ACIM-210-1(803)E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	1	34

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

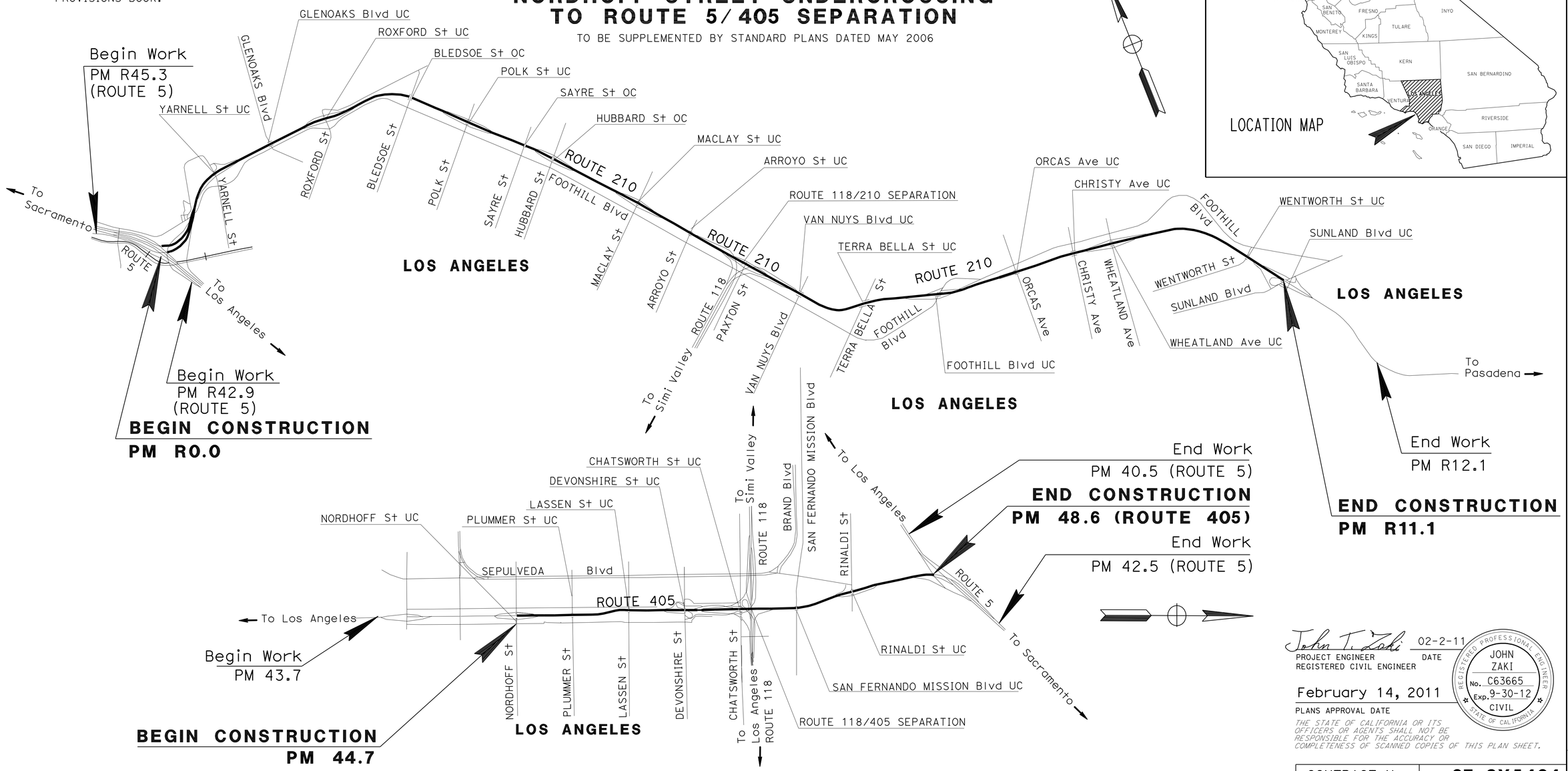
IN LOS ANGELES COUNTY IN LOS ANGELES ON ROUTE 210 FROM ROUTE 5/210 SEPARATION TO SUNLAND BOULEVARD UNDERCROSSING AND ON ROUTE 405 FROM NORDHOFF STREET UNDERCROSSING TO ROUTE 5/405 SEPARATION

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

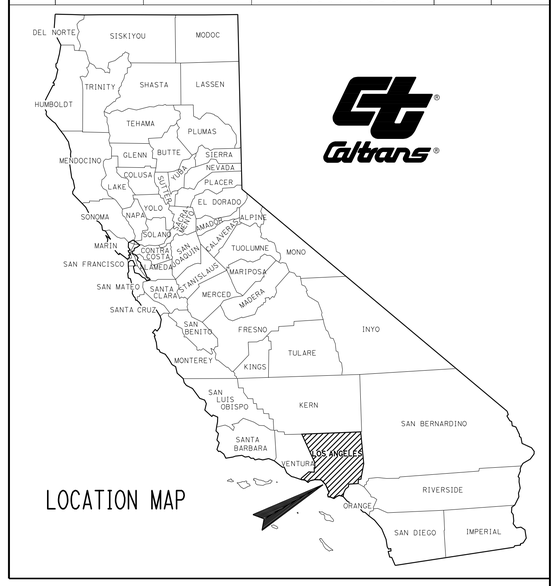
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4	PROJECT CONTROL AND MONUMENTATION
5	CONSTRUCTION DETAILS
6	CONSTRUCTION AREA SIGNS
7-15	TRAFFIC HANDLING DETAILS
16	PAVEMENT DELINEATION QUANTITIES
17	SUMMARY OF QUANTITIES
18-22	ELECTRICAL PLANS
23-34	NEW AND REVISED STANDARD PLANS

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



NO SCALE



LOCATION MAP

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

PROJECT MANAGER GARY KEVORKIAN

DESIGN ENGINEER DEBORAH WONG

John T. Zaki 02-2-11
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER JOHN ZAKI No. C63665 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

February 14, 2011
PLANS APPROVAL DATE

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

DATE PLOTTED => 17-FEB-2011
TIME PLOTTED => 15:44

CONTRACT No.	07-3Y5404
PROJECT ID	0700000751

LAST REVISION 02-14-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	2	34

John T. Zaki 02-2-11
REGISTERED CIVIL ENGINEER DATE

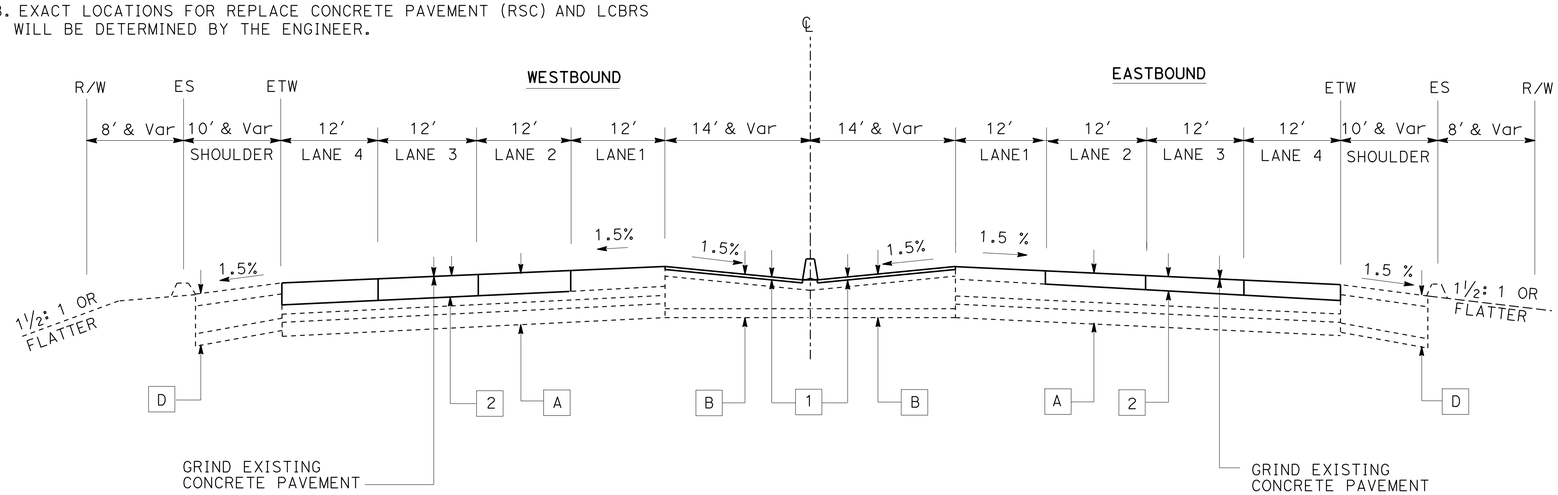
02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER JOHN ZAKI No. C63665 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

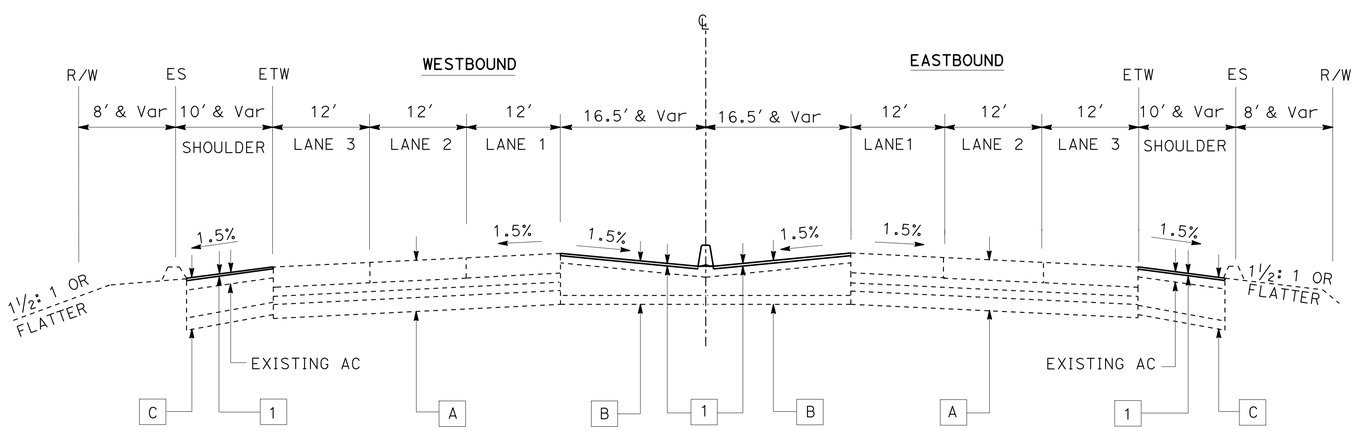
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
4. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
5. EXISTING DRAINAGE INLETS HAVE NOT BEEN PLOTTED ON THESE PLANS.
6. DO NOT GRIND BRIDGES.
7. SEE SUMMARY OF QUANTITIES SHEET FOR LOCATIONS AND QUANTITIES OF GRIND EXISTING CONCRETE PAVEMENT.
8. EXACT LOCATIONS FOR REPLACE CONCRETE PAVEMENT (RSC) AND LCBRS WILL BE DETERMINED BY THE ENGINEER.



PM R6.00 TO PM R11.10



ROUTE 210

PM R0.00 TO PM R6.10

EXISTING STRUCTURAL SECTIONS

A
- 0.67' PORTLAND CEMENT CONCRETE
- 0.35' CLASS B CEMENT TREATED BASE
- 0.33' CEMENT TREATED BASE
- 0.65' CLASS 4 AGGREGATE SUBBASE

B
- 0.20' ASPHALT CONCRETE (TYPE B)
- 1.15' & Var CEMENT TREATED BASE
- 0.65' CLASS 4 AGGREGATE SUBBASE

C
- 0.35' ASPHALT CONCRETE (TYPE B)
- 1.00' & Var CEMENT TREATED BASE
- 0.65' CLASS 4 AGGREGATE SUBBASE

D
- 0.10' ASPHALT CONCRETE (TYPE G)
- 0.25' ASPHALT CONCRETE (TYPE B)
- 1.00' & Var CEMENT TREATED BASE
- 0.65' CLASS 4 AGGREGATE SUBBASE

E
- 0.75' PORTLAND CEMENT CONCRETE
- 0.45' CLASS A CEMENT TREATED BASE
- 0.30' CLASS 3 AGGREGATE BASE
- 0.50' CLASS 4 AGGREGATE SUBBASE

F
- 0.30' ASPHALT CONCRETE (TYPE B)
- 0.60' CLASS 2 AGGREGATE BASE
- 1.16' & Var CLASS 4 AGGREGATE SUBBASE

G
- 0.30' ASPHALT CONCRETE (TYPE B) WITH ASPHALT BLANKET
- 0.60' CLASS 2 AGGREGATE BASE
- 1.16' & Var CLASS 4 AGGREGATE SUBBASE

PROPOSED STRUCTURAL SECTIONS

1
- 0.10' COLD PLANE ASPHALT CONCRETE PAVEMENT
- TACK COAT
- 0.10' RUBBERIZED HOT MIX ASPHALT (GAP GRADED)

2
- 0.65' REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)

3
- 0.75' REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)

TYPICAL CROSS SECTIONS

NO SCALE

X-1

REVISED BY | DATE REVISED
JOHN ZAKI | DEBORAH WONG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DEBORAH WONG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:44

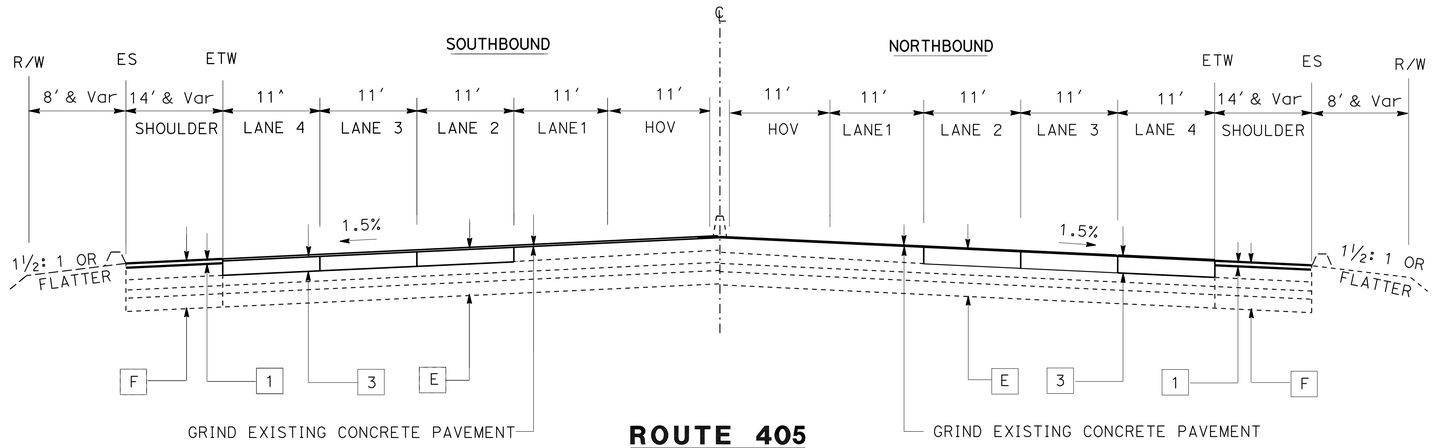
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	3	34

John T. Zaki 02-2-11
REGISTERED CIVIL ENGINEER DATE

02-14-11
PLANS APPROVAL DATE

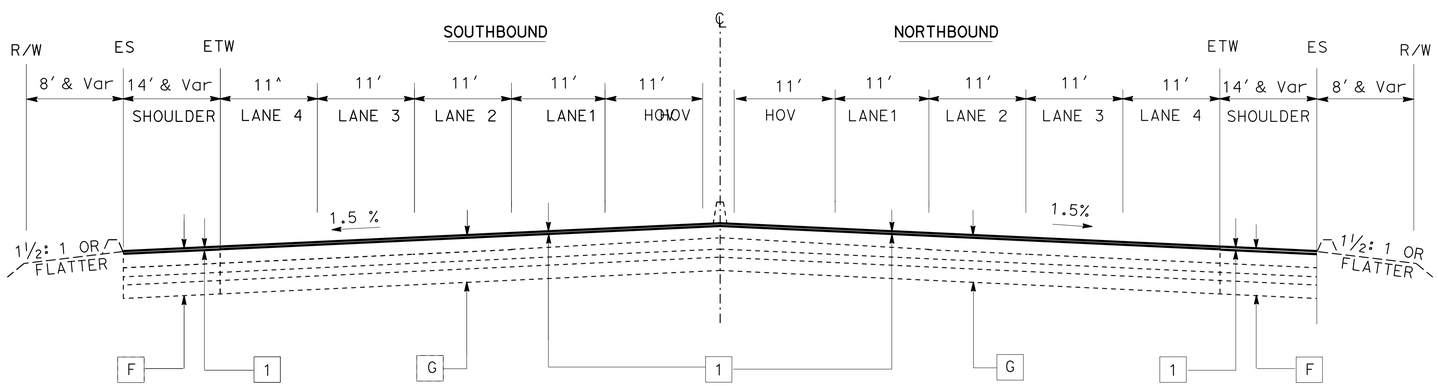
REGISTERED PROFESSIONAL ENGINEER
JOHN ZAKI
No. C63665
Exp. 9-30-12
CIVIL
STATE OF CALIFORNIA

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.



ROUTE 405

PM 44.70 TO PM 48.60



NORTHBOUND
PM 44.97 TO PM 45.07
PM 46.72 TO PM 46.95
PM 47.20 TO PM 47.95

SOUTHBOUND
PM 48.17 TO PM 47.79
PM 47.35 TO PM 47.16
PM 46.95 TO PM 46.68
PM 45.74 TO PM 45.68

ROUTE 405

TYPICAL CROSS SECTIONS

NO SCALE

X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: DEBORAH WONG
CALCULATED-DESIGNED BY: JOHN ZAKI
CHECKED BY: DEBORAH WONG
REVISED BY
DATE REVISED

LAST REVISION 02-14-11
DATE PLOTTED => 17-FEB-2011
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	4	34

John T. Zaki 02-2-11
REGISTERED CIVIL ENGINEER DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER JOHN ZAKI No. C63665 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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SURVEY MONUMENTATION (N)

NAME	LATITUDE	LONGITUDE	DESCRIPTION	POST MILE	LOCATION
Rte 405 MONUMENTATION					
6736	34° 13′ 29" N	118° 28′ 24" W	2¼" Br DISK	44.00	Rte 405 PM 44.0 S/B SHOULDER
6737	34° 13′ 49" N	118° 28′ 24" W	2¼" Br DISK	44.40	Rte 405 PM 44.4 S/B SHOULDER
6738	34° 14′ 07" N	118° 28′ 24" W	2¼" Br DISK	44.70	Rte 405 PM 44.7 SOUTHERLY END Br RAIL
6739	34° 14′ 26" N	118° 28′ 24" W	2¼" Br DISK	45.10	Rte 405 PM 45.1 S/B SHOULDER
6740	34° 14′ 43" N	118° 28′ 23" W	2¼" Br DISK	45.40	Rte 405 PM 45.4 PAST S/B ONRAMP SHOULDER
6741	34° 15′ 01" N	118° 28′ 19" W	2¼" Br DISK	45.80	Rte 405 PM 45.8 N/B DROP INLET
6742	34° 15′ 20" N	118° 28′ 21" W	2¼" Br DISK	46.10	Rte 405 PM 46.1 S/B DROP INLET
6743	34° 15′ 39" N	118° 28′ 21" W	2¼" Br DISK	46.40	Rte 405 PM 46.4 S/B DROP INLET
6744	34° 16′ 01" N	118 28′ 21" W	2¼" Br DISK	46.80	Rte 405 PM 46.8 S/B DROP INLET
6745	34° 16 18" N	118° 28 ′20" W	2¼" Br DISK	47.20	Rte 405 PM 47.2 S/B Conc PAD
6746	34° 16′ 33" N	118° 28′ 16" W	2¼" Br DISK	47.50	Rte 405 PM 47.5 S/B SHOULDER
6749	34° 17′ 31" N	118° 28′ 07" W	2¼" Br DISK	41.60	Rte 405 PM 41.6 S/B " V " DITCH
6750	34° 17′ 46" N	118° 28′ 23" W	2¼" Br DISK	42.10	Rte 405 PM 42.1 S/B DROP INLET
Rte 210 EAST BOUND MONUMENTATION					
Sta 115+64.78 BC	34° 19′ 15" N	118° 28′ 59" W	2¼" Br DISK	0.57	Rte 210 EAST BOUND SHOULDER
Sta 121+00.00 POC	34° 19′ 18" N	118° 28′ 54" W	2¼" Br DISK	0.67	Rte 210 EAST BOUND SHOULDER
Sta 124+54.02 POC	34° 19′ 20" N	118° 28′ 51" W	2¼" Br DISK	0.74	Rte 210 EAST BOUND SHOULDER
Sta 132+75.20 EC	34° 19′ 22" N	118° 28′ 42" W	2¼" Br DISK	0.89	Rte 210 EAST BOUND SHOULDER
Sta 145+04.41 POT	34° 19′ 23" N	118° 28′ 27" W	2¼" Br DISK	1.12	Rte 210 EAST BOUND SHOULDER
Sta 160+33.39 POT	34° 19′ 24" N	118° 28′ 09" W	2¼" Br DISK	1.41	Rte 210 EAST BOUND SHOULDER
Sta 169+73.72 POT	34° 19′ 25" N	118° 27′ 58" W	2¼" Br DISK	1.59	Rte 210 EAST BOUND SHOULDER
Sta 179+32.60 BC	34° 19′ 25" N	118° 27′ 47" W	2¼" Br DISK	1.77	Rte 210 EAST BOUND SHOULDER
Sta 182+69.53 MPC	34° 19′ 25" N	118° 27′ 43" W	2¼" Br DISK	1.84	Rte 210 EAST BOUND SHOULDER
Sta 186+06.45 EC	34° 19′ 25" N	118° 27′ 39" W	2¼" Br DISK	1.90	Rte 210 EAST BOUND SHOULDER
Sta 189+27.15 BC	34° 19′ 24" N	118° 27′ 35" W	2¼" Br DISK	1.96	Rte 210 EAST BOUND SHOULDER
Sta 191+62.85 MPC	34° 19′ 24" N	118° 27′ 32" W	2¼" Br DISK	2.01	Rte 210 EAST BOUND SHOULDER
Sta 193+89.55 PCC	34° 19′ 24" N	118° 27′ 29" W	2¼" Br DISK	2.05	Rte 210 EAST BOUND SHOULDER
Sta 195+98.22 EC	34° 19′ 24" N	118° 27′ 27" W	2¼" Br DISK	2.09	Rte 210 EAST BOUND SHOULDER
Sta 207+78.27 BC	34° 19′ 25" N	118° 27′ 13" W	2¼" Br DISK	2.31	Rte 210 EAST BOUND SHOULDER
Sta 213+96.00¼D	34° 19′ 24" N	118° 27′ 06" W	2¼" Br DISK	2.43	Rte 210 EAST BOUND SHOULDER
Sta 220+15.57 MPC	34° 19′ 23" N	118° 26′ 58" W	2¼" Br DISK	2.55	Rte 210 EAST BOUND SHOULDER
Sta 226+34.25¾D	34° 19′ 52" N	118° 26′ 52" W	2¼" Br DISK	2.66	Rte 210 EAST BOUND SHOULDER
Sta 232+52.92 EC	34° 19′ 17" N	118° 26′ 46" W	2¼" Br DISK	2.78	Rte 210 EAST BOUND SHOULDER
Sta 243+43.81 POT	34° 19′ 09" N	118° 26′37" W	2¼" Br DISK	2.99	Rte 210 EAST BOUND SHOULDER
Sta 255+23.55 BC	34° 19′ 01" N	118° 26′ 27" W	2¼" Br DISK	3.21	Rte 210 EAST BOUND SHOULDER
Sta 289+50.91 BC	34° 18′ 38" N	118° 25′ 57" W	2¼" Br DISK	3.86	Rte 210 EAST BOUND SHOULDER
Sta 293+40.03 MPC	34° 18′ 35" N	118° 25′ 54" W	2¼" Br DISK	3.93	Rte 210 EAST BOUND SHOULDER
Sta 297+29.14 EC	34° 18′ 33" N	118° 25′ 50" W	2¼" Br DISK	4.01	Rte 210 EAST BOUND SHOULDER
Sta 308+00.00 POT	34° 18′ 25" N	118° 25′ 41" W	2¼" Br DISK	4.21	Rte 210 EAST BOUND SHOULDER
Sta 326.08.87 BC	34° 18′ 12" N	118° 25′ 27" W	2¼" Br DISK	4.55	Rte 210 EAST BOUND SHOULDER
Sta 331+19.97 POC	34° 18′ 08" N	118° 25′ 23" W	2¼" Br DISK	4.65	Rte 210 EAST BOUND SHOULDER
Sta 333+78.00 EC	34° 18′ 18" N	118° 25′ 20" W	2¼" Br DISK	4.70	Rte 210 EAST BOUND SHOULDER
Sta 341+19.00 PI	34° 18′ 01" N	118° 25′ 15" W	2¼" Br DISK	4.84	Rte 210 EAST BOUND SHOULDER
Sta 344+63.60 POT	34° 17′ 59" N	118° 25′ 12" W	2¼" Br DISK	4.90	Rte 210 EAST BOUND SHOULDER
Rte 210 WEST BOUND MONUMENTATION					
179+36.86 BC	34° 19′ 26"N	118° 27′ 47" W	2¼" Br DISK	1.77	Rte 210 WEST BOUND SHOULDER
182+67.76 MPC	34° 19′ 26"N	118° 27′ 43" W	2¼" Br DISK	1.84	Rte 210 WEST BOUND SHOULDER
185+98.65 EC	34° 19′ 26"N	118° 27′ 39" W	2¼" Br DISK	1.90	Rte 210 WEST BOUND SHOULDER
190+03.05 BC	34° 19′ 25"N	118° 27′ 34" W	2¼" Br DISK	1.98	Rte 210 WEST BOUND SHOULDER
192+02.15 MPC	34° 19′ 25"N	118° 27′ 32" W	2¼" Br DISK	2.01	Rte 210 WEST BOUND SHOULDER
194+01.26 PCC	34° 19′ 25"N	118° 27′ 29" W	2¼" Br DISK	2.05	Rte 210 WEST BOUND SHOULDER

NOTE:

FOR COMPLETE PROJECT CONTROL AND MONUMENTATION DATA, SEE THE SURVEY RECORDS ON FILE IN THE SURVEYS DEPARTMENT AT THE DISTRICT OFFICE.

ABBREVIATION:

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

LEGEND:

Br - BRASS
D - DELTA ANGLE CURVE
MPC - MIDPOINT OF CURVE

PROJECT CONTROL AND MONUMENTATION

PC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: DEBORAH WONG
CALCULATED-DESIGNED BY: JOHN ZAKI
CHECKED BY: DEBORAH WONG
REVISED BY
DATE REVISED

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	5	34

REGISTERED CIVIL ENGINEER 02-2-11 DATE

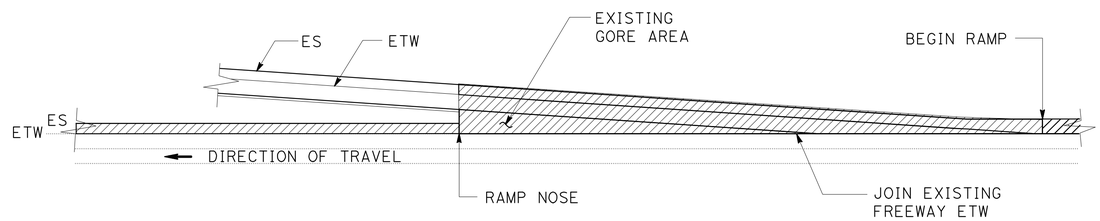
PLANS APPROVAL DATE 02-14-11

REGISTERED PROFESSIONAL ENGINEER JOHN ZAKI No. C63665 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

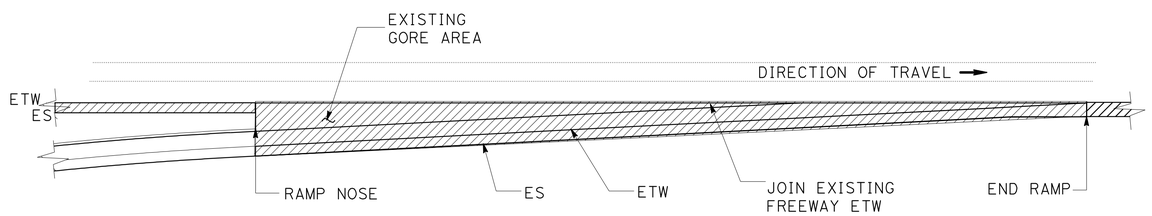
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:

1 — 0.10′ COLD PLANE ASPHALT CONCRETE PAVEMENT
TACK COAT
0.10′ RUBBERIZED HOT MIX ASPHALT (GAP GRADED)

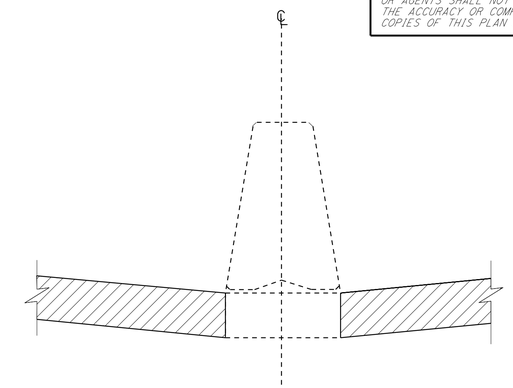


OFF-RAMP

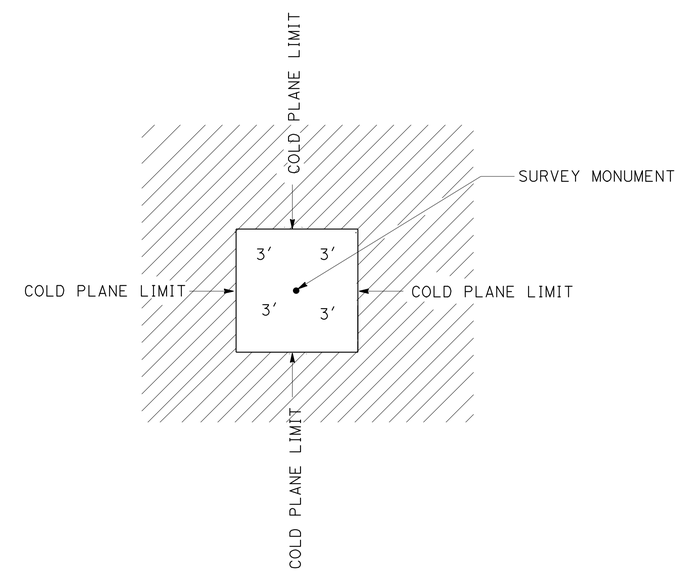


ON-RAMP

TYPICAL SHOULDER PAVING AT RAMP DETAILS



TYPICAL SHOULDER PAVING AT CONCRETE BARRIER



MONUMENT PROTECTION

CONSTRUCTION DETAILS
NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: DEBORAH WONG
CALCULATED-DESIGNED BY: JOHN ZAKI
CHECKED BY: DEBORAH WONG
REVISED BY
DATE REVISED

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	6	34

REGISTERED CIVIL ENGINEER 02-2-11 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER JOHN ZAKI No. C63665 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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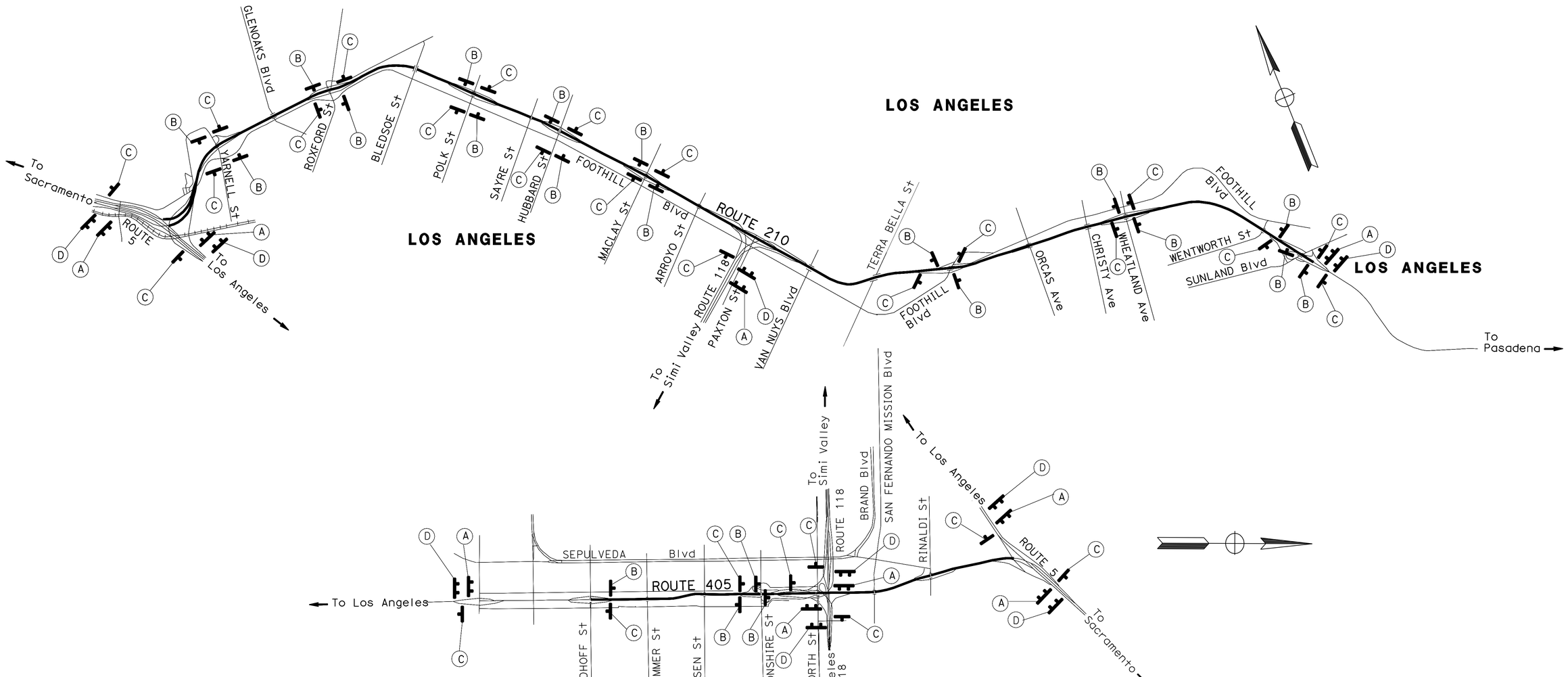
NOTE:

LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE, EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

SIGN NUMBER AND CODE	DESCRIPTION	PANEL SIZE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
(A) W20-1	ROAD WORK AHEAD	60"x 60"	2- 6" X 6"	9
(B) W20-1	ROAD WORK AHEAD	48" X 48"	1- 6" X 6"	21
(C) G20-2	END ROAD WORK	48" X 24"	1-4" X 4"	28
(D) C40(CA)	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	144" X 60"	2- 4" X 6"	9



CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: DEBORAH WONG
CALCULATED-DESIGNED BY: JOHN ZAKI
CHECKED BY: DEBORAH WONG
REVISED BY
DATE REVISED

LAST REVISION 02-14-11
DATE PLOTTED => 17-FEB-2011
TIME PLOTTED => 15:44

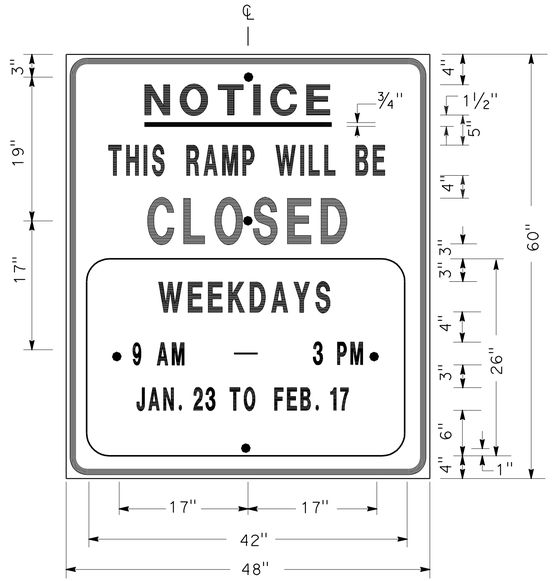
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	7	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

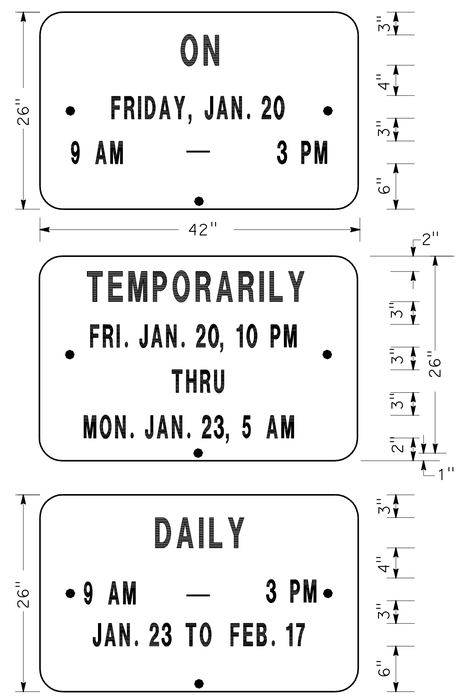
02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 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 SP-1



ALTERNATE OVERLAY PANELS (TYPICAL)

SPECIAL ADVANCE NOTICE PUBLICITY SIGN

NOTES: (SIGN SP-1)

1. SIGNS SHALL HAVE ORANGE RETROREFLECTORIZED BACKGROUND WITH BLACK BORDER AND LETTERS.
2. BOLT HOLES SHALL BE 3/8" DIAMETER.
3. BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
4. SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.

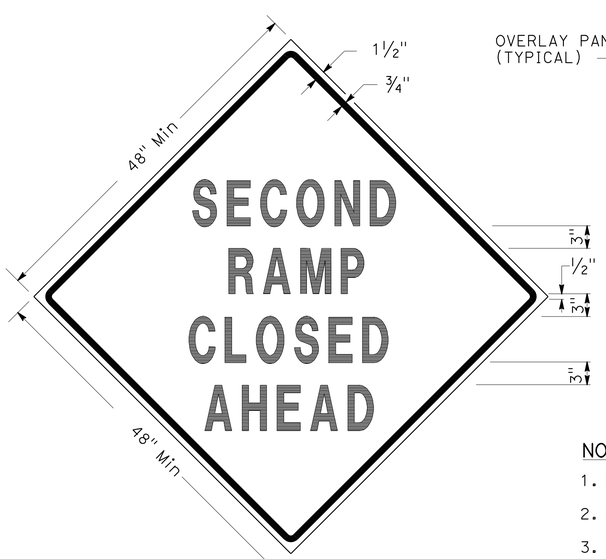
SIZE	BORDER WIDTH	MARGIN WIDTH	LETTER SIZE					CORNER RADIUS
			LINE 1	LINE 2*	LINE 3	LINE 4	LINE 5,6 & 7*	
48"x60"	1 1/4"	3/4"	4E	4D	6E	4D		3"
42"x26"	OVERLAY						3D	1 1/2"
* CONDENSED SPACING IF NECESSARY								

SIGN SP-4

NOTES: (SIGN SP-4)

1. LETTERS - 6" SERIES C.
2. LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED WHITE BACKGROUND.
3. BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
4. SIGNS SHALL BE PLACED AT RAMP ENTRANCES IN ADDITION TO SIGNS POSTED IN ACCORDANCE WITH STANDARD PLAN T14.

SPECIAL SIGN FOR ENTRANCE RAMP CLOSURES



SIGN SP-3

SIGN SP-5

NOTES: (SIGNS SP-3 & SP-5)

1. LETTERS - 6" SERIES D.
2. LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
3. BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
4. SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.

SPECIAL SIGN FOR EXIT RAMP CLOSURES

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURES, DETOUR SIGNS AND MISCELLANEOUS DETAILS
SHEET 1 OF 2
NO SCALE

THD-1

JC	JC	JC
9/08	8/08	7/08

REVISED BY / DATE REVISED

ALBERT K YU / JOCELYN C CHIANG

CALCULATED-DESIGNED BY / CHECKED BY

FUNCTIONAL SUPERVISOR: JOHN YANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	8	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA

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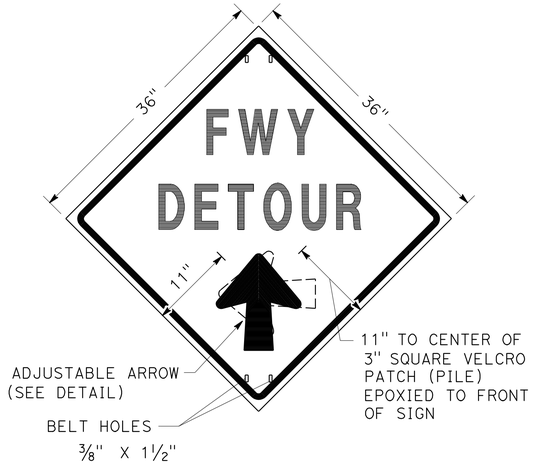
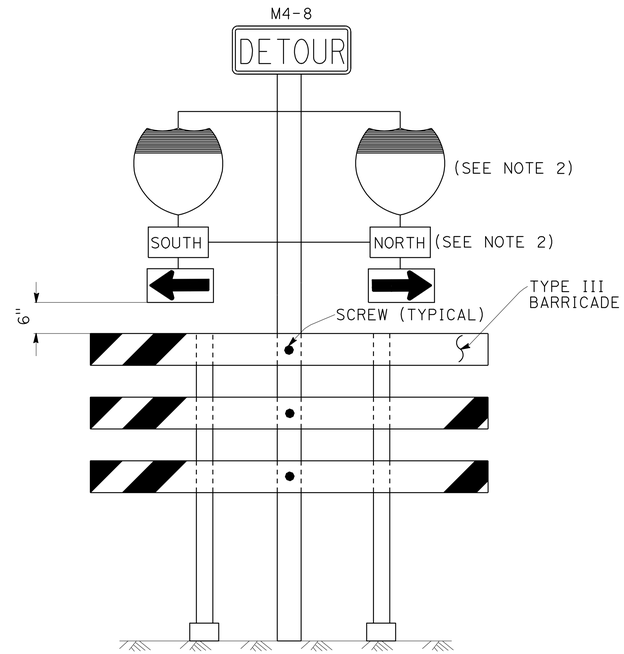
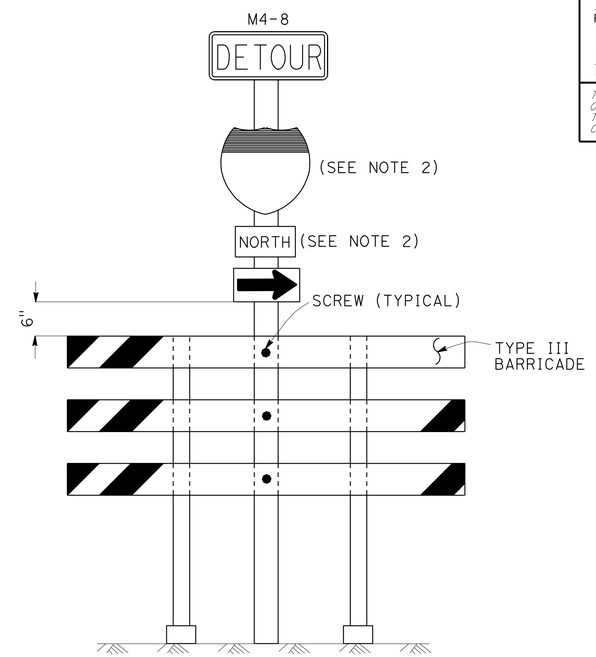


SIGN SP-2



SIGN SP-6 (SEE NOTE 1)



SIGN SP-7 (SEE NOTE 1)

NOTES: (SIGN SP-2)

1. LETTERS -6" SERIES E.
2. LETTERS, BORDER AND ARROW - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
3. BASE MATERIAL FOR SIGNS AND ARROWS SHALL BE ALUMINUM (MINIMUM 0.06").
4. BELTS (LUGGAGE STRAPS) SHALL BE 1" WIDE BY 48" LONG, MADE OF COTTON OR POLYPROPYLENE WEB MATERIAL.
5. SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND EXCEPT AS OTHERWISE SHOWN ON OTHER TRAFFIC HANDLING DETAILS PLANS.

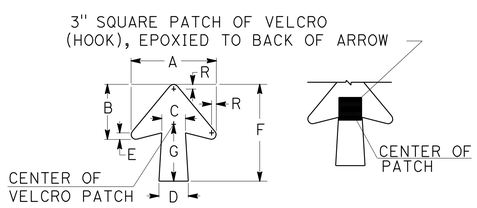
ABBREVIATION

(CA) CALIFORNIA CODE

NOTES: (SIGNS SP-6 & SP-7)

1. IN LIEU OF PLACING SIGNS ON TYPE III BARRICADES, SIGNS, INCLUDING POSTS, MAY BE PLACED INTO THE GROUND OR FASTENED ONTO ELECTROLIERS.
2. USE APPROPRIATE ROUTE SHIELD [G26-2(CA), G27-2(CA), G28-2(CA)] AND CARDINAL DIRECTION [NORTH (M3-1), SOUTH (M3-3), EAST (M3-2), WEST (M3-4)]

SPECIAL PORTABLE FREEWAY DETOUR SIGNS



DIMENSIONS							
A	B	C	D	E	F	G	R
11 1/4"	7 1/4"	3 1/8"	4"	7/8"	13"	7 1/2"	5/8"

SPECIAL PORTABLE FREEWAY DETOUR SIGN

ADJUSTABLE ARROW DETAIL

TRAFFIC HANDLING DETAILS

TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURES, DETOUR SIGNS AND MISCELLANEOUS DETAILS

SHEET 2 OF 2

NO SCALE

THD-2

REVISED BY	DATE REVISED
JC	9/08
JC	7/08

CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
FUNCTIONAL SUPERVISOR: JOHN YANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	9	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA

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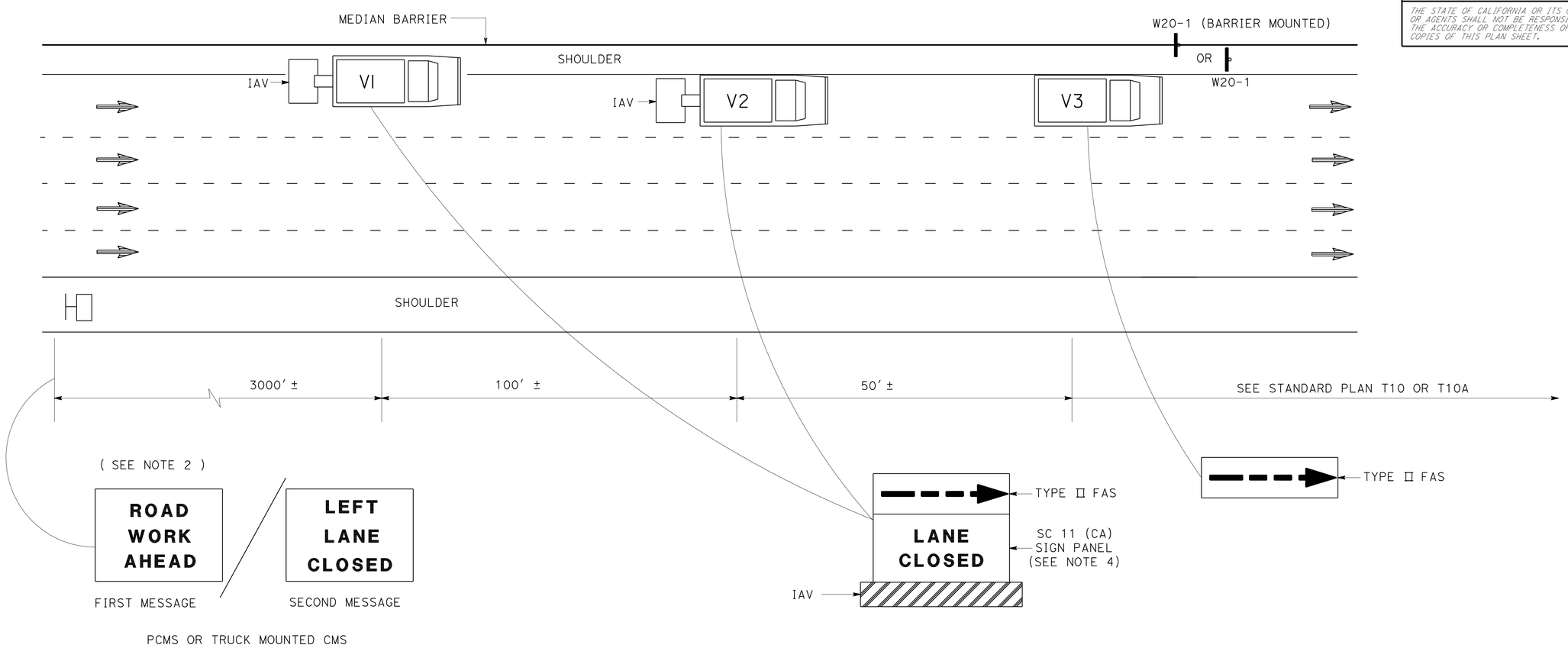


NOTES:

1. LANE CLOSURES SHALL NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
2. PCMS SHALL BE ACTIVATED PRIOR TO TRAFFIC CONTROL ACTIVITIES ON THE LANE.
3. A MINIMUM SIGHT DISTANCE OF 1500′ SHALL BE PROVIDED IN ADVANCE OF PCMS.
4. VEHICLE-MOUNTED SIGN PANELS SHALL BE TYPE III OR IV RETROREFLECTORIZED SHEETING, BLACK ON WHITE OR BLACK ON ORANGE WITH 8" MINIMUM SERIES D LETTERS PER CALTRANS SIGN SPECIFICATIONS.

LEGEND

V1, V2	SHADOW VEHICLE
V3	WORK/APPLICATION VEHICLE
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	DIRECTION OF TRAVEL
	CONSTRUCTION AREA SIGN

ABBREVIATIONS

FAS	FLASHING ARROW SIGN
IAV	IMPACT ATTENUATOR VEHICLE
CMS	CHANGEABLE MESSAGE SIGN
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
(CA)	CALIFORNIA CODE

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR MEDIAN SHOULDERS LESS THAN 8 FEET

NO SCALE

THD-3

JC	9/08		
JC	7/08	REVISED BY	DATE REVISED
ALBERT K YU	JOCELYN C CHIANG	CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	JOHN YANG		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DTM

LAST REVISION 02-14-11
DATE PLOTTED => 17-FEB-2011
TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	10	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 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:

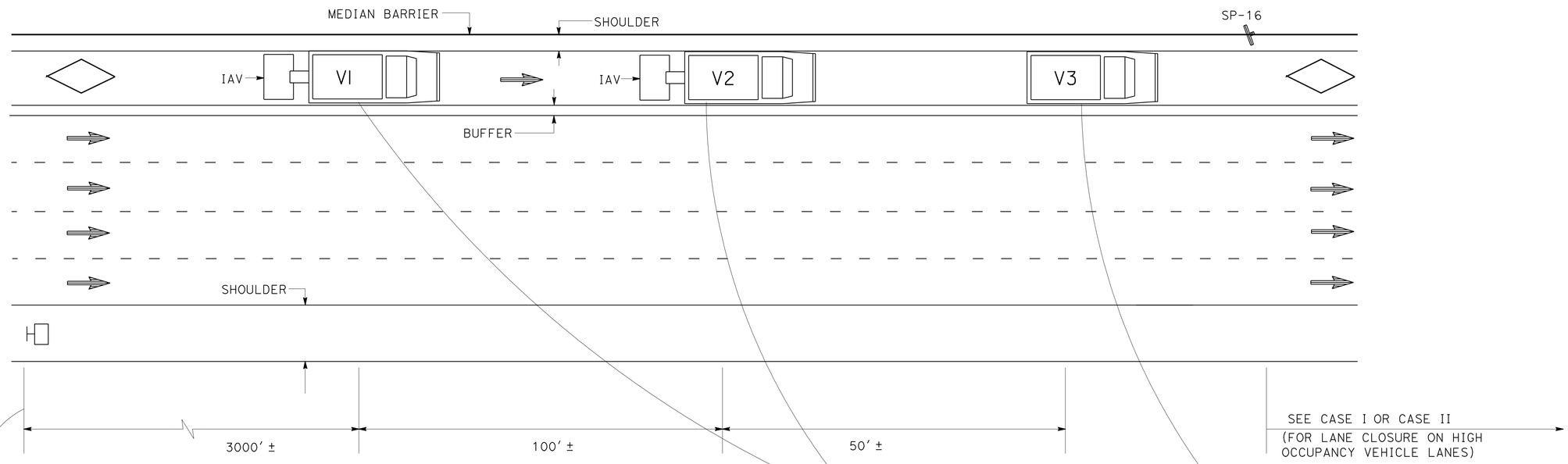
1. LANE CLOSURES SHALL NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
2. PCMS SHALL BE ACTIVATED PRIOR TO TRAFFIC CONTROL ACTIVITIES ON THE HOV LANE.
3. A MINIMUM SIGHT DISTANCE OF 1500′ SHALL BE PROVIDED IN ADVANCE OF PCMS.
4. VEHICLE-MOUNTED SIGN PANELS SHALL BE TYPE III OR IV RETROREFLECTORIZED SHEETING, BLACK ON WHITE OR BLACK ON ORANGE WITH 8" MINIMUM SERIES D LETTERS PER CALTRANS SIGN SPECIFICATIONS.
5. PLACE PCMS ON THE MEDIAN SHOULDER WHERE SUFFICIENT ROOM (SUCH AS CHP ENFORCEMENT AREAS) EXISTS.

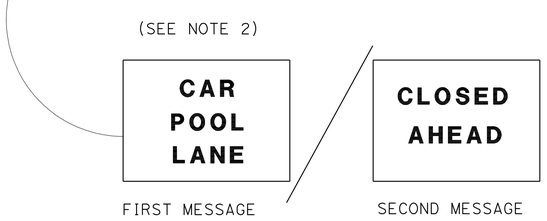
LEGEND

V1, V2	SHADOW VEHICLE
V3	WORK/APPLICATION VEHICLE
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	DIRECTION OF TRAVEL
	HOV LANE

ABBREVIATIONS

FAS	FLASHING ARROW SIGN
IAV	IMPACT ATTENUATOR VEHICLE
CMS	CHANGEABLE MESSAGE SIGN
(CA)	CALIFORNIA CODE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
HOV	HIGH OCCUPANCY VEHICLE





PCMS/TRUCK MOUNTED CMS
(SEE NOTE 5)

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR HIGH OCCUPANCY VEHICLE LANES WITH MEDIAN SHOULDERS LESS THAN 8 FEET
NO SCALE

THD-4

CALCULATED-DESIGNED BY	JC	9/08	
CHECKED BY	JC	7/08	
FUNCTIONAL SUPERVISOR	JOHN YANG	REVISED BY	
		DATE REVISED	
	ALBERT K YU		
	JOCELYN C CHIANG		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LAST REVISION 02-14-11
DATE PLOTTED => 17-FEB-2011
TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	11	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA

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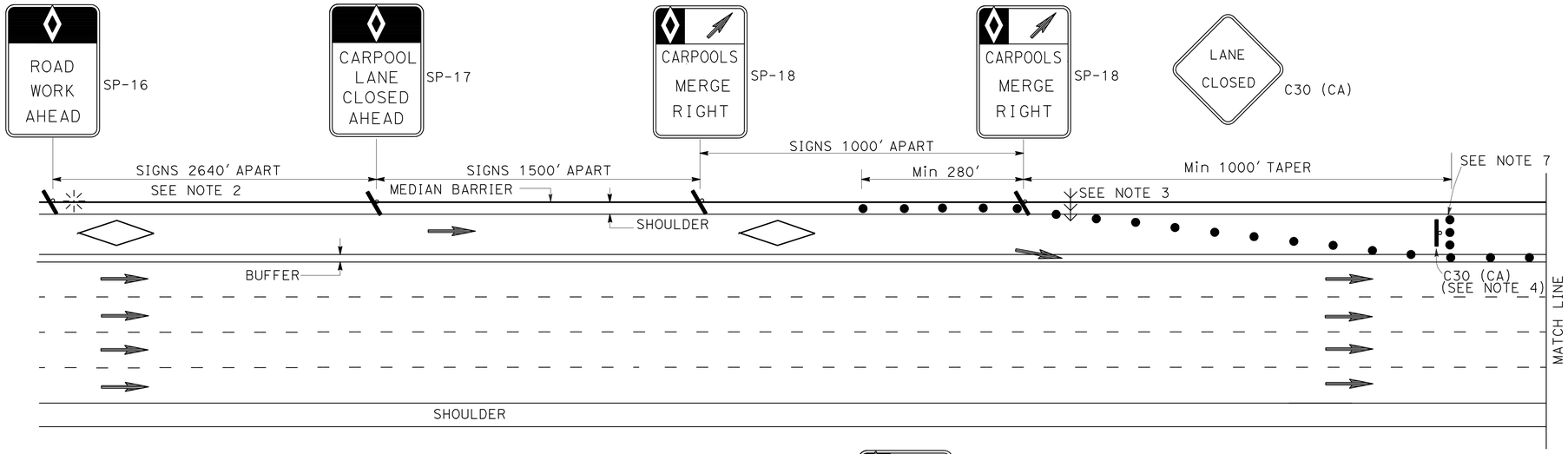

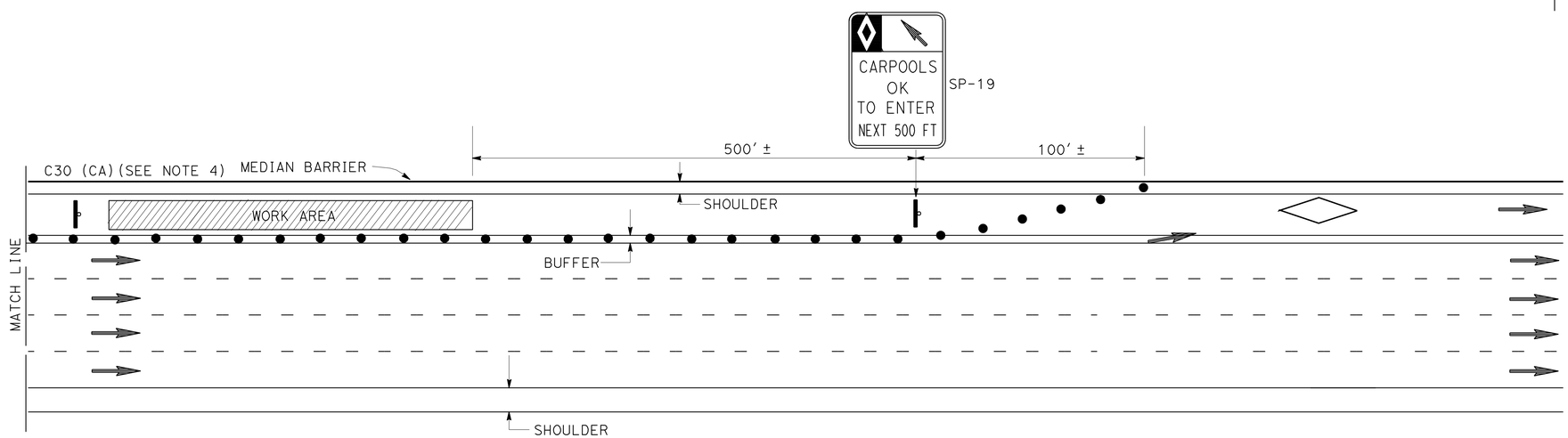

ABBREVIATIONS

(CA) CALIFORNIA CODE

HOV HIGH OCCUPANCY VEHICLE

NOTES: FOR CASE I AND CASE II

1. AT LEAST ONE PERSON SHALL BE ASSIGNED TO FULL TIME MAINTENANCE OF TRAFFIC CONTROL DEVICES ON NIGHT LANE CLOSURES OR DAY-TIME CLOSURES EXCEEDING 1 MILE LENGTH, INCLUDING TAPERS.
2. ADVANCE WARNING SIGN INSTALLATIONS SHALL BE EQUIPPED WITH FLAGS FOR DAYTIME CLOSURES. TYPE B HIGH INTENSITY FLASHING WARNING LIGHTS SHALL BE USED ON SP-16 SIGNS DURING NIGHT LANE CLOSURES. FLAGS AND WARNING LIGHTS SHALL BE ATTACHED TO SIGNS AS APPROVED BY THE ENGINEER.
3. THE FLASHING ARROW SIGN SHALL BE TYPE I.
4. PLACE C30 (CA) SIGNS EVERY 2000' THROUGHOUT THE LENGTH OF LANE CLOSURE.
5. A MINIMUM 1500' OF SIGHT DISTANCE SHALL BE PROVIDED WHERE POSSIBLE FOR VEHICLES APPROACHING THE FLASHING ARROW SIGN. LANE CLOSURES SHALL NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
6. PORTABLE DELINEATORS PLACED AT ONE-HALF THE SPACING INDICATED FOR TRAFFIC CONES MAY BE USED INSTEAD OF CONES FOR DAYTIME CLOSURES.
7. A MINIMUM OF 3 CONES SHALL BE PLACED TRANSVERSELY ACROSS CLOSED LANES WHERE TAPERS END AND EVERY 2000'. TWO TYPE II BARRICADES MAY BE USED INSTEAD OF 3 CONES. THE ALIGNMENT OF CONES OR BARRICADES MAY BE SHIFTED FROM THE TRANSVERSE ALIGNMENT TO PROVIDE ACCESS TO WORK.
8. IF AN INGRESS/EGRESS AREA IS WITHIN 5250' UPSTREAM OR DOWNSTREAM OF THE WORK AREA, LANE CLOSURES SHALL BE EXTENDED TO THAT AREA AS SHOWN IN CASE II.
9. SIGNS SP-16, 17, 18, AND 19 MAY BE OVERLAID ON EXISTING CARPOOL SIGNS IN MEDIANS AS APPROVED BY THE ENGINEER.
10. SIGNS SP-16, 17, 18, AND C30 (CA) SHALL BE BLACK ON ORANGE BACKGROUND. SIGN SP-19 SHALL BE BLACK ON WHITE BACKGROUND. DIAMONDS ON SIGNS SHALL BE WHITE.
11. FOR CLOSURE OF LANE(S) ADJACENT TO HOV LANES, SEE CASE II.
12. THE MAXIMUM SPACING BETWEEN CONES SHALL BE APPROXIMATELY 50' IN TAPERS AND 100' ON TANGENTS.

LEGEND

- CONE
- FLASHING BEACON
- HOV LANE
- FLASHING ARROW SIGN
- PORTABLE SIGN
- DIRECTION OF TRAVEL

SIGN PANEL

SIZE (MIN)

SP-16 36" X 54"
SP-17 36" X 54"
SP-18 36" X 48"
SP-19 36" X 60"
C30 (CA) 30" X 30"
G20-2 48" X 24"

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR HIGH OCCUPANCY VEHICLE LANES AT NON-INGRESS/EGRESS AREAS
CASE I
NO SCALE

THD-5

JC	9/08	ALBERT K YU	JOHN YANG
JC	7/08	JOCELYN C CHIANG	
REVISED BY	DATE REVISED	CALCULATED-DESIGNED BY	FUNCTIONAL SUPERVISOR
		CHECKED BY	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	12	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA

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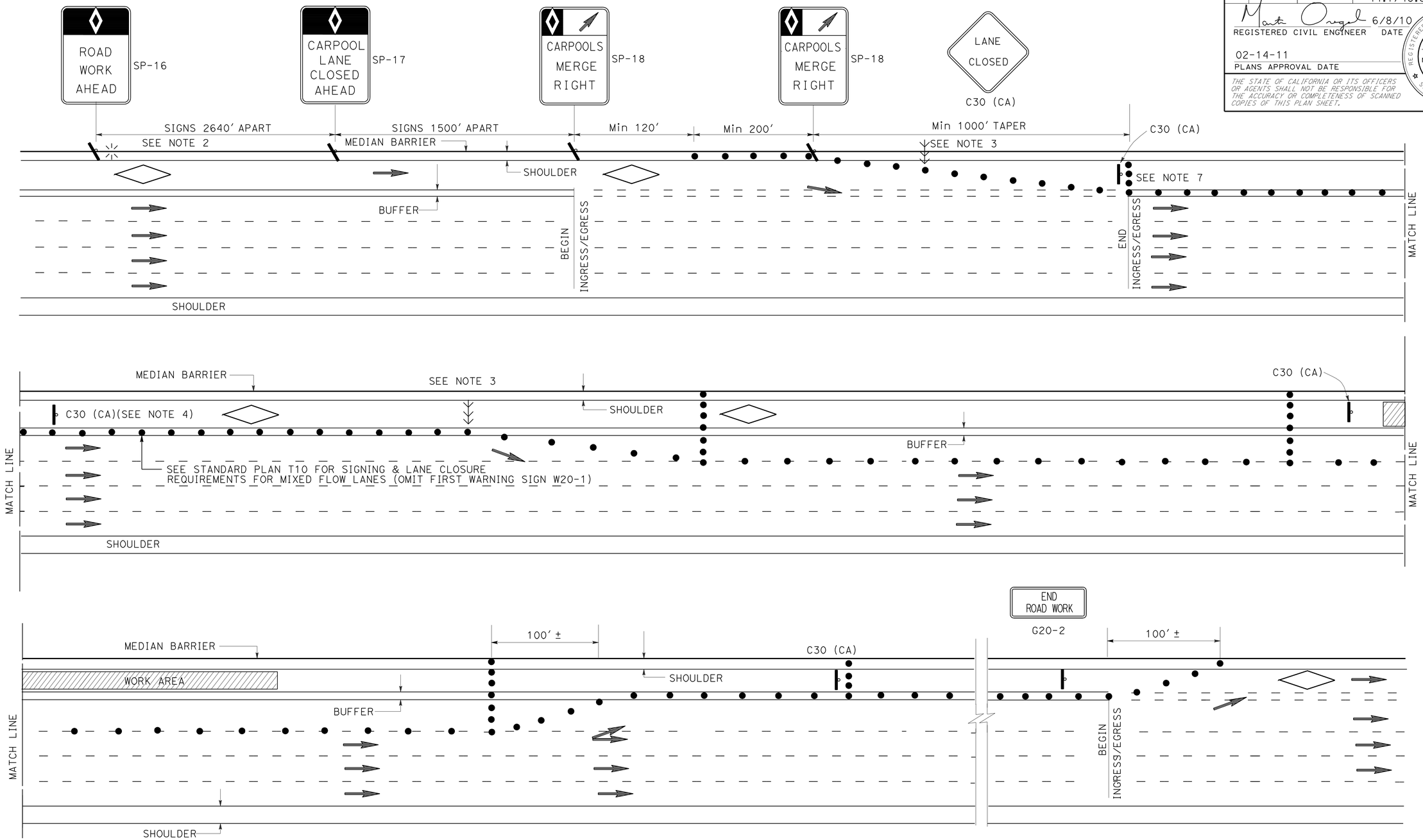

NOTES:

1. SEE CASE I FOR NOTES, LEGENDS AND ABBREVIATIONS FOR THIS SHEET.
2. CLOSURES OF ONE MIXED FLOW TRAFFIC LANE ADJACENT TO HOV LANE SHOWN. MULTIPLE MIXED FLOW LANE CLOSURES ARE SIMILAR.

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR HIGH OCCUPANCY VEHICLE LANES AND ADJACENT FREEWAY LANES BETWEEN INGRESS/EGRESS AREAS
CASE II
NO SCALE

THD-6

JC	9/08	
JC	7/08	
REVISED BY	DATE REVISED	
ALBERT K YU	JOCELYN C CHIANG	
CALCULATED-DESIGNED BY	CHECKED BY	
FUNCTIONAL SUPERVISOR	JOHN YANG	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	13	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA

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NOTES:

1. WORDING DISPLAYED ON PCMS WILL BE APPROVED BY THE ENGINEER.
2. EXACT LOCATIONS OF PCMS WILL BE DETERMINED BY THE ENGINEER.
3. CHANGE PCMS MESSAGE AT THE BEGINNING OF CURE PERIOD TO REFLECT NUMBER OF CLOSED LANES.

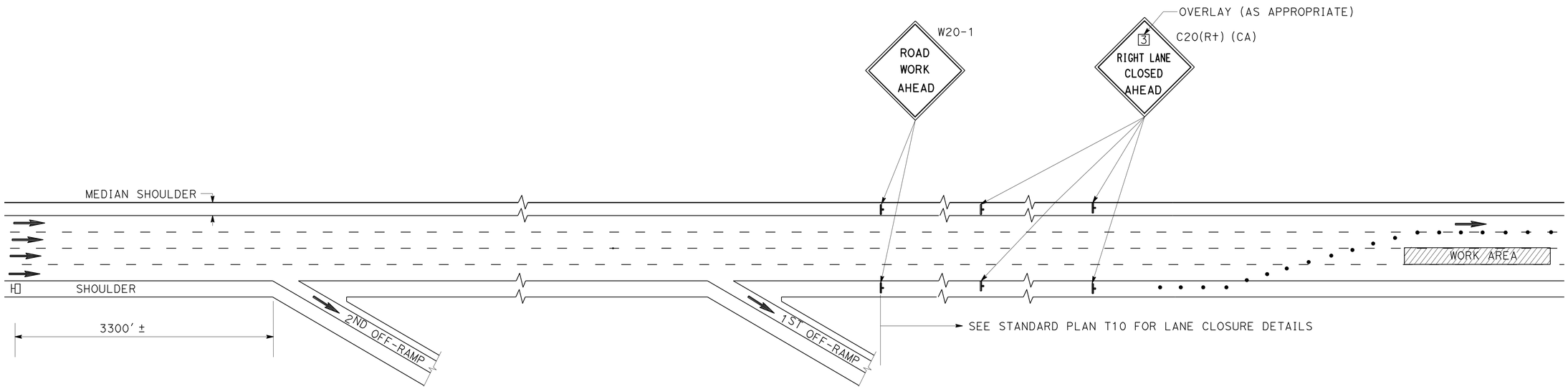
ABBREVIATIONS

PCMS PORTABLE CHANGEABLE MESSAGE SIGN

(CA) CALIFORNIA CODE

LEGEND

- CONE
- PORTABLE SIGN
- DIRECTION OF TRAVEL
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- (CA) CALIFORNIA CODE



FIRST FLASH MESSAGE	X (NO OF LANES)RIGHT/LEFT	1ST LINE (TYPICAL)
	LANES	2ND LINE (TYPICAL)
	CLOSED	3RD LINE (TYPICAL)
SECOND FLASH MESSAGE	A ST	LIMIT OF CLOSURE (TYPICAL)
	TO	
	B DR	LIMIT OF CLOSURE (TYPICAL)

WORDING FOR PORTABLE CHANGEABLE MESSAGE SIGN

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR CONCRETE PAVEMENT AND APPROACH SLAB REPLACEMENT
NO SCALE

THD-7

REVISED BY	DATE REVISED
JC	9/08
JC	7/08

CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
FUNCTIONAL SUPERVISOR: JOHN YANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DTM

LAST REVISION 02-14-11
DATE PLOTTED => 17-FEB-2011
TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	14	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA

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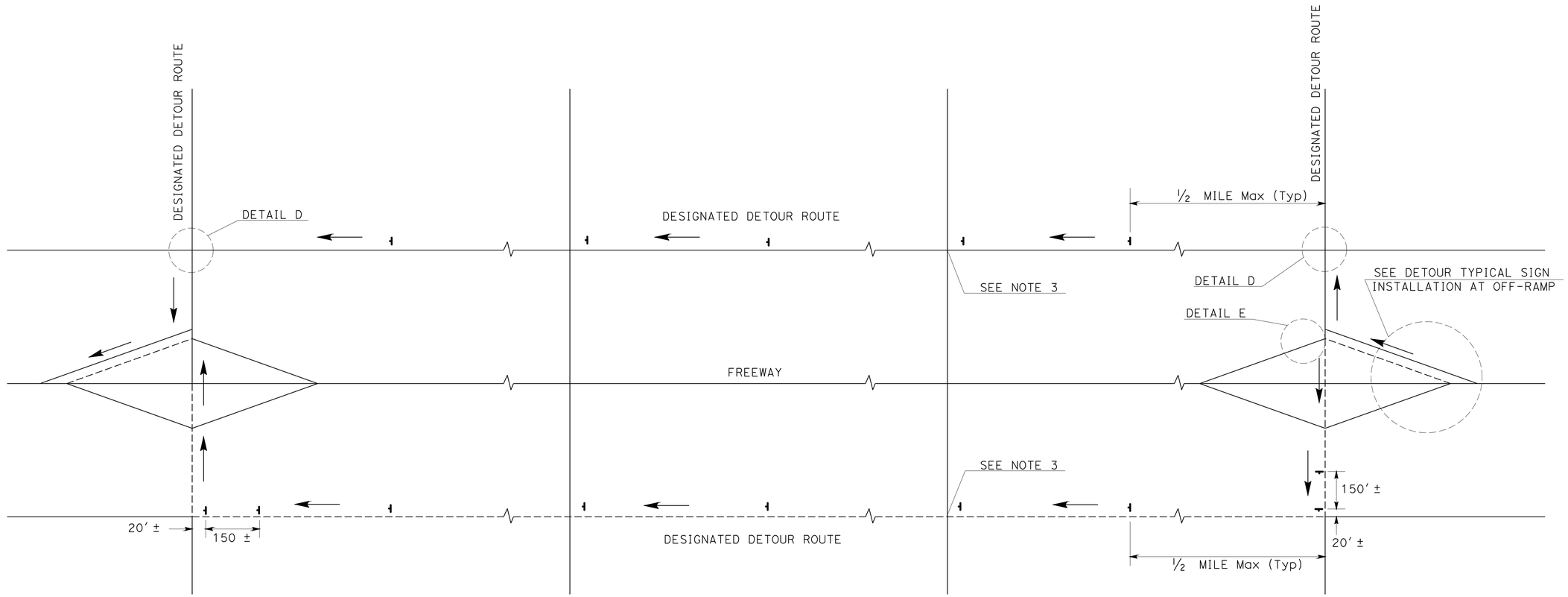

TYPICAL DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE

LEGEND

- SIGN SP-2
- AND/OR DESIGNATED DETOUR ROUTE
- DIRECTION OF TRAVEL

NOTES:

1. SP-2 SIGNS SHALL NOT BE INSTALLED ON BARRICADES EXCEPT AS OTHERWISE SHOWN.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
3. SP-2 SIGNS SHALL BE POSTED AT SIGNALIZED INTERSECTIONS ALONG THE DESIGNATED DETOUR ROUTE OR ½ MILE MAXIMUM APART.

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE
SHEET 1 OF 2
NO SCALE

THD-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

FUNCTIONAL SUPERVISOR: JOHN YANG
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC JC
DATE REVISED: 7/08 9/08

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210,405	R0.0/R11.1, 44.7/48.6	15	34

REGISTERED CIVIL ENGINEER 6/8/10 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARTIN OREGEL No. 56816 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA

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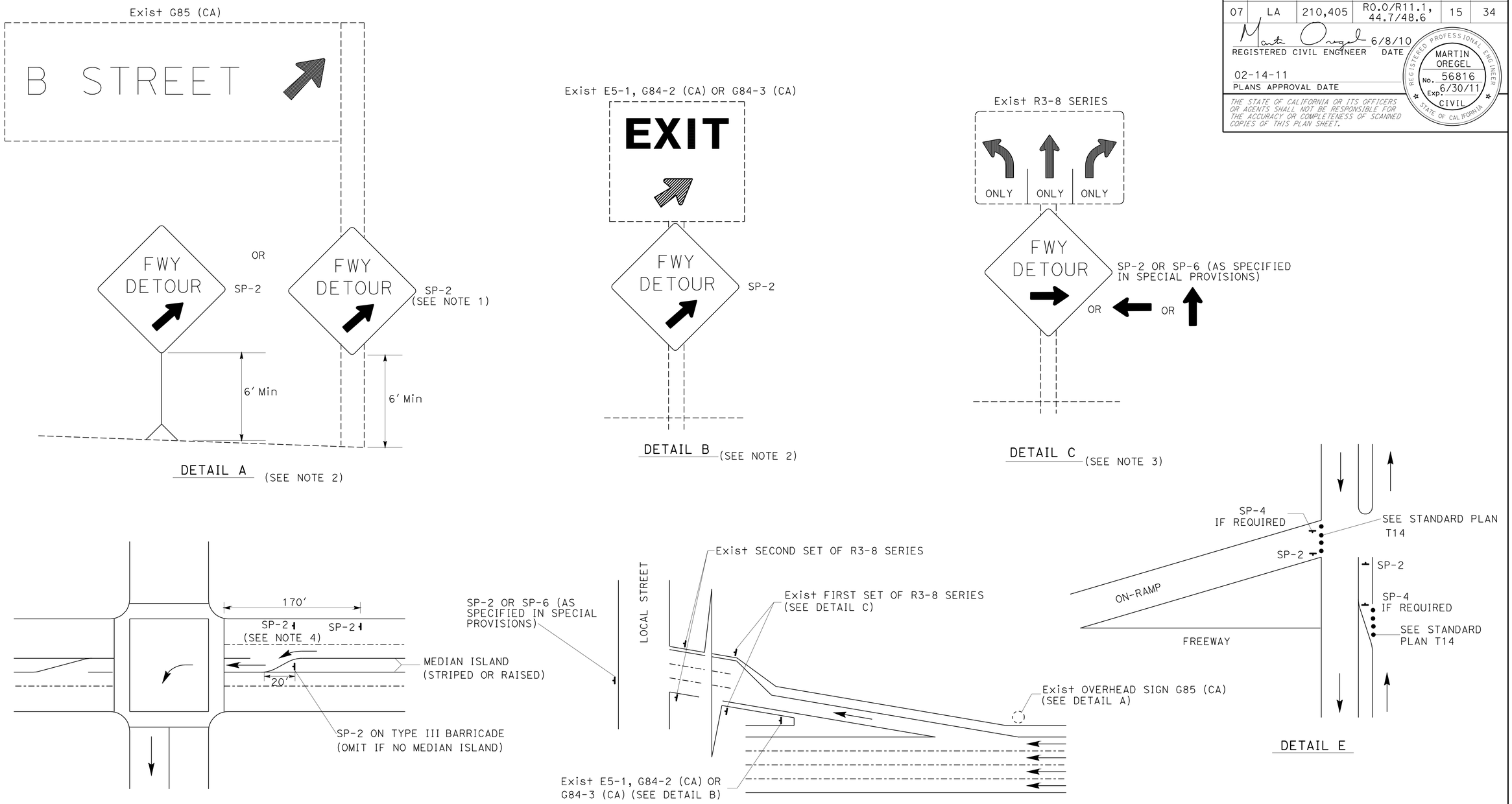

TYPICAL DETOUR SIGN INSTALLATION AT OFF-RAMP

NOTES:

1. SP-2 MAY BE STRAPPED ON EXISTING ELECTROLIER SIGNAL POSTS OR SIGN POSTS.
2. OMIT DETAIL A AND DETAIL B FOR FULL FREEWAY CLOSURES.
3. SEE TRAFFIC HANDLING DETAILS PLAN-TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURES, DETOUR SIGNS AND MISCELLANEOUS DETAILS SHEET 2 OF 2 FOR SP-6.
4. OMIT IF MEDIAN ISLAND EXIST.

ABBREVIATIONS

(CA) CALIFORNIA CODE

LEGENDS

- CONE
- PORTABLE SIGN
- DIRECTION OF TRAVEL
- EXISTING OVERHEAD SIGN

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM FOR DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE
SHEET 2 OF 2
NO SCALE

THD-9

JC	9/08	ALBERT K YU	JC
JC	7/08	JOCELYN C CHIANG	
REVISED BY	DATE REVISED	CALCULATED-DESIGNED BY	CHECKED BY

FUNCTIONAL SUPERVISOR: JOHN YANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans DTM

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	16	34

John T. Zaki 02-2-11
REGISTERED CIVIL ENGINEER DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER JOHN ZAKI No. C63665 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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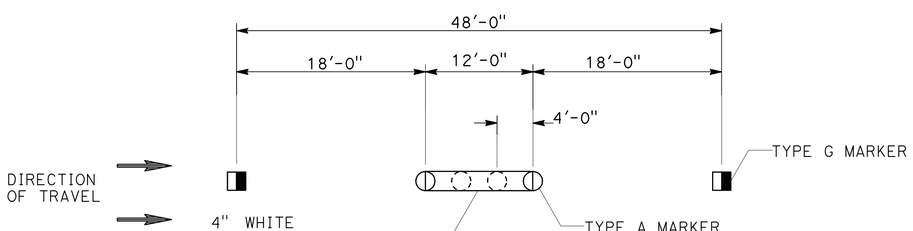
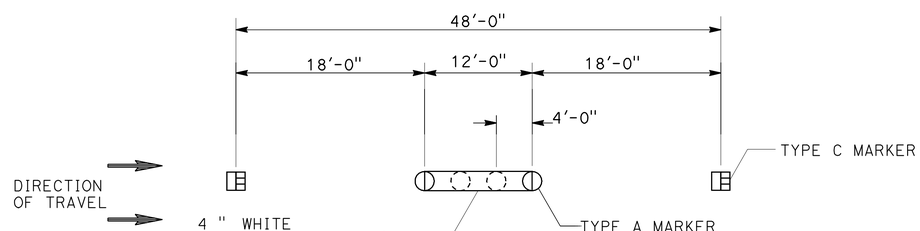
NOTES:
1. PLACE 4" WIDE THERMOPLASTIC TRAFFIC STRIPE ON TOP OF TYPE A NON-REFLECTIVE MARKERS.
2. QUANTITIES INCLUDE STRIPING ON BRIDGES, NOT SHOWN ON THE PLANS.

PAVEMENT DELINEATION QUANTITIES

LOCATION	THERMOPLASTIC TRAFFIC STRIPE								THERMOPLASTIC PAVEMENT MARKING						PAVEMENT MARKER (RETROREFLECTIVE)			PAVEMENT MARKER (NON-REFLECTIVE)
	BROKEN (36 -12)		BROKEN (12 -3)	4" SOLID				8" SOLID										
	4" BROKEN DETAIL 13 (MODIFIED)	4" BROKEN DETAIL 14 (MODIFIED)	8" BROKEN DETAIL 37	4" (DETAIL 25)	4" (DETAIL 27)	4" (DETAIL 27B)	4" (DETAIL 8)	DETAIL 36/36A	4" DIAGONAL	CAR	POOL	ONLY	◇	TYPE VI ARROW	TYPE G	TYPE C	TYPE H	TYPE A
	LF	LF	LF	LF	LF	LF	LF	LF	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	EA	EA	EA	EA
WB ROUTE 210 (FROM ROUTE 5/210 SEPARATION TO ROUTE 118/210 SEPARATION)			250	31,680		31,680	1,000	3,200	140					189			660	
EB ROUTE 210 (FROM ROUTE 5/210 SEPARATION TO ROUTE 118/210 SEPARATION)			250	31,680		31,680	1,000	3,200	140					189			660	
WB ROUTE 210 (FROM ROUTE 118/210 SEPARATION TO SUNLAND BOULEVARD UNDERCROSSING)	75,500	5,200		26,900			600								1,574	110	562	6,726
EB ROUTE 210 (FROM ROUTE 118/210 SEPARATION TO SUNLAND BOULEVARD UNDERCROSSING)	75,500	5,200		26,900			600								1,574	110	562	6,726
NB ROUTE 405 (FROM NORDHOFF STREET UNDERCROSSING TO ROUTE 5/405 SEPARATION)	56,600	5,200	500	20,600	41,200	41,200	1,000	3,200		204	276	264	143		1,180	110	860	5,150
SB ROUTE 405 (FROM NORDHOFF STREET UNDERCROSSING TO ROUTE 5/405 SEPARATION)	56,600	5,200	500	20,600	41,200	41,200	1,000	3,200		221	299	286	165		1,180	110	860	5,150
SUB TOTAL	264,200	20,800	1,500	158,360	82,400	145,760	5,200	12,800	280	425	575	550	308	378	5,508	440	4,164	23,752
TOTAL	285,000		1,500	391,720				12,800	2,516						10,112			23,752



DETAIL 13 (MODIFIED)



DETAIL 14 (MODIFIED)

PAVEMENT DELINEATION QUANTITIES

NO SCALE

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: DEBORAH WONG
CALCULATED-DESIGNED BY: JOHN ZAKI
CHECKED BY: DEBORAH WONG
REVISED BY
DATE REVISED

LAST REVISION 02-14-11
DATE PLOTTED => 17-FEB-2011
TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	17	34

John T. Zaki 02-2-11
REGISTERED CIVIL ENGINEER DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN ZAKI
No. C63665
Exp. 9-30-12
CIVIL
STATE OF CALIFORNIA

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ROADWAY QUANTITIES

LOCATION	GRIND EXISTING CONCRETE PAVEMENT	COLD PLANE ASPHALT CONCRETE PAVEMENT	TACK COAT	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)
	SQYD	SQYD	TON	TON
WB ROUTE 210 (FROM ROUTE 5/210 SEPARATION TO ROUTE 118/210 SEPARATION)		96,971	33	6,657
EB ROUTE 210 (FROM ROUTE 5/210 SEPARATION TO ROUTE 118/210 SEPARATION)		96,971	33	6,657
WB ROUTE 210 (FROM ROUTE 118/210 SEPARATION TO SUNLAND BOULEVARD UNDERCROSSING)	143,600	41,067	14	2,772
EB ROUTE 210 (FROM ROUTE 118/210 SEPARATION TO SUNLAND BOULEVARD UNDERCROSSING)	143,600	41,067	14	2,772
NB ROUTE 405 (FROM NORDHOFF STREET UNDERCROSSING TO ROUTE 5/405 SEPARATION)	107,000	64,581	22	4,471
SB ROUTE 405 (FROM NORDHOFF STREET UNDERCROSSING TO ROUTE 5/405 SEPARATION)	112,000	59,512	20	4,129
TOTAL	506,200	400,169	136	27,458

SLAB REPLACEMENT QUANTITIES

POST MILE	LANE No. 1	LANE No. 2	LANE No. 3	LANE No. 4	REPLACE CONCRETE PAVEMENT(RSC)(CY)	LCBRS (CY)	DESCRIPTION
10.00		15	70	80	737.55	371	WB ROUTE 210 BETWEEN SUNLAND BOULEVARD AND WHEATLAND AVENUE
9.00		14	15	20	219.03		WB ROUTE 210 BETWEEN WHEATLAND AVENUE AND FOOTHILL BOULEVARD
7.50		19	40	65	554.28		WB ROUTE 210 BETWEEN FOOTHILL BOULEVARD AND ROUTE 118
7.00		20	60	76	697.32		EB ROUTE 210 BETWEEN ROUTE 118 AND FOOTHILL BOULEVARD
9.30		14	70	100	822.48		EB ROUTE 210 BETWEEN FOOTHILL BOULEVARD AND WHEATLAND AVENUE
10.50		17	60	62	621.33		EB ROUTE 210 BETWEEN WHEATLAND AVENUE AND SUNLAND BOULEVARD
45.50		10	5		75		NB ROUTE 405 BETWEEN NORDHOFF STREET AND DEVONSHIRE STREET
46.50		7	5		60		NB ROUTE 405 BETWEEN DEVONSHIRE STREET AND ROUTE 118
48.20		4	4		40		NB ROUTE 405 BETWEEN ROUTE 118 AND ROUTE 5
48.00		6	4		50		SB ROUTE 405 BETWEEN ROUTE 5 AND ROUTE 118
46.70		7	5		60		SB ROUTE 405 BETWEEN ROUTE 118 AND DEVONSHIRE STREET
45.00		10	6		80		SB ROUTE 405 BETWEEN DEVONSHIRE STREET AND NORDHOFF STREET
TOTAL		143	344	403	4016.99		

SUMMARY OF QUANTITIES

Q-1

REVISED BY | DATE REVISED
JOHN ZAKI | DEBORAH WONG
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | DEBORAH WONG
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	18	34

REGISTERED ELECTRICAL ENGINEER 1/19/11 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CESAR HERNANDEZ No. E15805 Exp. 12/31/12 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.

INDUCTIVE LOOP DETECTOR TABLE FOR EASTBOUND ROUTE 210 MAINLINE

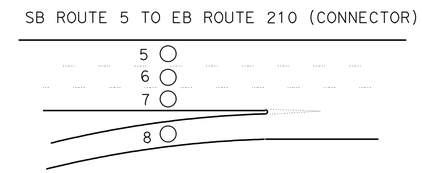
PM	LOCATION	SEE DETAIL "A" AND "B" ON THIS SHEET FOR TYPICAL LOCATION OF INDUCTIVE LOOP DETECTOR								TOTAL No. OF LOOPS PER LOCATION	No. OF STUBOUTS (REPLACE)
		1	2	3	4	5	6	7	8		
0.0	SB ROUTE 5 TO EB 210 (CONNECTOR)					X	X	X	X	4	2
1.0	AT YARNELL St ON-RAMP	X	X	X						3	1
2.0	AT ROXFORD St ON-RAMP	X	X	X						3	1
3.3	AT POLK St ON-RAMP	X	X	X						3	1
4.2	AT HUBBARD St ON-RAMP	X	X	X						3	1
4.9	AT MACLAY St ON-RAMP	X	X	X						3	1
5.6	WEST OF 118 CONNECTOR	X	X	X						3	1
6.1	AT PAXTON St ON-RAMP	X	X	X						3	1
6.3	EAST OF 118 CONNECTOR	X	X	X						3	1
7.9	AT FOOTHILL Blvd ON-RAMP	X	X	X	X					4	1
9.5	AT WHEATLAND Ave ON-RAMP	X	X	X	X					4	1
11.0	AT SUNLAND Blvd LOOP ON-RAMP	X	X	X	X					4	1

X - ABANDON EXISTING INDUCTIVE LOOP DETECTORS.
INSTALL TYPE E INDUCTIVE LOOP DETECTOR AT THE SAME LOCATION.

INDUCTIVE LOOP DETECTOR TABLE FOR WESTBOUND ROUTE 210 MAINLINE

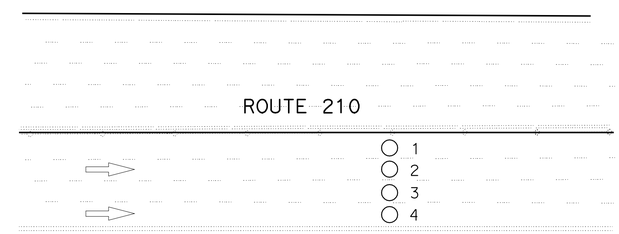
PM	LOCATION	SEE DETAIL "A" ON THIS SHEET FOR TYPICAL LOCATION OF INDUCTIVE LOOP DETECTOR							TOTAL No. OF LOOPS PER LOCATION	No. OF STUBOUTS (REPLACE)
		1	2	3	4	5	6	7		
0.8	AT YARNELL St ON-RAMP	X	X	X					3	1
1.7	AT ROXFORD St ON-RAMP	X	X	X					3	1
3.2	AT POLK St ON-RAMP	X	X	X					3	1
3.9	AT HUBBARD St ON-RAMP	X	X	X					3	1
4.8	AT MACLAY St ON-RAMP	X	X	X					3	1
5.6	WEST OF 118 CONNECTOR	X	X	X					3	1
5.9	AT PAXTON St ON-RAMP	X	X	X					3	1
6.3	EAST OF 118 CONNECTOR	X	X	X	X				4	1
7.8	AT FOOTHILL Blvd ON-RAMP	X	X	X	X				4	1
9.3	AT WHEATLAND Ave ON-RAMP	X	X	X	X				4	1
11.0	AT SUNLAND Blvd ON-RAMP	X	X	X	X				4	1

X - ABANDON EXISTING INDUCTIVE LOOP DETECTORS.
INSTALL TYPE E INDUCTIVE LOOP DETECTOR AT THE SAME LOCATION.



DETAIL B

TYPICAL INDUCTIVE LOOP DETECTOR CONFIGURATION (MAINLINE)



DETAIL A

TYPICAL INDUCTIVE LOOP DETECTOR CONFIGURATION (MAINLINE)

NOTES: (THIS SHEET)

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING INDUCTIVE LOOP DETECTORS.
2. ABANDON EXISTING INDUCTIVE LOOP DETECTORS. INSTALL TYPE E INDUCTIVE LOOP DETECTORS AT THE SAME LOCATION.
3. SPLICE NEW INDUCTIVE LOOP DETECTORS TO EXISTING dlc IN ADJACENT PULL BOX.
4. ABANDON EXISTING RIGHT HAND SIDE SHOULDER STUBOUTS. INSTALL $1\frac{1}{2}$" STUBOUT FOR INDUCTIVE LOOP DETECTORS.
5. TAG EXISTING dlc IN ADJACENT PULL BOX AND AT CONTROLLER CABINET.

INDUCTIVE LOOP DETECTOR (REPLACEMENT)

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

E-1

REVISED BY | DATE REVISED
CESAR HERNANDEZ | HASSAN MANNAA
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: HASSAN MANNAA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	19	34

REGISTERED ELECTRICAL ENGINEER 1/19/11 DATE

02-14-11
PLANS APPROVAL DATE

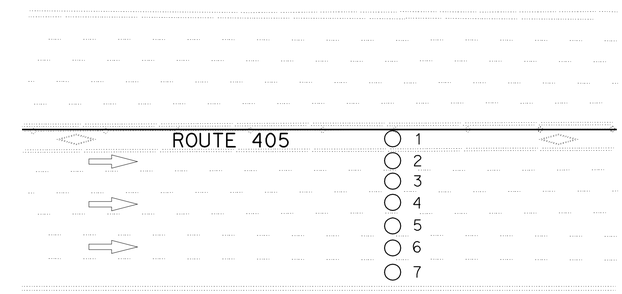
REGISTERED PROFESSIONAL ENGINEER
CESAR HERNANDEZ
No. E15805
Exp. 12/31/12
ELECTRICAL
STATE OF CALIFORNIA

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.

INDUCTIVE LOOP DETECTOR TABLE FOR NORTHBOUND ROUTE 405 MAINLINE

PM	LOCATION	SEE DETAIL "A" ON THIS SHEET FORTYPICAL LOCATION OF INDUCTIVE LOOP DETECTOR							TOTAL No. OF LOOPS PER LOCATION	No. OF STUBOUTS (REPLACE)
		1	2	3	4	5	6	7		
44.9	AT NORDHOFF St ON-RAMP	X	X	X	X	X			5	1
45.6	AT MARILLA St	X	X	X	X	X			5	1
46.2	AT DEVONSHIRE St	X	X	X	X	X	X	X	7	1
47.9	AT RINALDI St ON-RAMP		X	X	X				3	1
48.2	AT RINALDI St	X	X	X	X				4	1

X - ABANDON EXISTING INDUCTIVE LOOP DETECTOR. INSTALL TYPE E INDUCTIVE LOOP DETECTOR AT THE SAME LOCATION.



DETAIL A

TYPICAL INDUCTIVE LOOP DETECTOR CONFIGURATION (MAINLINE)

INDUCTIVE LOOP DETECTOR TABLE FOR SOUTHBOUND ROUTE 405 MAINLINE

PM	LOCATION	SEE DETAIL "A" ON THIS SHEET FOR TYPICAL LOCATION OF INDUCTIVE LOOP DETECTOR							TOTAL No. OF LOOPS PER LOCATION	No. OF STUBOUTS (REPLACE)
		1	2	3	4	5	6	7		
44.9	AT NORDHOFF St OFF-RAMP	X	X	X	X	X			5	1
45.6	AT MARILLA St	X	X	X	X	X			5	1
46.2	AT DEVONSHIRE St ON-RAMP	X	X	X	X	X	X	X	7	1
46.3	AT DEVONSHIRE St LOOP ON-RAMP	X	X	X	X	X	X	X	7	1
47.3	AT SAN FERNANDO LOOP ON-RAMP	X	X	X	X	X			5	1
47.7	AT RINALDI St ON-RAMP	X	X	X	X				4	1
48.2	AT RINALDI St		X	X	X	X			4	1

X - ABANDON EXISTING INDUCTIVE LOOP DETECTOR. INSTALL TYPE E INDUCTIVE LOOP DETECTOR AT THE SAME LOCATION.

NOTES: (THIS SHEET)

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING INDUCTIVE LOOP DETECTORS.
2. ABANDON EXISTING INDUCTIVE LOOP DETECTORS. INSTALL TYPE E INDUCTIVE LOOP DETECTORS AT THE SAME LOCATION.
3. SPLICE NEW INDUCTIVE LOOP DETECTORS TO EXISTING dlc IN ADJACENT PULL BOX.
4. ABANDON EXISTING RIGHT HAND SIDE SHOULDER STUBOUTS. INSTALL 2" STUBOUT FOR INDUCTIVE LOOP DETECTORS.
5. TAG EXISTING dlc IN ADJACENT PULL BOX AND AT CONTROLLER CABINET.

INDUCTIVE LOOP DETECTOR (REPLACEMENT)

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

E-2

REVISED BY | DATE REVISED
CESAR HERNANDEZ | HASSAN MANNAA
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: HASSAN MANNAA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	20	34

REGISTERED ELECTRICAL ENGINEER 1/19/11 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CESAR HERNANDEZ No. E15805 Exp. 12/31/12 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.

ABBREVIATION

STC SCREENED COAXIAL TRANSMISSION CABLE

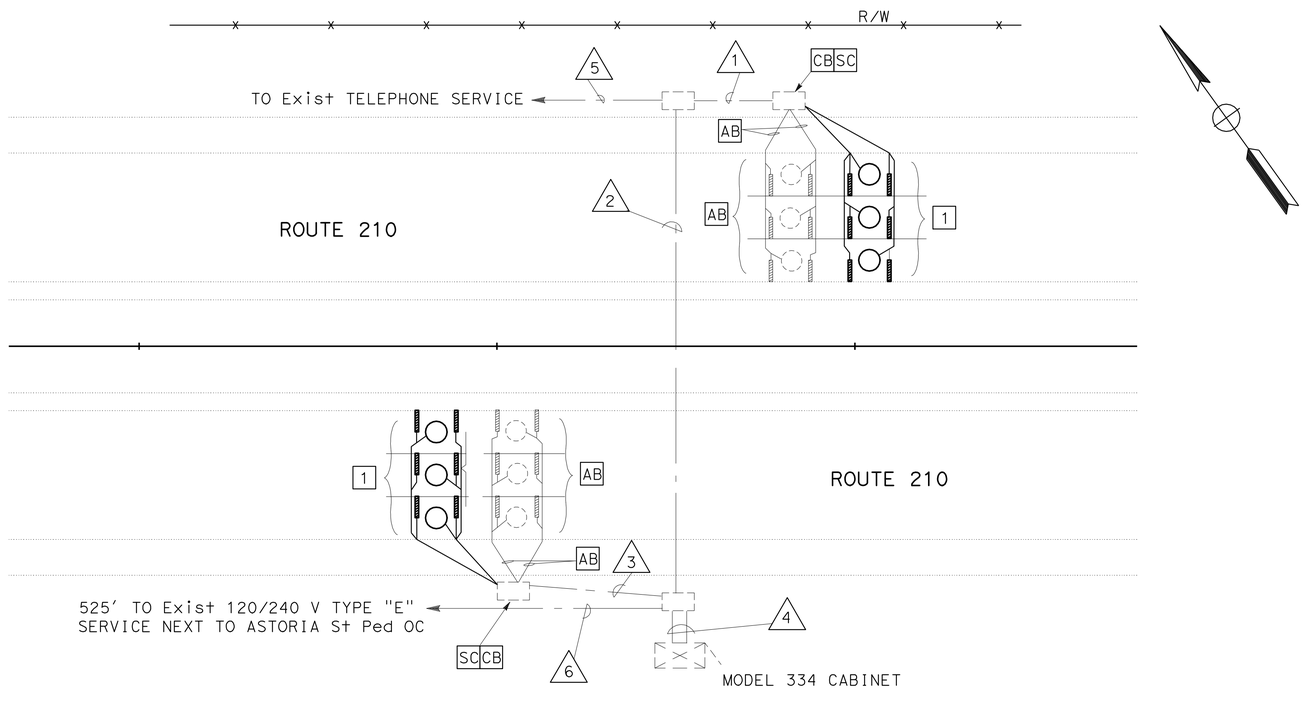
PROJECT NOTE: (THIS SHEET ONLY)

1 INSTALL 3 INDUCTIVE LOOP DETECTORS AND 6 AXLE SENSORS. SEE SHEET E-5 FOR INSTALLATION DETAILS.

CONDUCTOR AND CONDUIT SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	1	2	3	4	5	6
DLC	EB PRESENCE DETECTORS			3	3		
	WB PRESENCE DETECTORS	3	3		3		
STC	EB AXLE SENSORS			6(N)	6(N)		
	WB AXLE SENSORS	6(N)	6(N)		6(N)		
#10	120/240 V SERVICE				2		2
4#18 SHIELDED	TELEPHONE		1		1	1	
	CONDUIT	4"	4"	4"	2-4"	3"	4"

ALL CONDUCTORS ARE EXISTING, UNLESS OTHERWISE NOTED.
(N) NEW



LA-210 EAST OF POLK STREET UNDERCROSSING

PM R3.6

MODIFY AUTOMATIC VEHICLE CLASSIFICATION

(LOCATION 1)

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

E-3

REVISED BY | DATE REVISED
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CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: HASSAN MANNAA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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BORDER LAST REVISED 7/2/2010 | USERNAME => s122436 | DGN FILE => 0700000751ua003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1879 | PROJECT NUMBER & PHASE 07000007511

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	21	34

REGISTERED ELECTRICAL ENGINEER 1/19/11 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
CESAR HERNANDEZ
No. E15805
Exp. 12/31/12
ELECTRICAL
STATE OF CALIFORNIA

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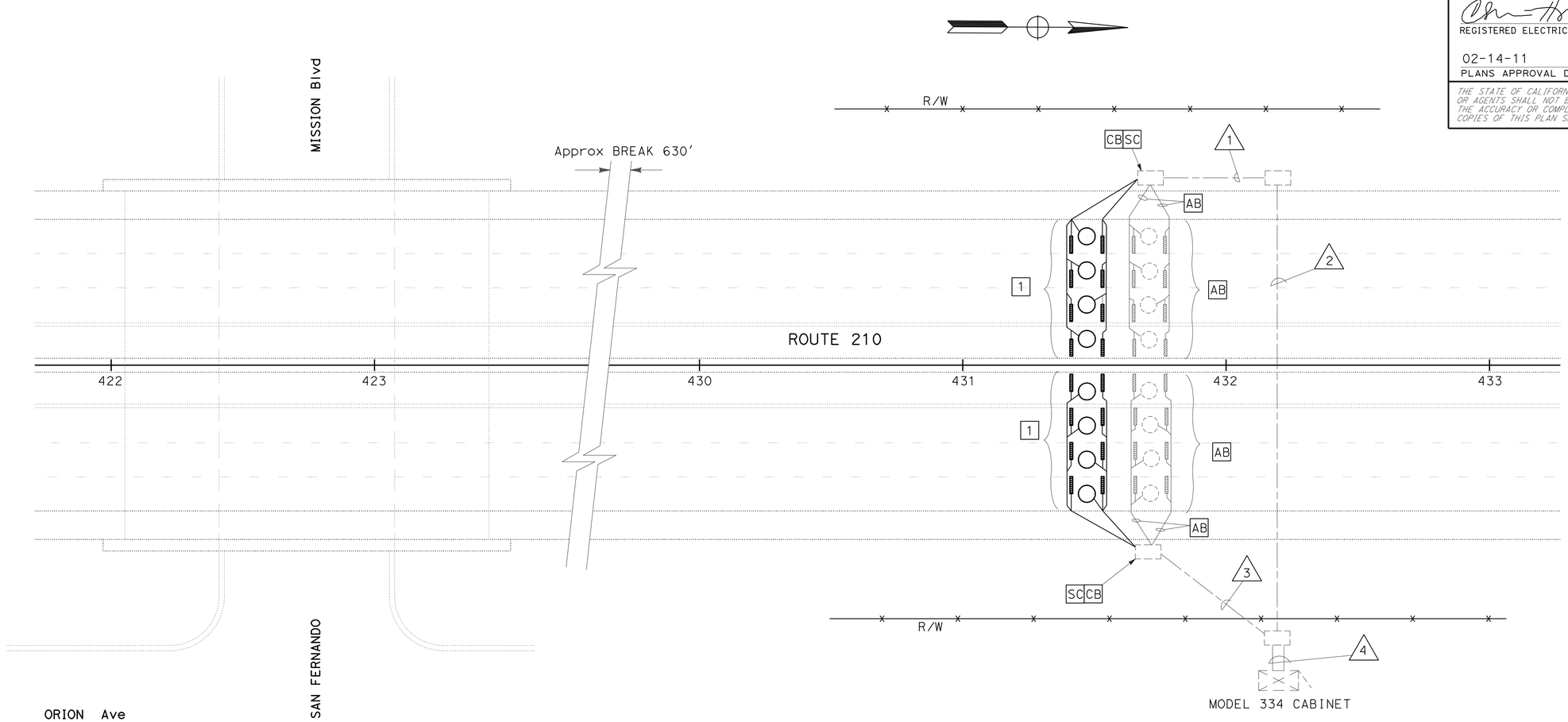

CONDUCTOR AND CONDUIT SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	1	2	3	4
DLC	SB PRESENCE DETECTORS	4	4	–	4
	NB PRESENCE DETECTORS	–	–	4	4
STC	SB AXLE SENSORS	8(N)	8(N)	–	8(N)
STC	NB AXLE SENSORS	–		8(N)	8(N)
	CONDUIT	2"	2"	2"	2-3"

ALL CONDUCTORS ARE EXISTING, UNLESS OTHERWISE NOTED.
(N) NEW

ABBREVIATION

STC SCREENED COAXIAL TRANSMISSION CABLE

PROJECT NOTE: (THIS SHEET ONLY)

1 INSTALL 4 INDUCTIVE LOOP DETECTORS AND 8 AXLE SENSORS. SEE SHEET E-5 FOR INSTALLATION DETAILS.

MODIFY AUTOMATIC VEHICLE CLASSIFICATION
(LOCATION 2)
NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

E-4

REVISED BY | DATE REVISED
CESAR HERNANDEZ | HASSAN MANNAA
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: HASSAN MANNAA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
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LAST REVISION 02-14-11 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:46

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	22	34

REGISTERED ELECTRICAL ENGINEER 1/19/11 DATE

02-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CESAR HERNANDEZ No. E15805 Exp. 12/31/12 ELECTRICAL STATE OF CALIFORNIA

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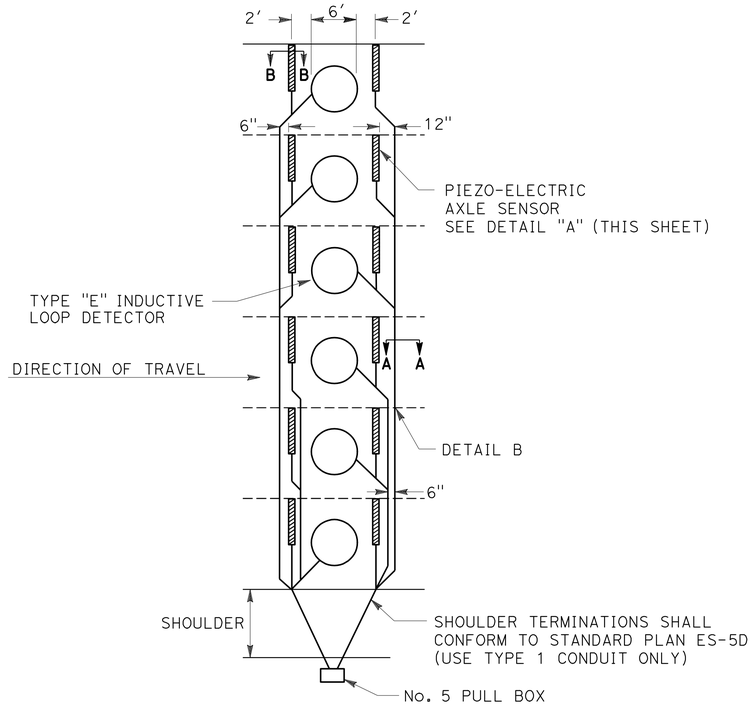
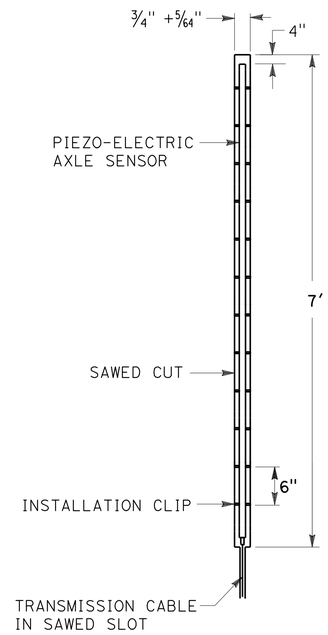


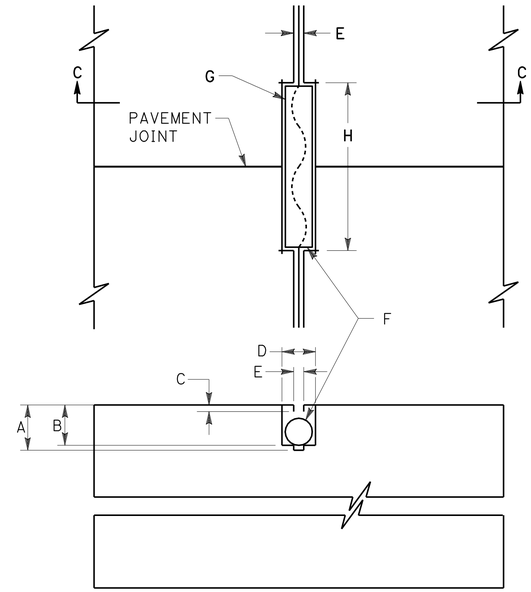
TYPICAL AXLE SENSOR INSTALLATION

NO SCALE



DETAIL "A"

NO SCALE



SECTION C-C

DETAIL B (TYPICAL LEAD-IN AT PAVEMENT JOINT)

NO SCALE

A. SAW CUT DEPTH TO ACCOMODATE SPECIFIED NUMBER OF CONDUCTORS WITH A MINIMUM OF 1" FROM TOP OF WIRE TO PAVEMENT SURFACE (3¼" Max).

B. SLOT SAW-CUT DEPTH TO ACCOMODATE 1" TYPE 3 CONDUIT WITH ½" MINIMUM FROM TOP OF CONDUIT TO PAVEMENT SURFACE.

C. ½" MINIMUM BETWEEN TOP OF CONDUIT AND PAVEMENT SURFACE.

D. SAW-CUT WIDTH TO ACCOMODATE 1" TYPE 3 CONDUIT WITH ⅛" CLEARANCE.

E. SAW-CUT ⅜" WIDE (Max).

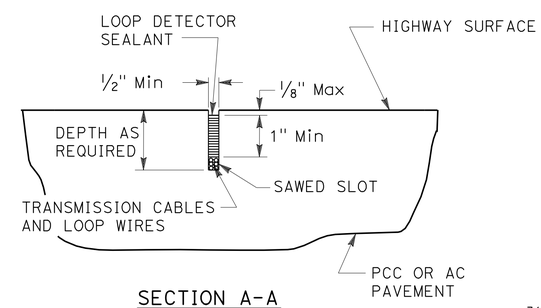
F. 1" TYPE 3 CONDUIT, 6" LONG. PLUG BOTH ENDS WITH CAULKING COMPOUND TO KEEP OUT EPOXY.

G. CONDUCTORS WITH ½" MINIMUM SLACK INSIDE CONDUIT.

H. SAW-CUT LENGTH OF SLOT ⅛" LONGER THAN CONDUIT.

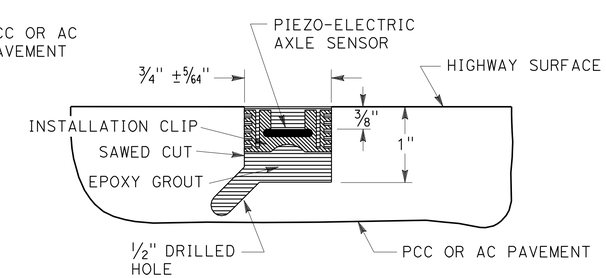
AXLE SENSOR INSTALLATION PROCEDURE

1. MARK THE POSITION OF THE AXLE SENSORS AS DIRECTED BY THE ENGINEER. AXLE SENSOR CHANNELS MUST BE PERPENDICULAR TO TRAFFIC.
2. MARK THE POSITION OF THE LOOP DETECTORS. THE DETECTORS SHALL BE CENTERED IN THE LANE AND BETWEEN THE AXLE SENSORS.
3. MARK THE HOME RUN CUTS AS SHOWN IN THE AXLE SENSOR INSTALLATION DETAIL.
4. USING A CONCRETE SAW CUT THE AXLE SENSOR CHANNELS ¾" WIDE BY 1" DEEP IN A SINGLE PASS. CUTS SHALL BE STRAIGHT AND TRUE.
5. CUT THE LOOP DETECTORS AND HOME RUNS IN ACCORDANCE WITH CALTRANS SPECIFICATIONS.
6. DRILL ½" HOLES, 1" DEEP, AT A 45 DEGREE ANGLE AT THE BOTTOM CORNERS OF EACH CHANNEL. HOLES SHALL BE 12" APART AND ON ALTERNATING SIDES OF THE CHANNEL.
7. WASH OUT THE CHANNELS AND ALL SAW CUTS THOROUGHLY WITH HIGH PRESSURE WATER. DRY COMPLETELY WITH AN AIR COMPRESSOR. IN PCC PAVEMENT ONLY, WIPE OUT THE CHANNELS WITH LACQUER THINNER AND CLEAN COTTON RAGS.
8. PLACE 4" DUCT TAPE STRIPS ON THE PAVEMENT AROUND THE CHANNELS.
9. ENSURE THAT EACH SENSOR IS STRAIGHT AND FLAT. BEND EACH END DOWN SLIGHTLY AND PLACE THE INSTALLATION CLIPS ON THE SENSOR.
10. BLOCK OFF THE CABLE END OF THE CHANNEL WITH DUCT SEAL TO PREVENT THE GROUT FLOWING OUT OF THE CHANNEL.
11. PRE-MIX THE EPOXY GROUT UNTIL A UNIFORM CONSISTENCY IS OBTAINED, A MINIMUM OF 4 MINUTES, SCRAPING BOTH THE SIDES AND BOTTOM OF THE CONTAINER. ADD THE HARDENER POWDER AND MIX FOR 1 MINUTE.
12. WHILE WEARING PROTECTIVE GLOVES, HALF FILL THE CHANNEL WITH EPOXY GROUT. ENSURE THAT THE BOTTOM OF THE CHANNEL IS COMPLETELY COVERED, AND THAT THE HOLES DRILLED IN STEP 6 ARE FILLED.
13. PLACE THE SENSOR IN THE CHANNEL WITH THE BRASS ELEMENT ⅜" BELOW THE ROAD SURFACE, WITH NO VOIDS BENEATH THE SENSOR.
14. COMPLETELY FILL THE CHANNEL WITH GROUT. SMOOTH OUT THE GROUT ON TOP OF THE SENSOR TO ROAD LEVEL, WITH NO TROUGH ON TOP.
15. WHEN GROUT HAS BEGUN TO SET, REMOVE THE DUCT TAPE FROM THE PAVEMENT. REMOVE THE DUCT SEAL FROM THE END OF THE CHANNEL.
16. INSTALL THE LOOP DETECTORS AS PER CALTRANS SPECIFICATIONS.
17. INSTALL ALL LEAD-IN CABLES IN THE HOME RUN SLOTS, INSTALLING TYPE 3 CONDUIT AT THE EXPANSION JOINT CROSSINGS. PULL CABLES THROUGH STUB-OUT CONDUIT AND COIL IN PULL BOX.
18. SEAL ALL SAW CUTS. ELASTOMERIC SEALANT ONLY SHALL BE USED IN ALL CUTS CONTAINING SCREENED TRANSMISSION CABLE.
19. REMOVE ANY HIGH SPOTS IN THE EPOXY GROUT WITH A HAND GRINDER.
20. CLEAN UP THE SITE. WHEN ALL GROUT AND SEALANTS ARE COMPLETELY CURED, LANES MAY BE OPENED TO TRAFFIC.



SECTION A-A

NO SCALE



SECTION B-B

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY AUTOMATIC VEHICLE CLASSIFICATION (DETAIL)

NO SCALE

E-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: HASSAN MANNAA

CESAR HERNANDEZ | HASSAN MANNAA | REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY

LAST REVISION 00-00-00 | DATE PLOTTED => 17-FEB-2011 | TIME PLOTTED => 15:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	23	34

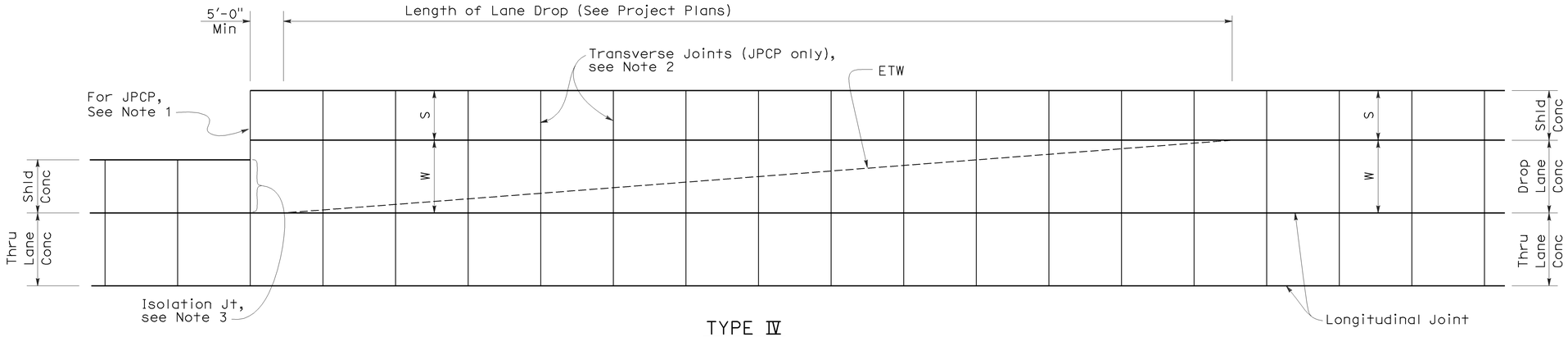
William K. Farnbach
REGISTERED CIVIL ENGINEER

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.

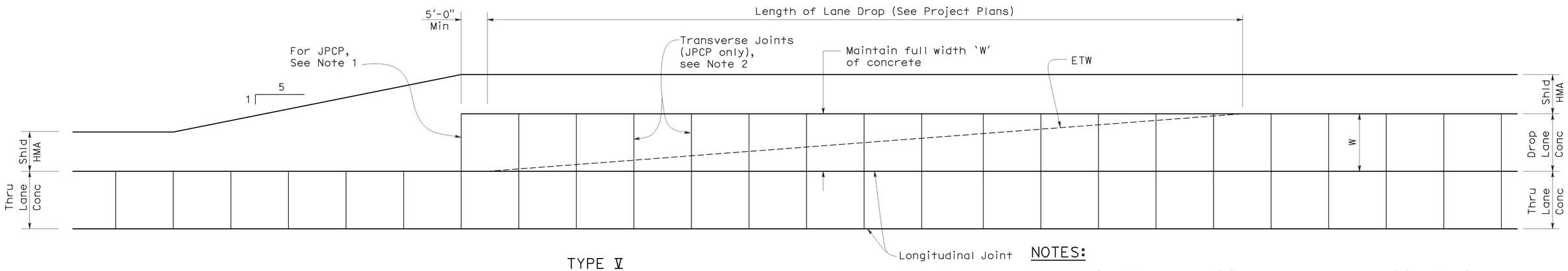
To accompany plans dated 02-14-11



TYPE Ⅳ

JOINTED PLAIN AND CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

(See Revised Std Plans RSP P1, RSP P2, or New Std Plan NSP P4 for details not shown)



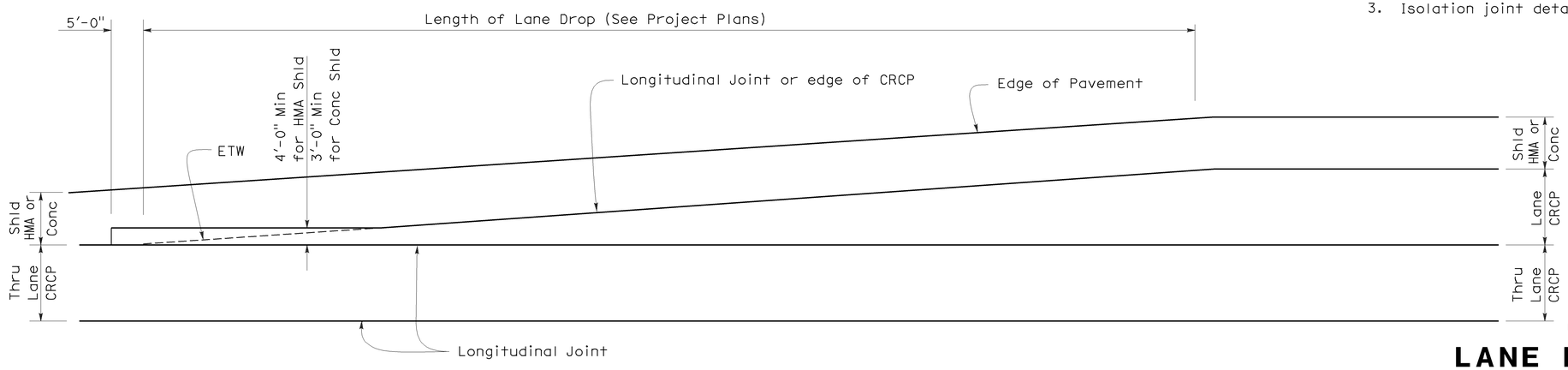
TYPE Ⅴ

JOINTED PLAIN AND CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

(See Revised Std Plans RSP P1, RSP P2, or New Std Plan NSP P4 for details not shown)

NOTES:

1. Location of transverse joint to match transverse joint of adjacent lane.
2. Place transverse joint of lane and shoulder perpendicular to longitudinal joint of through lane.
3. Isolation joint detail shown on Revised Standard Plan RSP P18.



TYPE Ⅵ

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

(See New Std Plan NSP P4 for details not shown)

LEGEND

S - Shoulder width
W - Lane width

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-
LANE DROP PAVING DETAILS No. 2

NO SCALE

NSP P34 DATED MAY 15, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP P34

2006 NEW STANDARD PLAN NSP P34

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	24	34

REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Donald E. Howe No. C46402 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

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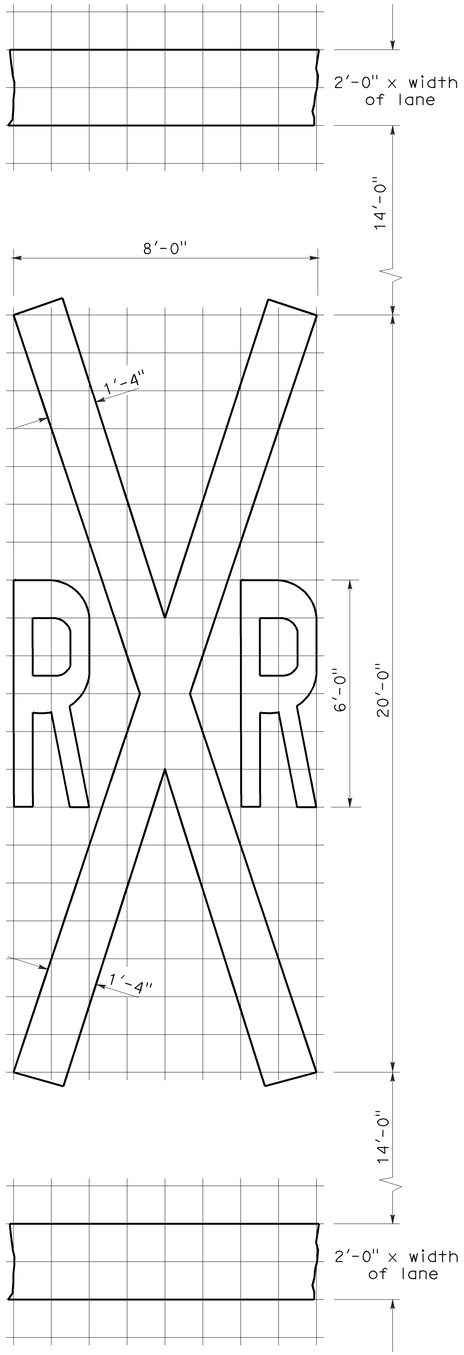
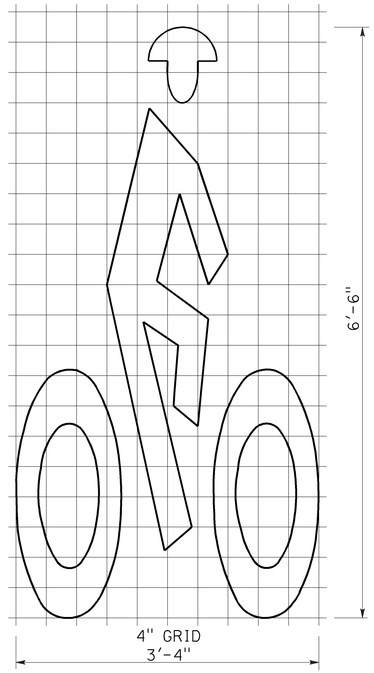
To accompany plans dated 02-14-11

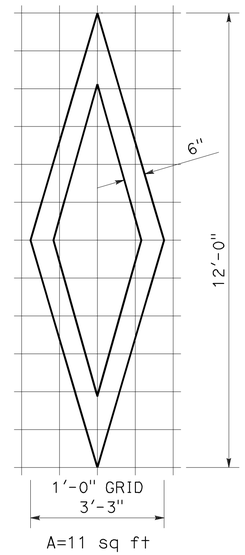


RAILROAD CROSSING SYMBOL

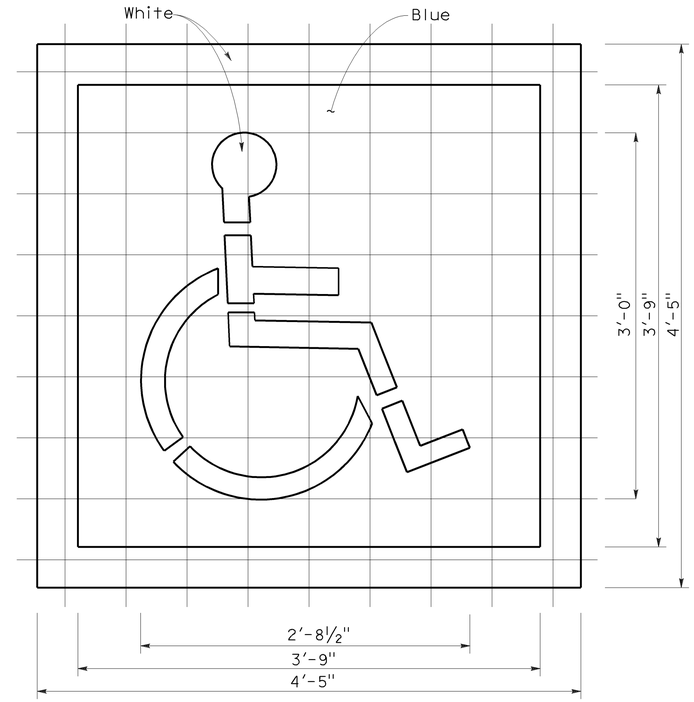
✳70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



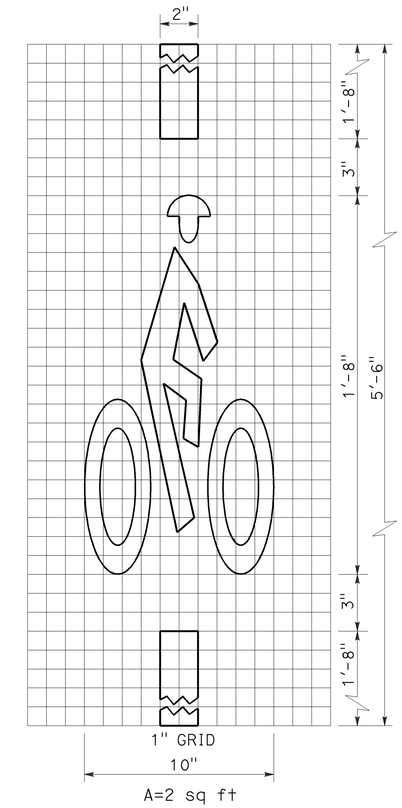
BIKE LANE SYMBOL



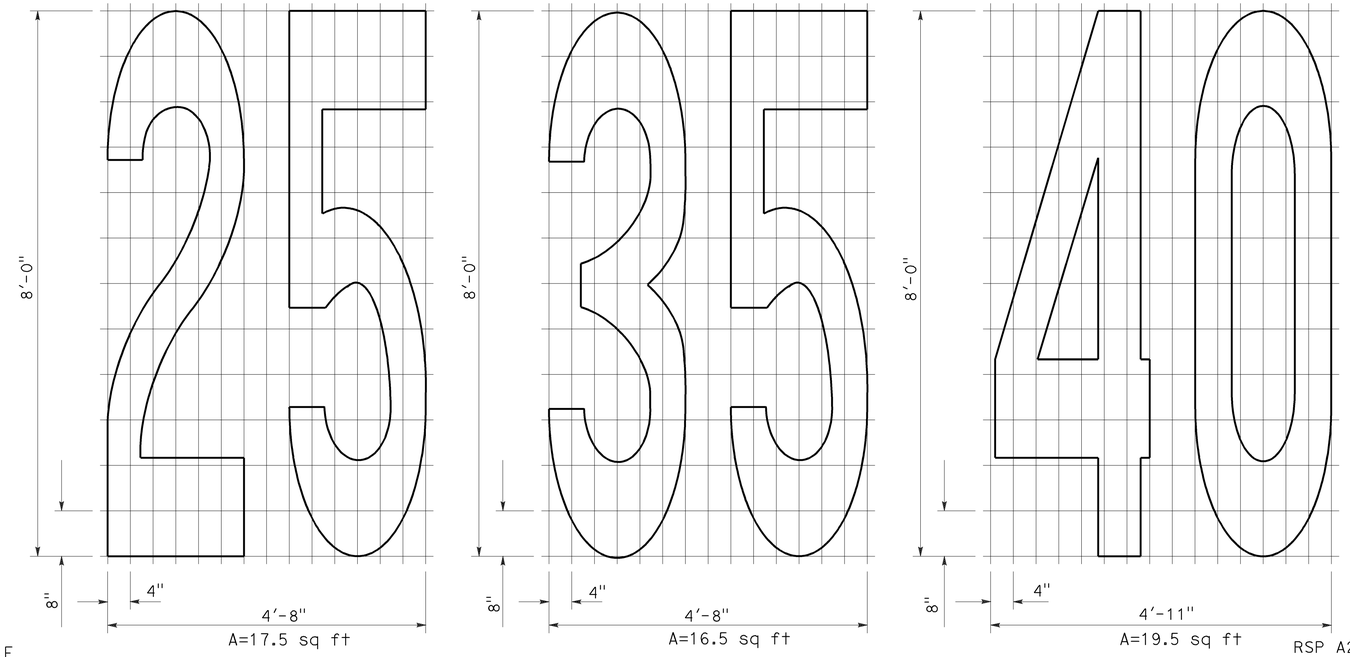
DIAMOND SYMBOL



INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING



BICYCLE LOOP DETECTOR SYMBOL



NUMERALS

NOTE:

1. Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS SYMBOLS AND NUMERALS

NO SCALE

RSP A24C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A24C DATED MAY 1, 2006 - PAGE 11 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A24C

2006 REVISED STANDARD PLAN RSP A24C

5-27-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	25	34

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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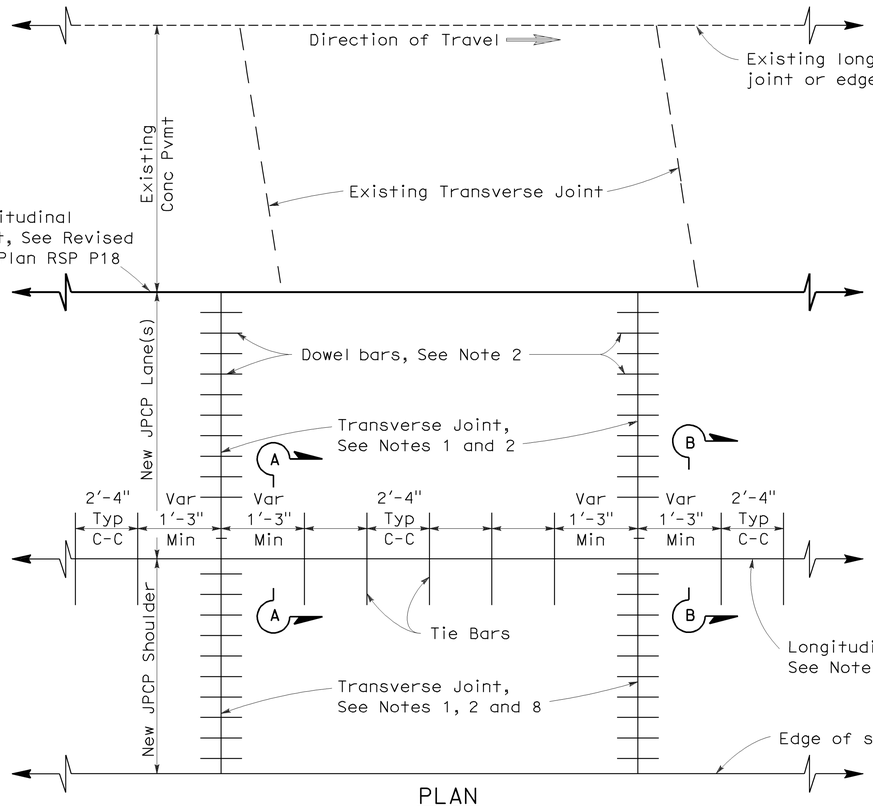
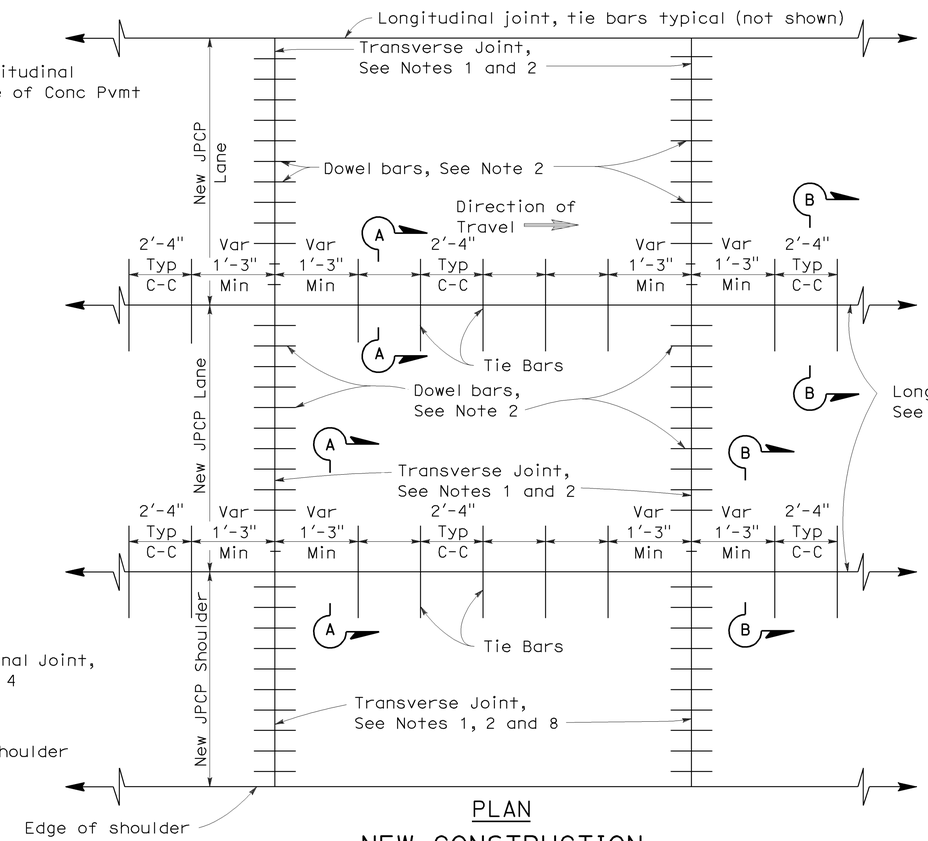
To accompany plans dated 02-14-11



PLAN

LANE/SHOULDER ADDITION OR RECONSTRUCTION

See Notes 6 and 7



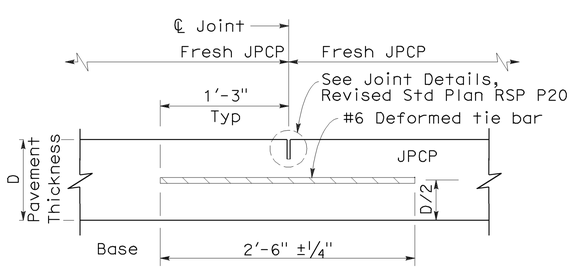
PLAN

NEW CONSTRUCTION

See Notes 6 and 7

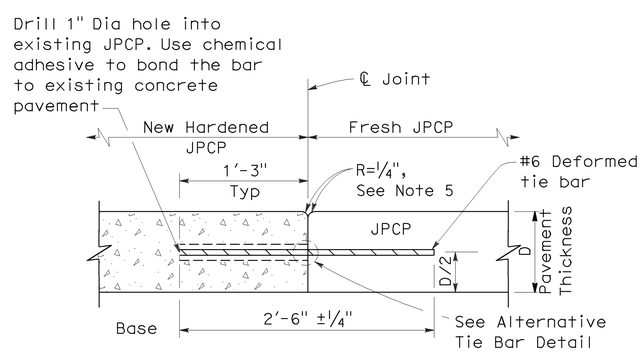
NOTES:

1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new jointed plain concrete pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
2. For transverse joint and dowel bar details not shown, See Revised Standard Plan RSP P10.
3. Construct longitudinal contraction joints as shown in Section A-A when more than one lane or shoulder widths are placed at one time. If constructing one lane at a time, use longitudinal construction joint, as shown in Section B-B.
4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
5. If fresh concrete is placed adjacent to existing concrete, the top corner of the new hardened concrete does not need to be rounded to the 1/4" radius as shown.
6. Joint spacing patterns do not apply to intersections.
7. Details can also apply to inside widening.
8. Dowel bars may be omitted from shoulders when the shoulder cross slope is not the same as the adjacent traffic lane.



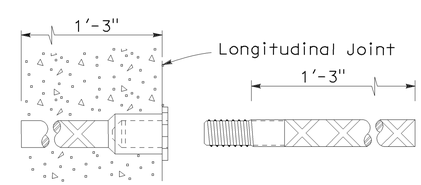
SECTION A-A

LONGITUDINAL CONTRACTION JOINT



SECTION B-B

LONGITUDINAL CONSTRUCTION JOINT



ALTERNATIVE TIE BAR SPLICE DETAIL

(Splice Coupler)

TIE BAR DETAILS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINTED PLAIN CONCRETE PAVEMENT

NO SCALE

RSP P1 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P1
DATED MAY 1, 2006 - PAGE 119 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P1

2006 REVISED STANDARD PLAN RSP P1

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	26	34

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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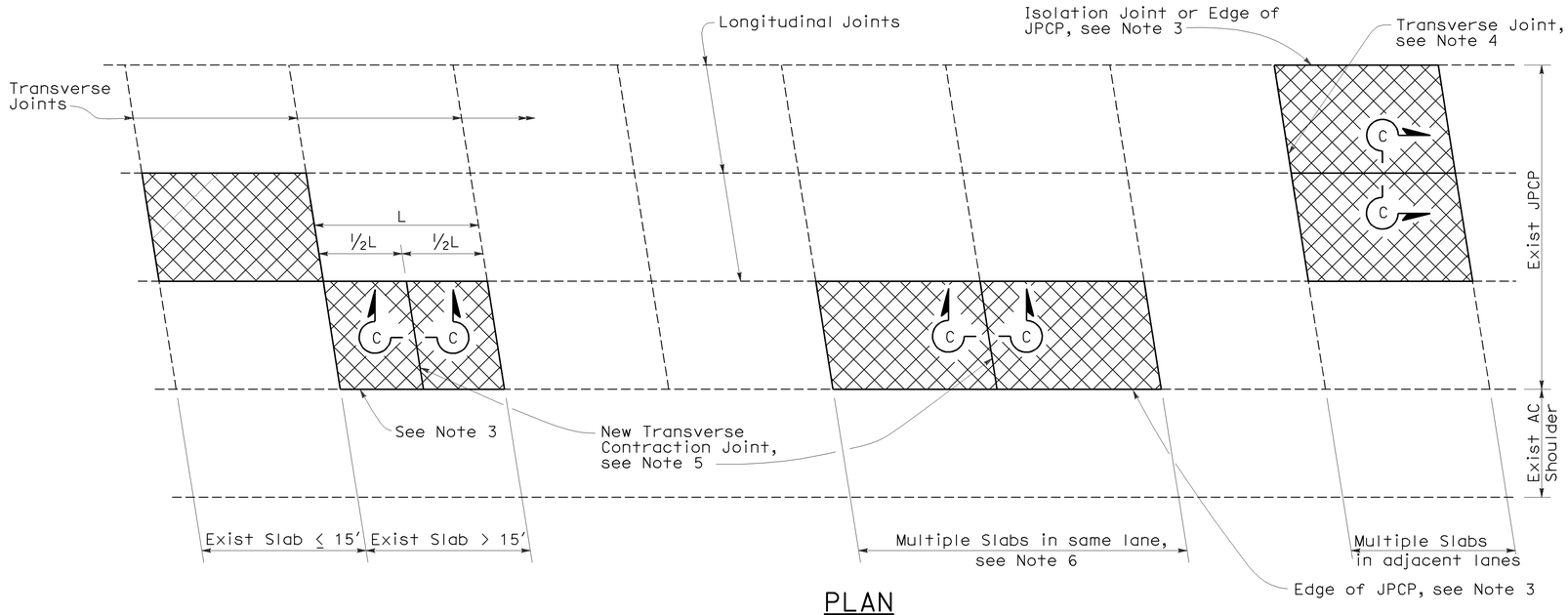
To accompany plans dated 02-14-11



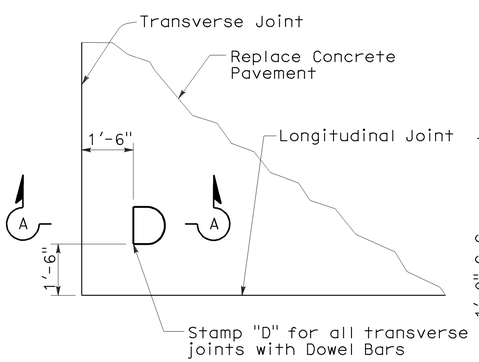
PLAN

NOTES:

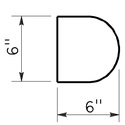
1. For details not shown, see Revised Standard Plan RSP P10.
2. Where the existing outer shoulder pavement is asphalt concrete pavement, the "a" dimension shall be 1′-0" and the "b" dimension shall be 2′-0".
3. Side forms shall be used where edge of pavement is adjacent to asphalt concrete.
4. For detail,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

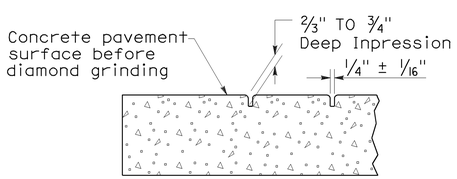
LEGEND

Replace Concrete Pavement (See Slab Layout Detail)

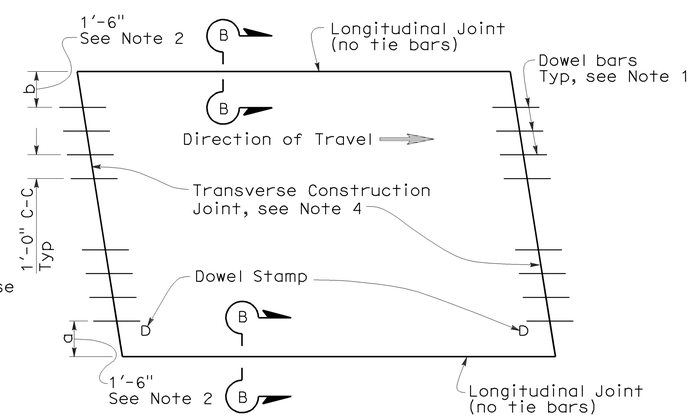


DOWEL STAMP DETAIL

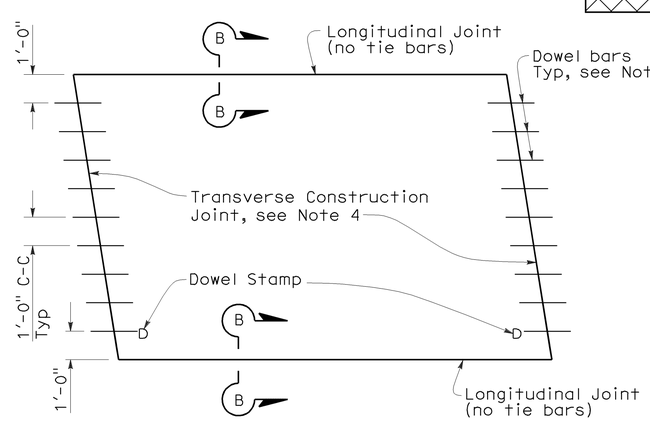




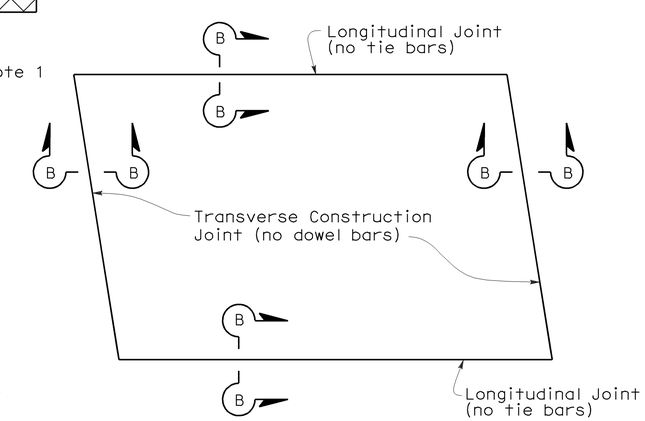
SECTION A-A



TYPE I
(traffic lane lines match longitudinal joints)

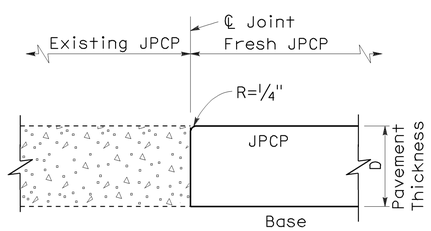


TYPE II
(traffic lane lines do not match longitudinal joints)

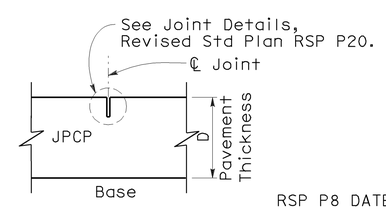


TYPE III
(for short term repairs < 5 yrs design life or for slab replacements with a cracking and seating operation)

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
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	27	34

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

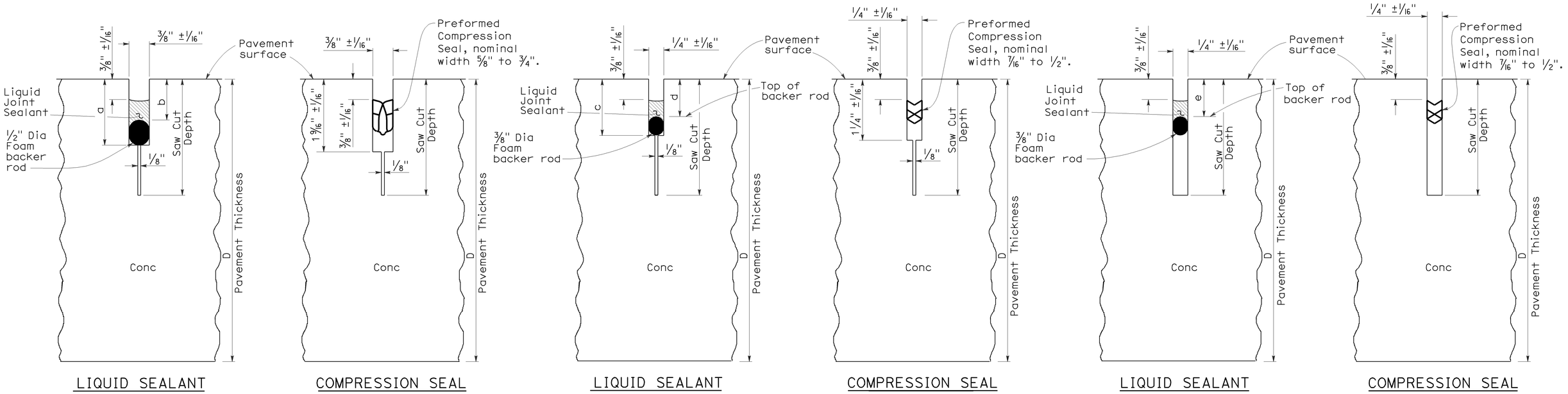
REGISTERED PROFESSIONAL ENGINEER William K. Farnbach No. C49042 Exp. 9-30-10 CIVIL STATE OF CALIFORNIA

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 02-14-11

NOTE:

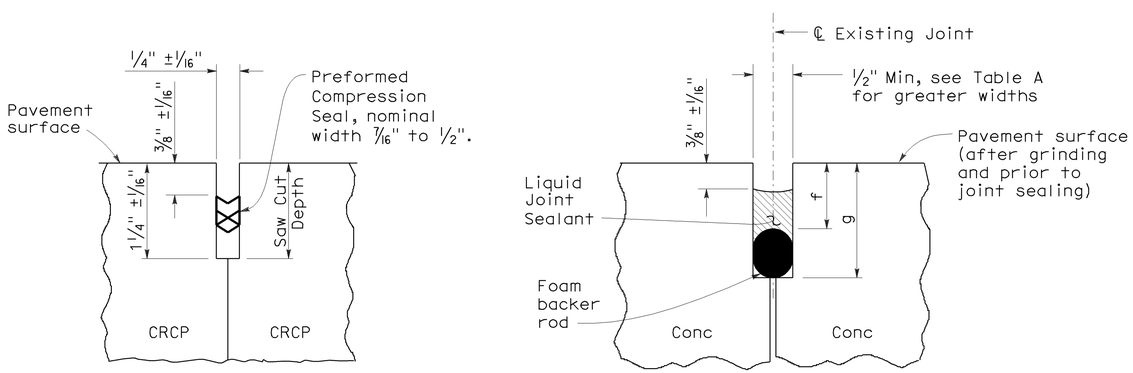
1. Tie bars, dowel bars, and reinforcement are not shown in joint seal details, see Revised Standard Plans RSP P1, RSP P3, RSP P10, RSP P35, RSP P45, or RSP P46 as applicable.



TYPE A1
Transverse Contraction Joints

TYPE A2
Longitudinal Contraction Joints

TYPE B
Longitudinal or Transverse Contraction Joint



TYPE C
Transverse and Longitudinal Construction Joints (For CRCP)

TYPE R
Retrofit Transverse and Longitudinal Joints

LIQUID SEALANT RESERVOIR DEPTH

LIQUID SEALANT MATERIAL	3/8" Joint Width Type A1		1/4" Joint Width Type A2		1/4" Joint Width Type B
	DIMENSION		DIMENSION		DIMENSION
	a	b	c	d	e
SILCONE	1" ±1/16"	5/8" ±1/16"	15/16" ±1/16"	9/16" ±1/16"	9/16" ±1/16"
ASPHALT RUBBER	1 3/16" ±1/16"	3/4" ±1/16"	1 1/16" ±1/16"	11/16" ±1/16"	11/16" ±1/16"

TABLE A (TYPE R JOINT)

Sawn Joint Width	Backer Rod Diameter ± 1/16"	DIMENSION "f"	DIMENSION "g"
1"	1 5/16"	7/8"	2 1/4"
7/8"	1 3/16"	13/16"	2"
3/4"	1"	3/4"	1 3/4"
5/8"	7/8"	11/16"	1 1/2"
1/2"	11/16"	5/8"	1 1/4"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-JOINT DETAILS

NO SCALE

RSP P20 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P20
DATED MAY 1, 2006 - PAGE 128 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P20

2006 REVISED STANDARD PLAN RSP P20

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	28	34

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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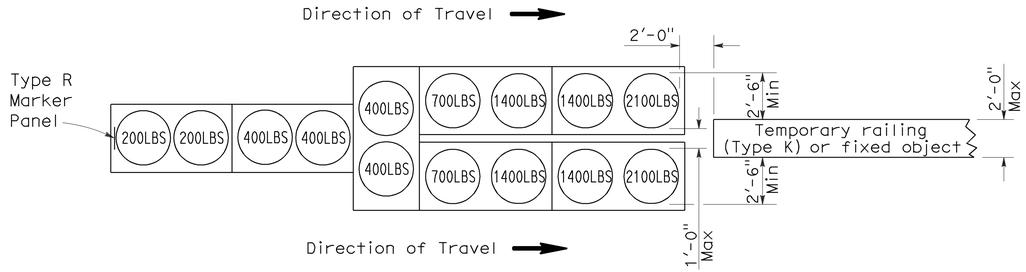
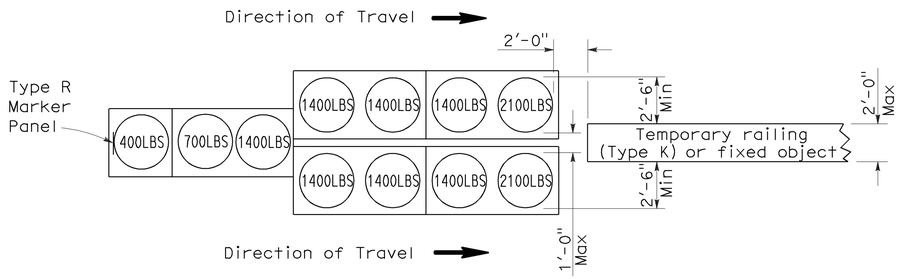
To accompany plans dated 02-14-11



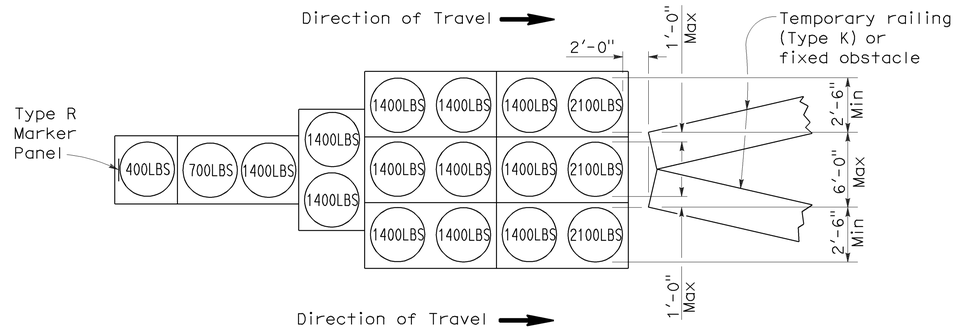
ARRAY 'TU14'

Approach speed 45 mph or more



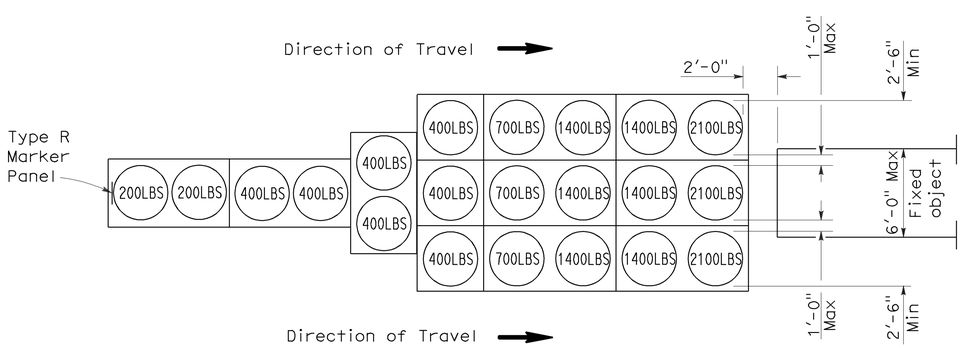
ARRAY 'TU11'

Approach speed less than 45 mph



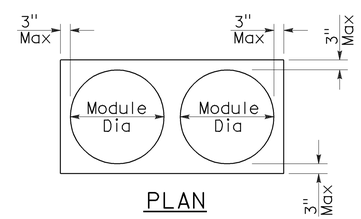
ARRAY 'TU17'

Approach speed less than 45 mph

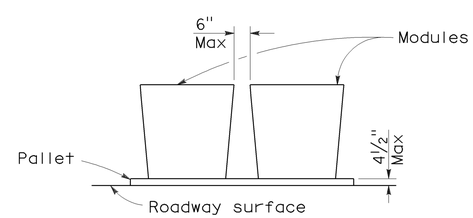


ARRAY 'TU21'

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
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	29	34

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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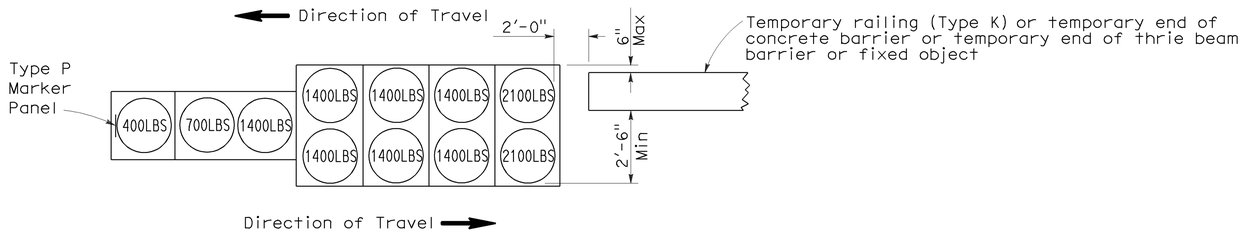
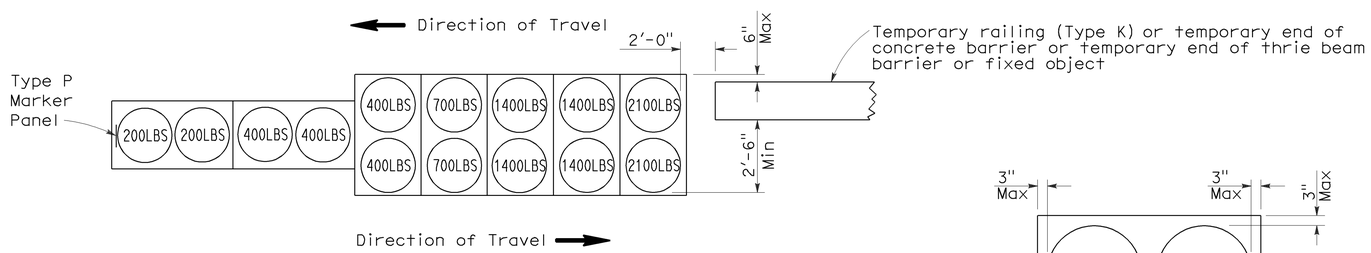
To accompany plans dated 02-14-11



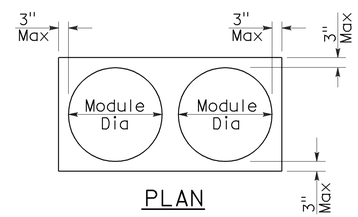
ARRAY 'TB11'

Approach speed less than 45 mph

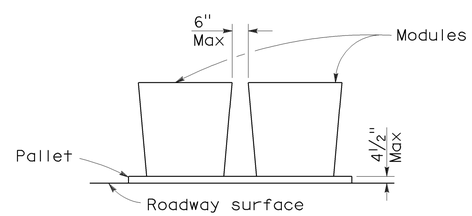


ARRAY 'TB14'

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
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	30	34

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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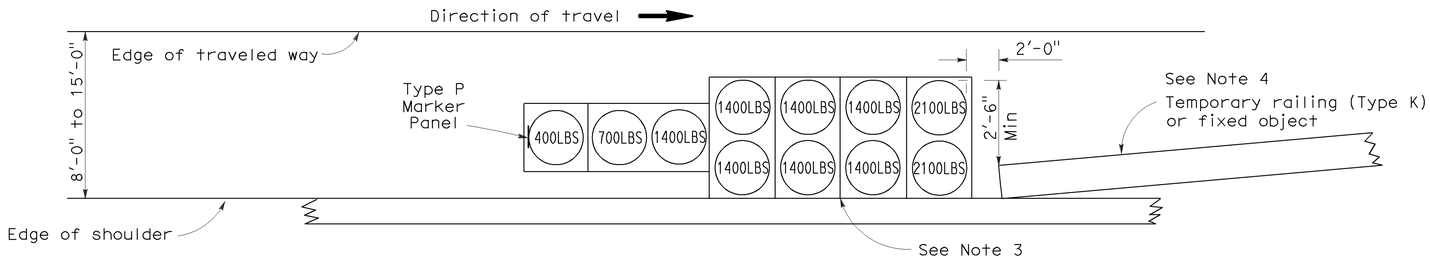
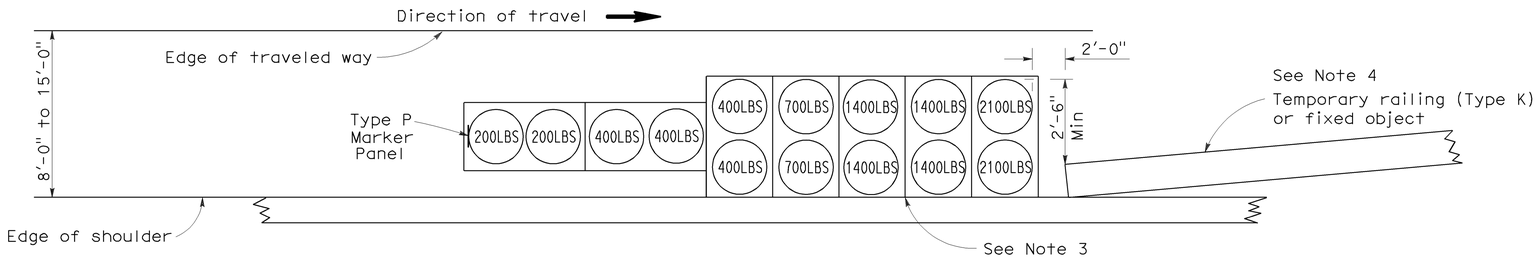
To accompany plans dated 02-14-11



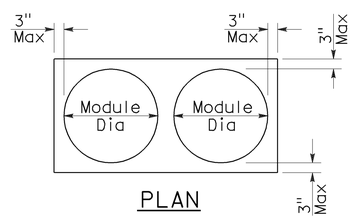
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9

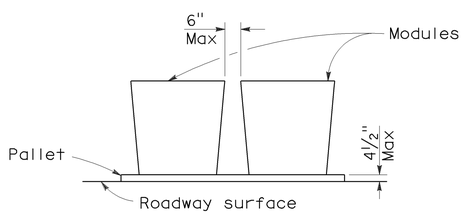


ARRAY 'TS14'

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
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	31	34

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 02-14-11

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

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	32	34

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 02-14-11

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
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	33	34

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 02-14-11

2006 REVISED STANDARD PLAN RSP ES-1C

EQUIPMENT IDENTIFICATION

ILLUMINATED SIGN IDENTIFICATION NUMBER:

Sign No. 12345 — Sign number - Place on post or structure

10 ISL SCI 1.0

- 1.0 — Transformer rating (kVA)
- SCI — Lighting control type
- ISL — Number and type of fixtures

Do NOT place on standard or structure

ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:

12345 - 15'-0"

- 15'-0" — Mast arm length, if shown. Do not place on standard or structure.
- 12345 — 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

- 2#10, 15#14, 2 DLC — Number and size of conductors and cables
- 1½"C — 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

- 100 — Wind velocity = 100 mph
- 3 — Case 3 arm loading
- 19A — 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
- 9 — Slot number in input file
- J — Input file (I or J)
- 5 — 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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	210, 405	R0.0/R11.1, 44.7/48.6	34	34

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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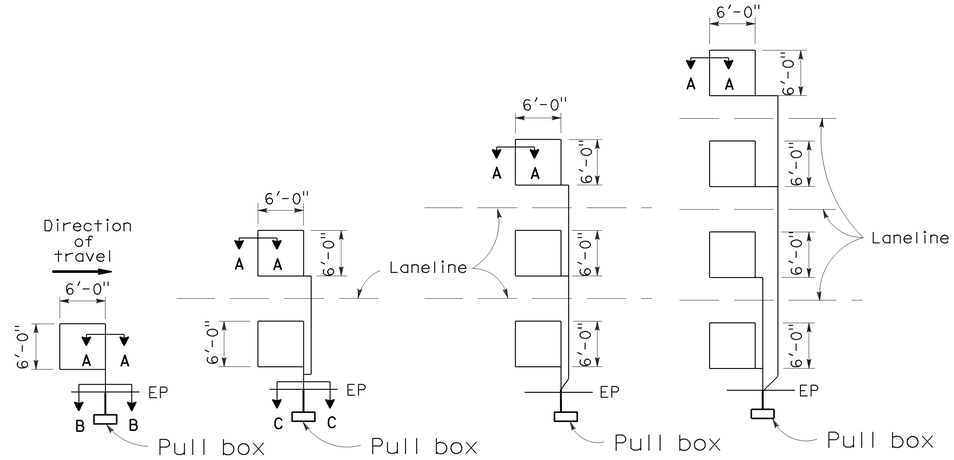
To accompany plans dated 02-14-11

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.

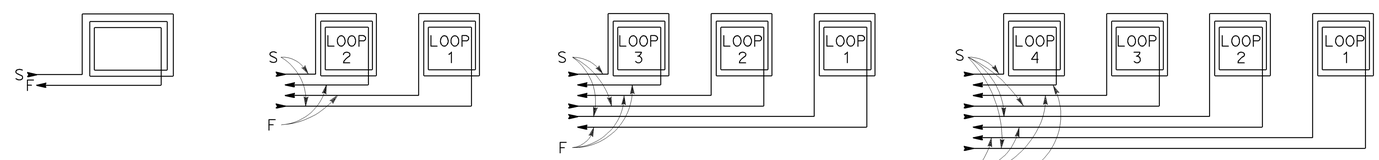


TYPE 1A INSTALLATION | TYPE 2A INSTALLATION | TYPE 3A INSTALLATION | TYPE 4A INSTALLATION

SAWCUT DETAILS

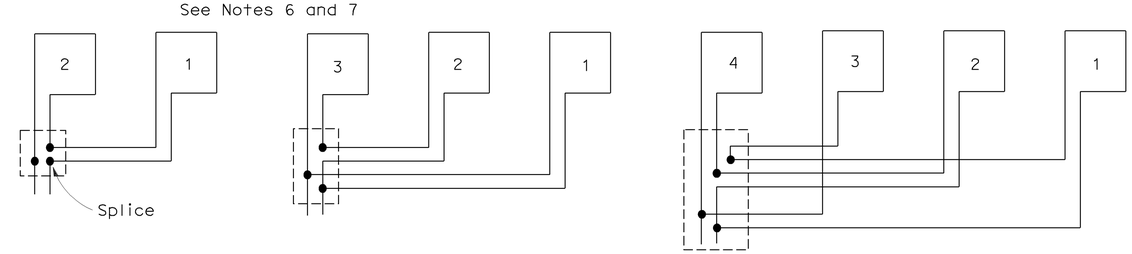
(Type A loop detector configurations illustrated)

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)



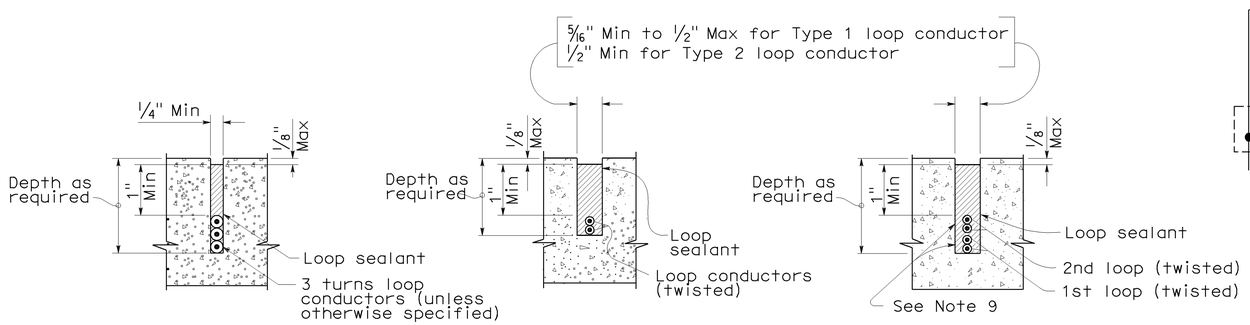
WINDING DETAILS

See Notes 6 and 7



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