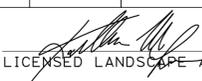
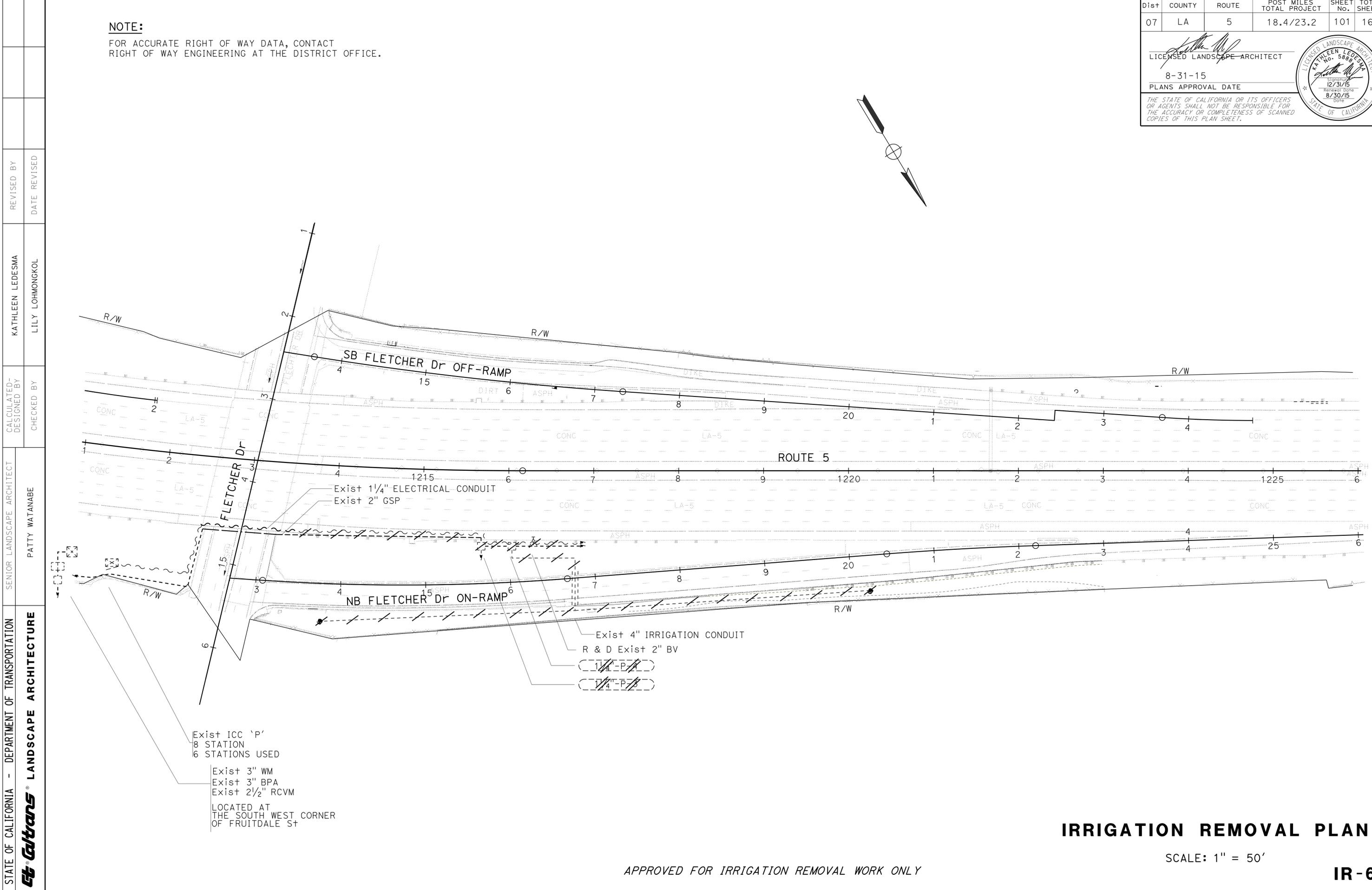
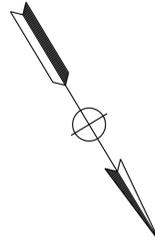


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	101	160

 LICENSED LANDSCAPE ARCHITECT		
8-31-15 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>		

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE  
 CALCULATED/DESIGNED BY: PATTY WATANABE  
 CHECKED BY: PATTY WATANABE  
 KATHLEEN LEDESMA  
 LILY LOHMONGKOL  
 REVISED BY: KATHLEEN LEDESMA  
 DATE REVISED: LILY LOHMONGKOL

# IRRIGATION REMOVAL PLAN

SCALE: 1" = 50'

**IR-6**

APPROVED FOR IRRIGATION REMOVAL WORK ONLY

LAST REVISION: 00-00-00  
 DATE PLOTTED => 18-SEP-2015  
 TIME PLOTTED => 10:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	102	160

LICENSED LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 No. 5888  
 8-31-15  
 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.

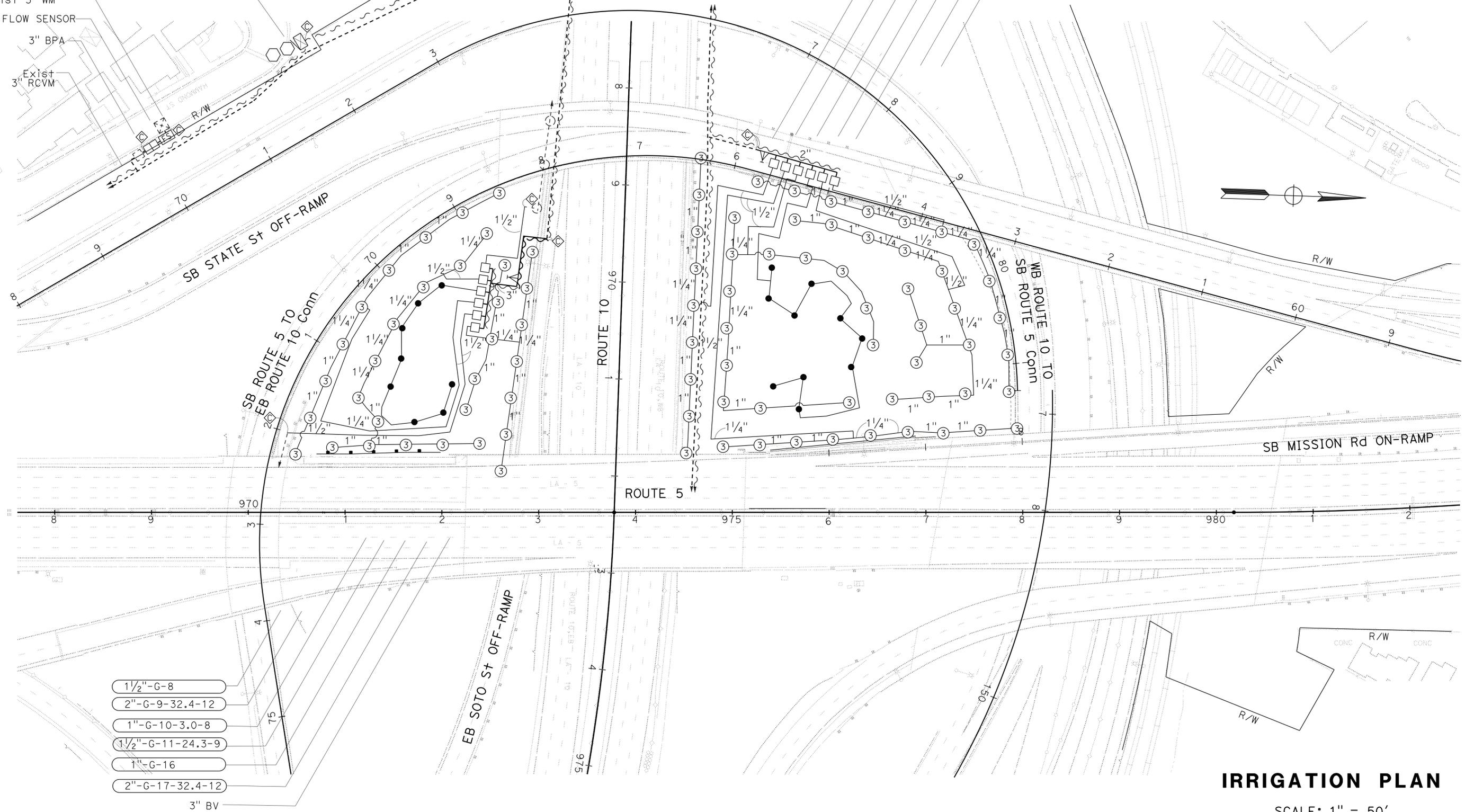
**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

ICC-'G' & 'H'  
 'G'- 24 STATION  
 17 STATION USED  
 'H'- 24 STATION  
 21 STATION USED

- 2" BV
- 1 1/2"-H-21-24.3-9
- 1 1/2"-H-20-24.3-9
- 2"-H-19-35.1-13
- 1"-H-18-3.8-10
- 2"-H-9-35.1-13
- 1 1/2"-H-8-27.0-11

Exist 3" WM  
 3" FLOW SENSOR  
 3" BPA  
 Exist 3" RCVM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 KATHLEEN LEDESMA  
 LILY LOHMONGKOL  
 REVISED BY  
 DATE REVISED



- 1 1/2"-G-8
- 2"-G-9-32.4-12
- 1"-G-10-3.0-8
- 1 1/2"-G-11-24.3-9
- 1"-G-16
- 2"-G-17-32.4-12



**IRRIGATION PLAN**

SCALE: 1" = 50'

APPROVED FOR IRRIGATION WORK ONLY

**IP-1**

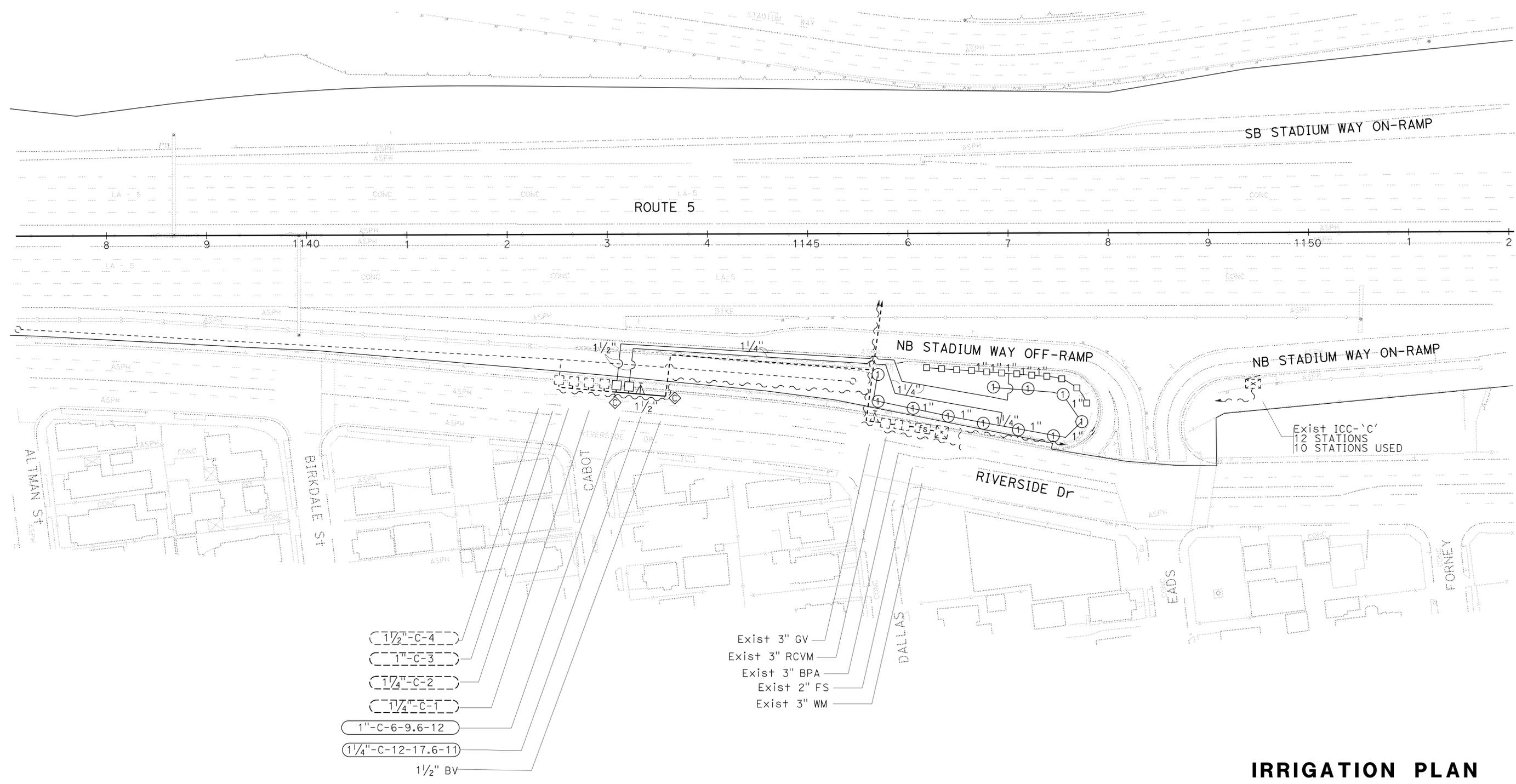
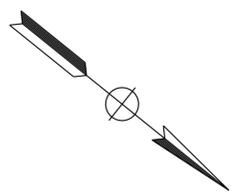


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	104	160

LICENSED LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 No. 5858  
 Signature: [Signature]  
 8-31-15  
 PLANS APPROVAL DATE  
 Renewal Date: 8/30/15  
 Date: [Date]  
 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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 KATHLEEN LEDESMA  
 LILY LOHMONGKOL  
 REVISED BY  
 DATE REVISED

APPROVED FOR IRRIGATION WORK ONLY

# IRRIGATION PLAN

SCALE: 1" = 50'

**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
07	LA	5	18.4/23.2	105	160

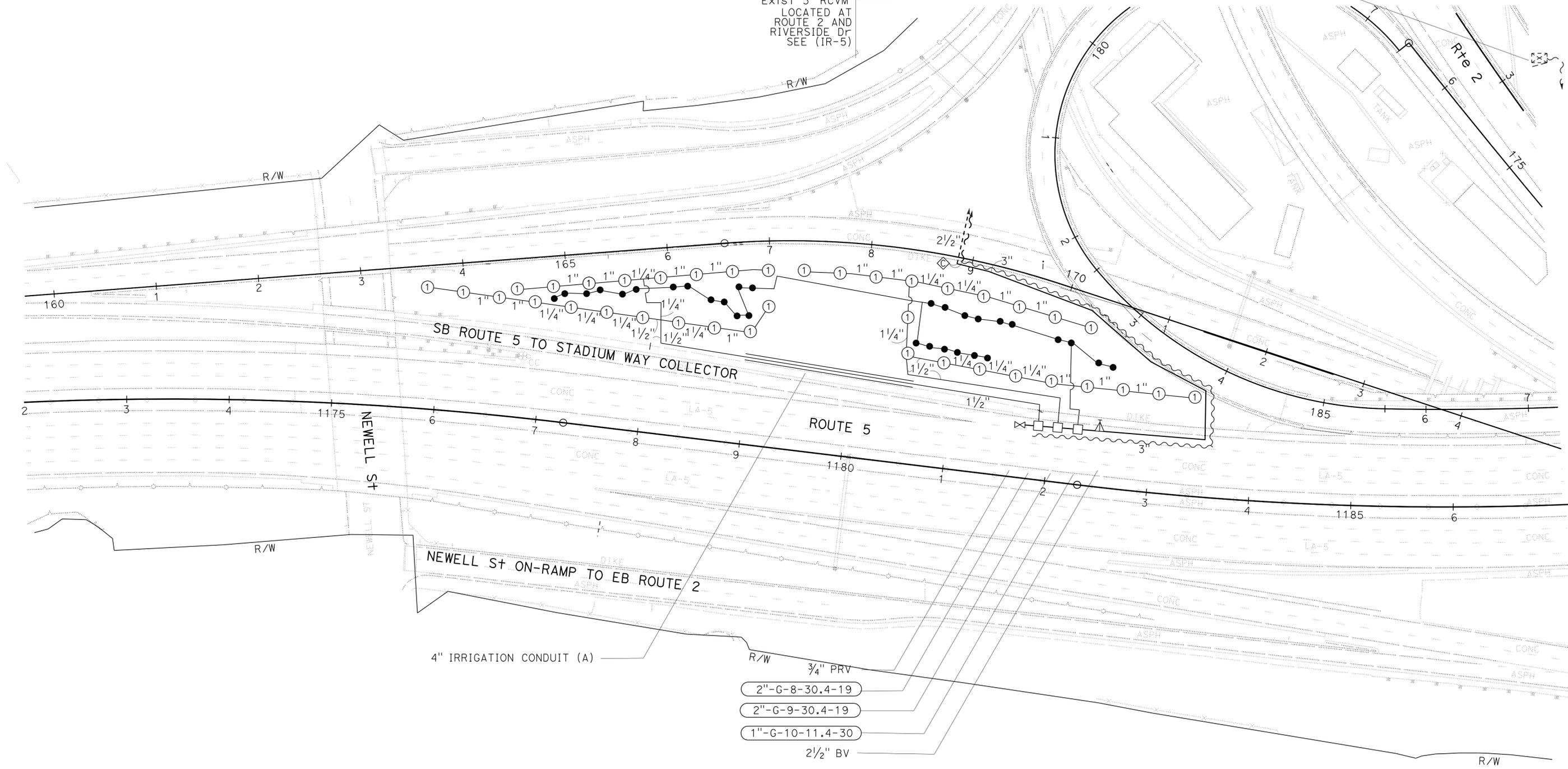
8-31-15  
PLANS APPROVAL DATE

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.



Exist ICC 'G'  
24 STATION  
16 STATIONS USED  
LOCATED AT SB ROUTE  
5 TO ROUTE 2 SB RAMP

Exist 3" WM  
Exist 3" BPA  
Exist 3" PRV  
Exist 3" RCVM  
LOCATED AT  
ROUTE 2 AND  
RIVERSIDE Dr  
SEE (IR-5)



- 2"-G-8-30.4-19
- 2"-G-9-30.4-19
- 1"-G-10-11.4-30
- 2 1/2" BV

**IRRIGATION PLAN**  
SCALE: 1" = 50'

APPROVED FOR IRRIGATION WORK ONLY

**IP-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
SENIOR LANDSCAPE ARCHITECT  
PATTY WATANABE  
CALCULATED/DESIGNED BY  
CHECKED BY  
KATHLEEN LEDESMA  
LILLY LOHMONGKOL  
REVISED BY  
DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	106	160

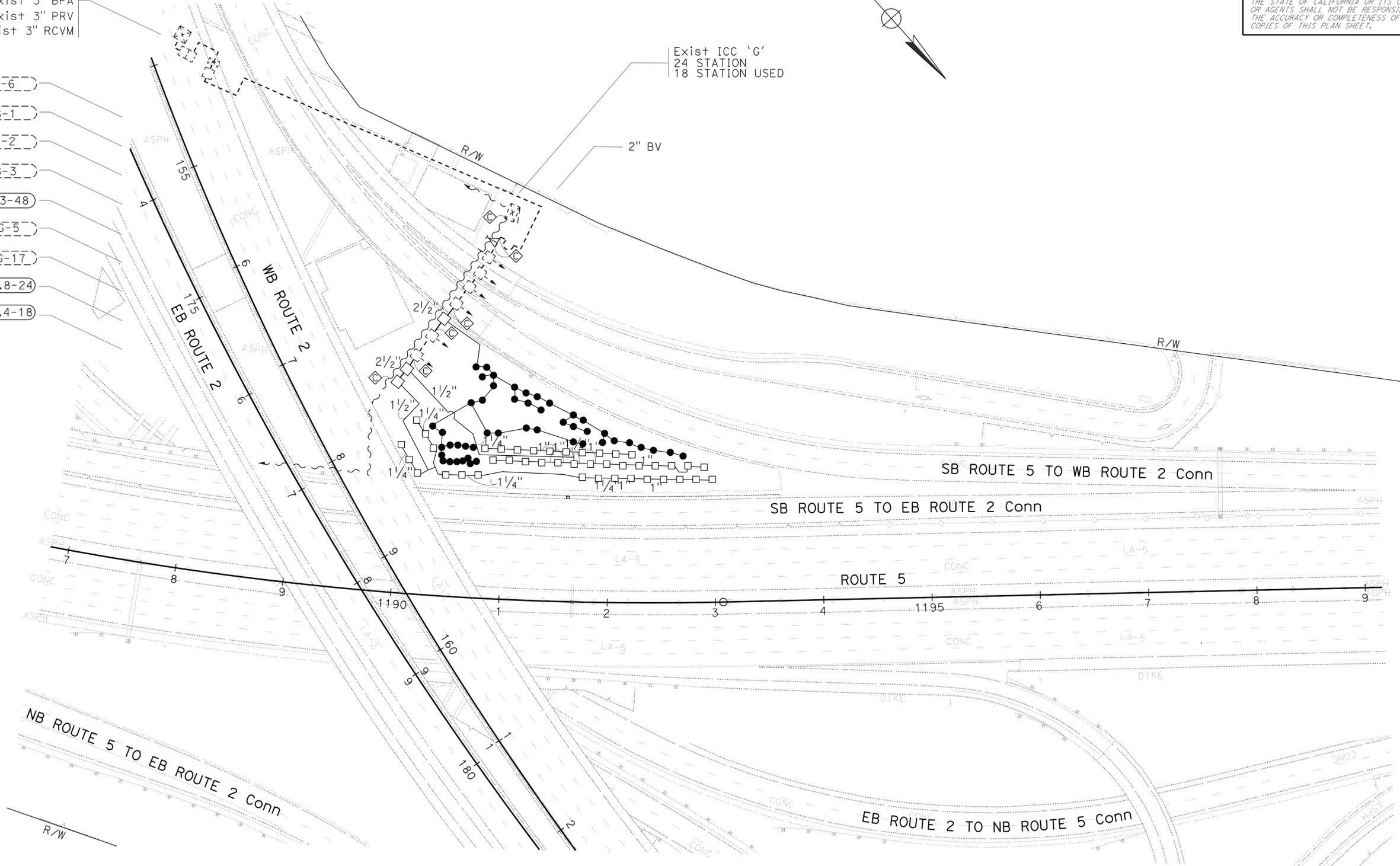
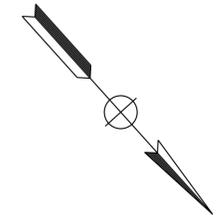
LICENSED LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 No. 5888  
 8-31-15  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

Exist 3" WM  
 Exist 3" BPA  
 Exist 3" PRV  
 Exist 3" RCVM

- 1/2"-G-6
- 1/2"-G-1
- 1/4"-G-2
- 1/4"-G-3
- 1/4"-G-4-18.3-48
- 1"-G-5
- 1"-G-17
- 1/2"-G-17-24.8-24
- 1/4"-G-18-14.4-18

Exist ICC 'G'  
 24 STATION  
 18 STATION USED



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 LILY LOHMONGKOL  
 CHECKED BY  
 PATTY WATANABE  
 REVISOR BY  
 DATE REVISOR  
 DATE REVISOR

**IRRIGATION PLAN**

SCALE: 1" = 50'

**IP-5**

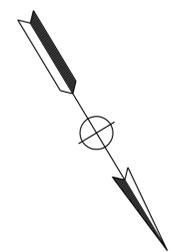
APPROVED FOR IRRIGATION WORK ONLY

LAST REVISION DATE PLOTTED => 18-SEP-2015  
 00-00-00 TIME PLOTTED => 10:57

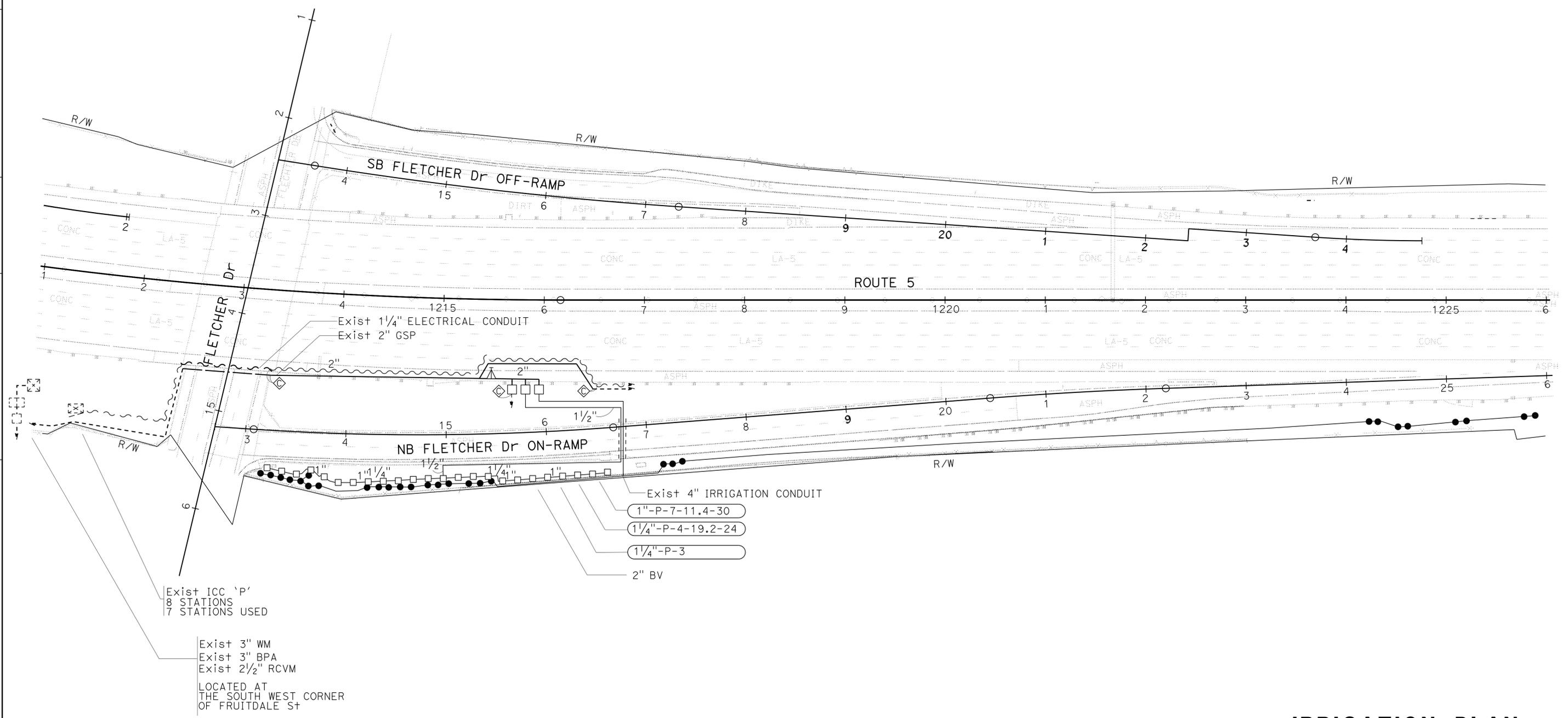
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	107	160

LICENSED LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 No. 5888  
 Signature: [Signature]  
 Date: 8/30/15  
 PLANS APPROVAL DATE: 8-31-15  
 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.

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE  
 CALCULATED/DESIGNED BY: PATTY WATANABE  
 CHECKED BY: [Blank]  
 KATHLEEN LEDESMA  
 LILY LOHMONGKOL  
 REVISED BY: [Blank]  
 DATE REVISED: [Blank]



**IRRIGATION PLAN**

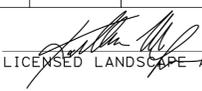
SCALE: 1" = 50'

APPROVED FOR IRRIGATION WORK ONLY

**IP-6**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 KATHLEEN LEDESMA  
 SUZIE KEARNS  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	108	160

  
 LICENSED LANDSCAPE ARCHITECT  
 8-31-15  
 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.

**SUBTOTALS PER VALVE ON LATERAL SUPPLY SIDE OF CONTROL VALVE**

DESCRIPTION	UNIT	VALVE OR ASSEMBLY NUMBER												SUBTOTALS	UNIT	DESCRIPTION	
		G-8	G-9	G-10	G-11	G-16	G-17	H-8	H-9	H-18	H-19	H-20	H-21				
PLASTIC PIPE SUPPLY LINE SCHEDULE 40	3/4 INCH		76	298	76		76	76	76	594	152	76	76	1,576	LF	3/4 INCH	
	1 INCH		152		152		114	152	196		152	152	152	1,222	LF	1 INCH	
	1 1/4 INCH		152		263		111	152	152		152	230	76	1,288	LF	1 1/4 INCH	
	1 1/2 INCH		99	81	233	294		142	271		154	340	225	1,839	LF	1 1/2 INCH	
SPRINKLER ASSEMBLY	A-1 RISER (GEAR DRIVEN)	EA													EA	A-1 RISER (GEAR DRIVEN)	
	A-3 RISER (GEAR DRIVEN)	EA		12		9		12	11	13		13	9	9	88	EA	A-3 RISER (GEAR DRIVEN)
	B-3 RISER	EA														EA	B-3 RISER
	C-3 TREE WELL	EA			8						10				18	EA	C-3 TREE WELL

DESCRIPTION	UNIT	VALVE OR ASSEMBLY NUMBER												SUBTOTALS	UNIT	DESCRIPTION
		J-18	C-6	C-12	G-8	G-9	G-10	G-4	G-17	G-18	P-4	P-7				
PLASTIC PIPE SUPPLY LINE SCHEDULE 40	3/4 INCH	120	90	140	140	105	734	278	165	45	90	1120	3,027	LF	3/4 INCH	
	1 INCH	120	175	210	245	245		199	285	45	120	348	1,992	LF	1 INCH	
	1 1/4 INCH	105	430	404	229	245	88	92	176	312	135		2,216	LF	1 1/4 INCH	
	1 1/2 INCH	225	37	34	453	235			59	50	358		1,451	LF	1 1/2 INCH	
SPRINKLER ASSEMBLY	A-1 RISER (GEAR DRIVEN)	EA			11	19	19							49	EA	A-1 RISER (GEAR DRIVEN)
	A-3 RISER (GEAR DRIVEN)	EA													EA	A-3 RISER (GEAR DRIVEN)
	B-3 RISER	EA	24	12					24	18	24			102	EA	B-3 RISER
	C-3 TREE WELL	EA					30	48				30		108	EA	C-3 TREE WELL

**IRRIGATION QUANTITIES**

LAST REVISION DATE PLOTTED => 18-SEP-2015 00-00-00 TIME PLOTTED => 10:57

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 KATHLEEN LEDESMA  
 REVISED BY  
 SUZIE KEARNS  
 DATE REVISED  
 CALCULATED/DESIGNED BY  
 PATTY WATANABE  
 CHECKED BY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	109	160

8-31-15  
 PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 No. 5888  
 Signature: [Signature]  
 Renewal Date: 12/31/15  
 Date: 8/30/15

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.

**SUBTOTALS PER PLAN SHEET  
 ON MAIN SUPPLY SIDE OF CONTROL VALVE**

DESCRIPTION	UNIT	SHEET NUMBER						SUBTOTALS
		IP-1	IP-2	IP-3	IP-4	IP-5	IP-6	
<b>BPA</b>								
3 INCH	EA	1						1
<b>IRRIGATION CONTROLLER</b>								
24 STATION	EA	2						2
32 STATION	EA		1					1
<b>CEC</b>								
SINGLE	EA	2	1					3
<b>VALVES AND ASSEMBLIES</b>								
<b>RCV</b>								
1 INCH	EA	3		1	1		1	6
1 1/4 INCH	EA			1		2	2	5
1 1/2 INCH	EA	5	1			1		7
2 INCH	EA	4			2			6
<b>BV</b>								
1 1/2 INCH	EA			1				1
2 INCH	EA	1				1	1	3
2 1/2 INCH	EA		1		1			2
3 INCH	EA	1						1
<b>GV</b>								
2 1/2 INCH	EA		1					1
<b>PRV</b>								
3/4 INCH	EA				1			1
<b>PLASTIC PIPE SUPPLY LINE</b>								
<b>SCHEDULE 40</b>								
1 1/2 INCH	LF			54				54
2 INCH	LF	117	153			407		677
2 1/2 INCH	LF		805			183		988
3 INCH	LF	177			505			682
<b>FLOW SENSOR</b>								
3 INCH	EA	1						1

**TOTAL QUANTITIES**

TOTALS	UNIT	DESCRIPTION		
				<b>BPA</b>
1	EA	3 INCH		
				<b>IRRIGATION CONTROLLER</b>
2		24 STATION		
1		32 STATION		
				<b>CEC</b>
3		SINGLE		
				<b>VALVES AND ASSEMBLIES</b>
6	EA	1 INCH		
5	EA	1 1/4 INCH		
7	EA	1 1/2 INCH		
6	EA	2 INCH		
1	EA	1 1/2 INCH		
3	EA	2 INCH		
2	EA	2 1/2 INCH		
1	EA	3 INCH		
				<b>PRV</b>
1	EA	2 1/2 INCH		
				<b>SCHEDULE 40</b>
4,603	LF	3/4 INCH		
3,214	LF	1 INCH		
3,504	LF	1 1/4 INCH		
3,344	LF	1 1/2 INCH		
677	LF	2 INCH		
988	LF	2 1/2 INCH		
682	LF	3 INCH		
				<b>FLOW SENSOR</b>
1	EA	3 INCH		
				<b>SPRINKLER ASSEMBLY</b>
49	EA	A-1 RISER (GEAR DRIVEN)		
88	EA	A-3 RISER (GEAR DRIVEN)		
102	EA	B-3 RISER		
126	EA	C-3 TREE WELL		

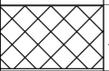
**NOTE:** TOTALS FOR SCHEDULE 40 SUPPLY LINES INCLUDE LATERAL, MAIN, AND IRRIGATION CONDUIT.

**IRRIGATION QUANTITIES**

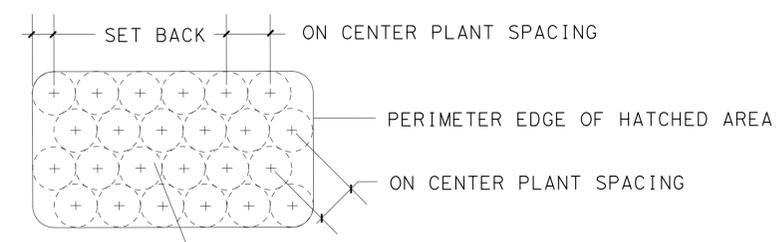
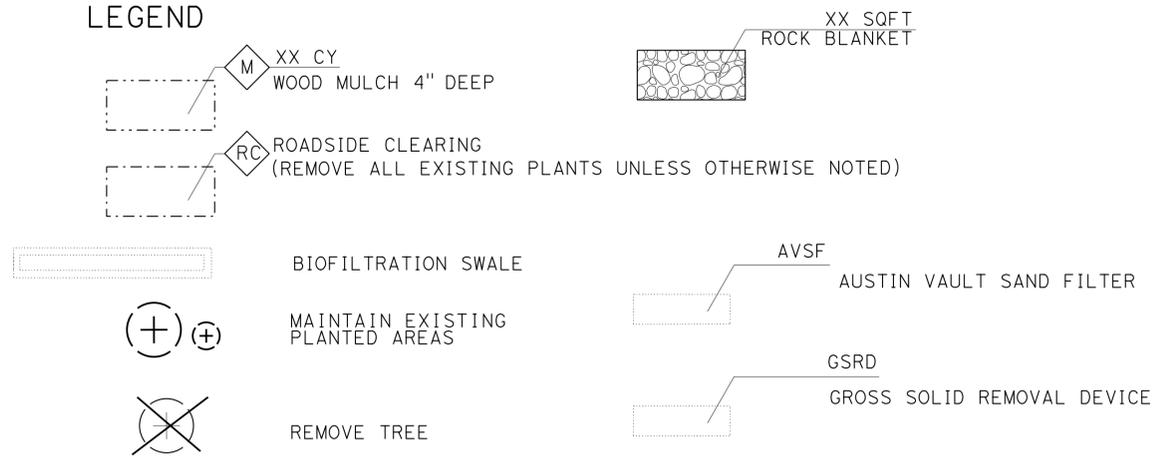
**IQ-2**

LAST REVISION DATE PLOTTED => 18-SEP-2015  
 00-00-00 TIME PLOTTED => 10:57

### PLANTING LEGEND

PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (INCH)		BASIN TYPE	SOIL AMENDMENT ①		IRON SULFATE RATE	COMMERCIAL FERTILIZER ①		BASIN MULCH ①		STAKING	PLANTING LIMITS							REMARKS
							Dia	DEPTH		TYPE	RATE		PLANTING	PLT ESTB	TYPE	CY		MINIMUM DISTANCE (ft) FROM					ON CENTER (ft)		
																		ETW	Pvmt	FENCE	WALL	PAVED DITCH		EARTH DITCH	
A	1		<u>ALOE ARBORENSIS</u>	TREE ALOE	No. 1	165	③	③	I	⑤	0.04 CY	—	4 Oz	4 Oz	WC	0.05	—	—	8	8	8	8	10	⑦	SHRUB
	2		<u>MUHLENBERGIA RIGENS</u>	DEER GRASS	No. 1	1,539	③	③	I	⑤	0.04 CY	—	2 Oz	2 Oz	WC	0.04	—	2	—	—	—	2	2	3	GRASS
B	3		<u>EUCALYPTUS SIDEROXYLON</u>	PINK IRONBARK	No. 5	17	③	③	I	⑤	0.19 CY	—	6 Oz	6 Oz	WC	0.04	—	30	—	15	15	15	17	⑦	TREE
	4		<u>PIITOSPORUM CRASIFOLIUM</u>	EVERGREEN PITTOSPORUM	No. 5	47	③	③	I	⑤	0.19 CY	—	6 Oz	6 Oz	WC	0.04	—	—	15	10	10	8	10	⑦	SHRUB
F	5		<u>LANTANA MONTEVIDENSIS</u>	LANTANA	IN FLATS	3,026	—	—	—	—	—	—	5 LB/1000 SQFT	5 LB/1000 SQFT	—	—	—	—	6	6	6	6	8	3	GROUNDCOVER
H	6		<u>CARPOBROTUS EDULIS</u>	HOTTENTOT FIG	CUTTING	125,224	—	—	—	—	—	—	5 LB/1000 SQFT	5 LB/1000 SQFT	—	—	—	—	6	6	6	6	8	1	④ GROUNDCOVER
U	7		<u>LAGERSTROEMIA INDICA</u>	GRAPE MYTLE	No. 15	21	③	③	I	⑤	0.56 CY	—	10 Oz	10 Oz	WC	0.16	—	30	—	15	15	17	10	⑦	TREE
	8		<u>PINUS CANARIENSIS</u>	CANARY ISLANDS PINE	No. 15	7	③	③	I	⑤	0.56 CY	—	10 Oz	10 Oz	WC	0.16	—	40	—	20	16	10	11	⑦	TREE

#### LEGEND



**NOTE:**  
 PLACE PLANTS ON TRIANGULAR SPACING  
**TYPICAL PLANT PLACEMENT**  
 NO SCALE

#### WOOD MULCH AND ROCK BLANKET

SHEET NUMBER	WOOD MULCH		ROCK BLANKET SQFT
	BASIN CY	SPREAD CY	
PL-1	76.85		
PP-1		229.00	10,819
PP-2		1.30	2,348
PP-3			1,392
PP-4		295.00	7,544
PP-5		164.00	1,347
PP-6		87.00	
SUBTOTAL	76.85	776.30	
TOTAL		853.15	23,450

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

### PLANT LEGEND

PL-1





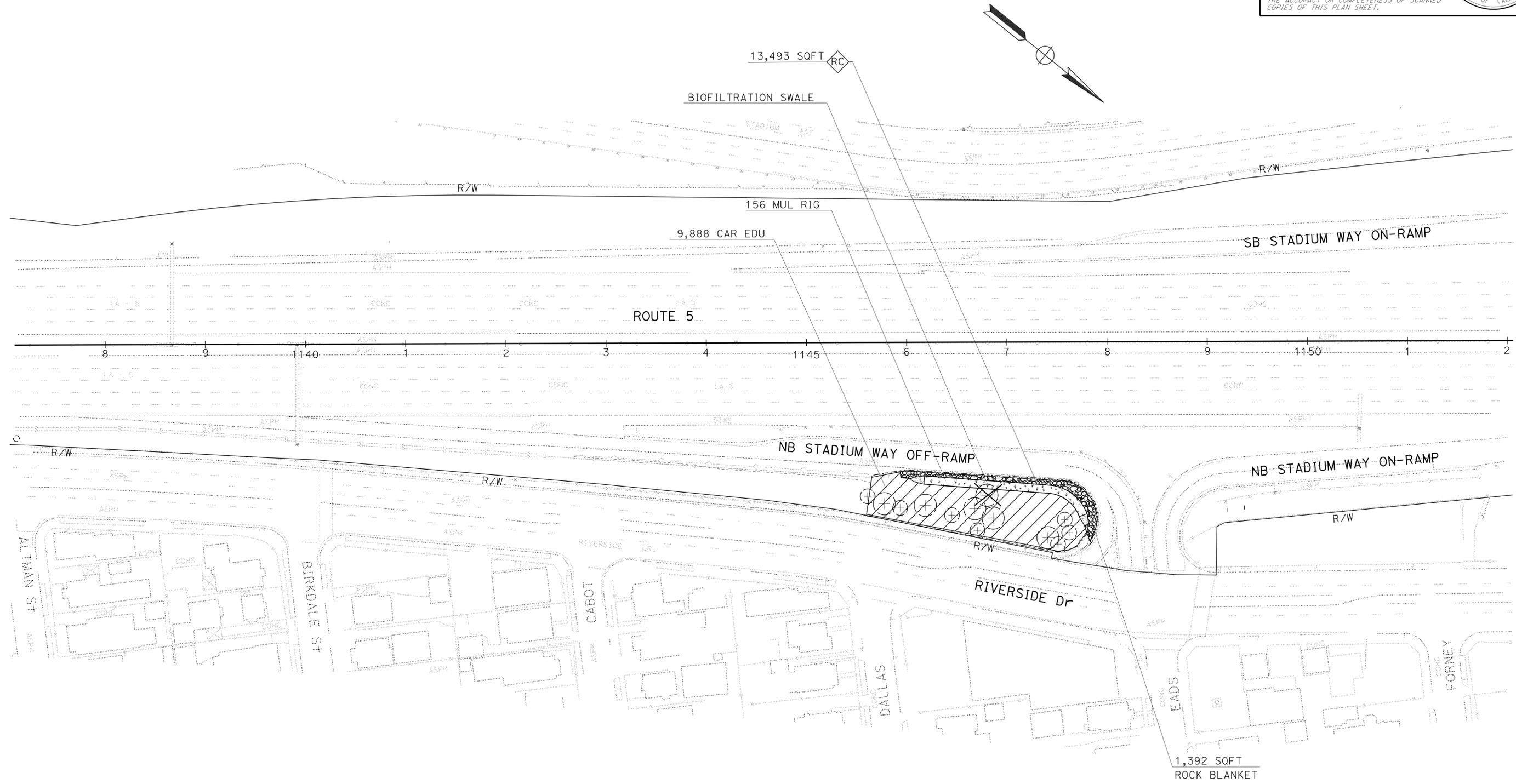
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	113	160

LICENSED LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 No. 5888  
 Signature: *Kathleen Ledesma*  
 8-31-15  
 PLANS APPROVAL DATE  
 12/31/15  
 Renewal Date: 8/30/15  
 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.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SENIOR LANDSCAPE ARCHITECT	CALCULATED/DESIGNED BY	REVISED BY
<b>Caltrans</b> LANDSCAPE ARCHITECTURE	PATTY WATANABE	CHECKED BY	DATE REVISED



**PLANTING PLAN**  
 SCALE: 1" = 50'  
**PP-3**

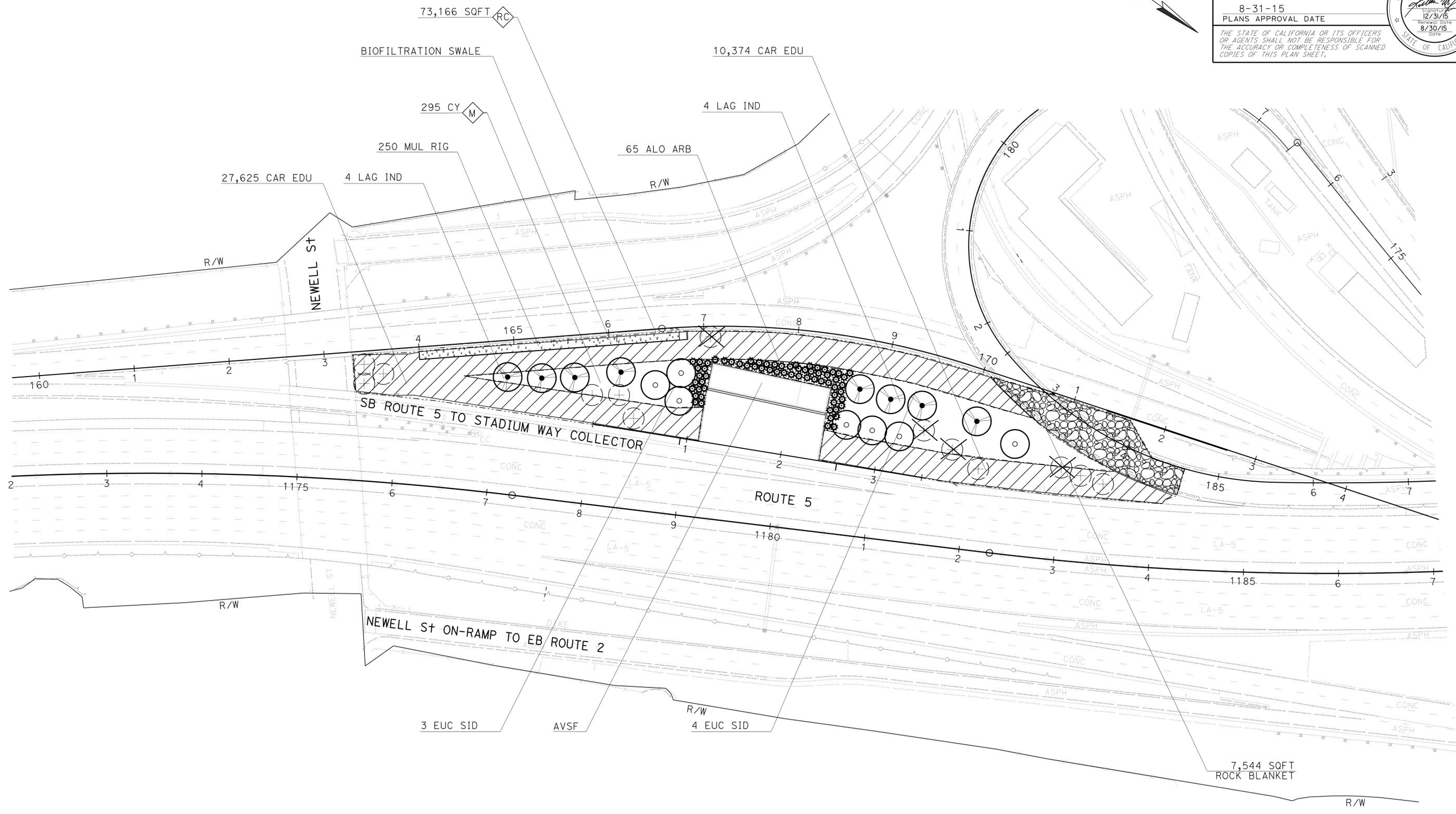
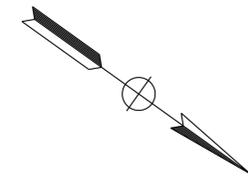
APPROVED FOR PLANTING WORK ONLY

LAST REVISION:    DATE PLOTTED => 18-SEP-2015  
 00-00-00    TIME PLOTTED => 10:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	114	160

LICENSED LANDSCAPE ARCHITECT  
 Signature: *Kathleen Ledesma*  
 8-31-15  
 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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE  
 CALCULATED/DESIGNED BY: KATHLEEN LEDESMA  
 CHECKED BY: LILY LOHMONGKOL  
 REVISED BY: KATHLEEN LEDESMA  
 DATE REVISED: LILY LOHMONGKOL

**PLANTING PLAN**  
 SCALE: 1" = 50'  
**PP-4**

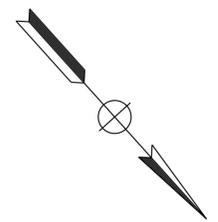
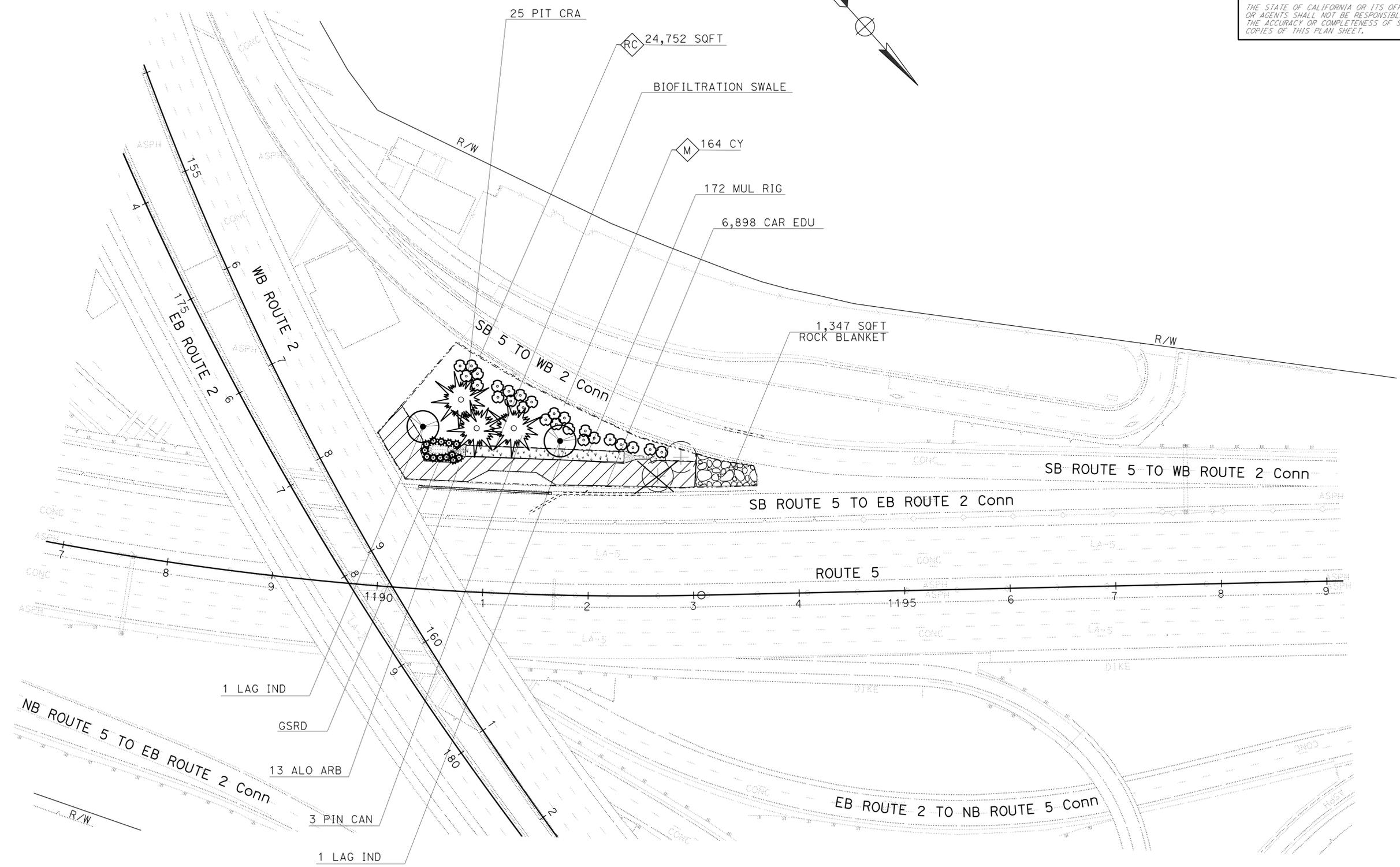
APPROVED FOR PLANTING WORK ONLY

LAST REVISION: 00-00-00    DATE PLOTTED => 18-SEP-2015    TIME PLOTTED => 10:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	115	160

LICENSED LANDSCAPE ARCHITECT  
 8-31-15  
 PLANS APPROVAL DATE  
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 KATHLEEN LEDESMA  
 LILY LOHMONGKOL  
 REVISED BY  
 DATE REVISED

**PLANTING PLAN**  
 SCALE: 1" = 50'  
**PP-5**

APPROVED FOR PLANTING WORK ONLY

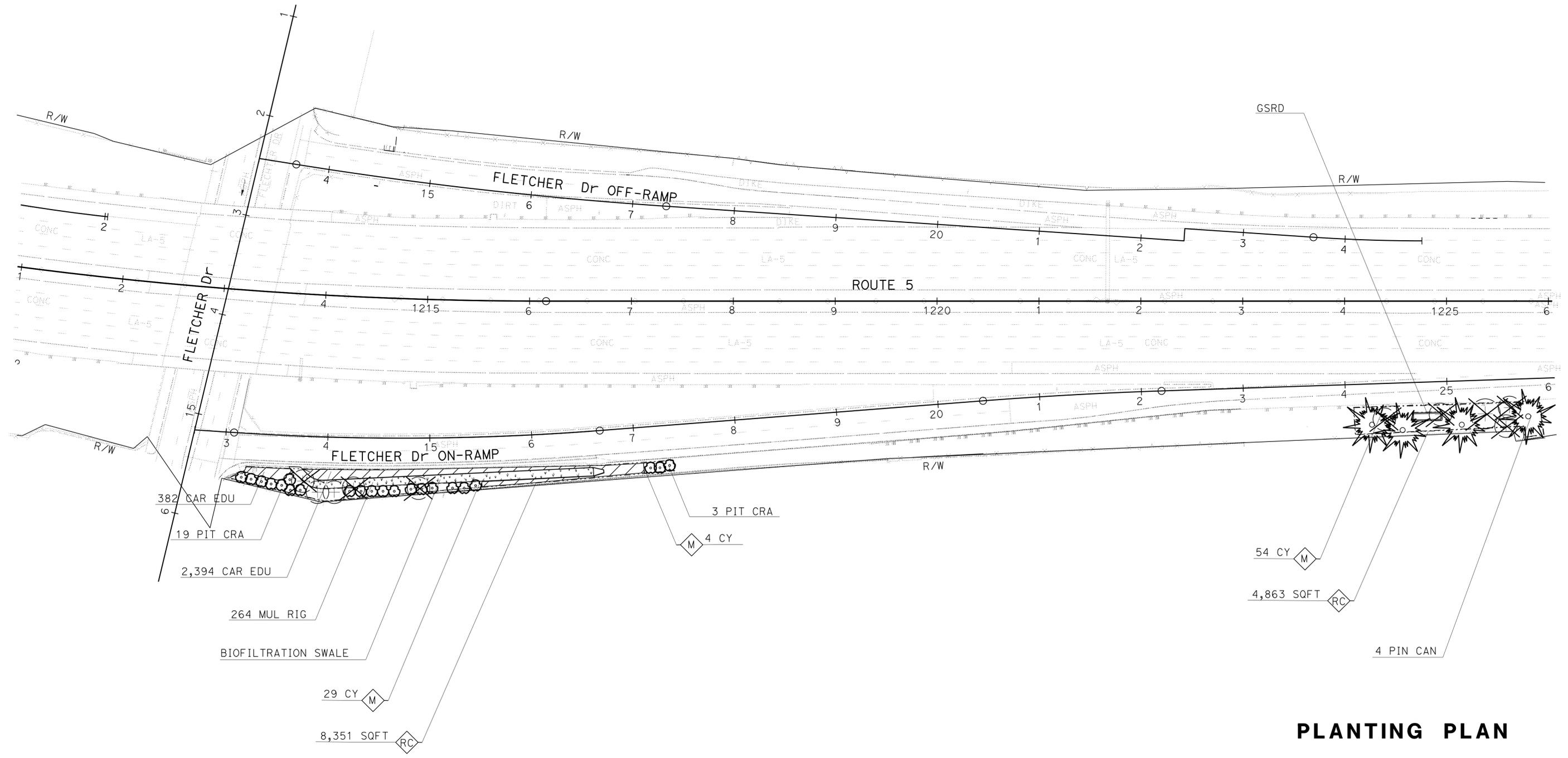
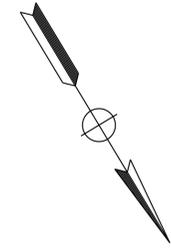
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 00-00-00 TIME PLOTTED => 10:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	116	160

LICENSED LANDSCAPE ARCHITECT  
 KATHLEEN LEDESMA  
 No. 5888  
 Signature: *Kathleen Ledesma*  
 8-31-15  
 PLANS APPROVAL DATE  
 Renewal Date: 8/30/15  
 Date:

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



**PLANTING PLAN**  
 SCALE: 1" = 50'  
**PP-6**

APPROVED FOR PLANTING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE  
 CALCULATED/DESIGNED BY: KATHLEEN LEDESMA  
 CHECKED BY: LILY LOHMONGKOL  
 REVISED BY: KATHLEEN LEDESMA  
 DATE REVISED: LILY LOHMONGKOL

USERNAME => s119140  
 DGN FILE => 725840su006.dgn



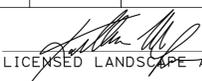
UNIT 1851

PROJECT NUMBER & PHASE

07120001021

LAST REVISION: DATE PLOTTED => 18-SEP-2015  
 00-00-00 TIME PLOTTED => 10:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	117	160

  
 LICENSED LANDSCAPE ARCHITECT  
 8-31-15  
 PLANS APPROVAL DATE



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### IRRIGATION LEGEND

SYMBOL	TYPE	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)		RISER		POP-UP		TREE WELL					
						GALLONS PER MINUTE (GPM)	GALLONS PER HOUR (GPH)				MATERIAL	SIZE (IPS INCH)	HEIGHT (INCH)	TYPE		INLET CONNECTION (NPT INCH)	SPRINKLER PROTECTOR (TYPE)		HEIGHT (INCH)	
①	A-1	RISER SPRINKLER ASSEMBLY (GEAR DRIVE)	P	40	—	1.6	—	35'	—	X	IV	X	—	3/4"	18"	—	—	—	—	
③	A-3	RISER SPRINKLER ASSEMBLY (GEAR DRIVE)	F/P	40	—	2.7	—	38'	—	X	IV	X	—	3/4"	18"	—	—	—	—	
□	B-3	RISER SPRINKLER ASSEMBLY	H	30	—	0.80	—	15'	—	X	—	—	—	—	—	III	1/2"	—	—	
●	C-3	TREE WELL SPRINKLER ASSEMBLY	Q	30	—	0.38	—	8'	—	X	—	—	—	—	—	—	—	—	4"	

X IN BOX DENOTES REQUIREMENT

**APPLICABLE WHEN CIRCLED BELOW:**

- 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 - SWING JOINTS REQUIRED ADJACENT TO SHOULDERS, CURBS, SIDEWALKS, AND DIKES.
- 5 - UNLESS OTHERWISE SHOWN.

NUMBER OF SPRINKLERS	SIZE OF PIPE
1-16	3/4"
17-24	1"
25-44	1 1/4"
45-60	1 1/2"
61-100	2"

### IRRIGATION CONDUIT

SHEET No.	IRRIGATION CONDUIT No.	LOCATION	(N)	(N)	SCHEDULE 40 PVC PIPE				
			WATER SUPPLY LINE	ELECTRICAL CONDUIT	2"	4"	6"	8"	10"
		STATION	SIZE (INCH)	SIZE (INCH)					
IP-4	A	SEE PLAN IP-4	1 1/2"	—	—	166	—	—	—
				SUBTOTAL		166			
				TOTAL					

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

## LANDSCAPE DETAILS

LD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 KATHLEEN LEDESMA  
 LILY LOHMONGKOL  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 SENIOR LANDSCAPE ARCHITECT  
 PATTY WATANABE  
 LANDSCAPE ARCHITECTURE



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	118	160

REGISTERED ELECT. ENGINEER		DATE	
G.S. TOOR		6/4/15	
PLANS APPROVAL DATE		8-31-15	

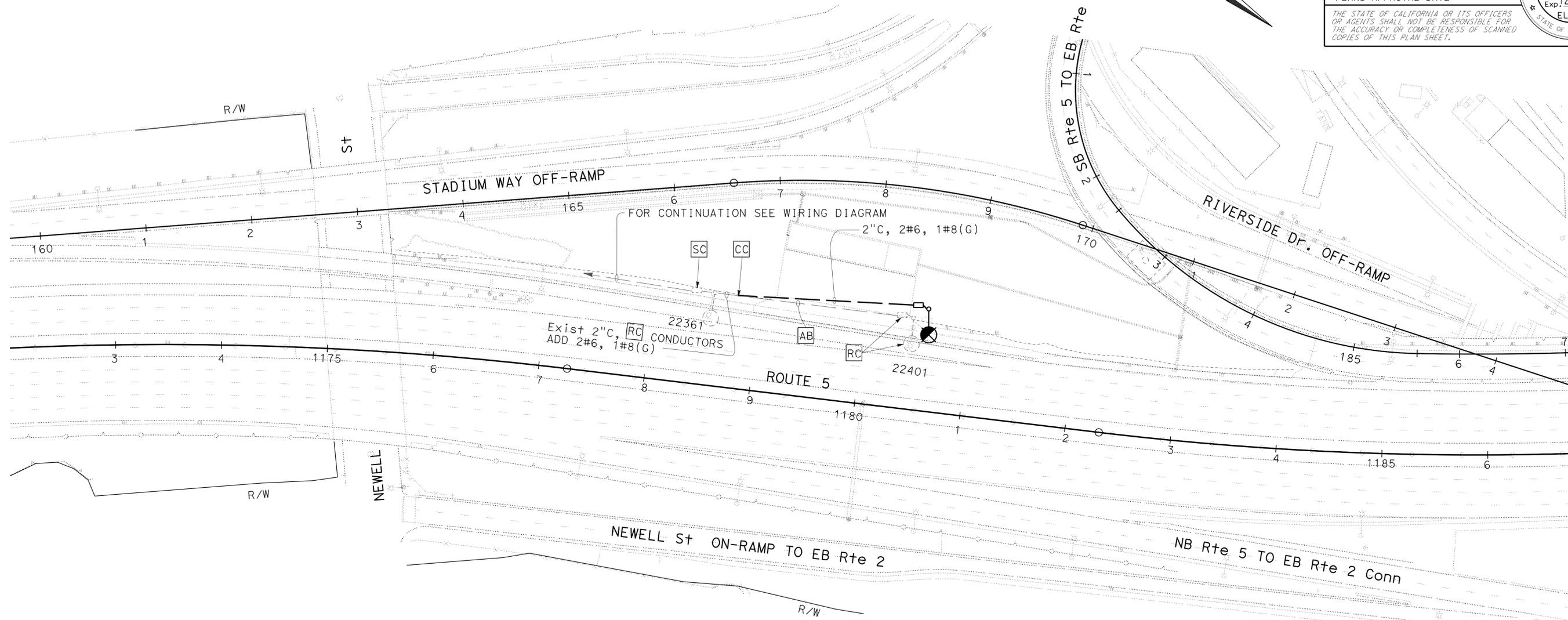
  

REGISTERED PROFESSIONAL ENGINEER	
No.	E15613
Exp.	12/31/15
ELECT	

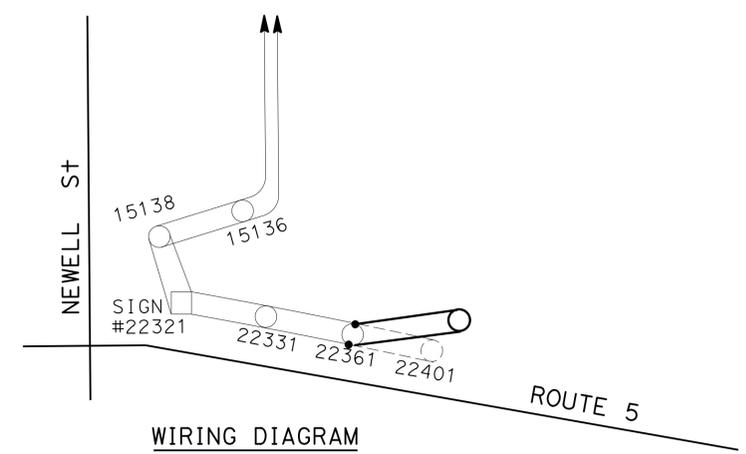
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**NOTE: (SHEET E-1 TO E-2)**

1. NEW PULL BOX COVER MUST HAVE TAMPER RESISTANT COVER.
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



120/240 V SERVICE  
 PP #570632H  
 ADDRESS: 2610 1/2 KNOX Ave



- WIRING DIAGRAM LEGEND: (SHEET E-1 TO E-2)**
- INSTALL 235 W LED LAMP
  - EXISTING LAMP
  - INSTALL NEW CONDUCTORS
  - SPLICE CONDUCTORS.
  - RC LAMP
  - EXISTING CONDUCTOR
  - - - RC CONDUCTOR
  - EXISTING SIGN LAMP

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**Caltrans** TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

CALCULATED/DESIGNED BY: OSWALD ELIZONDO

REVISOR: GARY TOOR

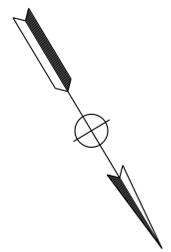
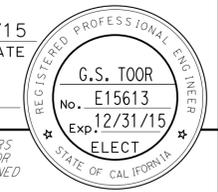
DATE REVISION: OSWALD ELIZONDO

**LOCATION 6**

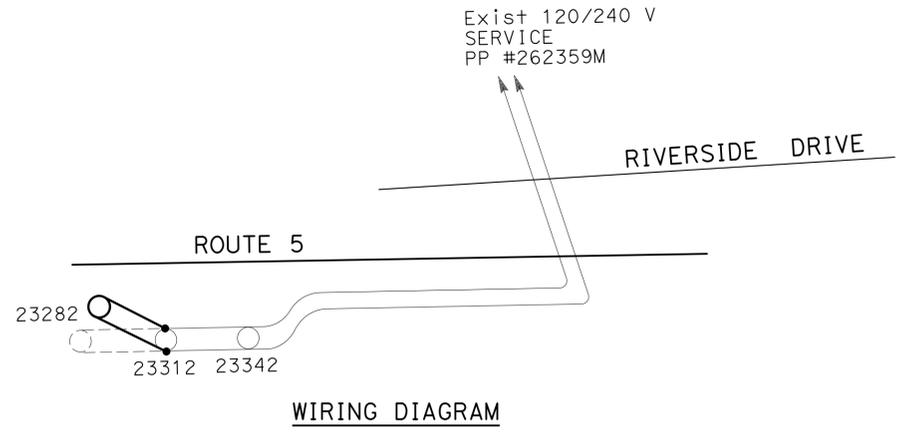
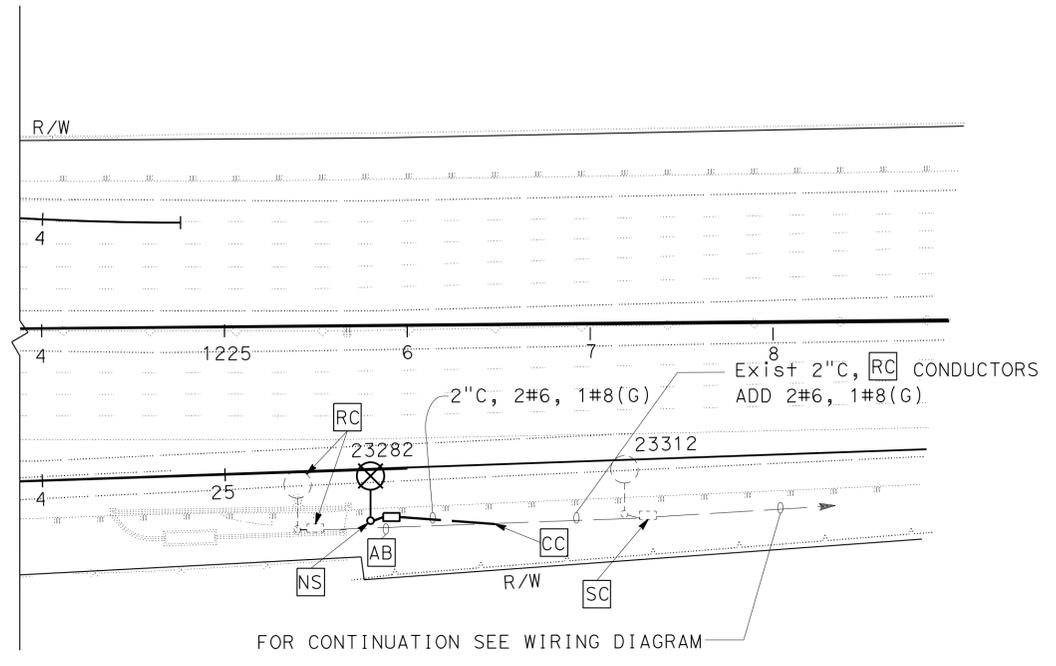
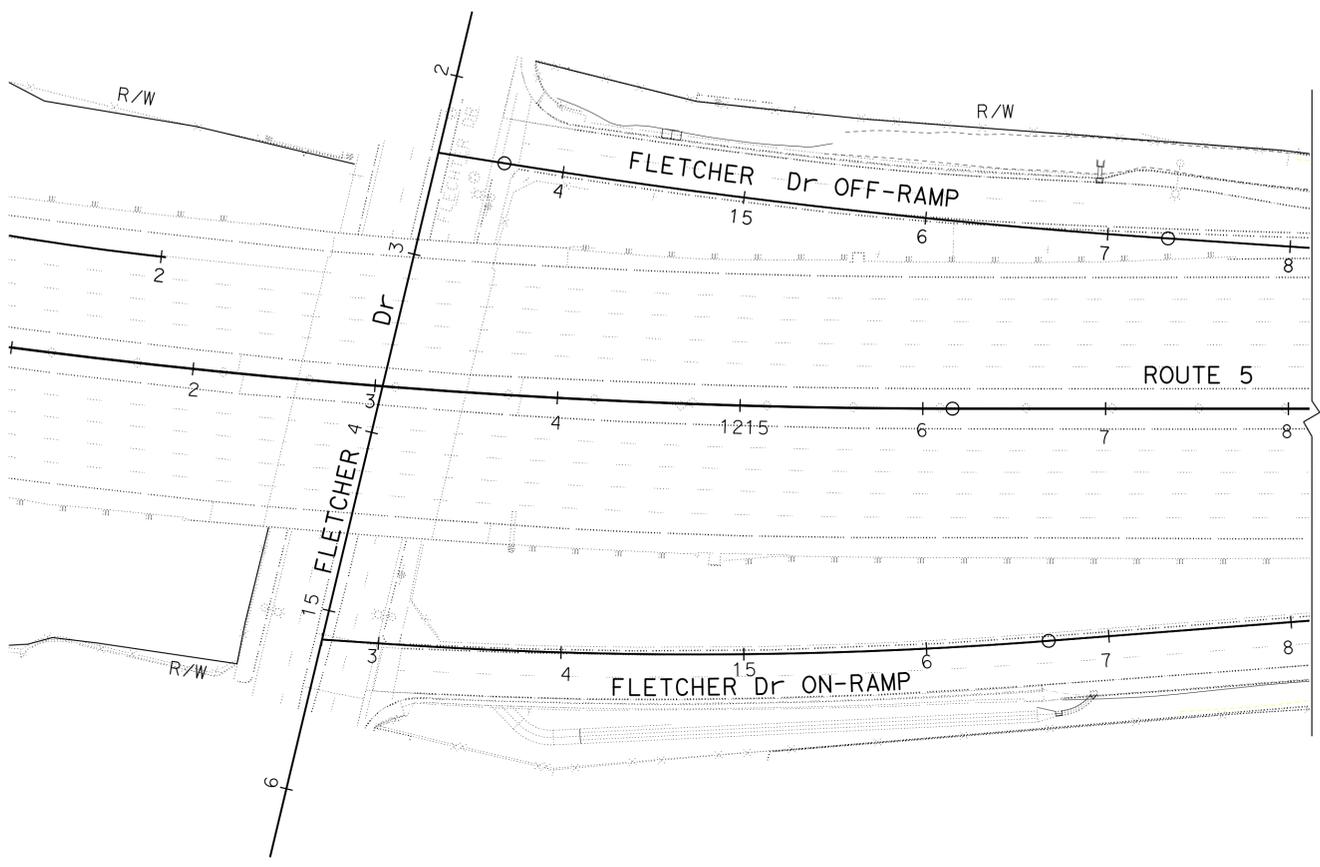
APPROVED FOR ELECTRICAL WORK ONLY

**MODIFY LIGHTING**  
 SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	119	160
			6/4/15 REGISTERED ELECT ENGINEER DATE		
			8-31-15 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.



**LOCATION 9**

**MODIFY LIGHTING**

SCALE: 1"=50'

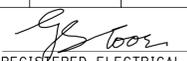
APPROVED FOR ELECTRICAL WORK ONLY

**E-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	GARY TOOR	REVISOR BY	OSWALD ELIZONDO
<b>Caltrans</b> TRAFFIC DESIGN	OSWALD ELIZONDO	CHECKED BY	OSWALD ELIZONDO	DATE	REVISOR

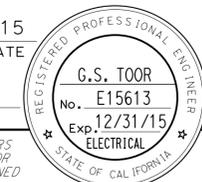
LAST REVISION DATE PLOTTED => 18-SEP-2015 00-00-00 TIME PLOTTED => 10:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	120	160

 6/4/15  
 REGISTERED ELECTRICAL ENGINEER DATE

8-31-15  
 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:**

ITEMS SHOWN IN TABLE ARE NOT A SEPARATE ITEM,  
FOR INFORMATION ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR  
 OSWALD ELIZONDO  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 GARY TOOR  
 OSWALD ELIZONDO  
 REVISED BY  
 DATE REVISED

MODIFY LIGHTING

SHEET No.	LIGHTING STANDARD TYPE 32	SIZE 2" CONDUIT	CONDUCTOR #8 GROUND	CONDUCTOR #6	No.5 PULL BOX	235 WATTS LED LUMINAIRE	LIGHTING STANDARD TYPE 30	LIGHTING STANDARD TYPE 30 FOUNDATION	LIGHTING STANDARD TYPE 32 FOUNDATION	TAMPER RESISTANT COVER
	EA	LF	LF	LF	EA	EA	EA	EA	EA	EA
E-1	1	200	250	500	1	1	-	-	1	1
E-2	-	70	150	300	1	1	1	1	-	1

**ELECTRICAL QUANTITIES**



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

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

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	121	160

*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 8-31-15

**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 <sup>3</sup> , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
∅	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.

**REVISED STANDARD PLAN RSP A10B**

2010 REVISED STANDARD PLAN RSP A10B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	122	160

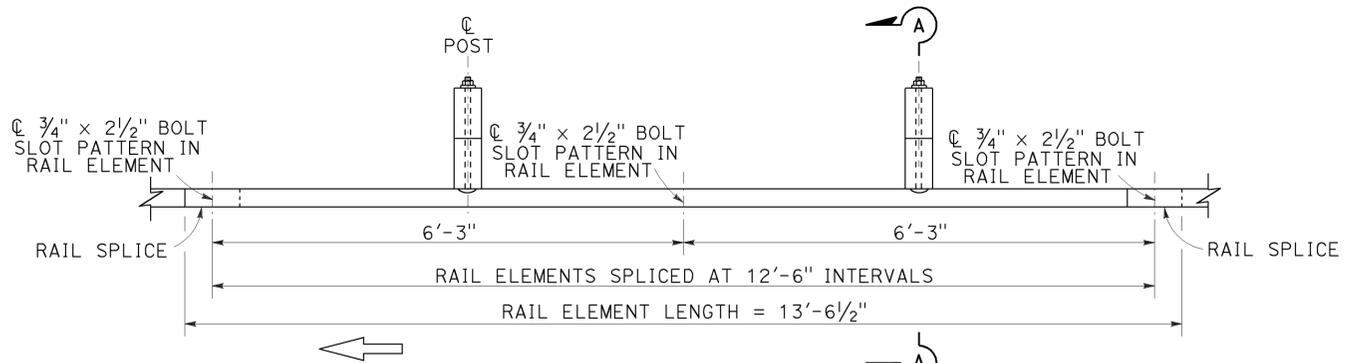
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

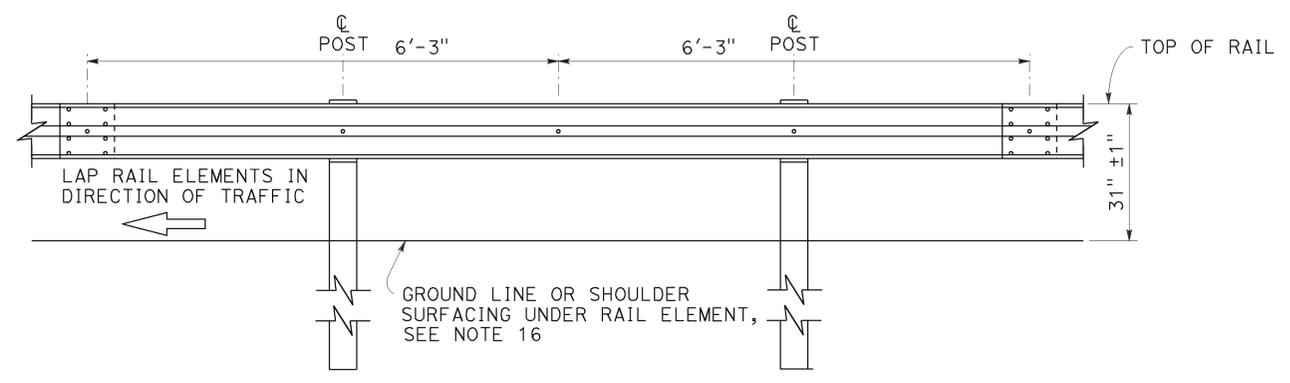
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REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 8-31-15

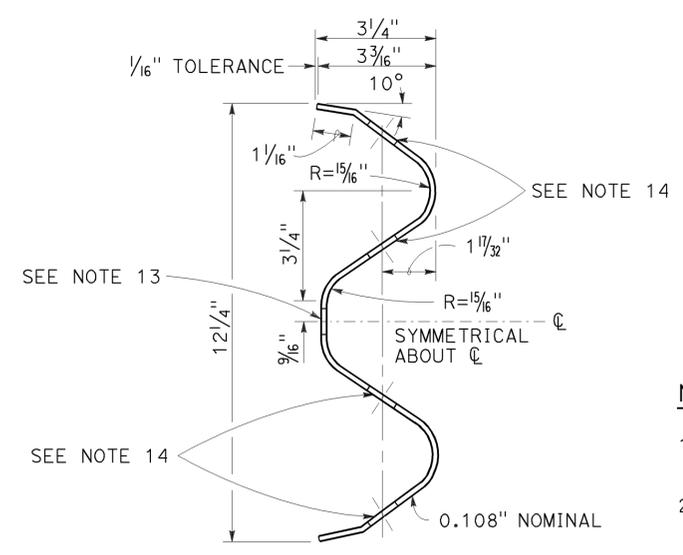


PLAN



ELEVATION

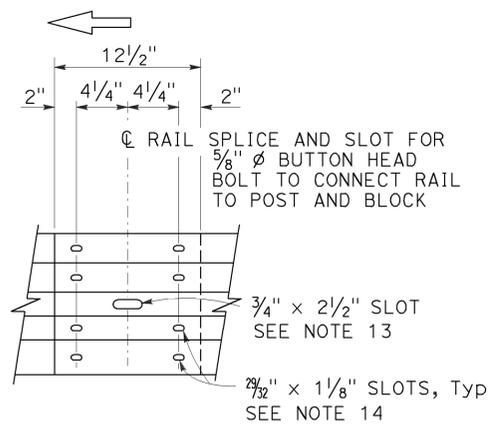
**MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS**



SECTION THRU RAIL ELEMENT

NOTES:

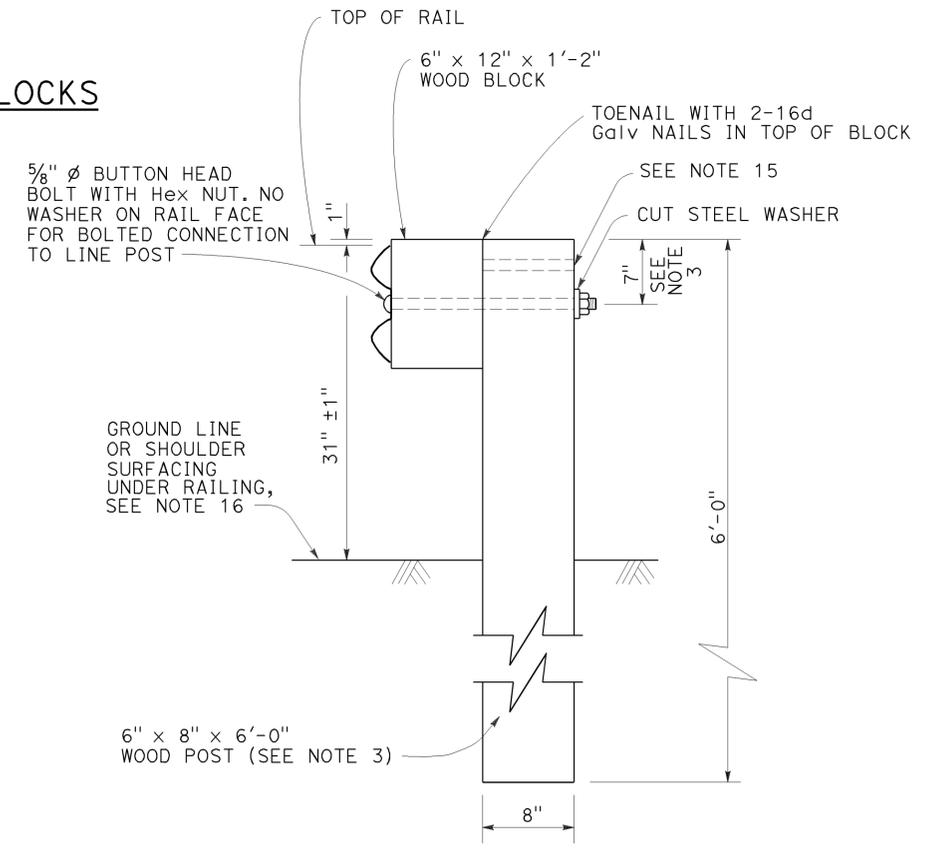
- For details of steel post installations, see Revised Standard Plan RSP A77L2.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
- For additional installation 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"  $\phi$  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"  $\phi$  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)**

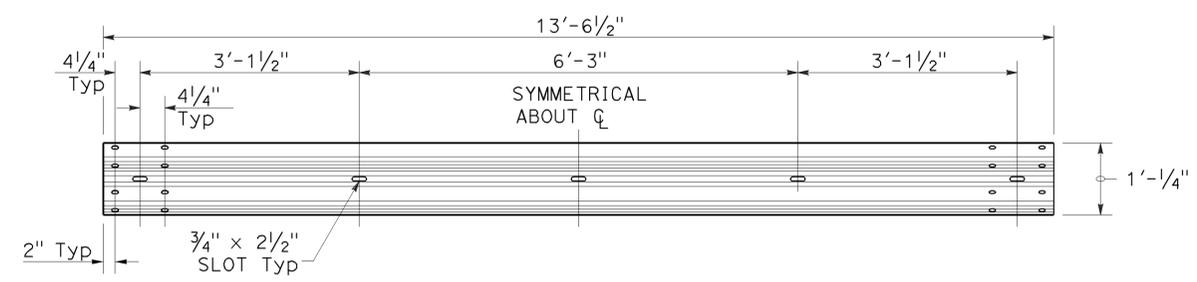
NO SCALE

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

**REVISED STANDARD PLAN RSP A77L1**

2010 REVISED STANDARD PLAN RSP A77L1

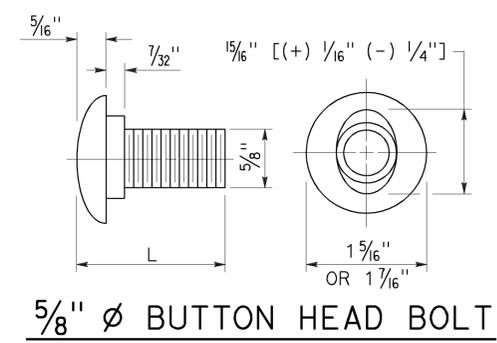
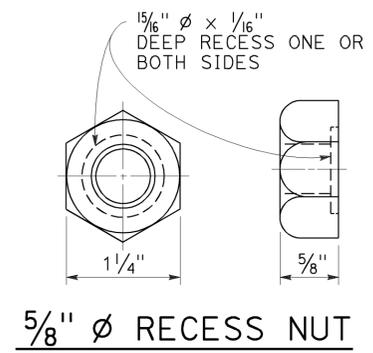
TO ACCOMPANY PLANS DATED 8-31-15



TYPICAL RAIL ELEMENT

**NOTE:**

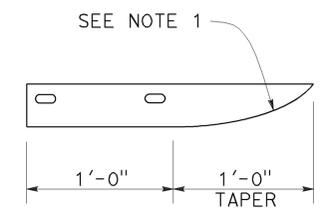
1. Slotted holes for splice bolts to overlap ends of rail element.



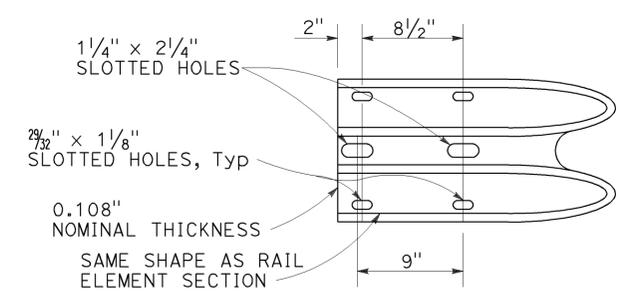
**BUTTON HEAD BOLT**

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
07	LA	5	18.4/23.2	124	160

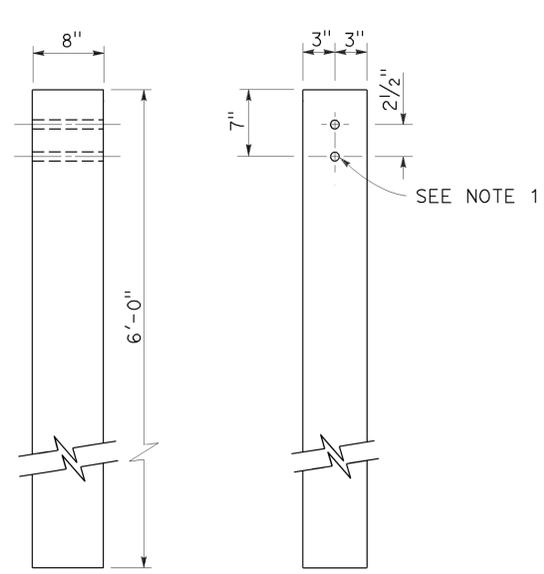
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

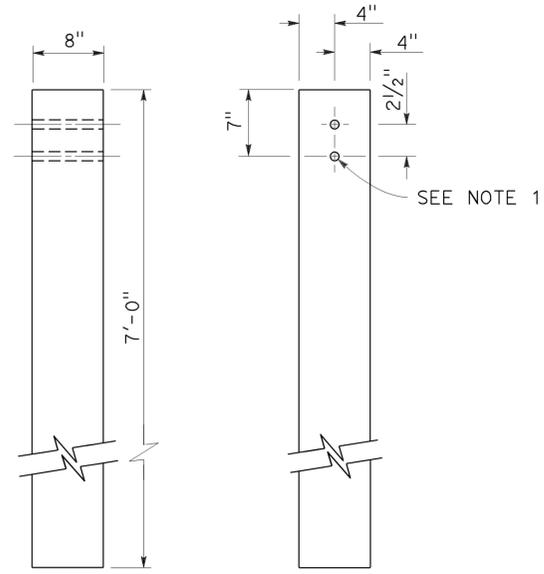
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REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

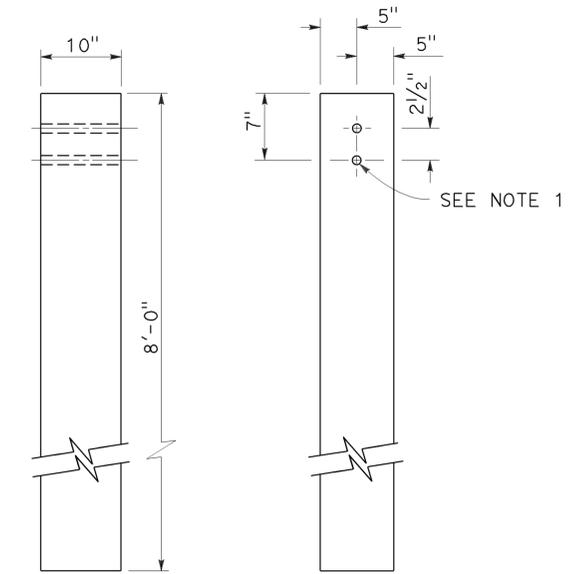
TO ACCOMPANY PLANS DATED 8-31-15



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



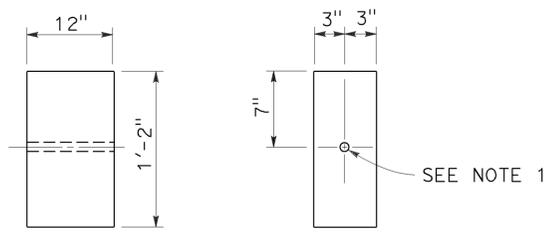
SIDE      FRONT  
8" x 8" WOOD POST  
See Note 4



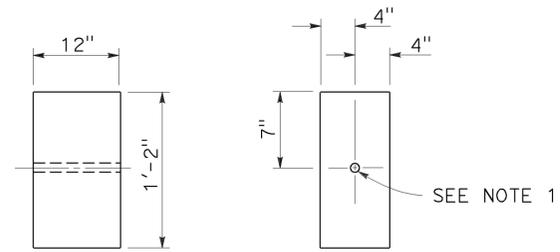
SIDE      FRONT  
10" x 10" WOOD POST  
See Note 5

**NOTES:**

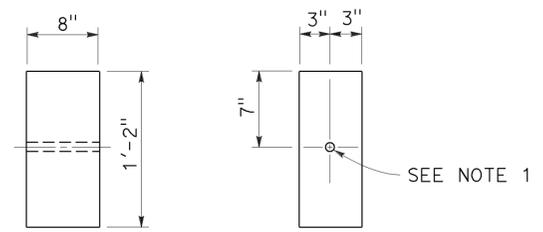
1. All holes in wood posts and blocks shall be  $\frac{3}{4}$ " Dia  $\pm$   $\frac{1}{16}$ ".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS 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.



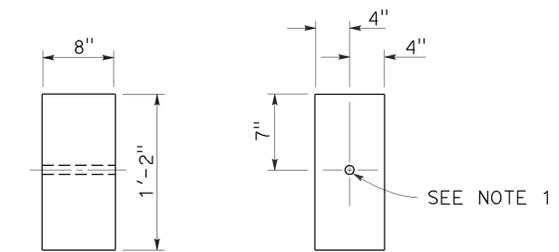
SIDE      FRONT  
6" x 12" WOOD BLOCK  
See Note 3



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**

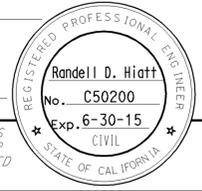
2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	125	160

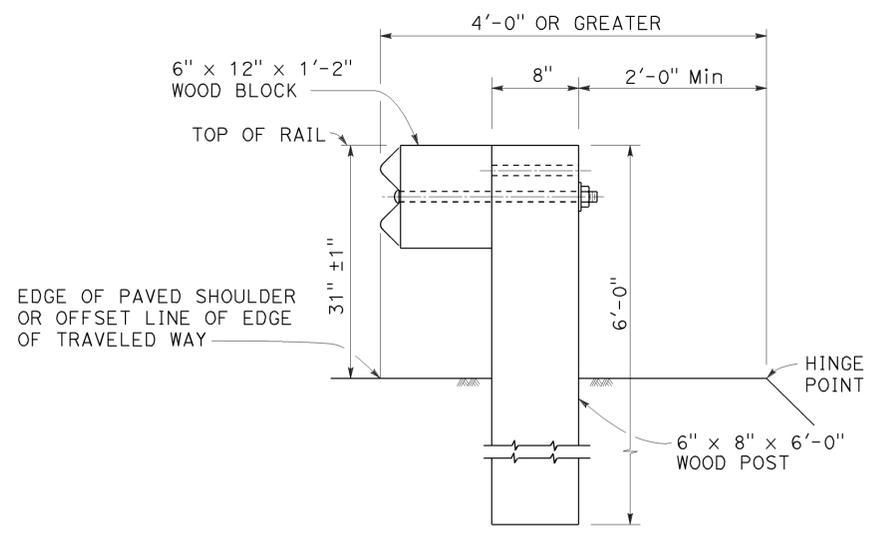
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

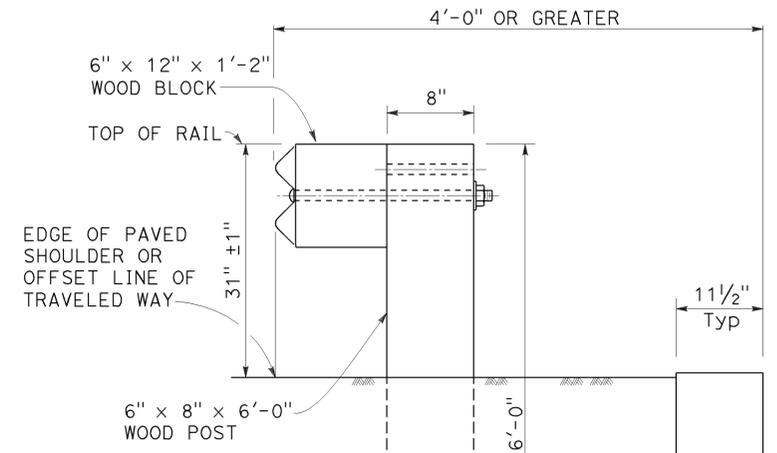
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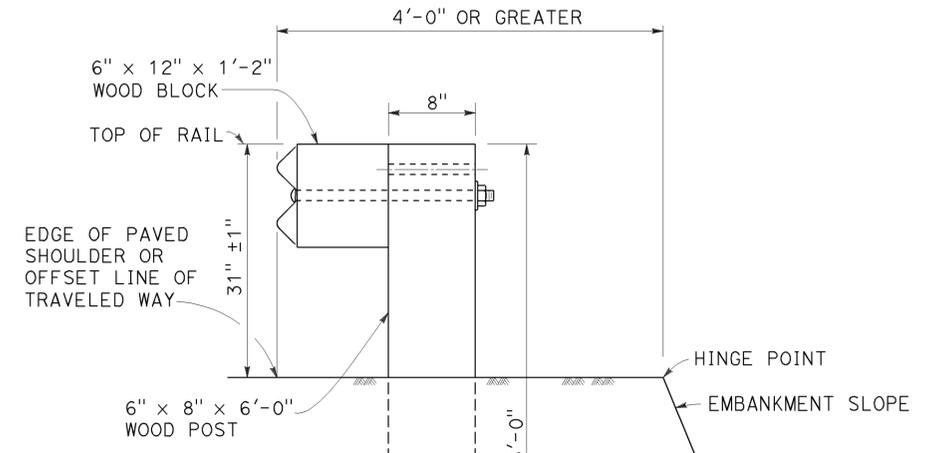
TO ACCOMPANY PLANS DATED 8-31-15



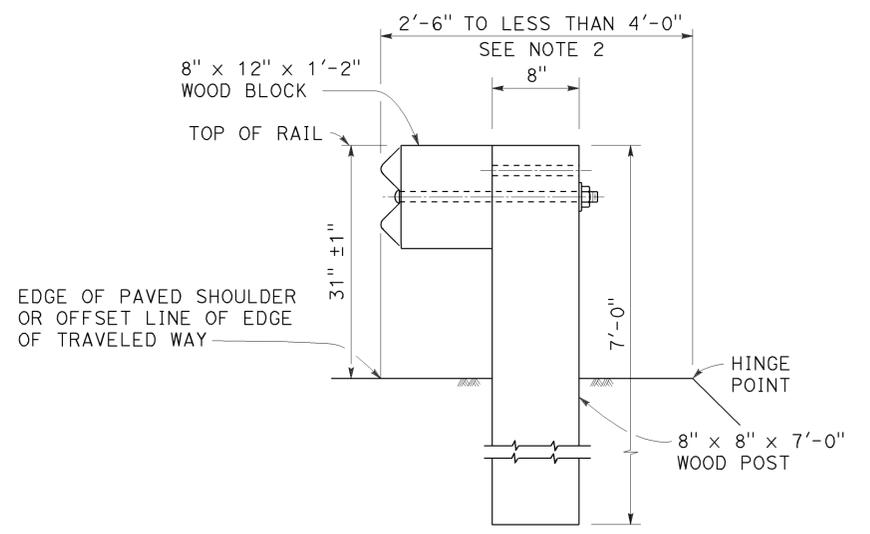
**DETAIL A**  
**TYPICAL ROADWAY**  
**INSTALLATION**  
See Note 1



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



**DETAIL D**



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

**POST EMBEDMENT**

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP A77N3**

2010 REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	126	160

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

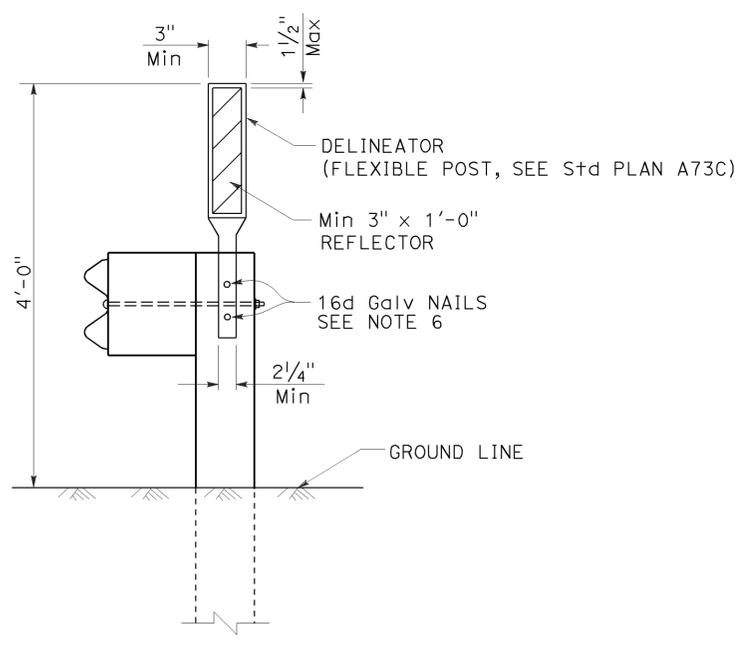
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REGISTERED PROFESSIONAL ENGINEER  
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

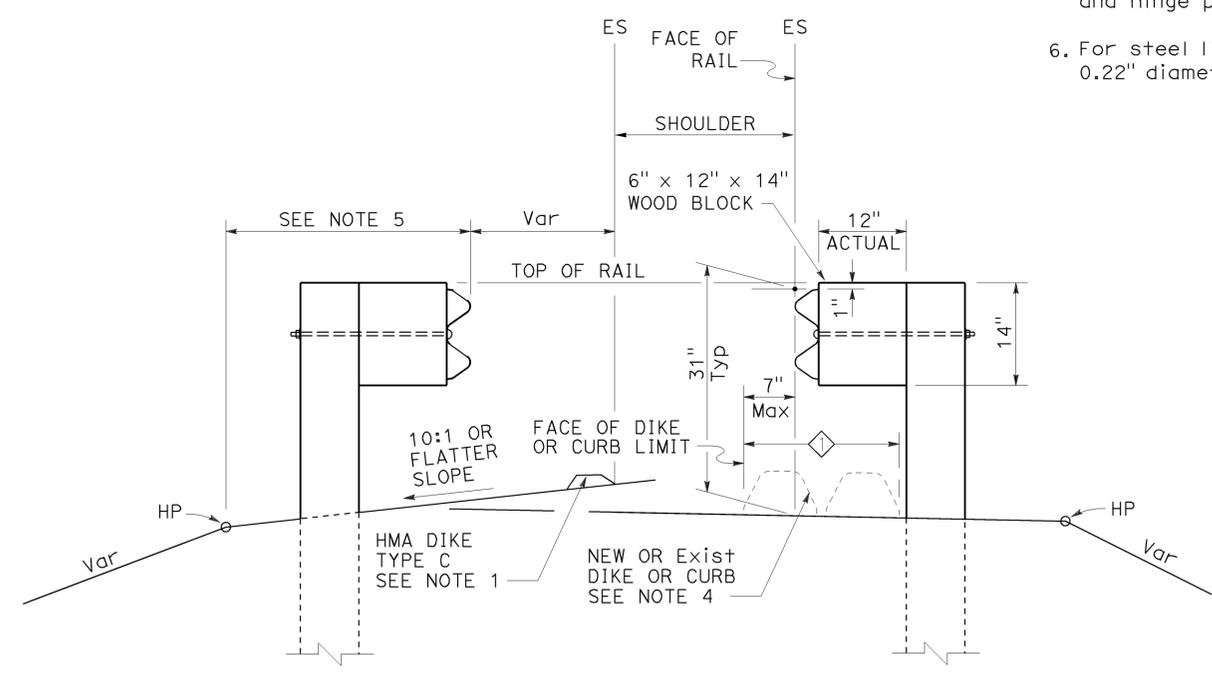
TO ACCOMPANY PLANS DATED 8-31-15

**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
07	LA	5	18.4/23.2	127	160

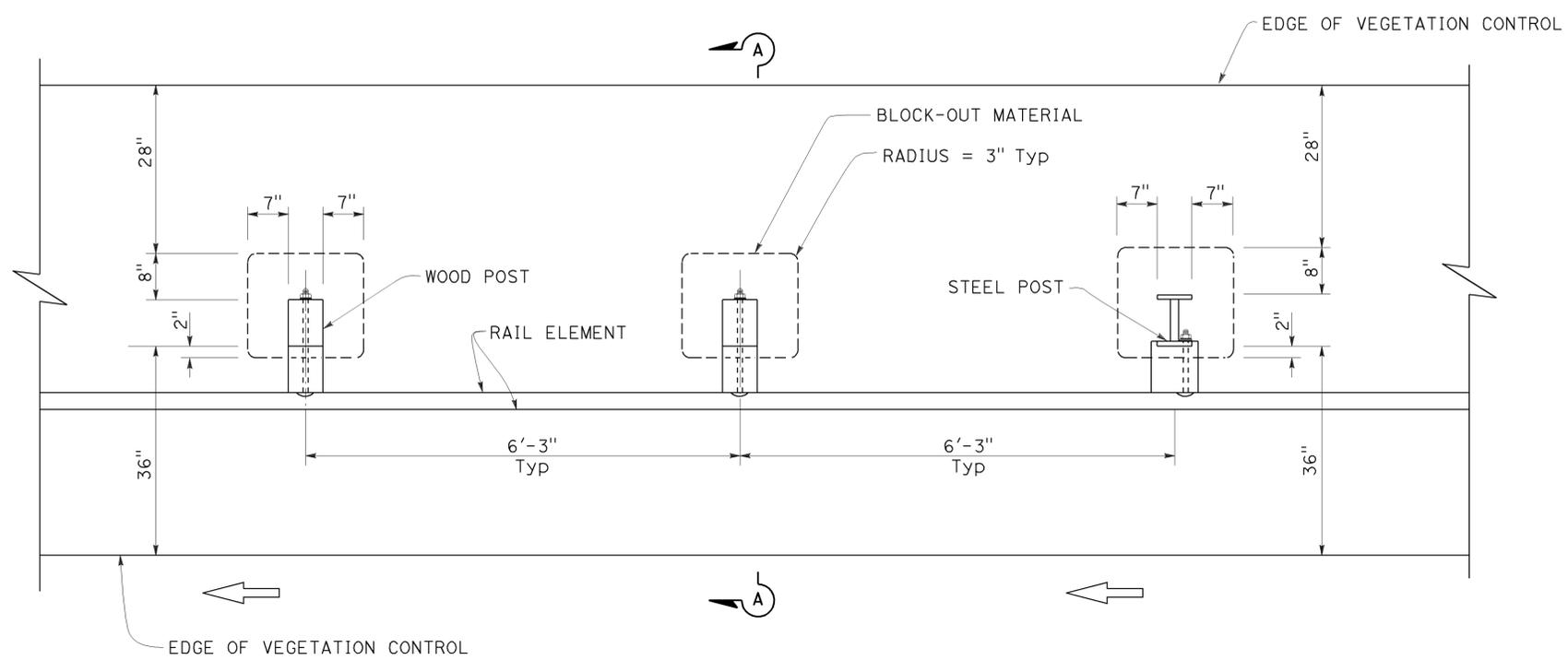
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

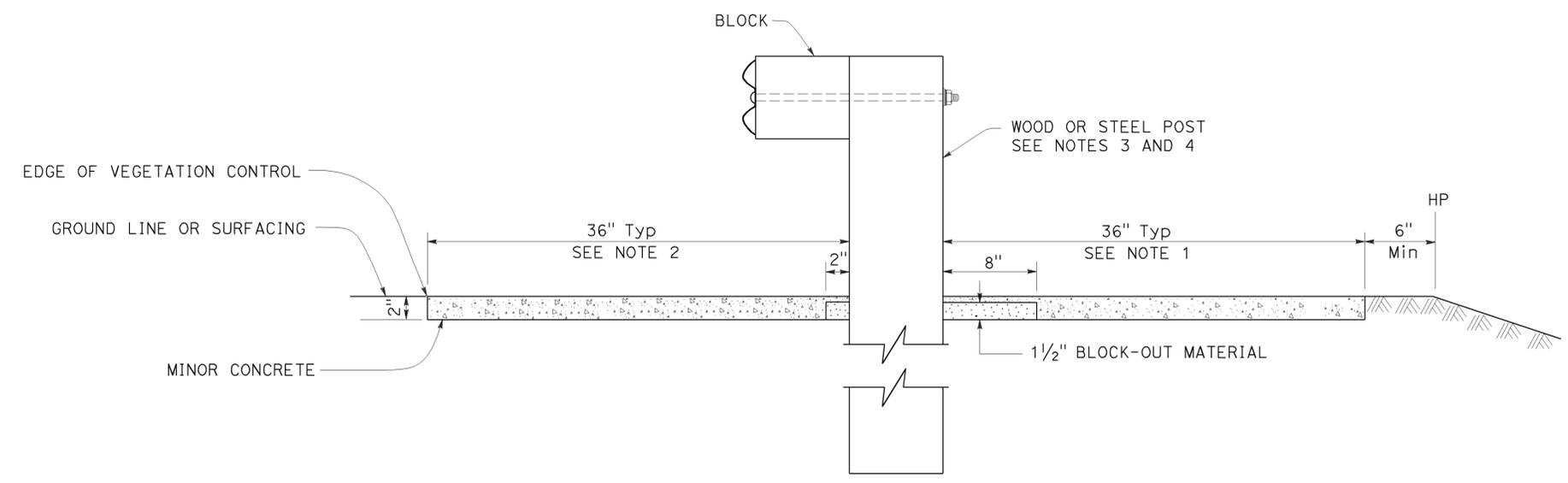
TO ACCOMPANY PLANS DATED 8-31-15



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

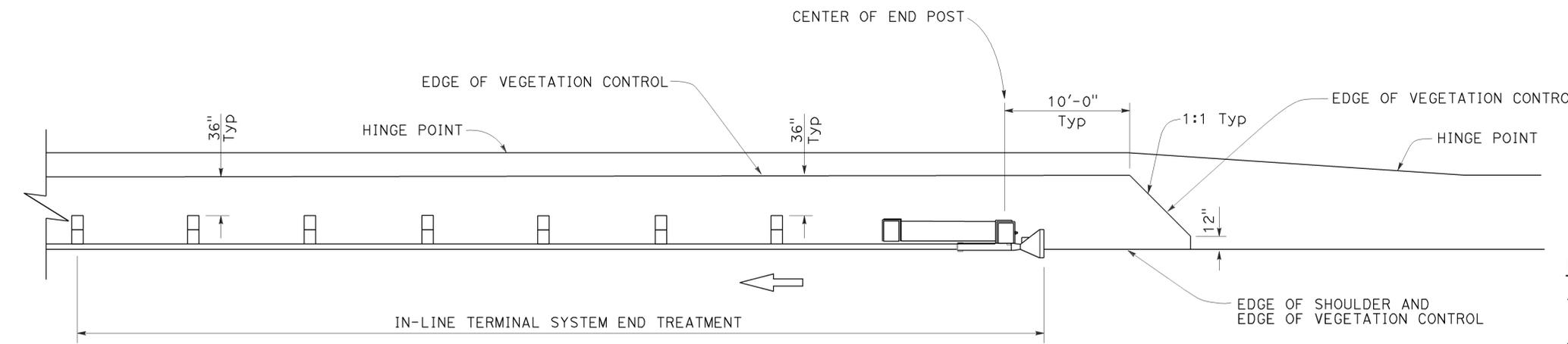
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	128	160

RANDALL D. HIATT  
 REGISTERED CIVIL ENGINEER  
 No. C50200  
 Exp. 6-30-15  
 CIVIL  
 STATE OF CALIFORNIA

July 19, 2013  
 PLANS APPROVAL DATE

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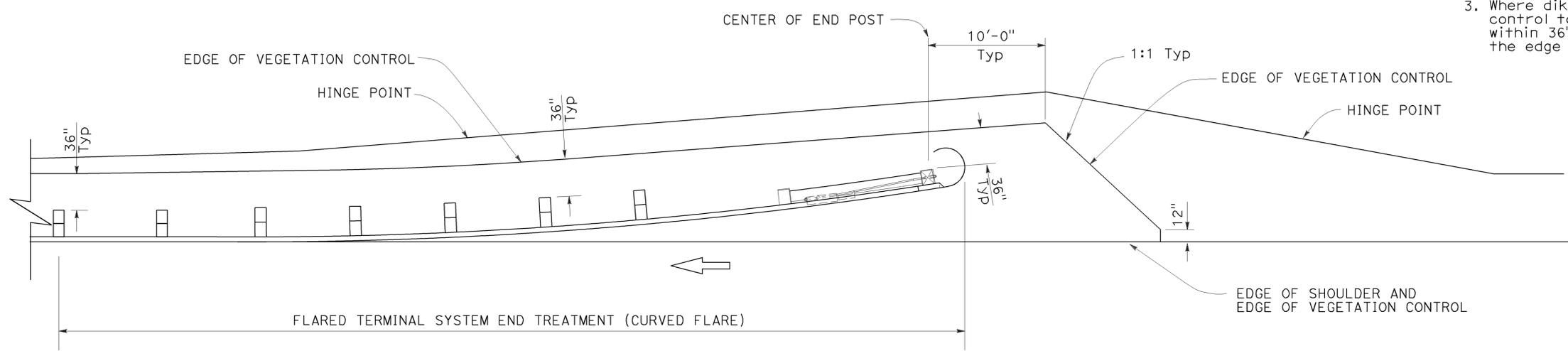
TO ACCOMPANY PLANS DATED 8-31-15



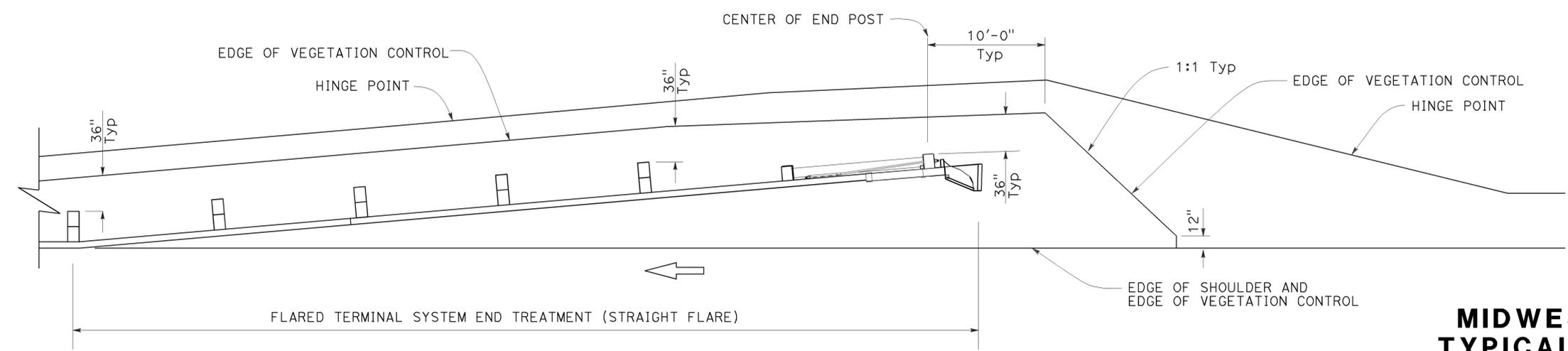
PLAN

**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
07	LA	5	18.4/23.2	129	160

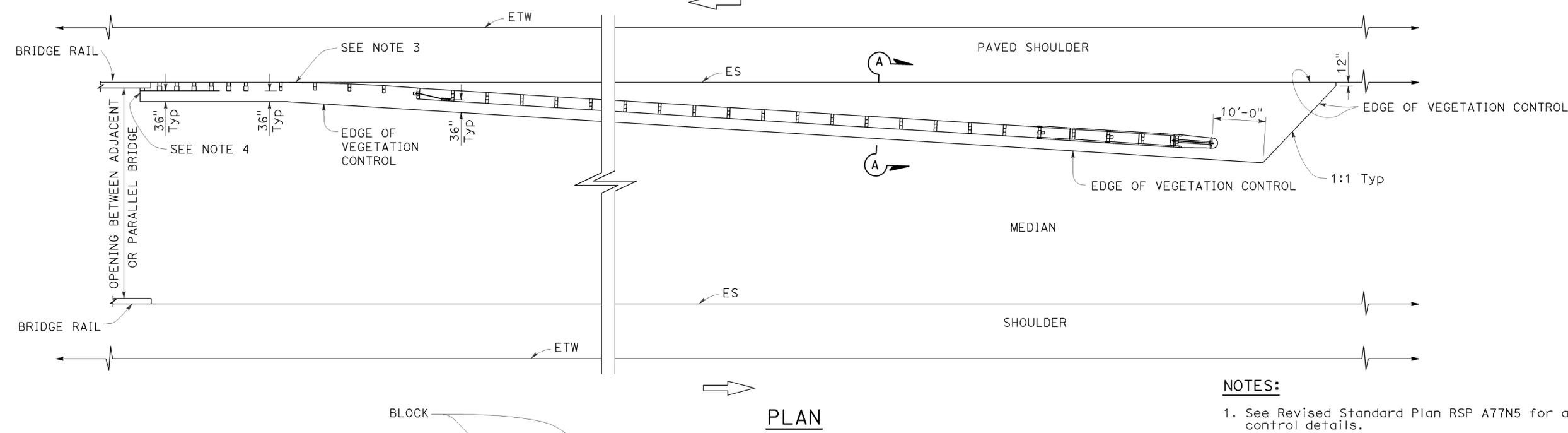
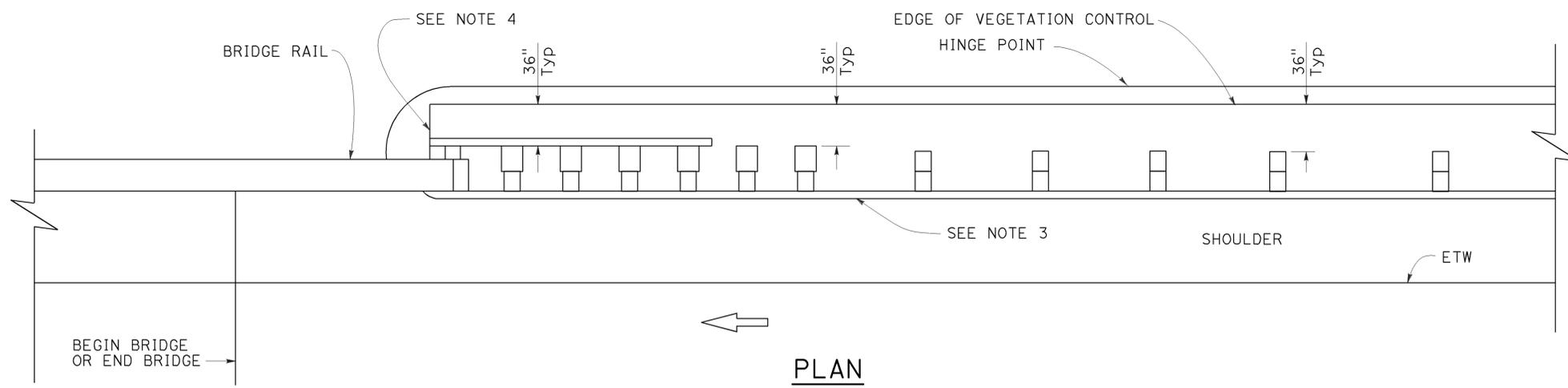
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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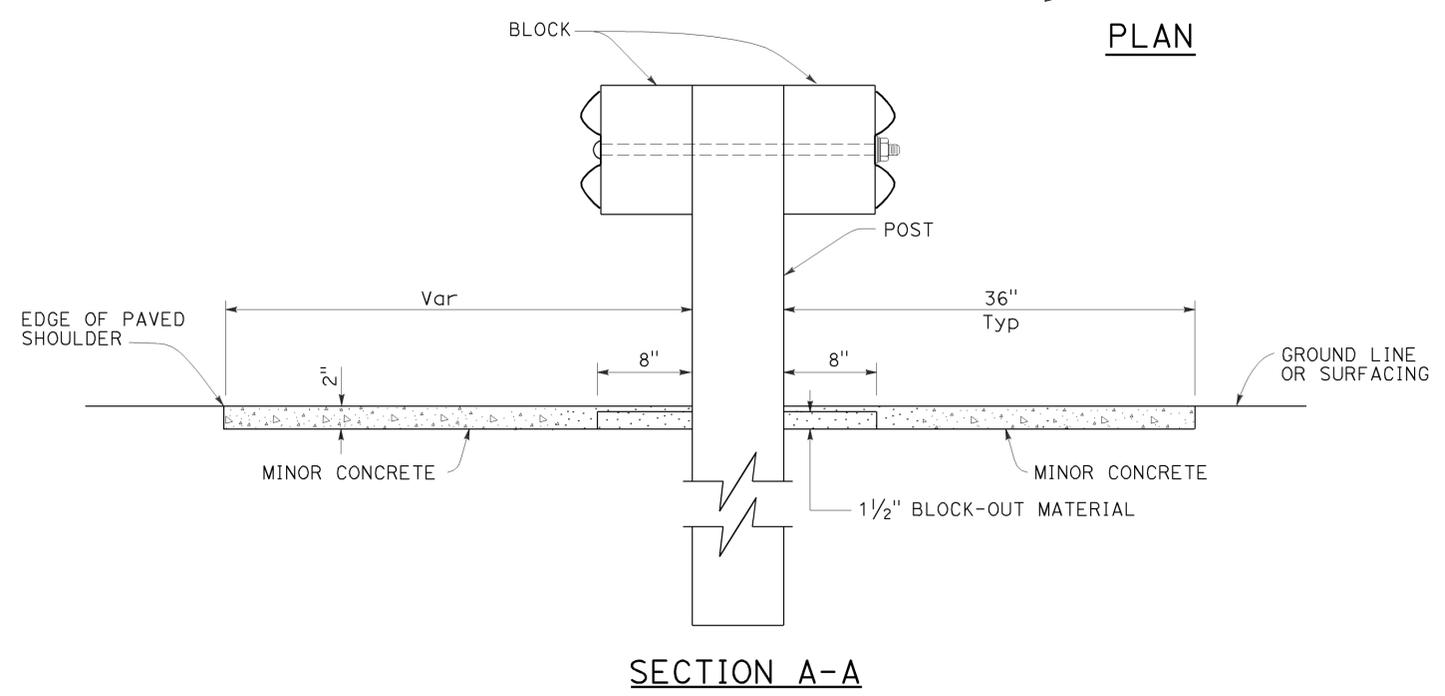
TO ACCOMPANY PLANS DATED 8-31-15

2010 REVISED STANDARD PLAN RSP A77N7



**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.



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**

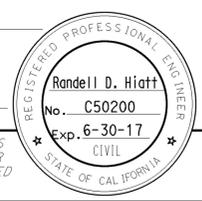
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	130	160

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

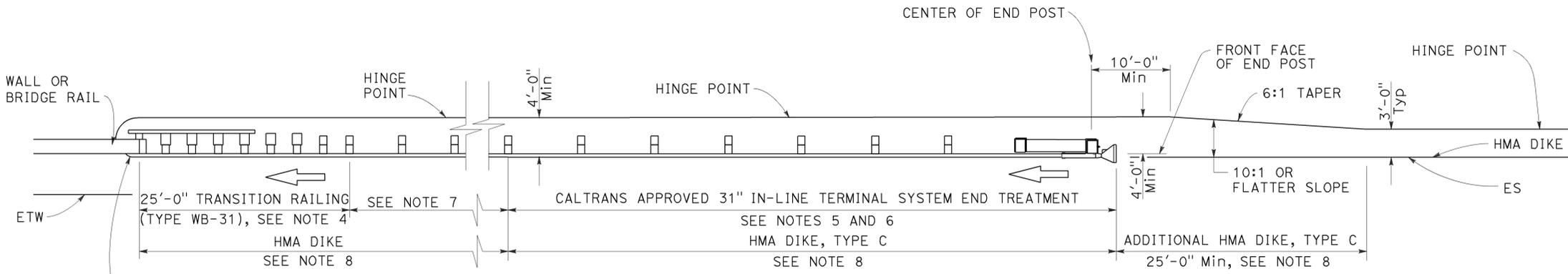
August 14, 2015  
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 8-31-15

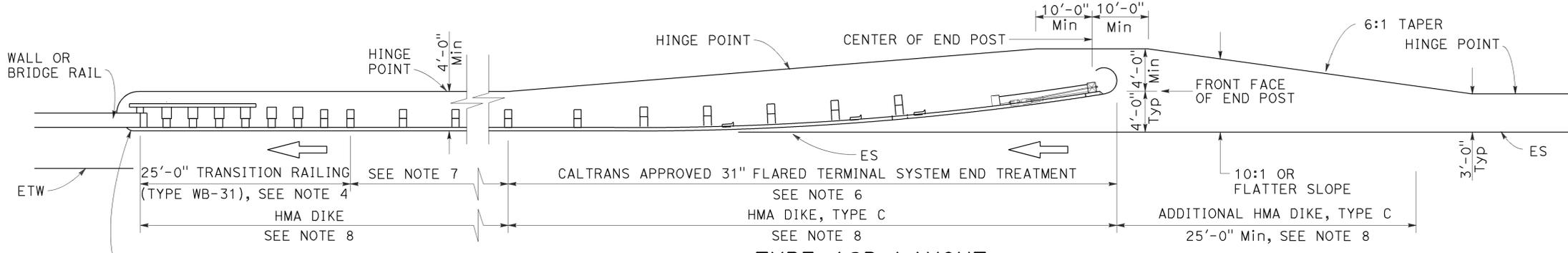


2010 REVISED STANDARD PLAN RSP A77Q1



**TYPE 12A LAYOUT**

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



**TYPE 12B LAYOUT**

(MGS installation at structure approach with 31" flared end treatment at traffic approach end of railing)  
See Note 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 of 31" 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 AUGUST 14, 2015 SUPERSEDES RSP A77Q1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77Q1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	131	160

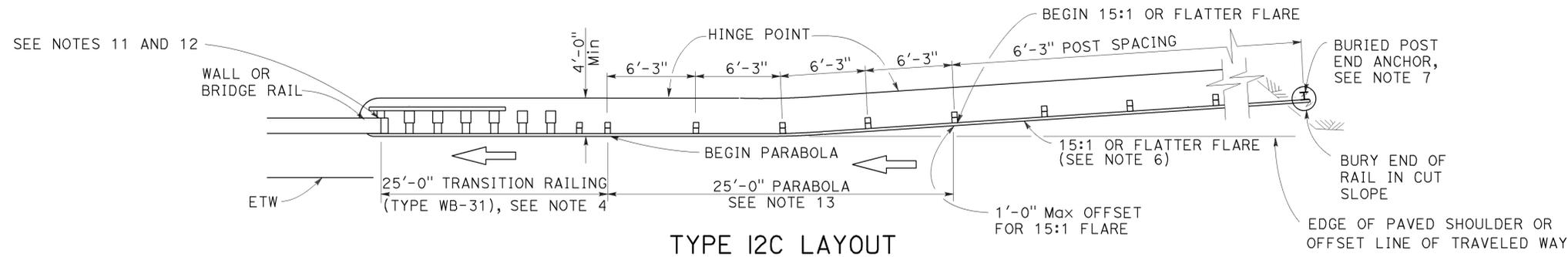
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

August 14, 2015  
PLANS APPROVAL DATE

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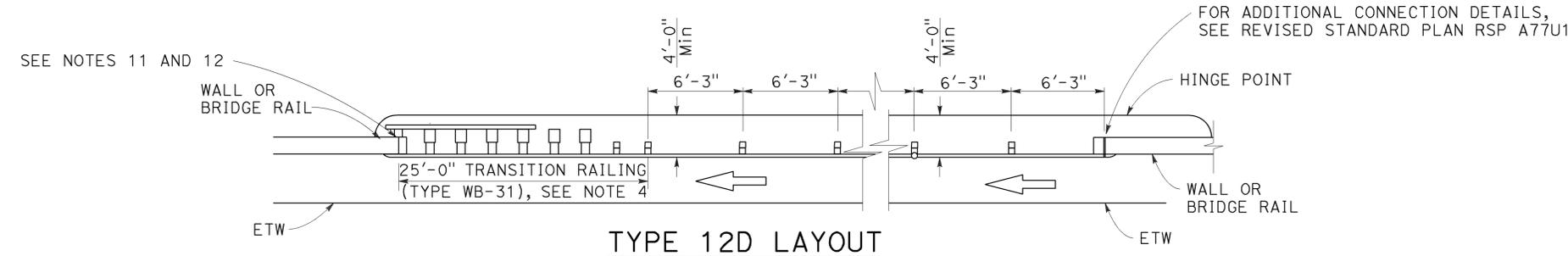
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-17  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 8-31-15



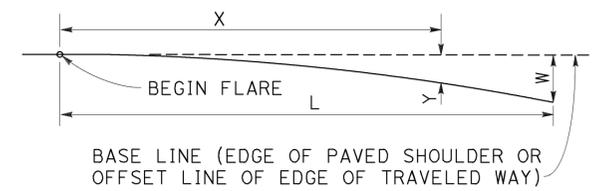
**TYPE 12C LAYOUT**

(MGS installation at structure approach with a Buried end anchor treatment at traffic approach end of railing)  
See Notes 8 and 9



**TYPE 12D LAYOUT**

(Continuous MGS installation between structures)  
See Notes 5 and 9

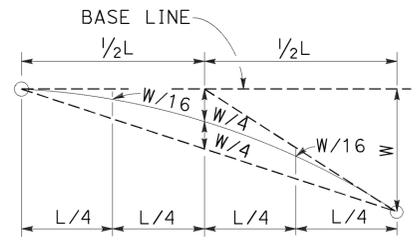


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

Y = OFFSET FROM BASE LINE  
W = MAXIMUM OFFSET  
X = DISTANCE ALONG BASE LINE  
L = LENGTH OF FLARE

**PARABOLIC FLARE OFFSETS**



**TYPICAL PARABOLIC LAYOUT**

**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" m 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 12C and 12D Layouts, see Revised Standard Plan RSP A77U4.
- Type 12D layout is typically used where continuous MGS is recommended between structures.
- The 15:1 or flatter flare for Type 12C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS with the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 12C Layout, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12C Layout is typically used:
  - To the right of approaching traffic, at the end of the 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 each 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.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
STRUCTURE APPROACH  
AND BETWEEN STRUCTURES**

NO SCALE

RSP A77Q2 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q2 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77Q2**

2010 REVISED STANDARD PLAN RSP A77Q2

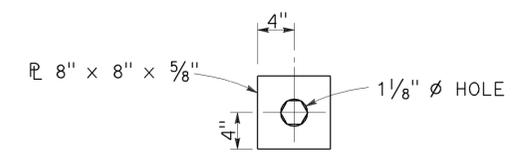
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	132	160

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

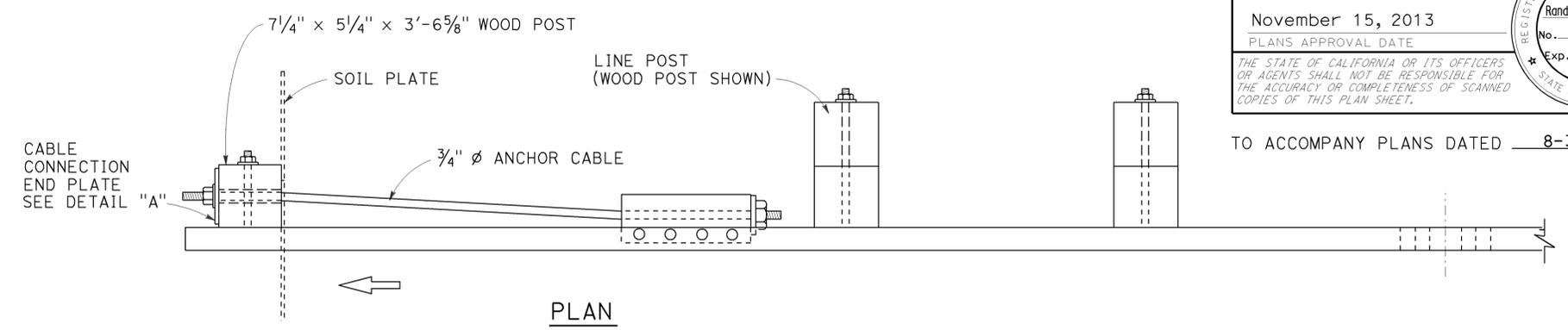
November 15, 2013  
PLANS APPROVAL DATE

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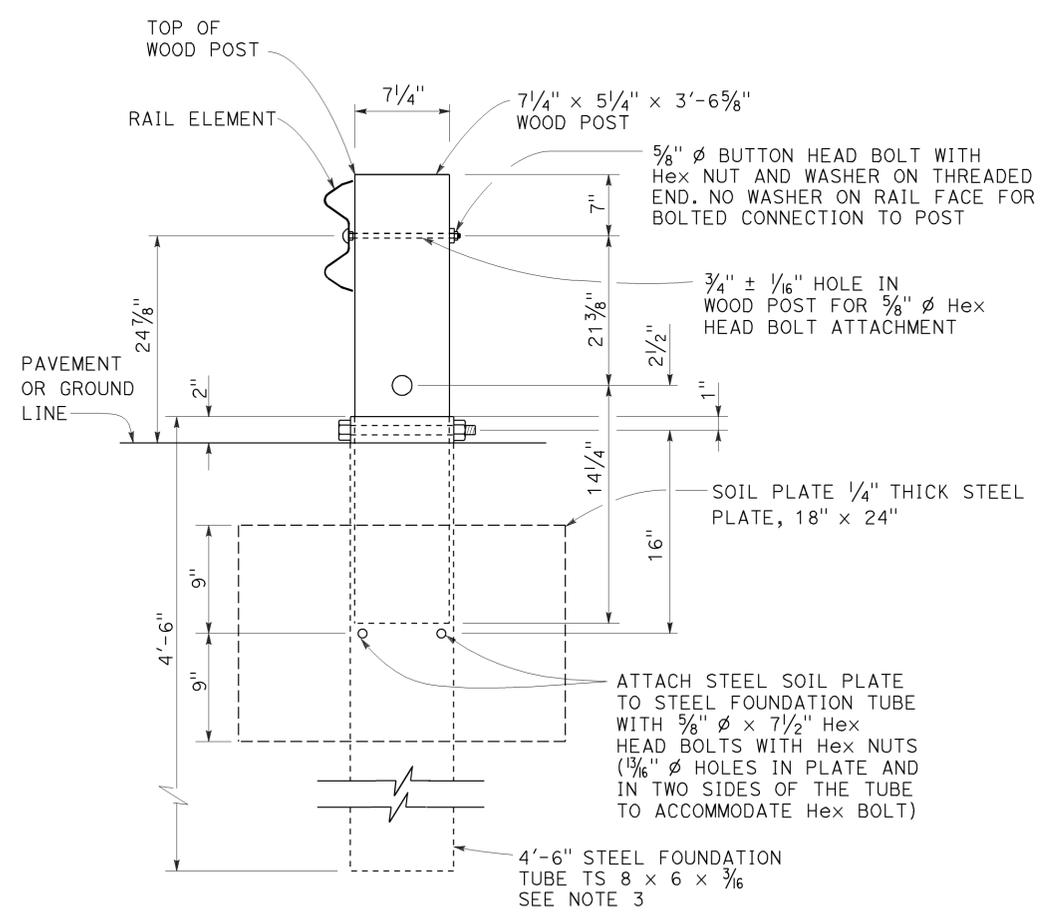
TO ACCOMPANY PLANS DATED 8-31-15



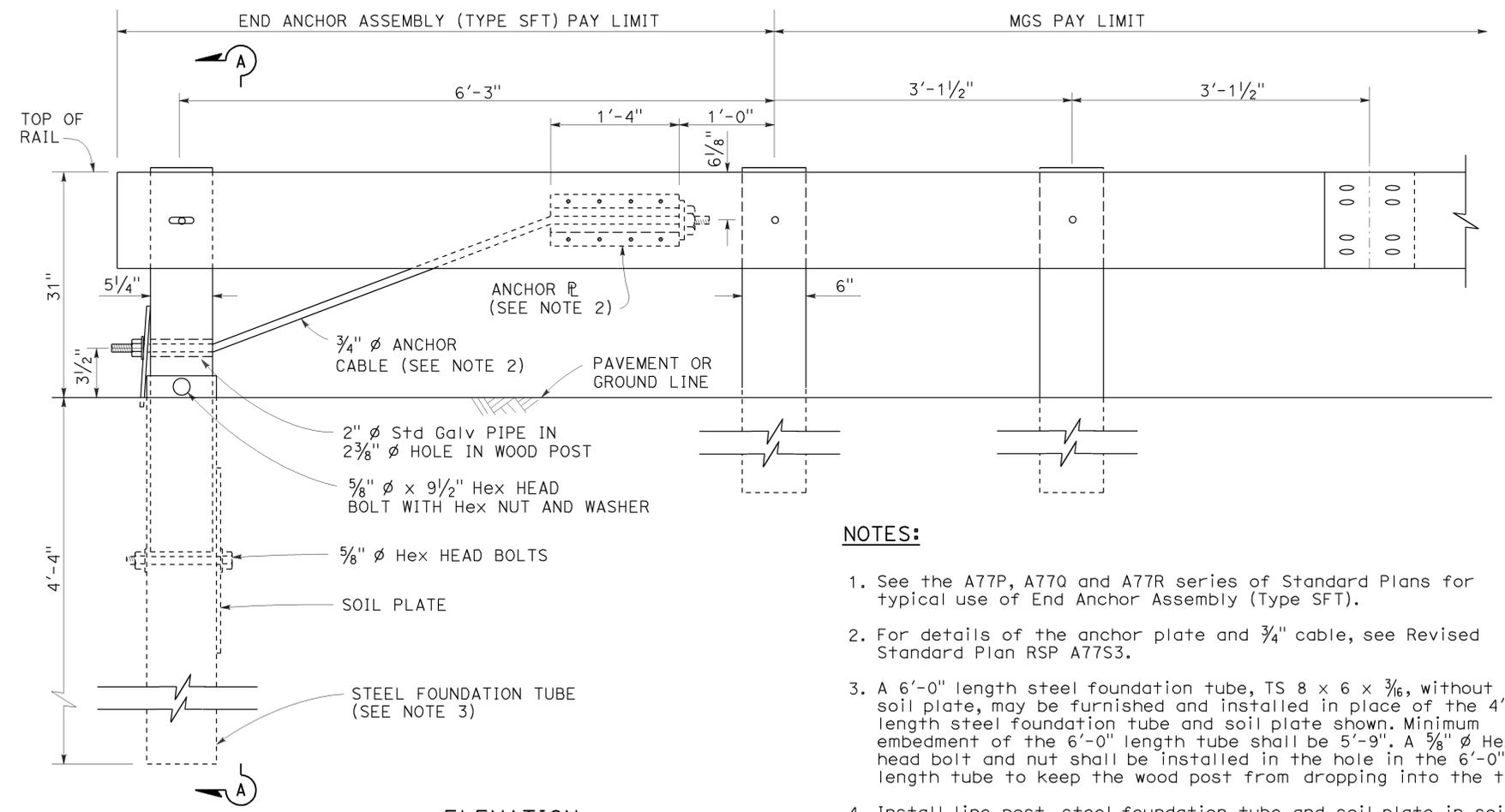
**DETAIL "A"**  
**CABLE CONNECTION**  
**END PLATE**



**PLAN**



**SECTION A-A**



**ELEVATION**

**END ANCHOR**  
**ASSEMBLY (TYPE SFT)**  
See Note 1

**NOTES:**

1. See the A77P, A77Q and A77R series of Standard Plans for typical use of End Anchor Assembly (Type SFT).
2. For details of the anchor plate and 3/4" cable, see Revised Standard Plan RSP A77S3.
3. A 6'-0" length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" diameter Hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
4. Install line post, steel foundation tube and soil plate in soil.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**MIDWEST GUARDRAIL SYSTEM**  
**END ANCHOR ASSEMBLY**  
**(TYPE SFT)**

NO SCALE

RSP A77S1 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77S1**

2010 REVISED STANDARD PLAN RSP A77S1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	133	160

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

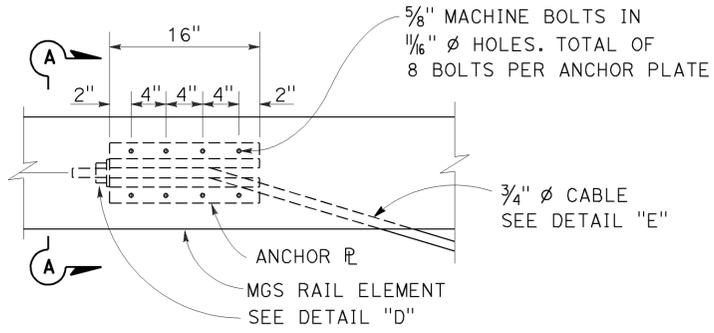
November 15, 2013  
PLANS APPROVAL DATE

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.

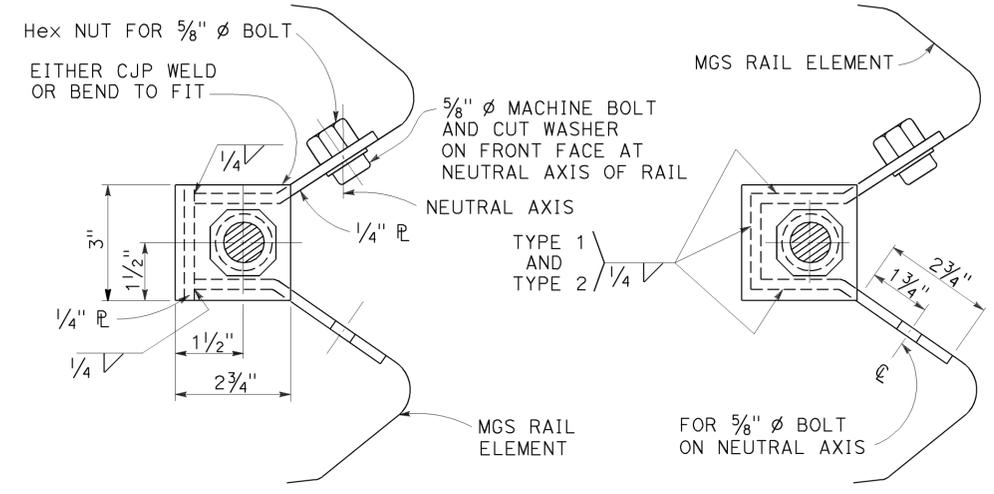
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 8-31-15

**NOTE:**  
See Revised Standard Plans RSP A77S1, RSP A77S2 and RSP A77T1 for typical use of anchor cable and anchor plate.



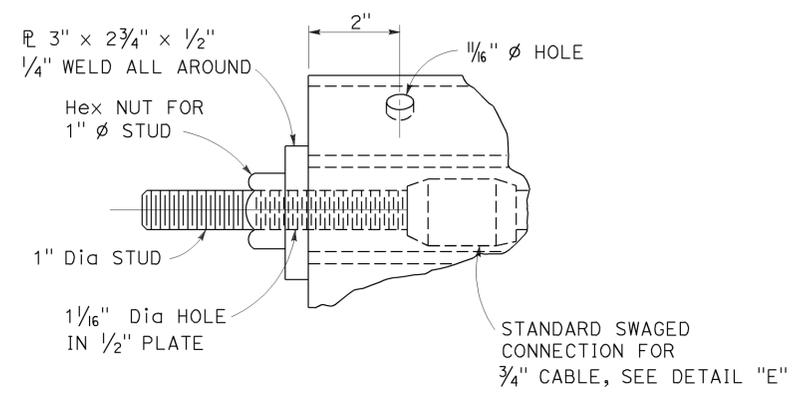
**ANCHOR PLATE DETAIL**  
(MGS shown, TBB similar)



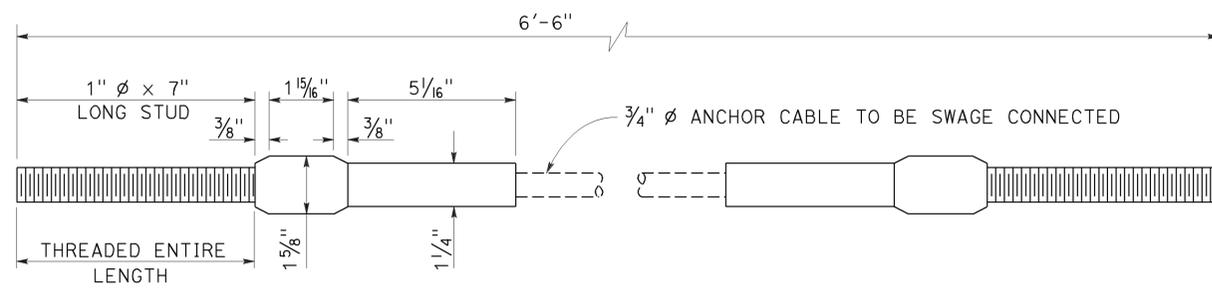
**SECTION A-A**  
(ALTERNATIVE TYPE 1)

**SECTION A-A**  
(ALTERNATIVE TYPE 2)

**NOTE:**  
Dimensioning applies to both types.



**DETAIL "D"**



**ANCHOR CABLE WITH  
SWAGED FITTING AND STUD  
DETAIL "E"**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL RAILING  
ANCHOR CABLE AND  
ANCHOR PLATE DETAILS**

NO SCALE  
RSP A77S3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S3  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77S3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	134	160

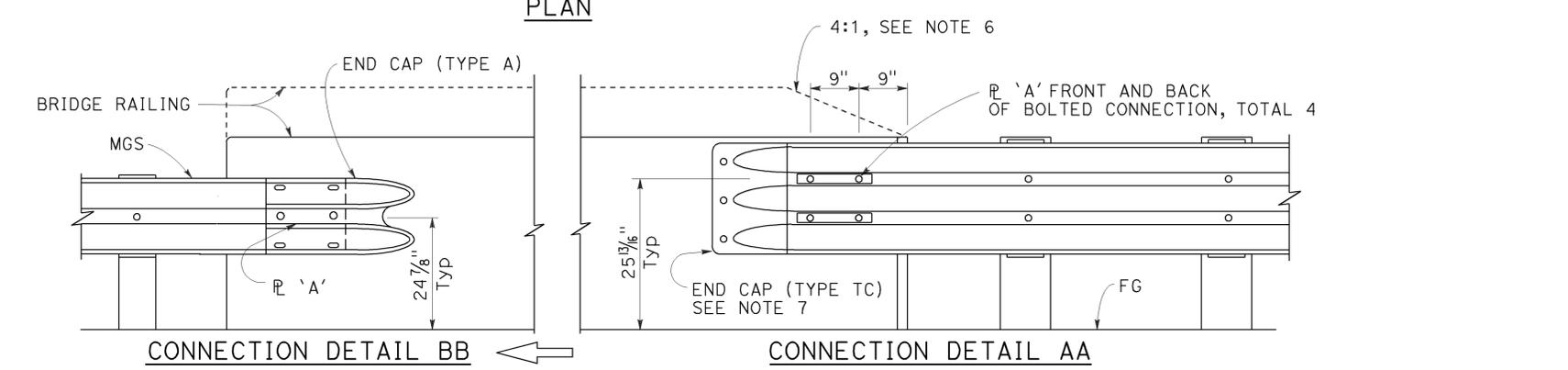
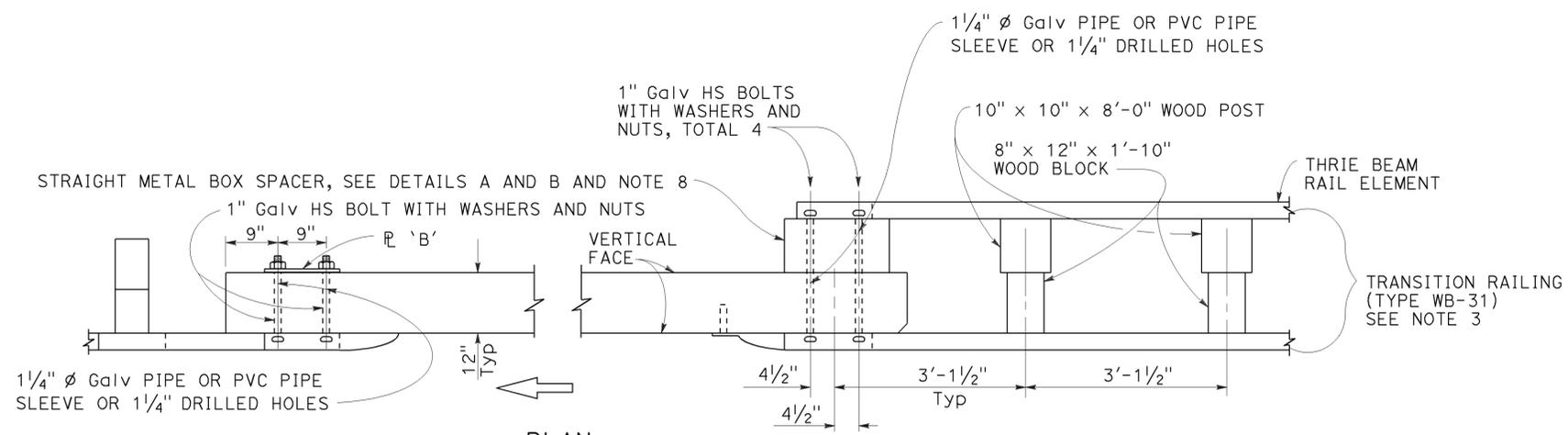
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

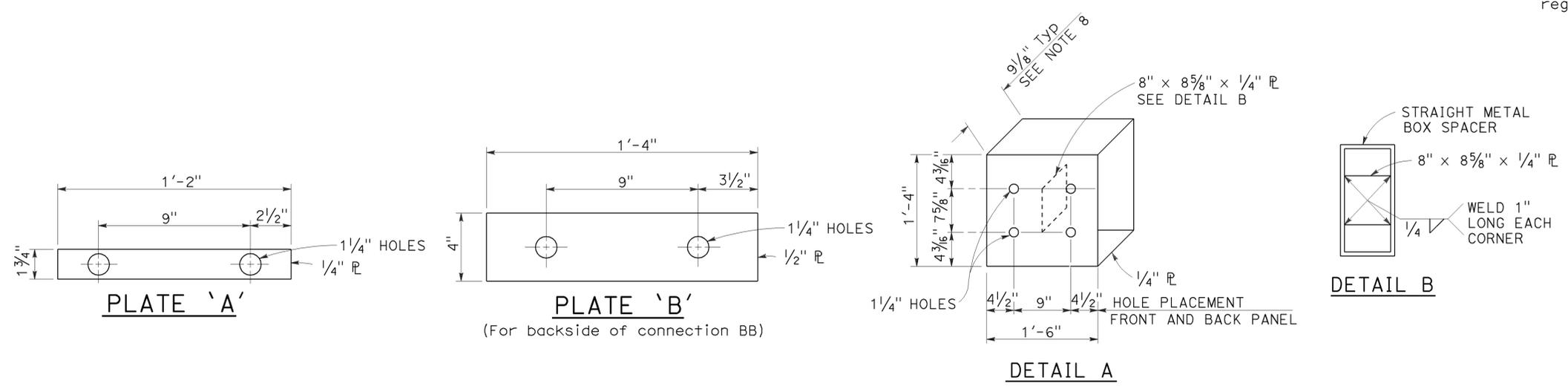
TO ACCOMPANY PLANS DATED 8-31-15



**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.



**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

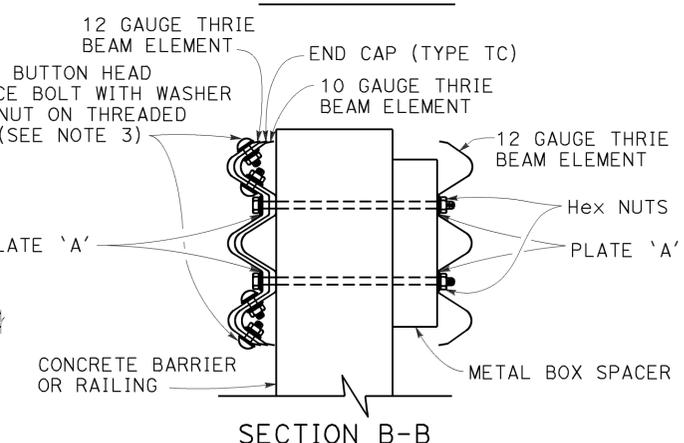
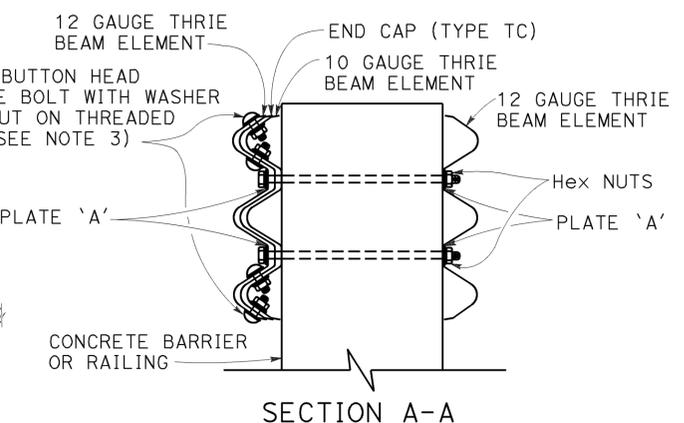
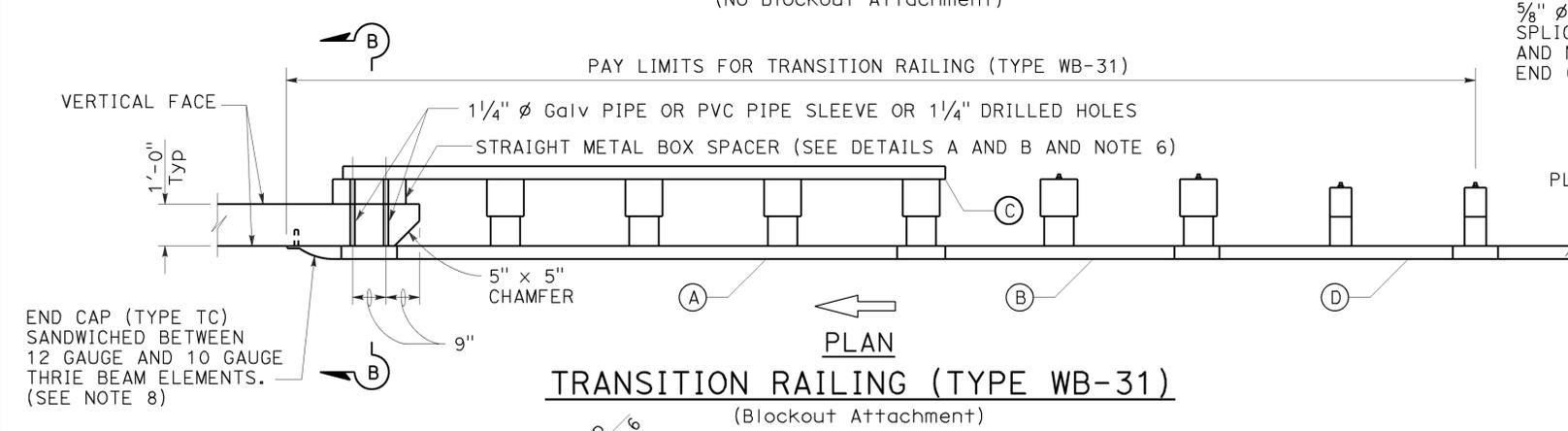
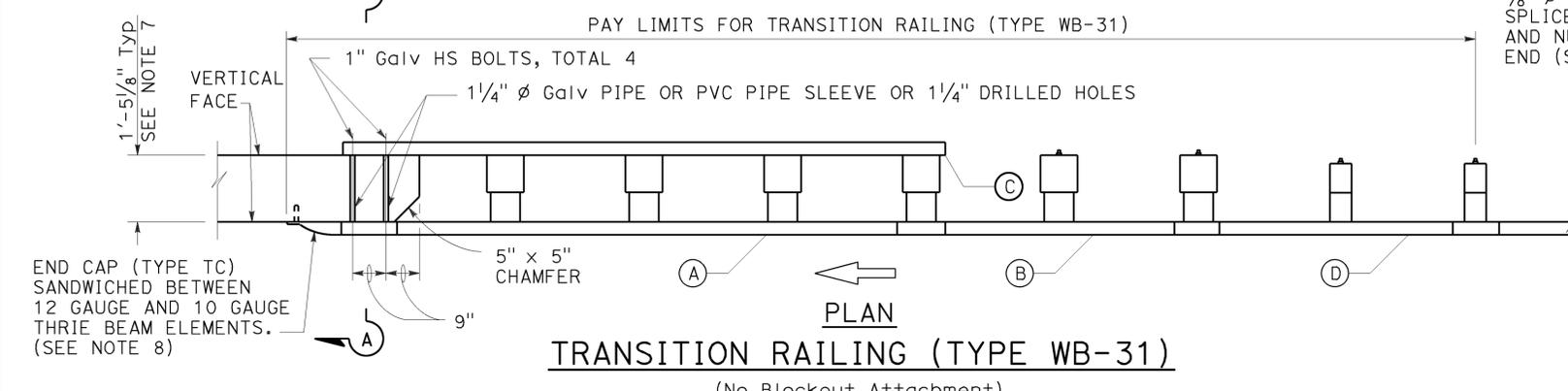
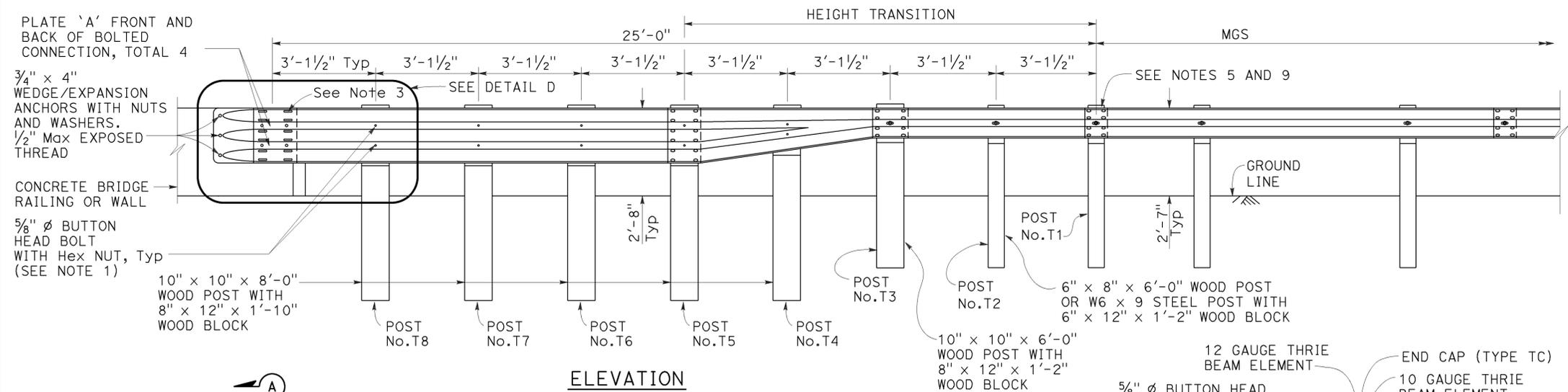
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	135	160

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

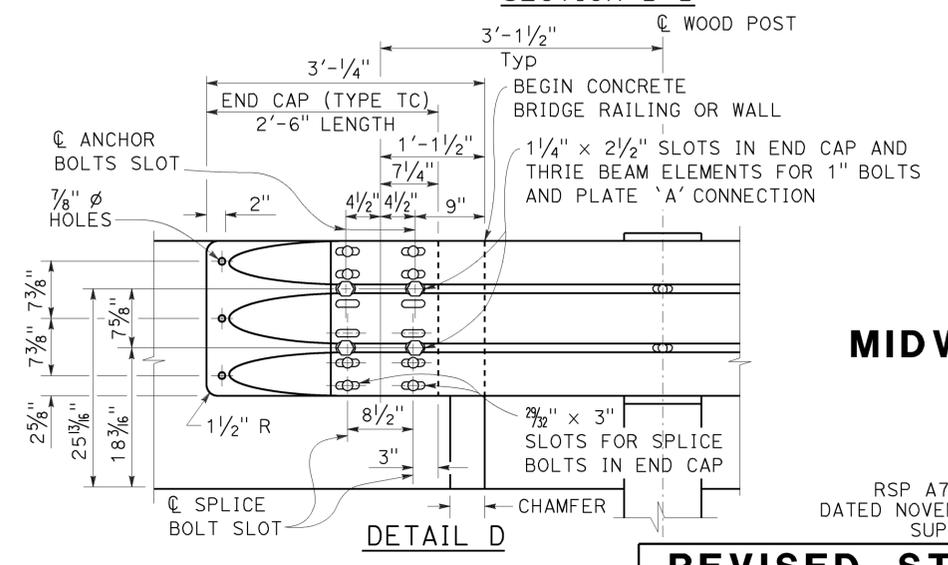
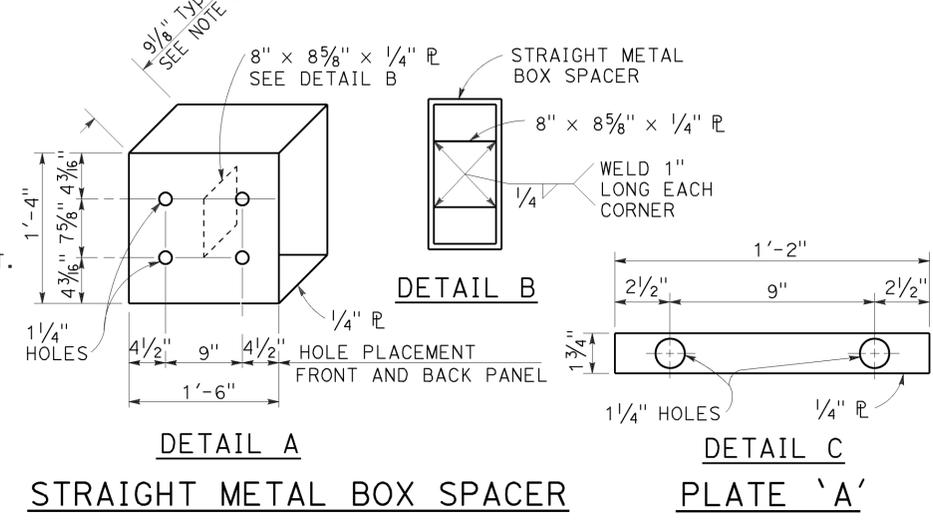
January 23, 2015  
PLANS APPROVAL DATE

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



- LEGEND:**
- (A) NESTED THRIE BEAM ELEMENTS (ONE 12 GAUGE ELEMENT NESTED OVER ONE 10 GAUGE ELEMENT).
  - (B) ONE ASYMMETRICAL 10 GAUGE "W" BEAM TO THRIE BEAM ELEMENT.
  - (C) ONE 12 GAUGE THRIE BEAM ELEMENT.
  - (D) ONE 10 GAUGE "W" BEAM RAIL ELEMENT (7'-3 1/2" LENGTH)
- 10 GAUGE = 0.138" THICK  
12 GAUGE = 0.108" THICK



**NOTES:** TO ACCOMPANY PLANS DATED 8-31-15

1. Use 5/8"  $\phi$  Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
2. The nested rail elements, end cap, and "W" beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
3. Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4"  $\phi$ . Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
6. The depth of the metal box spacer varies from the 9/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

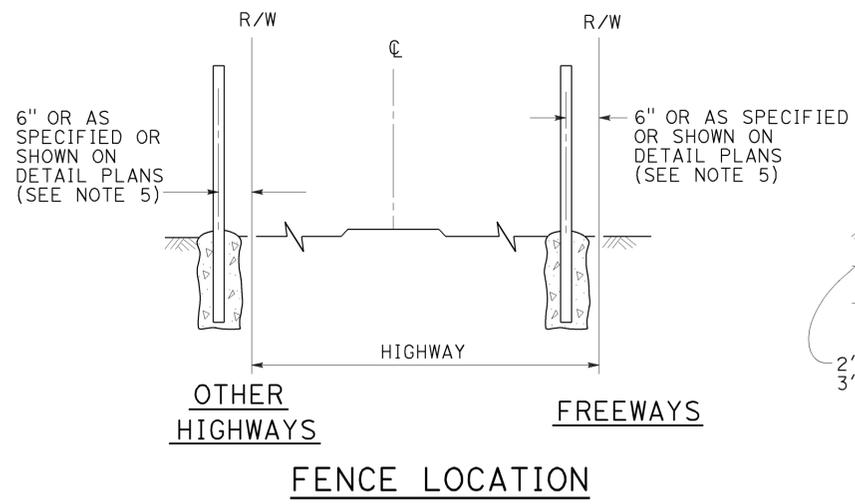
**MIDWEST GUARDRAIL SYSTEM  
TRANSITION RAILING  
(TYPE WB-31)**

NO SCALE

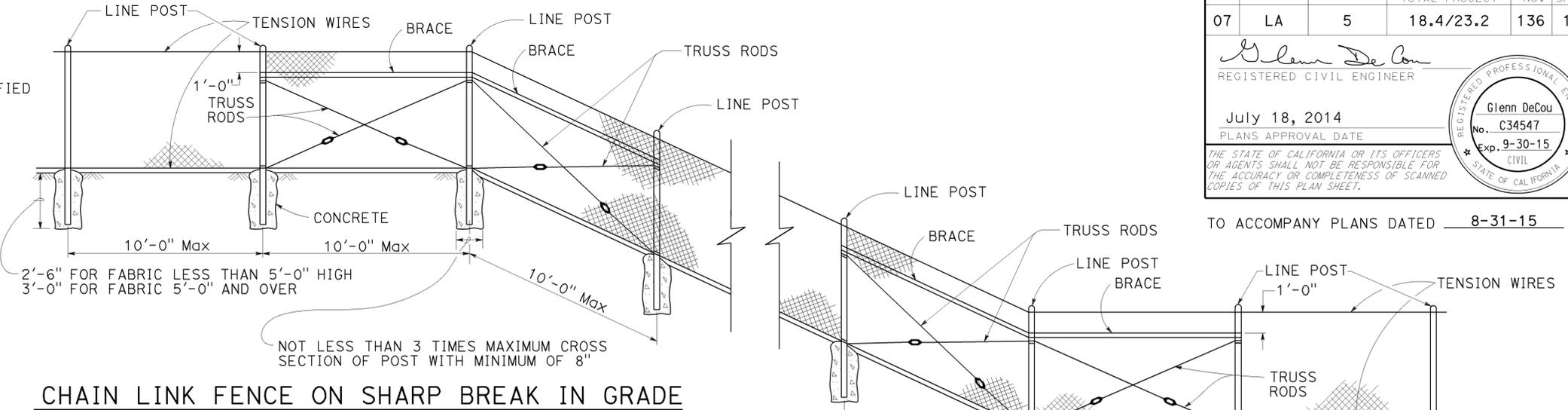
RSP A77U4 DATED JANUARY 23, 2015 SUPERSEDES RSP A77U4 DATED NOVEMBER 15, 2013 AND RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U4**

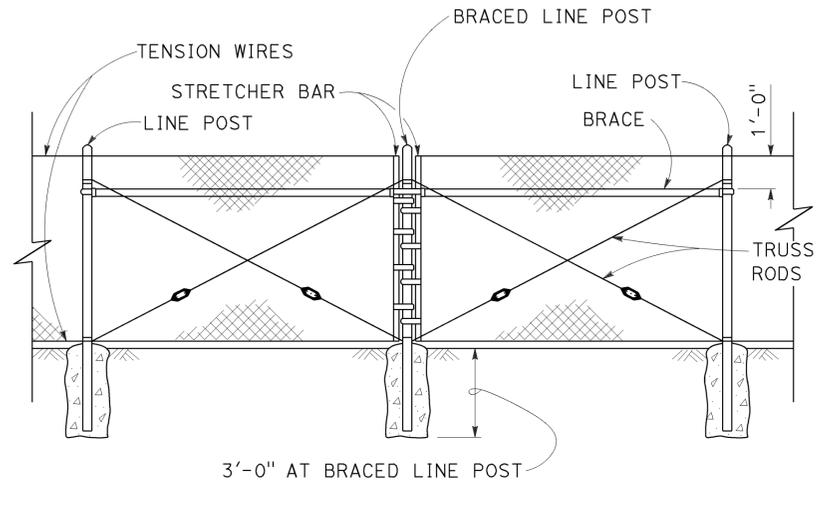
2010 REVISED STANDARD PLAN RSP A77U4



**FENCE LOCATION**

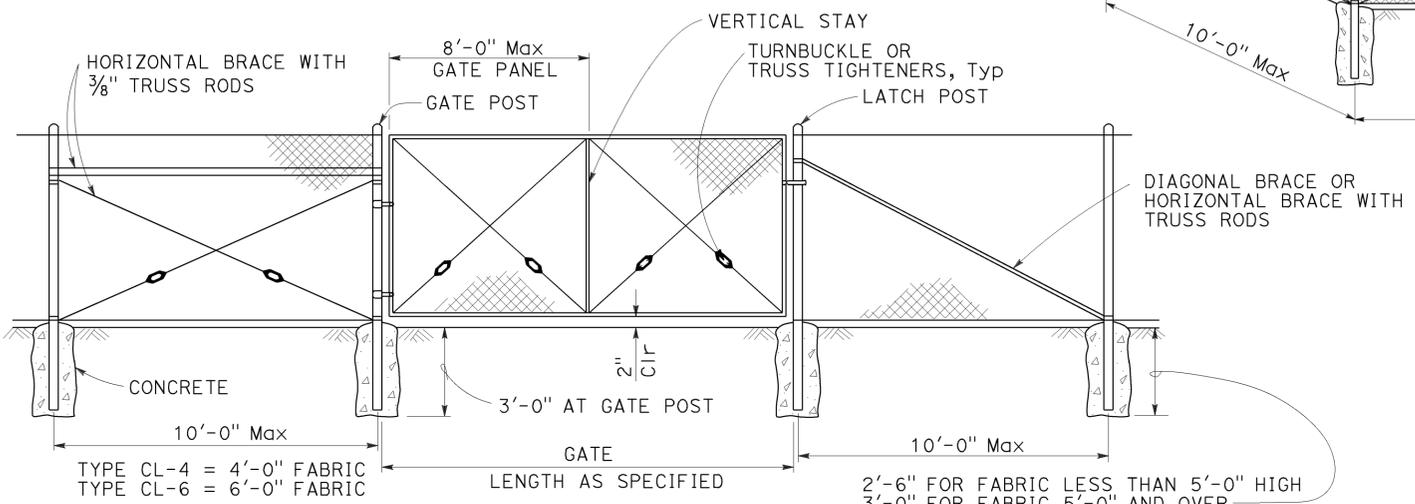


**CHAIN LINK FENCE ON SHARP BREAK IN GRADE**



**BRACED LINE POST INSTALLATION**

Braced line post at intervals not exceeding 1000'



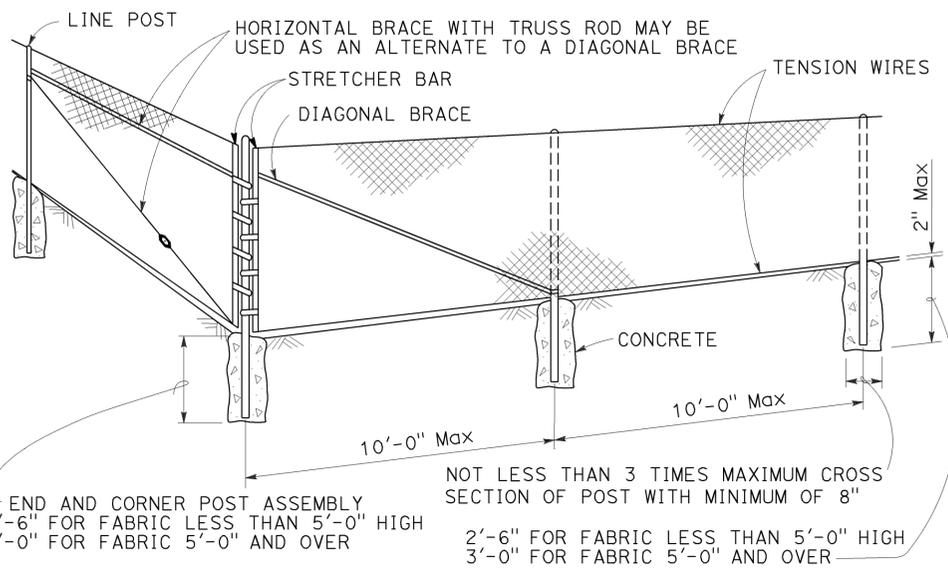
**CHAIN LINK GATE INSTALLATION**

**NOTES:**

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

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

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



**CORNER POST**

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

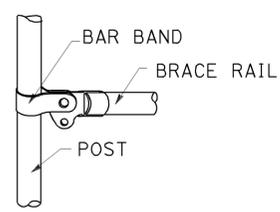
RSP A85 DATED JULY 18, 2014 SUPERSEDES STANDARD PLAN A85 DATED MAY 20, 2011 - PAGE 112 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A85

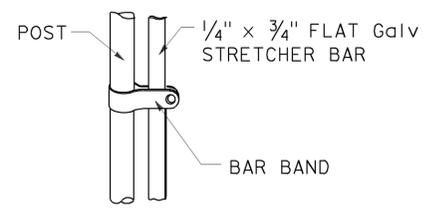
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	137	160

Glenn DeCou  
 REGISTERED CIVIL ENGINEER  
 October 19, 2012  
 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.

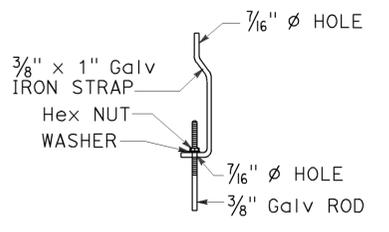
REGISTERED PROFESSIONAL ENGINEER  
 Glenn DeCou  
 No. C34547  
 Exp. 9-30-13  
 CIVIL  
 STATE OF CALIFORNIA



**BRACE RAIL**



**STRETCHER BAR**

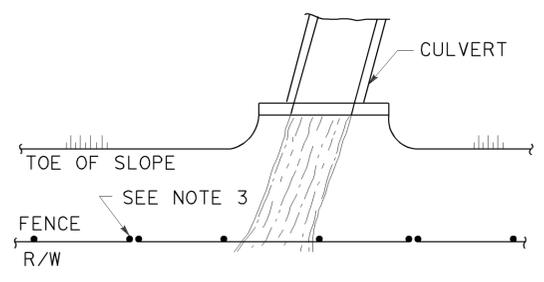


**TRUSS TIGHTENER**

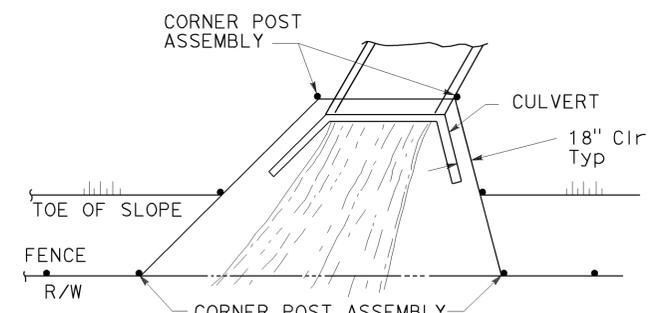
**NOTES:**

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

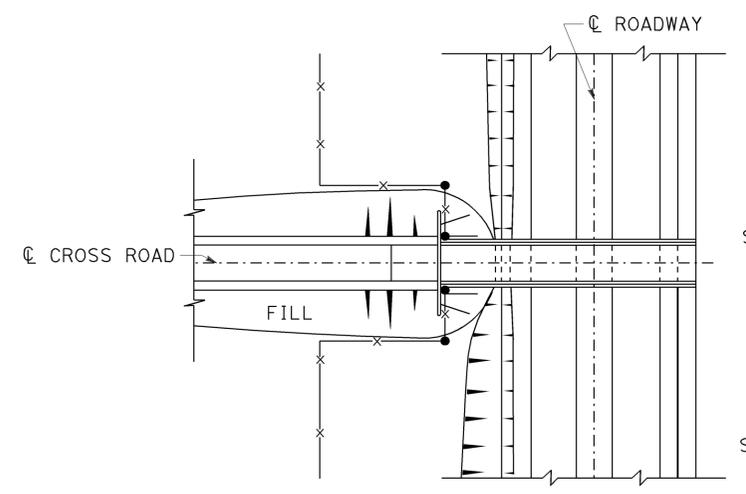
TO ACCOMPANY PLANS DATED 8-31-15



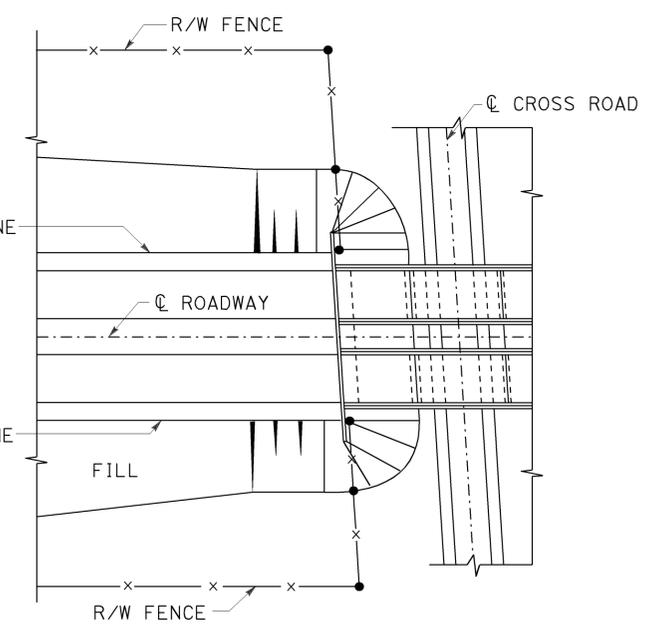
**PLAN**



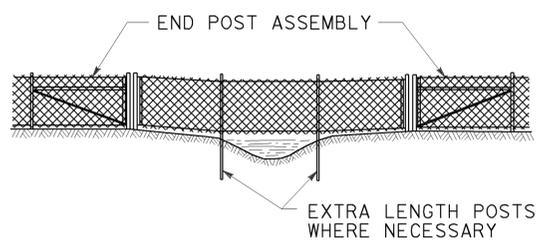
**PLAN**



**PLAN OF ROADWAY - OVERCROSSING**

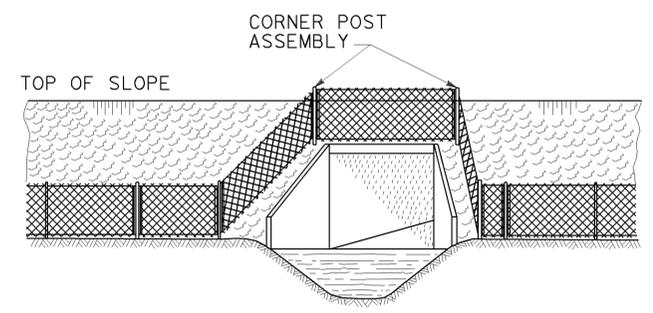


**PLAN OF ROADWAY - UNDERCROSSING**



**ELEVATION**

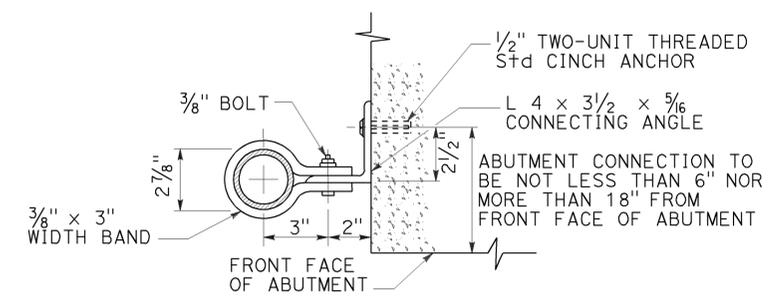
**INSTALLATION OVER STREAM**



**ELEVATION**

**INSTALLATION AROUND HEADWALL**

See Note 4



**ABUTMENT CONNECTION**

**TYPICAL INSTALLATION AT BRIDGES**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CHAIN LINK FENCE DETAILS**

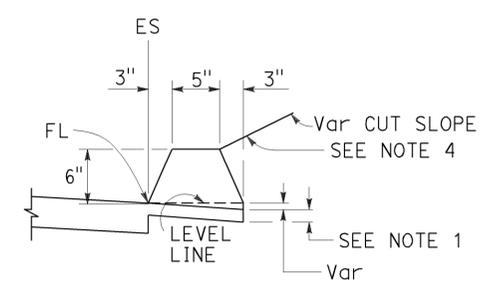
NO SCALE

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

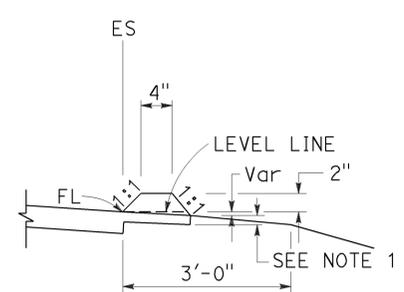
**REVISED STANDARD PLAN RSP A85B**

2010 REVISED STANDARD PLAN RSP A85B

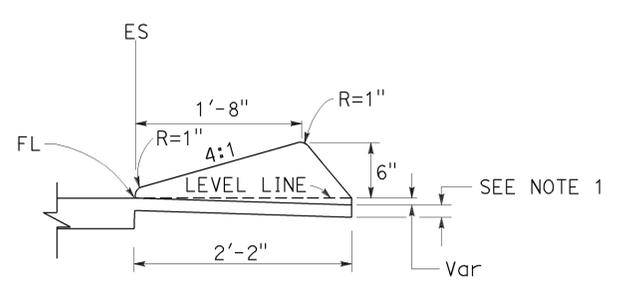
TO ACCOMPANY PLANS DATED 8-31-15



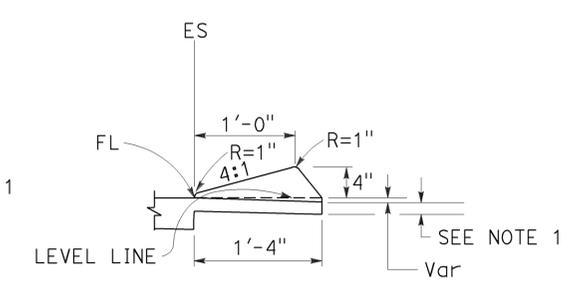
**TYPE A**  
See Note 3



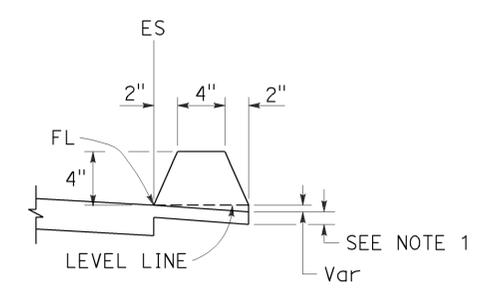
**TYPE C**



**TYPE D**

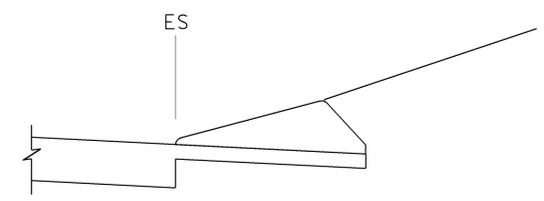


**TYPE E**

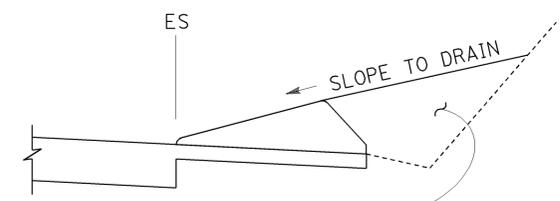


**TYPE F**  
See Note 5

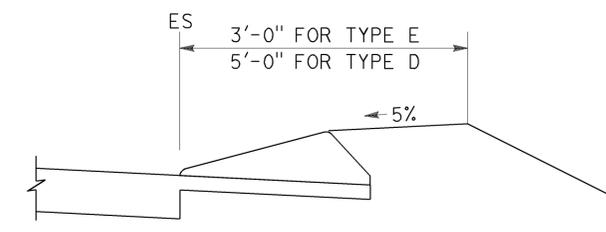
**DIKES**



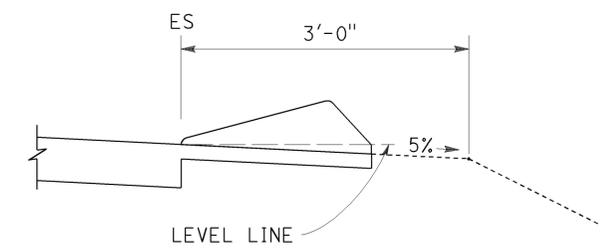
**CASE C-1**  
Cut Slope



**CASE C-2**  
Cut Slope



**CASE F**



**CASE R**  
See Note 2

**TYPE D AND E BACKFILL DETAILS**

**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.

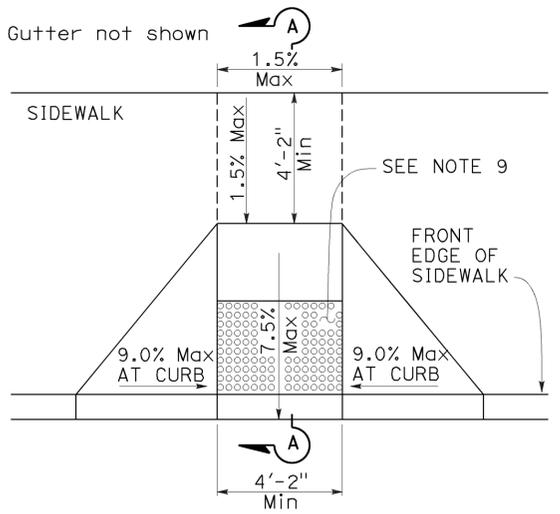
**REVISED STANDARD PLAN RSP A87B**

2010 REVISED STANDARD PLAN RSP A87B

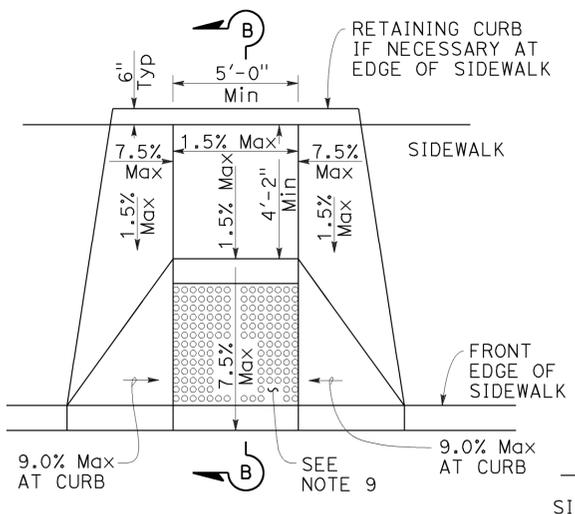
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	139	160

H. David Cordova  
 REGISTERED CIVIL ENGINEER  
 No. C41957  
 Exp. 3-31-16  
 CIVIL  
 STATE OF CALIFORNIA

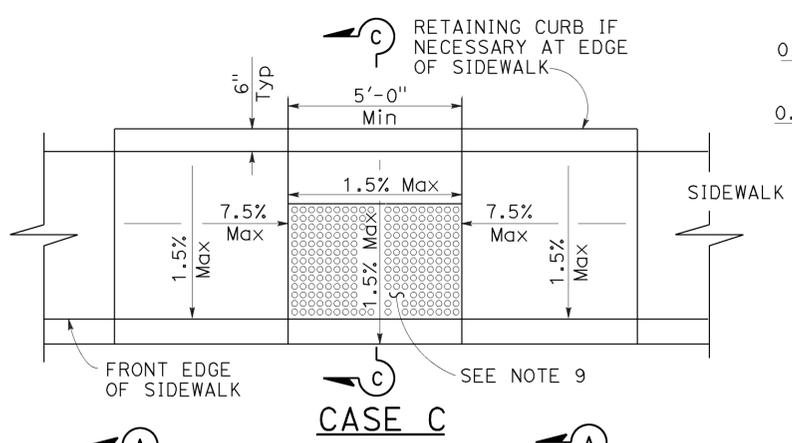
July 3, 2015  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



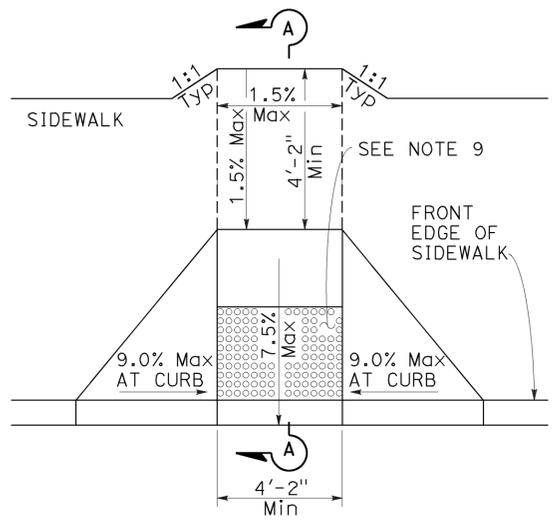
**CASE A**



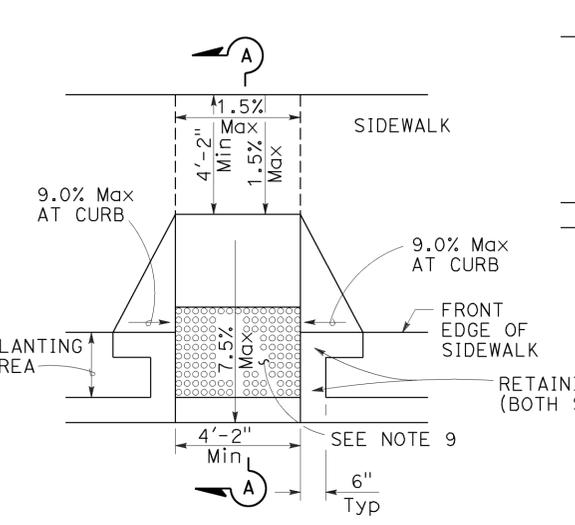
**CASE B**



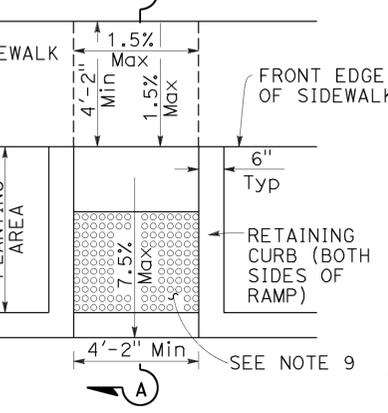
**CASE C**



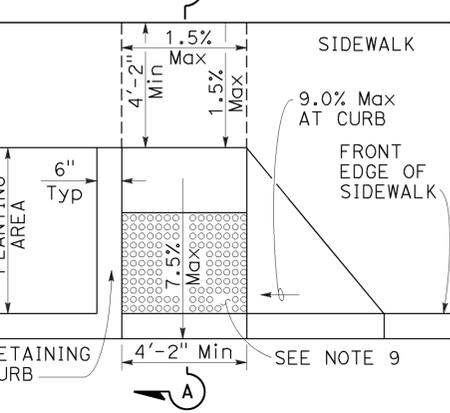
**CASE D**



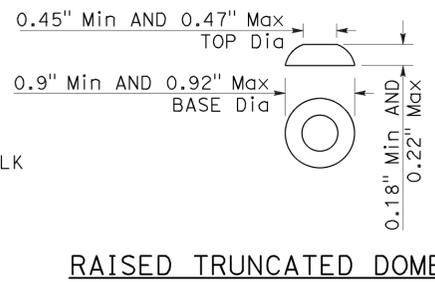
**CASE E**



**CASE F**



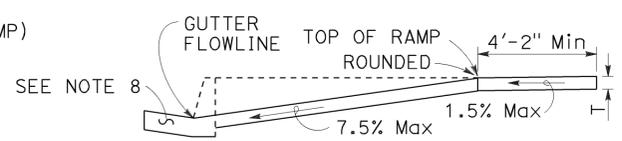
**CASE G**



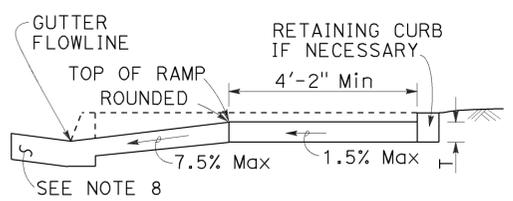
**RAISED TRUNCATED DOME**

**NOTES:**

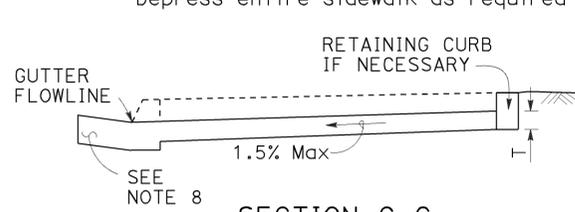
- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-2".
- Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- Transitions from ramps and landing to walks, gutters or streets shall be flush (no lip) and free of abrupt changes.
- Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1:20 (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. A 4'-0" wide detectable warning surface may be used on a 4'-2" wide curb ramp. Detectable Warning Surfaces shall conform to the requirements in the Standard Specifications.
- Sidewalk and ramp thickness, "T", shall be 3 1/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- Detectable warning surface may have to be cut to allow removal of utility covers while maintaining full detectable warning width and depth.



**SECTION A-A**



**SECTION B-B**

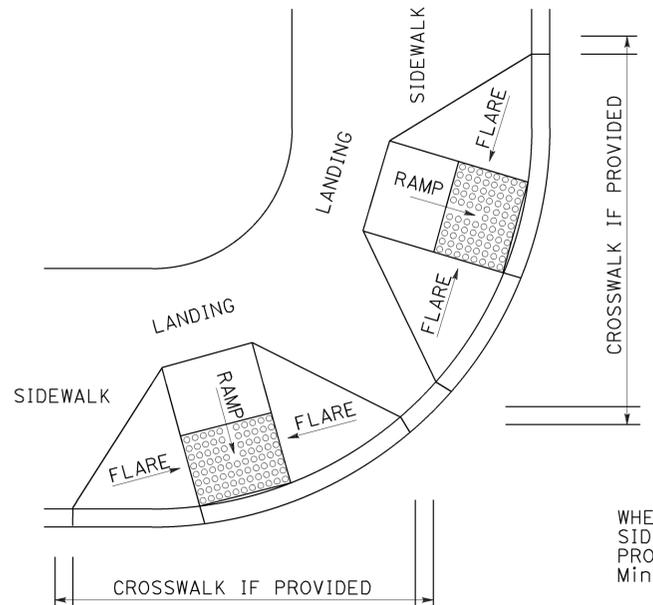


**SECTION C-C**



**RAISED TRUNCATED DOME PATTERN (IN-LINE)  
DETECTABLE WARNING SURFACE**

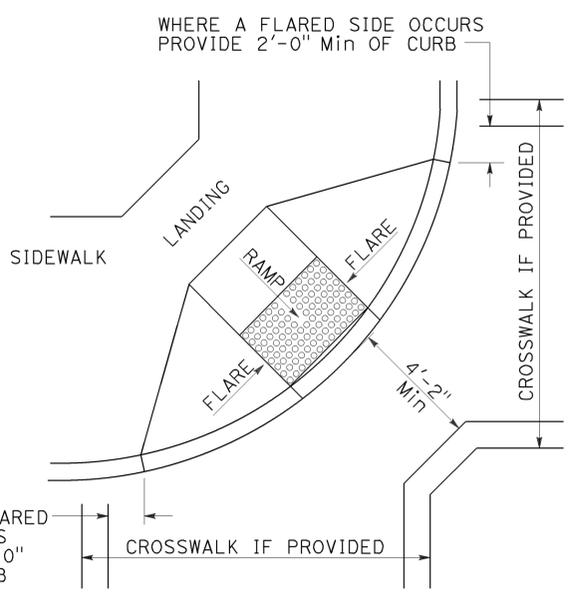
See Note 9



**DETAIL A**

**TYPICAL TWO-RAMP CORNER INSTALLATION**

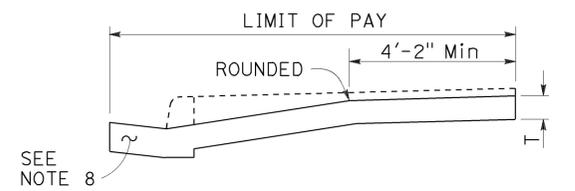
See Note 1



**DETAIL B**

**TYPICAL ONE-RAMP CORNER INSTALLATION**

See Notes 1 and 3



**RETROFIT PAY LIMITS**

Existing curb and sidewalk

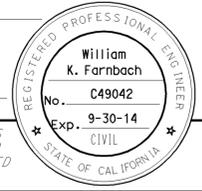
2010 REVISED STANDARD PLAN RSP A88A

RSP A88A DATED JULY 3, 2015 SUPERSEDES RSP A88A DATED MARCH 21, 2014 AND RSP A88A DATED JULY 19, 2013 AND STANDARD PLAN A88A DATED MAY 20, 2011 - PAGE 121 OF THE STANDARD PLANS BOOK DATED 2010.

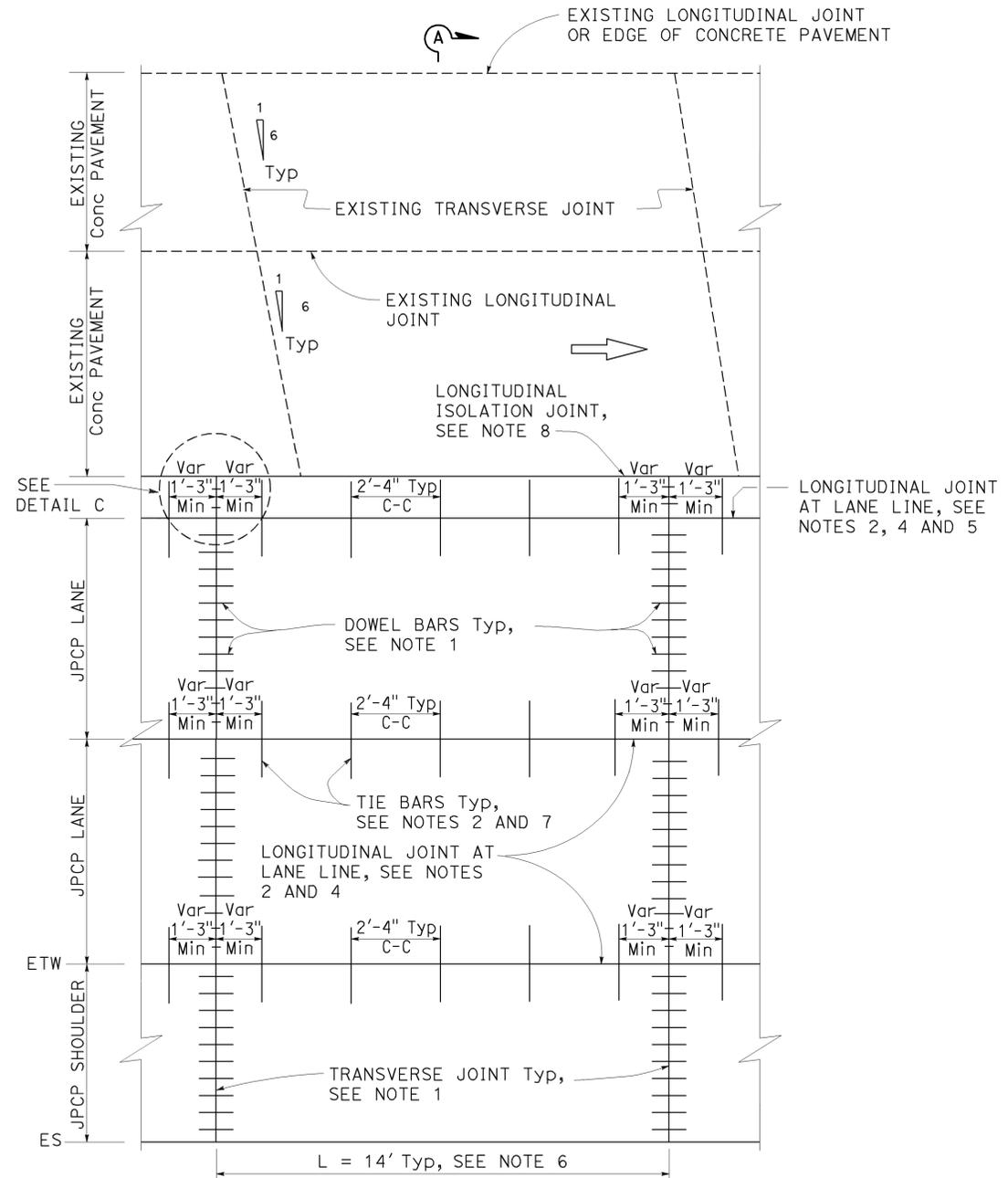
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CURB RAMP DETAILS**  
NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	140	160

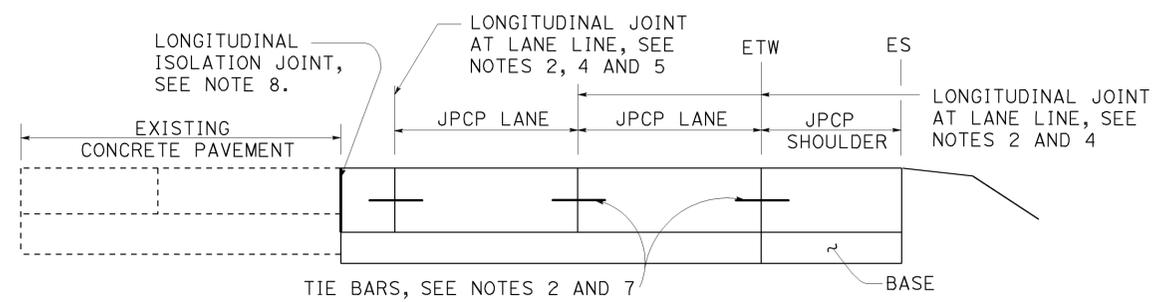
William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



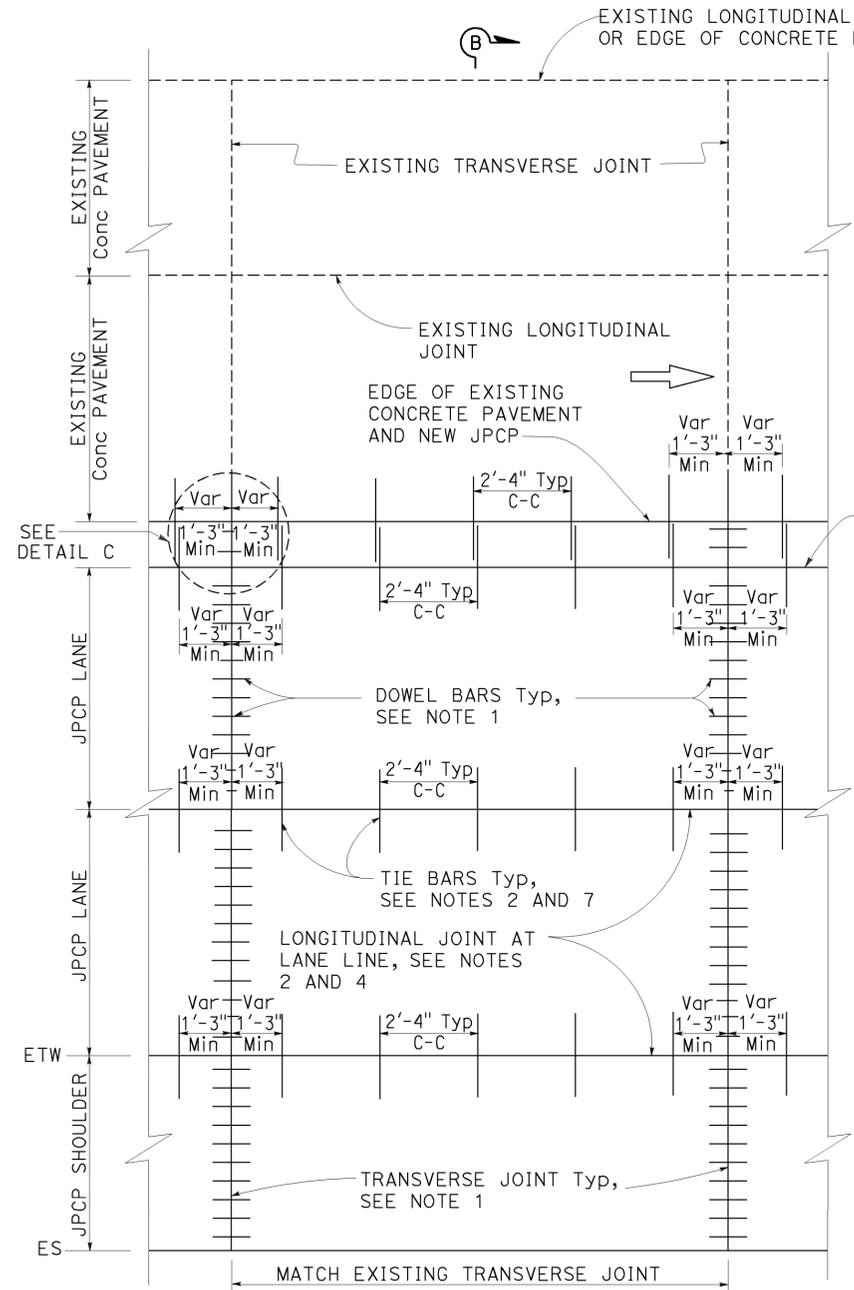
TO ACCOMPANY PLANS DATED 8-31-15



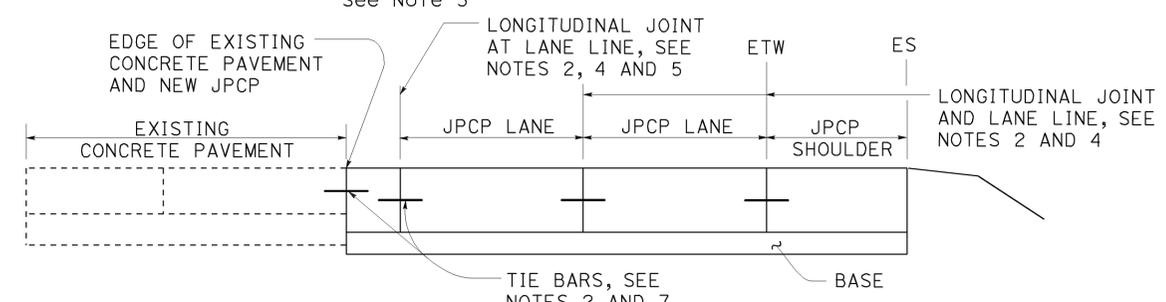
**PLAN ISOLATED**  
See Note 3



**SECTION A-A**



**PLAN TIED**  
See Note 3

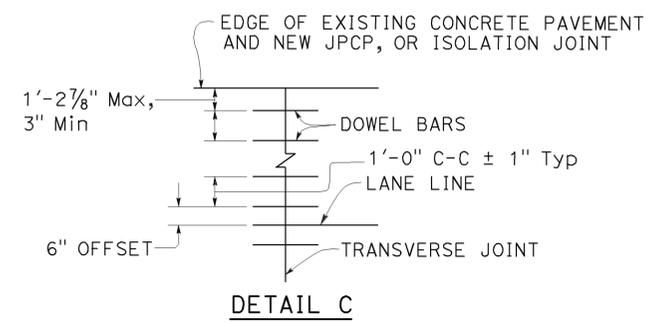


**SECTION B-B**

LONGITUDINAL JOINT AT LANE LINE, SEE NOTES 2, 4 AND 5

**NOTES:**

1. For transverse joint and dowel bar details not shown, see Revised Standard Plan RSP P10.
2. For longitudinal joint and tie bar details not shown, see Revised Standard Plan RSP P15.
3. For joint layout at intersections, see Project Plans.
4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
5. Omit longitudinal joint when edge of new concrete pavement is 3'-3" or less from JPCP lane line.
6. Transverse joint spacing may be adjusted to no less than 10' and no more than 15'-6" to conform to bridges, change in pavement type and existing pavement.
7. For dowel bars at longitudinal joint. see Revised Standard Plan RSP P18.
8. For isolation joints, see Detail A on Revised Standard Plan RSP P18.



**DETAIL C**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**JOINTED PLAIN CONCRETE PAVEMENT LANE & SHOULDER ADDITION OR REPLACEMENT**

NO SCALE

RSP P3A DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP P3A**

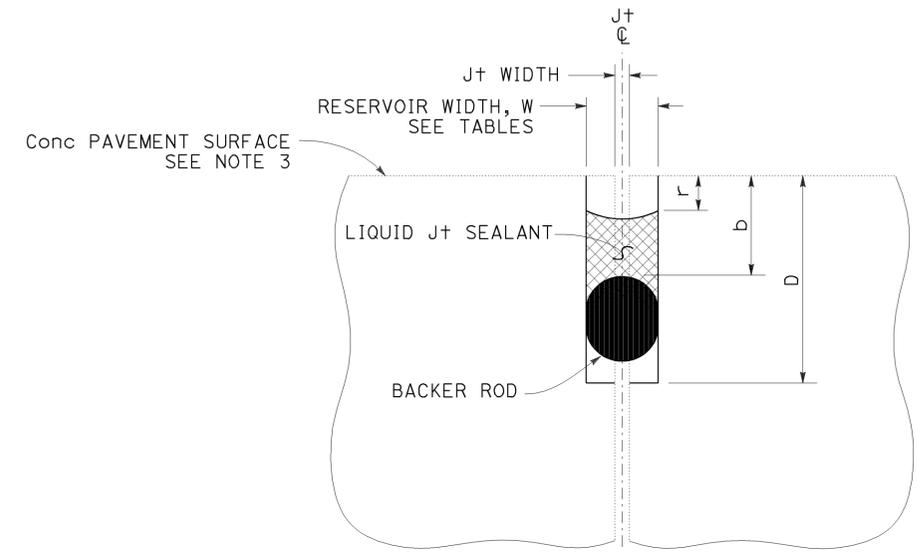
2010 REVISED STANDARD PLAN RSP P3A



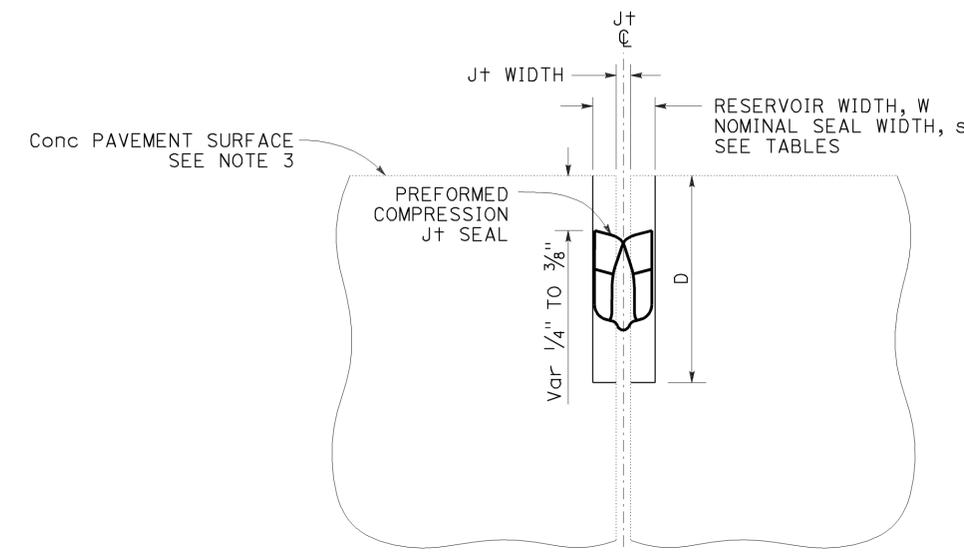
TO ACCOMPANY PLANS DATED 8-31-15

**NOTES:**

- Details do not apply to isolation joints and longitudinal construction joints.
- Tie bars, dowel bars, and bar reinforcement are not shown.
- Depths are measured from the final concrete pavement surface elevation after any grinding.



**LIQUID JOINT SEALANT**



**PREFORMED COMPRESSION JOINT SEAL**

Const SEASON	Min RESERVOIR WIDTH * W ± 1/16"
WINTER	1/4"
SPRING	3/8"
SUMMER	
FALL	

\* Minimum reservoir width for replace joint seal = existing joint width + 1/8"

RESERVOIR WIDTH W ± 1/16"	LIQUID JOINT SEALANT DIMENSIONS					
	BACKER ROD NOMINAL Dia *	DEPTHS (ASPHALT RUBBER) **		DEPTHS (SILICONE)		
		RESERVOIR D ± 1/4"	BACKER ROD b ± 1/16"	RESERVOIR D ± 1/4"	BACKER ROD b ± 1/16"	RECESS r ± 1/16"
1/4"	3/8"	1 3/4"	7/8"	1 3/8"	1/2"	1/4"
3/8"	1/2"	1 7/8"	7/8"	1 1/2"	1/2"	1/4"
1/2"	3/4"	2"	7/8"	1 3/4"	9/16"	5/16"
5/8"	7/8"	2 1/4"	1"	2"	5/8"	5/16"
3/4"	1"	2 3/4"	1 1/8"	2 1/4"	3/4"	3/8"
7/8"	1 1/4"	3"	1 1/4"	2 1/2"	13/16"	3/8"
1"	1 1/2"	3 1/4"	1 3/8"	2 5/8"	7/8"	3/8"
1 1/8"	1 1/2"	3 1/2"	1 1/2"	2 13/16"	1"	1/2"

\* Larger diameter backer rods may be substituted according to manufacturer recommendations if reservoir depth is increased equivalently.

\*\* Asphalt rubber sealant recess depth "r" varies from 1/4" to 3/8"

RESERVOIR WIDTH W ± 1/16"	PREFORMED COMPRESSION JOINT SEAL DIMENSIONS	
	NOMINAL SEAL WIDTH s	RESERVOIR DEPTH D ± 1/4"
1/4"	7/16"	1 1/4"
3/8"	11/16"	1 1/16"
1/2"	13/16"	1 1/8"
5/8"	1"	1 7/8"
3/4"	1 1/4"	2 1/8"
7/8"	1 5/8"	2 5/8"
1"	1 7/8"	2 3/8"
1 1/8"	2"	2 7/8"

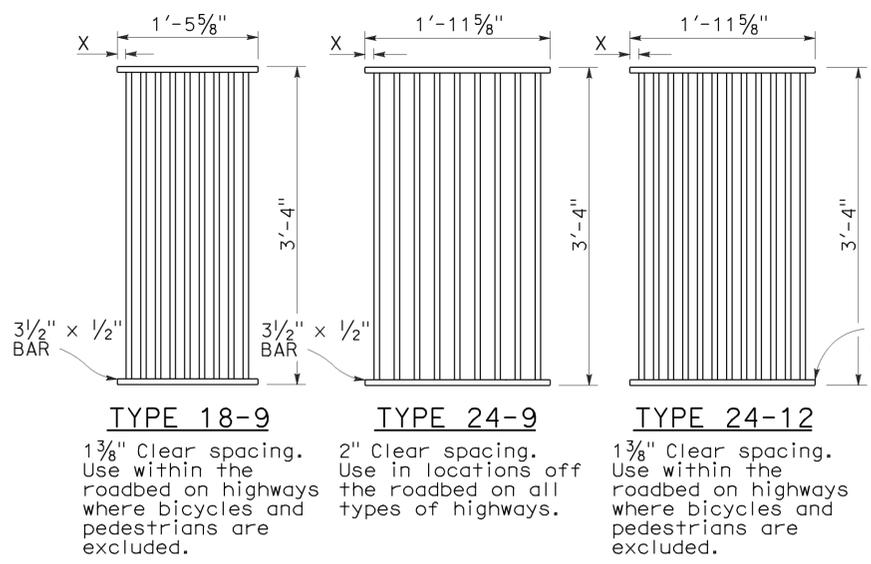
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**JOINT SEALS**

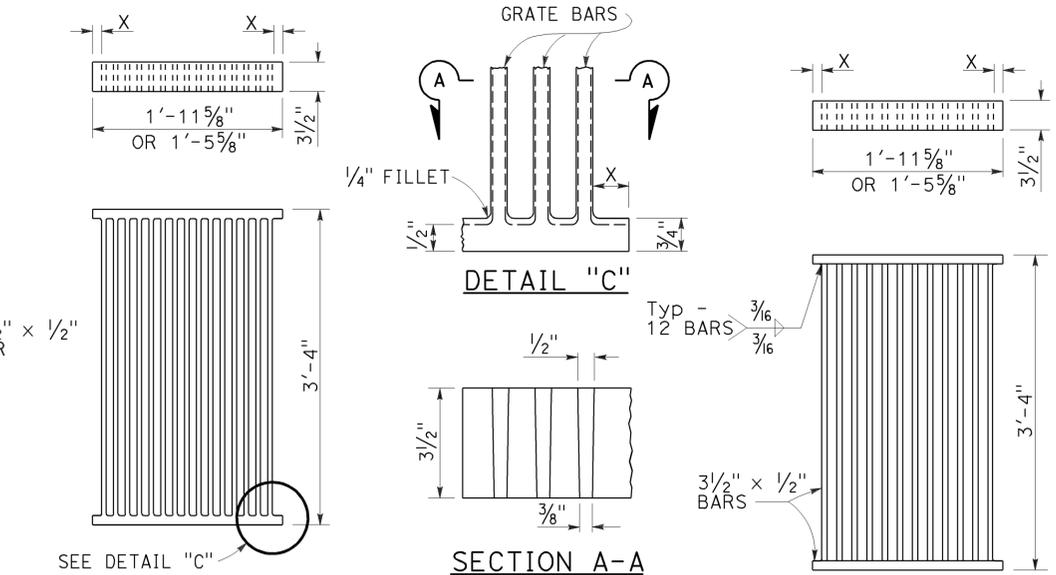
NO SCALE

RSP P20 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN P20  
DATED MAY 20, 2011 - PAGE 136 OF THE STANDARD PLANS BOOK DATED 2010.

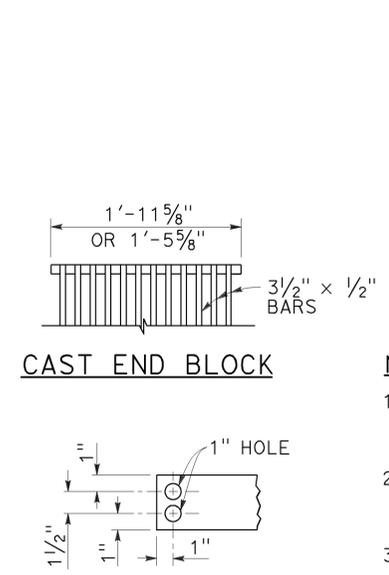
2010 REVISED STANDARD PLAN RSP P20



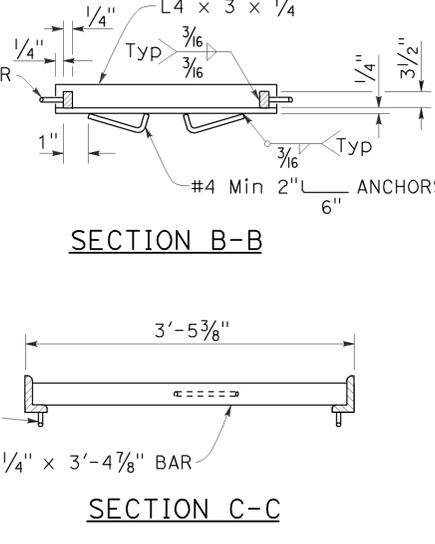
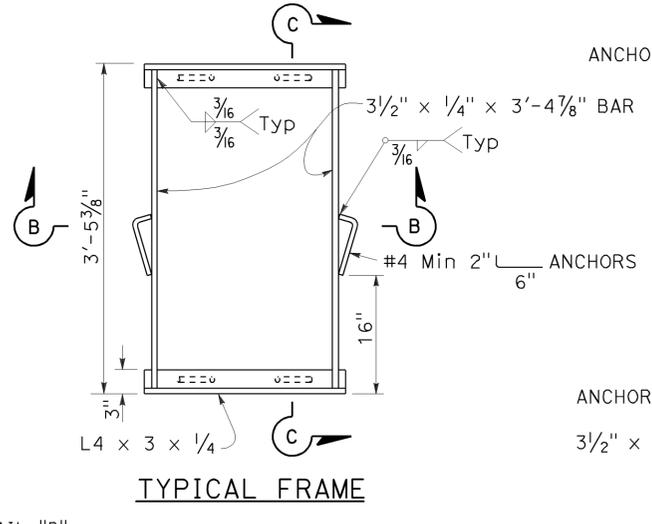
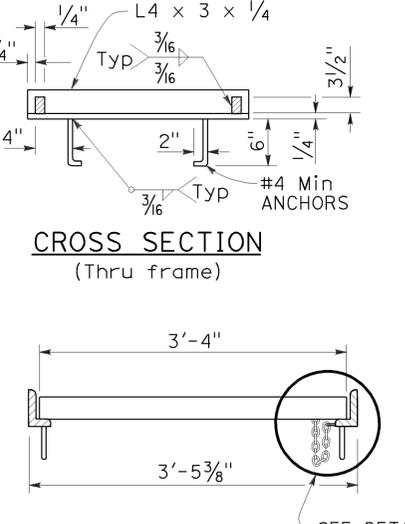
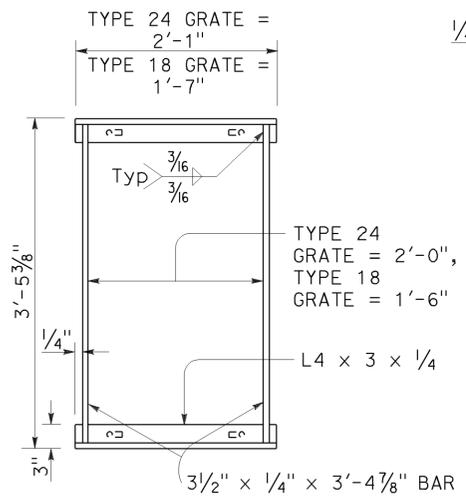
**RECTANGULAR GRATE DETAILS**  
(See table below)



**ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE**



**ALTERNATIVE WELDED GRATE**



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

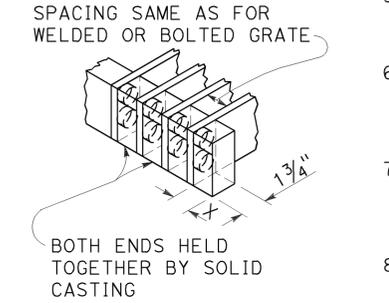
**ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME**  
(For details not shown, See Rectangular Frame Details)

**GRATE BAR SPACING TABLE**

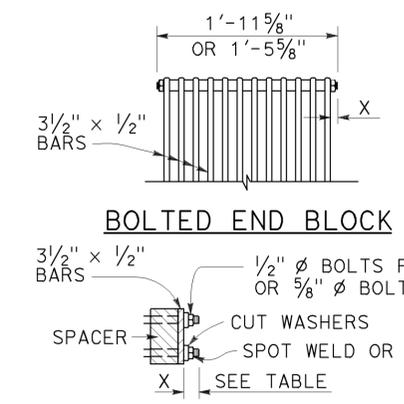
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

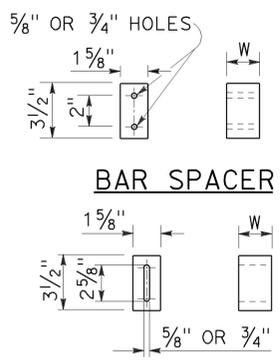
INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22
GRATE CHAIN			3



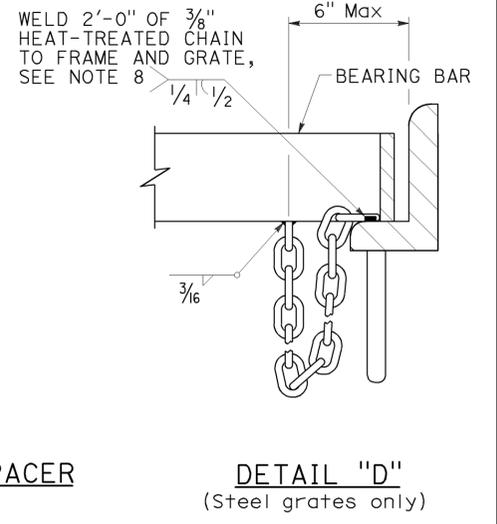
**ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE**



**ALTERNATIVE BOLTED GRATE**



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

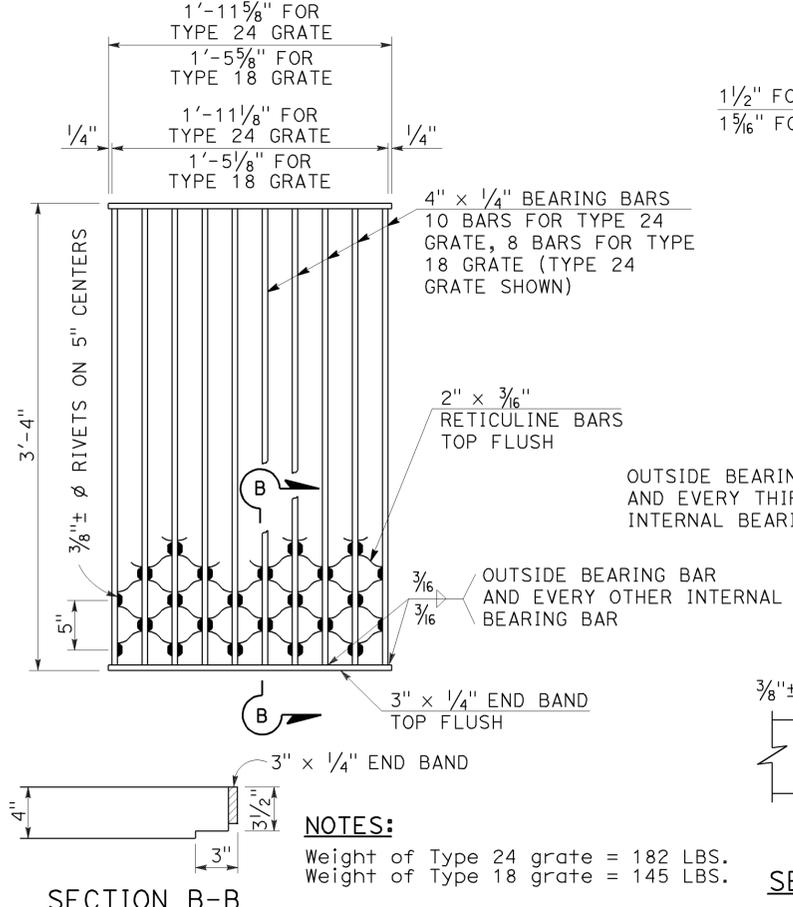
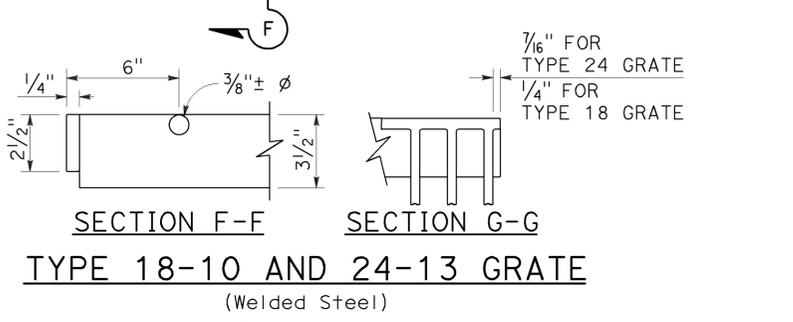
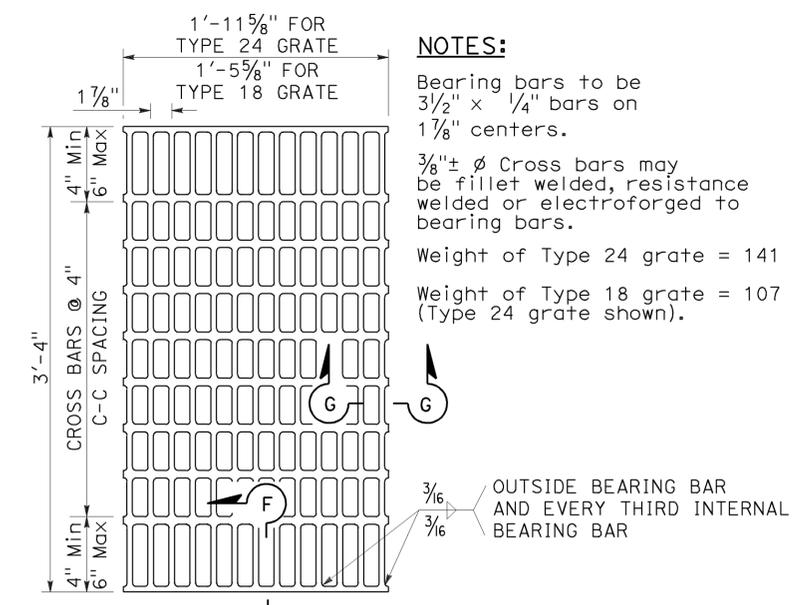


**GRATE DETAILS No. 1**  
NO SCALE

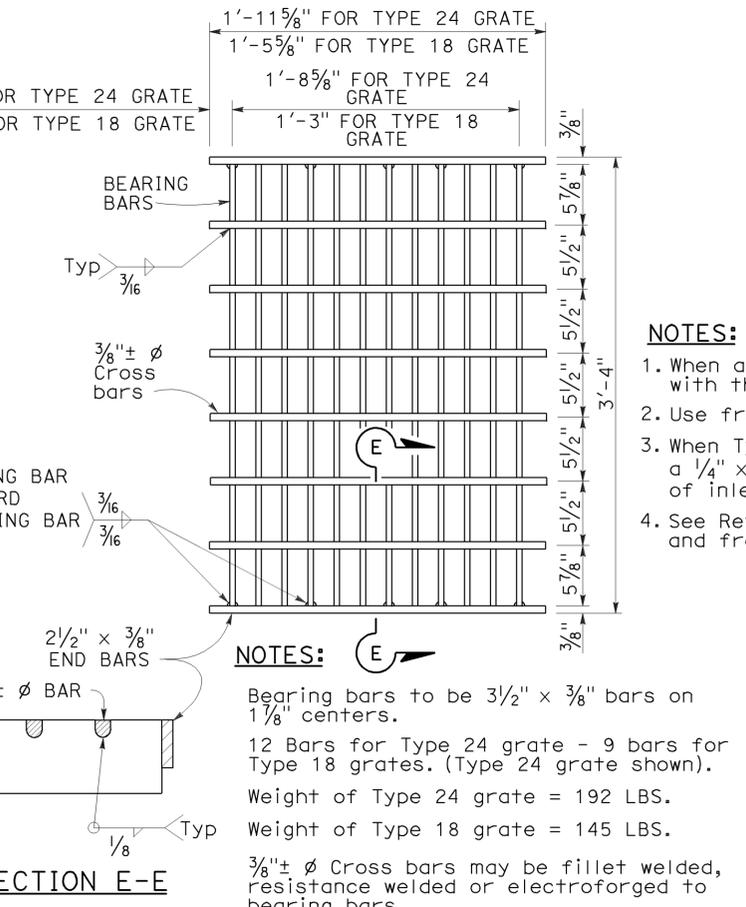
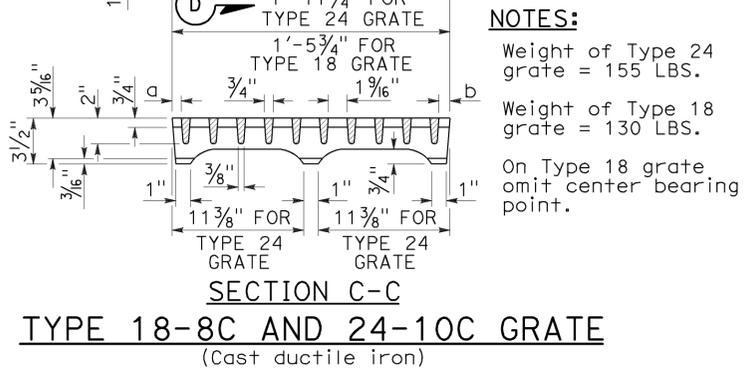
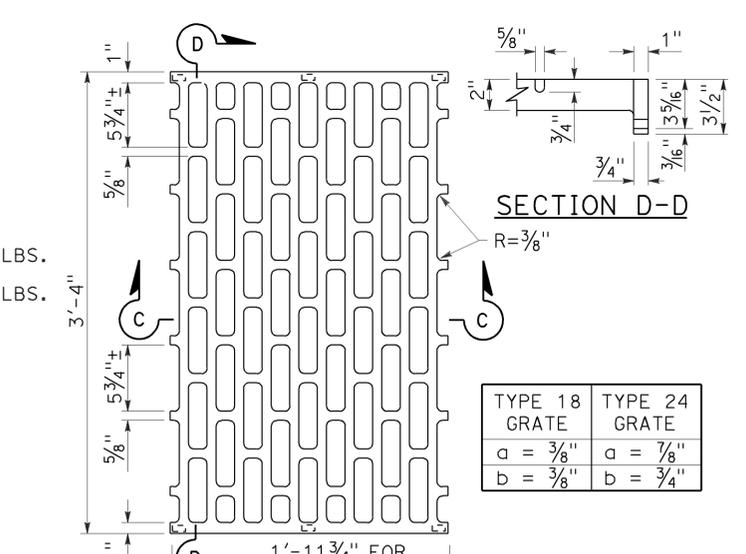
RSP D77A DATED APRIL 19, 2013 SUPERSEDES RSP D77A DATED JULY 20, 2012 AND STANDARD PLAN D77A DATED MAY 20, 2011 - PAGE 164 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP D77A

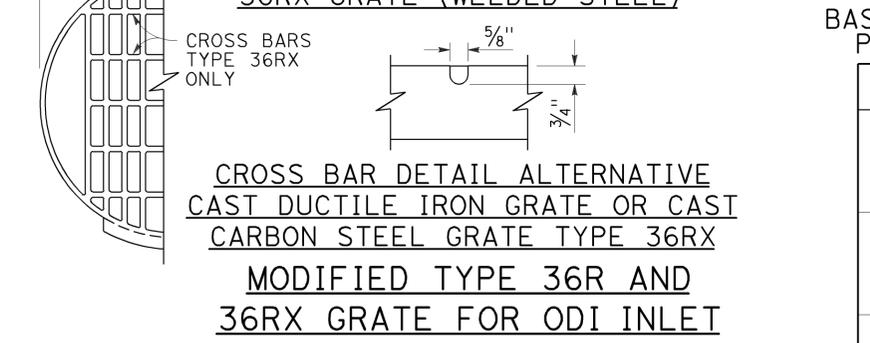
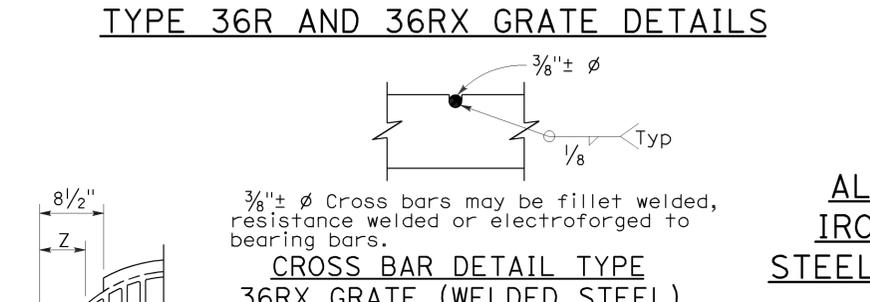
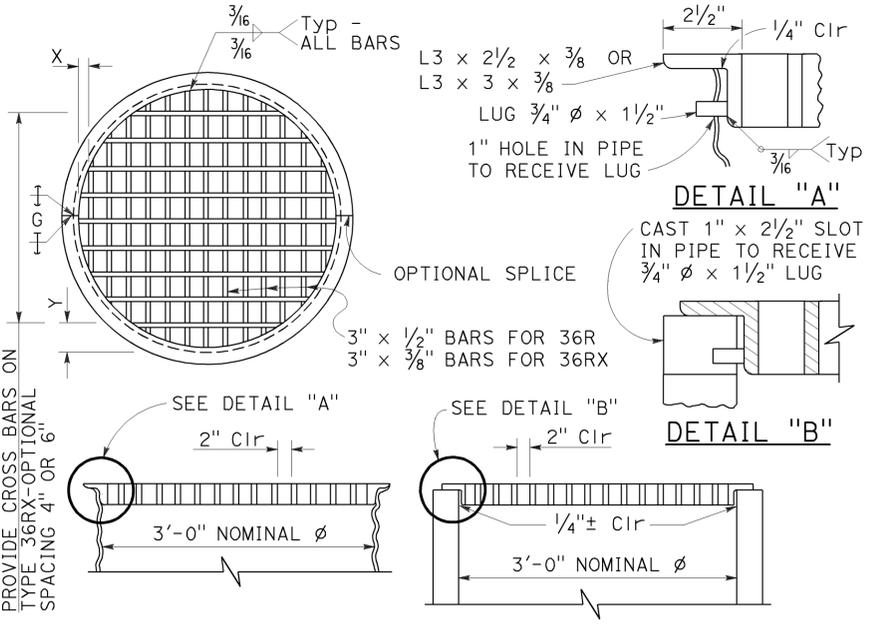
**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**  
(See Note 7)



SECTION B-B  
TYPE 18-8S AND 24-10S GRATE  
(Welded Steel) Reticuline type



SECTION E-E  
TYPE 18-9X AND 24-12X GRATE  
(Welded Steel)



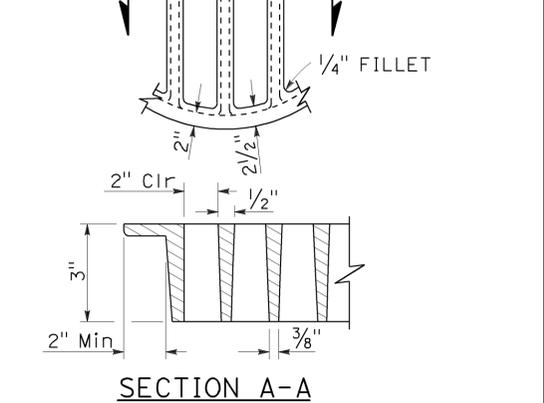
- NOTES:
- When alternative grates are allowed - Final pay based on alternative with the lesser weight.
  - Use frame shown on Standard Plan D74A, D74B or RSP D77A as appropriate.
  - When Type 24-10S, 24-12X or 24-13 grates are used with GDO Inlets, a 1/4" x 3/2" x 3'-4 7/8" steel bar shall be welded across the center of inlet frame to separate the individual grates.
  - See Revised Standard Plan RSP D77A for connecting chain to welded grate and frame. When chain is required, do not use cast ductile iron grate.

GRATE BAR SPACING TABLE

TYPE	NO. OF BARS	CLEAR BAR SPACING	X	Y		Z
				4" SPACING	6" SPACING	
36R	13	2"	2 1/8"	-	-	-
36RX (STEEL)	15	2"	9/16"	3 3/4"	5 3/4"	-
36RX (CAST)	13	2"	2 1/8"	3 3/4"	5 3/4"	-
36R Mod	12	2"	2 1/8"	-	-	5"
36RX Mod (STEEL)	13	2"	9/16"	3 3/4"	5 3/4"	5 1/16"
36RX Mod (CAST)	12	2"	2 1/8"	3 3/4"	5 3/4"	5"

RSP D77B DATED APRIL 19, 2013 SUPERSEDES RSP D77B DATED JULY 20, 2012 AND STANDARD PLAN D77B DATED MAY 20, 2011 - PAGE 165 OF THE STANDARD PLANS BOOK DATED 2010.

TO ACCOMPANY PLANS DATED 8-31-15



BASIS FOR Misc IRON AND STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS

INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
GDO (SEE NOTE 4)	24-10C	2	391
	24-10S	2	456
	24-12X	2	473
	24-13	2	374
G0, G0L, G1, G2, G3, G4 (TYPE 24)	24-10C	1	202
	24-10S	1	229
	24-12X	1	239
	24-13	1	188
G4 (TYPE 18) G5, G6	18-8S	1	187
	18-9X	1	187
	18-10	1	149
GT1, GT2	18-8S	2	374
	18-9X	2	374
	18-10	2	298
GT3, GT4	24-10C	2	404
	24-10S	2	458
	24-12X	2	478
ODI	24-13	2	376
	36RX (Mod)	1	196
	36R (Mod)	1	220
GMP, GCP, GCPI	36RX	1	215
TRASH RACK	36R	1	236
GRATE CHAIN			22
			3

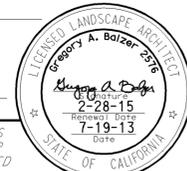
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**GRATE DETAILS No. 2**  
NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	144	160

*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 8-31-15

**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
07	LA	5	18.4/23.2	145	160

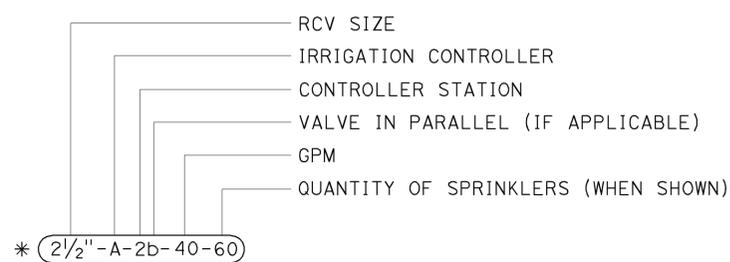
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 November 15, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 8-31-15

2010 REVISED STANDARD PLAN RSP H2

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



\* 2 1/2" - A - 2b - 40 - 60

**VALVE CODE**

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

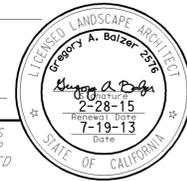
RSP H2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP H2 DATED JULY 19, 2013 AND STANDARD PLAN H2 DATED MAY 20, 2011 - PAGE 219 OF THE STANDARD PLANS BOOK DATED 2010.

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

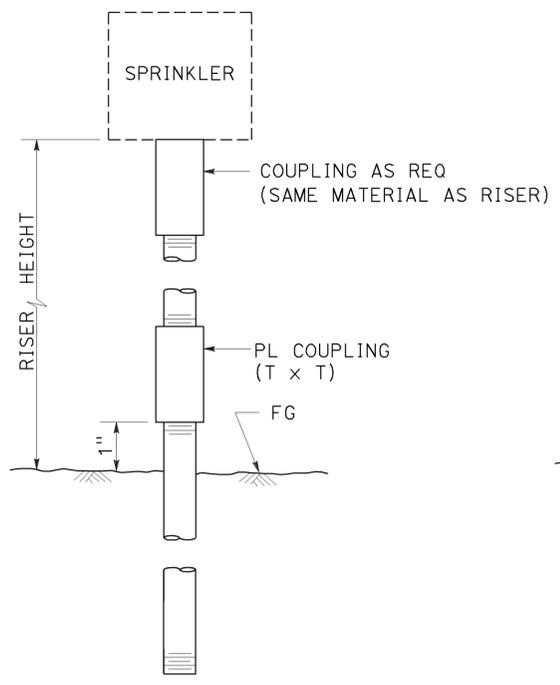
**REVISED STANDARD PLAN RSP H2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	146	160

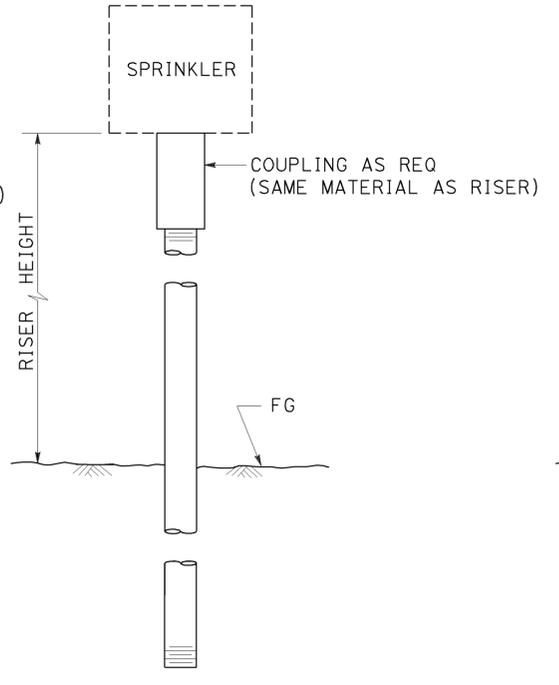
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 July 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



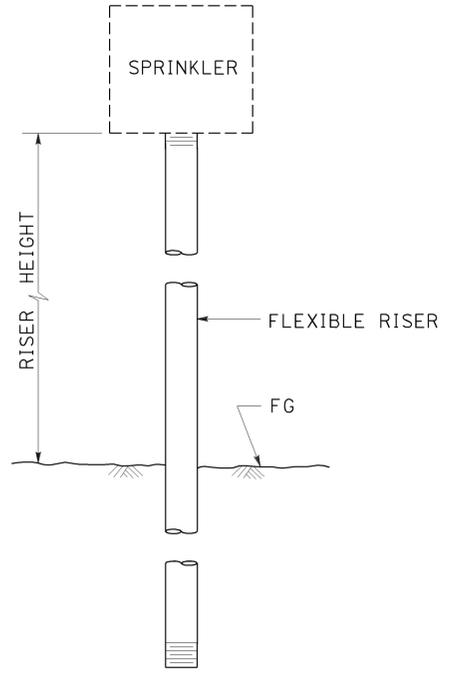
TO ACCOMPANY PLANS DATED 8-31-15



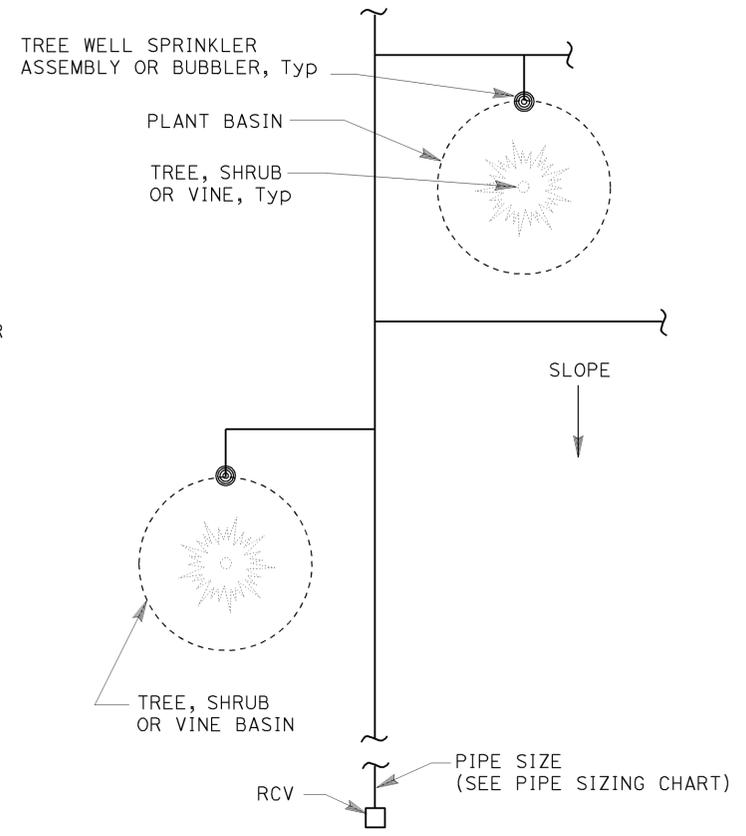
**ELEVATION**  
**RISER SPRINKLER ASSEMBLY TYPE I**



**ELEVATION**  
**RISER SPRINKLER ASSEMBLY TYPE II**

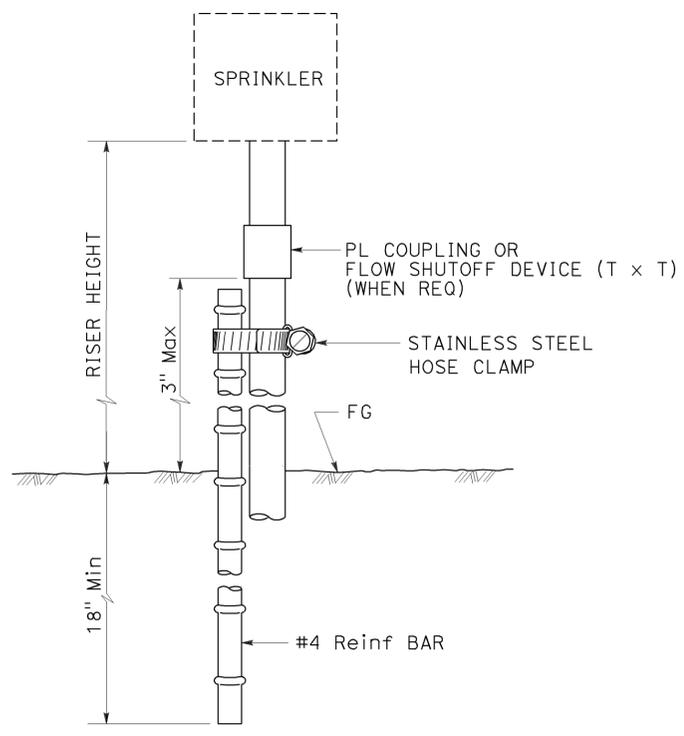


**ELEVATION**  
**RISER SPRINKLER ASSEMBLY TYPE III**

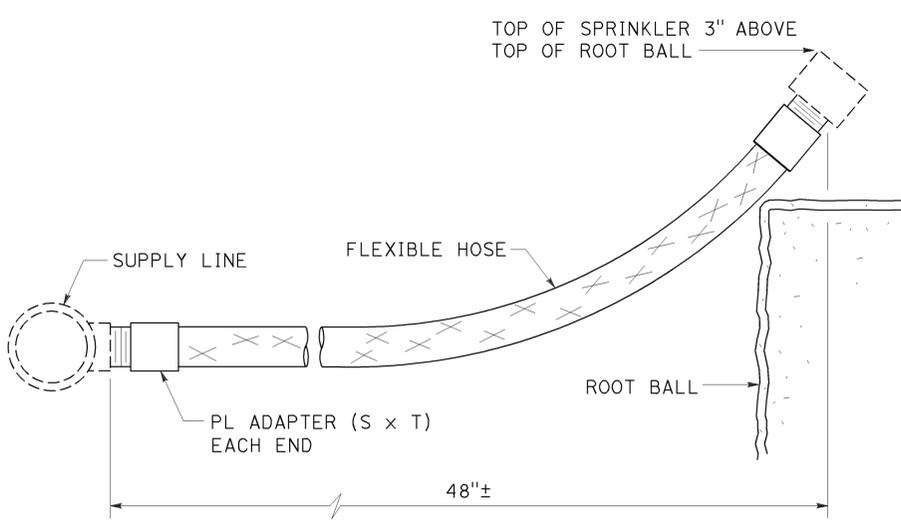


**PLAN**

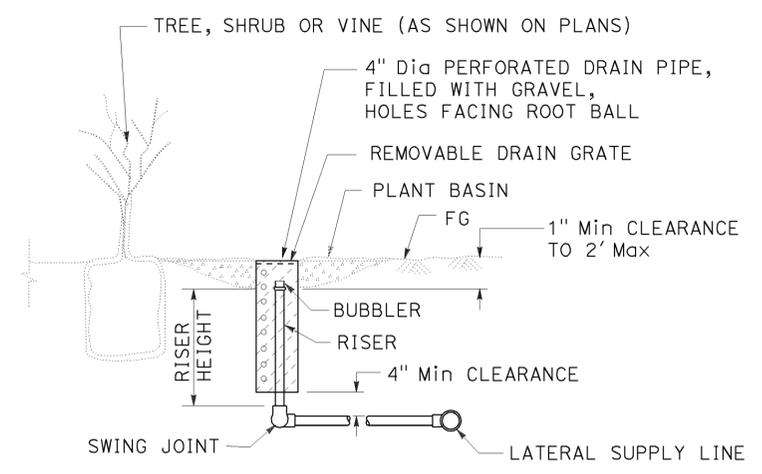
- NOTES:**
1. Install tree well sprinkler assembly on up-hill side of plant when on slope.
  2. Install bubbler within basin.



**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.

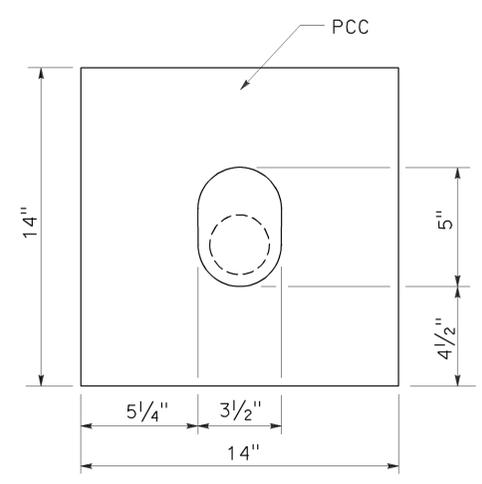
**REVISED STANDARD PLAN RSP H5**

**2010 REVISED STANDARD PLAN RSP H5**

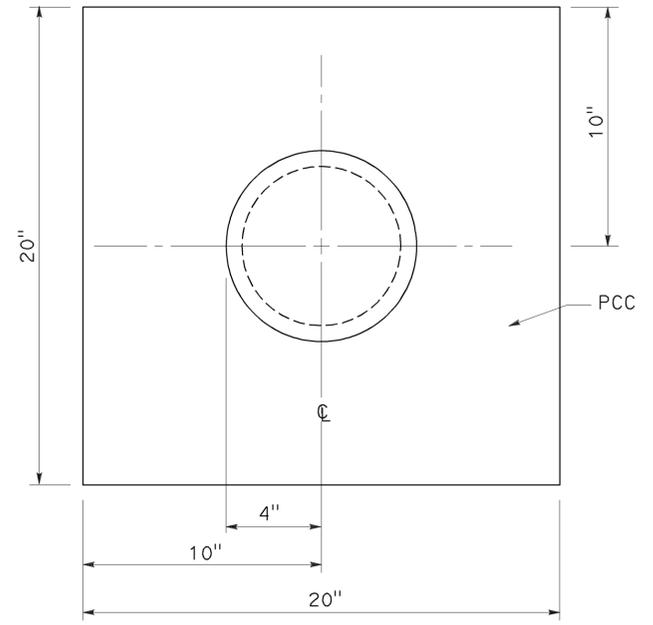
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	147	160

*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 July 19, 2013  
 PLANS APPROVAL DATE  
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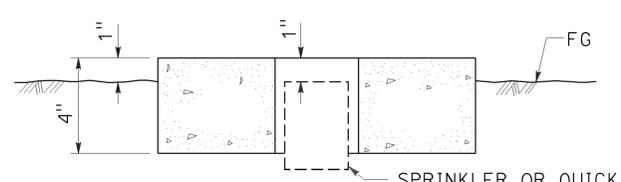
TO ACCOMPANY PLANS DATED 8-31-15



PLAN

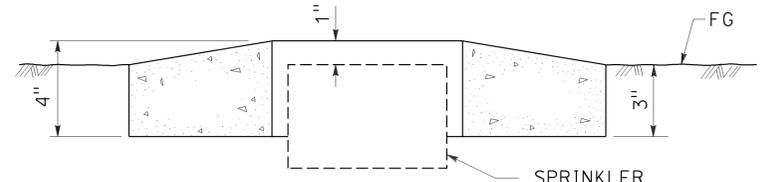


PLAN



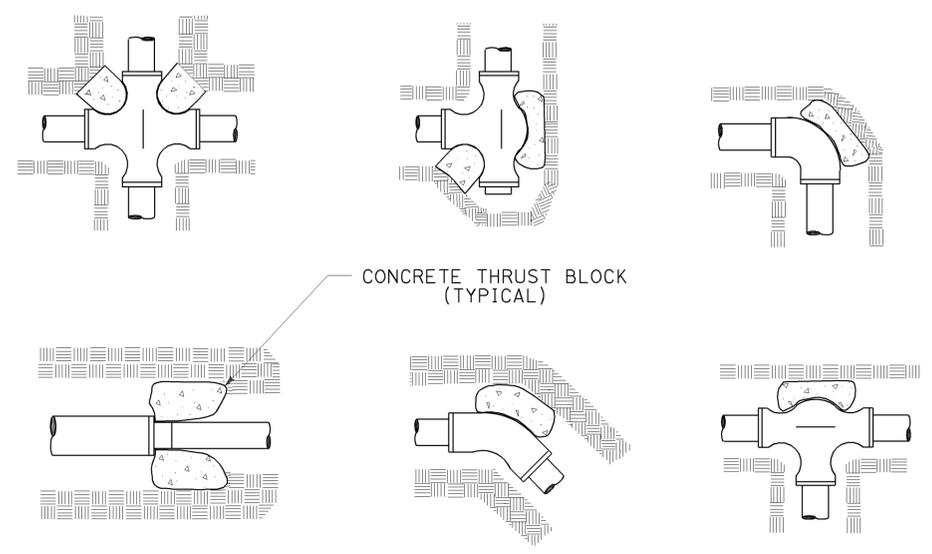
SECTION SPRINKLER OR QUICK COUPLING VALVE

SPRINKLER PROTECTOR TYPE I

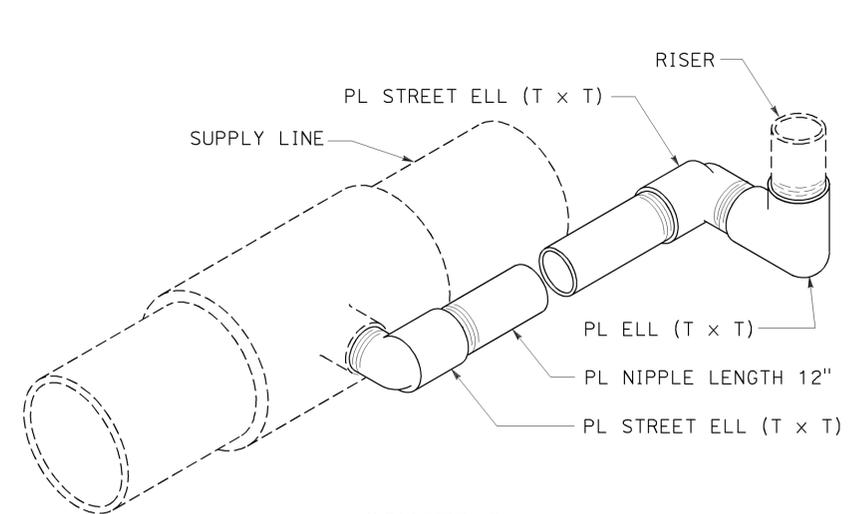


SECTION SPRINKLER

SPRINKLER PROTECTOR TYPE II

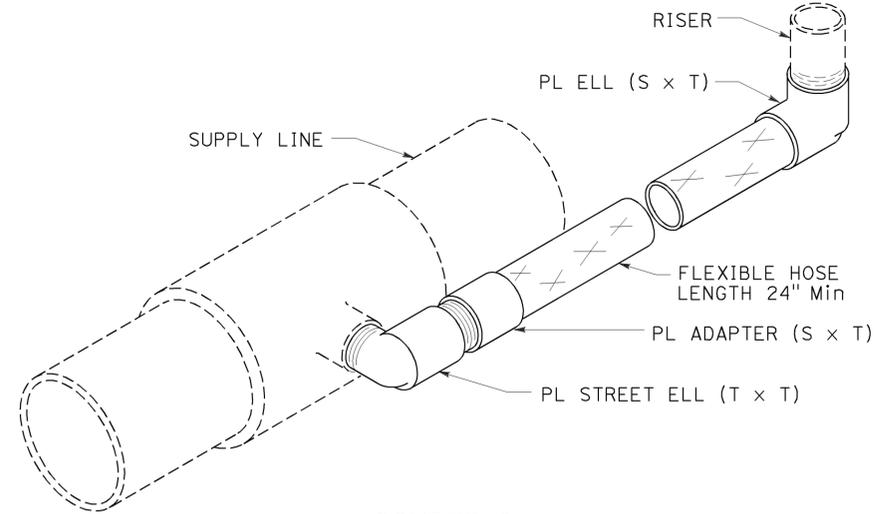


TYPICAL THRUST BLOCKS



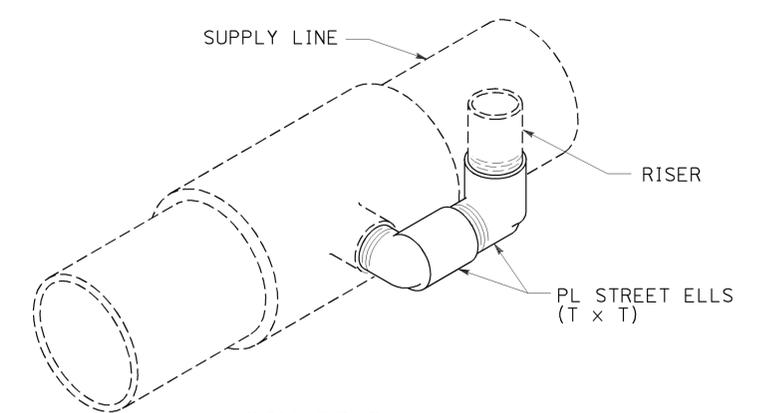
ISOMETRIC

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

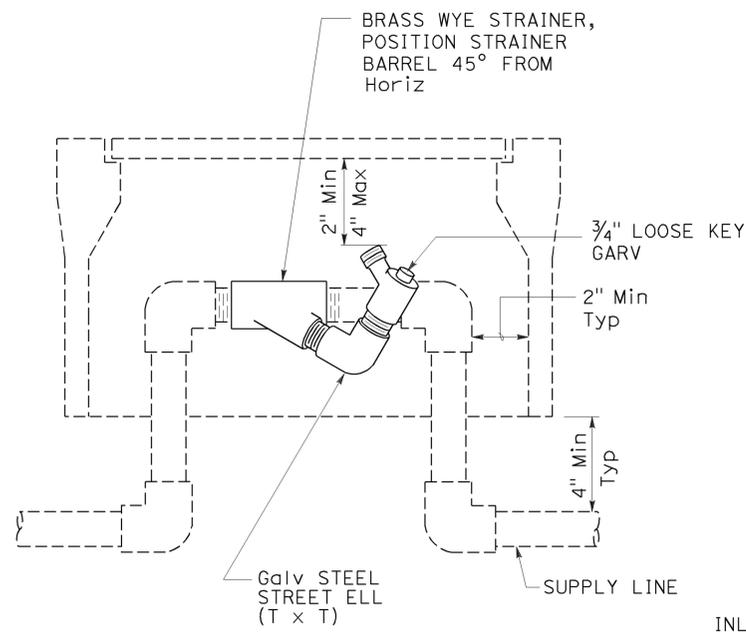
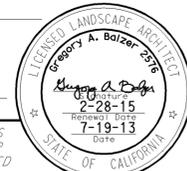
RSP H6 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H6 DATED MAY 20, 2011 - PAGE 223 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H6**

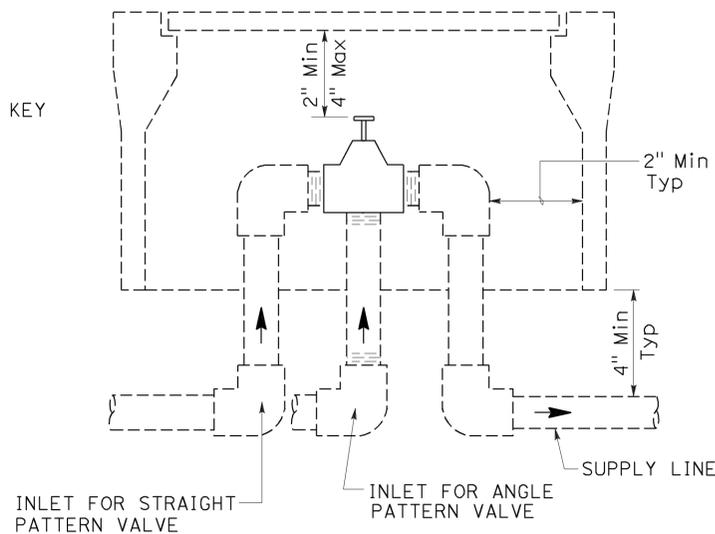
2010 REVISED STANDARD PLAN RSP H6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	148	160

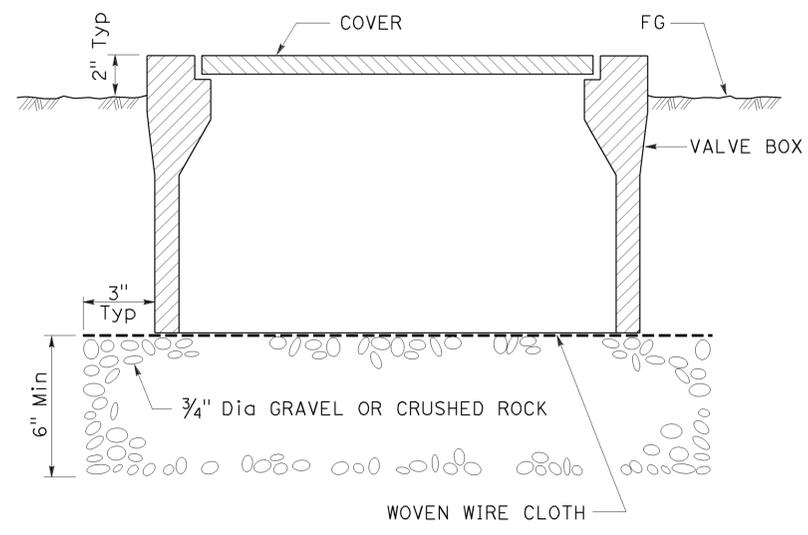
July 19, 2013  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



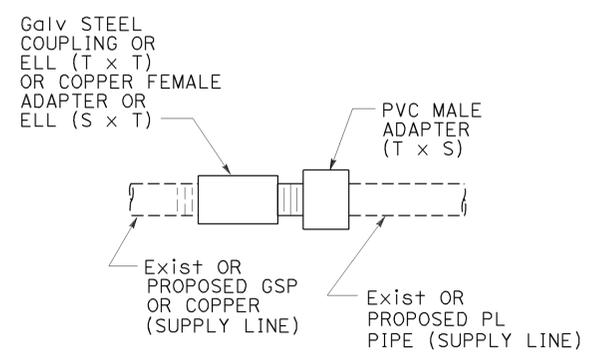
**ELEVATION**  
**WYE STRAINER ASSEMBLY**



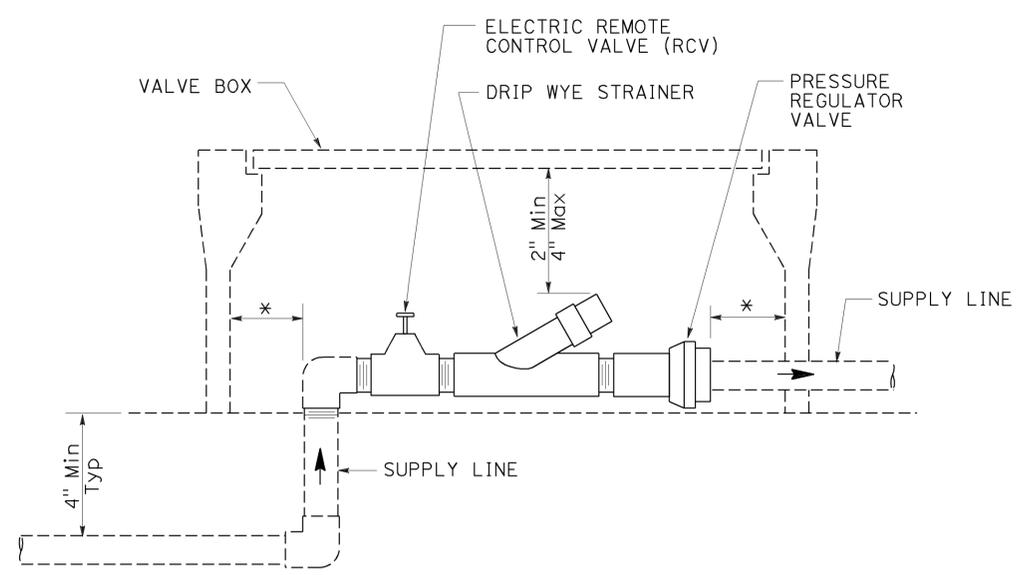
**ELEVATION**  
**VALVE**



**SECTION**  
**VALVE BOX**



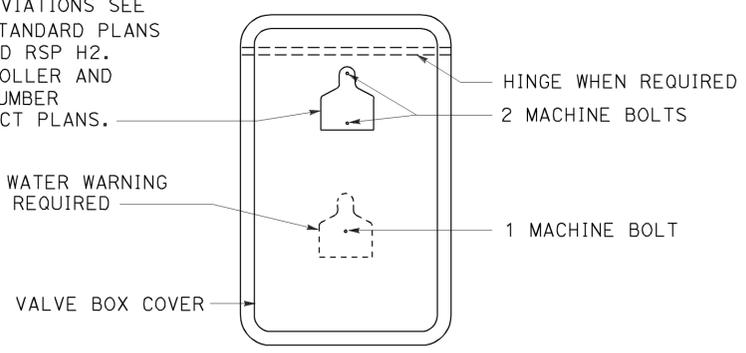
**GALVANIZED OR COPPER PIPE CONNECTION TO PLASTIC PIPE**



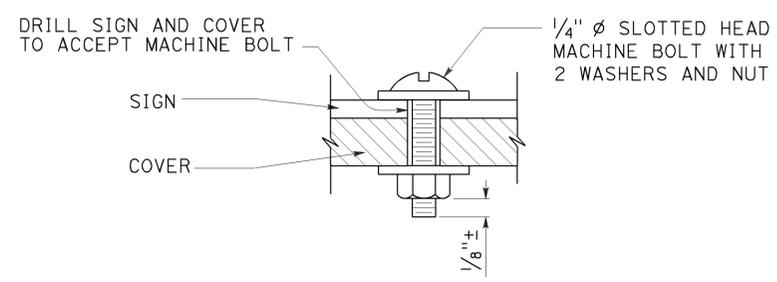
**ELEVATION**  
**DRIP VALVE ASSEMBLY**

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

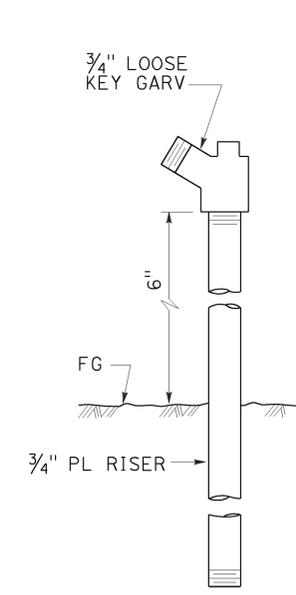
RECYCLED WATER WARNING  
SIGN WHEN REQUIRED



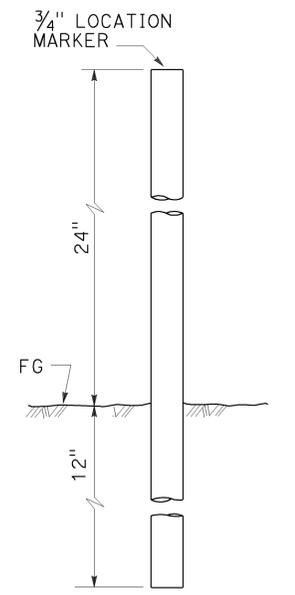
**PLAN**



**SECTION**  
**VALVE BOX IDENTIFICATION**



**ELEVATION**  
**GARDEN VALVE ASSEMBLY**



**ELEVATION**  
**LOCATION MARKER**

**GARDEN VALVE ASSEMBLY**

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**

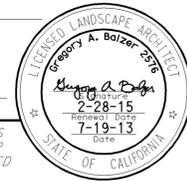
2010 REVISED STANDARD PLAN RSP H7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	149	160

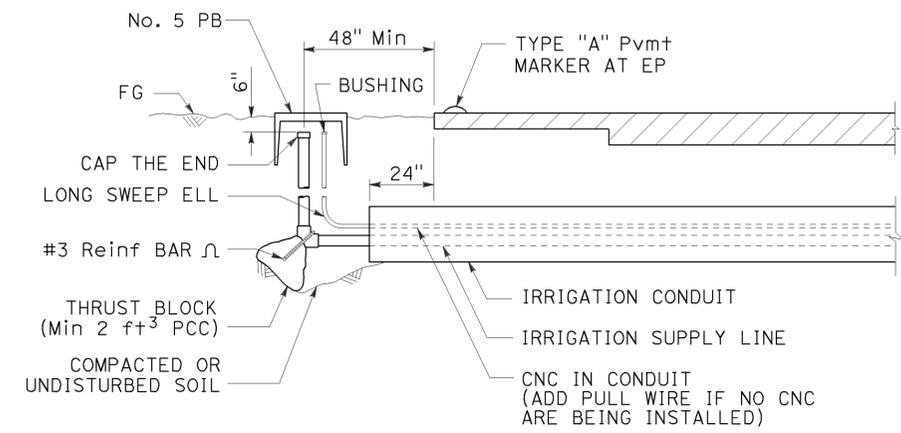
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT

July 19, 2013  
 PLANS APPROVAL DATE

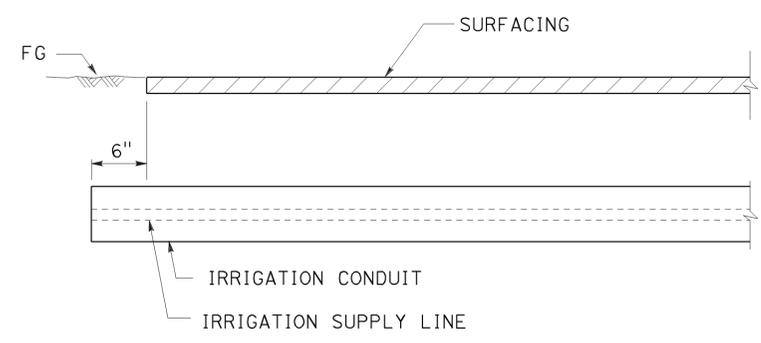
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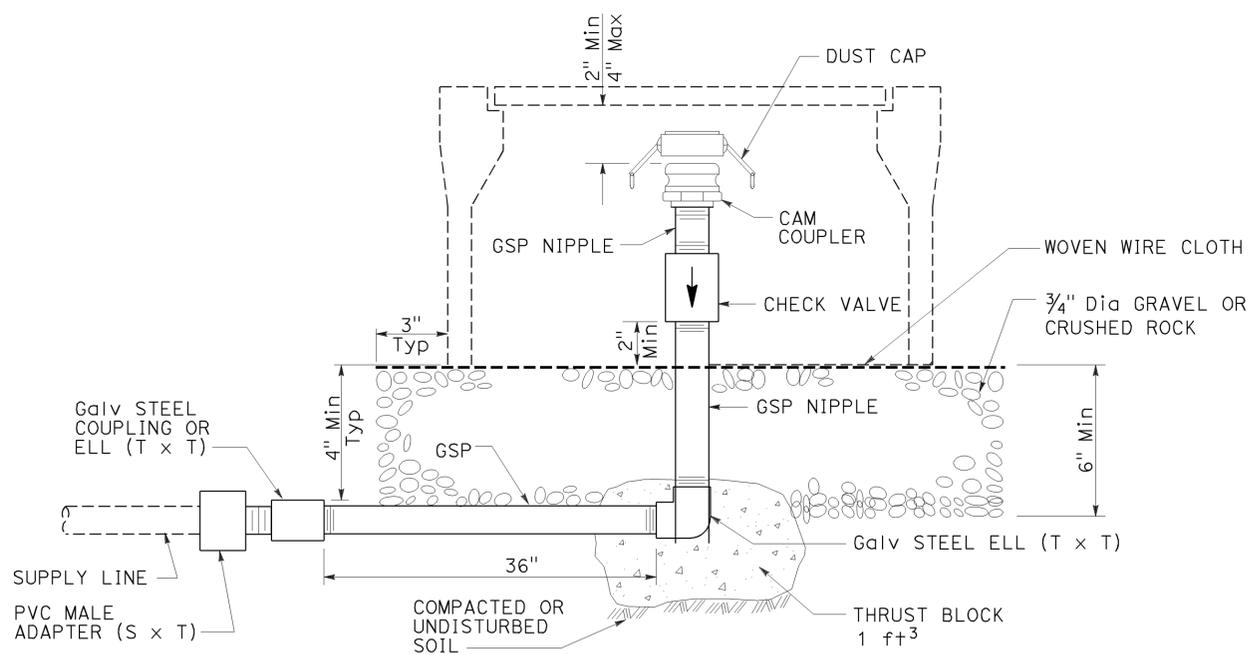
TO ACCOMPANY PLANS DATED 8-31-15



**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

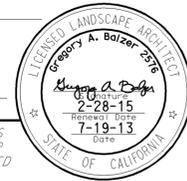
RSP H9 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H9 DATED MAY 20, 2011 - PAGE 226 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H9**

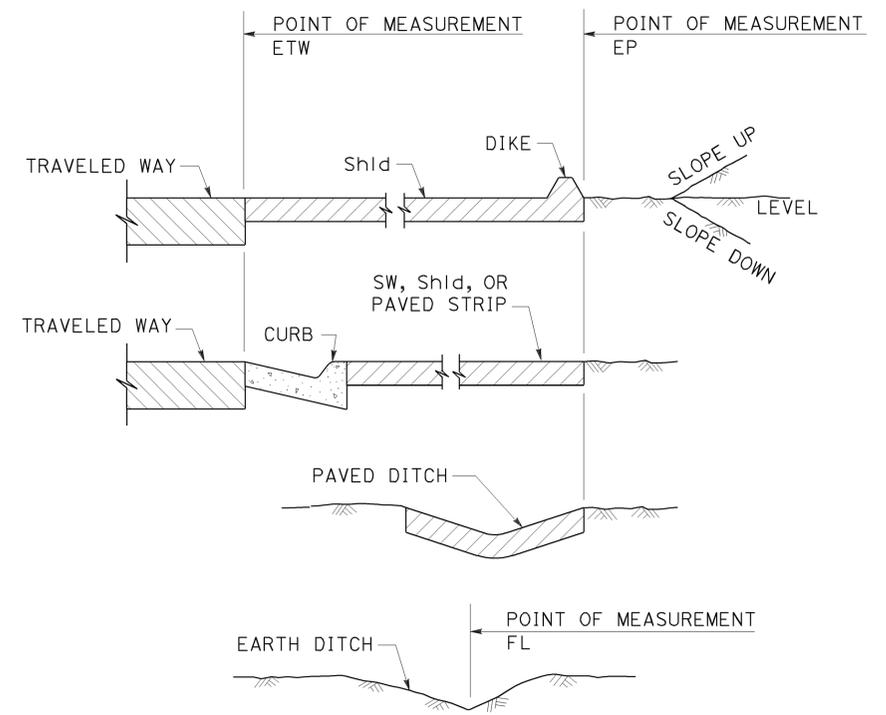
2010 REVISED STANDARD PLAN RSP H9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	150	160

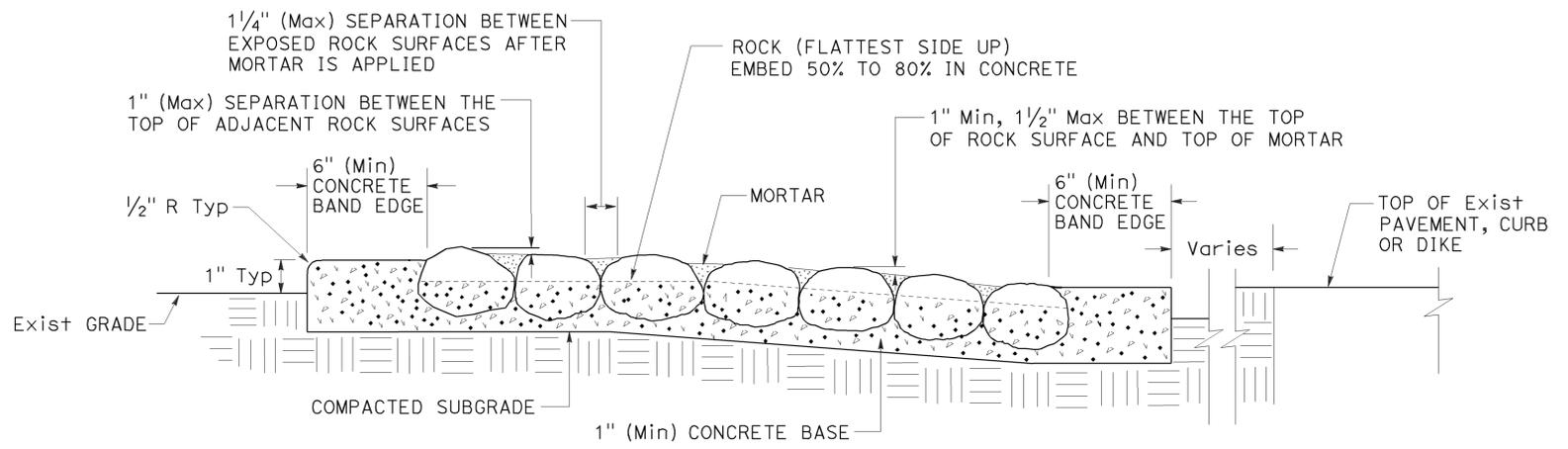
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 July 19, 2013  
 PLANS APPROVAL DATE  
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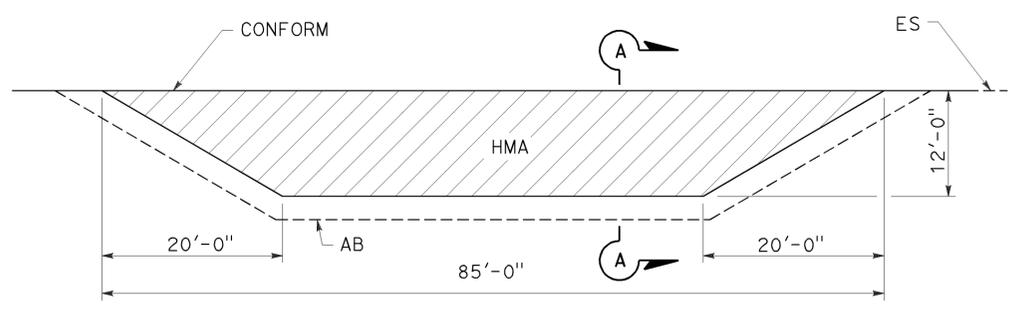
TO ACCOMPANY PLANS DATED 8-31-15



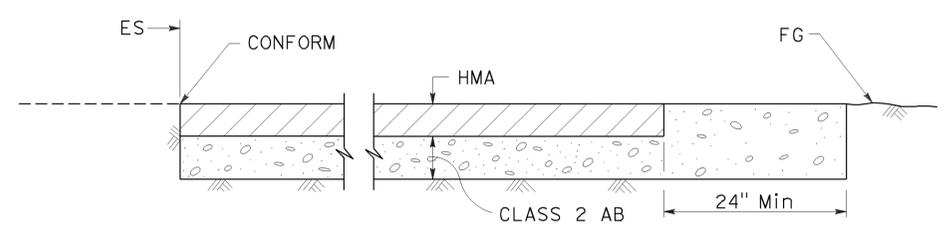
**SECTION  
POINTS OF MEASUREMENT**



**SECTION  
ROCK BLANKET**



**PLAN**



**SECTION A-A  
MAINTENANCE VEHICLE PULLOUT**

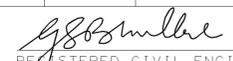
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**LANDSCAPE DETAILS**  
 NO SCALE

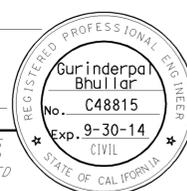
RSP H9A DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H9A**

2010 REVISED STANDARD PLAN RSP H9A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	151	160

  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED 8-31-15

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**

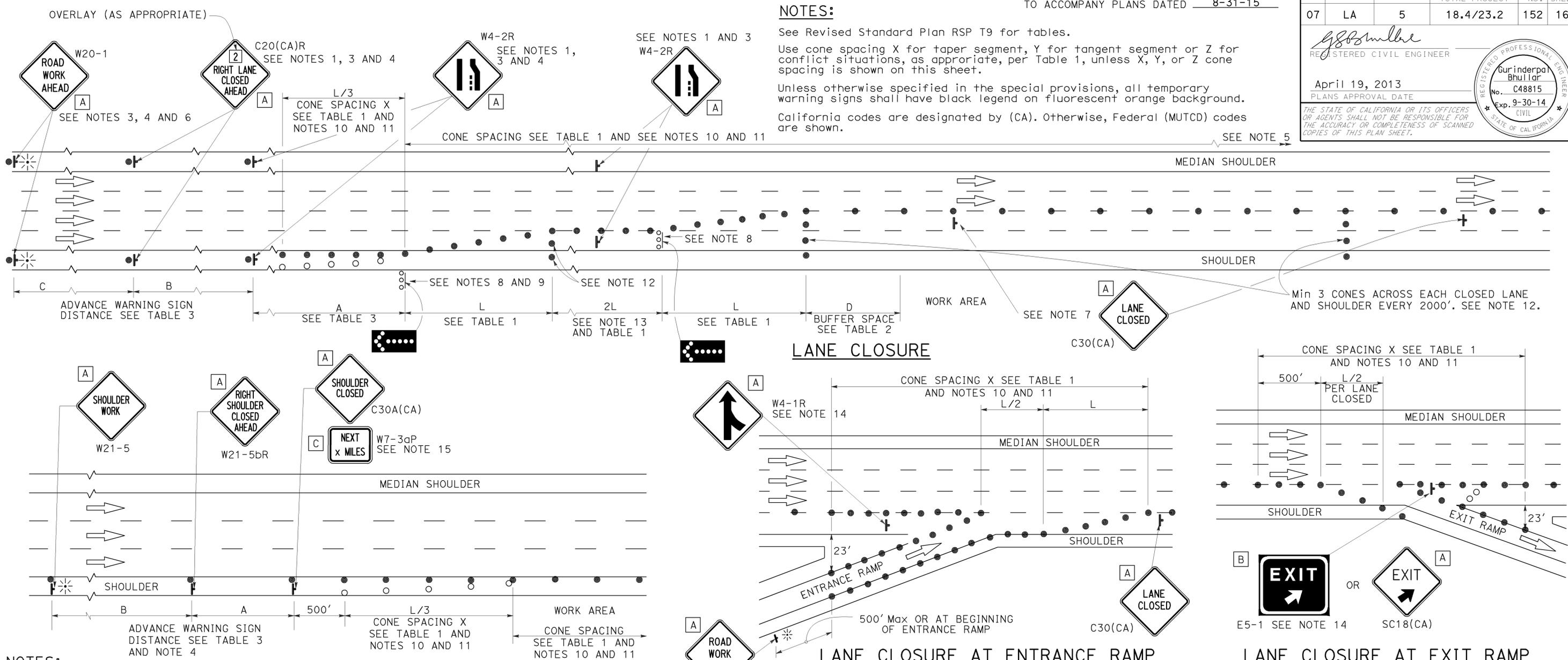
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	152	160

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



- NOTES:**
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
  - At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
  - Duplicate sign installations are not required:
    - On opposite shoulder if at least one-half of the available lanes remain open to traffic.
    - In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
  - 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.
  - 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**
- 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)N sign for the first advance warning sign.
  - Place a C30(CA) sign every 2000' throughout length of lane closure.
  - One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
  - 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.
  - All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
  - Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

- 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.
- 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.
- Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
- 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

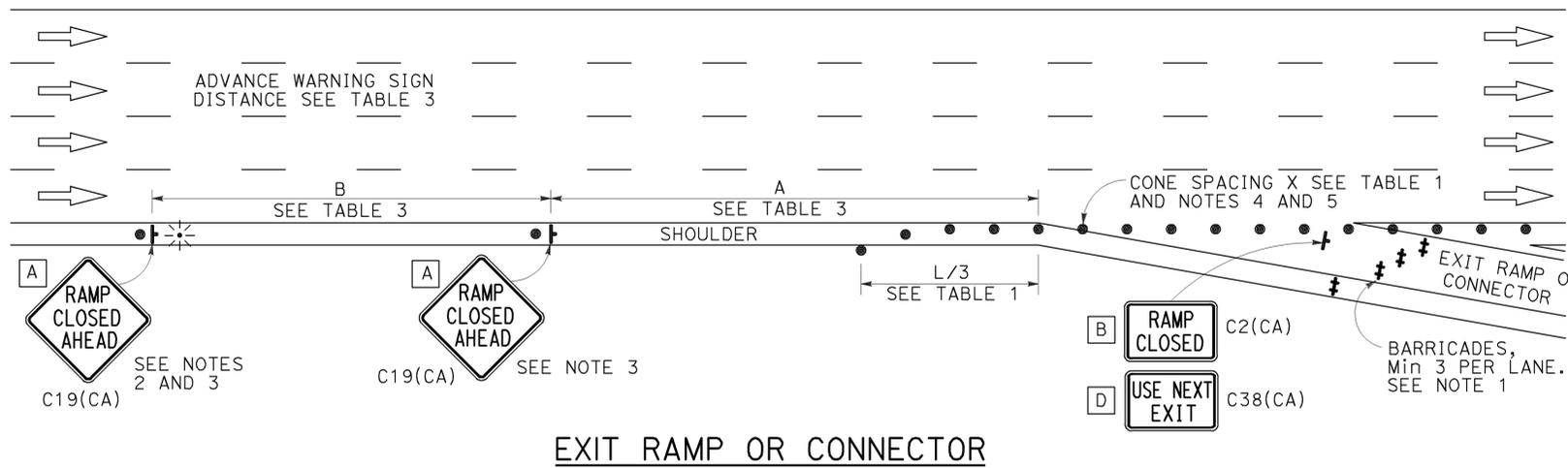
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	153	160

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

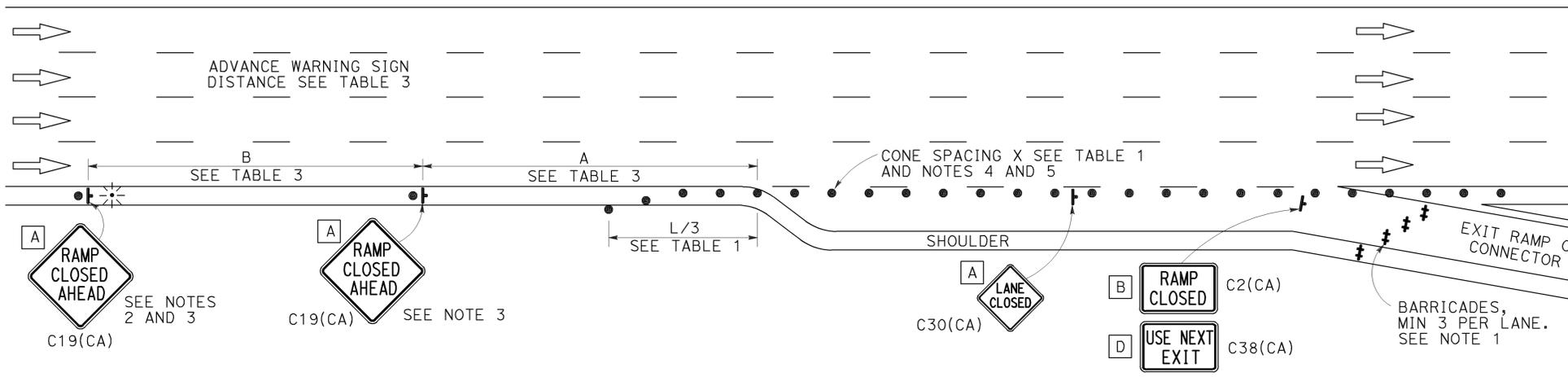
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TO ACCOMPANY PLANS DATED 8-31-15

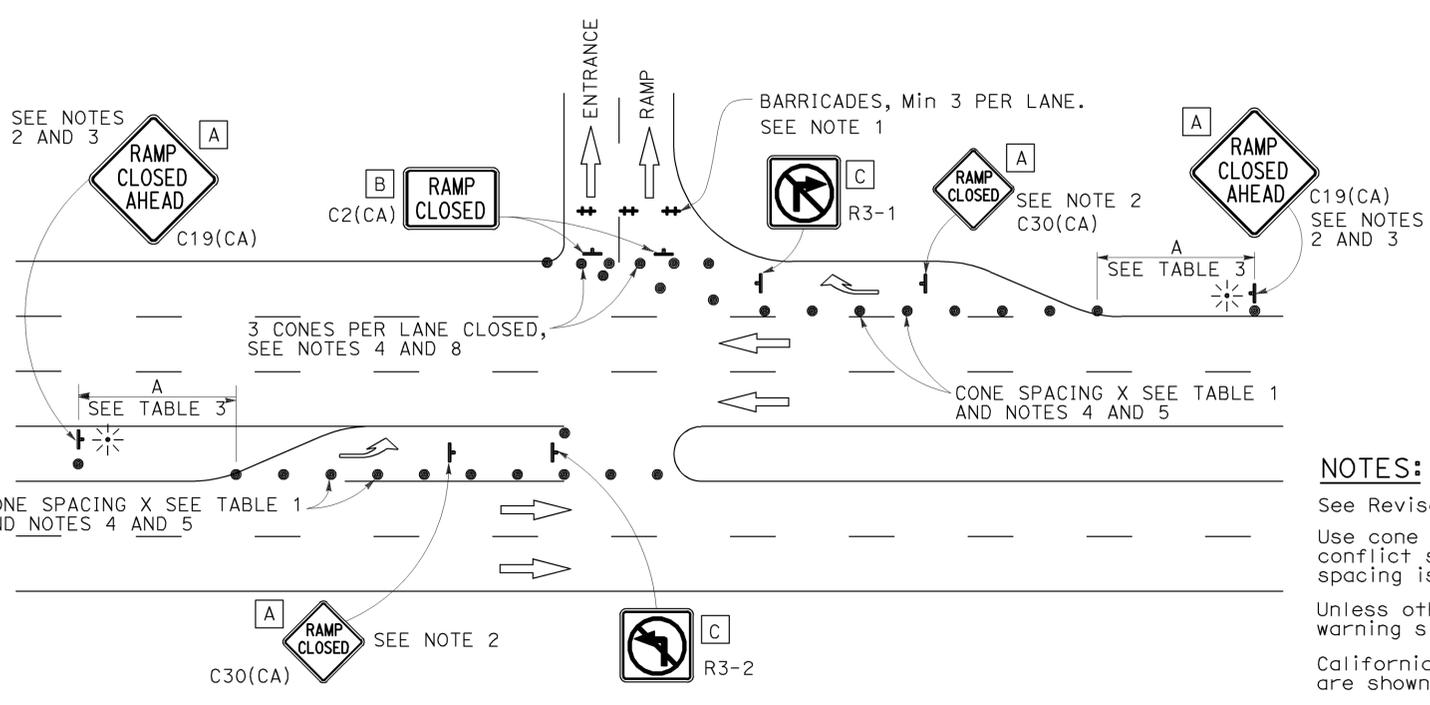
2010 REVISED STANDARD PLAN RSP T14



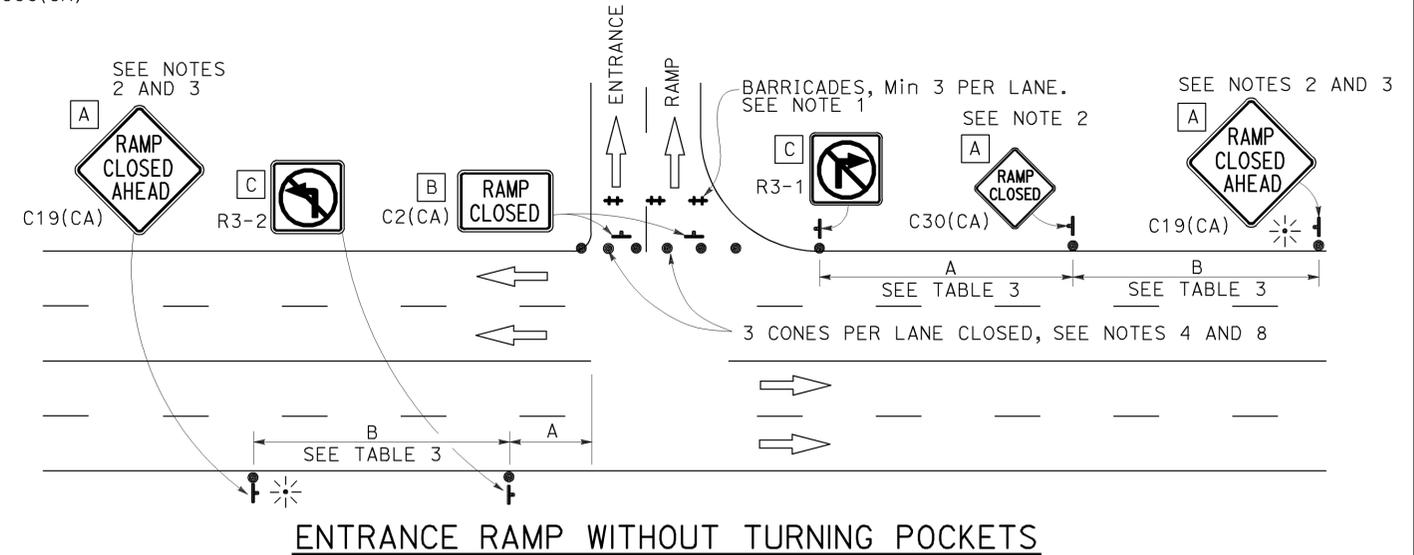
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

## NOTES:

1. See Revised Standard Plan RSP T9 for tables.
2. 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.
3. Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
4. California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

## NOTES:

1. 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.
2. 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.
3. 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.
4. All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
5. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
6. At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
7. The existing "EXIT" signs shall be covered during ramp closures.
8. A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.

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

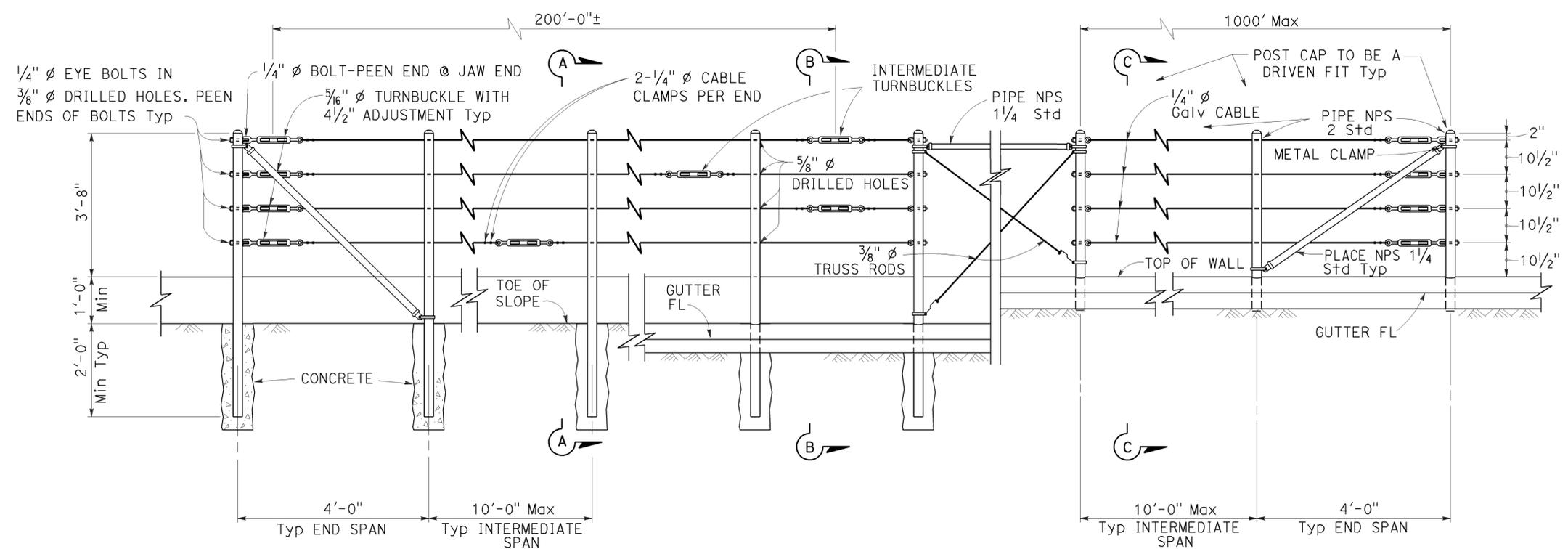
RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14  
 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.  
**REVISED STANDARD PLAN RSP T14**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	154	160

REGISTERED CIVIL ENGINEER  
 Tillet Satter  
 No. C42892  
 Exp. 3-31-12  
 CIVIL  
 STATE OF CALIFORNIA

October 21, 2011  
 PLANS APPROVAL DATE

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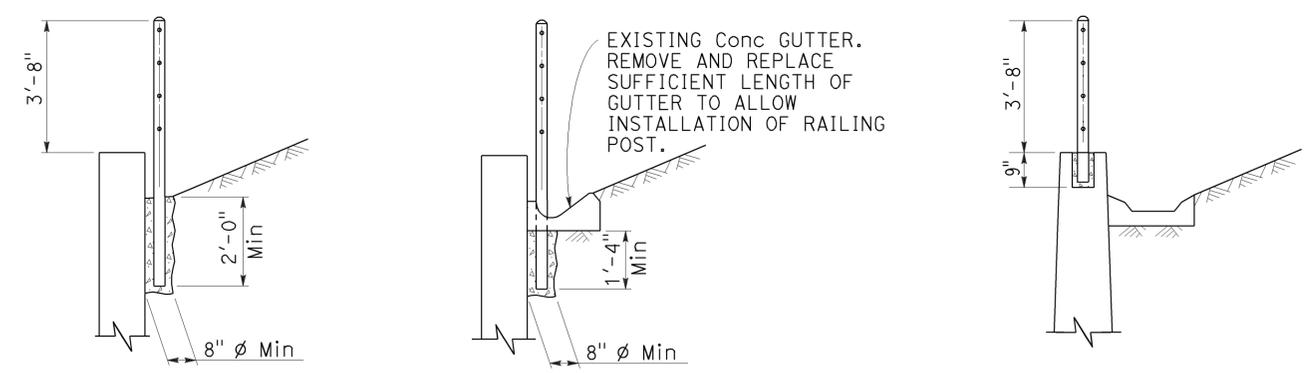


**EXISTING WALL (WITHOUT GUTTER)** Existing  
**RETAINING WALL (WITH GUTTER)** Existing  
**RETAINING WALL (WITH GUTTER)** New construction

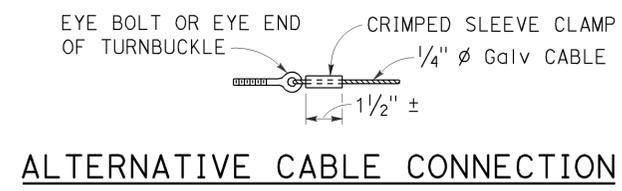
**ELEVATION**

**NOTES:**

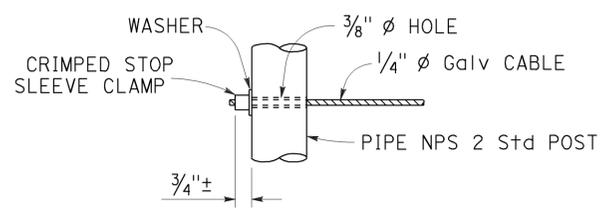
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining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



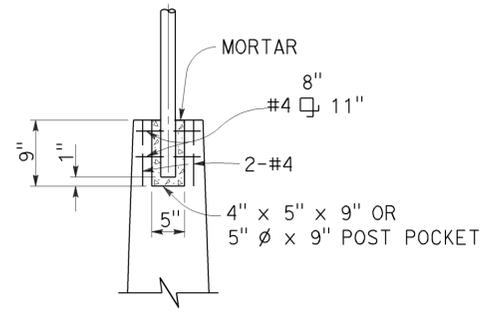
**SECTION A-A** Existing  
**SECTION B-B** Existing  
**SECTION C-C** New construction



**ALTERNATIVE CABLE CONNECTION**



**ALTERNATIVE DEAD END ANCHORAGE**



**POST POCKET**

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

NO SCALE

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

**REVISED STANDARD PLAN RSP B11-47**

2010 REVISED STANDARD PLAN RSP B11-47

**LEGEND:**

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

**ABBREVIATIONS**

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	155	160

*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 8-31-15

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

**MISCELLANEOUS ELECTROLIERS**

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

**NOTES:**

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

**STANDARD ELECTROLIER**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)**

NO SCALE

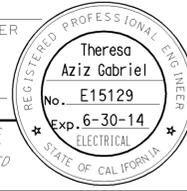
RSP ES-1A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

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

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	156	160

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



TO ACCOMPANY PLANS DATED 8-31-15

**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**

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

**FLASHING BEACON**

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

**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

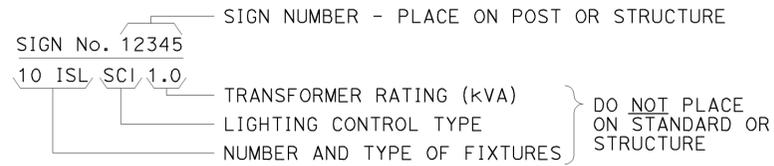
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

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.

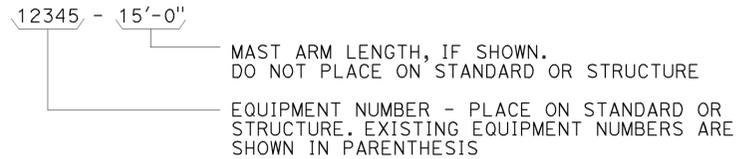
2010 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

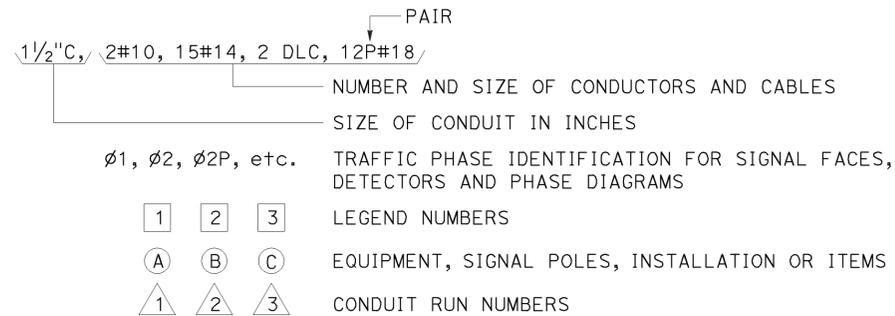
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



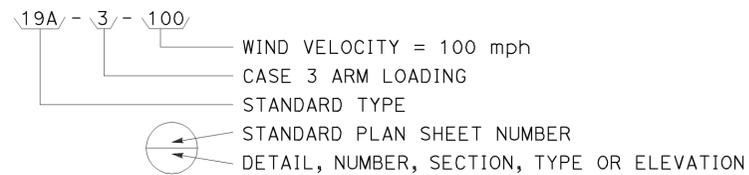
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



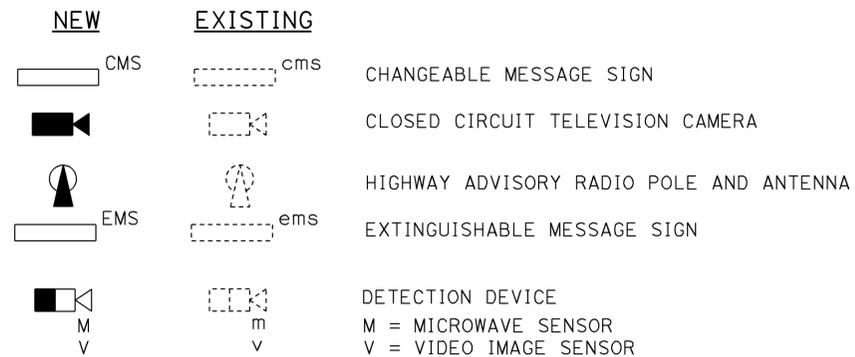
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



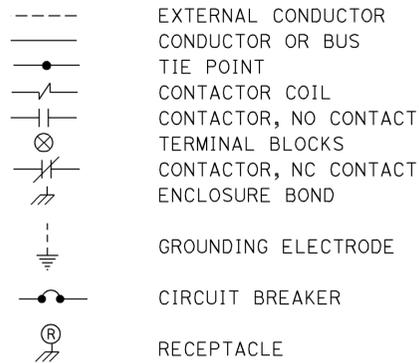
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



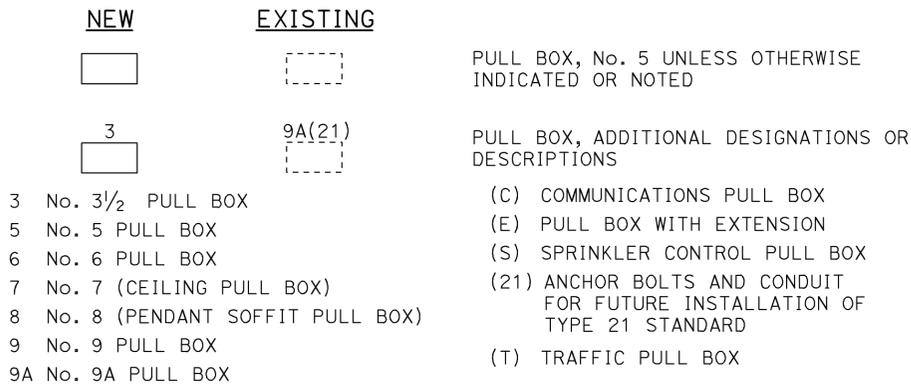
### MISCELLANEOUS EQUIPMENT



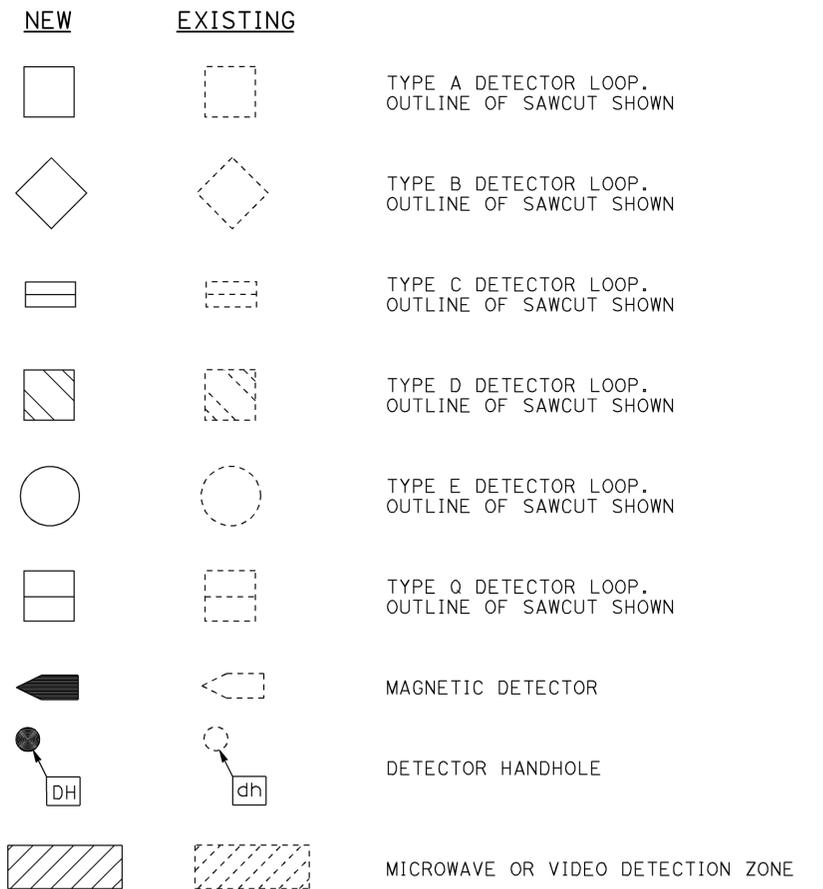
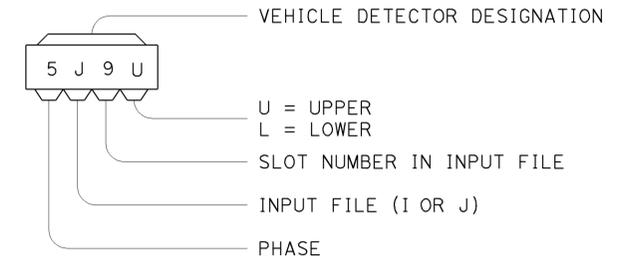
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

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

2010 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	18.4/23.2	158	160

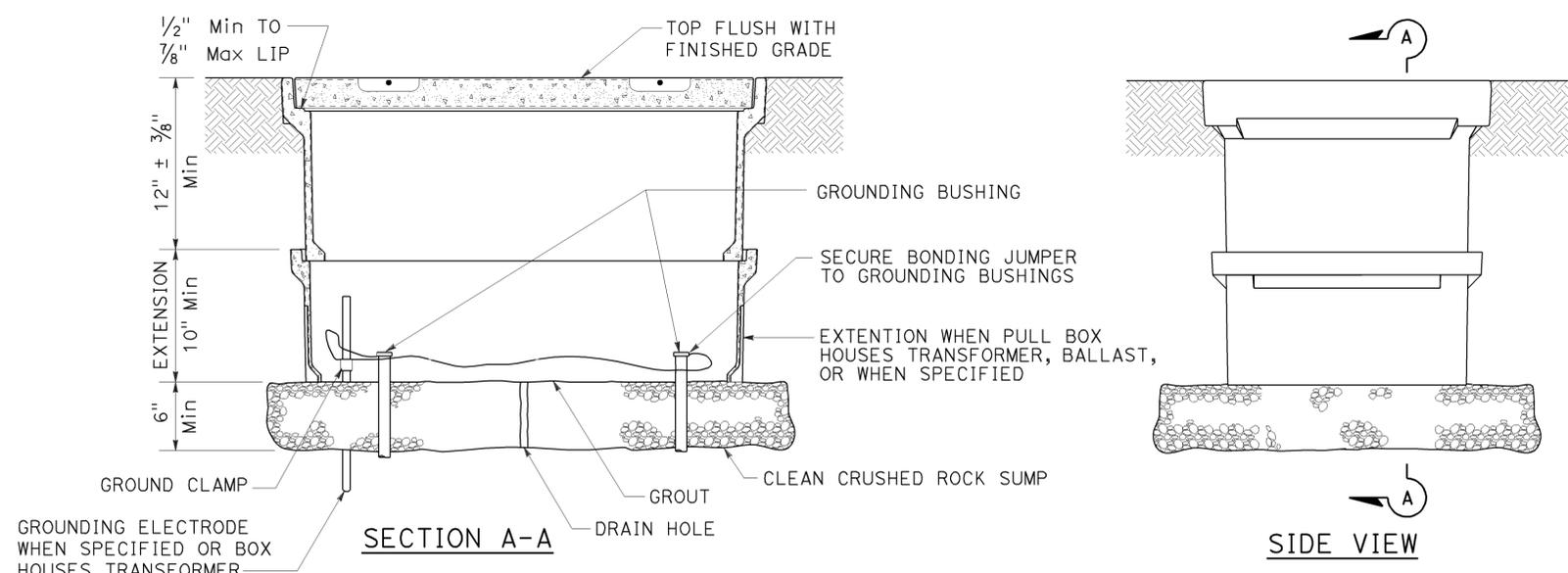
Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

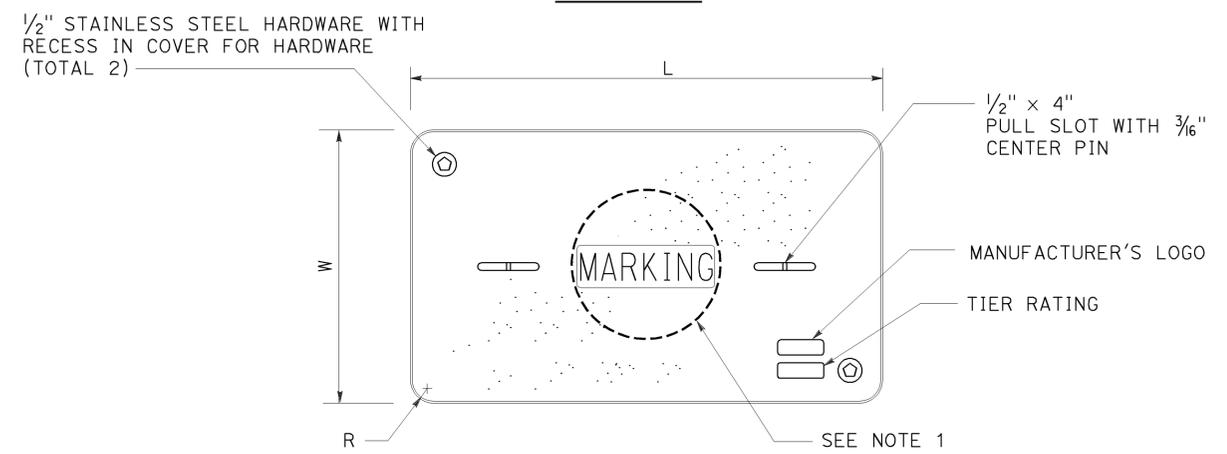
Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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

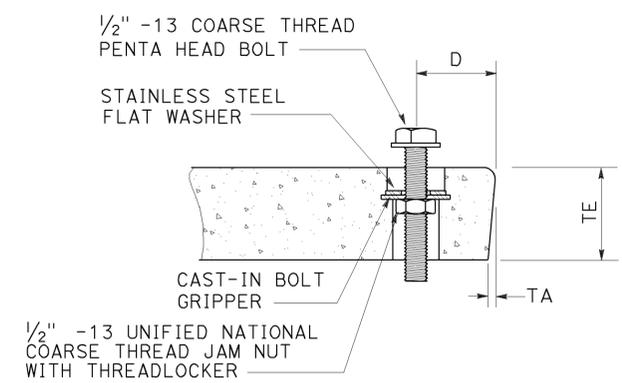
TO ACCOMPANY PLANS DATED 8-31-15



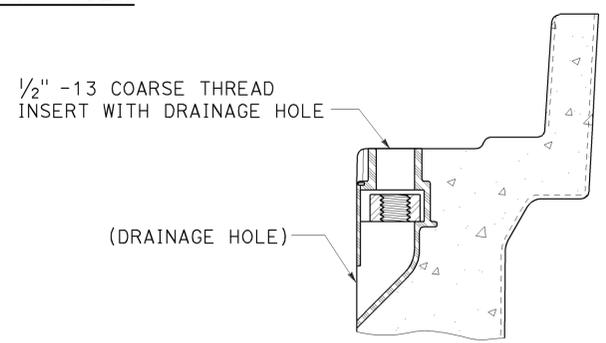
**INSTALLATION DETAILS**  
**DETAIL A**



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

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

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

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

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

2010 REVISED STANDARD PLAN RSP ES-8A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	18.4/23.2	159	160

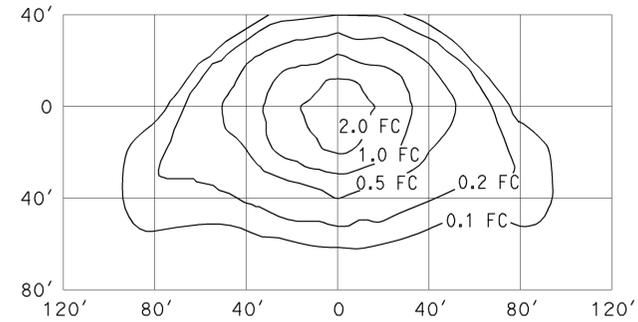
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

July 19, 2013  
 PLANS APPROVAL DATE

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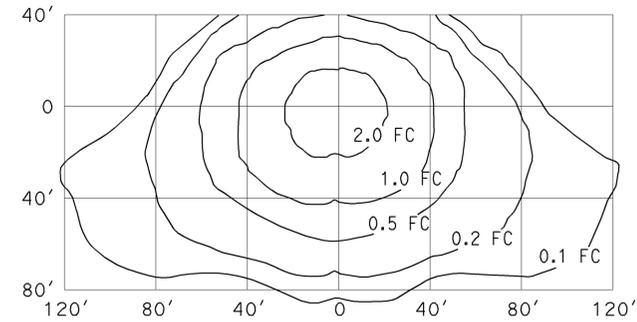
TO ACCOMPANY PLANS DATED 8-31-15

**ISOFOOTCANDLE CURVE - MINIMUM**



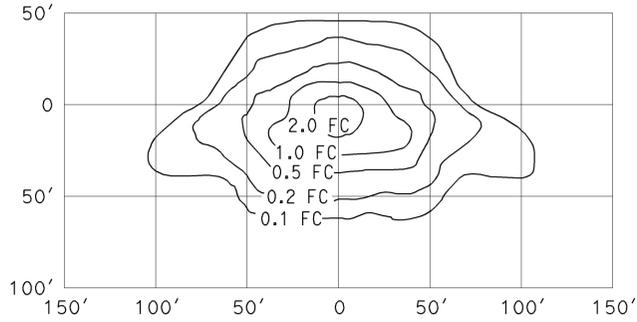
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 34' Mounting Height  
 Lamp operated at 22,000 lm  
 200-W high pressure sodium lamp  
 ANSI Designation S66

**ISOFOOTCANDLE CURVE - MINIMUM**



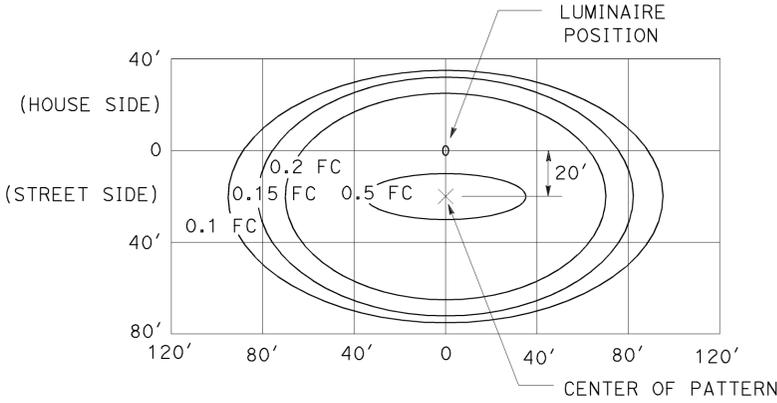
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 40' Mounting Height  
 Lamp operated at 37,000 lm  
 310-W high pressure sodium lamp  
 ANSI Designation S67

**ISOFOOTCANDLE CURVE - MINIMUM**



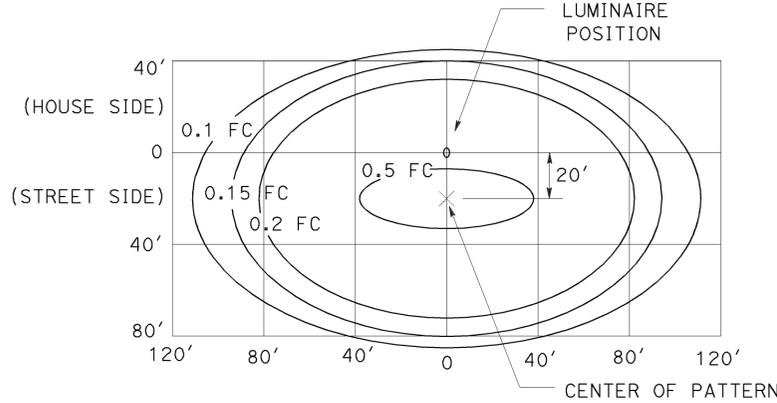
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 30' Mounting Height  
 Lamp operated at 16,000 lm  
 150-W high pressure sodium lamp  
 ANSI Designation S55

**ISOFOOTCANDLE CURVE - MINIMUM**



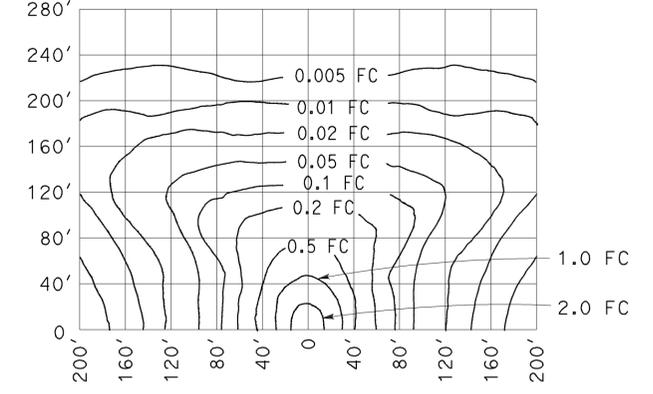
**LED LUMINAIRE ROADWAY 1**  
 165-W at 34' Mounting Height

**ISOFOOTCANDLE CURVE - MINIMUM**



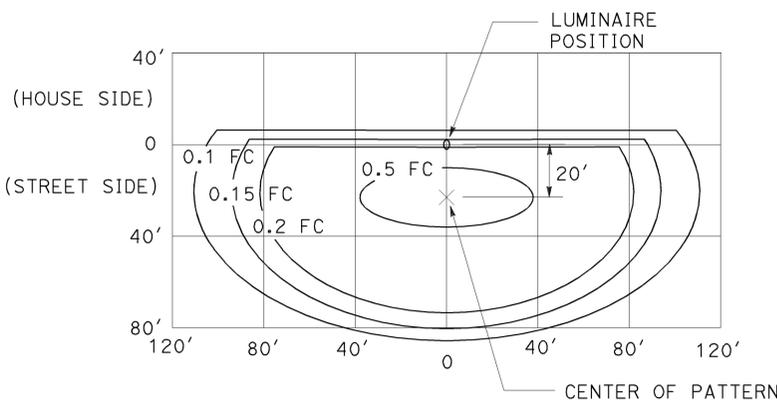
**LED LUMINAIRE ROADWAY 2**  
 235-W at 40' Mounting Height

**ISOFOOTCANDLE CURVE - MINIMUM**



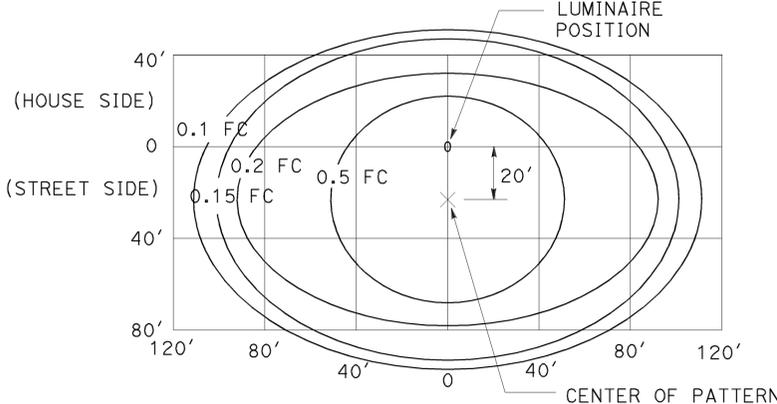
**LOW PRESSURE SODIUM LUMINAIRE**  
 40' Mounting Height  
 Lamp operated at 33,000 lm  
 180-W low pressure sodium lamp

**ISOFOOTCANDLE CURVE - MINIMUM**



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

**ISOFOOTCANDLE CURVE - MINIMUM**

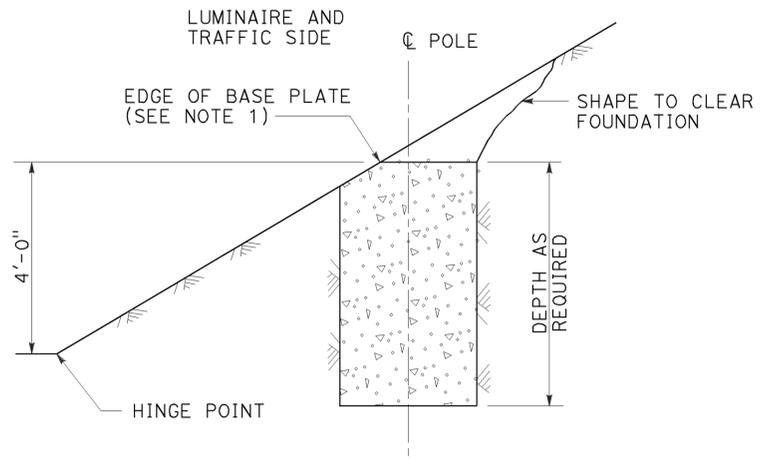


**LED LUMINAIRE ROADWAY 4**  
 300-W at 40' Mounting Height

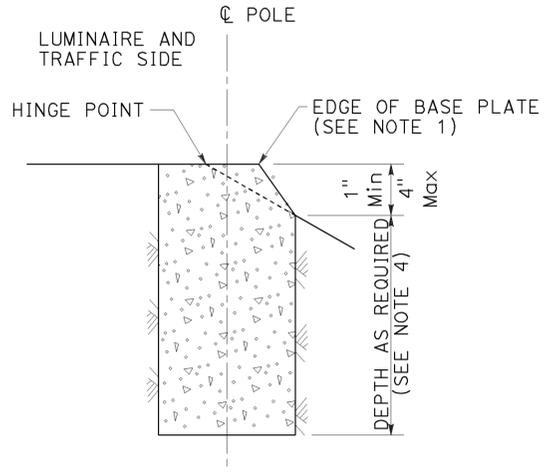
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (ISOFOOTCANDLE DIAGRAMS)**

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.

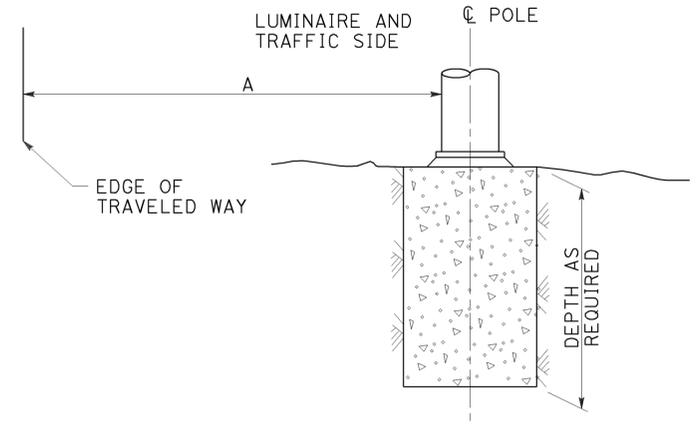
2010 REVISED STANDARD PLAN RSP ES-10A



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

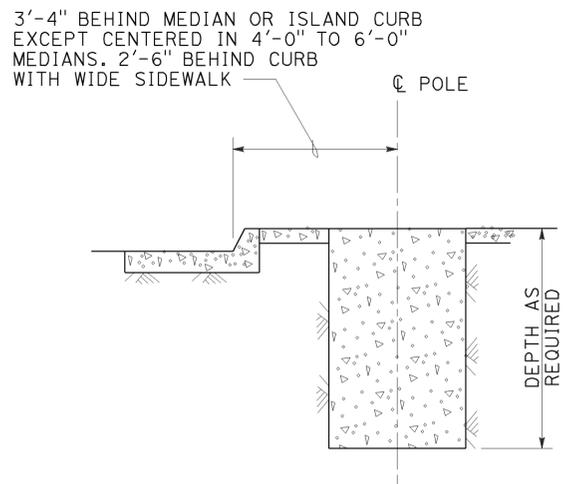
TO ACCOMPANY PLANS DATED 8-31-15

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

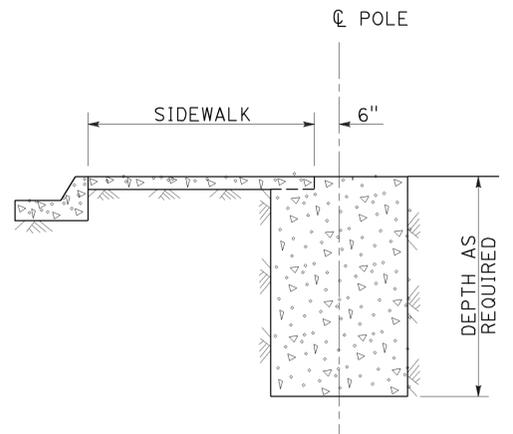
FOUNDATIONS ADJACENT TO ALL ROADWAYS EXCEPT  
IN SIDEWALK, MEDIAN AND ISLAND AREAS  
DETAIL A

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.