

INDEX OF PLANS

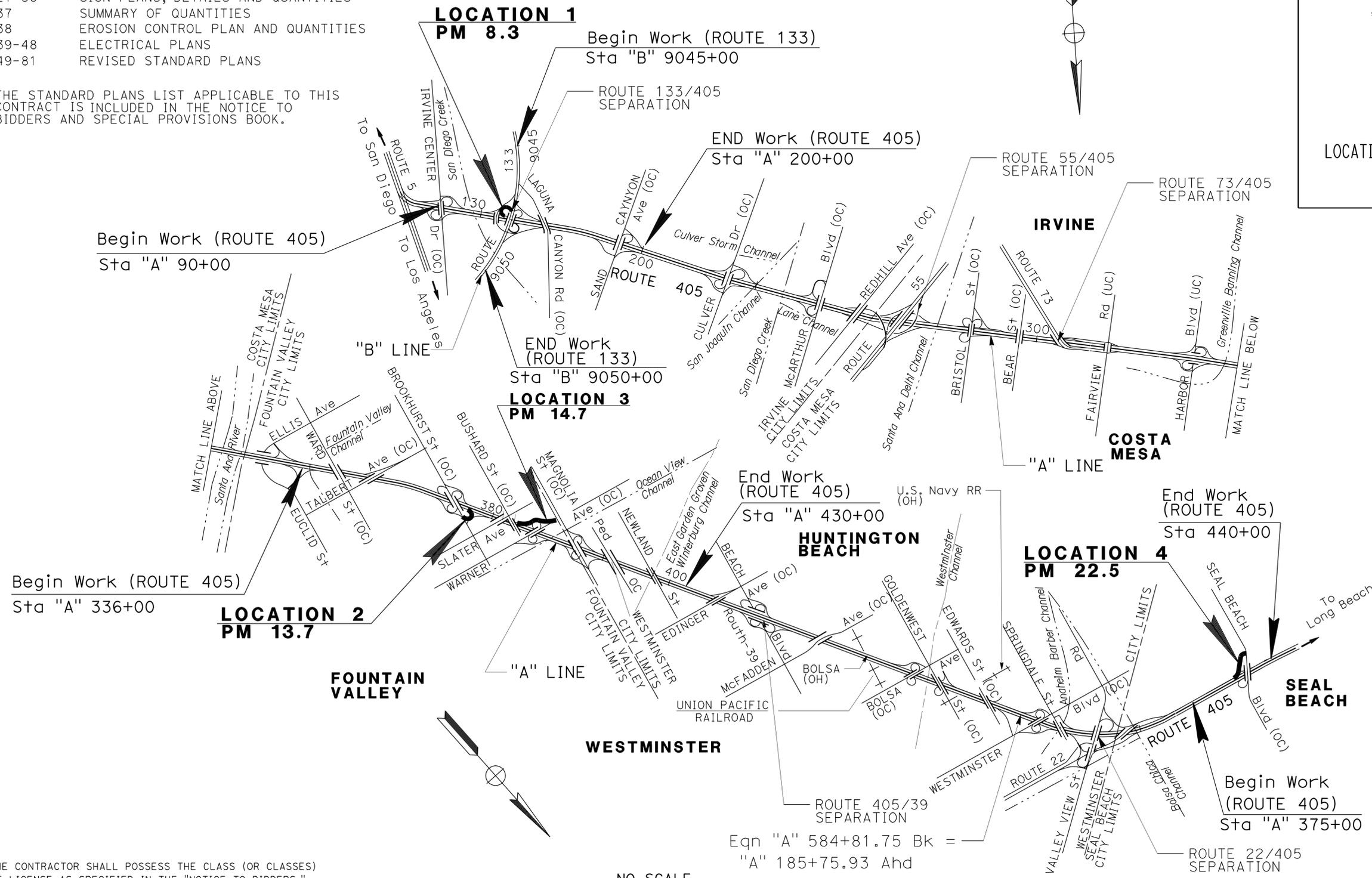
SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTION
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8	PROFILE AND SUPERELEVATION DIAGRAM
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA **ACHSNHP - X059(071)E**
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN ORANGE COUNTY
AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133, 405	8.3, 13.7, 14.7, 22.5	1	81



PROJECT MANAGER	BOB BAZARGAN
DESIGN MANAGER	MATTHEW CUGINI

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

NO SCALE



USERNAME => s111173
DGN FILE => 1213000185ab001.dgn

UNIT 2994 PROJECT NUMBER & PHASE 12120000571

STEVEN LE 10-29-15
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
 November 09, 2015
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONTRACT No.	12-ON2504
PROJECT ID	1213000185

DATE PLOTTED => 23-DEC-2015 TIME PLOTTED => 10:47

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	3	81

10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

CURVE DATA

No.	R	Δ	T	L
①	5000'	09°19'13"	407.57'	813.34'
②	175'	136°41'18"	440.74'	417.49'
③	175'	136°40'16"	440.55'	417.44'
④	6000'	03°43'56"	195.49'	390.84'
⑤	5036'	22°17'16"	992.04'	1958.99'

NOTE:

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

LEGEND:

- X STRUCTURAL SECTION TYPE SEE SHEET X-1
- CURVE No.

ABBREVIATIONS:

- SCG SOUTHERN CALIFORNIA GAS COMPANY
- SCE SOUTHERN CALIFORNIA EDISON
- TeI TELEPHONE - VERIZON

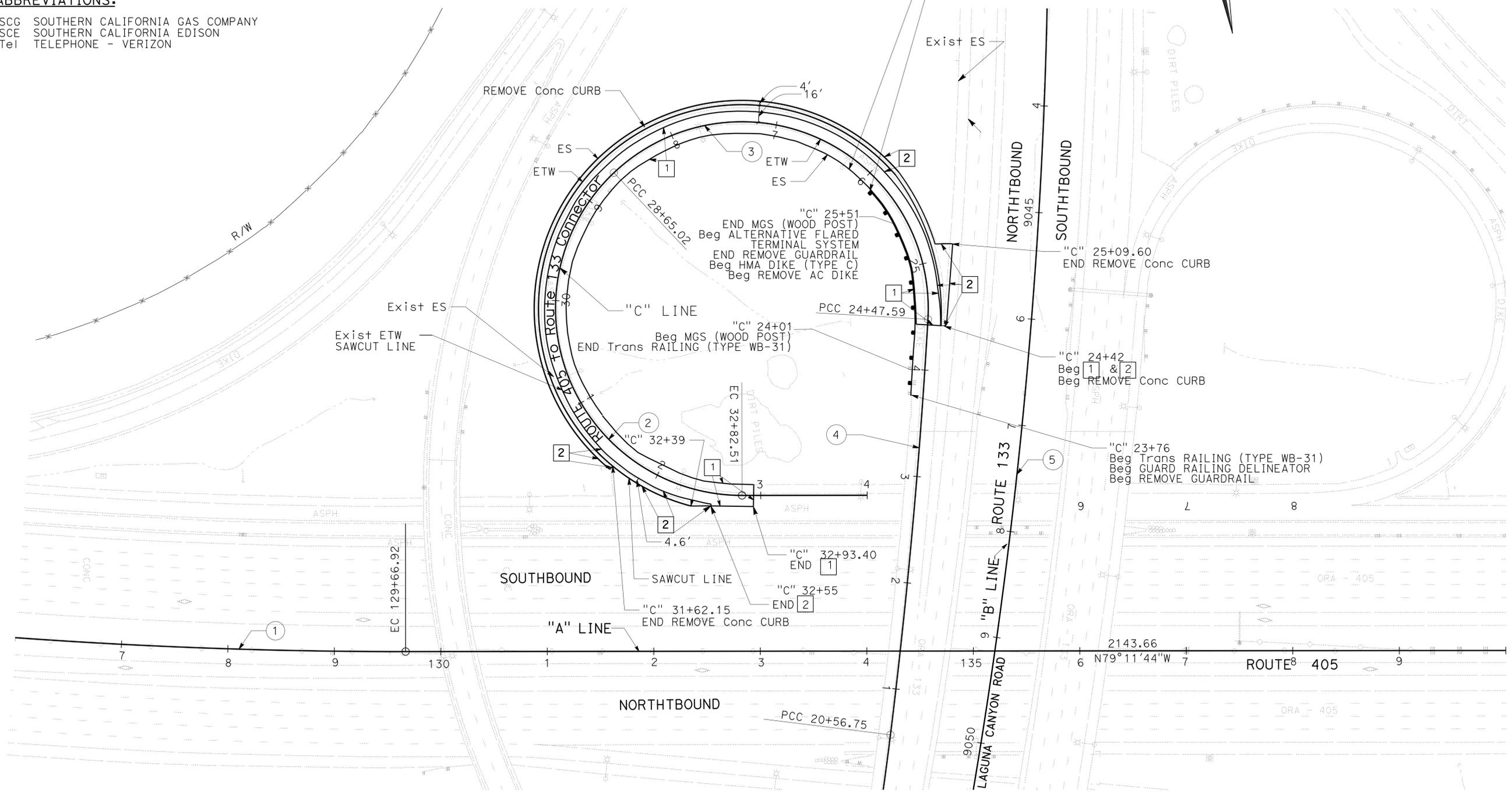
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

REVISOR: STEVEN LE
DATE: 10-29-15

DESIGNER: KEITH DESILVA

CHECKED BY: [Blank]

FUNCTIONAL SUPERVISOR: MATTHEW O. CUGINI



LAYOUT (LOCATION 1)
SCALE : 1"=50'

L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 MATTHEW O. CUGINI

CALCULATED/DESIGNED BY
 CHECKED BY

STEVEN LE
 KEITH DESILVA

REVISED BY
 DATE REVISED

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

CURVE DATA

No.	R	Δ	T	L
14	149'	224°19'52"	364.52'	581.44'

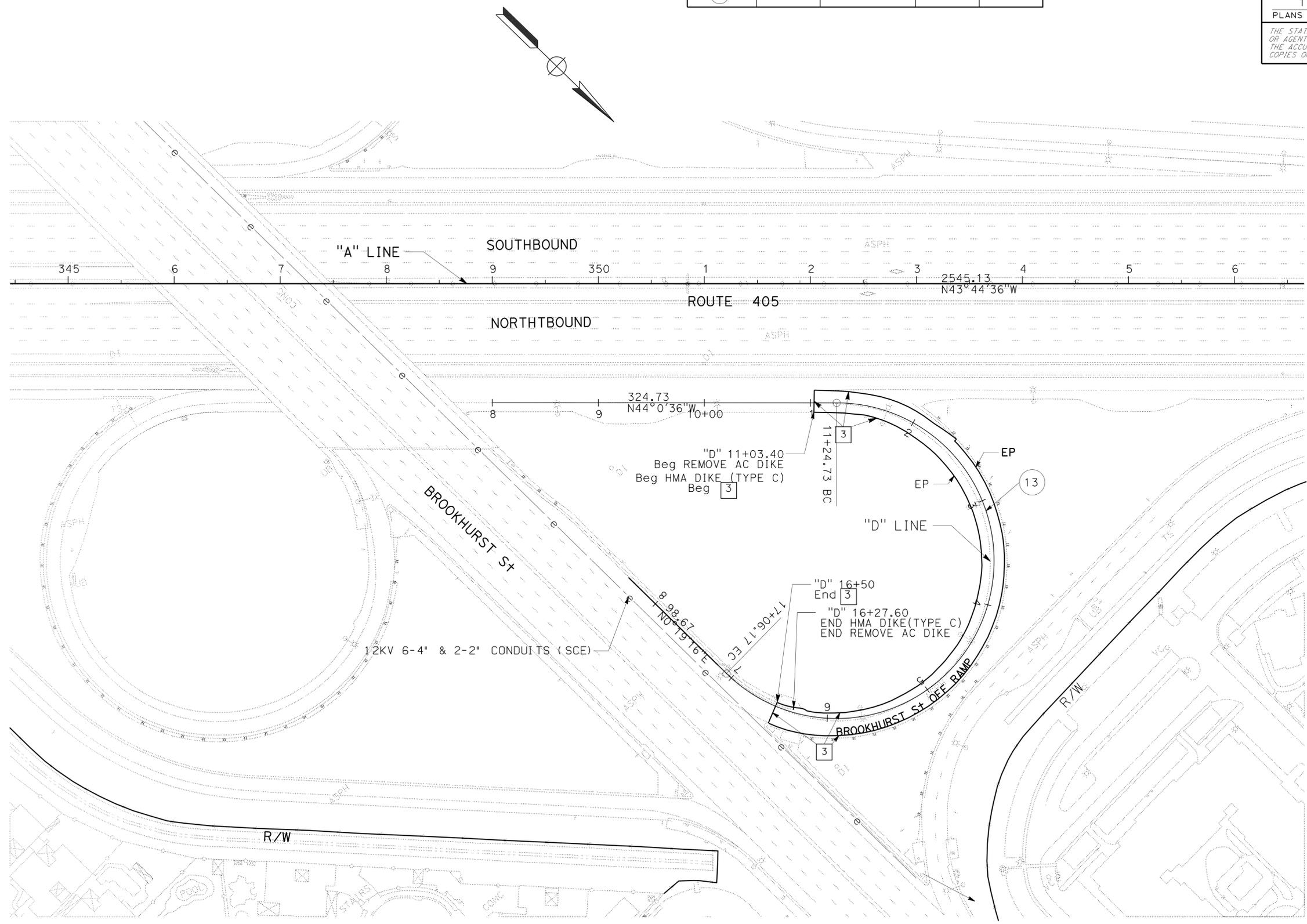
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	4	81

REGISTERED CIVIL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL

10-29-15
 DATE

11-09-15
 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.



LAYOUT
(LOCATION 2)
 SCALE : 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 MATTHEW O. CUGINI

CALCULATED/DESIGNED BY
 CHECKED BY

STEVEN LE
 KEITH DESILVA

REVISED BY
 DATE REVISED

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

CURVE DATA

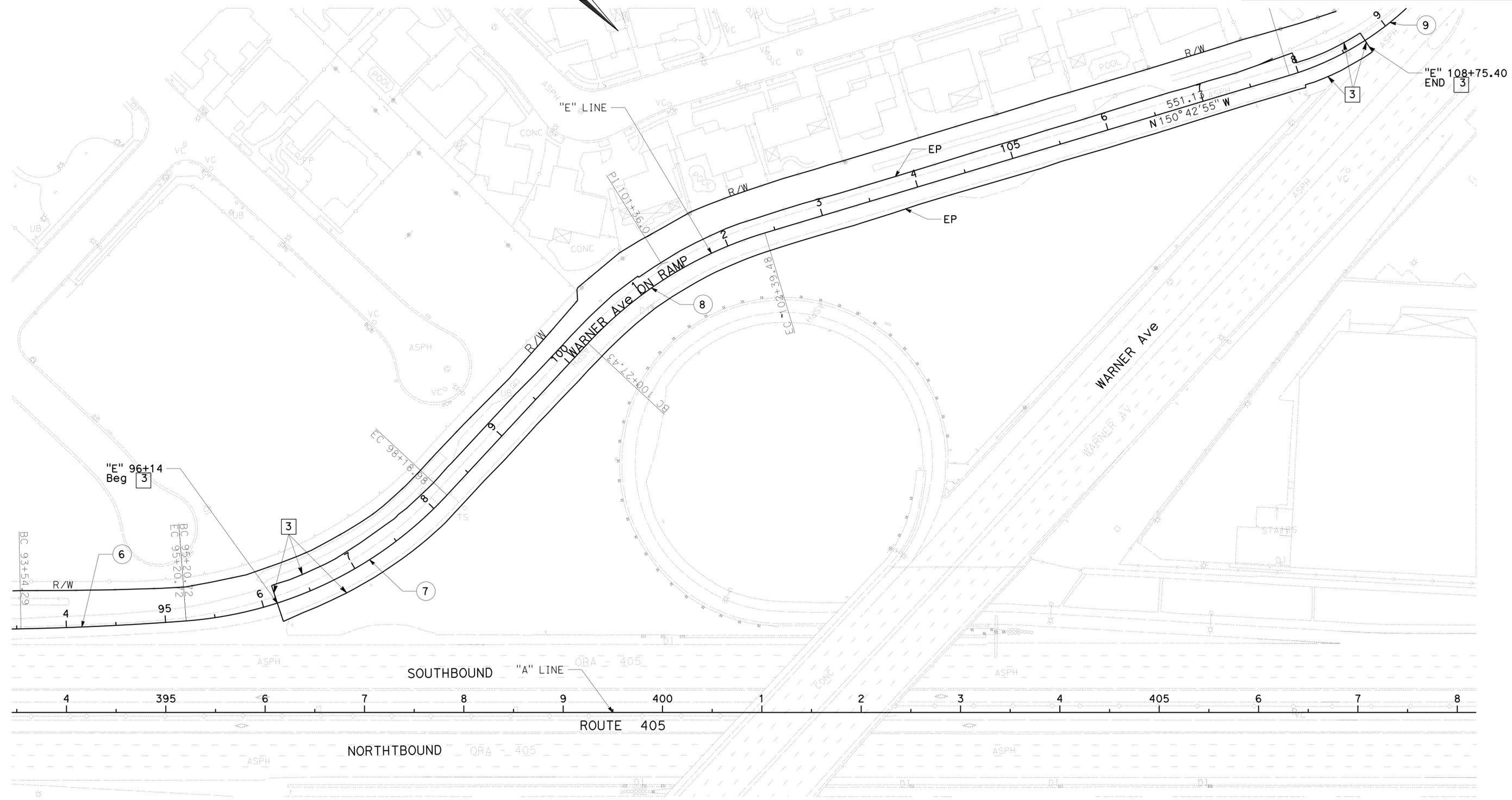
No.	R	Δ	T	L
6	910'	03°11'34"	25.37'	50.73'
7	122'	42°43'25"	47.68'	90.91'
8	122'	30°22'08"	33.09'	64.63'
9	91'	30°10'16"	24.64'	48.14'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405'	8.3, 13.7, 14.7, 22.5	5	81

Steven Le
 REGISTERED CIVIL ENGINEER DATE 10-29-15
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

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LAYOUT
(LOCATION 3)
 SCALE : 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	6	81

Steven Le 10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

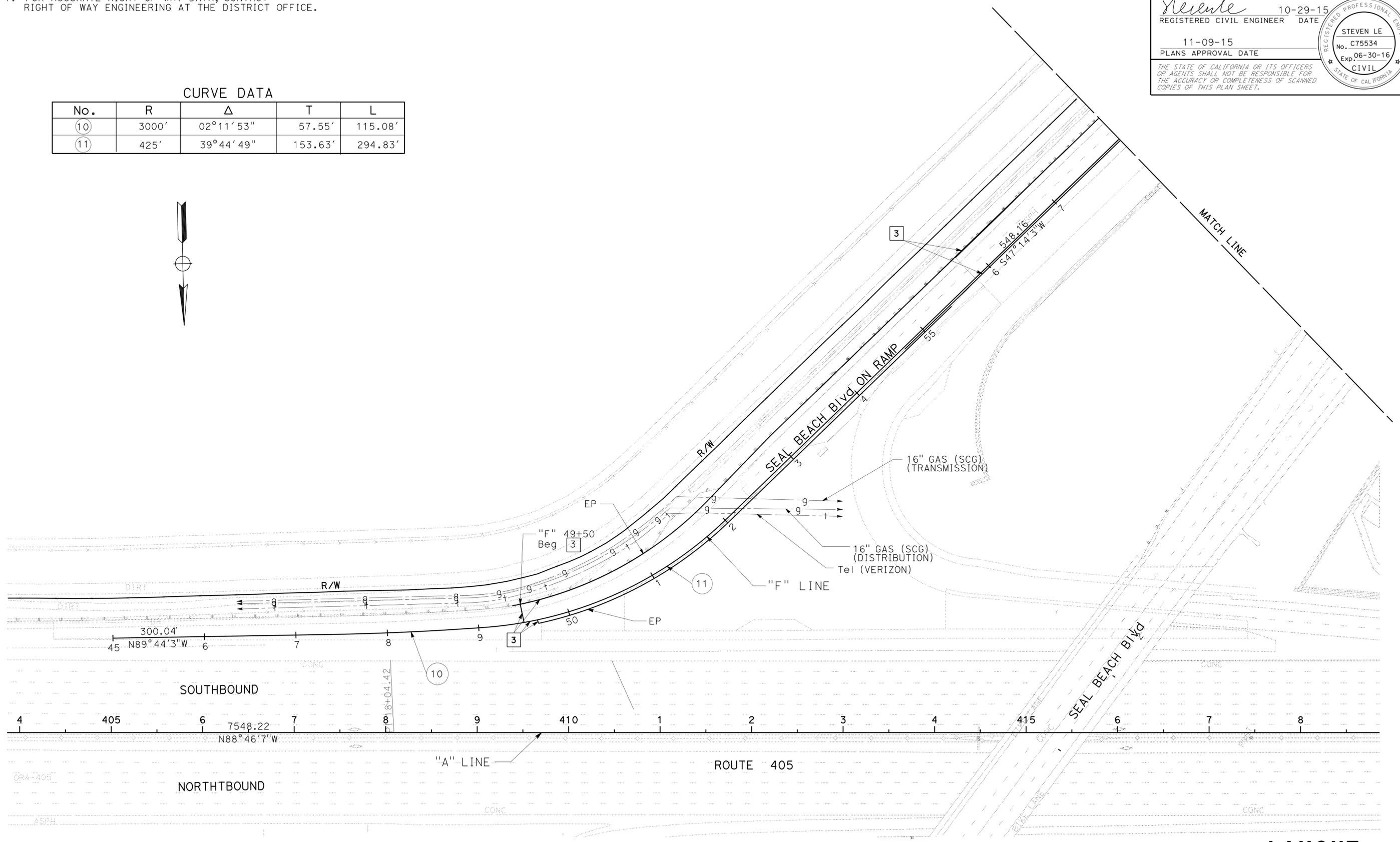
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

CURVE DATA				
No.	R	Δ	T	L
10	3000'	02°11'53"	57.55'	115.08'
11	425'	39°44'49"	153.63'	294.83'

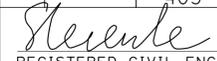
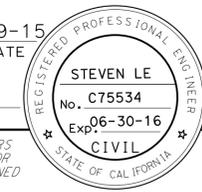


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
 FUNCTIONAL SUPERVISOR: MATTHEW O. CUGINI
 CALCULATED/DESIGNED BY: KEITH DESILVA
 CHECKED BY:
 REVISOR: STEVEN LE
 DATE: 11-09-15
 REVISION: 10-29-15



LAYOUT
 (LOCATION 4)
 SCALE : 1"=50'

L-4

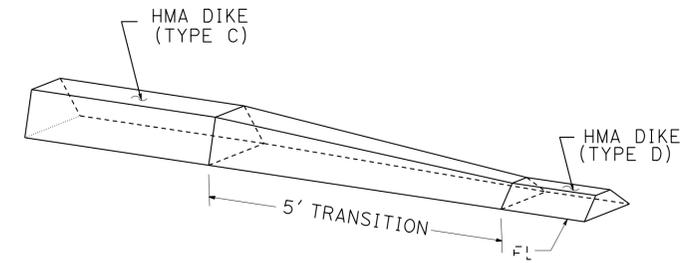
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	9	81
 REGISTERED CIVIL ENGINEER DATE 10-29-15					
PLANS APPROVAL DATE 11-09-15					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

LEGEND:

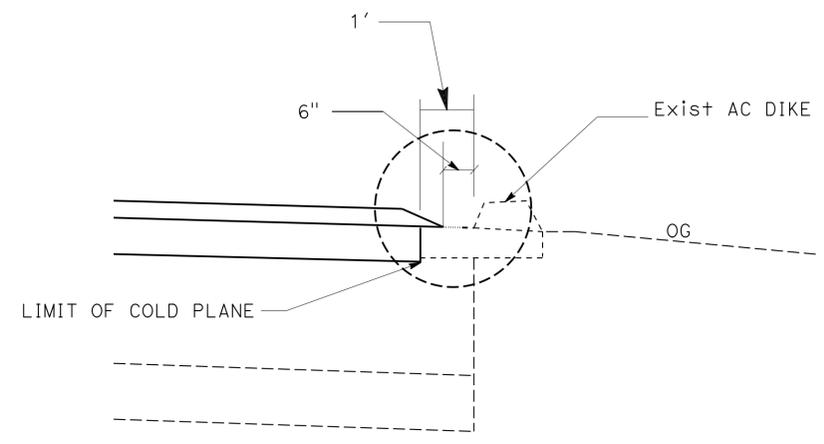
[X] STRUCTURAL SECTION TYPE
SEE SHEET X-1

NOTE :

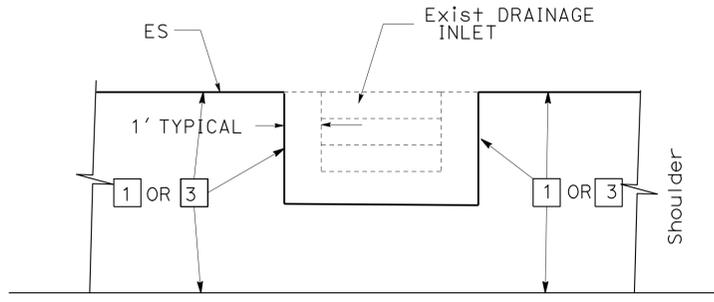
1. USE 15'-7 1/2" LENGTH RAIL.



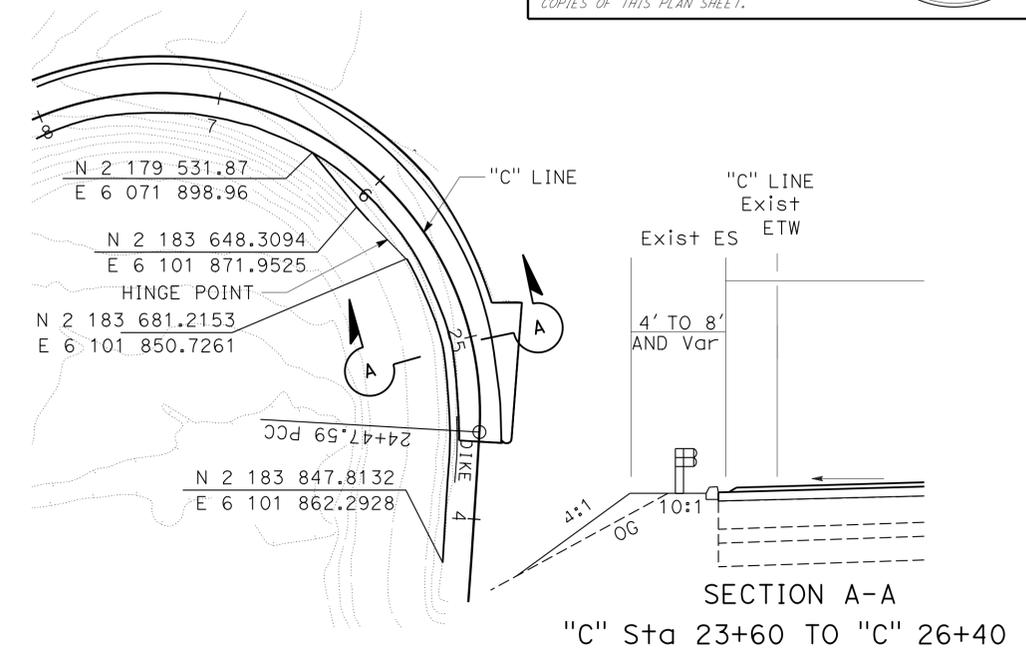
DETAIL B
HMA DIKE TRANSITION



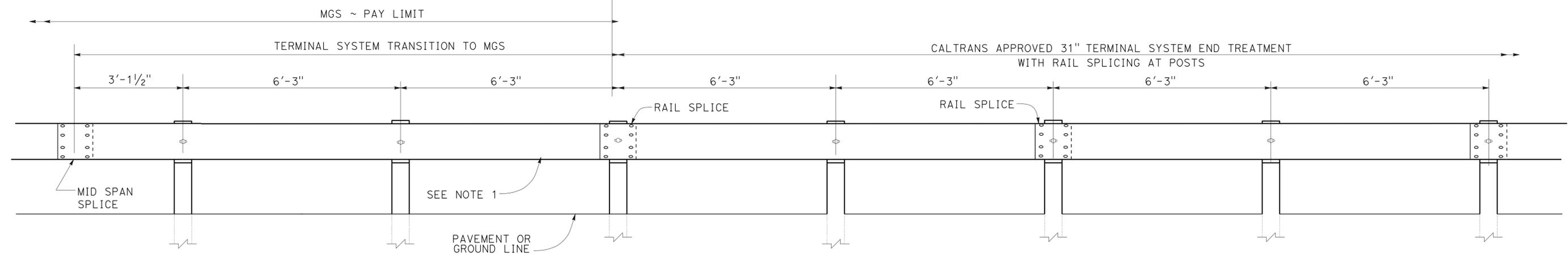
DETAIL C



LIMITS OF STRUCTURAL SECTION TYPE 1 OR 3
ADJACENT TO INLET
TYPICAL
DETAIL A



DETAIL D



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

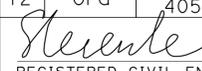
CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

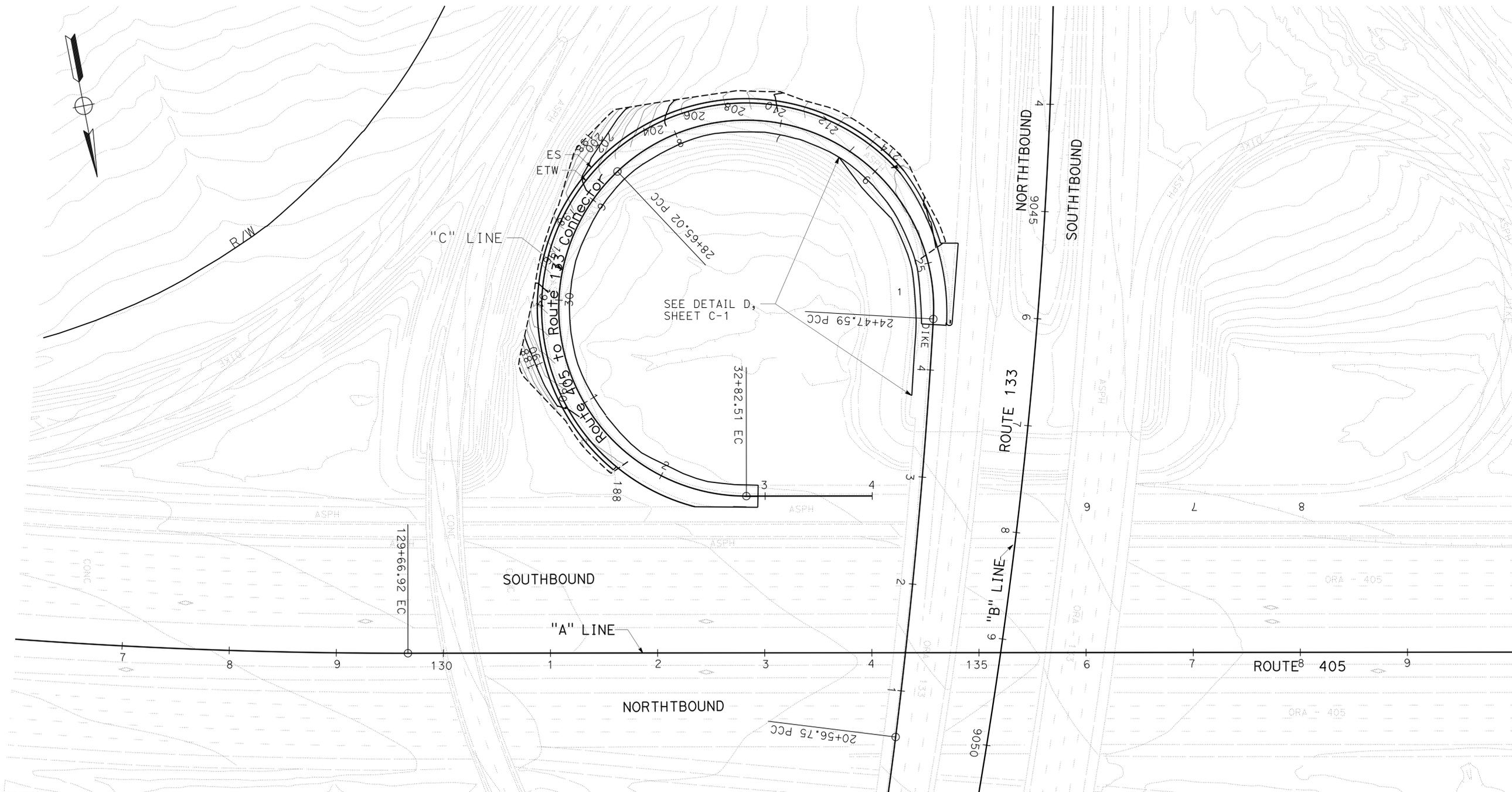
 DESIGN
 MATTHEW O. CUGINI
 FUNCTIONAL SUPERVISOR
 KEITH DESILVA
 CHECKED BY
 STEVEN LE
 DESIGNED BY
 REVISOR
 DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	10	81
			10-29-15		
REGISTERED CIVIL ENGINEER			DATE		
11-09-15			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:

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
	
FUNCTIONAL SUPERVISOR	MATTHEW O. CUGINI
CALCULATED/DESIGNED BY	CHECKED BY
STEVEN LE	KEITH DESILVA
REVISED BY	DATE REVISED



APPROVED FOR CONTOUR GRADING WORK ONLY

COUNTOUR GRADING
(LOCATION 1)
 SCALE : 1"=50'

G-1



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW O. CUGINI
 CHECKED BY: KEITH DESILVA
 REVISIONS: (None listed)

NOTES:

- EXACT LOCATIONS OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
- FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS, SEE SHEETS SCQ-1 & THQ-1.

LEGEND:

- (X) CONSTRUCTION AREA SIGN No.
- ↑ CONSTRUCTION AREA SIGN, 1-POST
- CONSTRUCTION AREA

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

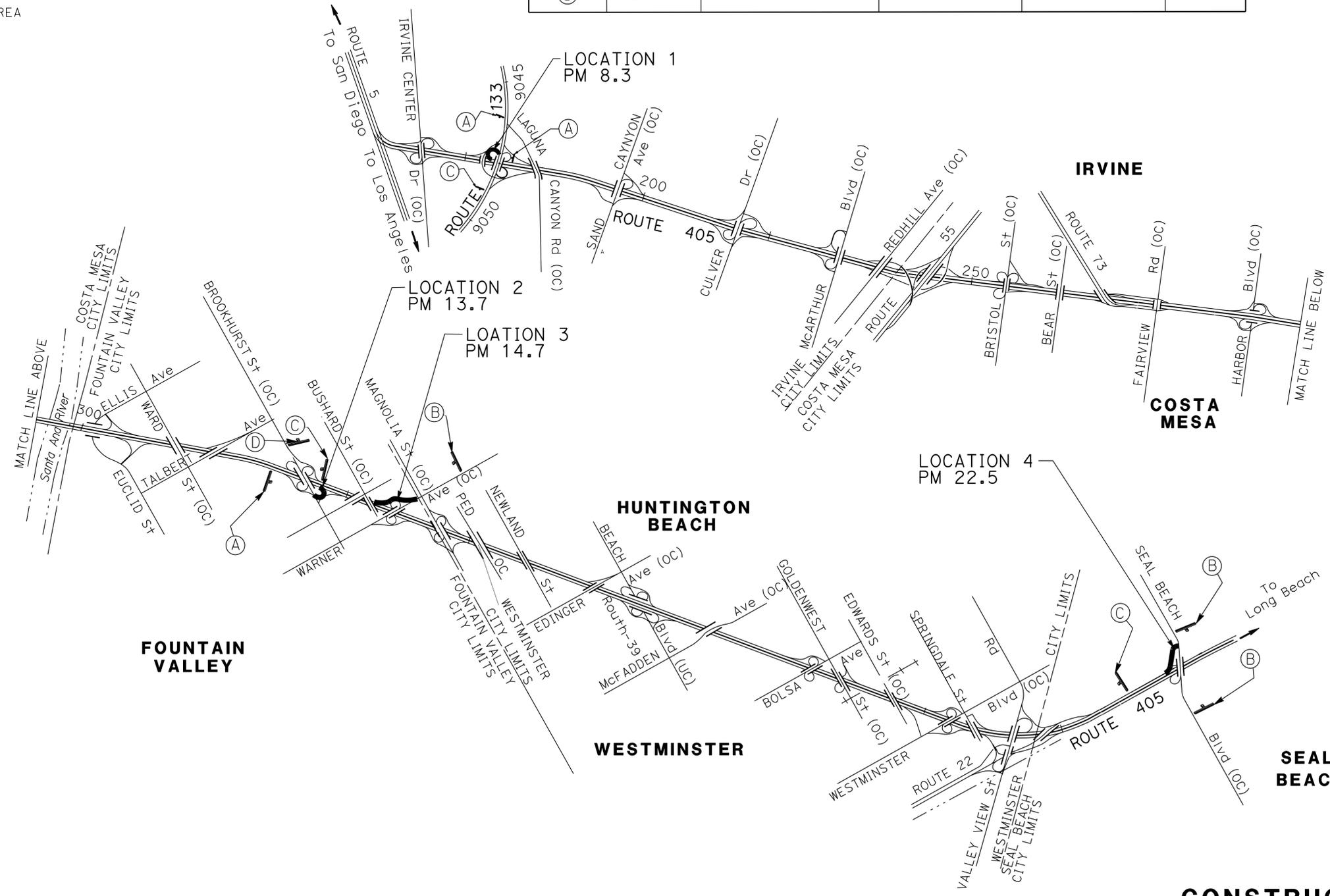
SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POSTS AND SIZE	No OF SIGNS
(A)	W20-1	ROAD WORK AHEAD	48" X 48'	1 -6" X 6"	3
(B)	W20-1	ROAD WORK AHEAD	36" X 36"	1 -6" X 6"	3
(C)	G20-2	END ROAD WORK	48" X 24"	1 -6" X 6"	3
(D)	G20-2	END ROAD WORK	36" X 36'	1 -6" X 6"	1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	11	81

REGISTERED CIVIL ENGINEER: *Steven Le*
 DATE: 10-29-15
 PLANS APPROVAL DATE: 11-09-15

REGISTERED PROFESSIONAL ENGINEER: STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL

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CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

APPROVED FOR TRAFFIC HANDLING WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	13	81

Steven Le 10-29-15
 REGISTERED CIVIL ENGINEER DATE

11-09-15
 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.

STAGE CONSTRUCTION QUANTITIES

SHEET No.	ALIGNMENT AND STATIONS	PAINT TRAFFIC STRIPE (2-COAT)			PAVEMENT MARKER (RETROREFLECTIVE)	TEMPORARY CRASH CUSHION MODULE		TEMPORARY RAILING (TYPE K)	TEMPORARY TRAFFIC SCREEN	CHANNELIZER (SURFACE MOUNTED)	REMOVE PAINTED TRAFFIC STRIPE	REMOVE PAVEMENT MARKER	
		DETAIL 25A 4" SOLID YELLOW	DETAIL 27B 4" SOLID WHITE	DETAIL 36\ 36A 8" SOLID WHITE		TYPE H	ARRAY TS 14						ARRAY TU 17
		LF	LF	LF		EA	EA						EA
SC-1	LINE "C" 24+42 TO 32+82	726			140			848	848		726	140	
SC-1	LINE "B" 9045+20 TO 9046+10					14		96		8			
SC-1	LINE "A" 131+70 TO 133+63			200			17	120	120	8	400		
SC-1	LINE "B" 9047+05 TO LINE "A" 138+20		1552								1552		
SC-1	LINE "C" 31+64 TO 33+62			200							400		
SC-1	LINE "B" 9047+05 TO LINE "C" 24+42			95									
	SUB TOTAL	726	1552	495	140	14	17	1064	968	16	3078	140	
	TOTAL	2773			140*	31		1064	968	16	3078	140*	

* FOR GRAND TOTAL OF PAVEMENT MARKER (RETRO REFLECTIVE) & REMOVE Pvm+ MARKER, SEE SHEET PDQ-1.

CONSTRUCTION AREA SIGNS (STAGE CONSTRUCTION)

SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POST AND SIZE	No. OF SIGNS
C30A(CA)	SHOULDER CLOSED	48" X 48"	1 - 4" X 6"	3
C31A(CA)	NO SHOULDER	48" X 48"	1 - 4" X 6"	3

FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS , SEE SHEET CS-1 AND THQ-1

STAGE CONSTRUCTION QUANTITIES

SCQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 Et Caltrans®
 MATTHEW O. CUGINI
 FUNCTIONAL SUPERVISOR
 CHECKED BY
 KEITH DESILVA
 REVISOR
 DATE REVISOR



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	14	81

Steven Le 10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

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NOTES:

1. LOCATIONS OF CONSTRUCTION AREA SIGNS AND PCMS ARE APPROXIMATE
2. EXACT LOCATIONS OF CONSTRUCTION AREA SIGNS AND MESSAGE ON PCMS TO BE DETERMINED BY THE ENGINEER.

LEGEND:

- CONSTRUCTION AREA SIGN (DETOUR) No.
- DIRECTION OF TRAVEL
- CONSTRUCTION AREA SIGN (DETOUR) No.
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- CLOSURE

CLOSURE:

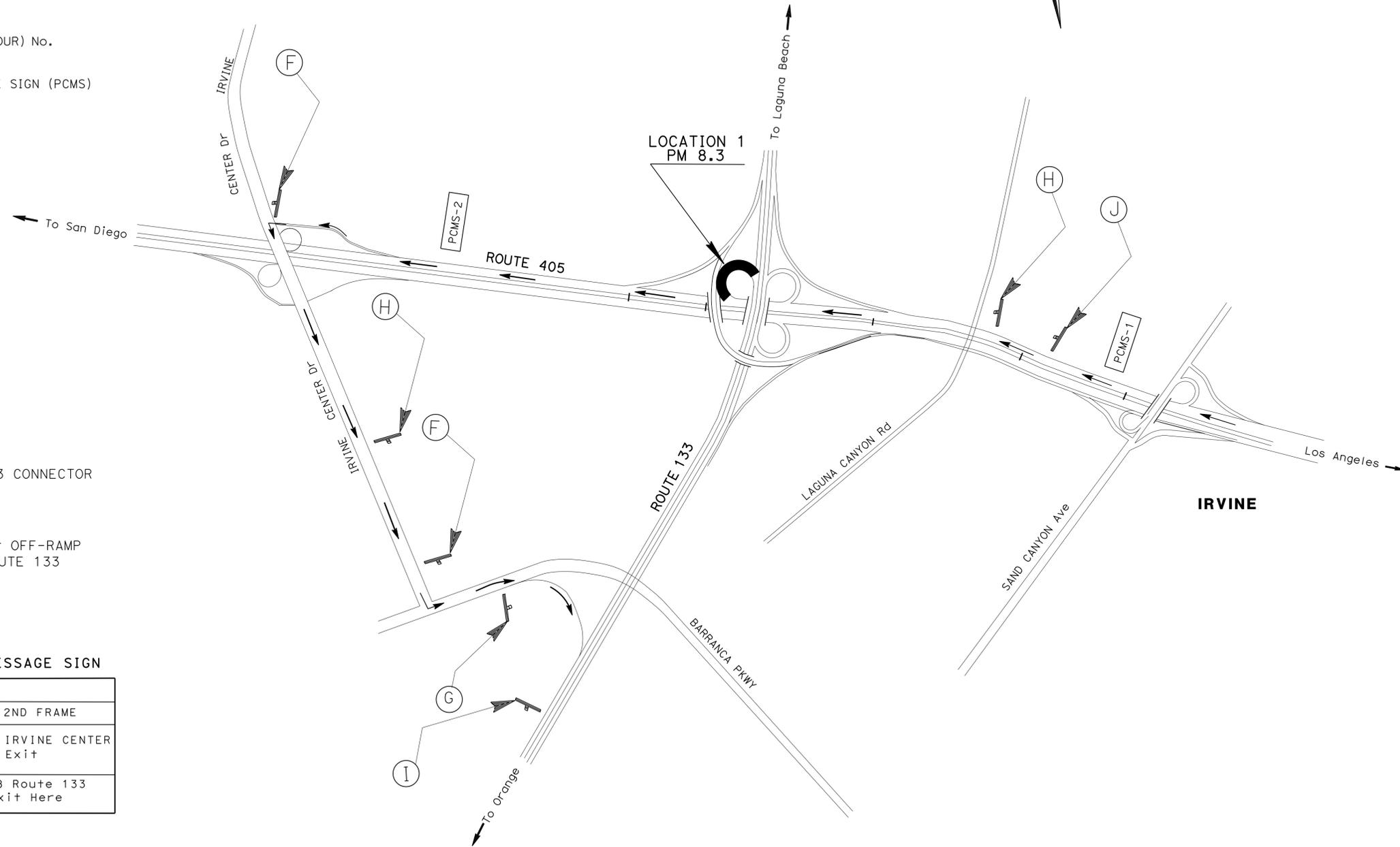
SB ROUTE 405 TO NB ROUTE 133 CONNECTOR

DETOUR:

SB ROUTE 405 IRVINE CENTER DR OFF-RAMP TO WB BARRANCA Ave TO NB ROUTE 133

PORTABLE CHANGEABLE MESSAGE SIGN

PCMS No.	MESSAGE	
	1ST FRAME	2ND FRAME
PCMS-1	NB Route 133 Connector Closed	USE IRVINE CENTER DR. Exit
PCMS-2	Detour	NB Route 133 Exit Here



TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-1

APPROVED FOR TRAFFIC HANDLING WORK ONLY



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	15	81

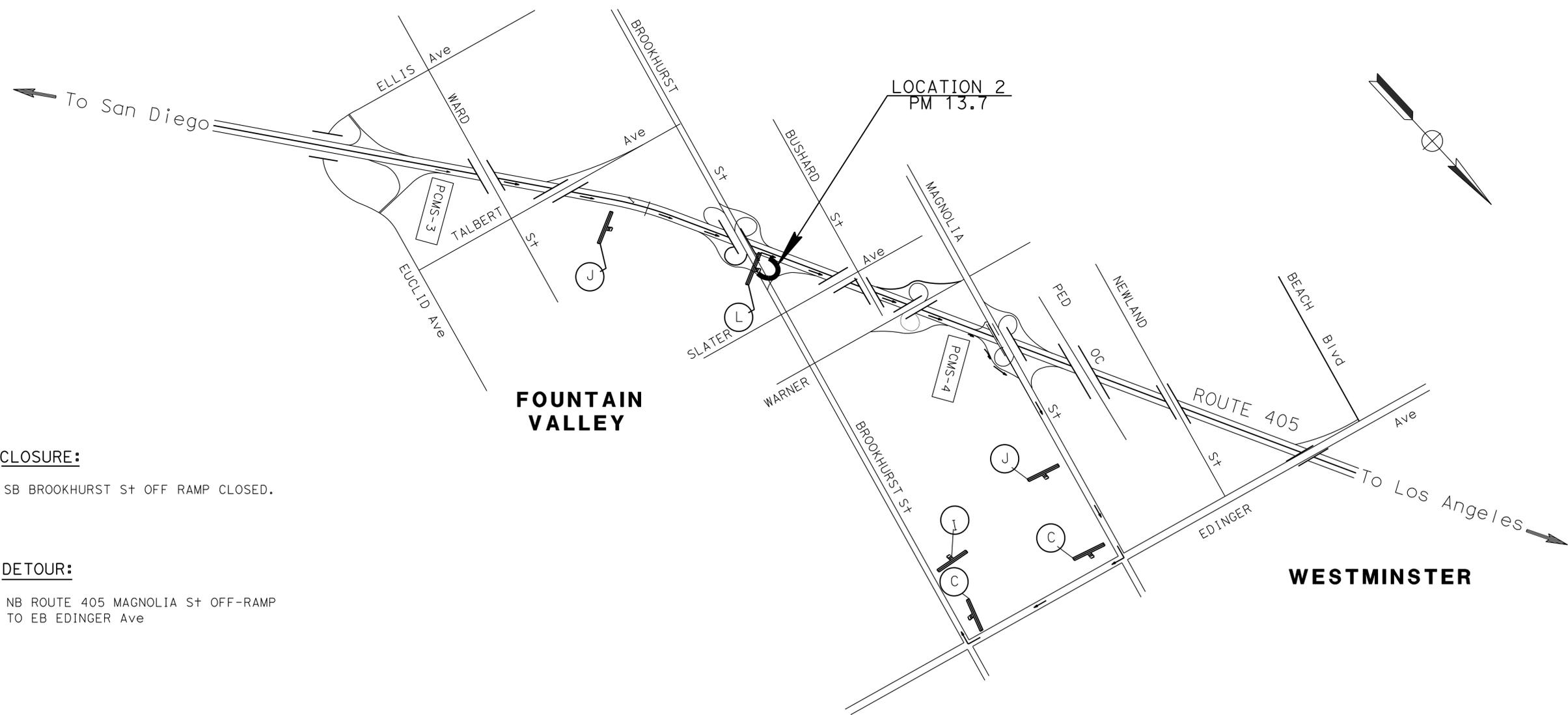
Steven Le
 REGISTERED CIVIL ENGINEER DATE 10-29-15
 PLANS APPROVAL DATE 11-09-15

REGISTERED PROFESSIONAL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

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PORTABLE CHANGABLE MESSAGE SIGN

PCMS No	MESSAGE	
	1ST FRAME	2ND FRAME
PCMS-3	SB Brookhurst St Exit Closed	Use Magnolia St Exit
PCMS-4	DETOUR	Brookhurst St Exit Here



CLOSURE:

SB BROOKHURST ST OFF RAMP CLOSED.

DETOUR:

NB ROUTE 405 MAGNOLIA ST OFF-RAMP TO EB EDINGER Ave

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR	MATTHEW O. CUGINI
CALCULATED/DESIGNED BY	CHECKED BY
REVISOR	STEVEN LE
REVISION	KEITH DESILVA
DATE	
REVISOR	
DATE	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	16	81

Steven Le 10-29-15
 REGISTERED CIVIL ENGINEER DATE

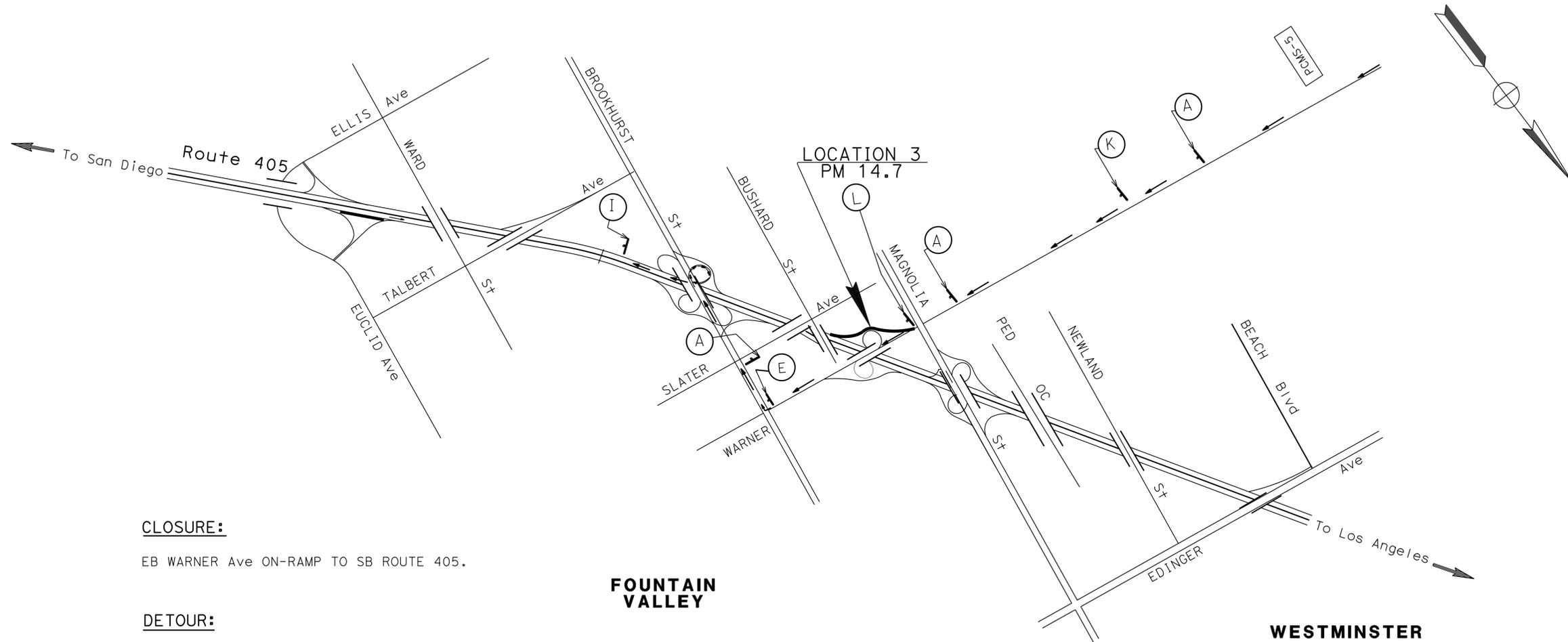
11-09-15
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

PORTABLE CHANGABLE MESSAGE SIGN

PCMS No.	MESSAGE	
	1ST FRAME	2ND FRAME
PCMS-5	Warner Ave on-ramp to SB 405 Closed	USE Brookhurst St



CLOSURE:

EB WARNER Ave ON-RAMP TO SB ROUTE 405.

DETOUR:

EB WARNER TRAFFIC TO SB BROOKHURST St TO SB ROUTE 405.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 MATTHEW O. CUGINI

CALCULATED/DESIGNED BY
 CHECKED BY

STEVEN LE
 KEITH DESILVA

REVISED BY
 DATE REVISED

APPROVED FOR TRAFFIC HANDLING WORK ONLY



TRAFFIC HANDLING PLAN (DETOUR)

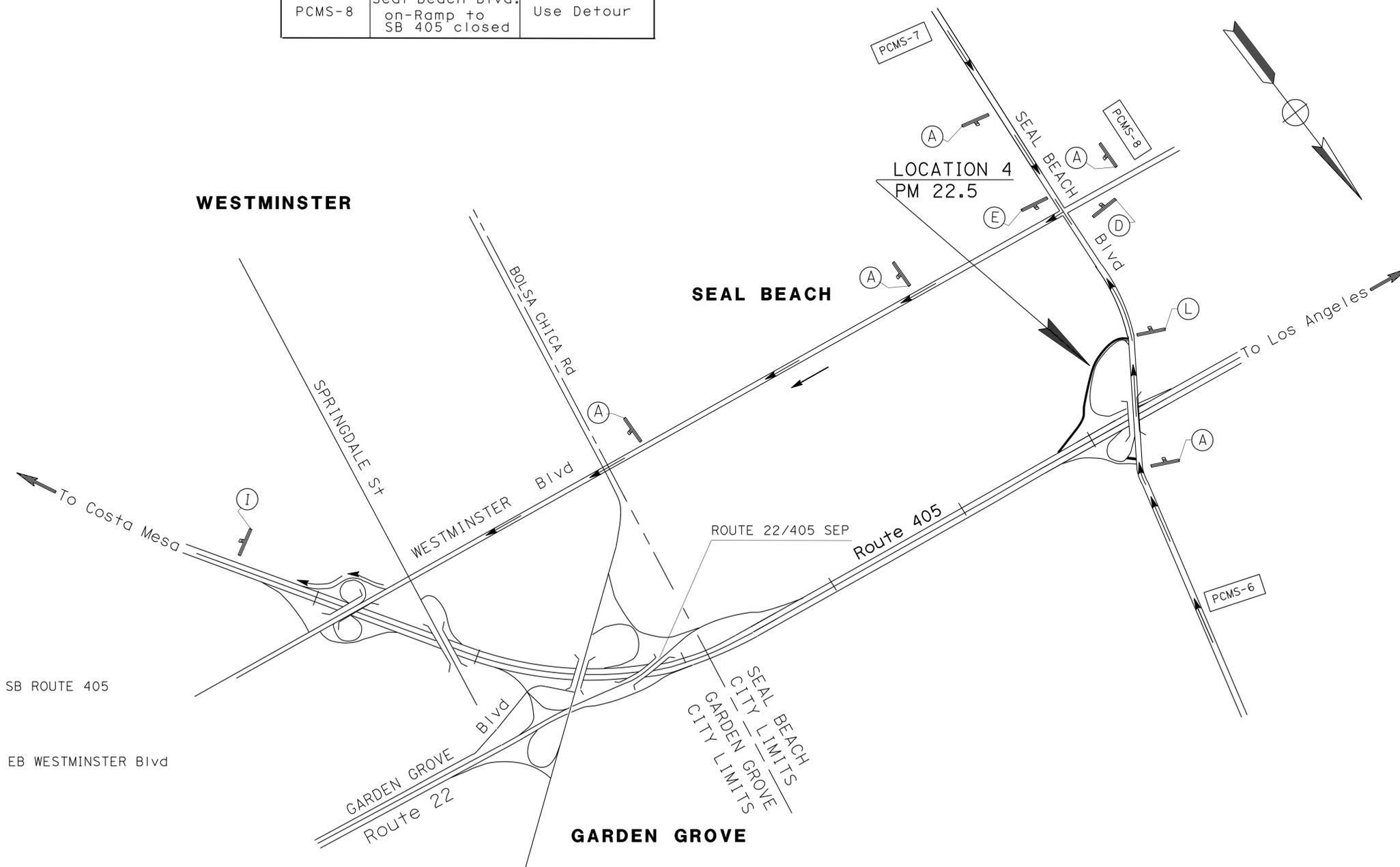
NO SCALE

TH-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	17	81
<i>Steven Le</i> REGISTERED CIVIL ENGINEER			10-29-15	DATE	
11-09-15			PLANS APPROVAL DATE		
REGISTERED PROFESSIONAL ENGINEER No. C75534 Exp. 06-30-16 CIVIL			STATE OF CALIFORNIA		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

PORTABLE CHANGABLE MESSAGE SIGN

PCMS No.	MESSAGE	
	1ST FRAME	2ND FRAME
PCMS-6	Seal Beach Blvd. TO SB 405 on-Ramp closed	Use Detour
PCMS-7	Seal Beach Blvd. on-Ramp to SB 405 closed	Use Detour
PCMS-8	Seal Beach Blvd. on-Ramp to SB 405 closed	Use Detour



CLOSURE:
 SEAL BEACH Blvd ON-RAMP TO SB ROUTE 405

DETOUR:
 SB AND NB SEAL BEACH Blvd TO EB WESTMINSTER Blvd
 TO SB ROUTE 405.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 MATTHEW O. CUGINI

CALCULATED/DESIGNED BY
 CHECKED BY

REVISOR
 STEVEN LE
 KEITH DESILVA

REVISIONS
 REVISOR
 DATE

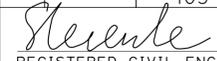
APPROVED FOR TRAFFIC HANDLING WORK ONLY



TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

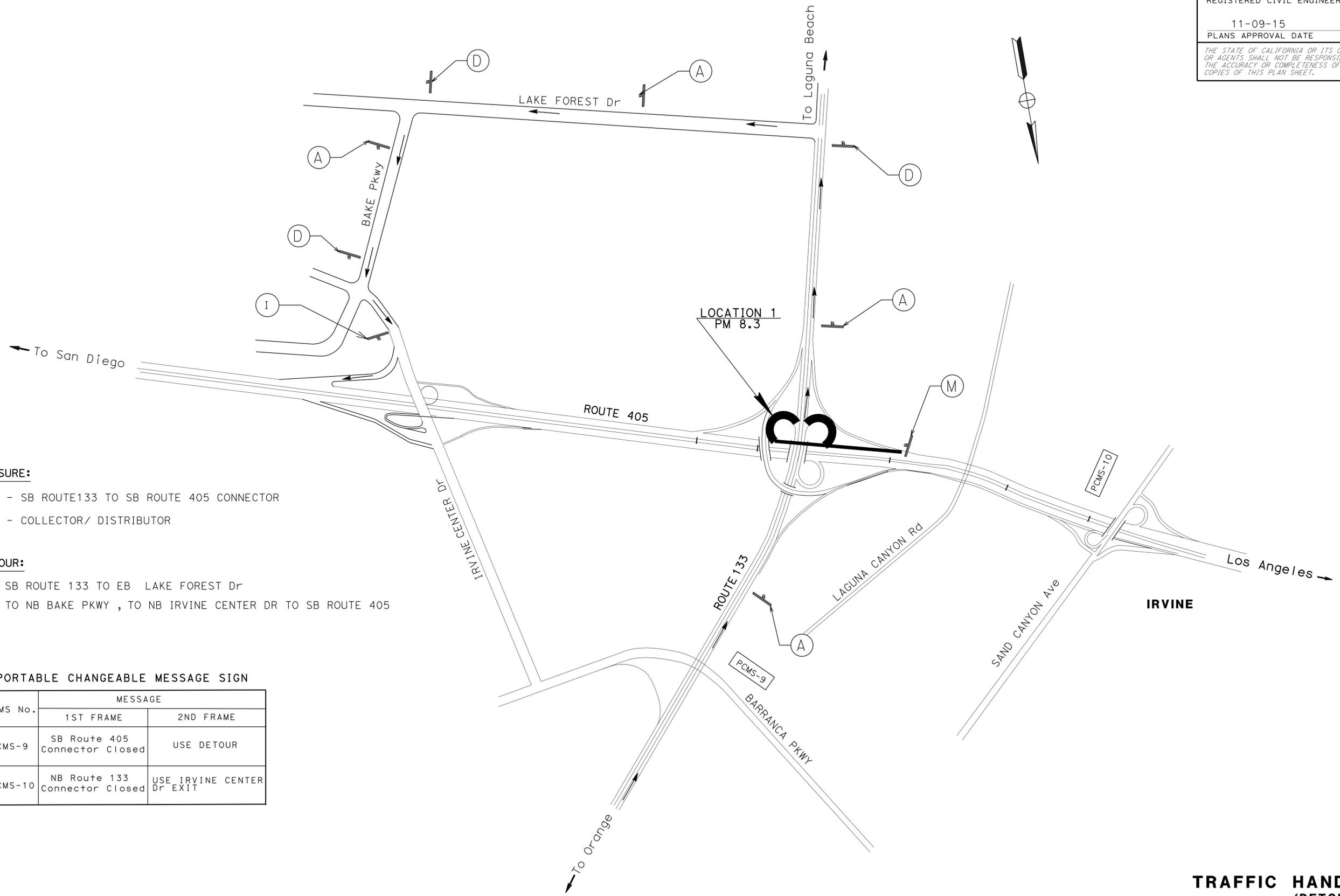
TH-4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	18	81
			10-29-15		
REGISTERED CIVIL ENGINEER			DATE		
11-09-15			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>					

NOTES:

1. SEE TRAFFIC HANDLING PLAN TH-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
	
FUNCTIONAL SUPERVISOR	MATTHEW O. CUGINI
CALCULATED/DESIGNED BY	CHECKED BY
STEVEN LE	KEITH DESILVA
REVISED BY	DATE REVISED



CLOSURE:

- SB ROUTE 133 TO SB ROUTE 405 CONNECTOR
- COLLECTOR/ DISTRIBUTOR

DETOUR:

SB ROUTE 133 TO EB LAKE FOREST DR
TO NB BAKE PKWY, TO NB IRVINE CENTER DR TO SB ROUTE 405

PORTABLE CHANGEABLE MESSAGE SIGN

PCMS No.	MESSAGE	
	1ST FRAME	2ND FRAME
PCMS-9	SB Route 405 Connector Closed	USE DETOUR
PCMS-10	NB Route 133 Connector Closed	USE IRVINE CENTER DR EXIT

TRAFFIC HANDLING PLAN (DETOUR)

NO SCALE

TH-5

APPROVED FOR TRAFFIC HANDLING WORK ONLY

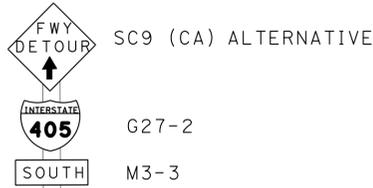


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 14.7, 22.5	19	81

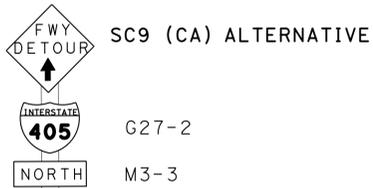
Steven Le 10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

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



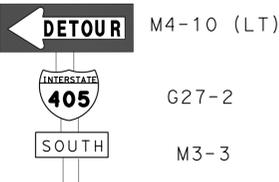
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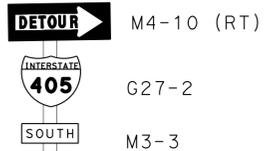
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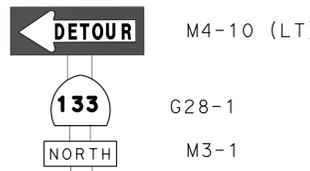
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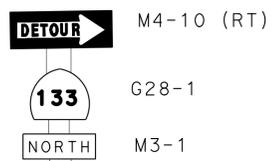
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E



F



G



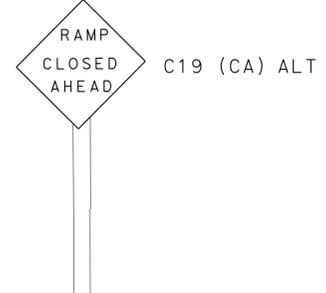
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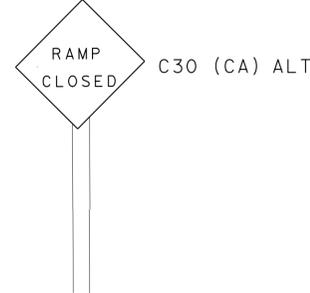
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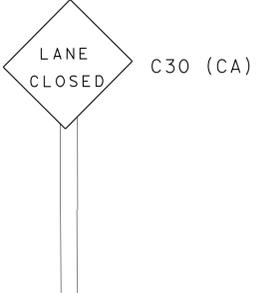
J



K



L



M

TRAFFIC HANDLING DETAILS (DETOUR)

NO SCALE

THD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

REVISOR BY: STEVEN LE
 DATE REVISOR: KEITH DESILVA

CALCULATED/DESIGNED BY: MATTHEW O. CUGINI
 CHECKED BY:

FUNCTIONAL SUPERVISOR:

USERNAME => s111173
 DGN FILE => 1213000185me001.dgn

RELATIVE BORDER SCALE 1" = 10' IN INCHES
 0 1 2 3

UNIT 2994 PROJECT NUMBER & PHASE 12130001851

LAST REVISION | DATE PLOTTED => 23-DEC-2015
 10-15-15 TIME PLOTTED => 10:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	20	81

10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

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

NOTE:
 1. FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS, SEE SHEET CS-1 AND SCQ-1

CONSTRUCTION AREA SIGN (DETOUR)

SHEET No.	LOCATION No.	SIGN	CODE	PANEL SIZE	PANEL LABEL	No. OF POST AND SIZE	No. OF SIGNS		
TH-1	LOC-1	Ⓜ	SC9 (CA) ALT	48" x 18"	FWY Detour	1 - 6" x 6"	2		
			G28-1	28" x 25"	133				
			M3-1	30" x 15"	North				
		Ⓧ	M4-10 (LT)	Ⓧ	M4-10 (LT)	48" x 18"	Detour	1 - 6" x 6"	2
					G28-1	28" x 25"	133		
					M3-1	30" x 15"	North		
		Ⓧ	M4-10 (RT)	Ⓧ	M4-10 (RT)	48" x 48"	Detour	1 - 6" x 6"	1
					G28-1	28" x 25"	133		
					M3-1	30" x 15"	North		
		Ⓧ	Ⓧ	Ⓧ	W20-2	48" x 48"	DETOUR AHEAD	1 - 6" x 6"	1
Ⓧ	M4-8a (CA)				24" x 18"	End Detour	1 - 6" x 6"	1	
TH-2	LOC-2	Ⓧ	C30 (CA) ALT	48" x 48"	RAMP CLOSED	1 - 6" x 6"	1		
			Ⓧ	M4-10 (L+)	48" x 18"	Detour	1 - 6" x 6"	2	
		Ⓧ	Ⓧ	G7 Mod	28" x 25"	Brookhurst St.	1 - 6" x 6"	1	
				Ⓧ	M4-8a (CA)	24" x 18"			End Detour
		Ⓧ	Ⓧ	Ⓧ	W20-2	48" x 48"	DETOUR AHEAD	1 - 6" x 6"	2
TH-3	LOC-3	Ⓧ	SC9 (CA) ALT	48" x 48"	Fwy Detour	1 - 6" x 6"	3		
			G27-2	28" x 25"	405				
			M3-3	30" x 15"	South				
		Ⓧ	Ⓧ	Ⓧ	M4-10 (R+)	48" x 18"	Detour	1 - 6" x 6"	1
					G27-2	28" x 25"	405		
Ⓧ	Ⓧ	Ⓧ	M3-3	30" x 15"	South	1 - 6" x 6"	1		
Ⓧ	Ⓧ	Ⓧ	M4-8a (CA)	24" x 18"	End Detour	1 - 6" x 6"	1		
TH-4	LOC-4	Ⓧ	SC9 (CA) ALT	48" x 48"	Fwy Detour	1 - 6" x 6"	5		
			G27-2	28" x 25"	405				
			M3-3	30" x 15"	SOUTH				
		Ⓧ	Ⓧ	Ⓧ	M4-10 (L+)	48" x 18"	Detour	1 - 6" x 6"	1
					G27-2	28" x 25"	405		
					M3-3	30" x 15"	SOUTH		
		Ⓧ	Ⓧ	Ⓧ	M4-10 (R+)	48" x 18"	Detour	1 - 6" x 6"	1
					G27-2	28" x 25"	405		
		Ⓧ	Ⓧ	Ⓧ	M3-3	30" x 15"	SOUTH	1 - 6" x 6"	1
		Ⓧ	Ⓧ	Ⓧ	M4-8a (CA)	24" x 18"	End Detour	1 - 6" x 6"	1
Ⓧ	Ⓧ	Ⓧ	C30 (CA) ALT	48" x 48"	RAMP CLOSED	1 - 6" x 6"	1		

CONSTRUCTION AREA SIGN (DETOUR)

SHEET No.	LOCATION No.	SIGN	CODE	PANEL SIZE	PANEL LABEL	No. OF POST AND SIZE	No. OF SIGNS		
TH-5	LOC-1	Ⓧ	SC9 (CA) ALT	48" x 48"	Fwy Detour	1 - 6" x 6"	4		
			G27-2	28" x 25"	405				
			M3-3	30" x 15"	SOUTH				
		Ⓧ	Ⓧ	Ⓧ	M4-10 (L+)	48" x 18"	Detour	1 - 6" x 6"	3
					G27-2	28" x 25"	405		
		Ⓧ	Ⓧ	Ⓧ	M3-3	30" x 15"	SOUTH	1 - 6" x 6"	1
		Ⓧ	Ⓧ	Ⓧ	M4-8a (CA)	24" x 18"	End Detour	1 - 6" x 6"	1

TRAFFIC HANDLING QUANTITIES (DETOUR) THQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 FUNCTIONAL SUPERVISOR MATTHEW O. CUGINI
 CALCULATED/DESIGNED BY CHECKED BY
 STEVEN LE KEITH DESILVA
 REVISED BY DATE
 REVISIONS

LAST REVISION DATE PLOTTED => 23-DEC-2015 10:15:15 TIME PLOTTED => 10:48

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN

FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR

CALCULATED/DESIGNED BY: RICHARD DANG

CHECKED BY: BANG HUA

REVISOR: RICHARD DANG

DATE: 7/2/2010

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ALL CONFLICTING TRAFFIC STRIPES, PAVEMENT MARKINGS AND PAVEMENT MARKERS SHALL BE REMOVED.
3. TRAFFIC STRIPES AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC (ENHANCED WET NIGHT VISIBILITY), UNLESS OTHERWISE NOTED.
4. EXACT LOCATIONS FOR PAVEMENT MARKINGS TO BE DETERMINED BY THE ENGINEER.

LEGEND:

- PAVEMENT DELINEATION DETAIL NUMBER
- CHANGE IN PAVEMENT DELINEATION DETAIL
- END OF PAVEMENT DELINEATION DETAIL
- DIRECTION OF TRAFFIC
- DELINEATOR (CLASS I)

ABBREVIATIONS:

- F TYPE F DELINEATOR (CLASS I)
- G TYPE G DELINEATOR (CLASS I)

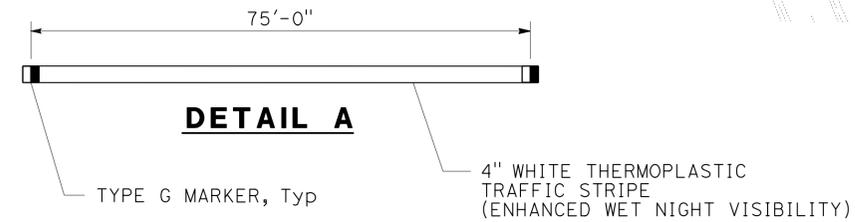
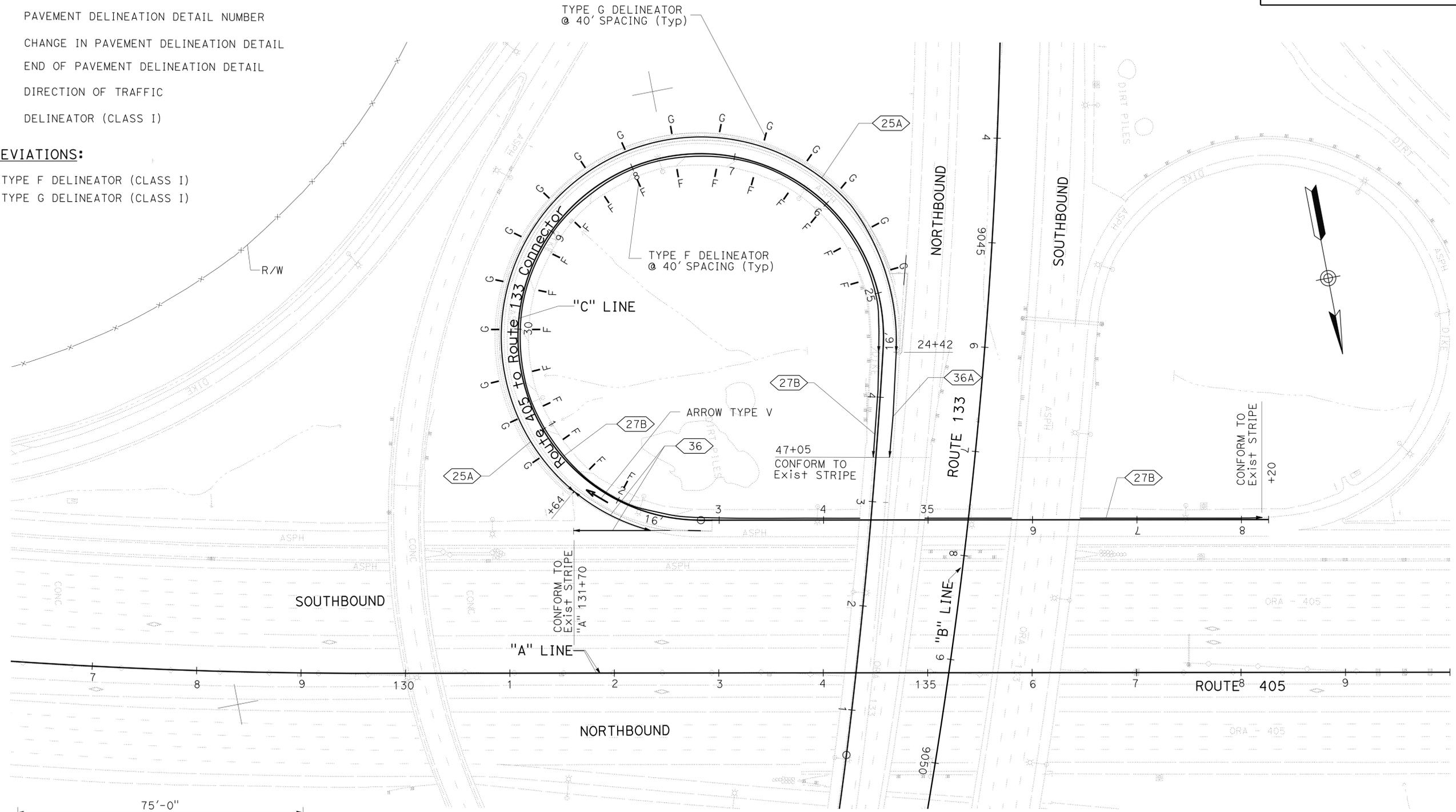
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	21	81

Bang Q. Hua 10-29-15
 REGISTERED CIVIL ENGINEER DATE

11-09-15
 PLANS APPROVAL DATE

BANG Q. HUA
 No. CT1273
 Exp! 2-31-15
 CIVIL

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



PAVEMENT DELINEATION PLAN (LOCATION 1)

SCALE : 1"=50'

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

PD-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405'	8.3, 13.7, 14.7, 22.5	22	81

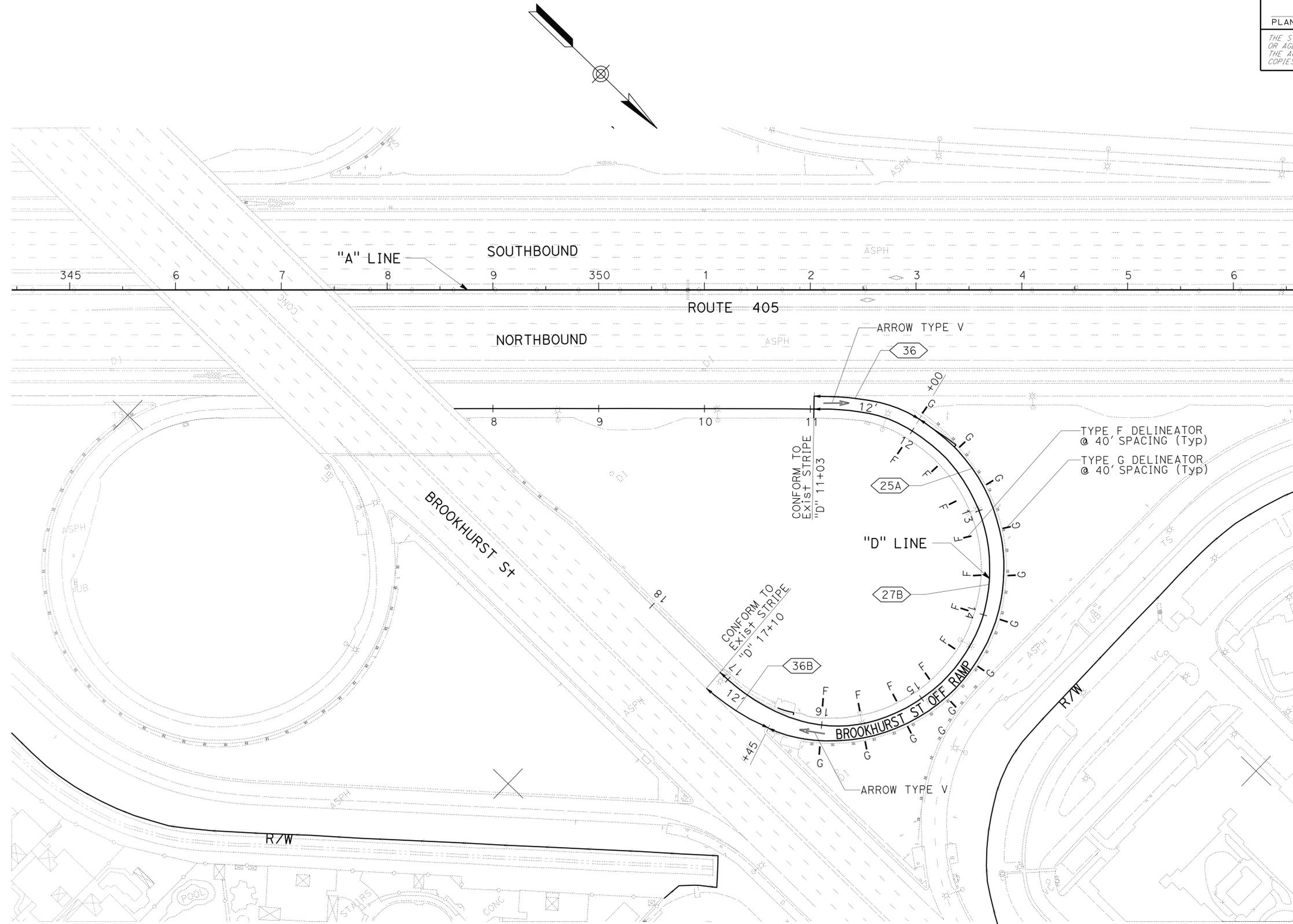
Bang Q. Hua 10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 BANG Q. HUA
 No. C71273
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA

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

NOTE:

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



**PAVEMENT DELINEATION PLAN
(LOCATION 2)**

SCALE : 1"=50'

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

PD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
Caltrans	
FUNCTIONAL SUPERVISOR	KAMRAN MAZHAR
CALCULATED/DESIGNED BY	CHECKED BY
RICHARD DANG	BANG HUA
REVISOR	DATE

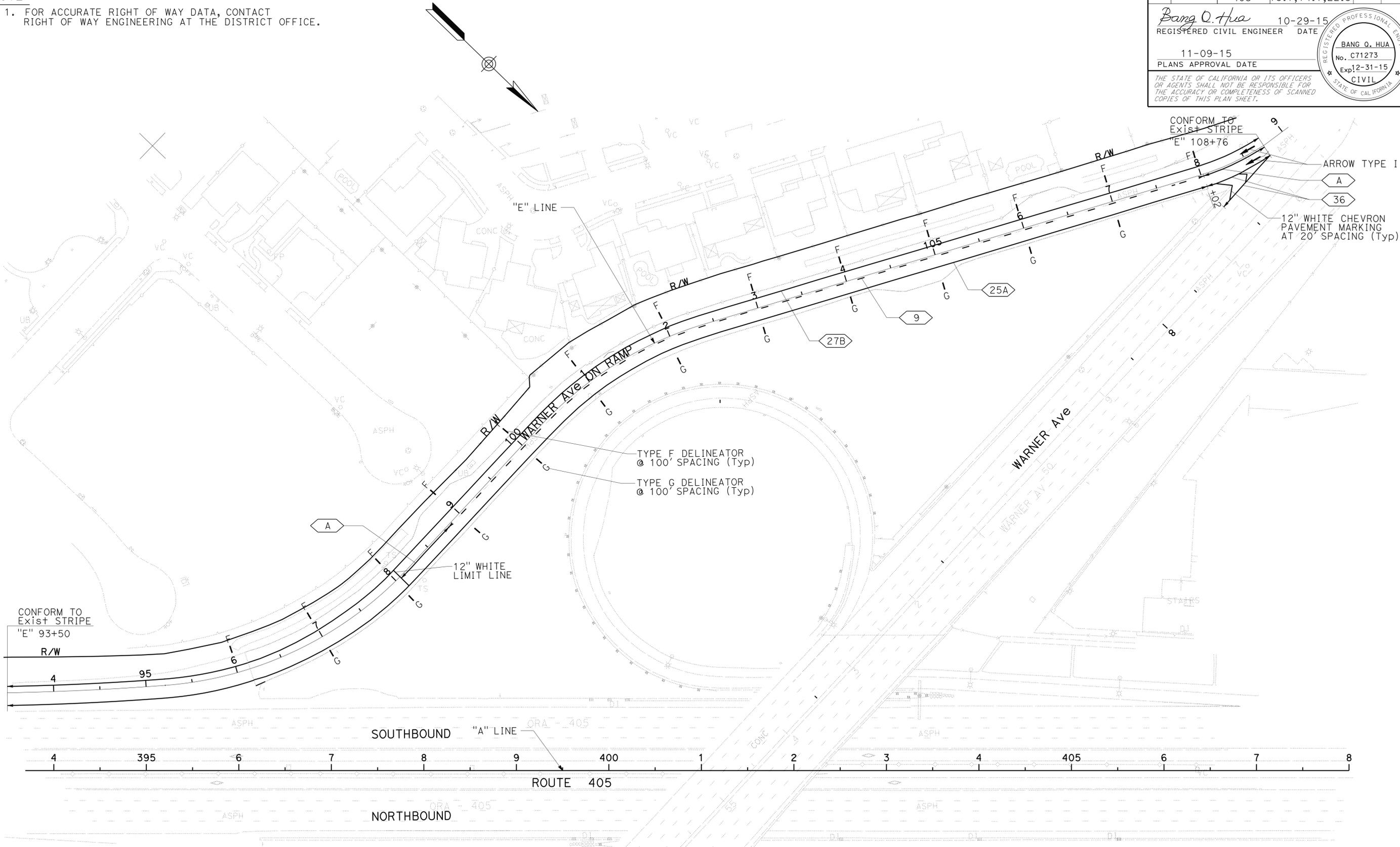


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	23	81

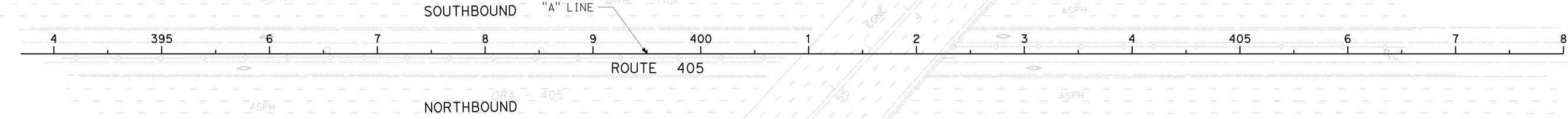
BANG Q. HUA 10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 BANG Q. HUA
 No. C71273
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA

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



CONFORM TO Exist STRIPE "E" 93+50



**PAVEMENT DELINEATION PLAN
 (LOCATION 3)**

SCALE : 1"=50'

PD-3

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	KAMRAN MAZHAR
CALCULATED/DESIGNED BY	CHECKED BY
RICHARD DANG	BANG HUA
REVISOR	DATE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	RICHARD DANG	REVISED BY	
Caltrans DESIGN	KAMRAN MAZHAR	CHECKED BY	BANG HUA	DATE REVISED	

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



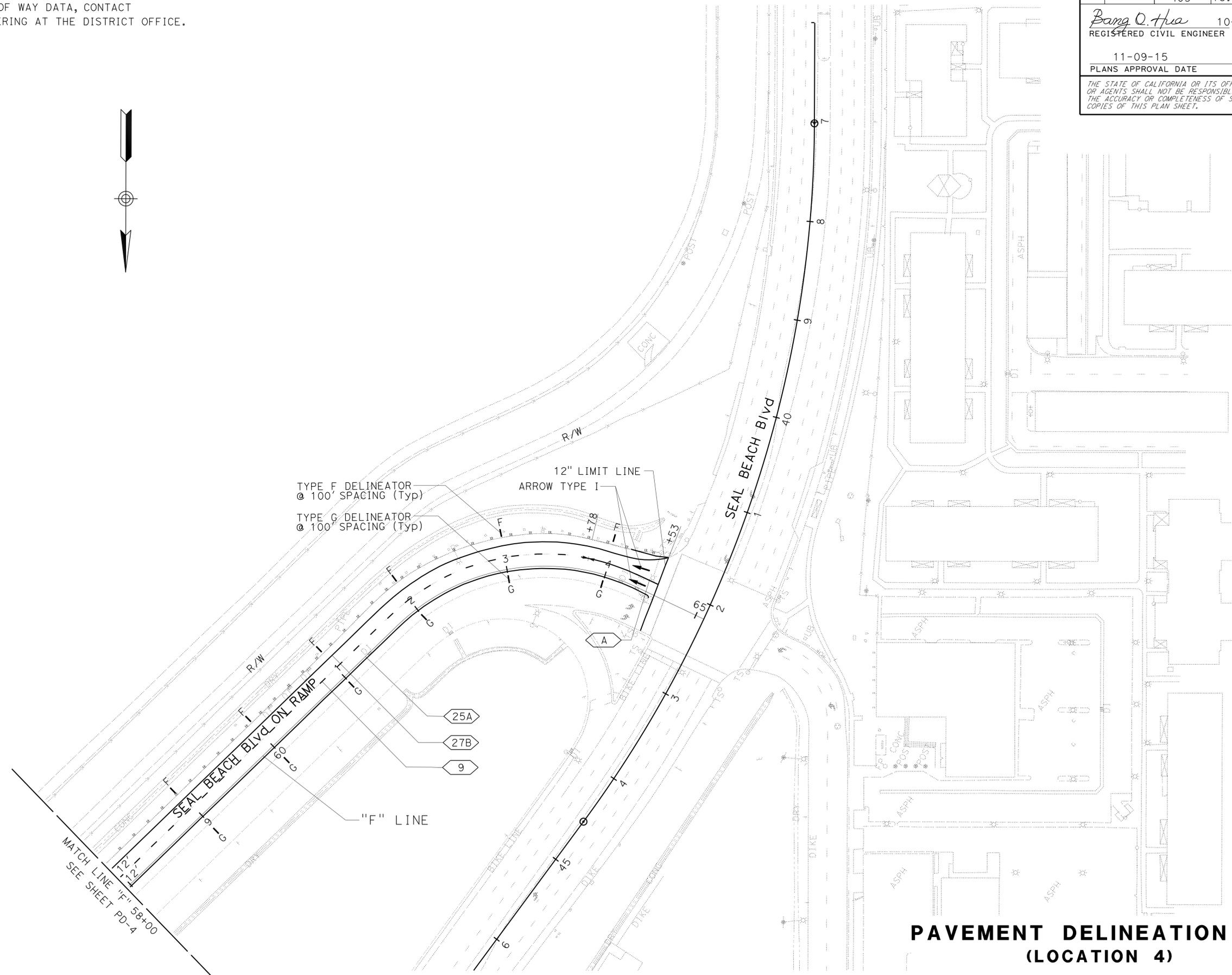
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	25	81

Bang Q. Hua 10-29-15
 REGISTERED CIVIL ENGINEER DATE

11-09-15
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 BANG Q. HUA
 No. C71273
 Exp 12-31-15
 CIVIL
 STATE OF CALIFORNIA



**PAVEMENT DELINEATION PLAN
 (LOCATION 4)**

SCALE : 1"=50'

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

PD-5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	26	81

Bang Q. Hua 10-29-15
REGISTERED CIVIL ENGINEER DATE

11-09-15
PLANS APPROVAL DATE

BANG Q. HUA
No. C71273
Exp. 12-31-15
CIVIL

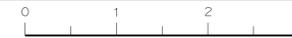
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

PAVEMENT DELINEATION QUANTITIES

SHEET No.	LOCATION-DESCRIPTION	THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY)						THERMOPLASTIC PAVEMENT MARKING (ENHANCED WET NIGHT VISIBILITY)			PAVEMENT MARKER		DELINEATOR CLASS I		REMOVE				
		4"					8"	ARROW	DIAGONAL / CHEVRON	CROSSWALK & LIMIT LINE	RETRO-REFLECTIVE		TYPE F	TYPE G	THERMOPLASTIC TRAFFIC STRIPE (WHITE)	YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	PAVEMENT MARKING	PAVEMENT MARKER	
		DETAIL 9 BROKEN WHITE (17-7)	DETAIL 8 BROKEN WHITE (17-7)	DETAIL A SOLID WHITE	DETAIL 27B SOLID WHITE	DETAIL 25A SOLID YELLOW	DETAIL 36/36A/36B SOLID WHITE				TYPE G	TYPE H							EA
PD-1	SB Route 405 to NB Route 133 CONNECTOR				1483	718	259	33				36	18	18	1151	718	200	36	
PD-2	NB Route 405 BROOKHURST Ave OFF-RAMP				603	510	162	66				8	19	11	11		580		
PD-3	SB Route 405 WARNER Ave ON-RAMP	920		150	1262	1188	200	62	40	24	33	53	13	11		1188			
PD-4	SB Route 405 SEAL BEACH Blvd ON-RAMP	485	245	75	1355	840	366			24	14	36	14	9		840			
PD-5	SB Route 405 SEAL BEACH Blvd ON-RAMP	578		75	653	653		62			14	27	6	6		653			
SUB-TOTAL		1983	245	300	5356	3909	987	223	40	48	69	171	62	55	1151	3979	200	36	
FROM STAGE CONSTRUCTION QUANTITY SHEET SCQ-1												140						140	
GRAND TOTAL		2228		9565			987	311			380		117		1151	3979	200	176	

PAVEMENT DELINEATION QUANTITIES

PDQ-1



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR
 CALCULATED/DESIGNED BY: RICHARD DANG
 CHECKED BY: BANG HUA
 REVISED BY: DATE REVISION

NOTE:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- FEDERAL SIGN CODES ARE SHOWN UNLESS DESIGNATED BY (CA) WHICH INDICATES A CALIFORNIA CODE.

LEGEND:

- ROADSIDE SIGN NUMBER
- ROADSIDE SIGN - ONE POST
- ROADSIDE SIGN - TWO POST

ABBREVIATIONS:

- IS ROADSIDE SIGN - ONE POST OR TWO POSTS
- RM REMOVE ROADSIDE SIGN
- RMS REMOVE ROADSIDE SIGN (STRAP AND SADDLE BRACKET METHOD)
- ISS INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)
- ISR INSTALL SIGN (RAMP METER), SEE ELECTRICAL PLANS
- PP TO REMAIN IN PLACE

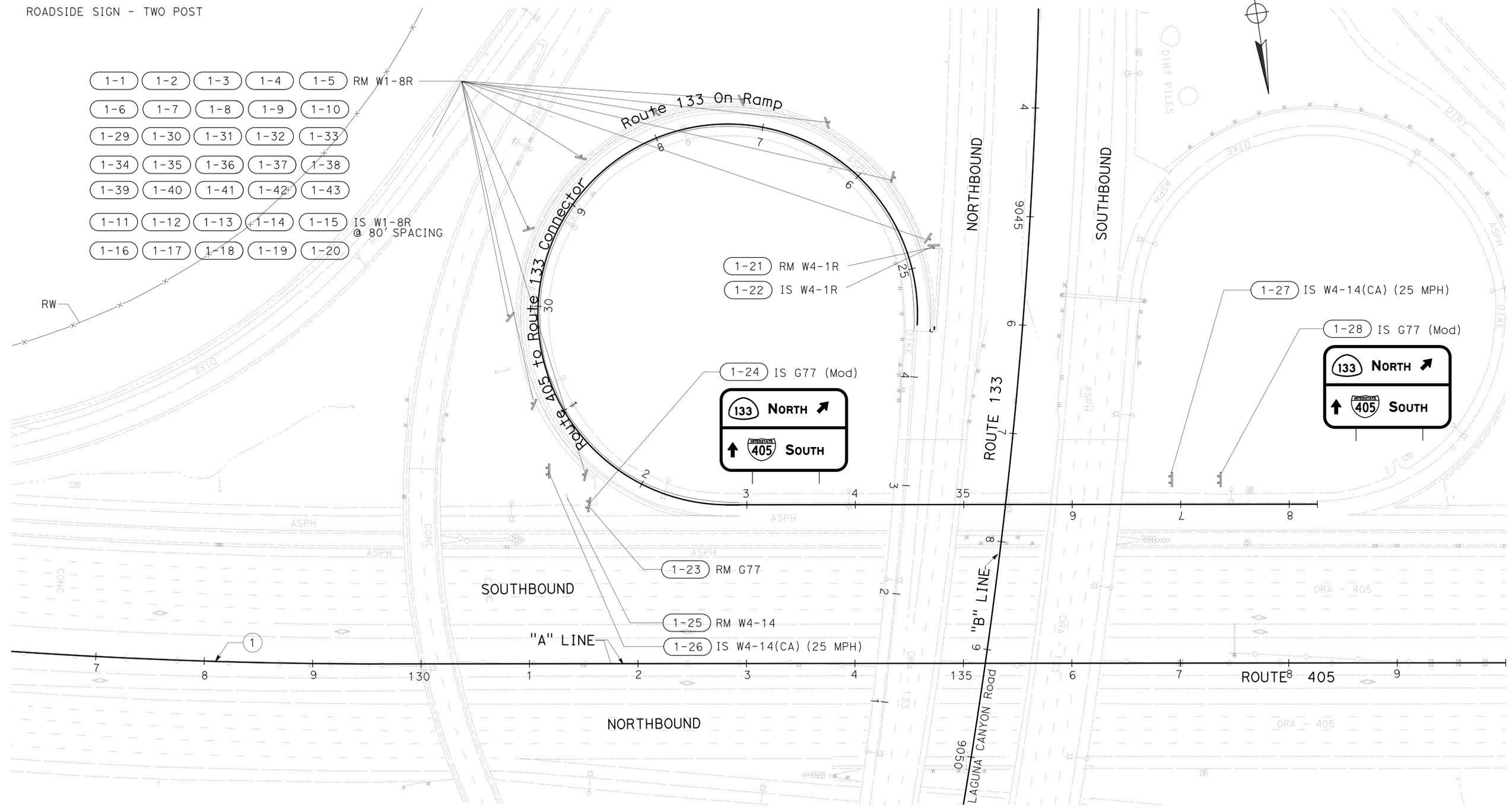
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	27	81

Bang Q. Hua 10-29-15
 REGISTERED CIVIL ENGINEER DATE

11-09-15
 PLANS APPROVAL DATE

BANG Q. HUA
 No. C71273
 Exp. 12-31-15
 CIVIL

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SIGN PLAN (LOCATION 1)

SCALE : 1"=50'

APPROVED FOR SIGN WORK ONLY

S-1

NOTE:

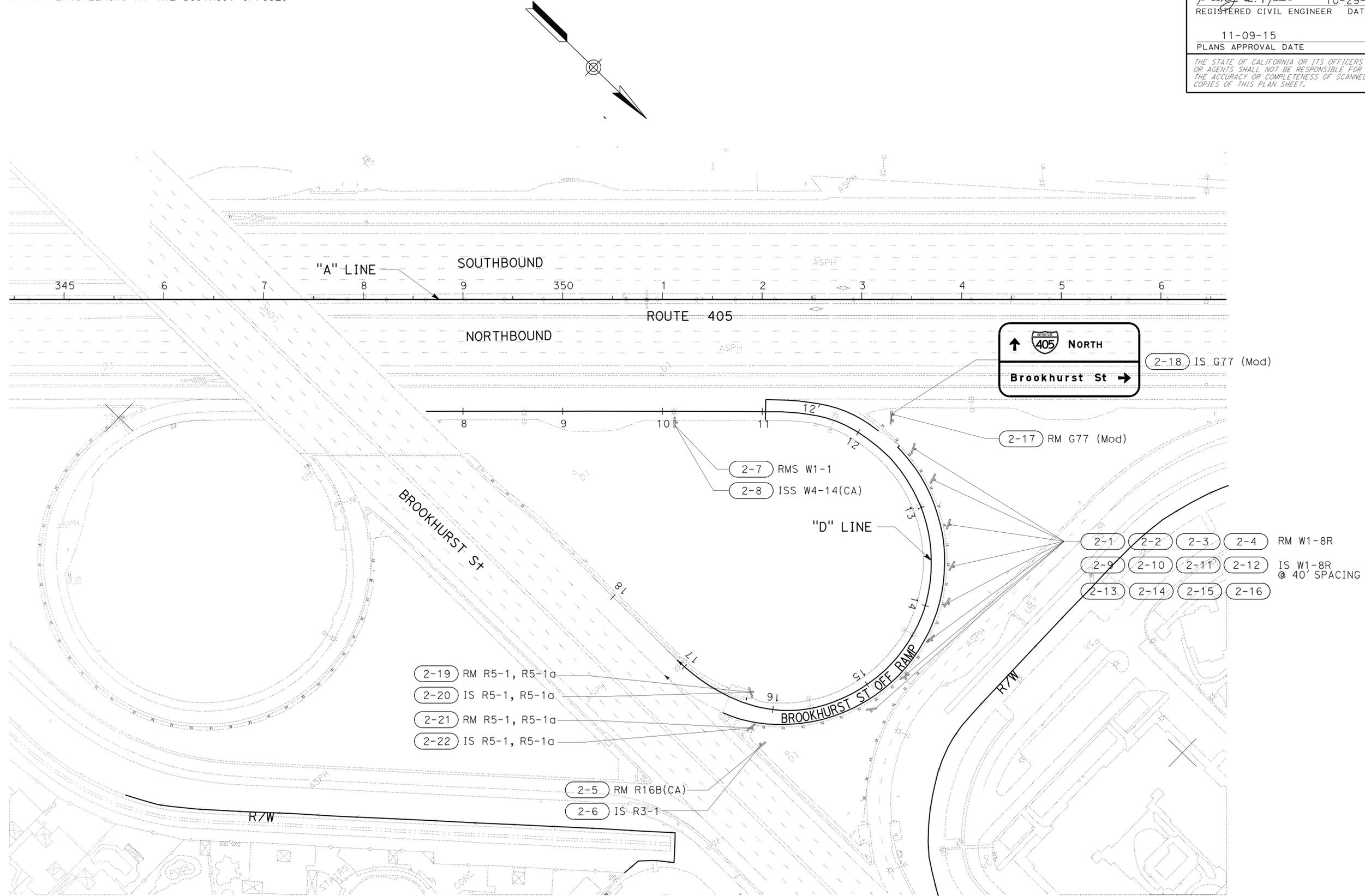
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	28	81

Bang Q. Hua 10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 BANG Q. HUA
 No. C71273
 Exp! 2-31-15
 CIVIL
 STATE OF CALIFORNIA

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR
 CALCULATED/DESIGNED BY: RICHARD DANG
 CHECKED BY: BANG HUA
 REVISED BY: DATE REVISIONS

APPROVED FOR SIGN WORK ONLY

**SIGN PLAN
(LOCATION 2)**

SCALE : 1"=50'

S-2

LAST REVISION | DATE PLOTTED => 23-DEC-2015
 10-15-15 TIME PLOTTED => 10:48

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 KAMRAN MAZHAR

CALCULATED/DESIGNED BY
 CHECKED BY

RICHARD DANG
 BANG HUA

REVISED BY
 DATE REVISED

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

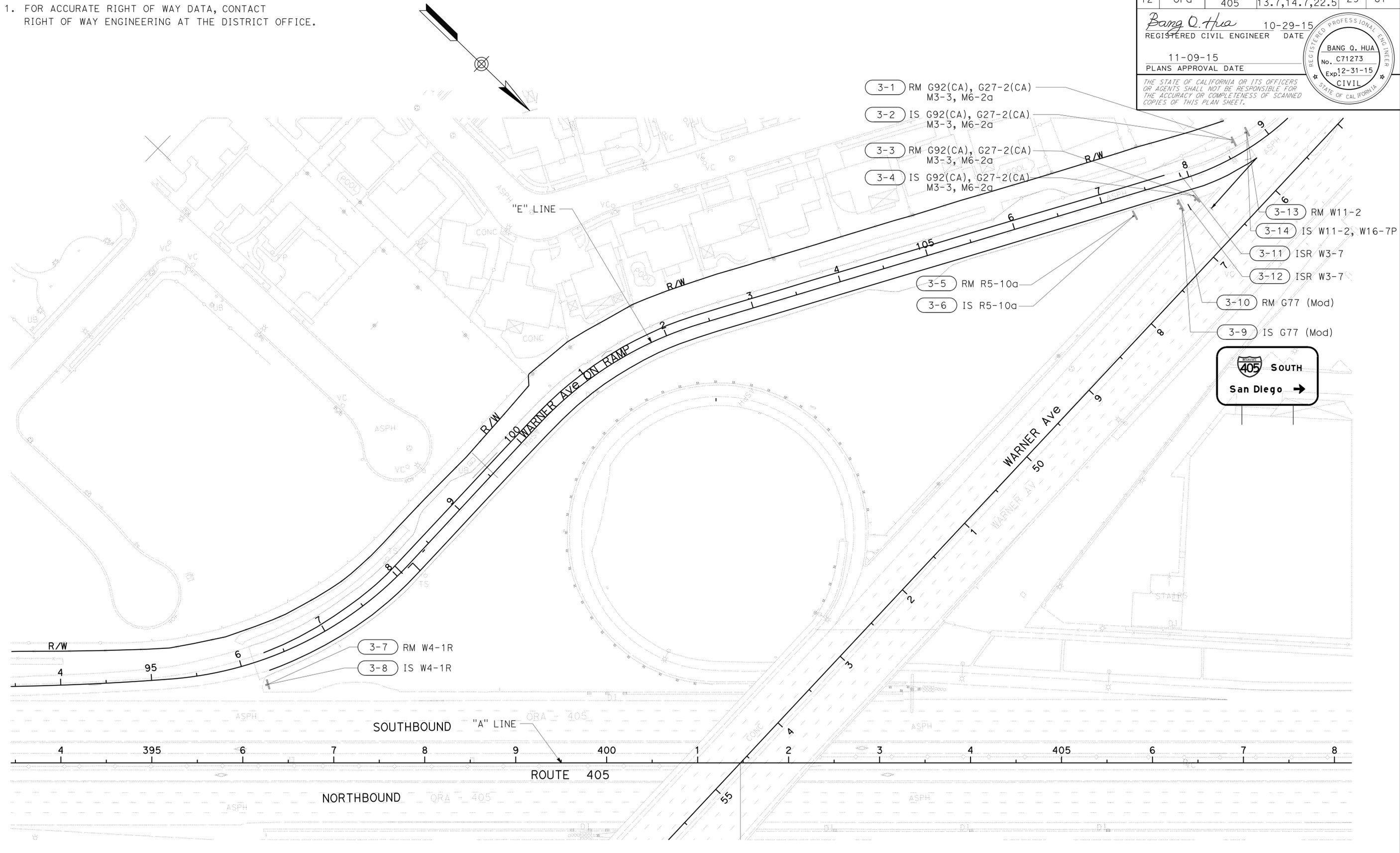
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	29	81

Bang Q. Hua 10-29-15
 REGISTERED CIVIL ENGINEER DATE

11-09-15
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
 BANG Q. HUA
 No. C71273
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA



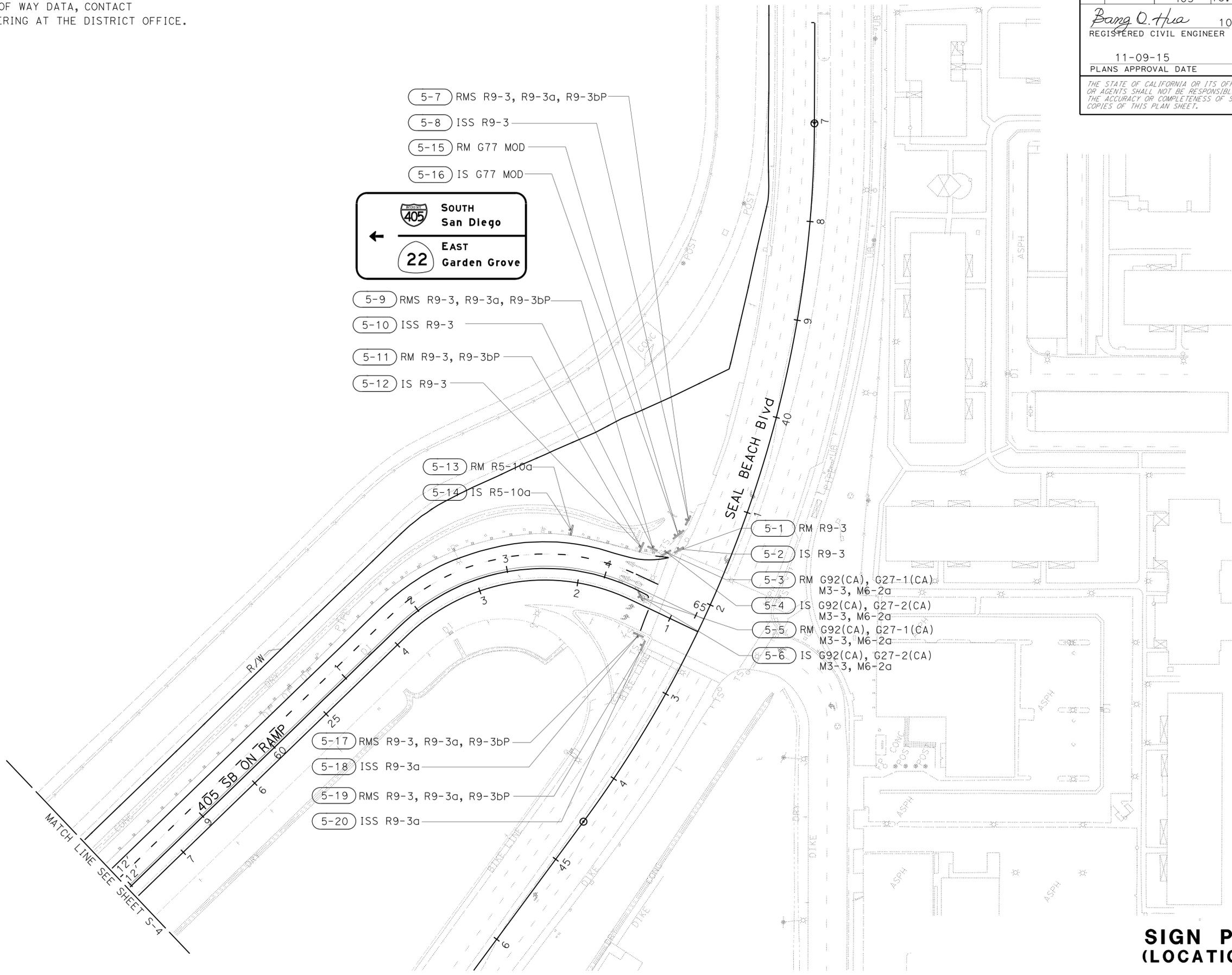
APPROVED FOR SIGN WORK ONLY

**SIGN PLAN
 (LOCATION 3)**
 SCALE : 1"=50'
S-3

LAST REVISION DATE PLOTTED => 23-DEC-2015 10-15-15 TIME PLOTTED => 10:48

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans DESIGN	KAMRAN MAZHAR	CHECKED BY	RICHARD DANG
			BANG HUA
			DATE REVISED

NOTE:
1. 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
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	31	81

Bang Q. Hua 10-29-15
REGISTERED CIVIL ENGINEER DATE

11-09-15
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
BANG Q. HUA
No. C71273
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

APPROVED FOR SIGN WORK ONLY

**SIGN PLAN
(LOCATION 4)**

SCALE : 1"=50'

S-5

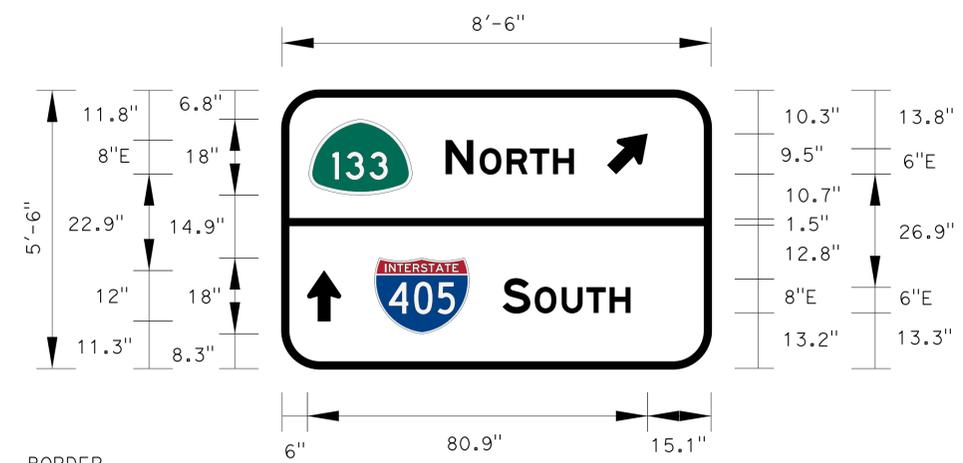
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	32	81

Bang Q. Hua 10-29-15
REGISTERED CIVIL ENGINEER DATE

11-09-15
PLANS APPROVAL DATE

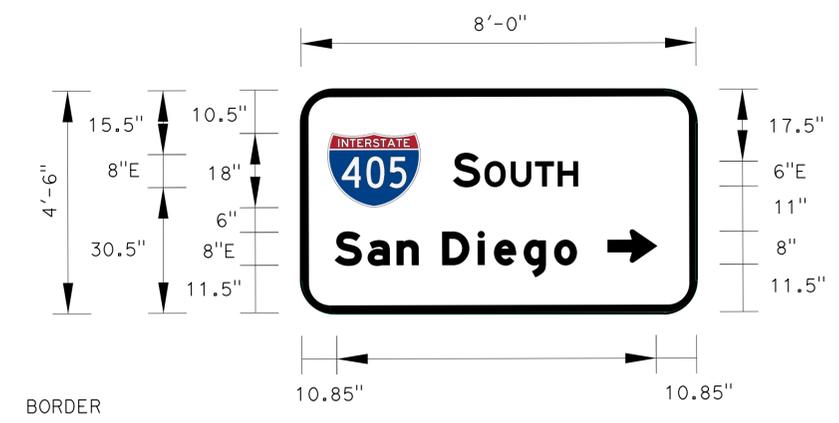
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
BANG Q. HUA
No. C71273
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA



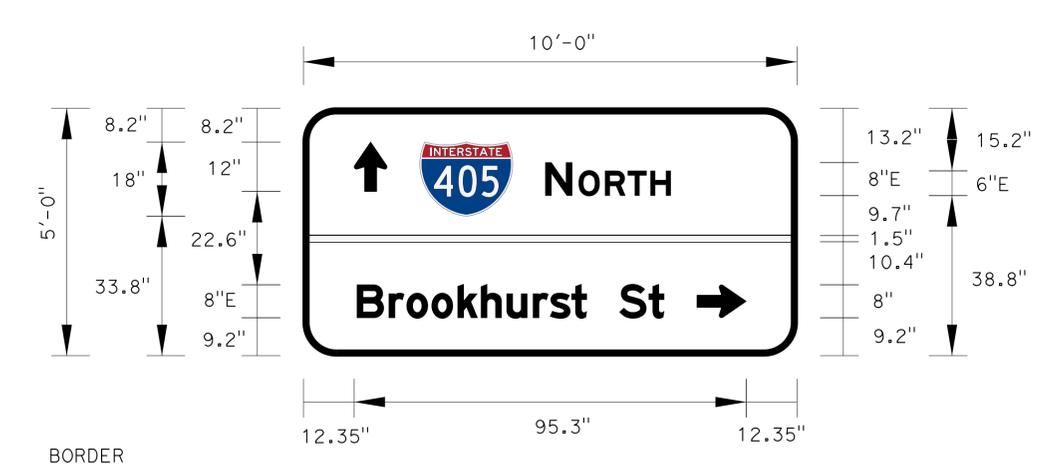
BORDER
R=9"
TH=1.5"
Panel Style: guide_exp_distance.ssi
M.U.T.C.D.: 2009 Edition

1-24 G77 MOD



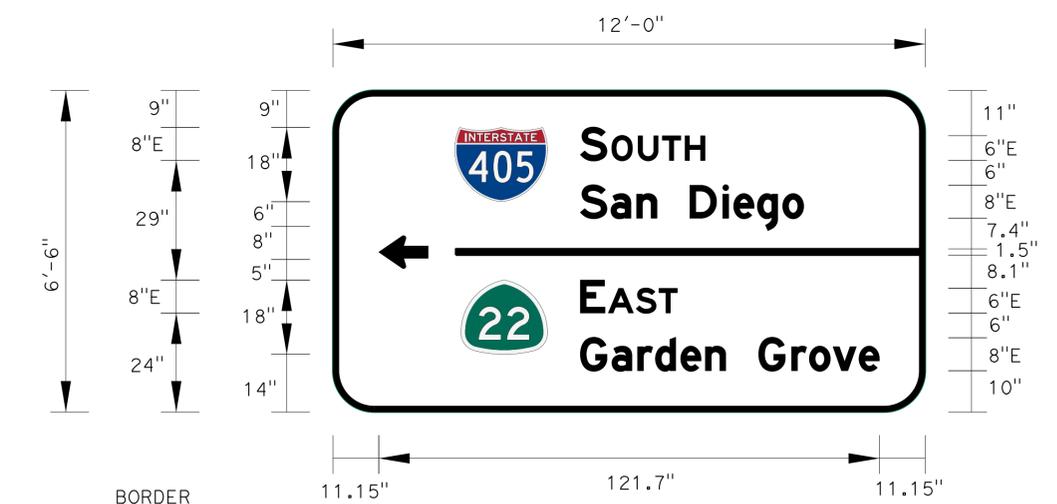
BORDER
R=7"
TH=1.75"
Panel Style: guide_exp_distance.ssi
M.U.T.C.D.: 2009 Edition

3-9 G77 MOD



BORDER
R=8"
TH=1.5"
Panel Style: guide_exp_distance.ssi
M.U.T.C.D.: 2009 Edition

2-18 G77 MOD



BORDER
R=10"
TH=1.5"
Panel Style: guide_exp_distance.ssi
M.U.T.C.D.: 2009 Edition

5-16 G77 MOD

SIGN DETAILS
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN

FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR

REVISOR: RICHARD DANG, BANG HUA

DATE: 7/2/2010

LAST REVISION DATE PLOTTED => 23-DEC-2015 10:15:15 TIME PLOTTED => 10:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	34	81

Bang Q. Hua 10-29-15
 REGISTERED CIVIL ENGINEER DATE

11-09-15
 PLANS APPROVAL DATE

BANG Q. HUA
 No. C71273
 Exp. 12-31-15
 CIVIL

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

ROADSIDE SIGNS QUANTITIES

SHEET No.	SIGN No.	SIGN CODE	PANEL SIZE	POST SIZE & LENGTH (N)		REMOVE ROADSIDE SIGN	REMOVE ROADSIDE SIGN (STRAP & SADDLE BRACKET METHOD)	ROADSIDE SIGN - ONE POST	ROADSIDE SIGN - TWO POST	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD)	INSTALL SIGN (RAMP METER) (N)	TREATED WOOD WASTE	REMARK	
				6" x 6"	F+									
				INCHES	F+	EA	EA	EA	EA	EA	EA	LB		
S-5	5-4	G92(CA)	48 x 30	20				1						
		G27-2(CA)	30 x 25											
		M3-3	24 x 12											
		M6-2a	21 x 15											
	5-5	G92, G27-1, M3-3, M6-2a	EXISTING			1						175		
	5-6	G92(CA)	48 x 30	20				1						
		G27-2(CA)	30 x 25											
		M3-3	24 x 12											
	5-7	R9-3	EXISTING					1						
	5-8	R9-3	18 x 18							1				
	5-9	R9-3, R9-3a	EXISTING					1						
		R9-3bP												
	5-10	R9-3	18 x 18							1				
	5-11	R9-3, R9-3a	EXISTING					1					115	
		R9-3bP												
	5-12	R9-3	18 x 18	15					1					
	5-13	R5-10a	EXISTING				1						115	
	5-14	R5-10a	30 x 36	16					1					
	5-15	G77	EXISTING				1						115	
	5-16	G77 Mod	120 x 60	19						1				
5-17	R9-3, R9-3a	EXISTING					1							
	R9-3bP													
5-18	R9-3								1					
5-19	R9-3, R9-3a	EXISTING					1							
	R9-3bP													
5-20	R9-3								1					
SUB-TOTAL SQ-2							4	4	4	1	4		520	
SUB-TOTAL SQ-1							46	1	29	6	1	2	5562	
TOTAL							50	5	33	7	5	2	6082*	

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY
 * FOR GRAND TOTAL OF TREATED WOOD WASTE, SEE SHEET Q-1

SIGN QUANTITIES

SQ-2

LAST REVISION | DATE PLOTTED => 23-DEC-2015 10-15-15 | TIME PLOTTED => 10:48

MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SHEET No.	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL						ROADSIDE						RETROREFLECTIVE SHEETING (TYPE XI)
					BACKGROUND		LEGEND		PROTECTIVE FILM		FURNISH SINGLE SHEET ALUMINUM SIGN		FURNISH SINGLE SHEET ALUMINUM SIGN FOR RETROREFLECTIVE SHEETING (TYPE XI)			FURNISH LAMINATED PANEL SIGN (1"-TYPE B)	
					SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	STANDARD	PREMIUM	0.063"	0.080"	0.063"	0.080"		FOR REFLECTIVE SHEETING (TYPE XI)	
											UNFRAMED	UNFRAMED	UNFRAMED	UNFRAMED	FRAMED		
S-1	1-11	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-12	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-13	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-14	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-15	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-16	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-17	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-18	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-19	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-20	W1-8R	36 x 48	x	Y	XI	B	Non	x				12.0			12.0	
	1-22	W4-1R	48 x 48	x	Y	XI	B	Non	x					16.0		16.0	
	1-24	G77 Mod	102 x 66	x	G	XI	W	XI	x					46.8		46.8	
	1-26	W4-14(CA)	96 x 96	x	Y	XI	B	Non	x					64.0		64.0	
	1-27	W4-14(CA)	96 x 96	x	Y	XI	B	Non	x					64.0		64.0	
1-28	G77 Mod	102 x 66	x	G	XI	W	XI	x					46.8		46.8		
S-2	2-6	R3-1	30 x 30	x	W	VIII	R/B	VIII	x		6.3						
	2-8	W4-14(CA)	48 x 48	x	Y	XI	B	XI	x				16.0		16.0		
	2-9	W1-8R	36 x 48	x	Y	XI	B	Non	x			12.0			12.0		
	2-10	W1-8R	36 x 48	x	Y	XI	B	Non	x			12.0			12.0		
	2-11	W1-8R	36 x 48	x	Y	XI	B	Non	x			12.0			12.0		
	2-12	W1-8R	36 x 48	x	Y	XI	B	Non	x			12.0			12.0		
	2-13	W1-8R	36 x 48	x	Y	XI	B	Non	x			12.0			12.0		
	2-14	W1-8R	36 x 48	x	Y	XI	B	Non	x			12.0			12.0		
	2-15	W1-8R	36 x 48	x	Y	XI	B	Non	x			12.0			12.0		
	2-16	W1-8R	36 x 48	x	Y	XI	B	Non	x			12.0			12.0		
	2-18	G77 Mod	144 x 78	x	G	XI	W	XI	x					78.0		78.0	
S-3	3-2	G92(CA)	48 x 30	x	G	XI	W	XI	x				10.0		10.0		
		G27-2(CA)	30 x 25	x	Blu	XI	W/R	XI	x			5.2			5.2		
		M3-3	24 x 12	x	Blu	XI	W	XI	x			2.0			2.0		
	3-4	M6-2a	21 x 15	x	Blu	XI	W	XI	x			2.2			2.2		
G92(CA)		48 x 30	x	G	XI	W	XI	x				10.0		10.0			
G27-2(CA)		30 x 25	x	Blu	XI	W/R	XI	x			5.2			5.2			
M3-3		24 x 12	x	Blu	XI	W	XI	x			2.0			2.0			
M6-2a		21 x 15	x	Blu	XI	W	XI	x			2.2			2.2			
R5-10a		30 x 36	x	W	VIII	B	Non	x		7.5							
3-6	R5-10a	30 x 36	x	W	VIII	B	Non	x				16.0		16.0			
3-8	W4-1R	48 x 48	x	Y	XI	B	Non	x				16.0		16.0			
3-9	G77 Mod	96 x 54	x	G	XI	W	XI	x				36.0		36.0			
3-11	W3-7	36 x 36	x	Y	XI	B	Non	x			9.0			9.0			
3-12	W3-7	36 x 36	x	Y	XI	B	Non	x			9.0			9.0			
3-14	W11-2	30 x 30	x	Y	XI	B	Non	x			6.3			6.3			
	W16-7pL	24 x 12	x	Y	XI	B	Non	x			2.0			2.0			
S-4	4-2	W4-1R	48 x 48	x	Y	XI	B	Non	x				16.0		16.0		
SUB-TOTAL											25.8	32.0	261.1	84.0	257.6	78.0	680.7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	35	81
<i>Bang Q. Hua</i> REGISTERED CIVIL ENGINEER			10-29-15	DATE	
11-09-15			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

REGISTERED PROFESSIONAL ENGINEER
BANG Q. HUA
 No. C71273
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA

ABBREVIATIONS:

- B = BLACK
- Blu = BLUE
- R = RED
- W = WHITE
- Y = YELLOW
- Non = NON-REFLECTIVE
- N/A = NOT APPLICABLE

SIGN QUANTITIES (CONTRACTOR FURNISHED SIGNS)

SQ-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR
 CALCULATED/DESIGNED BY: RICHARD DANG
 CHECKED BY: BANG HUA
 REVISED BY: DATE REVISED

LAST REVISION DATE PLOTTED => 23-DEC-2015
 10-15-15 TIME PLOTTED => 10:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	36	81

Bang Q. Hua 10-29-15
REGISTERED CIVIL ENGINEER DATE

11-09-15
PLANS APPROVAL DATE

BANG Q. HUA
No. C71273
Exp. 12-31-15
CIVIL

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

MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SHEET No.	SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL						ROADSIDE					RETROREFLECTIVE SHEETING (TYPE XI)	
					BACKGROUND		LEGEND		PROTECTIVE FILM		FURNISH SINGLE SHEET ALUMINUM SIGN		FURNISH SINGLE SHEET ALUMINUM SIGN FOR RETROREFLECTIVE SHEETING (TYPE XI)				FURNISH LAMINATED PANEL SIGN (1"-TYPE B) FOR REFLECTIVE SHEETING (TYPE XI)
					SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	STANDARD	PREMIUM	0.063"	0.080"	0.063"	0.080"			
											UNFRAMED	UNFRAMED	UNFRAMED	UNFRAMED	FRAMED		
SQFT		SQFT		SQFT		SQFT	SQFT	SQFT		SQFT							
S-5	5-2	R9-3	18 x 18	x	W	VIII	R/B	VIII	x								
	5-4	G92(CA)	48 x 30	x	G	XI	W	XI	x			10.0					10.0
		G27-2(CA)	30 x 25	x	Blu	XI	W/R	XI	x			5.2					5.2
		M3-3	24 x 12	x	Blu	XI	W	XI	x			2.0					2.0
		M6-2a	21 x 15	x	Blu	XI	W	XI	x			2.2					2.2
	5-6	G92(CA)	48 x 30	x	G	XI	W	XI	x			10.0					10.0
		G27-2(CA)	30 x 25	x	Blu	XI	W/R	XI	x			5.2					5.2
		M3-3	24 x 12	x	Blu	XI	W	XI	x			2.0					2.0
		M6-2a	21 x 15	x	Blu	XI	W	XI	x			2.2					2.2
	5-8	R9-3	18 x 18	x	W	VIII	R/B	VIII	x		2.3						
	5-10	R9-3	18 x 18	x	W	VIII	R/B	VIII	x		2.3						
	5-12	R9-3	18 x 18	x	W	VIII	R/B	VIII	x		2.3						
	5-14	R5-10a	30 x 36	x	W	VIII	B	Non	x		7.5						
	5-16	G77 Mod	120 x 60	x	G	XI	W	XI	x						50.0		50.0
5-18	R9-3	18 x 18	x	W	VIII	R/B	VIII	x		2.3							
5-20	R9-3	18 x 18	x	W	VIII	R/B	VIII	x		2.3							
SUB-TOTAL SQ-4											21.3		38.8		50.0		88.8
SUB-TOTAL SQ-3											25.8	32.0	261.1	84.0	257.6	78.0	680.7
TOTAL											47.1	32.0	299.9	84.0	307.6	78.0	769.5

ABBREVIATIONS:

B = BLACK
Blu = BLUE
R = RED
W = WHITE
Y = YELLOW
Non = NON-REFLECTIVE
N/A = NOT APPLICABLE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN

Caltrans

FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR

CALCULATED/DESIGNED BY: RICHARD DANG

CHECKED BY: BANG HUA

REVISOR BY: []

DATE REVISED: []

LAST REVISION | DATE PLOTTED => 23-DEC-2015
10-15-15 TIME PLOTTED => 10:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	37	81

Steven Le 10-29-15
 REGISTERED CIVIL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 STEVEN LE
 No. C75534
 Exp. 06-30-16
 CIVIL
 STATE OF CALIFORNIA

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

ROADWAY QUANTITIES

SHEET No.	STATION	REMOVE CONCRETE CURB	REMOVE AC DIKE	REMOVE GUARDRAIL	MIDWEST GUARD RAIL SYSTEM (WOOD POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	HOT MIX ASPHALT -OPEN GRADED (OGFC)	HOT MIX ASPHALT (TYPE A)	COLD PLANE AC PAVEMENT	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	ROADWAY EXCAVATION	EMBANKMENT (N)	TACK COAT	CI 2 AS	TREATED WOOD WASTE	TEMPORARY DRAINAGE INLET PROTECTION	TRANSITION RAILING (TYPE WB-31)	GEOSYNTHETIC PAVEMENT INTERLAYER (PAVING FABRIC)	TEMPORARY FIBER ROLL	PLACE HMA DIKE (TYPE C)	GUARD RAILING DELINEATOR	ASPHALT BINDER (GEOSYNTHETIC PAVEMENT INTERLAYER)	
		LF	LF	LF	LF	EA	TON	TON	SQYD	TON	CY	CY	TON	CY	LB	EA	CY	SQYD	LF	LF	EA	TON	
L-1	"C" 24+42 To "C" 31+62.15	795																					
	"C" 24+42 To "C" 32+93.40						212	469	1956	424	1043	95	1	932				1956	682			2	
	"C" 23+76 TO 25+51			175	154										2978	2	1				10		
	"C" 25+51 TO 26+18		67			1		0.6												67			
	"C" 23+60 TO 26+40																		240				
L-2	"D" 11+03.40 To "D" 16+50						98		1314	146			0.6										
	"D" 11+03.40 To "D" 16+27.60		525					4													525		
L-3	"E" 96+14 TO "E" 108+75.40						362		4880	544			2.3			1							
L-4	"F" 49+50 TO "F" 58+00						249		3346	373			1.5										
L-5	"F" 58+00 TO "F" 64+70						196		2640	294			1.2			6							
SUB TOTAL		795	592	175	154	1	1117	473.6	14136	1781	1043	95	7	932	2978	9	1	1956	922	592	10	2	
FROM SHEET SQ-2															6082								
TOTAL		795	592	175	154	1	1117	473.6	14136	1781	1043	95	7	932	9060	9	1	1956	922	592	10	2	

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

SUMMARY OF QUANTITIES Q-1



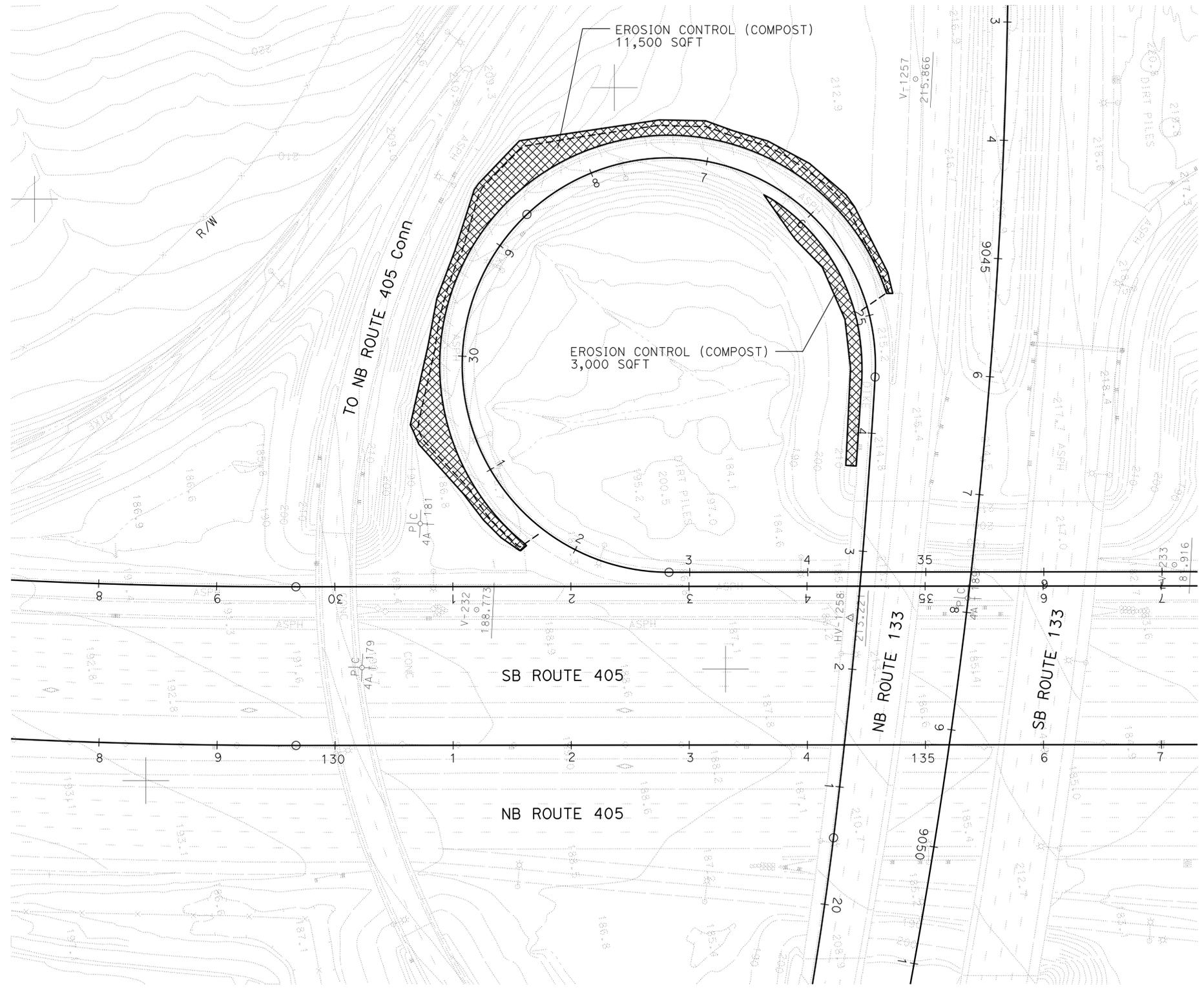
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	38	81

10-29-15
 LICENSED LANDSCAPE ARCHITECT

11-09-15

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.

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



LEGEND

	EROSION CONTROL (COMPOST)
--	---------------------------

EROSION CONTROL QUANTITY

SHEET No.	EROSION CONTROL TYPES	QUANTITY
EC-1	COMPOST	14,500 SQFT

EROSION CONTROL TYPES

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE	DEPTH
		DESCRIPTION	TYPE		
STEP 1	COMPOST	COMPOST	MEDIUM	270 CY/ACRE	2 "
		SEED MIX No. 3 (N)			

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

SEED MIX (N)			
PLANT TYPE	BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	PURE LIVE SEED LBS/ACRE
GRASS	Nassella pulchra (Purple Needlegrass)	40	8.0
	Vulpia microstachys (Small Fescue)	40	8.0
	Nassella lepida (Foothill Stipa)	30	2.0
	Festuca rubra 'molate' (Creeping Red Fescue)	40	5.0
WILD FLOWER	Lasthenia californica (California Goldfield)	25	0.5
	Eschscholzia californica (California Poppy)	40	2.0
	Achillea millefolium (Common Yarrow)	40	0.5
	Clarkia rubicunda (Ruby Chalice Clarkia)	15	1.0
	Penstemon spectabilis (Showy Penstemon)	40	2.0
TOTAL			29.0

**EROSION CONTROL PLAN
 (LOCATION 1)
 EC-1**

SCALE : 1"=50'

APPROVED FOR EROSION CONTROL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - LANDSCAPE ARCHITECTURE

Caltrans

SENIOR LANDSCAPE ARCHITECT: ERIC DICKSON

CALCULATED/DESIGNED BY: ERIC DICKSON

CHECKED BY: ERIC DICKSON

DESIGNED BY: ERIC DICKSON

REVISOR: KEN CHAN

DATE: 7/2/2010

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: [blank]
 CHECKED BY: [blank]
 REVISIONS: [blank]
 REVISOR: MINA ZOLFAGHARI, VANESSA TRUONG
 DATE: [blank]

NOTES (THIS SHEET ONLY):

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- EXISTING 240/480 V METERED TYPE III-BF SERVICE EQUIPMENT ENCLOSURE LOCATED AT NEAR LAGUNA CANYON OVERCROSSING. 480/120 STEPDOWN TRANSFORMER CIRCUIT No. 5 AND 6
 ID No. 12-55-405-0-002.130
 PP No. 1765791E
 2P, 480 V, 100 A, CB FOR MAIN
 2-2P, 480 V, 30 A, CB FOR LIGHTING AND SIGN ILLUMINATION
 1P, 120 V, 15 A, CB FOR PEC
- ALL EXISTING ELECTROLIERS MUST BE OPERATIONAL DURING CONSTRUCTION UNTIL THE NEW ELECTROLIERS ARE INSTALLED AND OPERATIONAL.

LEGEND (THIS SHEET ONLY):

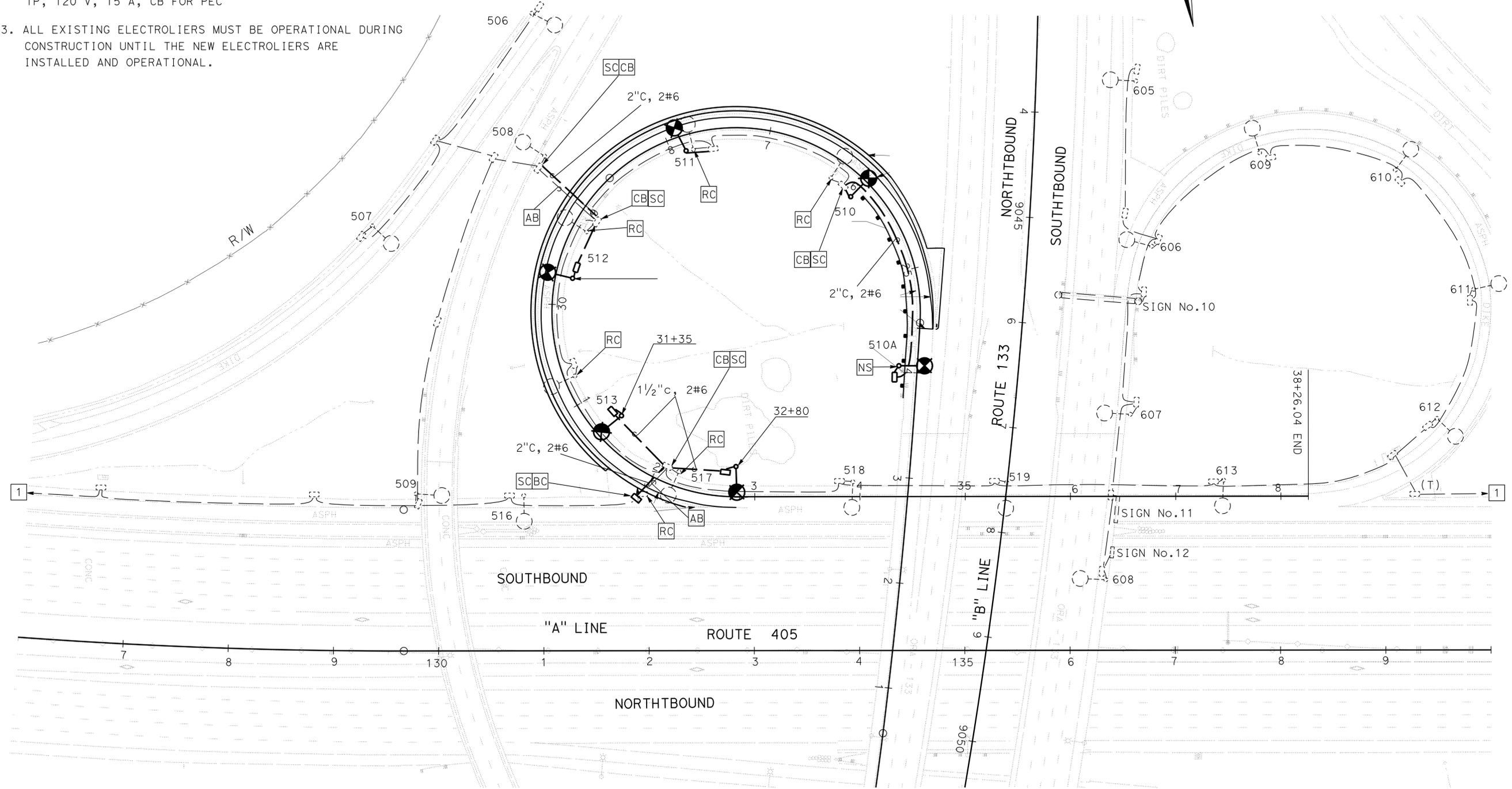
- 1 FOR CONTINUATION SEE WIRING DIAGRAM SHEET E-3.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	39	81

Mina Zolfaghari 10-29-15
 REGISTERED ELECTRICAL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 MINA ZOLFAGHARI
 No. E 16816
 Exp. 12/31/16
 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.



LIGHTING AND SIGN ILLUMINATION

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

E-1

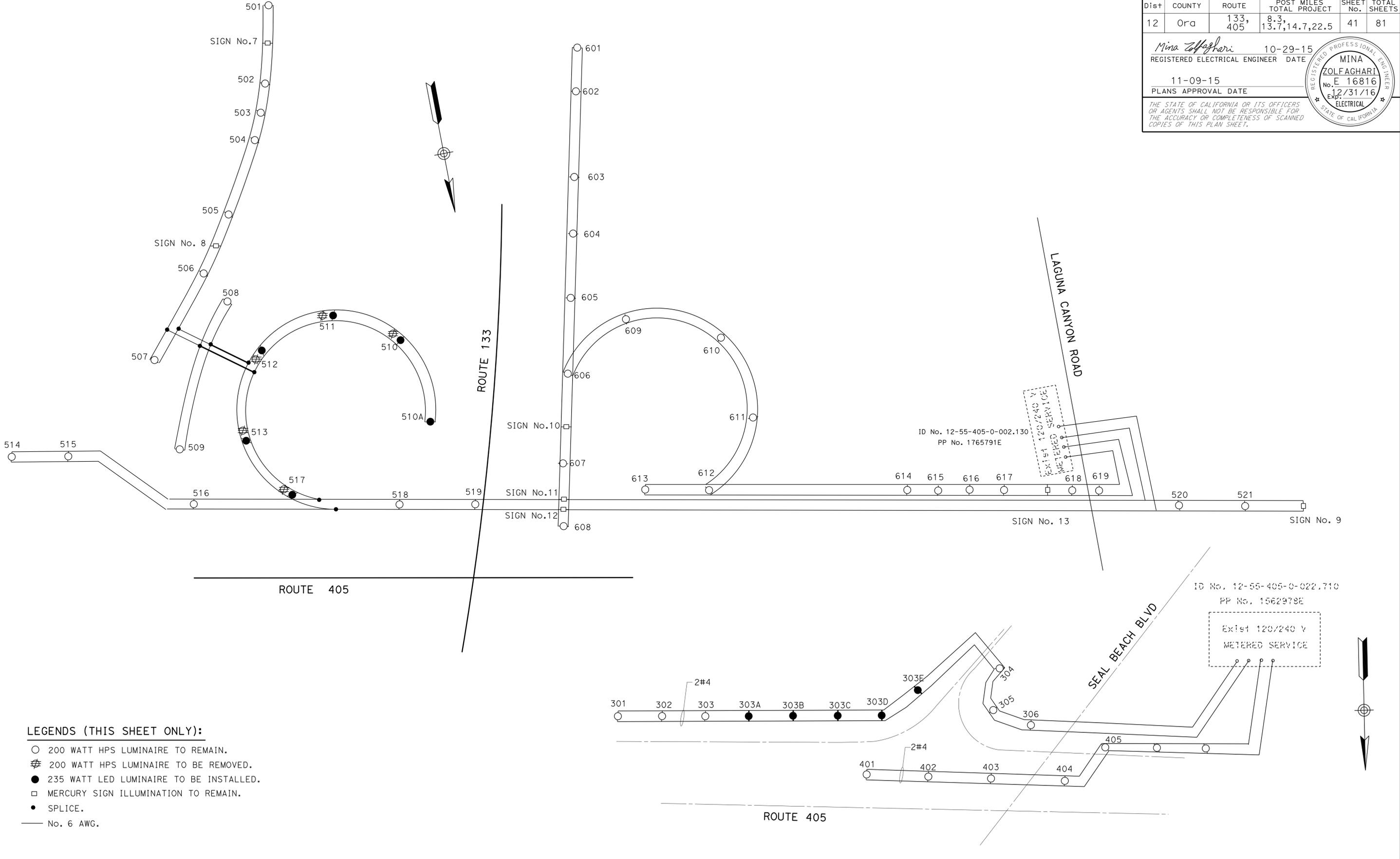
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	41	81

<i>Mina Zolfaghari</i>	10-29-15
REGISTERED ELECTRICAL ENGINEER	DATE
11-09-15	
PLANS APPROVAL DATE	

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: MINA ZOLFAGHARI
 CHECKED BY: VANESSA TRUONG
 REVISED BY: [] DATE: []
 REVISIONS: []



- LEGENDS (THIS SHEET ONLY):**
- 200 WATT HPS LUMINAIRE TO REMAIN.
 - ⊗ 200 WATT HPS LUMINAIRE TO BE REMOVED.
 - 235 WATT LED LUMINAIRE TO BE INSTALLED.
 - MERCURY SIGN ILLUMINATION TO REMAIN.
 - SPLICE.
 - No. 6 AWG.

NOTE (THIS SHEET ONLY):
 1. FOR SERVICE INFORMATION AND LOCATION SEE SHEET E-1 AND E-2.

WIRING DIAGRAM

LIGHTING AND SIGN ILLUMINATION

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR
 SHAHRAM SHAHRIARI

CALCULATED-DESIGNED BY
 CHECKED BY

MINA ZOLFAGHARI
 VANESSA TRUONG

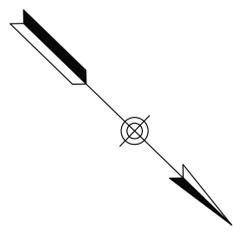
REVISED BY
 DATE REVISED

LEGENDS (THIS SHEET ONLY):

- 1 EXISTING TYPE 170 CONTROLLER IN TYPE 332 ASSEMBLY.
- 2 EXISTING 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE.

NOTE (THIS SHEET ONLY):

1. SEE SHEET E-4.

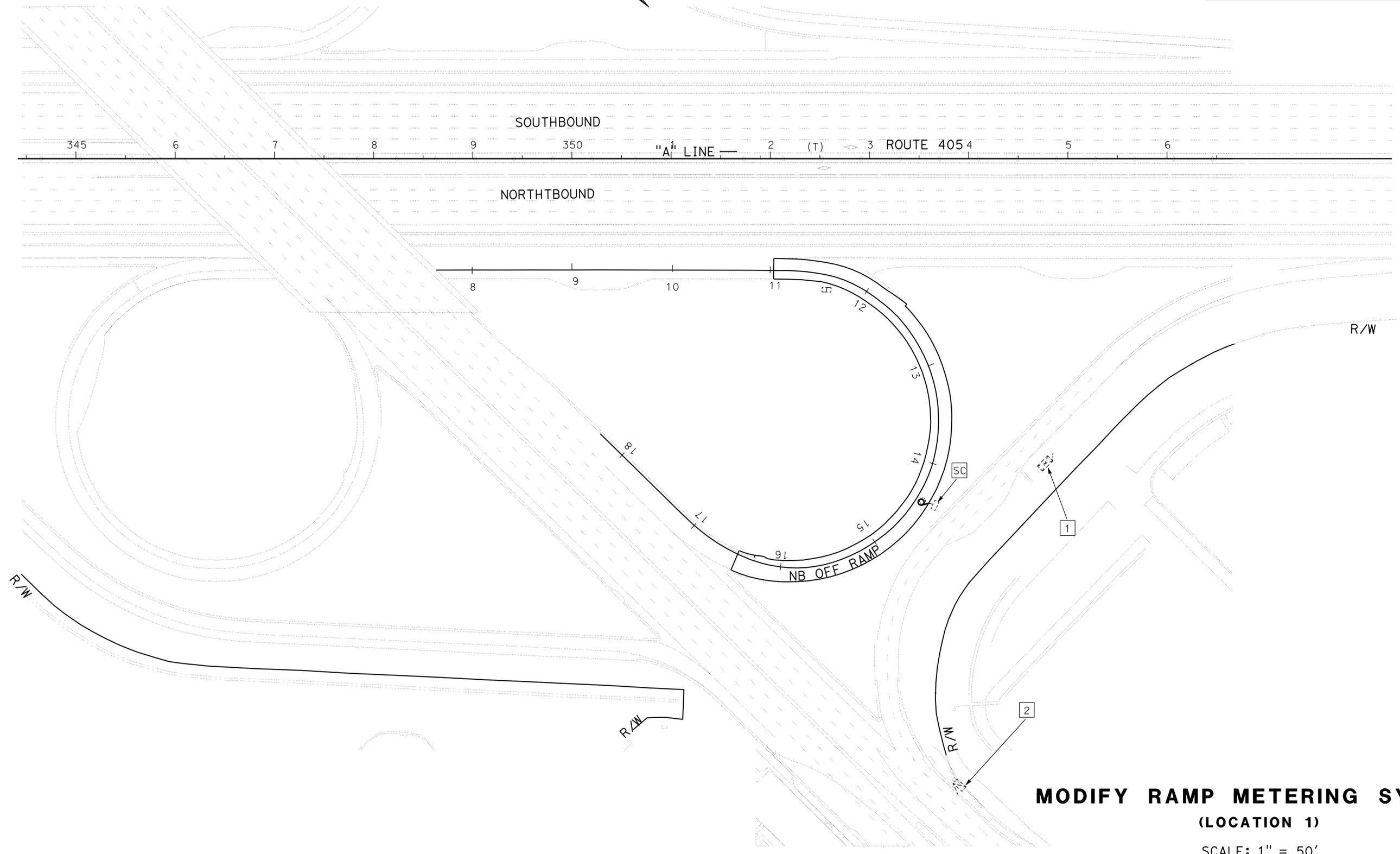


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 14.7, 22.5	43	81

Mina Zolfaghari 10-29-15
 REGISTERED ELECTRICAL ENGINEER DATE

11-09-15
 PLANS APPROVAL DATE

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MODIFY RAMP METERING SYSTEM

(LOCATION 1)

SCALE: 1" = 50'

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E-5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	44	81

Mina Zolfaghari 10-29-15
REGISTERED ELECTRICAL ENGINEER DATE

11-09-15
PLANS APPROVAL DATE

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NOTE (THIS SHEET ONLY):

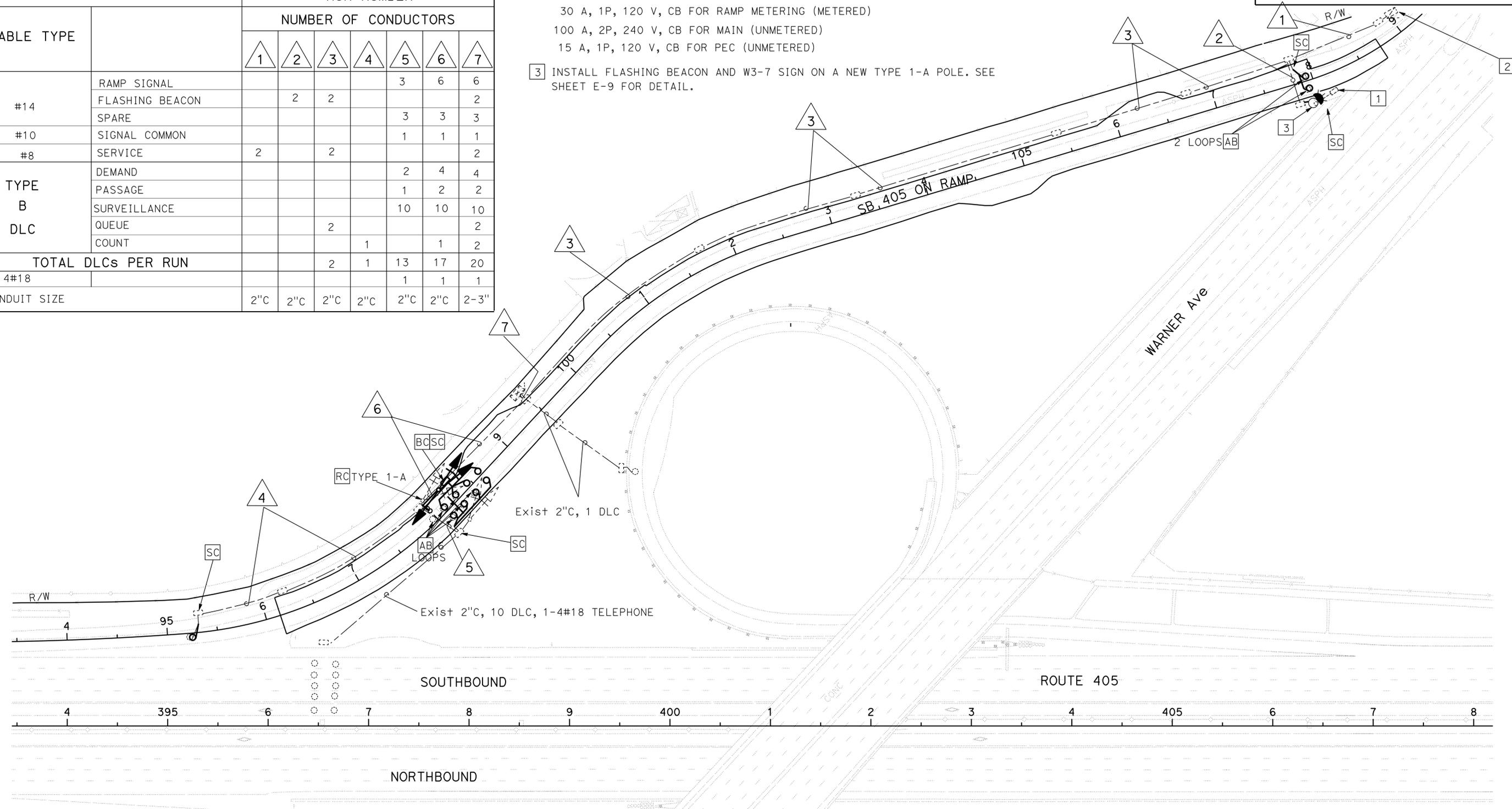
1. SEE SHEET E-4.

LEGENDS (THIS SHEET ONLY):

- 1 RC EXISTING METER-ON SIGN, TYPE1A STANDARD, AND FOUNDATION
- 2 EXISTING 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING:
 - 100 A, 2P, 240 V, CB FOR MAIN (METERED)
 - 50 A, 2P, 240 V, CB FOR SIGN (METERED)
 - 20 A, 1P, 120 V, CB FOR IISNS (METERED)
 - 30 A, 1P, 120 V, CB FOR RAMP METERING (METERED)
 - 100 A, 2P, 240 V, CB FOR MAIN (UNMETERED)
 - 15 A, 1P, 120 V, CB FOR PEC (UNMETERED)
- 3 INSTALL FLASHING BEACON AND W3-7 SIGN ON A NEW TYPE 1-A POLE. SEE SHEET E-9 FOR DETAIL.

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CABLE TYPE	CONDUCTOR DESIGNATION	RUN NUMBER						
		NUMBER OF CONDUCTORS						
		1	2	3	4	5	6	7
#14	RAMP SIGNAL					3	6	6
	FLASHING BEACON		2	2				2
	SPARE					3	3	3
#10	SIGNAL COMMON					1	1	1
#8	SERVICE	2		2				2
TYPE B DLC	DEMAND					2	4	4
	PASSAGE					1	2	2
	SURVEILLANCE					10	10	10
	QUEUE			2				2
	COUNT					1	1	2
TOTAL DLCs PER RUN				2	1	13	17	20
4#18						1	1	1
CONDUIT SIZE		2"C	2"C	2"C	2"C	2"C	2"C	2-3"



MODIFY RAMP METERING SYSTEM

(LOCATION 2)

SCALE: 1" = 50'

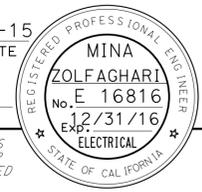
E-6

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	45	81

<i>Mina Zolfaghari</i>	10-29-15
REGISTERED ELECTRICAL ENGINEER	DATE
11-09-15	
PLANS APPROVAL DATE	

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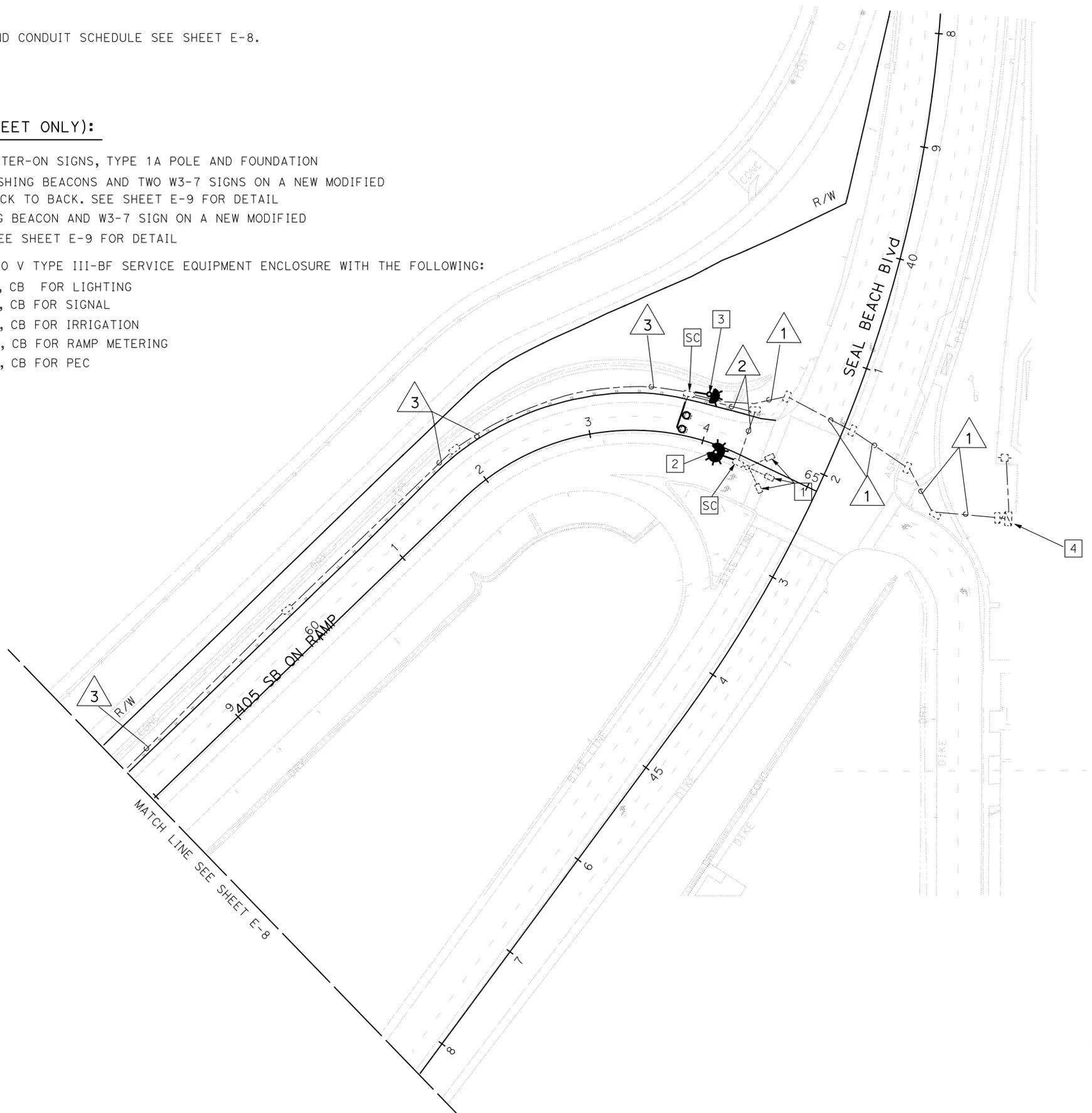


NOTES (THIS SHEET ONLY):

1. SEE SHEET E-4.
2. FOR CONDUCTOR AND CONDUIT SCHEDULE SEE SHEET E-8.

LEGENDS (THIS SHEET ONLY):

- 1 [RC] EXISTING 3 METER-ON SIGNS, TYPE 1A POLE AND FOUNDATION
- 2 INSTALL TWO FLASHING BEACONS AND TWO W3-7 SIGNS ON A NEW MODIFIED TYPE 1A POLE BACK TO BACK. SEE SHEET E-9 FOR DETAIL
- 3 INSTALL FLASHING BEACON AND W3-7 SIGN ON A NEW MODIFIED TYPE 1A POLE. SEE SHEET E-9 FOR DETAIL
- 4 EXISTING 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING:
 40 A, 2P, 240 V, CB FOR LIGHTING
 40 A, 2P, 240 V, CB FOR SIGNAL
 20 A, 1P, 120 V, CB FOR IRRIGATION
 30 A, 1P, 120 V, CB FOR RAMP METERING
 15 A, 1P, 120 V, CB FOR PEC



**MODIFY RAMP METERING SYSTEM
(LOCATION 3)
SCALE: 1" = 50'**

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	MINA ZOLFAGHARI	
	CHECKED BY	DESIGNED BY	DATE
		VANESSA TRUONG	

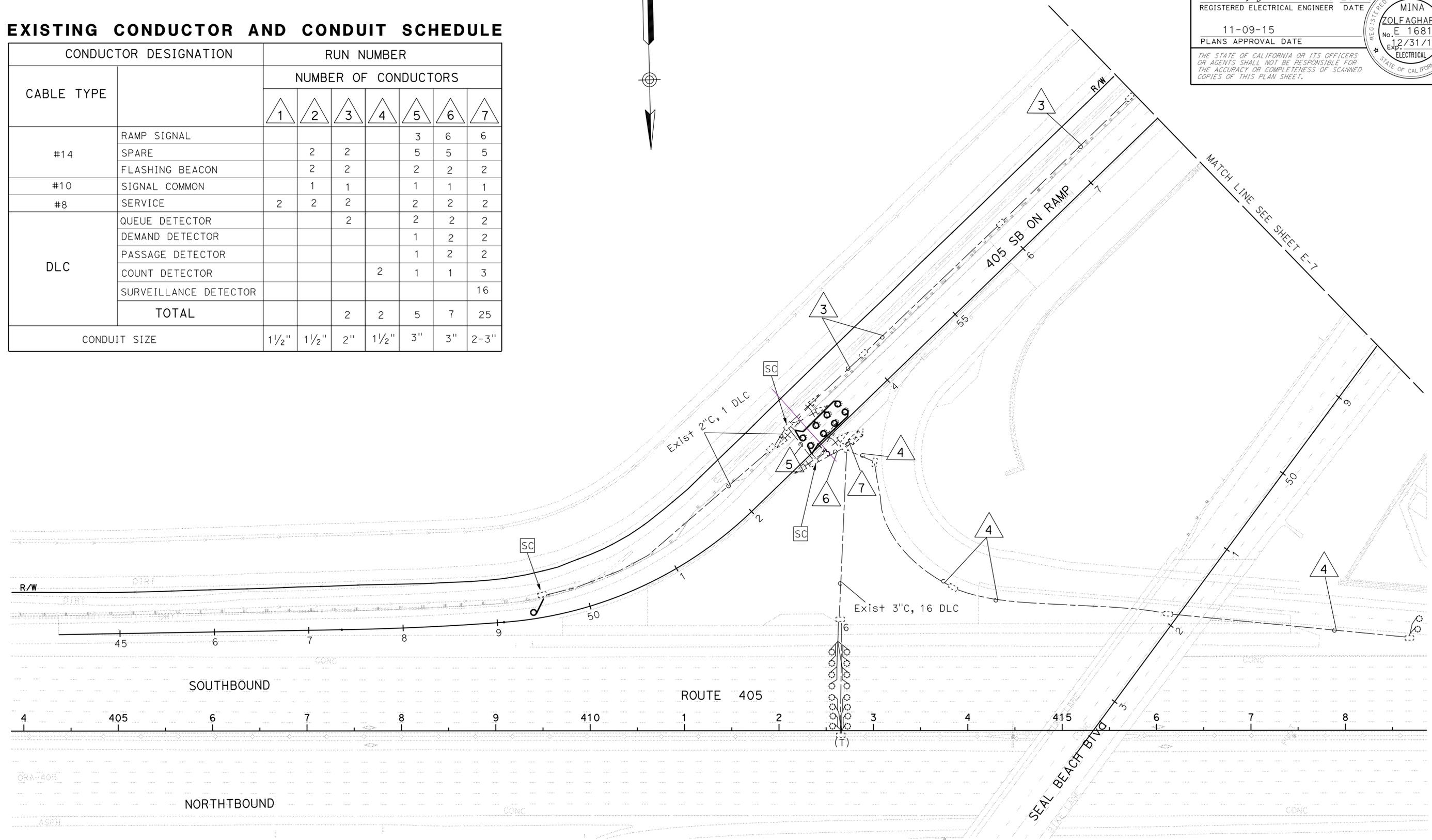
LAST REVISION DATE PLOTTED => 23-DEC-2015 TIME PLOTTED => 10:48

NOTE (THIS SHEET ONLY):

1. SEE SHEET E-4.

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CABLE TYPE	CONDUCTOR DESIGNATION	RUN NUMBER						
		NUMBER OF CONDUCTORS						
		1	2	3	4	5	6	7
#14	RAMP SIGNAL					3	6	6
	SPARE		2	2		5	5	5
	FLASHING BEACON		2	2		2	2	2
#10	SIGNAL COMMON		1	1		1	1	1
#8	SERVICE	2	2	2		2	2	2
DLC	QUEUE DETECTOR			2		2	2	2
	DEMAND DETECTOR					1	2	2
	PASSAGE DETECTOR					1	2	2
	COUNT DETECTOR				2	1	1	3
	SURVEILLANCE DETECTOR							16
TOTAL				2	2	5	7	25
CONDUIT SIZE		1½"	1½"	2"	1½"	3"	3"	2-3"



MODIFY RAMP METERING SYSTEM

(LOCATION 3)

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

E-8

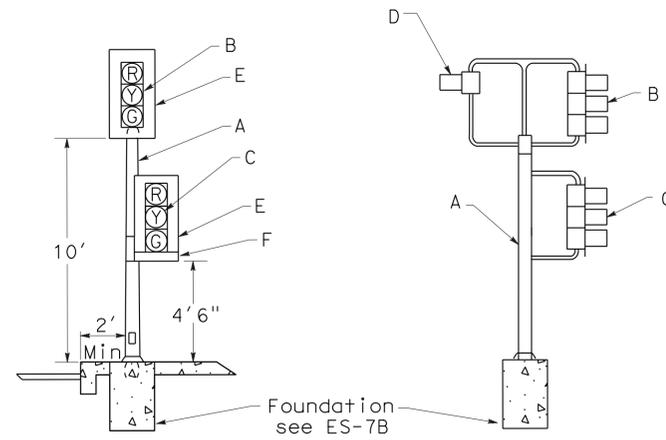
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 ELECTRICAL DESIGN
 MINA ZOLFAGHARI
 VANESSA TRUONG
 SHAHRAM SHAHRIARI

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	47	81

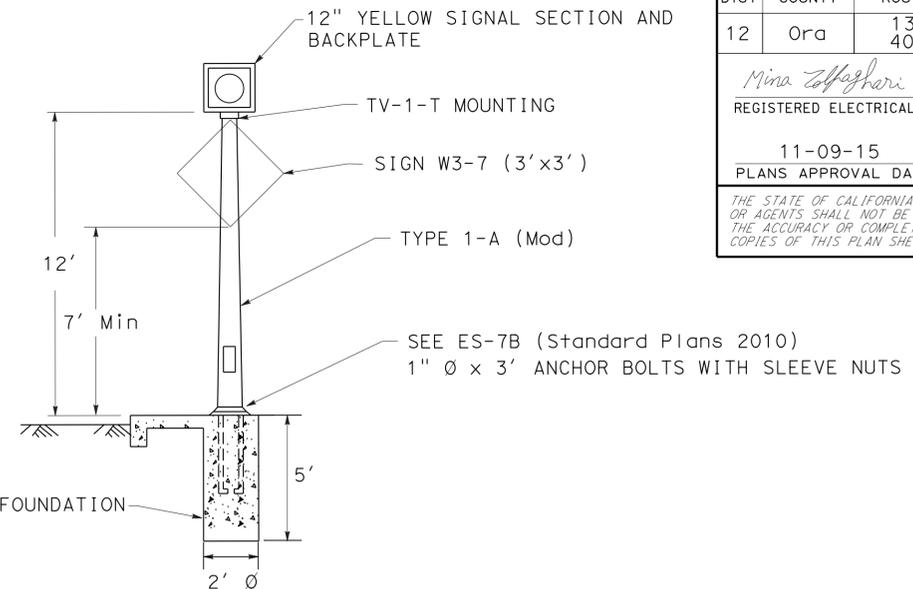
Mina Zolfaghari 10-29-15
 REGISTERED ELECTRICAL ENGINEER DATE
 11-09-15
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES: (RAMP METERING SIGNAL)

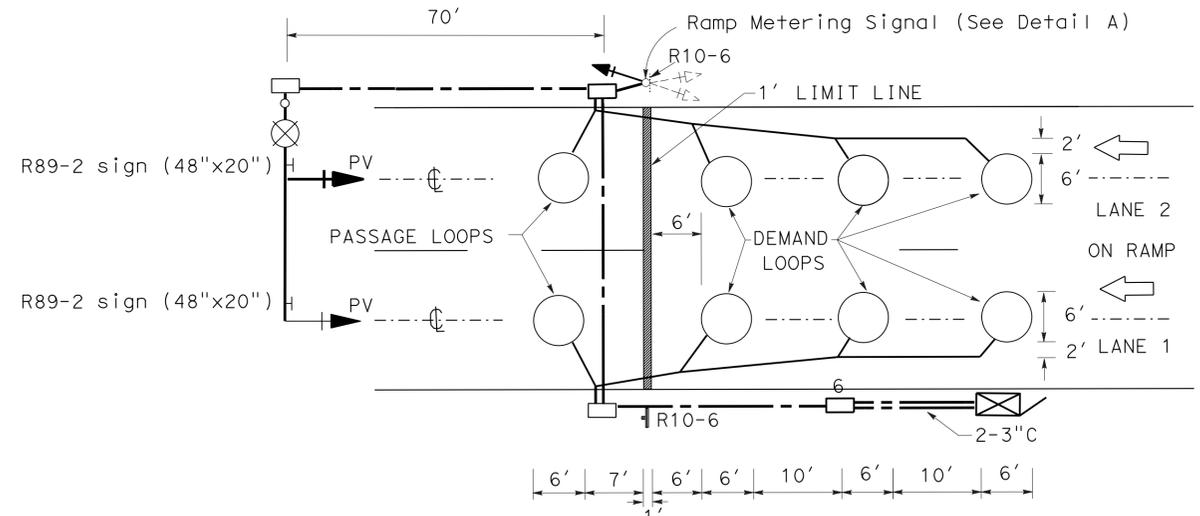
- A. TYPE 1-A STANDARD. INSTALL ANCHOR BOLTS WITH SLEEVE NUTS (SEE ES-7B).
- B. 3-SECTION, 12" SIGNAL HEAD (RED, YELLOW, GREEN). 18" X 12" ANGLED VISORS ARE REQUIRED WHERE SHOWN ON THE PLANS. TYPE TV-2-T POST-TOP MOUNTING.
- C. 3-SECTION, 8" SIGNAL HEAD (RED, YELLOW, GREEN), 8" FULL CIRCLE VISORS. TYPE SV-1-T BRACKET MOUNTING ON SIDE OF STANDARD AWAY FROM TRAFFIC.
- D. 1-SECTION, 12" SIGNAL HEAD (RED), 12" FULL CIRCLE VISOR. RED STATUS LIGHT FOR ENFORCEMENT.
- E. BACKPLATE.
- F. "ONE CAR PER GREEN" R89 SIGN (24"x10"). (FOR ONE LANE AND HOV).
 "ONE CAR PER GREEN THIS LANE" R89-2 SIGN (24"x10") (FOR TWO LANES)
 "TWO CARS PER GREEN THIS LANE" R89-2 SIGN (24"x10") (FOR TWO LANES).
 "ONE CAR PER GREEN THIS LANE" R89-2 SIGN (48"x20") (ONE LANE MAST ARM).
 "TWO CARS PER GREEN THIS LANE" R89-2 SIGN (48"x20") (TWO LANES MAST ARM).
 MOUNTED ON BACK PLATE AND CENTER BETWEEN GREEN SECTION AND BOTTOM OF BACK PLATE AND SIDES. ATTACH WITH " ALUMINUM BLIND RIVETS OR GALVANIZED " X " BOLTS, HEX NUTS, PLAIN AND LOCK WASHERS.



**RAMP METERING SIGNAL
DETAIL A**



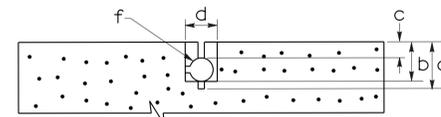
**TYPE 1-A (Mod)
FLASHING BEACON
DETAIL A
NTS**



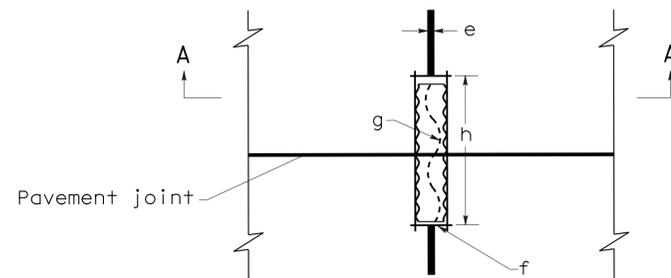
**TYPICAL 2-LANE RAMP
METERING INSTALLATION
DETAIL F**

NOTES: (LOOP DETECTOR)

- A. SAW-CUT DEPTH TO ACCOMMODATE SPECIFIED NUMBER OF CONDUCTORS WITH A MINIMUM OF " FROM TOP OF WIRE TO PAVEMENT SURFACE (3" MAX).
- B. SLOT-SAW CUT DEPTH TO ACCOMMODATE 1" NON-METALLIC CONDUIT WITH " MINIMUM FROM TOP OF CONDUIT TO PAVEMENT SURFACE.
- C. " MINIMUM BETWEEN TOP OF CONDUIT AND PAVEMENT SURFACE.
- D. SAW-CUT WIDTH TO ACCOMMODATE 1" NON-METALLIC CONDUIT WITH " CLEARANCE.
- E. INDUCTIVE LOOP DETECTOR SAW-CUT.
- F. 1" NON-METALLIC CONDUIT, 6" LONG, PLUG BOTH ENDS WITH CAULKING COMPOUND TO KEEP OUT EPOXY.
- G. CONDUCTORS WITH " MINIMUM SLACK INSIDE CONDUIT.
- H. SAW-CUT LENGTH OF SLOT " LONGER THAN CONDUIT.
- I. SEE ES-5A, ES-5B AND ES-5D FOR ADDITIONAL LOOP INSTALLATION PROCEDURE.
- J. LOOP DETECTORS SHALL BE INSTALLED AFTER THE PLACEMENT OF UPPERMOST LAYER OF NEW PAVEMENT AND AFTER APPLYING TRAFFIC STRIPES AND PAVEMENT MARKINGS.
- K. SPACING FOR MAINLINE DOUBLE LOOP IS 20' LEADING EDGE TO LEADING EDGE.



SECTION A-A



PLAN VIEW

TYPICAL LOOP LEAD-IN DETAIL AT PAVEMENT JOINT

LEGENDS:

- RAMP METERING SIGNAL TO BE INSTALLED (SEE RAMP METERING SIGNAL DETAIL A).
- STATE-FURNISHED MODEL 170 CONTROLLER IN MODEL 334 CABINET TO BE INSTALLED. FOR FOUNDATION DETAILS SEE STANDARD PLANS ES-3C (FRONT DOOR SWING AS SHOWN).

**RAMP METERING SYSTEM
(DETAILS)
NO SCALE**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 REVISIONS: VANESSA TRUONG
 MINA ZOLFAGHARI
 CALCULATED/DESIGNED BY: VANESSA TRUONG
 CHECKED BY:

LAST REVISION DATE PLOTTED => 23-DEC-2015
 04-30-15 TIME PLOTTED => 10:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	48	81

Mina Zolfaghari 10-29-15
REGISTERED ELECTRICAL ENGINEER DATE

11-09-15
PLANS APPROVAL DATE

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LIGHTING AND SIGN ILLUUMINATION

SHEET No.	CONDUCTORS	CONDUIT		PULL BOX	LUMINIAIRE TYPE 31 WITH 20' LMA	NONE SLIP BASELUMINIAIRE TYPE 31 WITH 20' LMA	FOUNDATION TYPE 31	FOUNDATION TYPE 32	LUMINIAIRE TYPE 32	RC LUMINIAIRE TYPE 15	REMOVE FOUNDATION TYPE 15	235 W LED	CB	SC	BC
	#6	1 1/2"	2"		EA	EA	EA	EA	EA	EA	EA		EA	EA	EA
E-1	960	150	330	4	3	1	4	2	2	5	122.66	6	4	5	1
E-2	-	-	-	5	-	5	5	-	-	-	-	-	-	5	5

TRAFFIC MONITORING STATION

SHEET No.	CONDUIT	CONDUCTORS	No. 5 PULL BOX	BC	SC	LOOP
	2"	#2 AWG		EA	EA	EA
E-4	60	120	2	2	2	1

NOTES (THIS SHEET ONLY):

- ELECTRICAL QUANTITY INFORMATION ON THIS SHEET IS FOR DESIGNER USE ONLY. DO NOT USE FOR BIDDING PURPOSES.

ABBREVIATIONS (THIS SHEET ONLY):

- LF LINEAR FEET
- CF CUBIC FEET
- EA EACH

MODIFY RAMP METERING SYSTEM

SHEET No.	STANDARD TYPE 1-A WITH FOUNDATION	MODIFIED STANDARD TYPE 1-A WITH FOUNDATION	LOOP EA	BC	SC	RC STANDARD TYPE 1-A	RC FOUNDATION TYPE 1-A	FLASHING BEACON EA	3-SECTION 8" SIGNAL EA	3-SECTION 12" SIGNAL EA	1-SECTION 12" SIGNAL EA	RC METER- ON SIGN EA
	EA	EA		EA	EA	EA	CF					EA
E-5	-	-	1	-	1	-	-	-	-	-	-	-
E-6	1	1	11	1	5	1	10.99	1	1	1	1	1
E-7	-	2	2	-	2	1	10.99	3	-	-	-	3
E-8	-	-	9	-	3	-	-	-	-	-	-	-

QUANTITY SHEET

NO SCALE

E-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: VANESSA TRUONG
 REVISOR: MINA ZOLFAGHARI
 CHECKED BY: VANESSA TRUONG
 REVISIONS: 7/2/2010

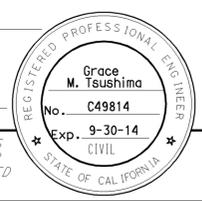
LAST REVISION DATE PLOTTED => 23-DEC-2015
 04-30-15 TIME PLOTTED => 10:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	49	81

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 11-09-15

UNIT OF MEASUREMENT SYMBOLS:

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

TABLE A

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

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

TABLE B

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft ³ , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
∅	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

Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED, MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EMBANKMENT
Mt	MOUNTAIN, MOUNT
MtI	MATERIAL
MVP	MAINTENANCE VEHICLE PULLOUT
N	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
Obir	OBLITERATE
OC	OVERCROSSING
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OGFC	OPEN GRADED FRICTION COURSE
OH	OVERHEAD
OHWM	ORDINARY HIGH WATER MARK
O-O	OUT TO OUT
Opp	OPPOSITE
OSD	OVERSIDE DRAIN
p	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

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
Qty	QUANTITY
R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
Rd	ROAD
Reinf	REINFORCED, REINFORCEMENT, REINFORCING
Rel	RELOCATE
Repl	REPLACEMENT
Ret	RETAINING
Rev	REVISED, REVISION
Rdwy	ROADWAY
RHMA	RUBBERIZED HOT MIX ASPHALT
Riv	RIVER
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN
Rt	RIGHT
Rte	ROUTE
RW	REDWOOD, RETAINING WALL
R/W	RIGHT OF WAY
Rwy	RAILWAY

S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND, SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
SL	STATION LINE
SM	SELECTED MATERIAL
Spec	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE
SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
St	STREET
Sta	STATION
STBB	SINGLE THRIE BEAM BARRIER
Std	STANDARD
Str	STRUCTURE
Surf	SURFACING
SW	SIDEWALK, SOUND WALL
Swr	SEWER
Sym	SYMMETRICAL
S4S	SURFACE 4 SIDES
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

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

P continued

S

T continued

M

Q

R

T

X

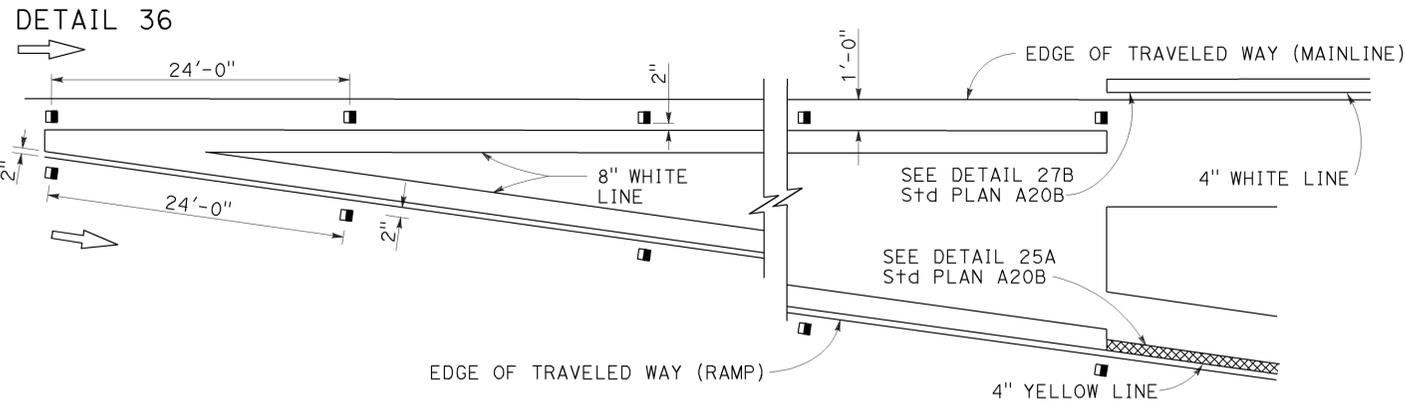
Y

U

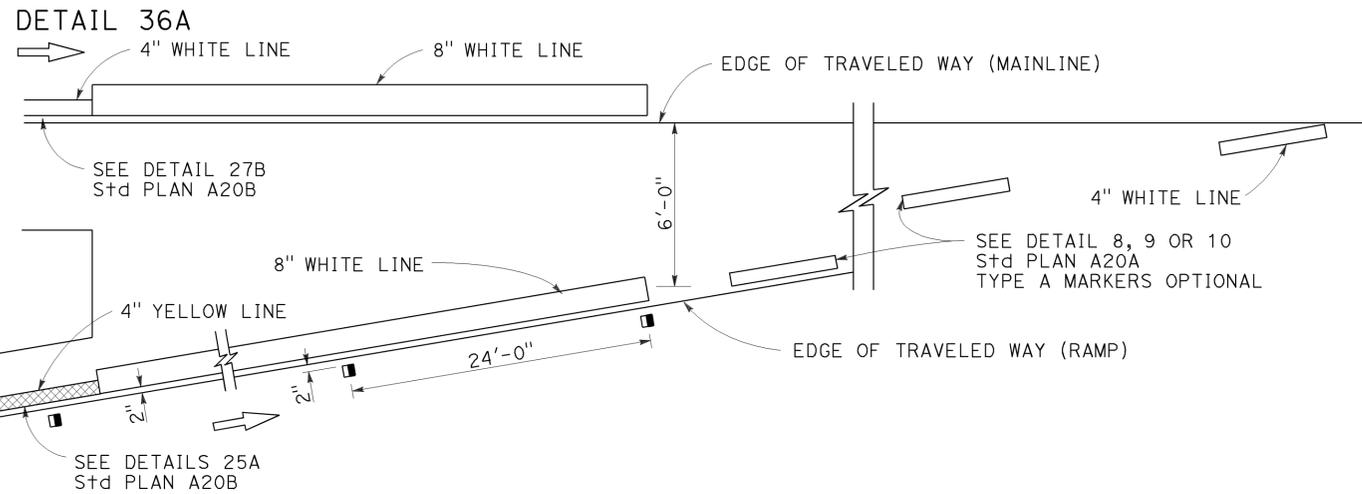
V

W

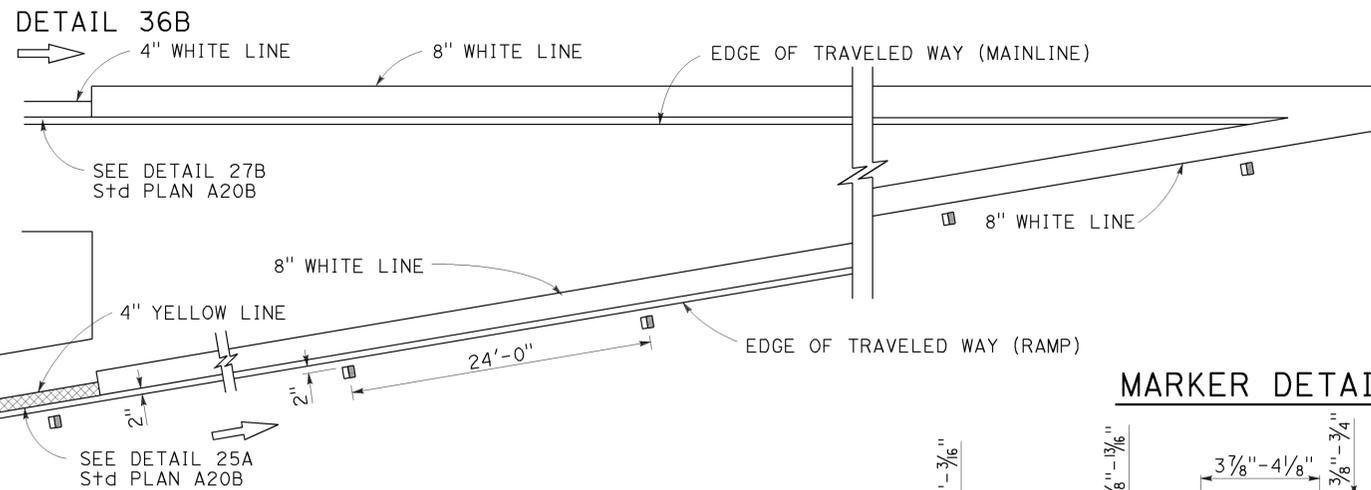
EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT



ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT

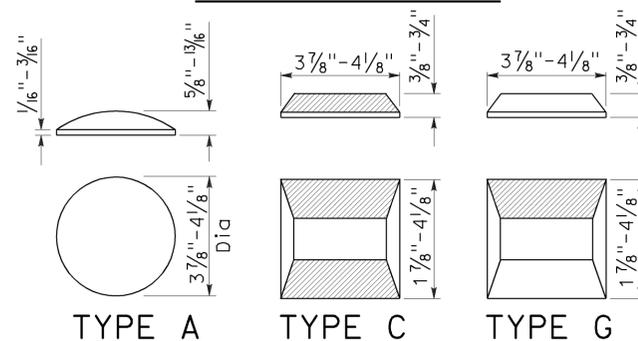


MARKER DETAILS

LEGEND:

MARKERS

- TYPE A WHITE NON-REFLECTIVE
- ◻ TYPE C RED-CLEAR RETROREFLECTIVE
- TYPE G ONE-WAY CLEAR RETROREFLECTIVE



RETROREFLECTIVE FACE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	50	81

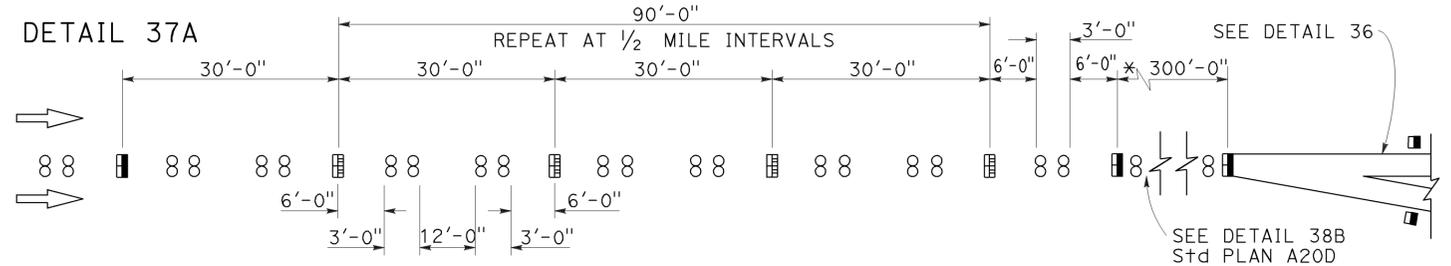
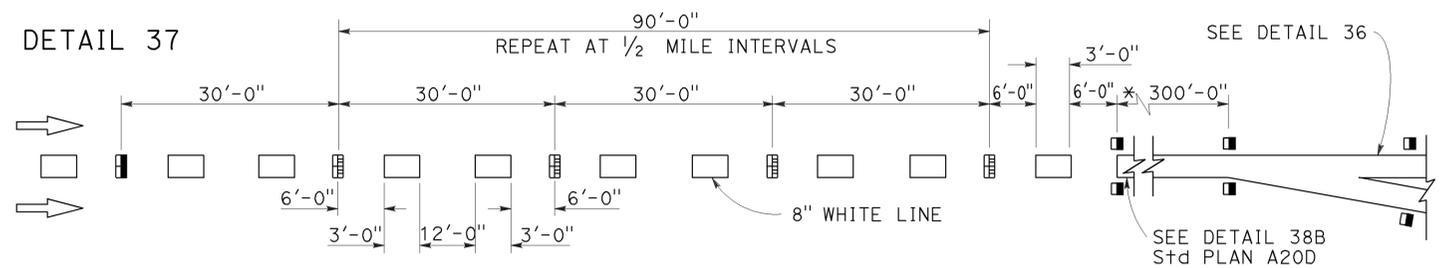
Registered Professional Engineer
Roberta L. McLaughlin
 REGISTERED CIVIL ENGINEER
 No. C40375
 Exp. 3-31-15
 CIVIL
 STATE OF CALIFORNIA

July 19, 2013
 PLANS APPROVAL DATE

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

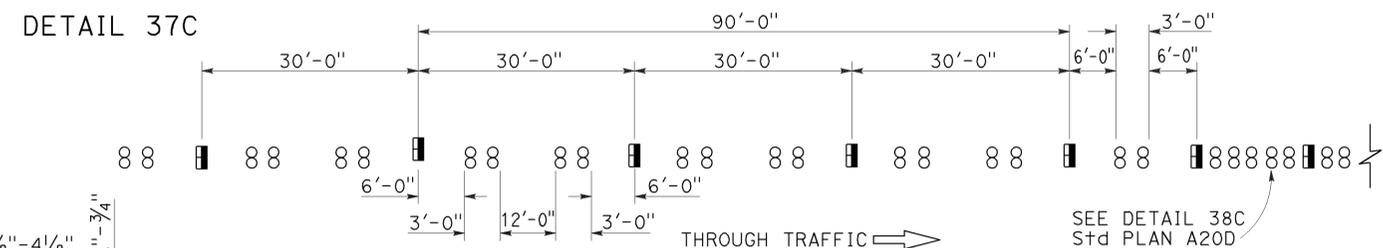
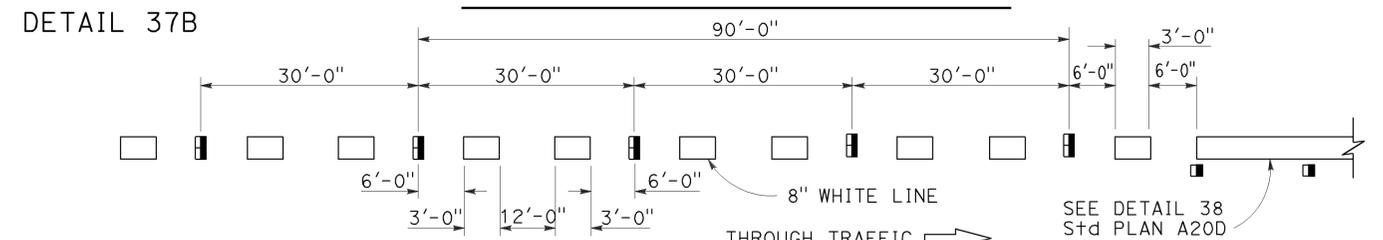
TO ACCOMPANY PLANS DATED 11-09-15

LANE DROP AT EXIT RAMP



* The solid channelizing line shown may be omitted on short auxiliary lanes where weaving length is critical.

LANE DROP AT INTERSECTIONS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKERS AND TRAFFIC LINE TYPICAL DETAILS

NO SCALE

RSP A20C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A20C DATED MAY 20, 2011 - PAGE 11 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A20C

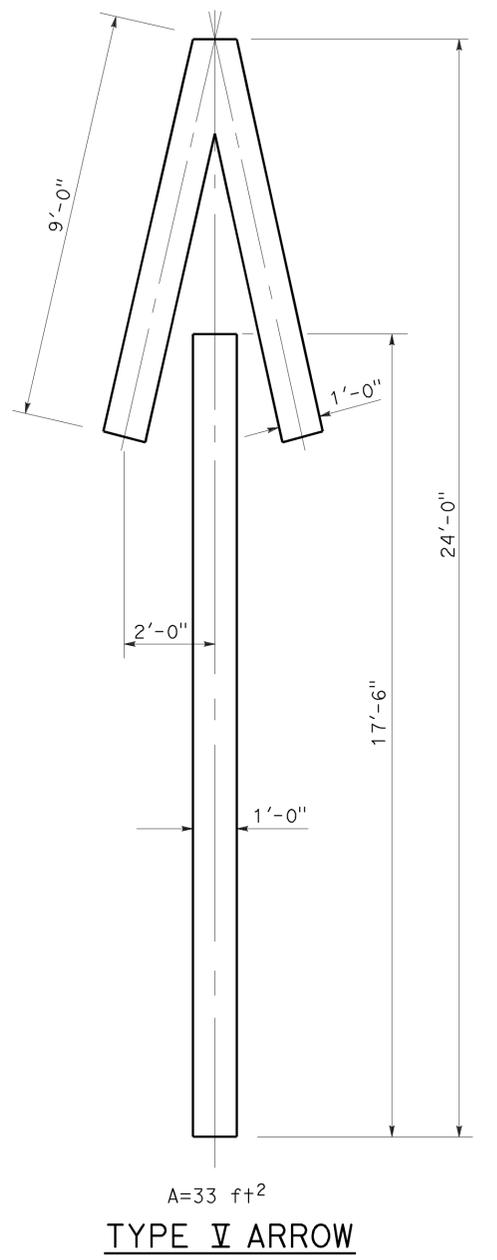
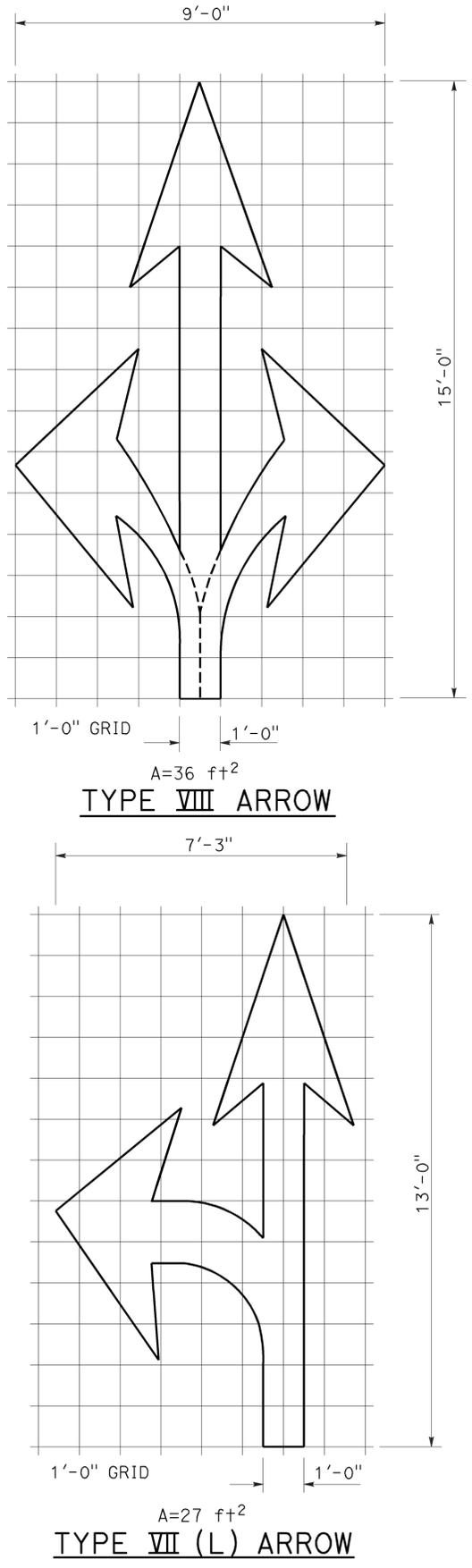
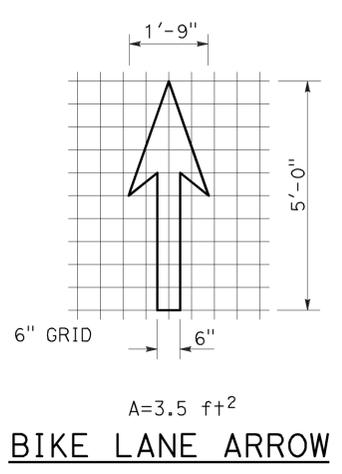
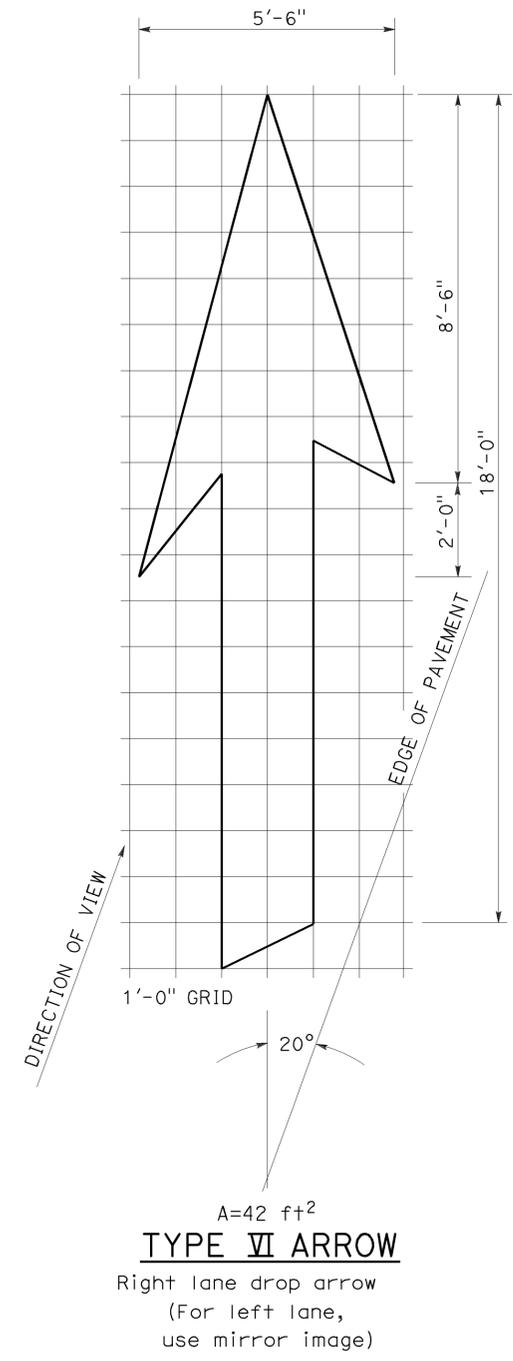
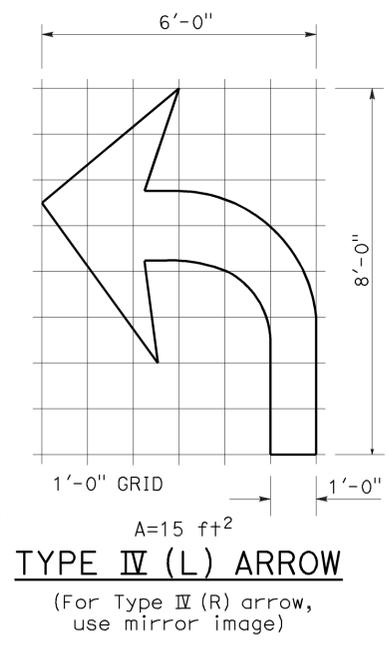
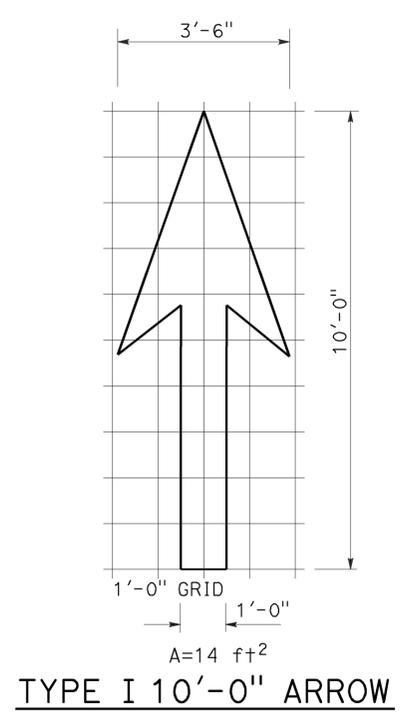
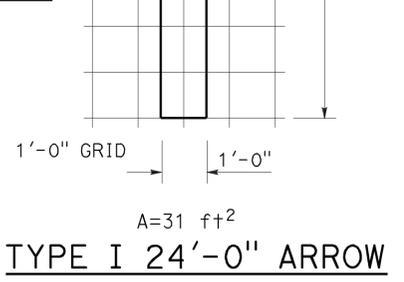
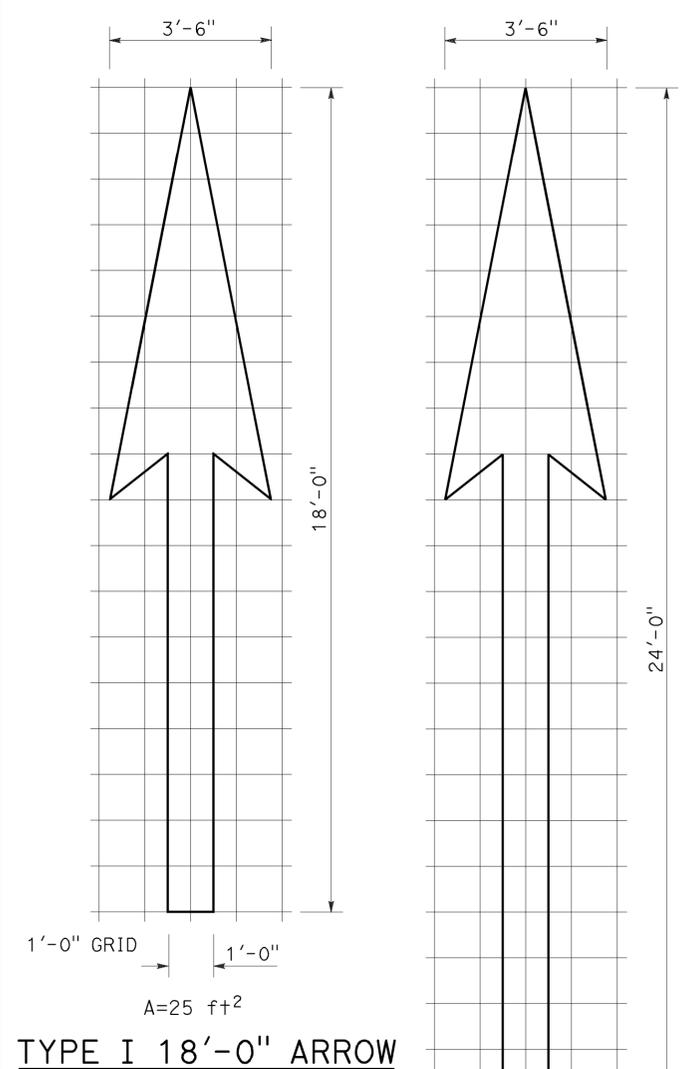
2010 REVISED STANDARD PLAN RSP A20C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	51	81

Robert L. McLaughlin
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Roberta L. McLaughlin
 No. C40375
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 11-09-15



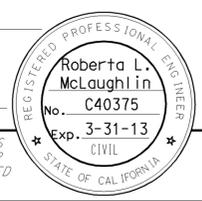
NOTE:
Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
ARROWS**
NO SCALE

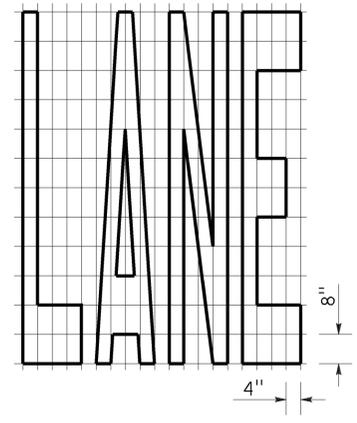
RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A24A

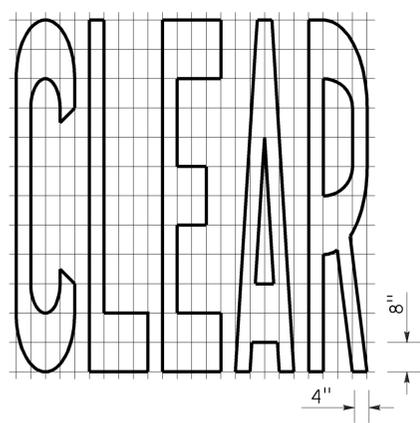
2010 REVISED STANDARD PLAN RSP A24A



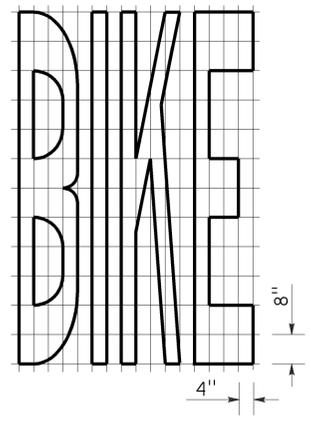
TO ACCOMPANY PLANS DATED 11-09-15



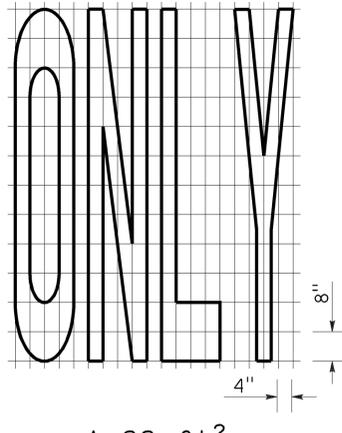
A=24 ft²



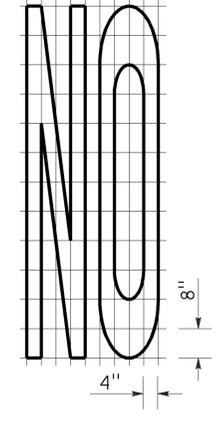
A=27 ft²



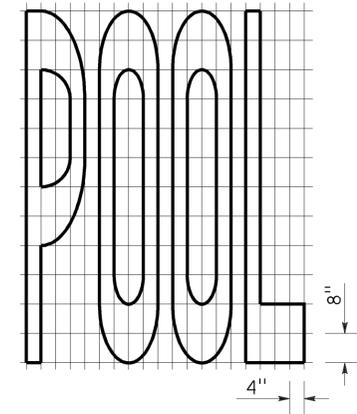
A=21 ft²



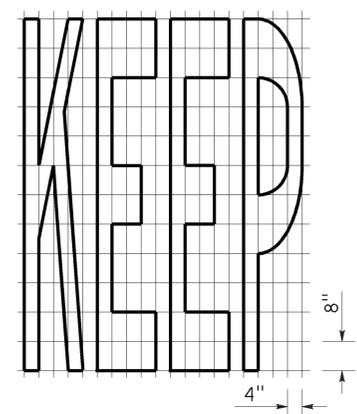
A=22 ft²



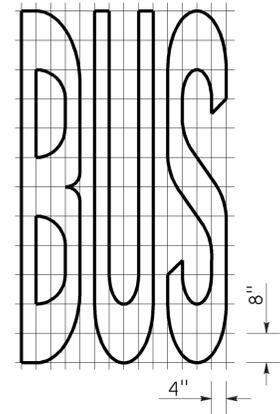
A=14 ft²



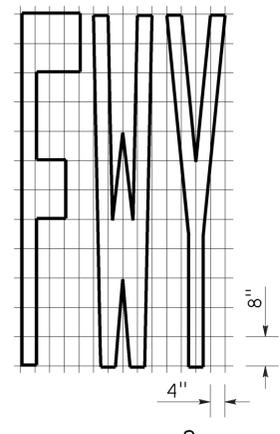
A=23 ft²



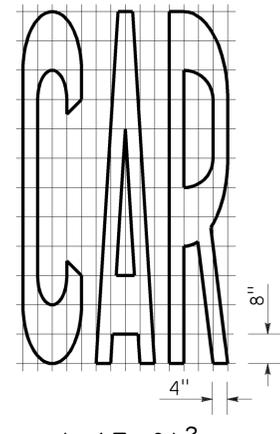
A=24 ft²



A=20 ft²

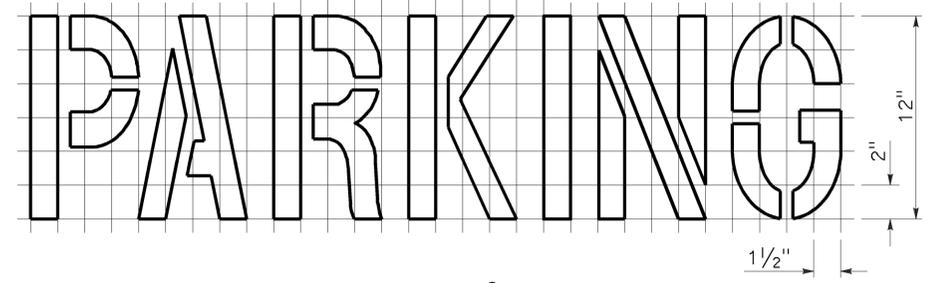
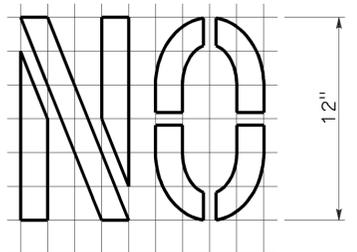


A=16 ft²

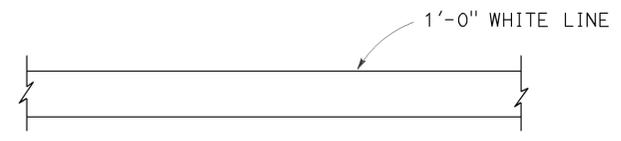


A=17 ft²

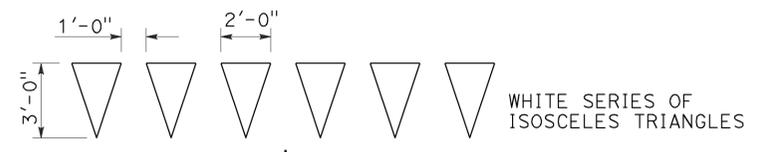
WORD MARKINGS			
ITEM	ft ²	ITEM	ft ²
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft²
See Notes 6 and 7



LIMIT LINE (STOP LINE)



YIELD LINE

NOTES:

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKINGS
WORDS, LIMIT AND YIELD LINES
NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A24E

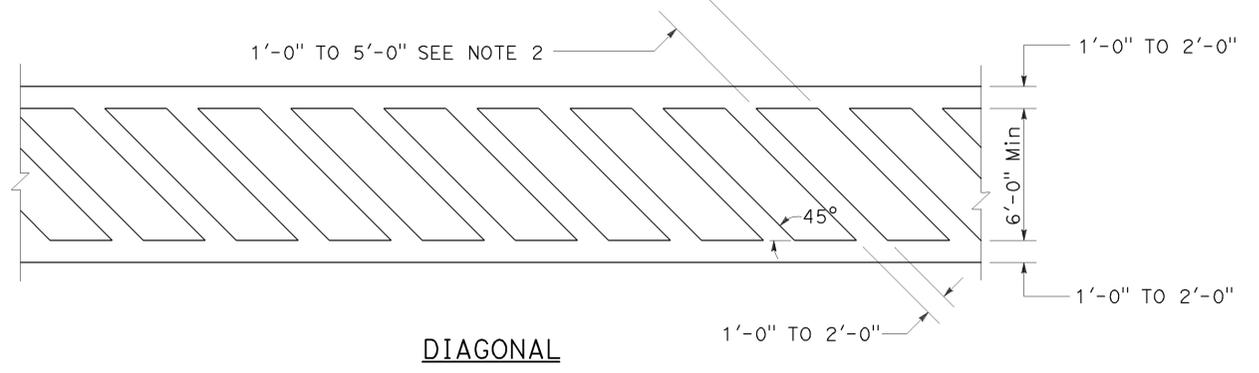
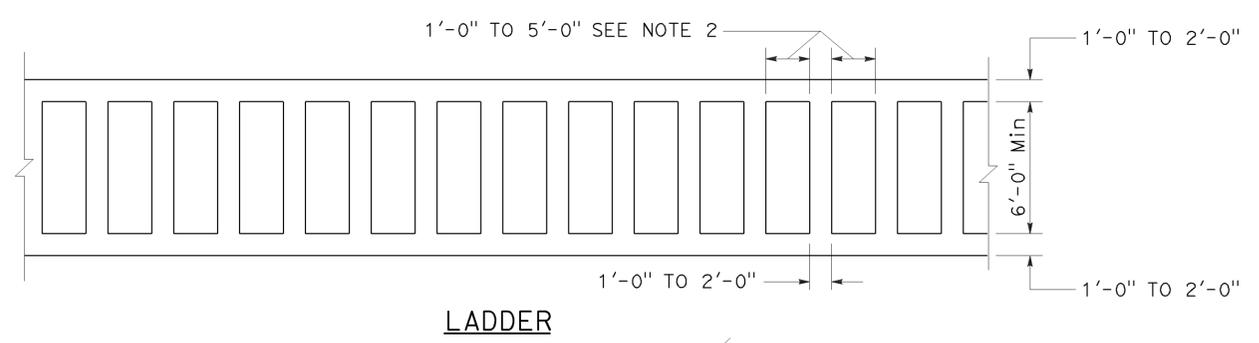
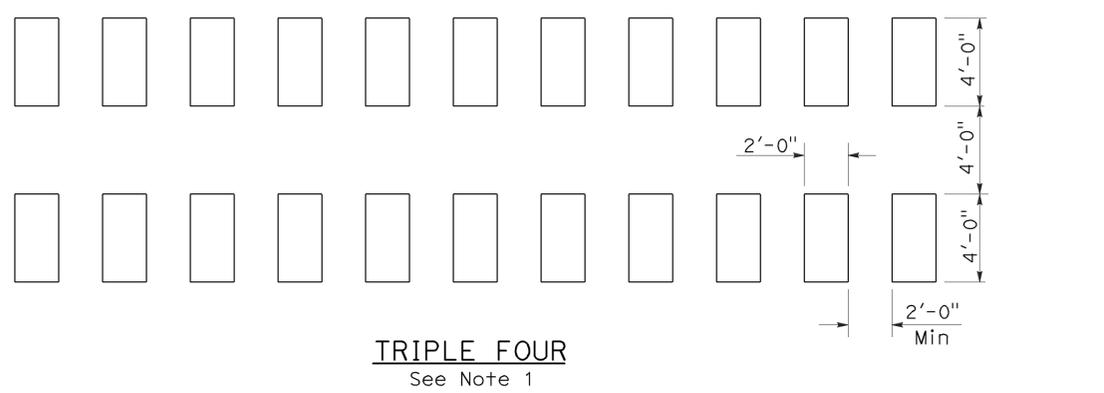
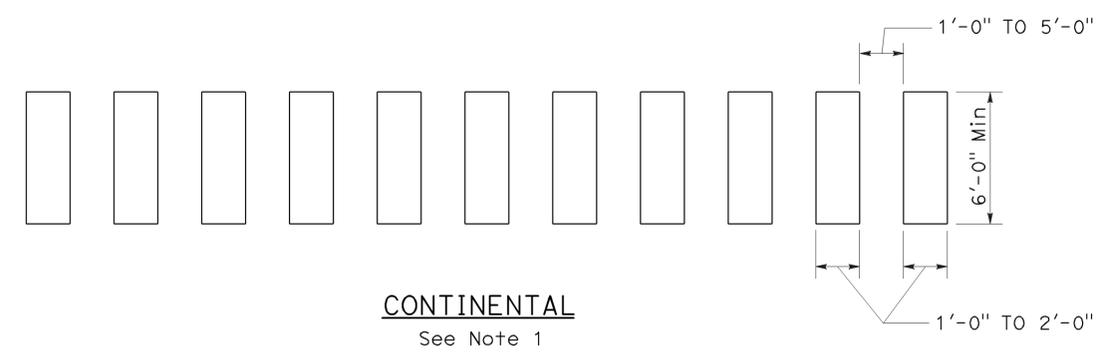
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	53	81

Roberta L. McLaughlin
 REGISTERED CIVIL ENGINEER
 July 20, 2012
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 Roberta L. McLaughlin
 No. C40375
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

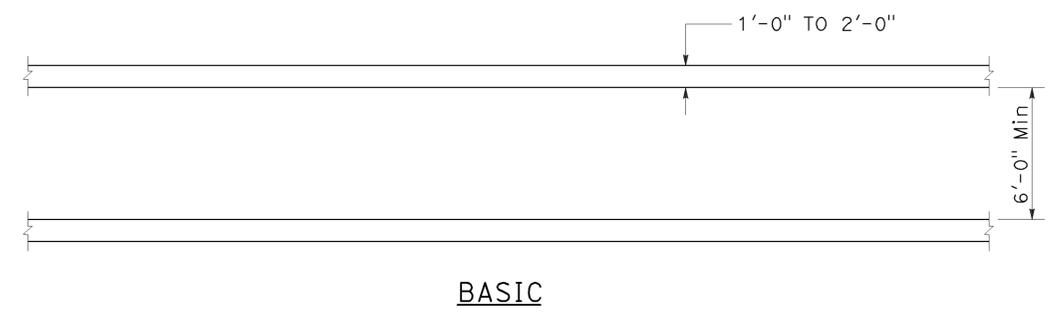
TO ACCOMPANY PLANS DATED 11-09-15



HIGHER VISIBILITY CROSSWALKS

NOTES:

1. Spaces between markings should be placed in wheel tracks of each lane.
2. Spacings not to exceed 2.5 times width of longitudinal line.
3. All crosswalk markings must be white except for those near schools must be yellow.



BASIC

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
CROSSWALKS**

NO SCALE
RSP A24F DATED JULY 20, 2012 SUPPLEMENTS THE
STANDARD PLANS BOOK DATED 2010.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	54	81

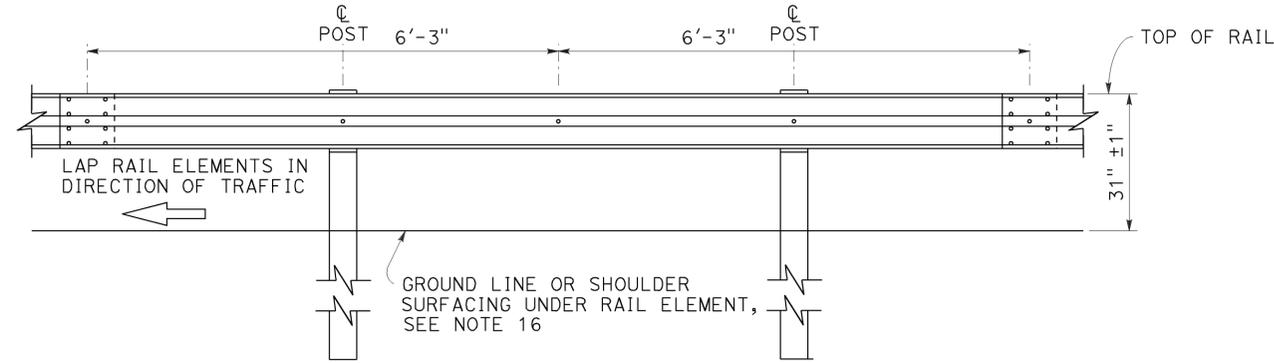
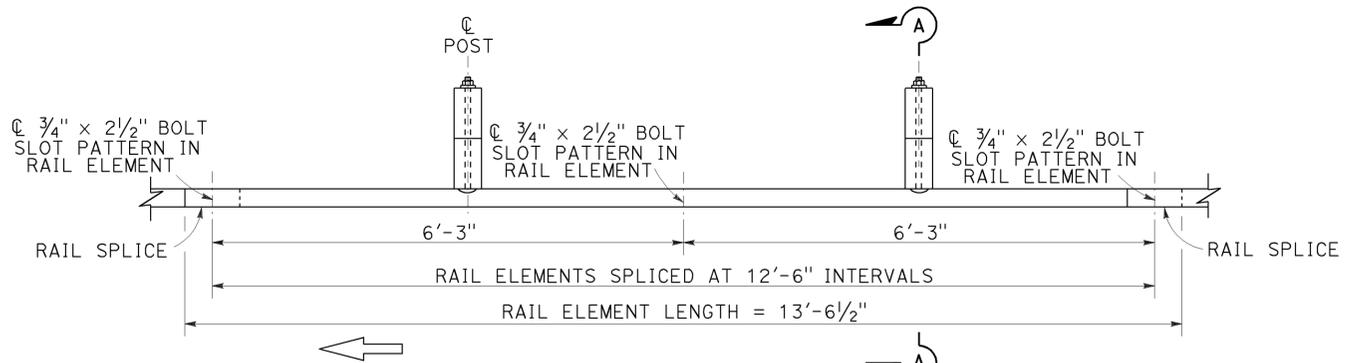
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

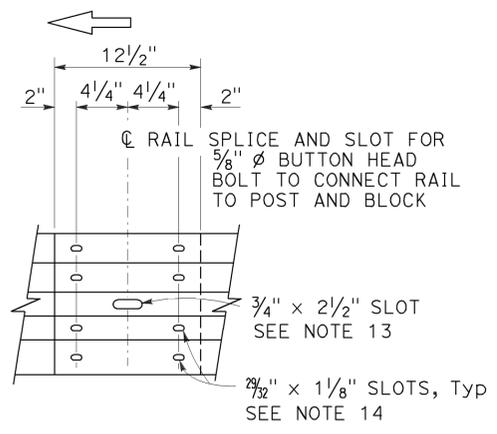
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

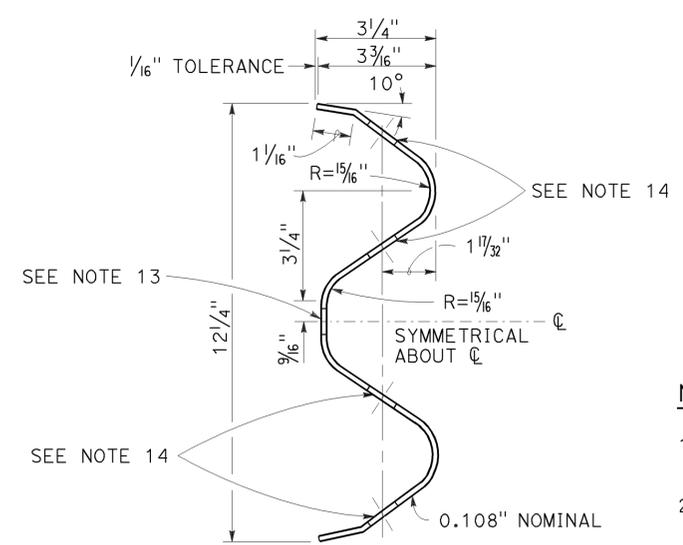
TO ACCOMPANY PLANS DATED 11-09-15



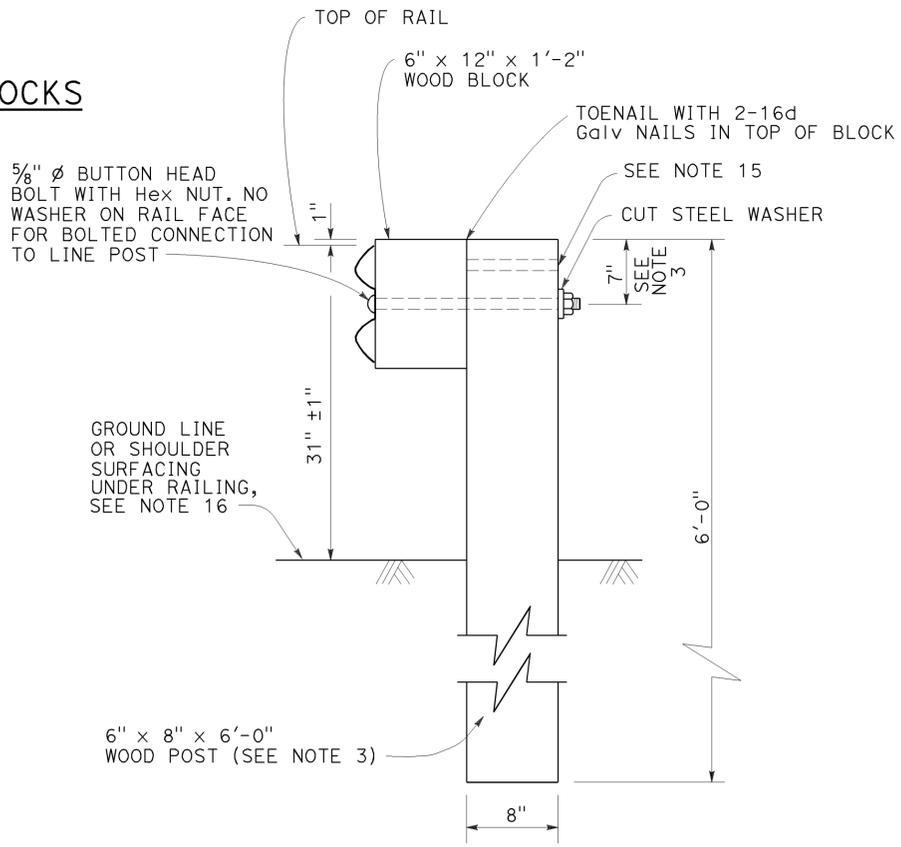
MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



- Connect the over lapped end of the rail elements with 5/8" ϕ x 1 3/8" button head oval shoulder splice bolts inserted into the 7/32" x 1 1/8" slots and bolted together with 5/8" ϕ recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



SECTION THRU RAIL ELEMENT



SECTION A-A TYPICAL WOOD LINE POST INSTALLATION

See Note 4

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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

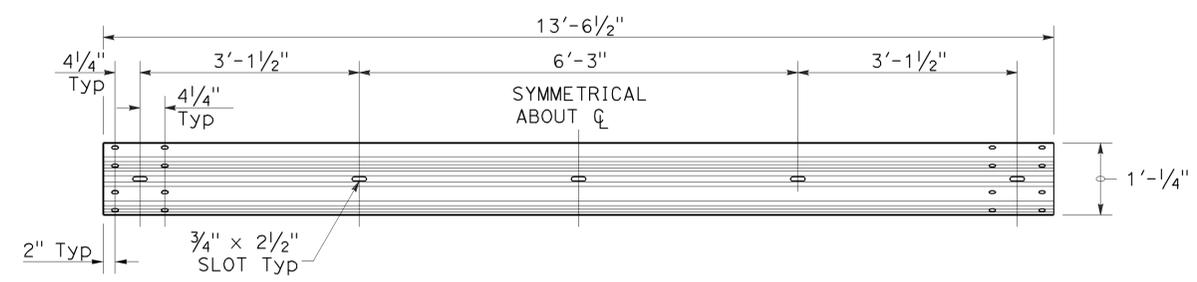
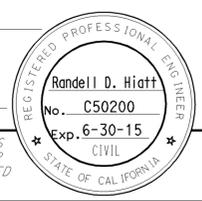
MIDWEST GUARDRAIL SYSTEM
STANDARD RAILING SECTION
(WOOD POST WITH WOOD BLOCK)

NO SCALE

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

REVISED STANDARD PLAN RSP A77L1

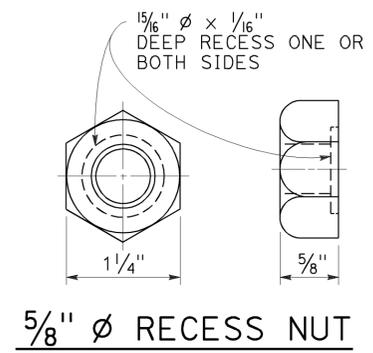
2010 REVISED STANDARD PLAN RSP A77L1



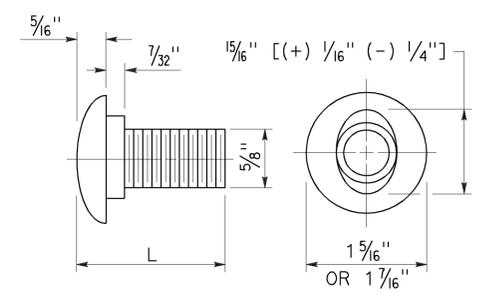
TYPICAL RAIL ELEMENT

NOTE:

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



5/8" Ø RECESS NUT

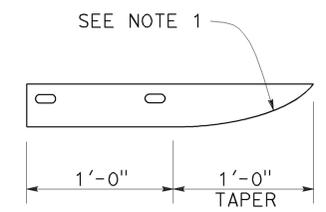


5/8" Ø BUTTON HEAD BOLT

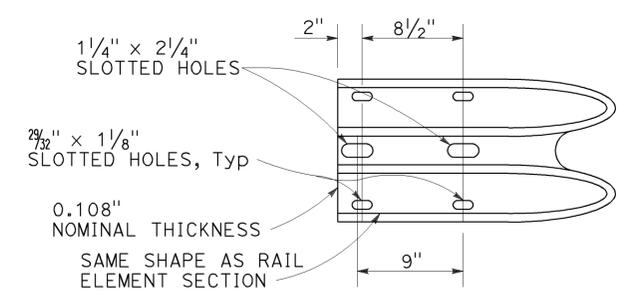
BUTTON HEAD BOLT

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

** For nested rail applications.



PLAN



**ELEVATION
END CAP
(TYPE A)**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
STANDARD HARDWARE**

NO SCALE

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

REVISED STANDARD PLAN RSP A77M1

2010 REVISED STANDARD PLAN RSP A77M1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	56	81

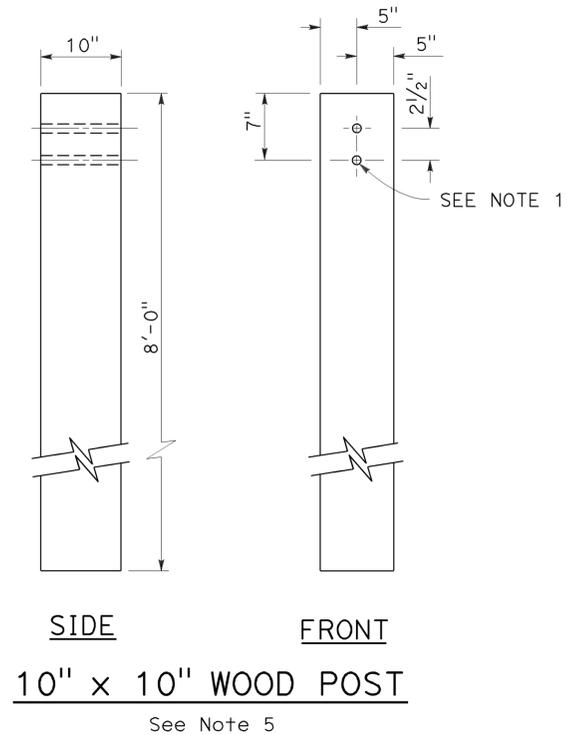
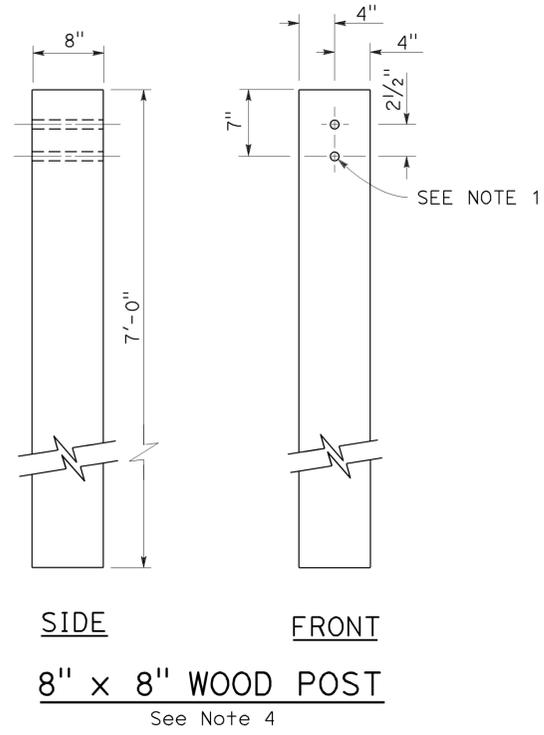
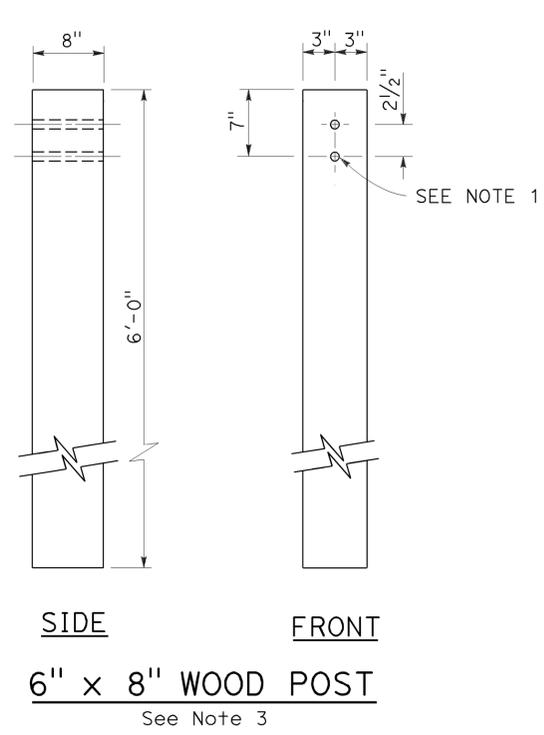
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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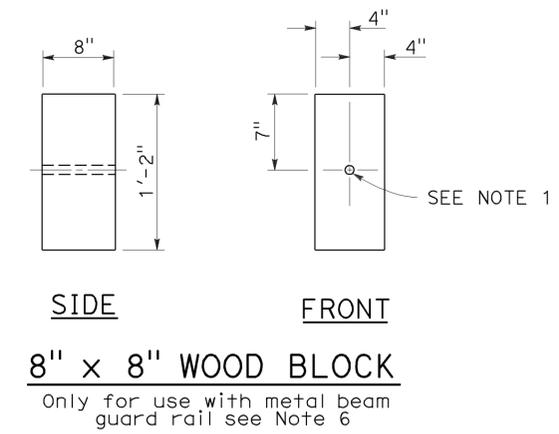
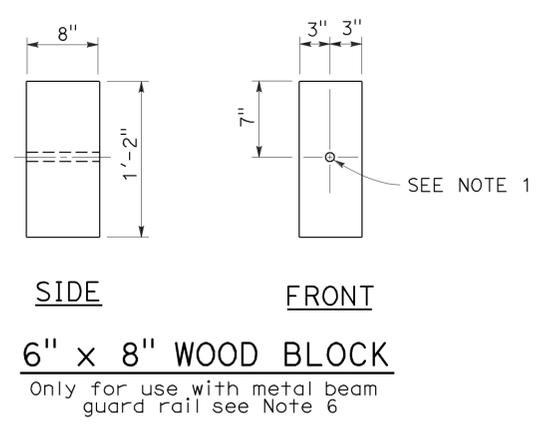
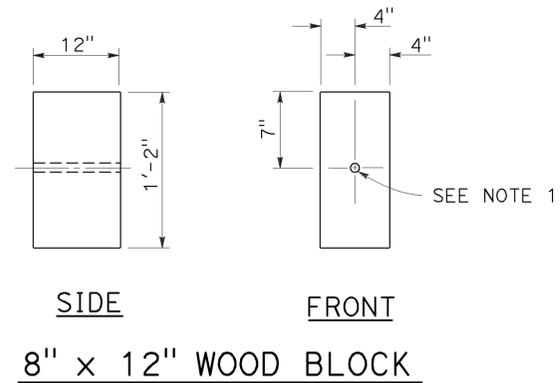
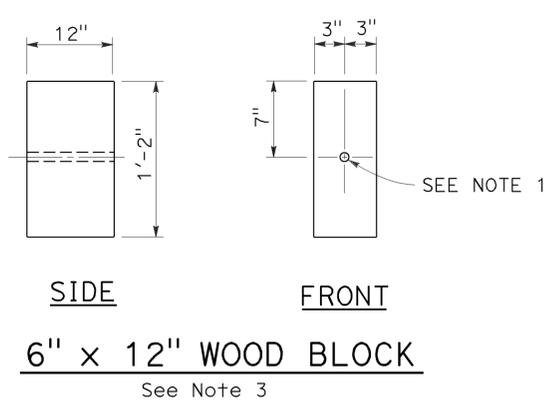
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 11-09-15



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.



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

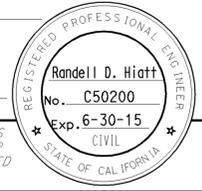
2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	57	81

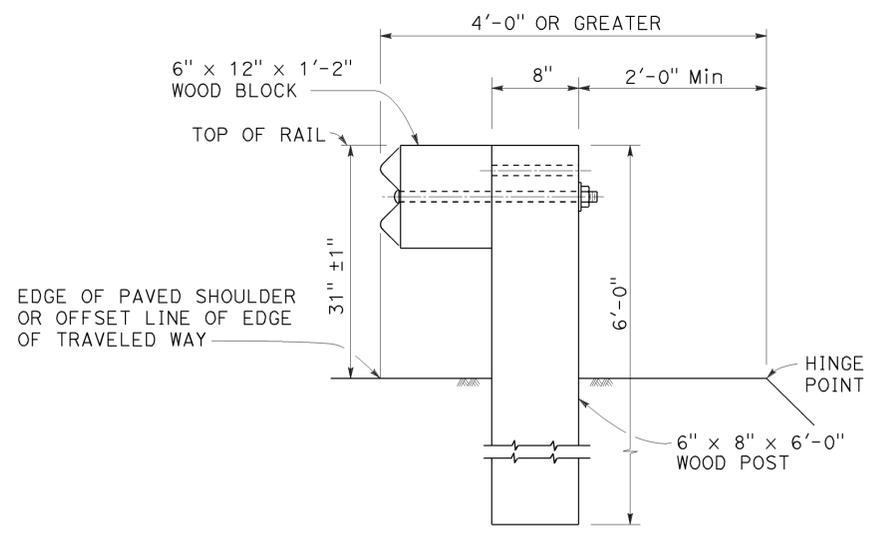
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

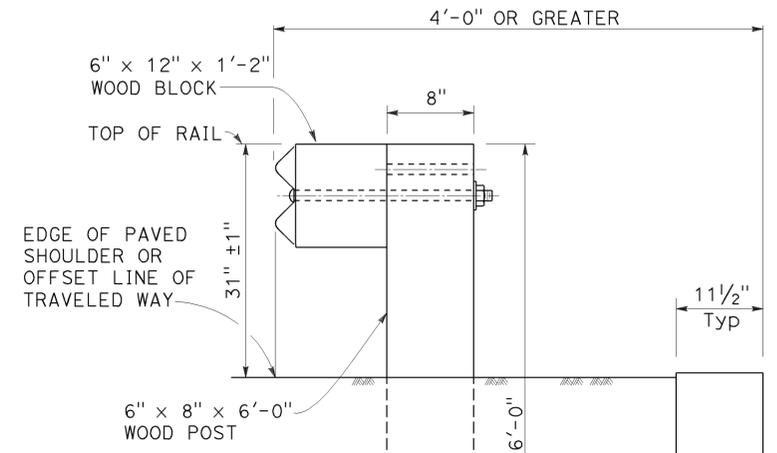
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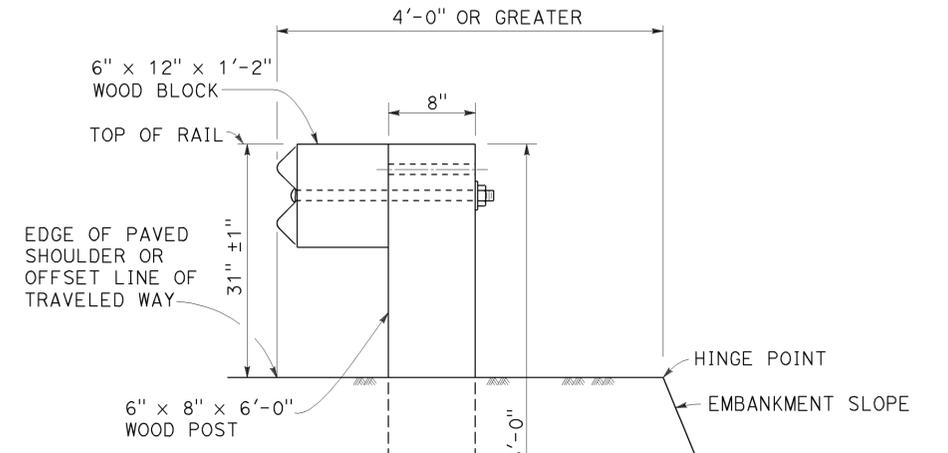
TO ACCOMPANY PLANS DATED 11-09-15



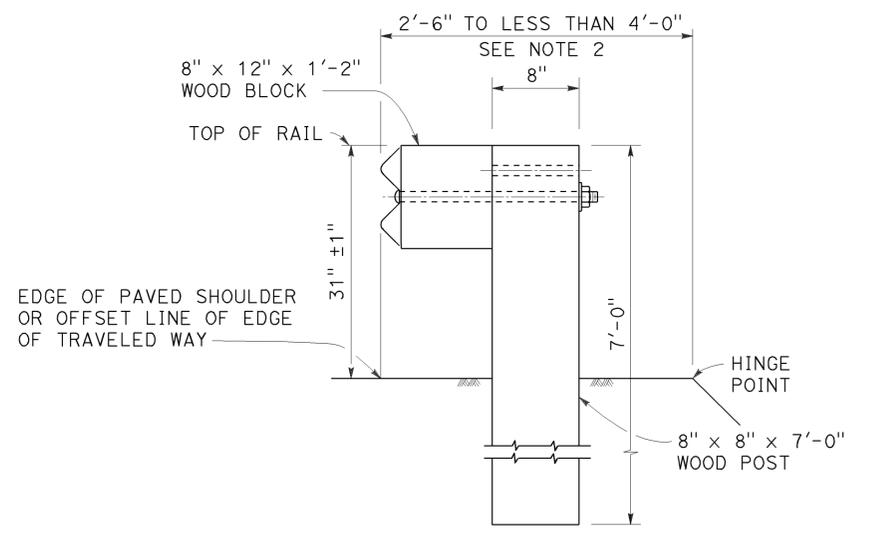
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL C



DETAIL D



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

INSTALLATION AT EARTH RETAINING WALLS

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
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	58	81

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

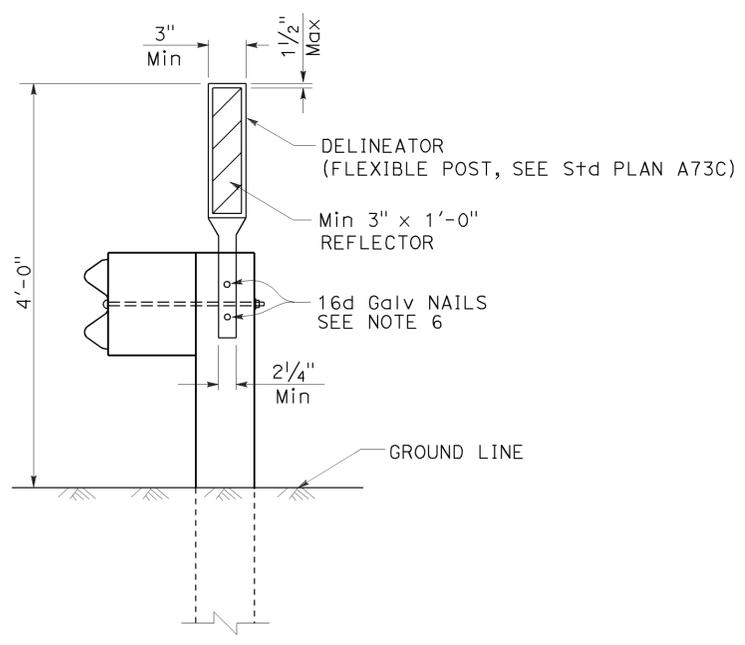
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

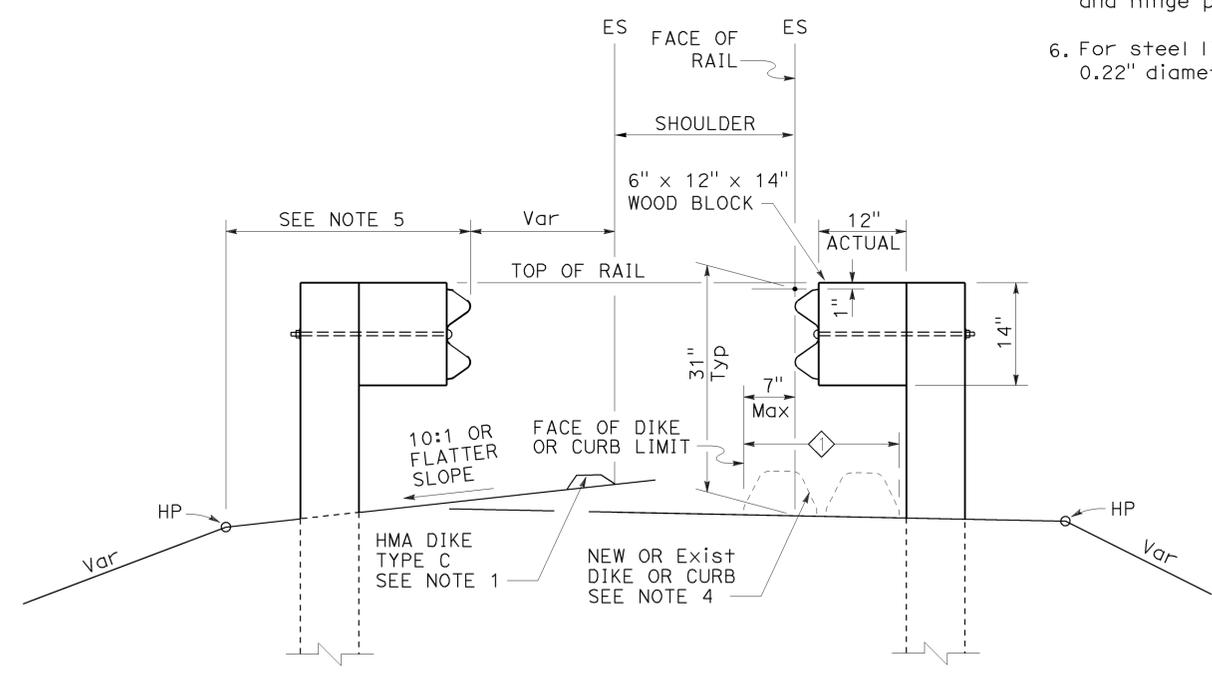
TO ACCOMPANY PLANS DATED 11-09-15

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

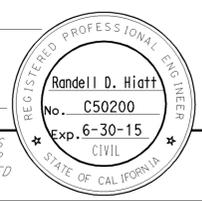
2010 REVISED STANDARD PLAN RSP A77N4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	59	81

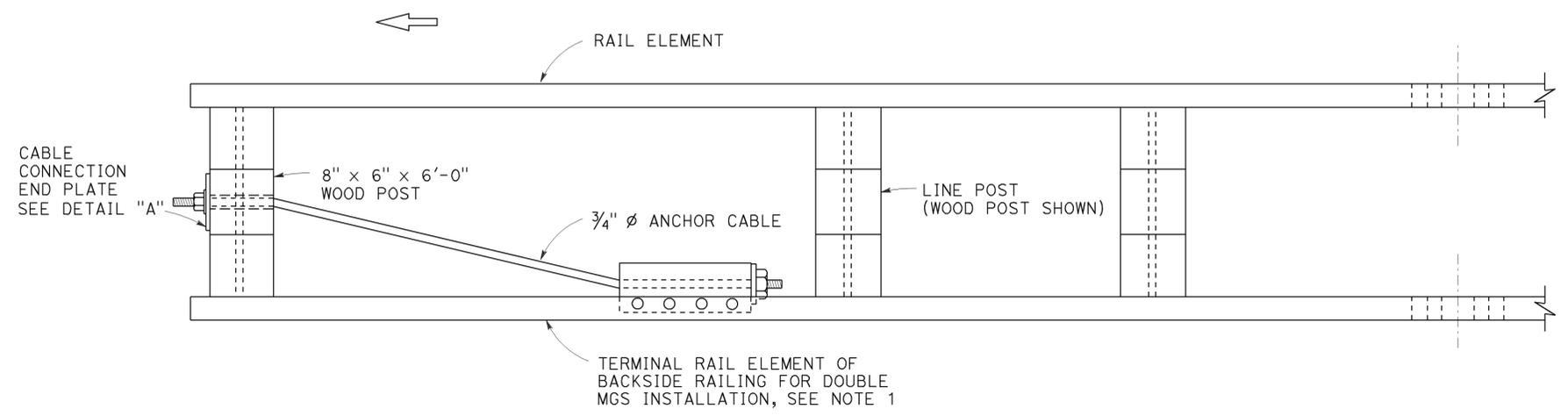
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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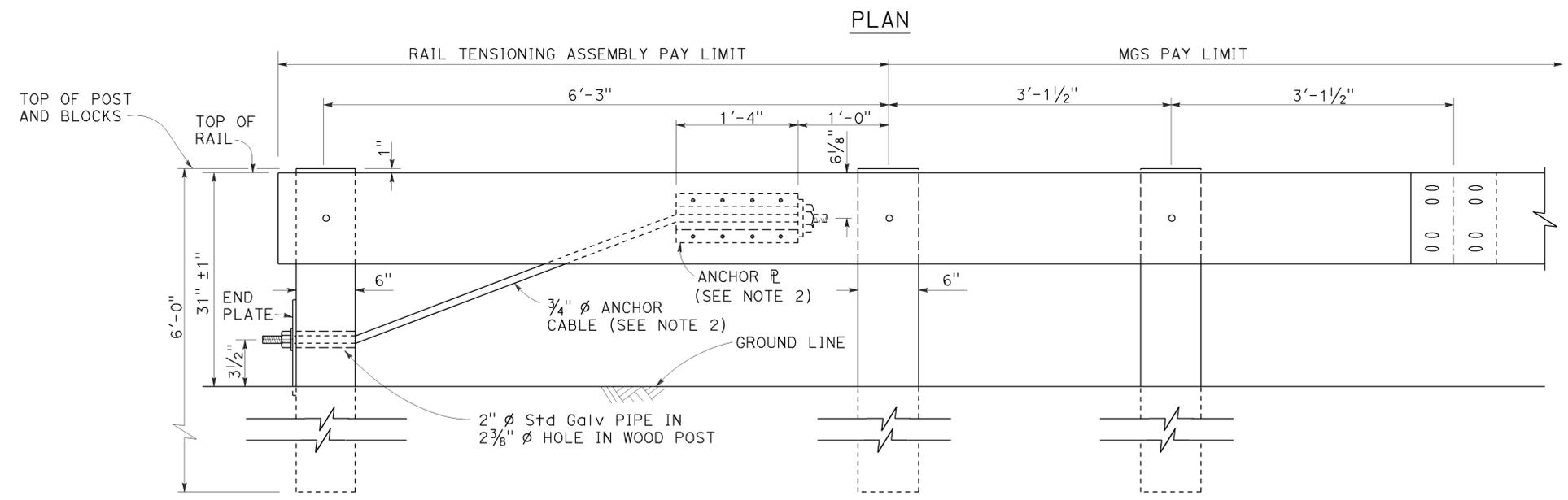


TO ACCOMPANY PLANS DATED 11-09-15

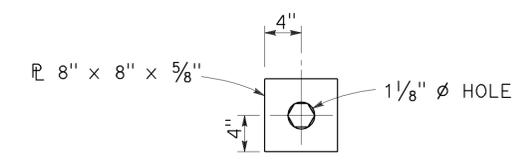


NOTES:

1. See Revised Standard Plans RSP A77Q3 and RSP A77R1 for typical use of rail tensioning assembly.
2. For details of the anchor plate and 3/4" cable, see Revised Standard Plan RSP A77S3.



ELEVATION
RAIL TENSIONING
ASSEMBLY
See Note 1



DETAIL "A"
CABLE CONNECTION
END PLATE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM
RAIL TENSIONING ASSEMBLY

NO SCALE

RSP A77S2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77S2

2010 REVISED STANDARD PLAN RSP A77S2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	60	81

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

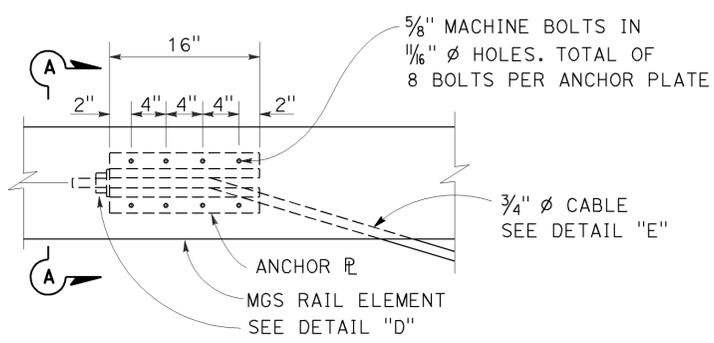
November 15, 2013
PLANS APPROVAL DATE

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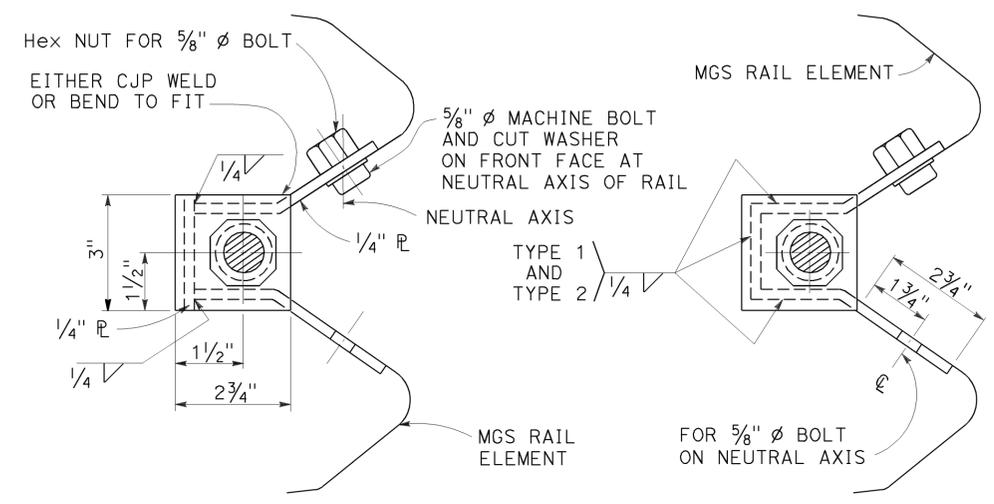
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
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TO ACCOMPANY PLANS DATED 11-09-15

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



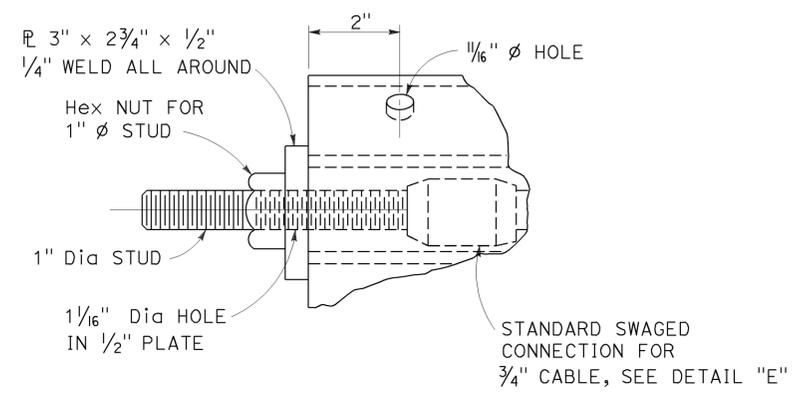
ANCHOR PLATE DETAIL
(MGS shown, TBB similar)



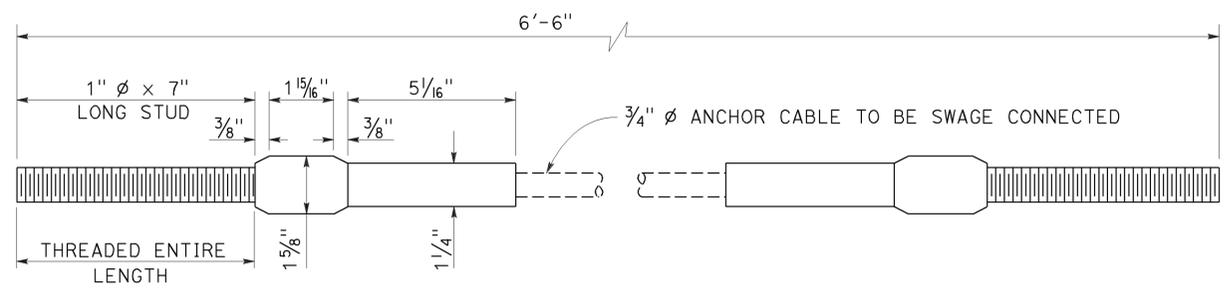
SECTION A-A
(ALTERNATIVE TYPE 1)

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

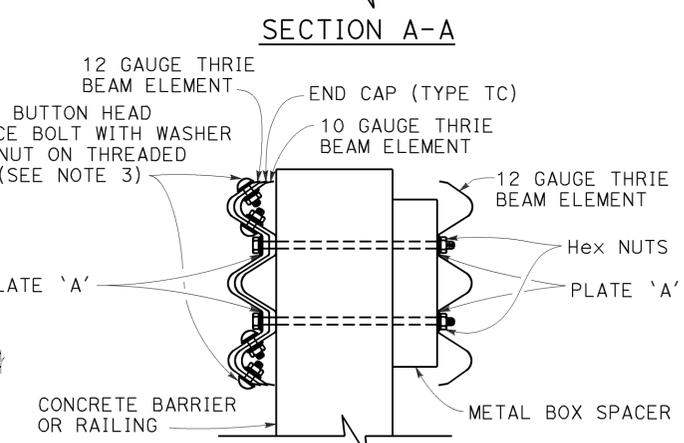
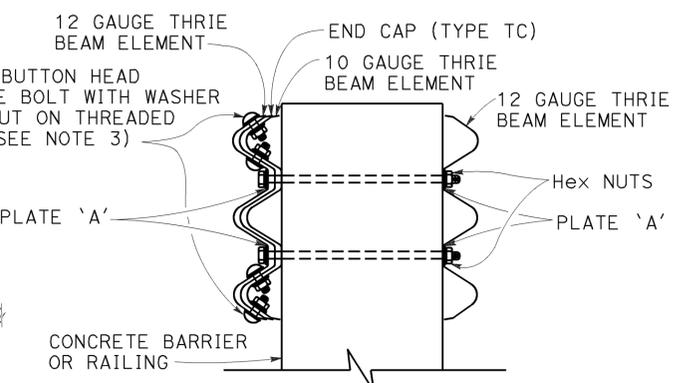
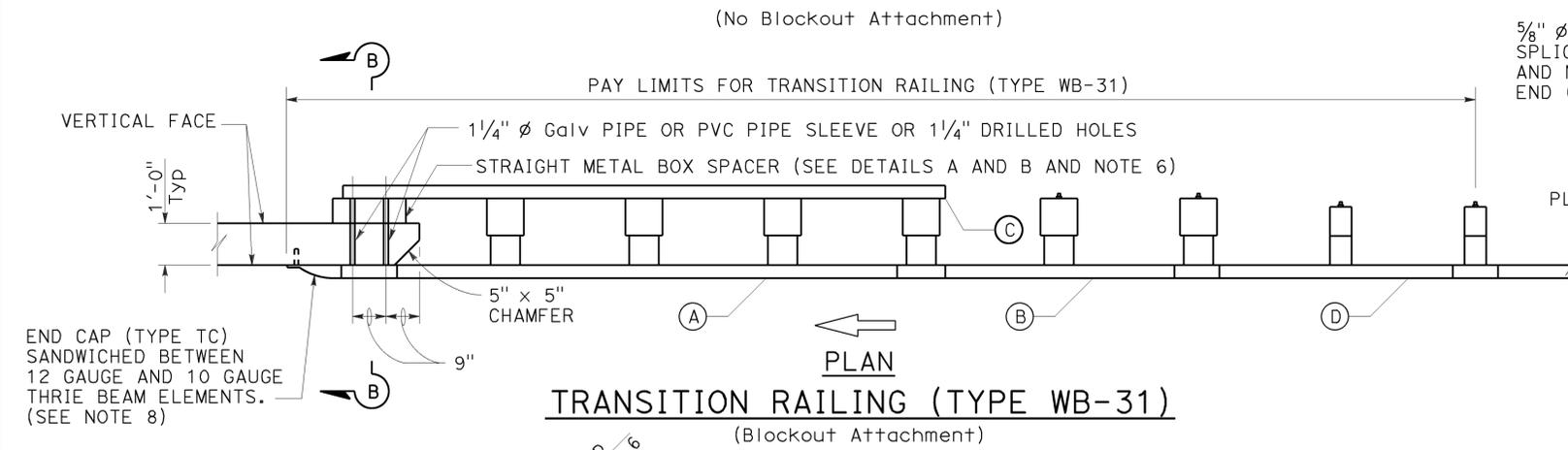
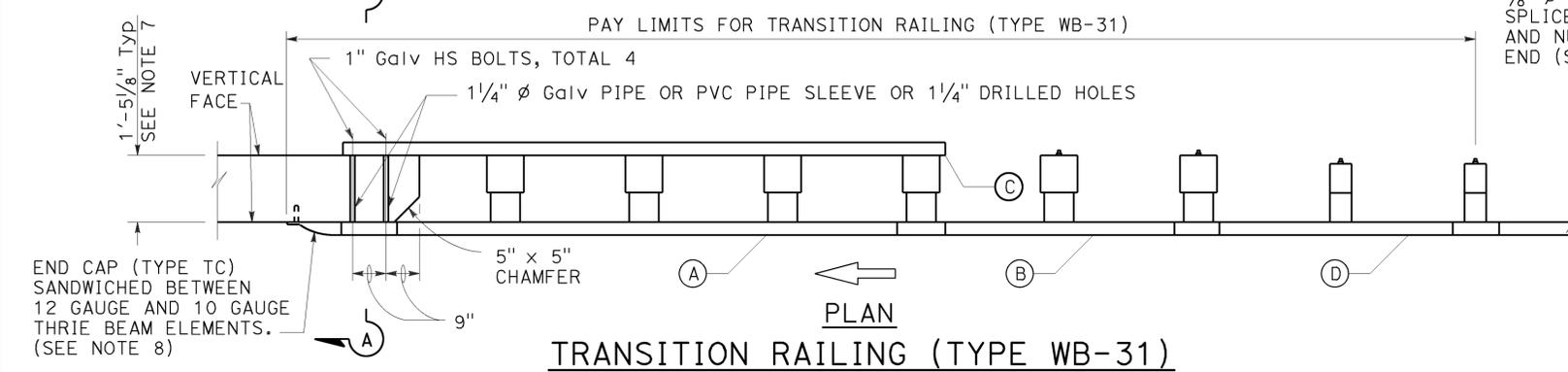
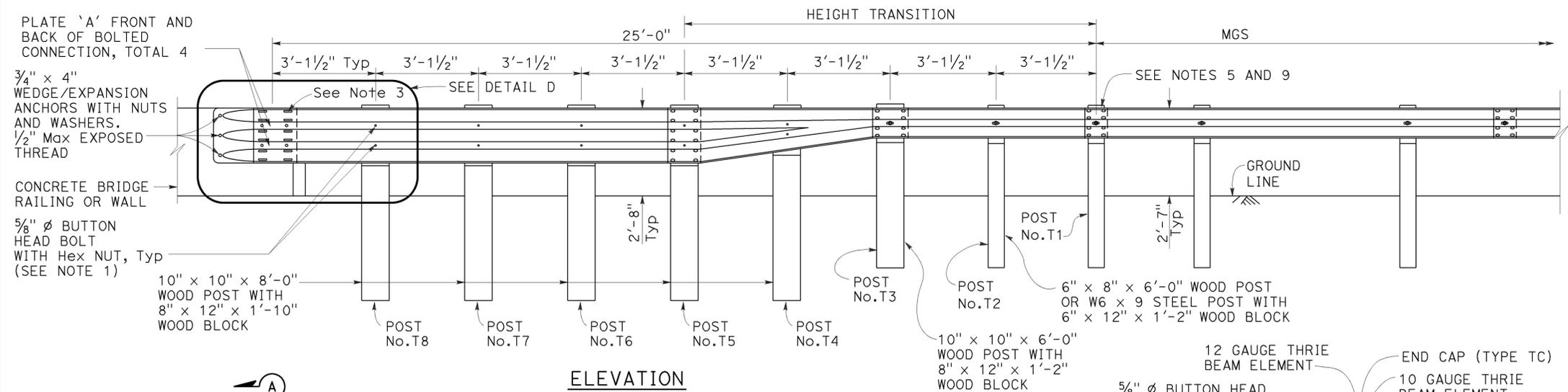
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405'	8.3 13.7, 14.7, 22.5	61	81

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

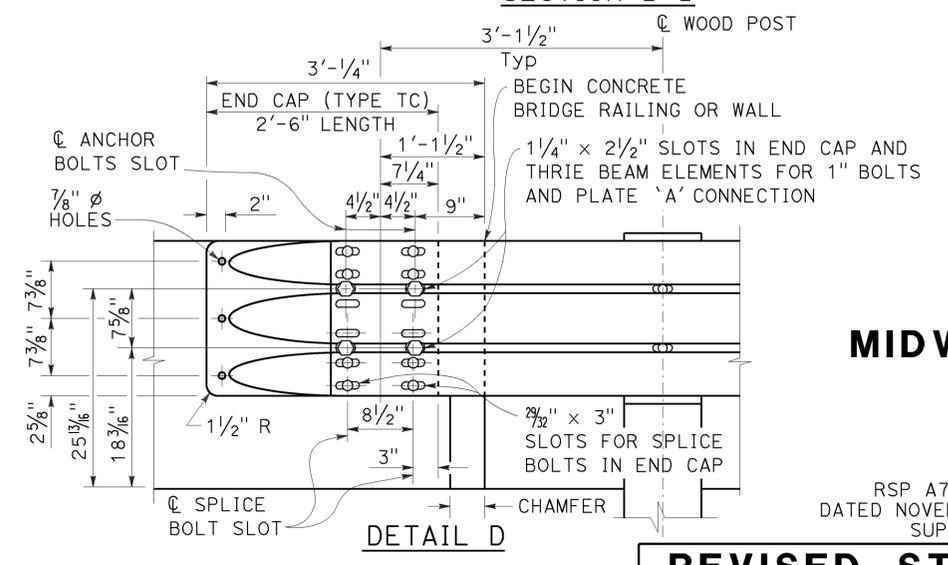
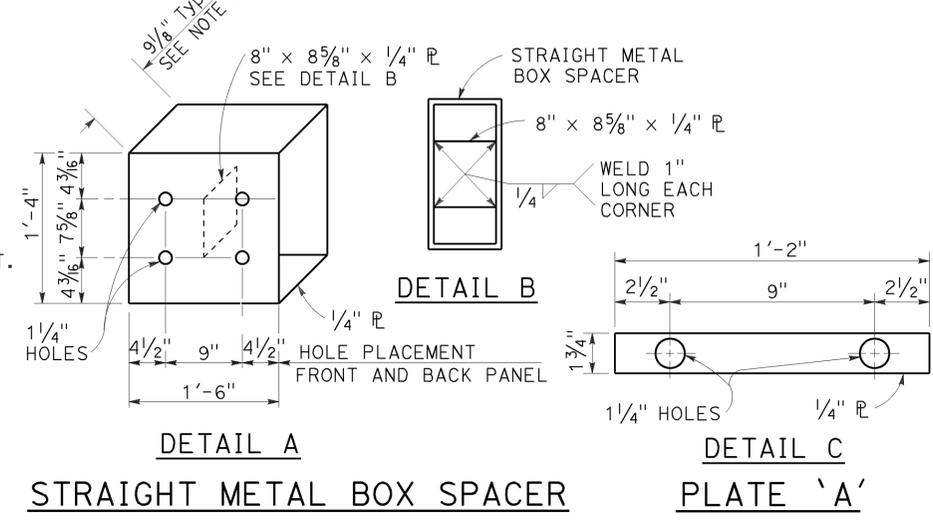
January 23, 2015
PLANS APPROVAL DATE

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Randell D. Hiatt
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 11-09-15
1. Use 5/8" ϕ 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" ϕ . 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.

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DEPARTMENT OF TRANSPORTATION

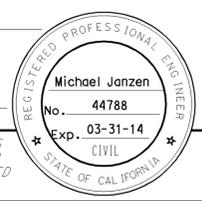
**MIDWEST GUARDRAIL SYSTEM
TRANSITION RAILING
(TYPE WB-31)**

NO SCALE

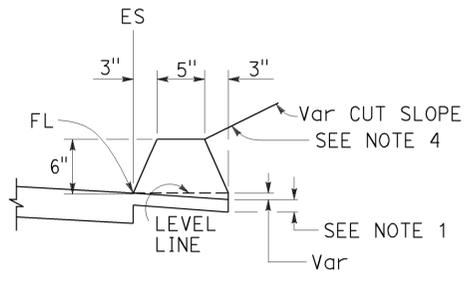
RSP A77U4 DATED JANUARY 23, 2015 SUPERSEDES RSP A77U4 DATED NOVEMBER 15, 2013 AND RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U4

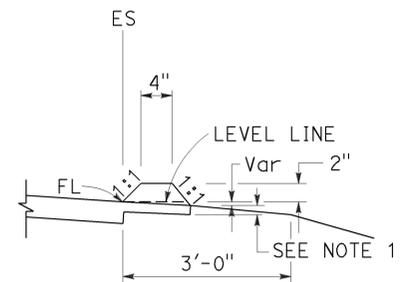
2010 REVISED STANDARD PLAN RSP A77U4



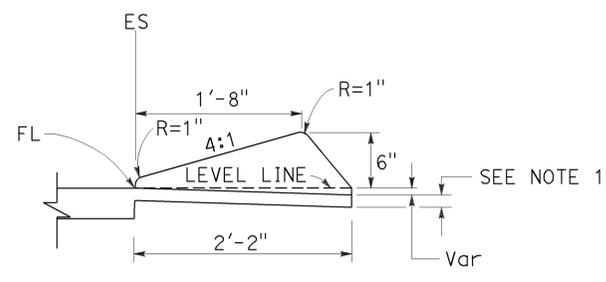
TO ACCOMPANY PLANS DATED 11-09-15



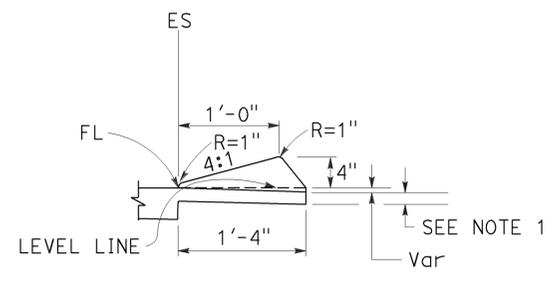
TYPE A
See Note 3



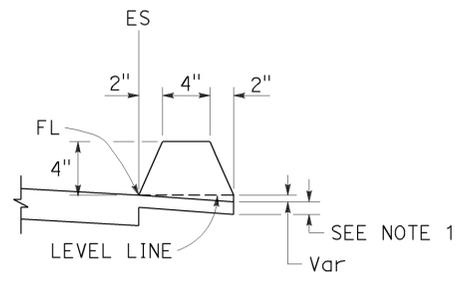
TYPE C



TYPE D

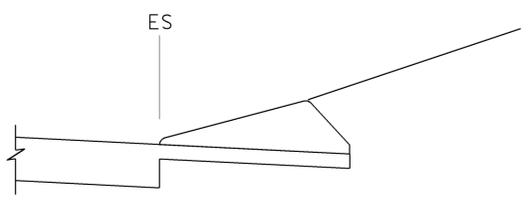


TYPE E

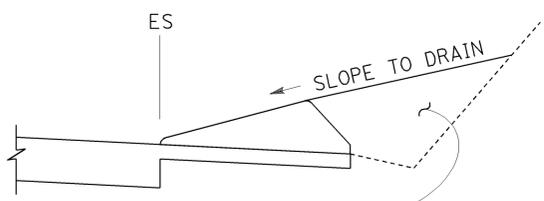


TYPE F
See Note 5

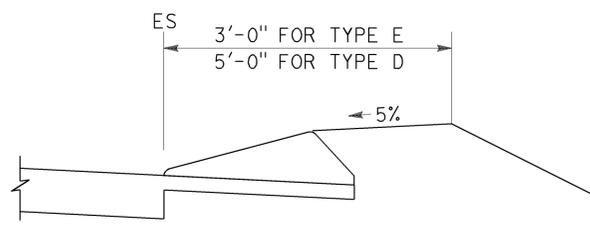
DIKES



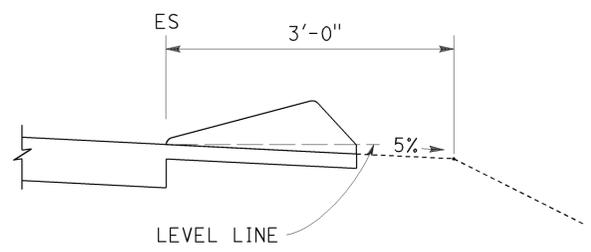
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

1. 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.
2. Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
3. Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
4. Fill and compact with excavated material to top of dike.
5. 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

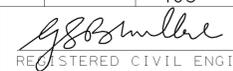
NO SCALE

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
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	63	81


 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED 11-09-15

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	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

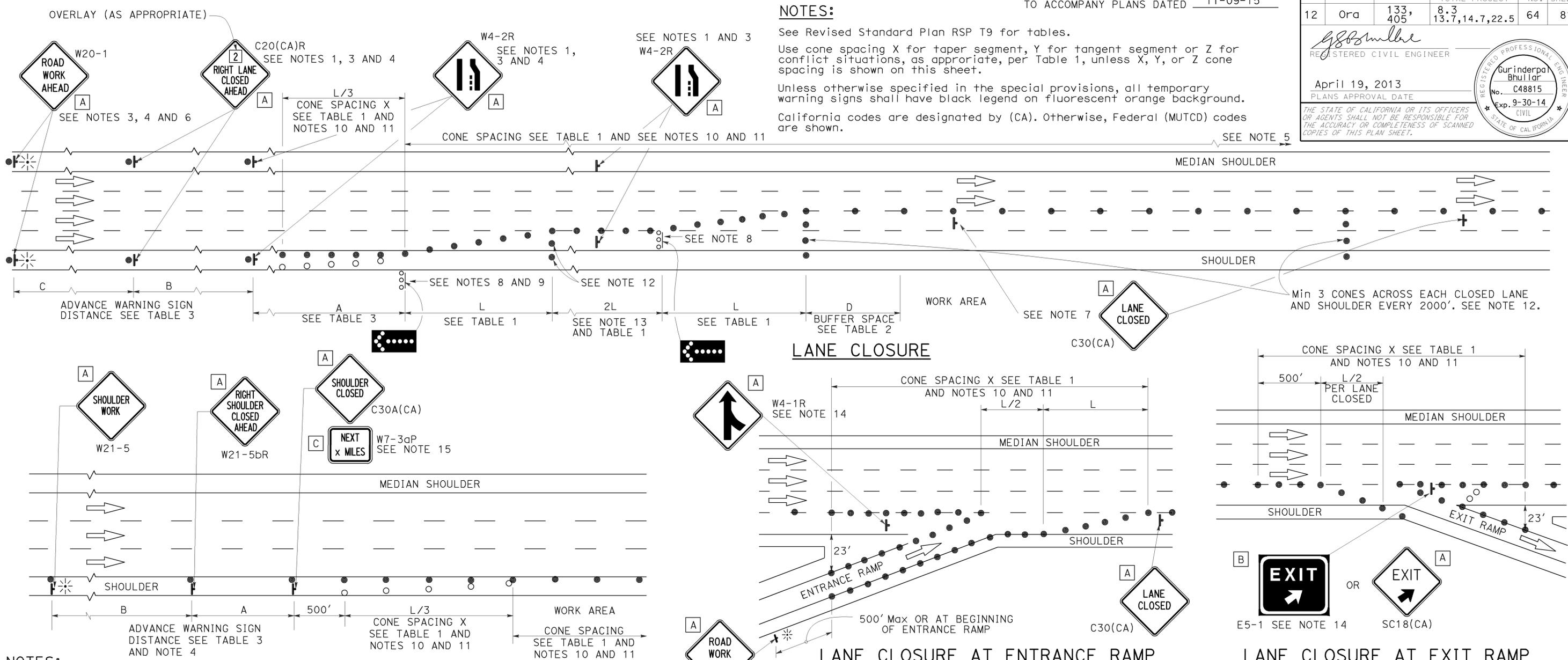
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405'	8.3 13.7, 14.7, 22.5	64	81

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

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

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- NOTES:**
1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
 2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 3. Duplicate sign installations are not required:
 - a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
 - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
 5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

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

12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
15. A W7-3aP "NEXT x 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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	65	81

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

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

TO ACCOMPANY PLANS DATED 11-09-15

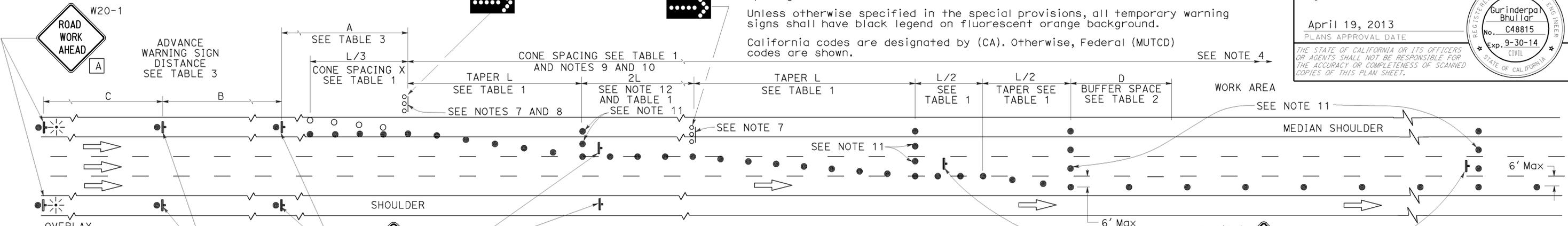
NOTES: See Revised Standard Plan RSP T9 for tables.

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

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

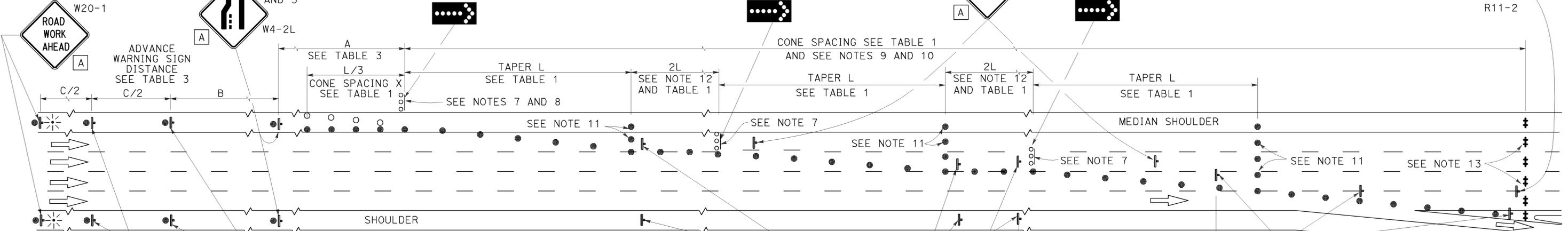
California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

SEE NOTES 3 AND 5



LANE CLOSURE WITH PARTIAL SHOULDER USE

SEE NOTES 3 AND 5



COMPLETE CLOSURE

- NOTES:**
- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
 - At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 - 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.
 - 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) 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 the 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 With Partial Shoulder Use" 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.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

SIGN PANEL SIZE (Min)

A	48" x 48"
B	48" x 18"
C	48" x 30"

LEGEND

●	TRAFFIC CONE
○	TRAFFIC CONE (OPTIONAL TAPER)
⊥	TEMPORARY TRAFFIC CONTROL SIGN
●●●●●	FLASHING ARROW SIGN (FAS)
○○○	FAS SUPPORT OR TRAILER
⚡	PORTABLE FLASHING BEACON

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10A

2010 REVISED STANDARD PLAN RSP T10A

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
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	66	81

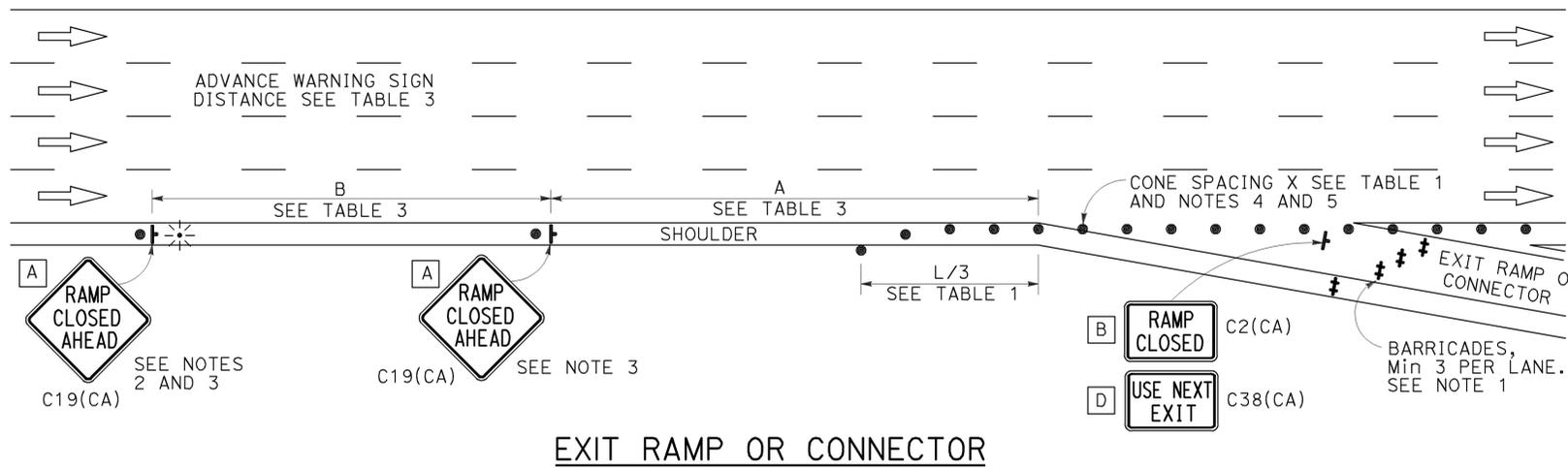
Gurinderpal Bhullar
 REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

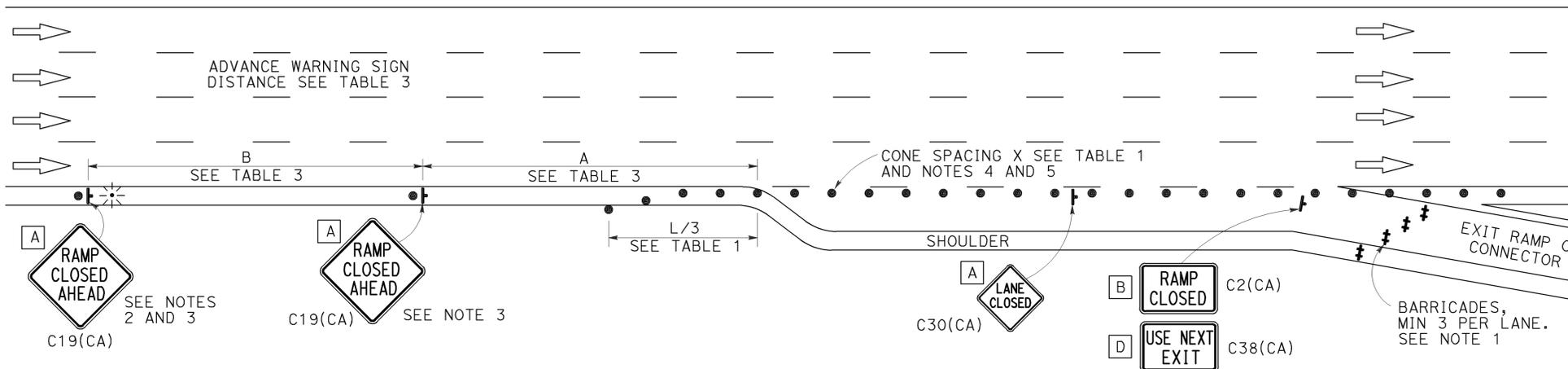
TO ACCOMPANY PLANS DATED 11-09-15

NOTES:

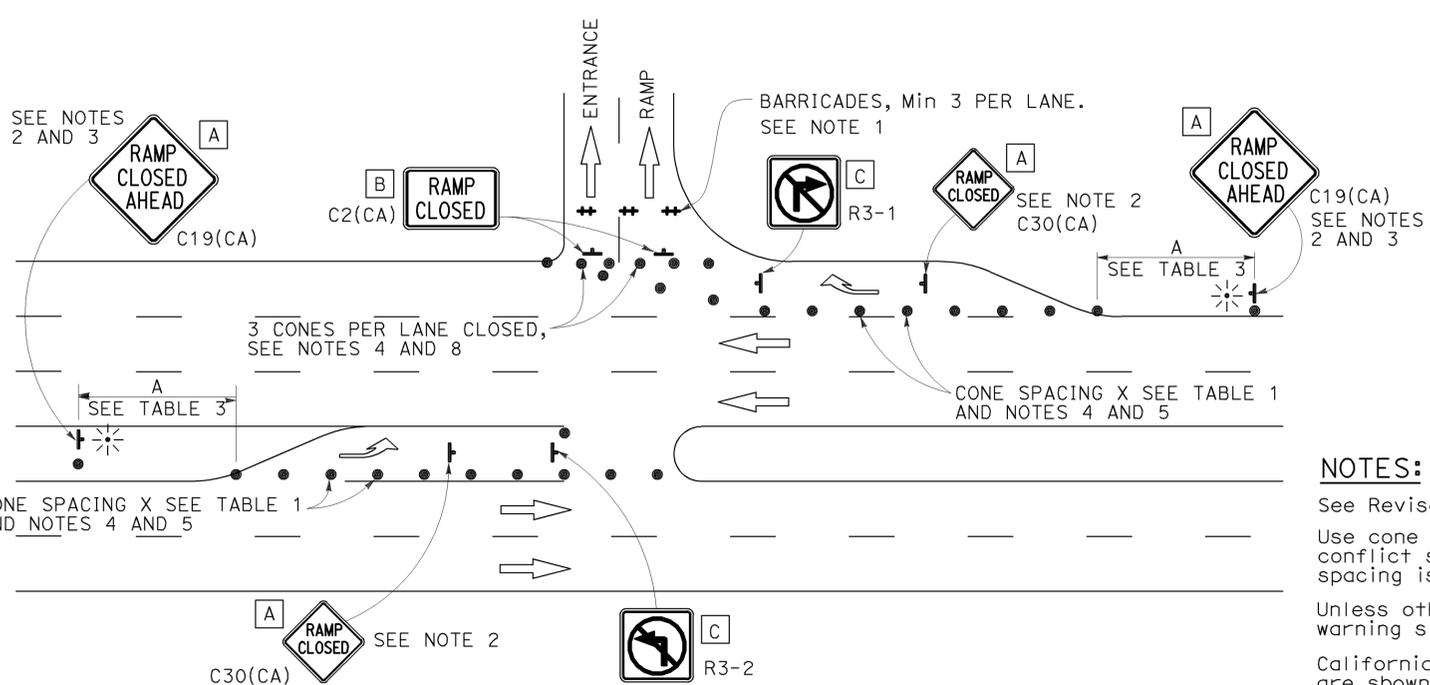
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
- Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
- All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
- At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
- The existing "EXIT" signs shall be covered during ramp closures.
- A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.



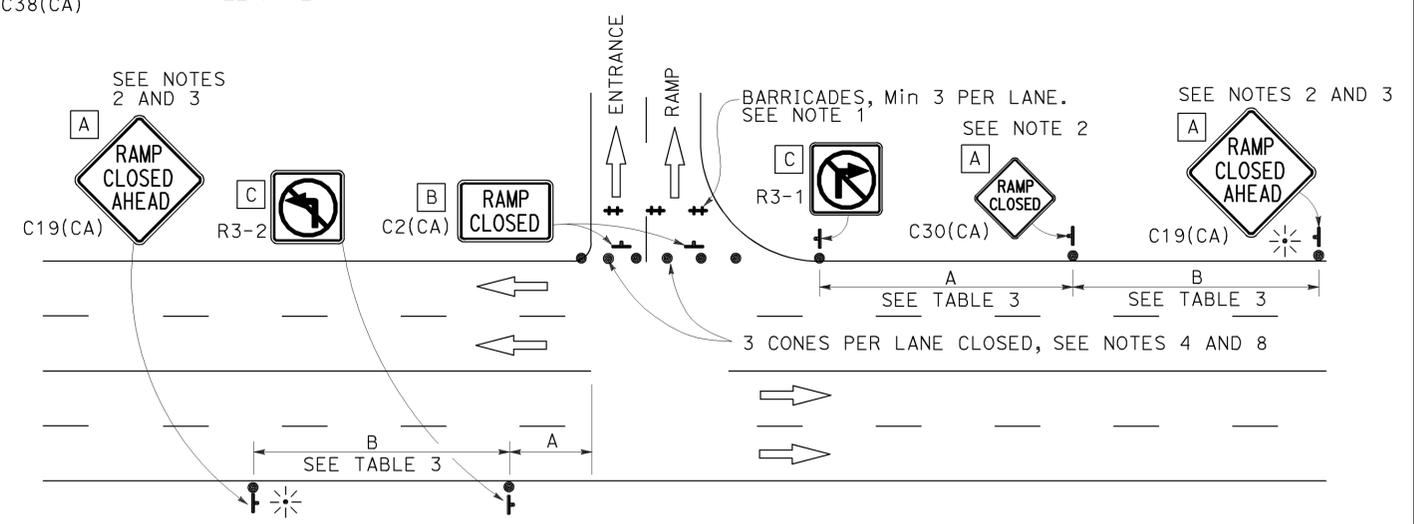
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

NOTES:

- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

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

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

REVISED STANDARD PLAN RSP T14

2010 REVISED STANDARD PLAN RSP T14

LEGEND:

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

ABBREVIATIONS

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	67	81

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Theresa
Aziz Gabriel
No. E15129
Exp. 6-30-16
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 11-09-15

SOFFIT AND WALL-MOUNTED LUMINAIRES

- PENDANT SOFFIT LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- FLUSH-MOUNTED SOFFIT LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- WALL-MOUNTED LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- EXISTING SOFFIT OR WALL-MOUNTED LUMINAIRE TO REMAIN UNMODIFIED
- EXISTING SOFFIT OR WALL-MOUNTED LUMINAIRE TO BE MODIFIED AS SPECIFIED

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

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

MISCELLANEOUS ELECTROLIERS

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

- NOTES:**
- 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 OCTOBER 30, 2015 SUPERSEDES RSP ES-1A DATED JULY 19, 2013 AND 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
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	68	81

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER
October 30, 2015
PLANS APPROVAL DATE

Theresa
Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 11-09-15

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
		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

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 DEMARCATON CABINET

		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 OCTOBER 30, 2015 SUPERSEDES RSP ES-1B DATED JULY 19, 2013 AND STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

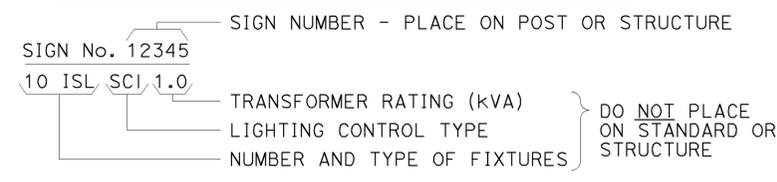
2010 REVISED STANDARD PLAN RSP ES-1B



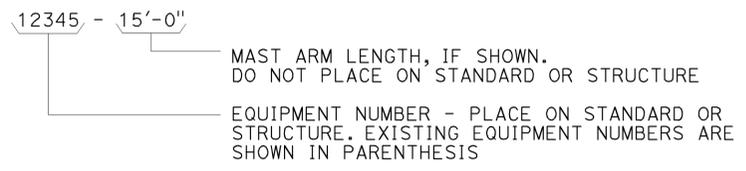
TO ACCOMPANY PLANS DATED 11-09-15

EQUIPMENT IDENTIFICATION

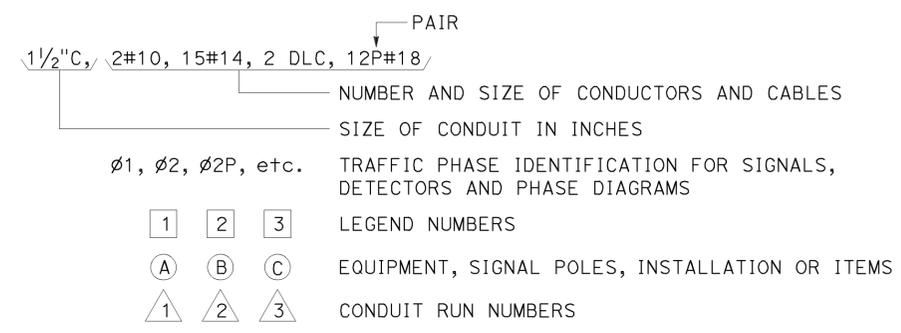
ILLUMINATED SIGN IDENTIFICATION NUMBER:



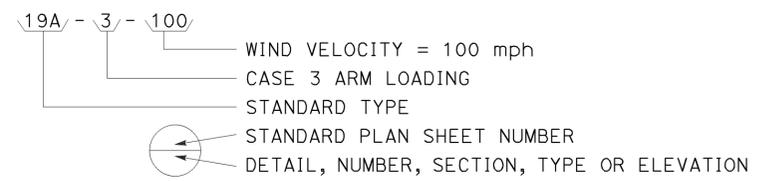
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



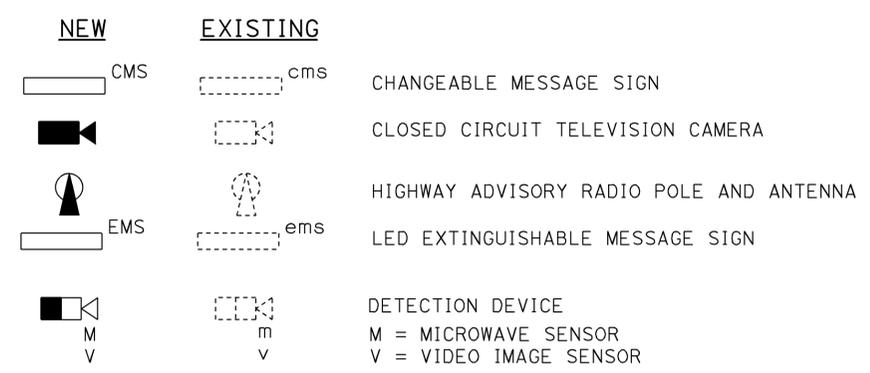
CONDUIT AND CONDUCTOR IDENTIFICATION:



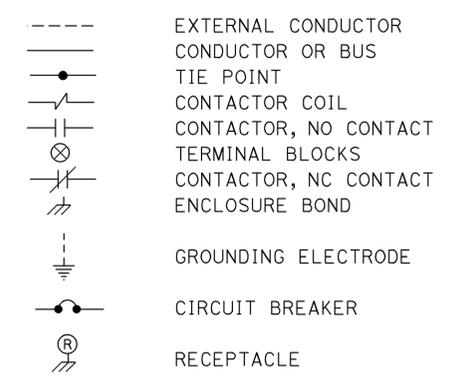
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



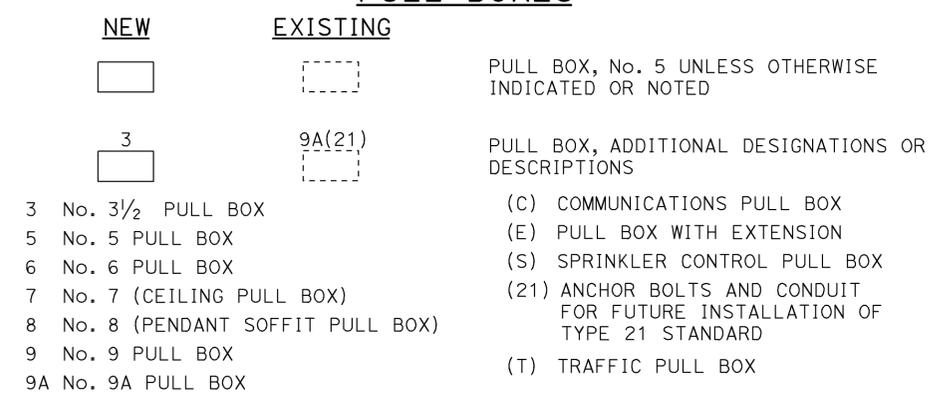
MISCELLANEOUS EQUIPMENT



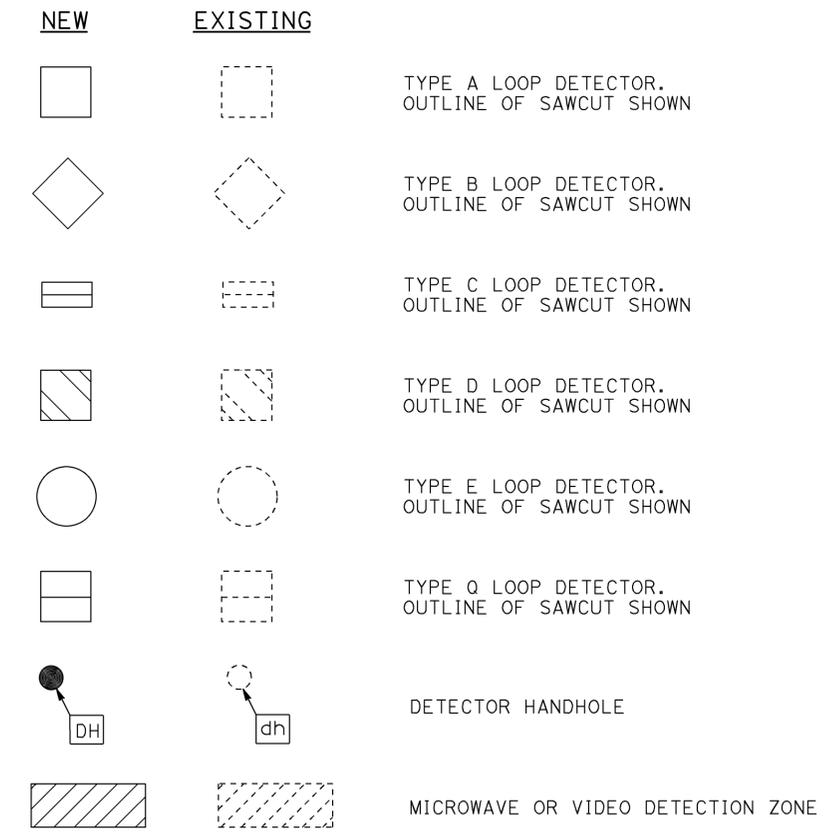
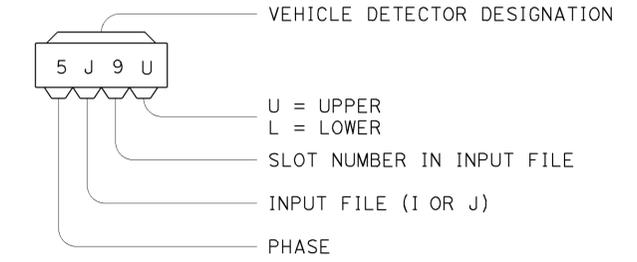
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1C DATED JULY 19, 2013 AND STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

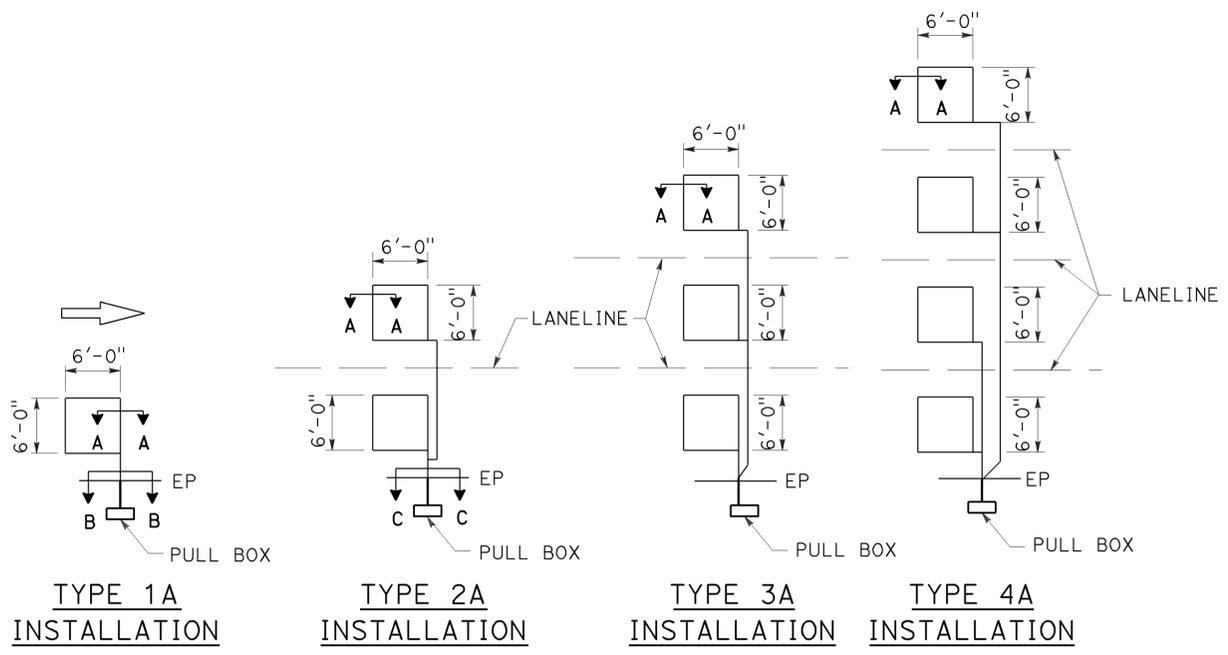
2010 REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	70	81

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

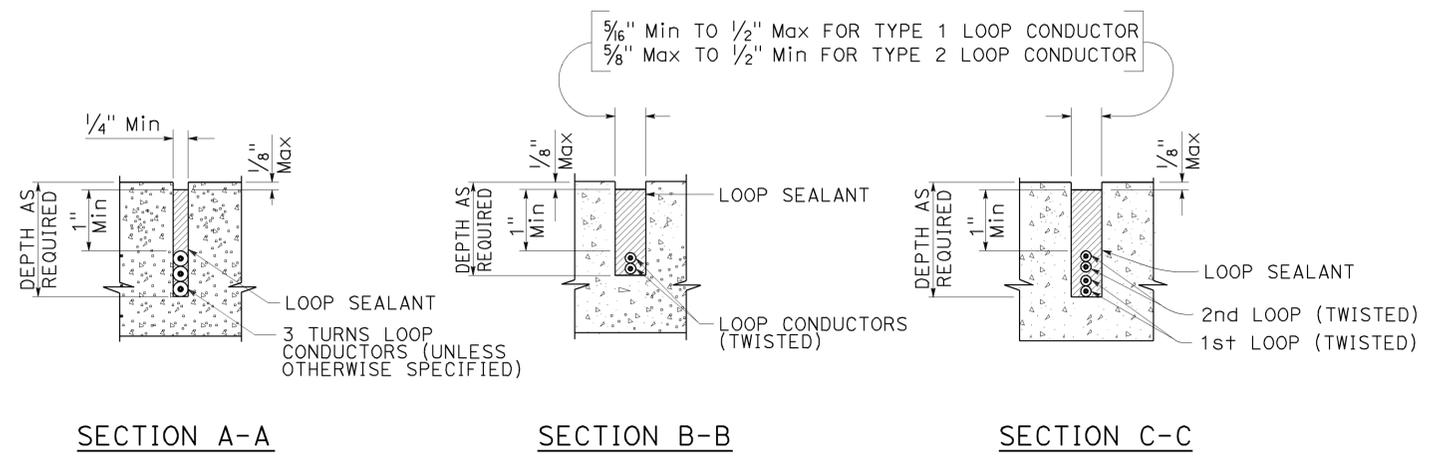


TO ACCOMPANY PLANS DATED 11-09-15

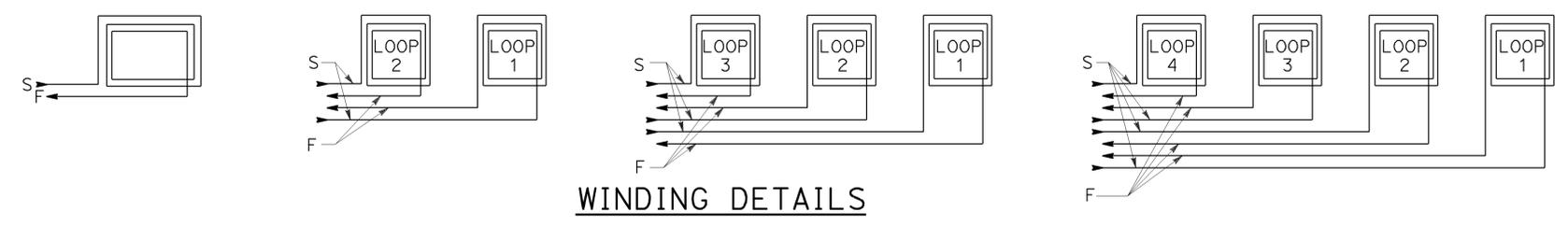


SAWCUT DETAILS

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

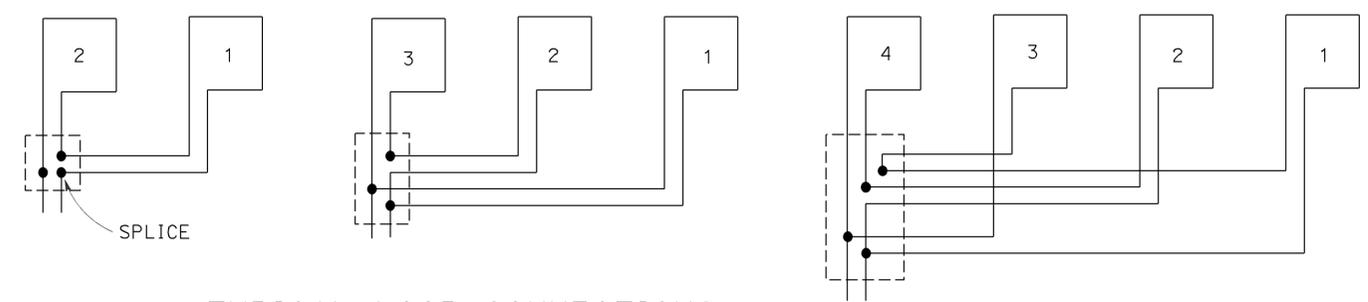


SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



WINDING DETAILS

ABBREVIATIONS:
 S - START
 F - FINISH



TYPICAL LOOP CONNECTIONS
 Dashed lines represent the pull box

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

RSP ES-5A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-5A DATED MAY 20, 2011 - PAGE 448 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-5A

2010 REVISED STANDARD PLAN RSP ES-5A

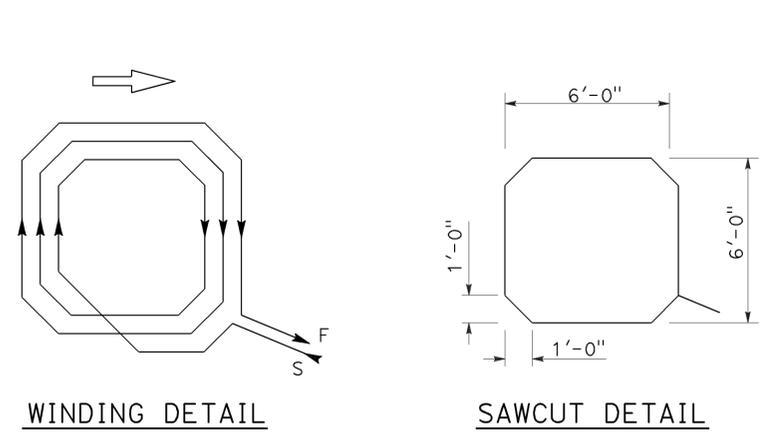
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	71	81

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

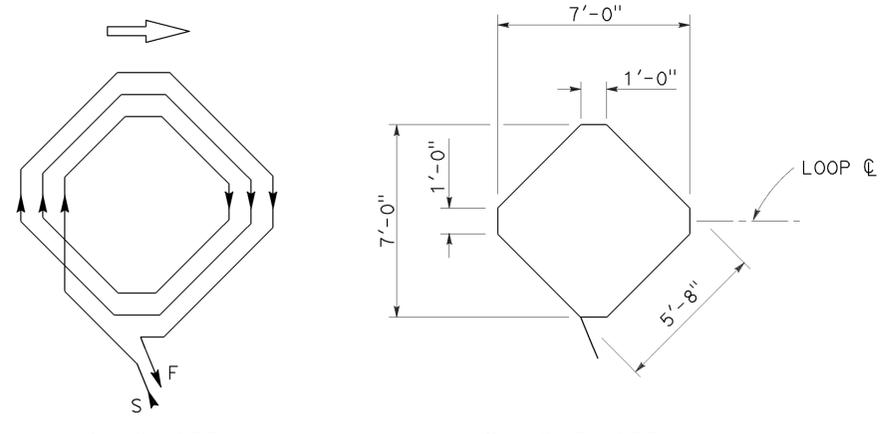
October 30, 2015
 PLANS APPROVAL DATE

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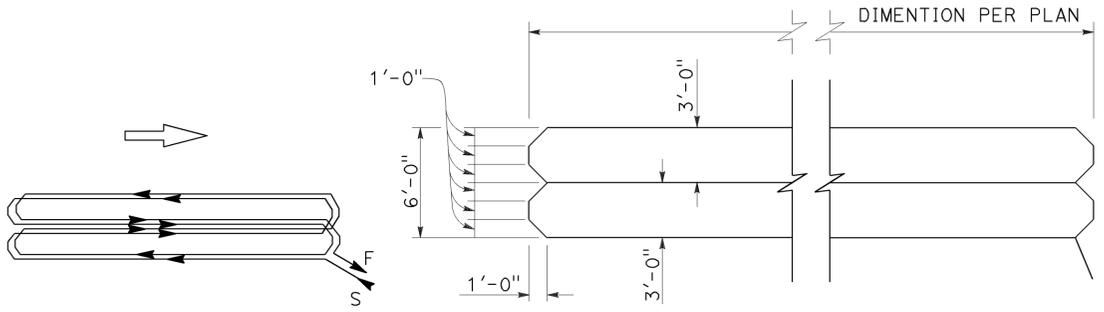
TO ACCOMPANY PLANS DATED 11-09-15



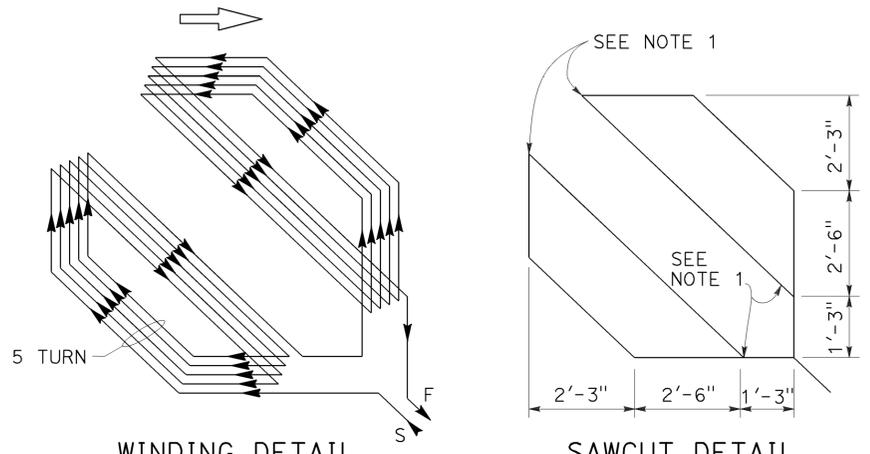
WINDING DETAIL
SAWCUT DETAIL
TYPE A LOOP DETECTOR CONFIGURATION



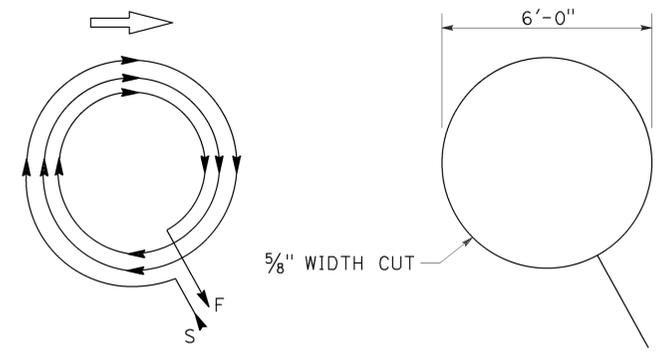
WINDING DETAIL
SAWCUT DETAIL
TYPE B LOOP DETECTOR CONFIGURATION



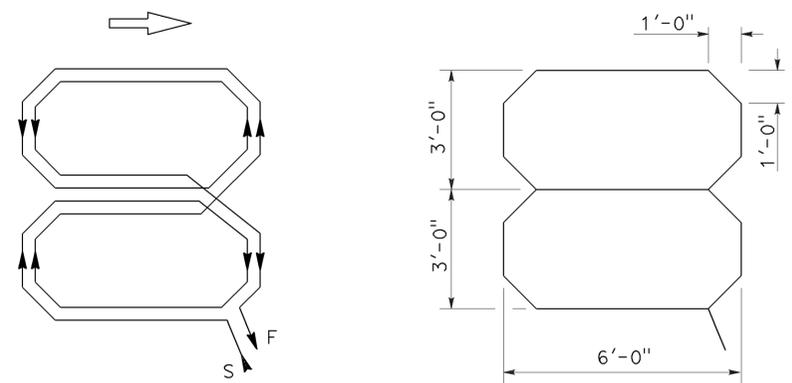
WINDING DETAIL
SAWCUT DETAIL
TYPE C LOOP DETECTOR CONFIGURATION



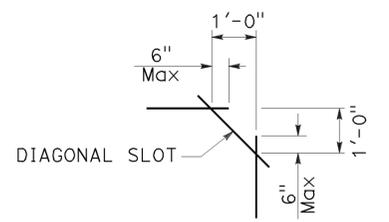
WINDING DETAIL
SAWCUT DETAIL
TYPE D LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAWCUT DETAIL
TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAWCUT DETAIL
TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF DIAGONAL SLOT AT CORNERS

- NOTES:**
1. Round corners of acute angle sawcuts to prevent damage to conductors.
 2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.
 3. Use Type D loops for limit line detector installations in left turn and bicycle lanes.

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

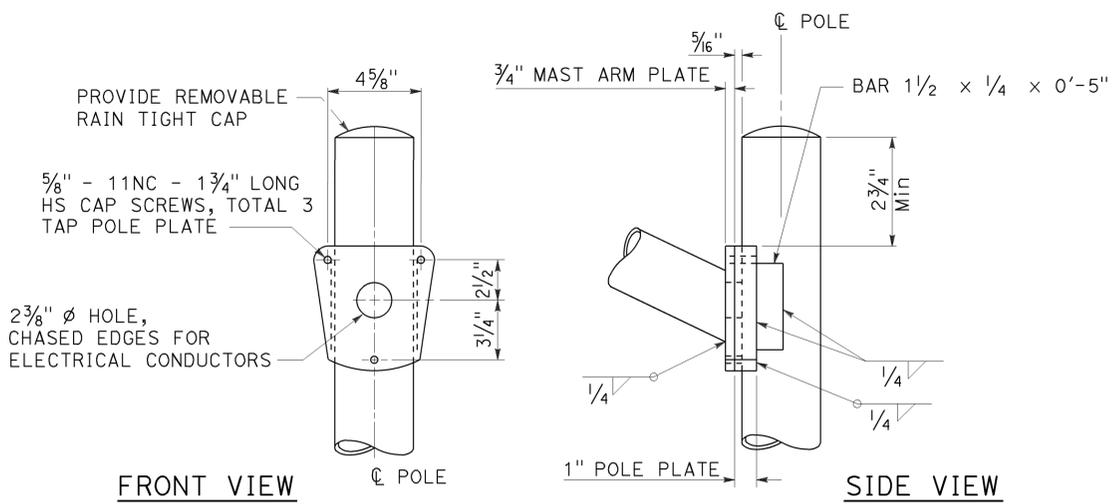
RSP ES-5B DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-5B DATED JULY 19, 2013 AND STANDARD PLAN ES-5B DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-5B

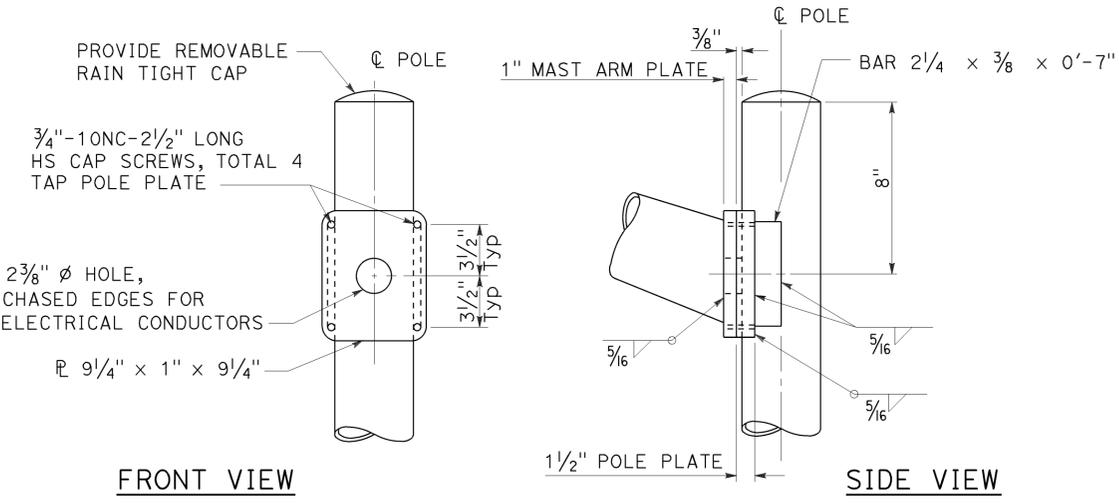
2010 REVISED STANDARD PLAN RSP ES-5B

LUMINAIRE MAST ARM DATA			
PROJECTED LENGTH	THICKNESS	MINIMUM OD AT POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3 1/4"	36'-9"±
* 8'-0"		3 1/2"	37'-3"±
* 10'-0"		3 3/4"	38'-0"±
* 12'-0"		4 1/4"	39'-0"±
** 20'-0"	0.1793"	5"	37'-0"±

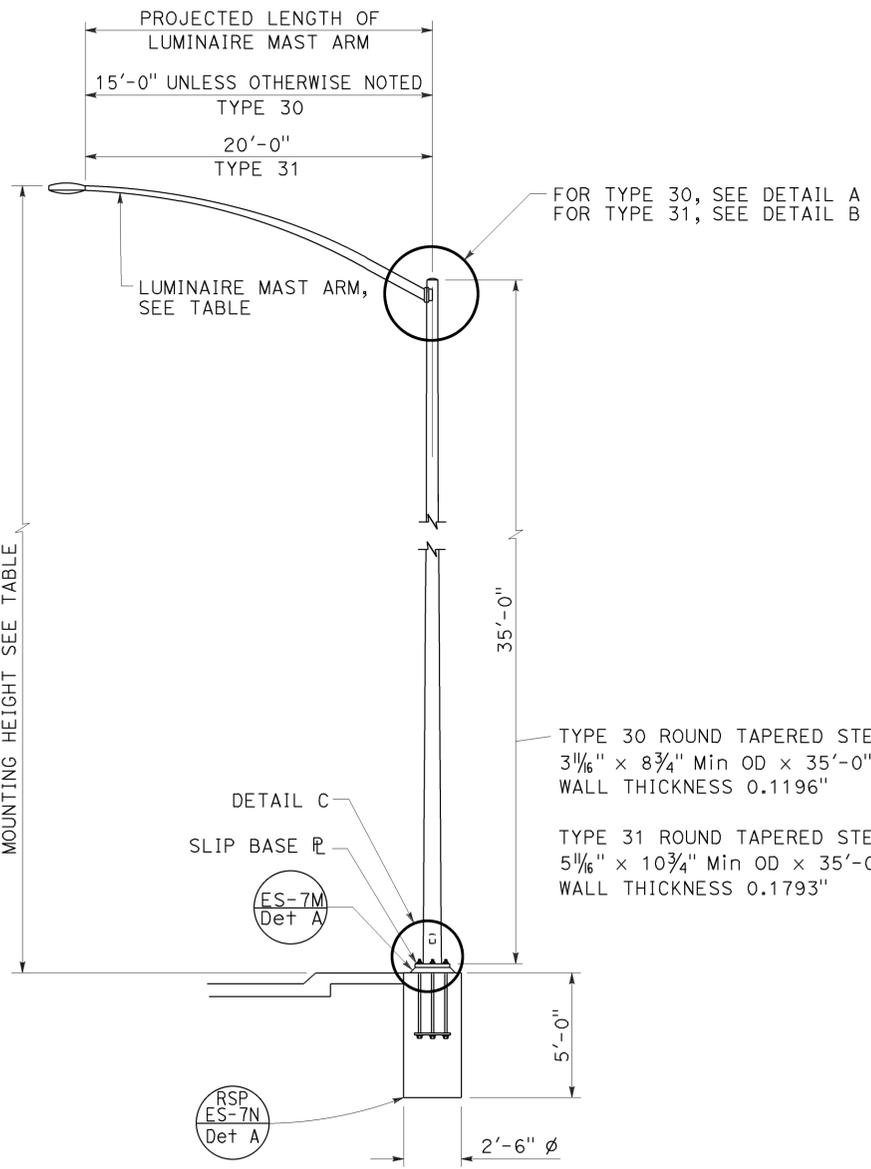
* TYPE 30
** TYPE 31



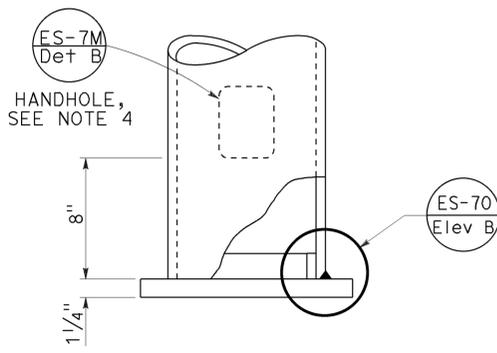
**TYPE 30
DETAIL A**



**TYPE 31
DETAIL B**



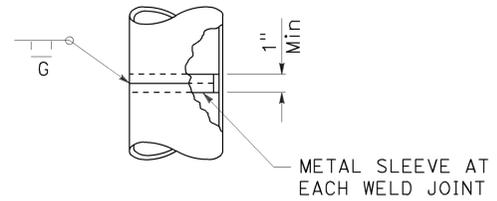
ELEVATION A



DETAIL C

NOTES:

1. For slip base plate details, see Revised Standard Plan RSP ES-6F.
2. For Type 30 fixed base use Type 15 base plate and foundation shown on Revised Standard Plan RSP ES-6A. Use 1 1/4" Dia x 3'-6" anchor bolts.
3. For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Revised Standard Plan RSP ES-6G.
4. Handhole shall be located on the downstream side of traffic.
5. For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.



POLE SPLICE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(LIGHTING STANDARD,
TYPES 30 AND 31)**

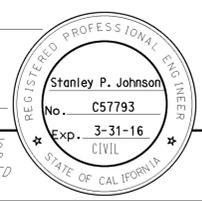
NO SCALE

RSP ES-6E DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-6E DATED MAY 20, 2011 - PAGE 456 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-6E

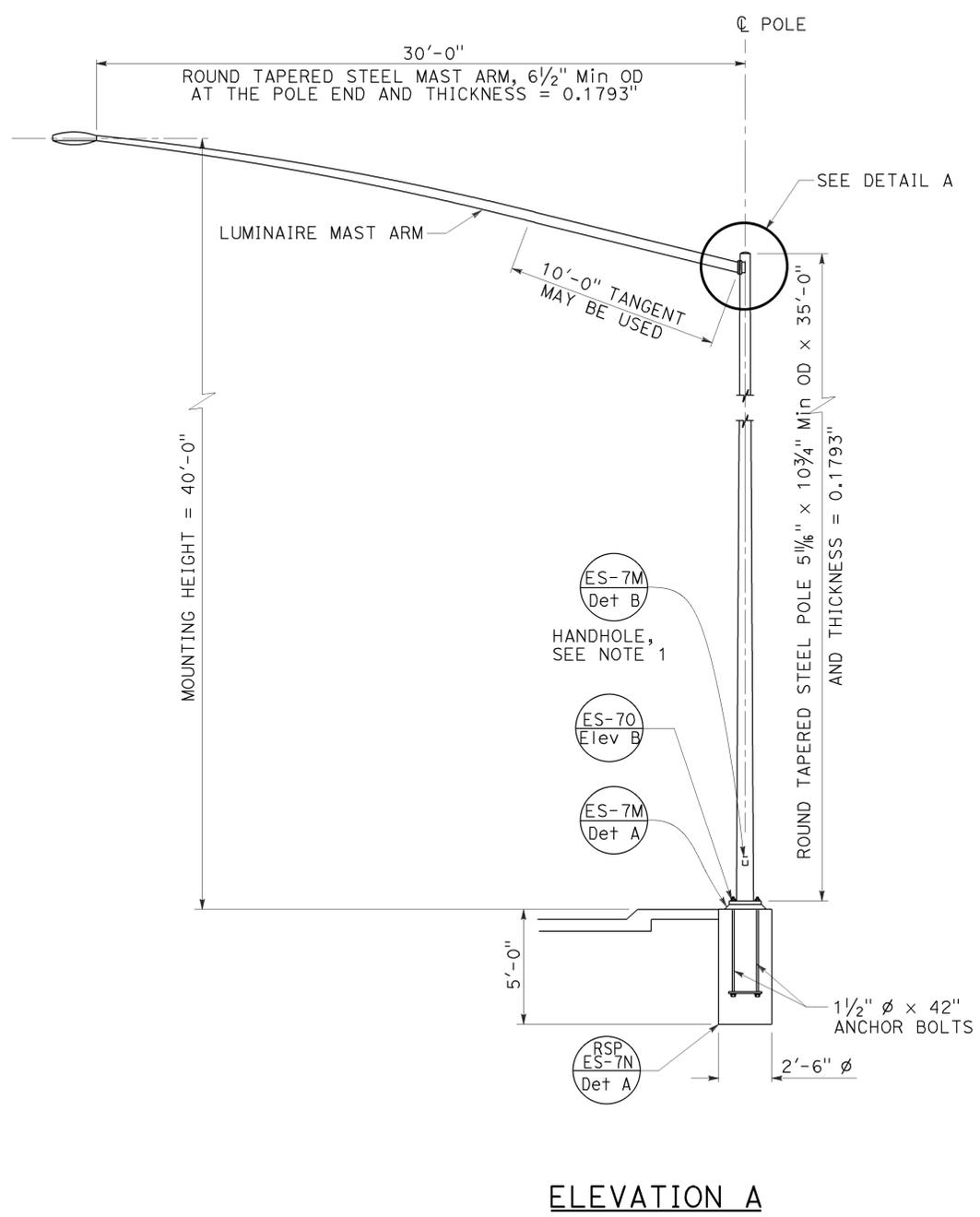
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	74	81

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

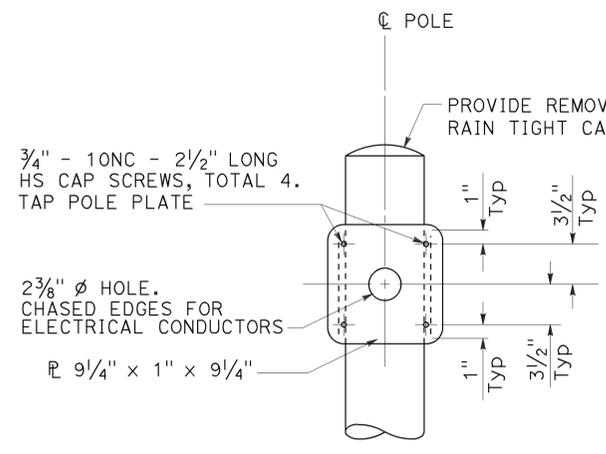


TO ACCOMPANY PLANS DATED 11-09-15

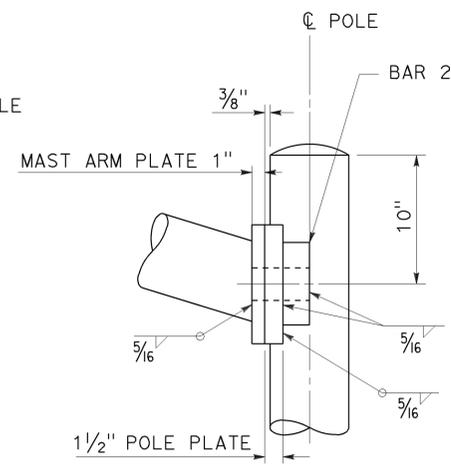
- NOTES:**
1. Handhole shall be located on the downstream side of traffic.
 2. For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.



ELEVATION A

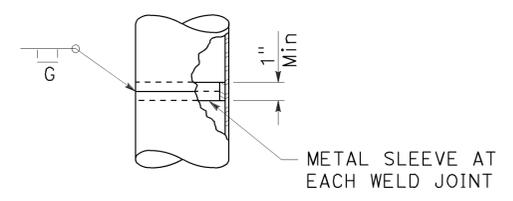


FRONT VIEW

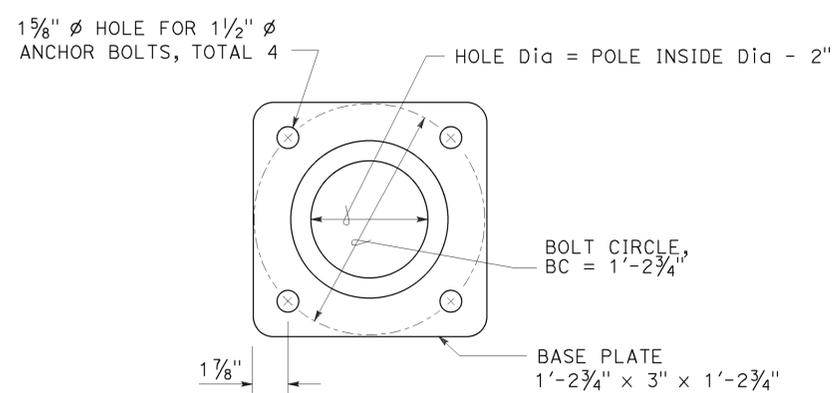


SIDE VIEW

DETAIL A



**POLE SPLICE
DETAIL B**



PLAN
**BASE PLATE
DETAIL C**

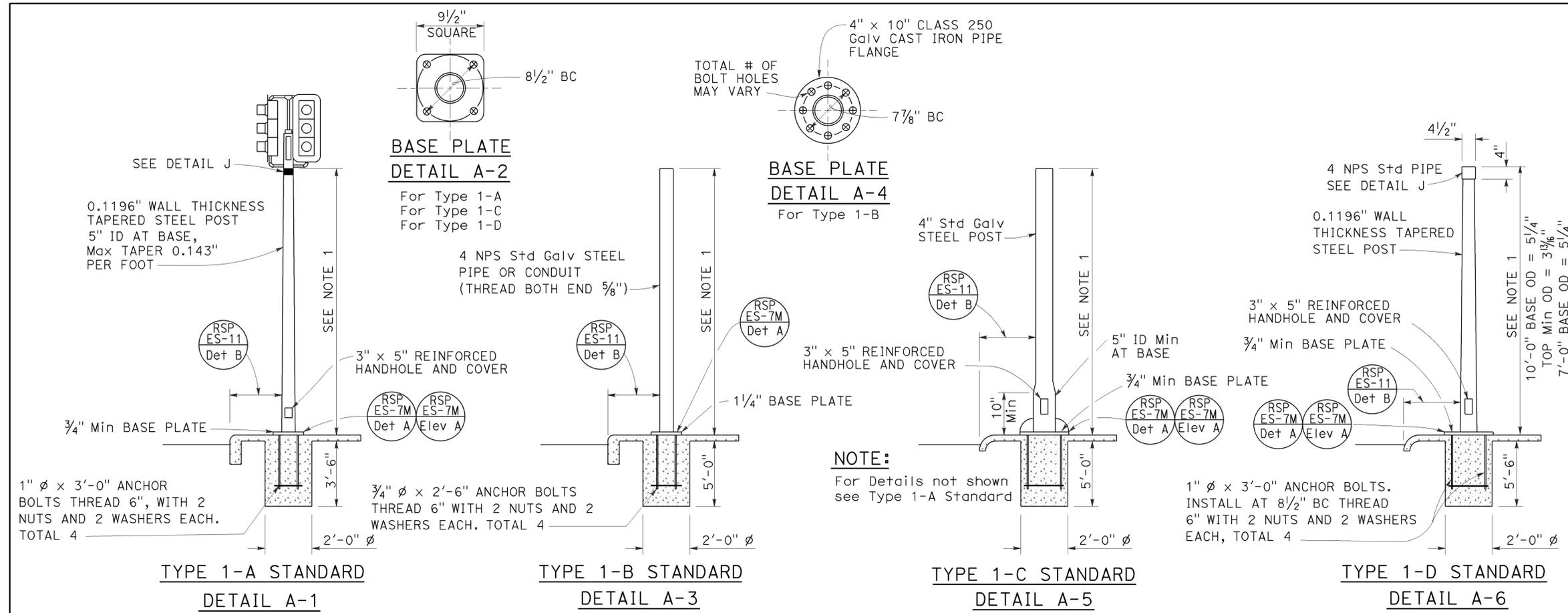
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(LIGHTING STANDARD,
TYPE 32)**

NO SCALE

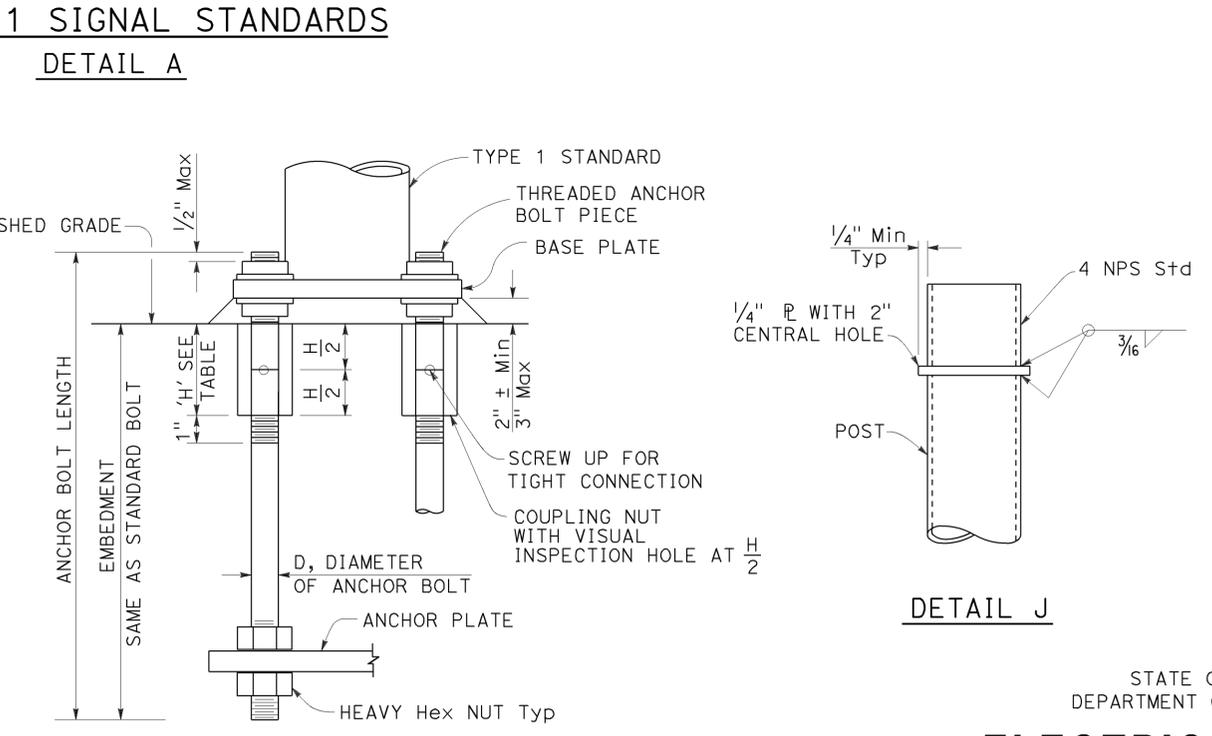
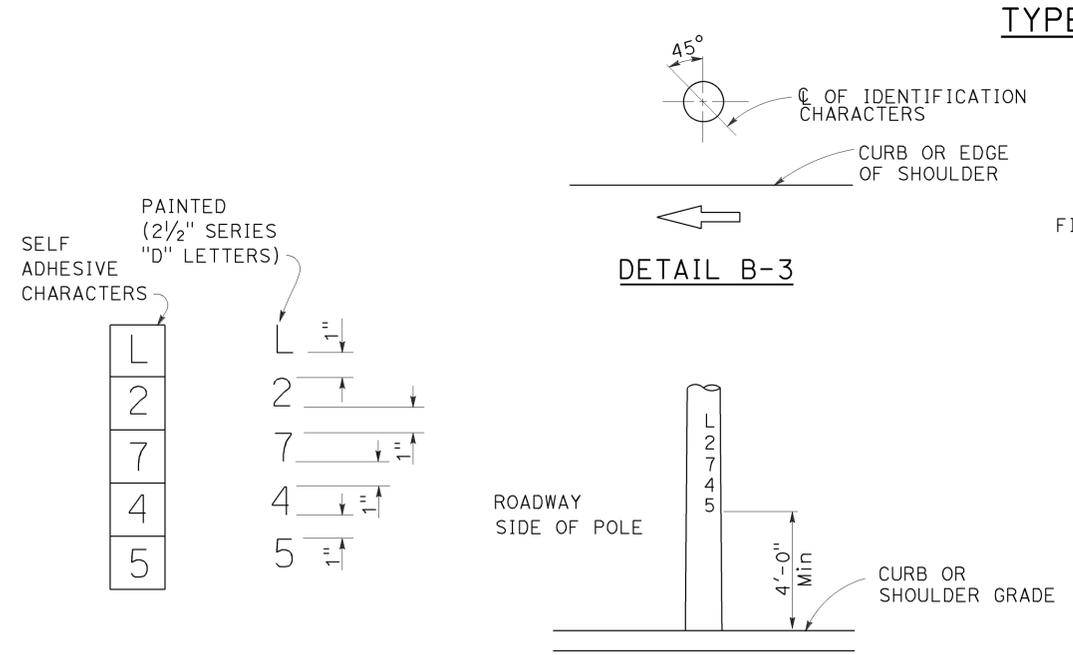
RSP ES-6G DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-6G DATED MAY 20, 2011 - PAGE 458 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-6G

2010 REVISED STANDARD PLAN RSP ES-7B



- NOTES:**
- Standards shall be 10'-0" ± 2" for vehicle signals and 7'-0" ± 2" for pedestrian signals unless shorter pole is noted on project plans.
 - Top of standards shall be 4 1/2" OD.
 - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
 - Anchor bolts shall be bonded to conduit or grounding conductor.
 - For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.
 - Pour foundation concrete against undisturbed soil.
 - For standards with handhole, locate in the downstream side of traffic.
 - Coupling nuts to be used only when shown or specified on project plans.



COUPLING NUT TABLE

BOLT DIAMETER	NUT TABLE THICKNESS 'H'
3/4"	2 1/4"
1"	3"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD, TYPE 1
AND EQUIPMENT IDENTIFICATION CHARACTERS)**

NO SCALE

RSP ES-7B DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-7B DATED MAY 20, 2011 - PAGE 463 OF THE STANDARD PLANS BOOK DATED 2010.

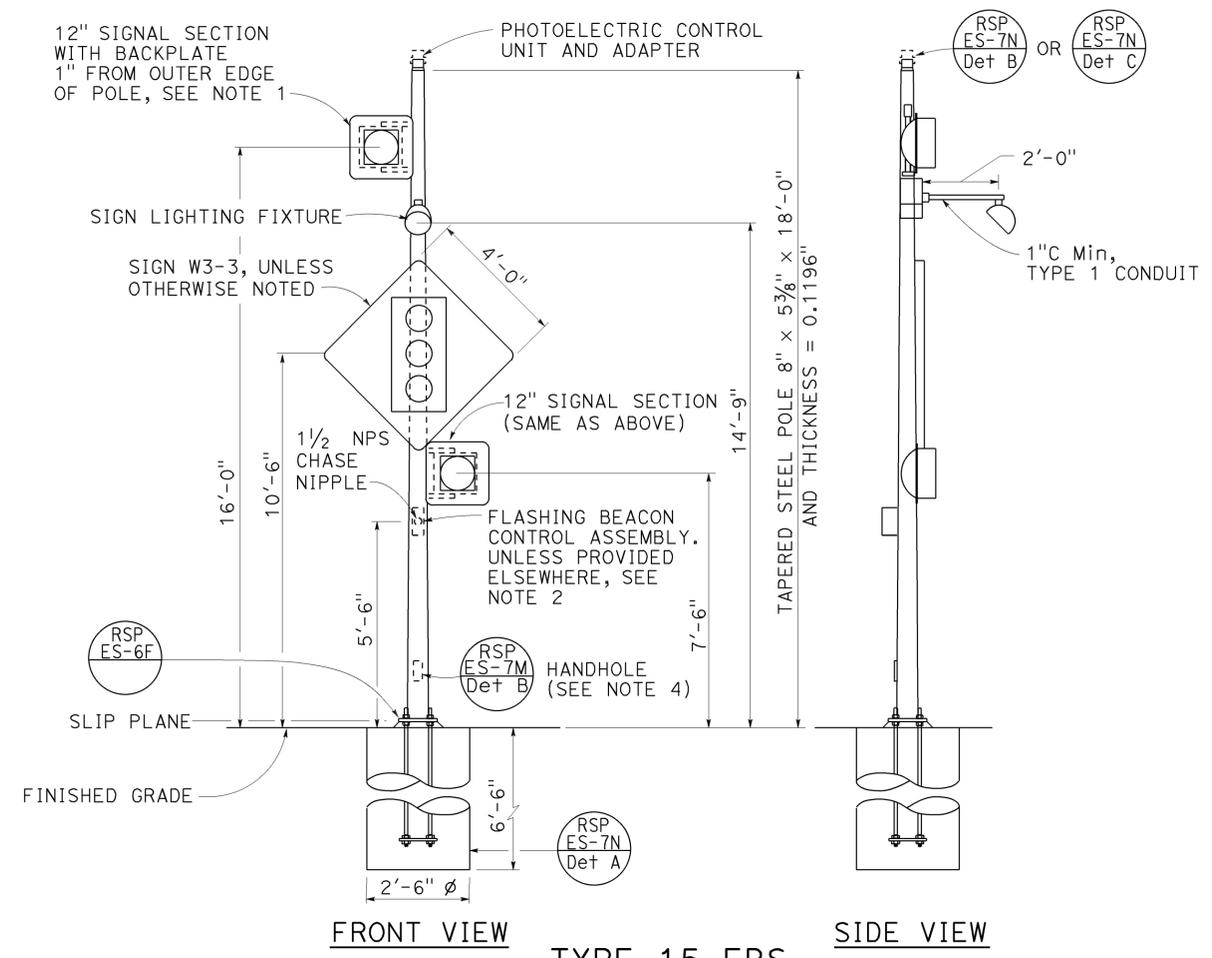
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3, 13.7, 14.7, 22.5	76	81

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
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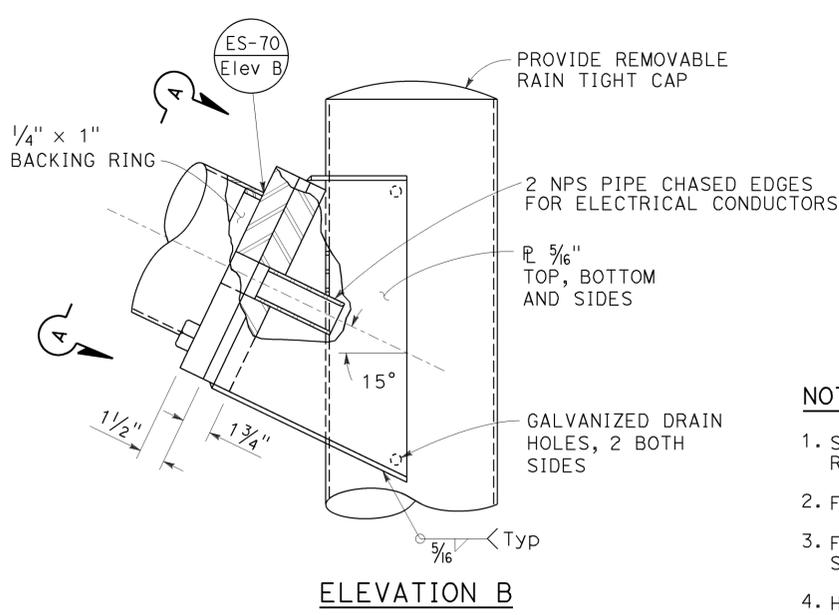
TO ACCOMPANY PLANS DATED 11-09-15

NOTES:

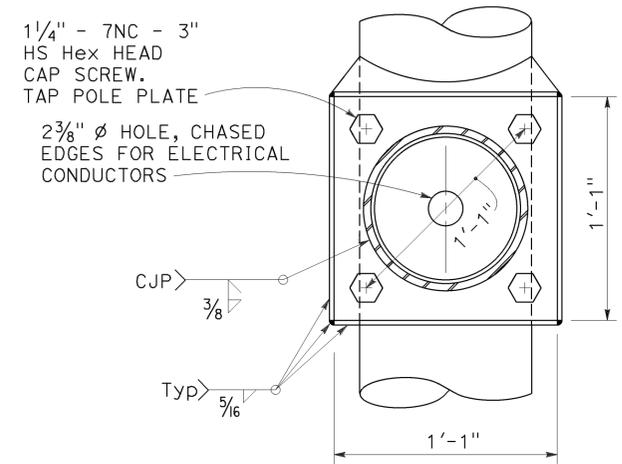
1. See Revised Standard Plans RSP ES-4A and RSP ES-4D for attachment fitting details.
2. For wiring diagram, see Standard Plan ES-14B.
3. For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.
4. Handhole shall be located on the downstream side of traffic.
5. See project plans for type of standard to be installed.



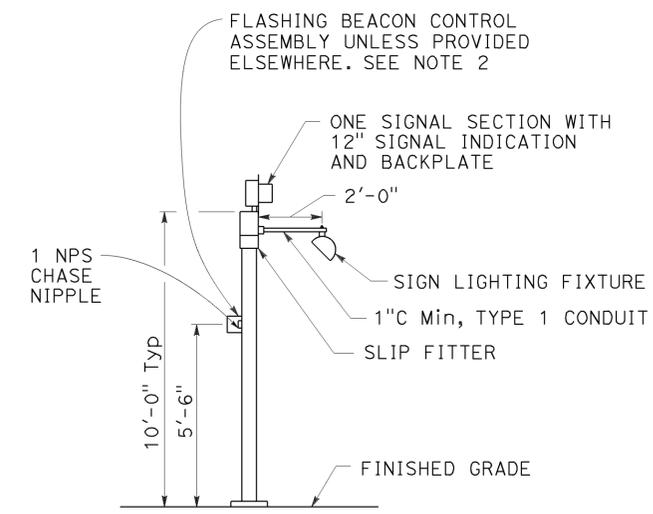
TYPE 15-FBS
ADVANCE FLASHING BEACON WITH SLIP BASE INSTALLATION
DETAIL A



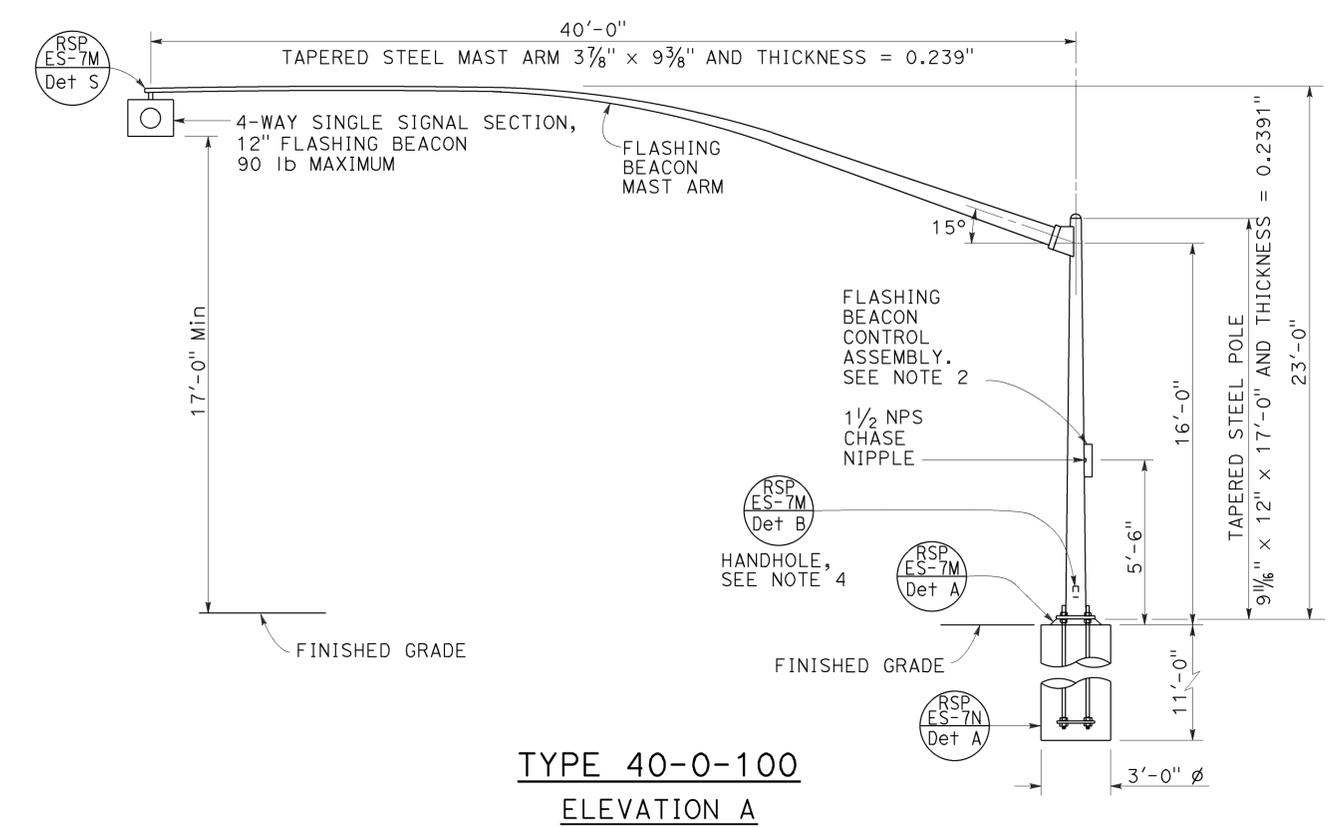
ELEVATION B



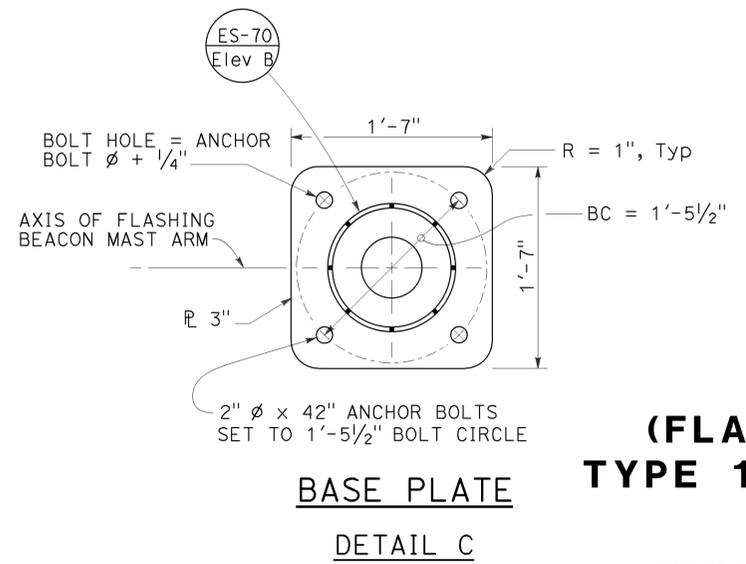
VIEW A-A
FLASHING BEACON MAST ARM
CONNECTION DETAIL
DETAIL B



TYPE 1-A, 1-B, 1-C, AND 1-D
ADVANCE FLASHING
BEACON INSTALLATION
DETAIL D
 See Note 5



TYPE 40-0-100
ELEVATION A



BASE PLATE
DETAIL C

ELECTRICAL SYSTEMS
(FLASHING BEACON ON A TYPE 1,
TYPE 15-FBS, AND TYPE 40 STANDARD)
 NO SCALE

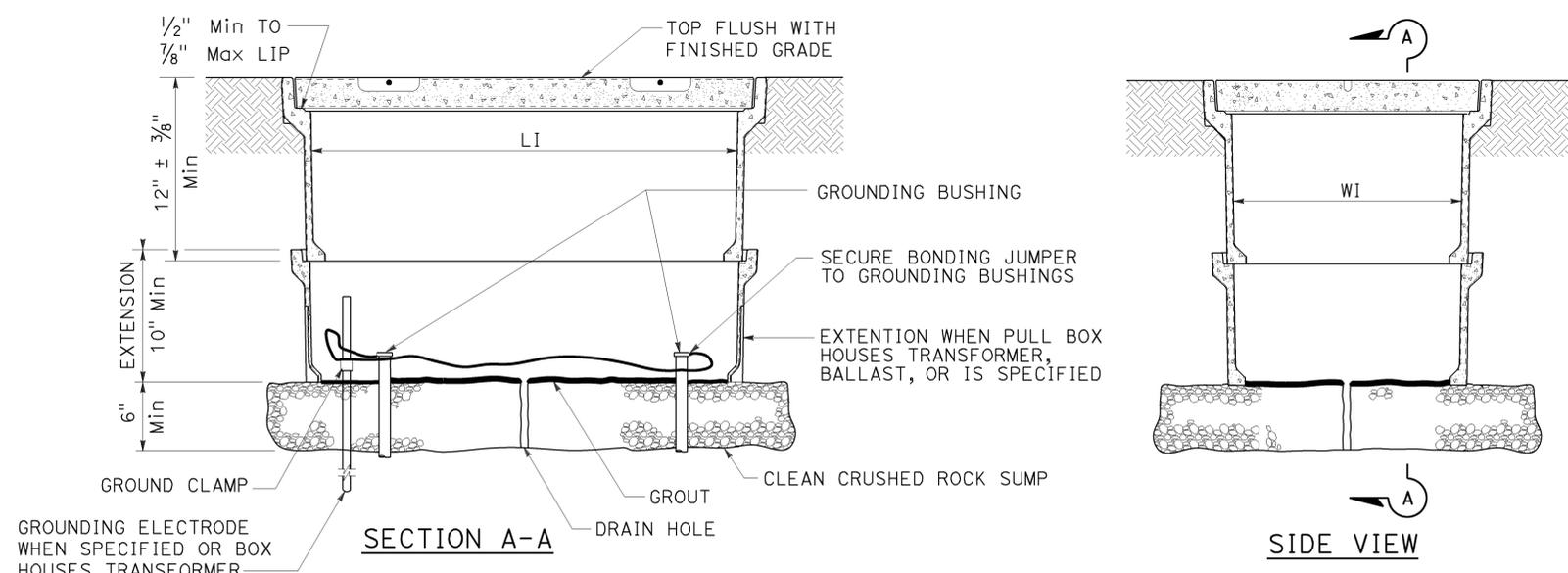
RSP ES-7J DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-7J DATED JULY 19, 2013 AND STANDARD PLAN ES-7J DATED MAY 20, 2011 - PAGE 471 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-7J

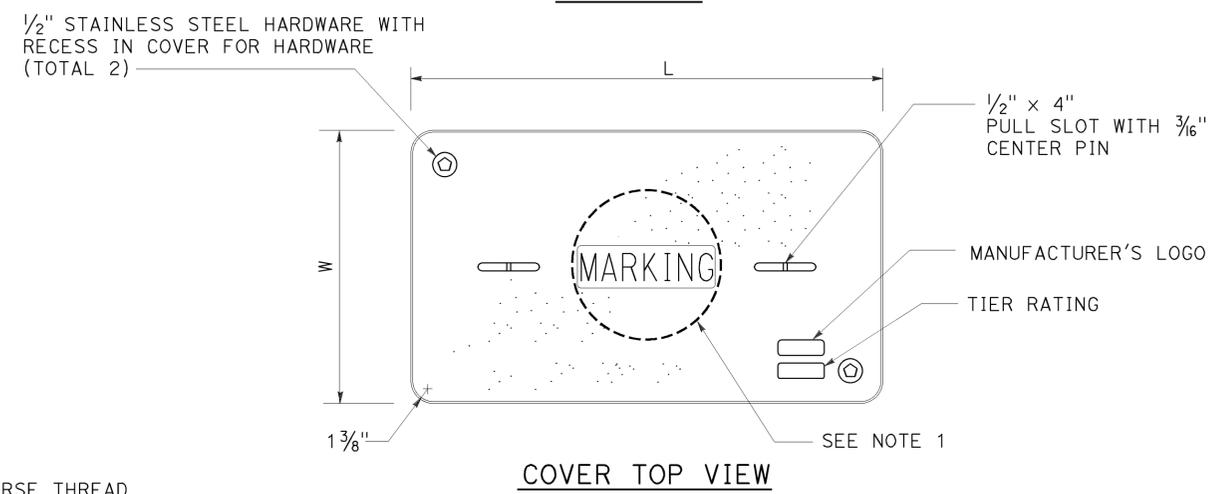
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	77	81

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
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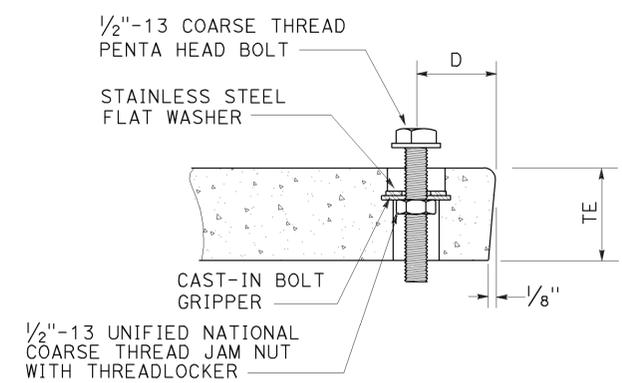
TO ACCOMPANY PLANS DATED 11-09-15



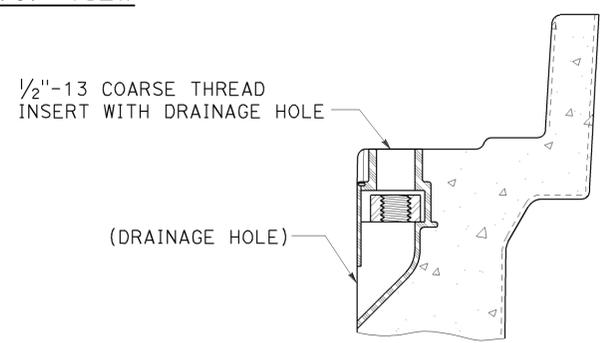
INSTALLATION DETAILS
DETAIL A



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.
- 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	MINIMUM WEIGHT	LI Min	WI Min	TE	D	L	W	MINIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3"	9"	1 3/4"	1 3/4"	1'-3 1/4" - 1'-3 3/8"	10" - 10 1/8"	30 lb
No. 5	12"	10"	55 lb	1' - 8"	11"	2"	1 3/4"	1'-11 1/4"	1'-1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 4 1/4"	1' - 3 1/4"	2"	2"	2'-6 1/2"	1'-5 1/2"	85 lb

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

RSP ES-8A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-8A DATED JULY 19, 2013 AND 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

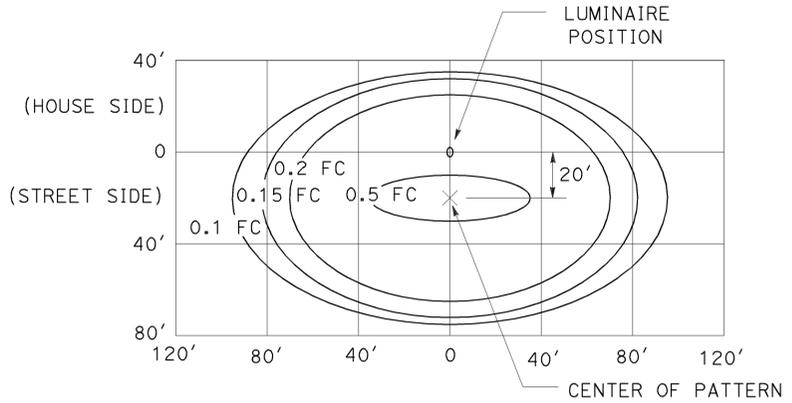
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	78	81

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
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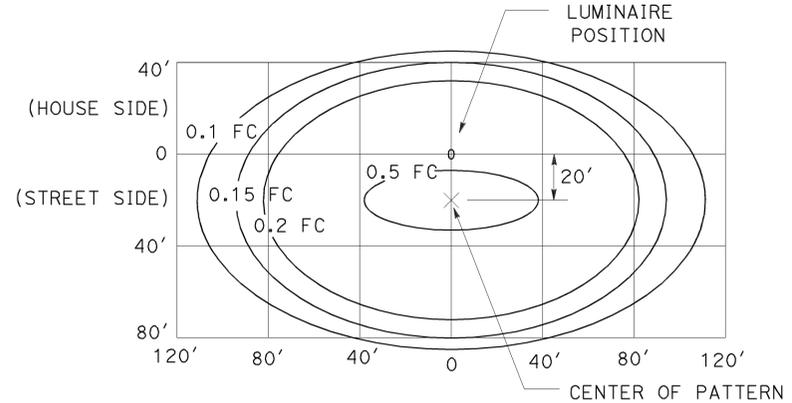


TO ACCOMPANY PLANS DATED 11-09-15

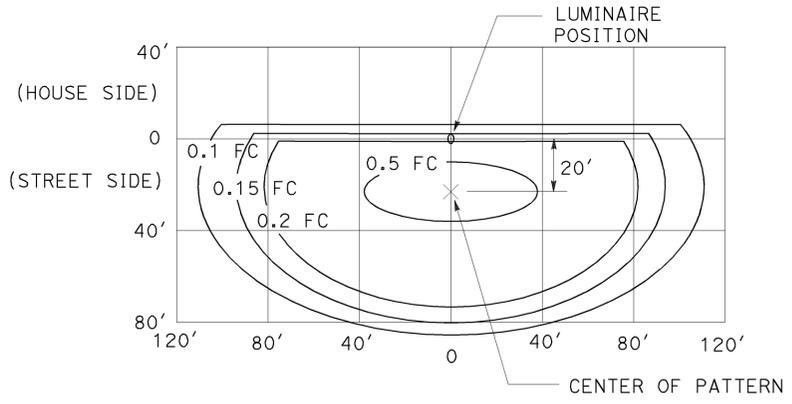
NOTE:
Curves represent the minimum footcandle (FC).



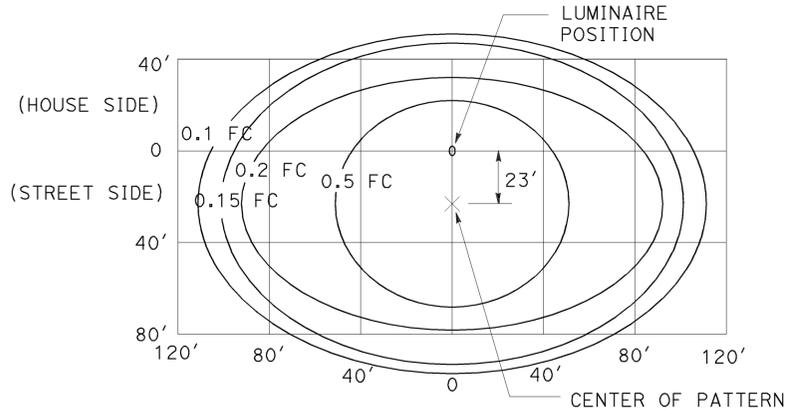
LED LUMINAIRE 165 W
34' Mounting Height



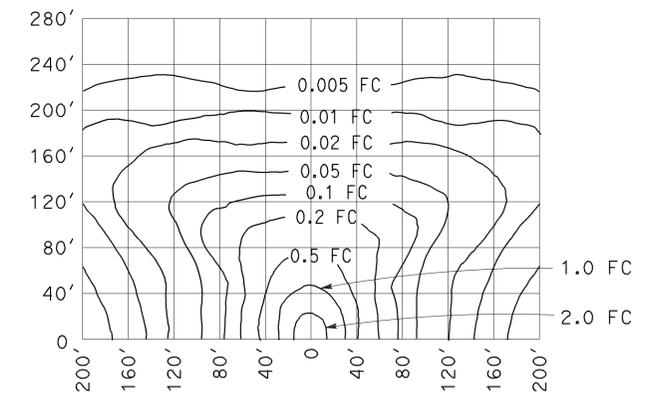
LED LUMINAIRE 235 W
40' Mounting Height



LED LUMINAIRE 235 W
40' Mounting Height
with back side control



LED LUMINAIRE 300 W
40' Mounting Height



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

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

NO SCALE

RSP ES-10A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-10A DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-10A

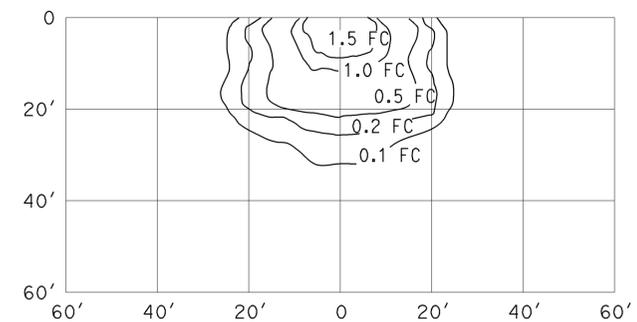
2010 REVISED STANDARD PLAN RSP ES-10A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	79	81

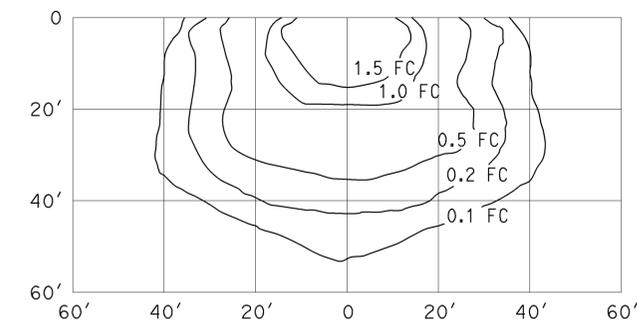
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 11-09-15

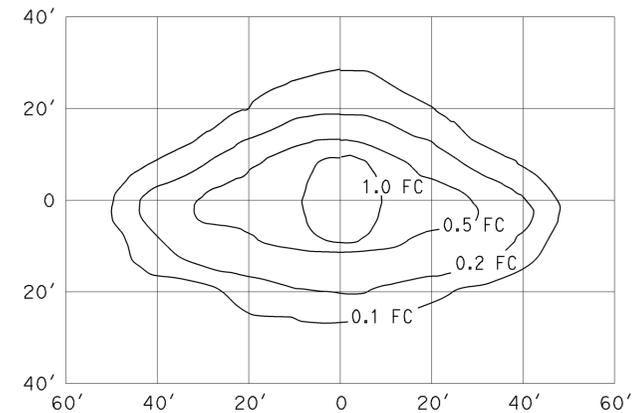
NOTE:
Curves represent the minimum footcandle (FC).



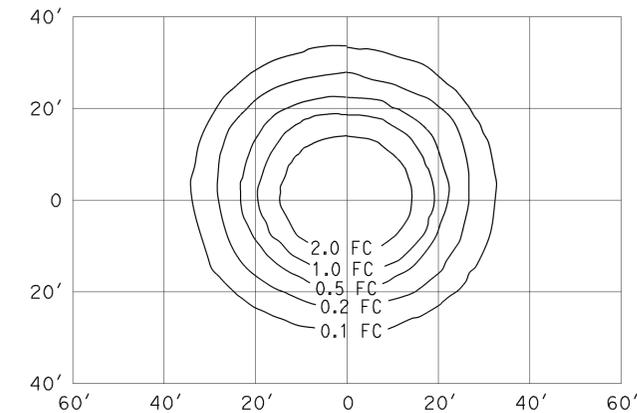
**HIGH-PRESSURE SODIUM
WALL-MOUNTED LUMINAIRE 70 W**
15' Mounting Height
ANSI Designation S62
Lamp operated at 5,800 lm



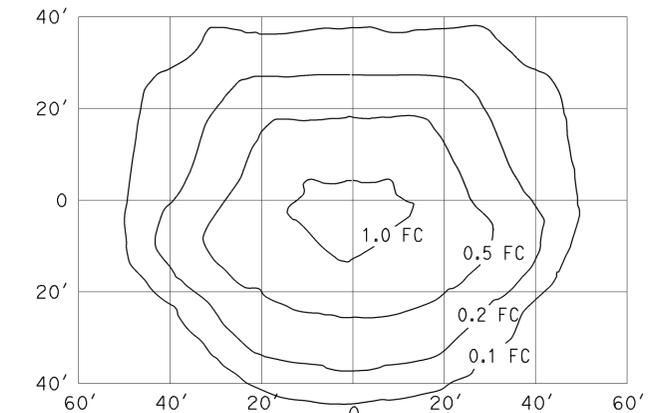
**HIGH-PRESSURE SODIUM
WALL-MOUNTED LUMINAIRE 100 W**
15' Mounting Height
ANSI Designation S54
Lamp operated at 9,500 lm



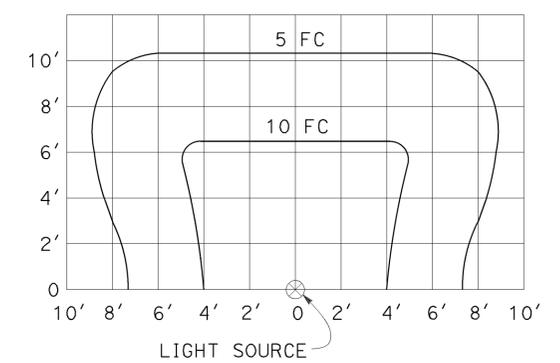
**HIGH-PRESSURE SODIUM
PENDANT SOFFIT LUMINAIRE 70 W
TYPE III SHORT**
17' Mounting Height
ANSI Designation S62
Lamp operated at 5,800 lm



**HIGH-PRESSURE SODIUM
PENDANT SOFFIT LUMINAIRE 70 W**
17' Mounting Height
ANSI Designation S62
Lamp operated at 5,800 lm



**HIGH-PRESSURE SODIUM
FLUSH-MOUNTED SOFFIT LUMINAIRE 70 W**
17' Mounting Height
ANSI Designation S62
Lamp operated at 5,800 lm



**INDUCTION SIGN
LIGHTING FIXTURE 85 W**

2010 REVISED STANDARD PLAN RSP ES-10B

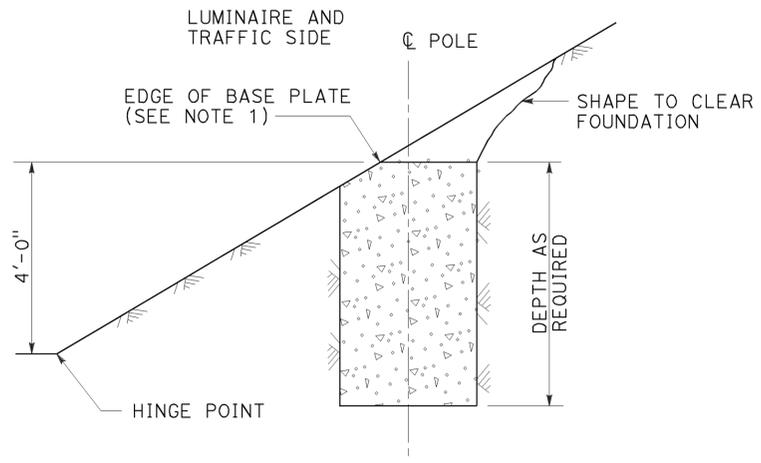
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(ISOFOOTCANDLE CURVES)**

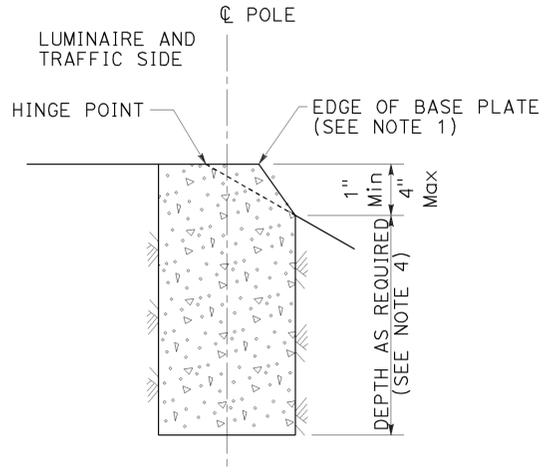
NO SCALE

RSP ES-10B DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-10B DATED JULY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

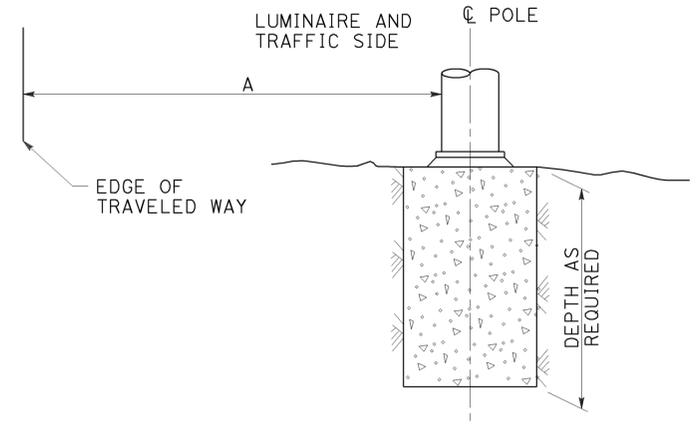
REVISED STANDARD PLAN RSP ES-10B



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

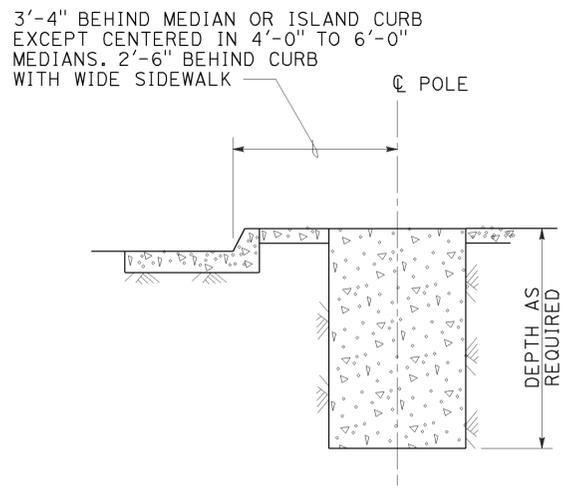
TO ACCOMPANY PLANS DATED 11-09-15

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

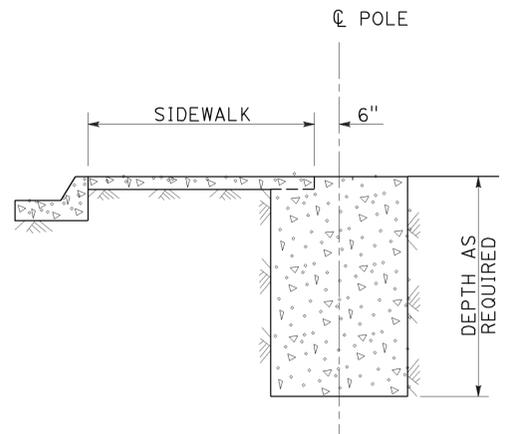
FOUNDATIONS ADJACENT TO ALL ROADWAYS EXCEPT
IN SIDEWALK, MEDIAN AND ISLAND AREAS
DETAIL A

NOTES:

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



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



NARROW SIDEWALK
DETAIL B-2
 Less than 7' wide

FOUNDATIONS IN SIDEWALK, MEDIAN AND ISLAND AREAS
DETAIL B

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

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

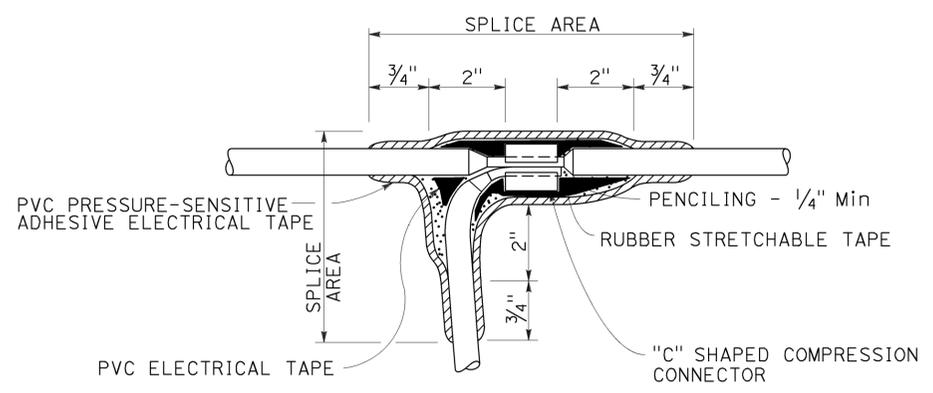
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133, 405	8.3 13.7, 14.7, 22.5	81	81

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE

Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

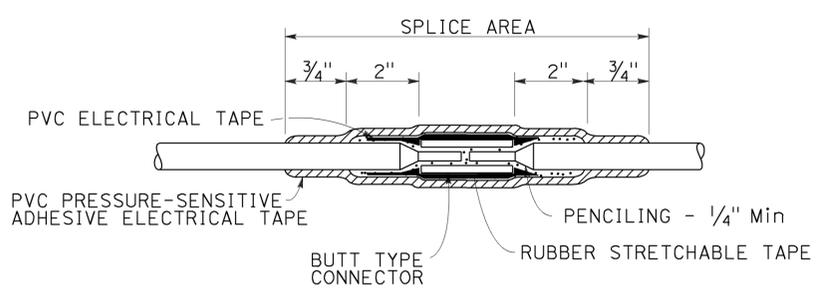
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TO ACCOMPANY PLANS DATED 11-09-15



TYPE C SPLICE

See Note 3

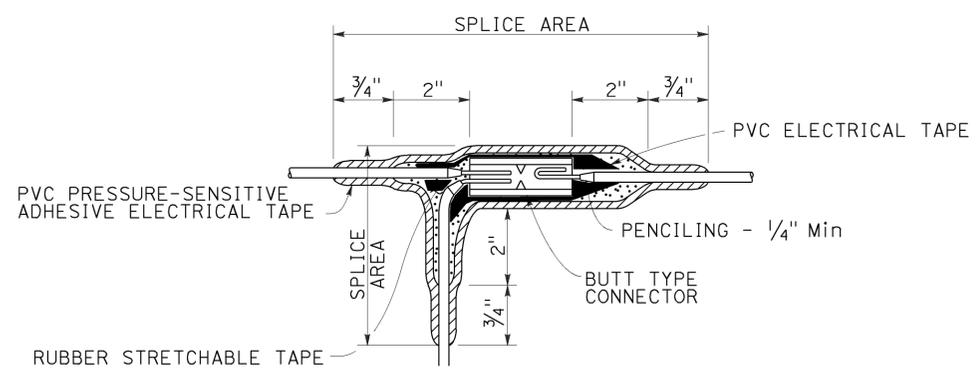


TYPE S SPLICE

See Note 4

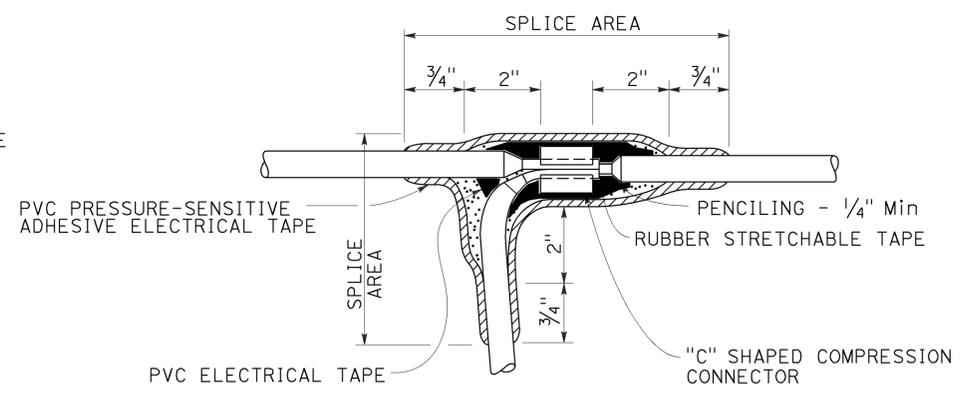
NOTES:

1. Dimensions are minimum.
2. Rubber tapes shall be rolled after application.
3. Between 1 free-end and 1 through conductor.
4. Between 2 free-end conductors.
5. Between 3 free-end conductors.



TYPE ST SPLICE

See Note 5



TYPE T SPLICE

See Note 5

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(SPLICING DETAILS)**

NO SCALE

RSP ES-13A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-13A DATED MAY 20, 2011 - PAGE 491 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-13A

2010 REVISED STANDARD PLAN RSP ES-13A