

SHEET No.	INDEX OF PLANS DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4-10	CONSTRUCTION DETAILS
11	CONSTRUCTION AREA SIGNS
12	TRAFFIC HANDLING PLANS
13-17	PAVEMENT DELINEATION AND SIGN PLANS
18	PAVEMENT DELINEATION QUANTITIES
19	SIGN QUANTITIES
20	SUMMARY OF QUANTITIES
21-22	ELECTRICAL PLANS
23-32	REVISED AND NEW STANDARD PLANS

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

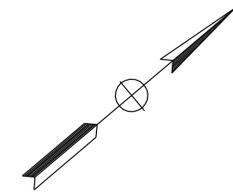
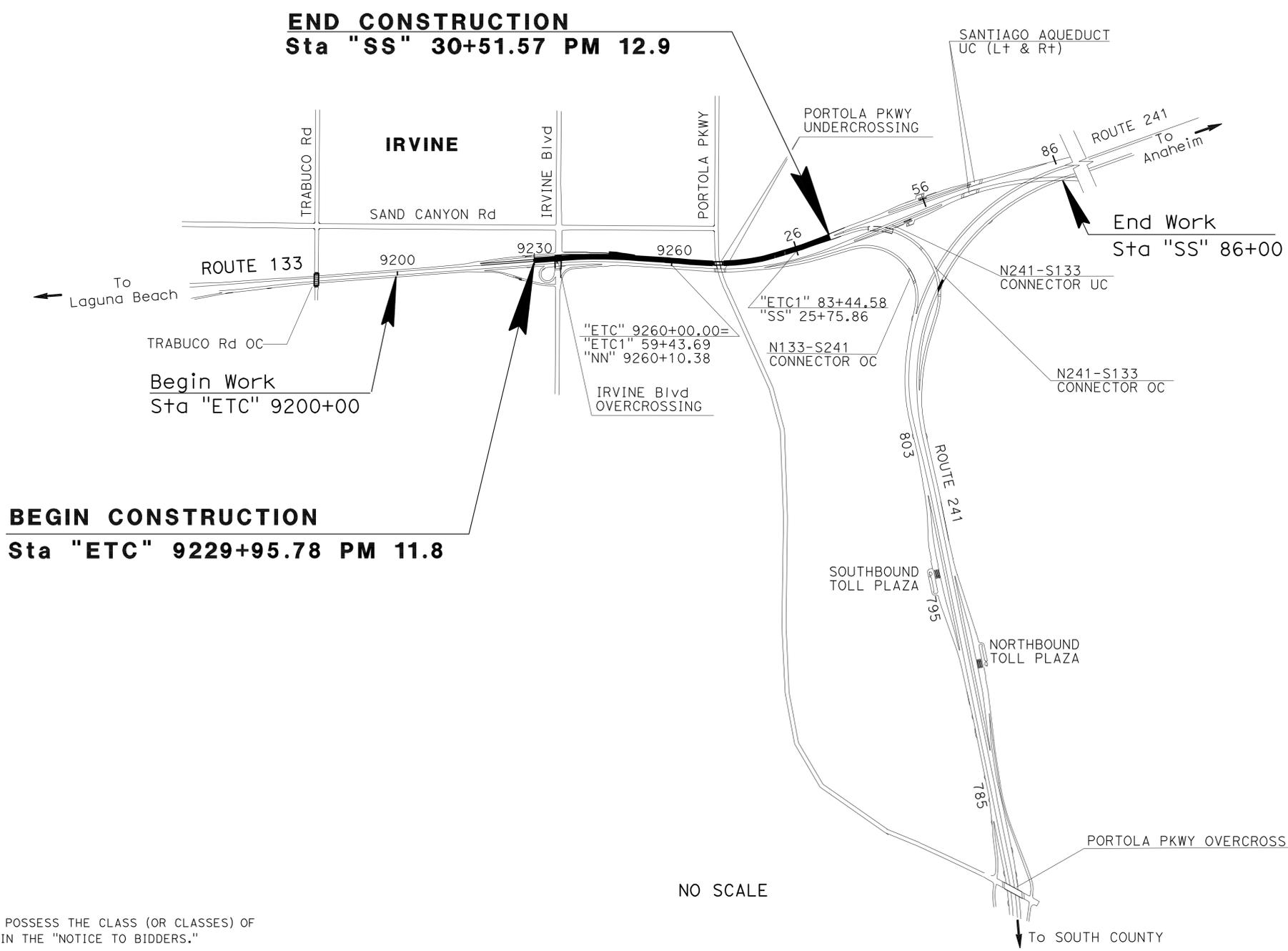
STATE OF CALIFORNIA **ACHSSTPH-P133(012)E**  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN ORANGE COUNTY**  
**IN IRVINE**

**FROM 0.4 MILE EAST OF PORTOLA PARKWAY UNDERCROSSING**  
**TO 0.1 MILE WEST OF IRVINE BOULEVARD OVERCROSSING**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133	11.8/12.9	1	32

LOCATION MAP



NO SCALE

PROJECT MANAGER <b>BILL BANGTSON</b>	DESIGN ENGINEER <b>GRACE WANG</b>
---	--------------------------------------

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

PROJECT ENGINEER DATE 10-26-09  
 REGISTERED CIVIL ENGINEER  
**November 9, 2009**  
 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.

REGISTERED PROFESSIONAL ENGINEER  
**GRACE WANG**  
 No. 57003  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

CONTRACT No. **12-OK2704**

DATE PLOTTED => 10-MAR-2010 TIME PLOTTED => 06:24

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	133	11.8/12.9	2	32

REGISTERED CIVIL ENGINEER DATE 10-26-09  
 11-9-09  
 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.

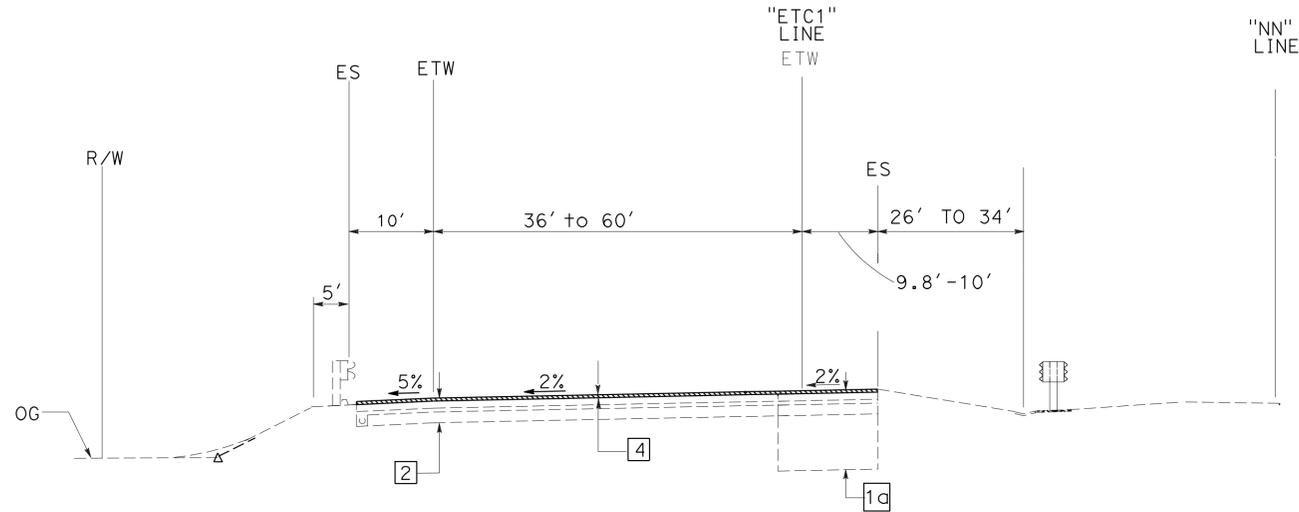
**STRUCTURAL SECTIONS:**

- 1 — 0.60' AC (TYPE A)  
0.25' ATPB  
0.50' AB (CLASS 2)  
(EXISTING) 2.65' OVER EXCAVATION  
(95% COMPACTION)
- 1c — 0.60' AC (TYPE A)  
0.25' ATPB  
0.50' AB (CLASS 2)  
(EXISTING) 2.65' OVER EXCAVATION  
(95% COMPACTION)

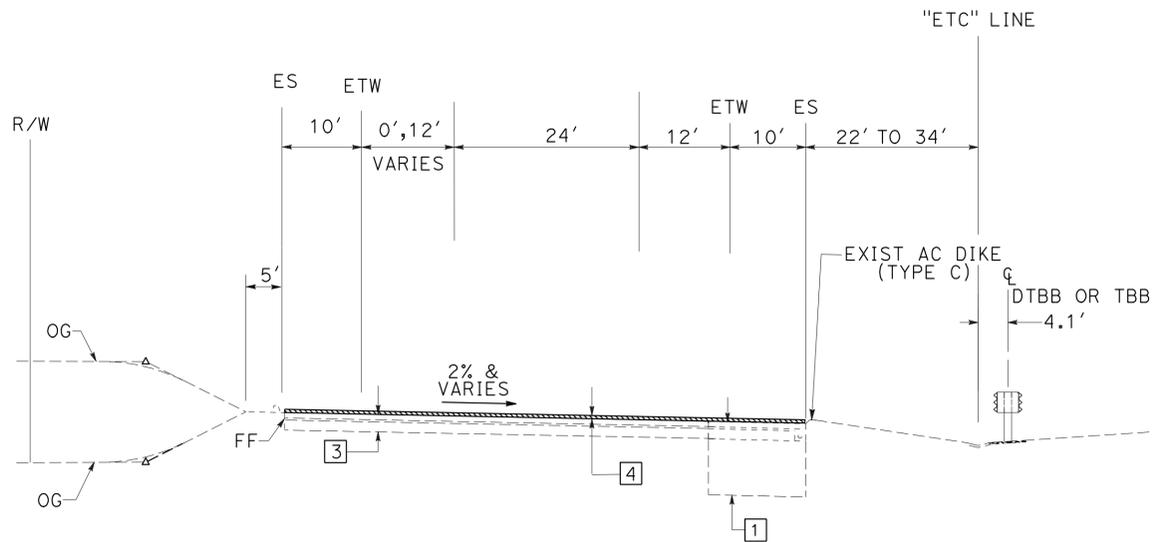
- 2 — 0.60' AC (TYPE B)  
0.25' ATPB  
(EXISTING) 0.70' AB (CLASS 2)
- 3 — 0.60' AC (TYPE B)  
0.25' ATPB  
(EXISTING) 0.50' AB (CLASS 2)
- 4 — 0.1' HOT MIX ASPHALT (OPEN GRADED)  
1/2 inch Grading

**NOTES:**

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTION) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. FOR BEGIN AND END OVERLAY TRANSITION DETAIL, SEE SHEET C-6.
3. FOR SHOULDER OVERLAY TRANSITION DETAIL AND COLD PLANE TRANSITION DETAIL SEE SHEET C-6, and C-7.



**S/B ROUTE 133**  
Sta "ETC1" 59+43.69 TO 68+46.52

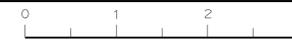


**S/B ROUTE 133**  
Sta "ETC" 9229+95.78 TO 9260+00

**TYPICAL CROSS SECTION**

NO SCALES

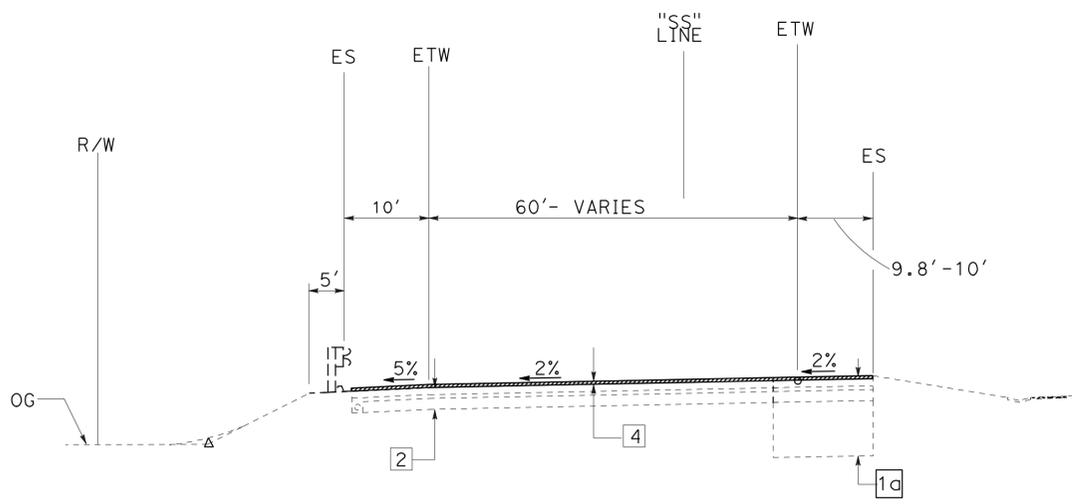
**X-1**



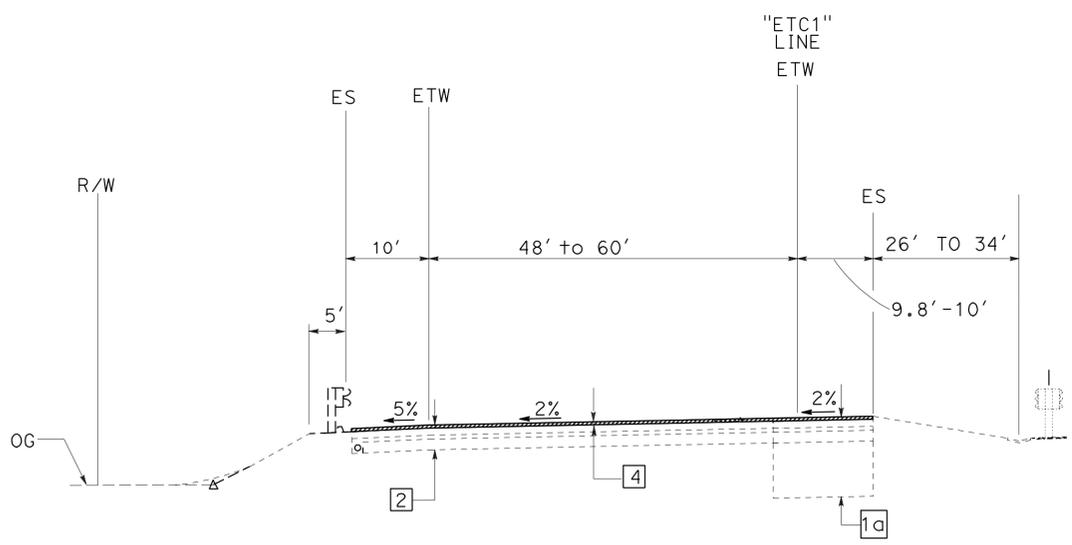
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN I  
 FUNCTIONAL SUPERVISOR  
 ADEL MALEK  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 GRACE WANG  
 BERC IKIZYAN  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	133	11.8/12.9	3	32

REGISTERED CIVIL ENGINEER DATE 10-26-09  
 GRACE WANG  
 No. C57003  
 Exp. 6/30/11  
 CIVIL  
 PLANS APPROVAL DATE 11-9-09  
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.



**S/B ROUTE 133**  
 Sta "SS" 25+75.86 TO 30+51.57



**S/B ROUTE 133**  
 Sta "ETC1" 70+86.75 TO 83+44.58

**TYPICAL CROSS SECTION**

NO SCALE

**X-2**

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

FUNCTIONAL SUPERVISOR: ADEL MALEK  
 CALCULATED/DESIGNED BY: GRACE WANG  
 CHECKED BY: BERK IKIZYAN  
 REVISED BY: GRACE WANG  
 DATE REVISED: BERK IKIZYAN

**NOTE:**  
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

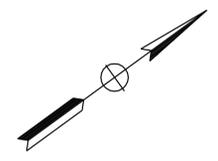
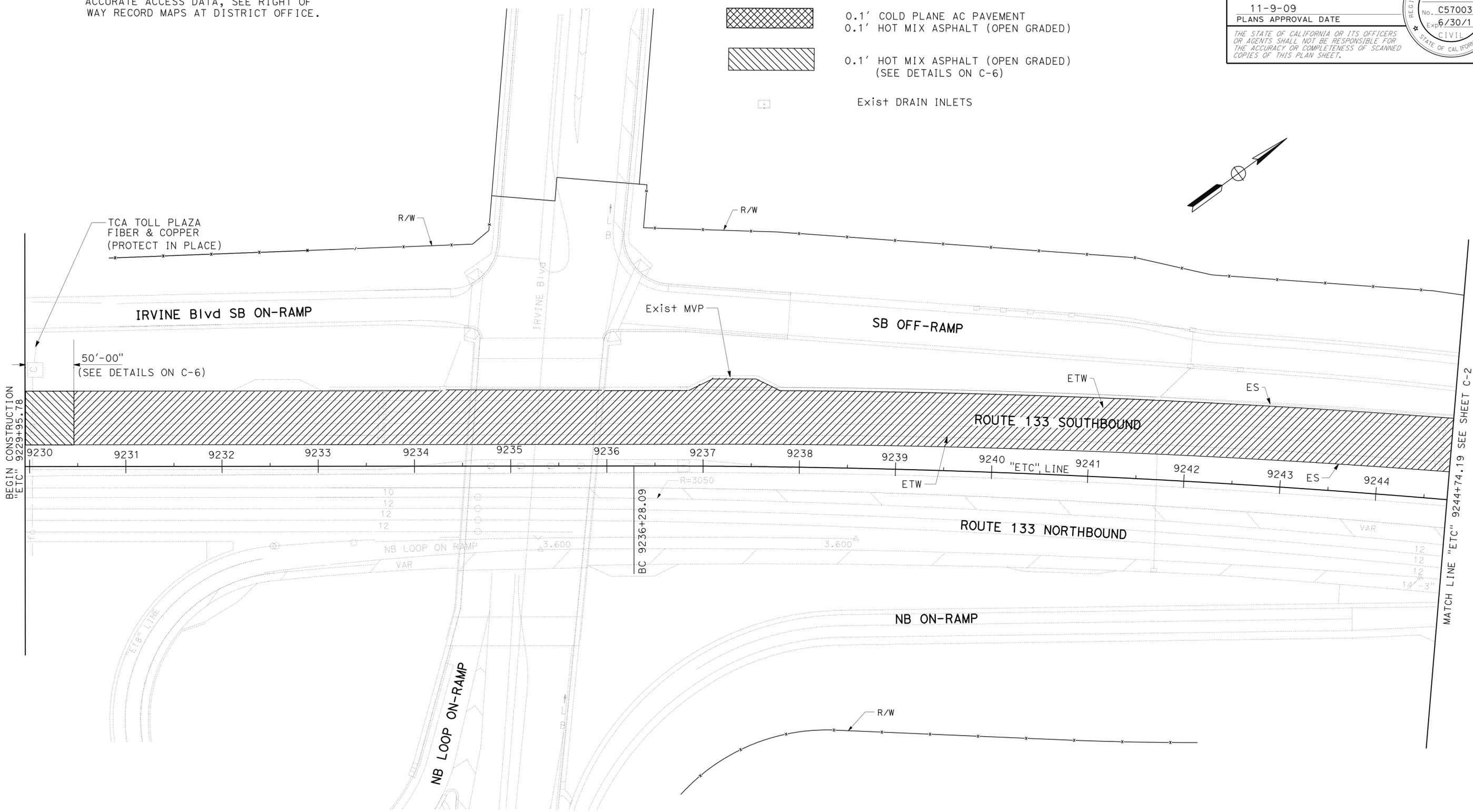
**LEGEND**

-  0.1' HOT MIX ASPHALT (OPEN GRADED)
-  0.1' COLD PLANE AC PAVEMENT
-  0.1' HOT MIX ASPHALT (OPEN GRADED) (SEE DETAILS ON C-6)
-  Exist DRAIN INLETS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133	11.8/12.9	4	32

REGISTERED CIVIL ENGINEER: GRACE WANG  
 No. C57003  
 Exp. 6/30/11  
 CIVIL  
 10-26-09 DATE  
 11-9-09 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.

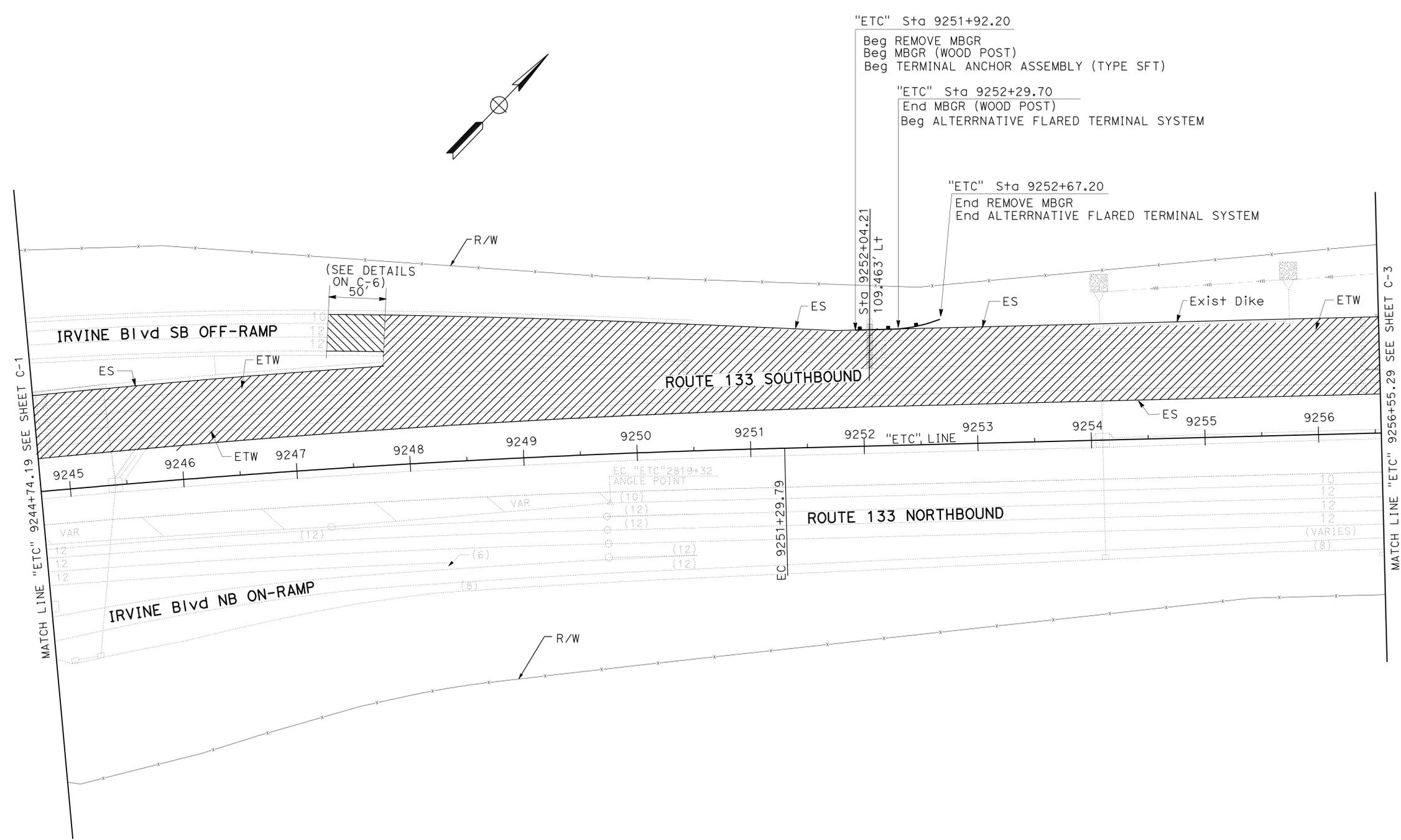


**CONSTRUCTION DETAILS**

SCALE: 1"=50'  
**C-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133	11.8/12.9	5	32
 REGISTERED CIVIL ENGINEER			10-26-09	DATE	
11-9-09 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.					
					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN I
	
FUNCTIONAL SUPERVISOR	ADEL MALEK
CALCULATED-DESIGNED BY	CHECKED BY
GRACE WANG	BERC IKIZYAN
REVISED BY	DATE REVISED
AM	10/15/09



**CONSTRUCTION DETAILS**

SCALE: 1"=50'

**C-2**

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

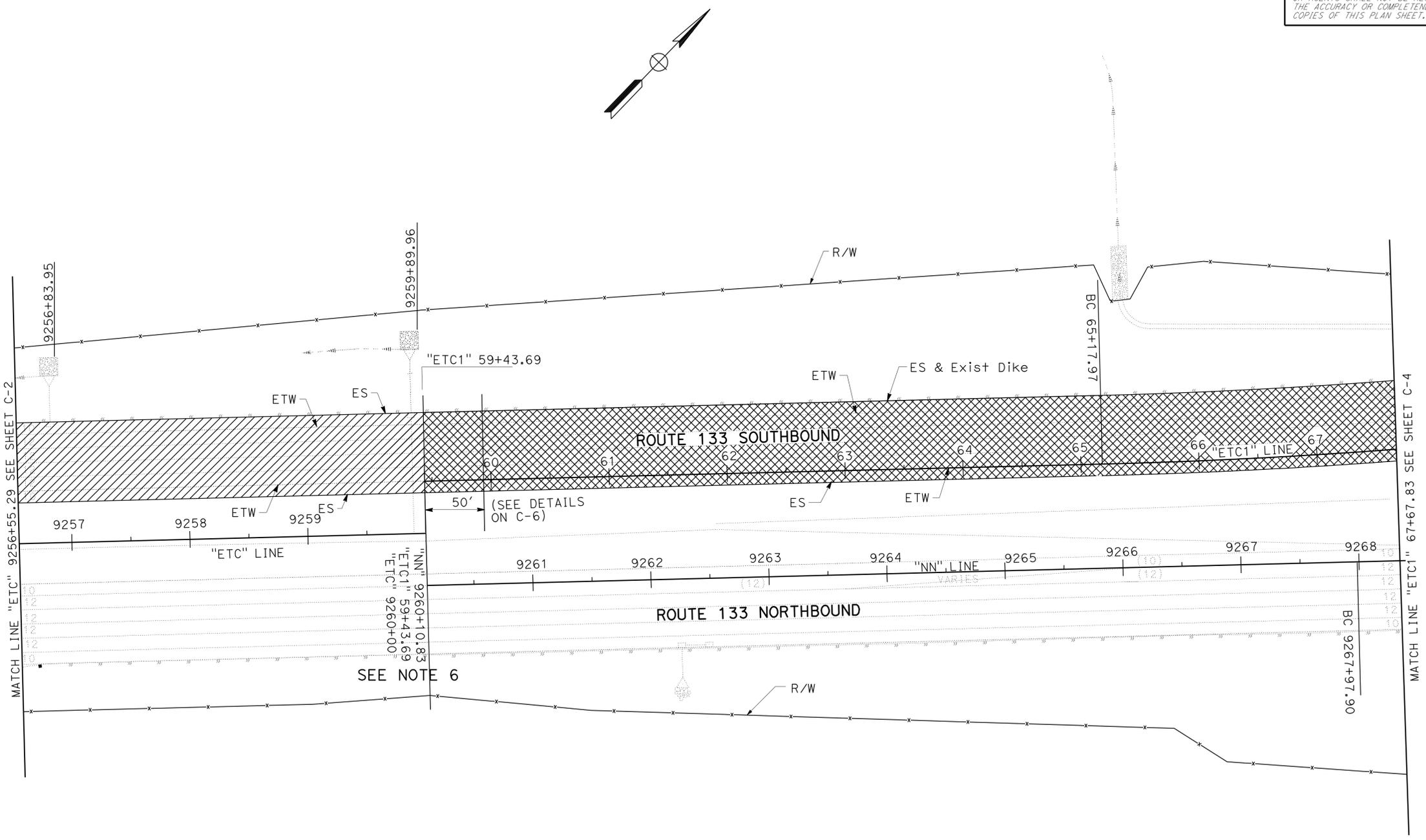
FUNCTIONAL SUPERVISOR ADEL MALEK	CALCULATED-DESIGNED BY GRACE WANG	REVISOR BY AM
CHECKED BY BERC IKIZYAN	DATE REVISOR 10/15/09	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133	11.8/12.9	6	32

REGISTERED CIVIL ENGINEER  
 GRACE WANG  
 No. C57003  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

10-26-09  
 DATE  
 11-9-09  
 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.



**CONSTRUCTION DETAILS**

SCALE: 1"=50'

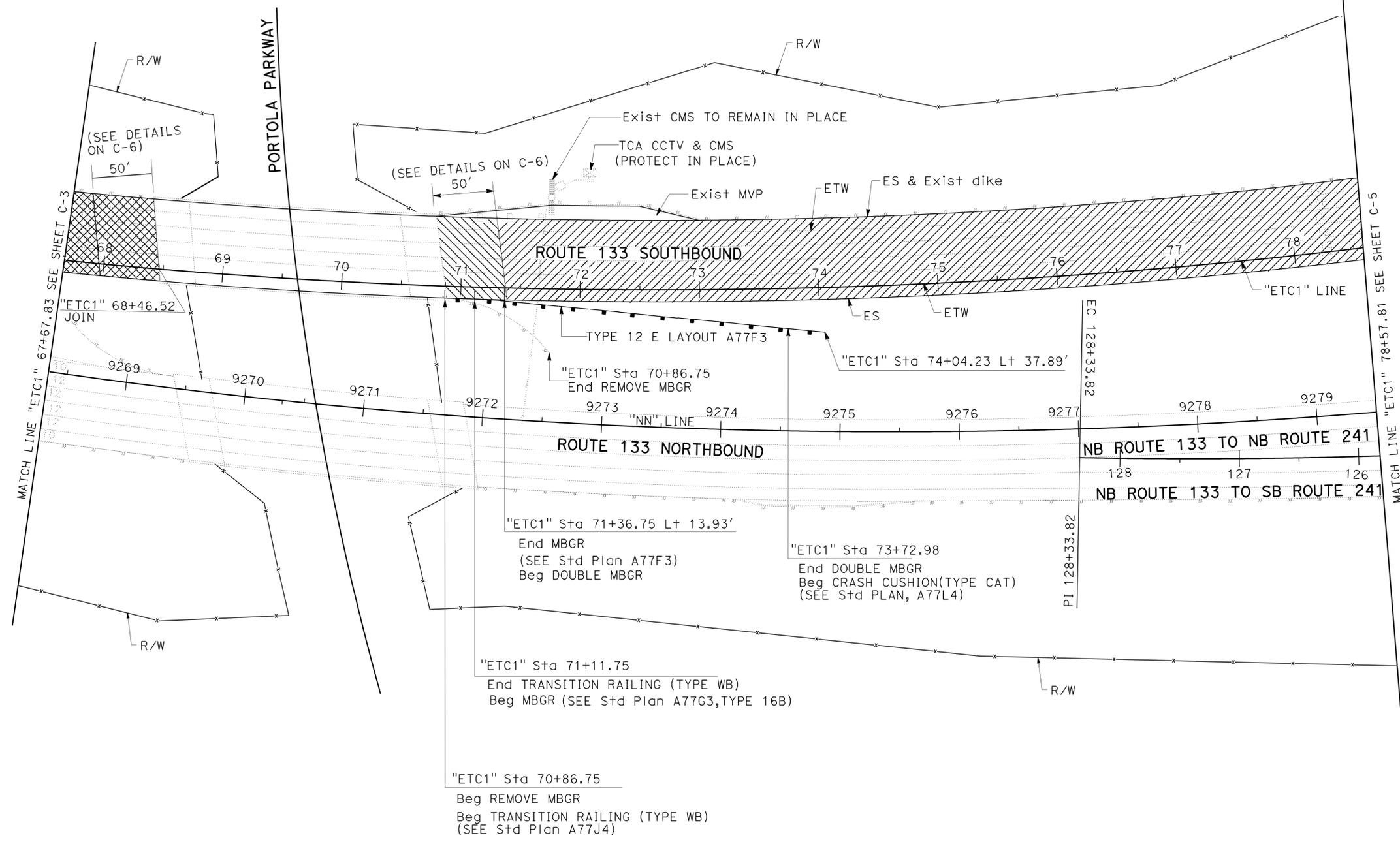
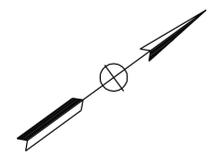
**C-3**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	133	11.8/12.9	7	32

*Grace Wang* 10-26-09  
 REGISTERED CIVIL ENGINEER DATE  
 11-9-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**GRACE WANG**  
 No. C57003  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN I
ADDEL MALEK	ADDEL MALEK
FUNCTIONAL SUPERVISOR	ADDEL MALEK
CALCULATED-DESIGNED BY	CHECKED BY
GRACE WANG	BERC IKIZYAN
REVISED BY	DATE REVISED
AM	10/15/09

**CONSTRUCTION DETAILS**

SCALE: 1"=50'

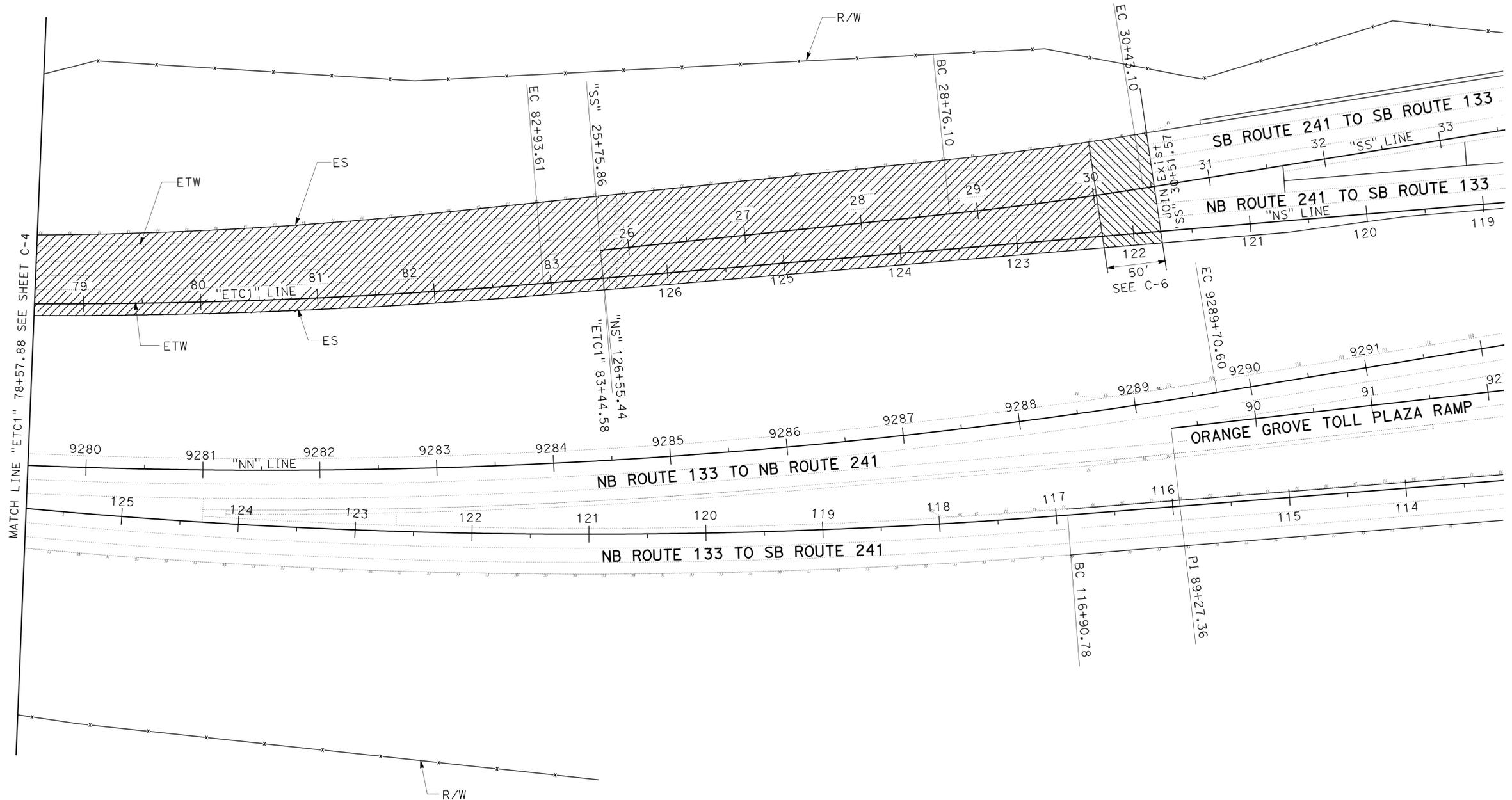
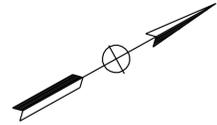
**C-4**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133	11.8/12.9	8	32

*Grace Wang* 10-26-09  
 REGISTERED CIVIL ENGINEER DATE  
 11-9-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**GRACE WANG**  
 No. C57003  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN I
<b>Caltrans</b>	
FUNCTIONAL SUPERVISOR	ADEL MALEK
CALCULATED-DESIGNED BY	CHECKED BY
GRACE WANG	BERC IKIZYAN
REVISED BY	DATE REVISED
AM	10/15/09

**CONSTRUCTION DETAILS**

SCALE: 1"=50'

**C-5**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Org	133	11.8/12.9	9	32

REGISTERED CIVIL ENGINEER	DATE
<i>Grace Wang</i>	10-26-09
PLANS APPROVAL DATE	
11-9-09	

REGISTERED PROFESSIONAL ENGINEER
GRACE WANG
No. C57003
EXP. 6/30/11
CIVIL
STATE OF CALIFORNIA

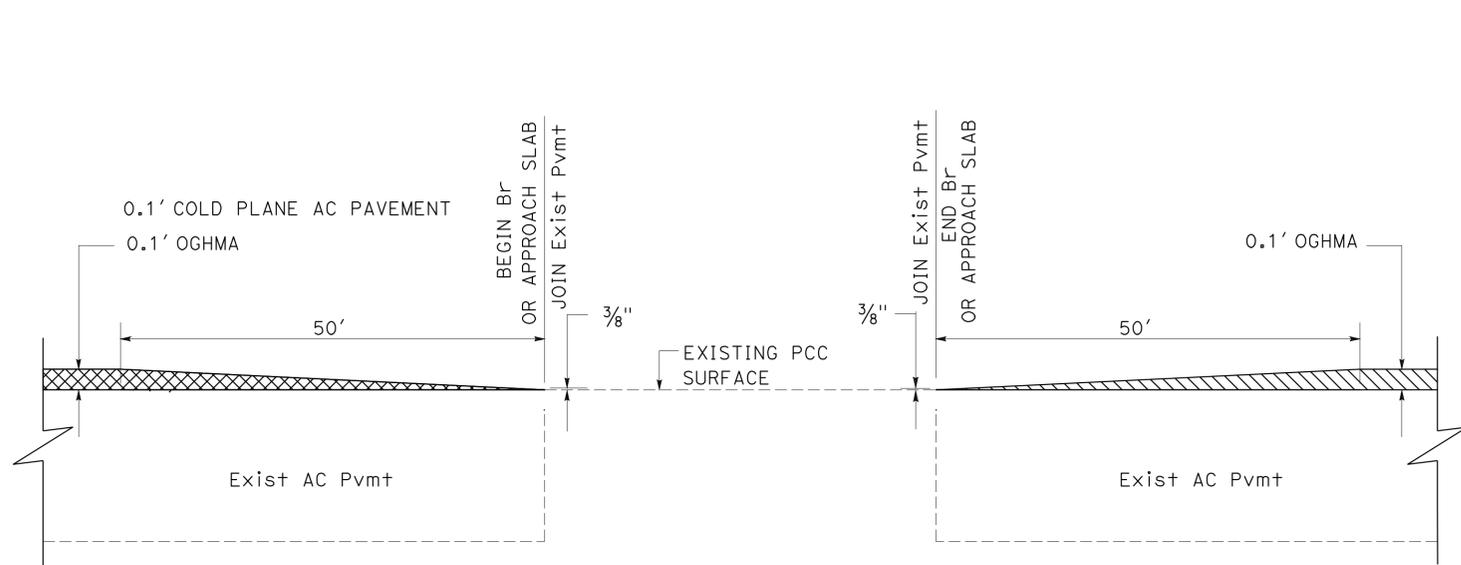
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**LEGEND**

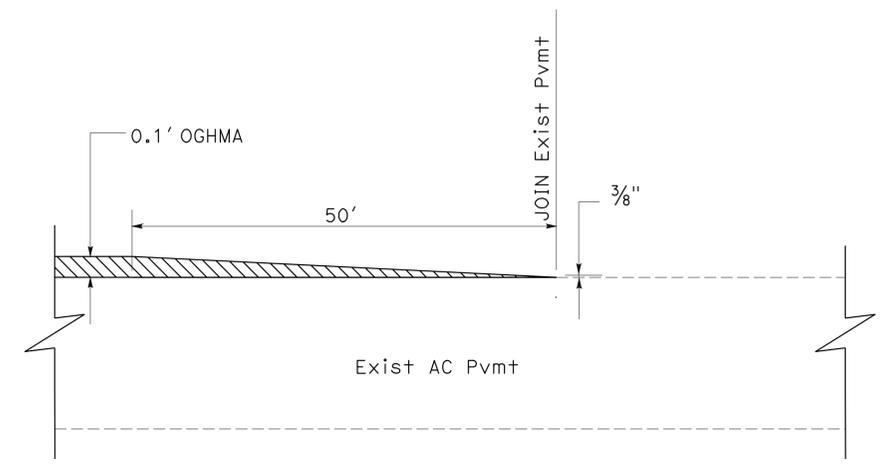
	0.1' HOT MIX ASPHALT (OPEN GRADED)
	0.1' COLD PLANE AC PAVEMENT
	0.1' HOT MIX ASPHALT (OPEN GRADED)

**ABBREVIATIONS:**

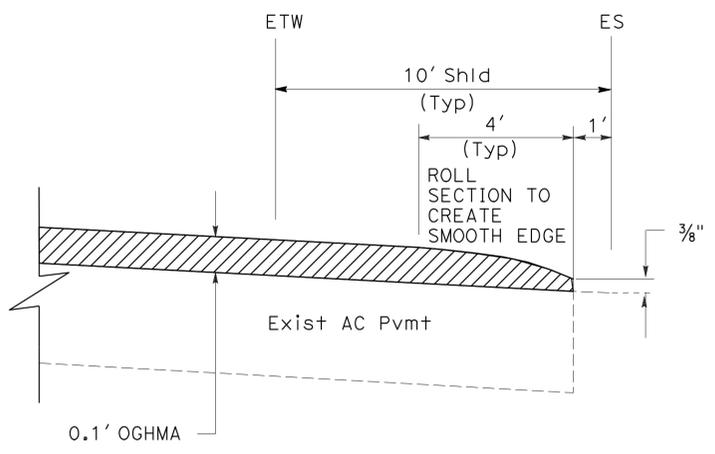
OGHMA	HOT MIX ASPHALT (OPEN GRADED)
-------	-------------------------------



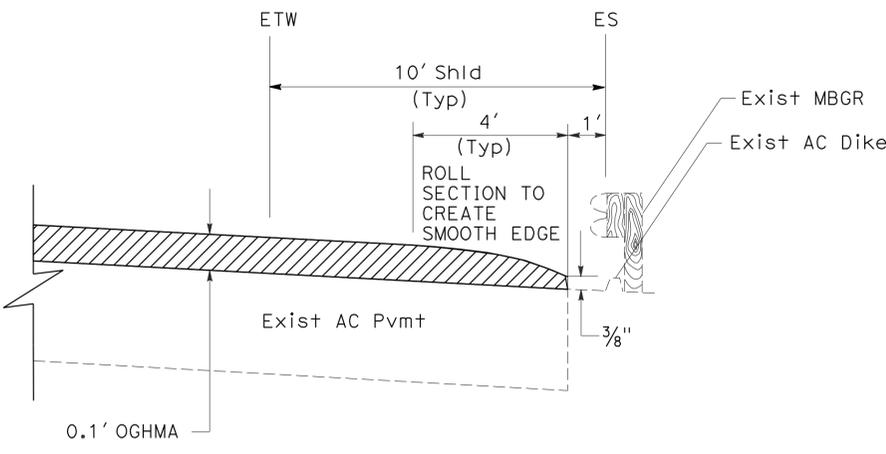
**CONFORM DETAIL AT BRIDGE UNDERCROSSINGS**



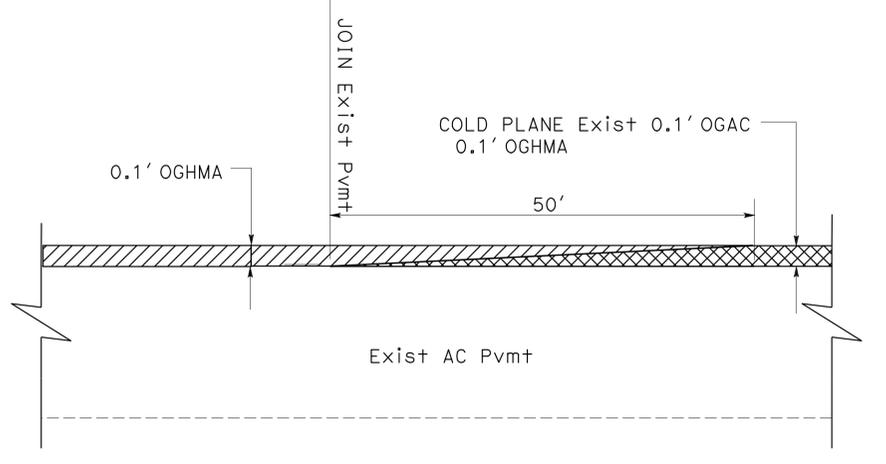
**CONFORM DETAIL AT JOIN TO EXISTING PAVEMENT (Typ)**  
Sta ETC 9225+95.78 TO 9226+45.78  
Sta ETC 9250+50 TO 9251+00  
Sta ETC1 70+86.75 TO 71+36.75  
Sta SS 30+01.57 TO 30+51.57



**OVERLAY DETAIL AT INSIDE AND OUTSIDE SHOULDER**



**OVERLAY DETAIL AT OUTSIDE SHOULDER WITH MBGR AND/OR AC DIKE**



**CONFORM DETAIL AT JOIN TO EXISTING PAVEMENT (Typ)**  
Sta ETC1 59+43.69 TO 59+93.69  
Sta ETC1 67+96.52 TO 68+46.52

**CONSTRUCTION DETAILS**

NO SCALE **C-6**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
DESIGN I  
FUNCTIONAL SUPERVISOR: ADEL MALEK  
GRACE WANG  
BERC IKIZYAN  
AM  
10/15/09  
REVISOR: AM  
DATE: 10/15/09



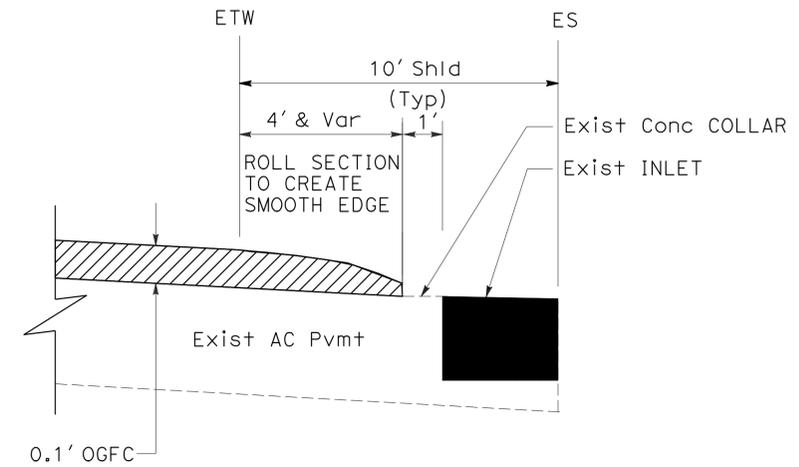
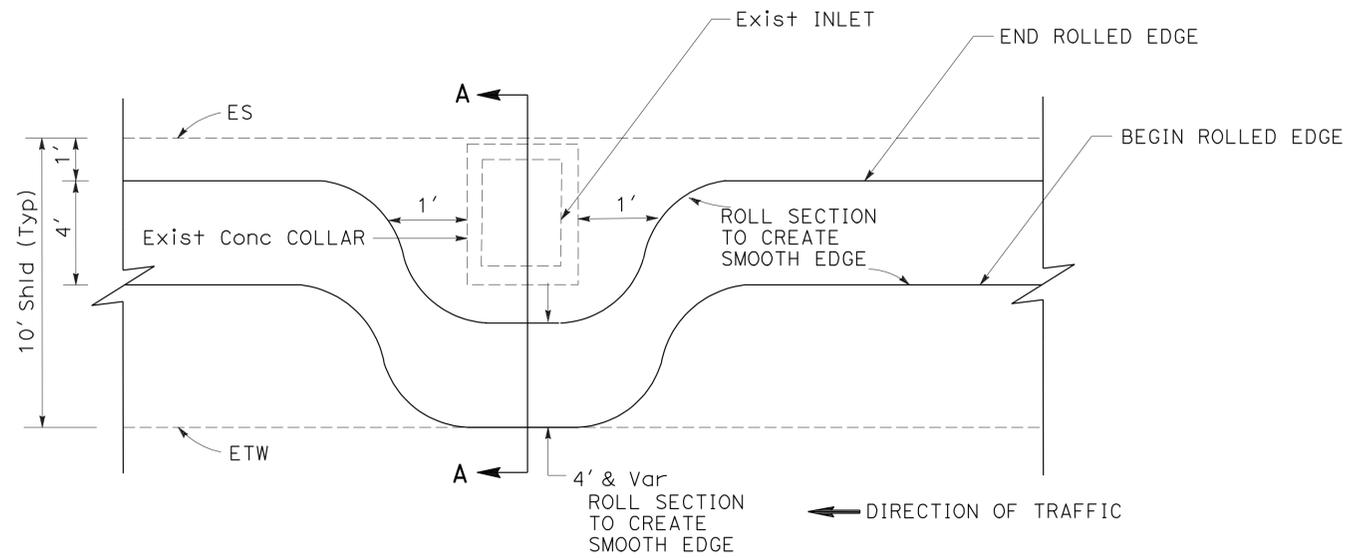
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Org	133	11.8/12.9	10	32

*Grace Wang* 10-26-09  
 REGISTERED CIVIL ENGINEER DATE

11-9-09  
 PLANS APPROVAL DATE

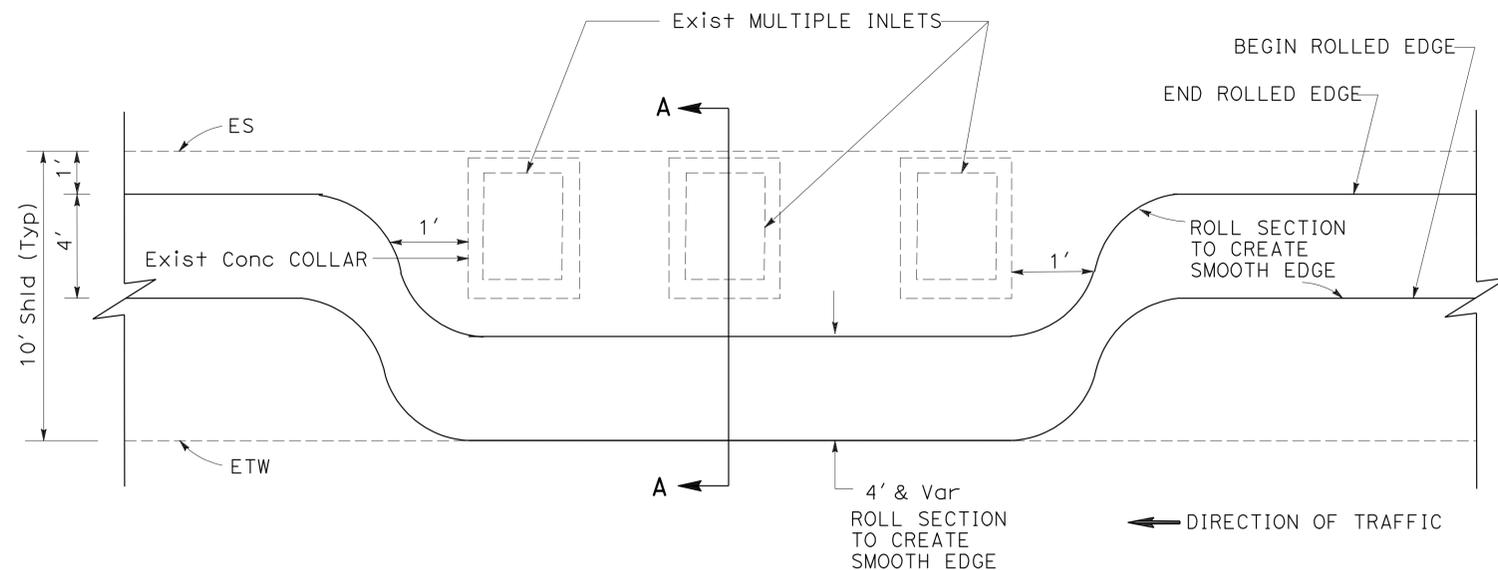
REGISTERED PROFESSIONAL ENGINEER  
**GRACE WANG**  
 No. C57003  
 EXP. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

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



**PLAN**  
**OVERLAY DETAIL AT OUTSIDE SHOULDER WITH INLET**

**SECTION A-A**



**PLAN**  
**OVERLAY DETAIL AT OUTSIDE SHOULDER WITH MULTIPLE INLETS**

**CONSTRUCTION DETAILS**

NO SCALE

**C-7**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN I	FUNCTIONAL SUPERVISOR	ADDEL MALEK	GRACE WANG	BERC IKIZYAN	REVISOR	AM
<b>Caltrans</b>							10/15/09

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Org	133	11.8/12.9	11	32

REGISTERED CIVIL ENGINEER DATE 10-26-09  
 11-9-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GRACE WANG  
 No. C57003  
 EXP. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

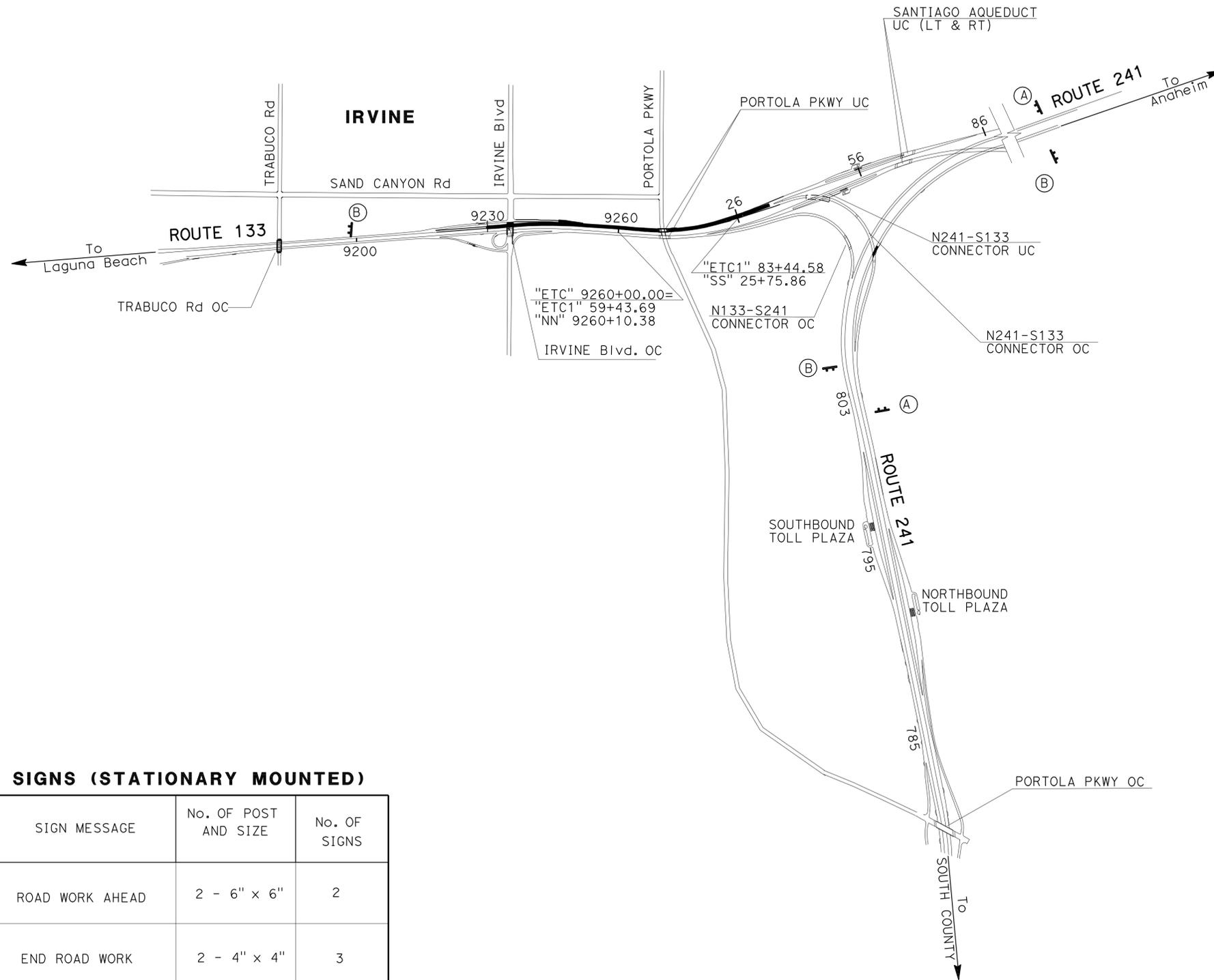
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

- SIGN LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
- FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS SEE SHEET TH-1.

**LEGEND:**

- ⊗ CONSTRUCTION AREA SIGN
- ⌚ CONSTRUCTION AREA SIGN, 2 POSTS.



**CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)**

SIGN No.	TYPE	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZE	No. OF SIGNS
(A)	W20-1	72" x 72"	ROAD WORK AHEAD	2 - 6" x 6"	2
(B)	G20-2	60" x 24"	END ROAD WORK	2 - 4" x 4"	3

**CONSTRUCTION AREA SIGNS**

NO SCALE

**CS-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN I  
 ADEL MALEK  
 GRACE WANG  
 BERC IKIZYAN  
 AM  
 10/15/09

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN I  
 FUNCTIONAL SUPERVISOR: ADEL MALEK  
 REVISIONS: 10/15/09, 11-9-09

**LEGEND**

- PCMS PORTABLE CHANGABLE MESSAGE SIGN
- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN (DETOUR)
- CLOSURE
- CONSTRUCTION AREA SIGN (DETOUR), 1-POST

**NOTES:**

1. LOCATION OF CONSTRUCTION AREA SIGNS (DETOUR) & PCMS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

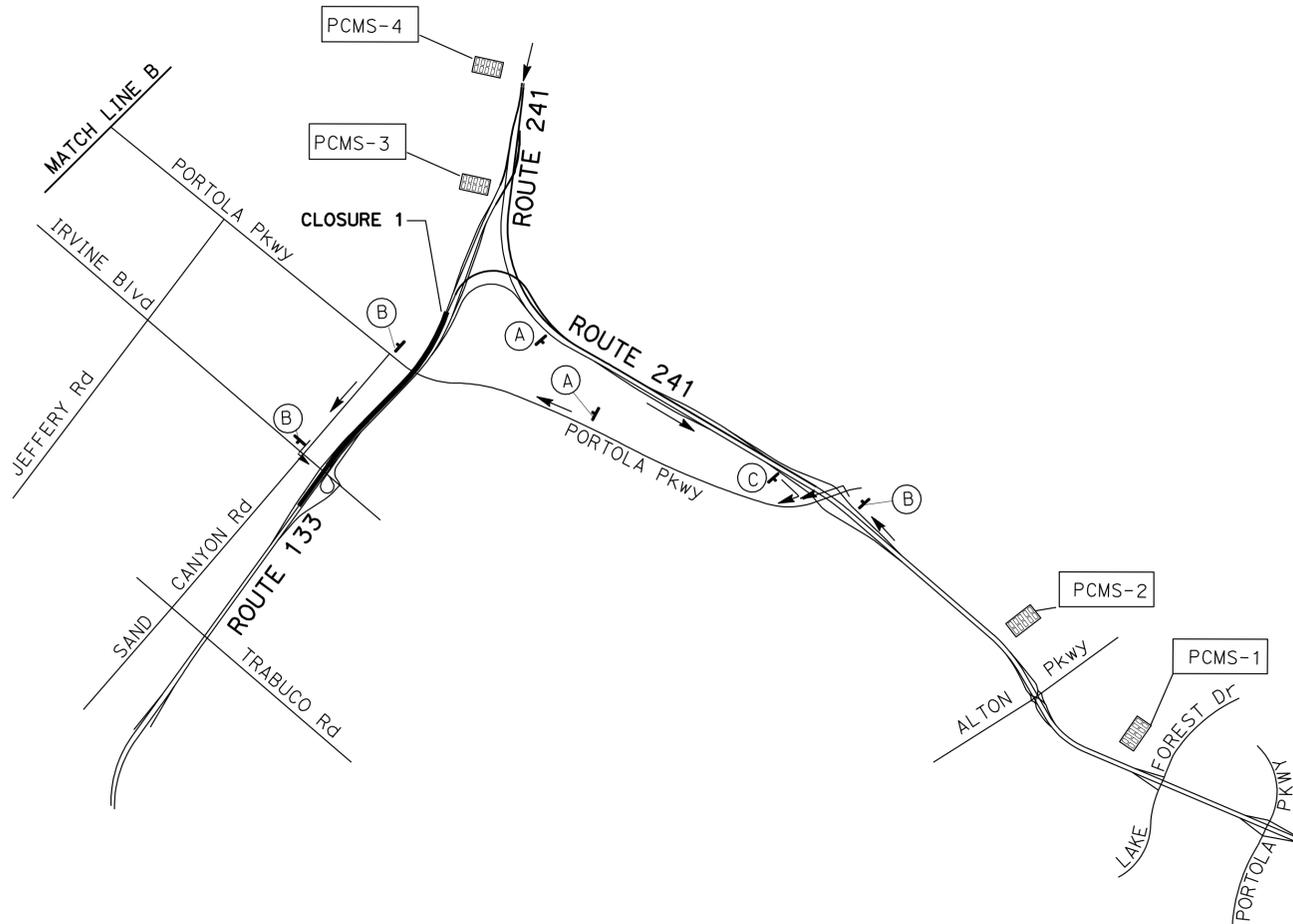
2. DURING THE CLOSURES, THE PCMS SHOULD READ AS FOLLOWS:

SB 133 CLOSED  
 USE PORTOLA PKWY

**CLOSURE :** SB ROUTE 133

**DETOUR:** SB ROUTE 241: SOUTH ON ROUTE 241, EXIT PORTOLA PKWY, RIGHT ON PORTOLA PKWY, LEFT ON SAND CANYON RD, LEFT ON IRVINE BLVD, AND RIGHT ON SB ROUTE 133 ON-RAMP.

NB ROUTE 241: NOUTH ON ROUTE 241, EXIT PORTOLA PKWY, LEFT ON PORTOLA PKWY, LEFT ON SAND CANYON RD, LEFT ON IRVINE BLVD, AND RIGHT ON SB ROUTE 133 ON-RAMP.



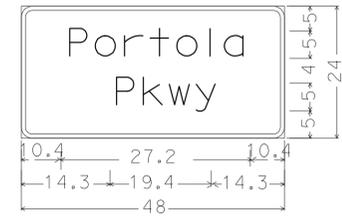
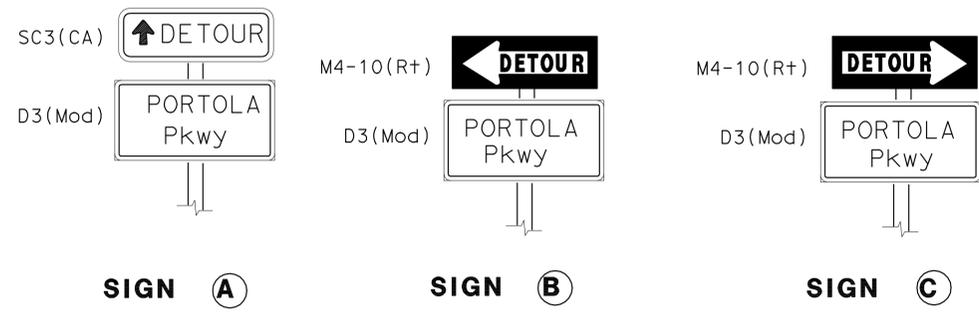
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Org	133	11.8/12.9	12	32

REGISTERED CIVIL ENGINEER DATE 10-26-09  
 11-9-09 PLANS APPROVAL DATE  
 GRACE WANG No. C57003 EXP. 6/30/11 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.

**DETOUR SIGNS (STATIONARY)**

SIGN	SIGN CODE	PANEL SIZE	No. OF POST AND SIZE	No. OF SIGN	SIGN MESSAGE
A	SC3(CA)	48" x 18"	1-4"x 6" (S)	2	DETOUR
	D3(Mod)	48" x 24"			PORTOLA PKWY
B	M4-10(R+)	48" x 18"	1-4"x 6" (S)	3	DETOUR
	D3(Mod)	48" x 24"			PORTOLA PKWY
C	M4-10(L+)	48" x 18"	1-4"x 6" (S)	1	DETOUR
	D3(Mod)	48" x 24"			PORTOLA PKWY
TOTAL				6 *	
PCMS				2	SEE NOTES

\*: FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGN SEE SHEET CS-1  
 (S) : FOR STATIONERY SIGN



3.0" Radius, 1" Border, Black on Orange; [Portola] E Mod; [Pkwy] E Mod;

**D3 (Mod)**

**TRAFFIC HANDLING PLAN (DETOUR)**

NO SCALE **TH-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133	11.8/12.9	13	32

REGISTERED CIVIL ENGINEER		DATE	
GRACE WANG		10-26-09	
PLANS APPROVAL DATE		11-9-09	

REGISTERED PROFESSIONAL ENGINEER	
GRACE WANG	
No. C57003	EXP. 6/30/11
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.

**NOTES:**

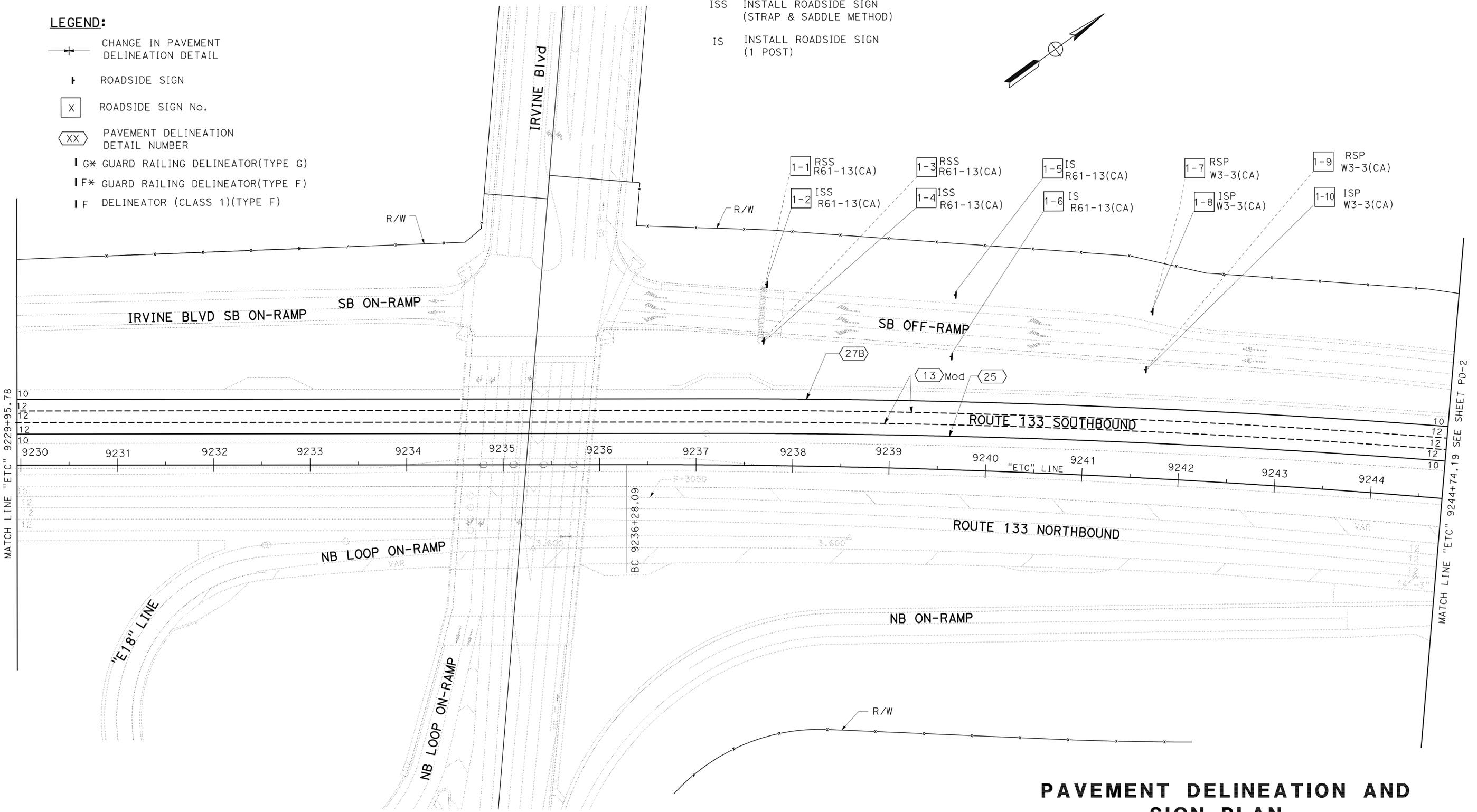
1. ALL TRAFFIC STRIP & PAVEMENT MARKING SHALL BE THERMOPLASTIC.
2. ALL CONFLICTING TRAFFIC STRIP SHALL BE REMOVED PRIOR TO PAINTING TRAFFIC STRIPS.
3. ALL SIGNS WILL PROTECT IN PLACE EXCEPT NOTED.

**ABBREVIATION:**

- RSP REMOVE ROADSIDE SIGN PANEL
- ISP INSTALL ROADSIDE SIGN PANEL ON EXIST POST
- RSS REMOVE ROADSIDE SIGN (STRAP & SADDLE METHOD)
- ISS INSTALL ROADSIDE SIGN (STRAP & SADDLE METHOD)
- IS INSTALL ROADSIDE SIGN (1 POST)

**LEGEND:**

- CHANGE IN PAVEMENT DELINEATION DETAIL
- ROADSIDE SIGN
- ROADSIDE SIGN No.
- PAVEMENT DELINEATION DETAIL NUMBER
- G\* GUARD RAILING DELINEATOR(TYPE G)
- F\* GUARD RAILING DELINEATOR(TYPE F)
- F DELINEATOR (CLASS 1)(TYPE F)



**PAVEMENT DELINEATION AND SIGN PLAN**

SCALE: 1"=50'

**PD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN I
FUNCTIONAL SUPERVISOR	ADEL MALEK
CALCULATED-DESIGNED BY	BERC IKIZYAN
CHECKED BY	
GRACE WANG	
REVISED BY	DATE REVISED
AM	10/15/09

LAST REVISION DATE PLOTTED => 09-NOV-2009 10-20-09 TIME PLOTTED => 13:37

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

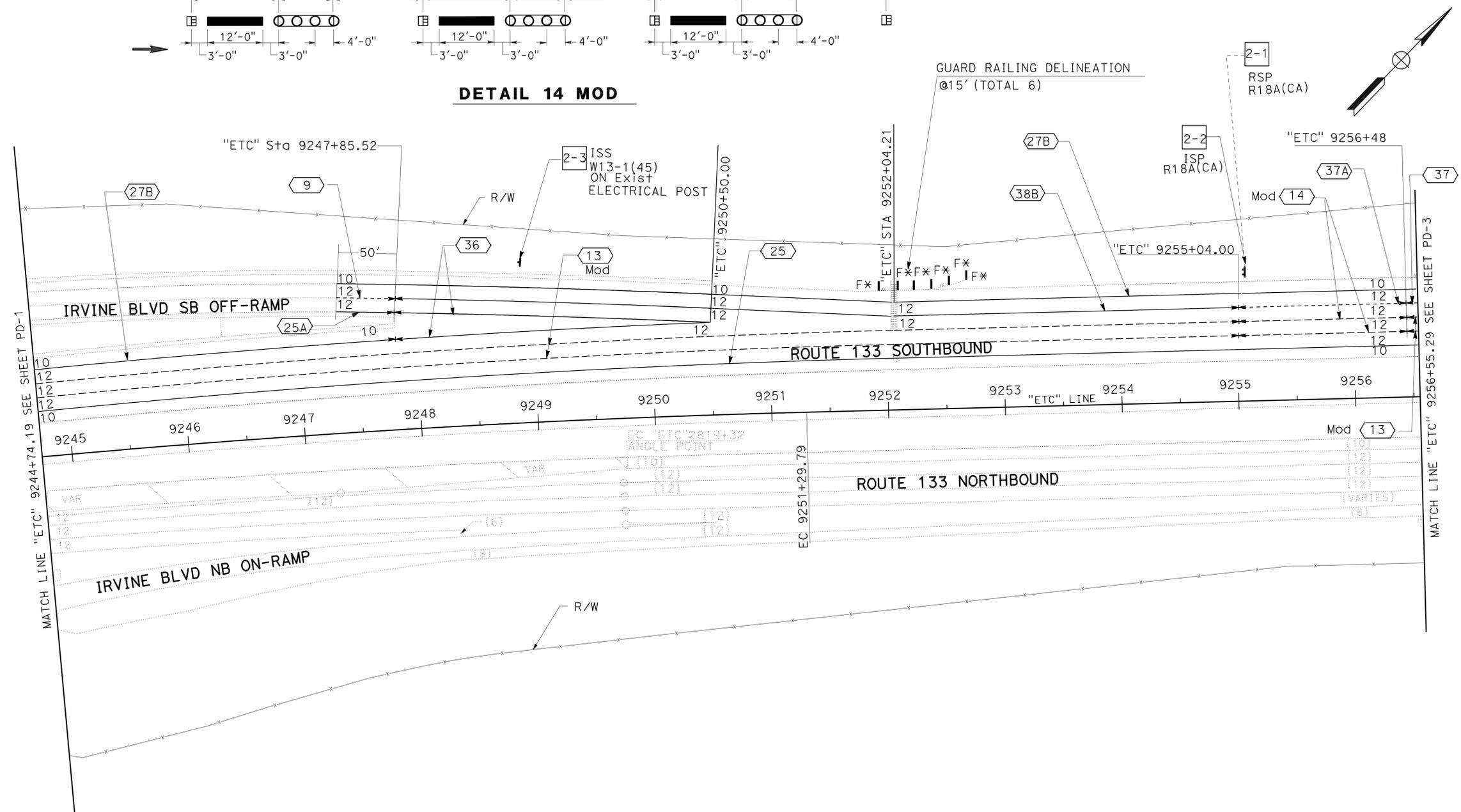
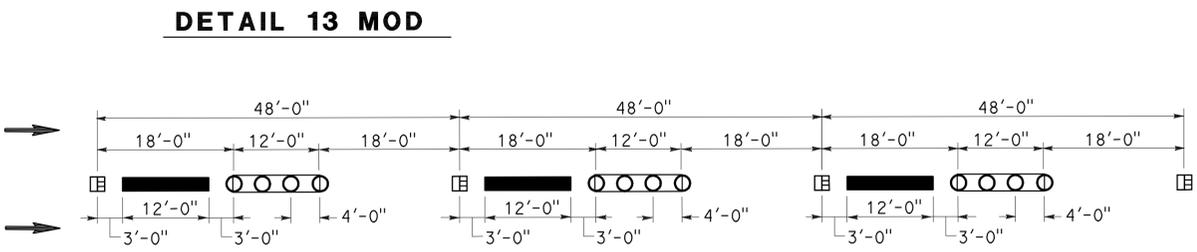
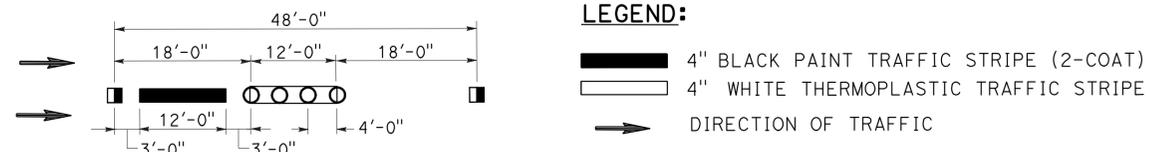
FUNCTIONAL SUPERVISOR: ADEL MALEK  
 CALCULATED/DESIGNED BY: GRACE WANG  
 CHECKED BY: BERK IKIZYAN  
 AM: 10/15/09  
 REVISED BY: DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133	11.8/12.9	14	32

10-26-09  
 REGISTERED CIVIL ENGINEER DATE  
 11-9-09  
 PLANS APPROVAL DATE

GRACE WANG  
 No. C57003  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

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



**PAVEMENT DELINEATION AND SIGN PLAN**

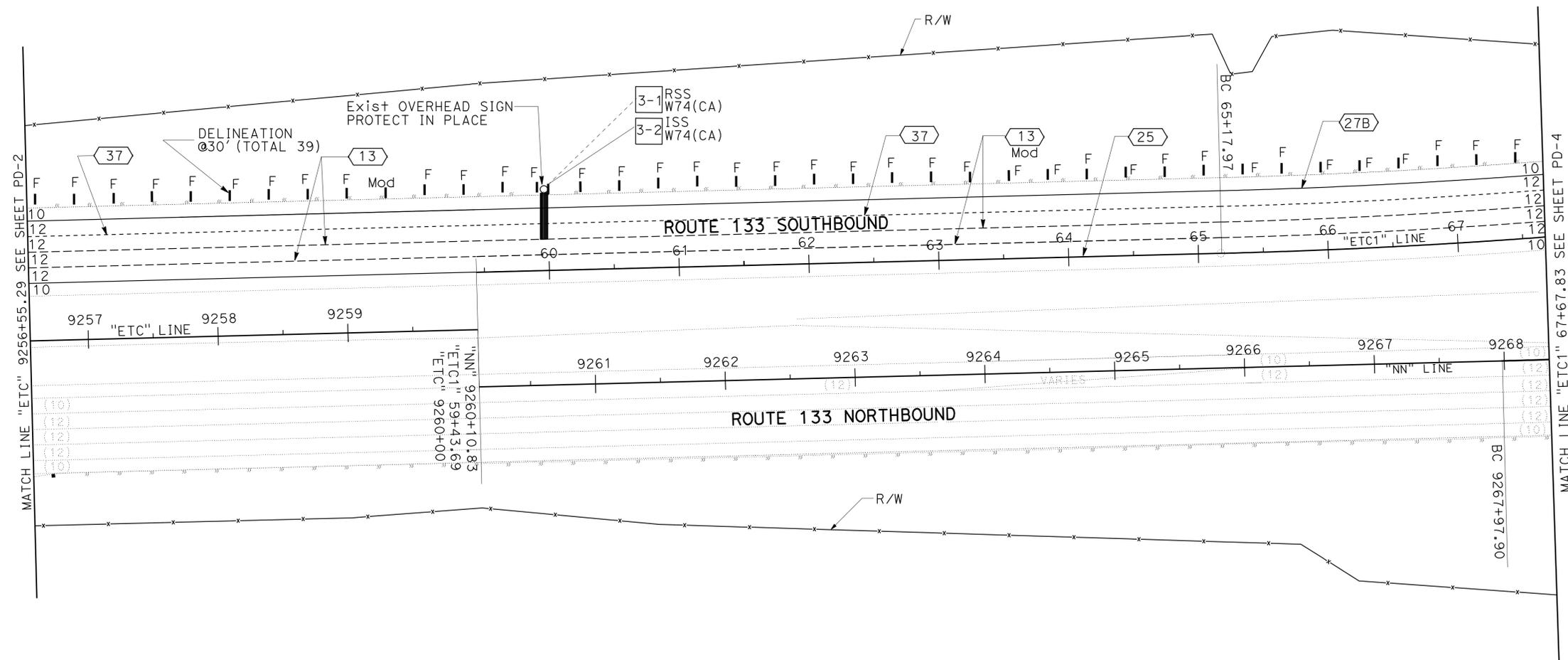
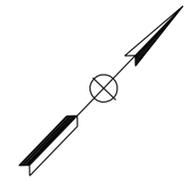
FOR NOTES AND LEGEND, SEE SHEET PD-1

SCALE: 1"=50'

**PD-2**

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133	11.8/12.9	15	32
<i>Grace Wang</i> REGISTERED CIVIL ENGINEER			10-26-09	DATE	
11-9-09 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.					
REGISTERED PROFESSIONAL ENGINEER <b>GRACE WANG</b> No. C57003 EXP. 6/30/11 CIVIL STATE OF CALIFORNIA					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN I
<b>Caltrans</b>	
FUNCTIONAL SUPERVISOR	ADEL MALEK
CALCULATED-DESIGNED BY	CHECKED BY
GRACE WANG	BERC IKIZYAN
REVISED BY	DATE REVISED
AM	10/15/09

# PAVEMENT DELINEATION AND SIGN PLAN

FOR NOTES AND LEGEND, SEE SHEET PD-1

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION ONLY

SCALE: 1"=50'

**PD-3**

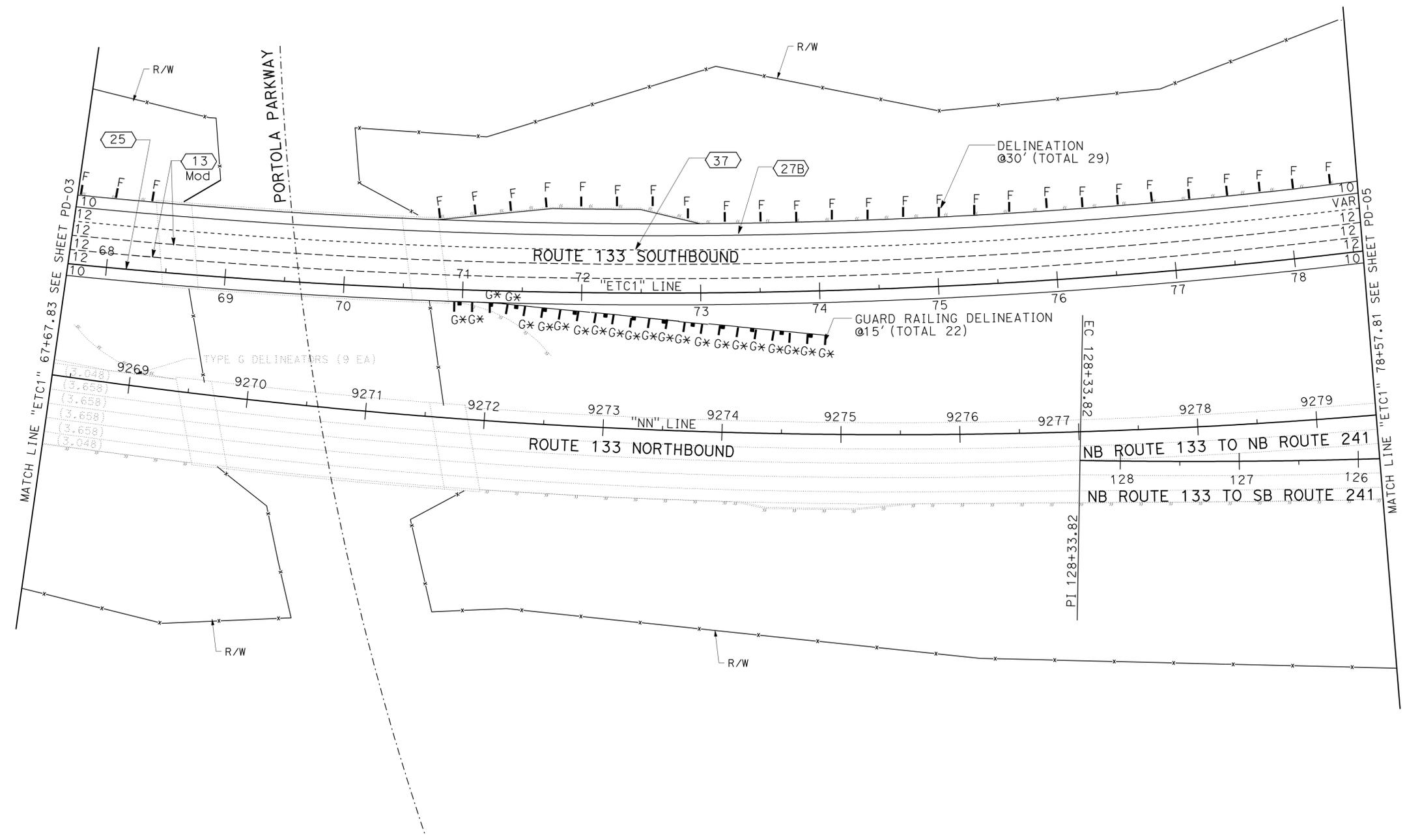
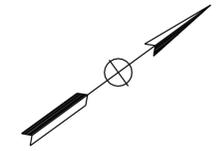
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133	11.8/12.9	16	32

<i>Grace Wang</i>	10-26-09
REGISTERED CIVIL ENGINEER	DATE
11-9-09	
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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	GRACE WANG	REVISED BY	AM
<b>Caltrans</b>	ADEL MALEK	CHECKED BY	BERC IKIZYAN	DATE REVISED	10/15/09
<b>DESIGN I</b>					

# PAVEMENT DELINEATION AND SIGN PLAN

SCALE: 1"=50'

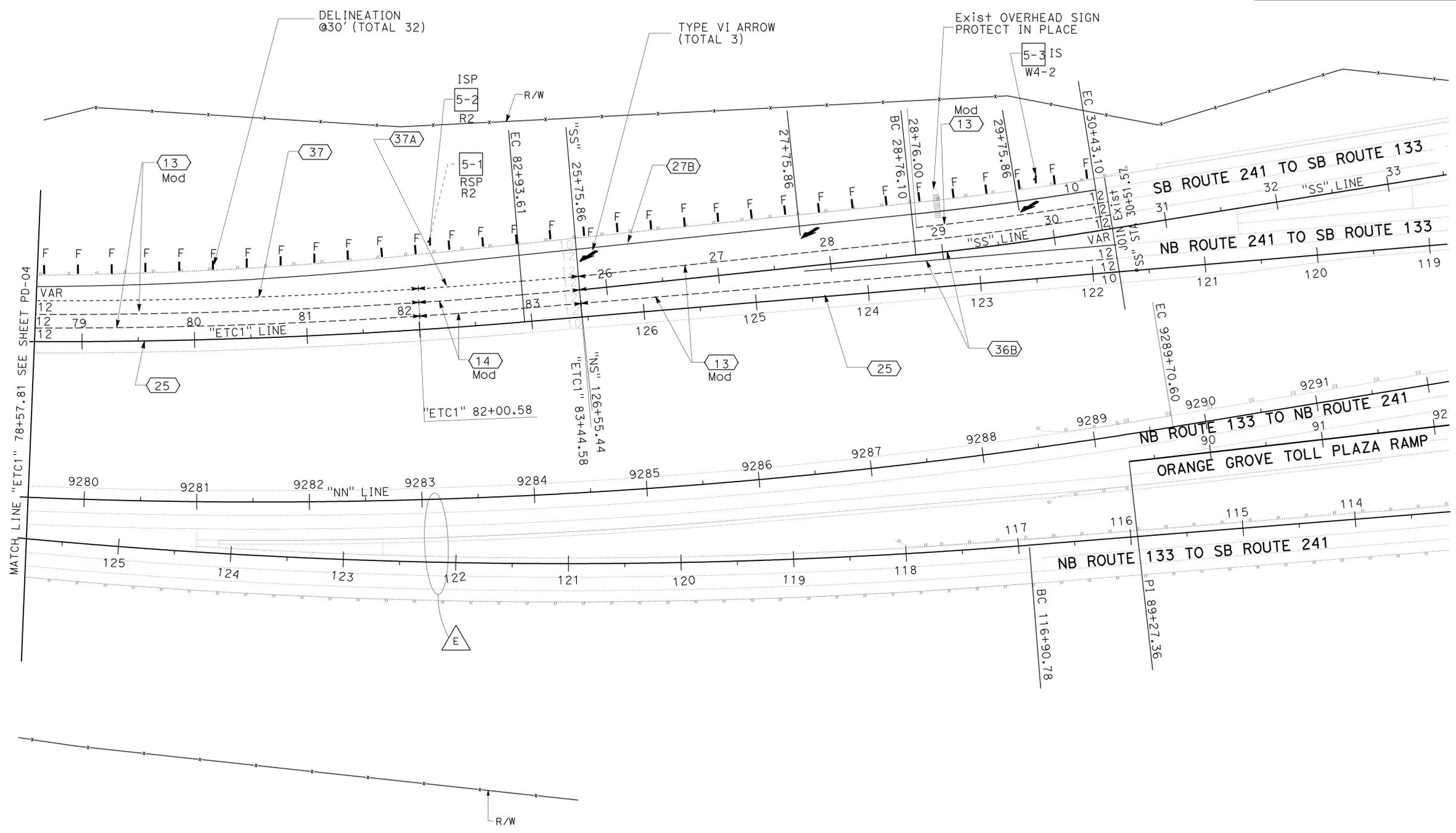
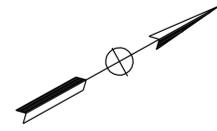
**PD-4**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133	11.8/12.9	17	32

REGISTERED CIVIL ENGINEER  
 GRACE WANG  
 No. C57003  
 EXP. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

10-26-09  
 DATE  
 11-9-09  
 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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
**DESIGN I**  
 FUNCTIONAL SUPERVISOR: ADEL MALEK  
 CALCULATED-DESIGNED BY: GRACE WANG  
 CHECKED BY: BERK IKIZYAN  
 REVISED BY: AM  
 DATE REVISED: 10/15/09  
 BORDER LAST REVISED 4/11/2008

## PAVEMENT DELINEATION AND SIGN PLAN

FOR NOTES AND LEGEND, SEE SHEET PD-1  
 THIS PLAN ACCURATE FOR PAVEMENT DELINEATION ONLY

SCALE: 1"=50'

**PD-5**



USERNAME => frmikes1  
 DGN FILE => c0k270na005.dgn

CU 12241

EA 0K2701

LAST REVISION: 10-20-09  
 DATE PLOTTED => 09-NOV-2009  
 TIME PLOTTED => 13:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133	11.8/12.9	18	32

*Grace Wang* 10-26-09  
 REGISTERED CIVIL ENGINEER DATE  
 11-9-09  
 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 QUANTITIES

SHEET No.	STATION LINE	THERMOPLASTIC TRAFFIC STRIPE									PAINT TRAFFIC STRIPE 2 COAT	THERMOPLASTIC PAVEMENT MARKING	PAVEMENT MARKER				REMOVE			DELINEATOR (CLASS 1)	GUARD RAIL DELINEATOR
		DETAIL 25 4" SOLID YELLOW	DETAIL 27B 4" SOLID WHITE	DETAIL 8 & 9 4" WHITE BROKEN (17-7)	DETAIL 13 MOD 4" WHITE BROKEN (36-12)	DETAIL 14 MOD 4" WHITE BROKEN (36-12)	DETAIL 37 & 37 MOD 8" WHITE BROKEN (12-3)	DETAIL 36 & 36A & 36B 8" SOLID WHITE	DETAIL 38B 8" SOLID WHITE	DETAILS 13 MOD & 14 MOD 4" BLACK BROKEN (36-12)			ARROW (TYPE V1)	NON-REFLECTIVE	RETRO-REFLECTIVE			THERMOPLASTIC YELLOW TRAFFIC STRIPE	THERMOPLASTIC TRAFFIC STRIPE		
		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	SQFT	EA	EA	EA	EA	EA	EA	EA	EA	EA
PD-1	"ETC" LINE	1479	1479		2957						2957		256		64	32	1479	4436	352		
PD-2	"ETC" LINE	1181	1231	50	2074	288	156	315	718		2362		208	20	102	29	1181	4782	359		6
PD-3	"ETC" LINE	345	1169		2338						2338		200		130	25	345	4676	355	39	
	"ETC1" LINE	824		824																	
PD-4	"ETC1" LINE	1090	1090		2180		1090				2180		188		122	24	1090	4361	334	29	22
PD-5	"ETC1" LINE	487	1240	199	2191		487	277		2191	126		212	20	101	21	487	5158	334	32	
	"SS" LINE	476				476															
SUB-TOTAL		5882	6209	249	11740	288	2902	592	718	12028	126	126	1064	20	519	131	5882	23413	1734	100	28
TOTAL		12100		250	12030		2902		1310	12030	126	126	1070		670		5890	23420	1740	100	28

### PAVEMENT DELINEATION QUANTITIES

PDQ-1



**ROADWAY ITEMS**

SHEET	STATION/LOCATION	REMOVE MBGR	COLD PLANE ASPHALT CONCRETE PAVEMENT	HOT MAX ASPHALT (OPEN GRADED)	MBGR (WOOD POST)	DOUBLE MBGR (WOOD POST)	TRANSITION RAILING (TYPE WB)	RAIL TENSIONING ASSEMBLY	ALTERNATIVE FLARED TERMINAL SYSTEM	TERMINAL ANCHOR ASSEMBLY (TYPE SFT)	CRASH CUSHION (TYPE CAT)
		LF	SQYD	TON	LF	LF	EA	EA	EA	EA	EA
C-1	9229+95.78 to 9244+74.19			579							
C-2	ETC 9244+74.19 to 9256+55.29	75		852	37.5				1	1	
C-3	9256+55.29 to 9260+00			165							
C-4	ETC1 59+43.60 to 67+67.83		6043	394							
	67+67.83 to 68+46.52		577	38							
	70+86.83 to 78+57.81	100		369	25	237	1	1			1
	78+57.81 to 83+44.58			254							
C-5	SS 25+75.86 to 30+51.57			304							
TOTAL		175	6620	2955	62.5	237	1	1	1	1	1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	133	11.8/12.9	20	32

*Grace Wang* 10-26-09  
 REGISTERED CIVIL ENGINEER DATE

11-9-09  
 PLANS APPROVAL DATE

GRACE WANG  
 No. C57003  
 EXP. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

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

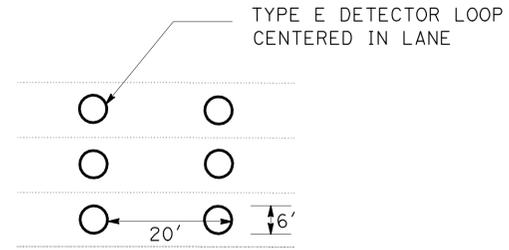
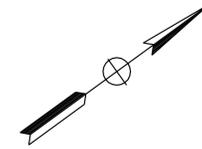
**SUMMARY OF QUANTITIES**  
**Q-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133	11.8/12.9	21	32

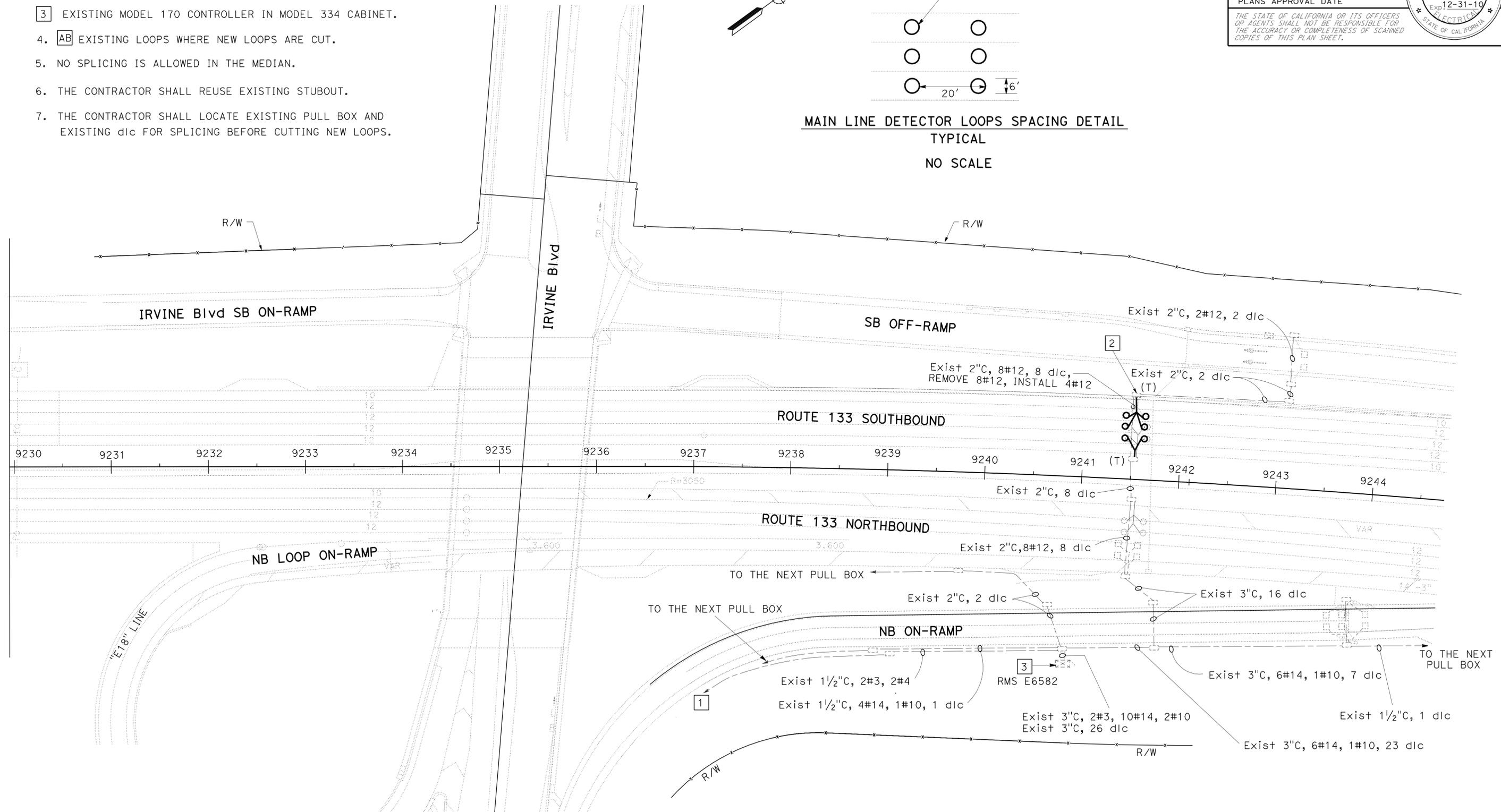
Mina Zolfaghari 10-26-09  
 REGISTERED ELECTRICAL ENGINEER DATE  
 11-9-09  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES (THIS SHEET ONLY):**

- 1 TO EXISTING 120/240 V TYPE III-CF SERVICE EQUIPMENT ENCLOSURE LOCATED AT CORNER OF SR-133 NB OFF-RAMP. ID No. 12-55-133-0-011.864 AND 12-55-133-0-011.866.
- 2 SPLICE NEW LOOP WIRES TO EXISTING DLC.
- 3 EXISTING MODEL 170 CONTROLLER IN MODEL 334 CABINET.
4. [AB] EXISTING LOOPS WHERE NEW LOOPS ARE CUT.
5. NO SPLICING IS ALLOWED IN THE MEDIAN.
6. THE CONTRACTOR SHALL REUSE EXISTING STUBOUT.
7. THE CONTRACTOR SHALL LOCATE EXISTING PULL BOX AND EXISTING dlc FOR SPLICING BEFORE CUTTING NEW LOOPS.



**MAIN LINE DETECTOR LOOPS SPACING DETAIL**  
TYPICAL  
NO SCALE



"FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORDS AT DISTRICT OFFICE."

**INDUCTIVE LOOP DETECTOR**

SCALE: 1"=50'

**E-1**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Electrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
 CALCULATED-DESIGNED BY: MINA ZOLFAGHARI  
 CHECKED BY: MZ  
 REVISOR BY: MZ  
 DATE REVISED: 10-30-08

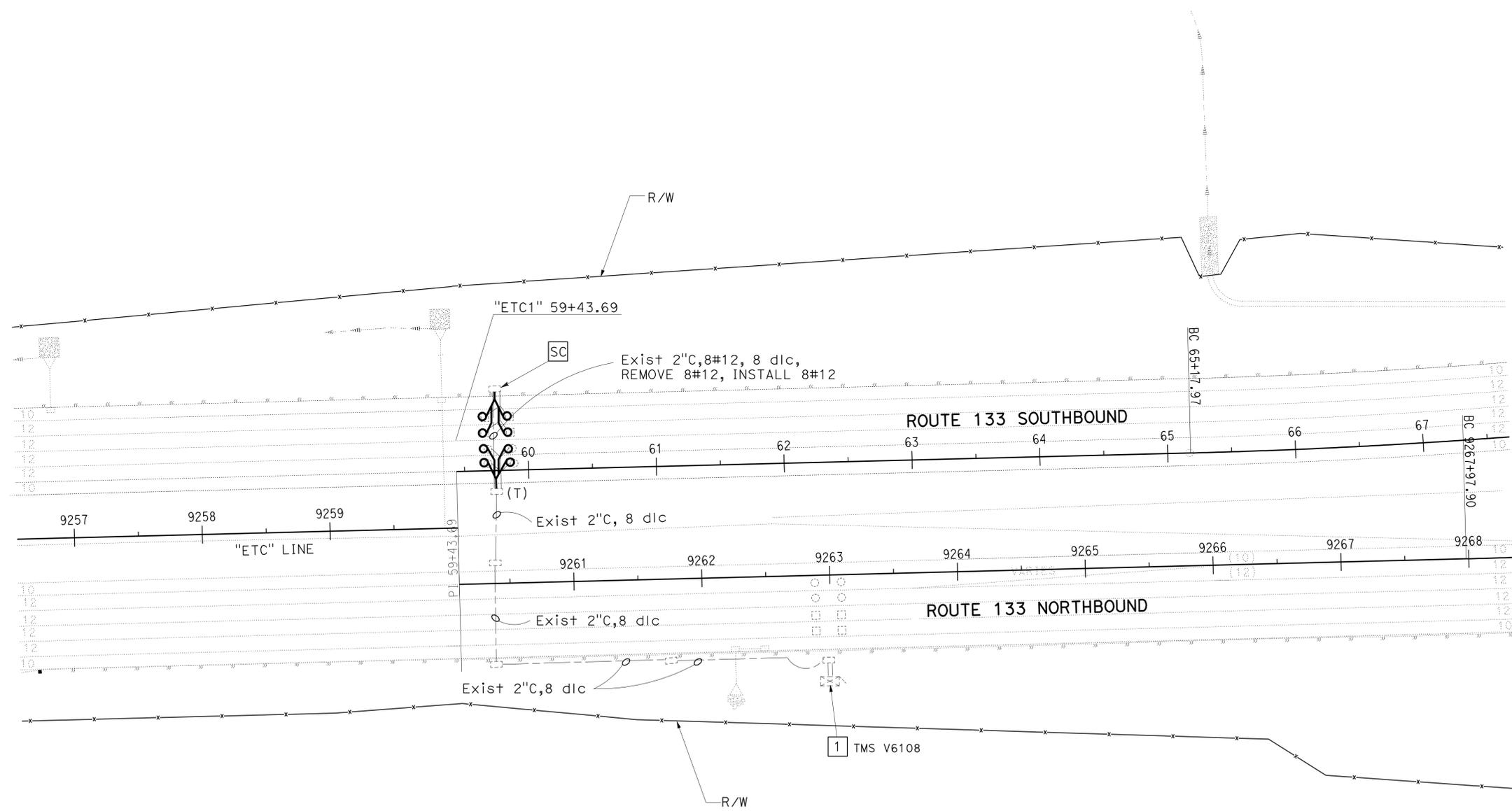
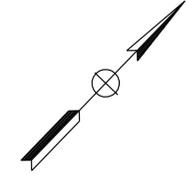
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	133	11.8/12.9	22	32

Mina Zolfaghari 10-26-09	
REGISTERED ELECTRICAL ENGINEER DATE	
11-9-09	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 (THIS SHEET ONLY):**

- 1 EXISTING MODEL 170 CONTROLLER IN MODEL 334 CABINET.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
 CALCULATED-DESIGNED BY: MINA ZOLFAGHARI  
 CHECKED BY: MZ  
 REVISED BY: MZ  
 DATE REVISED: 10-30-08  
 MZ

"FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORDS AT DISTRICT OFFICE."

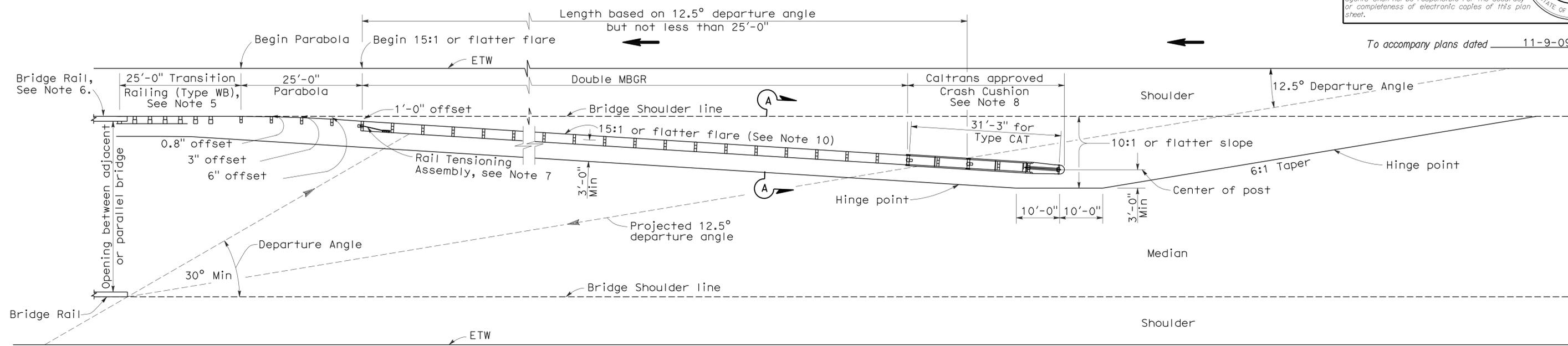
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**INDUCTIVE LOOP DETECTOR**

SCALE: 1"=50'

**E-2**



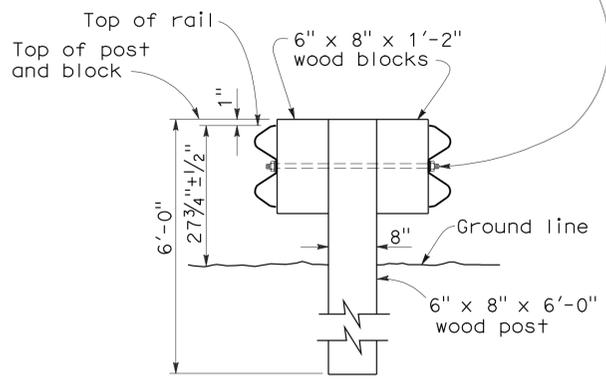


To accompany plans dated 11-9-09

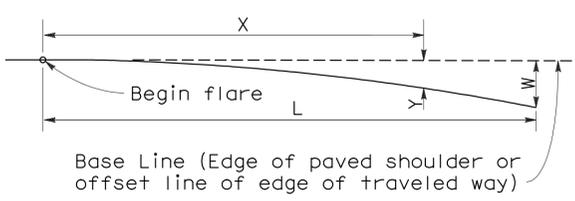
**TYPE 12E LAYOUT**

See Note 10

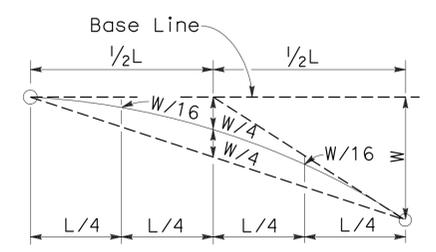
5/8" Ø Button head bolt with hex nut or 5/8" Ø Rod, threaded both ends, with hex nuts. 1/2" Max exposed threads after hex nut(s) tightened. No washer on rail faces for bolted connection to line post.



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



**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.

2006 REVISED STANDARD PLAN RSP A77F3

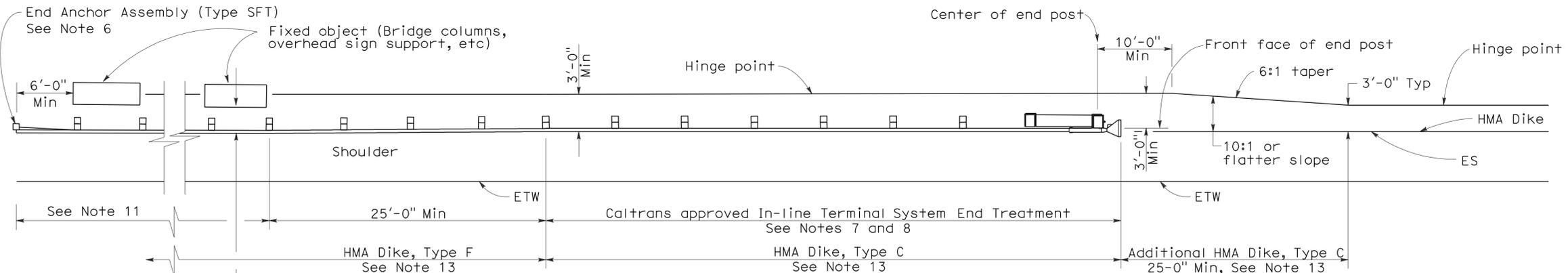
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	133	11.8/12.9	24	32

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

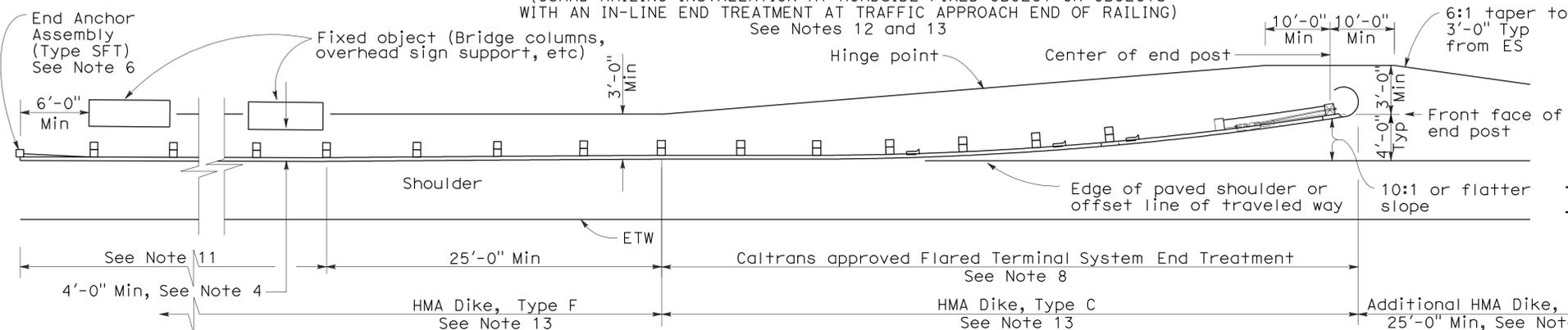
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

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



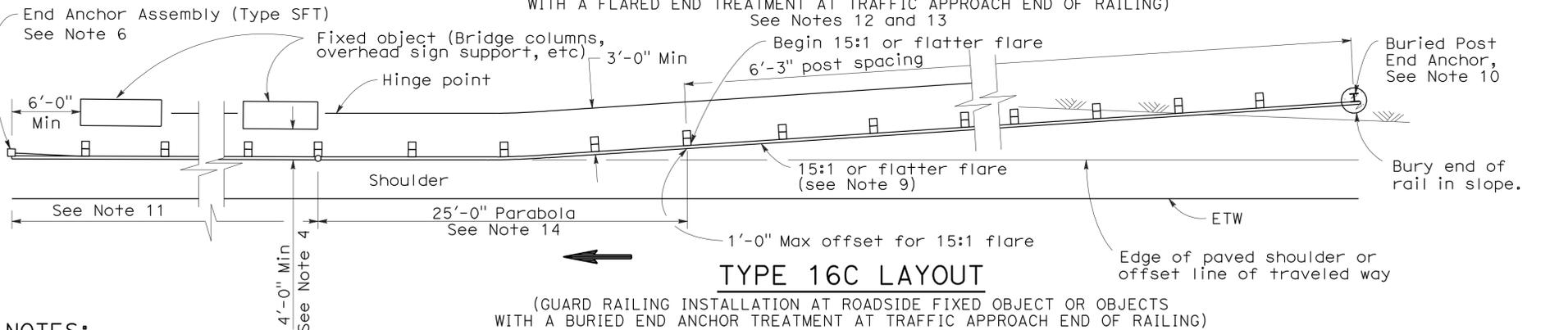
**TYPE 16A LAYOUT**

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 7 and 8



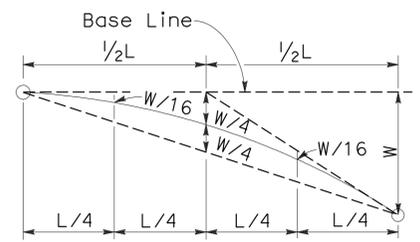
**TYPE 16B LAYOUT**

(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

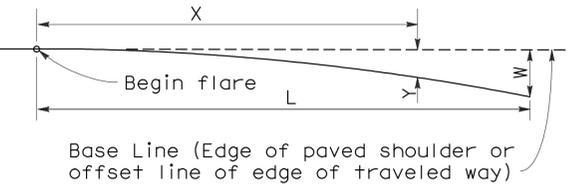


**TYPE 16C LAYOUT**

(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**

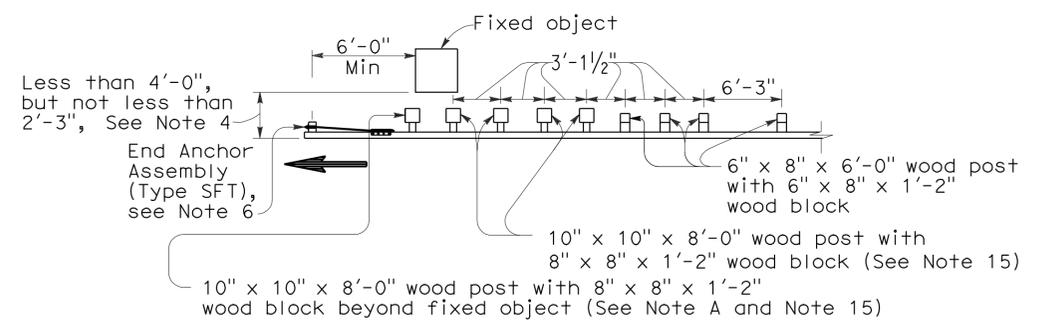


Base Line (Edge of paved shoulder or offset line of edge of traveled way)  
Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare

**PARABOLIC FLARE OFFSETS**

**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  $\rightarrow$ .
- 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".



**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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS**

NO SCALE

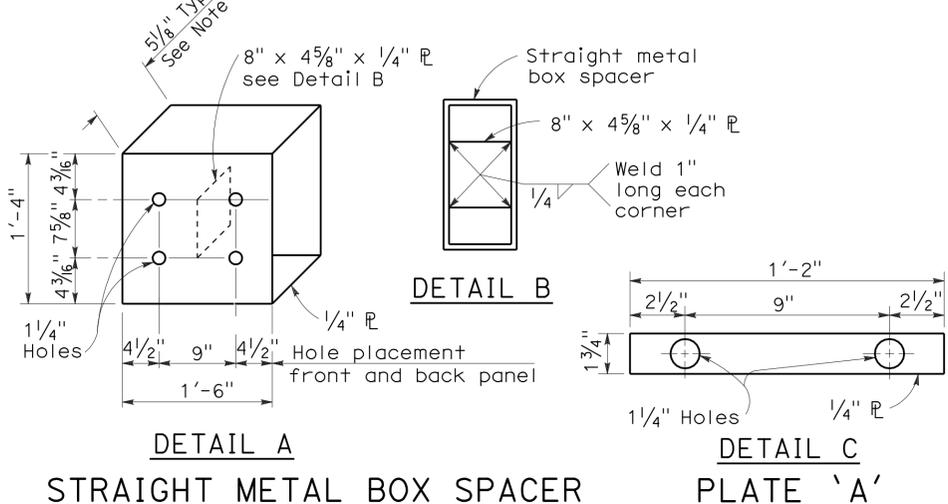
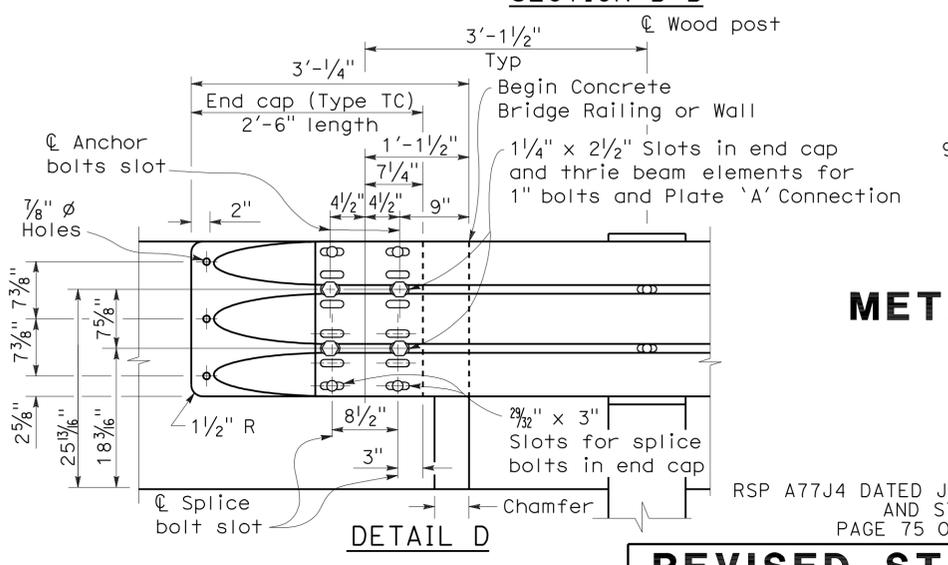
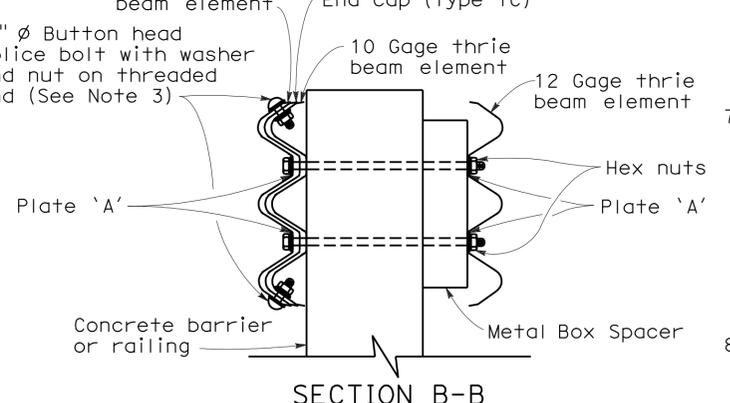
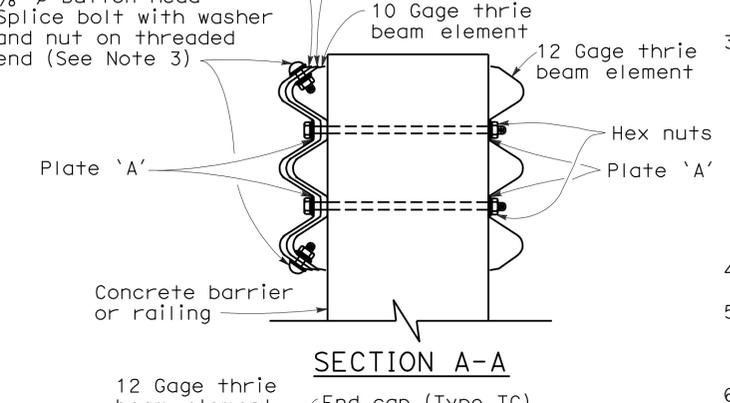
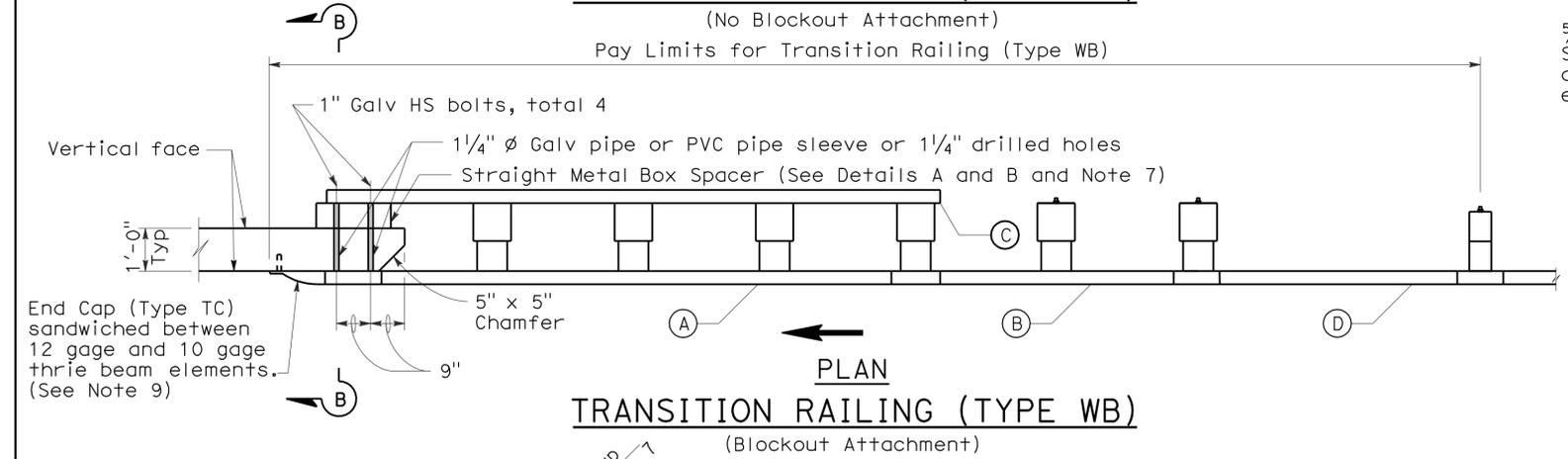
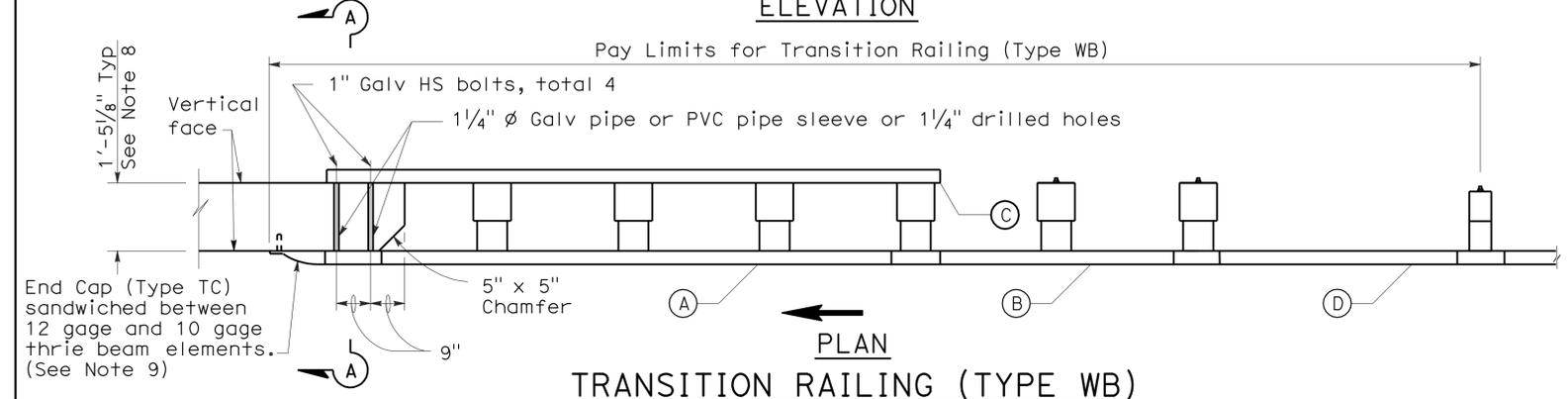
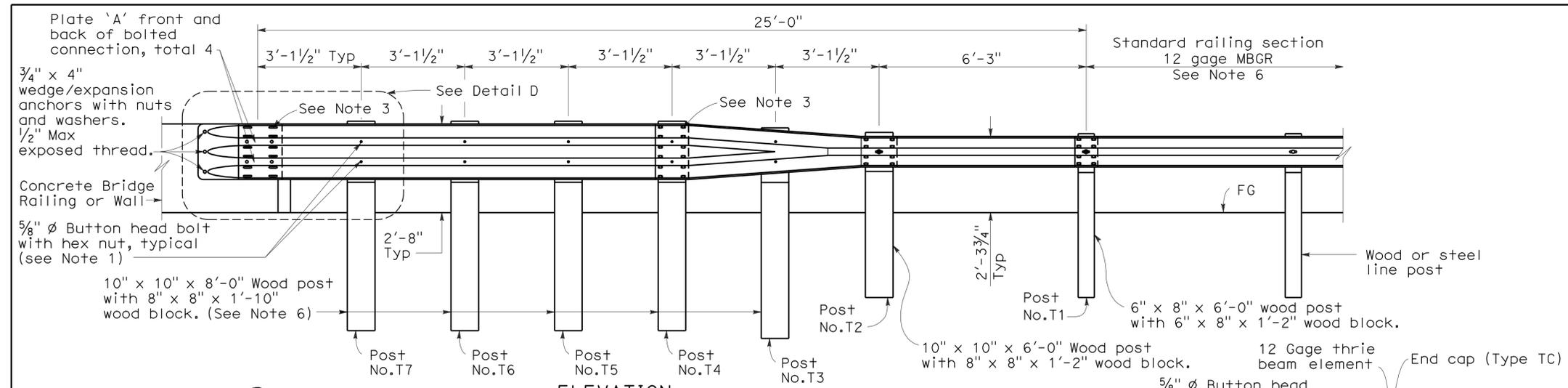
RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3  
DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G3**

2006 REVISED STANDARD PLAN RSP A77G3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	133	11.8/12.9	25	32

RANDALL D. HIATT  
 REGISTERED CIVIL ENGINEER  
 June 5, 2009  
 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.



- 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 11-9-09
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

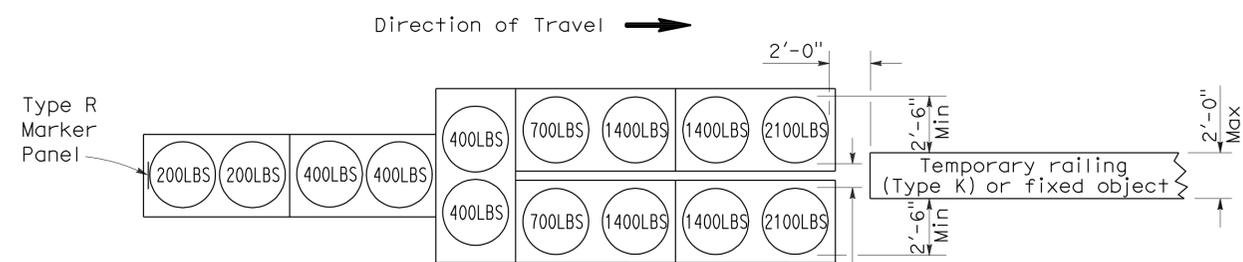
RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008 AND STANDARD PLAN A77J4 DATED MAY 1, 2006 - PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77J4**

2006 REVISED STANDARD PLAN RSP A77J4

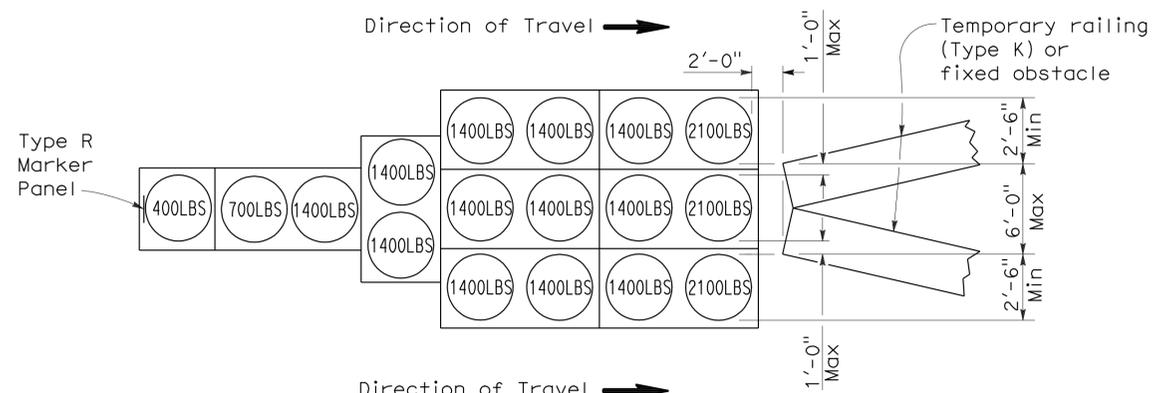
To accompany plans dated 11-9-09

2006 REVISED STANDARD PLAN RSP T1A



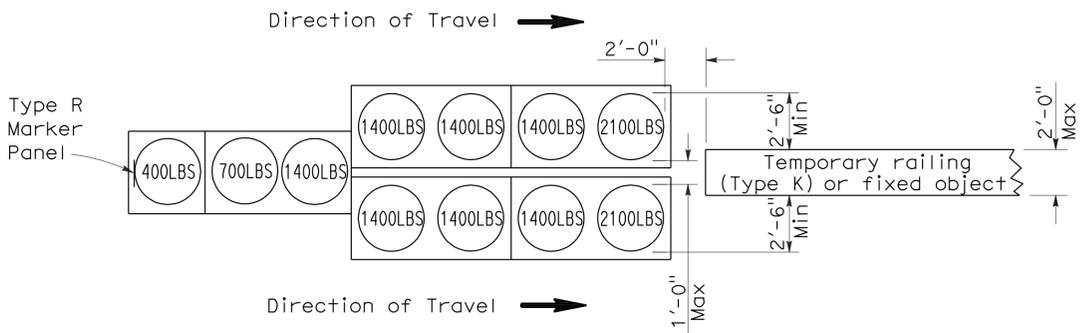
**ARRAY 'TU14'**

Approach speed 45 mph or more



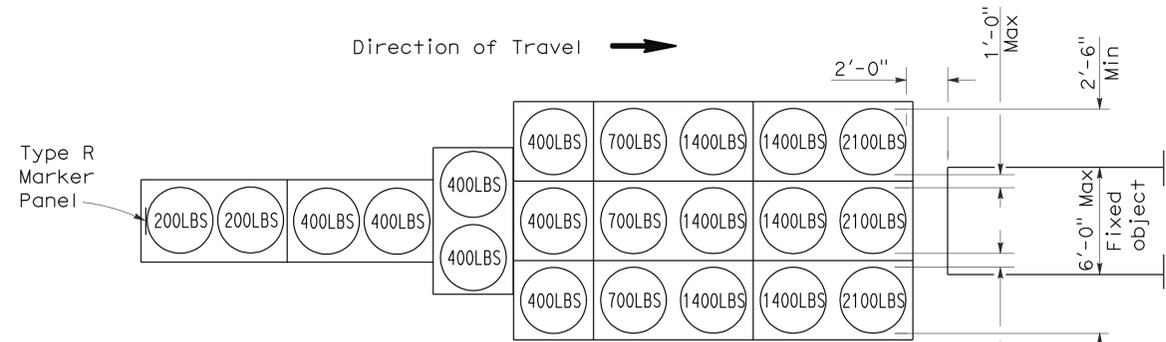
**ARRAY 'TU17'**

Approach speed less than 45 mph



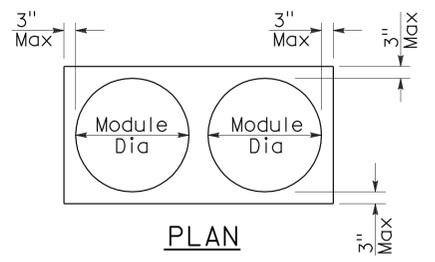
**ARRAY 'TU11'**

Approach speed less than 45 mph

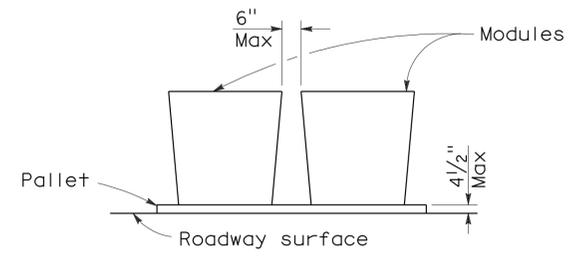


**ARRAY 'TU21'**

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**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	133	11.8/12.9	27	32

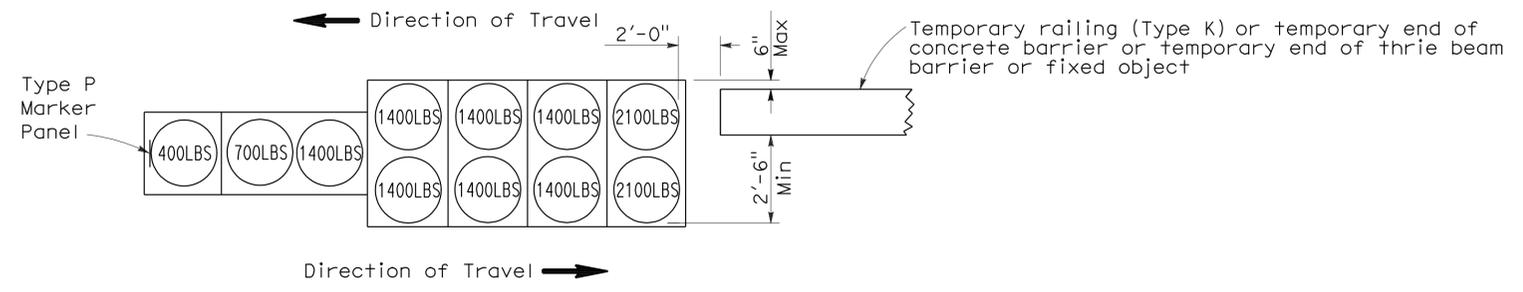
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

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.*

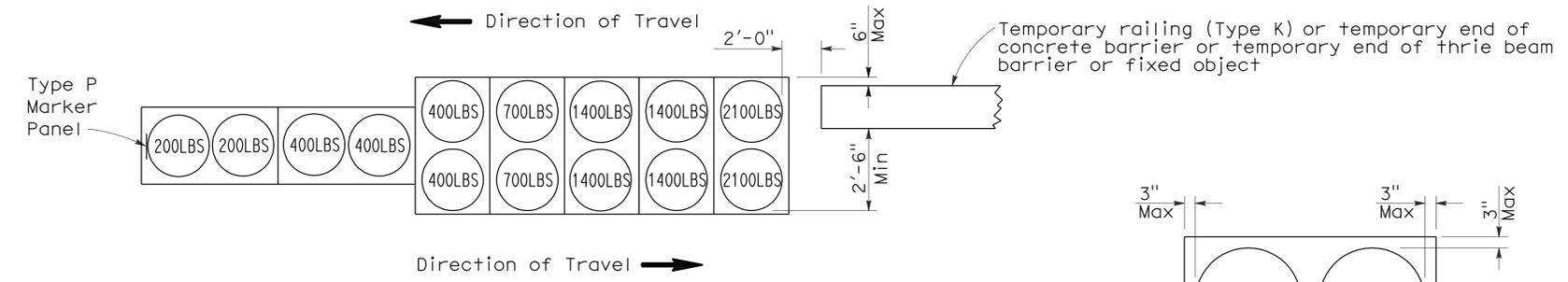
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 11-9-09



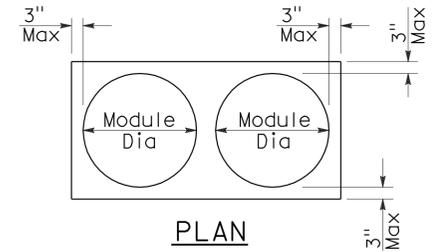
**ARRAY 'TB11'**

Approach speed less than 45 mph

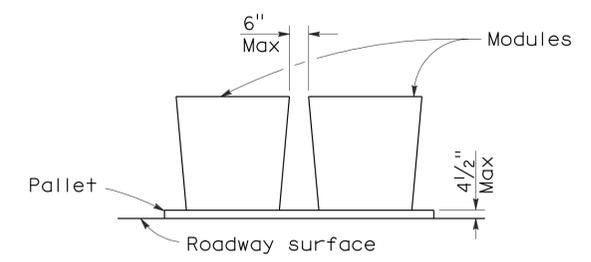


**ARRAY 'TB14'**

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
12	Ora	133	11.8/12.9	28	32

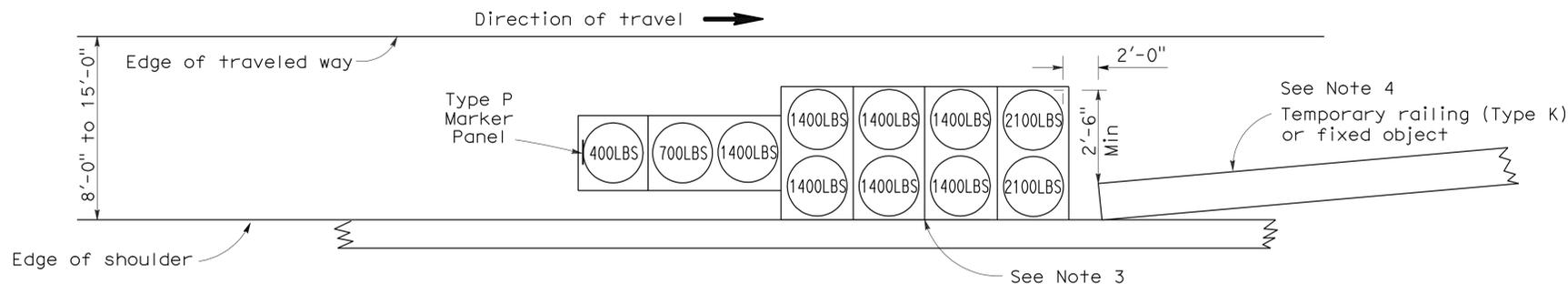
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

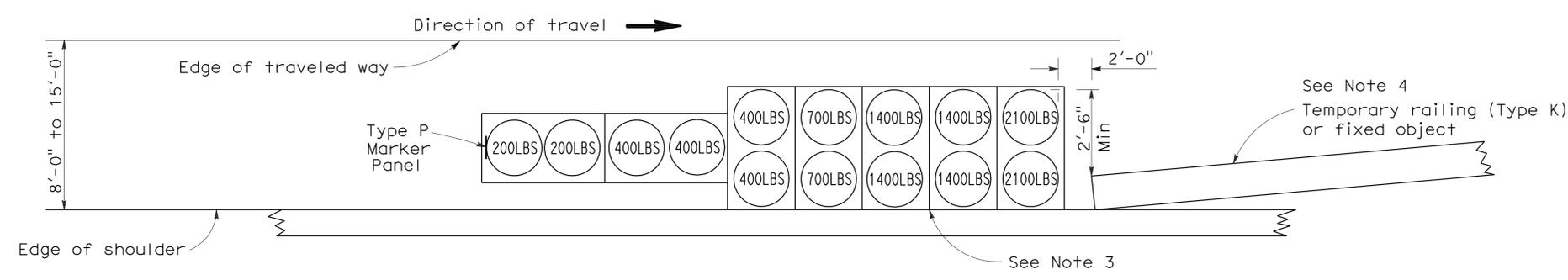
*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

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

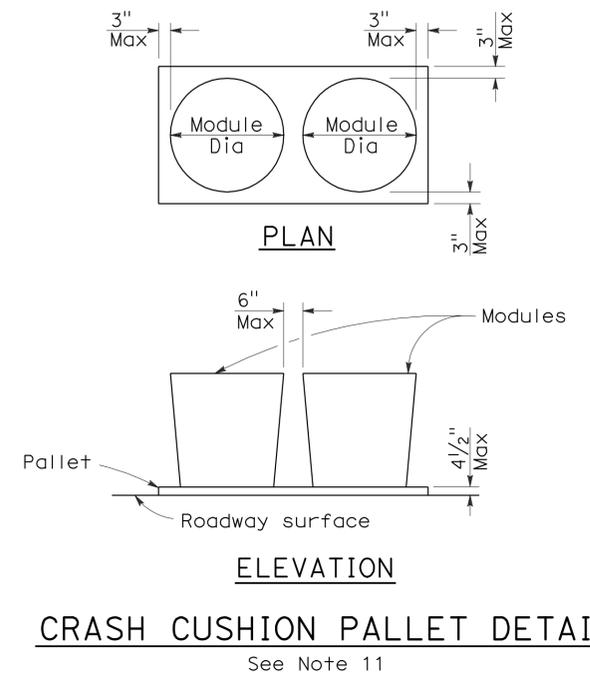
To accompany plans dated 11-9-09



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



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



**NOTES:**

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
4. If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
5. Temporary crash cushion arrays shall not encroach on the traveled way.
6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
7. Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
8. Refer to Standard Plan A73B for marker details.
9. For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
10. Approach speeds indicated conform to NCHRP 350 Report criteria.
11. Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(SHOULDER INSTALLATIONS)**

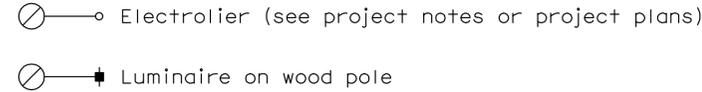
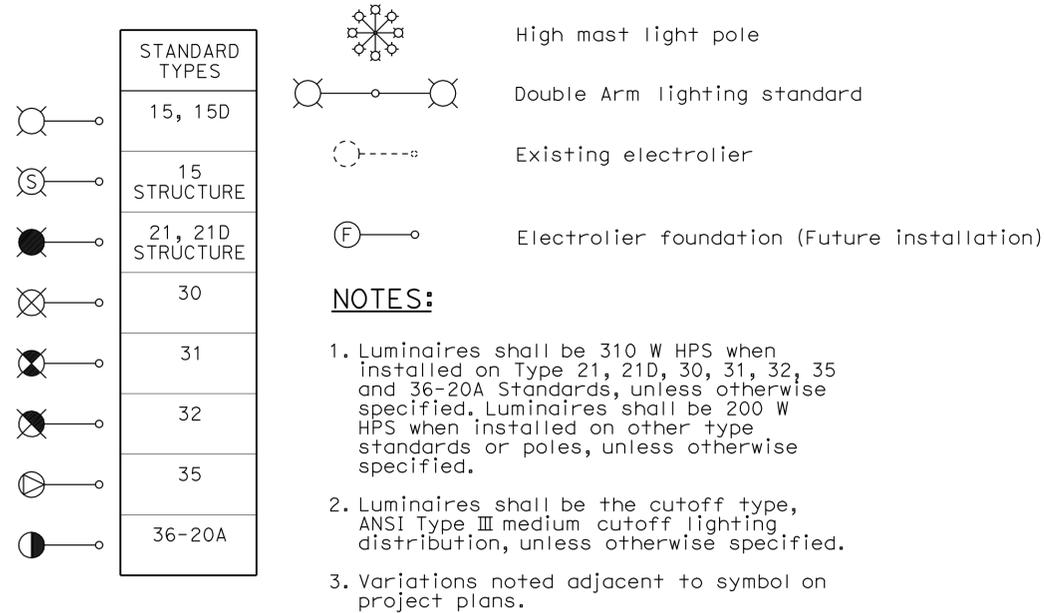
NO SCALE

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

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

# ELECTROLIERS



## 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
12	Ora	133	11.8/12.9	29	32

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

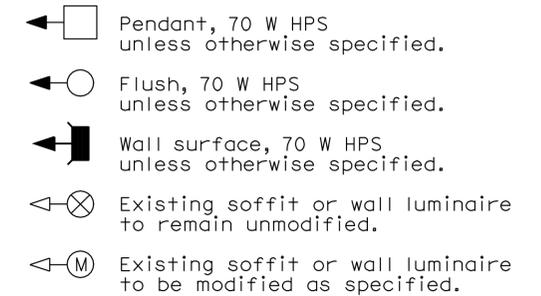
October 5, 2007  
PLANS APPROVAL DATE

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

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

To accompany plans dated 11-9-09

## SOFFIT AND WALL MOUNTED LUMINAIRES



### 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
12	Ora	133	11.8/12.9	30	32

*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.

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

### 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

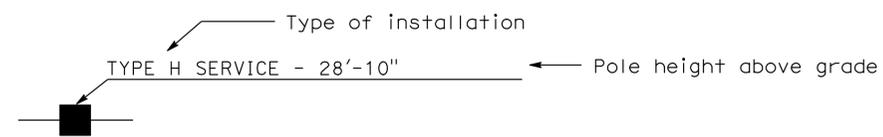
### SIGNAL EQUIPMENT

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.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SYMBOLS AND ABBREVIATIONS)**  
 NO SCALE

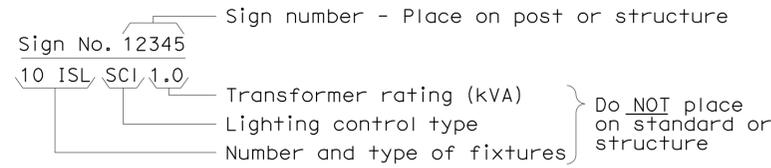
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

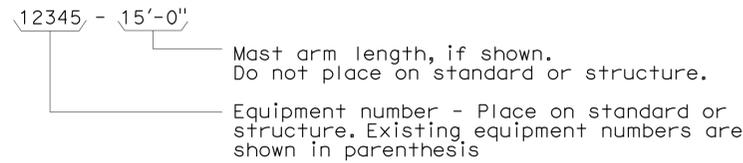
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

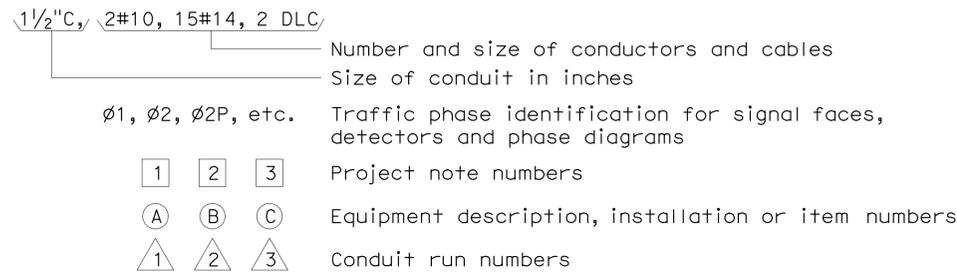
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



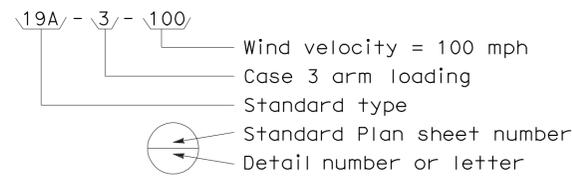
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



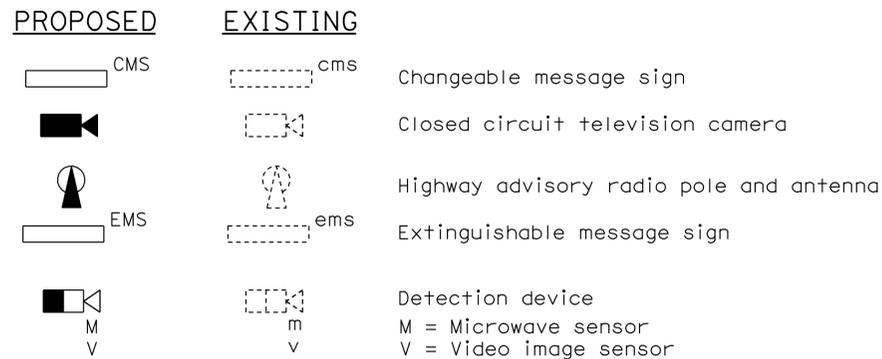
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



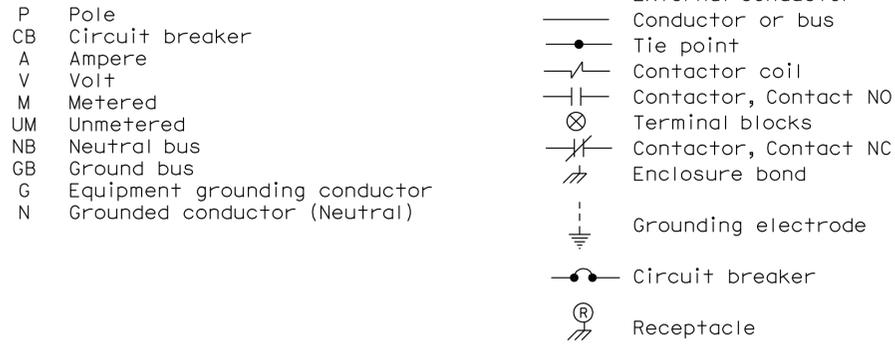
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



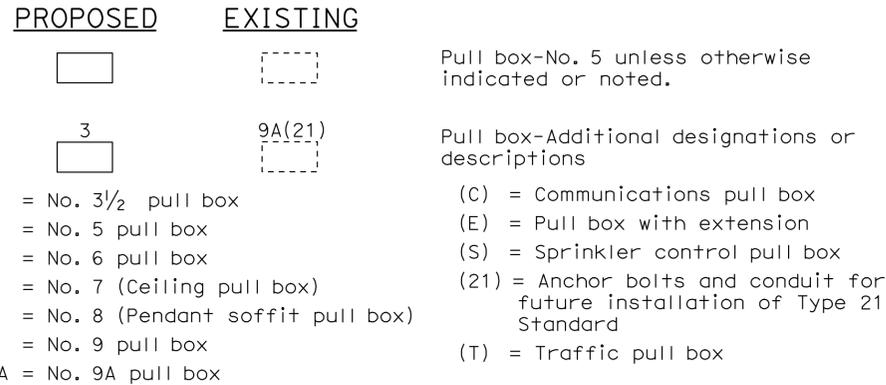
### MISCELLANEOUS EQUIPMENT



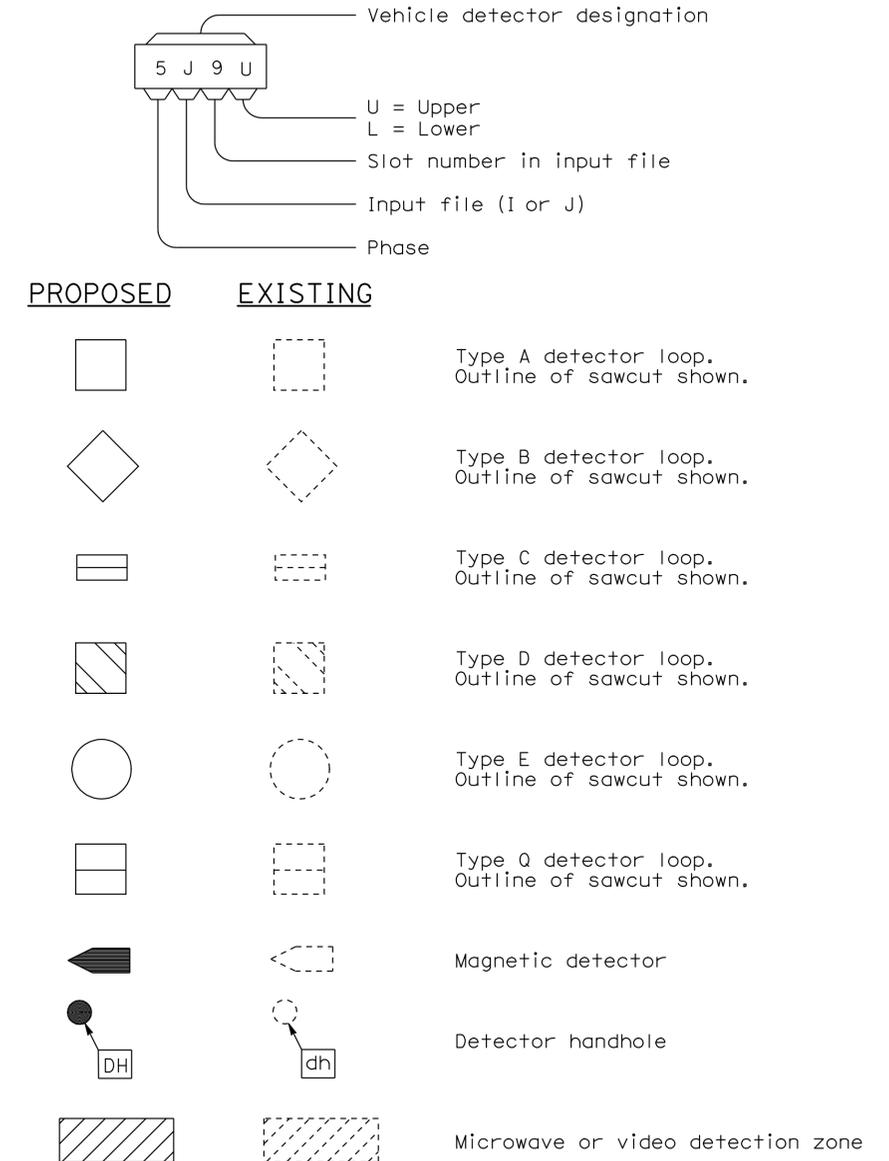
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SYMBOLS AND ABBREVIATIONS)**  
 NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1C

