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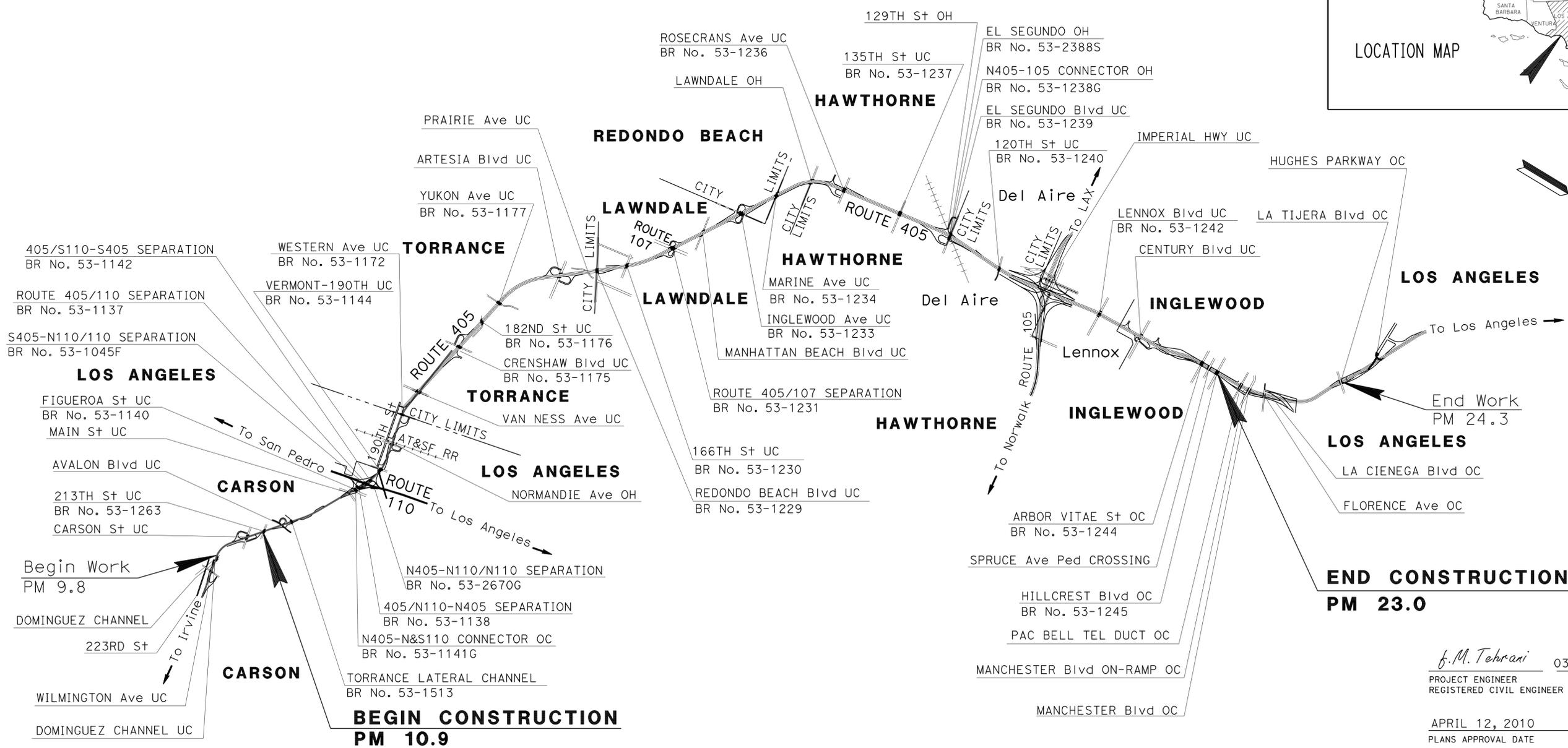
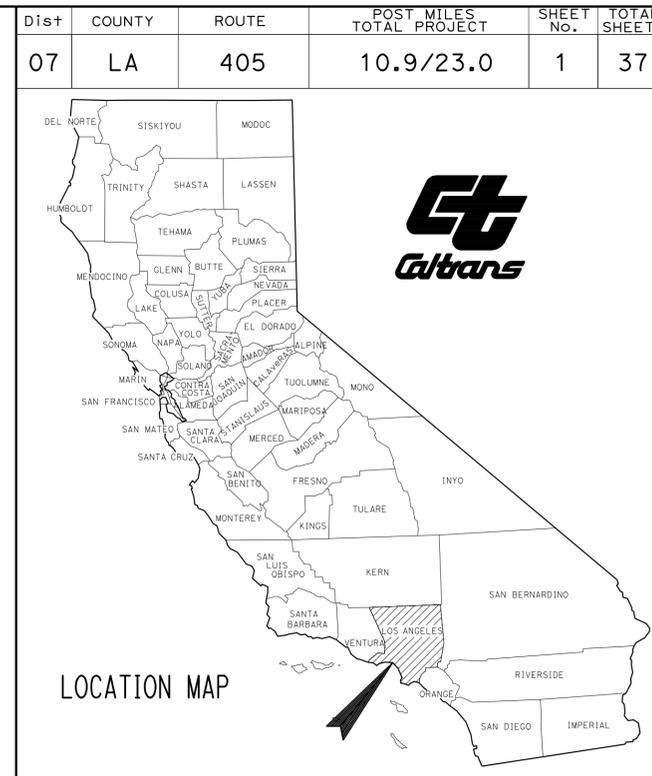
STRUCTURES PLANS

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

STATE OF CALIFORNIA ACIM-405-3(017)E
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN LOS ANGELES COUNTY
AT VARIOUS LOCATIONS
FROM 213TH STREET UNDERCROSSING
TO HILLCREST BOULEVARD OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PROJECT MANAGER
MABEL TRAN
 DESIGN ENGINEER
FARIBORZ M TEHRANI

f.M. Tehrani 03-01-10
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER



APRIL 12, 2010
 PLANS APPROVAL DATE
 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.

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

NO SCALE



USERNAME => s125624
 DGN FILE => 73Y630ab001.dgn

CONTRACT No. **07-3Y6304**

CU 07602 EA 3Y6301

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FARIBORZ M. TEHRANI
 HAMID SAADATNEJADI

FUNCTIONAL SUPERVISOR
 HECTOR OBESO

REVISOR
 DATE

BORDER LAST REVISED 3/1/2007

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	2	37

f. M. Tehrani 03/01/10
 REGISTERED CIVIL ENGINEER DATE

4-12-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 FARIBORZ M. TEHRANI
 No. 59694
 Exp. 12/31/11
 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.

LOCATIONS OF CONSTRUCTION

PM	BR. NO.	BRIDGE NAME
10.9	53-1263	213TH STREET UC
11.4	53-1513	TORRANCE LATERAL CHANNEL
12.7	53-1140	FIGUEROA STREET UC
12.7	53-1141G	N405-N&S110 CONNECTOR OC
12.8	53-1138	405/N110-N405 SEPARATION
12.9	53-1045F	S405-N110/110 SEPARATION
13.0	53-1137	ROUTE 405/110 SEPARATION
13.0	53-2670G	N405-N110/N110 SEPARATION
13.1	53-1142	405/S110-S405 SEPARATION
13.3	53-1144	VERMONT-190TH UC
14.4	53-1172	WESTERN AVENUE UC
15.5	53-1175	CRENSHAW Blvd UC
15.7	53-1176	182ND STREET UC
16.0	53-1177	YUKON AVENUE UC
16.9	53-1229	REDONDO BEACH Blvd UC
17.1	53-1230	166TH STREET UC
17.6	53-1231	ROUTE 405/107 SEPARATION
18.2	53-1233	INGLEWOOD AVENUE UC
18.6	53-1234	MARINE AVENUE UC
19.2	53-1236	ROSECRANS AVENUE UC
19.7	53-1237	135TH STREET UC
20.2	53-2388S	EL SEGUNDO OH
20.2	53-1238G	N405-105 CONNECTOR OH
20.2	53-1239	EL SEGUNDO Blvd UC
R20.7	53-1240	120TH STREET UC
21.7	53-1242	LENNOX Blvd UC
22.7	53-1244	ARBOR VITAE STREET OC
23.0	53-1245	HILLCREST Blvd OC

LOCATIONS OF CONSTRUCTION

LC-1



USERNAME => s125624
 DGN FILE => 73Y630ba001.dgn

CU 07602

EA 3Y6301

LAST REVISION | DATE PLOTTED => 28-APR-2010
 08-22-07 | TIME PLOTTED => 14:52

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	3	37

f. M. Tehrani 03/01/10
 REGISTERED CIVIL ENGINEER DATE

4-12-10
 PLANS APPROVAL DATE

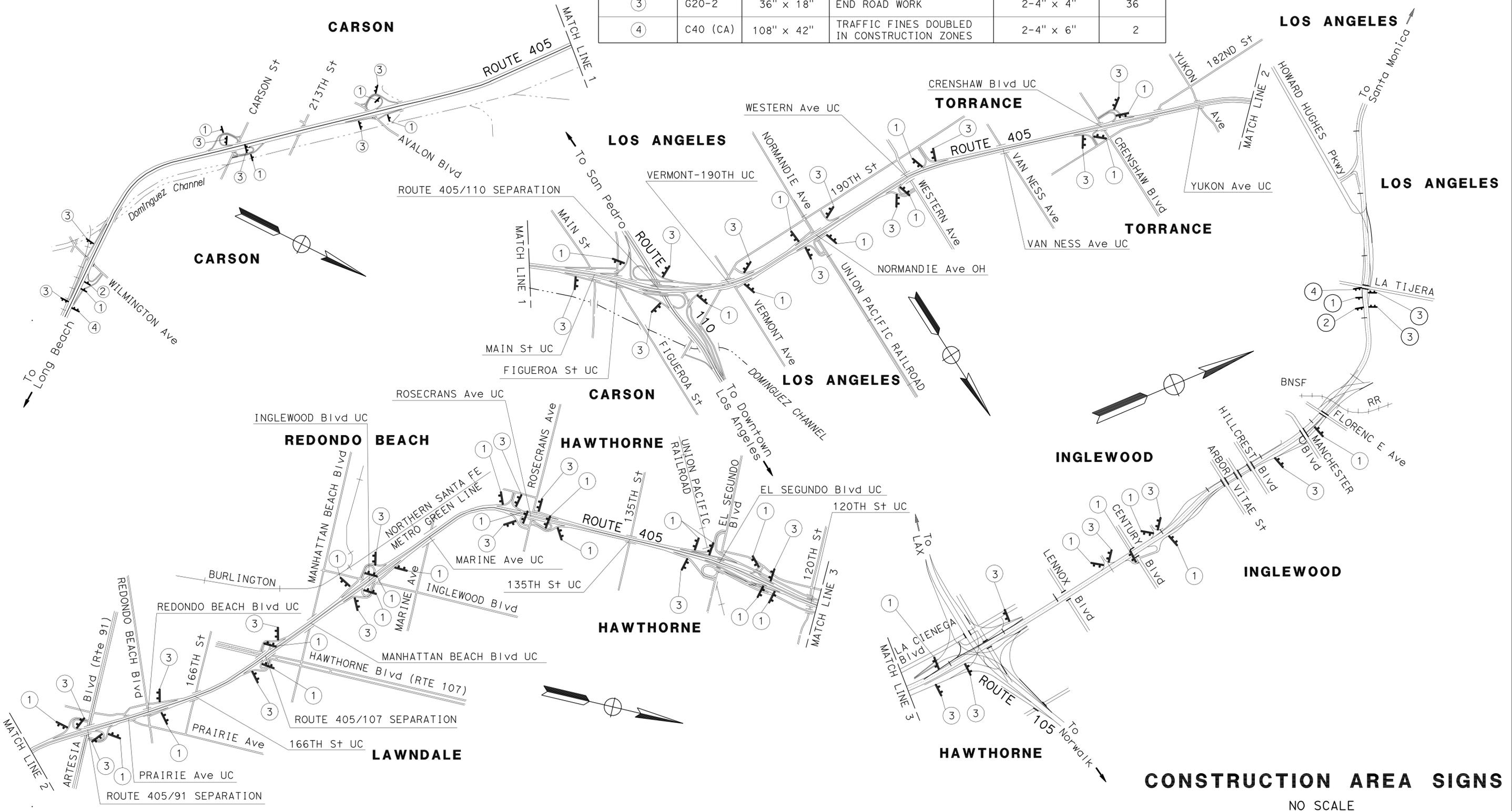
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REGISTERED PROFESSIONAL ENGINEER
FARIBORZ M. TEHRANI
 No. 59694
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA

- NOTES:**
1. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATION WILL BE DETERMINED BY THE ENGINEER.
 2. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
 3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN NUMBER	SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
①	W20-1	36" x 36"	ROAD WORK AHEAD	1-6" x 6"	38
②	G20-1	36" x 18"	ROAD WORK NEXT XX MILES	2-4" x 4"	2
③	G20-2	36" x 18"	END ROAD WORK	2-4" x 4"	36
④	C40 (CA)	108" x 42"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2-4" x 6"	2



CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

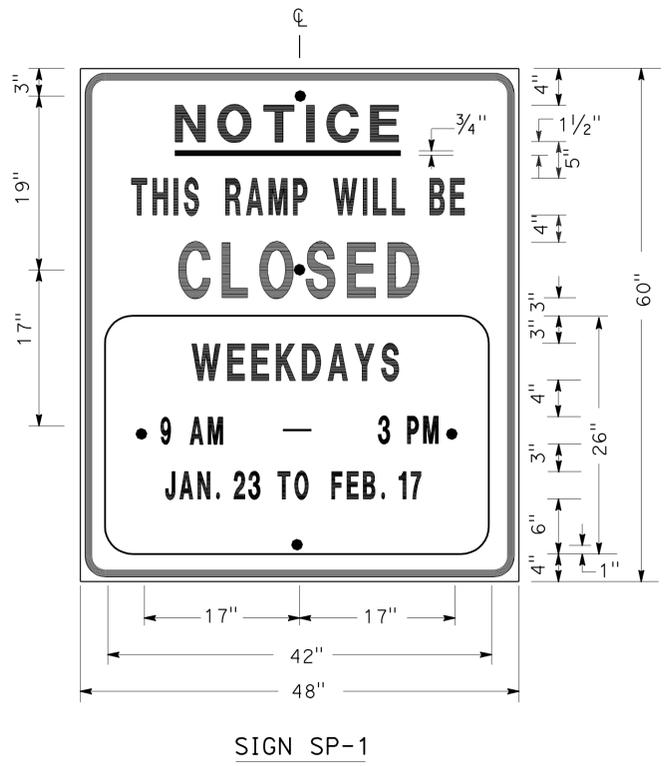
FUNCTIONAL SUPERVISOR: HECTOR OBESO
 CALCULATED/DESIGNED BY: FARIBORZ M. TEHRANI
 CHECKED BY: HAMID SAADATNEJADI
 REVISED BY: [] DATE REVISED: []

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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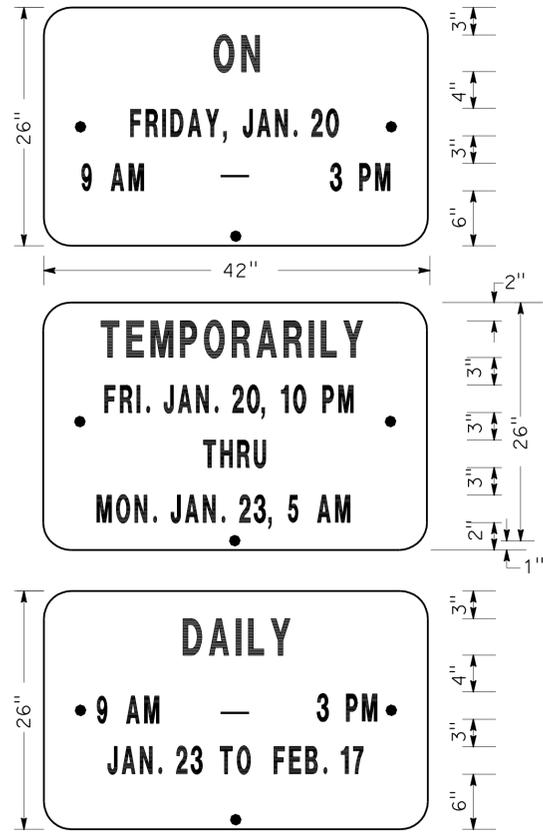
12/8/09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE

ALBERT K. YU
 No. 43220
 Exp. 3/31/10
 CIVIL

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SIGN SP-1



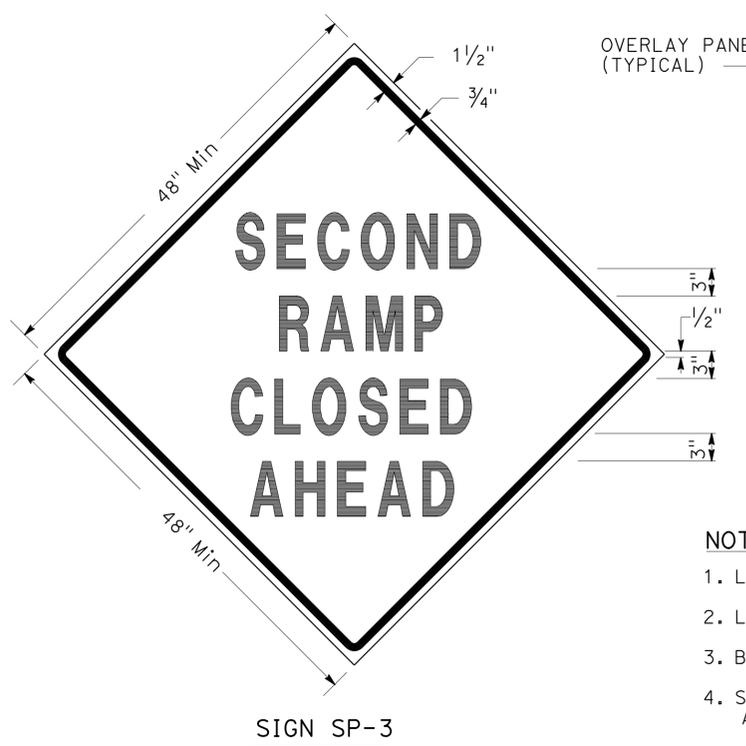
ALTERNATE OVERLAY PANELS (TYPICAL)

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

SIZE	BORDER	MARGIN	LETTER SIZE					CORNER RADIUS
	WIDTH	WIDTH	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

SPECIAL ADVANCE NOTICE PUBLICITY SIGN



SIGN SP-3

SPECIAL SIGN FOR EXIT RAMP CLOSURES

- NOTES: (SIGNS SP-3 & SP-5)
- LETTERS - 6" SERIES D.
 - LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
 - BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
 - SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.



SIGN SP-5



SIGN SP-4

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

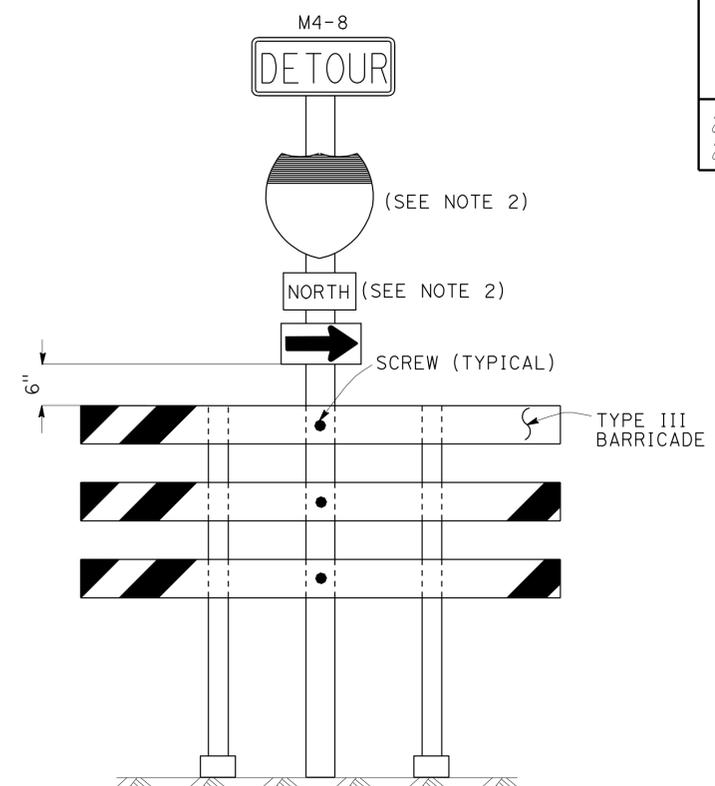
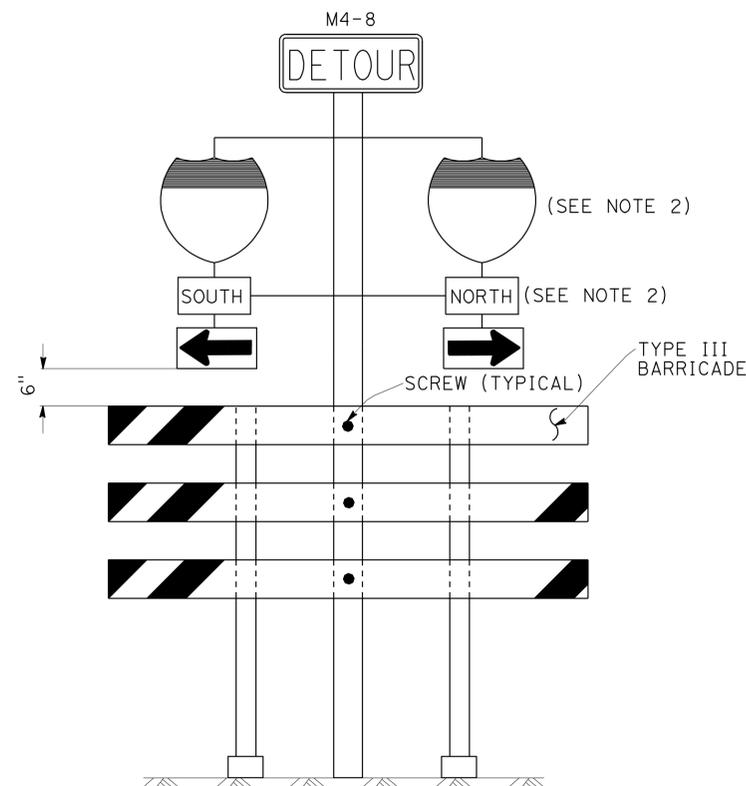
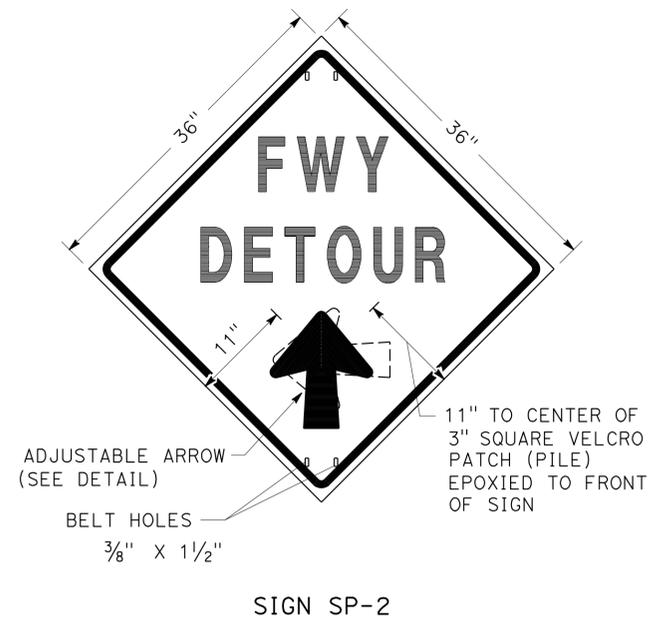
SPECIAL SIGN FOR ENTRANCE RAMP CLOSURES

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

SHEET 1 OF 2

NO SCALE

THD-1

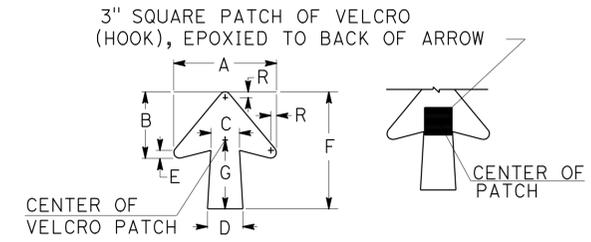


- NOTES:** (SIGN SP-2)
- LETTERS -6" SERIES E.
 - LETTERS, BORDER AND ARROW - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
 - BASE MATERIAL FOR SIGNS AND ARROWS SHALL BE ALUMINUM (MINIMUM 0.06").
 - BELTS (LUGGAGE STRAPS) SHALL BE 1" WIDE BY 48" LONG, MADE OF COTTON OR POLYPROPYLENE WEB MATERIAL.
 - 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)
- IN LIEU OF PLACING SIGNS ON TYPE III BARRICADES, SIGNS, INCLUDING POSTS, MAY BE PLACED INTO THE GROUND OR FASTENED ONTO ELECTROLIERS.
 - 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 3/8"	4"	7 7/8"	13"	7 1/2"	5 7/8"

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
 DT M
 FUNCTIONAL SUPERVISOR JOHN YANG
 CHECKED BY
 CALCULATED/DESIGNED BY
 REVISOR BY DATE REVISED
 JOCELYN C CHIANG
 7/08
 JC
 9/08
 JC

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	6	37

12/8/09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE

ALBERT K. YU
 No. 43220
 Exp. 3/31/10
 CIVIL

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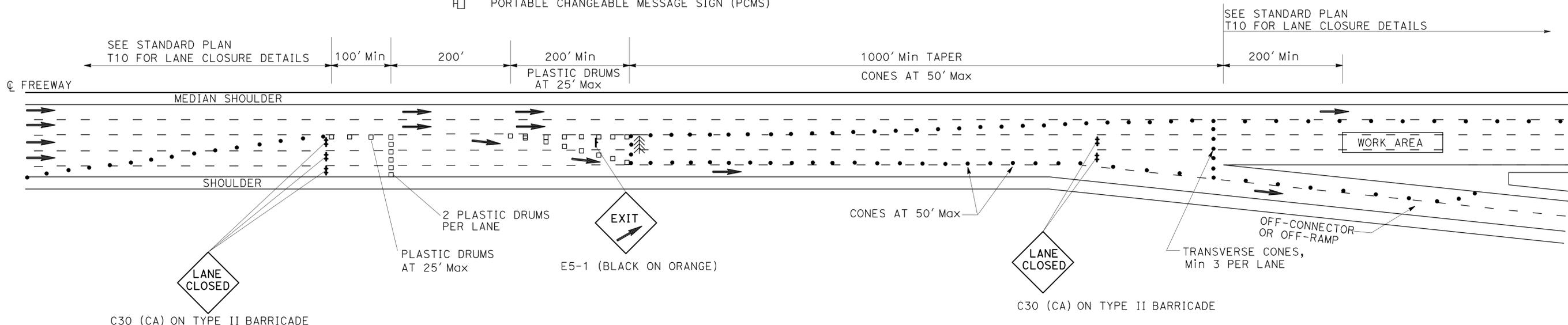
LEGEND

- CONE
- TRAFFIC PLASTIC DRUM
- ⚡ FLASHING ARROW SIGN
- ┆ PORTABLE SIGN
- ➔ DIRECTION OF TRAVEL
- ▭ PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

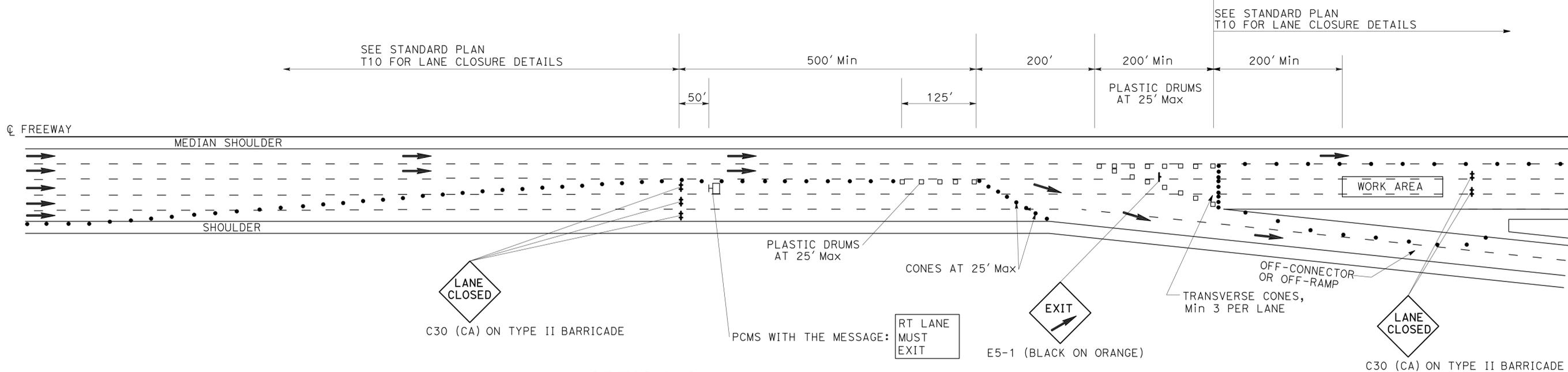
ABBREVIATIONS

(CA) CALIFORNIA CODE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DTMM
 FUNCTIONAL SUPERVISOR: JOHN YANG
 CALCULATED/DESIGNED BY: ALBERT K. YU
 CHECKED BY: JOCELYN C. CHIANG
 REVISED BY: JC (7/08)
 JC (9/08)



OPTION 1



OPTION 2

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR SLIP-RAMP AT
OFF-CONNECTOR OR OFF-RAMP
 NO SCALE
THD-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	7	37

12/8/09
 REGISTERED CIVIL ENGINEER DATE
 ALBERT K. YU
 No. 43220
 Exp. 3/31/10
 CIVIL
 STATE OF CALIFORNIA

4-12-10
 PLANS APPROVAL DATE
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NOTES:

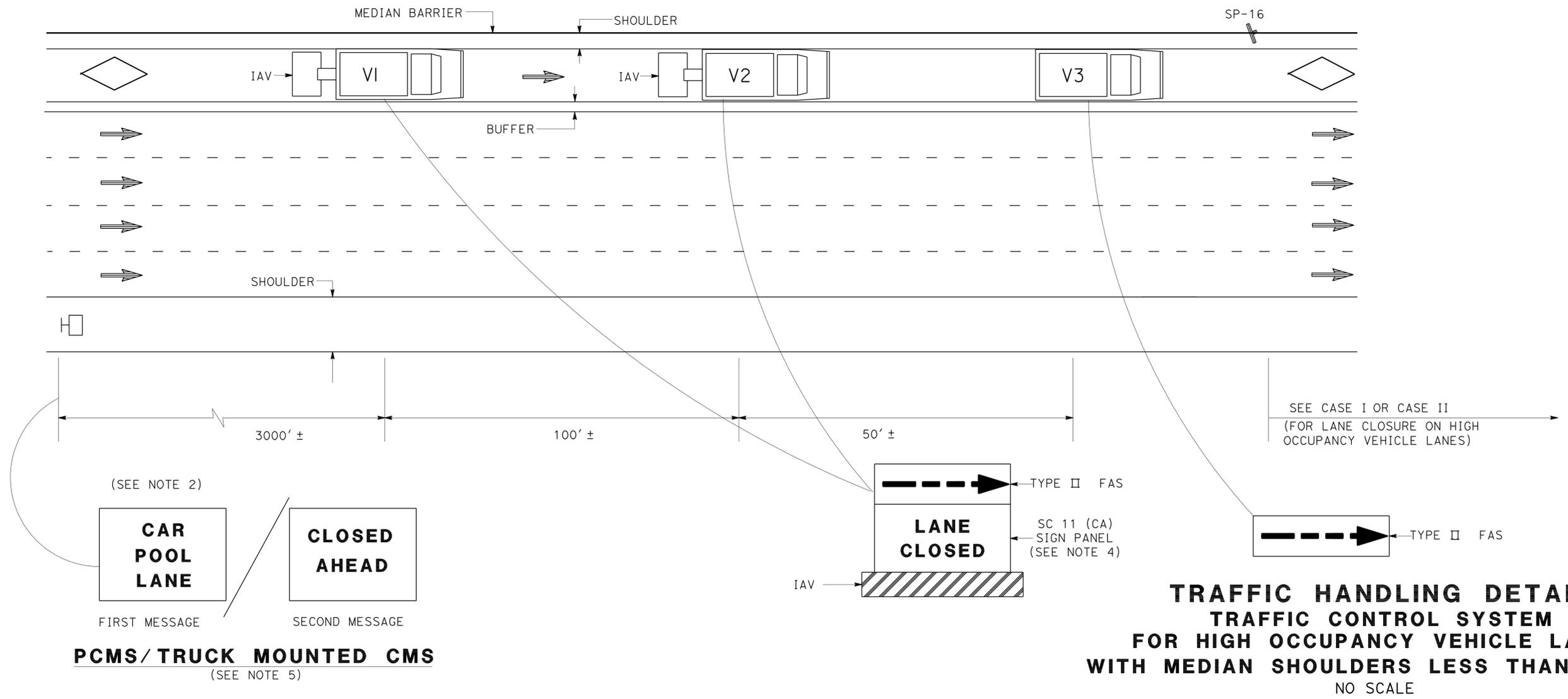
- LANE CLOSURES SHALL NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
- PCMS SHALL BE ACTIVATED PRIOR TO TRAFFIC CONTROL ACTIVITIES ON THE HOV LANE.
- A MINIMUM SIGHT DISTANCE OF 1500' SHALL BE PROVIDED IN ADVANCE OF PCMS.
- VEHICLE-MOUNTED SIGN PANELS SHALL BE TYPE II OR IV RETROREFLECTORIZED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

LEGEND

- V1, V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- [Symbol] PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- [Symbol] DIRECTION OF TRAVEL
- [Symbol] 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



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

THD-4

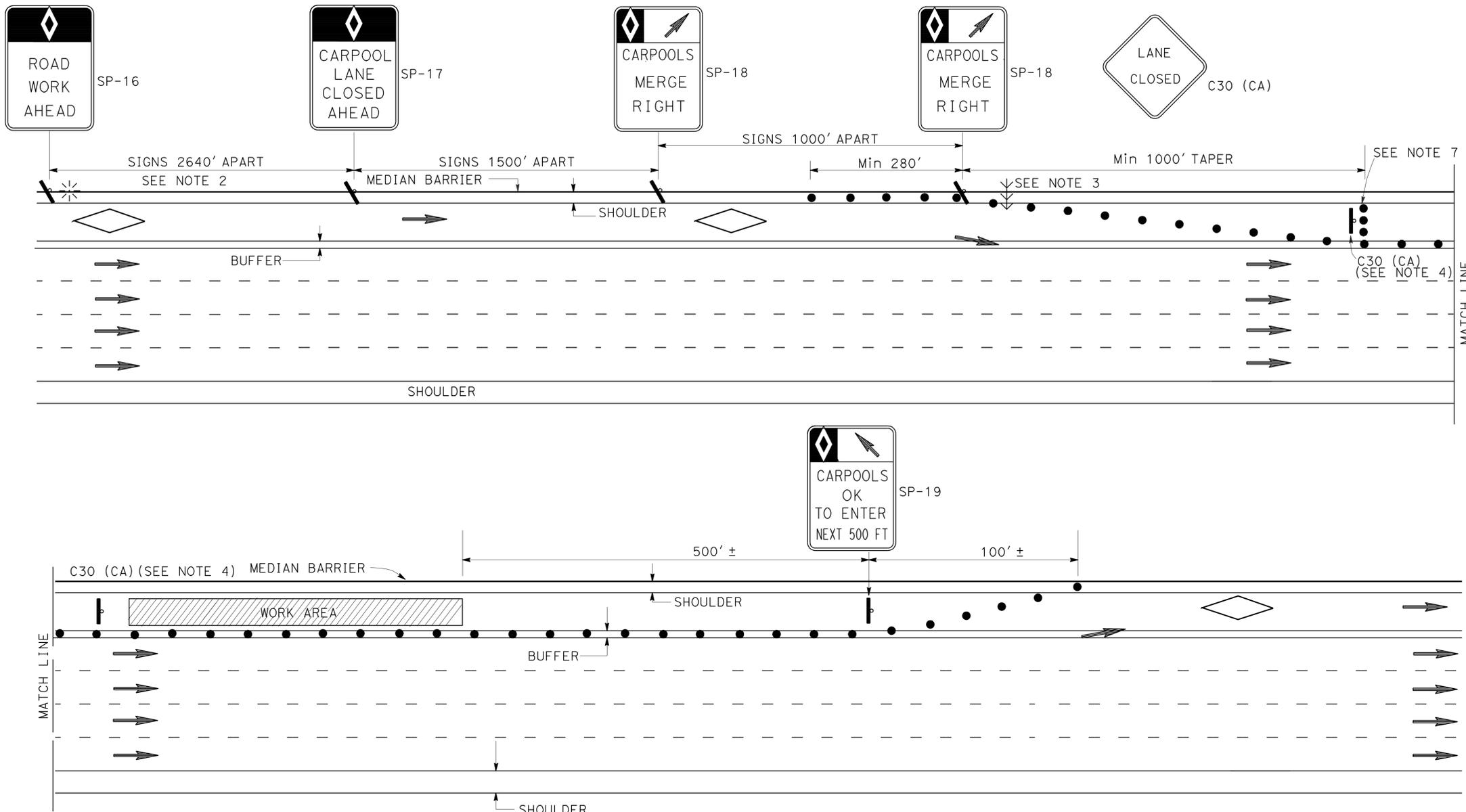
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	ALBERT K YU	JOCELYN C CHIANG	JOHN YANG	DTM
FUNCTIONAL SUPERVISOR	REVISOR	CHECKER	DESIGNER	
DATE	DATE	DATE	DATE	
00-00-00	00-00-00	00-00-00	00-00-00	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	8	37

12/8/09
 REGISTERED CIVIL ENGINEER DATE
 ALBERT K. YU
 No. 43220
 Exp 3/31/10
 CIVIL
 STATE OF CALIFORNIA

4-12-10
 PLANS APPROVAL DATE

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ABBREVIATIONS

(CA) CALIFORNIA CODE

HOV HIGH OCCUPANCY VEHICLE

NOTES: FOR CASE I AND CASE II

- 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.
- 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.
- THE FLASHING ARROW SIGN SHALL BE TYPE I.
- PLACE C30 (CA) SIGNS EVERY 2000' THROUGHOUT THE LENGTH OF LANE CLOSURE.
- 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.
- PORTABLE DELINEATORS PLACED AT ONE-HALF THE SPACING INDICATED FOR TRAFFIC CONES MAY BE USED INSTEAD OF CONES FOR DAYTIME CLOSURES.
- 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.
- 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.
- SIGNS SP-16, 17, 18, AND 19 MAY BE OVERLAID ON EXISTING CARPOOL SIGNS IN MEDIANS AS APPROVED BY THE ENGINEER.
- 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.
- FOR CLOSURE OF LANE(S) ADJACENT TO HOV LANES, SEE CASE II.
- THE MAXIMUM SPACING BETWEEN CONES SHALL BE APPROXIMATELY 50' IN TAPERS AND 100' ON TANGENTS.

LEGEND

- CONE
- ⚡ FLASHING BEACON
- ◇ HOV LANE
- ←←← FLASHING ARROW SIGN
- ▬ PORTABLE SIGN
- DIRECTION OF TRAVEL

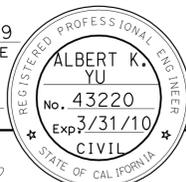
SIGN PANEL SIZE (MIN)

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

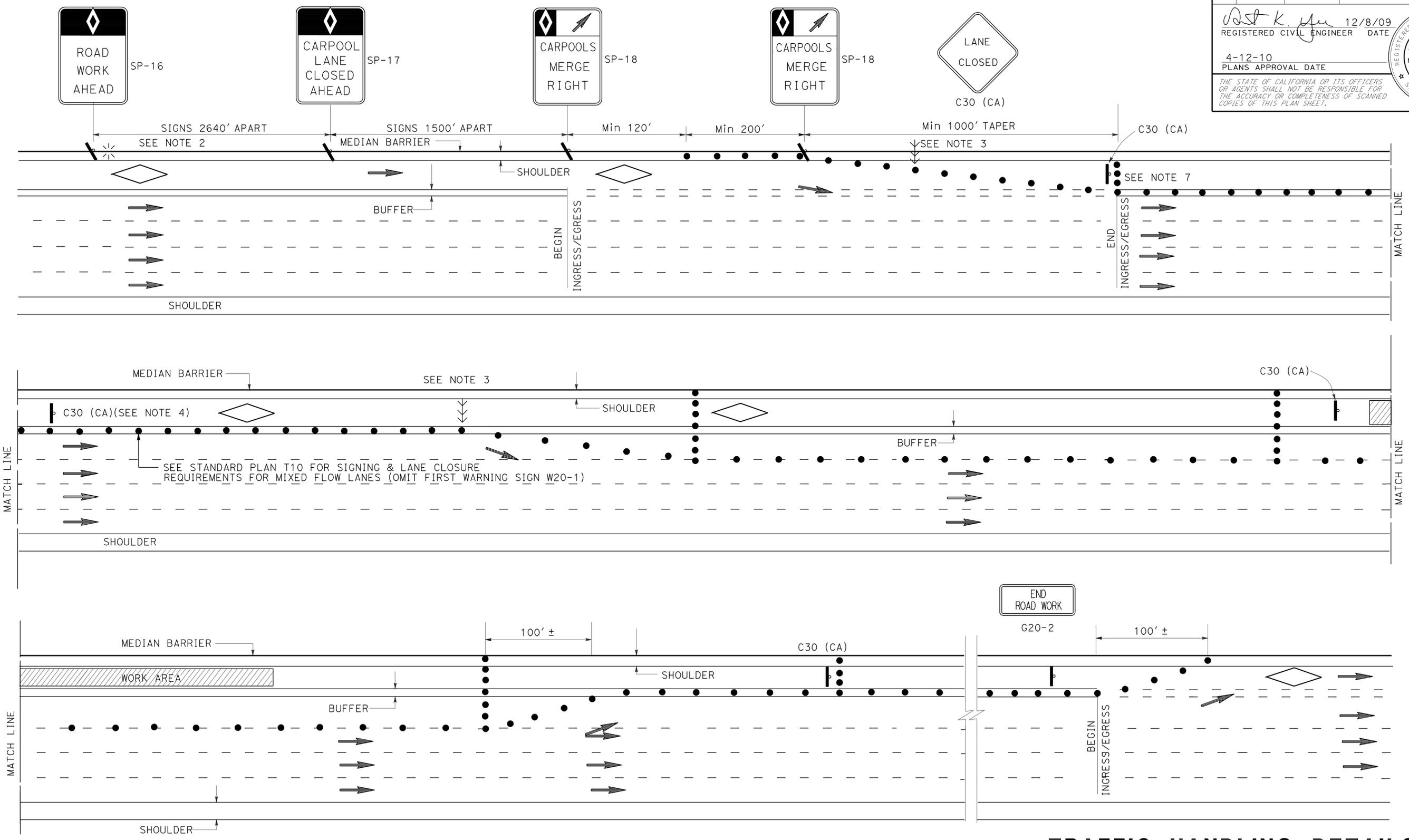
TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR HIGH OCCUPANCY VEHICLE LANES
AT NON-INGRESS/EGRESS AREAS
CASE I
NO SCALE

THD-5

JC 9/08
 JC 7/08
 REVISED BY DATE REVISED
 ALBERT K YU JOCELYN C CHIANG
 CALCULATED/DESIGNED BY CHECKED BY
 JOHN YANG
 FUNCTIONAL SUPERVISOR
 DEPARTMENT OF TRANSPORTATION
 DTM
 STATE OF CALIFORNIA
 Caltrans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	9	37
 REGISTERED CIVIL ENGINEER DATE 12/8/09					
4-12-10 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DT M
 FUNCTIONAL SUPERVISOR JOHN YANG
 CHECKED BY JOCELYN C CHIANG
 CALCULATED/DESIGNED BY ALBERT K YU
 REVISED BY JC 7/08
 JC 9/08



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

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR HIGH OCCUPANCY
VEHICLE LANES AND ADJACENT FREEWAY LANES
BETWEEN INGRESS/EGRESS AREAS
CASE II
 NO SCALE **THD-6**

NOTES:

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

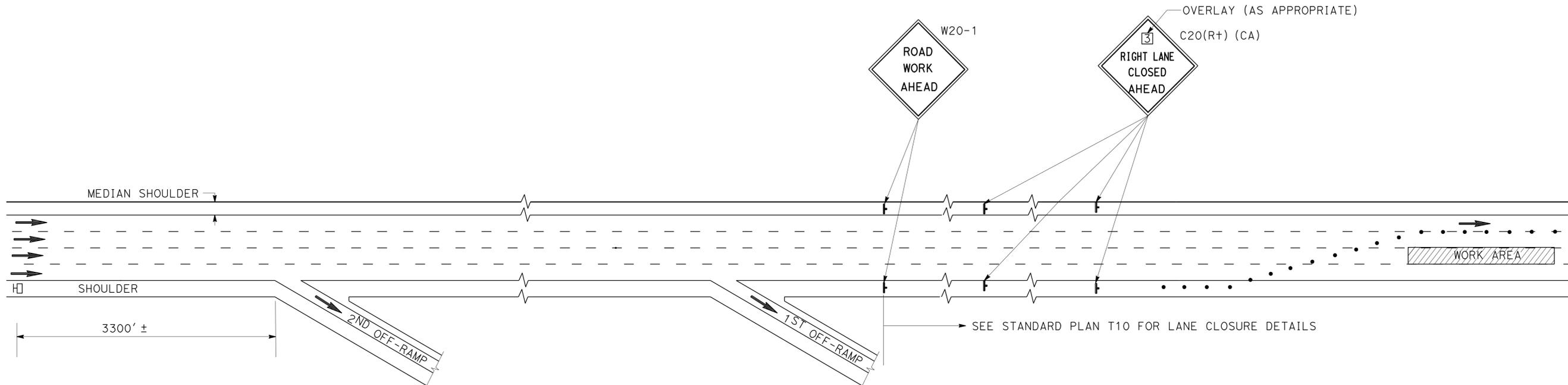
ABBREVIATIONS

PCMS PORTABLE CHANGEABLE MESSAGE SIGN
 (CA) CALIFORNIA CODE

LEGEND

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans®
 DTMT
 FUNCTIONAL SUPERVISOR JOHN YANG
 CALCULATED/DESIGNED BY JOCELYN C CHIANG
 CHECKED BY ALBERT K YU
 REVISED BY JOCELYN C CHIANG
 DATE REVISED 7/08
 JC
 9/08
 JC
 7/08



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

WORDING FOR PORTABLE CHANGEABLE MESSAGE SIGN

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

THD-7

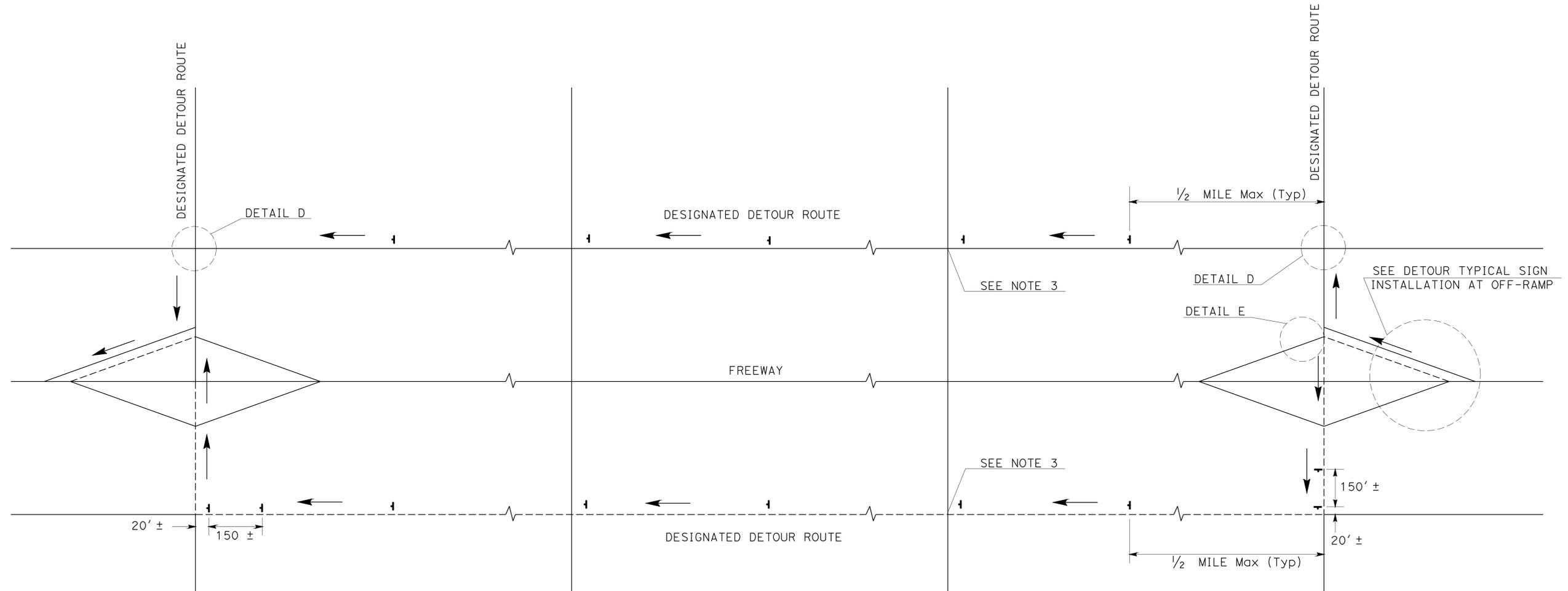
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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Albert K. Yu 12/8/09
 REGISTERED CIVIL ENGINEER DATE

4-12-10
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 ALBERT K. YU
 No. 43220
 Exp. 3/31/10
 CIVIL
 STATE OF CALIFORNIA



TYPICAL DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE

LEGEND

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

NOTES:

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

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

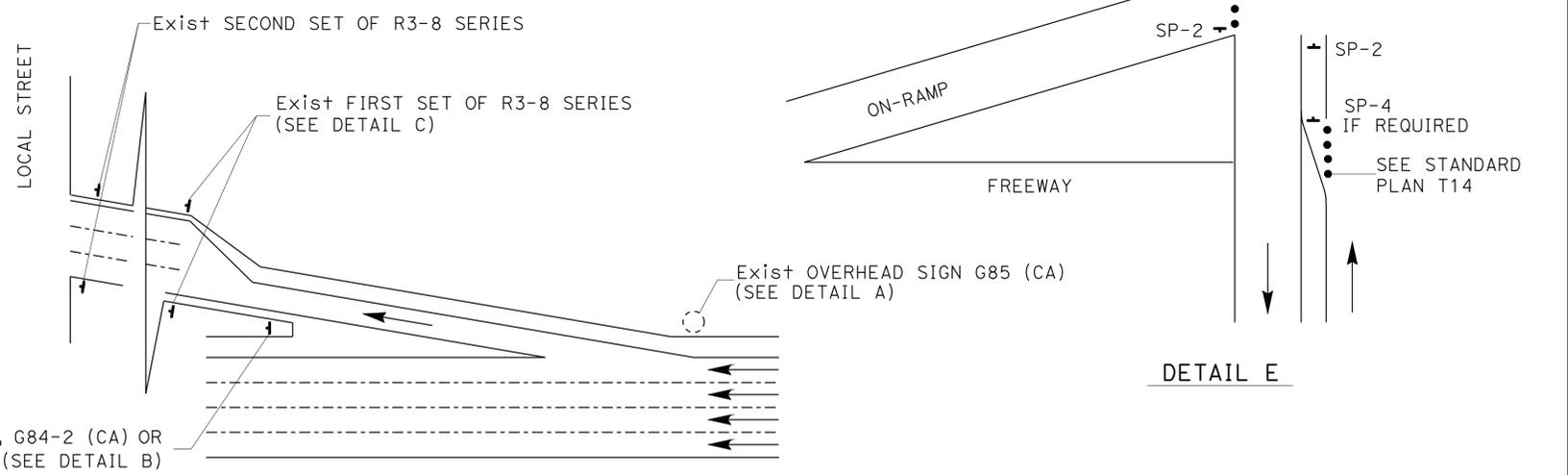
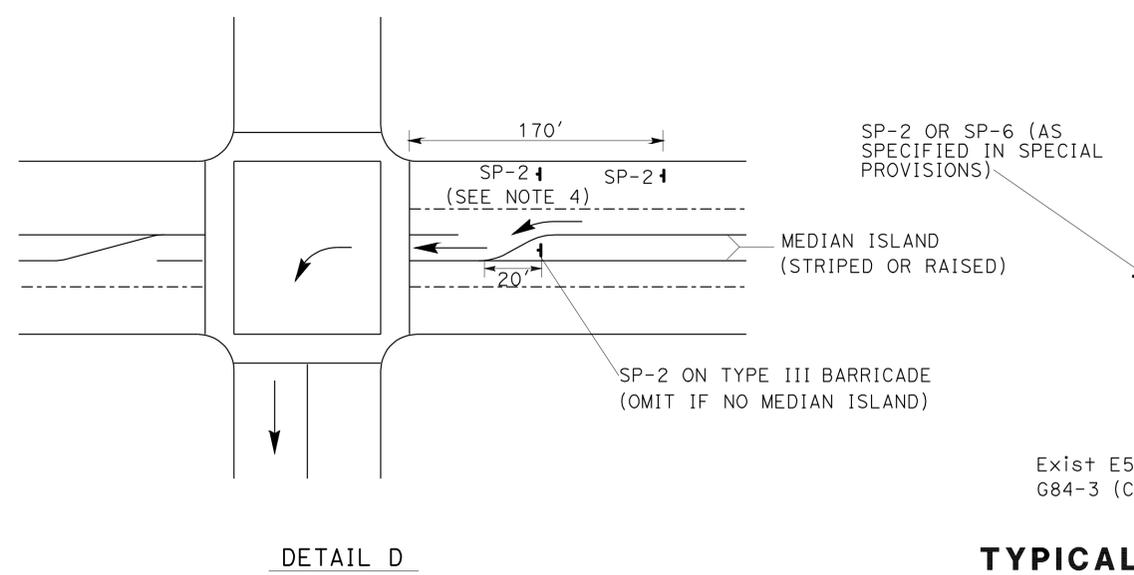
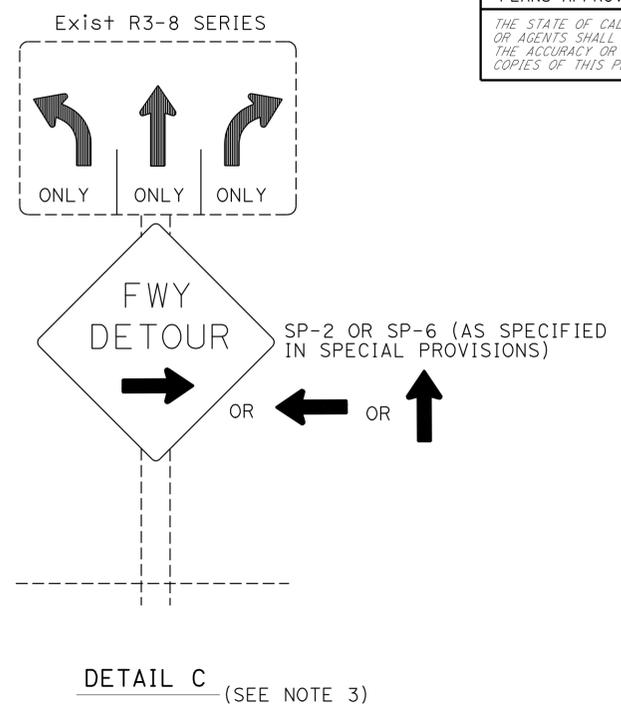
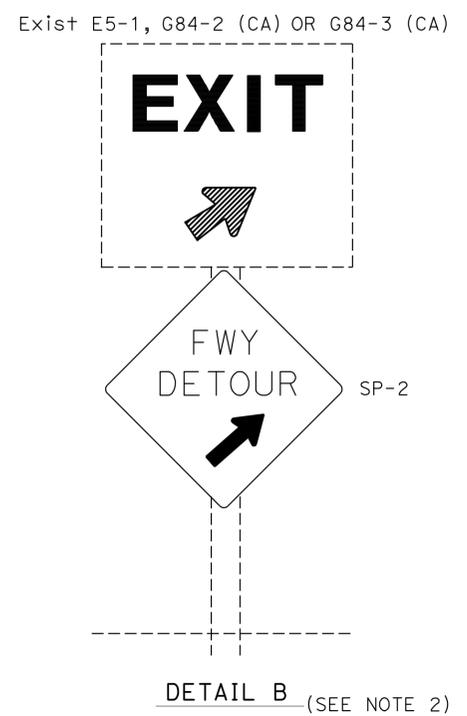
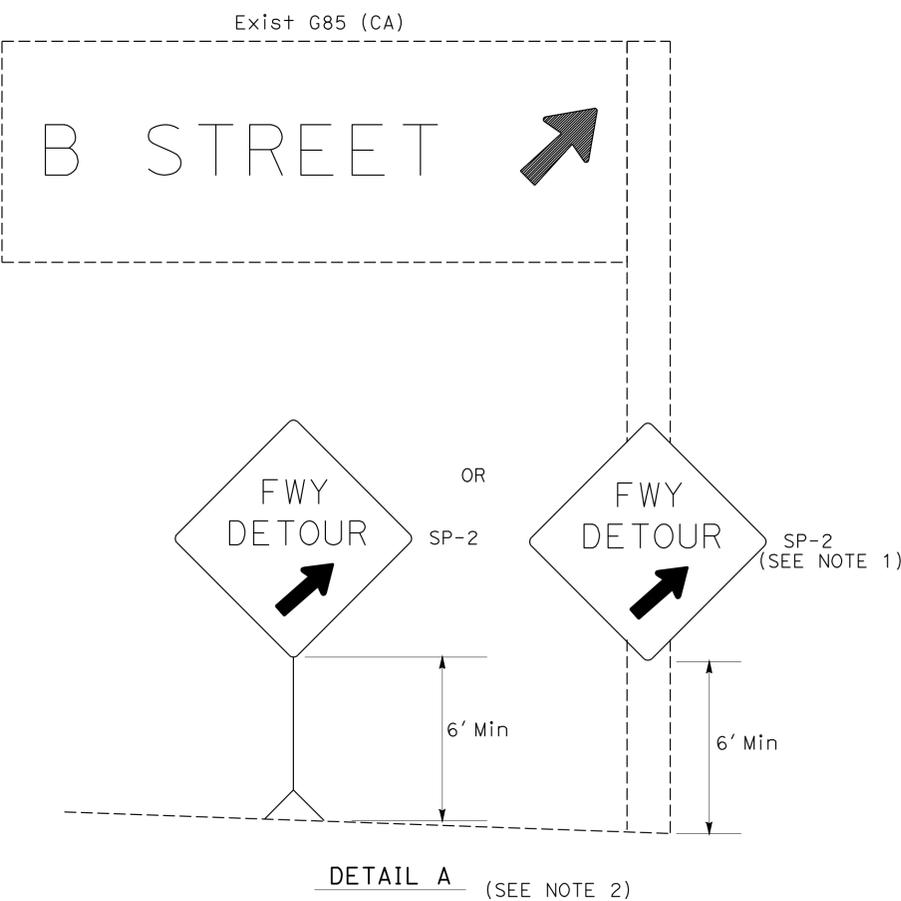
THD-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DTM
 FUNCTIONAL SUPERVISOR: JOHN YANG
 CHECKED BY: JOCELYN C CHIANG
 DESIGNED BY: ALBERT K YU
 REVISED BY: JC
 DATE REVISED: 7/08
 JC
 9/08

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	12	37

12/8/09
 REGISTERED CIVIL ENGINEER DATE
 ALBERT K. YU
 No. 43220
 Exp. 3/31/10
 CIVIL
 STATE OF CALIFORNIA

4-12-10
 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.



TYPICAL DETOUR SIGN INSTALLATION AT OFF-RAMP

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

ABBREVIATIONS

(CA) CALIFORNIA CODE

LEGENDS

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

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

THD-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Functional Supervisor: JOHN YANG
 Designer: ALBERT K. YU
 Checker: JOCELYN C. CHIANG
 Date Revised: 7/08
 Date: 9/08
 JC
 JC
 REVISOR: ALBERT K. YU
 CHECKER: JOCELYN C. CHIANG
 DESIGNED BY: ALBERT K. YU
 CALCULATED BY: ALBERT K. YU
 SUPERVISOR: JOHN YANG
 TRANSPORTATION: JOHN YANG
 DTM
 Caltrans

FUNCTIONAL SUPERVISOR	HECTOR OBESO
CALCULATED/DESIGNED BY	FARIBORZ M. TEHRANI
CHECKED BY	HAMID SAADATNEJADI
REVISOR	REVISOR
DATE	DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	13	37

f. M. Tehrani 03/01/10
 REGISTERED CIVIL ENGINEER DATE

4-12-10
 PLANS APPROVAL DATE

FARIBORZ M. TEHRANI
 No. 59694
 Exp. 12/31/11
 CIVIL

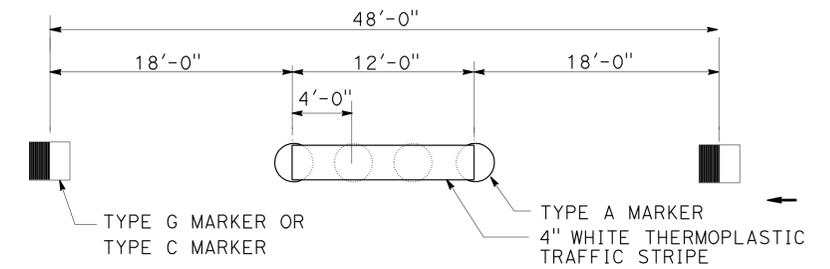
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

PAVEMENT DELINEATION QUANTITIES

PM	Br. No.	BRIDGE NAME	THERMOPLASTIC TRAFFIC STRIPE										REMOVE THERMOPLASTIC TRAFFIC STRIPE	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	
			Det 21	Det 25	Det 27 (Mod)	Det 27B	Det 36	Det 36B	Det 38A	Det 38B	Det 8	Det 37			Det 13/14 (Mod)
			4" SOLID YELLOW	4" SOLID YELLOW	4" SOLID YELLOW	4" SOLID WHITE	8" SOLID WHITE	8" SOLID WHITE	8" SOLID YELLOW	8" SOLID YELLOW	4" WHITE (BROKEN 17-7)	8" WHITE (BROKEN 12-3)			4" WHITE (BROKEN 36-12)
			LF												
10.9	53-1263	213TH STREET UC		148	295	295							443	406	443
11.4	53-1513	TORRANCE LATERAL CHANNEL		411		446		35					1,096	790	411
12.7	53-1140	FIGUEROA STREET UC		397	795	795							1,192	1,093	1,192
13.0	53-1137	ROUTE 405/110 SEPARATION		753	1,011	1,258							1,258	1,572	1,764
13.3	53-1144	VERMONT-190TH UC		911	1,821	1,821			455				2,732	2,504	3,642
14.4	53-1172	WESTERN AVENUE UC		348	696	696							1,217	1,000	1,044
15.5	53-1175	CRENSHAW Blvd UC		361	721	721							1,443	1,082	1,082
15.7	53-1176	182ND STREET UC		385	770	770							1,155	1,059	1,155
16.0	53-1177	YUKON AVENUE UC		128	256	256							384	352	384
16.9	53-1229	REDONDO BEACH Blvd UC		355	709	709							1,064	975	1,064
17.1	53-1230	166TH STREET UC		350	700	700							1,050	962	1,050
17.6	53-1231	ROUTE 405/107 SEPARATION		612	612	1,342		425					2,446	2,378	1,224
18.2	53-1233	INGLEWOOD AVENUE UC		374	748	748							1,496	1,122	1,122
18.6	53-1234	MARINE AVENUE UC		398	796	796							1,194	1,094	1,194
19.2	53-1236	ROSECRANS AVENUE UC		376	376	564							1,442	924	752
19.7	53-1237	135TH STREET UC		276	552	552	124						1,104	1,076	828
20.2	53-1239	EL SEGUNDO Blvd UC		120	240	240							360	330	360
R20.7	53-1240	120TH STREET UC		295	589	589						295	884	280	884
22.7	53-1244	ARBOR VITAE STREET OC	412			823			358		823			1,063	1,128
23.0	53-1245	HILLCREST Blvd OC	330			660								660	330
SUBTOTAL			742	6,999	11,687	14,781	124	460	358	455	823	295	21,960	20,722	21,053
TOTAL				19,428		14,781		584		813		823	295	21,960	41,775

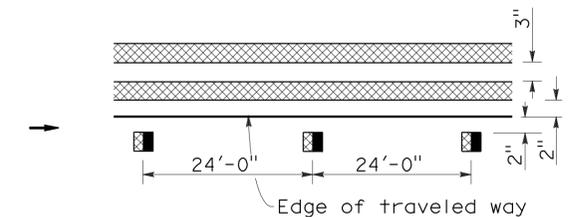
LEGEND:

- 4" WHITE THERMOPLASTIC STRIPE
- 4" YELLOW THERMOPLASTIC STRIPE
- DIRECTION OF TRAVEL



- APPLY 4" WIDE WHITE THERMOPLASTIC TRAFFIC STRIPE ON TOP OF TYPE A NON-REFLECTIVE MARKERS.

DETAIL 13/14 (MODIFIED)



DETAIL 27 (MODIFIED)

PAVEMENT DELINEATION QUANTITIES

PDQ-1

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	405	10.9/23.0	14	37

f. M. Tehrani 03/01/10
REGISTERED CIVIL ENGINEER DATE

4-12-10
PLANS APPROVAL DATE

FARIBORZ M. TEHRANI
No. 59694
Exp. 12/31/11
CIVIL

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PAVEMENT DELINEATION QUANTITIES

LOCATION			PAVEMENT MARKER								THERMOPLASTIC PAVEMENT MARKING							
			Det 37	Det 25	Det 27 (Mod)	Det 36	Det 36B	Det 38B	Det 13/14 (Mod)		REMOVE PAVEMENT MARKER	12" WHITE DIAGONAL AND CHEVRON	TYPE IV ARROW	TYPE VI ARROW	WORD MARKING	◇	REMOVE THERMOPLASTIC PAVEMENT MARKING	
			RED-CLEAR RETROREFLECTIVE (TYPE C)	ONE-WAY YELLOW RETROREFLECTIVE (TYPE H)	ONE-WAY YELLOW RETROREFLECTIVE (TYPE H)	ONE-WAY CLEAR RETROREFLECTIVE (TYPE G)	ONE-WAY CLEAR RETROREFLECTIVE (TYPE G)	ONE-WAY CLEAR RETROREFLECTIVE (TYPE G)	ONE-WAY CLEAR RETROREFLECTIVE (TYPE G)	NON- RETROREFLECTIVE (TYPE A)								
PM	Br. No.	BRIDGE NAME	EA								SQFT							
10.9	53-1263	213TH STREET UC		3	6					9	37	55						
11.4	53-1513	TORRANCE LATERAL CHANNEL		9			1			23	91	124			62	22	84	
12.7	53-1140	FIGUEROA STREET UC		8	17					25	99	149	11					11
13.0	53-1137	ROUTE 405/110 SEPARATION		16	21					26	105	168						
13.3	53-1144	VERMONT-190TH UC		19	38				38	57	228	380			17	33	50	
14.4	53-1172	WESTERN AVENUE UC		7	14					25	101	147			84		84	
15.5	53-1175	CRENSHAW Blvd UC		8	15					30	120	173			84		84	
15.7	53-1176	182ND STREET UC		8	16					24	97	145			17	11	28	
16.0	53-1177	YUKON AVENUE UC		3	5					8	32	48						
16.9	53-1229	REDONDO BEACH Blvd UC		8	15					22	89	134						
17.1	53-1230	166TH STREET UC		7	15					22	88	132						
17.6	53-1231	ROUTE 405/107 SEPARATION		13	13		17			51	204	298			40		40	
18.2	53-1233	INGLEWOOD AVENUE UC		8	16					31	125	180			40	11	51	
18.6	53-1234	MARINE AVENUE UC		8	17					25	100	150						
19.2	53-1236	ROSECRANS AVENUE UC		8	8					30	120	166			17	11	28	
19.7	53-1237	135TH STREET UC		6	12	5				23	92	138				11	11	
20.2	53-1239	EL SEGUNDO Blvd UC		3	5					8	30	46						
R20.7	53-1240	120TH STREET UC	20	6	12					18	74	130						
22.7	53-1244	ARBOR VITAE STREET OC											45		72		117	
23.0	53-1245	HILLCREST Blvd OC																
SUBTOTAL			20	148	245	5	18	38	457	1,832	2,763	11	45	168	265	99	588	
TOTAL			931						1,832	2,763	588							

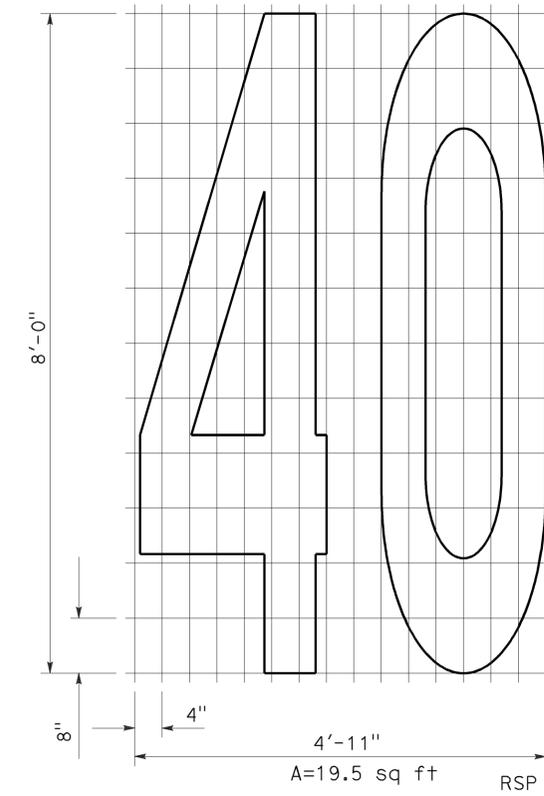
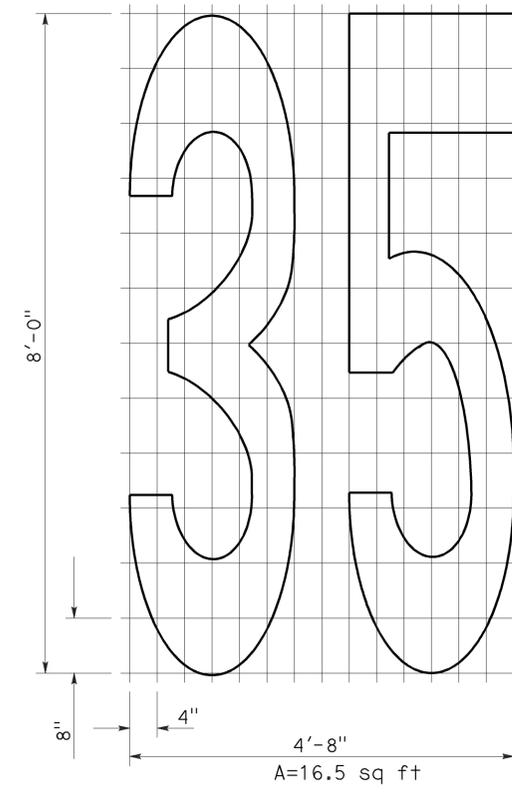
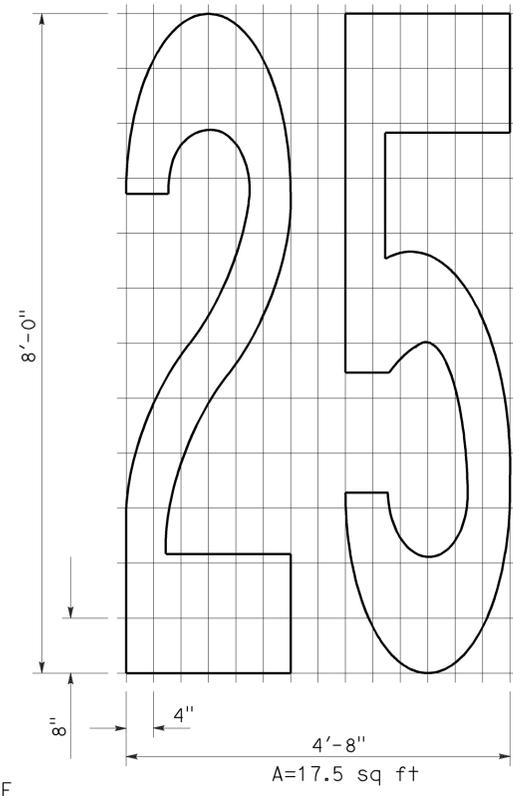
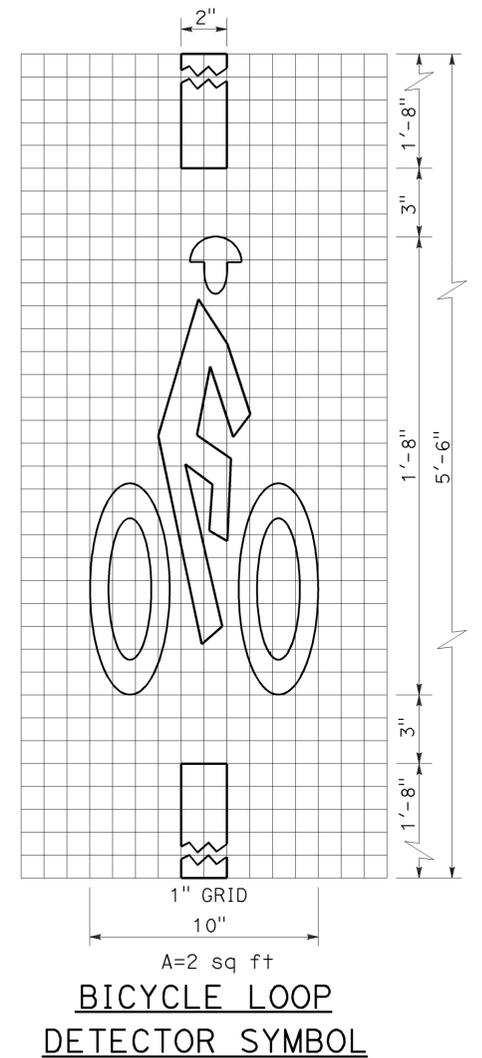
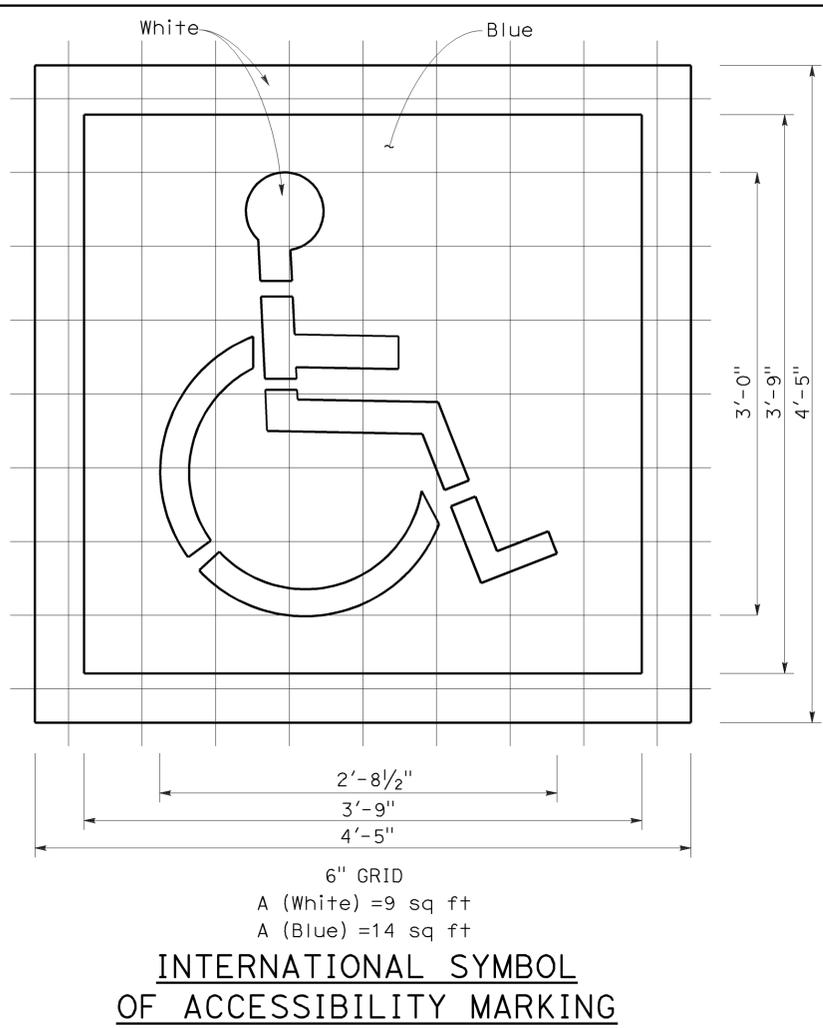
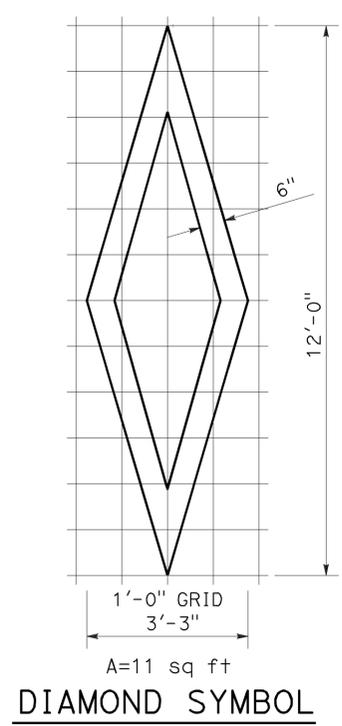
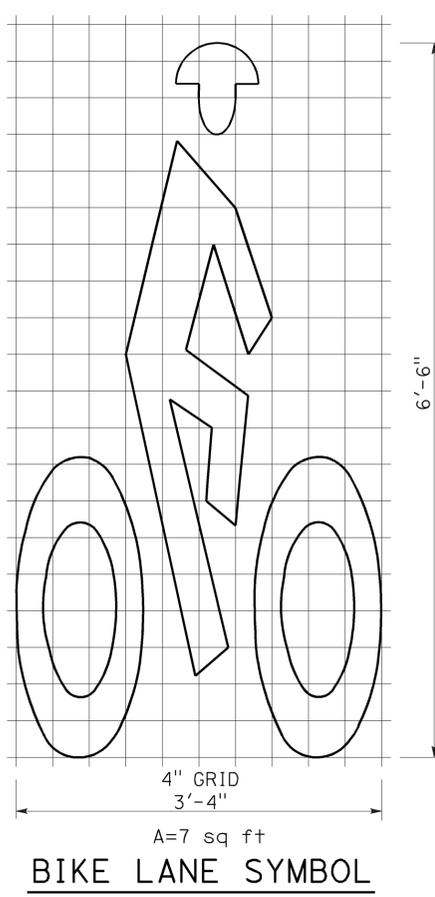
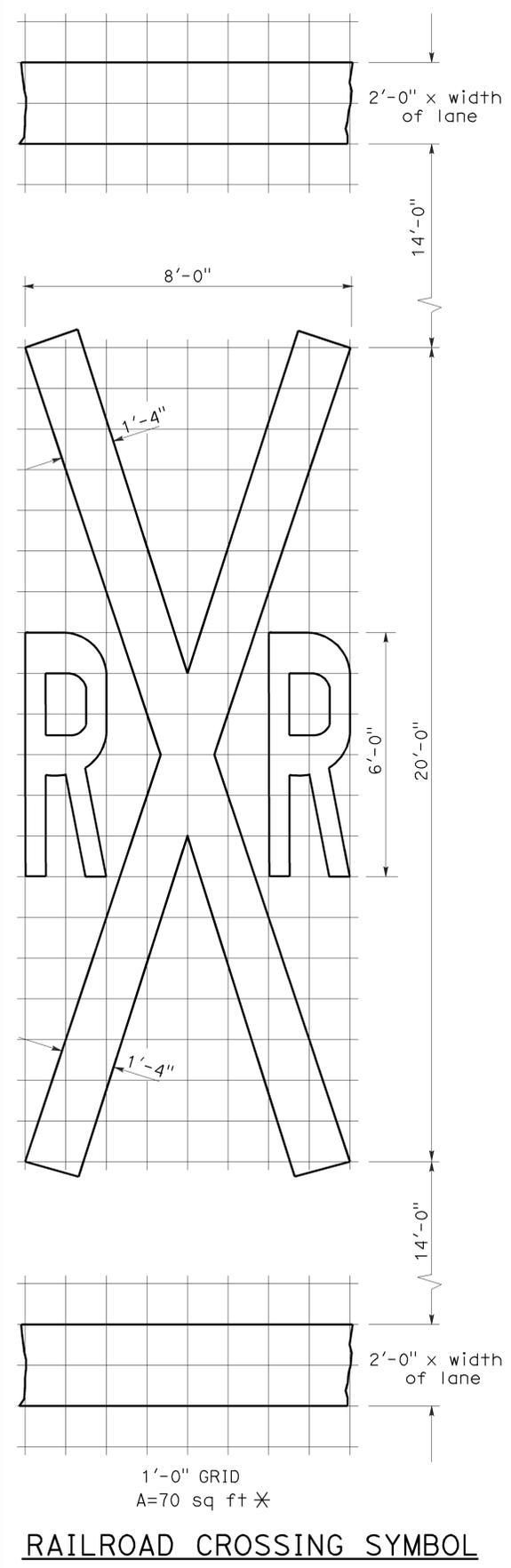
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING
 FUNCTIONAL SUPERVISOR: HECTOR OBESO
 CALCULATED/DESIGNED BY: FARIBORZ M. TEHRANI
 CHECKED BY: HAMID SAADATNEJADI
 REVISOR: REVISOR BY: DATE REVISOR: DATE REVISOR: DATE

PAVEMENT DELINEATION QUANTITIES

PDQ-2

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION WORK ONLY

To accompany plans dated 4-12-10



NUMERALS

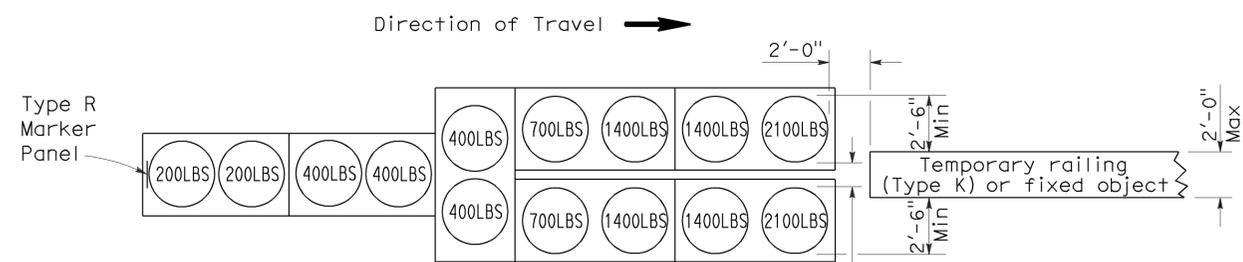
NOTE:
 1. Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKINGS SYMBOLS AND NUMERALS

NO SCALE

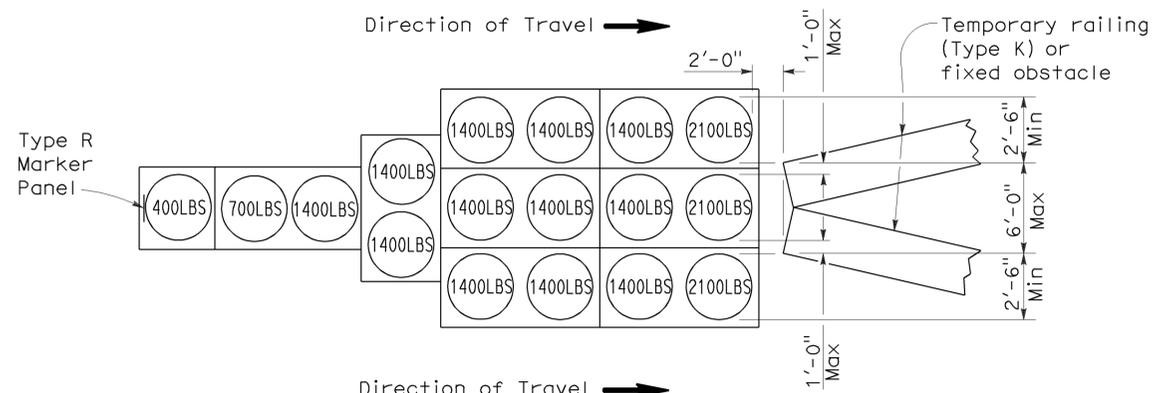
RSP A24C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A24C
 DATED MAY 1, 2006 - PAGE 11 OF THE STANDARD PLANS BOOK DATED MAY 2006.

To accompany plans dated 4-12-10



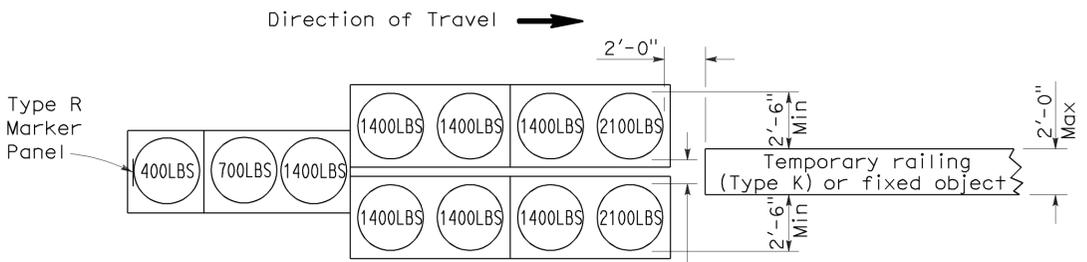
ARRAY 'TU14'

Approach speed 45 mph or more



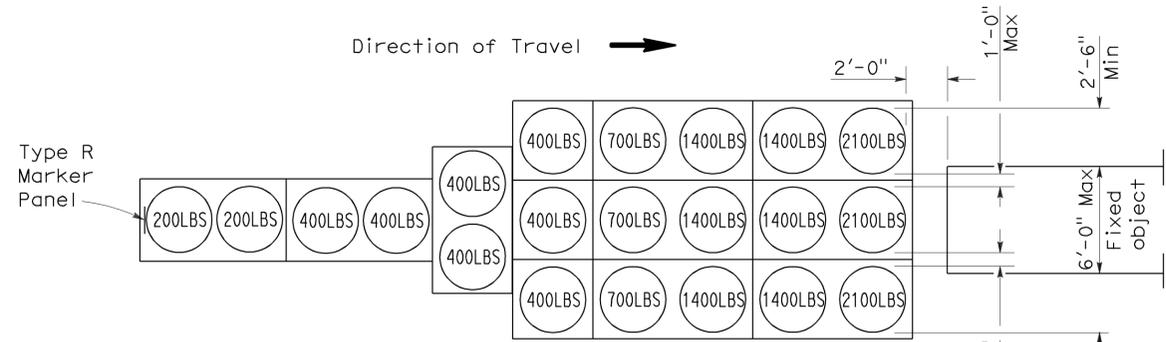
ARRAY 'TU17'

Approach speed less than 45 mph



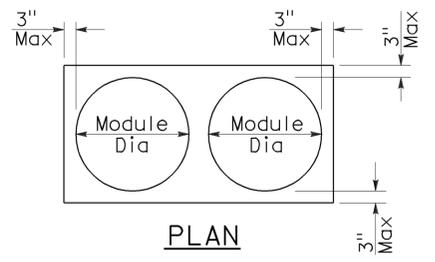
ARRAY 'TU11'

Approach speed less than 45 mph

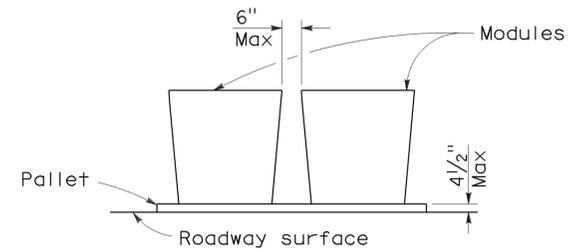


ARRAY 'TU21'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

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

REVISED STANDARD PLAN RSP T1A

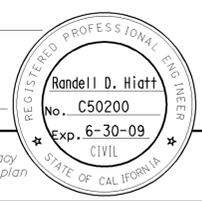
2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	17	37

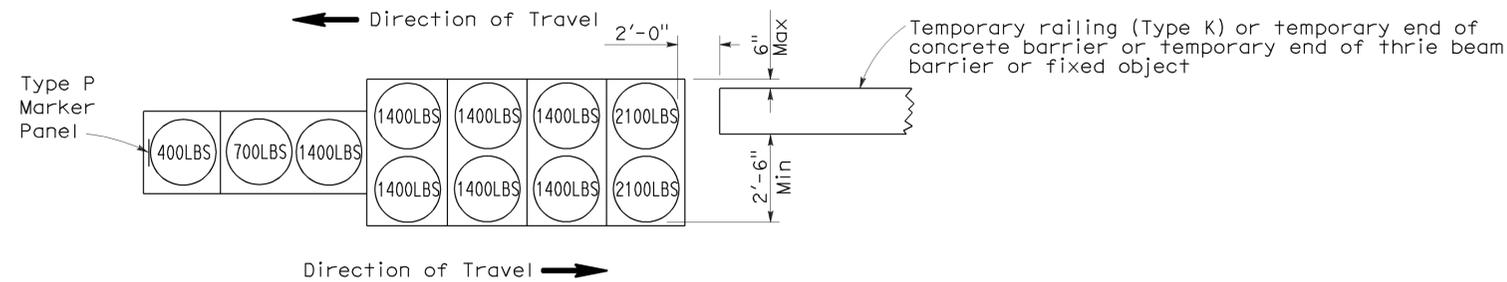
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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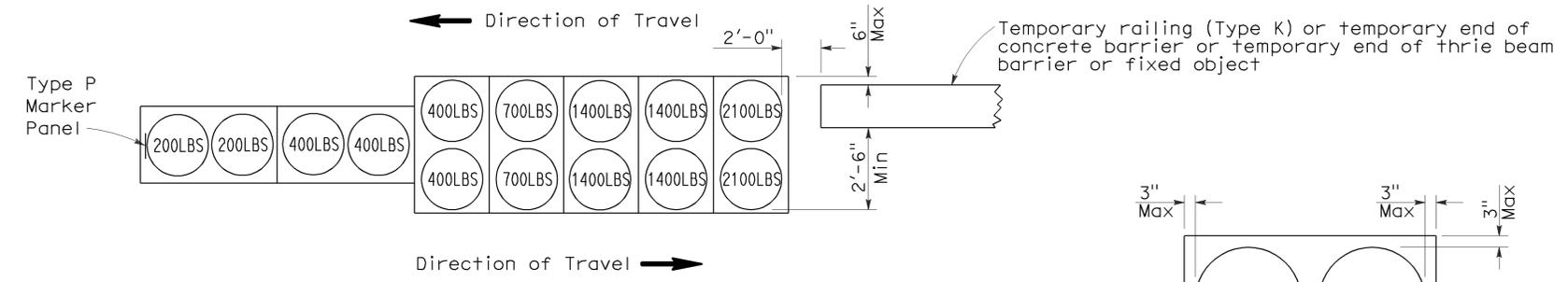


To accompany plans dated 4-12-10



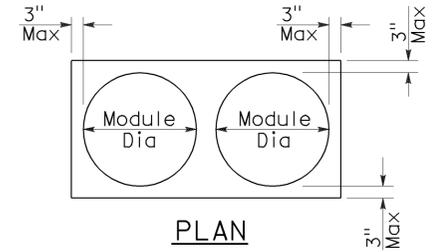
ARRAY 'TB11'

Approach speed less than 45 mph

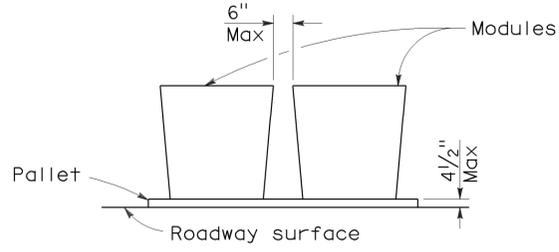


ARRAY 'TB14'

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

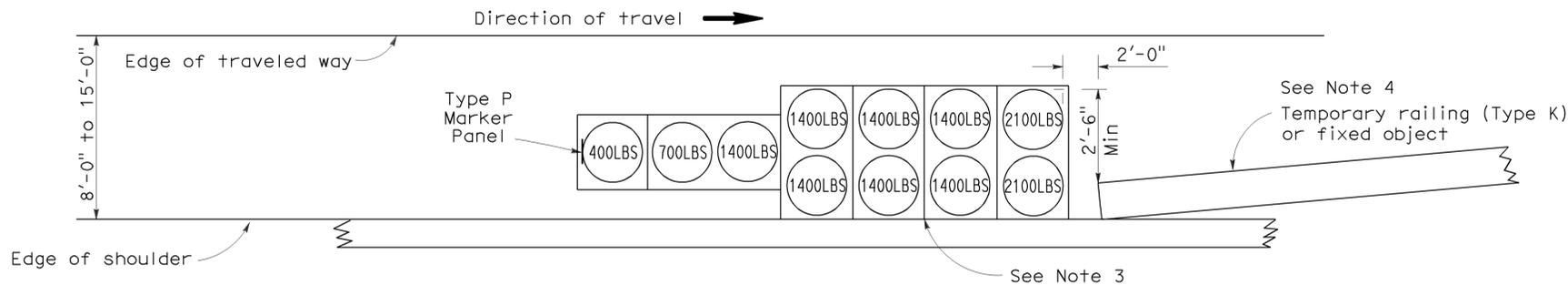
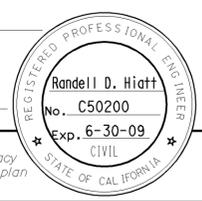
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	18	37

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

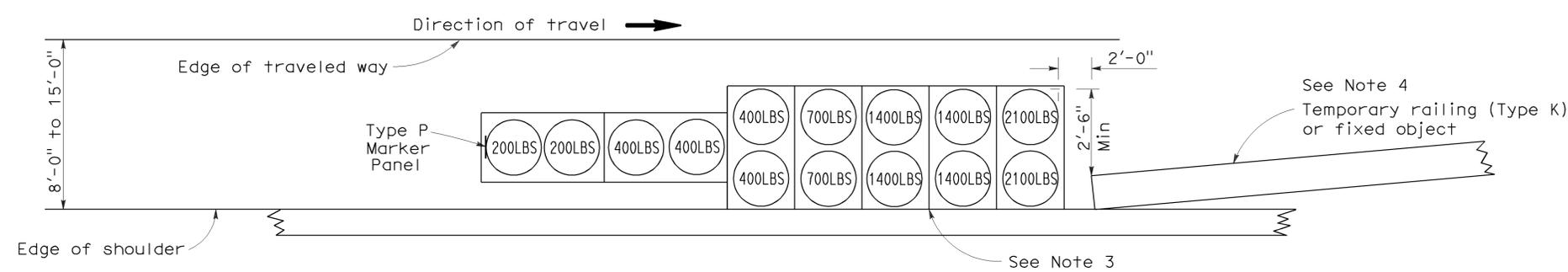
June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 4-12-10



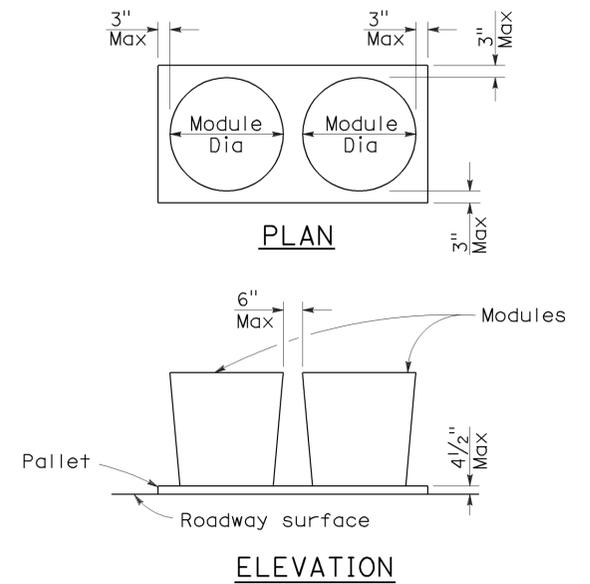
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



ARRAY 'TS14'
Approach speed 45 mph or more
See Note 9

NOTES:

- (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.
- All sand weights are nominal.
- 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.
- 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.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
- Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
- Refer to Standard Plan A73B for marker details.
- 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.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- Use of pallets is optional.



CRASH CUSHION PALLET DETAIL
See Note 11

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.

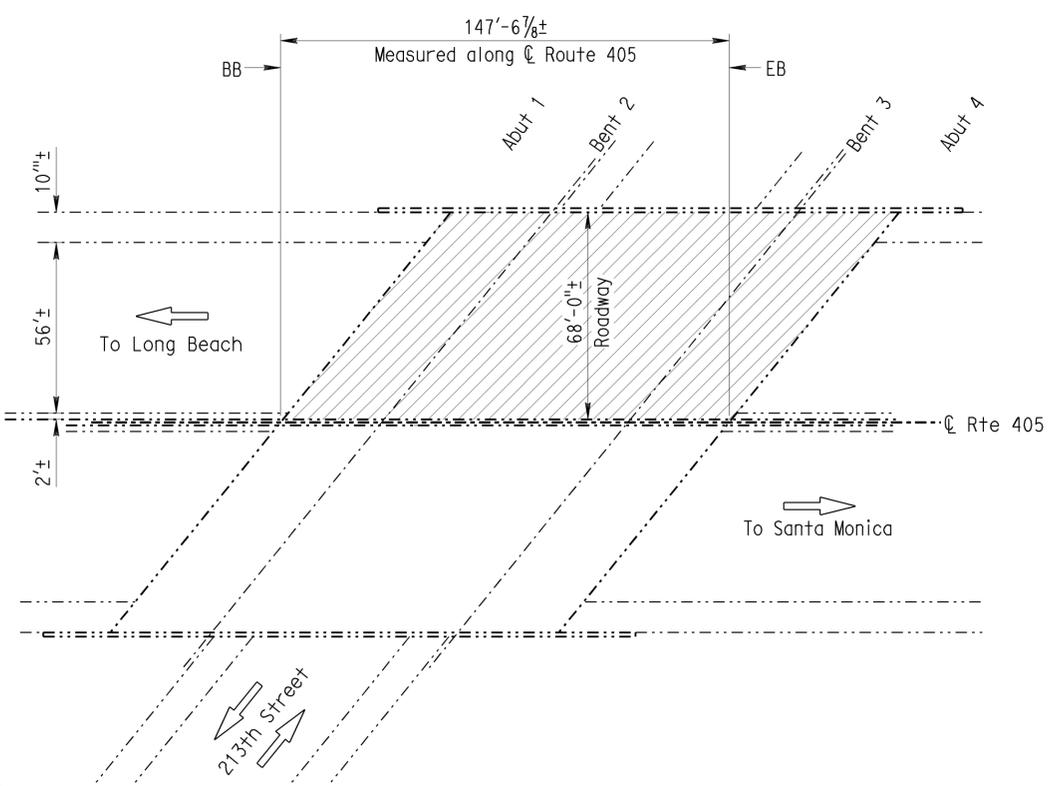
REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	20	37

T. Powell 11-24-09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE
 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.

REGISTERED PROFESSIONAL ENGINEER
 TIMOTHY J. POWELL
 No. C 61037
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

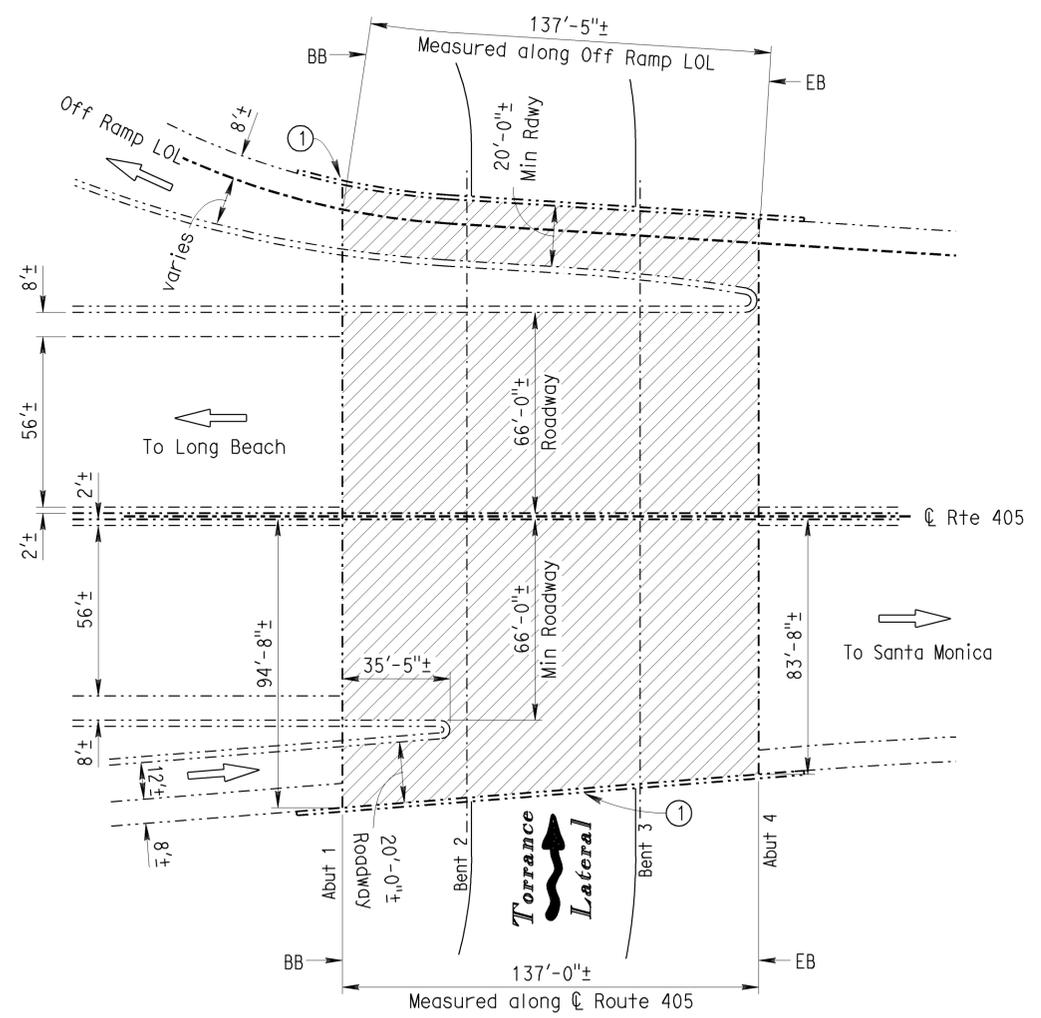


213TH STREET UNDERCROSSING

BR NO. 53-1263, LA, ROUTE 405, PM 10.88
1' = 30'

213 STREET UC	BRIDGE NO. 53-1263
QUANTITIES	
REMOVE UNSOUND CONCRETE	50 CF
CLEAN BRIDGE DECK	10,035 SQFT
RAPID SETTING CONCRETE (PATCH)	50 CF
TREAT BRIDGE DECK	10,035 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	111 GAL
PUBLIC SAFETY PLAN	LUMP SUM

TORRANCE LATERAL CHANNEL	BRIDGE NO. 53-1513
QUANTITIES	
REMOVE UNSOUND CONCRETE	120 CF
CLEAN BRIDGE DECK	24,018 SQFT
RAPID SETTING CONCRETE (PATCH)	120 CF
REPAIR SPALLED SURFACE AREA	10 SQFT
TREAT BRIDGE DECK	24,018 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	267 GAL



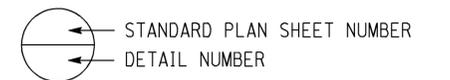
TORRANCE LATERAL CHANNEL

BR NO. 53-1513, ROUTE 405, PM 11.39
1' = 30'

NOTES: (APPLY TO ALL SHEETS)

----- Indicates existing structure.

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



NOTES: (APPLY TO THIS SHEET ONLY)

Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.

① Patch spalls at existing concrete Barrier Railing Type 1 as directed by the Engineer. See Barrier Concrete Rail Repair Table on "DECK AND RAIL DETAILS" sheet.

INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN NO. 1
2	GENERAL PLAN NO. 2
3	GENERAL PLAN NO. 3
4	GENERAL PLAN NO. 4
5	GENERAL PLAN NO. 5
6	GENERAL PLAN NO. 6
7	GENERAL PLAN NO. 7
8	GENERAL PLAN NO. 8
9	GENERAL PLAN NO. 9
10	GENERAL PLAN NO. 10
11	GENERAL PLAN NO. 11
12	GENERAL PLAN NO. 12
13	JOINT SEAL DETAILS
14	JOINT/HINGE DETAILS
15	DECK AND RAIL DETAILS
16	JOINT SEAL ASSEMBLY DETAILS (MAX MR=4")
17	STRUCTURE APPROACH DETAILS TYPE R (30D)

STANDARD PLANS DATED MAY 2006

SHEET NO.	TITLE
A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
RSP P10	CONCRETE PAVEMENT - DOWEL BAR DETAILS

Michael J. Lee 11-24-09
 DESIGN ENGINEER

DESIGN	BY T. Powell	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY T. Powell	CHECKED B. Nguyen

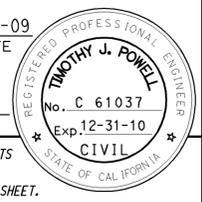
LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
SPECIFICATIONS	BY Dave Klein	PLANS AND SPECIFICATIONS COMPARED T. Powell

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

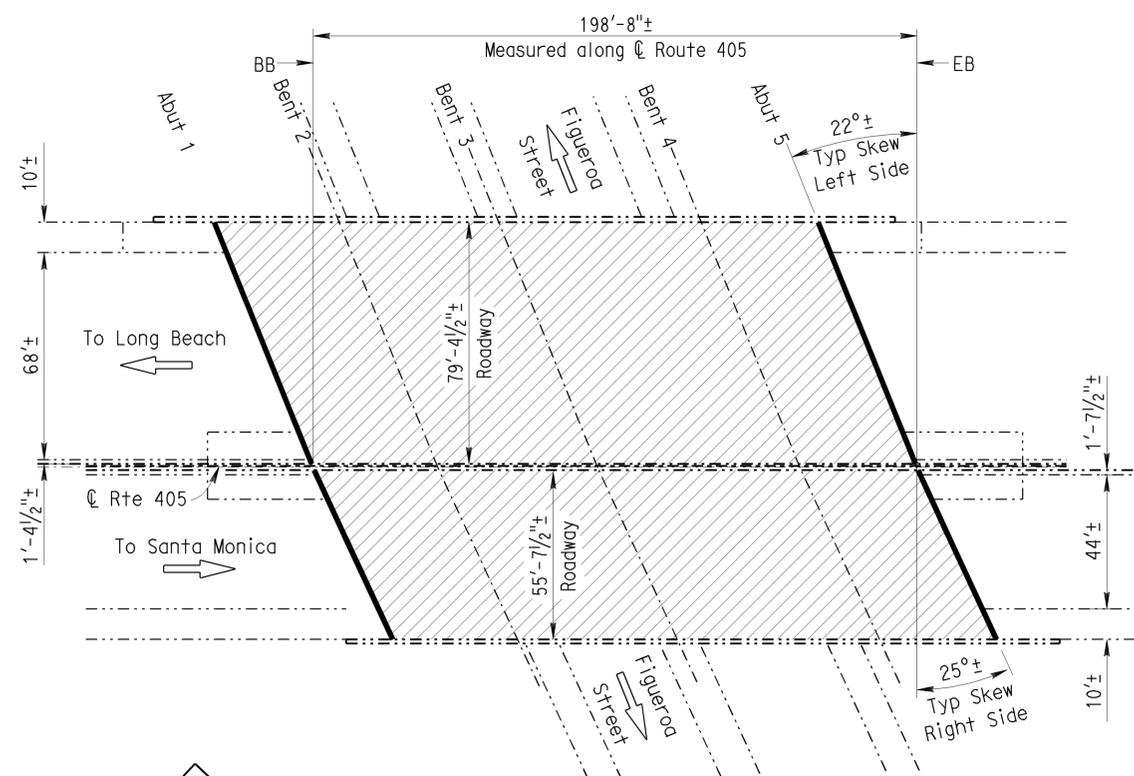
DIVISION OF MAINTENANCE
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
 POST MILE VARIES
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	21	37
			11-24-09		
REGISTERED CIVIL ENGINEER			DATE		
4-12-10			PLANS APPROVAL DATE		
<small>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.</small>					

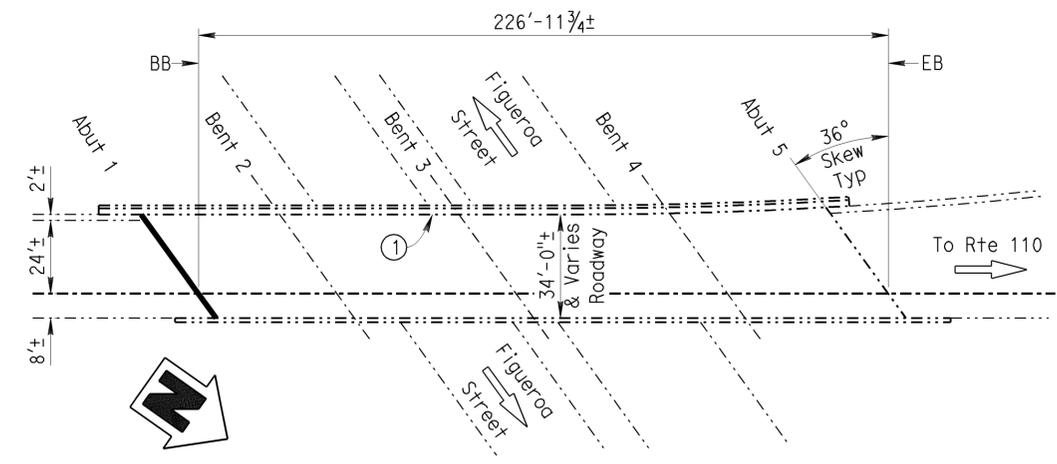


- NOTES:** (APPLY TO THIS SHEET ONLY)
-  Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.
 - ① Patch spalls at existing concrete Barrier Railing Type 1 as directed by the Engineer. See Barrier Concrete Rail Repair Table on "DECK AND RAIL DETAILS" sheet.
 - ② Prepare & place polyester concrete overlay on bridge deck, approx. area = 10ft x 5ft with 2 inch min depth and as directed by the Engineer.
 -  Indicates location of remove existing joint seal and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.



FIGUEROA STREET UNDERCROSSING

BR NO. 53-1140, LA, ROUTE 405, PM 12.73
1" = 30'



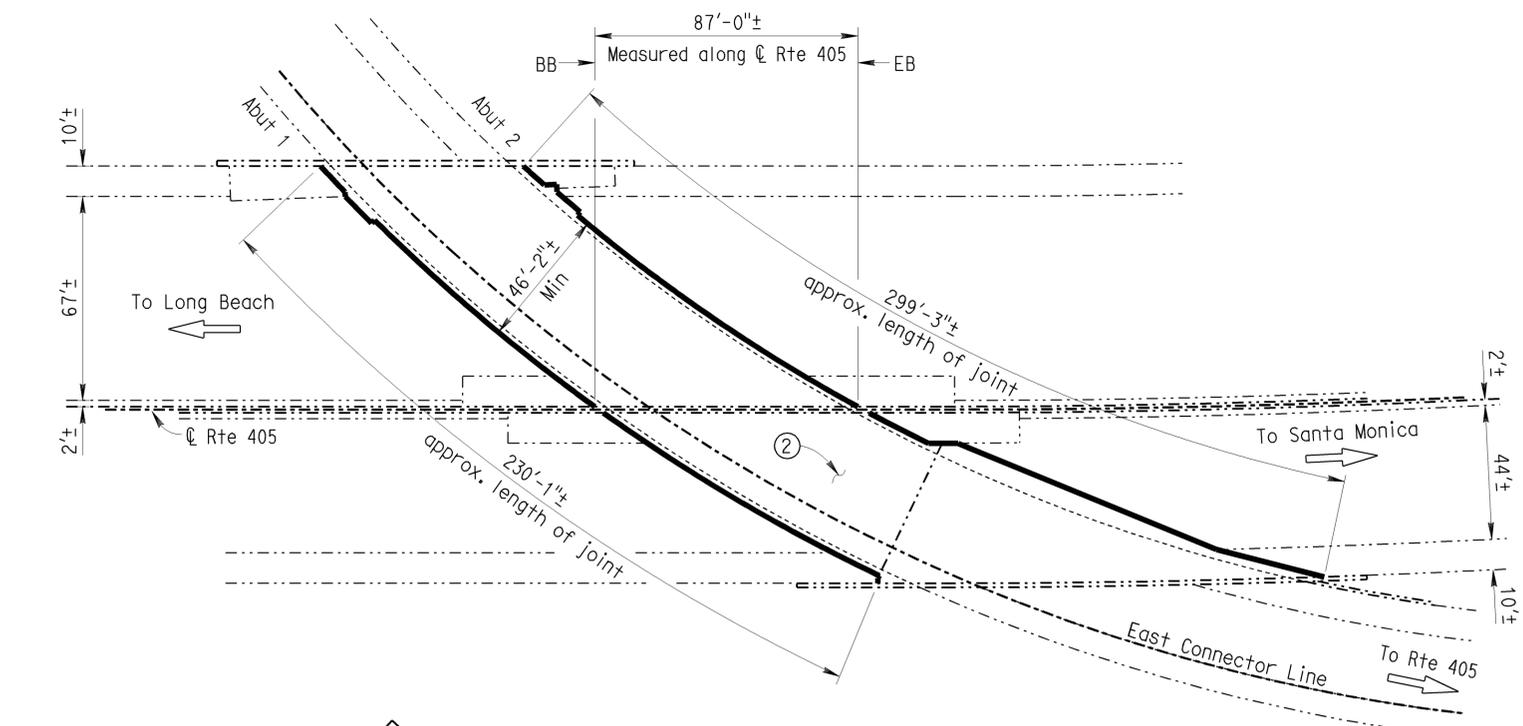
N405-N&S110 CONNECTOR OVERCROSSING

BR NO. 53-1141G, LA, ROUTE 405, PM 12.74
1" = 30'

FIGUEROA STREET UC	QUANTITIES	BRIDGE NO. 53-1140
REMOVE UNSOUND CONCRETE	134 CF	
CLEAN BRIDGE DECK	26,820 SQFT	
CLEAN EXPANSION JOINT	298 LF	
RAPID SETTING CONCRETE (PATCH)	134 CF	
JOINT SEAL (MR 1")	298 LF	
TREAT BRIDGE DECK	26,820 SQFT	
FURNISH BRIDGE DECK TREATMENT MATERIAL	298 GAL	

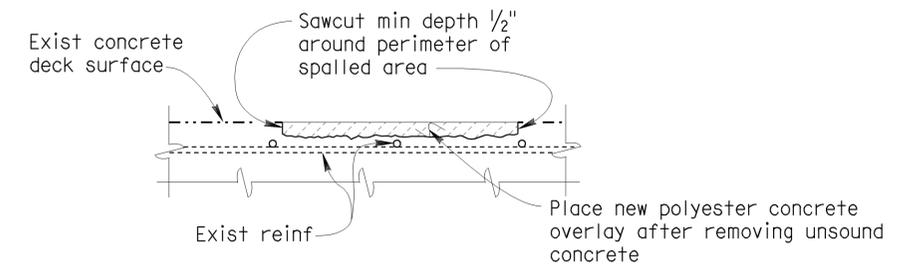
N405-N&S110 CONN OC	QUANTITIES	BRIDGE NO. 53-1141G
CLEAN EXPANSION JOINT	42 LF	
REPAIR SPALLED SURFACE AREA	10 SQFT	
JOINT SEAL (MR 1")	42 LF	

405/N110-N405 SEPARATION	QUANTITIES	BRIDGE NO. 53-1138
REMOVE UNSOUND CONCRETE	8 CF	
PREPARE CONCRETE BRIDGE DECK SURFACE	50 SQFT	
CLEAN EXPANSION JOINT	530 LF	
FURNISH POLYESTER CONCRETE OVERLAY	10 CF	
PLACE POLYESTER CONCRETE OVERLAY	50 SQFT	
JOINT SEAL (MR 1/2")	530 LF	



405/N110-N405 SEPARATION

BR NO. 53-1138, LA, ROUTE 405, PM 12.83
1" = 30'



DECK REPAIR DETAIL

Br. No. 53-1138 only
Reinforcement may be encountered during deck concrete removal.
NO SCALE

 11-24-09
DESIGN ENGINEER

DESIGN	BY T. Powell	CHECKED B. Nguyen	LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen	SPECIFICATIONS	BY Dave Klein	CHECKED T. Powell
QUANTITIES	BY T. Powell	CHECKED B. Nguyen			

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

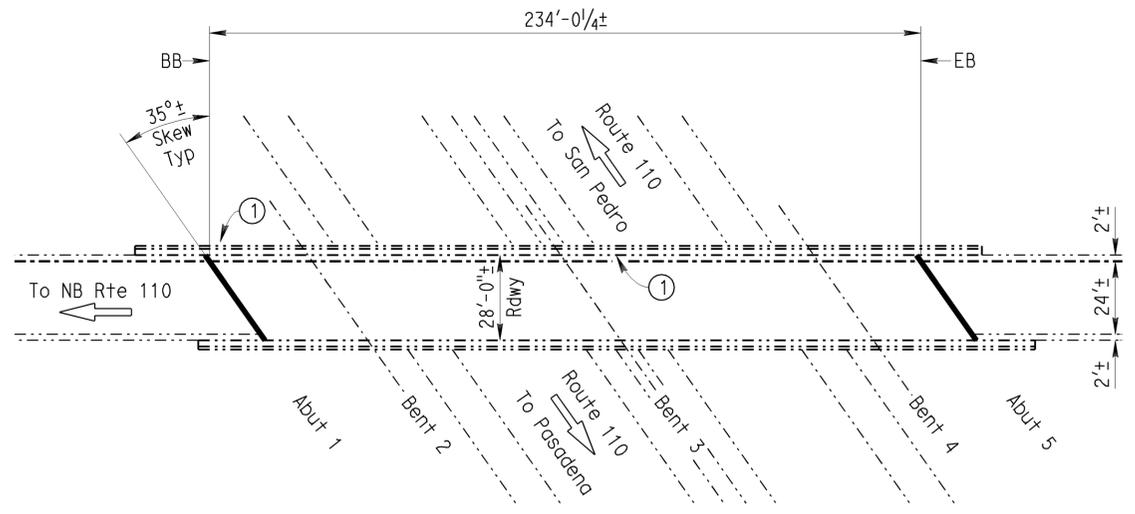
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
POST MILE VARIOUS
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 2

FILE => 07-3y6301_02gp2.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	22	37

REGISTERED CIVIL ENGINEER DATE 11-24-09
 REGISTERED CIVIL ENGINEER TIMOTHY J. POWELL
 No. C 61037
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



S405-N110/110 SEPARATION BRIDGE NO. 53-1045F

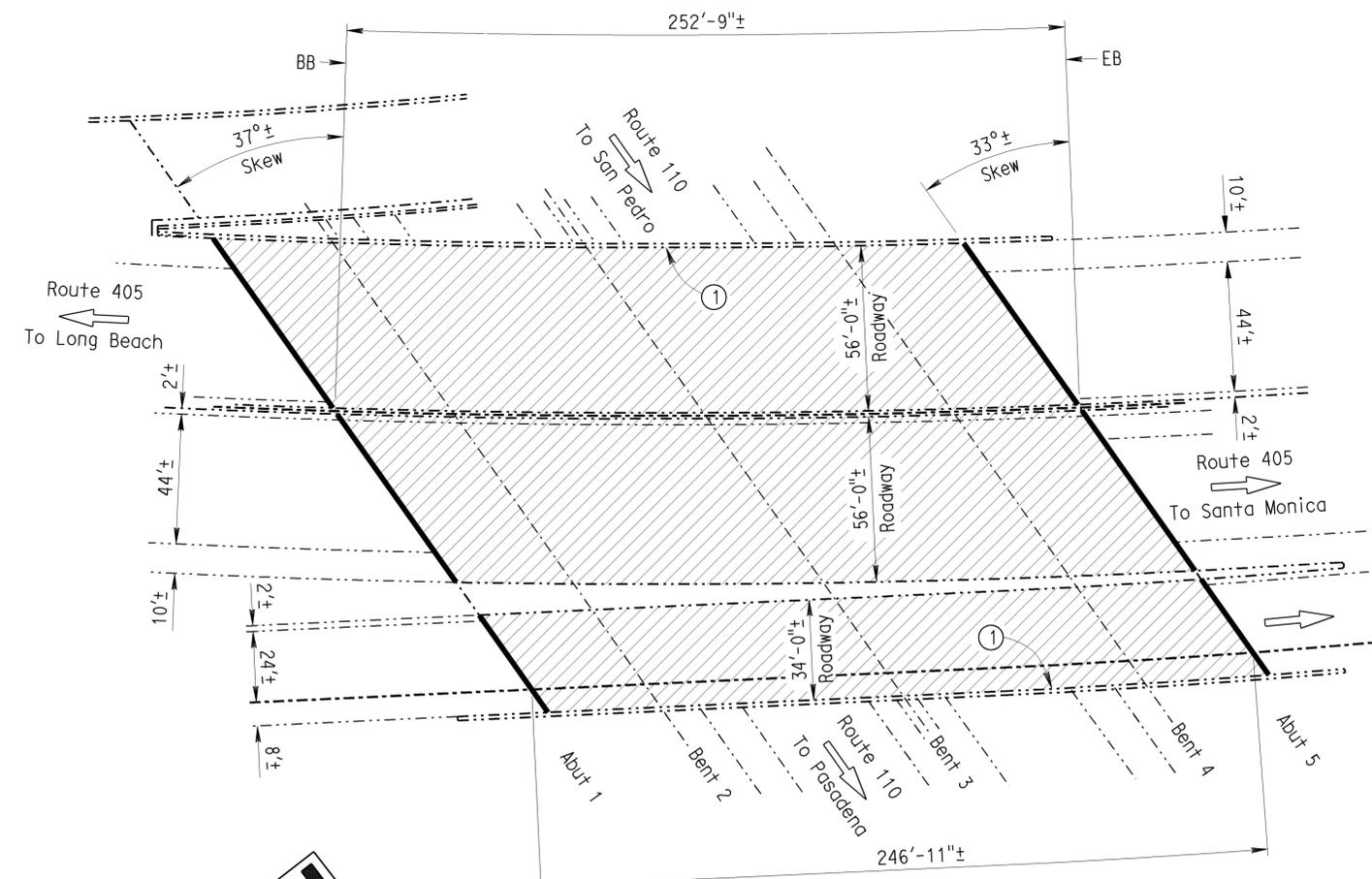
QUANTITIES	
CLEAN EXPANSION JOINT	70 LF
REPAIR SPALLED SURFACE AREA	10 SQFT
JOINT SEAL (MR 1")	70 LF

ROUTE 405/110 SEPARATION BRIDGE NO. 53-1137

QUANTITIES	
REMOVE UNSOUND CONCRETE	184 CF
CLEAN BRIDGE DECK	36,700 SQFT
CLEAN EXPANSION JOINT	360 LF
RAPID SETTING CONCRETE (PATCH)	184 CF
REPAIR SPALLED SURFACE AREA	10 SQFT
JOINT SEAL (MR 1")	360 LF
TREAT BRIDGE DECK	36,700 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	407 GAL

S405-N110/110 SEPARATION

BR NO. 53-1045F, LA, ROUTE 405, PM 12.94
1" = 30'



ROUTE 405/110 SEPARATION

BR NO. 53-1137, LA, ROUTE 405, PM 12.95
1" = 30'

- NOTES: (APPLY TO THIS SHEET ONLY)
- Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.
 - Indicates location of remove existing joint seal and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.
 - ① Patch spalls at existing concrete Barrier Railing Type 1 as directed by the Engineer. See Barrier Concrete Rail Repair Table on "DECK AND RAIL DETAILS" sheet.

DESIGN ENGINEER
 11-24-09

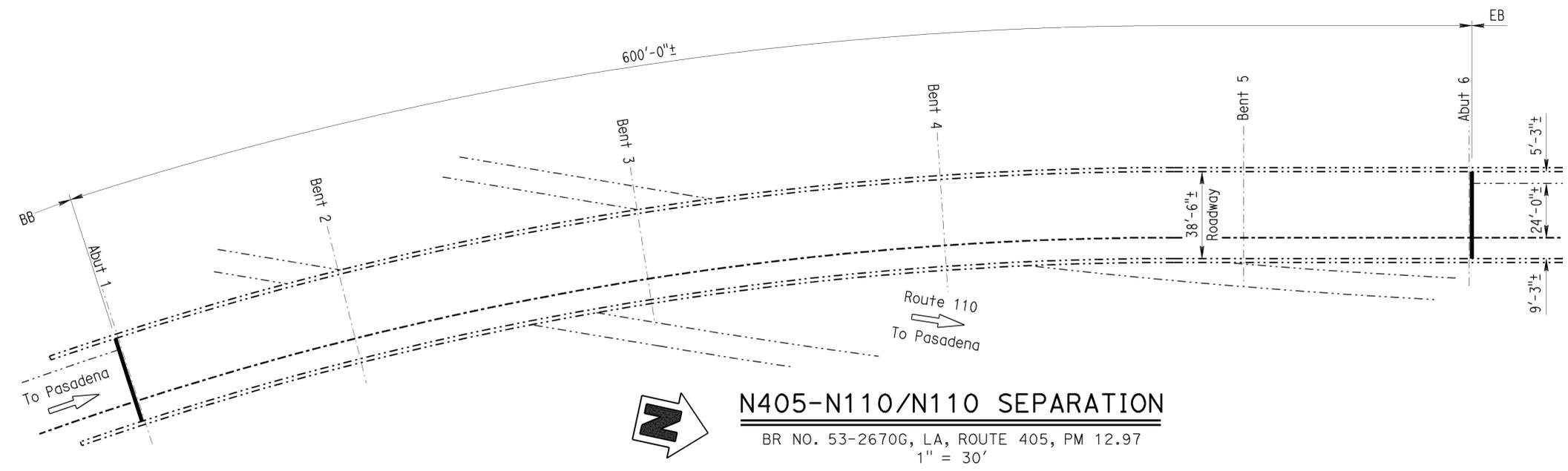
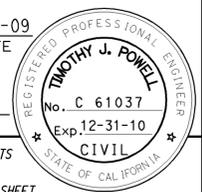
DESIGN BY T. Powell	CHECKED B. Nguyen	LAYOUT BY Bidwell/Hallstrom	CHECKED T. Powell
DETAILS BY Bidwell/Hallstrom	CHECKED B. Nguyen	SPECIFICATIONS BY Dave Klein	PLANS AND SPECIFICATIONS COMPARED T. Powell
QUANTITIES BY T. Powell	CHECKED B. Nguyen		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
POST MILE VARIES
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 3

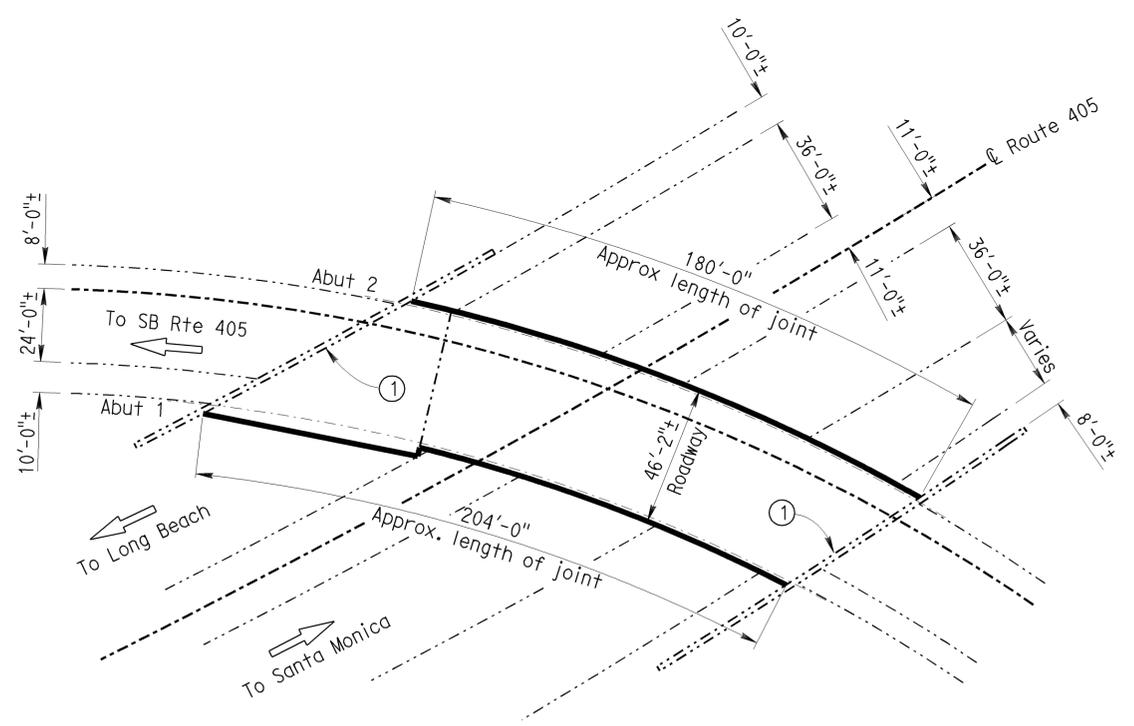
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	23	37
			11-24-09		
REGISTERED CIVIL ENGINEER			DATE		
4-12-10			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>					



N405-N110/N110 SEPARATION
BR NO. 53-2670G, LA, ROUTE 405, PM 12.97
1" = 30'

NOTES: (APPLY TO THIS SHEET ONLY)

- Indicates location of remove existing joint seal and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.
- ① Patch spalls at existing concrete Barrier Railing Type 1 as directed by the Engineer. See Barrier Concrete Rail Repair Table on "DECK AND RAIL DETAILS" sheet.



405/S110-S405 SEPARATION
BR NO. 53-1142, LA, ROUTE 405, PM 13.06
1" = 30'

N405-N110/N110SEPARATION	BRIDGE NO. 53-2670G
QUANTITIES	
CLEAN EXPANSION JOINT	79 LF
JOINT SEAL (MR 2")	79 LF
405/S110-S405 SEPARATION	BRIDGE NO. 53-1142
QUANTITIES	
CLEAN EXPANSION JOINT	385 LF
REPAIR SPALLED SURFACE AREA	10 SQFT
JOINT SEAL (MR 1/2")	385 LF

 11-24-09
DESIGN ENGINEER

DESIGN	BY T. Powell	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY T. Powell	CHECKED B. Nguyen

LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
SPECIFICATIONS	BY Dave Klein	PLANS AND SPECIFICATIONS COMPARED T. Powell

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
POST MILE VARIOUS
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 4

STRUCTURES MAINTENANCE GENERAL PLAN & DETAIL SHEET (ENGLISH) (REV. 10/17/07)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 07
EA 3Y6301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

USERNAME => jbt.powell DATE PLOTTED => 16-DEC-2009 TIME PLOTTED => 08:22

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	24	37

T. Powell
 REGISTERED CIVIL ENGINEER
 DATE 11-24-09
 PLANS APPROVAL DATE 4-12-10
 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.

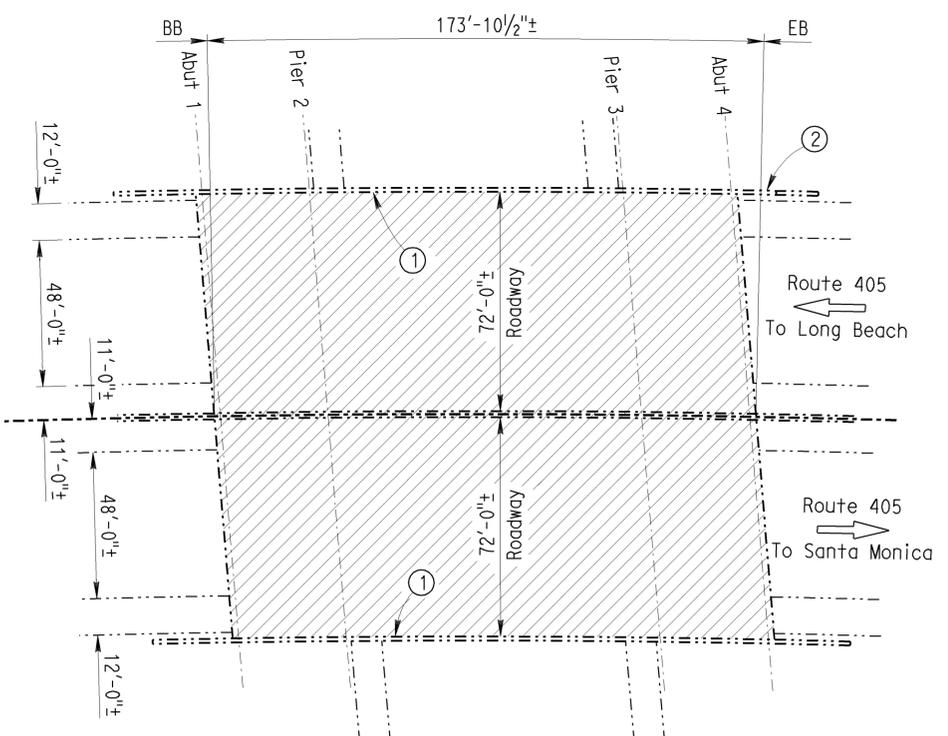
REGISTERED PROFESSIONAL ENGINEER
 TIMOTHY J. POWELL
 No. C 61037
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA



VERMONT AVENUE-190TH STREET UNDERCROSSING

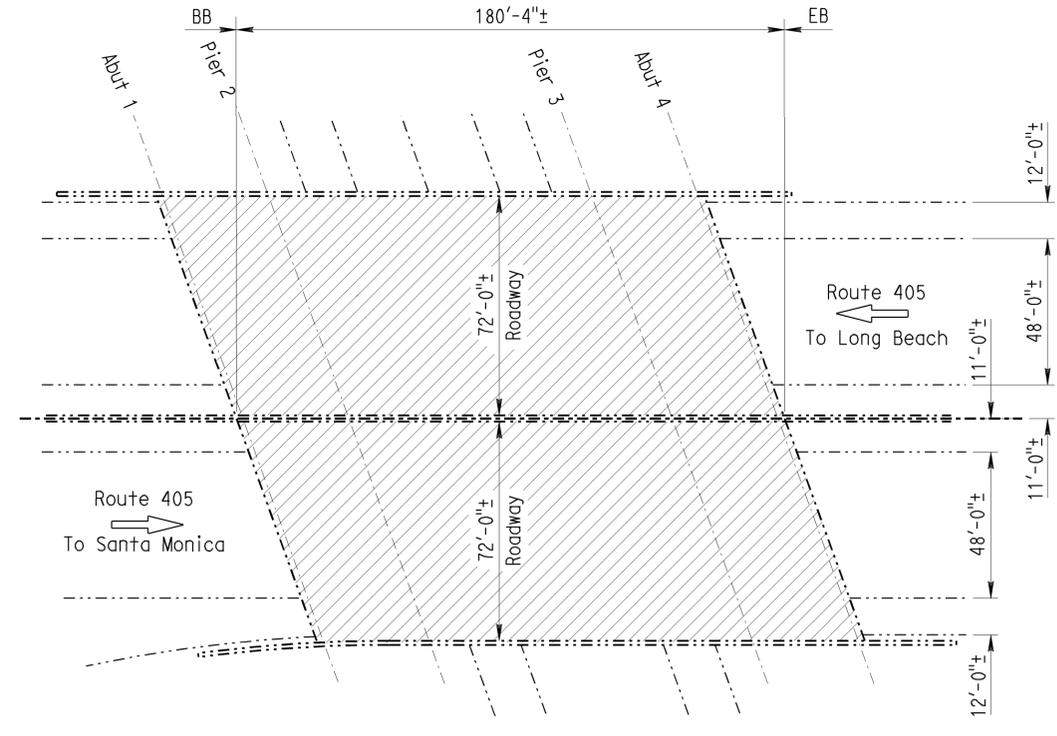
BR NO. 53-1144, LA, ROUTE 405, PM 13.28
 1" = 30'

- NOTES: (APPLY TO THIS SHEET ONLY)
- ① Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.
 - ② Patch spalls at existing concrete Barrier Railing Type 1 as directed by the Engineer. See Barrier Concrete Rail Repair Table on "DECK AND RAIL DETAILS" sheet.
 - ③ Indicates location of reconstruct damaged rail post and rail as directed by the Engineer. See "Post and Rail Repair" table on DECK AND RAIL DETAILS sheet.



WESTERN AVENUE UNDERCROSSING

BR NO. 53-1172, LA, ROUTE 405, PM 14.4
 1" = 30'



CRENSHAW BOULEVARD UNDERCROSSING

BR NO. 53-1175, LA, ROUTE 405, PM 15.45
 1" = 30'

BRIDGE NO.	QUANTITIES	AMOUNT	UNIT
VERMONT AVENUE-19TH ST UC	BRIDGE NO. 53-1144		
REMOVE UNSOUND CONCRETE		343	CF
CLEAN BRIDGE DECK		68,670	SQFT
RAPID SETTING CONCRETE (PATCH)		343	CF
TREAT BRIDGE DECK		68,670	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL		763	GAL
PUBLIC SAFETY PLAN		LUMP	SUM
WESTERN AVENUE UC	BRIDGE NO. 53-1172		
REMOVE UNSOUND CONCRETE		125	CF
CLEAN BRIDGE DECK		25,041	SQFT
RECONSTRUCT METAL RAILING (BRIDGE)		LUMP	SUM
RAPID SETTING CONCRETE (PATCH)		125	CF
REPAIR SPALLED SURFACE AREA		10	SQFT
TREAT BRIDGE DECK		25,041	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL		278	GAL
PUBLIC SAFETY PLAN		LUMP	SUM
CRENSHAW BOULEVARD UC	BRIDGE NO. 53-1175		
REMOVE UNSOUND CONCRETE		130	CF
CLEAN BRIDGE DECK		25,967	SQFT
RAPID SETTING CONCRETE (PATCH)		130	CF
FURNISH BRIDGE DECK TREATMENT MATERIAL		289	GAL
TREAT BRIDGE DECK		25,967	SQFT
PUBLIC SAFETY PLAN		LUMP	SUM

Michael J. Lee
 DESIGN ENGINEER
 11-24-09

DESIGN	BY T. Powell	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY T. Powell	CHECKED B. Nguyen

LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
SPECIFICATIONS	BY Dave Klein	CHECKED T. Powell

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
 STRUCTURE MAINTENANCE DESIGN

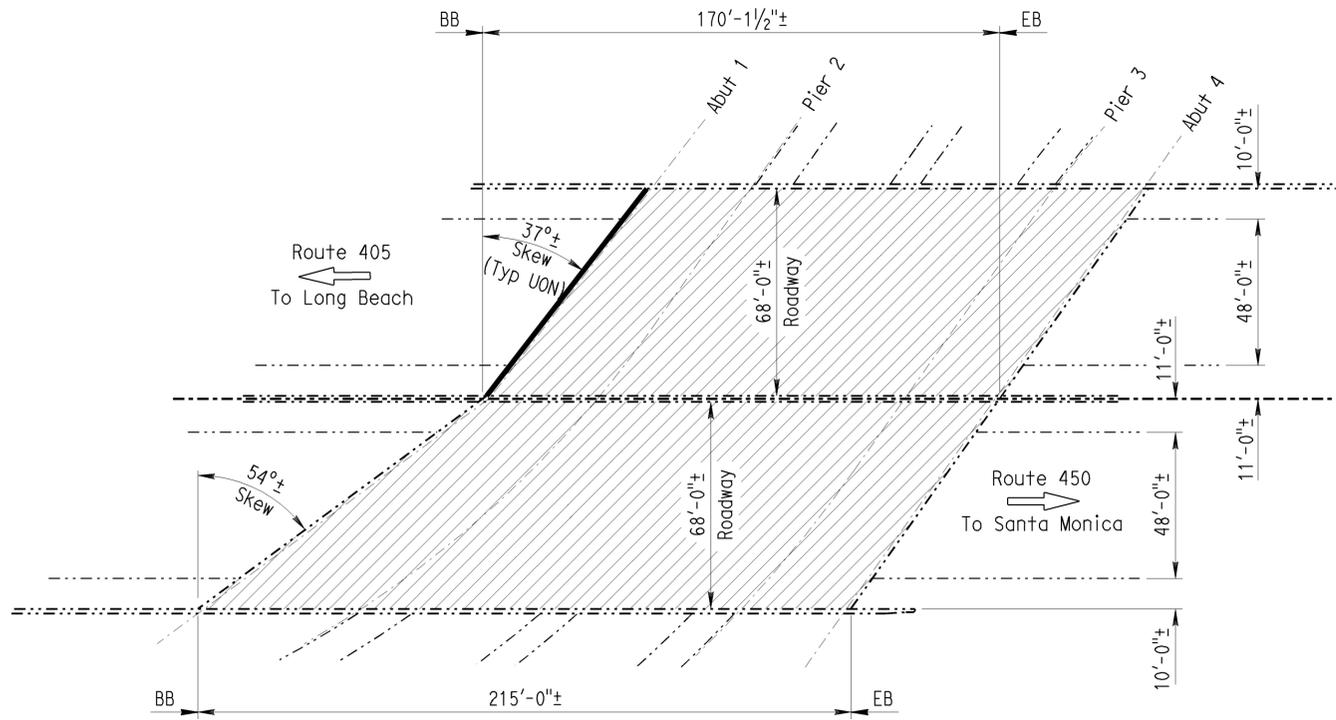
BRIDGE NO. VARIOUS
 POST MILE VARIOUS
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 5

USERNAME => jtd.powell DATE PLOTTED => 16-DEC-2009 TIME PLOTTED => 10:41

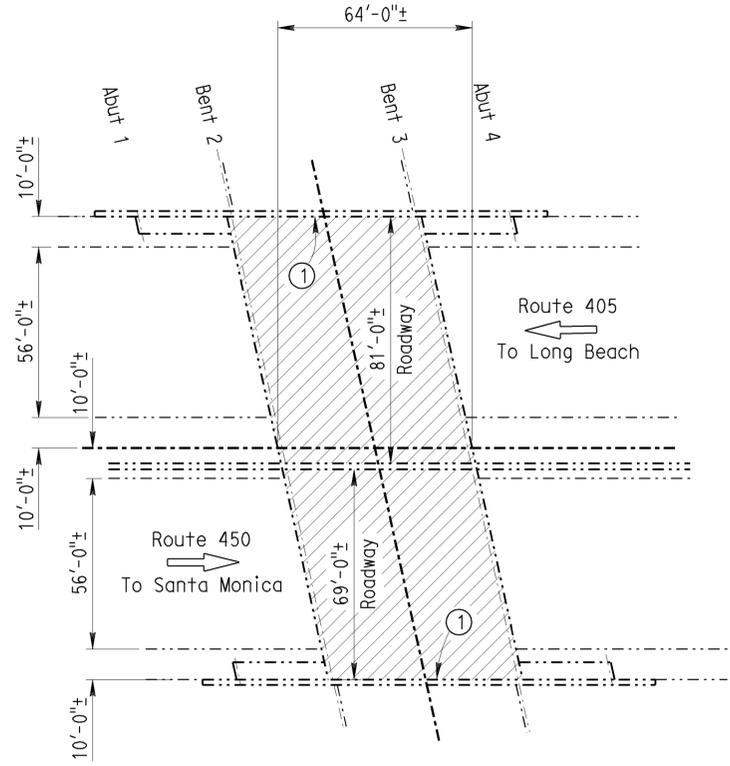
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	25	37

11-24-09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE
 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.

REGISTERED PROFESSIONAL ENGINEER
 TIMOTHY J. POWELL
 No. C 61037
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

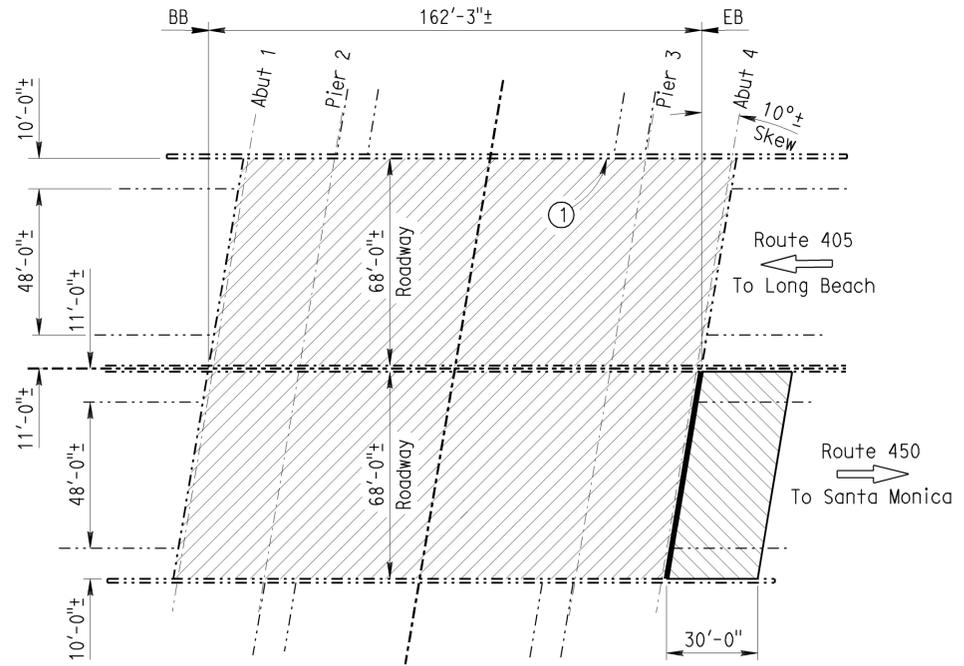


182ND STREET UNDERCROSSING
 BR NO. 53-1176, LA, ROUTE 405, PM 15.73
 1" = 30'



YUKON AVENUE UNDERCROSSING
 BR NO. 53-1177, LA, ROUTE 405, PM 15.98
 1" = 30'

- NOTES: (APPLY TO THIS SHEET ONLY)
- Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.
 - Indicates location of remove existing structure approach and place new structure approach Type 30D. See "STRUCTURE APPROACH SLAB DETAILS" sheet.
 - Indicates location of remove existing joint seal and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet
 - ① Patch spalls at existing concrete barrier railing as directed by the Engineer. See Barrier Concrete Rail Repair Table on "DECK AND RAIL DETAILS" sheet.



REDONDO BEACH BOULEVARD UNDERCROSSING
 BR NO. 53-1229, LA, ROUTE 405, PM 16.88
 1" = 30'

182ND STREET UC	BRIDGE NO. 53-1176	REDONDO BEACH BOULEVARD UC	BRIDGE NO. 53-1229
QUANTITIES		QUANTITIES	
REMOVE UNSOUND CONCRETE	123 CF	REMOVE UNSOUND CONCRETE	110 CF
CLEAN BRIDGE DECK	24,663 SQFT	CLEAN BRIDGE DECK	22,100 SQFT
CLEAN EXPANSION JOINT	85 LF	AGGREGATE BASE (APPROACH SLAB)	8 CY
RAPID SETTING CONCRETE (PATCH)	123 CF	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	75 CY
JOINT SEAL (MR 1")	85 LF	PAVING NOTCH EXTENSION	35 CF
TREAT BRIDGE DECK	24,663 SQFT	RAPID SETTING CONCRETE (PATCH)	110 CF
FURNISH BRIDGE DECK TREATMENT MATERIAL	274 GAL	REPAIR SPALLED SURFACE AREA	10 SQFT
PUBLIC SAFETY PLAN	LUMP SUM	JOINT SEAL (MR 1/2")	70 LF
		TREAT BRIDGE DECK	22,100 SQFT
		FURNISH BRIDGE DECK TREATMENT MATERIAL	245 GAL
		PUBLIC SAFETY PLAN	LUMP SUM
YUKON AVENUE UC	BRIDGE NO. 53-1177		
QUANTITIES			
REMOVE UNSOUND CONCRETE	48 CF		
CLEAN BRIDGE DECK	9,600 SQFT		
RAPID SETTING CONCRETE (PATCH)	48 CF		
REPAIR SPALLED SURFACE AREA	10 SQFT		
TREAT BRIDGE DECK	9,600 SQFT		
FURNISH BRIDGE DECK TREATMENT MATERIAL	107 GAL		

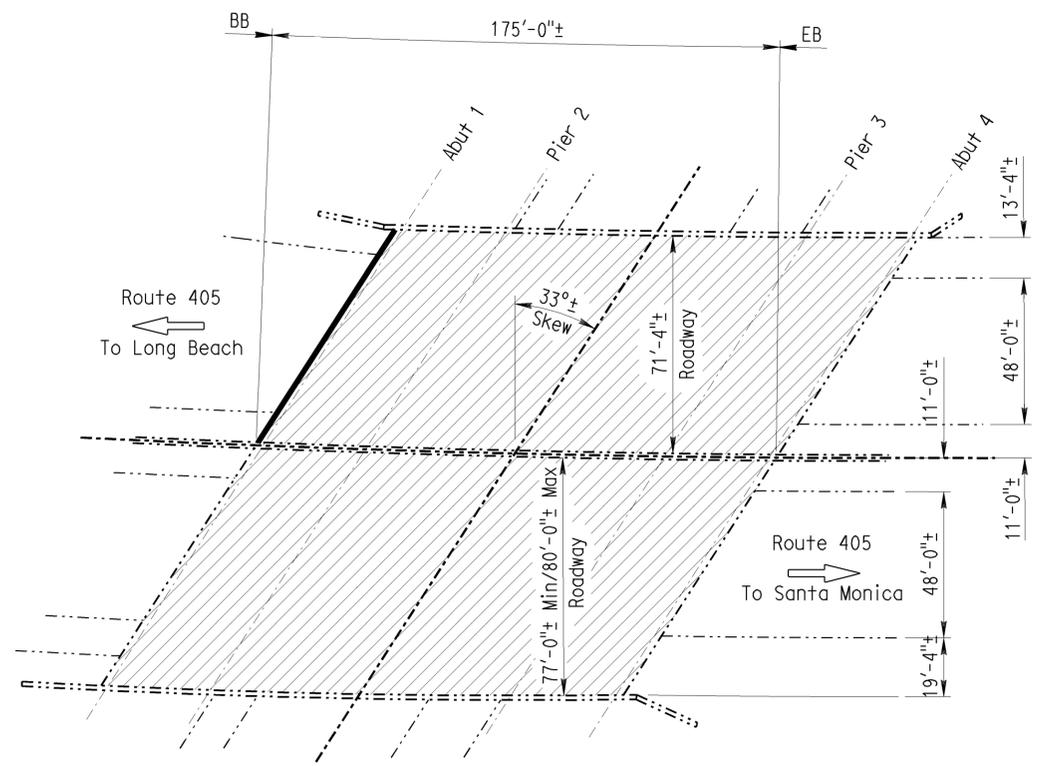
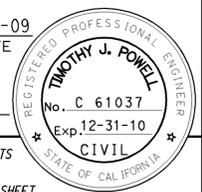
 DESIGN ENGINEER 11-24-09	DESIGN BY T. Powell	CHECKED B. Nguyen	LAYOUT BY Bidwell/Hallstrom	CHECKED T. Powell	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF MAINTENANCE STRUCTURE MAINTENANCE DESIGN	BRIDGE NO. VARIOUS POST MILE VARIOUS	ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS) GENERAL PLAN NO. 6
	DETAILS BY Bidwell/Hallstrom	CHECKED B. Nguyen	SPECIFICATIONS BY Dave Klein	PLANS AND SPECIFICATIONS COMPARED T. Powell				
	QUANTITIES BY T. Powell	CHECKED B. Nguyen			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 07 EA 3Y6301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 6 OF 17 REVISION DATES

STRUCTURES MAINTENANCE GENERAL PLAN & DETAIL SHEET (ENGLISH) (REV. 10/17/07)

FILE => 07-3y6301_06gp6.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	26	37

11-24-09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE
 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.



166TH STREET UC BRIDGE NO. 53-1230

QUANTITIES		
REMOVE UNSOUND CONCRETE	131	CF
CLEAN BRIDGE DECK	26,220	SQFT
CLEAN EXPANSION JOINT	85	LF
RAPID SETTING CONCRETE (PATCH)	131	CF
JOINT SEAL (MR 1")	85	LF
TREAT BRIDGE DECK	26,220	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	291	GAL
PUBLIC SAFETY PLAN		LUMP SUM

ROUTE 405/107 SEPARATION BRIDGE NO. 53-1231

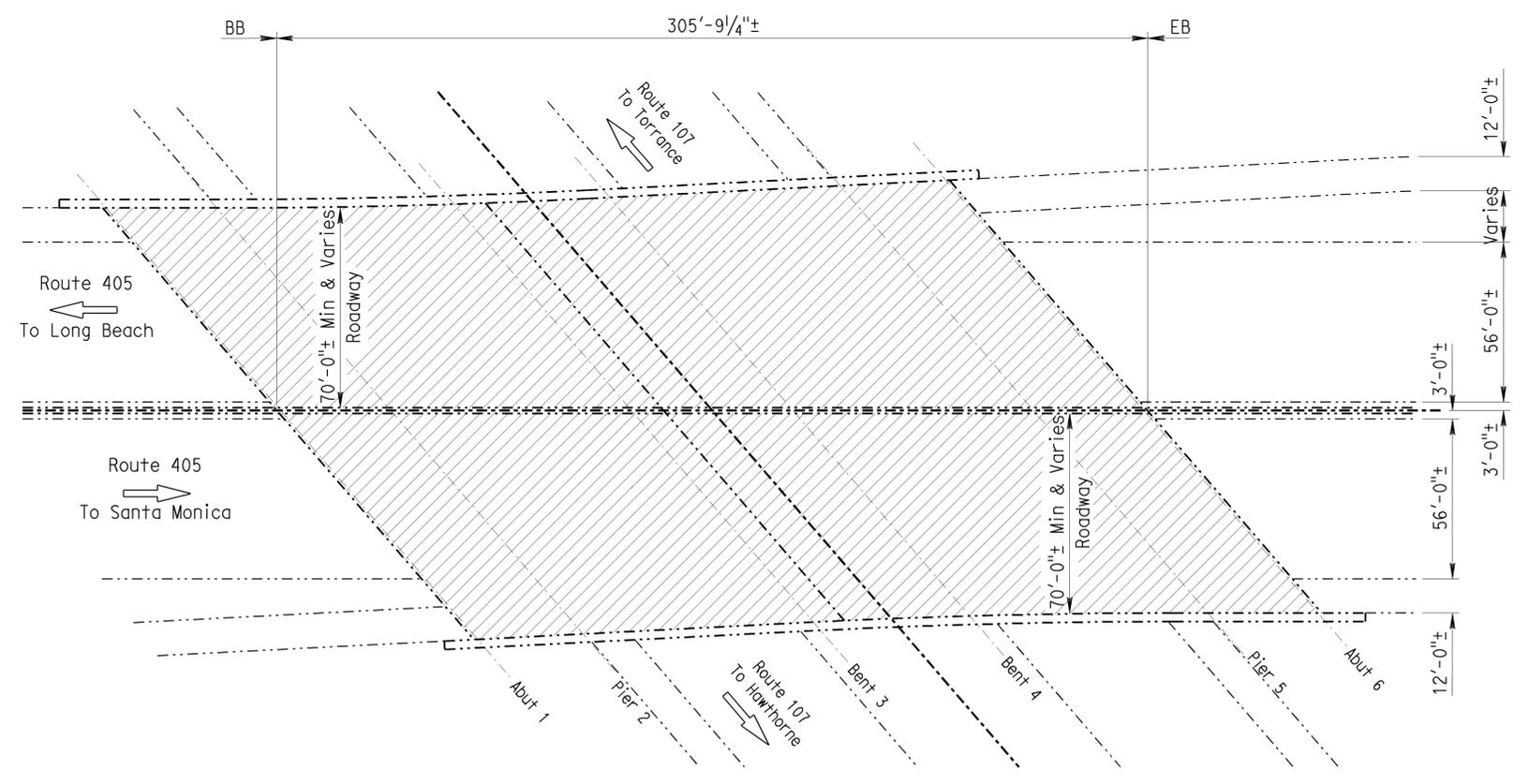
QUANTITIES		
REMOVE UNSOUND CONCRETE	224	CF
CLEAN BRIDGE DECK	44,718	SQFT
RAPID SETTING CONCRETE (PATCH)	224	CF
TREAT BRIDGE DECK	44,718	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	497	GAL
PUBLIC SAFETY PLAN		LUMP SUM

NOTES: (APPLY TO THIS SHEET ONLY)

Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.

Indicates location of remove existing joint seal and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.

166TH STREET UNDERCROSSING
 BR NO. 53-1230, LA, ROUTE 405, PM 17.14
 1" = 30'



ROUTE 405/107 SEPARATION
 BR NO. 53-1231, LA, ROUTE 405, PM 17.56
 1" = 30'

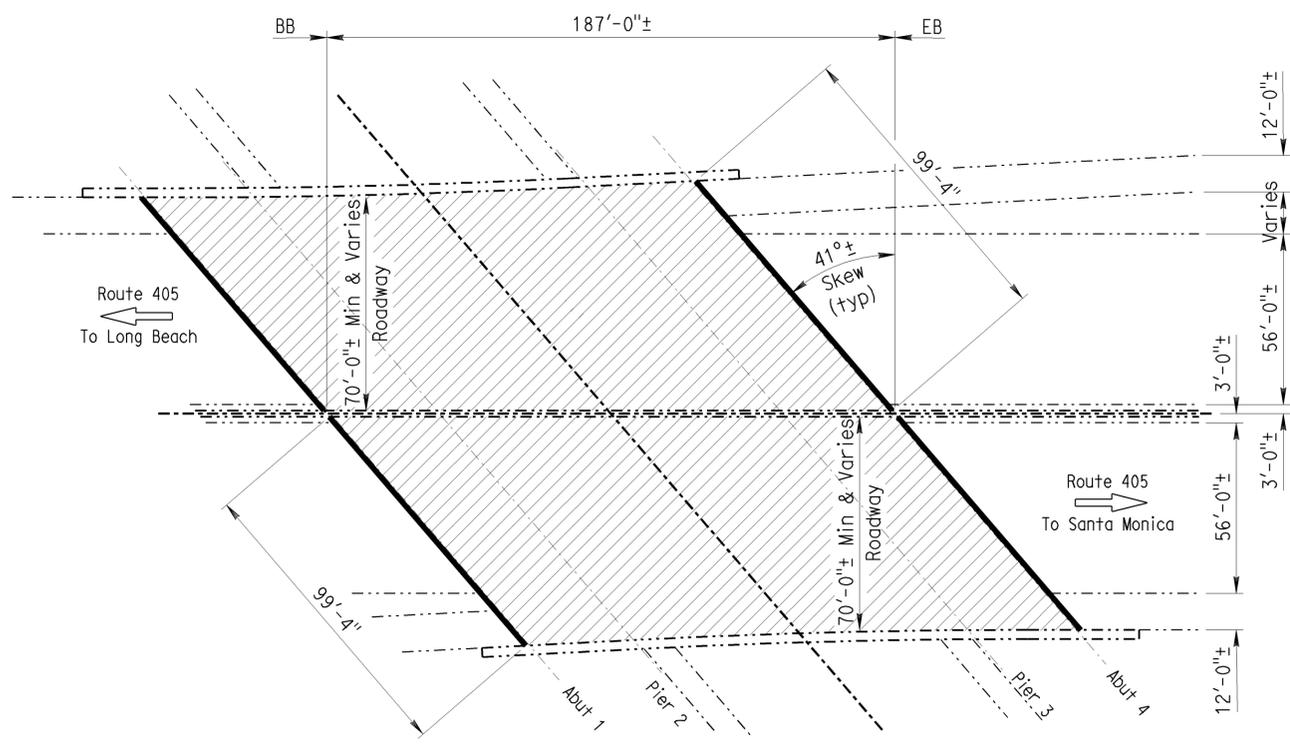
 DESIGN ENGINEER 11-24-09	DESIGN BY T. Powell	CHECKED B. Nguyen	LAYOUT BY Bidwell/Hallstrom	CHECKED T. Powell	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF MAINTENANCE STRUCTURE MAINTENANCE DESIGN	BRIDGE NO. VARIOUS	ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS) GENERAL PLAN NO. 7
	DETAILS BY Bidwell/Hallstrom	CHECKED B. Nguyen	BY Dave Klein	PLANS AND SPECIFICATIONS COMPARED T. Powell			POST MILE VARIES	
QUANTITIES BY T. Powell	CHECKED B. Nguyen				CU 07 EA 3Y6301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	9-9-09	SHEET 7 OF 17

STRUCTURES MAINTENANCE GENERAL PLAN & DETAIL SHEET (ENGLISH) (REV. 10/17/07)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

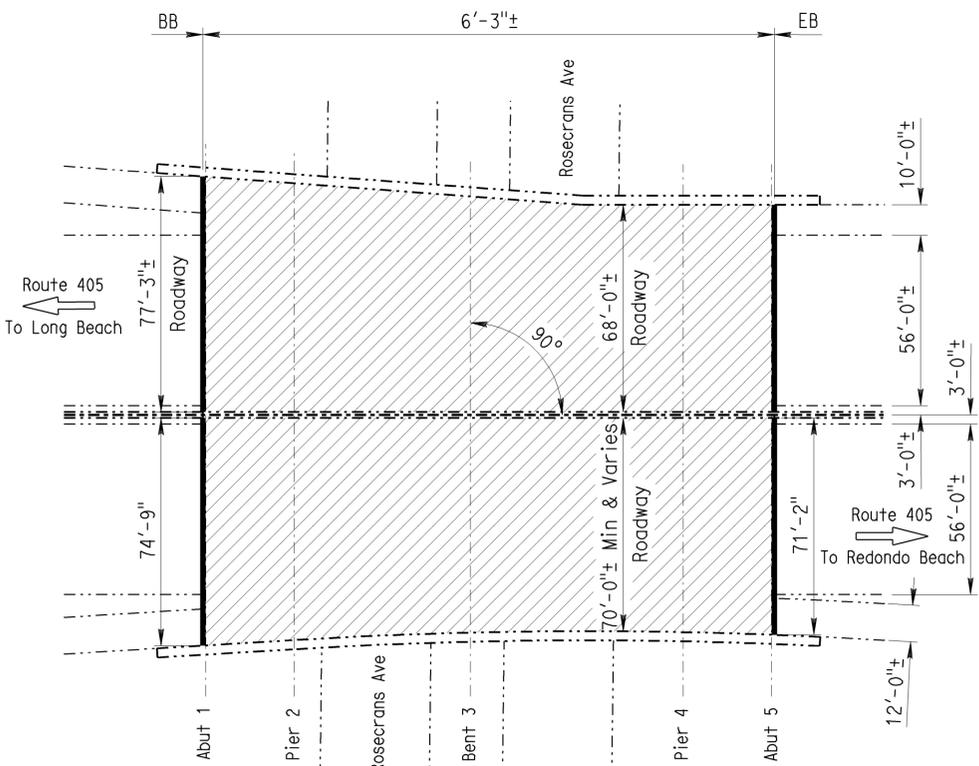
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	27	37
			11-24-09		
REGISTERED CIVIL ENGINEER			DATE		
4-12-10			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>					



INGLEWOOD AVENUE UNDERCROSSING

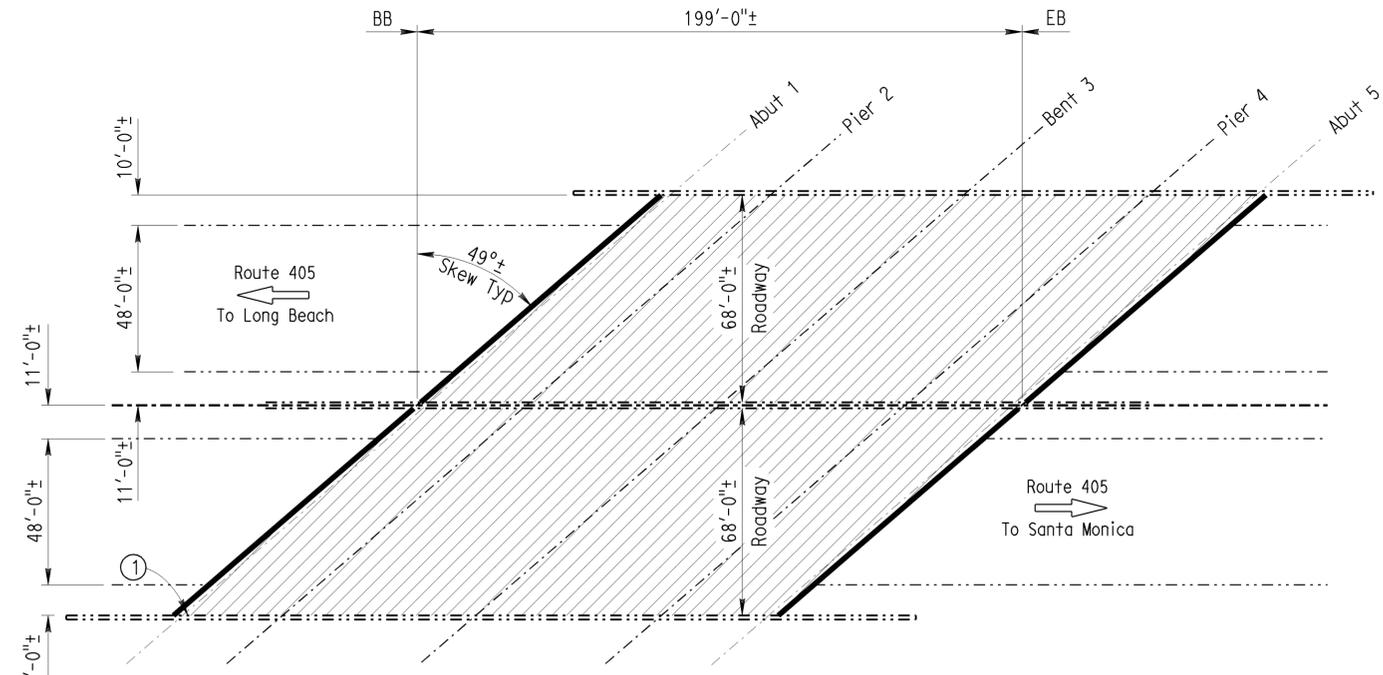
BR NO. 53-1233, LA, ROUTE 405, PM 18.23
1" = 30'



ROSECRANS AVENUE UNDERCROSSING

BR NO. 53-1236, LA, ROUTE 405, PM 19.21
1" = 30'

- NOTES: (APPLY TO THIS SHEET ONLY)
-  Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.
 -  Indicates location of remove existing joint seal and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.
 - ① Patch spalls at existing concrete barrier railing as directed by the Engineer.



MARINE AVENUE UNDERCROSSING

BR NO. 53-1234, LA, ROUTE 405, PM 18.63
1" = 30'

INGLEWOOD AVENUE UC BRIDGE NO. 53-1233

QUANTITIES	
REMOVE UNSOUND CONCRETE	134 CF
CLEAN BRIDGE DECK	26,840 SQFT
CLEAN EXPANSION JOINT	387 LF
RAPID SETTING CONCRETE (PATCH)	134 CF
JOINT SEAL (MR 1")	387 LF
TREAT BRIDGE DECK	26,840 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	298 GAL

MARINE AVENUE UC BRIDGE NO. 53-1234

QUANTITIES	
REMOVE UNSOUND CONCRETE	135 CF
CLEAN BRIDGE DECK	27,064 SQFT
CLEAN EXPANSION JOINT	417 LF
RAPID SETTING CONCRETE (PATCH)	135 CF
REPAIR SPALLED SURFACE AREA	10 SQFT
JOINT SEAL (MR 1")	417 LF
TREAT BRIDGE DECK	27,064 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	301 GAL

ROSECRANS AVENUE UC BRIDGE NO. 53-1236

QUANTITIES	
REMOVE UNSOUND CONCRETE	134 CF
CLEAN BRIDGE DECK	26,884 SQFT
CLEAN EXPANSION JOINT	292 LF
RAPID SETTING CONCRETE (PATCH)	134 CF
JOINT SEAL (MR 1")	292 LF
TREAT BRIDGE DECK	26,884 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	298 GAL

 11-24-09
DESIGN ENGINEER

DESIGN	BY T. Powell	CHECKED B. Nguyen	LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen	SPECIFICATIONS	BY Dave Klein	CHECKED T. Powell
QUANTITIES	BY T. Powell	CHECKED B. Nguyen			

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

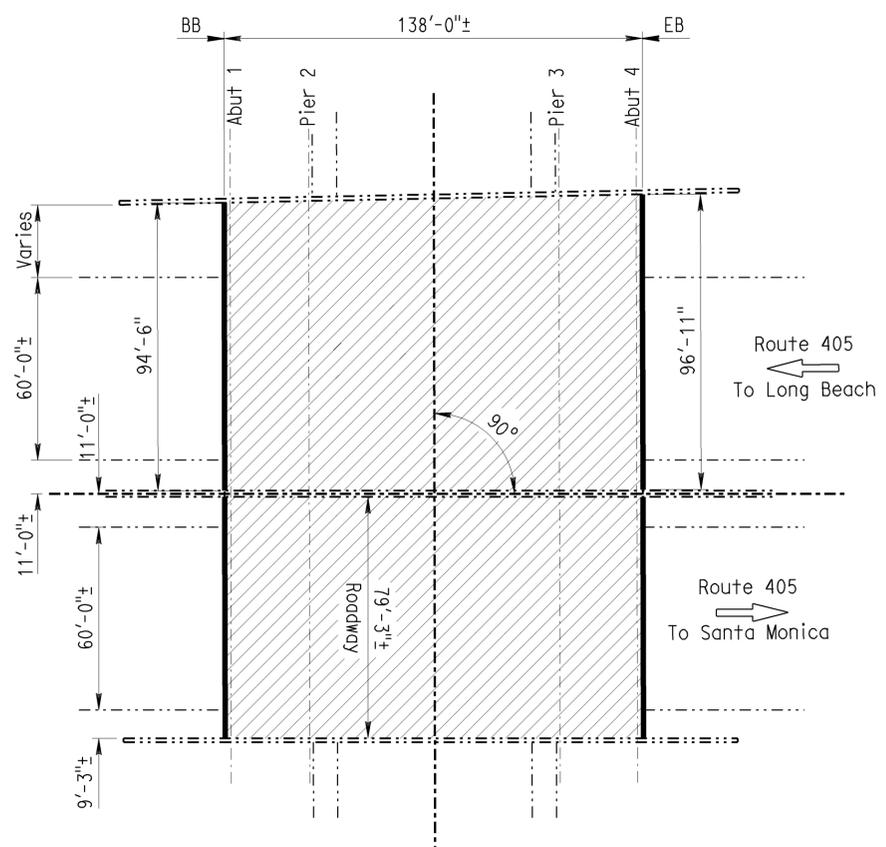
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
POST MILE VARIOUS
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 8

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	28	37

11-24-09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE
 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.

REGISTERED PROFESSIONAL ENGINEER
 TIMOTHY J. POWELL
 No. C 61037
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA



135TH STREET UC BRIDGE NO. 53-1237

QUANTITIES		
REMOVE UNSOUND CONCRETE	121	CF
CLEAN BRIDGE DECK	24,144	SQFT
CLEAN EXPANSION JOINT	351	LF
RAPID SETTING CONCRETE (PATCH)	121	CF
JOINT SEAL (MR 1/2")	351	LF
TREAT BRIDGE DECK	24,144	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	268	GAL

EL SEGUNDO OVERHEAD BRIDGE NO. 53-2388S

QUANTITIES		
BRIDGE REMOVAL (PORTION), LOCATION B	LUMP SUM	
STRUCTURAL CONCRETE, BRIDGE	2	CY
DRILL AND BOND DOWEL	128	LF
JOINT SEAL (MR 1 1/2")	33	LF
BAR REINFORCING STEEL (BRIDGE)	685	LB

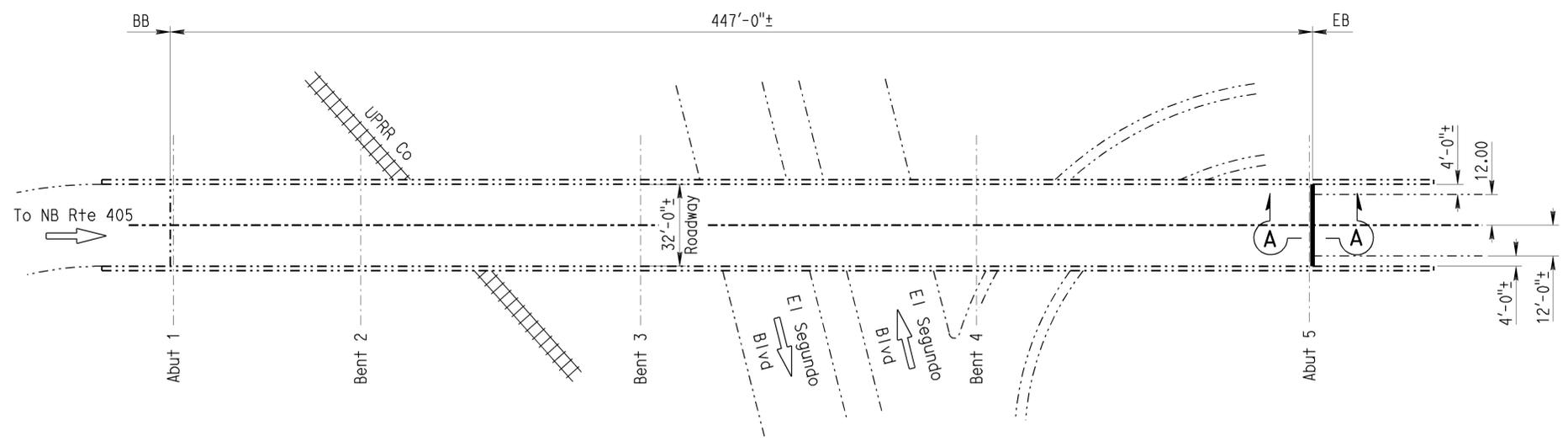
NOTES: (APPLY TO THIS SHEET ONLY)

Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.

Indicates location of remove existing joint seal assembly and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.

For Section A-A see JOINT/HINGE DETAILS sheet.

135TH STREET UNDERCROSSING
 BR NO. 53-1237, LA, ROUTE 405, PM 19.74
 1" = 30'



EL SEGUNDO OVERHEAD
 BR NO. 53-2388S, LA, ROUTE 405, PM 20.17
 1" = 30'

Michael J. Lee
 DESIGN ENGINEER
 11-24-09

DESIGN	BY T. Powell	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY T. Powell	CHECKED B. Nguyen

LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
SPECIFICATIONS	BY Dave Klein	CHECKED T. Powell

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
 POST MILE VARIES
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	29	37

T. Powell
 REGISTERED CIVIL ENGINEER
 11-24-09
 DATE
 4-12-10
 PLANS APPROVAL DATE
 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.

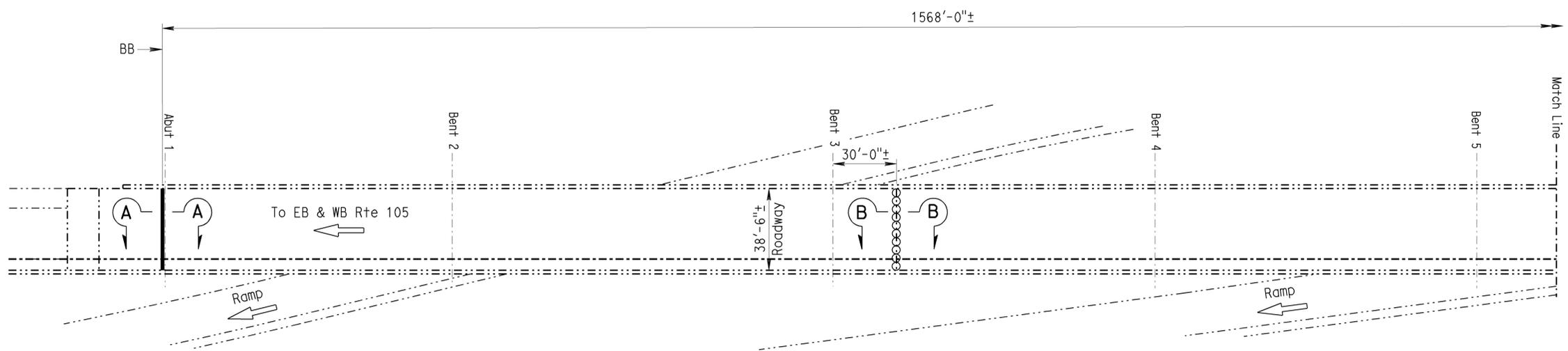
REGISTERED PROFESSIONAL ENGINEER
 TIMOTHY J. POWELL
 No. C 61037
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

NOTES: (APPLY TO THIS SHEET ONLY)

 Indicates location of remove existing joint seal assembly and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.

 Indicates location of remove existing joint seal assembly and place new joint seal assembly. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.

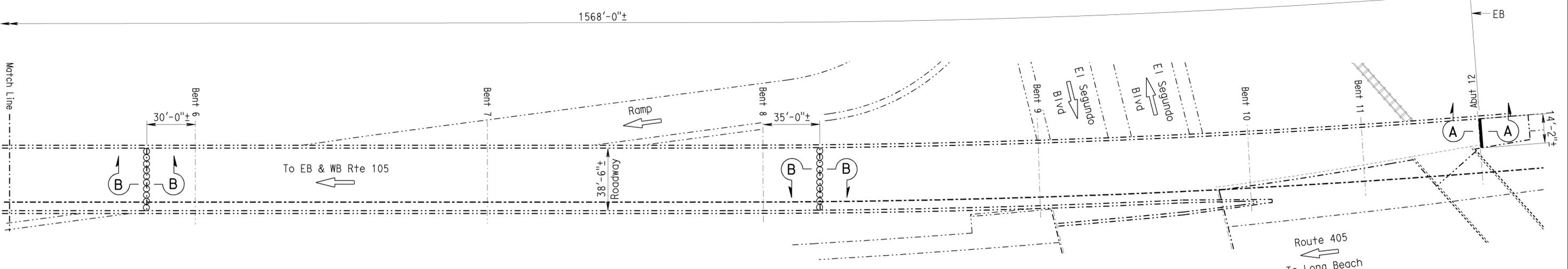
For Section A-A and B-B see JOINT/HINGE DETAILS sheet.



N405-105 CONNECTOR OVERHEAD

BR NO. 53-1238G, LA, ROUTE 405, PM 20.19
1" = 30'

N405-105 CONNECTOR OH		BRIDGE NO. 53-1238G
QUANTITIES		
BRIDGE REMOVAL (PORTION), LOCATION A		LUMP SUM
STRUCTURAL CONCRETE, BRIDGE	13	CY
DRILL AND BOND DOWEL	211	LF
JOINT SEAL (MR 1")	40	LF
JOINT SEAL ASSEMBLY (MR 2")	40	LF
JOINT SEAL (MR 1 1/2")	15	LF
JOINT SEAL ASSEMBLY (MR 2 1/2")	79	LF
BAR REINFORCING STEEL (BRIDGE)	1,818	LB



N405-105 CONNECTOR OVERHEAD

BR NO. 53-1238G, LA, ROUTE 405, PM 20.19
1" = 30'


 11-24-09
 DESIGN ENGINEER

DESIGN	BY T. Powell	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY T. Powell	CHECKED B. Nguyen

LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
SPECIFICATIONS	BY Dave Klein	PLANS AND SPECIFICATIONS COMPARED T. Powell

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
 POST MILE VARIOUS
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 10

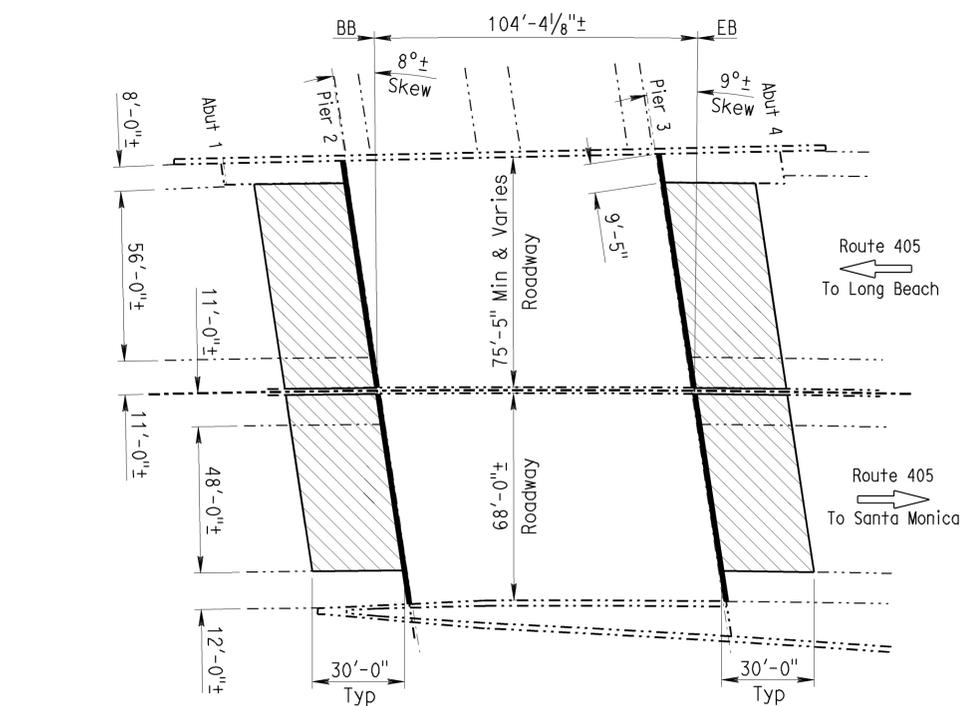
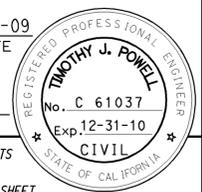
STRUCTURES MAINTENANCE GENERAL PLAN & DETAIL SHEET (ENGLISH) (REV. 10/17/07)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 07
EA 3Y6301

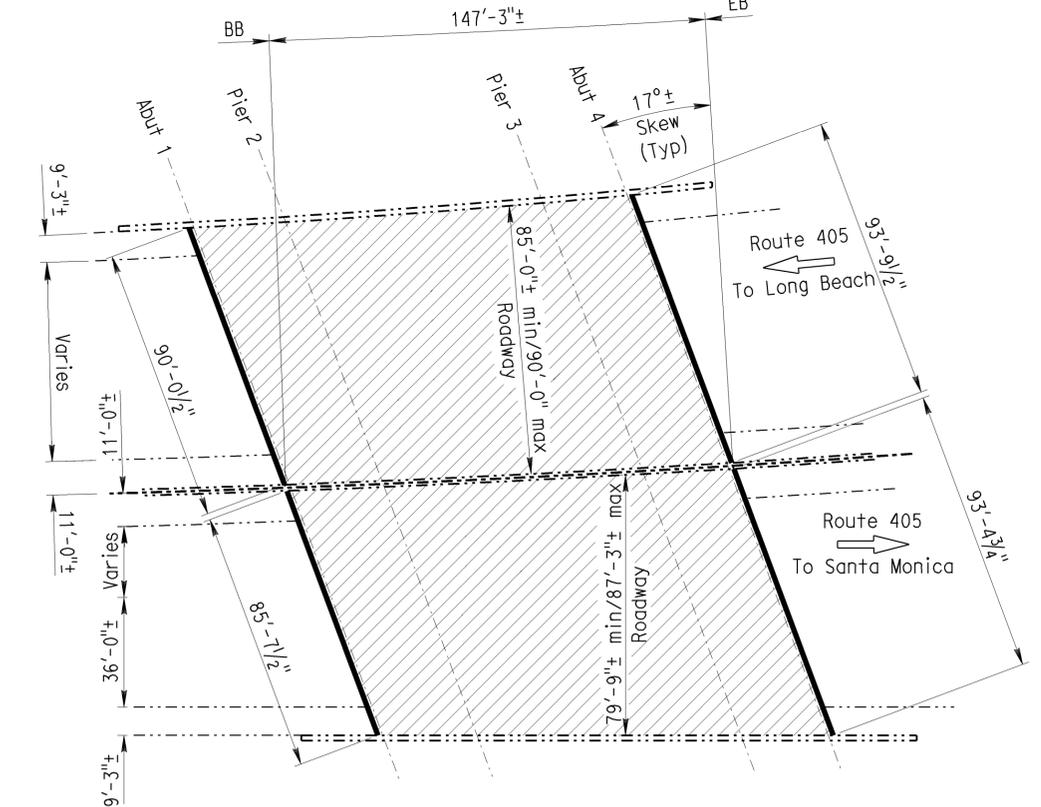
DISREGARD PRINTS BEARING EARLIER REVISION DATES

USERNAME => jbt.powell DATE PLOTTED => 16-DEC-2009 TIME PLOTTED => 08:18



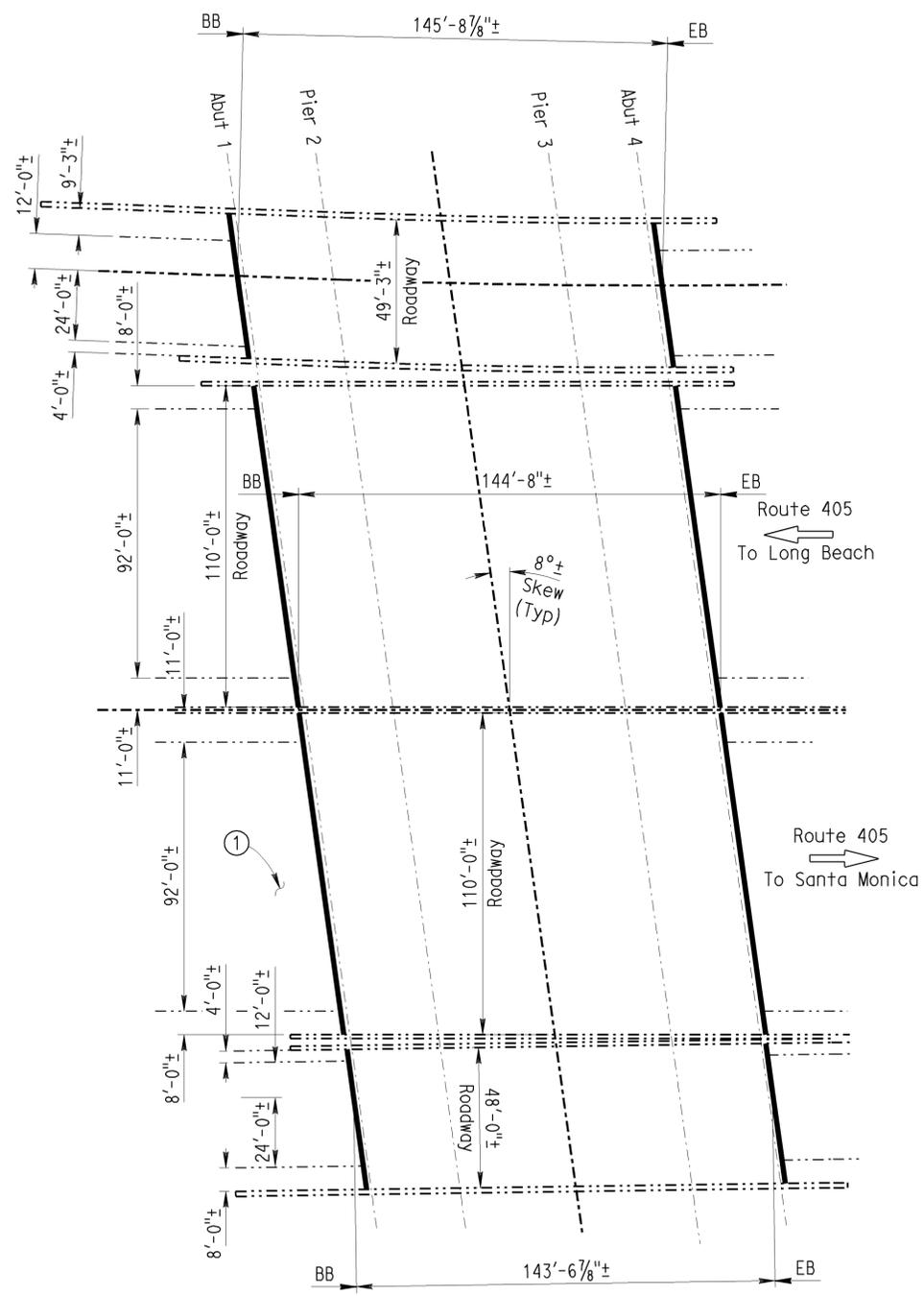
EL SEGUNDO BOULEVARD UNDERCROSSING

BR NO. 53-1239, LA, ROUTE 405, PM 20.22
1" = 30'



120TH STREET UNDERCROSSING

BR NO. 53-1240, LA, ROUTE 405, PM R20.73
1" = 30'



LENNOX BOULEVARD UNDERCROSSING

BR NO. 53-1242, LA, ROUTE 405, PM 21.74
1" = 30'

- NOTES: (APPLY TO THIS SHEET ONLY)
- Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.
 - Indicates location of remove existing structure approach and pave new structure approach Type 30D. See "STRUCTURE APPROACH SLAB DETAILS" sheet.
 - Indicates location of remove existing joint seal and place new joint seal. Repair spalled concrete as directed by the Engineer. See Joint Seal Table on "JOINT SEAL DETAILS" sheet.
 - Remove unsound concrete and patch approach slab spall with rapid setting concrete patch as directed by the Engineer. Approximate area = 10 SQFT x 3" deep.

EL SEGUNDO BOULEVARD UC	BRIDGE NO. 53-1239
QUANTITIES	
AGGREGATE BASE (APPROACH SLAB)	28 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	280 CY
PAVING NOTCH EXTENSION	127 CF
CLEAN EXPANSION JOINT	44 LF
JOINT SEAL (MR 1/2")	300 LF
120TH STREET UC	BRIDGE NO. 53-1240
QUANTITIES	
REMOVE UNSOUND CONCRETE	128 CF
CLEAN BRIDGE DECK	25,474 SQFT
CLEAN EXPANSION JOINT	363 LF
RAPID SETTING CONCRETE (PATCH)	128 CF
JOINT SEAL (MR 1/2")	363 LF
TREAT BRIDGE DECK	25,474 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	283 GAL
LENNOX BOULEVARD UC	BRIDGE NO. 53-1242
QUANTITIES	
REMOVE UNSOUND CONCRETE	3 CF
CLEAN EXPANSION JOINT	644 LF
RAPID SETTING CONCRETE (PATCH)	3 CF
JOINT SEAL (MR 1/2")	644 LF

Michael J. Lee 11-24-09
DESIGN ENGINEER

DESIGN	BY T. Powell	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY T. Powell	CHECKED B. Nguyen

LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
SPECIFICATIONS	BY Dave Klein	CHECKED T. Powell

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

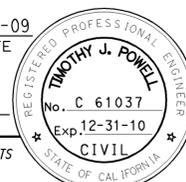
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
POST MILE VARIOUS

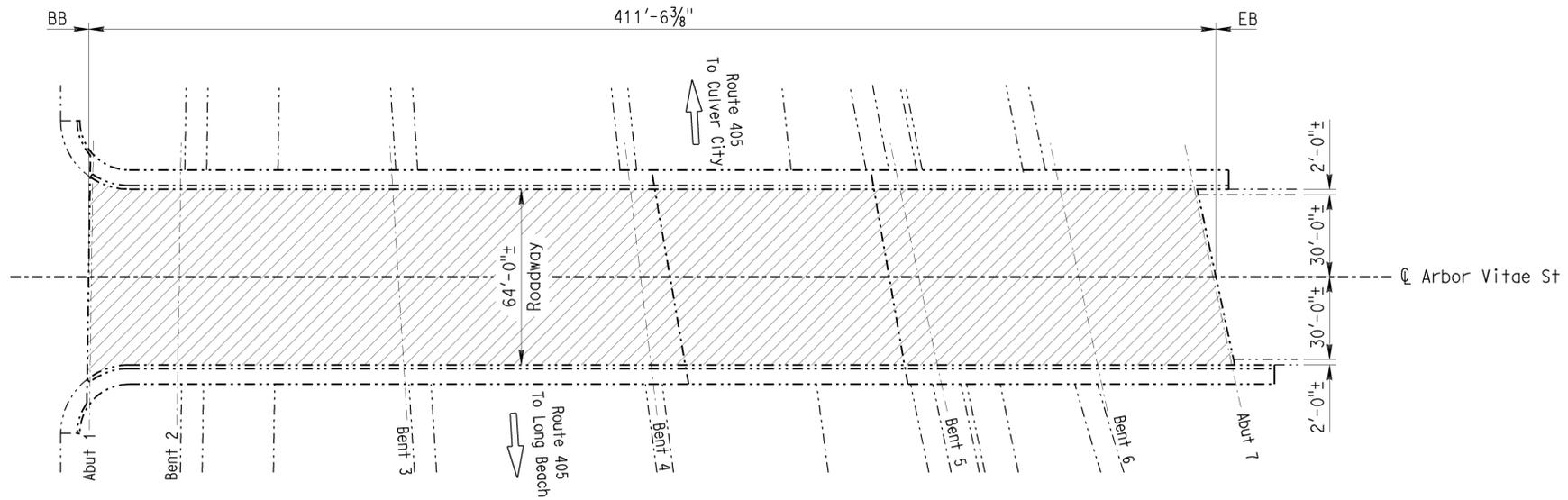
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 11

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	31	37

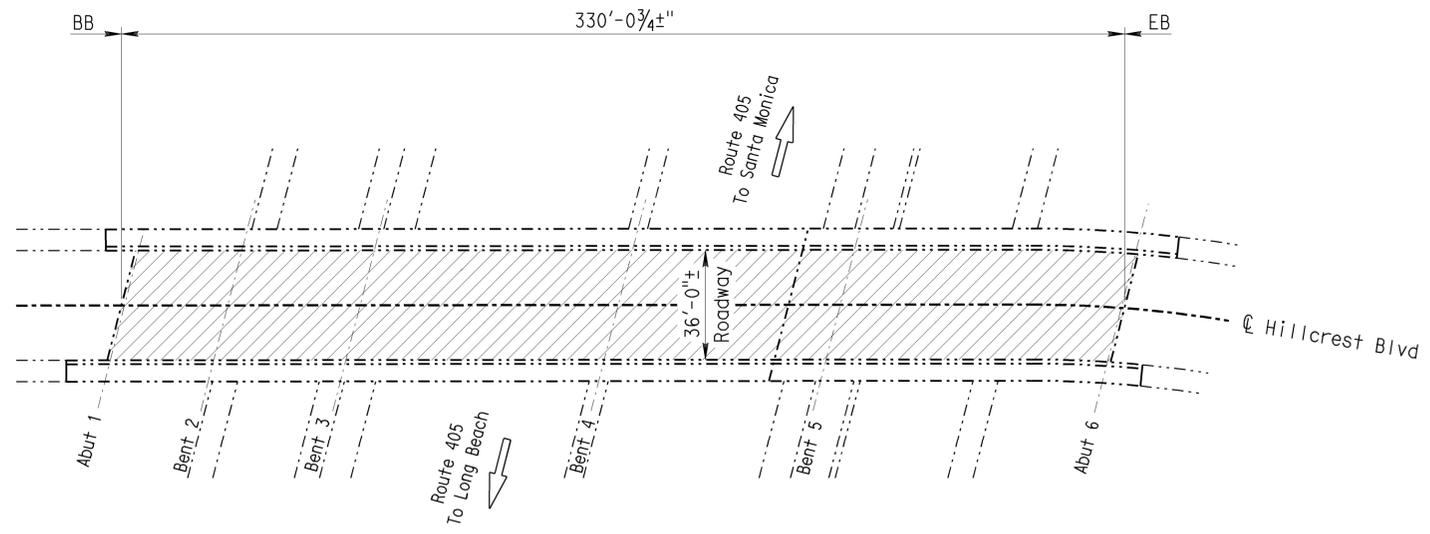
 11-24-09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



NOTES: (APPLY TO THIS SHEET ONLY)
 Indicates limits of clean and treat bridge deck with high molecular weight methacrylate. Remove unsound concrete and patch with rapid setting concrete prior to bridge deck treatment.




ARBOR VITAE STREET OVERCROSSING
 BR NO. 53-1244, LA, ROUTE 405, PM 22.74
 1" = 30'




HILLCREST BOULEVARD OVERCROSSING
 BR NO. 53-1245, LA, ROUTE 405, PM 23.00
 1" = 30'

ARBOR VITAE STREET OC BRIDGE NO. 53-1244

QUANTITIES		
REMOVE UNSOUND CONCRETE	132	CF
CLEAN BRIDGE DECK	26,368	SQFT
RAPID SETTING CONCRETE (PATCH)	132	CF
TREAT BRIDGE DECK	26,368	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	293	GAL
PUBLIC SAFETY PLAN		LUMP SUM

HILLCREST BOULEVARD OC BRIDGE NO. 53-1245

QUANTITIES		
REMOVE UNSOUND CONCRETE	59	CF
CLEAN BRIDGE DECK	11,882	SQFT
RAPID SETTING CONCRETE (PATCH)	59	CF
TREAT BRIDGE DECK	11,882	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	132	GAL
PUBLIC SAFETY PLAN		LUMP SUM

 11-24-09
 DESIGN ENGINEER

DESIGN	BY T. Powell	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY T. Powell	CHECKED B. Nguyen

LAYOUT	BY Bidwell/Hallstrom	CHECKED T. Powell
SPECIFICATIONS	BY Dave Klein	CHECKED T. Powell

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
 POST MILE VARIOUS
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
GENERAL PLAN NO. 12

USERNAME => jbt.powell DATE PLOTTED => 16-DEC-2009 TIME PLOTTED => 08:18

JOINT SEAL TABLE

BRIDGE NAME	BRIDGE NUMBER	LOCATION		MINIMUM "MR" (inches)	APPROXIMATE LENGTH (feet)	EXISTING WATERSTOP	APPROX DEPTH TO CLEAN EXPANSION JOINT (inches)	APPROXIMATE DEPTH OF JOINT SPALLS * (inches)	APPROXIMATE WIDTH OF JOINT SPALLS * (inches)	APPROXIMATE LENGTH OF JOINT SPALLS * (feet)
		Abutment	Backwall							
FIGUEROA STREET UNDERCROSSING	53-1140	Abut 1	BW	1	148.1	No	12.0	3	6	5
		Abut 5	BW	1	148.1	No	12.0	3	6	5
N405/N&S110 CONNECTOR	53-1141G	Abut 1	BW	1	42.6	No	12.0	3	6	5
405/N110-N405 SEPARATION	53-1138	Abut 1	BW	1/2	230.6	No	12.0	3	6	5
		Abut 2	BW	1/2	299.8	No	12.0	3	6	5
S405-N110/110 SEPARATION	53-1045F	Abut 1	BW	1	34.8	No	12.0	3	6	5
		Abut 5	BW	1	34.8	No	12.0	3	6	5
ROUTE 405/110 SEPARATION	53-1137	Abut 1	BW	1	184.7	No	12.0	3	6	5
		Abut 5	BW	1	175.9	No	12.0	3	6	5
N405-N110/N110 SEPARATION	53-2670G	Abut 1	BW	2	39.5	No	12.0	3	6	5
		Abut 6	BW	2	39.5	No	12.0	3	6	5
405/110-S405 SEPARATION	53-1142	Abut 1	PN	1/2	204.5	No	12.0	3	6	5
		Abut 2	PN	1/2	180.5	No	12.0	3	6	5
182ND STREET UNDERCROSSING	53-1176	Abut 1	BW	1	85.8	No	12.0	3	6	5
REDONDO BEACH BLVD UNDERCROSSING	53-1229	Abut 4	BW	1/2	68.5	No	12.0	3	6	5
166TH STREET UNDERCROSSING	53-1230	Abut 1	BW	1	85.6	No	12.0	3	6	5
INGLEWOOD AVENUE UNDERCROSSING	53-1233	Abut 1	BW	1	193.2	No	12.0	3	6	5
		Abut 4	BW	1	193.2	No	12.0	3	6	5
MARINE AVENUE UNDERCROSSING	53-1234	Abut 1	BW	1	208.8	No	12.0	3	6	5
		Abut 2	BW	1	208.8	No	12.0	3	6	5
ROSECRANS AVENUE UNDERCROSSING	53-1236	Abut 1	BW	1	153.2	No	12.0	3	6	5
		Abut 5	BW	1	140.2	No	12.0	3	6	5
135TH STREET UNDERCROSSING	53-1237	Abut 1	BW	1/2	174.8	No	12.0	3	6	5
		Abut 4	BW	1/2	177.2	No	12.0	3	6	5
EL SEGUNDO BLVD OVERHEAD	53-2388S	Abut 5	BW	1/2	33	No	12.0	3	6	5
N405-105 CONNECTOR OVERHEAD	53-1238G	Abut 1	BW	1	39.5	No	12.0	3	6	5
		Bent 3	BW	2 *	39.5	No	12.0	3	6	5
		Bent 6	BW	2 1/2 *	39.5	No	12.0	3	6	5
		Bent 8	BW	2 1/2 *	39.5	No	12.0	3	6	5
		Abut 12	BW	1/2	14.7	No	12.0	3	6	5
EL SEGUNDO BLVD UNDERCROSSING	53-1239	Pier 2	BW	1/2	148.4	No	12.0	3	6	5
		Pier 3	BW	1/2	150.3	No	12.0	3	6	5
120TH STREET UNDERCROSSING	53-1240	Abut 1	BW	1/2	176.7	No	12.0	3	6	5
		Abut 4	BW	1/2	188.1	No	12.0	3	6	5
LENNOX BLVD UNDERCROSSING	53-1242	Abut 1	BW	1/2	322.4	No	12.0	3	6	5
		Abut 4	BW	1/2	322.4	No	12.0	3	6	5

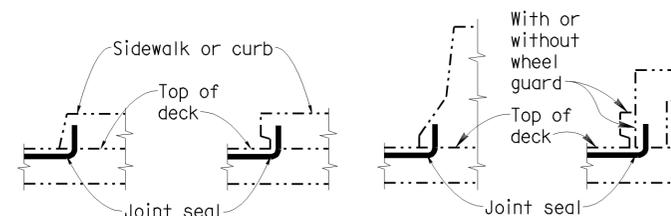
LEGEND:
 BW = Backwall
 PN = Paving Notch
 * = Indicates Joint Seal Assembly

The following note applies to JOINT SEAL TYPE A:

Install Type A joint seal 3" up into curb or rail on the low side of the deck where joint matches curb or rail joint. For details not shown see 

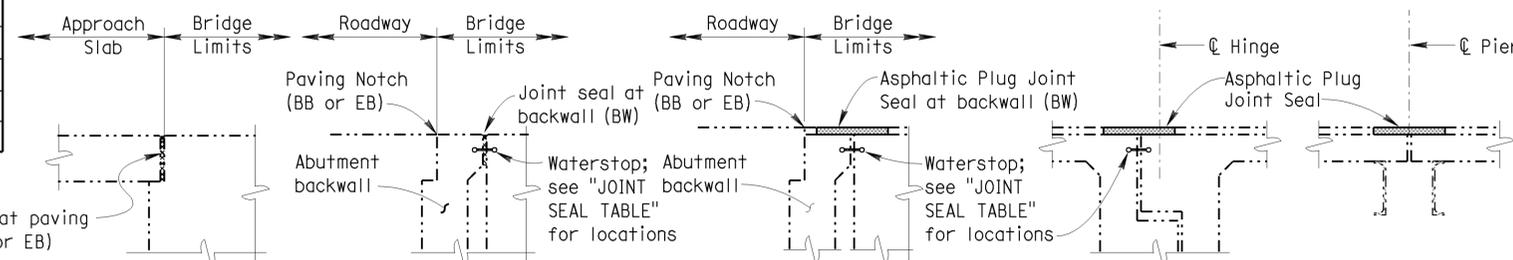
The following notes apply to JOINT SEAL TYPE B:

- Seal must satisfy both minimum Movement Rating (MR) and minimum W1 requirements.
- Minimum W1 is the calculated maximum width of the joint based on field measurements. After the joints have been cleaned, minimum W1 is to be calculated by the Engineer.
- W1 shall be the smaller of the values determined as follows:
 - 0.85 times the manufacturer's designed minimum uncompressed width of the seal.
 - The width of the seal on the third successive test cycle of the pressure deflection test, when compressed to an average pressure of 3 psi.
- Bend Type B joint seal 6" up into curb or rail on the low side of the deck where deck joint matches curb or rail joint.
- For details not shown see 



JOINT SEAL AT LOW SIDE OF DECK

Details shown for illustration purposes only. For use only where deck joint matches the barrier rail joint.
NO SCALE



JOINT SEAL LOCATION

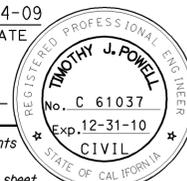
NO SCALE

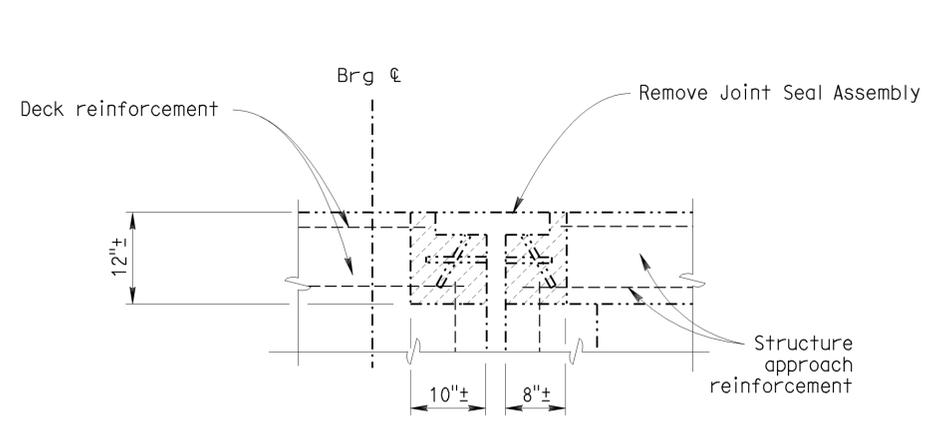
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	32	37

 11-24-09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE
 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.

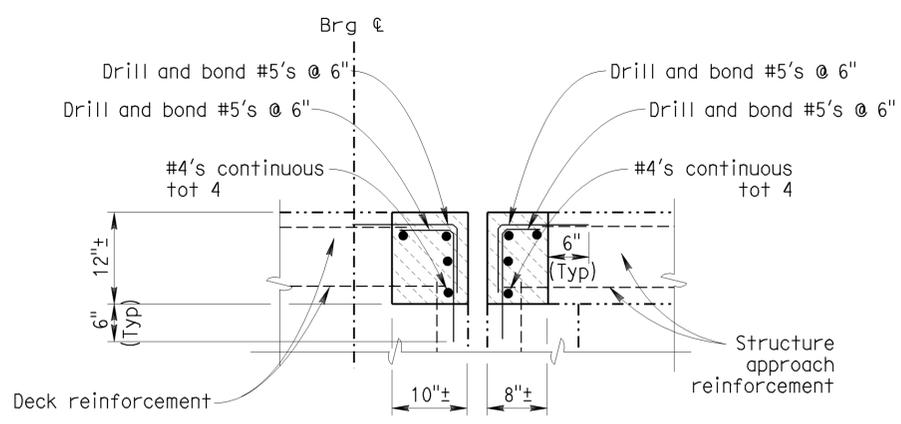
REGISTERED PROFESSIONAL ENGINEER
 TIMOTHY J. POWELL
 No. C 61037
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	33	37


 11-24-09
 REGISTERED CIVIL ENGINEER DATE
 4-12-10
 PLANS APPROVAL DATE
 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.



EXISTING



RECONSTRUCTION

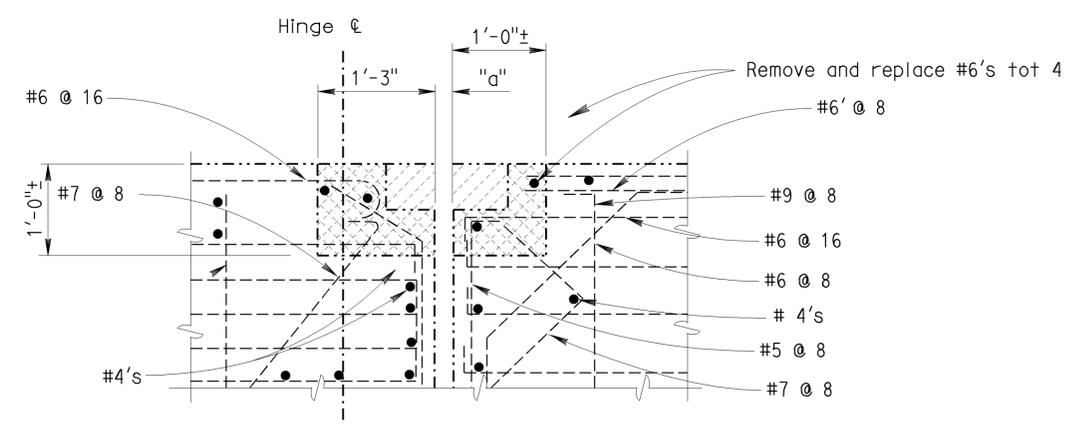
-  Indicates limits of remove existing concrete and joint seal assembly.
-  Indicates limits of place new structural concrete and reinforcement.

SECTION A-A

Br. #53-2388S Abut 5 and Br. #53-1238G Abut 1 & 12
 1" = 1'
 Existing reinforcement may be encountered during reconstruction.

**GENERAL NOTES
LOAD FACTOR DESIGN**

- DESIGN: BRIDGE DESIGN SPECIFICATIONS (2006 AASHTO with Interims and Revisions by CALTRANS)
- DEAD LOAD: Includes 35 psf for future wearing surface.
- LIVE LOADING: HL93 and permit design load.
- REINFORCED CONCRETE:
 - fy = 60 ksi
 - f'c = 3.6 ksi
 - n = 8



SECTION B-B

Br. #53-1238G Hinges at Bent 3, 6 and 8
 1" = 1'

Bend existing reinforcement as needed to place new assembly.
 Replace transverse reinforcement with new. For "d" dimension see "JOINT SEAL ASSEMBLY" sheet

MOMENT DEMAND/FOOT (kips-ft/ft)	BOLT SHEAR/FOOT (kips/ft)	BOLT TENSION (kips)
5.2	8	8

Plate deflection shall not exceed s/300 (s = span of plate).
 Maximum anchor bolt spacing = 0'-9".

STRUCTURES MAINTENANCE GENERAL PLAN & DETAIL SHEET (ENGLISH) (REV. 5/17/06)	DESIGN	BY T. Powell	CHECKED B. Nguyen	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF MAINTENANCE STRUCTURE MAINTENANCE DESIGN	BRIDGE NO.	ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
	DETAILS	BY Powell/Hallstrom	CHECKED B. Nguyen			VARIOUS	
	QUANTITIES	BY T. Powell	CHECKED B. Nguyen			VARIES	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3				CU 07 EA 3Y6301	DISREGARD PRINTS BEARING EARLIER REVISION DATES → 9-16-09		SHEET 14 OF 17

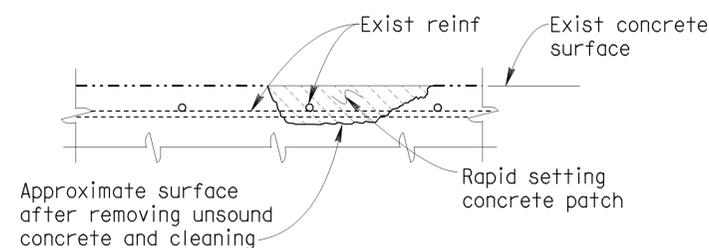
FILE => 07-3y6301_14joint-hinge_defs.dgn

USERNAME => jbt.powell DATE PLOTTED => 16-DEC-2009 TIME PLOTTED => 08:19

DECK REPAIR TABLE

BRIDGE NAME	BRIDGE NUMBER	APPROXIMATE AREA DAMAGED (PERCENT)	APPROXIMATE DEPTH (INCHES)
213TH STREET UNDERCROSSING	53-1263	2	3
TORRANCE LATERAL CHANNEL	53-1513	2	3
FIGUEROA STREET UNDERCROSSING	53-1140	2	3
ROUTE 405/110 SEPARATION	53-1137	2	3
VERMONT 190TH UNDERCROSSING	53-1144	2	3
WESTERN AVENUE UNDERCROSSING	53-1172	2	3
CRENSHAW BLVD UNDERCROSSING	53-1175	2	3
182ND STREET UNDERCROSSING	53-1176	2	3
YUKON AVENUE UNDERCROSSING	53-1177	2	3
REDONDO BEACH BLVD UNDERCROSSING	53-1229	2	3
166TH STREET UNDERCROSSING	53-1230	2	3
ROUTE 405/107 SEPARATION	53-1231	2	3
INGLEWOOD AVENUE UNDERCROSSING	53-1233	2	3
MARINE AVENUE UNDERCROSSING	53-1234	2	3
ROSECRANS AVENUE UNDERCROSSING	53-1236	2	3
135TH STREET UNDERCROSSING	53-1237	2	3
120TH STREET UNDERCROSSING	53-1240	2	3
ARBOR VITAE STREET OVERCROSSING	53-1244	2	3
HILLCREST BLVD OVERCROSSING	53-1245	2	3

Remove unsound concrete and patch with rapid setting concrete. Locations to be determined by the Engineer. For details see "DECK REPAIR DETAIL".



SPALL REPAIR DETAIL

Reinforcement may be encountered during concrete removal. NO SCALE

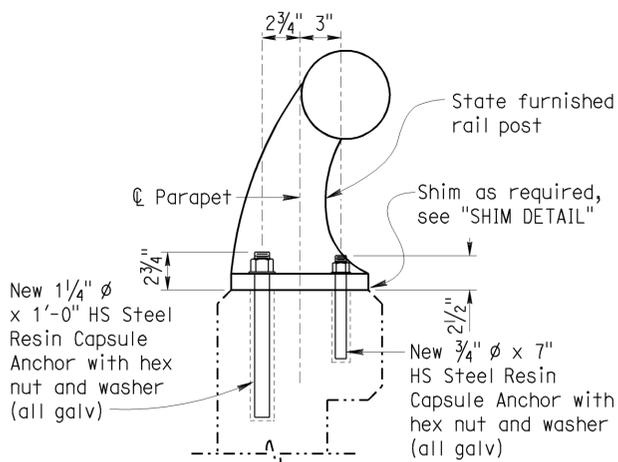
POST AND RAIL REPAIR TABLE

BRIDGE NAME	BRIDGE NUMBER	DAMAGED POST (EACH)	STATE FURNISHED METAL TUBULAR RAIL (FEET)	REMOVE UNSOUND CONCRETE & PATCH WITH RAPID SETTING CONCRETE
				VOLUME (ft ³)
WESTERN AVENUE UNDERCROSSING	53-1172	1	20	2

Install missing tubular rail and repair or replace damaged post. Locations to be determined by the Engineer. All tubular railing elements and hardware are provided by CALTRANS from the maintenance yard.

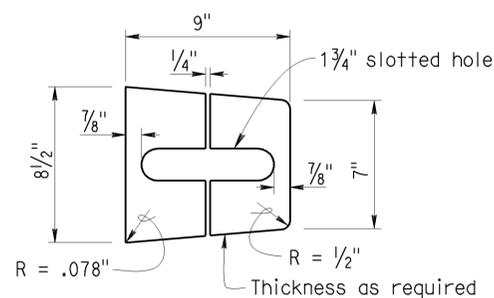
BARRIER CONCRETE RAIL SPALL REPAIR TABLE

BRIDGE NUMBER	SPALL SURFACE AREA (ft ²)	LOCATION
53-1513	10	Throughout int. & ext. faces
53-1141G	10	Throughout int. faces
53-1045F	10	Throughout int. & ext. faces
53-1137	10	Edge of deck
53-1142	10	Throughout int. faces
53-1172	10	Throughout int. faces
53-1177	10	Throughout int. faces
53-1229	10	Throughout int. faces
53-1234	10	Rail approach



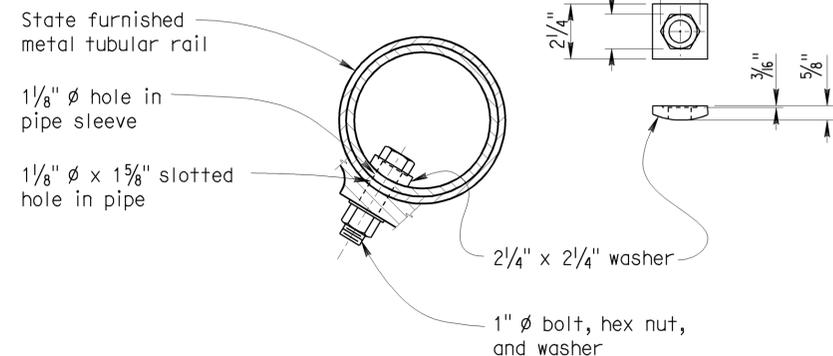
RAIL POST ANCHOR BOLT DETAIL

NO SCALE



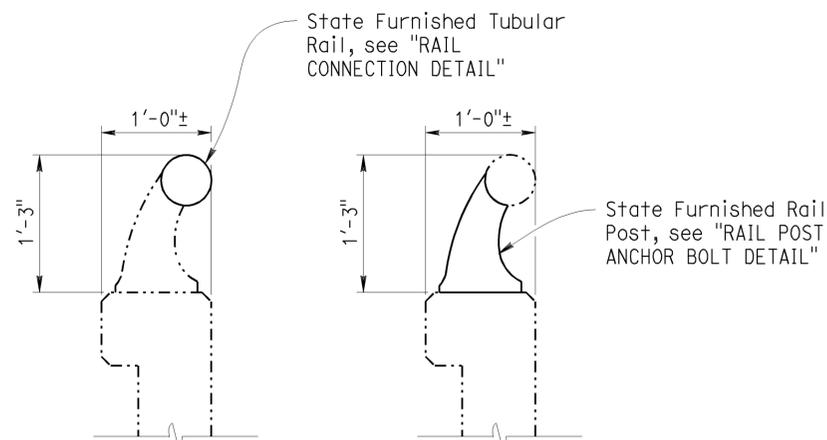
SHIM DETAIL

NO SCALE



RAIL CONNECTION DETAIL

NO SCALE



RAIL POST DETAIL

NO SCALE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	405	10.9/23.0	34	37


 11-24-09
 REGISTERED CIVIL ENGINEER DATE

4-12-10
 PLANS APPROVAL DATE

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.

REGISTERED PROFESSIONAL ENGINEER
 TIMOTHY J. POWELL
 No. C 61037
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

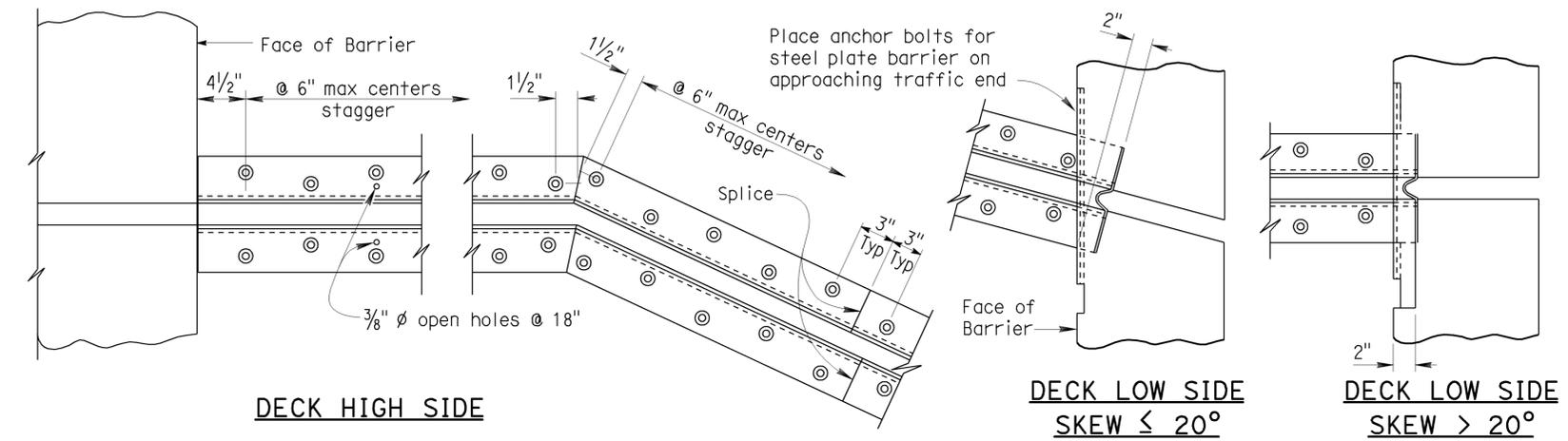
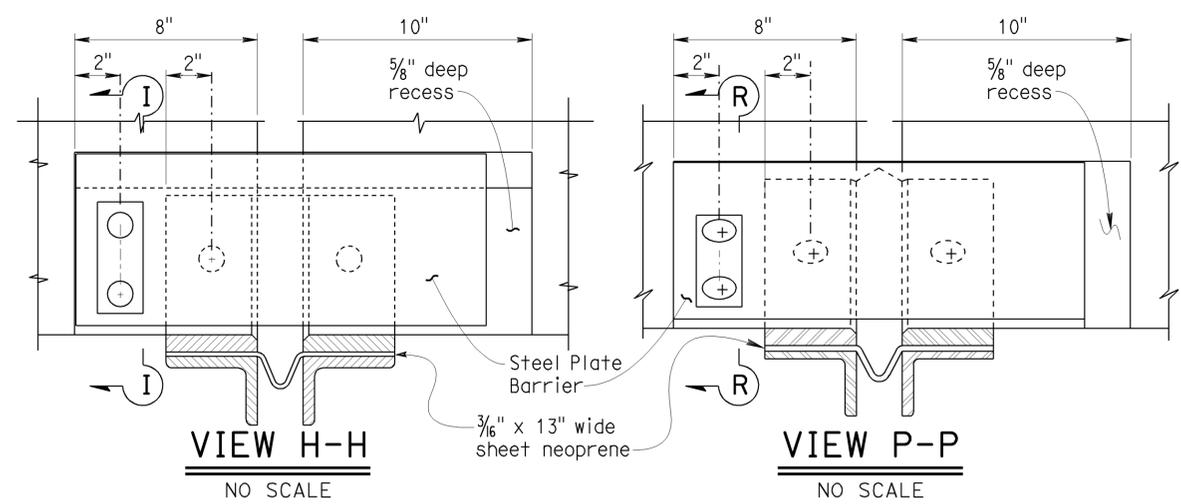
DESIGN	BY B. Nguyen	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY B. Nguyen	CHECKED B. Nguyen

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

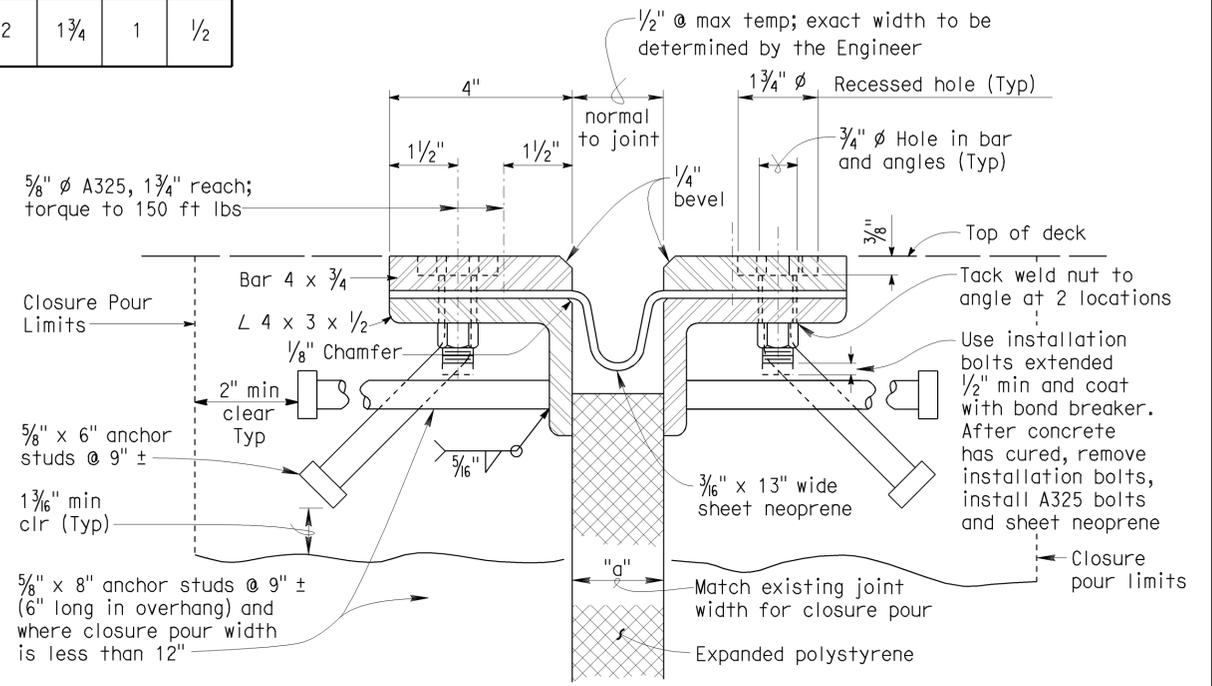
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
POST MILE VARIOUS
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
DECK AND RAIL DETAILS

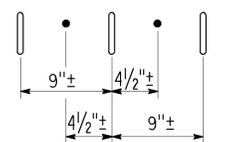
JOINT INFORMATION							
BRIDGE NUMBER	LOCATION	"MR" (inches)	Dimension "a" (inches)				
			28°F	50°F	70°F	90°F	110°F
53-1238G	Hinge at Bent 3	2	2 1/2	2	1 3/4	1 1/4	3/4
	Hinge at Bent 5	2 1/2	3	2	1 3/4	1	1/2
	Hinge at Bent 8	2 1/2	3	2	1 3/4	1	1/2



BOLT & PLATE LAYOUT PLAN
NO SCALE



Note:
Stagger anchor studs @ 4 1/2" on centers thus:

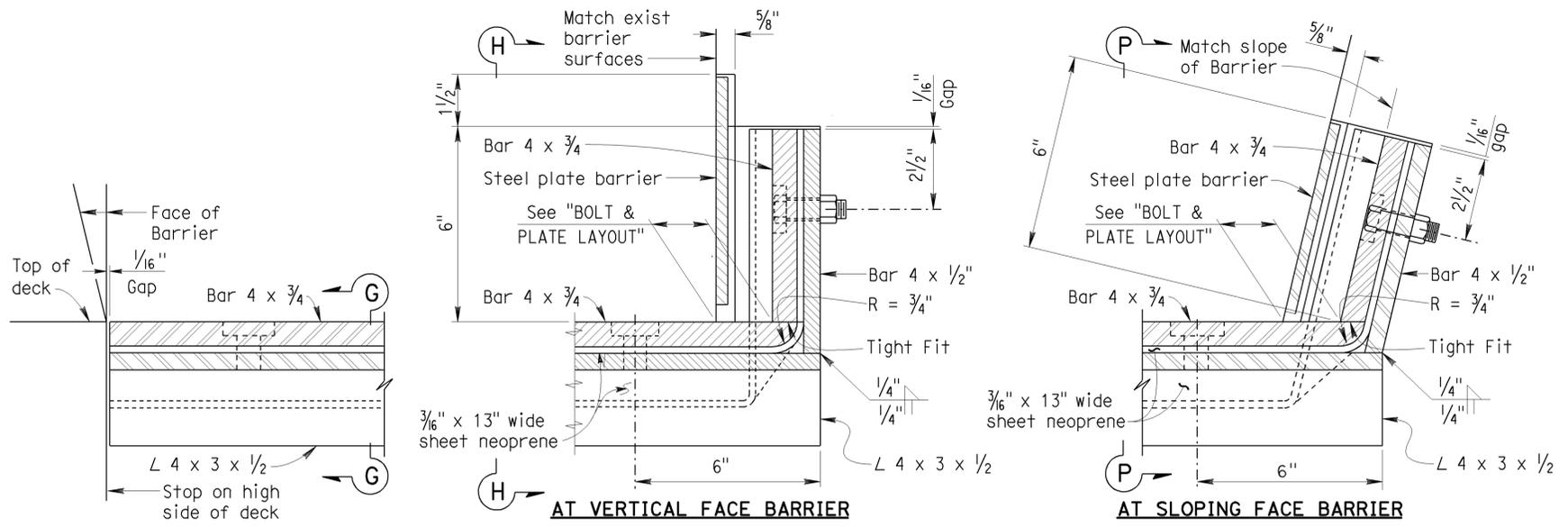


NOTES:
Full penetration butt welds may be substituted for fillet welds on all anchor studs.

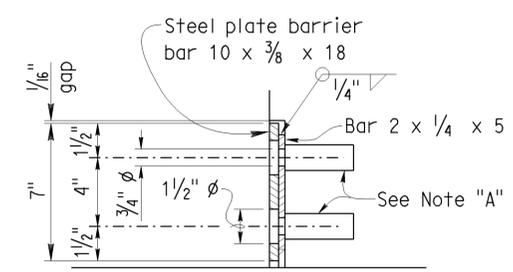
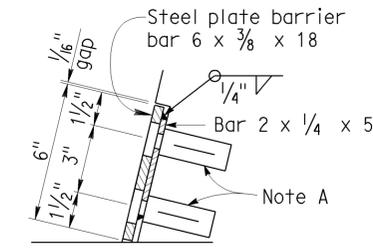
Alternate types of anchor studs may be permitted subject to the approval by the Engineer.
Use joint at crown of roadway, at any change in transverse slope in deck and at changes in horizontal direction. Place other joints at or near lane lines. All metal parts to be painted or galvanized after fabrication.

Sheet neoprene shall be fabricated in one continuous piece or joints shall be vulcanized. Neoprene shall be fabricated to bend around corners. 1" holes in neoprene sheets shall be drilled or punched so that the neoprene is not distorted at the time of installation.

NOTE A:
Insert assembly or expansion anchorage for 5/8" diameter x 1 3/4" A325 bolt.



BARRIER DETAIL
NO SCALE



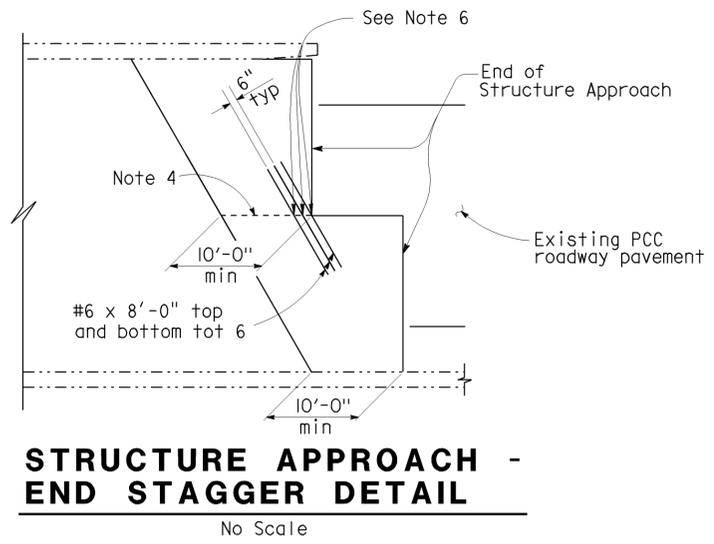
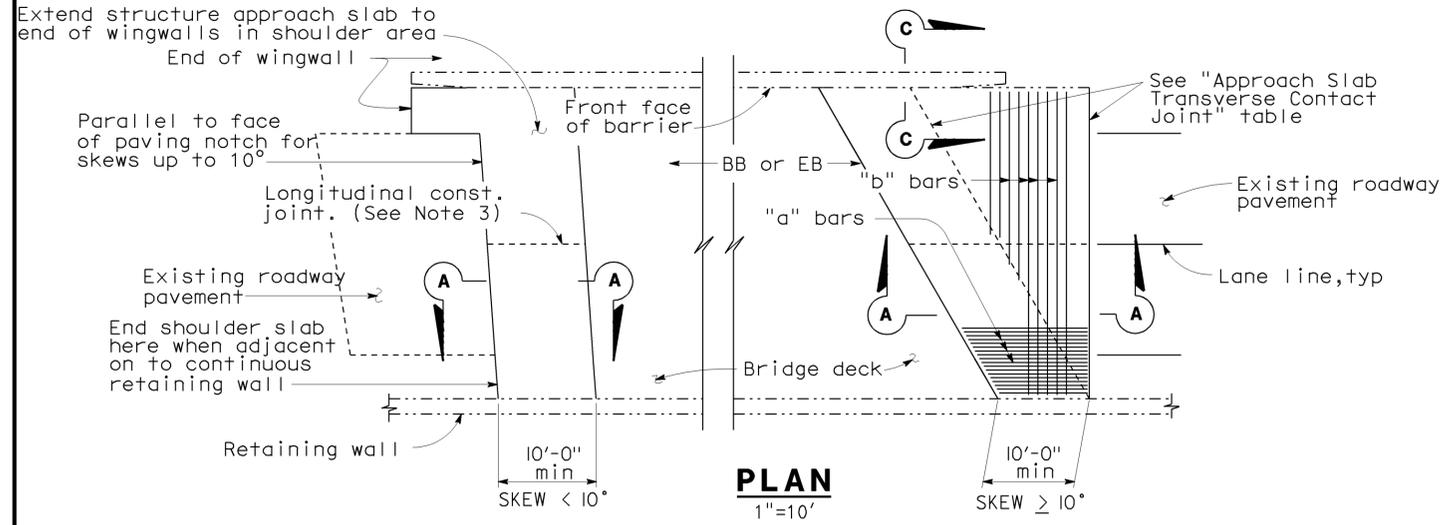
DECK HIGH SIDE

DESIGN	BY B. Nguyen	CHECKED B. Nguyen
DETAILS	BY Bidwell/Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY B. Nguyen	CHECKED B. Nguyen

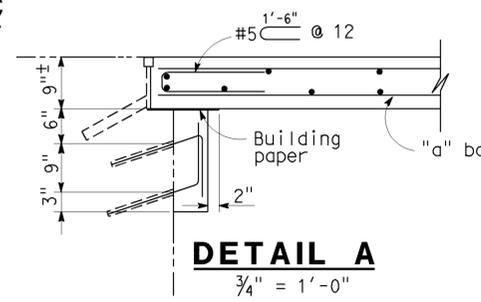
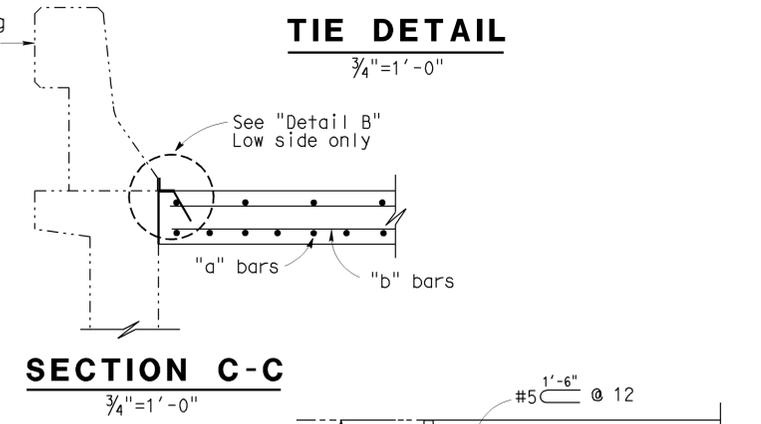
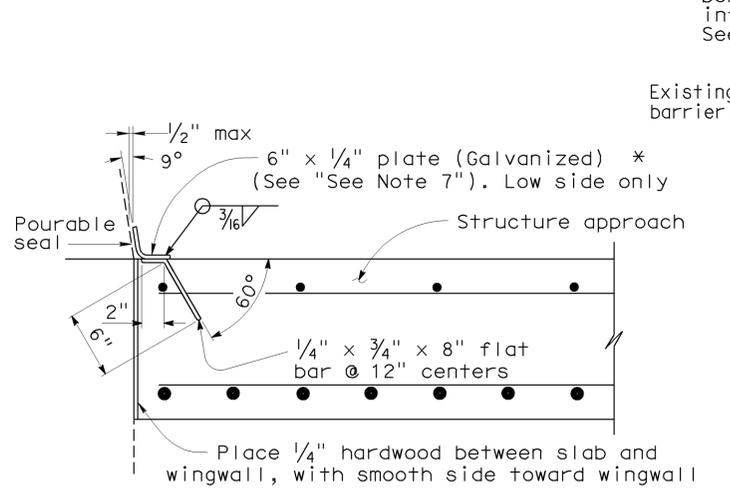
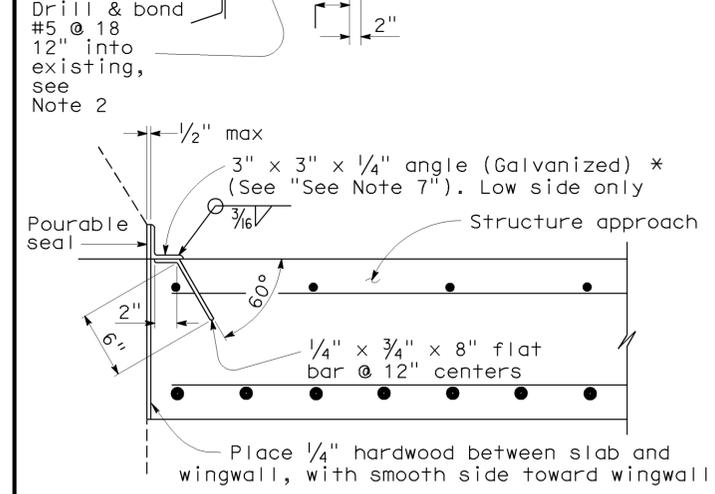
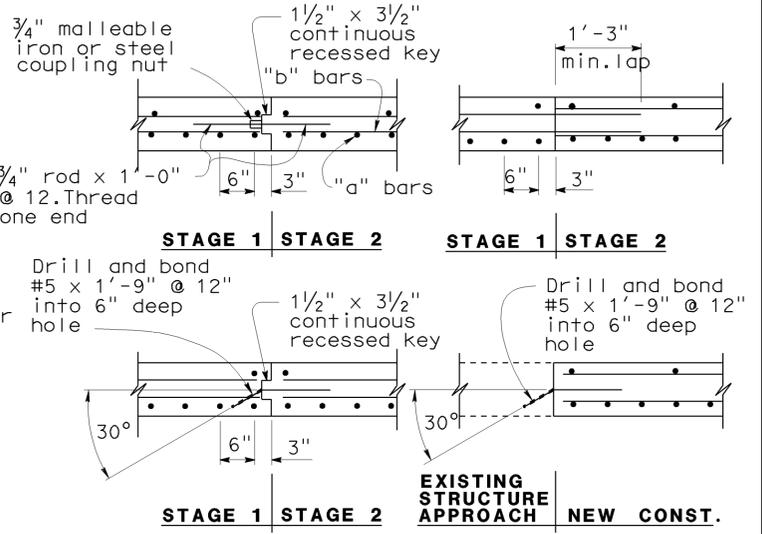
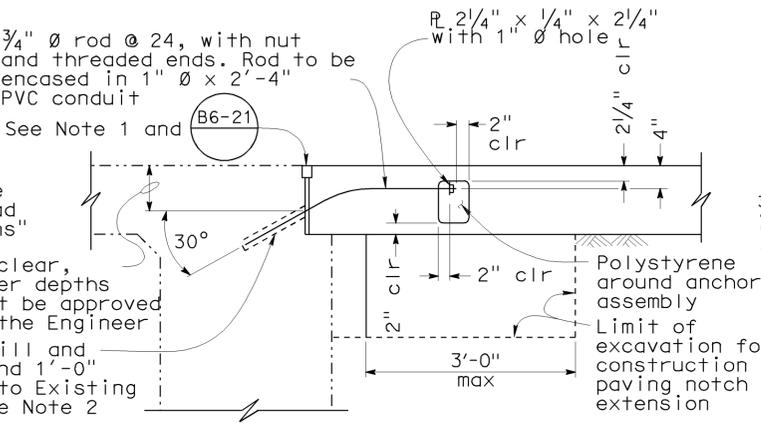
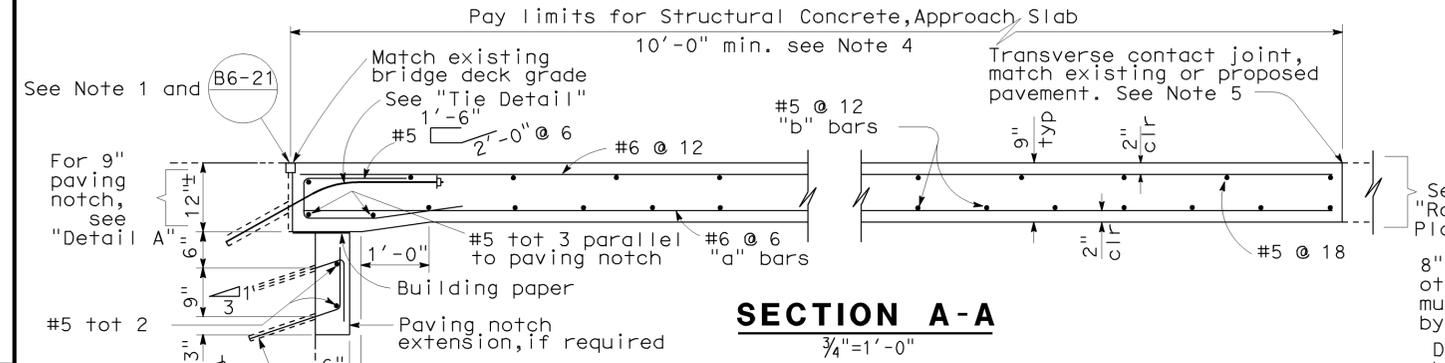
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS
POST MILE VARIOUS
ROUTE 405 BRIDGES (TREAT DECK & REPLACE JOINT SEALS)
JOINT SEAL ASSEMBLY (MAX MR=4")



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	Parallel to face of paving notch	Parallel to face of paving notch
10°- 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line

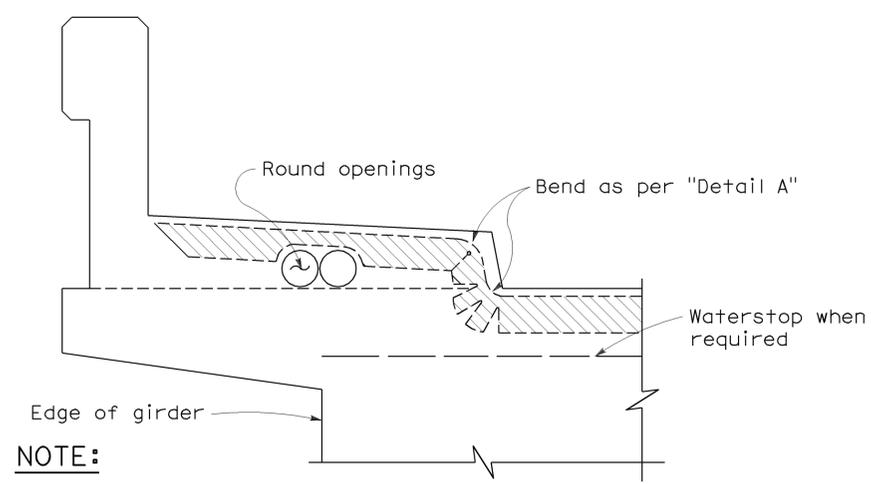


LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES

- NOTES:**
- For details not noted or shown, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
 - Space to avoid existing prestress anchorages and main reinforcement.
 - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
 - Transverse contact joint shall be a minimum of 5' from an existing or constructed weakened plane joint.
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
 - Couplers are required for stage construction.
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.

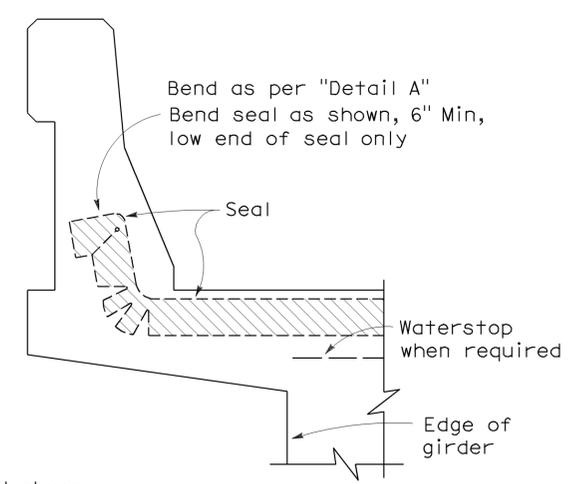
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING

Note: For details not shown, see "Section A-A".

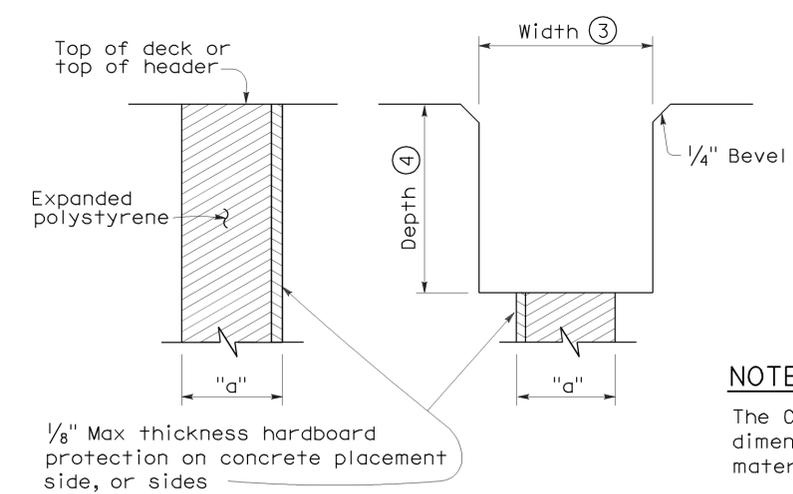


NOTE:
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend Type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

CONCRETE BARRIER AND SIDEWALK



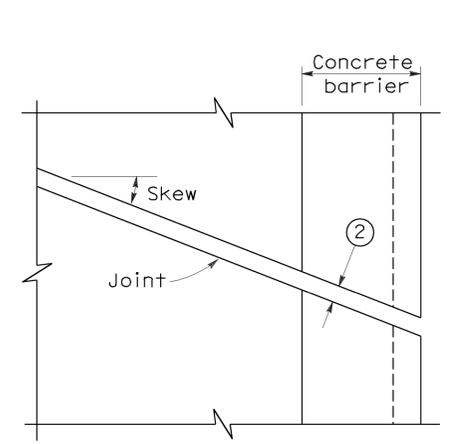
CONCRETE BARRIER



FORMING DETAIL SAWCUT DETAIL

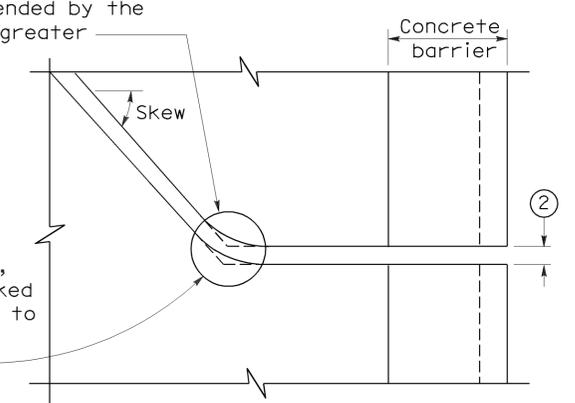
NOTE:
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

JOINT SEALS DETAILS



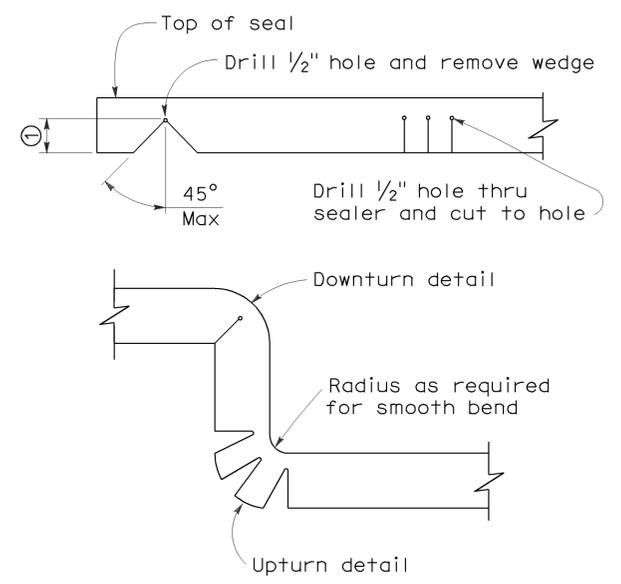
PLAN OF JOINT (SKEW ≤ 20°)

Min ϕ radius to be 4 times uncompressed width of seal or as recommended by the manufacturer, whichever is greater



PLAN OF JOINT (SKEW > 20°)

In lieu of saw cutting, this area may be blocked out and reconstructed to match saw cutting on both sides.



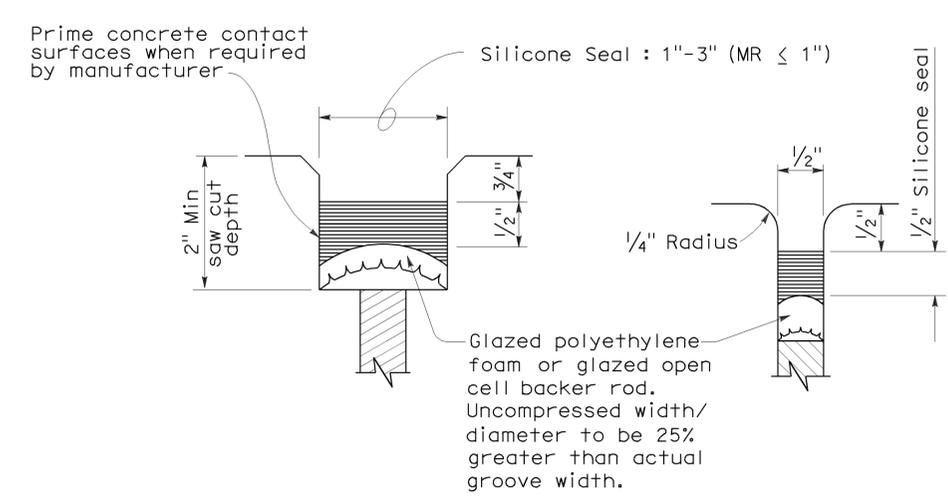
DETAIL A

NOTES:

- Make smooth cuts from the bottom of seal to 1 1/2" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
- Opening in barrier to match width of sawn deck joint.
- Sawcut groove widths shall be as ordered by the Engineer.
- Depth of sawcut: Type A - Depth to be 2" minimum.
 Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position (W₂) plus dimensions shown.
- MR (movement rating) as shown on other plan sheets.
- Other depths must be approved by the Engineer.

DIMENSIONS "a" OF JOINT REQUIRED

Movement Rating (MR) ⑤	Bridge Type	"a" Dimension		
		Deck Concrete Placed		
		Winter	Fall-Spring	Summer
2"	All except CIP/PS	1 1/2"	1 1/4"	3/4"
	CIP/PS	1 1/4"	1"	1/2"
1 1/2"	All except CIP/PS	1 1/4"	1"	1/2"
	CIP/PS	1"	3/4"	1/2"
1"	All except CIP/PS	1"	3/4"	1/2"
	CIP/PS	3/4"	1/2"	1/2"
1/2"	All except CIP/PS	3/4"	3/4"	1/2"
	CIP/PS	1/2"	1/2"	1/2"

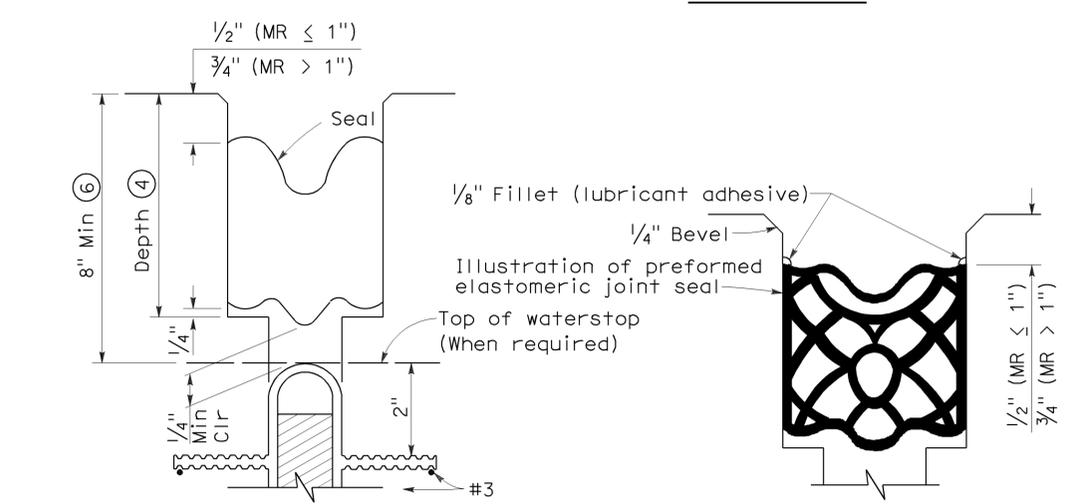


TYPE A SEAL

Movement rating : Silicone = 1" Max

TYPE AL SEAL

Longitudinal joints only



TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W₂)

TYPE B SEAL

Movement Rating ≤ 2"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
JOINT SEALS
(MAXIMUM MOVEMENT RATING = 2")
 NO SCALE

RSP B6-21 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B6-21 DATED MAY 1, 2006 - PAGE 258 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP B6-21