

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	1	86

Caltrans

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN ALAMEDA COUNTY
IN OAKLAND AT 0.1 MILE SOUTH
OF CARSON STREET UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

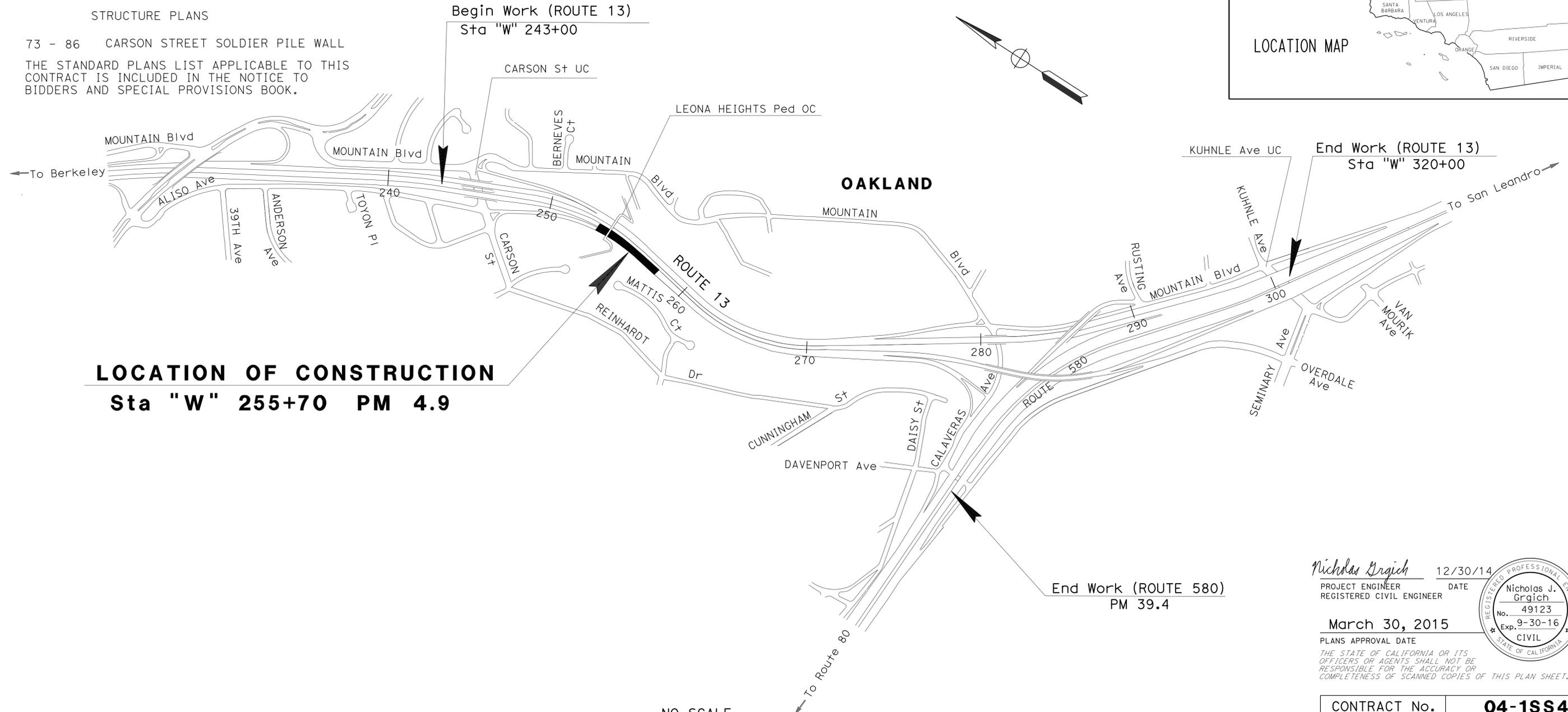
INDEX OF PLANS

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STRUCTURE PLANS

73 - 86 CARSON STREET SOLDIER PILE WALL

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



PROJECT MANAGER
JULIE CAMPERO
 DESIGN MANAGER
NESTOR P. PEREZ

Nicholas J. Grgich 12/30/14
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
March 30, 2015
 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.

CONTRACT No.	04-1SS414
PROJECT ID	0413000228

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

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	2	86
<i>Nicholas Grigich</i> REGISTERED CIVIL ENGINEER			12/30/14	DATE	
3-30-15 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>					



**SOUTHBOUND ROUTE 13
DESIGN DESIGNATION**

ADT (2017) 28800 D = 51%
 ADT (2037) 35700 T = 1.2%
 DHV 3570 V = 55 MPH
 ESAL 723000 TI = 10.0

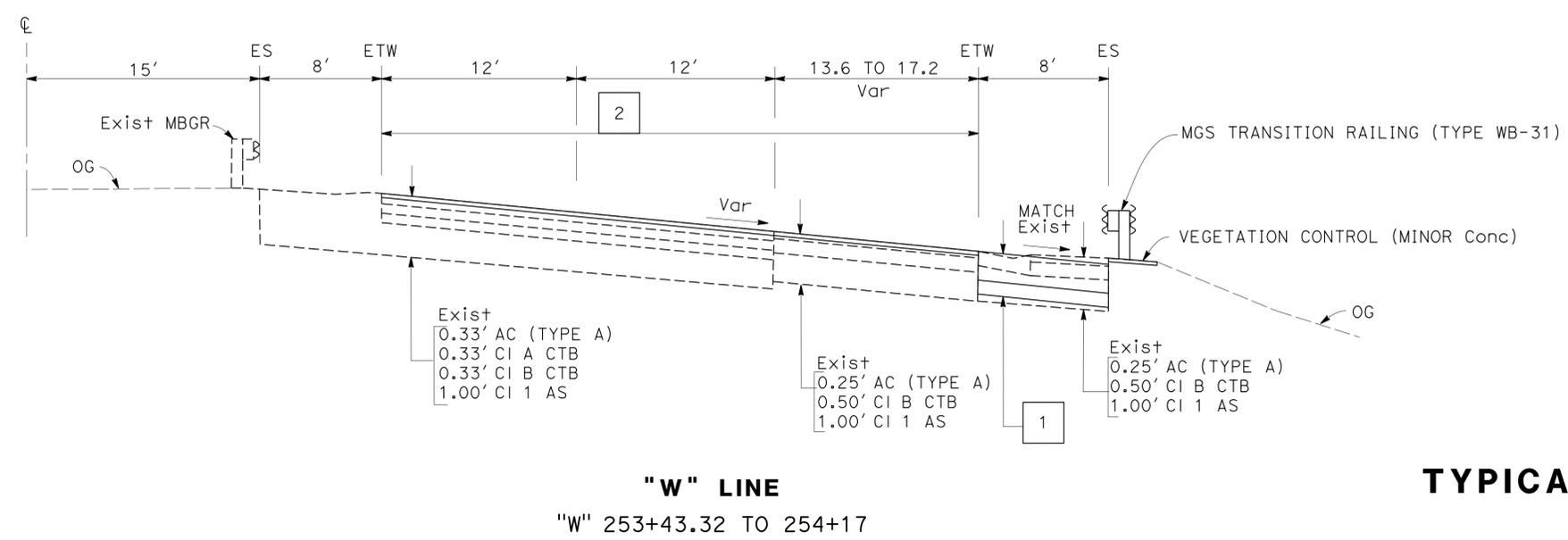
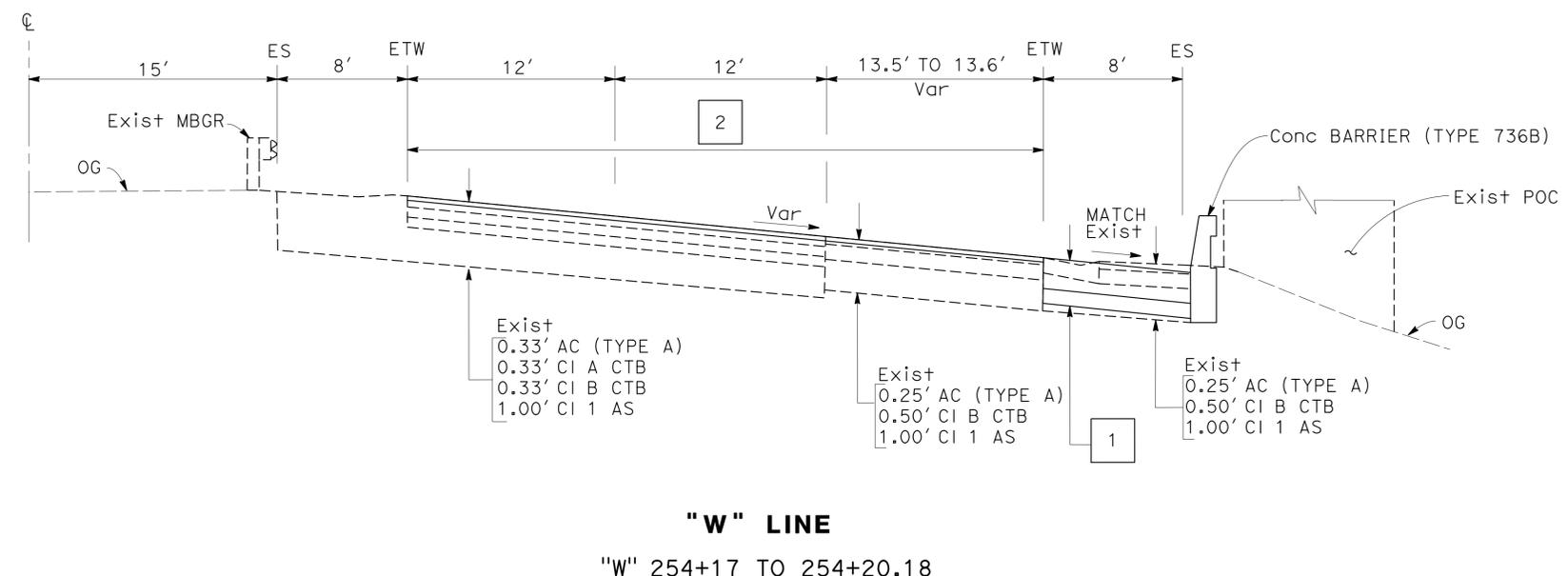
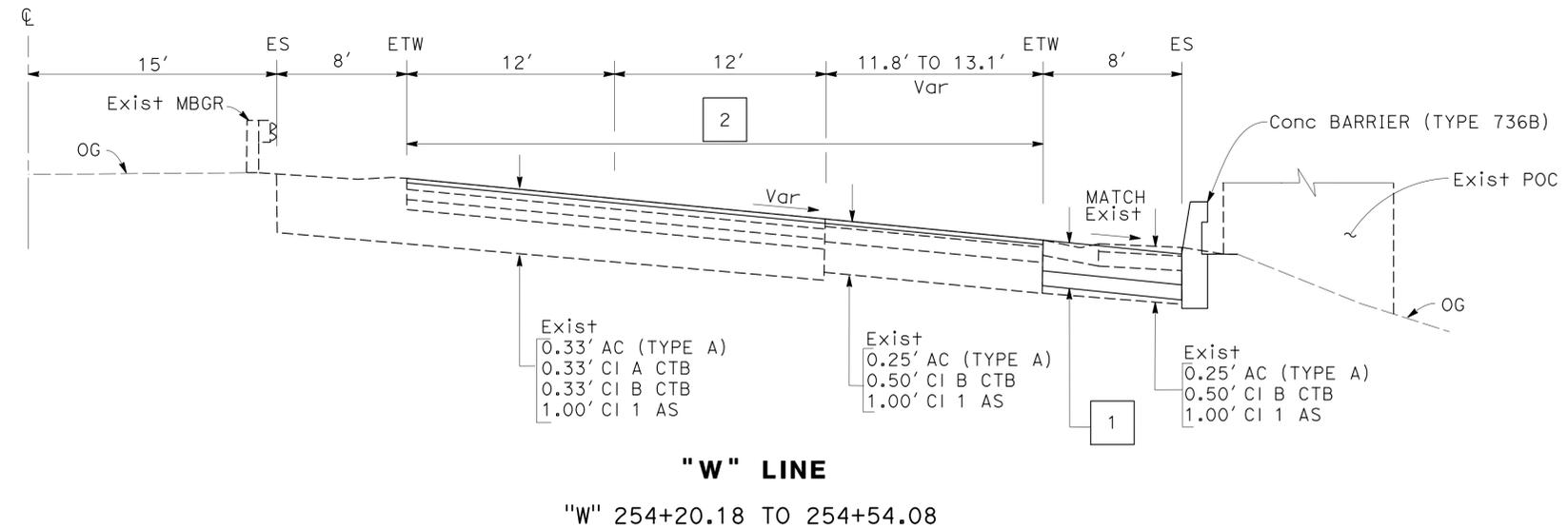
PAVEMENT CLIMATE REGION (CENTRAL COAST)

NOTE:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.

LEGEND:

No. STRUCTURAL SECTION NUMBER



TYPICAL PAVEMENT STRUCTURAL SECTIONS

1 1.00' HMA (TYPE A)
0.50' CI 4 AS

2 0.15' COLD PLANE AC Pvmf
0.15' HMA (TYPE A)

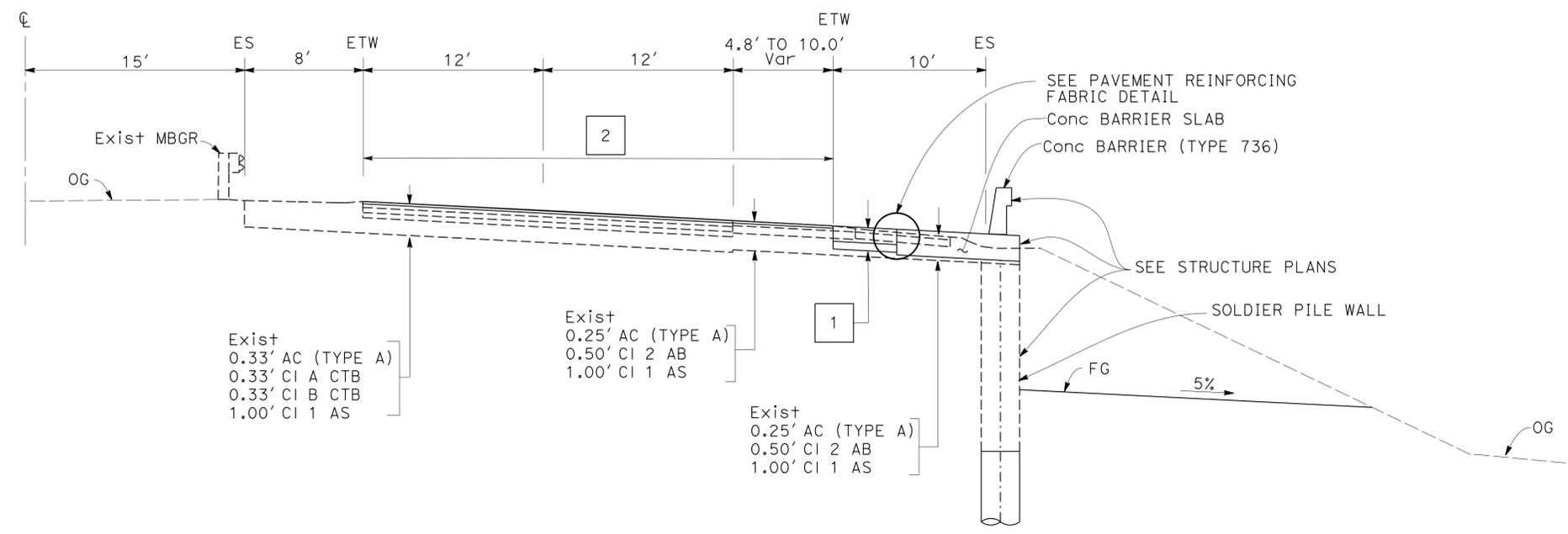
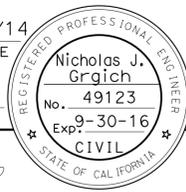
TYPICAL CROSS SECTIONS

NO SCALE

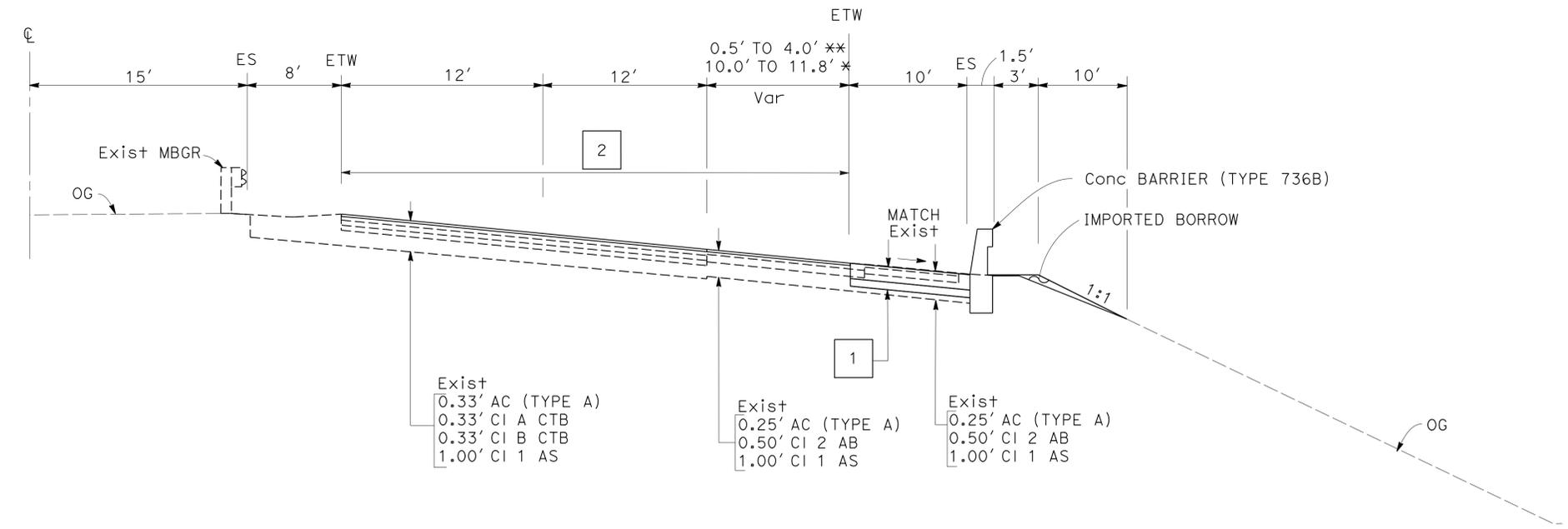
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: NESTOR P. PEREZ
 CHECKED BY: LIN KYAIN
 REVISIONS: NG 12/5/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	3	86
Nicholas Grigich			12/30/14	REGISTERED CIVIL ENGINEER DATE	
3-30-15			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>					



"W" LINE
"W" 254+91.61 TO 256+82.74



"W" LINE
"W" 256+82.74 TO 258+23.21 **
"W" 254+54.08 TO 254+91.61 *

TYPICAL CROSS SECTIONS

NO SCALE

X-2

FOR NOTE AND LEGENDS, SEE SHEET X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: NESTOR P. PEREZ
 REVISIONS: NG 12/15/14
 REVISOR: LIN KYAIN
 CALCULATED/DESIGNED BY: [Blank]
 CHECKED BY: [Blank]

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

NOTES:

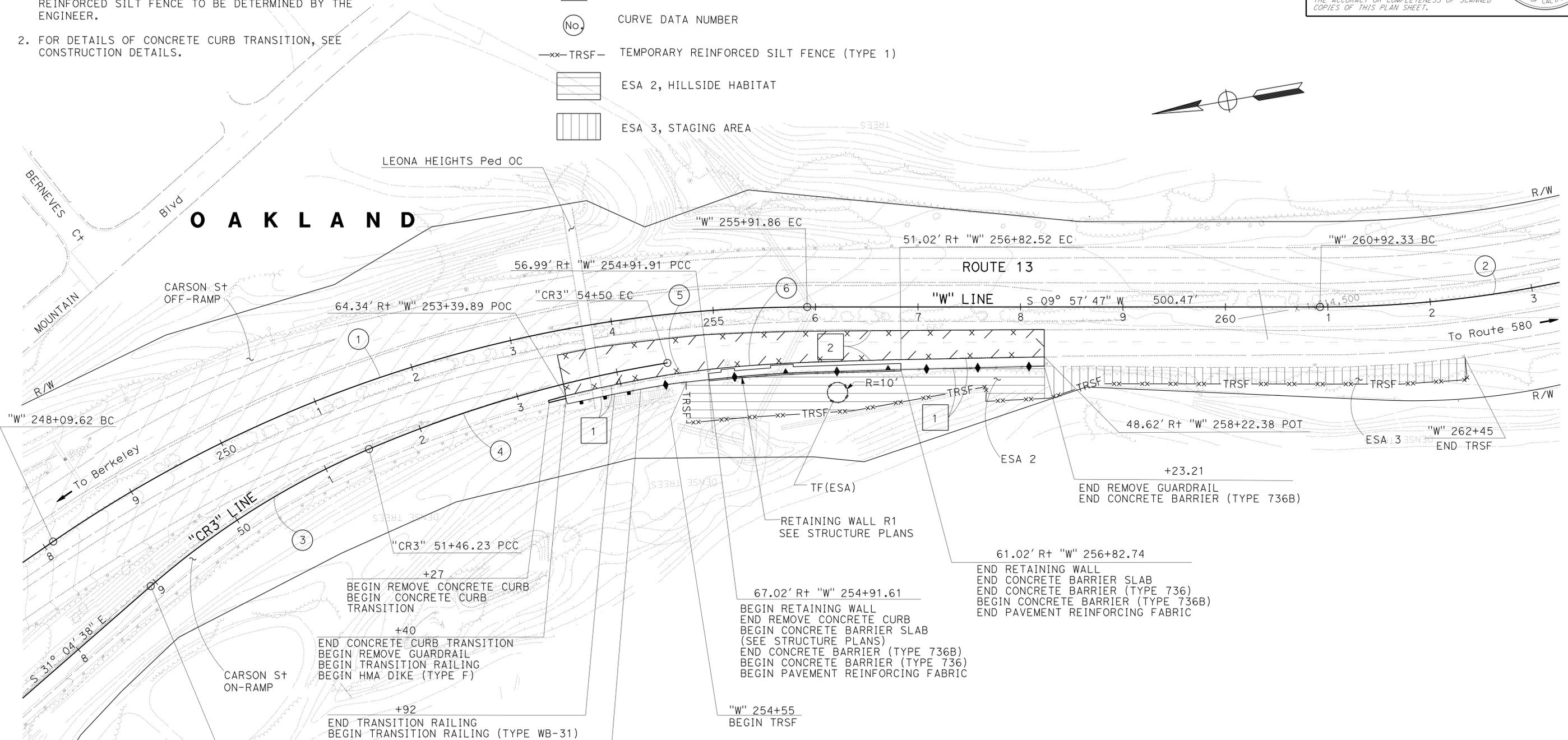
1. EXACT LOCATION AND PLACEMENT OF TEMPORARY REINFORCED SILT FENCE TO BE DETERMINED BY THE ENGINEER.
2. FOR DETAILS OF CONCRETE CURB TRANSITION, SEE CONSTRUCTION DETAILS.

LEGEND:

- 0.15' COLD PLANE AC PAVEMENT AND PLACE HMA (TYPE A)
- No. STRUCTURAL SECTION NUMBER
- No. CURVE DATA NUMBER
- xx-- TRSF-- TEMPORARY REINFORCED SILT FENCE (TYPE 1)
- ESA 2, HILLSIDE HABITAT
- ESA 3, STAGING AREA

ABBREVIATIONS:

- TF(ESA) TEMPORARY FENCE (TYPE ESA)
- TRSF TEMPORARY REINFORCED SILT FENCE



CURVE DATA

No.	⊕	R	Δ	T	L	N	E
1		1300'	34° 28' 34"	403.36'	782.24'	2115069.10	6074669.28
2		1150'	11° 43' 46"	118.13'	235.43'	2114152.30	6076995.74
3		800'	18° 04' 25"	127.23'	252.36'	2115108.59	6075108.07
4		1253'	13° 53' 18"	152.61'	303.73'	2115006.26	6074666.78
5		1241'	06° 41' 57"	72.63'	145.10'	2115006.26	6074666.78
6		1243'	04° 58' 27"	53.99'	107.91'	2115026.00	6074665.85

LAYOUT

SCALE: 1" = 50'

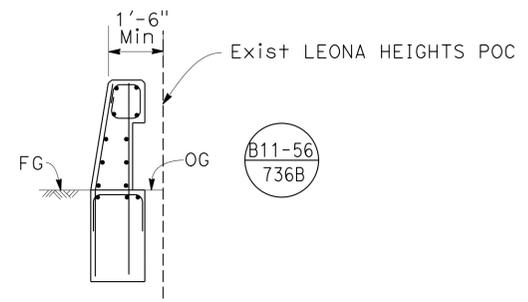
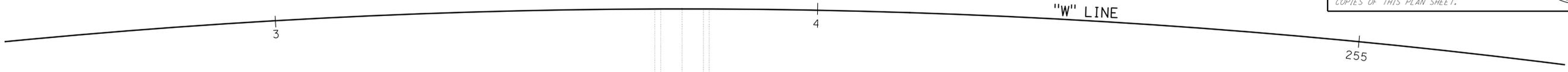
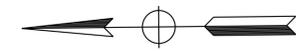
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 FUNCTIONAL SUPERVISOR: NESTOR P. PEREZ
 CALCULATED/DESIGNED BY: NICHOLAS GRIGICH
 CHECKED BY: LIN KYAIN
 REVISED BY: NG
 DATE REVISED: 12/5/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	5	86

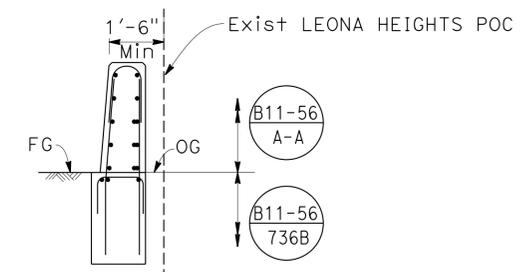
<i>Nicholas Grgich</i>	12/30/14
REGISTERED CIVIL ENGINEER	DATE
3-30-15	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
Nicholas J. Grgich
No. 49123
Exp. 9-30-16
CIVIL
STATE OF CALIFORNIA

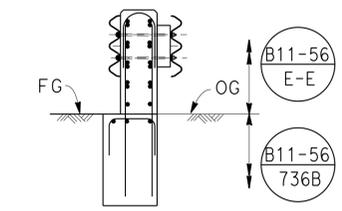
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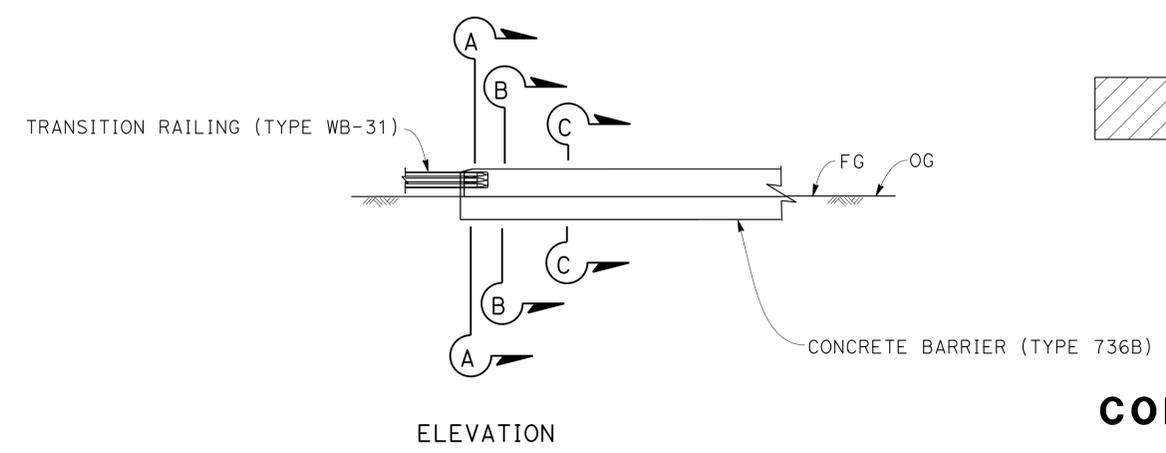
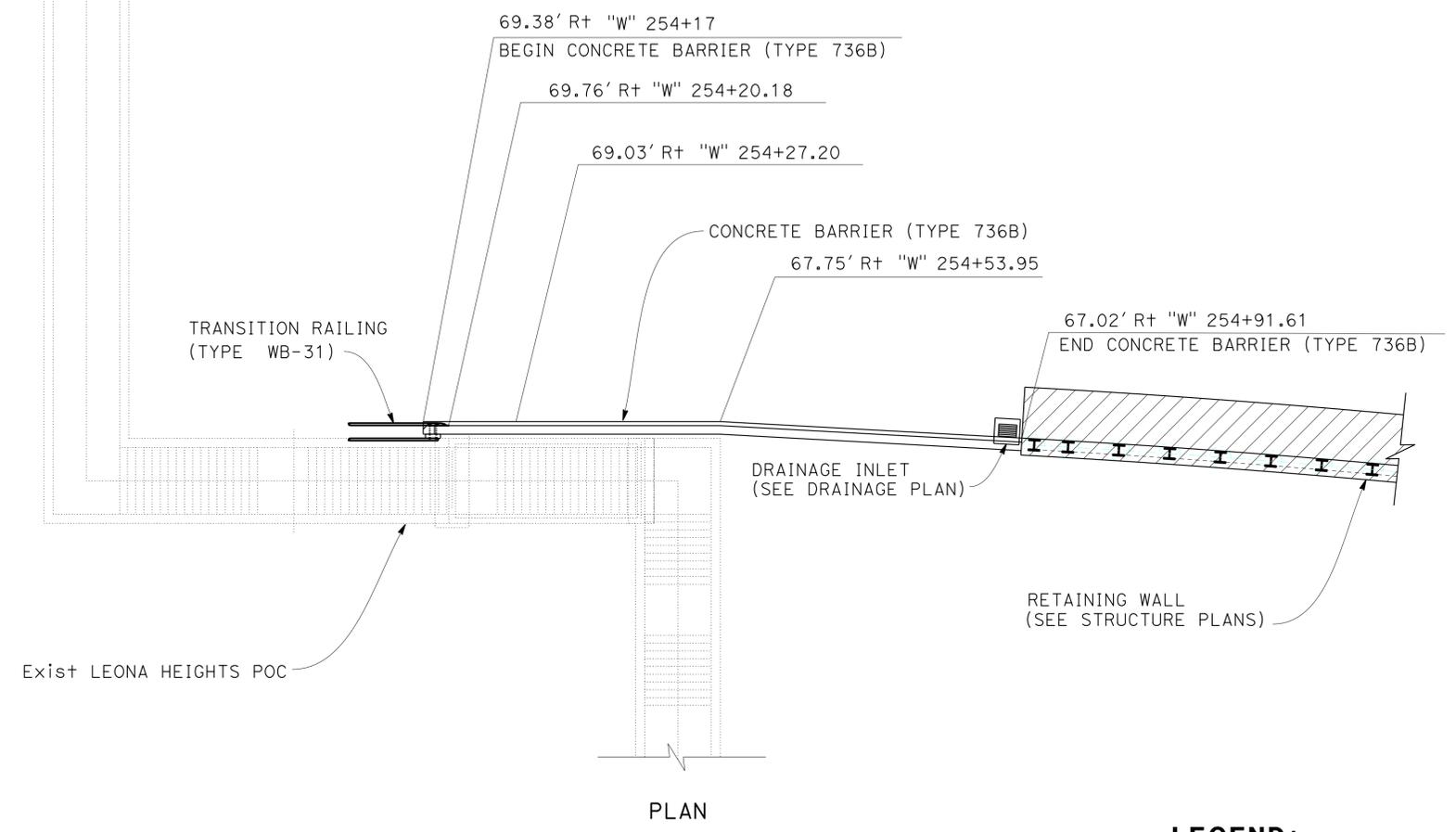
"W" 254+27.20 TO 256+91.61
SECTION C-C



"W" 254+20.18 TO 254+27.20
SECTION B-B



"W" 254+17 TO 254+20.18
SECTION A-A



ELEVATION

LEGEND:

CONCRETE BARRIER SLAB

CONSTRUCTION DETAILS

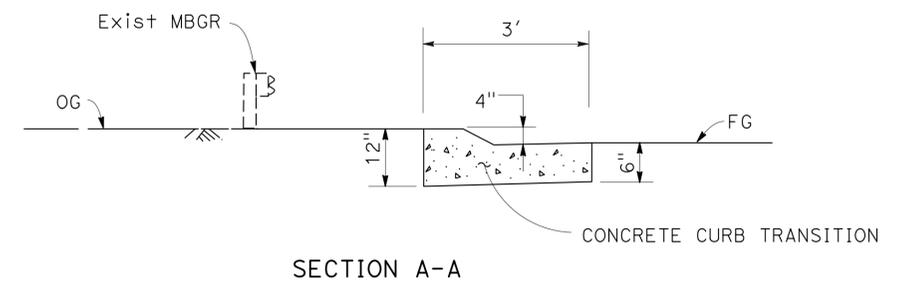
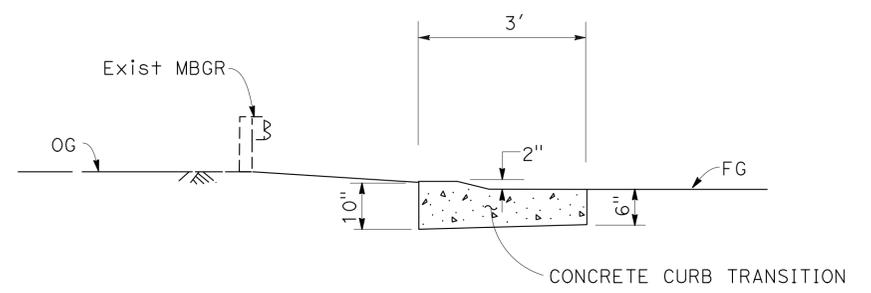
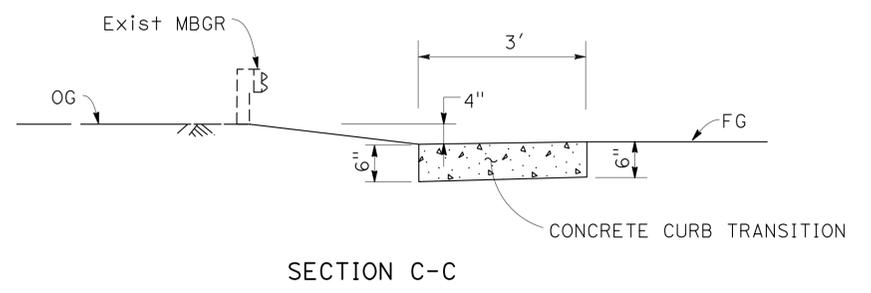
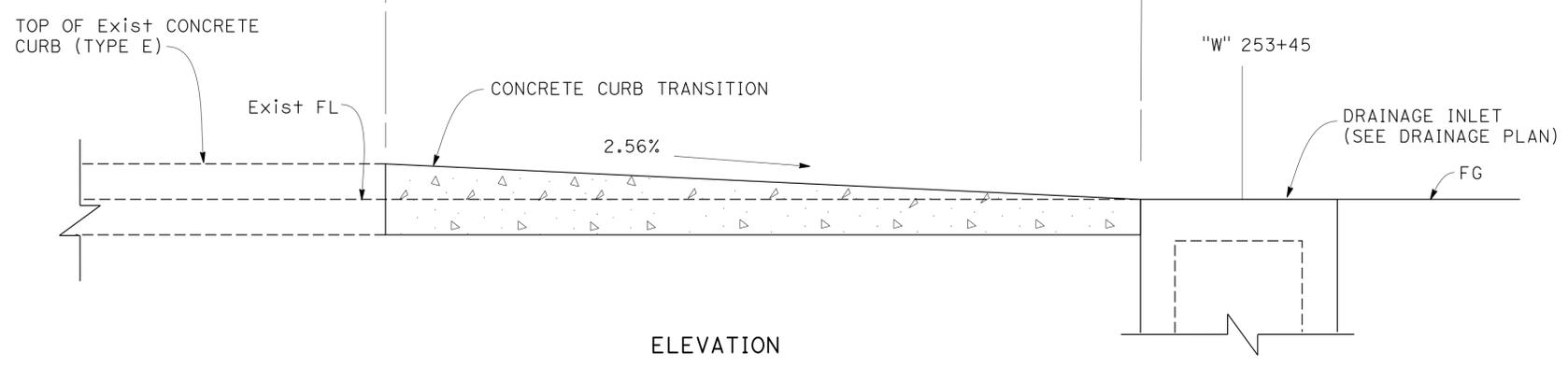
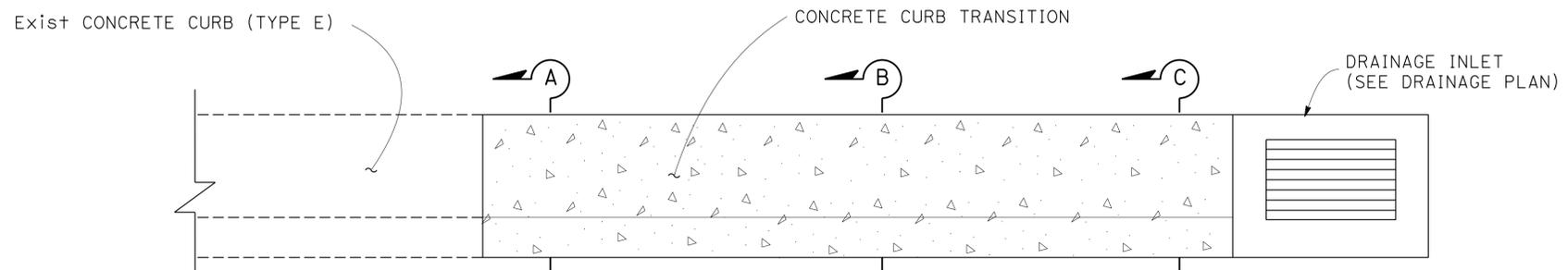
NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	NESTOR P. PEREZ
CALCULATED/DESIGNED BY	CHECKED BY
NICHOLAS GRGICH	LIN KYAIN
REVISOR	DATE
NG	12/5/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	6	86
<i>Nicholas Grigich</i> REGISTERED CIVIL ENGINEER			12/30/14 DATE		
3-30-15 PLANS APPROVAL DATE					
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→ DIRECTION OF TRAVEL



CONCRETE CURB TRANSITION

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR	DATE
Caltrans	NESTOR P. PEREZ	NICHOLAS GRIGICH	NG	12/5/14
		LIN KYAN		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	7	86

12/31/14
 REGISTERED CIVIL ENGINEER DATE
 Sharon X. Yuan
 No. 58701
 Exp. 2-31-16
 CIVIL
 STATE OF CALIFORNIA

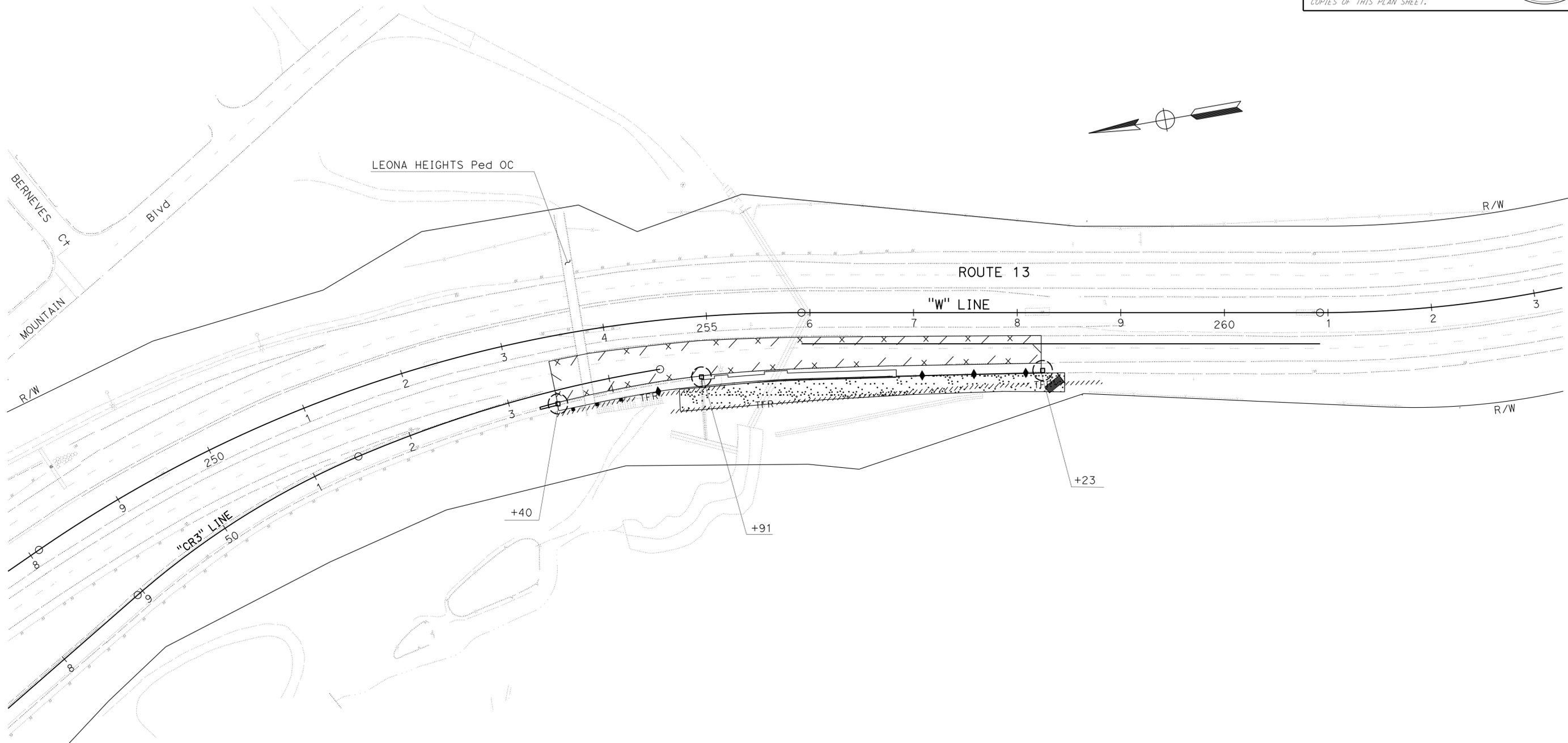
3-30-15
 PLANS APPROVAL DATE

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

LEGEND:

-  TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)
-  TEMPORARY DRAINAGE INLET PROTECTION



TEMPORARY WATER POLLUTION CONTROL QUANTITIES

ITEM	STATION	QUANTITY	UNIT
TEMPORARY HYDRAULIC MULCH (BFM)	"W" 254+67 TO 258+23	1000	SQYD
TEMPORARY FIBER ROLL	"W" 254+67 TO 258+23	700	LF
TEMPORARY DRAINAGE INLET PROTECTION	"W" 253+40, "W" 254+94, "W" 258+23	3	EA
TEMPORARY CONSTRUCTION ENTRANCE	"W" 253+00 TO 258+30	1	EA

TEMPORARY WATER POLLUTION CONTROL PLAN
 NO SCALE

APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

WPC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans WATER QUALITY
 FUNCTIONAL SUPERVISOR: KAMRAN NAKHJIRI
 CALCULATED/DESIGNED BY: SHARON YUAN
 CHECKED BY: KAMRAN NAKHJIRI
 REVISIONS: 3/25/15
 SY

LAST REVISION DATE PLOTTED => 06-APR-2015
 03-25-15 TIME PLOTTED => 10:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	8	86

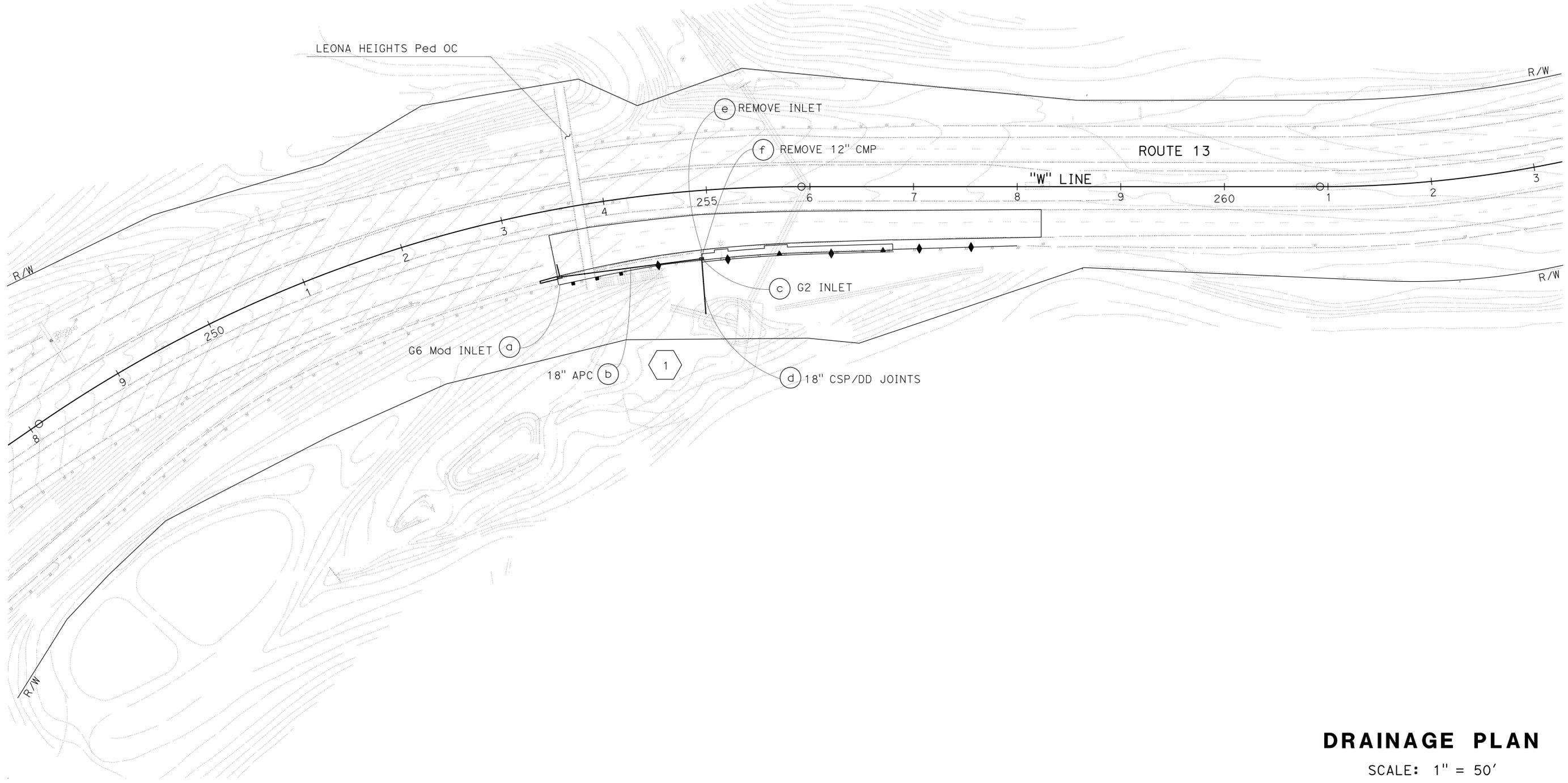
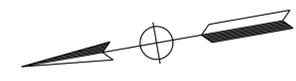
<i>Nicholas Grgich</i>	12/30/14
REGISTERED CIVIL ENGINEER	DATE
3-30-15	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER Nicholas J. Grgich No. 49123 Exp. 9-30-16 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.

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

NOTE:
 1. TIES TO TOP OF GRATE ELEVATIONS ARE AT THE FLOW LINE.



DRAINAGE PLAN
 SCALE: 1" = 50'

APPROVED FOR DRAINAGE WORK ONLY

D-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
Caltrans	NESTOR P. PEREZ	NICHOLAS GRGICH	NG	12/5/14
DESIGN		CARLOS MORA		

LAST REVISION: DATE PLOTTED => 06-APR-2015
 08-12-14 TIME PLOTTED => 10:44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 NESTOR P. PEREZ

CALCULATED/DESIGNED BY
 CHECKED BY

NICHOLAS GRGICH
 CARLOS MORA

REVISOR
 NG
 12/5/14

DATE REVISED
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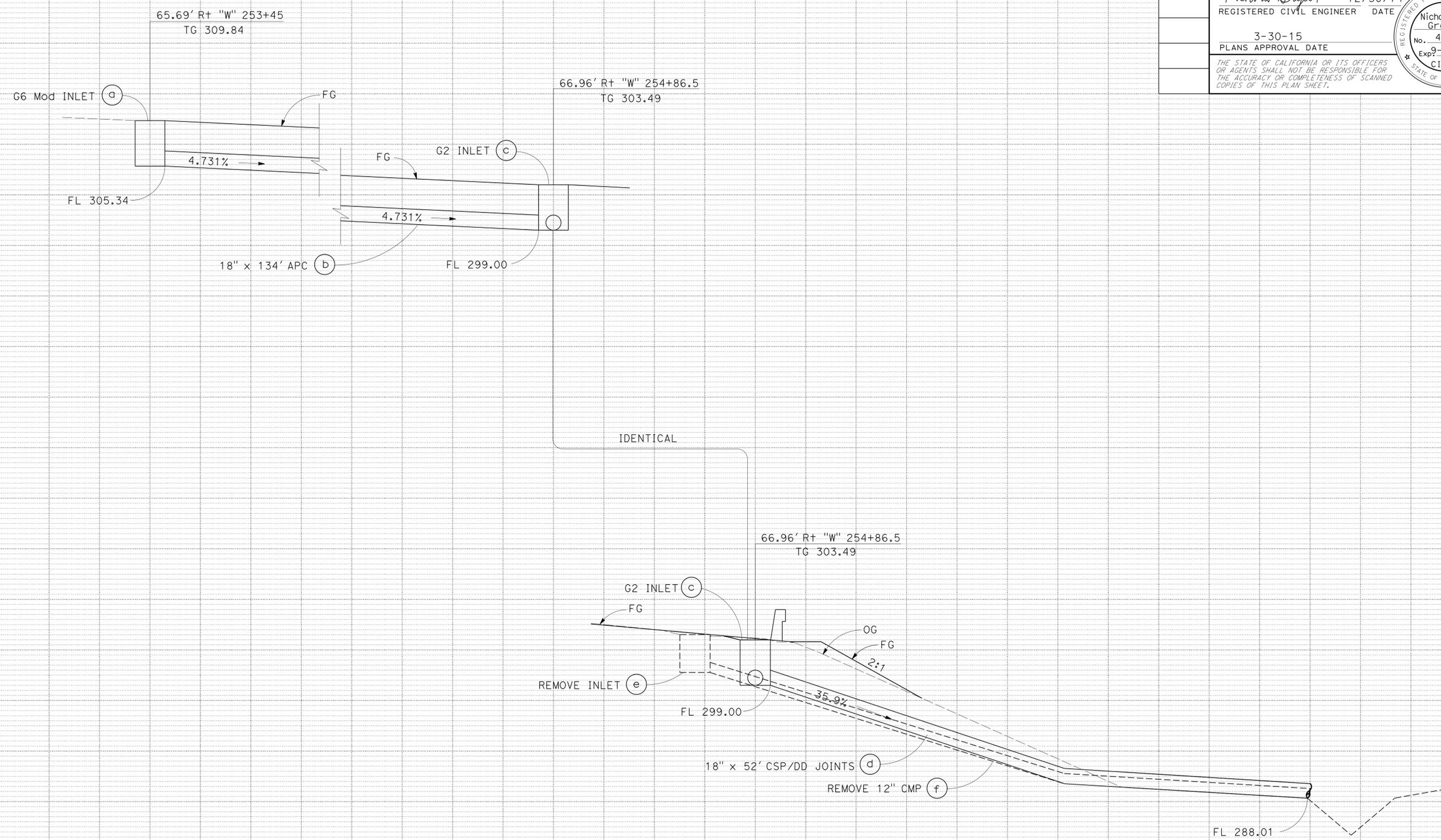
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DRAINAGE SYSTEM No. 1

DRAINAGE PROFILES

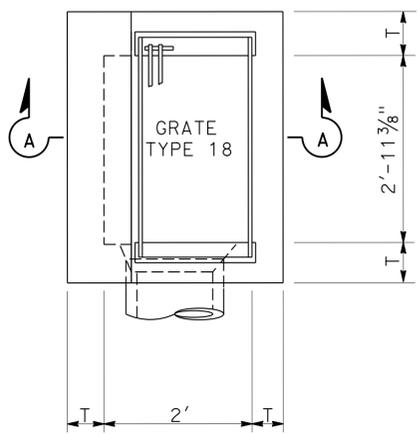
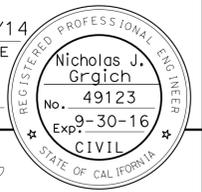
SCALE: Horiz 1" = 5'
 Vert 1" = 5'

DP-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	9	86
Nicholas Grigich		12/30/14		REGISTERED CIVIL ENGINEER DATE	
3-30-15		PLANS APPROVAL DATE		REGISTERED PROFESSIONAL ENGINEER Nicholas J. Grigich No. 49123 Exp. 9-30-16 CIVIL STATE OF CALIFORNIA	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SUPERVISOR	NICHOLAS GRGICH	REVISOR	NG
		NESTOR P. PEREZ	LIN KYAIN	DATE	12/5/14
		CALCULATED/DESIGNED BY			
		CHECKED BY			

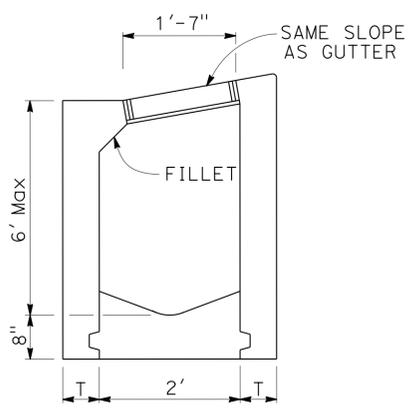
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	10	86
<i>Nicholas Grgich</i> REGISTERED CIVIL ENGINEER			12/30/14 DATE		
			3-30-15 PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



TYPE G6 MODIFIED

NOTE:

1. FOR DETAILS NOT SHOWN, SEE STD PLAN D73A.



SECTION A-A

DRAINAGE DETAILS

NO SCALE

DD-1



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	11	86

Nicholas Grgich 12/30/14
 REGISTERED CIVIL ENGINEER DATE

3-30-15
 PLANS APPROVAL DATE

Nicholas J. Grgich
 No. 49123
 Exp. 9-30-16
 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.

APC ALLOWABLE PIPE MATERIAL AND PROTECTION

DESIGNATION	RCP **	PLASTIC (TYPE S) ***	CSP	
			THICK (IN)	*
18" APC	YES	YES	0.079	

- * EITHER HELICAL OR ANNULAR CORRUGATIONS ARE ALLOWABLE.
- ** FOR MINIMUM ALLOWABLE CLASS OF RCP, SEE S+d PLAN A62D.
- *** ALLOWABLE PLASTIC PIPE OPTION SHALL BE SMOOTH INTERIOR WALL TYPES OR CORRUGATED INTERIOR WALL TYPES.

ABBREVIATION:

S STANDARD JOINT

DRAINAGE QUANTITIES

DRAINAGE SHEET No.	DRAINAGE SYSTEM No.		REMOVE CULVERT	REMOVE INLET	ALTERNATIVE PIPE CULVERT		PIPE ELBOW (N)	MISCELLANEOUS IRON AND STEEL	FRAME AND COVER (N)		MINOR CONCRETE (MINOR STRUCTURE)	HEIGHT OF INLET (N)	MAXIMUM COVER (N)	PIPE JOINT CLASSIFICATION	DESCRIPTION	STATION	DRAINAGE SYSTEM No.	
	LF	EA			18"	18" CORRUGATED STEEL PIPE (0.079" THICK)			EA	LB							EA	CY
D-1	1	a						326	1		1.7	4.5			G6 Mod INLET	"W" 253+45	1	a
		b			134								3.0	S	18" APC			b
		c						249	1		1.4	4.5			G2 INLET	"W" 254+86.5		c
		d					52	1					4.4	DD	18" CSP/DD JOINTS			d
		e		1											REMOVE INLET	"W" 254+86.5		e
		f	60												REMOVE 12" CMP	"W" 254+86.5		f
SHEET TOTAL	60	1		1	134		52	575			3.1				SHEET TOTAL			

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

DRAINAGE QUANTITIES

DQ-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	12	86

<i>Claudia K Fang</i>	12/30/14
REGISTERED CIVIL ENGINEER	DATE
3-30-15	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
Claudia K. Fang
No. 80493
Exp. 3-31-17
CIVIL
STATE OF CALIFORNIA

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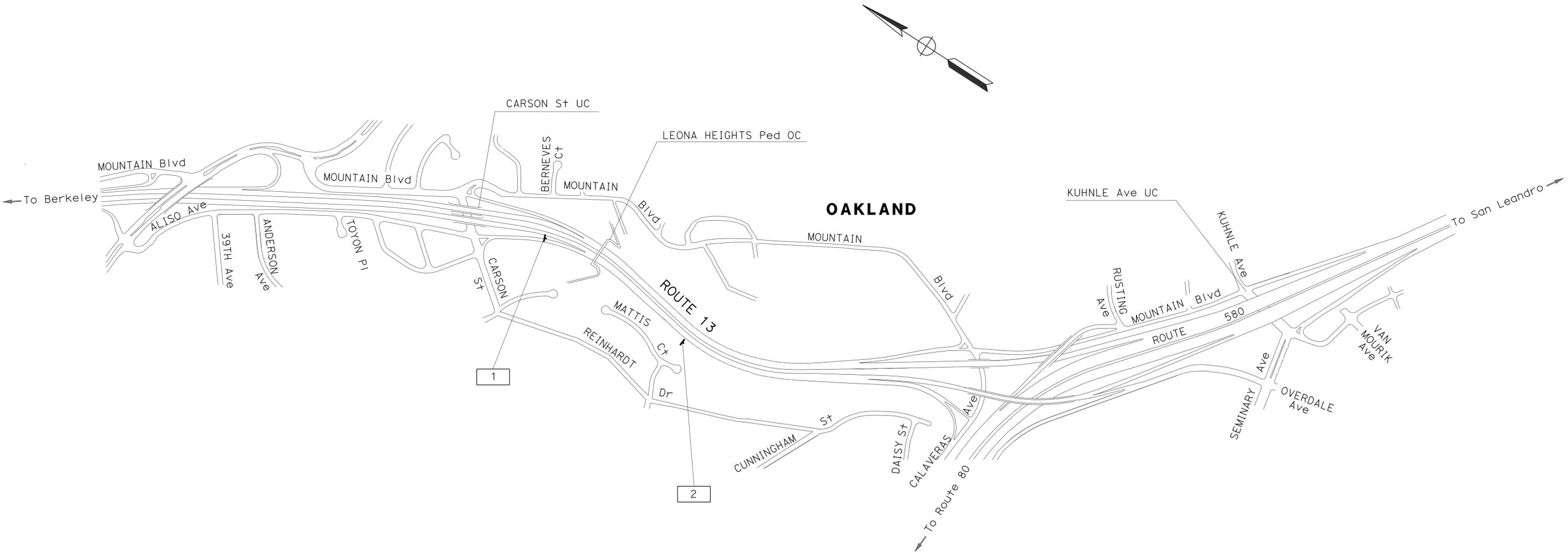
LEGEND:

No. CONSTRUCTION AREA SIGN NUMBER

NOTE:

1. EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.

CF	12/5/14	REVISOR	DATE
CLAUDIA FANG	RACHEL LIU	DESIGNED BY	CHECKED BY
LOURDES DAVID	TRAFFIC	FUNCTIONAL SUPERVISOR	DEPARTMENT OF TRANSPORTATION
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION			
Caltrans			



CONSTRUCTION AREA SIGNS
NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CS-1

LAST REVISION DATE PLOTTED => 06-APR-2015 04-14-14 TIME PLOTTED => 10:44

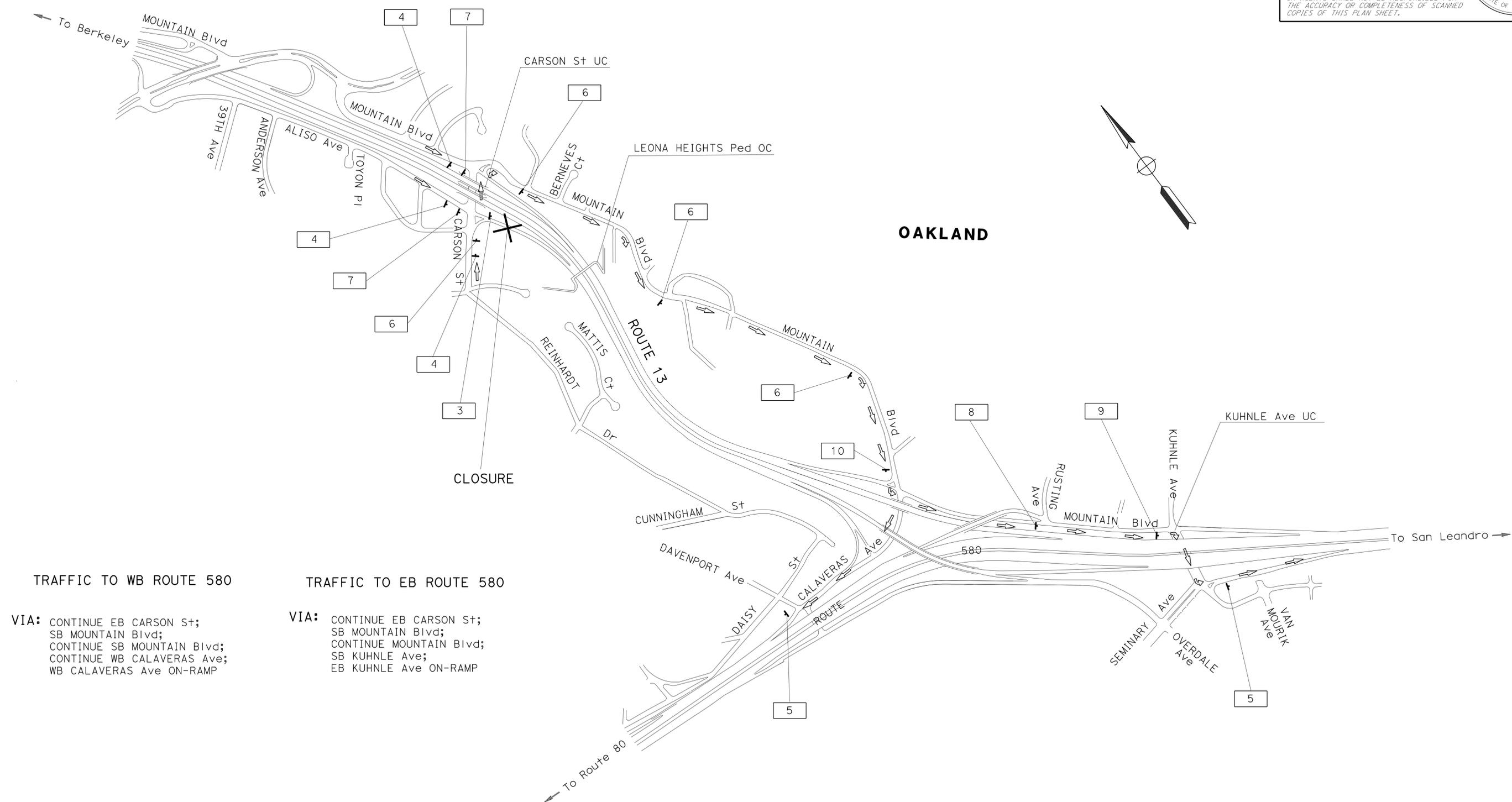
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	13	86

Claudia K Fang 12/30/14
 REGISTERED CIVIL ENGINEER DATE
 3-30-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 No. 80493
 Exp. 3-31-17
 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.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR	DATE
Caltrans	LOURDES DAVID	CLAUDIA FANG	CF	12/5/14
TRAFFIC		RACHEL LIU		
		CHECKED BY		



TRAFFIC TO WB ROUTE 580

VIA: CONTINUE EB CARSON St;
 SB MOUNTAIN Blvd;
 CONTINUE SB MOUNTAIN Blvd;
 CONTINUE WB CALAVERAS Ave;
 WB CALAVERAS Ave ON-RAMP

TRAFFIC TO EB ROUTE 580

VIA: CONTINUE EB CARSON St;
 SB MOUNTAIN Blvd;
 CONTINUE MOUNTAIN Blvd;
 SB KUHNLE Ave;
 EB KUHNLE Ave ON-RAMP

DETOUR PLAN No. 1

SB ROUTE 13 CARSON St ON-RAMP CLOSED

CONSTRUCTION AREA SIGNS

NO SCALE

CS-2

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR NOTE AND LEGEND, SEE SHEET CS-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	14	86

Claudia K. Fang 12/30/14
 REGISTERED CIVIL ENGINEER DATE

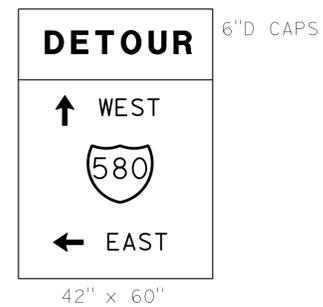
3-30-15
 PLANS APPROVAL DATE

Claudia K. Fang
 No. 80493
 Exp. 3-31-17
 CIVIL

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STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE		SIGN MESSAGE	PANEL SIZE	NUMBER OF POST AND SIZE	No. OF SIGNS	REMARKS
	FEDERAL	CALIFORNIA					
1	W20-1		ROAD WORK AHEAD	48" x 48"	1 - 4" x 6"	1	
2	G20-2		END ROAD WORK	48" x 24"	1 - 4" x 4"	1	
3		SC6-4(CA)	RAMP CLOSED	48" x 60"	1 - 4" x 6"	1	
4	W20-2		DETOUR AHEAD	36" x 36"	1 - 4" x 6"	3	
5	M4-8A		END DETOUR	24" x 18"	1 - 4" x 4"	2	
6	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	4	
		G27-2(CA)	ROUTE 580 SHIELD	21" x 18"			
7	M6-3(↑)		UP ARROW	21" x 15"	1 - 4" x 6"	2	
	M4-8		DETOUR	24" x 12"			
8		G27-2(CA)	ROUTE 580 SHIELD	21" x 18"	1 - 4" x 6"	1	
	M3-2		EAST	24" x 12"			
9	M6-3(↑)		UP ARROW	21" x 15"	1 - 4" x 6"	1	
	M4-8		DETOUR	24" x 12"			
10		G27-2(CA)	ROUTE 580 SHIELD	21" x 18"	1 - 4" x 6"	1	
	M3-2		EAST	24" x 12"			
11	M6-1(→)		RIGHT ARROW	21" x 15"	1 - 6" x 6"	1	
	SPEC 1		DETOUR EAST ROUTE 580 WEST	42" x 60"			
11	W4-1R		MERGE	48" x 48"	1 - 4" x 6"	2	SEE SHEET TH-1
	W4-5P		NO MERGE AREA	24" x 30"			



SPEC 1

CONSTRUCTION AREA SIGNS
 NO SCALE

CS-3



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 NESTOR P. PEREZ

CALCULATED/DESIGNED BY
 CHECKED BY

NICHOLAS GRGICH
 LIN KYAIN

REVISOR
 DATE REVISED

NG
 12/5/14

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

- NOTES:**
1. OFFSET DIMENSIONS ARE TO FACE OF TEMPORARY RAILING (TYPE K).
 2. PCMS MESSAGE ON MAINLINE TO ALTERNATE BETWEEN "CAUTION" AND "SHOULDER, CLOSED, AHEAD."
 3. PCMS MESSAGE ON SHOULDER TO ALTERNATE BETWEEN "CAUTION" AND "SHOULDER, CLOSED, AHEAD."
 4. EXACT LOCATIONS OF PCMS AND CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
 5. FOR DETAILS OF PAVEMENT DELINEATION 13M, SEE SHEET PD-1.

ABBREVIATIONS:

& AND
 PCMS PORTABLE CHANGEABLE MESSAGE SIGN

LEGEND:

- CONSTRUCT THIS STAGE
- PORTABLE CHANGEABLE MESSAGE SIGN
- CONSTRUCTION AREA SIGN

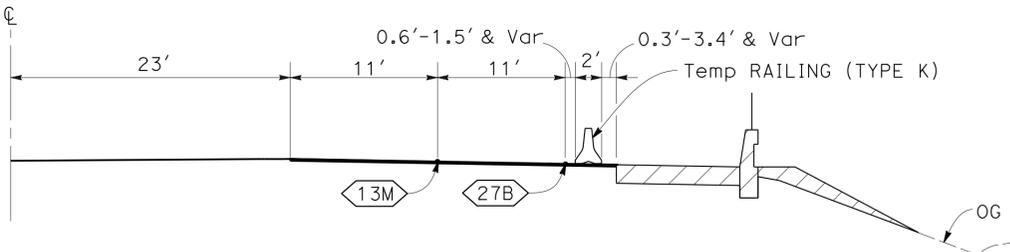
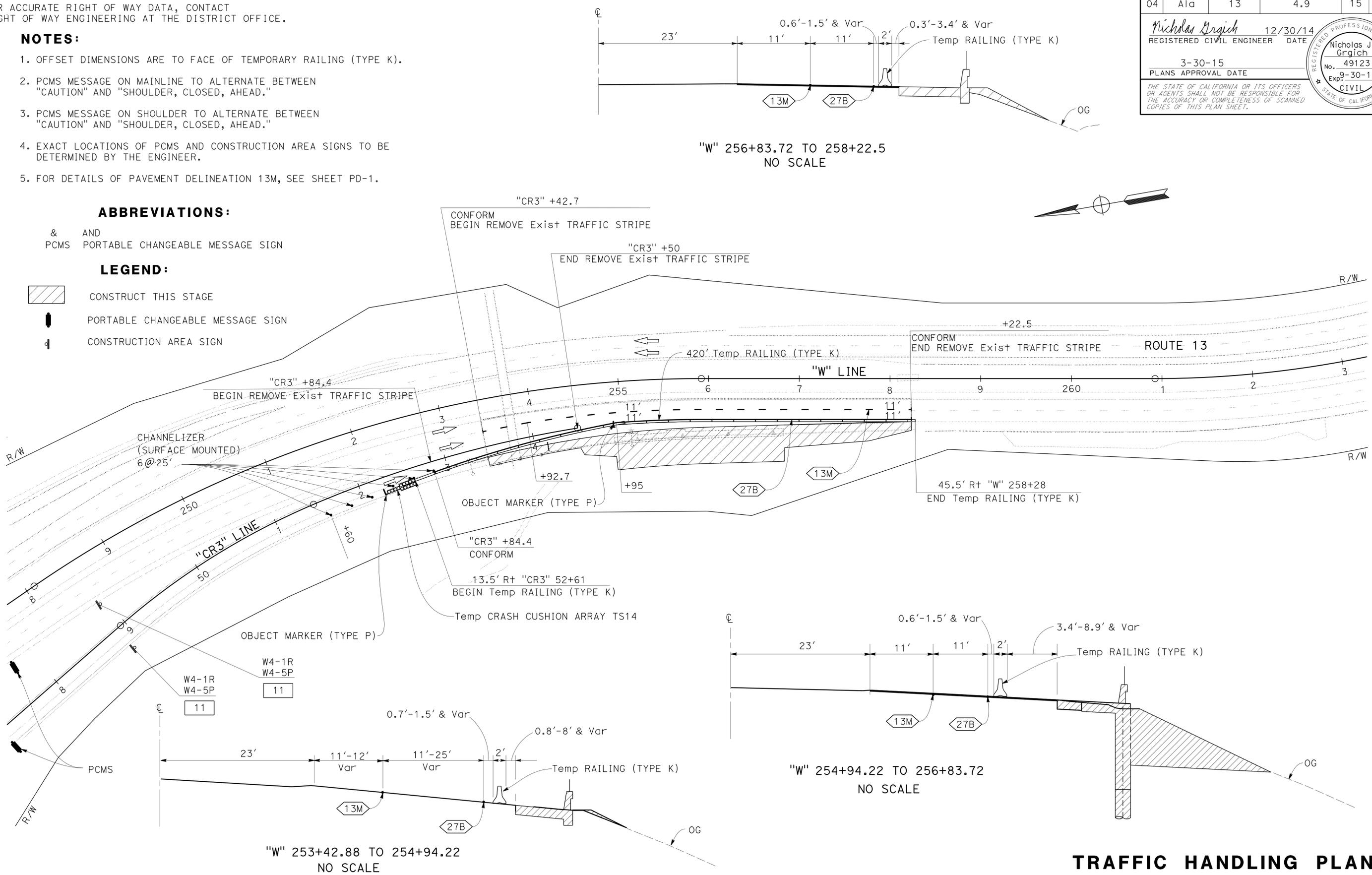
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	15	86

Nicholas Grgich 12/30/14
 REGISTERED CIVIL ENGINEER DATE

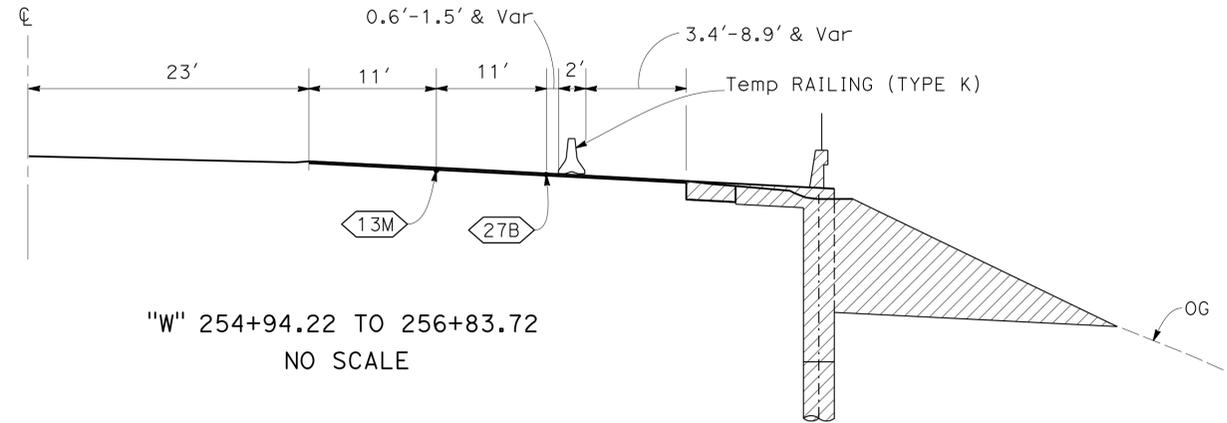
3-30-15
 PLANS APPROVAL DATE

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Nicholas J. Grgich
 No. 49123
 Exp. 9-30-16
 CIVIL



"W" 256+83.72 TO 258+22.5
 NO SCALE



"W" 254+94.22 TO 256+83.72
 NO SCALE

"W" 253+42.88 TO 254+94.22
 NO SCALE

TRAFFIC HANDLING PLAN

SCALE: 1" = 50'

TH-1

APPROVED FOR TRAFFIC HANDLING WORK ONLY

LAST REVISION DATE PLOTTED => 06-APR-2015 03-19-15 TIME PLOTTED => 10:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	16	86

Nicholas Grgich 12/30/14
REGISTERED CIVIL ENGINEER DATE

3-30-15
PLANS APPROVAL DATE

Nicholas J. Grgich
No. 49123
Exp. 9-30-16
CIVIL

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PAVEMENT DELINEATION REMOVAL QUANTITIES

SHEET No.	STATION LIMIT	REMOVE THERMOPLASTIC TRAFFIC STRIPE		REMOVE PAVEMENT MARKER
		YELLOW HAZARDOUS WASTE	4" WHITE	
		LF		
TH-1	"CR3" 52+84.4 TO "W" 258+23	483	166	112
	TOTAL	483	166	112

TEMPORARY PAVEMENT DELINEATION AND TRAFFIC CONTROL DEVICES

SHEET No.	STATION LIMIT	TEMPORARY TRAFFIC STRIPE (PAINT)		PAVEMENT MARKER		CHANNELIZER (SURFACE MOUNTED)	TEMPORARY RAILING (TYPE K)	TEMPORARY CRASH CUSHION MODULE	OBJECT MARKER (TYPE P)
		DETAIL 27B	DETAIL 13M	RETRO-REFLECTIVE	NON-REFLECTIVE			ARRAY TS14	
		4" WHITE SOLID	4" WHITE BROKEN 36-12					EA	
LF		EA		LF	EA				
TH-1	"W" 251+60 TO 258+28	544	480	16	40	6	600	14	1
	SUBTOTAL	544	480	16	40	6	600	14	1
	TOTAL	1024		16	40	6	600	14	1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: NESTOR P. PEREZ
CALCULATED/DESIGNED BY: NICHOLAS GRGICH
CHECKED BY: LIN KYAIN
REVISED BY: NG
DATE REVISED: 12/5/14

TRAFFIC HANDLING QUANTITIES

THQ-1



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 NESTOR P. PEREZ

CALCULATED/DESIGNED BY
 CHECKED BY

NICHOLAS GRGICH
 SHI LAM

REVISOR BY
 DATE REVISED

NG
 12/5/14

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

- NOTES:**
1. PLACE 4" WHITE TRAFFIC STRIPE AFTER INSTALLING PAVEMENT MARKERS.
 2. DETAIL 13M IS MODIFIED PAVEMENT DELINEATION DETAIL 13. FOR DETAILS NOT SHOWN, SEE STANDARD PLAN A20A.

- LEGEND:**
- B** CONCRETE BARRIER MARKER - TYPE F
 - G** GUARD RAILING DELINEATOR - TYPE F

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	17	86

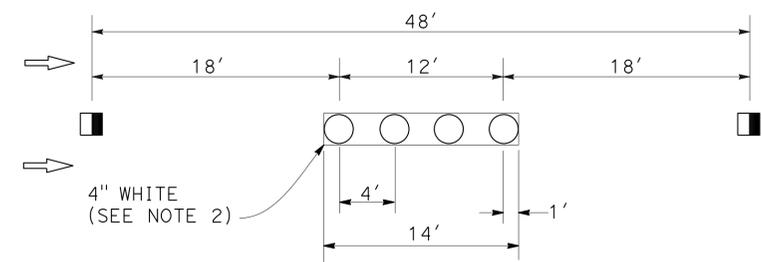
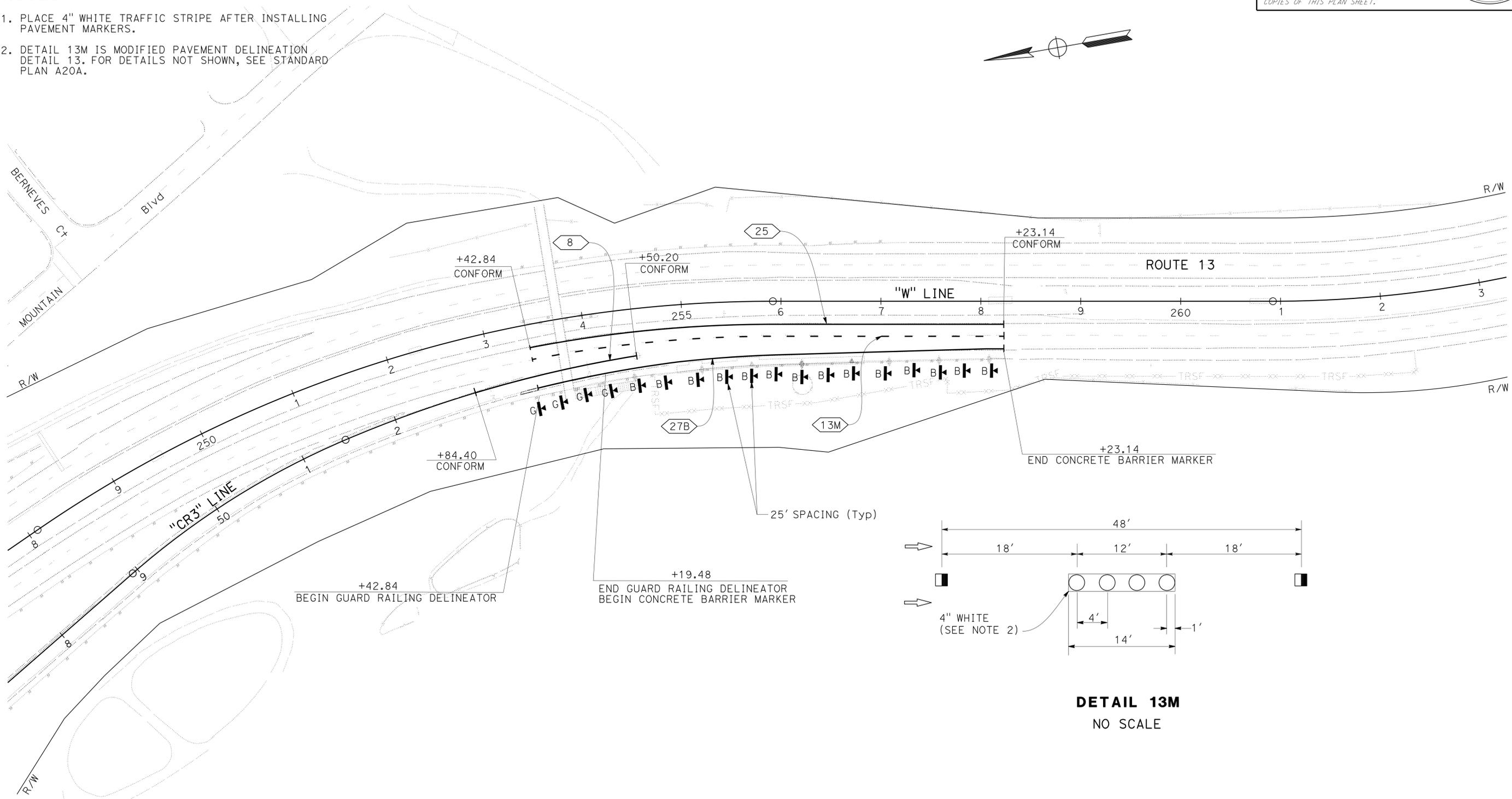
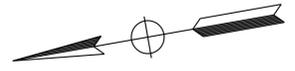
Nicholas Grgich 12/30/14
 REGISTERED CIVIL ENGINEER DATE

3-30-15
 PLANS APPROVAL DATE

Nicholas J. Grgich
 No. 49123
 Exp. 9-30-16
 CIVIL

REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA

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PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

PD-1

LAST REVISION DATE PLOTTED => 06-APR-2015 12-29-14 TIME PLOTTED => 10:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	18	86

Nicholas Grgich 12/30/14
REGISTERED CIVIL ENGINEER DATE

3-30-15
PLANS APPROVAL DATE

Nicholas J. Grgich
No. 49123
Exp. 9-30-16
CIVIL

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR
NESTOR P. PEREZ
CALCULATED/DESIGNED BY
CHECKED BY
NICHOLAS GRGICH
LIN KYAIN
REVISED BY
DATE REVISED
NG
12/5/14

TRAFFIC STRIPES AND PAVEMENT MARKERS

SHEET No.	STATION LIMIT	THERMOPLASTIC TRAFFIC STRIPE				PAVEMENT MARKER (RETRO-REFLECTIVE)	PAVEMENT MARKER (NON-REFLECTIVE)	GUARD RAILING DELINEATOR	CONCRETE BARRIER MARKER
		DETAIL 13M	DETAIL 8	DETAIL 27B	DETAIL 25				
		4" WHITE (BROKEN 36-12)	4" WHITE (BROKEN 17-7)	4" WHITE	4" YELLOW				
		LF				EA			
PD-1	"CR3" 253+84.40 TO "W" 258+23.14	483	166	544	483	16	40	4	14
	TOTAL	483	166	1027		16	40	4	14

PAVEMENT DELINEATION QUANTITIES
PDQ-1

LAST REVISION | DATE PLOTTED => 06-APR-2015
01-22-15 | TIME PLOTTED => 10:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	19	86

Nicholas Grgich 12/30/14
REGISTERED CIVIL ENGINEER DATE

3-30-15
PLANS APPROVAL DATE

Nicholas J. Grgich
No. 49123
Exp. 9-30-16
CIVIL

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ROADWAY QUANTITIES

SHEET No.	STATION LIMIT	HOT MIX ASPHALT (TYPE A)	CLASS 4 AGGREGATE SUBBASE	TACK COAT	PRIME COAT	GEOSYNTHETIC PAVEMENT INTERLAYER (PAVING FABRIC)	COLD PLANE ASPHALT CONCRETE PAVEMENT 0.15' Max	CONCRETE BARRIER (TYPE 736B)	REMOVE CONCRETE CURB	REMOVE GUARD RAILING	TREATED WOOD WASTE
		TON	CY	TON	TON	SQYD	LF	LB			
L-1	"W" 253+40 TO 258+23 FROM HOT MIX ASPHALT DIKE TABLE	390 1	68	0.6	0.2	85	1252	208	142	481	6860
TOTAL		391	68	0.6	0.2	85	1252	208	142	481	6860

EARTHWORK QUANTITIES

SHEET No.	STATION LIMIT	ROADWAY EXCAVATION	EMBANKMENT (N)
		CY	
L-1	"W" 253+40 TO 258+23	191	46
TOTAL		191	46

MIDWEST GUARDRAIL SYSTEM

SHEET No.	STATION LIMIT	TRANSITION RAILING (TYPE WB-31)	MGS TRANSITION RAILING	VEGETATION CONTROL (MINOR CONCRETE)
		EA	LF	SQYD
L-1	"W" 253+40 TO 254+17	1	50	33.4
TOTAL		1	50	33.4

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

TEMPORARY REINFORCED SILT FENCE

SHEET No.	TYPE 1
L-1	LF 880
TOTAL	880

PLACE HOT MIX ASPHALT DIKE

SHEET No.	STATION LIMIT	PLACE HOT MIX ASPHALT DIKE (TYPE F)	HOT MIX ASPHALT (TYPE A)
		LF	TON
L-1	"W" 253+40 TO 254+17	75	1
TOTAL		75	1 *

* ADDED TO ROADWAY QUANTITIES

MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)

SHEET No.	STATION LIMIT	LOCATION	CONCRETE CURB TRANSITION
L-1	"W" 253+27 TO 253+40	R+	CY 0.8
TOTAL			0.8

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: NESTOR P. PEREZ
 CALCULATED/DESIGNED BY: NICHOLAS GRGICH
 CHECKED BY: LIN KYAIN
 REVISED BY: NG
 DATE REVISED: 12/5/14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 LYDIA MAC
 CALCULATED/DESIGNED BY
 CHECKED BY
 DENNIS CALLOWAY
 DAVID W. ENG
 REVISED BY
 DATE REVISED
 DC
 DC
 10-31-14 11-26-14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	20	86

Dennis Calloway
 LICENSED LANDSCAPE ARCHITECT
 3-30-15
 PLANS APPROVAL DATE

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IRRIGATION SPRINKLER SCHEDULE

SYMBOL	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (psi)	PRESSURE COMPENSATING	PLUS/MINUS 5% ②					FLOW SHUTOFF DEVICE	SPRINKLER ASSEMBLY							REMARKS	
					DISCHARGE		RADIUS (ft)	WIDTH x LENGTH (ft)	TYPE		RISER			POP-UP		TREE WELL			
					GALLONS PER MINUTE (GPM)	GALLONS PER HOUR (GPH)					MATERIAL	SIZE (IPS INCH)	HEIGHT (INCH)	SWING JOINT (TYPE)	TYPE		INLET CONNECTION (NPT INCH)		SPRINKLER PROTECTOR (TYPE) ④
					PLASTIC	GALVANIZED													
•	RISER SPRINKLER ASSEMBLY	-	20	X	0.5	-	-	-	-	V	X	-	1/2	-	-	-	-	-	BUBBLER- INSTALL ON UPHILL SIDE OF PLANT BASIN
○	RISER SPRINKLER ASSEMBLY	-	20	X	1.0	-	-	-	-	V	X	-	1/2	-	-	-	-	-	BUBBLER- INSTALL ON UPHILL SIDE OF PLANT BASIN

APPLICABLE WHEN CIRCLED X BELOW: X IN BOX DENOTES REQUIREMENT

1 - SEE SPECIAL PROVISIONS.
 ② - IF A PRESSURE COMPENSATING DEVICE IS SPECIFIED, THE DISCHARGE AND RADII SHOWN REFLECT ITS USE.
 3 - VINYL-COATED CAST IRON HOUSING.
 4 - SPRINKLER PROTECTORS REQUIRED ADJACENT TO SHOULDERS, CURBS, SIDEWALKS, AND DIKES.
 5 - UNLESS OTHERWISE SHOWN ON PLANS.

IRRIGATION SPRINKLER SCHEDULE ISS-1

LAST REVISION DATE PLOTTED => 06-APR-2015 11-26-14 TIME PLOTTED => 10:44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 LANDSCAPE ARCHITECT
 DENNIS CALLOWAY
 DAVID W. ENG
 DC
 DC
 REVISED BY
 DATE REVISED
 11-26-14
 12-04-14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	21	86

Dennis Calloway
 LICENSED LANDSCAPE ARCHITECT
 3-30-15
 PLANS APPROVAL DATE

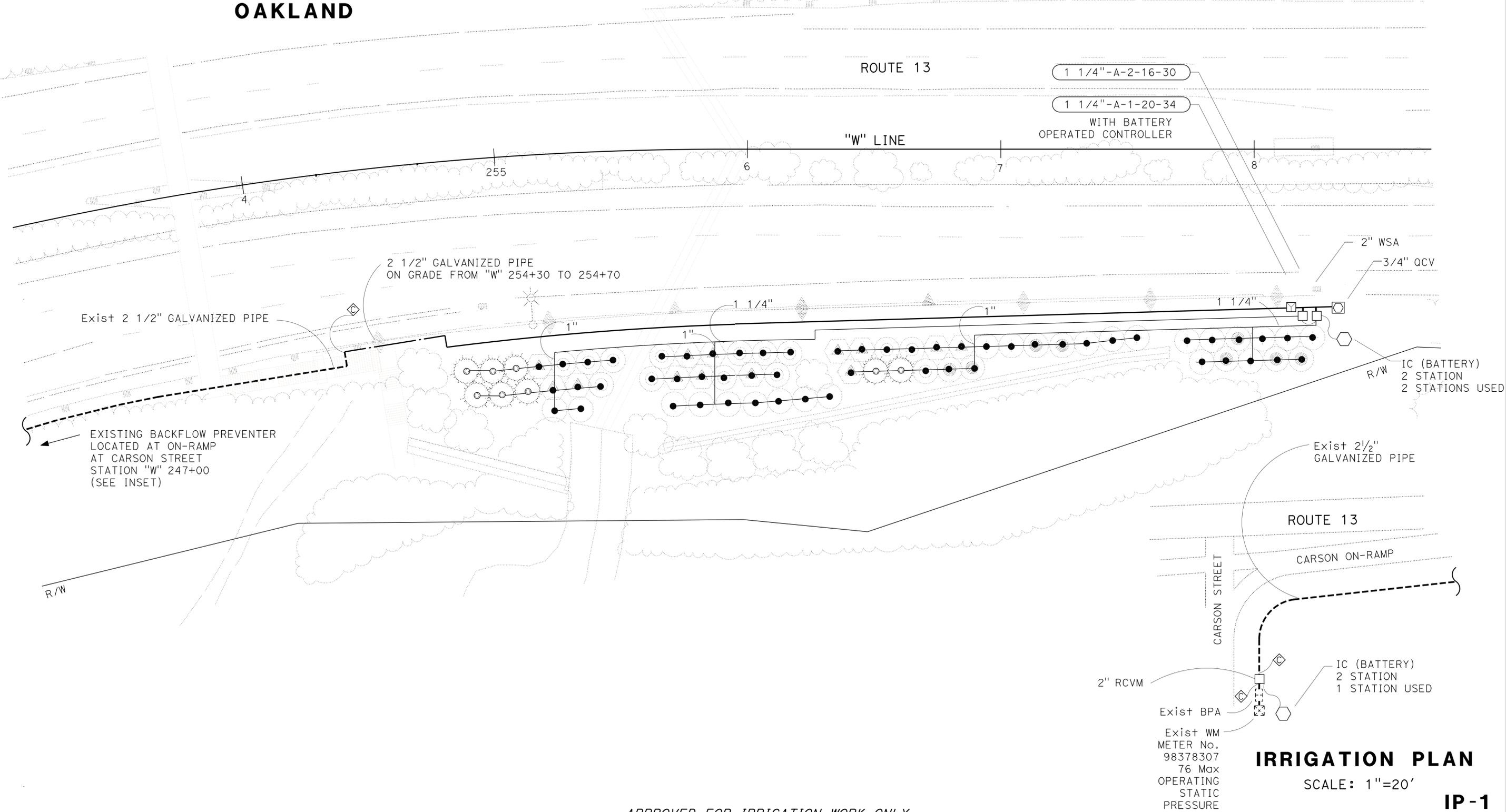
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IRRIGATION NOTES:

1. UNLABELED PLASTIC PIPE SUPPLY LINE (MAIN) MUST BE 2" (SCH 40) PVC.
2. UNLABELED PLASTIC PIPE SUPPLY LINE (LATERAL) DOWNSTREAM OF REMOTE CONTROL VALVES MUST BE 3/4" (SCH 40) PVC.
3. QUICK COUPLING VALVE (QCV) MUST BE INSTALLED ON SWING JOINT (TYPE 1) WITH A SPRINKLER PROTECTOR (TYPE 1).
4. BATTERY OPERATED IRRIGATION CONTROLLER MUST BE INSTALLED IN SAME VALVE BOX AS THE REMOTE CONTROL VALVE.

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

OAKLAND



Exist 2 1/2" GALVANIZED PIPE

2 1/2" GALVANIZED PIPE ON GRADE FROM "W" 254+30 TO 254+70

EXISTING BACKFLOW PREVENTER LOCATED AT ON-RAMP AT CARSON STREET STATION "W" 247+00 (SEE INSET)

1 1/4"-A-2-16-30

1 1/4"-A-1-20-34

WITH BATTERY OPERATED CONTROLLER

2" WSA

3/4" QCV

IC (BATTERY)
 2 STATION
 2 STATIONS USED

Exist 2 1/2" GALVANIZED PIPE

2" RCVM

Exist BPA
 Exist WM METER No. 98378307
 76 Max OPERATING STATIC PRESSURE

IC (BATTERY)
 2 STATION
 1 STATION USED

IRRIGATION PLAN

SCALE: 1"=20'

IP-1

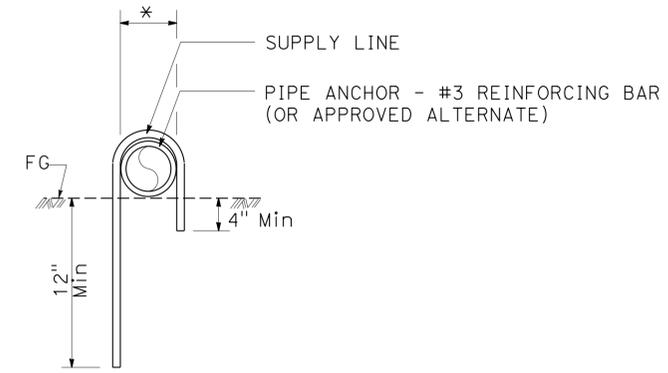
APPROVED FOR IRRIGATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SENIOR LANDSCAPE ARCHITECT	CALCULATED/DESIGNED BY	REVISOR	DATE
Caltrans LANDSCAPE ARCHITECTURE	LYDIA MAC	CHECKED BY	DAVID W. ENG	12-01-14
			DENNIS CALLOWAY	DC

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	22	86

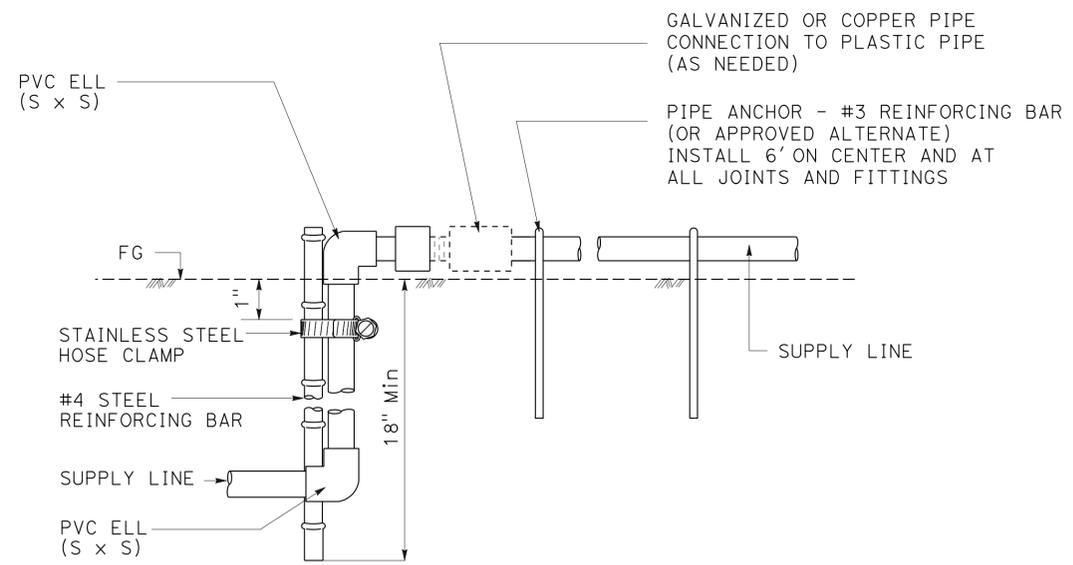
Dennis Calloway
 LICENSED LANDSCAPE ARCHITECT
 3-30-15
 PLANS APPROVAL DATE

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* EQUAL TO 1/2" - 1" GREATER THAN OUTSIDE PIPE DIAMETER

ELEVATION
PIPE ANCHOR



ELEVATION
SUPPLY LINE ON GRADE TRANSITION

IRRIGATION DETAILS

NO SCALE

ID-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	25	86

Dennis Calloway
 LICENSED LANDSCAPE ARCHITECT
 3-30-15
 PLANS APPROVAL DATE

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PLANTING LEGEND

PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (INCH)		BASIN TYPE	SOIL AMENDMENT ①		IRON SULFATE ①	COMMERCIAL FERTILIZER ①		BASIN MULCH ②		STAKING	PLANTING LIMITS						REMARKS	
							Di	DEPTH		TYPE	RATE		RATE	PLANTING	PLT ESTB	TYPE		CY	MINIMUM DISTANCE (ft) FROM			ON CENTER (ft)			
																			ETW	Pvmt	FENCE		WALL		PAVED DITCH
B	1	⊙	<u>ARBUS MENZIESII</u>	MADRONE	No. 5	14	36	18	I	C	3 CF	-	0.2 LB	0.3 LB	WC	0.075	-	30	-	20	15	5	22	10	TREE
	2	⊙	<u>HETEROMELES ARBUTIFOLIA</u>	TOYON	No. 5	15	36	18	I	C	3 CF	-	0.2 LB	0.3 LB	WC	0.075	-	-	15	15	15	5	12	10	TREE
	3	⊙	<u>QUERCUS AGRIFOLIA</u>	COAST LIVE OAK	No. 5	12	36	18	I	C	3 CF	-	0.2 LB	0.3 LB	WC	0.075	④	30	-	20	15	5	17	10	TREE
	4	⊙	<u>QUERCUS LOBATA</u>	VALLEY OAK	No. 5	8	36	18	I	C	3 CF	-	0.2 LB	0.3 LB	WC	0.075	④	30	-	20	15	5	22	10	TREE
	5	⊙	<u>SEQUOIA SEMPERVIRENS 'SOQUEL'</u>	SOQUEL COAST REDWOOD	No. 5	6	36	18	I	C	3 CF	-	0.2 LB	0.3 LB	WC	0.075	④	30	-	20	15	5	22	10	TREE
	6	○	<u>UMBELLULARIA CALIFORNICA</u>	CALIFORNIA BAY TREE	No. 5	9	36	18	I	C	3 CF	-	0.2 LB	0.3 LB	WC	0.075	-	40	-	30	15	5	22	10	TREE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 DENNIS CALLOWAY
 DAVID W. ENG
 CHECKED BY
 LYDIA MAC

APPLICABLE WHEN CIRCLED:

- ① - QUANTITIES SHOWN ARE "PER PLANT" UNLESS SHOWN AS SQFT OR SQYD APPLICATION RATES
- ② - BASIN MULCH IN MULCH AREAS IS INCLUDED WITH MULCH QUANTITIES SHOWN ON PLANTING PLAN
- 3 - SUFFICIENT TO RECEIVE ROOT BALL AND AMENDMENTS IF REQUIRED
- ④ - SEE DETAIL
- 5 - SEE SPECIAL PROVISIONS
- 6 - SEE STANDARD SPECIFICATIONS
- ⑦ - AS SHOWN ON PLANS
- 8 - UNLESS OTHERWISE SHOWN ON PLANS
- 9 - FOLIAGE PROTECTOR REQUIRED
- 10 - ROOT PROTECTOR REQUIRED
- 11 - ROOT BARRIER REQUIRED
- 12 - DEPARTMENT-FURNISHED

ABBREVIATIONS

- C - COMPOST
- WC - WOOD CHIP

LEGEND

- LIMITS OF SPREAD MULCH PLACE MULCH WITHIN ASSOCIATED PLANTING AREAS
- EXISTING PLANTS TO REMAIN

NOTE:

UNDERLINED PORTIONS OF BOTANICAL NAME INDICATE ABBREVIATIONS USED ON PLANTING PLANS.

**PLANT LIST
PL-1**

LAST REVISION DATE PLOTTED => 06-APR-2015 TIME PLOTTED => 10:44

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

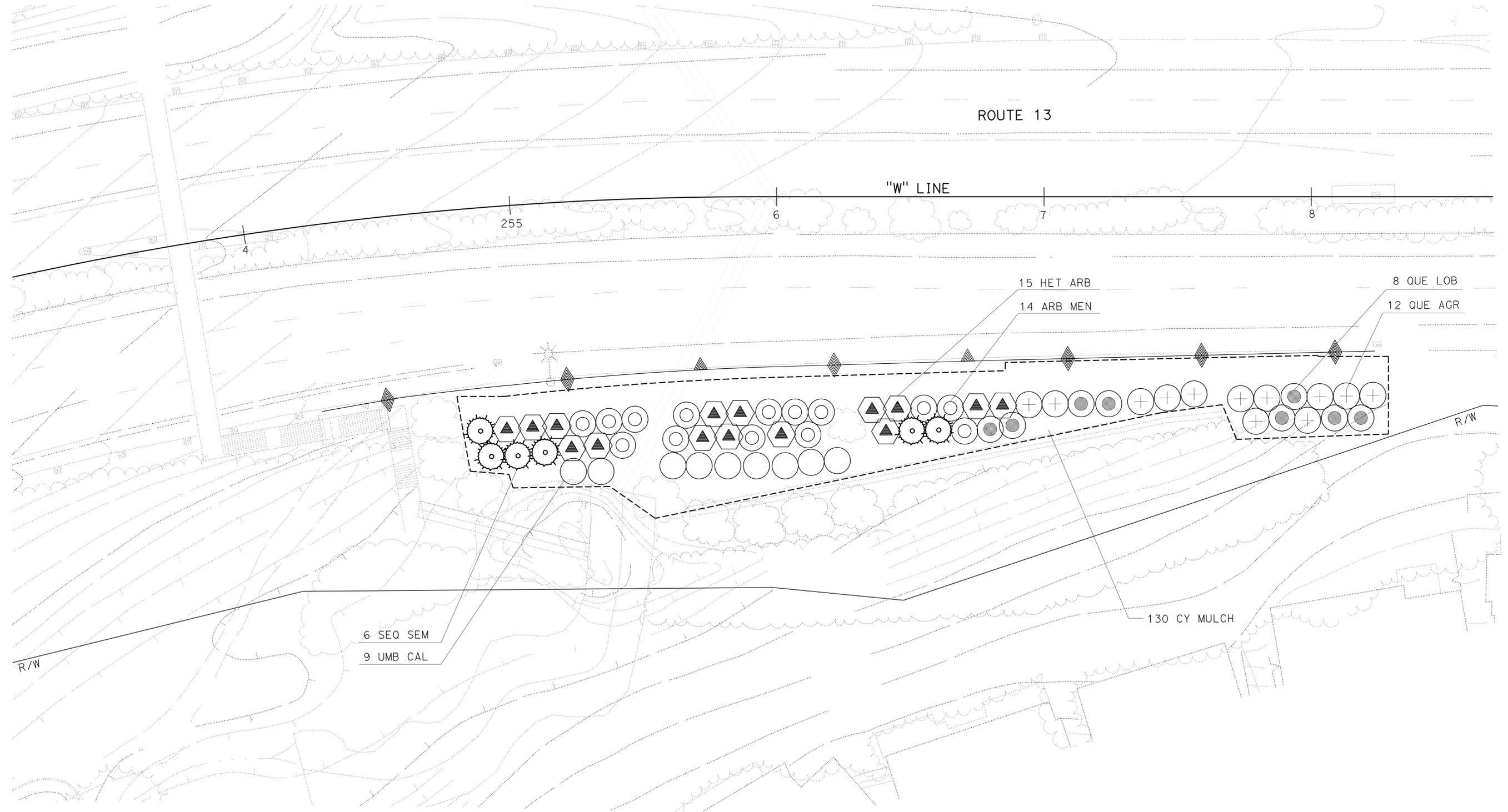
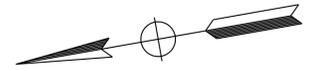
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	26	86

Dennis Calloway
LICENSED LANDSCAPE ARCHITECT

3-30-15
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.

O A K L A N D



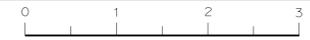
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
SENIOR LANDSCAPE ARCHITECT: LYDIA MAC
CALCULATED/DESIGNED BY: DENNIS CALLOWAY
CHECKED BY: DAVID W. ENG
DC
REVISED BY: 12-01-14

PLANTING PLAN

SCALE: 1"=20'

PP-1

APPROVED FOR PLANTING WORK ONLY



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - LANDSCAPE ARCHITECTURE
Caltrans LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 LYDIA MAC
 CALCULATED/DESIGNED BY
 CHECKED BY
 DENNIS CALLOWAY
 DAVID W. ENG
 REVISED BY
 DATE REVISED
 DC
 12-01-14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	27	86

Dennis Calloway
 LICENSED LANDSCAPE ARCHITECT
 3-30-15
 PLANS APPROVAL DATE

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WOOD MULCH

SHEET No.	TYPE	① BASIN (CY)	② AREA (CY)	SUBTOTAL PER SHEET (CY)
PP-1	WC	-	130	130
TOTAL				130

MULCH TYPES:

- C - COMPOST
- N - NITROLIZED FIR BARK
- SB - SHREDDED BARK
- TB - TREE BARK
- TT - TREE TRIMMING
- WC - WOOD CHIP

- ① - QUANTITIES SHOWN ARE TOTAL "PER PLANT" OUTSIDE OF MULCH AREAS
- ② - BASIN MULCH WITHIN MULCH AREAS IS INCLUDED WITH MULCH AREA QUANTITIES SHOWN ON PLANTING PLAN

PLANT QUANTITIES

TYPE	QUANTITY	IRON SULFATE	SOIL AMENDMENT	COMMERCIAL FERTILIZER		② BASIN MULCH	STAKES (N)	FOLIAGE PROTECTOR	ROOT PROTECTOR	TIME-RELEASE WATER ASSEMBLY
		EA	LB	CY	PACKET EA					
PLANT (GROUP B)	64	-	7.2	-	12.8	4.8	52	-	-	-
TOTAL	64	-	7.2	-	12.8	4.8	-	-	-	-

- ② - BASIN MULCH WITHIN WOOD MULCH AREAS IS INCLUDED WITH WOOD MULCH AREA QUANTITIES
- (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

LANDSCAPE QUANTITIES
LQ-1



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans WATER QUALITY

SENIOR LANDSCAPE ARCHITECT
 DAVID W. YAM

CALCULATED/DESIGNED BY
 CHECKED BY

ALEX McDONALD
 BART VAN DER ZEEUW

REVISED BY
 DATE REVISED

AKM
 01/22/15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	28	86

LICENSED LANDSCAPE ARCHITECT

3-30-15
 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 TYPE 1

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE	DEPTH	REMARKS
		DESCRIPTION	TYPE			
STEP 1	FIBER ROLLS	FIBER ROLL	8 TO 10 INCHES IN Dia	-	-	RICE STRAW FILLED, JUTE COVERED AND INSTALLATION TYPE 1
STEP 2	COMPOST	COMPOST	MEDIUM	135 CY/ACRE	1"	-
STEP 3	HYDROSEED	SEED	MIX 1	41 LB/ACRE	-	-
		FIBER	ALTERNATE	1,000 LB/ACRE	-	
		FERTILIZER	ORGANIC	500 LB/ACRE	-	
STEP 4	HYDROMULCH	FIBER	ALTERNATE	2,000 LB/ACRE	-	-
		TACKIFIER	PSYLLIUM	200 LB/ACRE	-	

SEED MIX

SEED	BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
MIX 1	KOELERIA MACRANTHA JUNEGRASS	50	8
	LEYMUS TRITICOIDES (CREEPING WILD RYE)	50	8
	STIPA PULCHRA (PURPLE NEEDLEGRASS)	50	12
	TRIFOLIUM WILLDENOVII (TOMCAT CLOVER)	50	5
	VULPIA MICROSTACHYS (SMALL FESCUE)	50	8

EROSION CONTROL LEGEND

ECL-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	29	86

LICENSED LANDSCAPE ARCHITECT
 Signature: [Signature]
 3-30-15
 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:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

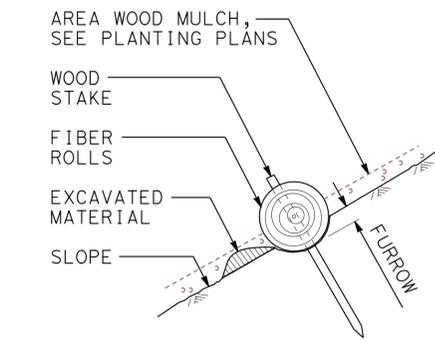
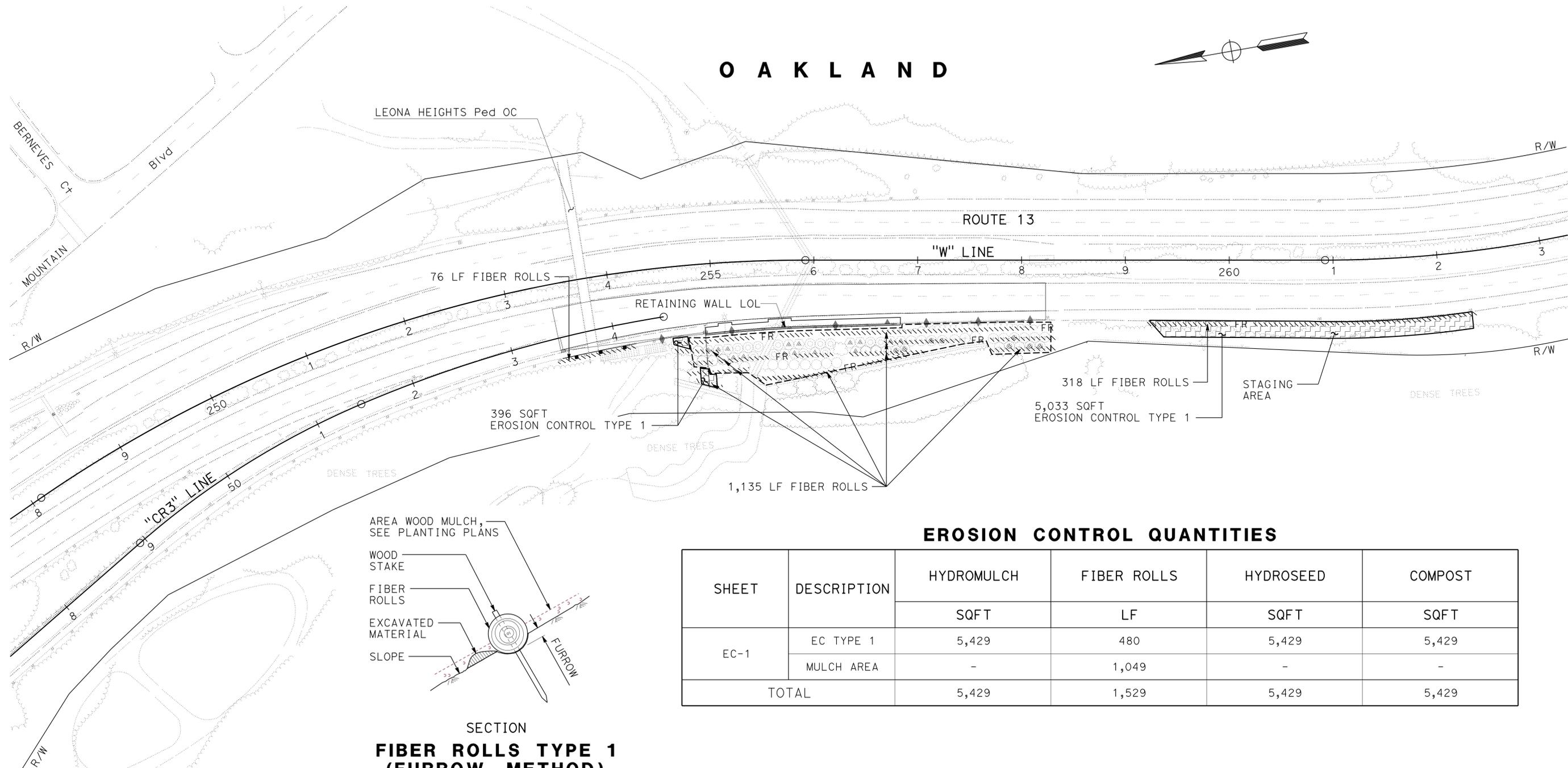
NOTES:

1. PLACE FIRST FIBER ROLLS ROW 8'-0" FROM RETAINING WALL LOL, CONCRETE BARRIER, AT EDGE OF PAVEMENT, OR EDGE OF VEGETATION CONTROL MINOR CONCRETE.
2. INSTALL FIBER ROLLS AFTER PLANTING AND IRRIGATION WORK BUT BEFORE AREA WOOD MULCH INSTALLATION.

LEGEND:

- AREA WOOD MULCH, SEE PLANTING PLANS
- EROSION CONTROL TYPE 1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Water Quality
 SENIOR LANDSCAPE ARCHITECT: DAVID W. YAM
 CHECKED BY: ALEX McDONALD
 DESIGNED BY: BART VAN DER ZEEUW
 REVISED BY: AKM
 DATE REVISED: 01/22/15



EROSION CONTROL QUANTITIES

SHEET	DESCRIPTION	HYDROMULCH	FIBER ROLLS	HYDROSEED	COMPOST
		SQFT	LF	SQFT	SQFT
EC-1	EC TYPE 1	5,429	480	5,429	5,429
	MULCH AREA	-	1,049	-	-
TOTAL		5,429	1,529	5,429	5,429

SECTION FIBER ROLLS TYPE 1 (FURROW METHOD) WITH AREA WOOD MULCH
NO SCALE

EROSION CONTROL PLAN AND QUANTITIES

SCALE: 1" = 50'

APPROVED FOR EROSION CONTROL WORK ONLY

EC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 ELECTRICAL

FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI
 CALCULATED/DESIGNED BY: SOHEILA BANA
 CHECKED BY: BARON OMYEONG
 REVISED BY: BO
 DATE REVISED: 12/5/14

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

INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. 04902

PROVIDE EQUIPMENT ITEMS ① THROUGH ⑭ PER SERVICE MIRING DIAGRAM ON SHEET E-3.
 INSTALL ENCLOSURE 3' FROM EDGE OF PAVEMENT WITH DOOR FACING EAST.
 Ctid No. 04330130004902

LOAD: 1-235 W LED LUMINAIRE (METERED)
 4-165 W LED LUMINAIRE (METERED)
 3-85 W ISL (METERED)
 75 W MERCURY VAPOR SOFFIT LUMINAIRE (METERED)

Exist SYSTEM No. 33-013-04902

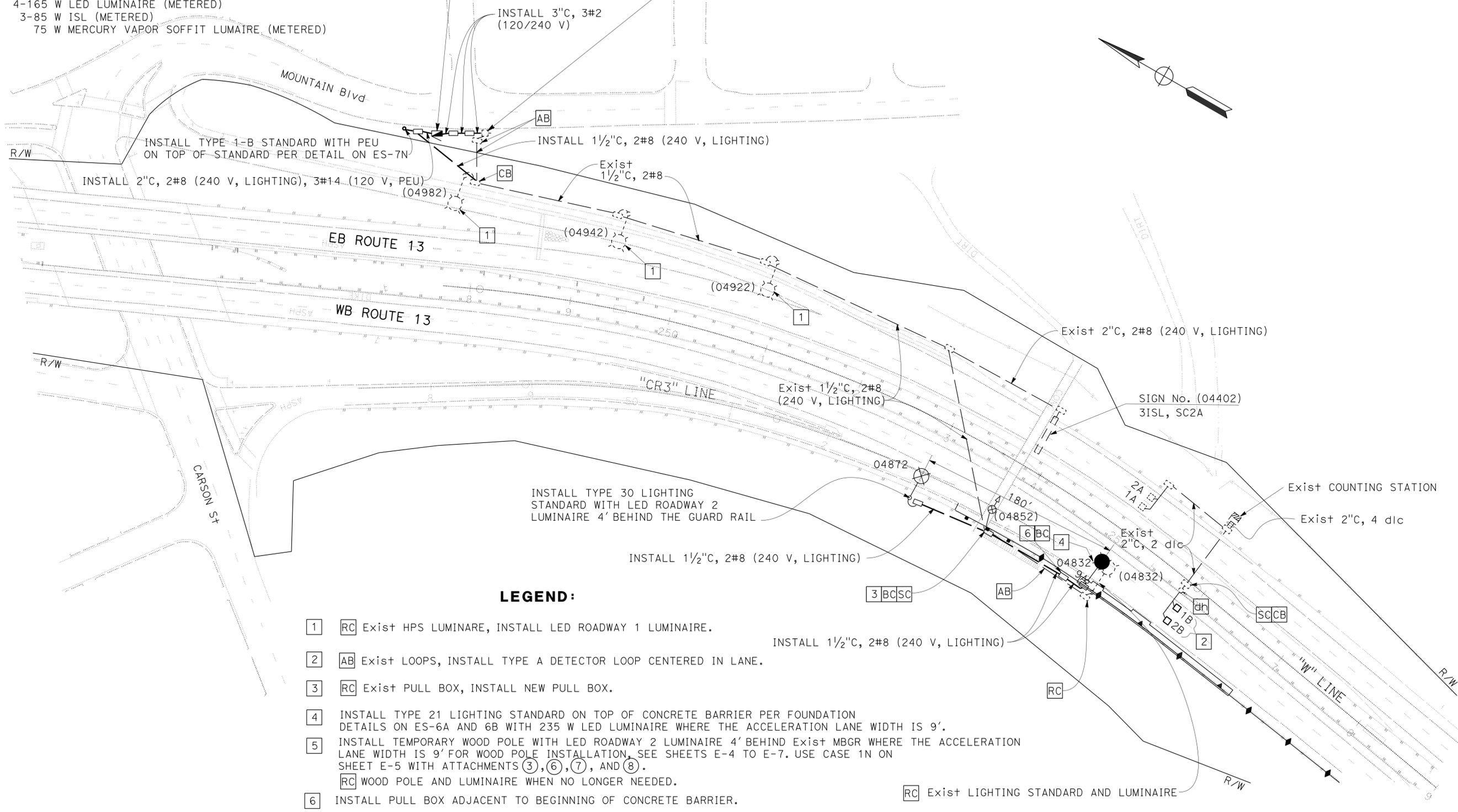
REPLACE Exist TYPE A SERVICE (120/240 V)
 ON WOOD POLE WITH TYPE H SERVICE (120/240 V)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	30	86

REGISTERED ELECTRICAL ENGINEER: *M Nou* 12/31/14
 No. 13717
 Exp. 3-30-15
 ELECT

PLANS APPROVAL DATE: 3-30-15

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.



LEGEND:

- ① RC Exist HPS LUMINAIRE, INSTALL LED ROADWAY 1 LUMINAIRE.
- ② AB Exist LOOPS, INSTALL TYPE A DETECTOR LOOP CENTERED IN LANE.
- ③ RC Exist PULL BOX, INSTALL NEW PULL BOX.
- ④ INSTALL TYPE 21 LIGHTING STANDARD ON TOP OF CONCRETE BARRIER PER FOUNDATION DETAILS ON ES-6A AND 6B WITH 235 W LED LUMINAIRE WHERE THE ACCELERATION LANE WIDTH IS 9'.
- ⑤ INSTALL TEMPORARY WOOD POLE WITH LED ROADWAY 2 LUMINAIRE 4' BEHIND Exist MBGR WHERE THE ACCELERATION LANE WIDTH IS 9' FOR WOOD POLE INSTALLATION, SEE SHEETS E-4 TO E-7. USE CASE 1N ON SHEET E-5 WITH ATTACHMENTS ③, ⑥, ⑦, AND ⑧.
 RC WOOD POLE AND LUMINAIRE WHEN NO LONGER NEEDED.
- ⑥ INSTALL PULL BOX ADJACENT TO BEGINNING OF CONCRETE BARRIER.

LIGHTING AND COUNTING STATION

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

E-1



LAST REVISION DATE PLOTTED => 06-APR-2015
 03-26-15 TIME PLOTTED => 10:44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 ELECTRICAL

FUNCTIONAL SUPERVISOR
 BEHZAD GOLEMOHAMMADI

CALCULATED/DESIGNED BY
 CHECKED BY

SOHEILA BANA
 BARON OWYEONG

REVISED BY
 DATE REVISED

BO
 12/5/14

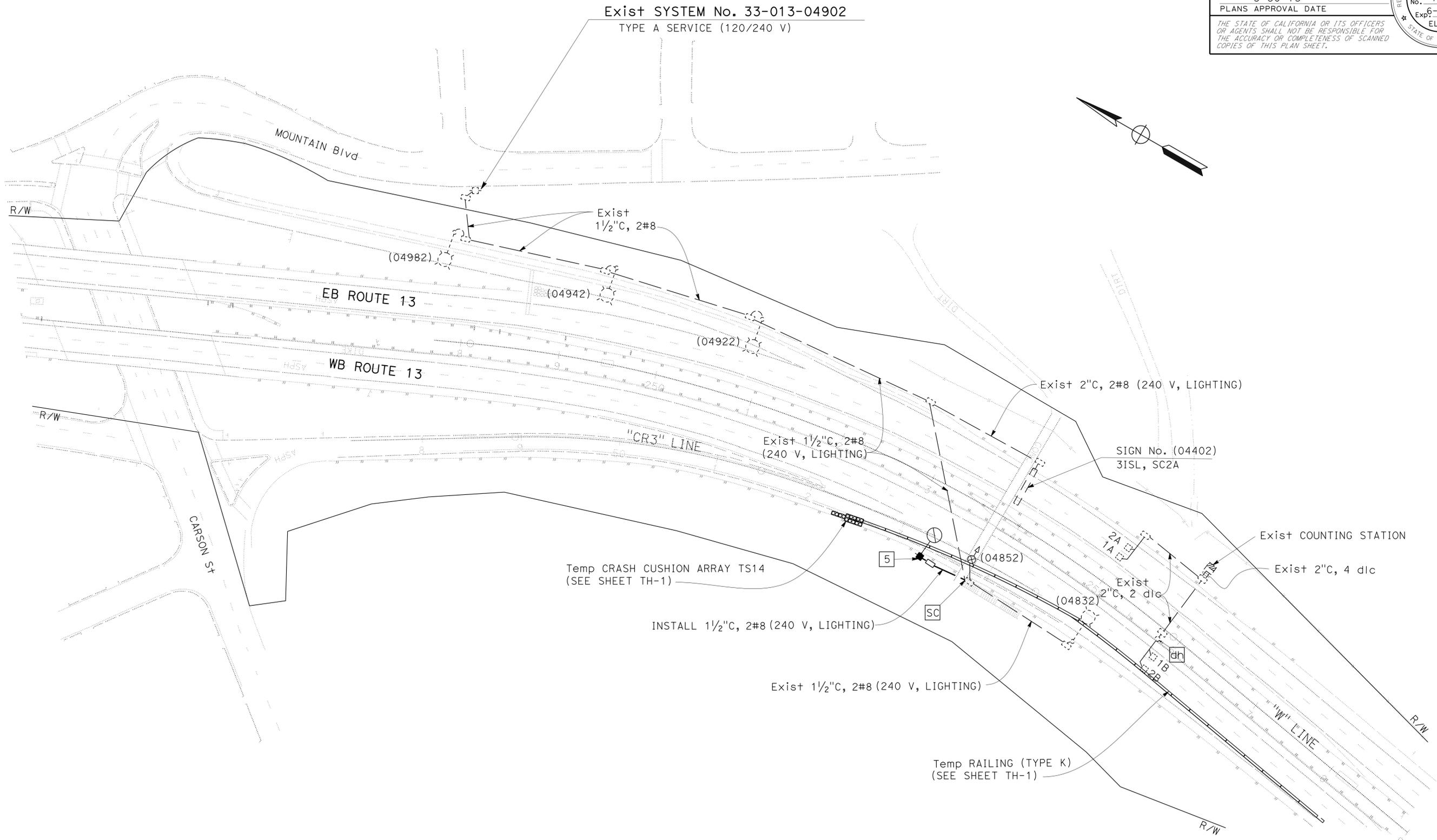
NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	31	86

REGISTERED ELECTRICAL ENGINEER DATE 12/31/14
M Nou
 3-30-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Mahmood Noii
 No. 13717
 Exp. 3-30-15
 ELECT
 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.

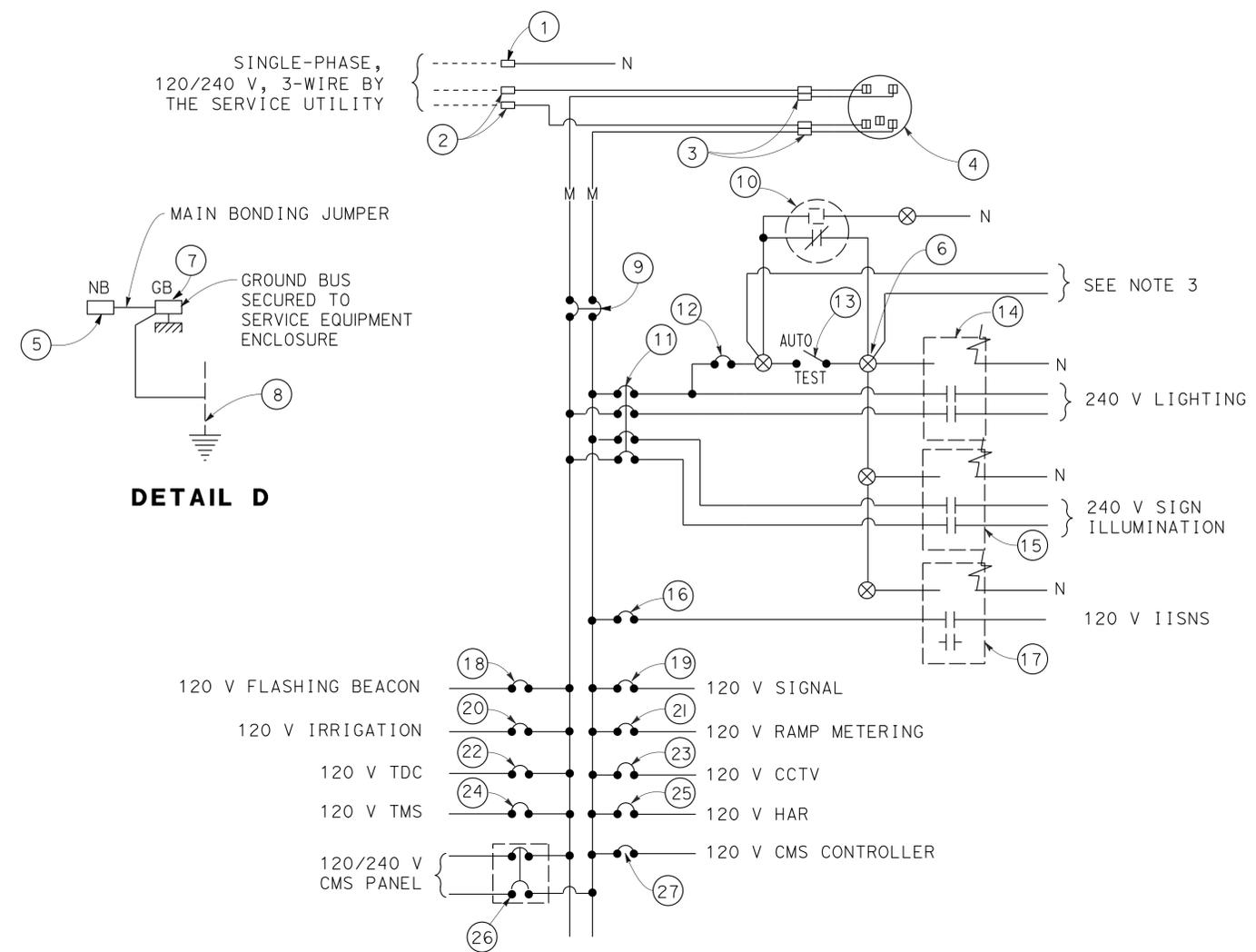


**LIGHTING
 (STAGE CONSTRUCTION)**
 SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

E-2

LAST REVISION DATE PLOTTED => 06-APR-2015 01-22-15 TIME PLOTTED => 10:44



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)
DETAIL C

NOTES: (FOR THIS SHEET ONLY)

- VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
- UNLESS OTHERWISE INDICATED ON THE PLANS, SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN.
- CONNECT TO REMOTE TEST SWITCH MOUNTED ON SIGN POST OR STRUCTURE WHEN REQUIRED.
- ITEM No. (1) AND (5) SHALL BE ISOLATED FROM THE CABINET.
- METER SOCKETS SHALL MEET SERVICE UTILITY REQUIREMENTS.
- THE LANDING LUG SHALL BE SUITABLE FOR MULTIPLE CONDUCTORS.
- PHOTOELECTRIC CONTROL SHALL BE TYPE II.
- SERVICE UTILITY WILL INSTALL THE TIME-OF-USE METER IF APPLICABLE.
- UNLESS OTHERWISE NOTED, THE MAXIMUM NUMBER OF SINGLE-POLE CIRCUIT BREAKER SPACES IN THE ENCLOSURE IS FOURTEEN.
- SEE STANDARD PLAN ES-2D FOR OTHER DETAILS.

TYPE III-A SERVICE EQUIPMENT ENCLOSURE LEGEND (120/240 V)

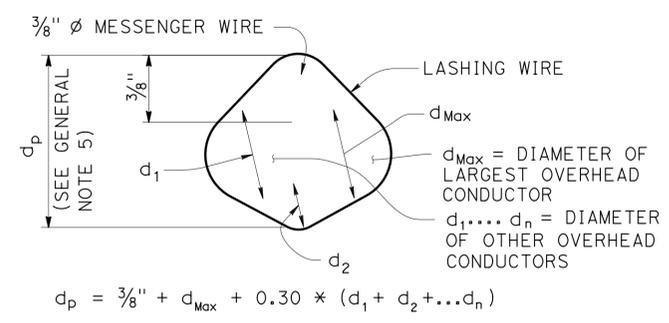
ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION	ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION
(1)	NEUTRAL LUG		(15)	30 A, 2P, NO CONTACTOR	
(2)	LANDING LUG		(16)	15 A, 120 V, 1P, CB	IISNS
(3)	TEST BYPASS FACILITY		(17)	30 A, 2P, NO CONTACTOR	
(4)	METER SOCKET AND SUPPORT		(18)	15 A, 120 V, 1P, CB	FLASHING BEACON
(5)	NEUTRAL BUS		(19)	50 A, 120 V, 1P, CB	SIGNALS
(6)	TERMINAL BLOCK		(20)	20 A, 120 V, 1P, CB	IRRIGATION
(7)	GROUND BUS		(21)	30 A, 120 V, 1P, CB	RAMP METERING
(8)	GROUNDING ELECTRODE		(22)	20 A, 120 V, 1P, CB	TELEPHONE DEMARCATION CABINET
(9)	100 A, 240 V, 2P, CB	MAIN BREAKER	(23)	30 A, 120 V, 1P, CB	CCTV
(10)	PHOTOELECTRIC UNIT (NOTE 7)		(24)	30 A, 120 V, 1P, CB	TMS
(11)	30 A, 240 V, 4P, CB	LIGHTING AND SIGN ILLUMINATION	(25)	30 A, 120 V, 1P, CB	HAR
(12)	15 A, 120 V, 1P, CB	LIGHTING AND SIGN ILLUMINATION CONTROL	(26)	30 A, 240 V, 2P, CB	CMS PANEL
(13)	15 A, 120 V, 1P, TEST SWITCH	TEST SWITCH	(27)	30 A, 120 V, 1P, CB	CMS CONTROLLER
(14)	60 A, 2P, NO CONTACTOR				

ELECTRICAL DETAILS
(SERVICE EQUIPMENT ENCLOSURE AND TYPICAL WIRING DIAGRAM, TYPE III-A SERIES)

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 ELECTRICAL
 SOHEILA BANA
 BARON OWYEONG
 BEHZAD GOLEMOHAMMADI
 BO 12/5/14

APPROVED FOR ELECTRICAL WORK ONLY



PROJECTED DEPTH OVERHEAD BUNDLE, (d_p)

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: 100 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:

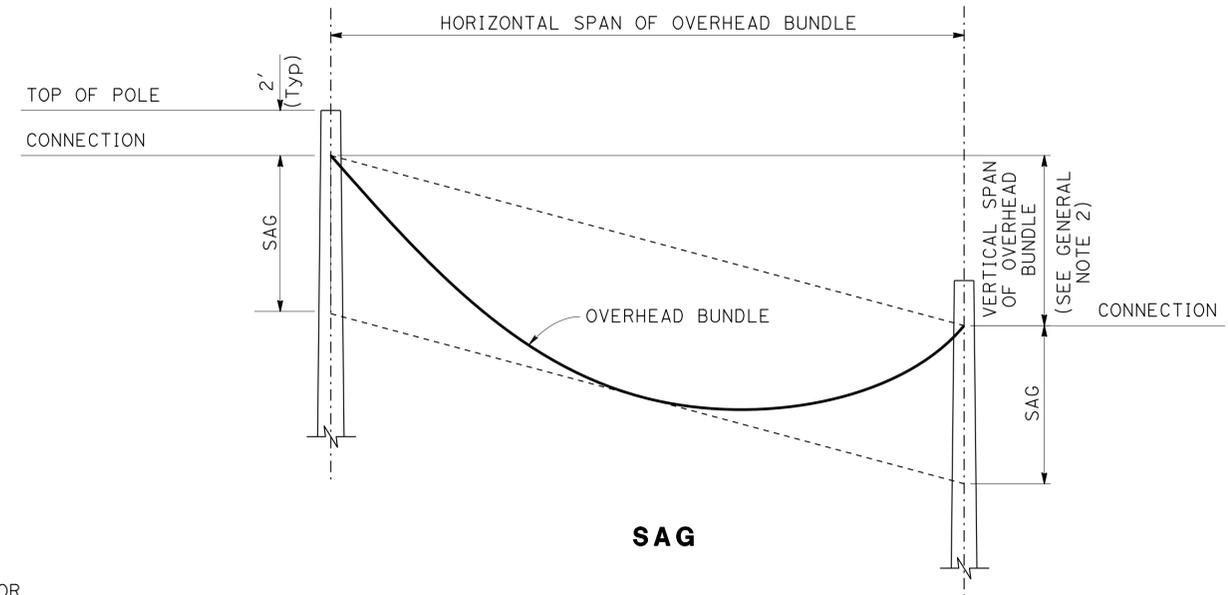
TIMBER POLES:
 $F_b = 1850$ psi
 $F_v = 110$ psi
 $F_{cp} = 230$ psi
 $F_c = 950$ psi
 $E = 1500 \times 10^3$ psi

DESIGN WIRE BREAKING STRENGTHS:

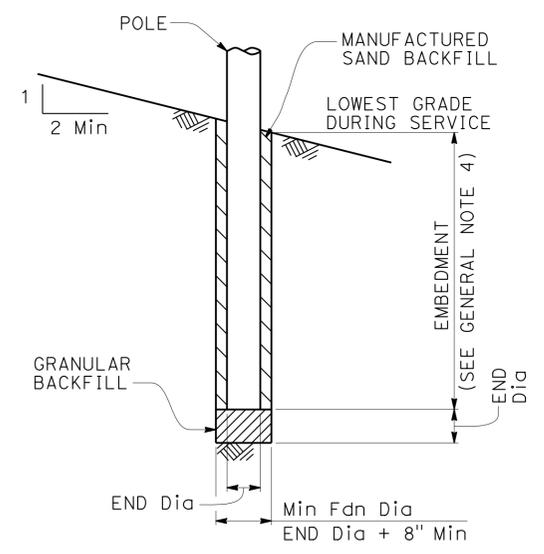
ASTM A475, UTILITIES GRADE, 7 STRAND MODIFIED BY TERMINATION EFFICIENCY FACTOR OF 0.8

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:
 $\phi = 30$ Deg, $\gamma = 120$ pcf.
SOIL ASSUMED TO BE UNSATURATED.
- AN OVERLOAD FACTOR OF 2.0 AND AN UNDERCAPACITY 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.
- GUY WIRE ANCHOR MINIMUM ALLOWABLE TENSION CAPACITY, "QA" = 8,900 LBS.



SAG



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 IN THE POLE SELECTION TABLES.
- 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_p 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
$\frac{3}{8}$ " ϕ MESSENGER WIRE	0.375	0.2730

**ELECTRICAL DETAILS
TEMPORARY WOOD POLES**

NO SCALE

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN

Caltrans

FUNCTIONAL SUPERVISOR: NESTOR P. PEREZ

REVISOR: LIN KYAIN

DATE REVISED: 12/5/14

LAST REVISION DATE PLOTTED => 06-APR-2015
TIME PLOTTED => 10:44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: NESTOR P. PEREZ
 CALCULATED/DESIGNED BY: [] CHECKED BY: []
 NICHOLAS GRGICH
 LIN KYAIN
 REVISED BY: [] DATE REVISED: []
 NG 12/5/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	34	86

Nicholas J. Grgich 12/30/14
 REGISTERED CIVIL ENGINEER DATE
 3-30-15
 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
 Nicholas J. Grgich
 No. 49123
 Exp. 9-30-16
 CIVIL
 STATE OF CALIFORNIA

LEGEND:

- WOOD POLE NO ATTACHMENTS
- A** WOOD POLE WITH ATTACHMENTS
- OH- OVERHEAD BUNDLE

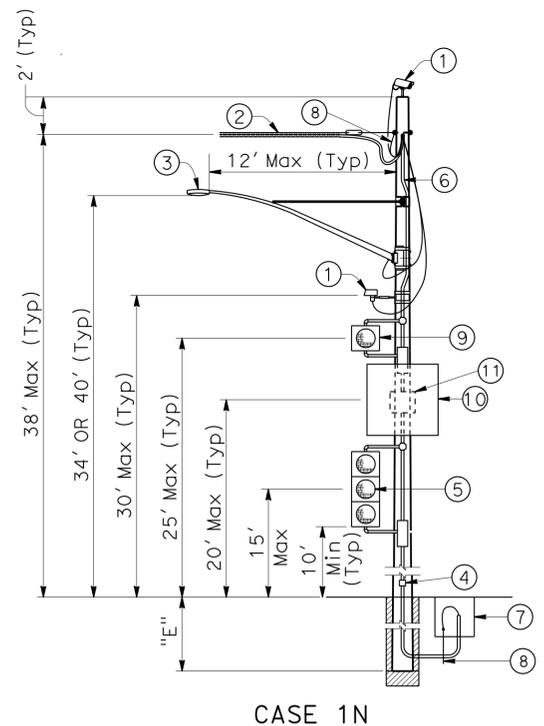
POLE SELECTION TABLE

	MAXIMUM d _p	CASE 1N				CASE 2N				CASE 3N				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
OVERHEAD BUNDLE HORIZONTAL SPAN (Max)	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'												

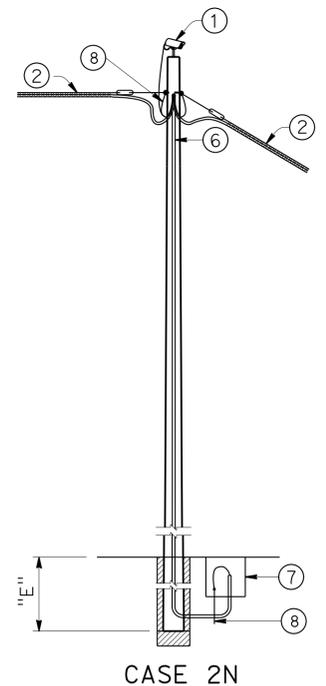
- ① CCTV CAMERA ASSEMBLY OR VEHICLE DETECTION SYSTEM
- ② OVERHEAD BUNDLE CONSISTING OF A 3/8" Ø MESSENGER WIRE, OVERHEAD CONDUCTORS, AND LASHING WIRE
- ③ LUMINAIRE WITH MAST ARM
- ④ PEDESTRIAN PUSH BUTTON ASSEMBLY OR ACCESSIBLE PUSH BUTTON ASSEMBLY
- ⑤ SIGNAL FACE WITH 3 INDICATIONS OR SINGLE SHEET SIGN PANEL (10 SQFT Max)
- ⑥ RISER WITH WEATHER HEAD AS REQUIRED
- ⑦ PULL BOX AS REQUIRED
- ⑧ GROUNDING AS REQUIRED
- ⑨ SINGLE 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 LBS
- ⑬ 25' SQFT Max TOTAL PHOTOVOLTAIC PANELS MOUNTED AS SHOWN AS REQUIRED
- ⑭ 2-12" FLASHING BEACONS

NOTES:

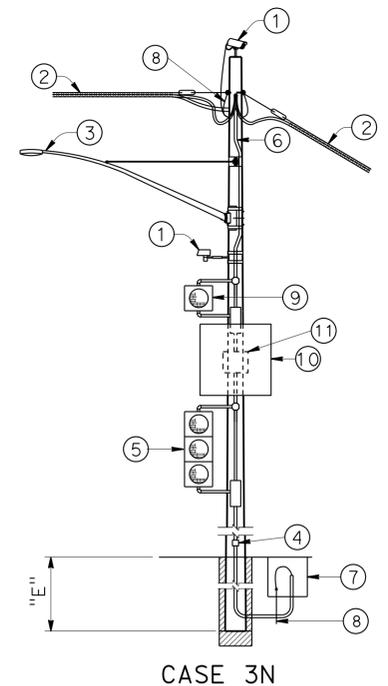
1. IN ADDITION TO OTHER RESTRICTIONS ON MAXIMUM HORIZONTAL SPAN, THIS HORIZONTAL SPAN MUST NOT EXCEED 100'.
2. CASES 1N, 3N AND 4N MAY SUBSTITUTE THE ATTACHMENTS SHOWN IN CASE 5N IF THE PHOTOVOLTAIC PANEL IS NOT INCLUDED.
3. FOR CASE 1N WITHOUT AN OVERHEAD BUNDLE (ITEM ②) USE MINIMUM POLE CLASS H-1 WITH E=11'.



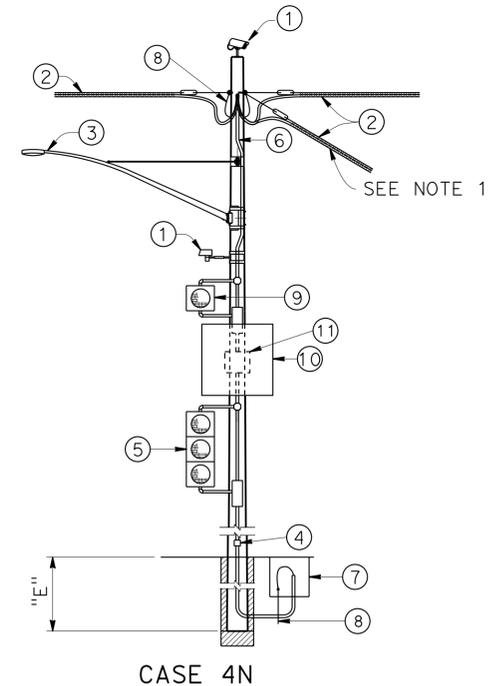
CASE 1N
POLE AT DEAD END WITH ATTACHMENTS
 SEE NOTE 2



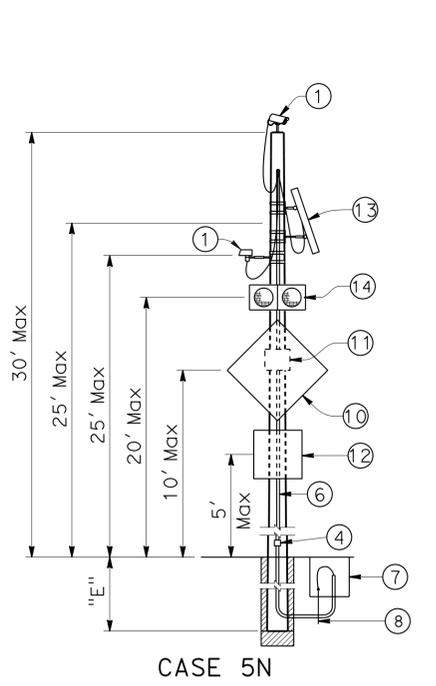
CASE 2N
POLE AT TANGENT WITHOUT ATTACHMENTS



CASE 3N
POLE AT TANGENT OR CORNER WITH ATTACHMENTS
 SEE NOTE 2

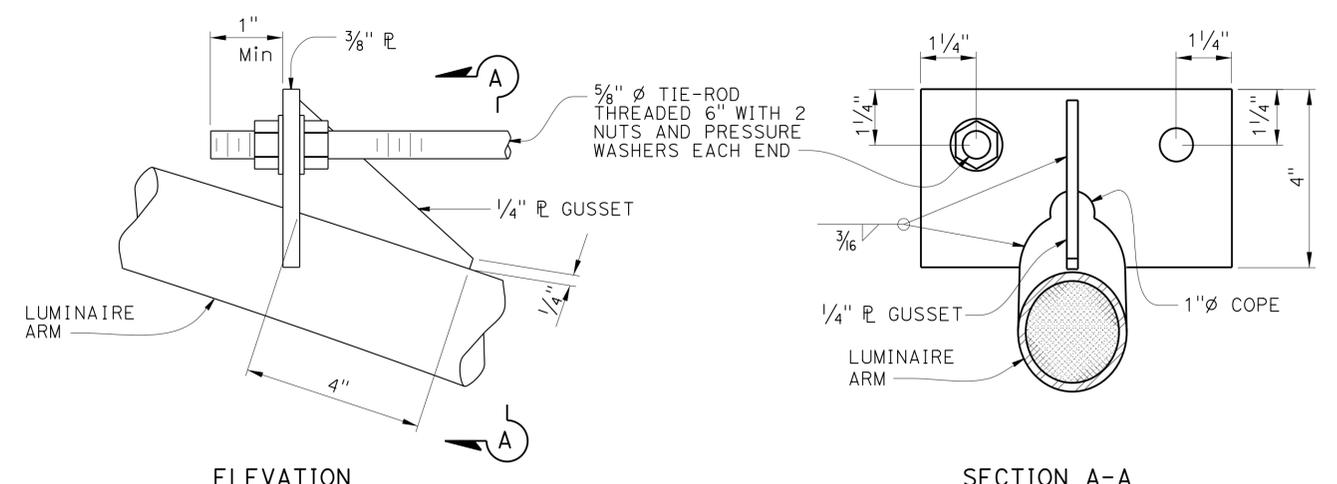


CASE 4N
POLE AT JUNCTION WITH ATTACHMENTS
 SEE NOTE 2



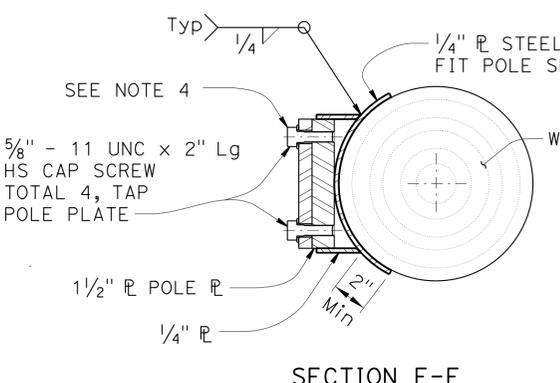
CASE 5N
POLE WITHOUT OVERHEAD BUNDLE WITH ATTACHMENTS

ELECTRICAL DETAILS
TEMPORARY WOOD POLES
NON-GUYED - NO SIGNAL ON SPANS
 NO SCALE **E-5**

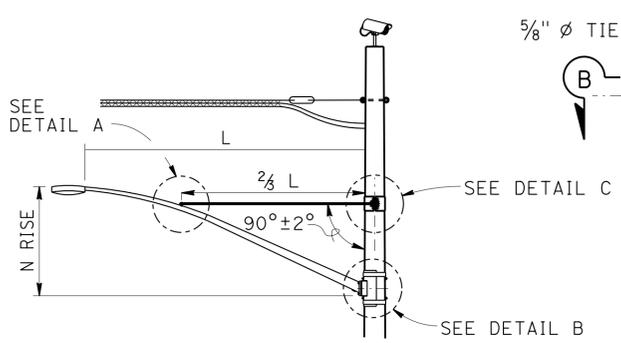


DETAIL A
TIE-ROD AT LUMINAIRE ARM

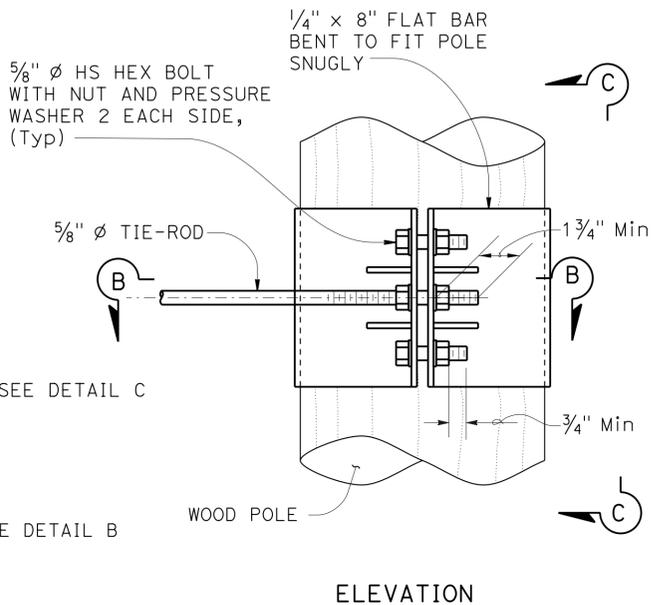
- NOTES:**
- LUMINAIRE MAST ARMS MUST BE IN COMPLIANCE WITH STANDARD PLAN ES-6D WITH NOTED MODIFICATIONS.
 - VERIFY POLE DIMENSIONS AT TIE-ROD ATTACHMENT HEIGHT. FABRICATE 8" FLAT BAR WITH "L" DIMENSION TO MAINTAIN AN OPEN GAP BETWEEN FLANGES IN FINISHED INSTALLATION.
 - NOT ALL SCREW HEADS AND BOLT HEADS ARE SHOWN FOR CLARITY.
 - MAST ARM NOT SHOWN FOR CLARITY.



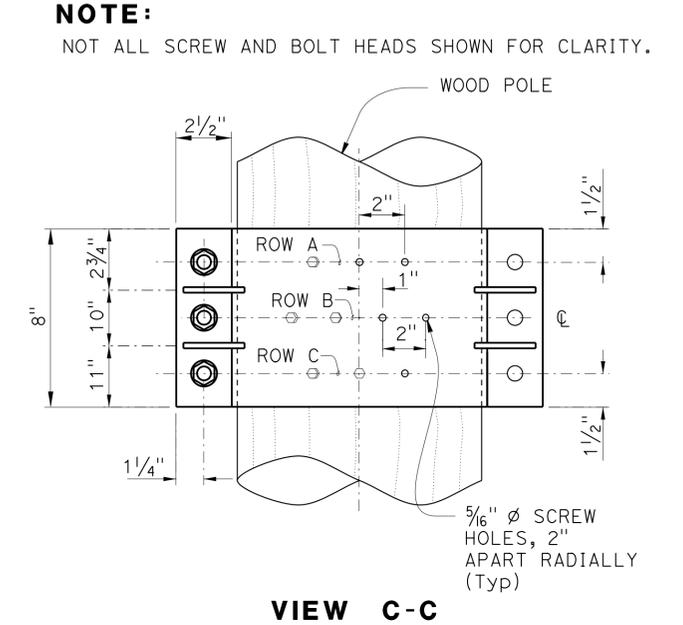
LUMINAIRE MAST ARM DATA			
PROJECTED LENGTH	N RISE	Min OD AT POLE	NOMINAL THICKNESS
6'-0"	2'-0"±	3 1/4"	0.1196"
8'-0"	2'-6"±	3 1/2"	
10'-0"	3'-3"±	3 3/8"	
12'-0"	4'-3"±	3 7/8"	



LUMINAIRE MAST ARM

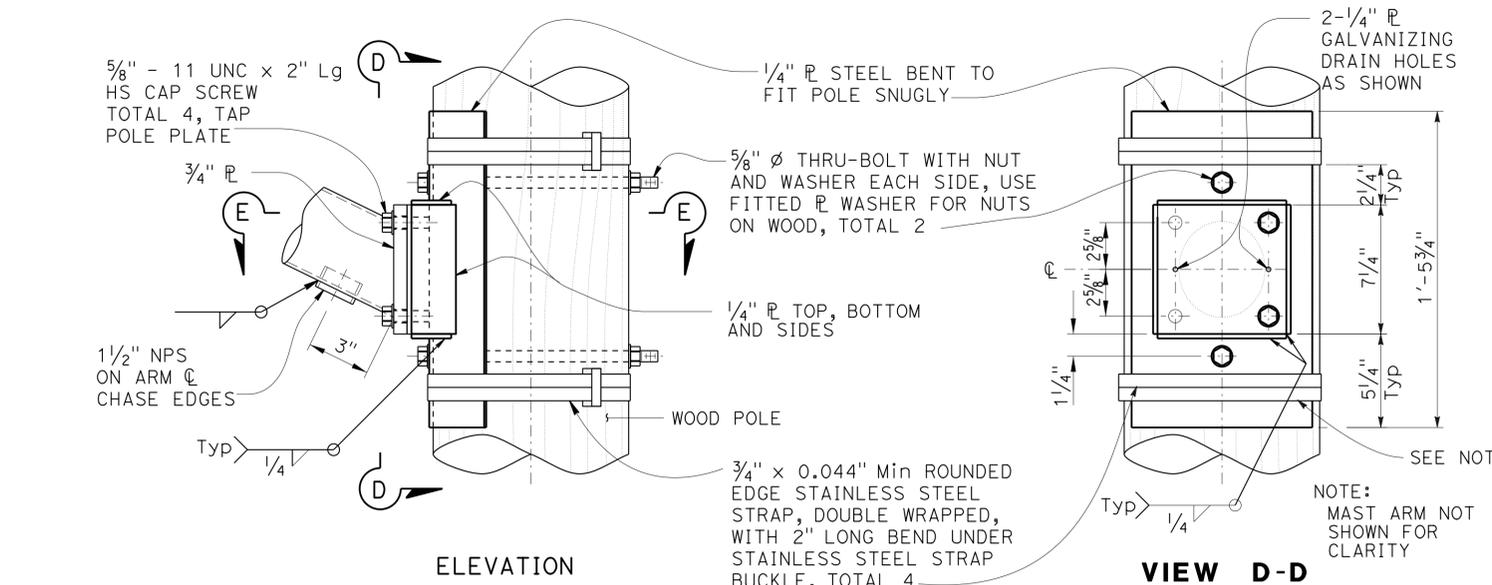


ELEVATION

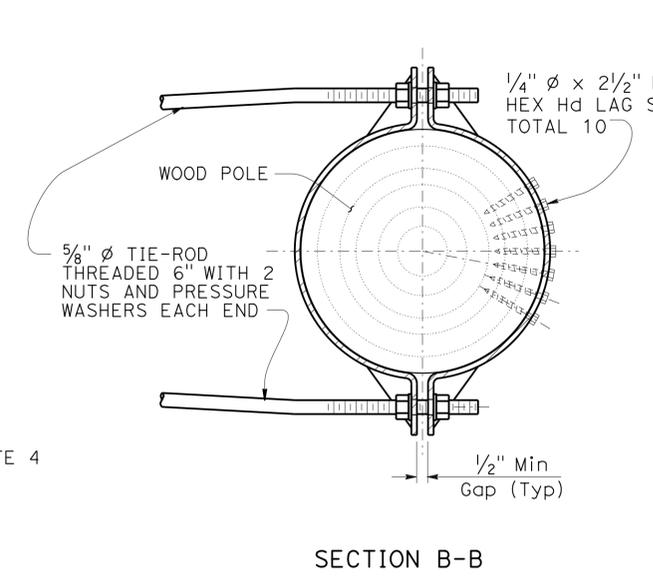


VIEW C-C

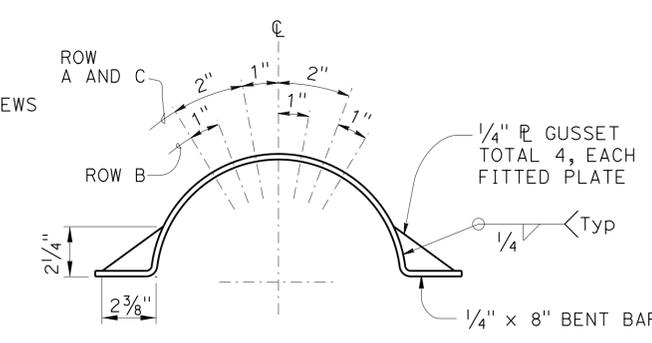
NOTE:
NOT ALL SCREW AND BOLT HEADS SHOWN FOR CLARITY.



DETAIL B
ARM CONNECTION DETAILS



SECTION B-B



DETAIL C
TIE-ROD AT POLE

LAG SCREW AND GUSSET PLATE LAYOUT

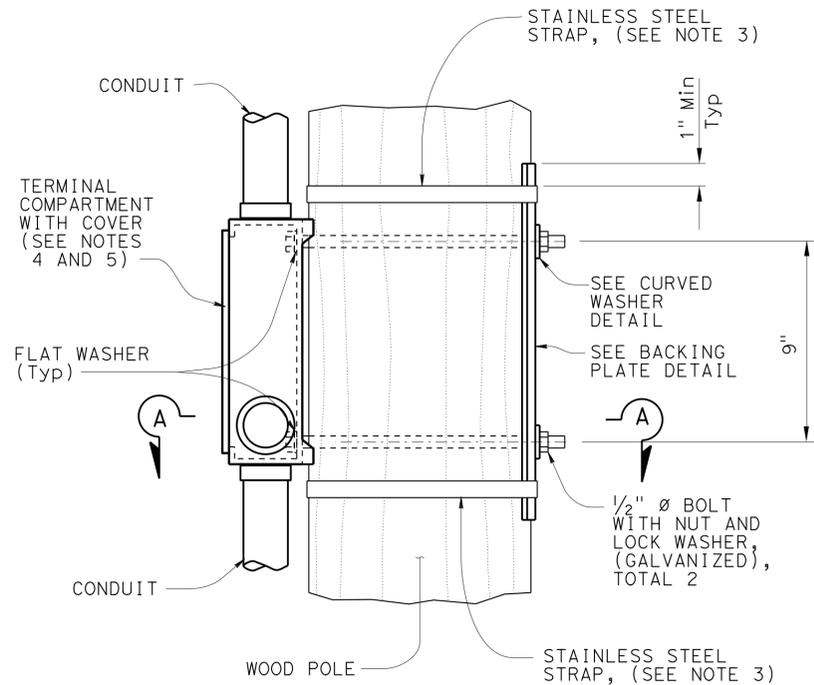
DETAIL No. 3
ELECTRICAL DETAILS
TEMPORARY WOOD POLES
NO SCALE
E-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 FUNCTIONAL SUPERVISOR: NESTOR P. PEREZ
 CALCULATED/DESIGNED BY: NICHOLAS GRIGICH
 CHECKED BY: LIN KYAIN
 REVISED BY: NG
 DATE REVISED: 12/5/14
 USERNAME => s132175
 DGN FILE => 0413000228u006.dgn
 BORDER LAST REVISED 7/2/2010
 RELATIVE BORDER SCALE IS IN INCHES
 UNIT 0733
 PROJECT NUMBER & PHASE
 04130002281

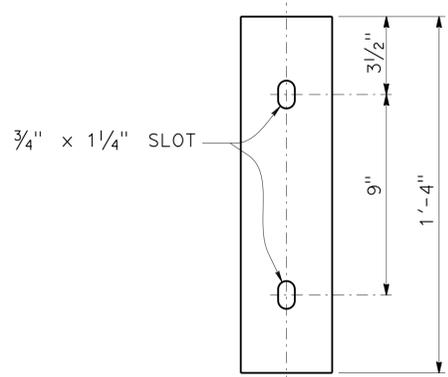
LAST REVISION: DATE PLOTTED => 06-APR-2015
 01-22-15 TIME PLOTTED => 10:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	36	86
<i>Nicholas Grgich</i> REGISTERED CIVIL ENGINEER			12/30/14 DATE		
3-30-15 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>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	NESTOR P. PEREZ
CALCULATED/DESIGNED BY	CHECKED BY
NICHOLAS GRGICH	LIN KYAIN
REVISED BY	DATE REVISED
NG	12/5/14



ELEVATION

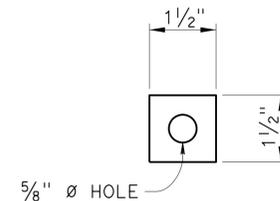


ELEVATION

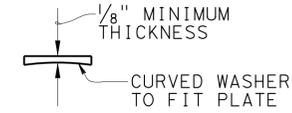


PLAN

BACKING PLATE
DETAIL



ELEVATION

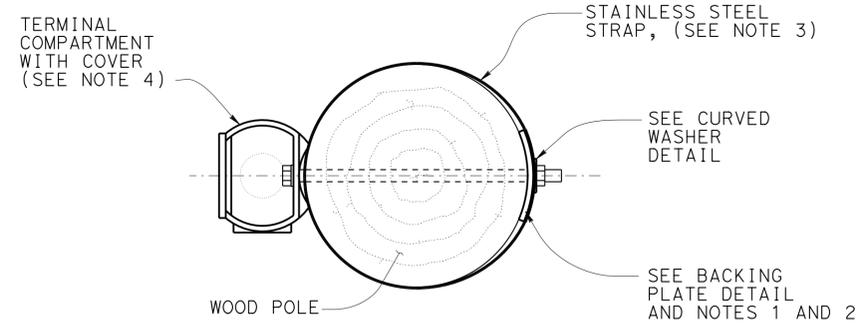


PLAN

CURVED WASHER
DETAIL

NOTES:

1. VERIFY POLE DIMENSIONS AT TERMINAL COMPARTMENT FOR FABRICATION OF BACKING PLATE AND CURVED WASHER.
2. BACKING PLATE TO BE GALVANIZED 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 MISCELLANEOUS DETAILS FOR SIGNAL MOUNTING NOT SHOWN, SEE STANDARD PLAN ES-4D.
5. IF THE TERMINAL COMPARTMENT HAS A CABLE ENTRY GUIDE ON THE REAR FACE, REMOVE THE CABLE ENTRY GUIDE TO A LEVEL THAT WILL NOT INTERFERE WITH THE WOOD POST. CLOSE ANY UNUSED CABLE ENTRY LOCATIONS WITH RAIN-TIGHT CAP.



SECTION A-A

**SIDE MOUNTING
TERMINAL COMPARTMENT**

DETAIL No. 4

**ELECTRICAL DETAILS
TEMPORARY WOOD POLES**

NO SCALE

E-7

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

FUNCTIONAL SUPERVISOR
 BEHZAD GOLEMOHAMMADI

CALCULATED/DESIGNED BY
 CHECKED BY

SOHEILA BANA
 BARON OWYEONG

REVISED BY
 DATE REVISED

BO
 12/5/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	37	86

M Nou 12/31/14
 REGISTERED ELECTRICAL ENGINEER DATE

3-30-15
 PLANS APPROVAL DATE

Mahmood Noii
 No. 13717
 Exp. 6-30-15
 ELECT

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.

SHEET No.	TYPE 21 STANDARD LIGHTING	TYPE 30 LIGHT STANDARD	TEMPORARY WOOD POLE	HPS 200 W	LED LUMINAIRE ROADWAY 1	LED LUMINAIRE ROADWAY 2	SERVICE CABINET	SC	DETECTOR LOOP TYPE A	PB	PB (9A)	CONDUIT			CONDUCTOR		
												1 1/2"	2"	3"	No. 2	No. 8	No. 14
	EA											FT					
E-1	1	1			4	1	1	2	2	5	1	250	50	100	300	500	100
E-2			1	1				1		1		20				150	
TOTAL	1	1	1	1	4	1	1	3	2	6	1	270	50	100	300	650	100

ELECTRICAL QUANTITIES

LAST REVISION | DATE PLOTTED => 06-APR-2015
 01-22-15 TIME PLOTTED => 10:45

	M	
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	
	N	
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	
	O	
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	
	P	
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	

	P continued	
PG	PROFILE GRADE	
PI	POINT OF INTERSECTION	
PJP	PARTIAL JOINT PENETRATION	
Pkwy	PARKWAY	
P, 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	PREFORMED 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	
	Q	
Qty	QUANTITY	
	R	
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	

	S	
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	
£	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	
	T	
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	

	T continued	
TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL	
Typ	TYPICAL	U
UC	UNDERCROSSING	
UD	UNDERDRAIN	
UG	UNDERGROUND	
UON	UNLESS OTHERWISE NOTED	
UP	UNDERPASS	V
V	VALVE, DESIGN SPEED	
Var	VARIABLE, VARIES	
VC	VERTICAL CURVE	
VCP	VITRIFIED CLAY PIPE	
Vert	VERTICAL	
Via	VIADUCT	
Vol	VOLUME	W
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	
WWLOL	WINGWALL LAYOUT LINE	X
X Sec	CROSS SECTION	
Xing	CROSSING	Y
Yr	YEAR	
Yrs	YEARS	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	38	86

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 3-30-15

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 ³ , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kíp	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	Ala	13	4.9	39	86

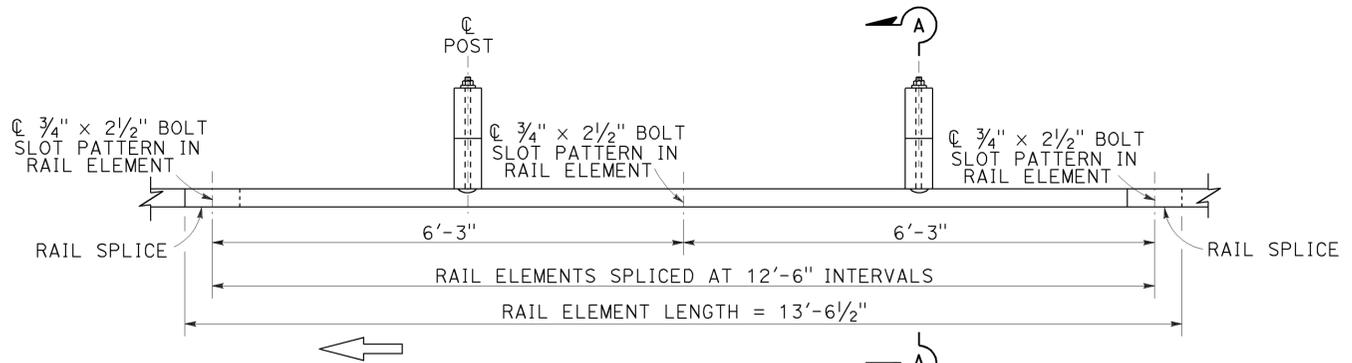
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

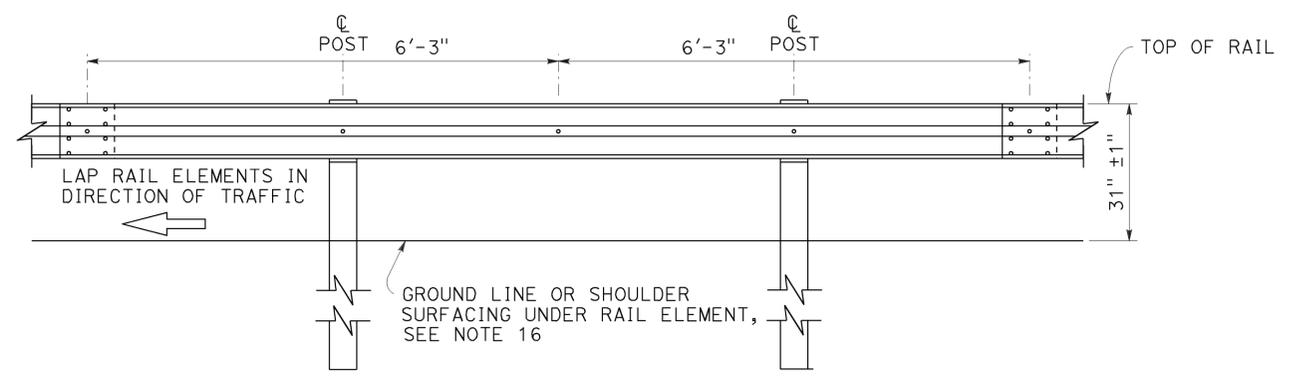
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 3-30-15

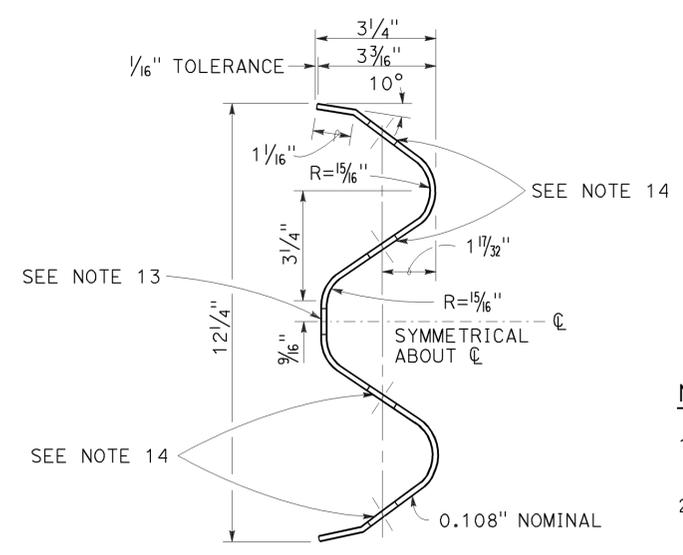


PLAN



ELEVATION

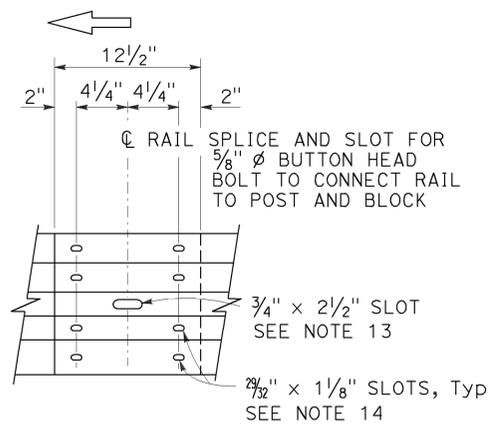
MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



SECTION THRU RAIL ELEMENT

NOTES:

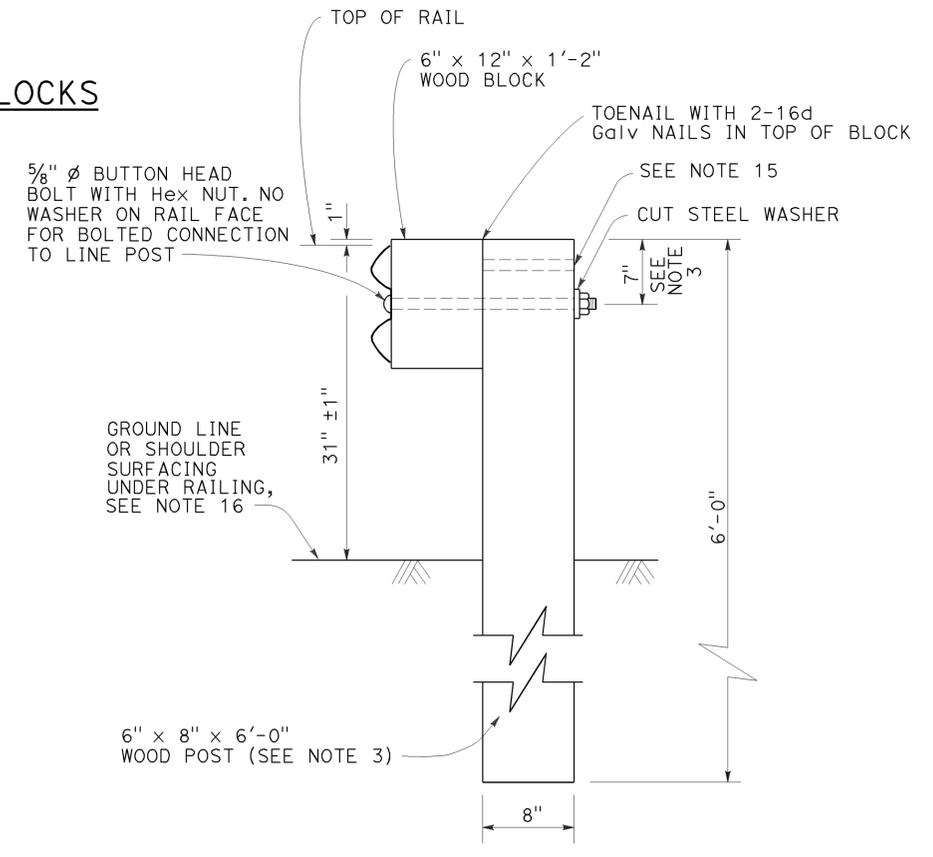
- For details of steel post installations, see Revised Standard Plan RSP A77L2.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
- For additional installation 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 railing, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For MGS connection details to abutments and walls, see Revised Standard Plan RSP A77U3.
- For typical MGS delineation and dike positioning details, see Revised Standard Plan RSP A77N4.
- 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".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Revised Standard Plan RSP A77N1.
- Install posts in soil.



ELEVATION

RAIL ELEMENT SPLICE DETAIL

- Connect the over lapped end of the rail elements with 5/8" ϕ 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" ϕ 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.



SECTION A-A TYPICAL WOOD LINE POST INSTALLATION
See Note 4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
STANDARD RAILING SECTION
(WOOD POST WITH
WOOD BLOCK)**

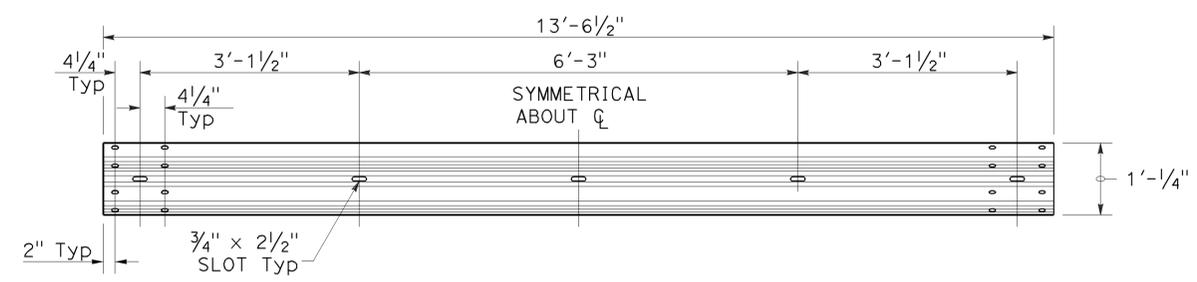
NO SCALE

RSP A77L1 DATED JULY 19, 2013 SUPPLEMENTS STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

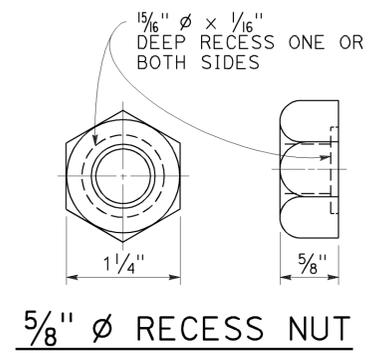
TO ACCOMPANY PLANS DATED 3-30-15



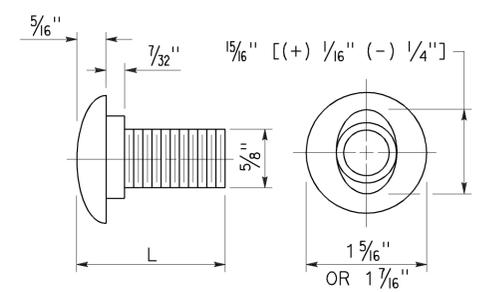
TYPICAL RAIL ELEMENT

NOTE:

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



5/8" Ø RECESS NUT

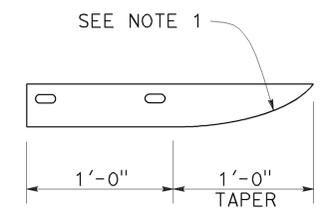


5/8" Ø BUTTON HEAD BOLT

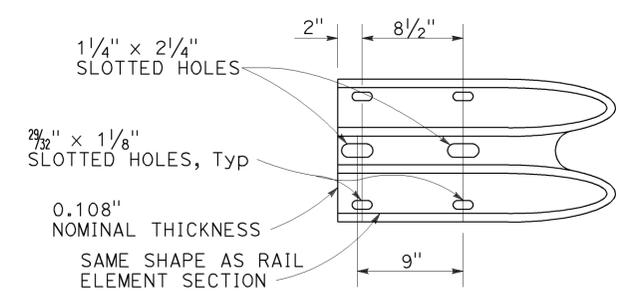
BUTTON HEAD BOLT

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	Ala	13	4.9	41	86

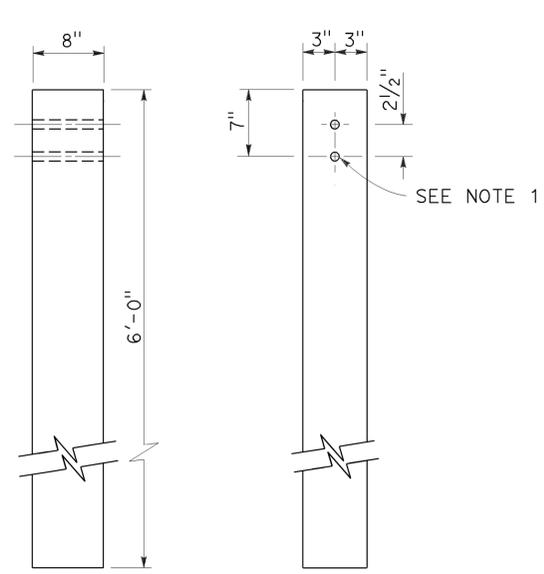
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

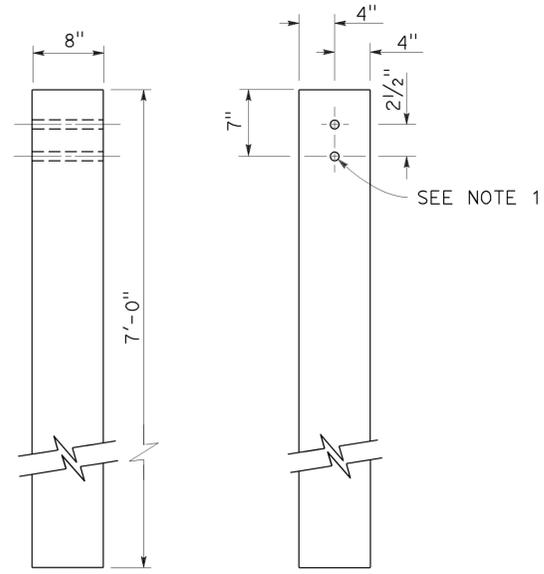
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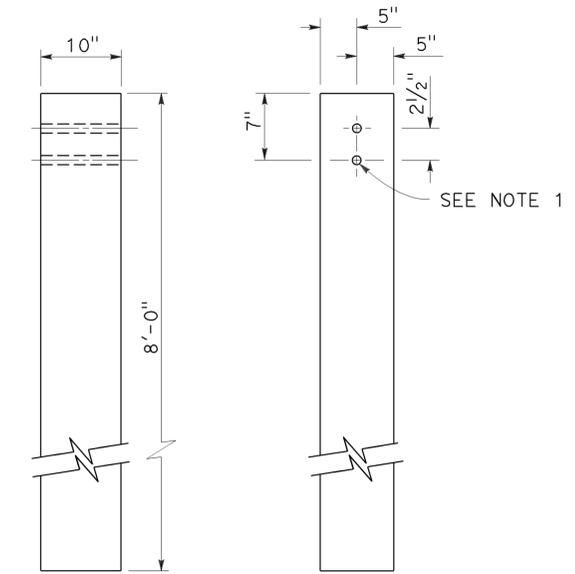
TO ACCOMPANY PLANS DATED 3-30-15



SIDE FRONT
6" x 8" WOOD POST
See Note 3



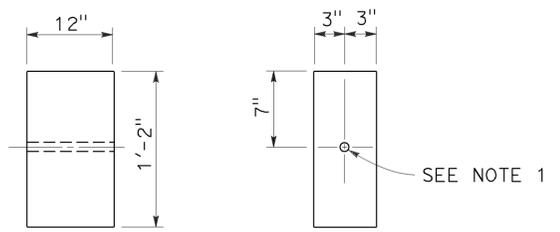
SIDE FRONT
8" x 8" WOOD POST
See Note 4



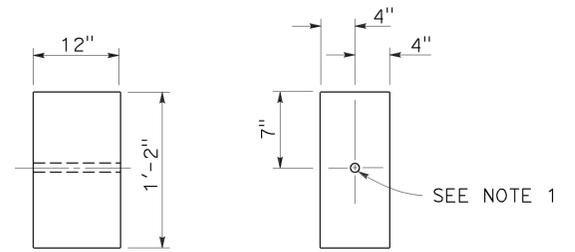
SIDE FRONT
10" x 10" WOOD POST
See Note 5

NOTES:

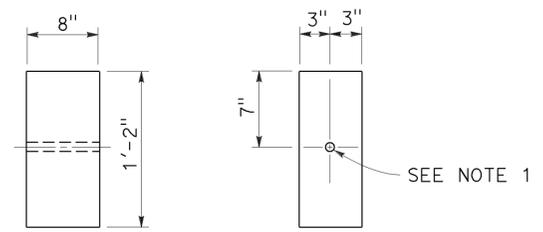
1. All holes in wood posts and blocks shall be 3/4" Dia ± 1/16".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post and 8" x 12" block combination is typically used where strengthened line post sections of MGS are warranted to shield fixed objects.
6. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" wood blocks.



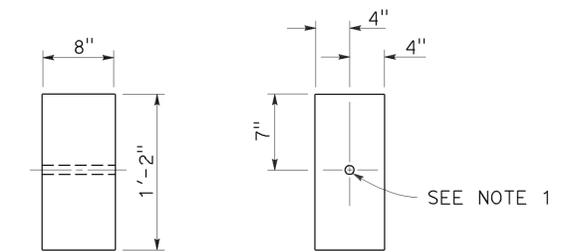
SIDE FRONT
6" x 12" WOOD BLOCK
See Note 3



SIDE FRONT
8" x 12" WOOD BLOCK



SIDE FRONT
6" x 8" WOOD BLOCK
Only for use with metal beam guard rail see Note 6



SIDE FRONT
8" x 8" WOOD BLOCK
Only for use with metal beam guard rail see Note 6

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
WOOD POST AND
WOOD BLOCK DETAILS**

NO SCALE

RSP A77N1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N1

2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	42	86

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July 19, 2013
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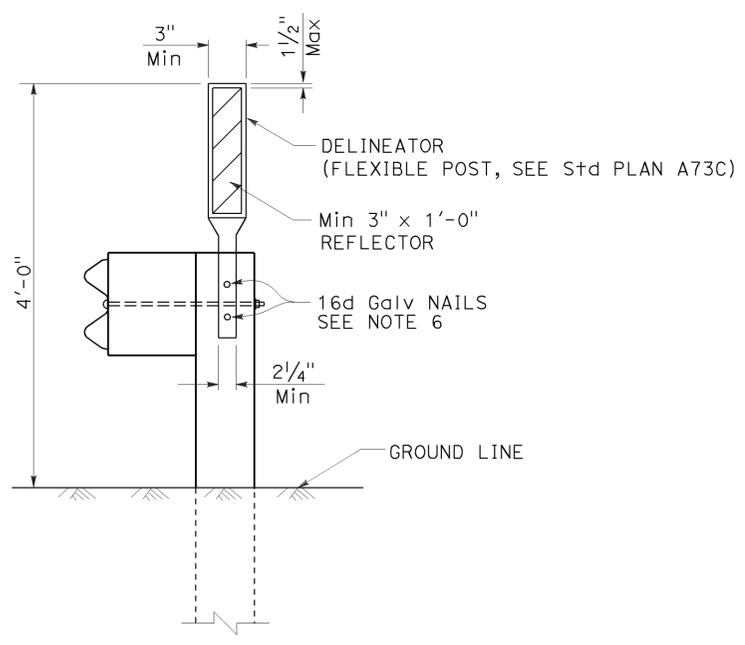
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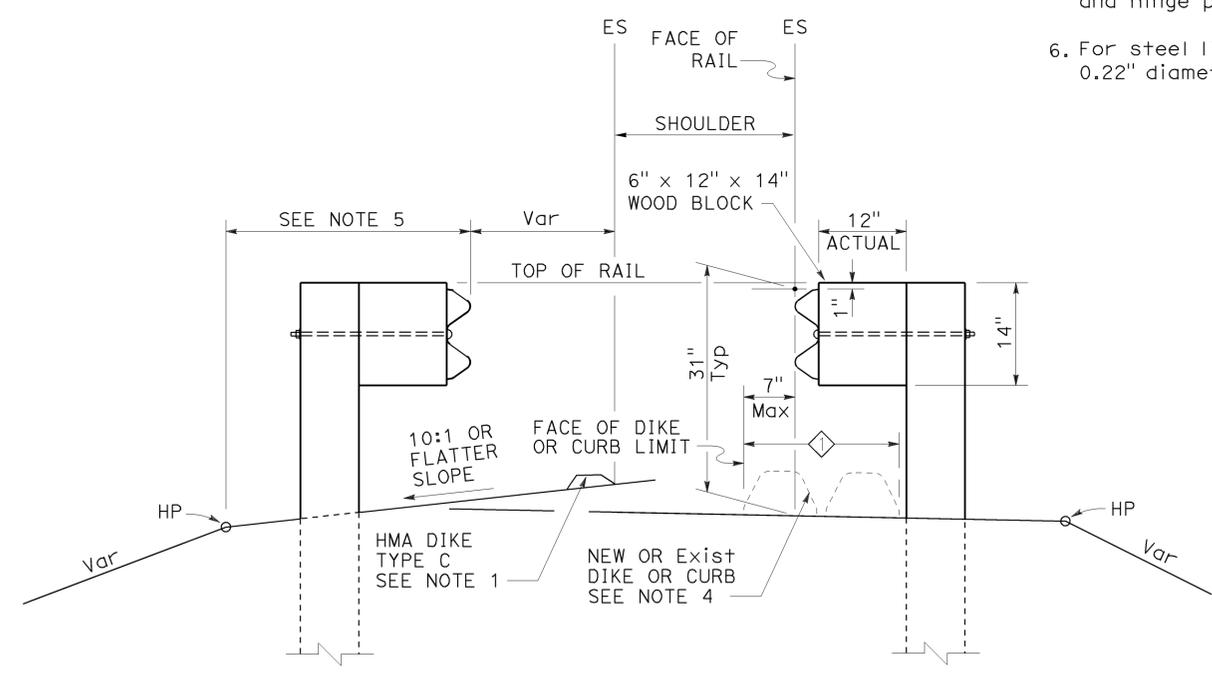
TO ACCOMPANY PLANS DATED 3-30-15

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	Ala	13	4.9	43	86

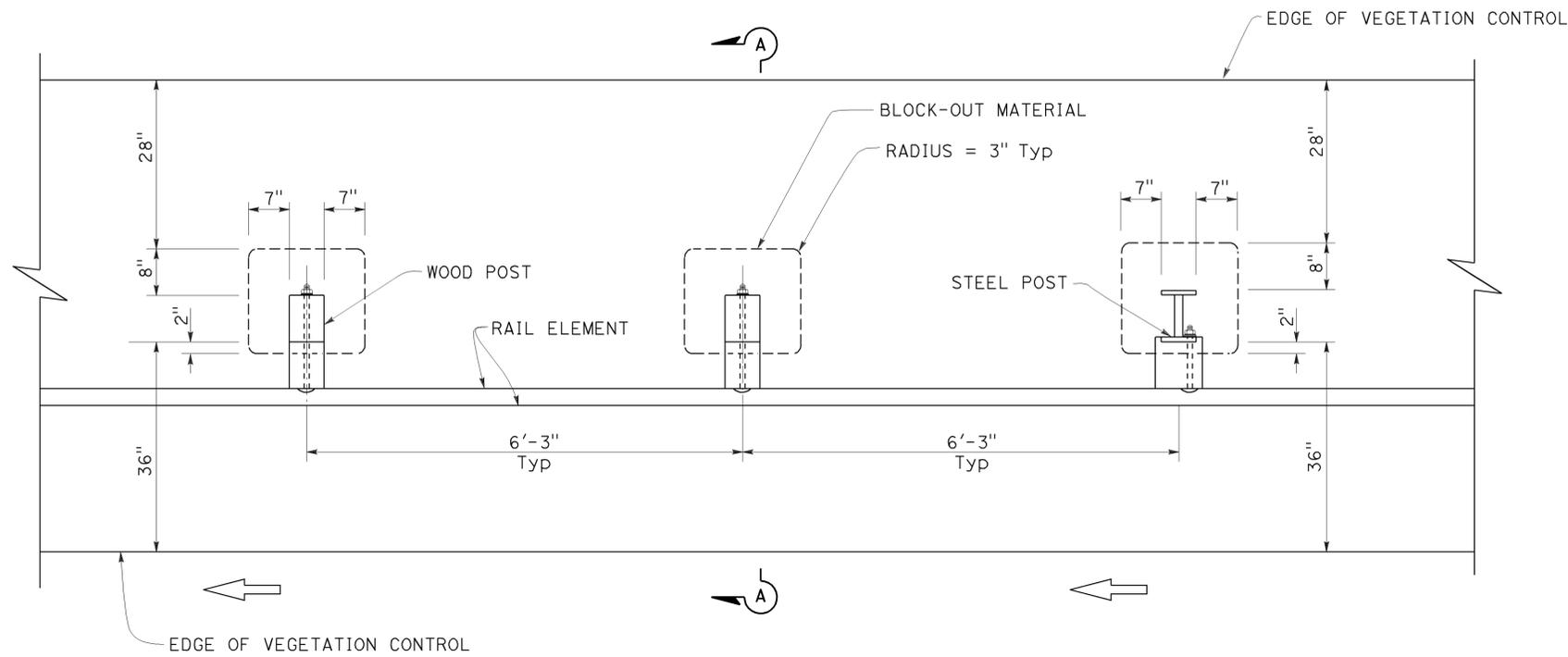
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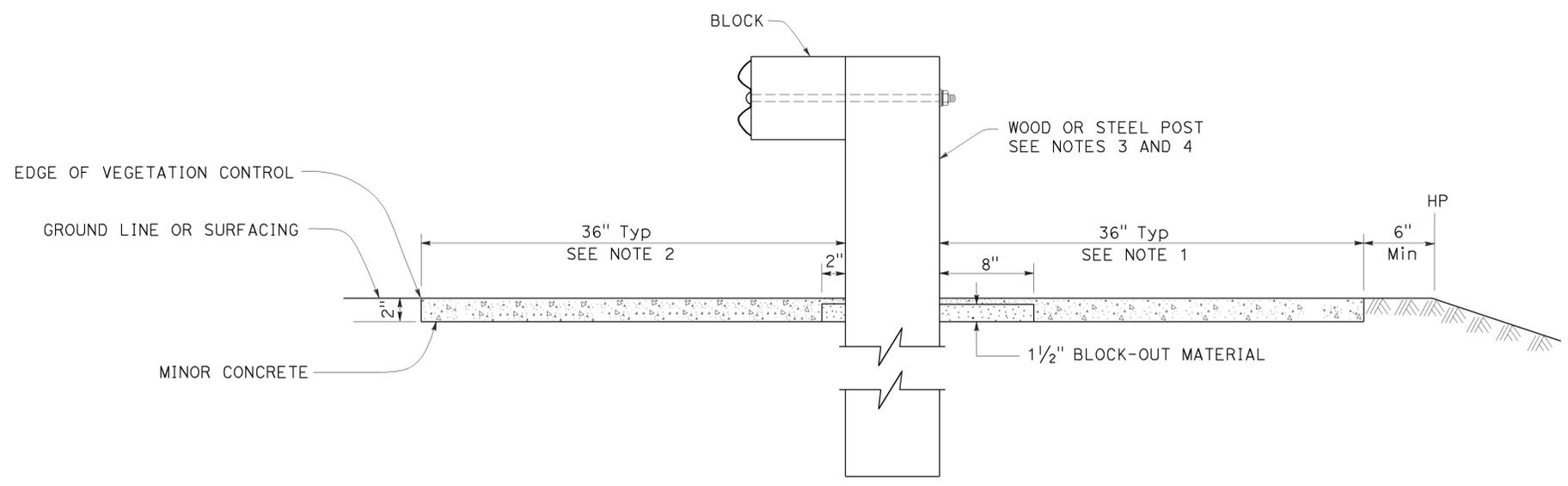
TO ACCOMPANY PLANS DATED 3-30-15



PLAN

NOTES:

1. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
3. For wood post sizes, see Revised Standard Plan RSP A77N1.
4. For steel post sizes, see Revised Standard Plan RSP A77N2.
5. For details not shown, see Revised Standard Plans RSP A77L1 and RSP A77L2.



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
STANDARD RAILING SECTION**

NO SCALE

RSP A77N5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N5

2010 REVISED STANDARD PLAN RSP A77N5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	44	86

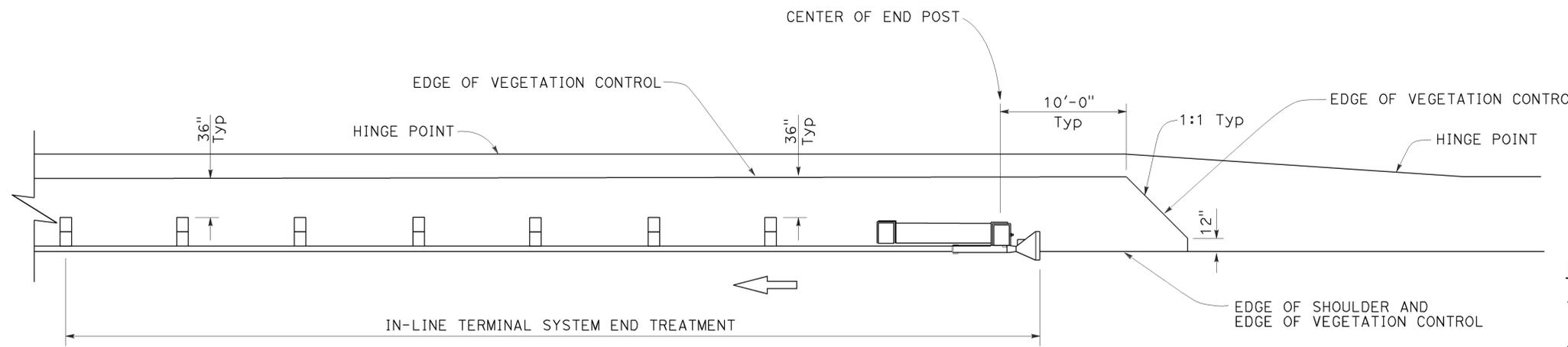
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July 19, 2013
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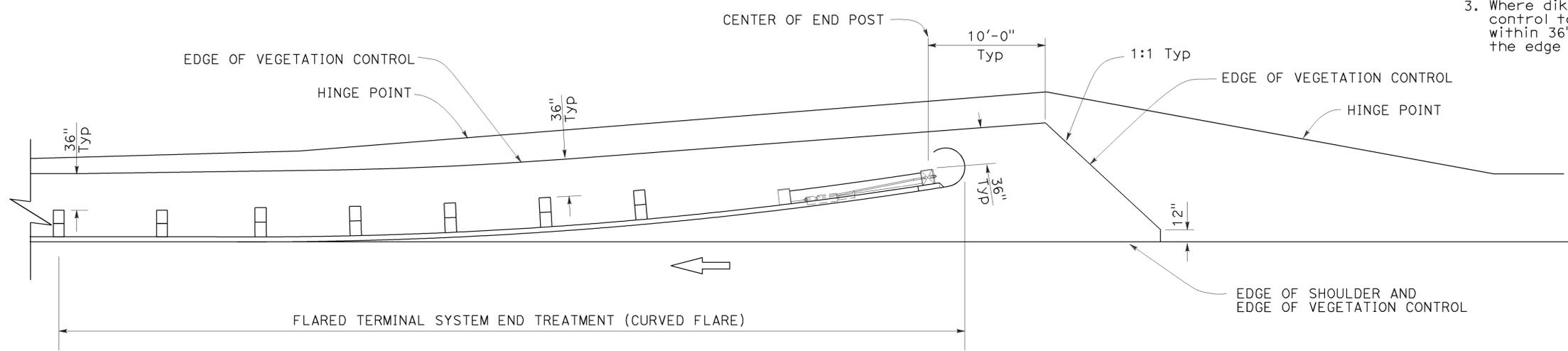
TO ACCOMPANY PLANS DATED 3-30-15



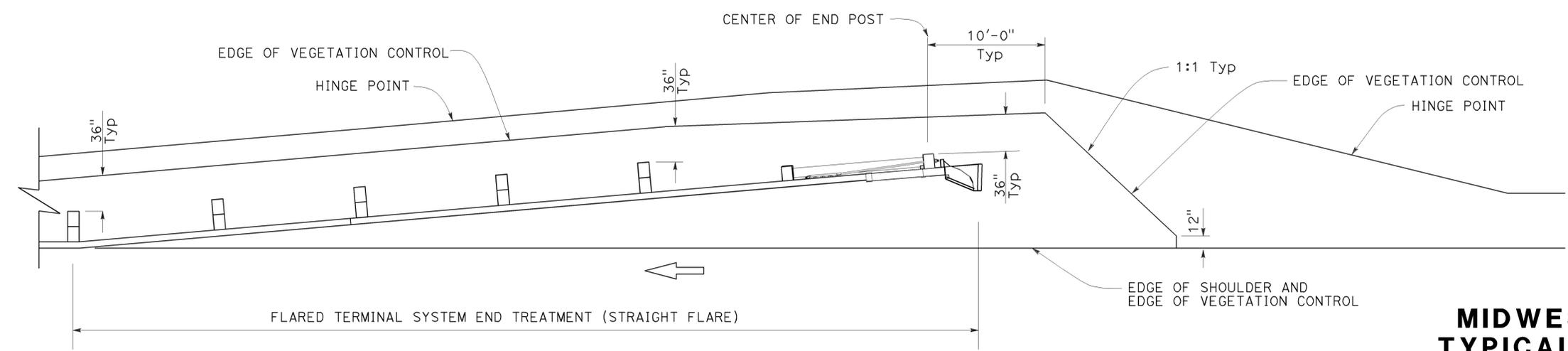
PLAN

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE

RSP A77N6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N6

2010 REVISED STANDARD PLAN RSP A77N6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	45	86

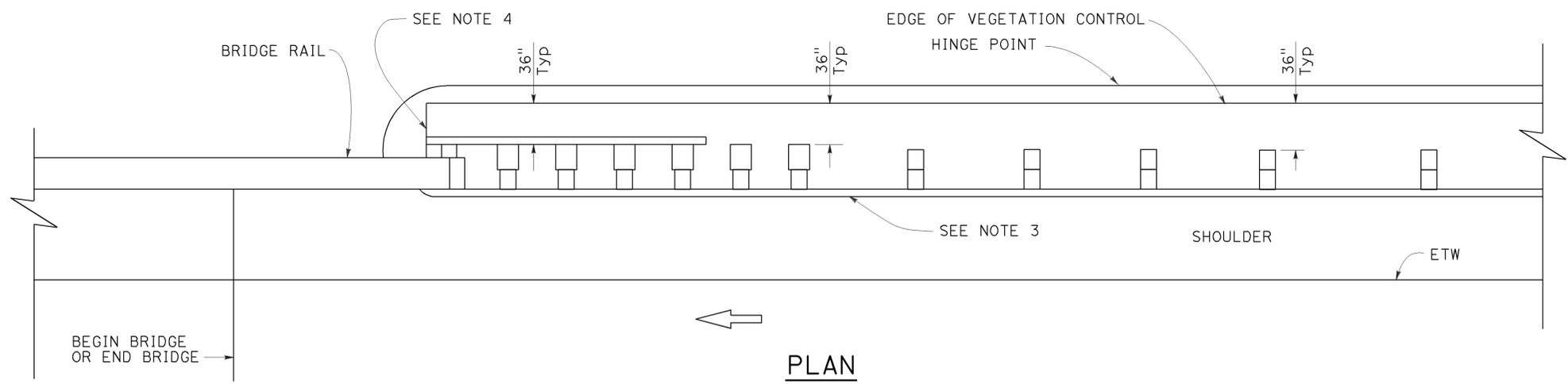
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July 19, 2013
PLANS APPROVAL DATE

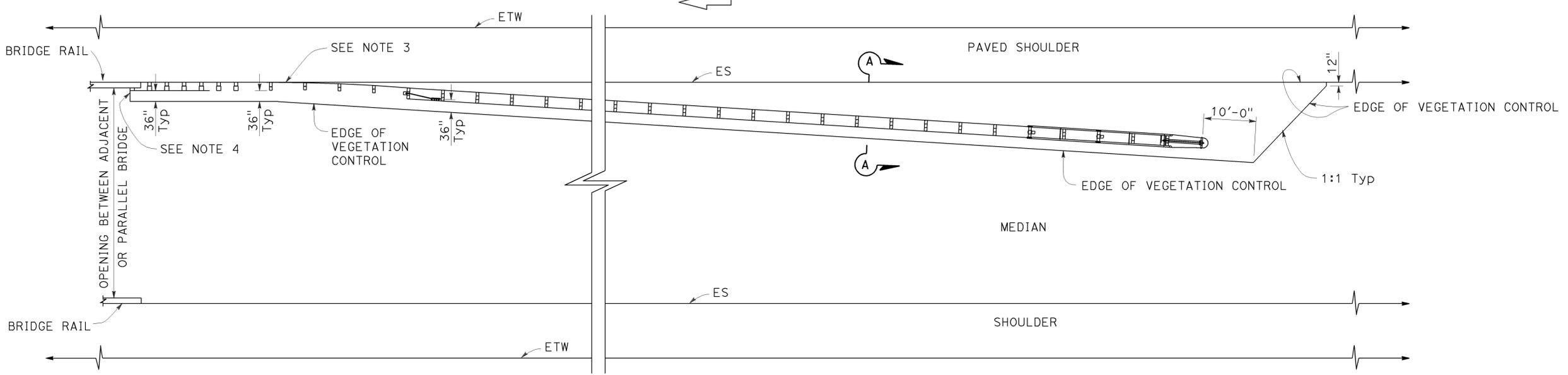
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TO ACCOMPANY PLANS DATED 3-30-15

2010 REVISED STANDARD PLAN RSP A77N7



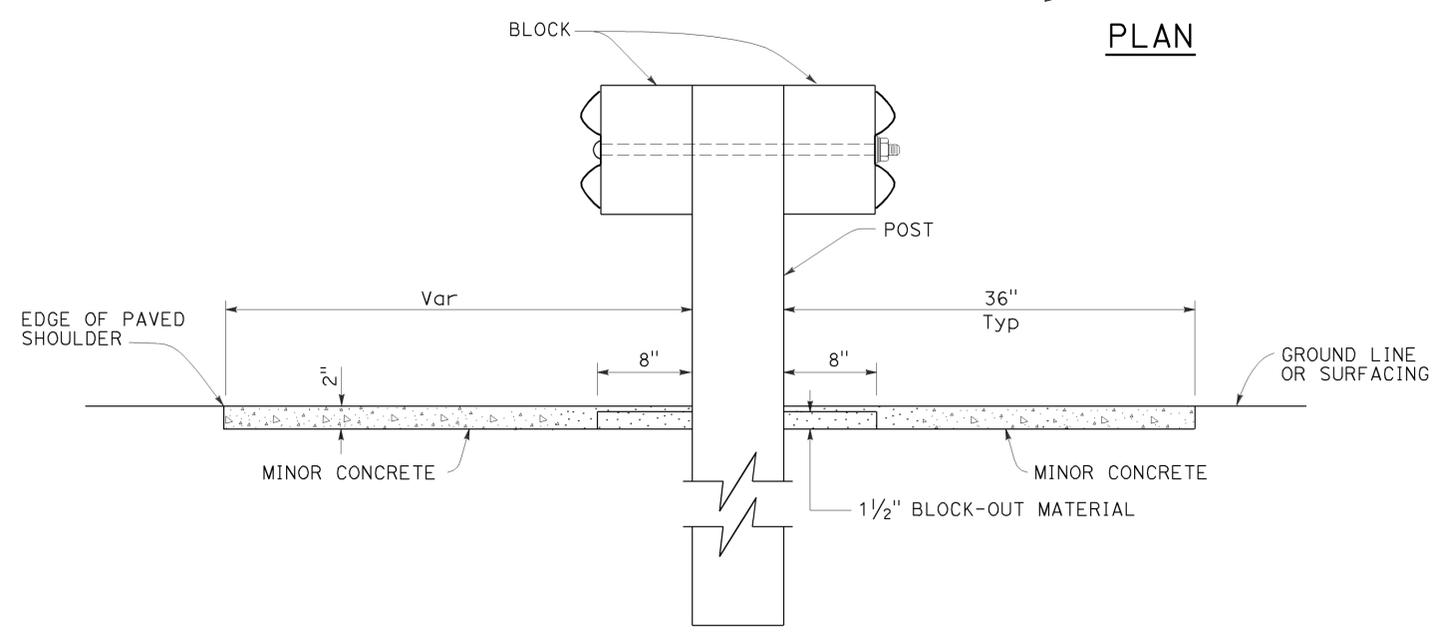
PLAN



PLAN

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
4. End vegetation control at end of backside rail element.



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
AT STRUCTURE APPROACH**

NO SCALE

RSP A77N7 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

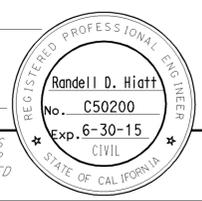
REVISED STANDARD PLAN RSP A77N7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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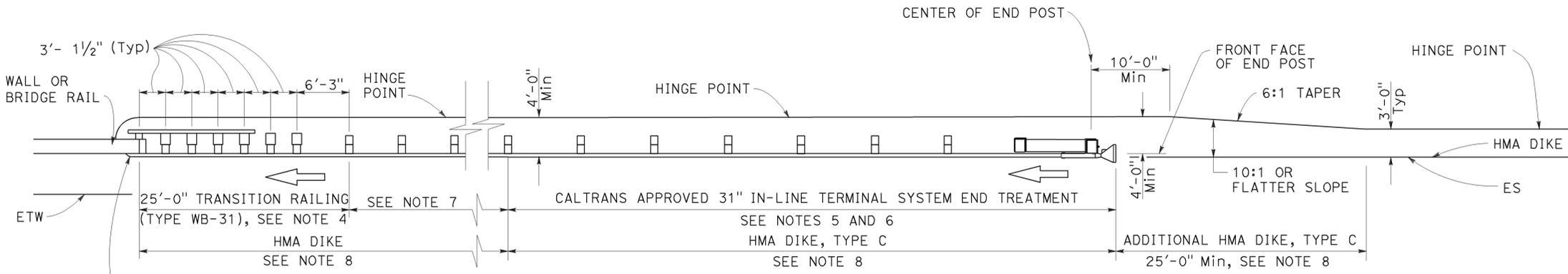
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July 19, 2013
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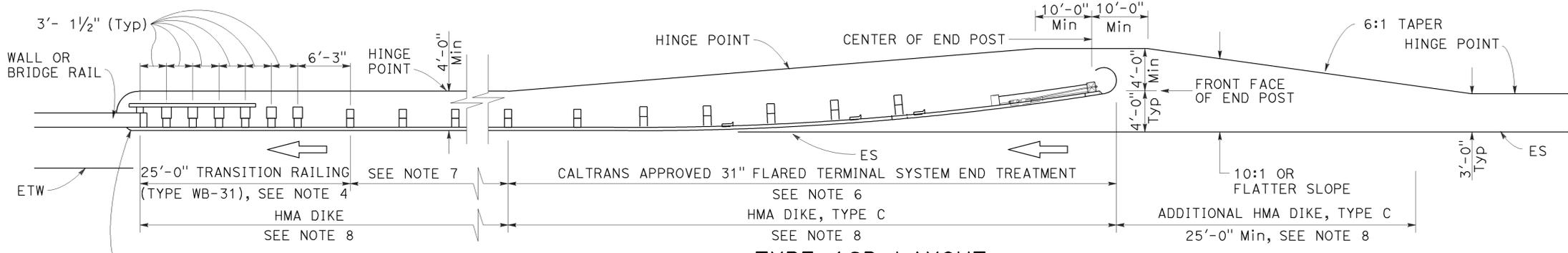


TO ACCOMPANY PLANS DATED 3-30-15



TYPE 12A LAYOUT

(MGS installation at structure approach with 31" in-line end treatment at traffic approach end of railing)
See Notes 9



TYPE 12B LAYOUT

(MGS installation at structure approach with 31" Flared end treatment at traffic approach end of railing)
See Notes 9

NOTES:

- 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.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 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 posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Types 12A and 12B Layouts, see Revised Standard Plan RSP A77U4.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type 31" of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment. A 12.5 degree angle of departure can be drawn on the Project Plans from the edge of traveled way through the outer most point of the fixed object to determine the additional length of railing needed.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
 - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
- For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

RSP A77Q1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q1

2010 REVISED STANDARD PLAN RSP A77Q1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	47	86

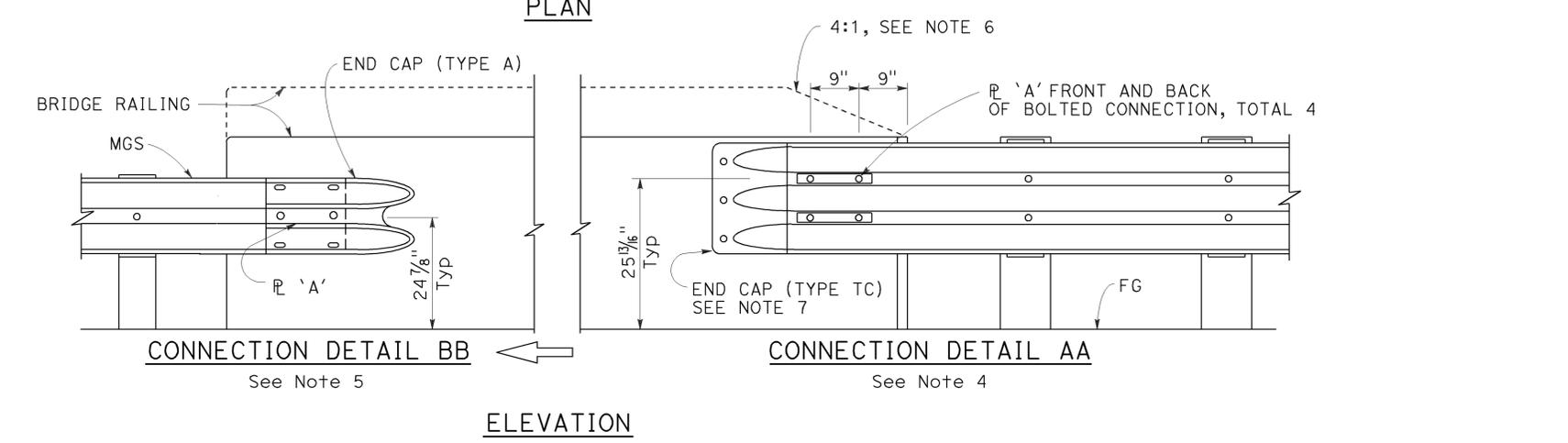
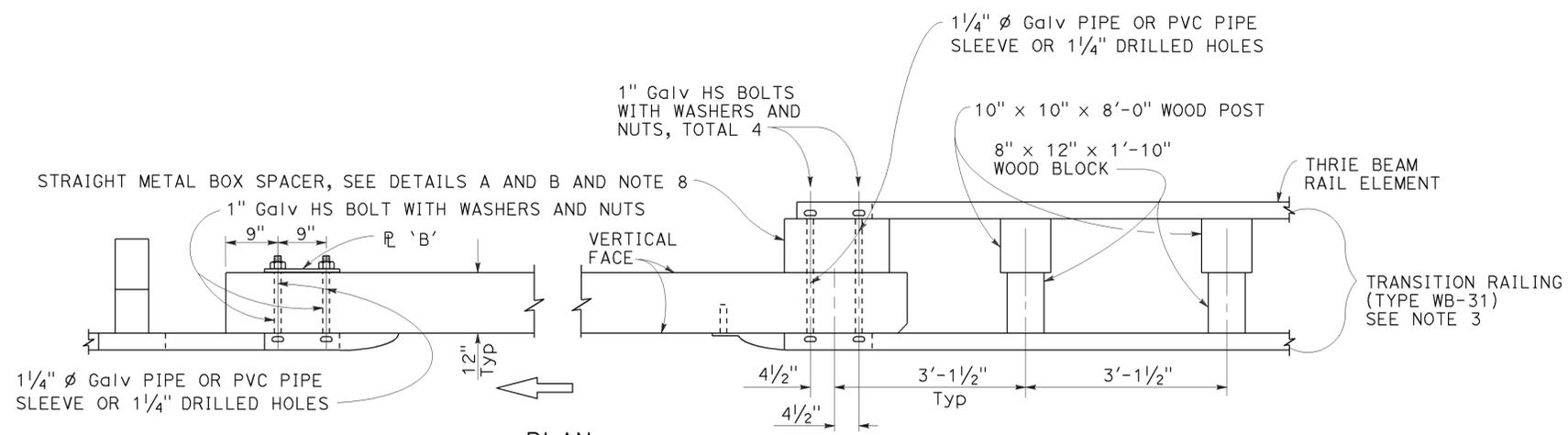
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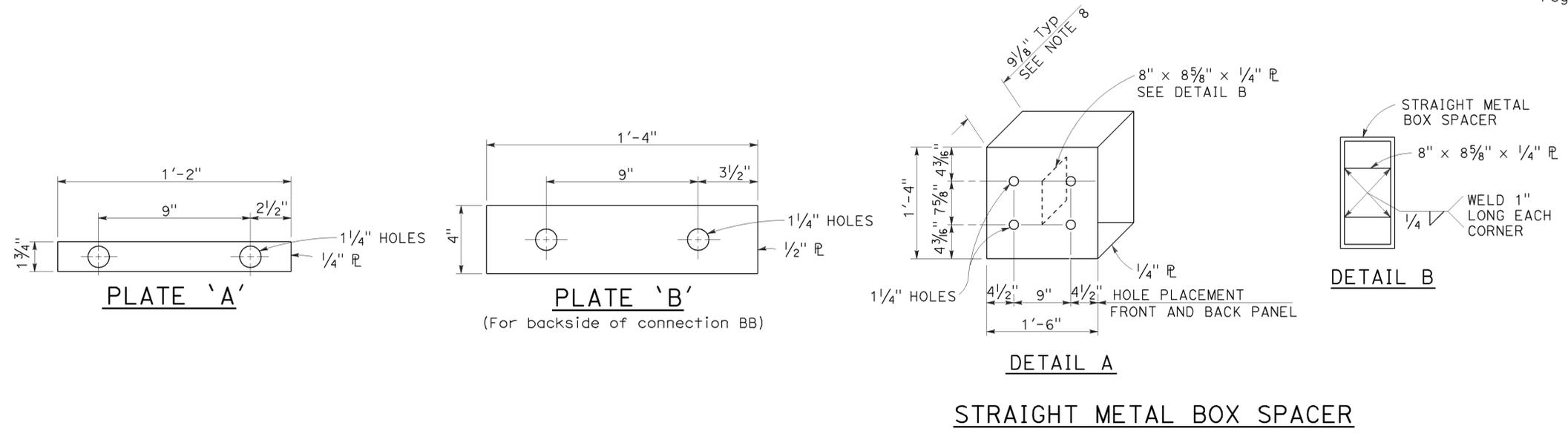
TO ACCOMPANY PLANS DATED 3-30-15



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77U2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS

DETAILS No. 1

NO SCALE

RSP A77U1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U1

2010 REVISED STANDARD PLAN RSP A77U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	48	86

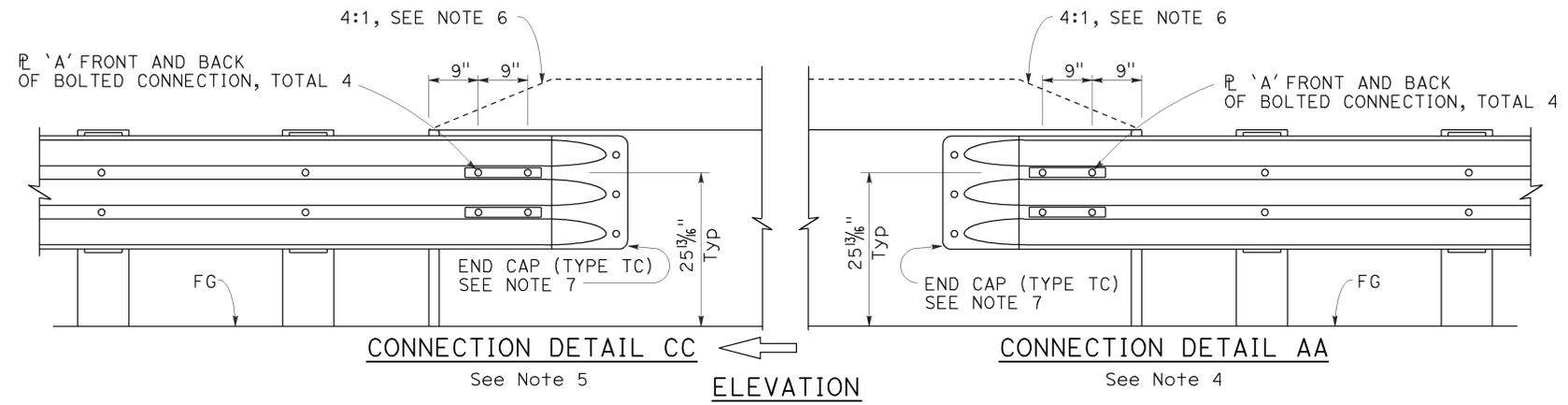
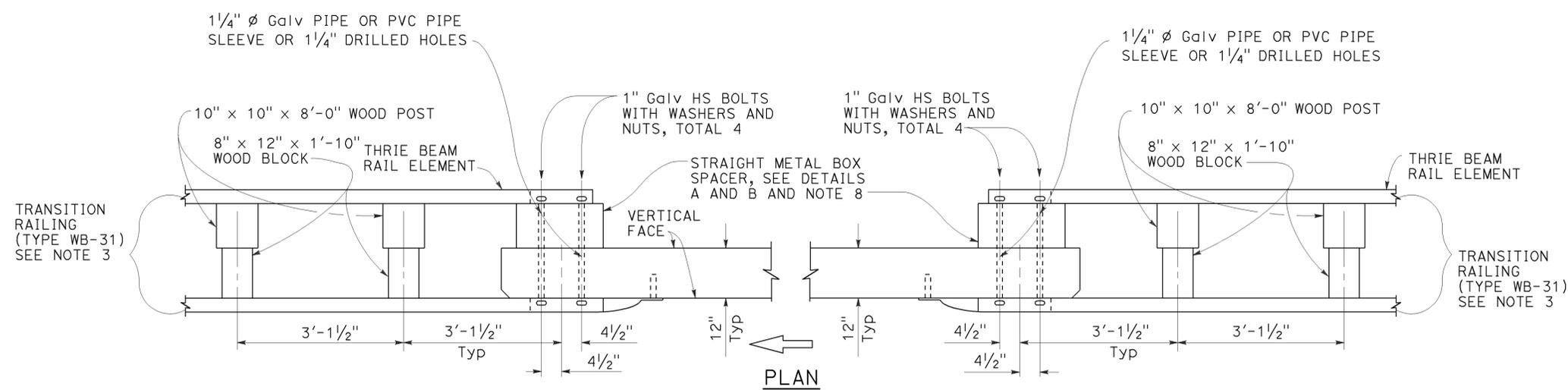
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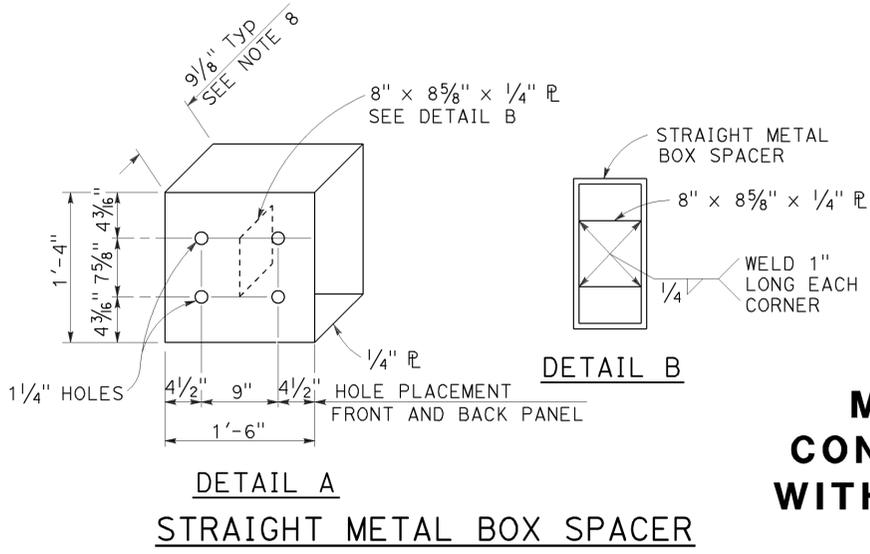
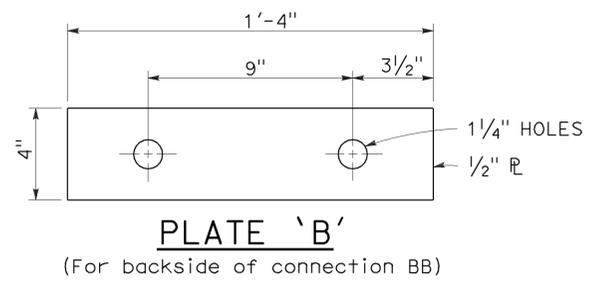
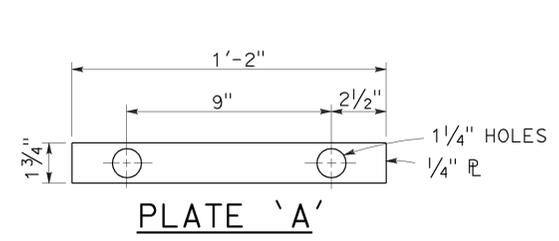
TO ACCOMPANY PLANS DATED 3-30-15



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77U1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Revised Standard Plan RSP A77Q4 and Layout Type 12CC on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
CONNECTIONS TO BRIDGE RAILINGS
WITHOUT SIDEWALKS DETAILS No. 2**

NO SCALE

2010 REVISED STANDARD PLAN RSP A77U2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	50	86

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July 19, 2013
PLANS APPROVAL DATE

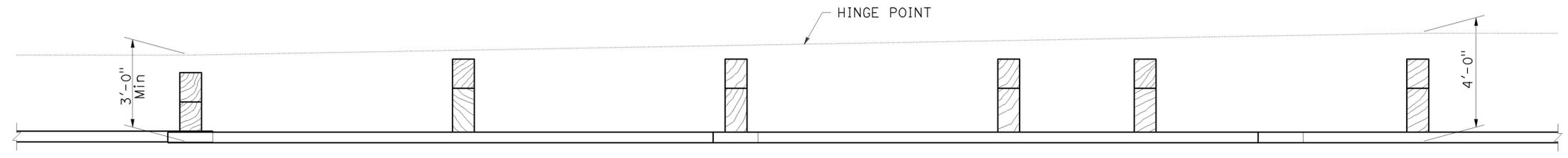
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

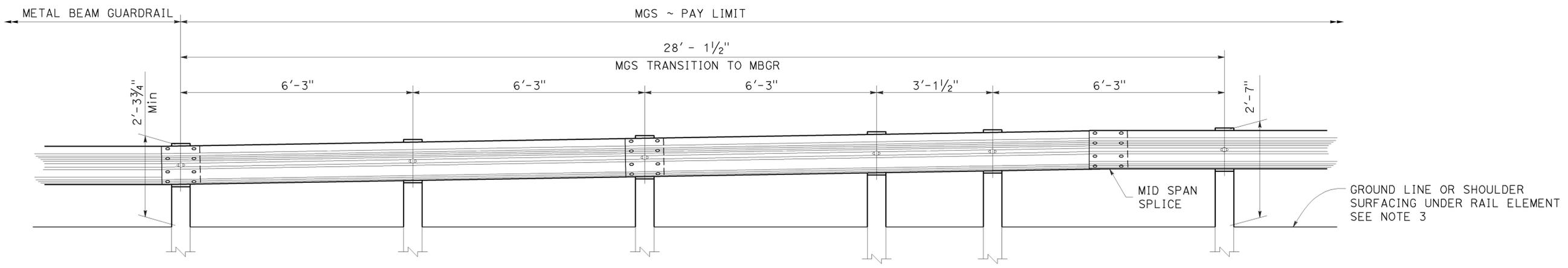
TO ACCOMPANY PLANS DATED 3-30-15

NOTES:

1. Refer to Revised Standard Plans RSP A77L1 and RSP A77L2 for component details for MGS not shown on this plan.
2. All posts for any standard barrier run shall be of the same type: Wood or Steel.
3. Install posts in soil.



PLAN



ELEVATION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TRANSITION TO METAL BEAM GUARDRAIL**

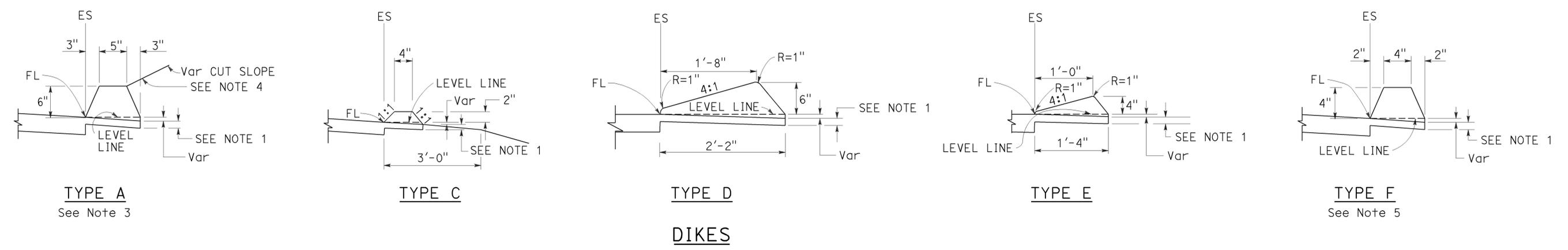
NO SCALE

RSP A77U5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U5

2010 REVISED STANDARD PLAN RSP A77U5

TO ACCOMPANY PLANS DATED 3-30-15



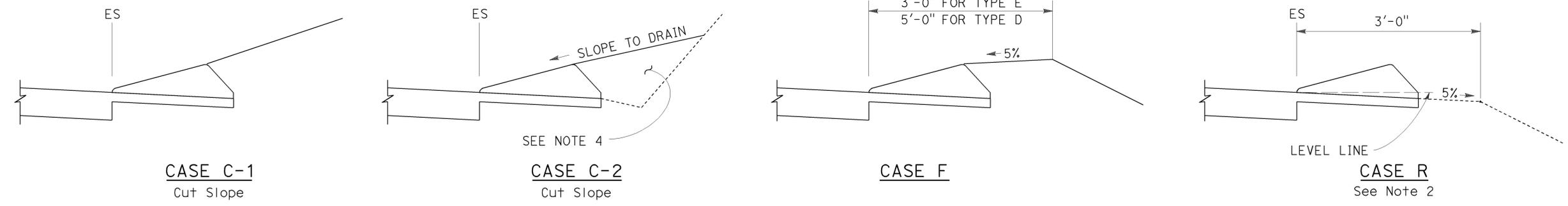
TYPE A
See Note 3

TYPE C

TYPE D

TYPE E

TYPE F
See Note 5



CASE C-1
Cut Slope

CASE C-2
Cut Slope

CASE F

CASE R
See Note 2

NOTES:

- For HMA shoulders only, extend top layer of HMA placed on the shoulder under dike with no joint at the ES. For projects with OGFC shoulders, do not extend OGFC under dike. See project plans for modified dike detail.
- Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
- Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
- Fill and compact with excavated material to top of dike.
- Use Type F dike, where dike is required with guard railing installations. See Revised Standard Plan RSP A77N4 for dike positioning details.

**DIKE
QUANTITIES**

TYPE	CUBIC YARDS PER LINEAR FOOT
A	0.0135
C	0.0038
D	0.0293
E	0.0130
F	0.0066

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

RSP A87B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87B
DATED MAY 20, 2011 - PAGE 120 OF THE STANDARD PLANS BOOK DATED 2010.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	13	4.9	52	86

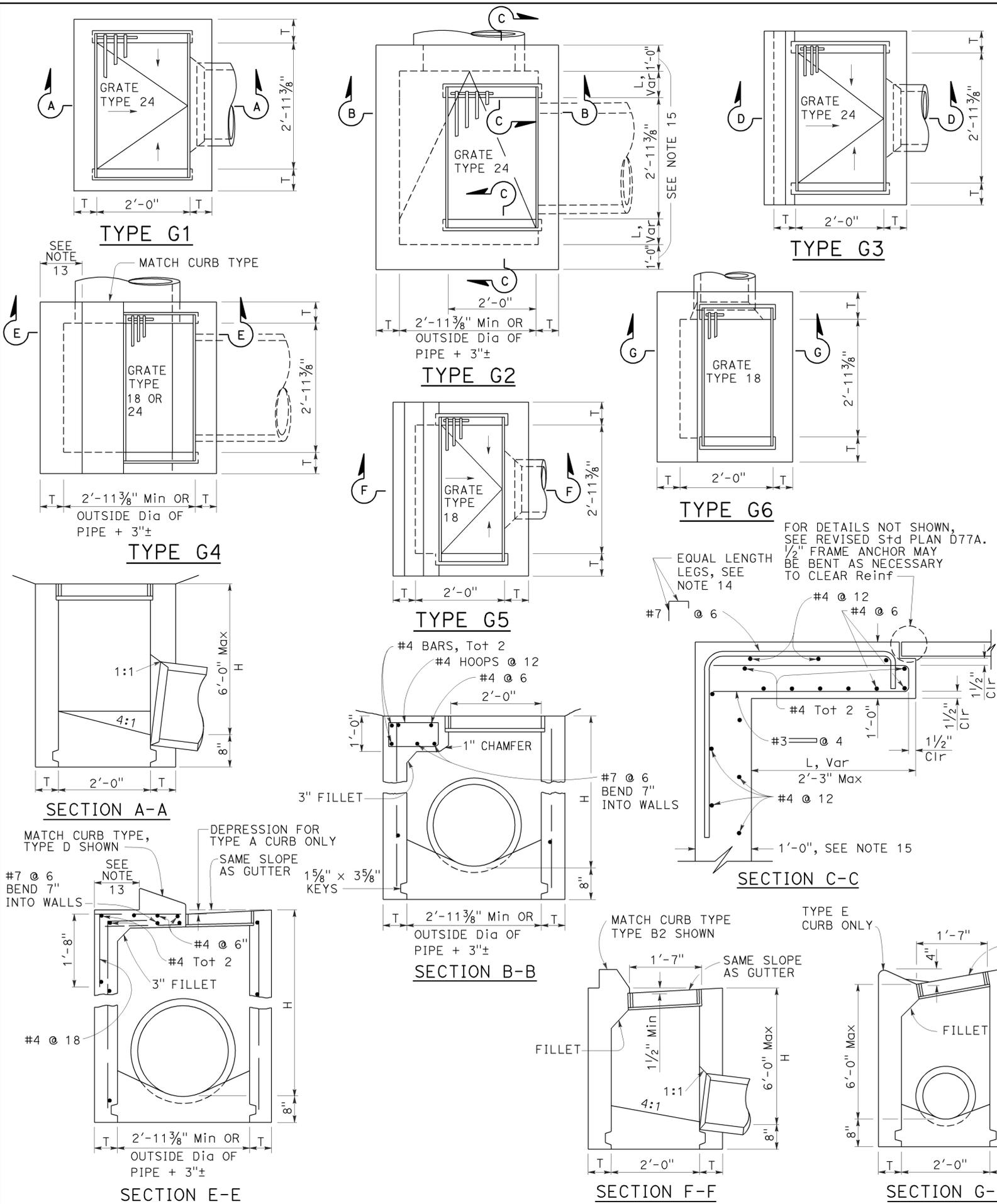
Glenn DeCou
REGISTERED CIVIL ENGINEER

October 19, 2012
PLANS APPROVAL DATE

Glenn DeCou
No. C34547
Exp. 9-30-13
CIVIL
STATE OF CALIFORNIA

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2010 REVISED STANDARD PLAN RSP D73



NOTES:

- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- For "T" wall thickness, see Table A below.
- Wall reinforcing not required when "H" is 8'-0" or less and the unsupported width or length is 7'-0" or less. Walls exceeding these limits shall be reinforced with #4 bars @ 1'-6" ± centers placed 1 1/2" clear to inside of box unless otherwise shown.
- Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced bottom and alternative half round bottom.
- Steps-None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below top of inlet. The distance between steps shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
- Details shown apply to both metal and concrete pipe.
- Pipe(s) can be placed in any wall.
- Curb section shall match adjacent curb.
- Basin floors shall have wood trowel finish and a minimum slope of 12:3 from all directions toward outlet pipe.
- Set inlet so that grate bars are parallel to direction of principal surface flow.
- See Revised Standard Plans D77A and D77B for grate and frame details and weights of miscellaneous iron and steel.
- See Standard Plan D78A for gutter depression details.
- This dimension will vary with different grates, curbs types, box width and wall thickness.
- Bar may be rotated as necessary to clear opening. Where "L" is 6" or less, bar may be omitted.
- Where "L" is 6" or less, wall thickness shall be as shown in Table A.
- Cast-in-place inlets to be formed around all pipes/stubs intersecting the inlet, and concrete poured in one continuous operation. Precast inlets shall have mortared connections conforming to details for Type GCP Inlet shown on Standard Plan D75B. See Standard Specifications for mortar composition.

TABLE A

TYPE	CONCRETE QUANTITIES		CONCRETE QUANTITIES	
	H=3'-0" TO 8'-0" (T=6")	H=8'-1" TO 20'-0" (T=8")	H=3'-0" (CY)	H=8'-1" (CY)
G-1	0.95	0.220	See Note A	SEE NOTE A
G-2*	1.31	0.255	3.50	0.357
G-3	1.03	0.220	See Note A	SEE NOTE A
G-4* (TYPE 24)	1.27	0.255	3.48	0.357
G-4* (TYPE 18)	1.30	0.255	3.50	0.357
G-5	1.02	0.220	SEE NOTE A	SEE NOTE A
G-6	1.04	0.220	SEE NOTE A	SEE NOTE A

TABLE BASED ON 8" FLOOR SLAB. NO DEDUCTIONS ARE TO BE MADE TO THESE QUANTITIES BECAUSE OF PIPE OPENINGS, DIFFERENT FLOOR ALTERNATIVES OR DIFFERENT CURB TYPES. * QUANTITIES FOR TYPE G-2 AND G-4 INLETS BASED ON THE MINIMUM INTERIOR DIMENSIONS.

NOTE A:

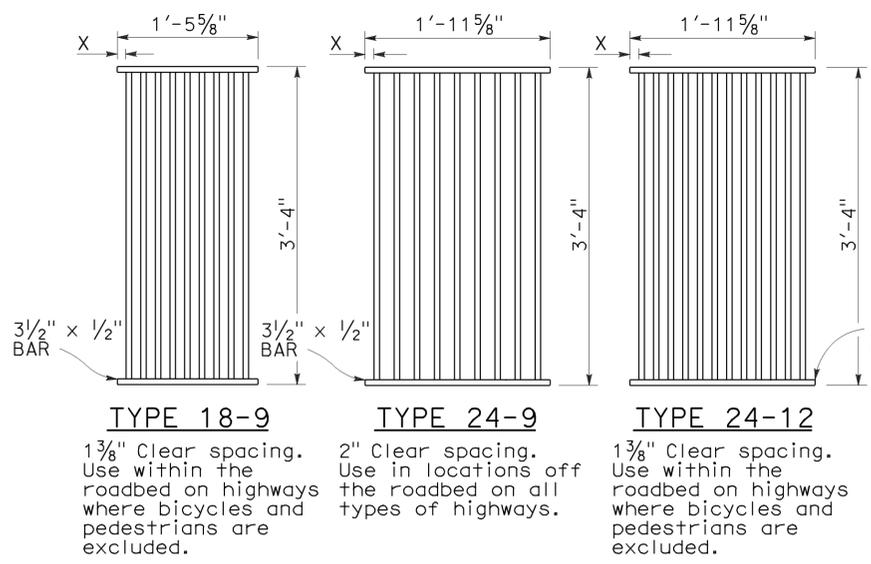
Maximum allowable height 6'-0".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

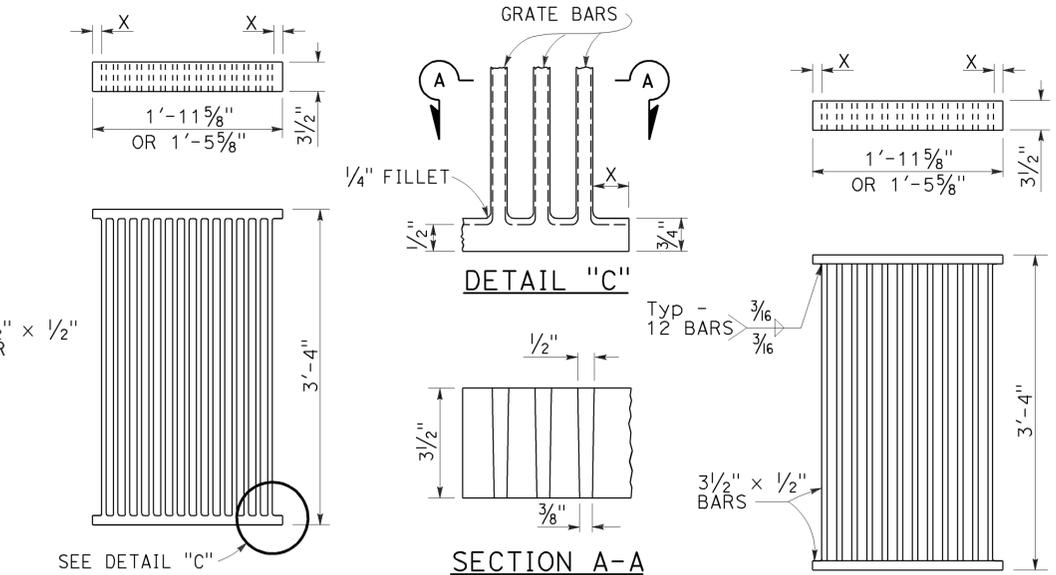
DRAINAGE INLETS
NO SCALE

RSP D73 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN D73 DATED MAY 20, 2011 - PAGE 156 OF THE STANDARD PLANS BOOK DATED 2010.

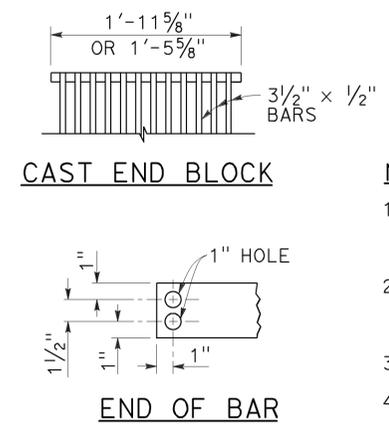
REVISED STANDARD PLAN RSP D73



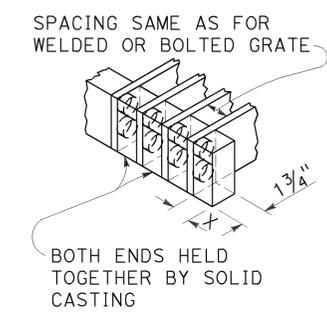
RECTANGULAR GRATE DETAILS
(See table below)



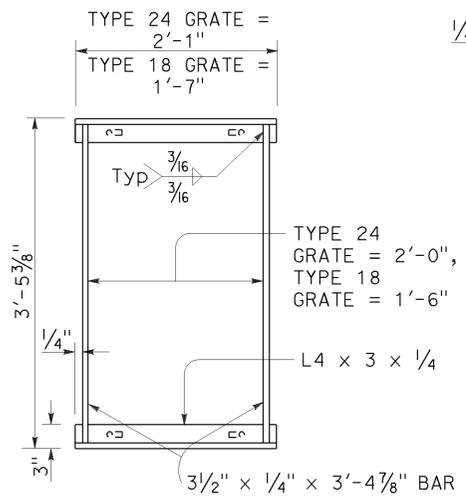
ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE



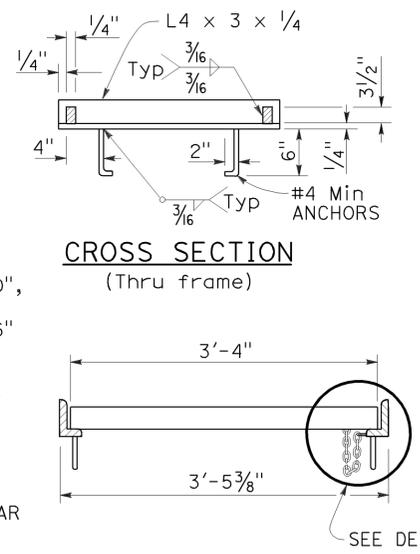
ALTERNATIVE WELDED GRATE



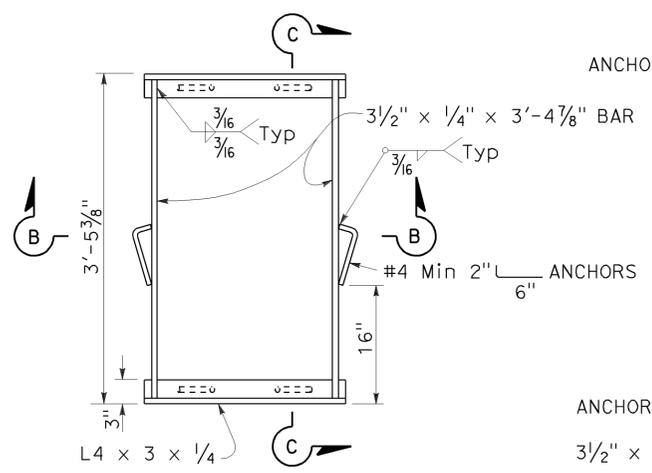
ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE



TYPICAL FRAME

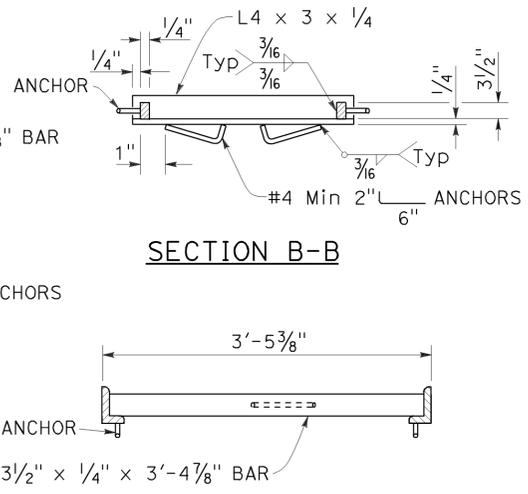


LONGITUDINAL SECTION
(Thru frame and grate)



TYPICAL FRAME

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



SECTION B-B



SECTION C-C

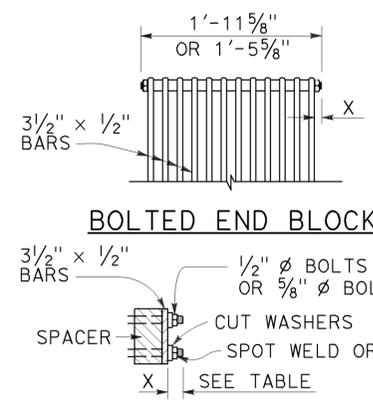
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

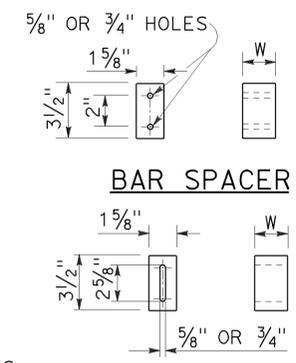
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

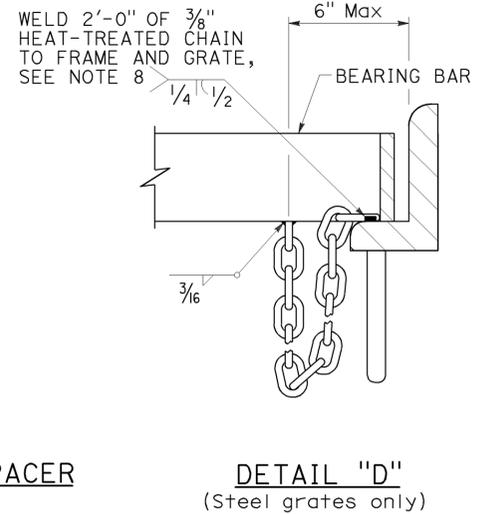
INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22
GRATE CHAIN			3



BOLTING DETAIL
ALTERNATIVE BOLTED GRATE



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



DETAIL "D"
(Steel grates only)

GRATE DETAILS No. 1
NO SCALE

BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS
(See Note 7)

RSP D77A DATED APRIL 19, 2013 SUPERSEDES RSP D77A DATED JULY 20, 2012 AND STANDARD PLAN D77A DATED MAY 20, 2011 - PAGE 164 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D77A

2010 REVISED STANDARD PLAN RSP D77A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	54	86

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 3-30-15

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
 Pvm+ 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

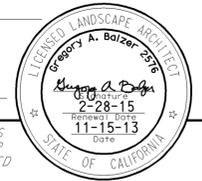
RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1
 DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H1

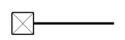
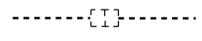
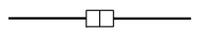
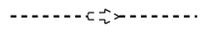
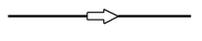
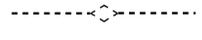
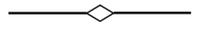
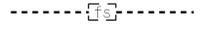
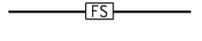
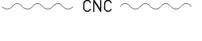
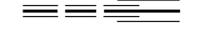
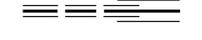
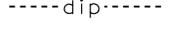
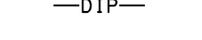
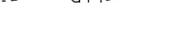
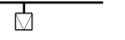
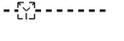
2010 REVISED STANDARD PLAN RSP H1

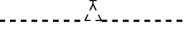
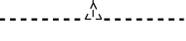
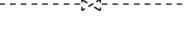
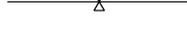
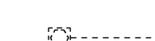
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	55	86


 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 3-30-15

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.

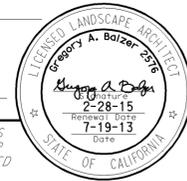
REVISED STANDARD PLAN RSP H2

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

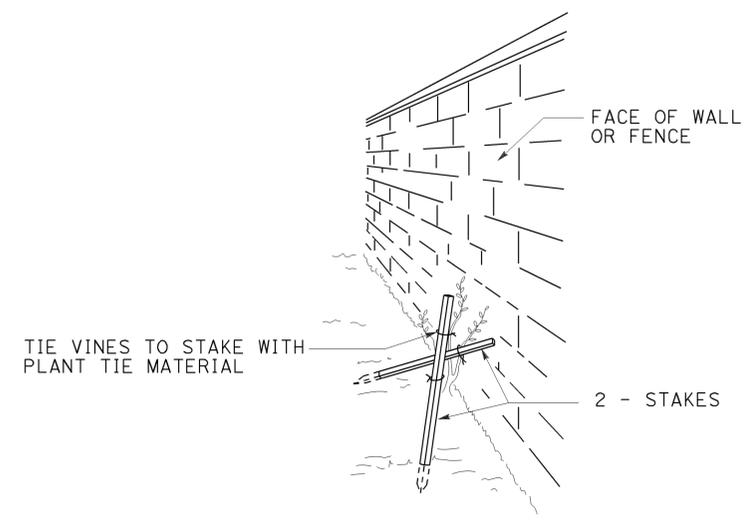
2010 REVISED STANDARD PLAN RSP H2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	56	86

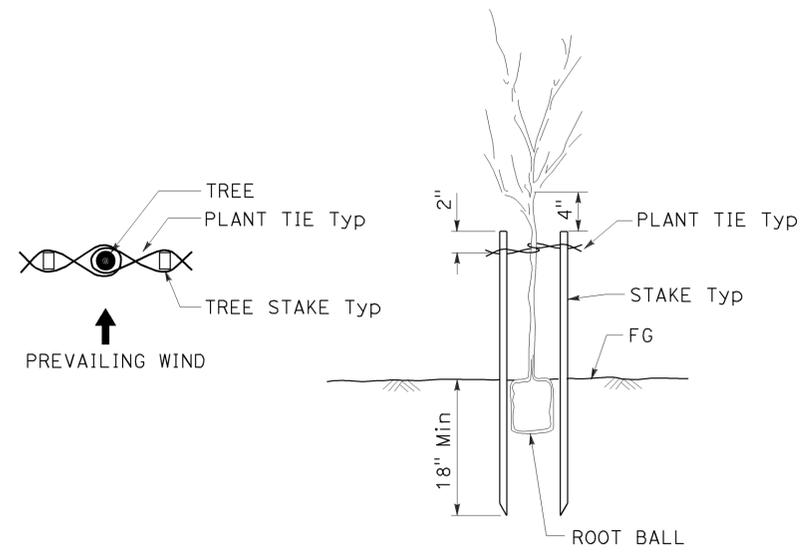
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



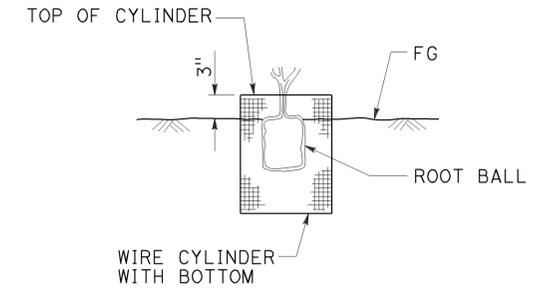
TO ACCOMPANY PLANS DATED 3-30-15



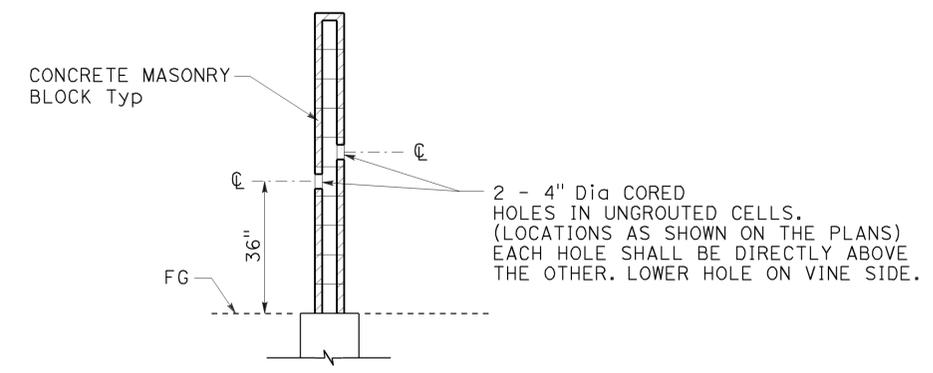
PERSPECTIVE VINE STAKING



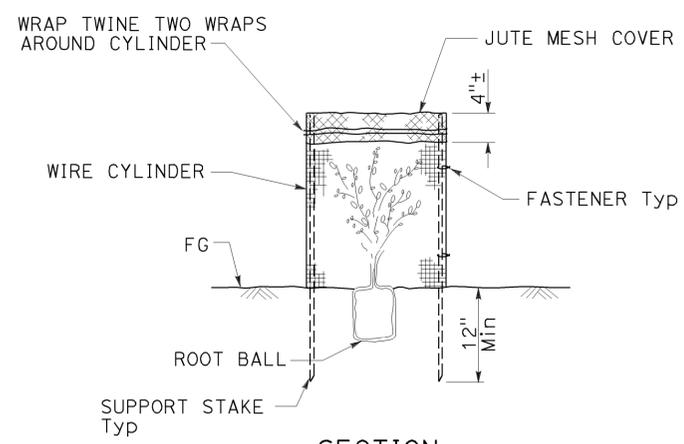
TREE STAKING



SECTION ROOT PROTECTOR



SECTION CORE HOLE (VINE)



SECTION FOLIAGE PROTECTOR

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS
 NO SCALE

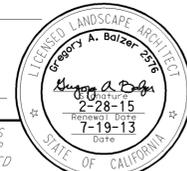
RSP H4 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H4 DATED MAY 20, 2011 - PAGE 221 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H4

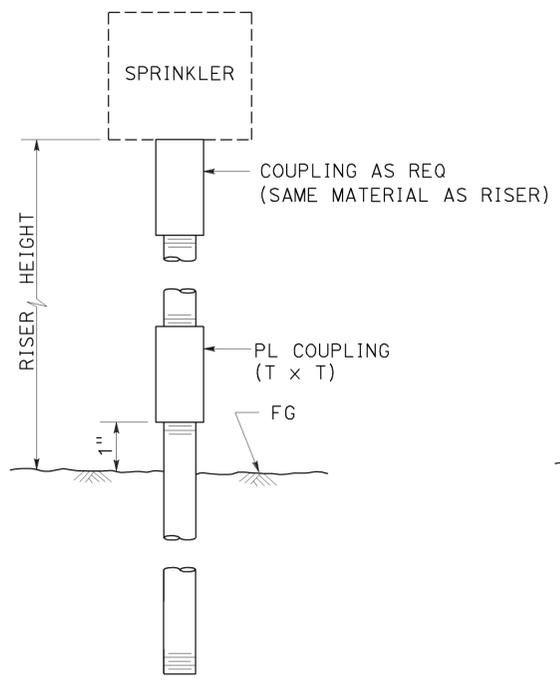
2010 REVISED STANDARD PLAN RSP H4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	57	86

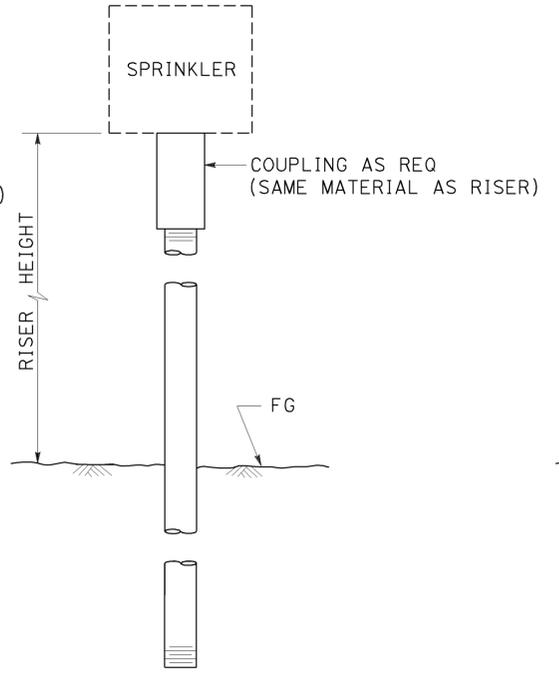
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



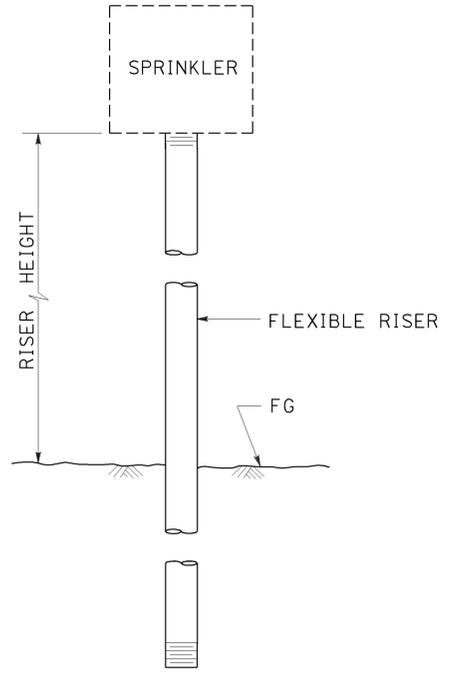
TO ACCOMPANY PLANS DATED 3-30-15



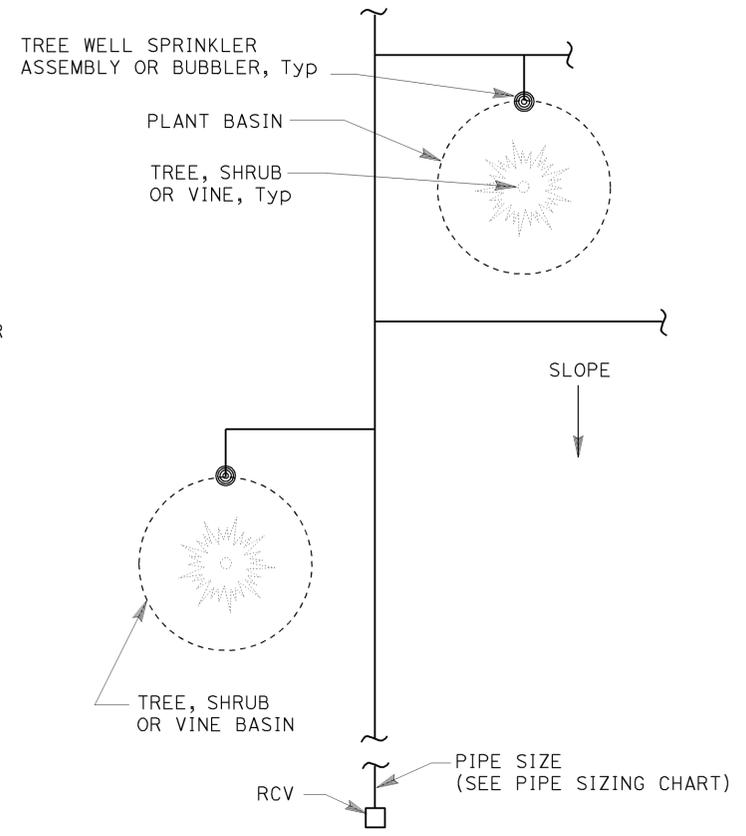
ELEVATION
RISER SPRINKLER ASSEMBLY TYPE I



ELEVATION
RISER SPRINKLER ASSEMBLY TYPE II



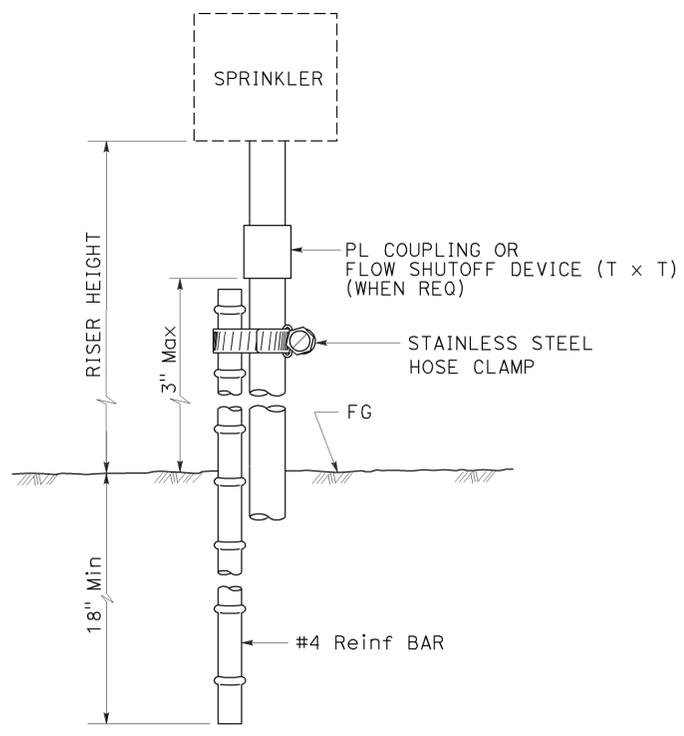
ELEVATION
RISER SPRINKLER ASSEMBLY TYPE III



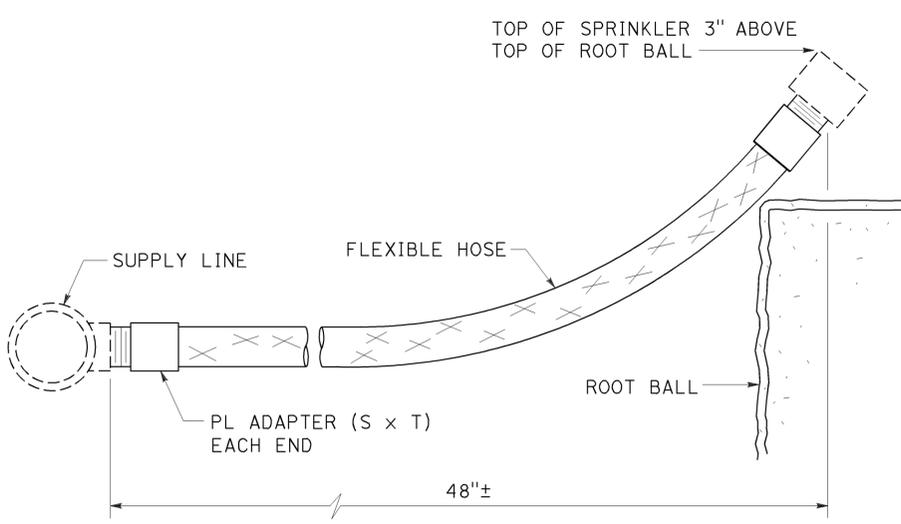
PLAN

NOTES:

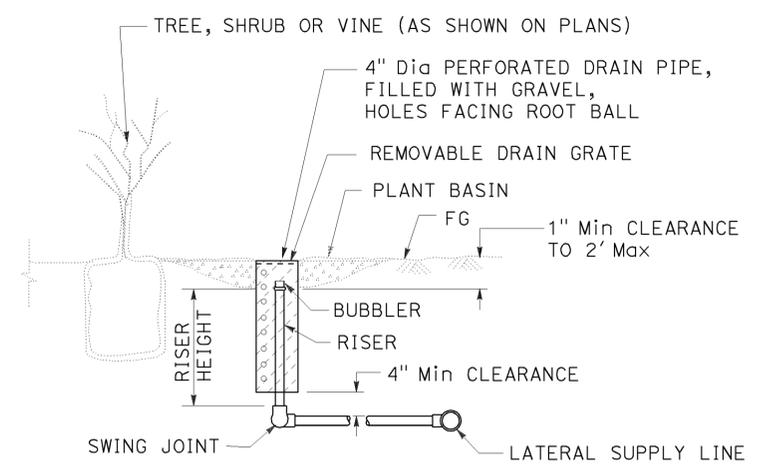
1. Install tree well sprinkler assembly on up-hill side of plant when on slope.
2. Install bubbler within basin.



ELEVATION
RISER SPRINKLER ASSEMBLY TYPE IV



ELEVATION
RISER SPRINKLER ASSEMBLY TYPE V



SECTION
TREE WELL SPRINKLER ASSEMBLY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS
NO SCALE

RSP H5 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H5
DATED MAY 20, 2011 - PAGE 222 OF THE STANDARD PLANS BOOK DATED 2010.

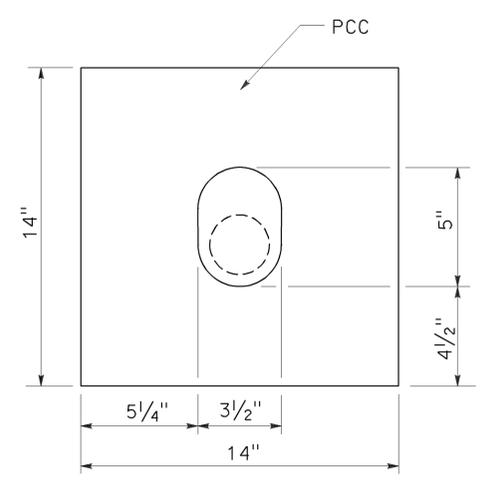
REVISED STANDARD PLAN RSP H5

2010 REVISED STANDARD PLAN RSP H5

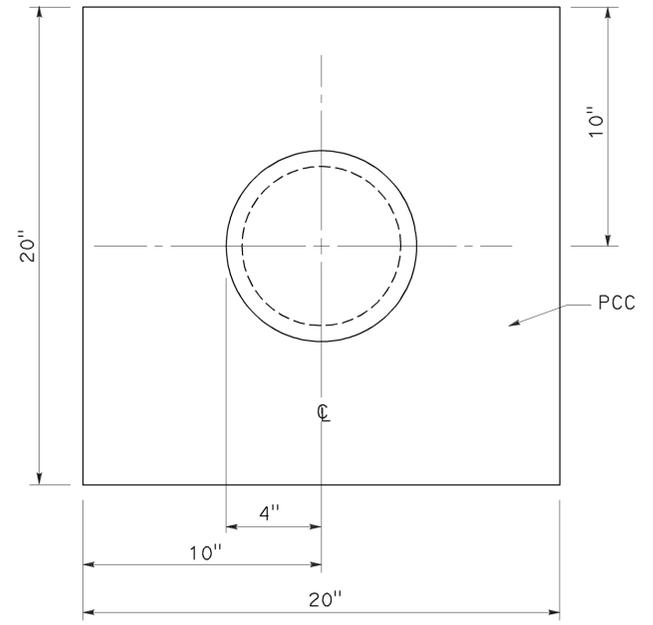
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	58	86

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 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.

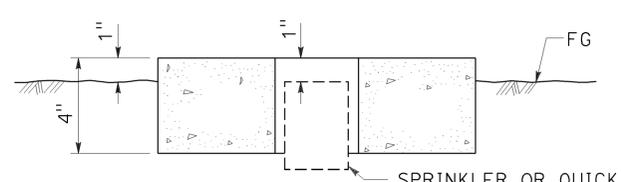
TO ACCOMPANY PLANS DATED 3-30-15



PLAN

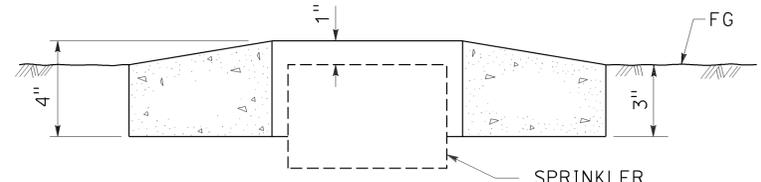


PLAN



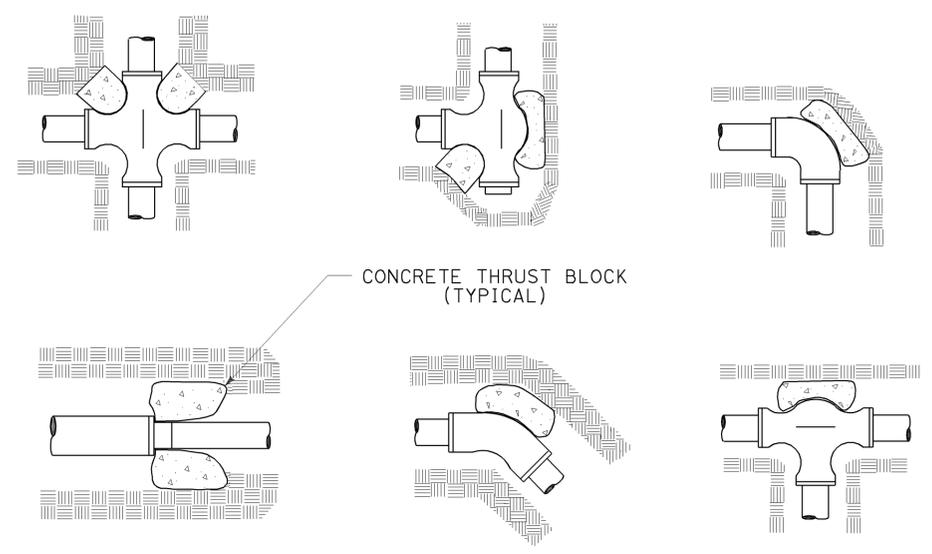
SECTION SPRINKLER OR QUICK COUPLING VALVE

SPRINKLER PROTECTOR TYPE I

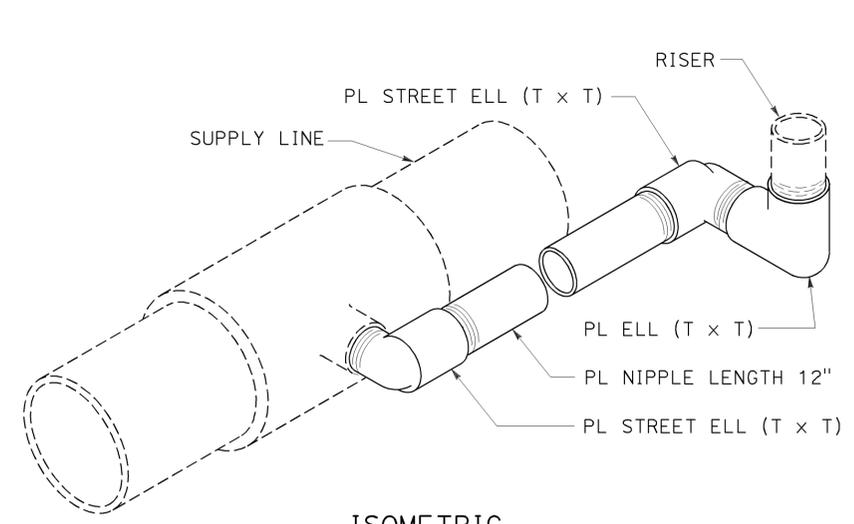


SECTION SPRINKLER

SPRINKLER PROTECTOR TYPE II

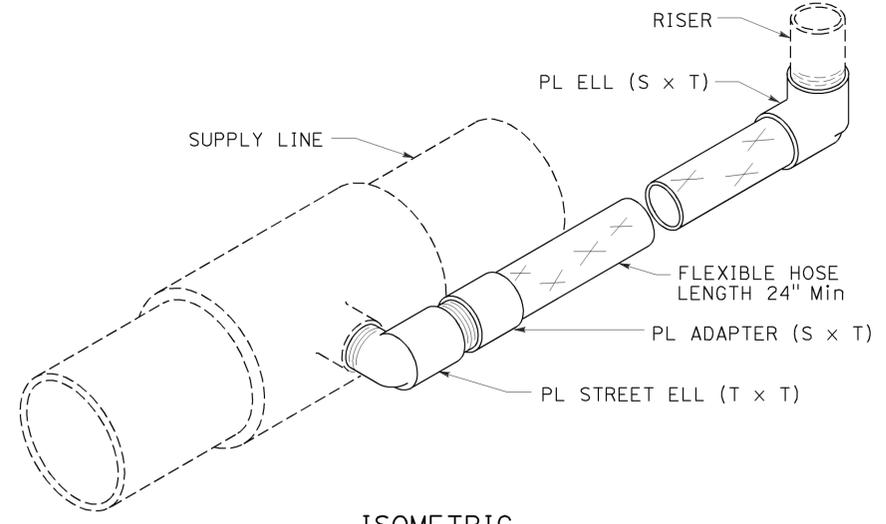


TYPICAL THRUST BLOCKS



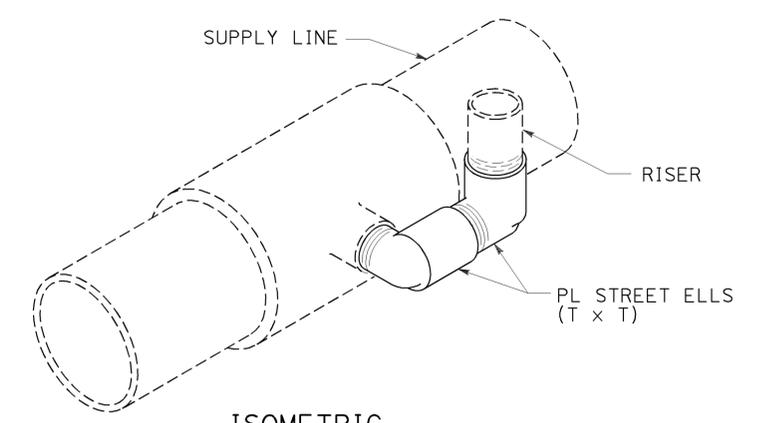
ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE I



ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE II



ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE III

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS

NO SCALE

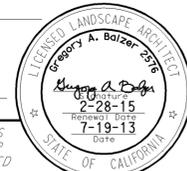
RSP H6 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H6 DATED MAY 20, 2011 - PAGE 223 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H6

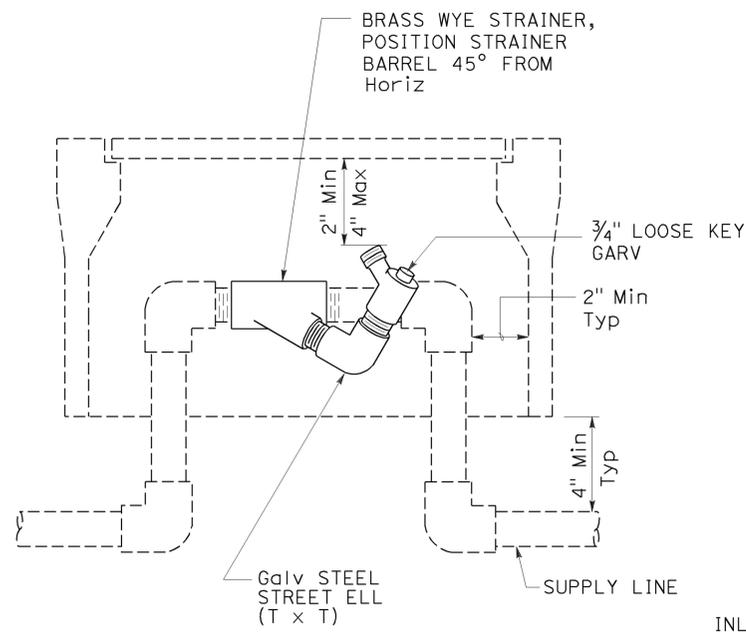
2010 REVISED STANDARD PLAN RSP H6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	59	86

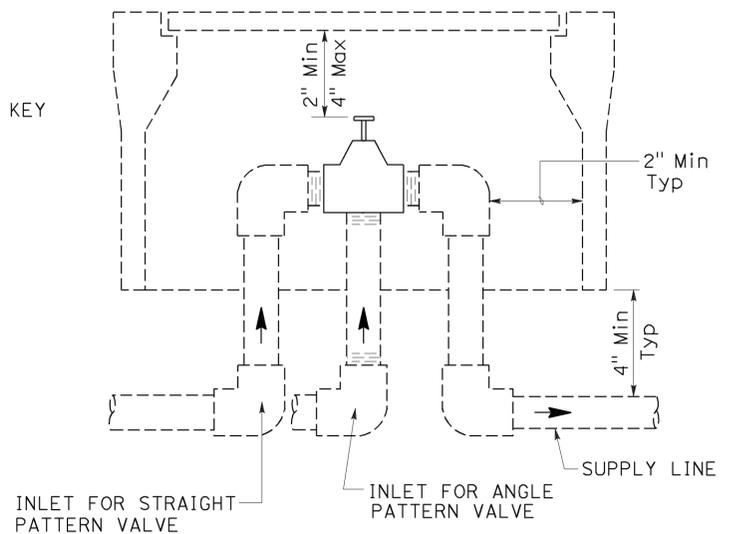
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



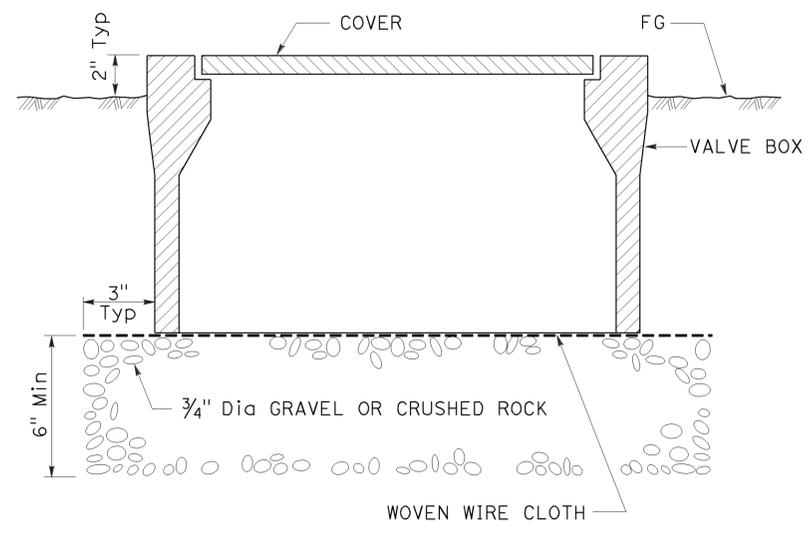
TO ACCOMPANY PLANS DATED 3-30-15



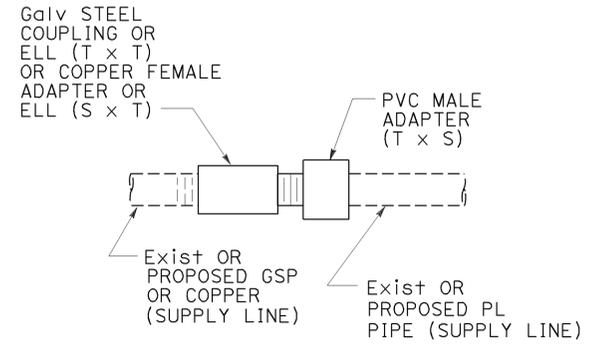
ELEVATION
WYE STRAINER ASSEMBLY



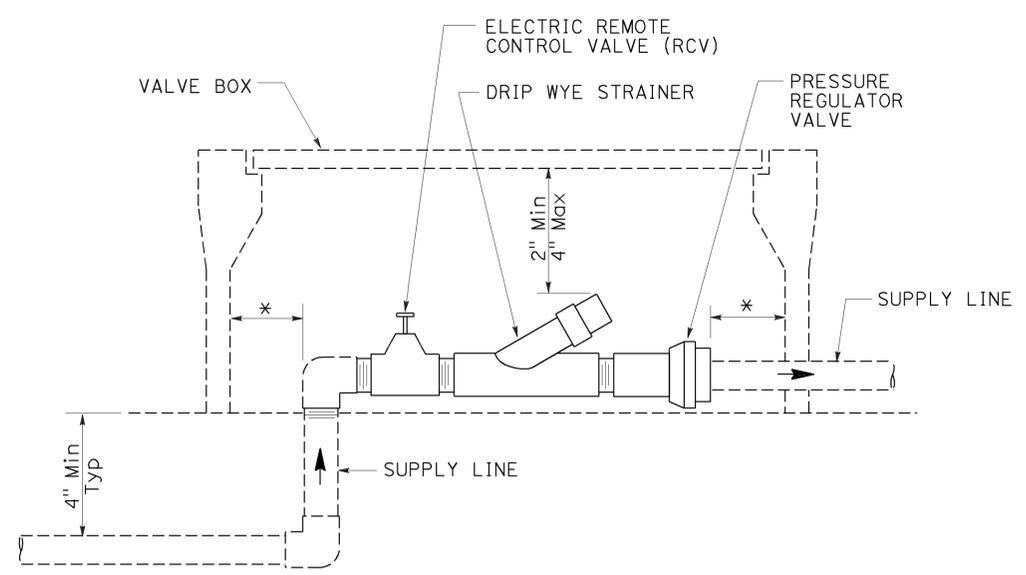
ELEVATION
VALVE



SECTION
VALVE BOX



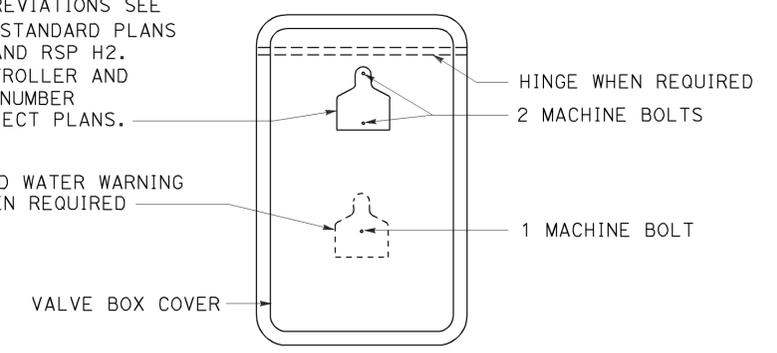
GALVANIZED OR COPPER PIPE CONNECTION TO PLASTIC PIPE



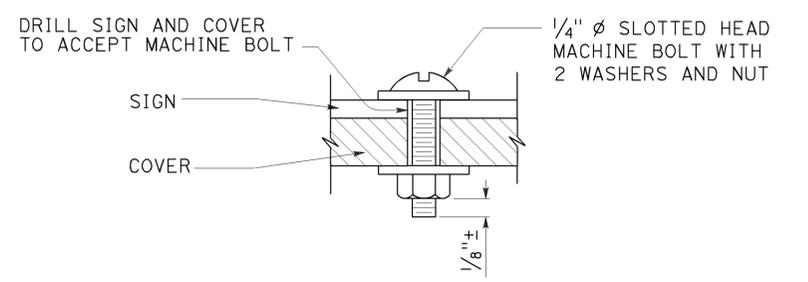
ELEVATION
DRIP VALVE ASSEMBLY

IDENTIFICATION LABEL:
FOR ABBREVIATIONS SEE
REVISED STANDARD PLANS
RSP H1 AND RSP H2.
FOR CONTROLLER AND
STATION NUMBER
SEE PROJECT PLANS.

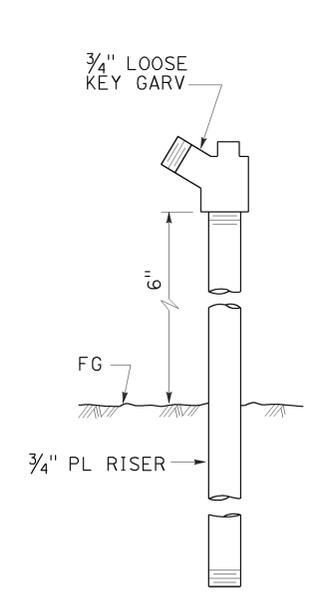
RECYCLED WATER WARNING
SIGN WHEN REQUIRED



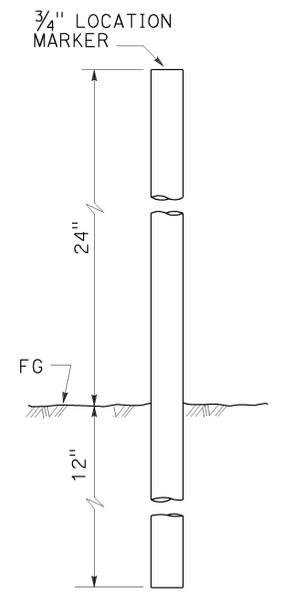
PLAN



SECTION
VALVE BOX IDENTIFICATION



ELEVATION
GARDEN VALVE ASSEMBLY



ELEVATION
LOCATION MARKER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

NO SCALE

RSP H7 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H7
DATED MAY 20, 2011 - PAGE 224 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H7

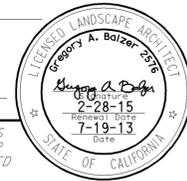
2010 REVISED STANDARD PLAN RSP H7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	60	86

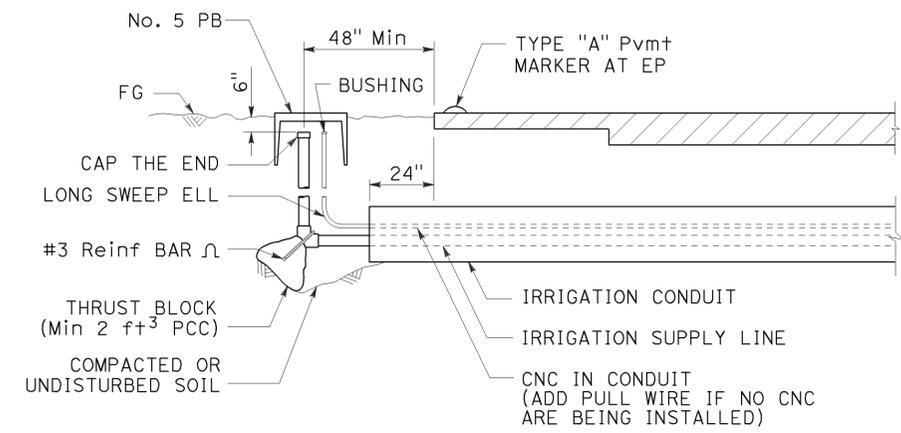
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT

July 19, 2013
 PLANS APPROVAL DATE

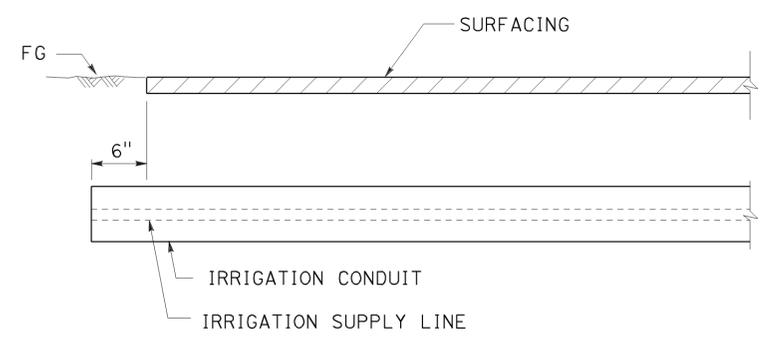
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



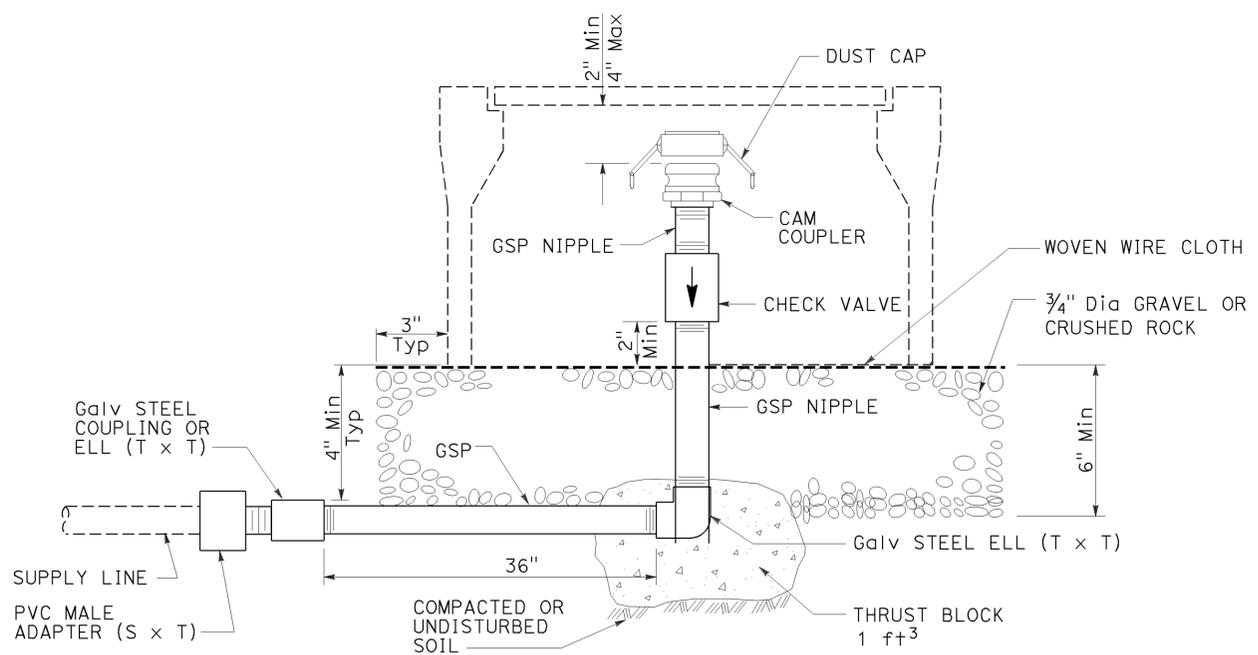
TO ACCOMPANY PLANS DATED 3-30-15



SECTION
IRRIGATION CONDUIT
UNDER TRAVELED WAY



SECTION
IRRIGATION CONDUIT
UNDER SIDEWALKS, DRIVEWAYS AND PATHS



ELEVATION
CAM COUPLER ASSEMBLY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

NO SCALE

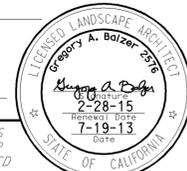
RSP H9 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H9 DATED MAY 20, 2011 - PAGE 226 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H9

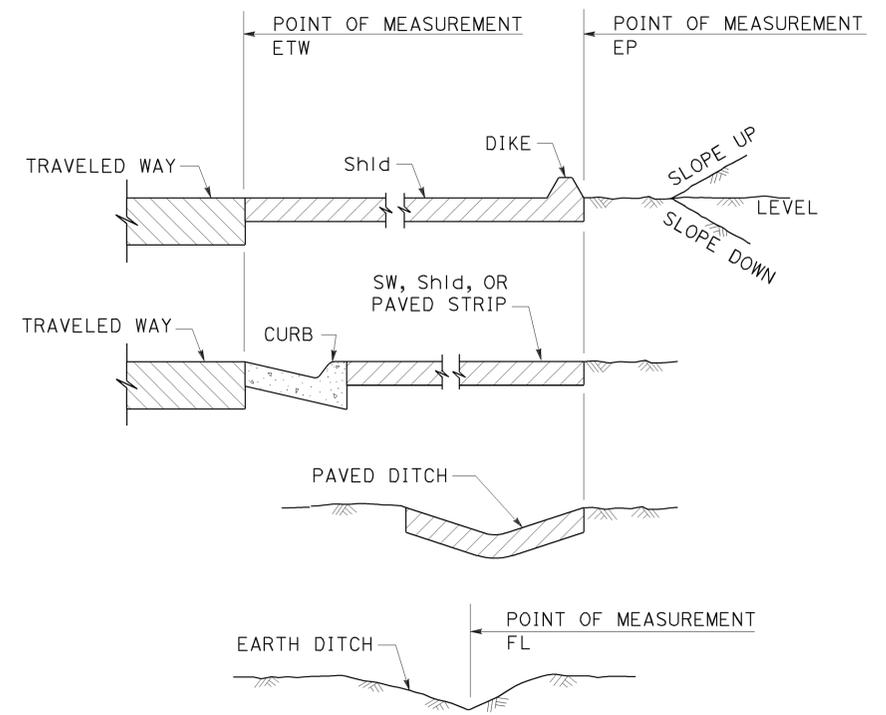
2010 REVISED STANDARD PLAN RSP H9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	61	86

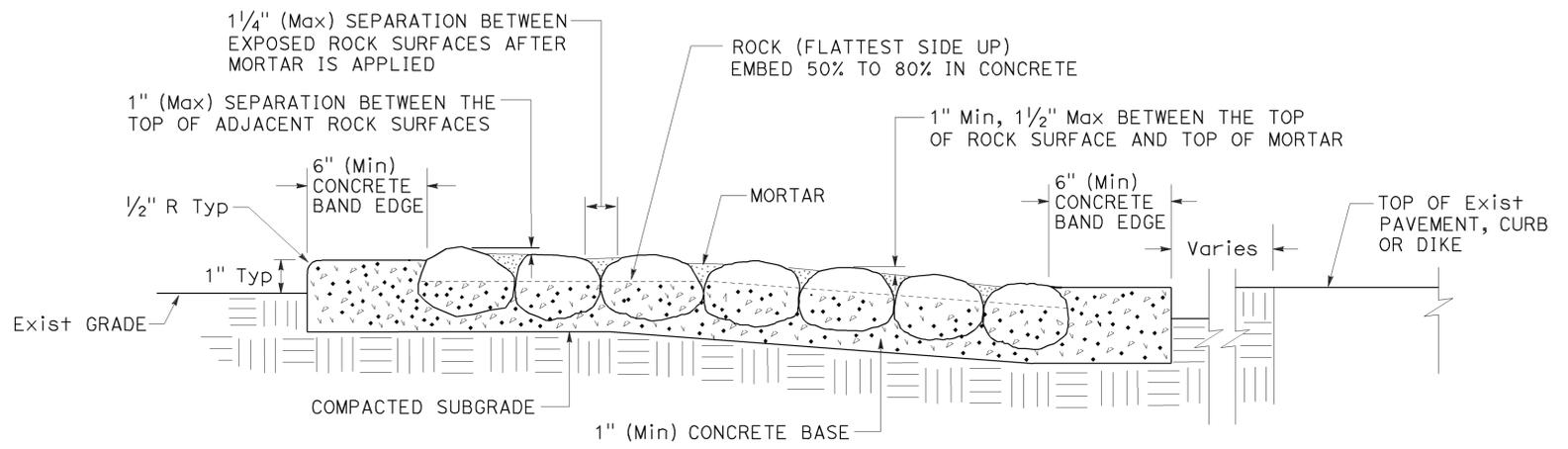
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



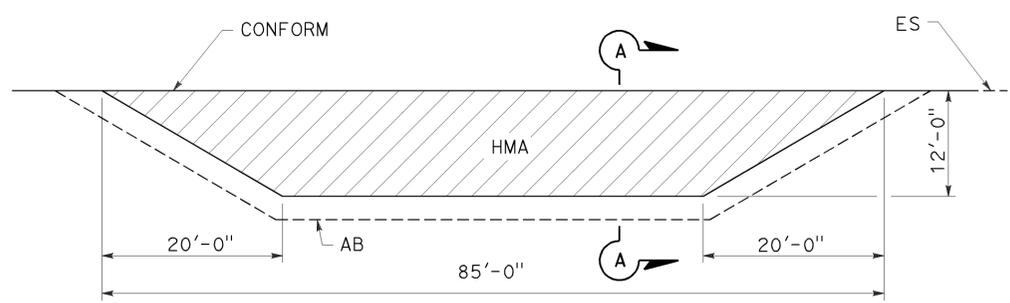
TO ACCOMPANY PLANS DATED 3-30-15



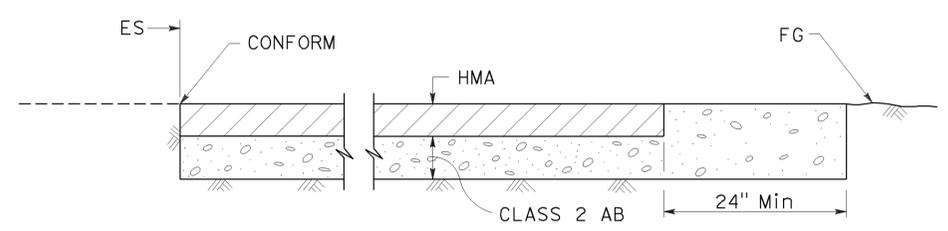
**SECTION
POINTS OF MEASUREMENT**



**SECTION
ROCK BLANKET**



PLAN



**SECTION A-A
MAINTENANCE VEHICLE PULLOUT**

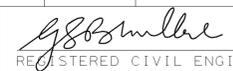
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS
 NO SCALE

RSP H9A DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H9A

2010 REVISED STANDARD PLAN RSP H9A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	62	86


 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 3-30-15

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
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.

REVISED STANDARD PLAN RSP T9

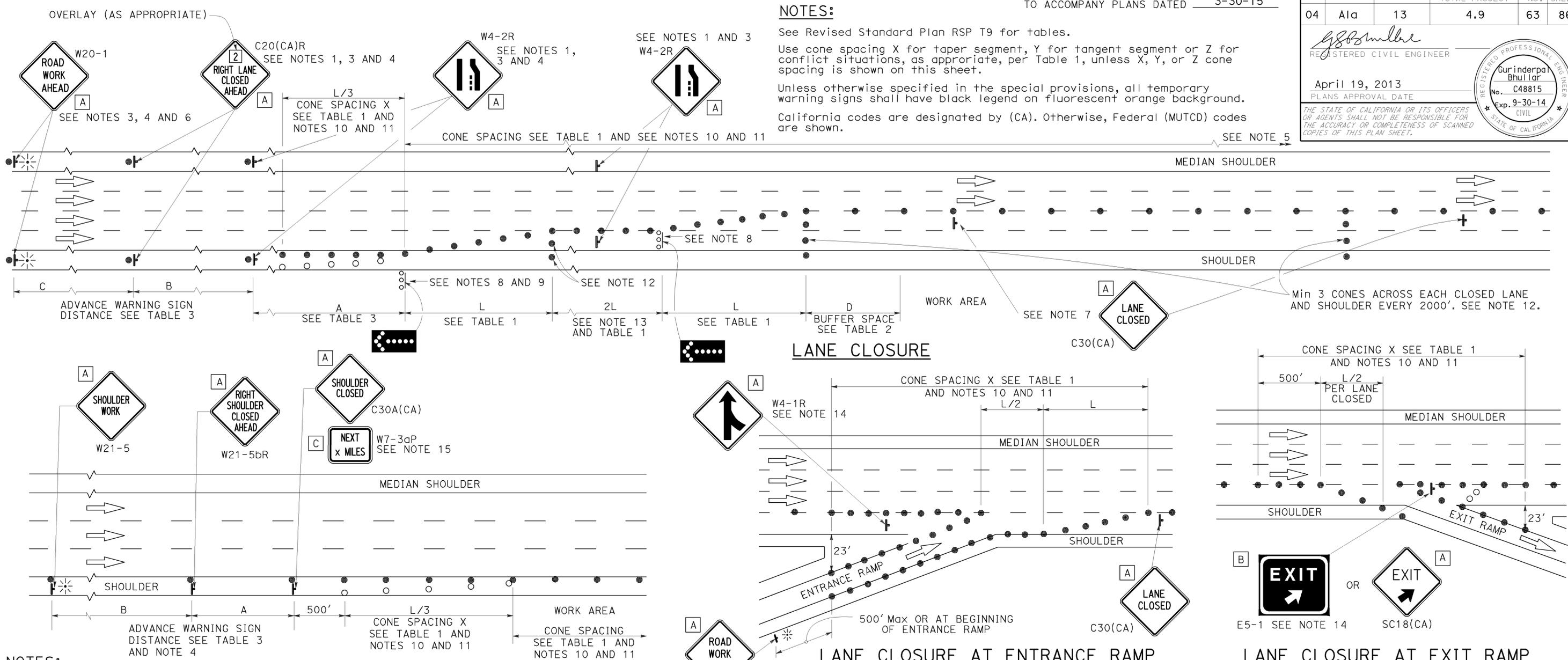
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	63	86

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 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.



- NOTES:**
1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
 2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 3. Duplicate sign installations are not required:
 - a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
 - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 4. Each advance warning sign on each side of the roadway 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.
 5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

- SHOULDER CLOSURE**
6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA)L and W4-2L signs shall be used.
 7. Place a C30(CA) sign every 2000' throughout length of lane closure.
 8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
 9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
 10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
 11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

- LANE CLOSURE AT ENTRANCE RAMP**
- LANE CLOSURE AT EXIT RAMP**
12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
 13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
 14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
 15. A W7-3aP "NEXT _____ MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- ⬢ FLASHING ARROW SIGN (FAS)
- ⬢ FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

A	48" x 48"
B	72" x 60"
C	36" x 30"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURE ON
 FREEWAYS AND EXPRESSWAYS**

NO SCALE

RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

TYPICAL RAMP CLOSURES

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 30"
- C 36" x 36"
- D 48" x 36"

LEGEND

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⚡ PORTABLE FLASHING BEACON

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	64	86

Gurinderpal Bhullar
 REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

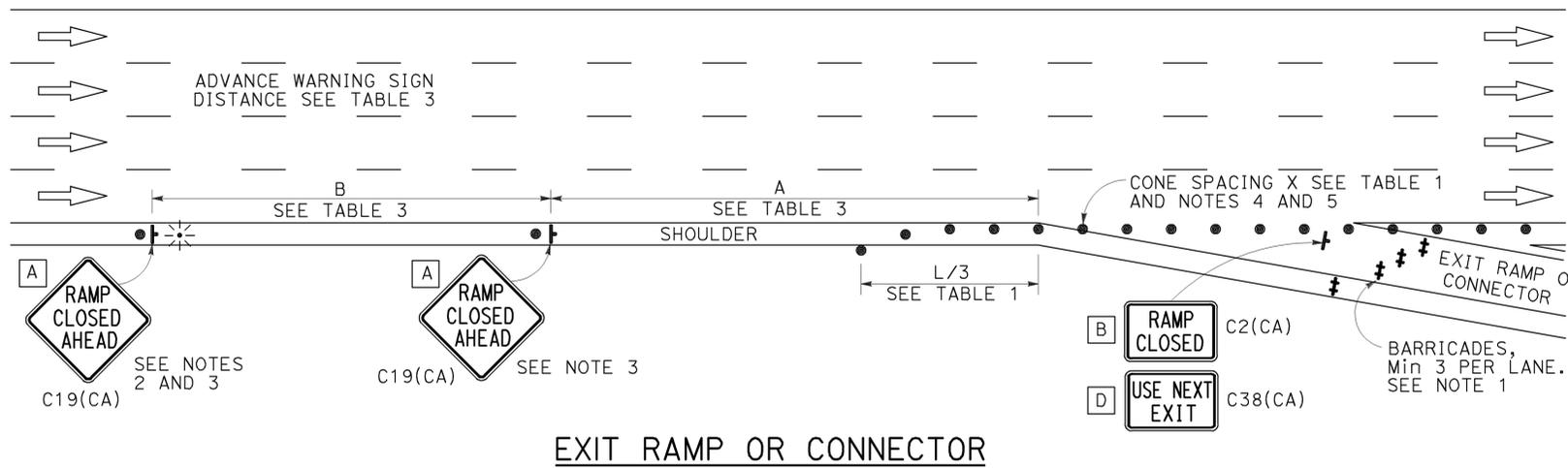
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

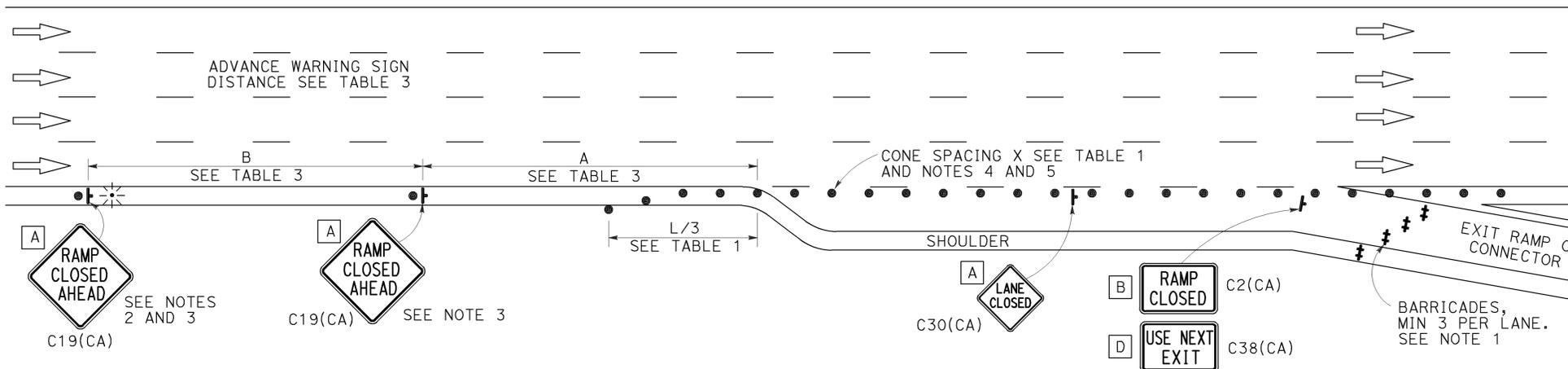
TO ACCOMPANY PLANS DATED 3-30-15

NOTES:

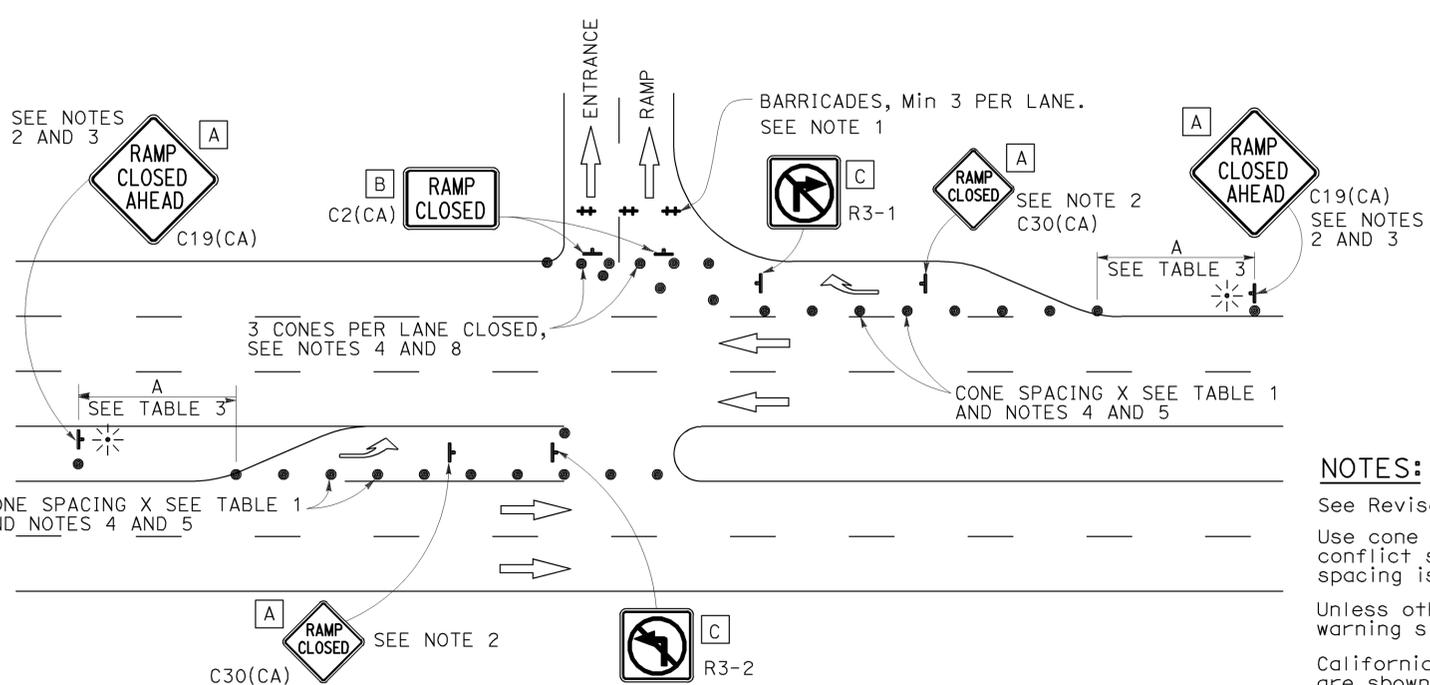
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
- Each advance C19(CA) "RAMP CLOSED AHEAD" sign 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. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
- All cones used for ramp 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 ramp closures only.
- At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
- The existing "EXIT" signs shall be covered during ramp closures.
- A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.



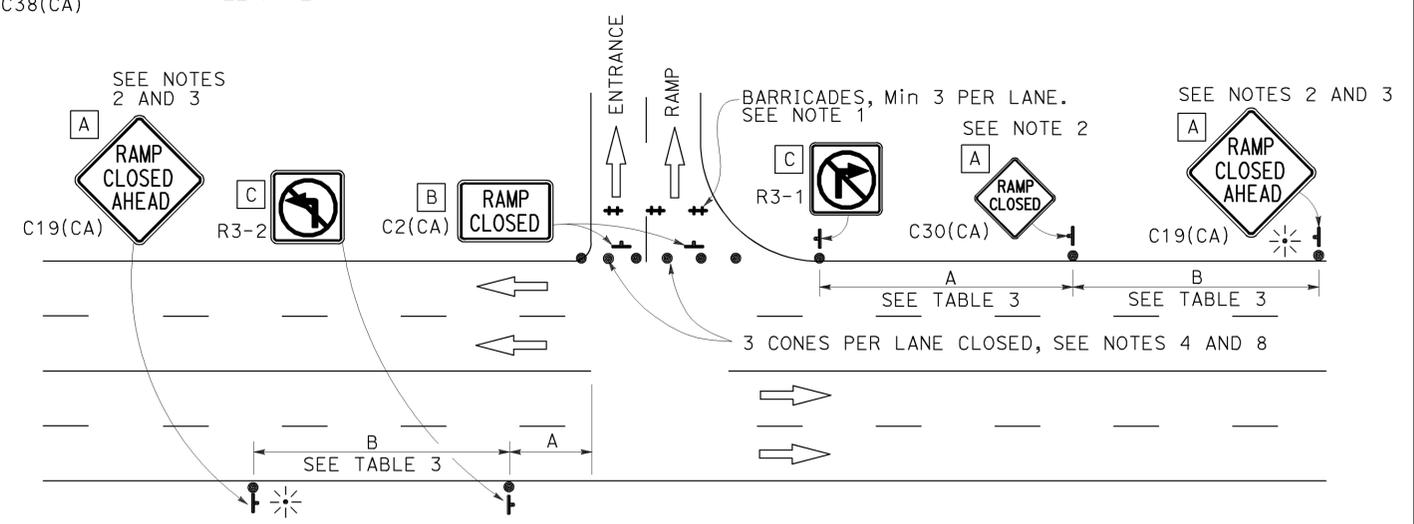
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

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.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR RAMP CLOSURE**
 NO SCALE

RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14
 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T14

2010 REVISED STANDARD PLAN RSP T14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	65	86

REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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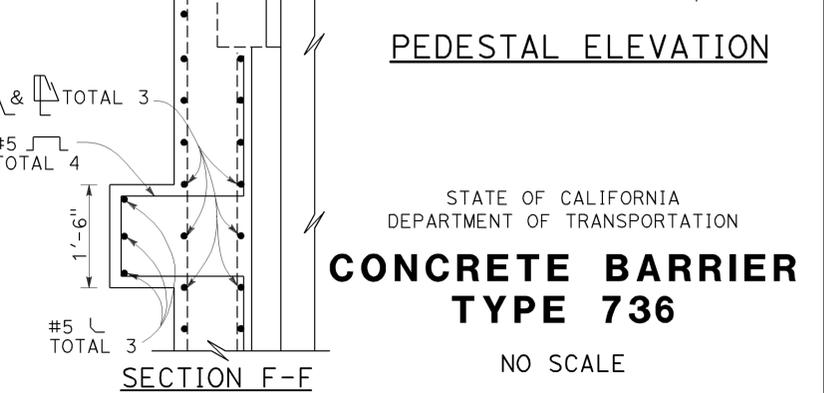
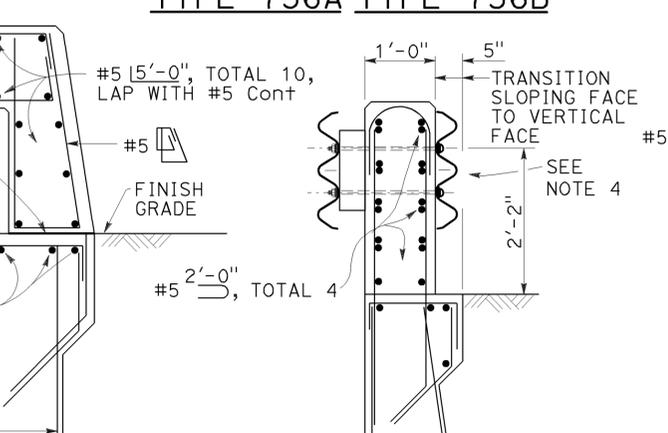
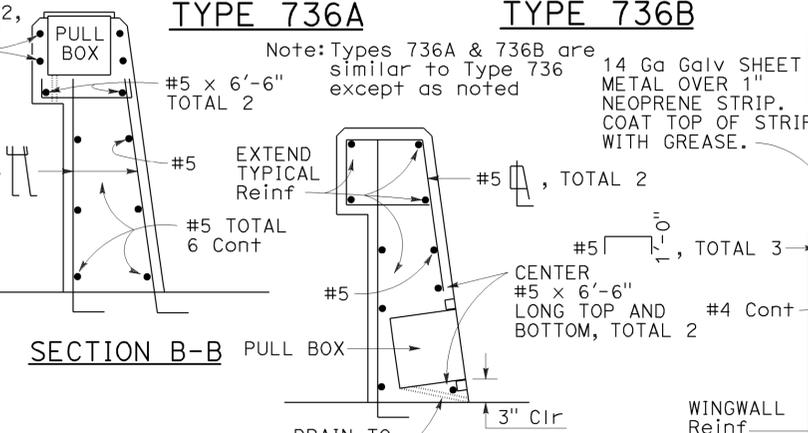
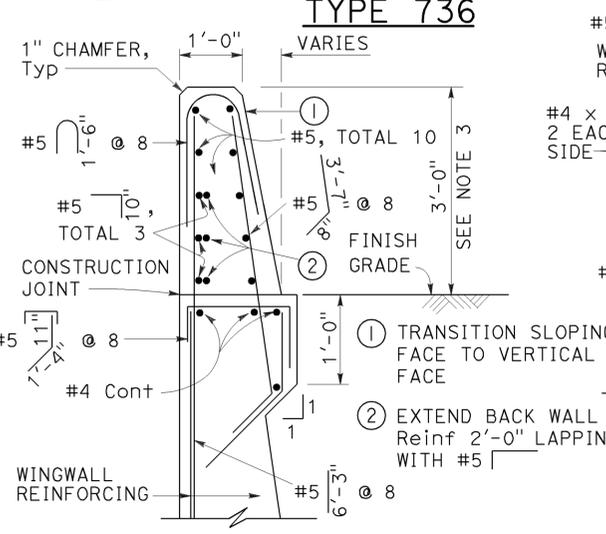
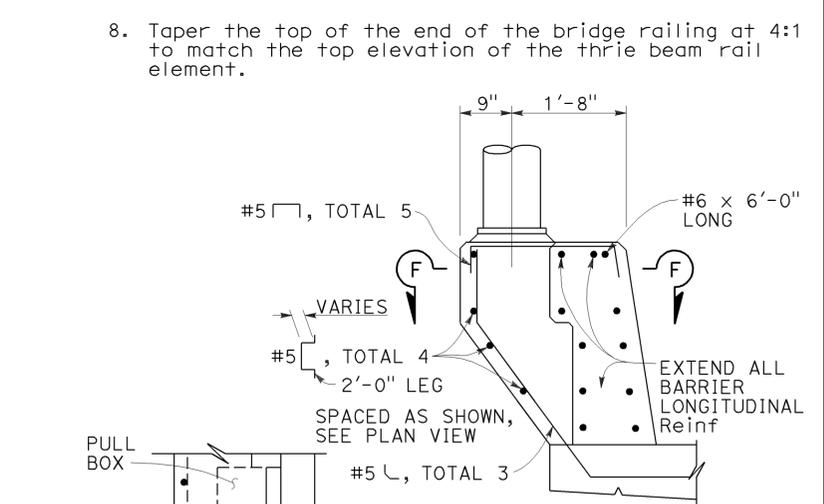
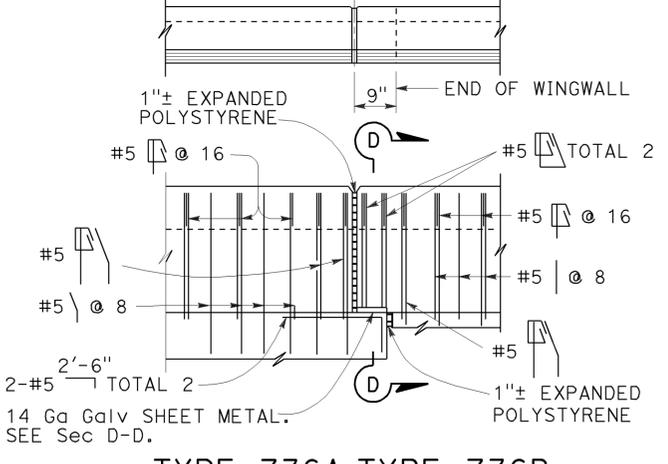
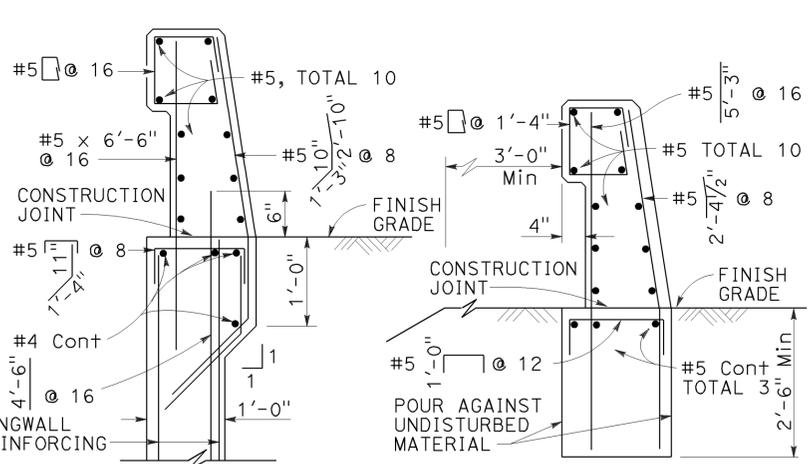
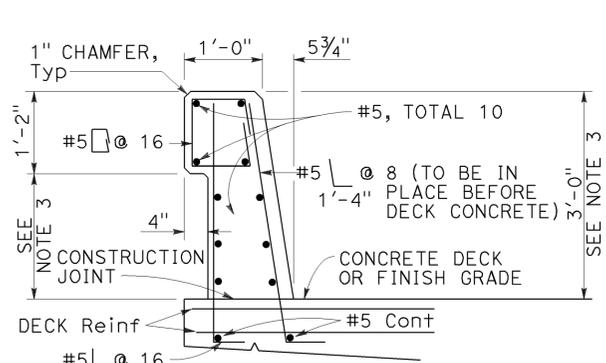
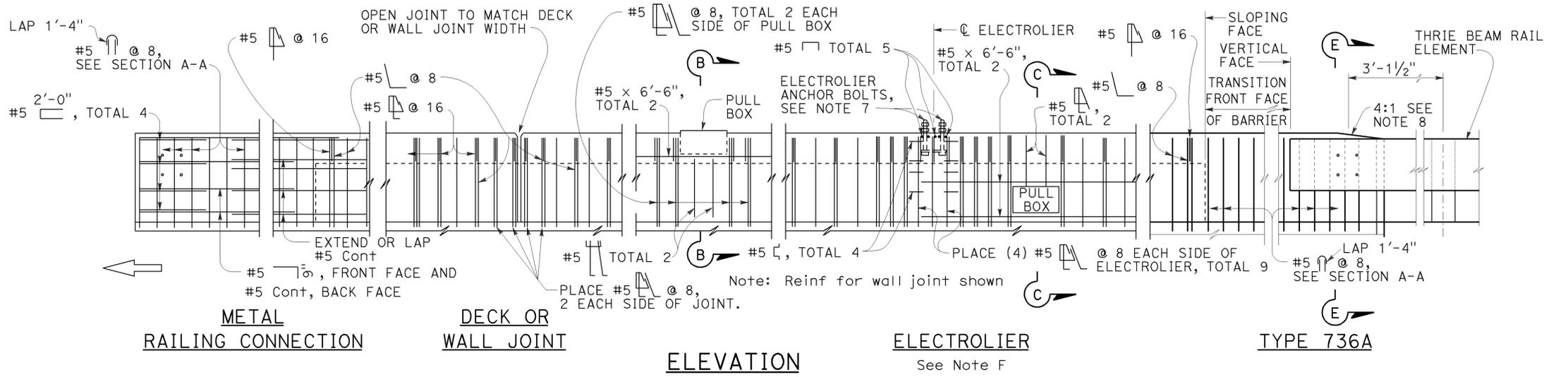
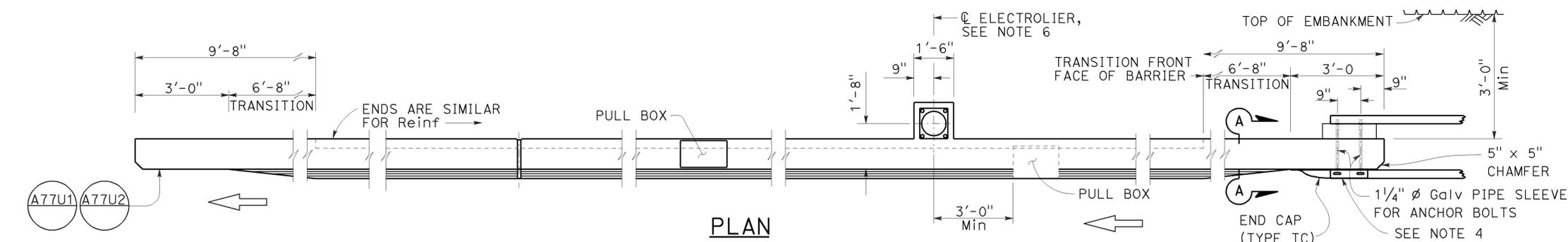
REGISTERED PROFESSIONAL ENGINEER
Tillett Satter
No. C42892
Exp. 3-31-14
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 3-30-15

NOTES:

1. Walls are to be backfilled before barrier is placed.
2. Clearance to reinforcing steel in barrier to be 1", except as noted. Longitudinal reinforcement to stop at all expansion joints.
3. Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.
4. For typical metal railing connection details not shown, see Revised Standard Plans RSP A77U1 and RSP A77U2.
5. See Standard Plans ES-9A, ES-9B, ES-9C, ES-9D and ES-9E for electrical details. The maximum number of conduits in the barrier is limited to two 2" conduits along with one 3" conduit. When a 3" conduit is used, it is restricted to the base of the barrier.
6. For electrolier mounting details, See Standard Plans ES-6A and ES-6B.
7. Minimum concrete edge distance, to the reinforcing shown, shall be maintained. Edge distance may be adjusted to accommodate increase in concrete cover for architectural treatment.
8. Taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail element.

2010 REVISED STANDARD PLAN RSP B11-56



SECTION A-A
Details shown for barrier anchorage to Type 736A. Anchorage for barrier Types 736 and 736B are similar to their respective details.

SECTION B-B
Note: Types 736A & 736B are similar to Type 736 except as noted.

SECTION D-D
Note: Types 736A & 736B are similar to Type 736 except as noted.

SECTION F-F
NO SCALE

LEGEND:

AB	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
BC	INSTALL PULL BOX IN EXISTING CONDUIT RUN
BP	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
CB	INSTALL CONDUIT INTO EXISTING PULL BOX
CC	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
CF	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
DH	DETECTOR HANDHOLE
FA	FOUNDATION TO BE ABANDONED
IS	INSTALL SIGN ON SIGNAL MAST ARM
NS	NO SLIP BASE ON STANDARD
PEC	PHOTOELECTRIC CONTROL
PEU	PHOTOELECTRIC UNIT
RC	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
RE	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
RL	RELOCATE EQUIPMENT
RR	REMOVE AND REUSE EQUIPMENT
RS	REMOVE AND SALVAGE EQUIPMENT
SC	SPLICE NEW TO EXISTING CONDUCTORS
SD	SERVICE DISCONNECT
TSP	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
Ck+	CIRCUIT	NO	NORMALLY OPEN
CMS	CHANGEABLE MESSAGE SIGN	P	CIRCUIT BREAKER'S POLE
C+id	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	Ala	13	4.9	66	86

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 3-30-15

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
Ω	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
μ	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.

REVISED STANDARD PLAN RSP ES-1A

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	67	86

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 3-30-15

CONDUIT

SIGNAL EQUIPMENT

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

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)

SIGNAL EQUIPMENT Cont

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

SERVICE EQUIPMENT

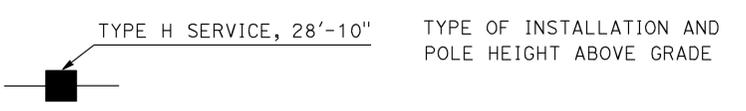
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

NEW	EXISTING	
		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

NOTES:

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

POLE-MOUNTED SERVICE DESIGNATION



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

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

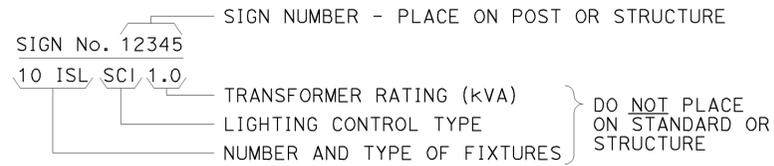
RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

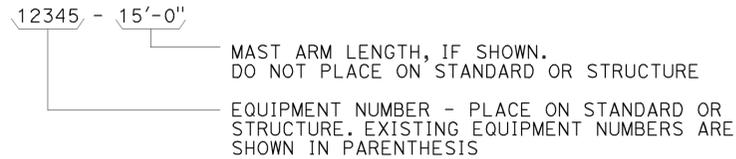
2010 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

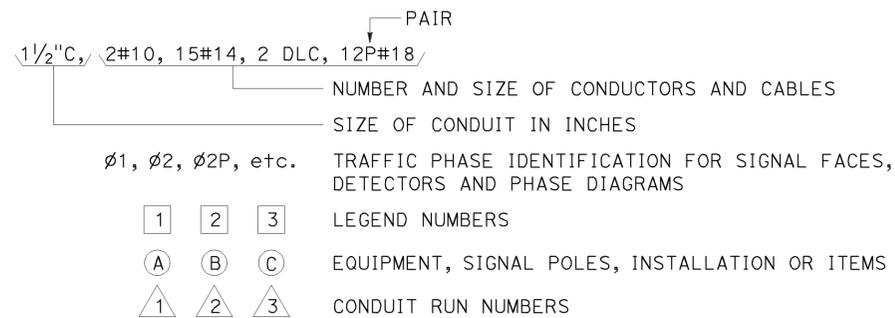
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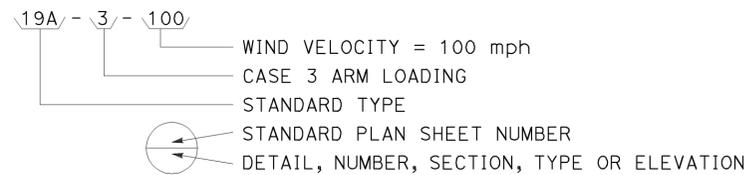
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



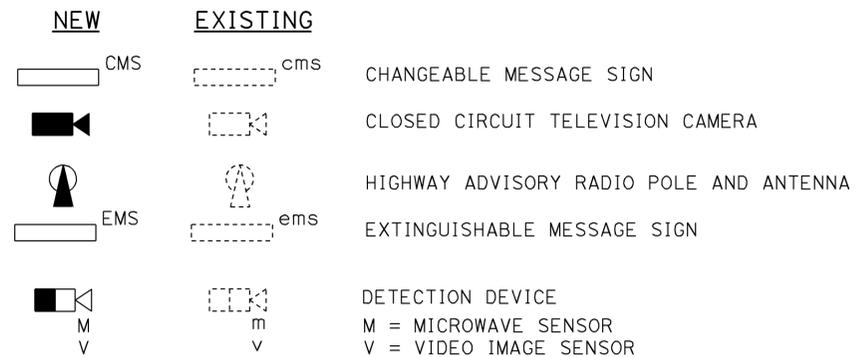
CONDUIT AND CONDUCTOR IDENTIFICATION:



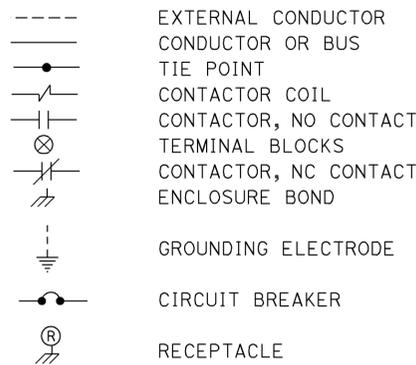
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



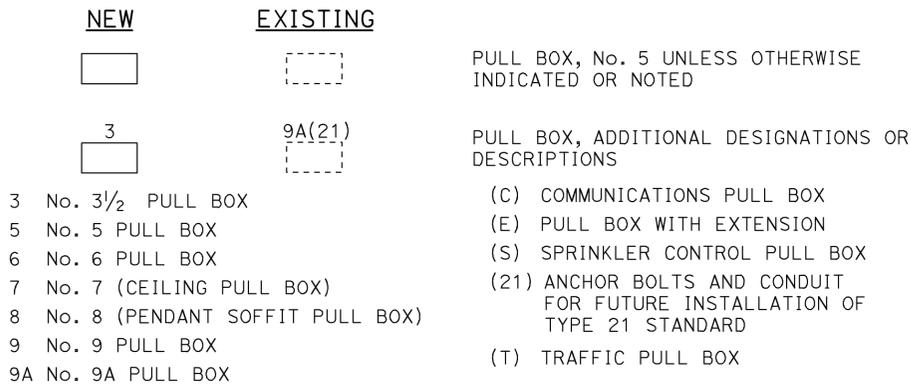
MISCELLANEOUS EQUIPMENT



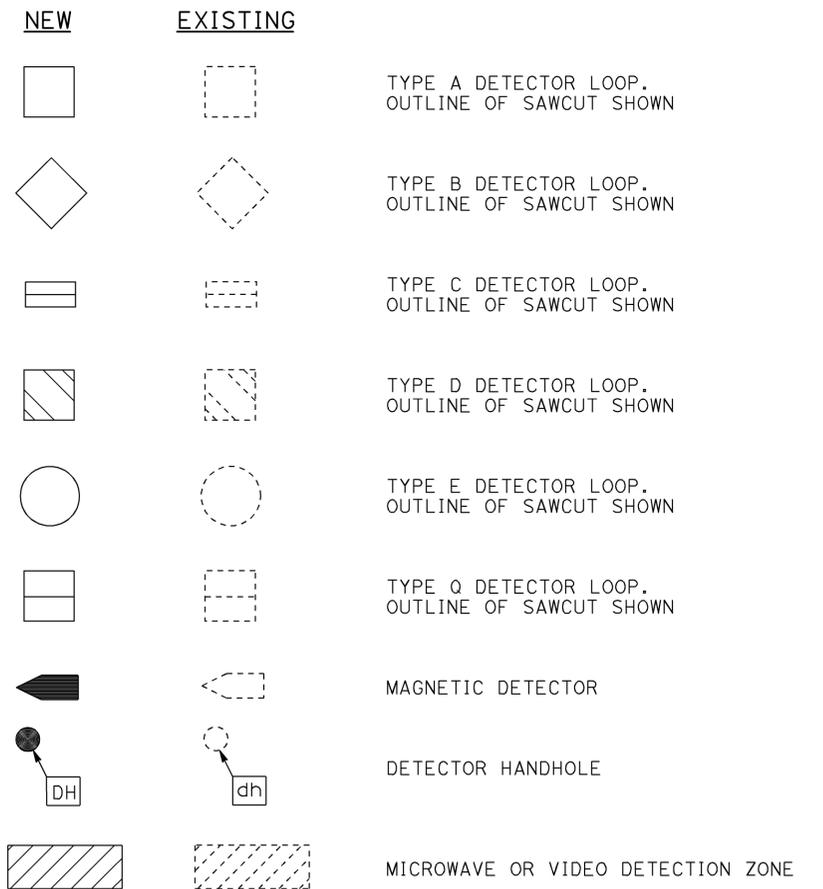
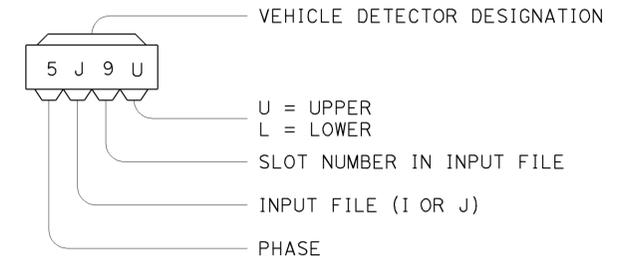
WIRING DIAGRAM LEGEND



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.

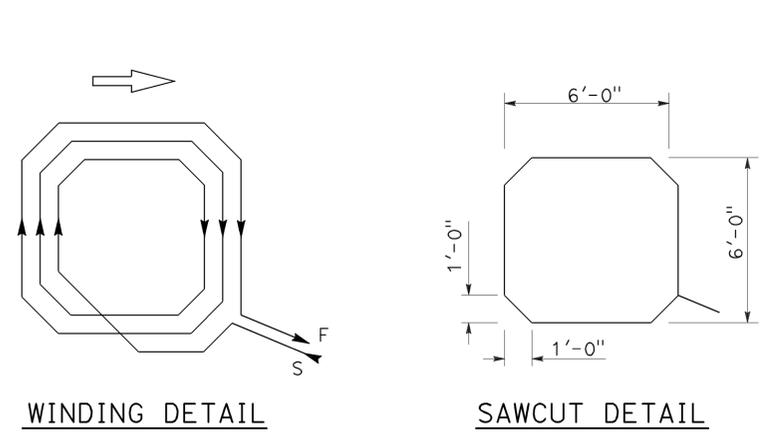
REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

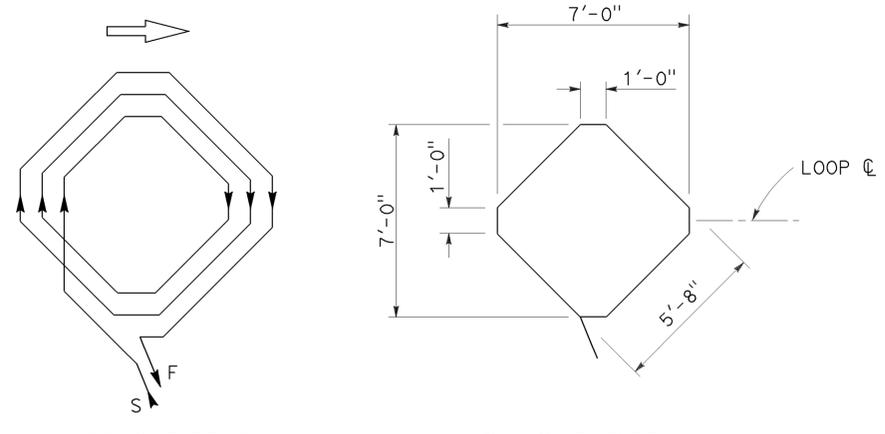
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	69	86
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

TO ACCOMPANY PLANS DATED 3-30-15

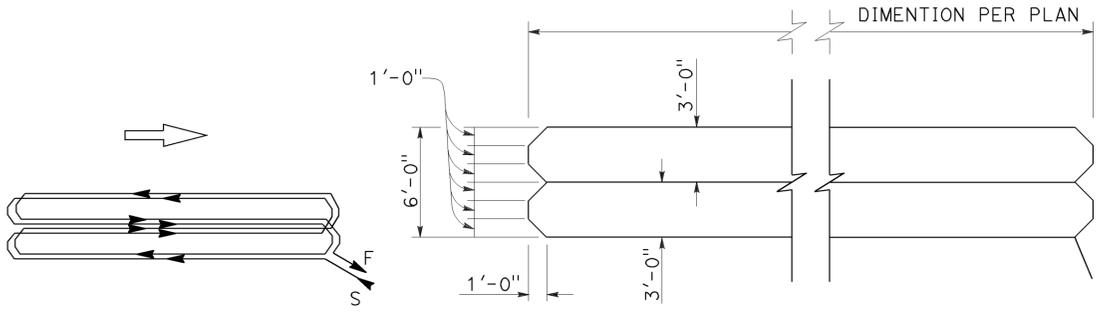
2010 REVISED STANDARD PLAN RSP ES-5B



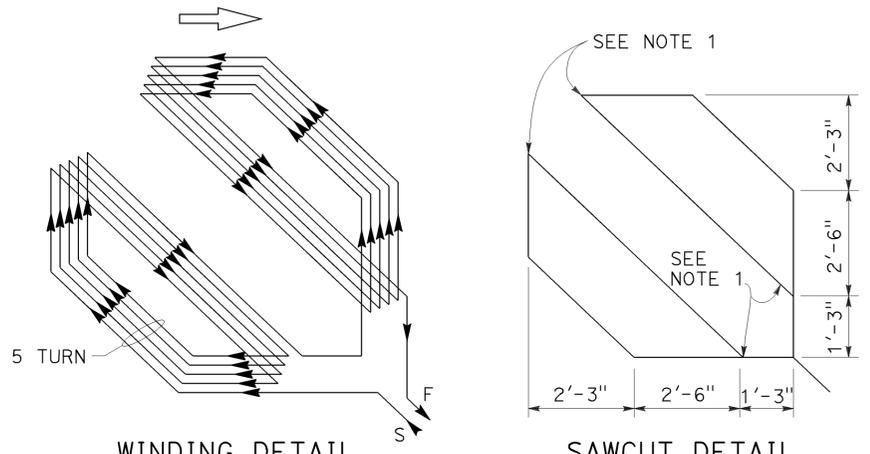
WINDING DETAIL SAWCUT DETAIL
TYPE A LOOP DETECTOR CONFIGURATION



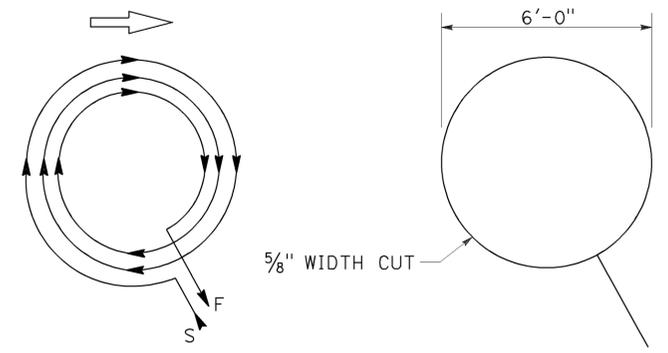
WINDING DETAIL SAWCUT DETAIL
TYPE B LOOP DETECTOR CONFIGURATION



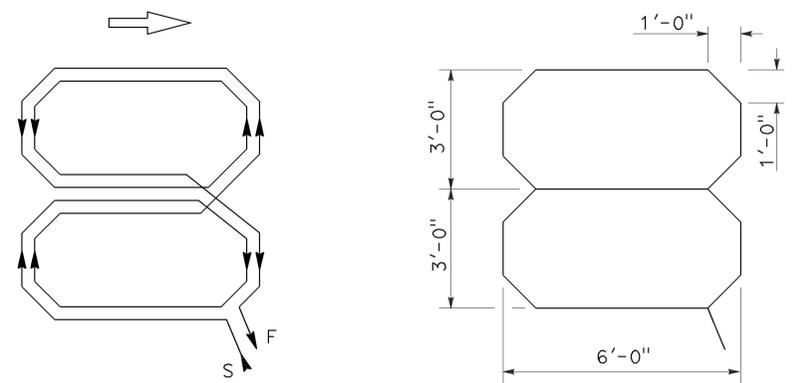
WINDING DETAIL SAWCUT DETAIL
TYPE C LOOP DETECTOR CONFIGURATION



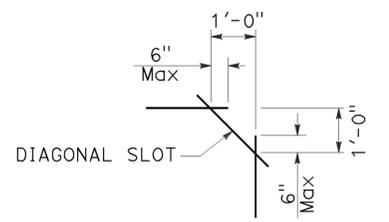
WINDING DETAIL SAWCUT DETAIL
TYPE D LOOP DETECTOR CONFIGURATION



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

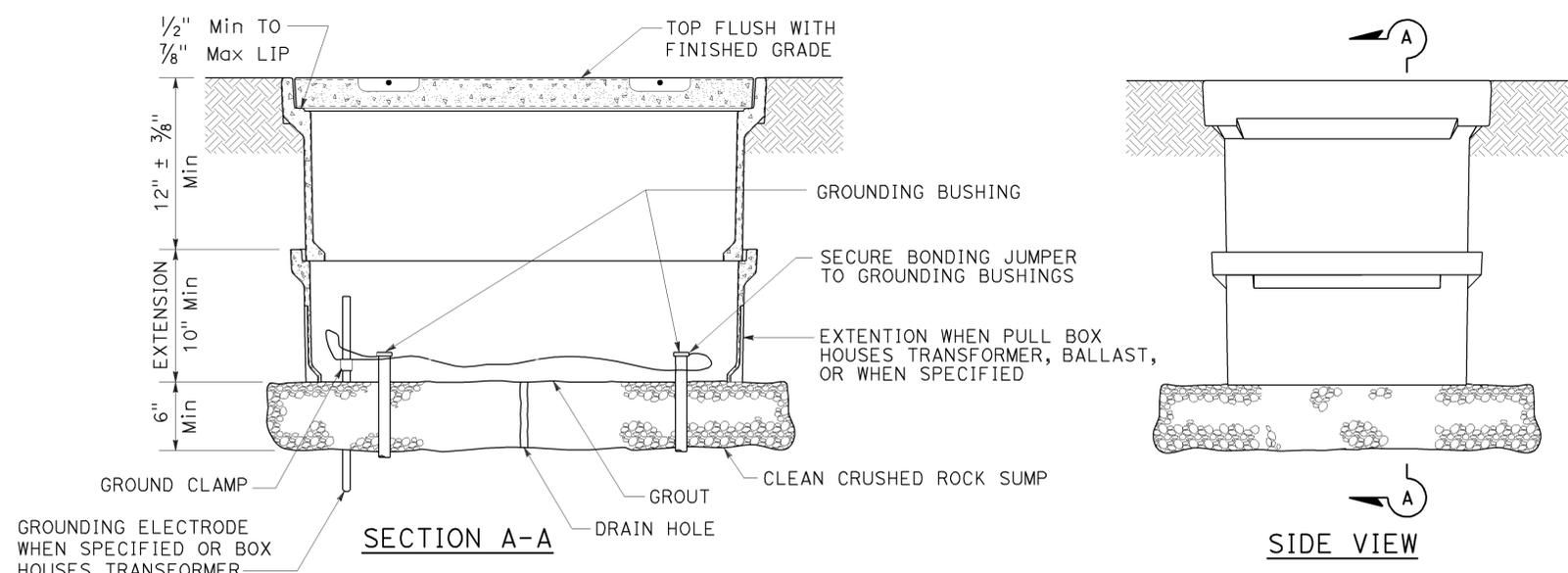
ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

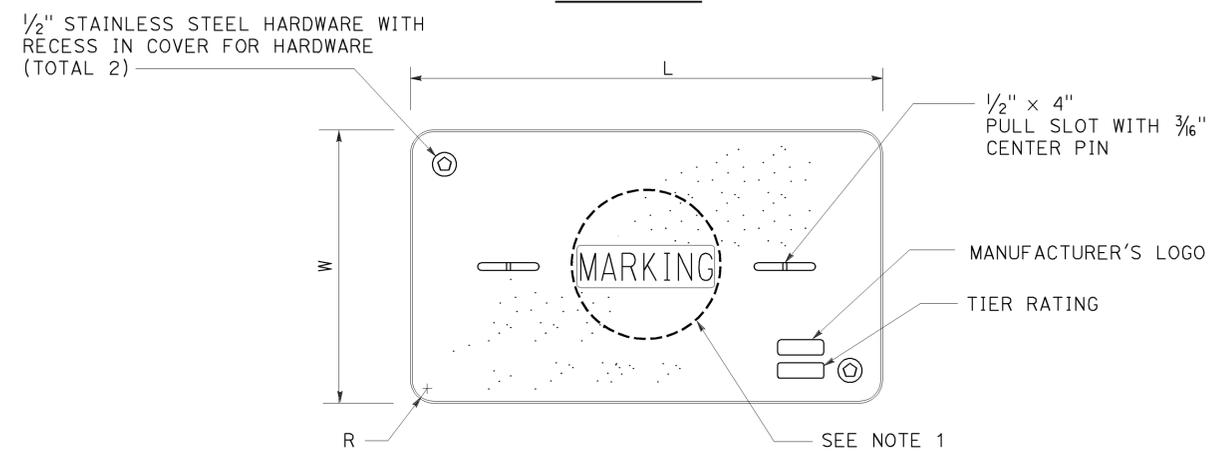
RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-8A

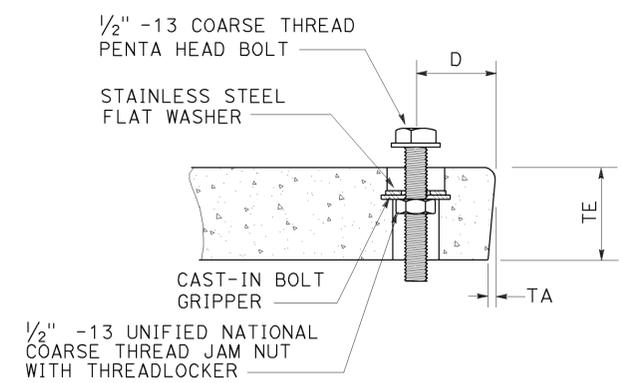
TO ACCOMPANY PLANS DATED 3-30-15



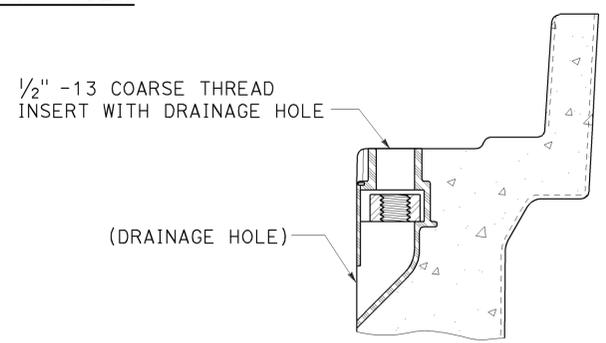
INSTALLATION DETAILS
DETAIL A



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. 3½ 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. 3½	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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	71	86

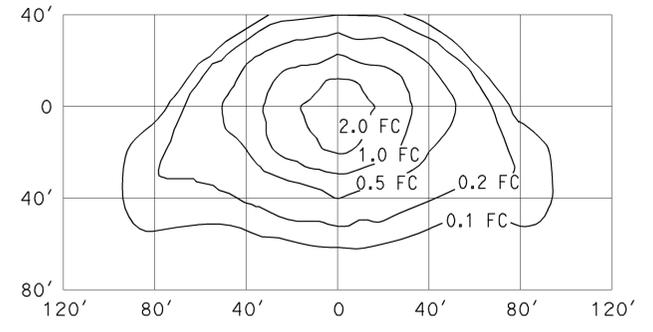
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

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.

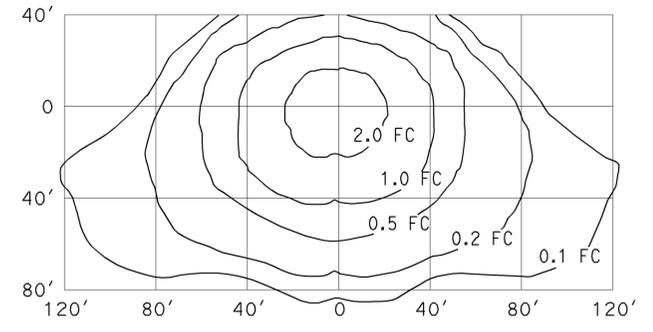
TO ACCOMPANY PLANS DATED 3-30-15

ISOFOOTCANDLE CURVE - MINIMUM



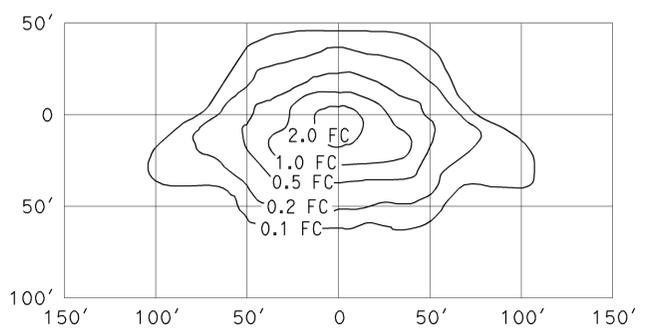
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 34' Mounting Height
 Lamp operated at 22,000 lm
 200-W high pressure sodium lamp
 ANSI Designation S66

ISOFOOTCANDLE CURVE - MINIMUM



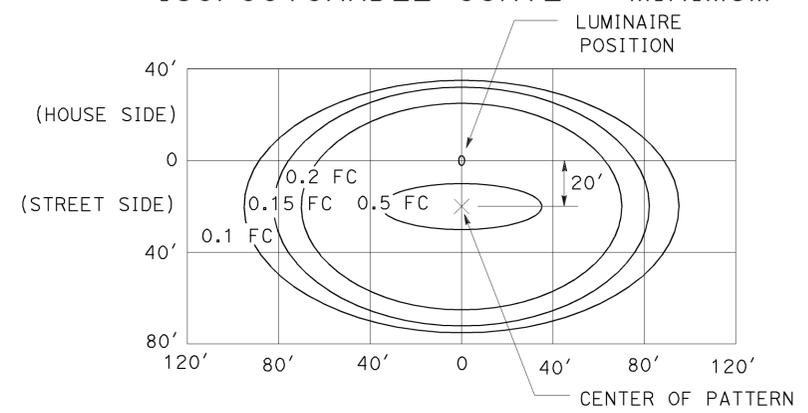
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 40' Mounting Height
 Lamp operated at 37,000 lm
 310-W high pressure sodium lamp
 ANSI Designation S67

ISOFOOTCANDLE CURVE - MINIMUM



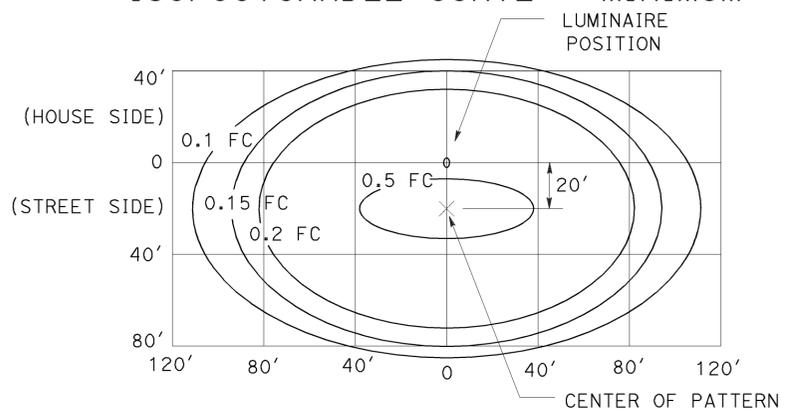
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 30' Mounting Height
 Lamp operated at 16,000 lm
 150-W high pressure sodium lamp
 ANSI Designation S55

ISOFOOTCANDLE CURVE - MINIMUM



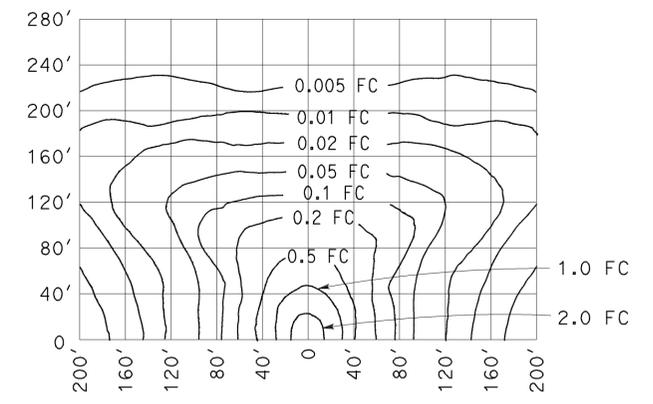
LED LUMINAIRE ROADWAY 1
 165-W at 34' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



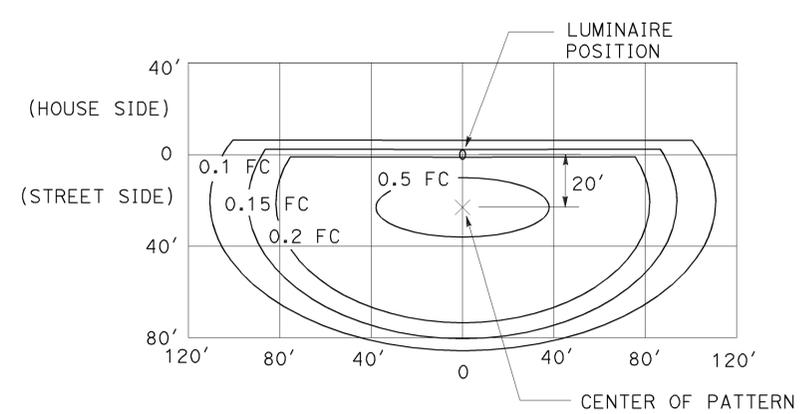
LED LUMINAIRE ROADWAY 2
 235-W at 40' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



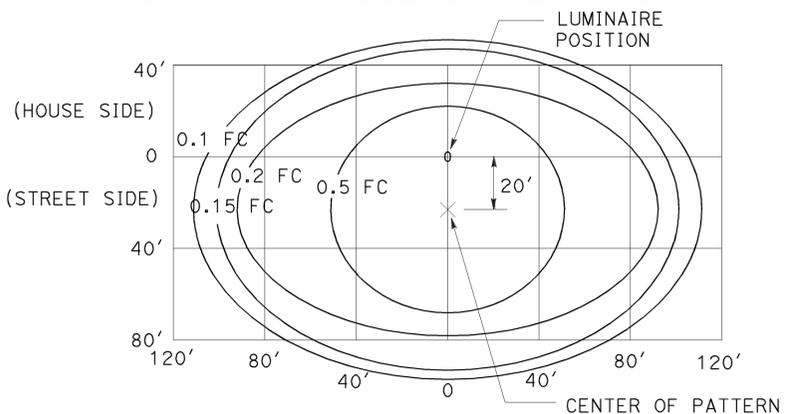
LOW PRESSURE SODIUM LUMINAIRE
 40' Mounting Height
 Lamp operated at 33,000 lm
 180-W low pressure sodium lamp

ISOFOOTCANDLE CURVE - MINIMUM



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

ISOFOOTCANDLE CURVE - MINIMUM

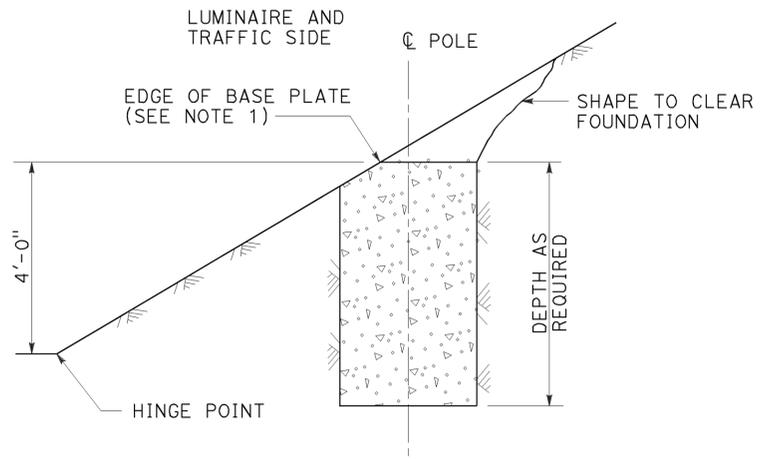


LED LUMINAIRE ROADWAY 4
 300-W at 40' Mounting Height

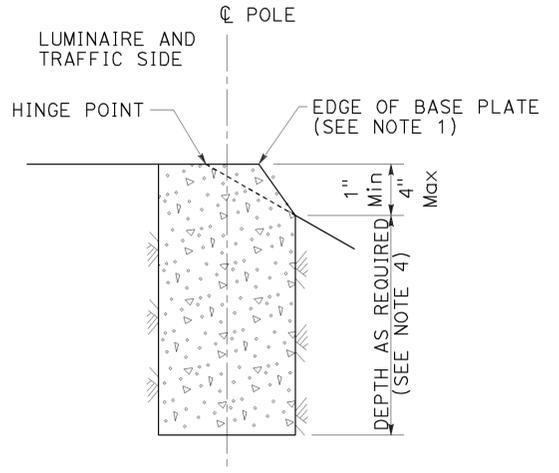
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (ISOFOOTCANDLE DIAGRAMS)**

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.

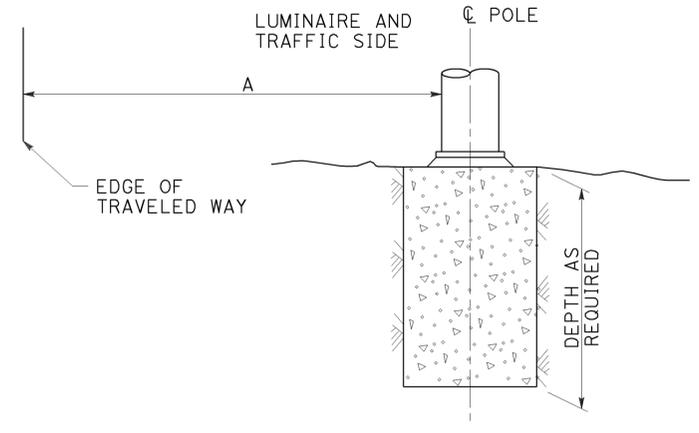
2010 REVISED STANDARD PLAN RSP ES-10A



CUT SLOPES
STEEPER THAN 4:1,
LESS THAN 2:1
DETAIL A-1
 See Note 2 and 3



FILL SLOPES
STEEPER THAN 4:1,
LESS THAN 2:1
DETAIL A-2
 See Note 2 and 3



FLAT SECTIONS, CUT OR FILL SLOPES
4:1 OR FLATTER
DETAIL A-3
 See Note 2

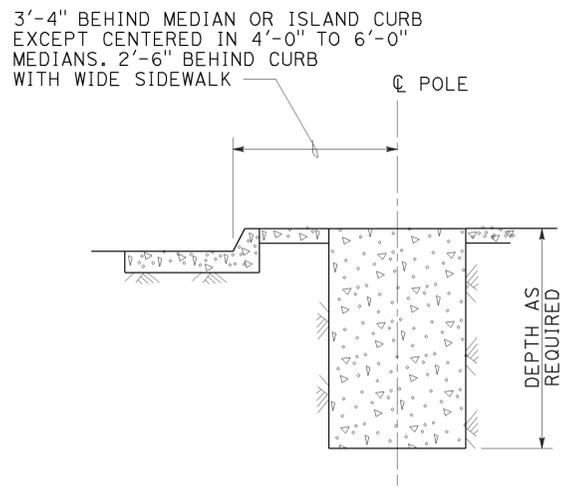
TO ACCOMPANY PLANS DATED 3-30-15

STANDARD TYPE	SETBACK (DIMENSION A)
32	30'-0" (Min)
31	20'-0" (Min)
15, 15D, 15-SB, 21, 21D, 30	ARM LENGTH (Min)

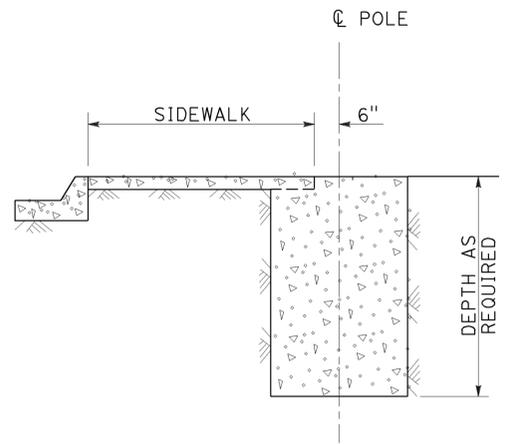
FOUNDATIONS ADJACENT TO ALL ROADWAYS EXCEPT
IN SIDEWALK, MEDIAN AND ISLAND AREAS
DETAIL A

NOTES:

- Where a portion of the foundation is above grade, the top edges shall have a 1" chamfer.
- Slopes shall be horizontal to vertical ratio (Horizontal : Vertical).
- Horizontal setbacks on cut and fill slopes steeper than 4:1 shall not exceed the distance shown for flat sections.
- CIDH embedment depth shall be increased beyond standard depths by the diameter of the CIDH.



MEDIAN, ISLAND
OR WIDE SIDEWALK
DETAIL B-1
 7' Wide and wider



NARROW SIDEWALK
DETAIL B-2
 Less than 7' wide

FOUNDATIONS IN SIDEWALK, MEDIAN AND ISLAND AREAS
DETAIL B

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(FOUNDATION INSTALLATIONS)
 NO SCALE

RSP ES-11 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-11
 DATED MAY 20, 2011 - PAGE 488 OF THE STANDARD PLANS BOOK DATED 2010.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	73	86

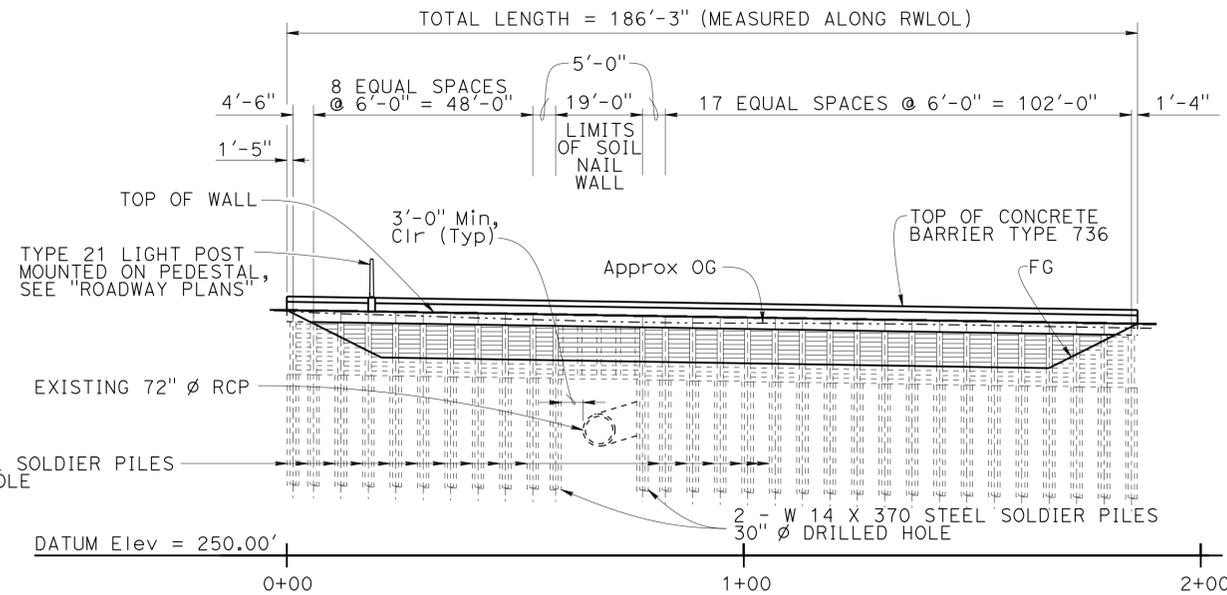
Rosa M Candiotti 12/18/14
REGISTERED CIVIL ENGINEER DATE

3-30-15
PLANS APPROVAL DATE

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- NOTES:
- TEMPORARY K-RAIL, SEE "ROADWAY PLANS"
 - EXISTING METAL BEAM GUARD RAIL TO BE REMOVED, SEE "ROADWAY PLANS"
 - CONCRETE BARRIER TYPE 736
 - REFER TO "CONCRETE BARRIER SLAB DETAILS" SHEET FOR VARIATIONS

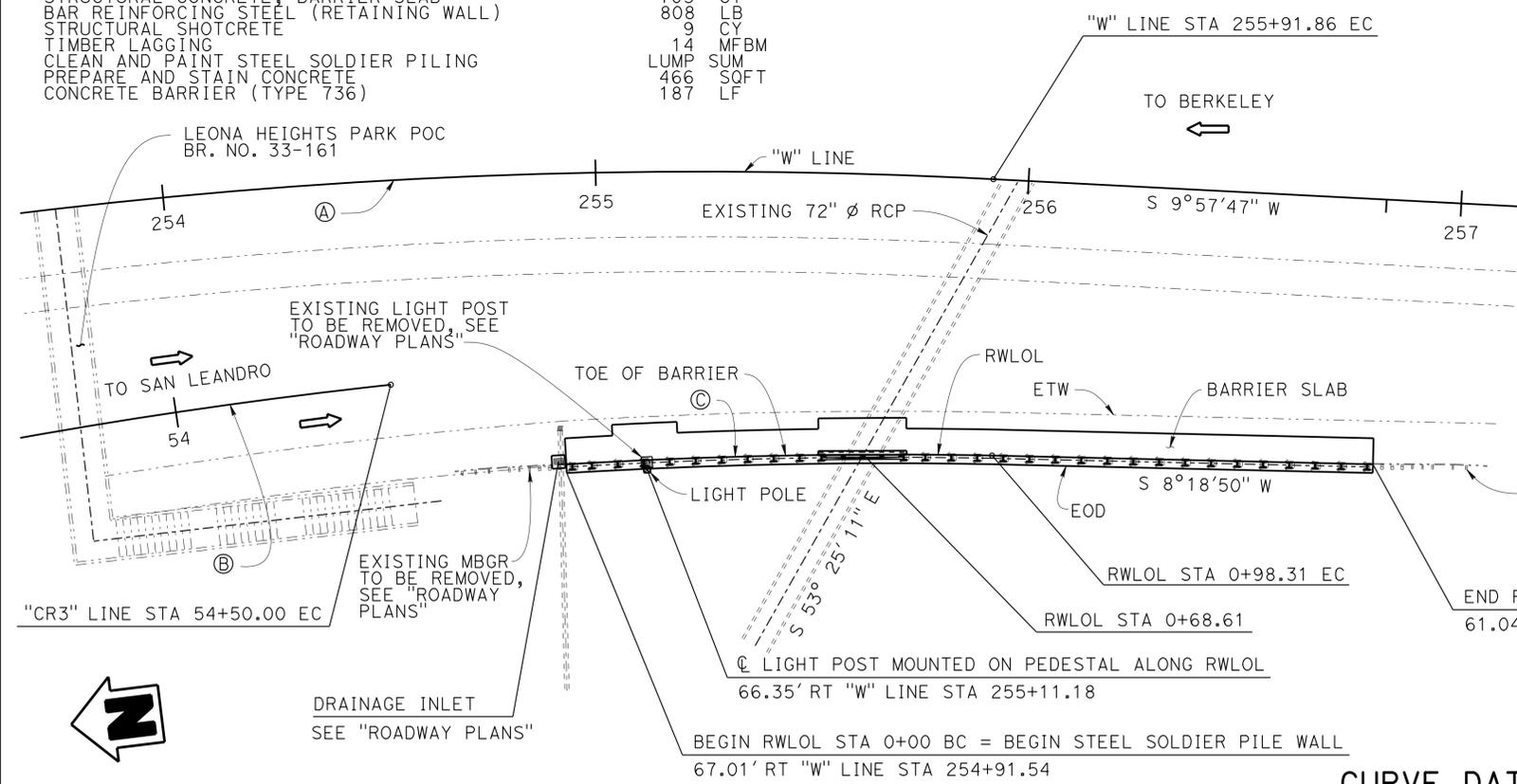
- LEGEND:
- PORTION REMOVAL
 - DENOTES EXISTING STRUCTURE
 - DENOTES NEW STRUCTURE



QUANTITIES

STRUCTURE EXCAVATION (SOLDIER PILE WALL)	246	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	73	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	137	CY
LEAN CONCRETE BACKFILL	76	CY
SOIL NAIL	370	LF
STEEL SOLDIER PILE (W 14 X 342)	1,015	LF
STEEL SOLDIER PILE (W 14 X 370)	73	LF
30" DRILLED HOLE	1,124	LF
STRUCTURAL CONCRETE, BARRIER SLAB	105	CY
BAR REINFORCING STEEL (RETAINING WALL)	808	LB
STRUCTURAL SHOTCRETE	9	CY
TIMBER LAGGING	14	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	LUMP	SUM
PREPARE AND STAIN CONCRETE	466	SQFT
CONCRETE BARRIER (TYPE 736)	187	LF

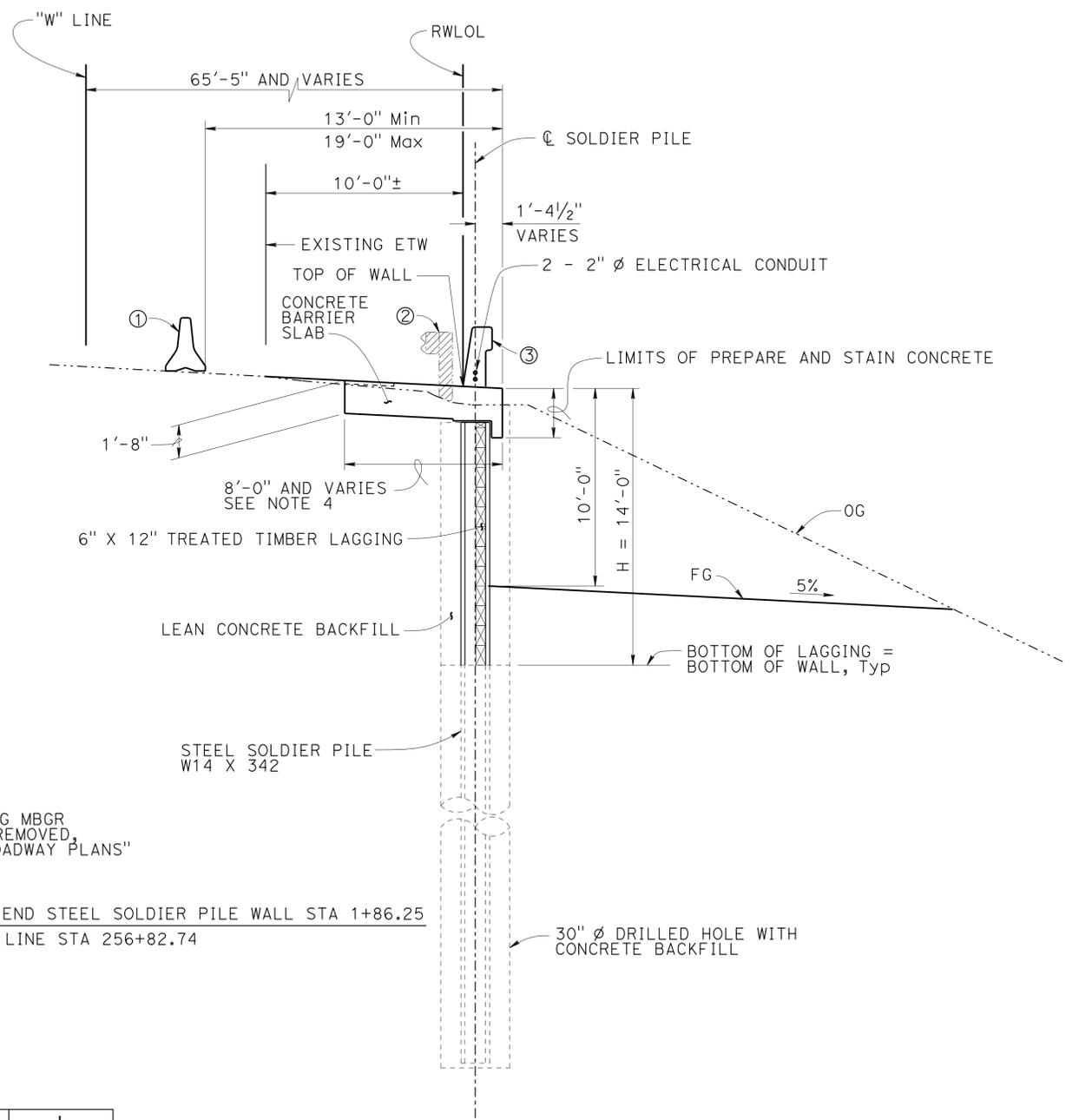
ELEVATION
1" = 20'



CURVE DATA

No.	R	Δ	T	L
A	1300.00'	34°28'34"	403.36'	782.24'
B	1253.00'	13°53'18"	152.61'	303.73'
C	1233.00'	04°34'06"	49.18'	98.31'

PLAN
1" = 20'



TYPICAL SECTION

1/4" = 1'-0"

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

GORDON DANKE DESIGN ENGINEER	DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO.	33E0234	CARSON STREET SOLDIER PILE WALL GENERAL PLAN	
	DETAILS	BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY	LAYOUT	BY ROSA CANDIOTTI			CHECKED MOHEY EL-MOUSLY	POST MILE		4.8-5.0
	QUANTITIES	BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA	SPECIFICATIONS	BY MARY KOPSA			CHECKED MARY KOPSA	PLANS AND SPECS COMPARED		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	74	86

Rosa M Candiotti 12/18/14
REGISTERED CIVIL ENGINEER DATE

3-30-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROSA CANDIOTTI
No. C64626
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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STANDARD PLANS DATED MAY 2010

- RSP - A10A ABBREVIATIONS (SHEET 1 OF 2)
- RSP - A10B ABBREVIATIONS (SHEET 2 OF 2)
- RSP - A10C LINES AND SYMBOLS (SHEET 1 OF 3)
- RSP - A10D LINES AND SYMBOLS (SHEET 2 OF 3)
- RSP - A10E LINES AND SYMBOLS (SHEET 3 OF 3)
- RSP - A10F LEGEND - SOIL (SHEET 1 OF 2)
- RSP - A10G LEGEND - SOIL (SHEET 1 OF 2)
- RSP - A10H LEGEND - ROCK
- RSP - A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL
- RSP - B11-56 CONCRETE BARRIER TYPE 736
- RSP - ES-6A ELECTRICAL SYSTEMS (LIGHTING STANDARD, TYPES 15 AND 21)

INDEX TO PLANS

1. GENERAL PLAN
2. INDEX TO PLANS
3. STRUCTURE PLAN
4. FOUNDATION PLAN
5. EXCAVATION AND BACKFILL DETAILS
6. SOLDIER PILE AND SOIL NAIL DETAILS
7. CANTILEVER SOLDIER PILE WALL DETAILS
8. SOLDIER PILE WALL LAGGING DETAILS
9. SOIL NAIL WALL LAYOUT
10. SOIL NAIL WALL DETAILS NO. 1
11. SOIL NAIL WALL DETAILS NO. 2
12. CONCRETE BARRIER SLAB DETAILS
13. WALL DRAIN DETAILS
14. LOG OF TEST BORINGS

PILE DATA TABLE

PILE NO.	STATION ALONG RWLOL	TOP OF WALL ELEVATION (FT) ALONG RWLOL	BOTTOM OF LAGGING ELEVATION (FT)	SPECIFIED PILE TIP ELEVATION (FT)	PILE SECTION
1	0+01.35	303.53	289.45	265.53	W14 X 342
2	0+05.86	303.46	289.36	265.45	W14 X 342
3	0+11.86	303.36	289.26	265.35	W14 X 342
4	0+17.87	303.29	289.16	265.25	W14 X 342
5	0+23.87	303.18	289.06	265.16	W14 X 342
6	0+29.87	303.07	288.94	265.06	W14 X 342
7	0+35.88	302.94	288.81	264.94	W14 X 342
8	0+41.87	302.82	288.69	264.81	W14 X 342
9	0+47.89	302.71	288.56	264.68	W14 X 342
10	0+53.89	302.59	288.47	264.56	W14 X 342
11	0+58.89	302.49	288.12	264.49	W14 X 370
12	0+77.91	302.13	288.03	264.13	W14 X 370
13	0+82.90	302.03	287.91	264.02	W14 X 342
14	0+88.90	301.91	287.79	263.91	W14 X 342
15	0+94.90	301.80	287.68	263.79	W14 X 342
16	1+00.91	301.68	287.57	263.67	W14 X 342
17	1+06.91	301.57	287.47	263.57	W14 X 342
18	1+12.92	301.48	287.38	263.47	W14 X 342
19	1+18.90	301.38	287.28	263.37	W14 X 342
20	1+24.92	301.28	287.19	263.27	W14 X 342
21	1+30.91	301.19	287.10	263.18	W14 X 342
22	1+36.91	301.11	287.02	263.10	W14 X 342
23	1+42.91	301.02	286.94	263.02	W14 X 342
24	1+48.92	300.94	286.87	262.94	W14 X 342
25	1+54.92	300.87	286.82	262.87	W14 X 342
26	1+60.91	300.83	286.78	262.82	W14 X 342
27	1+66.91	300.79	286.73	262.78	W14 X 342
28	1+72.91	300.75	286.69	262.73	W14 X 342
29	1+78.91	300.71	286.64	262.69	W14 X 342
30	1+84.91	300.64		262.64	W14 X 342

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

DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO.	CARSON STREET SOLDIER PILE WALL INDEX TO PLANS
DETAILS	BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY			33E0234	
QUANTITIES	BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA			POST MILE 4.8-5.0	

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

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 3594
PROJECT NUMBER & PHASE: 0413000228-1
CONTRACT NO.: 04-1SS414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
11-24-14 12-17-14 3-27-14 12-18-14	2	14

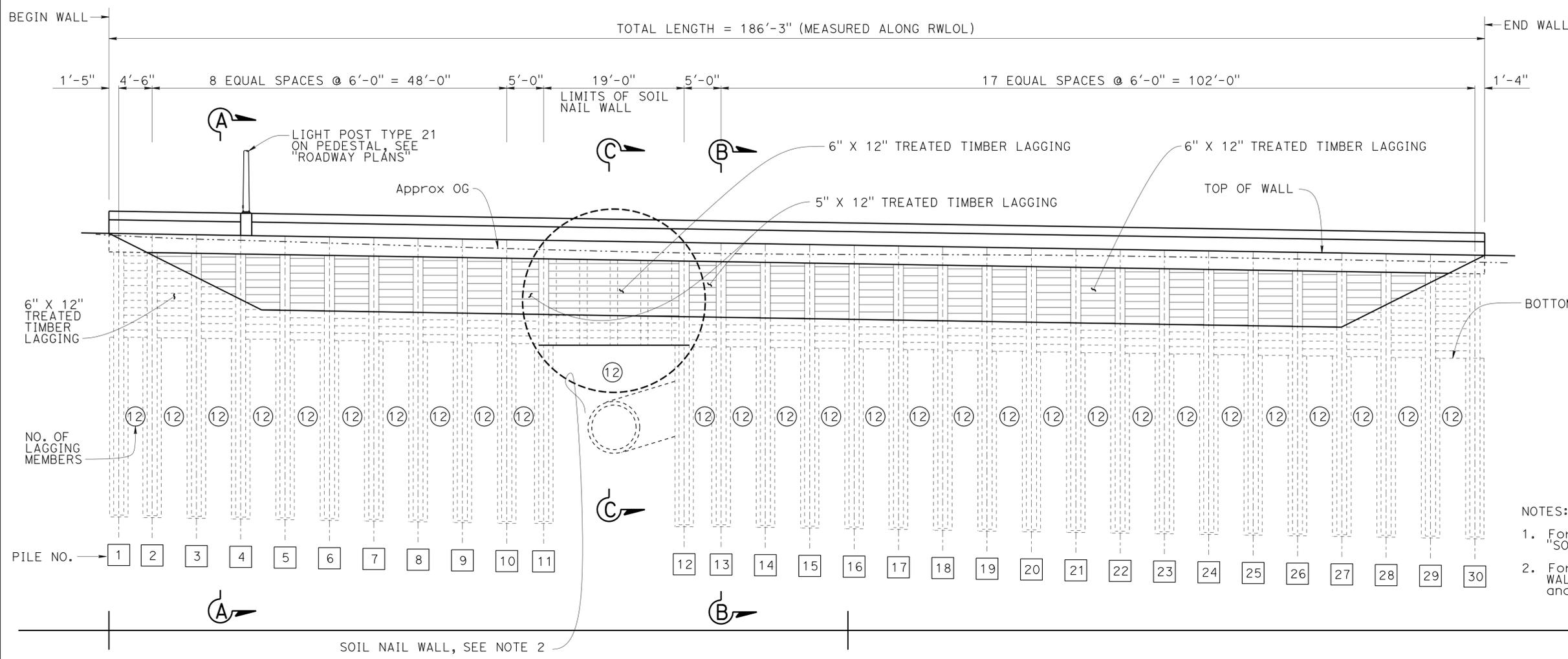
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TIME PLOTTED => 10:46
DATE PLOTTED => 06-APR-2015
USERNAME => s132175

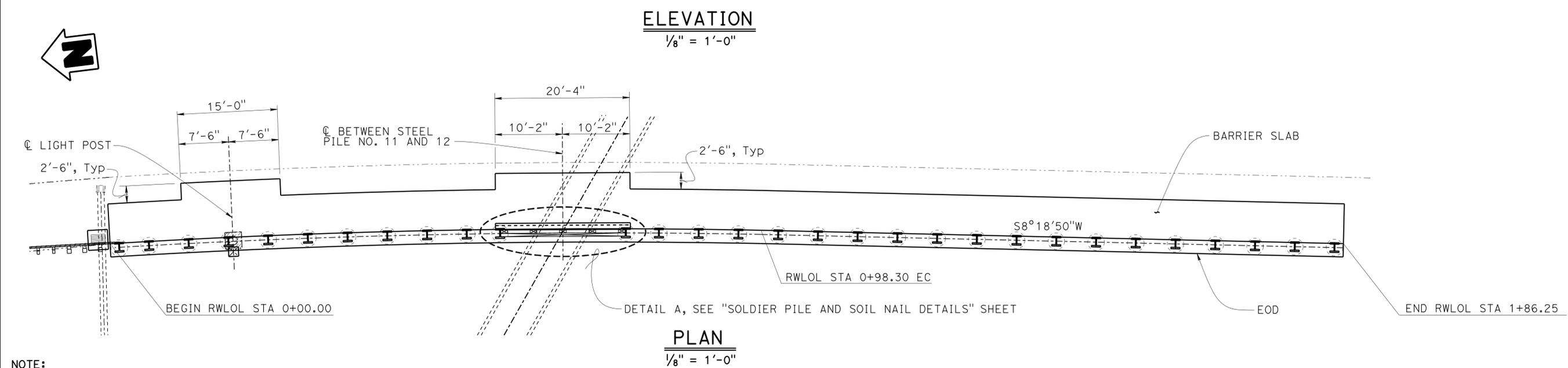
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	75	86

Rosa M Candiotti		12/18/14
REGISTERED CIVIL ENGINEER	DATE	
3-30-15		
PLANS APPROVAL DATE		

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- NOTES:
- For Section A-A, B-B, and C-C, see "SOLDIER PILE AND SOIL NAIL DETAILS" sheet.
 - For additional details, see "SOIL NAIL WALL LAYOUT", "SOIL NAIL WALL DETAILS NO. 1" and "SOIL NAIL WALL DETAILS NO. 2" sheets.



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

DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO. 33E0234	CARSON STREET SOLDIER PILE WALL STRUCTURE PLAN	
	DETAILS	BY DAVID ELLIOTT			CHECKED MOHEY EL-MOUSLY		POST MILE 4.8-5.0
	QUANTITIES	BY ROSA CANDIOTTI			CHECKED ANDREW ONODERA		

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: 0413000228-1	CONTRACT NO.: 04-1SS414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 3 OF 14
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	76	86

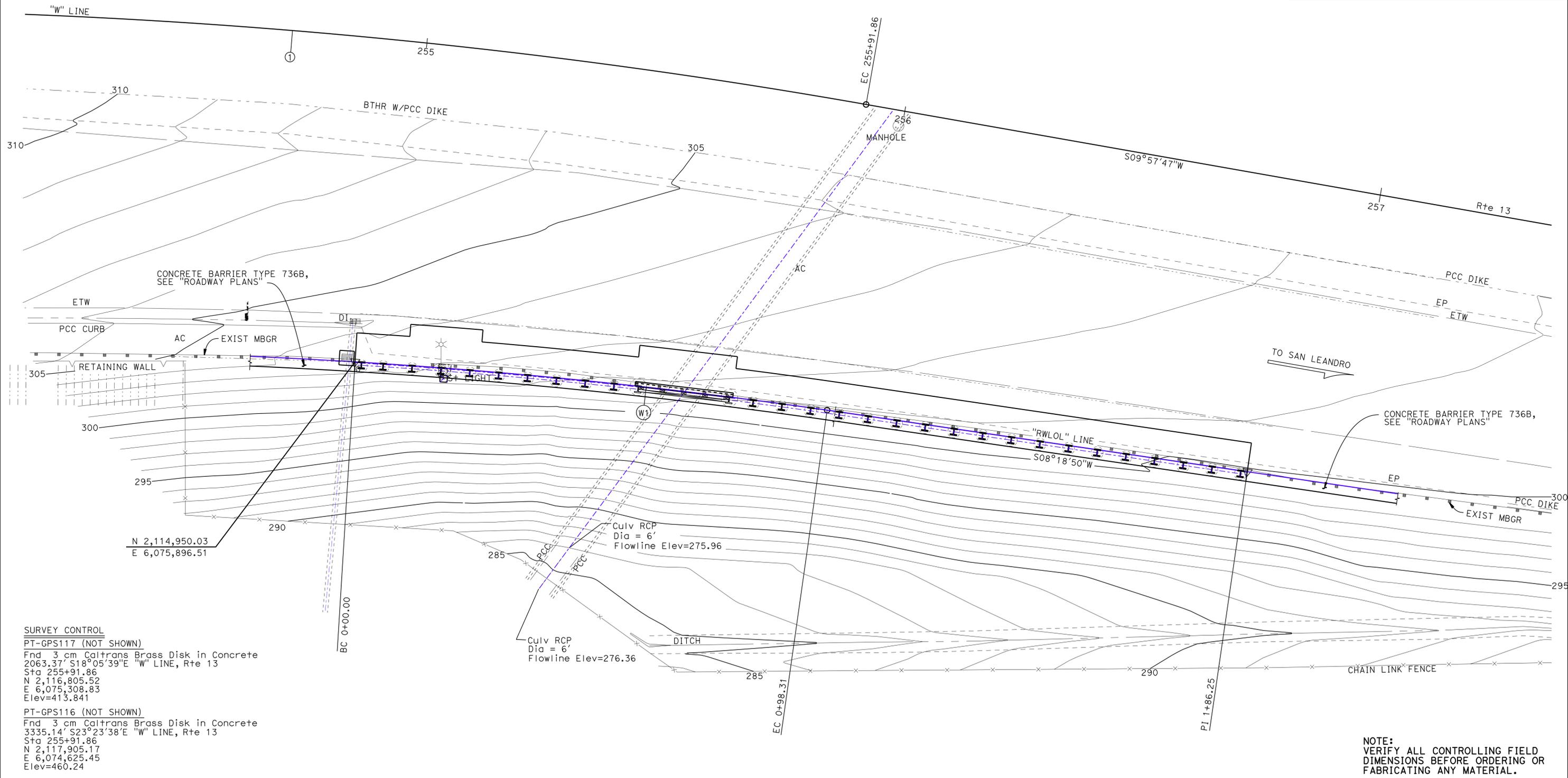
Rosa M Candiotti 12/18/14
 REGISTERED CIVIL ENGINEER DATE

3-30-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 ROSA CANDIOTTI
 No. C64626
 Exp. 6-30-15
 CIVIL
 STATE OF CALIFORNIA

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No.	⊙	R	Δ	T	L
1		1300.00	34°28'34"	403.36	782.24
W1		1233.00	04°34'06"	49.18	98.31



SURVEY CONTROL

PT-GPS117 (NOT SHOWN)
 Fnd 3 cm Caltrans Brass Disk in Concrete
 2063.37' S18°05'39"E "W" LINE, Rte 13
 Sta 255+91.86
 N 2,116,805.52
 E 6,075,308.83
 Elev=413.841

PT-GPS116 (NOT SHOWN)
 Fnd 3 cm Caltrans Brass Disk in Concrete
 3335.14' S23°23'38"E "W" LINE, Rte 13
 Sta 255+91.86
 N 2,117,905.17
 E 6,074,625.45
 Elev=460.24

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

PRELIMINARY INVESTIGATION SECTION				DESIGN BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO. 33E0234	CARSON STREET SOLDIER PILE WALL FOUNDATION PLAN
SCALE VERT. DATUM NAVD88 (1991.35)	PHOTOGRAMMETRY AS OF: X	DETAILS BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY	POST MILE 4.90					
1"=10'	HORIZ. DATUM NAD83	QUANTITIES BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA						
ALIGNMENT TIES Dis+ TRAVERSE SHEET	DRAFTED BY S ZHENG	CHECKED BY C FASSETT	CHECKED BY L LEW	UNIT: 3646	PROJECT NUMBER & PHASE: 0413000228-1	CONTRACT NO.: 04-1SS414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 4 OF 14

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

FILE => 33e0234-e-fp.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	77	86

Rosa M Candiotti 12/18/14
 REGISTERED CIVIL ENGINEER DATE

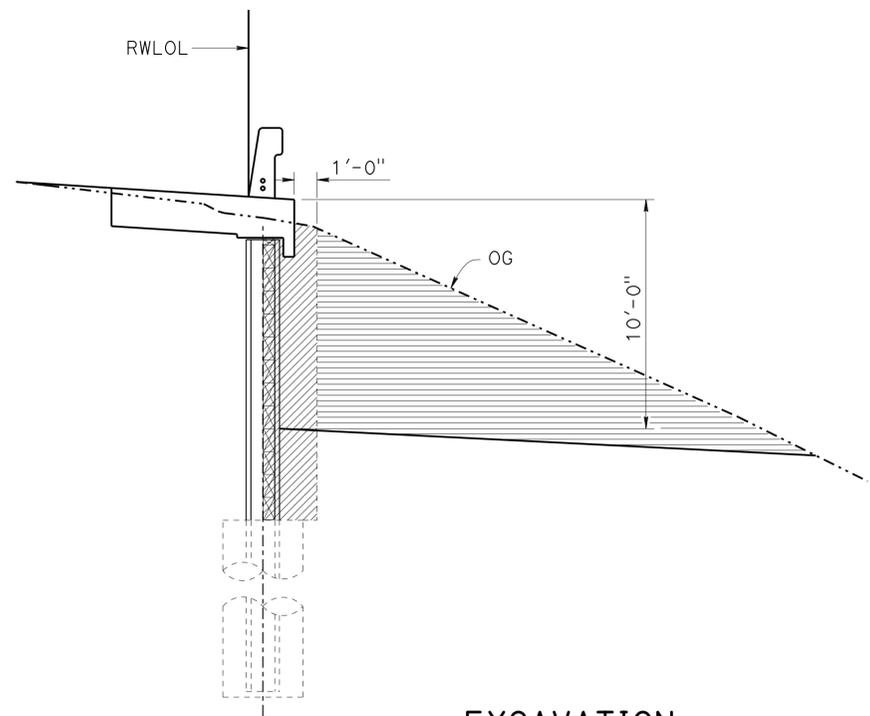
3-30-15
 PLANS APPROVAL DATE

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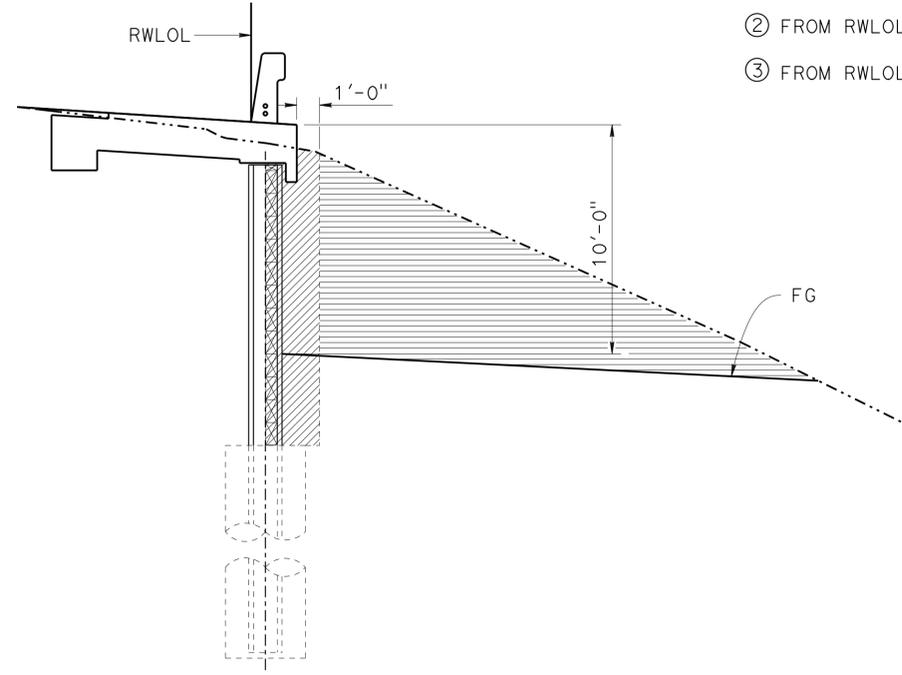
REGISTERED PROFESSIONAL ENGINEER
 ROSA CANDIOTTI
 No. C64626
 Exp. 6-30-15
 CIVIL
 STATE OF CALIFORNIA

- NOTES:
- FROM RWLOL STA 0+00 TO RWLOL STA 0+11.11, FROM RWLOL STA 0+26.00 TO RWLOL STA 0+58.28, AND FROM RWLOL STA 0+78.52 TO RWLOL STA 1+86.25
 - FROM RWLOL STA 0+11.11 TO RWLOL STA 0+26.00
 - FROM RWLOL STA 0+58.28 TO RWLOL STA 0+78.52

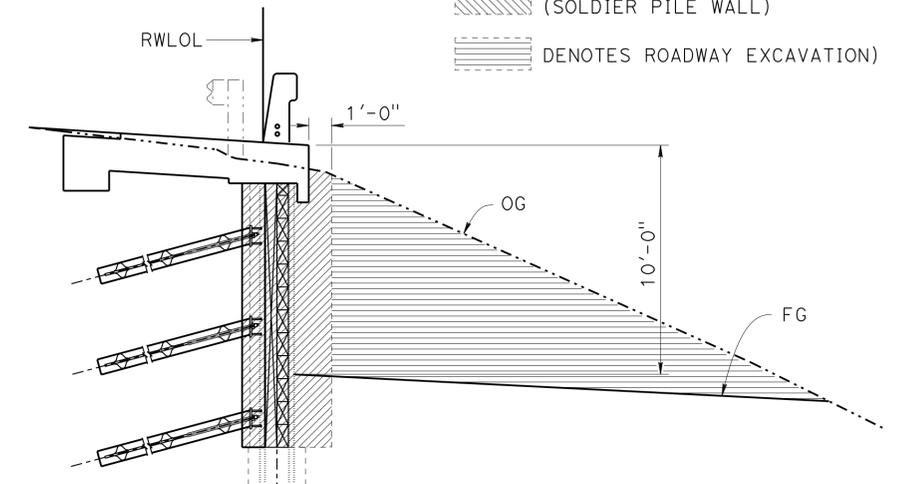
- LEGEND:
- DENOTES NEW STRUCTURE
 - - - DENOTES EXISTING STRUCTURE
 - ▨ DENOTES STRUCTURE EXCAVATION (SOLDIER PILE WALL)
 - ▩ DENOTES STRUCTURE BACKFILL (SOLDIER PILE WALL)
 - ▧ DENOTES ROADWAY EXCAVATION



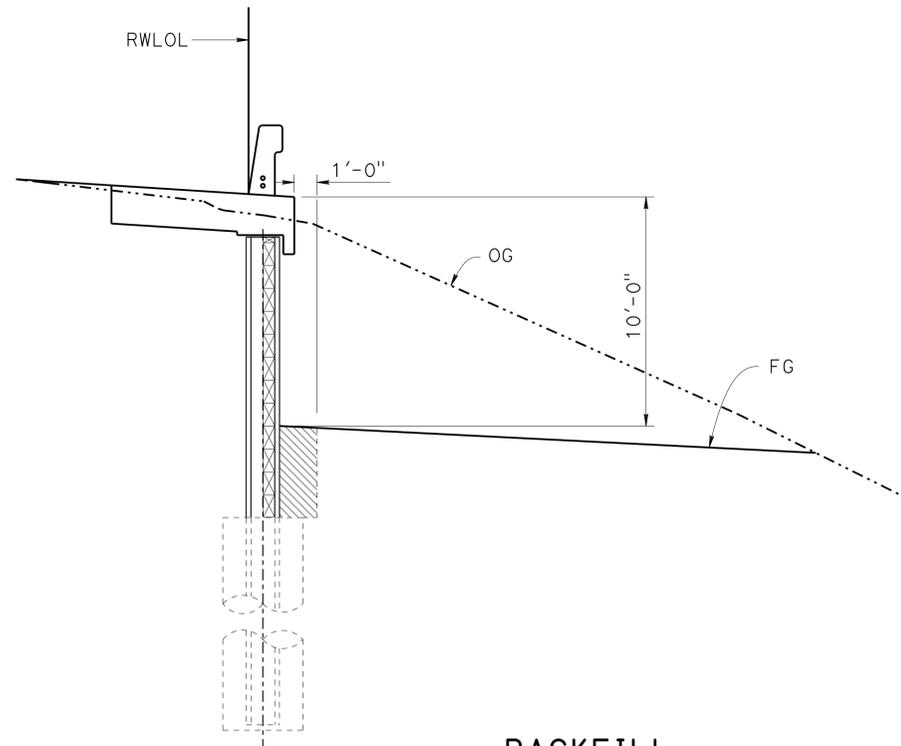
EXCAVATION ①
 $\frac{1}{4}'' = 1'-0''$



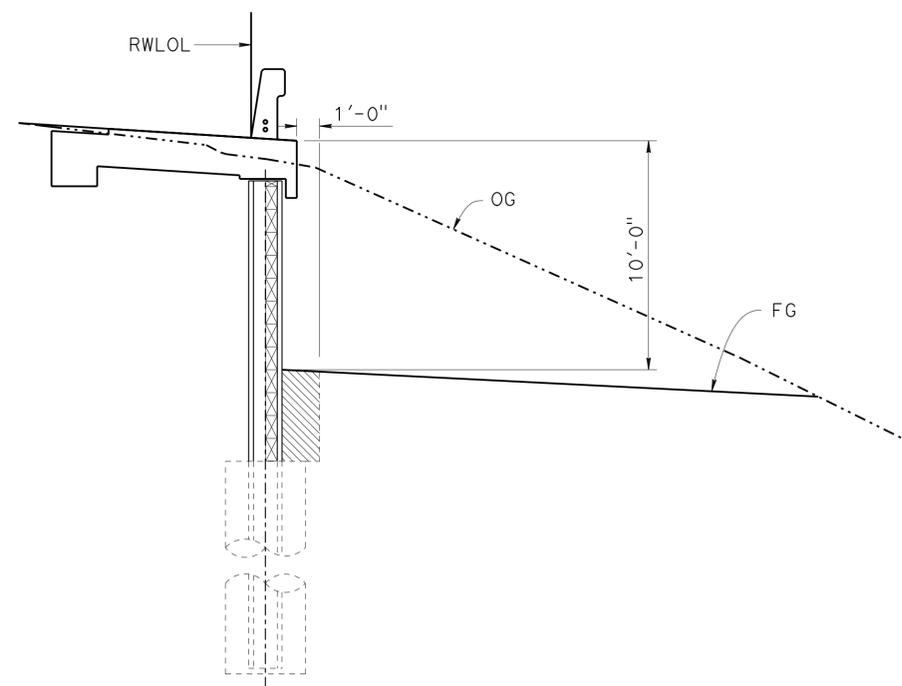
EXCAVATION ②
 $\frac{1}{4}'' = 1'-0''$



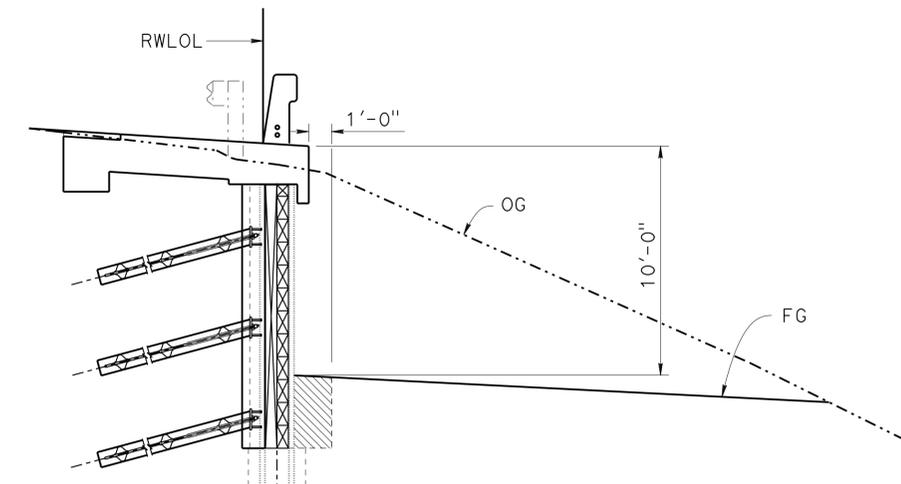
EXCAVATION ③
 $\frac{1}{4}'' = 1'-0''$



BACKFILL ①
 $\frac{1}{4}'' = 1'-0''$



BACKFILL ②
 $\frac{1}{4}'' = 1'-0''$



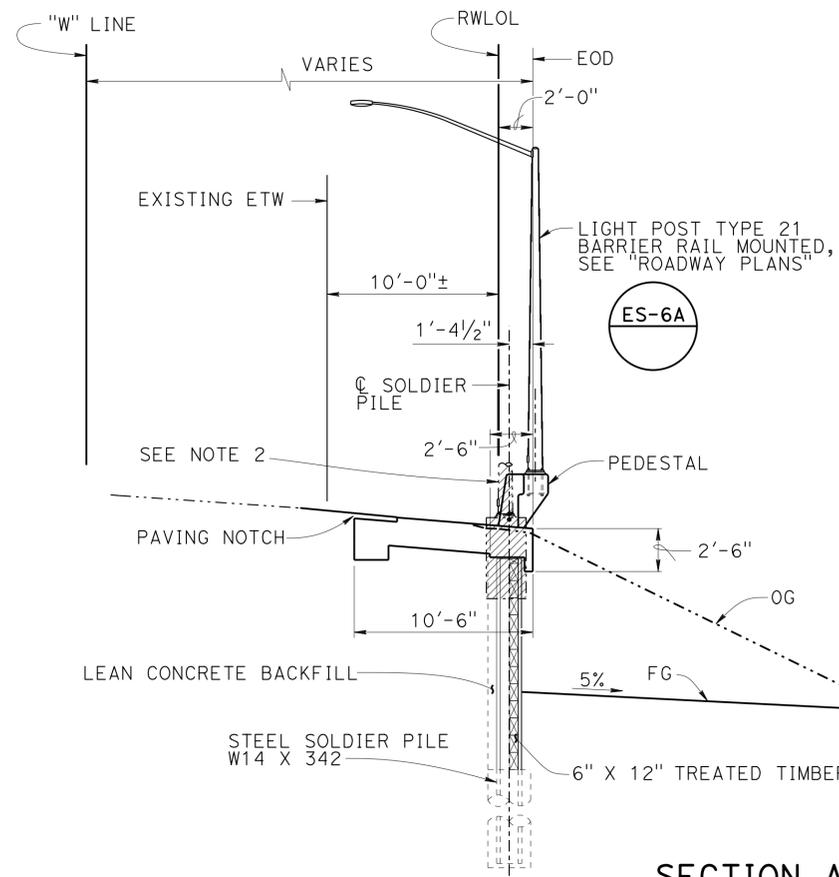
BACKFILL ③
 $\frac{1}{4}'' = 1'-0''$

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

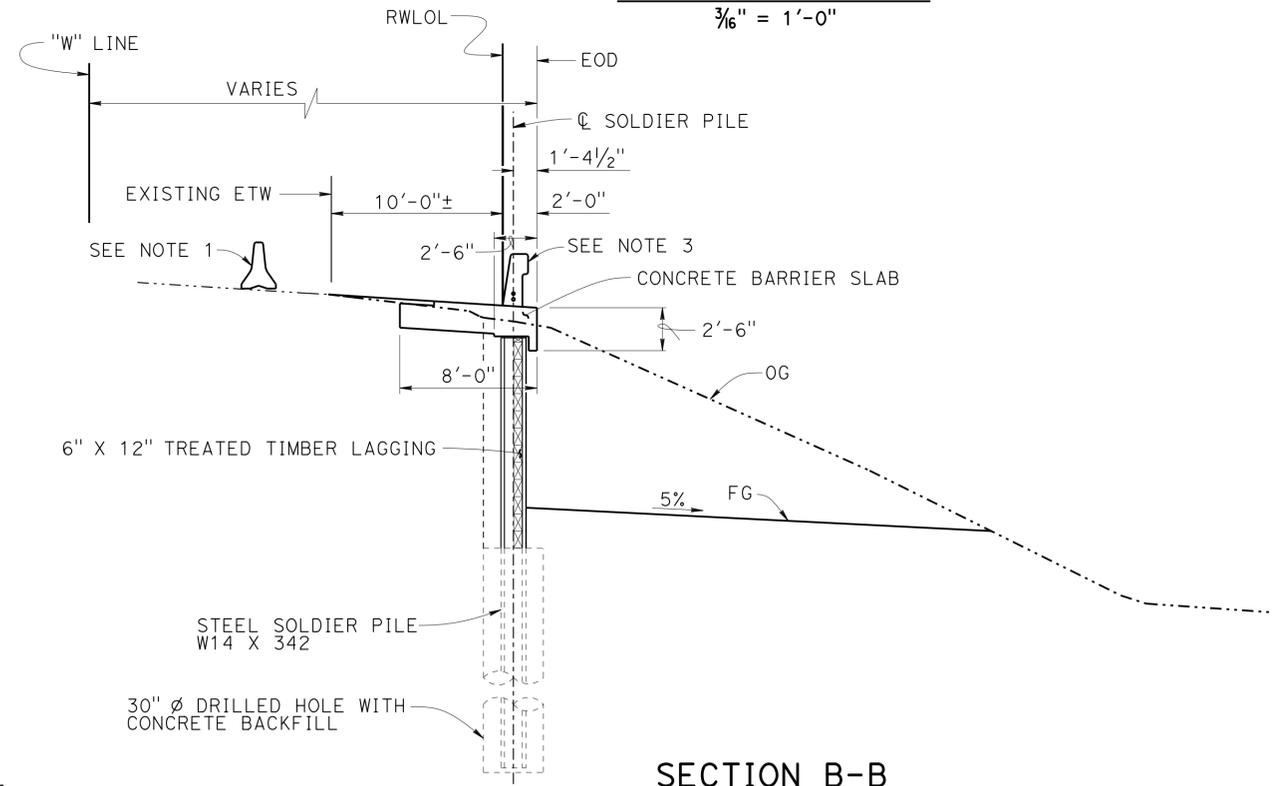
DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO.	CARSON STREET SOLDIER PILE WALL EXCAVATION AND BACKFILL DETAILS
DETAILS	BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY			33E0234	
QUANTITIES	BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA			POST MILE 4.8-5.0	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	78	86

Rosa M. Candiotti 12/18/14
 REGISTERED CIVIL ENGINEER DATE
 3-30-15
 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.

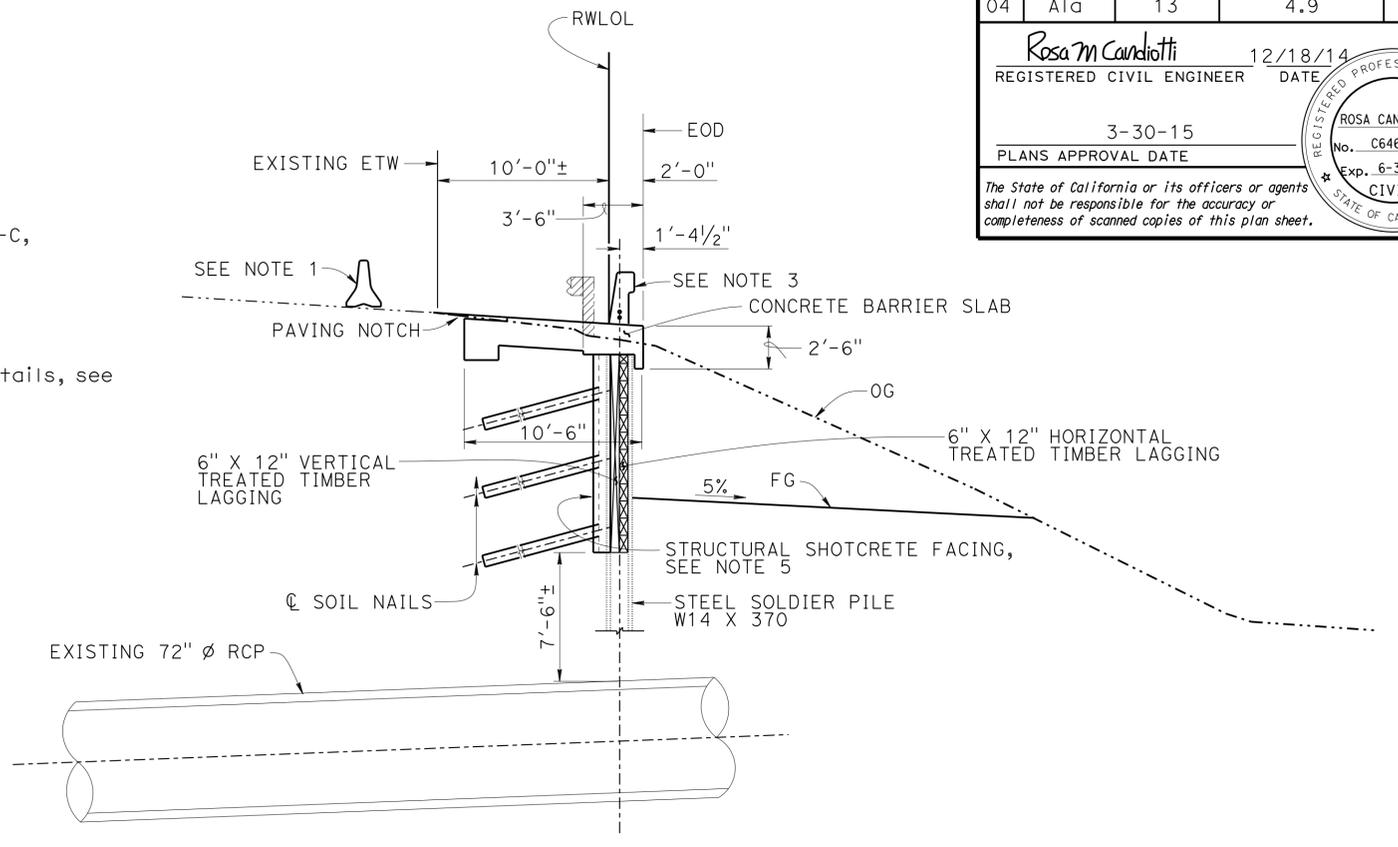


SECTION A-A
3/16" = 1'-0"

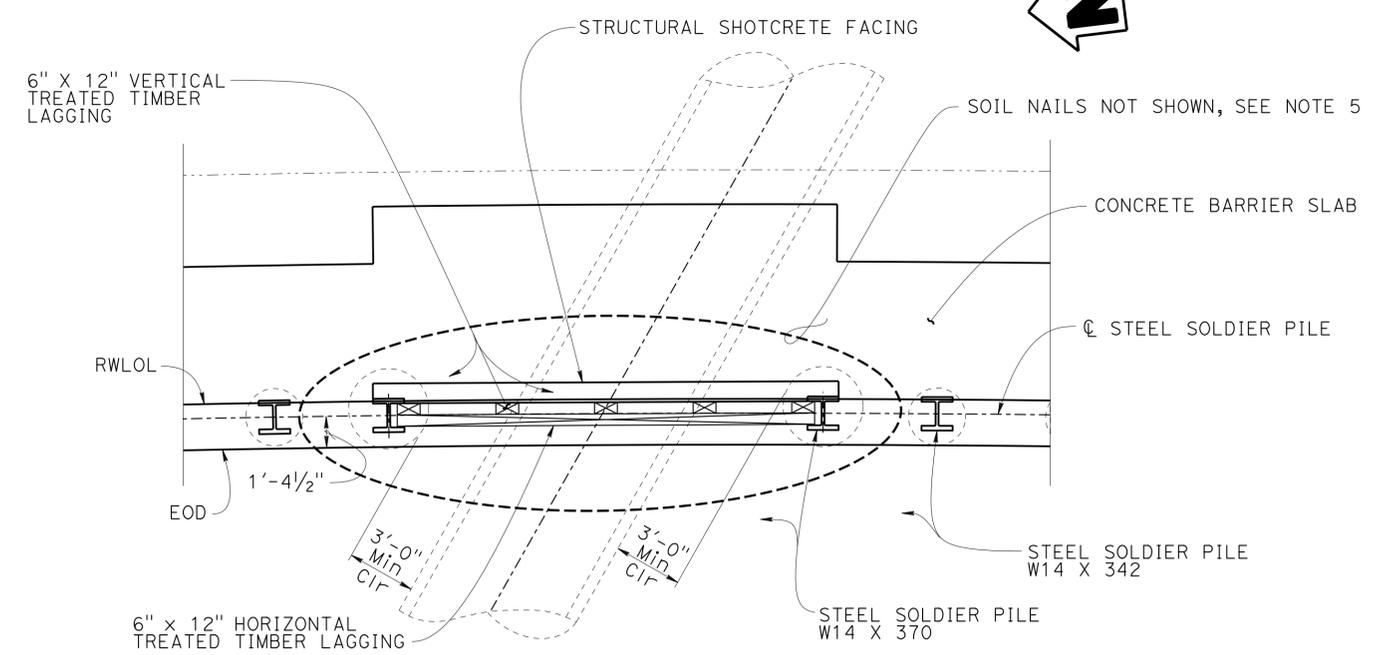


SECTION B-B
3/16" = 1'-0"

- LEGEND:**
 [Hatched Area] PORTION REMOVAL
- NOTES:**
1. Temporary K Rail.
 2. Existing Light Pedestal Post to be removed, see "ROADWAY PLANS".
 3. Concrete Barrier Type 736.
 4. For location of section A-A, B-B, and C-C, see "STRUCTURE PLAN" sheet.
 5. For soil nail wall details, see "SOIL NAIL WALL LAYOUT" and "SOIL NAIL WALL DETAILS NO. 1" AND "SOIL NAIL WALL DETAILS NO. 2" sheets.
 6. For additional concrete barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.



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



DETAIL A
1/4" = 1'-0"

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

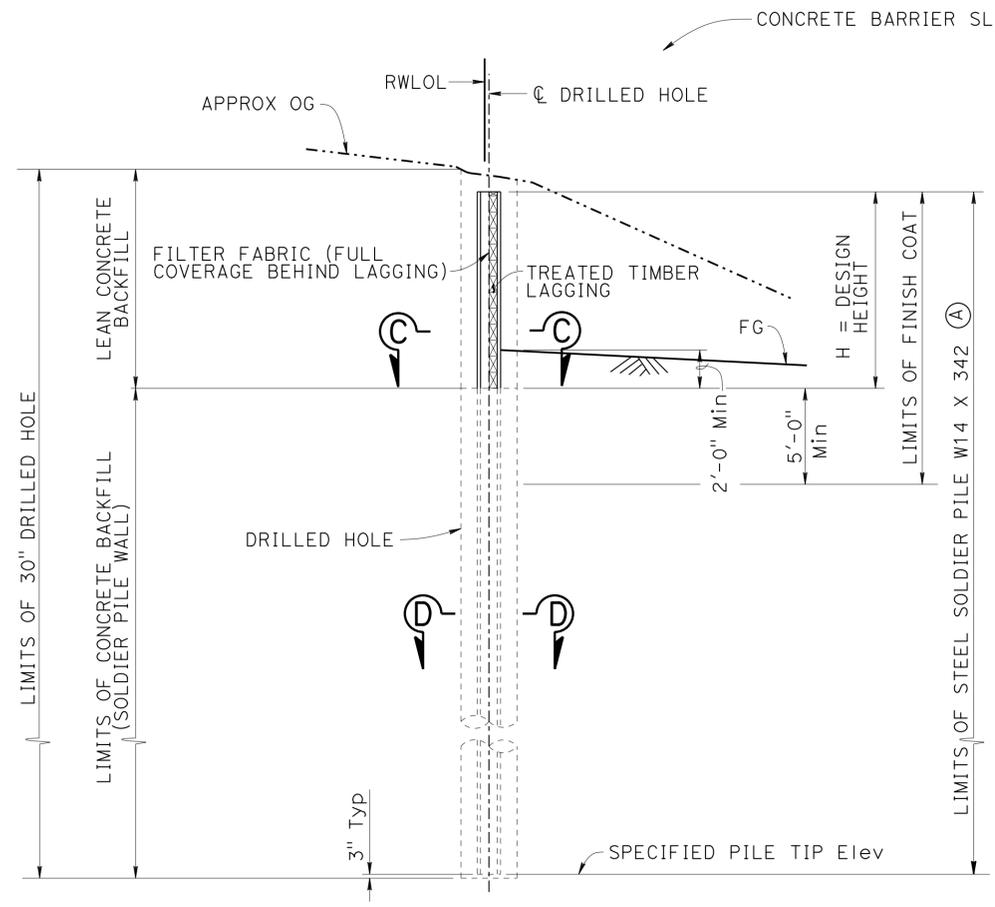
DESIGN BY ROSA CANDIOTTI CHECKED MOHEY EL-MOUSLY DETAILS BY DAVID ELLIOTT CHECKED MOHEY EL-MOUSLY QUANTITIES BY ROSA CANDIOTTI CHECKED ANDREW ONODERA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO. 33E0234 POST MILE 4.8-5.0	CARSON STREET SOLDIER PILE WALL SOLDIER PILE AND SOIL NAIL DETAILS
	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: 0413000228-1 CONTRACT NO.: 04-1SS414	DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 12-11-14, 11-18-14, 11-21-14, 12-4-14
	FILE => 33e0234-f-sp_det-sheet.dgn	SHEET 6 OF 14	USERNAME => s132175 DATE PLOTTED => 06-APR-2015 TIME PLOTTED => 10:46	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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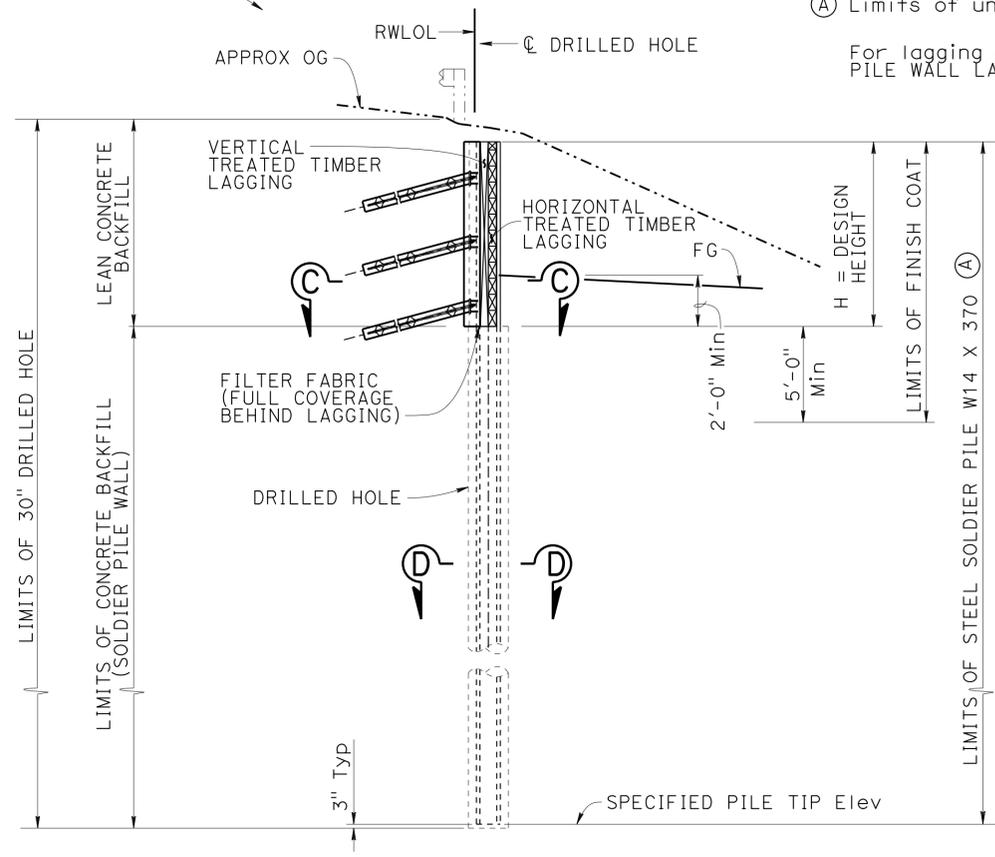
Rosa M Candiotti		12/18/14
REGISTERED CIVIL ENGINEER	DATE	
3-30-15		
PLANS APPROVAL DATE		

Rosa M Candiotti		12/18/14
REGISTERED PROFESSIONAL ENGINEER	DATE	
No. C64626		
Exp. 6-30-15		
CIVIL		

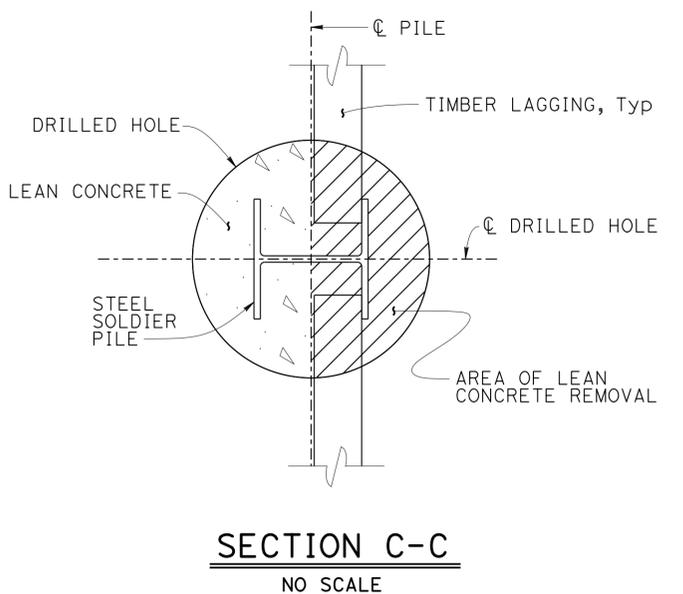
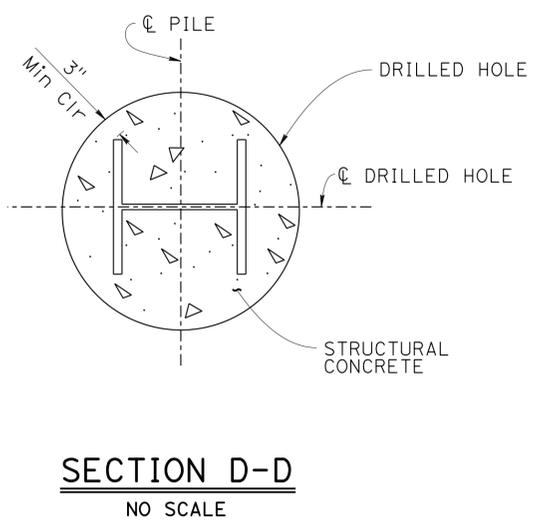
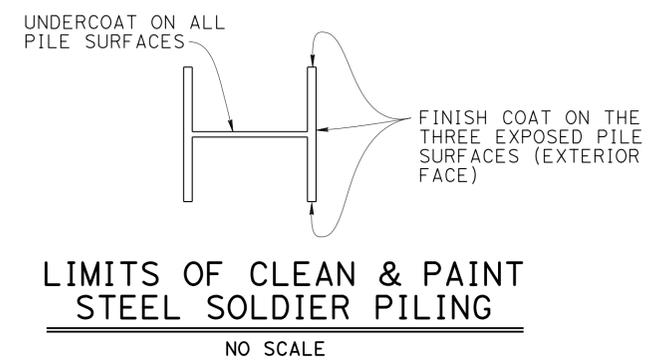
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TYPICAL SECTION @ W14 X 342
NO SCALE



TYPICAL SECTION @ W14 X 370
NO SCALE



GENERAL NOTES

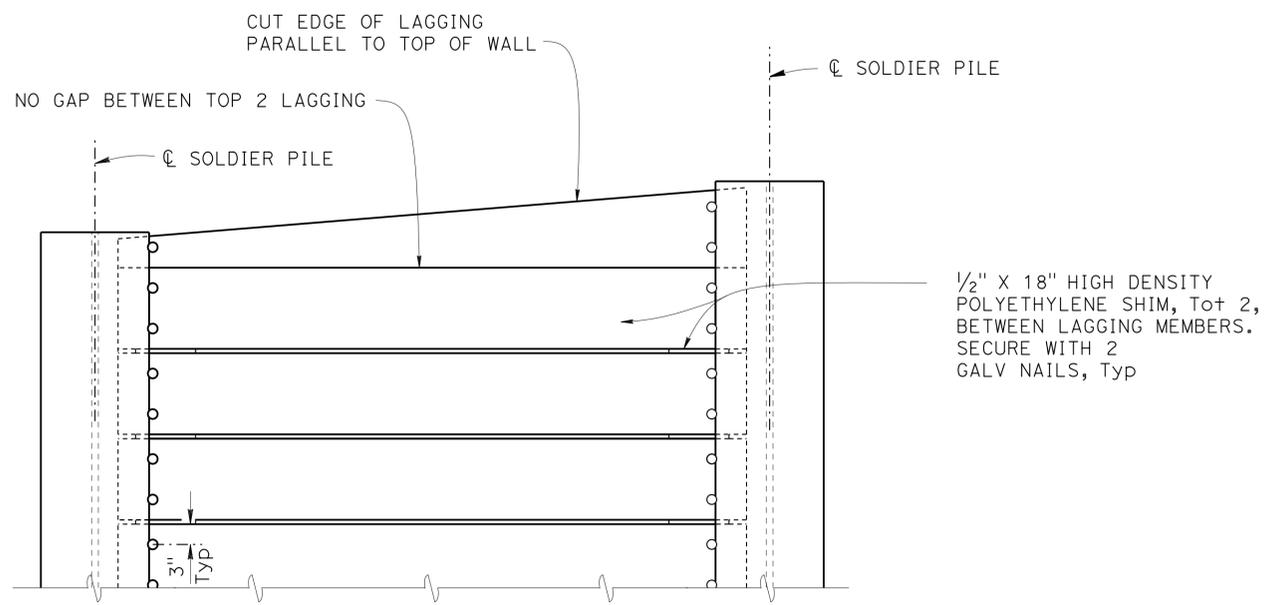
- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments.
- LS: 170 psf distributed uniformly with depth.
- SOIL PARAMETERS: (For determination of Design Lateral Earth Pressures)
 - Active soil within H (Wall Height) Unit Weight = 125 lb/ft³
 - Friction Angle = 10°
 - c = 350psf
 - Soil/Rock below H (Wall Height), Unit Weight = 125 lb/ft³
 - Friction Angle = 30° c = 50psf
- STEEL SOLDIER PILES: ASTM A572/A, ASTM 572M Grade 50 Min
- REINFORCED CONCRETE: f'c = 3600 psi, fy = 60 ksi
- STRUCTURAL TIMBER: Treated Douglas Fir, Grade No. 1 or better Timber to be full sawn
- SEISMIC LOADING: Soil Profile: Class C PGA: 0.93g kh=0.31g

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

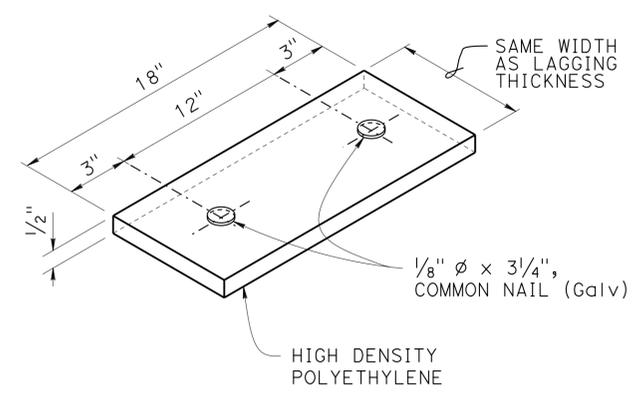
DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO.	CARSON STREET SOLDIER PILE WALL CANTILEVER SOLDIER PILE WALL DETAILS	
	DETAILS	BY DAVID ELLIOTT			CHECKED MOHEY EL-MOUSLY		33E0234
	QUANTITIES	BY ROSA CANDIOTTI			CHECKED ANDREW ONODERA		POST MILE

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: 0413000228-1 CONTRACT NO.: 04-1SS414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 7 OF 14
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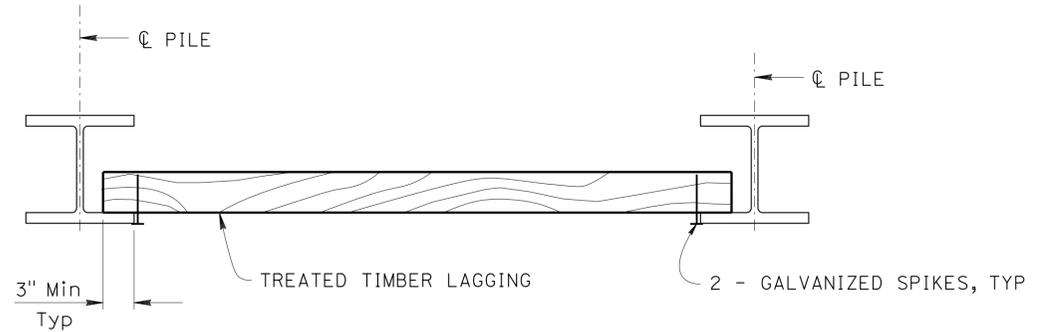
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	80	86
Rosa M Candiotti		12/18/14		REGISTERED CIVIL ENGINEER DATE	
3-30-15		PLANS APPROVAL DATE			
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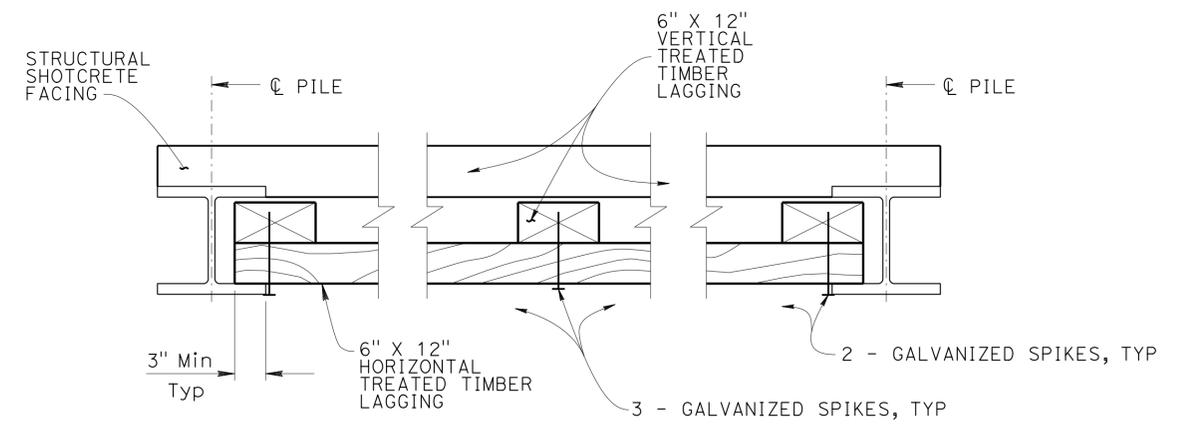
PART ELEVATION
LAGGING DETAILS
NO SCALE



SHIM DETAIL
NO SCALE



PART PLAN
NO SCALE



PART PLAN BETWEEN PILE NO. 11 AND NO. 12
NO SCALE

- NOTES:
1. No clipping of timber lagging corners allowed.
 2. Use 16d Galv wire spikes for 5 x 12 lagging and 40d Galv wire spikes for 6 x 12 lagging.
 3. Spikes must not be bent

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

DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY
DETAILS	BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY
QUANTITIES	BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 9

BRIDGE NO.	33E0234
POST MILE	4.8-5.0

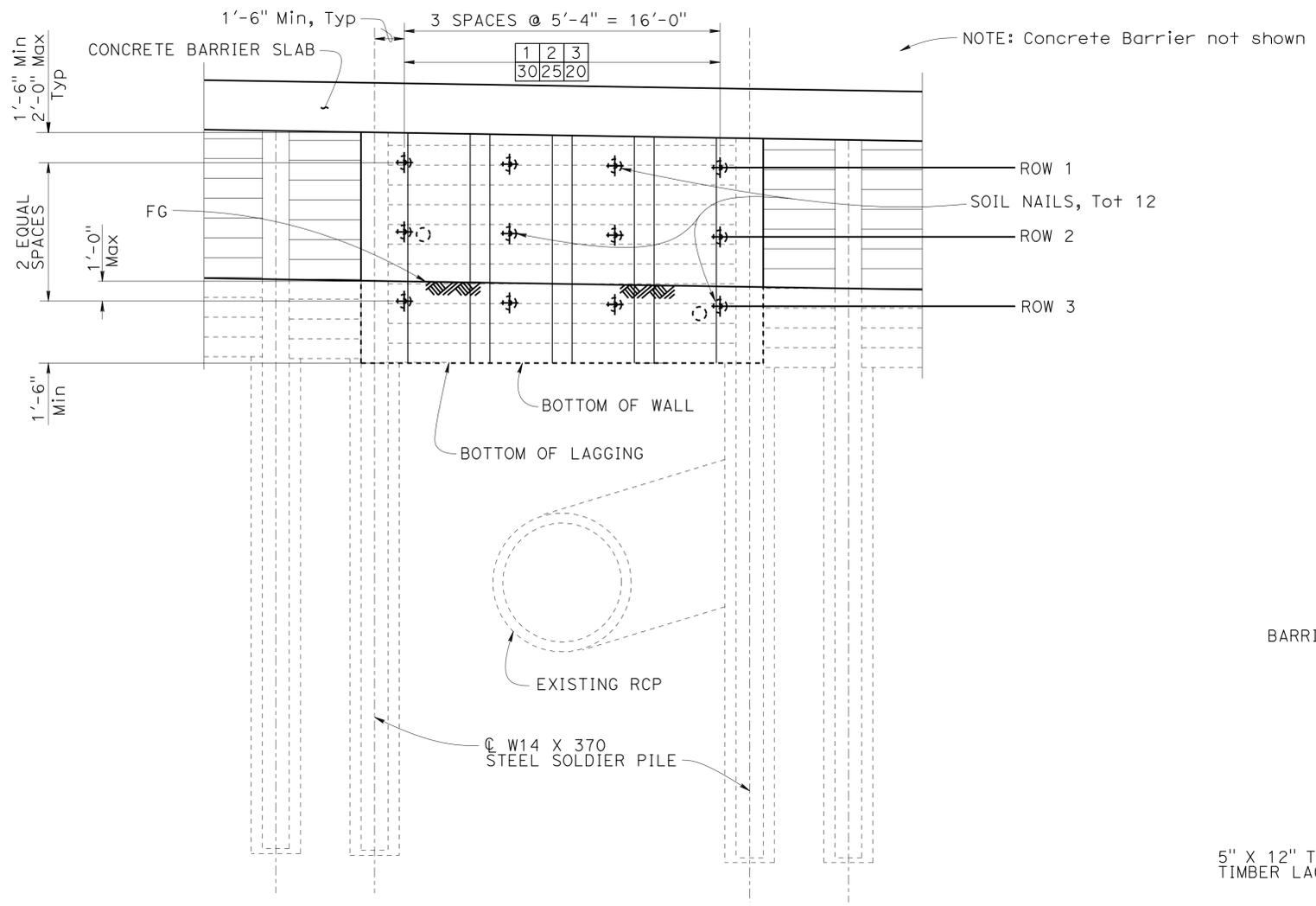
CARSON STREET SOLDIER PILE WALL
SOLDIER PILE WALL LAGGING DETAILS

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	81	86

Rosa M Candiotti		12/18/14
REGISTERED CIVIL ENGINEER	DATE	
3-30-15		
PLANS APPROVAL DATE		

Rosa M Candiotti	
No. C64626	Exp. 6-30-15
CIVIL	

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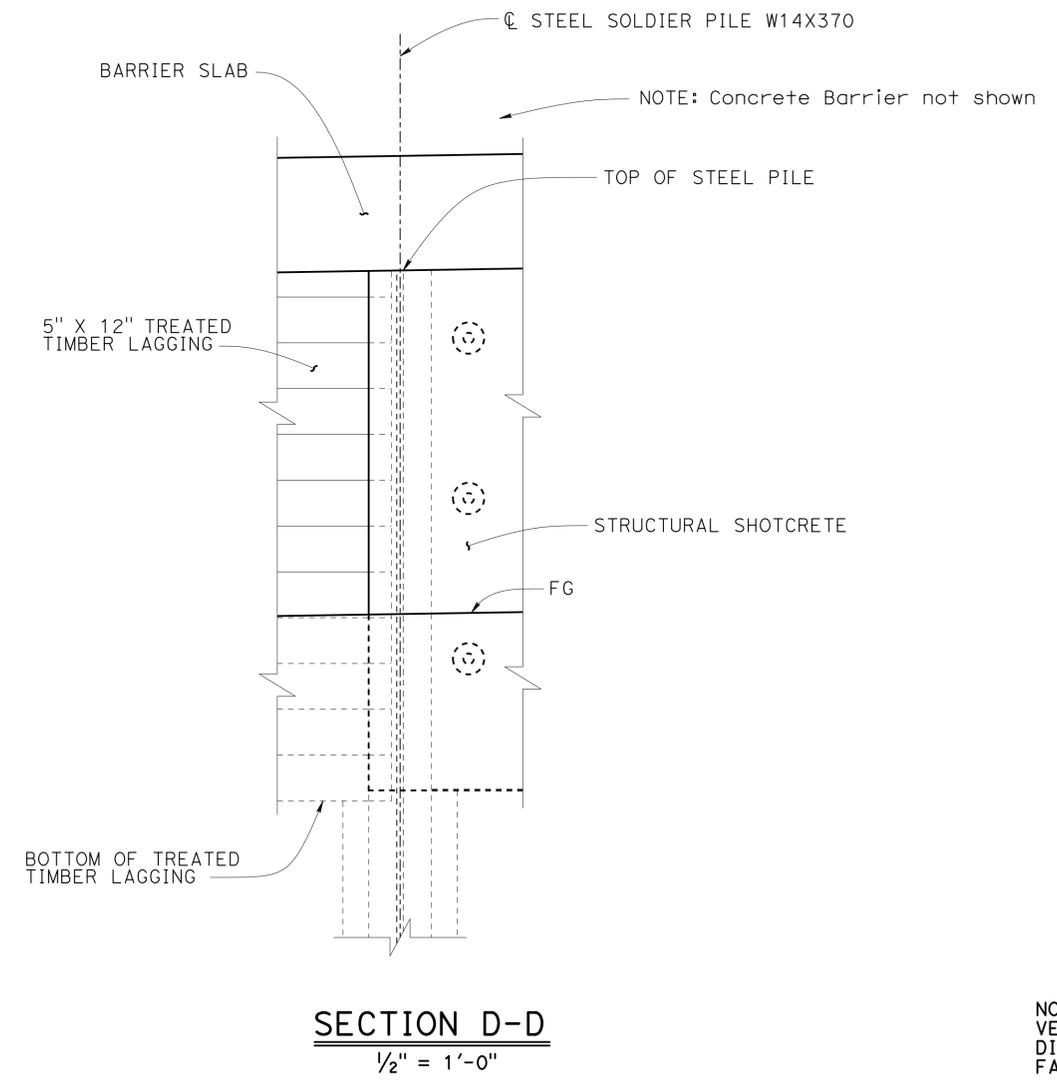
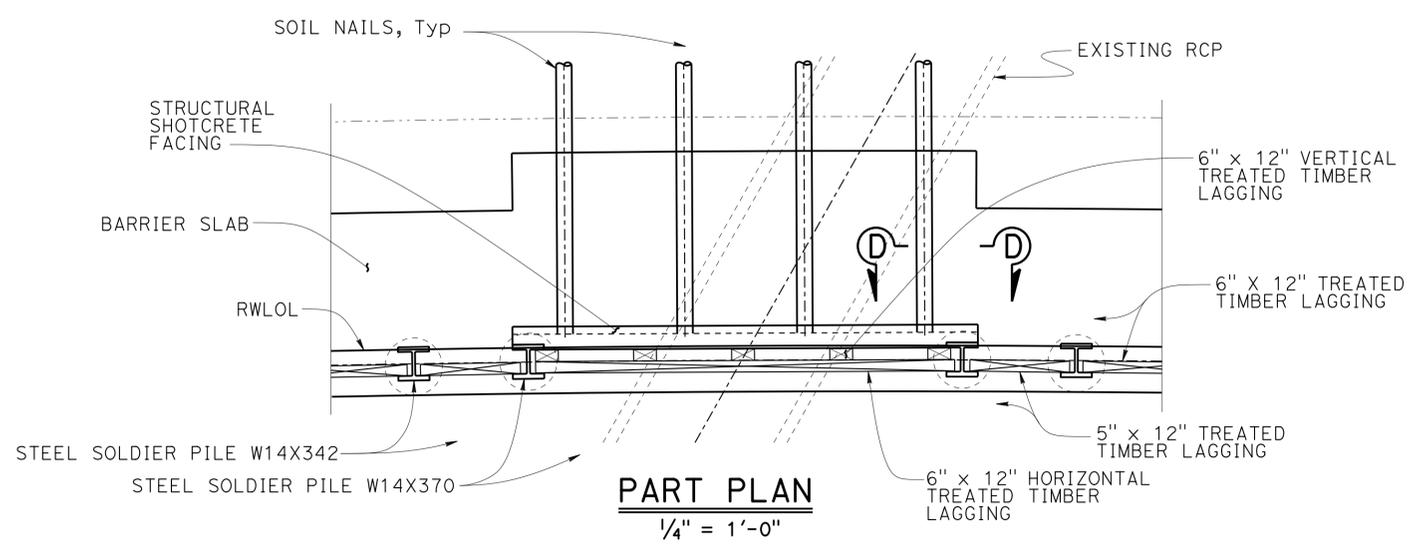


LEGEND:
 ⊕ APPROXIMATE LOCATION OF SOIL NAIL
 ⊙ APPROXIMATE LOCATION OF PROOF TEST SOIL NAIL

1 2 3 ← ROW NUMBER
 30 25 20 ← SOIL NAIL EMBEDMENT LENGTH (LE) (F+)

- NOTES:
- Maximum vertical soil nail spacing = 5'-0". Minimum vertical and horizontal soil nail spacing = 2'-6", except as shown.
 - For additional details, see "SOIL NAIL WALL DETAILS NO. 1" sheet.
 - "SECTION D-D" is for pile No. 12, pile No. 11 detail is similar.
 - For slab dimensions, see "STRUCTURE PLAN" sheet.

PART MIRRORED ELEVATION
 1/4" = 1'-0"



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

DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY
DETAILS	BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY
QUANTITIES	BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

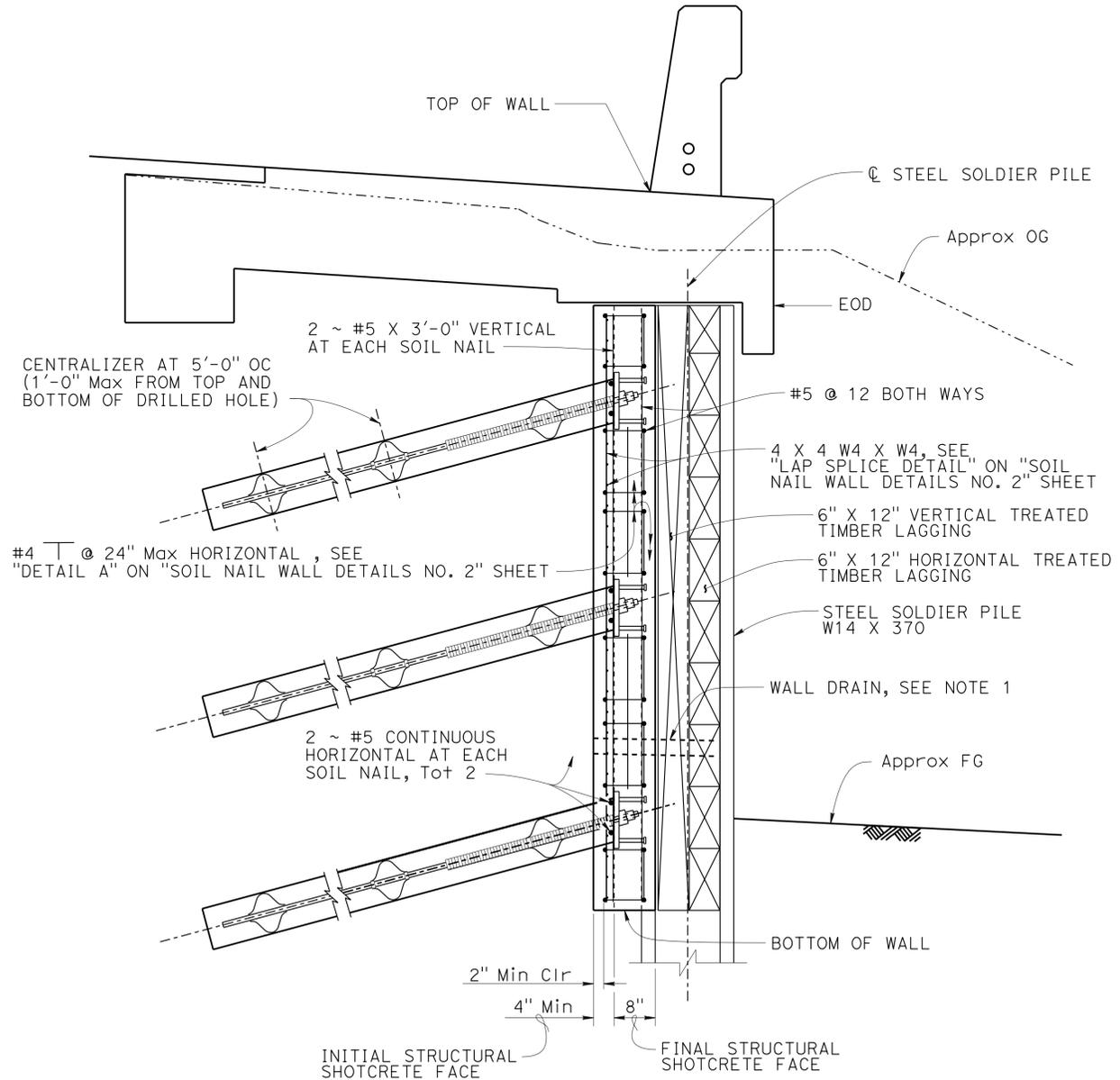
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 9

BRIDGE NO.	33E0234
POST MILE	4.8-5.0

CARSON STREET SOLDIER PILE WALL
SOIL NAIL WALL LAYOUT

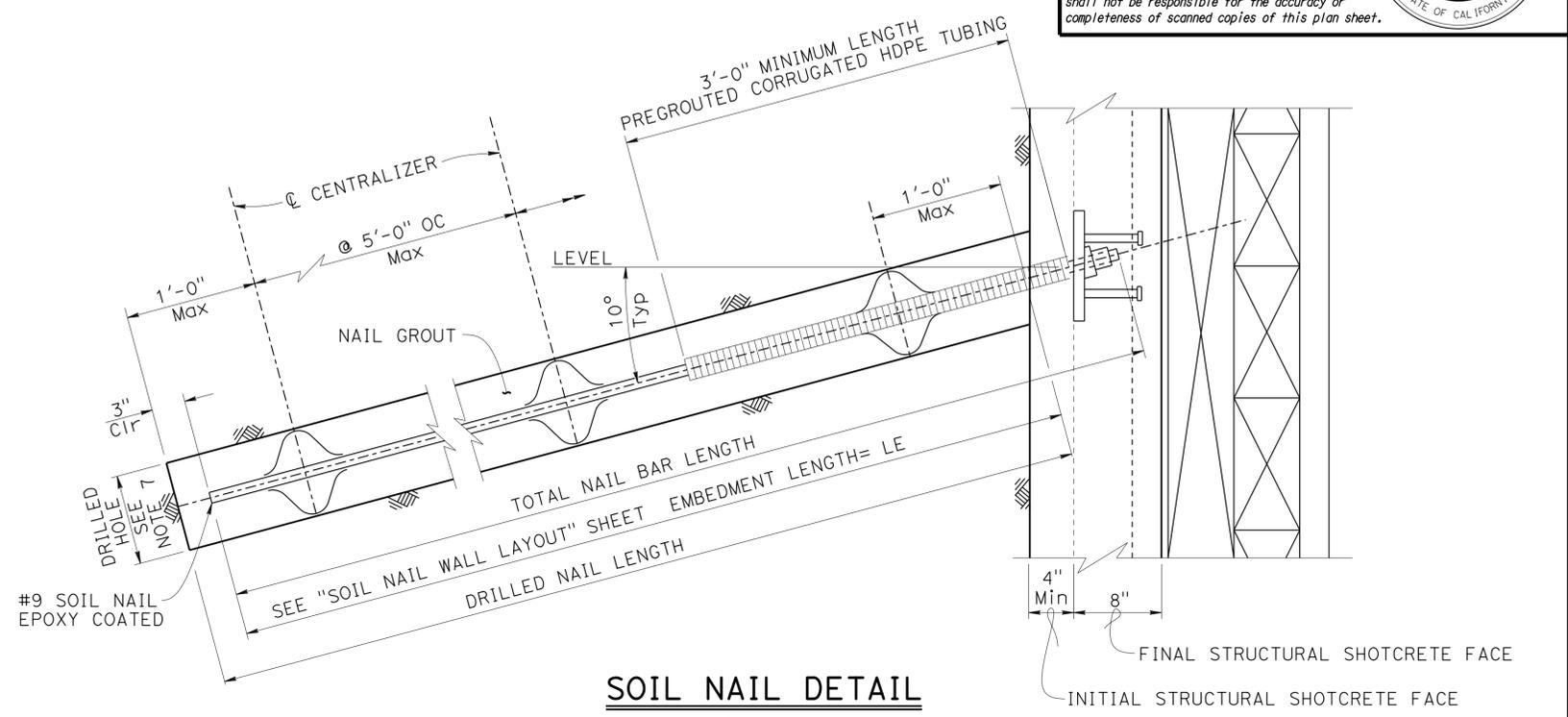
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	82	86
Rosa M Candiotti			12/18/14	REGISTERED CIVIL ENGINEER DATE	
3-30-15			PLANS APPROVAL DATE		
REGISTERED PROFESSIONAL ENGINEER ROSA CANDIOTTI No. C64626 Exp. 6-30-15 CIVIL STATE OF CALIFORNIA					
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- NOTES:
- For drain details, see "WALL DRAIN DETAILS" sheet.
 - For soil nail layout, see "SOIL NAIL WALL LAYOUT" sheet.
 - Bottom of wall to be placed against undisturbed material.
 - Excavation for timber lagging and for soil nail construction must be initiated after all soldier piles are installed.
 - 4" temporary shotcrete must be applied at any excavation lift immediately before any drilling for soil nails at that lift.
 - Soil nail installation, shotcrete placement and soil nail testing must be completed before the subsequent excavation lift is initiated.
 - Contractor to determine drilled hole diameter.
 - Monitor roadway and adjacent facilities by installing appropriate survey points. Conduct surveys daily during excavation and terminate when all nails are installed. Provide Engineer daily with a copy of these daily surveys.

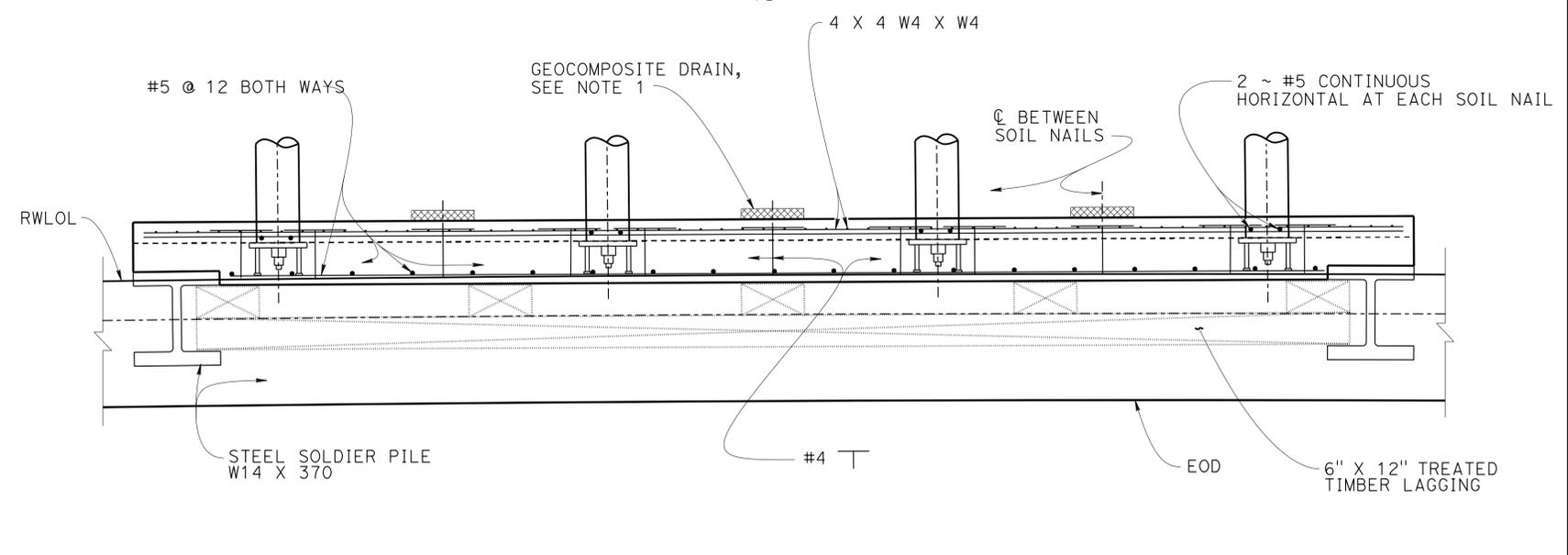


PART ELEVATION
 $\frac{3}{4}'' = 1'-0''$

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



SOIL NAIL DETAIL
 $\frac{1}{2}'' = 1'-0''$



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

DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY
DETAILS	BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY
QUANTITIES	BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA

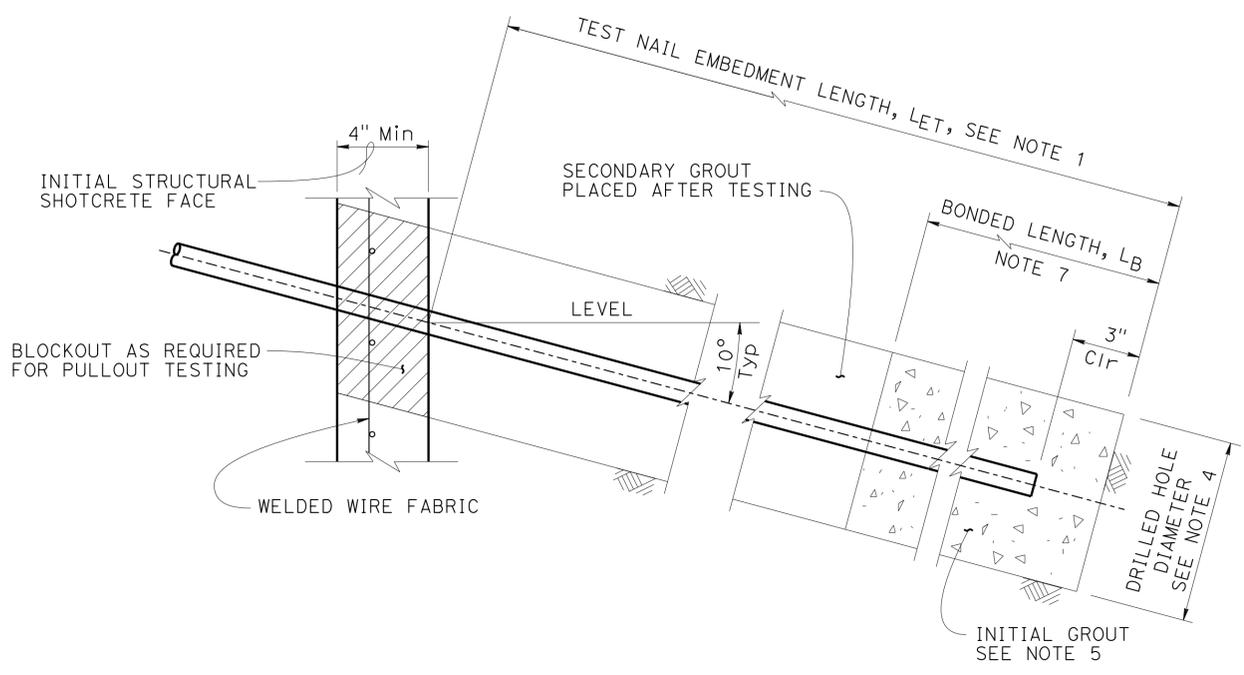
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 9

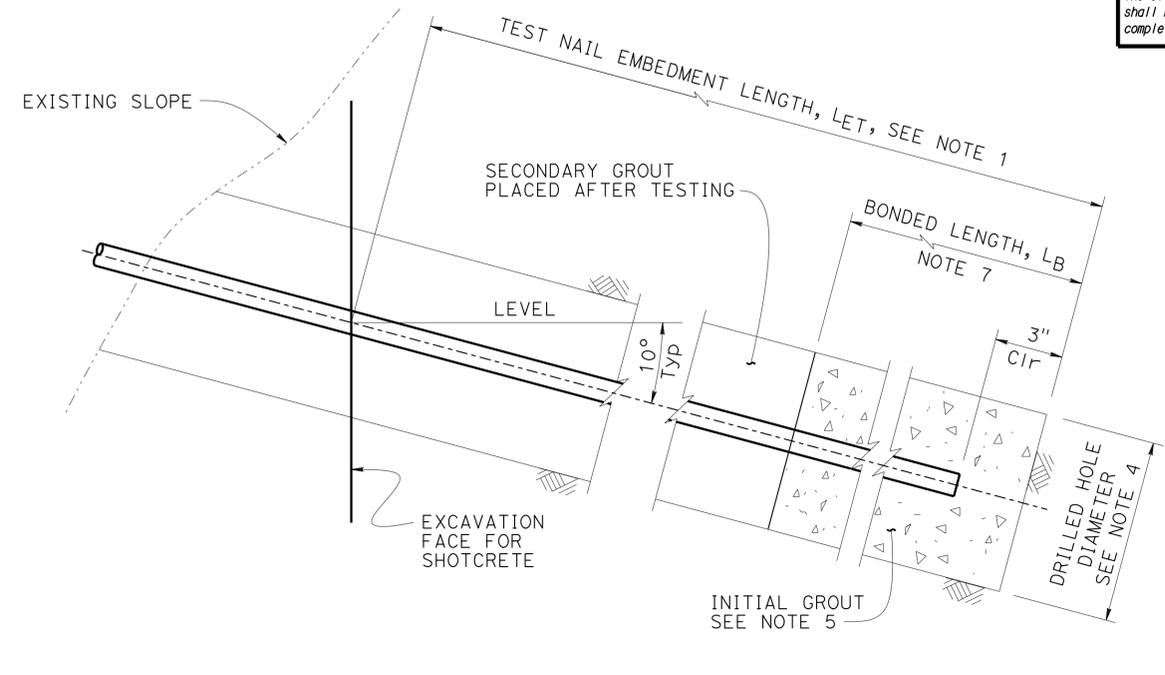
BRIDGE NO.	33E0234
POST MILE	4.8-5.0

CARSON STREET SOLDIER PILE WALL
SOIL NAIL WALL DETAILS NO. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	83	86
Rosa M Candiotti		12/18/14		REGISTERED CIVIL ENGINEER DATE	
3-30-15		PLANS APPROVAL DATE			
REGISTERED PROFESSIONAL ENGINEER ROSA CANDIOTTI No. C64626 Exp. 6-30-15 CIVIL STATE OF CALIFORNIA					
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PROOF TEST SOIL NAIL DETAIL
3" = 1'-0"



VERIFICATION TEST SOIL NAIL DETAIL
3" = 1'-0"

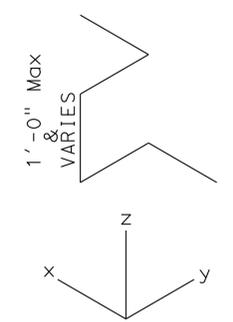
NOTES:

1. The test nail embedment length L_{eT} , shall be equal to $2/3$ of the embedment length, L_e , of adjacent production soil nail assemblies, but not less than 12'-0".
2. The total length of the proof test soil nail assembly equals to the embedment length plus the length required for jacking equipment.
3. For location of proof test nail, see "SOIL NAIL WALL LAYOUT" sheet. Additional proof test nails will be installed and tested per special provisions.
4. Contractor to determine drilled hole diameter.
5. Finished grout surface to be normal to the bar.
6. The location of verification test nails to be determined in the field by the Engineer.
7. For bonded length L_B , see Special Provisions.
8. Not all reinforcement shown, see "SOIL NAIL WALL DETAILS NO. 1" sheet.

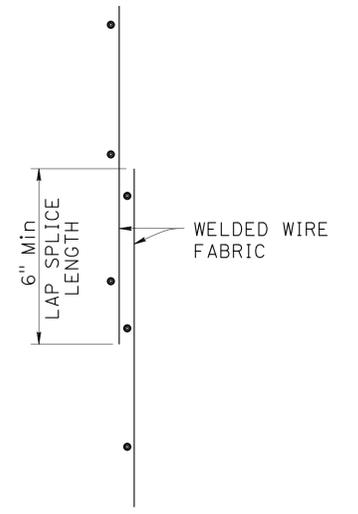
NOTE:
VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

GENERAL NOTES

- DESIGN:**
Facing design - FHWA Geotechnical Engineering circular No. 7
- SOIL PARAMETERS - SOIL NAIL DESIGN**
Friction Angle, $\phi = 10^\circ$
Cohesion, $c = 350$ psf
Unit Weight, $\gamma = 125$ pcf
Design Pullout Resistance = 2.0 k/ft
- GROUT**
 $f'_c = 3,600$ psi
- SHOTCRETE**
 $f'_c = 3,600$ psi
 $f_y = 60$ ksi
- SOIL NAILS**
ASTM Designation A615/A615M, Grade 420
 $f_y = 60$ ksi
- SEISMIC LOADING**
Soil profile: Class C
PGA: 0.93g $K_h = 0.31g$



DETAIL A
NO SCALE



LAP SPLICE DETAIL
NO SCALE

DESIGN	BY	ROSA CANDIOTTI	CHECKED	MOHEY EL-MOUSLY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO.	33E0234	CARSON STREET SOLDIER PILE WALL SOIL NAIL WALL DETAILS NO. 2		
	DETAILS	BY	DAVID ELLIOTT	CHECKED			MOHEY EL-MOUSLY	POST MILE		4.8-5.0	
QUANTITIES	BY	ROSA CANDIOTTI	CHECKED	ANDREW ONODERA	PROJECT NUMBER & PHASE: 0413000228-1		CONTRACT NO.: 04-1SS414		REVISION DATES	SHEET	OF

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	84	86

Rosa M Candiotti		12/18/14
REGISTERED CIVIL ENGINEER	DATE	
3-30-15		
PLANS APPROVAL DATE		

REGISTERED PROFESSIONAL ENGINEER	ROSA CANDIOTTI
No.	C64626
Exp.	6-30-15
CIVIL	
STATE OF CALIFORNIA	

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DESIGN DATA

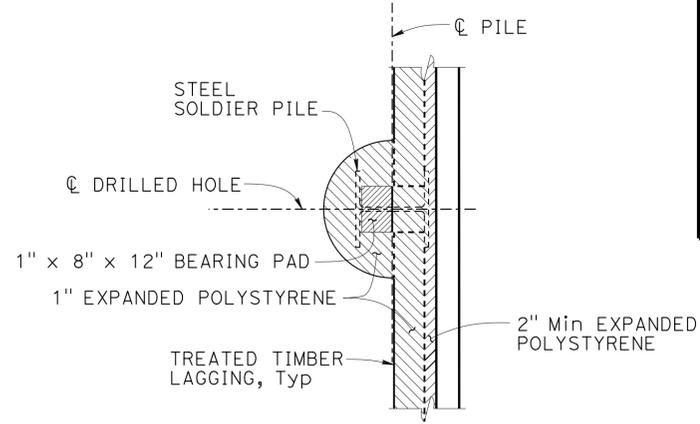
DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments.

F_t : 54 kips on barrier
EQE: $k_h = 0.2$
 $k_v = 0.0$

REINFORCED CONCRETE: $f'_c = 3600$ psi
 $f_y = 60$ ksi
 $n = 8$

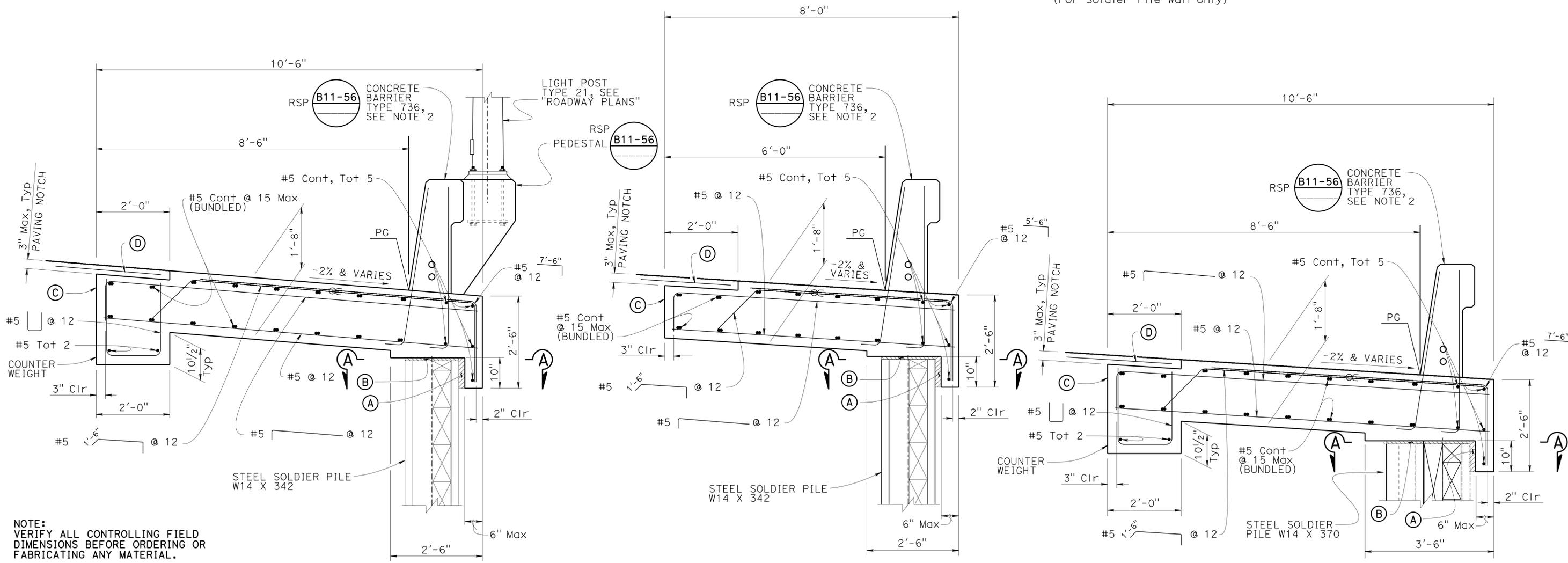
- NOTES:
1. Clearance to reinforcing steel in concrete barrier to be 1".
 2. Not all barrier reinforcement shown.
 3. No expansion joints in concrete barrier or barrier slab within wall limits.

- LEGEND:
- (A) 2" Min Expanded Polystyrene
 - (B) 1" Expanded Polystyrene, see "SECTION A-A"
 - (C) Contact joint
 - (D) 4'-0" wide pavement reinforcing fabric, see "ROADWAY PLANS"
 - ⊗ Indicates bundled bars



SECTION A-A

1/2" = 1'-0"
(For Soldier Pile Wall only)



CONCRETE BARRIER SLAB AT LIGHT POST

3/4" = 1'-0"

CONCRETE BARRIER SLAB

3/4" = 1'-0"

CONCRETE BARRIER SLAB AT EXISTING 72" Ø RCP

3/4" = 1'-0"

DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY
DETAILS	BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY
QUANTITIES	BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 9

BRIDGE NO.	33E0234
POST MILE	4.8-5.0

CARSON STREET SOLDIER PILE WALL
CONCRETE BARRIER SLAB DETAILS

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	4.9	85	86

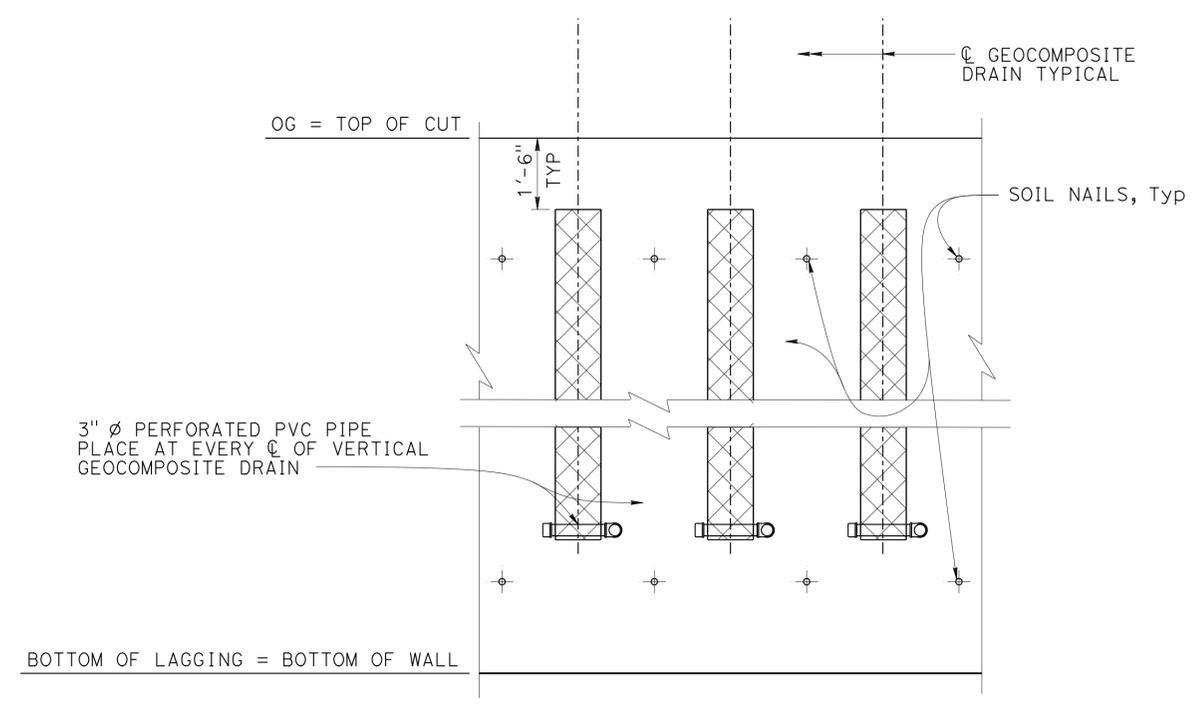
Rosa M Candiotti 12/18/14
REGISTERED CIVIL ENGINEER DATE

3-30-15
PLANS APPROVAL DATE

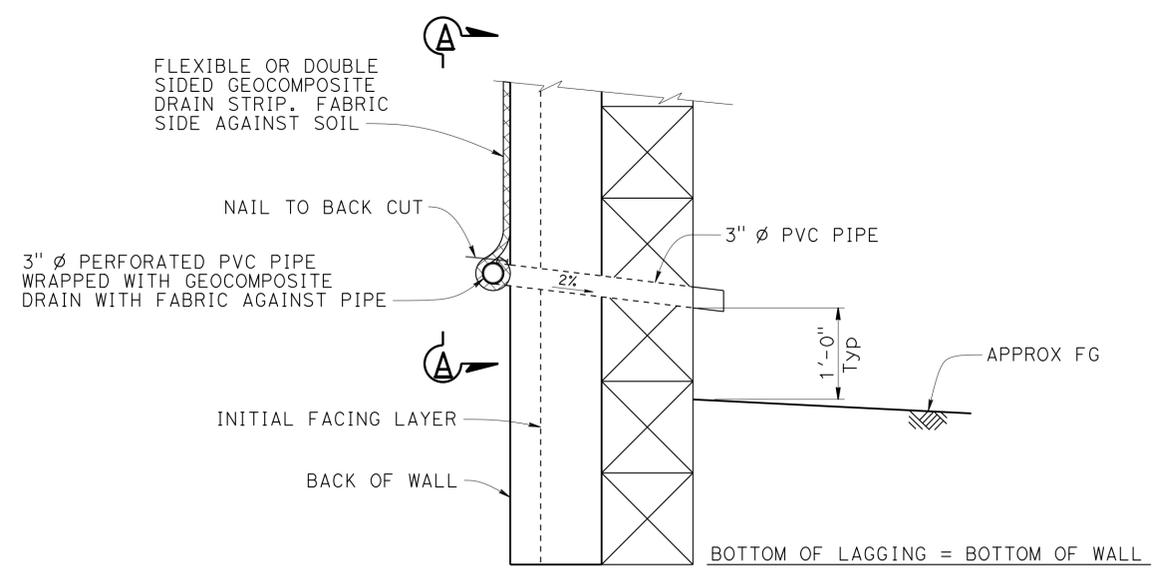
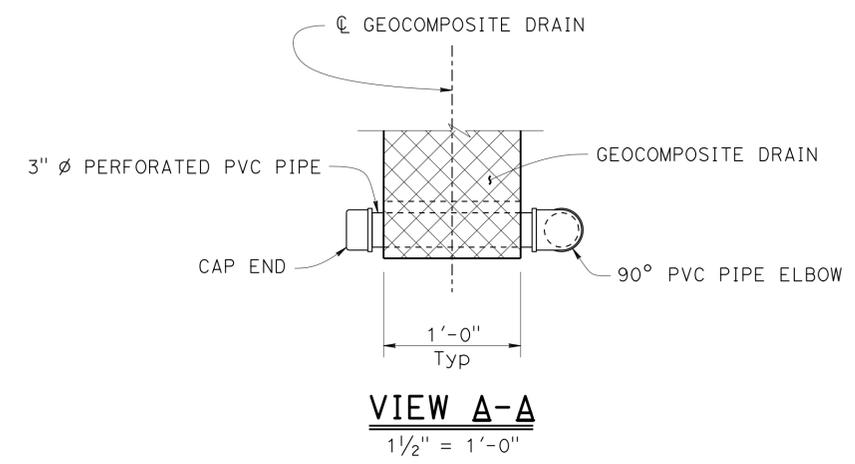
REGISTERED PROFESSIONAL ENGINEER
ROSA CANDIOTTI
No. C64626
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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- Notes:
1. Center Geocomposite vertical drain between soil nails.
 2. Geocomposite drain not required for wall height less than 6'-6".
 3. 1'-0" Minimum splice length required for Geocomposite drain.



PART ELEVATION WALL DRAIN
No Scale



WALL DRAIN DETAIL AT WEEPHOLE
1" = 1'-0"

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

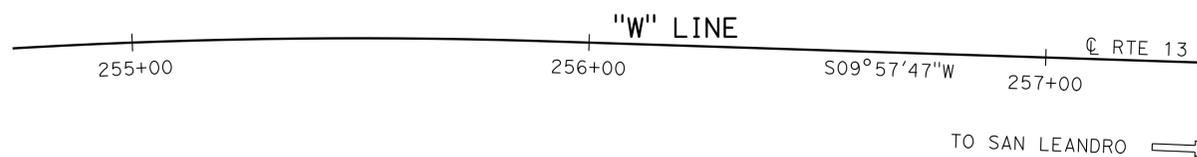
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY ROSA CANDIOTTI	CHECKED MOHEY EL-MOUSLY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO.	CARSON STREET SOLDIER PILE WALL			
	DETAILS	BY DAVID ELLIOTT	CHECKED MOHEY EL-MOUSLY			33E0234				
	QUANTITIES	BY ROSA CANDIOTTI	CHECKED ANDREW ONODERA			POST MILE		4.8-5.0		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3594	PROJECT NUMBER & PHASE: 0413000228-1	CONTRACT NO.: 04-1SS414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 13 OF 14

TIME PLOTTED => 10:47
DATE PLOTTED => 06-APR-2015
USERNAME => s132175

BENCH MARK

WP3002 1" shiner w/nail
 N 2,115,207.258
 E 6,076,024.708
 Elev 326.43
 NAVD88

← TO BERKELEY



RW-13-001

RW-13-002

PLAN

1" = 20'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	13	4.9	86	86

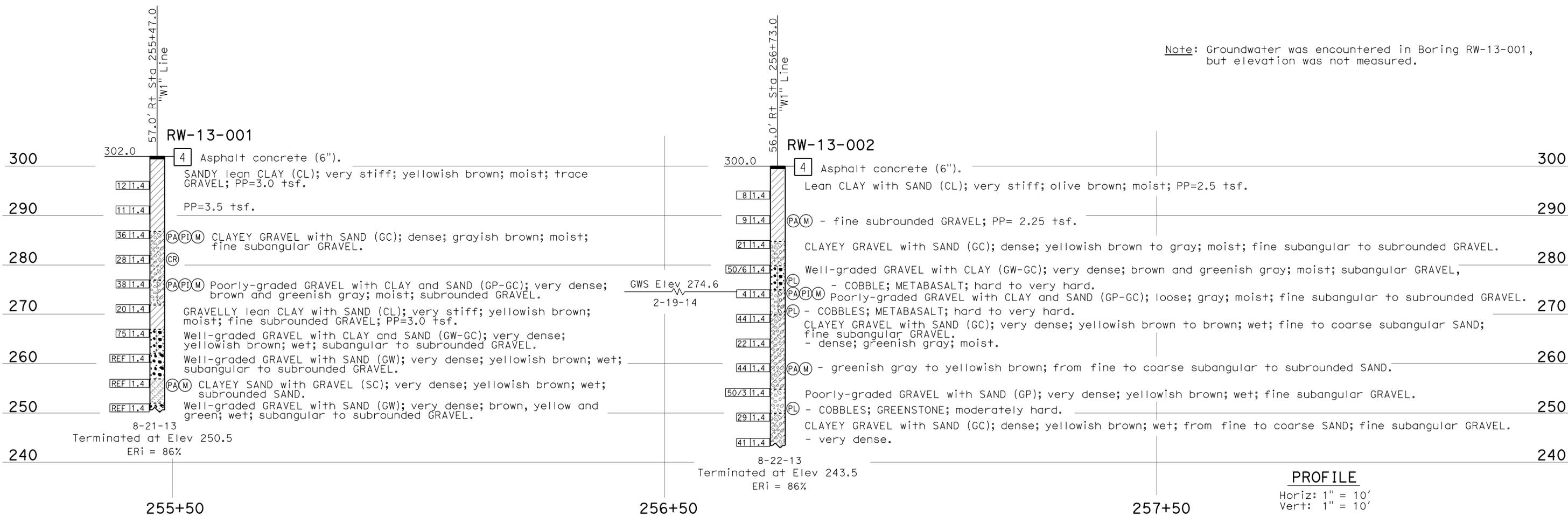
M. Momenzadeh. 8-8-14
 REGISTERED PROFESSIONAL ENGINEER

3-30-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Mahmood Momenzadeh
 No. GE2685
 Exp. 12-31-15
 STATE OF CALIFORNIA
 GEOTECHNICAL

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This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).
 See 2010 Standard Plans A10F and A10G for Soil Legend, and A10H for Rock Legend.



Note: Groundwater was encountered in Boring RW-13-001, but elevation was not measured.

PROFILE

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

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		CARSON STREET SOLDIER PILE WALL	
FUNCTIONAL SUPERVISOR		DRAWN BY: W. Tang 7/14		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		33E0234		LOG OF TEST BORINGS	
NAME: T. Pokrywka		CHECKED BY: J. Moore		FIELD INVESTIGATION BY: D. Nesbitt		DESIGN BRANCH 9		POST MILE			
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		UNIT: 3643		4.8/5.0		REVISION DATES	
						PROJECT NUMBER & PHASE: 0413000228-1		CONTRACT NO.: 04-1SS414		SHEET OF	
										14 14	

USERNAME => s132175 DATE PLOTTED => 06-APR-2015 TIME PLOTTED => 10:47