

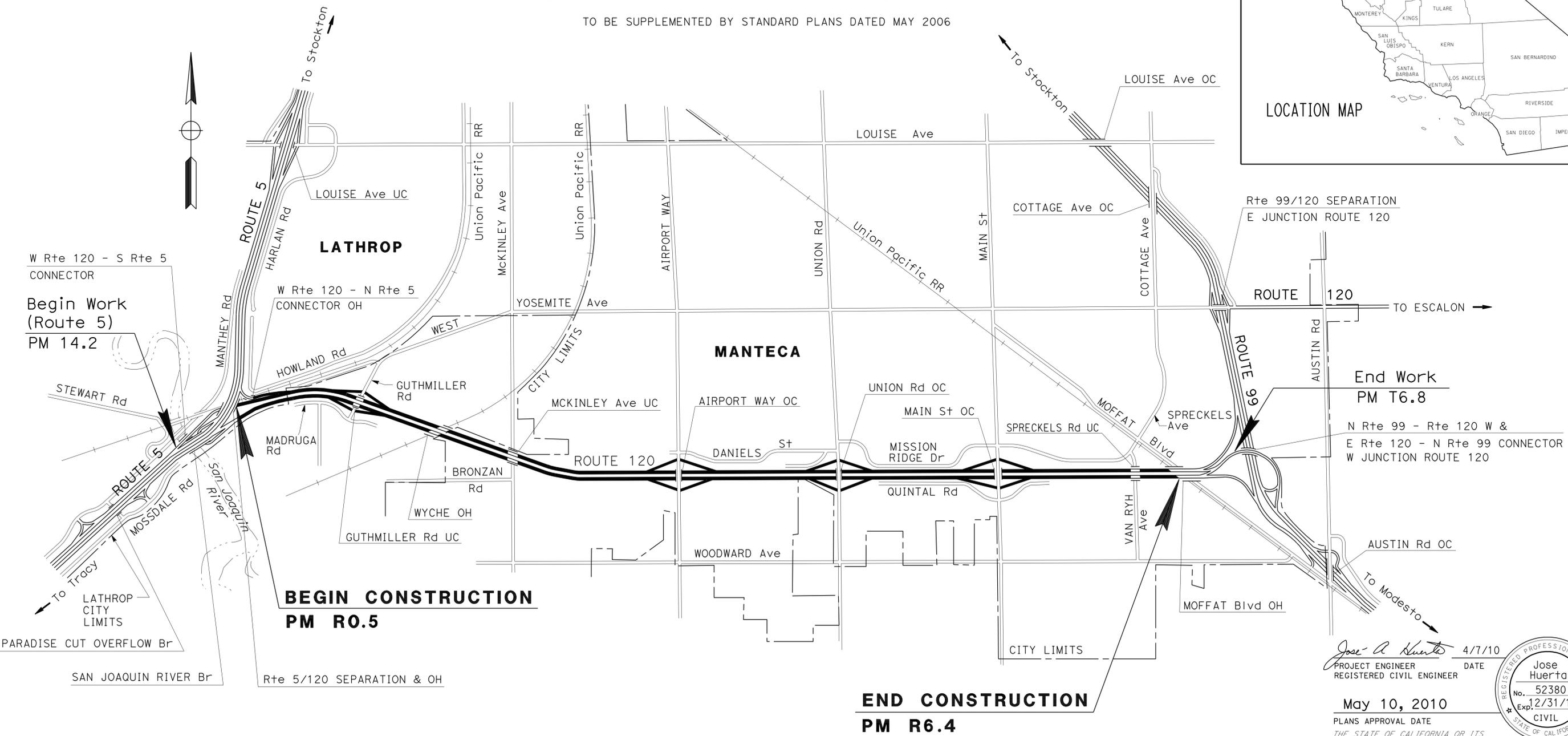
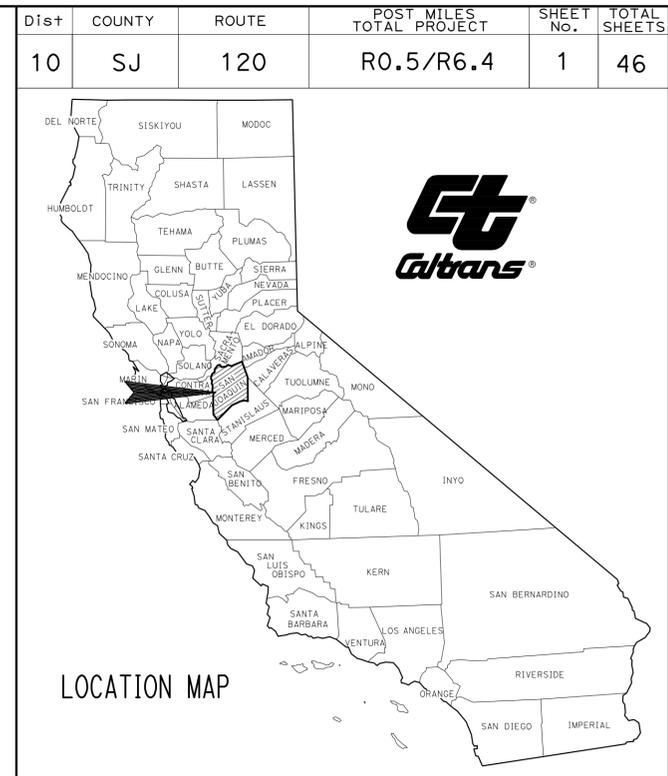
**INDEX OF PLANS**

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4-5	CONSTRUCTION DETAILS
6	CONSTRUCTION AREA SIGNS
7-9	TRAFFIC HANDLING PLANS
10-11	PAVEMENT DELINEATION QUANTITIES
12-17	SUMMARY OF QUANTITIES
18-28	ELECTRICAL PLANS
29-46	REVISED STANDARD PLANS

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

STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**NH-P120(050)E**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SAN JOAQUIN COUNTY**  
**IN AND NEAR MANTECA**  
**FROM ROUTE 5/120 SEPARATION AND OVERHEAD**  
**TO MOFFAT BOULEVARD OVERHEAD**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



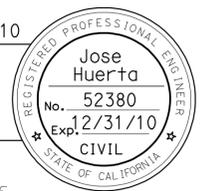
PROJECT MANAGER  
GILBERT BETANCOURT

DESIGN ENGINEER  
TERRY OGLE

*Jose A. Huerta* 4/7/10  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER

**May 10, 2010**  
 PLANS APPROVAL DATE

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



CONTRACT No.	<b>10-0V1604</b>
PROJECT ID	<b>1000000765</b>

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

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 TERRY OGLE  
 FUNCTIONAL SUPERVISOR  
 CHECKED BY  
 SARAVUTH PHIN  
 JOSE HUERTA  
 REVISOR BY  
 DATE REVISED  
 SP  
 5/12/10

- NOTES:**
- DIMENSIONS OF STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
  - SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
  - FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
  - EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
  - EDGE DRAINS WILL BE REPLACED WHERE REPLACE CONCRETE PAVEMENT IS ADJACENT TO ASPHALT CONCRETE. FOR REPLACE 3" PLASTIC PIPE LOCATIONS & CLASS 2 AB, SEE SUMMARY OF QUANTITIES SHEETS.
  - FOR REPLACE CONCRETE PAVEMENT DIMENSIONS AND LOCATIONS, SEE CONSTRUCTION DETAILS AND SUMMARY OF QUANTITIES SHEETS.
  - FOR COLD PLANE DIMENSIONS AND LOCATIONS, SEE SUMMARY OF QUANTITIES SHEETS.
  - FOR RUMBLE STRIP LOCATIONS, SEE SUMMARY OF QUANTITIES SHEETS.

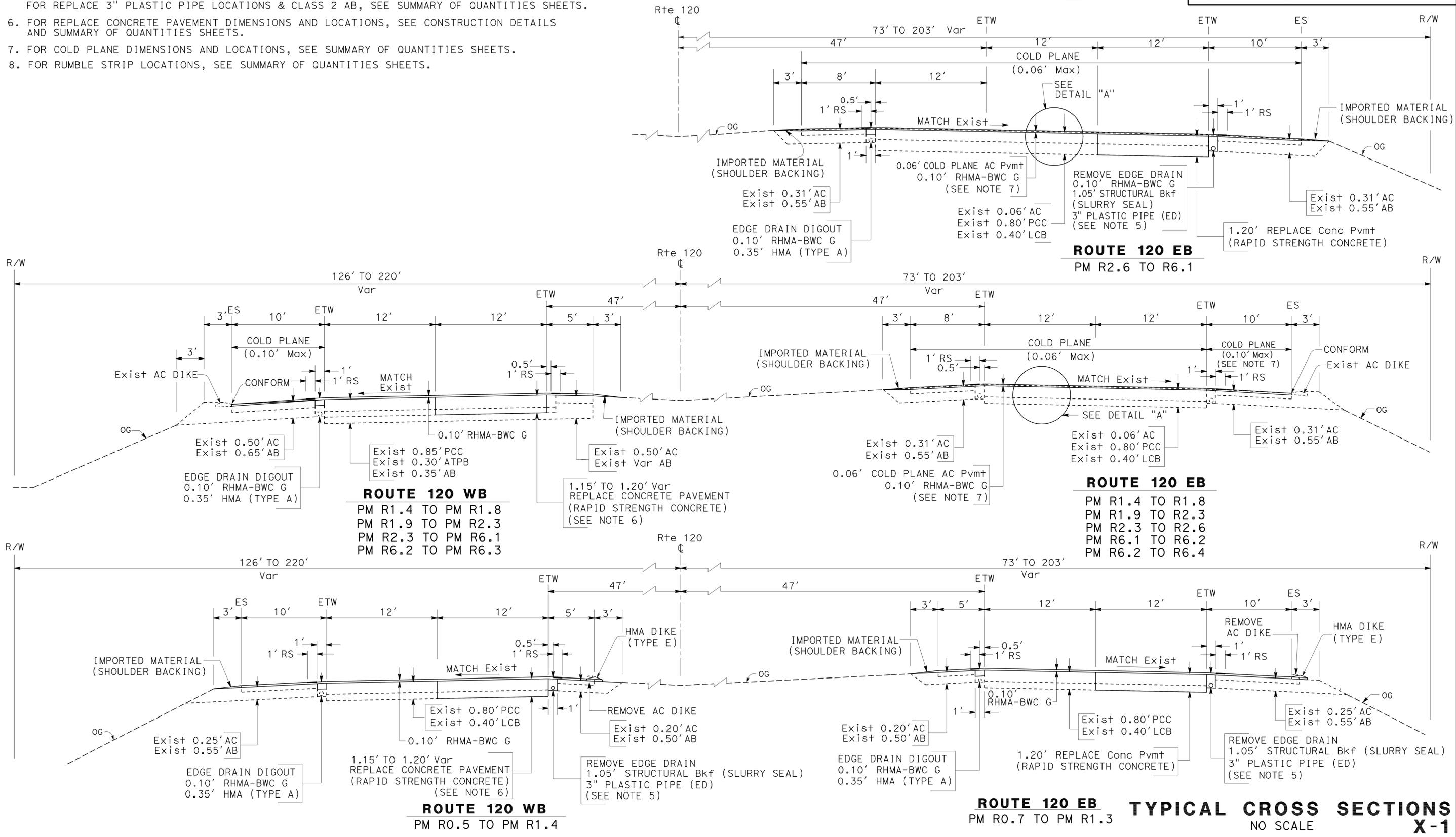
**ABBREVIATIONS:**

RHMA-BWC G	RUBBERIZED HOT MIXED ASPHALT, BONDED WEARING COURSE, GAP GRADED
RS	RUMBLE STRIP

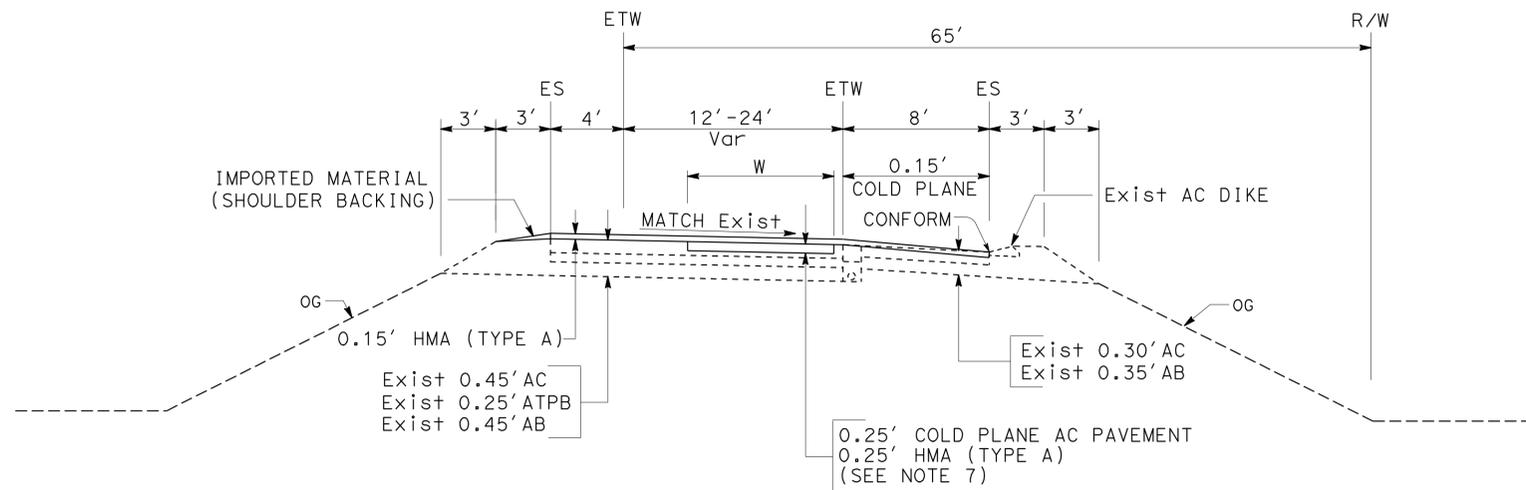
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	2	46

Jose A Huerta 4/7/10  
 REGISTERED CIVIL ENGINEER DATE  
 5/10/10  
 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.

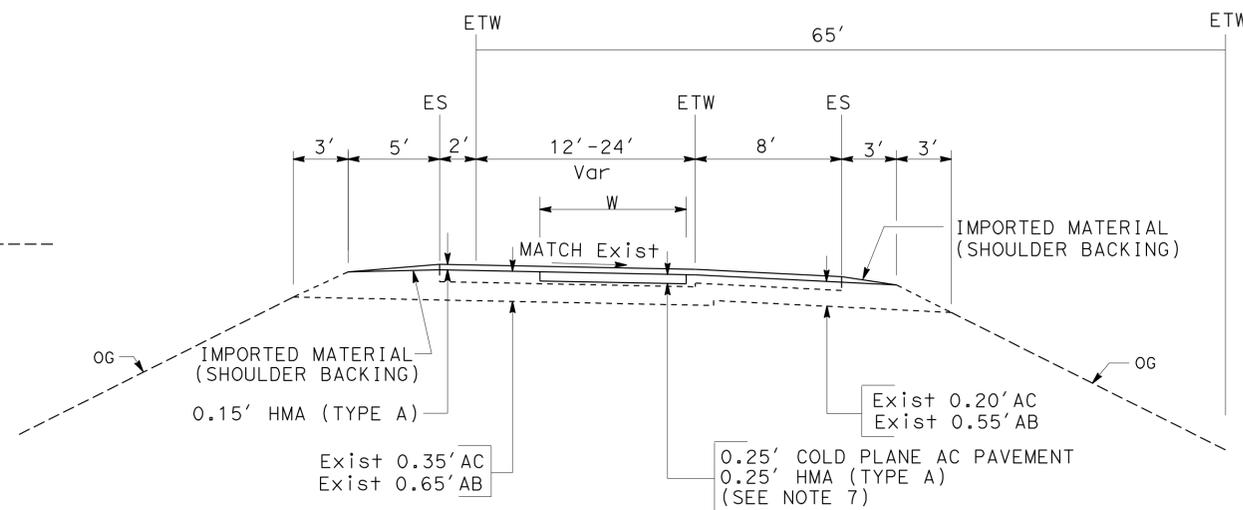
Jose Huerta  
 No. 52380  
 Exp. 12/31/10  
 CIVIL



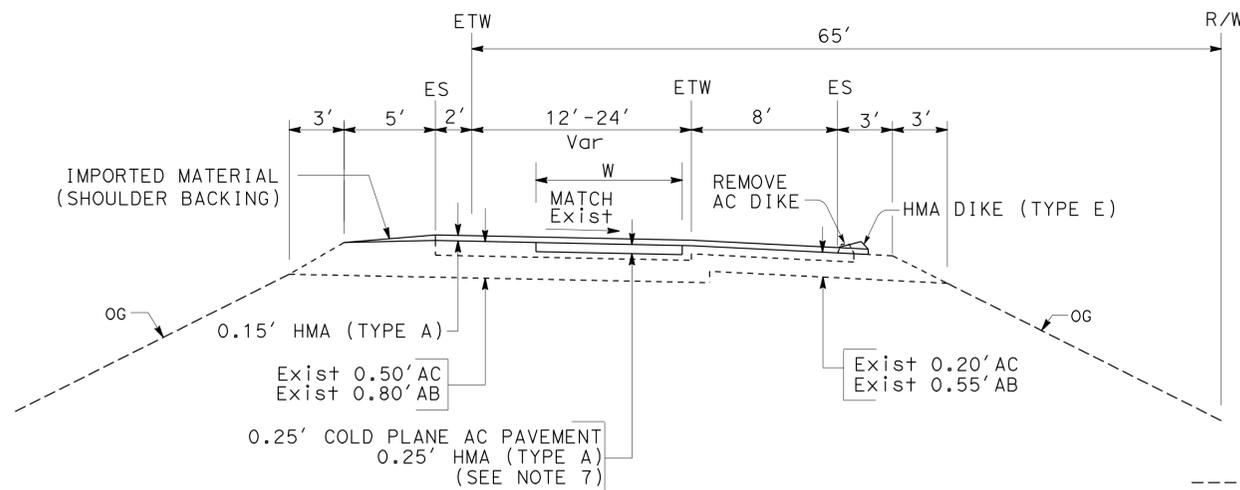
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	3	46
<i>Jose A Huerta</i> REGISTERED CIVIL ENGINEER			DATE	4/7/10 5/10/10 PLANS APPROVAL DATE	
REGISTERED PROFESSIONAL ENGINEER No. 52380 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA			THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		



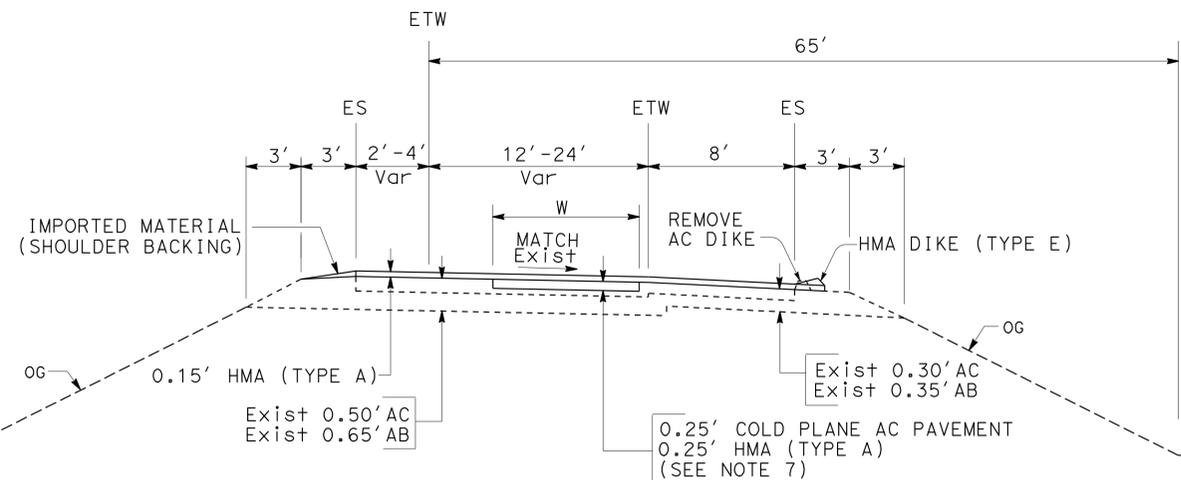
**YOSEMITE AVENUE**  
 WB OFF-RAMP & EB ON-RAMP  
**UNION ROAD**  
 WB ON & OFF RAMPS  
 EB ON & OFF RAMPS



**AIRPORT WAY**  
 EB OFF-RAMP & EB ON-RAMP



**YOSEMITE AVENUE**  
 WB ON-RAMP & EB OFF-RAMP  
**MAIN STREET**  
 EB OFF-RAMP & EB ON-RAMP



**AIRPORT WAY**  
 WB ON-RAMP & WB OFF-RAMP  
**MAIN STREET**  
 WB ON-RAMP & WB OFF-RAMP

**TYPICAL CROSS SECTIONS**  
 NO SCALE  
**X-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 TERRY OGLE  
 FUNCTIONAL SUPERVISOR  
 JOSE HUERTA  
 SARAVUTH PHIN  
 REVISOR  
 SP  
 4/29/10  
 DATE REVISED



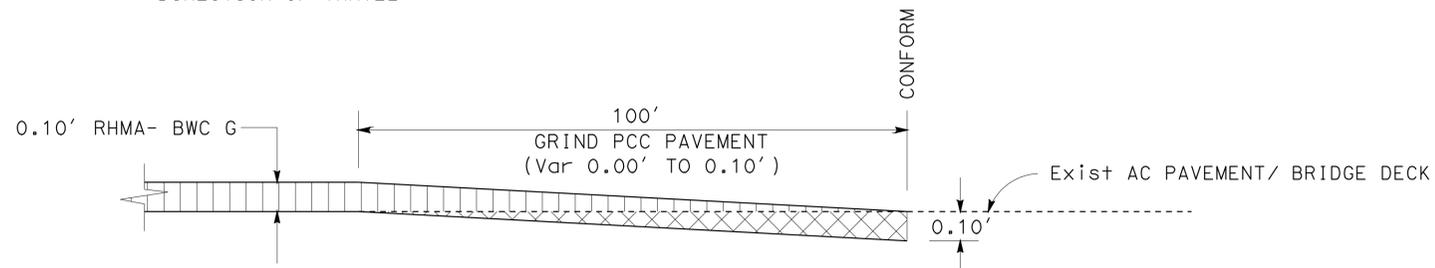
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	4	46
<i>Jose A Huerta</i> REGISTERED CIVIL ENGINEER			4/7/10	DATE	
5/10/10 PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

**LEGEND:**

- 0.10' RHMA- BWC G
- 0.00' TO 0.10' Var - GRIND PCC PAVEMENT
- 0.15' HMA (TYPE A)
- 0.00' TO 0.15' Var - COLD PLANE AC PAVEMENT
- REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)
- DIRECTION OF TRAVEL

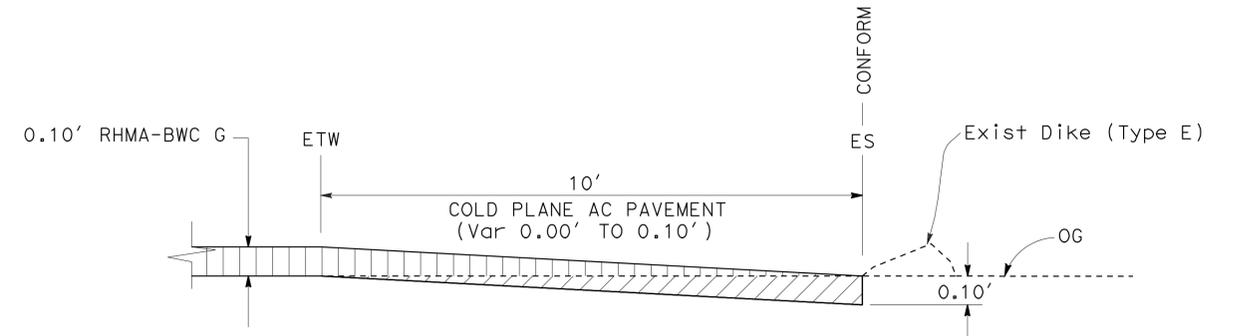
**ABBREVIATION:**

RHMA- BWC G = RUBBERIZED ASPHALT CONCRETE, BONDED WEARING COURSE (GAP GRADED)

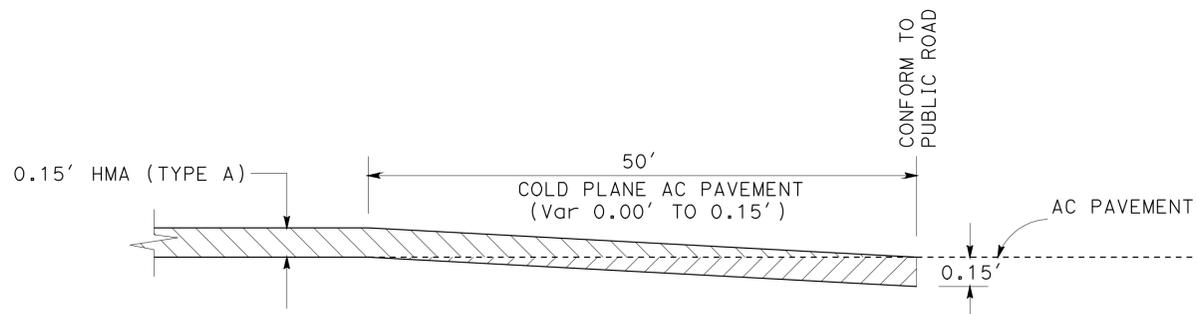


**LONGITUDINAL CONFORM TAPER FOR EXISTING PAVEMENT AND APPROACH/DEPARTURE BRIDGE DECK**

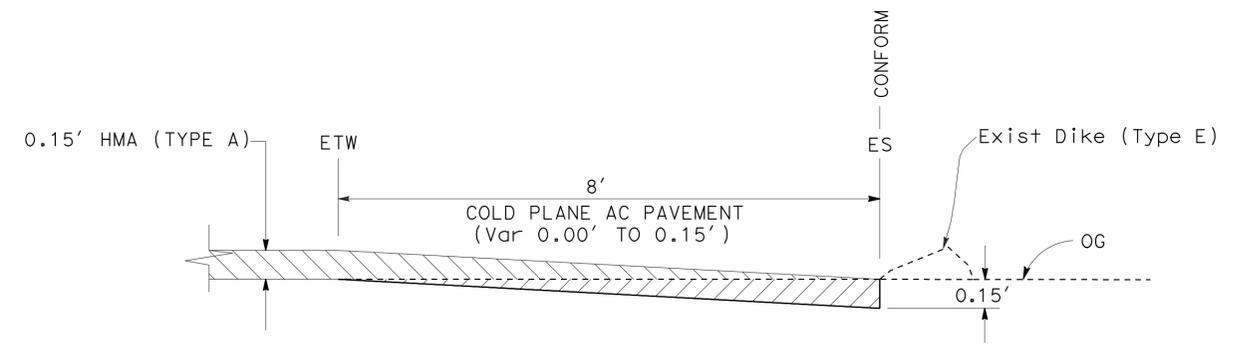
W ROUTE 120 - N ROUTE 5 CONNECTOR OH  
 GUTHMILLER ROAD UC  
 WYCHE OH  
 MCKINLEY AVENUE UC  
 SPRECKLES ROAD UC  
 MOFFAT Blvd OH



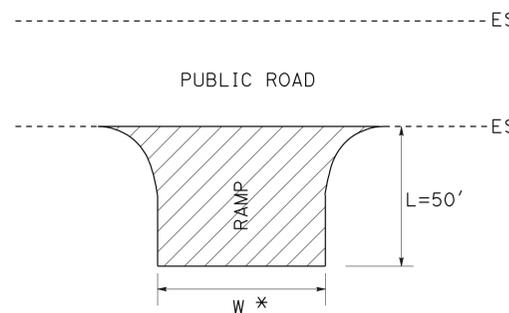
**CONFORM TAPER FOR ROUTE 120 AT DIKE**



**LONGITUDINAL CONFORM TAPER FOR RAMPS**



**CONFORM TAPER FOR RAMPS AT DIKE**



**PAVING LIMITS AT PUBLIC ROAD**

\* (SEE SUMMARY OF QUANTITIES FOR LOCATIONS & WIDTH)

**CONSTRUCTION DETAILS**

NO SCALE

**C-1**

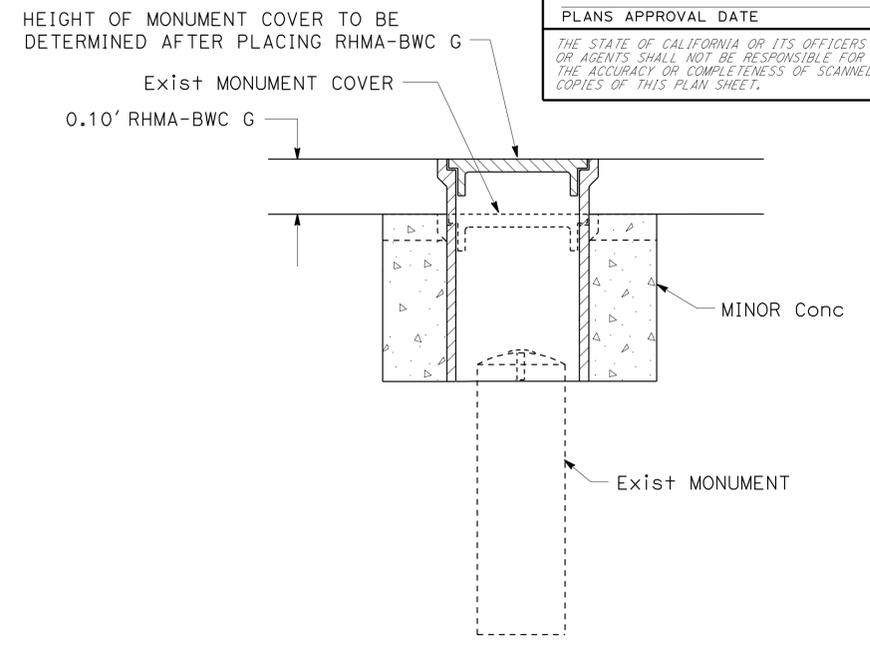
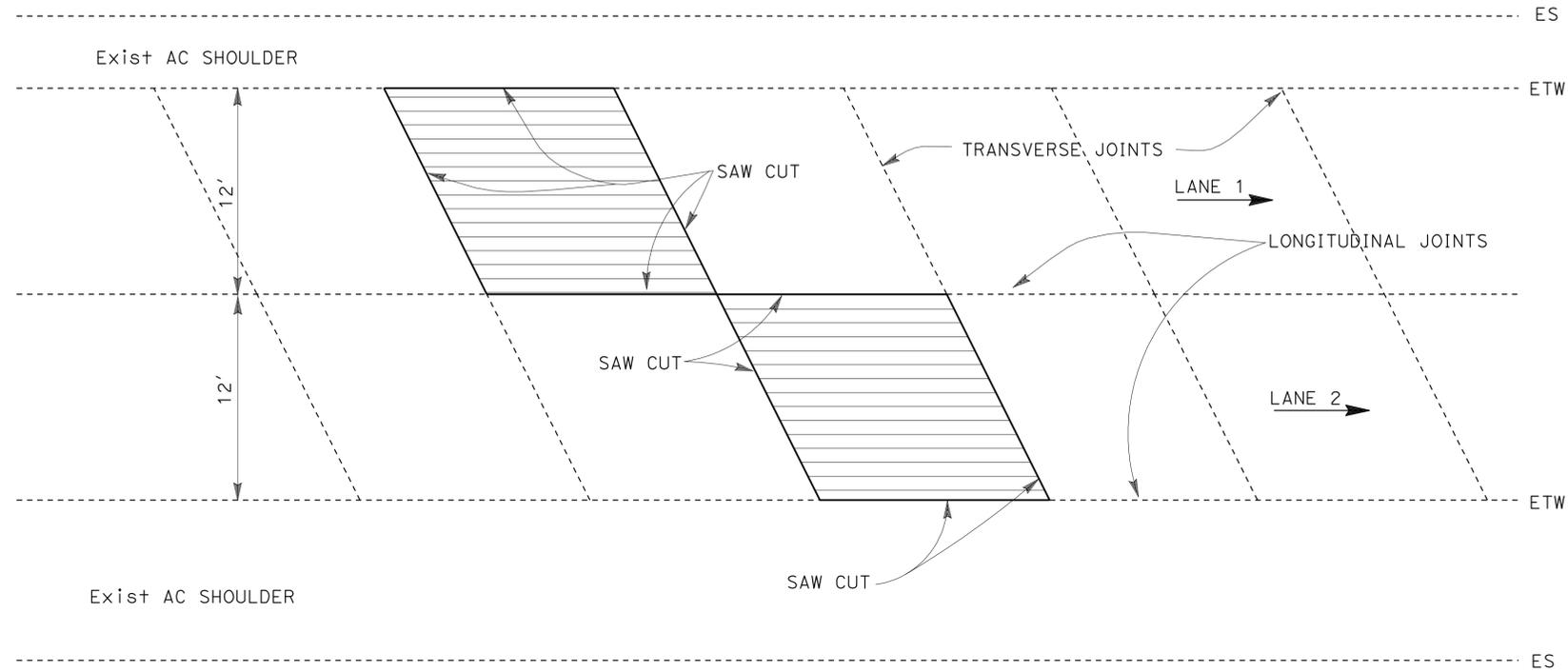
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN  
 Saravuth Phin, Jose Huerta, Terry Ogle  
 4/29/10  
 SP  
 4/29/10  
 00-00-00  
 DATE PLOTTED => 22-JUL-2010  
 TIME PLOTTED => 15:25

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	5	46
<i>Jose A Huerta</i> REGISTERED CIVIL ENGINEER			4/7/10	DATE	
5/10/10 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>					



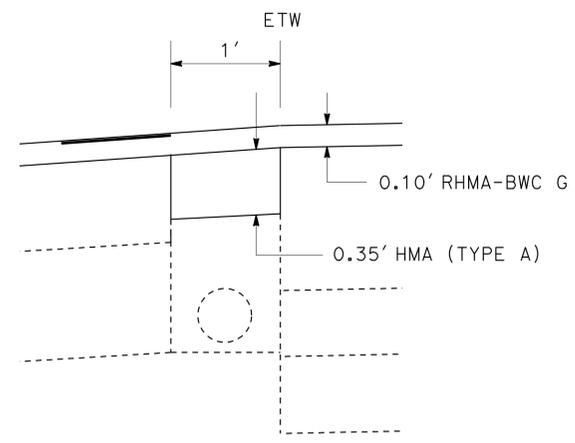
- NOTE:**
1. SEE SUMMARY OF QUANTITIES FOR REPLACE 3" PLASTIC PIPE EDGE DRAIN LOCATIONS.
  2. SEE TYPICAL CROSS SECTIONS AND SUMMARY OF QUANTITIES FOR RUMBLE STRIP LOCATIONS.
  3. SEE SUMMARY OF QUANTITIES FOR ADJUST MONUMENT TO GRADE LOCATIONS.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Saravuth Phin  
 Jose Huerta  
 Terry Ogle  
 DESIGN

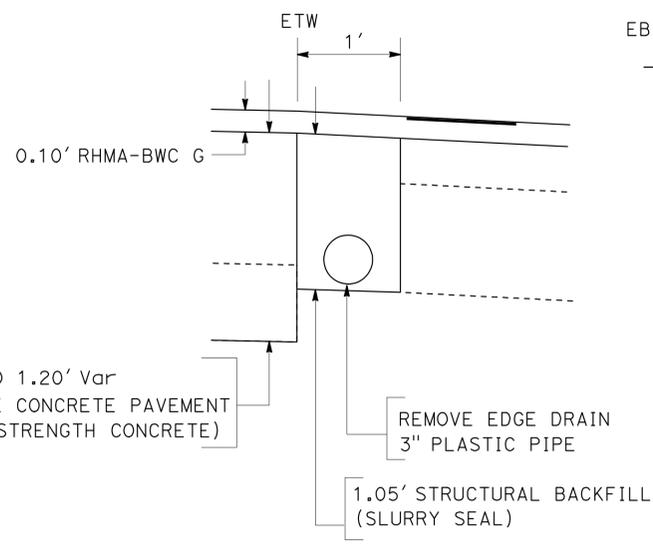


**ADJUST MONUMENT TO GRADE**  
 (FOR ADDITIONAL INFORMATION SEE STANDARD PLAN A74)

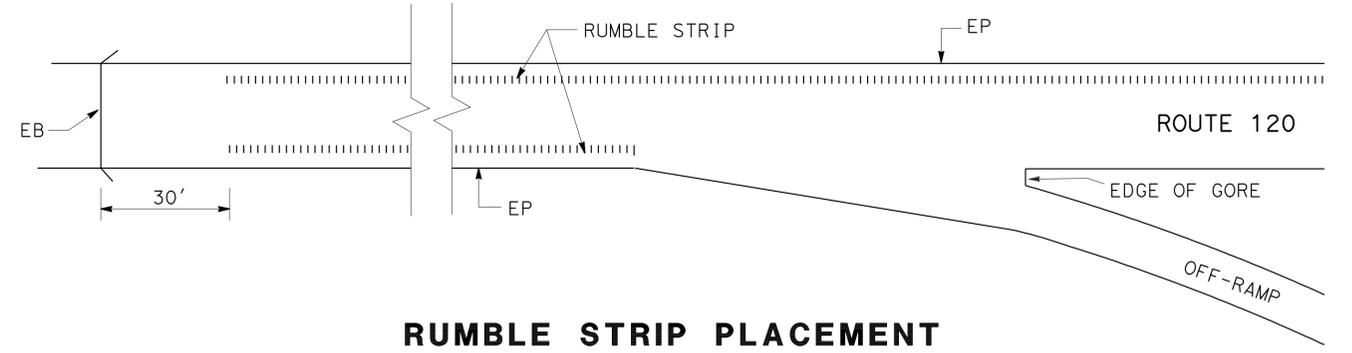
**REPLACE CONCRETE PAVEMENT DETAIL**



ROUTE 120 WB PM R1.4-R6.3  
**EDGE DRAIN DIGOUT**



ROUTE 120 WB PM R0.5-R1.4  
 ROUTE 120 EB PM R0.7-R6.4  
**3' PLASTIC PIPE (EDGE DRAIN)**



**RUMBLE STRIP PLACEMENT**

**CONSTRUCTION DETAILS**

NO SCALE **C-2**

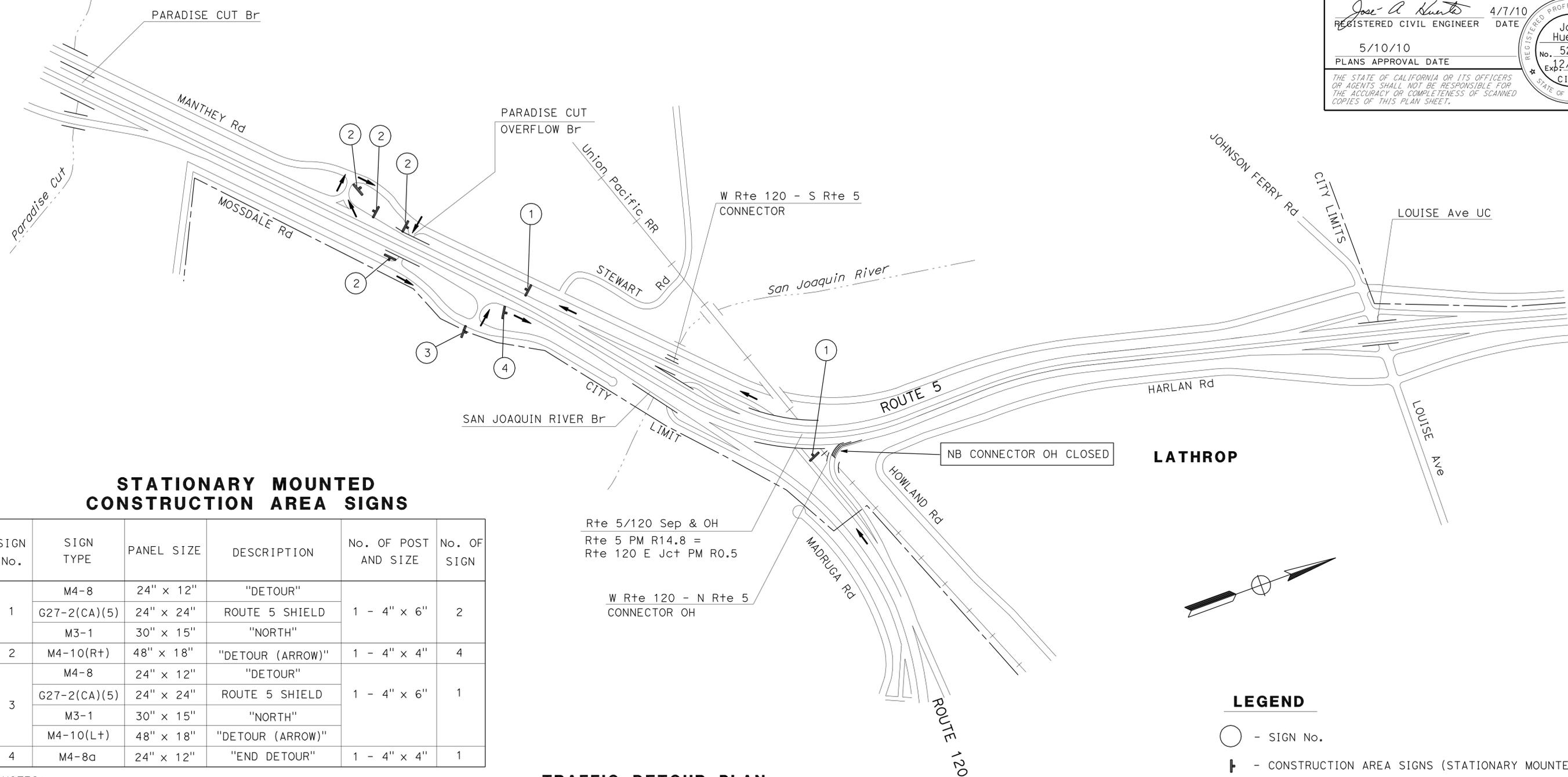


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	7	46

*Jose A Huerta* 4/7/10  
 REGISTERED CIVIL ENGINEER DATE  
 5/10/10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 Jose Huerta  
 No. 52380  
 Exp. 12/31/10  
 CIVIL  
 STATE OF CALIFORNIA

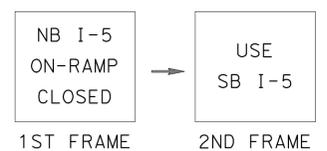
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SIGN No.	SIGN TYPE	PANEL SIZE	DESCRIPTION	No. OF POST AND SIZE	No. OF SIGN
1	M4-8	24" x 12"	"DETOUR"	1 - 4" x 6"	2
	G27-2(CA)(5)	24" x 24"	ROUTE 5 SHIELD		
	M3-1	30" x 15"	"NORTH"		
2	M4-10(R+)	48" x 18"	"DETOUR (ARROW)"	1 - 4" x 4"	4
	M4-8	24" x 12"	"DETOUR"		
	G27-2(CA)(5)	24" x 24"	ROUTE 5 SHIELD		
3	M3-1	30" x 15"	"NORTH"	1 - 4" x 6"	1
	M4-10(L+)	48" x 18"	"DETOUR (ARROW)"		
	M4-8a	24" x 12"	"END DETOUR"		
4	M4-8a	24" x 12"	"END DETOUR"	1 - 4" x 4"	1

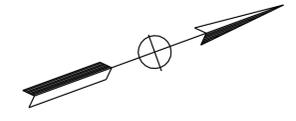
- NOTES:
- EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
  - WHEN DETOUR IS NOT IN USE, COVER ALL CONSTRUCTION AREA SIGNS (TRAFFIC HANDLING) EXCEPT SC6-4.
  - COVER ALL CONFLICTING ROADSIDE SIGNS.
  - DURING THE NB ON-RAMP ROUTE 5/120 CONNECTOR CLOSURE, THE PCMS MESSAGE SHOULD READ.



5. SEE CONSTRUCTION AREA SIGNS PLAN FOR ADDITIONAL SIGNS.

**TRAFFIC DETOUR PLAN**

NB ON-RAMP ROUTE 5/120 CONNECTOR CLOSED  
 CONTINUE ON SB ROUTE 5  
 TAKE MANTHEY ROAD OFF-RAMP  
 TURN RIGHT ONTO MANTHEY ROAD  
 TURN RIGHT TO MOSSDALE ROAD  
 TURN LEFT ONTO MOSSDALE ROAD  
 TAKE NB ON-RAMP AT MOSSDALE ROAD TO NB ROUTE 5



**LEGEND**

- - SIGN No.
- ⊥ - CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)
- - DIRECTION OF TRAFFIC
- ▬ - CONSTRUCTION AT TIME OF DETOUR

**TRAFFIC HANDLING PLAN  
 DETOUR LAYOUT  
 (WEST ROUTE 120 - NORTH ROUTE 5  
 CONNECTOR OH CLOSURE)**

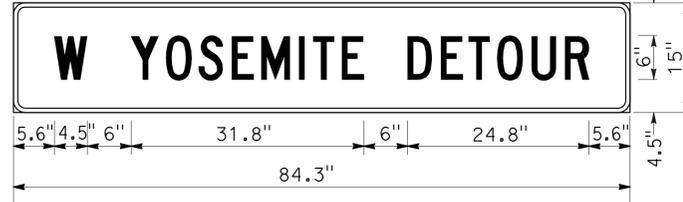
NO SCALE

**TH-1**

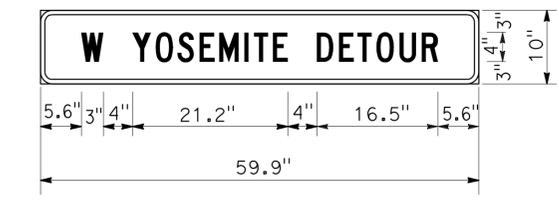
THIS PLAN ACCURATE FOR TRAFFIC HANDLING WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 Saravuth Phin  
 Jose Huerta  
 Terry Ogle  
 Functional Supervisor  
 Calculated/Designed By  
 Checked By  
 Revised By  
 Date Revised  
 SP  
 4/29/10

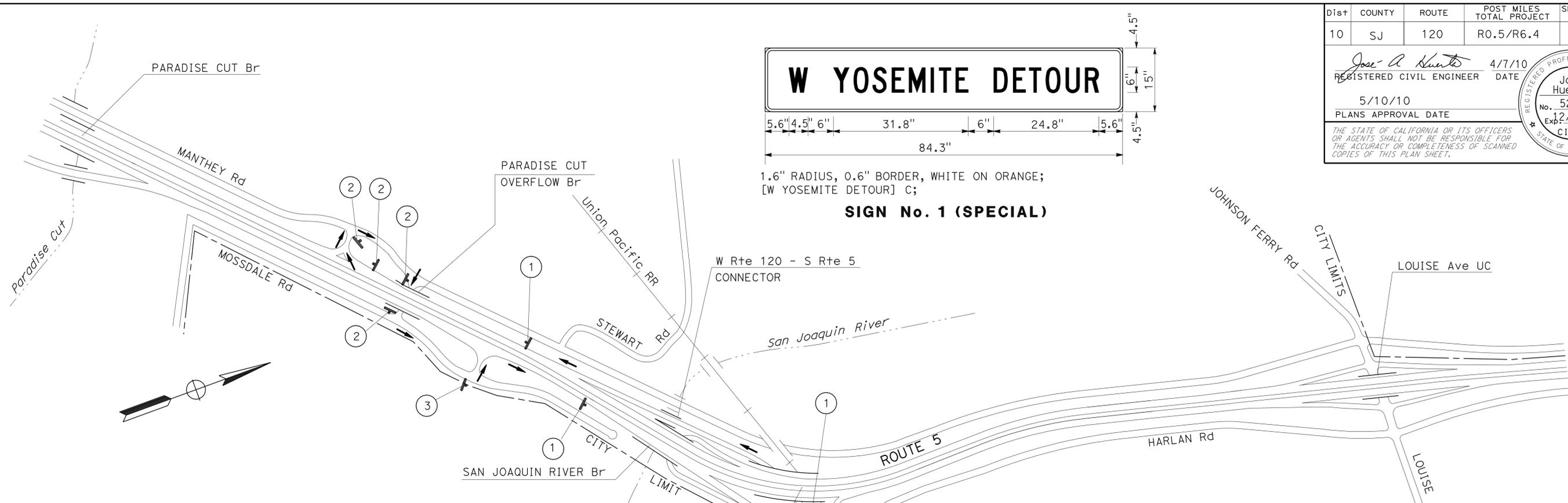
LAST REVISION DATE PLOTTED => 22-JUL-2010  
 00-00-00 TIME PLOTTED => 15:25



1.6" RADIUS, 0.6" BORDER, WHITE ON ORANGE;  
 [W YOSEMITE DETOUR] C;  
**SIGN No. 1 (SPECIAL)**



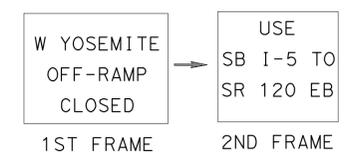
1.6" RADIUS, 0.6" BORDER, WHITE ON ORANGE;  
 [W YOSEMITE DETOUR] C;  
**SIGN No. 3 (SPECIAL)**



**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SIGN No.	SIGN TYPE	PANEL SIZE	DESCRIPTION	No. OF POST AND SIZE	No. OF SIGN	
1	M4-8	24" x 12"	"DETOUR"	1 - 4" x 6"	2	
	G27-2(CA)(5)	24" x 24"	ROUTE 120 SHIELD			
	SPECIAL	84.3" x 15"	"W YOSEMITE DETOUR"			
2	M4-10(R+)	48" x 18"	"DETOUR (ARROW)"	1 - 4" x 4"	5	
	3	M4-8	24" x 12"			"DETOUR"
		G27-2(CA)(5)	24" x 24"			ROUTE 120 SHIELD
SPECIAL	59.9" x 10"	"W YOSEMITE DETOUR"				
4	M4-10(L+)	48" x 18"	"DETOUR (ARROW)"	1 - 4" x 4"	1	
	M4-8a	24" x 12"	"END DETOUR"			

- NOTES:
- EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
  - WHEN DETOUR IS NOT IN USE, COVER ALL CONSTRUCTION AREA SIGNS (TRAFFIC HANDLING) EXCEPT SC6-4.
  - COVER ALL CONFLICTING ROADSIDE SIGNS.
  - DURING THE WB W YOSEMITE OFF-RAMP CLOSURE, THE PCMS MESSAGE SHOULD READ.



5. SEE CONSTRUCTION AREA SIGNS PLAN FOR ADDITIONAL SIGNS.

**TRAFFIC DETOUR PLAN**

WEST YOSEMITE WB OFF RAMP CLOSED  
 CONTINUE ON WB ROUTE 120 TO SB ROUTE 5  
 TAKE MANTHEY ROAD OFF-RAMP  
 TURN RIGHT ONTO MANTHEY ROAD  
 TURN RIGHT TO MOSSDALE ROAD  
 TURN LEFT ONTO MOSSDALE ROAD  
 TAKE NB ON-RAMP AT MOSSDALE ROAD TO NB ROUTE 5  
 TAKE EB ROUTE 120 CONNECTOR TO WEST YOSEMITE ROAD

THIS PLAN ACCURATE FOR TRAFFIC HANDLING WORK ONLY.

**TRAFFIC HANDLING PLAN DETOUR LAYOUT**

(YOSEMITE AVENUE WB OFF-RAMP CLOSURE)

NO SCALE **TH-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN

SARAVUTH PHIN  
 JOSE HUERTA

REVISOR  
 DATE

4/29/10

SP

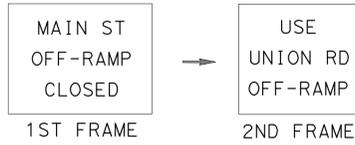
FUNCTIONAL SUPERVISOR  
 TERRY OGLE

CALCULATED/DESIGNED BY  
 CHECKED BY

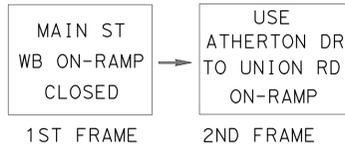
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LAST REVISION DATE PLOTTED => 22-JUL-2010  
 TIME PLOTTED => 15:25

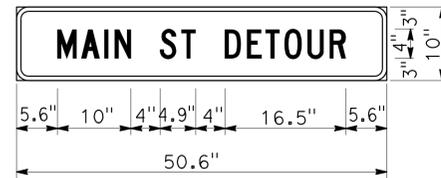
- NOTES:
- EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
  - WHEN DETOUR IS NOT IN USE, COVER ALL CONSTRUCTION AREA SIGNS (TRAFFIC HANDLING) EXCEPT SC6-4.
  - COVER ALL CONFLICTING ROADSIDE SIGNS.
  - DURING THE MAIN ST EB OFF-RAMP CLOSURE, THE PCMS MESSAGE SHOULD READ.



- DURING THE MAIN ST WB ON-RAMP CLOSURE, THE PCMS MESSAGE SHOULD READ.

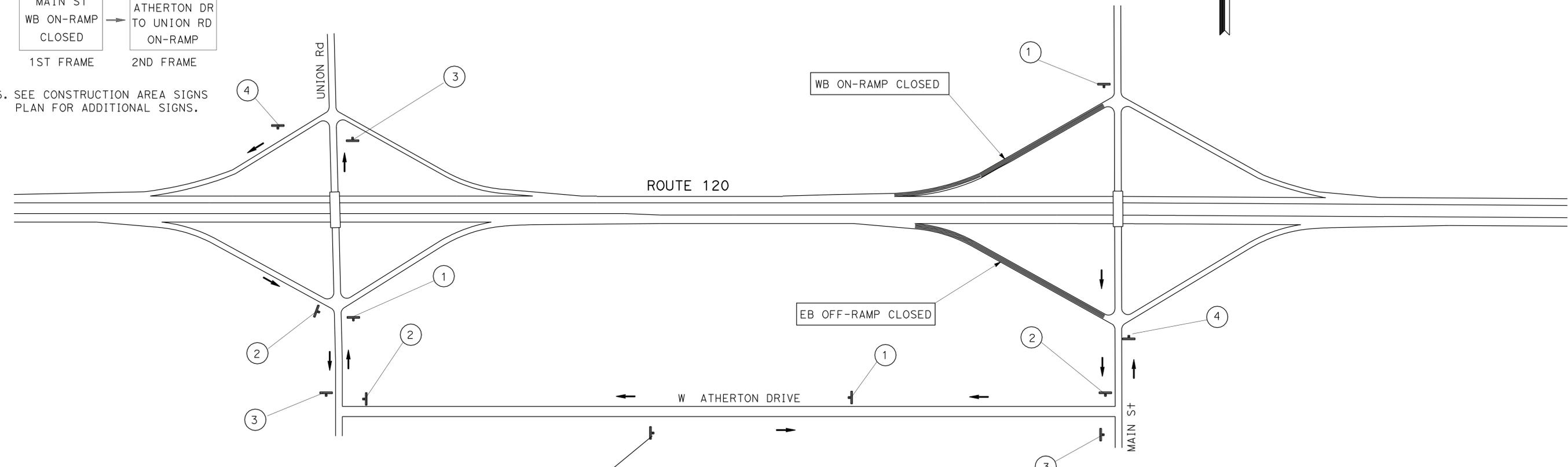


- SEE CONSTRUCTION AREA SIGNS PLAN FOR ADDITIONAL SIGNS.



1.6" RADIUS, 0.6" BORDER, WHITE ON ORANGE;  
 [MAIN ST DETOUR] C;

**SIGN No. 1 & 3 (SPECIAL)**



**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SIGN No.	SIGN TYPE	PANEL SIZE	DESCRIPTION	No. OF POST AND SIZE	No. OF SIGN
1	M4-8	24" x 12"	"DETOUR"	1 - 4" x 6"	5
	M4-10 (Rt)	24" x 12"	"DETOUR (ARROW)"		
	SPECIAL	50.6" x 10"	"MAIN ST DETOUR"		
2	M4-10 (Rt)	48" x 18"	"DETOUR (ARROW)"	1 - 4" x 4"	3
	SPECIAL	50.6" x 10"	"MAIN ST DETOUR"		
3	M4-10 (Lt)	48" x 18"	"DETOUR (ARROW)"	1 - 4" x 6"	3
	M4-8a	24" x 12"	"END DETOUR"		

**TRAFFIC DETOUR PLAN MAIN St EB OFF-RAMP**

MAIN St EB OFF-RAMP CLOSED  
 TAKE UNION ROAD EB OFF-RAMP  
 TURN RIGHT ONTO UNION ROAD  
 TURN LEFT TO ATHERTON DRIVE  
 TURN LEFT ONTO MAIN St

**TRAFFIC DETOUR PLAN MAIN St WB ON-RAMP**

MAIN St WB ON-RAMP CLOSED  
 CONTINUE ON SB MAIN St  
 TURN RIGHT ONTO ATHERTON DRIVE  
 TURN RIGHT TO UNION ROAD  
 TURN LEFT ONTO UNION ROAD WB ON-RAMP

**TRAFFIC HANDLING PLAN  
 DETOUR LAYOUT**

**(MAIN STREET EB OFF-RAMP  
 AND WB ON-RAMP CLOSURE)**

NO SCALE

**TH-3**

THIS PLAN ACCURATE FOR TRAFFIC HANDLING WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN  
 PERLITA BALBIN  
 JOSE HUERTA  
 TERRY OGLE  
 PB  
 4/29/10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	10	46

Hassan Cohe 2-22-10  
REGISTERED CIVIL ENGINEER DATE

5/10/10  
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.

## PAVEMENT DELINEATION ITEMS

LOCATION	DIRECTION	DETAIL No.	PAVEMENT MARKERS (RETROREFLECTIVE)			REMOVE PAVEMENT MARKERS (N)	THERMOPLASTIC TRAFFIC STRIPE					REMOVE THERMOPLASTIC TRAFFIC STRIPE	THERMOPLASTIC PAVEMENT MARKING		REMOVE THERMOPLASTIC PAVEMENT MARKING							
			TYPE C	TYPE G	TYPE H		8" SOLID	4" SOLID	4" BROKEN (36-12)	4" BROKEN (17-7)	8" BROKEN (12-3)		DESCRIPTION	SQFT								
			EA	EA	EA		EA	LF	LF	LF	LF		LF	LF		LF	LF					
ROUTE 120		PM R0.50 TO PM R6.40	EB	25		650																
		PM R0.50 TO PM R6.40	EB	12		650																
		PM R0.50 TO PM R6.40	EB	27B																		
		PM R5.90 TO PM R6.40	EB	37	16	164																
		PM R0.50 TO PM R6.40	WB	25		650																
		PM R0.50 TO PM R6.40	WB	12		650																
		PM R0.50 TO PM R6.40	WB	27B																		
YOSEMITE Ave OFF-RAMP	EB	36			24																	
		25A				32																
		27B																				
YOSEMITE Ave ON-RAMP	EB	14A	8																			
		25A				34																
		27B																				
AIRPORT WAY OFF-RAMP	EB	36A			14																	
		8																				
		25A				34																
AIRPORT WAY ON-RAMP	EB	27B																				
		36A				8																
		8																				
UNION Rd OFF-RAMP	EB	36			24																	
		25A				55																
		27B																				
UNION Rd ON-RAMP	EB	14A	8																			
		25A				49																
		27B																				
MAIN St OFF-RAMP	EB	36A			8																	
		8																				
		25A				59																
MAIN St ON-RAMP	EB	27B																				
		38				9																
		14A	8																			
MAIN St OFF-RAMP	WB	25A				59																
		27B																				
		38				9																
MAIN St ON-RAMP	WB	14A	8																			
		25A				59																
		27B																				
UNION Rd OFF-RAMP	WB	36A			9																	
		8																				
		25A				59																
UNION Rd ON-RAMP	WB	27B																				
		36A				9																
		8																				
SUBTOTAL																						

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

## PAVEMENT DELINEATION QUANTITIES

### PDQ-1

LAST REVISION DATE PLOTTED => 22-JUL-2010 00-00-00 TIME PLOTTED => 15:25

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	11	46

Hassan Cohe 2-22-10  
REGISTERED CIVIL ENGINEER DATE

5/10/10  
PLANS APPROVAL DATE

HASSAN M. TAHA  
No. 60130  
Exp 06/30/10  
CIVIL

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

**PAVEMENT DELINEATION ITEMS**

LOCATION	DIRECTION	DETAIL No.	PAVEMENT MARKER (RETROREFLECTIVE)			REMOVE PAVEMENT MARKER (N)	THERMOPLASTIC TRAFFIC STRIPE					REMOVE THERMOPLASTIC TRAFFIC STRIPE	THERMOPLASTIC PAVEMENT MARKING		REMOVE THERMOPLASTIC PAVEMENT MARKING
			TYPE C	TYPE G	TYPE H		8" SOLID	4" SOLID	4" BROKEN (36-12)	4" BROKEN (17-7)	8" BROKEN (12-3)		DESCRIPTION	SQFT	
			EA	EA	EA		LF	LF	LF	LF	LF		LF	SQFT	
AIRPORT WAY OFF-RAMP	WB	36		24			518					1036			
		25A			57				1339						
		27B							1463						
		38		21				480				960			
AIRPORT WAY ON-RAMP	WB	14A	8												
		25A			55				1294						
		27B							1712						
		36A		13				290				580			
YOSEMITE Ave OFF-RAMP	WB	8								241					
		36		12			259				318				
		25A			36			840							
		27B						820							
YOSEMITE Ave ON-RAMP	WB	14A	8												
		25A			32			735							
		27B						1043							
		36A		10			219				438				
		8							194						
SUBTOTAL			16	80	180		1766	9246		435		3332			
SUBTOTAL FROM PDQ-1			64	1719	1913		5543	155,455	62,304	1473	2640	11,086	2407	2407	
TOTAL				3972			7309	164,701	62,304	1908	2640	14,418	2407	2407	

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

**DELINEATOR**

LOCATION	DIRECTION	CLASS 1	
		TYPE G	TYPE F
		EA	EA
YOSEMITE Ave	EB	9	15
AIRPORT WAY	EB	12	20
UNION Rd	EB	12	20
MAIN St	EB	12	20
YOSEMITE Ave	WB	9	15
AIRPORT WAY	WB	12	20
UNION Rd	WB	12	20
MAIN St	WB	12	20
SUBTOTAL		90	150
TOTAL		240	

**PAVEMENT DELINEATION QUANTITIES PDQ-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06 - TRAFFIC DESIGN

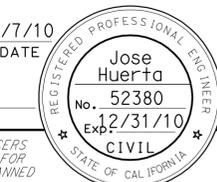
HT  
4/27/10

KEVIN NGUYEN  
HASSAN TAHA

REVISOR  
DATE

FUNCTIONAL SUPERVISOR  
MOHAMMED OATAMI

DESIGNED BY  
CHECKED BY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	12	46
 REGISTERED CIVIL ENGINEER			4/7/10	DATE	
5/10/10 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>					

**ABBREVIATION:**

RHMA-BWC G RUBBERIZED HOT MIX ASPHALT,  
BONDED WEARING COURSE, GAP GRADED

**METAL BEAM GUARD RAILING**

LOCATION - PM TO PM	DIRECTION	SIDE	REMOVE MBGR	MBGR (WOOD POST)	(N)	DOUBLE MBGR (WOOD POST)	CRASH CUSHION (TYPE CAT)	CRASH CUSHION (TYPE CAT) BACKUP	RAIL TENSIONING ASSEMBLY	TRANSITION RAILING (TYPE WB)	ALTERNATIVE FLARED TERMINAL SYSTEM	END ANCHOR ASSEMBLY (TYPE SFT)	GUARD RAILING DELINEATOR (TYPE F)	OBJECT MARKER (TYPE L-1)	PLACE HMA DIKE		HMA (TYPE A)	
			LF	LF	(LAYOUT TYPE)	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	TON (1)
			LF	LF		EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF
Rte 120 - R0.76 (Br No. 29-029F)	WB	R+	792	737.5	12B					1	1		3	1				
Rte 120 - R1.31 TO R1.31 (Br No. 29-0271R)	EB	R+	62.5		12B					1	1		3	1	62.5	25	0.81	
Rte 120 - R1.29 TO R1.31 (Br No. 29-0271R)	EB	L+	150		12E	225	1	1	1	1			3	1				
Rte 120 - R1.35 TO R1.36 (Br No. 29-0271L)	WB	L+	150	100	12E	175	1	1	1	1			3	1				
Rte 120 - R1.35 TO R1.36 (Br No. 29-0271L)	WB	R+	62.5	25	12B					1	1		3	1	62.5	25	0.81	
Rte 120 - R1.58 TO R1.59	WB	R+	75	37.5	16B						1	1	3	1				
Rte 120 - R1.68 TO R1.79 (Br No. 29-0272R)	EB	R+	619	575	12B					1	1		3	1	62.5	581.5	8.24	
Rte 120 - R1.78 TO R1.79 (Br No. 29-0272R)	EB	L+	150	37.5	12E	175	1	1	1	1			3	1				
Rte 120 - R1.86 TO R1.88 (Br No. 29-0272L)	WB	L+	150	25	12E	175	1	1	1	1			3	1				
Rte 120 - R1.87 TO R1.88 (Br No. 29-0272L)	WB	R+	62.5		12B					1	1		3	1	62.5	25	0.81	
Rte 120 - R1.89 TO R2.28 (Br No. 29-0273R)	EB	R+	2392	2375	12D					1			3	1		2392	31.93	
Rte 120 - R2.26 TO R2.28 (Br No. 29-0273R)	EB	L+	150	125	12E	175	1	1	1	1			3	1	62.5	25	0.81	
Rte 120 - R2.30 TO R2.31 (Br No. 29-0273L)	WB	R+	62.5		12B					1	1		3	1				
Rte 120 - R2.31 TO R2.32 (Br No. 29-0273L)	WB	L+	150	125	12E	175	1	1	1	1			3	1		1127	15.04	
Rte 120 - R2.31 TO R2.52 (Br No. 29-0273R)	EB	R+	1127	1075	12BB					1	1		3	1				
Rte 120 - R2.97 TO R2.98	EB	R+	75	37.5	16B						1	1	3	1				
Rte 120 - R3.31 (Br No. 29-0274)	EB	L+	200															
Rte 120 - R3.31 (Br No. 29-0274)	EB	L+		87.5	14A	25	1	1	1			1	3	1				
Rte 120 - R3.31 (Br No. 29-0274)	WB	L+		112.5	14A	25	1	1	1			1	3	1				
Rte 120 - R3.64 TO R3.66	WB	R+	75	37.5	16B						1	1	3	1				
Rte 120 - R3.99 TO R4.00	EB	R+	75	37.5	16B						1	1	3	1				
Rte 120 - R4.30 (Br No. 29-0275)	EB	L+	200															
Rte 120 - R4.30 (Br No. 29-0275)	EB	L+		100	14A	25	1	1	1			1	3	1				
Rte 120 - R4.30 (Br No. 29-0275)	WB	L+		112.5	14A	25	1	1	1			1	3	1				
Rte 120 - R4.60 TO R4.61	WB	R+	75	37.5	16B						1	1	3	1				
Rte 120 - R4.95 TO R4.96	EB	R+	75	37.5	16B						1	1	3	1				
Rte 120 - R5.20 TO R5.21	EB	R+	75	37.5	16B						1	1	3	1				
Rte 120 - R5.30 (Br No. 29-0276)	EB	L+	200															
Rte 120 - R5.30 (Br No. 29-0276)	EB	L+		87.5	14A	25	1	1	1			1	3	1				
Rte 120 - R5.30 (Br No. 29-0276)	WB	L+		112.5	14A	25	1	1	1			1	3	1				
SHEET 1 SUBTOTAL			7205	6087.5		1250	12	12	12	14	14	13	81	27	312.5	4200.5	58.45	

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.  
(1) - QUANTITY INCLUDED IN HMA (TYPE A) TABLE.

**SUMMARY OF QUANTITIES**  
**Q-1**



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 TERRY OGLE  
 FUNCTIONAL SUPERVISOR  
 PERLITA BALBIN  
 JOSE HUERTA  
 REVISOR BY  
 DATE REVISOR  
 4/29/10  
 PB  
 CALCULATED/DESIGNED BY  
 CHECKED BY

**EXISTING DRAINAGE INLET (N)**

LOCATION - PM	DIRECTION	DESCRIPTION
EB ON-RAMP (YOSEMITE Ave) - PM R1.46	EB	GI DI, 24-12 GRATE
Rte 120 - PM R1.42	WB	GI DI, 24-12 GRATE
Rte 120 - PM R1.56	WB	GI DI, 24-12 GRATE
Rte 120 - PM R1.65	WB	GI DI, 24-12 GRATE
Rte 120 - PM R1.76	WB	GI DI, 24-12 GRATE
Rte 120 - PM R1.94	WB	GI DI, 24-12 GRATE
Rte 120 - PM R2.02	WB	GI DI, 24-12 GRATE
Rte 120 - PM R2.12	WB	GI DI, 24-12 GRATE
Rte 120 - PM R2.18	WB	GI DI, 24-12 GRATE
Rte 120 - PM R2.26	WB	GI DI, 24-12 GRATE
Rte 120 - PM R2.35	WB	GI DI, 24-12 GRATE
Rte 120 - PM R2.45	WB	GI DI, 24-12 GRATE
Rte 120 - PM R2.54	WB	GI DI, 24-12 GRATE
Rte 120 - PM R2.64	WB	GI DI, 24-12 GRATE
Rte 120 - PM R5.74	WB	GI DI, 24-12 GRATE
Rte 120 - PM R5.86	WB	GI DI, 24-12 GRATE
Rte 120 - PM R5.97	WB	GI DI, 24-12 GRATE
Rte 120 - PM R6.08	WB	GI DI, 24-12 GRATE
Rte 120 - PM R6.16	WB	GI DI, 24-12 GRATE
Rte 120 - PM R6.27	WB	GI DI, 24-12 GRATE
Rte 120 - PM R6.48	WB	GI DI, 24-12 GRATE

(N) FOR INFORMATION ONLY

**HMA DIKE**

LOCATION - PM TO PM	DIRECTION	PLACE HMA DIKE (TYPE E) LF	* HMA (TYPE A) TON
WB ON-RAMP (YOSEMITE Ave) - R1.14 TO R1.31	WB	1000	26.29
EB OFF-RAMP (YOSEMITE Ave) - R1.14 TO R1.31	EB	1000	26.29
WB ON-RAMP (YOSEMITE Ave) - R3.24 TO R3.30	WB	300	7.89
Rte 120 - R0.59 TO R1.31	EB	3800	99.89
Rte 120 - R0.50 TO R1.40	WB	4750	124.86
MBGR DIKE			59.26
<b>TOTAL</b>		<b>10,850</b>	<b>344.48</b>

\* - QUANTITY INCLUDED IN ROADWAY QUANTITY TABLE.

**REMOVE ASPHALT CONCRETE DIKE**

LOCATION - PM TO PM	DIRECTION	LF
WB ON-RAMP (YOSEMITE Ave) - R1.14 TO R1.31	WB	1000
EB OFF-RAMP (YOSEMITE Ave) - R1.14 TO R1.31	EB	1000
WB ON-RAMP (AIRPORT WAY) - R3.24 TO R3.30	WB	300
Rte 120 - R0.50 TO R1.40	WB	4750
Rte 120 - R0.59 TO R1.31	EB	3800
Rte 120 - R1.35 TO R1.36	WB	87.5
Rte 120 - R1.67 TO R1.68	EB	644
Rte 120 - R1.83 TO R2.28	EB	2392
Rte 120 - R1.87 TO R1.88	WB	87.5
Rte 120 - R2.30 TO R2.32	WB	87.5
Rte 120 - R2.31 TO R2.54	EB	1127
Rte 120 - R6.15 TO R6.17	EB	87.5
<b>TOTAL</b>		<b>15,363</b>

**METAL BEAM GUARD RAILING**

LOCATION - PM TO PM	DIRECTION	SIDE	REMOVE MBGR		(N) (LAYOUT TYPE)	DOUBLE MBGR (WOOD POST) LF	CRASH CUSHION (TYPE CAT) EA	CRASH CUSHION (TYPE CAT) BACKUP EA	RAIL TENSIONING ASSEMBLY EA	TRANSITION RAILING (TYPE WB) EA	ALTERNATIVE FLARED TERMINAL SYSTEM EA	END ANCHOR ASSEMBLY (TYPE SFT) EA	GUARD RAILING DELINEATOR (TYPE F) EA	OBJECT MARKER (TYPE L-1) EA	PLACE HMA DIKE		HMA (TYPE A) TON (1)
			LF	LF											TYPE C LF	TYPE F LF	
			Rte 120 - R5.63 TO R5.65	WB											R+	75	37.5
Rte 120 - R5.90 TO R5.92	EB	R+	75	37.5	16B						1	1	3	1			
Rte 120 - R5.91	EB	L+	150														
Rte 120 - R5.91	EB	L+		75	14A	25	1	1	1			1	3	1			
Rte 120 - R5.91	WB	L+		100	14A	25	1	1	1			1	3	1			
Rte 120 - R6.01 TO R6.12 (Br No. 29-0277R)	EB	R+	603	550	12B					1	1		3	1			
Rte 120 - R6.10 TO R6.12 (Br No. 29-0277R)	EB	L+	150	100	12E	175	1	1	1	1			3	1			
Rte 120 - R6.15 TO R6.17 (Br No. 29-0277L)	WB	L+	150	87.5	12E	150	1	1	1	1			3	1			
Rte 120 - R6.15 TO R6.16 (Br No. 29-0277L)	WB	R+	62.5		12B					1	1		3	1	62.5	25	0.81
Rte 120 - R6.15 TO R6.35 (Br No. 29-0277R)	EB	R+	1095	1075	12D					1			3	1			
Rte 120 - R6.32 TO R6.34	EB	L+	150	225	12E	150	1	1	1	1			3	1			
SHEET 1 SUBTOTAL			7205	6087.5		1250	12	12	12	14	14	13	81	27	312.5	4200.5	58.45
SHEET 2 SUBTOTAL			2510.5	2287.5		525	5	5	5	6	4	4	30	10	62.5	25	0.81
<b>TOTAL</b>			<b>9715.5</b>	<b>8375</b>		<b>1775</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>20</b>	<b>18</b>	<b>17</b>	<b>111</b>	<b>37</b>	<b>375</b>	<b>4225.5</b>	<b>59.26</b>

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

(1) - QUANTITY INCLUDED IN PLACE HMA DIKE TABLE.

**SUMMARY OF QUANTITIES Q-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	13	46

Jose A Huerta 4/7/10  
 REGISTERED CIVIL ENGINEER DATE  
 5/10/10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 Jose Huerta  
 No. 52380  
 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 SCANNED COPIES OF THIS PLAN SHEET.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	14	46

*Jose A Huerta* 4/7/10  
 REGISTERED CIVIL ENGINEER DATE  
 5/10/10  
 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.

### ROADWAY ITEMS

LOCATION - PM TO PM	HMA (TYPE A)	RUBBERIZED HOT MIX ASPHALT (BWC GAP-GRADED)	TACK COAT	IMPORTED MATERIAL (SHOULDER BACKING)	CRACK TREATMENT
	TON	TON	TON	TON	LANE-MILE
W Rte 120 - N Rte 5 Conn OH (PM R0.8)	143	1			
ROUTE 120 WB	R0.5-R1.4	250	1390	9	214
	R1.4-R1.8	56	618	4	72
	R1.9-R2.3	56	618	4	
	R2.3-R6.1	527	5869	40	737
	R6.2-R6.3	14	155	1	48
ROUTE 120 EB	R0.7-R1.3	167	927	6	143
	R1.4-R1.8	111	666	5	84
	R1.9-R2.3	111	666	5	96
	R2.3-R2.6	84	499	3	72
	R2.6-R6.1	971	7485	51	832
	R6.1-R6.2	28	167	1	24
YOSEMITE Ave	R6.2-R6.4	56	333	2	48
	WB ON-RAMP	986		1	59
	WB OFF-RAMP	423		1	26
	EB OFF-RAMP	441		1	46
AIRPORT WAY	EB ON-RAMP	377		2	32
	WB ON-RAMP	1087		2	45
	WB OFF-RAMP	940		2	40
	EB OFF-RAMP	621		2	79
UNION ROAD	EB ON-RAMP	760		2	89
	WB ON-RAMP	524		2	76
	WB OFF-RAMP	514		2	70
	EB OFF-RAMP	734		2	72
MAIN STREET	EB ON-RAMP	772		2	78
	WB ON-RAMP	1092		2	87
	WB OFF-RAMP	814		2	79
	EB OFF-RAMP	569		2	80
	EB ON-RAMP	886		2	87
HMA DIKE	345				
TOTAL	14,316	19,536	161	3415	56

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR: TERRY OGLE  
 CHECKED BY: JOSE HUERTA  
 REVISIONS: SP 4/29/10

EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

## SUMMARY OF QUANTITIES

Q-3



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	15	46

*Jose A Huerta* 4/7/10  
 REGISTERED CIVIL ENGINEER DATE  
 5/10/10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 Jose Huerta  
 No. 52380  
 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 SCANNED COPIES OF THIS PLAN SHEET.

**NOTES: (FOR THIS SHEET ONLY)**

1. SLAB LOCATIONS SHOWN ARE APPROXIMATE, EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. TRAFFIC MANAGEMENT SYSTEM ELEMENT LOCATIONS ARE APPROXIMATE.
3. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

**REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE) DRILL AND BOND DOWEL, 3" PLASTIC PIPE, CLASS 2 AGGREGATE BASE**

PM	(N) LANE No. 1 # OF SLABS	(N) LANE No. 2 # OF SLABS	(N) LENGTH	(N) WIDTH	(N) DEPTH	REPLACE Conc Pymt (RAPID STRENGTH Conc)	DOWEL BAR (DRILL & BOND)	3" PLASTIC PIPE (EDGE DRAIN)
						CY	LF	LF
ROUTE 120 WB	R0.60	2	36'	12'	1.20'	19	54	
	R0.90	1	18'		1.20'	10	27	
	R1.30	3	54'		1.20'	29	81	
	R1.40	1	18'		1.15'	9	27	
	R1.80	3	54'			28	81	
	R2.10	1	18'			9	27	
	R3.00	1	18'			9	27	
	R4.10	2	36'			18	54	
	R4.20	1	18'			9	27	
	R4.50	1	18'			9	27	
	R4.70	2	36'			18	54	
	R4.80	2	36'			18	54	
	R5.10	1	18'			9	27	
	R5.50	1	18'			9	27	
	R5.80	1	1	36'		18	54	18
R6.10	1	1	18'		9	27		
R6.20	2	2	36'		18	54		
WB SUBTOTAL						251	729	18
Rte 120 EB	R0.50	1	8	162'	12'	86	243	162
	R0.60	5	23	504'	12'	269	756	504
	R1.20	1	2	54''	12'	29	81	54
	R5.80	1	1	36'	12'	19	54	36
EB SUBTOTAL						403	1134	756
WB SUBTOTAL						251	729	18
TOTAL						654	1863	774

**ADJUST MONUMENT TO GRADE**

Rte 120 PM	EASTBOUND SHOULDER SIDE	EACH
R0.70	R+	1
R1.00	R+	1
R1.30	R+	1
R1.60	R+	1
R1.90	R+	1
R2.20	R+	1
R2.70	R+	1
R3.00	R+	1
R3.20	R+	1
R3.50	R+	1
R3.70	R+	1
R4.00	R+	1
R4.20	R+	1
R4.50	R+	1
R5.00	R+	1
R5.20	R+	1
R5.50	R+	1
R5.70	R+	1
R5.90	R+	1
R6.20	R+	1
R6.40	R+	1
TOTAL		22

**TRAFFIC MANAGEMENT SYSTEM ELEMENTS (EXISTING)**

PM	SIDE	LOCATION	TYPE	DESCRIPTION
R0.49	WB	NORTH OF JUNCTION ROUTE SB 5	TMS	TRAFFIC MONITORING STATION
R0.54	WB	WEST OF JUNCTION ROUTE NB 5	TMS	TRAFFIC MONITORING STATION
R0.59	WB	EAST OF ROUTE 5	CMS	CHANGEABLE MESSAGE SIGN
R0.92	WB	EAST OF JUNCTION ROUTE 5	TMS	TRAFFIC MONITORING STATION
R1.27	WB	WEST OF YOSEMITE AVENUE	TMS	TRAFFIC MONITORING STATION
R1.77	WB	WYNCHÉ OH	TMS	TRAFFIC MONITORING STATION
R2.26	WB	MCKINLEY AVENUE UC	TMS	TRAFFIC MONITORING STATION
R2.28	WB	MCKINLEY AVENUE UN	RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
R2.71	WB	WEST OF AIRPORT WAY	TMS	TRAFFIC MONITORING STATION
R2.76	WB	WEST OF AIRPORT WAY	CMS	CHANGEABLE MESSAGE SIGN
R3.08	WB	AIRPORT WAY	SIGNAL	SIGNAL
R3.33	WB	AIRPORT WAY OC	TMS	TRAFFIC MONITORING STATION
R3.76	EB	WEST OF UNION ROAD	CMS	CHANGEABLE MESSAGE SIGN
R3.76	EB	WEST OF UNION ROAD	CCTV	CLOSED CIRCUIT TELEVISION
R3.83	WB	WEST OF UNION ROAD	TMS	TRAFFIC MONITORING STATION
R3.84	WB	AIRPORT WAY	RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
R4.12	EB	WEST OF MAIN STREET	TMS	TRAFFIC MONITORING STATION
R4.32	BOTH	UNION ROAD OC	TMS	TRAFFIC MONITORING STATION
R4.32	EB	SOUTH OF UNION ROAD	SIGNAL	SIGNAL
R4.32	WB	SOUTH OF UNION ROAD	SIGNAL	SIGNAL
R4.55	WB	EAST OF UNION ROAD	TMS	TRAFFIC MONITORING STATION
R4.78	BOTH	WEST OF MAIN STREET	TMS	TRAFFIC MONITORING STATION
R4.79	WB	EAST OF UNION ROAD	CMS	CHANGEABLE MESSAGE SIGN
R5.05	EB	WEST OF MAIN STREET	CMS	CHANGEABLE MESSAGE SIGN
R5.06	WB	WEST OF MAIN STREET	TMS	TRAFFIC MONITORING STATION
R5.31	EB	EAST OF MAIN STREET	TMS	TRAFFIC MONITORING STATION
R5.55	EB	SOUTH OF MAIN STREET	SIGNAL	SIGNAL
R5.56	EB	MAIN STREET	RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
R5.57	WB	SOUTH OF MAIN STREET	SIGNAL	SIGNAL
R5.58	WB	EAST OF MAIN STREET	TMS	TRAFFIC MONITORING STATION
R6.06	WB	EAST OF MAIN STREET	CMS	CHANGEABLE MESSAGE SIGN
R6.06	WB	WEST OF ROUTE 99	TMS	TRAFFIC MONITORING STATION
R6.50	WB	JUNCTION ROUTE 99	CCTV	CLOSED CIRCUIT TELEVISION

**SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATION)**

PM/PM	DIRECTION	SHOULDER	
		OUTER	Med
R0.5/R1.4	WB	48	48
R1.4/R1.8	WB	21	21
R1.9/R2.3	WB	21	21
R2.3/R6.1	WB	201	201
R6.2/R6.3	WB	5	5
WB SUBTOTAL		296	296

PM/PM	DIRECTION	SHOULDER	
		OUTER	Med
R0.7/R1.3	EB	32	32
R1.4/R1.8	EB	21	21
R1.9/R2.3	EB	21	21
R2.3/R2.6	EB	16	16
R2.6/R6.1	EB	185	185
R6.2/R6.4	EB	11	11
WB SUBTOTAL		286	286
EB SUBTOTAL		572	592
TOTAL		1164	

**SUMMARY OF QUANTITIES**

**Q-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Saravuth Phin  
 Jose Huerta  
 Terry Ogle  
 DESIGN

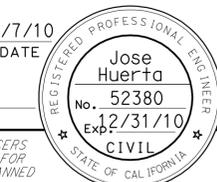
**COLD PLANE AC PAVEMENT**

**COLD PLANE AC PAVEMENT**

LOCATION PM	LENGTH (N)	WIDTH (N)	DEPTH (N)	SQYD
APPROACH TO W Rte 120 - N Rte 5 Conn OH	100'	15'	0.10'	167
APPROACH TO GUTHMILLER Rd UC (PM R1.4)	100'	15'	0.10'	167
DEPARTURE FROM GUTHMILLER Rd UC (PM R1.4)	100'	15'	0.10'	167
EXISTING DIKE (PM R1.4 TO R1.5)	528'	10'	0.10'	587
APPROACH TO WYCHE OH (PM R1.8)	100'	15'	0.10'	167
DEPARTURE FROM WYCHE OH (PM R1.9)	100'	15'	0.10'	167
EXISTING DIKE (PM 1.9 TO R2.3)	2112'	10'	0.10'	2347
APPROACH TO MCKINLEY Ave UC (PM R2.3)	100'	15'	0.10'	167
DEPARTURE FROM MCKINLEY Ave UC (PM R2.3)	100'	15'	0.10'	167
EXISTING DIKE (PM R2.3 TO R2.6)	1584'	10'	0.10'	1760
EXISTING DIKE (PM R5.7 TO R6.1)	2112'	10'	0.10'	2347
APPROACH TO SPECKLES Rd UC (PM R6.1)	100'	15'	0.10'	167
DEPARTURE FROM SPRECKLES Rd UC (PM R6.2)	100'	15'	0.10'	167
APPROACH TO MOFFAT Blvd OH (PM R6.3)	100'	15'	0.10'	167
WB SUBTOTAL				8711
APPROACH TO GUTHMILLER Rd UC (PM R1.3)	100'	15'	0.10'	167
DEPARTURE FROM GUTHMILLER Rd UC (PM R1.4)	100'	18'	0.10'	200
EXISTING DIKE (PM R1.4 TO R1.5)	528'	8'	0.10'	469
APPROACH TO WYCHE OH (PM R1.8)	100'	18'	0.10'	200
DEPARTURE FROM WYCHE OH (PM R1.9)	100'	18'	0.10'	200
APPROACH TO MCKINLEY Ave UC (PM R2.3)	100'	18'	0.10'	200
DEPARTURE FROM MCKINLEY Ave UC (PM R2.3)	100'	18'	0.10'	200
APPROACH TO SPECKLES Rd UC (PM R6.1)	100'	18'	0.10'	200
DEPARTURE FROM SPRECKLES Rd UC (PM R6.2)	100'	18'	0.10'	200
APPROACH TO MOFFAT Blvd OH (PM R6.4)	100'	18'	0.10'	200
EB SUBTOTAL				2236
SUBTOTAL 1				10,947
Rte 120 TRAVEL LANES				
PM R1.4 TO R1.8	2112'	42'	0.06'	9856
PM R1.9 TO R2.3	2112'	42'	0.06'	9856
PM R2.3 TO R2.6	1584'	42'	0.06'	7392
PM R2.6 TO R6.1	18,480'	54'	0.06'	110,880
PM R6.1 TO R6.2	528'	42'	0.06'	2464
SUBTOTAL 2				140,448
YOSEMITE Ave ON-RAMP (PM R1.2)	1470'	24'	0.25'	3920
YOSEMITE Ave OFF-RAMP (PM R1.5)	442'	14'	0.25'	688
AIRPORT WAY ON-RAMP (PM R3.1)	2111'	14'	0.25'	3284
AIRPORT WAY OFF-RAMP (PM R3.6)	1780'	14'	0.25'	2769
UNION ROAD ON-RAMP (PM R4.1)	300'	12'	0.25'	400
UNION ROAD OFF-RAMP (PM R4.5)	374'	14'	0.25'	582
MAIN STREET ON-RAMP (PM R5.1)	2034'	15'	0.25'	3390
MAIN STREET OFF-RAMP (PM R5.6)	1510'	12'	0.25'	2014
WB SUBTOTAL				17,047
YOSEMITE Ave OFF-RAMP (PM R1.2)	667'	15'	0.25'	1112
AIRPORT WAY OFF-RAMP (PM R3.1)	780'	13'	0.25'	1127
AIRPORT WAY ON-RAMP (PM R3.1)	905'	16'	0.25'	1609
UNION ROAD OFF-RAMP (PM R4.1)	1240'	13'	0.25'	1792
UNION ROAD ON-RAMP (PM R4.5)	1173'	14'	0.25'	1825
MAIN STREET OFF-RAMP (PM R5.1)	580'	12'	0.25'	774
MAIN STREET ON-RAMP (PM R5.6)	1687'	13'	0.25'	2437
EB SUBTOTAL				10,676
SUBTOTAL 3				27,723

LOCATION PM	LENGTH (N)	WIDTH (N)	DEPTH (N)	SQYD
YOSEMITE Ave ON-RAMP (PM R1.2)	50'	22'	0.15'	123
YOSEMITE Ave OFF-RAMP (PM R1.5)	50'	36'	0.15'	200
AIRPORT WAY ON-RAMP (PM R3.1)	50'	24'	0.15'	134
AIRPORT WAY OFF-RAMP (PM R3.6)	50'	36'	0.15'	200
UNION ROAD ON-RAMP (PM R4.1)	50'	22'	0.15'	123
UNION ROAD OFF-RAMP (PM R4.5)	50'	36'	0.15'	200
MAIN STREET ON-RAMP (PM R5.1)	50'	24'	0.15'	134
MAIN STREET OFF-RAMP (PM R5.6)	50'	36'	0.15'	200
WB SUBTOTAL				1314
YOSEMITE Ave OFF-RAMP (PM R1.2)	50'	15'	0.15'	84
YOSEMITE Ave ON-RAMP (PM R1.2)	50'	15'	0.15'	84
AIRPORT WAY OFF-RAMP (PM R3.1)	50'	13'	0.15'	73
AIRPORT WAY ON-RAMP (PM R3.1)	50'	16'	0.15'	89
UNION ROAD OFF-RAMP (PM R4.1)	50'	13'	0.15'	73
UNION ROAD ON-RAMP (PM R4.5)	50'	14'	0.15'	78
MAIN STREET OFF-RAMP (PM R5.1)	50'	12'	0.15'	67
MAIN STREET ON-RAMP (PM R5.6)	50'	13'	0.15'	73
EB SUBTOTAL				621
SUBTOTAL 4				1935
YOSEMITE Ave OFF-RAMP (PM R1.5)	2490'	8'	0.15'	2214
AIRPORT WAY ON-RAMP (PM R3.1)	150'	8'	0.15'	134
AIRPORT WAY OFF-RAMP (PM R3.6)	150'	8'	0.15'	134
WB SUBTOTAL				2482
YOSEMITE Ave ON-RAMP (PM R1.2)	1763'	8'	0.15'	1568
EB SUBTOTAL				1568
SUBTOTAL 5				4050
OUTER & INNER SHOULDERS (PM R1.4)	4752'	1'	0.35'	1056
OUTER SHOULDER (PM R1.8)	2112'	1'	0.35'	235
OUTER SHOULDER (PM R2.3)	2112'	1'	0.35'	235
OUTER SHOULDER (PM R6.1)	20,064	1'	0.35'	2230
OUTER SHOULDER (PM R6.3)	528'	1'	0.35'	59
WB SUBTOTAL				3815
OUTER & INNER SHOULDERS (PM R1.3)	3168'	1'	0.35'	704
OUTER & INNER SHOULDERS (PM R1.8)	2112'	1'	0.35'	470
OUTER & INNER SHOULDERS (PM R2.3)	2112'	1'	0.35'	470
OUTER & INNER SHOULDERS (PM R2.6)	1584'	1'	0.35'	352
OUTER & INNER SHOULDERS (PM R6.1)	18,480'	1'	0.35'	4107
OUTER & INNER SHOULDERS (PM R6.2)	528'	1'	0.35'	118
OUTER & INNER SHOULDERS (PM R6.4)	1056'	1'	0.35'	235
EB SUBTOTAL				6456
SUBTOTAL 6				10,271
SUBTOTAL 5				4050
SUBTOTAL 4				1935
SUBTOTAL 3				27,723
SUBTOTAL 2				140,448
SUBTOTAL 1				10,947
TOTAL				195,374

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	16	46
			4/7/10		
REGISTERED CIVIL ENGINEER			DATE		
5/10/10			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>					



- NOTES:**
- EXACT LIMITS OF COLD PLANE AC PvmT TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

**SUMMARY OF QUANTITIES**  
**Q-5**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	17	46

*Jose A Huerta* 4/7/10  
 REGISTERED CIVIL ENGINEER DATE  
 5/10/10  
 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.

**GRIND EXISTING PCC PAVEMENT  
(Rte 120 TRAVEL LANES CONFORM TAPERS AT BRIDGE  
AND BEGIN CONSTRUCTION)**

	LOCATION PM	LENGTH (N)	WIDTH (N)	DEPTH (N)	SQYD
WESTBOUND	BEGIN CONSTRUCTION (PM R0.5)	100'	24'	0.10'	267
	APPROACH TO GUTHMILLER Rd UC (PM R1.4)	100'	24'	0.10'	267
	DEPARTURE FROM GUTHMILLER Rd UC (PM R1.4)	100'	24'	0.10'	267
	APPROACH TO WYCHE OH (PM R1.8)	100'	24'	0.10'	267
	DEPARTURE FROM WYCHE OH (PM R1.9)	100'	24'	0.10'	267
	APPROACH TO MCKINLEY Ave UC (PM R2.3)	100'	24'	0.10'	267
	DEPARTURE FROM MCKINLEY Ave UC (PM R2.3)	100'	24'	0.10'	267
	APPROACH TO SPECKLES Rd UC (PM R6.1)	100'	24'	0.10'	267
	DEPARTURE FROM SPRECKLES Rd UC (PM R6.2)	100'	24'	0.10'	267
	APPROACH TO MOFFAT Blvd OH (PM R6.3)				
WB SUBTOTAL					2403
EASTBOUND	BEGIN CONSTRUCTION (PM 0.7)	100'	24'	0.10'	267
	APPROACH TO GUTHMILLER Rd UC (PM R1.3)	100'	24'	0.10'	267
	DEPARTURE FROM GUTHMILLER Rd UC (PM R1.4)	100'	24'	0.10'	267
	APPROACH TO WYCHE OH (PM R1.8)	100'	24'	0.10'	267
	DEPARTURE FROM WYCHE OH (PM R1.9)	100'	24'	0.10'	267
	APPROACH TO MCKINLEY Ave UC (PM R2.3)	100'	24'	0.10'	267
	DEPARTURE FROM MCKINLEY Ave UC (PM R2.3)	100'	24'	0.10'	267
	APPROACH TO SPECKLES Rd UC (PM R6.1)	100'	24'	0.10'	267
	DEPARTURE FROM SPRECKLES Rd UC (PM R6.2)	100'	24'	0.10'	267
APPROACH TO MOFFAT Blvd OH (PM R6.4)					
EB SUBTOTAL					2403
TOTAL					4806

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: TERRY OGLE  
 CALCULATED/DESIGNED BY: SARAVUTH PHIN  
 CHECKED BY: JOSE HUERTA  
 REVISED BY: SP  
 DATE REVISED: 4/29/10

**SUMMARY OF QUANTITIES  
Q-6**

LAST REVISION | DATE PLOTTED => 22-JUL-2010  
 00-00-00 | TIME PLOTTED => 15:26

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN

ALVARO ARAICA  
 JASPAL SINGH

ALVARO ARAICA  
 JASPAL SINGH

ALVARO ARAICA  
 JASPAL SINGH

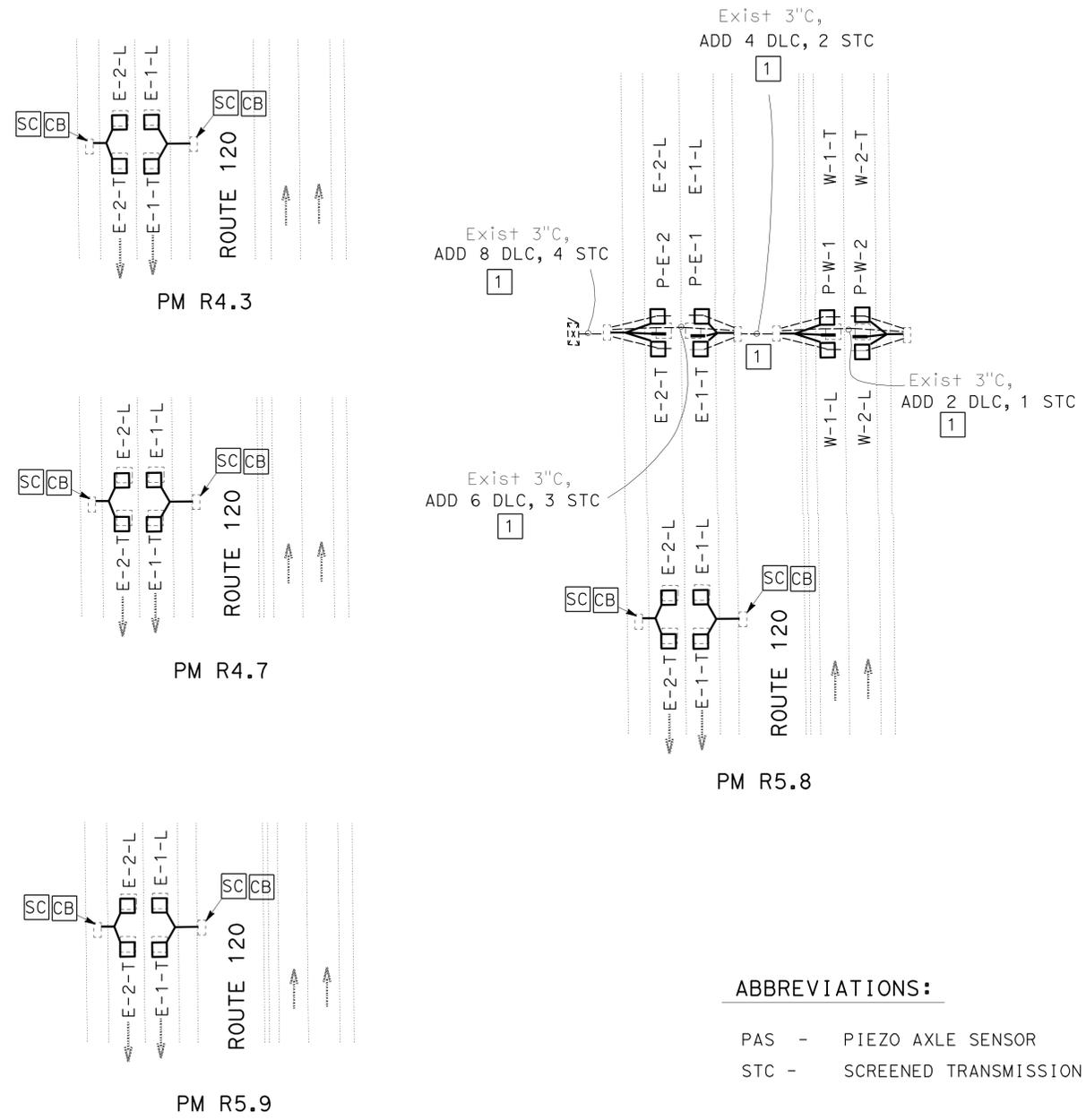
ALVARO ARAICA  
 JASPAL SINGH

**NOTES: (FOR THIS SHEET ONLY)**

1. **RC** Exist PIEZO AXLE SENSORS AND CABLES. SEE INSTALLATION DETAILS OF PIEZO AXLE SENSOR ON THIS SHEET.
2. **AB** Exist LOOP DETECTORS. SEE DETAIL A FOR INSTALLATION OF LOOP DETECTORS.
3. RIGHT OF WAY LIMITS ARE INDETERMINATE, AND ARE NOT SHOWN. THE CONTACTOR MUST CONTACT RIGHT OF ENGINEERING AT THE DISTRICT OFFICE FOR CONDITIONS OF USE PRIOR TO COMMENCING WORK.

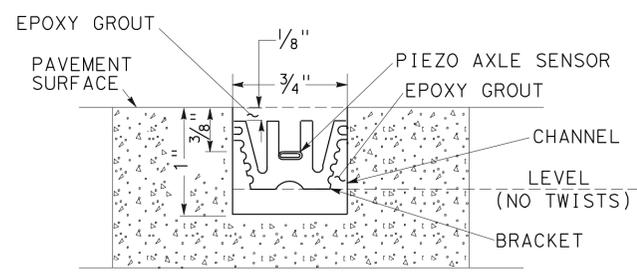


(NORTH ARROW APPLIES TO ALL 4 LOCATIONS BELOW)

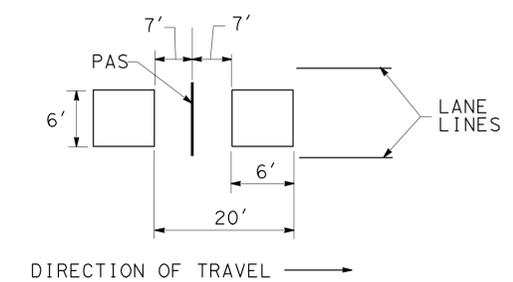


**ABBREVIATIONS:**

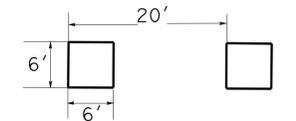
- PAS - PIEZO AXLE SENSOR
- STC - SCREENED TRANSMISSION CABLE



**SECTION A-A**

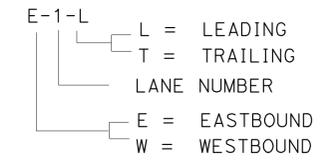
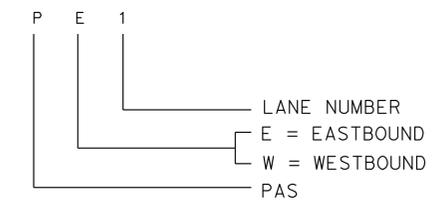


**TYPICAL LANE LAYOUT FOR PAS AND LOOP DETECTOR**



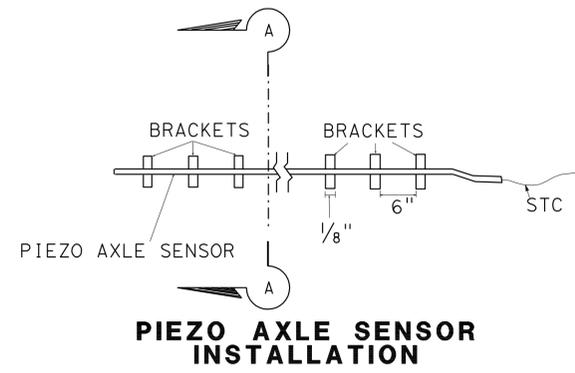
**TYPICAL LOOP DETECTOR LAYOUT**

**PAS DESIGNATION**



**LOOP DETECTOR IDENTIFICATION**

**DETAIL A**



**PIEZO AXLE SENSOR INSTALLATION**

**INDUCTIVE LOOP DETECTOR  
 MODIFY VEHICLE CLASSIFICATION STATION**

NO SCALE

**E-1**

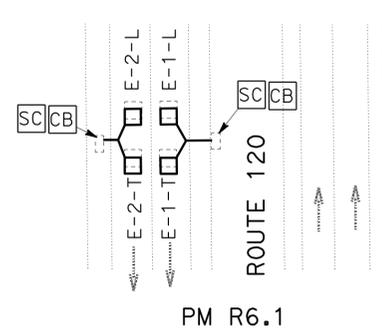
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**NOTES: (FOR THIS SHEET ONLY)**

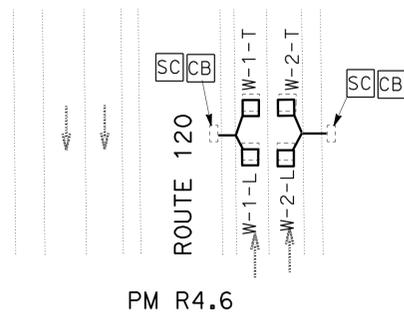
1. **AB** Exist LOOP DETECTORS. SEE SHEET E-1, DETAIL A FOR INSTALLATION OF LOOP DETECTORS.
2. RIGHT OF WAY LIMITS ARE INDETERMINATE, AND ARE NOT SHOWN. THE CONTACTOR MUST CONTACT RIGHT OF ENGINEERING AT THE DISTRICT OFFICE FOR CONDITIONS OF USE PRIOR TO COMMENCING WORK.



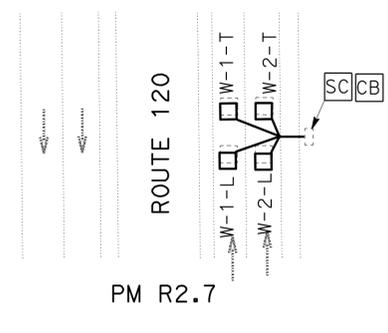
(NORTH ARROW APPLIES TO ALL 14 LOCATIONS BELOW)



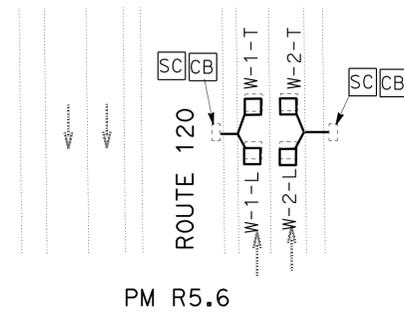
PM R6.1



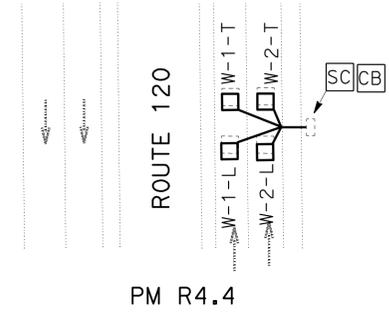
PM R4.6



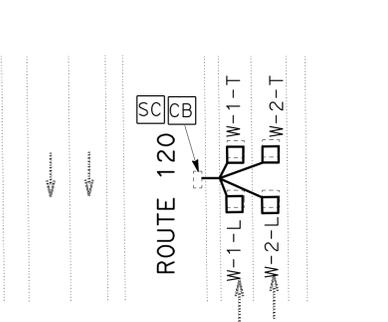
PM R2.7



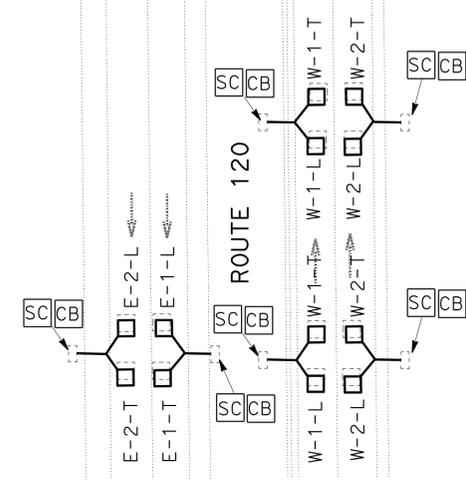
PM R5.6



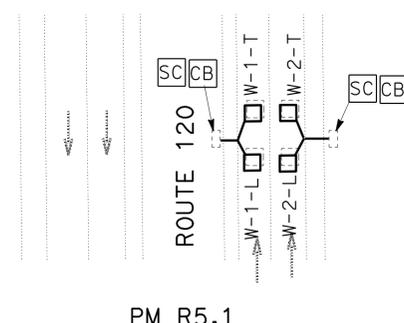
PM R4.4



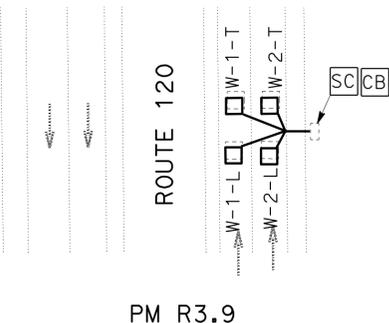
PM R2.3



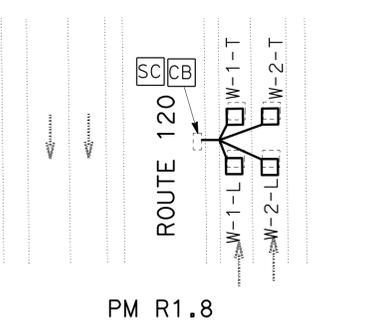
PM R0.9



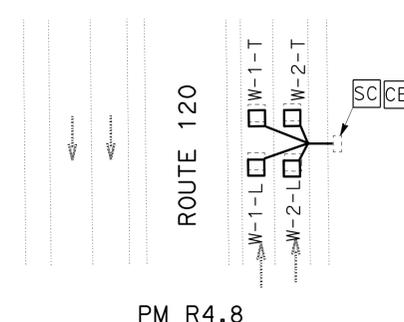
PM R5.1



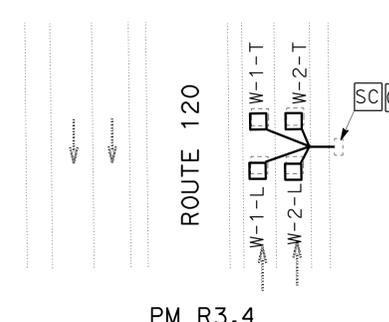
PM R3.9



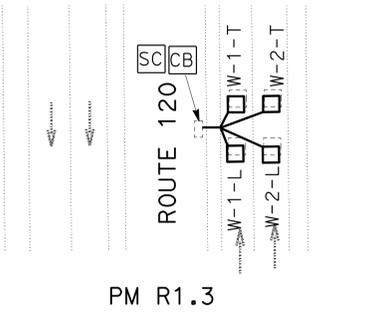
PM R1.8



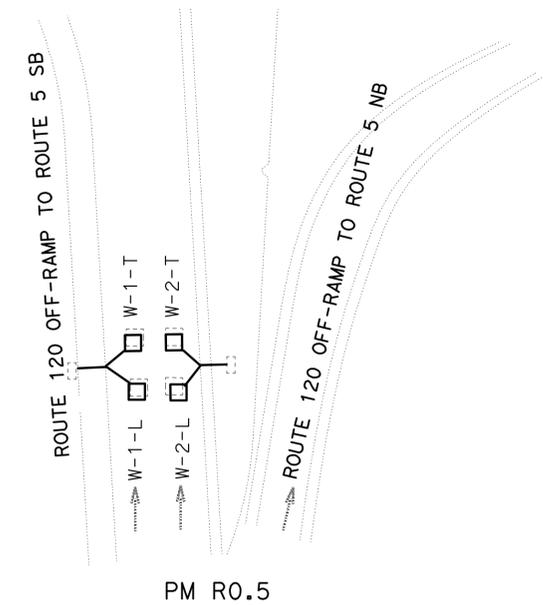
PM R4.8



PM R3.4



PM R1.3



PM R0.5

**INDUCTIVE LOOP DETECTOR**

NO SCALE

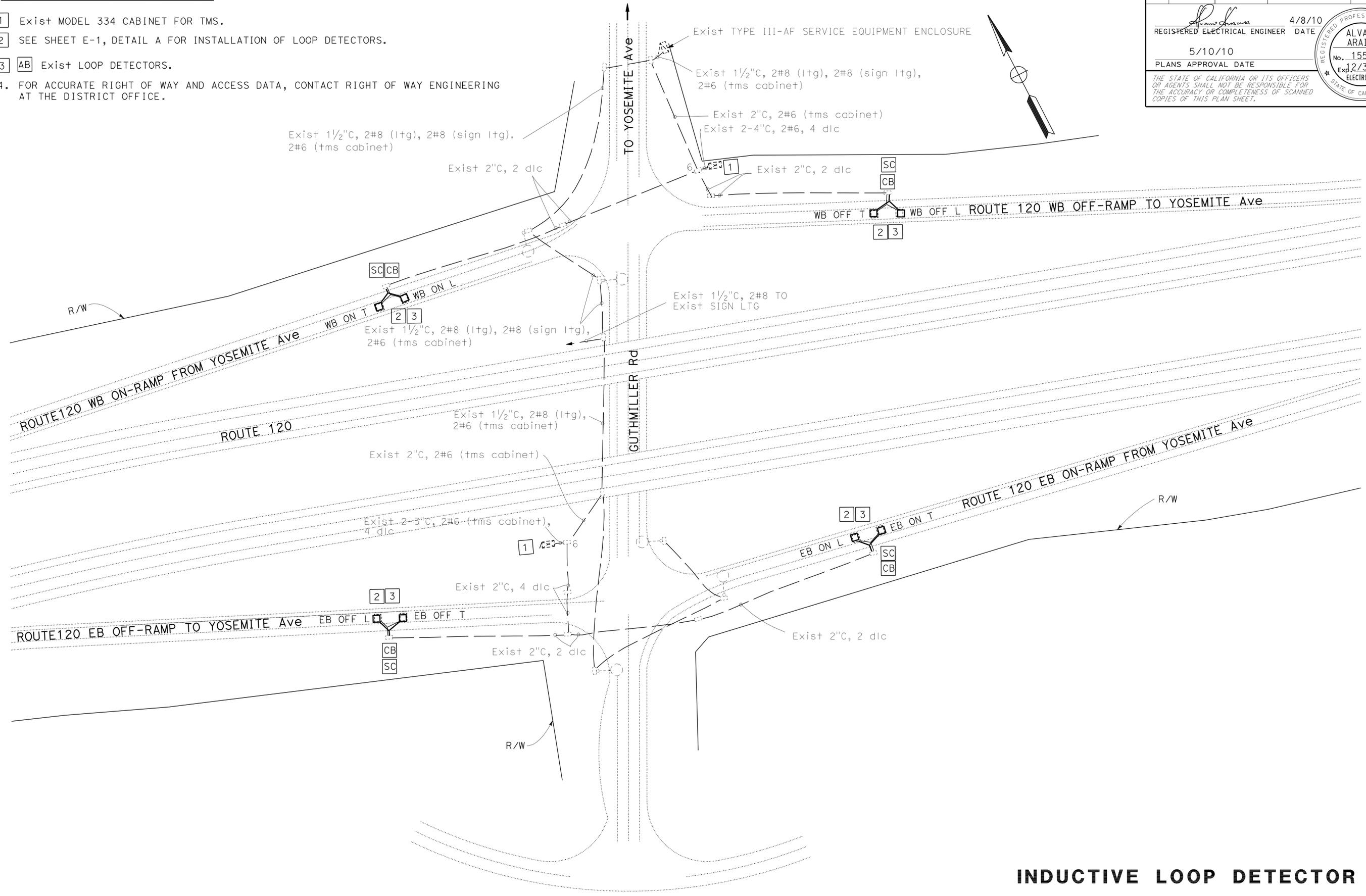
**E-2**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	20	46
REGISTERED ELECTRICAL ENGINEER			DATE	4/8/10	
ALVARO ARAICA			No.	15558	
PLANS APPROVAL DATE			DATE	5/10/10	
<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>					

**NOTES: (FOR THIS SHEET ONLY)**

- 1 Exist MODEL 334 CABINET FOR TMS.
- 2 SEE SHEET E-1, DETAIL A FOR INSTALLATION OF LOOP DETECTORS.
- 3 **AB** Exist LOOP DETECTORS.
4. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



**INDUCTIVE LOOP DETECTOR**

SCALE: 1"=50'

**E-3**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	AA	4/8/10
<b>Caltrans</b> ELECTRICAL DESIGN	FRED IYASERE	ALVARO ARAICA
FUNCTIONAL SUPERVISOR	CHECKED BY	ALVARO ARAICA
ALTI BAKHDOUN	DESIGNED BY	FRED IYASERE
	REVISOR	DATE
	AA	4/8/10

BORDER LAST REVISED 7/1/2010

USERNAME => s123936  
DGN FILE => a0v160ua003.dgn



UNIT 1515

PROJECT NUMBER & PHASE

10000007651

LAST REVISION DATE PLOTTED => 22-JUL-2010  
04-07-10 TIME PLOTTED => 15:26



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	22	46

<i>Alvaro Araica</i>	4/8/10
REGISTERED ELECTRICAL ENGINEER	DATE
5/10/10	
PLANS APPROVAL DATE	

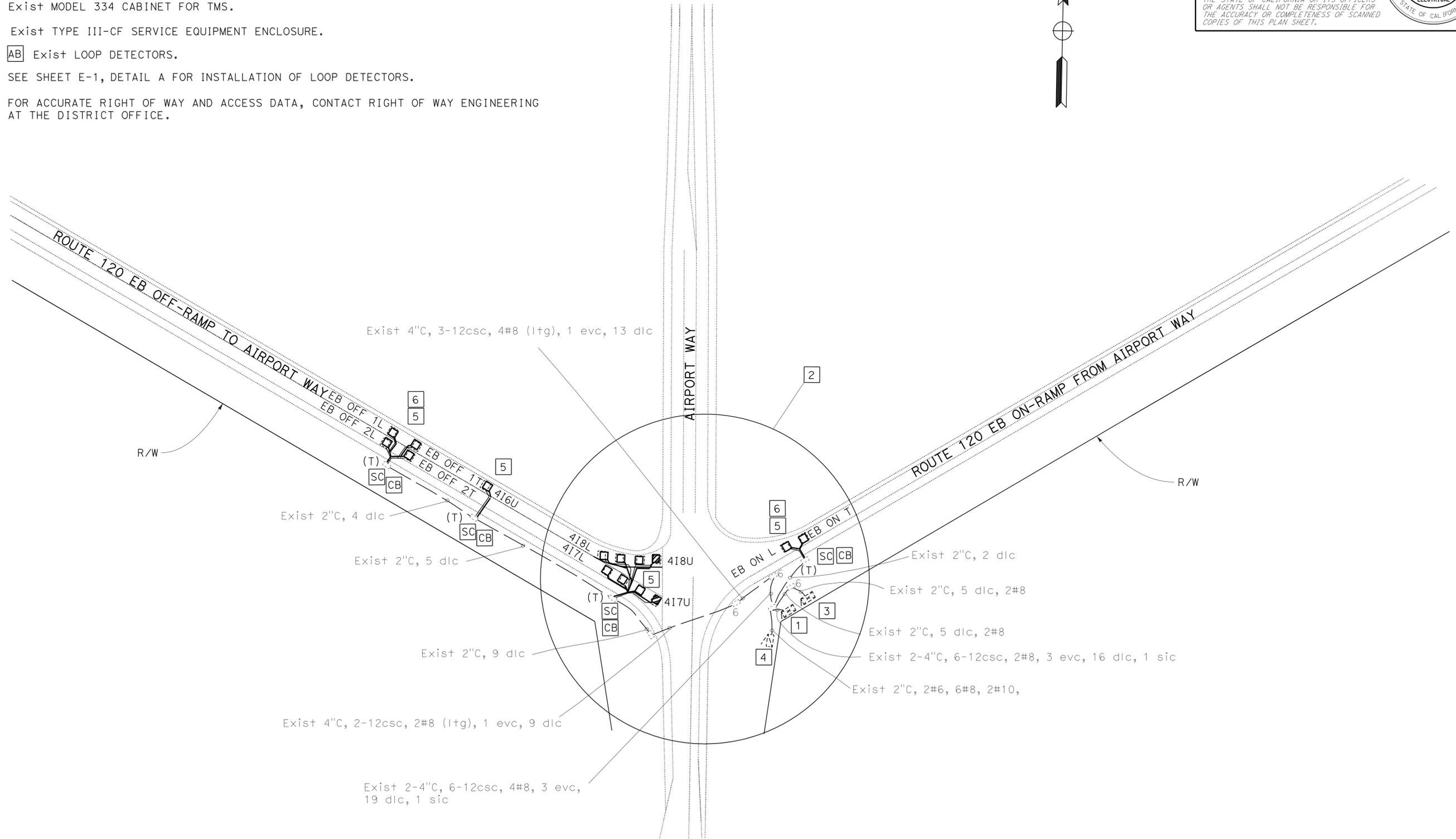
  

REGISTERED PROFESSIONAL ENGINEER	ALVARO ARAICA
No. 15558	Exp. 12/31/11
ELECTRICAL	

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**NOTES: (FOR THIS SHEET ONLY)**

- 1 Exist MODEL 332 SIGNAL CABINET.
  - 2 Exist SIGNAL AND LIGHTING DETAILS NOT SHOWN.
  - 3 Exist MODEL 334 CABINET FOR TMS.
  - 4 Exist TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
  - 5 **AB** Exist LOOP DETECTORS.
  - 6 SEE SHEET E-1, DETAIL A FOR INSTALLATION OF LOOP DETECTORS.
7. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHDOUD  
 CALCULATED/DESIGNED BY: FRED IYASERE  
 CHECKED BY: ALVARO ARAICA  
 REVISED BY: AA  
 DATE REVISED: 4/8/10

**INDUCTIVE LOOP DETECTOR**

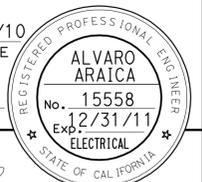
SCALE: 1"=50'

**E-5**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



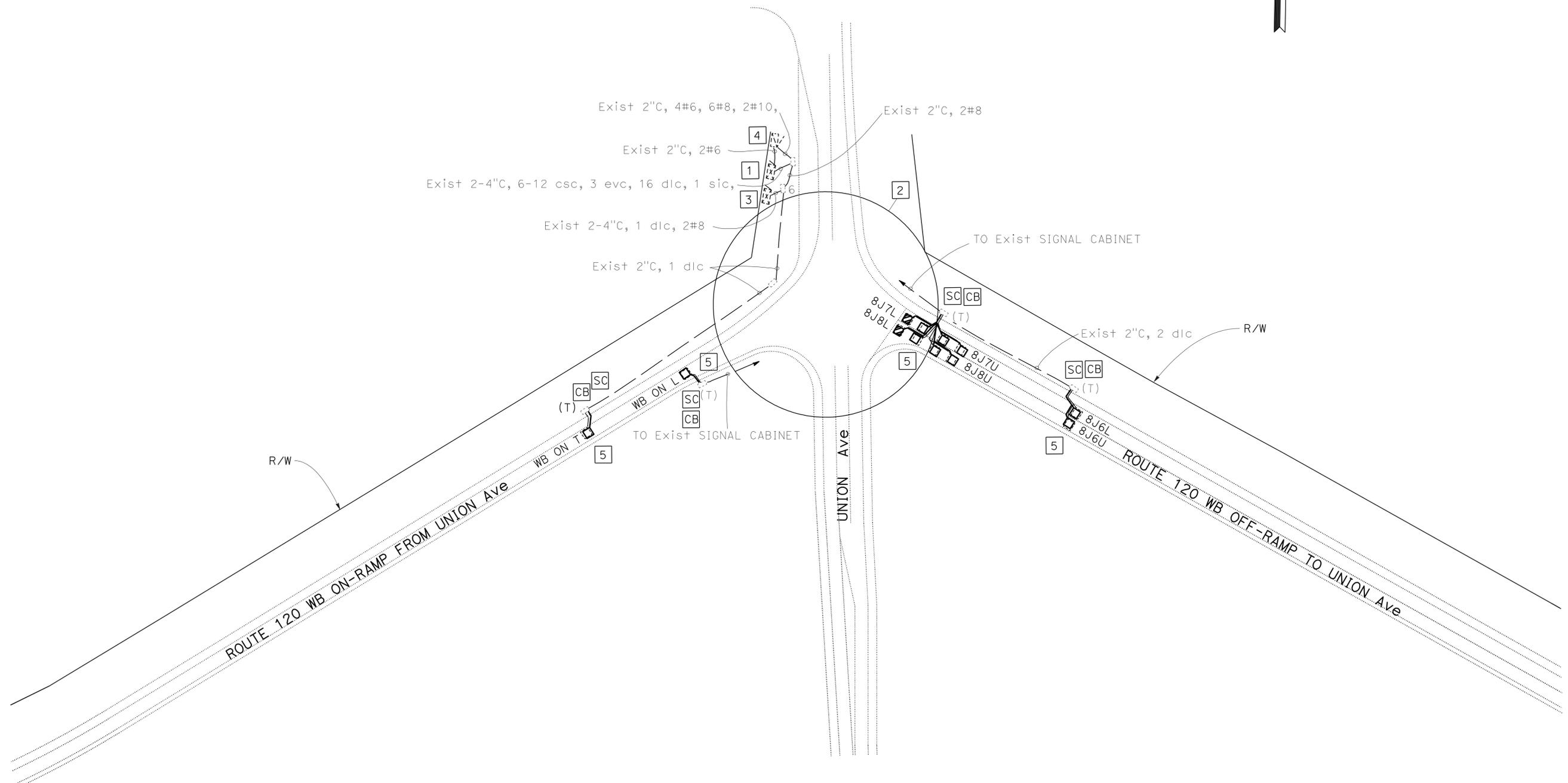
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	23	46
			REGISTERED ELECTRICAL ENGINEER	DATE	
			ALVARO ARAICA	4/8/10	
			PLANS APPROVAL DATE		
			5/10/10		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



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- 4 Exist TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
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AA	4/8/10	FRED IYASERE	ALVARO ARAICA	ALTI BAKHDOUD	ELECTRICAL DESIGN
REVISOR	DATE	DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	DEPARTMENT OF TRANSPORTATION
DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	DEPARTMENT OF TRANSPORTATION	ELECTRICAL DESIGN	



**INDUCTIVE LOOP DETECTOR**

SCALE: 1"=50'

**E-6**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

LAST REVISION DATE PLOTTED => 22-JUL-2010 04-07-10 TIME PLOTTED => 15:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	24	46

REGISTERED ELECTRICAL ENGINEER	DATE
<i>Alvaro Araica</i>	4/8/10
PLANS APPROVAL DATE	
5/10/10	

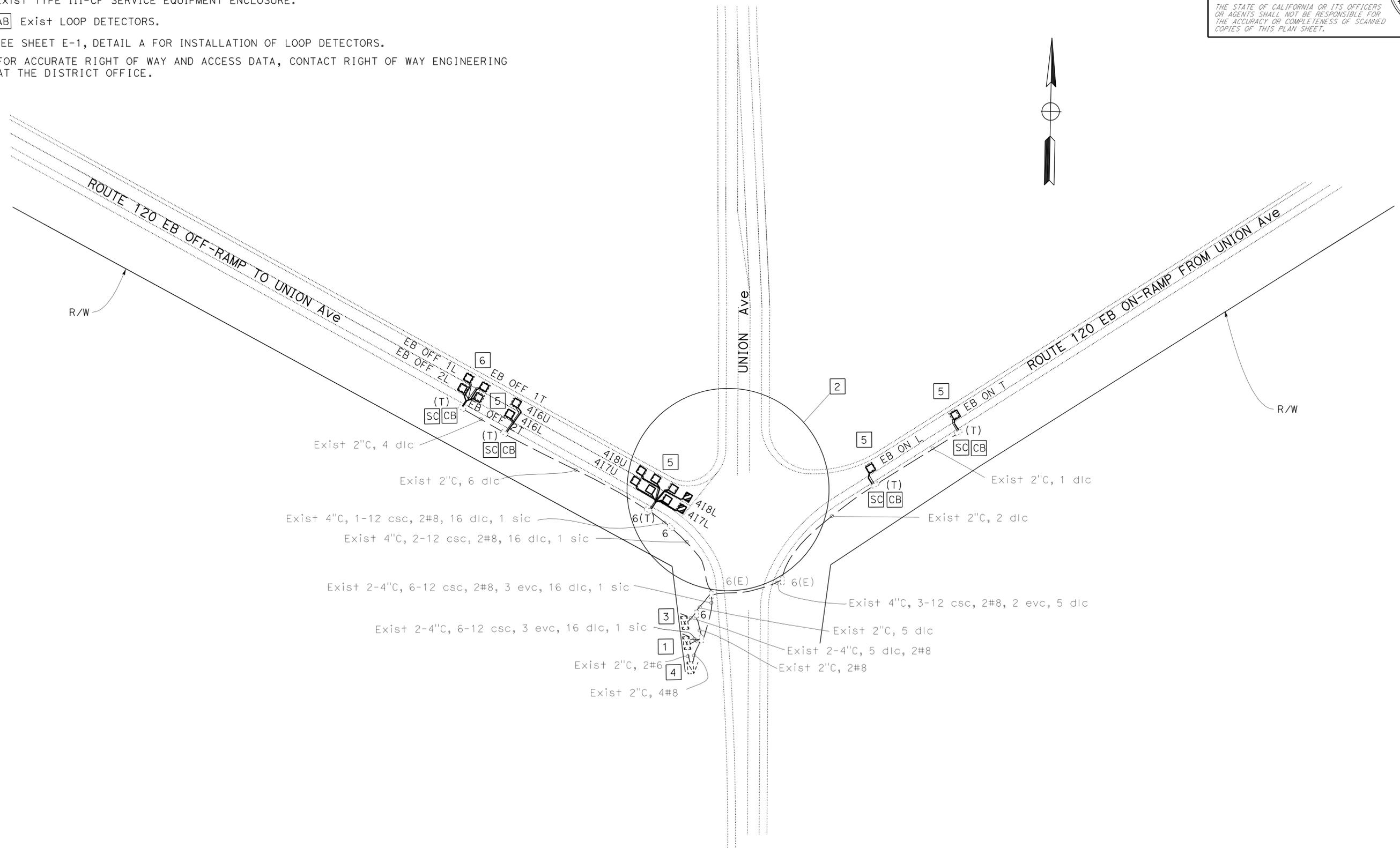
REGISTERED PROFESSIONAL ENGINEER
ALVARO ARAICA
No. 15558
Exp. 12/31/11
ELECTRICAL
STATE OF CALIFORNIA

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

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- 2 Exist SIGNAL AND LIGHTING DETAILS NOT SHOWN.
- 3 Exist MODEL 334 CABINET FOR TMS.
- 4 Exist TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
- 5 **AB** Exist LOOP DETECTORS.
- 6 SEE SHEET E-1, DETAIL A FOR INSTALLATION OF LOOP DETECTORS.
7. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

AA	4/8/10	FRED IYASERE	ALVARO ARAICA	ALTI BAKHDJUD
REVISOR	DATE	DESIGNER	CHECKER	FUNCTIONAL SUPERVISOR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - <b>ELECTRICAL DESIGN</b>				



THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**INDUCTIVE LOOP DETECTOR**

SCALE: 1"=50'

**E-7**

LAST REVISION DATE PLOTTED => 22-JUL-2010 04-07-10 TIME PLOTTED => 15:26

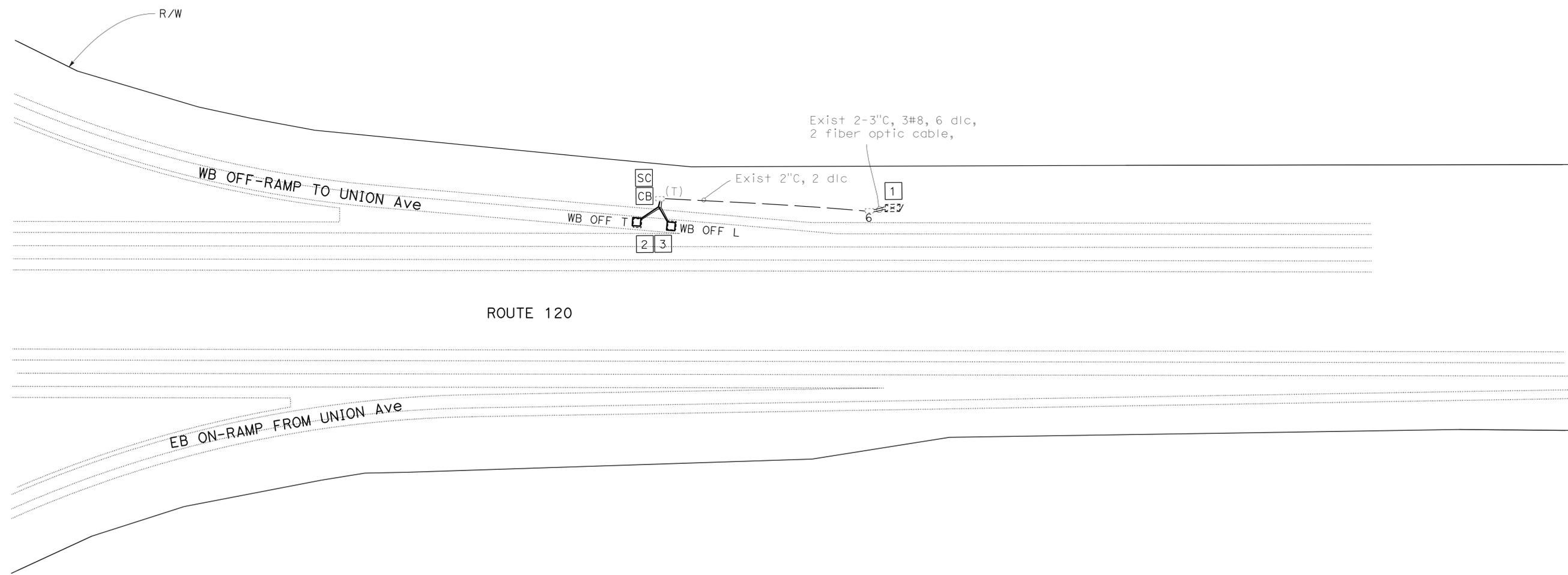
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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			ALVARO ARAICA	4/8/10	
			PLANS APPROVAL DATE		
			5/10/10		
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**NOTES: (FOR THIS SHEET ONLY)**

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- 4. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

AA	4/8/10		
REVISOR	DATE	BY	REASON
FRED IYASERE		ALVARO ARAICA	
CALCULATED/DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	
		ALI BAKHDOUD	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION			
<b>Caltrans</b> ELECTRICAL DESIGN			



**INDUCTIVE LOOP DETECTOR**

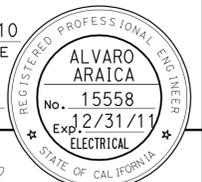
SCALE: 1"=50'

**E-8**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

LAST REVISION | DATE PLOTTED => 22-JUL-2010  
 04-07-10 | TIME PLOTTED => 15:26

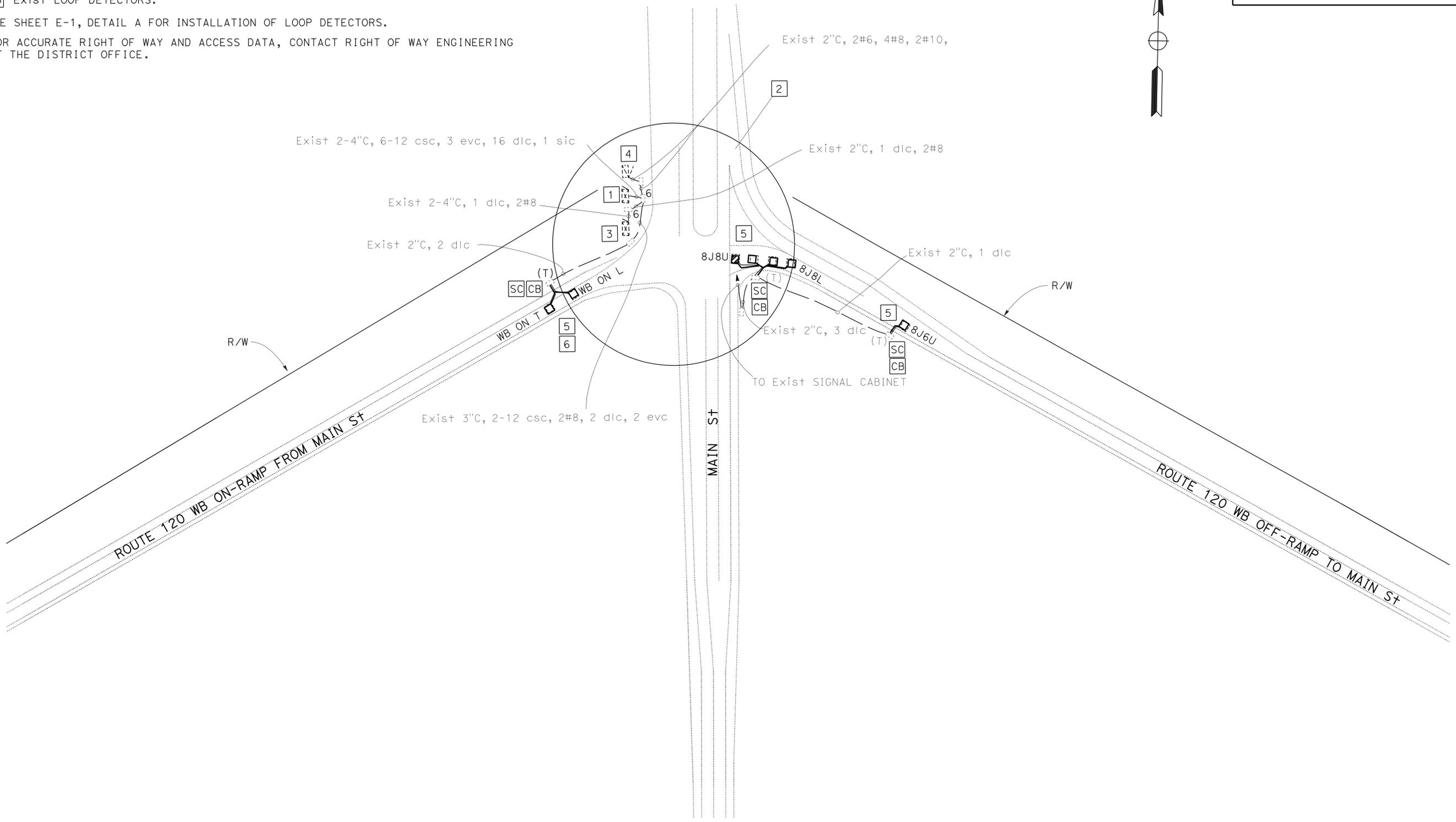
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	26	46
			REGISTERED ELECTRICAL ENGINEER	DATE	
			ALVARO ARAICA	4/8/10	
			PLANS APPROVAL DATE		
			5/10/10		
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**NOTES: (FOR THIS SHEET ONLY)**

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- 2 Exist SIGNAL AND LIGHTING DETAILS NOT SHOWN.
- 3 Exist MODEL 334 CABINET FOR TMS.
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- 6 SEE SHEET E-1, DETAIL A FOR INSTALLATION OF LOOP DETECTORS.
7. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

AA	4/8/10		
REVISED BY	DATE REVISED		
FRED IYASERE	ALVARO ARAICA		
CALCULATED-DESIGNED BY	CHECKED BY		
FUNCTIONAL SUPERVISOR			
ALT BAKHOUD			
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	<b>ELECTRICAL DESIGN</b>		



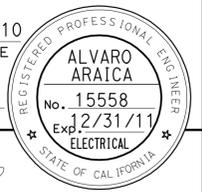
**INDUCTIVE LOOP DETECTOR**

SCALE: 1"=50'

**E-9**

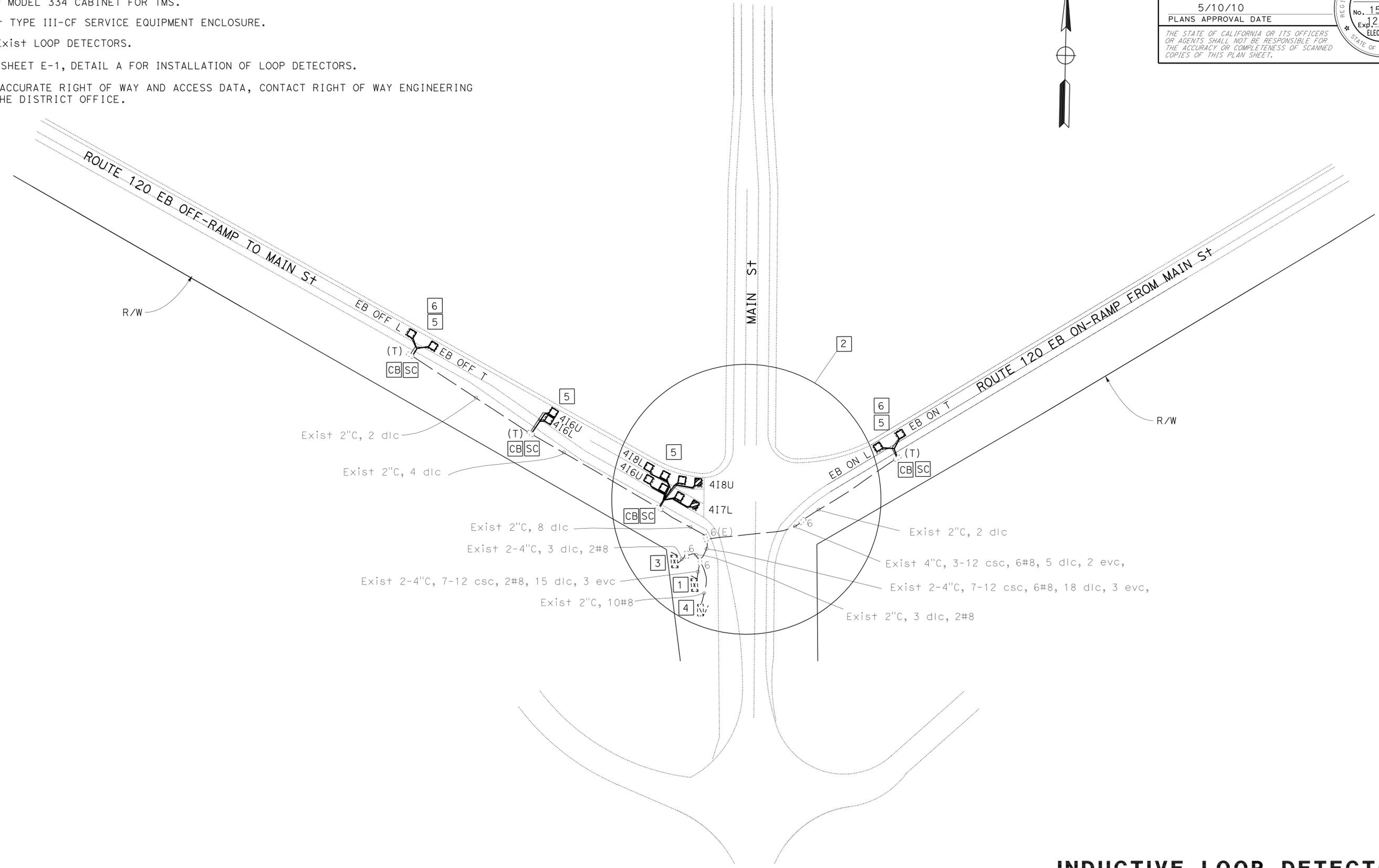
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	27	46
			REGISTERED ELECTRICAL ENGINEER	DATE	
			ALVARO ARAICA	4/8/10	
			PLANS APPROVAL DATE		
			5/10/10		
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- 6 SEE SHEET E-1, DETAIL A FOR INSTALLATION OF LOOP DETECTORS.
- 7. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	AA	REVISED BY	DATE REVISED	CALCULATED/DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR
<b>Caltrans</b> ELECTRICAL DESIGN	AA	FRED IYASERE	4/8/10	ALVARO ARAICA		ALI BAKHDOUD

**INDUCTIVE LOOP DETECTOR**  
SCALE: 1"=50'  
**E-10**

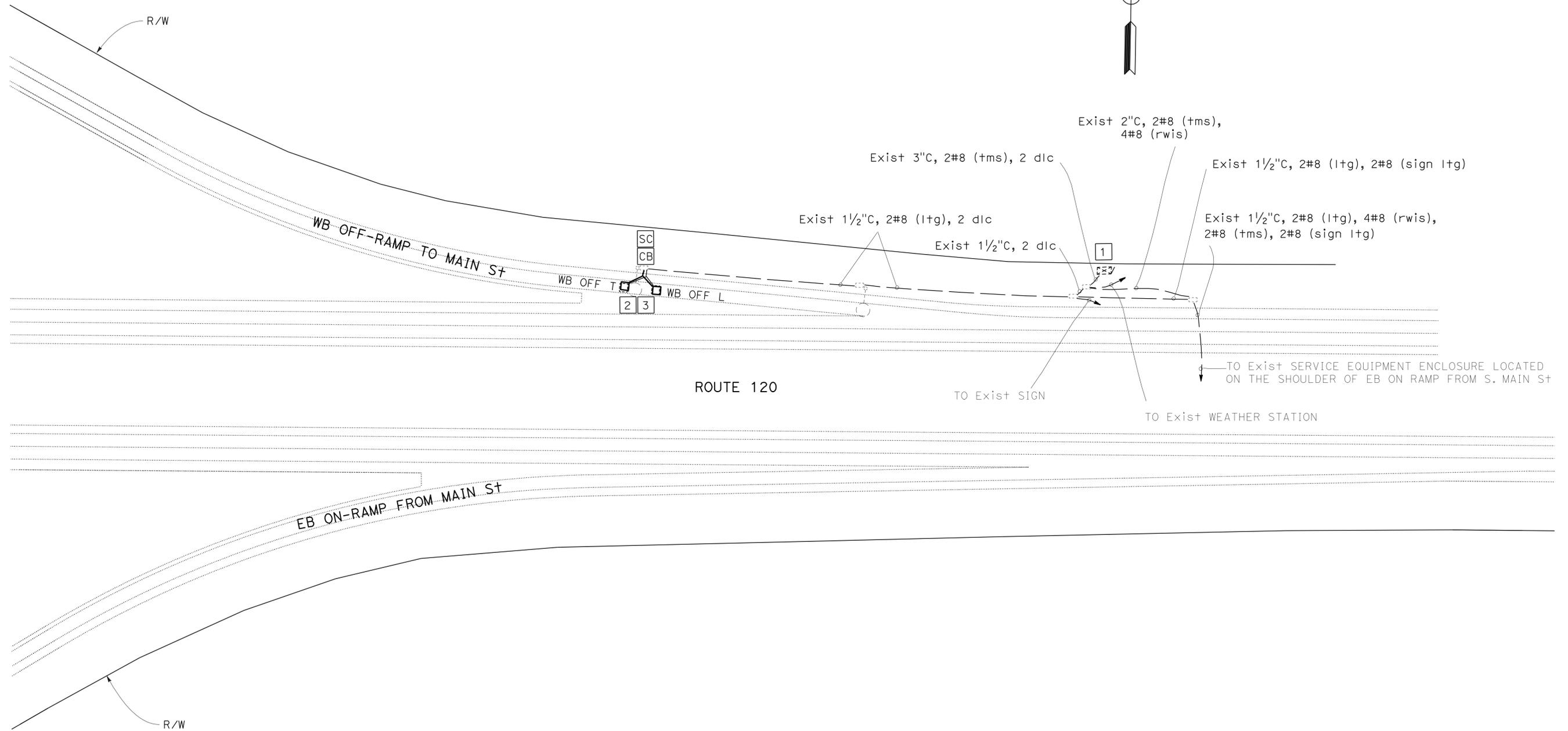
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	28	46
			REGISTERED ELECTRICAL ENGINEER	DATE	
			ALVARO ARAICA	4/8/10	
			PLANS APPROVAL DATE		
			5/10/10		
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- 3 SEE SHEET E-1, DETAIL A FOR INSTALLATION OF LOOP DETECTORS.
- 4. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	AA	4/8/10
<b>Caltrans</b> ELECTRICAL DESIGN	FRED IYASERE	ALVARO ARAICA
FUNCTIONAL SUPERVISOR	ALTI BAKHDOUD	
CALCULATED/DESIGNED BY	CHECKED BY	
REVISOR	DATE	REVISED

**INDUCTIVE LOOP DETECTOR**  
**E-11**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

SCALE: 1"=50'

LAST REVISION | DATE PLOTTED => 22-JUL-2010  
 04-07-10 | TIME PLOTTED => 15:26

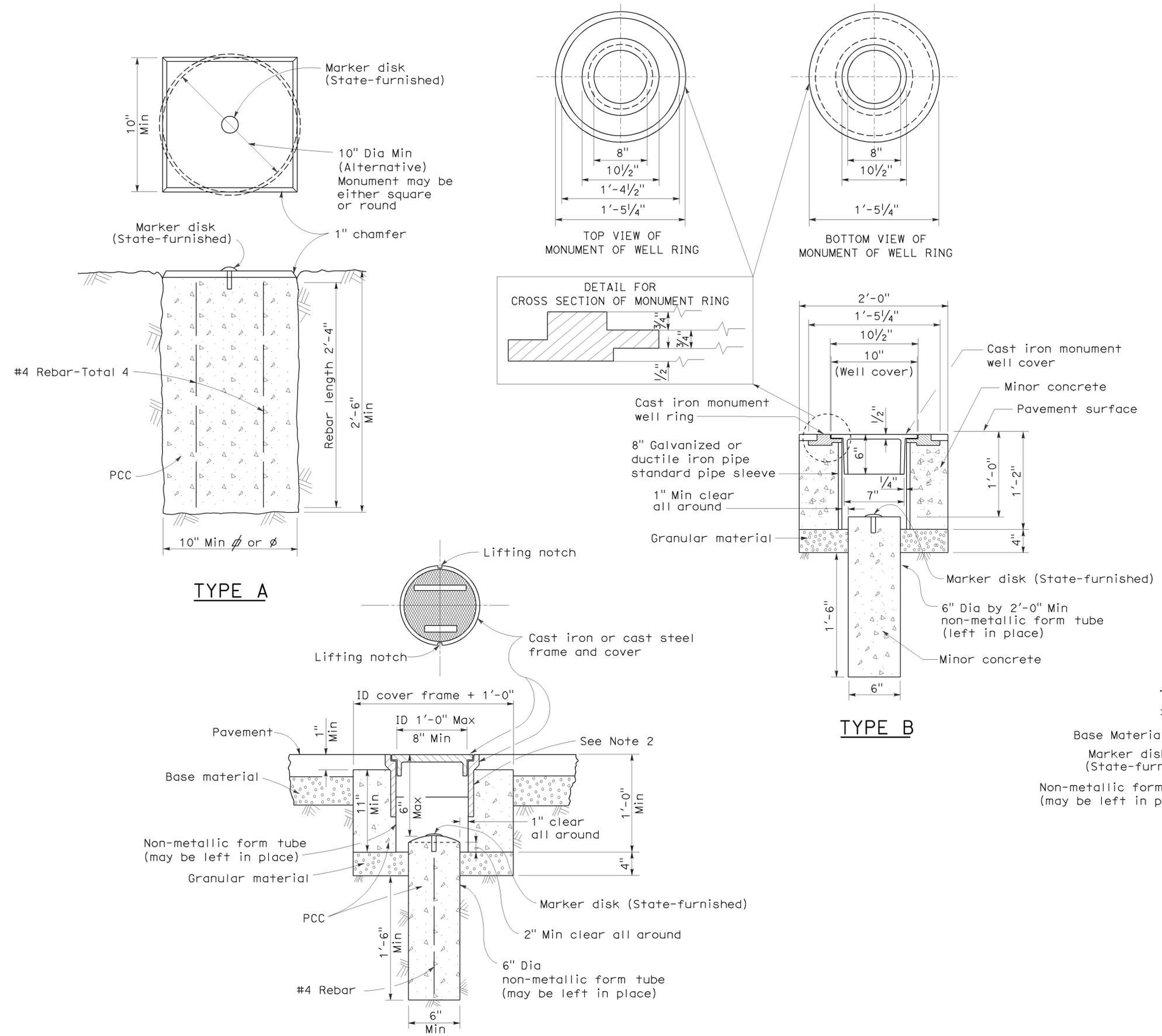
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	29	46

*Mark S. Turner*  
 PROFESSIONAL LAND SURVEYOR  
 June 30, 2006  
 PLANS APPROVAL DATE  
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LICENSED LAND SURVEYOR  
 Mark S. Turner  
 No. 6228  
 Exp. 3-31-08  
 STATE OF CALIFORNIA

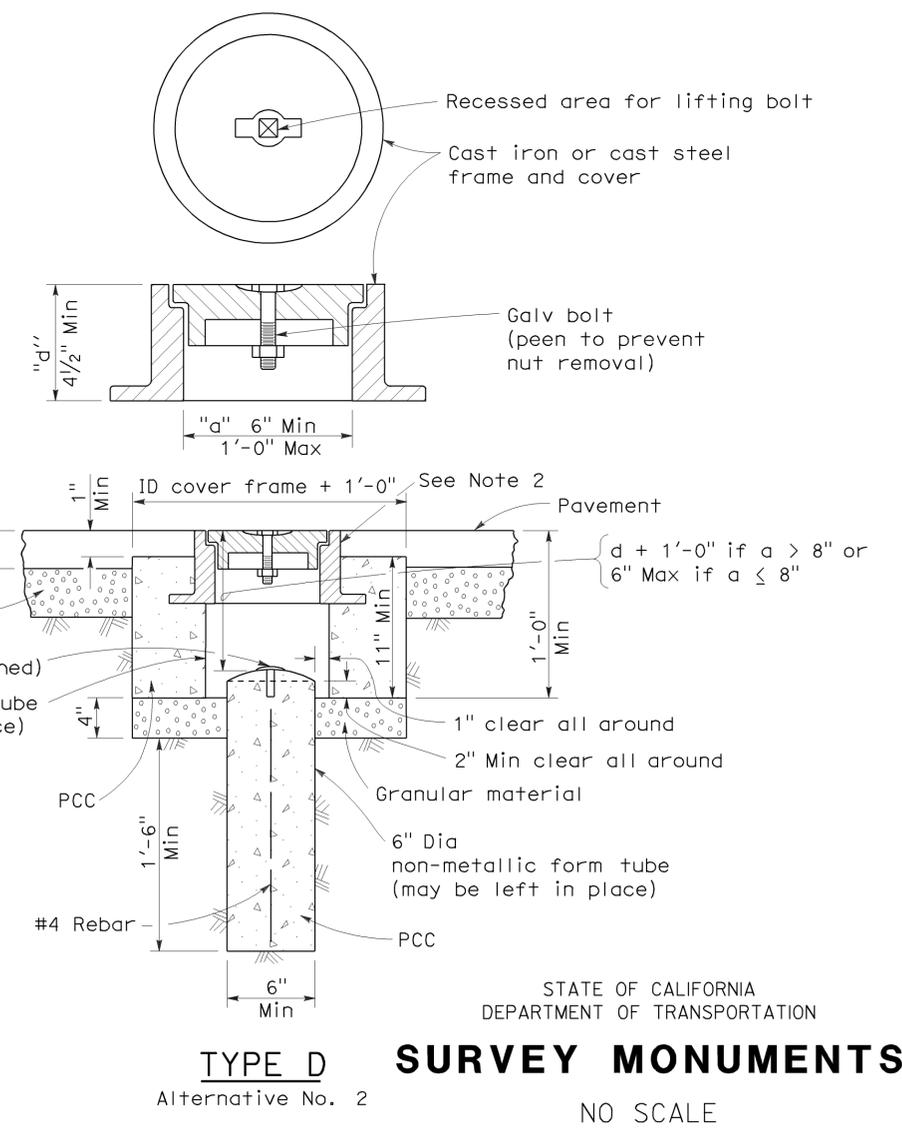
To accompany plans dated 5/10/10

2006 REVISED STANDARD PLAN RSP A74



**NOTES:**

1. The configuration of the cast iron or cast steel frame and cover may vary from that shown.
2. Frame shall be embedded in the concrete a minimum of 3".
3. Type D monument shall be either Alternative No. 1 or Alternative No. 2 at the contractor's option.
4. All portland cement concrete shall be Class 2 or minor concrete with 1" maximum aggregate.



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**SURVEY MONUMENTS**

NO SCALE

RSP A74 DATED JUNE 30, 2006 SUPERSEDES STANDARD PLAN DATED MAY 1, 2006 - PAGE 28 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A74**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	30	46

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

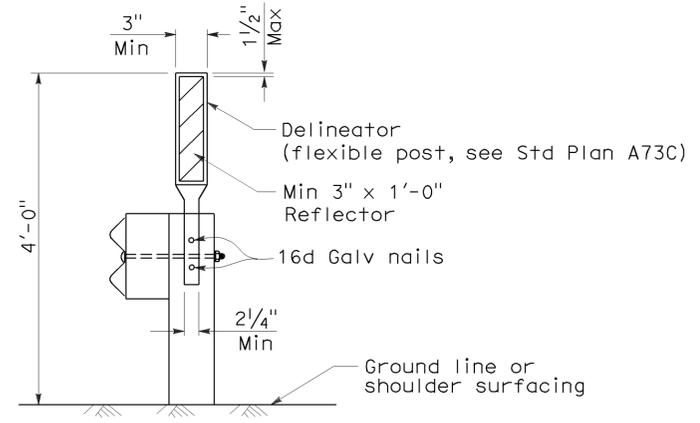
June 6, 2008  
PLANS APPROVAL DATE

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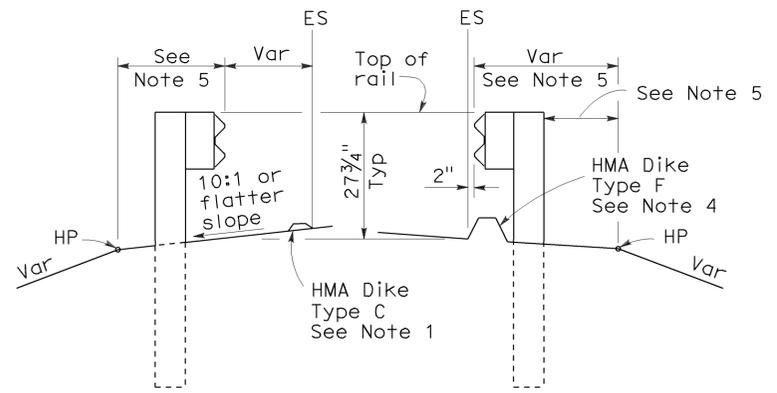
To accompany plans dated 5/10/10

**NOTES:**

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and Standard Plan A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



**GUARD RAILING DELINEATION**  
See Note 3



**DIKE POSITIONING**  
See Note 1

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL RAILING DELINEATION  
AND DIKE POSITIONING DETAILS**

NO SCALE

RSP A77C4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77C4  
DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77C4**

2006 REVISED STANDARD PLAN RSP A77C4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	31	46

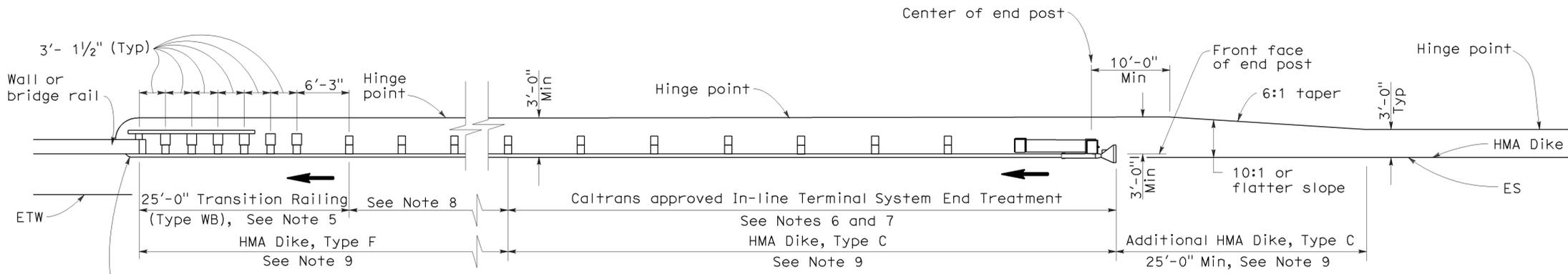
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

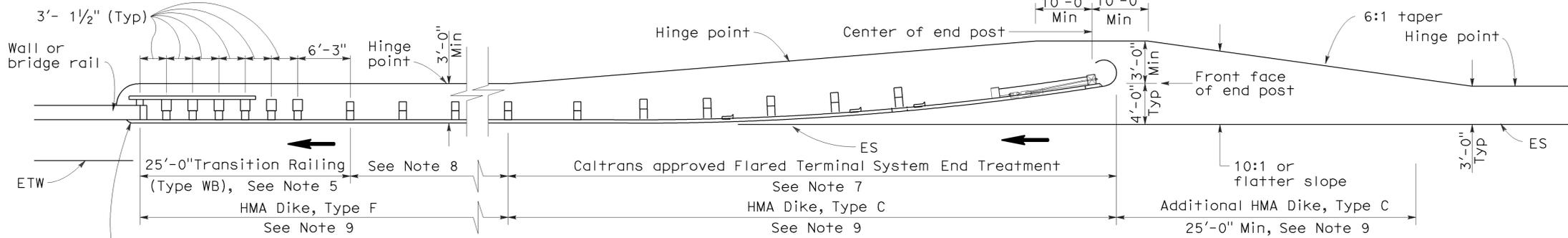
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To accompany plans dated 5/10/10



**TYPE 12A LAYOUT**

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 10



**TYPE 12B LAYOUT**

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 10

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
  - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
  - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
  - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
  - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.

- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
STRUCTURE APPROACH**

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1  
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77F1**

2006 REVISED STANDARD PLAN RSP A77F1

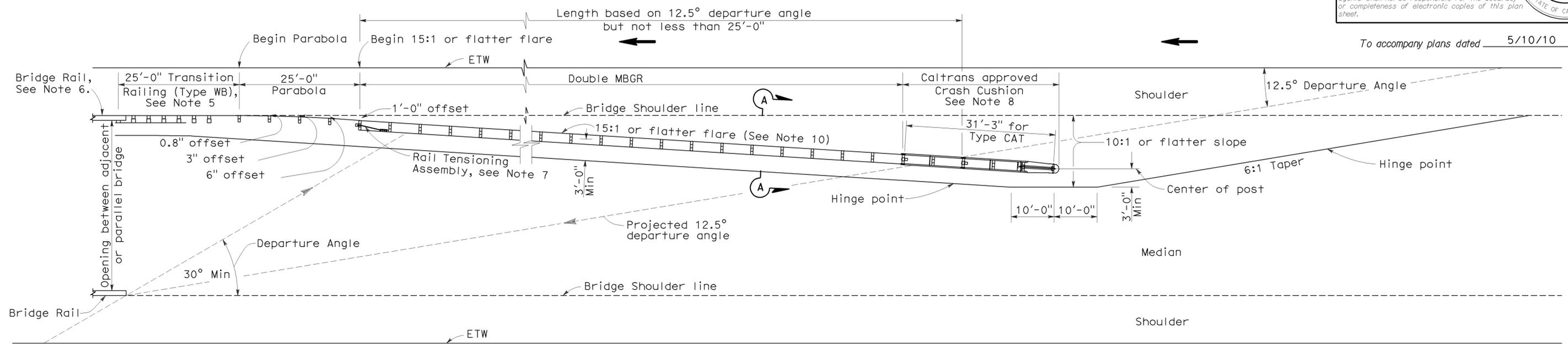
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	32	46

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

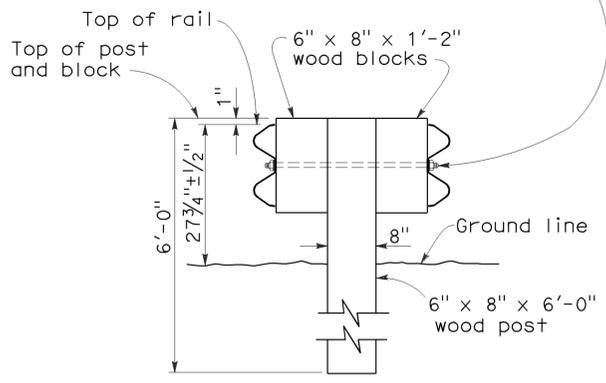


To accompany plans dated 5/10/10

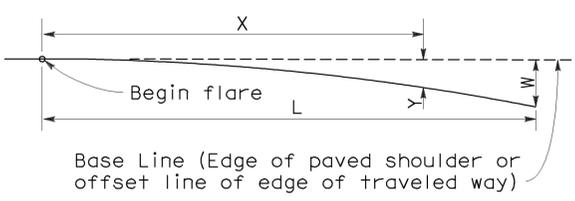
**TYPE 12E LAYOUT**

See Note 10

5/8" Ø Button head bolt with hex nut or 5/8" Ø Rod, threaded both ends, with hex nuts. 1/2" Max exposed threads after hex nut(s) tightened. No washer on rail faces for bolted connection to line post.



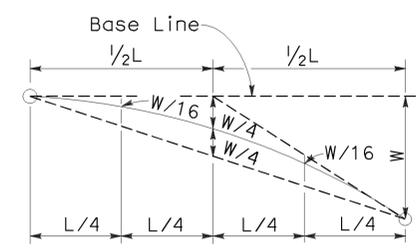
**SECTION A-A**  
**TYPICAL DOUBLE METAL BEAM GUARD RAILING**



$Y = \frac{WX^2}{L^2}$

Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare

**PARABOLIC FLARE OFFSETS**



**TYPICAL PARABOLIC LAYOUT**

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- For Transition Railing (Type WB) details, see Standard Plan A77J4.
- For additional details of a typical connection to bridge rail, see Connection Detail AA on Revised Standard Plan RSP A77J1.
- For Rail Tensioning Assembly details, see Standard Plan A77H2.
- The type of Crash Cushion to be used will be shown on the Project Plans.
- Type 12E Layout is typically used left of approaching traffic at the end of each structure on multilane freeways or expressways where a median type barrier is not constructed between separated roadbeds.
- The 15:1 or flatter flare is measured off of the edge of traveled way.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING**  
**TYPICAL LAYOUTS FOR**  
**STRUCTURE APPROACH**

NO SCALE

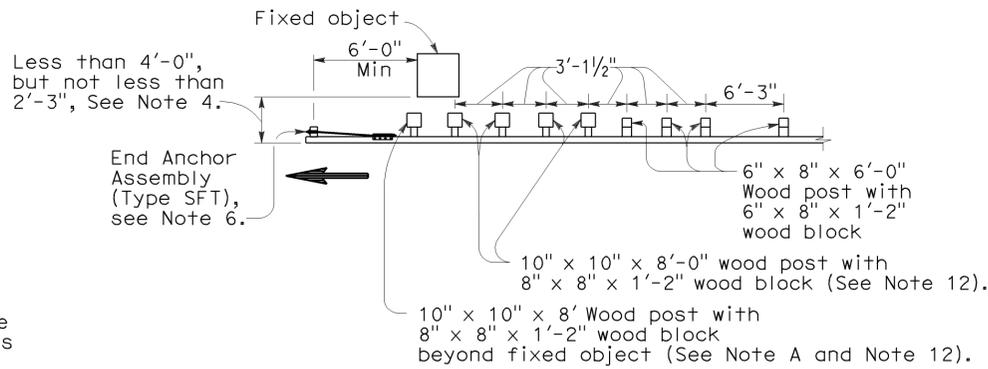
RSP A77F3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F3  
DATED MAY 1, 2006 - PAGE 56 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77F3**

2006 REVISED STANDARD PLAN RSP A77F3

**NOTES:**

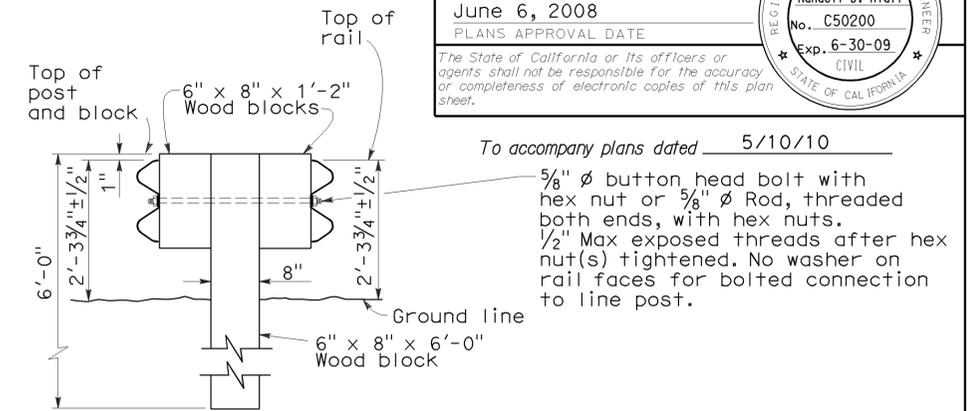
- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- For details of Rail Tensioning Assembly, see Standard Plan A77H2.
- The type of crash cushion to be used will be shown on the Project Plans.
- Type 14A layout is typically used on multilane freeways or expressways to shield fixed objects where a median type barrier is not constructed between the separated roadbeds.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- The 15:1 or flatter flare is measured off of the edge of traveled way.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic block may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



**NOTE A:** For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

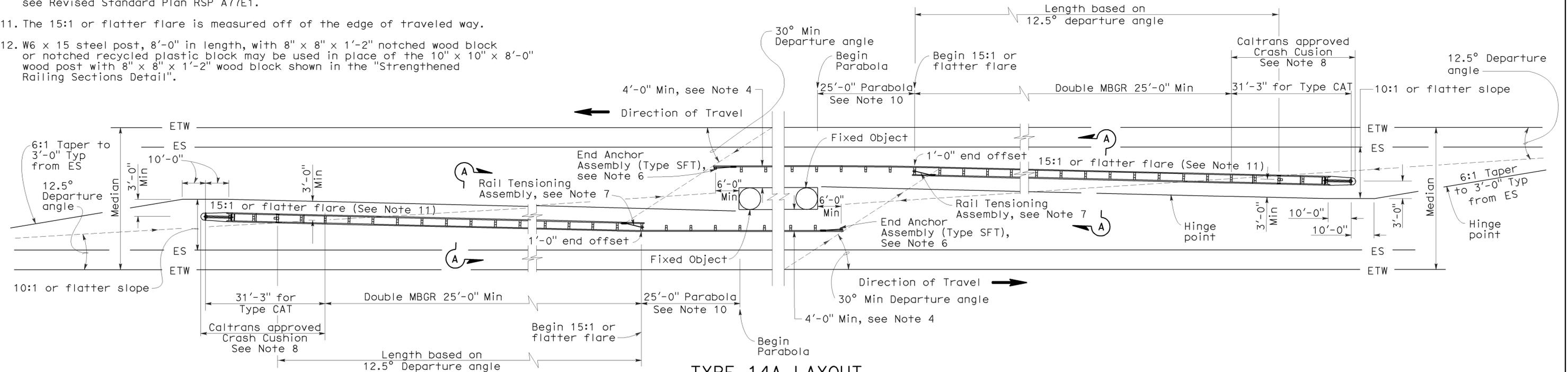
Use strengthened railing sections with Type 14A layout where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3", See Note 4.



**SECTION A-A TYPICAL DOUBLE METAL BEAM GUARD RAILING**

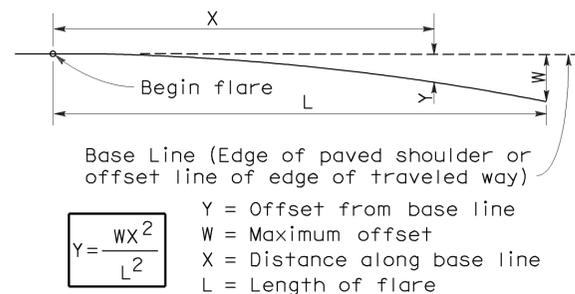
To accompany plans dated 5/10/10

5/8"  $\phi$  button head bolt with hex nut or 5/8"  $\phi$  Rod, threaded both ends, with hex nuts. 1/2" Max exposed threads after hex nut(s) tightened. No washer on rail faces for bolted connection to line post.



**TYPE 14A LAYOUT**

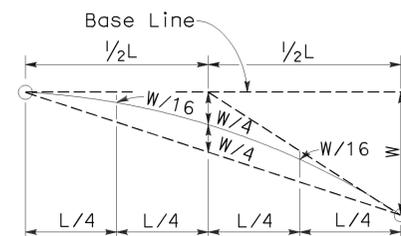
See Note 9



**PARABOLIC FLARE OFFSETS**

$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare



**TYPICAL PARABOLIC LAYOUT**

**METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR FIXED OBJECTS BETWEEN SEPARATE ROADBEDS (TWO-WAY TRAFFIC)**

NO SCALE

RSP A77G1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G1 DATED MAY 1, 2006 - PAGE 59 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G1**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5.R6.4	33	46

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

2006 REVISED STANDARD PLAN RSP A77G1

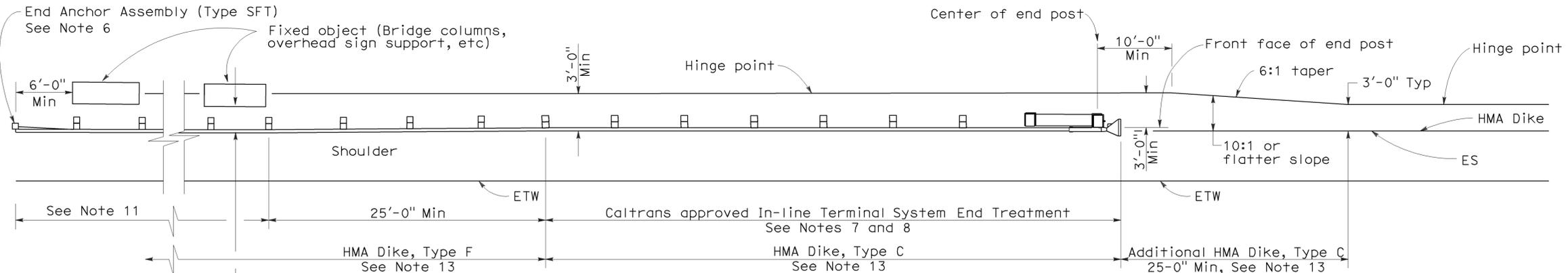
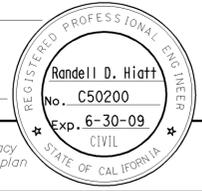
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	34	46

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

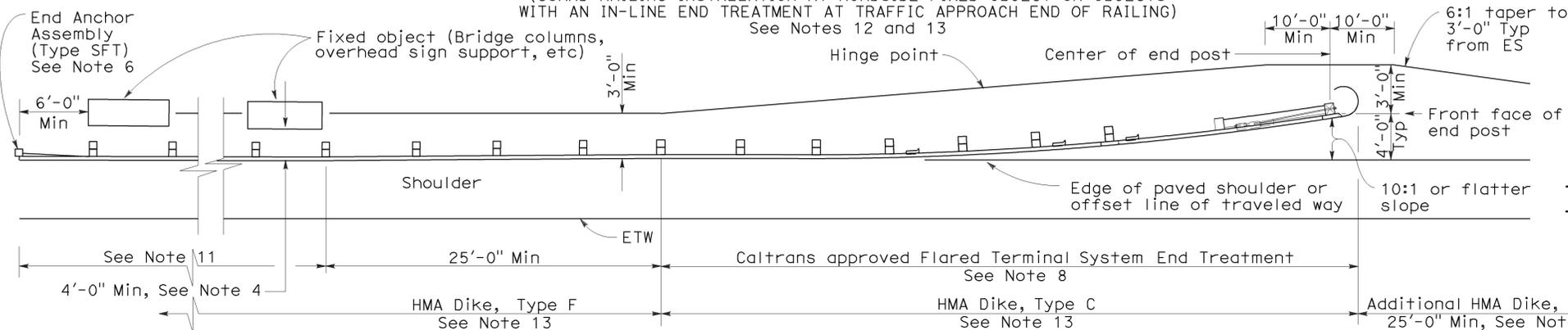
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To accompany plans dated 5/10/10



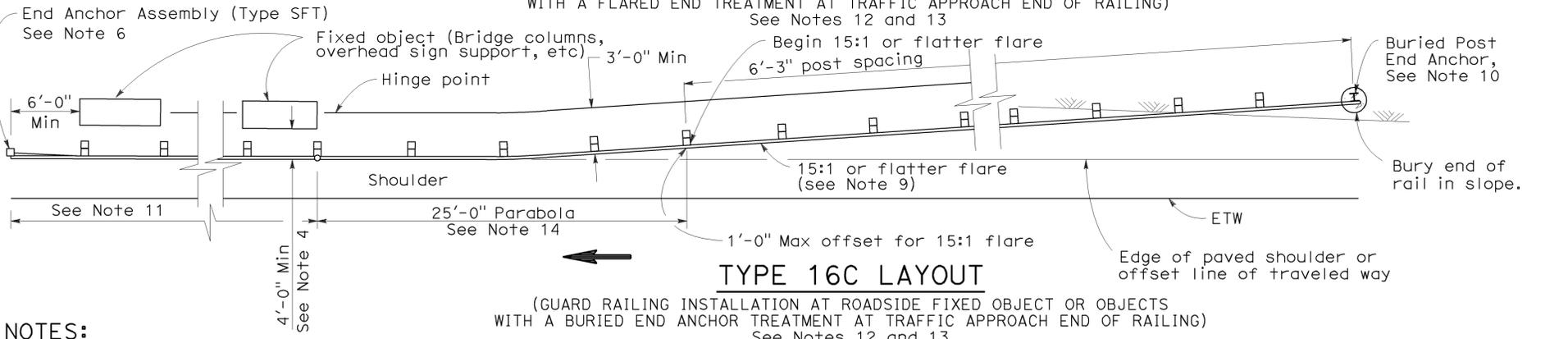
**TYPE 16A LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 12 and 13



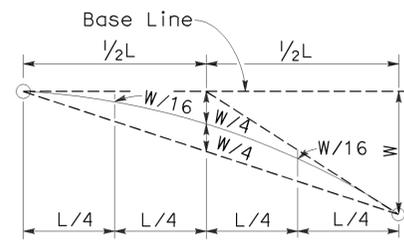
**TYPE 16B LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 12 and 13

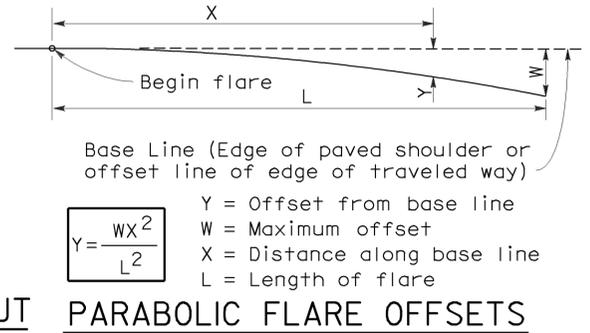


**TYPE 16C LAYOUT**

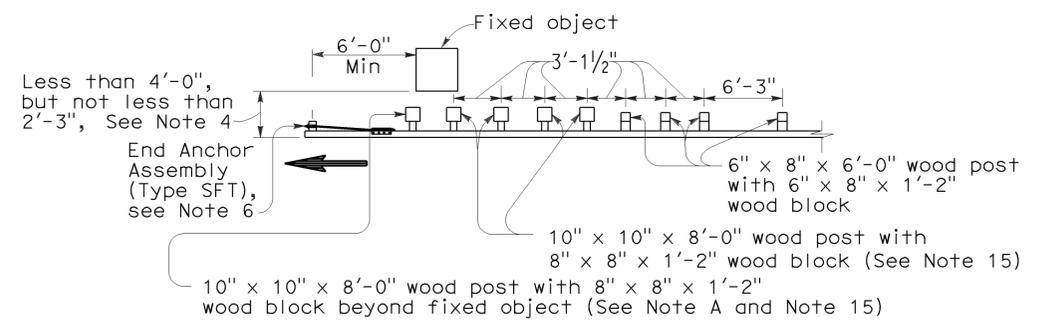
(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 12 and 13



**TYPICAL PARABOLIC LAYOUT**



**PARABOLIC FLARE OFFSETS**



**NOTE A:**

For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

**STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT**

Use strengthened railing sections with Types 16A, 16B or 16C Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4

**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
ROADSIDE FIXED OBJECTS**

NO SCALE

RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3  
DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G3**

2006 REVISED STANDARD PLAN RSP A77G3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	35	46

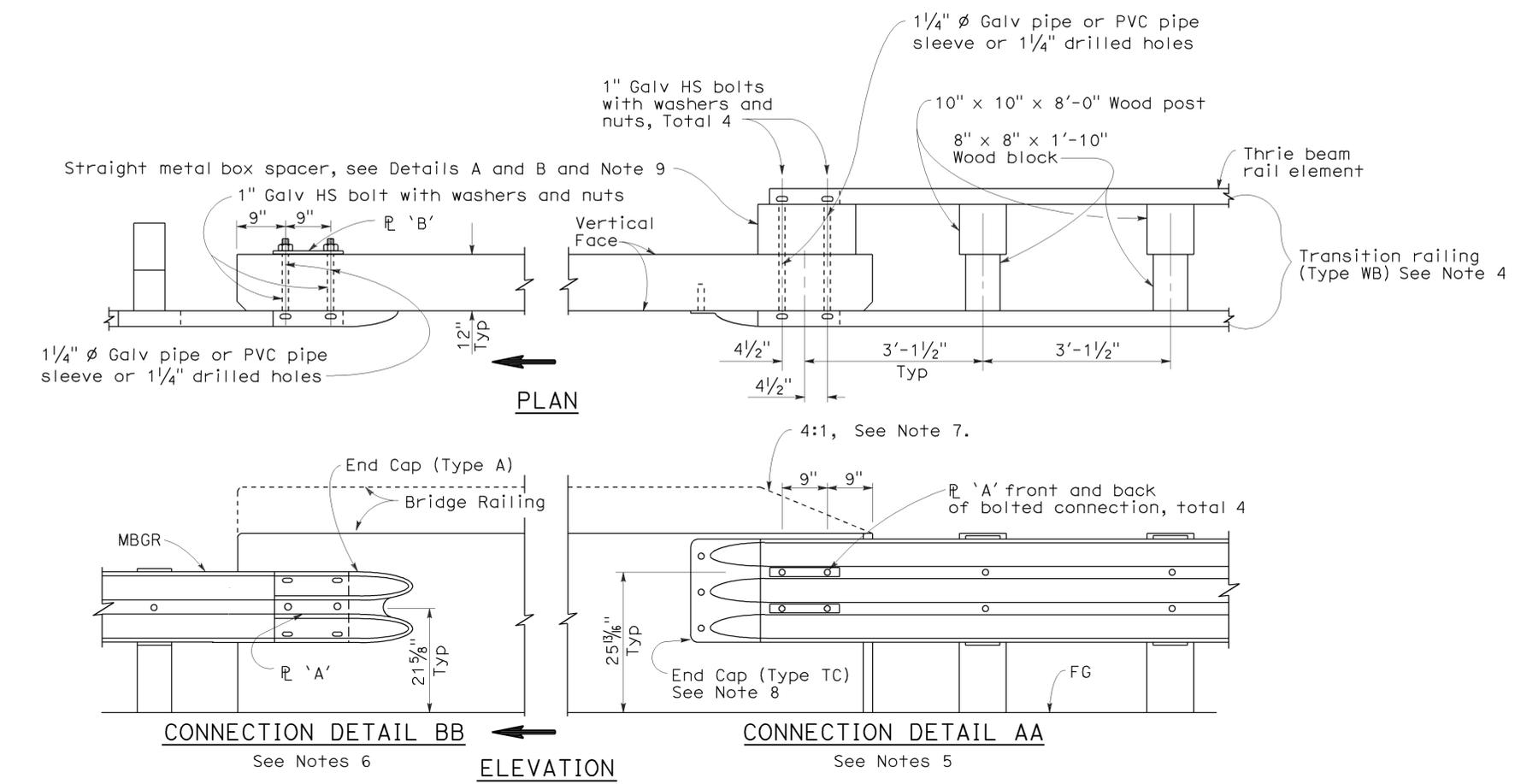
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

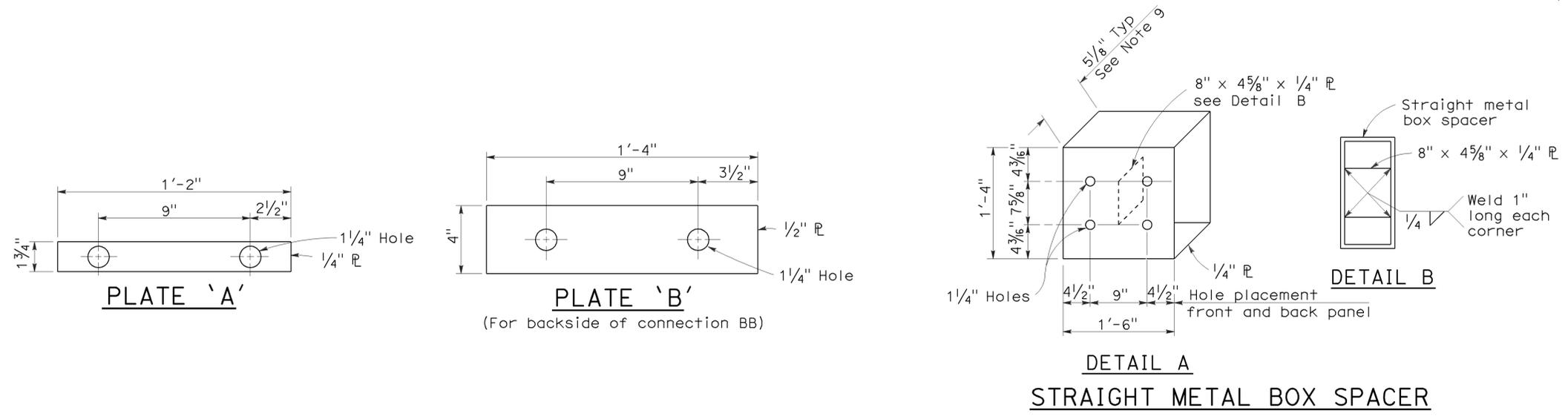
To accompany plans dated 5/10/10



**NOTES:**

1. See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by  $\rightarrow$ .
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
8. For details of End Cap (Type TC), see Standard Plan A77J4.
9. See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.

**GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK**



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.1**

NO SCALE

RSP A77J1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J1 DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77J1**

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	36	46

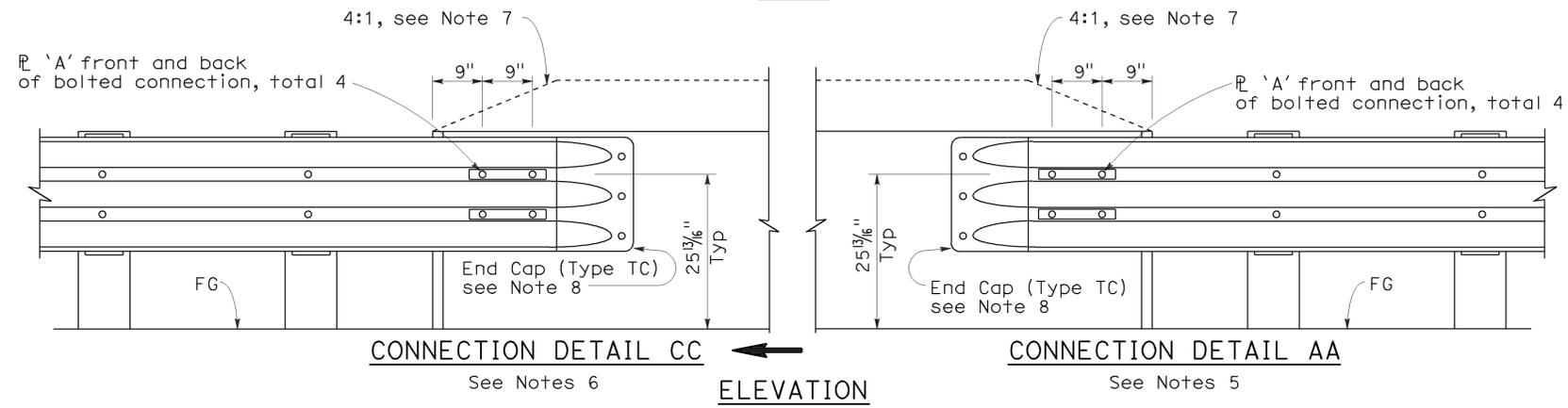
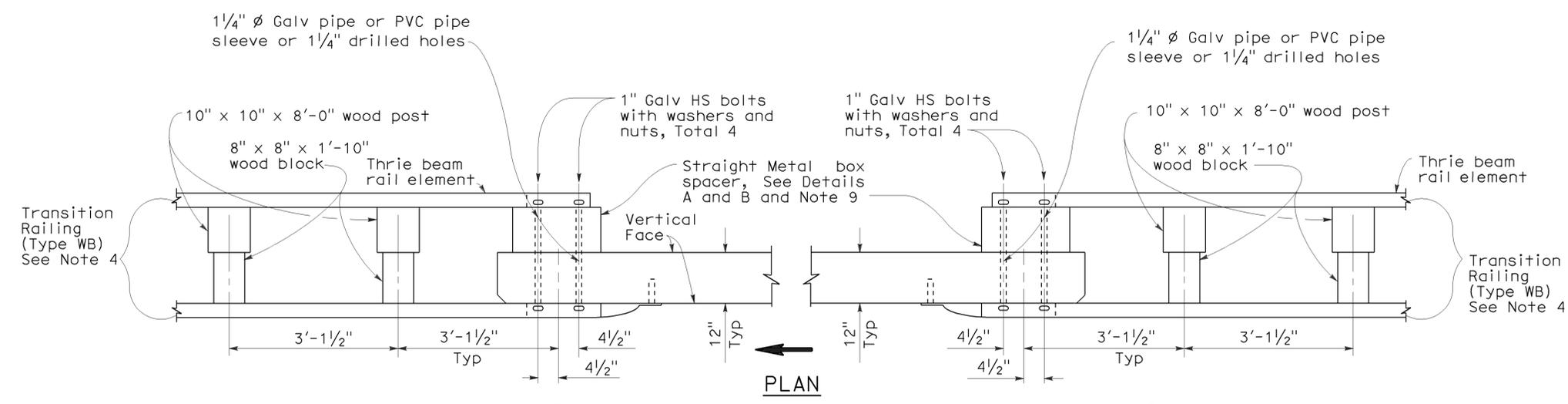
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

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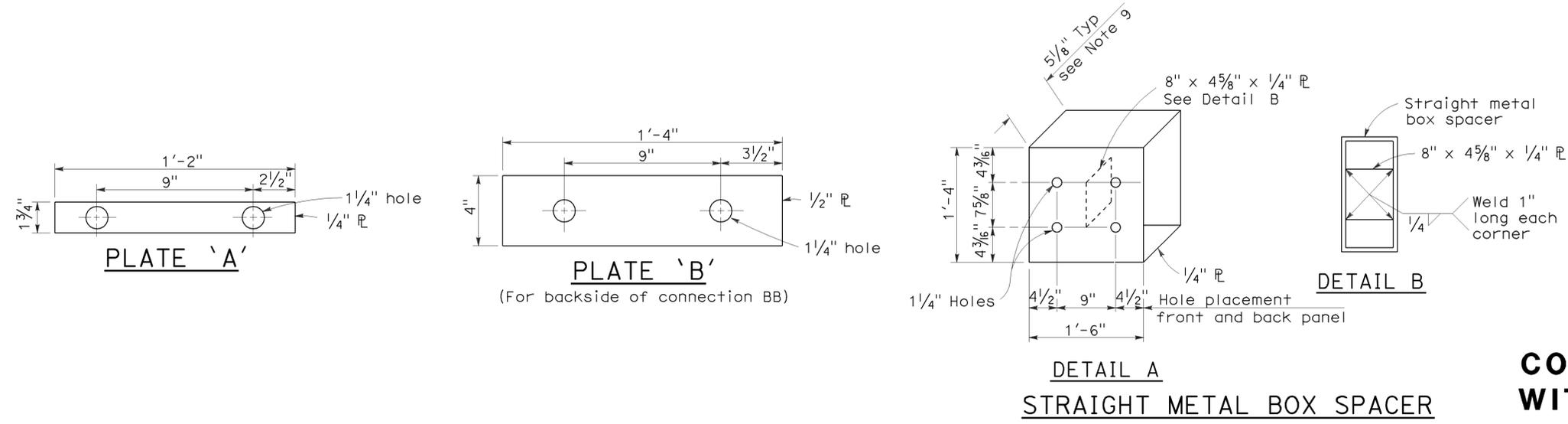
To accompany plans dated 5/10/10



**GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK**

**NOTES:**

1. See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by  $\rightarrow$ .
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
8. For details of End Cap (Type TC), see Standard Plans A77J4.
9. See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



**METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.2**

NO SCALE  
RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2  
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77J2**

2006 REVISED STANDARD PLAN RSP A77J2

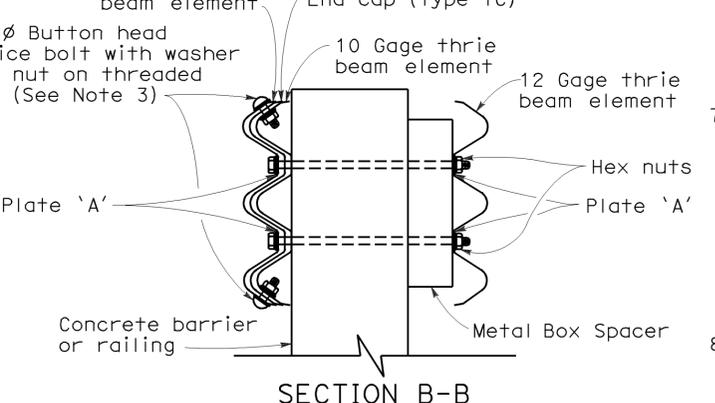
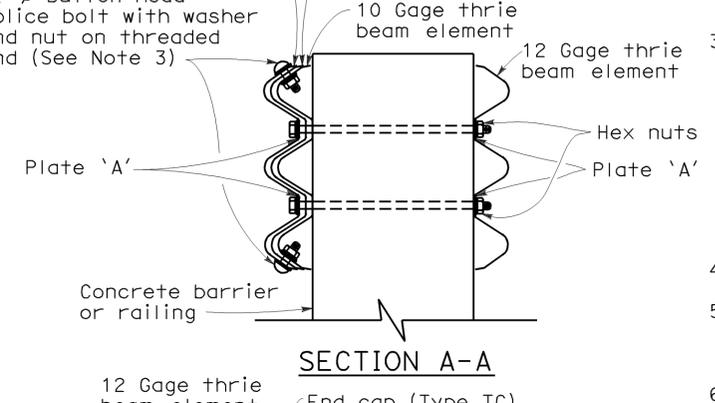
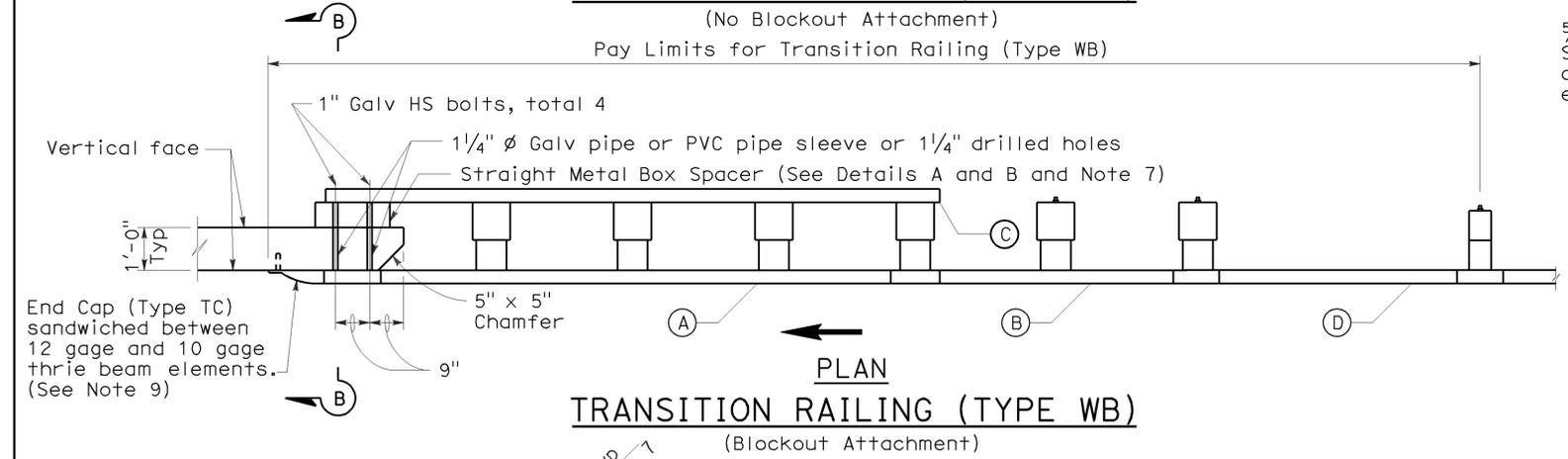
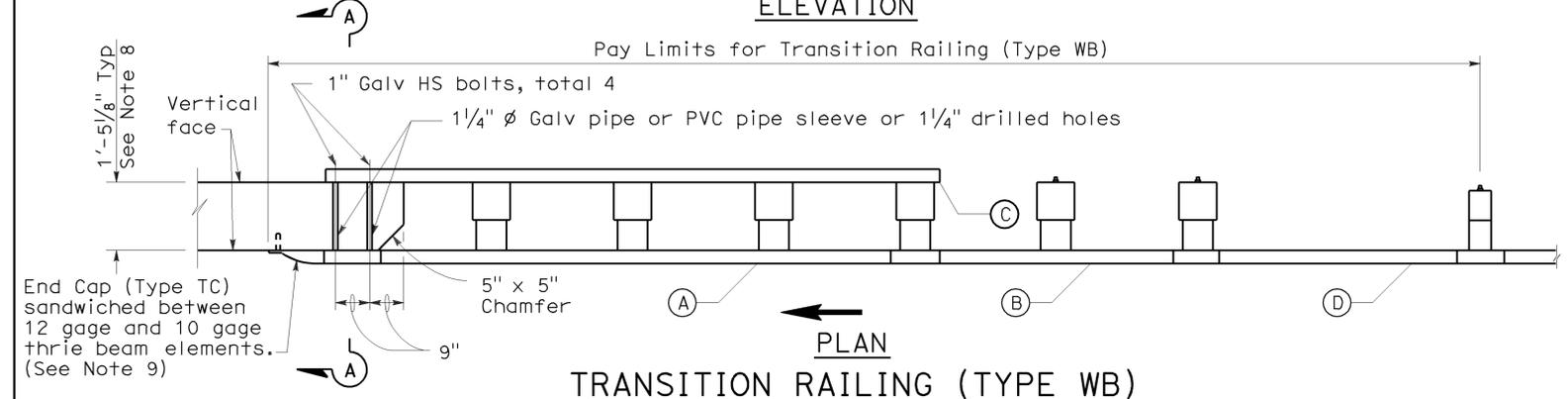
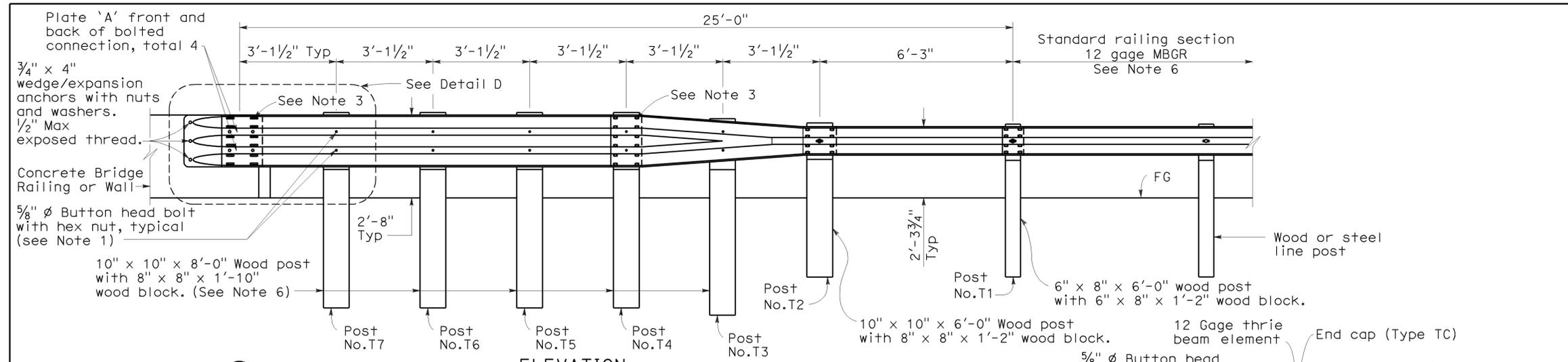
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	37	46

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

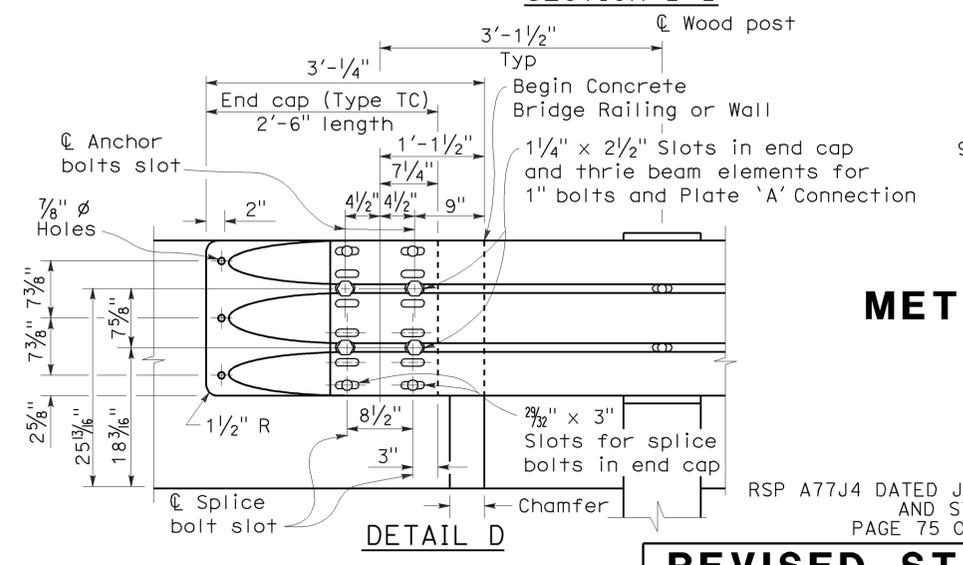
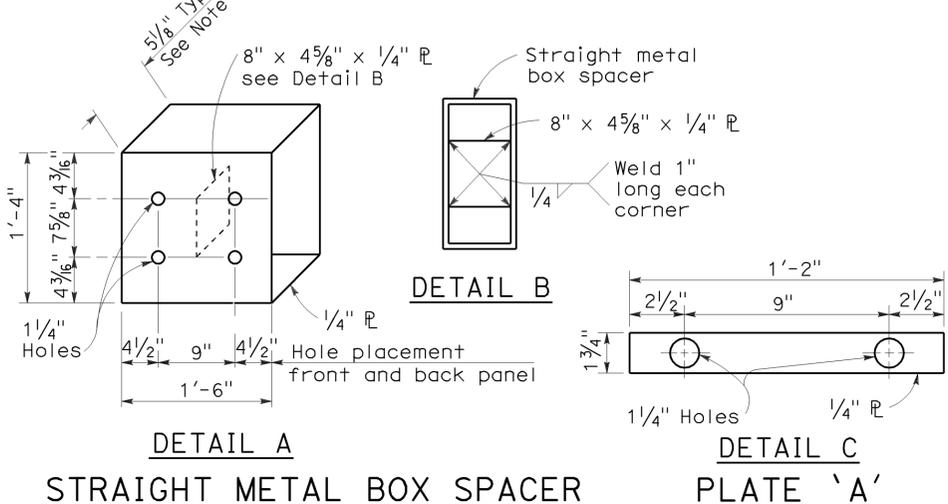
June 5, 2009  
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
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Exp. 6-30-09  
STATE OF CALIFORNIA  
CIVIL



- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
  - (B) One 10 gage "W" beam to thrie beam element.
  - (C) One 12 gage thrie beam element.
  - (D) One 10 gage "W" beam rail element (7'-3 1/2" length)
- 10 gage = 0.135" thick  
12 gage = 0.108" thick



- NOTES:** To accompany plans dated 5/10/10
1. Use 5/8" ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
  2. The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
  3. Exterior splice bolt holes for rail element splices at Post No. T4 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
  4. Direction of adjacent traffic indicated by →.
  5. The top elevation of Post Nos. T2 through T7 shall not project more than 1" above the top elevation of the rail element.
  6. Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing or an approved Caltrans end treatment attached to Post No. T1.
  7. The depth of the metal box spacer varies from the 5 1/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
  8. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. 4 through No. 7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
  9. End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TRANSITION RAILING  
(TYPE WB)**

NO SCALE

RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008  
AND STANDARD PLAN A77J4 DATED MAY 1, 2006  
PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

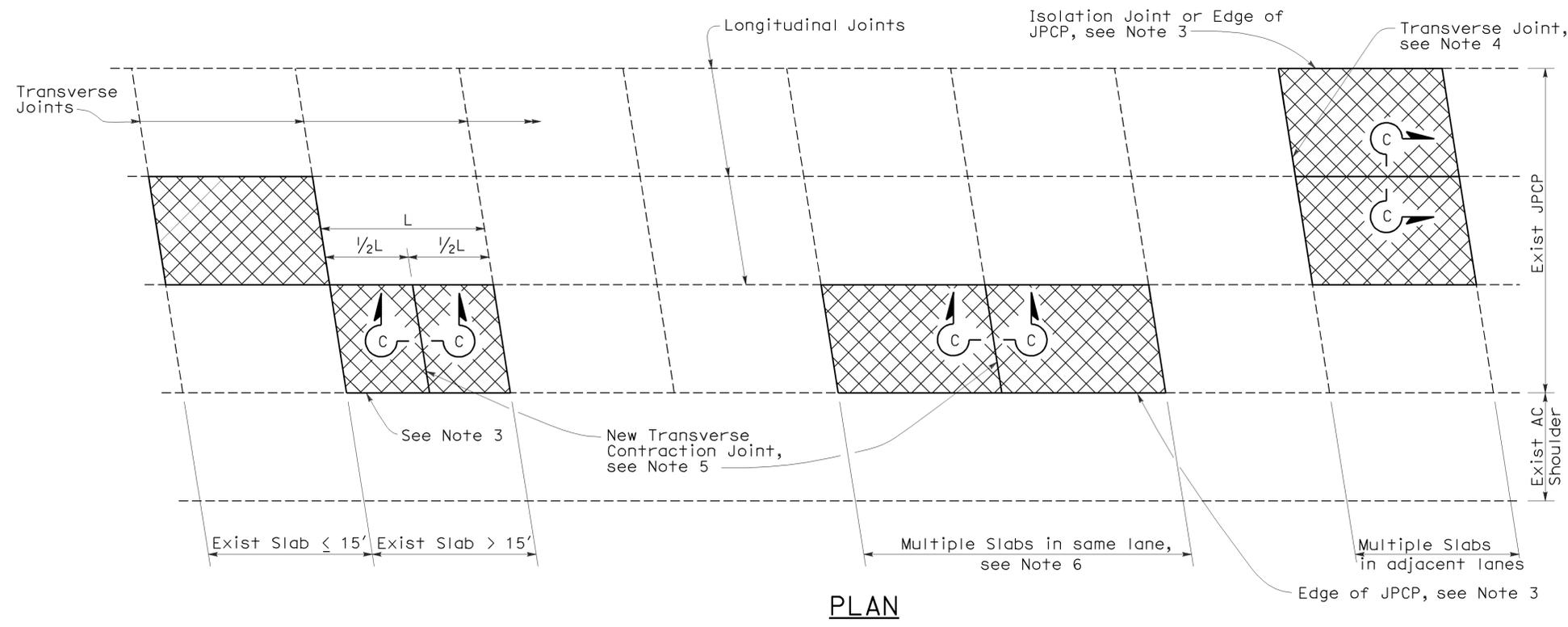
2006 REVISED STANDARD PLAN RSP A77J4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	38	46

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 May 15, 2009  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 William K. Farnbach  
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 Exp. 9-30-10  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 5/10/10

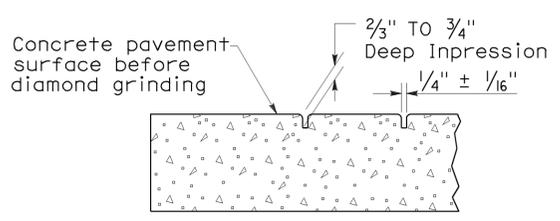
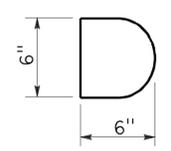
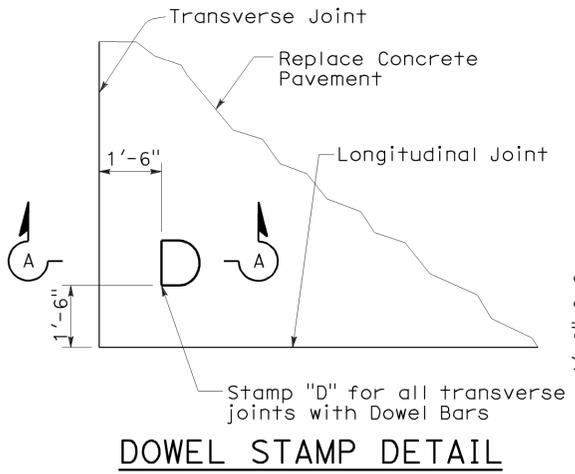


PLAN

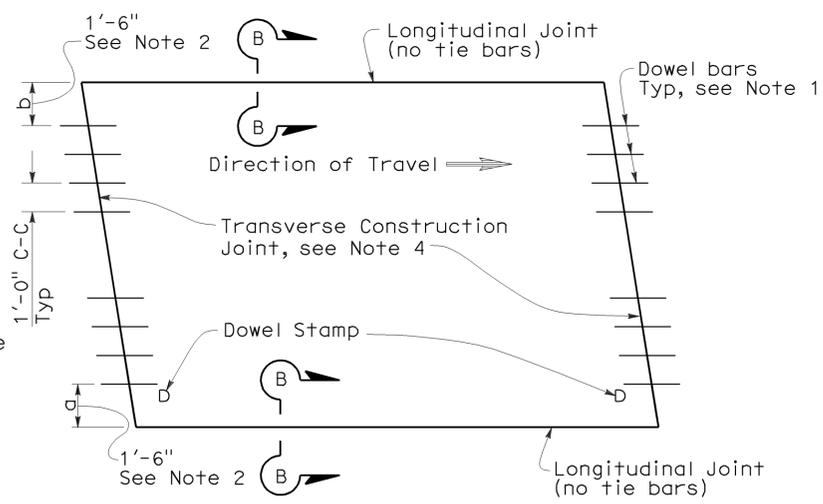
NOTES:

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

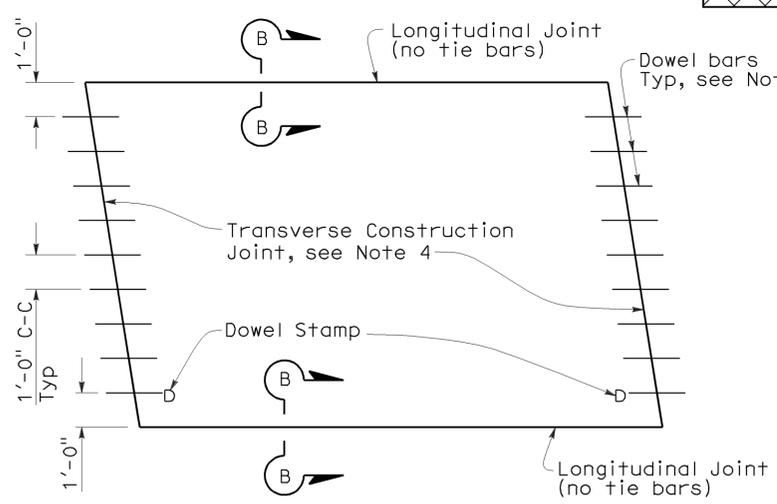
LEGEND



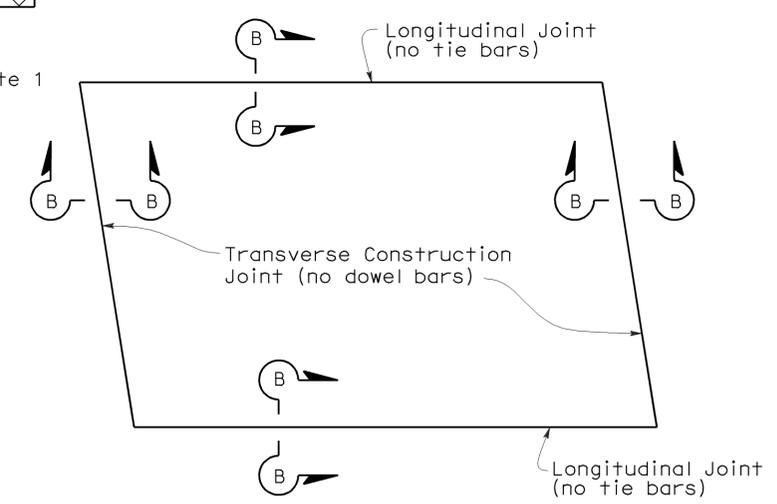
SECTION A-A



TYPE I  
(traffic lane lines match longitudinal joints)

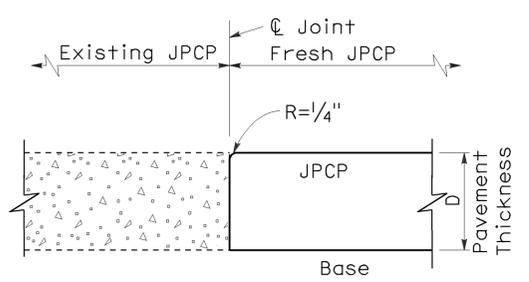


TYPE II  
(traffic lane lines do not match longitudinal joints)

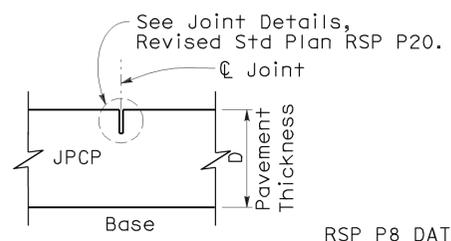


TYPE III  
(for short term repairs < 5 yrs design life or for slab replacements with a cracking and seating operation)

SLAB LAYOUT



SECTION B-B



SECTION C-C

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**JOINTED PLAIN CONCRETE PAVEMENT-INDIVIDUAL SLAB REPLACEMENT**

NO SCALE

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

**REVISED STANDARD PLAN RSP P8**

2006 REVISED STANDARD PLAN RSP P8

123

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	39	46

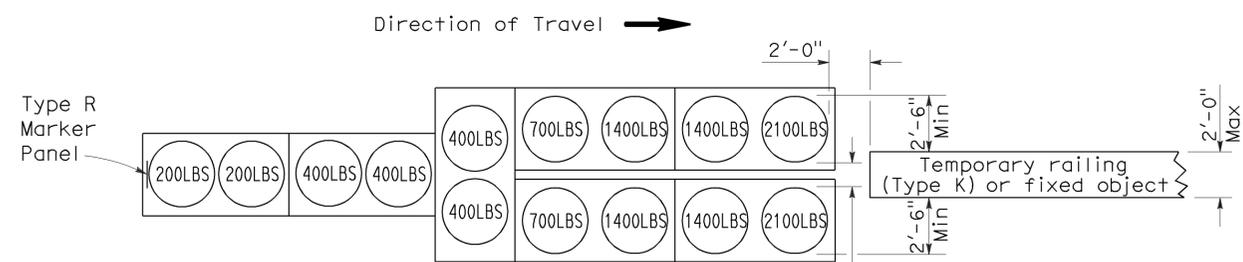
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
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.*

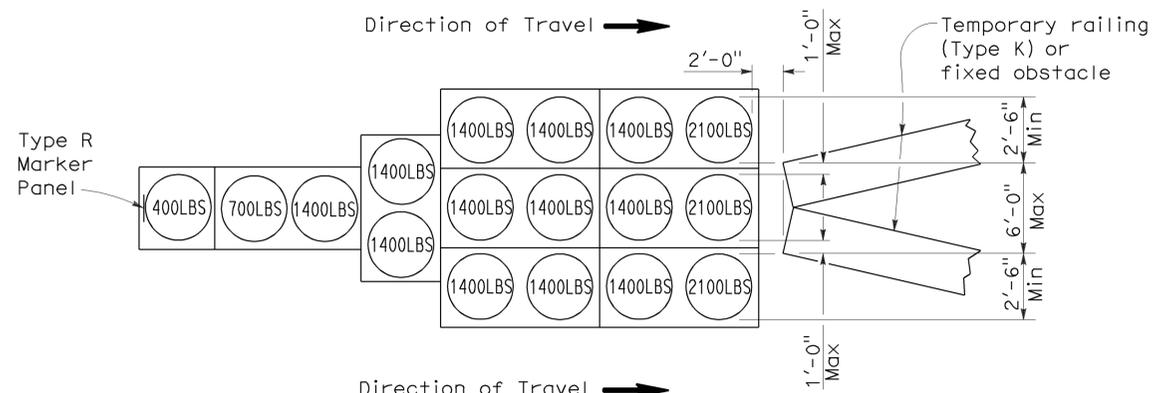
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 5/10/10



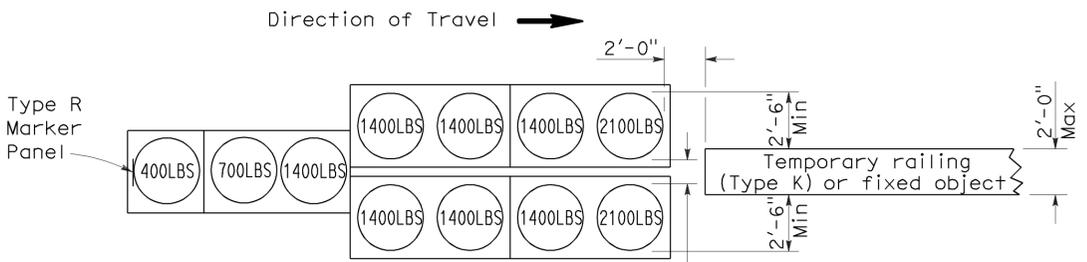
**ARRAY 'TU14'**

Approach speed 45 mph or more



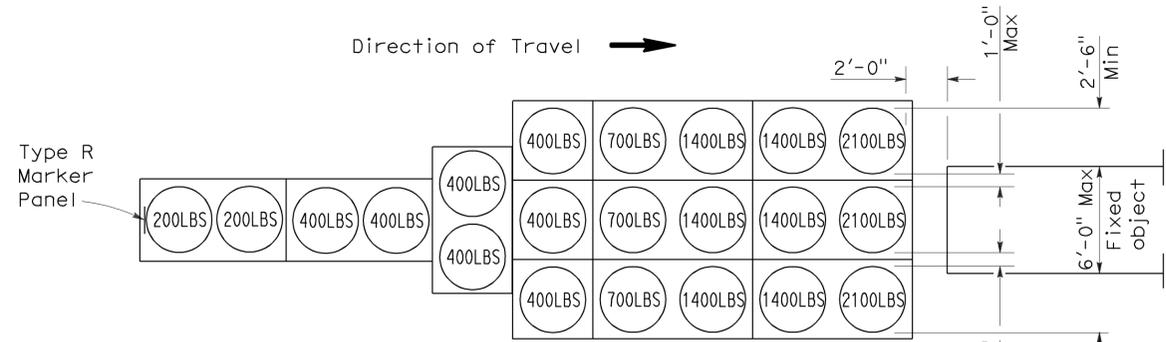
**ARRAY 'TU17'**

Approach speed less than 45 mph



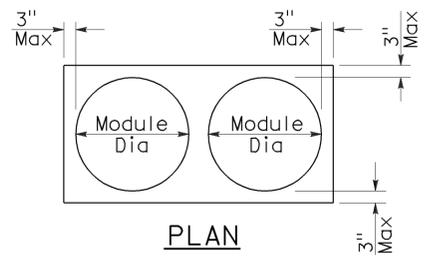
**ARRAY 'TU11'**

Approach speed less than 45 mph

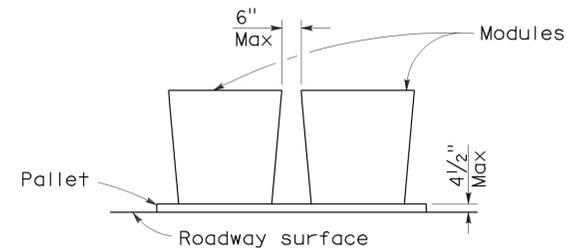


**ARRAY 'TU21'**

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

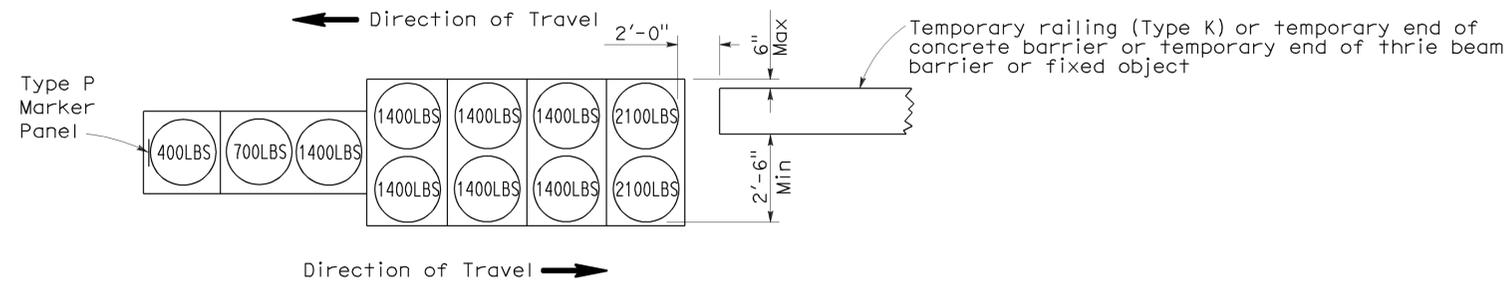
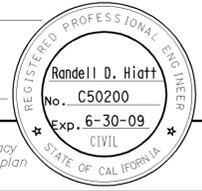
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	40	46

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

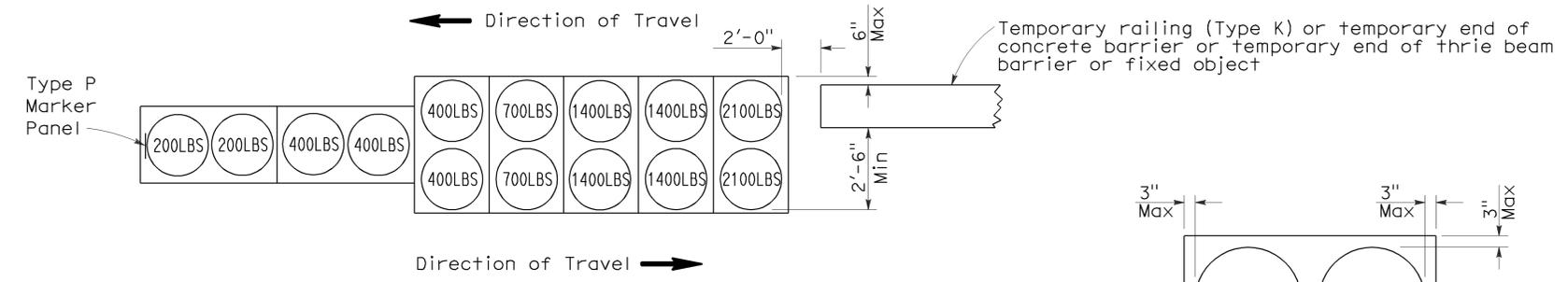
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5/10/10



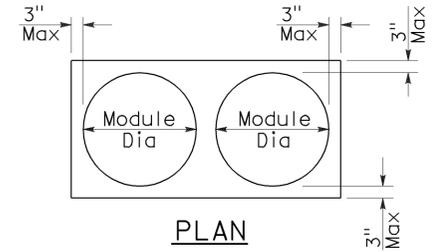
**ARRAY 'TB11'**

Approach speed less than 45 mph

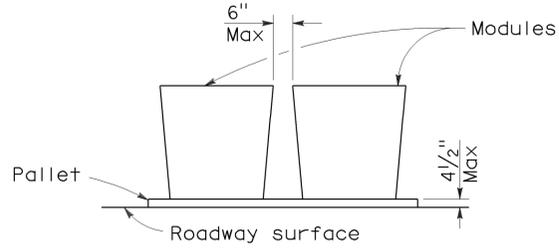


**ARRAY 'TB14'**

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

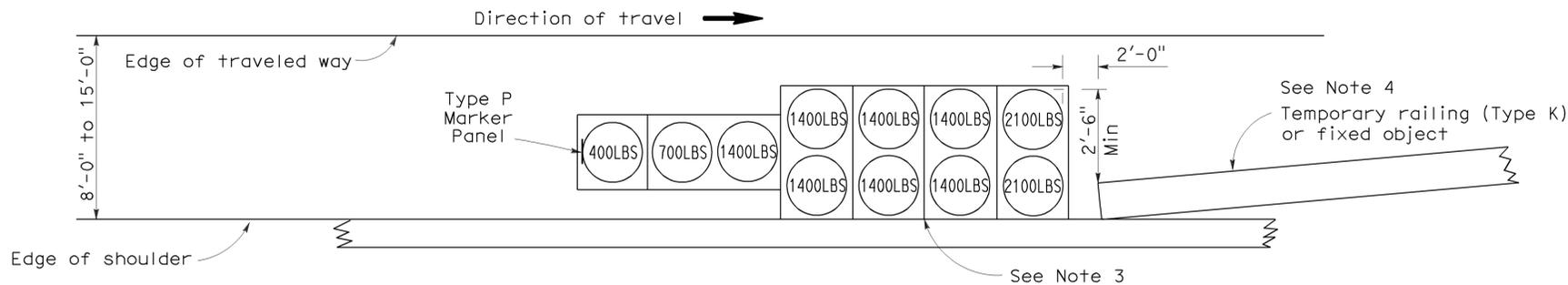
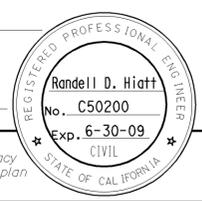
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	R0.5/6.4	41	46

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

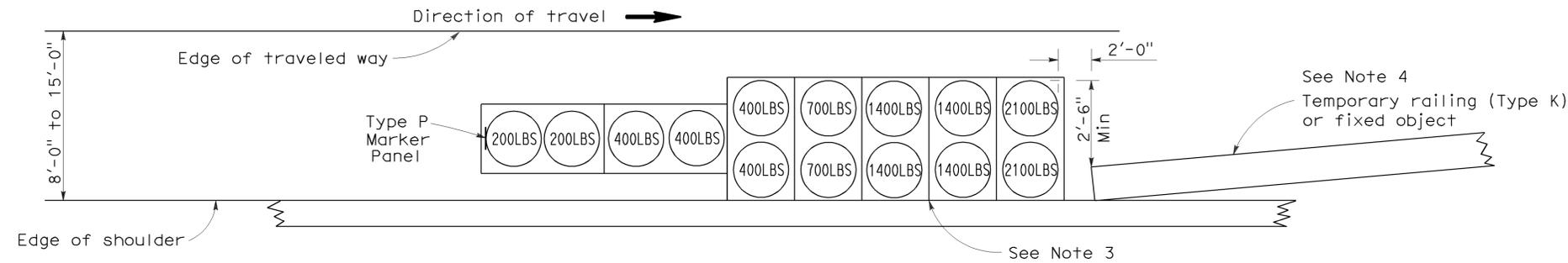
June 6, 2008  
PLANS APPROVAL DATE

*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.*

To accompany plans dated 5/10/10



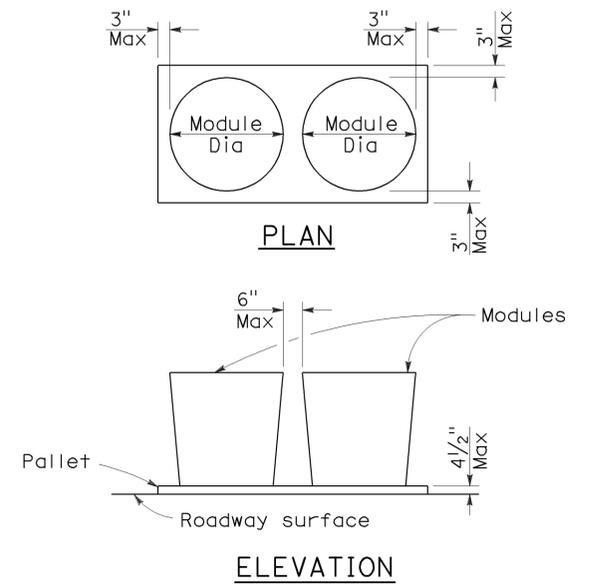
**ARRAY 'TS11'**  
Approach speed less than 45 mph  
See Note 9



**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

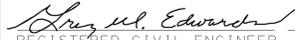
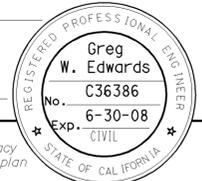
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2  
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	42	46

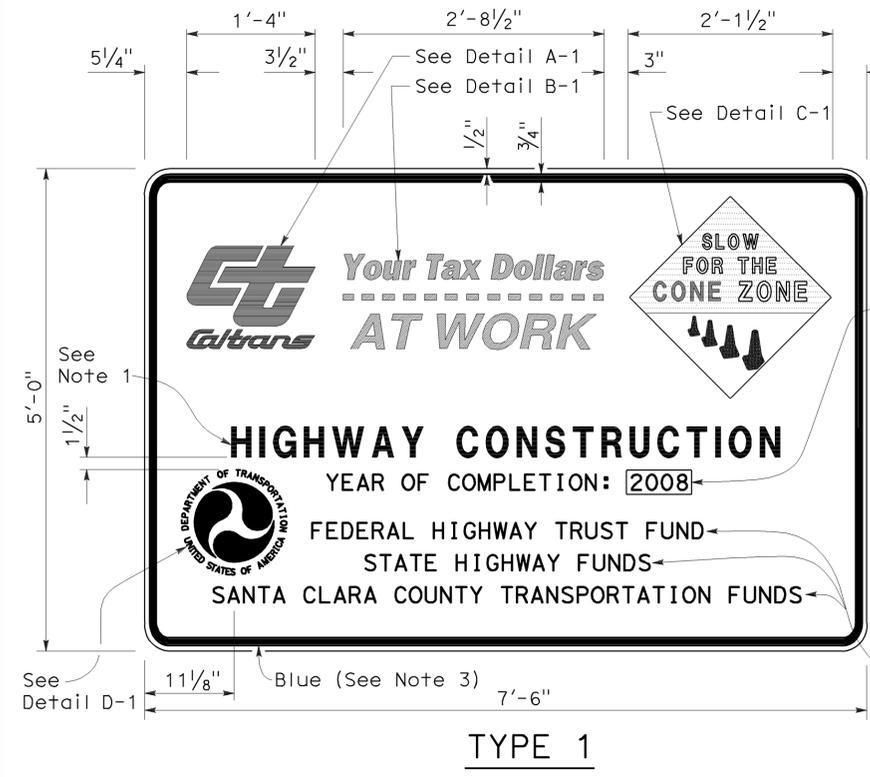
  

 REGISTERED CIVIL ENGINEER		
November 17, 2006 PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>		

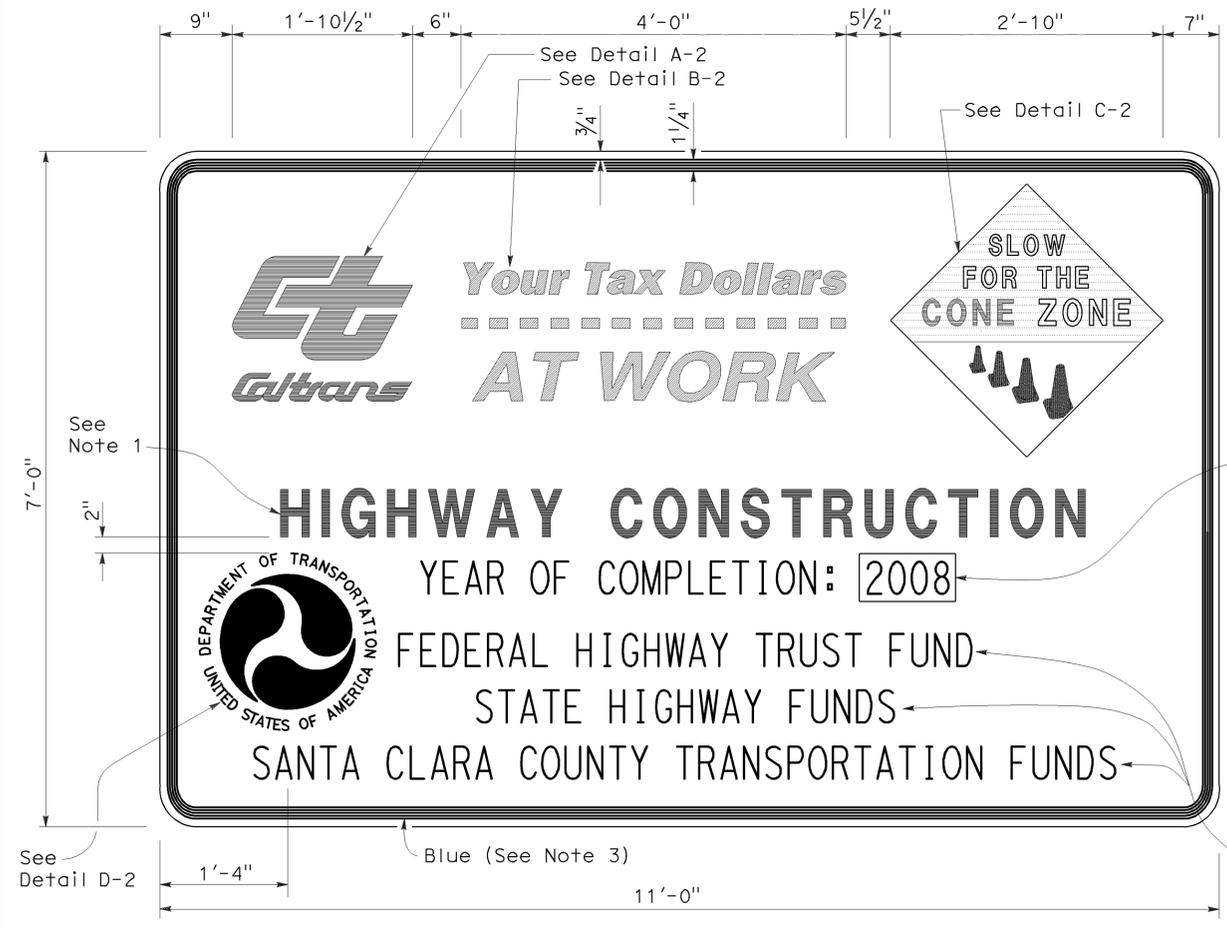
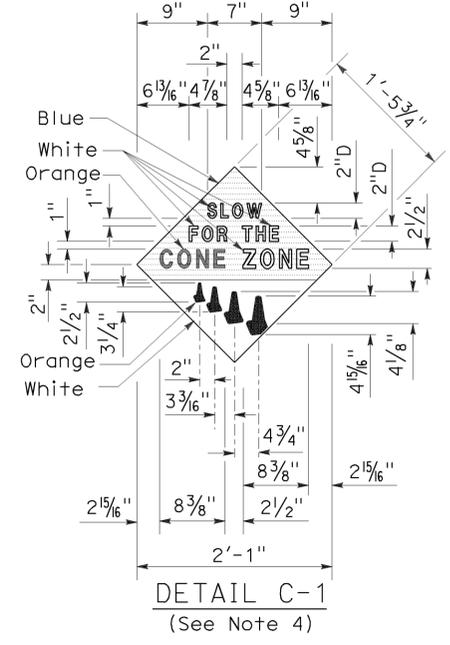
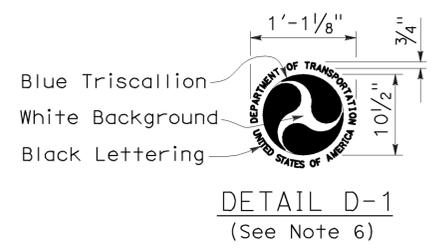
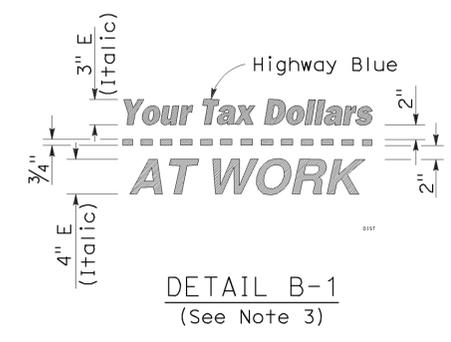
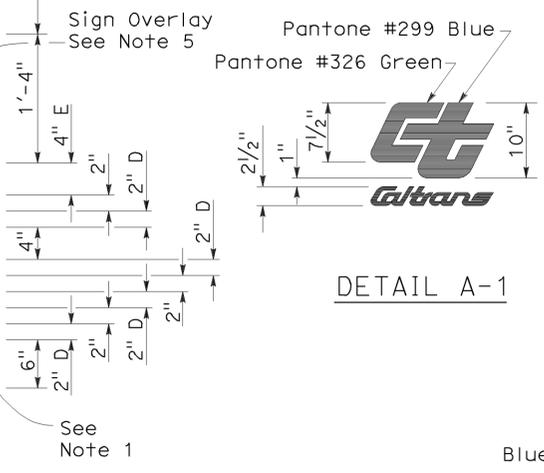
To accompany plans dated 5/10/10

**NOTES:**

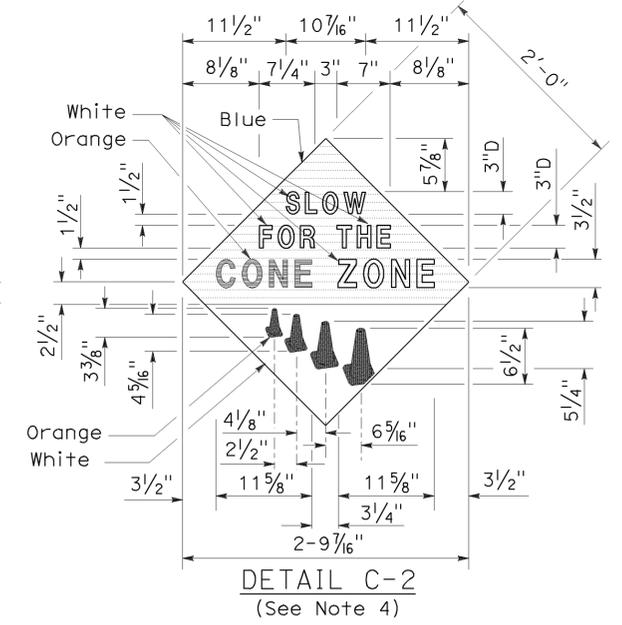
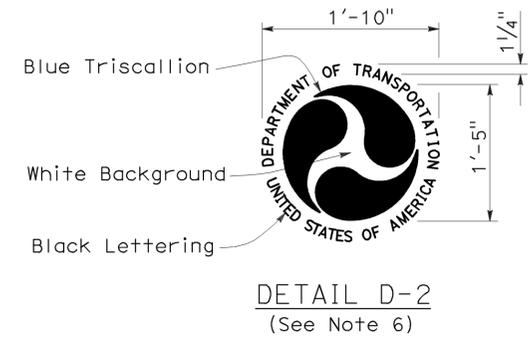
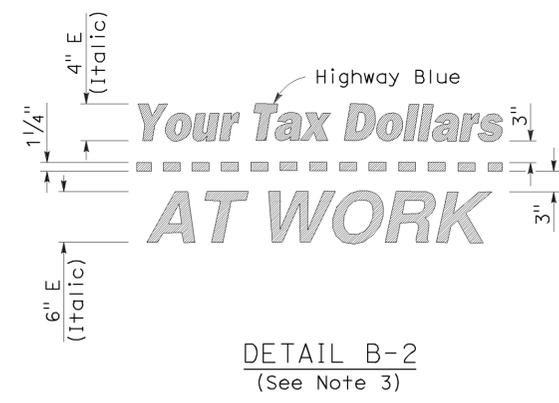
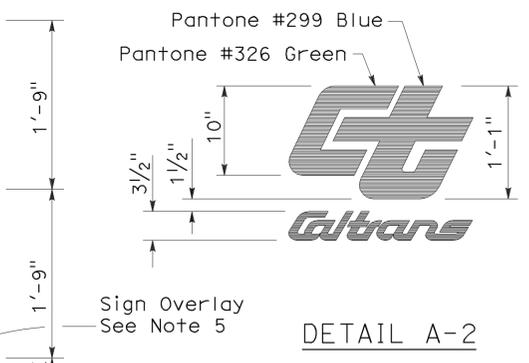
1. The sign messages shown for type of project and fund types are examples only. See the Special Provisions for the applicable type of project and fund type messages to be used.
2. Except as otherwise shown, the legend of sign shall be black on a white background (non-reflective).
3. The border of the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



**TYPE 1**



**TYPE 2**



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CONSTRUCTION PROJECT FUNDING IDENTIFICATION SIGNS**

NO SCALE

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

**REVISED STANDARD PLAN RSP T7**

2006 REVISED STANDARD PLAN RSP T7

# ELECTROLIERS

STANDARD TYPES		
15, 15D		High mast light pole
15		Double Arm lighting standard
21, 21D		Existing electrolier
30		Electrolier foundation (Future installation)
31		
32		
35		
36-20A		

**NOTES:**

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

- Electrolier (see project notes or project plans)
- Luminaire on wood pole

## STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	43	46

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE

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

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To accompany plans dated 5/10/10

## SOFFIT AND WALL MOUNTED LUMINAIRES

- Pendant, 70 W HPS unless otherwise specified.
- Flush, 70 W HPS unless otherwise specified.
- Wall surface, 70 W HPS unless otherwise specified.
- Existing soffit or wall luminaire to remain unmodified.
- Existing soffit or wall luminaire to be modified as specified.

### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

**REVISED STANDARD PLAN RSP ES-1A**

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	R0.5/R6.4	44	46

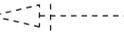
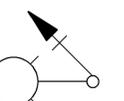
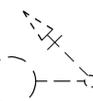
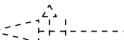
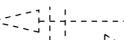
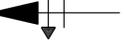
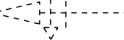
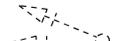
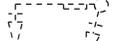
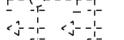
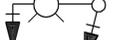
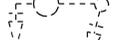
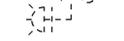
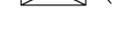
Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

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### CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination 
		Conduit riser in/on structure or service pole

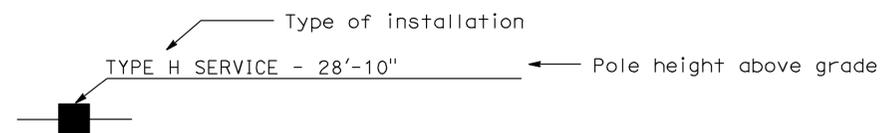
### SIGNAL EQUIPMENT

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

### SERVICE EQUIPMENT

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

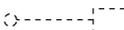
### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

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

### SIGNAL EQUIPMENT Cont

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

### NOTES:

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

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**ELECTRICAL SYSTEMS  
 (SYMBOLS AND ABBREVIATIONS)**  
 NO SCALE

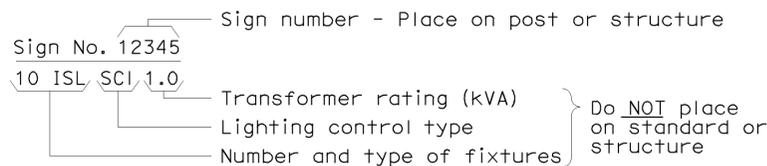
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1B**

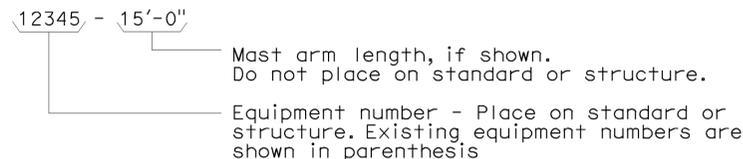
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

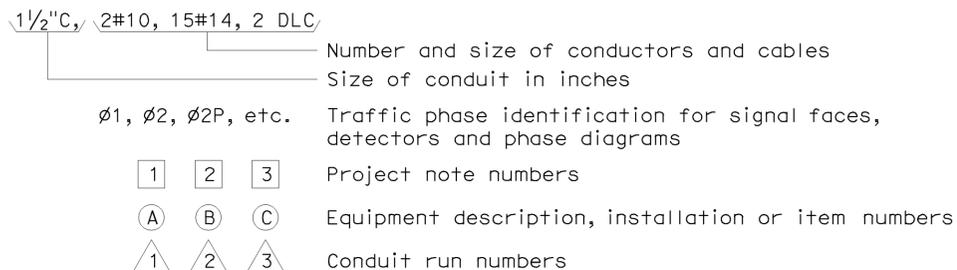
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



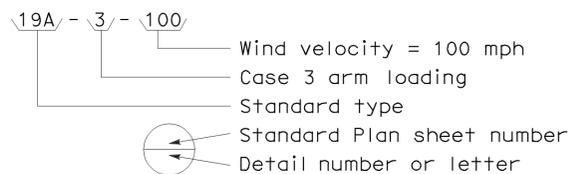
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



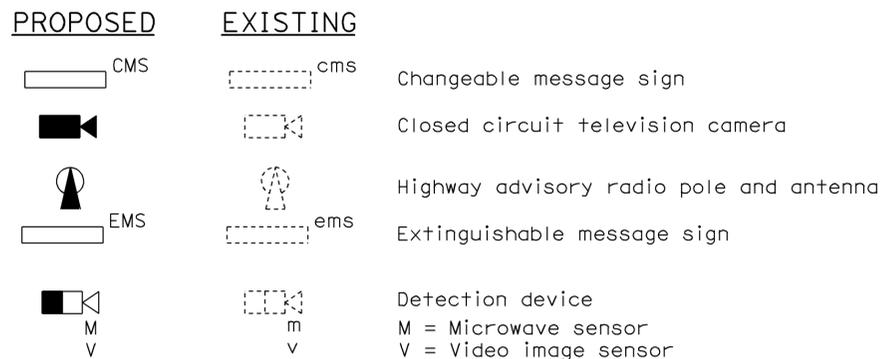
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



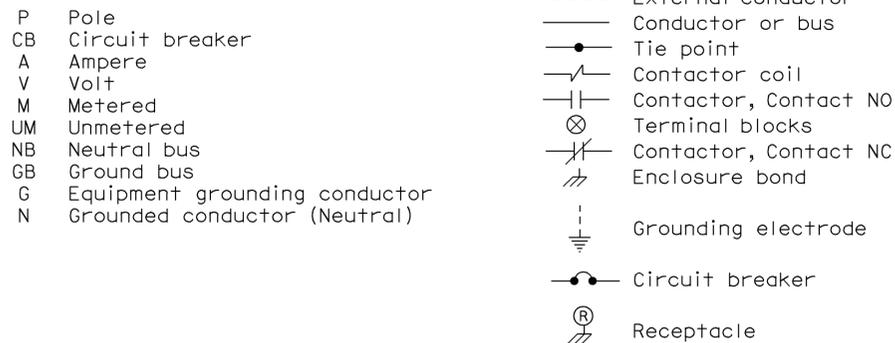
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



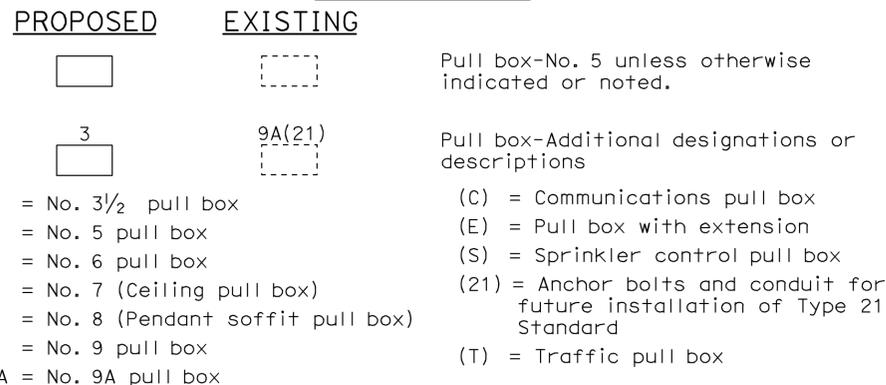
### MISCELLANEOUS EQUIPMENT



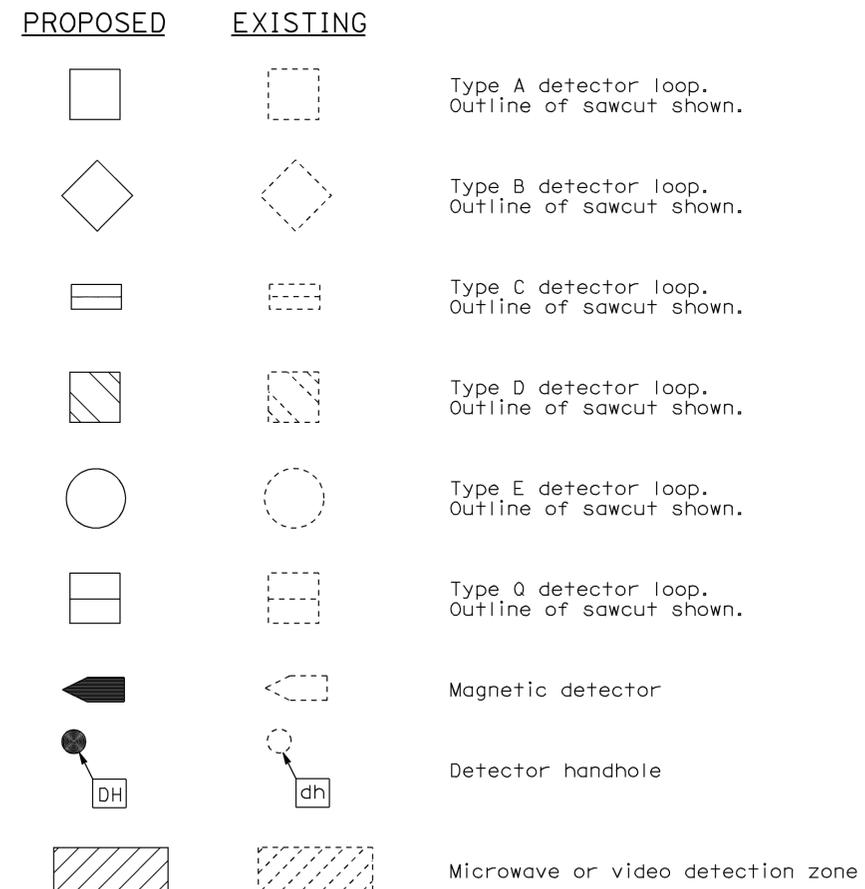
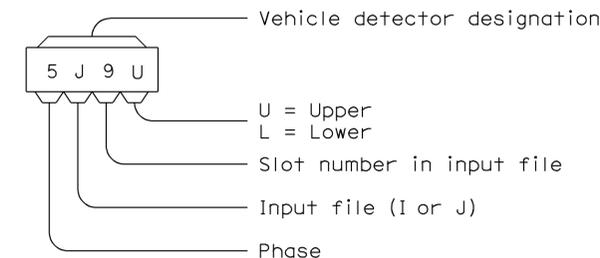
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
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## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

**REVISED STANDARD PLAN RSP ES-1C**

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	120	RO.5/R6.4	46	46

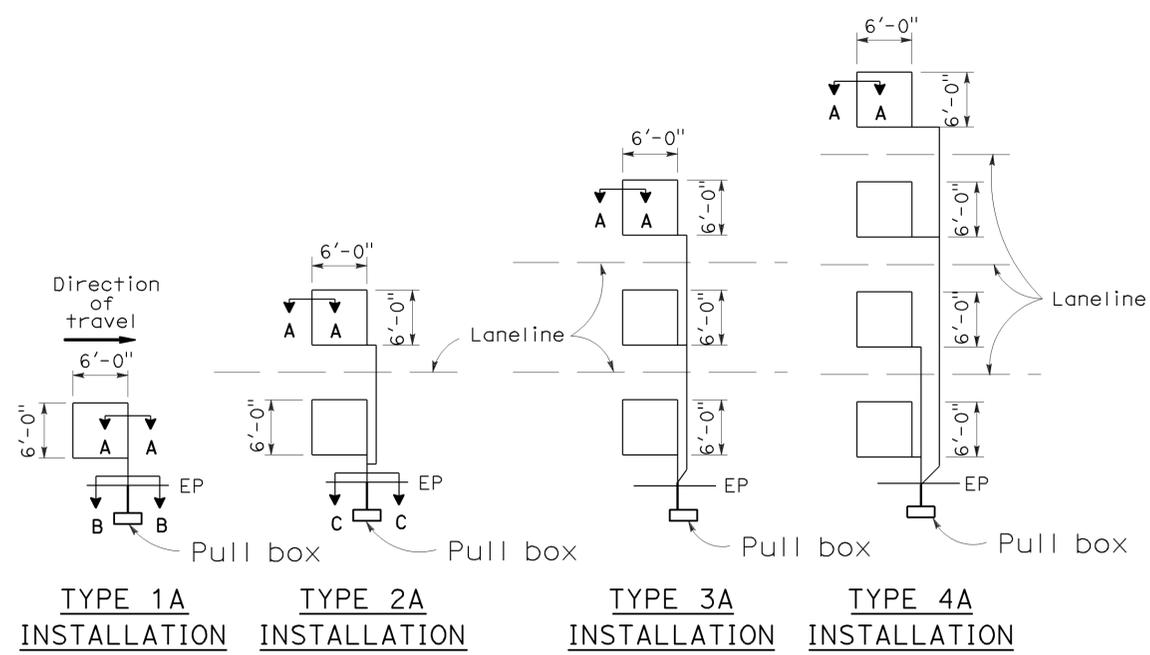
*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5/10/10

2006 REVISED STANDARD PLAN RSP ES-5A

## LOOP INSTALLATION PROCEDURE

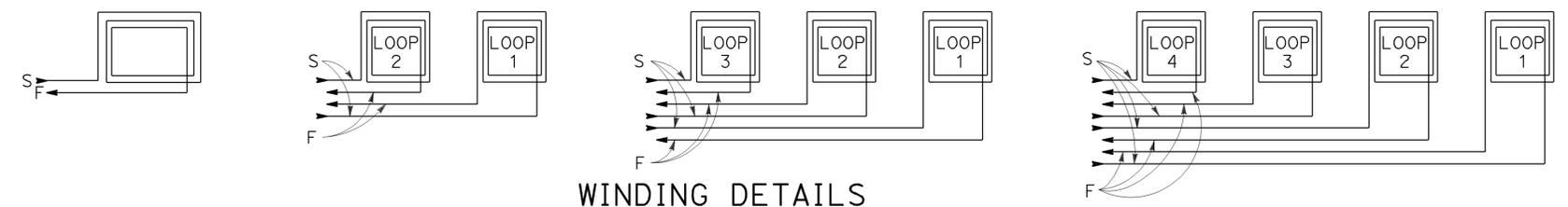
- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no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



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

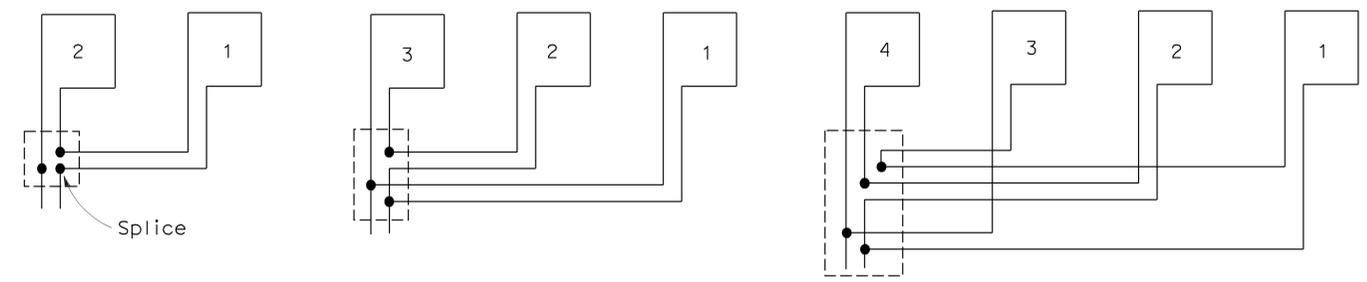
### SAWCUT DETAILS

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



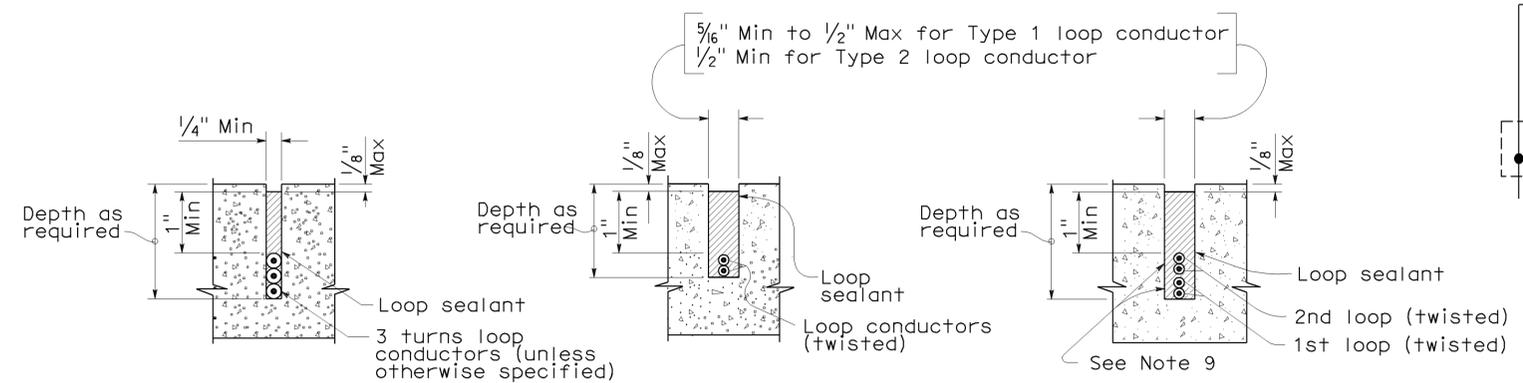
### WINDING DETAILS

See Notes 6 and 7



### TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



SECTION A-A    SECTION B-B    SECTION C-C  
 SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

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

**REVISED STANDARD PLAN RSP ES-5A**