

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4	LAYOUT
5	CONSTRUCTION DETAILS
6	TEMPORARY WATER POLLUTION CONTROL DETAILS
7-9	EROSION CONTROL PLAN, DETAILS AND QUANTITIES
10-14	DRAINAGE PLAN, PROFILES, DETAILS AND QUANTITIES
15	CONSTRUCTION AREA SIGNS
16-17	TRAFFIC HANDLING PLAN AND QUANTITIES
18	PAVEMENT DELINEATION PLAN
19	SUMMARY OF QUANTITIES
20	RETAINING WALL
21-25	ELECTRICAL PLANS
26-46	REVISED AND NEW STANDARD PLANS

STRUCTURE PLANS

47-57 SOLDIER PILE WALL

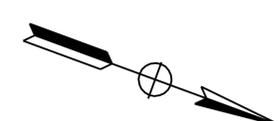
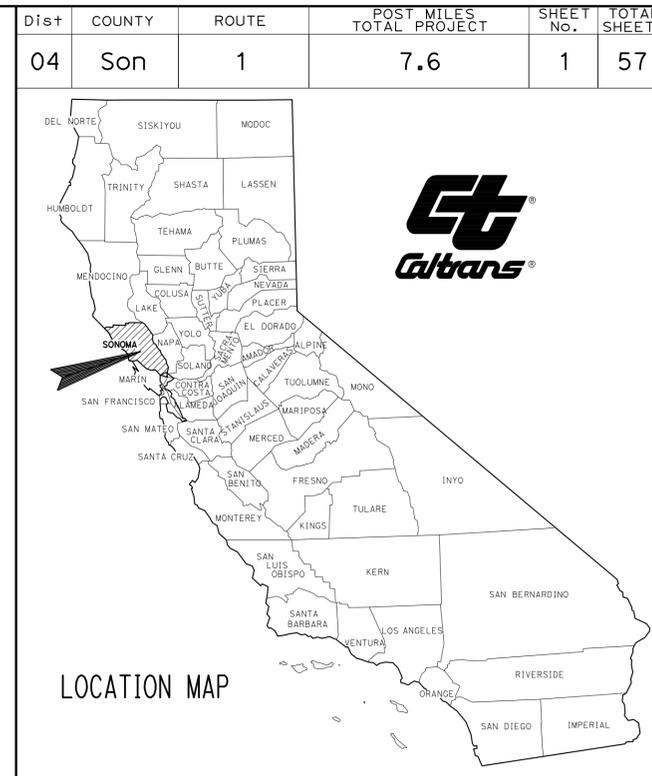
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

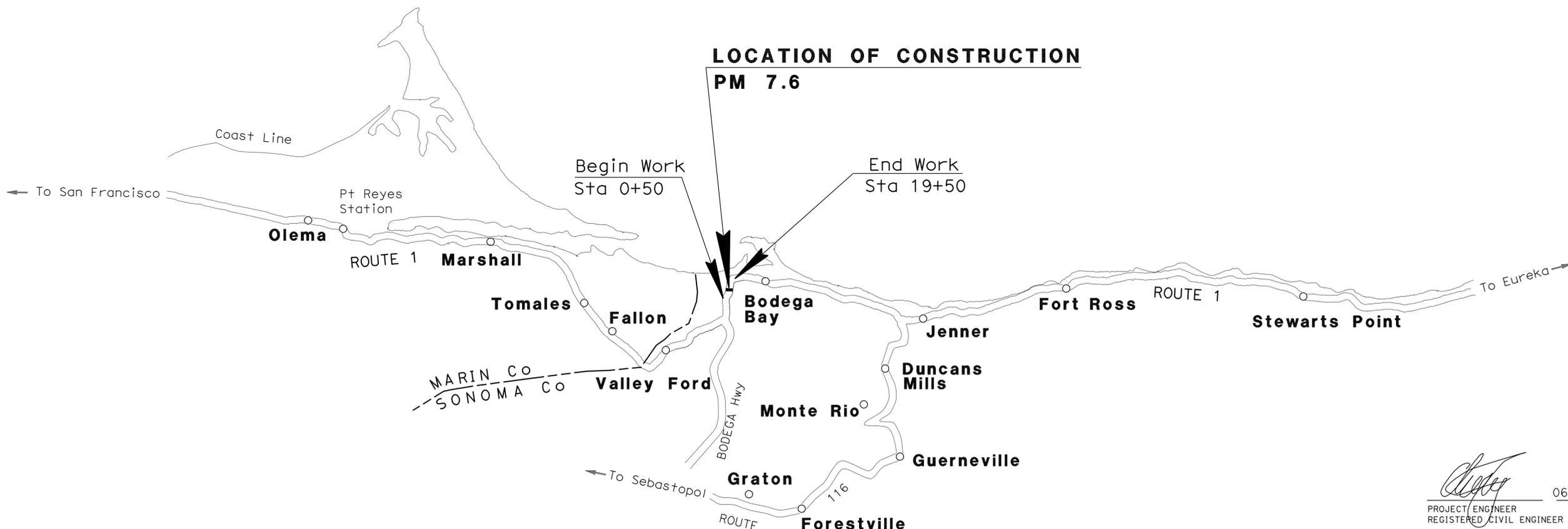
ACSTP-43L0(004)E

PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY  
IN SONOMA COUNTY  
NEAR BODEGA BAY  
AT 2.2 MILES NORTH OF  
BODEGA HIGHWAY

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PACIFIC OCEAN



PROJECT MANAGER  
LILIAN ACORDA

DESIGN ENGINEER  
NICHOLAS CHAN

*[Signature]*  
PROJECT ENGINEER  
REGISTERED CIVIL ENGINEER  
DATE 06-10-09

June 21, 2010  
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	2	57
			06-10-09		
REGISTERED CIVIL ENGINEER			DATE		
6-21-10			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

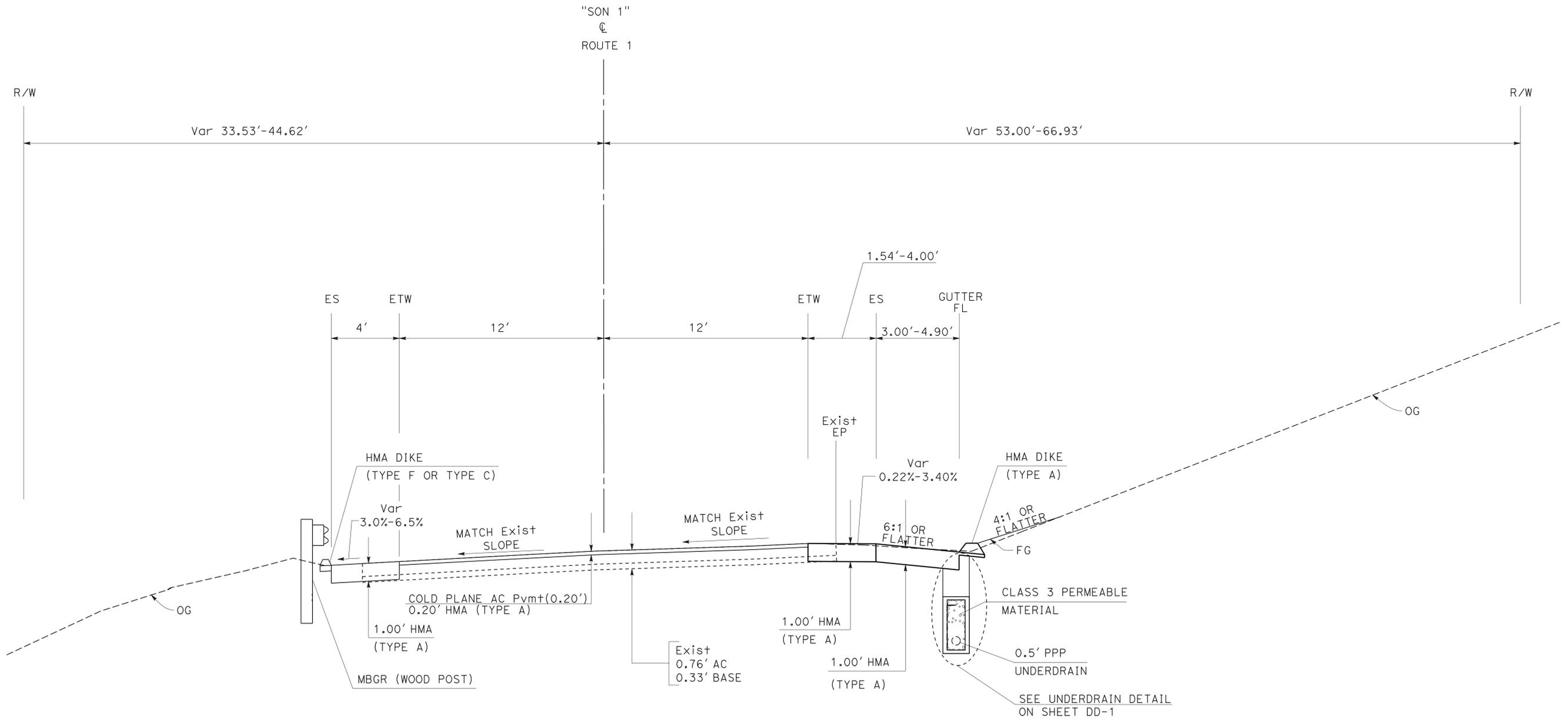


**NOTES:**

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SEE STRUCTURAL PLANS FOR RETAINING WALL (SOLDIER PILE WALL) DETAILS.
3. FOR LOCATION AND TYPE OF AC DIKE SEE LAYOUT SHEETS.
4. FOR DIMENSIONS OF UNDERDRAIN TYPICAL SECTION SEE DRAINAGE DETAIL SHEET DD1.
5. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.

**DESIGN DESIGNATION (ROUTE 1)**

ADT (2008)	5200	D	51%
ADT (2029)	6200	T	6.2%
DHV	1000	TI(20)	8.0
ESAL	389,000		



**SOUTHBOUND**

STA 8+31.37 TO STA 8+94.06  
STA 9+92.06 TO STA 11+10.64

**NORTHBOUND**

STA 8+31.75 TO STA 9+94.5

**TYPICAL CROSS SECTION**

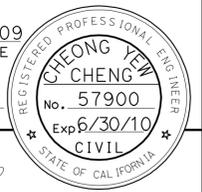
NO SCALE

**X-1**

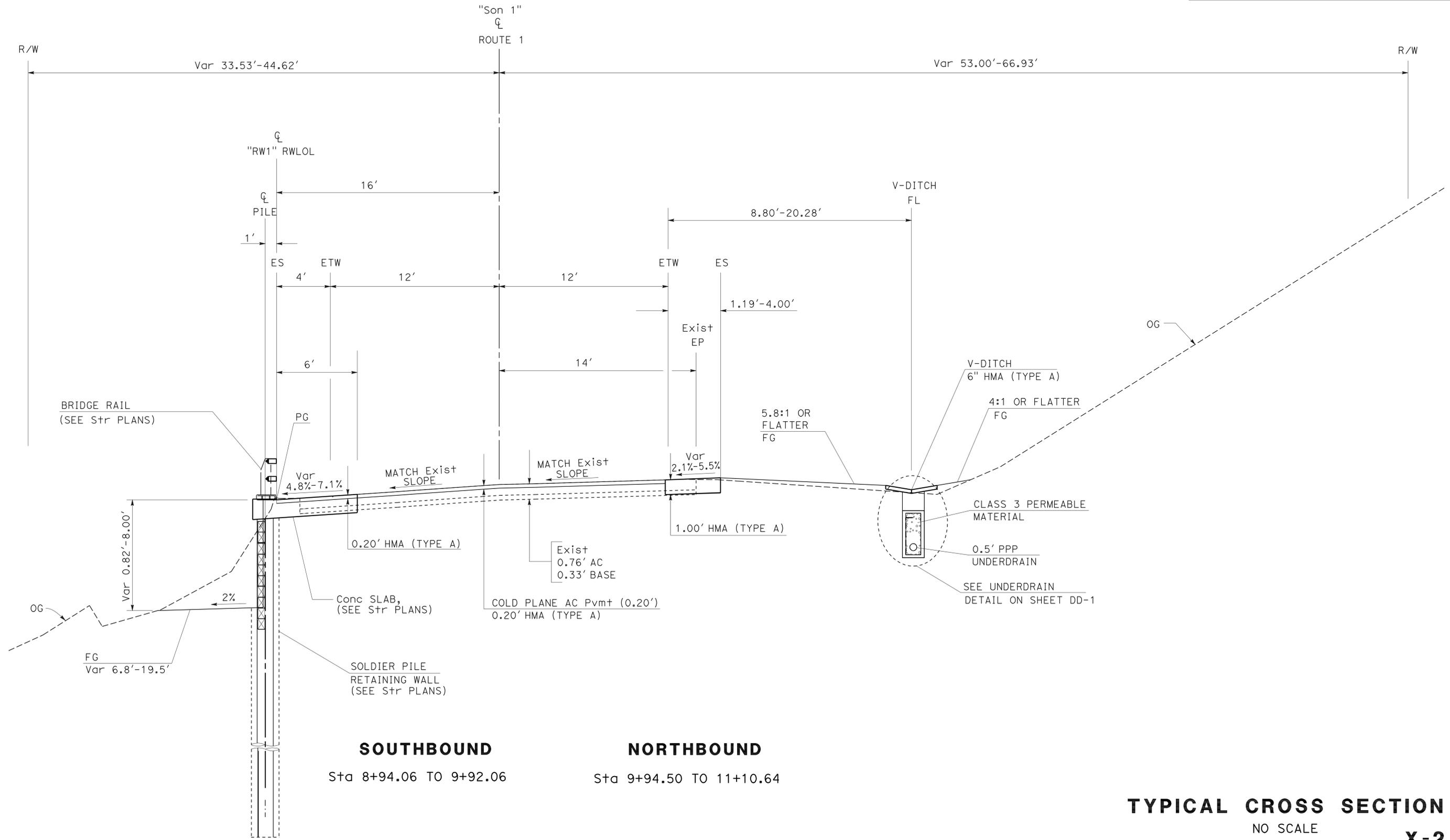


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b>	NICHOLAS CHAN	CHEONG-YEW CHENG	GASHU ENQUANHONG
<b>06-DESIGN</b>			

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	3	57
			06-10-09	REGISTERED CIVIL ENGINEER DATE	
			6-21-10	PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 06-DESIGN  
 FUNCTIONAL SUPERVISOR: NICHOLAS CHAN  
 CALCULATED/DESIGNED BY: GASHU ENQUANHONE  
 CHECKED BY: CHEONG-YEW CHENG  
 REVISED BY: GASHU ENQUANHONE  
 DATE REVISED: CHEONG-YEW CHENG

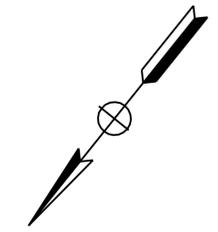


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	4	57

*Chey Cheng Yew* .06/21/10  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**CHEONG YEW CHENG**  
 No. 57900  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



**NOTE:**

FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

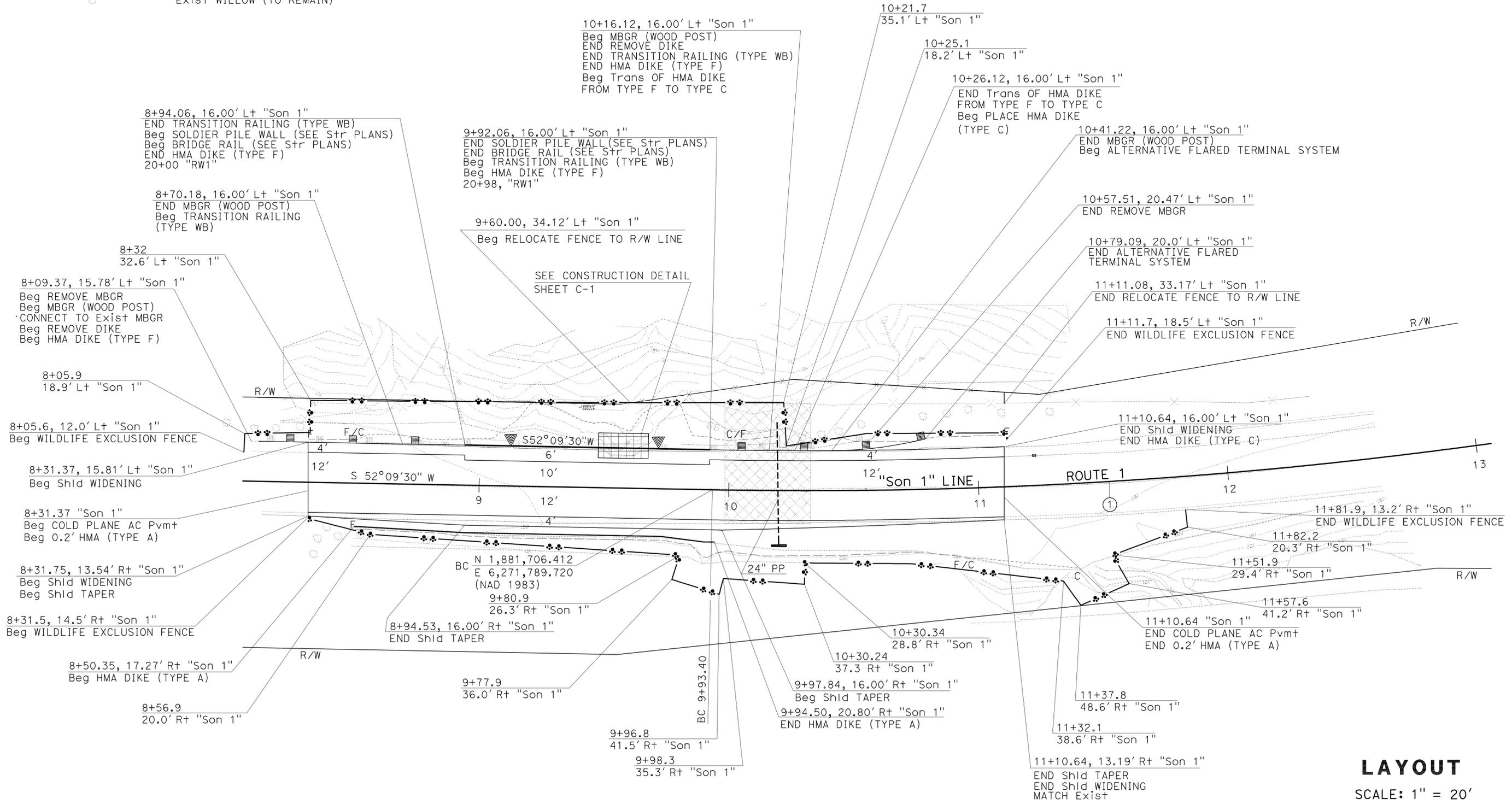
**LEGEND:**

- WILDLIFE EXCLUSION FENCE
- Exist RIPRAP
- Exist WILLOW (TO REMAIN)

**CURVE DATA**

No.	R	Δ	T	L
①	2000.00'	9°42'30"	169.85'	338.89'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 06-DESIGN  
 FUNCTIONAL SUPERVISOR: NICHOLAS CHAN  
 CALCULATED/DESIGNED BY: GASHU ENOUANHONE  
 CHECKED BY: CHEONG-YEW CHENG  
 REVISED BY: \_\_\_\_\_ DATE REVISED: \_\_\_\_\_

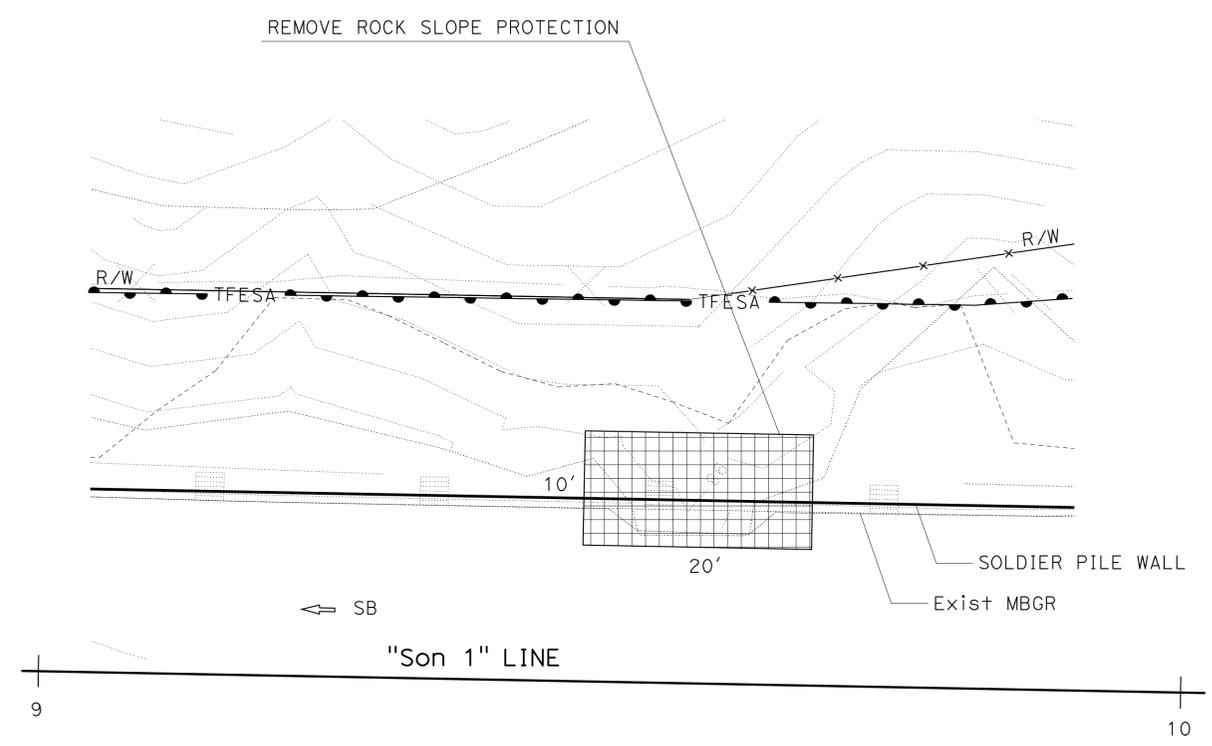
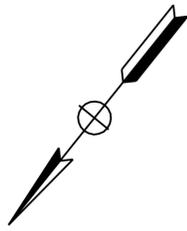
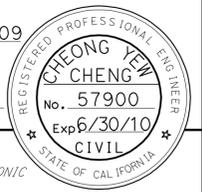


**LAYOUT**  
SCALE: 1" = 20'

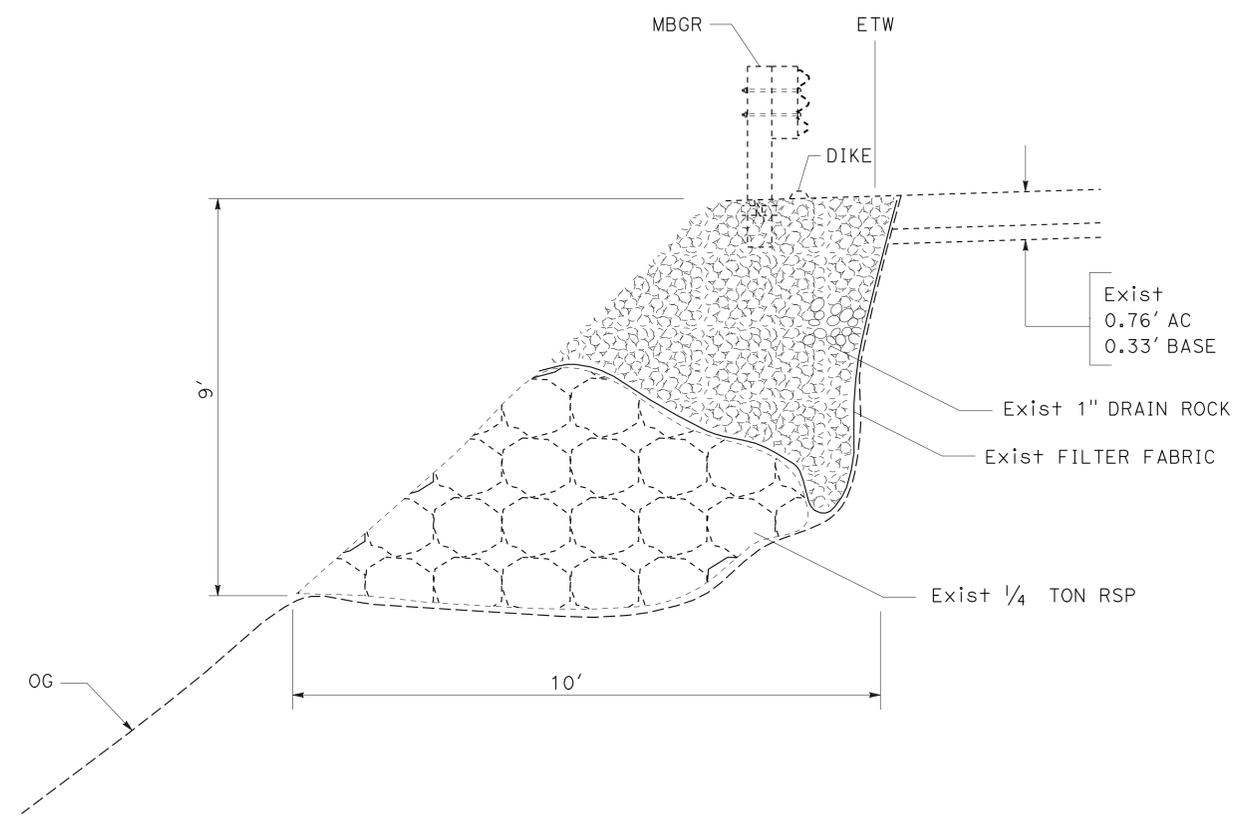
**L-1**

LAST REVISION DATE PLOTTED => 25-JUN-2010  
 06-21-10 TIME PLOTTED => 11:43

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	5	57
			09-25-09		
			REGISTERED CIVIL ENGINEER DATE		
			6-21-10		
			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



X-SECTION

**REMOVE ROCK SLOPE PROTECTION**

**CONSTRUCTION DETAIL**

NO SCALE **C-1**

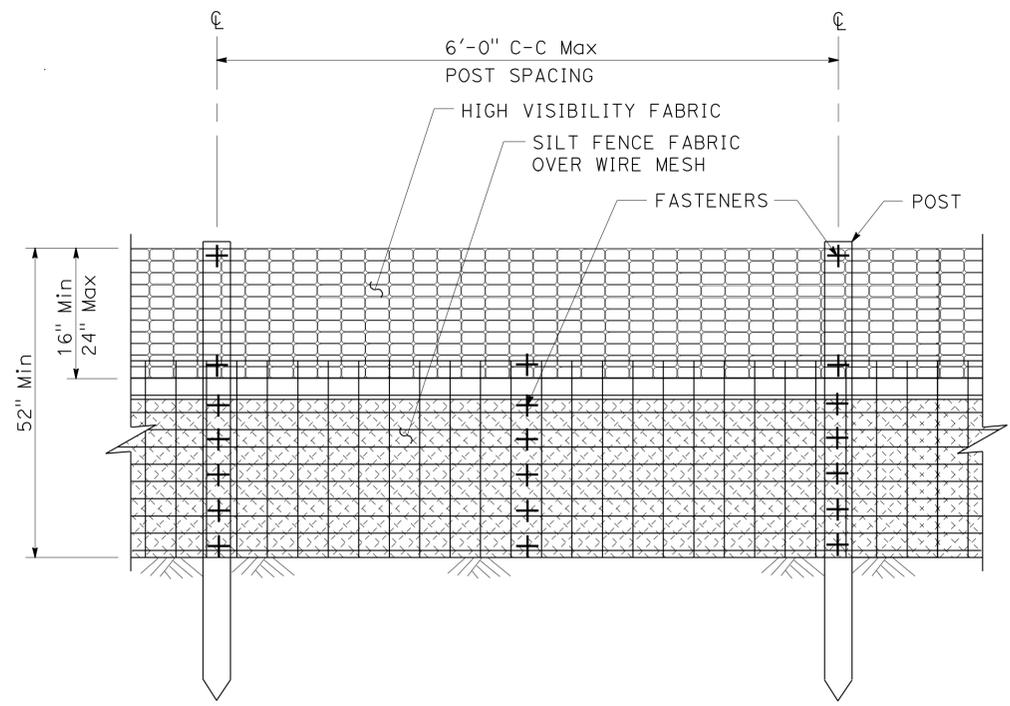
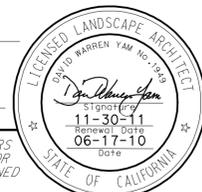
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 06-DESIGN  
 FUNCTIONAL SUPERVISOR: NICHOLAS CHAN  
 CALCULATED/DESIGNED BY: GASHU ENOUANHONE  
 CHECKED BY: CHEONG-YEW CHENG  
 REVISED BY: [ ] DATE: [ ]  
 REVISIONS: [ ]

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** OFFICE OF WATER QUALITY  
 SENIOR LANDSCAPE ARCHITECT DAVID W. YAM  
 V. FRANCI SCO SALLY BANG  
 REVISOR BY DATE REVISOR BY DATE  
 CALCULATED/DESIGNED BY CHECKED BY

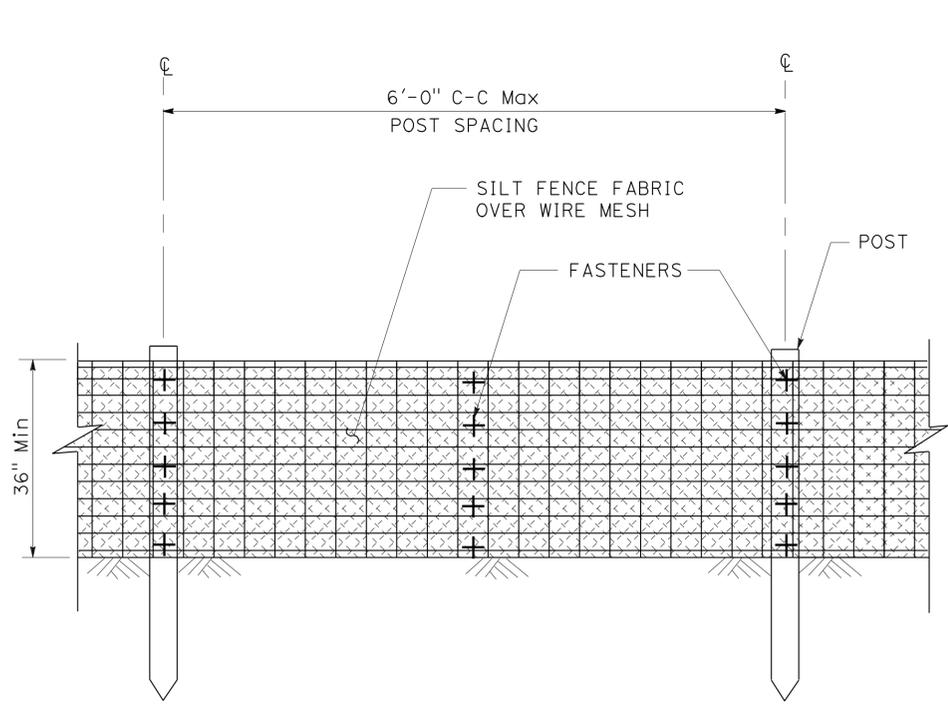
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	6	57

6-21-10  
 PLANS APPROVAL DATE

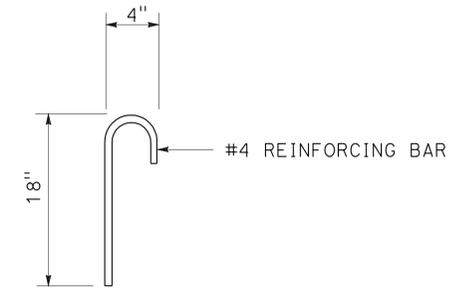
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



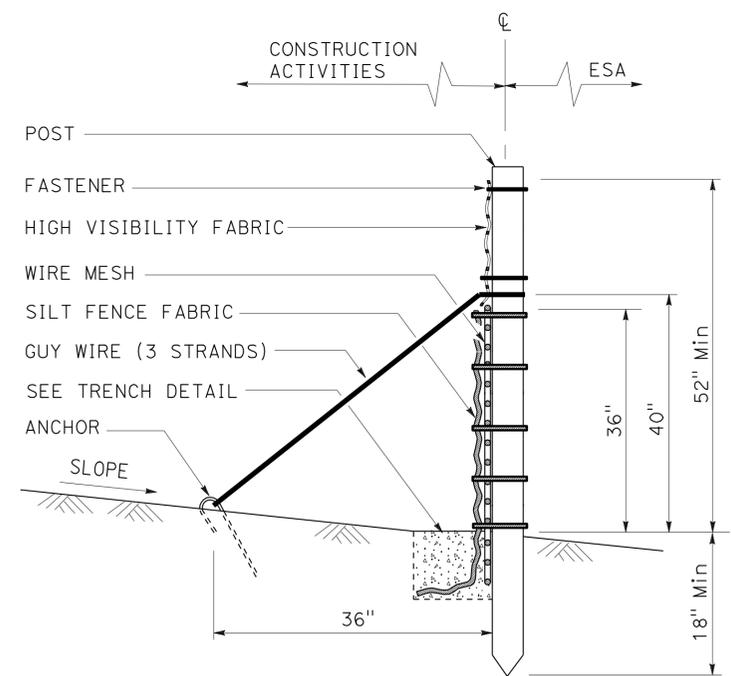
ELEVATION



ELEVATION

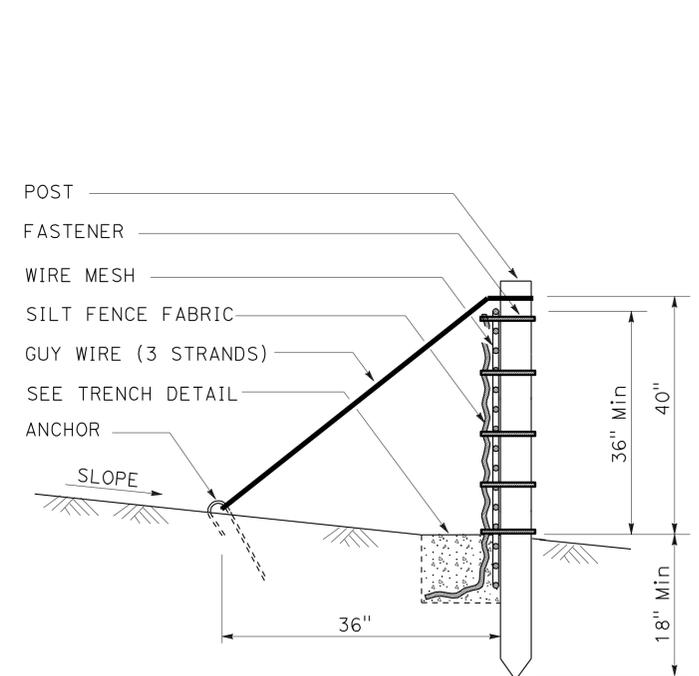


ANCHOR



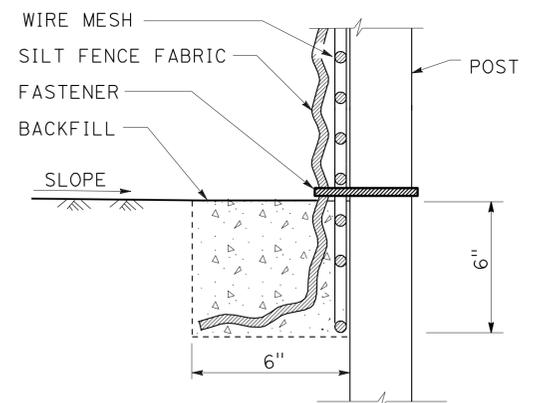
SECTION

WILDLIFE EXCLUSION FENCE (TYPE 1)



SECTION

WILDLIFE EXCLUSION FENCE (TYPE 2)



SECTION

TRENCH DETAIL

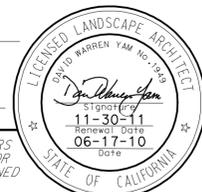
**TEMPORARY WATER POLLUTION CONTROL DETAILS**

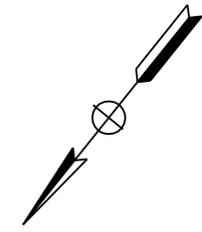
NO SCALE

**WPCD-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	7	57

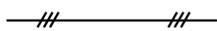
 LICENSED LANDSCAPE ARCHITECT		
6-21-10 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		



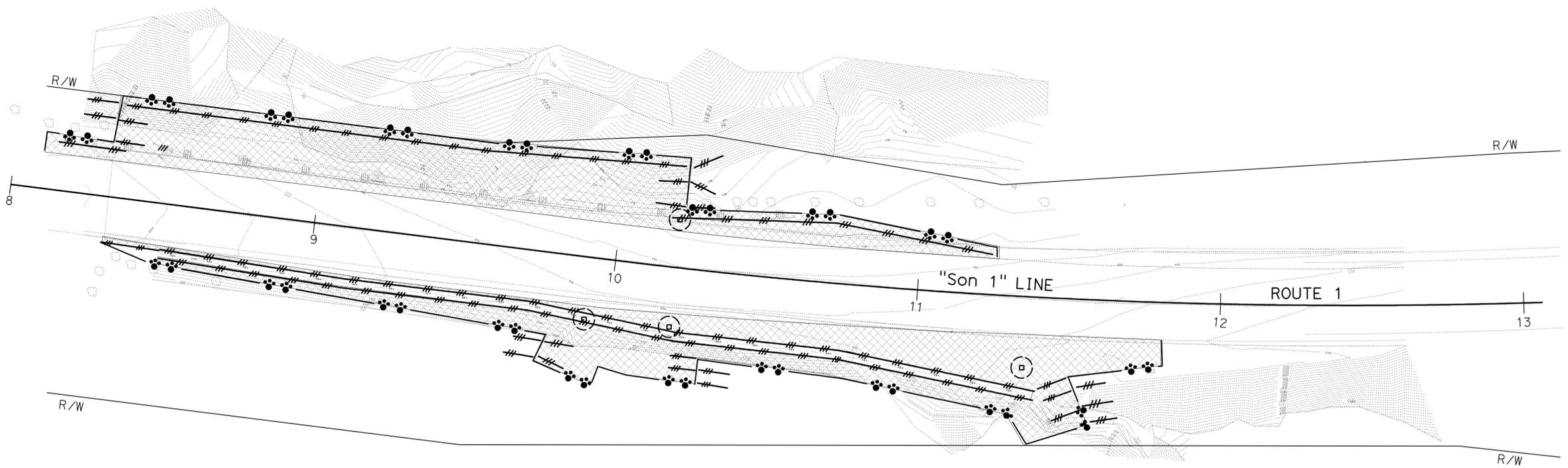
**NOTES:**

1. FIBER ROLL, AND WILDLIFE EXCLUSION FENCE ARE DIAGRAMMATIC AND ARE SHOWN OFFSET FOR CLARITY.
2. EXACT LIMITS OF WORK OR DEPLOYMENT OF EROSION CONTROL MATERIALS SHALL BE DETERMINED BY THE ENGINEER.
3. SEE DETAILS FOR SPECIFIC PLACEMENT.

**LEGEND:**

-  ROLLED EROSION CONTROL PRODUCT (NETTING)
-  FIBER ROLL
-  WILDLIFE EXCLUSION FENCE
-  TEMPORARY DRAINAGE INLET PROTECTION

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - OFFICE OF WATER QUALITY  
 SENIOR LANDSCAPE ARCHITECT: DAVID W. YAM  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 V. FRANCI SCO: SALLY BANG  
 REVISED BY: DATE REVISED:



**EROSION CONTROL PLAN**

SCALE: 1" = 20'

**EC-1**

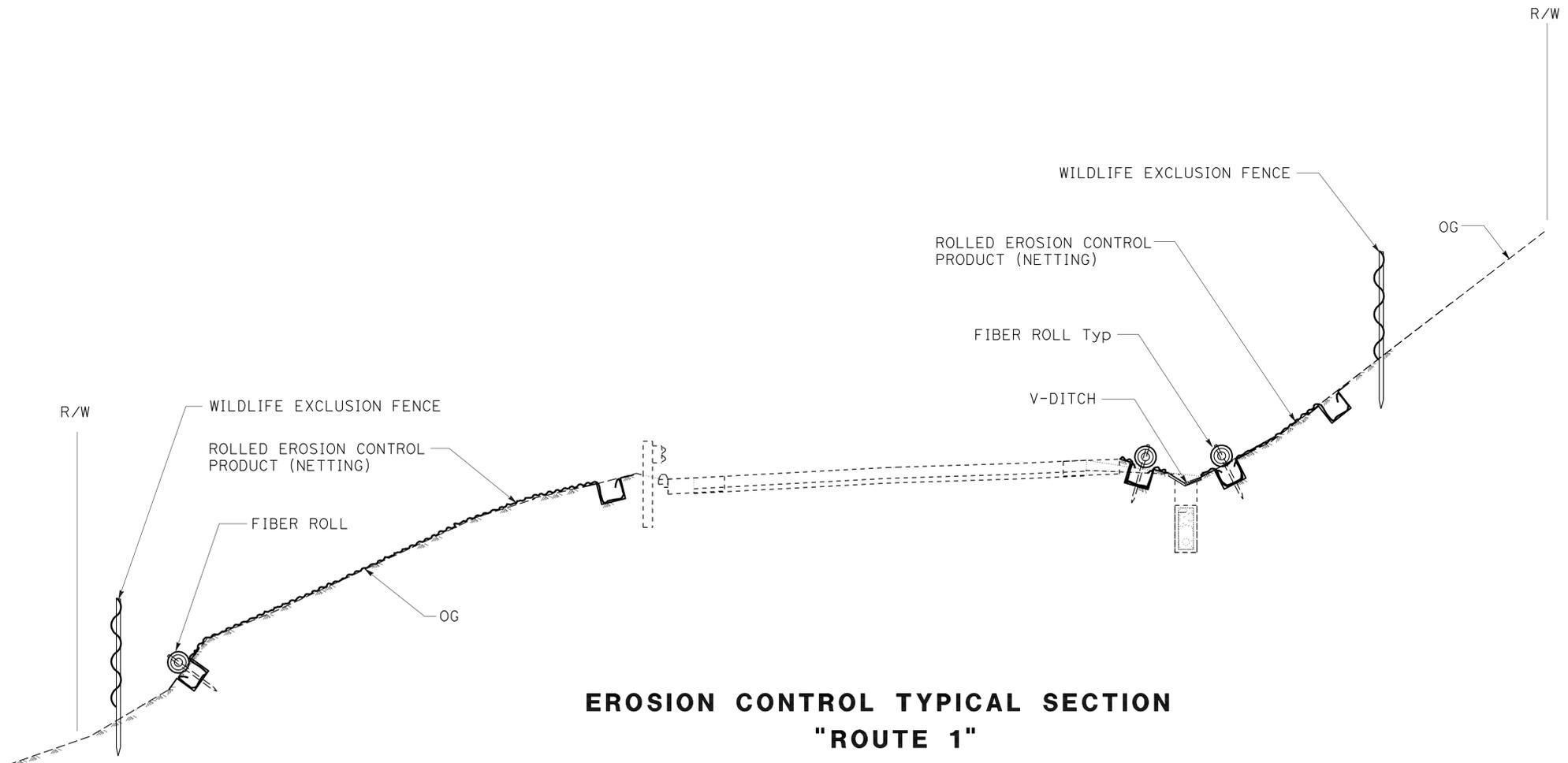
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	8	57

*David Warren Yam*  
 LICENSED LANDSCAPE ARCHITECT  
 6-21-10  
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS  
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
 THE ACCURACY OR COMPLETENESS OF SCANNED  
 COPIES OF THIS PLAN SHEET.

LICENSED LANDSCAPE ARCHITECT  
 DAVID WARREN YAM INC. 1949  
 11-30-11  
 RENEWAL DATE  
 06-17-10  
 STATE OF CALIFORNIA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SENIOR LANDSCAPE ARCHITECT	CALCULATED- DESIGNED BY	REVISOR	DATE
<b>Caltrans</b> OFFICE OF WATER QUALITY	DAVID W. YAM	CHECKED BY	V. FRANCISCO	
			SALLY BANG	



**EROSION CONTROL TYPICAL SECTION**

**"ROUTE 1"**

Sta 8+31.37 TO 8+94.06  
 Sta 9+92.06 TO 11+10.64

**EROSION CONTROL DETAILS**

NO SCALE

**ECD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** OFFICE OF WATER QUALITY

SENIOR LANDSCAPE ARCHITECT  
 DAVID W. YAM

CALCULATED, DESIGNED BY  
 CHECKED BY

V. FRANCISCO  
 SALLY BANG

REVISED BY  
 DATE REVISED

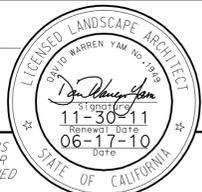
**EROSION CONTROL QUANTITIES**

SHEET No.	ROLLED EROSION CONTROL PRODUCT (NETTING) SQFT	EROSION CONTROL (HYDROSEED) SQFT	FIBER ROLL LF
EC-1	11,172	11,172	1060
TOTAL	11,172	11,172	1060

**WATER POLLUTION CONTROL QUANTITIES**

SHEET No.	WILDLIFE EXCLUSION FENCE LF	TEMPORARY COVER SQYD	TEMPORARY DRAINAGE INLET PROTECTION EA
EC-1	800	1000	4
TOTAL	800	1000	4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	9	57

  
 LICENSED LANDSCAPE ARCHITECT  
 6-21-10  
 PLANS APPROVAL DATE  
  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**EROSION CONTROL QUANTITIES  
 ECQ-1**

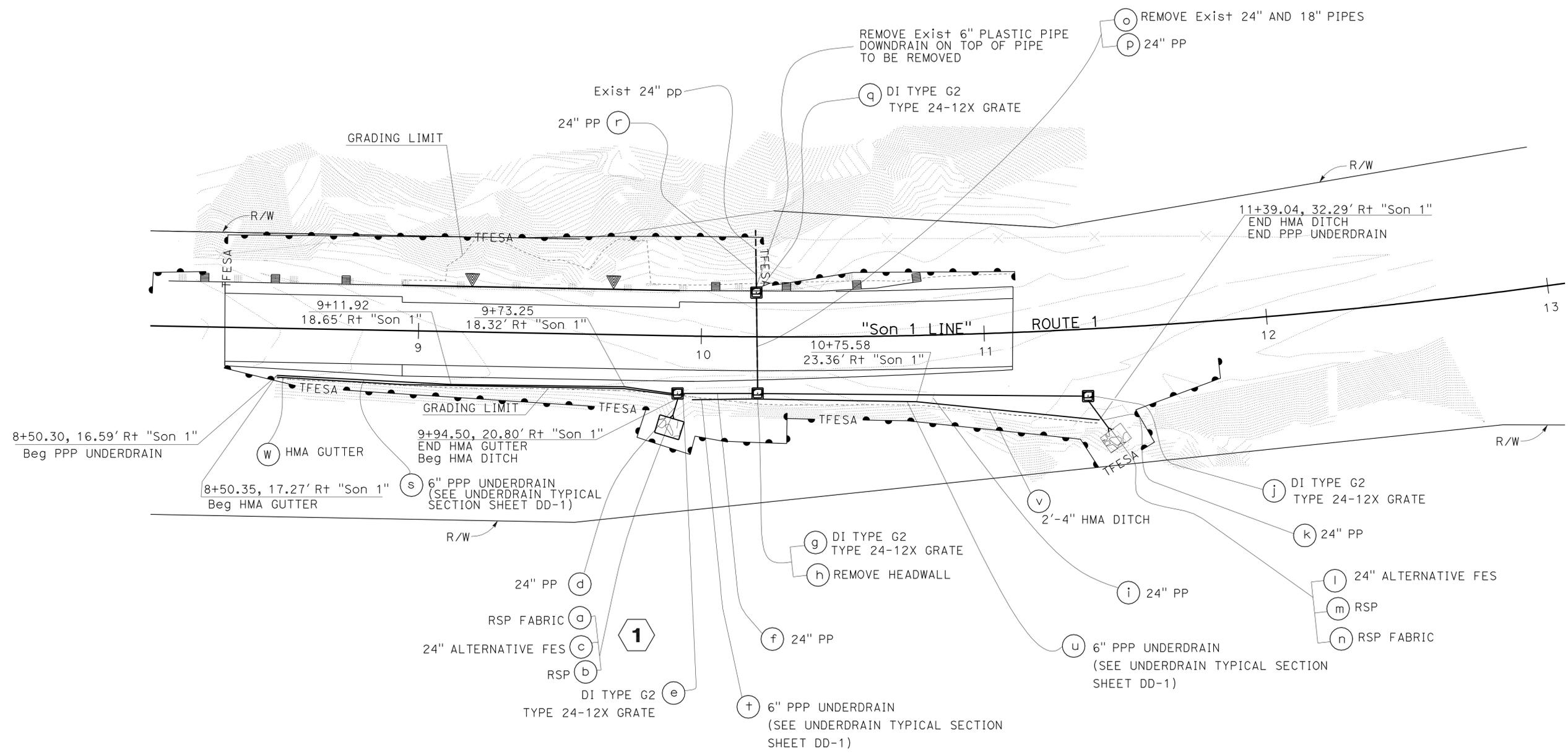
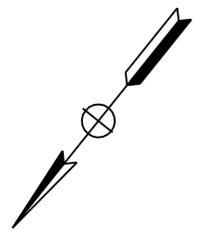
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-DESIGN  
 FUNCTIONAL SUPERVISOR: NICHOLAS CHAN  
 CALCULATED/DESIGNED BY: GASHU ENOUANHONE  
 CHECKED BY: CHEONG-YEW CHENG  
 REVISED BY: DATE REVISION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sonoma	1	7.6	10	57

REGISTERED CIVIL ENGINEER DATE: 09-25-09  
 PLANS APPROVAL DATE: 6-21-10  
 No. 57900  
 Exp 6/30/10  
 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.

- LEGEND:**
- DRAINAGE SYSTEM No.
  - DRAINAGE UNIT
  - RSP

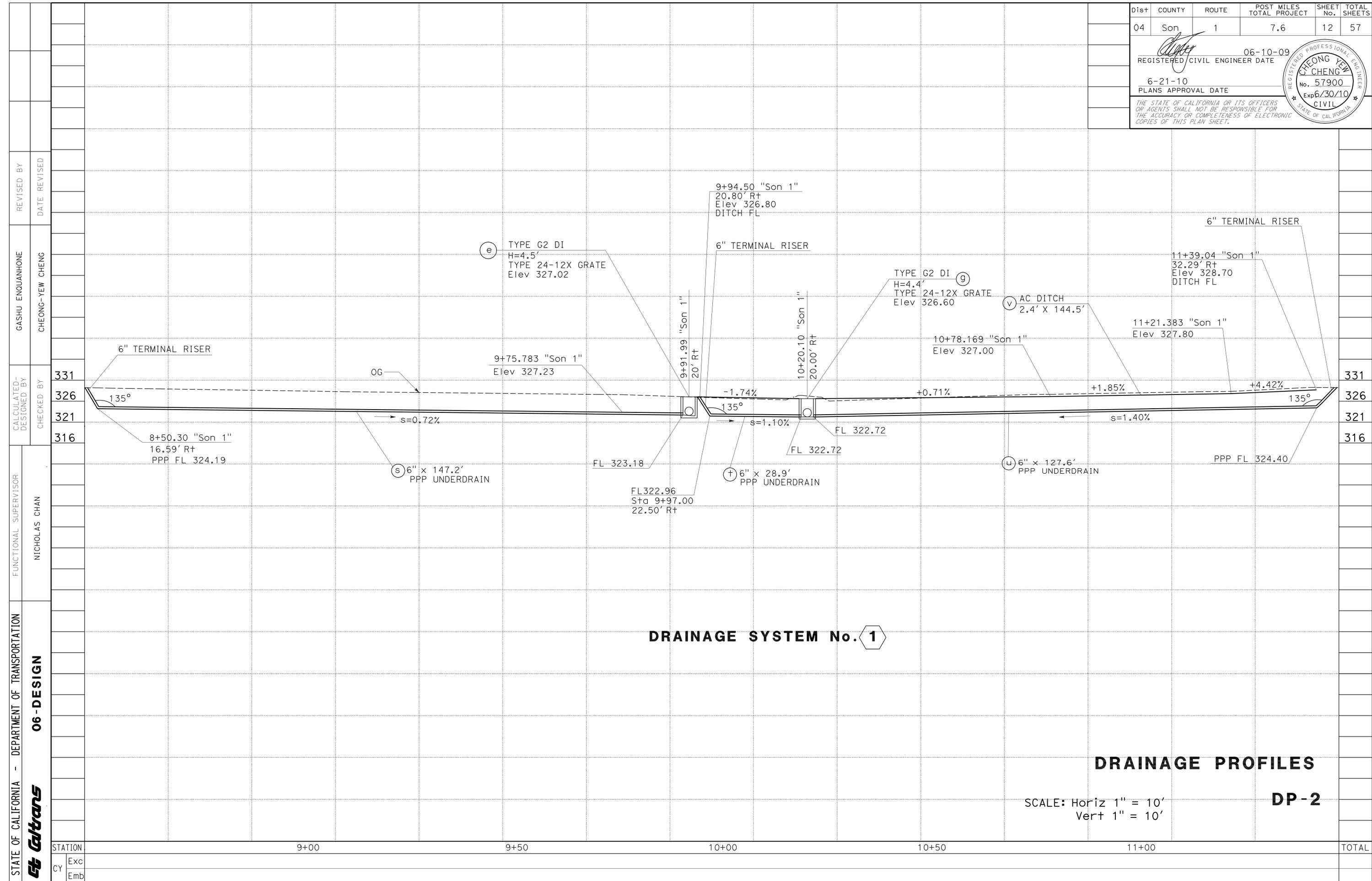


**DRAINAGE PLAN**  
 SCALE: 1" = 20'  
**D-1**

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	12	57
			06-10-09		
			REGISTERED CIVIL ENGINEER DATE		
			6-21-10		
			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>					



**DRAINAGE SYSTEM No. 1**

**DRAINAGE PROFILES**

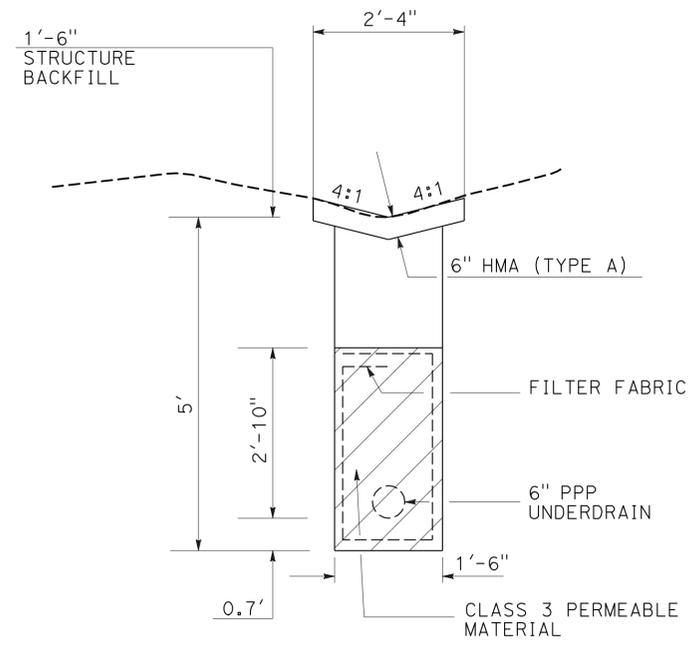
**DP-2**

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

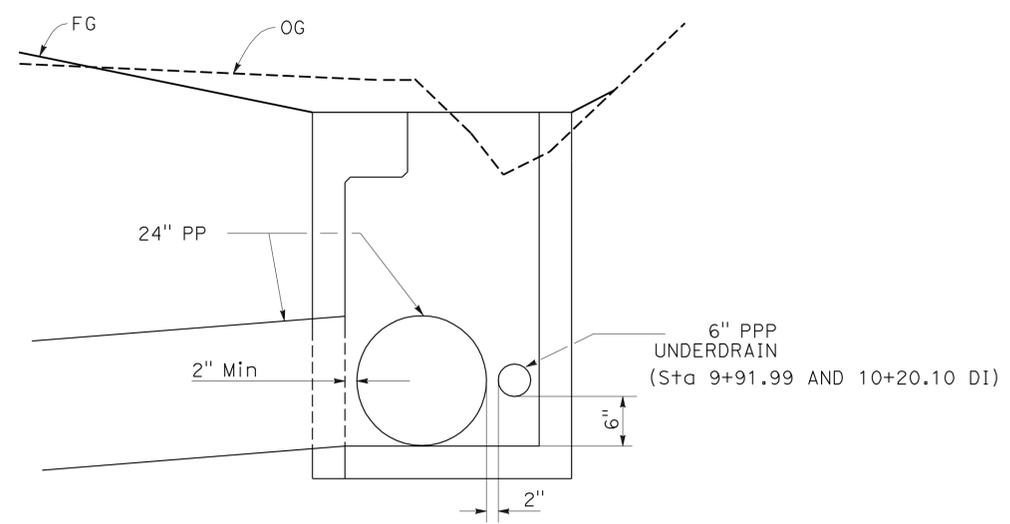
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	REVISOR
<b>Caltrans</b>	NICHOLAS CHAN	CHEONG-YEW CHENG	GASHU ENQUANPHONE	
06-DESIGN				

STATION	9+00	9+50	10+00	10+50	11+00	TOTAL
Exc						
Emb						

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	13	57
			06-10-09	DATE	
			6-21-10	PLANS APPROVAL DATE	
REGISTERED CIVIL ENGINEER CHEONG YEW CHENG No. 57900 Exp 6/30/10 CIVIL STATE OF CALIFORNIA					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

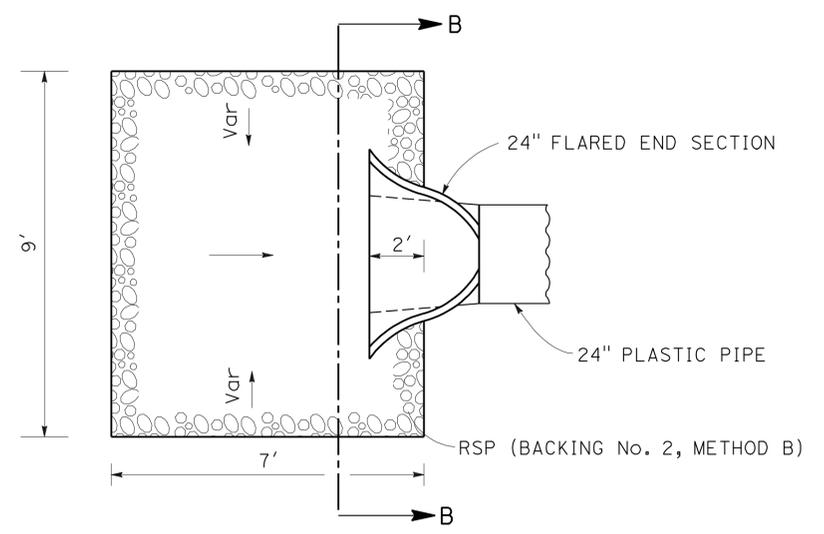


**PPP UNDERDRAIN  
TYPICAL SECTION**

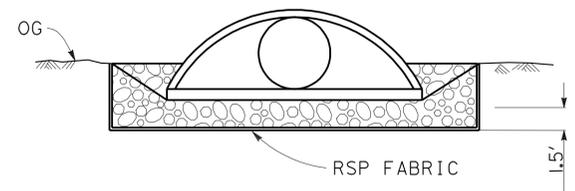


**TYPE G2  
CROSS SECTION**

No. 1 (e, g), (j, q)



**PLAN  
RSP DETAIL**



**SECTION B-B**

**DRAINAGE DETAILS**

NO SCALE

**DD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 06-DESIGN  
 FUNCTIONAL SUPERVISOR: NICHOLAS CHAN  
 REVISIONS: GASHU ENQUANHONE, CHEONG-YEW CHENG, CALCULATED/DESIGNED BY, CHECKED BY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	14	57

REGISTERED CIVIL ENGINEER DATE 06-10-09  
 6-21-10  
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS  
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
 THE ACCURACY OR COMPLETENESS OF SCANNED  
 COPIES OF THIS PLAN SHEET.

**NOTES:**

- (N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY
- PIPE JOINTS ARE WATERTIGHT

**DRAINAGE QUANTITIES**

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT No.	HMA (TYPE A) Ton	PLACE HMA (Misc AREA) SQYD	DRAINAGE INLET		FRAME & GRATE		24" PP LF	6" PPP UNDERDRAIN LF	REMOVE CULVERT (N) LF	REMOVE HEADWALL (N) EA	24" ALTERNATIVE FLARED END SECTION EA	RSP (BACKING No. 2, METHOD B) CY	RSP FABRIC SQYD	DESCRIPTION	LOCATION	DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT No.
					DESIGN H (N) Ft	MINOR CONCRETE (MINOR STRUCTURE) CY	(TYPE 24-12X) (N) EA	Misc IRON & STEEL lb												
D-1	1	a												3.5		RSP (BACKING No. 2, METHOD B)	9+89, 32' Rt, "Son 1"	D-1	1	a
		b													12.2	RSP FABRIC				b
		c							6.6				1			24" ALTERNATIVE FES	9+90.48, 27.9' Rt, "Son 1"			c
		d														24" PP				d
		e			4.5	1.7	1	239								DI TYPE G2	9+91.99, 20' Rt, "Son 1"			e
		f							25.4							24" PP				f
		g			4.4	1.7	1	239								DI TYPE G2	10+20.10, 22.7' Rt, "Son 1"			g
		h										1				REMOVE HEADWALL				h
		i							112.5							24" PP				i
		j			4.2	1.6	1	239								DI TYPE G2	11+35.56, 23.6' Rt, "Son 1"			j
		k							12.0							24" PP				k
		l											1			24" ALTERNATIVE FES	11+42.02, 35.2' Rt, "Son 1"			l
		m												3.5		RSP (BACKING No. 2, METHOD B)	11+44.74, 39.1' Rt, "Son 1"			m
		n													12.2	RSP FABRIC				n
		o									52.0					REMOVE Exis+ PIPE				o
		p							31.7							24" PP				p
		q			3.9	1.5	1	239								DI TYPE G2	10+19.40, 14.7' Lt, "Son 1"			q
		r							13.8							24" PP				r
		s									147.2					6" X 140.2' PPP UNDERDRAIN, 6" X 7' TERMINAL RISER				s
		t									28.9					6" X 21.9' PPP UNDERDRAIN, 6" X 7' TERMINAL RISER				t
		u									127.6					6" X 120.6' PPP UNDERDRAIN, 6" X 7' TERMINAL RISER				u
		v	12.6	37.5												HMA DITCH (2.4' X 144.5')	9+94.50 TO 11+39.04			v
D-1	1	w	32.4	48.1												HMA GUTTER (3' X 144.2')	8+50.35 TO 9+94.5	D-1	1	w
		TOTAL	45.0*	85.6*		6.5		956	202.0	303.7			2	7.0	24.4					

\* QUANTITY ADDED TO SHEET Q-1



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	15	57

*Hassan Cohe* 01-29-09  
REGISTERED CIVIL ENGINEER DATE

6-21-10  
PLANS APPROVAL DATE

**HASSAN M. TAHA**  
No. 60130  
Exp. 06/30/10  
CIVIL

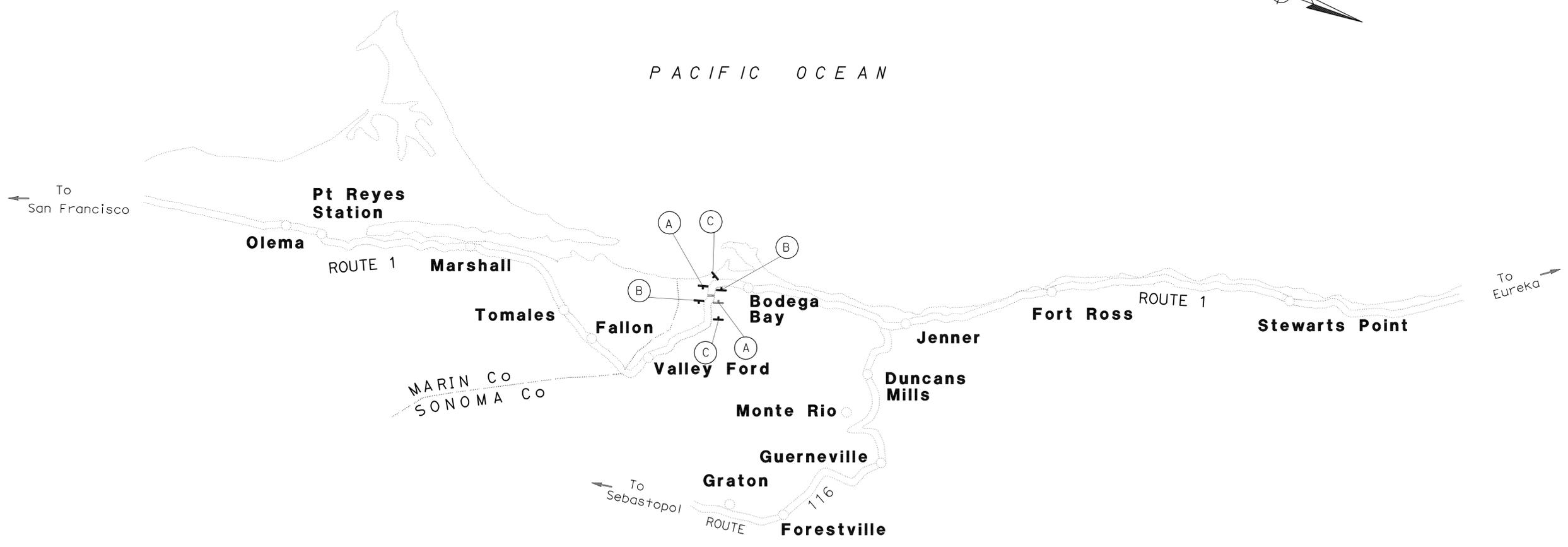
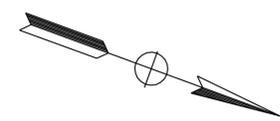
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

**NOTES:**

1. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, REFER TO TRAFFIC HANDLING PLANS.

**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POST AND SIZE	No. OF SIGNS
A	W20-1	ROAD WORK AHEAD	48" x 48"	1 - 6" x 6"	2
	R2-1	SPEED LIMIT(25)	24" x 30"		
B	G20-2	END ROAD WORK	36" x 18"	1 - 4" x 4"	2
	R3(CA)	END SPEED LIMIT(25)	36" x 45"		
C	R3(CA)	ONE LANE ROAD AHEAD	48" x 48"	1 - 6" x 6"	2



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06 - TRAFFIC DESIGN  
 SUPERVISING ENGINEER: MOHAMMED OATAMI  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 VANIK POGOSYAN HASSAN TAHA  
 REVISED BY: DATE REVISED:

**CONSTRUCTION AREA SIGNS**

NO SCALE

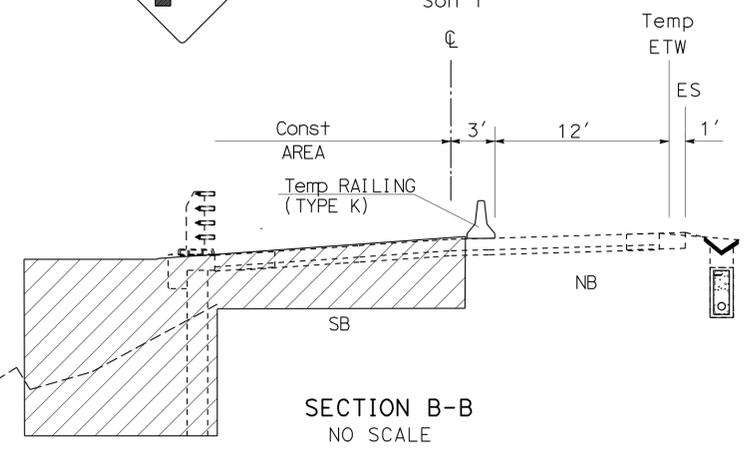
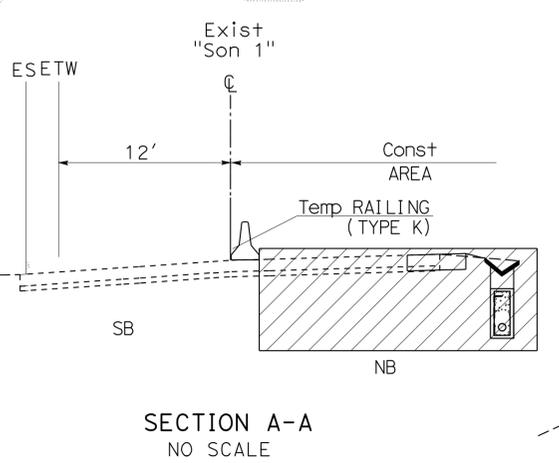
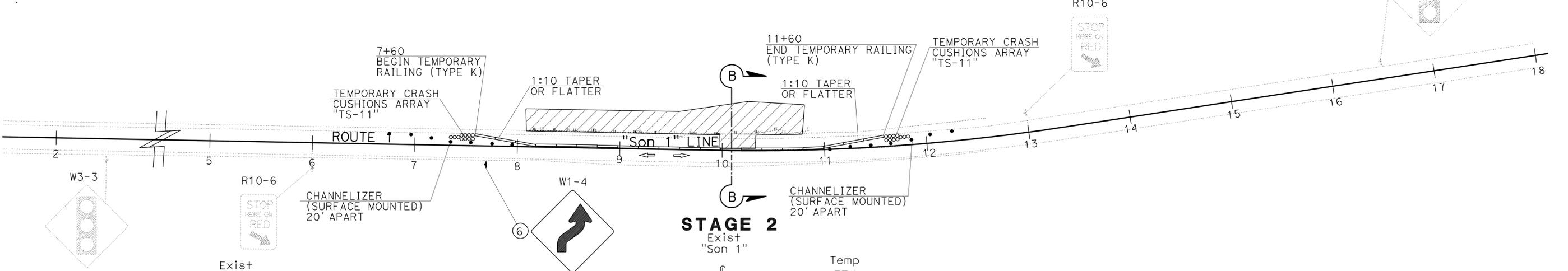
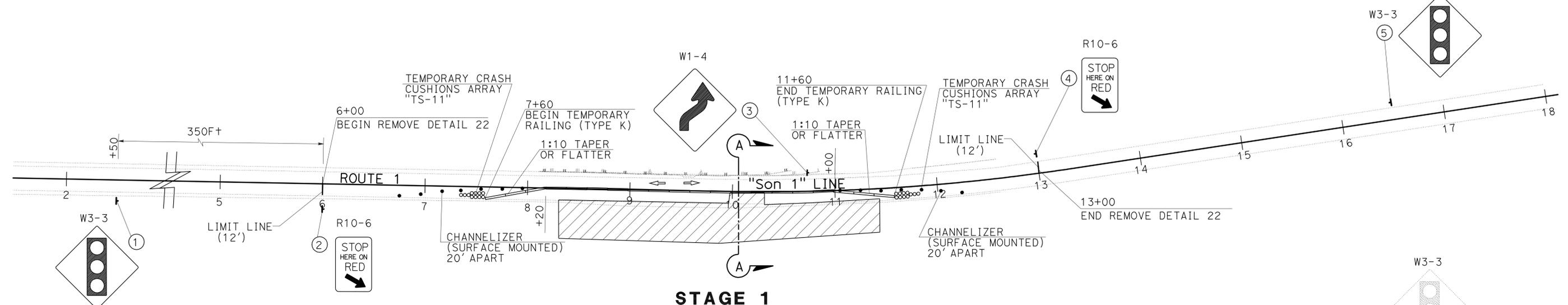
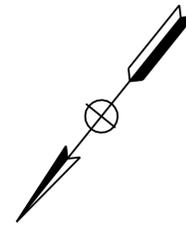
**CS-1**

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	16	57
Hassan Cohe		01-29-09		REGISTERED CIVIL ENGINEER DATE	
6-21-10		PLANS APPROVAL DATE		HASSAN M. TAHA No. 60130 Exp. 06/30/10 CIVIL	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>					

**NOTE:**  
FOR ADDITIONAL CONSTRUCTION AREA SIGNS REFER TO SHEET CS-1.

- LEGEND**
- CONSTRUCTION AREA
  - DIRECTION OF TRAFFIC
  - Temp RAILING (TYPE K)
  - CHANNELIZERS (SURFACE MOUNTED)
  - ROADSIDE SIGN No.
  - ROADSIDE SIGN ONE-POST
  - Temp CRASH CUSHION



**TRAFFIC HANDLING PLAN**  
SCALE: 1" = 50'  
**TH-1**

THIS PLAN ACCURATE FOR TRAFFIC HANDLING ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 06-TRAFFIC DESIGN  
 SUPERVISING ENGINEER: MOHAMMED OATAMI  
 CALCULATED/DESIGNED BY: VANIK POGOSYAN  
 CHECKED BY: HASSAN TAHA  
 REVISED BY: [blank]  
 DATE REVISED: [blank]

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	17	57

*Hassan M. Taaha* 10-06-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 SUPERVISING ENGINEER: MOHAMMED QATAMI  
 CALCULATED/DESIGNED BY: VANIK POGOSYAN  
 CHECKED BY: HASSAN TAHA  
 REVISED BY: DATE REVISION

### TEMPORARY CRASH CUSHION MODULE

SHEET No.	STAGE	EA
TH-1	1	22
	2	22
TOTAL		44

### CHANNELIZER (SURFACE MOUNTED)

SHEET No.	STAGE	EA
TH-1	1	14
	2	14
TOTAL		28

### TEMPORARY RAILING (TYPE K)

SHEET No.	STAGE	Sta TO Sta	LF
TH-1	1	7+60 TO 11+60	400
	2	7+60 TO 11+60	400
TOTAL			800

### CONSTRUCTION AREA SIGNS (TRAFFIC HANDLING)

SHEET No.	SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POST AND SIZE	No. OF SIGNS
TH-1	①	W3-3	AS SHOWN ON PLAN	36" x 36"	MOUNT ON BEACON	1
	②	R10-6	AS SHOWN ON PLAN	36" x 24"	SIGNAL POLE	1
	③	W1-4	AS SHOWN ON PLAN	30" x 30"	1-4" x 4"	1
	④	R10-6	AS SHOWN ON PLAN	36" x 24"	SIGNAL POLE	1
	⑤	W3-3	AS SHOWN ON PLAN	36" x 36"	MOUNT ON BEACON	1
	⑥	W1-4	AS SHOWN ON PLAN	30" x 30"	1-4" x 4"	1

### TEMPORARY PAVEMENT DELINEATION

SHEET No.	STAGE	LOCATION Sta TO Sta	DETAIL No.	REMOVE PAVEMENT MARKER	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	Temp PAVEMENT MARKING (TAPE)	
				EA	LF	DESCRIPTION	SQFT
TH-1	1	6+00 TO 13+00	22	62	1400	2-LIMIT LINE	24
TOTAL				62	1400	TOTAL	24

## TRAFFIC HANDLING QUANTITIES

### THQ-1



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	18	57

Hassan Cohe 01-29-09  
REGISTERED CIVIL ENGINEER DATE

6-21-10  
PLANS APPROVAL DATE

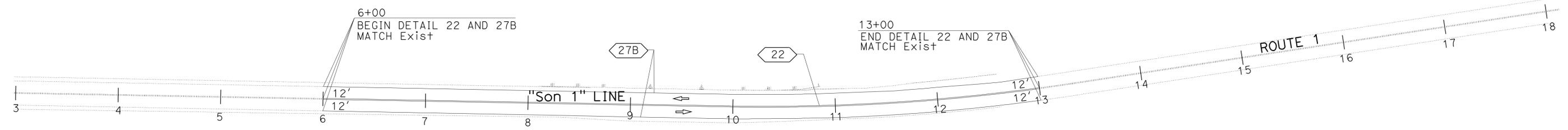
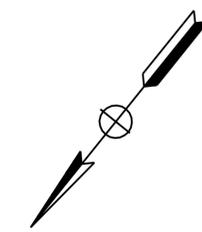
HASSAN M. TAHA  
No. 60130  
Exp. 06/30/10  
CIVIL

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.

**LEGEND**

XX TRAFFIC STRIPE DETAIL

⇨ DIRECTION OF TRAFFIC



**PAVEMENT DELINEATION**

SHEET No.	LOCATION Sta TO Sta	DETAIL No.	PAVEMENT MARKER RETRO-REFLECTIVE	4" THERMOPLASTIC TRAFFIC STRIPE YELLOW	8" THERMOPLASTIC TRAFFIC STRIPE
				EA	LF
TH-1	6+00 TO 13+00	22			
PD-1	6+00 TO 13+00	27B			1400
	6+00 TO 13+00	22	62	1400	
TOTAL			62	1400	1400

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06 - TRAFFIC DESIGN

SUPERVISING ENGINEER: MOHAMMED OATAMI  
DESIGNED BY: MOHAMMED OATAMI  
CHECKED BY: [Blank]  
CALCULATED BY: [Blank]  
VANIK POGOSYAN  
HASSAN TAHA  
REVISOR: [Blank]  
DATE: [Blank]

**PAVEMENT DELINEATION PLAN**

SCALE: 1" = 50'

**PD-1**

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	19	57

09-25-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**CHEONG YEW CHENG**  
 No. 57900  
 Exp 6/30/10  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

### ROADWAY QUANTITIES

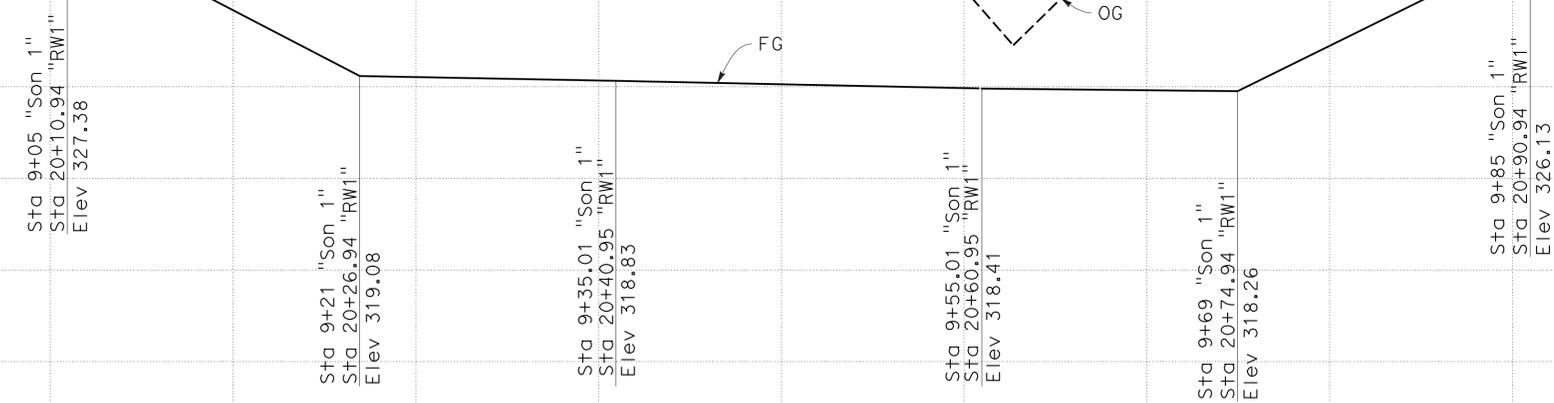
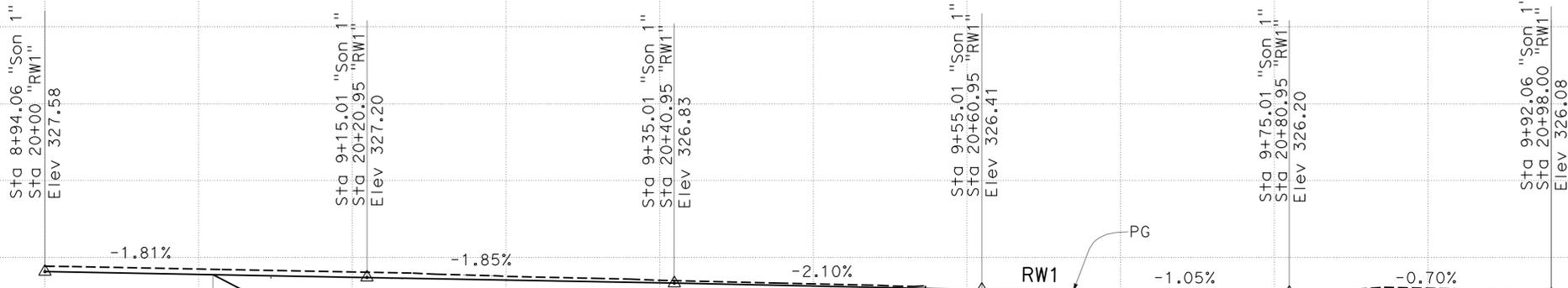
LOCATION (Sta TO Sta)	ROADWAY EXCAVATION	HMA (TYPE A)	REMOVE METAL BEAM GUARD RAILING	TRANSITION RAILING (TYPE WB)	METAL BEAM GUARD RAILING (WOOD POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	REMOVE ASPHALT CONCRETE DIKE	RELOCATE FENCE	PLACE HOT MIX ASPHALT DIKE (TYPE A)	PLACE HOT MIX ASPHALT DIKE (TYPE C)	PLACE HOT MIX ASPHALT DIKE (TYPE F)	PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	COLD PLANE AC Pvmf	TACK COAT
	CY	Ton	LF	EA	LF	EA	LF	LF	LF	LF	LF	SQYD	SQYD	Ton
8+31.37 To 11+10.64	123.6	254.4											744.7	0.2
FROM SHEET DQ-1 FOR HMA DITCH AND GUTTER		45.0										85.6		
8+09.37 To 10+57.51			248.1											
8+70.18 TO 8+94.06				1										
9+92.06 TO 10+16.12				1										
10+32.59 TO 10+57.51														
8+09.37 To 8+70.18					60.8									
10+16.12 To 10+41.22					25.1									
10+41.22 TO 10+79.09						1								
8+09.37 To 10+16.12							206.8							
9+60 To 11+11.08								151.1						
8+50.35 To 9+94.5		3.9							144.2					
10+16.12 To 11+10.64		0.7								94.5				
8+09.37 To 8+94.06		1.1									84.7			
9+92.06 To 10+16.12		0.4									24.1			
9+47.47 To 9+67.47 REMOVE ROCK SLOPE PROTECTION SEE SHEET C-1	35.0													
<b>TOTAL</b>	<b>158.6</b>	<b>305.5</b>	<b>248.1</b>	<b>2</b>	<b>85.9</b>	<b>1</b>	<b>206.8</b>	<b>151.1</b>	<b>144.2</b>	<b>94.5</b>	<b>108.8</b>	<b>85.6</b>	<b>744.7</b>	<b>0.2</b>

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-DESIGN  
 FUNCTIONAL SUPERVISOR: NICHOLAS CHAN  
 CALCULATED/DESIGNED BY: GASHU ENOUANHONE  
 CHECKED BY: CHEONG-YEW CHENG  
 REVISED BY: GASHU ENOUANHONE  
 DATE REVISED:

### SUMMARY OF QUANTITIES Q-1

LAST REVISION | DATE PLOTTED => 25-JUN-2010  
 02-03-10 TIME PLOTTED => 11:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	20	57
			09-25-09		
			REGISTERED CIVIL ENGINEER DATE		
			6-21-10		
			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.					



**PROFILE**

**RETAINING WALL (PROFILE)**

SCALE: Horiz 1" = 5'  
 Vert 1" = 5'

**R-1**

STATION	20+00	20+20	20+40	20+60	20+80	21+00	TOTAL
Exc							
Emb							

FUNCTIONAL SUPERVISOR  
 ALI BAKHDOUD

CALCULATED/DESIGNED BY  
 CHECKED BY  
 NORMA M. GALLEGOS  
 DANIEL T. VO

REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	21	57

 06-10-09  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 DANIEL THANH VO  
 No. 17408  
 Exp. 9/30/10  
 ELECTRICAL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**GENERAL NOTES:**

1. LOWEST SAG POINT OF MESSENGER WIRE SHALL BE 25' MINIMUM CLEARANCE FROM FINISHED GRADE/ROADWAY.
2. OVERHEAD CONDUCTORS SHALL BE TIED ON MESSENGER WIRE AT EVERY 3' MAXIMUM WITH SELF-CLINGING NYLON TIES.
3. OVERHEAD ENTRANCE CONDUIT FITTING SHALL BE INSTALLED IN SUCH A WAY SO THAT RAINWATER SHALL NOT SEEP INTO ELECTRICAL EQUIPMENT THROUGH THE ENTRANCE FITTING. FORM A DRIP LOOP AT ENTRANCE FITTING.
4. PROVIDE GUY WIRE, GUY GUARDS AND ANCHOR AS REQUIRED. POLE GUY SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
5. ESTABLISH CONTINUOUS GROUND WITH SYSTEM GROUND TO ALL METAL PARTS IN SYSTEM BY BONDING JUMPERS AND CONDUITS.
6. GROUND ELECTRODE SHALL BE INSTALLED IN PULL BOX ADJACENT TO WOOD POLES AND BOND TO RIGID METAL CONDUIT, UNLESS OTHERWISE NOTED.
7. MAXIMUM SPACING BETWEEN WOOD POLES WITH OVERHEAD CONDUCTORS SHALL NOT EXCEED 200'.
8. SIGNS SHOWN ARE "CONSTRUCTION AREA SIGNS". SEE SHEET TH-1 FOR DETAILS.

**PROJECT NOTES:**

1. INSTALL STATE-FURNISHED MODEL 170 CONTROLLER ASSEMBLY ON TEMPORARY FOUNDATION PLATFORM FOR MODEL 332 CABINET PER DETAIL 2 ON SHEET E-4. INSTALL UPS IN CONTROLLER CABINET.
2. Ø1 LOOPS SHALL HAVE 5 TURNS.
3. 2"C, 2#6 (120 V SERVICE TO CONTROLLER), 2#8 (240 V LIGHTING), 2#10 (120 V NB FB AND SIGN LTG), 2#8 (120 V SB FB AND SIGN LTG)
4. 2"C, 2#6 (120 V SERVICE TO CONTROLLER), 16#14 (Ø1-3, Ø1 PPB-2, Ø2-3, Ø2 PPB-2, SPARES-6), 2#10 (120 V SIGNAL NEUTRAL), 4 DLC
5. 2"C, 4#8 (240 V LIGHTING), 16#14 (Ø1-3, Ø1 PPB-2, Ø2-3, Ø2 PPB-2, SPARES-6), 2#10 (120 V SIGNAL NEUTRAL), 2#10 (120 V NB FB AND SIGN LTG), 2#8 (120 V SB FB AND SIGN LTG), 4 DLC
6. 2#8 (240 V LIGHTING), 8#14 (Ø2-3, Ø2 PPB-2, SPARES-3), 1#10 (120 V SIGNAL NEUTRAL), 2#10 (120 V NB FB AND SIGN LTG), 2 DLC
7. 2#8 (240 V LIGHTING), 8#14 (Ø1-3, Ø1 PPB-2, SPARES-3), 1#10 (120 V SIGNAL NEUTRAL), 2#8 (120 V SB FB AND SIGN LTG), 2 DLC

**INDEX TO ELECTRICAL PLANS:**

DRAWING No.	TITLE
E-1	TEMPORARY SIGNAL SYSTEM (PROJECT NOTES, SYMBOLS AND ABBREVIATIONS).
E-2 TO E-3	TEMPORARY SIGNAL SYSTEM.
E-4 TO E-5	TEMPORARY SIGNAL SYSTEM (ELECTRICAL DETAILS).

**LEGEND, SYMBOLS & ABBREVIATIONS:**

- PROPOSED
-  ADVANCE FLASHING BEACON WITH A W3-3 SIGN AND SIGN LIGHTING MOUNTED ON A WOOD POLE. SEE DETAIL 1 ON SHEET E-4.
  -  WOOD POLE WITH 200 W HPS LUMINAIRE (ON MASTARM), SIGNAL HEAD (ON MASTARM AND POLE) AND CONDUIT RISER. SEE DETAIL 3 ON SHEET E-4.
  -  WOOD POLE WITH 200 W HPS LUMINAIRE (ON MASTARM), SIGNAL HEAD, PPB, R10-6 SIGN AND CONDUIT RISER. SEE DETAIL 4 ON SHEET E-4.
  -  WOOD POST WITH NEMA 3R ENCLOSURE. SEE DETAILS 5 AND 6 ON SHEET E-5.
  -  40' WOOD POLE.
  -  GENERATOR WITH BACKUP GENERATOR. SEE DETAIL 7 ON SHEET E-5.
  -  OH OVERHEAD 5/8", 7 STRAND GALVANIZED MESSENGER WIRE WITH CONDUCTORS AS NOTED UNLESS OTHERWISE SPECIFIED.
  -  LPT LIQUID PROPANE TANK.
  -  LP LIQUID PROPANE.
  -  -X-X- TEMPORARY FENCE WITH GATE.
  -  -G- PROPANE GAS LINK.
  -  UPS UNINTERRUPTIBLE POWER SUPPLY.

**TEMPORARY SIGNAL SYSTEM  
 E-1**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	22	57

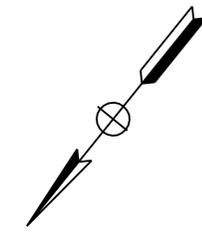
  

<i>Daniel Paulo</i>	06-10-09
REGISTERED ELECTRICAL ENGINEER	DATE
6-21-10	
PLANS APPROVAL DATE	

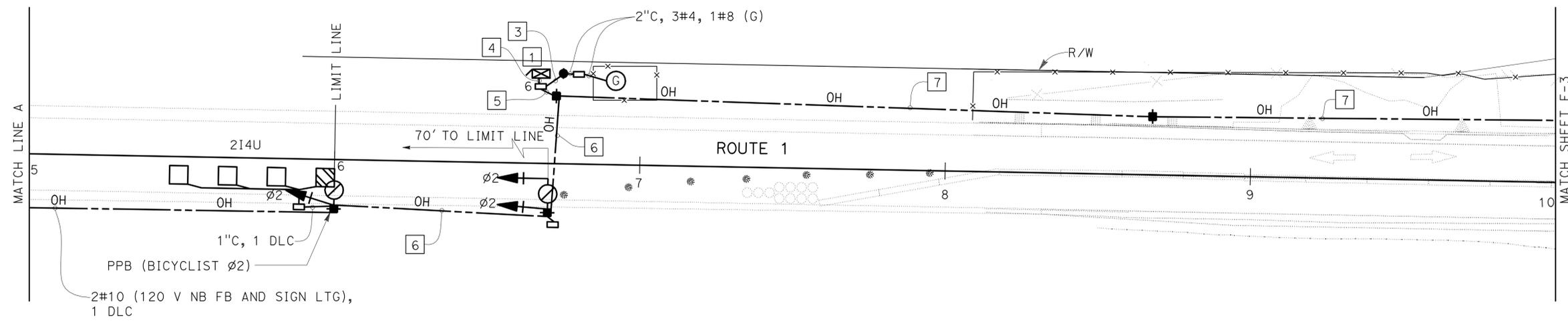
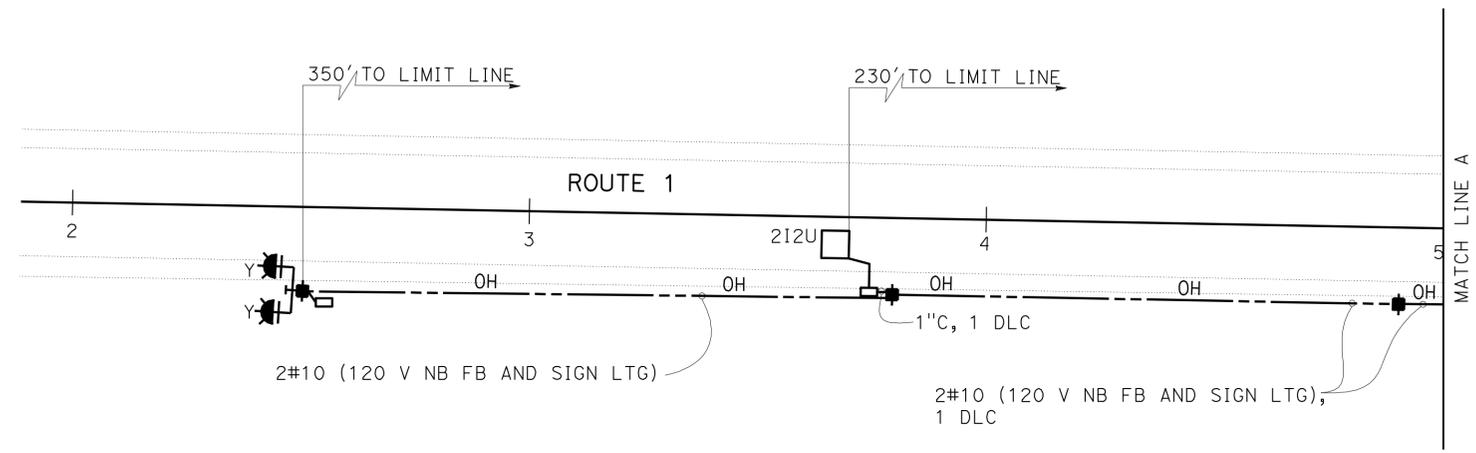
REGISTERED PROFESSIONAL ENGINEER
DANIEL THANH VO
No. 17408
Exp. 9/30/10
ELECTRICAL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



FOR NOTES AND SCHEDULES SEE SHEET E-1

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

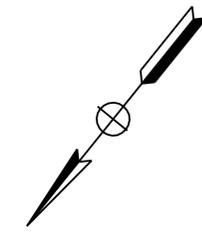
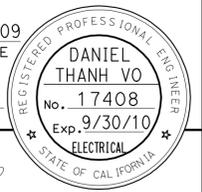


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHDOD  
 CALCULATED/DESIGNED BY: DANIEL T. VO  
 CHECKED BY: DANIEL T. VO  
 REVISIONS: NORMA M. GALLEGOS, DANIEL T. VO  
 REVISOR: DANIEL T. VO  
 DATE: 06-10-09

**TEMPORARY SIGNAL SYSTEM**  
 SCALE: 1" = 20'  
**E-2**

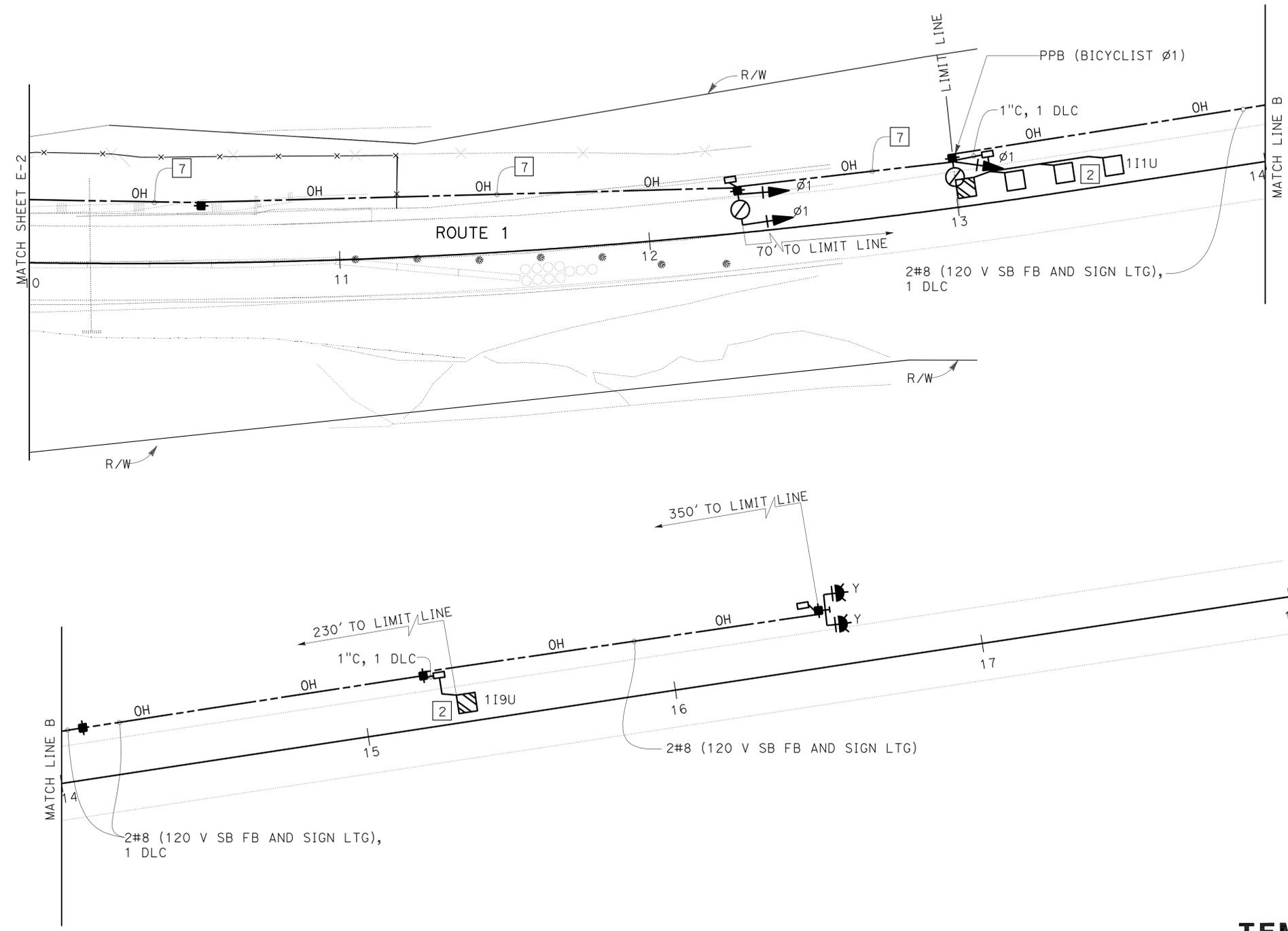
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	23	57
			06-10-09	DATE	
REGISTERED ELECTRICAL ENGINEER			DATE		
6-21-10			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



FOR NOTES AND SCHEDULES SEE SHEET E-1  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b> 06-ELECTRICAL DESIGN	ALI BAKHDOUN	DANIEL T. VO	NORMA M. GALLEGOS
		CHECKED BY	DATE REVISOR
			DANIEL T. VO



# TEMPORARY SIGNAL SYSTEM

SCALE: 1" = 20'

## E-3

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



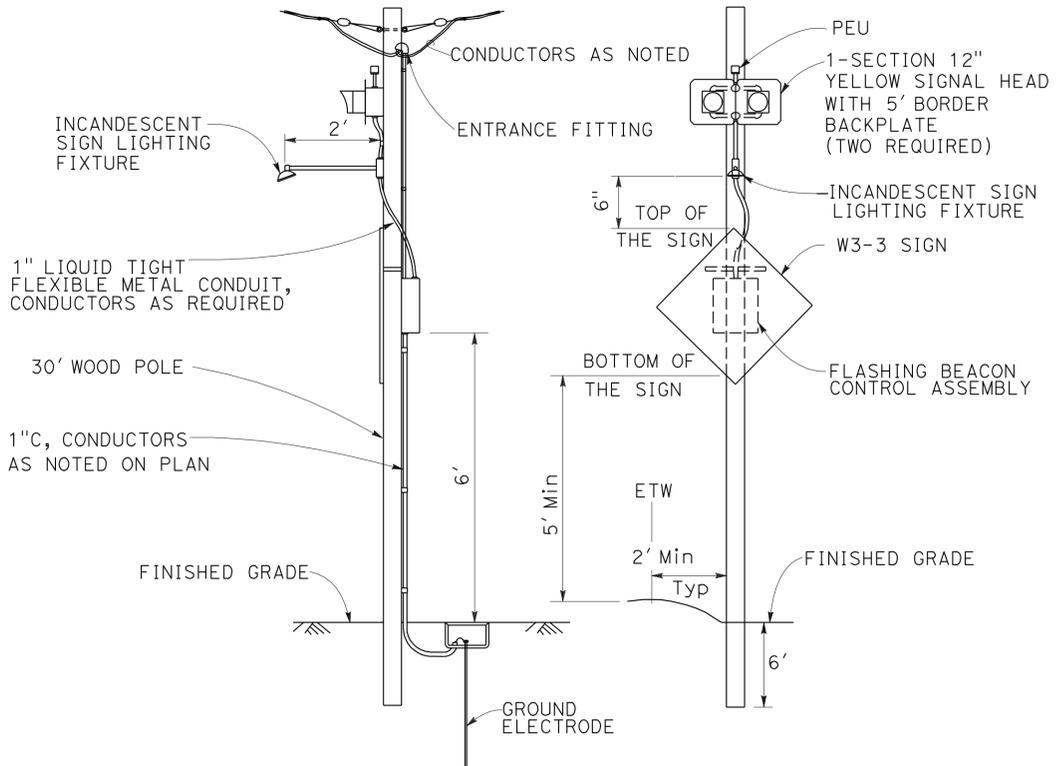
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	24	57

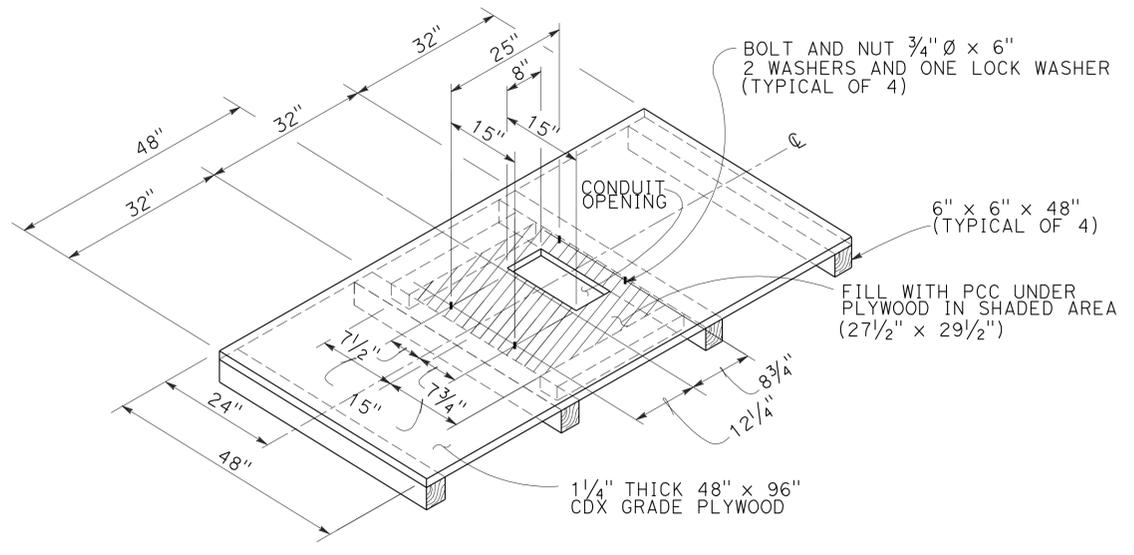
<i>Daniel Thau</i>	06-10-09
REGISTERED ELECTRICAL ENGINEER	DATE
6-21-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER  
**DANIEL THANH VO**  
 No. 17408  
 Exp. 9/30/10  
 ELECTRICAL  
 STATE OF CALIFORNIA

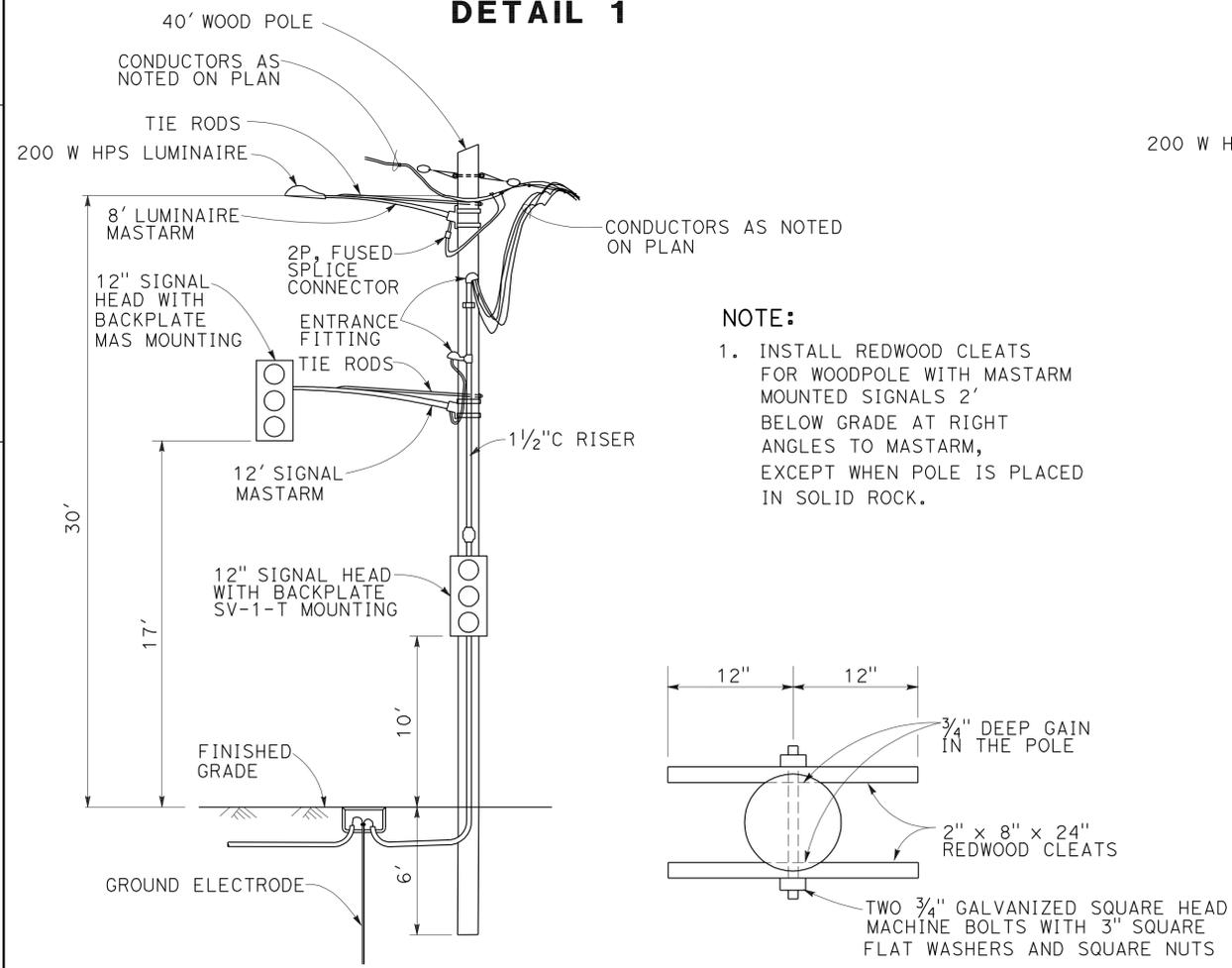
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**DETAIL 1**

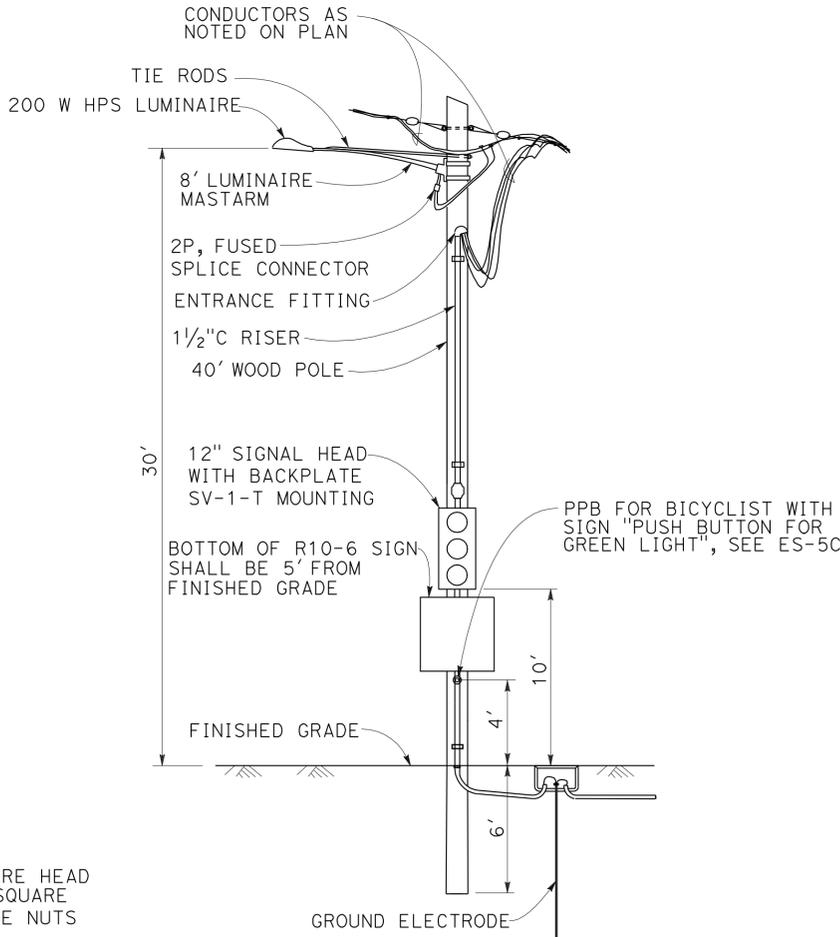
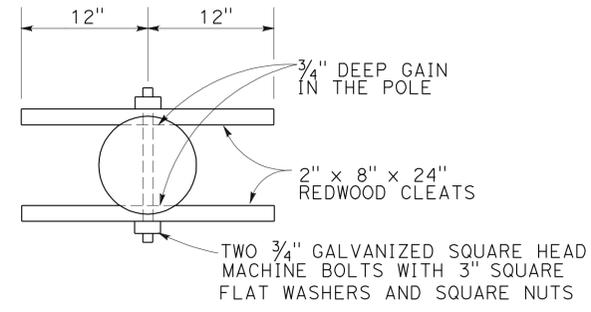


TEMPORARY MODEL 332 CABINET FOUNDATION PLATFORM



**DETAIL 3**

**NOTE:**  
 1. INSTALL REDWOOD CLEATS FOR WOODPOLE WITH MASTARM MOUNTED SIGNALS 2' BELOW GRADE AT RIGHT ANGLES TO MASTARM, EXCEPT WHEN POLE IS PLACED IN SOLID ROCK.



**DETAIL 4**

**TEMPORARY SIGNAL SYSTEM**  
 NO SCALE  
**E-4**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALT BAKHDOUD  
 CALCULATED/DESIGNED BY: NORMA M. CALLEGOS  
 CHECKED BY: DANIEL T. VO  
 REVISOR: DANIEL T. VO  
 DATE REVISOR: DANIEL T. VO

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	7.6	25	57

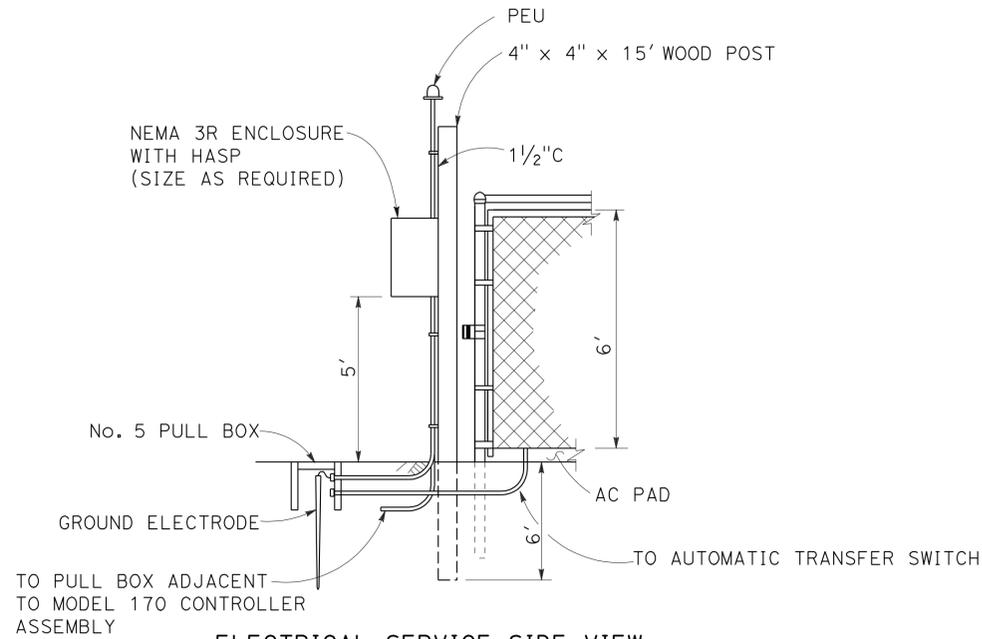
  

<i>Daniel Paul</i>	06-10-09
REGISTERED ELECTRICAL ENGINEER	DATE
6-21-10	
PLANS APPROVAL DATE	

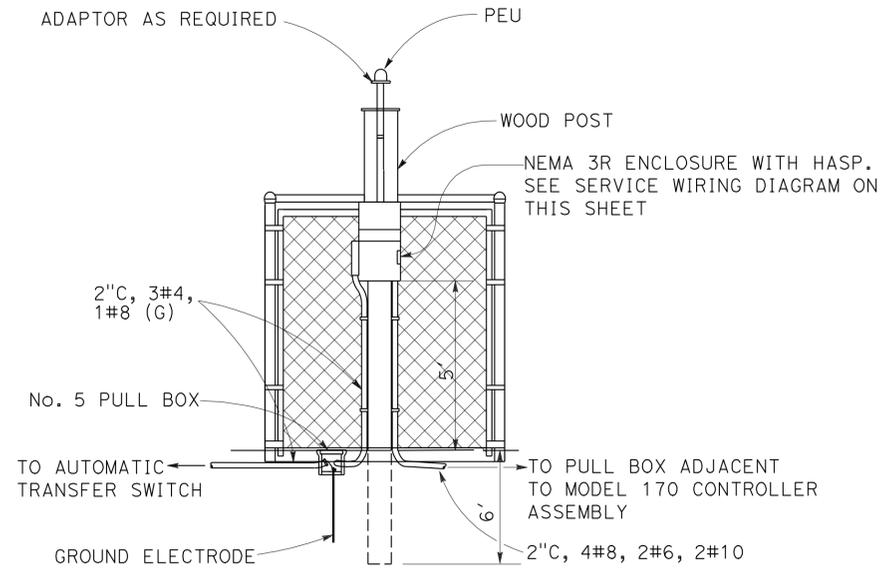
  

REGISTERED PROFESSIONAL ENGINEER
DANIEL THANH VO
No. 17408
Exp. 9/30/10
ELECTRICAL
STATE OF CALIFORNIA

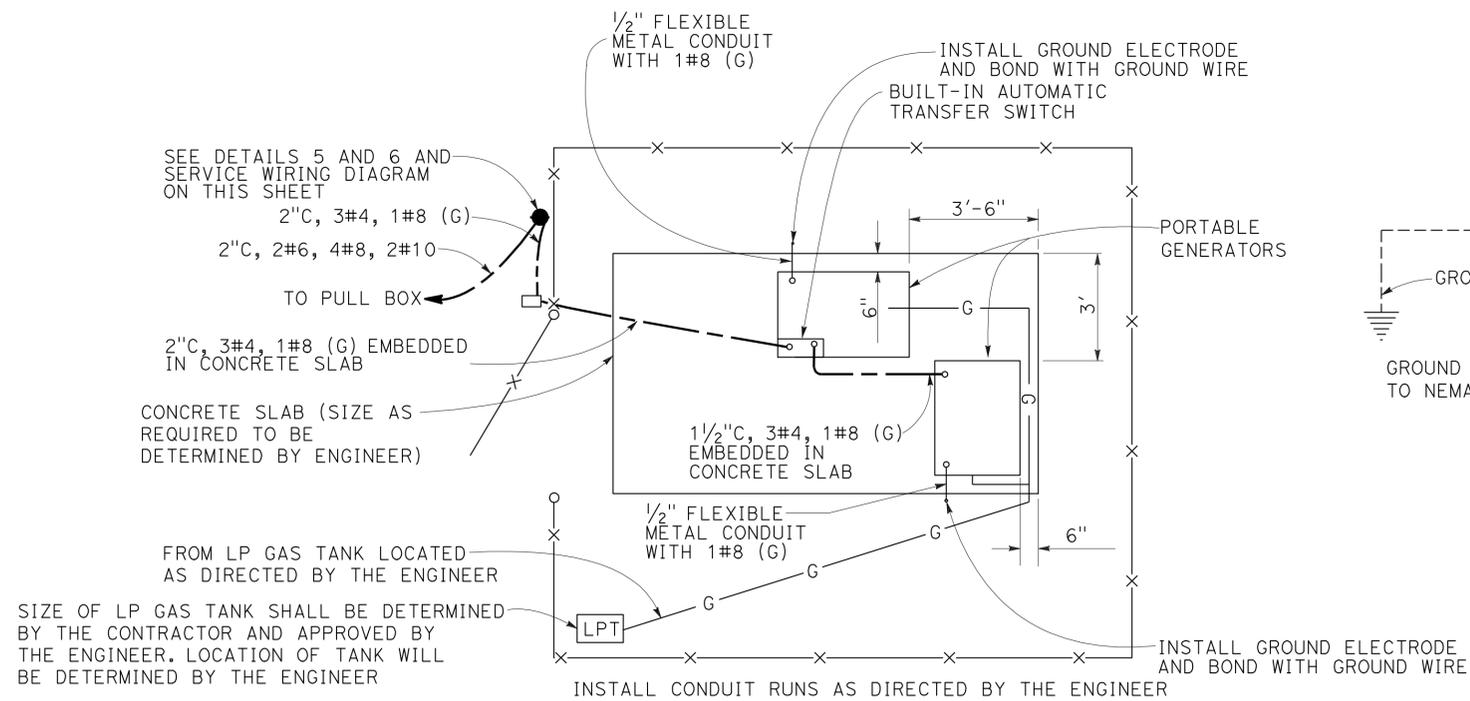
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



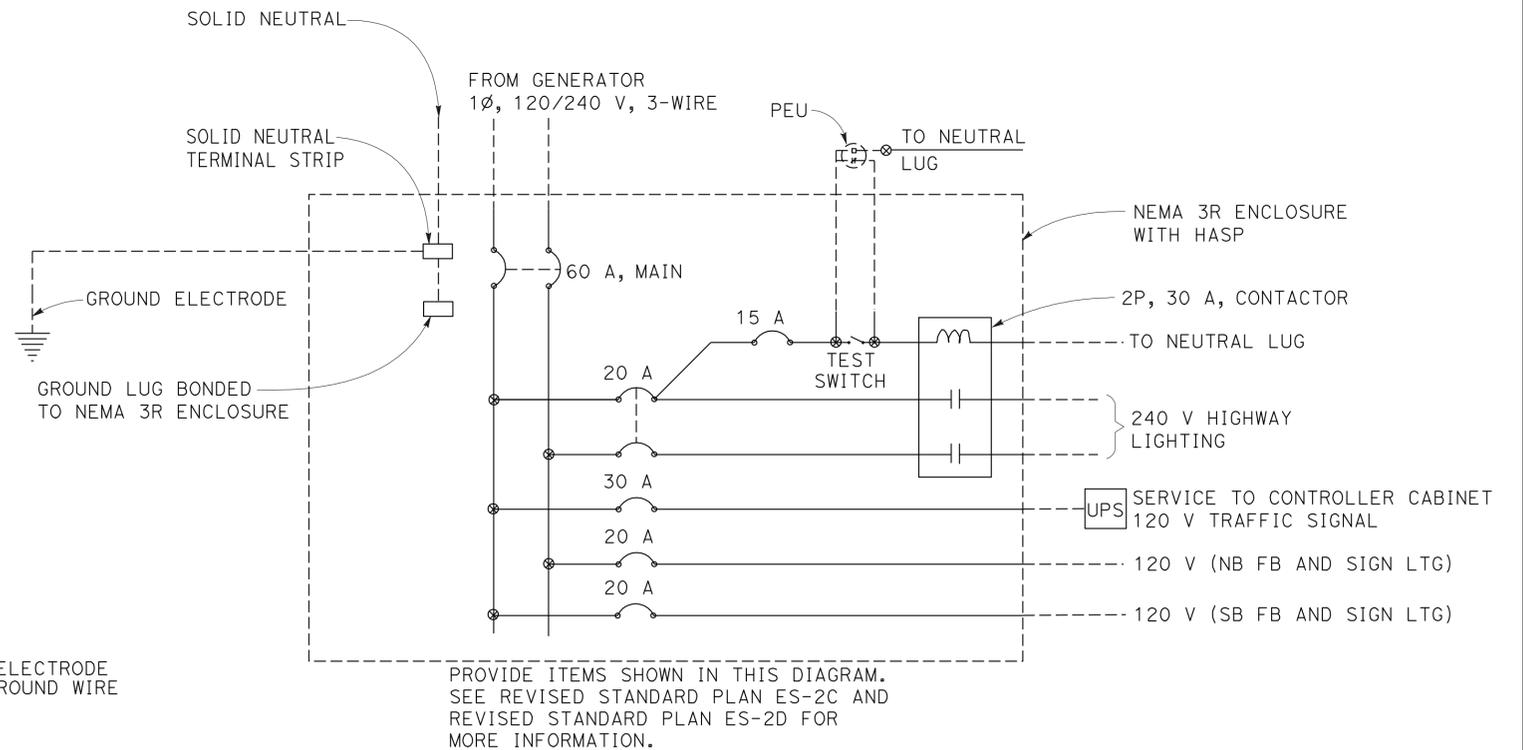
ELECTRICAL SERVICE SIDE VIEW  
**DETAIL 5**



ELECTRICAL SERVICE FRONT VIEW  
**DETAIL 6**



GENERATOR WITH GENERATOR BACK-UP  
**DETAIL 7**



**ELECTRICAL SERVICE WIRING DIAGRAM**

**TEMPORARY SIGNAL SYSTEM**

NO SCALE

**E-5**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - **Caltrans** 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR

ALI BAKHDOUD

CALCULATED, DESIGNED BY

CHECKED BY

NORMA M. GALLEGOS

DANIEL T. VO

REVISED BY

DATE REVISED

x

x

x

x

x

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	26	57

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

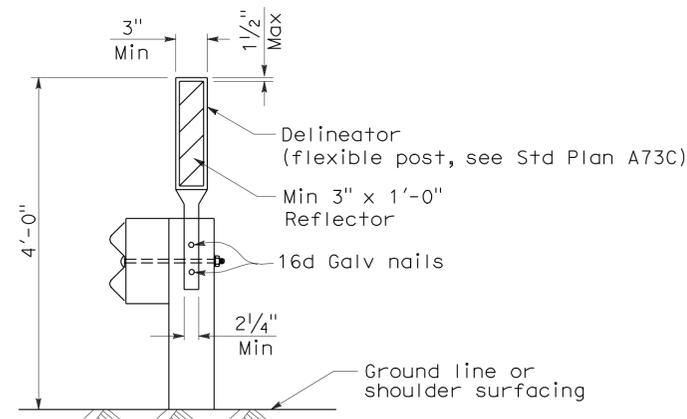
June 6, 2008  
PLANS APPROVAL DATE

*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.*

To accompany plans dated 6-21-10

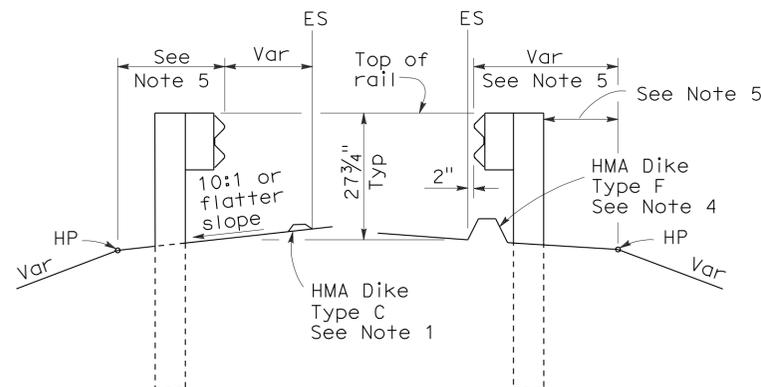
**NOTES:**

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and Standard Plan A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



**GUARD RAILING DELINEATION**

See Note 3



**DIKE POSITIONING**

See Note 1

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL RAILING DELINEATION  
AND DIKE POSITIONING DETAILS**

NO SCALE

RSP A77C4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77C4  
DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77C4**

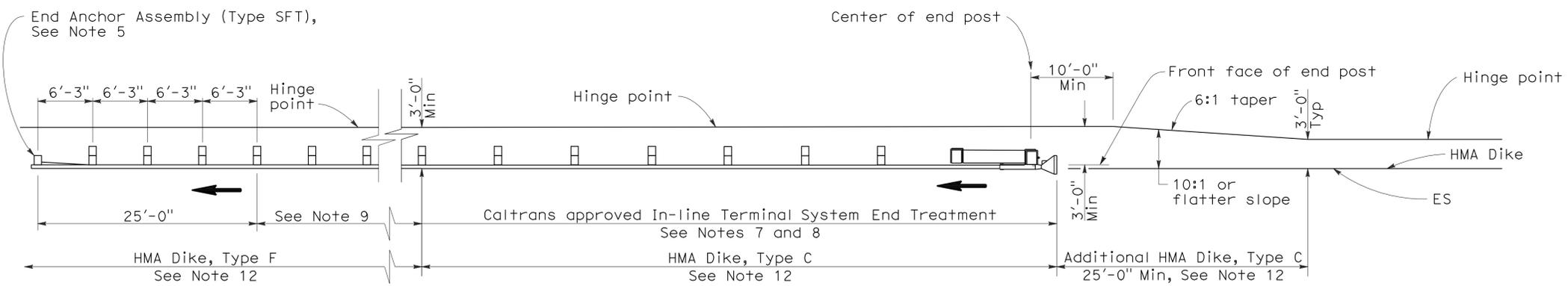
2006 REVISED STANDARD PLAN RSP A77C4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	27	57

RANDALL D. HIATT  
 REGISTERED CIVIL ENGINEER  
 No. C50200  
 Exp. 6-30-09  
 CIVIL  
 STATE OF CALIFORNIA

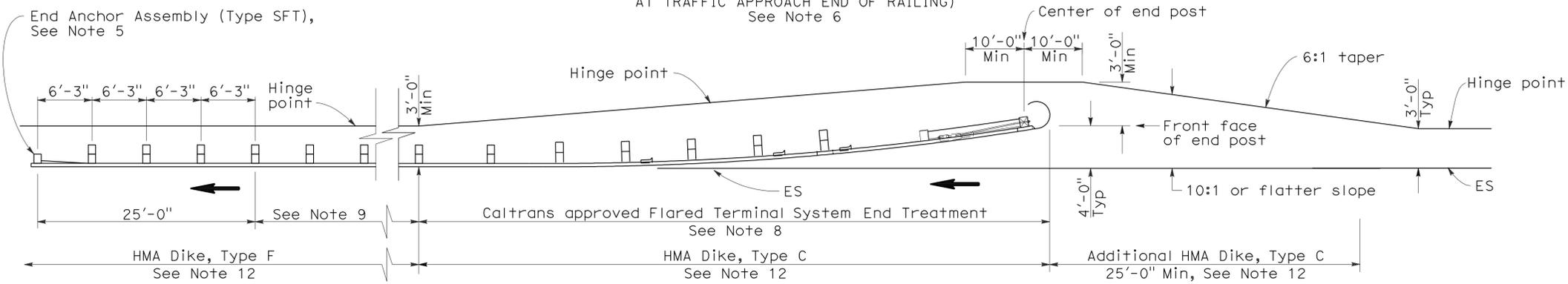
June 6, 2008  
 PLANS APPROVAL DATE

To accompany plans dated 6-21-10



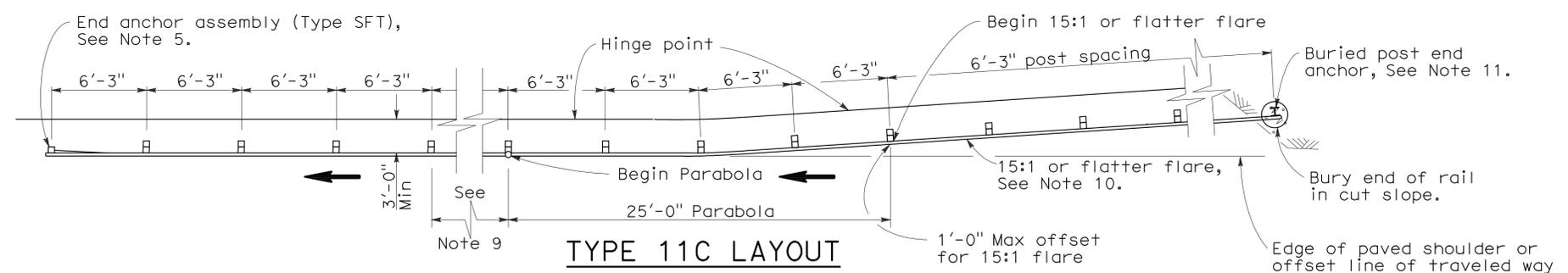
**TYPE 11A LAYOUT**

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Note 6



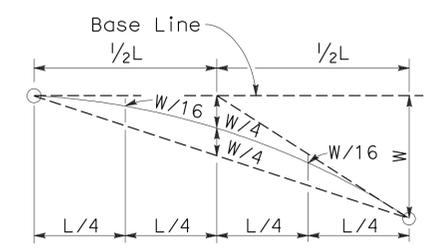
**TYPE 11B LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Note 6

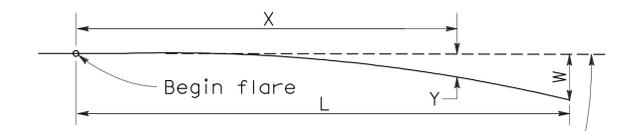


**TYPE 11C LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 6 and 12



**TYPICAL PARABOLIC LAYOUT**

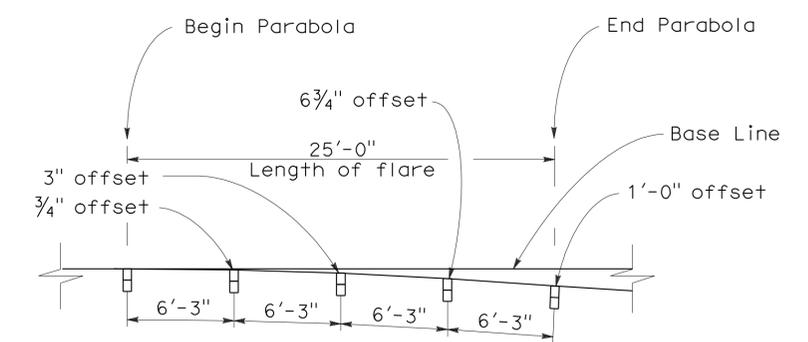


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line  
 W = Maximum offset  
 X = Distance along base line  
 L = Length of flare

**PARABOLIC FLARE OFFSETS**



**TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET**

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING**  
**TYPICAL LAYOUTS FOR EMBANKMENTS**  
NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1  
DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77E1**

2006 REVISED STANDARD PLAN RSP A77E1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	28	57

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

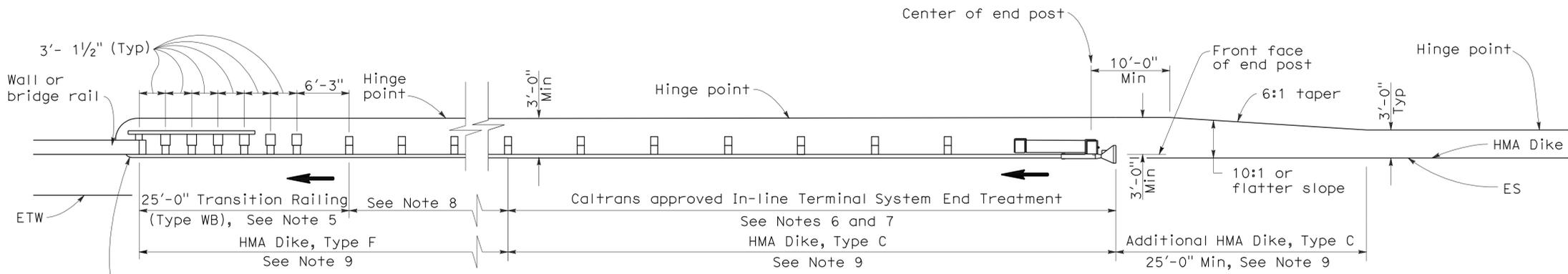
June 6, 2008  
PLANS APPROVAL DATE

*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

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

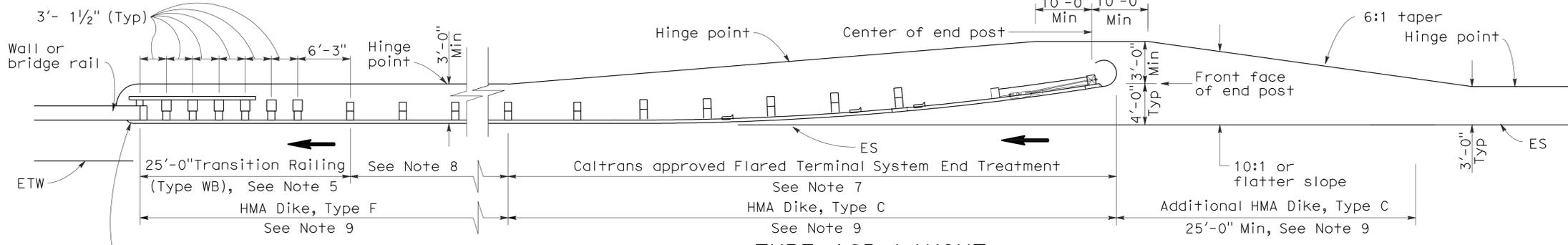
To accompany plans dated 6-21-10

2006 REVISED STANDARD PLAN RSP A77F1



**TYPE 12A LAYOUT**

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 10



**TYPE 12B LAYOUT**

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 10

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
  - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
  - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
  - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
  - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.

- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
STRUCTURE APPROACH**

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1  
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77F1**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	29	57

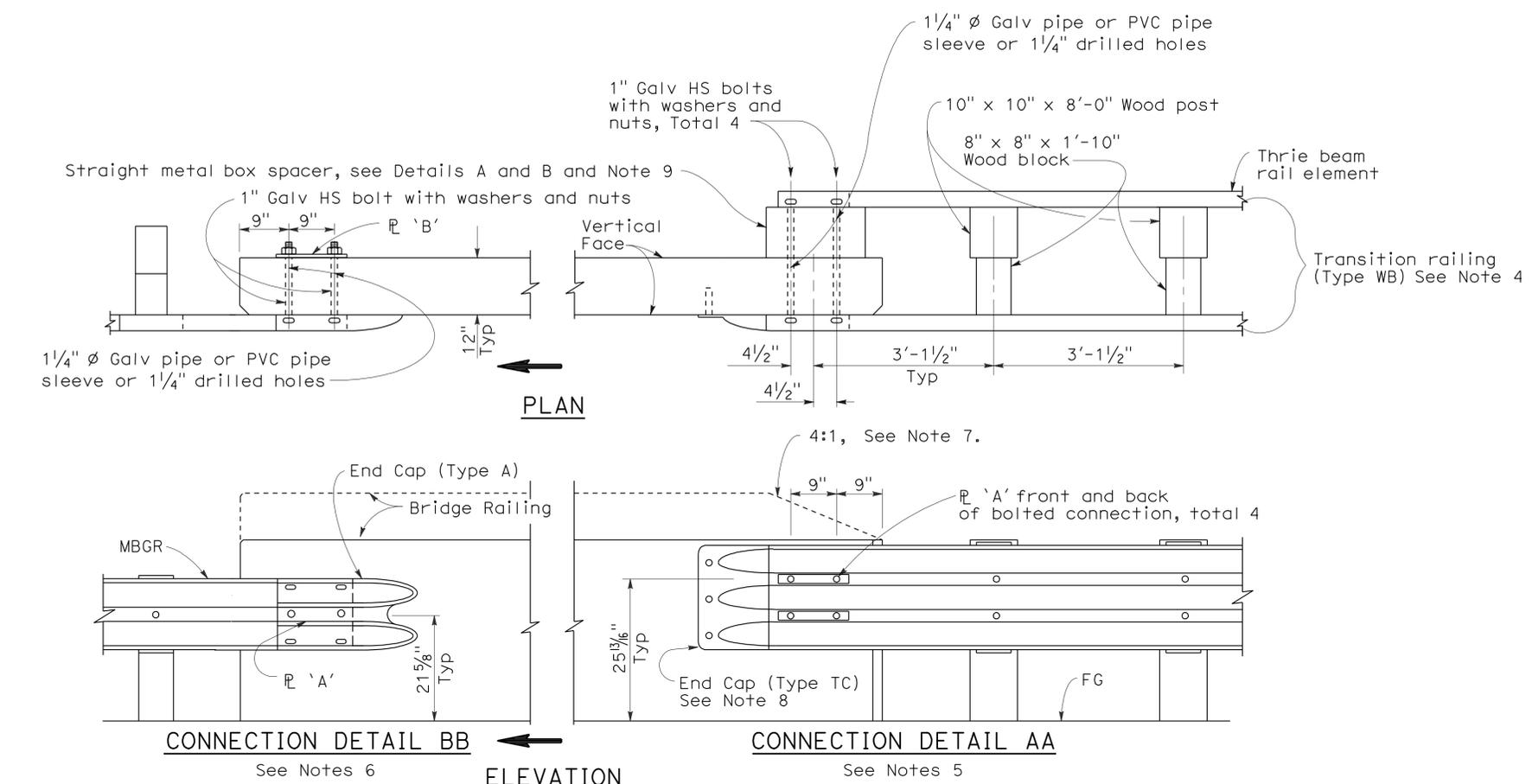
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
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  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

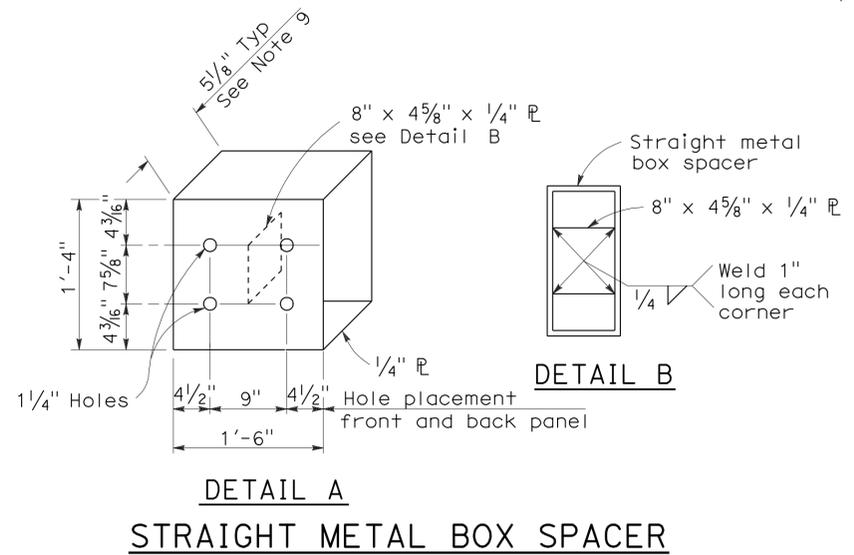
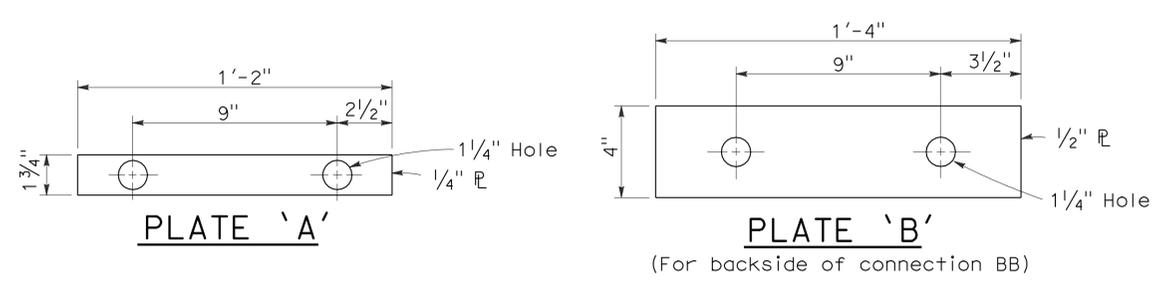
To accompany plans dated 6-21-10



**GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK**

**NOTES:**

1. See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by  $\rightarrow$ .
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
8. For details of End Cap (Type TC), see Standard Plan A77J4.
9. See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
CONNECTIONS TO  
BRIDGE RAILINGS  
WITHOUT SIDEWALKS  
DETAILS No.1**

NO SCALE

RSP A77J1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J1  
DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77J1**

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	30	57

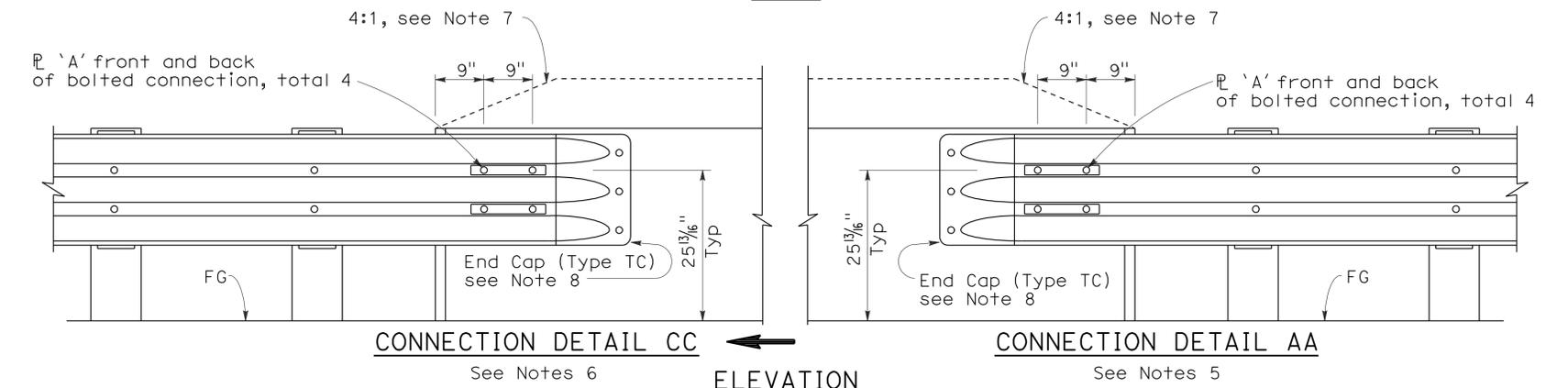
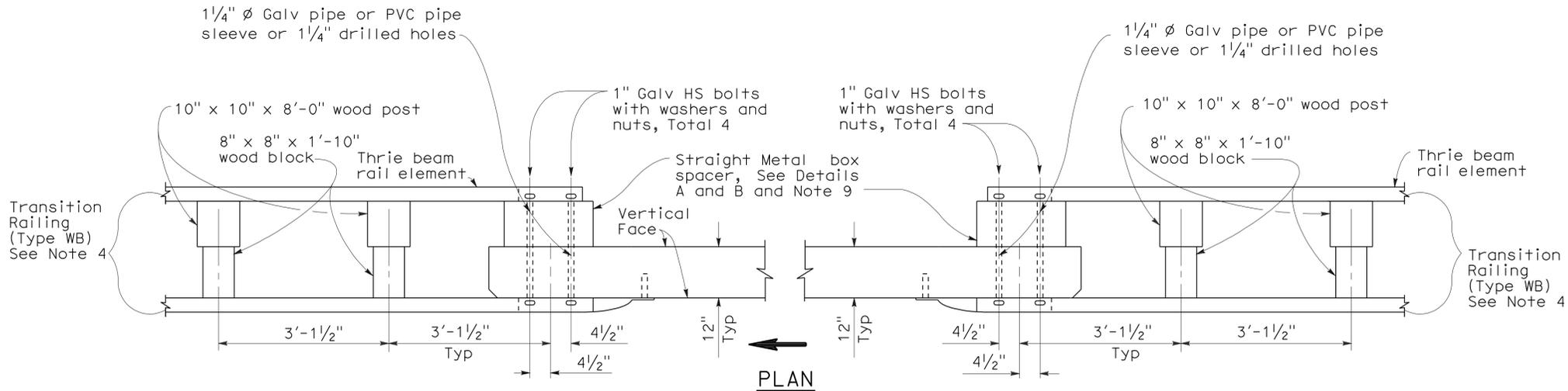
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

June 6, 2008  
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  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

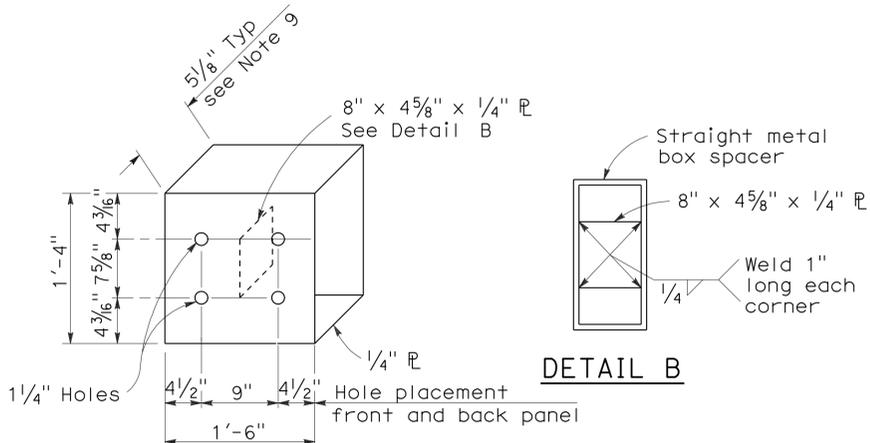
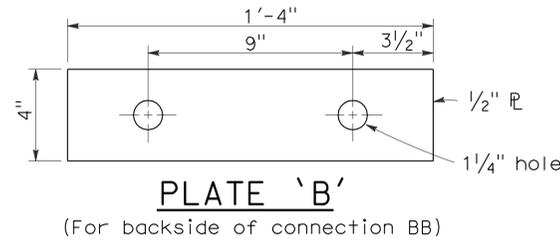
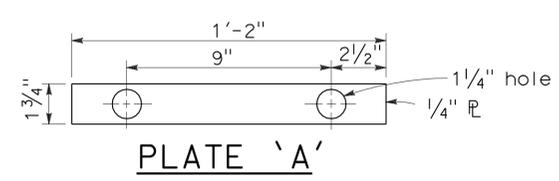
To accompany plans dated 6-21-10



**GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK**

**NOTES:**

1. See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by →.
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
8. For details of End Cap (Type TC), see Standard Plans A77J4.
9. See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



**DETAIL A  
STRAIGHT METAL BOX SPACER**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
CONNECTIONS TO BRIDGE RAILINGS  
WITHOUT SIDEWALKS DETAILS No.2**

NO SCALE  
RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2  
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77J2**

2006 REVISED STANDARD PLAN RSP A77J2

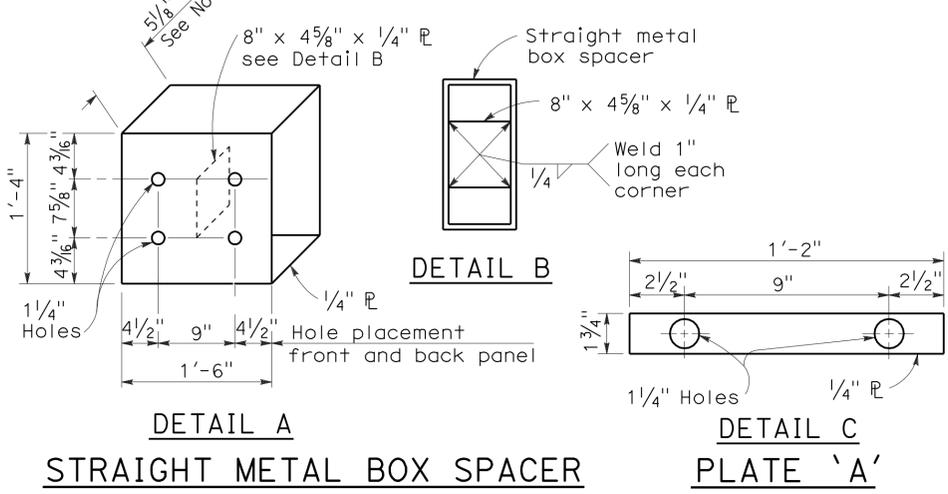
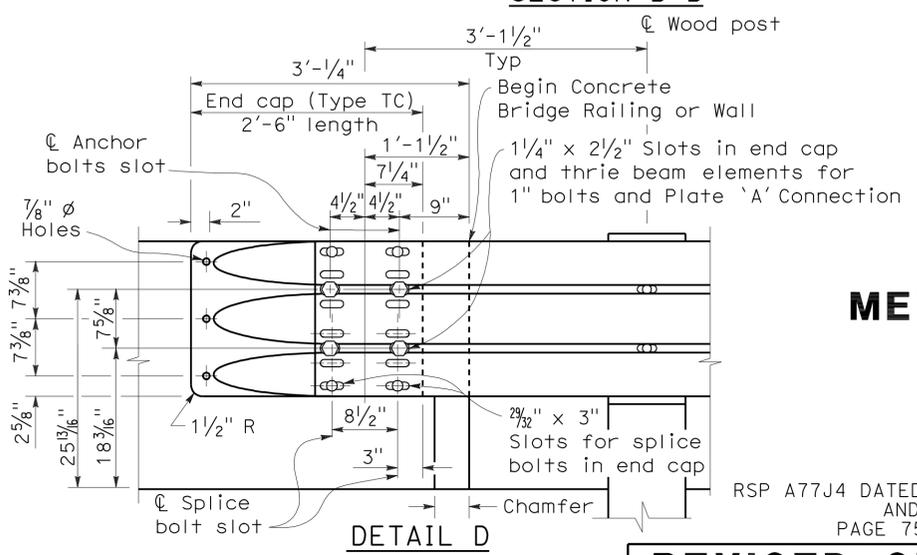
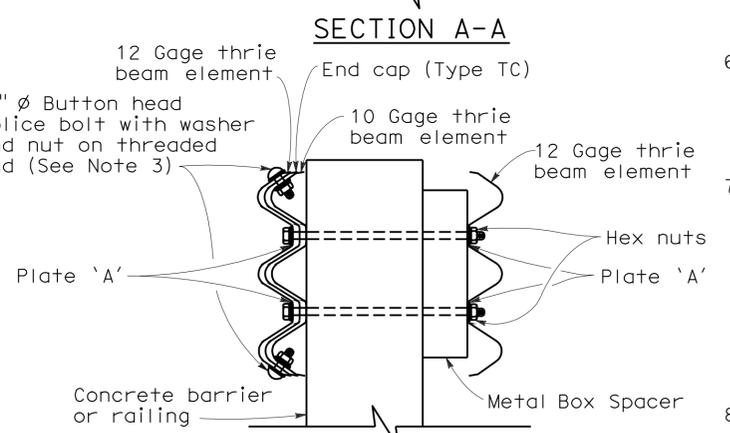
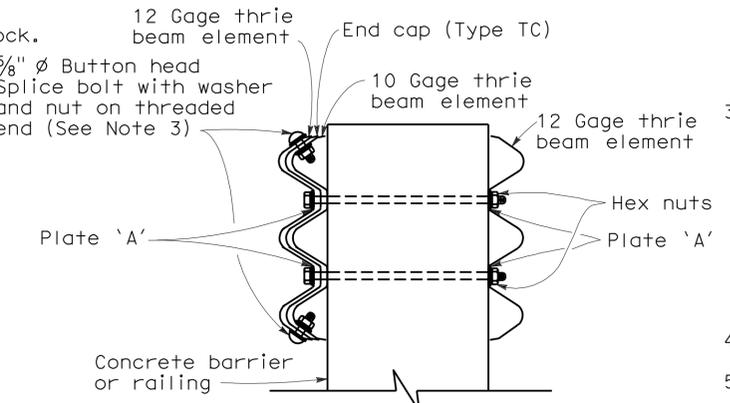
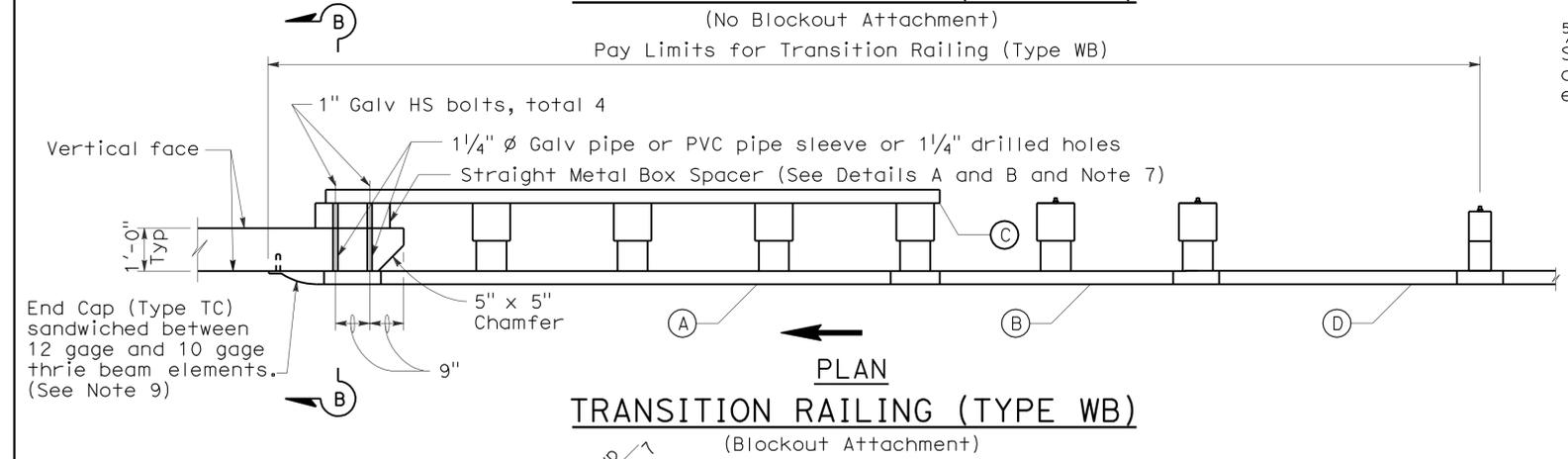
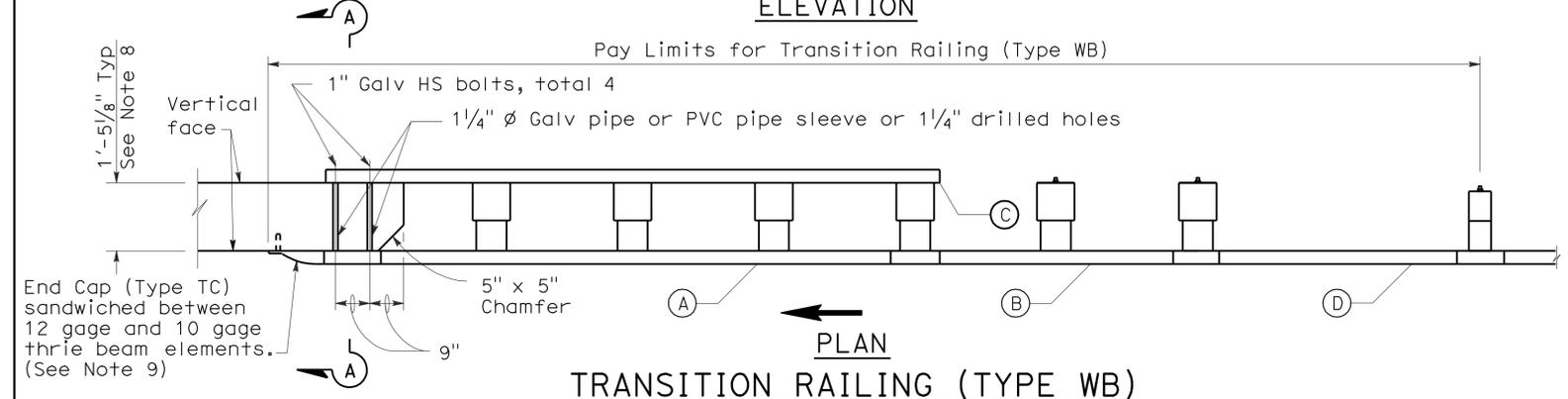
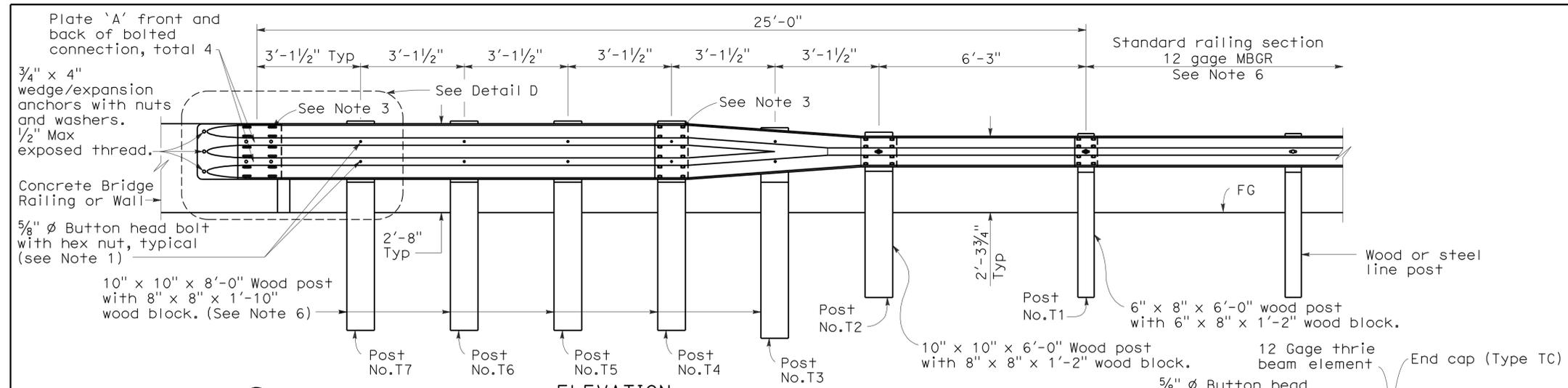
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	31	57

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

June 5, 2009  
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  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA



- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
  - (B) One 10 gage "W" beam to thrie beam element.
  - (C) One 12 gage thrie beam element.
  - (D) One 10 gage "W" beam rail element (7'-3 1/2" length)
- 10 gage = 0.135" thick  
12 gage = 0.108" thick

- NOTES:** To accompany plans dated 6-21-10
1. Use 5/8" ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
  2. The nested rail elements, end cap, and "W" beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
  3. Exterior splice bolt holes for rail element splices at Post No. T4 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
  4. Direction of adjacent traffic indicated by →.
  5. The top elevation of Post Nos. T2 through T7 shall not project more than 1" above the top elevation of the rail element.
  6. Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing or an approved Caltrans end treatment attached to Post No. T1.
  7. The depth of the metal box spacer varies from the 5 1/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
  8. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. 4 through No. 7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
  9. End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.

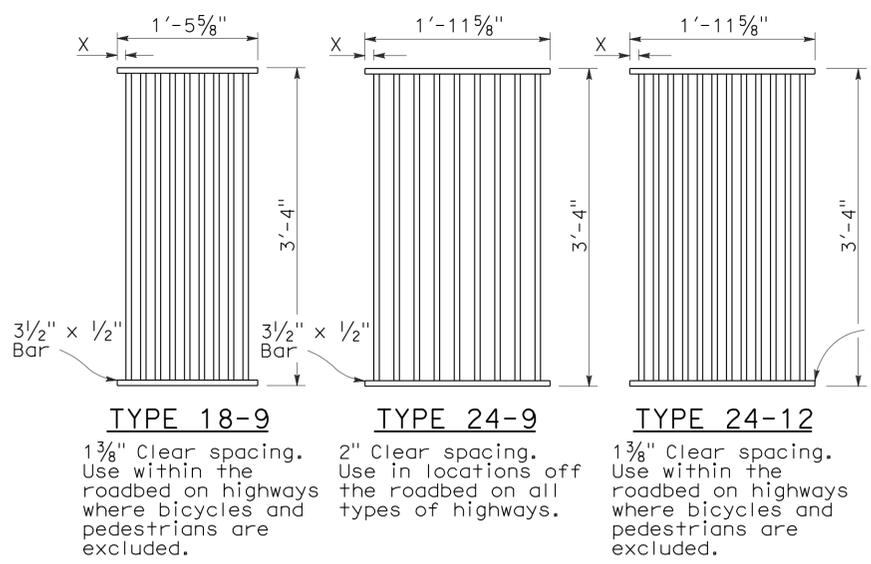
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TRANSITION RAILING  
(TYPE WB)**

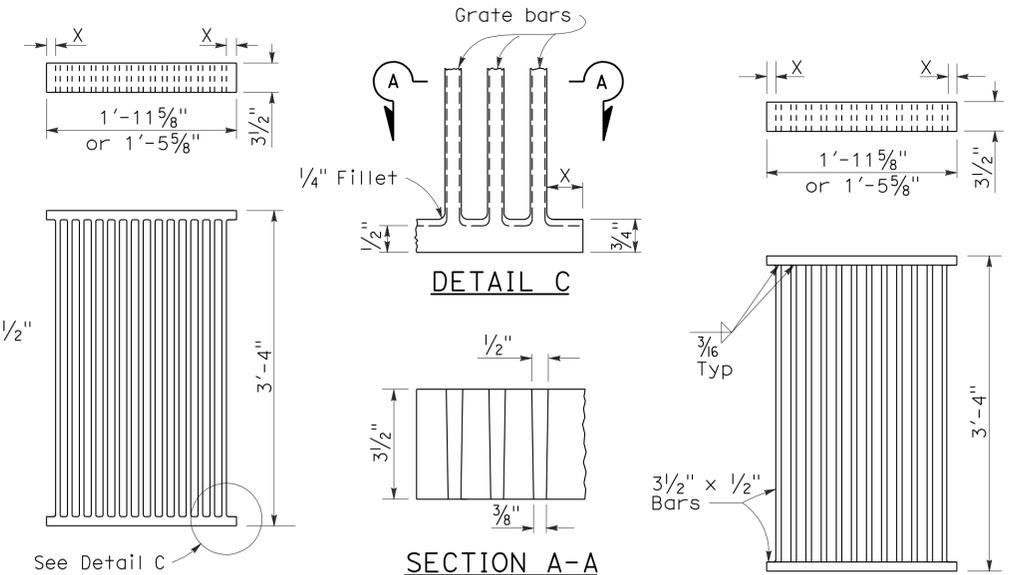
NO SCALE

RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008  
AND STANDARD PLAN A77J4 DATED MAY 1, 2006 -  
PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

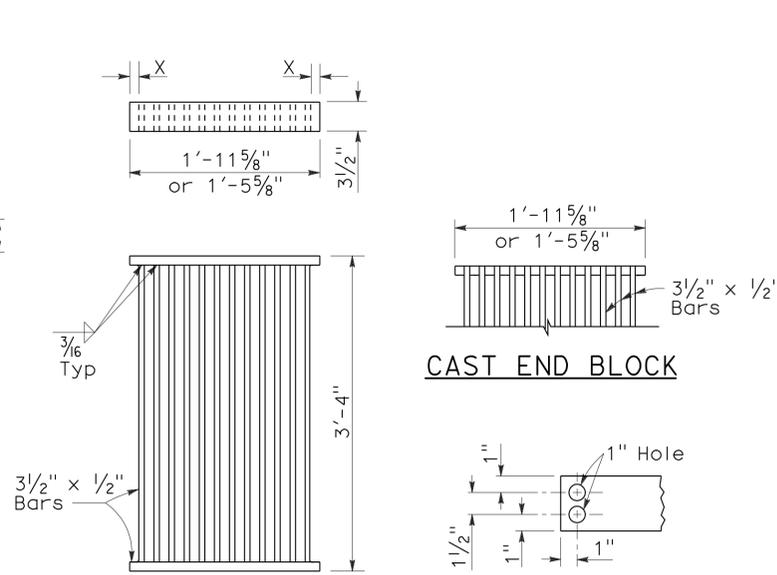
2006 REVISED STANDARD PLAN RSP A77J4



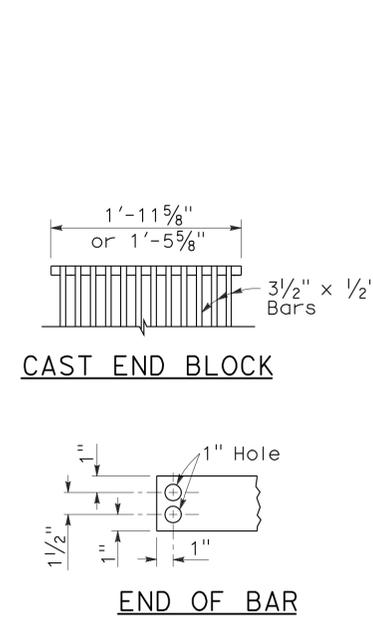
**RECTANGULAR GRATE DETAILS**  
(See table below)



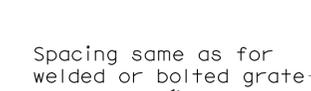
**ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE**



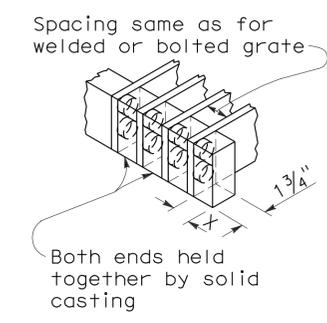
**ALTERNATIVE WELDED GRATE**



**CAST END BLOCK**

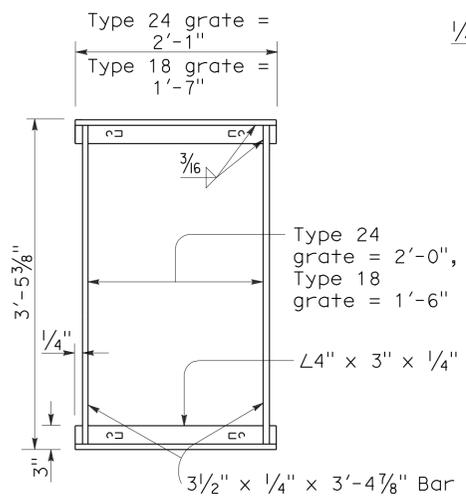


**END OF BAR**

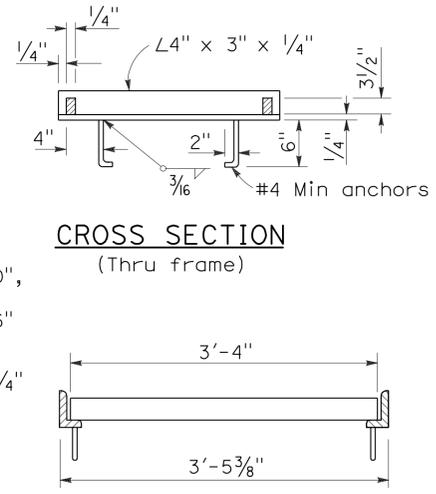


**ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE**

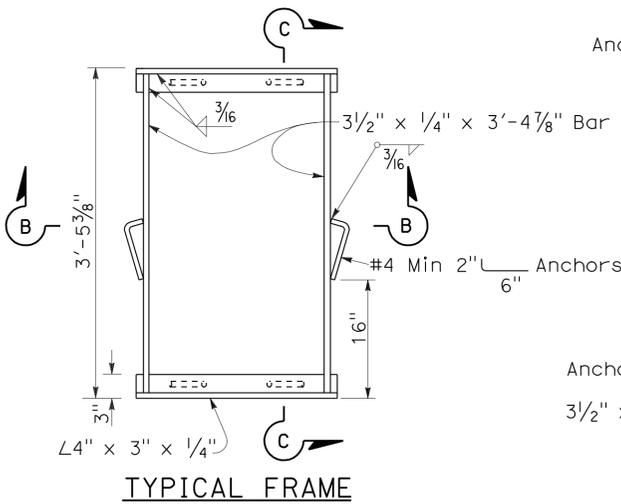
- NOTES:**
1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
  2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
  3. See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of grates and frames.
  4. Rounded top of bars optional on all grates.
  5. Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
  6. Full penetration butt welds may be substituted for the fillet welds on all anchors.
  7. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
  8. Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).



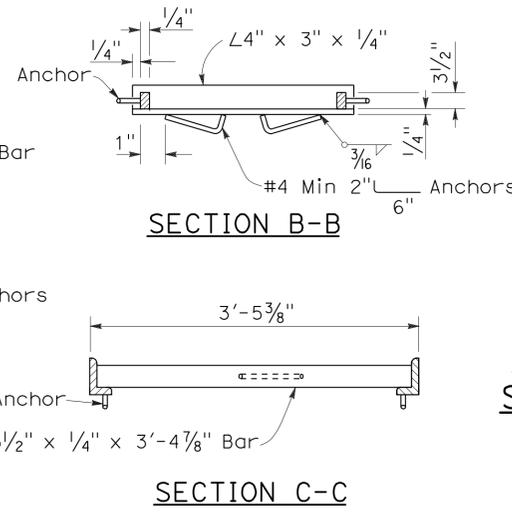
**TYPICAL FRAME**



**LONGITUDINAL SECTION**  
(Thru frame and grate)



**ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME**  
(For details not shown, See Rectangular Frame Details)



**SECTION B-B**

**SECTION C-C**

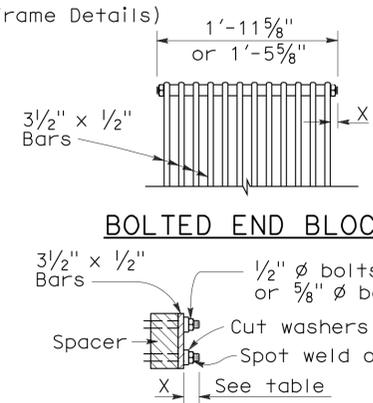
**RECTANGULAR FRAME DETAILS**  
(For all rectangular grates)

**GRATE BAR SPACING TABLE**

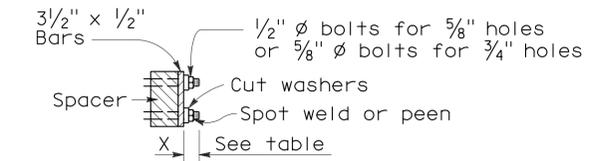
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22

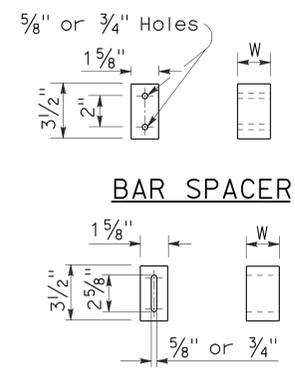


**BOLTED END BLOCK**



**BOLTING DETAIL**

**ALTERNATIVE BOLTED GRATE**



**BAR SPACER**

**ALTERNATIVE SPACER**  
W = 1 3/8" or 2"

**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**

(See General Notes, No 8)

**REVISED STANDARD PLAN RSP D77A**

2006 REVISED STANDARD PLAN RSP D77A

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
GRATE DETAILS  
NO SCALE  
RSP D77A DATED JANUARY 18, 2008 SUPERSEDES STANDARD PLAN D77A  
DATED MAY 1, 2006 - PAGE 155 OF THE STANDARD PLANS BOOK DATED MAY 2006.

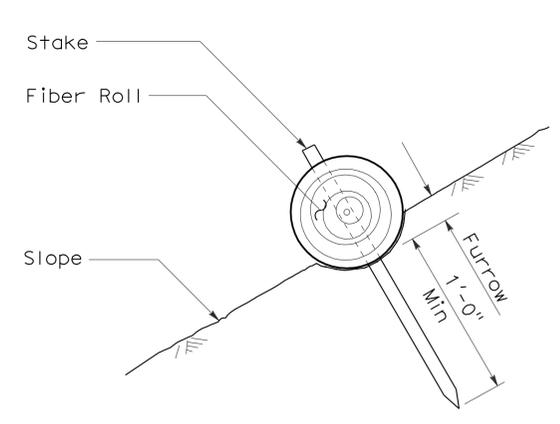
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	33	57

*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 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.

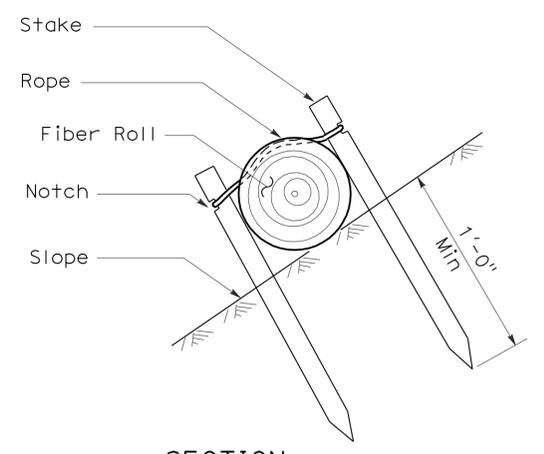
To accompany plans dated 6-21-10

**NOTES:**

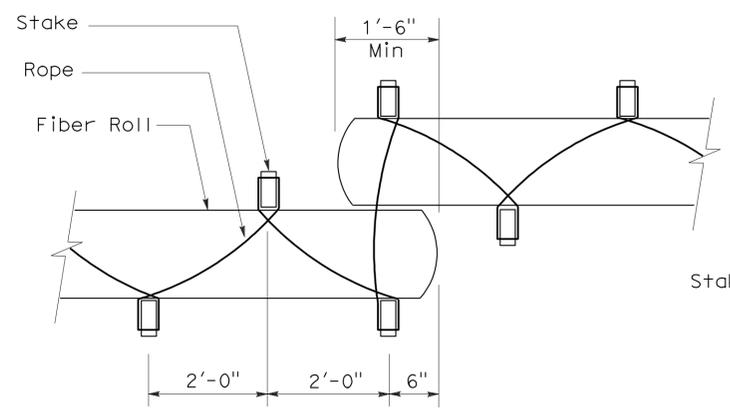
1. Fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



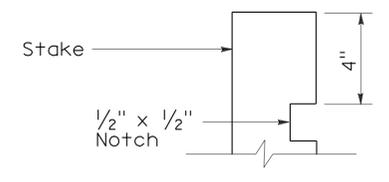
**SECTION**  
**FIBER ROLL**  
**(TYPE 1)**



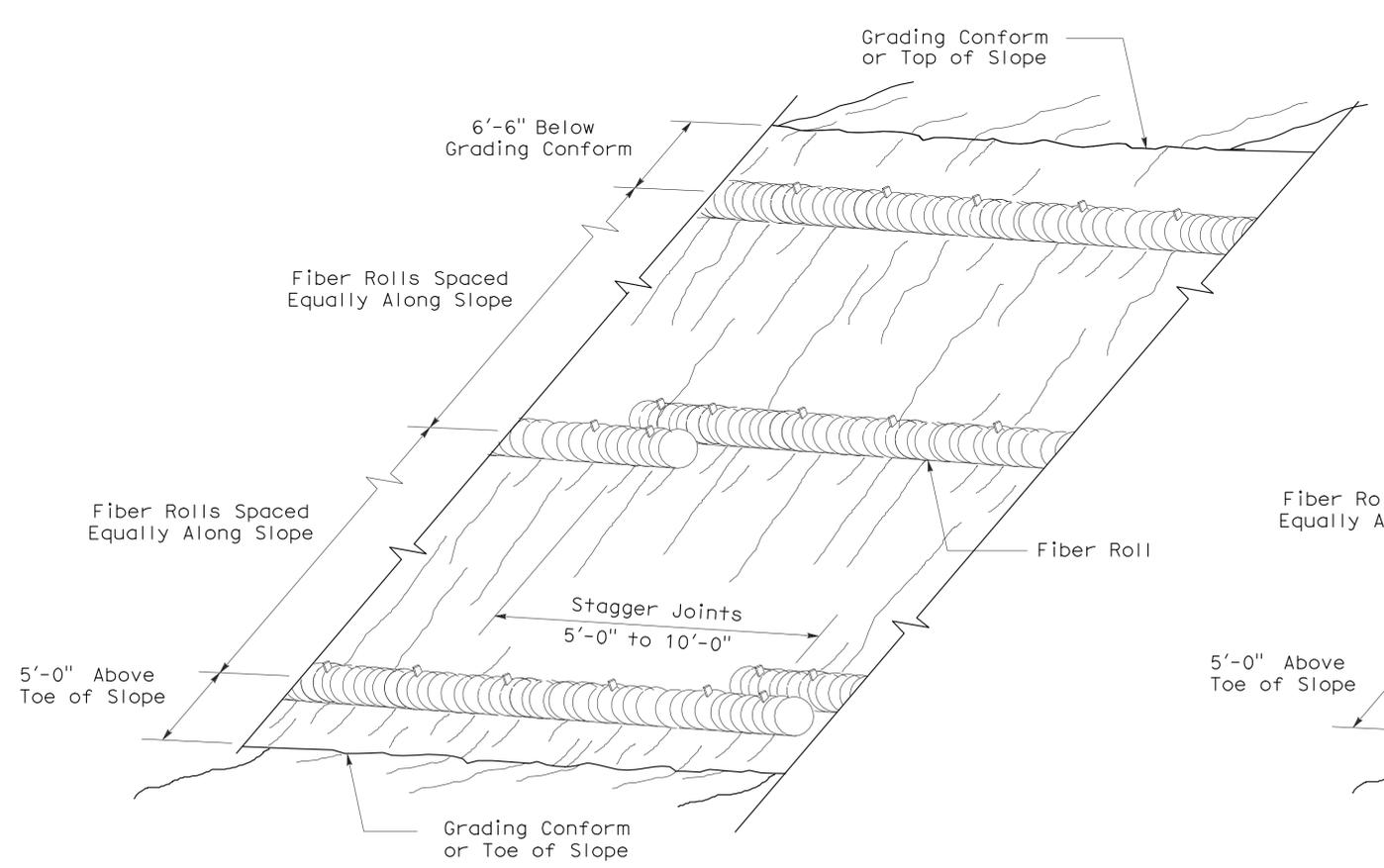
**SECTION**



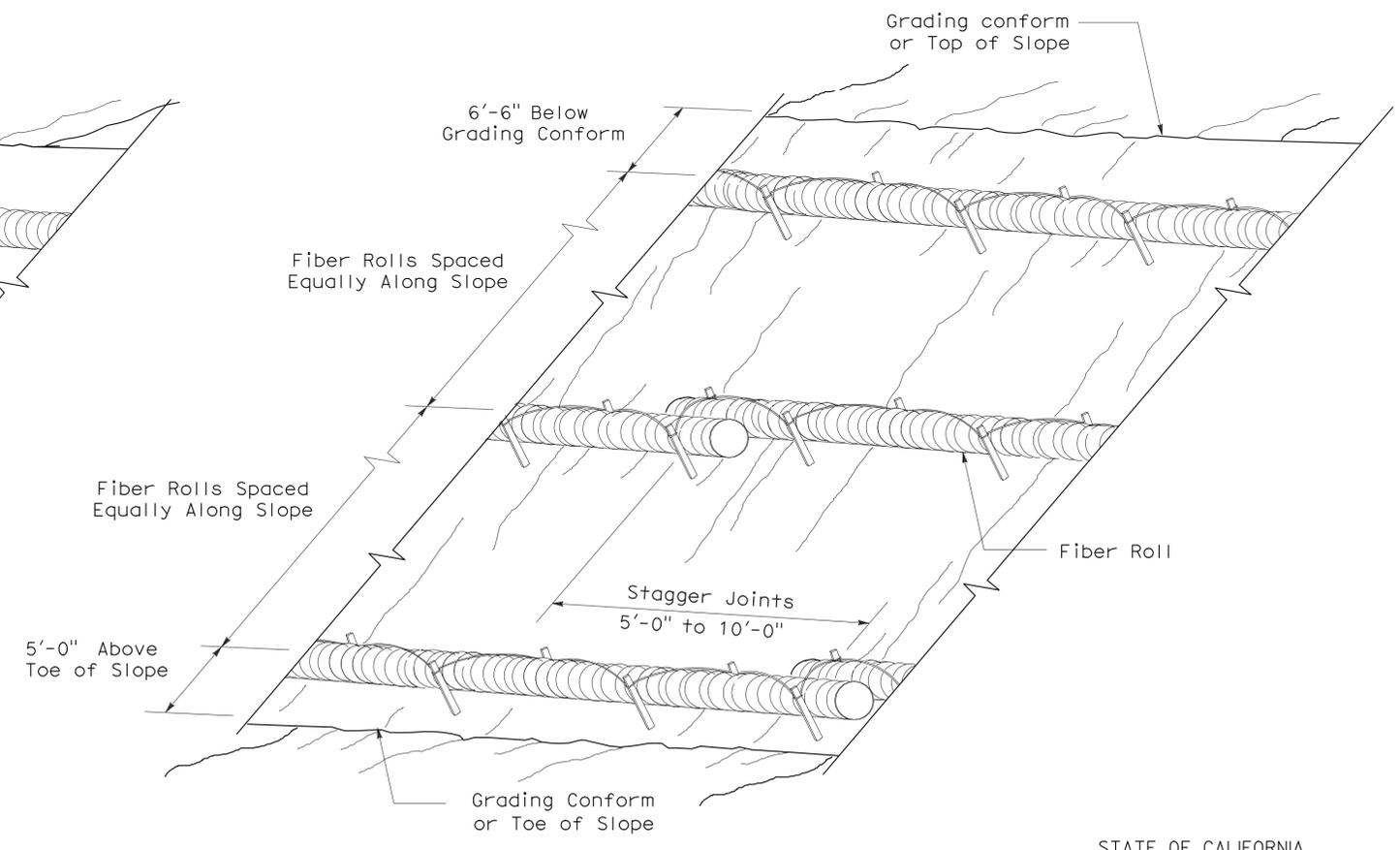
**PLAN**



**ELEVATION**  
**STAKE NOTCH DETAIL**



**PERSPECTIVE**  
**FIBER ROLL (TYPE 1)**



**PERSPECTIVE**  
**FIBER ROLL (TYPE 2)**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**EROSION CONTROL DETAILS**  
**(FIBER ROLL)**

NO SCALE

RNSP H51 DATED APRIL 3, 2009 SUPERSEDES NSP H51 DATED DECEMBER 1, 2006 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED NEW STANDARD PLAN RNSP H51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	34	57

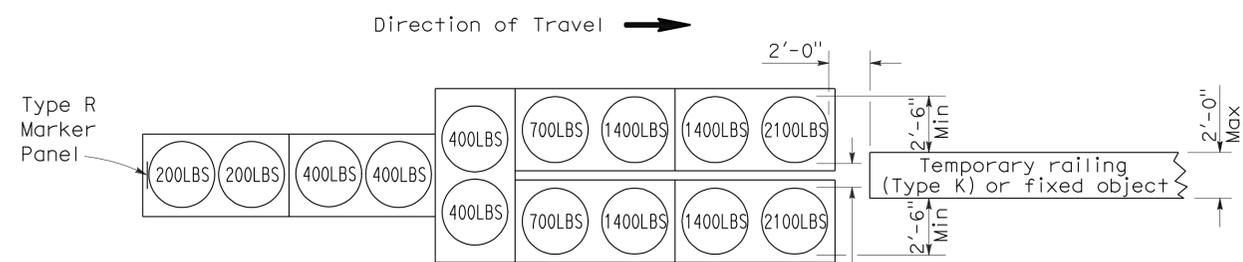
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
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.*

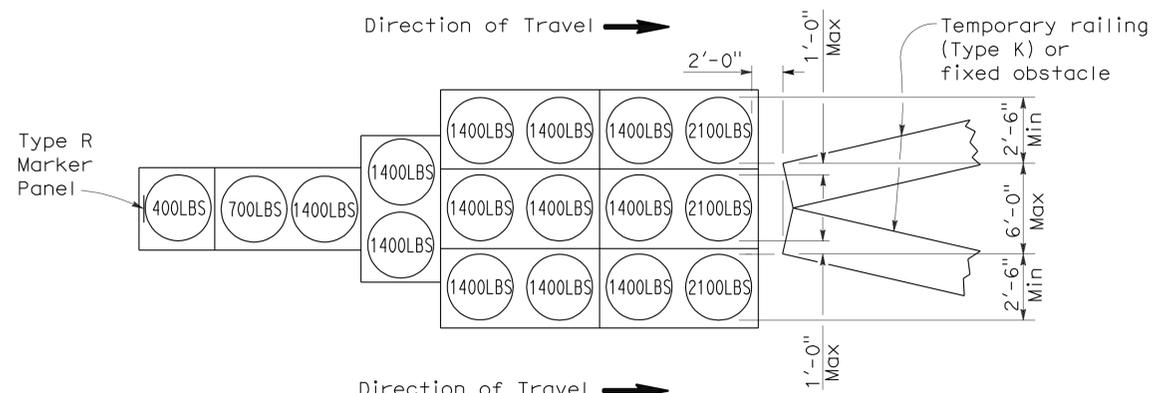
REGISTERED PROFESSIONAL ENGINEER  
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 6-21-10



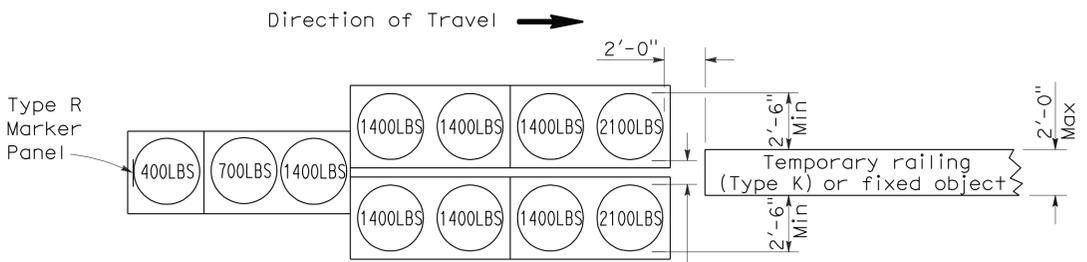
**ARRAY 'TU14'**

Approach speed 45 mph or more



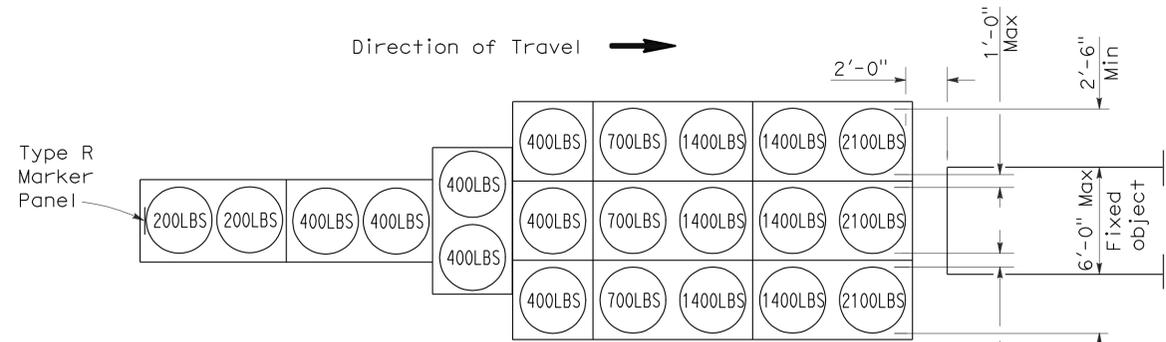
**ARRAY 'TU17'**

Approach speed less than 45 mph



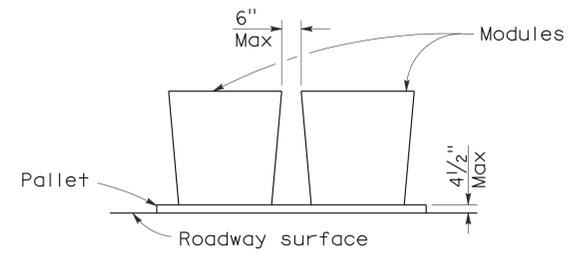
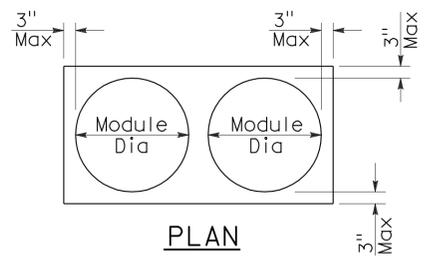
**ARRAY 'TU11'**

Approach speed less than 45 mph



**ARRAY 'TU21'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the top of Type R marker panel 1" below the module lid.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A  
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T1A**

2006 REVISED STANDARD PLAN RSP T1A

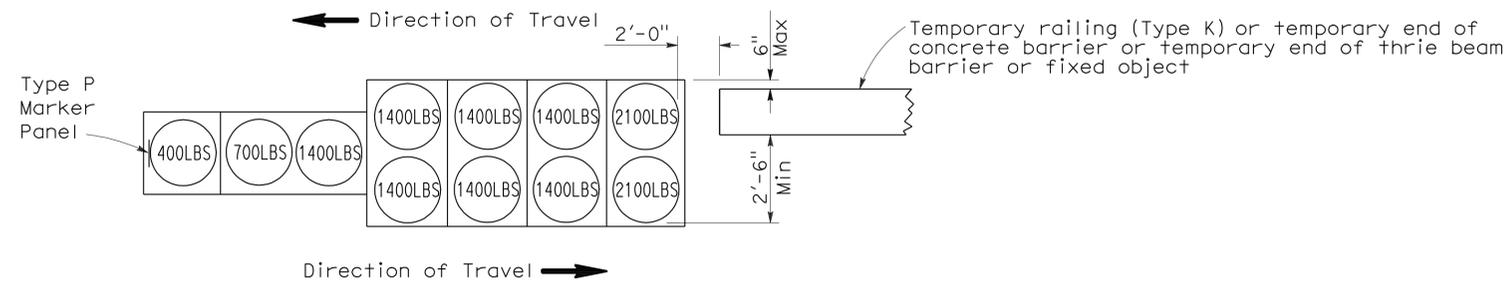
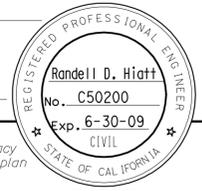
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	35	57

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

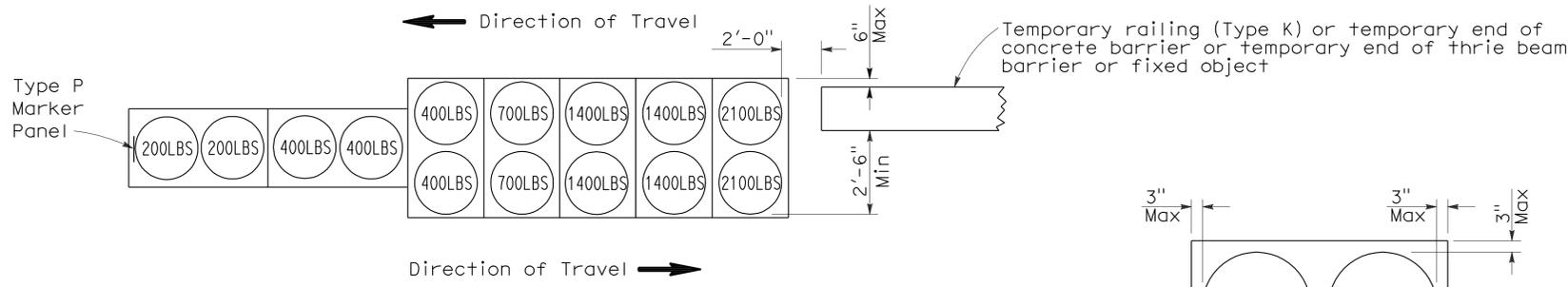
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 6-21-10



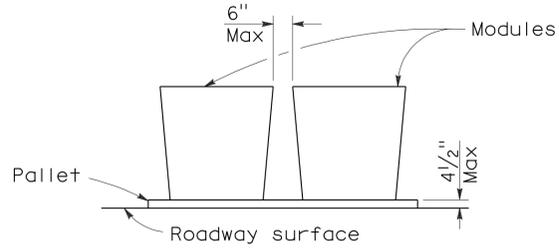
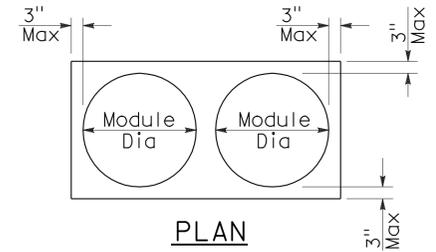
**ARRAY 'TB11'**

Approach speed less than 45 mph



**ARRAY 'TB14'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(BIDIRECTIONAL)**  
NO SCALE

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B  
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B



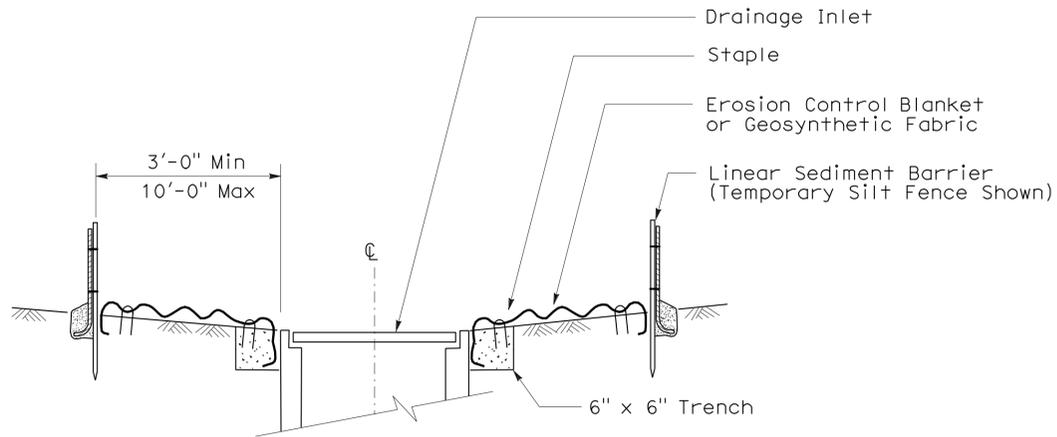
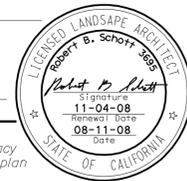
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	37	57

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT

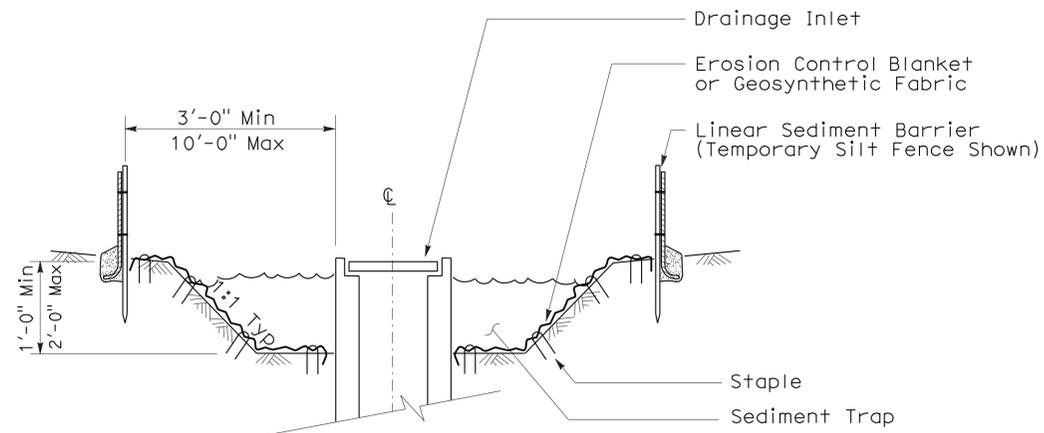
August 15, 2008  
 PLANS Approval DATE

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.

To accompany plans dated 6-21-10



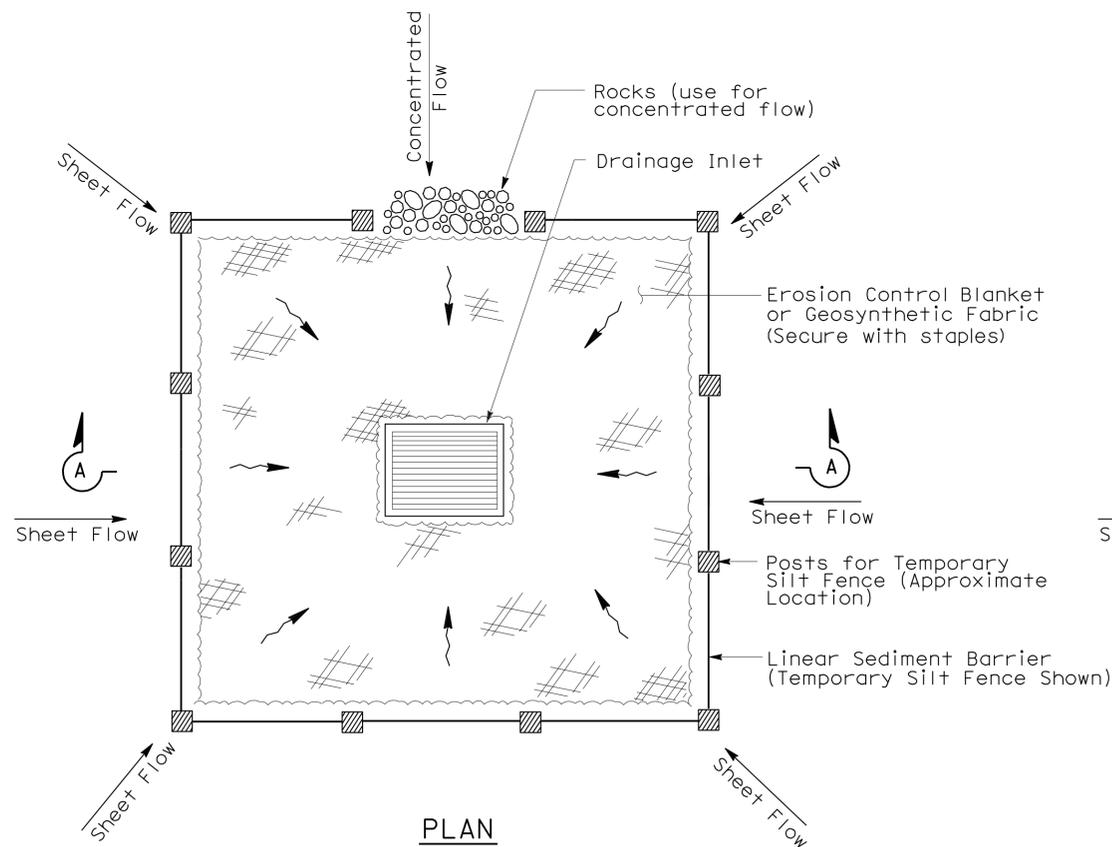
SECTION A-A



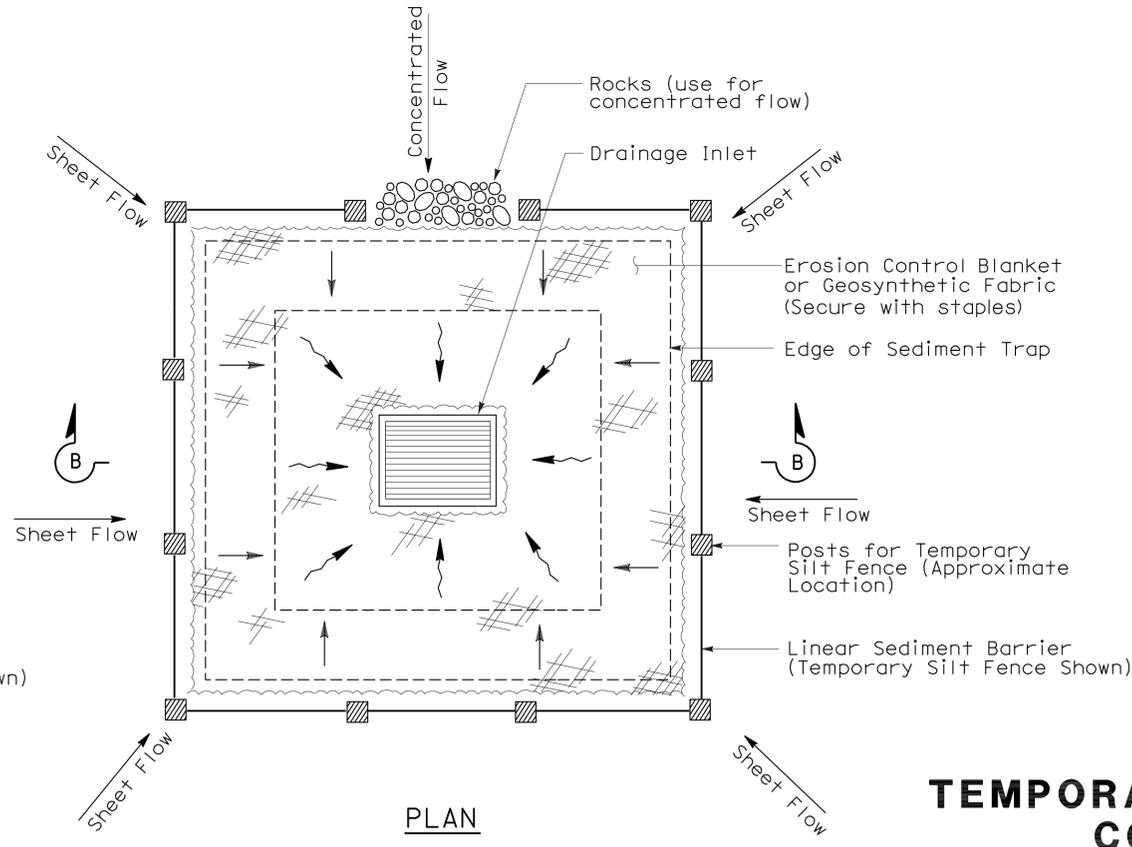
SECTION B-B

**NOTES:**

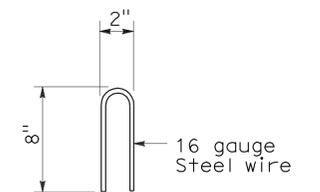
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 2) (EXCAVATED SEDIMENT TRAP)



STAPLE DETAIL

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY DRAINAGE INLET PROTECTION)**

NO SCALE

NSP T61 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	38	57

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 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.

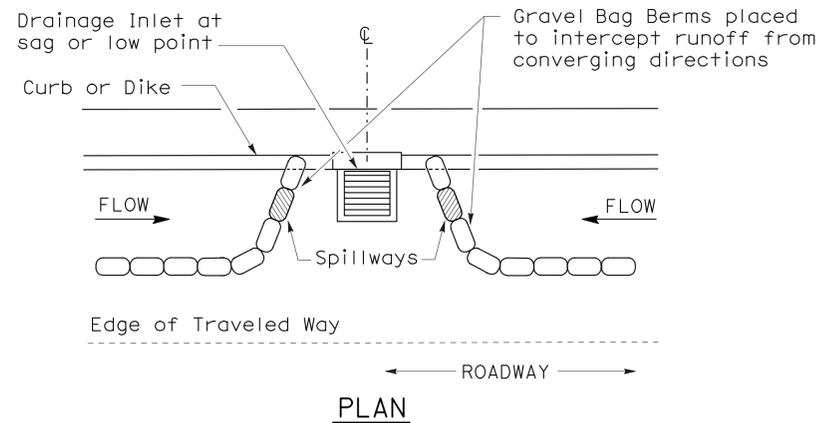
To accompany plans dated 6-21-10

2006 NEW STANDARD PLAN NSP T62

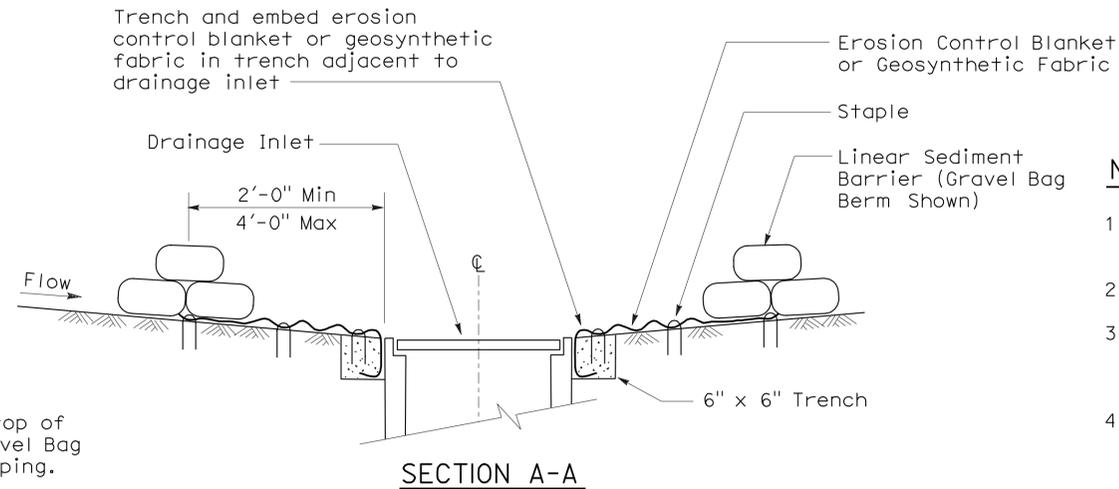
**GRAVEL BAG BERM (TYPE 3A) SPACING TABLE**

SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent



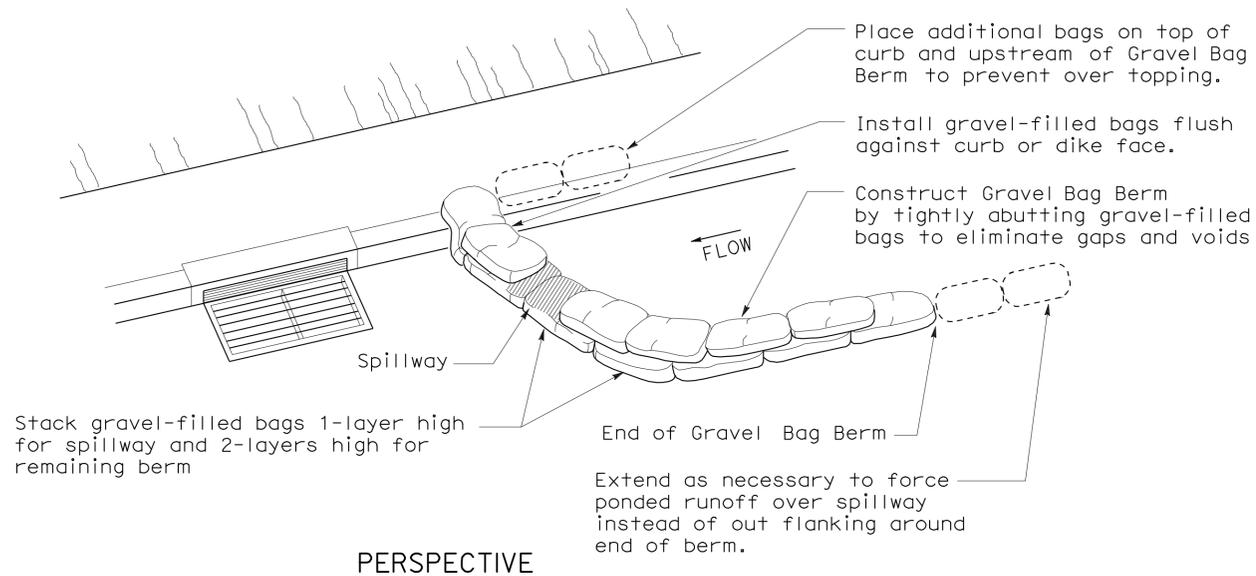
**PLAN**  
**CONFIGURATION FOR SAG POINT INLET**  
**(GRAVEL BAG BERM)**



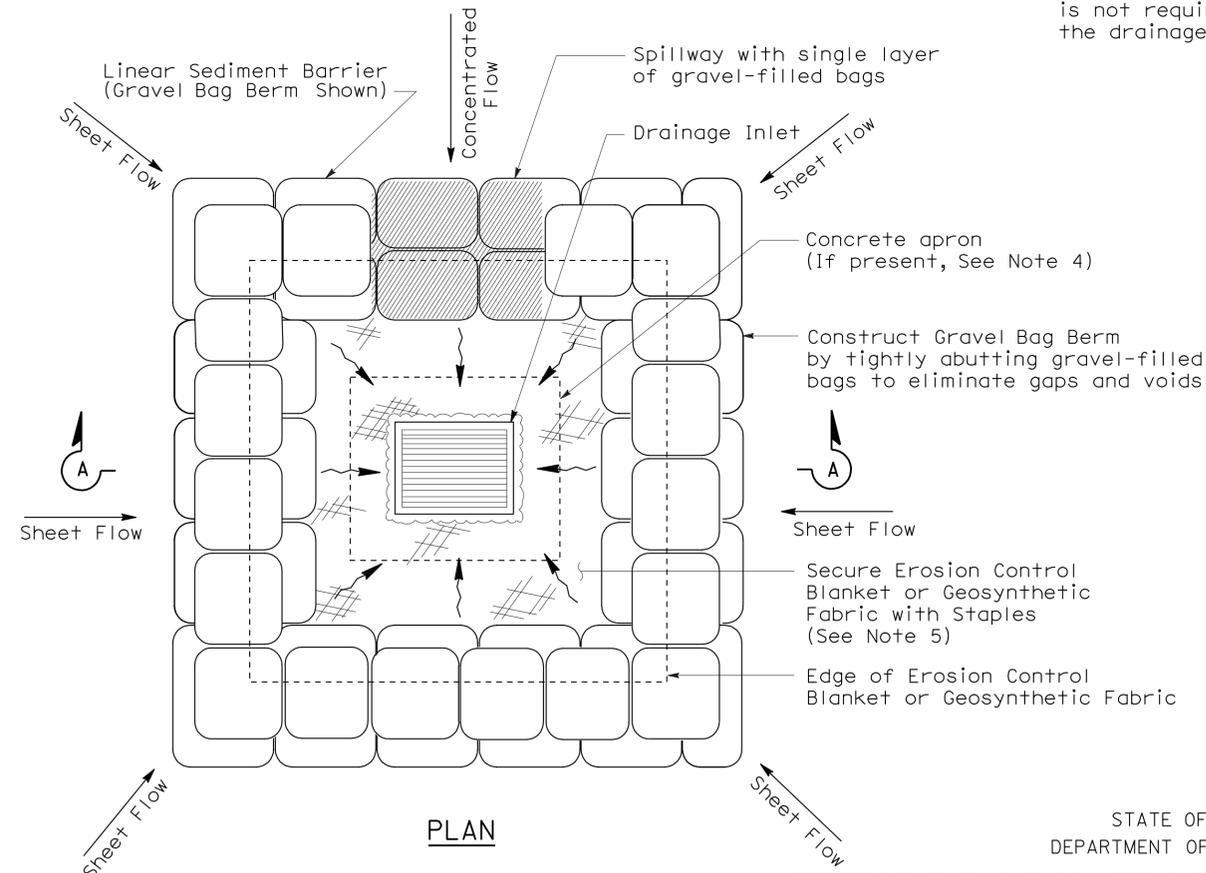
**SECTION A-A**

**NOTES:**

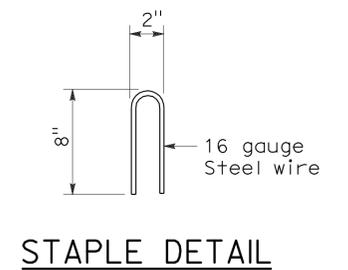
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated or paved.



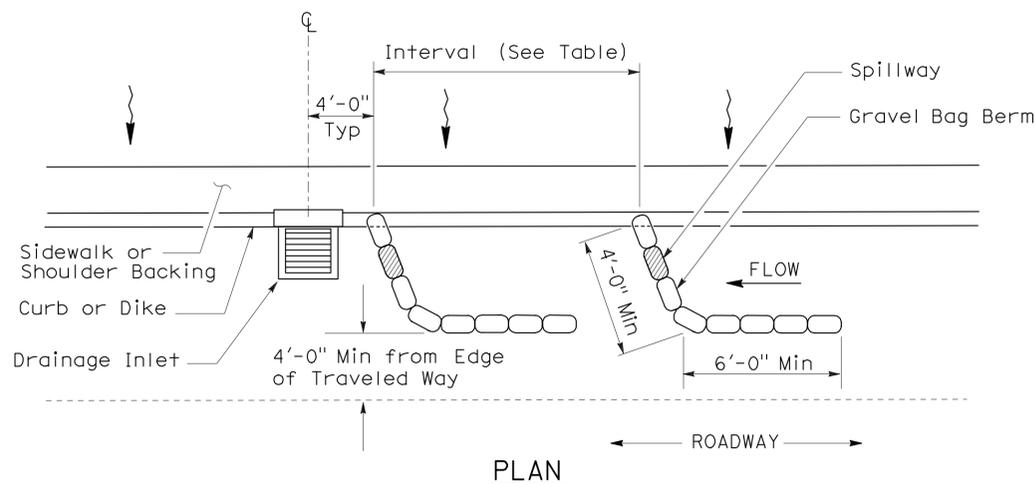
**PERSPECTIVE**



**PLAN**  
**TEMPORARY DRAINAGE**  
**INLET PROTECTION (TYPE 3B)**



**STAPLE DETAIL**



**PLAN**  
**TEMPORARY DRAINAGE**  
**INLET PROTECTION (TYPE 3A)**  
**(GRAVEL BAG BERM)**

**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY DRAINAGE INLET PROTECTION)**

NO SCALE  
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

FLEXIBLE SEDIMENT BARRIER SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	0 to 0.9	1 to 1.9	2 to 2.9	3 to 4	5+
INTERVAL BETWEEN BARRIERS	50'	35'	30'	25'	20'
ANGLE FROM FACE OF CURB	70°	70°	70°	45°	45°
SUGGESTED BARRIER LENGTH	6'	6'	6'	6'	6'

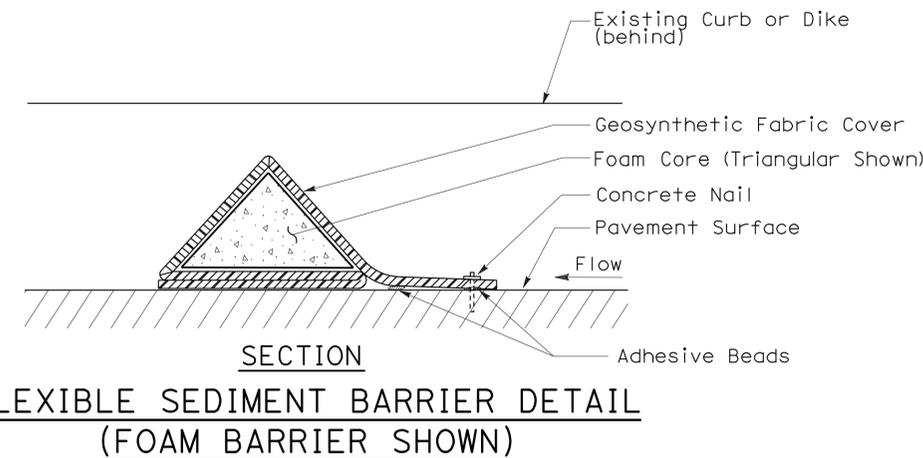
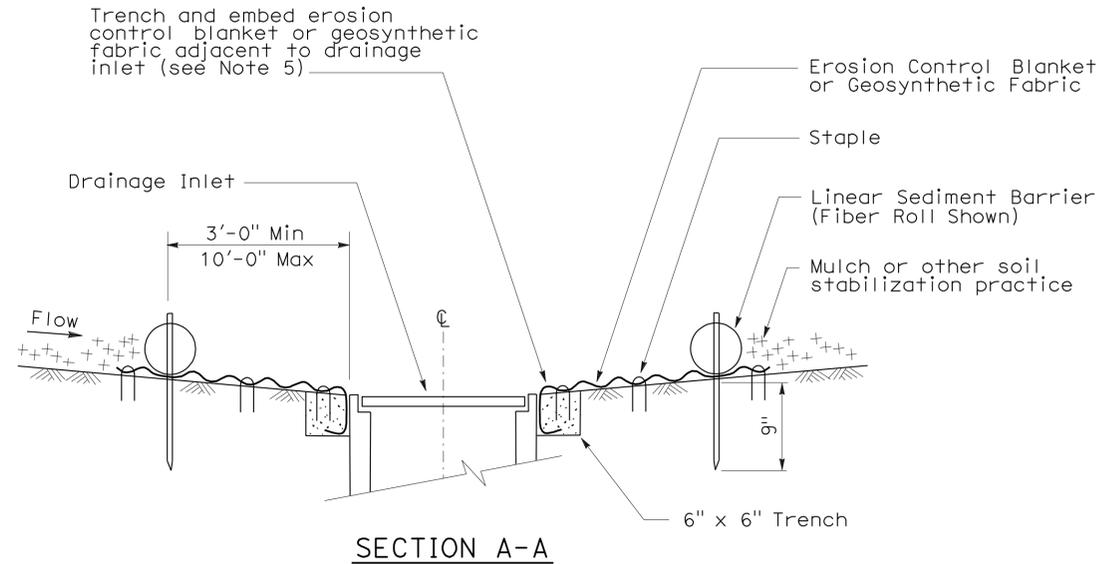
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	39	57

Robert B. Schott  
 LICENSED LANDSCAPE ARCHITECT

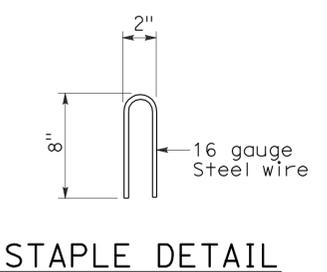
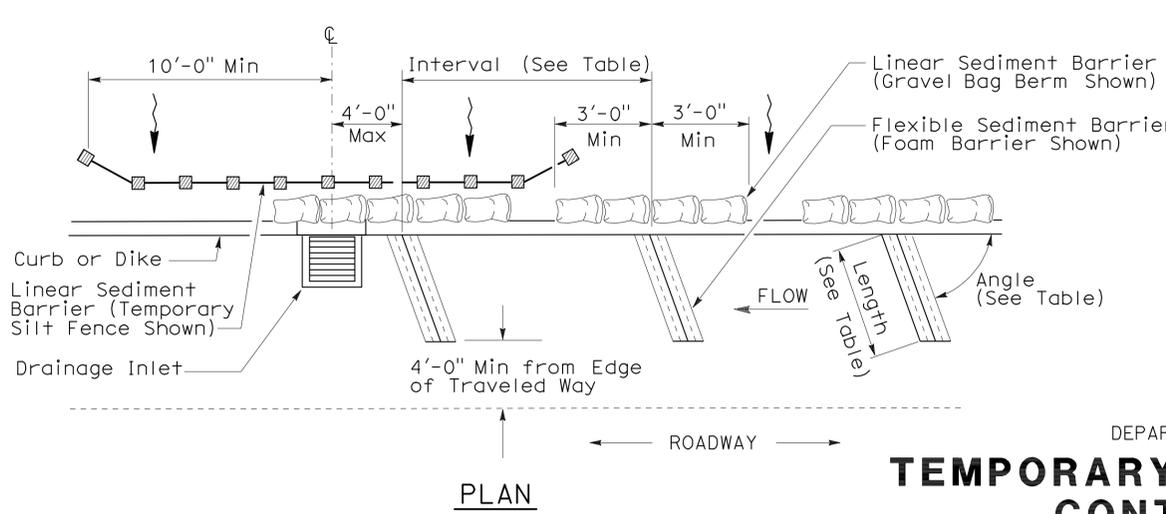
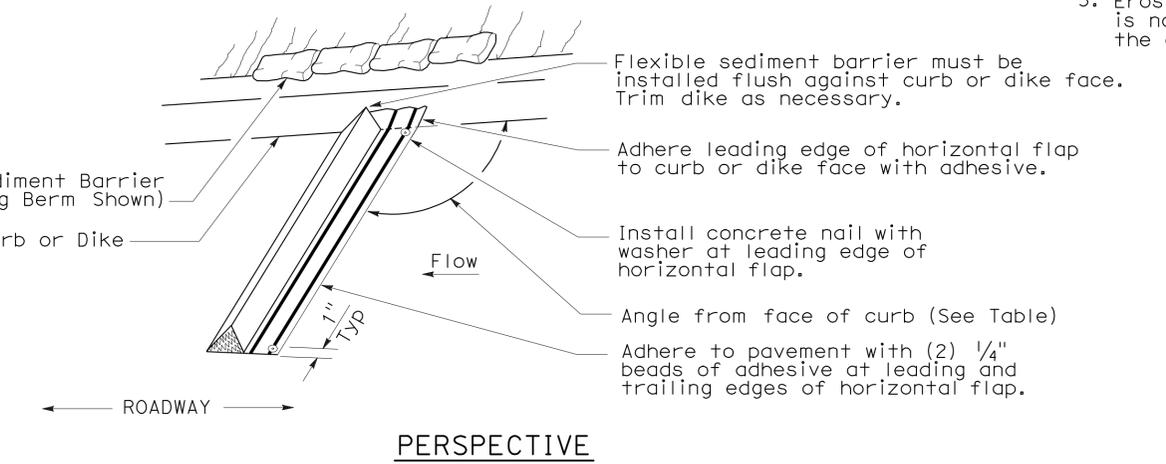
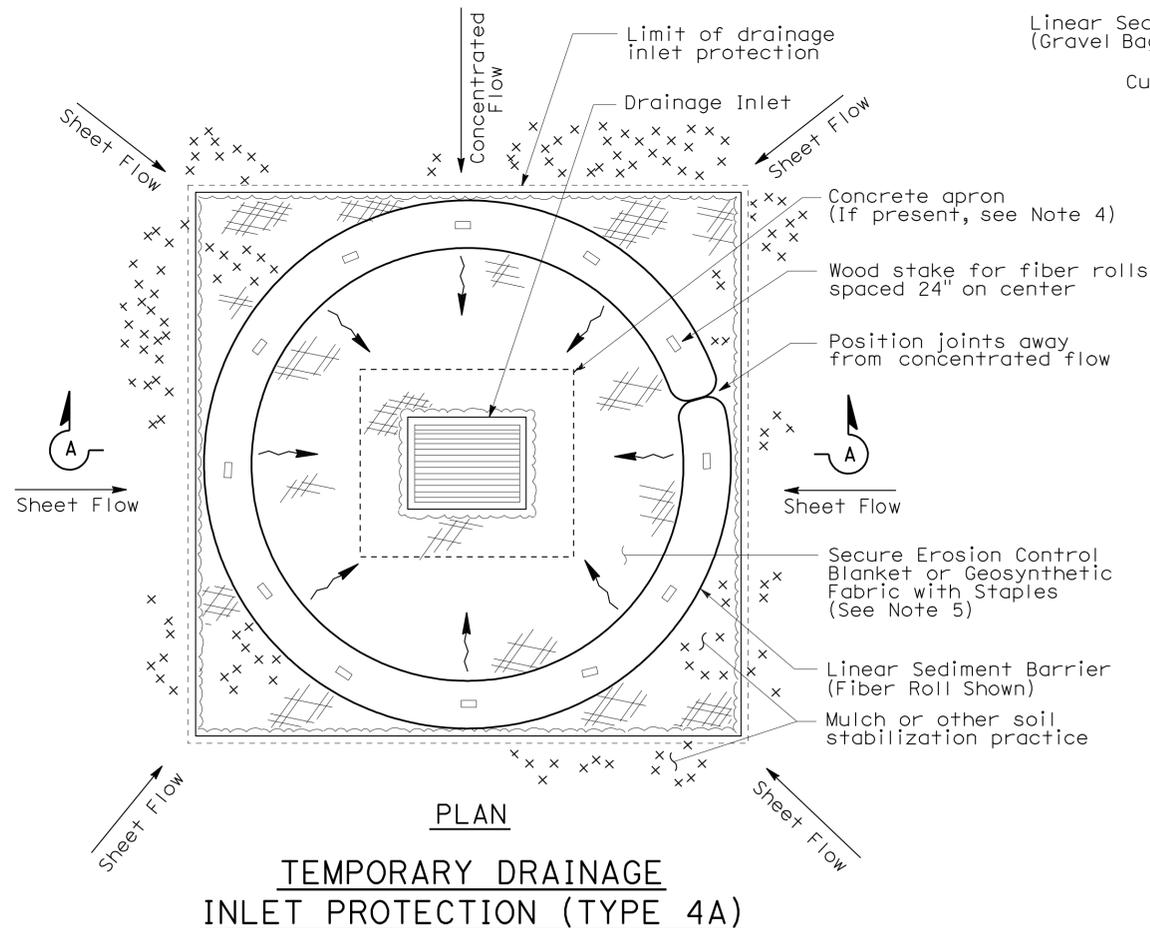
August 15, 2008  
 PLANS APPROVAL DATE

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.

To accompany plans dated 6-21-10



- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
  - Dimensions may vary to fit field conditions.
  - Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
  - Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
  - Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)**

NO SCALE  
 NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

**NEW STANDARD PLAN NSP T63**

2006 NEW STANDARD PLAN NSP T63

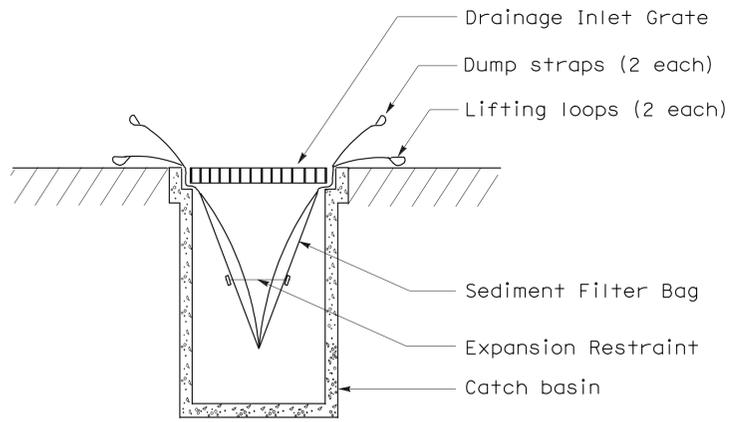
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	40	57

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT

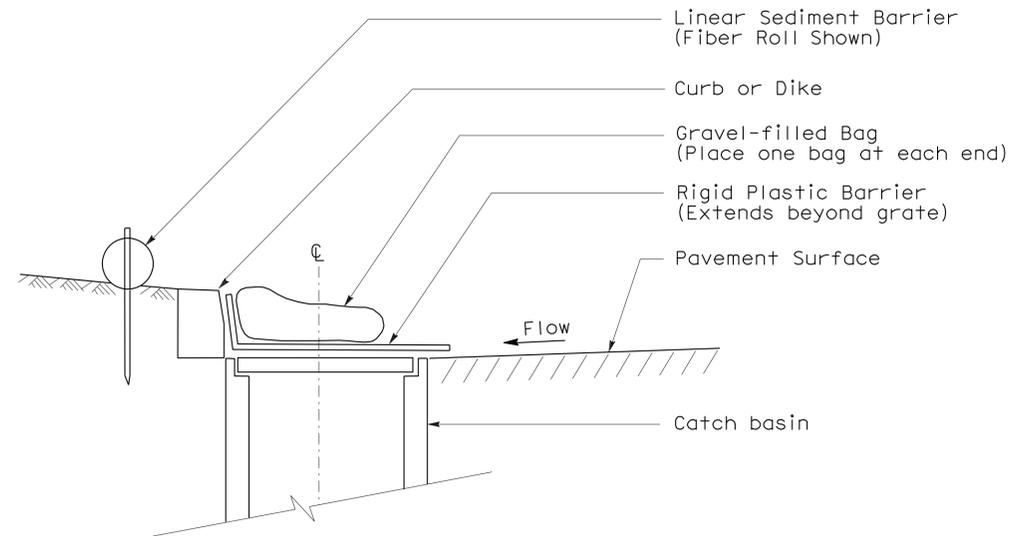
August 15, 2008  
 PLANS APPROVAL DATE

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.

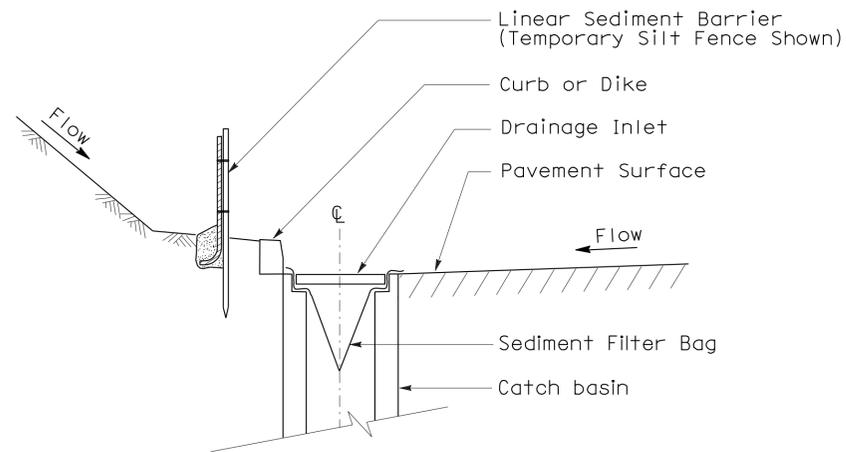
To accompany plans dated 6-21-10



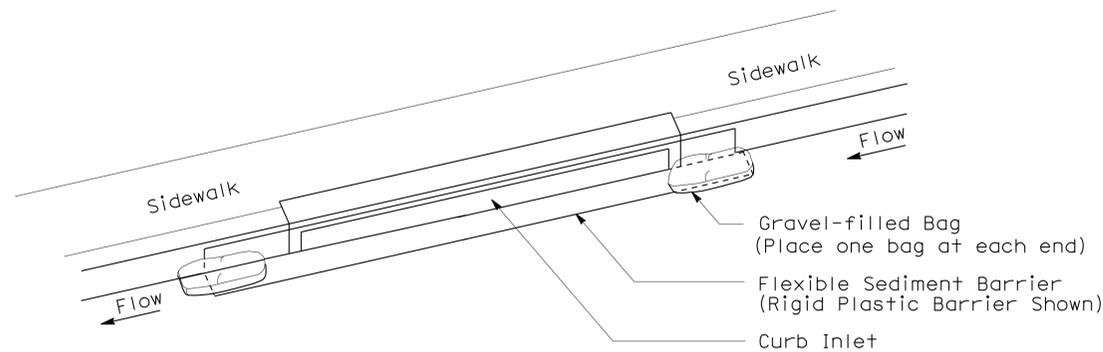
SECTION B-B  
SEDIMENT FILTER BAG DETAIL



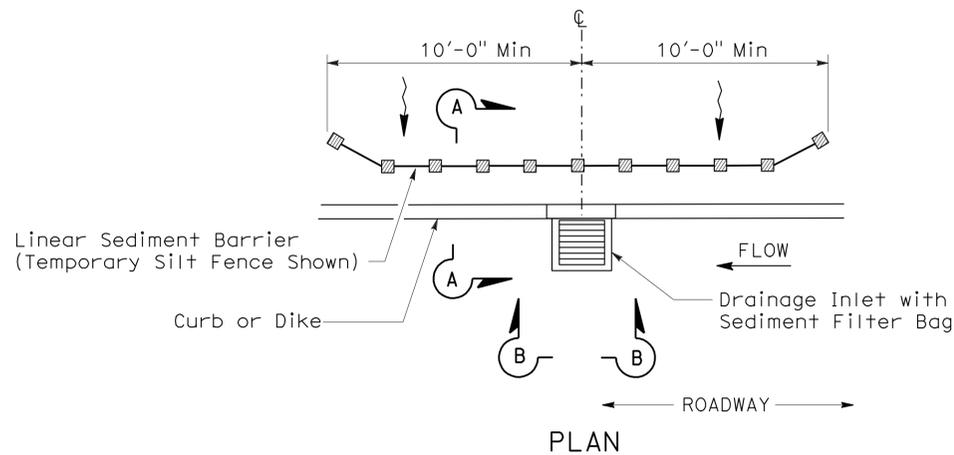
SECTION  
TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 6A)  
(CATCH BASIN WITH GRATE)



SECTION A-A



PERSPECTIVE  
TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 6B)  
(CURB INLET WITHOUT GRATE)



PLAN  
TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 5)  
(SEDIMENT FILTER BAG)

**NOTES:**

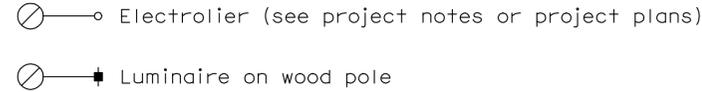
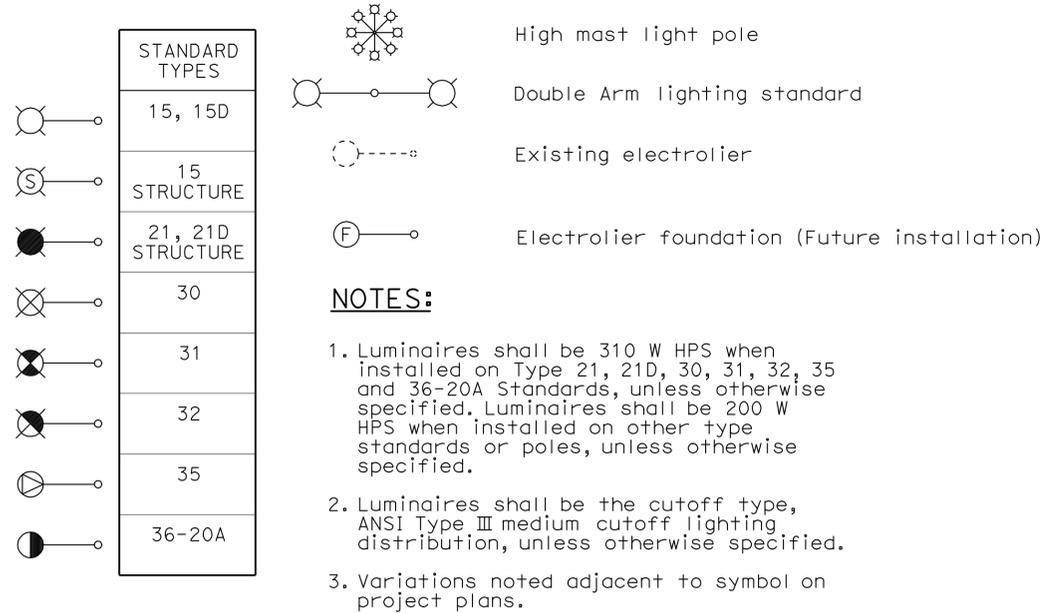
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION  
CONTROL DETAILS  
(TEMPORARY DRAINAGE  
INLET PROTECTION)**

NO SCALE  
NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

# ELECTROLIERS



## STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	41	57

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE

Jeffery G. McRae  
No. E14512  
Exp. 6-30-08  
ELECTRICAL  
STATE OF CALIFORNIA

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

To accompany plans dated 6-21-10

## SOFFIT AND WALL MOUNTED LUMINAIRES

- ◀ □ Pendant, 70 W HPS unless otherwise specified.
- ◀ ○ Flush, 70 W HPS unless otherwise specified.
- ◀ ■ Wall surface, 70 W HPS unless otherwise specified.
- ◀ ⊗ Existing soffit or wall luminaire to remain unmodified.
- ◀ ⊕ Existing soffit or wall luminaire to be modified as specified.

### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1A**

2006 REVISED STANDARD PLAN RSP ES-1A

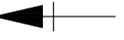
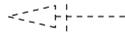
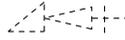
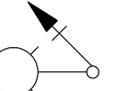
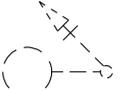
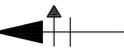
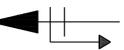
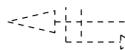
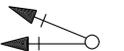
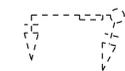
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	42	57

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
 Jeffrey G. McRae  
 REGISTERED PROFESSIONAL ENGINEER  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

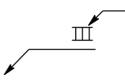
### CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination 
		Conduit riser in/on structure or service pole

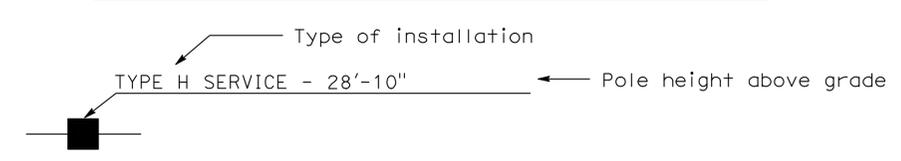
### SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
		Modifications of basic symbols: "L" indicates all non-arrow sections lowered "LG" indicates lowered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign

### SERVICE EQUIPMENT

PROPOSED	EXISTING	
---OH---	---oh---	Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

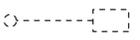
### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

### SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

### NOTES:

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.
- Signal indication shall be LED.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SYMBOLS AND ABBREVIATIONS)**  
 NO SCALE

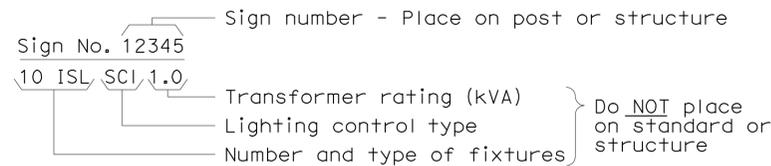
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1B**

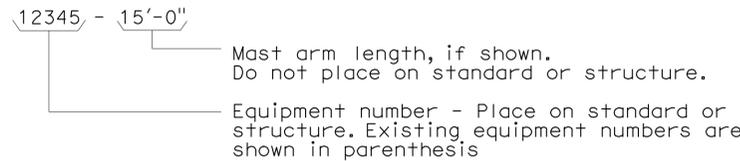
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

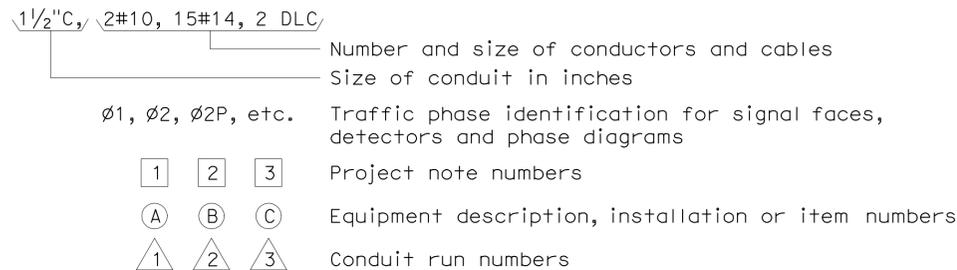
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



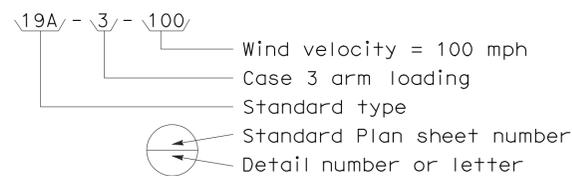
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



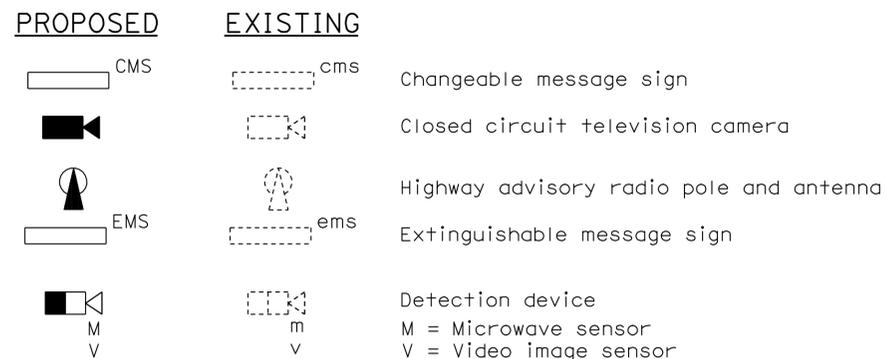
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



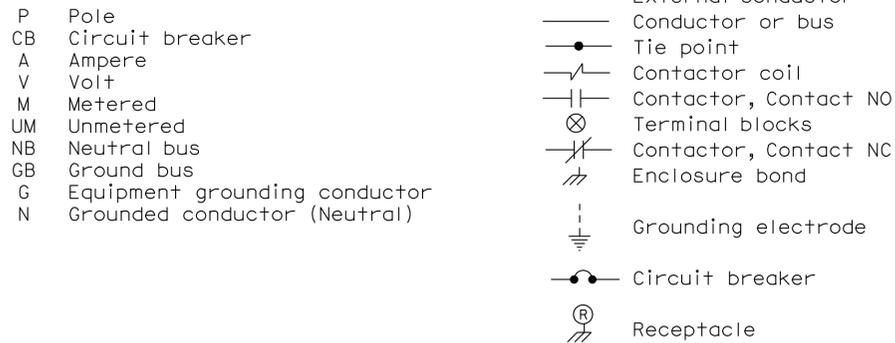
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



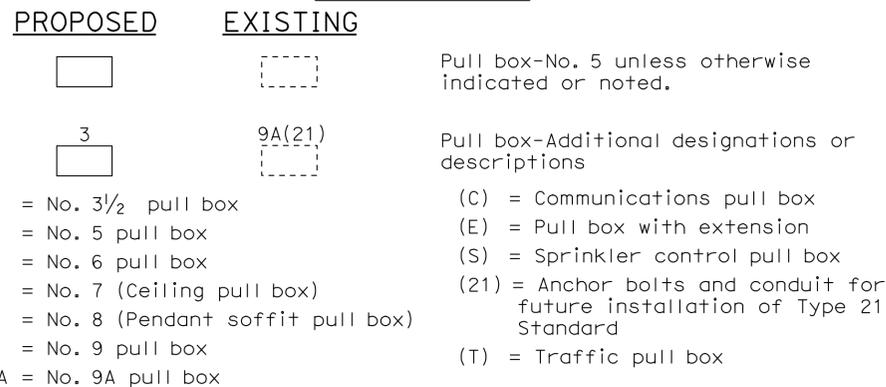
### MISCELLANEOUS EQUIPMENT



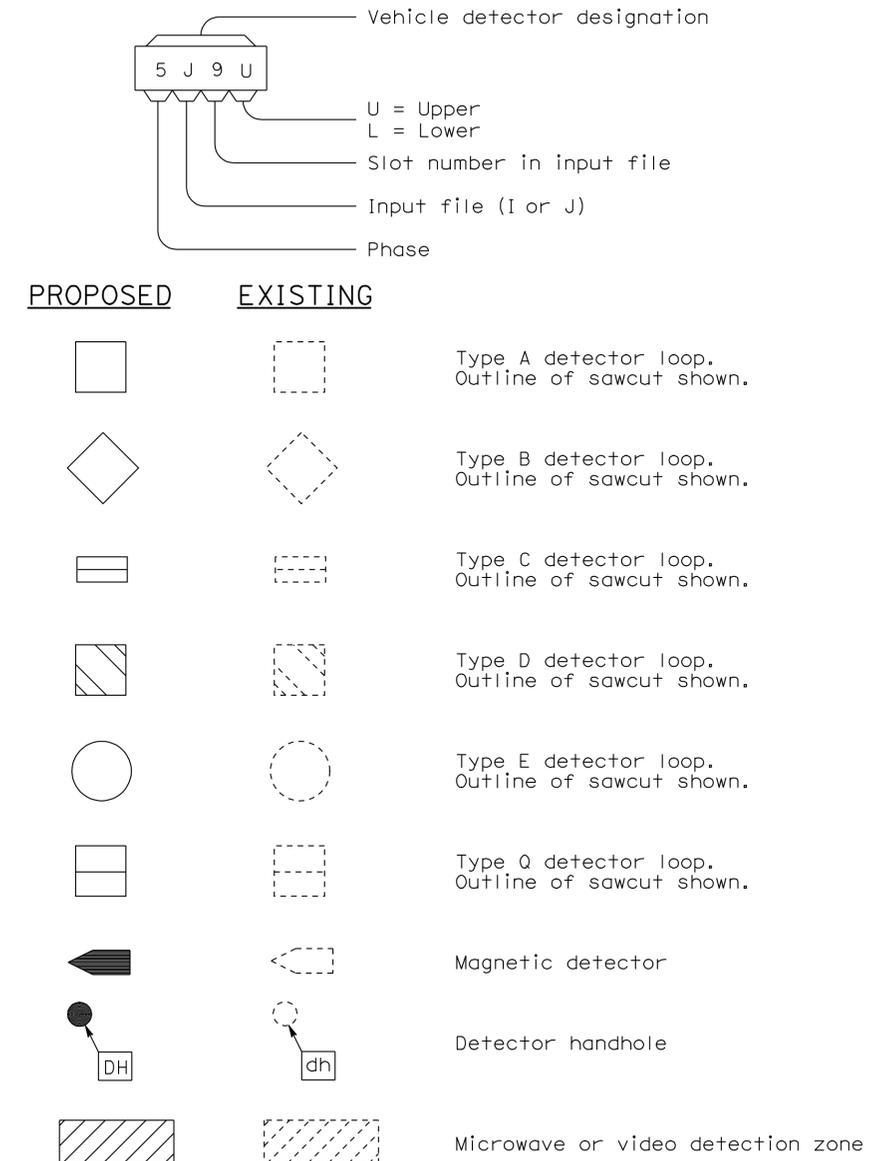
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

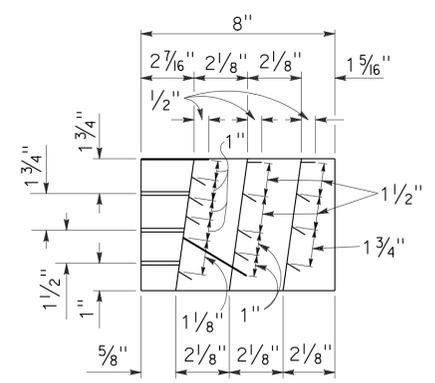
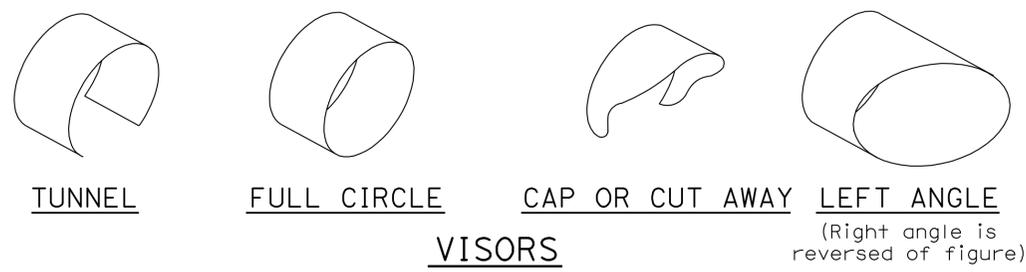
NO SCALE

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C  
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

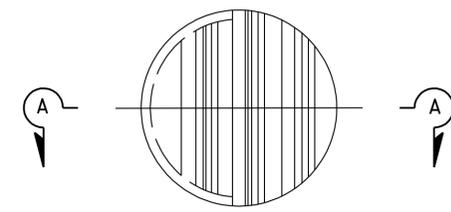
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	44	57

Jeffrey B. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 June 6, 2008  
 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  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-10  
 ELECTRICAL  
 STATE OF CALIFORNIA

To accompany plans dated 6-21-10



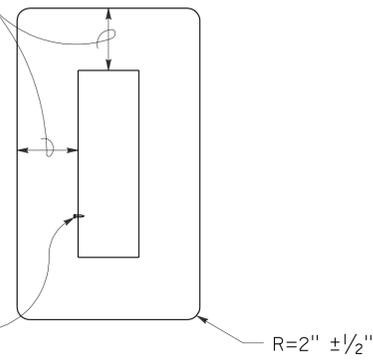
**SECTION A-A**



**FRONT VIEW**  
**DIRECTIONAL LOUVER**

Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.

8" ± 1/2" for 8" sections  
 5 1/2" ± 1/2" for 12" sections

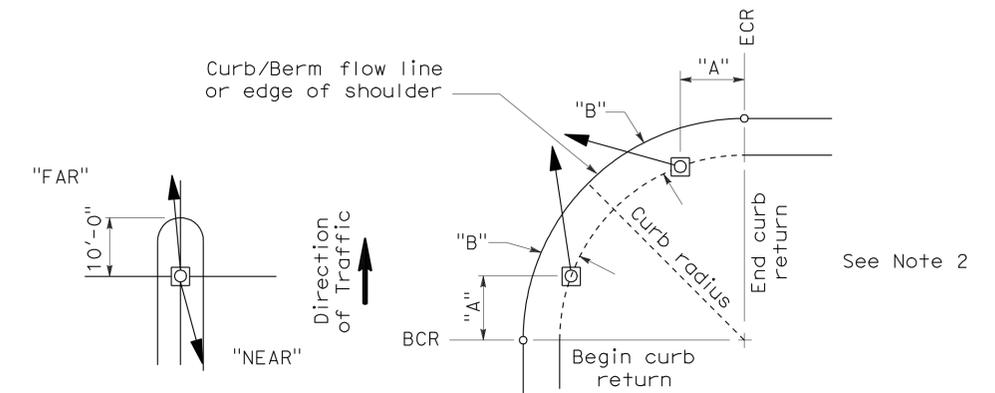


Drill signal face and attach backplate with six 10-24 or 10-32 self-tapping and locking stainless steel machine screws and flat washers

**8" AND 12" SECTIONS**

**BACKPLATE**

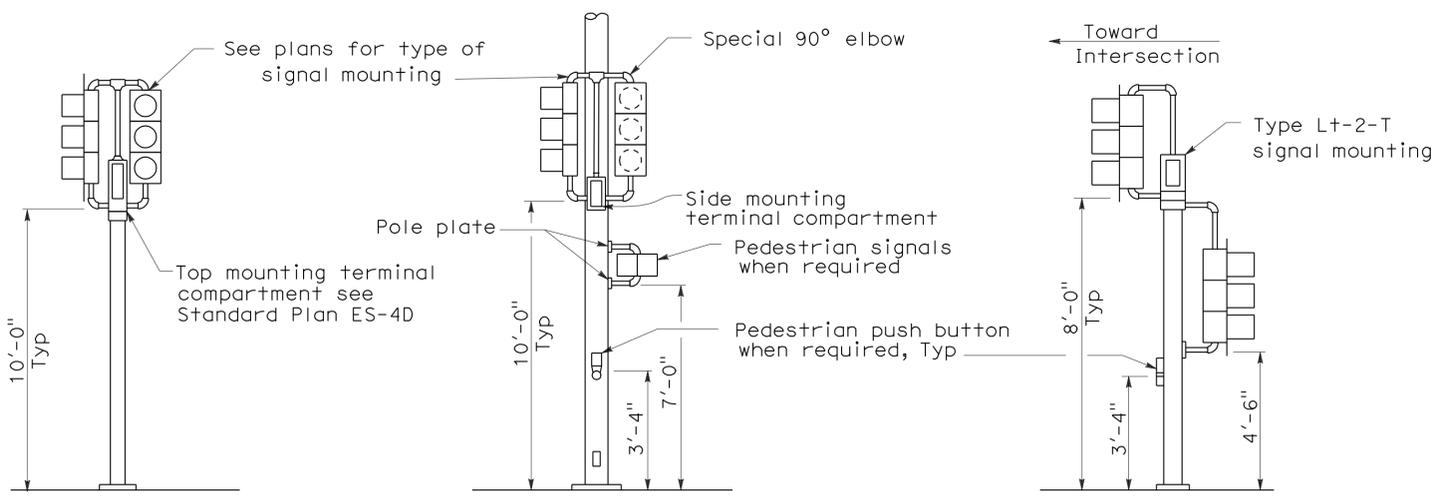
1/16" minimum thickness  
 3001-14 aluminum, or plastic when specified



**NOTES:**

1. Typical signal pole placement unless dimensioned on plans.
2. For "A" and "B" dimensions, see Pole Schedule, or as directed by the Engineer.

**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



**TOP MOUNTED SIGNALS (TV)**

Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

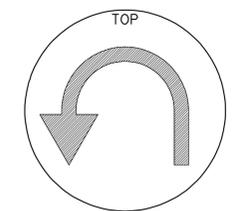
**SIDE MOUNTED SIGNALS (SV AND SP)**

Normally used on standards with luminaire or signal mast arm

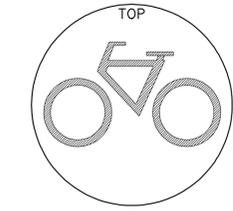
**LEFT TURN LANE SIGNAL**

Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans

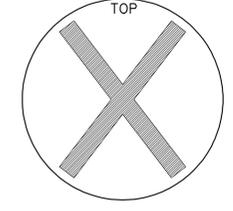
**TYPICAL SIGNAL INSTALLATIONS**



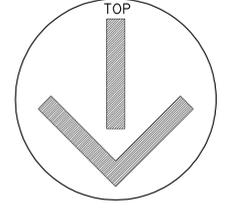
**U-TURN SIGNAL FACE**



**BICYCLE SIGNAL FACE**



**LANE CONTROL SIGNAL FACE**



**LANE CONTROL SIGNAL FACE**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)**  
 NO SCALE

RSP ES-4C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN ES-4C DATED MAY 1, 2006 - PAGE 420 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-4C**

2006 REVISED STANDARD PLAN RSP ES-4C

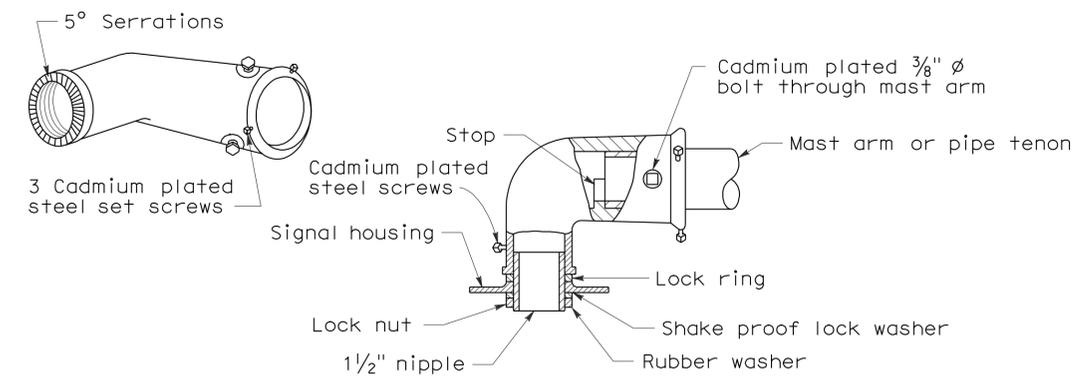
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	45	57

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-10  
 ELECTRICAL  
 STATE OF CALIFORNIA

June 6, 2008  
 PLANS APPROVAL DATE

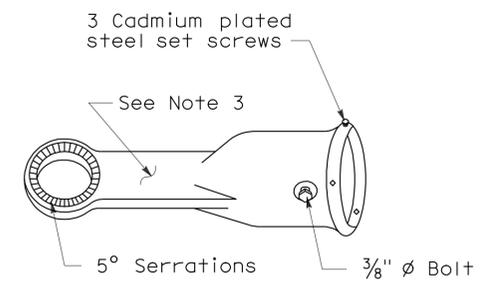
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 6-21-10



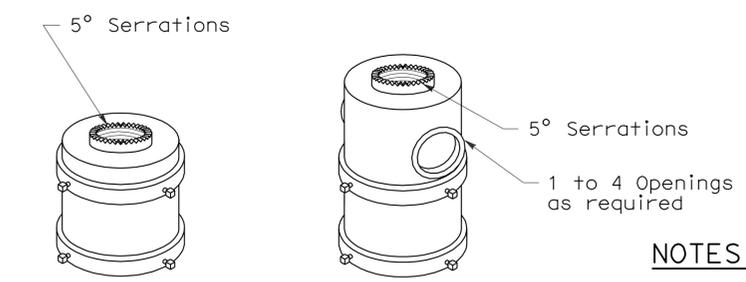
**MAST ARM MOUNTING - TYPE "MAT"**

For 2 NPS pipe, see Note 1.



**MAST ARM MOUNTING - TYPE "MAS"**

For 2 NPS pipe. See Note 1.

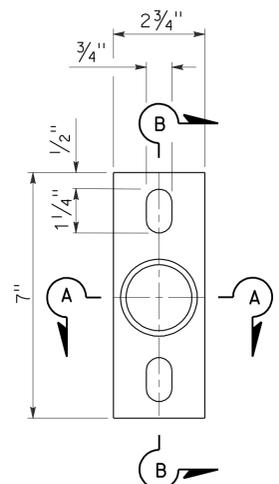


For one mounting For multiple mountings

**TOP MOUNTINGS**

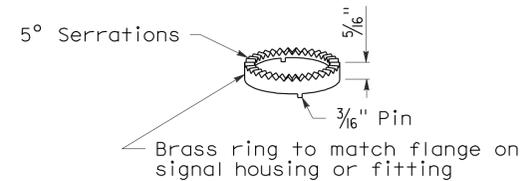
For 4 NPS pipe, see Note 2.

**SIGNAL SLIP FITTERS**



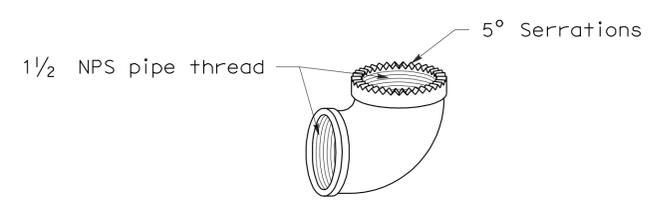
**POLE PLATE**

For side mountings



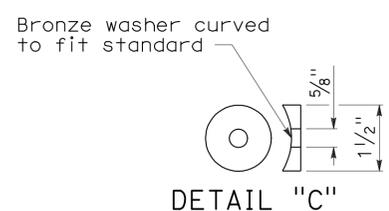
**LOCK RING**

Use where locking ring is not integral with signal housing or fitting.



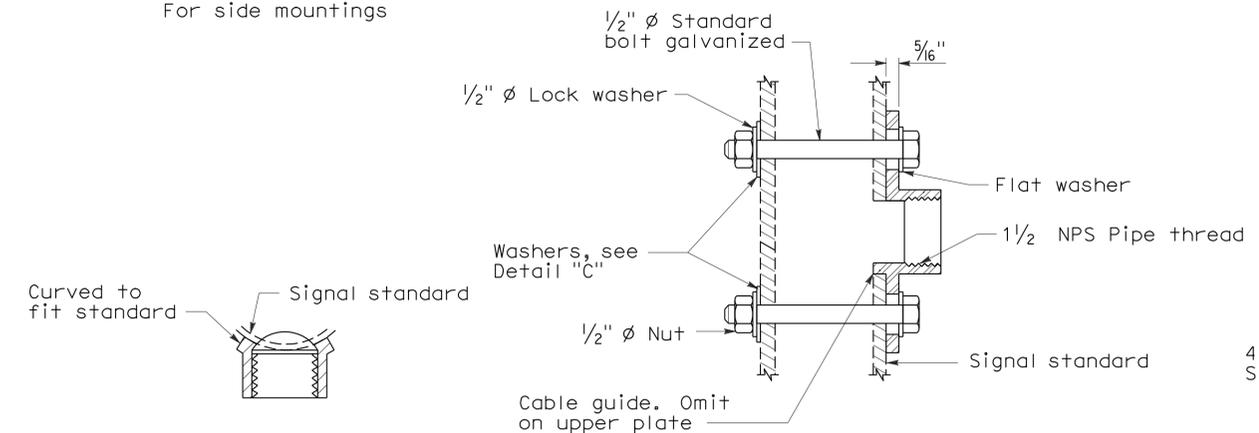
**SPECIAL 90° ELBOW**

One for each signal head, except those with special slip fitter mounting



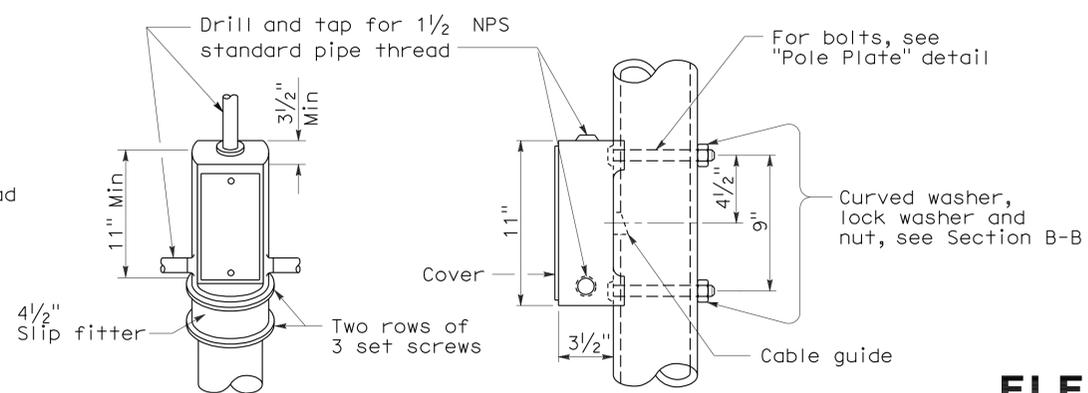
**DETAIL "C"**

**MISCELLANEOUS MOUNTING HARDWARE**



**SECTION A-A**

**SECTION B-B**



**TOP MOUNTING**

**SIDE MOUNTING**

**TERMINAL COMPARTMENTS**

**ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)**

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

NO SCALE

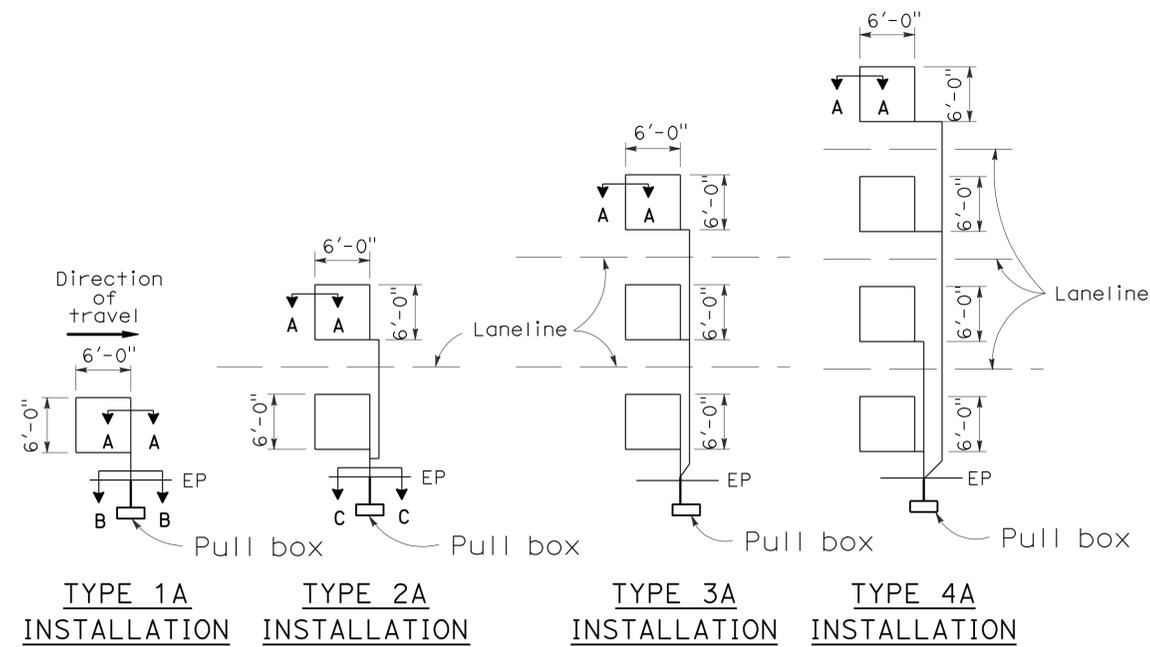
RSP ES-4D DATED June 6, 2008 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 1, 2006 - PAGE 421 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-4D**

2006 REVISED STANDARD PLAN RSP ES-4D

# LOOP INSTALLATION PROCEDURE

- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no sharp edges.
- Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
- Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
- Identify and tag loop circuit pairs in the pull box with loop number, start (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
- Install loop conductor in slot using a 3/16" to 1/4" thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
- No more than 2 twisted pairs shall be installed in one sawed slot.
- Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
- The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
- Fill slots as shown in details.
- Splice loop conductors to lead-in-cable. Splices shall be soldered.
- End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
- Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
- Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.

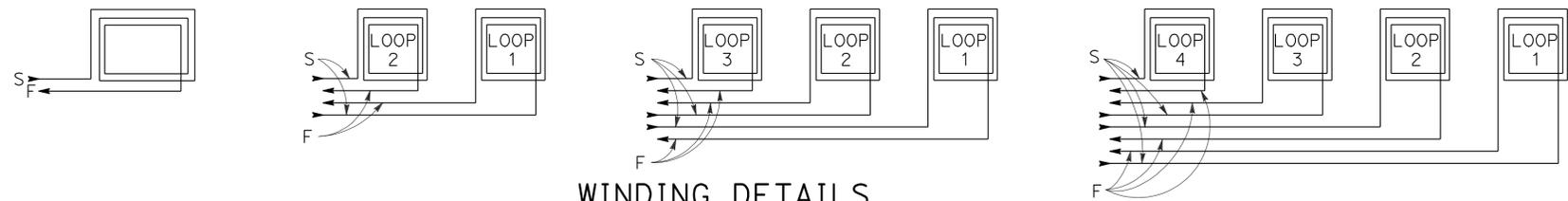


TYPE 1A INSTALLATION TYPE 2A INSTALLATION TYPE 3A INSTALLATION TYPE 4A INSTALLATION

## SAWCUT DETAILS

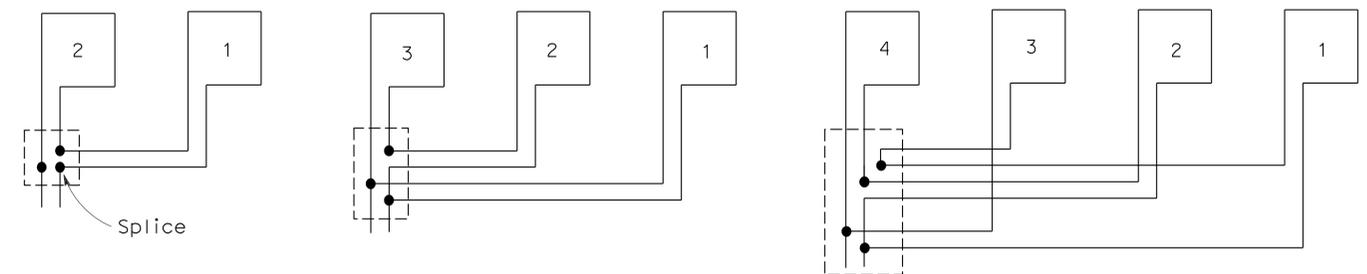
(Type A loop detector configurations illustrated)

- 1A thru 4A = 1 Type A loop configuration in each lane.
  - 1B thru 4B = 1 Type B loop configuration in each lane.
  - 1C = 1 Type C loop configuration entering lanes as required.
  - 1D thru 4D = 1 Type D loop configuration in each lane.
  - 1E thru 4E = 1 Type E loop configuration in each lane.
  - 1Q thru 4Q = 1 Type Q loop configuration in each lane.
- (Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)



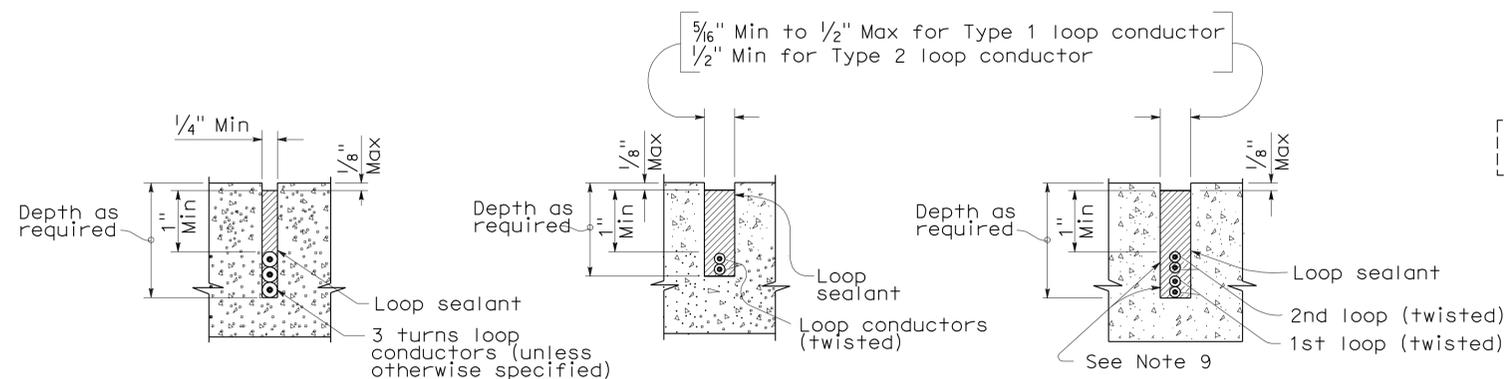
## WINDING DETAILS

See Notes 6 and 7



## TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



SECTION A-A SECTION B-B SECTION C-C  
SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

## ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-5A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	46	57

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 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  
 Jeffery G. McRae  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

To accompany plans dated 6-21-10

2006 REVISED STANDARD PLAN RSP ES-5A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	1	7.6	47	57

REGISTERED CIVIL ENGINEER DATE	3-16-09
PLANS APPROVAL DATE	6-21-10

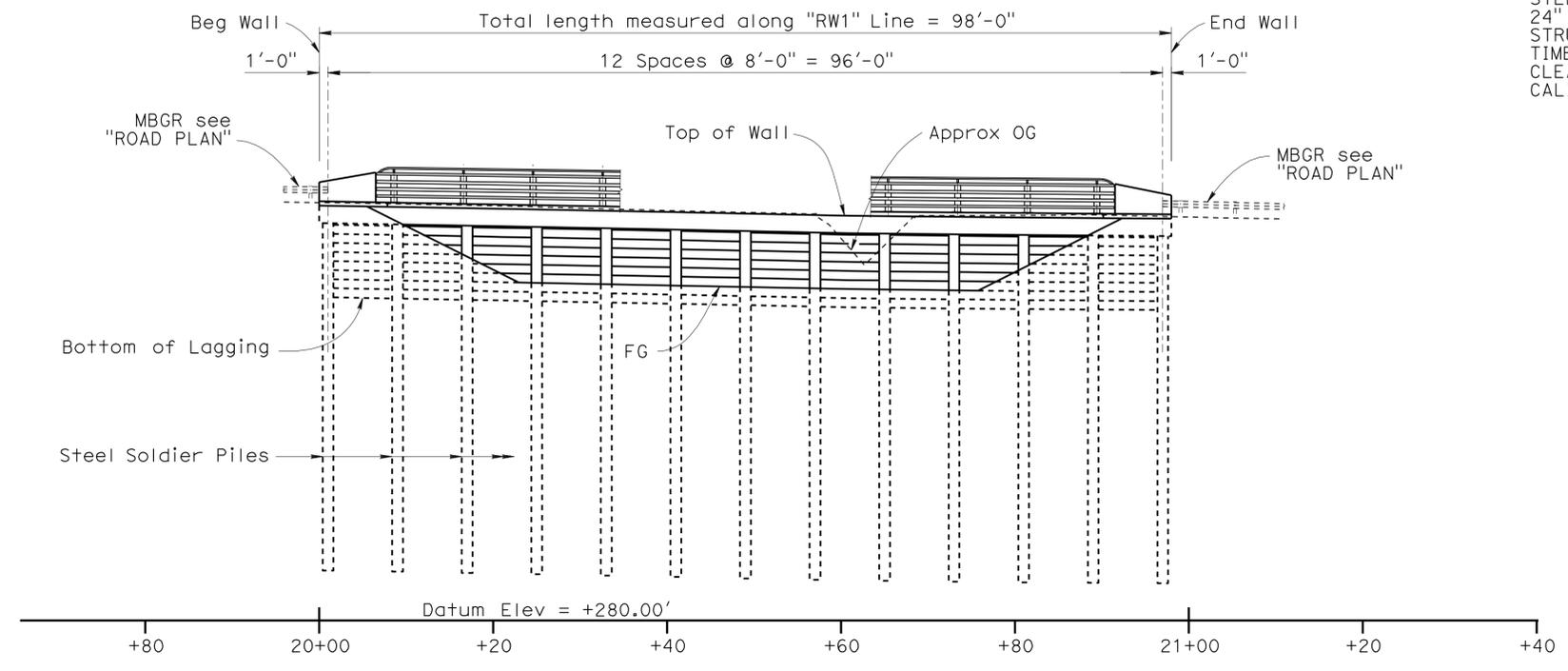
  

REGISTERED PROFESSIONAL ENGINEER	Son Thann Ly
No.	72584
Exp.	6-30-10
CIVIL	STATE OF CALIFORNIA

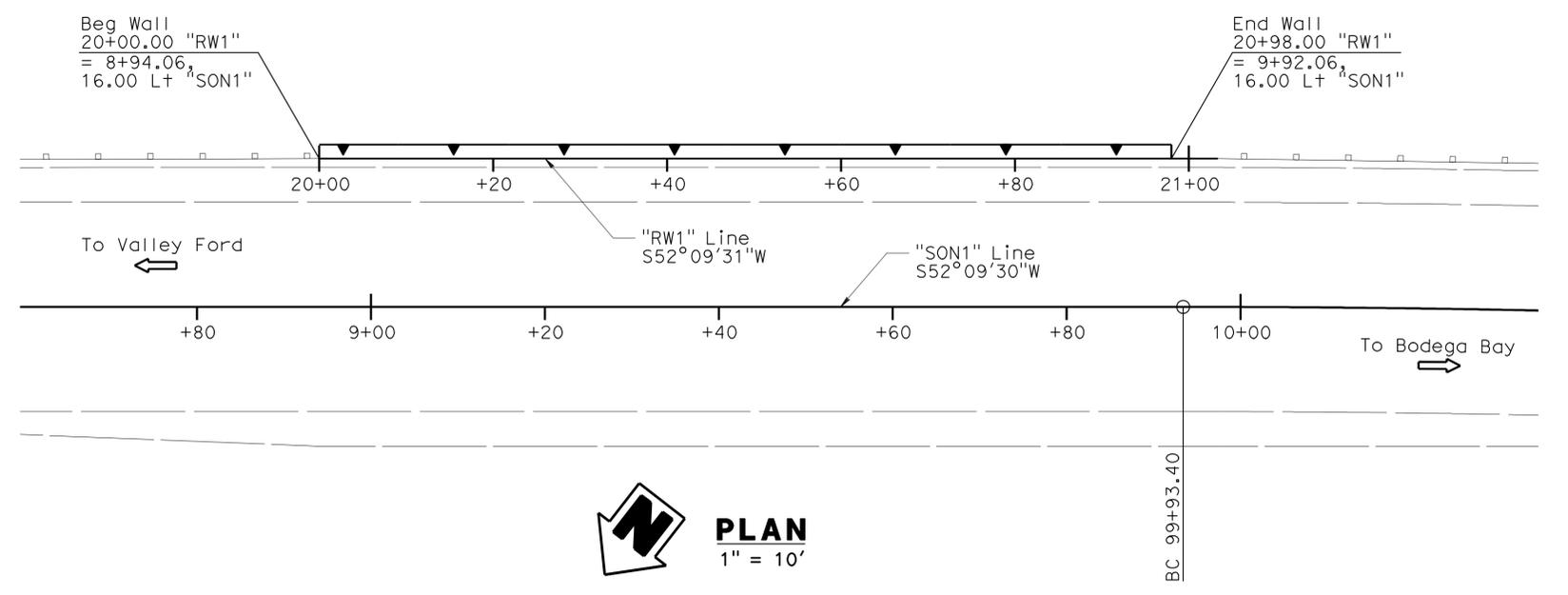
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

QUANTITIES

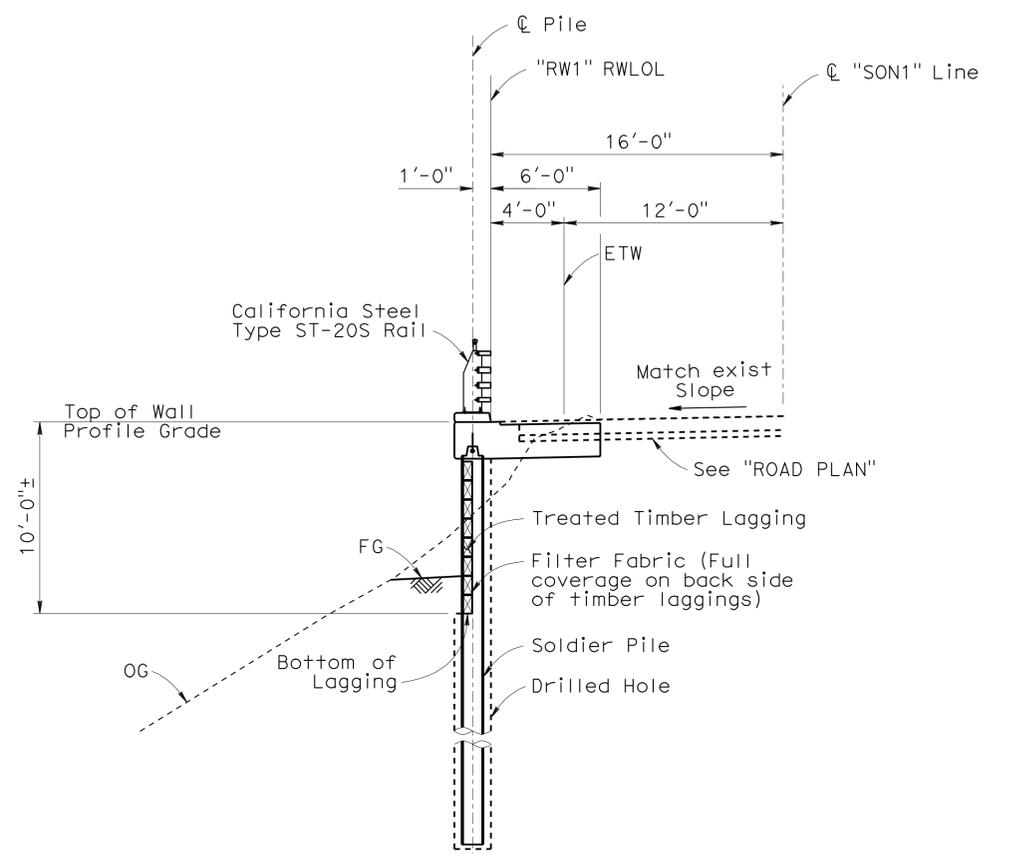
STRUCTURE EXCAVATION (SOLDIER PILE WALL)	116	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	17	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	42	CY
LEAN CONCRETE BACKFILL	6	CY
STEEL SOLDIER PILING (W 14 X 132)	520	LF
24" DRILLED HOLE	520	LF
STRUCTURAL CONCRETE, BARRIER SLAB	55	CY
TIMBER LAGGING	5	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	LUMP	SUM
CALIFORNIA ST-20S BRIDGE RAIL	98	LF



**MIRROR ELEVATION**  
1" = 10'



**PLAN**  
1" = 10'



**TYPICAL SECTION**  
1" = 5'

3-25-09  
Samad Hamoud  
DESIGN ENGINEER

DESIGN	BY S. Ly	CHECKED S. Hamoud	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY F. Maagma	CHECKED S. Hamoud	LAYOUT	BY S. Ly
QUANTITIES	BY H. Singh	CHECKED A. Perez	SPECIFICATIONS	BY Dave Klein

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 16

BRIDGE NO.	20E0054
POST MILE	7.6

**SOLDIER PILE WALL**  
**GENERAL PLAN**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	1	7.6	48	57
REGISTERED CIVIL ENGINEER			DATE	3-16-09	
PLANS APPROVAL DATE			6-21-10		
No. 72584			Exp. 6-30-10		
Son Thanh Ly			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.					

## INDEX TO PLANS

SHEET NO.	TITLES
1	GENERAL PLAN
2	INDEX TO PLANS
3	STRUCTURE PLAN
4	FOUNDATION PLAN
5	RETAINING WALL DETAILS NO.1
6	RETAINING WALL DETAILS NO.2
7	BARRIER RAILING DETAILS NO.1
8	BARRIER RAILING DETAILS NO.2
9	BARRIER RAILING DETAILS NO.3
10	BARRIER RAILING DETAILS NO.4
11	LOG OF TEST BORINGS

## GENERAL NOTES WORKING STRESS DESIGN

**DESIGN:**  
AASHTO Standard Specifications for Highway Bridges dated 1983 with Interim Specifications Bridges and as supplemented by Bridge Design Specifications (Caltrans)

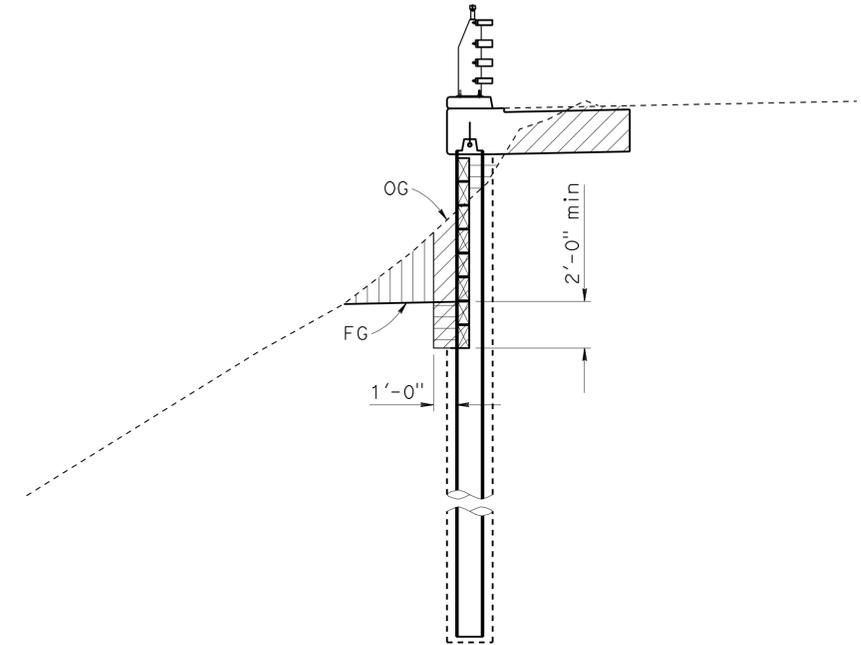
**LIVE LOAD:**  
Surcharge - Level + 240 psf Surcharge

**REINFORCED CONCRETE:**  
(Working Stress Design)  
 $f_y = 60 \text{ ksi}$   
 $f'_c = 4 \text{ ksi}$   
 $n = 8$

**SOIL PARAMETERS:**  
 $\phi = 30^\circ, \gamma = 120 \text{ lb/ft}^3$   
 $\phi = 30^\circ, \gamma = 125 \text{ lb/ft}^3$

**STRUCTURAL TIMBER:**  
Treated Douglas Fir No.1 or better, timber to be full sawn.

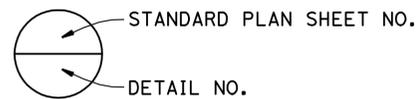
**STRUCTURAL STEEL:**  
(Working Stress Design)  
 $f_y = 36 \text{ ksi}$



**EXCAVATION AND BACKFILL**

## STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (A-L)
A10B	ACRONYMS AND ABBREVIATIONS (M-Z)
A10C	SYMBOLS
A10D	SYMBOLS



**Legend:**

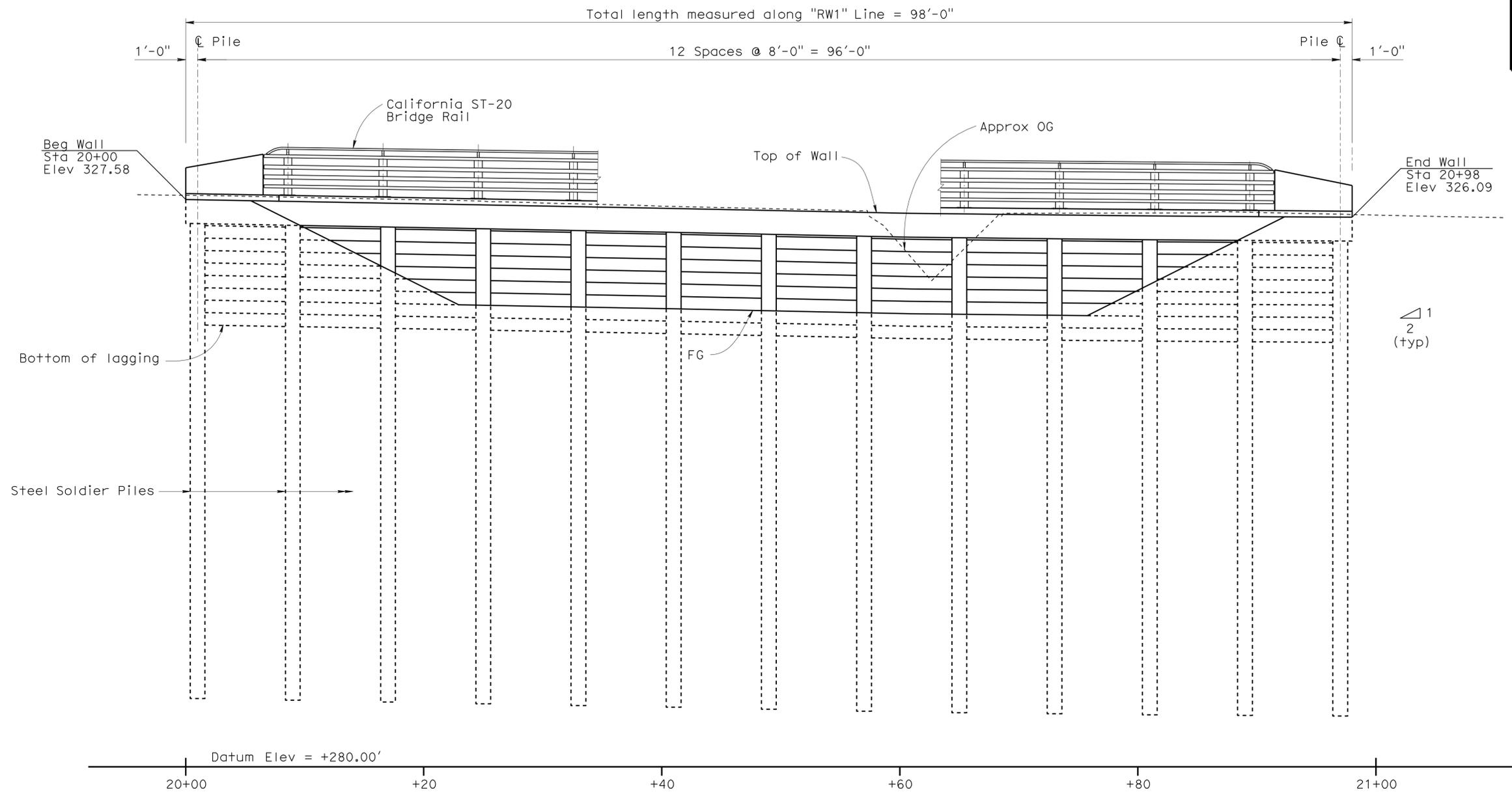
	Structural Excavation, Soldier Pile Wall
	Structural Backfill, Soldier Pile Wall
	Roadway Excavation

DESIGN	BY	S. Ly	CHECKED	S. Hamoud	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO.	20E0054	SOLDIER PILE WALL INDEX TO PLANS
	DETAILS	BY	F. Maagma	CHECKED			S. Hamoud	POST MILE	
QUANTITIES	BY	H. Singh	CHECKED	A. Perez	CU 06248 EA 3S8411	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	12-24-08 03-04-09 03-11-09 03-26-09	SHEET 2 OF 11

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	1	7.6	49	57

REGISTERED CIVIL ENGINEER DATE 3-16-09  
 REGISTERED CIVIL ENGINEER DATE 6-21-10  
 PLANS APPROVAL DATE 6-30-10  
 No. 72584  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA

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



Station	Top Wall Elevation
20+00	327.58
20+05	327.49
20+10	327.40
20+15	327.31
20+20	327.22
20+25	327.13
20+30	327.03
20+35	326.94
20+40	326.85
20+45	326.74
20+50	326.64
20+55	326.53
20+60	326.43
20+65	326.37
20+70	326.31
20+75	326.26
20+80	326.21
20+85	326.17
20+90	326.14
20+95	326.11
20+98	326.09

Pile No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Pile Length (ft)	40	40	40	40	40	40	40	40	40	40	40	40	40
Number of Timber Lagging between piles	8	8	8	8	8	8	8	8	8	8	8	8	8

**DEVELOPED MIRROR ELEVATION**  
1" = 5'

Note:  
 1. Pile length is measured from top of pile to tip of pile.  
 2. Treated timber lagging, place lagging members parallel to top of wall.

DESIGN BY H. Singh CHECKED S. Ly DETAILS BY F. Maagma CHECKED S. Hamoud QUANTITIES BY H. Singh CHECKED A. Perez	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 16</b>	BRIDGE NO.	<b>SOLDIER PILE WALL</b>
			20E0054	<b>STRUCTURE PLAN</b>
			POST MILE	
			7.6	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3			CU 06248 EA 3S8411	REVISION DATES 12-24-08 03-04-09 03-26-09
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 3 OF 11

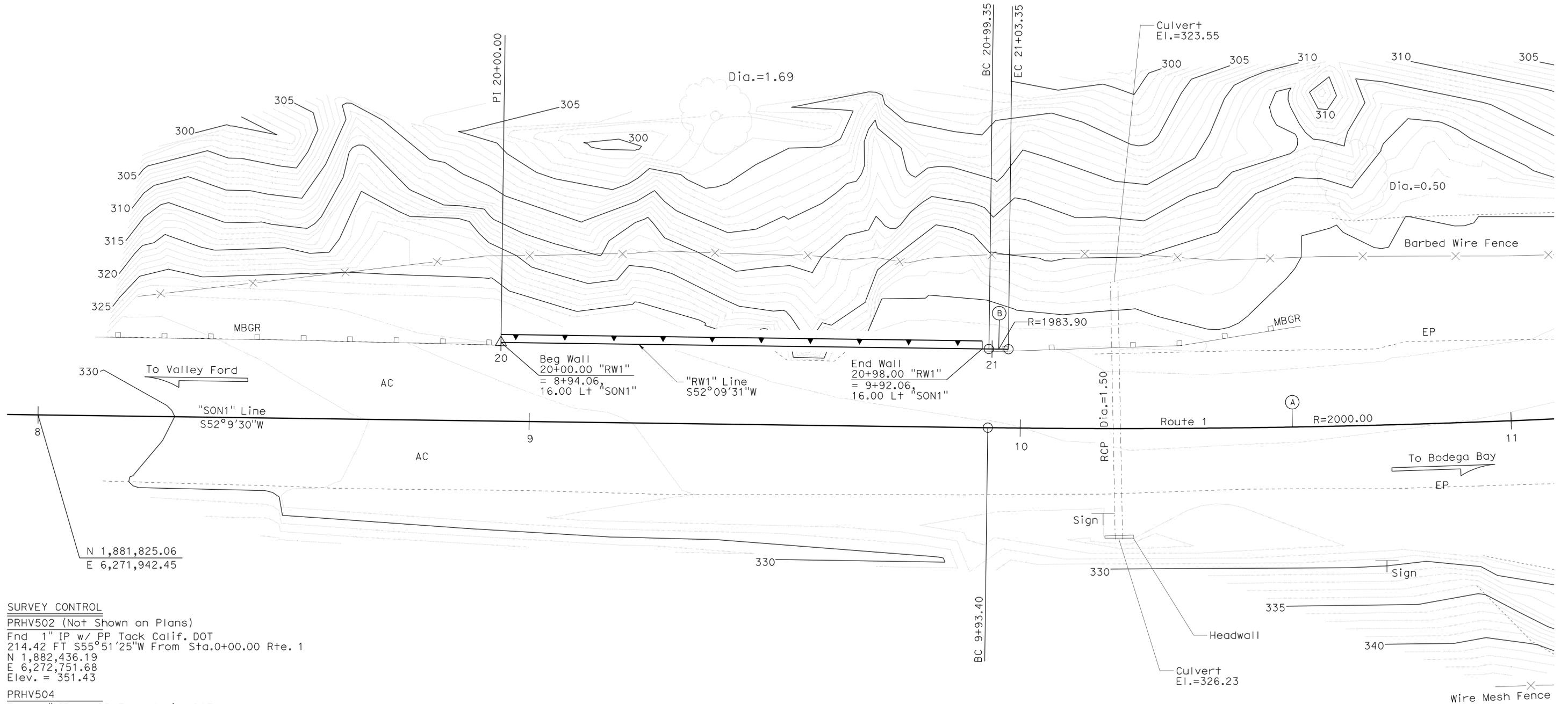
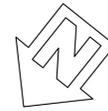
FILE => 20e0054-c-sp01.dgn

CURVE DATA

No.	R	Δ	T	L
(A)	2000.00	9° 42' 30"	169.85	338.89
(B)	1983.90	0° 6' 55"	2.00	3.99

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	1	7.6	50	57

REGISTERED CIVIL ENGINEER DATE 3-16-09  
 REGISTERED CIVIL ENGINEER No. 72584  
 PLANS APPROVAL DATE 6-21-10  
 Exp. 6-30-10  
 Son Thanh Ly  
 REGISTERED PROFESSIONAL ENGINEER  
 STATE OF CALIFORNIA  
 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.



**SURVEY CONTROL**  
 PRHV502 (Not Shown on Plans)  
 Fnd 1" IP w/ PP Tack Calif. DOT  
 214.42 FT S55°51'25"W From Sta.0+00.00 Rte. 1  
 N 1,882,436.19  
 E 6,272,751.68  
 Elev. = 351.43

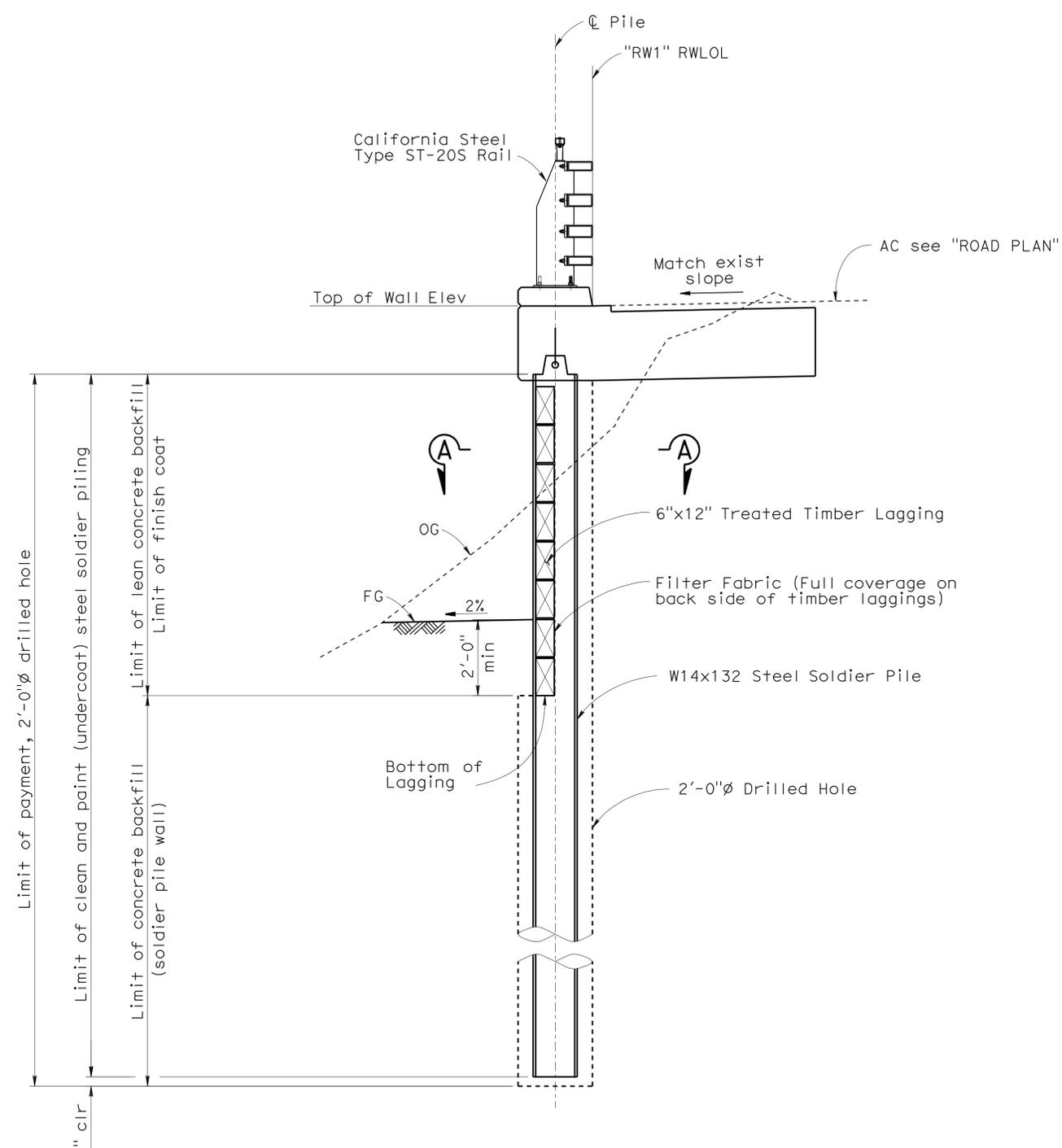
PRHV504  
 Fnd 1" IP w/ PP Tack Calif. DOT  
 16.45 FT Rt. C Rte 1  
 Sta. 11+89.52  
 N 1,881,590.64  
 E 6,271,629.66  
 Elev. = 328.08

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

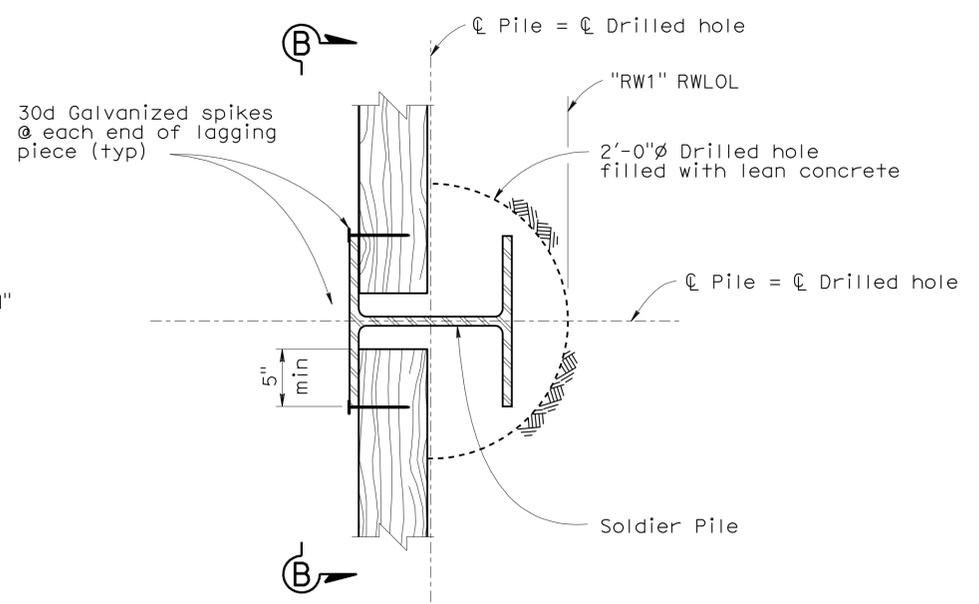
<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN BY H. Singh	CHECKED S. Ly	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 16</b>	BRIDGE NO. 20E0054	<b>SOLDIER PILE WALL</b> <b>FOUNDATION PLAN</b>
SCALE 1"=10'	VERT. DATUM Arbitrary	PHOTOGRAMMETRY AS OF: X	DETAILS BY F. Maagma	CHECKED S. Hamoud	POST MILE 7.6				
ALIGNMENT TIES Dist. Traverse Sheet	SURVEYED BY District	CHECKED BY C. Fasset 10/2008	QUANTITIES BY H. Singh	CHECKED A. Perez	REVISION DATES				
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 06248 EA 3S8411	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 4 OF 11

USERNAME => hrrrene DATE PLOTTED => 25-JUN-2010 TIME PLOTTED => 07:03

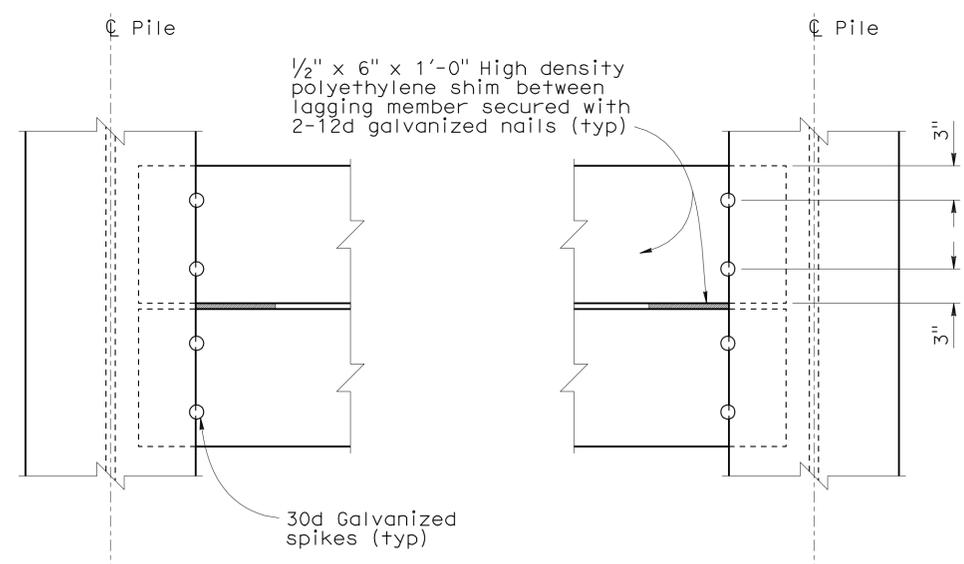
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	1	7.6	51	57
REGISTERED CIVIL ENGINEER DATE			3-16-09		
PLANS APPROVAL DATE			6-21-10		
No. 72584			Exp. 6-30-10		
Son Thann Ly			CIVIL		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



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



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



Note:  
No clipping of corners allowed  
**PART ELEVATION B-B**  
1/2" = 1'

DESIGN	BY H. Singh	CHECKED S. Ly
DETAILS	BY F. Maagma	CHECKED S. Hamoud
QUANTITIES	BY H. Singh	CHECKED A. Perez

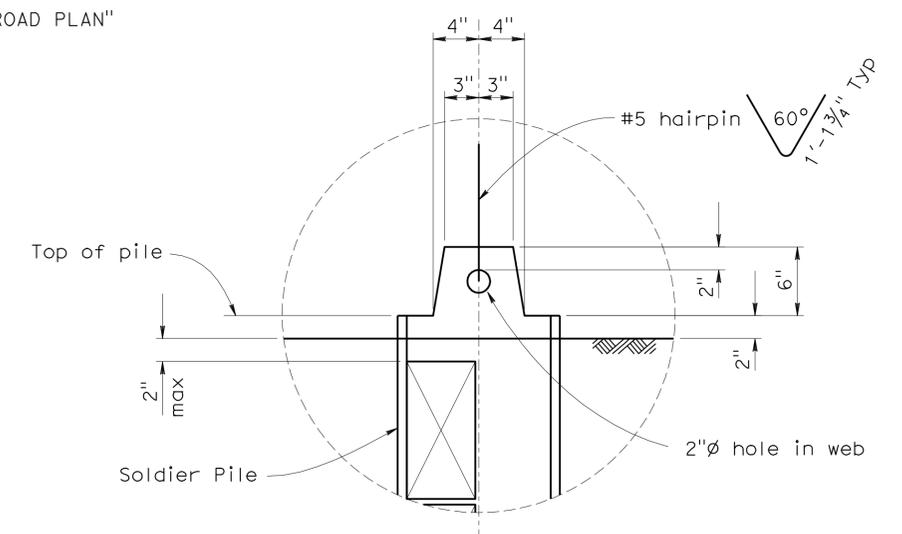
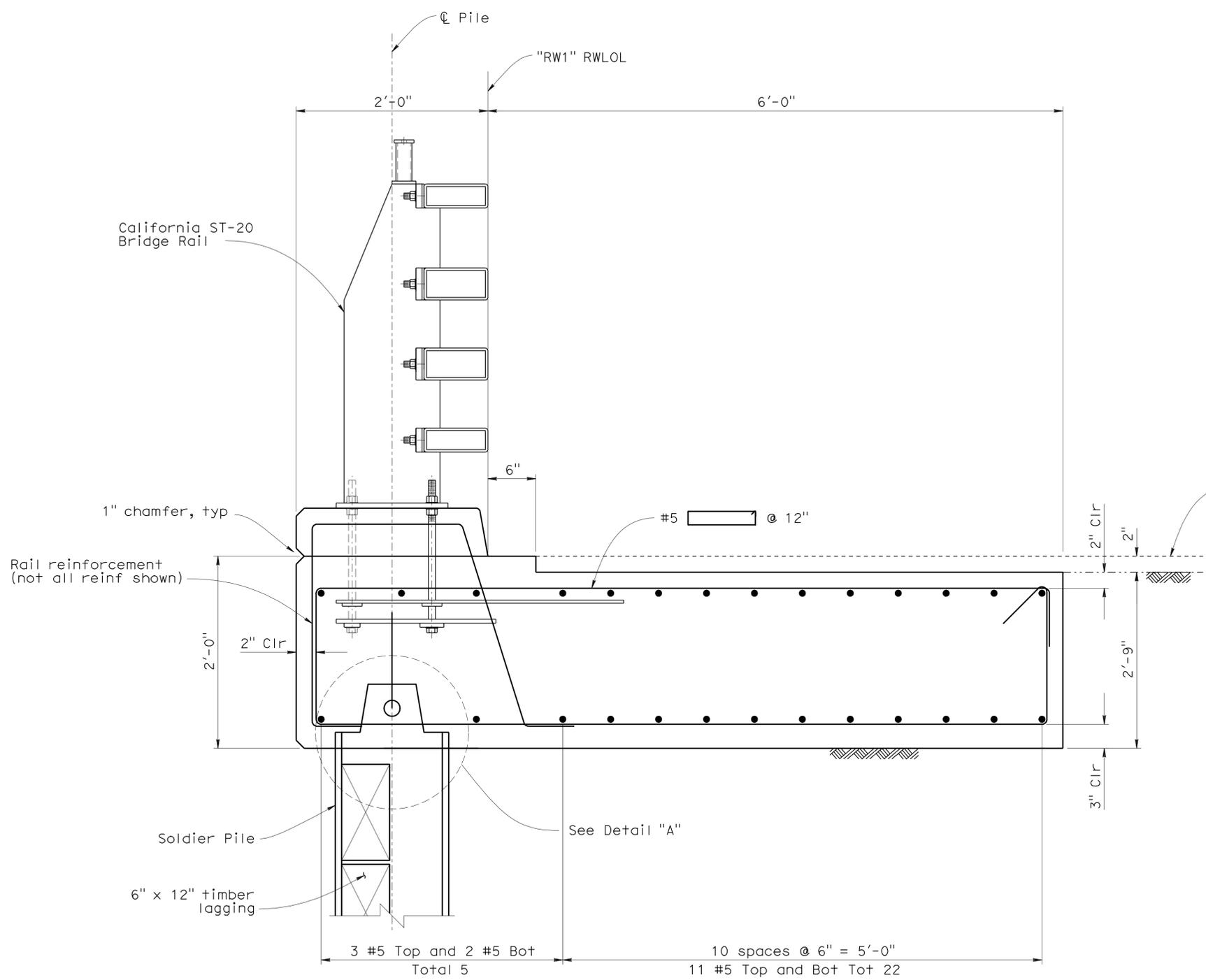
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 16

BRIDGE NO.	20E0054
POST MILE	7.6

**SOLDIER PILE WALL**  
**RETAINING WALL DETAILS NO. 1**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	1	7.6	52	57
			3-16-09		
			REGISTERED CIVIL ENGINEER		
			6-21-10		
			PLANS APPROVAL DATE		
			Son Thann Ly		
			No. 72584		
			Exp. 6-30-10		
			CIVIL		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



**DETAIL "A"**  
**STEEL PILE ANCHOR**  
1/2" = 1'

**CONCRETE BARRIER SLAB**  
1/2" = 1'

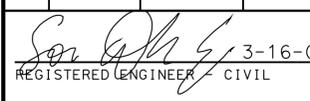
Notes:  
No expansion joints in concrete barrier or barrier slab within length of wall.

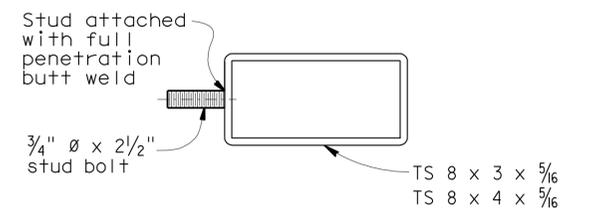
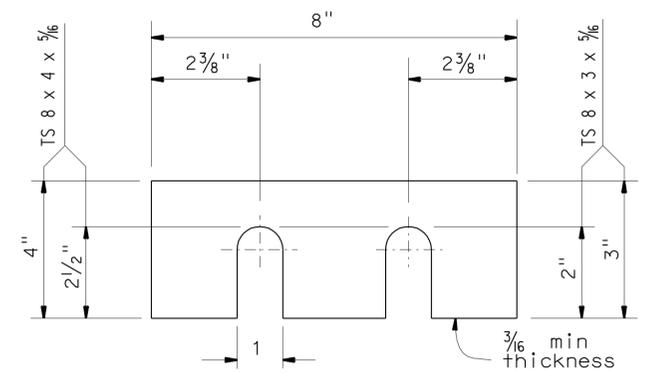
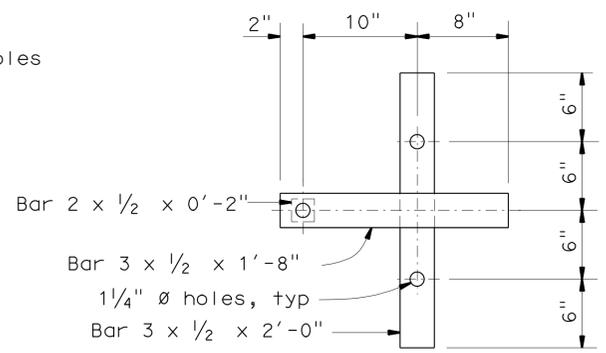
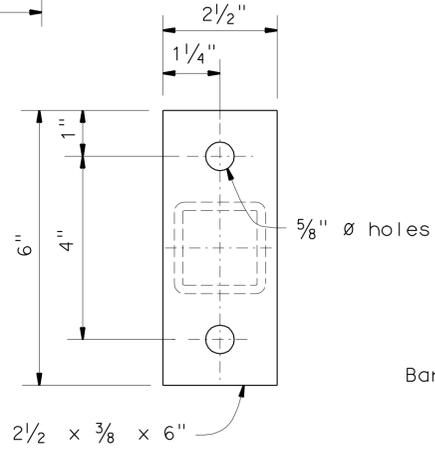
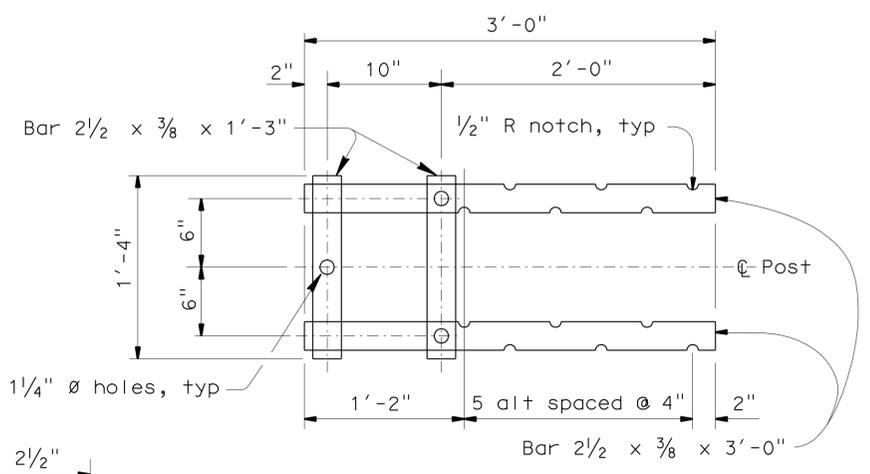
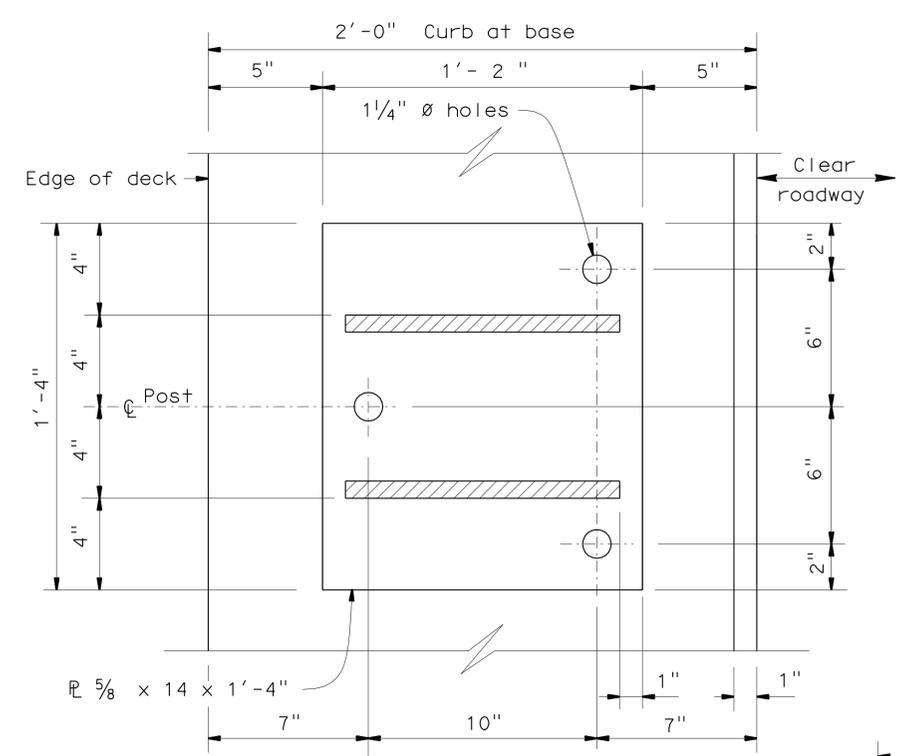
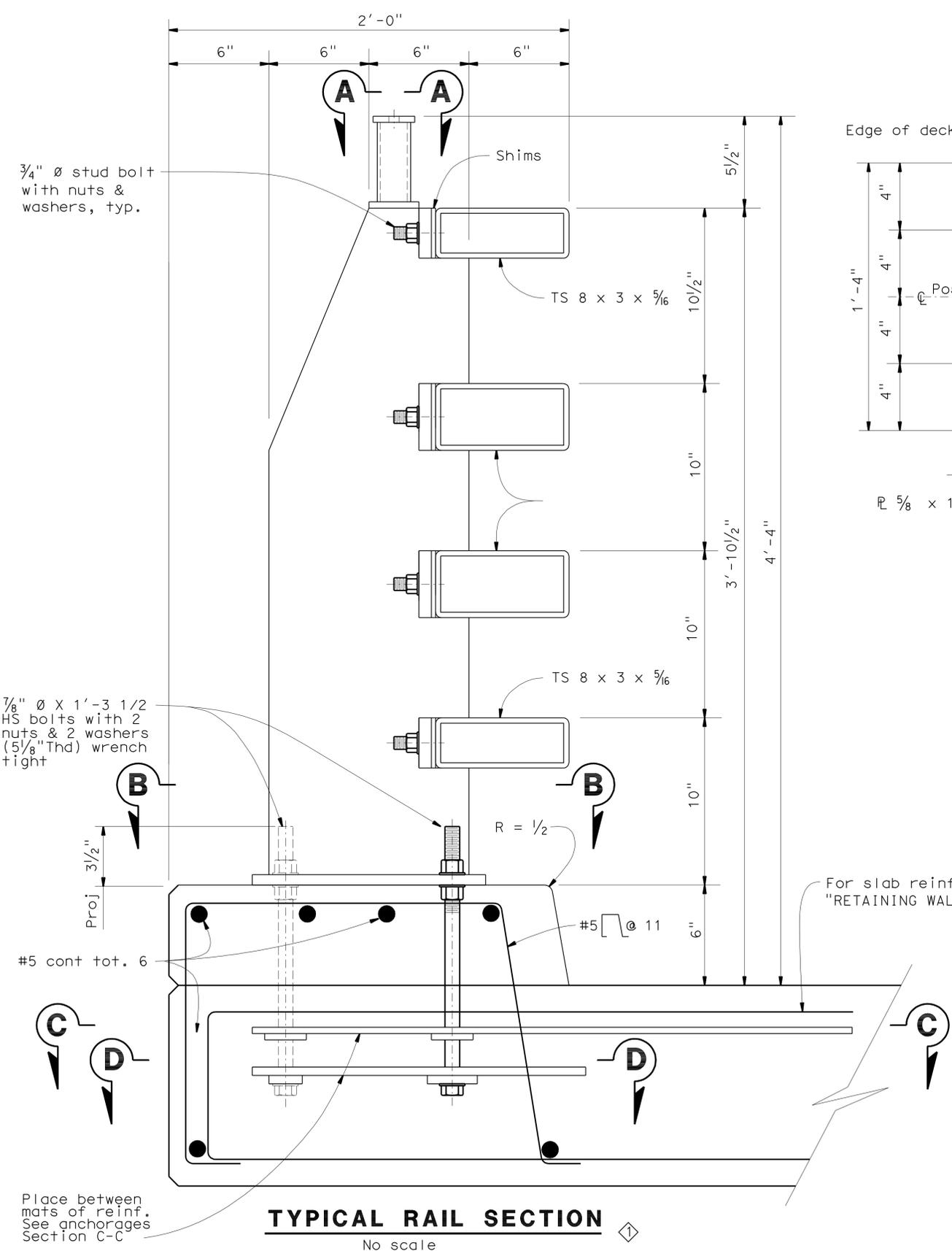
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY S. Ly	CHECKED S. Hamoud	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 16</b>	BRIDGE NO.	<b>SOLDIER PILE WALL</b>			
	DETAILS	BY F. Maagma	CHECKED S. Hamoud			20E0054	<b>RETAINING WALL DETAILS NO. 2</b>			
	QUANTITIES	BY H. Singh	CHECKED A. Perez			7.6				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					CU 06248 EA 3S8411	DISREGARD PRINTS BEARING EARLIER REVISION DATES				SHEET 6 OF 11

USERNAME => hrrrene DATE PLOTTED => 25-JUN-2010 TIME PLOTTED => 07:30

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	53	57

 REGISTERED ENGINEER - CIVIL No. 72584 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA	
3-16-09 PLANS APPROVAL DATE 6-21-10	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.	



For slab reinf, see "RETAINING WALL DETAILS NO.2"

STANDARD DRAWING		
FILE NO. <b>xs16-205-1e</b>	APPROVED BY <b>T SATTER</b> RESPONSIBLE TECHNICAL SPECIALIST	RELEASED BY <b>ROBERTO LACALLE</b> RESPONSIBLE OFFICE CHIEF
APPROVAL DATE <b>6-18-08</b>		RELEASE DATE <b>6-18-08</b>

Modified "Typical Rail Section".

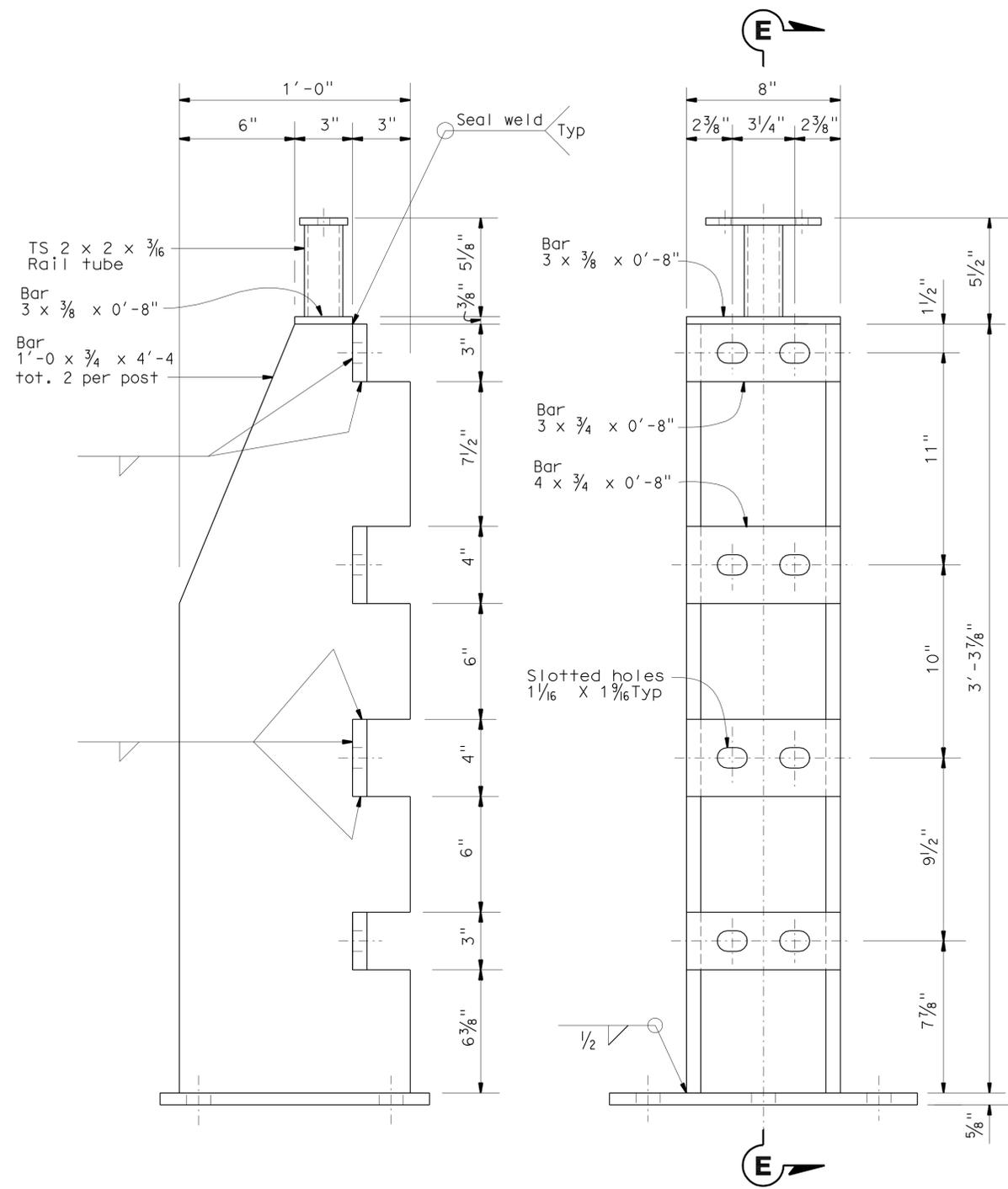
<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b>
--	---

BRIDGE NO. <b>20E0054</b>	<b>RAILING-CALIFORNIA STEEL TYPE ST-20S BRIDGE RAIL</b>
POST MILE <b>7.6</b>	<b>BARRIER RAILING DETAILS NO. 1</b>

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	54	57

 REGISTERED ENGINEER - CIVIL		3-16-09 PLANS APPROVAL DATE	
6-21-10 PLANS APPROVAL DATE			
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.			

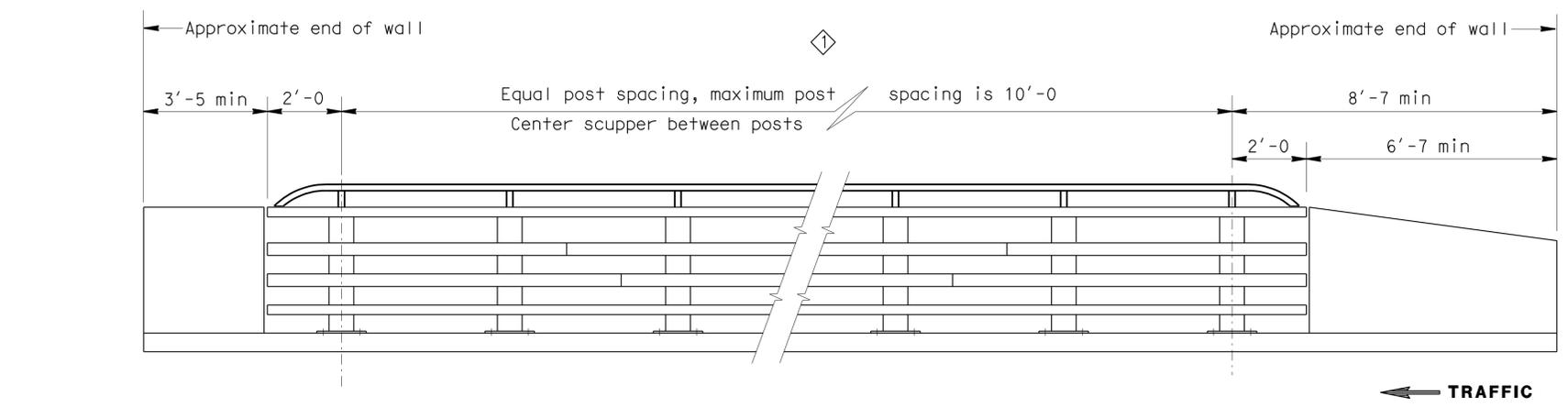


**SECTION E-E**  
Scale 3" = 1'-0"  
Hand Rail not shown

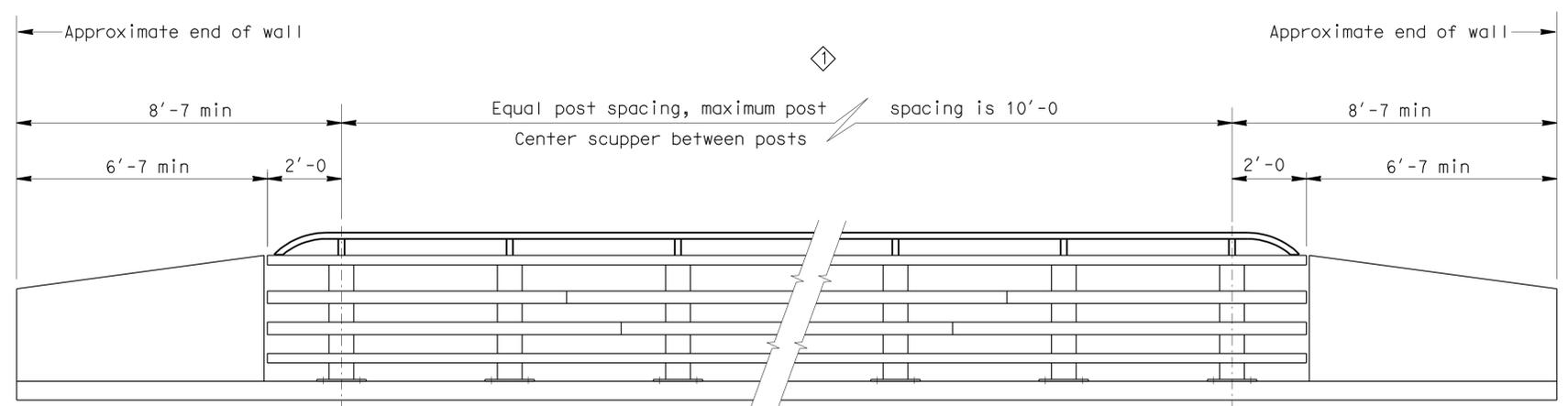
**ELEVATION**  
Scale 3" = 1'-0"  
Hand Rail not shown

**MATERIAL**

- A) All structural steel shall be A36, Structural tubing shall be A500 grade B except as noted.
- B) All bolts shall be high strength conforming to ASTM A325 Galvanized and wrench tight.
- C) Stud bolts shall be high strength ASTM A108 and torque to 100 Lb-ft.



**PROPOSED RAIL POST LAYOUT**



**PROPOSED RAIL POST LAYOUT**

See Note 2

STANDARD DRAWING		
FILE NO. <b>xs16-205-2e</b>	APPROVED BY <b>T SATTER</b> RESPONSIBLE TECHNICAL SPECIALIST	RELEASED BY <b>ROBERTO LACALLE</b> RESPONSIBLE OFFICE CHIEF
APPROVAL DATE <b>6-18-08</b>	RELEASE DATE <b>6-18-08</b>	

Removed note.

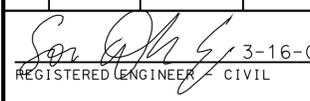
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

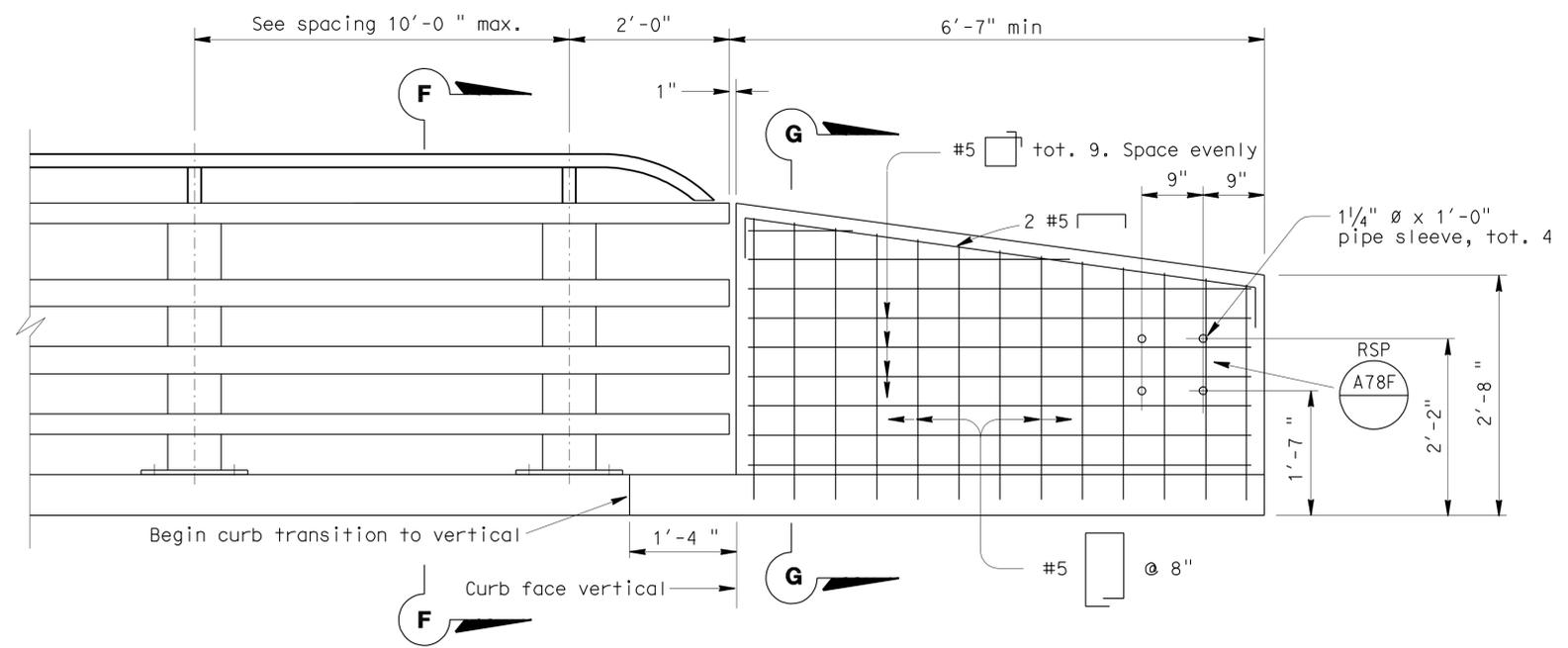
DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 20E0054	<b>RAILING-CALIFORNIA STEEL TYPE ST-20S BRIDGE RAIL</b>
POST MILE 7.6	
<b>BARRIER RAILING DETAILS NO. 2</b>	

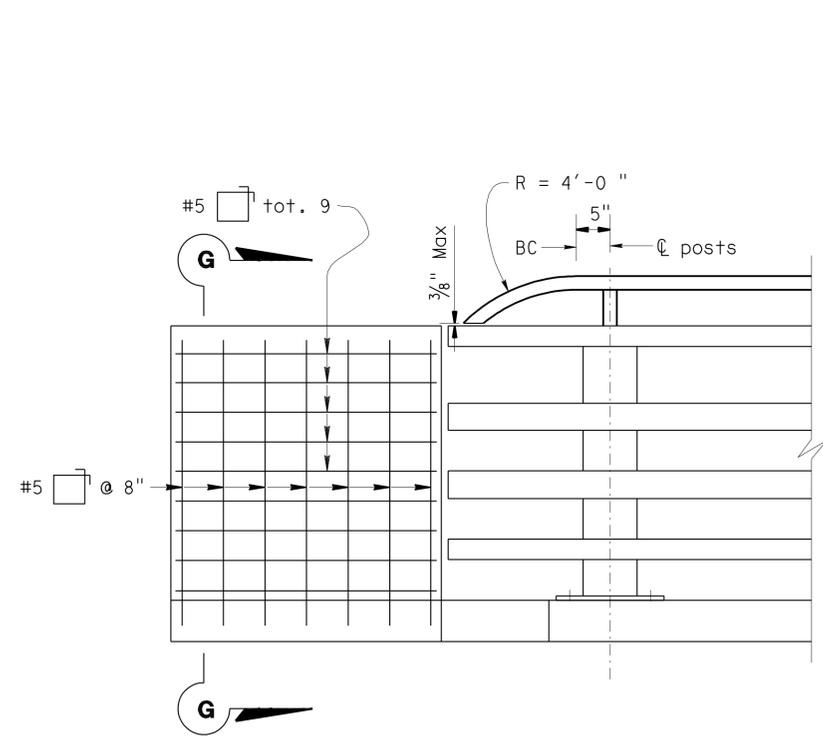
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	55	57

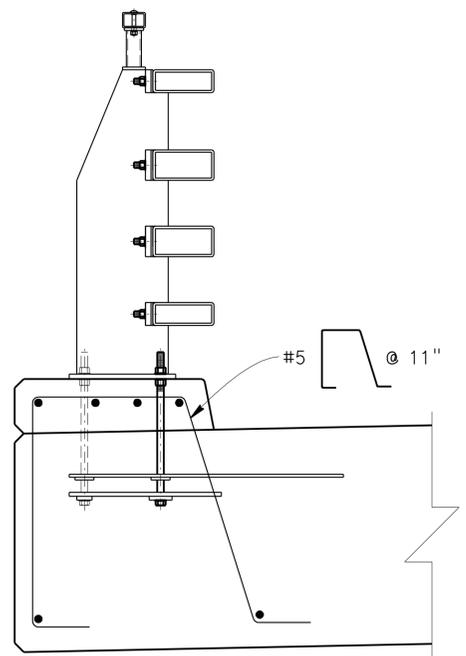
 REGISTERED ENGINEER - CIVIL		3-16-09 PLANS APPROVAL DATE	
6-21-10 PLANS APPROVAL DATE		No. 72584 Exp. 6-30-10 CIVIL	
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>			



**END OF RAILING ELEVATION**  
No scale

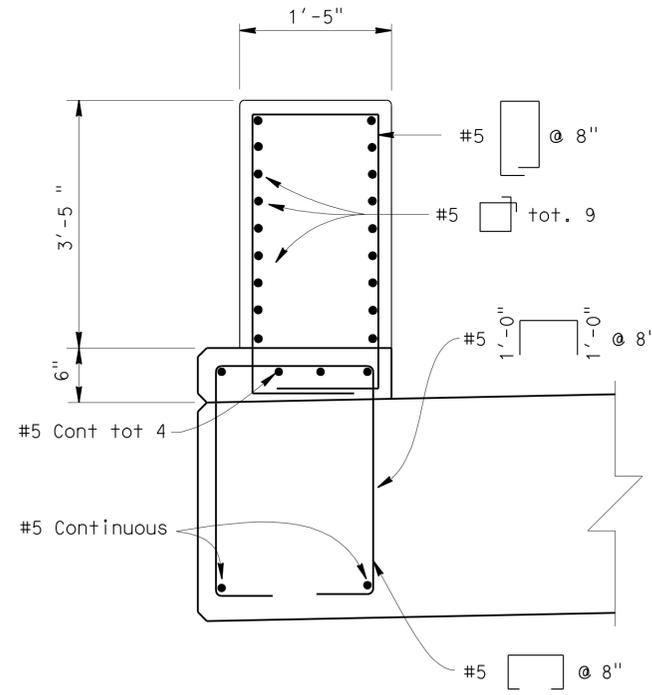


**END OF RAILING ELEVATION**  
No scale



**SECTION F-F**  $\nabla$   
No scale

Reinf. same as for Section G-G except as noted



**SECTION G-G**  $\nabla$   
No scale

Note:  
See "RETAINING WALL DETAILS NO.2" for slab reinforcement

**GENERAL NOTES**

- 1) All structural steel shall be galvanized after fabrication.
- 2) Proposed railing layout shown is approximate. Final layout shall be reviewed by engineer before fabrication.
- 3) Venting and pick-up holes in rails and sleeves shall be shown on fabricator's shop plans.
- 4) Anchor bolts may be tack welded (shop or field) to anchorage.
- 5) All rough edges on posts and rails shall be ground smooth.
- 6) Tubing shall be bent or fabricated to fit horizontal curve when curve is less than 900'-0" in radius.
- 7) After installation of rail, the exposed rail bolt threads shall be painted with two coats of zinc rich paint conforming to the requirement of section 75-1.05 galvanizing of The Standard Specifications.
- 8) The alternative welded splice may be used in lieu of The Standard Splice.
- 9) Each rail length shall be continuous over a minimum of two posts.
- 10) The fabricator shall check that the tubular sleeves splices conform to the dimensions indicated to assure proper clearance.
- 11) Except for expansion splices, not more than one splice shall be permitted per same side of post.
- 12) See contract plans for approach guardrail details.

STANDARD DRAWING			
FILE NO. <b>xs16-205-3e</b>	APPROVED BY <b>T SATTER</b> RESPONSIBLE TECHNICAL SPECIALIST	RELEASED BY <b>ROBERTO LACALLE</b> RESPONSIBLE OFFICE CHIEF	
	APPROVAL DATE <b>6-18-08</b>	RELEASE DATE <b>6-18-08</b>	

- $\nabla$  Modified "Section F-F" and "Section G-G".
- $\nabla$  Deleted "Wall Anchor Plate Detail".

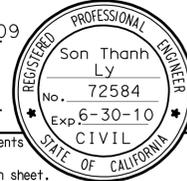
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

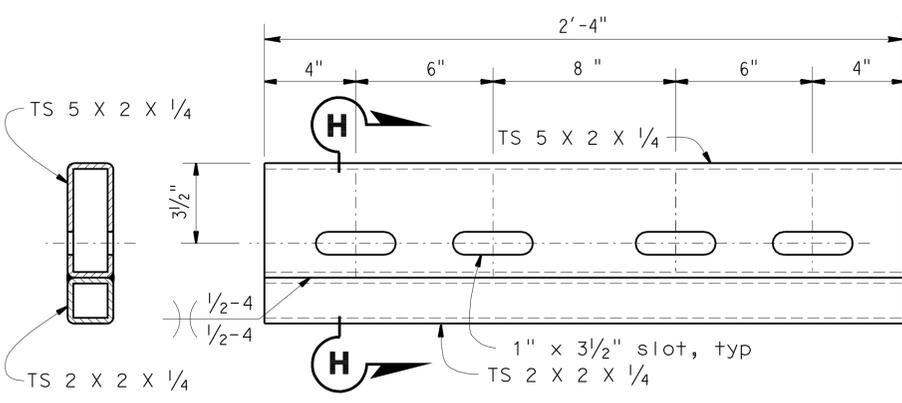
BRIDGE NO. 20E0054	<b>RAILING-CALIFORNIA STEEL TYPE ST-20S BRIDGE RAIL</b>
POST MILE 7.6	
<b>BARRIER RAILING DETAILS NO. 3</b>	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	56	57

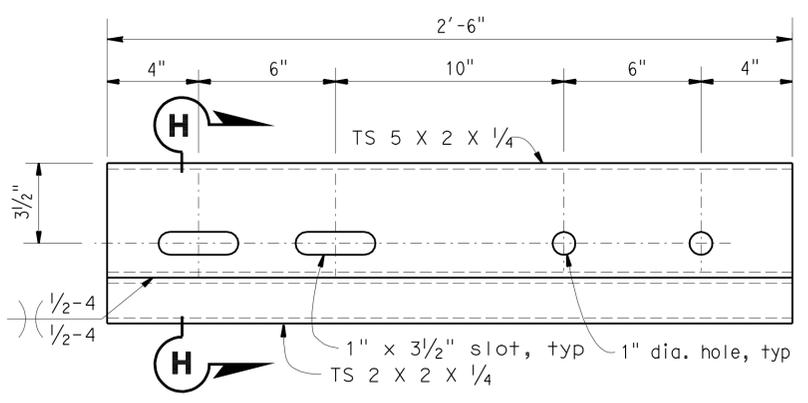
  

 REGISTERED ENGINEER - CIVIL No. 72584 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA		
3-16-09 PLANS APPROVAL DATE 6-21-10		

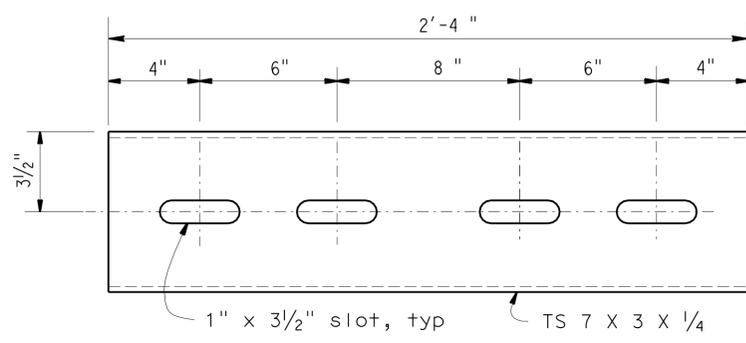
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



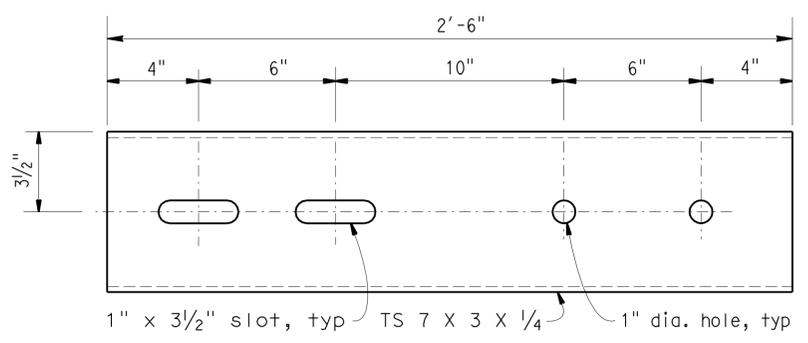
**SECT H-H**  
**STANDARD SLEEVE DETAIL**  
 (For TS 8 X 3 X 5/16 rail)  
 SCALE 3" = 1'



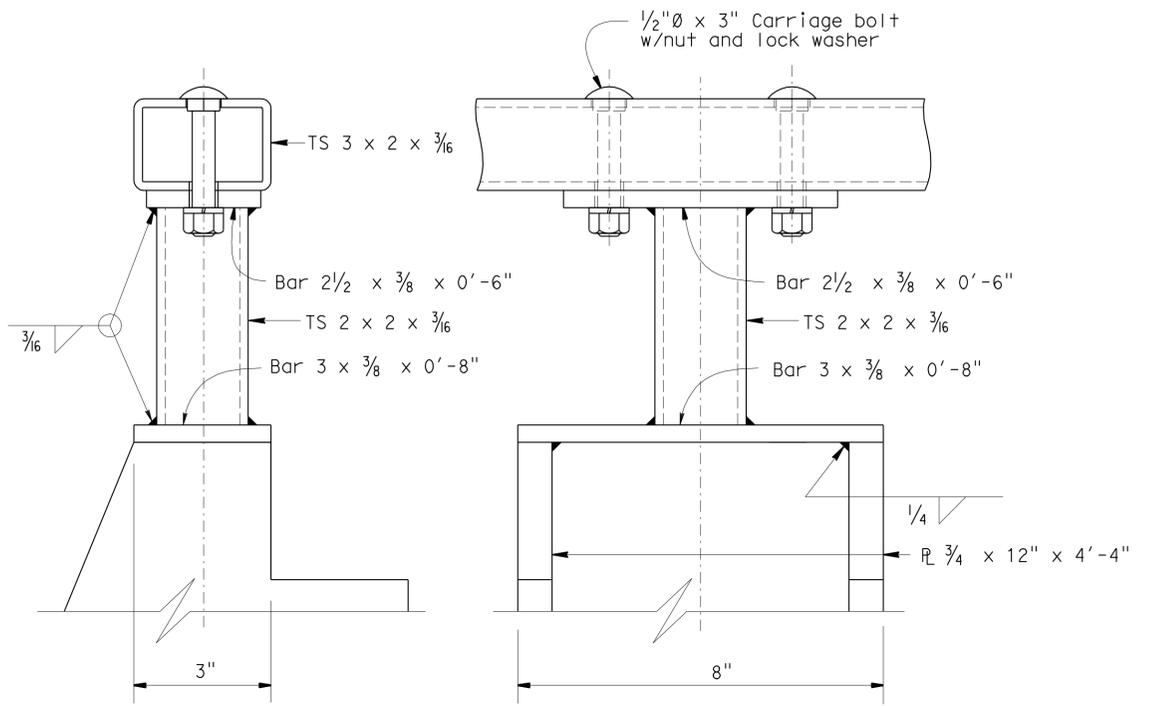
**EXPANSION SLEEVE DETAIL**  
 (For TS 8 X 3 X 5/16 rail)  
 SCALE 3" = 1'



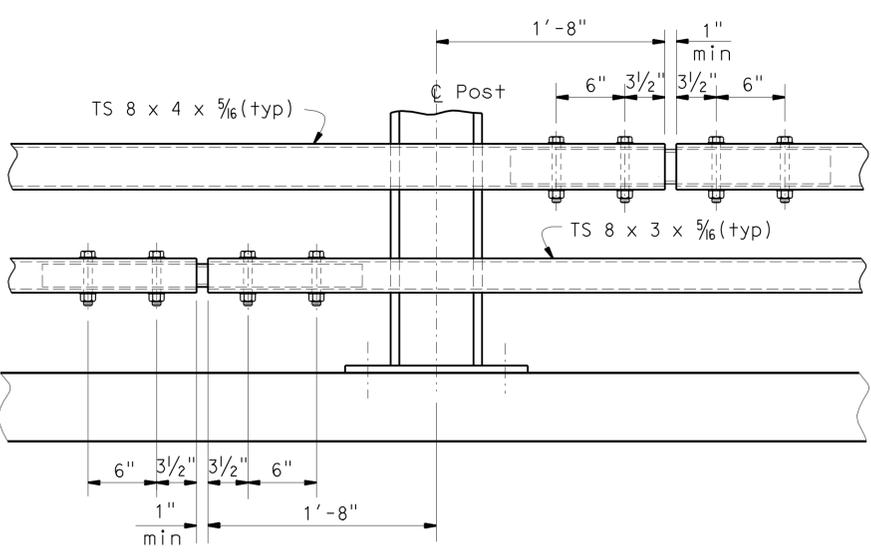
**STANDARD SLEEVE DETAIL**  
 (For TS 8 X 4 X 5/16 rail)  
 SCALE 3" = 1'



**EXPANSION SLEEVE DETAIL**  
 (For TS 8 X 4 X 5/16 rail)  
 SCALE 3" = 1'

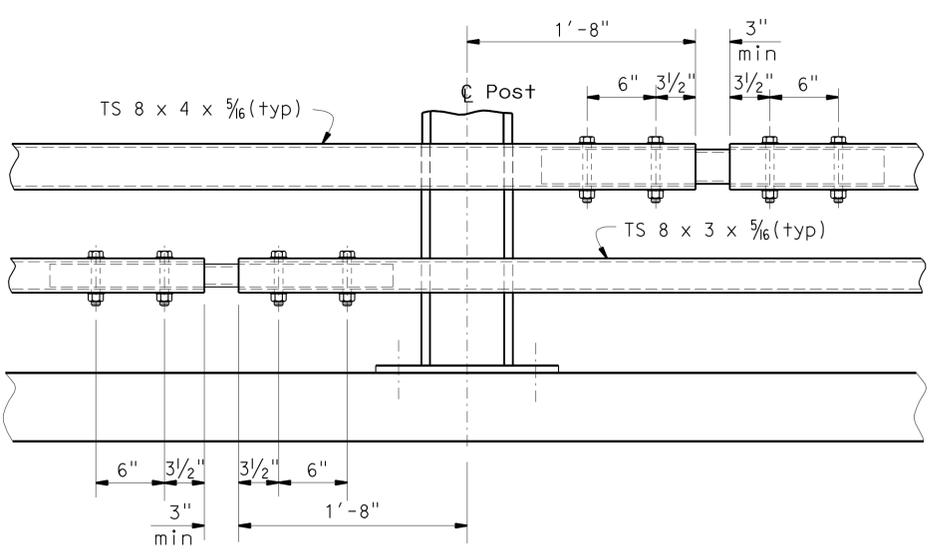


**RAIL CONNECTION DETAILS**  
 SCALE 6" = 1'



**STANDARD SPLICE**  
 SCALE 1 1/2" = 1'

Use 3/4" Ø x 5/4 (top rail) and 3/4" Ø x 4 1/4 (bottom rail) HS bolts with washers, 1" holes in rail (typ). Top 2 rails not shown for clarity.



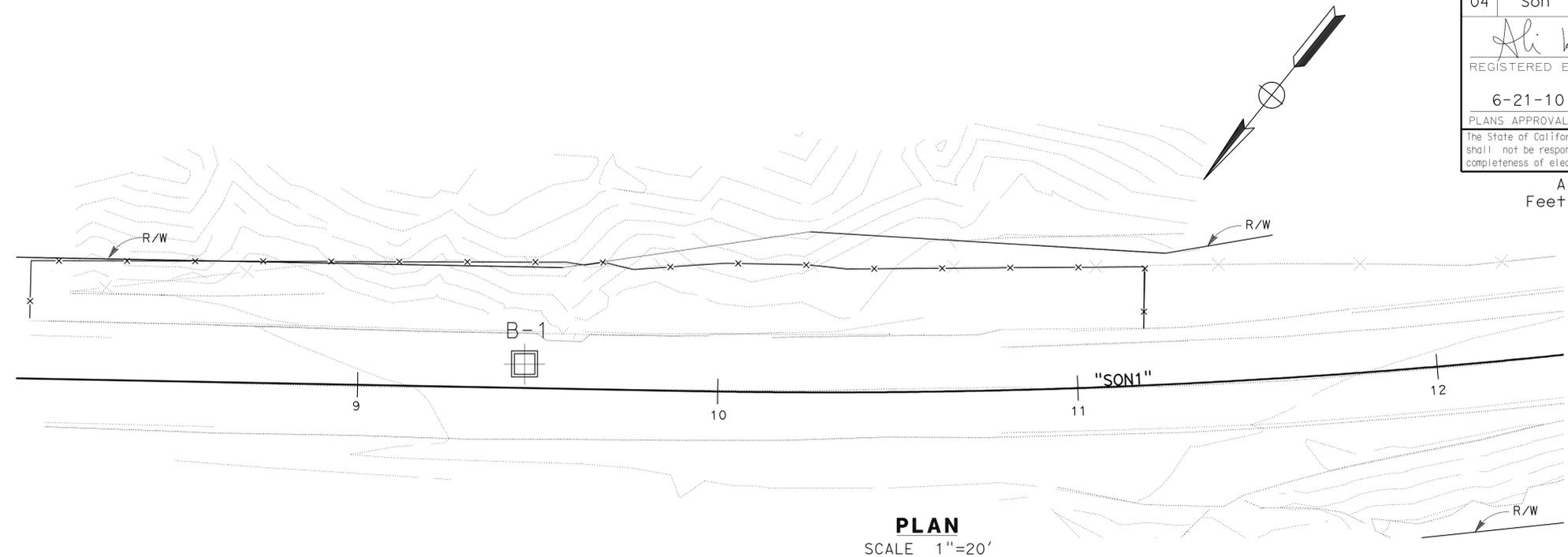
**EXPANSION SPLICE**  
 SCALE 1 1/2" = 1'

STANDARD DRAWING		
FILE NO. <b>xs16-205-4e</b>	APPROVED BY <u>T SATTER</u> RESPONSIBLE TECHNICAL SPECIALIST	RELEASED BY <u>ROBERTO LACALLE</u> RESPONSIBLE OFFICE CHIEF
APPROVAL DATE <u>6-18-08</u>	RELEASE DATE <u>6-18-08</u>	

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 20E0054	<b>RAILING-CALIFORNIA STEEL TYPE ST-20S BRIDGE RAIL</b>
POST MILE 7.6	
<b>BARRIER RAILING DETAILS NO. 4</b>	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	7.6	57	57
03-16-09					
Ali Kaddoura					
REGISTERED ENGINEER - CIVIL					
6-21-10					
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					
All Dimensions are in Feet unless otherwise shown					



**LEGEND OF BORING OPERATIONS**

**LEGEND OF EARTH MATERIALS**

**CONSISTENCY CLASSIFICATION FOR SOILS**

**LEGEND OF BORING OPERATIONS**

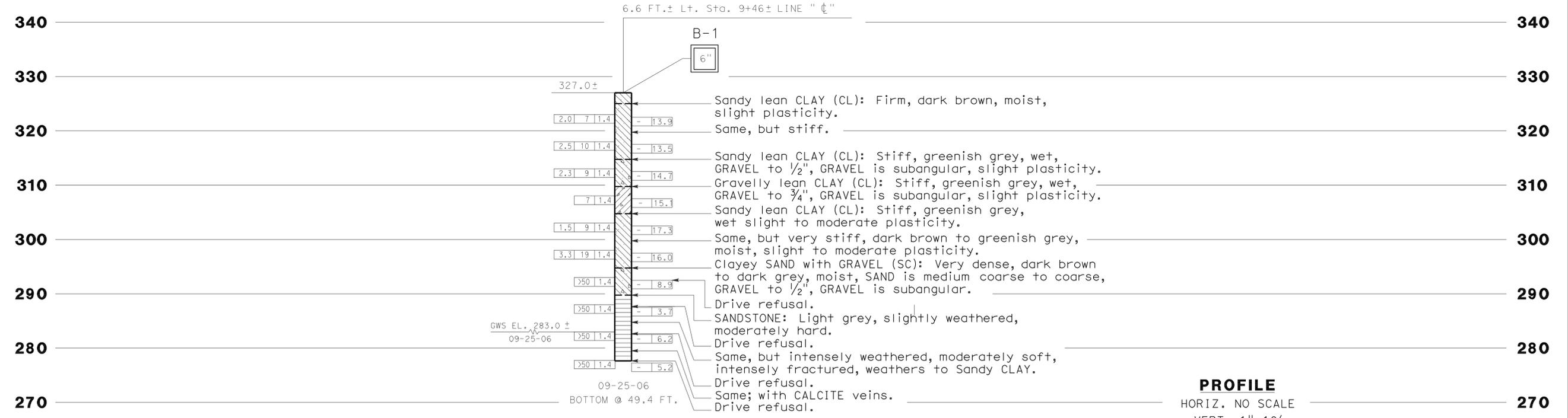
**LEGEND OF EARTH MATERIALS**

**CONSISTENCY CLASSIFICATION FOR SOILS**

**LEGEND OF BORING OPERATIONS**

**LEGEND OF EARTH MATERIALS**

**CONSISTENCY CLASSIFICATION FOR SOILS**



<b>DIVISION OF ENGINEERING SERVICES</b>		FIELD INVESTIGATION BY:	<b>STATE OF CALIFORNIA</b>	<b>GEOTECHNICAL SERVICES</b>	BRIDGE NO.	<b>SOLDIER PILE WALL</b>				
DRAWN BY	M. REYNOLDS 12/08	A. Kaddoura	<b>DEPARTMENT OF TRANSPORTATION</b>	<b>OFFICE OF GEOTECHNICAL DESIGN - WEST</b>	20E0054	<b>LOG OF TEST BORINGS</b>				
CHECKED BY	M. Zabolzadeh				7.6	REVISION DATES (PRELIMINARY STAGE ONLY)				
NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.			ORIGINAL SCALE IS IN INCHES FOR REDUCED PLANS	CU 06248 EA 3S8411	DISREGARD PRINTS BEARING EARLIER REVISION DATES	12-15-08				SHEET 11 OF 11