Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2 12.8/29.8	1	21

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

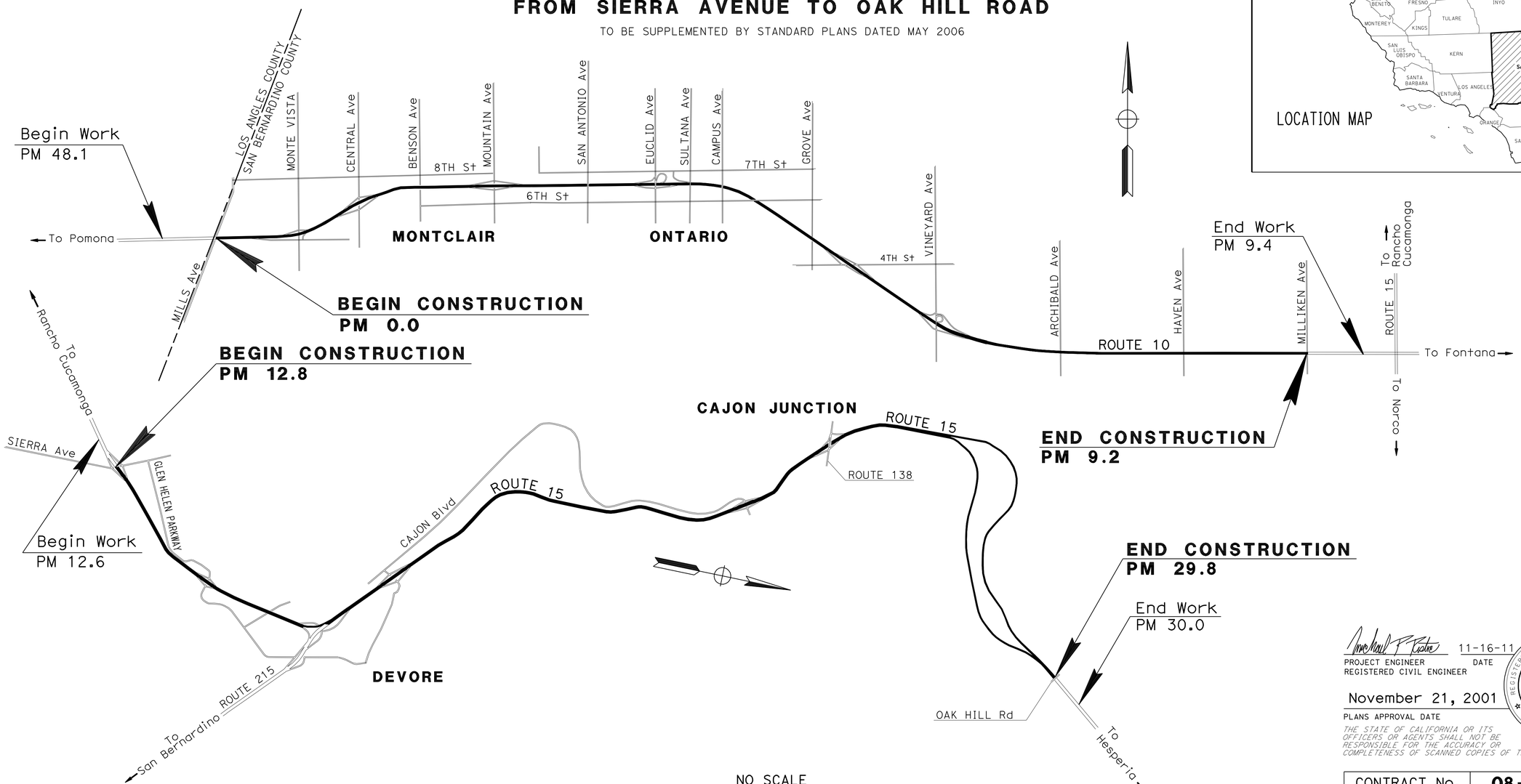
IN SAN BERNARDINO COUNTY
ON ROUTE 10 IN MONTCLAIR AND ONTARIO
FROM LOS ANGELES COUNTY LINE TO MILLIKEN AVENUE AND
ON ROUTE 15 IN DEVORE
FROM SIERRA AVENUE TO OAK HILL ROAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3	CONSTRUCTION DETAILS
4	CONSTRUCTION AREA SIGNS
5	PAVEMENT DELINEATION QUANTITIES
6	SUMMARY OF QUANTITIES
7-11	ELECTRICAL PLANS
12-21	NEW AND REVISED STANDARD PLANS

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



LOCATION MAP

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER

11-16-11
DATE

November 21, 2001
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MICHAEL P. RISTIC
No. C69439
Exp. 6-30-12
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.

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

PROJECT MANAGER: CATALINO PINNING
DESIGN ENGINEER: HELENA MEKONNEN

CONTRACT No.	08-0P8404
PROJECT ID	0800020036

LAST REVISION: 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	2	21

REGISTERED CIVIL ENGINEER 11-16-11 DATE

11-21-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MICHAEL P. RISTIC No. C69439 Exp. 6-30-12 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:

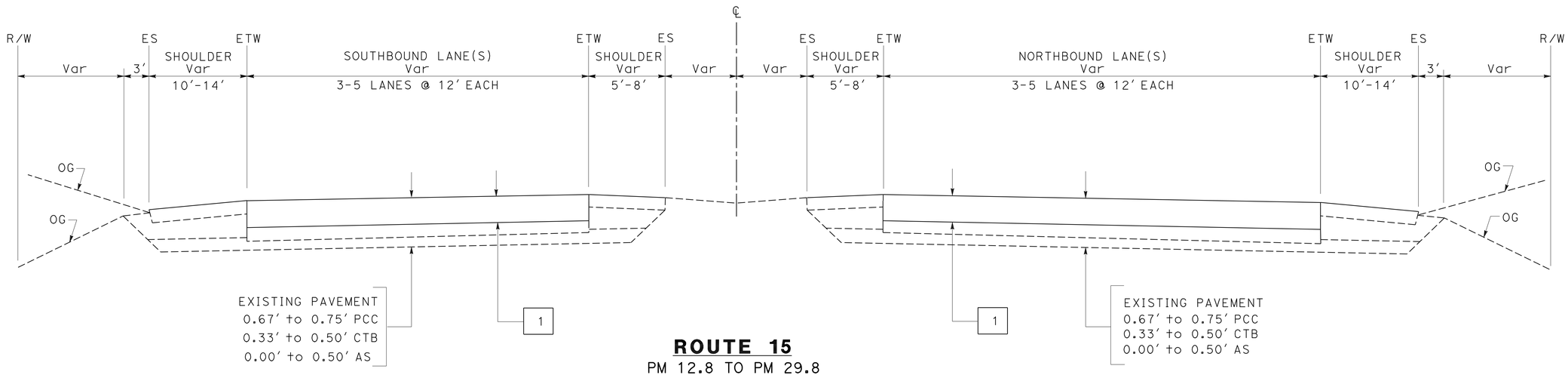
1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. EXACT LOCATIONS FOR REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE) ARE TO BE DETERMINED BY THE ENGINEER.
4. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

STRUCTURAL SECTION NOTE:

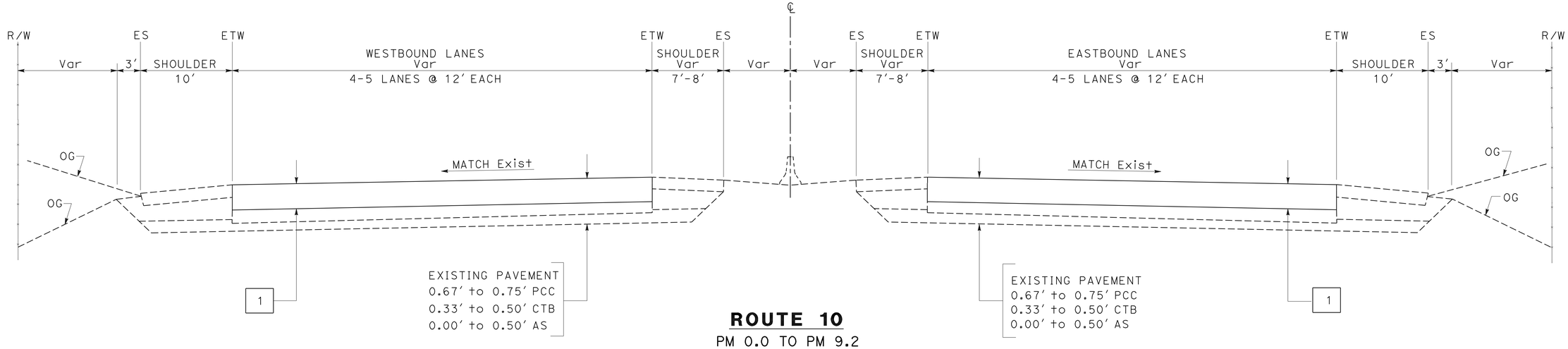
1 REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)

ABBREVATION:

(RSC) RAPID STRENGTH CONCRETE



ROUTE 15
PM 12.8 TO PM 29.8



ROUTE 10
PM 0.0 TO PM 9.2

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE DESIGN

FUNCTIONAL SUPERVISOR: MICHAEL P. RISTIC
CALCULATED-DESIGNED BY: HELENA MEKONNEN
CHECKED BY: MICHAEL P. RISTIC
REVISED BY
DATE REVISED

LAST REVISION 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	3	21

REGISTERED CIVIL ENGINEER 11-16-11 DATE

11-21-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MICHAEL P. RISTIC No. C69439 Exp. 6-30-12 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.

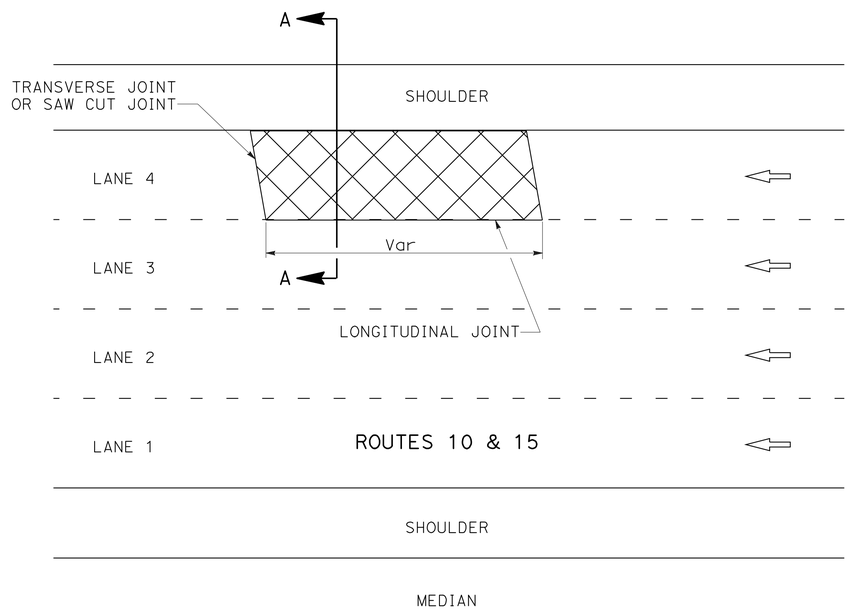
NOTES:

1. EXACT LIMITS OF REPLACE CONCRETE PAVEMENT (RSC) TO BE DETERMINED BY THE ENGINEER.
2. FOR LOCATIONS, DIMENSIONS OF SLABS AND SUMMARY OF QUANTITIES, SEE SHEET Q-1.
3. SEE STANDARD PLAN RSP-P8 JOINTED PLAIN CONCRETE PAVEMENT INDIVIDUAL SLAB REPLACEMENT, TYPE III.

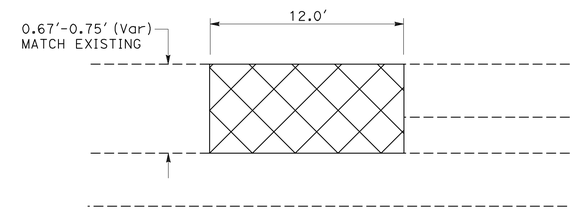
LEGEND:

REPLACE CONCRETE PAVEMENT

DIRECTION OF TRAVEL



REPLACE CONCRETE PAVEMENT
(RAPID STRENGTH CONCRETE)
TYPICAL PLAN



SECTION A-A

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE DESIGN

FUNCTIONAL SUPERVISOR: MICHAEL P. RISTIC
CALCULATED-DESIGNED BY: HELENA MEKONNEN
CHECKED BY: MICHAEL P. RISTIC
REVISED BY
DATE REVISED

LAST REVISION 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	4	21

REGISTERED CIVIL ENGINEER 11-16-11 DATE

11-21-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRIS HARDIMON No. C66092 Exp. 6-30-12 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.

LEGEND:

- CONSTRUCTION AREA
- CONSTRUCTION AREA SIGN (ONE POST)
- CONSTRUCTION AREA SIGN (TWO POST)
- (X) CONSTRUCTION AREA SIGN LETTER
- DIRECTION OF TRAFFIC

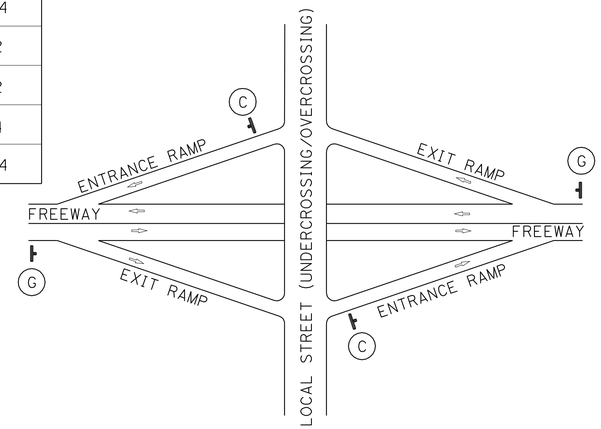
NOTES:

1. CONSTRUCTION AREA SIGN LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. REFER TO STANDARD PLANS T10, T11, T13, AND T14 FOR TRAFFIC CONTROL REQUIREMENTS.
3. 2 TYPE-2 CONSTRUCTION PROJECT INFORMATION SIGNS SHALL BE PLACED ON EACH ROUTE.

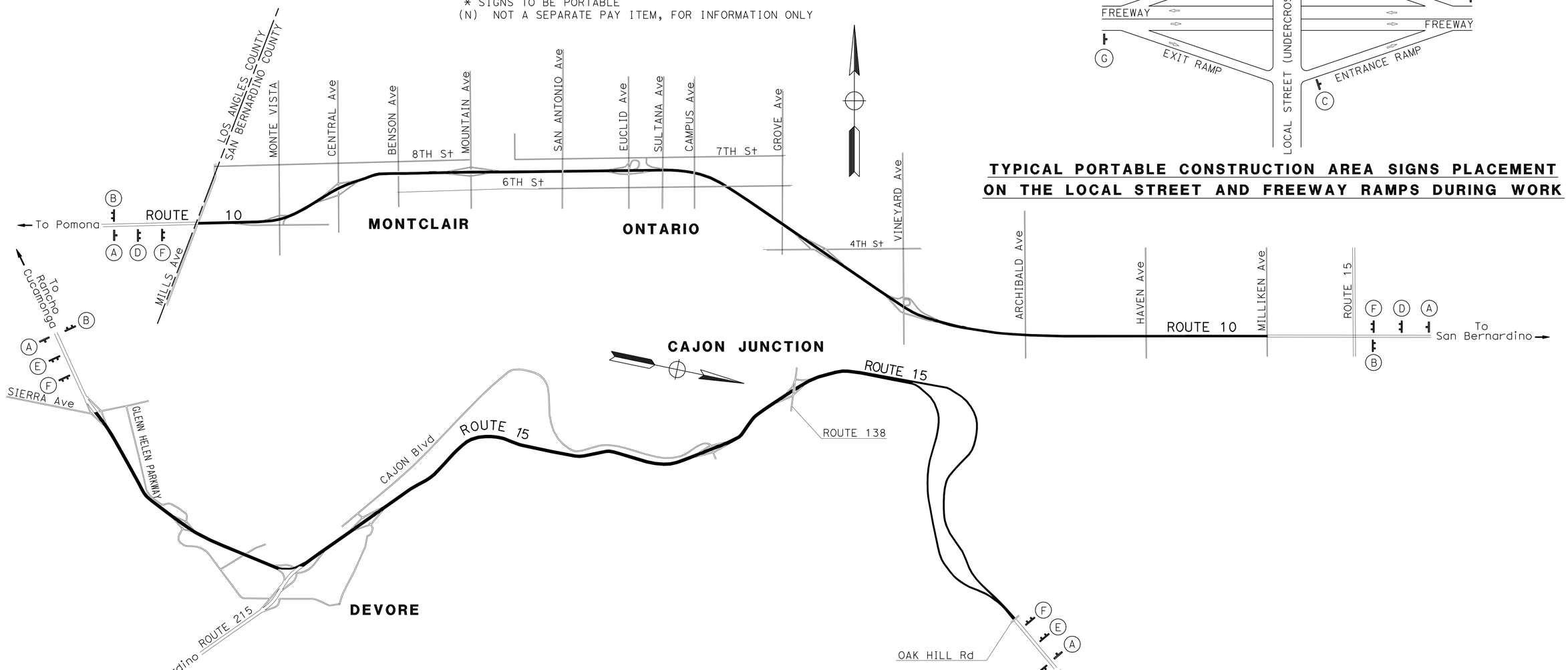
STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No. (X)	SIGN CODE FEDERAL	SIGN CODE CALIFORNIA	PANEL SIZE	No. OF POSTS AND SIZE	SIGN MESSAGE	(N) No. OF SIGNS
A	W20-1		36" x 36"	1 - 4" x 6"	ROAD WORK AHEAD	4
B		C14	48" x 24"	2 - 4" x 4"	END ROAD WORK	4
C *	W20-1		36" x 36"	1 - 4" x 6"	ROAD WORK AHEAD	24
D		C11	90" x 48"	2 - 6" x 6"	ROAD CONSTRUCTION NEXT 10 MILES	2
E		C11	90" x 48"	2 - 6" x 6"	ROAD CONSTRUCTION NEXT 17 MILES	2
F		C40	144" x 60"	2 - 6" x 8"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	4
G		SC6-4 (CA)	48" x 60"	1 - 6" x 6"	RAMP CLOSED	24

* SIGNS TO BE PORTABLE
(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY



TYPICAL PORTABLE CONSTRUCTION AREA SIGNS PLACEMENT ON THE LOCAL STREET AND FREEWAY RAMPS DURING WORK



THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN B

FUNCTIONAL SUPERVISOR: LARRY SARTORI
CALCULATED-DESIGNED BY: CHRIS HARDIMON
CHECKED BY: LARRY SARTORI
REVISED BY
DATE REVISED

LAST REVISION 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	5	21

REGISTERED CIVIL ENGINEER 11-16-11 DATE

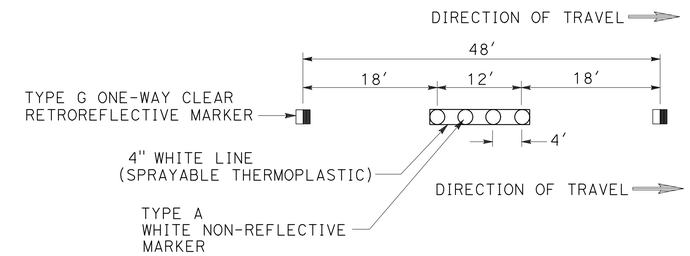
11-21-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRIS HARDIMON No. C66092 Exp. 6-30-12 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.

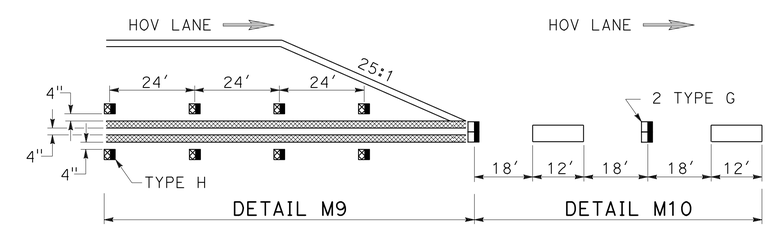
PAVEMENT DELINEATION QUANTITIES

LOCATION		DETAIL No. OR PAVEMENT MARKING	REMOVE PAVEMENT MARKERS	PAVEMENT MARKER					THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)	
				NON-REFLECTIVE TYPE	RETROREFLECTIVE TYPE		RECESSED TYPE			
				A	G	H	G	H	4" WHITE	8" WHITE
			EA	EA	EA		EA		LF	
EASTBOUND SBd-10 PM 0.0-9.2	(NUMBER 3 LANE)	13M	-	108	27	-	-	-	1100	-
EASTBOUND SBd-10 PM 0.0-9.2	(NUMBER 4 LANE)	13M	-	296	74	-	-	-	3200	-
WESTBOUND SBd-10 PM 0.0-9.2	(NUMBER 3 LANE)	13M	-	116	29	-	-	-	1200	-
WESTBOUND SBd-10 PM 0.0-9.2	(NUMBER 4 LANE)	13M	-	392	98	-	-	-	4400	-
EASTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	13M	3078	3815	3078	-	-	-	-	-
WESTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	13M	2961	3706	2961	-	-	-	-	-
EASTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	M9	3294	-	-	3294	-	-	-	-
WESTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	M9	3110	-	-	3110	-	-	-	-
EASTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	M10	182	-	182	-	-	-	-	-
WESTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	M10	328	-	328	-	-	-	-	-
EASTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	25	1012	-	-	1012	-	-	-	-
WESTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	25	1012	-	-	1012	-	-	-	-
EASTBOUND SBd-10 PM 0.0-9.2	(REPLACE MAINLINE MARKERS ONLY)	36	242	-	242	-	-	-	-	-
WESTBOUND SBd-10 PM 0.0-9.2	(REPLACE MAINLINE MARKERS ONLY)	36	234	-	234	-	-	-	-	-
EASTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	37	708	-	708	-	-	-	-	-
WESTBOUND SBd-10 PM 0.0-9.2	(REPLACE MARKERS ONLY)	37	556	-	556	-	-	-	-	-
NORTHBOUND SBd-15 PM 12.8-29.8	(NUMBER 3 LANE)	12	-	-	-	-	7	-	240	-
NORTHBOUND SBd-15 PM 12.8-29.8	(NUMBER 4 LANE)	12	-	-	-	-	70	-	3280	-
NORTHBOUND SBd-15 PM 12.8-29.8	(NUMBER 5 LANE)	12	-	-	-	-	155	-	7400	-
		27B	-	-	-	-	-	-	8960	-
		38	-	-	-	-	60	-	-	1440
SOUTHBOUND SBd-15 PM 12.8-29.8	(NUMBER 2 LANE)	12	-	-	-	-	16	-	680	-
SOUTHBOUND SBd-15 PM 12.8-29.8	(NUMBER 3 LANE)	12	-	-	-	-	2	-	80	-
SOUTHBOUND SBd-15 PM 12.8-29.8	(NUMBER 4 LANE)	12	-	-	-	-	35	-	1580	-
		27B	-	-	-	-	-	-	1220	-
NORTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MARKERS ONLY)	12	5708	-	-	-	5708	-	-	-
SOUTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MARKERS ONLY)	12	5676	-	-	-	5676	-	-	-
NORTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MARKERS ONLY)	25	1870	-	-	-	-	1870	-	-
SOUTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MARKERS ONLY)	25	1870	-	-	-	-	1870	-	-
NORTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MAINLINE MARKERS ONLY)	36	294	-	-	-	294	-	-	-
SOUTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MAINLINE MARKERS ONLY)	36	210	-	-	-	210	-	-	-
NORTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MARKERS ONLY)	37	938	-	-	-	938	-	-	-
SOUTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MARKERS ONLY)	37	118	-	-	-	118	-	-	-
NORTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MARKERS ONLY)	38	949	-	-	-	949	-	-	-
NORTHBOUND SBd-15 PM 12.8-29.8	(REPLACE MARKERS ONLY)	38B	50	-	-	-	50	-	-	-
SUBTOTAL			-	-	8517	8428	14288	3740	33340	1440
TOTAL			34400	8433	16945		18028		34780	



DETAIL 13 MODIFIED (13M)

INSTALL TYPE A NON-REFLECTIVE MARKER WITH STRIPING DETAIL 13M
INSTALL TYPE A MARKER BEFORE STRIPING TO GET THE PROPER BONDING



PAVEMENT DELINEATION QUANTITIES
PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN B

FUNCTIONAL SUPERVISOR: LARRY SARTORI
CALCULATED-DESIGNED BY: CHRIS HARDIMON
CHECKED BY: LARRY SARTORI
REVISED BY
DATE REVISED

LAST REVISION 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	6	21

REGISTERED CIVIL ENGINEER 11-16-11 DATE

11-21-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MICHAEL P. RISTIC No. C69439 Exp. 6-30-12 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.

NOTE:

1. EXACT LOCATIONS FOR REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE) TO BE DETERMINED BY THE ENGINEER.

REPLACE CONCRETE PAVEMENT (RSC)

	PM LOCATION	DIRECTION	(CY)				
			LANE 1	LANE 2	LANE 3	LANE 4	LANE 5
ROUTE 10	0.0/2.5	WB			100	225	
	0.0/2.9	EB			100	225	
	2.5/4.0	WB			100	225	
	2.9/5.0	EB			60	120	
	4.0/6.0	WB			100	140	
	5.0/6.5	EB			160	220	
	6.0/8.0	WB			80	150	
	6.5/8.0	EB			60	140	
	8.0/9.2	WB			60	140	
	8.0/9.2	EB			60	140	
ROUTE 15	12.8/15.0	NB				25	35
		SB			25	25	
	15.0/19.0	NB			15	250	1200
		SB		90	20		
	19.0/23.0	NB					
		SB				230	
	23.0/27.0	NB				20	300
		SB				20	
	27.0/29.8	NB				220	
		SB				120	
	SUBTOTAL			90	940	2635	1535
TOTAL					5200		

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE DESIGN

FUNCTIONAL SUPERVISOR: MICHAEL P. RISTIC
CALCULATED-DESIGNED BY / CHECKED BY
HELENA MEKONNEN / MICHAEL P. RISTIC
REVISED BY / DATE REVISED

LAST REVISION 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	7	21

REGISTERED ELECTRICAL ENGINEER 11-16-11 DATE

11-21-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FERDINAND DE LA CRUZ No. E17215 Exp. 6-30-12 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.

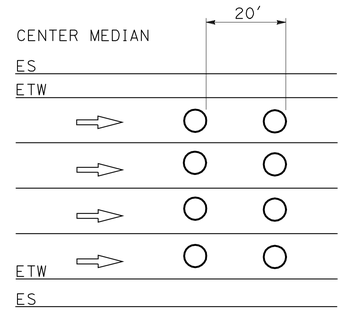
GENERAL NOTES FOR SHEETS E-1 TO E-3:

1. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF OF THE INDUCTIVE LOOP DETECTORS.

2. AB EXISTING INDUCTIVE LOOP DETECTORS BEFORE INSTALLING NEW LOOP DETECTOR.

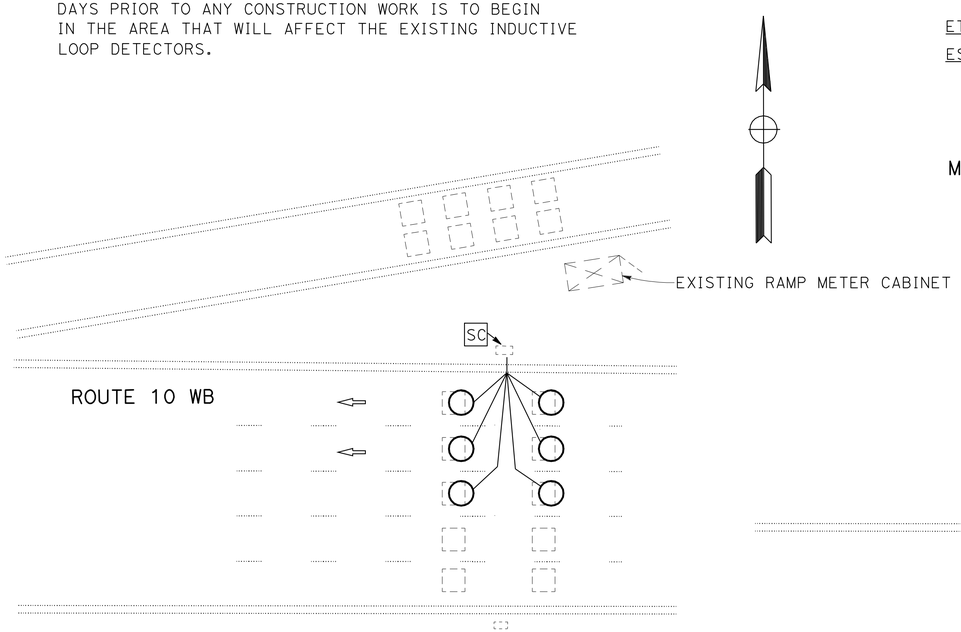
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 3 WORKING DAYS PRIOR TO INSTALLING DETECTOR LOOP.

3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 5 WORKING DAYS PRIOR TO ANY CONSTRUCTION WORK IS TO BEGIN IN THE AREA THAT WILL AFFECT THE EXISTING INDUCTIVE LOOP DETECTORS.

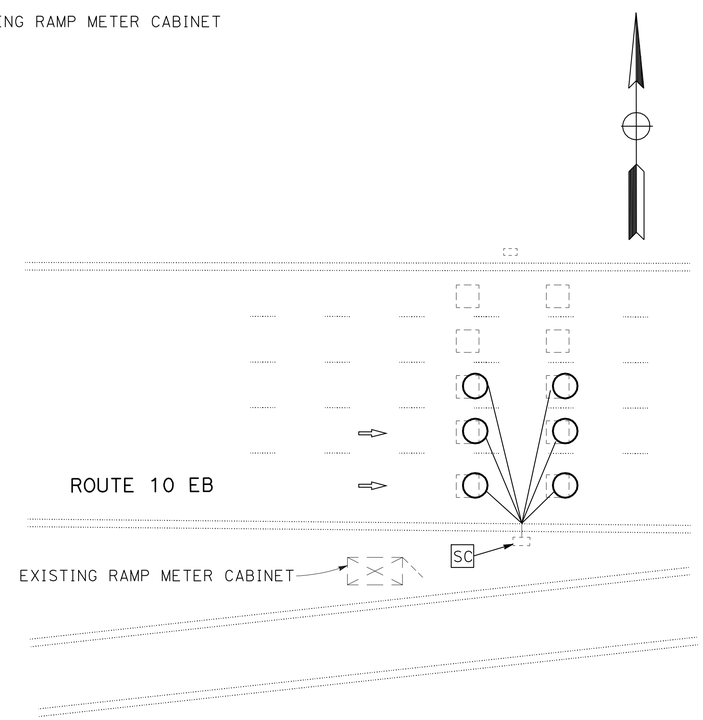


TYPICAL DETAIL

MAINLINE LOOP INSTALLATION



LOCATION 1, 3, 5, 8, 10, 13
16, 18, AND 20



LOCATION 2, 4, 6, 9, 11, 12, 15,
17, 19, AND 21

INDUCTIVE LOOP DETECTORS

LOCATION	SYSTEM	POSTMILE	LOCATION NEAR ENTRANCE RAMP	DIRECTION	No. LOOP DETECTOR
1	RM	0.6	MONTE VISTA Ave	WB	6
2	RM	0.8	MONTE VISTA Ave	EB	6
3	RM	1.2	CENTRAL Ave	WB	6
4	RM	1.4	CENTRAL Ave	EB	6
5	RM	2.2	MOUNTAIN Ave	WB	6
6	RM	2.5	MOUNTAIN Ave	EB	6
7	RM	3.6	EUCLID Ave	EB	12
8	RM	5.2	FOURTH St	WB	6
9	RM	5.3	FOURTH St	EB	6
10	RM	6.0	VINEYARD Ave	WB	6
11	RM	6.1	VINEYARD Ave	WB (LOOP)	6
12	RM	6.3	VINEYARD Ave	EB	6
13	RM	6.8	ARCHIBALD Ave	WB	6
14	RM	6.9	ARCHIBALD Ave	EB (CONN)	12
15	RM	7.4	ARCHIBALD Ave	EB	6
16	RM	8.0	HAVEN Ave	WB	6
17	RM	8.1	HAVEN Ave	EB (LOOP)	6
18	RM	8.2	HAVEN Ave	WB (LOOP)	6
19	RM	8.2	HAVEN Ave	EB	6
20	RM	9.0	MILLIKEN Ave	WB	6
21	RM	9.1	MILLIKEN Ave	EB (LOOP)	6
22	COUNT Sta	6.9	EUCLID Ave	WB, EB	12
23	TMS	9.2	MILLIKEN Ave	WB, EB	24
TOTAL					174

INDUCTIVE LOOP DETECTOR

NO SCALE

E-1

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN B

FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ
CALCULATED-DESIGNED BY: SANDY TUNG
CHECKED BY: FERDINAND DE LA CRUZ
REVISED BY
DATE REVISED

LAST REVISION 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	8	21

REGISTERED ELECTRICAL ENGINEER 11-16-11 DATE

PLANS APPROVAL DATE 11-21-11

REGISTERED PROFESSIONAL ENGINEER FERDINAND DE LA CRUZ No. E17215 Exp. 6-30-12 ELECTRICAL STATE OF CALIFORNIA

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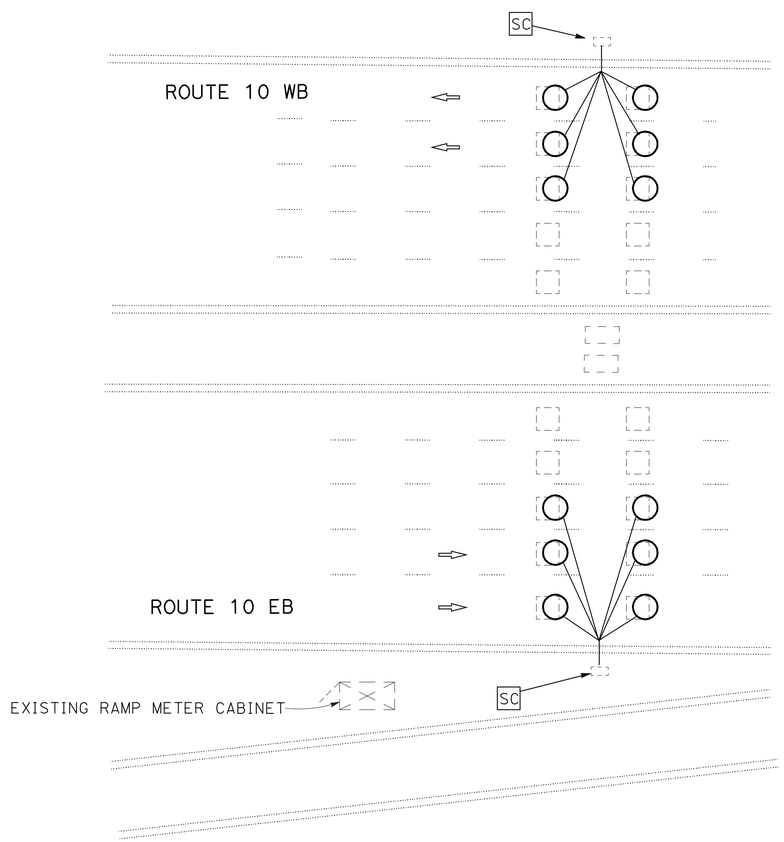
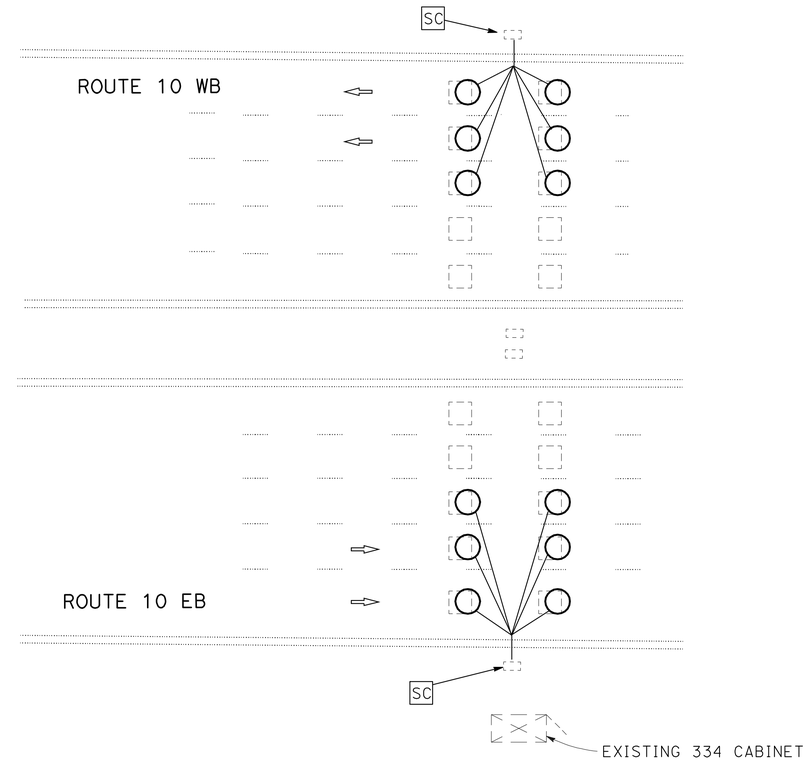


LOCATION 7 AND 14



LOCATION 22
COUNT STATION
ROUTE 10, PM 3.5
NEAR EUCLID Ave

INDUCTIVE LOOP DETECTOR

NO SCALE

E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans ELECTRICAL DESIGN B

FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ

CALCULATED-DESIGNED BY: SANDY TUNG

CHECKED BY: FERDINAND DE LA CRUZ

REVISED BY

DATE REVISED

LAST REVISION 11-16-11 | DATE PLOTTED => 17-NOV-2011 | TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	9	21

REGISTERED ELECTRICAL ENGINEER 11-16-11 DATE

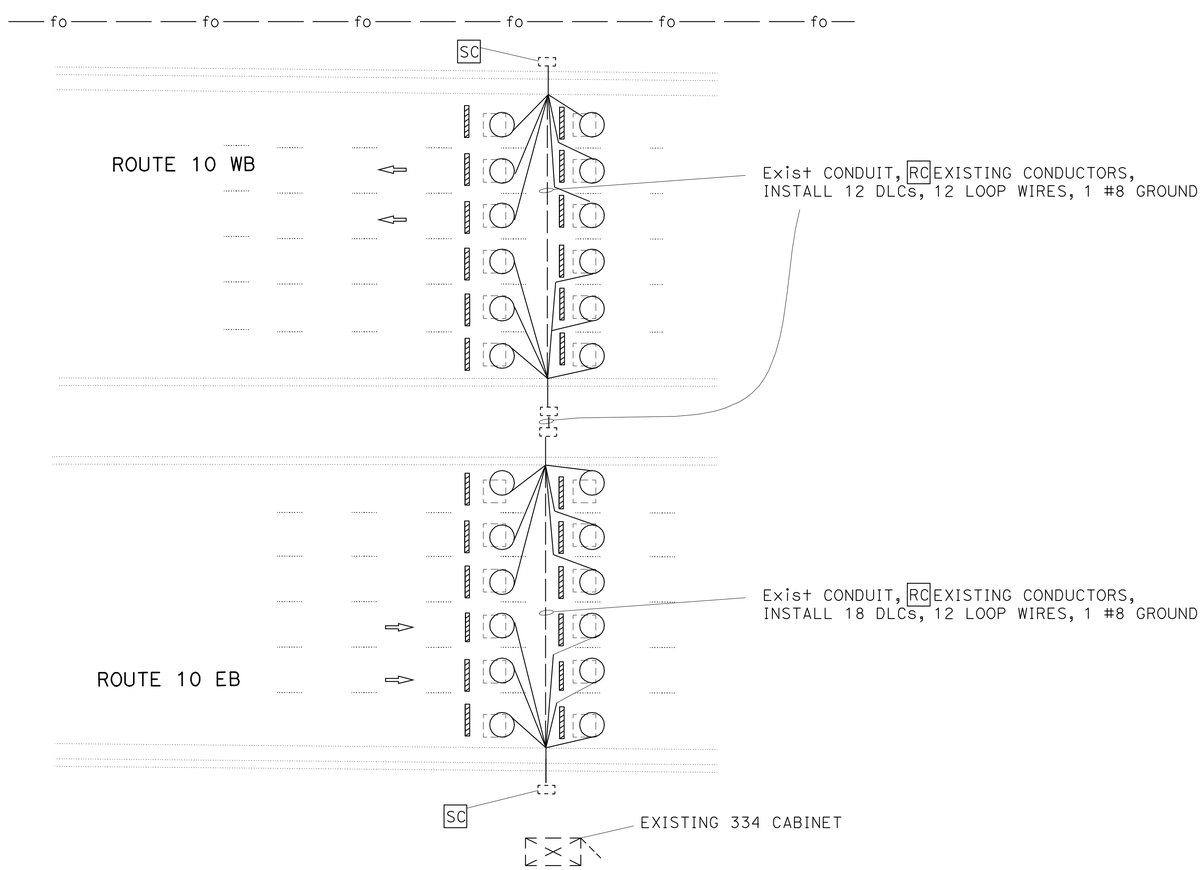
PLANS APPROVAL DATE 11-21-11

REGISTERED PROFESSIONAL ENGINEER FERDINAND DE LA CRUZ No. E17215 Exp. 6-30-12 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.

LEGEND:

EXISTING PIEZO-ELECTRIC AXLE SENSOR



LOCATION 23
TRAFFIC MONITORING STATION
ROUTE 10, PM 9.2
NEAR MILLIKEN Ave

INDUCTIVE LOOP DETECTOR

NO SCALE

E-3

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN B

FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ

CALCULATED-DESIGNED BY: SANDY TUNG
CHECKED BY: FERDINAND DE LA CRUZ

REVISED BY | DATE REVISED

LAST REVISION 11-16-11 | DATE PLOTTED => 17-NOV-2011 | TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	10	21

REGISTERED ELECTRICAL ENGINEER 11-16-11 DATE

PLANS APPROVAL DATE 11-21-11

REGISTERED PROFESSIONAL ENGINEER FERDINAND DE LA CRUZ No. E17215 Exp. 6-30-12 ELECTRICAL STATE OF CALIFORNIA

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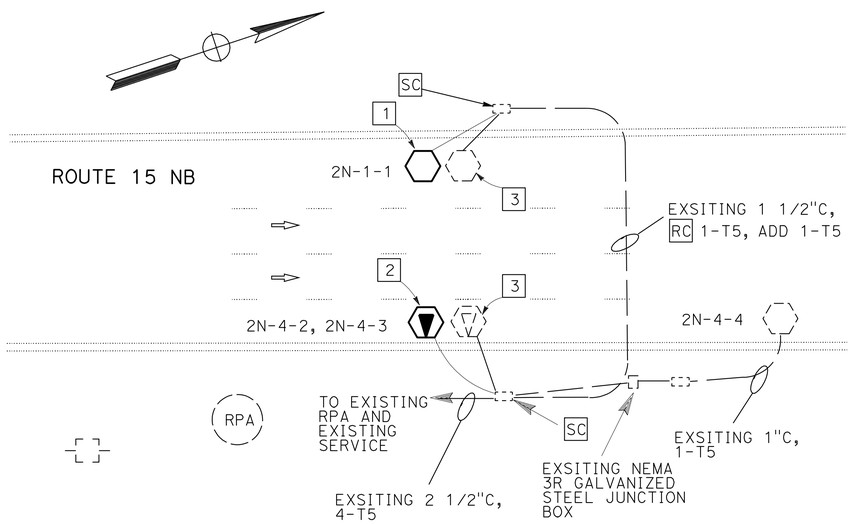
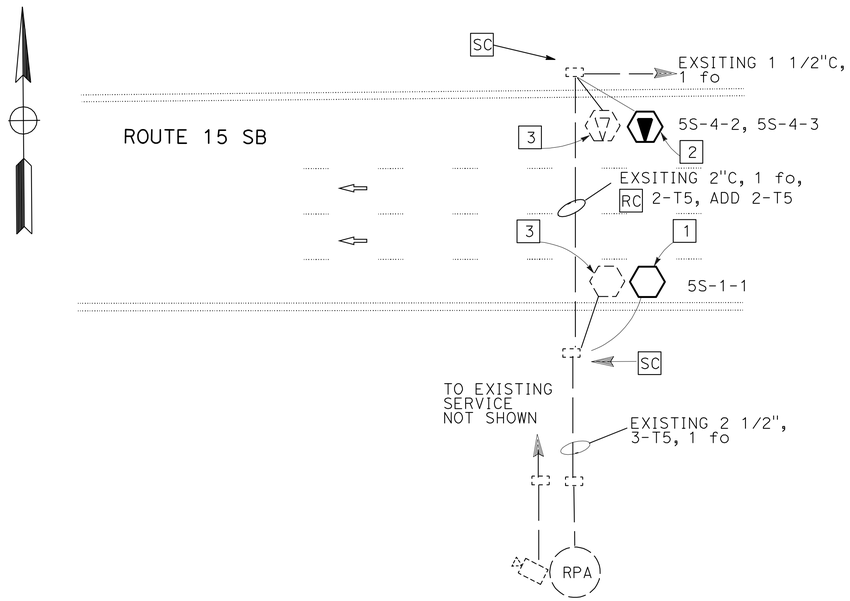


LOCATION 1
SBd-15, PM 13.0



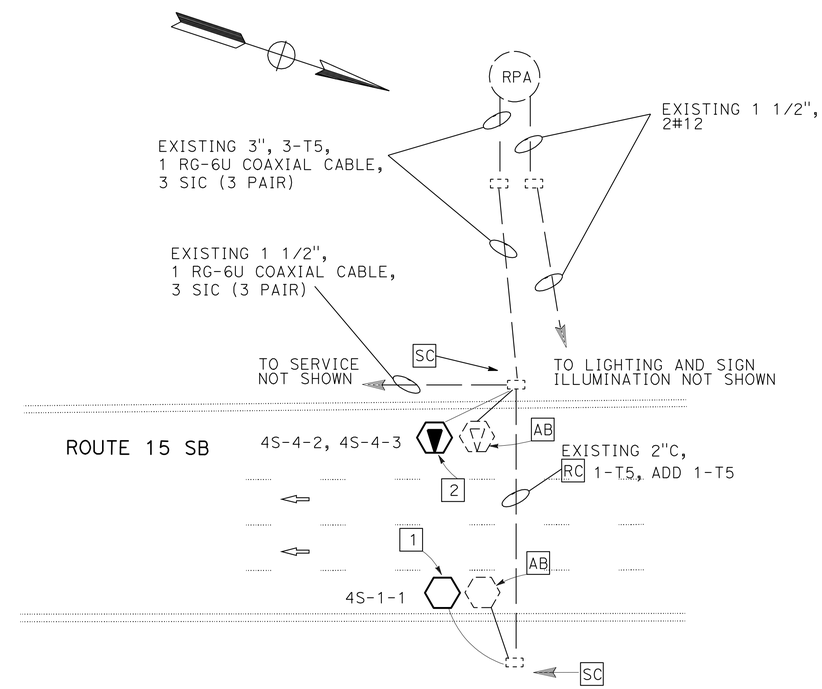
LOCATION 2
SBd-15, PM 25.0

PROJECT NOTES (SHEET E-4 AND E-5 ONLY)

1. INSTALL ROADWAY SURFACE SENSOR. SEE SHEET E-5 FOR INSTALLATION DETAILS 1 to 6.
2. INSTALL ROADWAY SURFACE SENSOR AND SUBSURFACE TEMPERATURE PROBE. SEE SHEET E-5 FOR INSTALLATION DETAILS 1 to 7.
3. AB EXISTING ROADWAY SURFACE AND SUBSURFACE SENSORS AS NOTED.

GENERAL NOTES (SHEET E-4 AND E-5)

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 5 WORKING DAYS PRIOR TO ANY CONSTRUCTION WORK IS TO BE DONE IN THE AREA THAT WILL AFFECT THE OPERATION OF THE SENSORS.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 5 WORKING DAYS PRIOR TO INSTALLING NEW SENSORS.



LOCATION 3
SBd-15, PM 21.7

MODIFY RWIS (ROAD WEATHER INFORMATION SYSTEM)

NO SCALE

E-4

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN B

FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ
CALCULATED-DESIGNED BY: SANDY TUNG
CHECKED BY: FERDINAND DE LA CRUZ
REVISED BY
DATE REVISED

LAST REVISION 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2, 12.8/29.8	11	21

REGISTERED ELECTRICAL ENGINEER 11-16-11 DATE

PLANS APPROVAL DATE 11-21-11

REGISTERED PROFESSIONAL ENGINEER FERDINAND DE LA CRUZ No. E17215 Exp. 6-30-12 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.

GENERAL NOTES:

1. ALL ROAD SENSORS SHALL BE INSTALLED WITH A MINIMUM OF 150 FEET OF T2 CABLE ATTACHED.
2. THE T2 SENSOR CABLE SHALL BE SPLICED TO THE T5 CABLE IN THE NEAREST PULL BOX AS SHOWN ON THE PLANS. 10 FEET OF T2 CABLE SLACK SHALL BE COILED IN THE PULL BOX.

ABBREVIATIONS:

RPA	REMOTE PROCESSING ASSEMBLY
T2	RWIS PAVEMENT SENSOR CABLE (TYPE II A)
T5	RWIS PAVEMENT SENSOR EXTENSION CABLE (TYPE V)

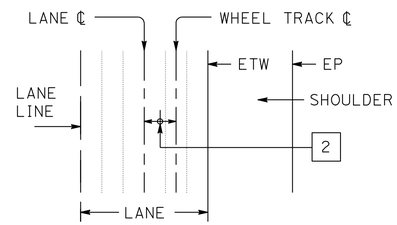
LEGEND:

- NEW PAVEMENT SURFACE SENSOR
- NEW PAVEMENT SURFACE SENSOR WITH NEW PAVEMENT SUBSURFACE PROBE BELOW PAVEMENT SURFACE SENSOR
- EXISTING PAVEMENT SURFACE SENSOR
- EXISTING PAVEMENT SURFACE SENSOR WITH EXISTING PAVEMENT SUBSURFACE PROBE BELOW PAVEMENT SURFACE SENSOR
- RPA EXISTING REMOTE PROCESSING ASSEMBLY

PAVEMENT SENSOR IDENTIFICATION

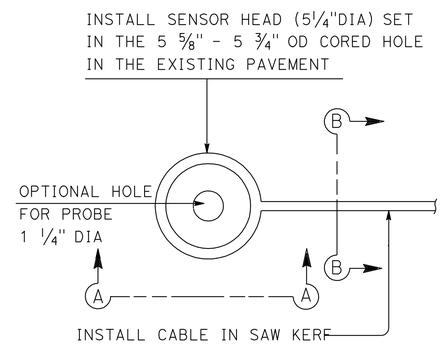
2N-4-2

- LOCATION DESIGNATION
- FREEWAY DETECTOR DESIGNATION: N - NORTHBOUND LANES (NB) S - SOUTHBOUND LANES (SB)
- NUMBER OF SENSOR
- NUMBER OF LANE FROM LEFT WITH RESPECT TO DIRECTION OF TRAFFIC: 1 = FIRST LANE FROM LEFT 4 = FOURTH LANE FROM LEFT

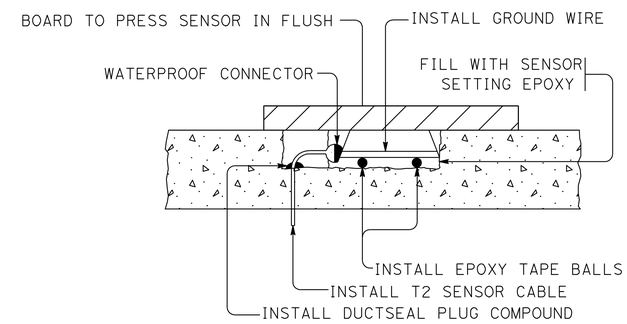


DETAIL 1: TYPICAL SENSOR

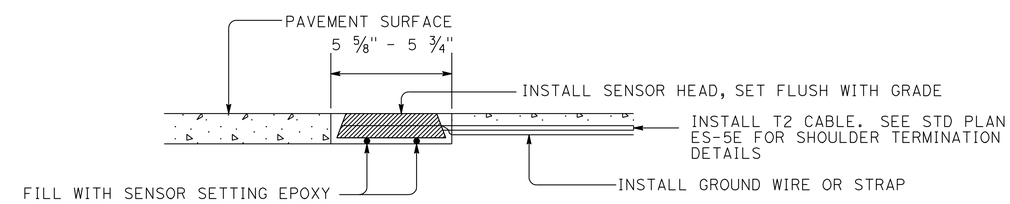
IN LANE PLACEMENT



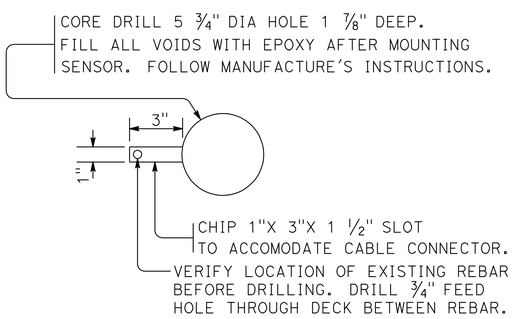
DETAIL 2: SENSOR HEAD



DETAIL 6: SENSOR INSTALLATION

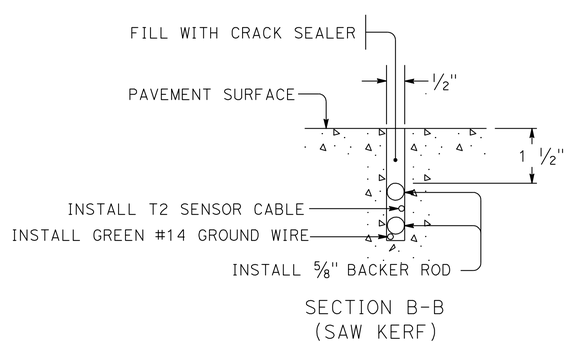


DETAIL 4: SECTION A-A



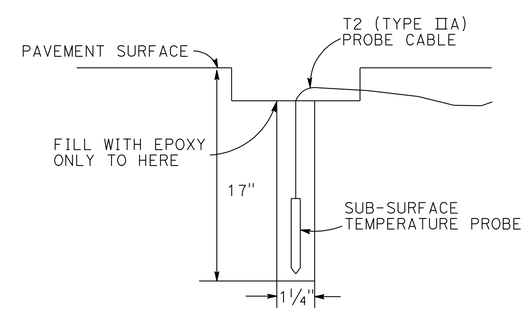
DETAIL 3: CORE DRILLED CAVITY

TOP VIEW



DETAIL 5: SENSOR INSTALLATION

IN ROADWAY PAVING



DETAIL 7: POSITIONING AND SEALING

THE SUB-SURFACE TEMPERATURE PROBE

INSTALLATION OF SURFACE SENSOR AND SUBSURFACE TEMPERATURE SENSOR (DETAIL)

NO SCALE

E-5

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN B

FUNCTIONAL SUPERVISOR: FERDINAND DE LA CRUZ
CALCULATED-DESIGNED BY: SANDY TUNG
CHECKED BY: FERDINAND DE LA CRUZ
REVISED BY
DATE REVISED

LAST REVISION 11-16-11
DATE PLOTTED => 17-NOV-2011
TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	10, 15	0.0/9.2 12.8/29.8	12	21

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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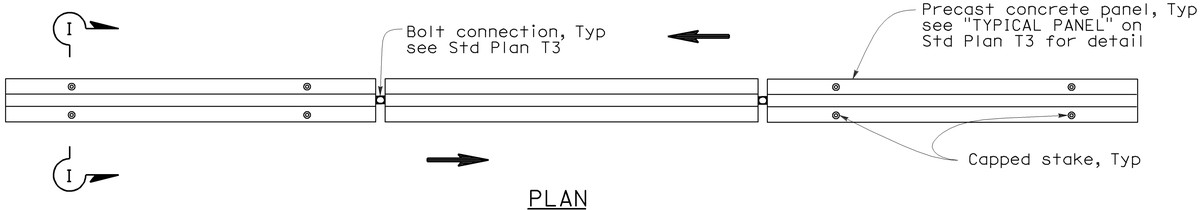
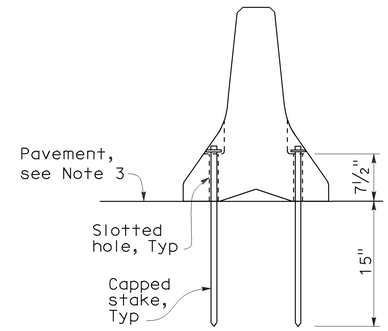
To accompany plans dated 11-21-11



PLAN

RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC

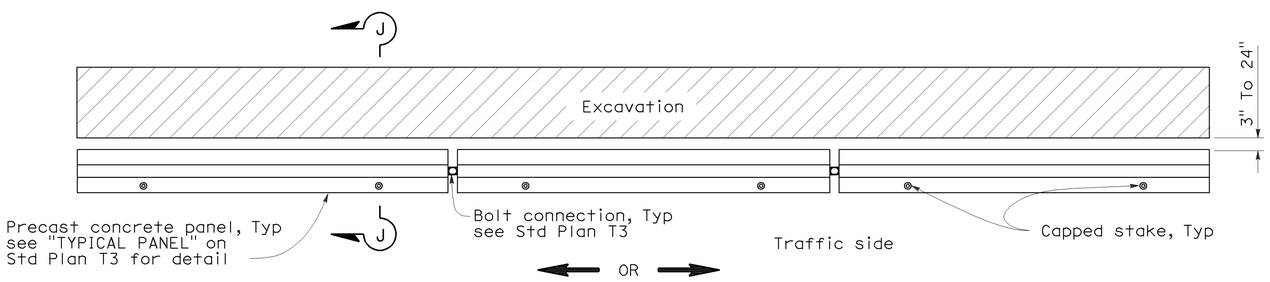
See Note 1



SECTION I-I

NOTES:

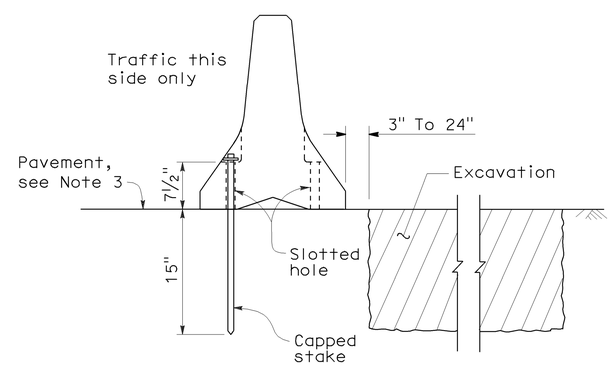
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of 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 ⟹.



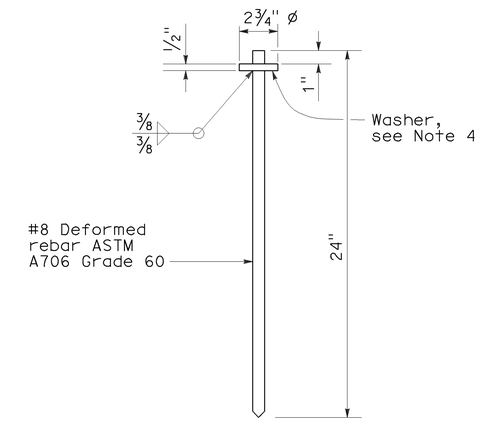
PLAN

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
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	13	21

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

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To accompany plans dated 11-21-11

2006 REVISED STANDARD PLAN RSP ES-1A

ELECTROLIERS

STANDARD TYPES
15, 15D
15 STRUCTURE
21, 21D STRUCTURE
30
31
32
35
36-20A

High mast light pole

Double Arm lighting standard

Existing electrolier

Electrolier foundation (Future installation)

NOTES:

1. Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified.
2. Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
3. Variations noted adjacent to symbol on project plans.

Electrolier (see project notes or project plans)

Luminaire on wood pole

STANDARD NOTES:

- 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 wire or rope.
- 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.
- SF — Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP — Telephone service point.

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

PROPOSED	EXISTING	
BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

SOFFIT AND WALL MOUNTED LUMINAIRES

Pendant, 70 W HPS unless otherwise specified.

Flush, 70 W HPS unless otherwise specified.

Wall surface, 70 W HPS unless otherwise specified.

Existing soffit or wall luminaire to remain unmodified.

Existing soffit or wall luminaire to be modified as specified.

NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	14	21

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

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To accompany plans dated 11-21-11

CONDUIT

PROPOSED	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 (RSP ES-9A C)
R	r	Conduit riser in/on structure or service pole

SERVICE EQUIPMENT

PROPOSED	EXISTING	
OH	oh	Overhead lines
U	U	Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
III		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
T	t	Telephone demarcation cabinet

POLE-MOUNTED SERVICE DESIGNATION

Type of installation

TYPE H SERVICE - 28'-10" ← Pole height above grade

ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
PV	PV	Modifications of basic symbols: "L" Indicates all non-arrow sections louvered "LG" Indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
R	Y	Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

NOTES:

1. All signal sections shall be 12" unless shown otherwise.
2. Signal heads shall be provided with backplates unless shown otherwise.
3. Signal indication shall be LED.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

2006 REVISED STANDARD PLAN RSP ES-1B

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	15	21

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

To accompany plans dated 11-21-11

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
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	16	21

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

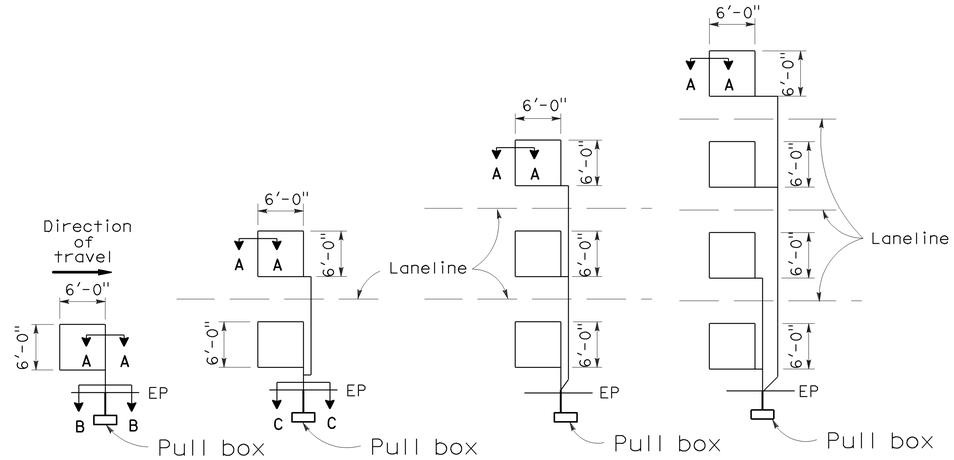
REGISTERED PROFESSIONAL ENGINEER Jeffery G. McRae No. E14512 Exp. 6-30-08 ELECTRICAL STATE OF CALIFORNIA

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 11-21-11

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.

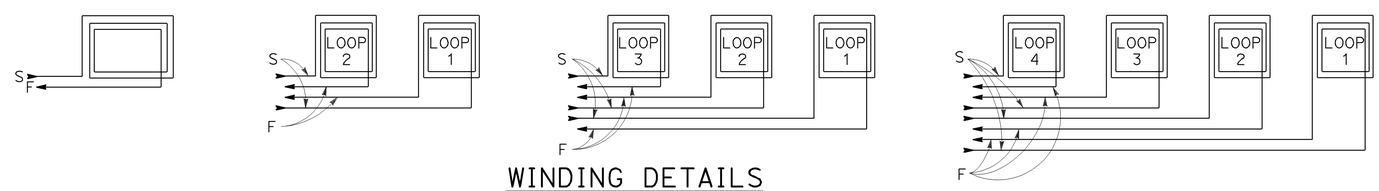


TYPE 1A INSTALLATION | TYPE 2A INSTALLATION | TYPE 3A INSTALLATION | TYPE 4A INSTALLATION

SAWCUT DETAILS

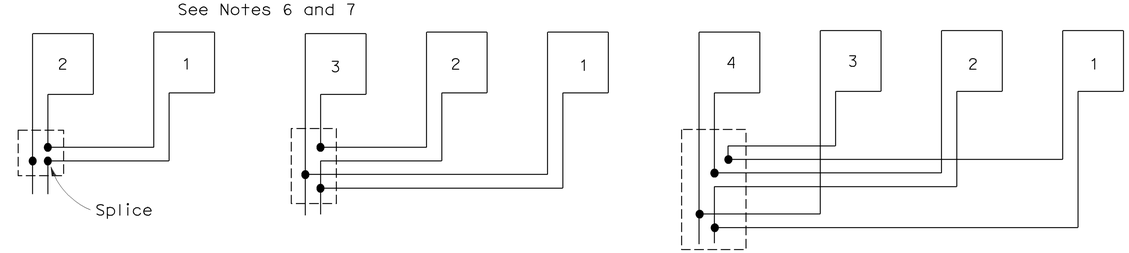
(Type A loop detector configurations illustrated)

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)



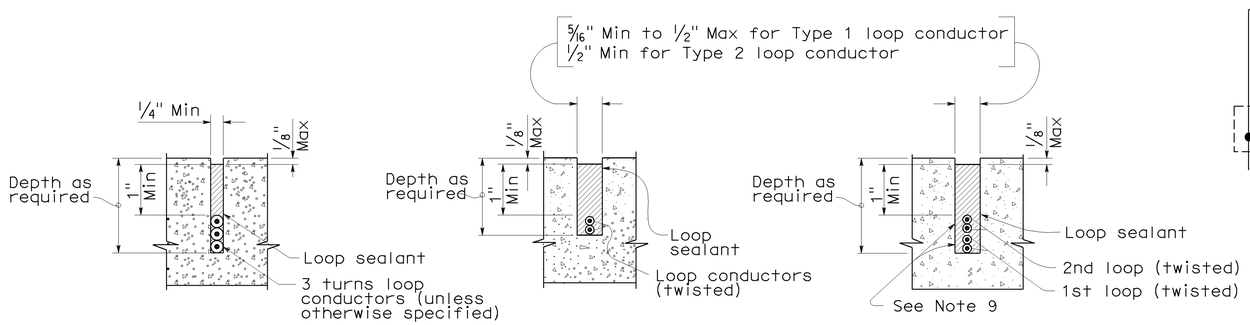
WINDING DETAILS

See Notes 6 and 7



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



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

SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

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

2006 REVISED STANDARD PLAN RSP ES-5A

8-17-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	17	21

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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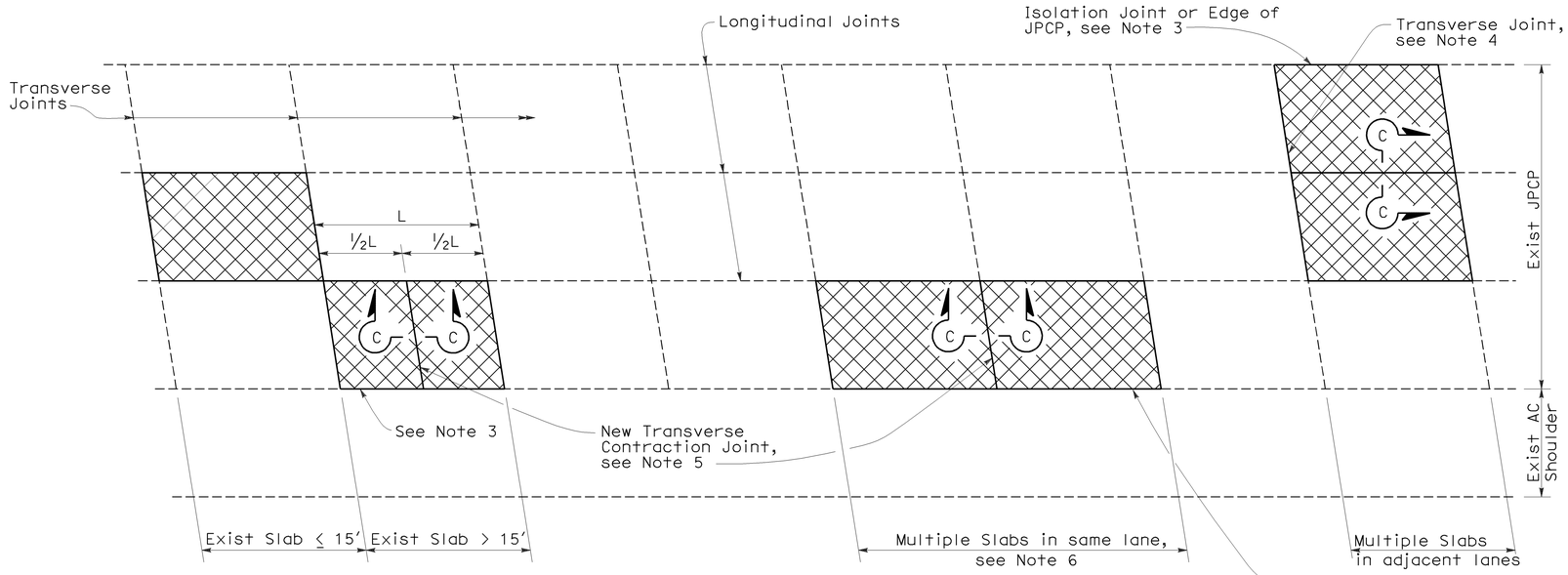
To accompany plans dated 11-21-11



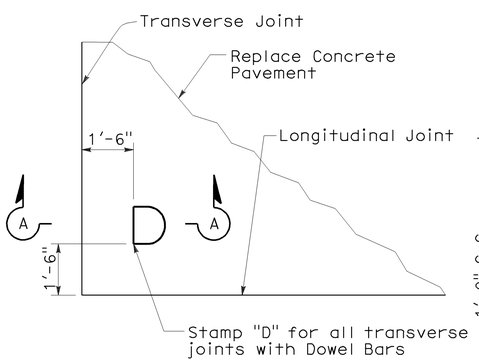
PLAN

NOTES:

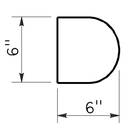
1. For details not shown, see Revised Standard Plan RSP P10.
2. Where the existing outer shoulder pavement is asphalt concrete pavement, the "a" dimension shall be 1′-0" and the "b" dimension shall be 2′-0".
3. Side forms shall be used where edge of pavement is adjacent to asphalt concrete.
4. For detail, 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′.

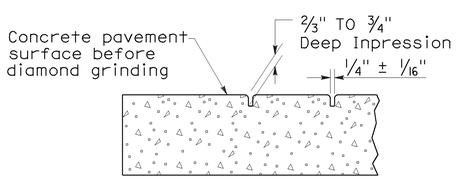
LEGEND

Replace Concrete Pavement (See Slab Layout Detail)

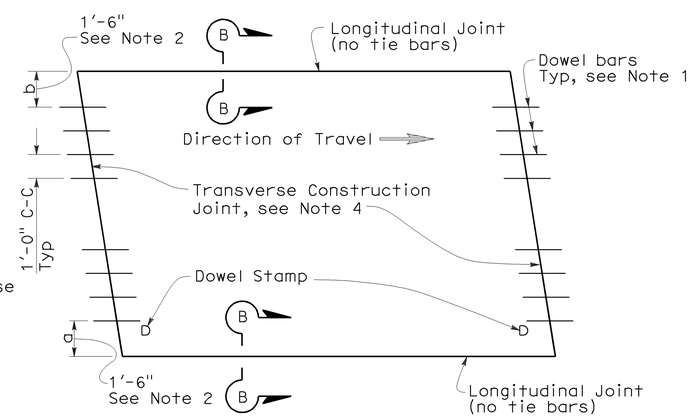


DOWEL STAMP DETAIL

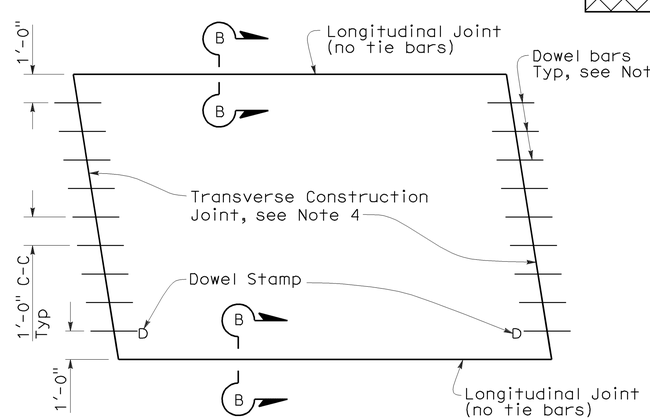




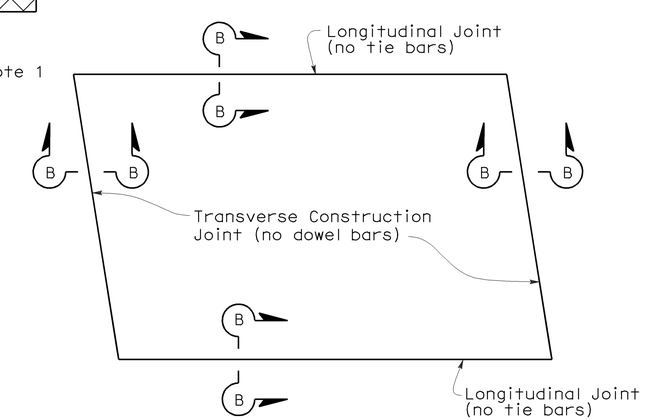
SECTION A-A



TYPE I
(traffic lane lines match longitudinal joints)

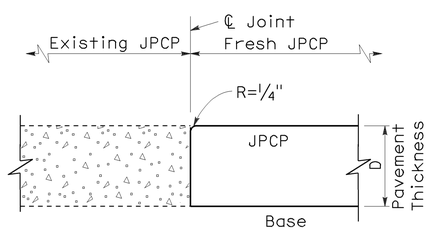


TYPE II
(traffic lane lines do not match longitudinal joints)

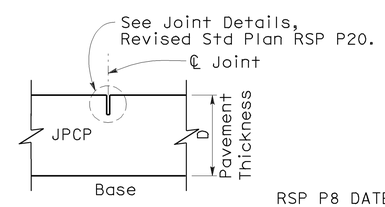


TYPE III
(for short term repairs < 5 yrs design life or for slab replacements with a cracking and seating operation)

SLAB LAYOUT



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
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	18	21

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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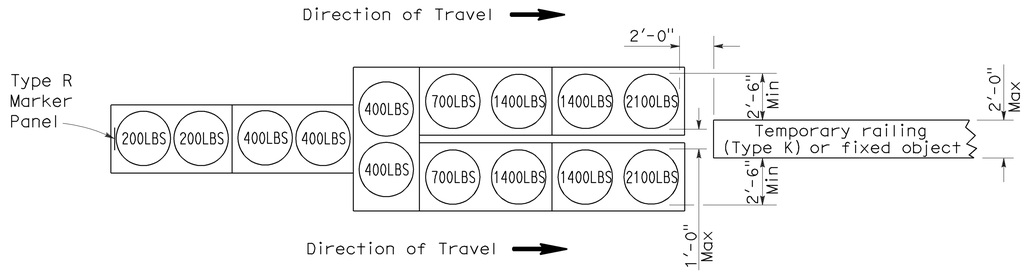
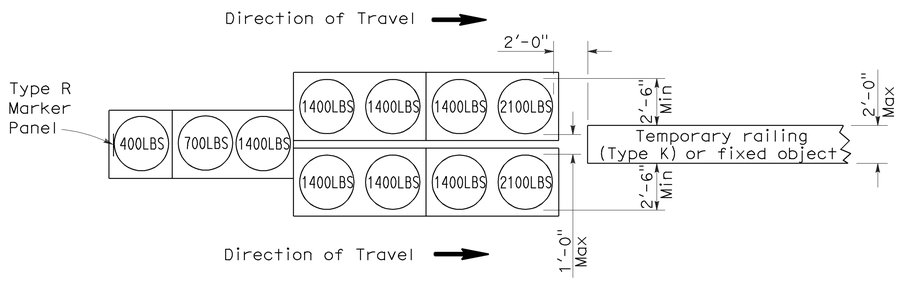
To accompany plans dated 11-21-11



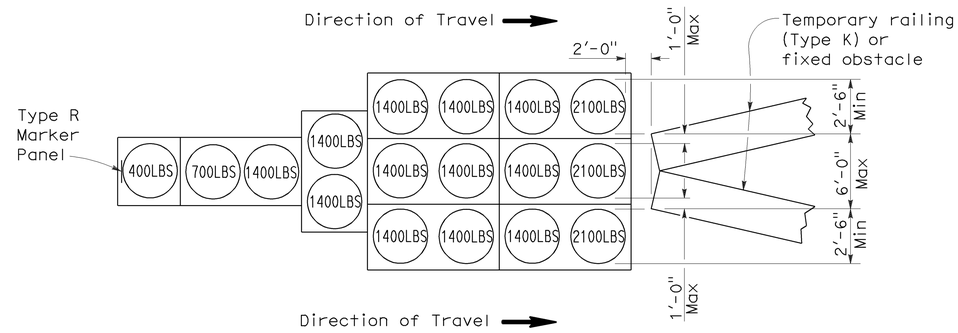
ARRAY 'TU14'

Approach speed 45 mph or more



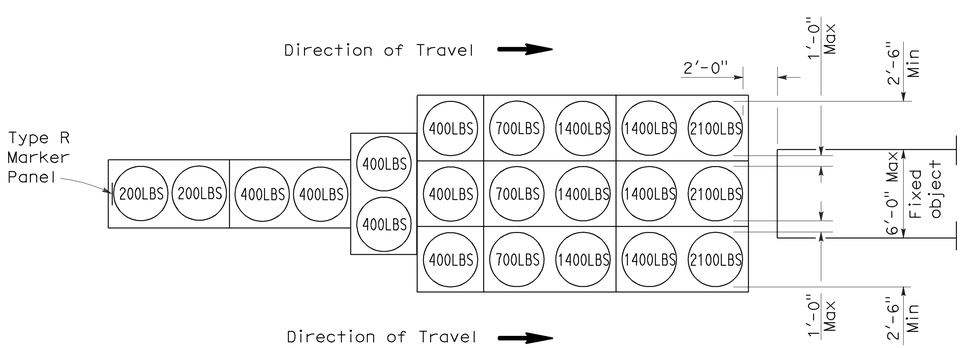
ARRAY 'TU11'

Approach speed less than 45 mph



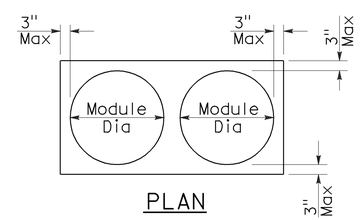
ARRAY 'TU17'

Approach speed less than 45 mph

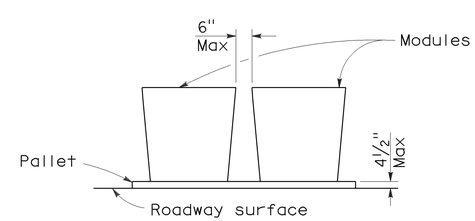


ARRAY 'TU21'

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
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	19	21

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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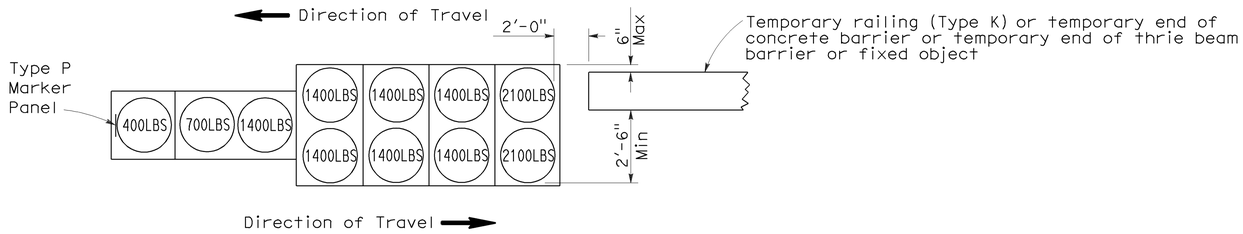
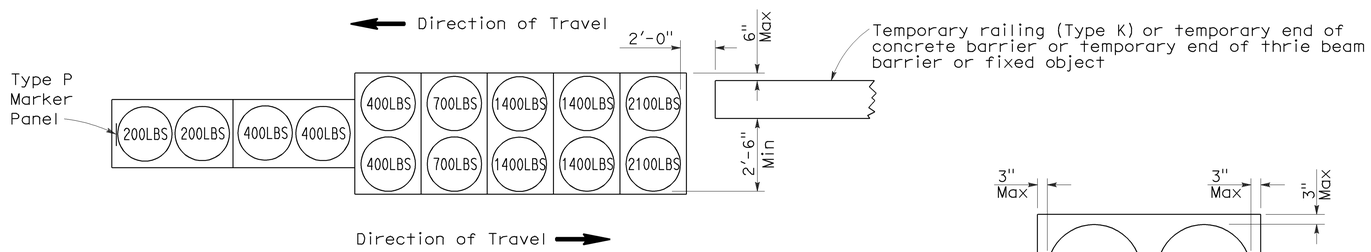
To accompany plans dated 11-21-11



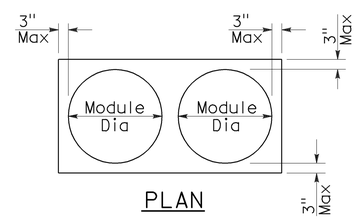
ARRAY 'TB11'

Approach speed less than 45 mph

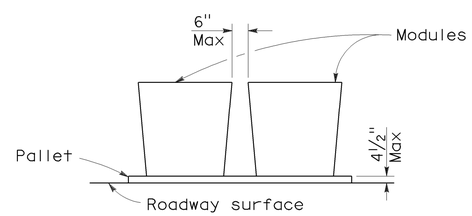


ARRAY 'TB14'

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
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	20	21

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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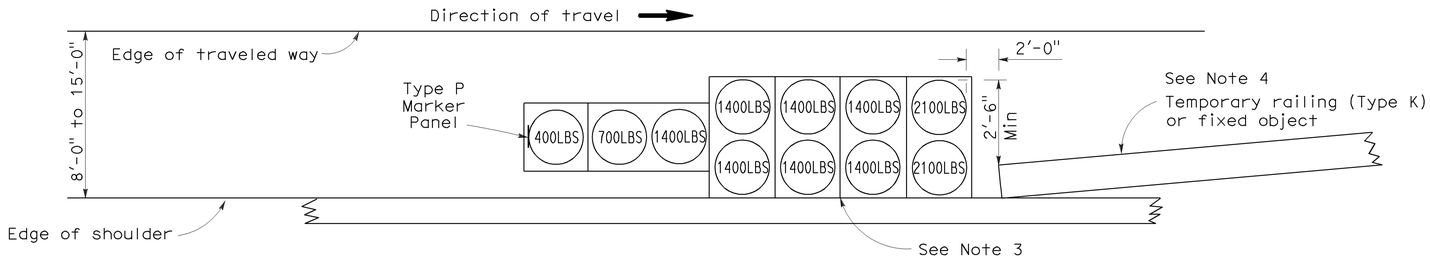
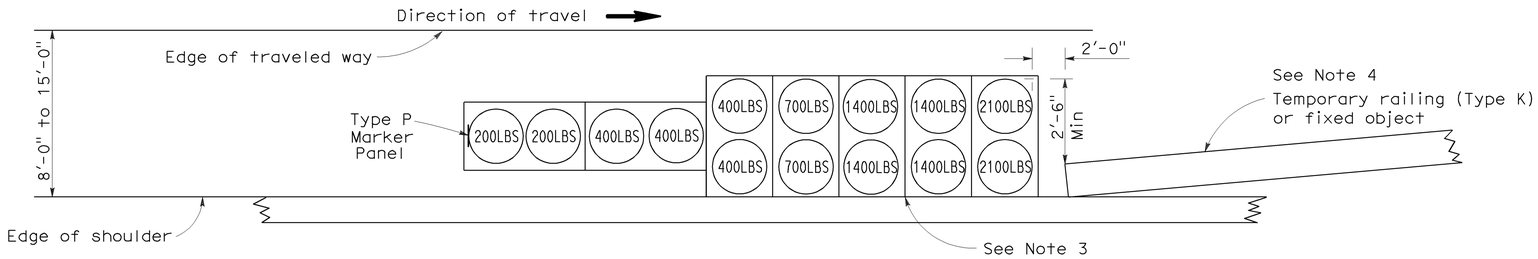
To accompany plans dated 11-21-11



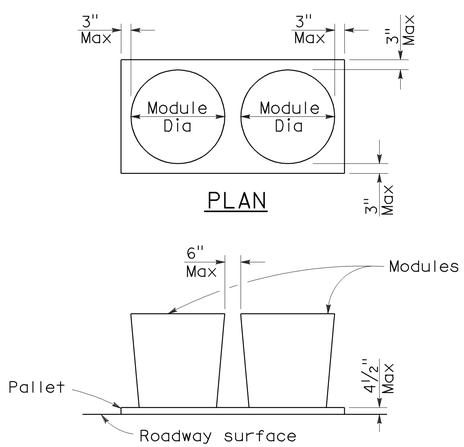
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9



ARRAY 'TS14'

Approach speed 45 mph or more
See Note 9



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
08	Sbd	10, 15	0.0/9.2, 12.8/29.8	21	21

REGISTERED CIVIL ENGINEER

November 17, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Greg W. Edwards — No. C36386 — Exp. 6-30-08 — CIVIL — STATE OF CALIFORNIA

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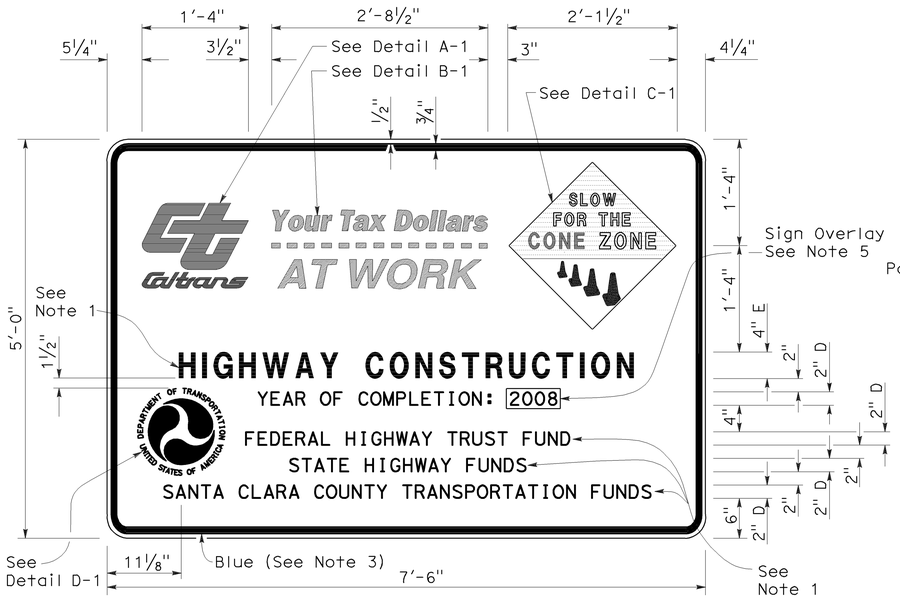
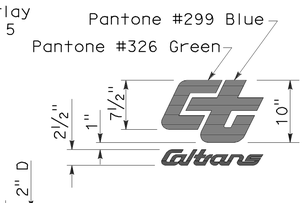
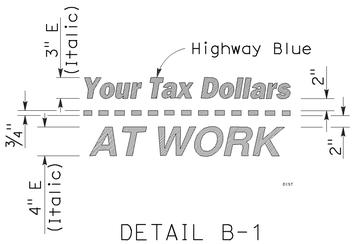
To accompany plans dated 11-21-11



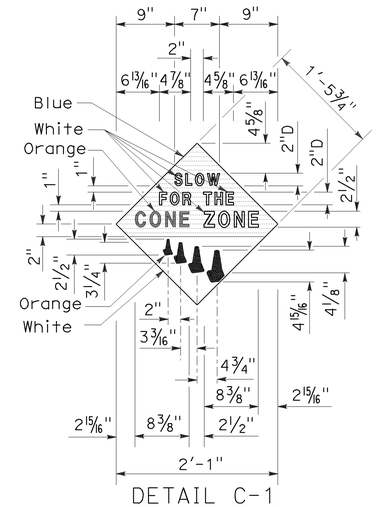
TYPE 1



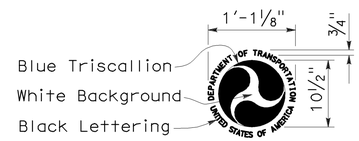
DETAIL A-1



DETAIL B-1
(See Note 3)



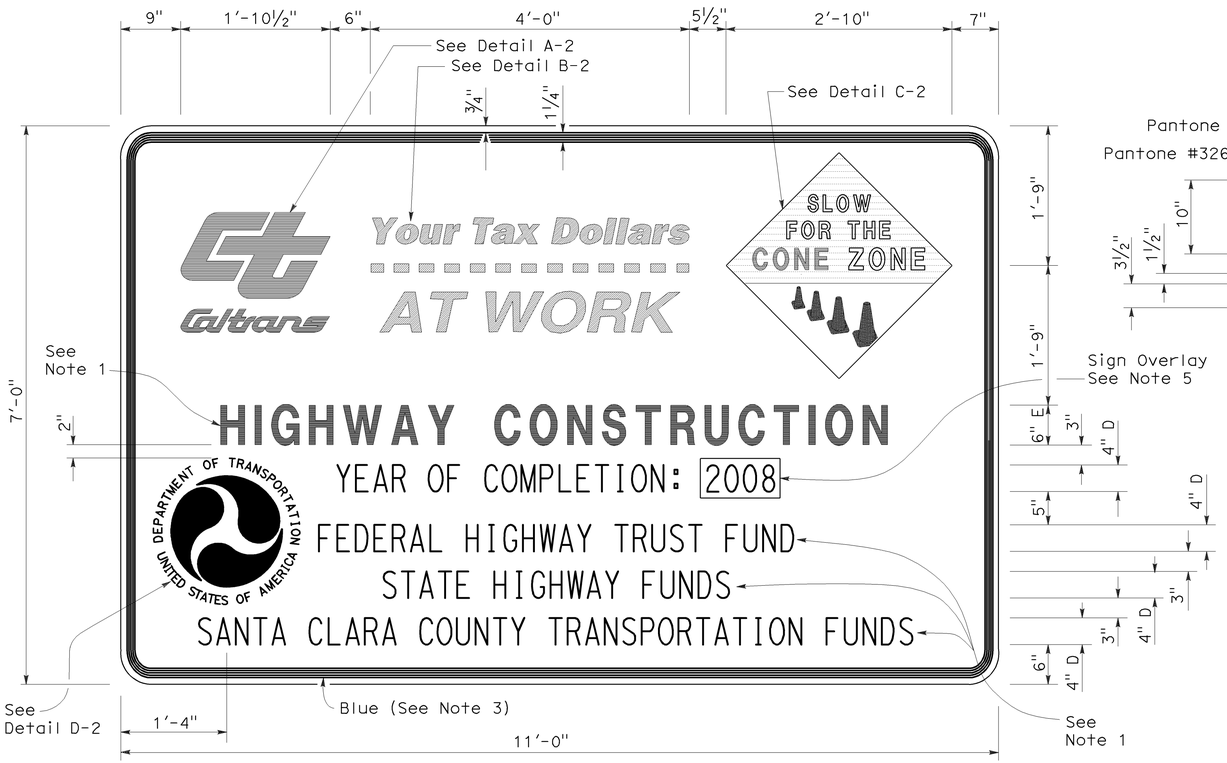
DETAIL C-1
(See Note 4)



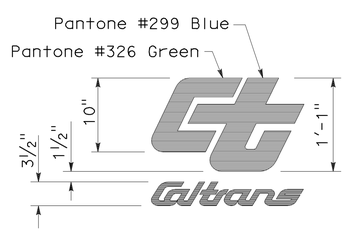
DETAIL D-1
(See Note 6)

NOTES:

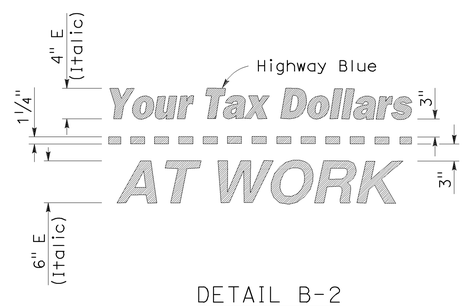
1. The sign messages shown for type of project and fund types are examples only. See the Special Provisions for the applicable type of project and fund type messages to be used.
2. Except as otherwise shown, the legend of sign shall be black on a white background (non-reflective).
3. The border of the signs and details "B-1" and "B-2" shall be blue (non-reflective).
4. The diamond in details "C-1" and "C-2" shall be blue for the background of message, " SLOW FOR THE CONE ZONE", and white background for the orange cones. The color and type of font for the "SLOW FOR THE CONE ZONE" message shall be: "SLOW" white D; "FOR THE" white D; "CONE" orange Arial font; "ZONE" white Arial font.
5. Year of completion of project construction shown on the overlay is an example only. See the Special Provisions.
6. Use when the Project involves Federal Highway Trust Fund.



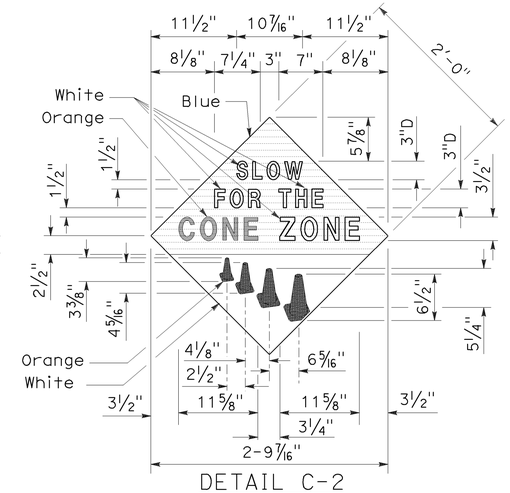
TYPE 2



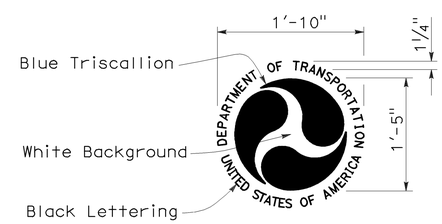
DETAIL A-2



DETAIL B-2
(See Note 3)



DETAIL C-2
(See Note 4)



DETAIL D-2
(See Note 6)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PROJECT FUNDING IDENTIFICATION SIGNS

NO SCALE

RSP T7 DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN T7
DATED MAY 1, 2006 - PAGE 217 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T7

2006 REVISED STANDARD PLAN RSP T7

9-7-06