Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	1	51

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-11	TYPICAL CROSS SECTIONS
12	CONSTRUCTION DETAILS
13	CONSTRUCTION AREA SIGNS
14-21	TRAFFIC HANDLING DETAILS
22-23	PAVEMENT DELINEATION DETAILS
24-31	PAVEMENT DELINEATION QUANTITIES
32-33	SUMMARY OF QUANTITIES
34	ELECTRICAL PLAN
35-51	REVISED STANDARD PLANS

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

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

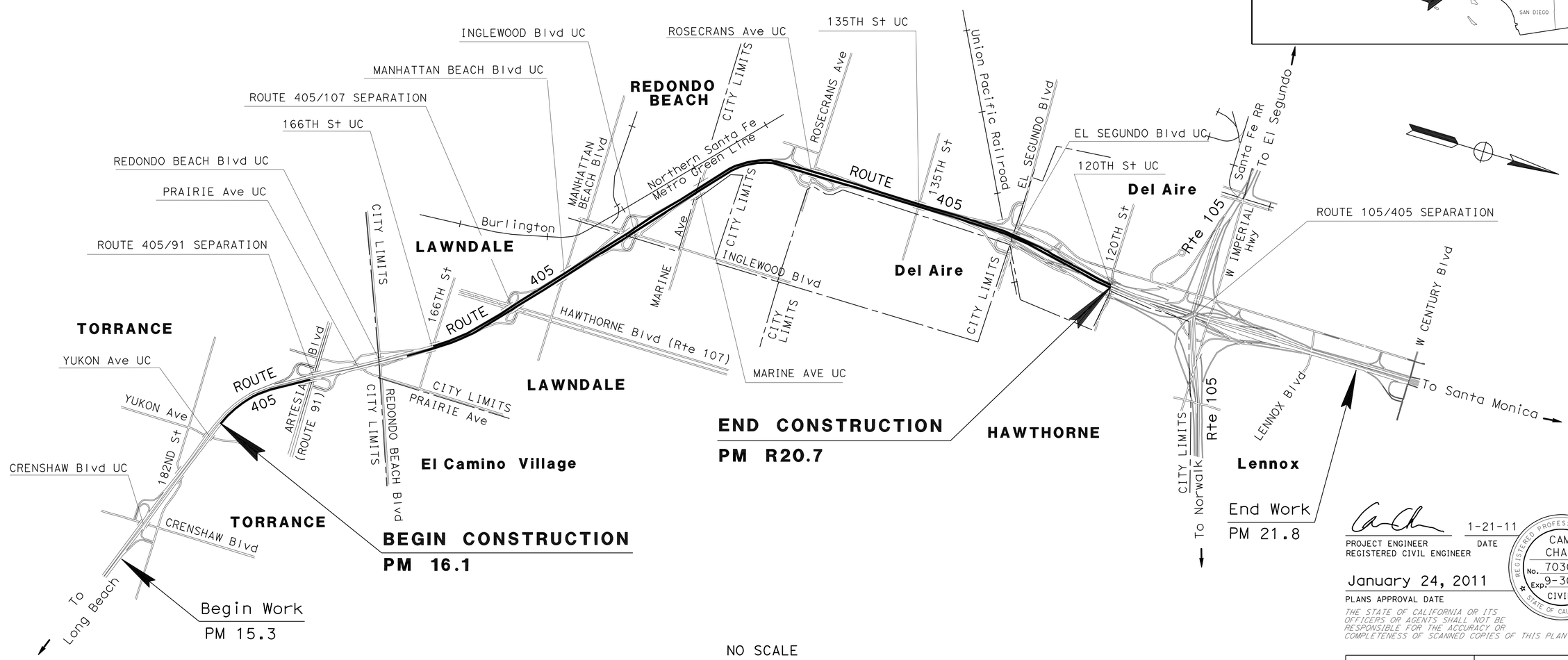
IN LOS ANGELES COUNTY

IN HAWTHORNE, LAWNDALE, REDONDO BEACH AND TORRANCE

FROM 0.1 MILE NORTH OF YUKON AVENUE UNDERCROSSING TO 120TH STREET UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

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 HAMID SAADATNEJADI

PROJECT ENGINEER REGISTERED CIVIL ENGINEER — DATE 1-21-11

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

January 24, 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.

CONTRACT No.	07-4Y5304
PROJECT ID	0700001875

LAST REVISION 01-24-11 DATE PLOTTED => 01-FEB-2011 TIME PLOTTED => 13:09

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	2	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

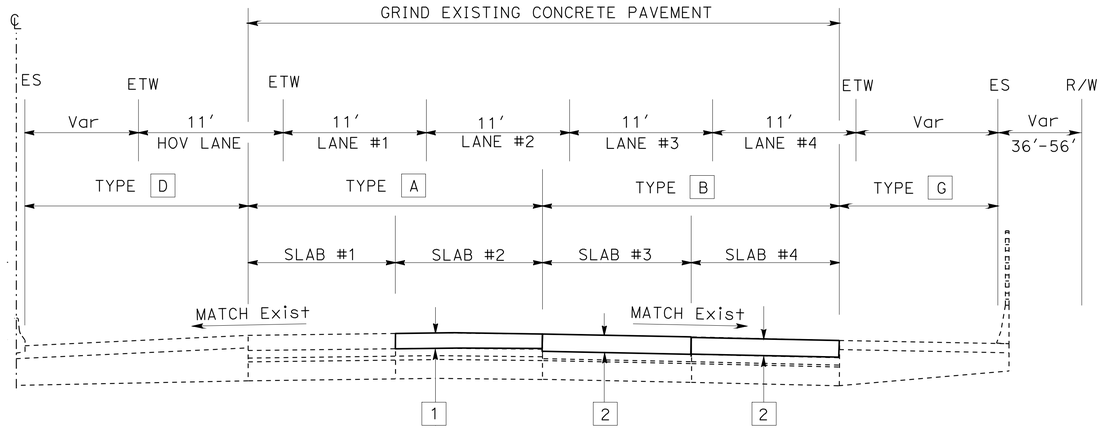
1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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 STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
4. EXISTING DRAINAGE INLETS HAVE NOT BEEN PLOTTED ON THESE PLANS.
5. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
6. OMIT COLD PLANING AND RHMA (GAP GRADED) OVERLAY ON BRIDGE DECKS AND PCC PAVEMENT.
7. CONSTRUCT JOINT SEAL RESERVOIRS AT EXISTING TRANSVERSE AND LONGITUDINAL CONTRACTION JOINTS AND PLACE JOINT SEALANT.
8. SEE SUMMARY OF QUANTITIES SHEET FOR LOCATIONS AND QUANTITIES OF GRIND EXISTING CONCRETE PAVEMENT, REPLACE CONCRETE PAVEMENT (RSC) AND LEAN CONCRETE BASE RAPID SETTING (LCBRS). EXACT LOCATIONS OF GRIND EXISTING CONCRETE PAVEMENT, REPLACE CONCRETE PAVEMENT (RSC) AND LCBRS WILL BE DETERMINED BY THE ENGINEER.
9. SEE RSP P8 FOR INDIVIDUAL SLAB REPLACEMENT DETAILS.
10. OMIT PCC GRINDING ON APPROACH SLABS AND BRIDGE DECKS.



ROUTE 405

NORTHBOUND

PM 16.52/16.56

110′ S. OF ARTESIA Blvd TO ARTESIA Blvd

ABBREVIATIONS:

RHMA: RUBBERIZED HOT MIX ASPHALT
RSC : RAPID STRENGTH CONCRETE

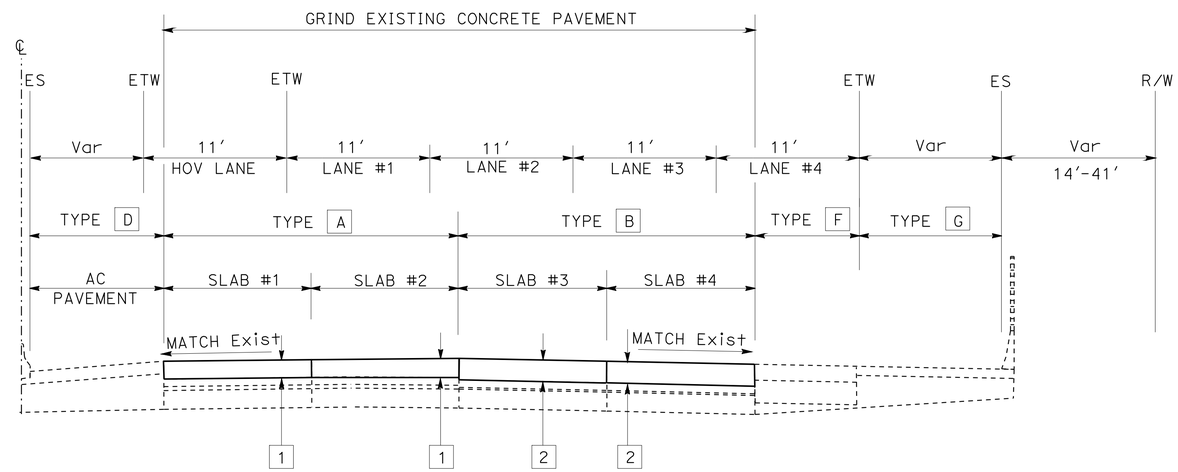
LEGEND:

1 — 0.67′ REPLACE CONCRETE PAVEMENT (RSC)

2 — 0.75′ REPLACE CONCRETE PAVEMENT (RSC)

3 — 0.85′ REPLACE CONCRETE PAVEMENT (RSC)

4 — 0.10′ COLD PLANE AC Pvmt
0.10′ RUBBERIZED HMA (GAP GRADED)



ROUTE 405

NORTHBOUND

PM 16.14/16.52

0.1 MILE N. OF YUKON Ave TO 100′ S. OF ARTESIA Blvd

EXISTING STRUCTURAL SECTIONS

A — 0.67′ PCC, 0.33′ CTB, 0.17′ AB, 0.83′ AS

B — 0.75′ PCC, 0.33′ CTB, 0.08′ AB, 0.83′ AS

C — 0.25′ AC, 0.50′ AB, Var AS

D — 0.55′ AC, Exist BASE

E — 0.25′ AC, Exist BASE

F — 0.70′ AC, 1.00′ Conc BASE

G — 0.40′ AC, Var Cl2 AB

H — 0.35′ AC, 0.67′ CTB, 1.00′ Cl2 AS

I — 1.1′ AC, Exist BASE

J — 0.35′ AC, 0.60′ Cl2 AB, 1.20′ Cl4 AS

K — 0.45′ AC, 0.75′ Conc BASE, 0.35′ Cl3 AB, 0.75′ Cl4 AS

L — 0.35′ AC, 0.65′ Cl2 AB, 1.05′ Cl4 AS

M — 0.85′ PCC, 0.50′ Conc BASE, 0.35′ Cl3 AB, 0.35′ Cl4 AS

TYPICAL CROSS SECTIONS

NO SCALE

X-1

REVISED BY | DATE REVISED
CAM CHAU | HAMID SAADATNEJADI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | HAMID SAADATNEJADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

LAST REVISION 01-24-11 | DATE PLOTTED => 01-FEB-2011 | TIME PLOTTED => 18:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	3	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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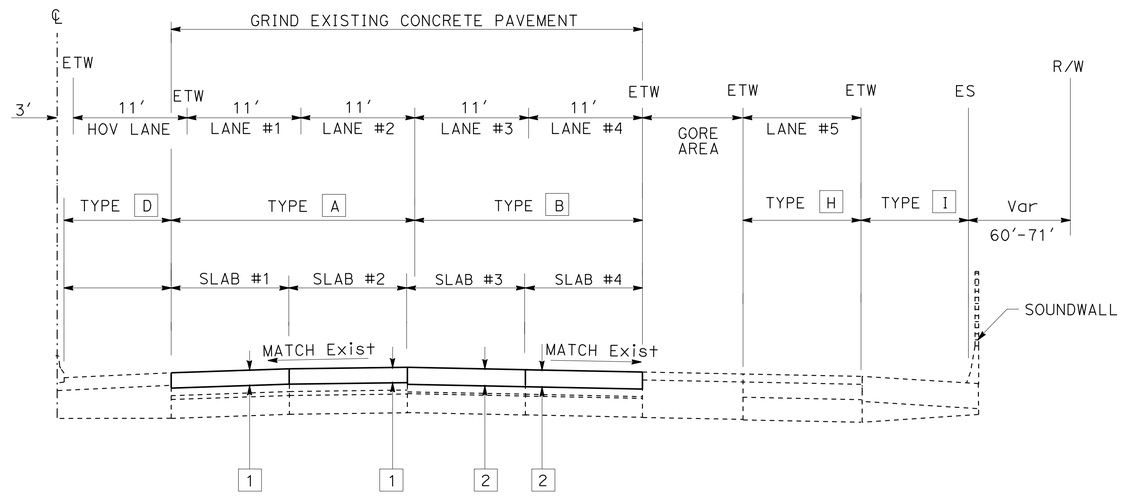

ROUTE 405

NORTHBOUND

PM 17.02/17.14

TYPICAL CROSS SECTIONS

NO SCALE

X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI

CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI

REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	4	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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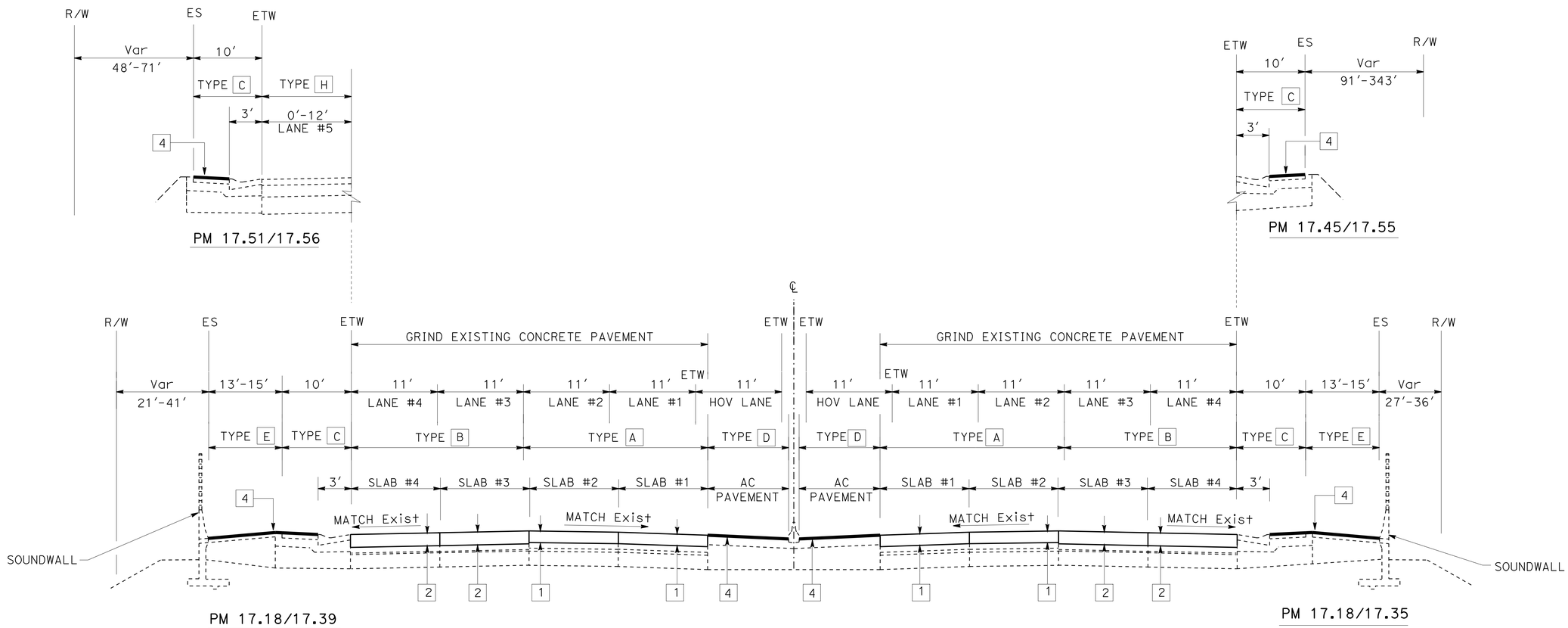

ROUTE 405

PM 17.18/17.56

166TH St UC TO HAWTHORNE (ROUTE 107) UC

TYPICAL CROSS SECTIONS

NO SCALE

X-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI

CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI

REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	5	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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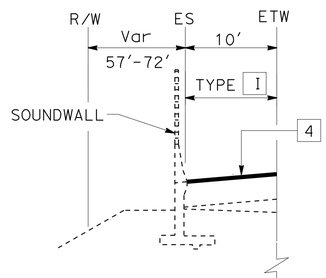
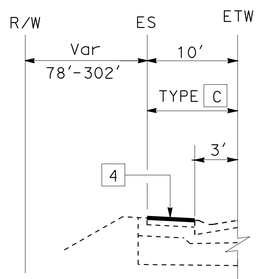


PM 17.78/17.86



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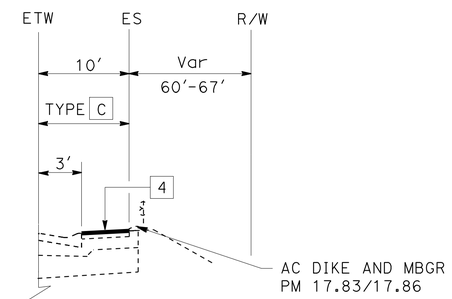
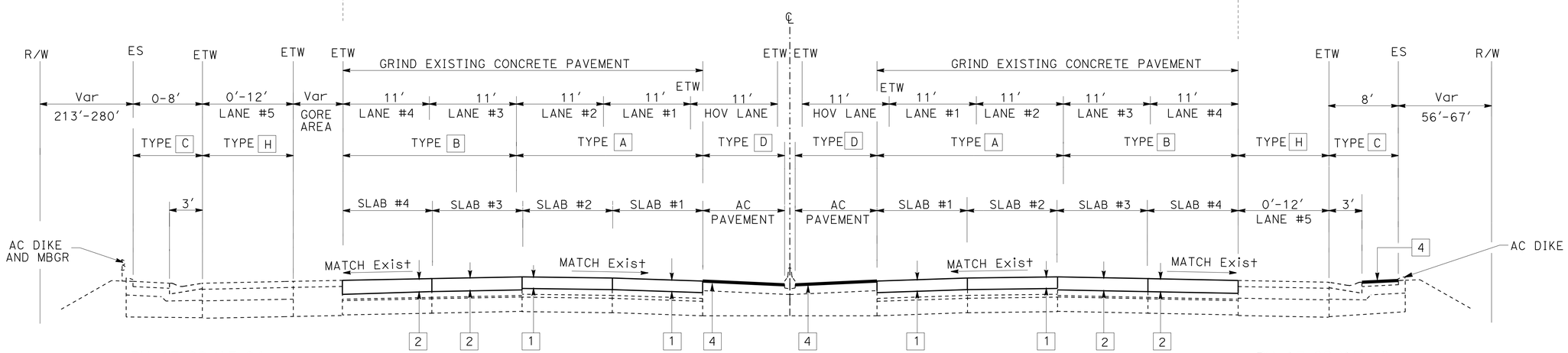


PM 17.78/17.86



PM 17.62/17.64

PM 17.62/17.78

SOUTHBOUND

NORTHBOUND

ROUTE 405

PM 17.62/17.86

HAWTHORNE (ROUTE 107) UC TO MANHATTAN BEACH Blvd UC

TYPICAL CROSS SECTIONS

NO SCALE

X-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI

CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	6	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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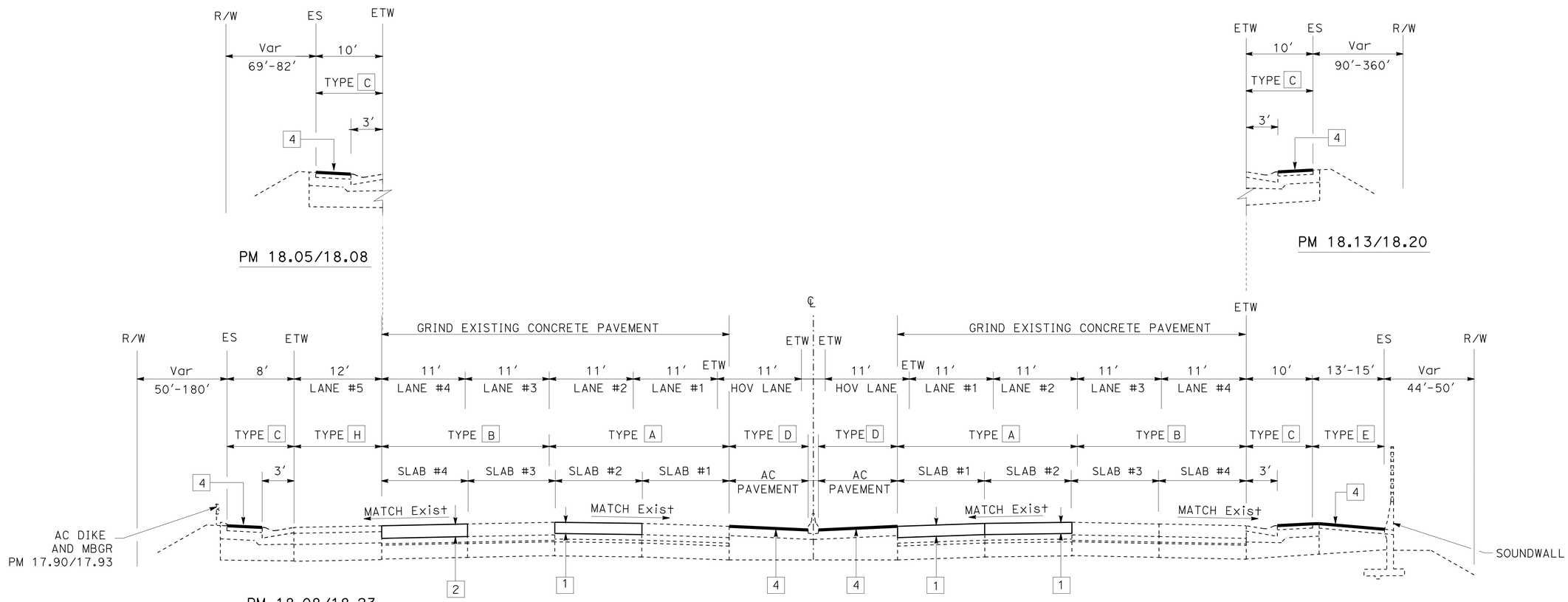

ROUTE 405

PM 17.90/18.23

MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC

TYPICAL CROSS SECTIONS

NO SCALE

X-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI

CALCULATED-DESIGNED BY: CAM CHAU

CHECKED BY: HAMID SAADATNEJADI

REVISED BY

DATE REVISED

LAST REVISION 01-24-11

DATE PLOTTED => 01-FEB-2011

TIME PLOTTED => 13:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	7	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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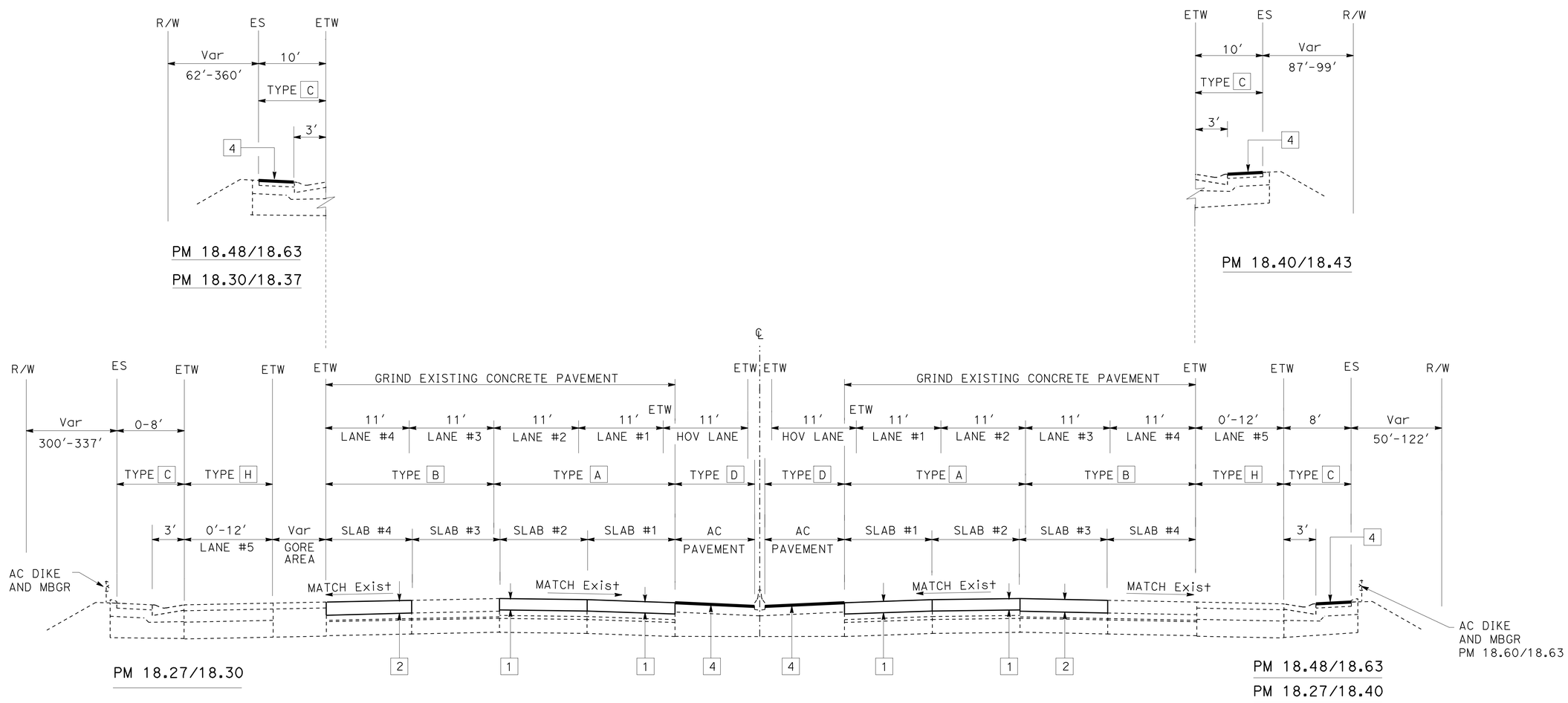

ROUTE 405

PM 18.27/18.63
INGLEWOOD Ave UC TO MARINE Ave UC

TYPICAL CROSS SECTIONS

NO SCALE

X-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	8	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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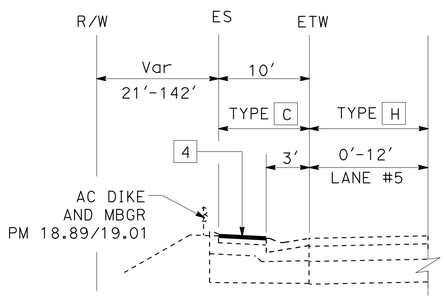

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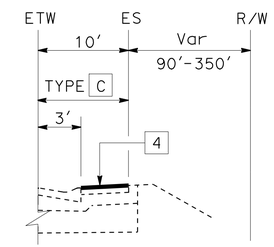

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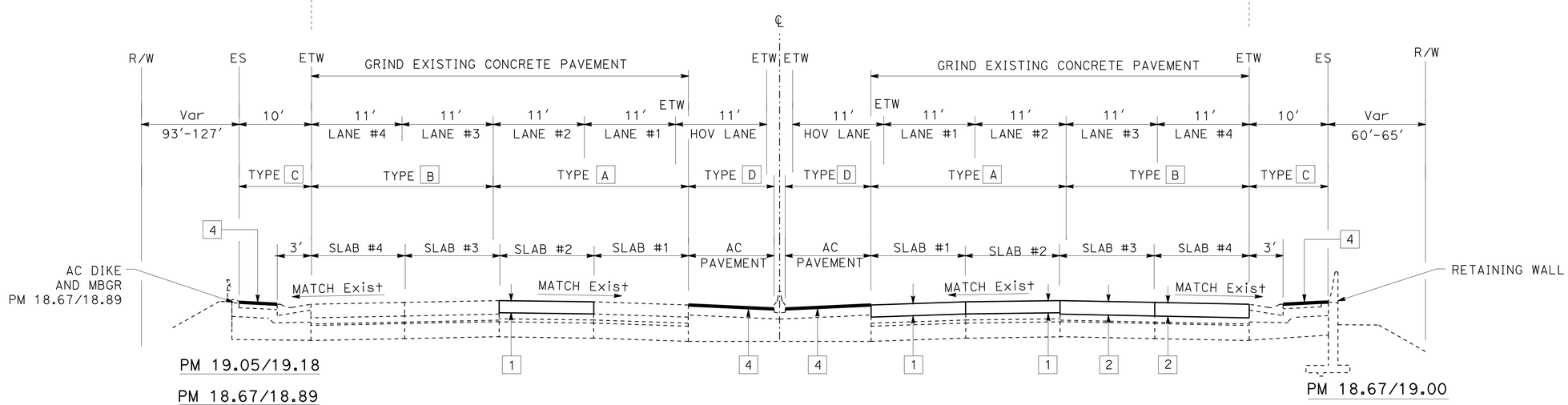

SOUTHBOUND

ROUTE 405

PM 18.67/19.21

MARINE Ave UC TO ROSECRANS Ave UC

NORTHBOUND

TYPICAL CROSS SECTIONS

NO SCALE

X-7

REVISED BY | DATE REVISED

CAM CHAU | HAMID SAADATNEJADI

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR | HAMID SAADATNEJADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans MAINTENANCE ENGINEERING

LAST REVISION 01-24-11 | DATE PLOTTED => 01-FEB-2011 | TIME PLOTTED => 13:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	9	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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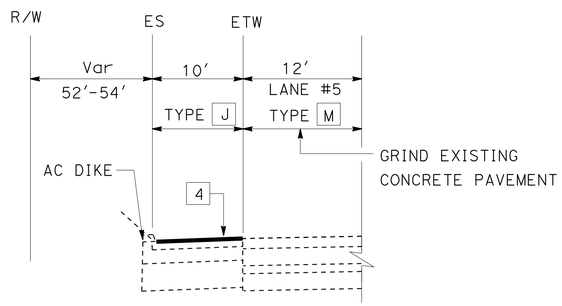

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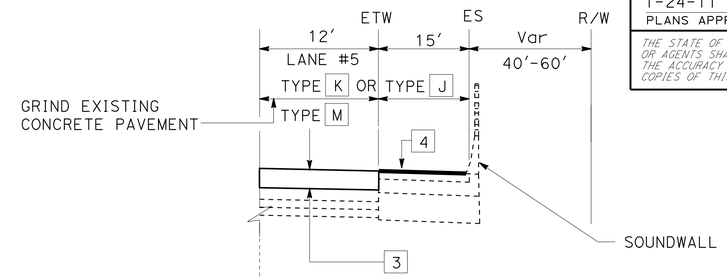

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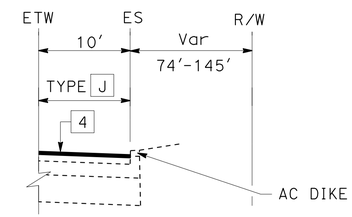

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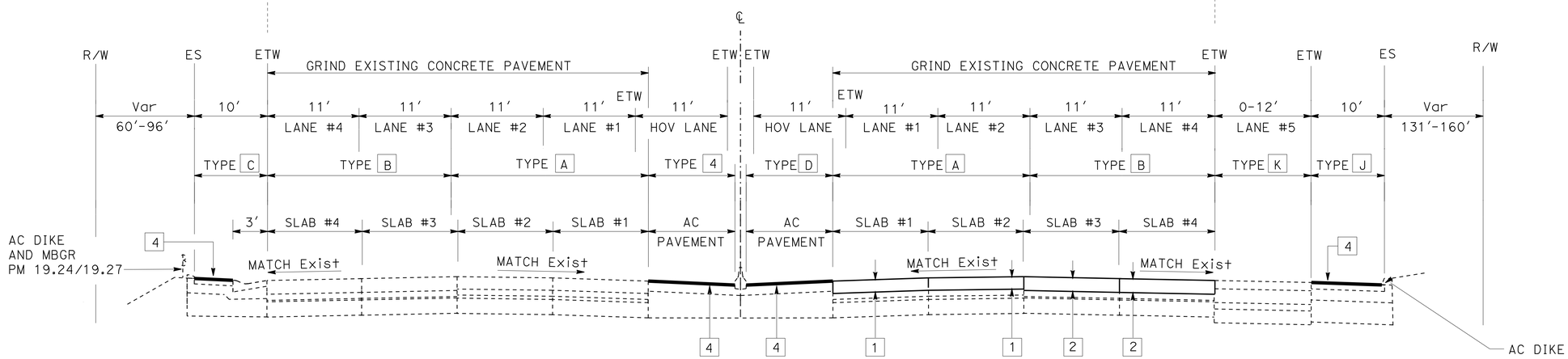

PM 19.24/19.36

PM 19.24/19.36

SOUTHBOUND

NORTHBOUND

ROUTE 405

PM 19.24/19.74

ROSECRANS Ave UC TO 135TH St UC

TYPICAL CROSS SECTIONS

NO SCALE

X-8

REVISED BY | DATE REVISED

CAM CHAU | HAMID SAADATNEJADI

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR | HAMID SAADATNEJADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans MAINTENANCE ENGINEERING

LAST REVISION 01-24-11 | DATE PLOTTED => 01-FEB-2011 | TIME PLOTTED => 13:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	10	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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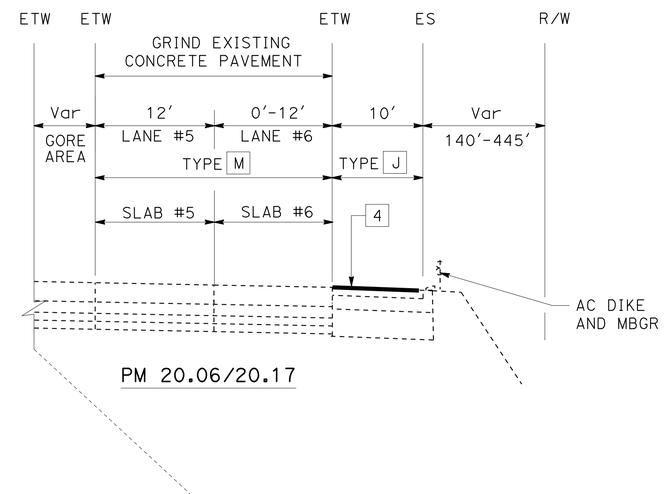
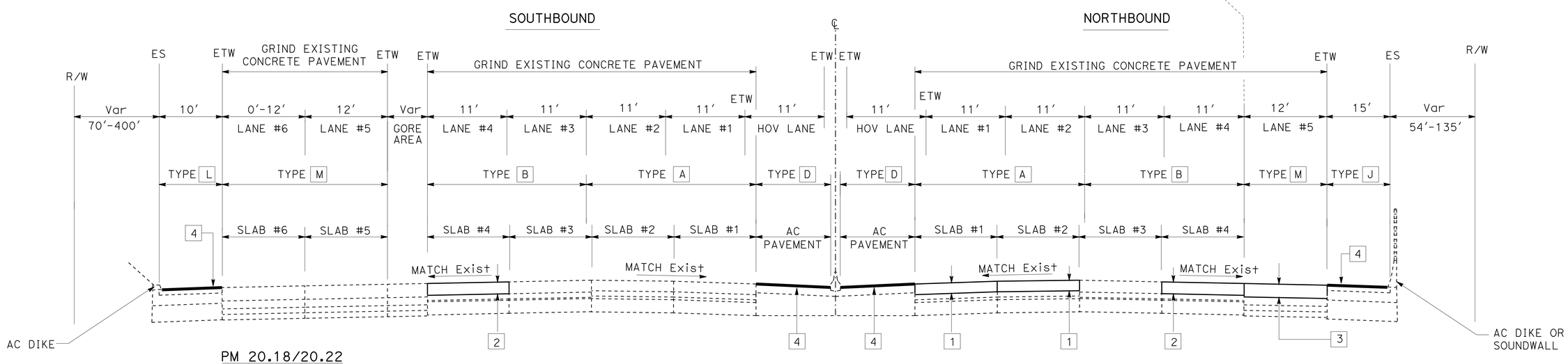


PM 20.06/20.17



PM 20.18/20.22
PM 20.06/20.17
PM 19.76/19.95

PM 19.96/20.06
PM 19.76/19.89

ROUTE 405

PM 19.76/20.22
135TH St UC TO EL SEGUNDO Blvd UC

TYPICAL CROSS SECTIONS

NO SCALE

X-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI

CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI

REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	11	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

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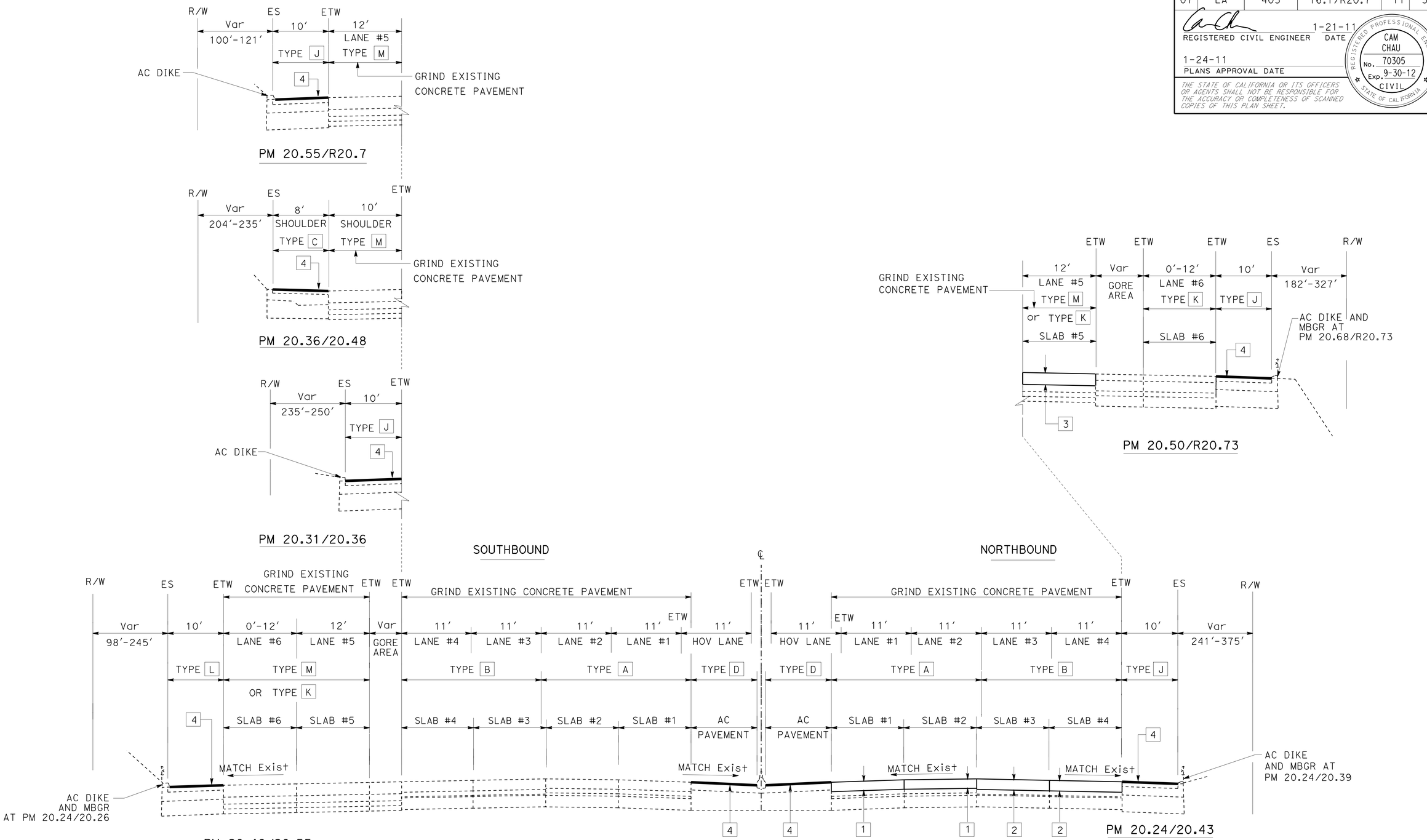

ROUTE 405

PM 20.24/R20.73

EL SEGUNDO Blvd UC TO 120TH St UC

TYPICAL CROSS SECTIONS

NO SCALE

X-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	12	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

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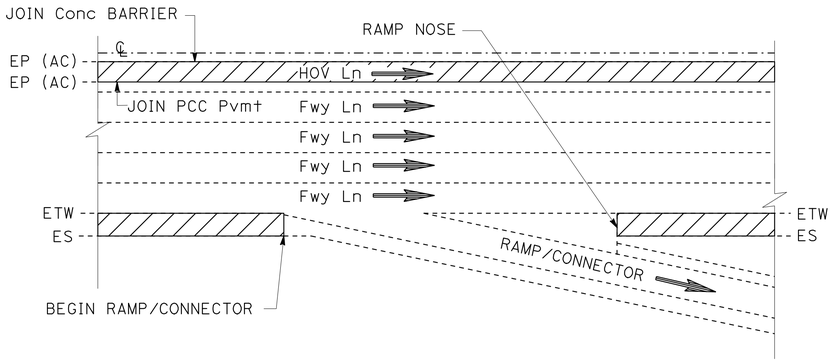
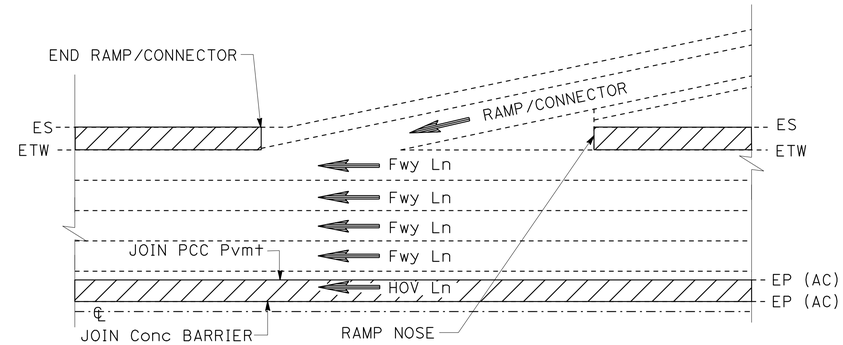


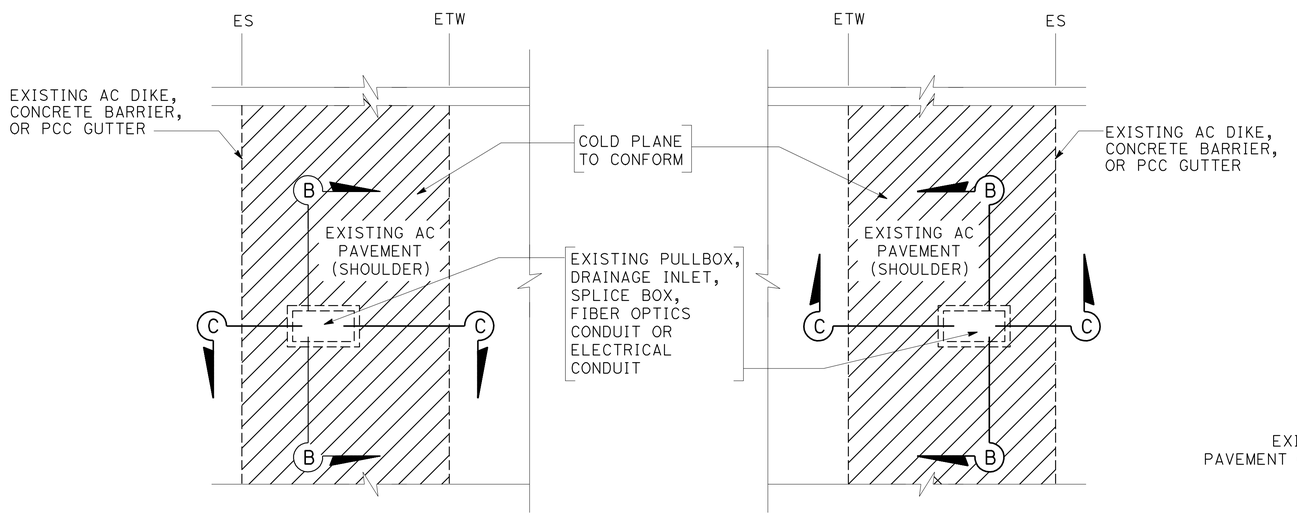


LEGEND:

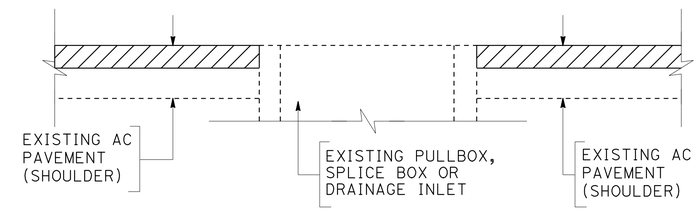
0.10' COLD PLANE AC PAVEMENT
0.10' RHMA (GAP GRADED)

DIRECTION OF TRAFFIC

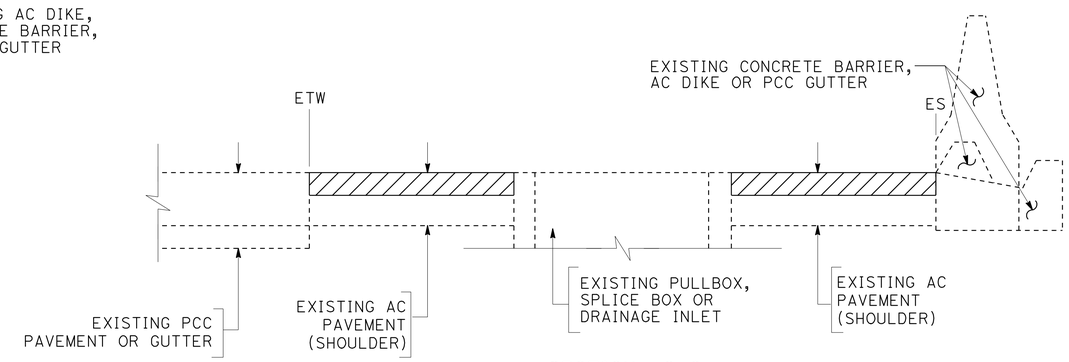
TYPICAL COLD PLANE AND OVERLAY DETAILS



FIBER OPTIC PULLBOX, DRAINAGE INLET OR SPLICEBOX (VARIOUS LOCATIONS)



SECTION B-B



SECTION C-C

TYPICAL FIBER OPTIC PULLBOX, SPLICE BOX OR DRAINAGE INLET

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	13	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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. LOCATIONS OF CONSTRUCTION AREA SIGNS AS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

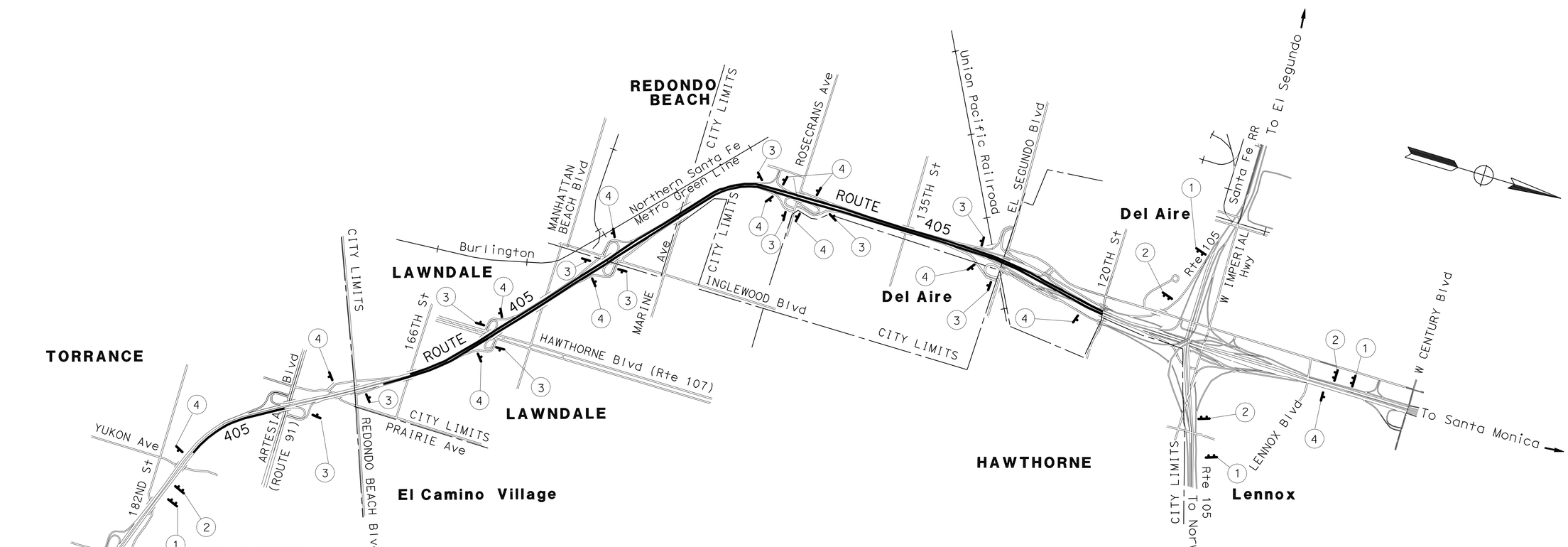
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THIS PLAN.

ABBREVIATION:

CA - CALIFORNIA CODE

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN NUMBER	SIGN CODE	PANEL SIZE (inch x inch)	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
1	C40(CA)	72 x 36	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2-4" x 6"	4
2	W20-1	60 x 60	ROAD WORK AHEAD	2-4" x 6"	4
3	W20-1	48 x 48	ROAD WORK AHEAD	1-4" x 6"	11
4	G20-2	48 x 24	END ROAD WORK	1-4" x 6"	13



CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGNS WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 18:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	14	51

REGISTERED CIVIL ENGINEER 9-1-10 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHANGJIA HORN No. 51846 Exp. 6-30-12 CIVIL STATE OF CALIFORNIA

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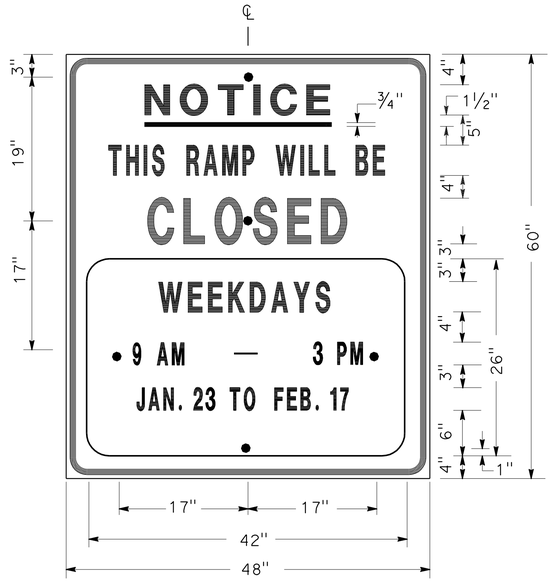
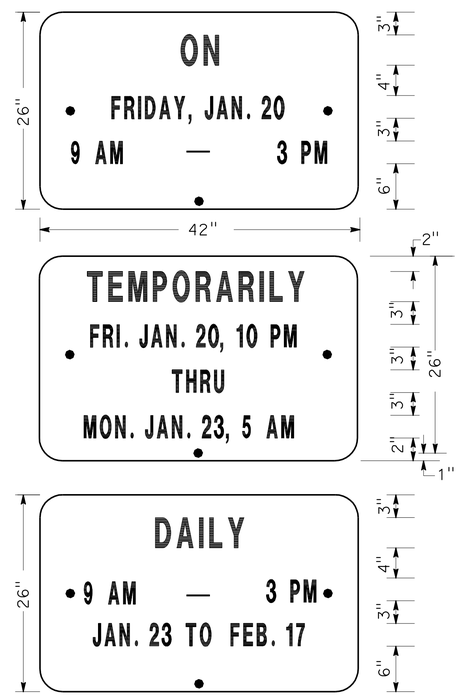


SIGN SP-1



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.

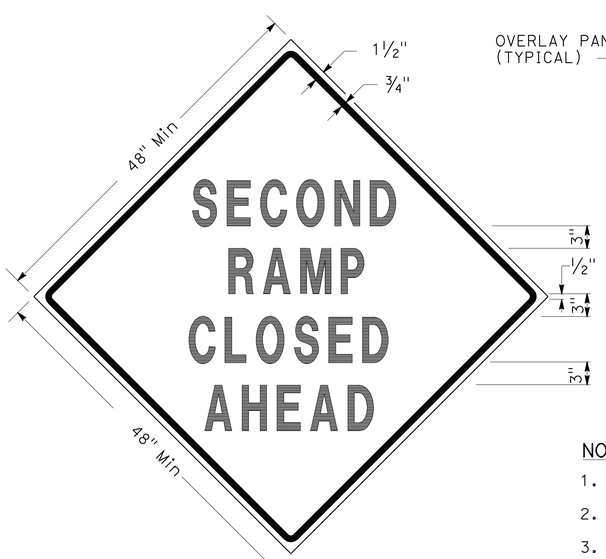
SIZE	BORDER WIDTH	MARGIN WIDTH	LETTER SIZE					CORNER RADIUS
			LINE 1	LINE 2*	LINE 3	LINE 4	LINE 5,6 & 7*	
48"x60"	1 1/4"	3/4"	4E	4D	6E	4D		3"
42"x26"	OVERLAY						3D	1 1/2"
* CONDENSED SPACING IF NECESSARY								

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

FUNCTIONAL SUPERVISOR: ALBERT K YU
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:26

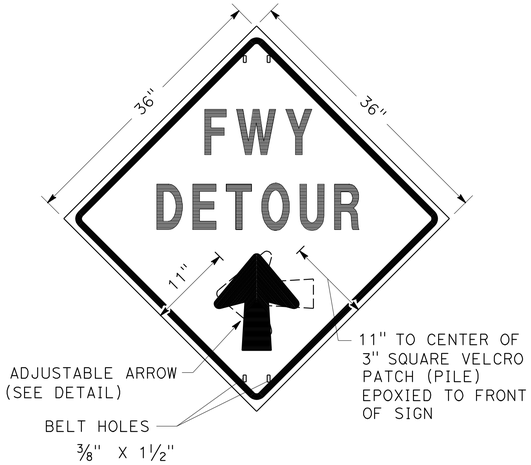
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	15	51

REGISTERED CIVIL ENGINEER 9-1-10 DATE

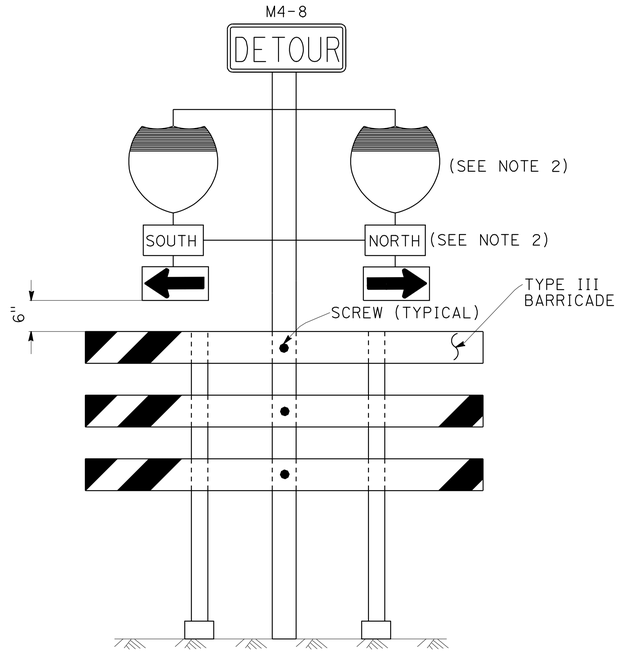
1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHANGJIA HORN No. 51846 Exp. 6-30-12 CIVIL STATE OF CALIFORNIA

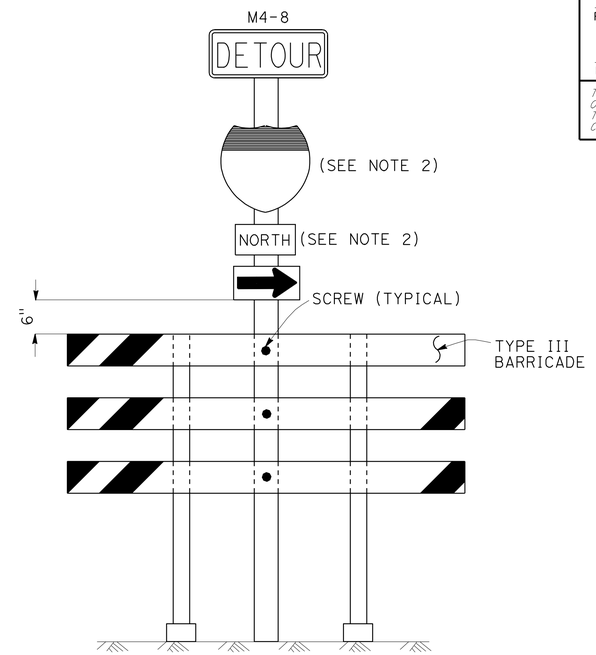
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



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.

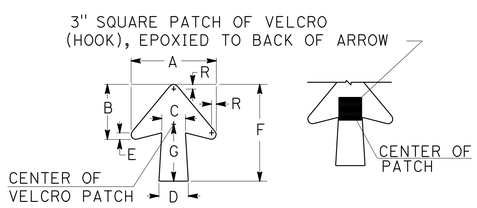
ABBREVIATION

(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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

FUNCTIONAL SUPERVISOR: ALBERT K YU
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	16	51

REGISTERED CIVIL ENGINEER 9-1-10 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHANGJIA HORN No. 51846 Exp. 6-30-12 CIVIL STATE OF CALIFORNIA

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

NOTES:

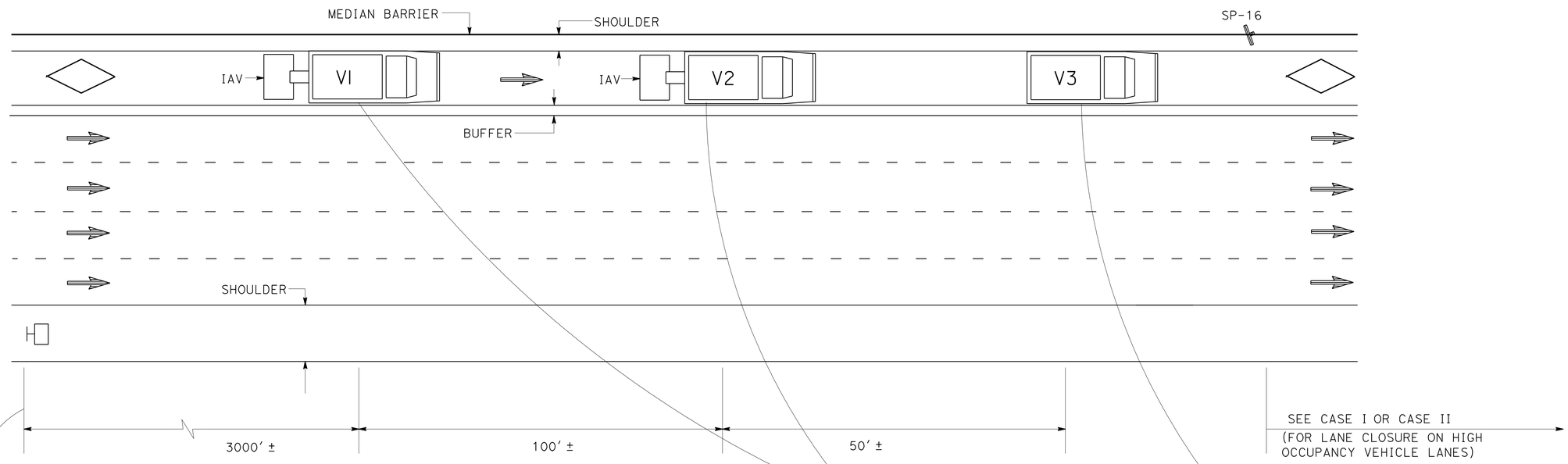
1. LANE CLOSURES SHALL NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
2. PCMS SHALL BE ACTIVATED PRIOR TO TRAFFIC CONTROL ACTIVITIES ON THE HOV LANE.
3. A MINIMUM SIGHT DISTANCE OF 1500′ SHALL BE PROVIDED IN ADVANCE OF PCMS.
4. VEHICLE-MOUNTED SIGN PANELS SHALL BE TYPE III OR IV RETROREFLECTORIZED 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.

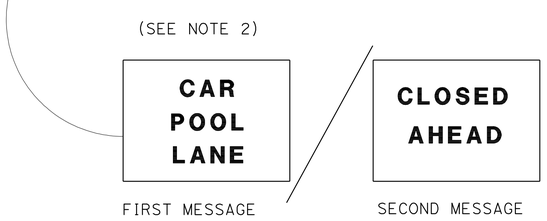
LEGEND

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-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DTM

FUNCTIONAL SUPERVISOR: ALBERT K YU
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	17	51

REGISTERED CIVIL ENGINEER 1-6-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHANGJIA HORN No. 51846 Exp. 6-30-12 CIVIL STATE OF CALIFORNIA

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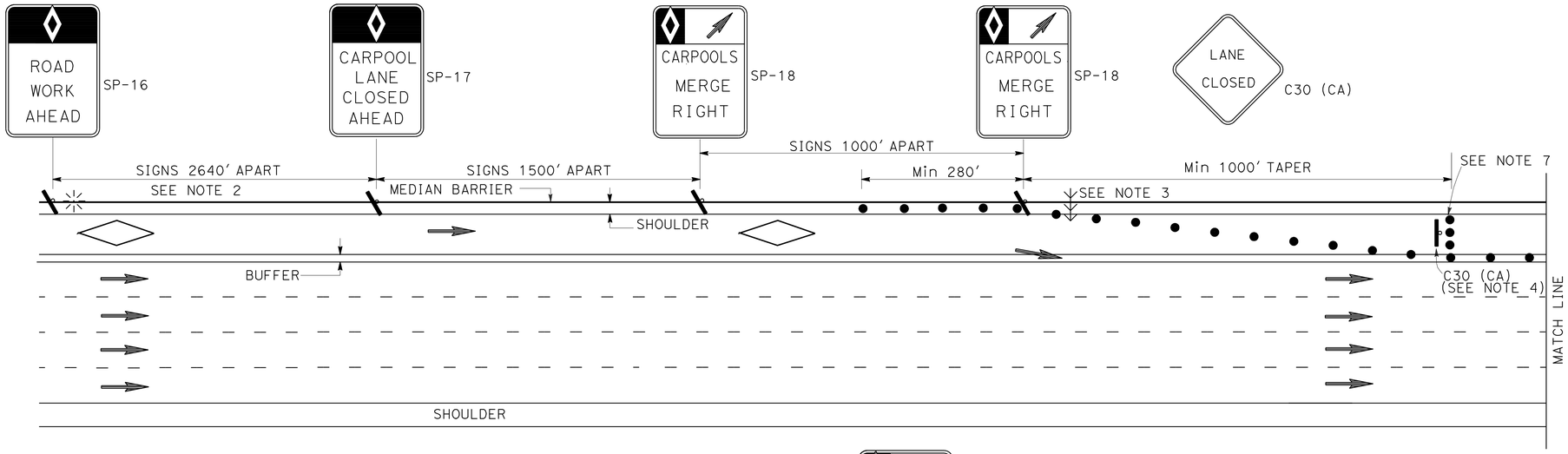

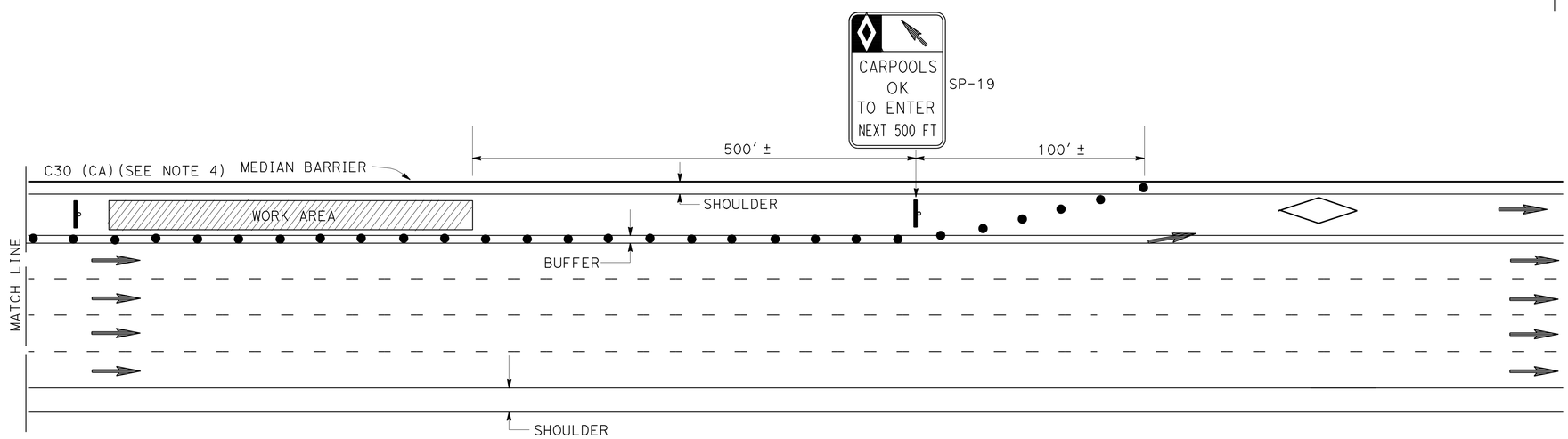

ABBREVIATIONS

(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-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

FUNCTIONAL SUPERVISOR: ALBERT K YU
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10

LAST REVISION 01-24-11 | DATE PLOTTED => 01-FEB-2011 | TIME PLOTTED => 13:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	18	51

REGISTERED CIVIL ENGINEER 1-5-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHANGJIA HORN No. 51846 Exp. 6-30-12 CIVIL STATE OF CALIFORNIA

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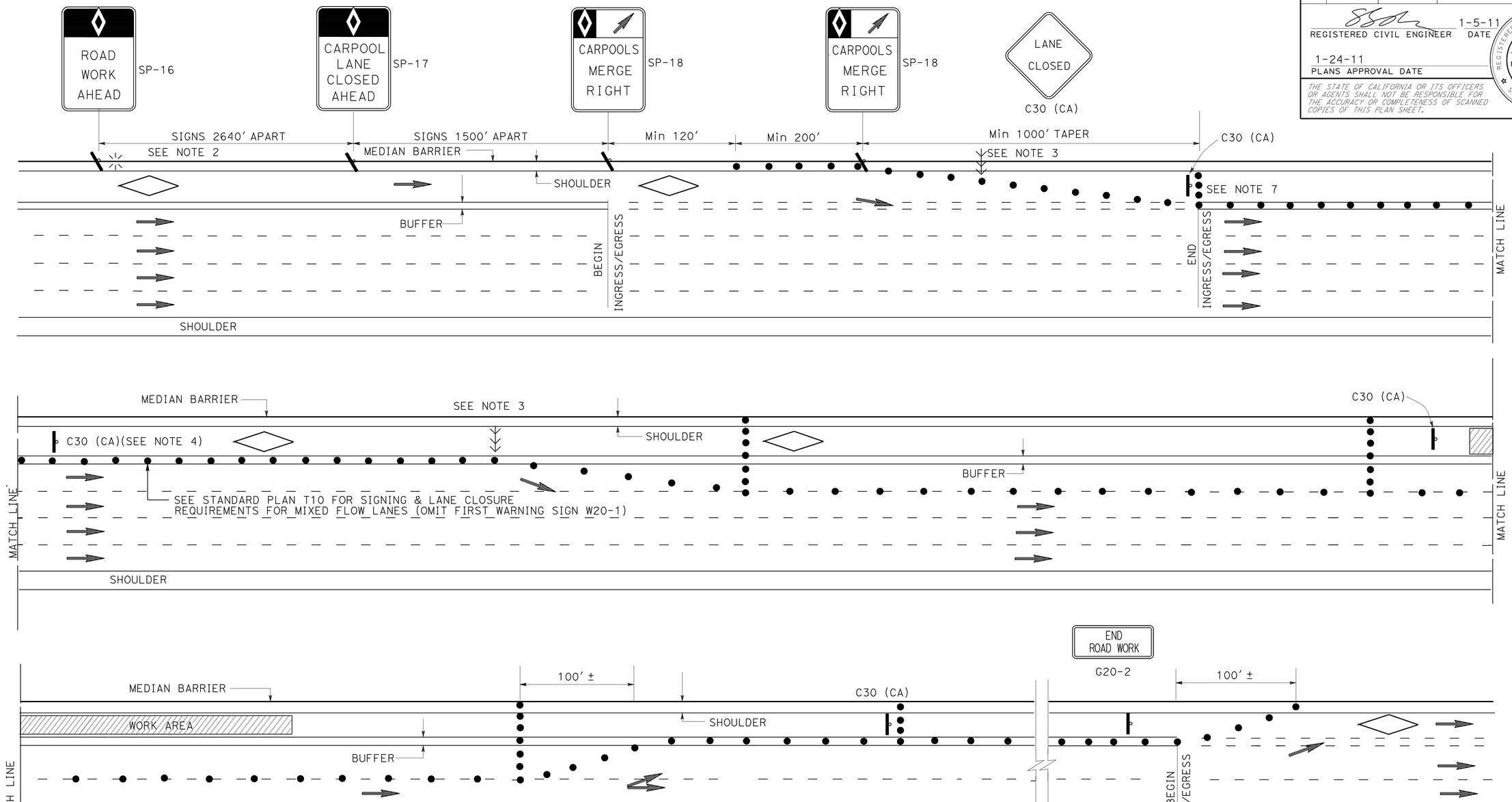


NOTES:

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-5

REVISED BY	DATE REVISED
JC	7/10

ALBERT K YU
JOCELYN C CHIANG

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR
ALBERT K YU

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DTM
Caltrans

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	19	51

REGISTERED CIVIL ENGINEER 1-13-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHANGJIA HORN No. 51846 Exp. 6-30-12 CIVIL STATE OF CALIFORNIA

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

NOTES:

1. 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.

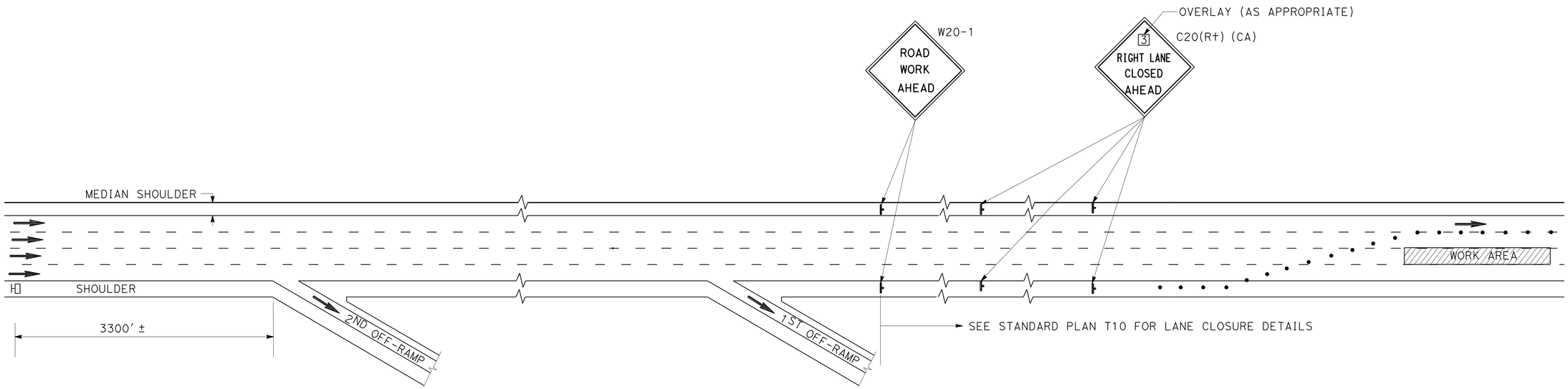
ABBREVIATIONS

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-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

FUNCTIONAL SUPERVISOR: ALBERT YU
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:28

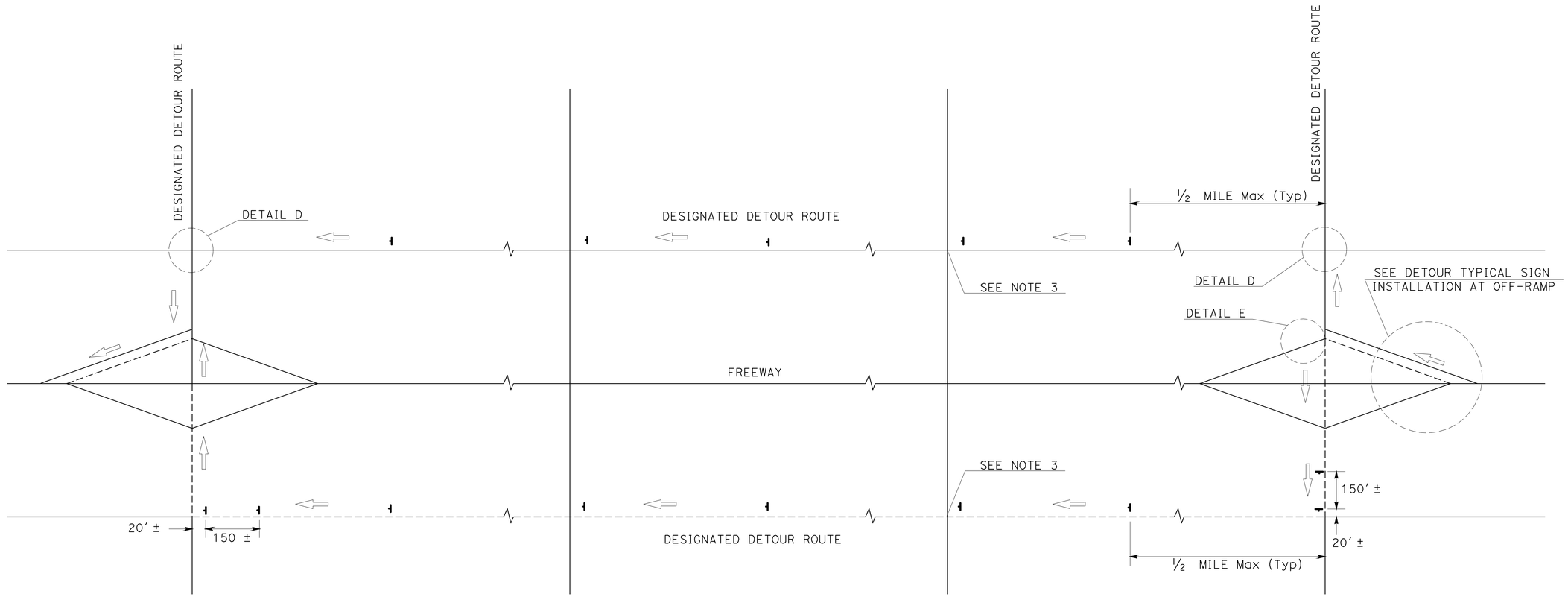
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	20	51

REGISTERED CIVIL ENGINEER 9-1-10 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHANGJIA HORN No. 51846 Exp. 6-30-12 CIVIL STATE OF CALIFORNIA

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



TYPICAL DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE

LEGEND

- TEMPORARY 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-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DTM
Caltrans

FUNCTIONAL SUPERVISOR: ALBERT K YU
CALCULATED-DESIGNED BY: ALBERT K YU
CHECKED BY: JOCELYN C CHIANG
REVISED BY: JC
DATE REVISED: 7/10

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:28

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	21	51

REGISTERED CIVIL ENGINEER 9-1-10 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHANGJIA HORN No. 51846 Exp. 6-30-12 CIVIL STATE OF CALIFORNIA

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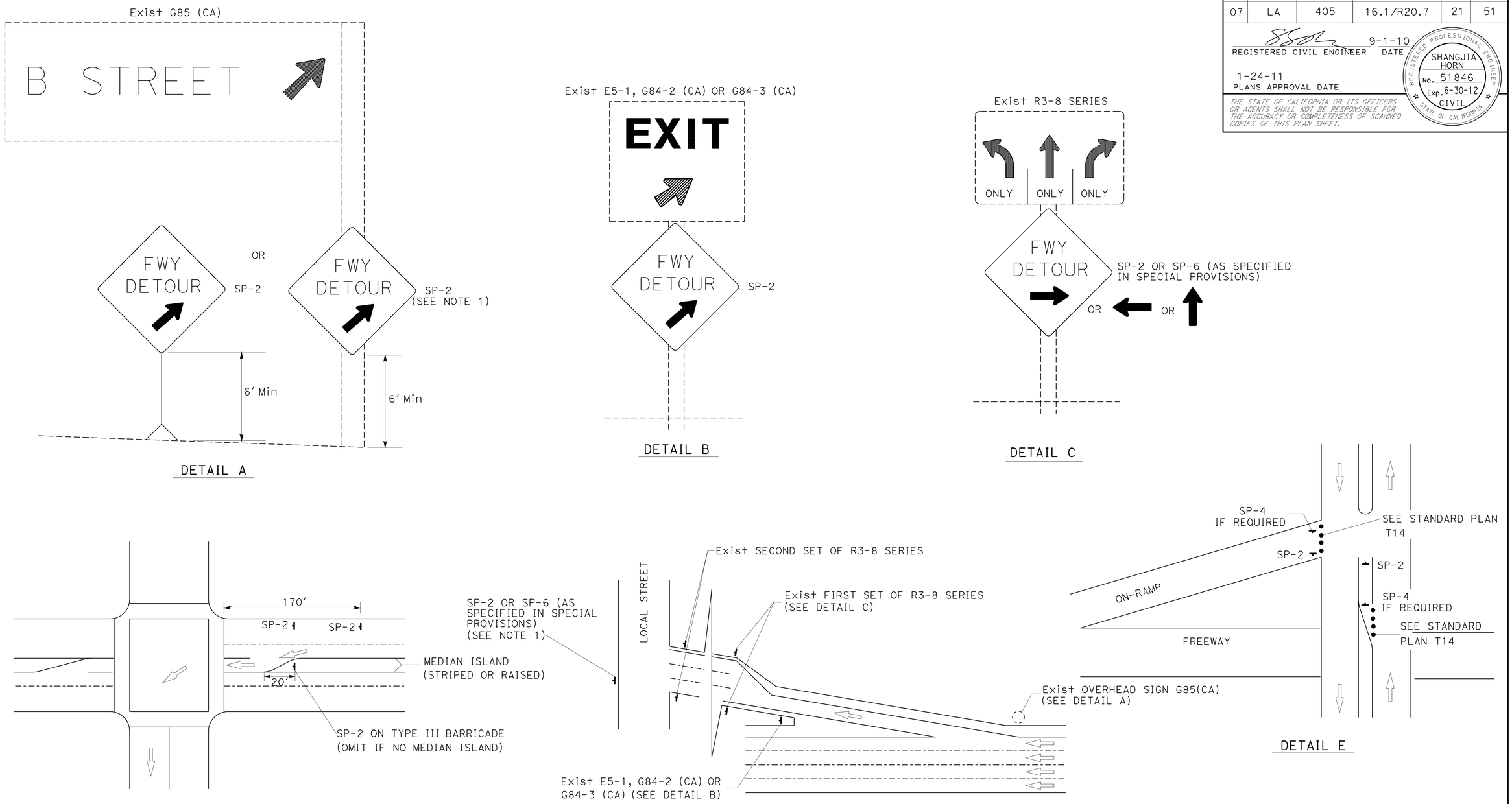

TYPICAL DETOUR SIGN INSTALLATION AT OFF-RAMP

NOTES:

1. TEMPORARY SIGNS 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.

ABBREVIATIONS

(CA) CALIFORNIA CODE

LEGENDS

- TRAFFIC CONE
- TEMPORARY 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-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DTM

FUNCTIONAL SUPERVISOR: ALBERT K YU

CALCULATED-DESIGNED BY: ALBERT K YU JOCELYN C CHIANG
CHECKED BY:
REVISED BY: JC
DATE REVISED: 8/10

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:28

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	22	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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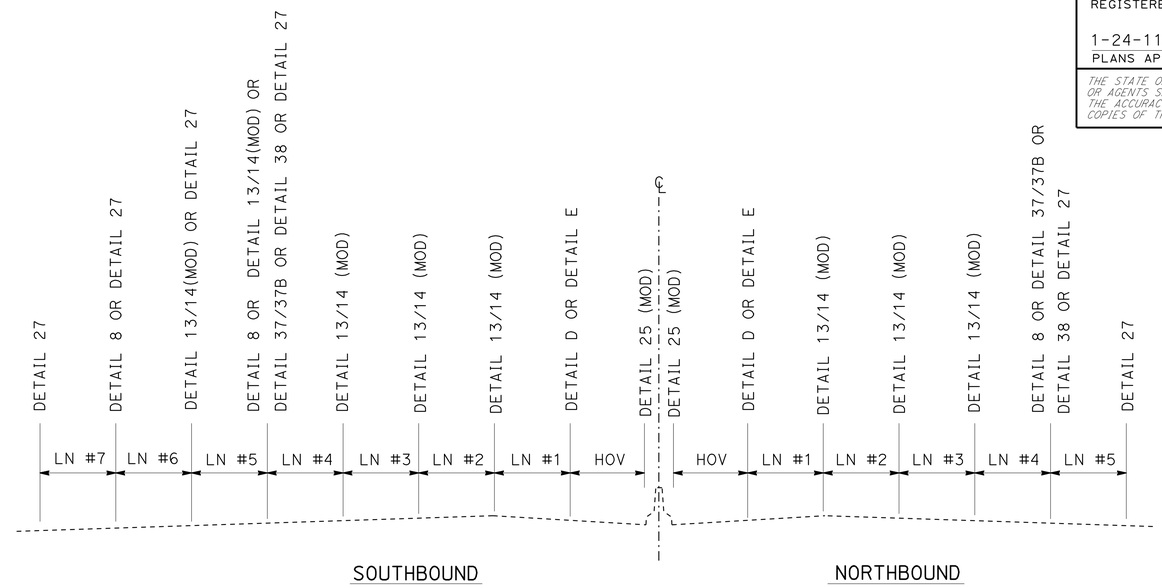
NOTES:

1. DETAIL 13/14 (Mod) CONSISTS OF DETAIL 13 WITH THE ADDITION OF A 4 INCH WIDE THERMOPLASTIC STRIPE 12 FEET LONG ON TOP OF TYPE A NON-REFLECTIVE PAVEMENT MARKERS.
2. RETROREFLECTIVE FACE OF PAVEMENT MARKER SHALL FACE TRAFFIC FOR CHEVRON STRIPING.

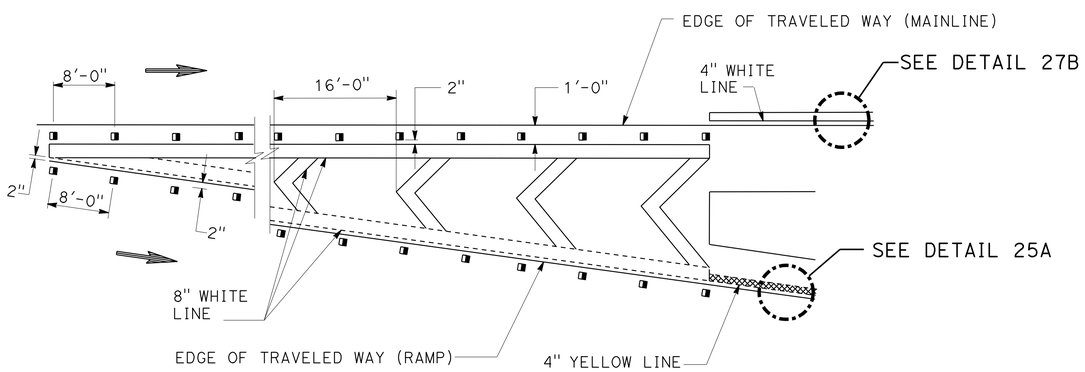
LEGEND:

- 4" WHITE THERMOPLASTIC TRAFFIC STRIPE
- 4" YELLOW THERMOPLASTIC TRAFFIC STRIPE
- 8" WHITE THERMOPLASTIC TRAFFIC STRIPE
- TYPE A MARKER
- TYPE G ONE-WAY CLEAR RETROREFLECTIVE
- TYPE H MARKER
- DIRECTION OF TRAVEL



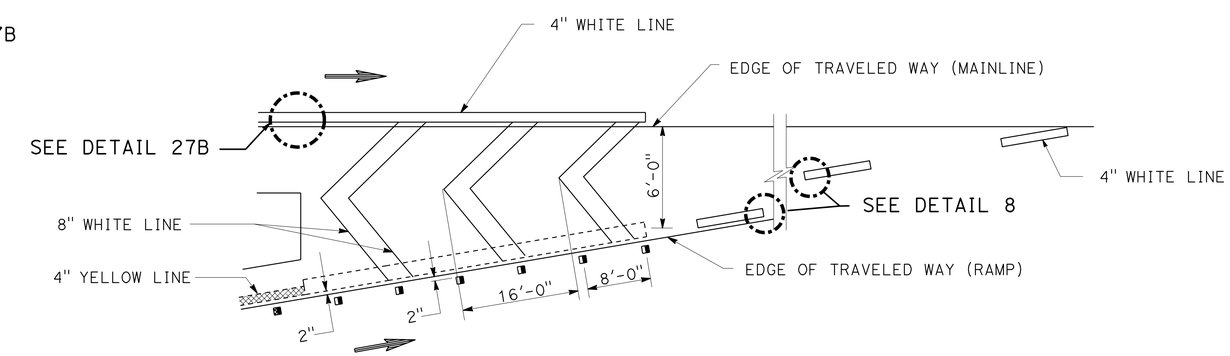
ROUTE 405
PM 16.1 TO R20.7

TYPICAL PAVEMENT DELINEATION DETAILS



DETAIL 36 (Mod)

EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



DETAIL 36A (Mod)

ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT

PAVEMENT DELINEATION DETAILS

PDD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY / DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:28

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	23	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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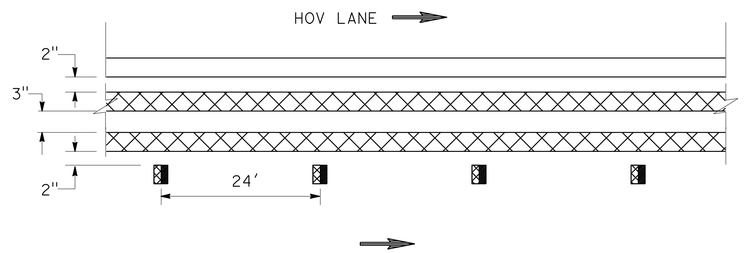
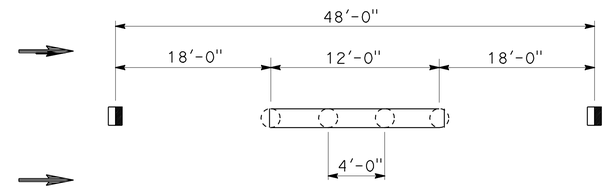
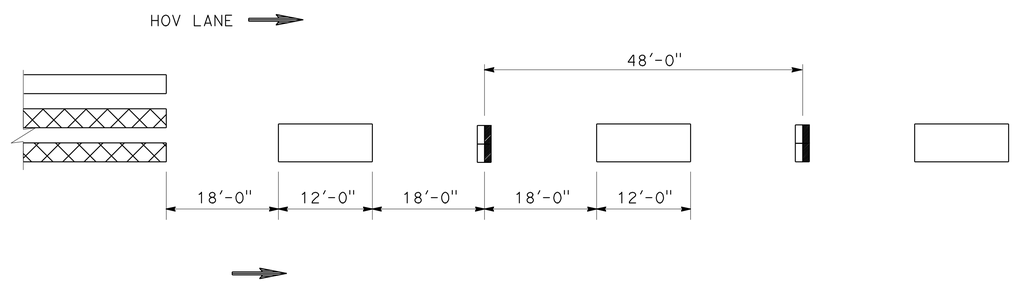


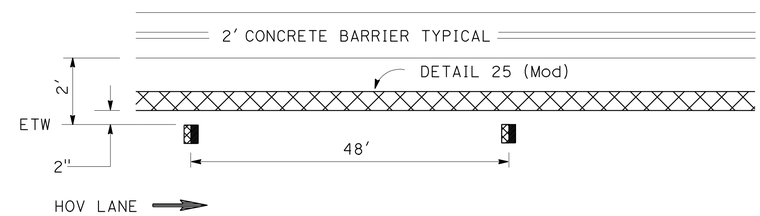
DETAIL D
HOV BUFFER DETAIL
NO SCALE



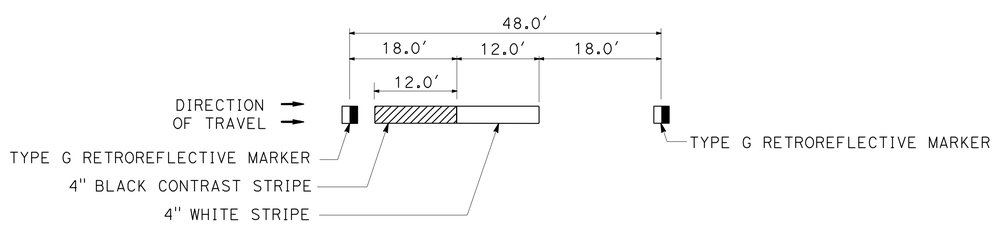
DETAIL 13/14 (Mod)
LANELINE DETAIL
NO SCALE



DETAIL E
HOV BUFFER & INGRESS/EGRESS DETAILS
NO SCALE



DETAIL 25 (Mod)
LEFT EDGE LINE DETAIL
NO SCALE



TEMPORARY LANE LINE PAVEMENT DELINEATION

PAVEMENT DELINEATION DETAILS

PDD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:29

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	24	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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.

PAVEMENT DELINEATION QUANTITIES

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE) LF	REMOVE THERMOPLASTIC TRAFFIC STRIPE LF	REMOVE PAVEMENT MARKER EA	4" TEMPORARY LANE LINE (BLACK PAINT STRIPE) (BROKEN) (N) LF	THERMOPLASTIC TRAFFIC STRIPE Det 8 4" WHITE (BROKEN 17-7) LF	Det 13/14 (Mod) 4" WHITE (BROKEN 36-12) LF	Det 25 (Mod) 4" YELLOW LF	Det D 4" YELLOW (DOUBLE) LF	Det D 4" WHITE LF	Det 27B 4" WHITE LF	Det 36A 4" WHITE LF	Det 36 8" WHITE LF	Det 38B 8" WHITE LF	Det E 8" WHITE (BROKEN 36-12) LF	Det 37/37B 8" WHITE (BROKEN 12-3) LF
0.1 MILE N OF YUKON Ave UC TO ARTESIA Blvd UC	NB	16.14	16.56			833	2,217		6,653	2,217	4,435	2,217						
0.1 MILE S OF 166TH St UC TO 166TH St UC	NB	17.02	17.14			267	750	200	2,249		1,500	750						
166TH St UC	NB	17.14	17.18	623	479	66	174		523	174	348	174	174					
166TH St UC TO HAWTHORNE (RTE 107) UC	NB	17.18	17.56			776	2,033		6,098	2,033	2,176	1,088	1,657	78	298		945	
HAWTHORNE (RTE 107) UC	NB	17.56	17.62	306	718	116	306	100	919	306			179	127			306	
HAWTHORNE (RTE 107) UC TO MANHATTAN BEACH Blvd UC	NB	17.62	17.86			480	1,278	166	3,833	1,278	2,436	1,218	1,278				60	
MANHATTAN BEACH Blvd UC	NB	17.86	17.90	681	624	86	227		681	227	454	227	227					
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	NB	17.90	18.23			671	1,742		5,227	1,742	3,485	1,742	1,188	160	394			
INGLEWOOD Ave UC	NB	18.23	18.27	554	562	70	185	185	554	185	370	185	185					
INGLEWOOD Ave UC TO MARINE Ave UC	NB	18.27	18.63			716	1,906	123	5,718	1,906	3,812	1,906	1,739	167				
SUBTOTAL				2164	2383	4081	10,818	774	32,455	10,068	19,016	9,507	6,627	532	692		1311	
SHEET TOTALS				2164	2383	4081	10,818	774	32,455	45,750					692		1311	

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

PAVEMENT DELINEATION QUANTITIES

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:29

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	25	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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PAVEMENT DELINEATION QUANTITIES

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE) LF	REMOVE THERMOPLASTIC TRAFFIC STRIPE LF	REMOVE PAVEMENT MARKER EA	4" TEMPORARY LANE LINE (BLACK PAINT STRIPE) (BROKEN) (N) LF	THERMOPLASTIC TRAFFIC STRIPE Det 8 4" WHITE (BROKEN 17-7) LF	Det 13/14 (Mod) 4" WHITE (BROKEN 36-12) LF	Det 25 (Mod) 4" YELLOW LF	Det D 4" YELLOW (DOUBLE) LF	Det D 4" WHITE LF	Det 27B 4" WHITE LF	Det 36A 4" WHITE LF	Det 36 8" WHITE LF	Det 38B 8" WHITE LF	Det E 8" WHITE (BROKEN 36-12) LF	Det 37/37B 8" WHITE (BROKEN 12-3) LF
MARINE Ave UC	NB	18.63	18.67	586	537	74	195		586	195	391	195	195					
MARINE Ave UC TO ROSECRANS Ave UC	NB	18.67	19.21			1081	2,846		8,538	2,846	3,654	1,827	2,440	91	315		1019	
ROSECRANS Ave UC	NB	19.21	19.24	190	483	72	190	190	570	190			190				190	
ROSECRANS Ave UC TO 135TH St UC	NB	19.24	19.74			1085	2,614	200	7,841	2,614	4,667	2,334	2,364	250			280	1554
135TH St UC	NB	19.74	19.76	412	432	62	137		412	137	275	137	137					137
135TH St UC TO EL SEGUNDO Blvd UC	NB	19.76	20.22			1084	2,397		7,191	2,397	4,794	2,397	1,229		1168	314		1640
EL SEGUNDO Blvd UC	NB	20.22	20.24	317	290	41	106		317	106	211	106	106					
EL SEGUNDO Blvd UC TO 120TH St UC	NB	20.24	R20.70			1002	2,450	378	7,350	2,450	4,900	2,450	1,919	531				1237
SUBTOTAL				1505	1742	4501	10,935	768	32,805	10,935	18,892	9,446	8,580	872	1483	314	1489	4568
SHEET TOTALS				1505	1742	4501	10,935	768	32,805	48,725					1797		1489	4568
NB TOTAL				3669	4125	8582	21,753	1542	65,260	94,475					2489		2800	4568

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PAVEMENT DELINEATION QUANTITIES

PDQ-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11 | DATE PLOTTED => 01-FEB-2011 | TIME PLOTTED => 13:29

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	26	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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.

PAVEMENT DELINEATION QUANTITIES

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE) LF	REMOVE THERMOPLASTIC TRAFFIC STRIPE LF	REMOVE PAVEMENT MARKER EA	4" TEMPORARY LANE LINE (BLACK PAINT STRIPE) (BROKEN) (N) LF	THERMOPLASTIC TRAFFIC STRIPE: Det 8 4" WHITE (BROKEN 17-7) LF	Det 13/14 (Mod) 4" WHITE (BROKEN 36-12) LF	Det 25 (Mod) 4" YELLOW LF	Det D 4" YELLOW (DOUBLE) LF	Det D 4" WHITE LF	Det 27B 4" WHITE LF	Det 36A 4" WHITE LF	Det 36 8" WHITE LF	Det 38B 8" WHITE LF	Det E 8" WHITE (BROKEN 36-12) LF	Det 37/37B 8" WHITE (BROKEN 12-3) LF
166TH St UC	SB	17.14	17.18	623	479	66	174		523	174	348	174	174					
166TH St UC TO HAWTHORNE (Rte 107) UC	SB	17.18	17.56			763	2033	88	6,098	2,033	3,844	1,922	2,033				111	
HAWTHORNE (Rte 107) UC	SB	17.56	17.62	307	716	116	306	91	919	306			217	89			306	
HAWTHORNE (Rte 107) UC TO MANHATTAN BEACH Blvd UC	SB	17.62	17.86			492	1278		3,833	1,278	816	408	883	100	295		870	
MANHATTAN BEACH Blvd UC	SB	17.86	17.90	681	624	86	227		681	227	454	227	227					
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	SB	17.90	18.23			654	1742	180	5,227	1,742	3,485	1,742	1,571	171				
INGLEWOOD Ave UC	SB	18.23	18.27	554	562	70	185	185	554	185	370	185	185					
INGLEWOOD Ave UC TO MARINE Ave UC	SB	18.27	18.63			731	1906		5,718	1,906	3,812	1,906	1,384	159	363			
SUBTOTAL				2165	2381	2978	7851	544	23,553	7,851	13,129	6,564	6,674	519	658		1287	
SHEET TOTALS				2165	2381	2978	7851	544	23,553	34,737					658		1287	

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PAVEMENT DELINEATION QUANTITIES

PDQ-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11 | DATE PLOTTED => 01-FEB-2011 | TIME PLOTTED => 13:30

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	27	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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PAVEMENT DELINEATION QUANTITIES

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE) LF	REMOVE THERMOPLASTIC TRAFFIC STRIPE LF	REMOVE PAVEMENT MARKER EA	4" TEMPORARY LANE LINE (BLACK PAINT STRIPE) (BROKEN) (N) LF	THERMOPLASTIC TRAFFIC STRIPE Det 8 4" WHITE (BROKEN 17-7) LF	Det 13/14 (Mod) 4" WHITE (BROKEN 36-12) LF	Det 25 (Mod) 4" YELLOW LF	Det D 4" YELLOW (DOUBLE) LF	Det D 4" WHITE LF	Det 27B 4" WHITE LF	Det 36A 4" WHITE LF	Det 36 8" WHITE LF	Det 38B 8" WHITE LF	Det E 8" WHITE (BROKEN 36-12) LF	Det 37/37B 8" WHITE (BROKEN 12-3) LF
MARINE Ave UC	SB	18.63	18.67	586	537	74	195		586	195	391	195	195					
MARINE Ave UC TO ROSECRANS Ave UC	SB	18.67	19.21			1,078	2,846	144	8,538	2,846	3,064	1,532	2,477	134	235		1314	
ROSECRANS Ave UC	SB	19.21	19.24	570	653	78	190		570	190	380	190	60		130			
ROSECRANS Ave UC TO 135TH St UC	SB	19.24	19.74			1,118	2,614		7,991	2,614	5,227	2,614	2,214		400	350		1138
135TH St UC	SB	19.74	19.76	412	412	67	137		549	137	275	137	137					
135TH St UC TO EL SEGUNDO Blvd UC	SB	19.76	20.22			1,185	2,397	285	9,926	2,397	4,794	2,397	1,887	510				
EL SEGUNDO Blvd UC	SB	20.22	20.24	317	290	41	106		317	106	211	106	106					
EL SEGUNDO Blvd UC TO 120TH St UC	SB	20.24	R20.70			987	2,450	132	7,350	2,450	4,900	2,450	1,962	208	280	176		609
SUBTOTAL				1885	1892	4,628	10,935	561	35,827	10,935	19,242	9,621	9,038	852	1045	526	1314	1747
SHEET TOTALS				1885	1892	4,628	10,935	561	35,827	49,688					1571		1314	1747
SB TOTAL				4050	4273	7,606	18,786	1105	59,380	84,425					2229		2601	1747
GRAND TOTAL (NB + SB)				7719	8398	16,188	40,539	2647	124,640	178,900					4718		5401	6315

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PAVEMENT DELINEATION QUANTITIES

PDQ-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:30

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	28	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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PAVEMENT MARKERS

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	Det 13/14 (Mod) TYPE A MARKER EA	Det 13/14 (Mod) TYPE C MARKER EA	Det 37 TYPE C MARKER EA	Det 13/14 (Mod) TYPE G MARKER EA	HOV TYPE G MARKER EA	Det 36 TYPE G MARKER EA	Det 37B TYPE G MARKER EA	Det 38B TYPE G MARKER EA	CHEVRON TYPE G MARKER EA	Det 25 TYPE C MARKER EA	HOV TYPE C MARKER EA
0.1 MILE N OF YUKON Ave UC TO ARTESIA Blvd UC	NB	16.14	16.56	555	12		128						46	93
0.1 MILE S OF 166TH St UC TO 166TH St UC	NB	17.02	17.14	187	12		36							31
166TH St UC	NB	17.14	17.18	44			12						4	7
166TH St UC TO HAWTHORNE (Rte 107) UC	NB	17.18	17.56	508	12		116	39	12				42	45
HAWTHORNE (Rte 107) UC	NB	17.56	17.62	77			20	13					6	
HAWTHORNE (Rte 107) UC TO MANHATTAN BEACH Blvd UC	NB	17.62	17.86	319			81	3					27	51
MANHATTAN BEACH Blvd UC	NB	17.86	17.90	57			15						5	9
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	NB	17.90	18.23	436	12		98		16				36	73
INGLEWOOD Ave UC	NB	18.23	18.27	46			13						4	8
INGLEWOOD Ave UC TO MARINE Ave UC	NB	18.27	18.63	477	12		108						40	79
MARINE Ave UC	NB	18.63	18.67	49			13						4	8
MARINE Ave UC TO ROSECRANS Ave UC	NB	18.67	19.21	711	12		167	42	13				59	76
ROSECRANS Ave UC	NB	19.21	19.24	48			13	8					4	
ROSECRANS Ave UC TO 135TH St UC	NB	19.24	19.74	653	24	16	140	12		88			54	97
135TH St UC	NB	19.74	19.76	34			10			9			3	6
135TH St UC TO EL SEGUNDO Blvd UC	NB	19.76	20.22	599	12	8	139		49	101	26		50	100
EL SEGUNDO Blvd UC	NB	20.22	20.24	26			8						2	4
EL SEGUNDO Blvd UC TO 120TH St UC	NB	20.24	R20.70	612	12	8	142			74			51	102
SUBTOTAL				5438	120	32	1259	117	90	272	26		437	789
NB TOTAL				5438	3142									

PAVEMENT DELINEATION QUANTITIES

PDQ-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11 | DATE PLOTTED => 01-FEB-2011 | TIME PLOTTED => 13:30

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	29	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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.

PAVEMENT MARKERS

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	Det 13/14 (Mod) TYPE A MARKER EA	Det 13/14 (Mod) TYPE C MARKER EA	Det 37 TYPE C MARKER EA	Det 13/14 (Mod) TYPE G MARKER EA	HOV TYPE G MARKER EA	Det 36 TYPE G MARKER EA	Det 37B TYPE G MARKER EA	Det 38B TYPE G MARKER EA	CHEVRON TYPE G MARKER EA	Det 25 TYPE C MARKER EA
166TH St UC	SB	17.14	17.18	44			12						7
166TH St UC TO HAWTHORNE (RTE 107) UC	SB	17.18	17.56	508	12		116	5					80
HAWTHORNE (Rte 107) UC	SB	17.56	17.62	77			20	13					
HAWTHORNE (Rte 107) UC TO MANHATTAN BEACH Blvd UC	SB	17.62	17.86	319	12		69	36	12				17
MANHATTAN BEACH Blvd UC	SB	17.86	17.90	57			15						9
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	SB	17.90	18.23	436			110						73
INGLEWOOD Ave UC	SB	18.23	18.27	46			13						8
INGLEWOOD Ave UC TO MARINE Ave UC	SB	18.27	18.63	477	12		108		15				79
MARINE Ave UC	SB	18.63	18.67	49			13						8
MARINE Ave UC TO ROSECRANS Ave UC	SB	18.67	19.21	711			179	55	10				64
ROSECRANS Ave UC	SB	19.21	19.24	48	12		1		5				8
ROSECRANS Ave UC TO 135TH St UC	SB	19.24	19.74	666	12		155		17	68	29		109
135TH St UC	SB	19.74	19.76	46			12						6
135TH St UC TO EL SEGUNDO Blvd UC	SB	19.76	20.22	827	16		192						100
EL SEGUNDO Blvd UC	SB	20.22	20.24	26			8						4
EL SEGUNDO Blvd UC TO 120TH St UC	SB	20.24	R20.70	612	12	8	142		12	33	15		102
SUBTOTAL				4,949	88	16	1165	109	71	101	44		674
SB TOTAL				4,949	2268								
GRAND TOTAL (NB + SB)				10,387	5410								

PAVEMENT DELINEATION QUANTITIES

PDQ-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:30

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	30	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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.

THERMOPLASTIC PAVEMENT MARKING

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	CHEVRON SQFT	DIAGONAL SQFT	DIAMOND SQFT	CAR SQFT	POOL SQFT	ONLY SQFT	TYPE VI ARROW SQFT
0.1 MILE N OF YUKON Ave UC TO ARTESIA Blvd UC	NB	16.14	16.56			22	17	23	22	
0.1 MILE S OF 166TH St UC TO 166TH St UC	NB	17.02	17.14			11				
166TH St UC	NB	17.14	17.18							
166TH St UC TO HAWTHORNE (Rte 107) UC	NB	17.18	17.56			22	51	69	66	
HAWTHORNE (RTE 107) UC	NB	17.56	17.62				17	23		
HAWTHORNE (RTE 107) UC TO MANHATTAN BEACH Blvd UC	NB	17.62	17.86			11			22	
MANHATTAN BEACH Blvd UC	NB	17.86	17.90							
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	NB	17.90	18.23			11				
INGLEWOOD Ave UC	NB	18.23	18.27				17	23		
INGLEWOOD Ave UC TO MARINE Ave UC	NB	18.27	18.63			11			22	
MARINE Ave UC	NB	18.63	18.67							
MARINE Ave UC TO ROSECRANS Ave UC	NB	18.67	19.21			55	51	69	66	
ROSECRANS Ave UC	NB	19.21	19.24			11	17			
ROSECRANS Ave UC TO 135TH St UC	NB	19.24	19.74			11		23	22	
135TH St UC	NB	19.74	19.76							
135TH St UC TO EL SEGUNDO Blvd UC	NB	19.76	20.22	84						
EL SEGUNDO Blvd UC	NB	20.22	20.24							
EL SEGUNDO Blvd UC TO 120TH St UC	NB	20.24	R20.70			22	17	23	22	
SUBTOTAL				84		187	187	253	242	
NB TOTAL				953						

PAVEMENT DELINEATION QUANTITIES

PDQ-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:31

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	31	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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.

THERMOPLASTIC PAVEMENT MARKING

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	DIAGONAL SQFT	DIAMOND SQFT	CAR SQFT	POOL SQFT	ONLY SQFT	TYPE VI ARROW SQFT
166TH St UC	SB	17.14	17.18						
166TH St UC TO HAWTHORNE (RTE 107) UC	SB	17.18	17.56		11	17	23	44	
HAWTHORNE (Rte 107) UC	SB	17.56	17.62		11	17	23		
HAWTHORNE (Rte 107) UC TO MANHATTAN BEACH Blvd UC	SB	17.62	17.86		11	34	46	44	
MANHATTAN BEACH Blvd UC	SB	17.86	17.90					22	
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	SB	17.90	18.23			17	23		
INGLEWOOD Ave UC	SB	18.23	18.27		11				
INGLEWOOD Ave UC TO MARINE Ave UC	SB	18.27	18.63		11	17	23	22	
MARINE Ave UC	SB	18.63	18.67						
MARINE Ave UC TO ROSECRANS Ave UC	SB	18.67	19.21		55	34	46	44	
ROSECRANS Ave UC	SB	19.21	19.24						
ROSECRANS Ave UC TO 135TH St UC	SB	19.24	19.74	117	22	34	46	44	
135TH St UC	SB	19.74	19.76		11				
135TH St UC TO EL SEGUNDO Blvd UC	SB	19.76	20.22		11	17	23	22	84
EL SEGUNDO Blvd UC	SB	20.22	20.24						
EL SEGUNDO Blvd UC TO 120TH St UC	SB	20.24	R20.70		22	17	23	22	
SUBTOTAL				117	176	204	276	264	84
SB TOTAL				1121					
GRAND TOTAL (NB + SB)				2074					

PAVEMENT DELINEATION QUANTITIES

PDQ-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11 | DATE PLOTTED => 01-FEB-2011 | TIME PLOTTED => 18:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	32	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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.

ROADWAY QUANTITIES

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	NUMBER OF SLABS (N) FREEWAY LANE No. HOV EA	1 EA	2 EA	3 EA	4 EA	5 EA	REPLACE CONCRETE PAVEMENT(RSC) CY	GRIND EXISTING CONCRETE PAVEMENT SQYD	SEAL JOINT (EXISTING CONCRETE PAVEMENT) LF	SEAL JOINT PAVEMENT LF	SEAL ISOLATION JOINT LF	LEAN CONCRETE BASE RAPID SETTING (LCBRS) CY	REPAIR SPALLED JOINTS SQYD	DOWEL BAR (DRILL AND BOND) EA
0.1 MILE N OF YUKON Ave UC TO ARTESIA Blvd UC	NB	16.14	16.56	4	8	29	55	2		481	11,815	10,089	4,449			4.0	1062
0.1 MILE S OF 166TH St UC TO 166TH St UC	NB	17.02	17.14		1	1	5	6		64	3,995	4,258	657			0.5	234
166TH St UC TO HAWTHORNE (RTE 107) UC	NB	17.18	17.56		10	16	56	39		591	10,831	7,483	5,843			0.5	2070
HAWTHORNE (Rte 107) UC TO MANHATTAN BEACH Blvd UC	NB	17.62	17.86		6	6	15	5		154	6,808	6,894	1,482			0.9	522
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	NB	17.90	18.23		24	26				224	9,284	9,799	1,623	360		0.9	882
INGLEWOOD Ave UC TO MARINE Ave UC	NB	18.27	18.63		14	16	4			154	10,156	11,301	1,194	210		2.7	594
MARINE Ave UC TO ROSECRANS Ave UC	NB	18.67	19.21		26	31	3	1		275	15,163	16,563	2,094	390			1098
ROSECRANS Ave UC TO 135TH St UC	NB	19.24	19.74		8	9	2	2	1	101	15,590	18,667	828	120		1.4	342
135TH St UC TO EL SEGUNDO Blvd UC	NB	19.76	20.22		14	13		1	1	131	16,298	19,763	951	210	215	1.8	522
EL SEGUNDO Blvd UC TO 120TH St UC	NB	20.24	R20.73		6	6	2	11	2	129	18,314	22,334	1,188	90		1.8	486
166TH St UC TO HAWTHORNE (Rte 107) UC	SB	17.18	17.56		8	13	18	16		264	10,831	10,986	2,340			0.5	630
HAWTHORNE (Rte 107) UC TO MANHATTAN BEACH Blvd UC	SB	17.62	17.86		1	1	18	8		139	6,808	7,149	1,227				144
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	SB	17.90	18.23			2		2		19	9,284	11,218	204				54
INGLEWOOD Ave UC TO MARINE Ave UC	SB	18.27	18.63		1	3		1		23	10,156	12,240	255				90
MARINE Ave UC TO ROSECRANS Ave UC	SB	18.67	19.21			1				5	15,163	18,603	54				18
ROSECRANS Ave UC TO 135TH St UC	SB	19.24	19.74								16,190	20,345					
135TH St UC TO EL SEGUNDO Blvd UC	SB	19.76	20.22					6		30	19,158	24,495	276				36
EL SEGUNDO Blvd UC TO 120TH St UC	SB	20.24	R20.73								15,584	19,650					
SUBTOTAL				4	127	173	178	100	4	2784	221,428	251,837	24,665	1380	215	15.0	8784
TOTAL				586						2784	221,428	251,837	24,665	1380	215	15.0	8784

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

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:31

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	33	51

REGISTERED CIVIL ENGINEER 1-21-11 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CAM CHAU No. 70305 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.

ROADWAY QUANTITIES

DESCRIPTION	DIRECTION	LOCATION FROM PM	LOCATION TO PM	COLD PLANE AC PAVEMENT SQYD	RUBBERIZED HMA (GAP GRADED) TON	TACK COAT TON
0.1 MILE N OF YUKON Ave UC TO ARTESIA Blvd UC	NB	16.14	16.56			
0.1 MILE S OF 166TH St UC TO 166TH St UC	NB	17.02	17.14			
166TH St UC TO HAWTHORNE (Rte 107) UC	NB	17.18	17.56	4,815	328	2.2
HAWTHORNE (Rte 107) UC TO MANHATTAN BEACH Blvd UC	NB	17.62	17.86	2,194	150	1.0
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	NB	17.90	18.23	3,729	255	1.7
INGLEWOOD Ave UC TO MARINE Ave UC	NB	18.27	18.63	3,032	207	1.4
MARINE Ave UC TO ROSECRANS Ave UC	NB	18.67	19.21	4,879	332	2.3
ROSECRANS Ave UC TO 135TH St UC	NB	19.24	19.74	6,505	443	3.0
135TH St UC TO EL SEGUNDO Blvd UC	NB	19.76	20.22	3,741	255	1.7
EL SEGUNDO Blvd UC TO 120TH St UC	NB	20.24	R20.73	5,134	350	2.4
166TH St UC TO HAWTHORNE (Rte 107) UC	SB	17.18	17.56	5,558	379	2.6
HAWTHORNE (Rte 107) UC TO MANHATTAN BEACH Blvd UC	SB	17.62	17.86	2,196	150	1.0
MANHATTAN BEACH Blvd UC TO INGLEWOOD Ave UC	SB	17.90	18.23	2,765	187	1.3
INGLEWOOD Ave UC TO MARINE Ave UC	SB	18.27	18.63	2,991	204	1.4
MARINE Ave UC TO ROSECRANS Ave UC	SB	18.67	19.21	5,042	343	2.3
ROSECRANS Ave UC TO 135TH St UC	SB	19.24	19.74	5,163	352	2.4
135TH St UC TO EL SEGUNDO Blvd UC	SB	19.76	20.22	4,437	303	2.1
EL SEGUNDO Blvd UC TO 120TH St UC	SB	20.24	R20.73	5,402	369	2.5
SUBTOTAL				67,583	4607	31.3
TOTAL				67,583	4607	31.3

SUMMARY OF QUANTITIES

Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: HAMID SAADATNEJADI
CALCULATED-DESIGNED BY: CAM CHAU
CHECKED BY: HAMID SAADATNEJADI
REVISED BY
DATE REVISED

LAST REVISION 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 13:31

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	16.1/R20.7	34	51

REGISTERED ELECTRICAL ENGINEER 12-12-10 DATE

1-24-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER STANLEY L. JOHNSON No. E16761 Exp. 09/30/12 ELECTRICAL STATE OF CALIFORNIA

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

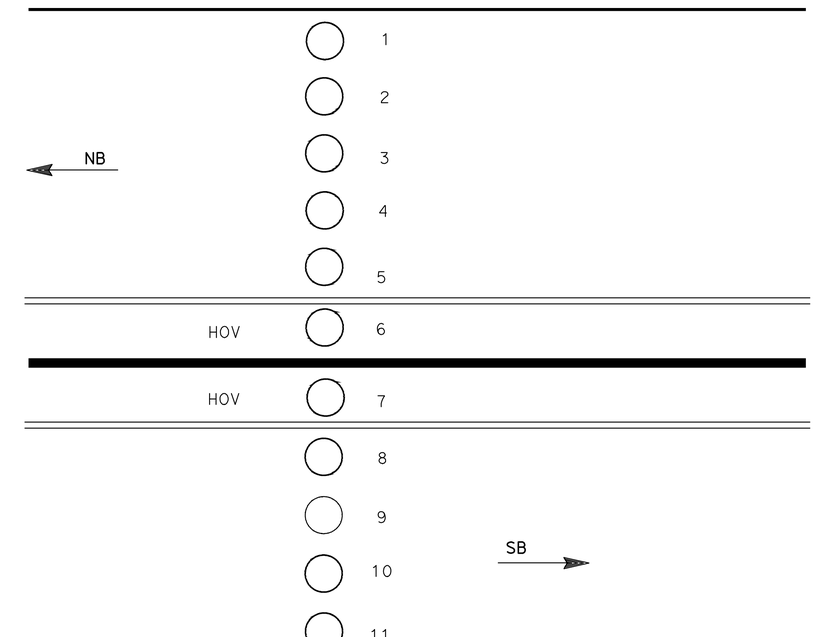
GENERAL NOTES: (THIS SHEET ONLY)

1. INSTALL 2" INDUCTIVE DETECTOR TERMINATION CONDUITS FOR NEW INDUCTIVE LOOP DETECTORS. ABANDON EXISTING DETECTOR TERMINATION CONDUITS.
2. LOCATE ALL EXISTING INDUCTIVE LOOP DETECTORS, PRIOR TO CONSTRUCTION.
3. SPLICE NEW INDUCTIVE LOOP DETECTORS TO EXISTING dlc in ADJACENT PULL BOX.
4. TAG EXISTING dlc IN ADJACENT PULL BOX AND AT CONTROLLER CABINET.
5. ABANDON EXISTING INDUCTIVE LOOP DETECTORS. INSTALL NEW INDUCTIVE LOOP DETECTORS AT THE SAME LOCATION.

INDUCTIVE LOOP DETECTOR (REPLACEMENT)

PM	LOCATION	No. OF LOOPS	SEE DETAIL "A" THIS SHEET FOR TYPICAL LOCATION OF LOOP DETECTORS											No. OF STUBOUTS (REPLACE)
			1	2	3	4	5	6	7	8	9	10	11	
17.52	NB ROUTE 405 S OF HAWTHORNE Blvd	5		X	X	X	X	X						1
17.64	SB ROUTE 405 N OF HAWTHORNE Blvd	5							X	X	X	X	X	1
18.20	NB/SB ROUTE 405 S OF INGLEWOOD Ave	10		X	X	X	X	X	X	X	X	X	X	1
18.30	SB ROUTE 405 N OF INGLEWOOD Ave	5							X	X	X	X	X	1
18.35	NB ROUTE 405 N OF INGLEWOOD Ave	5		X	X	X	X	X						1
19.16	NB/SB ROUTE 405 S OF ROSECRANS Ave	10		X	X	X	X	X	X	X	X	X	X	1
19.36	NB ROUTE 405 S OF ROSECRANS Ave	5		X	X	X	X	X						1
19.57	NB/SB ROUTE 405 N OF ROSECRANS Ave	10		X	X	X	X	X	X	X	X	X	X	1
R20.13	NB ROUTE 405 S OF EL SEGUNDO Blvd	5		X	X	X	X	X						1
R20.30	SB ROUTE 405 S OF EL SEGUNDO Blvd	5							X	X	X	X	X	1
R20.39	NB ROUTE 405 S OF 120TH St	6	X	X	X	X	X	X						1
R20.60	NB ROUTE 405 N OF 122ND St	5		X	X	X	X	X						1
R20.69	NB ROUTE 405 S OF IMPERIAL Hwy	5							X	X	X	X	X	1
TOTAL NUMBER OF LOOPS		81												

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



DETAIL "A"

DETAIL FOR TYPICAL LOOP DETECTOR INSTALLATION ON MAINLINE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

INDUCTIVE LOOP DETECTOR (REPLACEMENT)

NO SCALE

E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: HASSAN MANNAA

CALCULATED-DESIGNED BY: MARTY MORTAZEVI
CHECKED BY: STANLEY L. JOHNSON

REVISED BY
DATE REVISED

LAST REVISION: 01-24-11
DATE PLOTTED => 01-FEB-2011
TIME PLOTTED => 18:16

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	35	51

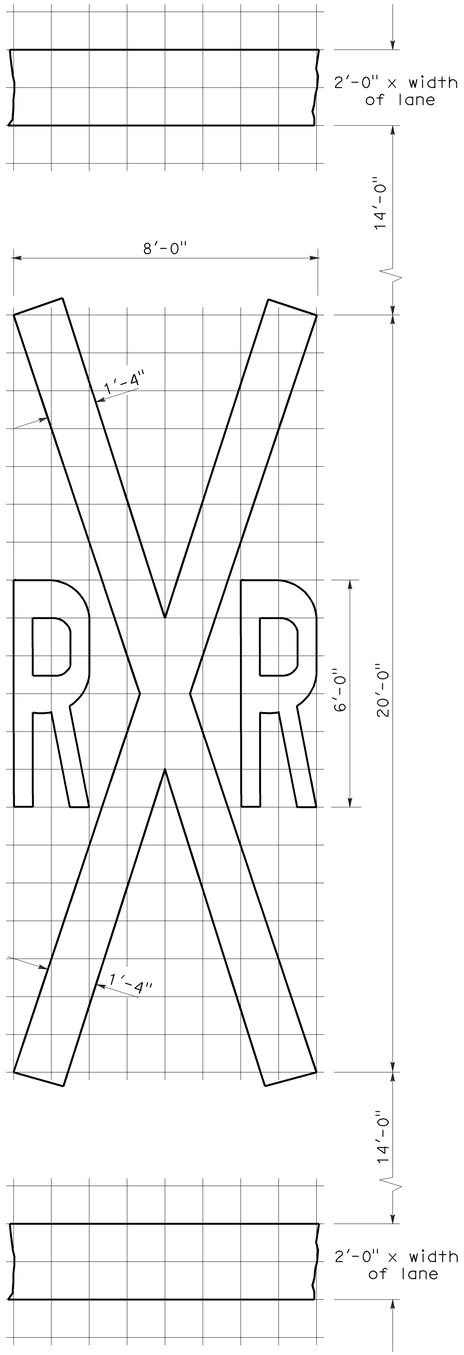
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

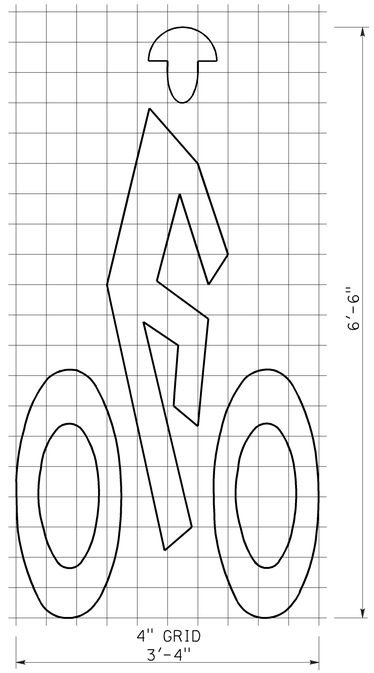
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 01-24-11

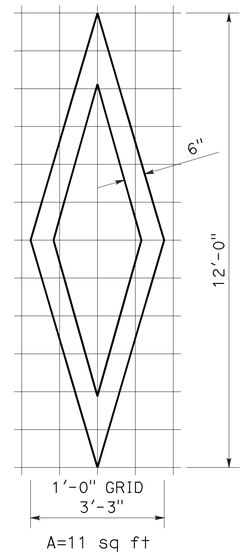


RAILROAD CROSSING SYMBOL

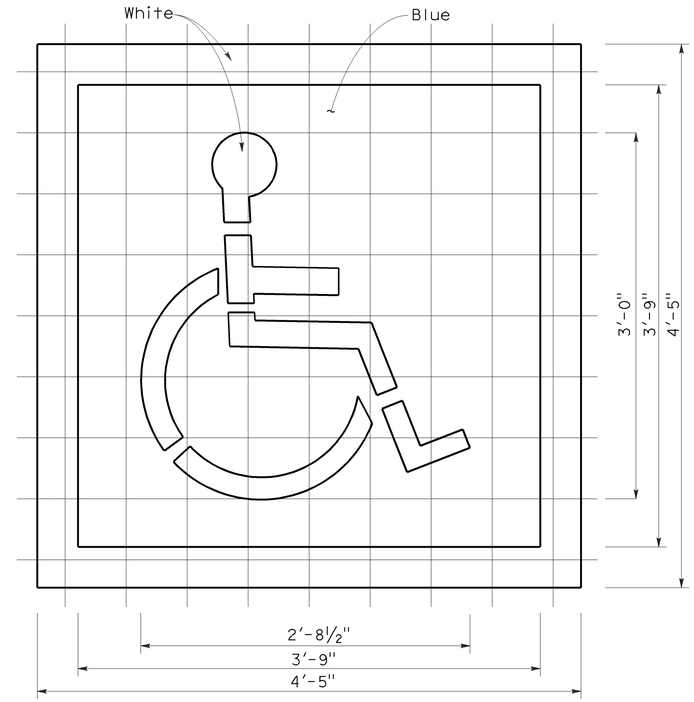
✳70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



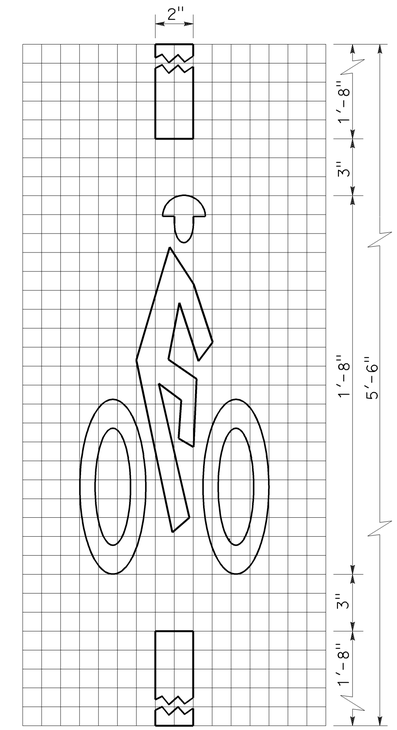
BIKE LANE SYMBOL



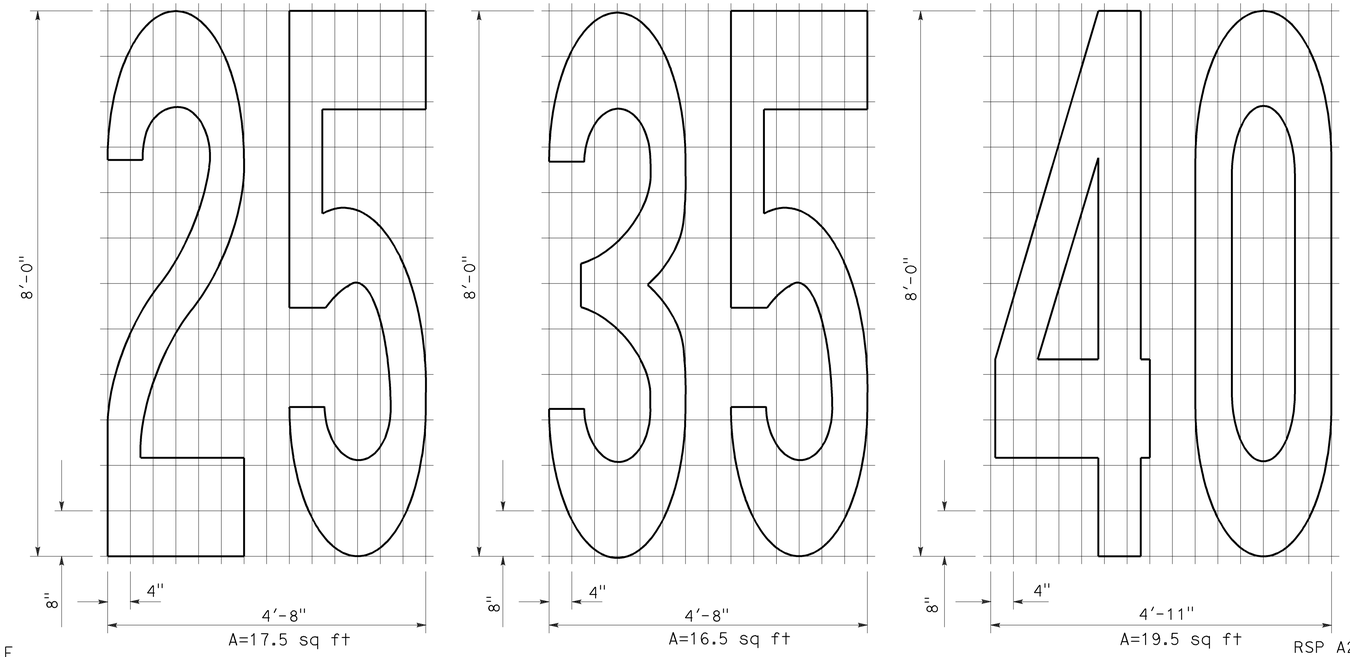
DIAMOND SYMBOL



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	405	16.1/R20.7	36	51

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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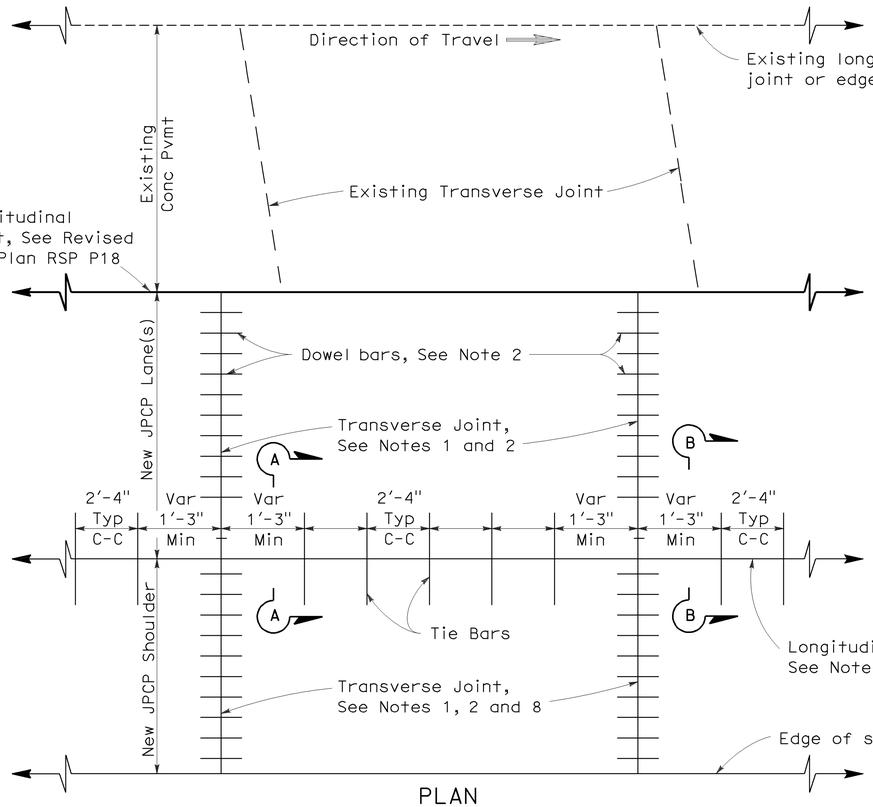
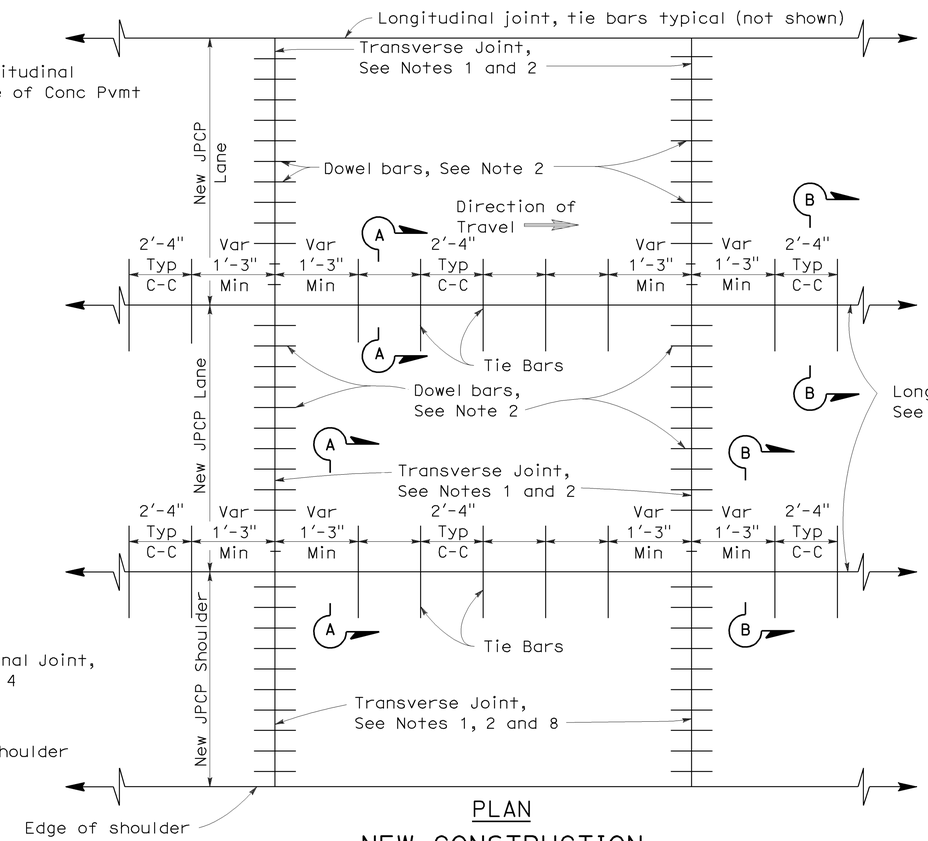
To accompany plans dated 01-24-11



PLAN

LANE/SHOULDER ADDITION OR RECONSTRUCTION

See Notes 6 and 7



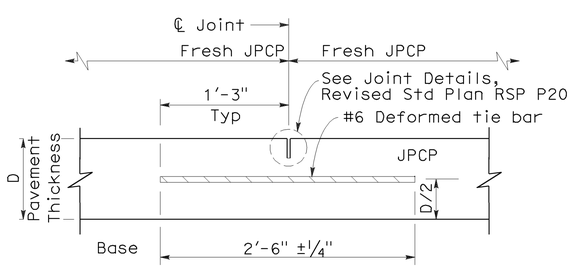
PLAN

NEW CONSTRUCTION

See Notes 6 and 7

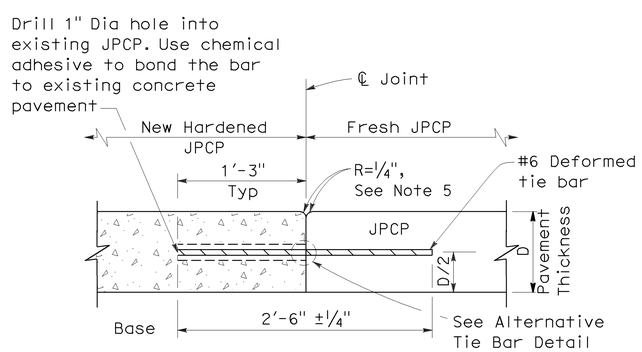
NOTES:

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.



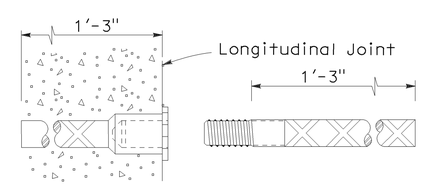
SECTION A-A

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	405	16.1/R20.7	37	51

William K. Farnbach
REGISTERED CIVIL ENGINEER

June 5, 2009
PLANS APPROVAL DATE

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

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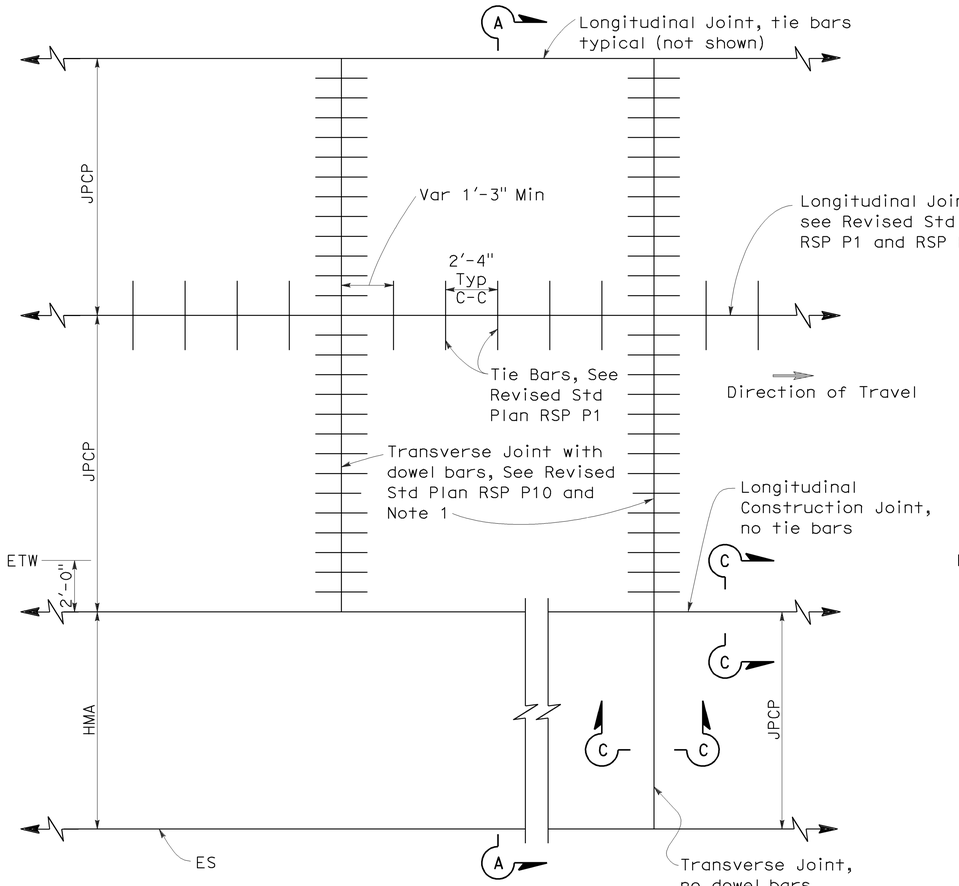
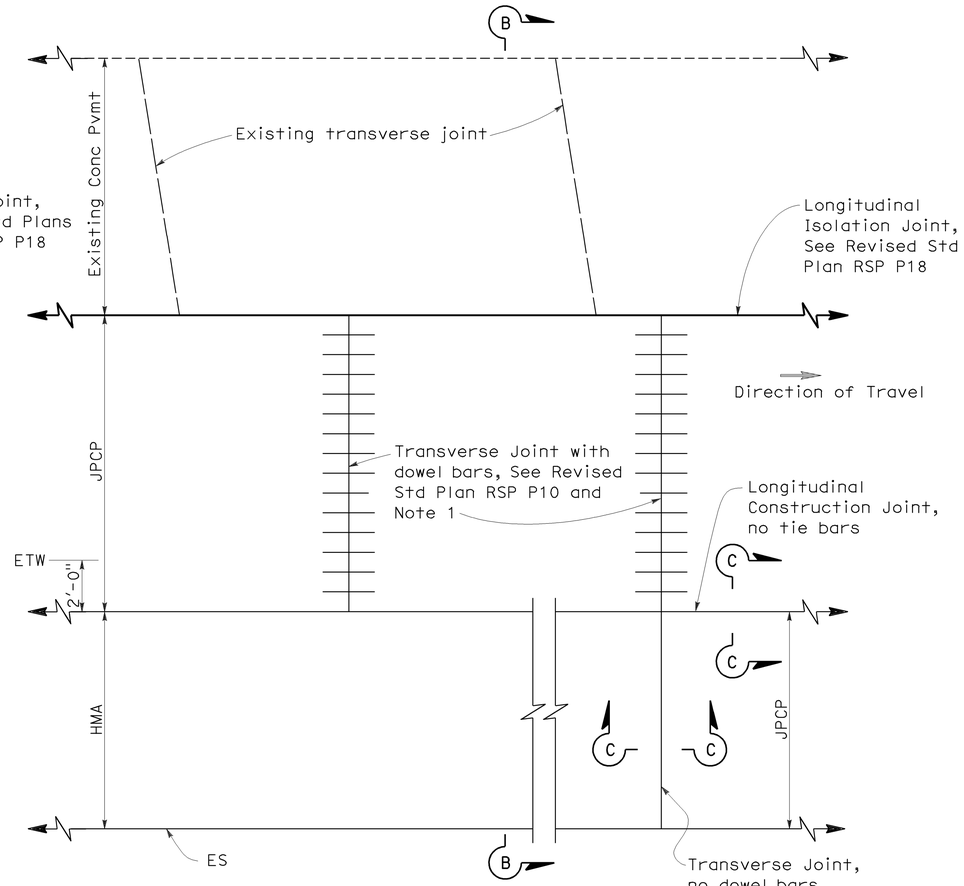
To accompany plans dated 01-24-11



PLAN

NEW CONSTRUCTION

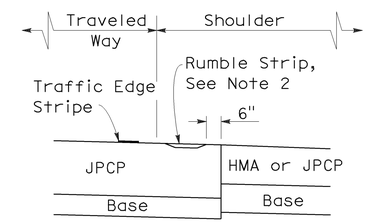


PLAN

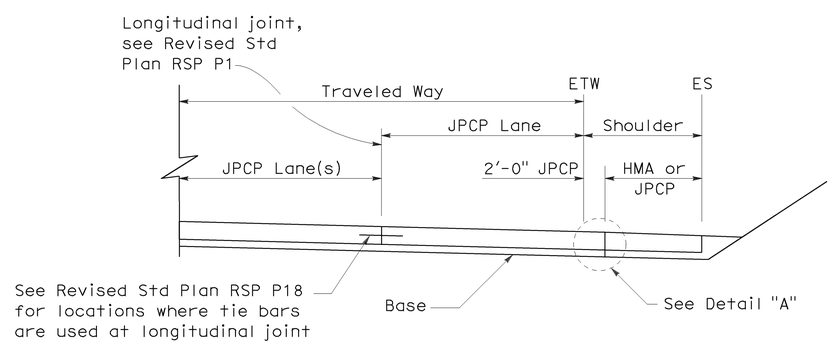
LANE/SHOULDER ADDITION OR RECONSTRUCTION

NOTES:

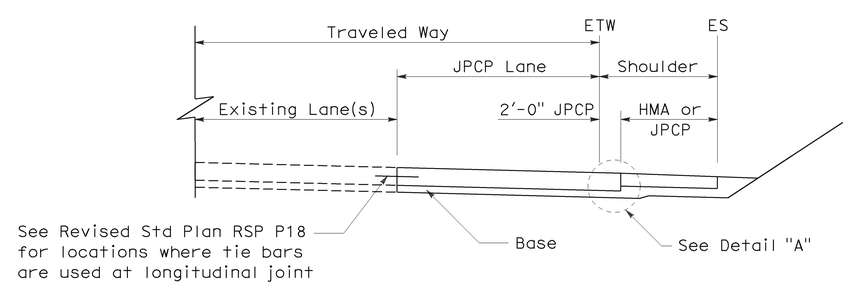
1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new Jointed Plain Concrete Pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
2. For locations of rumble strips, see project plans. For rumble strip details not shown, see Standard Plans A40A and A40B.
3. Joint spacing patterns do not apply to intersections.



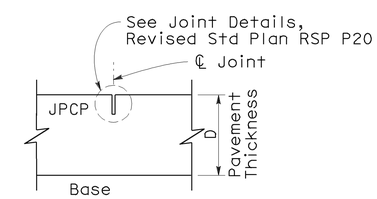
DETAIL "A"



SECTION A-A



SECTION B-B



SECTION C-C

TRANSVERSE/LONGITUDINAL JOINT

(no dowel bars/tie bars)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINTED PLAIN CONCRETE PAVEMENT-WIDENED SLAB DETAILS

NO SCALE

RSP P2 DATED JUNE 5, 2009 SUPERCEDES STANDARD PLAN P2
DATED MAY 1, 2006 - PAGE 120 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P2

2006 REVISED STANDARD PLAN RSP P2

5-19-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	38	51

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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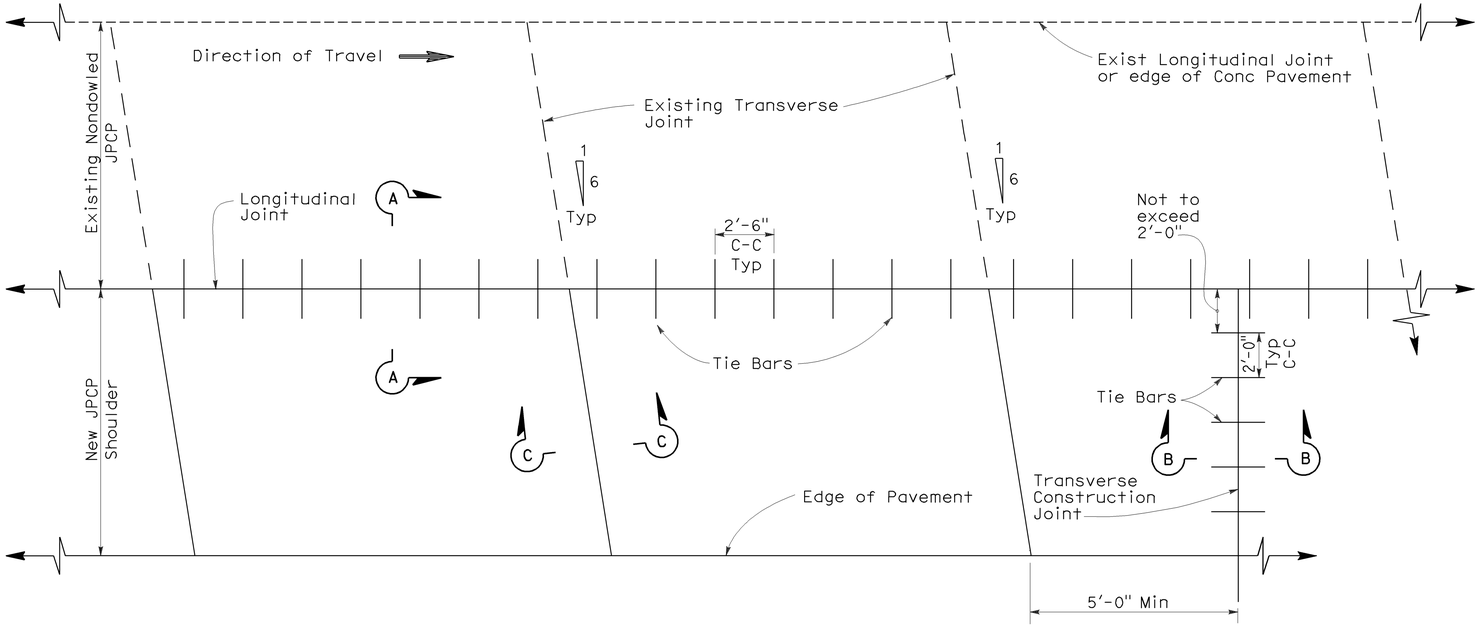
To accompany plans dated 01-24-11



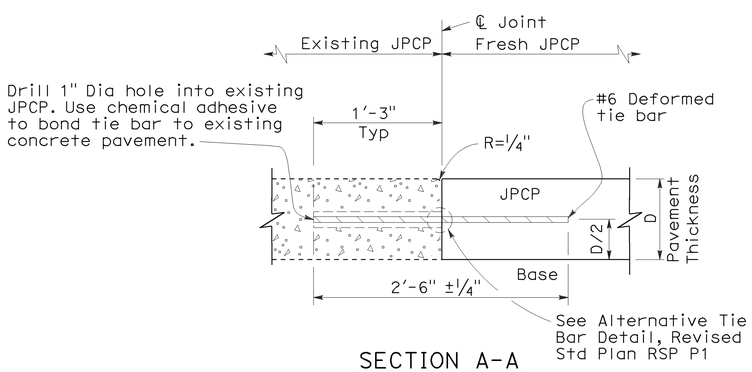
PLAN

NOTES:

1. New transverse contraction joints shall match the skewed offset and spacing of the adjacent existing contraction joints, as shown.
2. Transverse construction joints, with tie bars spaced as shown, shall be installed at the end of paving operations. Transverse construction joints shall be placed at least 5'-0" from any contraction joint.
3. This Standard Plan only applicable for constructing a nondoweled Jointed Plain Concrete Pavement shoulder next to existing nondoweled Jointed Plain Concrete Pavement lane.
4. 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.

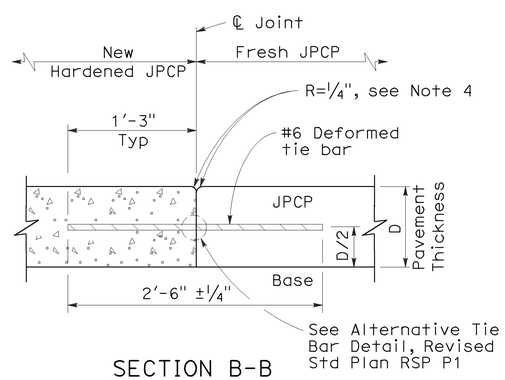
TABLE A

Tie Bar Spacing		
Slab Length	Total Tie Bars per Slab	Clearance Tie Bar to Transverse Joint
9'-0"	3	1'-3"
9'-6"	3	1'-4 1/2"
12'-0"	5	1'-4"
13'-0"	5	1'-10"
14'-0"	5	2'-3 3/4"
15'-0"	6	1'-8"



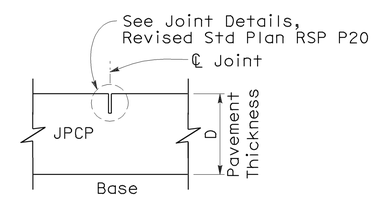
SECTION A-A

LONGITUDINAL JOINT
(Between fresh and hardened concrete)



SECTION B-B

TRANSVERSE CONSTRUCTION JOINT



SECTION C-C

TRANSVERSE CONTRACTION JOINT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINTED PLAIN CONCRETE PAVEMENT-NONDOWELED SHOULDER ADDITION/RECONSTRUCTION

NO SCALE

RSP P3 DATED MAY 15, 2009 SUPERSEDES RSP P3 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P3 DATED MAY 1, 2006 - PAGE 121 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P3

2006 REVISED STANDARD PLAN RSP P3

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	39	51

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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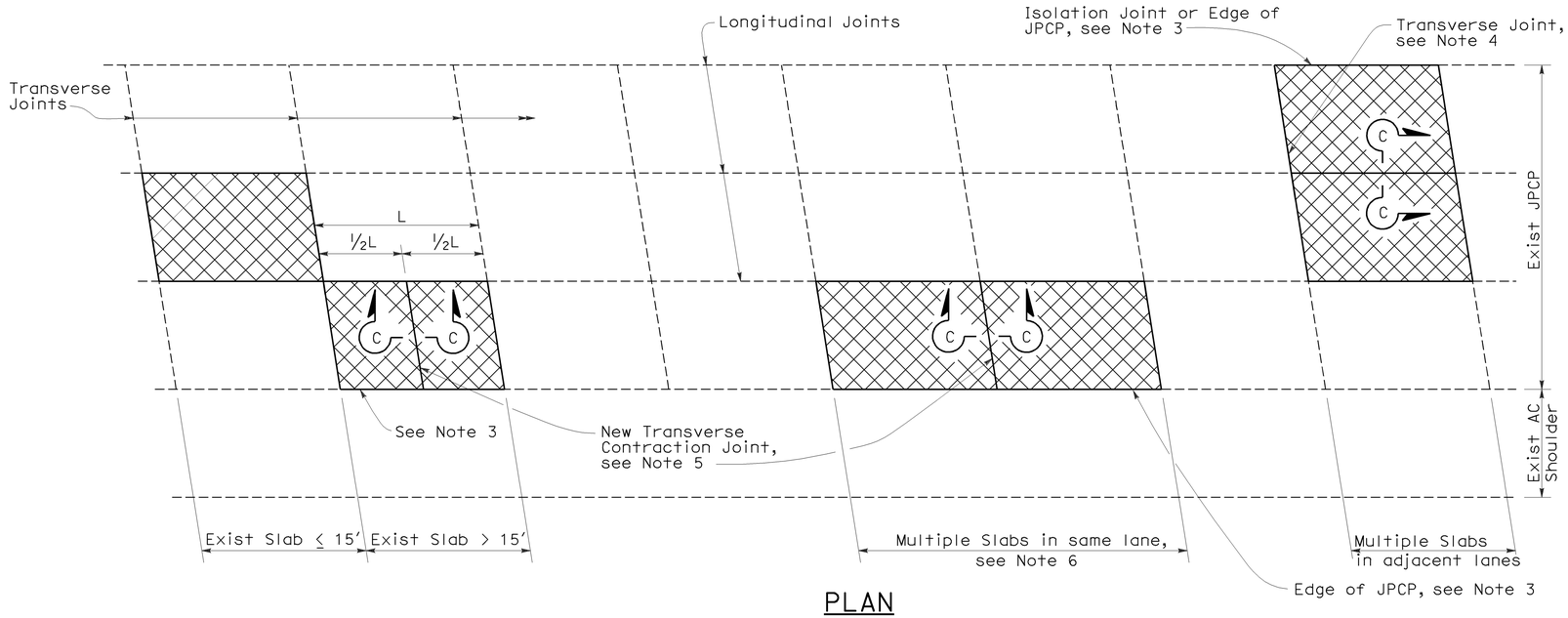
To accompany plans dated 01-24-11



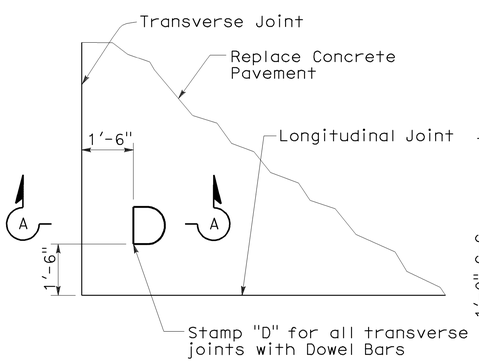
PLAN

NOTES:

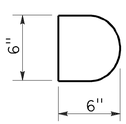
1. For details not shown, see Revised Standard Plan RSP P10.
2. Where the existing outer shoulder pavement is asphalt concrete pavement, the "a" dimension shall be 1′-0" and the "b" dimension shall be 2′-0".
3. Side forms shall be used where edge of pavement is adjacent to asphalt concrete.
4. For detail,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

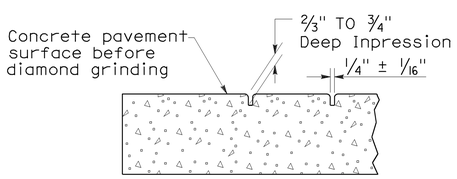
LEGEND

Replace Concrete Pavement (See Slab Layout Detail)

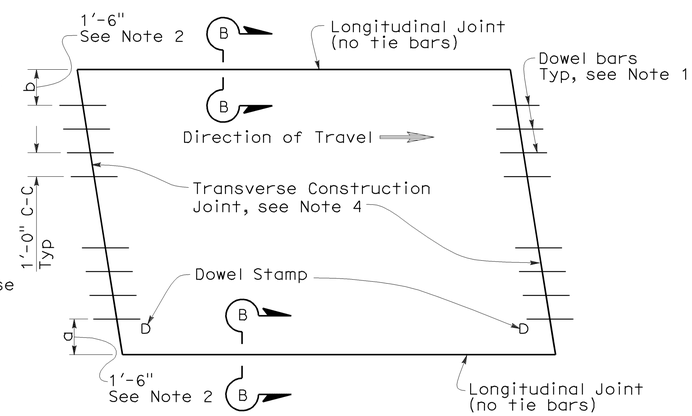


DOWEL STAMP DETAIL

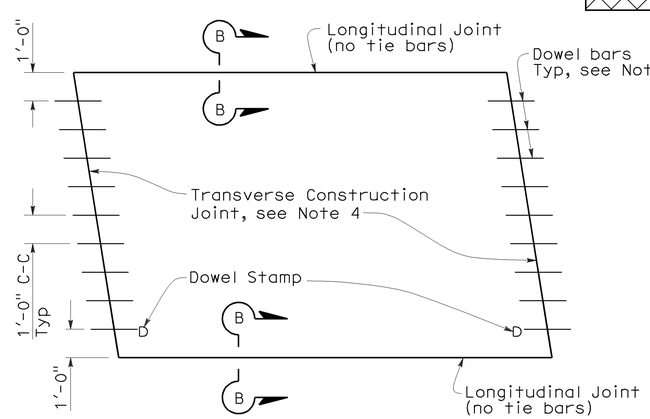




SECTION A-A

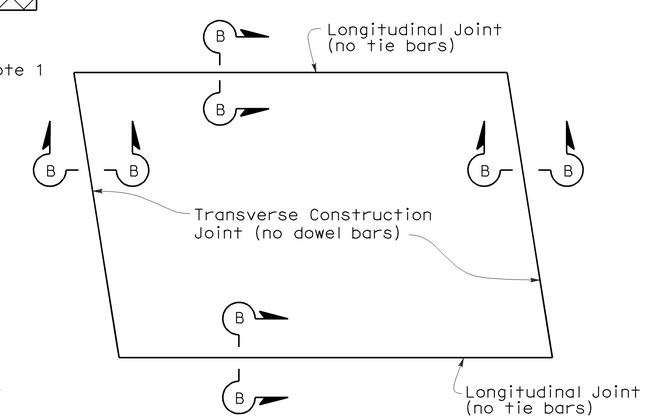


TYPE I
(traffic lane lines match longitudinal joints)

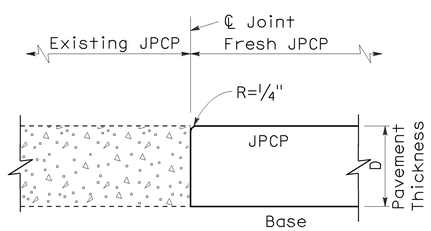


TYPE II
(traffic lane lines do not match longitudinal joints)

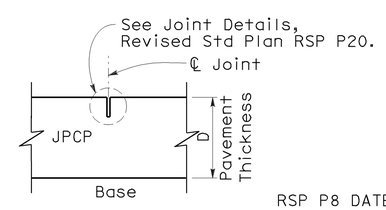
SLAB LAYOUT



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



SECTION B-B



SECTION C-C

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINTED PLAIN CONCRETE PAVEMENT-INDIVIDUAL SLAB REPLACEMENT

NO SCALE

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

REVISED STANDARD PLAN RSP P8

2006 REVISED STANDARD PLAN RSP P8

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	40	51

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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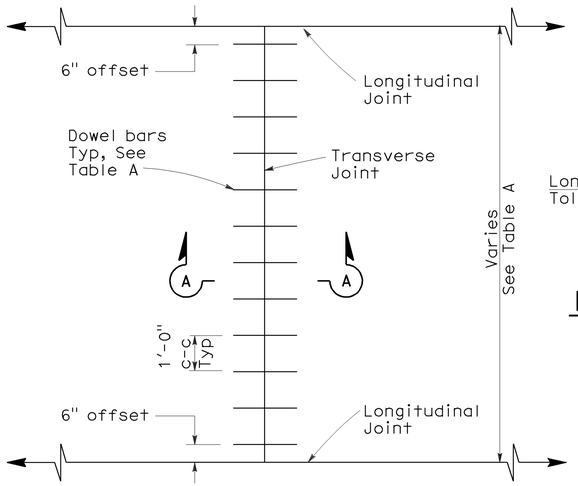
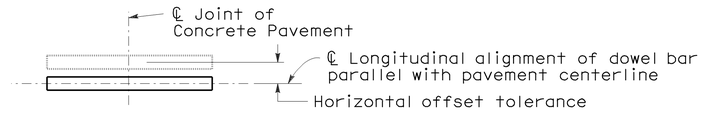
To accompany plans dated 01-24-11

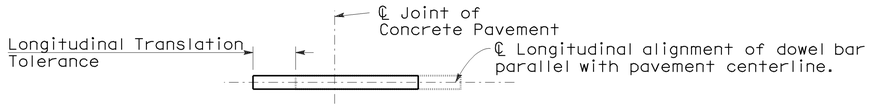


TRANSVERSE JOINT DOWEL BAR LAYOUT



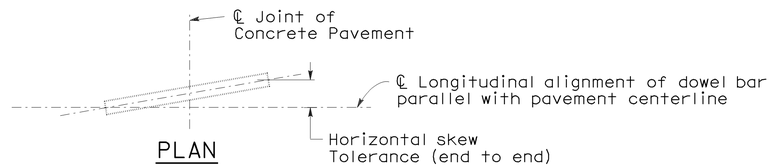
PLAN

HORIZONTAL OFFSET TOLERANCE



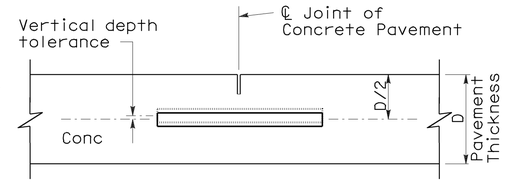
PLAN

LONGITUDINAL TRANSLATION TOLERANCE



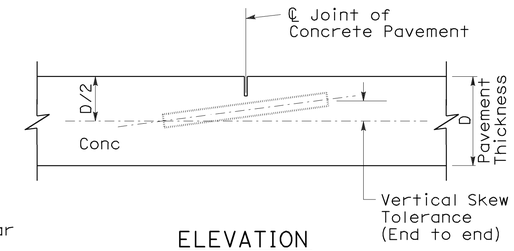
PLAN

HORIZONTAL SKEW TOLERANCE



ELEVATION

VERTICAL DEPTH TOLERANCE



ELEVATION

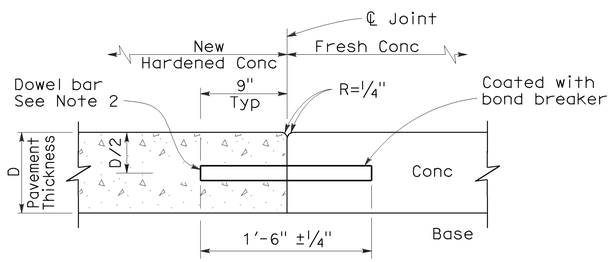
VERTICAL SKEW TOLERANCE

NOTES:

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

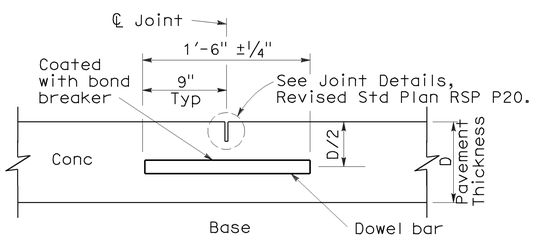
TABLE A (See Note 3)

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

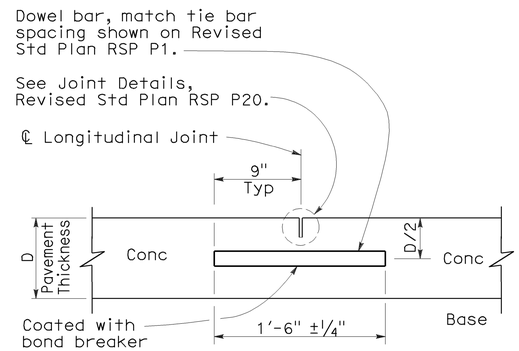


SECTION A-A

TRANSVERSE CONSTRUCTION JOINT DETAIL

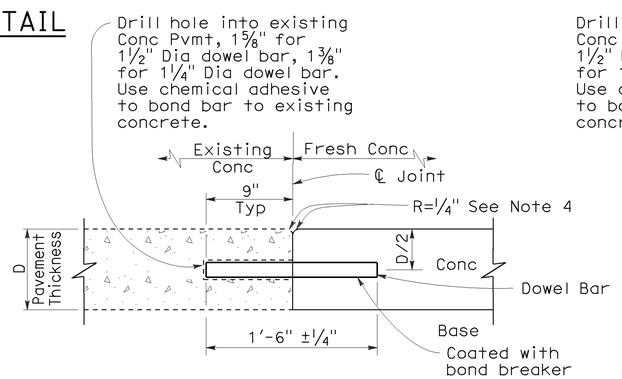


TRANSVERSE CONTRACTION JOINT



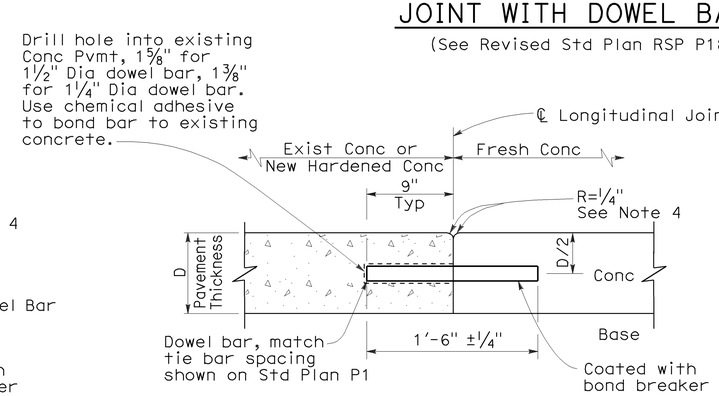
LONGITUDINAL CONTRACTION JOINT WITH DOWEL BARS

(See Revised Std Plan RSP P18)



TRANSVERSE CONSTRUCTION JOINT FOR EXISTING CONCRETE PAVEMENT

(Drill and bond locations)



LONGITUDINAL CONSTRUCTION JOINT WITH DOWEL BARS

(See Revised Std Plan RSP P18)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-DOWEL BAR DETAILS

NO SCALE

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

REVISED STANDARD PLAN RSP P10

2006 REVISED STANDARD PLAN RSP P10

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	41	51

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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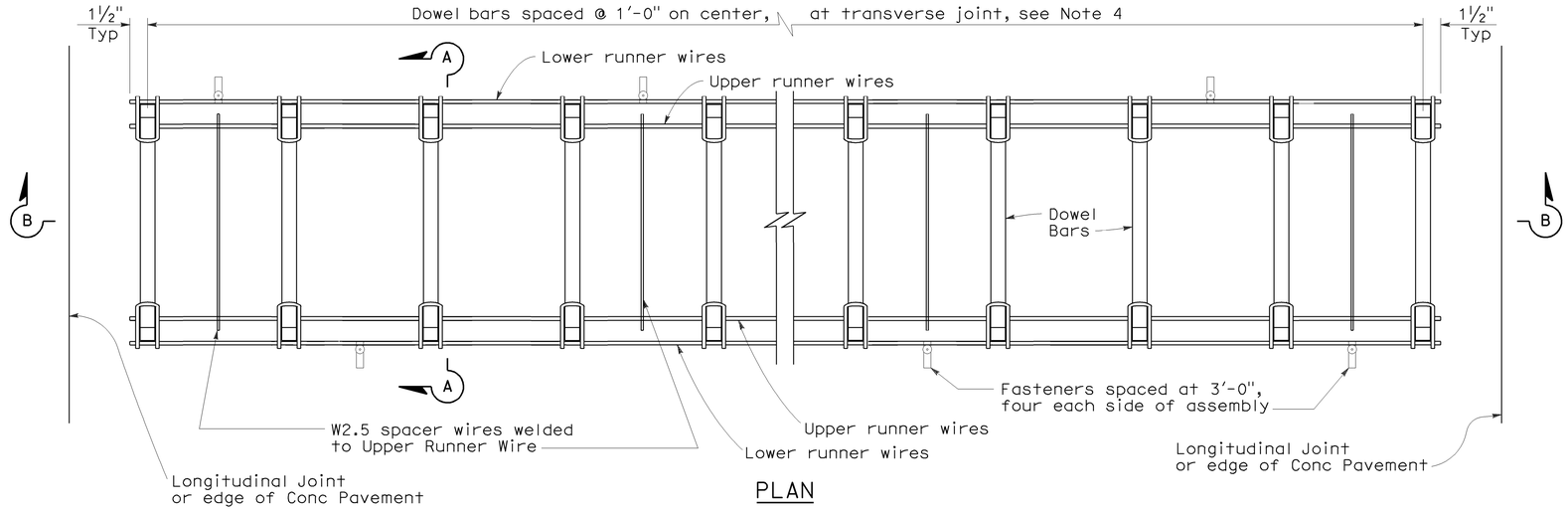
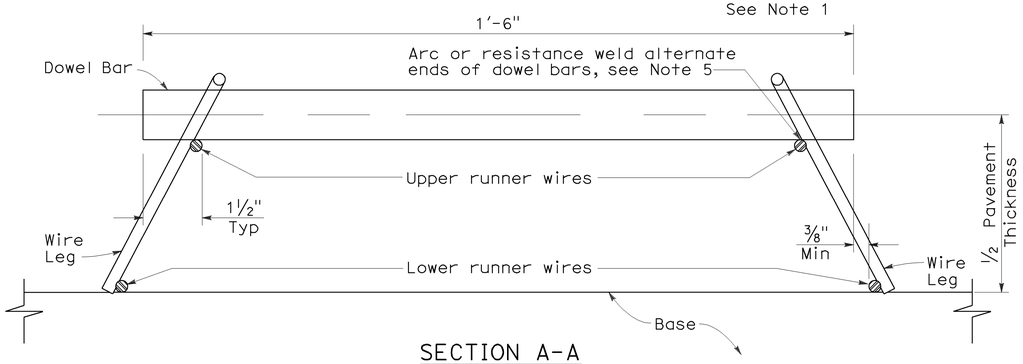
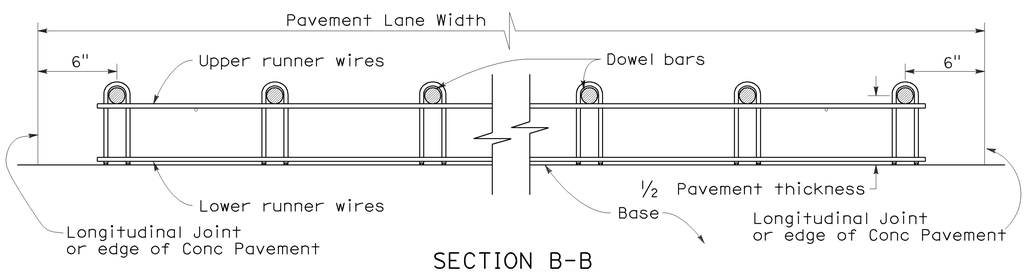
To accompany plans dated 01-24-11



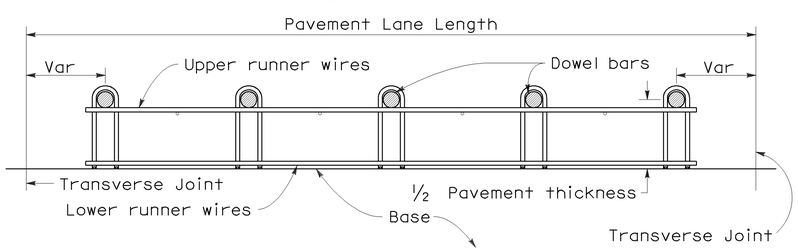
PLAN
DOWEL BAR BASKET (TRANSVERSE JOINT)
See Note 1



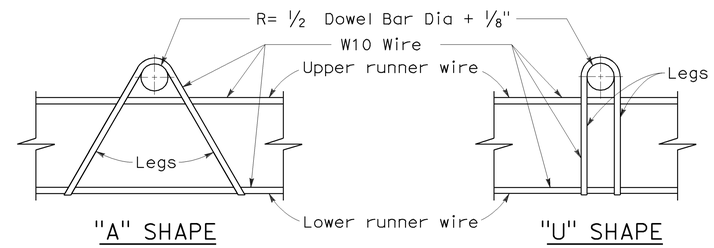
SECTION A-A



SECTION B-B
See Note 1

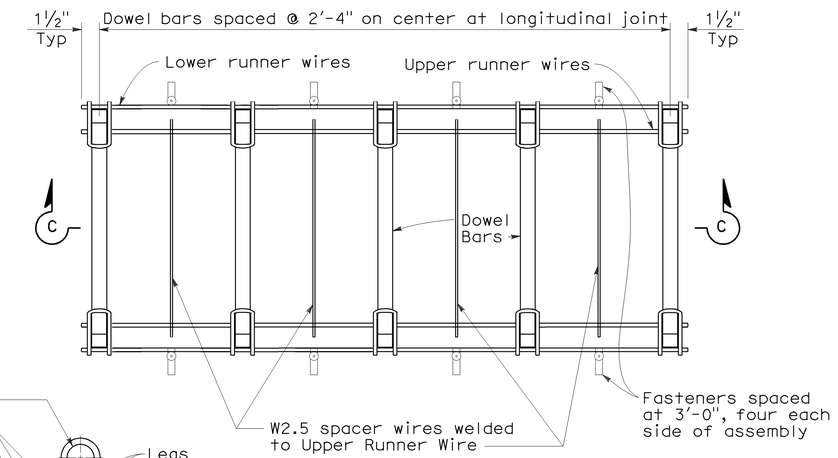


SECTION C-C
See Notes 1 and 4

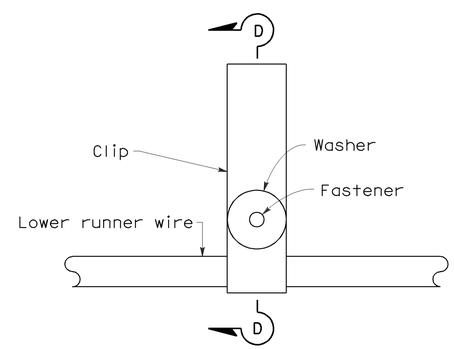


"A" SHAPE "U" SHAPE

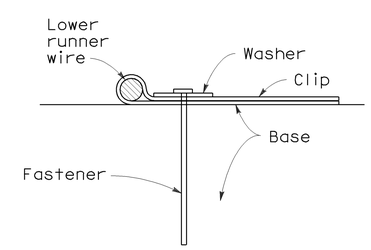
ASSEMBLY FRAME DETAILS



PLAN
DOWEL BAR BASKET (LONGITUDINAL JOINT)
See Note 1



PLAN



SECTION D-D

FASTENER DETAIL

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-DOWEL BAR BASKET DETAILS

NO SCALE

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

REVISED STANDARD PLAN RSP P12

2006 REVISED STANDARD PLAN RSP P12

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	42	51

William K. Farnbach
REGISTERED CIVIL ENGINEER

June 5, 2009
PLANS APPROVAL DATE

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

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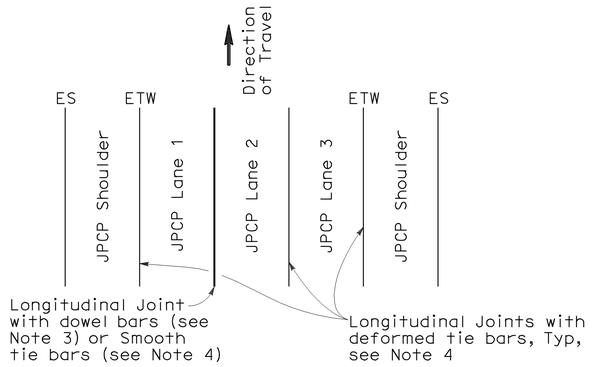
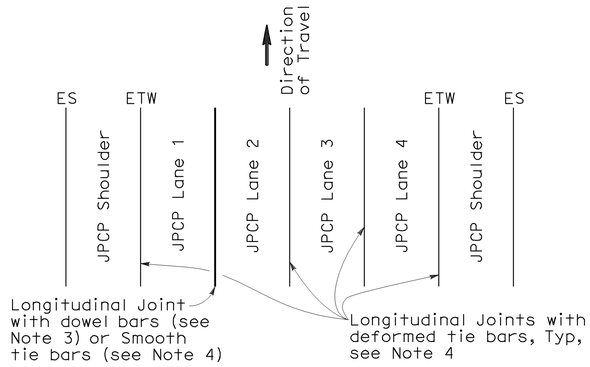
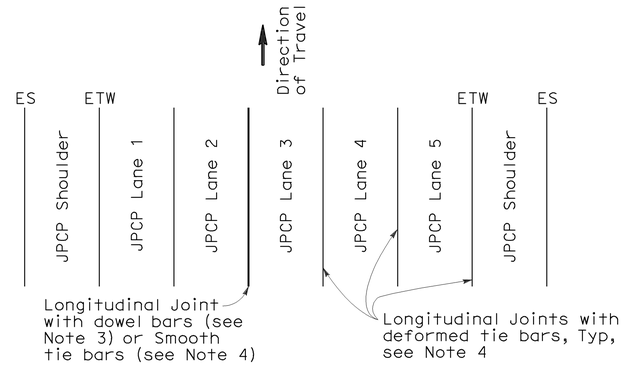
To accompany plans dated 01-24-11



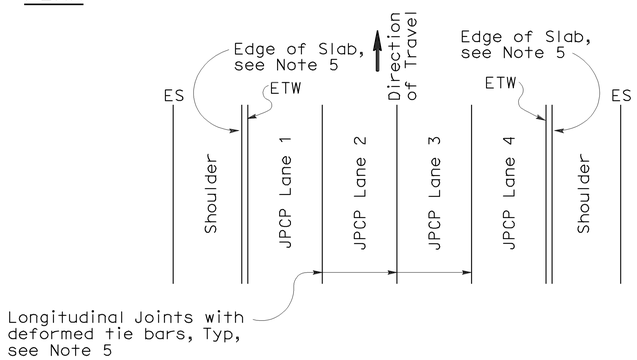
3 LANES WITH TIED CONCRETE SHOULDERS
PLAN



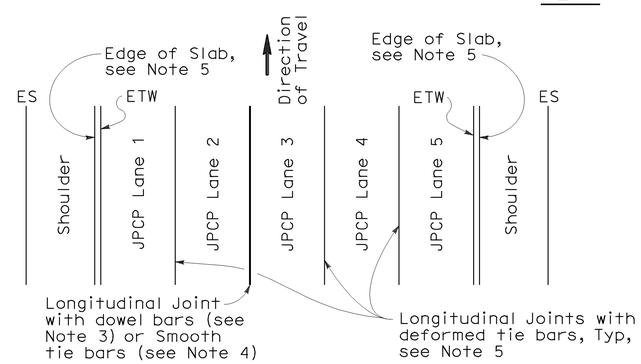
4 LANES WITH TIED CONCRETE SHOULDERS
PLAN



5 LANES WITH TIED CONCRETE SHOULDERS
PLAN



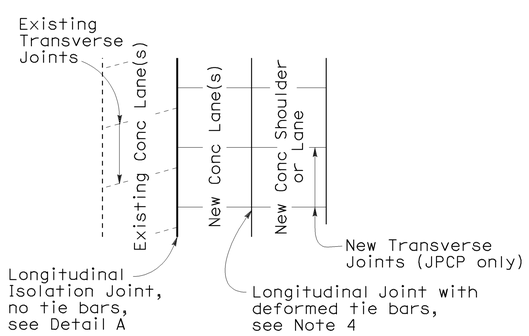
4 LANES OR LESS WITH WIDENED SLAB
PLAN



5 LANES WITH WIDENED SLAB
PLAN

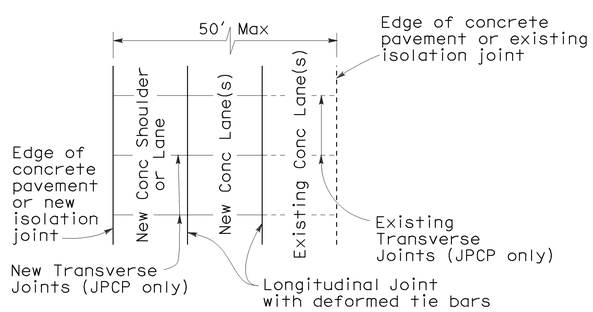
NEW CONSTRUCTION

Location of Longitudinal Joints
(For JPCP)



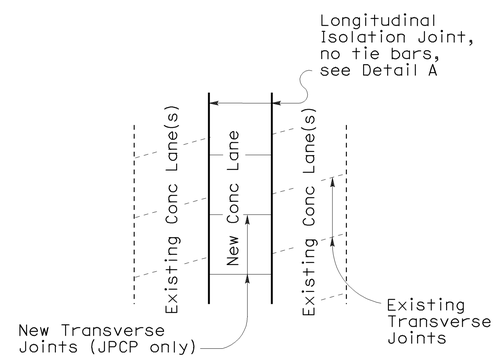
CASE 1
PLAN

Transverse Joints do not align between new and existing



CASE 2
PLAN

Transverse Joints align between new and existing



CASE 3 (INTERIOR LANE REPLACEMENT)
PLAN

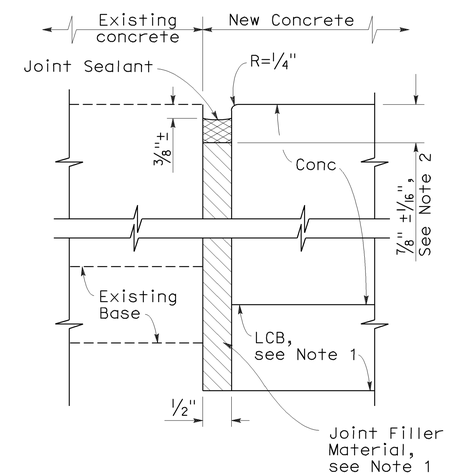
Transverse Joints do not align between new and existing

LANE/SHOULDER ADDITION OR RECONSTRUCTION

(For JPCP and CRCP)

NOTES:

1. Where Lean Concrete Base is not used as base material, the joint filler material used for the longitudinal isolation joint shall only extend to the bottom of the new concrete slab. See Detail A.
2. Use 5/8" ±1/16" dimension for silicone sealant.
3. See Revised Standard Plan RSP P10 for longitudinal joint with dowel bars.
4. See Revised Standard Plan RSP P1.
5. See Revised Standard Plan RSP P2.



DETAIL A

ISOLATION JOINT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-LANE SCHEMATICS AND ISOLATION JOINT DETAIL

NO SCALE

RSP P18 DATED JUNE 5, 2009 SUPERSEDES RSP P18 DATED MAY 15, 2009, RSP P18 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P18 DATED MAY 1, 2006 - PAGE 127 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P18

2006 REVISED STANDARD PLAN RSP P18

5-14-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	43	51

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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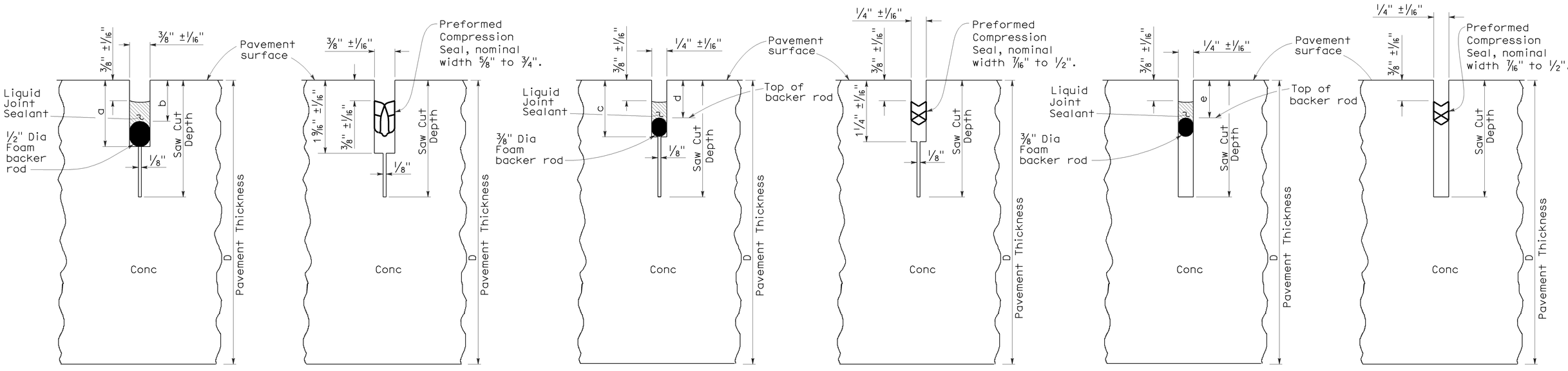
To accompany plans dated 01-24-11

2006 REVISED STANDARD PLAN RSP P20

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.



LIQUID SEALANT — COMPRESSION SEAL

TYPE A1

Transverse Contraction Joints

LIQUID SEALANT — COMPRESSION SEAL

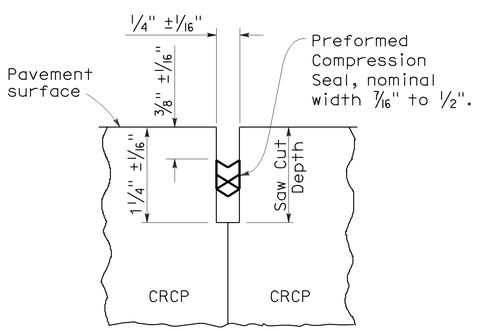
TYPE A2

Longitudinal Contraction Joints

LIQUID SEALANT — COMPRESSION SEAL

TYPE B

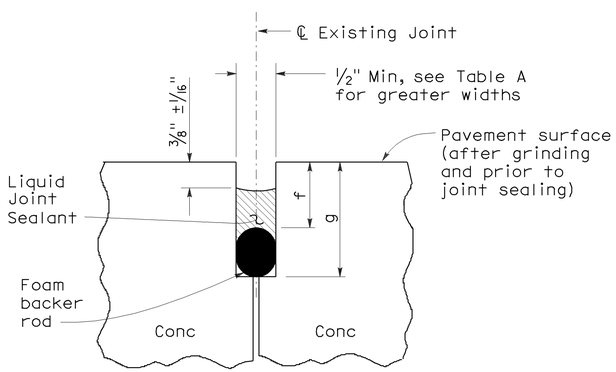
Longitudinal or Transverse Contraction Joint



COMPRESSION SEAL

TYPE C

Transverse and Longitudinal Construction Joints (For CRCP)



LIQUID SEALANT

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

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	44	51

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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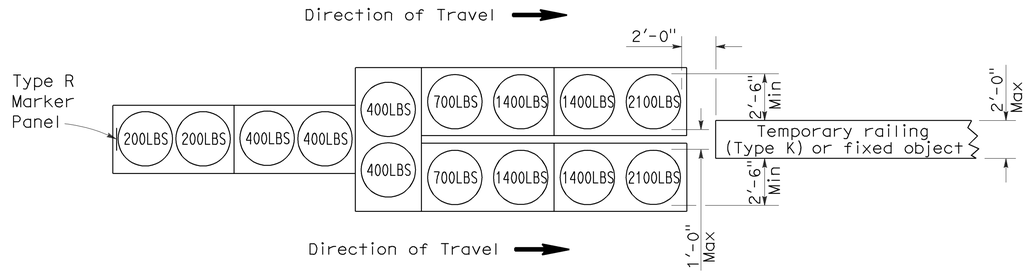
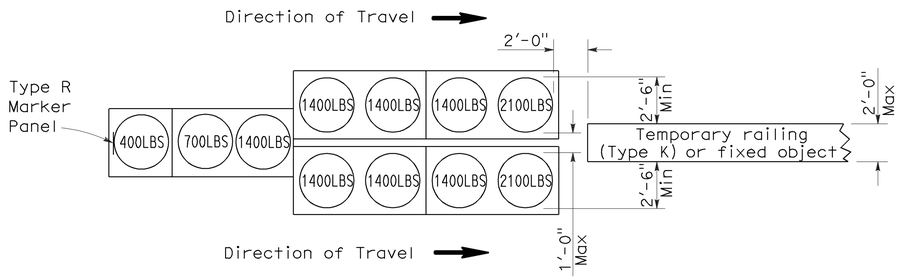
To accompany plans dated 01-24-11



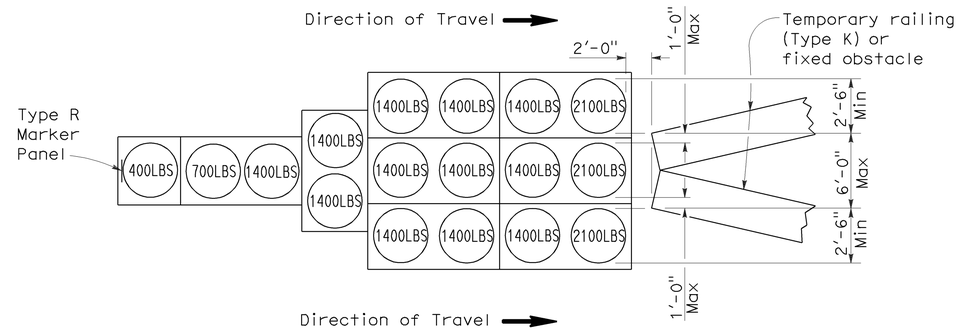
ARRAY 'TU14'

Approach speed 45 mph or more



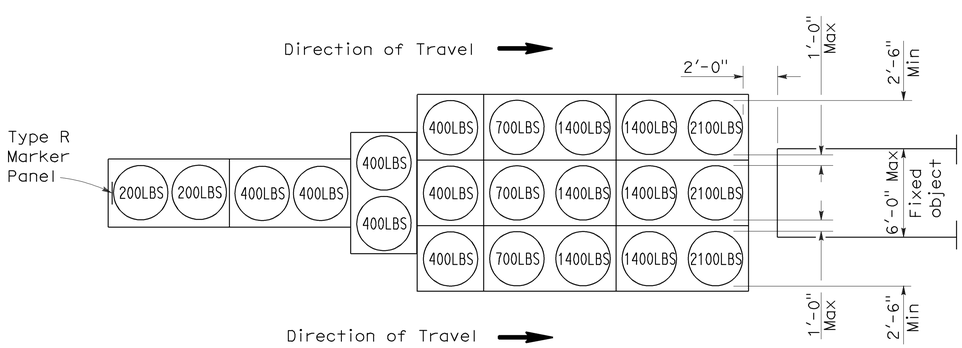
ARRAY 'TU11'

Approach speed less than 45 mph



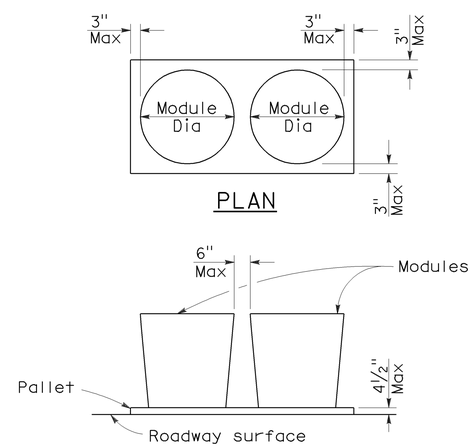
ARRAY 'TU17'

Approach speed less than 45 mph



ARRAY 'TU21'

Approach speed 45 mph or more



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	405	16.1/R20.7	45	51

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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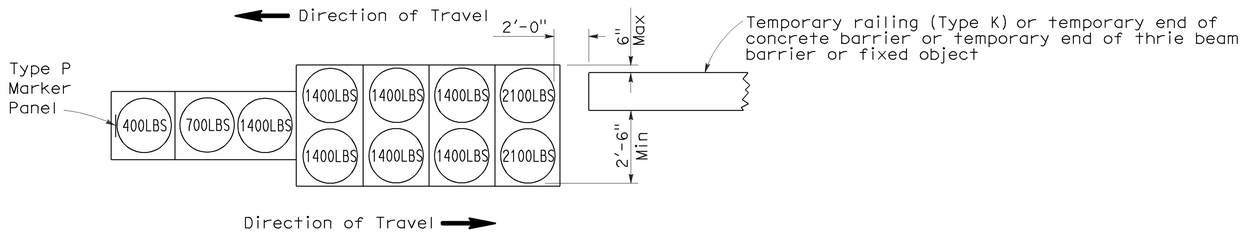
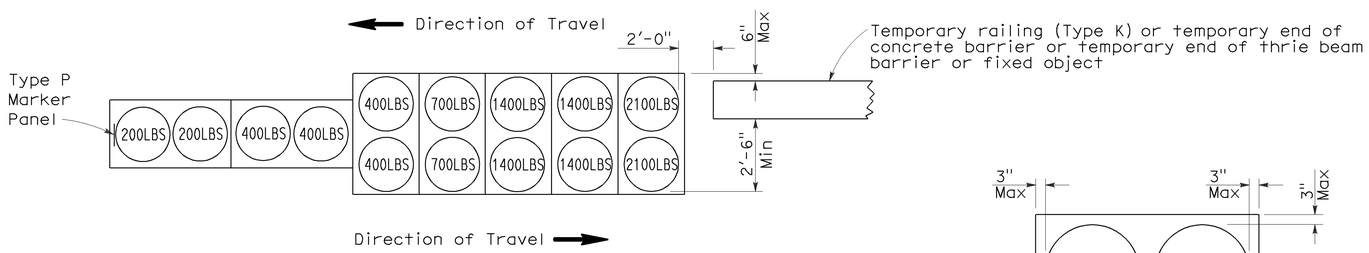
To accompany plans dated 01-24-11



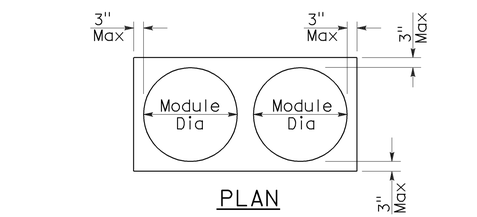
ARRAY 'TB11'

Approach speed less than 45 mph

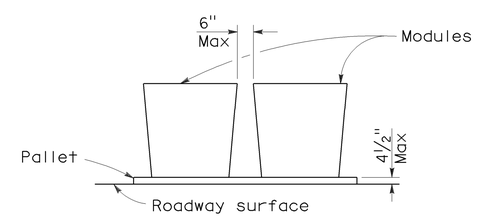


ARRAY 'TB14'

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	405	16.1/R20.7	46	51

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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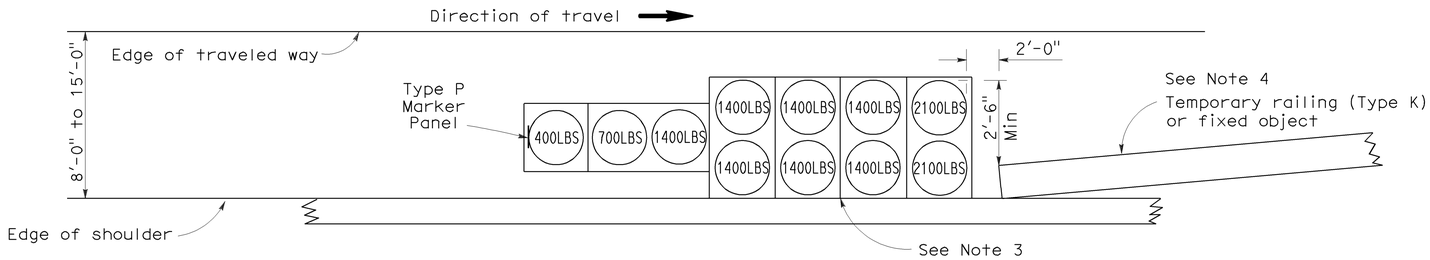
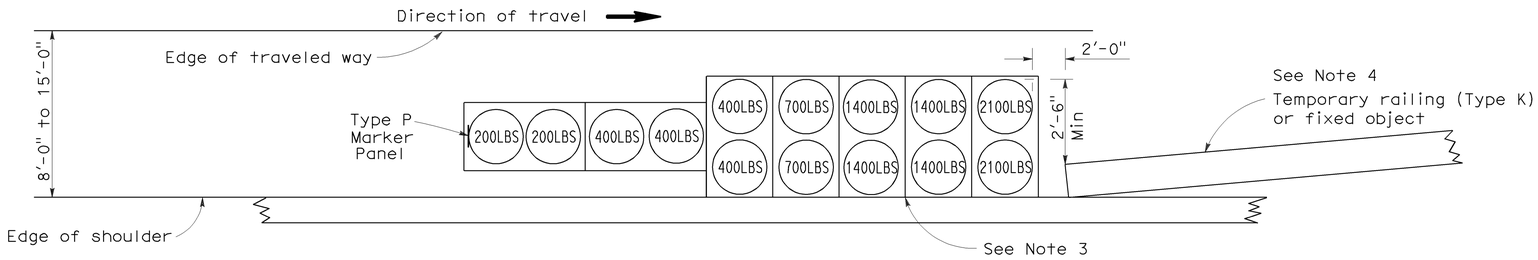
To accompany plans dated 01-24-11



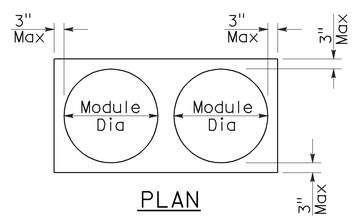
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9

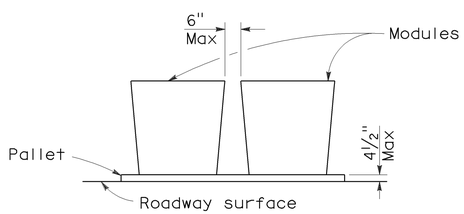


ARRAY 'TS14'

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	405	16.1/R20.7	47	51

REGISTERED CIVIL ENGINEER

November 17, 2006
PLANS APPROVAL DATE

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

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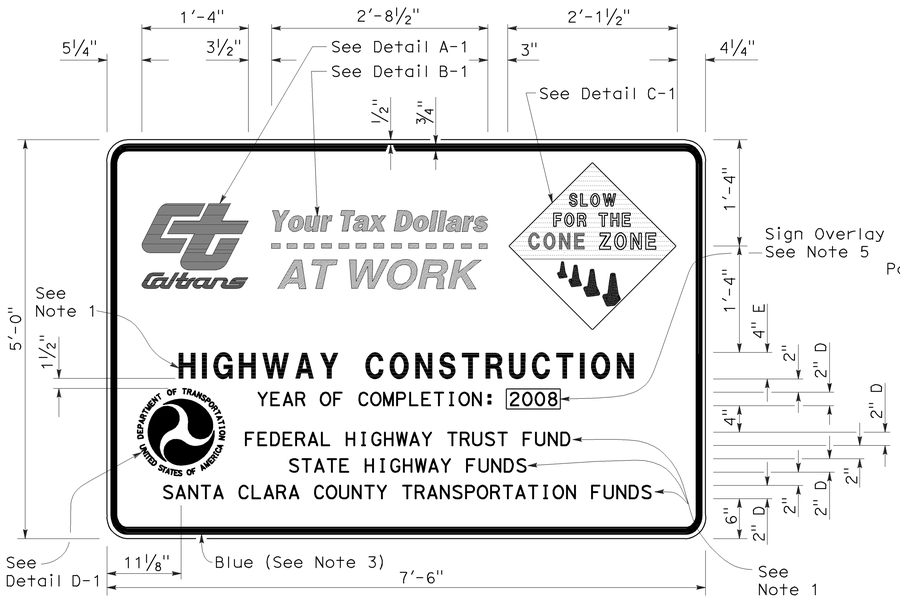
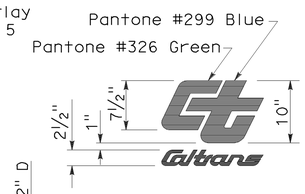
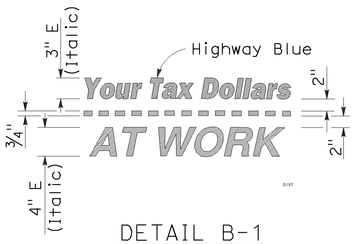
To accompany plans dated 01-24-11



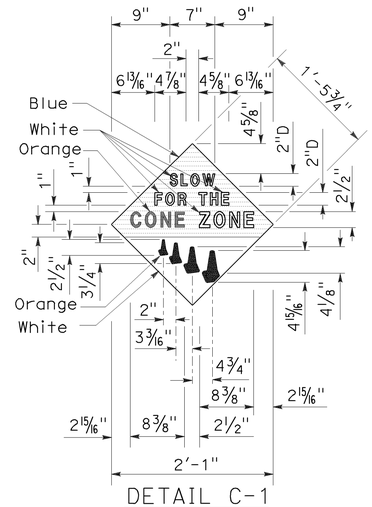
TYPE 1



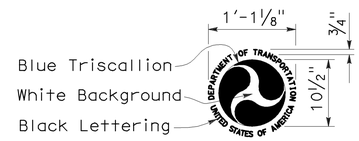
DETAIL A-1



DETAIL B-1
(See Note 3)



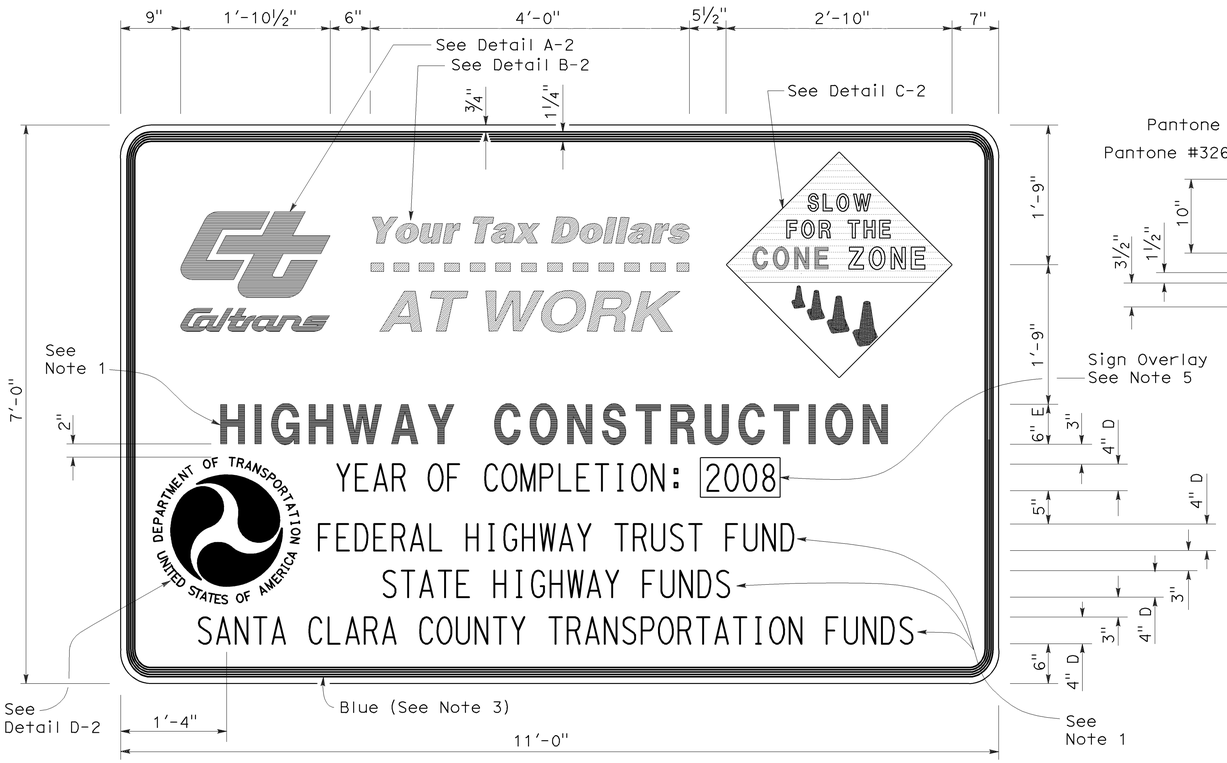
DETAIL C-1
(See Note 4)



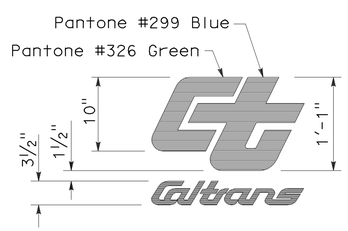
DETAIL D-1
(See Note 6)

NOTES:

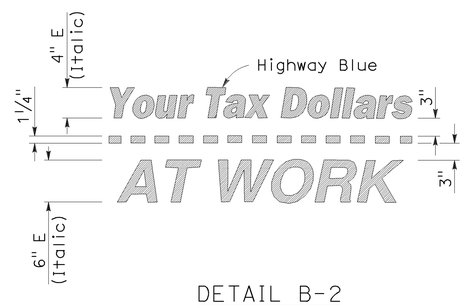
1. The sign messages shown for type of project and fund types are examples only. See the Special Provisions for the applicable type of project and fund type messages to be used.
2. Except as otherwise shown, the legend of sign shall be black on a white background (non-reflective).
3. The border of the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



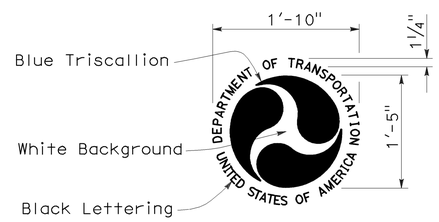
TYPE 2



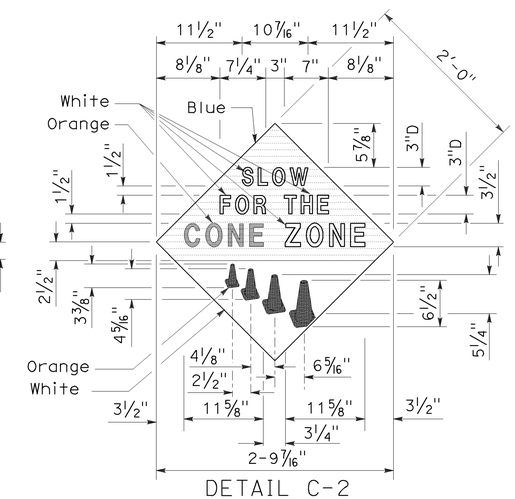
DETAIL A-2



DETAIL B-2
(See Note 3)



DETAIL D-2
(See Note 6)



DETAIL C-2
(See Note 4)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PROJECT FUNDING IDENTIFICATION SIGNS

NO SCALE

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

REVISED STANDARD PLAN RSP T7

2006 REVISED STANDARD PLAN RSP T7

9-7-06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	48	51

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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

To accompany plans dated 01-24-11

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	405	16.1/R20.7	49	51

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 01-24-11

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	405	16.1/R20.7	50	51

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 01-24-11

EQUIPMENT IDENTIFICATION

ILLUMINATED SIGN IDENTIFICATION NUMBER:

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

10 ISL SCI 1.0

- 10 — Transformer rating (kVA)
- ISL — Lighting control type
- SCI — 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
- Slot number in input file
- Input file (I or J)
- Phase

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1C

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	16.1/R20.7	51	51

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

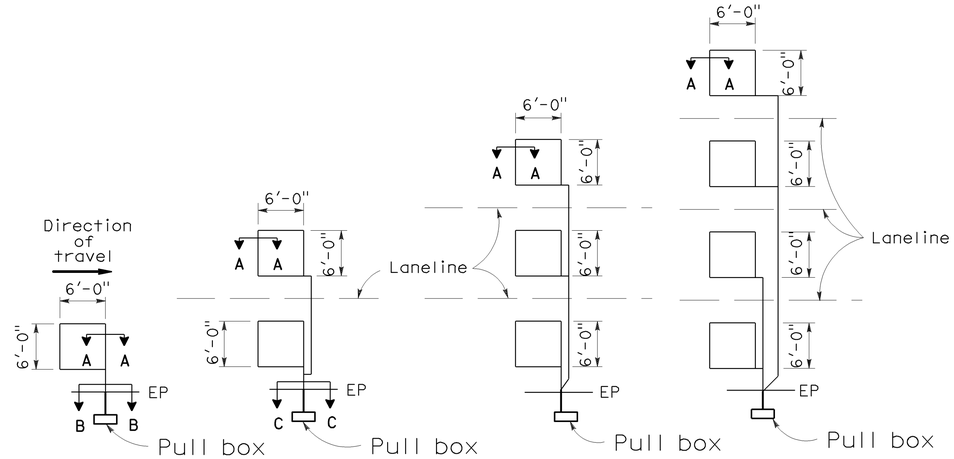
REGISTERED PROFESSIONAL ENGINEER Jeffery G. McRae No. E14512 Exp. 6-30-08 ELECTRICAL STATE OF CALIFORNIA

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

To accompany plans dated 01-24-11

LOOP INSTALLATION PROCEDURE

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

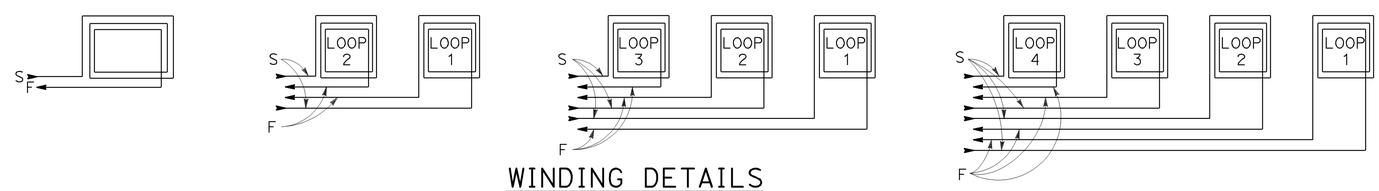


TYPE 1A INSTALLATION | TYPE 2A INSTALLATION | TYPE 3A INSTALLATION | TYPE 4A INSTALLATION

SAWCUT DETAILS

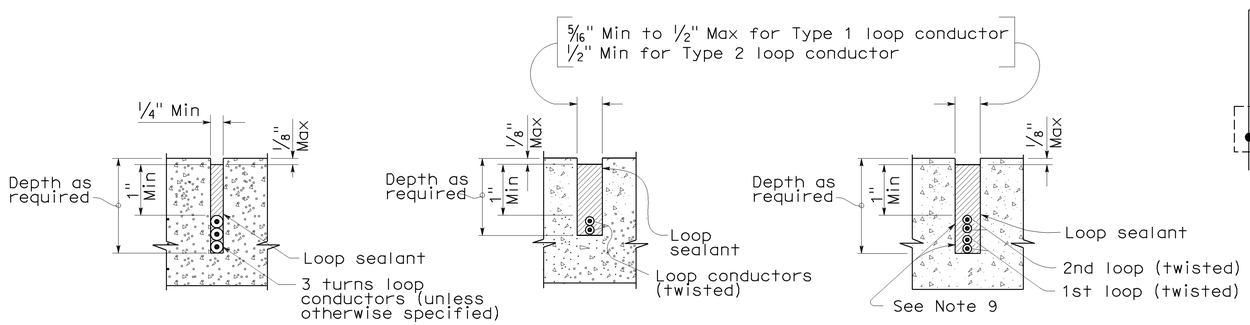
(Type A loop detector configurations illustrated)

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



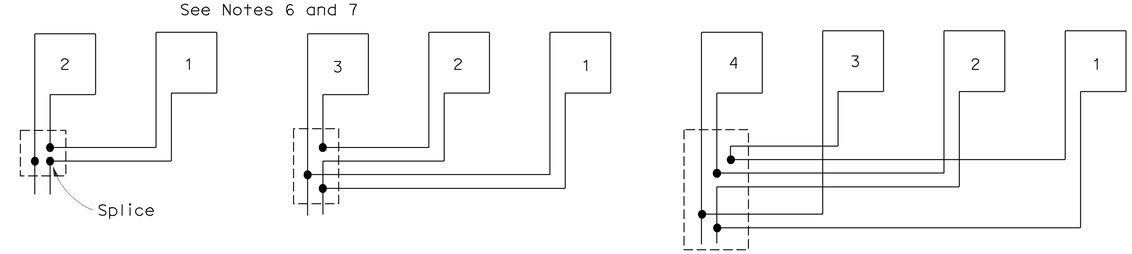
WINDING DETAILS

See Notes 6 and 7



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

SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-5A

2006 REVISED STANDARD PLAN RSP ES-5A

8-17-07