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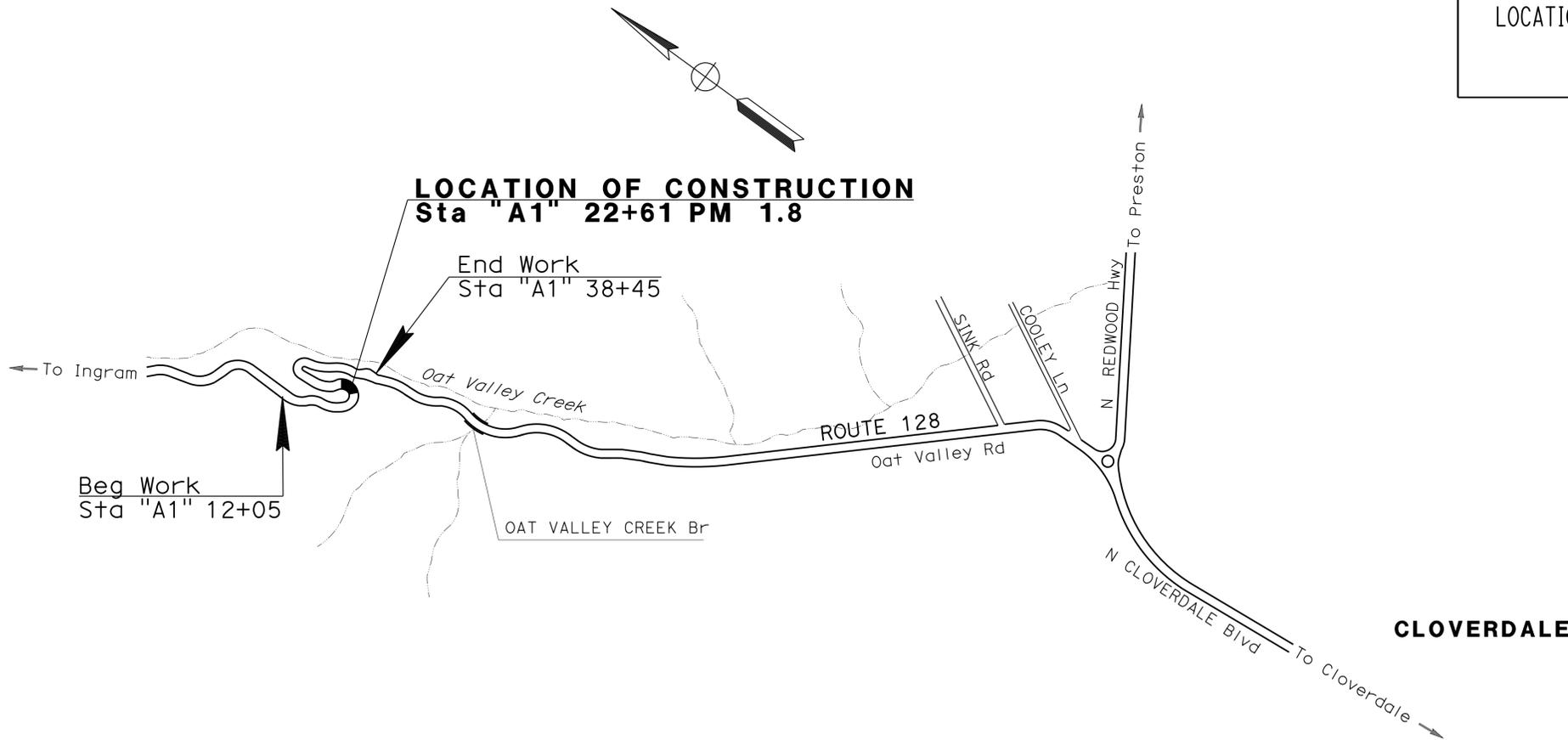
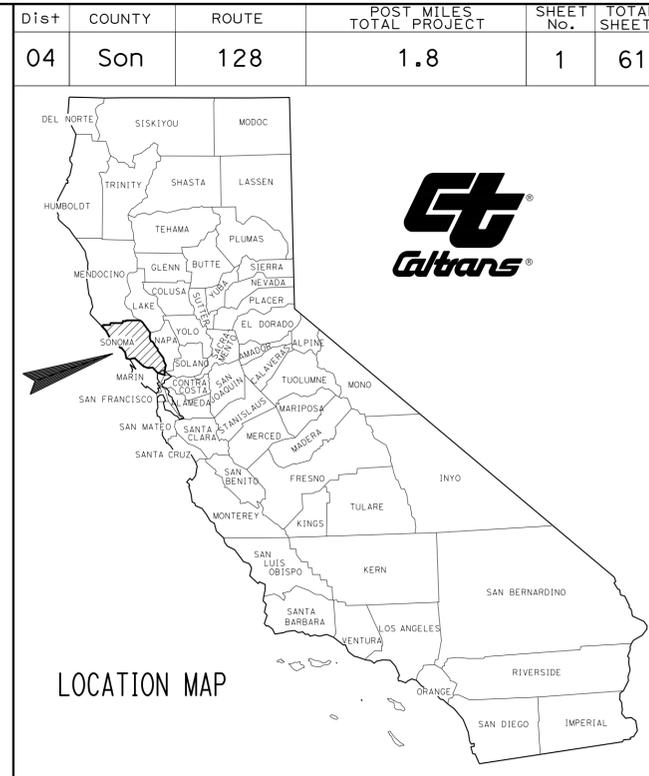
STRUCTURE PLANS

53-61	OAT VALLEY CURVE RETAINING WALL Br No. 20E0081
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA ACSTP-P128(054)E  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SONOMA COUNTY**  
**NEAR CLOVERDALE ABOUT 3.1 MILES**  
**WEST OF NORTH CLOVERDALE BOULEVARD**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



NO SCALE

PROJECT MANAGER	ROBERT NAVARRO
DESIGN ENGINEER	ARTHUR RAMIREZ

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

02-25-14  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER  
**June 16, 2014**  
 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.

REGISTERED PROFESSIONAL ENGINEER  
**ELLERY B. ELLIS**  
 No. 62592  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

CONTRACT No.	<b>04-3G1204</b>
PROJECT ID	<b>0400021276</b>

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	2	61
			02-25-14	DATE	
			6-16-14	PLANS APPROVAL DATE	
REGISTERED CIVIL ENGINEER <b>ELLERY B. ELLIS</b> No. 62592 Exp. 6-30-16 CIVIL 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.					

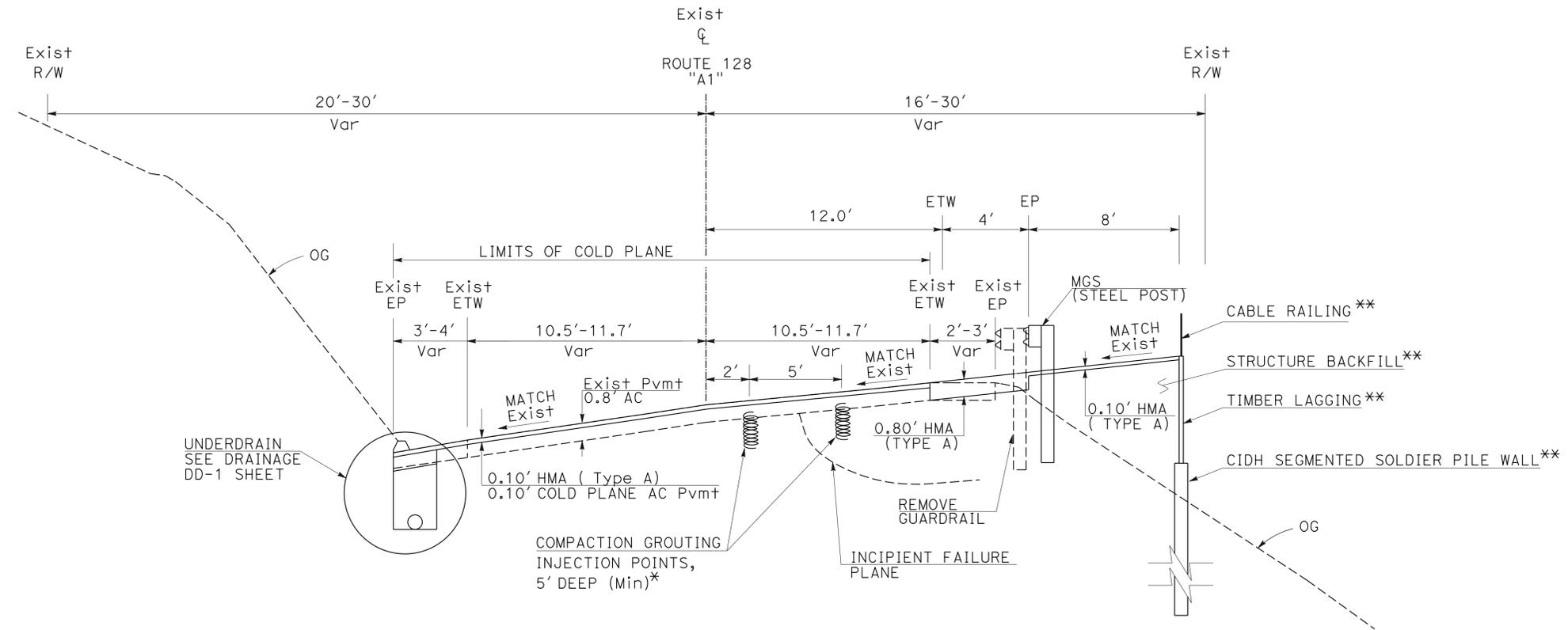
**NOTES:**

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
  - SUPERELEVATIONS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
- \* Min of 5 FEET DEEP GROUT OR AS DIRECTED BY THE ENGINEER  
 \*\* SEE STRUCTURE PLANS

**ABBREVIATION:**

MSG MIDWEST GUARDRAIL SYSTEM

REVISOR	REVISION
ANDREW UN	ELLERY ELLIS
CALCULATED/DESIGNED BY	CHECKED BY
ARTHUR RAMIREZ	
FUNCTIONAL SUPERVISOR	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	06 - DESIGN



"A1" 22+61.90 TO 25+45.06

**TYPICAL X-SECTIONS**  
 NO SCALE  
**X-1**





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	4	61

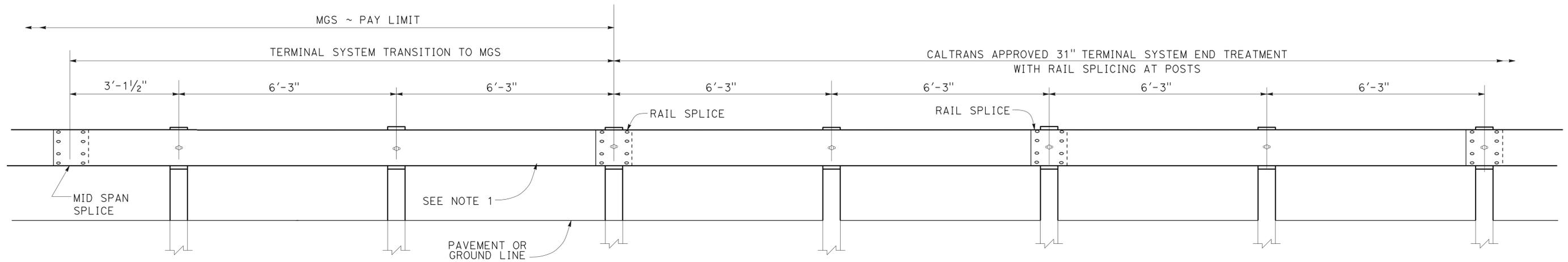
<i>[Signature]</i>	02-25-14
REGISTERED CIVIL ENGINEER	DATE
6-16-14	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
<b>ELLERY B. ELLIS</b>
No. 62592
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

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**NOTE:**  
USE 15'-7 1/2" LENGTH RAIL.



**TRANSITION DETAIL FOR 31" TERMINAL SYSTEM END TREATMENT WITH RAIL SPLICING AT POSTS TO MIDWEST GUARDRAIL SYSTEM**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b>	ARTHUR RAMIREZ	KULVINDER SINGH	
06-DESIGN	CHECKED BY	ELLERY ELLIS	
	DESIGNED BY		

**CONSTRUCTION DETAILS**  
NO SCALE  
**C-1**

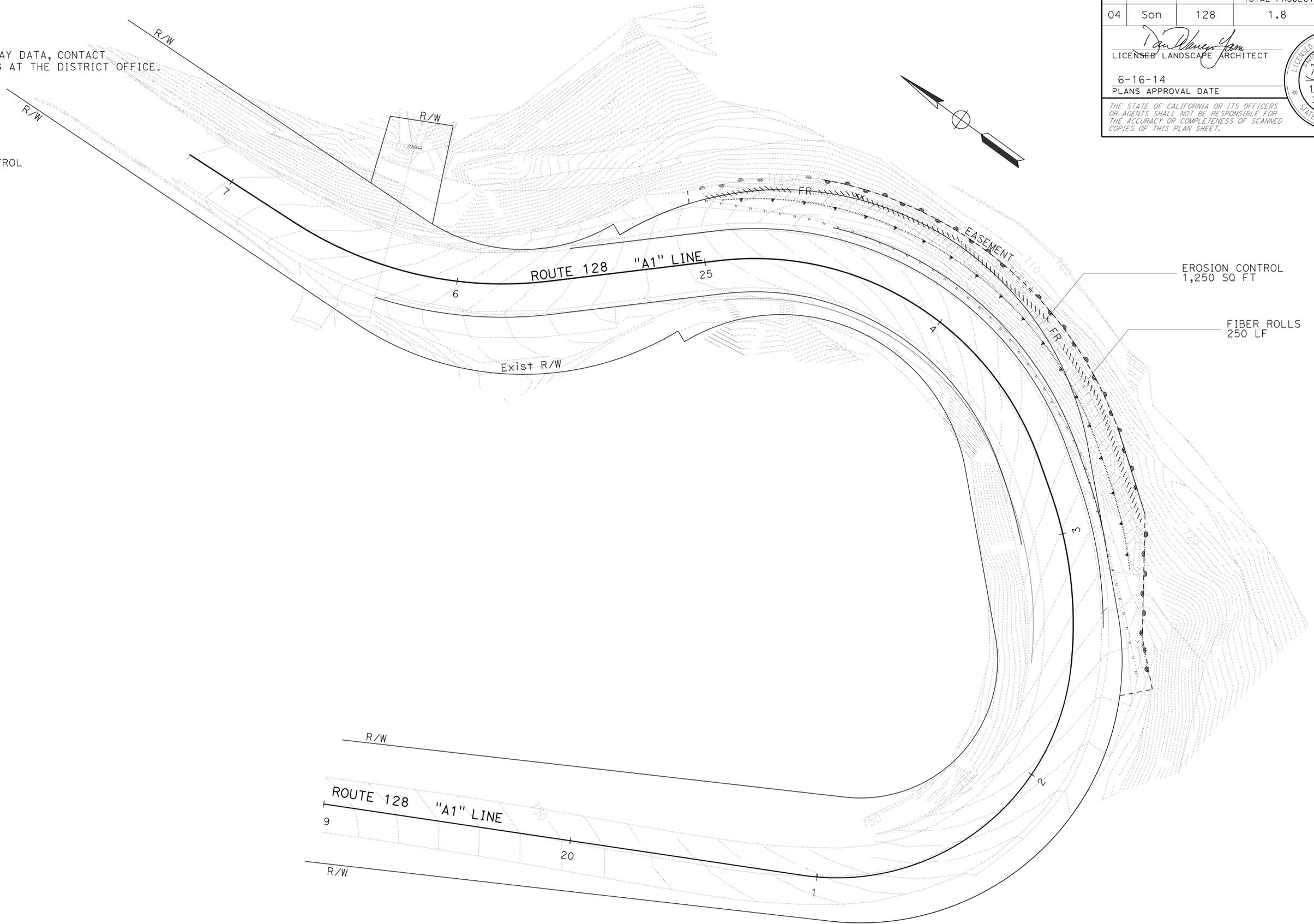
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** WATER QUALITY  
 SENIOR LANDSCAPE ARCHITECT  
 DAVID W. YAM  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 CALIE TSUI  
 DAVID YAM  
 REVISED BY  
 DATE REVISED

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

**LEGEND:**  
 EROSION CONTROL

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	5	61

  
 LICENSED LANDSCAPE ARCHITECT  
 6-16-14  
 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 PLAN**  
 SCALE: 1' = 20"  
**EC-1**

APPROVED FOR EROSION CONTROL WORK ONLY

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

SENIOR LANDSCAPE ARCHITECT  
 DAVID W. YAM

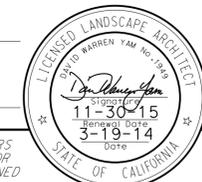
CALCULATED/DESIGNED BY  
 CHECKED BY

CALTE TSUI  
 DAVID YAM

REVISOR BY  
 DATE REVISED

04-01-14 08:43

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	6	61

  
 LICENSED LANDSCAPE ARCHITECT  
 6-16-14  
 PLANS APPROVAL DATE  
  
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**EROSION CONTROL**

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE	REMARKS
		DESCRIPTION	TYPE		
STEP 1	FIBER ROLLS	FIBER ROLL	8" TO 10" Dia		TYPE 1 FIBER ROLL INSTALLATION
STEP 2	HYDROSEED	SEED	MIX 1	58 LB/ACRE	
		FIBER	COMBINATION	285 LB/ACRE	
STEP 3	STRAW	STRAW	RICE	2 TONS/ACRE	
STEP 4	HYDROMULCH	FIBER	COMBINATION	285 LB/ACRE	
		TACKIFIER	GUAR	125 LB/ACRE	

**SEED MIX**

BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
BROMUS CARINATUS <sup>1</sup> (CALIFORNIA BROME)	40	10
ESCHSCHOLZIA CALIFORNICA (CALIFORNIA POPPY)	35	1
LOTUS SCOPARIUS (DEER WEED)	53	5
HORDEUM BRACHYANTHERUM (MEADOW BARLEY)	40	8
ELYMUS GLAUCUS (BLUE WILD RYE)	56	11
ACHILLEA MILLEFOLIUM <sup>1</sup> (WHITE YARROW)	85	7
NASSELLA PULCHRA (PURPLE NEEDLEGRASS)	35	10
VULPIA MICROSTACHYS <sup>1</sup> (SMALL FESCUE)	35	6

<sup>1</sup> SEED PRODUCED IN CALIFORNIA ONLY.

**EROSION CONTROL LEGEND  
 ECL-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** WATER QUALITY  
 SENIOR LANDSCAPE ARCHITECT  
 DAVID W. YAM  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 CALIE TSUI  
 DAVID YAM  
 REVISED BY  
 DATE REVISED

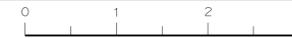
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	7	61

  
 LICENSED LANDSCAPE ARCHITECT  
 6-16-14  
 PLANS APPROVAL DATE  
  
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**EROSION CONTROL QUANTITIES**

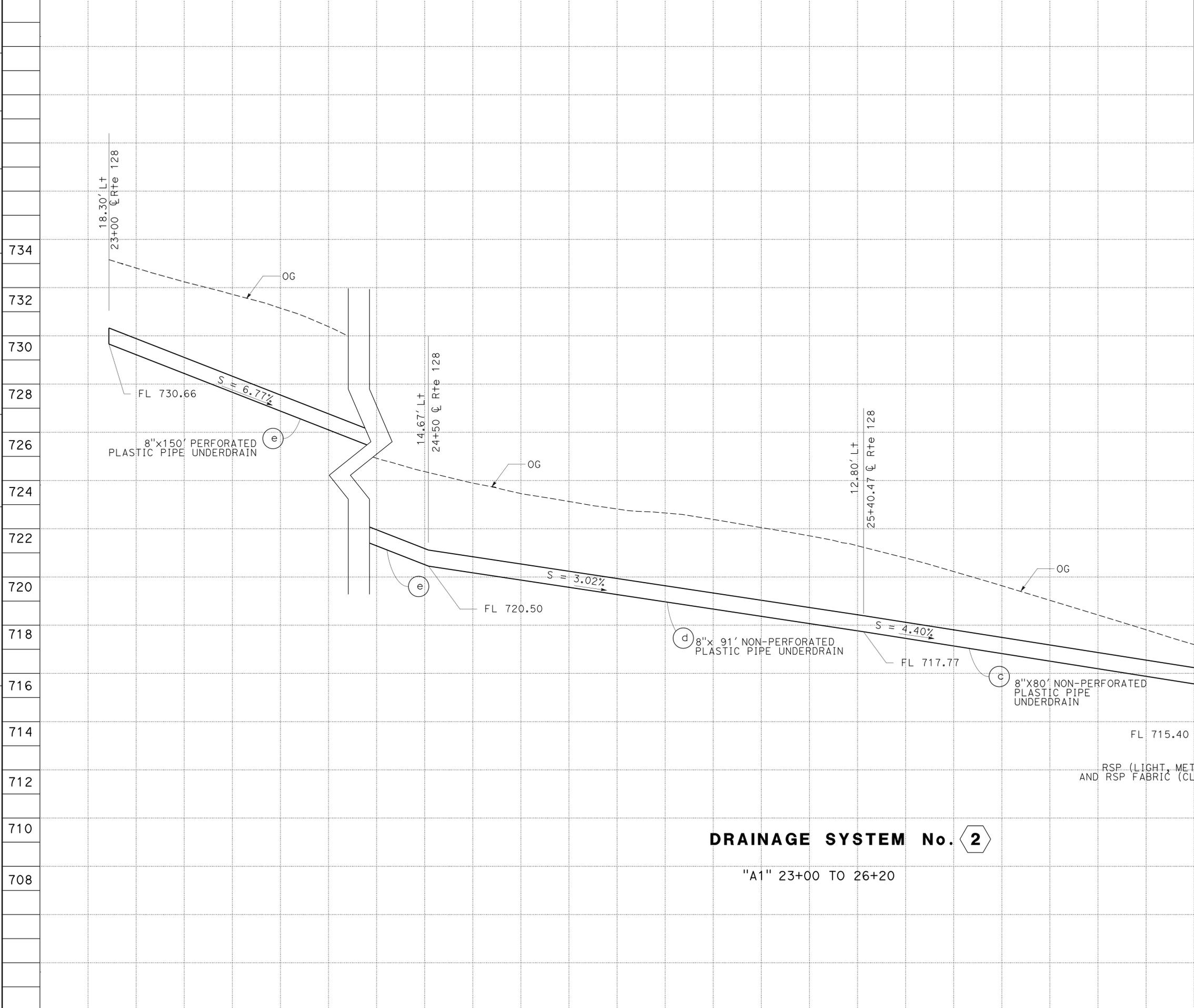
SHEET	DESCRIPTION	HYDROSEED	STRAW	HYDROMULCH	FIBER ROLLS	MOVE IN/MOVE OUT (EROSION CONTROL)
		SQFT	SQFT	SQFT	LF	EA
EC-1	EROSION CONTROL	1250	1250	1250	250	2
<b>TOTAL</b>		1250	1250	1250	250	2

**EROSION CONTROL QUANTITIES  
 ECQ-1**





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



**DRAINAGE SYSTEM No. 2**

"A1" 23+00 TO 26+20

**DRAINAGE PROFILE**  
 SCALE: Horiz 1" = 10'  
 Vert 1" = 2'  
**DP-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	9	61
			02-25-14	DATE	
			6-16-14	PLANS APPROVAL DATE	
REGISTERED CIVIL ENGINEER ELLERY B. ELLIS No. 62592 Exp. 6-30-16 CIVIL 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.					



FUNCTIONAL SUPERVISOR  
 ARTHUR RAMIREZ

CALCULATED/DESIGNED BY  
 CHECKED BY

KULVINDER SINGH  
 ELLERY ELLIS

REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	11	61

02-25-14  
 REGISTERED CIVIL ENGINEER DATE

6-16-14  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**ELLERY B. ELLIS**  
 No. 62592  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

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### DRAINAGE QUANTITIES

DRAINAGE SYSTEM No.	DRAINAGE UNIT	DESCRIPTION											LOCATION
		8" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	8" PERFORATED PLASTIC PIPE UNDERDRAIN	24" CSP (.079" THICK)	RSP (LIGHT, METHOD B)	RSP FABRIC (CLASS 8)	8" FES	24" FES	CLASS 3 PERMEABLE MAERTIAL (BLANKET)	FILTER FABRIC (N)	MAXIMUM COVER (N)	CONCRETE COLLAR (N)	
LF	LF	LF	CY	SQYD	EA	EA	CY	SQYD	LF	EA			
1	a						1					24" FES	26+30, 26.26' Rt
1	b			44					3.6			24" CSP	26+30, 26.26' Rt TO 26+30, 17.11' Lt
1	c									1		CONCRETE COLLAR (N)	26+30, 17.11' Lt
2	a				11.8	29.4						RSP (LIGHT, METHOD B) AND RSP FABRIC (CLASS 8)	26+23, 21.90' Lt
	b						1					8" FES	
	c	150						31.4	168	2.8		8" PERFORATED PLATIC PIPE UNDERDRAIN	23+00, 18.30' Lt TO 24+50, 14.67' Lt
	d	91								2.8		8" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	24+50, 14.67' Lt TO 25+40, 12.80' Lt
2	e	80								2.8		8" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	25+40, 12.80' Lt TO 26+30, 26.26' Lt
TOTAL		171	150	44	11.8	29.4	1	1	31.4				

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

### DRAINAGE QUANTITIES DQ-1

LAST REVISION DATE PLOTTED => 05-SEP-2014  
 11-21-13 TIME PLOTTED => 08:43

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	12	61
Hassan Cohe		03-24-14		REGISTERED CIVIL ENGINEER DATE	
6-16-14		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:**

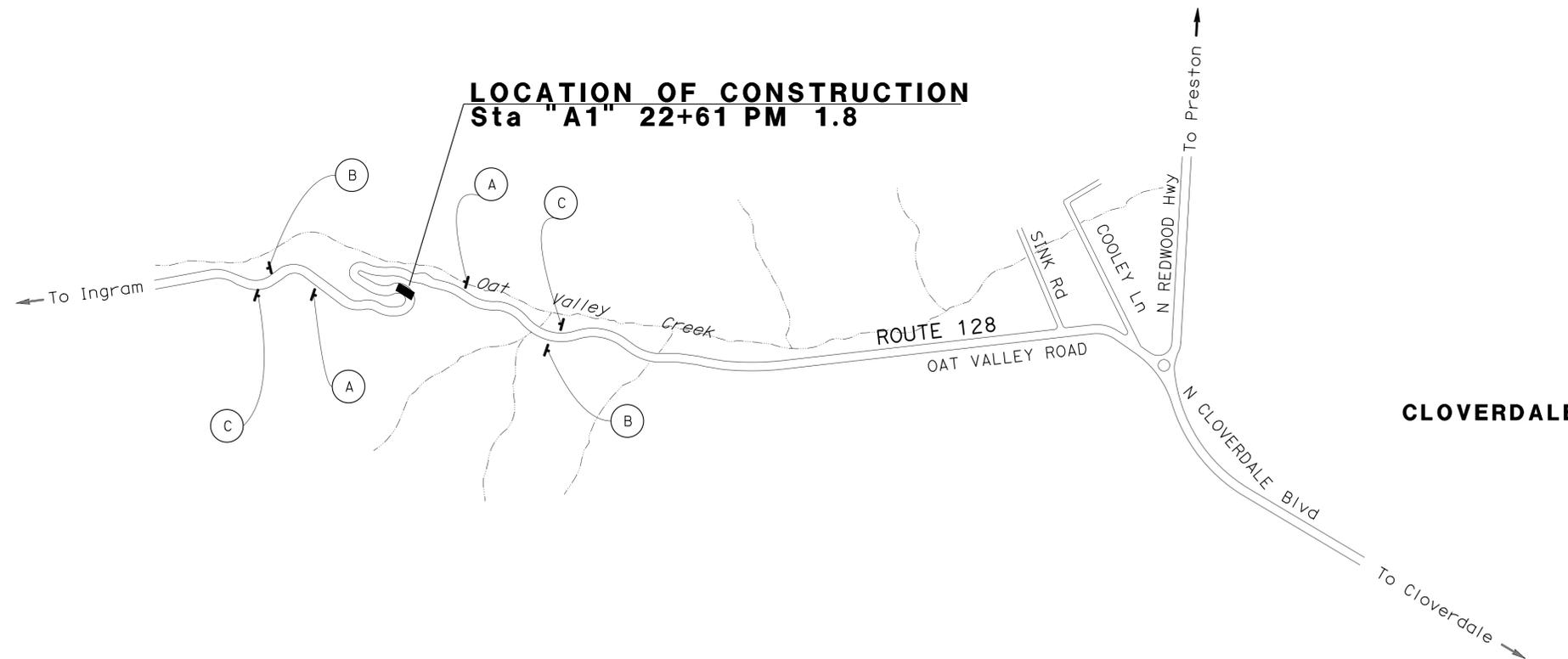
1. ALL TEMPORARY WARNING SIGNS MUST HAVE BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND.
2. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, REFER TO DETOUR AND TRAFFIC HANDLING PLANS.
4. CALIFORNIA CODES ARE DESIGNATED BY (CA). OTHERWISE, FEDERAL (MUTCD) CODES ARE SHOWN.

**LEGEND:**

(X) CONSTRUCTION AREA SIGN No.

**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
(B)	C14(CA)	END ROAD WORK	48" x 24"	1 - 4" x 4"	2
(C)	C40A(CA)	TRAFFIC FINES ARE DOUBLED IN CONSTRUCTION ZONES	48" x 48"	1 - 6" x 6"	2



**CONSTRUCTION AREA SIGNS**

NO SCALE

**CS-1**

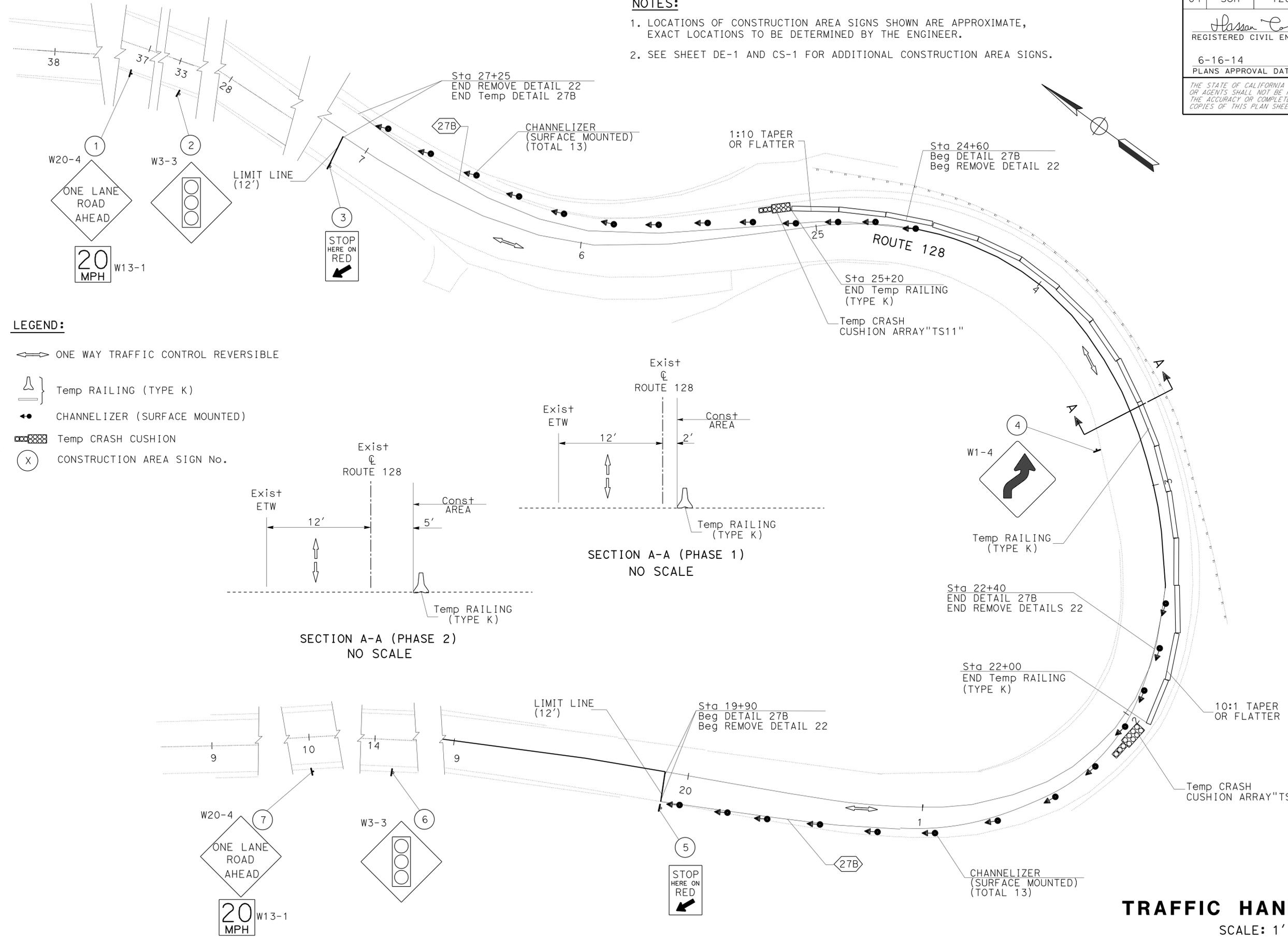
APPROVED FOR CONSTRUCTION AREA SING WORK ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	13	61
<i>Hassan Cohe</i> 03-24-14 REGISTERED CIVIL ENGINEER DATE			HASSAN M. TAHA No. 60130 Exp. 06/30/16 CIVIL		
6-16-14 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>					

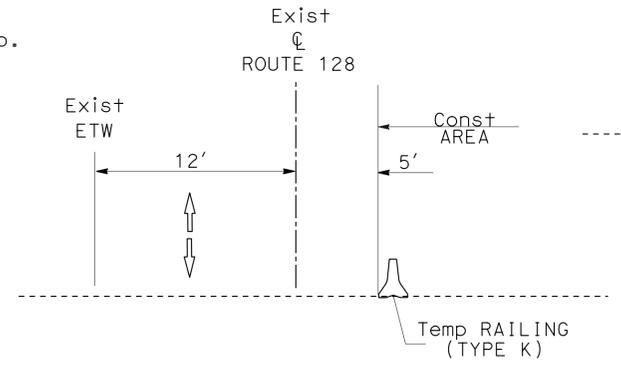
**NOTES:**

1. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE, EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. SEE SHEET DE-1 AND CS-1 FOR ADDITIONAL CONSTRUCTION AREA SIGNS.



**LEGEND:**

- ONE WAY TRAFFIC CONTROL REVERSIBLE
- Temp RAILING (TYPE K)
- CHANNELIZER (SURFACE MOUNTED)
- Temp CRASH CUSHION
- CONSTRUCTION AREA SIGN No.



SECTION A-A (PHASE 1)  
NO SCALE

SECTION A-A (PHASE 2)  
NO SCALE

**TRAFFIC HANDLING PLAN**  
SCALE: 1' = 20"  
**TH-1**

APPROVED FOR TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI  
 CHECKED BY: HASSAN TAHA  
 REVISIONS: 03-24-14  
 DATE REVISION: 03-24-14  
 DESIGNED BY: VANIK POGOSYAN  
 CHECKED BY: HASSAN TAHA

LAST REVISION DATE PLOTTED => 05-SEP-2014  
 04-01-14 TIME PLOTTED => 08:43

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	14	61

*Hassan Cohe* 03-24-14  
REGISTERED CIVIL ENGINEER DATE

6-16-14  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
HASSAN M. TAHA  
No. 60130  
Exp. 06/30/16  
CIVIL  
STATE OF CALIFORNIA

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### TEMPORARY CRASH CUSHION MODULE

SHEET No.	EA
TH-1	22
TOTAL	22

### CHANNELIZER (SURFACE MOUNTED)

SHEET No.	EA
TH-1	26
TOTAL	26

### 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	W20-4	AS SHOWN ON PLAN	36" x 36"	1-4" x 4"	1
		W13-1	AS SHOWN ON PLAN	36" x 24"		
	②	W3-3	AS SHOWN ON PLAN	36" x 36"	MOUNT ON POLE	1
	③	R10-6	AS SHOWN ON PLAN	36" x 24"	MOUNT ON POLE	1
	④	W1-4	AS SHOWN ON PLAN	30" x 30"	1-4" x 4"	1
	⑤	R10-6	AS SHOWN ON PLAN	36" x 24"	MOUNT ON POLE	1
	⑦	W20-4	AS SHOWN ON PLAN	36" x 36"	1-4" x 4"	1
W13-1		AS SHOWN ON PLAN	36" x 24"			

### TEMPORARY PAVEMENT DELINEATION

SHEET No.	LOCATION Sta TO Sta	DETAIL No.	REMOVE PAVEMENT MARKER	REMOVE YELLOW TRAFFIC STRIPE (HAZARDOUS WASTE)	TEMPORARY TRAFFIC STRIPE (TAPE)	TEMPORARY PAVEMENT MARKING (TAPE)	
			EA	LF	LF	DESCRIPTION	SQFT
TH-1	19+90 TO 22+40	22	24	500		2-LIMIT LINE	24
		27B			250		
	24+60 TO 27+25	22	26	530			
		27B			265		
TOTAL			50	1030	515		24

### TEMPORARY RAILING (TYPE K)

SHEET No.	Sta TO Sta	LF
TH-1	22+00 to 25+20	320
TOTAL		320

### RESET TEMPORARY RAILING (TYPE K)

SHEET No.	Sta TO Sta	LF
TH-1	22+00 to 25+20	320
TOTAL		320

## TRAFFIC HANDLING QUANTITIES THQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
*Caltrans* 06-TRAFFIC DESIGN  
FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI  
CALCULATED/DESIGNED BY: VANIK POGOSYAN  
CHECKED BY: HASSAN TAHA  
REVISED BY: VP  
DATE REVISED: 03-24-14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	15	61

Hassan Cohe 03-24-14  
REGISTERED CIVIL ENGINEER DATE

6-16-14  
PLANS APPROVAL DATE

HASSAN M. TAHA  
No. 60130  
Exp. 06/30/16  
CIVIL

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**NOTES:**

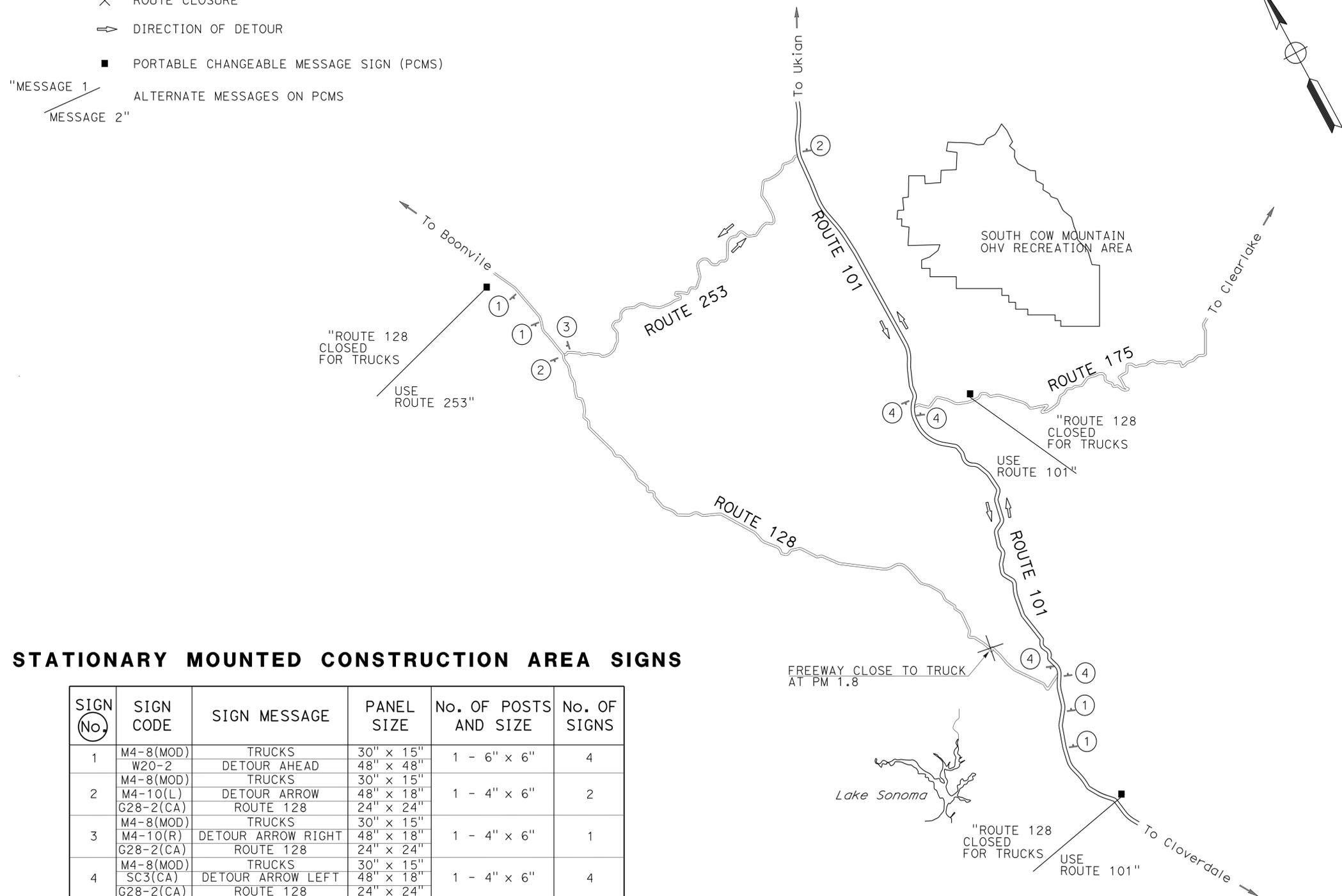
1. COVER ALL CONFLICTING SIGNS.
2. DETOUR SIGNS MAY BE MOUNTED ON BARRICADES FOR SHORT DURATION DETOURS.

**LEGEND:**

- (X) CONSTRUCTION AREA SIGN No.
- X ROUTE CLOSURE
- ↔ DIRECTION OF DETOUR
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- "MESSAGE 1"  
"MESSAGE 2" ALTERNATE MESSAGES ON PCMS

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

FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI  
VANIK POGOSYAN, HASSAN TAHA  
REVISOR: VP, DATE: 03-24-14



**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POSTS AND SIZE	No. OF SIGNS
1	M4-8(MOD)	TRUCKS	30" x 15"	1 - 6" x 6"	4
	W20-2	DETOUR AHEAD	48" x 48"		
2	M4-8(MOD)	TRUCKS	30" x 15"	1 - 4" x 6"	2
	M4-10(L)	DETOUR ARROW	48" x 18"		
	G28-2(CA)	ROUTE 128	24" x 24"		
3	M4-8(MOD)	TRUCKS	30" x 15"	1 - 4" x 6"	1
	M4-10(R)	DETOUR ARROW RIGHT	48" x 18"		
	G28-2(CA)	ROUTE 128	24" x 24"		
4	M4-8(MOD)	TRUCKS	30" x 15"	1 - 4" x 6"	4
	SC3(CA)	DETOUR ARROW LEFT	48" x 18"		
	G28-2(CA)	ROUTE 128	24" x 24"		

**DETOUR PLAN**  
NO SCALE  
**DE-1**

APPROVED FOR DETOUR ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	16	61

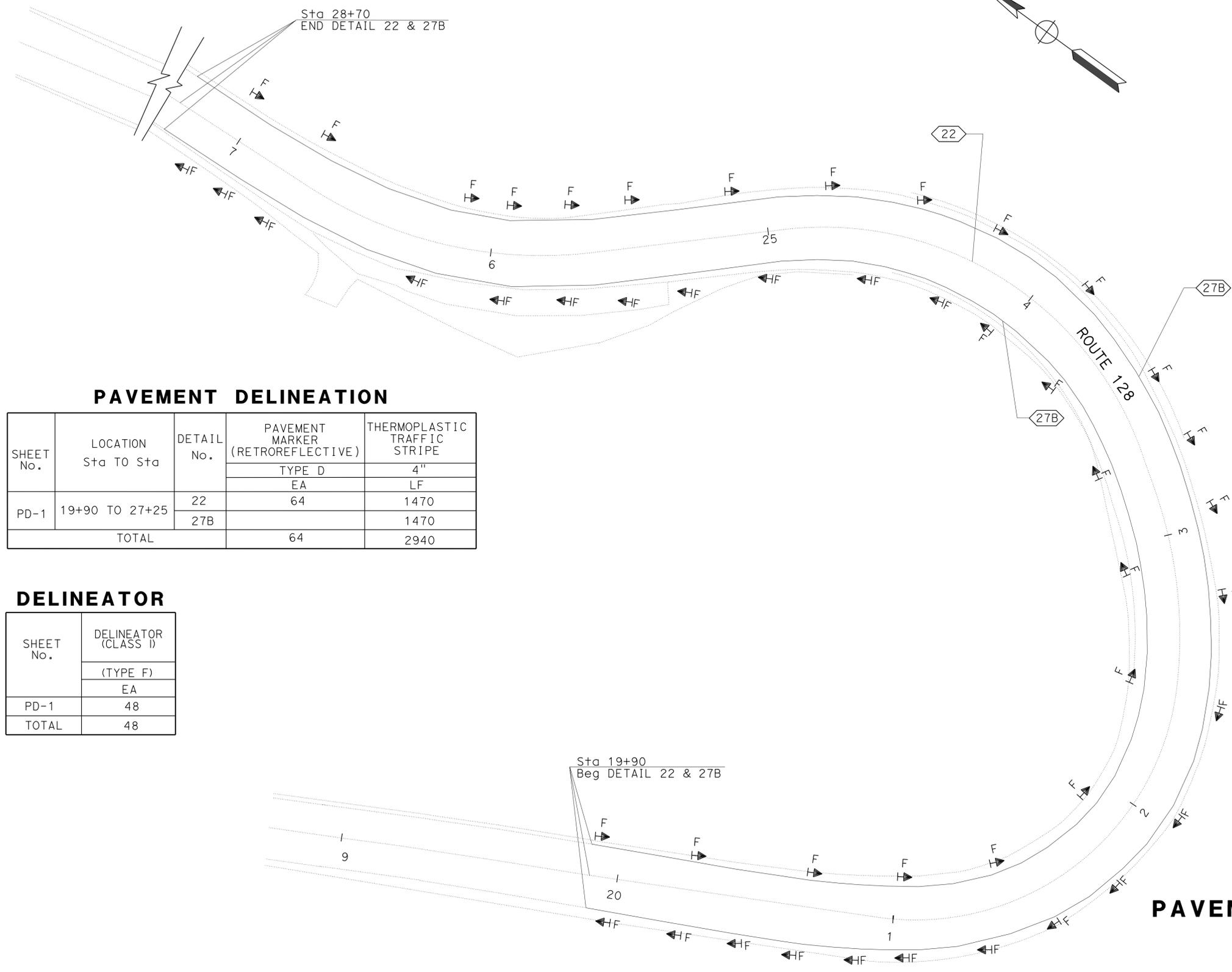
Hassan Cohe 03-24-14  
 REGISTERED CIVIL ENGINEER DATE  
 6-16-14  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 HASSAN M. TAHA  
 No. 60130  
 Exp. 06/30/16  
 CIVIL  
 STATE OF CALIFORNIA

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**LEGEND:**

▬ DELINEATOR (TYPE G/TYPE F)



**PAVEMENT DELINEATION**

SHEET No.	LOCATION Sta TO Sta	DETAIL No.	PAVEMENT MARKER (RETROREFLECTIVE)	THERMOPLASTIC TRAFFIC STRIPE
			TYPE D	4"
PD-1	19+90 TO 27+25	22	EA	1470
		27B		1470
TOTAL			64	2940

**DELINEATOR**

SHEET No.	DELINEATOR (CLASS I)
	(TYPE F)
PD-1	EA
TOTAL	48

**PAVEMENT DELINEATION PLAN AND QUANTITIES**

SCALE: 1" = 20'

**PD-1**

APPROVED FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 06 - TRAFFIC DESIGN  
 MOHAMMED OATAMI  
 VANIK POGOSYAN  
 HASSAN TAHA  
 03-24-14  
 VP

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	17	61

02-25-14  
 REGISTERED CIVIL ENGINEER DATE

6-16-14  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 ELLERY B. ELLIS  
 No. 62592  
 Exp. 6-30-16  
 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	HOT MIX ASPHALT (TYPE A)	ROADWAY EXCAVATION	COLD PLANE AC Pvm+	TACK COAT	COMPACTION GROUTING	GROUT INJECTION POINTS
	TON	CY	SQYD	TON	CF	EA
"A1" 22+61.90 TO "A1" 25+54.06	260	65	905	1.0	180	50
TOTAL	260	65	905	1.0	180	50

### MIDWEST GUARDRAIL SYSTEM

LOCATION	MIDWEST GUARDRAIL SYSTEM (STEEL POST)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	REMOVE GUARDRAIL
	LF	EA	LF
"A1" 22+65.09, 20.8' Rt		1	
"A1" 22+65.09, 20.8' Rt TO 24+77.39, 19.5' Rt	237.5		237.5
"A1" 24+77.39, 19.5' Rt		1	
TOTAL	237.5	2	237.5

### TEMPORARY WATER POLLUTION CONTROL

LOCATION	Temp REINFORCED SILT FENCE
	LF
"A1" 22+45.90, 30' Rt TO 24+98.60, 27' Rt	253
TOTAL	253

### TEMPORARY FENCE (TYPE ESA)

LOCATION	Temp FENCE (TYPE ESA)
	LF
"A1" 22+45.90, 32' Rt TO 24+98.60, 29' Rt	253
TOTAL	253

## SUMMARY OF QUANTITIES Q-1

FUNCTIONAL SUPERVISOR	ALI BAKHDOUD
CALCULATED/DESIGNED BY	CHECKED BY
YOHANNES CHALLA	MONA ATTALLAH
REVISOR	DATE
YC	03-27-14

**INDEX TO ELECTRICAL PLANS:**

SHEET No.	TITLE
E-1	INDEX, NOTES, LEGEND, ABBREVIATIONS, AND SYMBOLS
E-2 TO E-3	TEMPORARY SIGNAL SYSTEM
E-4 TO E-5	ELECTRICAL DETAILS
E-6	ELECTRICAL QUANTITIES

**NOTES:**

- REFER TO SES SHEETS FOR TEMPORARY WOOD POLE DETAILS.
- OVERHEAD CONDUCTORS MUST BE TIED ON MESSENGER WIRE PER SES PLANS.
- OVERHEAD ENTRANCE CONDUIT FITTING MUST BE INSTALLED IN SUCH A WAY SO THAT RAINWATER WILL NOT SEEP INTO ELECTRICAL EQUIPMENT THROUGH THE ENTRANCE FITTING. FORM A DRIP LOOP AT ENTRANCE FITTING.
- ESTABLISH CONTINUOUS GROUND WITH SYSTEM GROUND TO ALL METAL PARTS IN THE SYSTEM BY BONDING JUMPERS AND CONDUITS.
- SIGNS SHOWN ARE "CONSTRUCTION AREA SIGNS". SEE TRAFFIC HANDLING PLANS FOR DETAILS.

**LEGEND:**

- PROVIDE A GENERATOR WITH BACKUP GENERATOR. SEE DETAIL C ON SHEET E-4.
- SERVICE EQUIPMENT ENCLOSURE ON WOOD POLE. SEE DETAIL D AND E ON SHEET E-4.
- DEPARTMENT-FURNISHED MODEL 170E CONTROLLER ASSEMBLY. INSTALL UPS AND TEMPORARY FOUNDATION PLATFORM PER DETAIL A ON SHEET E-4.
- TEMPORARY WOOD POLE SIGNAL. SEE DETAIL H ON SHEET E-5.
- TEMPORARY WOOD POLE SIGNAL. SEE DETAIL I ON SHEET E-5.
- TEMPORARY WOOD POLE SIGNAL. SEE DETAIL M ON SHEET E-5.
- TEMPORARY WOOD POLE SIGNAL. SEE DETAIL J ON SHEET E-5.
- TEMPORARY WOOD POLE SIGNAL. SEE DETAIL O ON SHEET E-5.
- LOOP DETECTORS MUST HAVE 5 TURNS.
- LOOP DETECTORS MUST BE CONNECTED IN PB AS SHOWN ON SHEET E-4 IN DETAIL B FOR 1 TYPE D AND 3 TYPE A LOOP DETECTORS ON ONE SENSOR UNIT CHANNEL.
- 4 SECTIONAL SIGNAL HEAD. SEE DETAIL N ON SHEET E-5.
- TEMPORARY WOOD POLE. SEE DETAIL L ON SHEET E-5.
- TEMPORARY WOOD POLE FLASHING BEACON. SEE DETAIL G ON SHEET E-5.

**SYMBOLS:**

-  TEMPORARY WOOD POLE FLASHING BEACON. SEE DETAIL G ON SHEET E-5
-  TEMPORARY WOOD POLE SIGNAL
-  GENERATOR WITH BACKUP GENERATOR
-  OH --- MESSENGER WIRE WITH CONDUCTORS AS NOTED
-  FUEL FUEL TANK
-  ---x--- TEMPORARY CHAIN LINK FENCE (TYPE CL-6) WITH 4' CHAIN LINK GATE (TYPE CL-6)
-  ---F--- FUEL LINE

**ABBREVIATION:**

UPS UNINTERRUPTIBLE POWER SUPPLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	18	61

 03-26-14  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-16-14  
 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.

REGISTERED PROFESSIONAL ENGINEER  
 MONA N. ATTALLAH  
 No. 18407  
 Exp. 6/30/16  
 ELECTRICAL  
 STATE OF CALIFORNIA

**INDEX, NOTES, LEGEND, ABBREVIATIONS, AND SYMBOLS**  
**E-1**



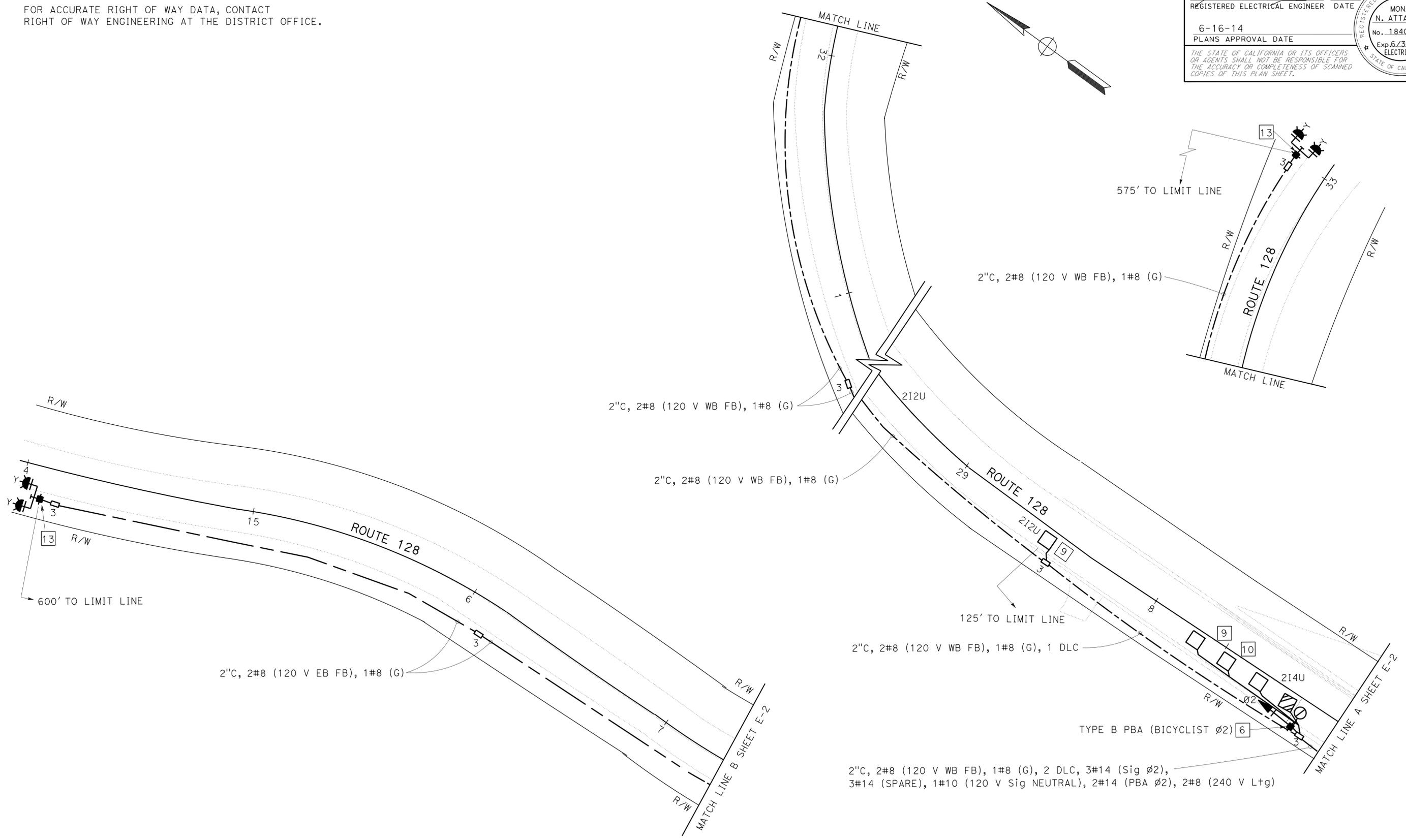
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHDOUD  
 CALCULATED/DESIGNED BY: YOHANNES CHALLA  
 CHECKED BY: MONA ATTALLAH  
 REVISIONS:  
 YC 03-27-14  
 REVISIONS:  
 DATE REVISED: 03-27-14

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	20	61

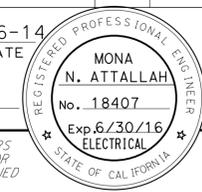
03-26-14  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-16-14  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

MONA N. ATTALLAH  
 No. 18407  
 Exp. 6/30/16  
 ELECTRICAL  
 STATE OF CALIFORNIA

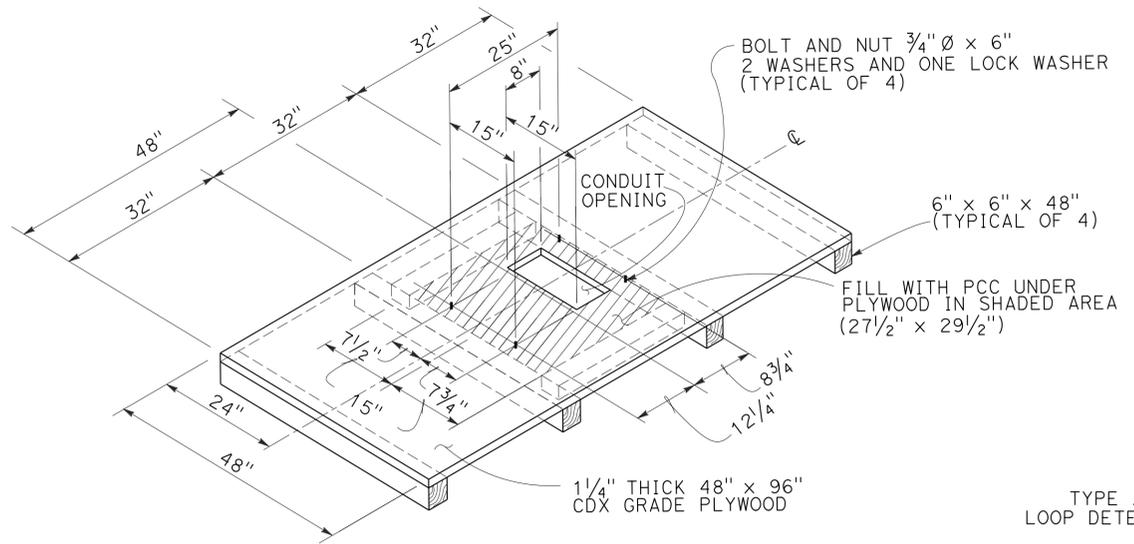


**TEMPORARY SIGNAL SYSTEM**  
 SCALE: 1" = 20'  
**E-3**

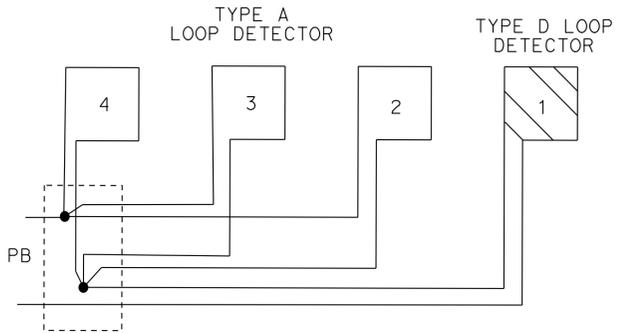
APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	21	61
			03-26-14	DATE	
REGISTERED ELECTRICAL ENGINEER			DATE		
6-16-14			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.					
					

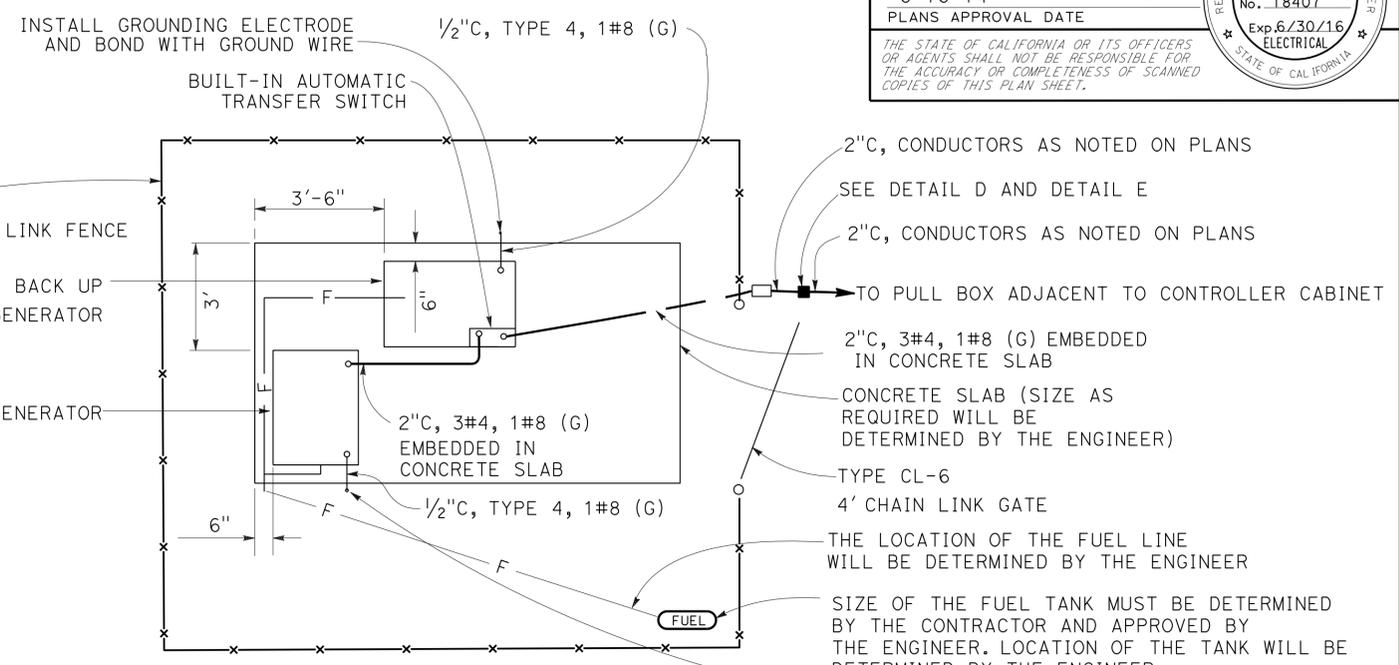
**NOTE:**  
REFER TO SES SHEETS FOR STRUCTURAL DETAILS.



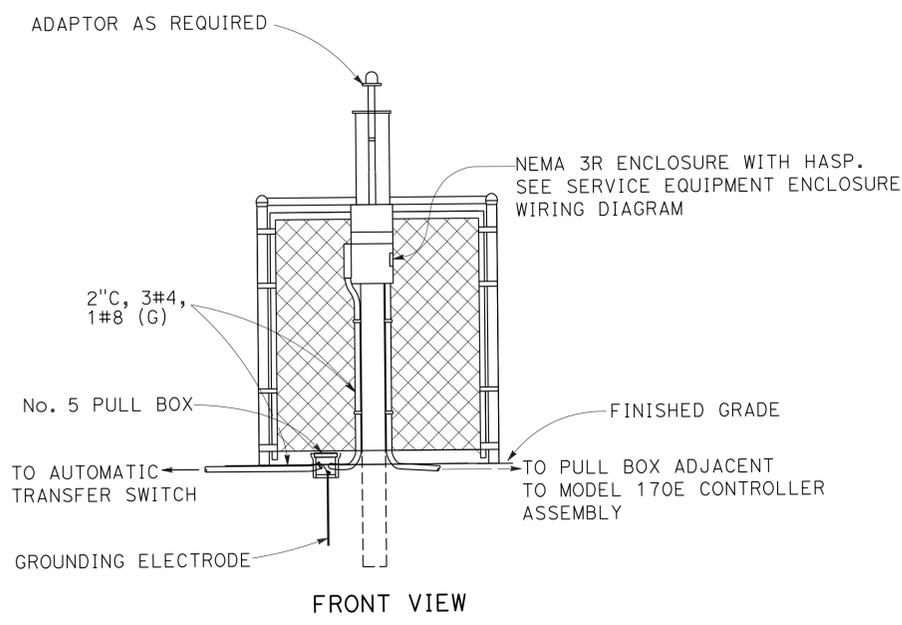
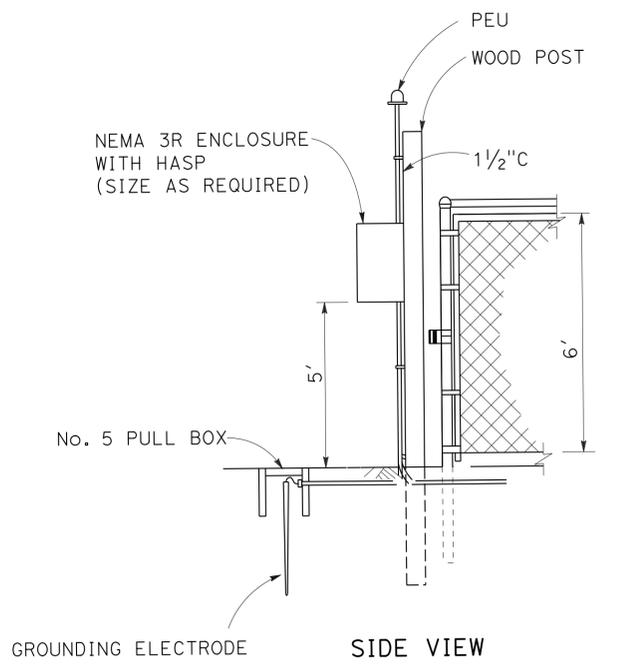
TEMPORARY FOUNDATION PLATFORM  
**DETAIL A**



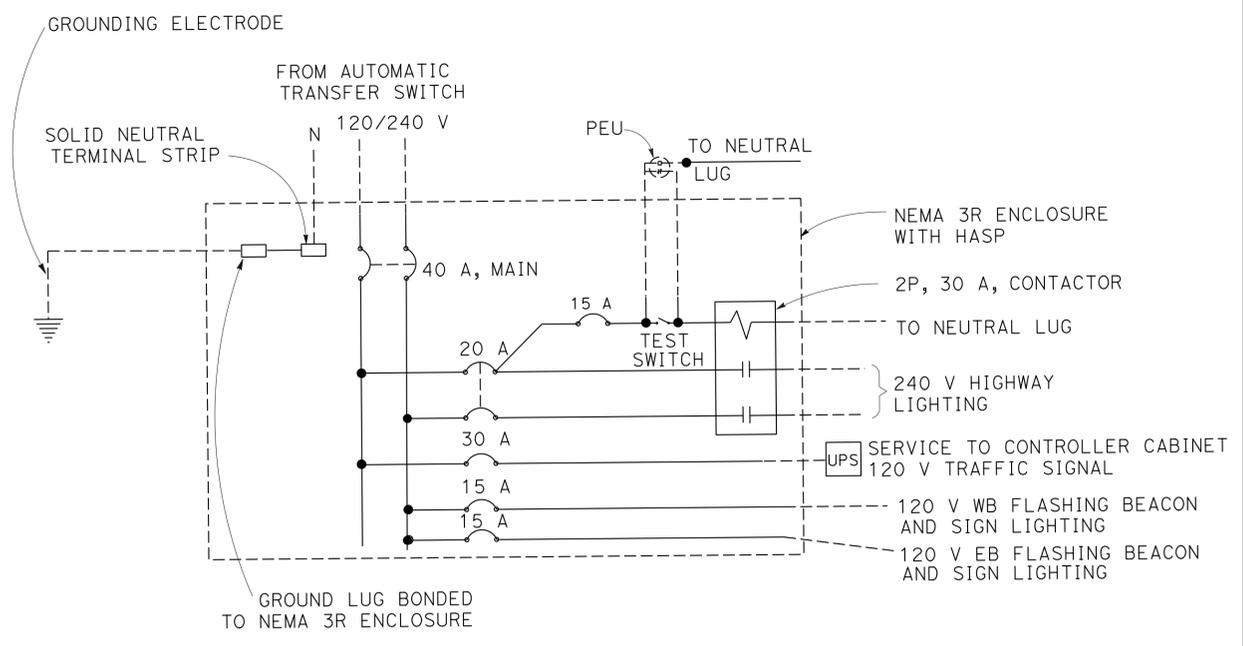
LOOP DETECTOR CONNECTION  
**DETAIL B**



GENERATOR WITH BACKUP GENERATOR  
**DETAIL C**



SERVICE EQUIPMENT ENCLOSURE ON WOOD POST  
**DETAIL D**



SERVICE EQUIPMENT ENCLOSURE WIRING DIAGRAM  
**DETAIL E**

**ELECTRICAL DETAILS**  
**E-4**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Ali Bahhoud  
 Functional Supervisor  
 Yohannes Challa  
 Monah Attallah  
 Revised By  
 Date Revised  
 03-27-14  
 Calculated/Designed By  
 Checked By  
 06-21-13  
 06-21-13

LAST REVISION  
 DATE PLOTTED => 05-SEP-2014  
 TIME PLOTTED => 08:44

**NOTE:**  
REFER TO SES SHEETS FOR STRUCTURAL DETAILS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	22	61

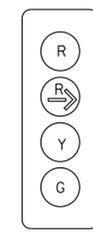
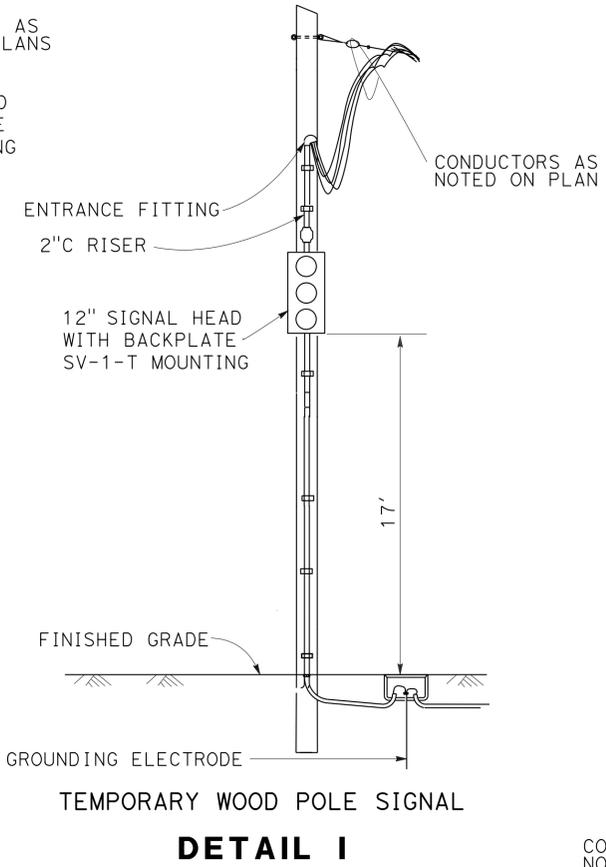
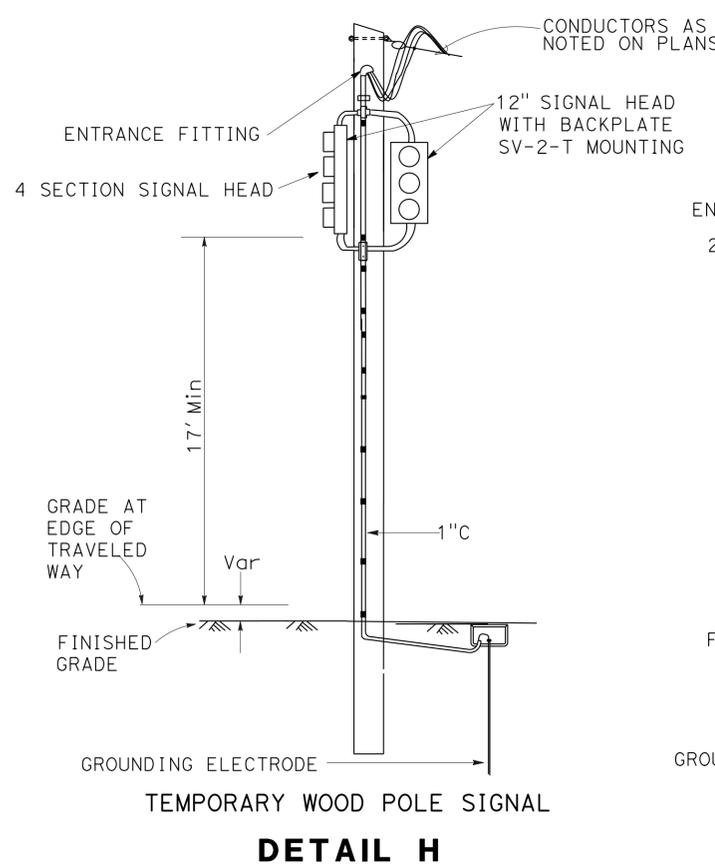
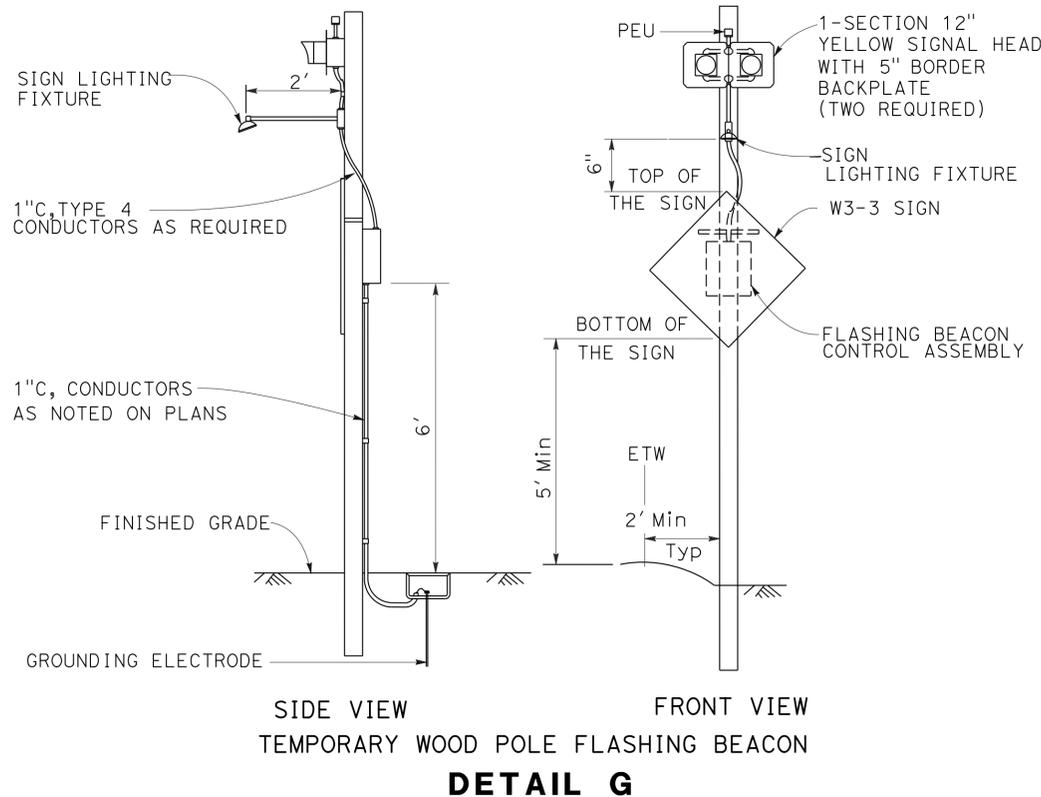
  

<i>Mona Attallah</i> 03-26-14	
REGISTERED ELECTRICAL ENGINEER	DATE
6-16-14	
PLANS APPROVAL DATE	

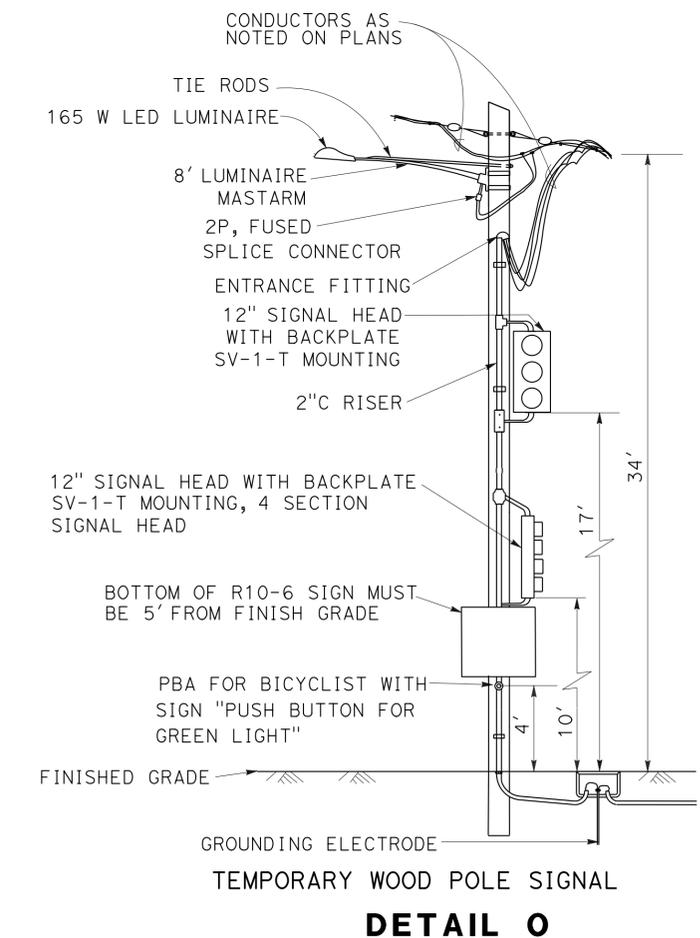
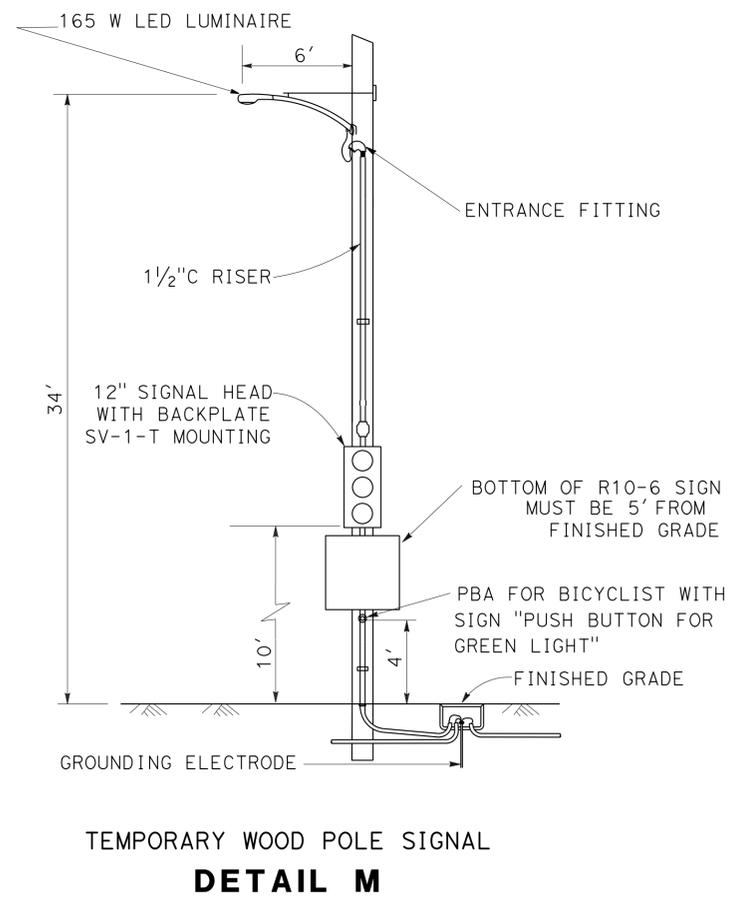
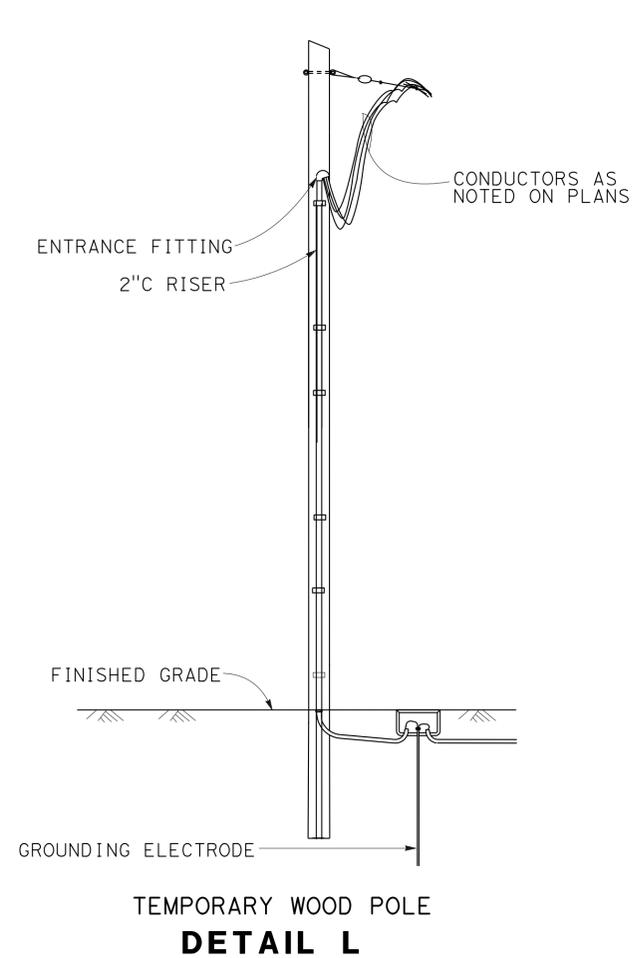
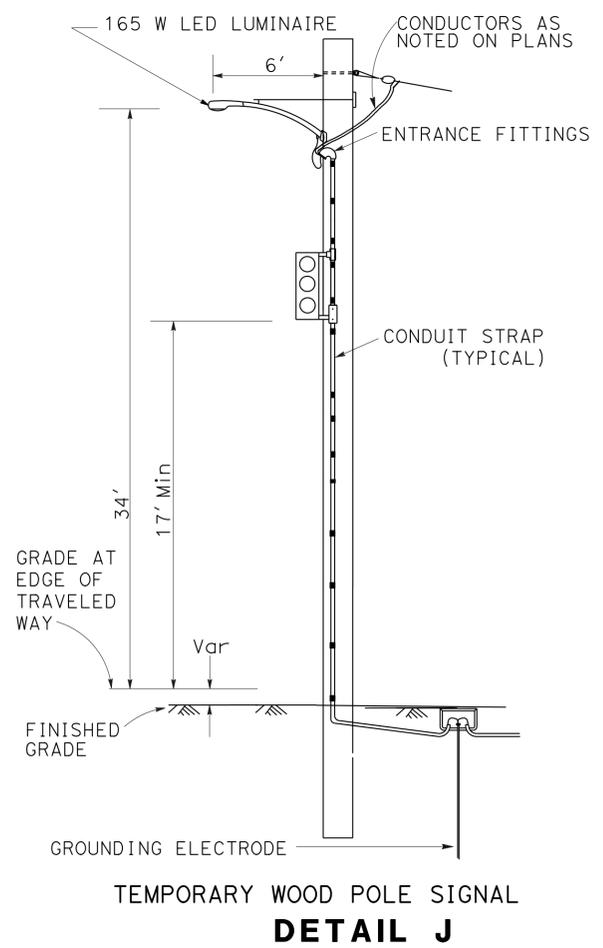
  

REGISTERED PROFESSIONAL ENGINEER	MONA N. ATTALLAH
No. 18407	Exp. 6/30/16
ELECTRICAL	
STATE OF CALIFORNIA	

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**4 SECTION SIGNAL HEAD  
DETAIL N**



**ELECTRICAL DETAILS  
E-5**

NO SCALE

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

FUNCTIONAL SUPERVISOR  
ALI BAKHDOUD

YOHANNES CHALLA  
MONA ATTALLAH

REVISOR  
DATE

Y.C.  
03-27-14

**NOTE:**  
 ITEMS SHOWN IN TABLE ARE NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	23	61

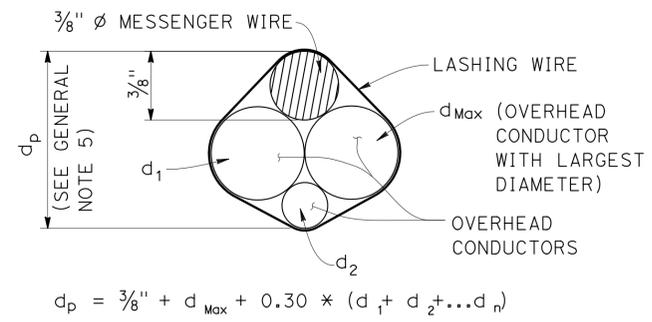
*Mon N. Attallah* 03-26-14  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-16-14  
 PLANS APPROVAL DATE

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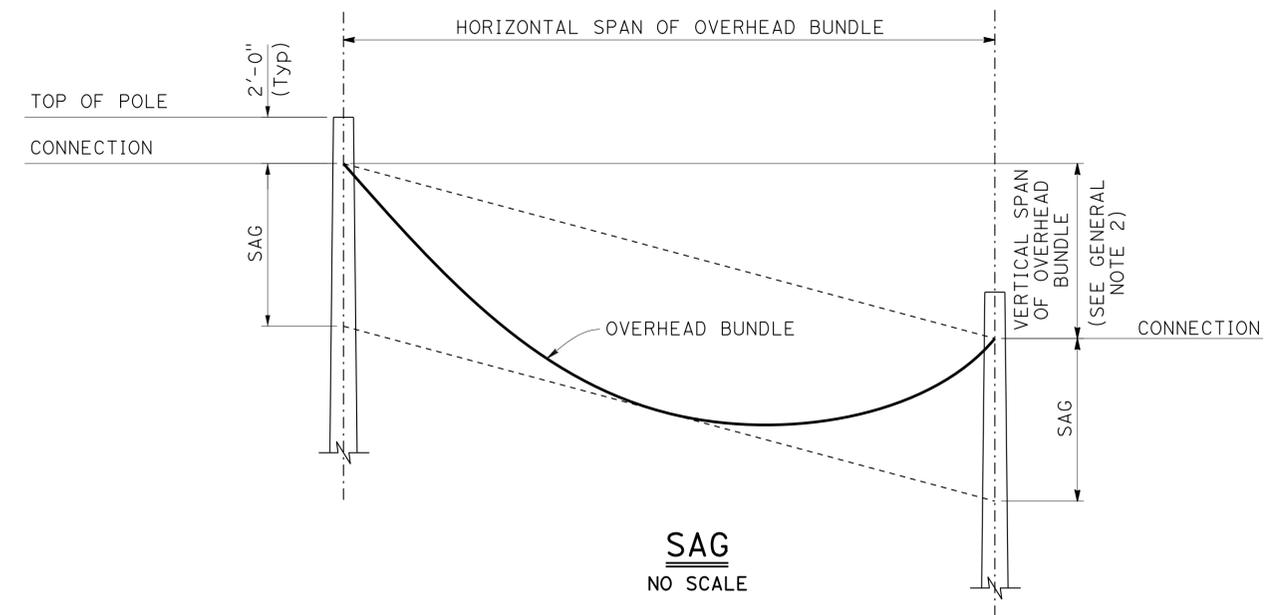
**TEMPORARY SIGNAL SYSTEM**

SHEET No.	DESCRIPTION	EA										LF											
E-2	SERVICE EQUIPMENT ENCLOSURE ON WOOD POST	1	5	1	10	2	1	4	1	2	1	2	1	1	1180	2000	4925	36	28	1070	130	1775	66
E-3	TEMPORARY WOOD POLE SIGNAL	1		2	6			4	1	1					820	1640	100			800		245	

**ELECTRICAL QUANTITIES**  
**E-6**



**PROJECTED DEPTH OF OVERHEAD BUNDLE, (d<sub>p</sub>)**



**SAG**  
NO SCALE

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition (LTS-5).

**GROUP LOAD COMBINATIONS:**

- I Dead Load
- II Dead Load + Wind Load
- III Dead Load + 0.5 (Wind Load) + Ice Load
- IV Fatigue: Not used

**LOADING:**

Wind Loading: 85 mph (3-second gust)  
 Wind Recurrence Interval: 10 years  
 Combined height, exposure, and elevated terrain factor = 1.05  
 (Exposure C, structure is not located on or over the top half of a ridge, hill, or escarpment)  
 Ice Loading: 3.0 psf on surfaces, 0.60 in radial thickness of ice at a unit weight of 60 pcf on overhead bundles

**BASIC DESIGN VALUES:**

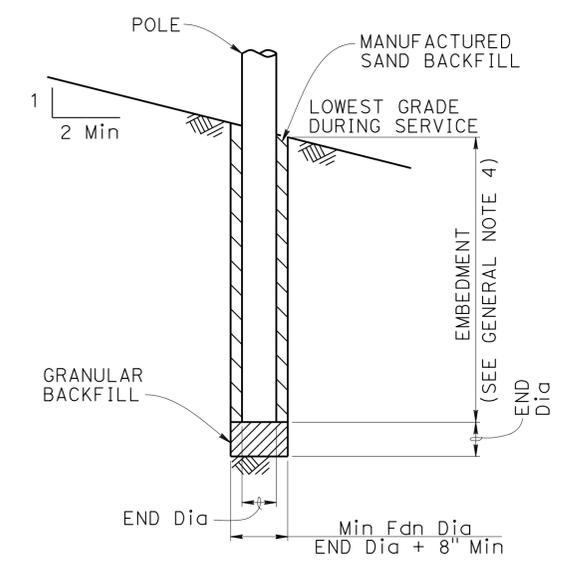
Timber Poles: F<sub>b</sub> = 1850 psi  
 F<sub>v</sub> = 110 psi  
 F<sub>cp</sub> = 230 psi  
 F<sub>c</sub> = 950 psi  
 E = 1500 x 10<sup>3</sup> psi

**DESIGN WIRE BREAKING STRENGTHS:**

ASTM A475, Utilities Grade, 7 strand modified by termination efficiency factor of 0.8.

**FOUNDATION DESIGN NOTES:**

- Pole embedment depth design is based on Broms' approximate procedure as described in Article 13.6 of AASHTO LTS-5.
- Embedment depth is calculated based on following soil parameters, Cohesive Soil: Shear strength of soil c = 1500 psf. Cohesionless Soil: φ = 30 deg, γ = 120 pcf. Soil assumed to be unsaturated.
- An overload factor of 2.0 and an under capacity factor of 0.7 were used for safety factor of 2.86.
- Allowable vertical bearing pressure at the end bearing of poles is 3000 psf at 6 feet or more embedment.



**POLE FOUNDATION**

**GENERAL NOTES:**

- The messenger wire and any combination of overhead conductors must not exceed either a self weight of 3.0 lb/ft or the maximum d<sub>p</sub>.
- The maximum vertical span is 10% of the horizontal span.
- For poles with adjacent unbalanced horizontal spans, the shortest horizontal span must be at least 50% of the largest horizontal span.
- Add 2'-0" for slopes above 1V:4H.
- For a pole supporting multiple spans, calculate d<sub>p</sub> for each span and use the largest value.
- Do not exceed the attachments shown.

**DIAMETERS AND SELF WEIGHT OF OVERHEAD CONDUCTORS**

CONDUCTOR OR CABLE TYPE	DIAMETER d (in)	WEIGHT w (plf)
3 CONDUCTOR SIGNAL CABLE (3CSC)	0.400	0.0980
5 CONDUCTOR SIGNAL CABLE (5CSC)	0.500	0.1560
9 CONDUCTOR SIGNAL CABLE (9CSC)	0.650	0.2760
12 CONDUCTOR SIGNAL CABLE (12CSC)	0.800	0.3970
28 CONDUCTOR SIGNAL CABLE (28CSC)	0.900	0.6490
1-#14	0.166	0.0235
1-#12	0.185	0.0330
1-#10	0.210	0.0476
1-#8	0.271	0.0774
1-#6	0.310	0.1130
1-#4	0.359	0.1690
1-#3	0.388	0.2080
1-#2	0.420	0.2560
1-#1	0.498	0.3340
6-CONDUCTOR SIGNAL INTERCONNECT CABLE (SIC)	0.350	0.0860
12-CONDUCTOR SIGNAL INTERCONNECT CABLE (SIC)	0.500	0.1440
DETECTOR LEAD-IN CABLE (DLC)	0.310	0.0440
12 to 48-STRAND FIBER OPTIC CABLE (48FOC)	0.424	0.0600
72-STRAND FIBER OPTIC CABLE (72FOC)	0.484	0.0770
96-STRAND FIBER OPTIC CABLE (96FOC)	0.535	0.1050
144-STRAND FIBER OPTIC CABLE (144FOC)	0.670	0.1890
3/8" φ MESSENGER WIRE	0.375	0.2730

NO SCALE

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

BRANCH CHIEF DAVID NEUMANN	DESIGN BY A MALAK	CHECKED T MARCHENKO	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE No.	TEMPORARY WOOD POLES GENERAL NOTES	SES-1
	DETAILS BY H NGUYEN	CHECKED A MALAK			N/A		
	QUANTITIES BY	CHECKED			POST MILE 1.8		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	25	61
9-5-13 REGISTERED CIVIL ENGINEER DATE			6-16-14 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.					

### POLE SELECTION TABLE

#### LEGEND

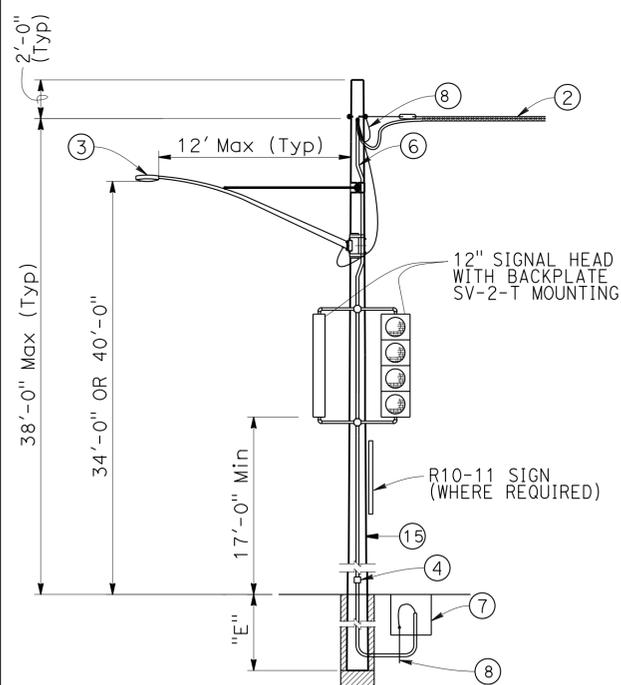
- Wood Pole No Attachments
- Wood Pole with Attachments
- Overhead Bundle

OVERHEAD BUNDLE HORIZONTAL SPAN (Max)	MAXIMUM d <sub>p</sub>	CASE 1N (Mod)				CASE 2N				CASE 3N (Mod)				CASE 4N				CASE 5N	
		1"	1.5"	2.0"	2.5"	1"	1.5"	2.0"	2.5"	1.0"	1.5"	2.0"	2.5"	1"	1.5"	2.0"	2.5"	N/A	
50'	MINIMUM POLE CLASS	H-1	H-2	H-2	H-2	4	3	2	1	H-2	H-2	H-3	H-3	H-4	H-4	H-4	H-5	CLASS 1 E = 10'	
	POLE EMBEDMENT (E)	11'				10'				11'				12'					
	100'	MINIMUM POLE CLASS	H-2	H-3	H-4	H-5	1	H-1	H-2	H-3	H-4	H-5	H-5	H-6	H-5	H-5	H-6		
		POLE EMBEDMENT (E)	12'				11'				12'				12'				
150'	MINIMUM POLE CLASS	H-4	H-5	H-6		H-1	H-2	H-3	H-5	H-6				H-6					
	POLE EMBEDMENT (E)	12'				12'				12'				12'					
200'	MINIMUM POLE CLASS	H-5	H-6			H-2	H-3	H-5											
	POLE EMBEDMENT (E)	12'				12'													

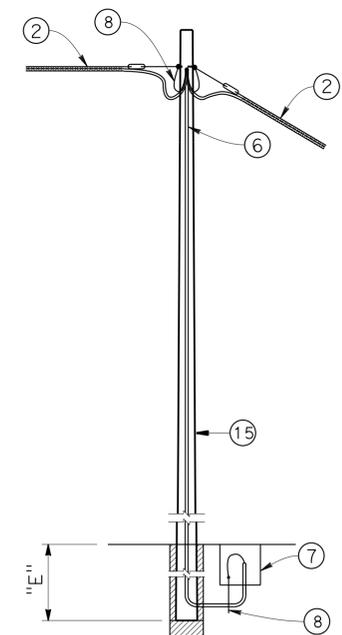
- 1 CCTV camera assembly or vehicle detection system
- 2 Overhead bundle consisting of a 3/8" ø messenger wire and overhead conductors and lashing wire.
- 3 Luminaire with mast arm
- 4 Pedestrian pushbutton
- 5 Signal face with 3 indications or single sheet sign panel (10 SQFT Max)
- 6 Riser with weather head as required
- 7 Pull box as required
- 8 Grounding as required
- 9 Single section flashing beacon or single sheet sign panel (4 SQFT Max)
- 10 Single sheet sign panel (4' x 4' Max) or signal face with 3 indications
- 11 Flashing beacon control assembly
- 12 NEMA 3R enclosure, 26"(W) x 56"(H) x 12"(D) Max dimensions. Max weight including batteries, 450 lb
- 13 25 SQFT Max total photovoltaic panels mounted as required
- 14 2-section 12" flashing beacon
- 15 Wood pole

#### NOTES:

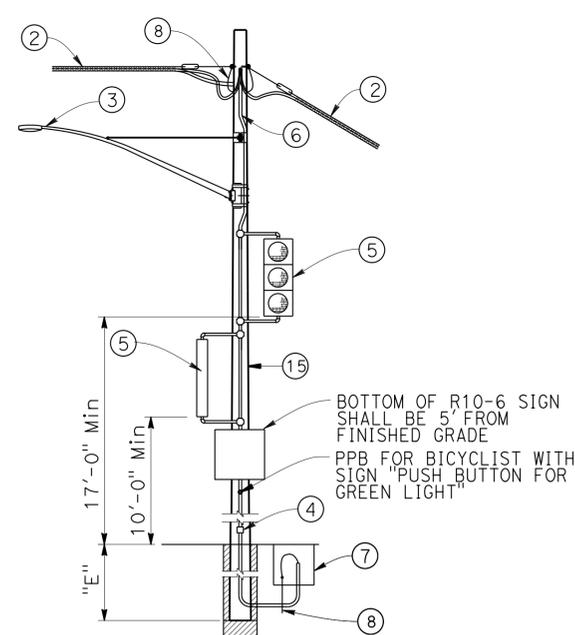
1. In addition to other restrictions on maximum horizontal span, this horizontal span must not exceed 100'.
2. Cases, 1N, 3N and 4N may substitute the attachments shown in Case 5N if the photovoltaic panel is not included.



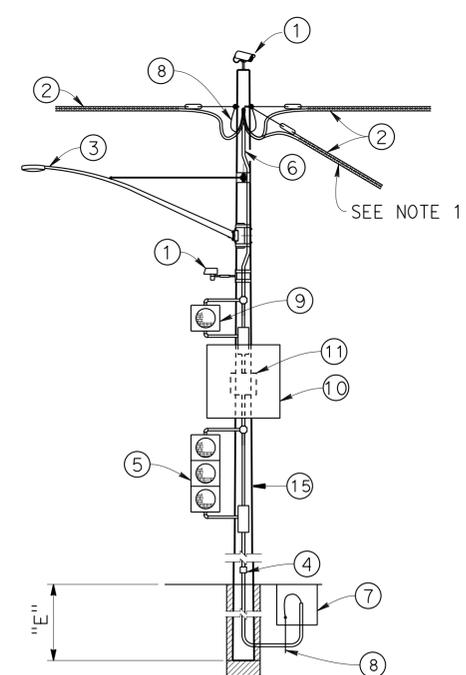
**CASE 1N (Mod)  
POLE AT DEAD END  
WITH ATTACHMENTS**



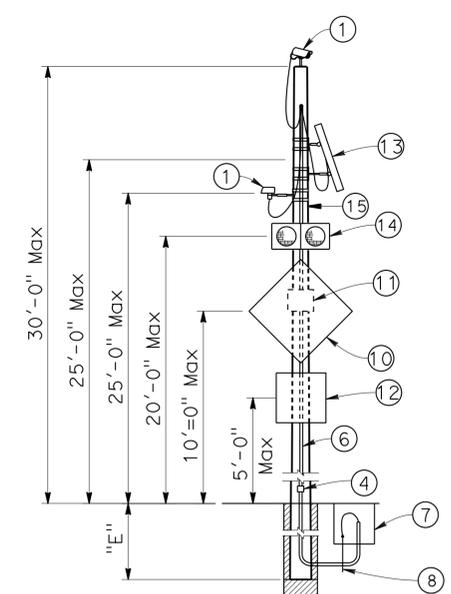
**CASE 2N  
POLE AT TANGENT  
WITHOUT ATTACHMENTS**



**CASE 3N (Mod)  
POLE AT TANGENT OR CORNER  
WITH ATTACHMENTS**



**CASE 4N  
POLE AT JUNCTION  
WITH ATTACHMENTS**



**CASE 5N  
POLE WITHOUT OVERHEAD BUNDLE  
WITH ATTACHMENTS**

NOTE: VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL. SEE NOTE 2

BRANCH CHIEF DAVID NEUMANN

DESIGN	BY A MALAK	CHECKED T MARCHENKO
DETAILS	BY H NGUYEN	CHECKED A MALAK
QUANTITIES	BY	CHECKED

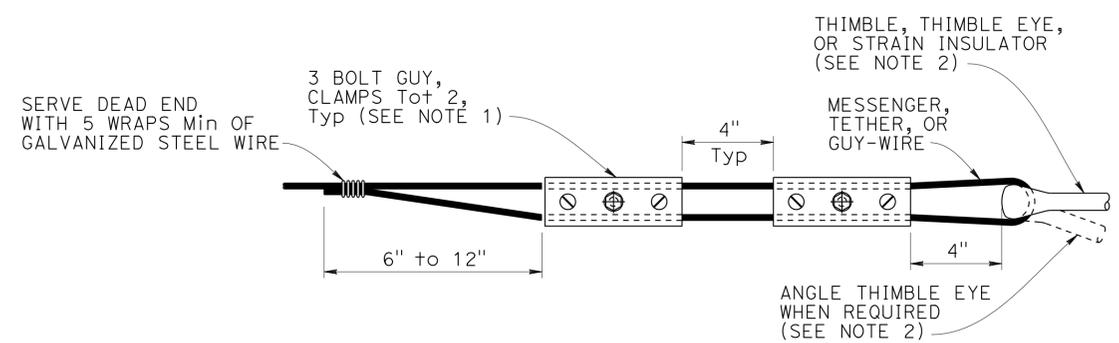
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES  
DESIGN AND TECHNICAL SERVICES  
SPECIAL DESIGNS BRANCH **B**

BRIDGE No.	N/A
POST MILE	1.8

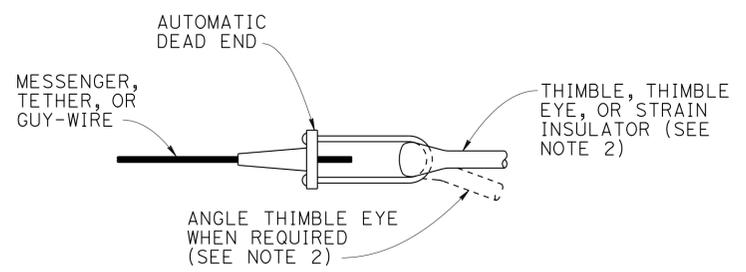
**TEMPORARY WOOD POLES  
NON-GUYED - NO SIGNALS ON SPANS**

SES-2

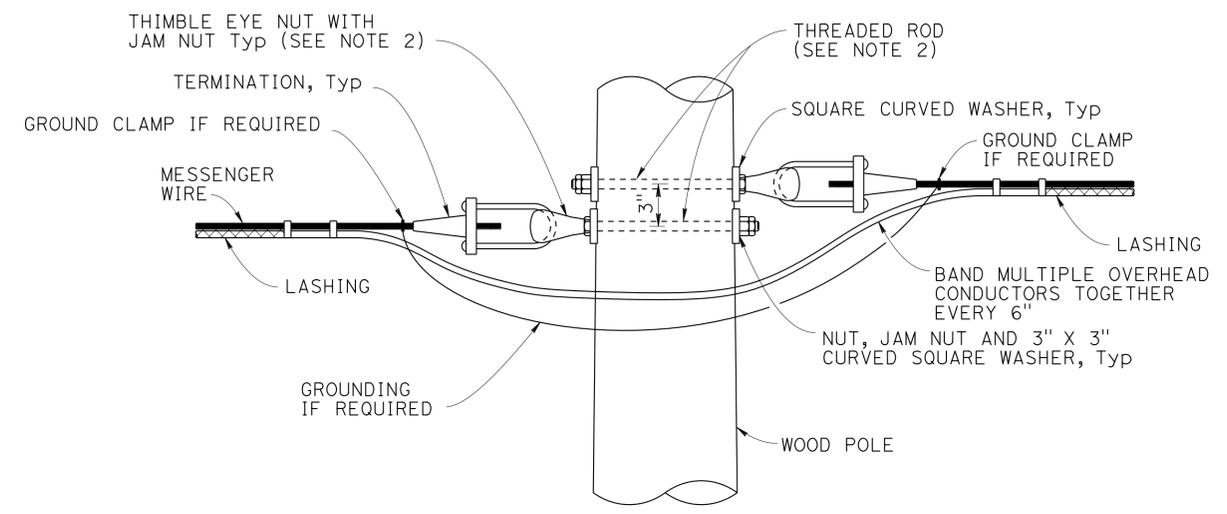
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	26	61
<i>Aman malak</i> REGISTERED CIVIL ENGINEER			9-5-13 DATE		
6-16-14 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



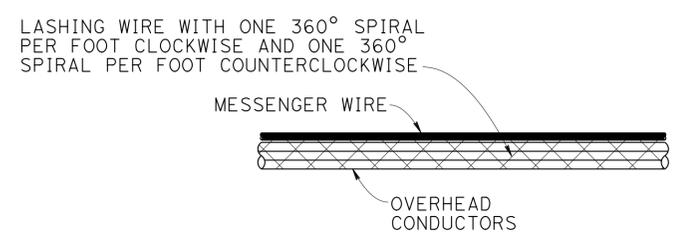
**ALTERNATIVE TERMINATION OF MESSENGER WIRES USING GUY CLAMPS**



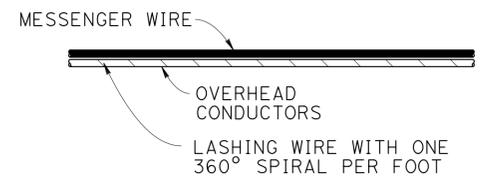
**TERMINATION OF WIRES USING AUTOMATIC DEAD END**



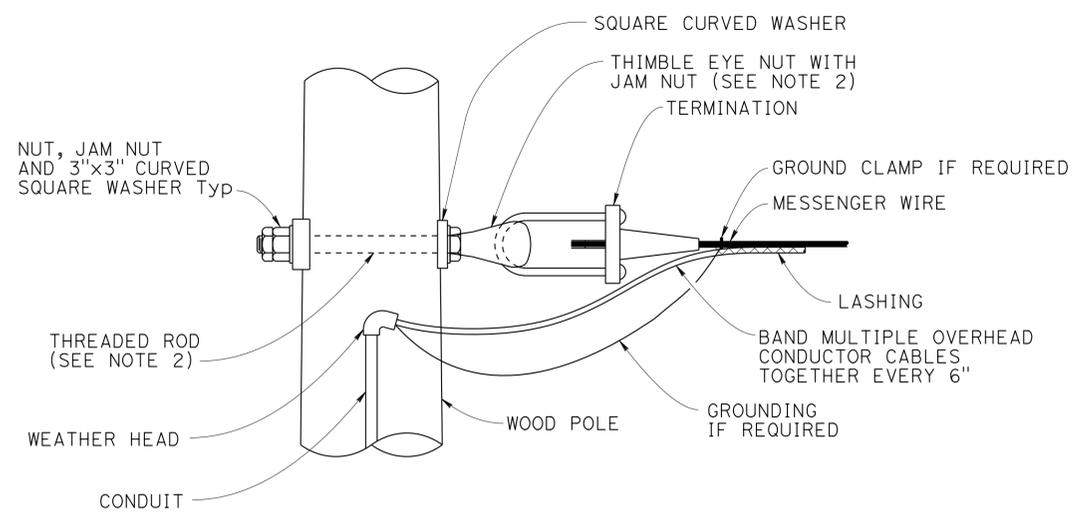
**POLE AT TANGENT OR CORNER CONNECTION**



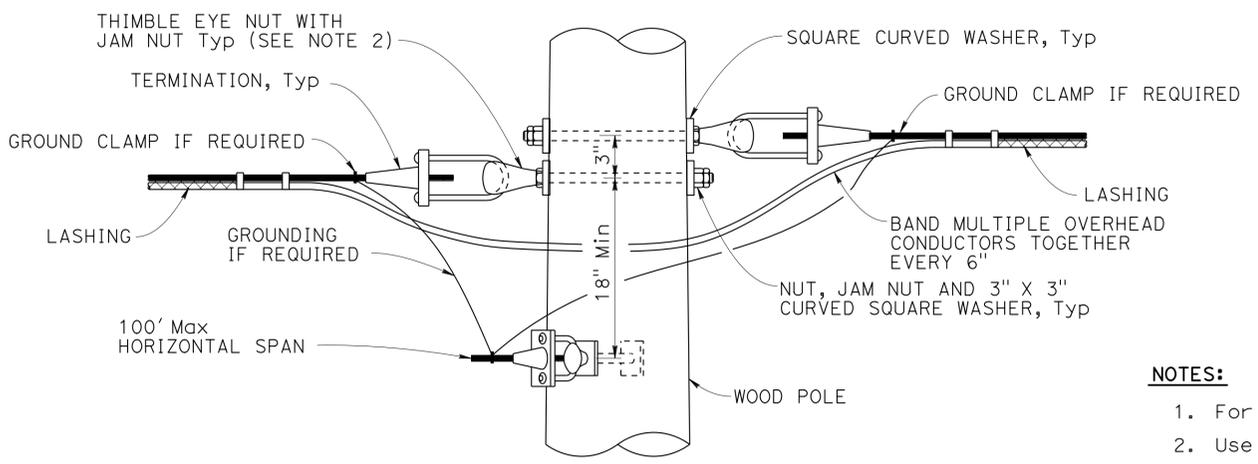
**DOUBLE LASHING DETAIL**  
USE IF d<sub>p</sub> IS GREATER THAN 1 1/2"



**TYPICAL LASHING DETAIL**  
USE IF d<sub>p</sub> IS 1 1/2" OR LESS



**POLE AT DEAD END CONNECTION**



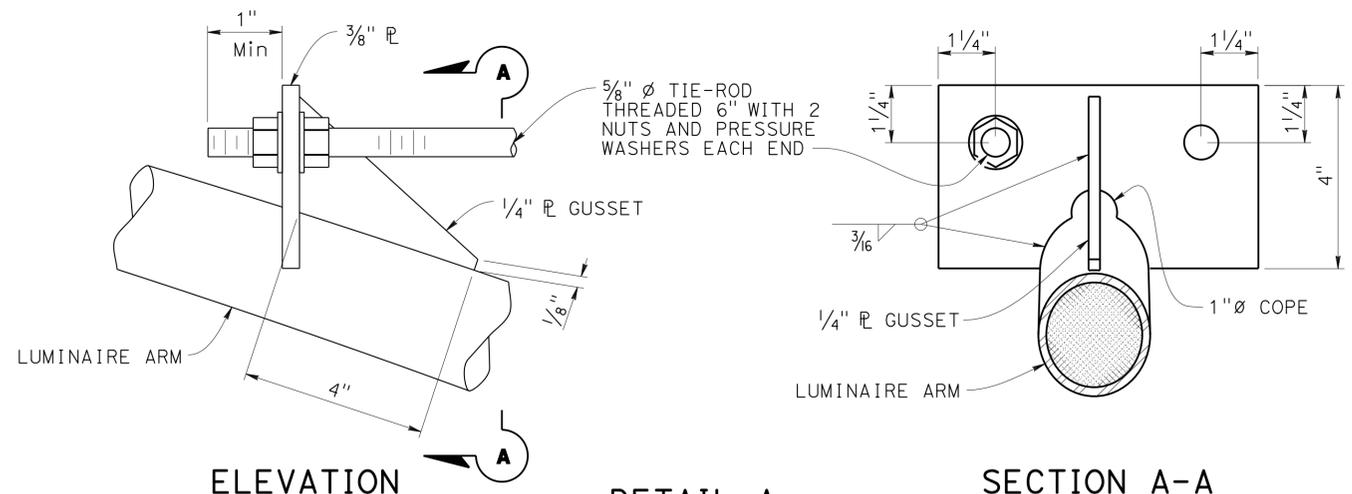
**POLE AT JUNCTION CONNECTION**

- NOTES:**
1. For guy wires use 3 clamps.
  2. Use 5/8" Dia except 3/4" Dia at guyed wires.
  3. Install additional angle thimble eyelet at poles with two guy wires.

NO SCALE

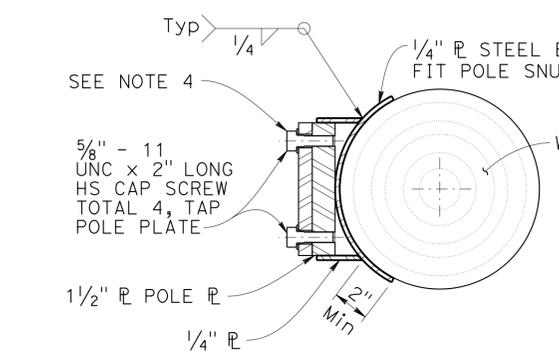
NOTE:  
VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BRANCH CHIEF <u>DAVID NEUMANN</u>	DESIGN	BY A MALAK	CHECKED T MARCHENKO	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH <b>B</b>	BRIDGE No.	N/A	<b>TEMPORARY WOOD POLES</b> <b>DETAILS No. 1</b>	<b>SES-3</b>
	DETAILS	BY H NGUYEN	CHECKED A MALAK			POST MILE	1.8		
	QUANTITIES	BY	CHECKED						



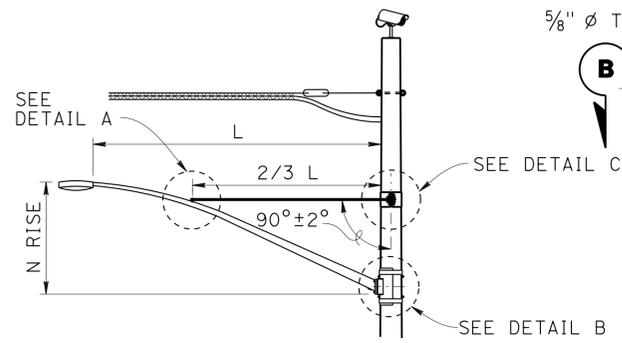
**ELEVATION**  
**DETAIL A**  
**TIE-ROD AT LUMINAIRE ARM**  
 NO SCALE

- NOTES:**
- Luminaire mast arms must be in compliance with Standard Plan ES-6D with noted modifications.
  - Verify pole dimensions at tie-rod attachment height. Fabricate 8" flat bar with L dimension to maintain an open gap between flanges in finished installation.
  - Not all screw heads and bolt heads are shown for clarity.
  - Mast arm not shown for clarity.

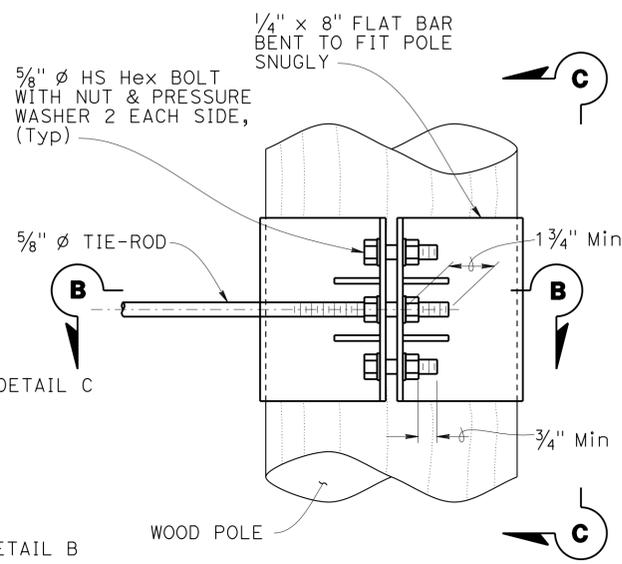


LUMINAIRE MAST ARM DATA			
PROJECTED LENGTH	N RISE	Min OD AT POLE	NOMINAL THICKNESS
6'-0"	2'-0"±	3/4"	0.1196"
8'-0"	2'-6"±	3/2"	
10'-0"	3'-3"±	3 3/8"	
12'-0"	4'-3"±	3 7/8"	

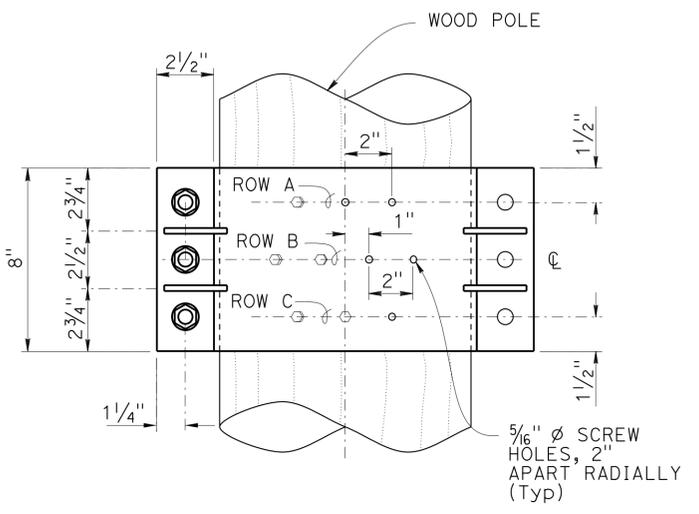
**SECTION E-E**



**LUMINAIRE MAST ARM**

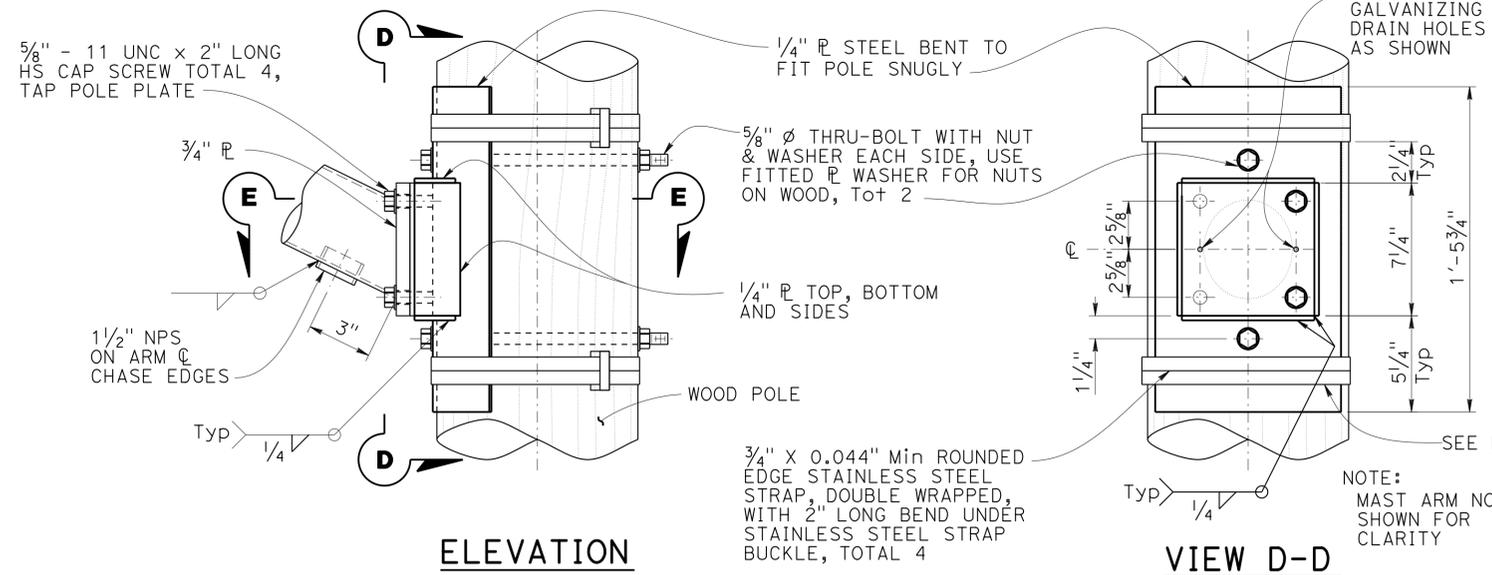


**ELEVATION**

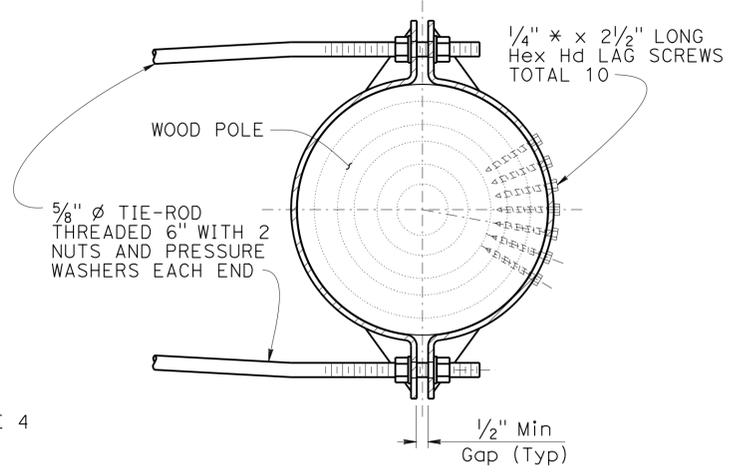


**VIEW C-C**

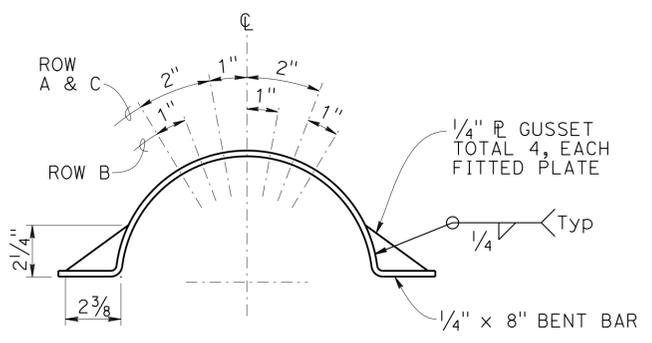
NOTE: Not all screw and bolt heads shown for clarity.



**DETAIL B**  
**ARM CONNECTION DETAILS**  
 NO SCALE



**SECTION B-B**



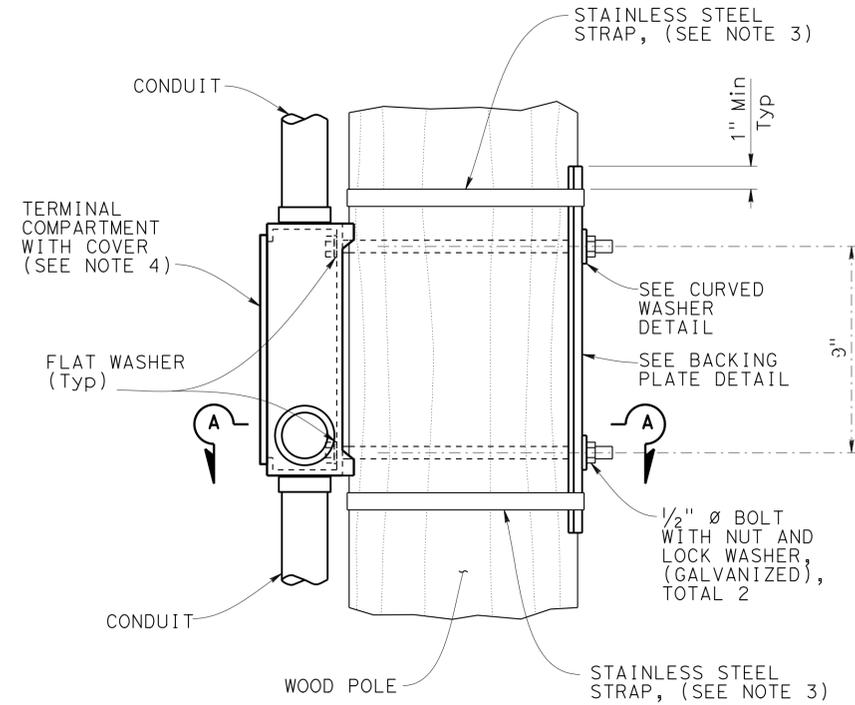
**DETAIL C**  
**TIE-ROD AT POLE**  
 NO SCALE

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

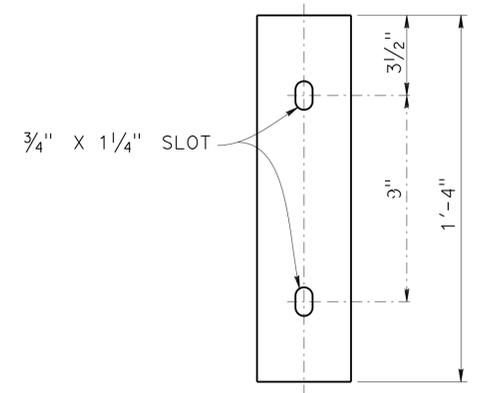
BRANCH CHIEF DAVID NEUMANN	DESIGN	BY J MAGANA	CHECKED T MARCHENKO	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE No.	TEMPORARY WOOD POLES DETAILS No. 2	SHEET 4 OF 5
	DETAILS	BY H NGUYEN	CHECKED J MAGANA			N/A		
	QUANTITIES	BY	CHECKED			POST MILE		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	28	61

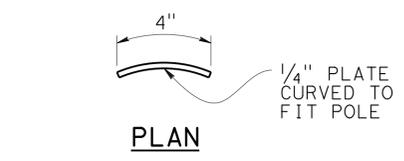
*Atman malak*  
 REGISTERED CIVIL ENGINEER DATE 9-5-13  
 6-16-14  
 PLANS APPROVAL DATE  
 No. C73369  
 Exp 12-31-2014  
 CIVIL  
 STATE OF CALIFORNIA  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



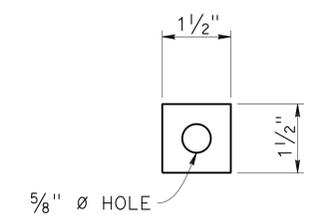
**ELEVATION**



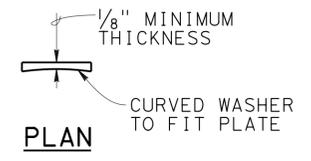
**ELEVATION**



**PLAN**  
**BACKING PLATE**  
**DETAIL**



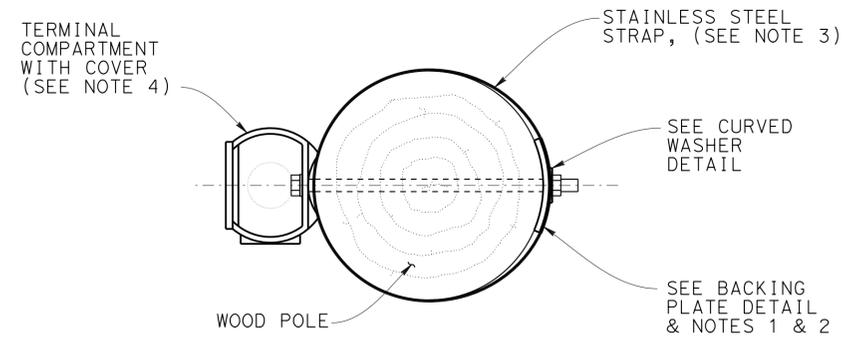
**ELEVATION**



**PLAN**  
**CURVED WASHER**  
**DETAIL**

**NOTES:**

1. Verify pole dimensions at terminal compartment for fabrication of backing plate and curved washer.
2. Galvanize backing plate after fabrication.
3. 3/4" x 0.044" minimum, rounded edge stainless steel straps, double wrapped with 2' long bend under stainless steel strap buckle.
4. For details not shown see Standard Plan ES-4D.



**SECTION A-A**

**SIDE MOUNTING**  
**TERMINAL COMPARTMENT**

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

NO SCALE

BRANCH CHIEF	BY	A MALAK
	BY	H NGUYEN
	BY	

DAVID NEUMANN

CHECKED	T MARCHENKO
CHECKED	A MALAK
CHECKED	

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
DESIGN AND TECHNICAL SERVICES  
SPECIAL DESIGNS BRANCH **B**

BRIDGE No.	N/A
POST MILE	1.8

TEMPORARY WOOD POLES  
DETAILS No. 3

SES-5

USERNAME => s121614 DATE PLOTTED => 28-AUG-2014 TIME PLOTTED => 12:44

	<b>M</b>	
Maint	MAINTENANCE	
Max	MAXIMUM	
MB	METAL BEAM	
MBB	METAL BEAM BARRIER	
MBGR	METAL BEAM GUARD RAILING	
Med	MEDIAN	
MGS	MIDWEST GUARDRAIL SYSTEM	
MH	MANHOLE	
Min	MINIMUM	
Misc	MISCELLANEOUS	
Misc I & S	MISCELLANEOUS IRON AND STEEL	
Mkr	MARKER	
Mod	MODIFIED, MODIFY	
Mon	MONUMENT	
MP	METAL PLATE	
MPGR	METAL PLATE GUARD RAILING	
MR	MOVEMENT RATING	
MSE	MECHANICALLY STABILIZED EMBANKMENT	
Mt	MOUNTAIN, MOUNT	
MtI	MATERIAL	
MVP	MAINTENANCE VEHICLE PULLOUT	
	<b>N</b>	
N	NORTH	
NB	NORTHBOUND	
No.	NUMBER (MUST HAVE PERIOD)	
Nos.	NUMBERS (MUST HAVE PERIOD)	
NPS	NOMINAL PIPE SIZE	
NS	NEAR SIDE	
NSP	NEW STANDARD PLAN	
NTS	NOT TO SCALE	
	<b>O</b>	
Obir	OBLITERATE	
OC	OVERCROSSING	
OD	OUTSIDE DIAMETER	
OF	OUTSIDE FACE	
OG	ORIGINAL GROUND	
OGAC	OPEN GRADED ASPHALT CONCRETE	
OGFC	OPEN GRADED FRICTION COURSE	
OH	OVERHEAD	
OHWM	ORDINARY HIGH WATER MARK	
O-O	OUT TO OUT	
Opp	OPPOSITE	
OSD	OVERSIDE DRAIN	
	<b>P</b>	
p	PAGE	
PAP	PERFORATED ALUMINUM PIPE	
PB	PULL BOX	
PC	POINT OF CURVATURE, PRECAST	
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE	
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN	
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE	
PCVC	POINT OF COMPOUND VERTICAL CURVE	
PEC	PERMIT TO ENTER AND CONSTRUCT	
Ped	PEDESTRIAN	
Ped OC	PEDESTRIAN OVERCROSSING	
Ped UC	PEDESTRIAN UNDERCROSSING	
Perm MtI	PERMEABLE MATERIAL	

	<b>P continued</b>	
PG	PROFILE GRADE	
PI	POINT OF INTERSECTION	
PJP	PARTIAL JOINT PENETRATION	
Pkwy	PARKWAY	
PL, PL	PLATE	
P/L	PROPERTY LINE	
PM	POST MILE, TIME FROM NOON TO MIDNIGHT	
PN	PAVING NOTCH	
POC	POINT OF HORIZONTAL CURVE	
POT	POINT OF TANGENT	
POVC	POINT OF VERTICAL CURVE	
PP	PIPE PILE, PLASTIC PIPE, POWER POLE	
PPL	PERFORMED PERMEABLE LINER	
PPP	PERFORATED PLASTIC PIPE	
PRC	POINT OF REVERSE CURVE	
PRF	PAVEMENT REINFORCING FABRIC	
PRVC	POINT OF REVERSE VERTICAL CURVE	
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES	
PS, P/S	PRESTRESSED	
PSP	PERFORATED STEEL PIPE	
PT	POINT OF TANGENCY	
PVC	POLYVINYL CHLORIDE	
Pvmt	PAVEMENT	
	<b>Q</b>	
Qty	QUANTITY	
	<b>R</b>	
R	RADIUS	
R & D	REMOVE AND DISPOSE	
R & S	REMOVE AND SALVAGE	
R/C	RATE OF CHANGE	
RCA	REINFORCED CONCRETE ARCH	
RCB	REINFORCED CONCRETE BOX	
RCP	REINFORCED CONCRETE PIPE	
RCPA	REINFORCED CONCRETE PIPE ARCH	
Rd	ROAD	
Reinf	REINFORCED, REINFORCEMENT, REINFORCING	
Rel	RELOCATE	
Repl	REPLACEMENT	
Ret	RETAINING	
Rev	REVISED, REVISION	
Rdwy	ROADWAY	
RHMA	RUBBERIZED HOT MIX ASPHALT	
Riv	RIVER	
RM	ROAD-MIXED	
RP	RADIUS POINT, REFERENCE POINT	
RR	RAILROAD	
RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN	
Rt	RIGHT	
Rte	ROUTE	
RW	REDWOOD, RETAINING WALL	
R/W	RIGHT OF WAY	
Rwy	RAILWAY	

	<b>S</b>	
S	SOUTH, SUPPLEMENT	
SAE	STRUCTURE APPROACH EMBANKMENT	
Salv	SALVAGE	
SAPP	STRUCTURAL ALUMINUM PLATE PIPE	
SB	SOUTHBOUND	
SC	SAND CUSHION	
SCSP	SLOTTED CORRUGATED STEEL PIPE	
SD	STORM DRAIN	
Sec	SECOND, SECTION	
Sep	SEPARATION	
SG	SUBGRADE	
Shld	SHOULDER	
Sht	SHEET	
Sim	SIMILAR	
SL	STATION LINE	
SM	SELECTED MATERIAL	
Spec	SPECIAL, SPECIFICATIONS	
SPP	SLOTTED PLASTIC PIPE	
SS	SLOPE STAKE	
SSBM	STRAP AND SADDLE BRACKET METHOD	
SSD	STRUCTURAL SECTION DRAIN	
SSPA	STRUCTURAL STEEL PLATE ARCH	
SSPP	STRUCTURAL STEEL PLATE PIPE	
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH	
SSRP	STEEL SPIRAL RIB PIPE	
St	STREET	
Sta	STATION	
STBB	SINGLE THRIE BEAM BARRIER	
Std	STANDARD	
Str	STRUCTURE	
Surf	SURFACING	
SW	SIDEWALK, SOUND WALL	
Swr	SEWER	
Sym	SYMMETRICAL	
S4S	SURFACE 4 SIDES	
	<b>T</b>	
T	SEMI-TANGENT	
Tan	TANGENT	
TBB	THRIE BEAM BARRIER	
Tbr	TIMBER	
TC	TOP OF CURB	
TCB	TRAFFIC CONTROL BOX	
TCE	TEMPORARY CONSTRUCTION EASEMENT	
TeI	TELEPHONE	
Temp	TEMPORARY	
TG	TOP OF GRADE	
Tot	TOTAL	
TP	TELEPHONE POLE	
TPB	TREATED PERMEABLE BASE	
TPM	TREATED PERMEABLE MATERIAL	
Trans	TRANSITION	

	<b>T continued</b>	
TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL	
Typ	TYPICAL	
	<b>U</b>	
UC	UNDERCROSSING	
UD	UNDERDRAIN	
UG	UNDERGROUND	
UON	UNLESS OTHERWISE NOTED	
UP	UNDERPASS	
	<b>V</b>	
V	VALVE, DESIGN SPEED	
Var	VARIABLE, VARIES	
VC	VERTICAL CURVE	
VCP	VITRIFIED CLAY PIPE	
Vert	VERTICAL	
Via	VIADUCT	
Vol	VOLUME	
	<b>W</b>	
W	WEST, WIDTH	
WB	WESTBOUND	
WH	WEEP HOLE	
WM	WIRE MESH	
WS	WATER SURFACE	
WSP	WELDED STEEL PIPE	
Wt	WEIGHT	
WV	WATER VALVE	
WW	WINGWALL	
WWL	WINGWALL LAYOUT LINE	
	<b>X</b>	
X Sec	CROSS SECTION	
Xing	CROSSING	
	<b>Y</b>	
Yr	YEAR	
Yrs	YEARS	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	29	61

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER  
 Grace M. Tsushima  
 No. C49814  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

July 19, 2013  
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.

TO ACCOMPANY PLANS DATED 6-16-14

**UNIT OF MEASUREMENT SYMBOLS:**

Some of the symbols used in the project plan quantity tables and in the Bid Item List are:

**TABLE A**

SYMBOL USED	DEFINITIONS
ACRE	ACRE
CF	CUBIC FOOT
CY	CUBIC YARD
EA	EACH
GAL	GALLON
LB	POUND
LF	LINEAR FOOT
SQFT	SQUARE FOOT
SQYD	SQUARE YARD
STA	100 FEET
TAB	TABLET
TON	2,000 POUNDS

Some of the symbols used in the plans other than in the project plan quantity tables are:

**TABLE B**

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft <sup>3</sup> , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kip	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS  
(SHEET 2 OF 2)**

NO SCALE

RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B  
DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	30	61

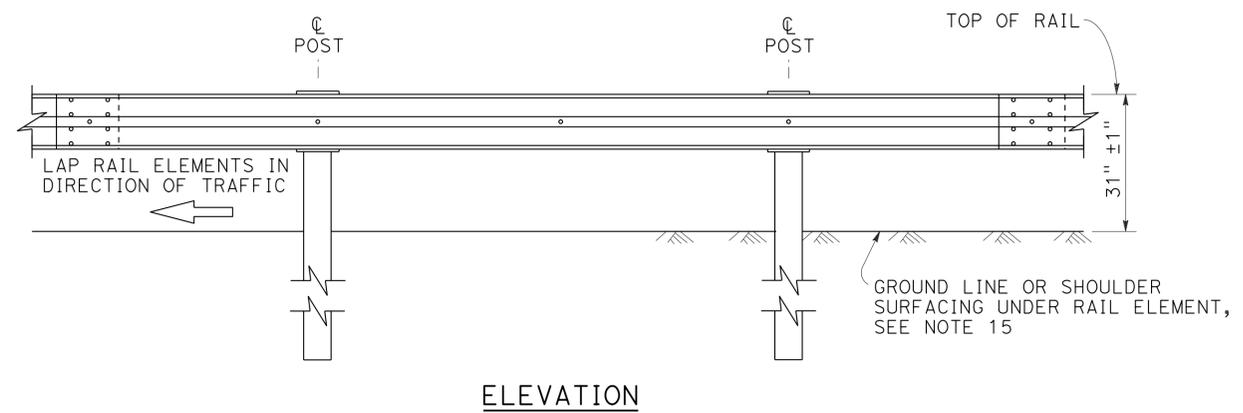
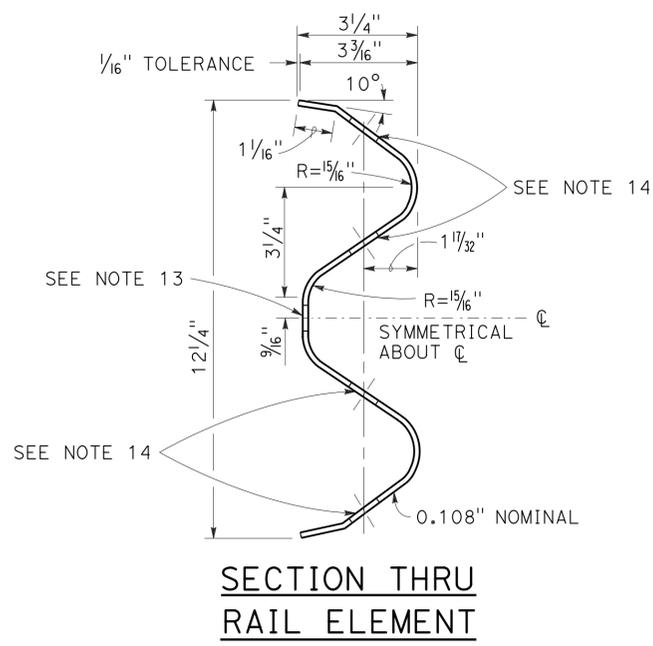
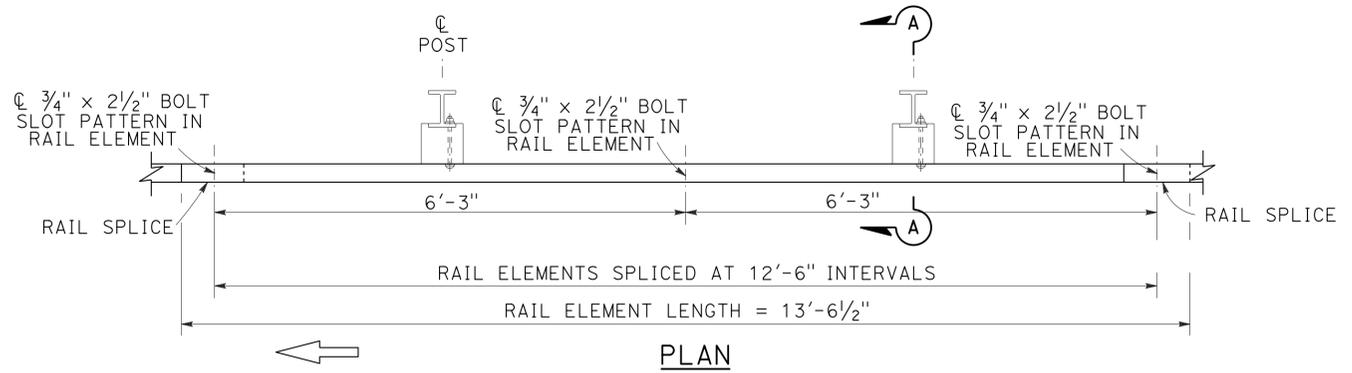
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
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.

TO ACCOMPANY PLANS DATED 6-16-14

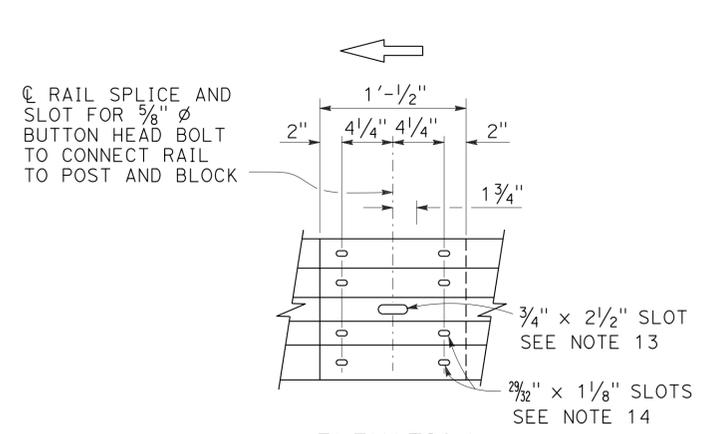
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



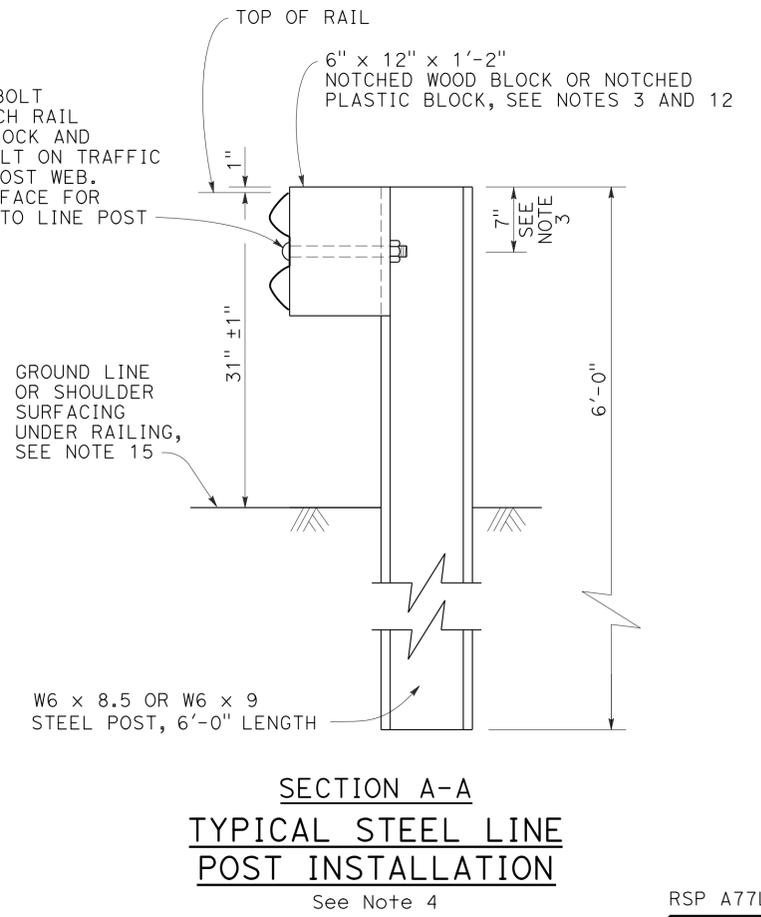
**MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS**

**NOTES:**

- For details of wood post installations, see Revised Standard Plan RSP A77L1.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
- Notched face of block faces steel post.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Install posts in soil.



- Connect the overlapped end of the rail elements with 5/8" Ø x 1 3/8" button head oval shoulder splice bolts inserted into the 2 3/32" x 1 1/8" slots and bolted together with 5/8" Ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

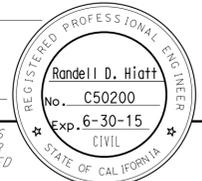
**MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)**

NO SCALE

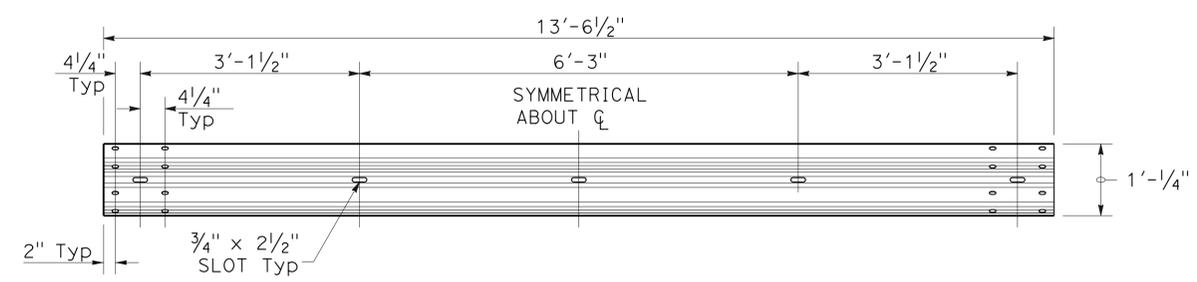
RSP A77L2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77L2**

2010 REVISED STANDARD PLAN RSP A77L2



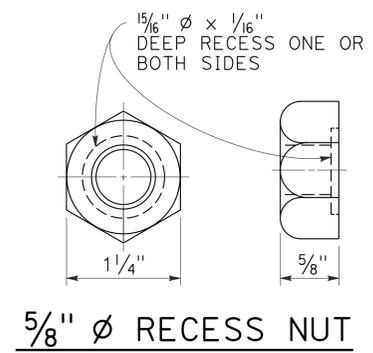
TO ACCOMPANY PLANS DATED 6-16-14



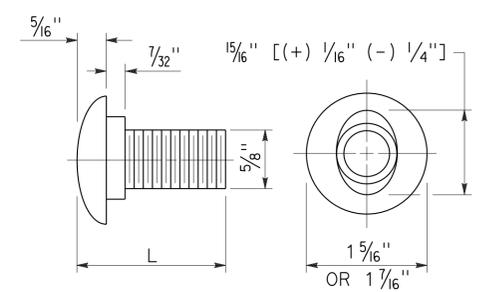
**TYPICAL RAIL ELEMENT**

**NOTE:**

1. Slotted holes for splice bolts to overlap ends of rail element.



**5/8" Ø RECESS NUT**

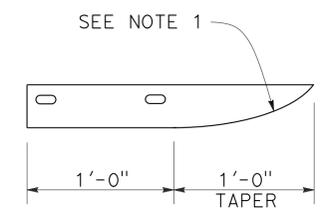


**5/8" Ø BUTTON HEAD BOLT**

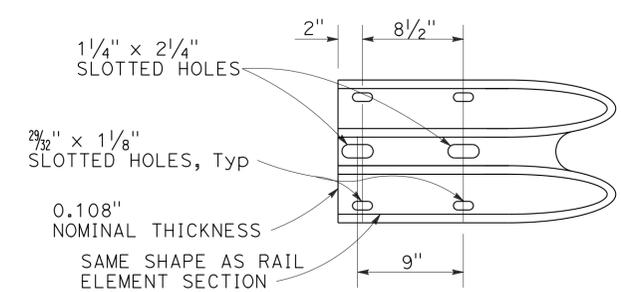
**BUTTON HEAD BOLT**

L	THREAD LENGTH
1 3/8"	FULL THREAD LENGTH
2"	FULL THREAD LENGTH
10"	4" Min THREAD LENGTH
18"	4" Min THREAD LENGTH
20"	4" Min THREAD LENGTH
22"	4" Min THREAD LENGTH
26"	4" Min THREAD LENGTH
36"	4" Min THREAD LENGTH
** 2 3/4"	2" Min THREAD LENGTH
** 19"	4" Min THREAD LENGTH

\*\* For nested rail applications.



**PLAN**



**ELEVATION  
END CAP  
(TYPE A)**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
STANDARD HARDWARE**

NO SCALE

RSP A77M1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77M1**

2010 REVISED STANDARD PLAN RSP A77M1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	32	61

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

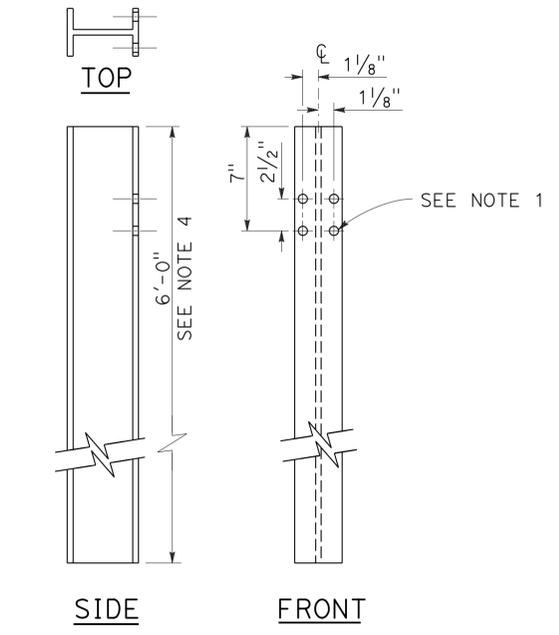
*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

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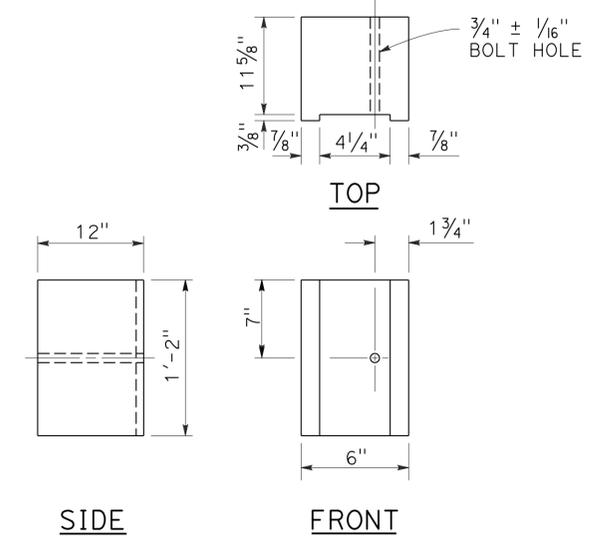
TO ACCOMPANY PLANS DATED 6-16-14

**NOTES:**

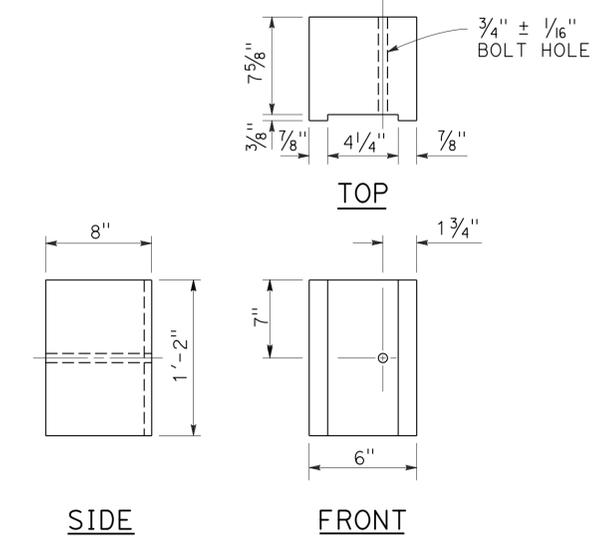
1. All holes in steel post shall be 1 3/8" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.



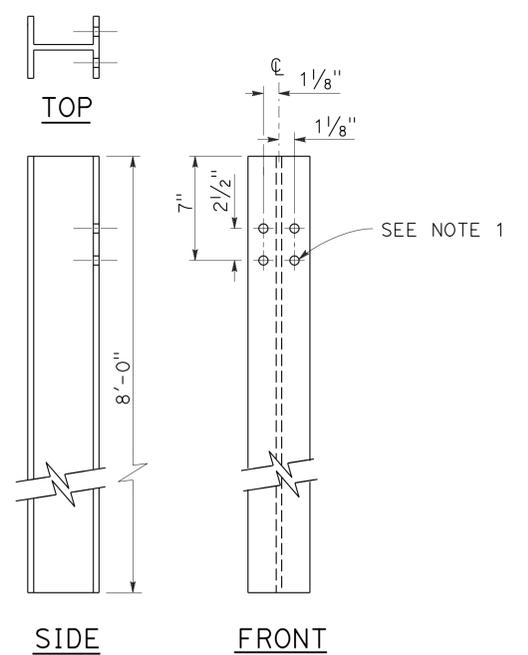
**W6 x 9 OR W6 x 8.5  
STEEL POST**  
See Note 4



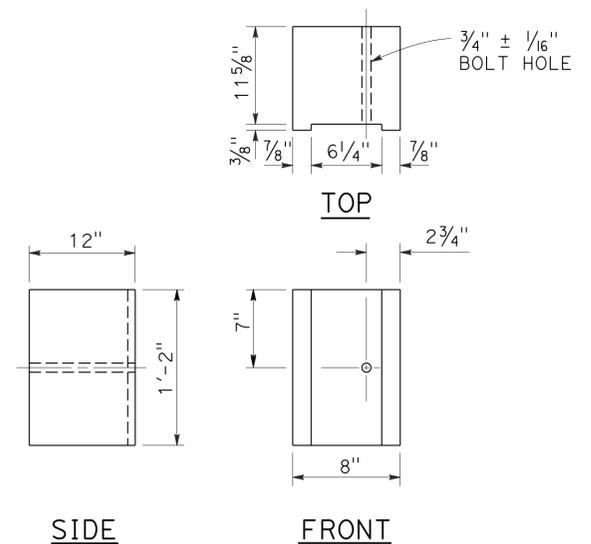
**6" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



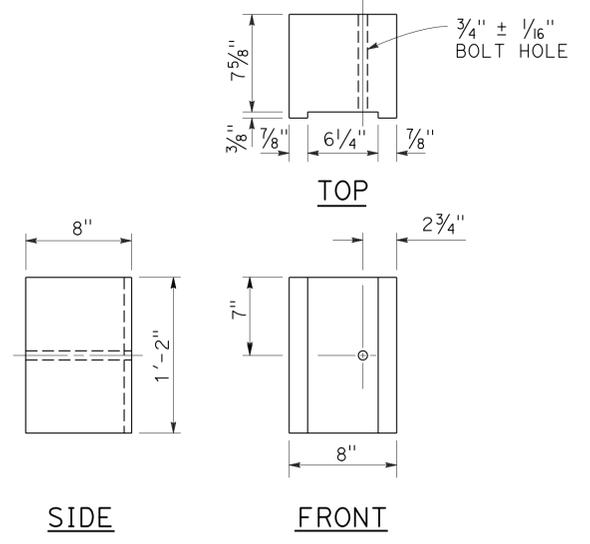
**6" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5



**W6 x 15  
STEEL POST**  
See Note 6



**8" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



**8" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
STEEL POST AND  
NOTCHED WOOD BLOCK DETAILS**

NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N2**

2010 REVISED STANDARD PLAN RSP A77N2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	33	61

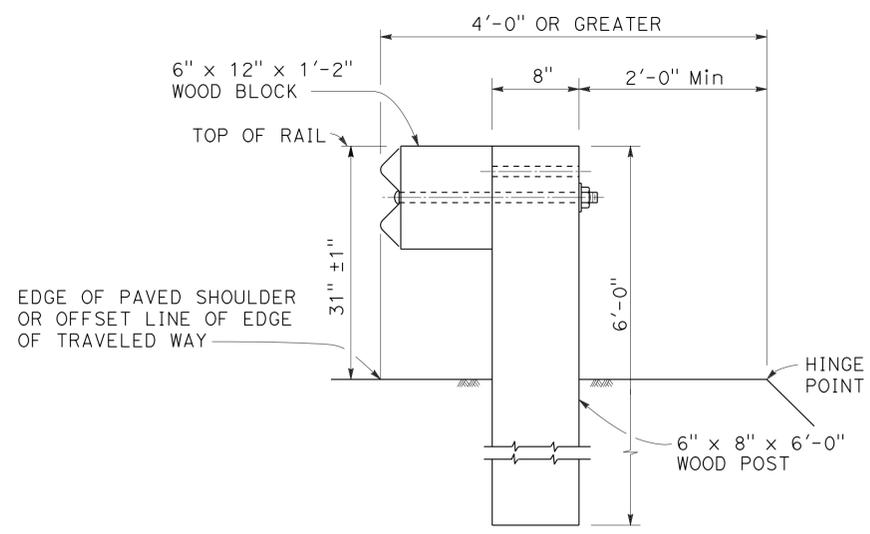
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

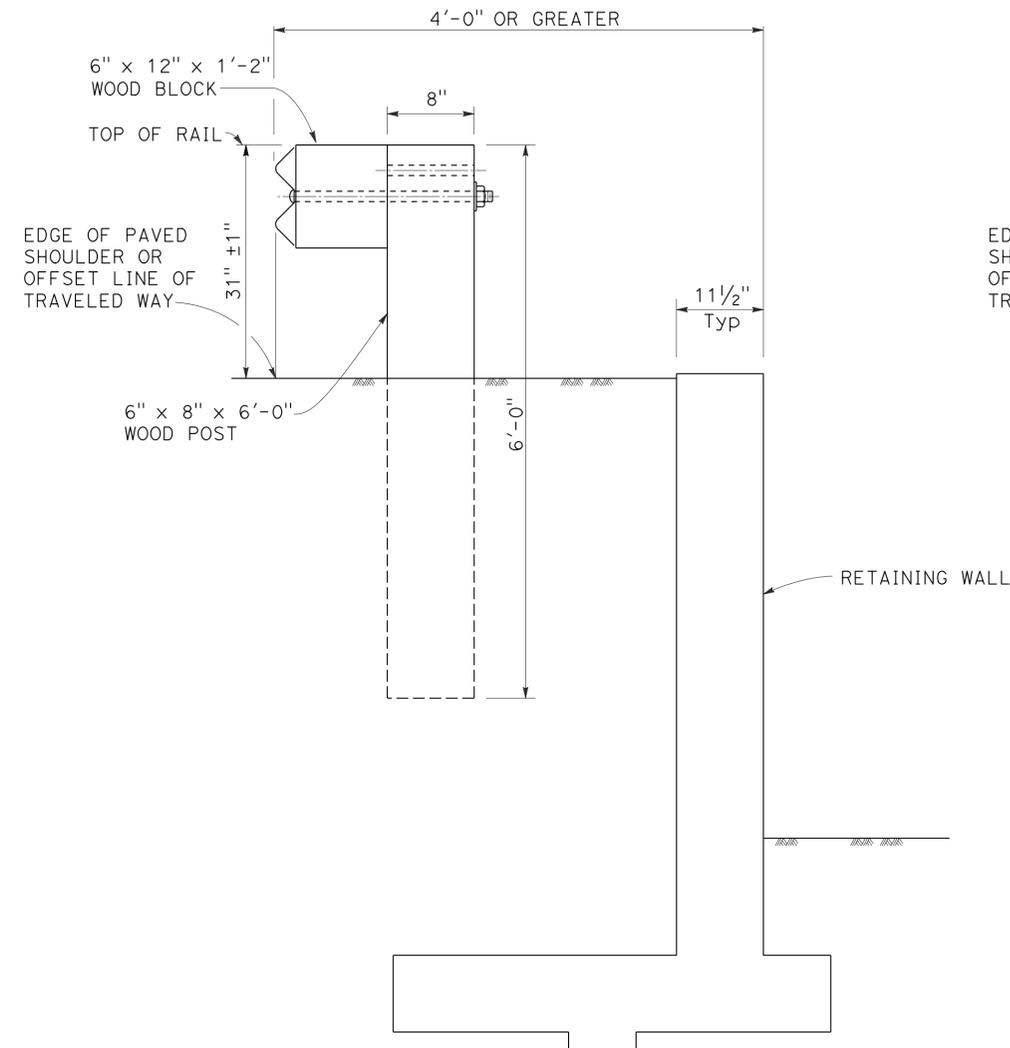
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

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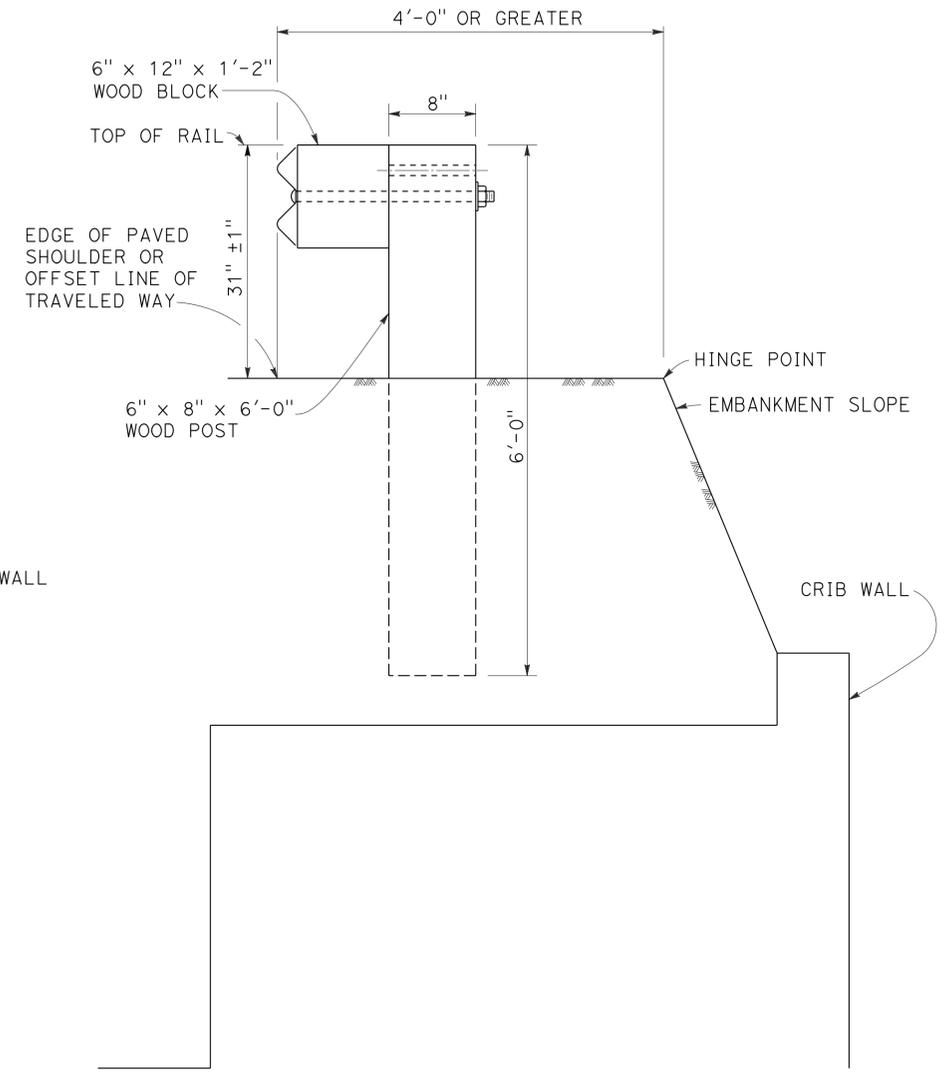
TO ACCOMPANY PLANS DATED 6-16-14



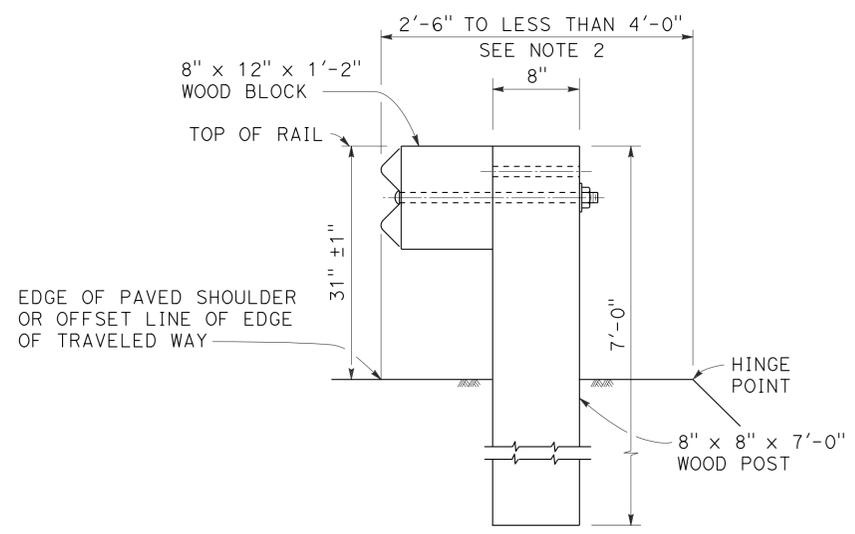
**DETAIL A**  
**TYPICAL ROADWAY**  
**INSTALLATION**  
See Note 1



**DETAIL C**  
**INSTALLATION AT EARTH RETAINING WALLS**



**DETAIL D**



**DETAIL B**  
**NARROW ROADWAY**  
**INSTALLATION**  
See Note 1

**POST EMBEDMENT**

**NOTES:**

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Revised Standard Plan RSP A77L1 and RSP A77L2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-6", see the Project Plans for special details.
3. For dike positioning with MGS installations, see Revised Standard Plan RSP A77N4.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM**  
**TYPICAL LINE POST**  
**EMBEDMENT AND**  
**HINGE POINT OFFSET DETAILS**

NO SCALE

RSP A77N3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N3  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N3**

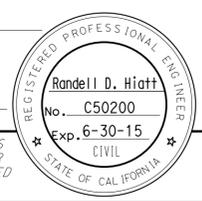
2010 REVISED STANDARD PLAN RSP A77N3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	34	61

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

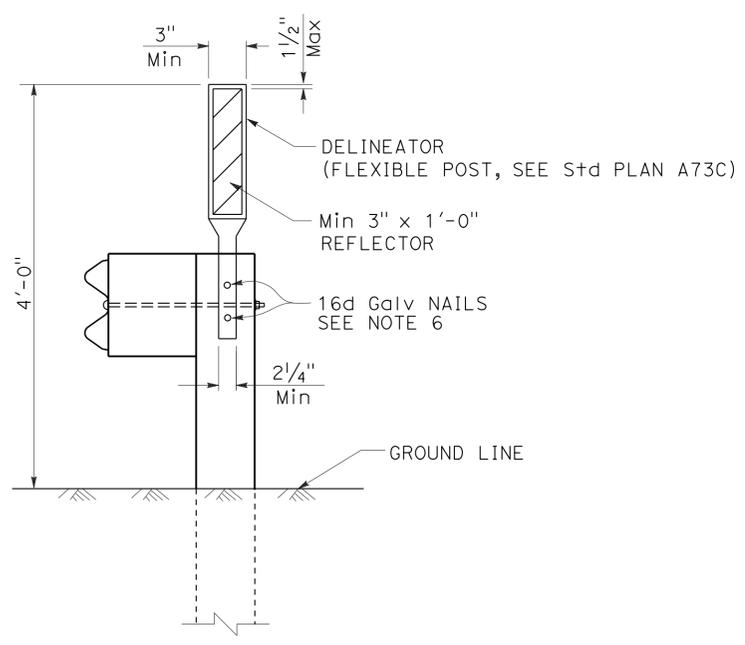
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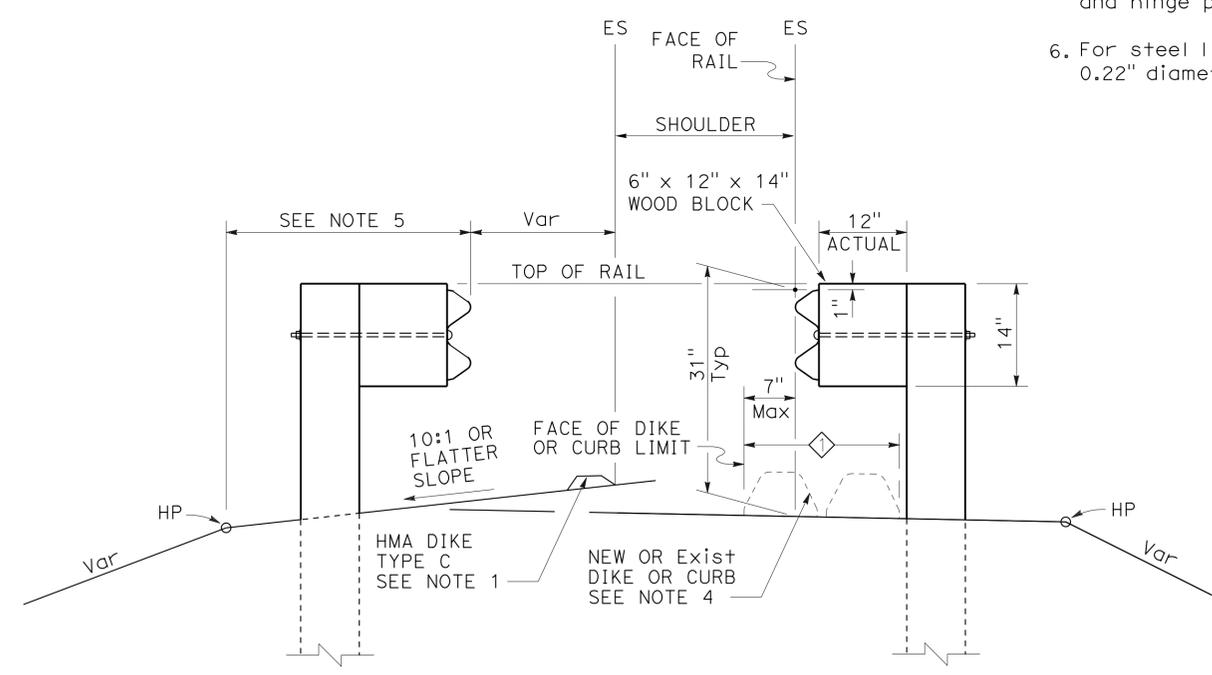
TO ACCOMPANY PLANS DATED 6-16-14

**NOTES:**

1. When necessary to place dike more than 7" in front of face of MGS, only Type C dike may be used. For dike details, see Revised Standard Plan RSP A87B.
2. For standard railing post embedment, see Revised Standard Plan RSP A77N3.
3. MGS delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under MGS, the maximum height of the dike or curb shall be 6". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and RSP A87B.
5. For details of typical distance between the face of rail and hinge point, see Revised Standard Plan RSP A77N3.
6. For steel line posts, use 1/4" - 20 self-tapping screws in 0.22" diameter holes or 1/4" bolts in 3/32" diameter holes.



**MGS DELINEATION**  
See Note 3



**DIKE POSITIONING**  
See Note 1

◇ PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL RAILING DELINEATION  
AND DIKE POSITIONING DETAILS**  
NO SCALE

RSP A77N4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N4**

2010 REVISED STANDARD PLAN RSP A77N4

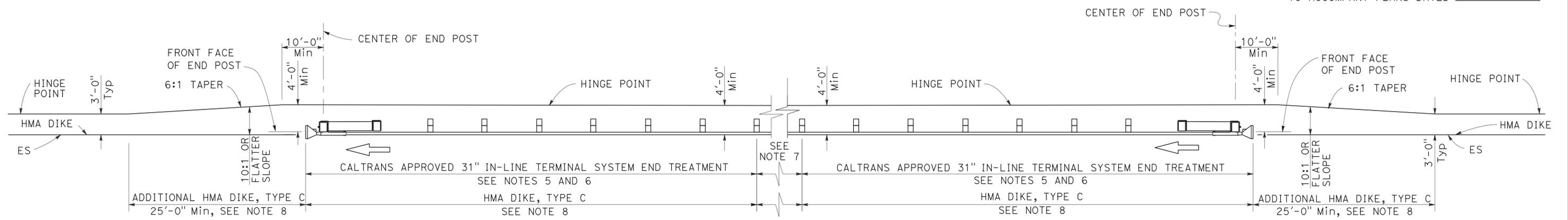
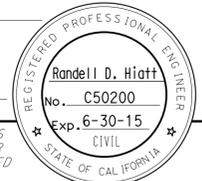
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	35	61

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

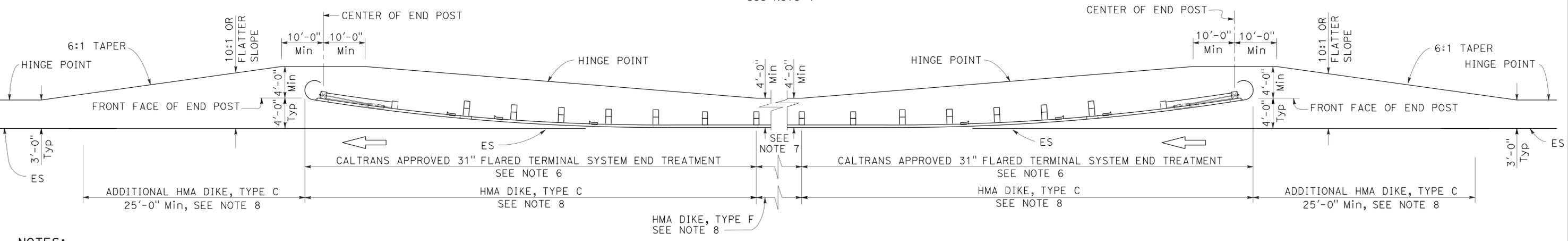
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TO ACCOMPANY PLANS DATED 6-16-14



**TYPE 11D LAYOUT**

(Embankment MGS installation with 31" in-line end treatment at each end of railing)  
See Note 4



**TYPE 11E LAYOUT**

(Embankment MGS installation with 31" flared end treatment at each end of railing)  
See Note 4

**NOTES:**

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

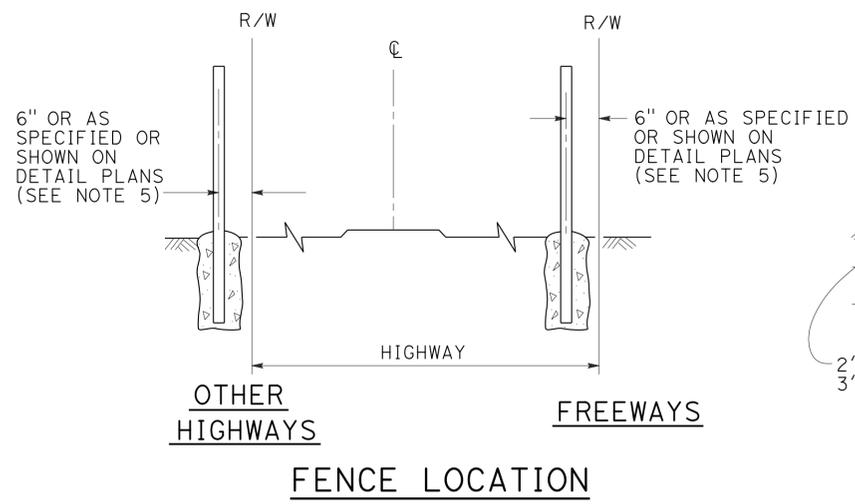
**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

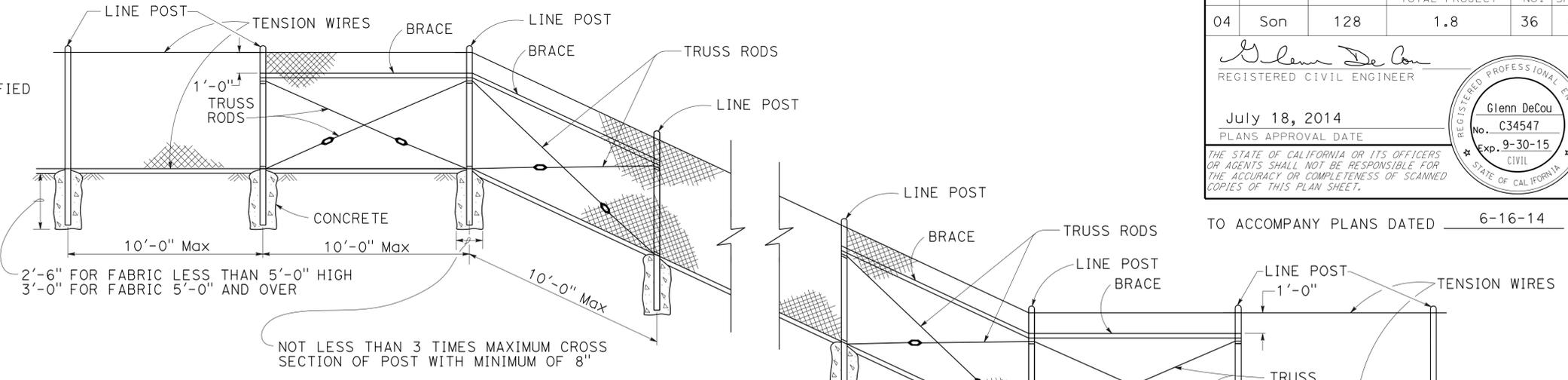
RSP A77P2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77P2**

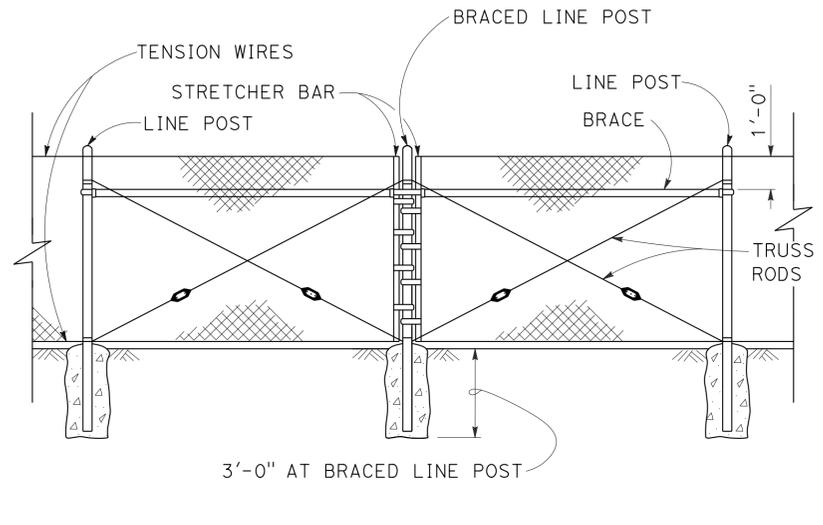
2010 REVISED STANDARD PLAN RSP A77P2



**FENCE LOCATION**

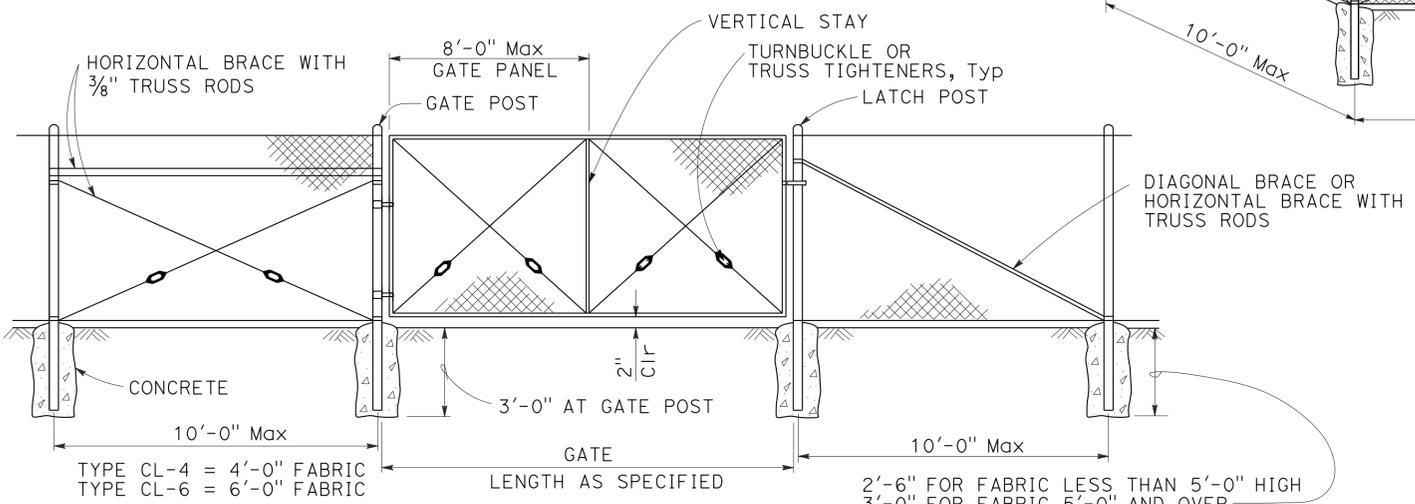


**CHAIN LINK FENCE ON SHARP BREAK IN GRADE**



**BRACED LINE POST INSTALLATION**

Braced line post at intervals not exceeding 1000'



**CHAIN LINK GATE INSTALLATION**

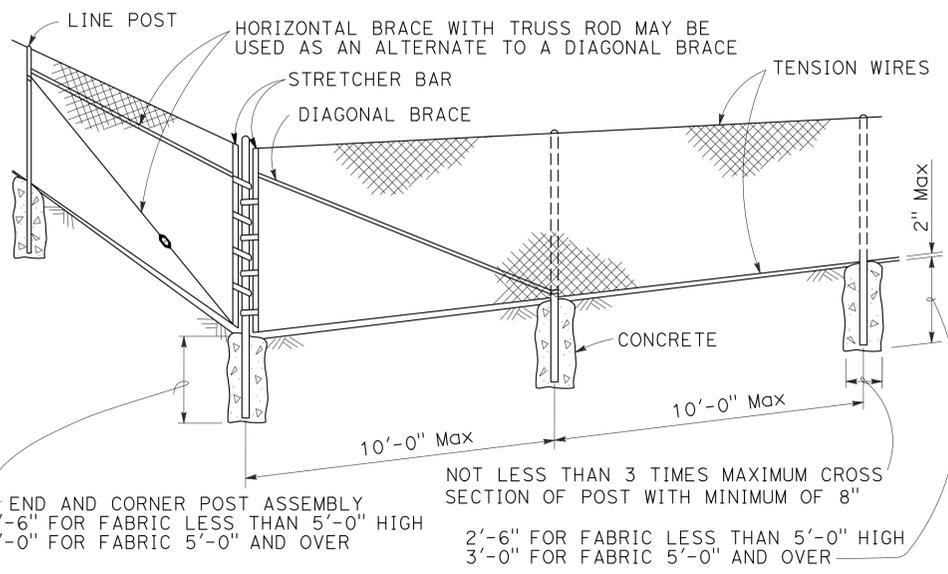
GATE POST			
FENCE HEIGHT	GATE WIDTHS	ROUND OD PIPE	WEIGHT (lb/ft)
6'-0" AND LESS	UP THRU 6'-0"	2.875"	5.80
	OVER 6'-0" THRU 12'-0"	4.500"	10.80
	OVER 12'-0" THRU 18'-0"	5.563"	14.63
OVER 6'-0" TO 8'-0" Max	OVER 18'-0" TO 24'-0" Max	6.625"	18.99
	UP THRU 6'-0"	3.500"	7.58
	OVER 6'-0" THRU 12'-0"	5.563"	14.63
	OVER 12'-0" THRU 18'-0"	6.625"	18.99
	OVER 18'-0" TO 24'-0" Max	8.625"	28.58

Above post dimensions and weights are minimums. Larger sizes may be used upon approval.

**NOTES:**

- The table below shows minimum sized posts and braces complying with the specifications. Larger or heavier post and brace sizes may be used upon approval.
- Sections shown in the tables must also comply with the strength requirements and other provisions of the Specifications.
- Other sections which comply with the strength requirements and other provisions of the Specifications may be used upon approval.
- Options exercised shall be uniform on any one project.
- Offset to be 2'-0" at monument locations, measured at right angles to R/W lines. Taper to achieve offset to be at least 20'-0" long.
- See Revised Standard Plan RSP A85B for Brace, Stretcher Bar, and Truss Tightener Details.

FENCE HEIGHT	TYPICAL MEMBER DIMENSIONS (See Notes)									
	LINE POSTS				END, LATCH AND CORNER POSTS		BRACES			
	ROUND OD PIPE	WEIGHT (lb/ft)	ROLL FORMED		ROUND OD PIPE	WEIGHT (lb/ft)	ROUND OD PIPE	WEIGHT (lb/ft)	ROLL FORMED	
			SECTION	WEIGHT (lb/ft)					SECTION	WEIGHT (lb/ft)
6'-0" AND LESS	1.900"	2.72	1.875" x 1.625"	1.85	2.375"	3.65	1.66"	2.27	1.625" x 1.25"	1.35
OVER 6'-0" TO 8'-0" Max	2.375"	3.65	2.25" x 1.70"	2.78	2.875"	5.80	1.66"	2.27	1.625" x 1.25"	1.35



**CORNER POST**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CHAIN LINK FENCE**  
NO SCALE

RSP A85 DATED JULY 18, 2014 SUPERSEDES STANDARD PLAN A85  
DATED MAY 20, 2011 - PAGE 112 OF THE STANDARD PLANS BOOK DATED 2010.

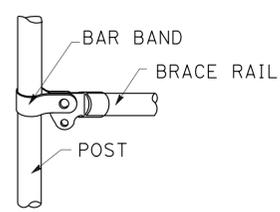
**REVISED STANDARD PLAN RSP A85**

2010 REVISED STANDARD PLAN RSP A85

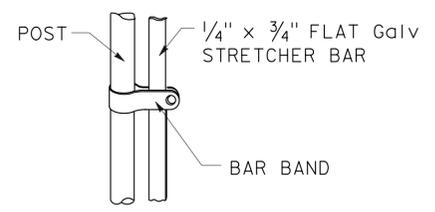
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	37	61

Glenn DeCou  
 REGISTERED CIVIL ENGINEER  
 October 19, 2012  
 PLANS APPROVAL DATE  
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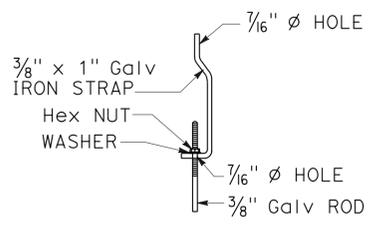
REGISTERED PROFESSIONAL ENGINEER  
 Glenn DeCou  
 No. C34547  
 Exp. 9-30-13  
 CIVIL  
 STATE OF CALIFORNIA



**BRACE RAIL**



**STRETCHER BAR**

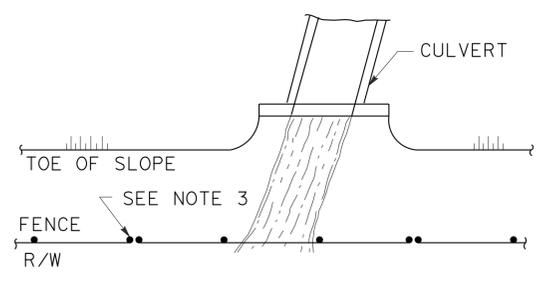


**TRUSS TIGHTENER**

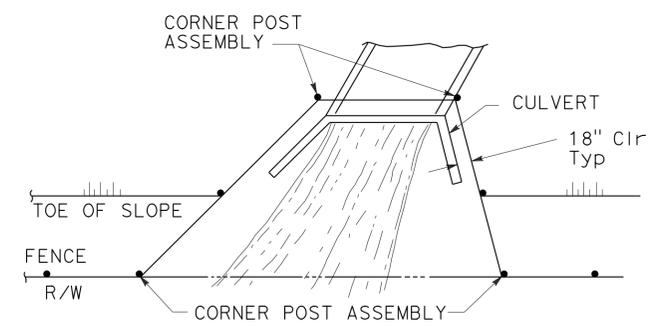
**NOTES:**

1. All material for abutment connection to be galvanized.
2. The chain link fabric shall be replaced by barbed wire strands at 12" maximum centers between the double posts.
3. When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device approved by the Engineer shall be used.
4. Fencing over stream and around headwall may also use Barbed Wire or Wire Mesh fencing with either wood post or steel post installation.
5. See Standard Plan A85 for Chain Link fence dimensions. See Standard Plan A86 for Barbed Wire and Wire Mesh fence dimensions and for wood post and steel post installation.

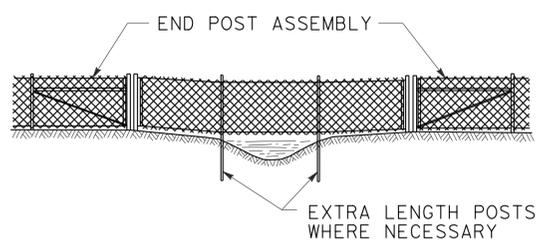
TO ACCOMPANY PLANS DATED 6-16-14



**PLAN**

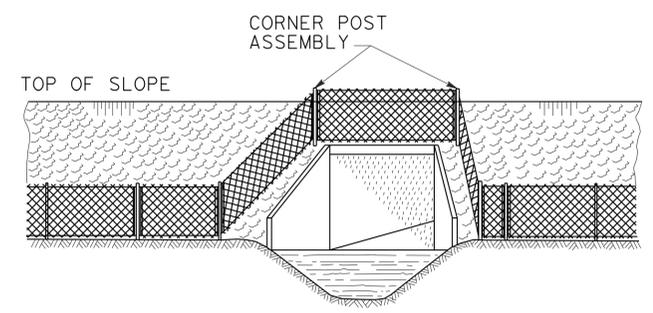


**PLAN**



**ELEVATION**

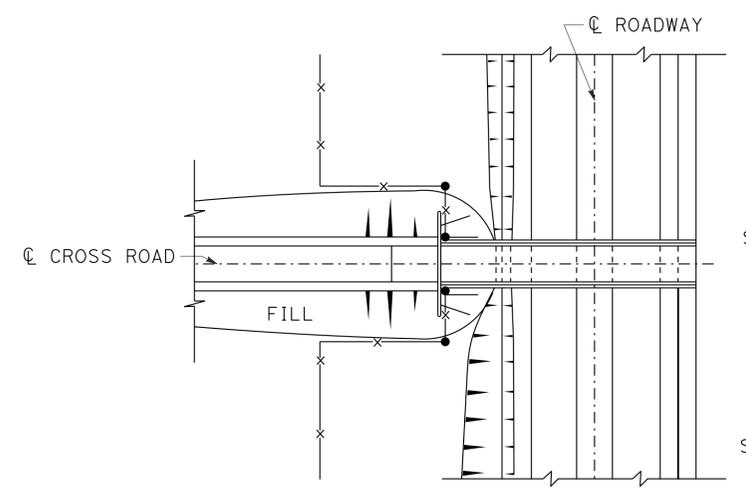
**INSTALLATION OVER STREAM**



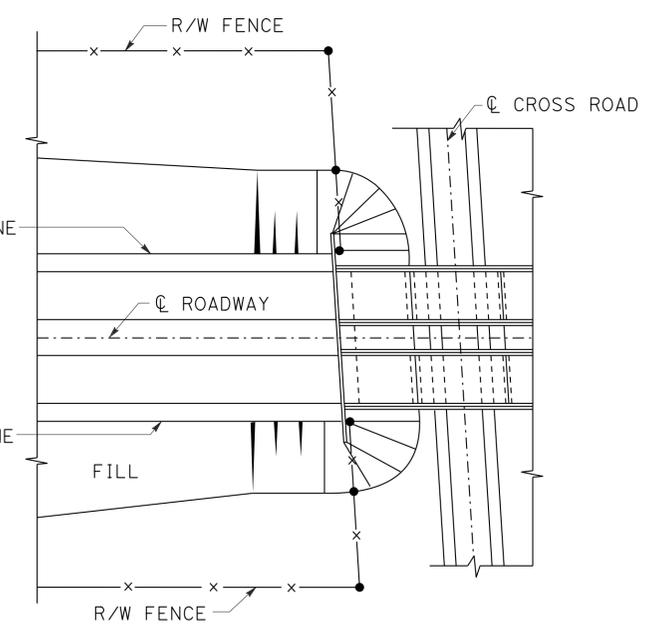
**ELEVATION**

**INSTALLATION AROUND HEADWALL**

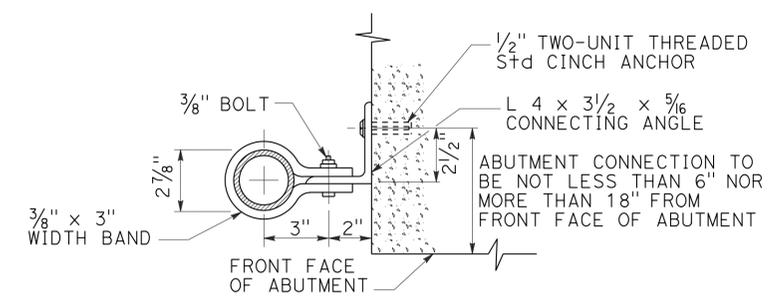
See Note 4



**PLAN OF ROADWAY - OVERCROSSING**



**PLAN OF ROADWAY - UNDERCROSSING**



**ABUTMENT CONNECTION**

**TYPICAL INSTALLATION AT BRIDGES**

ABUTMENT CONNECTION TO BE NOT LESS THAN 6" NOR MORE THAN 18" FROM FRONT FACE OF ABUTMENT

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CHAIN LINK FENCE DETAILS**

NO SCALE

RSP A85B DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A85B DATED MAY 20, 2011 - PAGE 114 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A85B**

2010 REVISED STANDARD PLAN RSP A85B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	38	61

  
 LICENSED LANDSCAPE ARCHITECT  
 July 19, 2013  
 PLANS APPROVAL DATE  
  
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TO ACCOMPANY PLANS DATED 6-16-14

**A**

AB AGGREGATE BASE  
 ABS ACRYLONITRILE-BUTADIENE-STYRENE  
 AC ASPHALT CONCRETE  
 ACC ARMOR-CLAD CONDUCTORS  
 Adj ADJACENT/ADJUSTABLE  
 AIC AUXILIARY IRRIGATION CONTROLLER  
 Alt ALTERNATIVE  
 AMEND AMENDMENT  
 ARV AIR RELEASE VALVE  
 AUTO AUTOMATIC  
 AUX AUXILIARY  
 AVB ATMOSPHERIC VACUUM BREAKER

**B**

B&B BALLED AND BURLAPPED  
 B/B BRASS/BRONZE  
 B/B/PL BRASS/BRONZE/PLASTIC  
 B/PL BRASS/PLASTIC  
 BFM BONDED FIBER MATRIX  
 Bit Ctd BITUMINOUS COATED  
 BP BOOSTER PUMP  
 BPA BACKFLOW PREVENTER ASSEMBLY  
 BPE BACKFLOW PREVENTER ENCLOSURE  
 BV BALL VALVE

**C**

C CONDUIT  
 CAP CORRUGATED ALUMINUM PIPE  
 CARV COMBINATION AIR RELEASE VALVE  
 CB COUPLING BAND  
 CCA CAM COUPLER ASSEMBLY  
 CEC CONTROLLER ENCLOSURE CABINET  
 CHDPE CORRUGATED HIGH DENSITY POLYETHYLENE  
 CL CHAIN LINK  
 CNC CONTROL AND NEUTRAL CONDUCTORS  
 Conc CONCRETE  
 CP COPPER PIPE  
 CS COMPOST SOCK  
 CSP CORRUGATED STEEL PIPE  
 CST CENTER STRIP  
 CV CHECK VALVE

**D**

Dia DIAMETER  
 DIP DUCTILE IRON PIPE  
 DIT DRIP IRRIGATION TUBING  
 DG DECOMPOSED GRANITE  
 DN DIAMETER NOMINAL  
 DVA DRIP VALVE ASSEMBLY

**E**

EC EROSION CONTROL  
 ECTC EROSION CONTROL TECHNOLOGY COUNCIL  
 Elect ELECTRIC/ELECTRICAL  
 Elev ELEVATION  
 ELL ELBOW  
 ENCL ENCLOSURE  
 EP EDGE OF PAVEMENT  
 ES EDGE OF SHOULDER  
 EST END STRIP  
 ESTB ESTABLISHMENT  
 ETW EDGE OF TRAVELED WAY

**F**

F FULL CIRCLE  
 F/P FULL/PART CIRCLE  
 FCV FLOW CONTROL VALVE  
 FERT FERTILIZER  
 FG FINISHED GRADE  
 FH FLEXIBLE HOSE  
 FIPT FEMALE IRON PIPE THREAD  
 FIS FERTILIZER INJECTOR SYSTEM  
 FL FLOW LINE  
 FR FIBER ROLL  
 FS FLOW SENSOR  
 FSC FLOW SENSOR CABLE  
 FV FLUSH VALVE

**G**

Galv GALVANIZED  
 GARV GARDEN VALVE  
 GARVA GARDEN VALVE ASSEMBLY  
 GM GRAVEL MULCH  
 GPH GALLONS PER HOUR  
 GPM GALLONS PER MINUTE  
 GSP GALVANIZED STEEL PIPE  
 GV GATE VALVE

**H**

H HALF CIRCLE  
 HDPE HIGH DENSITY POLYETHYLENE  
 HP HORSEPOWER/HINGE POINT  
 HPL HIGH PRESSURE LINE  
 Hwy HIGHWAY

**I**

IC IRRIGATION CONTROLLER  
 ICC IRRIGATION CONTROLLER(S)  
 IN CONTROLLER ENCLOSURE CABINET  
 ID INSIDE DIAMETER  
 IFS IRRIGATION FILTRATION SYSTEM  
 IPS IRON PIPE SIZE  
 IPT IRON PIPE THREAD  
 Irr IRRIGATION

**L**

L LENGTH

**M**

Max MAXIMUM  
 MBGR METAL BEAM GUARD RAILING  
 MCV MANUAL CONTROL VALVE  
 MIC MASTER IRRIGATION CONTROLLER  
 Min MINIMUM  
 MIPT MALE IRON PIPE THREAD  
 Misc MISCELLANEOUS  
 MtI MATERIAL  
 MVP MAINTENANCE VEHICLE PULLOUT

**N**

NCN NO COMMON NAME  
 NL NOZZLE LINE  
 No. NUMBER  
 NPT NATIONAL PIPE THREAD

**O**

O/C ON CENTER  
 OD OUTSIDE DIAMETER  
 OL OVERLAP

**P**

P PART CIRCLE  
 PB PULL BOX  
 PCC PORTLAND CEMENT CONCRETE  
 PE POLYETHYLENE  
 PKt PACKET  
 PL PLASTIC  
 PLS PURE LIVE SEED  
 PLT PLANT/PLANTING  
 PLT ESTB PLANT ESTABLISHMENT  
 PM POST MILE  
 PR PRESSURE RATED  
 PRLV PRESSURE RELIEF VALVE  
 PRV PRESSURE REGULATING VALVE  
 PVC POLYVINYL CHLORIDE  
 PvmT PAVEMENT

**Q**

Q QUARTER CIRCLE  
 QCV QUICK COUPLING VALVE

**NOTE:**  
 For additional abbreviations,  
 see Standard Plans A10A and A10B.

**R**

R RADIUS  
 RCP REINFORCED CONCRETE PIPE  
 RCV REMOTE CONTROL VALVE  
 RCVM REMOTE CONTROL VALVE (MASTER)  
 RCVMF REMOTE CONTROL VALVE (MASTER) W/FLOW SENSOR  
 RCVP REMOTE CONTROL VALVE W/PRESSURE REGULATOR  
 RCW RECYCLED WATER  
 RECP ROLLED EROSION CONTROL PRODUCT  
 REQ REQUIRED  
 RICS REMOTE IRRIGATION CONTROL SYSTEM  
 R/W RIGHT OF WAY

**S**

S SLIP  
 SCH SCHEDULE  
 SF STATE-FURNISHED  
 Shld SHOULDER  
 Sq SQUARE  
 SST SIDE STRIP  
 Sta STATION  
 Std STANDARD  
 SW SIDEWALK/SOUND WALL

**T**

T THIRD CIRCLE/THREAD  
 TLS TRUCK LOADING STANDPIPE  
 TQ THREE QUARTER CIRCLE  
 TRM TURF REINFORCEMENT MAT  
 TT TWO-THIRDS CIRCLE  
 TWSA TREE WELL SPRINKLER ASSEMBLY  
 Typ TYPICAL

**U**

UG UNDERGROUND

**W**

W WIDTH  
 W/ WITH  
 WM WATER METER  
 WS WYE STRAINER  
 WSA WYE STRAINER ASSEMBLY  
 WSP WELDED STEEL PIPE  
 WWM WELDED WIRE MESH

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**LANDSCAPE AND  
 EROSION CONTROL ABBREVIATIONS**  
 NO SCALE

RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1  
 DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H1**

2010 REVISED STANDARD PLAN RSP H1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	39	61

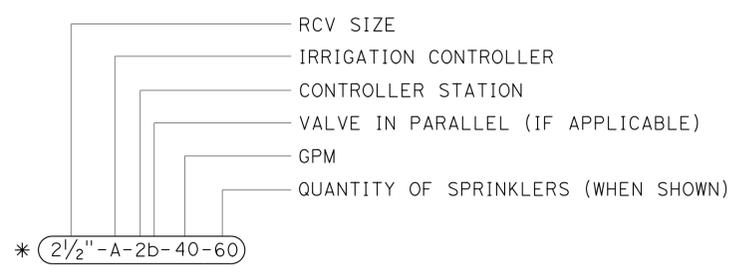
  
 LICENSED LANDSCAPE ARCHITECT  
 November 15, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



TO ACCOMPANY PLANS DATED 6-16-14

EXISTING	NEW	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ENCLOSURE (BPE)
		BOOSTER PUMP (BP)
		TRUCK LOADING STANDPIPE (TLS)
		FLOW SENSOR (FS)
		MASTER IRRIGATION CONTROLLER (MIC)
		AUXILIARY IRRIGATION CONTROLLER (AIC)
		IRRIGATION CONTROLLER (IC) IRRIGATION CONTROLLER (IC) (BATTERY) IRRIGATION CONTROLLER (IC) (SOLAR) IRRIGATION CONTROLLER (IC) (TWO WIRE) IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
		ARMOR-CLAD CONDUCTORS (ACC)
		CONTROL AND NEUTRAL CONDUCTORS (CNC)
		IRRIGATION CONDUIT
		EXTEND IRRIGATION CONDUIT
		DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (SUPPLY LINE) (LATERAL)
		COPPER PIPE (SUPPLY LINE)
		DRIP IRRIGATION TUBING
		REMOTE CONTROL VALVE (RCV) REMOTE CONTROL VALVE (MASTER) (RCVM) REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		REMOTE CONTROL VALVE W/PRESSURE REGULATOR (RCVP)
		EXISTING MANUAL CONTROL VALVE (MCV)
		DRIP VALVE ASSEMBLY (DVA)
		WYE STRAINER ASSEMBLY (WSA)

EXISTING	NEW	ITEM DESCRIPTION
		GATE VALVE (GV)
		BALL VALVE (BV)
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		GARDEN VALVE ASSEMBLY (GARVA)
		PRESSURE REGULATING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		EXISTING NOZZLE LINE W/TURNING UNION
		EXISTING IRRIGATION SYSTEM
		EXISTING IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
		SPRINKLER W/SPRINKLER PROTECTOR
		CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING
		FIBER ROLL
		COMPOST SOCK



**VALVE CODE**

\* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

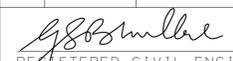
RSP H2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP H2 DATED JULY 19, 2013 AND STANDARD PLAN H2 DATED MAY 20, 2011 - PAGE 219 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H2**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**LANDSCAPE AND EROSION CONTROL SYMBOLS**  
NO SCALE

2010 REVISED STANDARD PLAN RSP H2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	40	61

  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 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.

TO ACCOMPANY PLANS DATED 6-16-14

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING							
SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

\* - For other offsets, use the following merging taper length formula for L:  
 For speed of 40 mph or less,  $L = WS^2/60$   
 For speed of 45 mph or more,  $L = WS$

Where: L = Taper length in feet  
 W = Width of offset in feet  
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

\*\* - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING				
SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
		ft	ft	ft
mph	ft	ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

\* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph  
 \*\* - Longitudinal buffer space or flagger station spacing  
 \*\*\* - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

\* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## TRAFFIC CONTROL SYSTEM TABLES FOR LANE AND RAMP CLOSURES

NO SCALE

RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP T9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	41	61

REGISTERED CIVIL ENGINEER  
 Gurinderpal Bhullar  
 No. C48815  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

April 19, 2013  
 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:**

See Revised Standard Plan RSP T9 for tables.

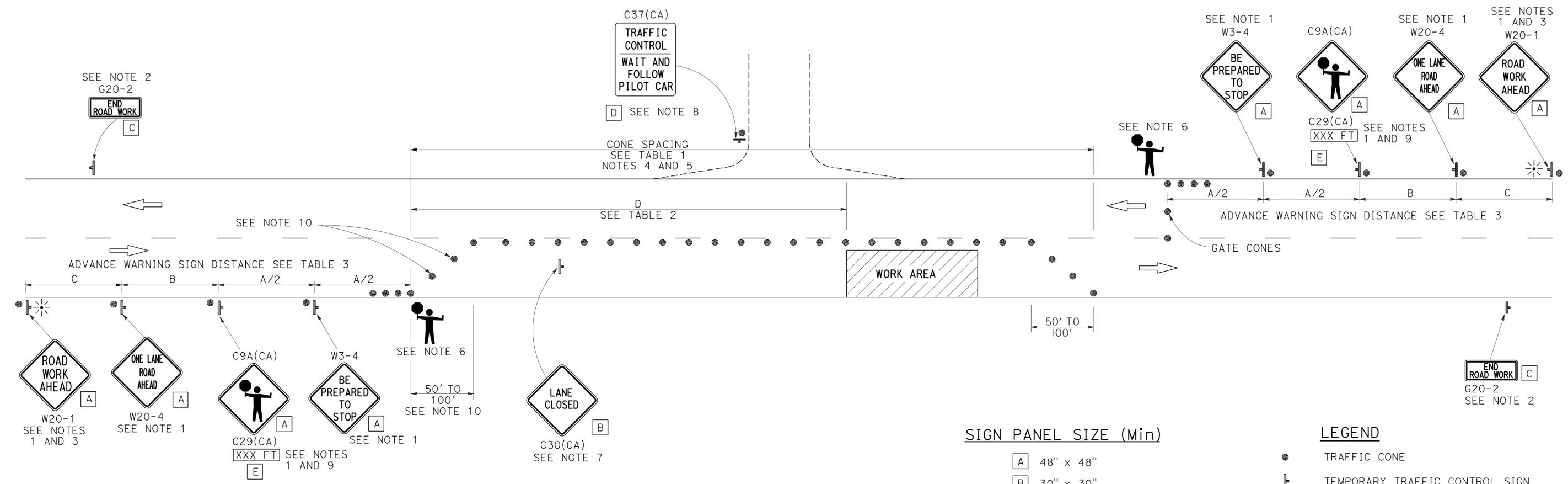
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

**TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL**

TO ACCOMPANY PLANS DATED 6-16-14



**NOTES:**

- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a W20-4 sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM  
FOR LANE CLOSURE ON  
TWO LANE CONVENTIONAL  
HIGHWAYS**

NO SCALE

RSP T13 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

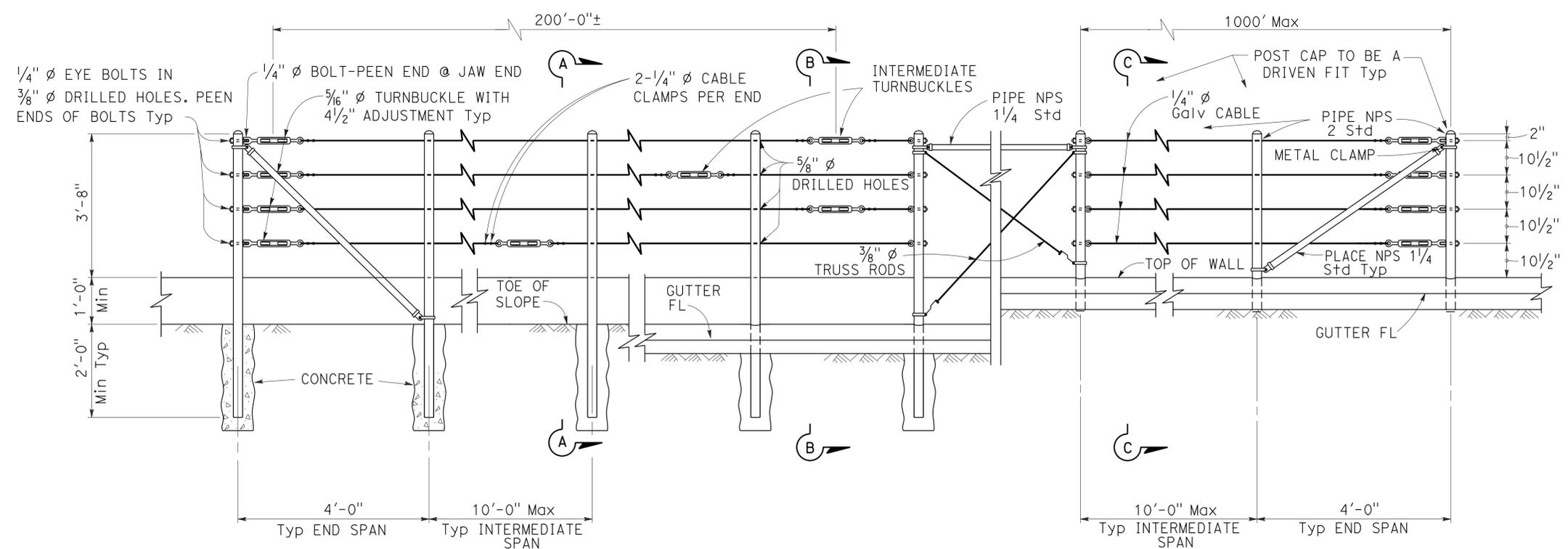
**REVISED STANDARD PLAN RSP T13**

2010 REVISED STANDARD PLAN RSP T13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	42	61

REGISTERED CIVIL ENGINEER  
 October 21, 2011  
 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.

Tilgat Satter  
 No. C42892  
 Exp. 3-31-12  
 CIVIL  
 STATE OF CALIFORNIA

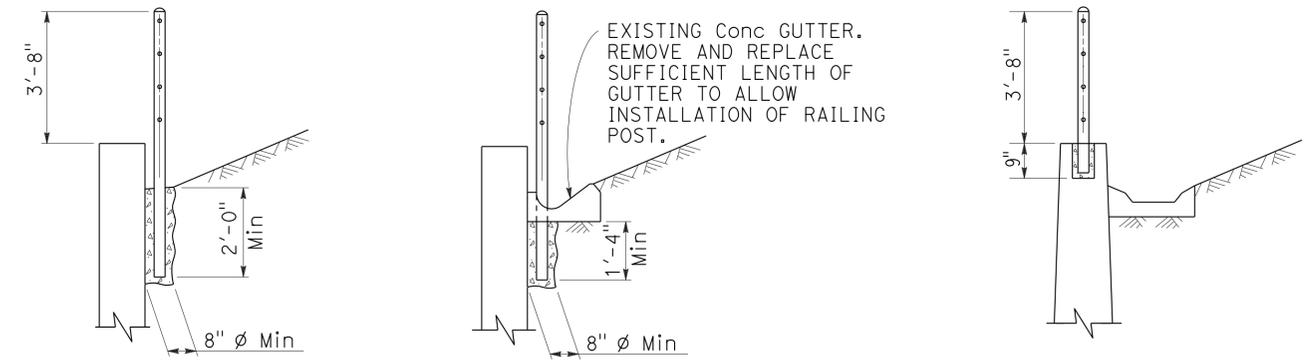


**EXISTING WALL (WITHOUT GUTTER)** Existing  
**RETAINING WALL (WITH GUTTER)** Existing  
**RETAINING WALL (WITH GUTTER)** New construction

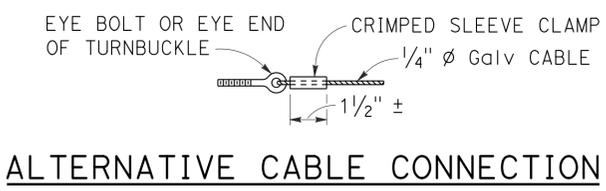
**ELEVATION**

**NOTES:**

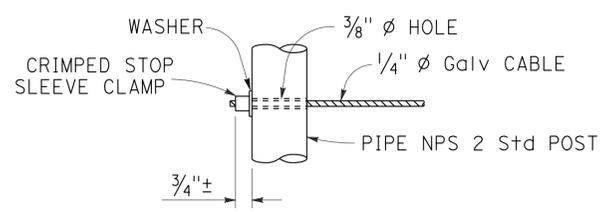
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining wall.
6. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.
7. Line posts shall be braced horizontally and trussed diagonally in both directions at intervals not to exceed 1000'.
8. Post pockets to be centered in top of wall.
9. Typical end spans, braced in both directions, shall be constructed at changes in line where the angle of deflection is 15° or more.
10. Provide thimbles at all cable loops.



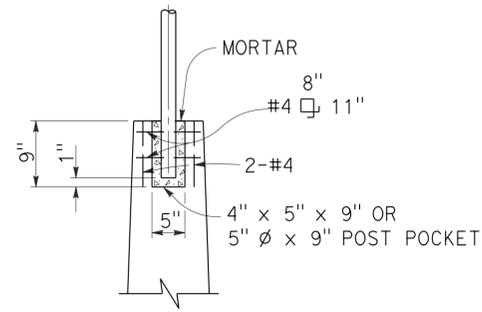
**SECTION A-A** Existing  
**SECTION B-B** Existing  
**SECTION C-C** New construction



**ALTERNATIVE CABLE CONNECTION**



**ALTERNATIVE DEAD END ANCHORAGE**



**POST POCKET**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CABLE RAILING**

NO SCALE

RSP B11-47 DATED OCTOBER 21, 2011 SUPERSEDES STANDARD PLAN B11-47 DATED MAY 20, 2011 - PAGE 293 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP B11-47**

2010 REVISED STANDARD PLAN RSP B11-47

**LEGEND:**

<b>AB</b>	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
<b>BC</b>	INSTALL PULL BOX IN EXISTING CONDUIT RUN
<b>BP</b>	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
<b>CB</b>	INSTALL CONDUIT INTO EXISTING PULL BOX
<b>CC</b>	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
<b>CF</b>	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
<b>DH</b>	DETECTOR HANDHOLE
<b>FA</b>	FOUNDATION TO BE ABANDONED
<b>IS</b>	INSTALL SIGN ON SIGNAL MAST ARM
<b>NS</b>	NO SLIP BASE ON STANDARD
<b>PEC</b>	PHOTOELECTRIC CONTROL
<b>PEU</b>	PHOTOELECTRIC UNIT
<b>RC</b>	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
<b>RE</b>	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
<b>RL</b>	RELOCATE EQUIPMENT
<b>RR</b>	REMOVE AND REUSE EQUIPMENT
<b>RS</b>	REMOVE AND SALVAGE EQUIPMENT
<b>SC</b>	SPLICE NEW TO EXISTING CONDUCTORS
<b>SD</b>	SERVICE DISCONNECT
<b>TSP</b>	TELEPHONE SERVICE POINT

**ABBREVIATIONS**

APS	ACCESSIBLE PEDESTRIAN SIGNAL	M/M	MULTIPLE TO MULTIPLE TRANSFORMER
BBS	BATTERY BACKUP SYSTEM	Mtg	MOUNTING
BC	BOLT CIRCLE	MV	MERCURY VAPOR LIGHTING FIXTURE
BPB	BICYCLE PUSH BUTTON	MVDS	MICROWAVE VEHICLE DETECTION SYSTEM
C	CONDUIT	N	NEUTRAL (GROUNDED CONDUCTOR)
CB	CIRCUIT BREAKER	NB	NEUTRAL BUS
CCTV	CLOSED CIRCUIT TELEVISION	NC	NORMALLY CLOSE
Ckt	CIRCUIT	NO	NORMALLY OPEN
CMS	CHANGEABLE MESSAGE SIGN	P	CIRCUIT BREAKER'S POLE
Ctid	CALTRANS IDENTIFICATION	PB	PULL BOX
Comm	COMMUNICATION	PBA	PUSH BUTTON ASSEMBLY
DLC	LOOP DETECTOR LEAD-IN CABLE	PEC	PHOTOELECTRIC CONTROL
EMS	EXTINGUISHABLE MESSAGE SIGN	Ped	PEDESTRIAN
EVUC	EMERGENCY VEHICLE UNIT CABLE	PEU	PHOTOELECTRIC UNIT
EVUD	EMERGENCY VEHICLE UNIT DETECTOR	PT	CONDUIT WITH PULL TAPE
FB	FLASHING BEACON	RE	RELOCATED EQUIPMENT
FBCA	FLASHING BEACON CONTROL ASSEMBLY	RM	RAMP METERING
FBS	FLASHING BEACON WITH SLIP BASE	RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
FO	FIBER OPTIC	SB	SLIP BASE
G	EQUIPMENT GROUNDING CONDUCTOR	SIC	SIGNAL INTERCONNECT CABLE
GB	GROUND BUS	Sig	SIGNAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SMA	SIGNAL MAST ARM
HAR	HIGHWAY ADVISORY RADIO	SNS	STREET NAME SIGN
Hex	HEXAGONAL	SP	SERVICE POINT
HPS	HIGH PRESSURE SODIUM	TDC	TELEPHONE DEMARCATION CABINET
IISNS	INTERNALLY ILLUMINATED STREET NAME SIGN	TMS	TRAFFIC MONITORING STATION
ISL	INDUCTION SIGN LIGHTING	TOS	TRAFFIC OPERATIONS SYSTEM
LED	LIGHT EMITTING DIODE	Veh	VEHICLE
LMA	LUMINAIRE MAST ARM	VIVDS	VIDEO IMAGE VEHICLE DETECTION SYSTEM
LPS	LOW PRESSURE SODIUM	WIM	WEIGH-IN-MOTION
Ltg	LIGHTING	Xfmr	TRANSFORMER
Lum	LUMINAIRE		
M	METERED		
MAT	MAST ARM MOUNTING TOP ATTACHMENT		
MAS	MAST ARM MOUNTING SIDE ATTACHMENT		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	43	61

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
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.

TO ACCOMPANY PLANS DATED 6-16-14

**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.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL USED	DEFINITIONS
$\Omega$	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
$\mu$	MICRO
P	PICO
Hz	HERTZ

**MISCELLANEOUS ELECTROLIERS**

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT NOTES OR PROJECT PLANS)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

- NOTES:**
- HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
  - LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
  - Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

**STANDARD ELECTROLIER**

NEW	EXISTING	STANDARD TYPE
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)**

NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	128	1.8	44	61

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
 No. E15129  
 Exp. 6-30-14  
 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.

TO ACCOMPANY PLANS DATED 6-16-14

**CONDUIT**

NEW	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 ATTACHED TO THE STRUCTURE OR SERVICE POLE

**SIGNAL EQUIPMENT**

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)
		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

**SERVICE EQUIPMENT**

NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

**POLE-MOUNTED SERVICE DESIGNATION**

	TYPE H SERVICE, 28'-10"	TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE
--	-------------------------	--

**FLASHING BEACON**

NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

**SIGNAL EQUIPMENT Cont**

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION SYSTEM

**NOTES:**

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

**ILLUMINATED OVERHEAD SIGN**

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

NO SCALE

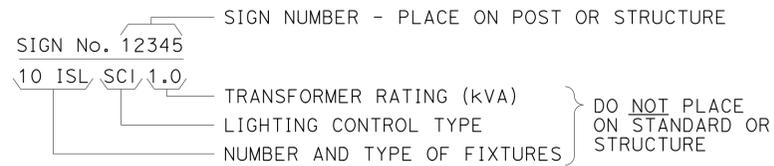
RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

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

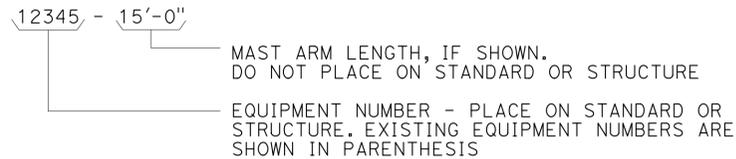
2010 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

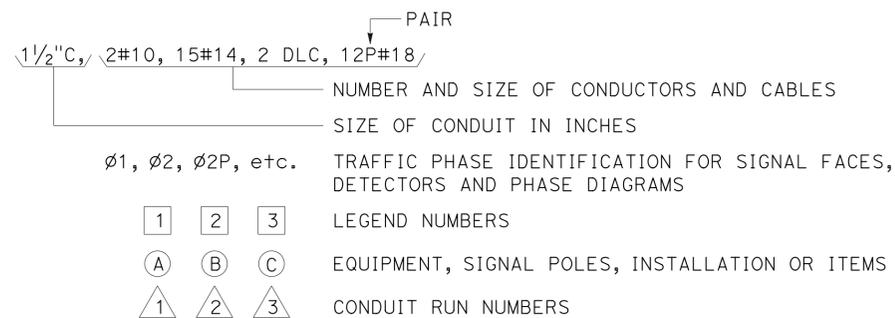
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



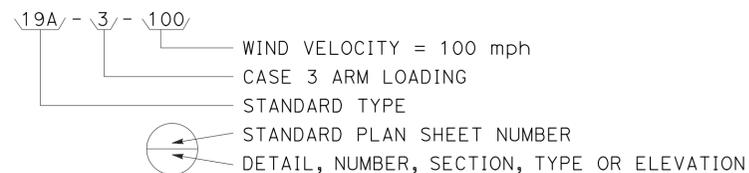
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



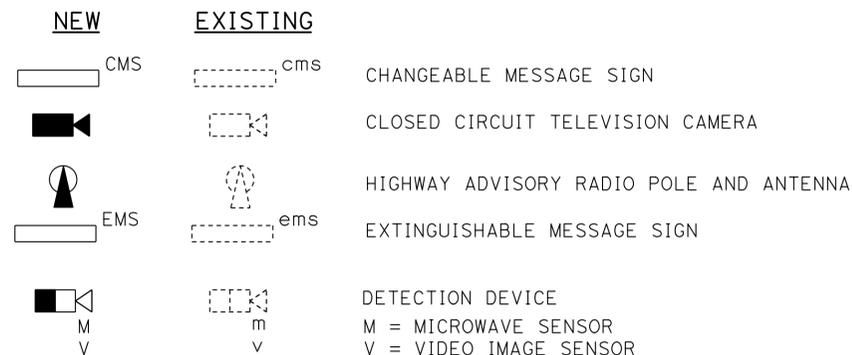
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



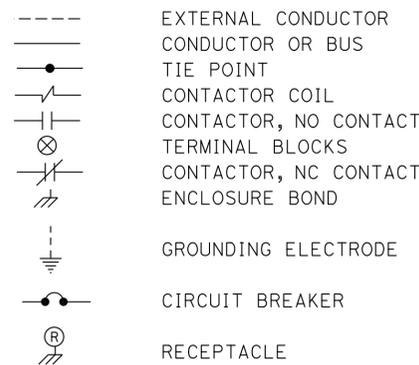
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



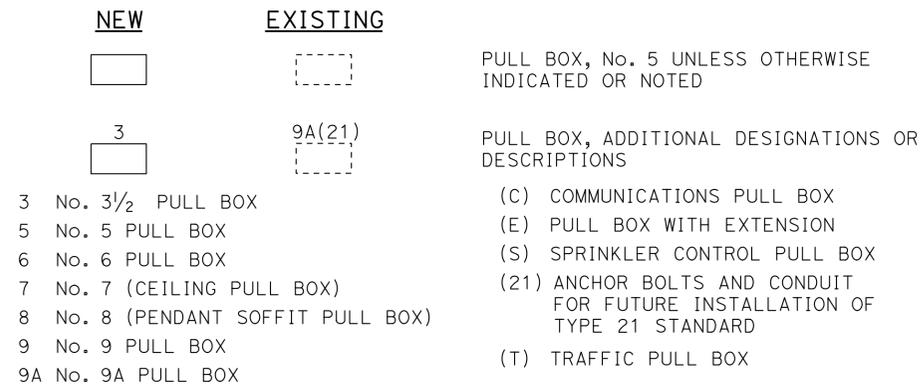
### MISCELLANEOUS EQUIPMENT



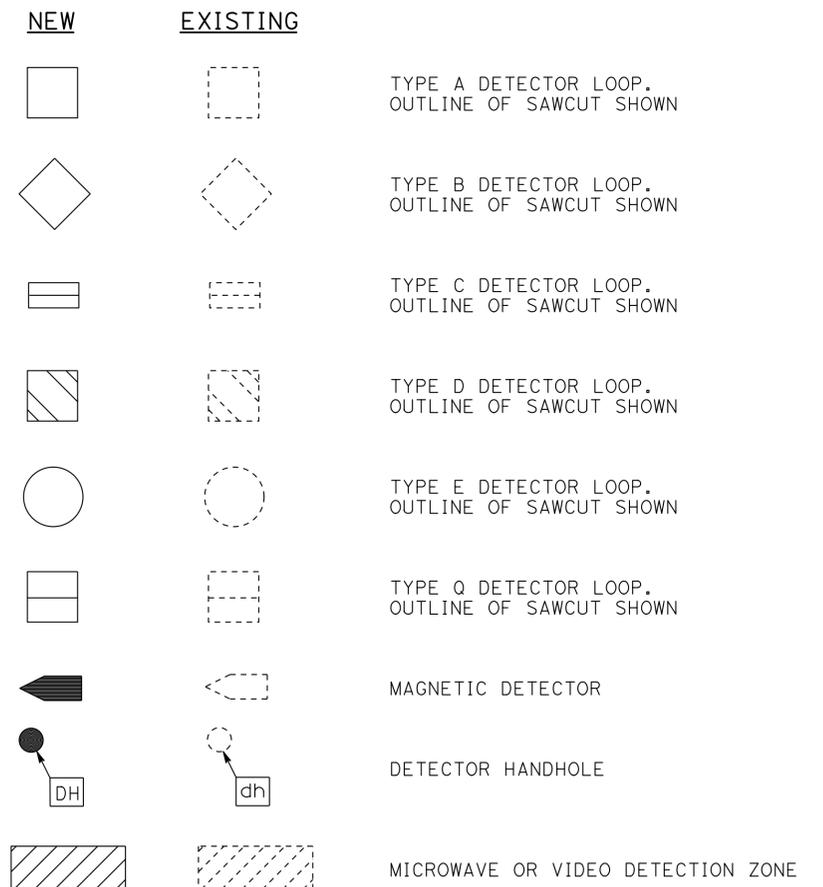
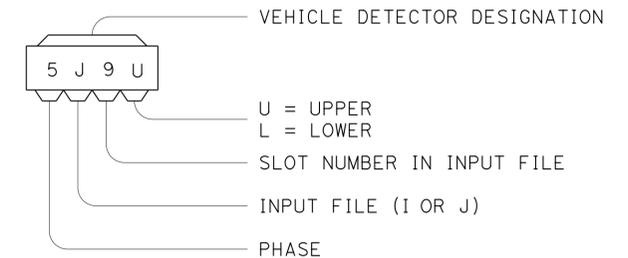
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1C  
DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

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

2010 REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	46	61

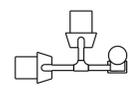
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

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.

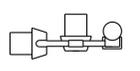
REGISTERED PROFESSIONAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-16-14

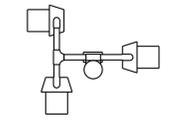
2010 REVISED STANDARD PLAN RSP ES-4A



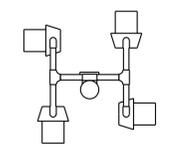
SV-2-TD



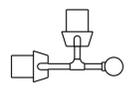
SV-2-TC



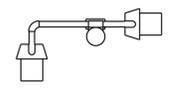
SV-3-TC



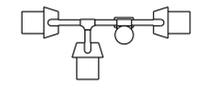
SV-4-TC



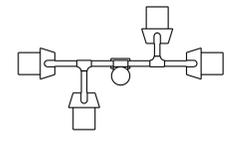
SV-2B



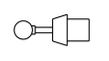
SV-2-TB



SV-3-TB



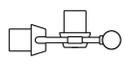
SV-4-TB



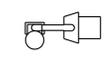
SV



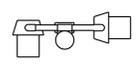
SV-1



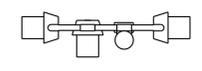
SV-2A



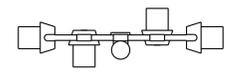
SV-1-T



SV-2-TA



SV-3-TA



SV-4-TA

SIDE MOUNTINGS

PLAN VIEW OF OTHER SIDE MOUNTINGS

ABBREVIATIONS:

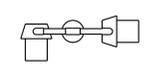
- SV SIDE MOUNTED VEHICLE SIGNALS
- T TERMINAL COMPARTMENT
- TV TOP MOUNTED VEHICLE SIGNALS
- 1, 2, 3, 4 NUMBER OF SIGNAL FACES (3 - SECTION, UNLESS OTHERWISE INDICATED)
- A, B, C, D CONFIGURATION OF SIGNALS

NOTES:

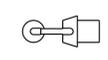
1. Mountings shall be oriented to provide maximum horizontal clearance to adjacent roadway.
2. Bracket arms shall be long enough to permit proper alignment of signals and backplate installation.
3. See Standard Plans ES-4D and ES-4E for attachment fitting details.



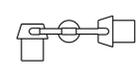
TV-1



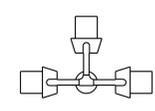
TV-2



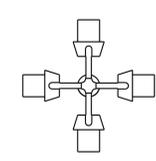
TV-1-T



TV-2-T



TV-3-T



TV-4-T

TOP MOUNTINGS

PLAN VIEW OF TOP MOUNTINGS

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (VEHICULAR SIGNAL HEADS  
 AND MOUNTINGS)**

NO SCALE

RSP ES-4A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4A DATED MAY 20, 2011 - PAGE 443 OF THE STANDARD PLANS BOOK DATED 2010.

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

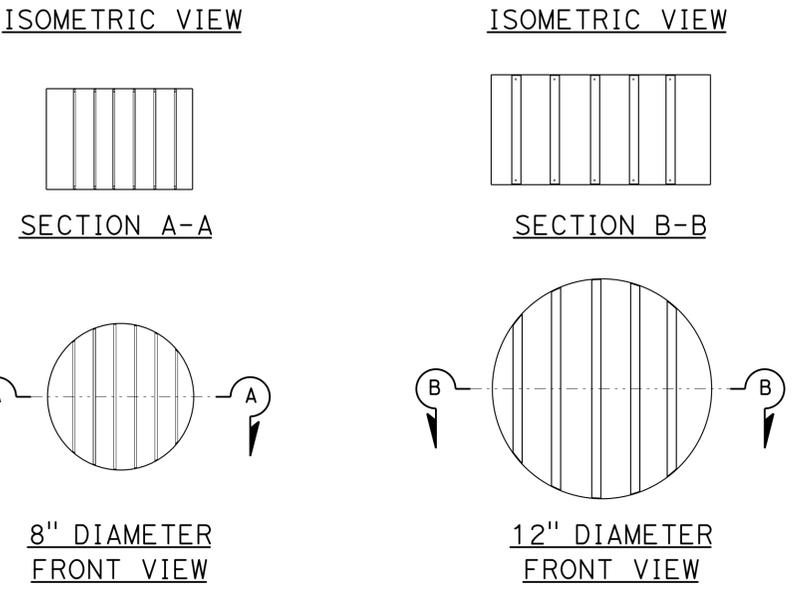
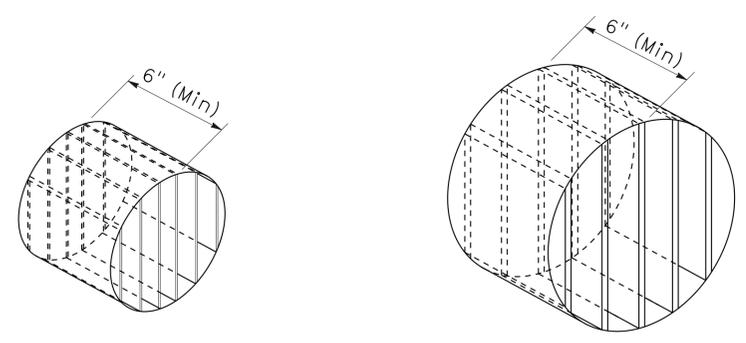
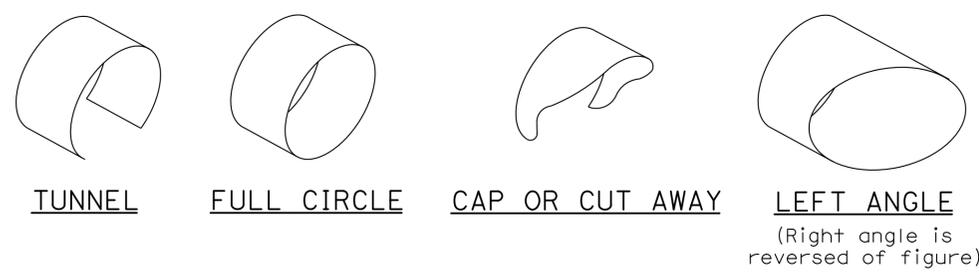
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	128	1.8	47	61

Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

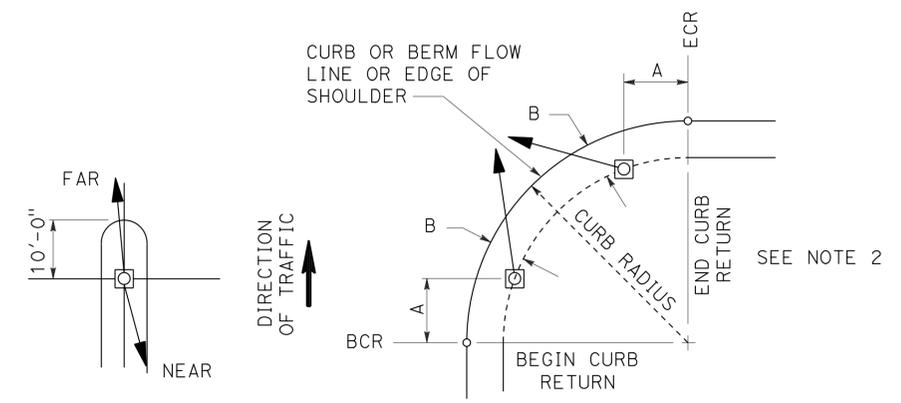
July 19, 2013  
 PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 6-16-14

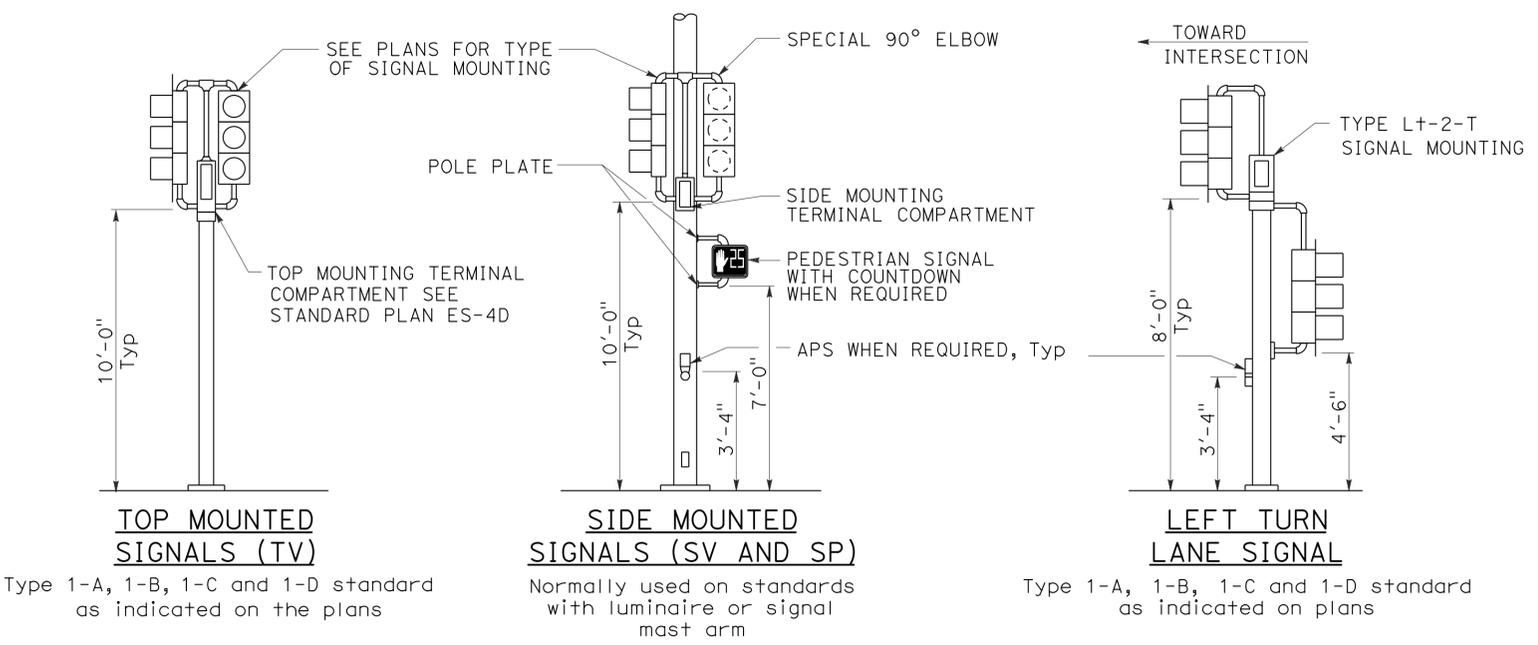
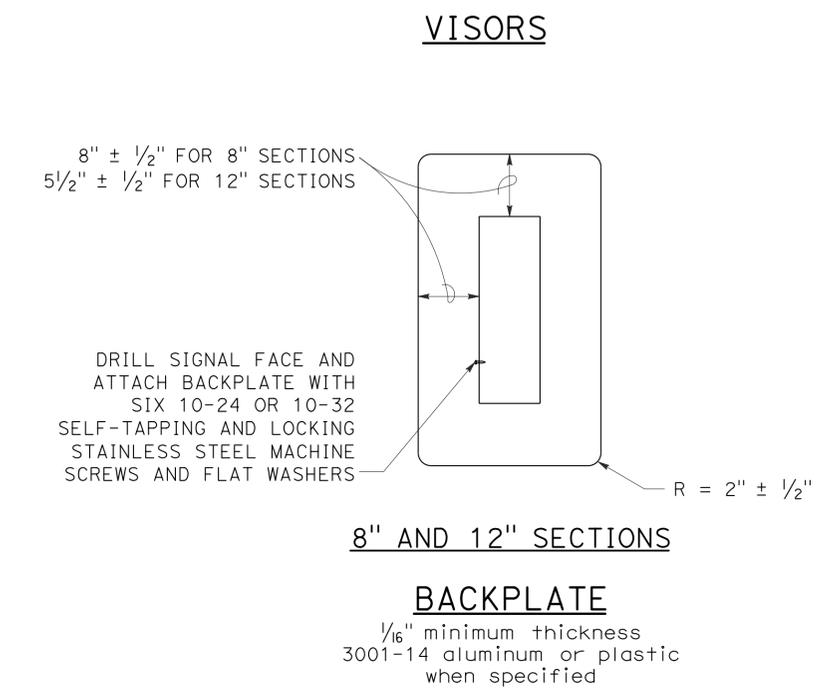


**DIRECTIONAL LOUVER**  
 Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.

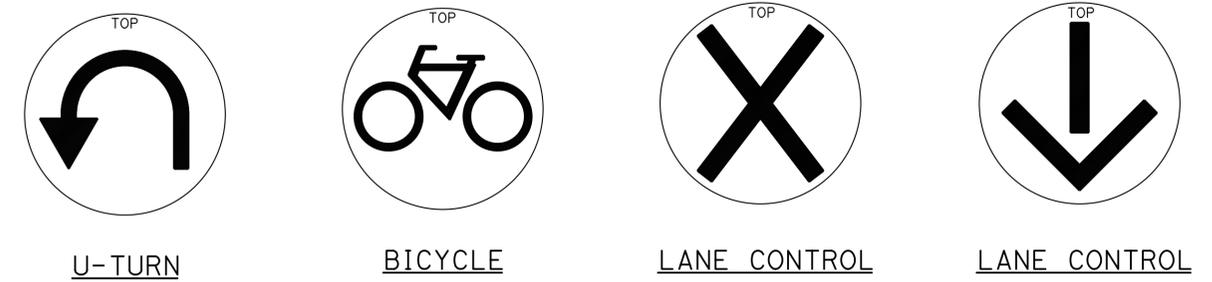


- NOTES:**
1. Typical signal pole placement unless dimensioned on plans.
  2. For A and B dimensions, see Pole Schedule, or as directed by the Engineer.

**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



**TYPICAL SIGNAL INSTALLATIONS**



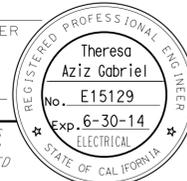
**SIGNAL FACES**

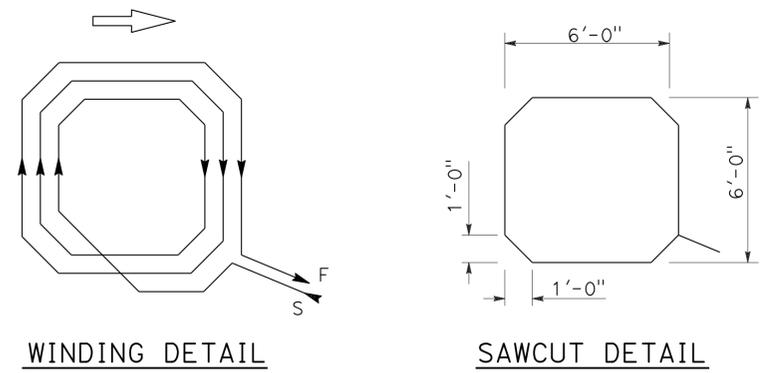
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS (VEHICULAR SIGNAL HEADS AND MOUNTINGS)**

NO SCALE

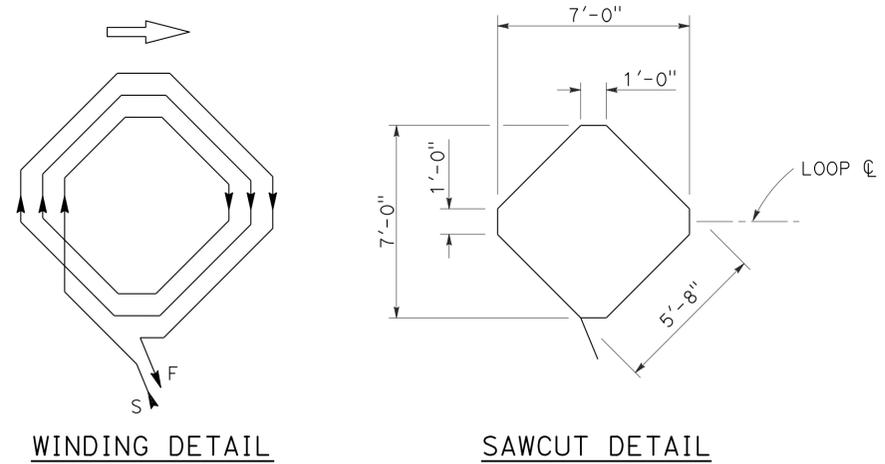
RSP ES-4C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-04C DATED MAY 20, 2011 - PAGE 445 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-4C

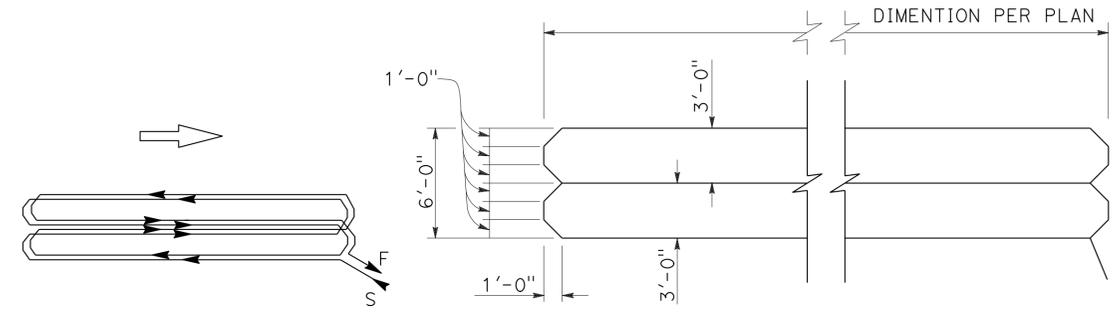
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	48	61
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER  July 19, 2013 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
					
TO ACCOMPANY PLANS DATED 6-16-14					



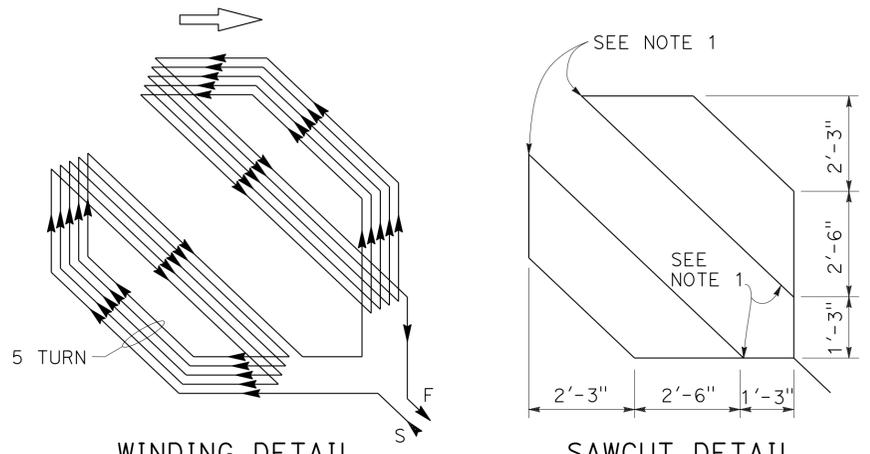
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE A LOOP DETECTOR CONFIGURATION**



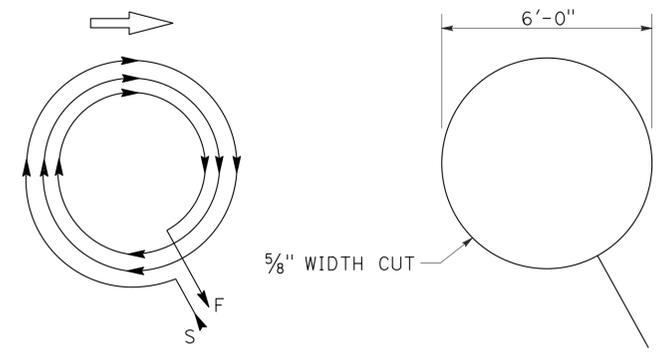
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE B LOOP DETECTOR CONFIGURATION**



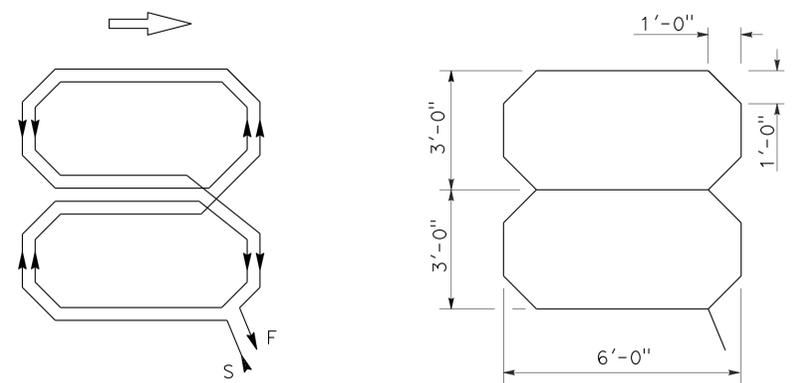
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE C LOOP DETECTOR CONFIGURATION**



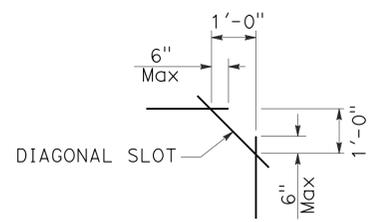
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE D LOOP DETECTOR CONFIGURATION**



WINDING DETAIL  
SAWCUT DETAIL  
**TYPE E LOOP DETECTOR CONFIGURATION**



WINDING DETAIL  
SAWCUT DETAIL  
**TYPE Q LOOP DETECTOR CONFIGURATION**



**PLAN VIEW OF DIAGONAL SLOT AT CORNERS**

- NOTES:**
1. Round corners of acute angle sawcuts to prevent damage to conductors.
  2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS (DETECTORS)**  
NO SCALE

RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

**2010 REVISED STANDARD PLAN RSP ES-5B**

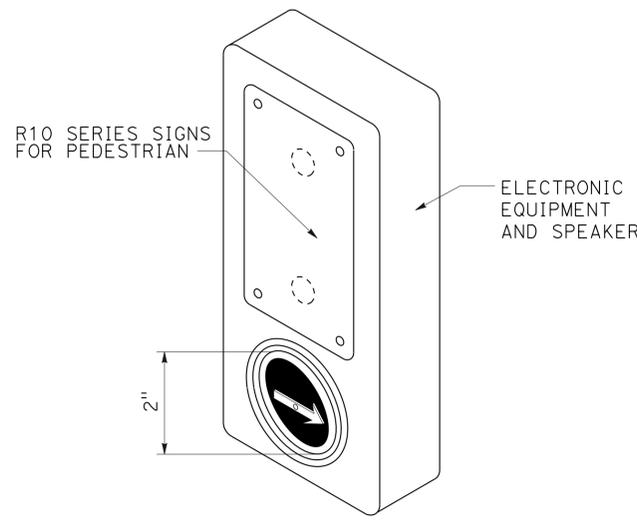
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	49	61

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
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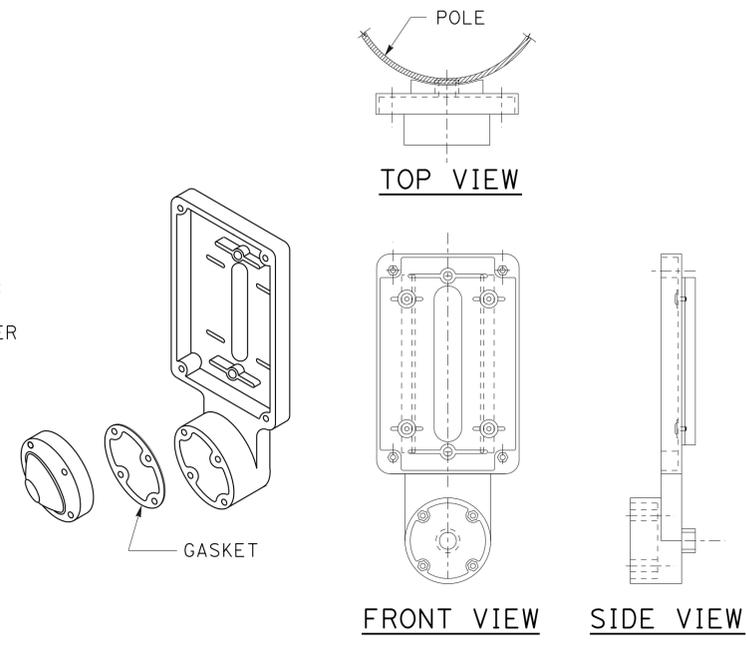
TO ACCOMPANY PLANS DATED 6-16-14

**NOTES:**

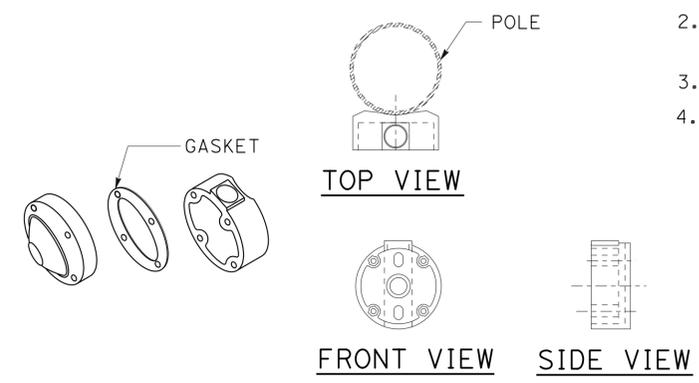
1. Back casting shape to fit curvature of pole.
2. Provide cover fitting for top of post, when PBA is mounted on push button assembly post.
3. Install push button on crosswalk side of standard.
4. Use R10 series regulatory signs and plaques for pedestrian and bicycle facilities.



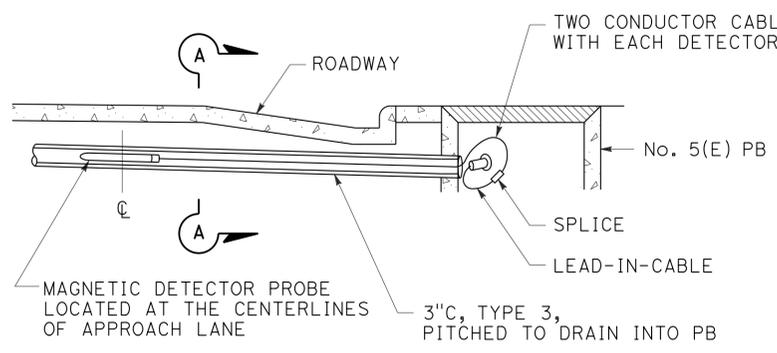
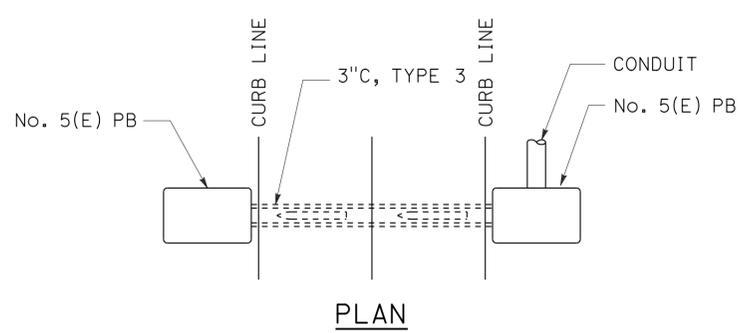
**ACCESSIBLE PEDESTRIAN SIGNAL**  
**DETAIL A**  
 (See note 1 to 4)



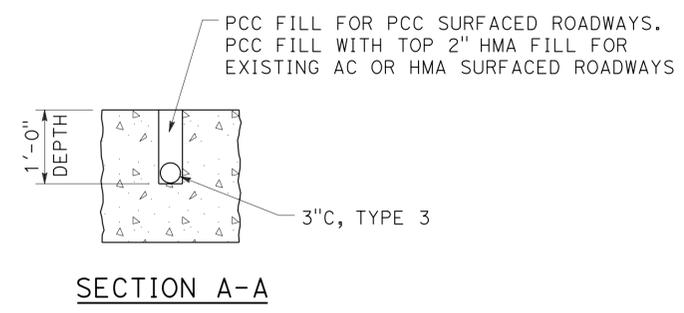
**TYPE B PUSH BUTTON ASSEMBLY**  
**DETAIL B**  
 (See note 1 to 4)



**TYPE C PUSH BUTTON ASSEMBLY**  
**DETAIL C**  
 (See note 1 to 4)



**MAGNETIC VEHICLE DETECTOR**  
**INSTALLATION DETAILS**  
**DETAIL D**



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(ACCESSIBLE PEDESTRIAN SIGNAL,**  
**PUSH BUTTON ASSEMBLIES AND**  
**MAGNETIC VEHICLE DETECTOR)**  
 NO SCALE

RSP ES-5C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5C DATED MAY 20, 2011 - PAGE 450 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-5C**

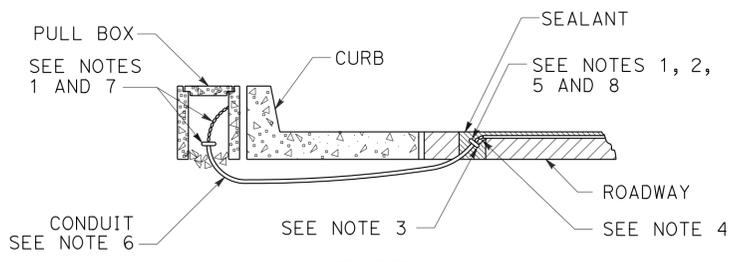
2010 REVISED STANDARD PLAN RSP ES-5C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	50	61

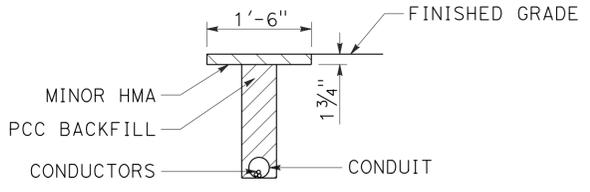
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



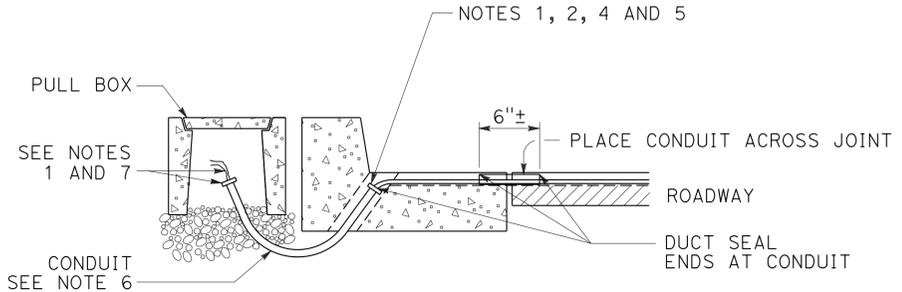
TO ACCOMPANY PLANS DATED 6-16-14



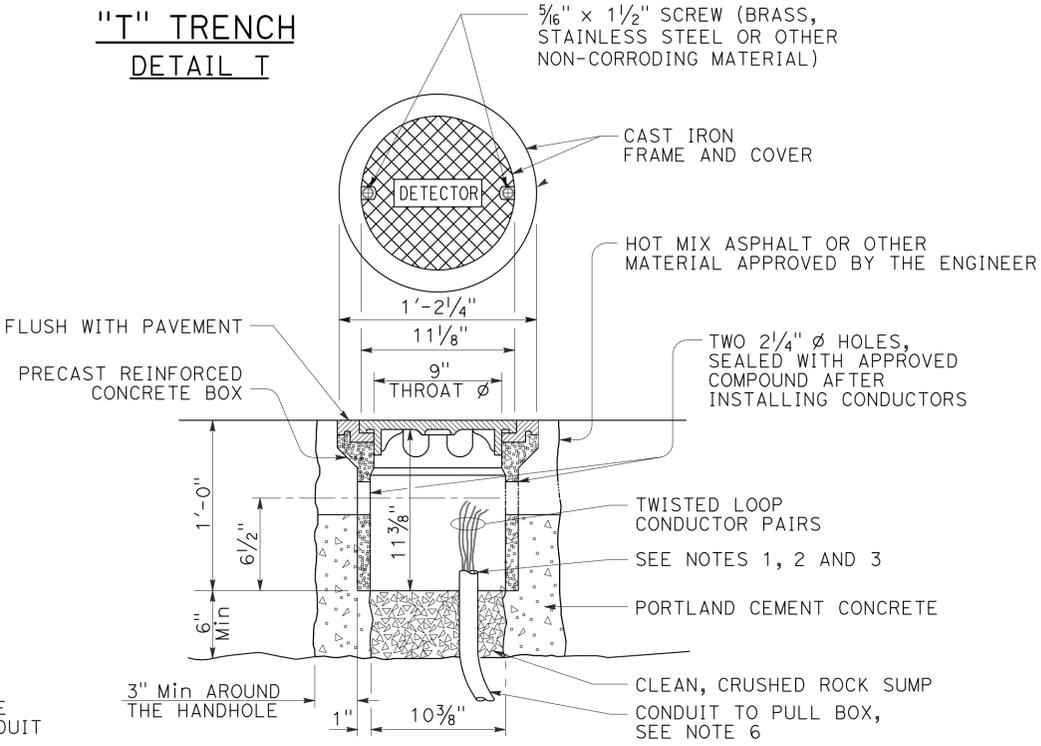
**TYPE A  
CURB TERMINATION DETAIL**



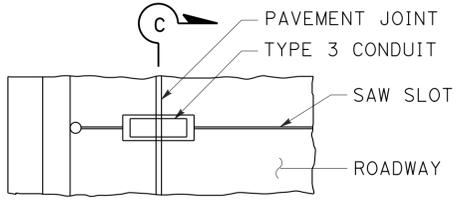
**"T" TRENCH  
DETAIL 1**



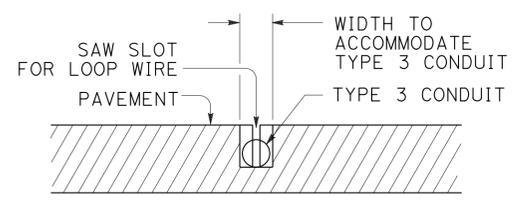
**CROSS SECTION**



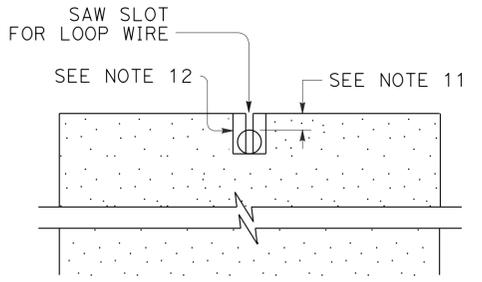
**DETECTOR HANDHOLE DETAIL**



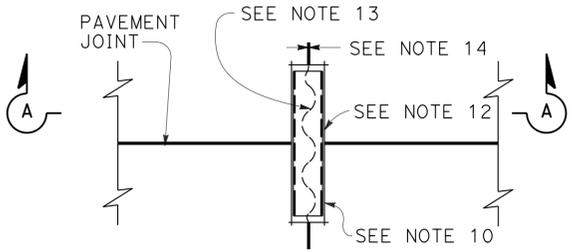
**PLAN VIEW**



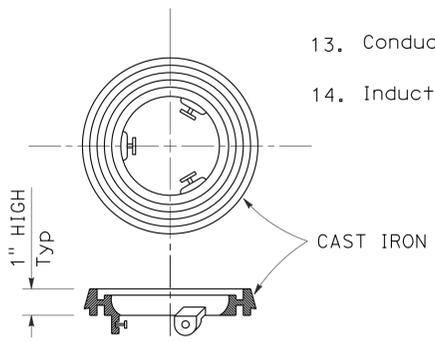
**SECTION C-C**



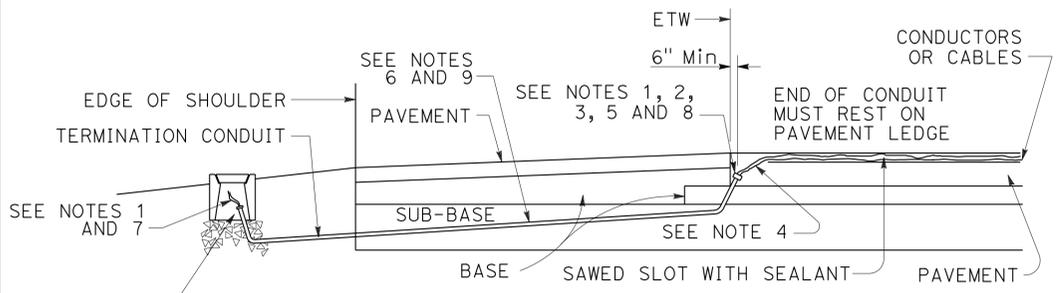
**SECTION A-A**



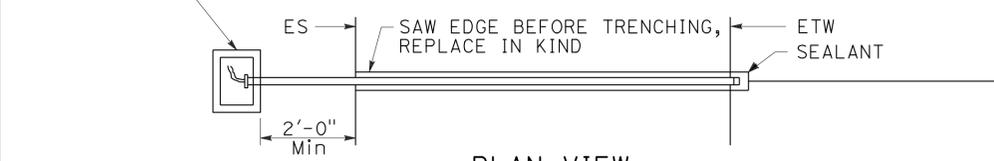
**PLAN VIEW  
TYPICAL LOOP LEAD-IN DETAIL  
AT PAVEMENT JOINT**



**LOCKING GRADE RING**



**CROSS SECTION**



**PLAN VIEW  
SHOULDER TERMINATION DETAILS**

**NOTES:**

- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- |                     |                        |
|---------------------|------------------------|
| <u>Conduit size</u> | <u>Loop conductors</u> |
| 1"C minimum         | 1 to 2 pairs           |
| 1 1/2"C minimum     | 3 to 4 pairs           |
| 2"C minimum         | 5 or more pairs        |
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(CURB TERMINATION  
AND HANDHOLE)**  
NO SCALE

RSP ES-5D DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5D DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-5D**

**2010 REVISED STANDARD PLAN RSP ES-5D**

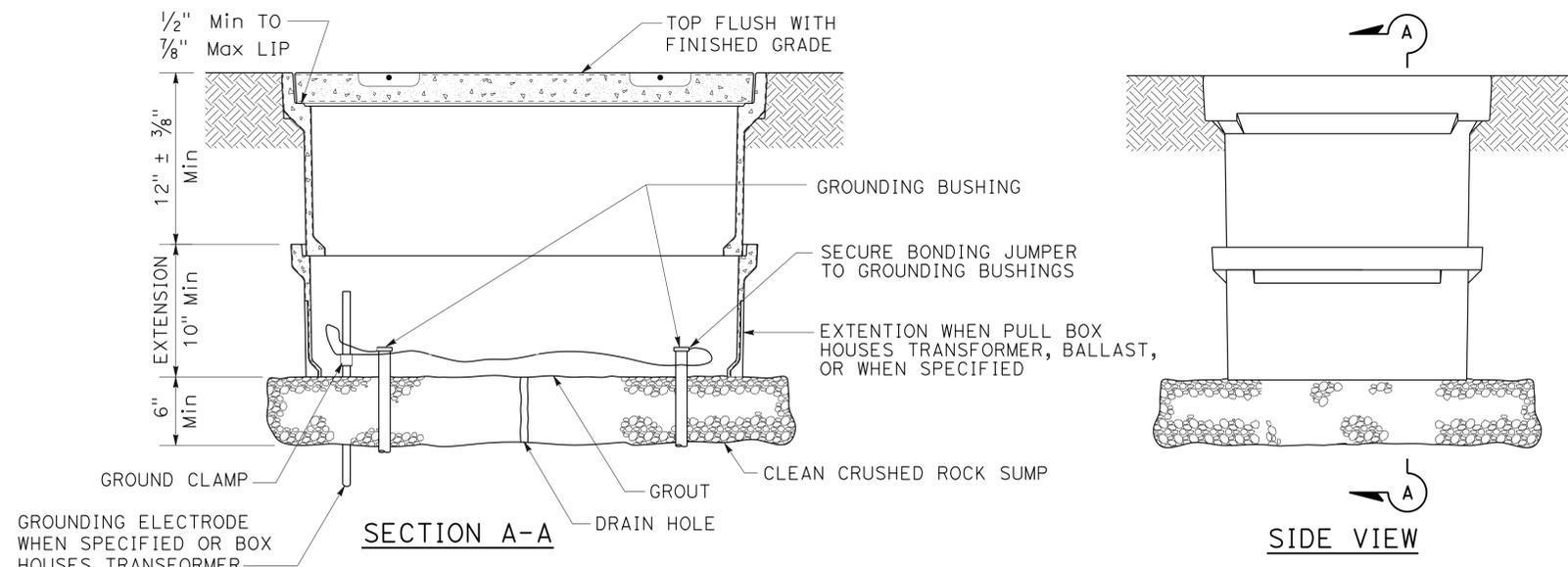
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	128	1.8	51	61

Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

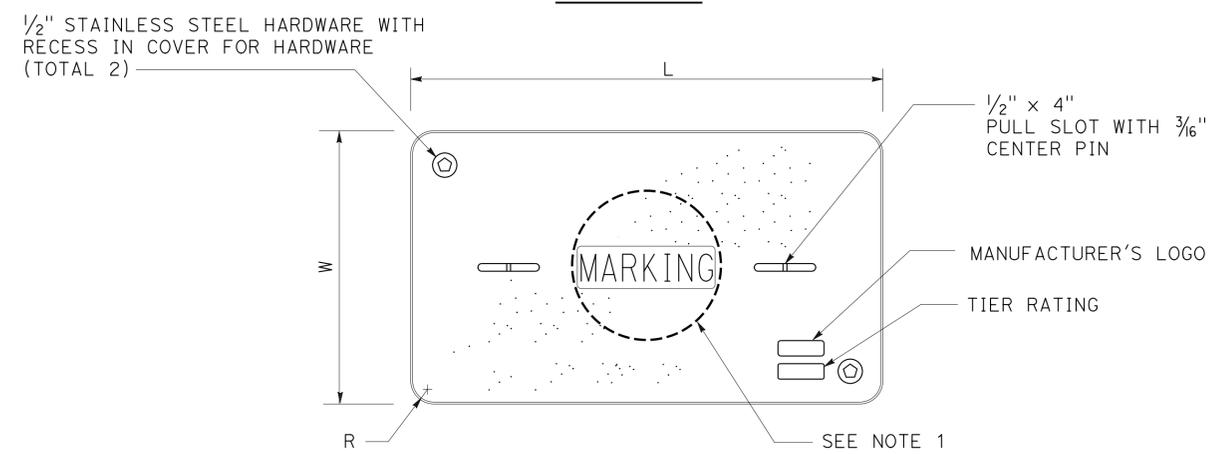
July 19, 2013  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

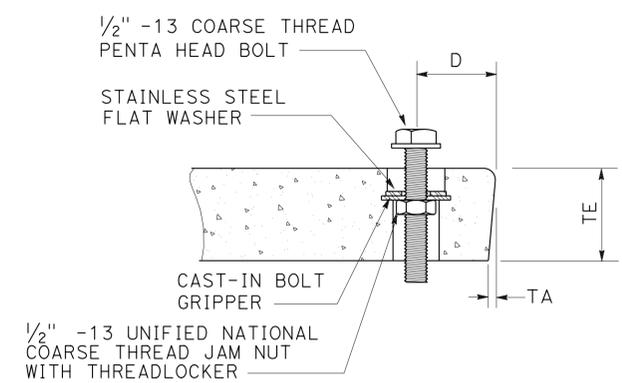
TO ACCOMPANY PLANS DATED 6-16-14



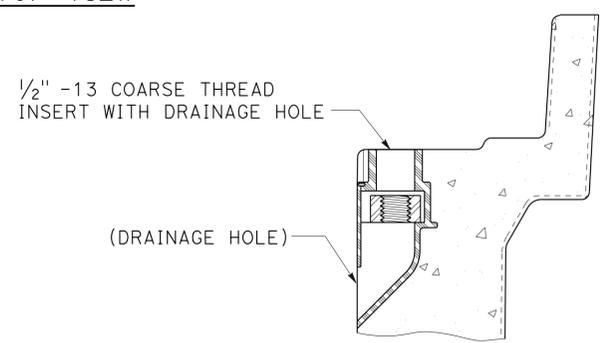
**INSTALLATION DETAILS**  
**DETAIL A**



**COVER TOP VIEW**



**TYPICAL COVER CAPTIVE BOLT**  
**OR SIMILAR**



**TYPICAL THREADED INSERT**  
**OR SIMILAR**

**NOTES:**

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
  - No. 3 1/2 pull box.
    - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
  - No. 5, 6, 9 or 9A pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
    - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATIONS" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communication line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
    - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(NON-TRAFFIC PULL BOX)**  
NO SCALE

RSP ES-8A DATED JULY 19, 2013 SUPERSEDES RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-8A**

2010 REVISED STANDARD PLAN RSP ES-8A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	128	1.8	52	61

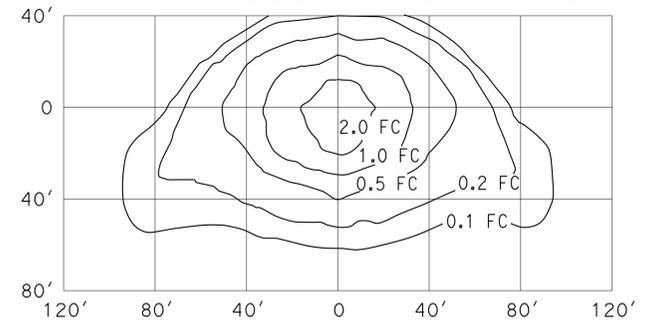
Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

July 19, 2013  
 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.

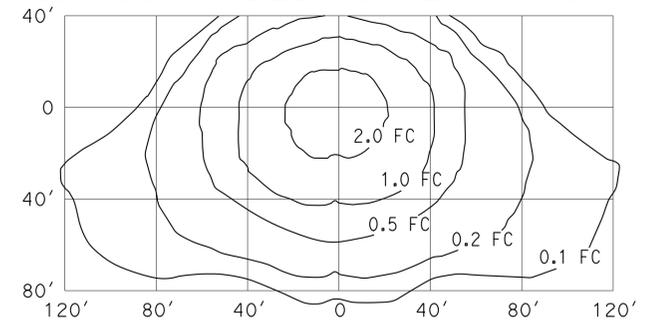
TO ACCOMPANY PLANS DATED 6-16-14

**ISOFOOTCANDLE CURVE - MINIMUM**



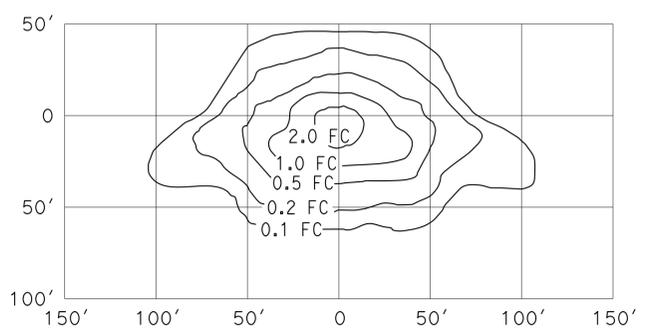
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 34' Mounting Height  
 Lamp operated at 22,000 lm  
 200-W high pressure sodium lamp  
 ANSI Designation S66

**ISOFOOTCANDLE CURVE - MINIMUM**



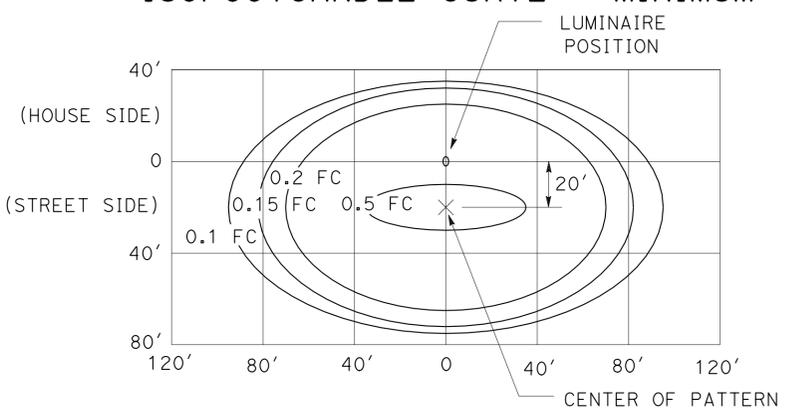
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 40' Mounting Height  
 Lamp operated at 37,000 lm  
 310-W high pressure sodium lamp  
 ANSI Designation S67

**ISOFOOTCANDLE CURVE - MINIMUM**



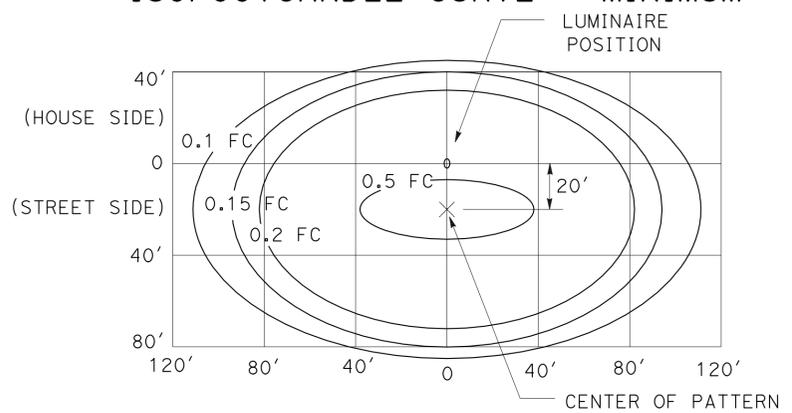
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 30' Mounting Height  
 Lamp operated at 16,000 lm  
 150-W high pressure sodium lamp  
 ANSI Designation S55

**ISOFOOTCANDLE CURVE - MINIMUM**



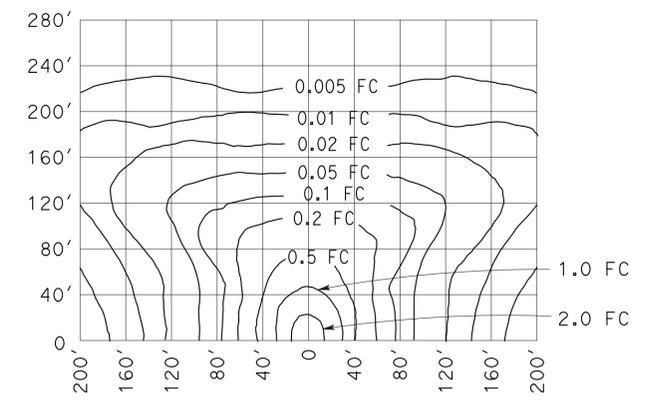
**LED LUMINAIRE ROADWAY 1**  
 165-W at 34' Mounting Height

**ISOFOOTCANDLE CURVE - MINIMUM**



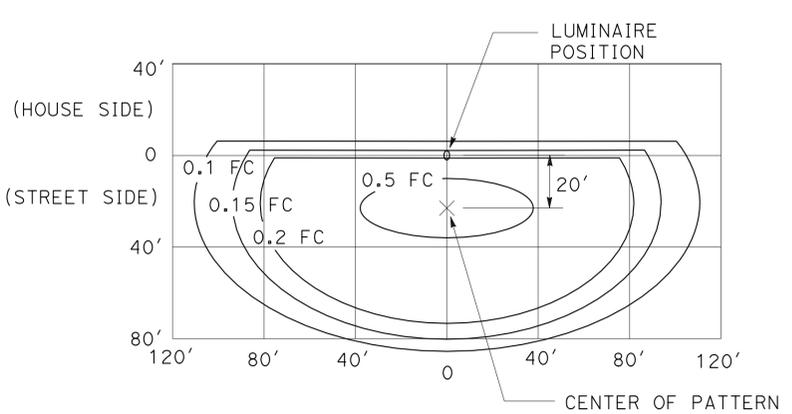
**LED LUMINAIRE ROADWAY 2**  
 235-W at 40' Mounting Height

**ISOFOOTCANDLE CURVE - MINIMUM**



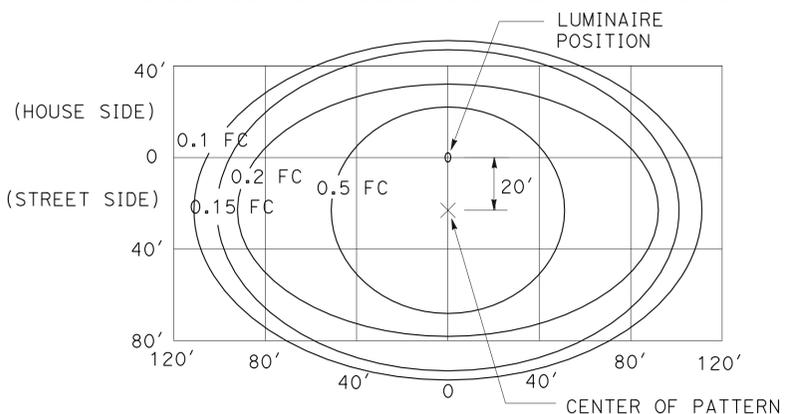
**LOW PRESSURE SODIUM LUMINAIRE**  
 40' Mounting Height  
 Lamp operated at 33,000 lm  
 180-W low pressure sodium lamp

**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 3**  
 235-W at 40' Mounting Height  
 with back side control

**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 4**  
 300-W at 40' Mounting Height

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

RSP ES-10A DATED JULY 19, 2013 SUPERSEDES RSP ES-10A DATED JULY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-10A**

2010 REVISED STANDARD PLAN RSP ES-10A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	53	61

Rosa M Candiotti 10-4-13  
REGISTERED CIVIL ENGINEER DATE

6-16-14  
PLANS APPROVAL DATE

Rosa Candiotti  
No. C64626  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

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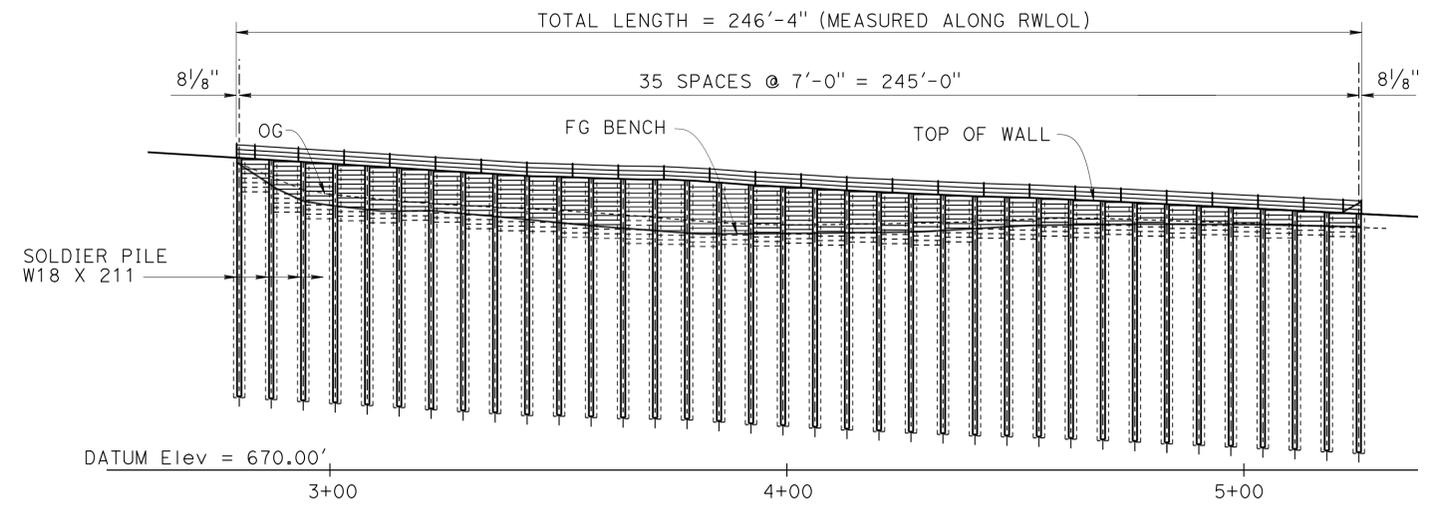
NOTES:

- ① MBGR, see "ROAD PLANS"
- ② CABLE RAILING

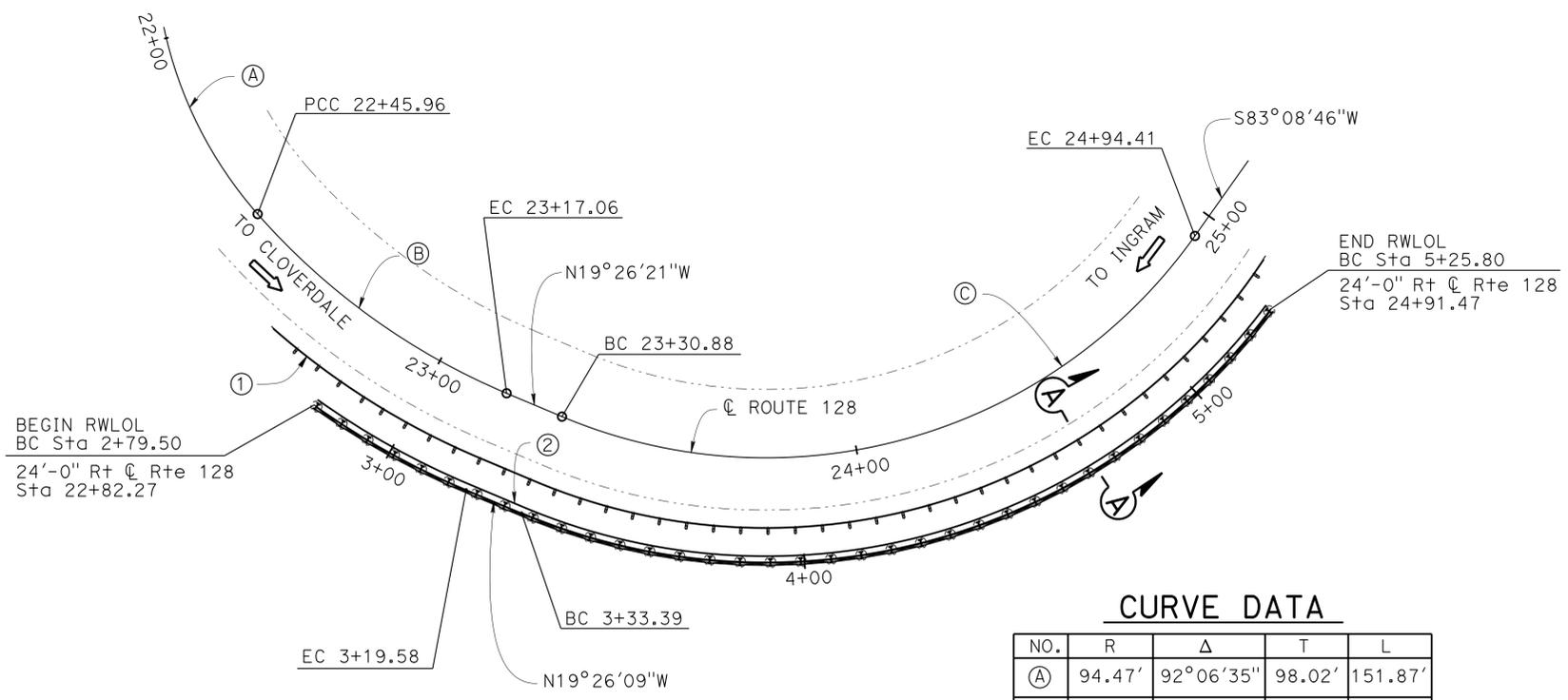


LEGEND:

----- DENOTES EXISTING



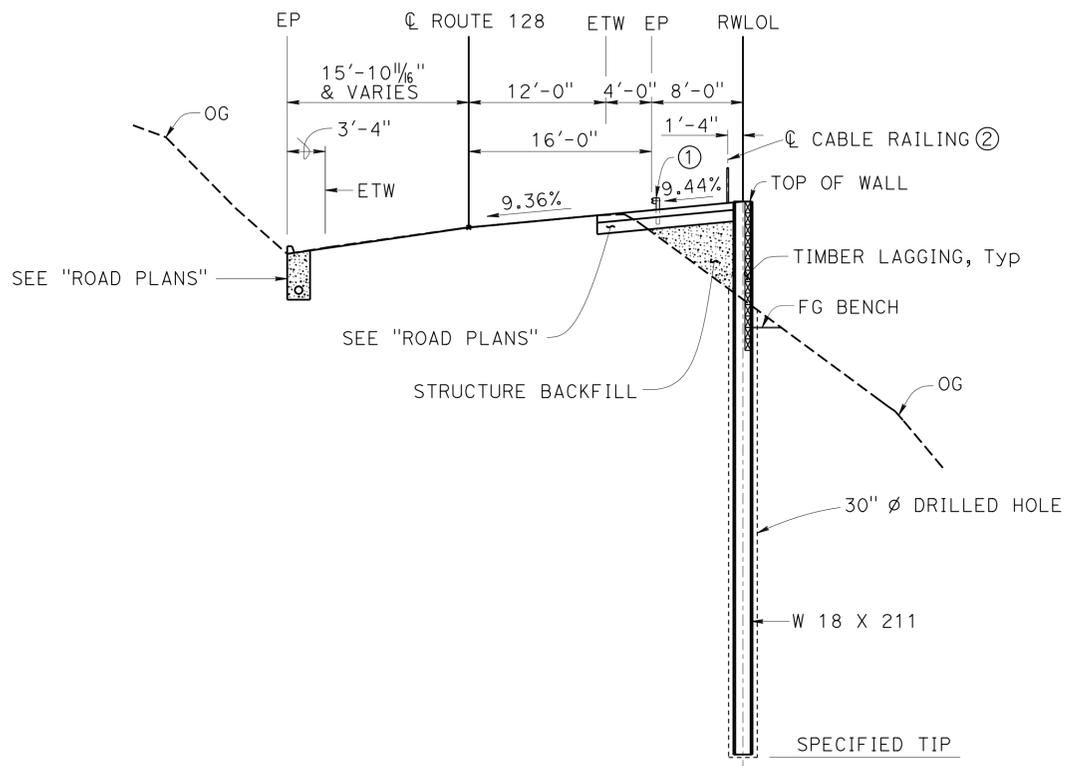
**DEVELOPED ELEVATION**  
1" = 20'



**CURVE DATA**

NO.	R	Δ	T	L
(A)	94.47'	92°06'35"	98.02'	151.87'
(B)	158.05'	25°46'36"	36.16'	71.11'
(C)	121.03'	77°24'55"	96.99'	163.53'

**PLAN**  
1" = 20'



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

QUANTITIES

STRUCTURE EXCAVATION (SOLDIER PILE WALL)	61	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	104	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	270	CY
LEAN CONCRETE BACKFILL	72	CY
STEEL SOLDIER PILE (W18X211)	1,875	LF
30" DRILLED HOLE	1,664	LF
TIMBER LAGGING	16	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	LUMP	SUM
CABLE RAILING	247	LF

GORDON DANKE DESIGN ENGINEER	DESIGN	BY ROSA CANDIOTTI	CHECKED Evan Franciliso	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOAD SURCHARGE	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 9</b>	BRIDGE NO.	<b>OAT VALLEY CURVE RETAINING WALL</b>	
	DETAILS	BY DAVID ELLIOTT	CHECKED Evan Franciliso	LAYOUT	BY DAVID ELLIOTT			CHECKED Rosa Candiotti	20E0081	<b>GENERAL PLAN</b>
	QUANTITIES	BY ROSA CANDIOTTI	CHECKED Evan Franciliso	SPECIFICATIONS	BY Dave Klein	PLANS AND SPECS COMPARED Dave Klein	POST MILE	1.8		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS							UNIT: 3594	PROJECT NUMBER & PHASE: 04000212761		CONTRACT NO.: 04-3G1201
							DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	SHEET 1 OF 9

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10) FILE => 20e0081-a-gp-sheet.dgn

**PILE DATA TABLE**

PILE NO.	STATION ALONG RWLOL	TOP OF WALL ELEVATION (FT)	BOTTOM OF LAGGING ELEVATION (FT)	BOTTOM OF DRILLED HOLE ELEVATION (FT)	PILE SECTION
1	2+80.15	738.13	-----	686.07	W18 X 211
2	2+87.15	737.70	726.73	685.63	W18 X 211
3	2+94.15	737.26	726.30	685.20	W18 X 211
4	3+01.15	736.82	725.86	684.76	W18 X 211
5	3+08.15	736.38	725.42	684.32	W18 X 211
6	3+15.15	735.94	723.98	683.88	W18 X 211
7	3+22.15	735.47	723.51	683.41	W18 X 211
8	3+29.15	735.06	723.10	683.00	W18 X 211
9	3+36.15	734.65	722.70	682.58	W18 X 211
10	3+43.15	734.20	722.20	682.14	W18 X 211
11	3+50.15	734.04	722.08	681.98	W18 X 211
12	3+57.15	733.75	721.79	681.69	W18 X 211
13	3+64.15	733.53	721.58	681.23	W18 X 211
14	3+71.15	733.42	720.45	681.35	W18 X 211
15	3+78.15	733.22	720.26	681.16	W18 X 211
16	3+85.15	732.76	719.80	680.70	W18 X 211
17	3+92.15	732.23	719.27	680.17	W18 X 211
18	3+99.15	731.85	718.90	679.79	W18 X 211
19	4+06.15	731.47	718.51	679.41	W18 X 211
20	4+13.15	731.05	719.09	678.99	W18 X 211
21	4+20.15	730.71	718.75	678.65	W18 X 211
22	4+27.15	730.38	719.42	678.32	W18 X 211
23	4+34.15	730.08	719.12	678.02	W18 X 211
24	4+41.15	729.77	719.81	677.71	W18 X 211
25	4+48.15	729.57	719.61	677.51	W18 X 211
26	4+55.15	729.35	720.38	677.28	W18 X 211
27	4+62.15	729.04	720.07	676.97	W18 X 211
28	4+69.15	728.73	720.77	676.67	W18 X 211
29	4+76.15	728.39	720.42	676.33	W18 X 211
30	4+83.15	728.04	720.08	675.98	W18 X 211
31	4-90.15	727.69	719.73	675.63	W18 X 211
32	4+97.15	727.34	719.38	675.28	W18 X 211
33	5+04.15	726.99	719.03	674.93	W18 X 211
34	5+11.15	726.64	718.68	674.58	W18 X 211
35	5+18.15	726.29	718.33	674.23	W18 X 211
36	5+25.15	725.94	717.98	673.88	W18 X 211

**STANDARD PLANS DATED 2010**

- RSP A10A ABBREVIATIONS (A-L) (SHEET 1 OF 2)
- RSP A10B ABBREVIATIONS (M-Z) (SHEET 2 OF 2)
- A10C LINE AND SYMBOLS (SHEET 1 OF 3)
- A10D LINE AND SYMBOLS (SHEET 2 OF 3)
- A10E LINE AND SYMBOLS (SHEET 1 OF 2)
- A10F LEGEND - SOIL (SHEET 1 OF 2)
- A10G LEGEND - SOIL (SHEET 2 OF 2)
- A10H LEGEND - ROCK
- RSP B11-47 CABLE RAILING

**INDEX TO PLANS**

1. GENERAL PLAN
2. INDEX TO PLANS
3. STRUCTURE PLAN NO. 1
4. STRUCTURE PLAN NO. 2
5. FOUNDATION PLAN
6. EXCAVATION AND BACKFILL DETAILS
7. SOLDIER PILE WALL LAGGING DETAILS
8. CANTILEVER SOLDIER PILE WALL DETAILS
9. LOG OF TEST BORING 1 OF 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	54	61

Rosa M Candiotti 10-4-13  
 REGISTERED CIVIL ENGINEER DATE

6-16-14  
 PLANS APPROVAL DATE

Rosa Candiotti  
 No. C64626  
 Exp. 6-30-15  
 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.*

DESIGN	BY R. Candiotti	CHECKED Evan Franciliso	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 9</b>	BRIDGE NO.	<b>OAT VALLEY CURVE RETAINING WALL</b>  <b>INDEX TO PLANS</b>
DETAILS	BY D. Elliott	CHECKED Evan Franciliso			20E0081	
QUANTITIES	BY R. Candiotti	CHECKED Evan Franciliso			POST MILE 1.8	

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

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 3594  
 PROJECT NUMBER & PHASE: 04000212761

CONTRACT NO.: 04-3G1201

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
6-12-13 7-26-13 8-12-13	2	9

FILE => 20e0081-a-1tp-sheet.dgn

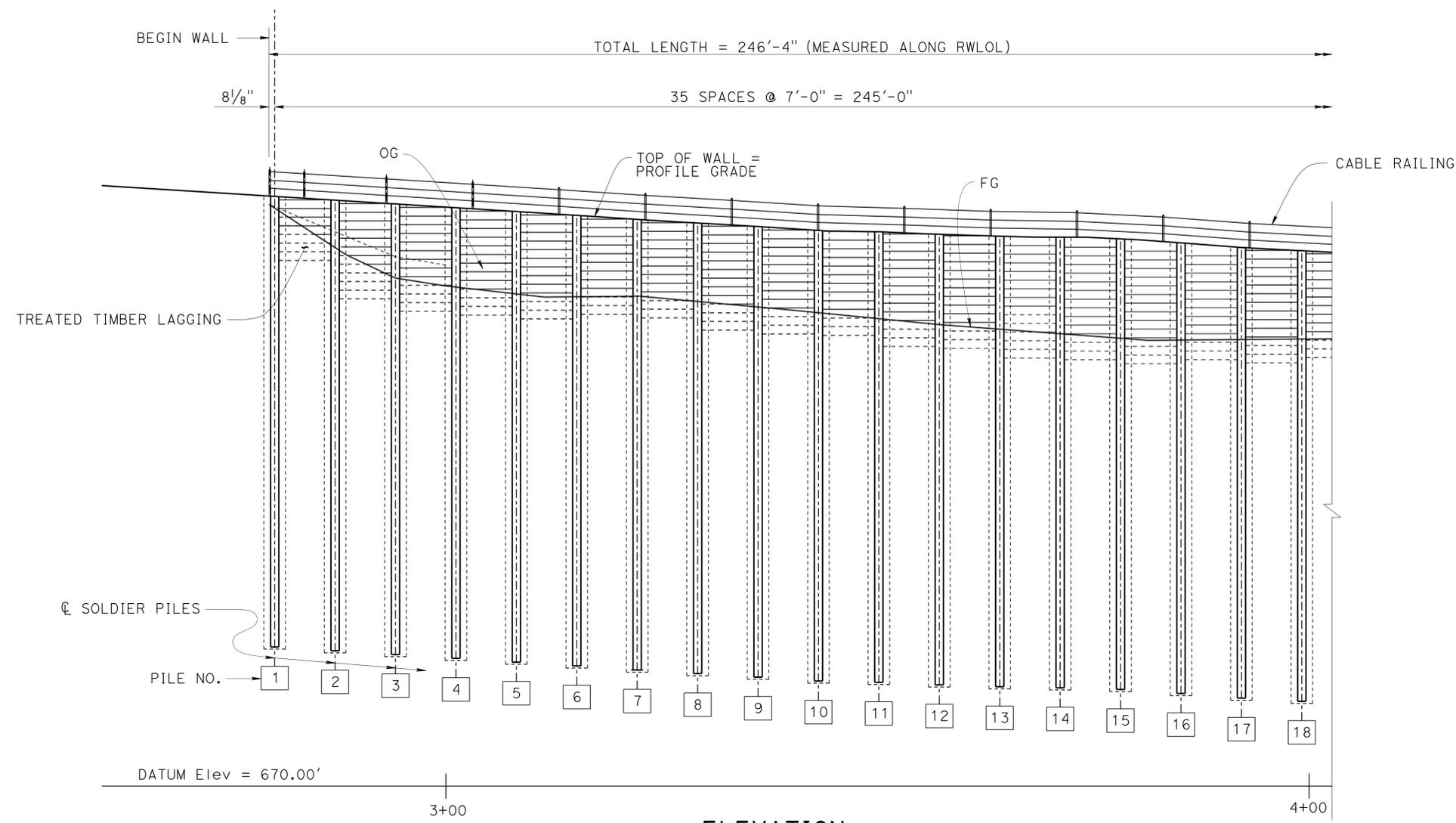
USERNAME => s121614 DATE PLOTTED => 28-AUG-2014 TIME PLOTTED => 12:44

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	55	61

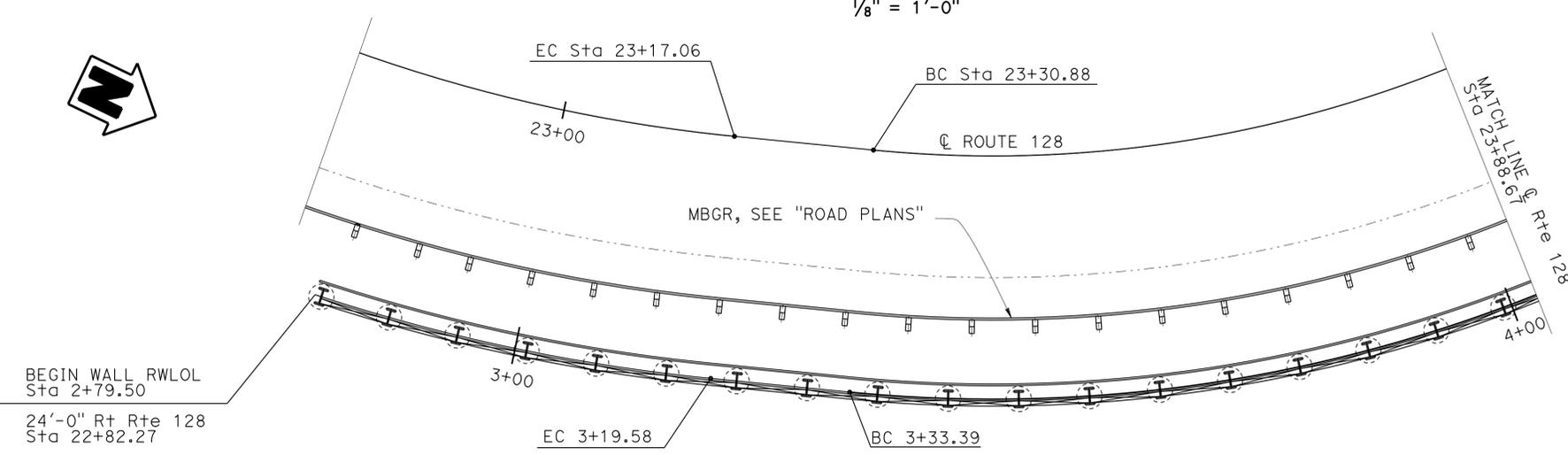
**Rosa M Candiotti** 10-4-13  
REGISTERED CIVIL ENGINEER DATE

6-16-14  
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**  
1/8" = 1'-0"



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

DESIGN	BY R. Candiotti	CHECKED Evan Franciliso
DETAILS	BY D. Elliott	CHECKED Evan Franciliso
QUANTITIES	BY R. Candiotti	CHECKED Evan Franciliso

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

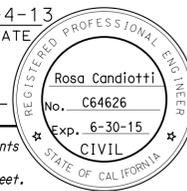
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 9**

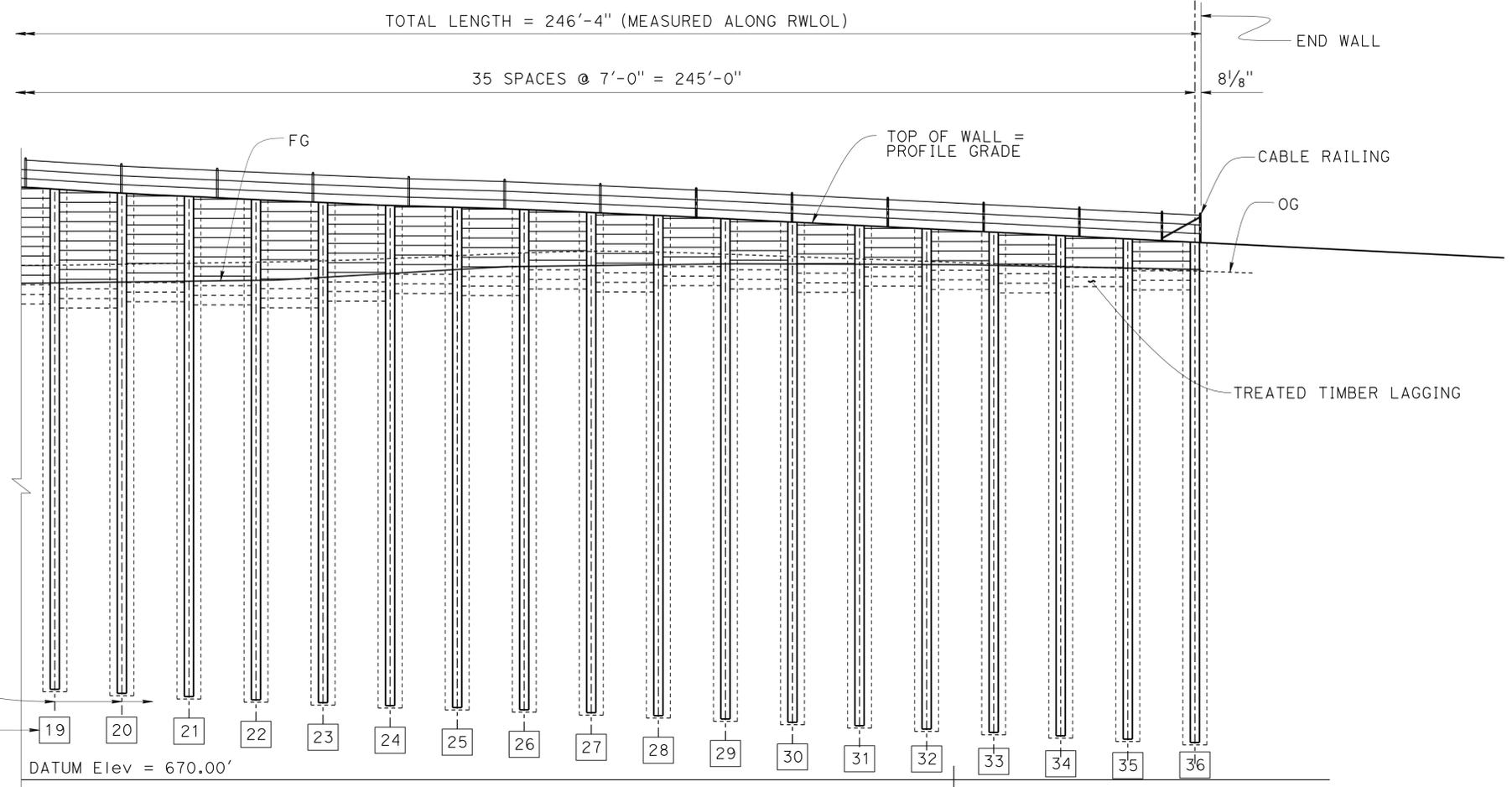
BRIDGE NO.	20E0081
POST MILE	1.8

**OAT VALLEY CURVE RETAINING WALL**  
**STRUCTURE PLAN NO. 1**

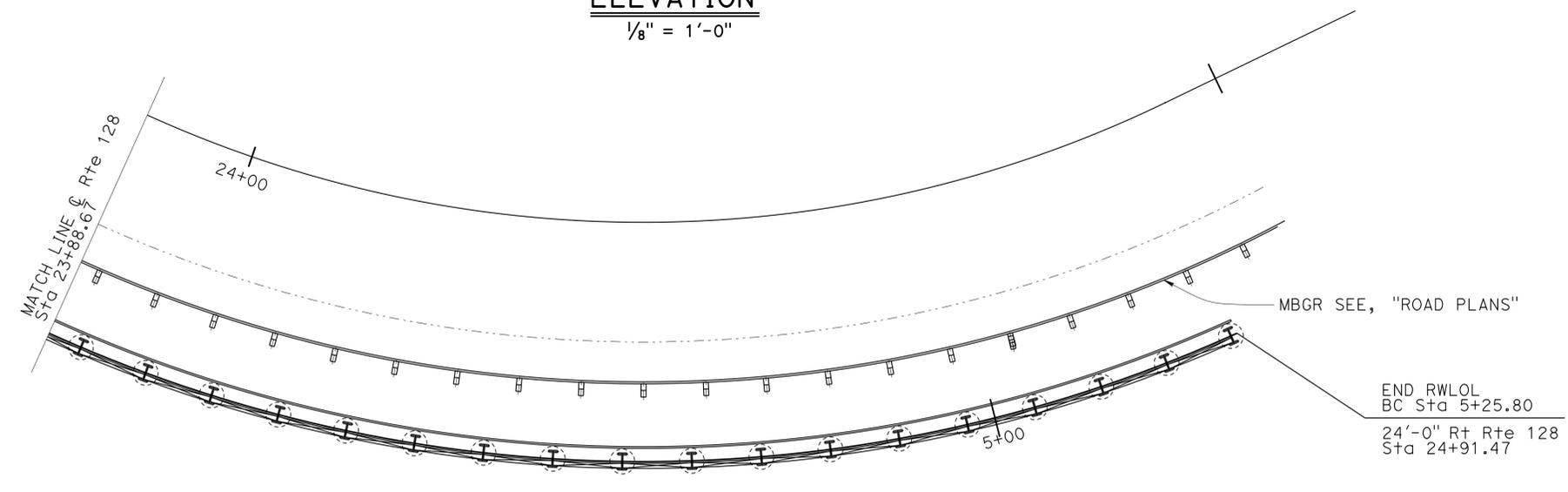
REVISION DATES	SHEET	OF
6-16-13 7-2-13 7-26-13	3	9

TIME PLOTTED => 12:44  
DATE PLOTTED => 28-AUG-2014  
USERNAME => s121614

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	56	61
Rosa M Candiotti		10-4-13		REGISTERED CIVIL ENGINEER DATE	
6-16-14		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>					



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



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



DESIGN	BY R. Candiotti	CHECKED Evan Franciliso
DETAILS	BY D. Elliott	CHECKED Evan Franciliso
QUANTITIES	BY R. Candiotti	CHECKED Evan Franciliso

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 9

BRIDGE NO.	20E0081
POST MILE	1.8

OAT VALLEY CURVE RETAINING WALL  
STRUCTURE PLAN NO. 2



REVISION DATES	SHEET	OF
6-16-13 7-2-13 7-26-13	4	9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	57	61

**Rosa Candiotti** 10-4-13  
 REGISTERED CIVIL ENGINEER DATE

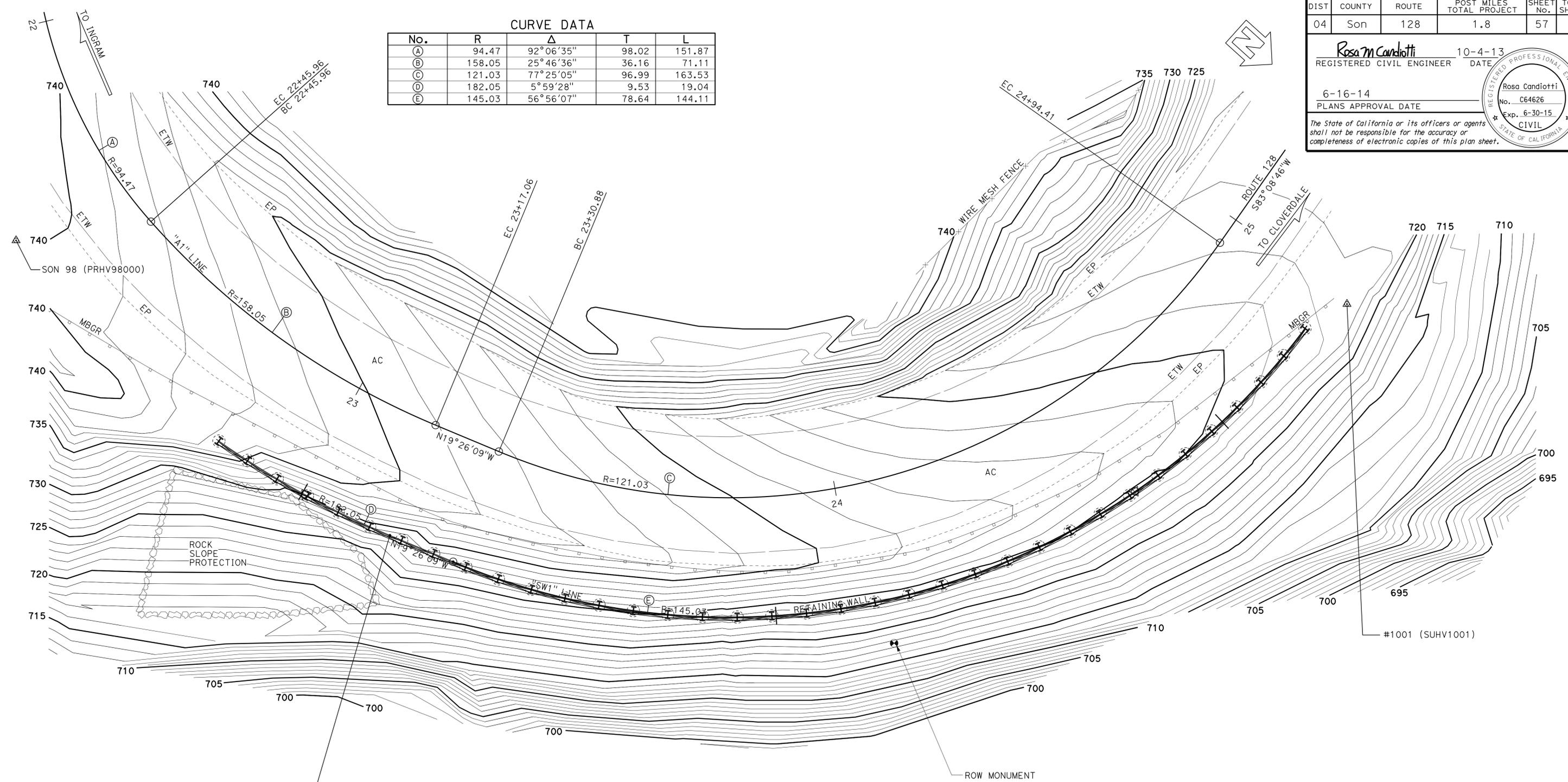
6-16-14  
 PLANS APPROVAL DATE

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. C64626  
 Exp. 6-30-15  
 CIVIL  
 STATE OF CALIFORNIA

**CURVE DATA**

No.	R	Δ	T	L
(A)	94.47	92°06'35"	98.02	151.87
(B)	158.05	25°46'36"	36.16	71.11
(C)	121.03	77°25'05"	96.99	163.53
(D)	182.05	5°59'28"	9.53	19.04
(E)	145.03	56°56'07"	78.64	144.11



**SURVEY CONTROL**  
 SON 98 (PRHV98000)  
 Fnd BRASS DISC  
 23.83 FT Rt "A1" LINE ROUTE 128  
 Sta 22+33.75  
 N 2,069,222.39  
 E 6,260,116.81  
 Elev = 739.94

#1001 (SUHV1001)  
 Fnd 8" SPIKE  
 28.03 FT Rt "A1" LINE ROUTE 128  
 Sta 24+99.10  
 N 2,069,430.30  
 E 6,259,946.58  
 Elev = 722.84

N 2,069,318.09  
 E 6,260,110.38

<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN BY R. Candiotti	CHECKED E. Franciliso	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 9</b>	BRIDGE NO. 20E0081	<b>OAT VALLEY CURVE RETAINING WALL</b> <b>FOUNDATION PLAN</b>			
SCALE 1"=10'	VERT.DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	DETAILS BY D. Elliott	CHECKED E. Franciliso	POST MILE 1.80							
ALIGNMENT TIES DIS+ TRAVERSE SHEET	SURVEYED BY T. ZOLNIKOV 05/2013	CHECKED BY L. LEW 05/2013	QUANTITIES BY R. Candiotti	CHECKED E. Franciliso								
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3646	PROJECT NUMBER & PHASE: 0400021276 0	CONTRACT NO.: 04-3G1201	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 5 OF 9

USERNAME => s121614 DATE PLOTTED => 28-AUG-2014 TIME PLOTTED => 12:45

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	58	61

**Rosa M Candiotti** 10-4-13  
REGISTERED CIVIL ENGINEER DATE

6-16-14  
PLANS APPROVAL DATE

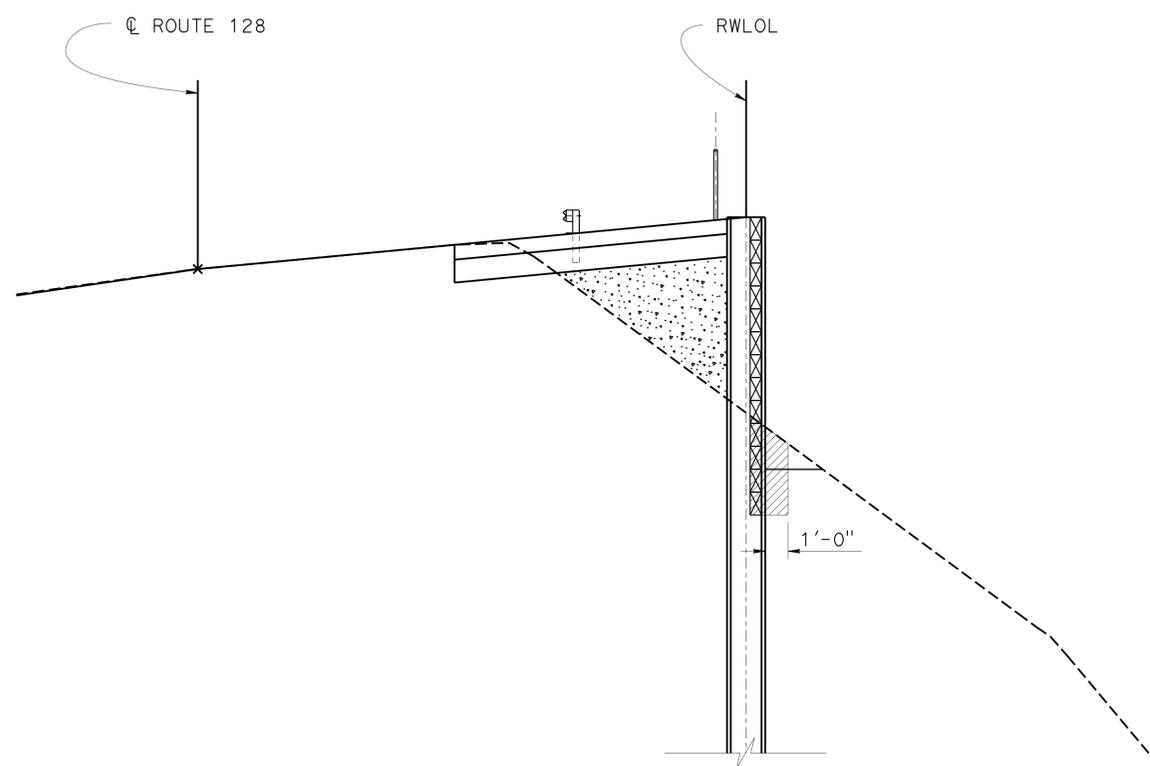
Rosa Candiotti  
No. C64626  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

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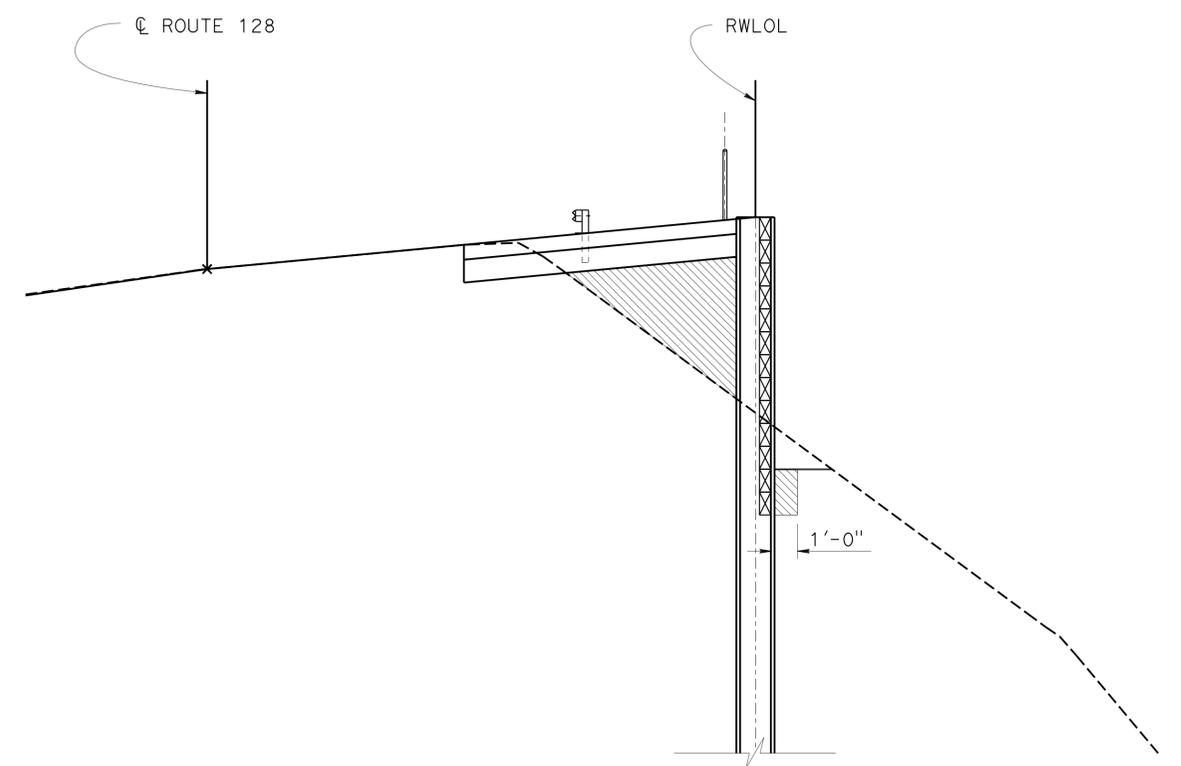
LEGEND:

 INDICATES STRUCTURE EXCAVATION

 INDICATES STRUCTURE BACKFILL



**EXCAVATION**  
1/4" = 1'-0"



**BACKFILL**  
1/4" = 1'-0"

DESIGN	BY R. Candiotti	CHECKED Evan Franciliso
DETAILS	BY D. Elliott	CHECKED Evan Franciliso
QUANTITIES	BY R. Candiotti	CHECKED Evan Franciliso

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 9**

BRIDGE NO.	20E0081
POST MILE	1.80

**OAT VALLEY CURVE RETAINING WALL**  
**EXCAVATION AND BACKFILL DETAILS**

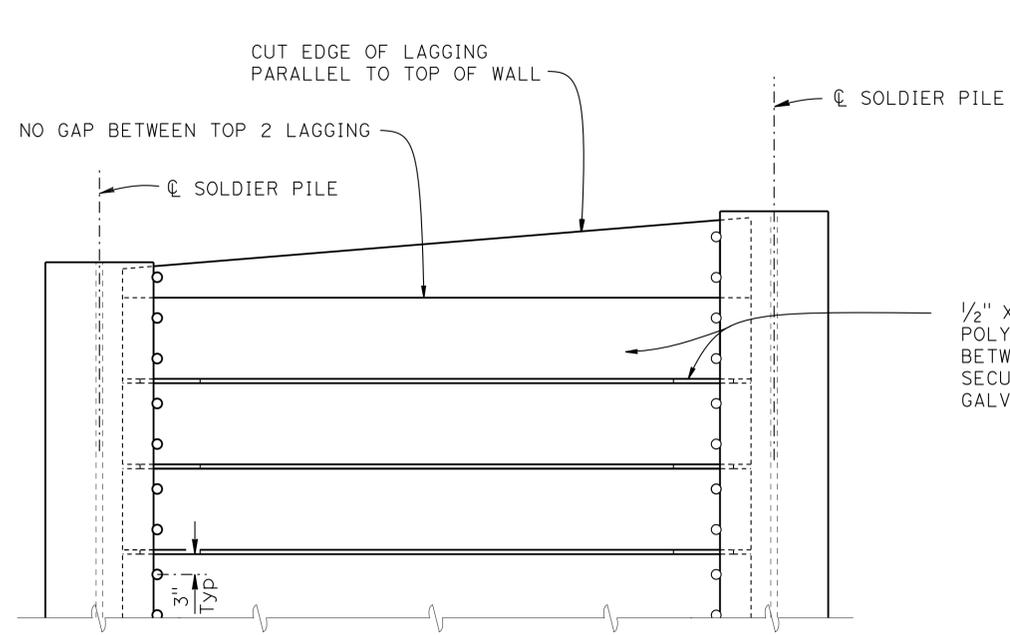
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	59	61

**Rosa M Candiotti** 10-4-13  
REGISTERED CIVIL ENGINEER DATE

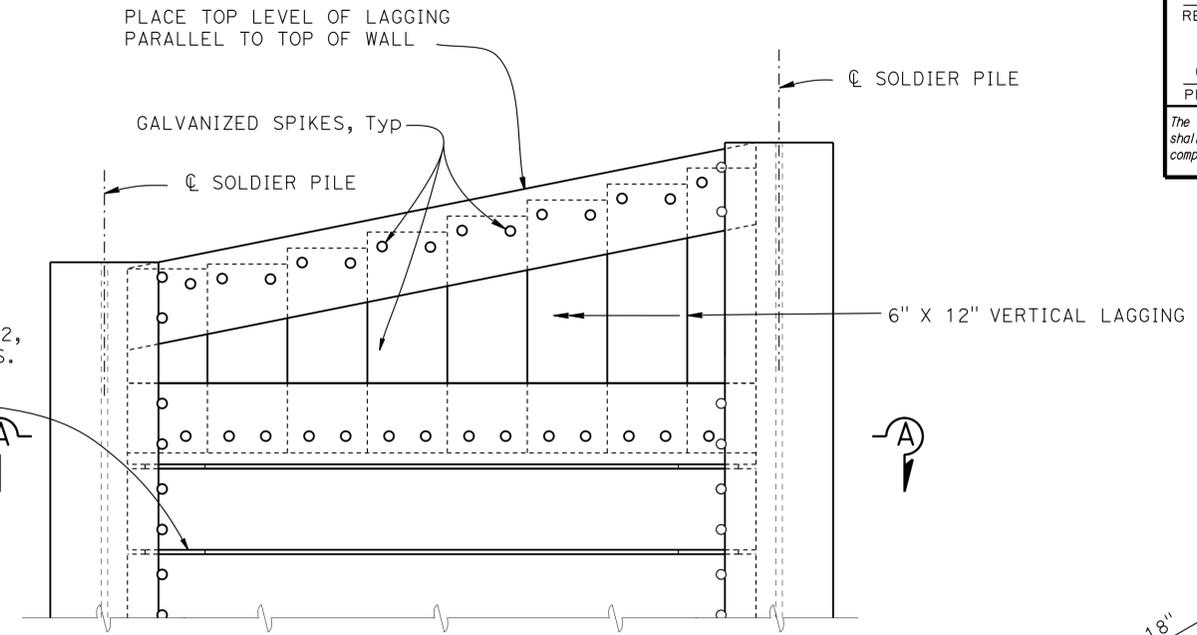
6-16-14  
PLANS APPROVAL DATE

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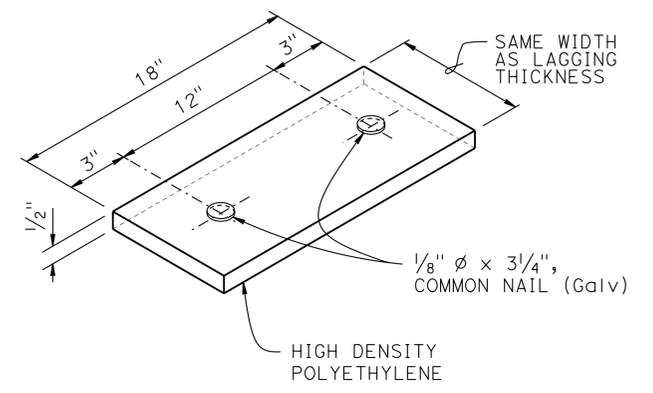
REGISTERED PROFESSIONAL ENGINEER  
Rosa Candiotti  
No. C64626  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



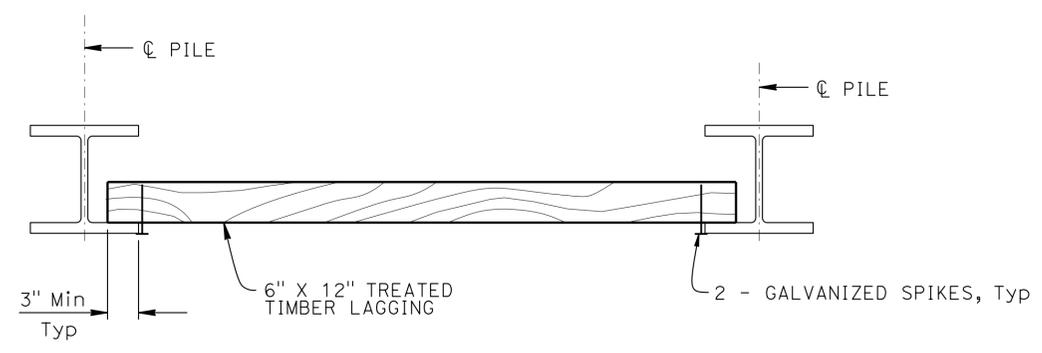
**PART ELEVATION**  
**LAGGING DETAILS (ALTERNATIVE 1)**  
NO SCALE



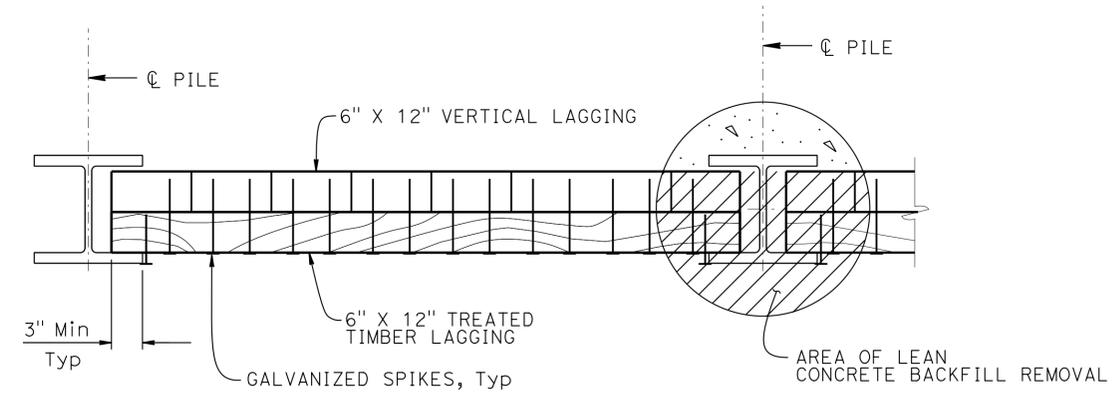
**PART ELEVATION**  
**LAGGING DETAILS (ALTERNATIVE 2)**  
NO SCALE



**SHIM DETAIL**  
NO SCALE



**PART PLAN**  
NO SCALE



**SECTION A-A**  
NO SCALE

- NOTES:
1. No clipping of timber lagging corners allowed
  2. Use 16d Galv wire spikes for 4 x 12 lagging, and 40d Galv wire spikes for 6 x 12 lagging
  3. Spikes shall not be bent

STANDARD DRAWING	
FILE NO. <b>xs12-080</b>	APPROVAL DATE <u>January 2012</u>

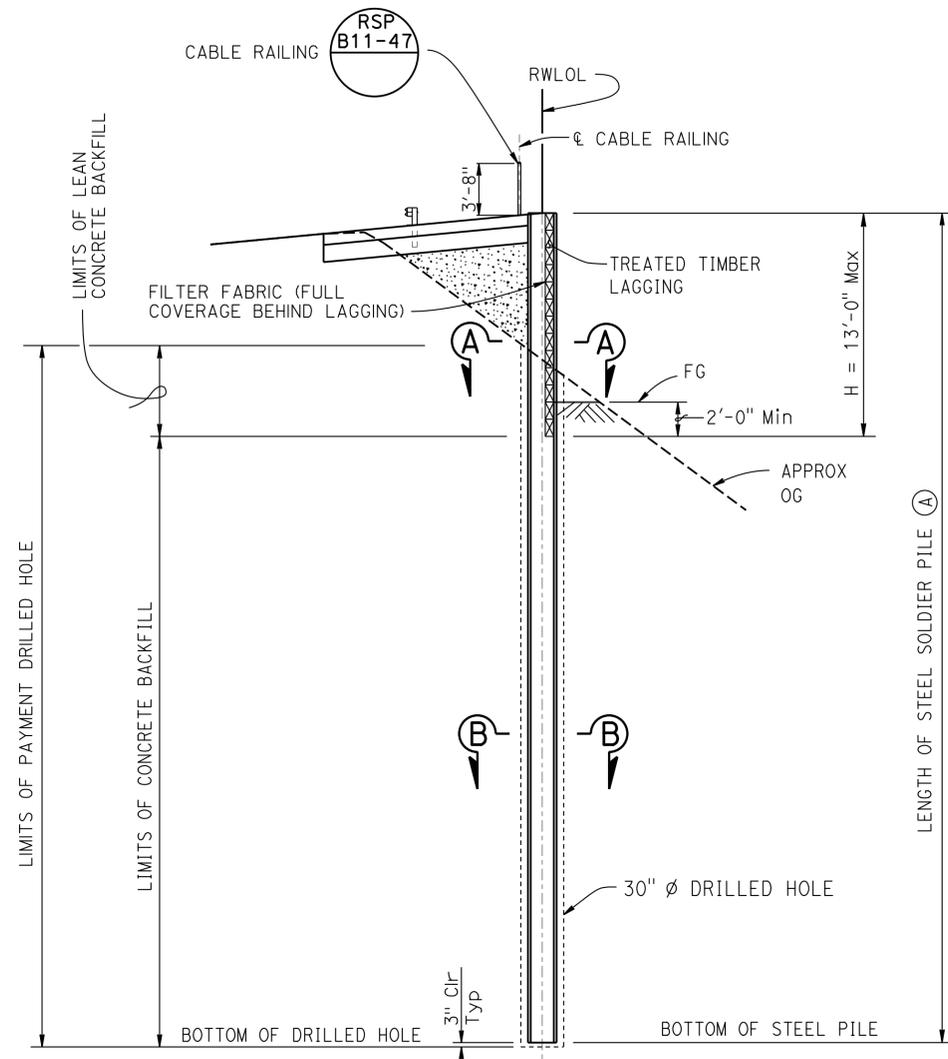
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

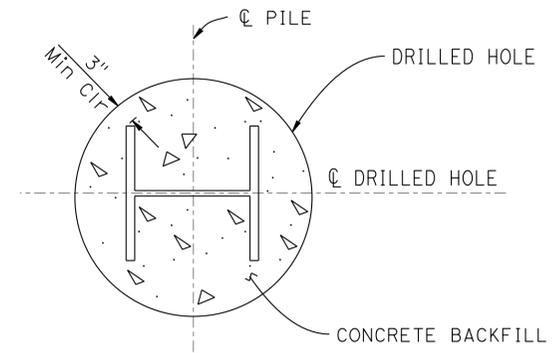
BRIDGE NO. 20E0081  
POST MILE 1.8

**OAT VALLEY CURVE SOLDIER PILE WALL**  
**SOLDIER PILE WALL LAGGING DETAILS**

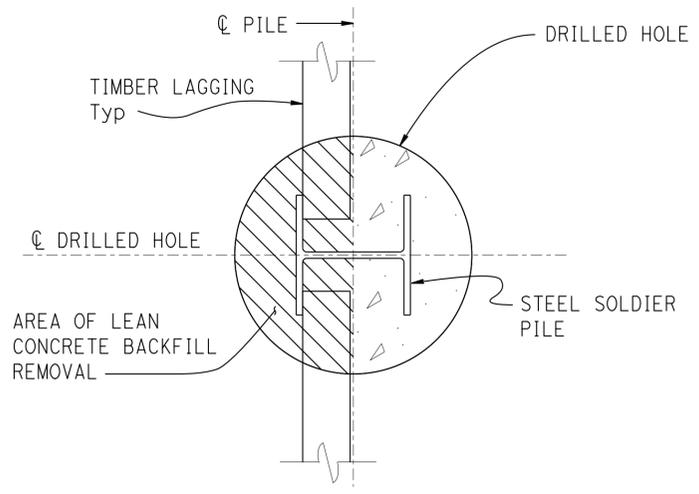
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	128	1.8	60	61
Rosa M Candiotti			10-4-13		
REGISTERED CIVIL ENGINEER			DATE		
6-16-14					
PLANS APPROVAL DATE					
Rosa Candiotti			REGISTERED PROFESSIONAL ENGINEER		
No. C64626			STATE OF CALIFORNIA		
Exp. 6-30-15			CIVIL		
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**TYPICAL SECTION 1**

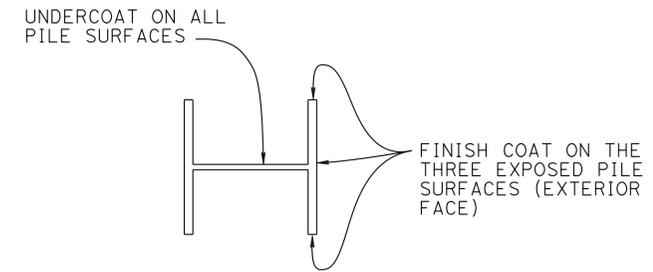


**SECTION B-B**  
NO SCALE



**SECTION A-A**  
NO SCALE

NOTE:  
 (A) Clean and paint Steel Soldier Pile from top of pile to 5 feet, Min below bottom of lagging.  
 For lagging details see "SOLDIER PILE WALL LAGGING DETAILS"

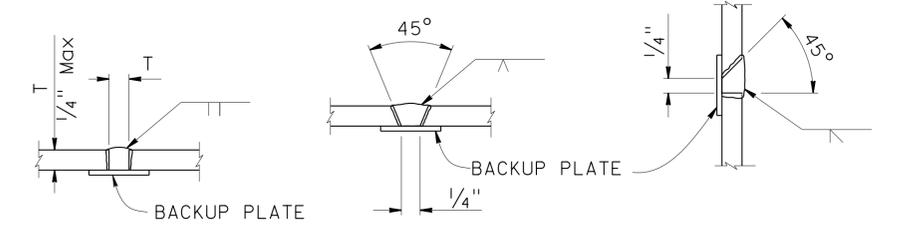


**LIMITS OF CLEAN & PAINT STEEL SOLDIER PILE**

NO SCALE

**GENERAL NOTES**

- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments.
- LIVE LOAD: 240 psf equivalent to 2 feet soil weight
- SOIL PARAMETERS: (For determination of Design Lateral Earth Pressures)  
 Backfill soil weight = 120 lb/ft<sup>3</sup> c = 1000psf  
 Friction Angle = 30°  
 Active Pressure coefficient, Ka = 0.33  
 Bedrock Unit Weight = 125 lb/ft<sup>3</sup> c = 1000 psf  
 Friction Angle = 36°
- STEEL SOLDIER PILES: ASTM A572/A, ASTM 572M Grade 50 Min, or ASTM A36/A36M
- REINFORCED CONCRETE: f'c = 4000 psi  
 fy = 60 ksi
- STRUCTURAL TIMBER: Treated Douglas Fir, Grade No. 1 or better  
 Timber to be full sawn



**PILE WELDING DETAIL-BUTT JOINTS**

NO SCALE

- NOTES:
1. Single vee-groove and square groove permitted for all positions
  2. Single bevel-groove permitted for horizontal joints only

STANDARD DRAWING	
FILE NO. <b>xs12-050</b>	APPROVAL DATE <u>January 2012</u>

**1** MODIFIED DETAIL

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 20E0081  
 POST MILE 1.8  
**OAT VALLEY CURVE SOLDIER PILE WALL**  
**CANTILEVER SOLDIER PILE WALL DETAILS**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	128	1.8	61	61

Ali Kaddoura 01-08-13  
REGISTERED CIVIL ENGINEER

6-16-14  
PLANS APPROVAL DATE

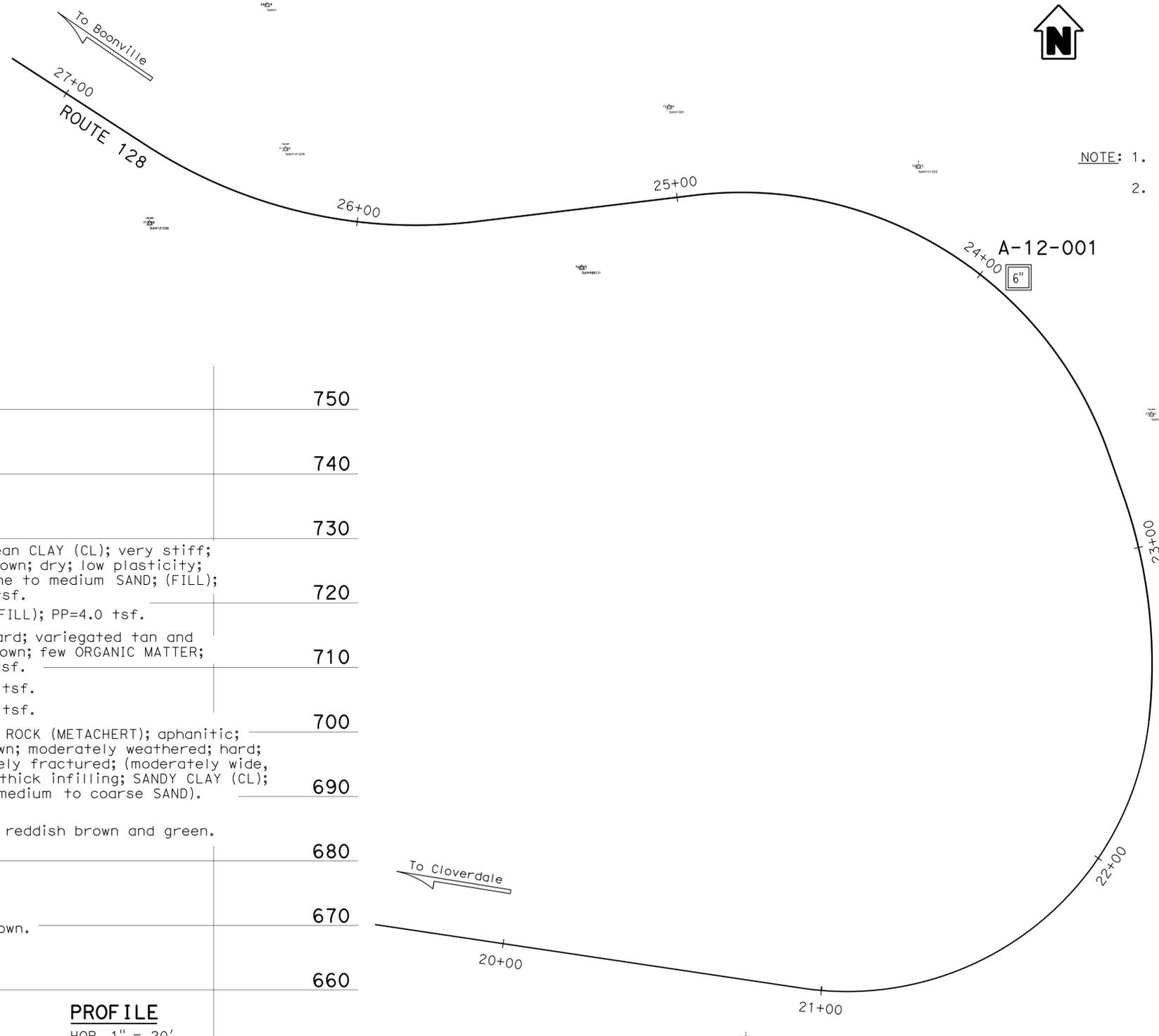
Ali K. Kaddoura  
No. 55710  
Exp. 12-31-12  
CIVIL  
STATE OF CALIFORNIA

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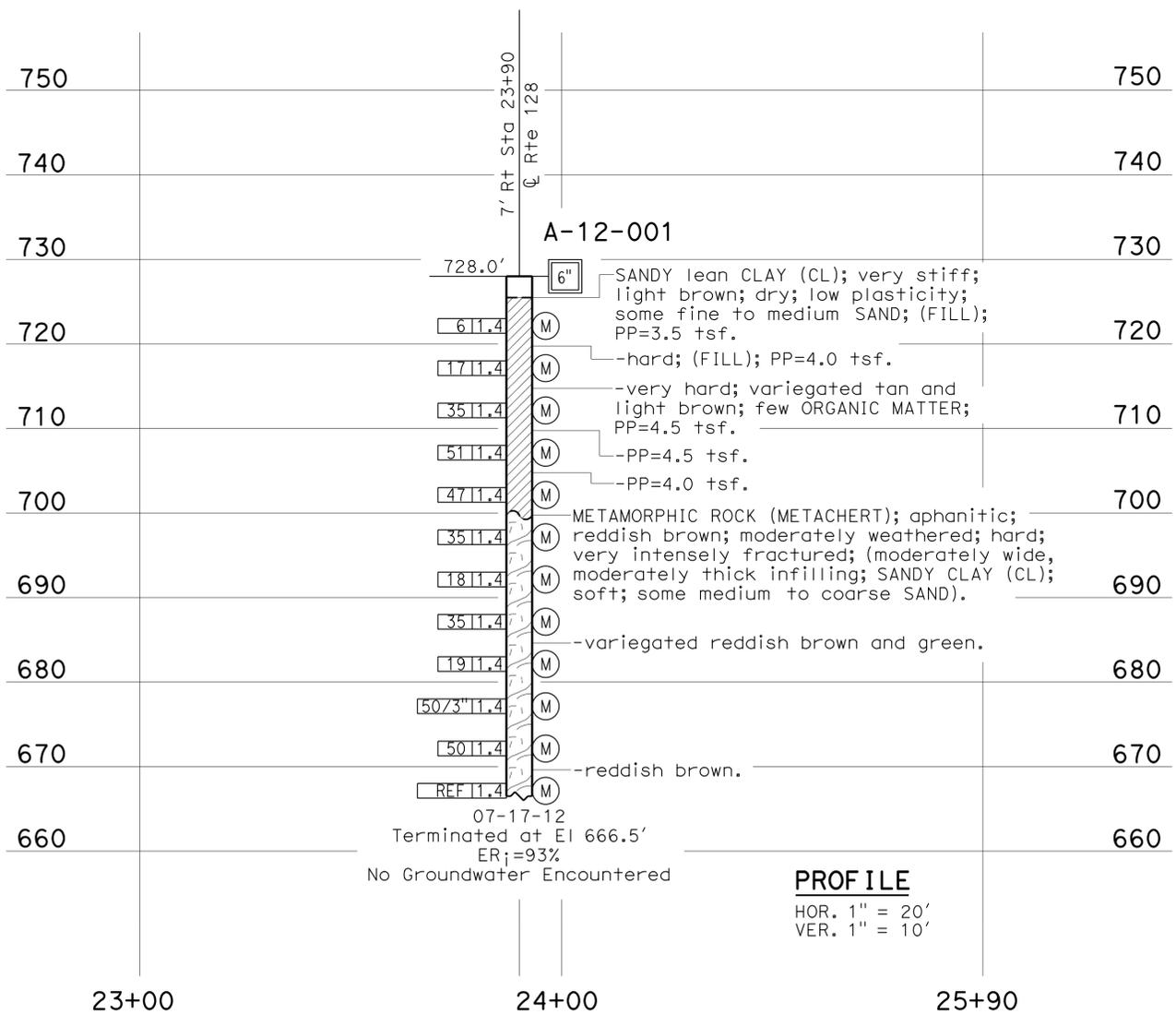
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

**BENCH MARK**

Name: SUHV 121229,  
Location: sta. 26+28,  
17.4' Rt. of centerline  
(Near PM 1.82).  
N 2,069,417.27;  
E 6,259,827.25;  
Elev. 711.34'.



- NOTE: 1. REF=Refusal.  
2. PP=unconfined compressive strength (tsf) as measured by pocket penetrometer.



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

**PLAN**  
1" = 20'

<b>ENGINEERING SERVICES</b>		<b>GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b>		<b>DIVISION OF ENGINEERING SERVICES</b>		<b>BRIDGE NO.</b>		<b>OAT VALLEY CURVE RETAINING WALL</b>	
FUNCTIONAL SUPERVISOR		DRAWN BY: M. Reynolds 08/12		DEPARTMENT OF TRANSPORTATION		OFFICE OF GEOTECHNICAL		20E0081		LOG OF TEST BORINGS 1 of 1	
NAME: H. Nikouï		CHECKED BY: C. Risdén		FIELD INVESTIGATION BY: A. Kaddoura		DESIGN BRANCH		POST MILES			
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3660		PROJECT NUMBER & PHASE: 04000212760		CONTRACT NO.: 04-3g1201		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
				0 1 2 3						REVISION DATES	
										SHEET OF	
										9 9	

FILE => 20e0081-z- 1otb.dgn  
DATE PLOTTED => 12:45  
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