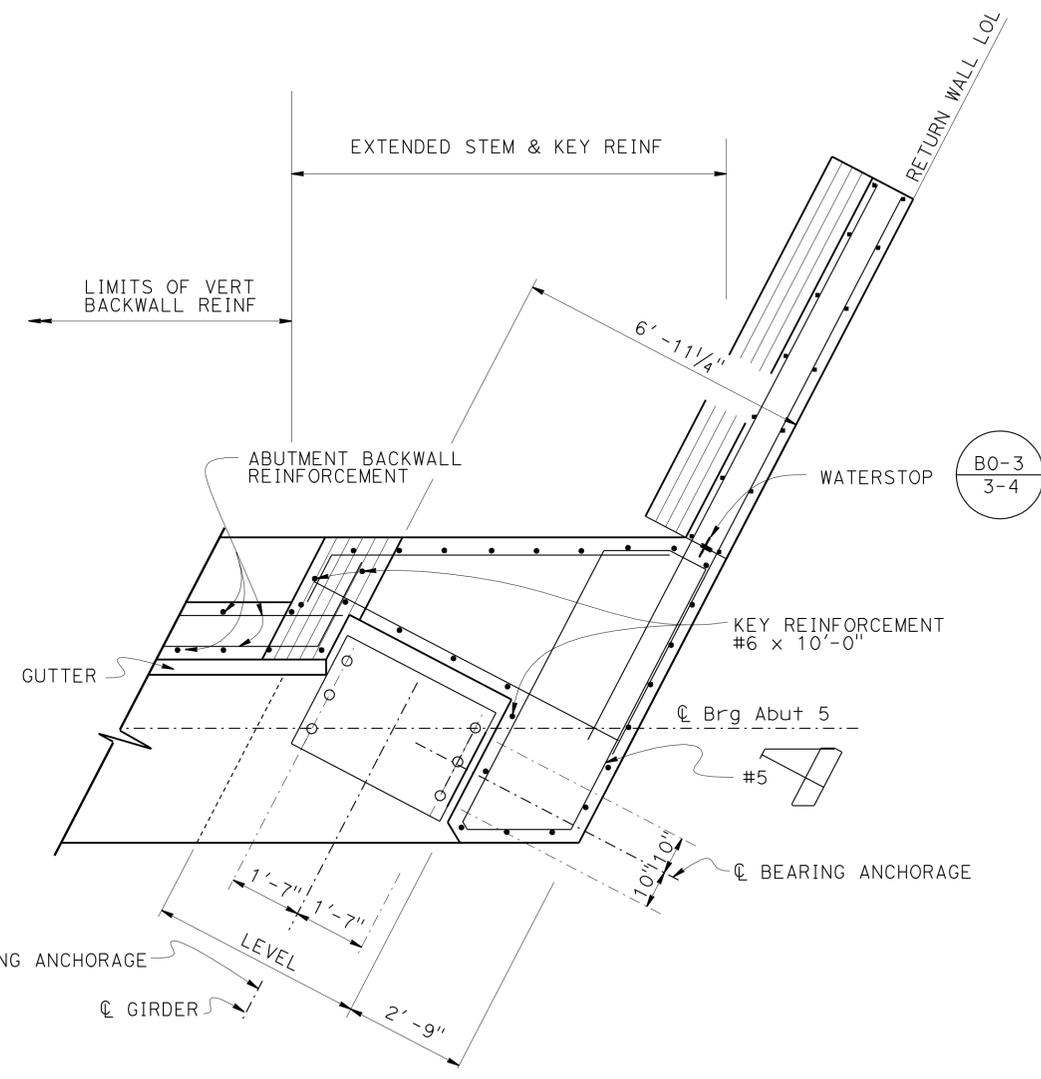


NOTE:
For details not shown, see ABUTMENT 5 "SECTION G-G"

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



**ACUTE CORNER EXTERIOR KEY
DETAIL B**
1/2" = 1'-0"



**ABUTMENT 5
SECTION G-G**
1/2" = 1'-0"

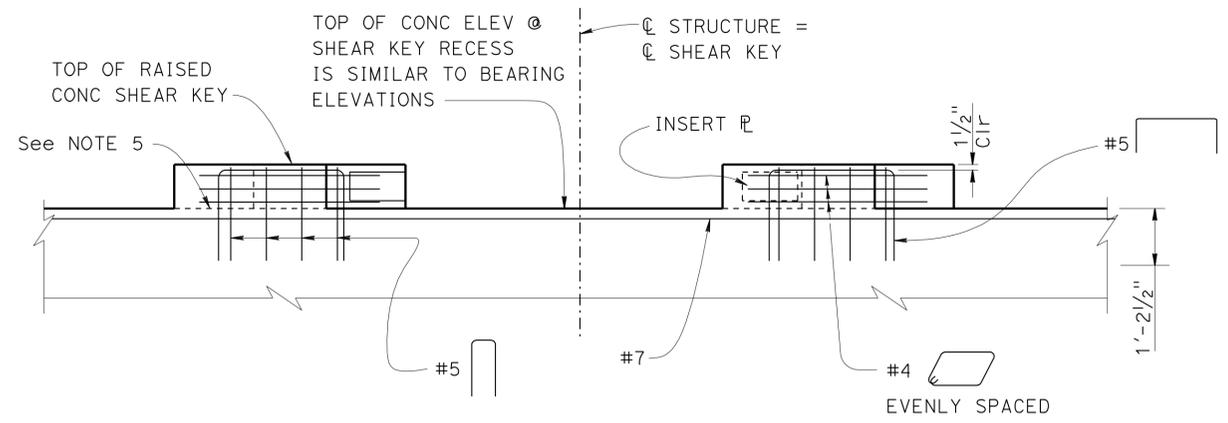
DESIGN	BY B Addlespurger	CHECKED Larry Wu
DETAILS	BY Janie Chlubna	CHECKED Larry Wu
QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO. 54-1306
R.R. MILE POST 5.88
LINE SEG. 7602
HIGHGROVE UP (SHOOFLY)
ABUTMENT DETAILS NO. 3

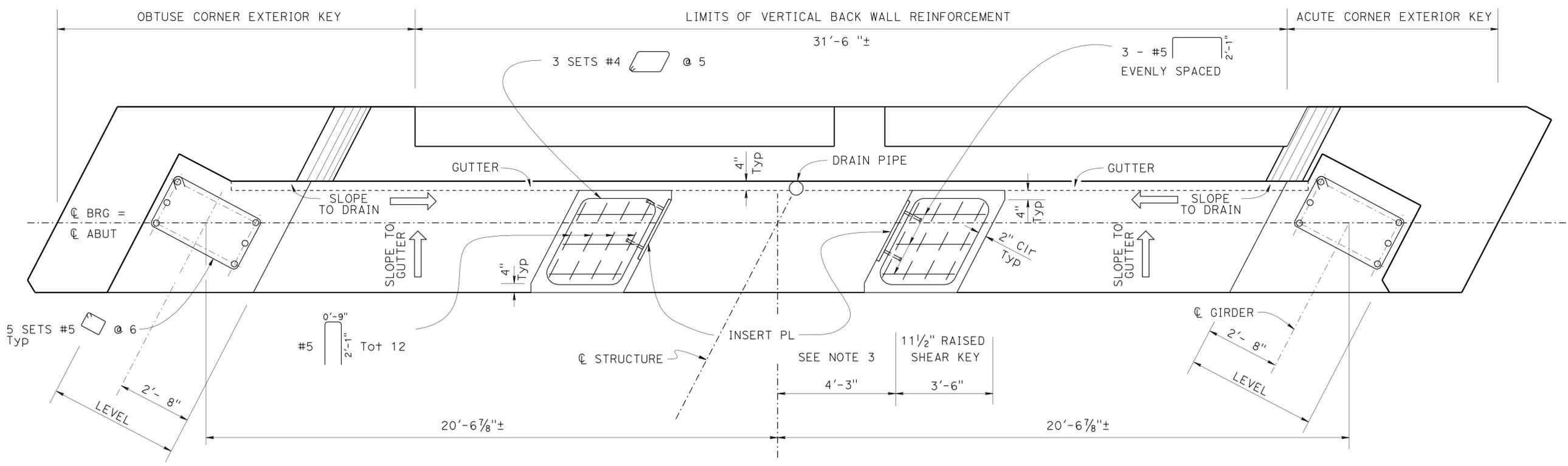
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1690	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



- NOTES:**
- FOR INSERT PLATE DETAILS, SEE "SHEAR KEY BEAM DETAILS" SHEET.
 - Reinf IS SYM TO \varnothing STRUCTURE. NOT ALL Reinf SHOWN FOR CLARITY.
 - RECESS TO MATCH FIT SHEAR KEY BEAM, SEE "SHEAR KEY BEAM LAYOUT" SHEET.
 - FOR ELEVATIONS, SEE "BEARING ANCHORAGE DETAILS" SHEET.
 - INTERFACE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF $1/4$ "

SHEAR KEY ELEVATION

$1/2" = 1'-0"$



SHEAR KEY PLAN

$1/2" = 1'-0"$

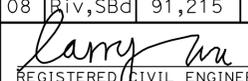
DESIGN	BY B Addlespurger	CHECKED Larry Wu
DETAILS	BY B Addlespurger	CHECKED Larry Wu
QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson

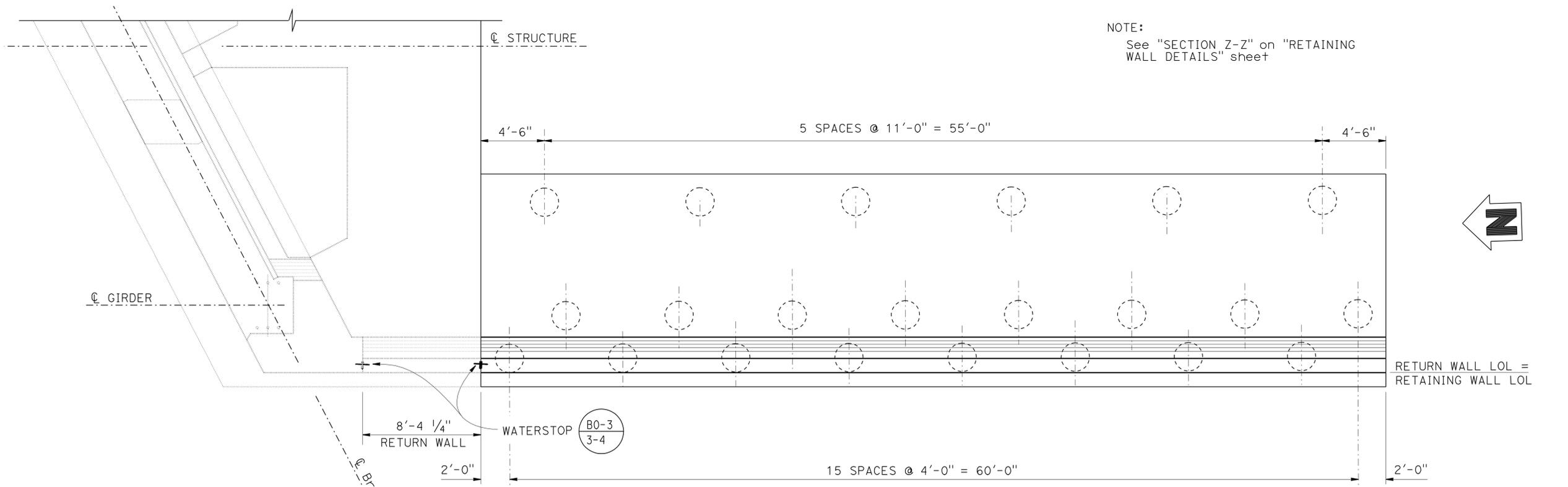
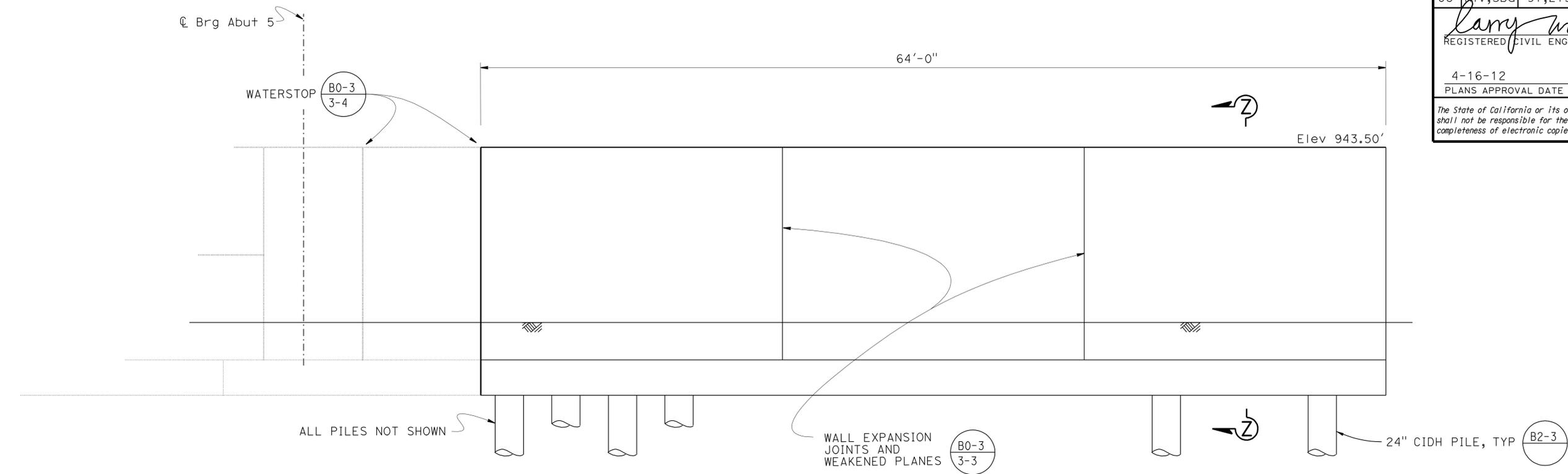
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	54-1306
R.R. MILE POST	5.88
LINE SEG. 7602	

**HIGHGROVE UP (SHOOFLY)
ABUTMENT DETAILS NO. 4**

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	1691	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.					
					



PLAN
1/4" = 1'-0"

DESIGN	BY B. Addlespurger	CHECKED Larry Wu
DETAILS	BY Janie Chlubna	CHECKED Larry Wu
QUANTITIES	BY B. Addlespurger	CHECKED Renee Anderson

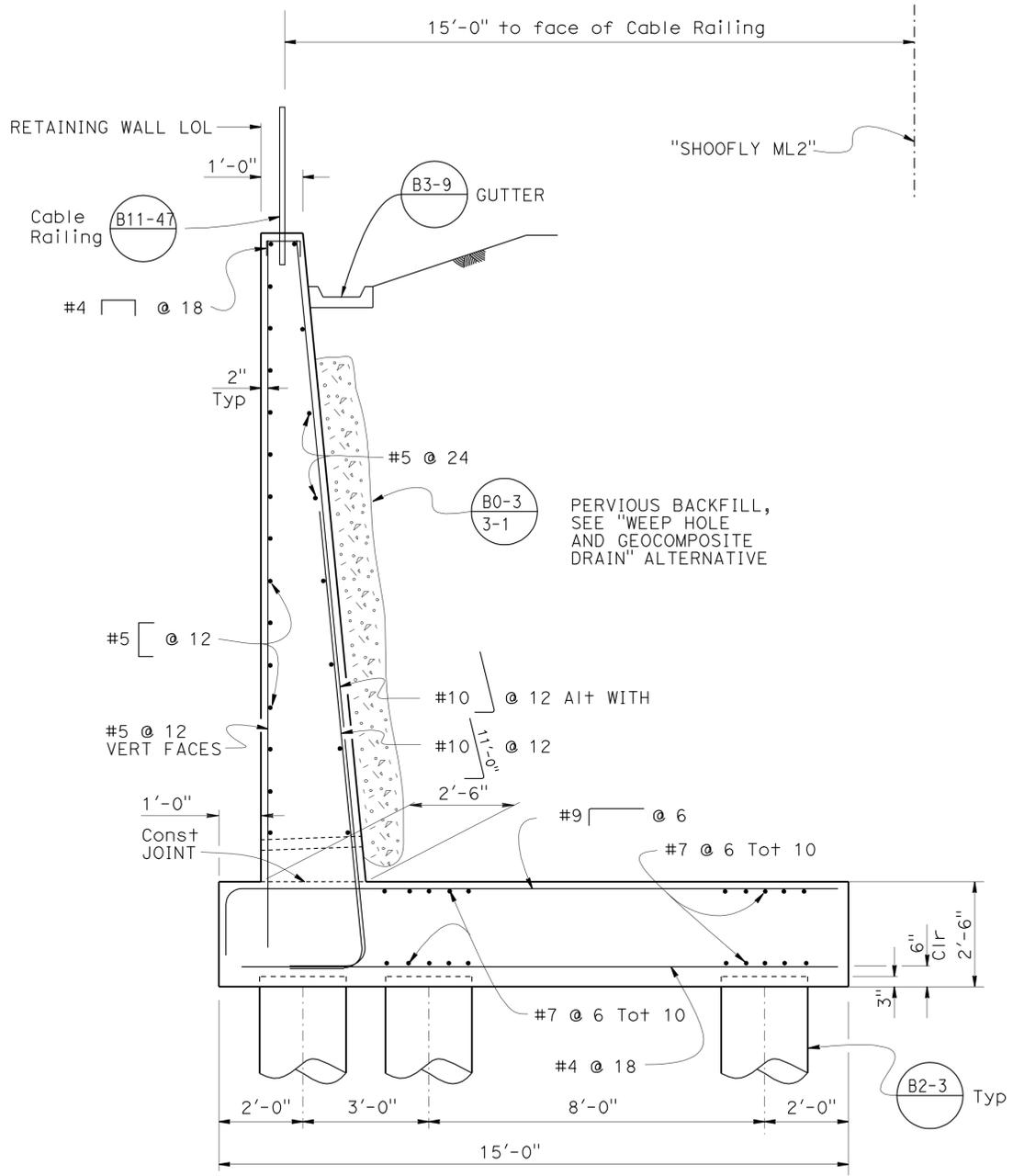
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

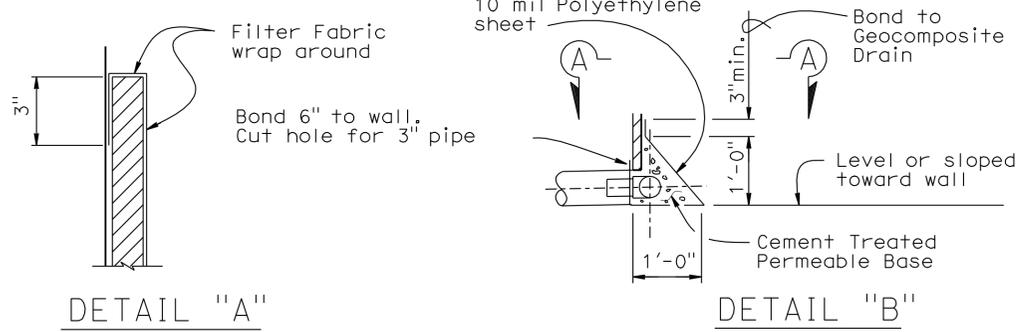
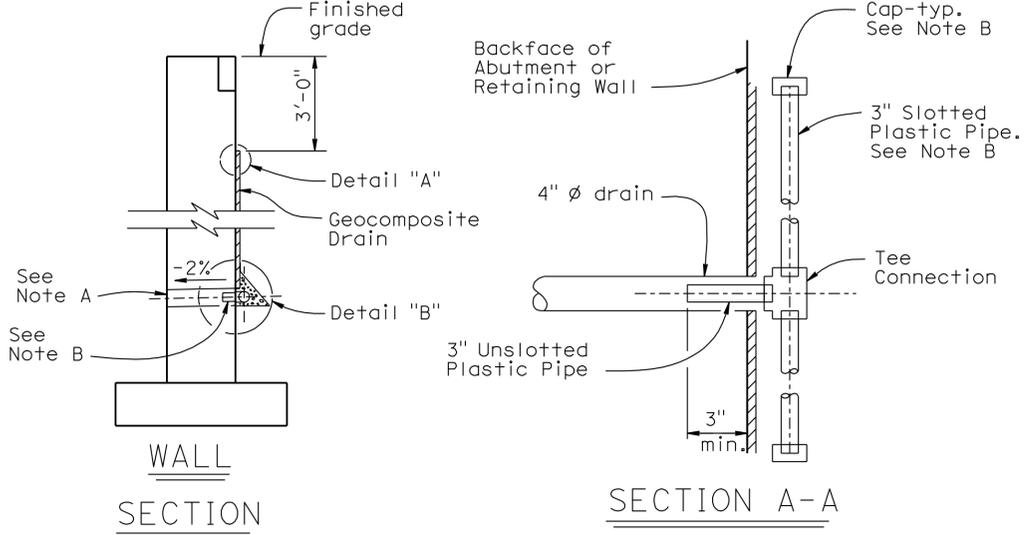
BRIDGE NO. 54-1306
R.R. MILE POST 5.88
LINE SEG. 7602

**HIGHGROVE UP (SHOOLLY)
RETAINING WALL 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	1692	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>					



SECTION Z-Z
1/2" = 1'-0"



WEEP HOLE AND GEOCOMPOSITE DRAIN

ALTERNATIVE TO BRIDGE DETAIL (B0-3 3-1)

- Notes:
- A. 4" ϕ drains at intermediate sag points and at 25' max center to center (9' c-c for Type 3 and 9'-3" c-c for Type 4 retaining walls). For walls adjacent to sidewalks or curbs, provide 4" cast iron or asbestos cement pipe under the sidewalk to discharge through curb face. Exposed wall drains shall be located 3" \pm above finished grade.
 - B. Geocomposite drain, cement treated permeable base, and 3" ϕ slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4" ϕ drain.
 - C. Connect the low end of plastic pipe to the main outlet pipe as applicable.

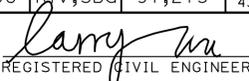
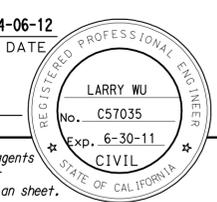
DESIGN	BY B. Addlespurger	CHECKED Larry Wu
DETAILS	BY Janie Chlubna	CHECKED Larry Wu
QUANTITIES	BY B. Addlespurger	CHECKED Renee Anderson

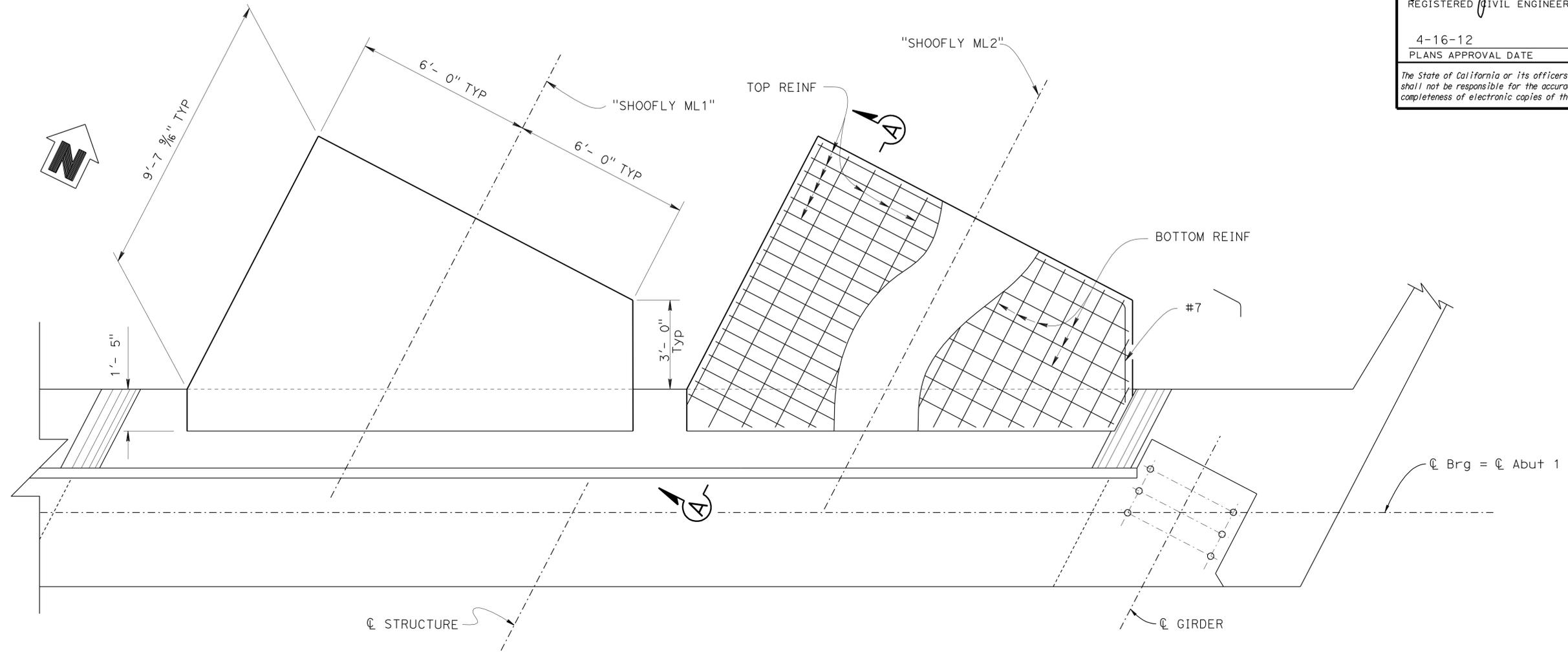
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO. 54-1306
R.R. MILE POST 5.88
LINE SEG. 7602

HIGHGROVE UP (SHOOFLY)
RETAINING WALL DETAILS

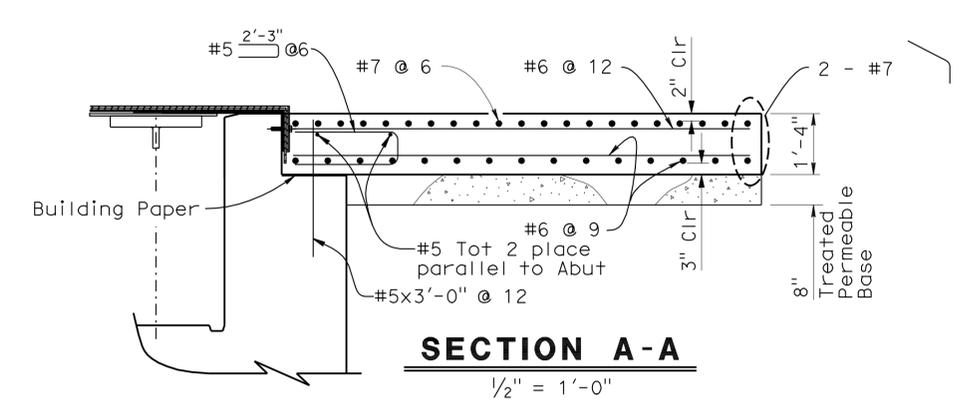
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1693	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



NOTE: Abut 1 shown Abut 5 similar.

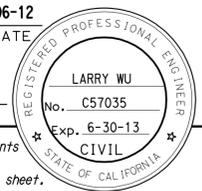
APRON SLAB LAYOUT

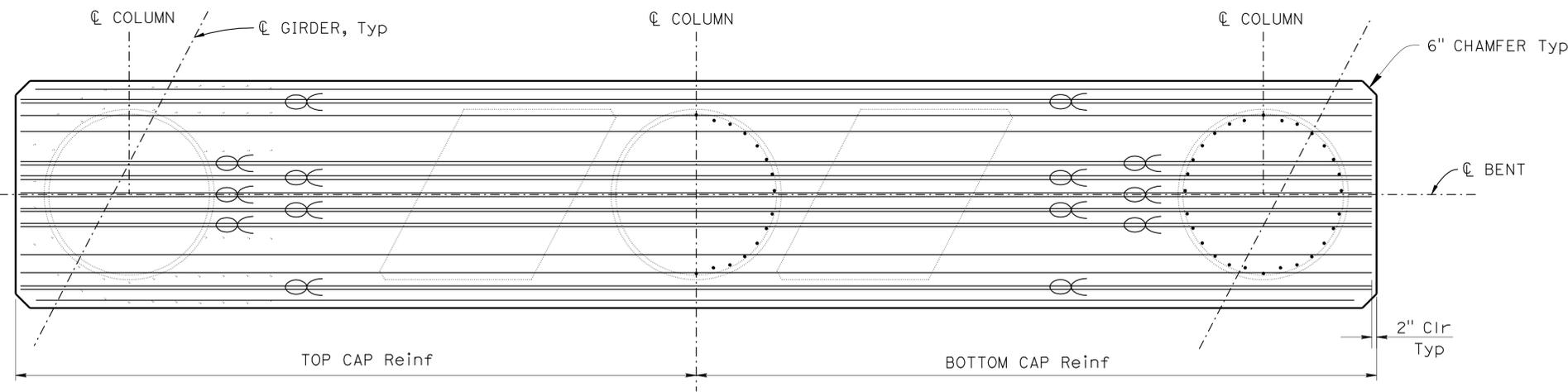
1/2" = 1'-0"



STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY B. Addlespurger	CHECKED L. Wu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1306	HIGHGROVE UP (SHOOFLY) APRON SLAB DETAILS	
	DETAILS	BY B. Addlespurger	CHECKED L. Wu			R.R. MILE POST	5.88		
	QUANTITIES	BY B. Addlespurger	CHECKED R. Anderson			LINE SEG. 7602			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506/0	CONTRACT NO.: 0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 1-28-12 3-30-12	SHEET 16 OF 49

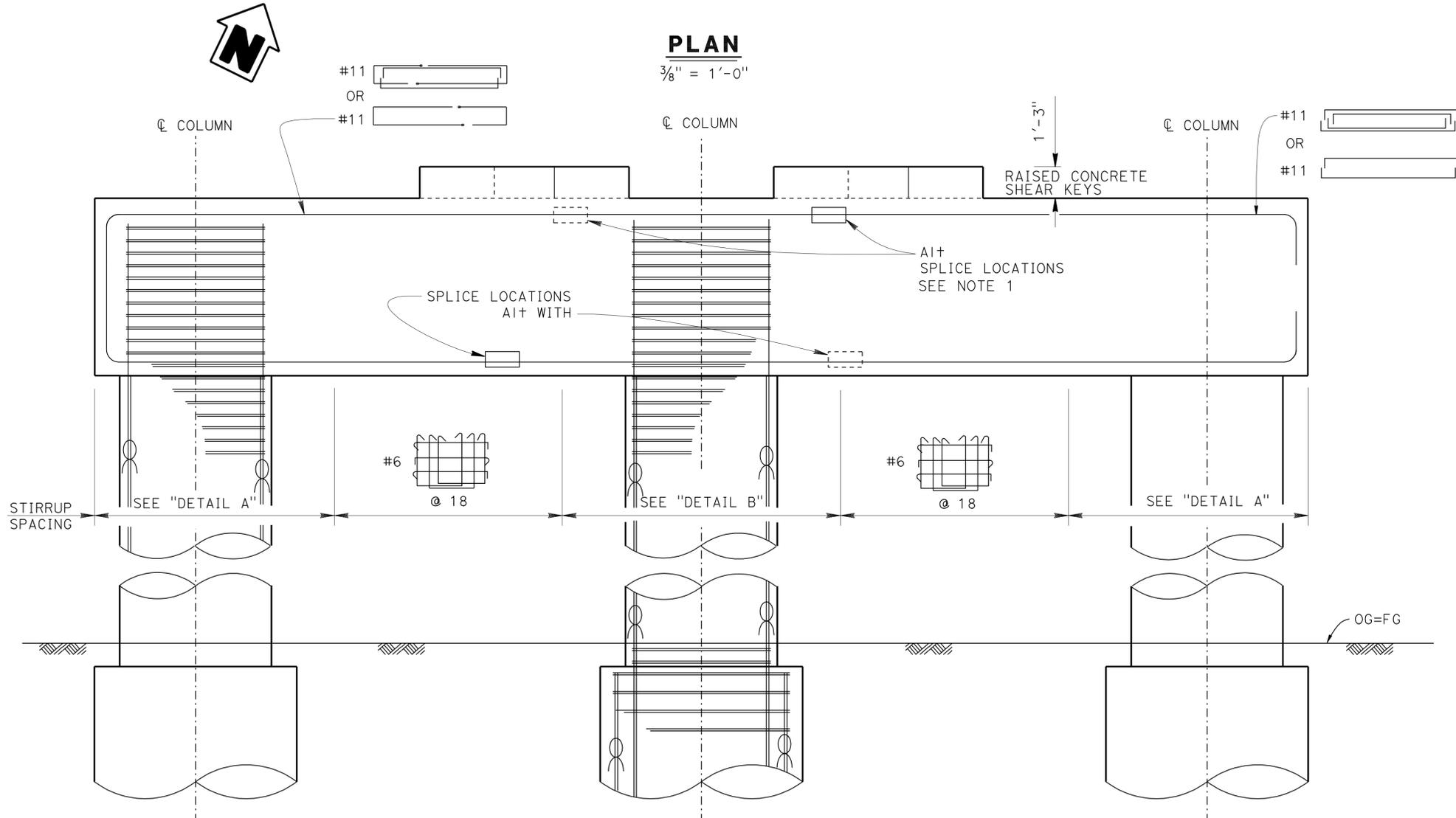
USERNAME => s124496 DATE PLOTTED => 14-JUN-2012 TIME PLOTTED => 06:10

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	1694	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

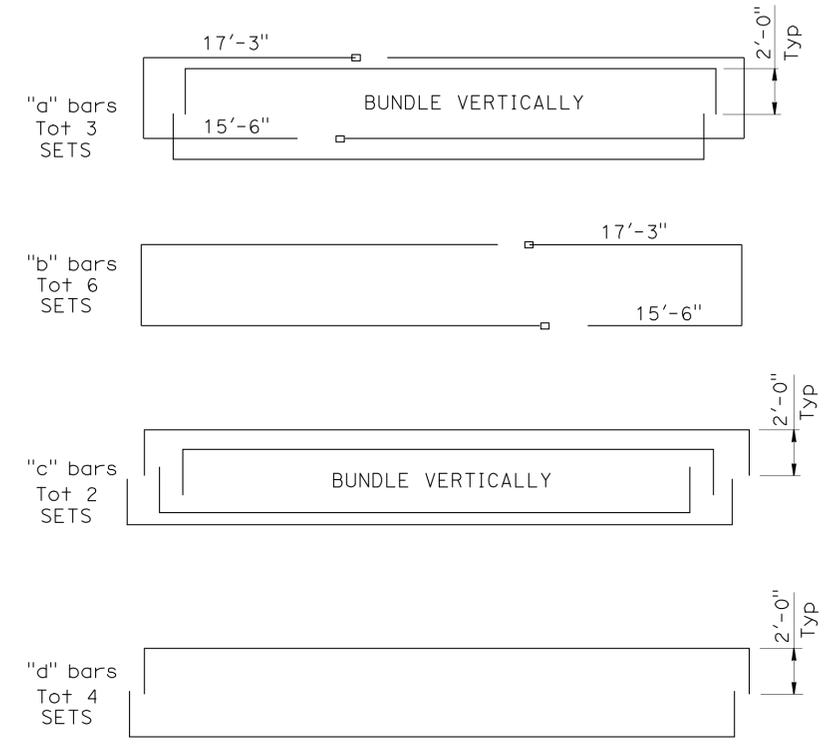
3/8" = 1'-0"



ELEVATION

3/8" = 1'-0"

REINFORCEMENT LOCATION DIAGRAMS:



NOTES:

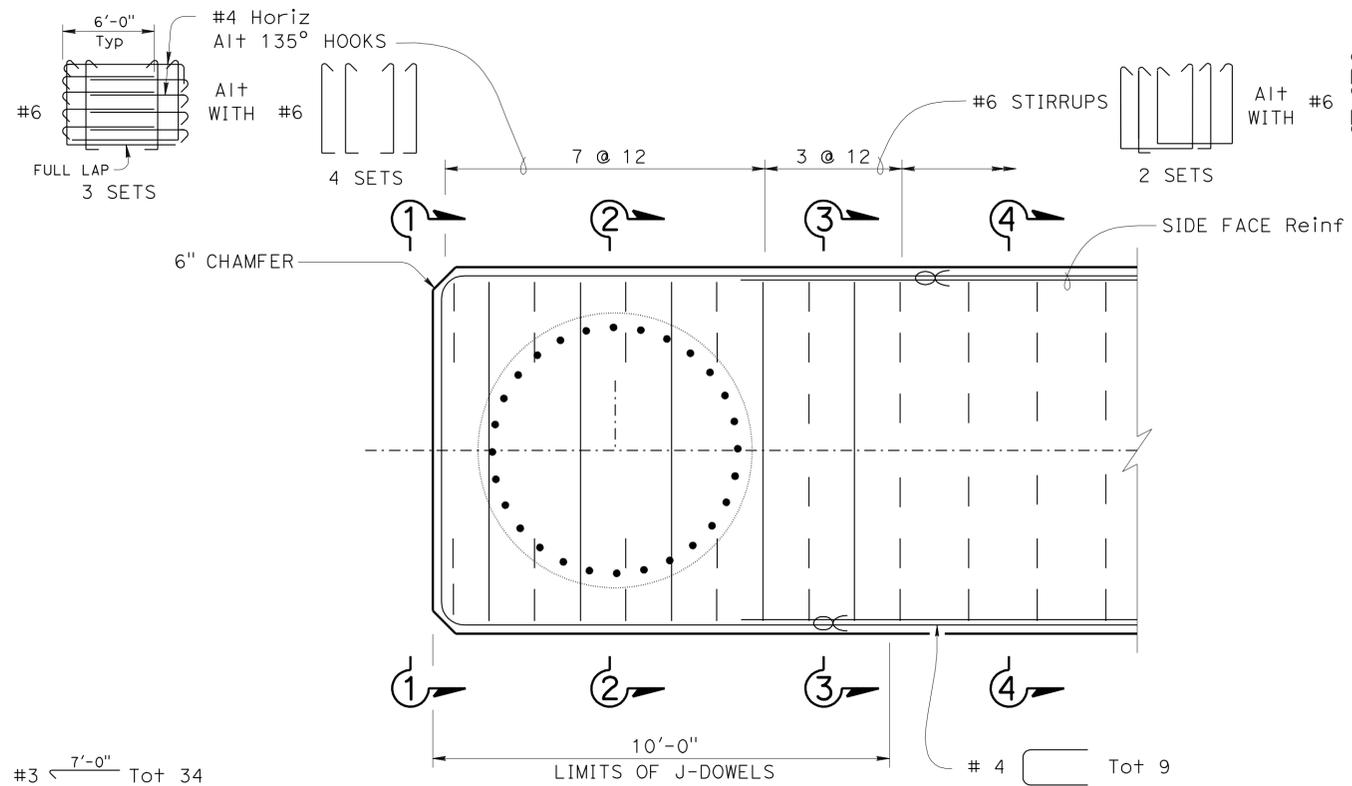
1. BARS TO BE "SERVICE" SPLICED AS SHOWN. FOR SPLICE LOCATIONS SEE DIAGRAMS AND "BENT DETAILS NO. 2" SHEET.
2. FOR "DETAIL A" AND "DETAIL B", SEE "BENT DETAILS NO. 1" SHEET.
3. ALL Reinf NOT SHOWN FOR CLARITY.
4. BENT 3 SHOWN, BENTS 2 & 4 ARE SIMILAR.

⊗ INDICATES BUNDLED BARS.

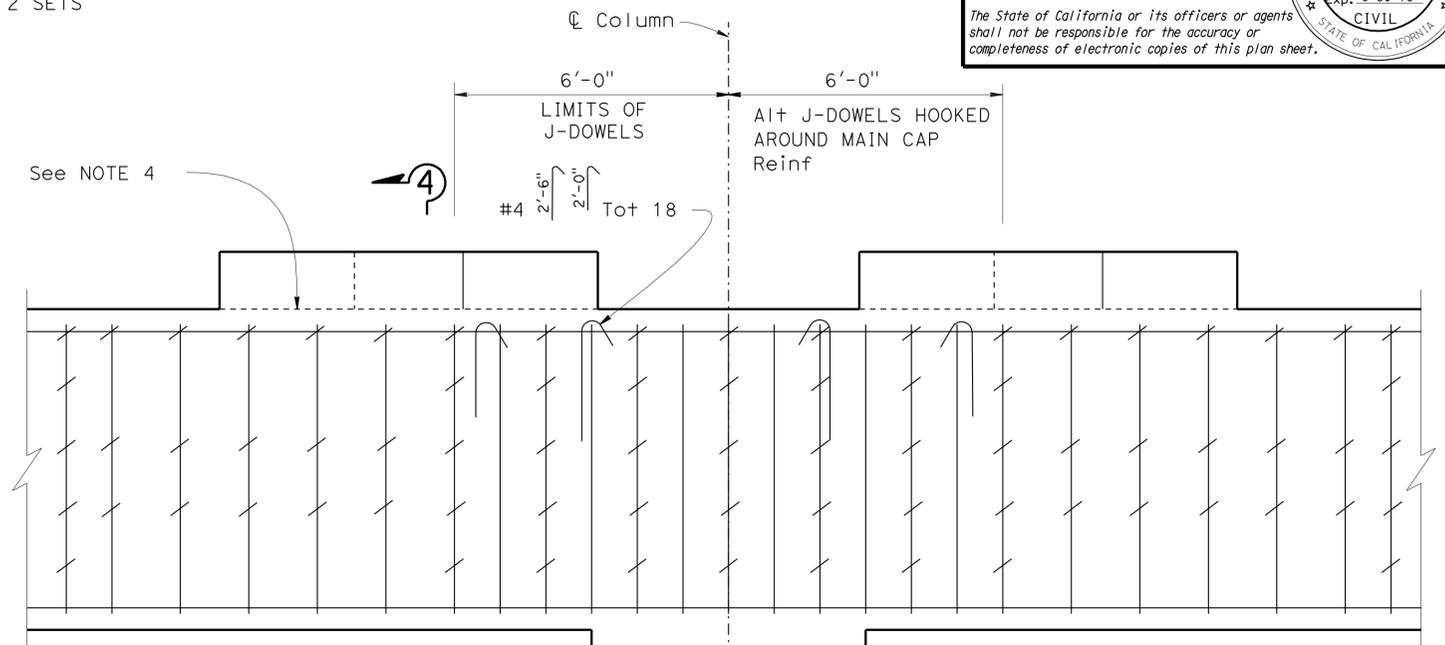
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY B Addlespurger CHECKED Larry Wu		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UP (SHOOFLY) BENT LAYOUT		
DETAILS BY B Addlespurger CHECKED Larry Wu				54-1306			
QUANTITIES BY B Addlespurger CHECKED Renee Anderson				R.R. MILE POST 5.88 LINE SEG. 7602			
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 12-8-11 12-14-11 1-10-12 4-02-12	SHEET 17 OF 49

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	1695	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>					

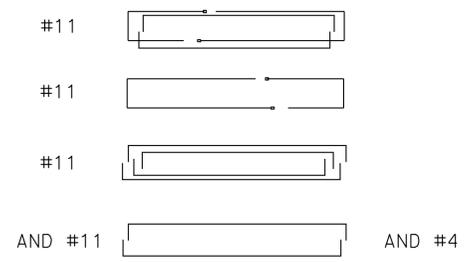


**PLAN
DETAIL A**
1/2" = 1'-0"



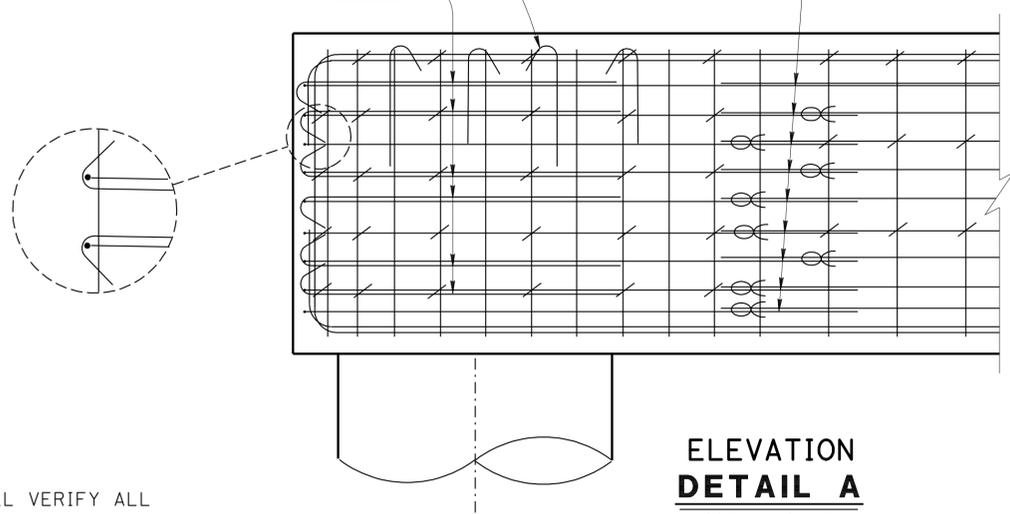
**ELEVATION
DETAIL B**
1/2" = 1'-0"

#3 7'-0" Tot 34
HOOK AROUND INTERSECTION OF



#4 2'-6" 2'-0" Tot 18
Alt J-DOWELS HOOKED AROUND MAIN CAP Reinf

#4 12'-0" Tot 9, LAP 3'-0"
WITH CAP SIDE FACE Reinf (NO SPLICES ALLOWED)



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

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

NOTES:

- SEE "BENT LAYOUT", "BENT DETAILS No. 2", AND "BENT DETAILS No. 3" SHEETS FOR ADDITIONAL INFORMATION.
 - ALL REINFORCEMENT NOT SHOWN FOR CLARITY.
 - BENT 3 SHOWN, BENTS 2 & 4 SIMILAR.
 - INTERFACE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/4"
- ∞ - INDICATES LAP SPLICED BARS.

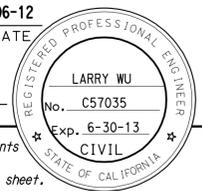
DESIGN	BY B Addlespurger	CHECKED Larry Wu
DETAILS	BY B Addlespurger	CHECKED Larry Wu
QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson

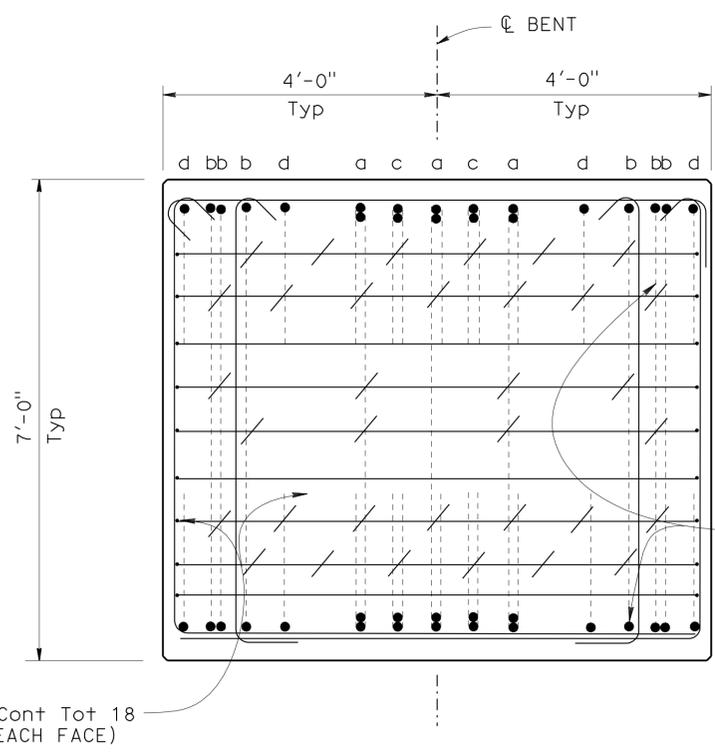
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

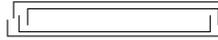
BRIDGE NO.	54-1306
R.R. MILE POST	5.88
LINE SEG.	7602

**HIGHGROVE UP (SHOOFLY)
BENT DETAILS NO. 1**

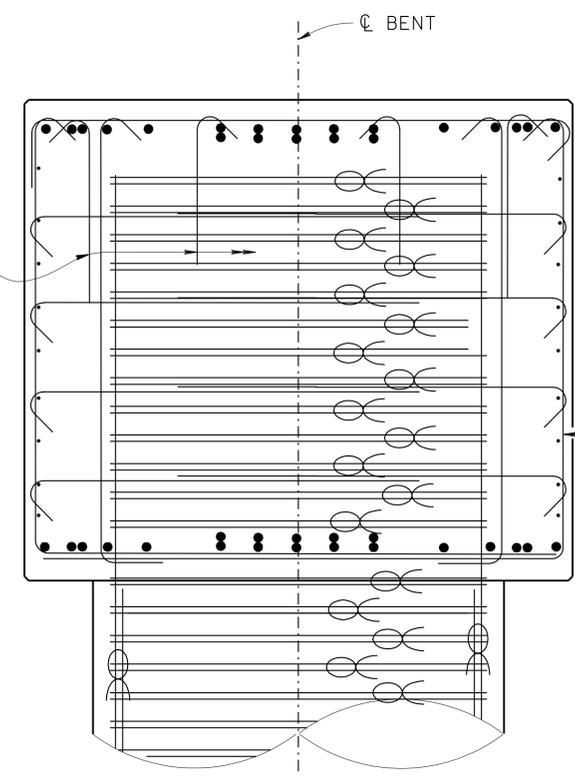
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1696	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



END VIEW 1-1
 $\frac{3}{4}'' = 1'-0''$

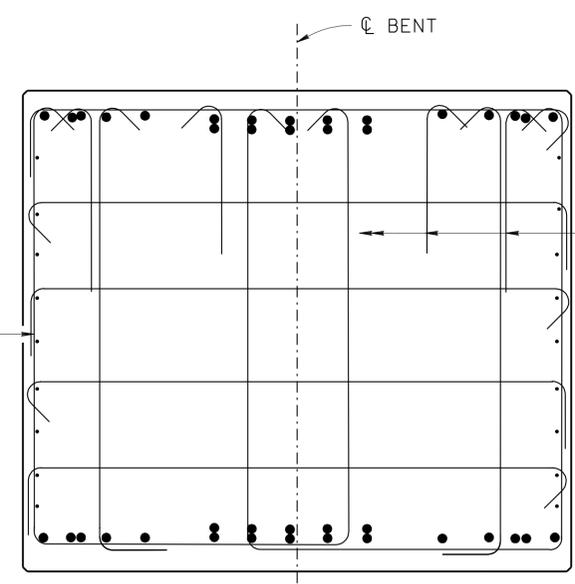
- #11  Tot 3 SETS "a" bars
- #11  Tot 6 SETS "b" bars
- #11  Tot 2 SETS "c" bars
- #11  Tot 4 SETS "d" bars

#4 $\frac{2'-6''}{2'-0''}$ Tot 18
 All J-DOWELS HOOKED
 AROUND TOP #11 Reinf

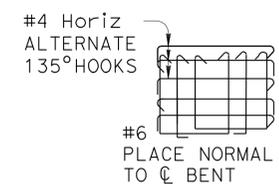


SECTION 2-2
 $\frac{3}{4}'' = 1'-0''$

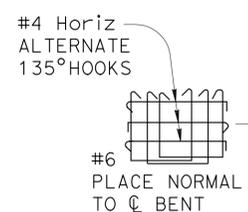
- NOTES:**
- BENT 3 SHOWN, BENTS 2 & 4 SIMILAR.
 - FOR LOCATION OF SECTIONS 1, 2, 3 & 4, SEE "BENT DETAILS NO.1" SHEET.
 - FOR REINFORCEMENT AND DIMENSIONS NOT SHOWN, SEE OTHER SECTIONS.
-  INDICATES BUNDLED BAR.



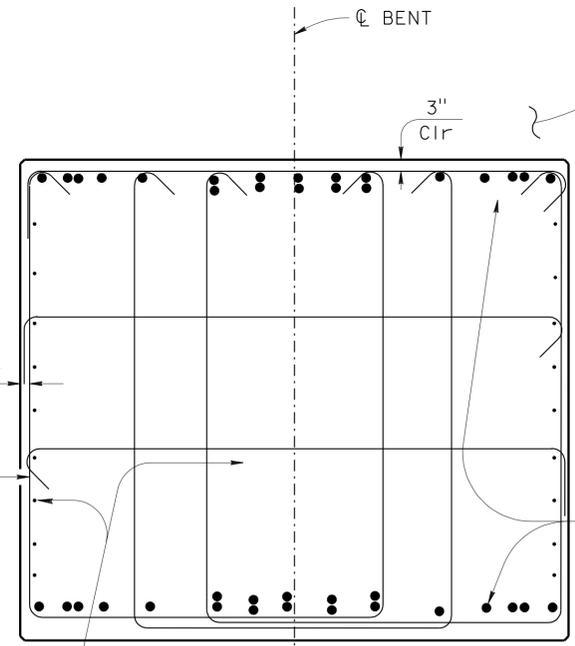
SECTION 3-3
 $\frac{3}{4}'' = 1'-0''$



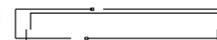
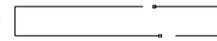
#4 $\frac{2'-6''}{2'-0''}$ Tot 18
 All J-DOWELS HOOKED
 AROUND TOP #11 Reinf



#4 Cont Tot 18
 (9 EACH FACE)

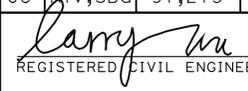
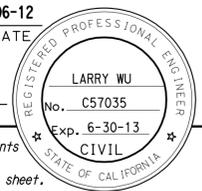


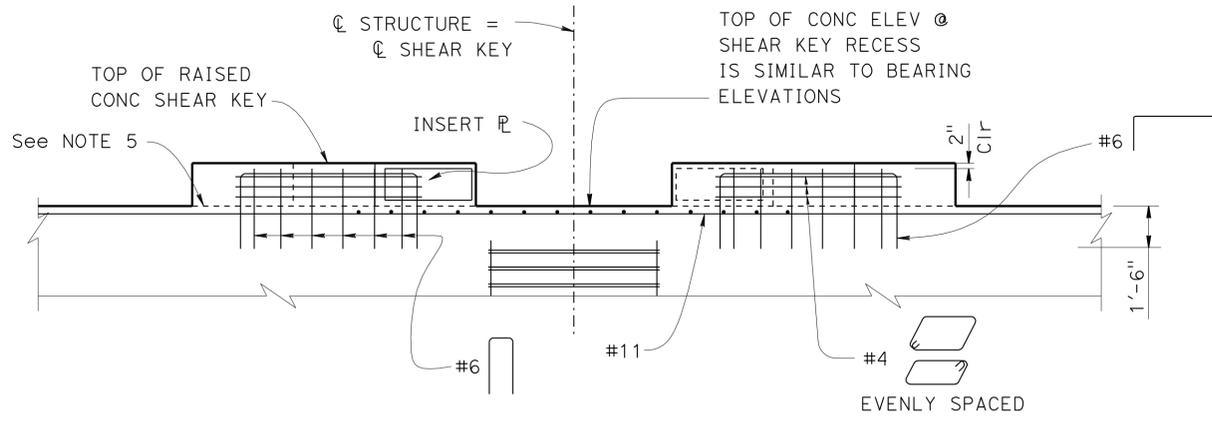
SECTION 4-4
 $\frac{3}{4}'' = 1'-0''$

- #11 
- #11 
- #11 
- #11 

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

DESIGN	BY	B Addlespurger	CHECKED	Larry Wu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	54-1306	HIGHGROVE UP (SHOOFLY) BENT DETAILS NO. 2				
	DETAILS	BY	B Addlespurger	CHECKED			Larry Wu	R.R. MILE POST		5.88			
QUANTITIES	BY	B Addlespurger	CHECKED	Renee Anderson	UNIT: 3589	PROJECT NUMBER & PHASE: 08000005061	CONTRACT NO.: 08-0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					0	1	2	3	17-8-11	17-11-11	4-02-12	19	49

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	1697	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>					

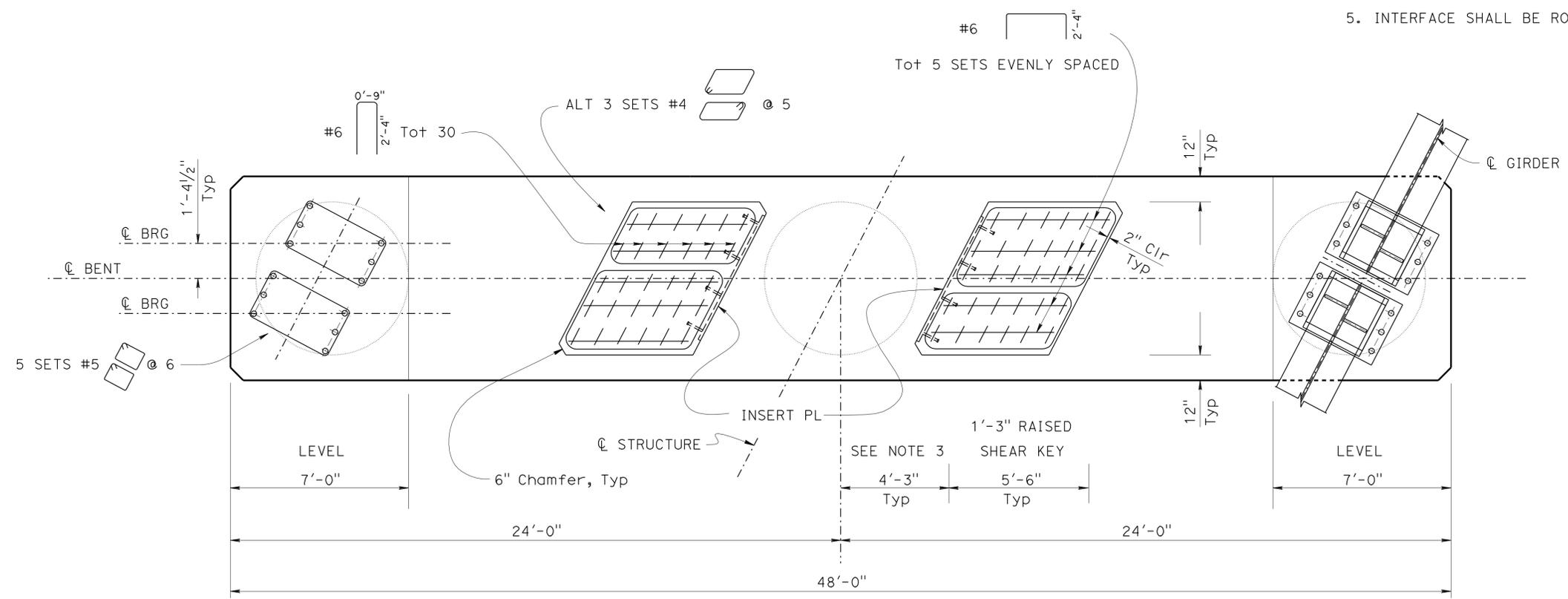


SHEAR KEY ELEVATION

3/8" = 1"-0"

NOTES:

- FOR INSERT PLATE DETAILS, SEE "SHEAR KEY BEAM DETAILS" SHEET.
- Reinf IS SYM TO ϕ STRUCTURE. NOT ALL Reinf SHOWN FOR CLARITY.
- RECESS TO MATCH FIT SHEAR KEY BEAM, SEE "SHEAR KEY BEAM LAYOUT" SHEET.
- FOR ELEVATIONS, SEE "BEARING LAYOUT" SHEET.
- INTERFACE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/4".



SHEAR KEY PLAN

3/8" = 1"-0"

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

DESIGN	BY B Addlespurger	CHECKED Larry Wu
DETAILS	BY B Addlespurger	CHECKED Larry Wu
QUANTITIES	BY B Addlespurger	CHECKED Renee Anderson

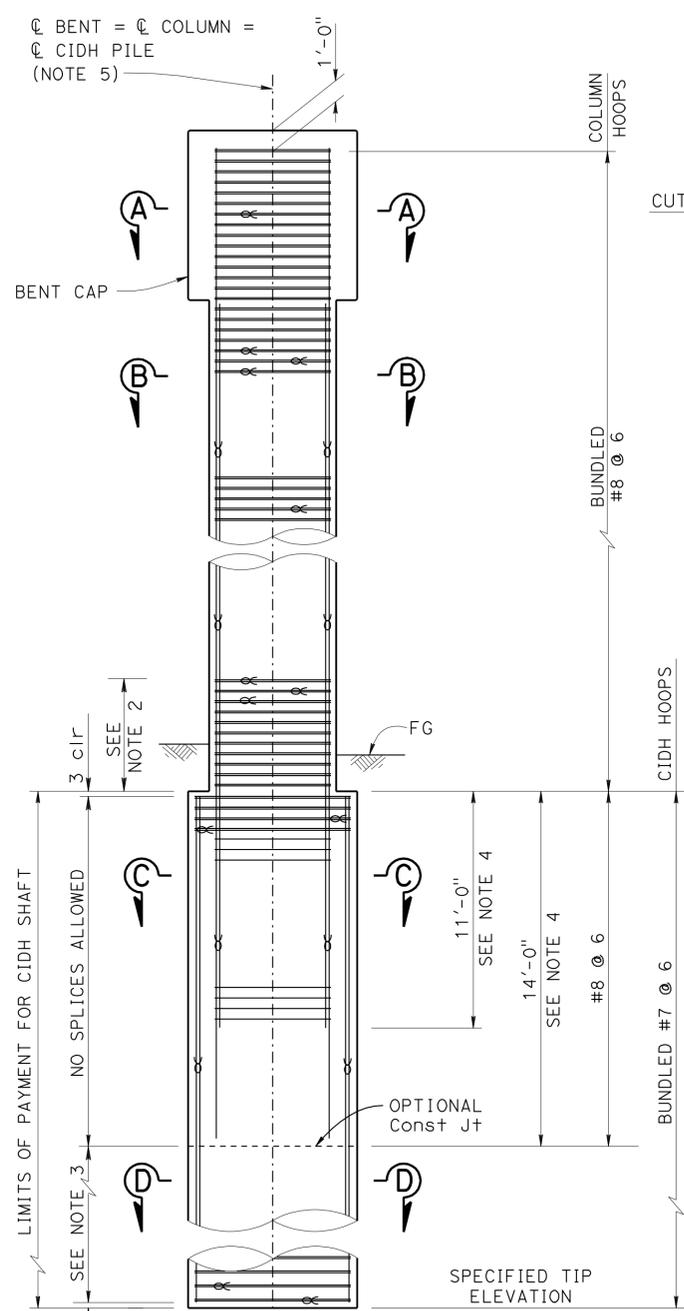
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO. 54-1306
R.R. MILE POST 5.88
LINE SEG. 7602
**HIGHGROVE UP (SHOOFLY)
BENT DETAILS NO. 3**

USERNAME => 8124486 DATE PLOTTED => 14-JUN-2012 TIME PLOTTED => 06:10

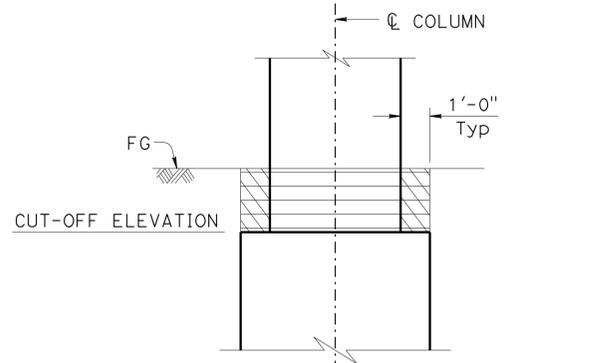
- NOTES:
- ALL HOOPS ARE "ULTIMATE " BUTT SPLICED CONTINUOUS.
 - SEE "ROAD PLANS" FOR BARRIERS, ETC.
 - ONLY STAGGERED ULTIMATE BUTT SPLICES ARE ALLOWED IN MAIN CIDH PILE REINFORCEMENT IN THIS ZONE.
 - ALTERNATE CUT OFF LENGTHS OF MAIN COLUMN REINFORCEMENT.
 - BENT 3 SHOWN, BENT 2 AND BENT 4 SIMILAR.
 - ∞ - INDICATES BUNDLED BARS.



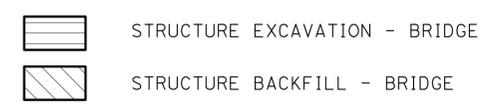
ELEVATION
1/4" = 1'-0"

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

NOTE:
ALL COLUMN AND PILE REINFORCEMENT NOT SHOWN FOR CLARITY.

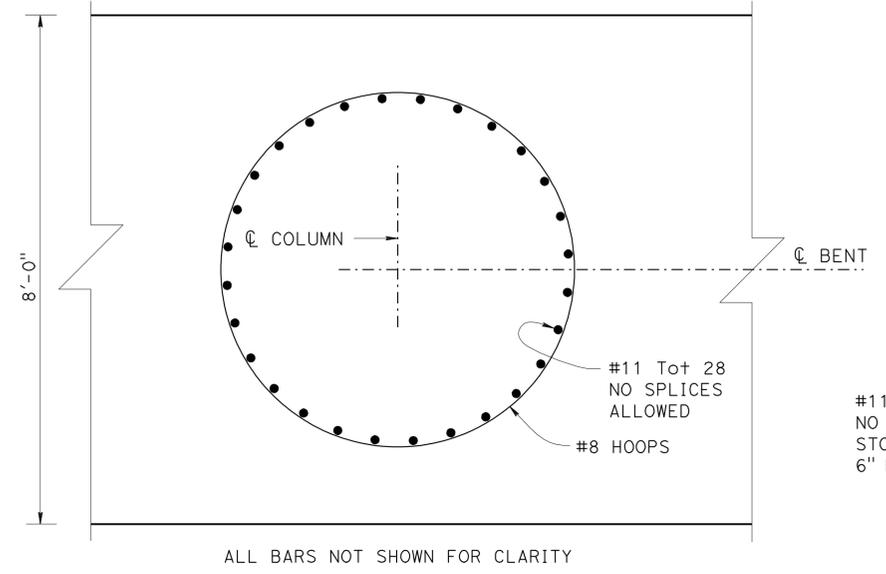


PAY-LIMITS OF STRUCTURE EXCAVATION AND BACKFILL
NO SCALE

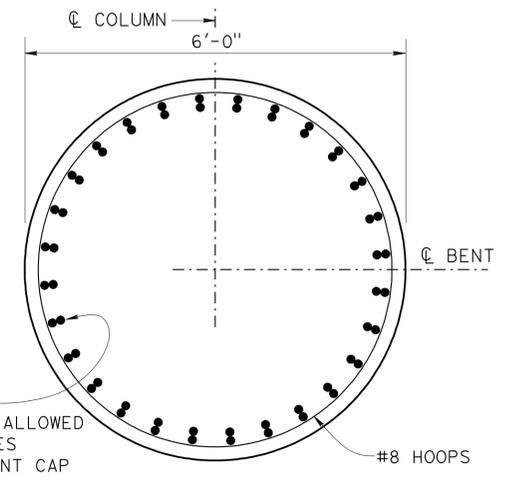


LOCATION	MAIN COLUMN REINF
BENT 2 TOP	TOT 28
BENT 2 BOTTOM	TOT 56 (28 BUNDLES)
BENT 3 TOP	TOT 28
BENT 3 BOTTOM	TOT 56 (28 BUNDLES)
BENT 4 TOP	TOT 28
BENT 4 BOTTOM	TOT 56 (28 BUNDLES)

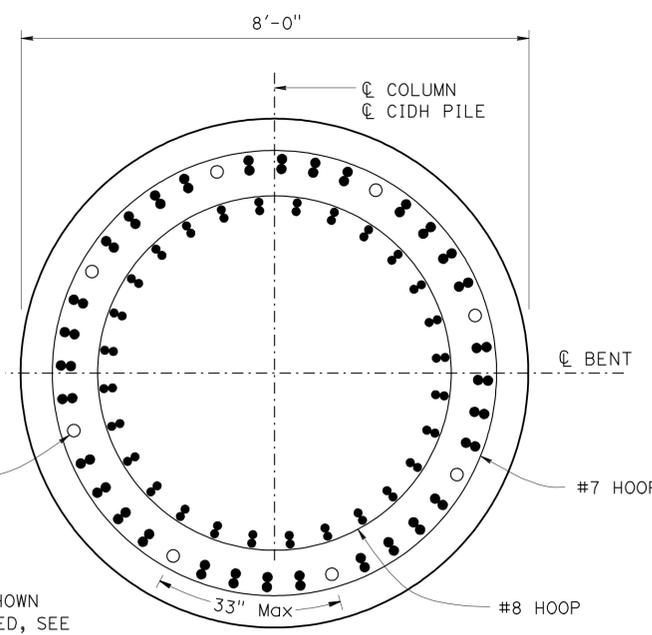
FOR Reinf SHOWN BUT NOT NOTED, SEE "SECTIONS A-A", "B-B" AND "D-D".



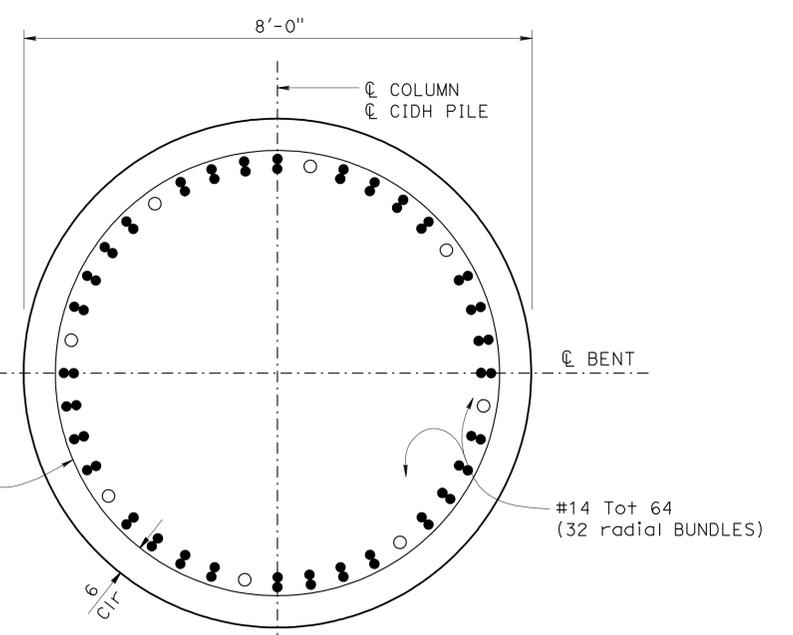
SECTION A-A
3/4" = 1'-0"



SECTION B-B
3/4" = 1'-0"

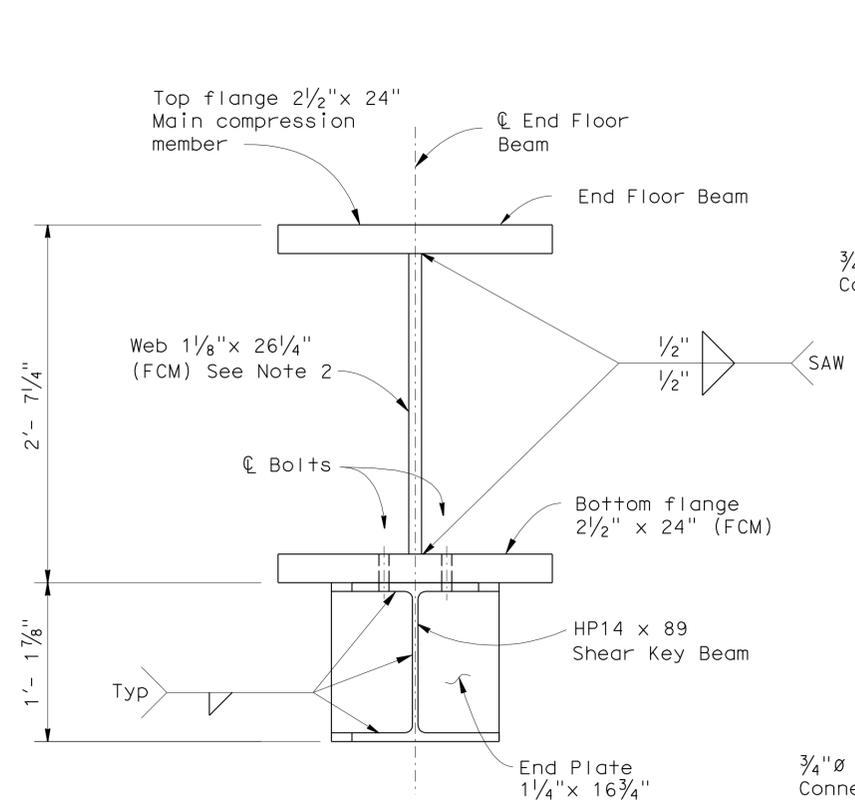


SECTION C-C
3/4" = 1'-0"

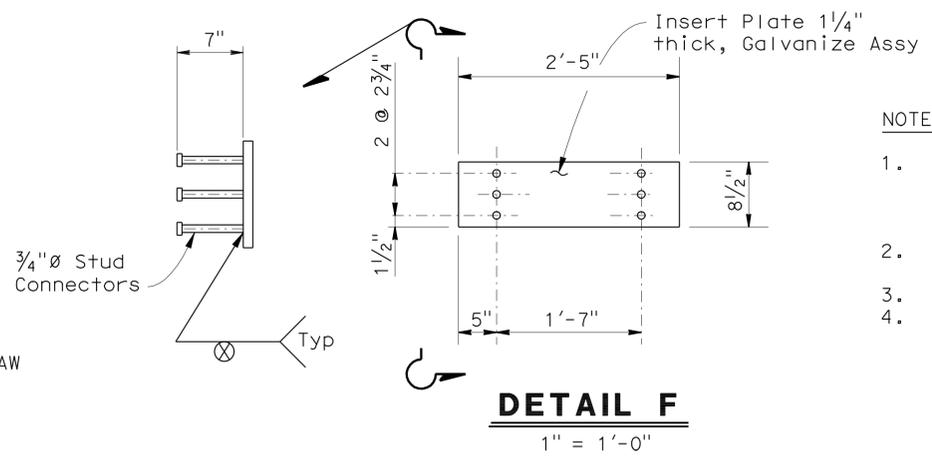


SECTION D-D
3/4" = 1'-0"

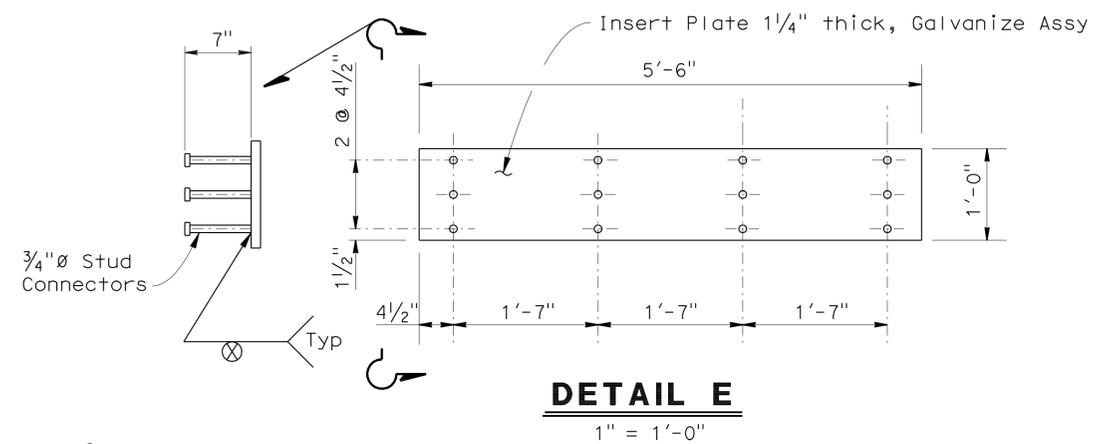
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv, SBd	91, 215	21.5/21.7, 43.2/45.2, 0.0/5.1	1700	1743
 REGISTERED CIVIL ENGINEER			4-06-12 DATE		
4-16-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



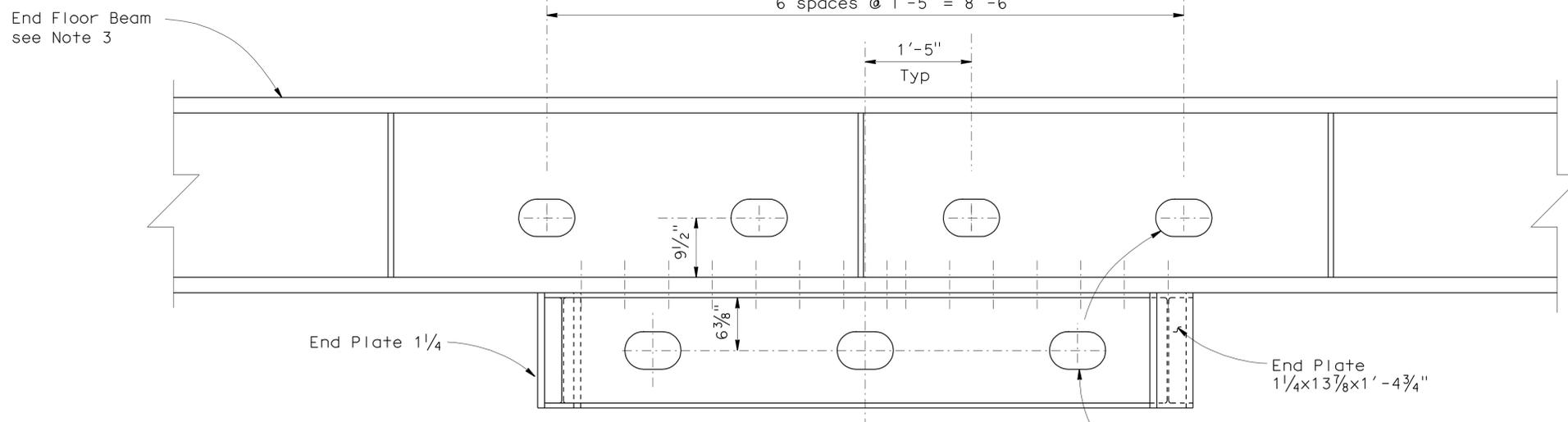
SECTION D-D
1 1/2" = 1'-0"



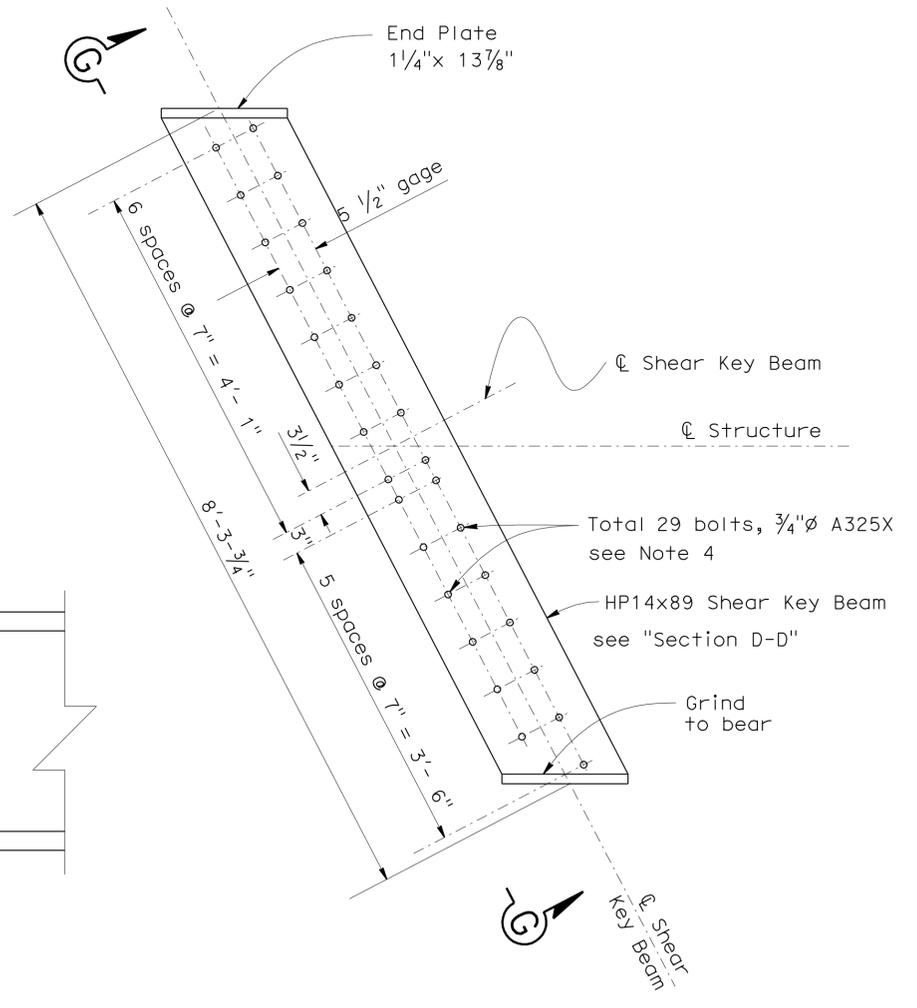
DETAIL F
1" = 1'-0"



DETAIL E
1" = 1'-0"



SECTION G-G
1" = 1'-0"



SHEAR KEY BEAM DETAIL C
1" = 1'-0"

NOTES:

1. For locations of "Section D-D", "Detail C", "Detail E", and "Detail F", see "SHEAR KEY BEAM LAYOUT" sheet.
2. FCM and compression zones extend to the middle depth of the web.
3. FB connections not shown for clarity.
4. Shear Key Bolts for Long Spans at Bents 2, 3 & 4 are 7/8" A325X

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

DESIGN	BY B. Addlespurger	CHECKED L. Wu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	HIGHGROVE UP (SHOOFLY) SHEAR KEY BEAM DETAILS
DETAILS	BY B. Addlespurger	CHECKED L. Wu			54-1306	
QUANTITIES	BY B. Addlespurger	CHECKED R. Anderson			R.R. MILE POST 5.88 LINE SEG. 7602	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3589 PROJECT NUMBER & PHASE: 0800000506/0	CONTRACT NO.: 0M9401	DISREGARD PRINTS BEARING EARLIER REVISION DATES
				0 1 2 3	REVISION DATES	SHEET 23 OF 49