Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	1	30

INDEX OF PLANS

SHEET NO.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3-6	CONSTRUCTION DETAILS
7-8	CONSTRUCTION AREA SIGNS
9-13	TRAFFIC HANDLING PLAN
14-16	PAVEMENT DELINEATION DETAILS AND QUANTITIES
17-20	SUMMARY OF QUANTITIES
21-30	REVISED AND NEW STANDARD PLANS

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

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

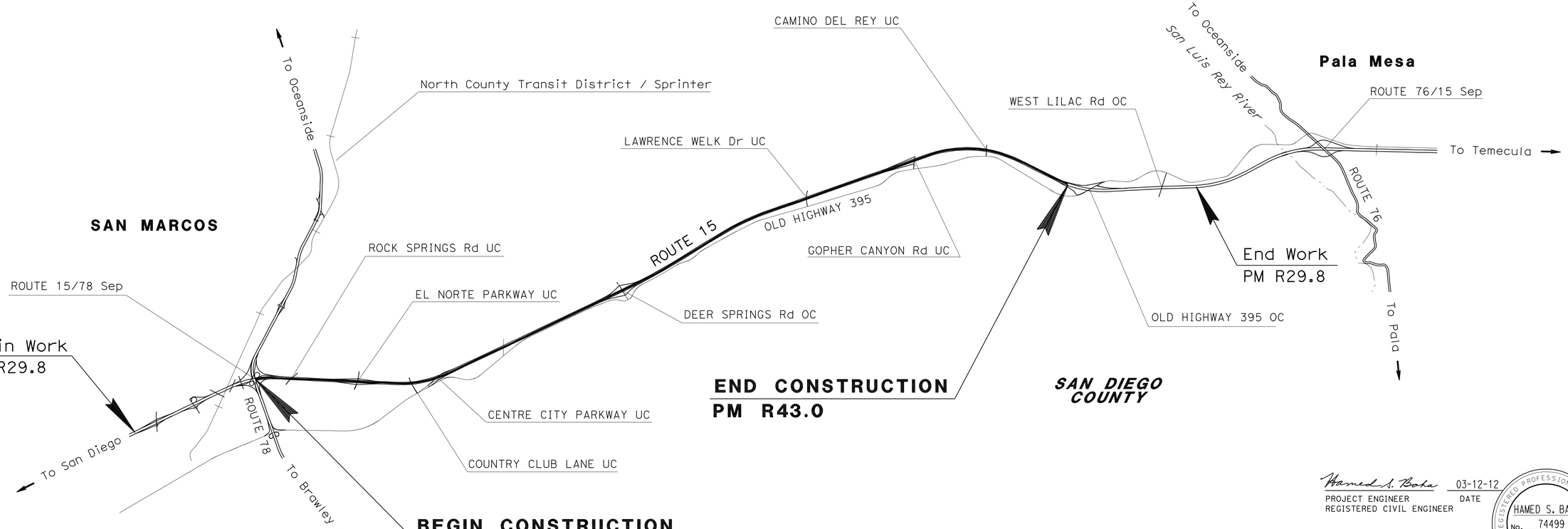
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SAN DIEGO COUNTY NEAR ESCONDIDO FROM ROUTE 15/78 SEPARATION TO 0.3 MILE SOUTH OF OLD HIGHWAY 395 OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

LOCATION MAP



PROJECT MANAGER ALBERTO GAYON

DESIGN ENGINEER ALBERTO GAYON

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

NO SCALE

Hamed S. Baha 03-12-12
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

March 12, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 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.

CONTRACT No.	11-2M5504
PROJECT ID	1112000114

LAST REVISION 03-14-12 DATE PLOTTED => 15-MAR-2012 TIME PLOTTED => 10:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	2	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

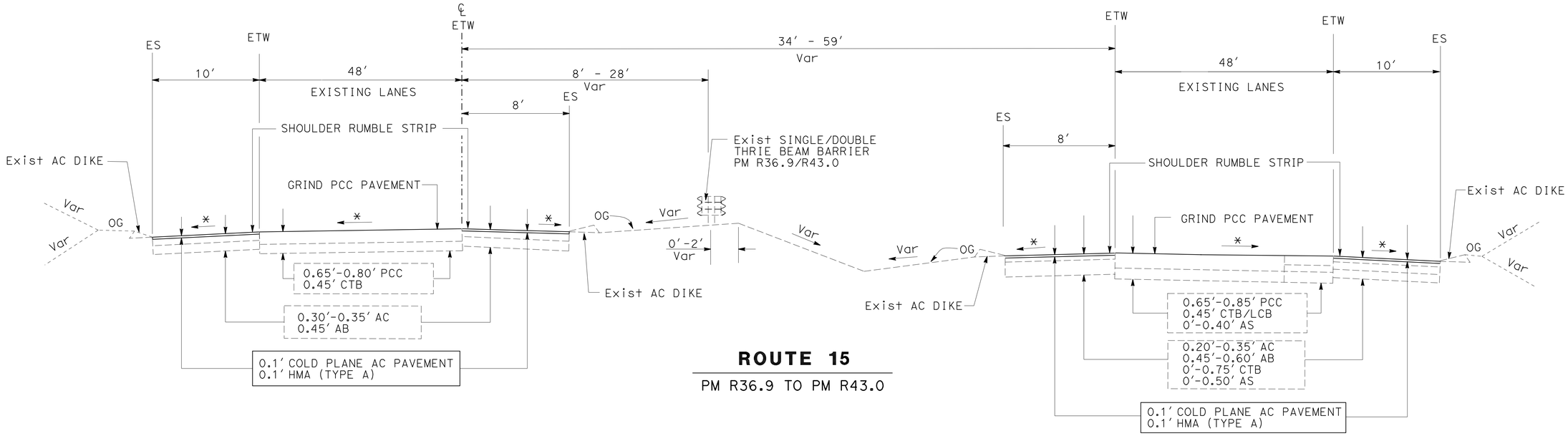
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. APPLY FOG SEAL AT AC DIKE, HMA DIKE AND AC SHOULDERS.
3. (*) = MATCH EXISTING.
4. FOR EXACT LOCATIONS OF PCC GRINDING, PCC SLAB REPLACEMENT, COLD PLANING, HMA OVERLAY, SHOULDER RUMBLE STRIP, Exist AC DIKE, HMA DIKE AND SHOULDER BACKING SEE THE SUMMARY OF QUANTITIES SHEETS.
5. Exist ELECTRICAL FEATURES WITHIN CONSTRUCTION LIMITS TO BE PRESERVED.
6. Exist EDGE DRAINS TO BE PRESERVED.

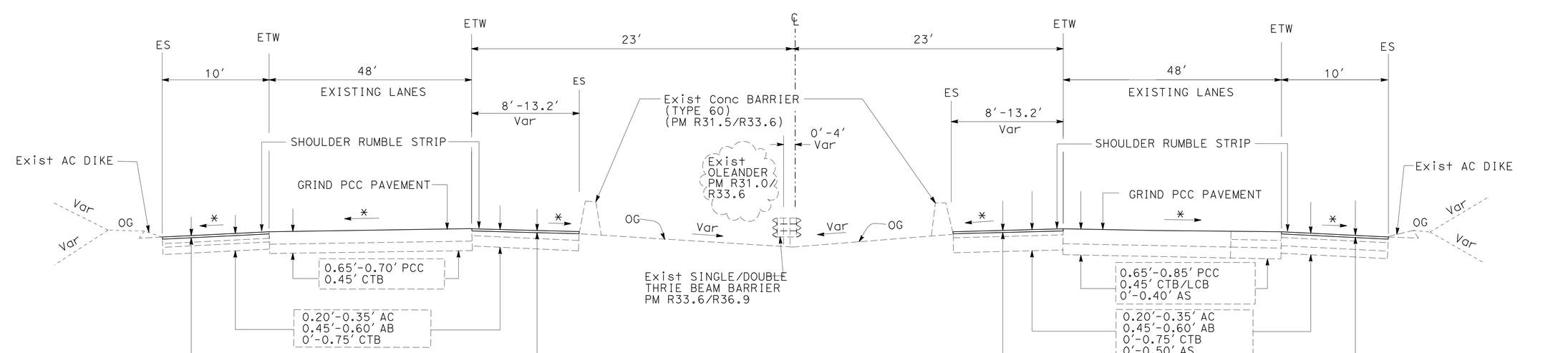
DESIGN DESIGNATION

ADT (2010) = 127,787 D = 50.6 % (SB)
ADT (2020) = 160,350 T = 13.2%
DHV (2020) = 11,780 V = 65



ROUTE 15

PM R36.9 TO PM R43.0



ROUTE 15

PM R31.5 TO PM R36.9

TYPICAL CROSS SECTIONS X-1

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
MAINTENANCE

FUNCTIONAL SUPERVISOR: ALBERTO GAYON
CALCULATED-DESIGNED BY: HAMED BAHA
CHECKED BY: LIDA MOVAHED
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:35

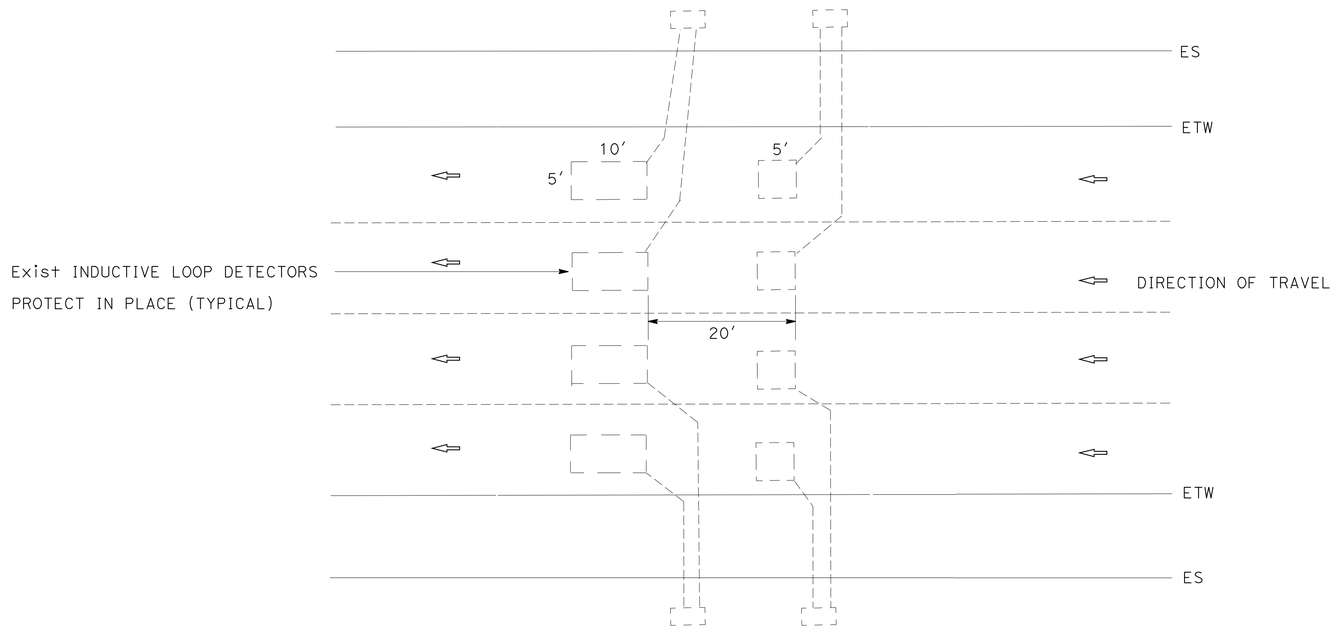
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	3	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HAMED S. BAHA
No. 74499
Exp. 12-31-13
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.



TYPICAL Exist INDUCTIVE LOOP DETECTORS DETAIL

SB DIRECTION SHOWN, NB DIRECTION SIMILAR

NB AND SB 15: PM R32.4 (JUST SOUTH OF EL NORTE PARKWAY UC)
SB 15: PM R32.7 (JUST SOUTH OF EL NORTE PARKWAY UC)
NB AND SB 15: PM R36.6 (JUST NORTH OF DEER SPRINGS Rd UC)

NOTE: POST MILES ARE APPROXIMATE.

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
MAINTENANCE

FUNCTIONAL SUPERVISOR: ALBERTO GAYON
CALCULATED-DESIGNED BY: HAMED BAHA
CHECKED BY: REBECCA IGNACIO
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	4	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

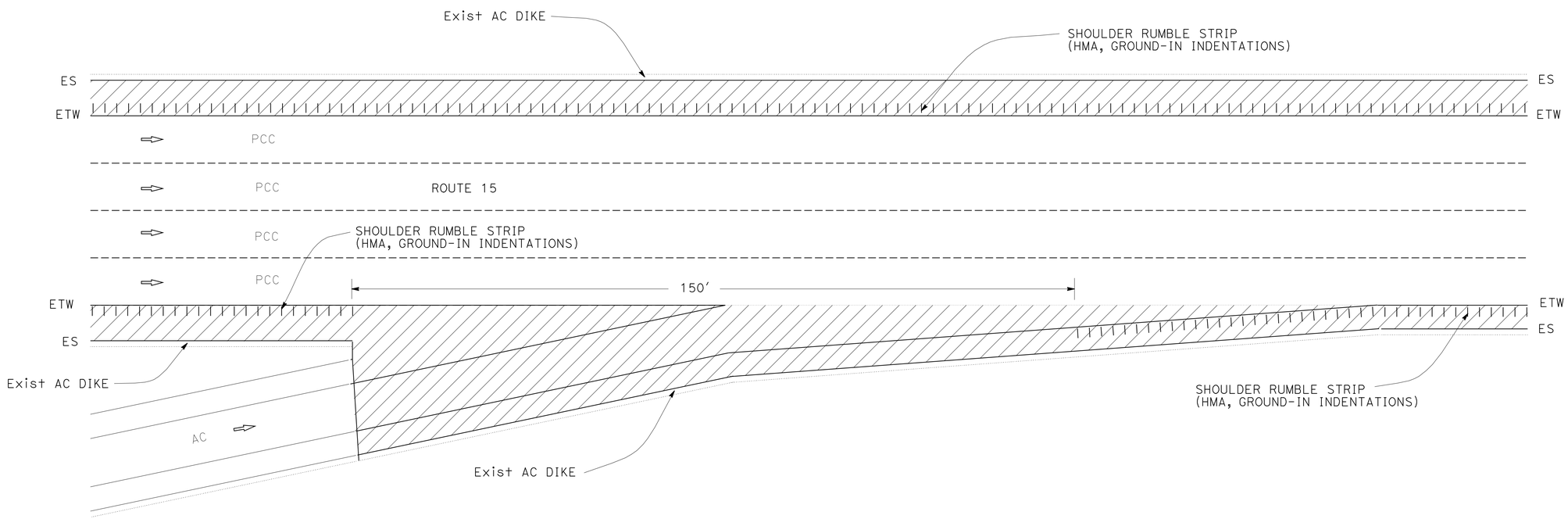
REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

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

NOTES:

= 0.1' COLD PLANE AC PAVEMENT
0.1' HMA (TYPE A)

⇨ = DIRECTION OF TRAFFIC



TYPICAL LIMIT OF WORK AT RAMPS DETAIL

ON-RAMP SHOWN, OFF-RAMP SIMILAR

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
MAINTENANCE

FUNCTIONAL SUPERVISOR: ALBERTO GAYON
CALCULATED-DESIGNED BY: HAMED BAHA
CHECKED BY: REBECCA IGNACIO
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	5	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

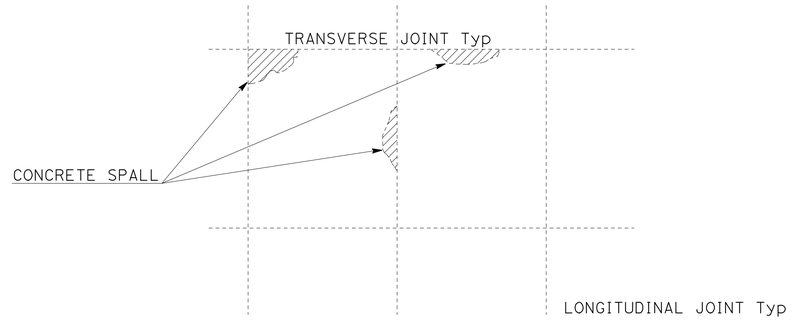
03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HAMED S. BAHA
No. 74499
Exp. 12-31-13
CIVIL
STATE OF CALIFORNIA

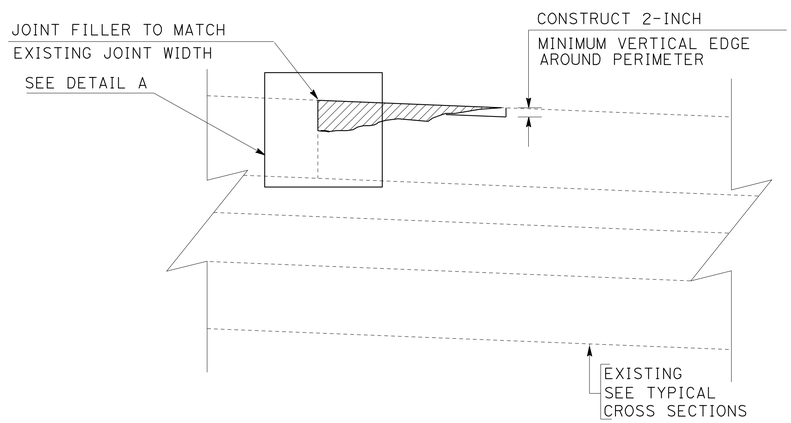
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:

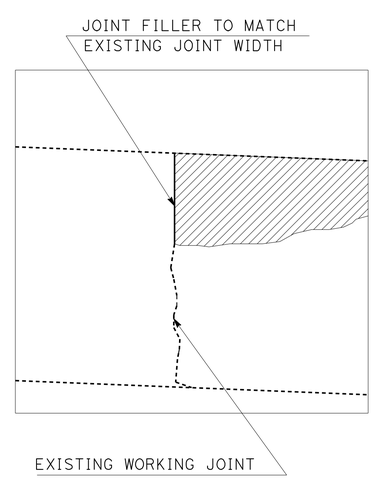
- REPAIR SPALLED CONCRETE



PLAN



ELEVATION



DETAIL A

TYPICAL DETAIL-REPAIR SPALLED CONCRETE

NOTE: LOCATIONS AND QUANTITIES TO BE DETERMINED BY THE ENGINEER

CONSTRUCTION DETAILS

NO SCALE

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
MAINTENANCE

FUNCTIONAL SUPERVISOR: ALBERTO GAYON
CALCULATED-DESIGNED BY: HAMED BAHA
CHECKED BY: REBECCA IGNACIO
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	6	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

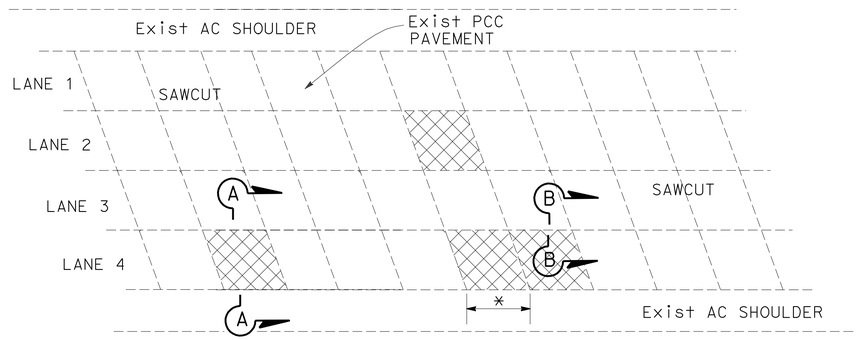
03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

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

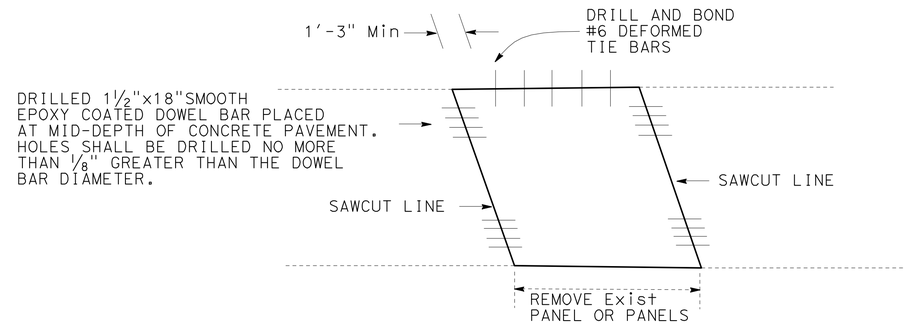
NOTES:

1. SEE Q SHEETS FOR LOCATIONS OF REPLACE CONCRETE PAVEMENT.
2. FOR DETAILS NOT SHOWN SEE REVISED STANDARD PLAN P8, P10 AND P12.
3. DOWEL BARS SHOULD BE PLACED AT TRANSVERSE CONTACT JOINTS AND TRANSVERSE CONTRACTION JOINTS ALIGNED WITH THE LONGITUDINAL EDGE OF THE SLAB.
4. DOWEL BAR BASKETS TO BE USED WHEN TWO OR MORE ADJACENT SLABS ARE REPLACED.
5. NEW TRANSVERSE CONTRACTION JOINTS SHALL MATCH THE SKEWED OFFSET AND SPACING OF THE ADJACENT EXISTING WEAKENED PLANE JOINTS, AS SHOWN.
6. REMOVE ALL LOOSE MATERIAL AT SUBGRADE AND APPLY 1/4"(Min) BOND BREAKER.

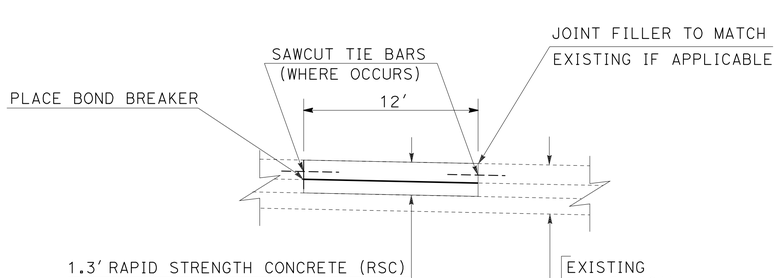


* = VARIES 12'-15'

PLAN

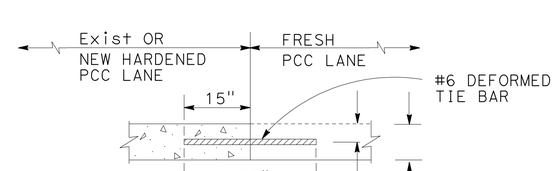


LIMITS OF SLAB REPLACEMENT
TYPICAL DETAIL



SECTION A-A

REPLACE CONCRETE PAVEMENT (MODIFIED)
TYPICAL DETAIL



SECTION B-B, TIE BAR DETAIL

LONGITUDINAL CONTACT
(CONSTRUCTION) JOINT

CONSTRUCTION DETAILS

NO SCALE

C-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE

FUNCTIONAL SUPERVISOR: ALBERTO GAYON
CALCULATED-DESIGNED BY: HAMED BAHA
CHECKED BY: REBECCA IGNACIO
REVISED BY
DATE REVISED

LAST REVISION 03-14-12 | DATE PLOTTED => 15-MAR-2012 | TIME PLOTTED => 10:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	7	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

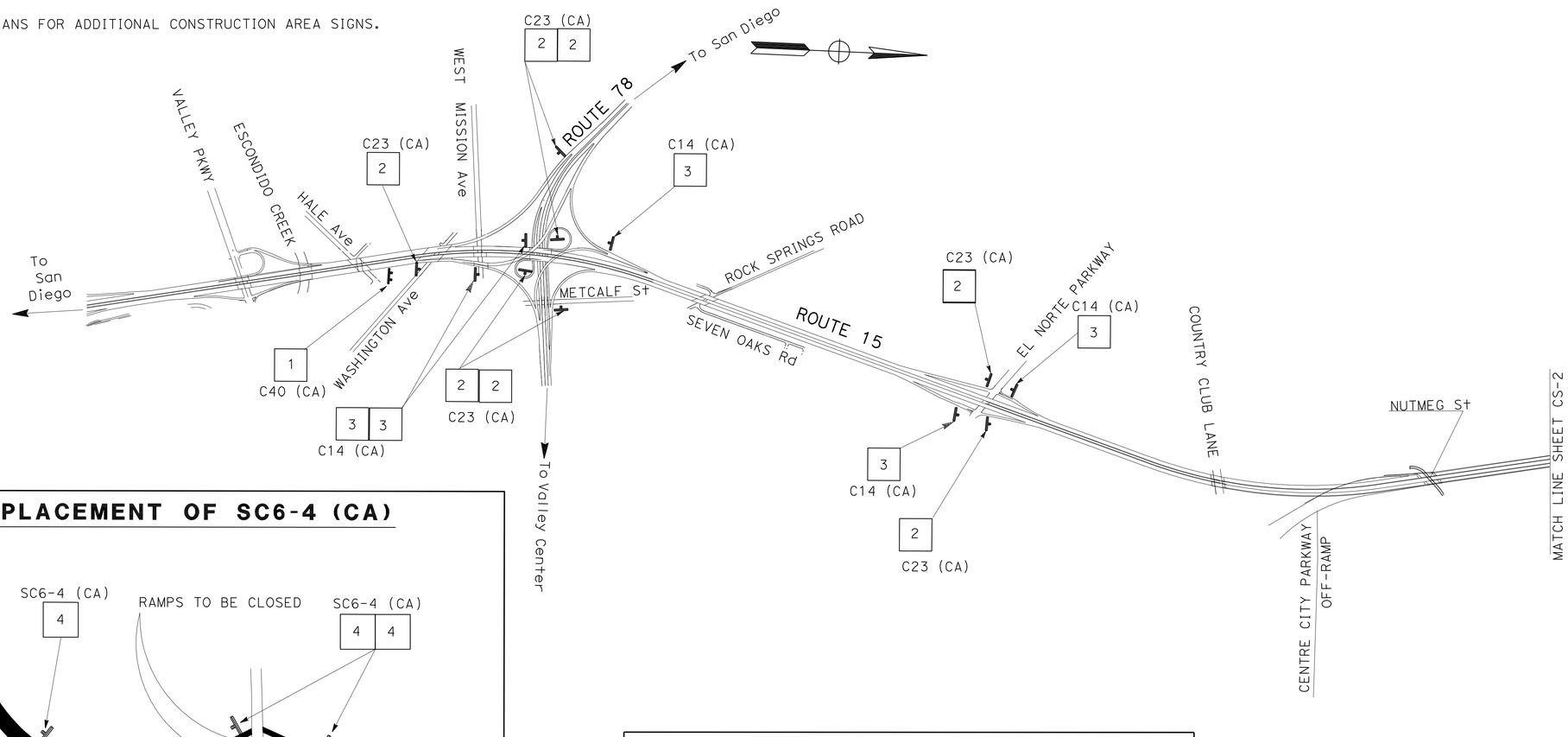
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

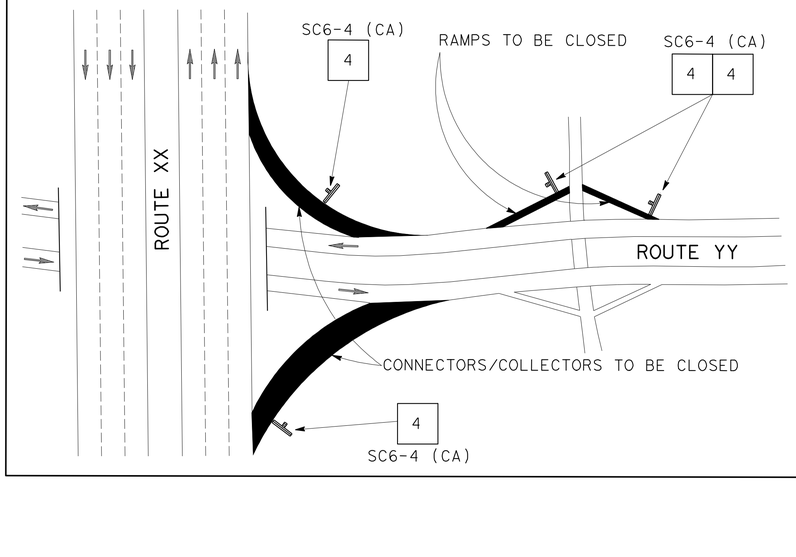
1. EXACT LOCATION OF CONSTRUCTION AREA SIGNS WILL BE DETERMINED BY THE ENGINEER.
2. FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SIGN CODES ARE SHOWN UNLESS DESIGNATED BY (CA), INDICATING CALIFORNIA MUTCD.
3. EXISTING UTILITIES ARE NOT SHOWN ON THESE PLAN SHEETS. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES AND ADJUST THE FIELD LOCATION OF THE SIGN POSTS IN CONSULTATION WITH THE ENGINEER.
4. SEE TRAFFIC HANDLING PLANS FOR ADDITIONAL CONSTRUCTION AREA SIGNS.

LEGEND:

XX = CONSTRUCTION AREA SIGN



TYPICAL- PLACEMENT OF SC6-4 (CA)



CONSTRUCTION AREA SIGNS

SIGN No.	TYPE	PANEL SIZE (In)	No. OF POST AND SIZE (In)	No. OF SIGNS
1	C40 (CA)	108 X 42	2-4 X 6 (S)	2
2	C23 (CA)	48 X 48	1-4 X 6 (S)	13
3	C14 (CA)	48 X 24	1-4 X 4 (S)	11
4	SC6-4 (CA)	48 X 60	PORTABLE	7
			TOTAL	33

NOTE:
- (S) DENOTES STATIONARY MOUNTED SIGN

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

REVISED BY | DATE REVISED
LIDA MOVAHED | RYAN CHAO
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
ALBERTO GAYON
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTANANCE

LAST REVISION 03-14-12 | DATE PLOTTED => 15-MAR-2012 | TIME PLOTTED => 10:35

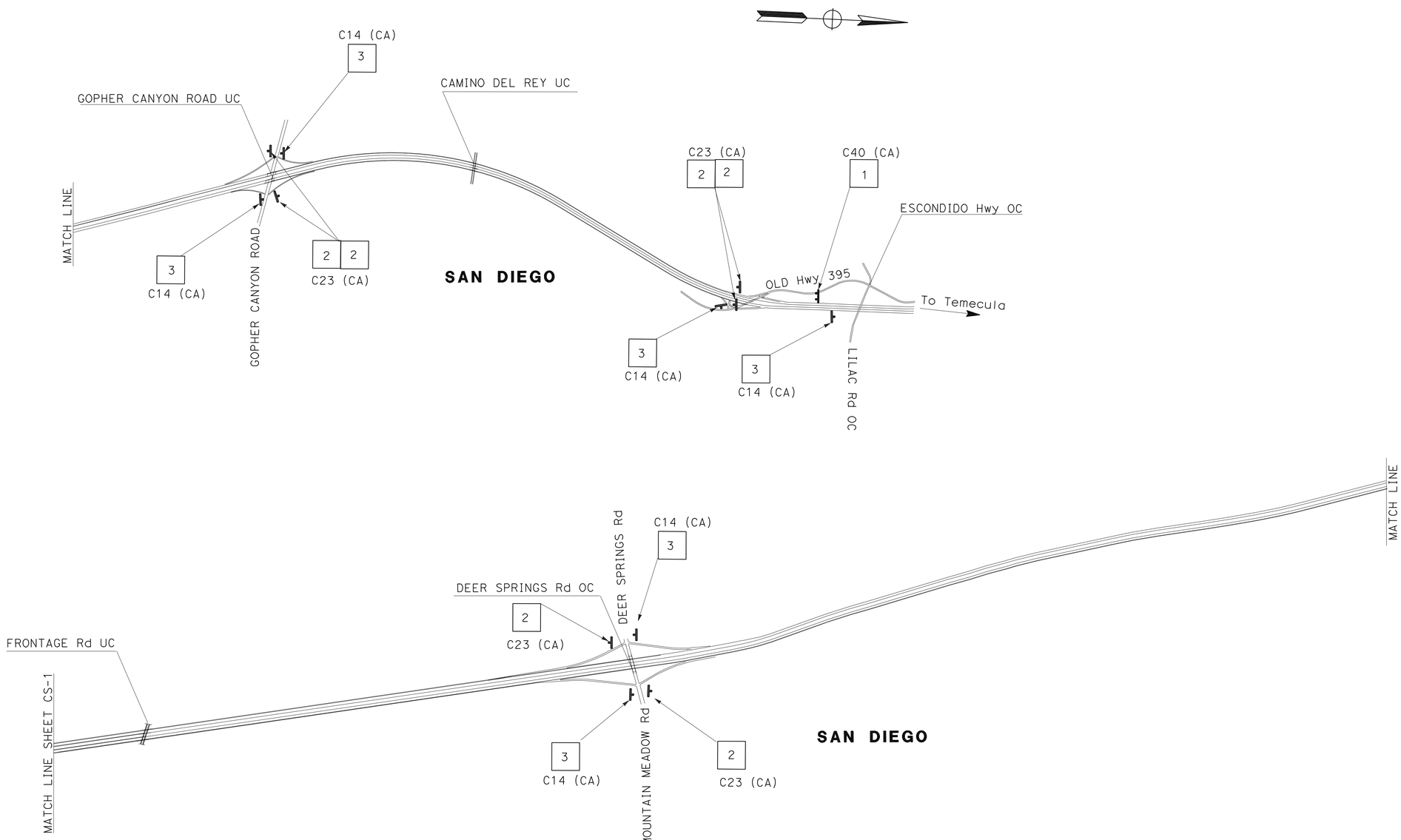
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	8	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HAMED S. BAHA
No. 74499
Exp. 12-31-13
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.



CONSTRUCTION AREA SIGNS

NO SCALE

CS-2

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **MAINTANANCE**

FUNCTIONAL SUPERVISOR: ALBERTO GAYON
CALCULATED-DESIGNED BY: LIDA MOVAHED
CHECKED BY: RYAN CHAO
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	9	30

REGISTERED CIVIL ENGINEER 03-12-12 DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHAHIN ADIBI No. 54839 Exp. 06-30-12 CIVIL STATE OF CALIFORNIA

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

NOTES:

1. EXACT LOCATION OF CONSTRUCTION AREA SIGNS SHALL BE DETERMINED BY THE ENGINEER.
2. FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SIGN CODES ARE SHOWN UNLESS DESIGNATED BY (CA), INDICATING CALIFORNIA MUTCD.
3. ROTATE ARROW ON SC9 (CA) PANEL TO REFLECT DIRECTION OF DETOUR.
4. SEE CONSTRUCTION AREA SIGN PLAN FOR ADDITIONAL CONSTRUCTION AREA SIGNS.
5. EXISTING UTILITIES ARE NOT SHOWN ON THESE PLAN SHEETS. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES AND ADJUST THE FIELD LOCATION OF THE SIGN POSTS IN CONSULTATION WITH THE ENGINEER.

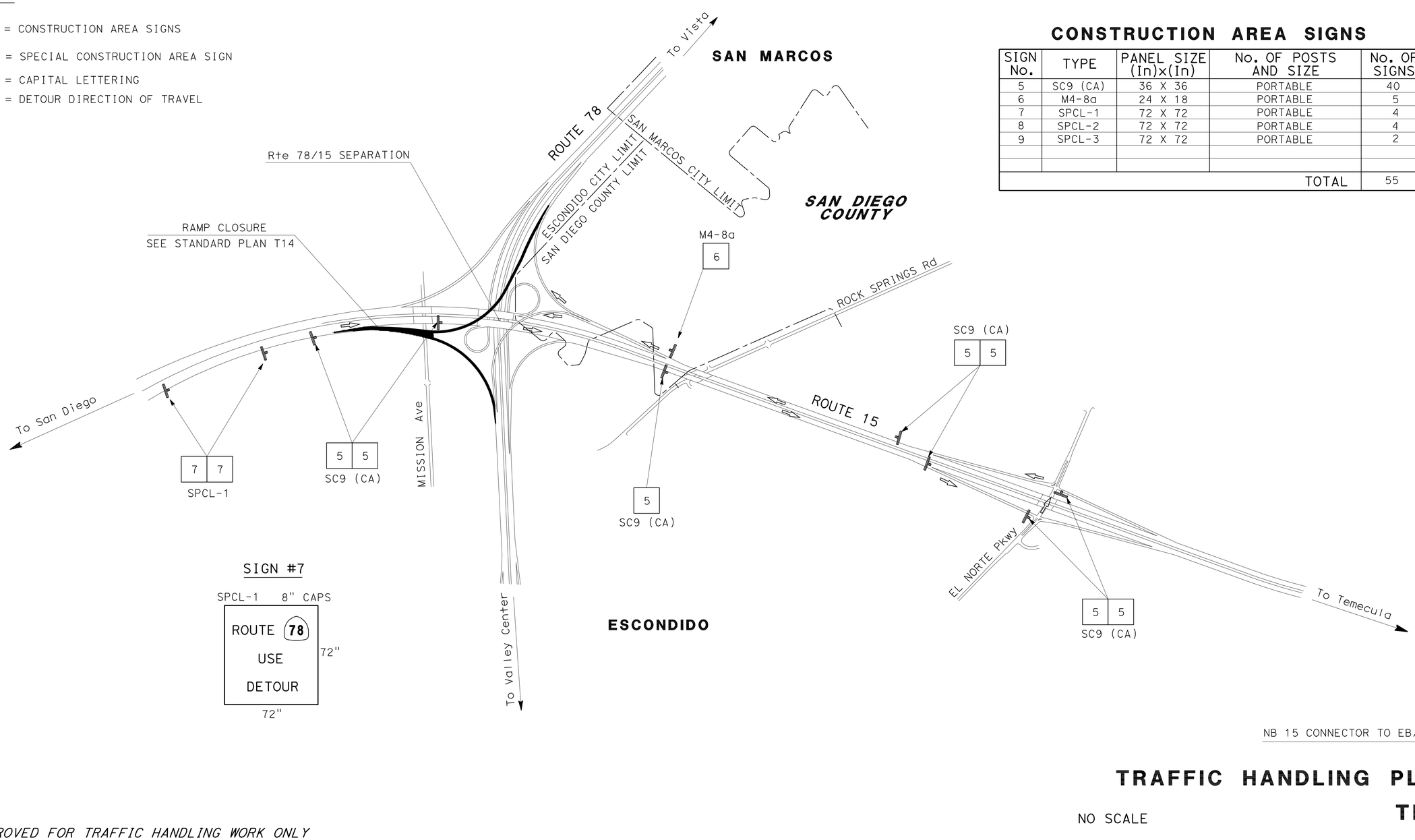
LEGEND

XX = CONSTRUCTION AREA SIGNS

SPCL = SPECIAL CONSTRUCTION AREA SIGN

Caps = CAPITAL LETTERING

⇨ = DETOUR DIRECTION OF TRAVEL



SIGN #7

SPCL-1 8" CAPS

ROUTE 78
USE
DETOUR

72" × 72"

CONSTRUCTION AREA SIGNS

SIGN No.	TYPE	PANEL SIZE (In)x(In)	No. OF POSTS AND SIZE	No. OF SIGNS
5	SC9 (CA)	36 X 36	PORTABLE	40
6	M4-8a	24 X 18	PORTABLE	5
7	SPCL-1	72 X 72	PORTABLE	4
8	SPCL-2	72 X 72	PORTABLE	4
9	SPCL-3	72 X 72	PORTABLE	2
			TOTAL	55

NB 15 CONNECTOR TO EB/WB 78

TRAFFIC HANDLING PLAN

NO SCALE

TH-1

APPROVED FOR TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: SHAHIN ADIBI
CHECKED BY: RYAN CHAO
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:36

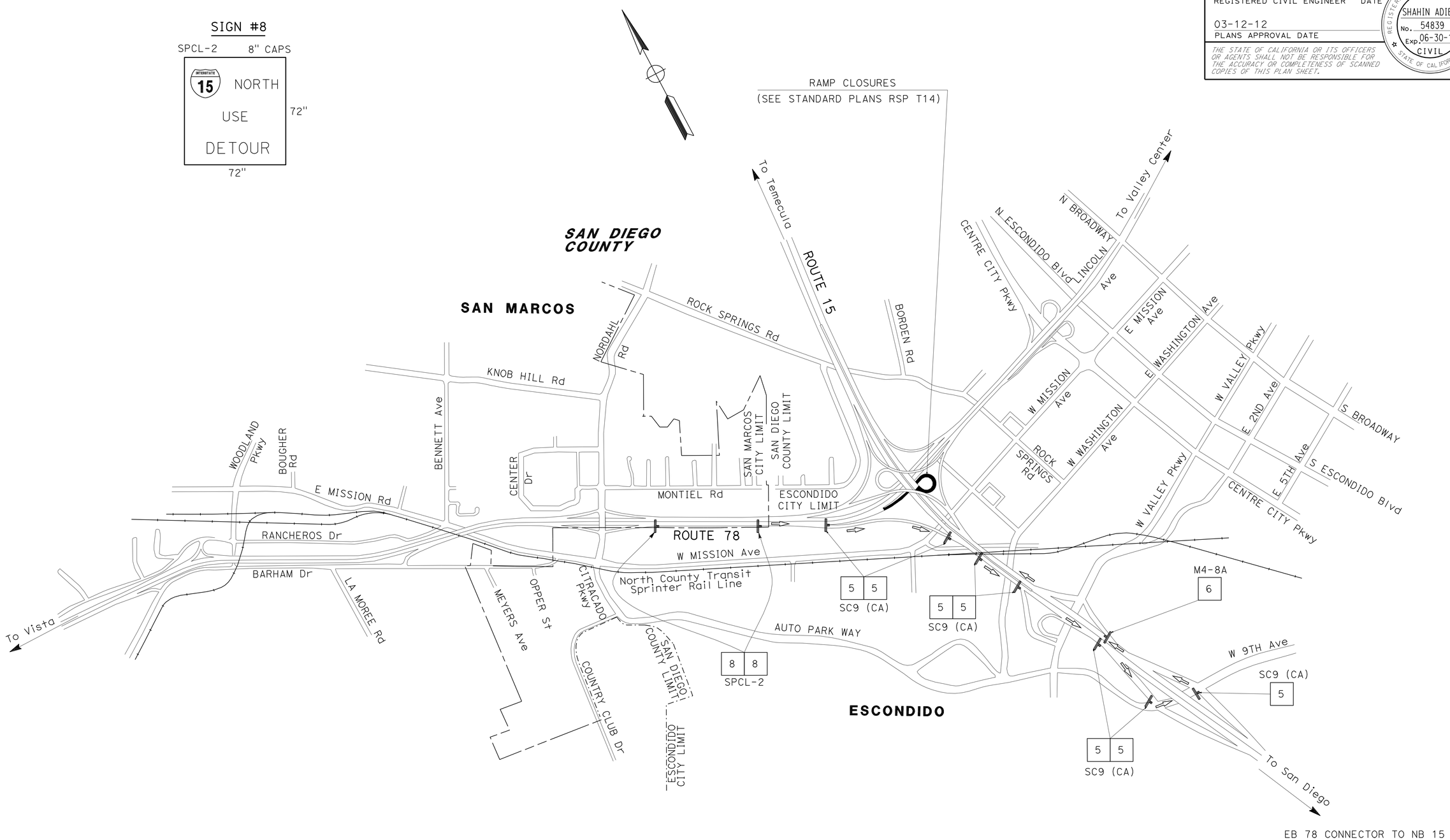
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	10	30

REGISTERED CIVIL ENGINEER 03-12-12 DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-12
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.



EB 78 CONNECTOR TO NB 15

TRAFFIC HANDLING PLAN

NO SCALE

TH-2

APPROVED FOR TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:36

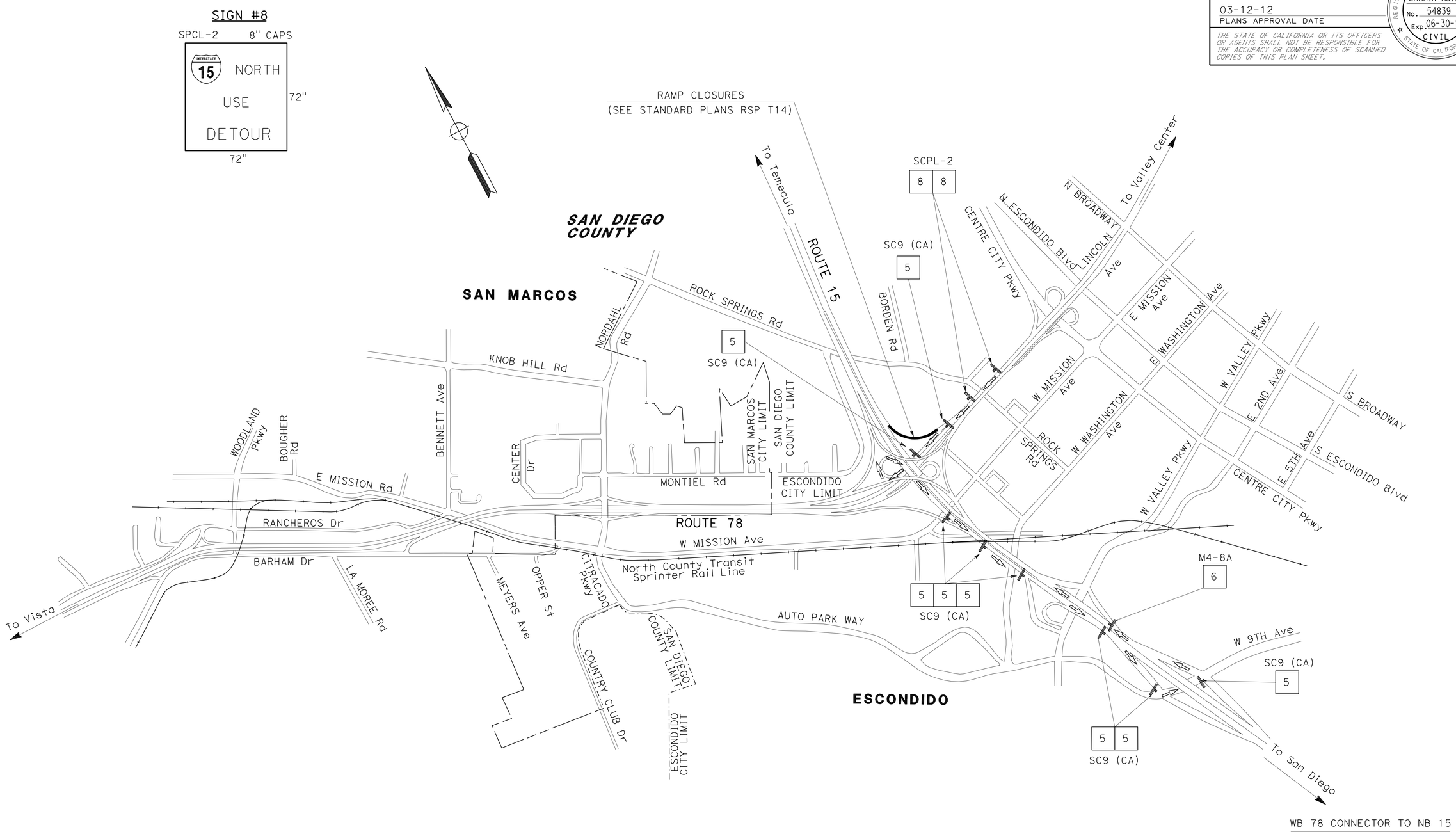
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	11	30

REGISTERED CIVIL ENGINEER 03-12-12 DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-12
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.



WB 78 CONNECTOR TO NB 15

TRAFFIC HANDLING PLAN

NO SCALE

TH-3

APPROVED FOR TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL

CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	12	30

REGISTERED CIVIL ENGINEER 03-12-12 DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-12
CIVIL
STATE OF CALIFORNIA

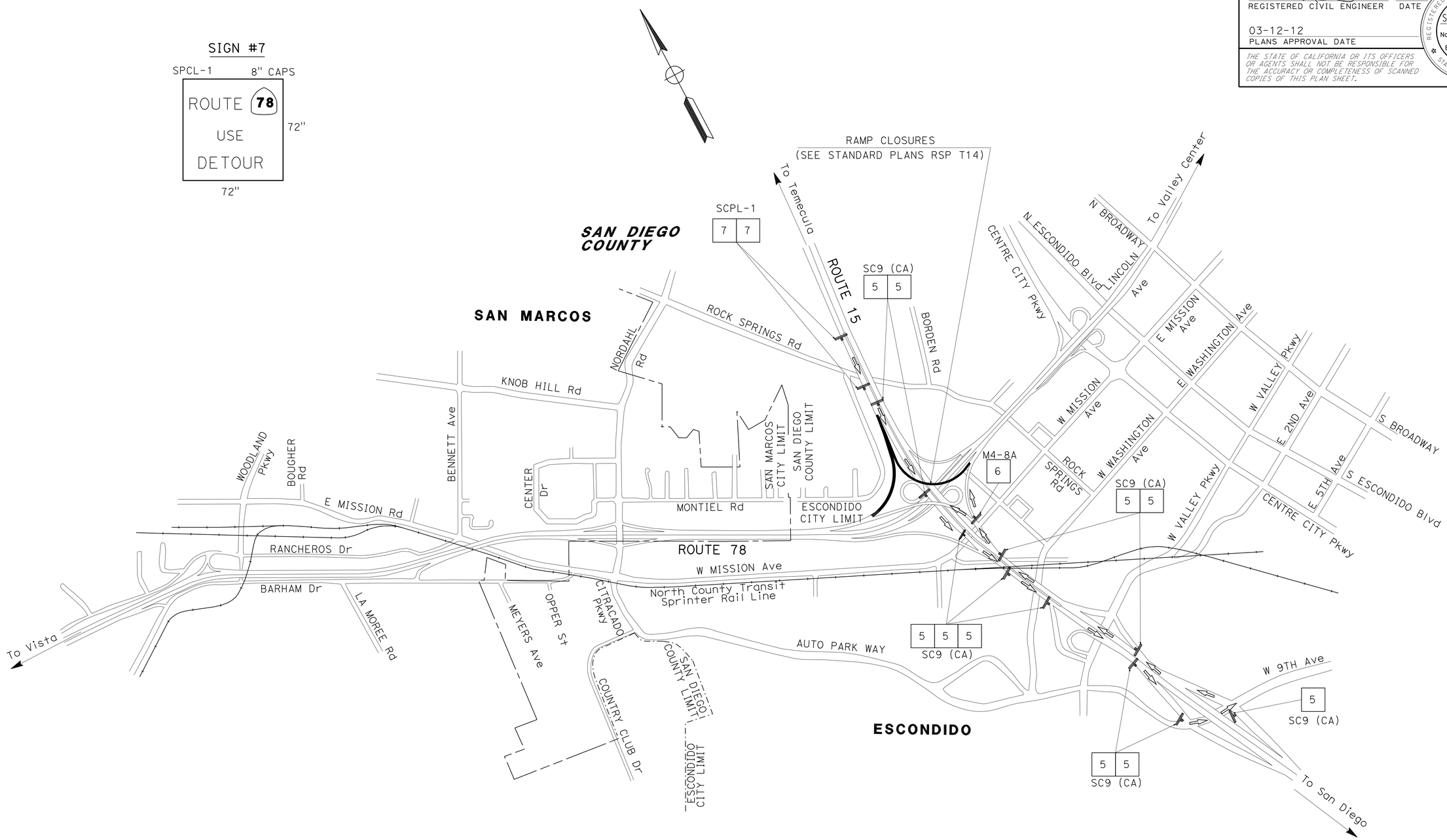
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

SIGN #7

SPCL-1 8" CAPS

ROUTE 78
USE
DETOUR

72" 72"



SB 15 CONNECTOR TO EB/WB 78

TRAFFIC HANDLING PLAN

NO SCALE

TH-4

APPROVED FOR TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	13	30

REGISTERED CIVIL ENGINEER 03-12-12 DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-12
CIVIL
STATE OF CALIFORNIA

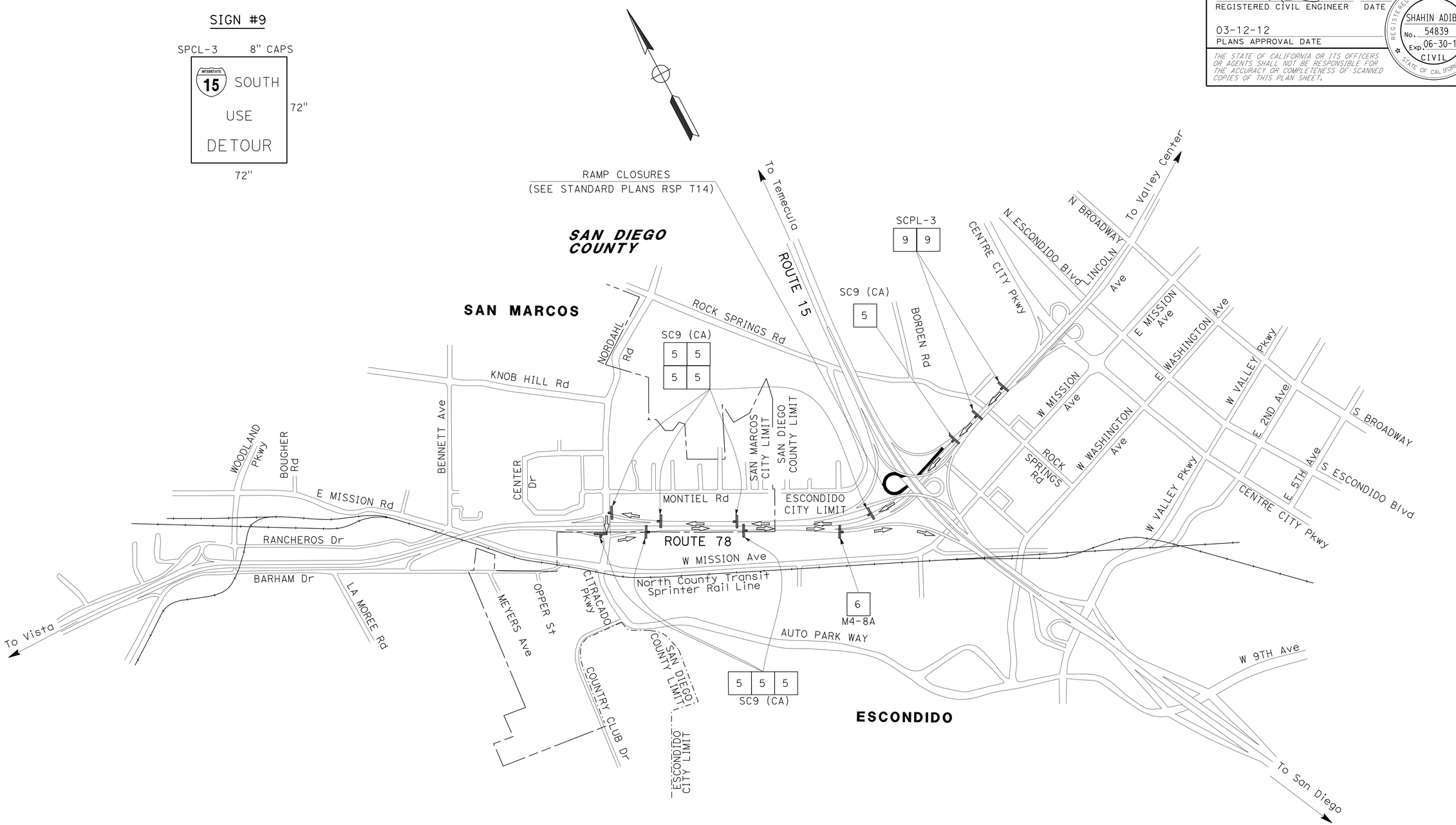
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

SIGN #9

SPCL-3 8" CAPS

INTERSTATE 15 SOUTH
USE
DETOUR

72" 72"



WB 78 CONNECTOR TO SB 15

TRAFFIC HANDLING PLAN

NO SCALE

TH-5

APPROVED FOR TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:36

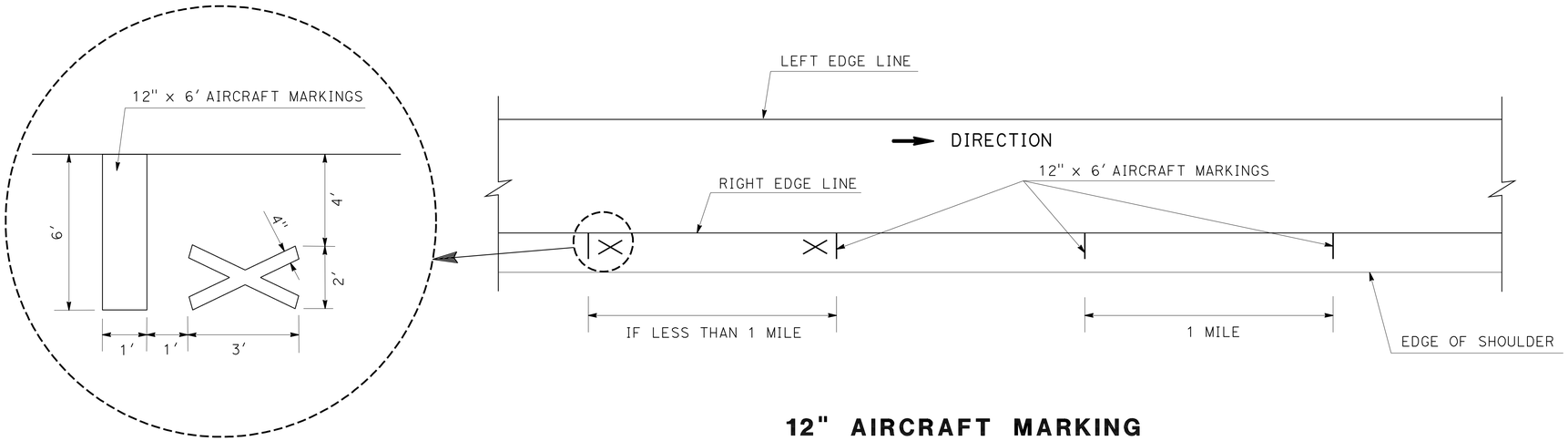
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	14	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

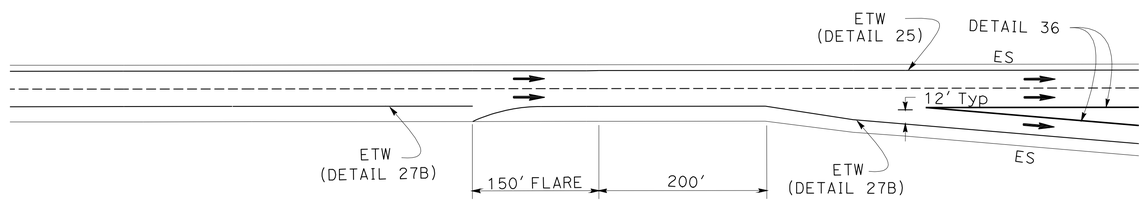
03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 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.



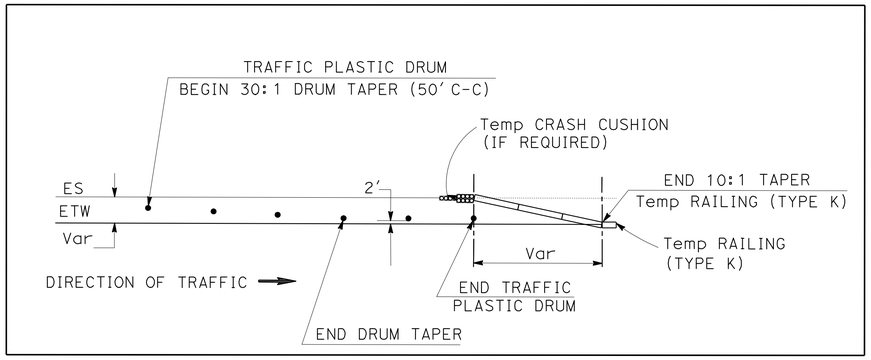
12" AIRCRAFT MARKING



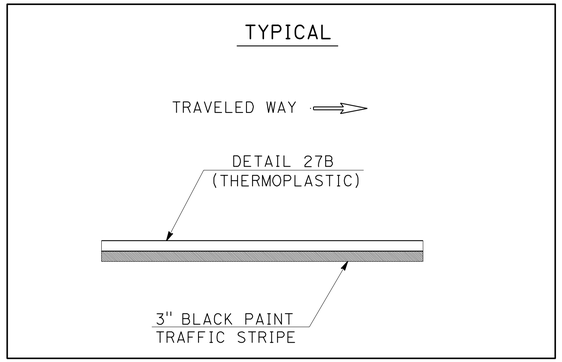
RIGHT EDGELINE FLARE DETAIL

[FOR USE ON ALL EXIT RAMPS EXCEPT WHERE LANE(S) TRAP OFF]

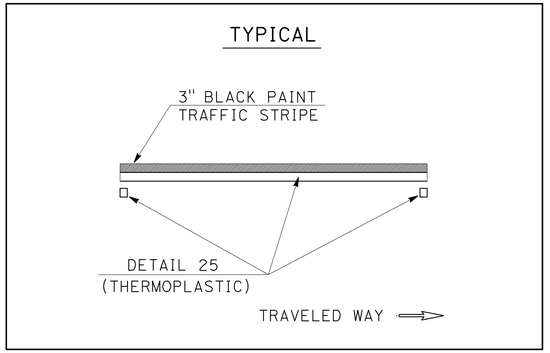
TYPICAL PLACEMENT OF TRAFFIC PLASTIC DRUM



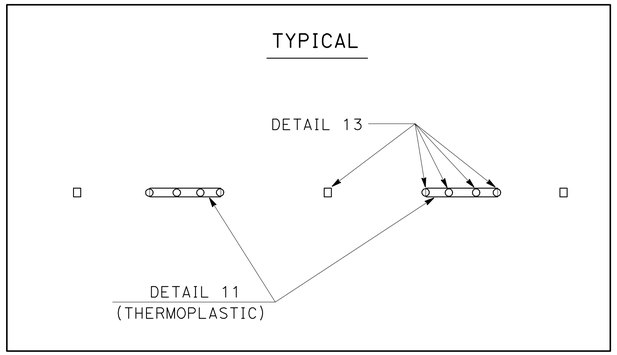
DETAIL 27B (Mod)



DETAIL 25 (Mod)



DETAIL 11/13



PAVEMENT DELINEATION DETAILS
PDD-1

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
MAINTENANCE

FUNCTIONAL SUPERVISOR: ALBERTO GAYON
CALCULATED-DESIGNED BY: REBECCA IGNACIO
CHECKED BY: HAMED BAHA
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	15	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

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NOTE:

1. ALL PAVEMENT DELINEATION SHALL BE REPLACED IN KIND UNLESS INDICATED OTHETRWISE.
2. THE EXCAVATION REQUIRED FOR THE INSTALLATION OF THE MILEPOST MARKERS SHALL BE DONE BY HAND.

MILEPOST MARKER

ROUTE	DIRECTION	POSTMILES	Qty (EA)	REMARKS
15	NB	R32.5	1	
		R37.0	1	
		R37.5	1	
		R39.0	1	
		R40.0	1	
		R40.5	1	
	SB	R32.5	1	
		R36.0	1	
		R37.0	1	
		R37.5	1	
		R38.5	1	
		R39.0	1	
		R39.5		REMOVE ONLY
		R41.5	1	
		TOTAL	13	

THERMOPLASTIC PAVEMENT MARKINGS

ROUTE	DIRECTION	POSTMILES		12" AIRCRAFT MARKINGS (SQFT)
		▭ = 6 SQFT	⊠ = 2.14 SQFT	
15	NB	R32.1; R33.1; R34.1; R36.1; R38.1; R39.1; R40.1; R41.1; R42.1	R33.6; R34.6; R35.6; R36.6; R38.6; R39.6; R40.6; R41.6	71.12
	SB	R32.1; R34.1; R35.1; R36.1; R38.1; R39.1; R40.1; R41.1; R42.1	R33.6; R34.6; R35.6; R36.6; R38.6; R39.6; R40.6; R41.6; R42.6	73.26
			TOTAL	144.38

REMOVE PAVEMENT MARKER (N)

ROUTE	DIRECTION	POSTMILE		TYPE (EA) (N)			REMARKS
		BEGIN	END	A	G	H	
15	NB	R31.50	R43.00	15,182	4,027	1,267	
	SB	R43.00	R31.50	15,182	4,020	1,267	

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

REMOVE PAINTED TRAFFIC STRIPE

ROUTE	DIRECTION	POSTMILE		DETAIL	4" WHITE BROKEN (LF)	4" WHITE SOLID (LF)	4" YELLOW SOLID (LF)	3" BLACK SOLID (LF)	REMARKS
		BEGIN	END						
15	NB	R31.50	R43.00	27B (Mod)		1848		1848	BRIDGE
				8	431				BRIDGE
				25 (Mod)			1,848		BRIDGE
	SB	R43.00	R31.50	27B (Mod)		1848		1848	BRIDGE
				8	321				BRIDGE
				25 (Mod)			1,848		BRIDGE
				SUB-TOTAL	752	3,696	3,696	3,696	
				TOTAL	11,840				

REMOVE THERMOPLASTIC TRAFFIC STRIPE (N)

ROUTE	DIRECTION	POSTMILE		DETAIL	LF (N)
		BEGIN	END		
15	NB	R31.50	R43.00	36	2,890
				36A	2,158
	SB	R43.00	R31.50	36	3,230
				36A	1,690
				TOTAL	9,968

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

PAVEMENT DELINEATION QUANTITIES

PDQ-1

REVISED BY | DATE REVISED
REBECCA IGNACIO | HAMED BAHA
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: ALBERTO GAYON
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE

LAST REVISION 03-14-12 | DATE PLOTTED => 15-MAR-2012 | TIME PLOTTED => 10:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	16	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

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PAVEMENT DELINEATION QUANTITIES

LOCATION			DETAIL No.	LENGTH (LF) (N)	PAVEMENT MARKER SUMMARY				TRAFFIC STRIPE SUMMARY						REMARKS
DESCRIPTION	POSTMILE				NON-REFLECTIVE (EA)	RETROREFLECTIVE (EA)			PAINT (1-COAT)	THERMOPLASTIC (LF)					
	BEGIN	END			TYPE A	TYPE C	TYPE G	TYPE H	3" BLACK SOLID	4" YELLOW SOLID	4" WHITE SOLID	4" WHITE BROKEN (17-7)	4" WHITE BROKEN (36-12)	8" WHITE SOLID	
NB ROUTE 15	R31.50	R43.00	11/13	177,408	14,786		3,698						177,408		
			25	60,720				1,267		60,720					
			25 (Mod)	1,848					1,848						* BRIDGES ONLY
			27B	60,720							60,720				
			27B (Mod)	1,848							1,848				* BRIDGES ONLY
	R31.50	R31.53	36A	138			8				138			138	
			8	64								64			
	R31.70	R31.82	36A	300			15				300			300	
			8	90								90			
	R32.57	R32.63	36	315			28							630	
			14	864	20	73									
	R33.07	R33.20	36A	360			17				360			360	
			8	88								88			
	R34.03	R34.21	36A	720			32				720			720	
			8	67								67			
	R36.32	R36.39	36	380			34							760	
			14	1,296	29	109									
	R36.80	R36.89	36A	300			15				300			300	
			8	56								55			
	R40.41	R40.48	36	370			33							740	
			14	1,296	29	109									
	R40.90	R41.01	36A	340			16				340			340	
			8	67								67			
	R42.86	R42.93	36	380			34							760	
			14	1,296	29	109									
SB ROUTE 15	R31.50	R43.00	11/13	176,976	14,750		3,689						176,976		
			25	60,720				1,267		60,720					
			25 (Mod)	1,848					1,848						* BRIDGES ONLY
			27B	60,720							60,720				
			27B (Mod)	1,848							1,848				* BRIDGES ONLY
	R31.83	R31.89	36	320			29							640	
			14	864	20	73									
	R32.56	R32.66	36A	305			15				305			305	
			8	61								61			
	R33.07	R33.13	36	330			30							660	
			14	864	20	73									
	R34.13	R34.20	36	390			35							780	
			14	864	20	73									
	R36.20	R36.41	36A	740			33				740			740	
			8	114								114			
	R36.86	R36.90	36	215			20							430	
			14	1,296	29	109									
	R40.45	R40.56	36A	360			17				360			360	
			8	89								89			
	R40.93	R41.00	36	360			32							720	
			14	1,296	29	109									
	R42.86	R42.95	36A	342			14				285			285	
			8	57								57		285	
			SUB-TOTALS		29,761	837	7,840	2,534	3,696	121,440	128,984	752	354,384	10,253	
			TOTALS		29,761	11,211			3,696	250,424		752	354,384	10,253	

PAVEMENT DELINEATION QUANTITIES
PDQ-2

REVISED BY | DATE REVISED
REBECCA IGNACIO | HAMED BAHA
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
ALBERTO GAYON
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
MAINTENANCE

LAST REVISION 03-14-12 | DATE PLOTTED => 15-MAR-2012 | TIME PLOTTED => 10:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

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LEGEND:

DIR = DIRECTION
(N) = NOT A SEPARATE PAY ITEM
IS = INSIDE SHOULDER

ROADWAY QUANTITIES

ROUTE 15			LENGTH (N)	TRAVELED WAY (N)	INSIDE SHOULDER WIDTH (N)	OUTSIDE SHOULDER WIDTH (N)	RAMP TRAVELED WAY (N)	GORE AREA (N)	SHOULDER AREA (N)	RAMP TRAVELED WAY (AREA) (N)	VOLUME (N)	GRIND EXISTING CONCRETE PAVEMENT	COLD PLANE ASPHALT CONCRETE PAVEMENT	HOT MIX ASPHALT (TYPE A)	TACK COAT	ASPHALTIC EMULSION (FOG SEAL COAT)	REMARKS
DIR	BEGIN PM	END PM	(LF)	(LF)	(LF)	(LF)	(LF)	(SQFT)	(SQFT)	(SQFT)	(CY)	(SQYD)	(SQYD)	(TON)	(TON)	(TON)	
NB	R31.50	R31.56	329.00														BRIDGE
	R31.56	R31.69	686.40	48	10.6	10	10	0.00	14139.84	6864.00	1372.80	3660.80	1525.33	98.64	0.32	0.52	NO WORK ON IS EXCEPT FOG SEAL
	R31.69	R31.79	528.00	60	10.6	10	0	7581.50	10876.80	0.00	1286.15	3520.00	1429.06	92.41	0.30	0.68	
	R31.79	R31.89	528.00	60	10.6	10	0	0.00	10876.80	0.00	528.00	3520.00	586.67	37.94	0.12	0.40	
	R31.89	R31.99	528.00	48	10.6	10	0	0.00	10876.80	0.00	528.00	2816.00	586.67	37.94	0.12	0.40	
	R31.99	R32.03	204.00														BRIDGE
	R32.03	R32.57	2851.20	48	10.6	10	0	0.00	58734.72	0.00	2851.20	15206.40	3168.00	204.86	0.66	2.18	NO WORK ON IS EXCEPT FOG SEAL
	R32.57	R32.66	475.20	48	10.6	10	12	4239.00	9789.12	5702.40	1469.34	2534.40	1632.60	105.57	0.34	0.52	
	R32.66	R32.86	1056.00	48	10.6	10	0	0.00	21753.60	0.00	1056.00	5632.00	1173.33	75.88	0.24	0.81	
	R32.86	R32.89	174.00												0.00		BRIDGE
	R32.89	R33.10	1108.80	48	10.6	10	0	0.00	22841.28	0.00	1108.80	5913.60	1232.00	79.67	0.26	0.85	NO WORK ON IS EXCEPT FOG SEAL
	R33.10	R33.22	633.60	48	10.6	10	12	8802.00	13052.16	7603.20	2274.12	3379.20	2526.80	163.4	0.53	0.81	
	R33.22	R33.32	528.00	48	10.6	10	12	0.00	10876.80	6336.00	1161.60	2816.00	1290.67	83.46	0.27	0.40	
	R33.32	R33.57	1320.00	48	10.6	10	0	0.00	27192.00	0.00	1320.00	7040.00	1466.67	94.84	0.31	1.01	
	R33.57	R33.61	198.00														BRIDGE
	R33.61	R33.99	2006.40	48	8.0	10	0	0.00	36115.20	0.00	3611.52	10700.80	4012.80	259.49	0.84	1.34	
	R33.99	R34.18	1003.20	48	8.0	10	12	17000.00	18057.60	12038.40	4709.60	5350.40	5232.89	338.39	1.09	1.30	
	R34.18	R34.22	211.20	48	8.0	10	12	0.00	3801.60	2534.40	633.60	1126.40	704.00	45.53	0.15	0.14	
	R34.22	R34.25	159.00		8.0												BRIDGE
	R34.25	R34.89	3379.20	48	8.0	10	0	0.00	60825.60	0.00	6082.56	18022.40	6758.40	437.04	1.41	2.25	
	R34.89	R34.92	148.00		8.0												BRIDGE
	R34.92	R36.29	7233.60	48	8.0	10	0	0.00	130204.80	0.00	13020.48	38579.20	14467.20	935.55	3.01	4.82	
	R36.29	R36.33	211.20	48	8.0	10	12	0.00	3801.60	2534.40	633.60	1126.40	704.00	45.53	0.15	0.14	
	R36.33	R36.40	369.60	48	8.0	10	12	5022.00	6652.80	4435.20	1611.00	1971.20	1790.00	115.75	0.37	0.43	
	R36.40	R36.81	2164.80	48	8.0	10	0	0.00	38966.40	0.00	3896.64	11545.60	4329.60	279.98	0.90	1.44	
	R36.81	R36.87	316.80	48	8.0	10	12	5808.00	5702.40	3801.60	1531.20	1689.60	1701.33	110.02	0.35	0.43	
	R36.87	R36.99	633.60	48	8.0	10	12	0.00	11404.80	7603.20	1900.80	3379.20	2112.00	136.58	0.44	0.42	
	R36.99	R39.35	12460.80	48	8.0	10	0	0.00	224294.40	0.00	22429.44	66457.60	24921.60	1611.6	5.19	8.31	
	R39.35	R39.37	105.00												0.00		BRIDGE
	R39.37	R40.39	5385.60	48	8.0	10	0	0.00	96940.80	0.00	9694.08	28723.20	10771.20	696.54	2.24	3.59	
	R40.39	R40.43	211.20	48	8.0	10	12	0.00	3801.60	2534.40	633.60	1126.40	704.00	45.53	0.15	0.14	
	R40.43	R40.50	369.60	48	8.0	10	12	5580.00	6652.80	4435.20	1666.80	1971.20	1852.00	119.76	0.39	0.45	
	R40.50	R40.84	1795.20	48	8.0	10	0	0.00	32313.60	0.00	3231.36	9574.40	3590.40	232.18	0.75	1.20	
	R40.84	R40.87	182.00														BRIDGE
	R40.87	R40.91	211.20	48	8.0	10	0	0.00	3801.60	0.00	380.16	1126.40	422.40	27.32	0.09	0.14	
	R40.91	R40.98	369.60	48	8.0	10	12	8292.50	6652.80	4435.20	1938.05	1971.20	2153.39	139.25	0.45	0.55	
	R40.98	R41.10	633.60	48	8.0	10	12	0.00	11404.80	7603.20	1900.80	3379.20	2112.00	136.58	0.44	0.42	
	R41.10	R41.82	3801.60	48	8.0	10	0	0.00	68428.80	0.00	6842.88	20275.20	7603.20	491.67	1.58	2.53	
	R41.82	R41.85	165.00														BRIDGE
	R41.85	R42.86	5332.80	48	8.0	10		0.00	95990.40	0.00	9599.04	28441.60	10665.60	689.71	2.22	3.56	
	R42.86	R42.90	211.20	48	8.0	10	12	0.00	3801.60	2534.40	633.60	1126.40	704.00	45.53	0.15	0.14	
	R42.90	R43.00	528.00	48	8.0	10	12	6000.00	9504.00	6336.00	2184.00	2816.00	2426.67	156.92	0.51	0.57	
											SUB-TOTAL	316518.40	126356.48	8171.06	26.34	42.89	

SUMMARY OF QUANTITIES
Q-1

REVISED BY | DATE REVISED
LIDA MOVAHED | HAMED BAHA
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: ALBERTO GAYON

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
MAINTENANCE

LAST REVISION 03-14-12 | DATE PLOTTED => 15-MAR-2012 | TIME PLOTTED => 10:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	18	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

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CONT.:

ROADWAY QUANTITIES

ROUTE 15 DIR	BEGIN PM	END PM	LENGTH (N) (LF)	TRAVELED WAY (N) (LF)	INSIDE SHOULDER WIDTH (N) (LF)	OUTSIDE SHOULDER WIDTH (N) (LF)	RAMP TRAVELED WAY (N) (LF)	GORE AREA (N) (SQFT)	SHOULDER AREA (N) (SQFT)	RAMP TRAVELED WAY (AREA) (N) (SQFT)	VOLUME (N) (CY)	GRIND EXISTING CONCRETE PAVEMENT (SQYD)	COLD PLANE ASPHALT CONCRETE PAVEMENT (SQYD)	HOT MIX ASPHALT (TYPE A) (TON)	TACK COAT (TON)	ASPHALTIC EMULSION (FOG SEAL COAT) (TON)	REMARKS
SB	R31.50	R31.56	329.00														BRIDGE
	R31.56	R31.84	1478.40	48	10.6	10	0	0.00	30455.04	0.00	3045.50	7884.80	3383.89	218.82	0.70	1.13	NO WORK ON IS EXCEPT FOG SEAL
	R31.84	R31.90	316.80	60	10.6	10	0	0.00	6526.08	0.00	652.61	2112.00	725.12	46.89	0.15	0.24	
	R31.90	R31.93	158.40	60	10.6	10	0	0.00	3263.04	0.00	326.30	1056.00	362.56	23.45	0.08	0.12	
	R31.93	R31.99	316.80	48	10.6	10	0	0.00	6526.08	0.00	652.61	1689.60	725.12	46.89	0.15	0.24	
	R31.99	R32.03	204.00														BRIDGE
	R32.03	R32.42	2059.20	48	10.6	10	0	0.00	42419.52	0.00	4241.95	10982.40	4713.28	304.79	0.98	1.57	NO WORK ON IS EXCEPT FOG SEAL
	R32.42	R32.57	792.00	48	10.6	10	12	0.00	16315.20	9504.00	3206.92	4224.00	3563.24	230.42	0.74	0.60	
	R32.57	R32.66	475.20	48	10.6	10	12	6250.00	9789.12	5702.40	1549.15	2534.40	1721.28	111.31	0.36	0.59	
	R32.66	R32.86	1056.00	48	10.6	10	0	0.00	21753.60	0.00	2175.36	5632.00	2417.07	156.3	0.50	0.81	
	R32.86	R32.89	174.00														BRIDGE
	R32.89	R33.10	1108.80	48	10.6	10	0	0.00	22841.28	0.00	2709.23	5913.60	3010.25	194.66	0.63	0.85	NO WORK ON IS EXCEPT FOG SEAL
	R33.10	R33.16	316.80	48	10.6	10	12	4251.00	6526.08	3801.60	1032.77	1689.60	1147.52	74.21	0.24	0.40	
	R33.16	R33.19	158.40	48	10.6	10	12	0.00	3263.04	1900.80	516.38	844.80	573.76	37.1	0.12	0.12	
	R33.19	R33.57	2006.40	48	10.6	10	0	0.00	41331.84	0.00	4133.18	10700.80	4592.43	296.98	0.96	1.53	
	R33.57	R33.60	189.00														BRIDGE
	R33.60	R34.14	2851.20	48	8.0	10	0	0.00	51321.60	0.00	5132.16	15206.40	6526.08	368.76	1.19	1.90	
	R34.14	R34.22	422.40	48	8.0	10	12	5250.00	7603.20	5068.80	1792.20	2252.80	2113.36	128.77	0.41	0.48	
	R34.22	R34.25	171.00		8.0												BRIDGE
	R34.25	R34.89	3379.20	48	8.0	10	0	0.00	60825.60	0.00	6082.56	18022.40	7734.61	437.04	1.41	2.25	
	R34.89	R34.91	133.00		8.0												BRIDGE
	R34.91	R36.20	6811.20	48	8.0	10	0	0.00	122601.60	0.00	12260.16	36326.40	15590.08	880.92	2.84	4.54	
	R36.20	R36.26	316.80	48	8.0	10	12	0.00	5702.40	3801.60	950.40	1689.60	1147.52	68.29	0.22	0.21	
	R36.26	R36.41	792.00	48	8.0	10	12	12896.00	14256.00	9504.00	3665.60	4224.00	4301.69	263.38	0.85	1.01	
	R36.41	R36.85	2323.20	48	8.0	10	0	0.00	41817.60	0.00	4181.76	12390.40	5317.55	300.47	0.97	1.55	
	R36.85	R36.89	211.20	48	8.0	10	12	1944.00	3801.60	2534.40	828.00	1126.40	981.01	59.49	0.19	0.21	
	R36.89	R36.93	211.20	48	8.0	10	12	0.00	3801.60	2534.40	633.60	1126.40	704.00	45.53	0.15	0.14	
	R36.93	R39.35	12777.60	48	8.0	10	0	0.00	229996.80	0.00	22999.68	68147.20	25555.20	1652.57	5.32	8.52	
	R39.35	R39.38	134.00														BRIDGE
	R39.38	R40.56	6230.40	48	8.0	10	0	0.00	112147.20	0.00	11214.72	33228.80	12460.80	805.8	2.60	4.15	
	R40.56	R40.63	369.60	48	8.0	10	12	4375.00	6652.80	4435.20	1546.30	1971.20	1718.11	111.1	0.36	0.41	
	R40.63	R40.84	1108.80	48	8.0	10	0	0.00	19958.40	0.00	1995.84	5913.60	2217.60	143.4	0.46	0.74	
	R40.84	R40.88	183.00														BRIDGE
	R40.88	R41.82	4963.20	48	8.0	10	0	0.00	89337.60	0.00	8933.76	26470.40	9926.40	641.91	2.07	3.31	
	R41.82	R41.85	165.00														BRIDGE
	R41.85	R42.94	5755.20	48	8.0	10	0	0.00	103593.60	0.00	10359.36	30694.40	11510.40	744.34	2.40	3.84	
	R42.94	R43.00	316.80	48	8.0	10	12	4102.00	5702.40	3801.60	1360.60	1689.60	1511.78	97.76	0.31	0.36	
											SUB-TOTAL FROM Q-3					10.32	
											SUB-TOTAL FROM Q-1	316,518.40	126,356.48	8,171.06	26.34	42.89	
											TOTAL	632,262.40	257,666.11	16,662.41	53.70	95.03	

SUMMARY OF QUANTITIES
Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE

FUNCTIONAL SUPERVISOR: ALBERTO GAYON
CALCULATED-DESIGNED BY: LIDA MOVAHED
CHECKED BY: HAMED BAHA
REVISED BY
DATE REVISED

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	19	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER HAMED S. BAHA No. 74499 Exp. 12-31-13 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.

REPAIR SPALLED JOINTS, FAST SETTING GROUT

ROUTE	PM	SQYD
15 NORTH	R31.5 - R43.0	100
15 SOUTH	R31.5 - R43.0	100
	TOTAL	200

INDIVIDUAL SLAB REPLACEMENT (RAPID STRENGTH CONCRETE)

ROUTE 15				AVERAGE LENGTH (N)	WIDTH (N)	DEPTH (N)	VOLUME CTB (N)	TIE BAR (DRILL & BOND) (N)	DOWEL BAR (DRILL & BOND)	INDIVIDUAL SLAB REPLACEMENT (RSC)	REMARKS
DIRECTION	POSTMILE	LANE No.	NUMBER OF SLABS	(LF)	(LF)	(LF)	(CY)	(LF)	(LF)	(CY)	
NB	R36.8	2	2	14	12	1.3	6.0	20	32	16.2	
SB	R36.4	4	2	14	12	1.3	6.0	20	32	16.2	
SB	R38.4	4	8	14	12	1.3	24.0	80	128	64.7	
						TOTALS			192	97.1	

MINOR HOT MIX ASPHALT, AC DIKES AND ASPHALTIC EMULSION (FOG SEAL COAT)

ROUTE 15				TYPE (N)	LENGTH (N)	REMOVE AC DIKE	PLACE HMA DIKE (TYPE E)	VOLUME (N)	MINOR HOT MIX ASPHALT	AREA (N)	ASPHALTIC EMULSION (FOG SEAL COAT)	REMARKS
DIRECTION	BEGIN PM	END PM	SHOULDER SIDE		(LF)	(LF)	(LF)	(CY)	(TON)	(SQFT)	(TON)	
NB	R31.72	R32.17	OUTSIDE	E	2376			30.89		3635.28	0.167	
	R32.17	R32.18		E	53	53	53	0.69	1.30	80.78	0.004	
	R32.18	R34.49		E	12197			158.56		18661.10	0.858	
	R34.49	R34.59		E	528	528	528	6.86	13.04	807.84	0.037	
	R34.59	R34.92		E	1742			22.65		2665.87	0.123	
	R34.92	R36.87		D	10296			301.67		15752.88	0.725	
	R36.87	R40.43	INSIDE	E	18797			244.36		28759.10	1.323	
	R36.87	R42.77	OUTSIDE	D	31152			912.75		47662.56	2.192	
	R42.75	R43.00	INSIDE	D	1320			38.68		2019.60	0.093	
SB	R31.16	R36.41	OUTSIDE	E	27720			360.36		42411.60	1.951	
	R36.84	R39.35	INSIDE	D	13253			388.31		20276.78	0.933	
	R39.40	R40.84	OUTSIDE	D	7603			222.77		11632.90	0.535	
	R39.40	R40.43	INSIDE	D	5438			159.35		8320.75	0.383	
	R40.85	R41.00	OUTSIDE	D	792			23.21		1211.76	0.056	
	R41.00	R42.90	INSIDE	D	10032			293.94		15348.96	0.706	
	R42.37	R43.00	OUTSIDE	D	3326			97.46		5089.39	0.234	
					TOTALS	581	581		14.35		*10.320	

* SEE Q-2 FOR TOTAL

SUMMARY OF QUANTITIES
Q-3

REVISED BY | DATE REVISED
HAMED BAHA | LIDA MOVAHED
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
ALBERTO GAYON
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE

LAST REVISION 03-14-12 | DATE PLOTTED => 15-MAR-2012 TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	20	30

Hamed S. Baha 03-12-12
REGISTERED CIVIL ENGINEER DATE

03-12-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HAMED S. BAHA
No. 74499
Exp. 12-31-13
CIVIL
STATE OF CALIFORNIA

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SHOULDER BACKING

ROUTE	DIRECTION	POSTMILE		LENGTH (LF) (N)	WIDTH (LF) (N)	DEPTH (LF) (N)	VOLUME (TON)	REMARKS
		BEGIN	END					
15	SB	R42.9	R42.4	2,640	3	0.2	114.7	OUTSIDE SHOULDER
						TOTAL	114.7	

SHOULDER RUMBLE STRIP
(HMA, GROUND-IN INDENTATIONS)

LOCATION			LENGTTH (FT) (N)	QUANTITY (STA)
	FROM PM	TO PM		
NB 15 - INSIDE SHOULDER	R31.5	R43.0	60,720	607.2
NB 15 - OUTSIDE SHOULDER	R31.5	R43.0	60,720	607.2
SB 15 - OUTSIDE SHOULDER	R31.5	R43.0	60,720	607.2
SB 15 - INSIDE SHOULDER	R31.5	R43.0	60,720	607.2
			TOTAL	2,428.8

SUMMARY OF QUANTITIES
Q-4

REVISED BY | DATE REVISED
HAMED BAHA | REBECCA IGNACIO
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
ALBERTO GAYON
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
MAINTENANCE

LAST REVISION 03-14-12
DATE PLOTTED => 15-MAR-2012
TIME PLOTTED => 10:37

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	21	30

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER William K. Farnbach No. C49042 Exp. 9-30-10 CIVIL STATE OF CALIFORNIA

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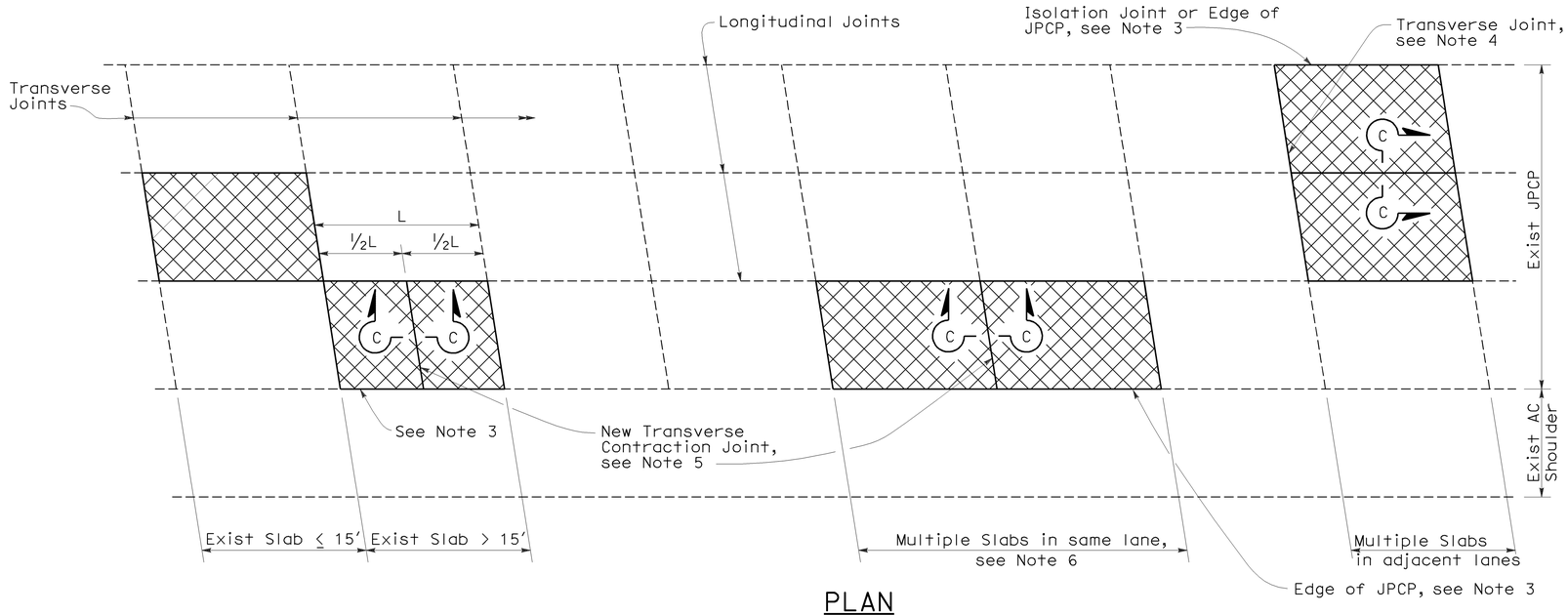
To accompany plans dated 03-12-12



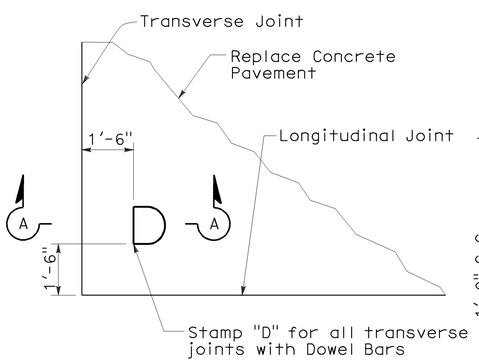
PLAN

NOTES:

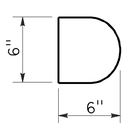
1. For details not shown, see Revised Standard Plan RSP P10.
2. Where the existing outer shoulder pavement is asphalt concrete pavement, the "a" dimension shall be 1′-0" and the "b" dimension shall be 2′-0".
3. Side forms shall be used where edge of pavement is adjacent to asphalt concrete.
4. For detail, see Transverse Construction Joint for existing concrete pavement detail on Revised Standard Plan RSP P10.
5. Transverse joint to match skew of existing joint. Omit dowel bars.
6. This Standard Plan only applicable when replacing multiple slabs in the same lane is less than 100′.

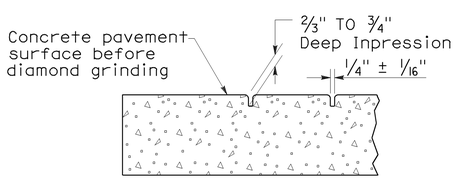
LEGEND

Replace Concrete Pavement (See Slab Layout Detail)

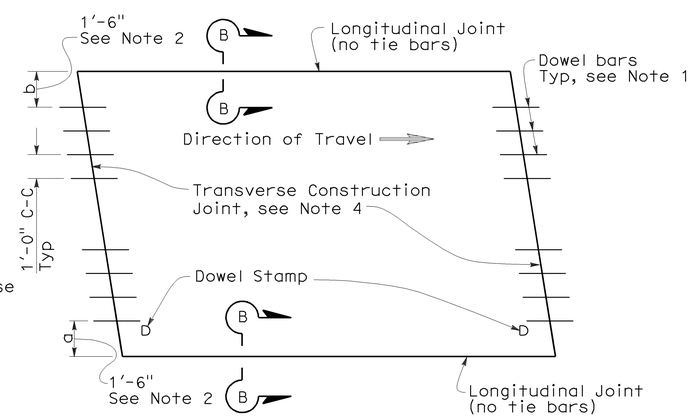


DOWEL STAMP DETAIL

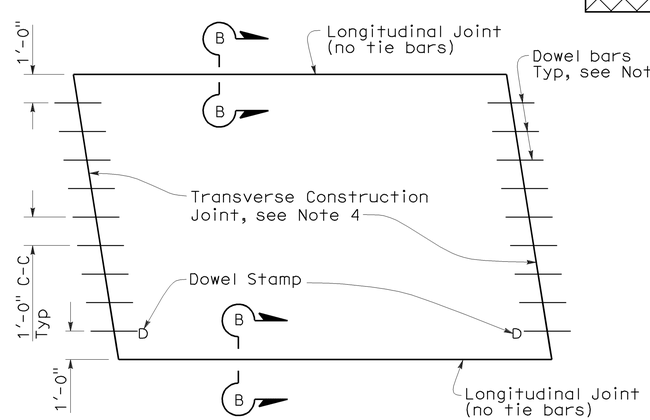




SECTION A-A

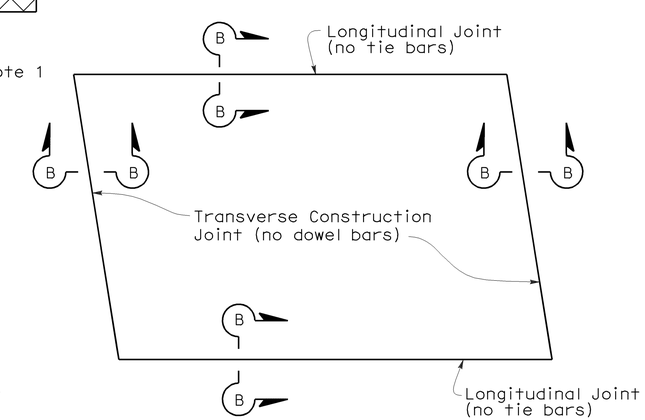


TYPE I
(traffic lane lines match longitudinal joints)

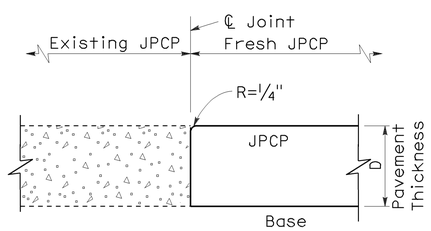


TYPE II
(traffic lane lines do not match longitudinal joints)

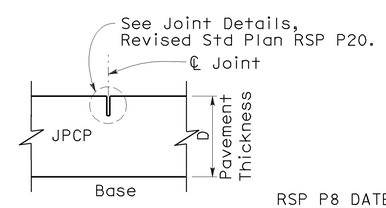
SLAB LAYOUT



TYPE III
(for short term repairs < 5 yrs design life or for slab replacements with a cracking and seating operation)



SECTION B-B



SECTION C-C

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINTED PLAIN CONCRETE PAVEMENT-INDIVIDUAL SLAB REPLACEMENT

NO SCALE

RSP P8 DATED MAY 15, 2009 SUPERSEDES RSP P8 DATED SEPTEMBER 1, 2006 AND STANDARD PLAN P8 DATED MAY 1, 2006 - PAGE 123 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P8

2006 REVISED STANDARD PLAN RSP P8

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	22	30

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER William K. Farnbach No. C49042 Exp. 9-30-10 CIVIL STATE OF CALIFORNIA

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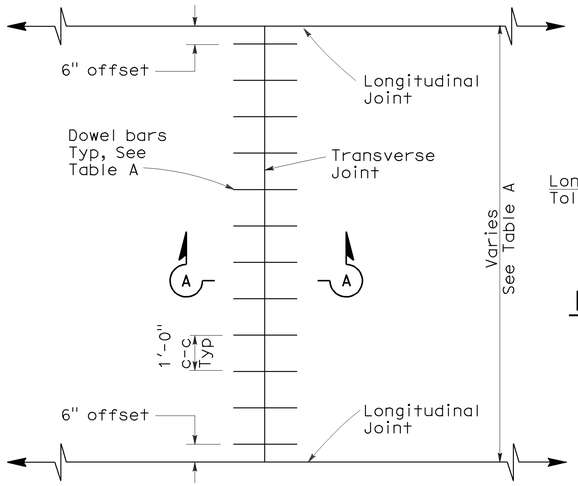
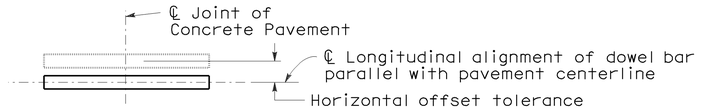
To accompany plans dated 03-12-12

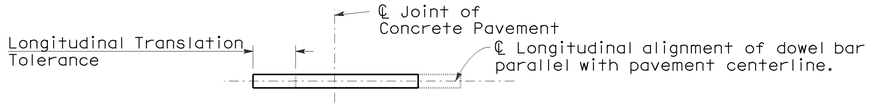


TRANSVERSE JOINT DOWEL BAR LAYOUT



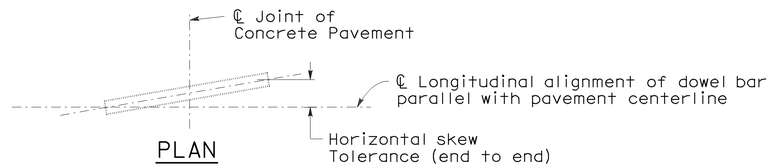
PLAN

HORIZONTAL OFFSET TOLERANCE



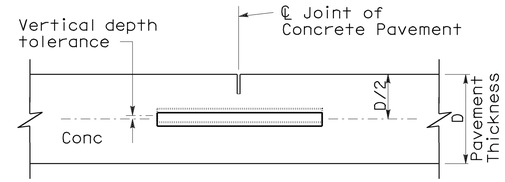
PLAN

LONGITUDINAL TRANSLATION TOLERANCE



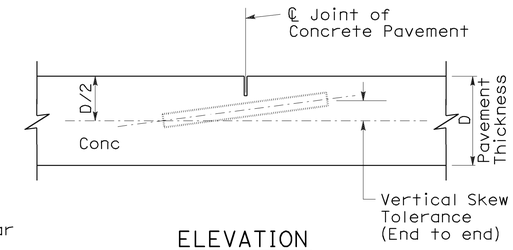
PLAN

HORIZONTAL SKEW TOLERANCE



ELEVATION

VERTICAL DEPTH TOLERANCE



ELEVATION

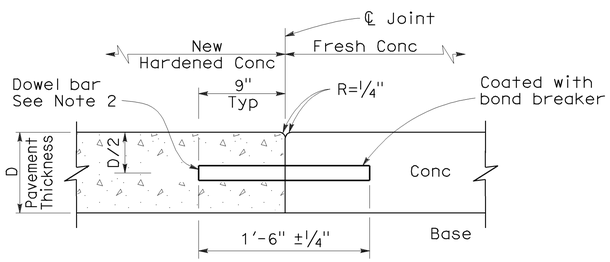
VERTICAL SKEW TOLERANCE

NOTES:

1. See Revised Standard Plan RSP P1 for typical dowel bar placement and locations.
2. 1½" Dia smooth dowel bars are to be used with a pavement thickness, D, equal to or greater than 0.70 feet. For pavement thickness, D, less than 0.70 feet, use 1¼" Dia smooth dowel bars.
3. For widths not shown, see Project Plans.
4. If fresh concrete pavement is placed adjacent to existing concrete pavement, the top corner of the existing concrete pavement does not need to be rounded to the ¼" radius, as shown.

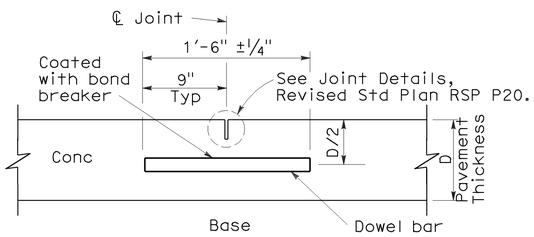
TABLE A (See Note 3)

Dowel Bar Transverse Spacing Table	
Width between Longitudinal Joints	Number of Dowels between Longitudinal Joints
14'-0"	14
13'-0"	13
12'-0"	12
11'-0"	11
10'-0"	10
8'-0"	8
5'-0"	5
4'-0"	4

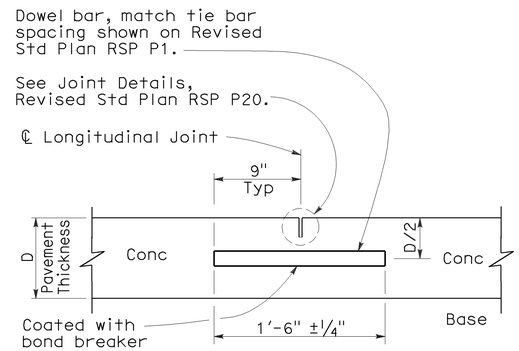


SECTION A-A

TRANSVERSE CONSTRUCTION JOINT DETAIL

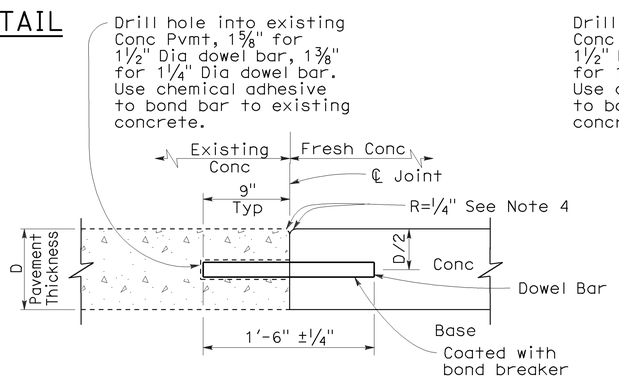


TRANSVERSE CONTRACTION JOINT



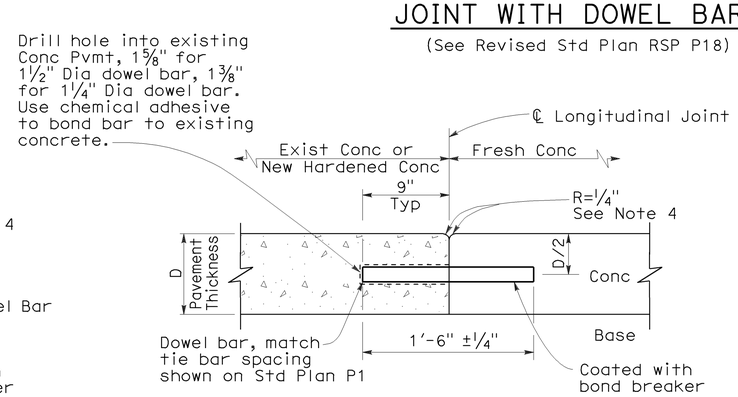
LONGITUDINAL CONTRACTION JOINT WITH DOWEL BARS

(See Revised Std Plan RSP P18)



TRANSVERSE CONSTRUCTION JOINT FOR EXISTING CONCRETE PAVEMENT

(Drill and bond locations)



LONGITUDINAL CONSTRUCTION JOINT WITH DOWEL BARS

(See Revised Std Plan RSP P18)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-DOWEL BAR DETAILS

NO SCALE

RSP P10 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P10 DATED MAY 1, 2006 - PAGE 124 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P10

2006 REVISED STANDARD PLAN RSP P10

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	23	30

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
William K. Farnbach
No. C49042
Exp. 9-30-10
CIVIL
STATE OF CALIFORNIA

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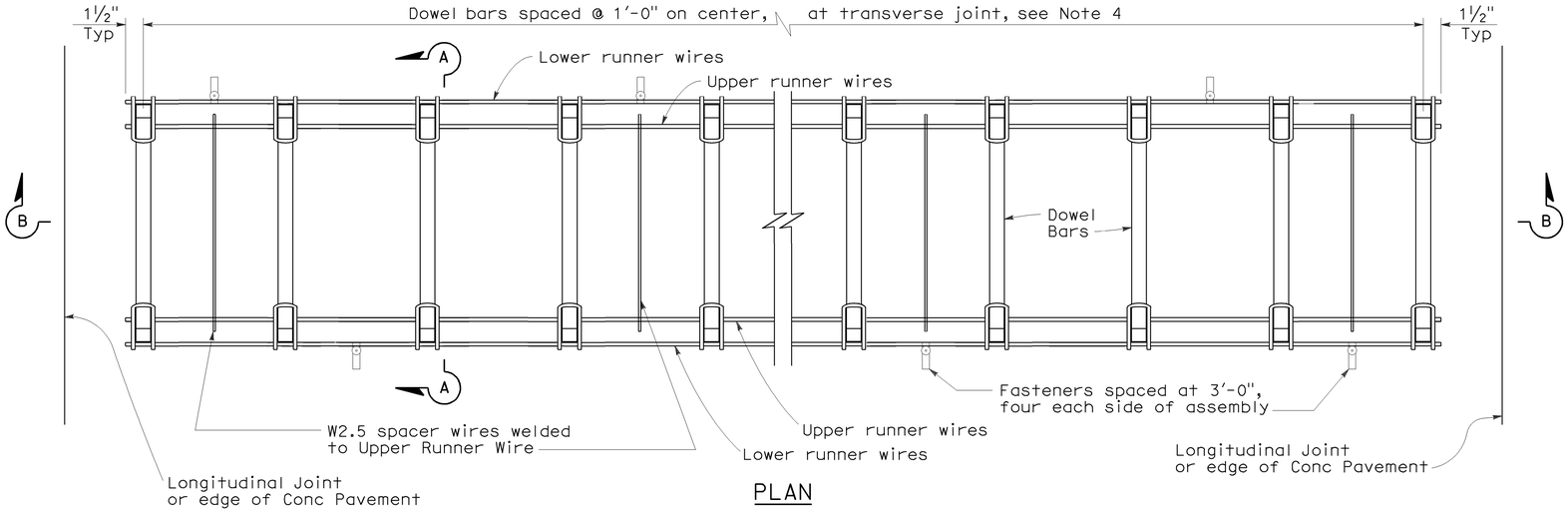
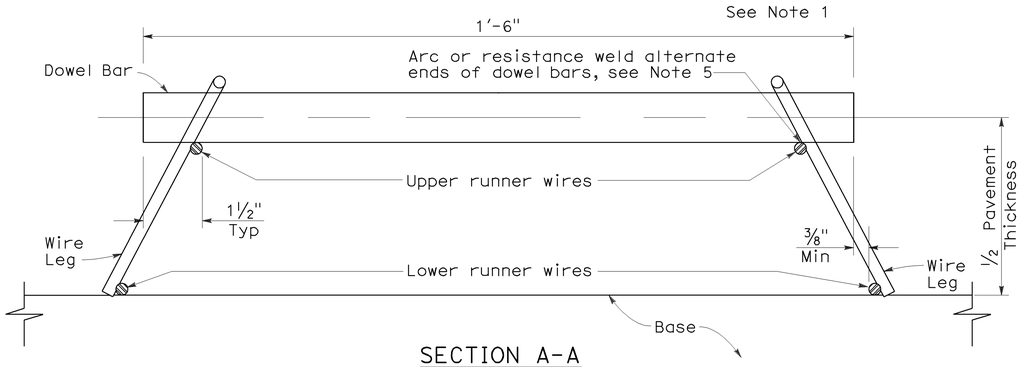
To accompany plans dated 03-12-12



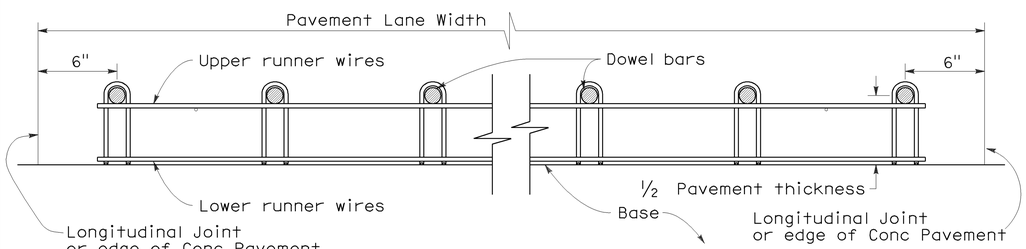
PLAN

DOWEL BAR BASKET (TRANSVERSE JOINT)

See Note 1

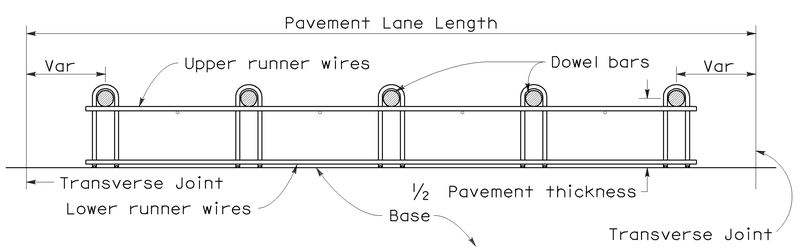


SECTION A-A



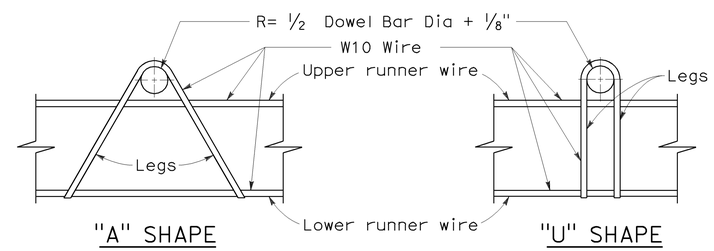
SECTION B-B

See Note 1



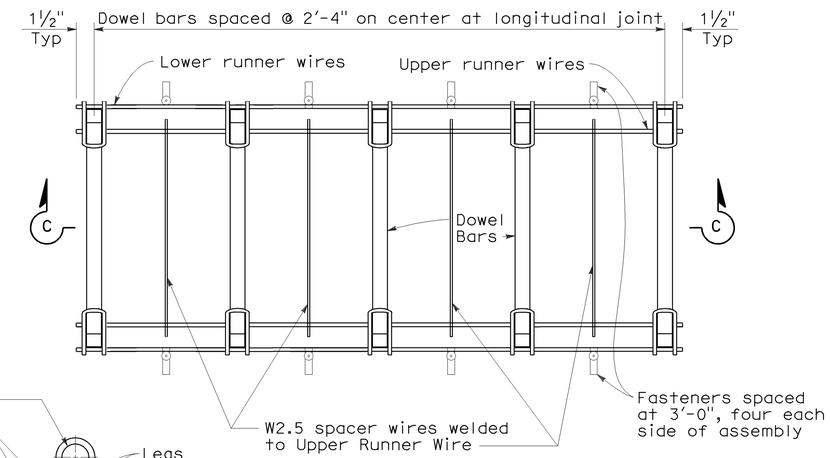
SECTION C-C

See Notes 1 and 4



"A" SHAPE "U" SHAPE

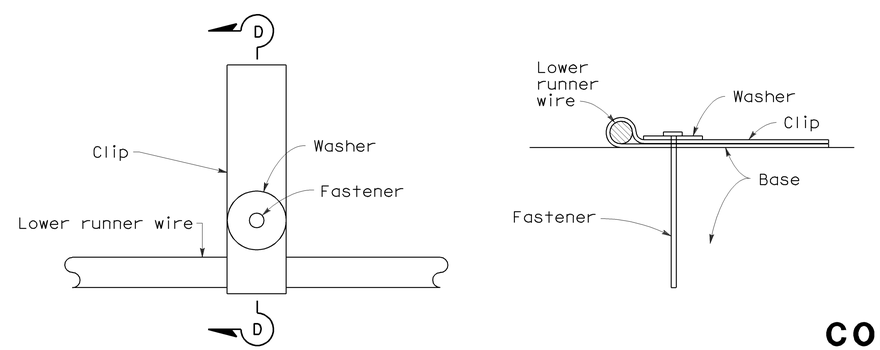
ASSEMBLY FRAME DETAILS



PLAN

DOWEL BAR BASKET (LONGITUDINAL JOINT)

See Note 1



PLAN SECTION D-D

FASTENER DETAIL

NOTES:

1. "U" frame shape assembly shown. "U" frame shape or "A" frame shape are acceptable.
2. Wire sizes shown are minimum required.
3. All wire intersections are to be resistance welded.
4. Use tie bar spacing for longitudinal dowel bar locations. See Revised Std Plans RSPs P1, P2, and P3 for tie bar requirements.
5. Weld may be at top or bottom of dowel bar.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-DOWEL BAR BASKET DETAILS

NO SCALE

RSP P12 DATED MAY 15, 2009 SUPERSEDES RSP P12 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P12 DATED MAY 1, 2006 - PAGE 125 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P12

2006 REVISED STANDARD PLAN RSP P12

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	24	30

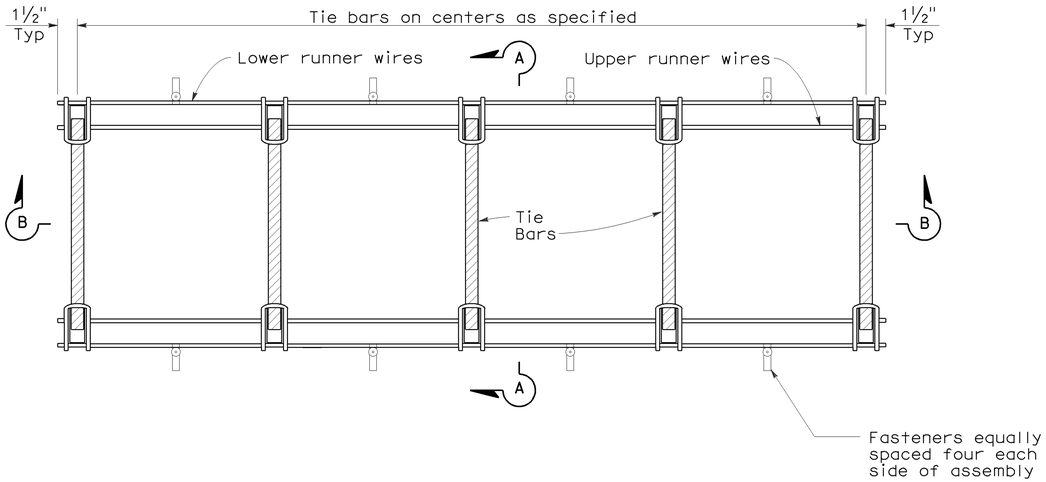
William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
William K. Farnbach
No. C49042
Exp. 9-30-10
CIVIL
STATE OF CALIFORNIA

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

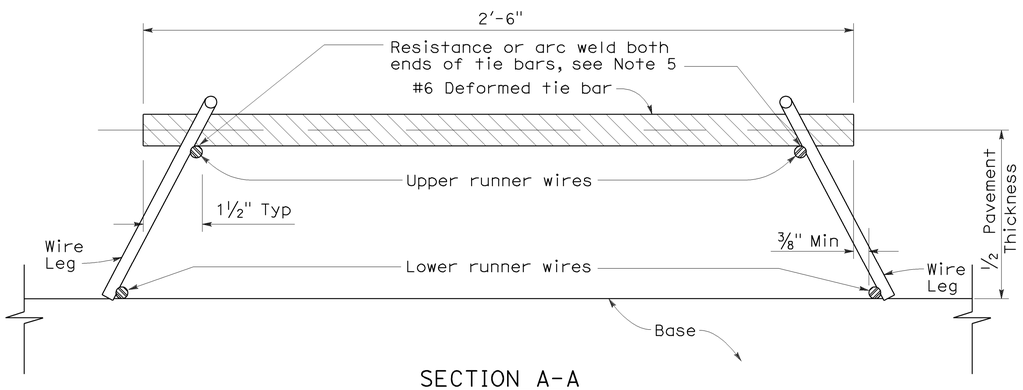
To accompany plans dated 03-12-12



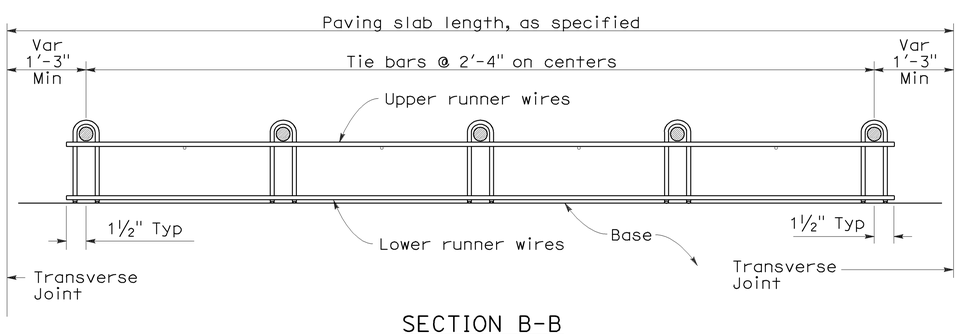
PLAN

TIE BAR BASKET

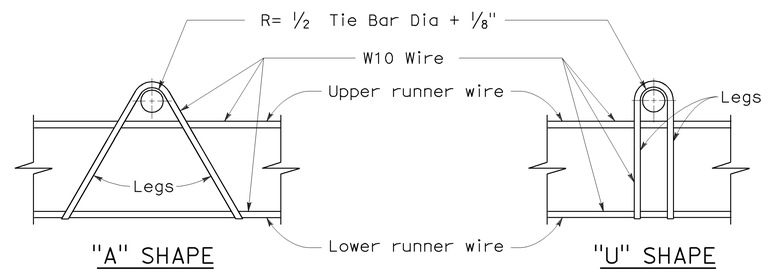
(TIE BARS AT LONGITUDINAL JOINT)
See Note 1



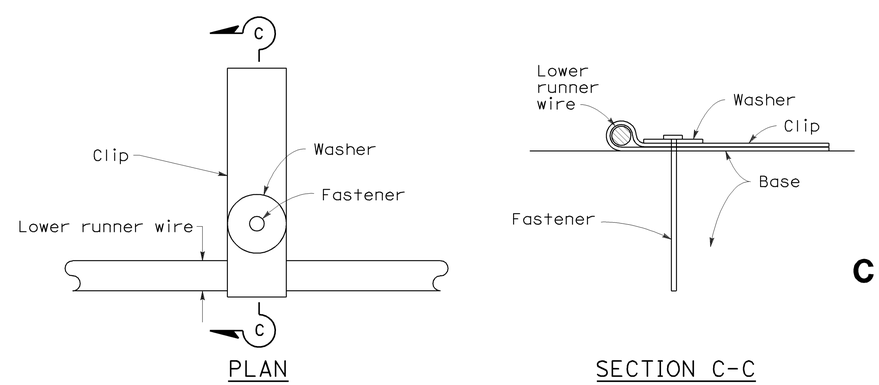
SECTION A-A



SECTION B-B
See Note 1



ASSEMBLY FRAME DETAILS



PLAN

SECTION C-C

FASTENER DETAIL

NOTES:

1. "U" frame shape assembly shown. "U" frame shape or "A" frame shape are acceptable.
2. Wire sizes shown are minimum required.
3. All wire intersections are to be resistance welded.
4. Not for use on nondoweled skewed jointed plain concrete pavement.
5. Weld may be at top or bottom of tie bar.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-TIE BAR BASKET DETAILS

NO SCALE

RSP P17 DATED MAY 15, 2009 SUPERSEDES RSP P17 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P17 DATED MAY 1, 2006 - PAGE 126 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P17

2006 REVISED STANDARD PLAN RSP P17

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	25	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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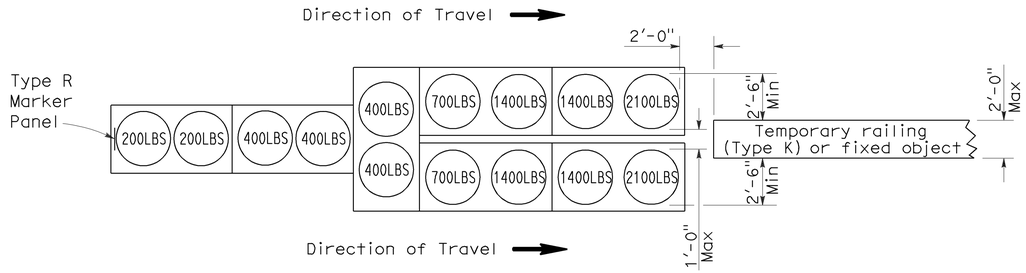
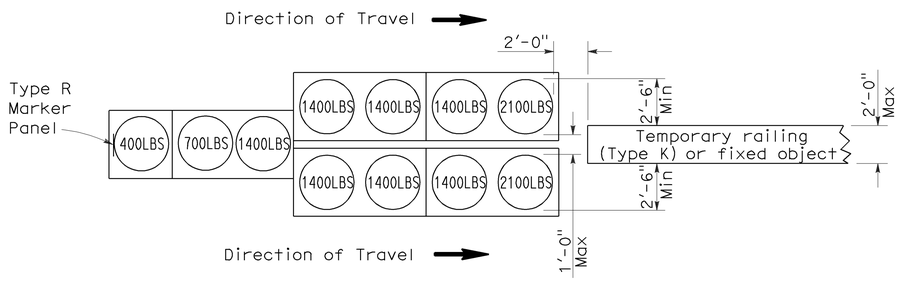
To accompany plans dated 03-12-12



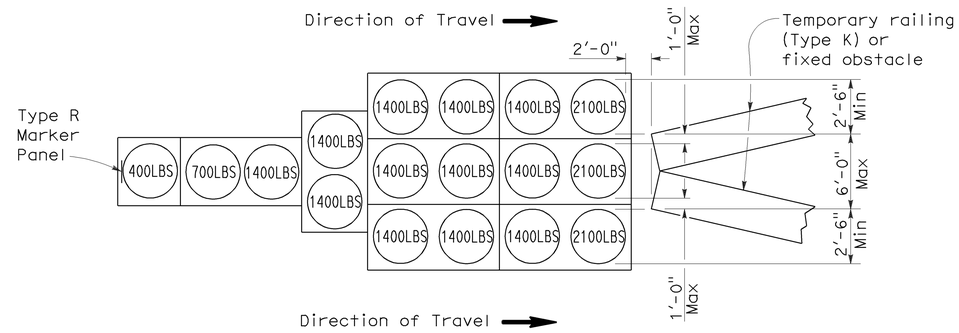
ARRAY 'TU14'

Approach speed 45 mph or more



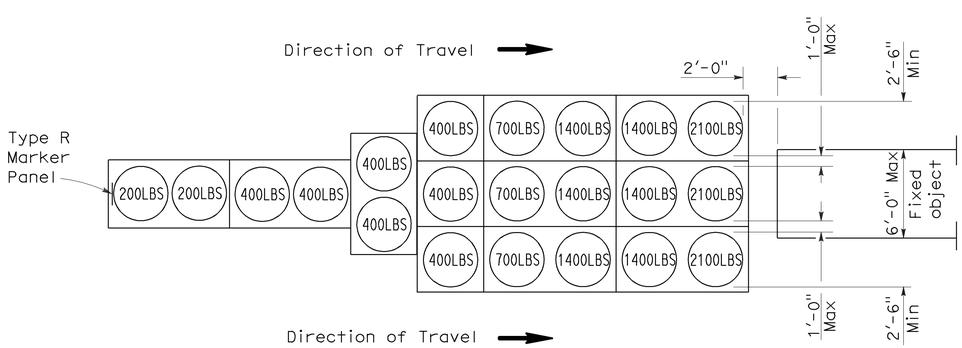
ARRAY 'TU11'

Approach speed less than 45 mph



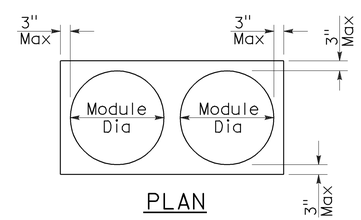
ARRAY 'TU17'

Approach speed less than 45 mph

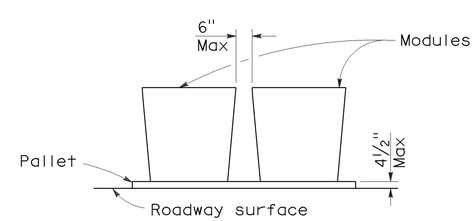


ARRAY 'TU21'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (UNIDIRECTIONAL)

NO SCALE

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

REVISED STANDARD PLAN RSP T1A

2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	26	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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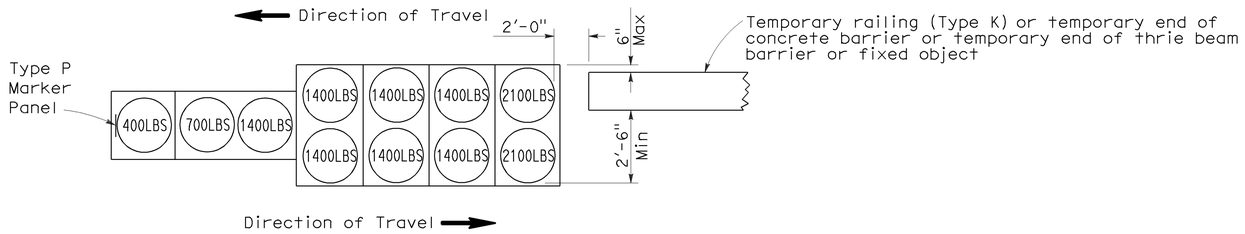
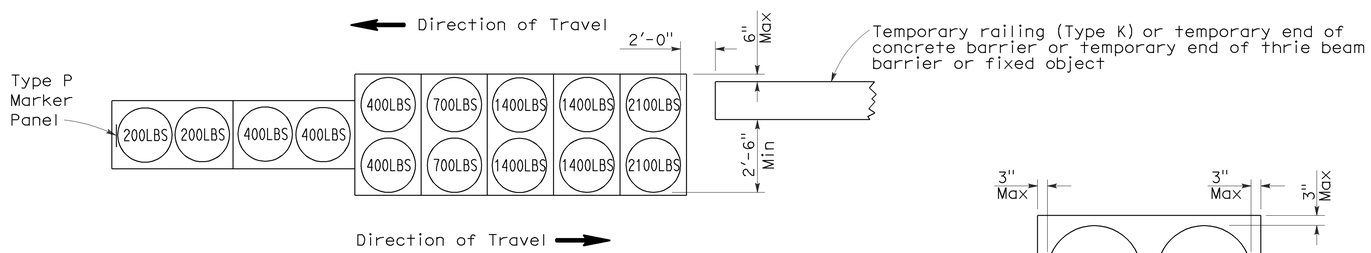
To accompany plans dated 03-12-12



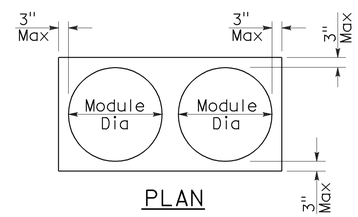
ARRAY 'TB11'

Approach speed less than 45 mph

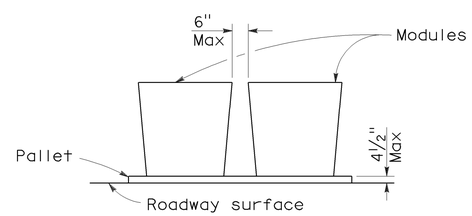


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (BIDIRECTIONAL)

NO SCALE

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	27	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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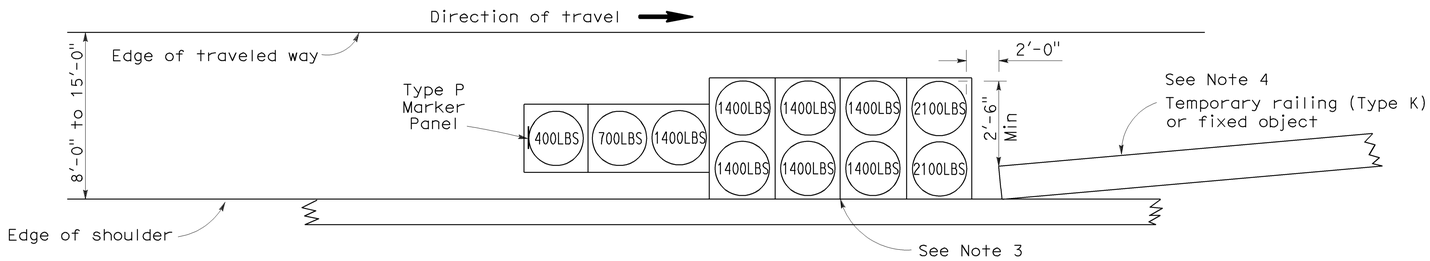
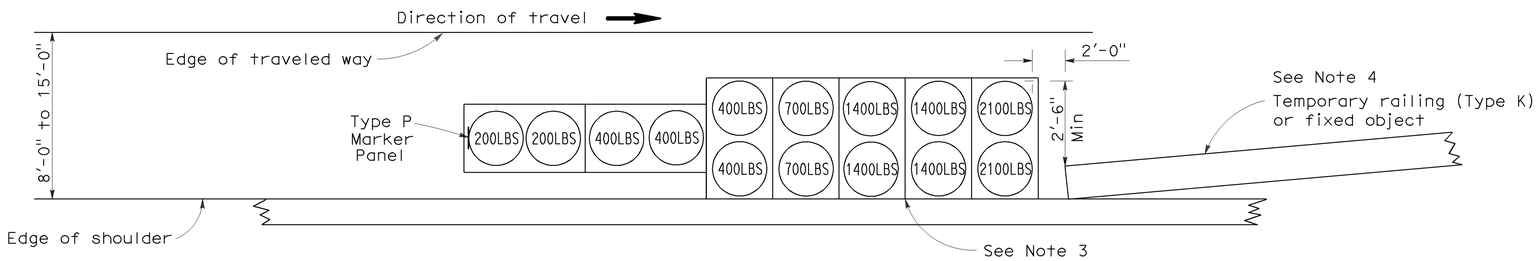
To accompany plans dated 03-12-12



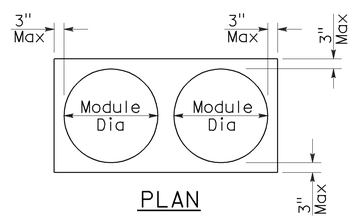
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9

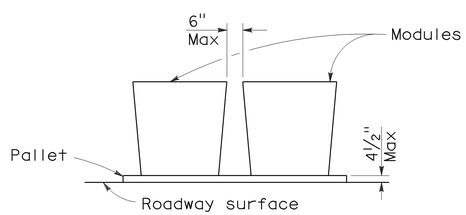


ARRAY 'TS14'

Approach speed 45 mph or more
See Note 9



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 11

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
4. If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
5. Temporary crash cushion arrays shall not encroach on the traveled way.
6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
7. Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
8. Refer to Standard Plan A73B for marker details.
9. For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
10. Approach speeds indicated conform to NCHRP 350 Report criteria.
11. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (SHOULDER INSTALLATIONS)

NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

5-15-08

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	28	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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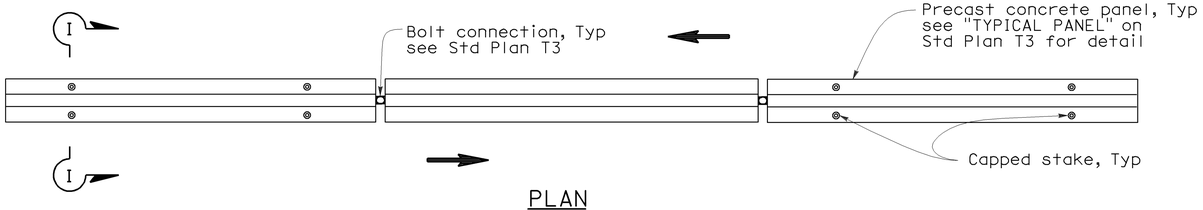
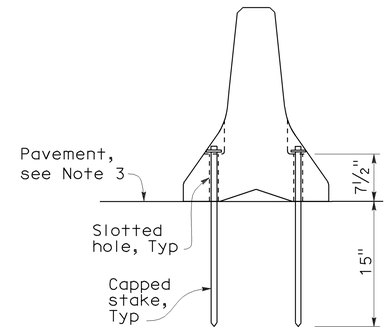
To accompany plans dated 03-12-12



PLAN

RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC

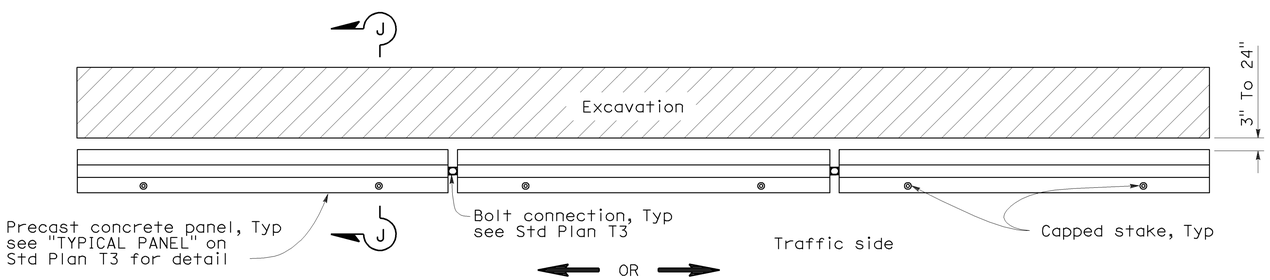
See Note 1



SECTION I-I

NOTES:

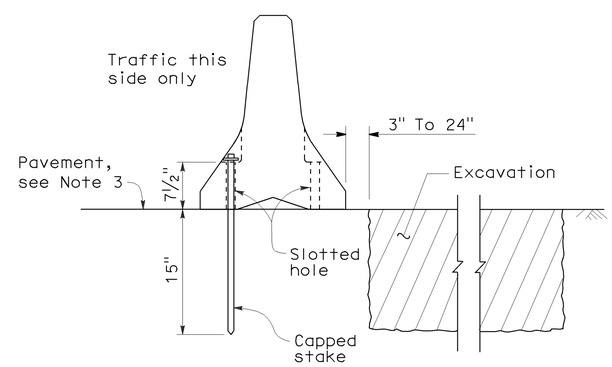
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by ⟹.



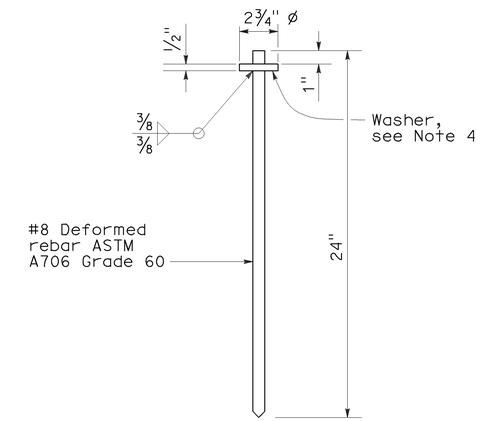
PLAN

RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION

See Note 2



SECTION J-J



CAPPED STAKE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY RAILING (TYPE K)

NO SCALE

NSP T3A DATED MAY 20, 2011 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T3A

2006 NEW STANDARD PLAN NSP T3A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	29	30

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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

To accompany plans dated 03-12-12

EQUIPMENT IDENTIFICATION

ILLUMINATED SIGN IDENTIFICATION NUMBER:

Sign No. 12345

10 ISL SCI 1.0

- Sign number - Place on post or structure
- Transformer rating (kVA)
- Lighting control type
- Number and type of fixtures

Do NOT place on standard or structure

ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:

12345 - 15'-0"

- Mast arm length, if shown. Do not place on standard or structure.
- Equipment number - Place on standard or structure. Existing equipment numbers are shown in parenthesis

CONDUIT AND CONDUCTOR IDENTIFICATION:

1½"C, 2#10, 15#14, 2 DLC

- Number and size of conductors and cables
- Size of conduit in inches

ø1, ø2, ø2P, etc.	Traffic phase identification for signal faces, detectors and phase diagrams
1 2 3	Project note numbers
A B C	Equipment description, installation or item numbers
1 2 3	Conduit run numbers

SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):

19A - 3 - 100

- Wind velocity = 100 mph
- Case 3 arm loading
- Standard type
- Standard Plan sheet number
- Detail number or letter

MISCELLANEOUS EQUIPMENT

PROPOSED	EXISTING	
CMS	cms	Changeable message sign
		Closed circuit television camera
		Highway advisory radio pole and antenna
EMS	ems	Extinguishable message sign
M V	m v	Detection device M = Microwave sensor V = Video image sensor

WIRING DIAGRAM LEGEND

P	Pole
CB	Circuit breaker
A	Ampere
V	Volt
M	Metered
UM	Unmetered
NB	Neutral bus
GB	Ground bus
G	Equipment grounding conductor
N	Grounded conductor (Neutral)

- External conductor
- Conductor or bus
- Tie point
- Contactor coil
- Contactor, Contact NO
- Terminal blocks
- Contactor, Contact NC
- Enclosure bond
- Grounding electrode
- Circuit breaker
- Receptacle

PULL BOXES

PROPOSED EXISTING

Pull box-No. 5 unless otherwise indicated or noted.

3 9A(21)

Pull box-Additional designations or descriptions

3	= No. 3½ pull box
5	= No. 5 pull box
6	= No. 6 pull box
7	= No. 7 (Ceiling pull box)
8	= No. 8 (Pendant soffit pull box)
9	= No. 9 pull box
9A	= No. 9A pull box

(C) = Communications pull box
(E) = Pull box with extension
(S) = Sprinkler control pull box
(21) = Anchor bolts and conduit for future installation of Type 21 Standard
(T) = Traffic pull box

VEHICLE DETECTORS

5 J 9 U

- U = Upper
- L = Lower
- Slot number in input file
- Input file (I or J)
- Phase

PROPOSED EXISTING

	Type A detector loop. Outline of sawcut shown.
	Type B detector loop. Outline of sawcut shown.
	Type C detector loop. Outline of sawcut shown.
	Type D detector loop. Outline of sawcut shown.
	Type E detector loop. Outline of sawcut shown.
	Type Q detector loop. Outline of sawcut shown.
	Magnetic detector
DH dh	Detector handhole
	Microwave or video detection zone

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1C

2006 REVISED STANDARD PLAN RSP ES-1C

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	15	R31.5/R43.0	30	30

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

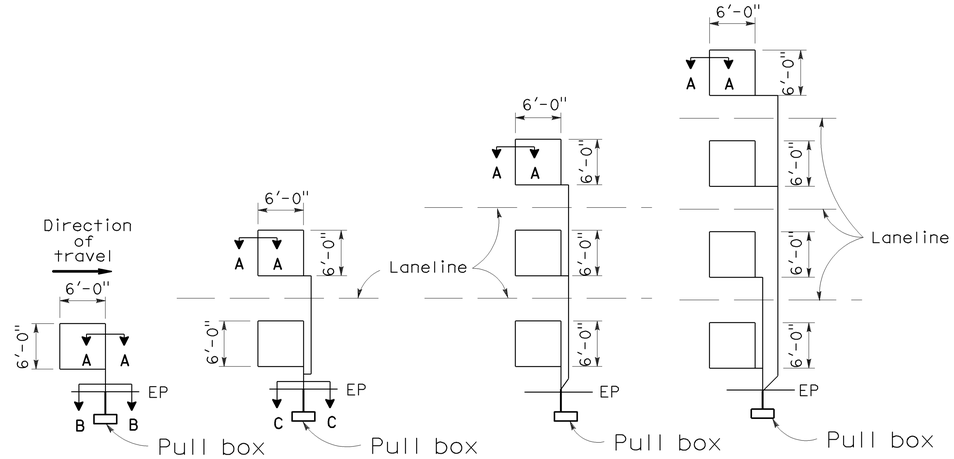
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 03-12-12

2006 REVISED STANDARD PLAN RSP ES-5A

LOOP INSTALLATION PROCEDURE

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

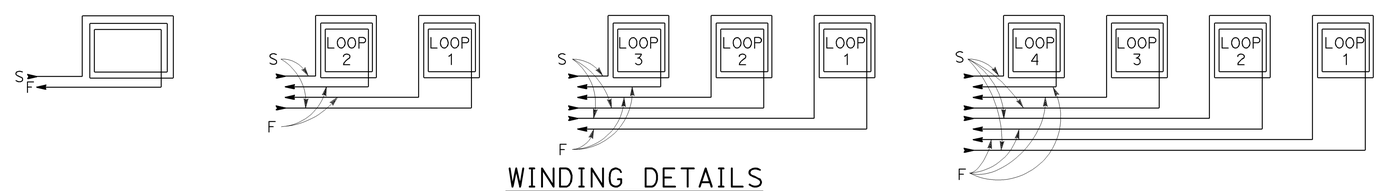


TYPE 1A INSTALLATION | TYPE 2A INSTALLATION | TYPE 3A INSTALLATION | TYPE 4A INSTALLATION

SAWCUT DETAILS

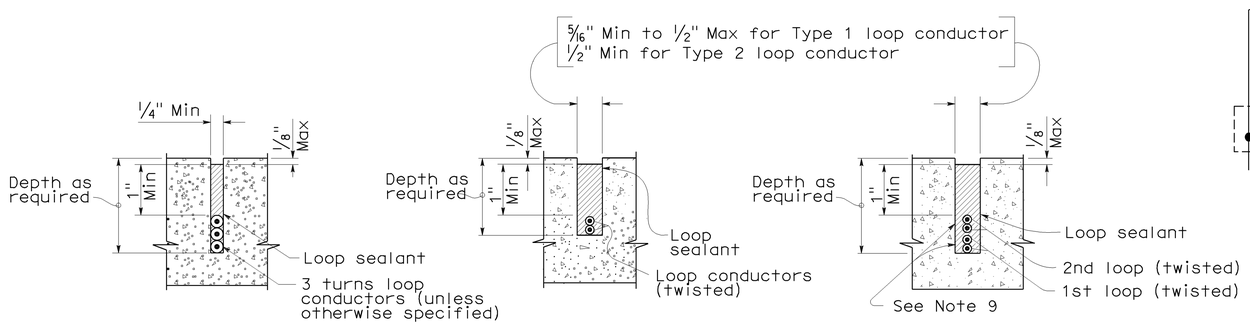
(Type A loop detector configurations illustrated)

1. 1A thru 4A = 1 Type A loop configuration in each lane.
2. 1B thru 4B = 1 Type B loop configuration in each lane.
3. 1C = 1 Type C loop configuration entering lanes as required.
4. 1D thru 4D = 1 Type D loop configuration in each lane.
5. 1E thru 4E = 1 Type E loop configuration in each lane.
6. 1Q thru 4Q = 1 Type Q loop configuration in each lane. (Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)



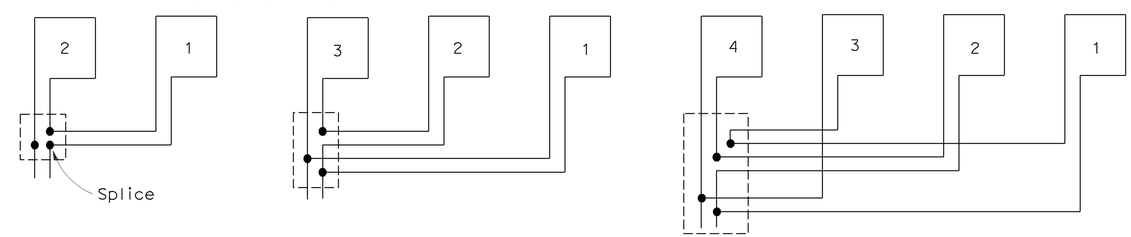
WINDING DETAILS

See Notes 6 and 7



SECTION A-A | SECTION B-B | SECTION C-C

SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-5A

8-17-07