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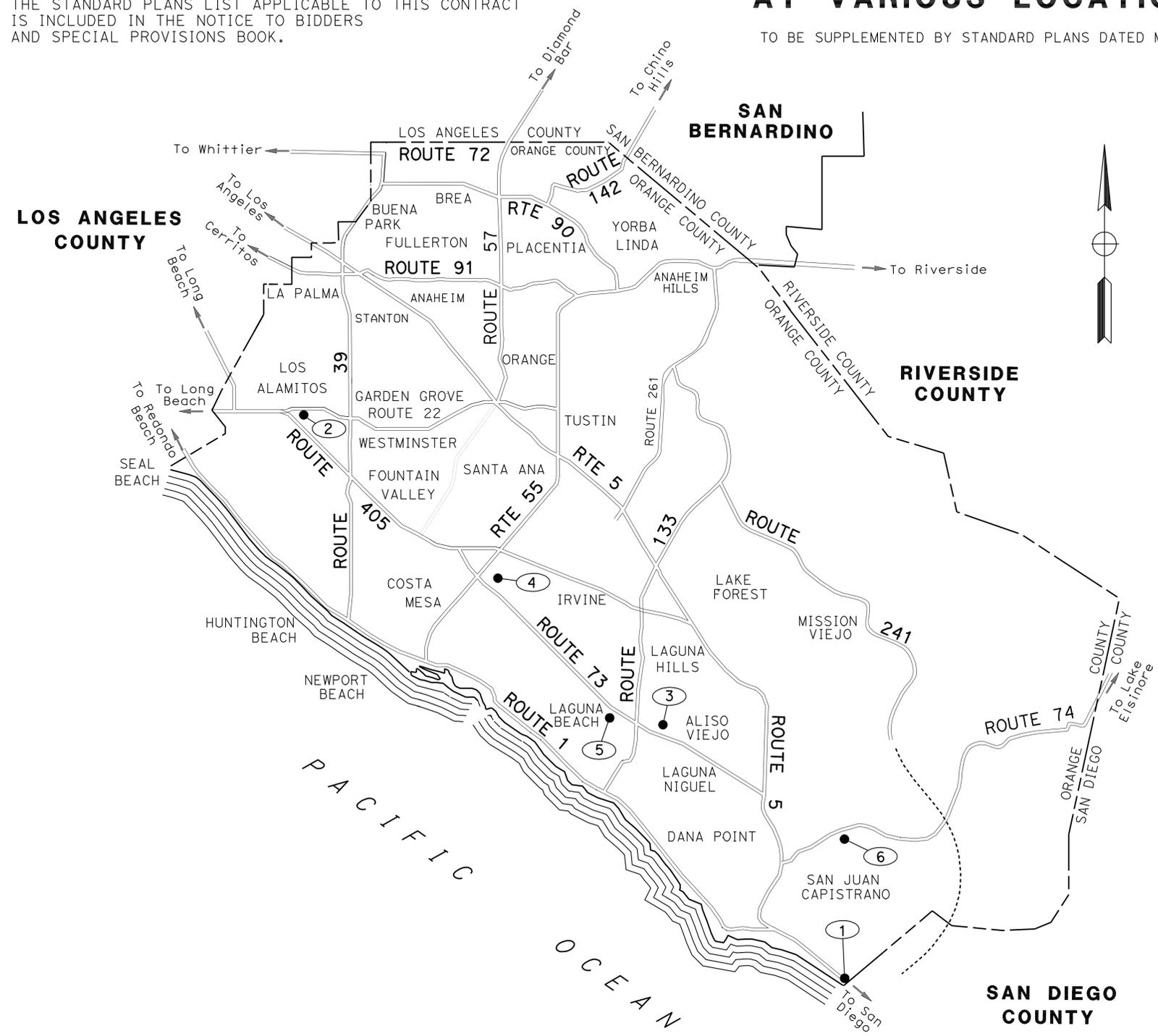
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA **HSSTPHG-X059(053)E**  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN ORANGE COUNTY**  
**AT VARIOUS LOCATIONS**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	1	70

LOCATION MAP



**LOCATIONS OF CONSTRUCTION**

Loc	CMS No.	ROUTE	POSTMILE	DIRECTION	DESCRIPTION
1	24	5	0.3	NB	0.3 Mile North of Orange/San Diego County Line
2	25	22	1.7	EB	0.2 Mile West of Springdale St OC
3	32	73	14.8	NB	0.1 Mile South of Laguna Hills Dr UC
4	33	73	25.0	NB	0.2 Mile North of Jamboree Rd OC
5	34	73	20.7	SB	0.1 Mile South of Wildlife UC (Bridge No. 55-862)
6	35	74	2.4	EB	0.3 Mile West of La Pata Ave/Antonio Parkway

PROJECT MANAGER  
BERC IKIZYAN  
 DESIGN ENGINEER  
KAMRAN MAZHAR

*Judy Chan Kennedy* 2/26/10  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER  
**June 21, 2010**  
 PLANS APPROVAL DATE  
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THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	2	70

*Judy Chan Kennedy* 2/26/10  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

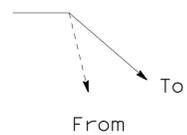
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REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
 No. C. 67701  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

**NOTES:**

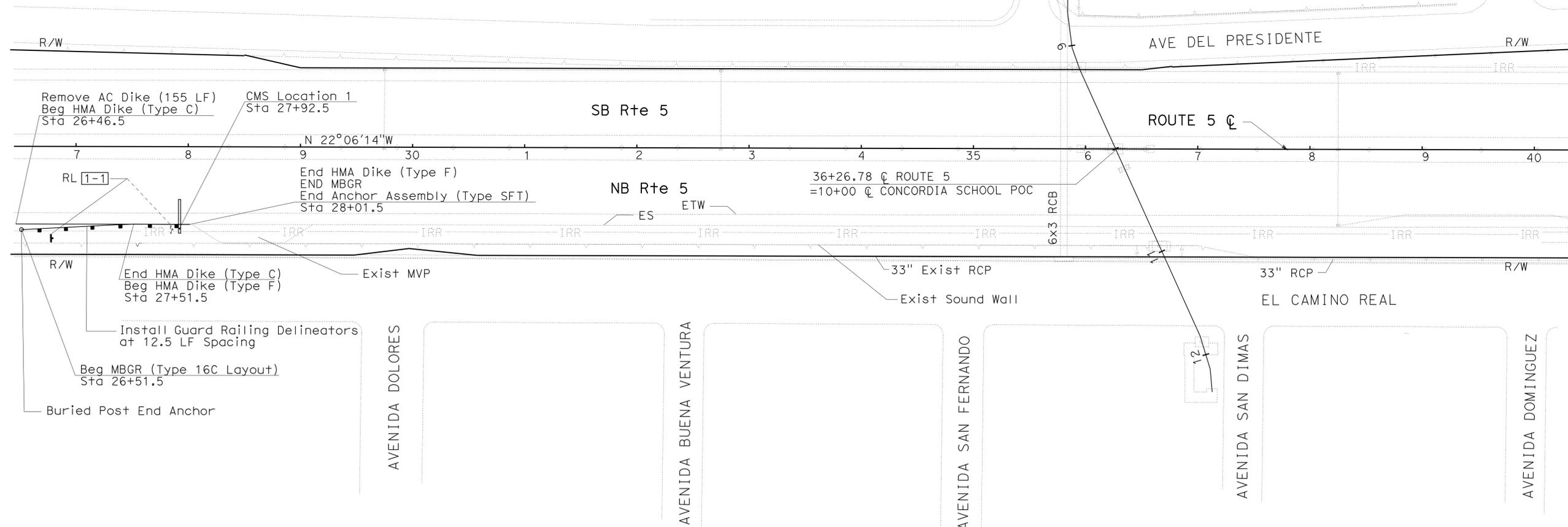
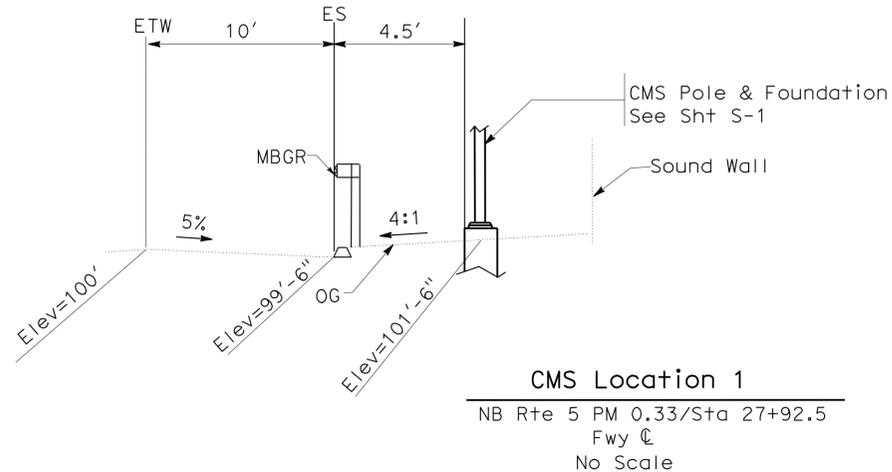
- For complete Right of Way and accurate access data, see Right of Way record maps at District Office.
- Exact CMS location to be determined by the Engineer.
- Final MBGR layout shall be adjusted per Std Plan A77G3 in the field based on the specified location of the CMS Controller Cabinet (See Electrical Plans).

**LEGEND**



**ABBREVIATIONS:**

- RL Sign to be Relocated
- RM Remove Roadside Sign
- IS Install Roadside Sign
- [1-1] Sign Number
- SCE Southern California Edison
- SDG&E San Diego Gas & Electric
- CMS Changeable Message Sign
- MVP Maintenance Vehicle Pullout



**CONSTRUCTION DETAILS  
LOCATION 1**

SCALE: 1" = 50'

**C-1**

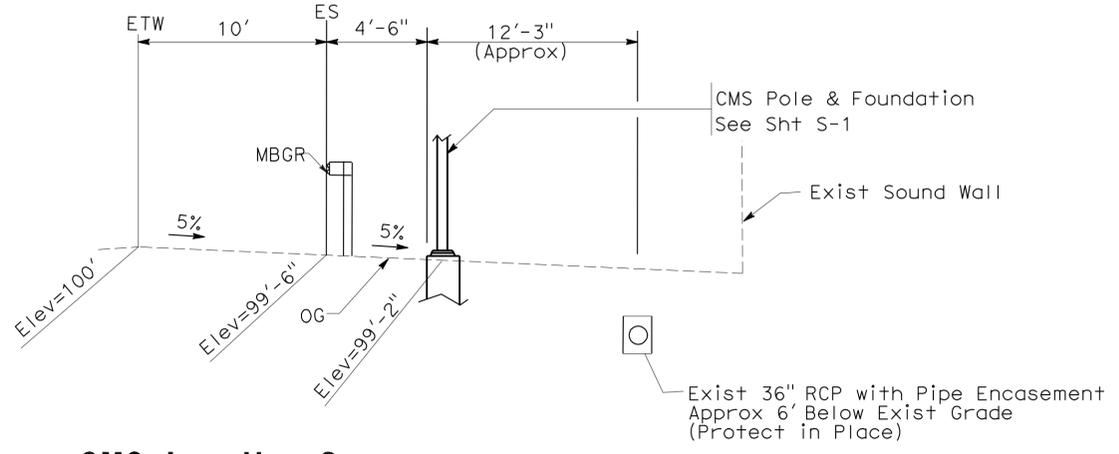
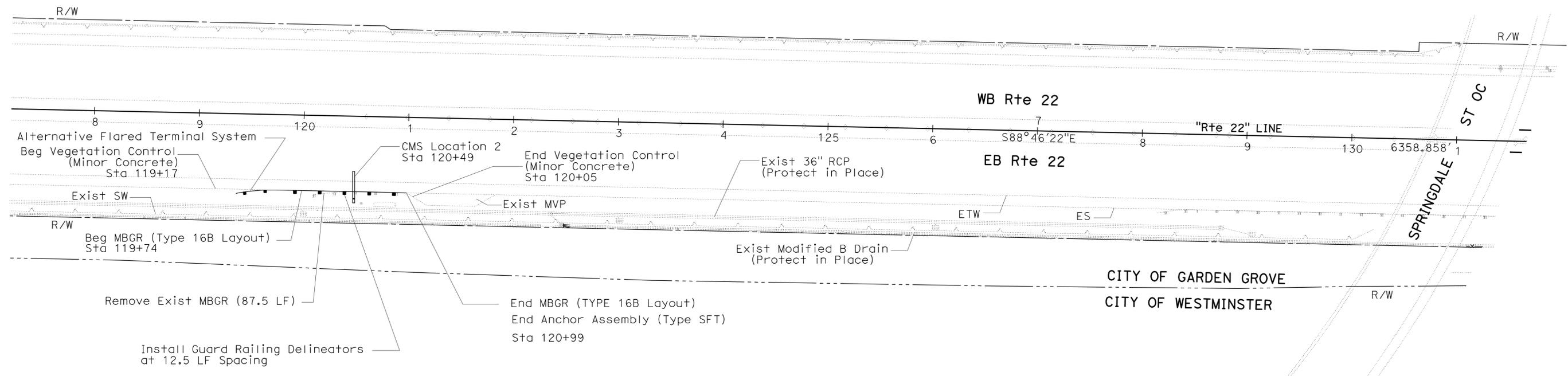
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	3	70

*Judy Chan Kennedy* 06-08-10  
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 6-21-10  
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REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
 No. C. 67701  
 Exp. 6/30/11  
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**NOTES:**

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. EXACT CMS LOCATION TO BE DETERMINED BY THE ENGINEER.
3. PROTECT IN PLACE ALL EXISTING DRAINAGE INLETS, CONTROLLER CABINETS, AND PULLBOXES IN CONSTRUCTION AREA.



**CONSTRUCTION DETAILS  
LOCATION 2**

SCALE: 1" = 50'

**C-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR  
 CALCULATED/DESIGNED BY: JUDY KENNEDY  
 CHECKED BY: SON THANH NGUYEN  
 REVISED BY: JUDY KENNEDY  
 DATE REVISED: SON THANH NGUYEN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	4	70

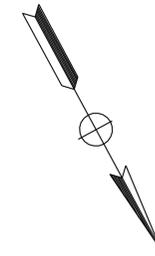
*Judy Chan Kennedy* 2/26/10  
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 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
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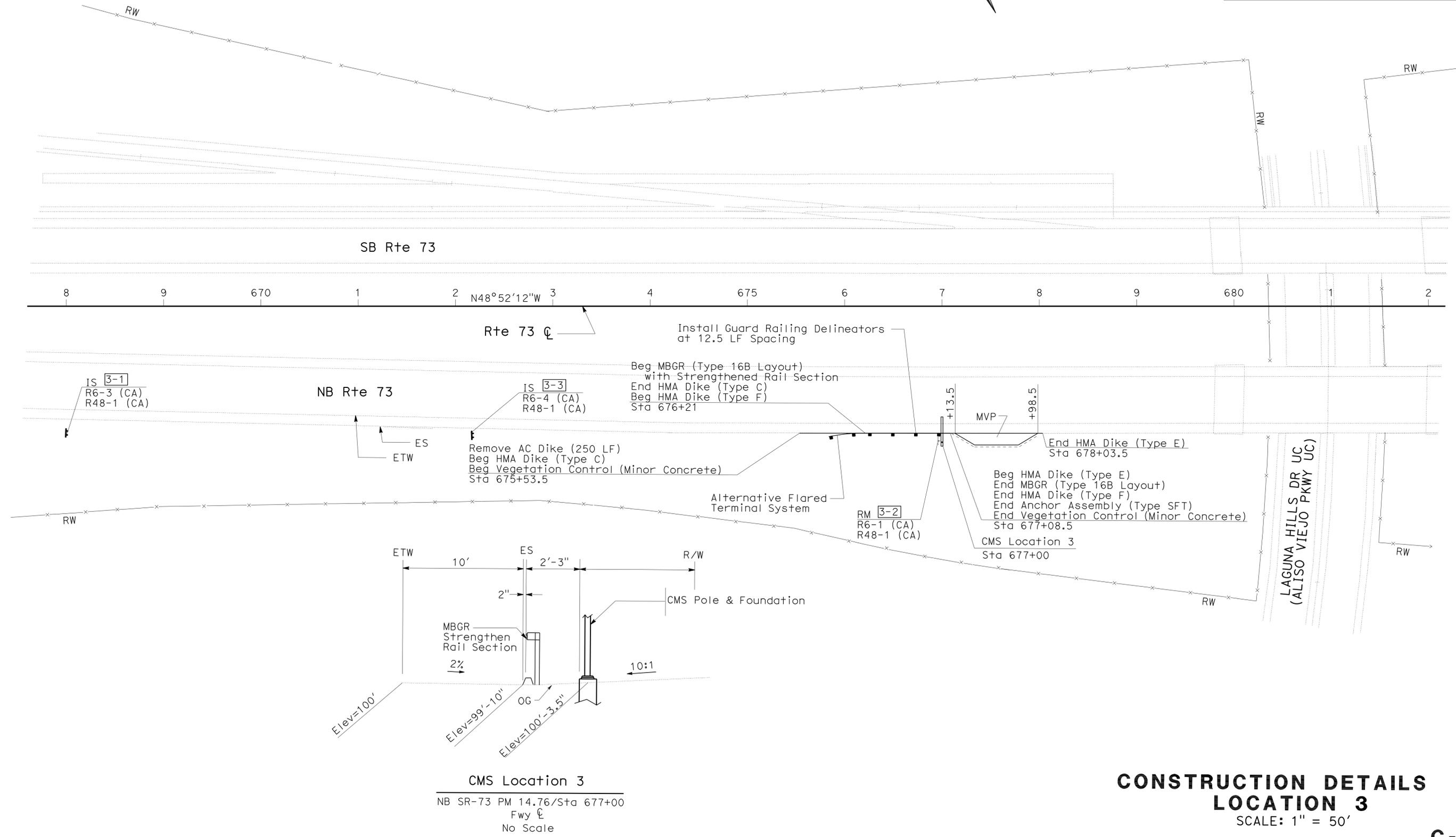
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**NOTES:**

1. For complete Right of Way and accurate access data, see Right of Way record maps at District Office.
2. Exact CMS and roadside sign locations to be determined by the Engineer.
3. Protect in place all existing signs within construction area.



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 CHECKED BY: SON THANH NGUYEN  
 REVISED BY: JUDY KENNEDY  
 DATE REVISED:



**CONSTRUCTION DETAILS  
LOCATION 3**  
SCALE: 1" = 50'

**C-3**

LAST REVISION | DATE PLOTTED => 31-JAN-2011 | TIME PLOTTED => 11:25

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	5	70

<i>Judy Chan Kennedy</i>		2/26/10
REGISTERED CIVIL ENGINEER	DATE	
6-21-10		
PLANS APPROVAL DATE		

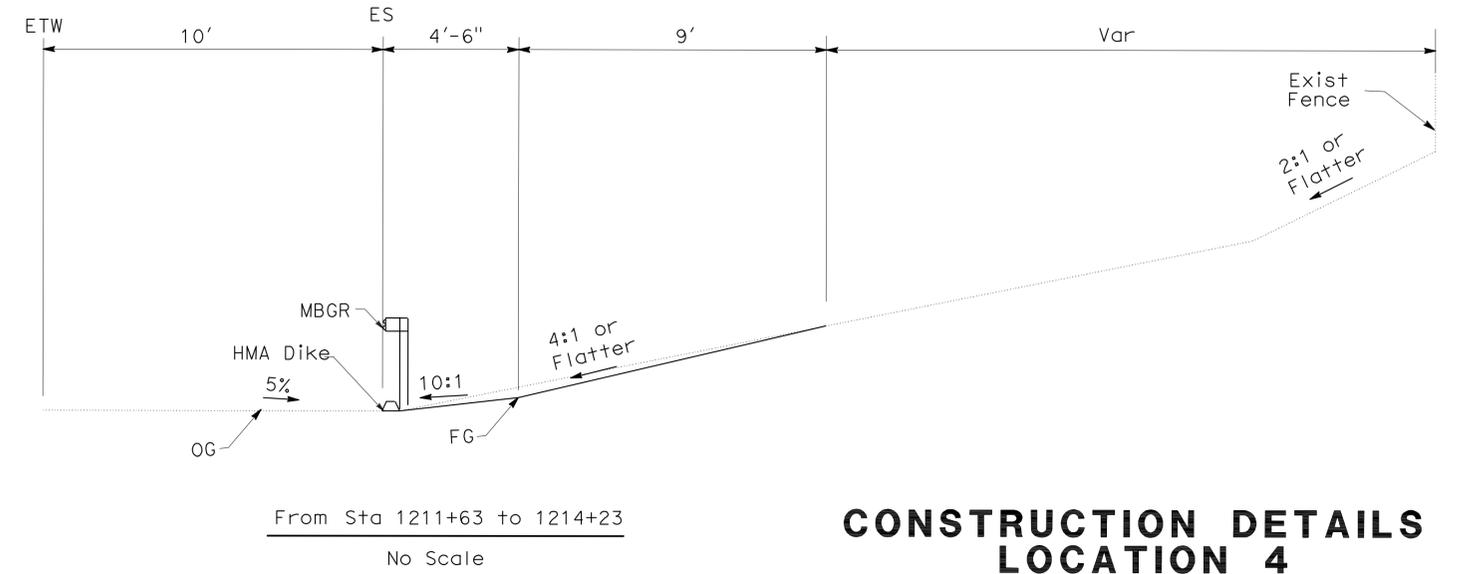
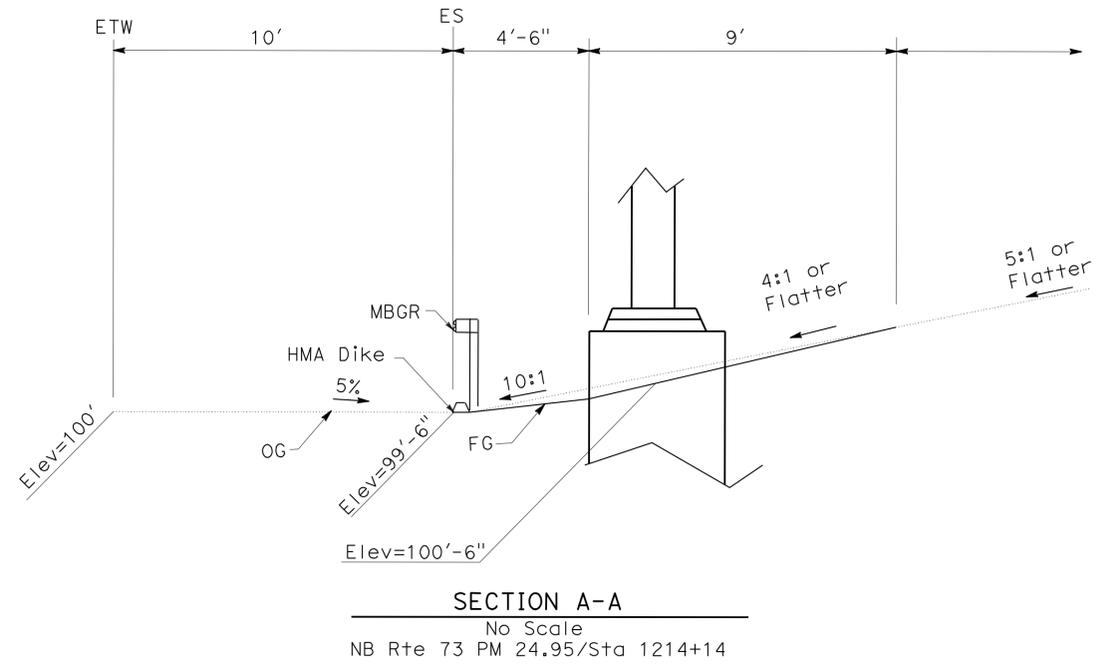
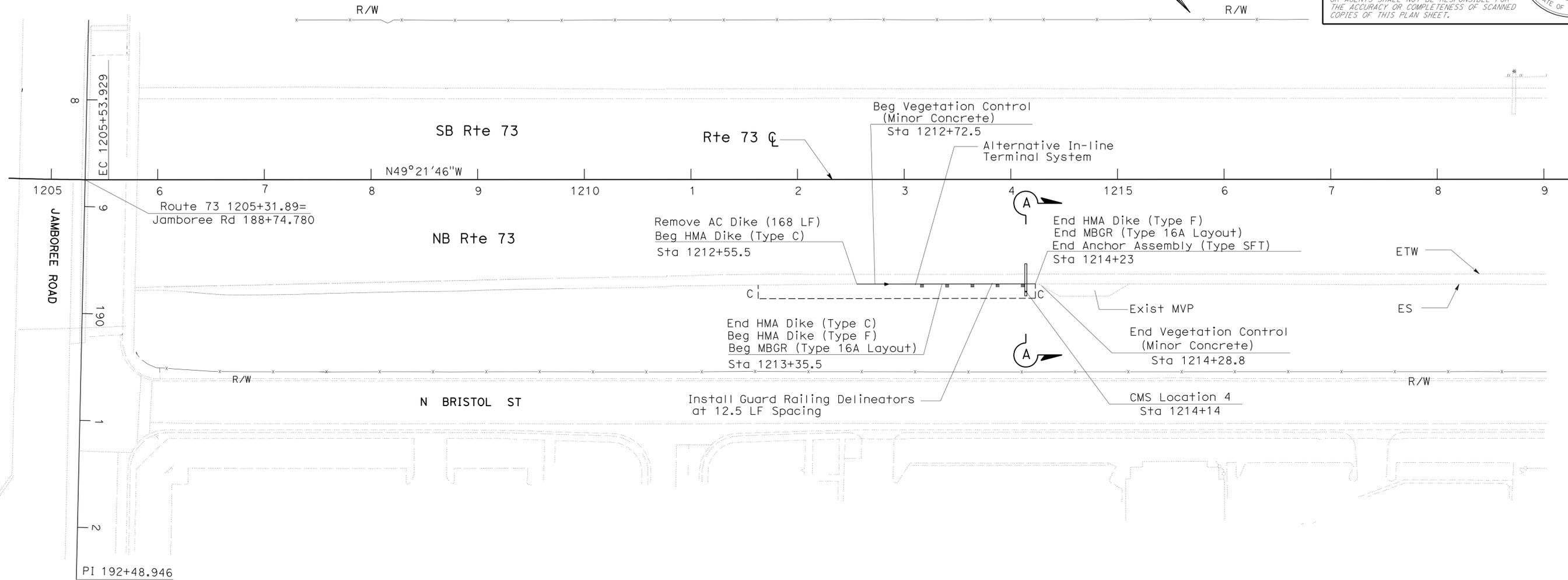
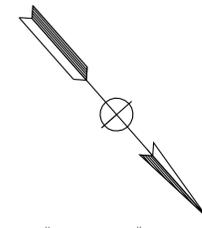
  

REGISTERED PROFESSIONAL ENGINEER	JUDY CHAN KENNEDY
No. C. 67701	Exp. 6/30/11
CIVIL	

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**NOTES:**

1. For complete Right of Way and accurate access data, see Right of Way record maps at District Office.
2. Exact location to be determined by Engineer.
3. Protect in place all drainage inlets within construction area.



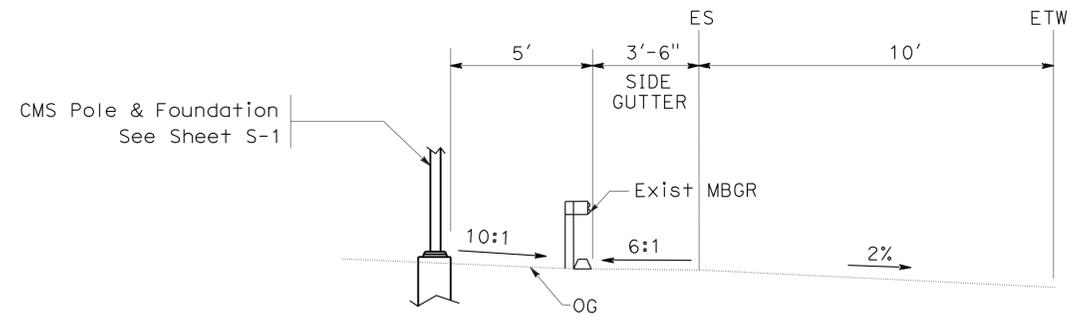
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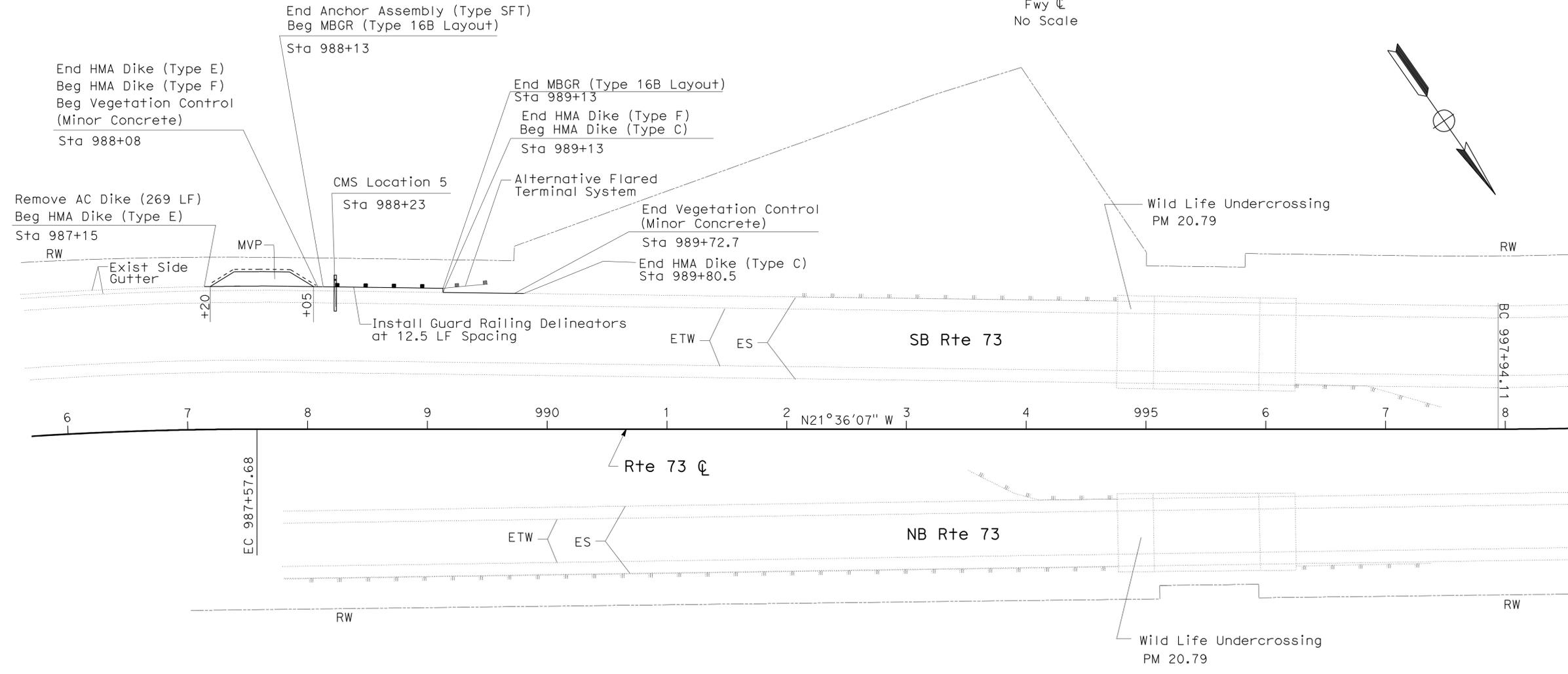
**NOTES:**

- For complete Right of Way and accurate access data, see Right of Way maps at District Office.
- Exact CMS locations to be determined by the Engineer.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	6	70
<i>Judy Chan Kennedy</i> REGISTERED CIVIL ENGINEER			DATE	2/26/10	
6-21-10 PLANS APPROVAL DATE			REGISTERED PROFESSIONAL ENGINEER <b>JUDY CHAN KENNEDY</b> No. C. 67701 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA		
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**CMS Location 5**  
 SB Rte 73 PM 20.66/Sta 988+23  
 Fwy  $\nabla$   
 No Scale



**CONSTRUCTION DETAILS  
 LOCATION 5**

SCALE: 1" = 50'

**C-5**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	7	70

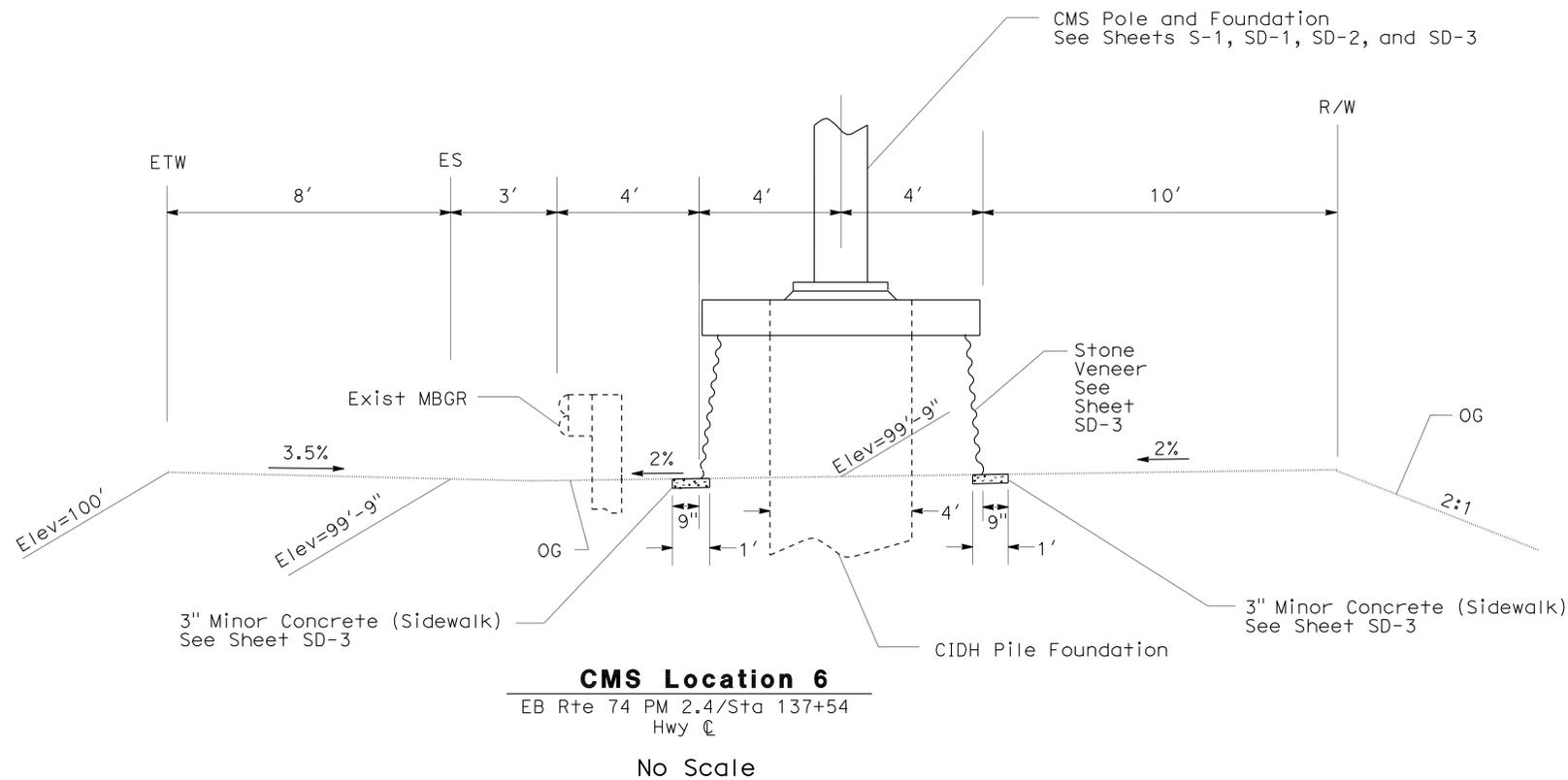
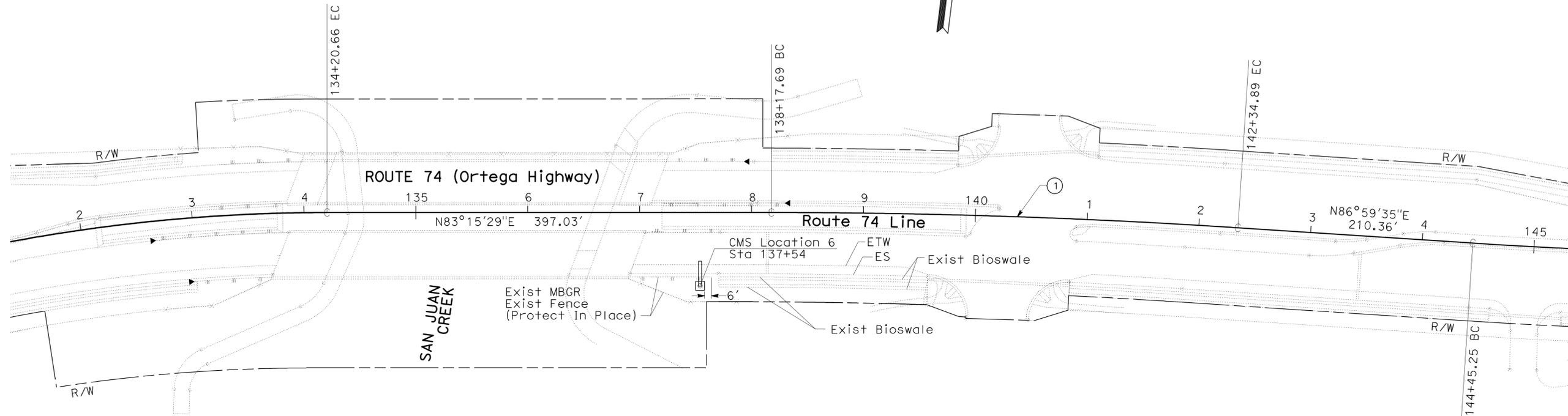
*Judy Chan Kennedy* 06-08-10  
 REGISTERED CIVIL ENGINEER DATE  
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REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
 No. C. 67701  
 Exp. 6/30/11  
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 STATE OF CALIFORNIA

**NOTES:**

- FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
- EXACT CMS LOCATION TO BE DETERMINED BY THE ENGINEER.



**CURVE DATA**

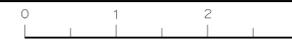
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(1)	6400.00'	3°44'06"	208.67'	417.20'

**CONSTRUCTION DETAILS  
LOCATION 6**

SCALE: 1" = 50'

**C-6**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
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 FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR  
 JUDY KENNEDY  
 SON THANH NGUYEN  
 REVISIONS: (None shown)  
 CALCULATED/DESIGNED BY: (None shown)  
 CHECKED BY: (None shown)





STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
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FUNCTIONAL SUPERVISOR  
 KAMRAN MAZHAR

CALCULATED/DESIGNED BY  
 CHECKED BY

JUDY KENNEDY  
 SON THANH NGUYEN

REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22,73,74	Var	9	70

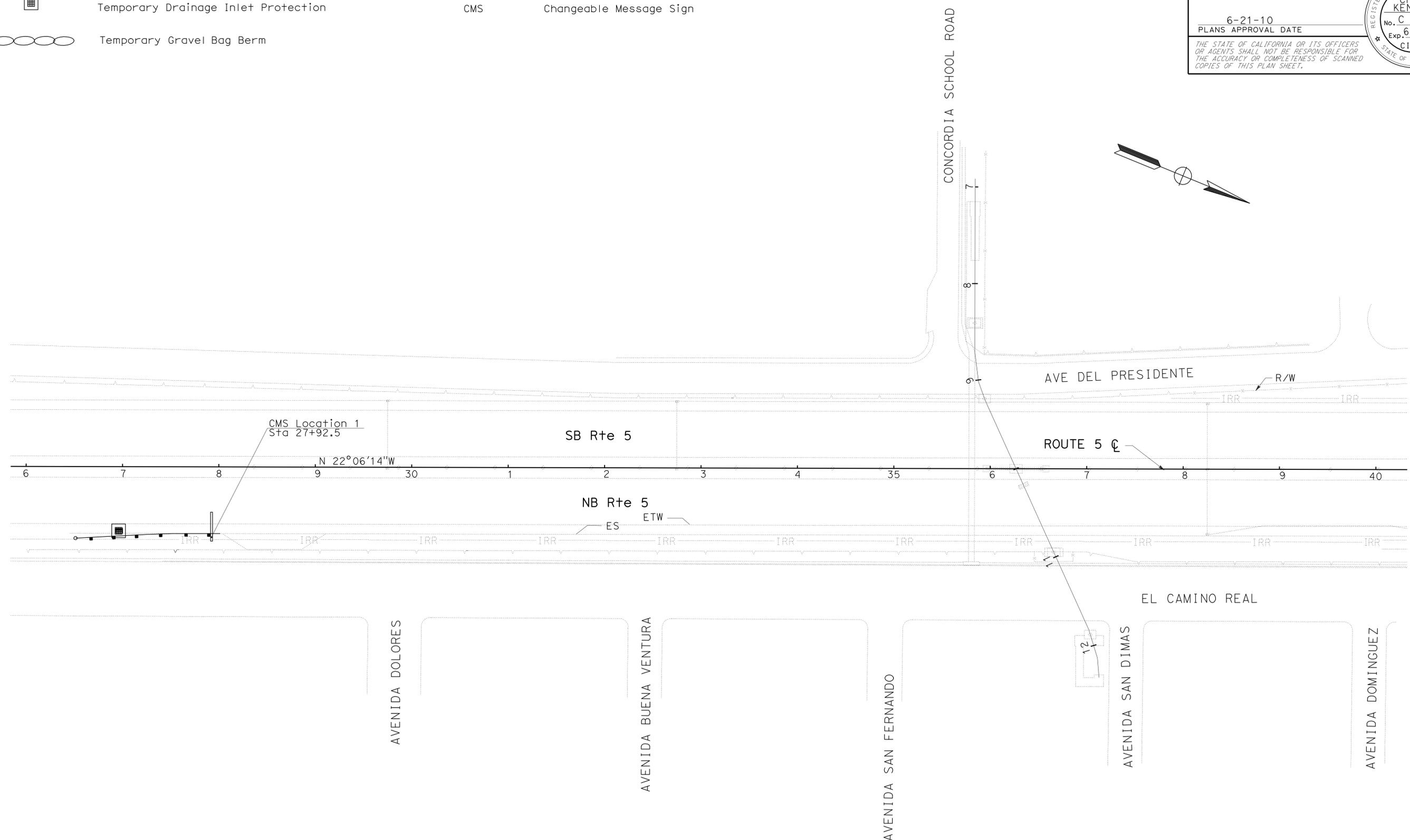
*Judy Chan Kennedy* 2/26/10  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE  
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**LEGEND**

- Temporary Drainage Inlet Protection
- Temporary Gravel Bag Berm

**ABBREVIATIONS**

- CMS Changeable Message Sign



**LOCATION 1**

**TEMPORARY WATER POLLUTION CONTROL PLAN**

SCALE: 1" = 50'

**WPC-1**

THIS PLAN IS ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY.

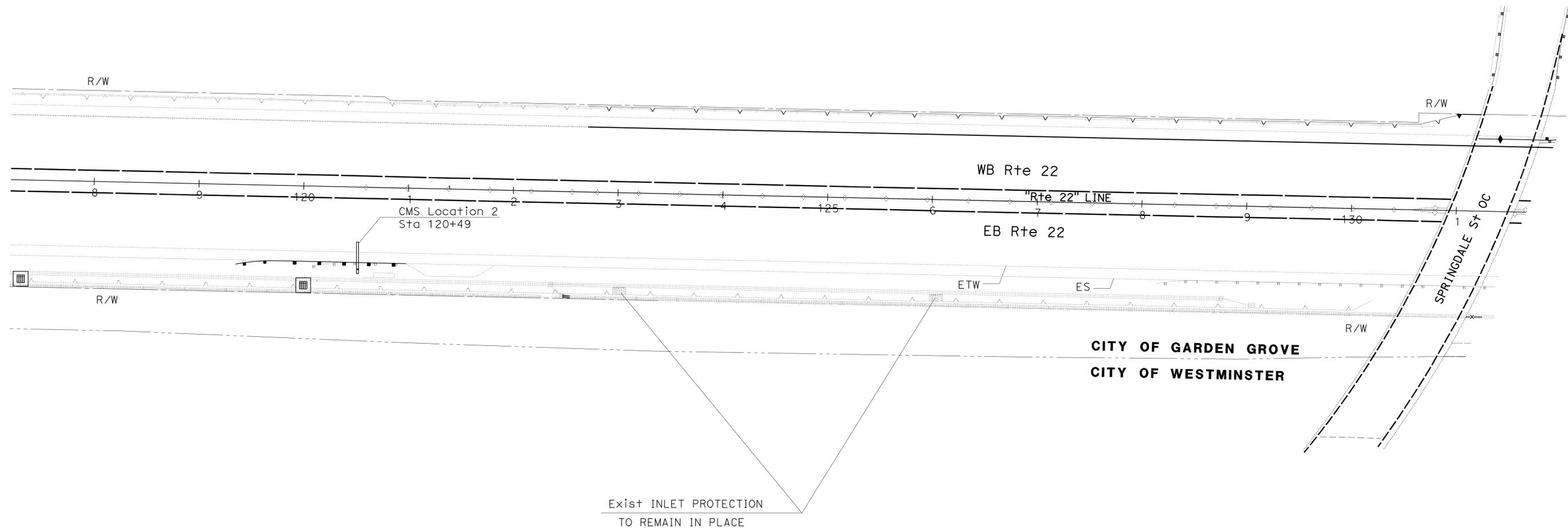
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	10	70

*Judy Chan Kennedy* 2/26/10  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

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 JUDY CHAN KENNEDY  
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JUDY KENNEDY	SON THANH NGUYEN
REVISED BY	DATE REVISED



**LOCATION 2**

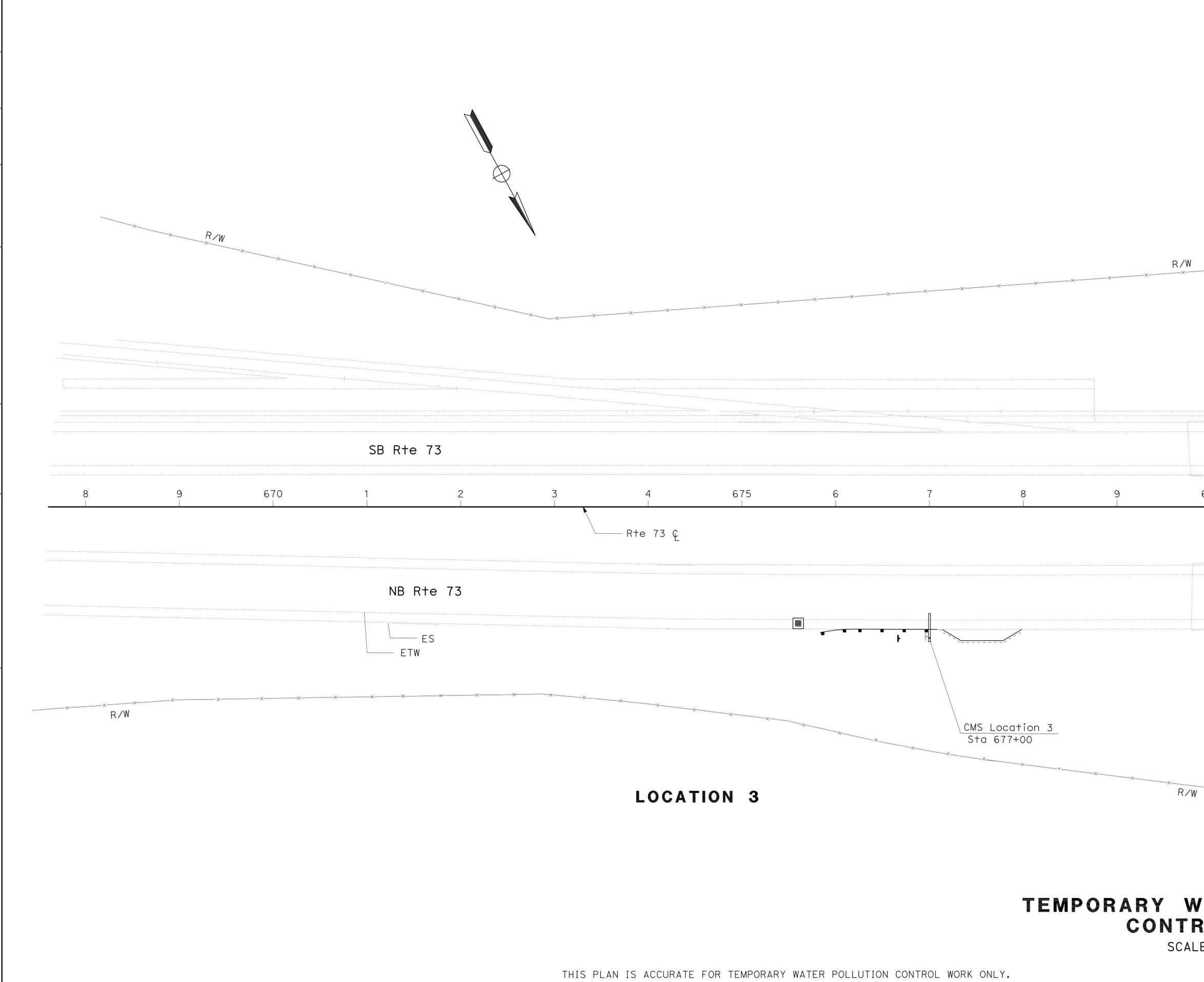
**TEMPORARY WATER POLLUTION CONTROL PLAN**

SCALE: 1" = 50'

**WPC-2**

THIS PLAN IS ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY.

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



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	11	70

*Judy Chan Kennedy* 2/26/10  
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 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
 No. C. 67701  
 Exp. 6/30/11  
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BORDER LAST REVISED 4/11/2008

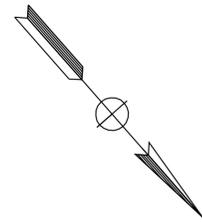
THIS PLAN IS ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY.

**TEMPORARY WATER POLLUTION CONTROL PLAN**  
 SCALE: 1" = 50'  
**WPC-3**

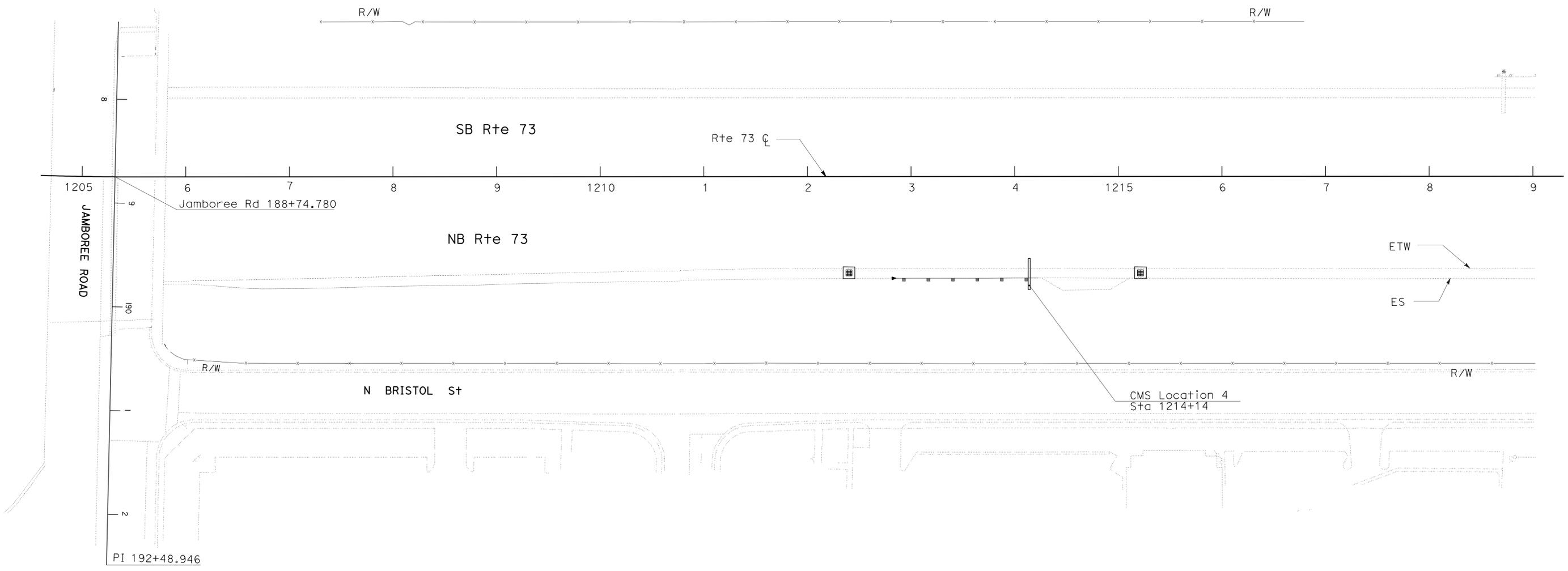
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 CU 12231  
 EA 0H2321

LAST REVISION | DATE PLOTTED => 31-JAN-2011  
 02-18-10 | TIME PLOTTED => 11:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22,73,74	Var	12	70
<i>Judy Chan Kennedy</i> REGISTERED CIVIL ENGINEER			DATE		
			2/26/10		
PLANS APPROVAL DATE			6-21-10		
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 CHECKED BY: SON THANH NGUYEN  
 REVISED BY: JUDY KENNEDY  
 DATE REVISIED: SON THANH NGUYEN



**LOCATION 4**

**TEMPORARY WATER POLLUTION CONTROL PLAN**

SCALE: 1" = 50'

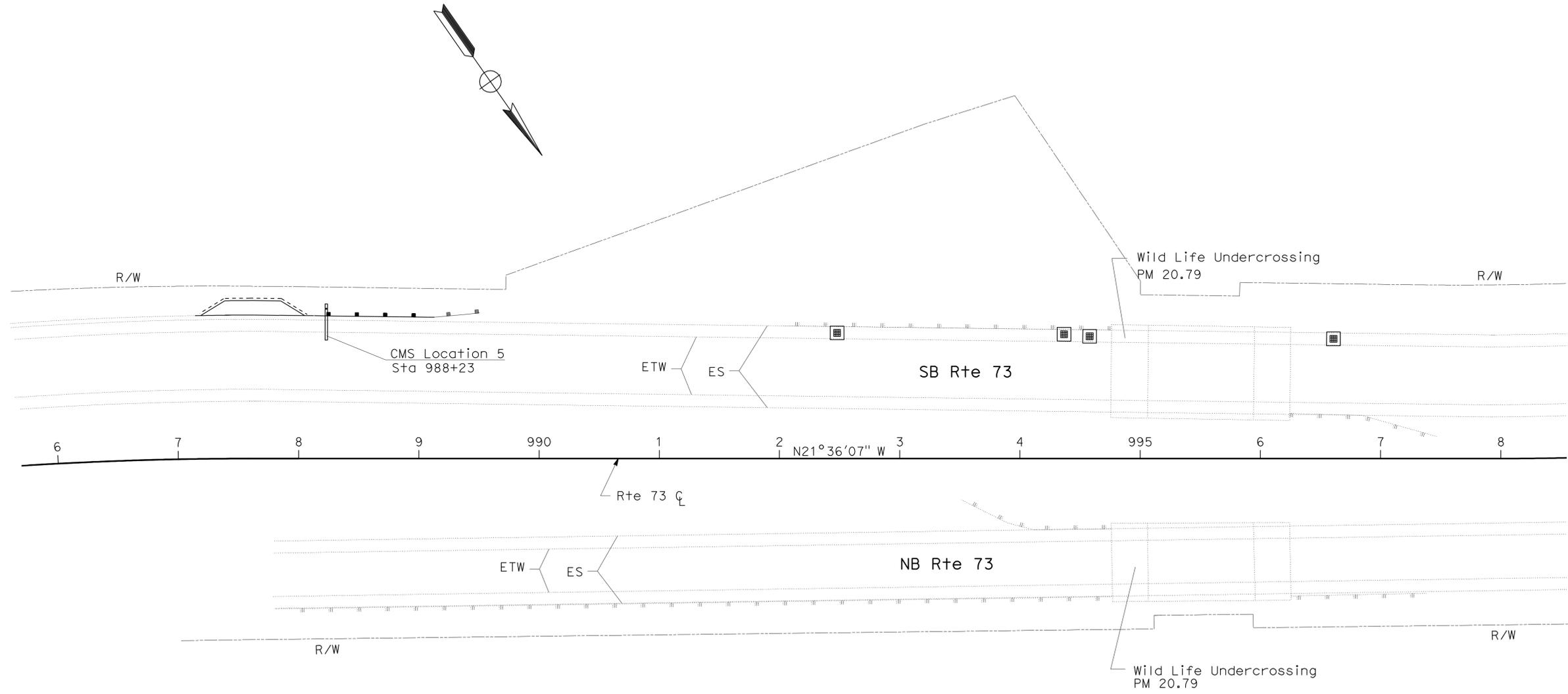
**WPC-4**

THIS PLAN IS ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22,73,74	Var	13	70
<i>Judy Chan Kennedy</i> REGISTERED CIVIL ENGINEER			DATE		
			2/26/10		
			PLANS APPROVAL DATE	6-21-10	
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CALCULATED/DESIGNED BY	CHECKED BY
JUDY KENNEDY	SON THANH NGUYEN
REVISOR BY	DATE REVISED



**LOCATION 5**

**TEMPORARY WATER POLLUTION CONTROL PLAN**

SCALE: 1" = 50'

**WPC-5**

THIS PLAN IS ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22,73,74	Var	15	70

*Judy Chan Kennedy* 2/26/10  
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**TEMPORARY WATER POLLUTION CONTROL QUANTITIES**

SHEET No.	LOCATION	ALIGNMENT	STATION	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY GRAVEL BAG BERM
				EA	LF
WPC-1	LOCATION 1 - NORTH OF ORANGE/SAN DIEGO COUNTY LINE	ROUTE 5 CL	26+98	1	
WPC-2	LOCATION 2 - WEST OF SPRINGDALE St OC	ROUTE 74 Line	117+00	1	
		ROUTE 74 Line	120+00	1	
WPC-3	LOCATION 3 - SOUTH OF LAGUNA HILLS Dr UC	ROUTE 73 CL	675+61	1	
WPC-4	LOCATION 4 - NORTH OF JAMBOREE Rd OC	ROUTE 73 CL	1212+41	1	
		ROUTE 73 CL	1215+21	1	
WPC-5	LOCATION 5 - SOUTH OF WILDLIFE UC (BRIDGE No. 55-862)	ROUTE 73 CL	992+48	1	
		ROUTE 73 CL	994+36	1	
		ROUTE 73 CL	994+59	1	
		ROUTE 73 CL	996+61	1	
WPC-6	LOCATION 6 - WEST OF LA PATA Ave/ANTONIO Pkwy	ROUTE 74 Line	138+75		6
		ROUTE 74 Line	139+00		6
		ROUTE 74 Line	139+25		6
		ROUTE 74 Line	139+49	1	
		ROUTE 74 Line	136+90 TO 137+75		90
TOTAL				11	108

**TEMPORARY WATER POLLUTION CONTROL QUANTITIES**

**WPCQ-1**

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	5,22, 73,74	Var	16	70

*Judy Chan Kennedy* 2/26/10  
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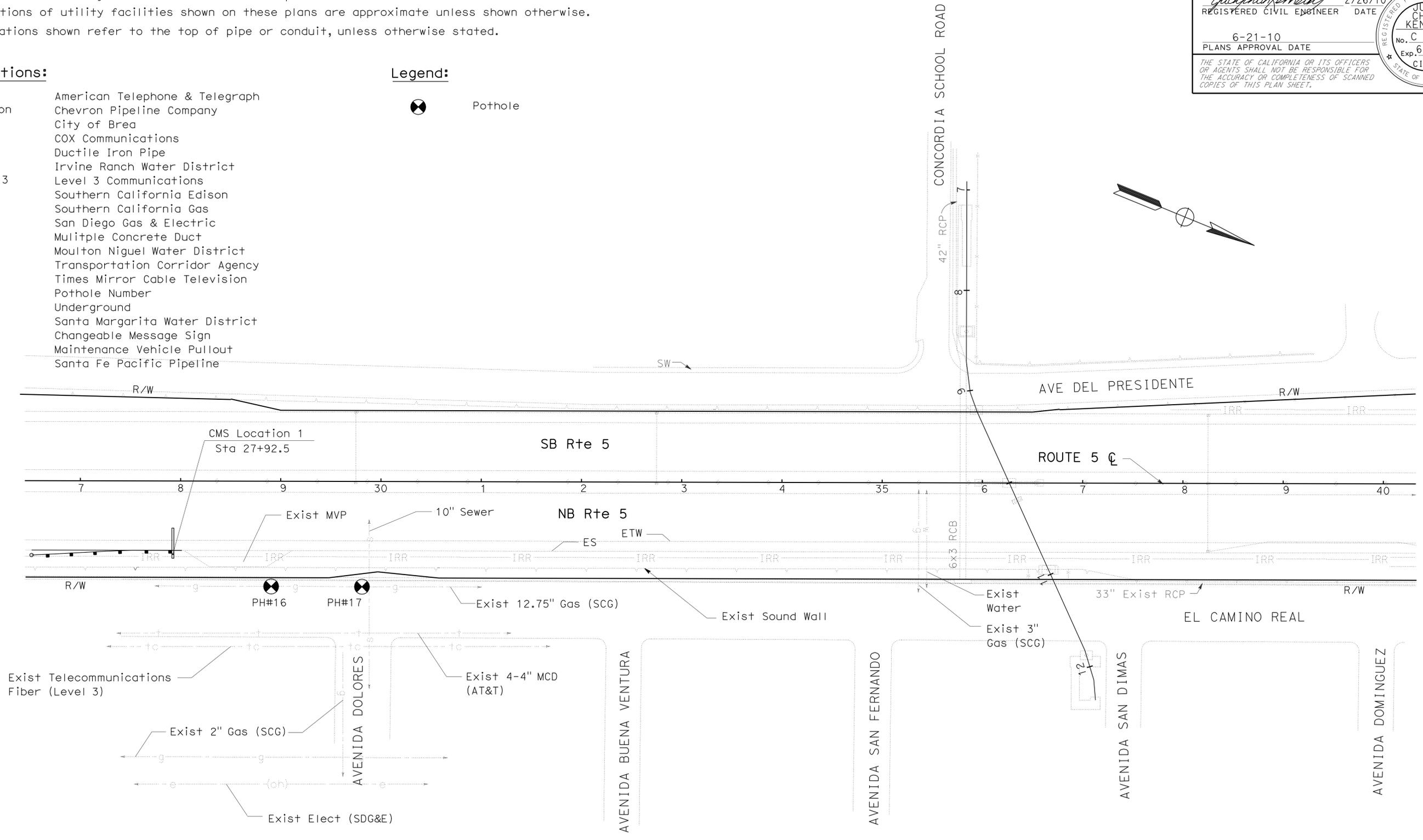
**Notes:**

1. For accurate Right of Way Data, contact Right of Way Engineering at the District Office.
2. Locations of utility facilities shown on these plans were obtained from owners Records and/or other record data.
3. Locations of utility facilities shown on these plans are approximate unless shown otherwise.
4. Elevations shown refer to the top of pipe or conduit, unless otherwise stated.

**Abbreviations:**

- AT&T American Telephone & Telegraph
- Chevron Chevron Pipeline Company
- COB City of Brea
- COX COX Communications
- DIP Ductile Iron Pipe
- IRWD Irvine Ranch Water District
- Level 3 Level 3 Communications
- SCE Southern California Edison
- SCG Southern California Gas
- SDG&E San Diego Gas & Electric
- MCD Multiple Concrete Duct
- MNWD Moulton Niguel Water District
- TCA Transportation Corridor Agency
- TMTV Times Mirror Cable Television
- PH# Pothole Number
- UG Underground
- SMWD Santa Margarita Water District
- CMS Changeable Message Sign
- MVP Maintenance Vehicle Pullout
- SFPP Santa Fe Pacific Pipeline

**Legend:**



**POTHOLE INFORMATION**

No.	FACILITY	Sta	OFFSET	NORTHING	EASTING	OG Elev	DEPTH	TOP OF FACILITY Elev
16	SCG (12-3/4" Gas Line)	28+90.6	104.7' Rt	2,092,227.4	6,150,961.3	119.1'	3.7'	115.4'
17	SCG (12-3/4" Gas Line)	29+81.2	104.8' Rt	2,092,311.3	6,150,927.1	120.8'	3.3'	117.5'

**UTILITY PLAN  
LOCATION 1  
SCALE: 1" = 50'**

**U-1**

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY.



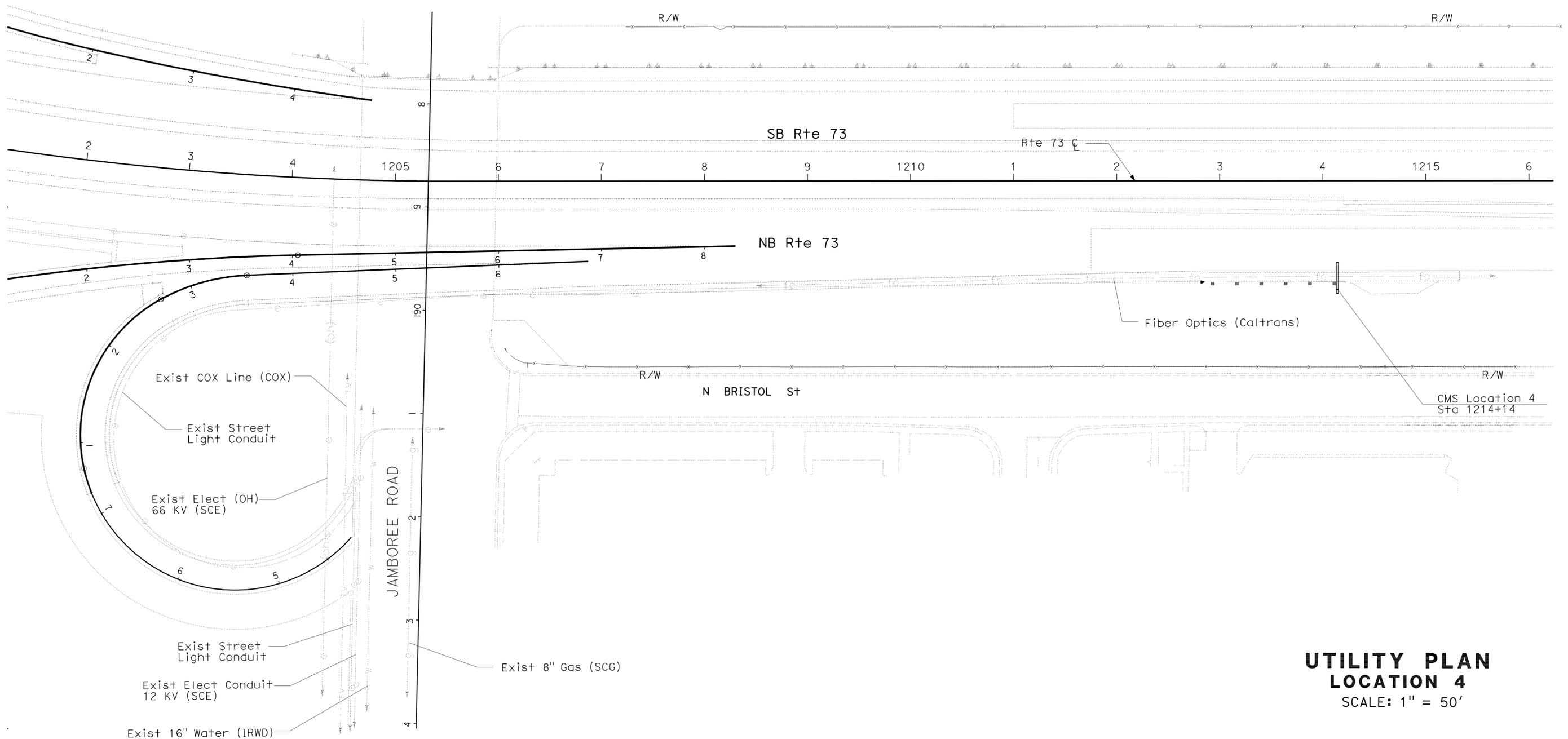
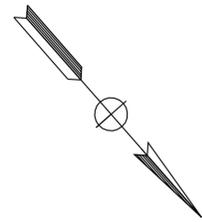
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	18	70

*Judy Chan Kennedy* 2/26/10  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
 No. C. 67701  
 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 ELECTRONIC COPIES OF THIS PLAN SHEET.

**Note:**  
For Accurate Right of Way Data, contact Right of Way Engineering at the District Office.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: KAMRAN MAZHAR  
 CALCULATED/DESIGNED BY: JUDY KENNEDY  
 CHECKED BY: SON THANH NGUYEN  
 REVISED BY: JUDY KENNEDY  
 DATE REVISED: SON THANH NGUYEN

**UTILITY PLAN  
LOCATION 4**  
SCALE: 1" = 50'

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY.

**U-3**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	19	70

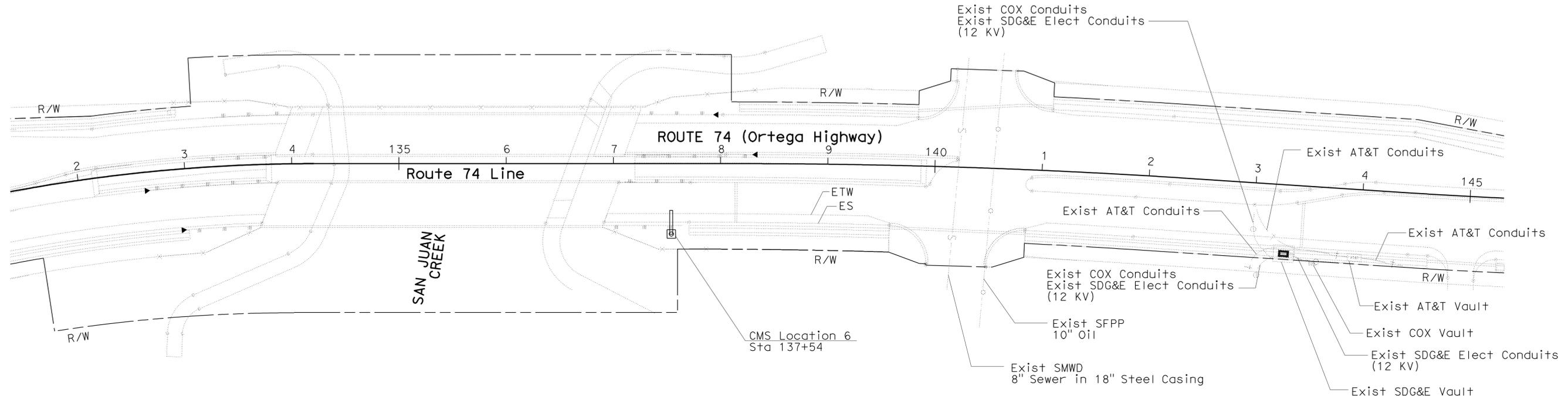
*Judy Chan Kennedy* 06-08-10  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

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.

REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
 No. C. 67701  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

**NOTE:**

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



**SDG&E Electrical Conduits (12 KV) Information\***

Station	Elevation (Top of Conduit)	Offset from Rte 74 Line	Depth Below Finished Grade (Approx.)
143+07	164.5'	56.9' Rt	3.9'
143+11	163.9'	61.9' Rt	4.2'
143+18	164.5'	68.5' Rt	3.7'
143+43	163.7'	67.3' Rt	5.6'
143+67	163.7'	68.5' Rt	6.3'
143+96	164.1'	69.1' Rt	6.7'

**SFPP 10" Oil Pipeline Information\***

Station	Elevation (Top of Pipe)	Offset from Rte 74 Line	Depth Below Finished Grade (Approx.)
140+52.3	159.6'	107.9' Rt	5.9'
140+54.6	159.3'	71.1' Rt	7.6'

\*SDG&E electrical conduits (12 KV) and SFPP 10" Oil Pipeline information were obtained from Contract No. 12-086914. COX conduits are installed over the SDG&E conduits in the same trench.

**UTILITY PLAN  
LOCATION 6**

SCALE: 1" = 50'

**U-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR  
 KAMRAN MAZHAR  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 JUDY KENNEDY  
 SON THANH NGUYEN  
 REVISED BY  
 DATE REVISED

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY.



USERNAME => frmikes1  
DGN FILE => c0H232ka004.dgn

CU 12231

EA 0H2321

BORDER LAST REVISED 4/11/2008

LAST REVISION | DATE PLOTTED => 31-JAN-2011  
 05-13-10 | TIME PLOTTED => 11:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22,73,74	Var	20	70

*Judy Chan Kennedy*  
 REGISTERED CIVIL ENGINEER DATE 2/26/10  
 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
 No. C. 67701  
 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 ELECTRONIC COPIES OF THIS PLAN SHEET.

**NOTE:**

Sign locations shown are approximate. Exact locations to be determined by the Engineer.

**LEGEND**

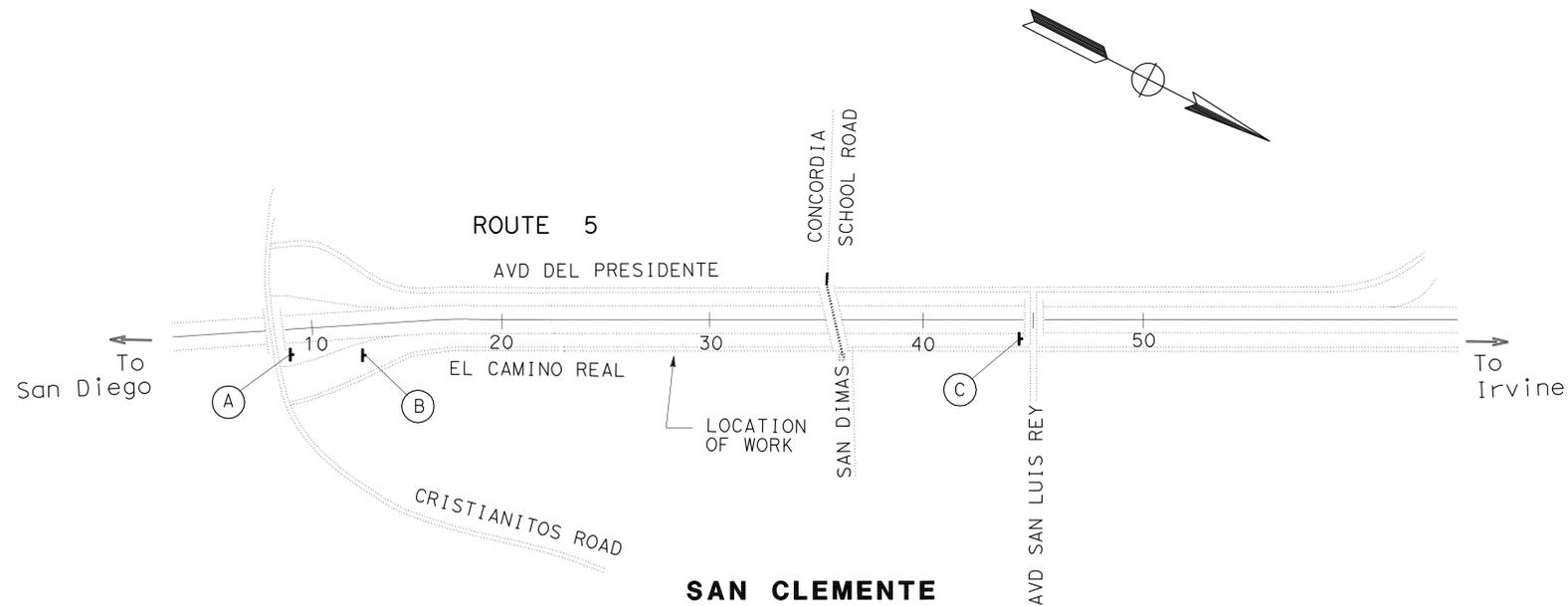
- DIRECTION OF TRAVEL
- ⊥ CONSTRUCTION AREA SIGN, STATIONARY MOUNTED OR PORTABLE

**CONSTRUCTION AREA SIGNS**

	SIGN CODE	PANEL SIZE (in)	SIGN MESSAGE	No. OF POST AND SIZE (in)	No. OF SIGNS	REMARKS
Ⓐ	W20-1	48 x 48	ROAD WORK AHEAD	1-4 x 6 (s)	5	
Ⓑ	W20-1	36 x 36	ROAD WORK AHEAD	1-4 x 6 (s)	7	
Ⓒ	C14 (CA)	48 x 24	END ROAD WORK	1-4 x 6 (s)	5	
Ⓓ	C14 (CA)	36 x 18	END ROAD WORK	1-4 x 4 (s)	1	

\* FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE SHEET TH-1.

(s) Denotes Stationary Mounted Sign



**LOCATION 1**

**CONSTRUCTION AREA SIGNS**  
NO SCALE

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGNS ONLY

**CS-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR  
 KAMRAN MAZHAR  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 JUDY KENNEDY  
 SON THANH NGUYEN  
 REVISED BY  
 DATE REVISED

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

FUNCTIONAL SUPERVISOR  
 KAMRAN MAZHAR

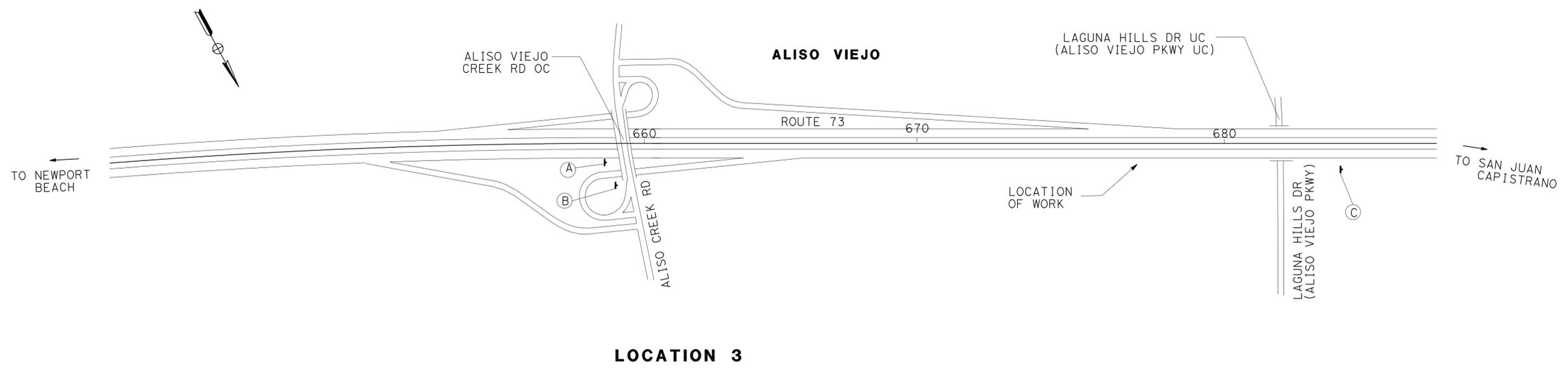
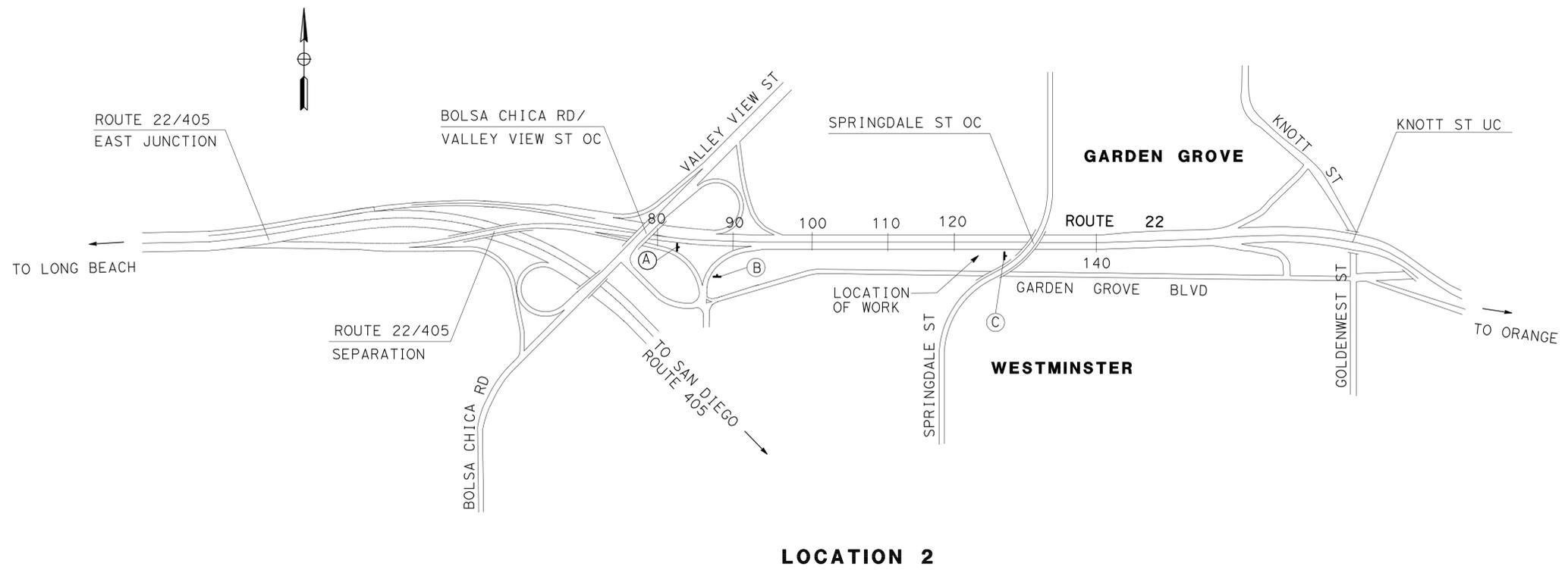
CALCULATED/DESIGNED BY  
 CHECKED BY

JUDY KENNEDY  
 SON THANH NGUYEN

REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22,73,74	Var	21	70

*Judy Chan Kennedy*  
 REGISTERED CIVIL ENGINEER DATE 2/26/10  
 6-21-10  
 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.

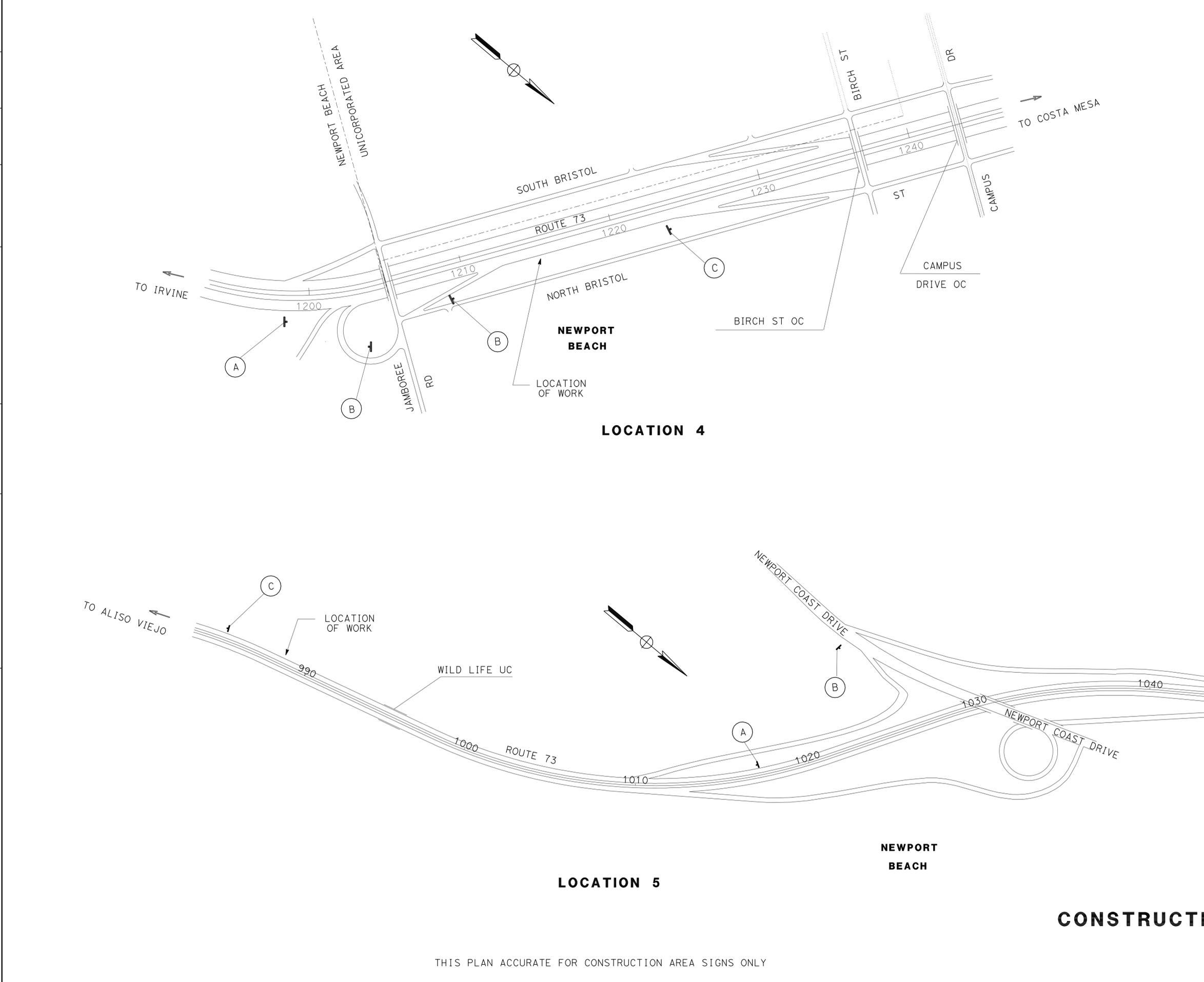


**CONSTRUCTION AREA SIGNS**  
 NO SCALE

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGNS ONLY

**CS-2**

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



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	22	70

*Judy Chan Kennedy* 2/26/10  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**JUDY CHAN KENNEDY**  
 No. C. 67701  
 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 ELECTRONIC COPIES OF THIS PLAN SHEET.

LAST REVISION | DATE PLOTTED => 31-JAN-2011  
 02-18-10 | TIME PLOTTED => 11:27

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

FUNCTIONAL SUPERVISOR  
 KAMRAN MAZHAR

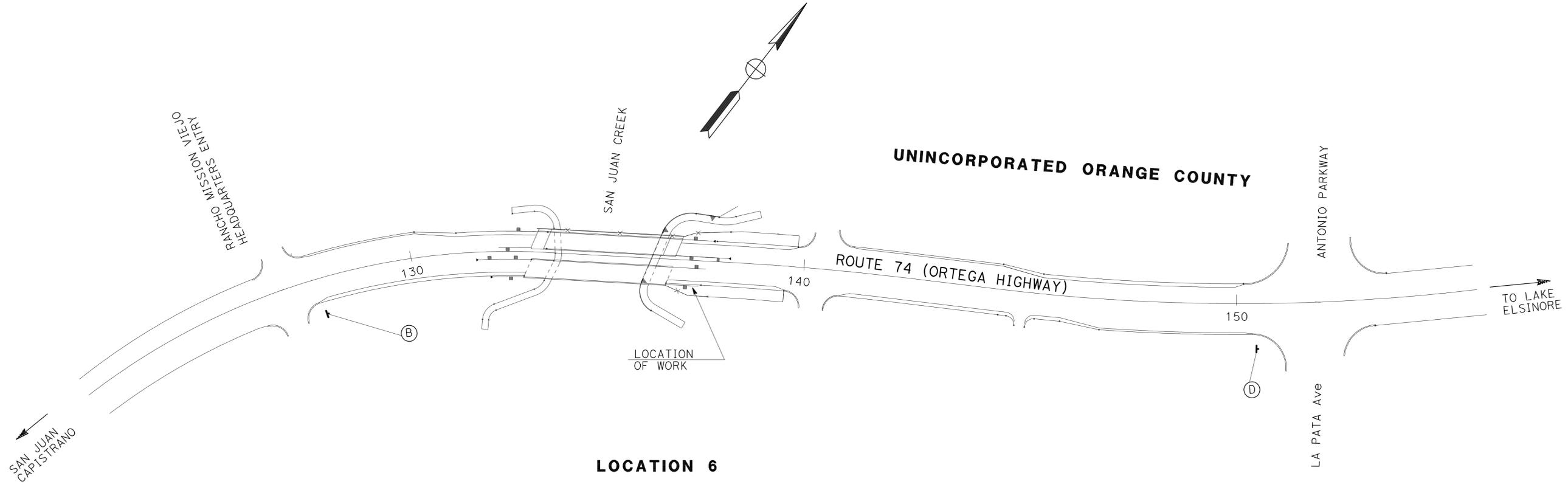
CALCULATED/DESIGNED BY  
 CHECKED BY

JUDY KENNEDY  
 SON THANH NGUYEN

REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	23	70

*Judy Chan Kennedy* 06-08-10  
 REGISTERED CIVIL ENGINEER DATE  
 6-21-10  
 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.



LOCATION 6

**CONSTRUCTION AREA SIGNS**

NO SCALE

**CS-4**

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGNS ONLY



USERNAME => trmikes1  
 DGN FILE => c0H2321a004.dgn

CU 12231

EA 0H2321

BORDER LAST REVISED 4/11/2008

LAST REVISION | DATE PLOTTED => 31-JAN-2011  
 05-13-10 | TIME PLOTTED => 11:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	24	70

*Judy Chan Kennedy* 2/26/10  
 REGISTERED CIVIL ENGINEER DATE

6-21-10  
 PLANS APPROVAL DATE

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

- NOTES:**
1. QUANTITIES DO NOT INCLUDE "STATE FURNISHED CMS PANEL".
  2. THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
  3. FOR LOCATION OF SIGN STRUCTURE, SEE PROJECT PLANS.

TABLE 1 Unbalanced Butterfly Changeable Message Sign Model 500

Loc	CMS NO.	Station	Route	Orientation	"X" (FT)	"h" (FT)	Assumed Elev. A (FT)	Elev. B (FT)
1	24	27+92.50	5	FNBT	17'	18'	100.00	102'-8"
2	25	120+49	22	FEBT	17'	20'	100.00	100'-8"
3	32	677+00	73	FNBT	14'-11"	20'	100.00	100'-9.5"
4	33	1214+14	73	FNBT	17'	18'	100.00	101'-7"
5	34	988+23	73	FSBT	21'	18'	100.00	101'-11"

TABLE 2 Unbalanced Butterfly Changeable Message Sign Model 510

Loc	CMS NO.	Station	Route	Orientation	X(FT)	"h" (FT)	Assumed Elev. A (FT)	Elev. B (FT)
6	35	137+54	74	FEBT	19'	16'	100.00	105'-0.3"

**SIGN PLAN  
 MODEL 500 AND 510  
 CHANGEABLE MESSAGE SIGN ON  
 OVERHEAD SIGN TRUSS SINGLE POST  
 DESIGN TABLES**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR  
 KAMRAN MAZHAR  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 JUDY KENNEDY  
 SON THANH NGUYEN  
 REVISED BY  
 DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 SPECIAL DESIGNS BRANCH

FUNCTIONAL SUPERVISOR  
 ANDREW BUI

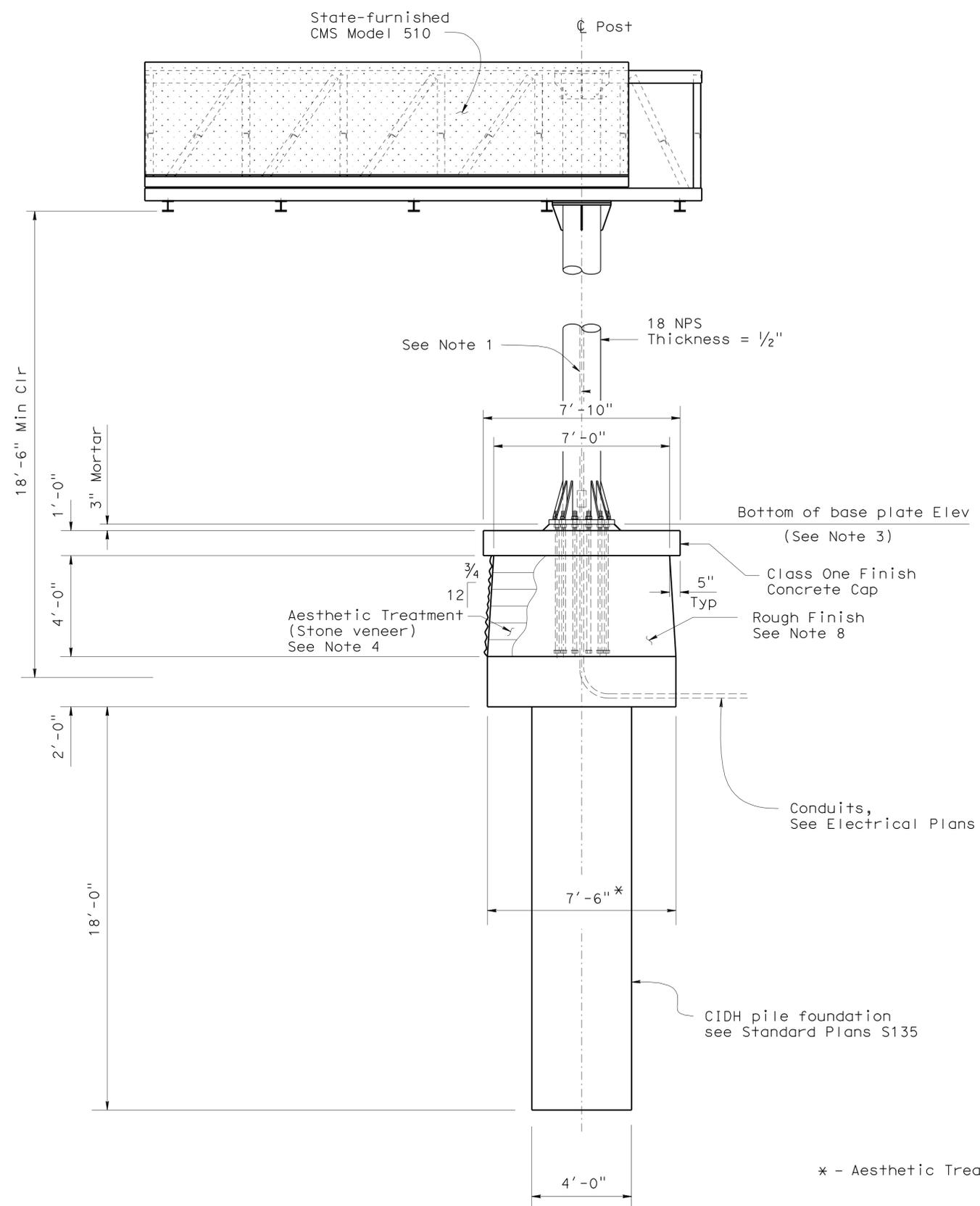
CALCULATED/DESIGNED BY  
 CHECKED BY

T. MARCHENKO  
 A BUI

REVISED BY  
 DATE REVISED

4/28/09  
 4/28/09

A R DUDSAK  
 T MARCHENKO



**ELEVATION**  
 at RTE 74 Line Sta 137+54

Abbreviation:  
 CMS - Changeable Message Sign

\* - Aesthetic Treatment not included.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	25	70

REGISTERED CIVIL ENGINEER DATE 06-08-10  
 ANDREW BUI No. C63560 Exp. 9/30/10  
 PLANS APPROVAL DATE 6-21-10

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

**GENERAL NOTES**

- DESIGN:  
 AASHTO Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, dated 2001
- CONSTRUCTION:  
 Standard Specifications and the Special Provisions State of California Department of Transportation Dated July 1999 and May 2006  
 Standard Plans State of California Department of Transportation Dated May 2006 and current Revised Plans
- LOADING:  
 WIND LOADING:  
 40 psf applied load combinations per 3.9 AASHTO Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, dated 2001
- WALKWAY LOADING:  
 Dead load +500 LBS concentrated live loading
- UNIT STRESSES:  
 STRUCTURAL STEEL: fy = 36000 psi  
 REINFORCED CONCRETE: fy = 60000 psi  
 f'c = 3600 psi

**STANDARD PLANS DATED MAY 2006**

- A10A ACRONYMS AND ABBREVIATIONS (A-L)
- A10B ACRONYMS AND ABBREVIATIONS (M-Z)
- SP S3 OVERHEAD SIGN- TRUSS SINGLE POST TYPE BASE PLATE AND ANCHORAGE DETAILS
- SP S120 UNBALANCED BUTTERFLY CHANGEABLE MESSAGE SIGNS MODEL 510
- SP S134 OVERHEAD SIGN-TRUSS SINGLE POST TYPE ANCHORAGE AND BASEPLATE DETAILS CHANGEABLE MESSAGE SIGNS MODEL 510
- SP S135 OVERHEAD SIGN-TRUSS SINGLE POST TYPE FOUNDATION AND MISCELLANEOUS DETAILS CHANGEABLE MESSAGE SIGNS MODEL 510

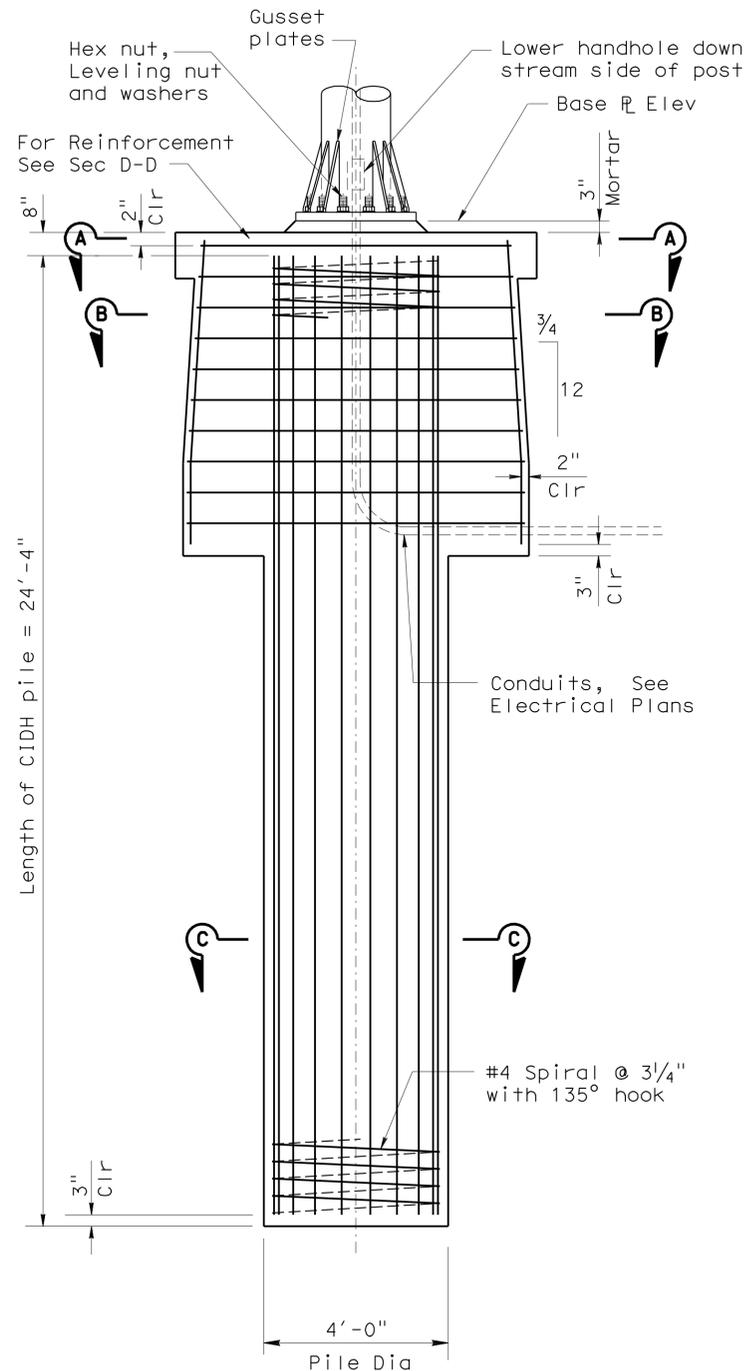
**NOTES:**

1. For details not shown, see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS".
2. For CMS 510 Sign Structure location see Project Plan and see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS" for details.
3. See Project Plans.
4. Installation and stone veneer type per Project Plan.
5. Pile shall be placed against undisturbed material.
6. For pedestal and base details see "MODIFIED CIDH PILE FOUNDATION WITH AESTHETIC PEDESTAL DETAILS" sheet.
7. Slope protection required per Project Plan.
8. Faces of Pedestal Structure for Aesthetic treatment shall be formed rough finished.

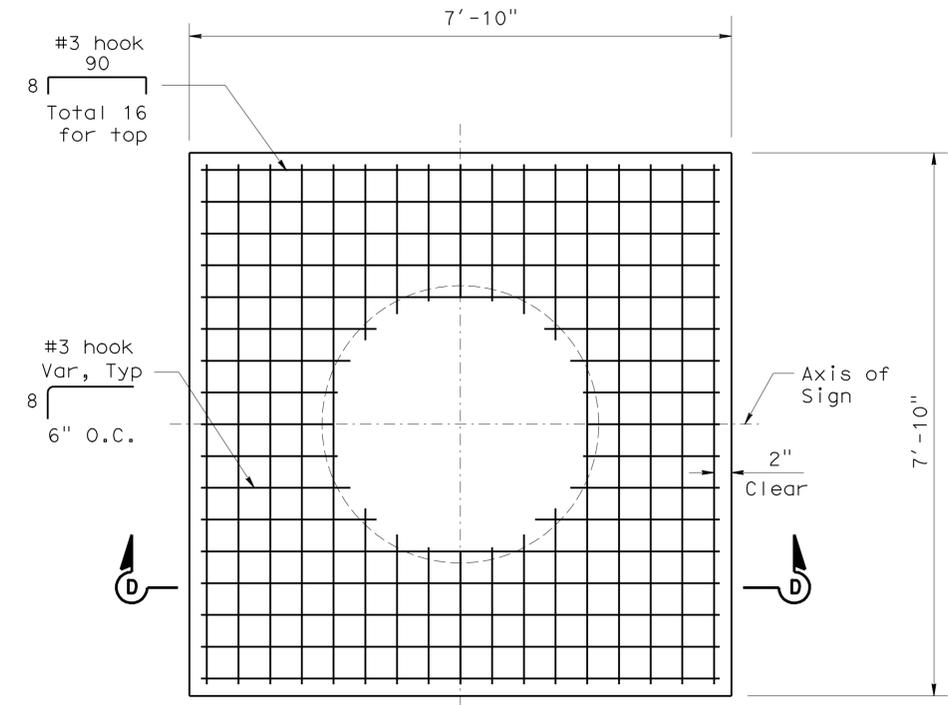
**LAYOUT**  
**MODIFIED CIDH PILE FOUNDATION**  
**WITH AESTHETIC PEDESTAL**  
**CHANGEABLE MESSAGE SIGN MODEL 510**

SD-1

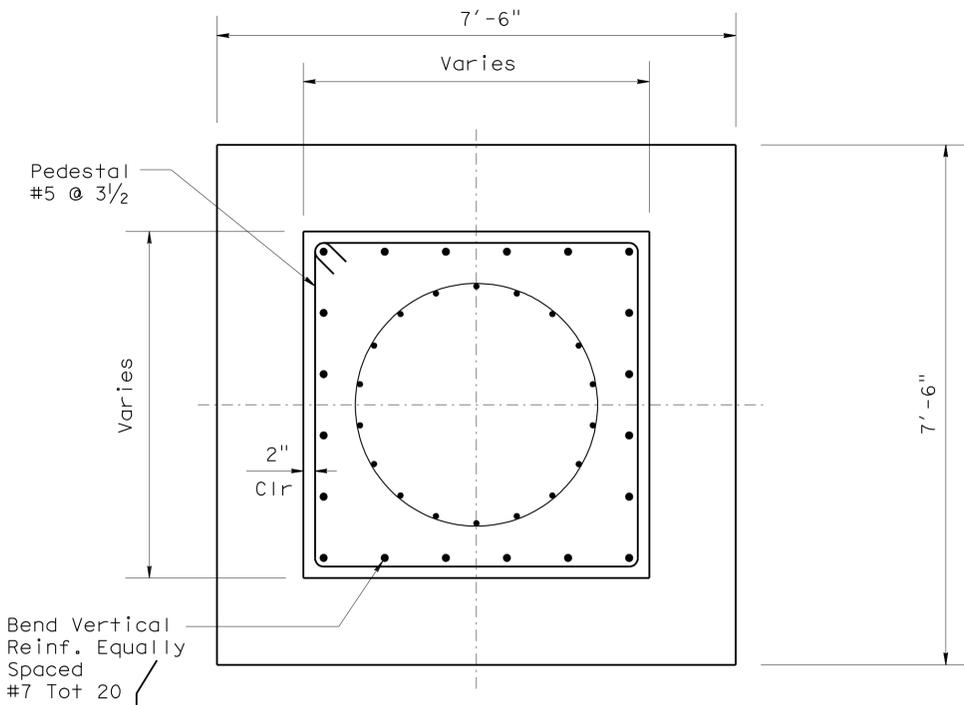
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	5,22, 73, 74	Var	26	70
REGISTERED CIVIL ENGINEER			DATE	2/26/10	
PLANS APPROVAL DATE			6-21-10		
REGISTERED PROFESSIONAL ENGINEER ANDREW BUI No. C63560 Exp. 9/30/10 CIVIL STATE OF CALIFORNIA					



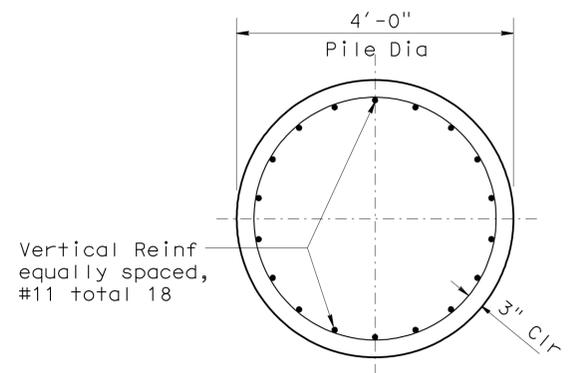
**CIDH PILE WITH PEDESTAL**



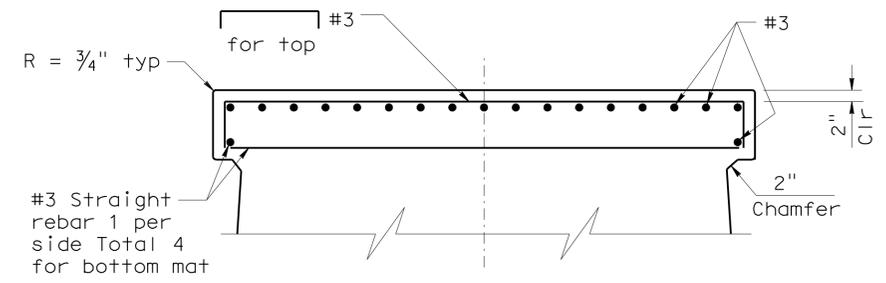
**SECTION A-A**  
FOR TOP MAT ONLY



**SECTION B-B**



**SECTION C-C**



**SECTION D-D**

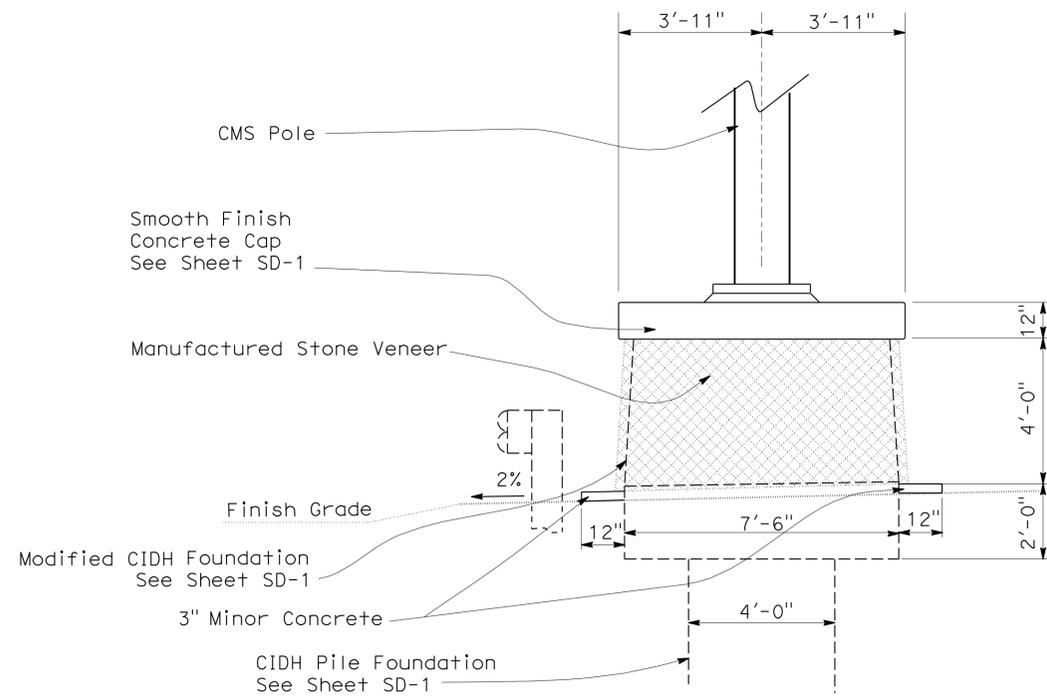
**NOTES:**

1. For anchorage and baseplate details see STANDARD PLANS S134, and S3 for typical use of templates.
2. For base plate elevation see Project Plans.
3. Prior to erection of the post, backfill and Slope protection per project Plan, shall be in place.
4. Pedestal shall be formed 12" min below ground surface.
5. For details not shown, see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS"

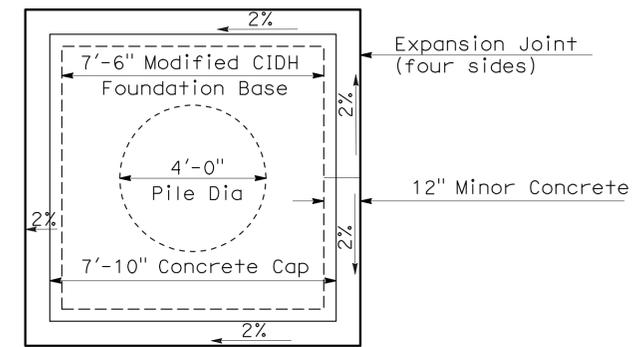
**MODIFIED CIDH PILE FOUNDATION  
 WITH AESTHETIC PEDESTAL  
 PEDESTAL DETAILS  
 CHANGEABLE MESSAGE SIGN MODEL 510**

**SD-2**

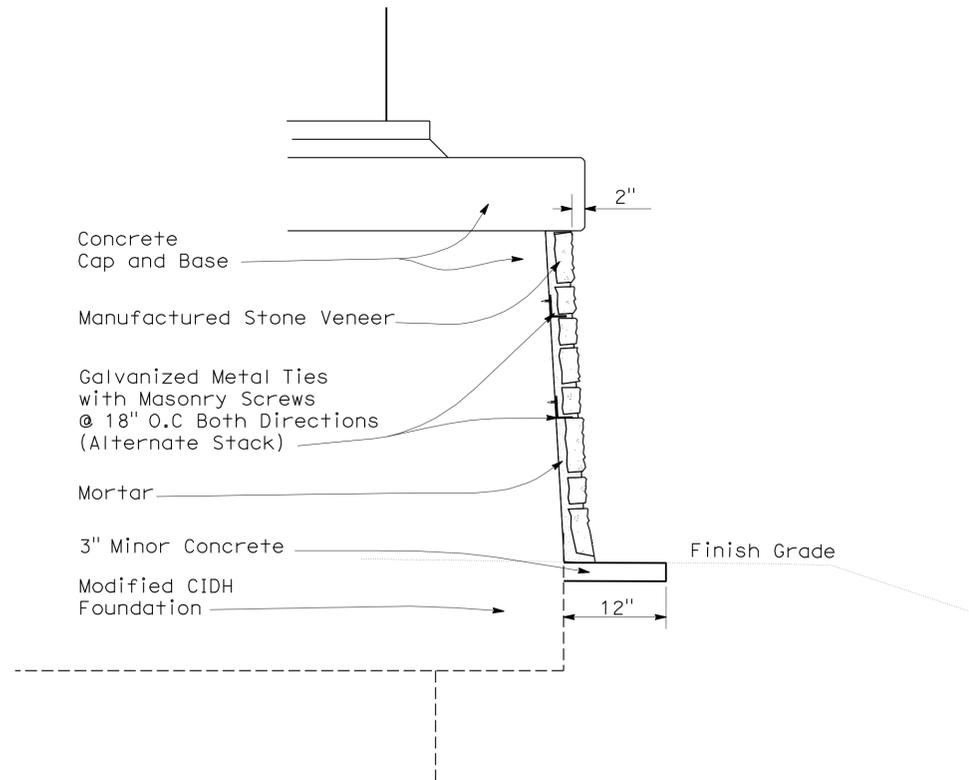
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	27	70
<i>Ronald Wong</i> LICENSED LANDSCAPE ARCHITECT 06-08-10 6-21-10 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



**AESTHETIC TREATMENT (MANUFACTURED STONE VENEER)  
CMS LOCATION 6**



**PLAN**



**SECTION**

**SIGN DETAIL  
ON MANUFACTURED STONE VENEER  
CHANGEABLE MESSAGE SIGN MODEL 510**

NO SCALE

**SD-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	LANDSCAPE ARCHITECTURE	SENIOR LANDSCAPE ARCHITECT	CHECKED BY	DESIGNED BY	REVISOR	DATE
<b>Caltrans</b>		ERIC DICKSON		VATHANA CHY	RONALD WONG	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR  
 KAMRAN MAZHAR  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 JUDY KENNEDY  
 SON THANH NGUYEN  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	28	70

*Judy Chan Kennedy* 2/26/10  
 REGISTERED CIVIL ENGINEER DATE

6-21-10  
 PLANS APPROVAL DATE

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### ROADSIDE SIGN QUANTITIES

SHEET No.	SIGN No.	SIZE CODE	PANEL SIZE (L x H)	POST SIZE & LENGTH (N)				ROADSIDE SIGN TWO POST	RELOCATE ROADSIDE SIGN (WOOD POST)	REMOVE ROADSIDE SIGN	REMARKS
				4 x 4 in	4 x 6 in	6 x 6 in	6 x 8 in				
				in x in	LF	LF	LF				
C-1	1-1	Special	EXIST						1		"CLICK IT OR TICKET" Sign
C-3	3-1	R6-3(CA)	48 x 60		18				1		
		R48-1(CA)	36 x 18								
	3-2	R6-1(CA)	EXIST							1	
		R48-1(CA)	EXIST								
	3-3	R6-4(CA)	48 x 60		18				1		
		R48-1(CA)	36 x 18								
TOTAL								2	1	1	

NOTE: SIGN CODES CONFORM TO CALIFORNIA MUTCD.  
 (N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

**ABBREVIATIONS:**

Blk = BLACK  
 Non = NON-REFLECTIVE  
 W = WHITE

### MATERIAL SUMMARY (CONTRACTOR FURNISHED SIGNS)

SIGN No.	SIGN CODE	SIGN PANEL DIMENSION (L x H)	SINGLE FACED	SIGN FACING MATERIAL				ROADSIDE		DESCRIPTION (REMARKS)
				BACKGROUND		LEGEND		FURNISH SINGLE SHEET ALUMINUM SIGN		
				SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	0.063"	0.080"	
								UNFRAMED	UNFRAMED	
				SQFT	SQFT					
3-1	R6-3(CA)	48 x 60	X	W	III	Blk	Non		20.0	
	R48-1(CA)	36 x 18	X	W	III	Blk	Non	4.5		
3-3	R6-4(CA)	48 x 60	X	W	III	Blk	Non		20.0	
	R48-1(CA)	36 x 18	X	W	III	Blk	Non	4.5		
TOTAL								9.0	40.0	

## SIGN QUANTITIES

**SQ-1**

FUNCTIONAL SUPERVISOR  
 KAMRAN MAZHAR

CALCULATED/DESIGNED BY  
 CHECKED BY

JUDY KENNEDY  
 SON THANH NGUYEN

REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22,73,74	Var	29	70

*Judy Chan Kennedy*  
 REGISTERED CIVIL ENGINEER DATE 2/26/10  
 6-21-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 JUDY CHAN KENNEDY  
 No. C 67701  
 Exp. 6/30/11  
 CIVIL

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

### ROADWAY AND OVERHEAD SIGN QUANTITIES

SHEET No.	LOCATION		CHANGEABLE MESSAGE SIGN LOCATION No.	ROADWAY EXCAVATION CY	STONE VENEER SQFT	REMOVE METAL BEAM GUARD RAILING LF	METAL BEAM GUARD RAILING						REMOVE ASPHALT CONCRETE DIKE LF	HOT MIX ASPHALT (TYPE A) TON	CLASS 2 AGGREGATE SUBBASE CY	PLACE HOT MIX ASPHALT DIKE (TYPE C) LF	PLACE HOT MIX ASPHALT DIKE (TYPE F) LF	PLACE HOT MIX ASPHALT DIKE (TYPE E) LF	VEGETATION CONTROL (Minor Concrete) SQYD	MINOR CONCRETE (SIDEWALK) CY	STRUCTURAL CONCRETE CY	BAR REINFORCING STEEL LB	SIGN STRUCTURE (TRUSS)		CIDH CONCRETE PILE (SIGN FOUNDATION)		REMARKS
	ROUTE No.	STATION					EA	EA	EA	EA	EA	EA											EA	EA	EA	EA	
C-1	5	27+92.50	1				150	1			12	155	2		105	50							14,516	14,516		22	CMS ON POLE
C-2	22	120+49	2			88	125	1	1		13							100					14,771	14,771		22	CMS ON POLE
C-3	73	677+00	3	144			88	1	1		10	75	250	46	30	68	88	95	91				14,771	14,771		22	CMS ON POLE
C-4	73	1214+14	4	20			88	1		1	11		168	2		80	88		86				14,516	14,516		22	CMS ON POLE
C-5	73	988+23	5	42			100	1	1		11		269	46	30	68	109	93	122				14,516	14,516		22	CMS ON POLE
C-6	74	137+54	6		150			1												0.3	9	1,040	9,235	9,235	25		CMS ON POLE
<b>TOTAL</b>				206	150	88	551	6	3	1	57	75	842	96	60	321	335	188	399	0.3	9	1,040	82,325	82,325	25	110	

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

### SUMMARY OF QUANTITIES

**ABBREVIATIONS:**

AMEND — amendment	Min — minimum
B & B — balled and burlapped	NCN — no common name
Dia — diameter	No. — number
EA — each	Pkt — packet
lb — pound	PLT ESTB — plant establishment
oz. — ounce	Pvmt — pavement
F+ — foot/feet	R/W — right of way
SQFT — square feet	SF — state furnished
CF — cubic feet	TRVD — traveled
Max — maximum	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	30	70

Signature: *Ronald Wong* 06-08-10  
 LICENSED LANDSCAPE ARCHITECT  
 6-21-10  
 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.

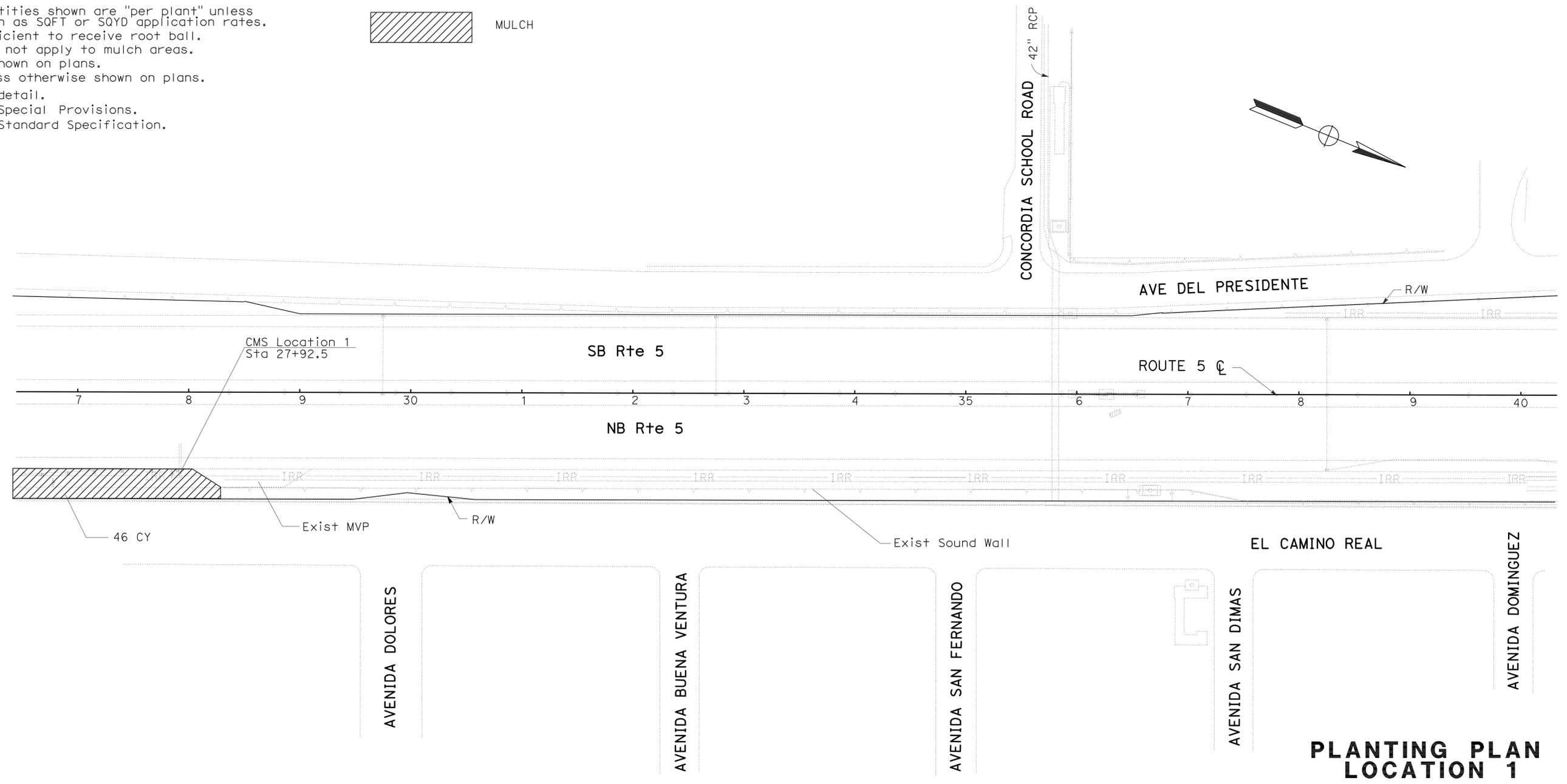
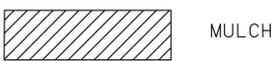
**PLANT LIST AND PLANTING SPECIFICATIONS**

PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (INCH)		BASIN TYPE	IRON SULFATE ①	SOIL AMEND ①	COMMERCIAL FERTILIZER ①		BASIN MULCH	STAKING	PLANTING LIMITS						REMARKS
							Dia	DEPTH				PLANTING	PLT ESTB			MINIMUM DISTANCE (F+) FROM				ON CENTER (F+)		
																TRVD WAY	PVMT	FENCE	WALL		PAVED DITCH	
H	1		CARPOBROTUS CHILENSIS	ICE PLANT	CUTTING	3400	②	②	-	-	-	-	-	-	-	6	6	6	6	8	1	GROUNDCOVER
F	2		CAREX DIVULSA	BERKELEY SEDGE	IN FLATS	790	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	ORNAMENTAL GRASS

**APPLICABLE WHEN CIRCLED:**

- ① - Quantities shown are "per plant" unless shown as SQFT or SQYD application rates.
- ② - Sufficient to receive root ball.
- 3 - Does not apply to mulch areas.
- 4 - As shown on plans.
- 5 - Unless otherwise shown on plans.
- 6 - See detail.
- 7 - See Special Provisions.
- 8 - See Standard Specification.

**INERT MATERIAL**



**PLANTING PLAN LOCATION 1**

SCALE: 1" = 50'

PP-1

THIS PLAN ACCURATE FOR PLANTING WORK ONLY.

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

FUNCTIONAL SUPERVISOR  
 ERIC DICKSON

CALCULATED/DESIGNED BY  
 CHECKED BY

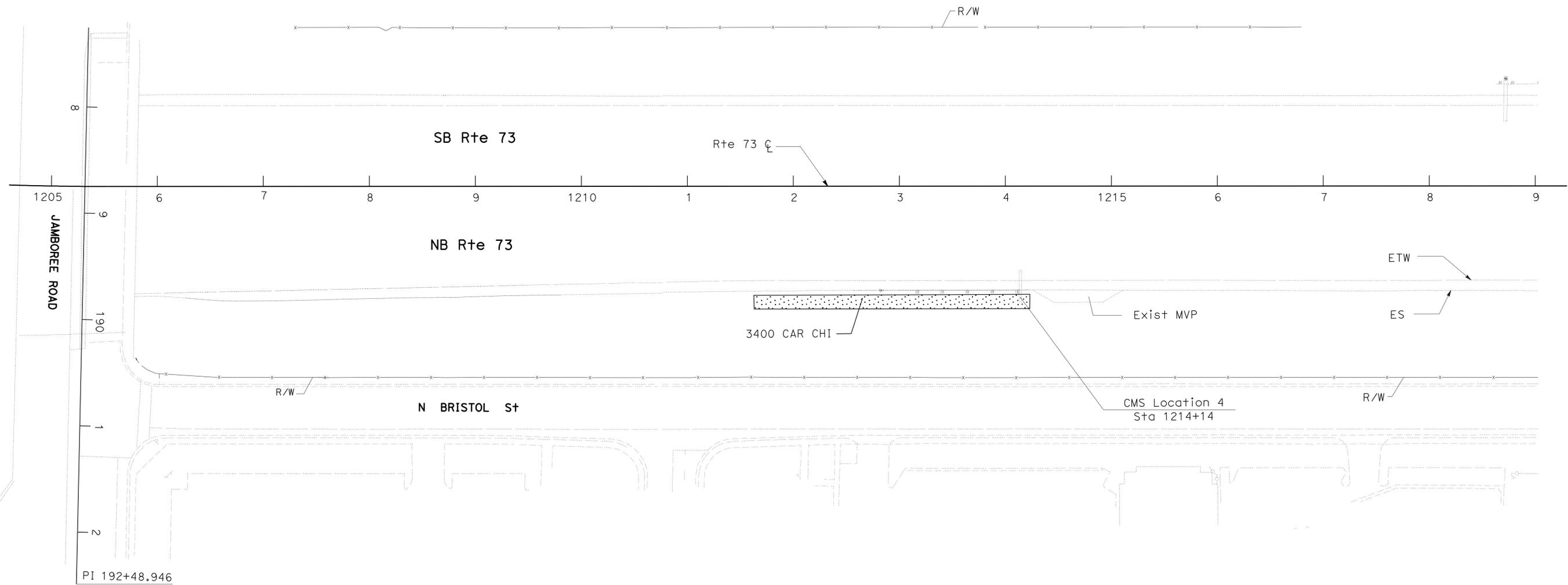
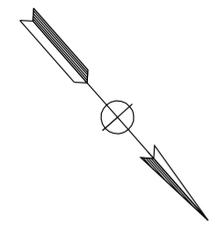
VATHANA CHY  
 RONALD WONG

REVISED BY  
 DATE REVISED

RW  
 02-24-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	31	70

Signature: *Ronald Wong* 06-08-10  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Ronald Wong*  
 1-31-12  
 Renewal Date: 06-08-10  
 Date: 06-08-10  
 PLANS APPROVAL DATE: 6-21-10  
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.



**PLANTING PLAN  
 LOCATION 4**

THIS PLAN ACCURATE FOR PLANTING WORK ONLY.

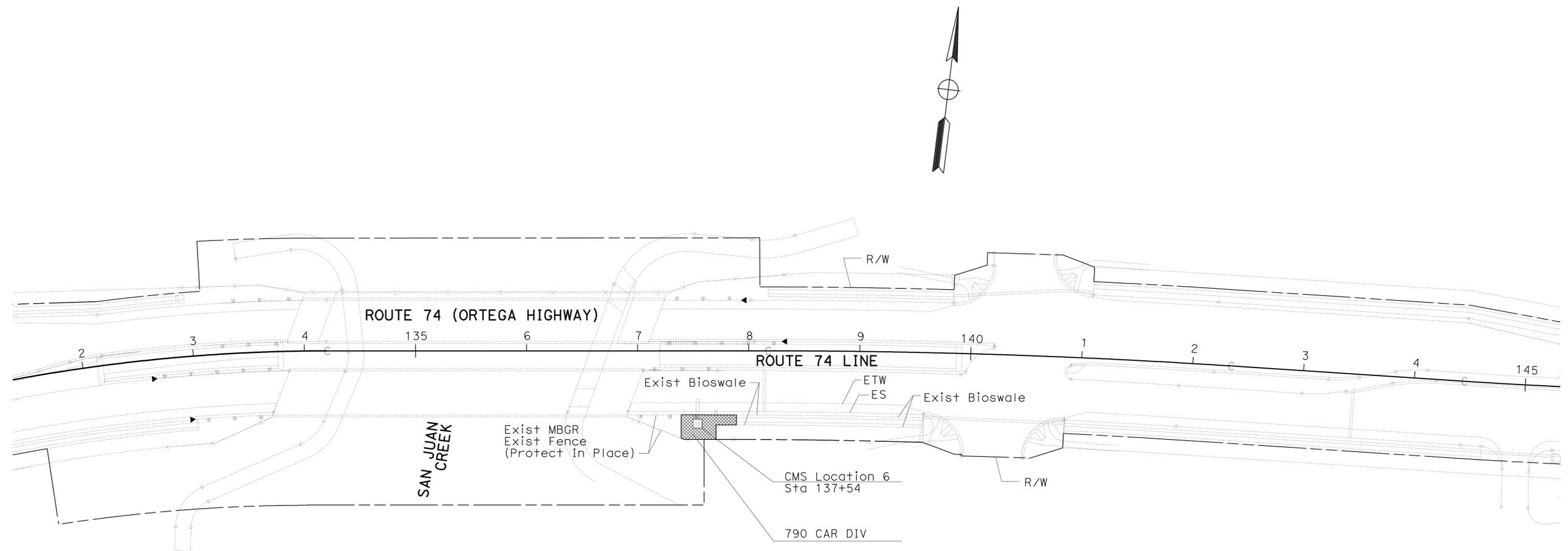
SCALE: 1" = 50'

**PP-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 ERIC DICKSON  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 VATHANA CHY  
 RONALD WONG  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	5,22,73,74	Var	32	70

Signature: *Ronald Wong* 06-08-10  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Ronald Wong*  
 1-31-12  
 Signature: *Ronald Wong*  
 06-08-10  
 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.



**PLANTING PLAN  
 LOCATION 6**

SCALE: 1" = 50'

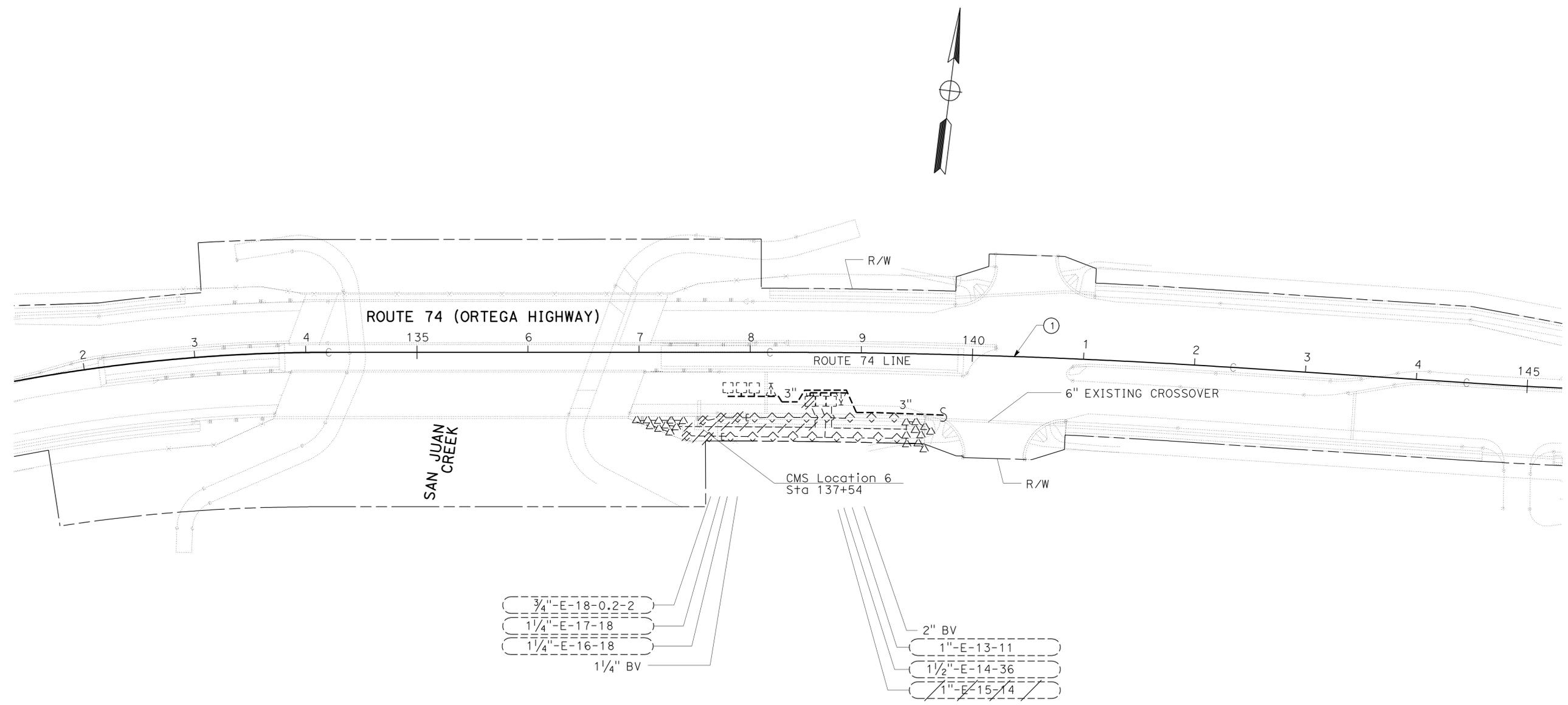
**PP-3**

THIS PLAN ACCURATE FOR PLANTING WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 ERIC DICKSON  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 VATHANA CHY  
 RONALD WONG  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22,73,74	Var	33	70

Signature: *Ronald Wong* 06-08-10  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Ronald Wong*  
 1-31-12  
 Renewal Date: 06-08-10  
 Date  
 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.



# IRRIGATION REMOVAL PLAN LOCATION 6

SCALE: 1" = 50'

IR-1

THIS PLAN ACCURATE FOR IRRIGATION REMOVAL WORK ONLY.

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

FUNCTIONAL SUPERVISOR  
 ERIC DICKSON

CALCULATED/DESIGNED BY  
 CHECKED BY

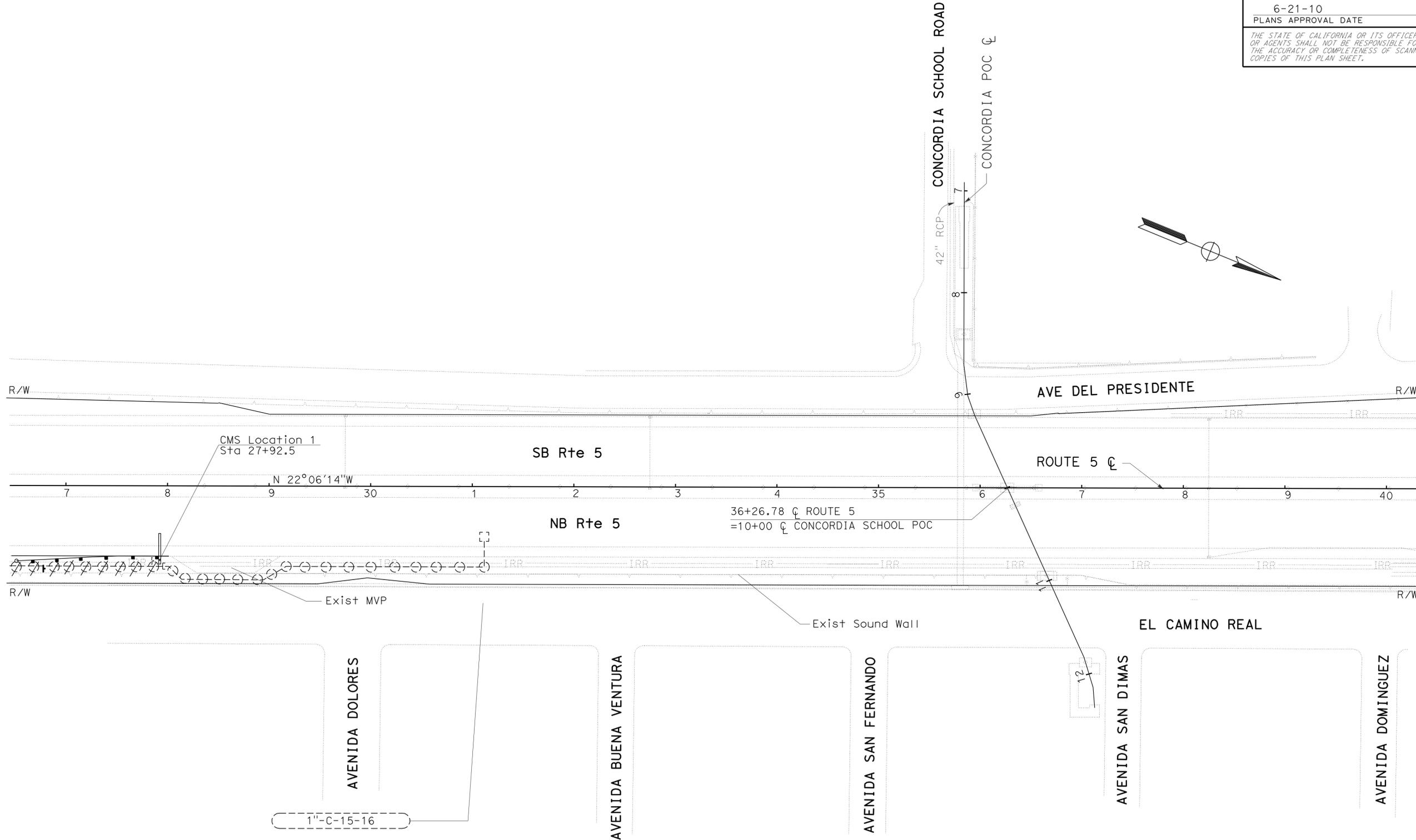
VATHANA CHY  
 RONALD WONG

REVISED BY  
 DATE REVISED

RW  
 02-24-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	34	70

*Ronald Wong* 02-26-10  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Ronald Wong*  
 Renewal Date: 1-31-12  
 Date: 02-26-10  
 PLANS APPROVAL DATE: 6-21-10  
 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.



**IRRIGATION PLAN  
 LOCATION 1**

SCALE: 1" = 50'

**IP-1**

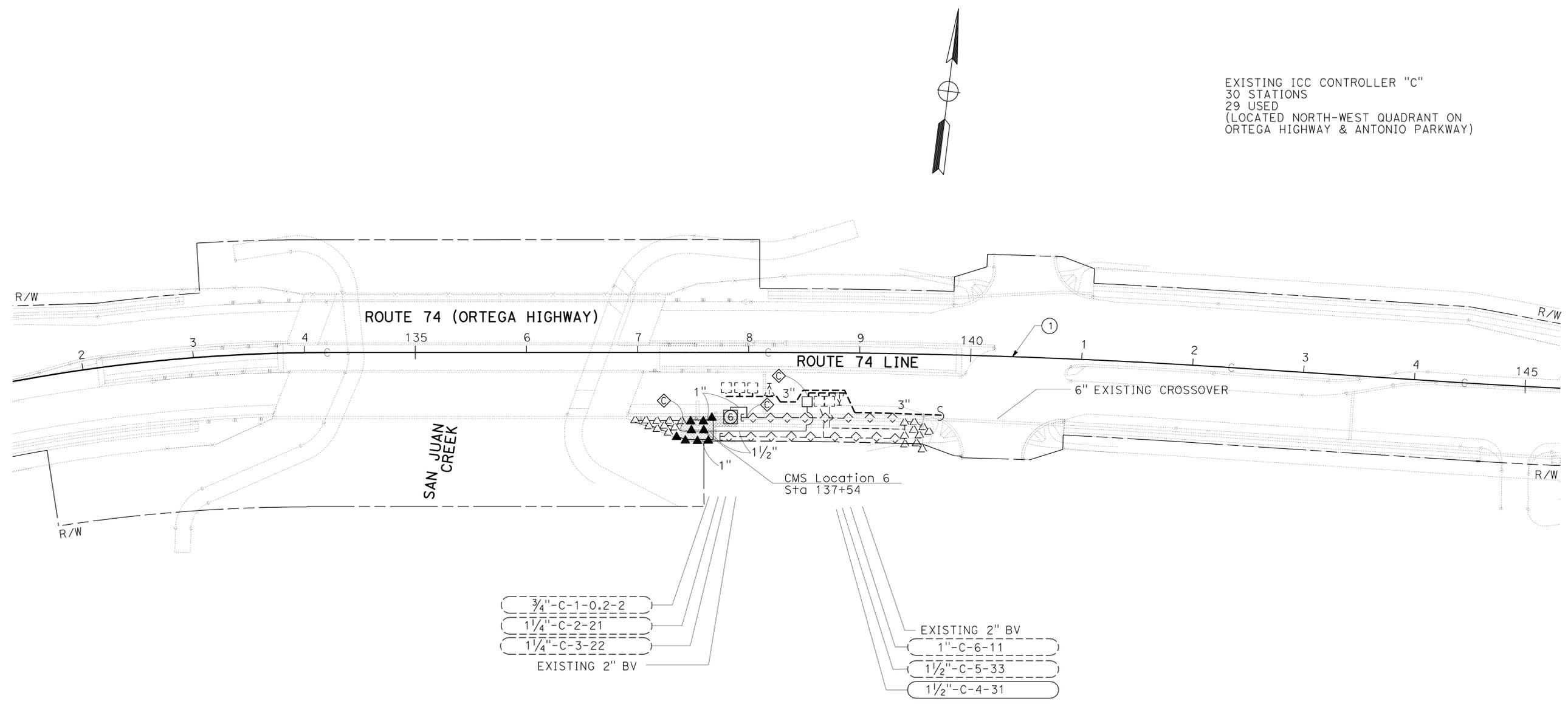
THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 ERIC DICKSON  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 VATHANA CHY  
 RONALD WONG  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	36	70

Signature: *Ronald Wong* 06-08-10  
 LICENSED LANDSCAPE ARCHITECT  
 Signature: *Ronald Wong*  
 1-31-12  
 Renewal Date: 06-08-10  
 Date  
 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.



EXISTING ICC CONTROLLER "C"  
 30 STATIONS  
 29 USED  
 (LOCATED NORTH-WEST QUADRANT ON  
 ORTEGA HIGHWAY & ANTONIO PARKWAY)

**IRRIGATION PLAN  
 LOCATION 6**

SCALE: 1" = 50'

**IP-3**

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	37	70

*Ronald Wong* 06-08-10  
 LICENSED LANDSCAPE ARCHITECT

6-21-10  
 PLANS APPROVAL DATE

Signature: *Ronald Wong*  
 1-31-12  
 Renewal Date: 06-08-10  
 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.

### SPRINKLER SCHEDULE

SYMBOL	TYPE	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (PSI)	PRESSURE COMPENSATING	PLUS/MINUS 5% ②				MATERIAL	NOZZLE SIZE (INCH)	INLET CONNECTION (NPT INCH)	POSITIVE-LOCKING ADJ ARC STOP	BACKSPASH PREVENTER	DIFFUSER PIN	DISTANCE CONTROL FLAP	ADJ DISCHARGE	RISER					SWING JOINT (TYPE) ⑤	RISER SUPPORT	SPRINKLER PROTECTOR (TYPE)	REMARKS
						GALLONS PER MINUTE (GPM)	GALLONS PER HOUR (GPH)	RADIUS (Ft)	WIDTH x LENGTH (Ft)									TYPE	PLASTIC	GALVANIZED	SIZE (IPS INCH)	HEIGHT (INCH)				
⑥	A-6	GEAR DRIVEN	P	30	—	3.5	—	38	—	PL	—	—	—	—	—	—	—	—	—	12	—	I	—	II	POP-UP WITH CONCRETE COLLAR	
▲	B-2	SHRUB SPRAY	P	30	—	0.51	—	10	—	PL	—	—	—	—	—	X	—	—	—	—	—	I	—	I	POP-UP ⑦ ⑧	

**ABBREVIATIONS**

- F — full circle  
 P — part circle  
 F/P — full/part circle  
 Q — quarter circle  
 T — third circle  
 H — half circle  
 TT — two third circle  
 TQ — three quarter circle  
 CST — center strip  
 SST — side strip  
 EST — end strip
- Ft — feet/foot  
 GPM — gallons per minute  
 GPH — gallons per hour  
 Adj — adjustable  
 PL — plastic  
 B/B — brass/bronze  
 B/PL — brass/plastic  
 B/B/PL — brass/bronze/plastic  
 NPT — national pipe thread  
 IPS — iron pipe size  
 PSI — pounds per square inch

X IN BOX DENOTES REQUIREMENT

**APPLICABLE WHEN CIRCLED BELOW:**

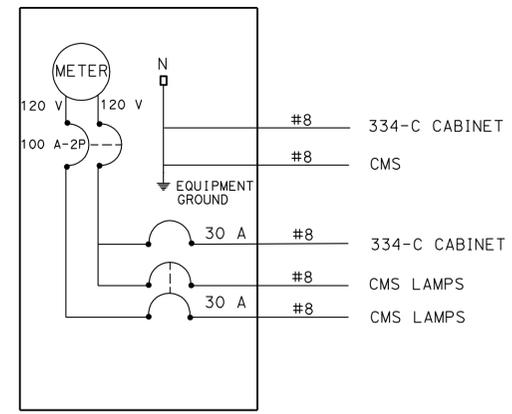
- 1 - See Special Provisions.
- 2 - If a pressure compensating device is specified, the discharge and radii shown reflect its use.
- 3 - Arc Stop shall be fitted with a nut and bolt.
- 4 - Vinyl-coated cast iron housing.
- ⑤ - Swing Joints required adjacent to shoulders, curbs, sidewalks, and dikes.
- 6 - Unless otherwise shown on plans.
- ⑦ - Sprinklers shall have internal check valves
- ⑧ - Sprinklers protectors type II are to be used for sprinklers adjacent to curbs, dikes, and shoulders where sprinklers are likely to be driven over.

**NOTE:** FOR ACCURATE RIGHT OF WAY AND ACCESS DATE, CONTACT RIGHT OF WAY ENGINEER AT THE DISTRICT OFFICE.

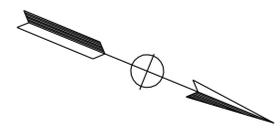
**CONDUCTOR AND CONDUIT SCHEDULE, SHEET E-1 AND E-2**

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8
#8	CMS LAMPS		3			3	3		
	CMS GROUND	1	1						
	334-C CABINET	2				2	2		
TYPE A CABLE	COMMUNICATION							1E	
TYPE B CABLE	COMMUNICATION							1E	
TYPE C CABLE	COMMUNICATION								
TYPE D CABLE	COMMUNICATION			1					
INNERDUCT	SIZE 1"								
PULL ROPE								2E	4E
**	HARNESS #4	1		1					
**	HARNESS #5	1		1					
CONDUIT SIZE		2-3"	3"	3"	2"	3"	2"	4"E	4"E

\*\* - STATE FURNISHED MATERIAL  
E - EXISTING



**CIRCUIT BREAKER DETAIL**  
**SERVICE EQUIPMENT ENCLOSURE**  
ID NO. 12-55-005-0-000.450



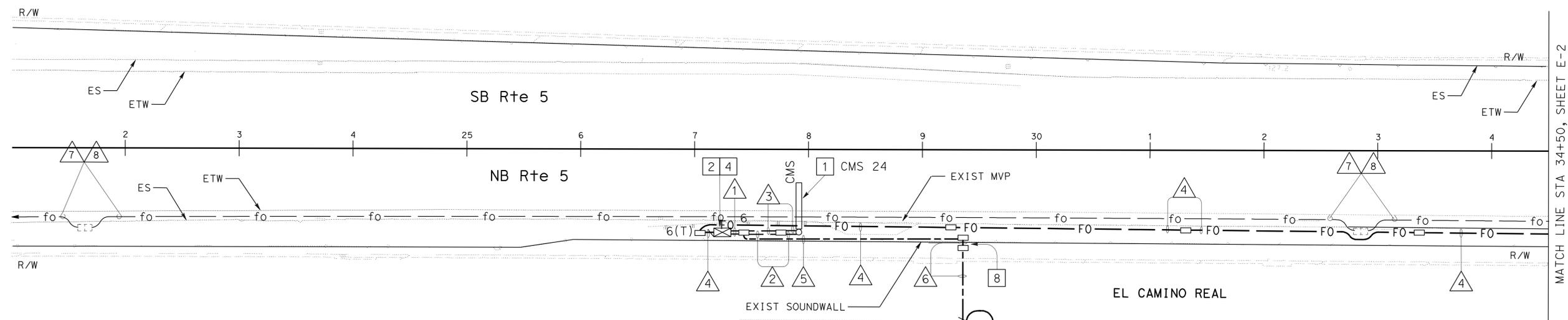
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	38	70

REGISTERED ELECTRICAL ENGINEER DATE 2/26/10  
S. SHAHRIARI No. E 13485 Exp. 9/30/10  
6-21-10 PLANS APPROVAL DATE

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

**ABBREVIATIONS (SHEETS E-1 THRU E-6)**

TYPE A CABLE	36 SINGLEMODE FIBER OPTIC CABLE
TYPE B CABLE	72 SINGLEMODE FIBER OPTIC CABLE
TYPE C CABLE	72 SINGLEMODE FIBER OPTIC CABLE
TYPE D CABLE	12 SINGLEMODE FIBER OPTIC CABLE
FDU	FIBER DISTRIBUTION UNIT
FODM	FIBER OPTIC DATA MODEM
SMFO	SINGLE MODE FIBER OPTIC
SDG&E	SAN DIEGO GAS AND ELECTRIC
SCE	SOUTHERN CALIFORNIA EDISON
TBO	TERMINAL BLOCK ZERO



**NOTES: (SHEET E-1 AND E-2)**

- 1 INSTALL STATE-FURNISHED MODEL 500 CHANGEABLE MESSAGE SIGN.
- 2 INSTALL STATE-FURNISHED MODEL 170 CONTROLLER ASSEMBLY WITH MODEL 334-C CABINET.
- 3 INSTALL 120/240 V, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE, ID No. 12-55-005-0-000.450  
METER: 100 A, 240 V, 2P, CB MAIN  
30 A, 120 V, 1P, CB(334-C CABINET)  
30 A, 240 V, 2P, CB(CMS LAMPS)
- 4 INSTALL FODM AND FDU FOR COMMUNICATION SYSTEM.
- 5 SPLICE FIBER NUMBERS 9 AND 10 FROM TYPE B CABLE TO TYPE D CABLE IN NEW SPLICE ENCLOSURE IN EXISTING SPLICE VAULT. REFER TO FIBER OPTIC SPLICING DETAIL ON SHEET E-12.
- 6 INSTALL CONDUIT WITH PULLROPE. CONDUIT SIZE PER UTILITY COMPANY. CONDUCTORS BY UTILITY COMPANY.
- 7 INSTALL TYPE H RISER.
- 8 SEE DETAIL ON SHEET E-15.
- 9 THE CONTROLLER CABINET, IN ITS ENTIRETY, SHALL BE INSTALLED NOT TO EXCEED 50 FEET FROM FACE OF CMS SIGN FOUNDATION.

**LEGEND: (SHEETS E-1 THRU E-9)**

- EXISTING COMMUNICATION PULL BOX
- FO NEW FIBER OPTIC CONDUIT
- fo EXISTING FIBER OPTIC CONDUIT
- EXISTING SPLICE VAULT
- DB NEW DIRECT BURIAL CABLE

**COMMUNICATION SYSTEM**  
**CHANGEABLE MESSAGE SIGN SYSTEM**  
**(LOCATION 1)**

SCALE: 1" = 50'

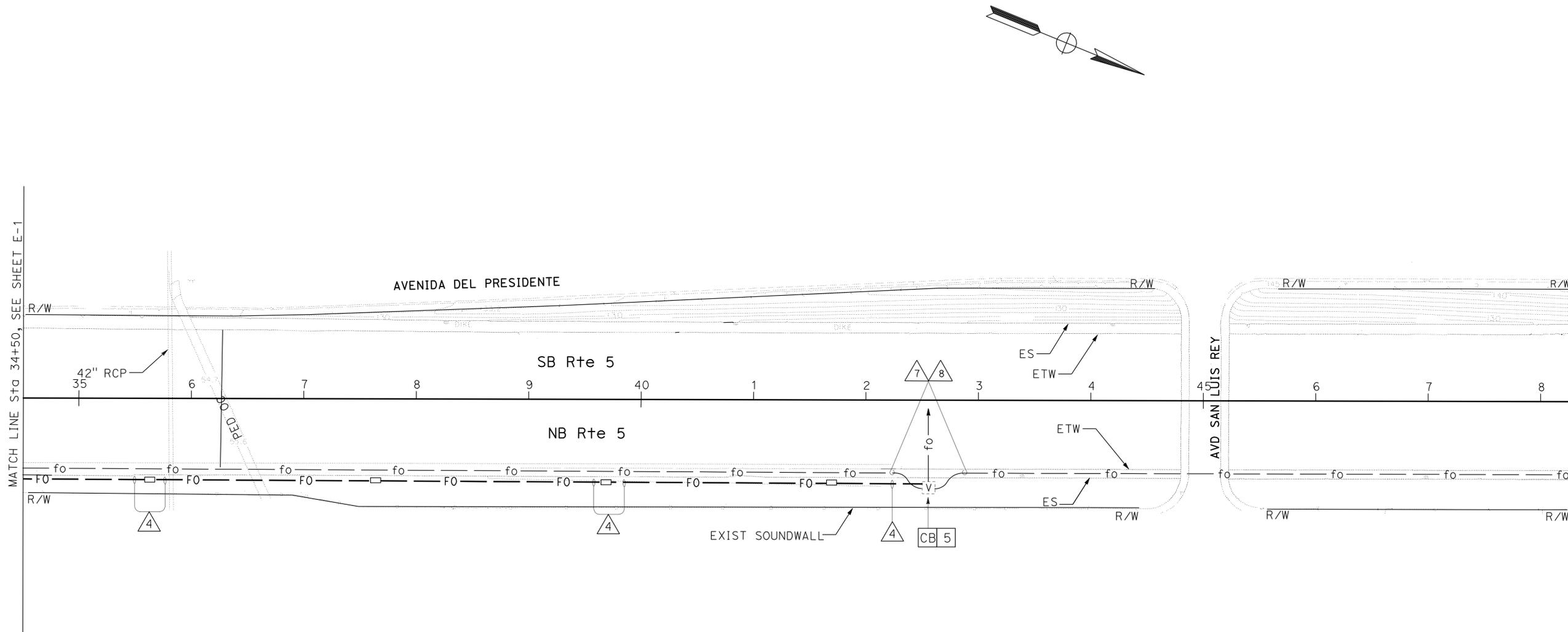
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	39	70
			REGISTERED ELECTRICAL ENGINEER	DATE	
			S. SHAHRIARI	2/26/10	
			PLANS APPROVAL DATE		
			6-21-10		
			REGISTERED PROFESSIONAL ENGINEER	No. E 13485	Exp. 9/30/10
			STATE OF CALIFORNIA		
<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>					

**NOTE:**

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

SEE SHEET E-1 FOR NOTES, CONDUCTOR RUNS AND LEGEND ON THIS SHEET.



**COMMUNICATION SYSTEM  
CHANGEABLE MESSAGE SIGN SYSTEM  
(LOCATION 1)**  
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR	DATE
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	SHAHRAM SHAHRIARI	Anthony C Fernandez	02-17-10
		CHECKED BY	Vanessa Truong	

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trmikes1  
DGN FILE => c0H232ua002.dgn

CU 12390

EA 0H2321

LAST REVISION | DATE PLOTTED => 31-JAN-2011  
02-23-10 | TIME PLOTTED => 11:28

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

**NOTES: (THIS SHEET)**

- 1 INSTALL STATE-FURNISHED MODEL 500 CHANGEABLE MESSAGE SIGN (CMS No. 25).
- 2 INSTALL STATE-FURNISHED MODEL 170 CONTROLLER ASSEMBLY WITH MODEL 334-C CABINET.
- 3 EXISTING 120/240 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. ID No. 12-055-022-0-001.640 (SCE).  
METER: 100 A, 240 V, 2P CB MAIN  
30 A, 120 V, IP, CB (TMS)  
30 A, 120 V, IP, CB (TRAFFIC CENSUS STATION)  
ADD: 30 A, 120 V, IP, CB (334-C CABINET)  
30 A, 240 V, 2P, CB (CMS LAMPS)
- 4 INSTALL FODM AND FDU FOR COMMUNICATION SYSTEM.
- 5 SPLICE FIBER NUMBERS 13 AND 14 FROM TYPE C CABLE TO TYPE D CABLE IN NEW SPLICE ENCLOSURE IN EXISTING SPLICE VAULT. REFER TO FIBER OPTIC SPLICING DETAIL ON SHEET E-12.
- 6 SEE SHEET E-1 FOR LEGEND AND ABBREVIATIONS.
- 7 THE CONTROLLER CABINET, IN ITS ENTIRETY, SHALL BE INSTALLED NOT TO EXCEED 50 FEET FROM FACE OF CMS SIGN FOUNDATION.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	40	70

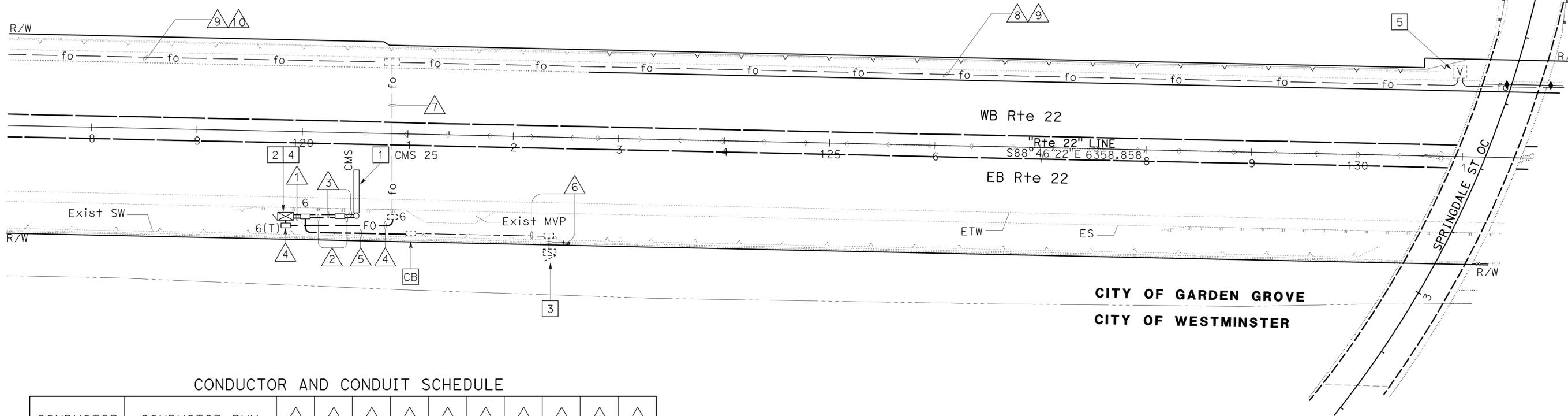
REGISTERED ELECTRICAL ENGINEER DATE 2/26/10

6-21-10 PLANS APPROVAL DATE

S. SHAHRIARI No. E 13485 Exp. 9/30/10

REGISTERED PROFESSIONAL ENGINEER 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.



CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8	9	10
#8	CMS LAMPS		3			3	3				
	CMS GROUND	1	1			1					
	334-C CABINET	2				2	2				
	SERVICE - TMS						2E				
	SERVICE - TCS						2E				
TYPE A CABLE	COMMUNICATION								1E		1E
TYPE B CABLE	COMMUNICATION								1E		1E
TYPE C CABLE	COMMUNICATION								1E		1E
TYPE D CABLE	COMMUNICATION				1			1	2E	1	2E
INNERDUCT	SIZE 1"								4E		4E
PULL ROPE										1E	1E
**	CMS HARNESS #4	1		1							
**	CMS HARNESS #5	1		1							
	CONDUIT SIZE	2-3"	3"	3"	2"	3"	2"E	3"E	4"E	4"E	4"E

\*\* - STATE FURNISHED MATERIAL  
E - EXISTING

**COMMUNICATION SYSTEM  
CHANGEABLE MESSAGE SIGN SYSTEM  
(LOCATION 2)**

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**NOTE:**

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

**NOTES: (THIS SHEET)**

- 1 INSTALL STATE-FURNISHED MODEL 500 CHANGEABLE MESSAGE SIGN.
- 2 INSTALL STATE-FURNISHED MODEL 170 CONTROLLER ASSEMBLY WITH MODEL 334-C CABINET.
- 3 INSTALL 120/240 V, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. ID No. 12-55-073-0-014.840 (SCE).  
METER: 100 A, 240 V, 2P, CB MAIN  
30 A, 120 V, 1P, CB (334-C CABINET)  
30 A, 240 V, 2P, CB (CMS LAMPS)
- 4 INSTALL FDU, IP DATA ENCODER, AND ETHERNET EDGE SWITCH FOR COMMUNICATION SYSTEM.
- 5 SPLICE FIBER NUMBERS 19 AND 20 FROM TYPE C CABLE TO TYPE D CABLE IN NEW SPLICE ENCLOSURE IN EXISTING SPLICE VAULT. REFER TO FIBER OPTIC SPLICING DETAIL ON SHEET E-13.
- 6 INSTALL CONDUIT WITH PULL ROPE. CONDUIT SIZE PER UTILITY COMPANY. CONDUCTORS BY UTILITY COMPANY.
- 7 EXISTING SYSTEM NOT SHOWN FOR CLARITY.
- 8 INSTALL PULL BOX PER UTILITY COMPANY.
- 9 SEE SHEET E-1 FOR LEGEND AND ABBREVIATIONS.
- 10 THE CONTROLLER CABINET, IN ITS ENTIRETY, SHALL BE INSTALLED NOT TO EXCEED 50 FEET FROM FACE OF CMS SIGN FOUNDATION.

**CONDUCTOR AND CONDUIT SCHEDULE**

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5
#8	CMS LAMPS		3			3
	CMS GROUND	1	1			1
	334-C CABINET	2				2
TYPE D CABLE	COMMUNICATION				1	
**	HARNESS #4	1		1		
**	HARNESS #5	1		1		
CONDUIT SIZE		2-3"	3"	3"	2"	2"

\*\* - STATE FURNISHED MATERIAL

**EXISTING CONDUCTOR AND CONDUIT SCHEDULE**

CONDUIT	CONDUIT RUN	INNERDUCT	CABLE TYPE	6	7
4"C WITH 4-1" INNERDUCT	T1	#1	25PR#22	*	*
		#2	PULLROPE	*	*
		#3	PULLROPE	1	1
		#4	PULLROPE	1	1
4"C W/2-1" INNERDUCT	T2	#1	PULLROPE	1	1
		#2	PULLROPE	1	1
4"C W/2-1" INNERDUCT	C1	#1	PULLROPE	1	1
		#2	TYPE C	1	1
4"C	P1	NONE	TCA POWER	**	**

\* - EXISTING TCA CABLES  
\*\* - EXISTING TCA POWER CONDUCTORS

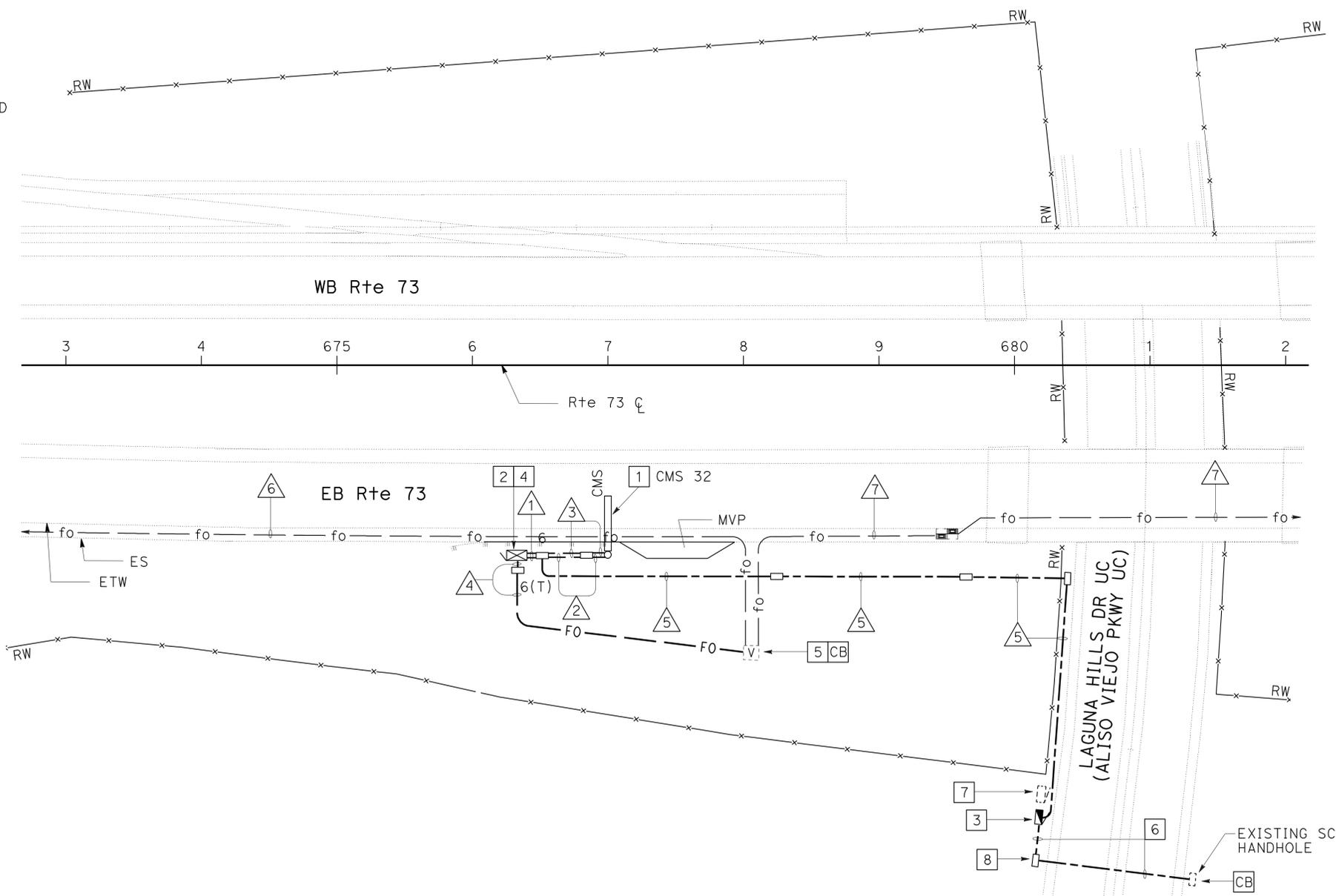
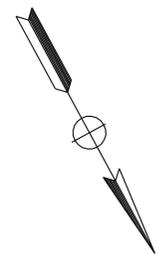
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	41	70

REGISTERED ELECTRICAL ENGINEER DATE 2/26/10

6-21-10 PLANS APPROVAL DATE

S. SHAHRIARI No. E 13485 Exp. 9/30/10

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.



**COMMUNICATION SYSTEM  
CHANGEABLE MESSAGE SIGN SYSTEM  
(LOCATION 3)**  
SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trmikes1  
DGN FILE => c0H232ua004.dgn

CU 12390

EA 0H2321

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
FUNCTIONAL SUPERVISOR SHAHRAM SHAHRIARI  
REVISOR: Anthony C Fernandez  
DATE REVISED: 02-17-10  
CHECKED BY: Vanessa Truong

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
 CALCULATED/DESIGNED BY: ANTHONY C FERNANDEZ  
 CHECKED BY: VANESSA TRUONG  
 REVISED BY: ANTHONY C FERNANDEZ  
 DATE REVISED: 02-17-10

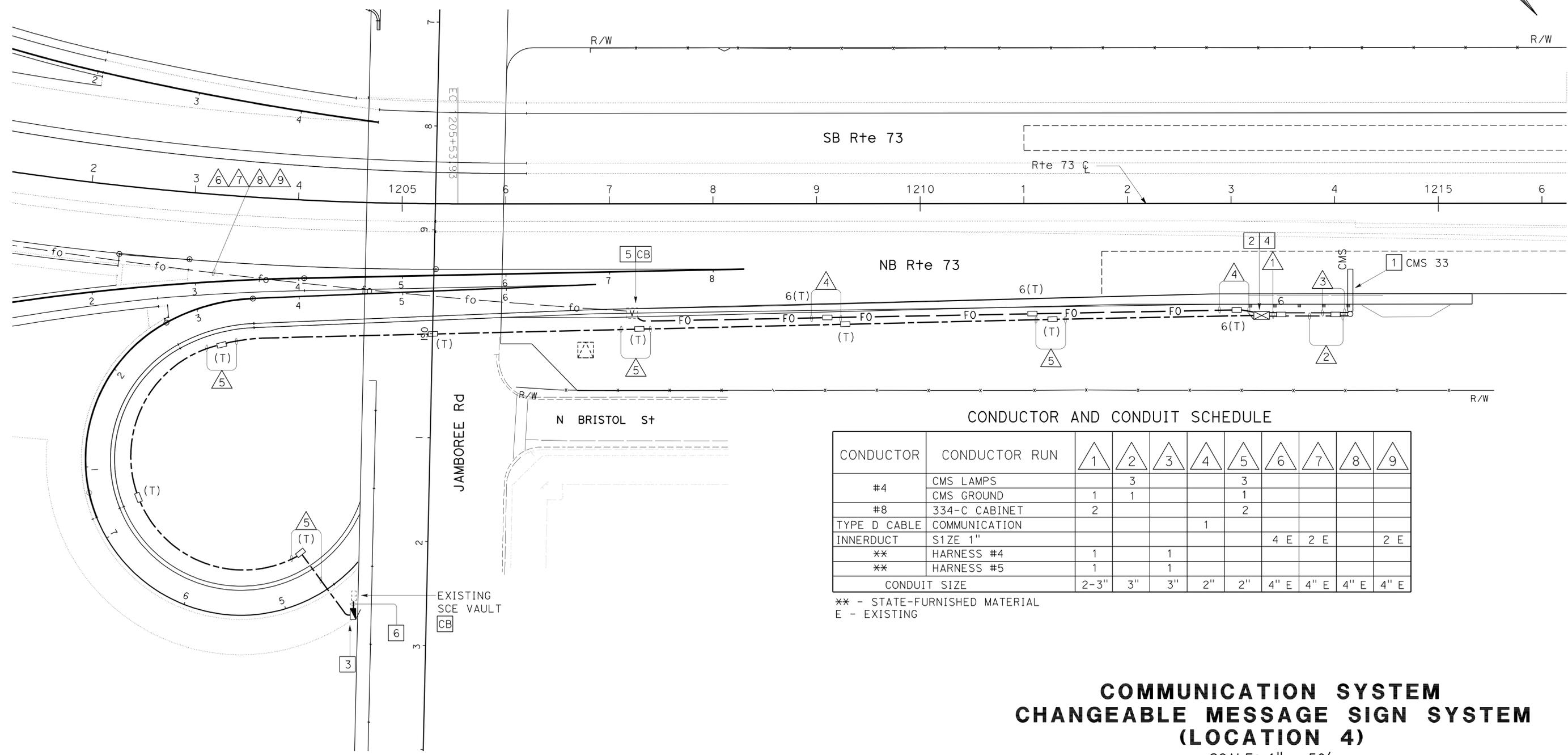
**NOTE:**  
 FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,  
 CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**NOTES: (THIS SHEET)**

- 1 INSTALL STATE-FURNISHED MODEL 500 CHANGEABLE MESSAGE SIGN (CMS No. 33).
- 2 INSTALL STATE-FURNISHED MODEL 170 CONTROLLER ASSEMBLY WITH MODEL 334-C CABINET.
- 3 INSTALL 120/240 V, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. ID No. 12-55-073-0-024.922 (SCE).  
 METER: 100 A, 240 V, 2P, CB MAIN  
 30 A, 120 V, 1P, CB (334-C CABINET)  
 30 A, 240 V, 2P, CB (CMS LAMPS)
- 4 INSTALL FDU, IP DATA ENCODER, AND ETHERNET EDGE SWITCH FOR COMMUNICATION SYSTEM.
- 5 SPLICE FIBER NUMBERS 19 AND 20 FROM TYPE C CABLE TO TYPE D CABLE IN NEW SPLICE ENCLOSURE IN EXISTING SPLICE VAULT. REFER TO FIBER OPTIC SPLICING DETAIL ON SHEET E-13.
- 6 INSTALL CONDUIT WITH PULLROPE. CONDUIT SIZE PER UTILITY COMPANY. CONDUCTORS BY UTILITY COMPANY.
- 7 SEE SHEET E-1 FOR LEGEND AND ABBREVIATIONS.
- 8 THE CONTROLLER CABINET, IN ITS ENTIRETY, SHALL BE INSTALLED NOT TO EXCEED 50 FEET FROM FACE OF CMS SIGN FOUNDATION.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	42	70

REGISTERED ELECTRICAL ENGINEER: *S. Shaahriari* DATE: 2/26/10  
 PLANS APPROVAL DATE: 6-21-10  
 No. E 13485  
 Exp. 9/30/10  
 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.



**CONDUCTOR AND CONDUIT SCHEDULE**

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8	9
#4	CMS LAMPS		3			3				
#8	334-C CABINET	1	1			1				
TYPE D CABLE	COMMUNICATION				1					
INNERDUCT	SIZE 1"						4 E	2 E		2 E
**	HARNESS #4	1		1						
**	HARNESS #5	1		1						
	CONDUIT SIZE	2-3"	3"	3"	2"	2"	4" E	4" E	4" E	4" E

\*\* - STATE-FURNISHED MATERIAL  
 E - EXISTING

**COMMUNICATION SYSTEM  
 CHANGEABLE MESSAGE SIGN SYSTEM  
 (LOCATION 4)**

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

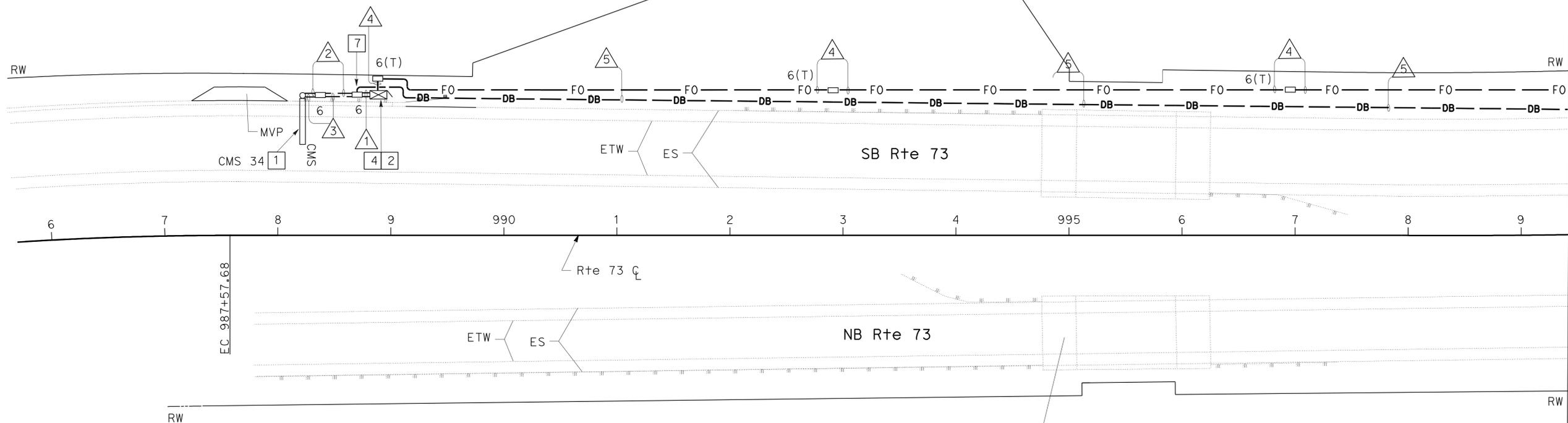
**NOTE:**

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

**CONDUCTOR AND CONDUIT SCHEDULE,  
SHEET E-6, E-7, E-8, AND E-9**

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5
#1	CMS LAMPS		3			3
	CMS GROUND	1	1			
	334-C CABINET	2				2
TYPE D CABLE	COMMUNICATION				1	
**	HARNESS #4	1		1		
**	HARNESS #5	1		1		
CONDUIT SIZE		2-3"	3"	3"	2"	

\*\* - STATE-FURNISHED MATERIAL



**NOTES: (SHEETS E-6 THRU E-9)**

- 1 INSTALL STATE-FURNISHED MODEL 500 CHANGEABLE MESSAGE SIGN.
- 2 INSTALL STATE-FURNISHED MODEL 170 CONTROLLER ASSEMBLY WITH MODEL 334-C CABINET.
- 3 INSTALL 120/240 V, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. ID No. 12-55-073-0-021,341 (SCE).  
METER: 100 A, 240 V, 2P,CB (MAIN)  
30 A, 120 V, 1P, CB (334-C CABINET)  
30 A, 240 V, 2P, CB (CMS LAMPS)
- 4 INSTALL FDU, IP DATA ENCODER, AND ETHERNET EDGE SWITCH FOR COMMUNICATION SYSTEM.
- 5 SPLICE FIBER NUMBERS 19 AND 20 FROM TYPE C CABLE TO TYPE D CABLE IN NEW SPLICE ENCLOSURE IN EXISTING SPLICE VAULT. REFER TO FIBER OPTIC SPLICING DETAIL ON SHEET E-13.
- 6 INSTALL CONDUIT WITH PULL ROPE. CONDUIT SIZE PER UTILITY COMPANY. CONDUCTORS BY UTILITY COMPANY.
- 7 SPLICE #1/0 TO #2 WIRE.
- 8 EXISTING 4"C, 2 SMFO, 1-TYPE D CABLE. ADD 1-TYPE D CABLE.
- 9 SEE SHEET E-1 FOR LEGEND AND ABBREVIATIONS.
- 10 THE CONTROLLER CABINET, IN ITS ENTIRETY, SHALL BE INSTALLED NOT TO EXCEED 50 FEET FROM FACE OF CMS SIGN FOUNDATION.

**COMMUNICATION SYSTEM  
CHANGEABLE MESSAGE SIGN SYSTEM  
(LOCATION 5)**

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	43	70

REGISTERED ELECTRICAL ENGINEER DATE 2/26/10

6-21-10 PLANS APPROVAL DATE

S. SHAHRIARI No. E. 13485 Exp. 9/30/10

REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA ELECTRICAL

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.

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

FUNCTIONAL SUPERVISOR SHAHRAM SHAHRIARI  
REVISOR: Anthony C Fernandez, Vanessa Truong  
MATCH LINE STA 999+50, SHEET E-7

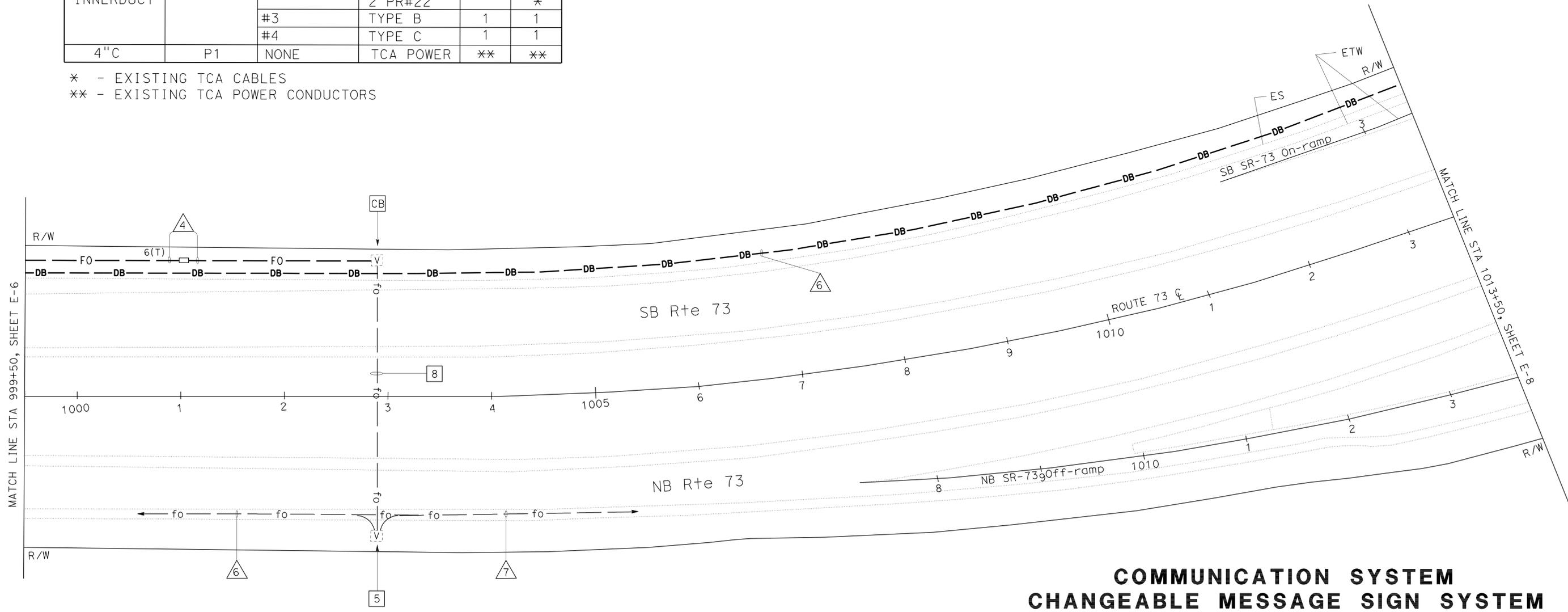
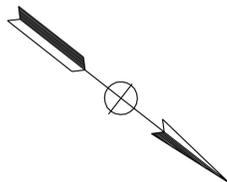
**NOTES:**

- SEE SHEET E-6 FOR NOTES AND CONDUCTOR RUNS ON THIS SHEET.
- FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**EXISTING CONDUCTOR AND CONDUIT SCHEDULE**

CONDUIT	CONDUIT RUN	INNERDUCT	CABLE TYPE	△6	△7
4" C W/4-1" INNERDUCT	T1	#1	25 PR#22	*	*
		#2	PULL ROPE	1	1
		#3	PULL ROPE	1	1
		#4	PULL ROPE	1	1
4" C W/2-1" INNERDUCT	T2	#1	60 SMFO	*	*
		#2	PULL ROPE	1	1
4" C W/2-1" INNERDUCT	C1	#1	PULL ROPE	1	1
			2 SMFO CCTV		*
		#2	PULL ROPE	1	
			2 PR#22		*
#3	TYPE B	1	1		
#4	TYPE C	1	1		
4" C	P1	NONE	TCA POWER	**	**

- \* - EXISTING TCA CABLES
- \*\* - EXISTING TCA POWER CONDUCTORS

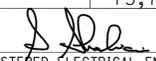
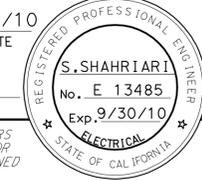


**COMMUNICATION SYSTEM  
CHANGEABLE MESSAGE SIGN SYSTEM  
(LOCATION 5)**

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

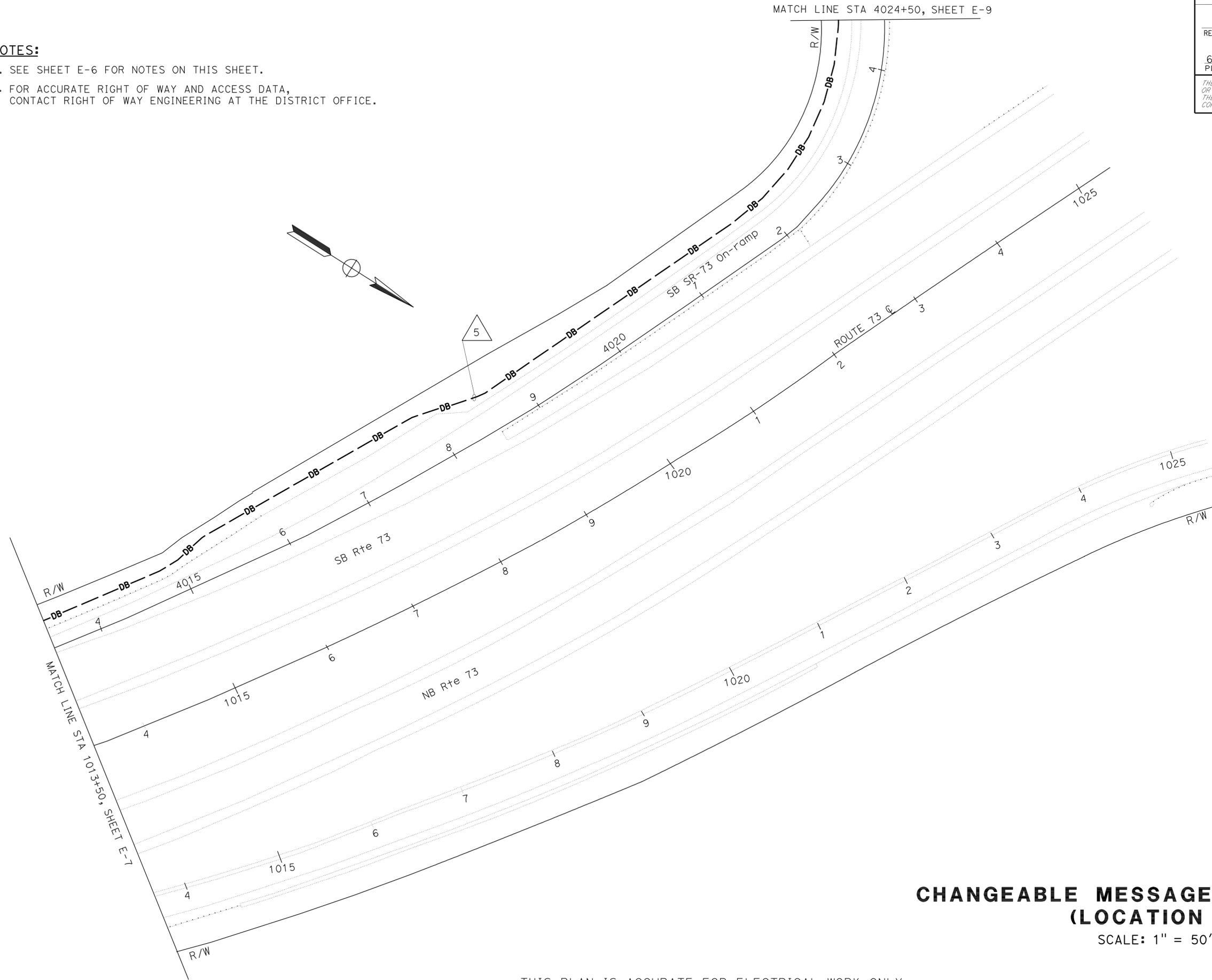
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
 REVISIONS: 02-17-10  
 DESIGNED BY: ANTHONY C FERNANDEZ  
 CHECKED BY: VANESSA TRUONG

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	45	70
 REGISTERED ELECTRICAL ENGINEER			2/26/10 DATE		
6-21-10 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:**

- SEE SHEET E-6 FOR NOTES ON THIS SHEET.
- FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

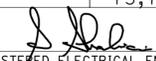
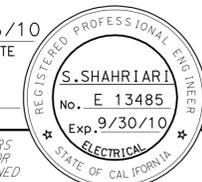
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR	DATE
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	SHAHRAM SHAHRIARI	Anthony C Fernandez	02-17-10
		CHECKED BY	DESIGNED BY	DATE
		Vanessa Truong	Vanessa Truong	02-17-10



**CHANGEABLE MESSAGE SIGN SYSTEM  
(LOCATION 5)**  
SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

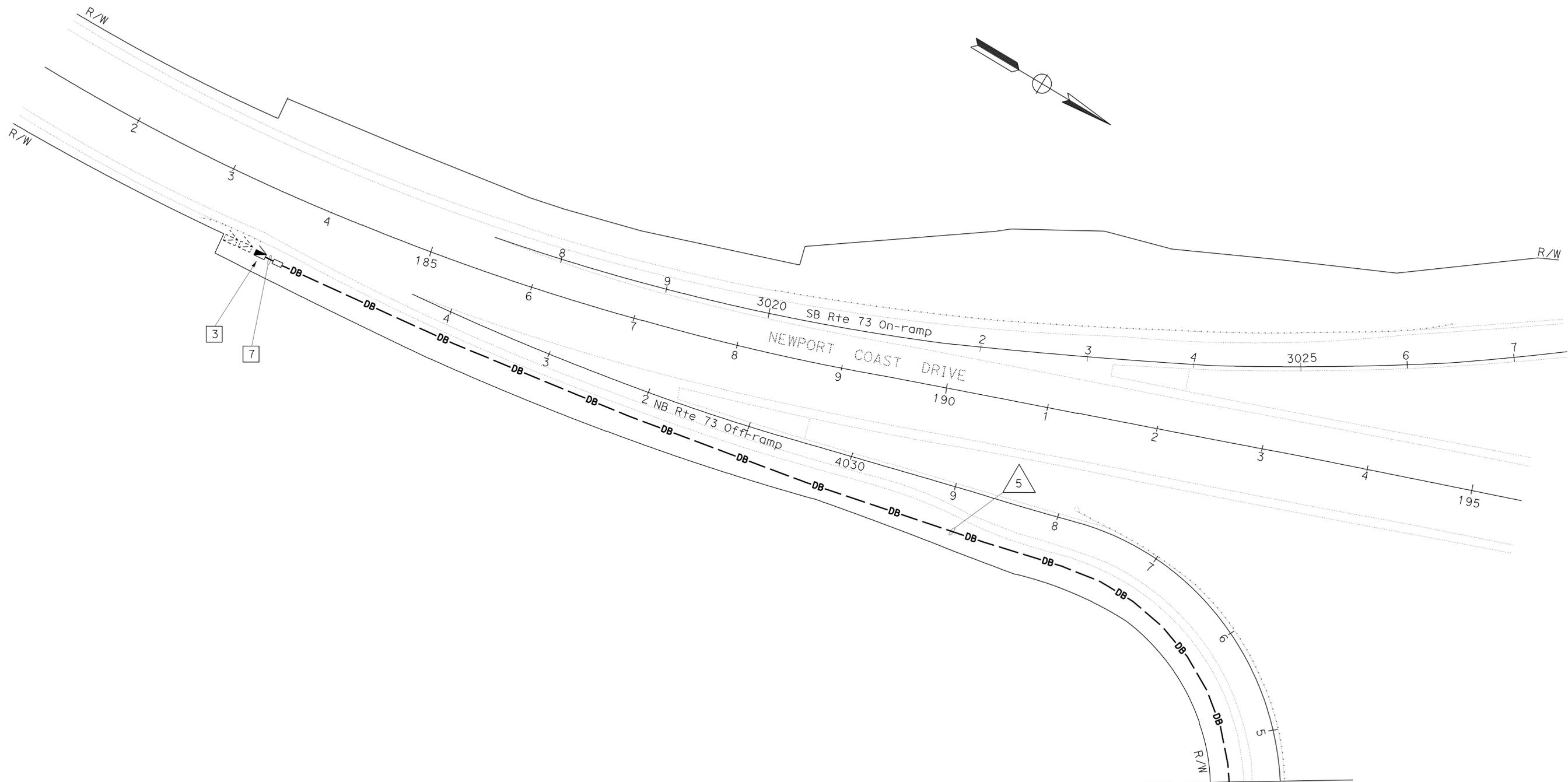


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	46	70
 REGISTERED ELECTRICAL ENGINEER			DATE	2/26/10	
6-21-10 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES:**

- SEE SHEET E-6 FOR NOTES ON THIS SHEET.
- FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	Anthony C. Fernandez	02-17-10
		Vanessa Truong	



MATCH LINE STA 4024+50, SHEET E-8

**CHANGEABLE MESSAGE SIGN SYSTEM  
(LOCATION 5)**  
SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trmikes1  
DGN FILE => c0H232ua009.dgn

CU 12390

EA 0H2321

BORDER LAST REVISED 4/11/2008

LAST REVISION | DATE PLOTTED => 31-JAN-2011  
02-23-10 TIME PLOTTED => 11:29

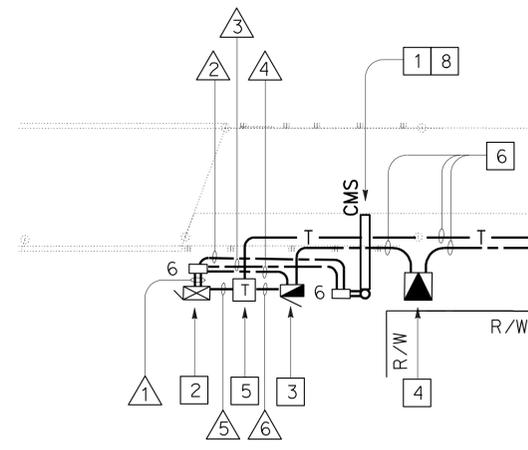
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
 CHECKED BY: VANESSA TRUONG  
 DESIGNED BY: ANTHONY C. FERNANDEZ  
 REVISIONS: 05-03-10  
 REVISIONS: 05-03-10

**NOTE:**

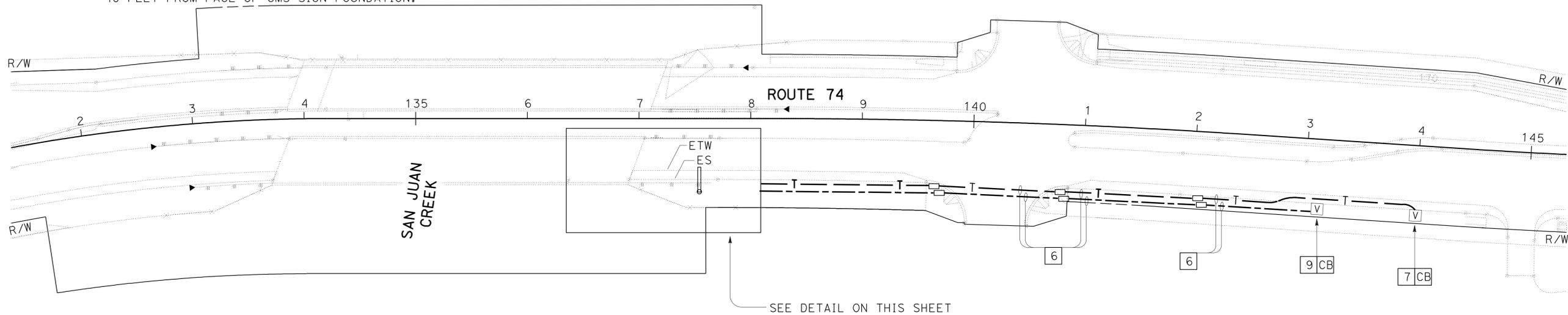
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,  
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**NOTES: (THIS SHEET ONLY)**

- 1 INSTALL STATE-FURNISHED MODEL 510 CHANGEABLE MESSAGE SIGN (CMS No. 35).
- 2 INSTALL STATE-FURNISHED MODEL 170 CONTROLLER ASSEMBLY WITH MODEL 334-C CABINET.
- 3 INSTALL 120/240 V, TYPE III-BF ID No. 12-074-0-001.960 (SDG&E)  
 METER: 100 A, 240 V, 2P, CB MAIN  
 20 A, 120V, 1P, CB (TDC)  
 30 A, 120 V, 1P, CB (334-C CABINET)  
 30 A, 240 V, 2P, CB (CMS LAMP)
- 4 NEW TRANSFORMER TO BE INSTALLED BY UTILITY COMPANY (SDG&E).
- 5 INSTALL TYPE C TELEPHONE DEMARCATION CABINET.
- 6 INSTALL CONDUIT WITH PULLROPE. CONDUIT SIZE PER UTILITY COMPANY. CONDUCTORS BY UTILITY COMPANY.
- 7 EXISTING AT&T VAULT.
- 8 REFER TO SHEETS SD-1, SD-2, AND SD-3.
- 9 EXISTING SDG&E VAULT.
- 10 THE CONTROLLER CABINET, IN ITS ENTIRETY, SHALL BE INSTALLED NOT TO EXCEED 40 FEET FROM FACE OF CMS SIGN FOUNDATION.



**DETAIL**  
NO SCALE



**CONDUCTOR AND CONDUIT SCHEDULE**

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
#8	CMS LAMPS		3		3		
	CMS GROUND	1	1				
#10	334-C CABINET	2			2		
	TDC POWER						2
4#18	TELEPHONE CABLE					1	
**	HARNESS #4	1		1			
**	HARNESS #5	1		1			
CONDUIT SIZE		2-3"	3"	3"	3"	1 1/2"	2"

\*\* - STATE FURNISHED MATERIAL

**CHANGEABLE MESSAGE SIGN SYSTEM  
(LOCATION 6)**

SCALE: 1" = 50'

**E-10**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

RELATIVE BORDER SCALE  
IS IN INCHES

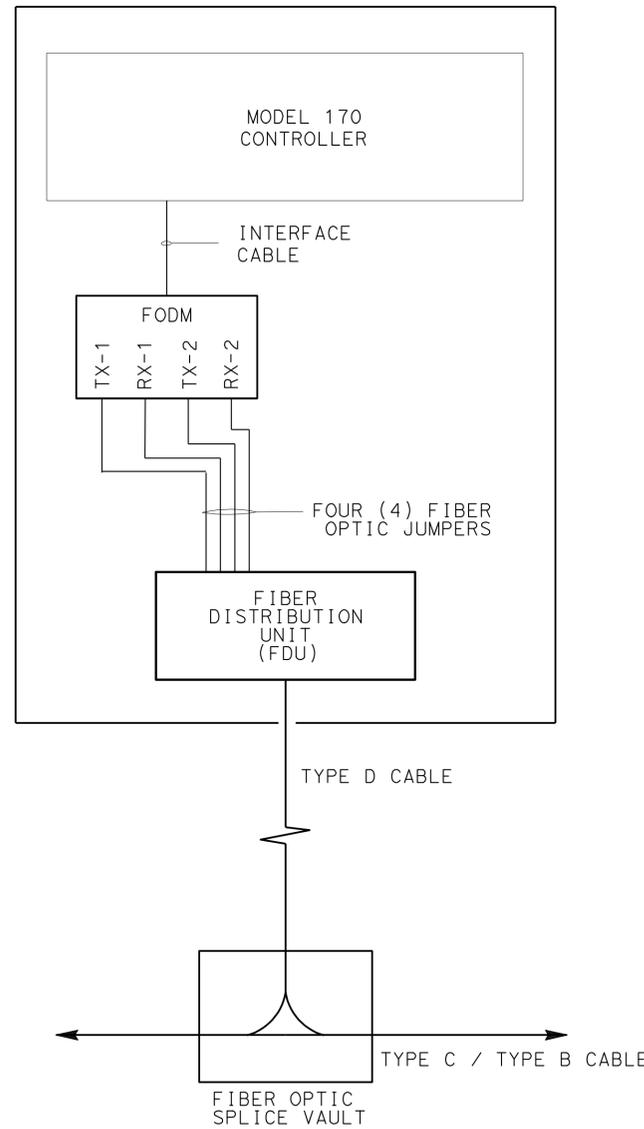


USERNAME => frmikesl  
DGN FILE => c0h232ua010.dgn

CU 12390

EA 0H2321

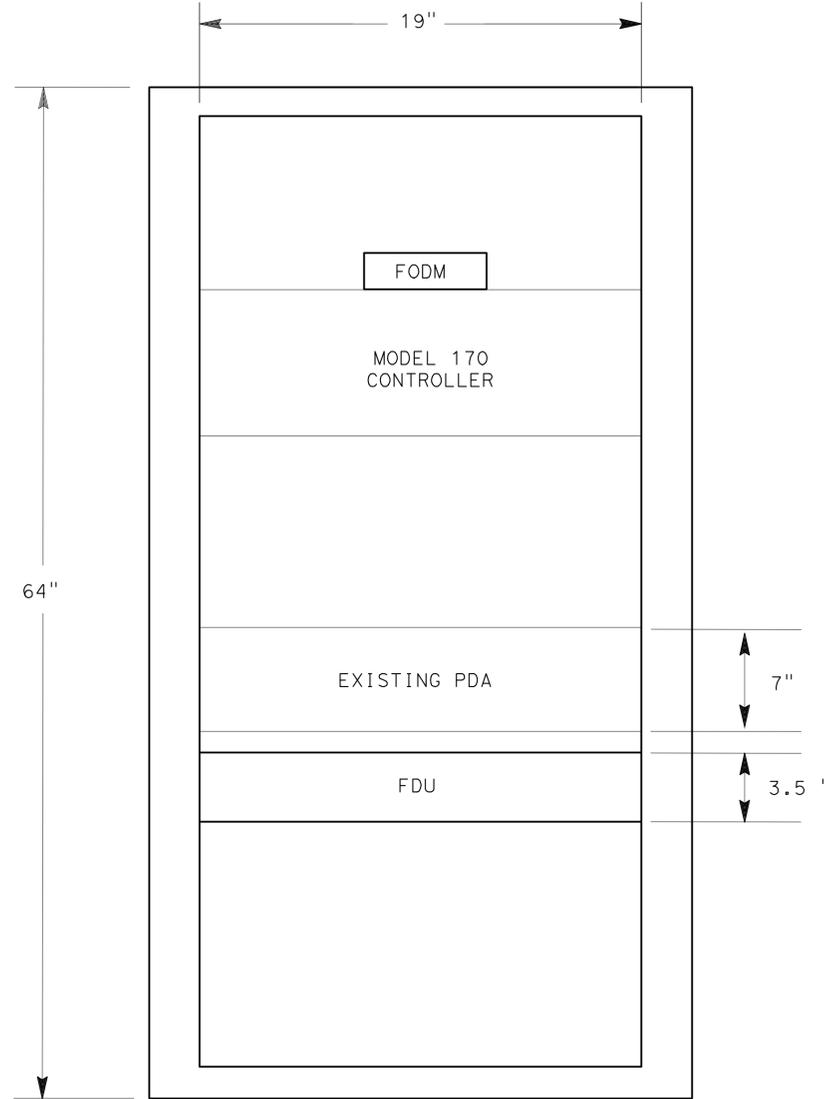
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL SYSTEM  
 FUNCTIONAL SUPERVISOR HENRY PHAM  
 REVISIONS: 02-17-10  
 REVISOR: Hussein Kalakech / Pauline Nguyen  
 CHECKED BY: Pauline Nguyen  
 DESIGNED BY: Pauline Nguyen  
 DATE: 02-17-10



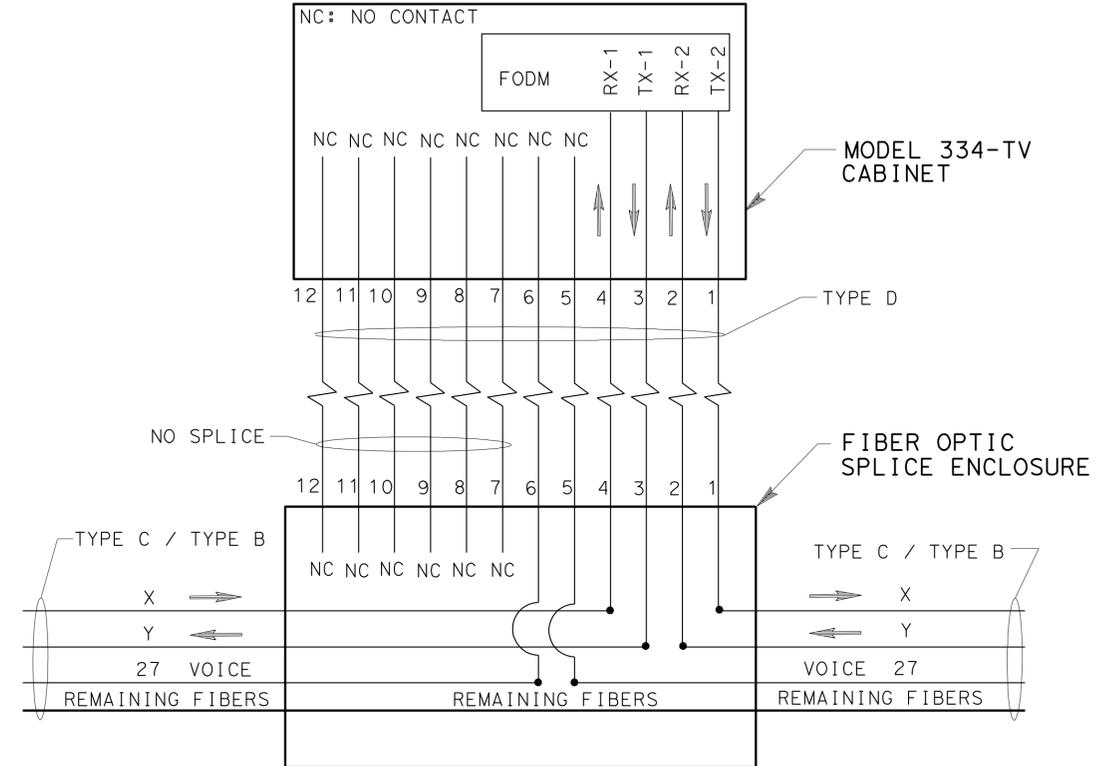
SCHEMATIC

**LEGEND:**

- FODM : FIBER OPTIC DATA MODEM; IFS MODEL D9130.
- TX-1 : TRANSMIT FIBER IN DIRECTION OF MASTER FODM
- RX-1 : RECEIVE FIBER IN DIRECTION OF MASTER FODM
- TX-2 : TRANSMIT FIBER IN OPPOSITE DIRECTION OF MASTER FODM
- RX-2 : RECEIVE FIBER IN OPPOSITE DIRECTION OF MASTER FODM



EQUIPMENT RACK LAYOUT

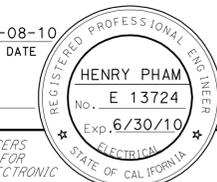


TYPICAL CONNECTION OF TYPE D TO TYPE C / TYPE B

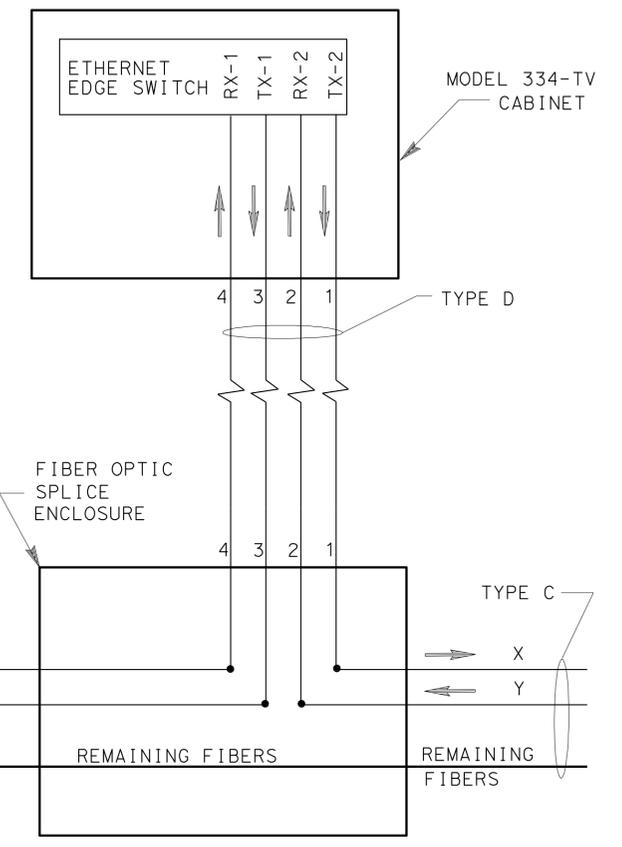
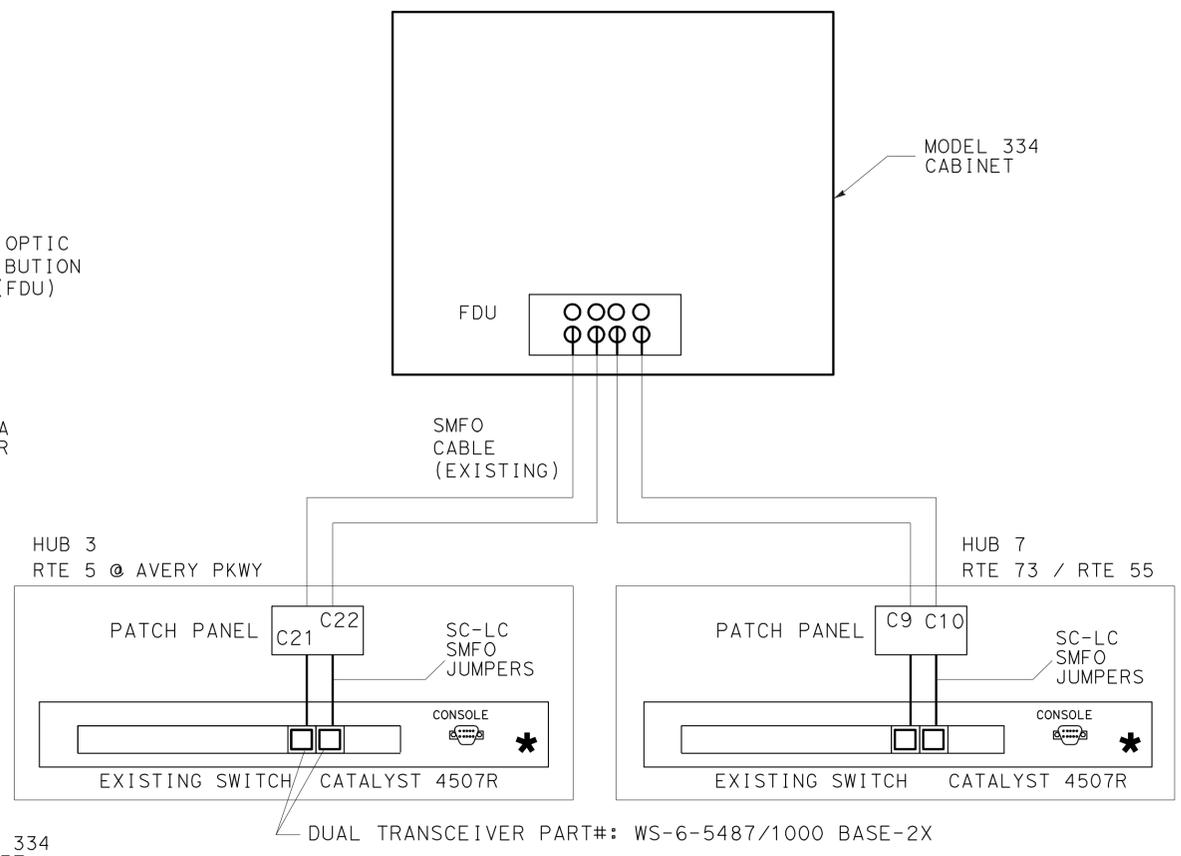
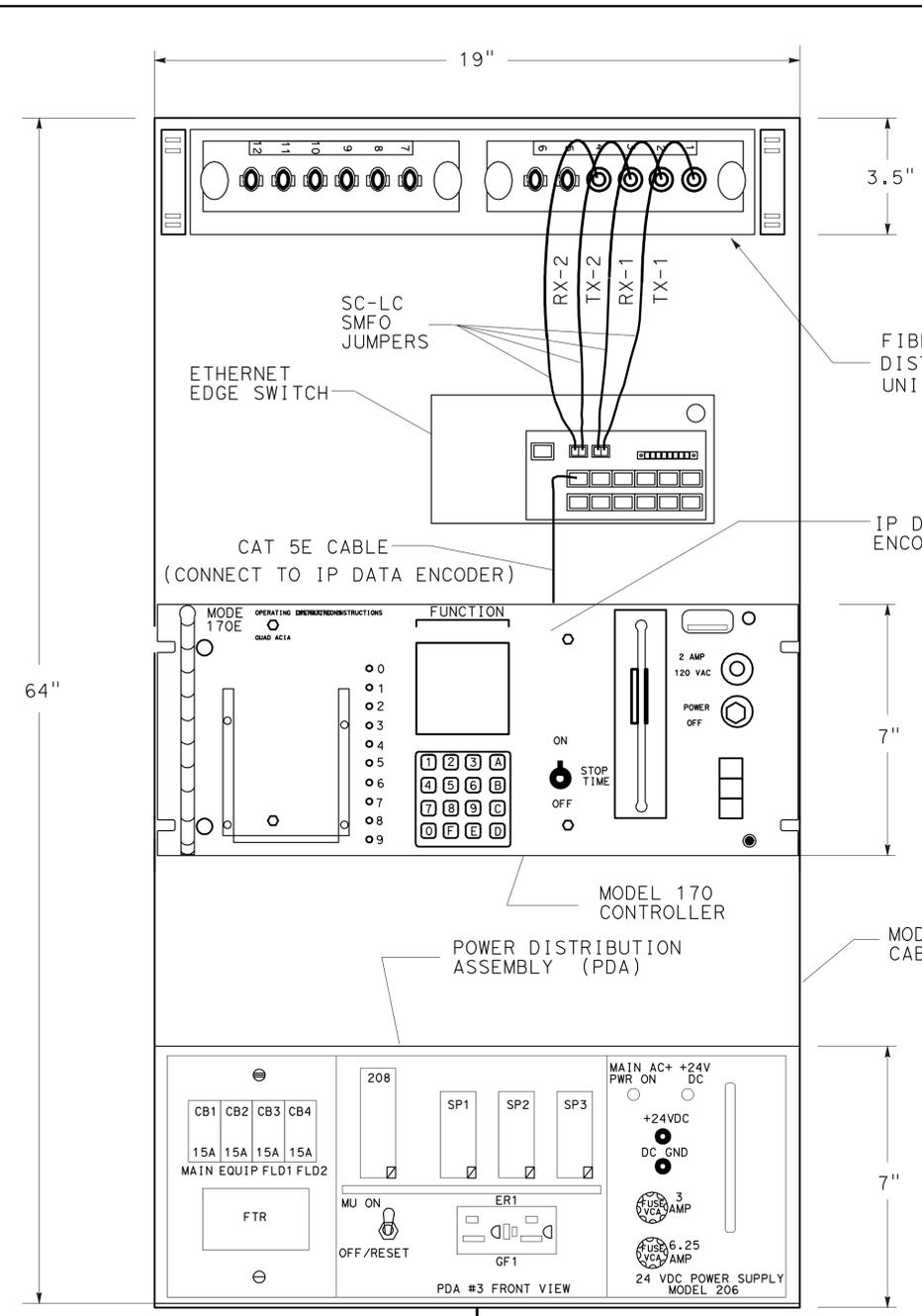
CMS FIBER ASSIGNMENTS				
	TYPE CABLE	X	Y	CMS CIRCUIT No.
LOCATION 1: CMS 24	B	9	10	22
LOCATION 2: CMS 25	C	13	14	15

**COMMUNICATION SYSTEM**  
**(EQUIPMENTS AT LOCATION 1, 2)**  
 NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	49	70
 REGISTERED ELECTRICAL ENGINEER			DATE		
PLANS APPROVAL DATE 6-21-10					
<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>					

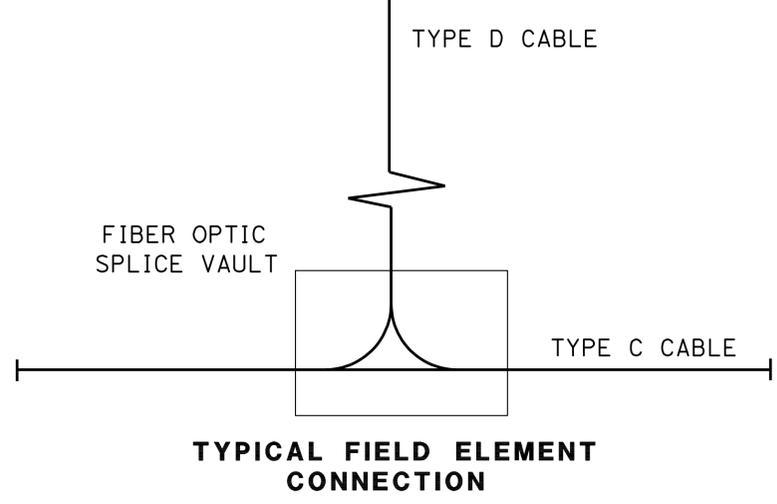
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL SYSTEM  
 FUNCTIONAL SUPERVISOR: HENRY PHAM  
 CALCULATED/DESIGNED BY: HENRY PHAM  
 CHECKED BY: HENRY PHAM  
 REVISIONS: 05-25-10  
 REVISOR: Hussein Kalakech  
 DATE: 05-25-10  
 CHECKER: Pauline Nguyen



**TYPICAL CONNECTION FROM FIELD ELEMENTS TO THE EXISTING SWITCH AT THE HUB**

**TYPICAL CONNECTION OF TYPE D TO TYPE C**

CMS FIBER ASSIGNMENTS			
	TYPE CABLE	X	Y
LOCATION 3: CMS 32	C	19	20
LOCATION 4: CMS 33	C	19	20
LOCATION 5: CMS 34	C	19	20



**NOTES:(THIS SHEET ONLY)**

- REMOVE MODEL 400 MODEM CARD FROM 170 CONTROLLER.
- INSTALL IP DATA ENCODER WITH 5-FOOT RJ-45 CABLE (CAT 5E) TO MODEM SLOT OF 170 CONTROLLER.
- CONNECT OTHER END PLUG OF CAT 5E CABLE TO 1X RJ-45 SOCKET OF ETHERNET EDGE SWITCH.
- INSTALL 4 SMFO SC-LC JUMPERS BETWEEN ETHERNET EDGE SWITCH AND FDU.

**LEGEND:**

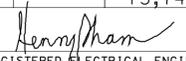
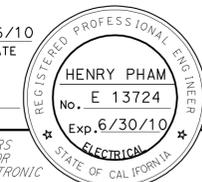
- TX-1: TRANSMIT UPSTREAM TO ETHERNET EDGE SWITCH
- RX-1: RECEIVE DOWNSTREAM FROM ETHERNET EDGE SWITCH
- TX-2: TRANSMIT DOWNSTREAM FROM ETHERNET EDGE SWITCH
- RX-2: RECEIVE UPSTREAM FROM ETHERNET EDGE SWITCH

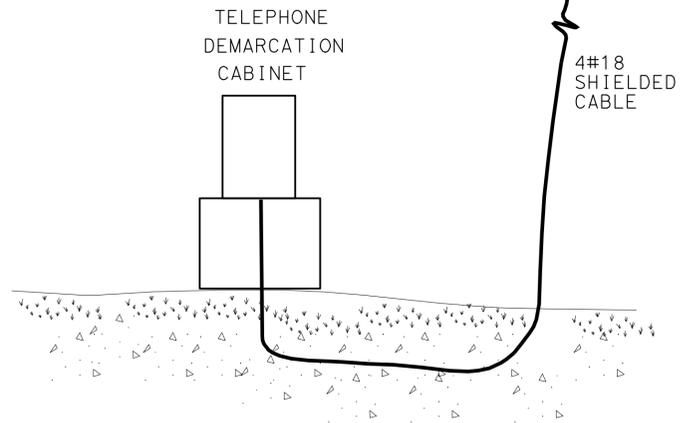
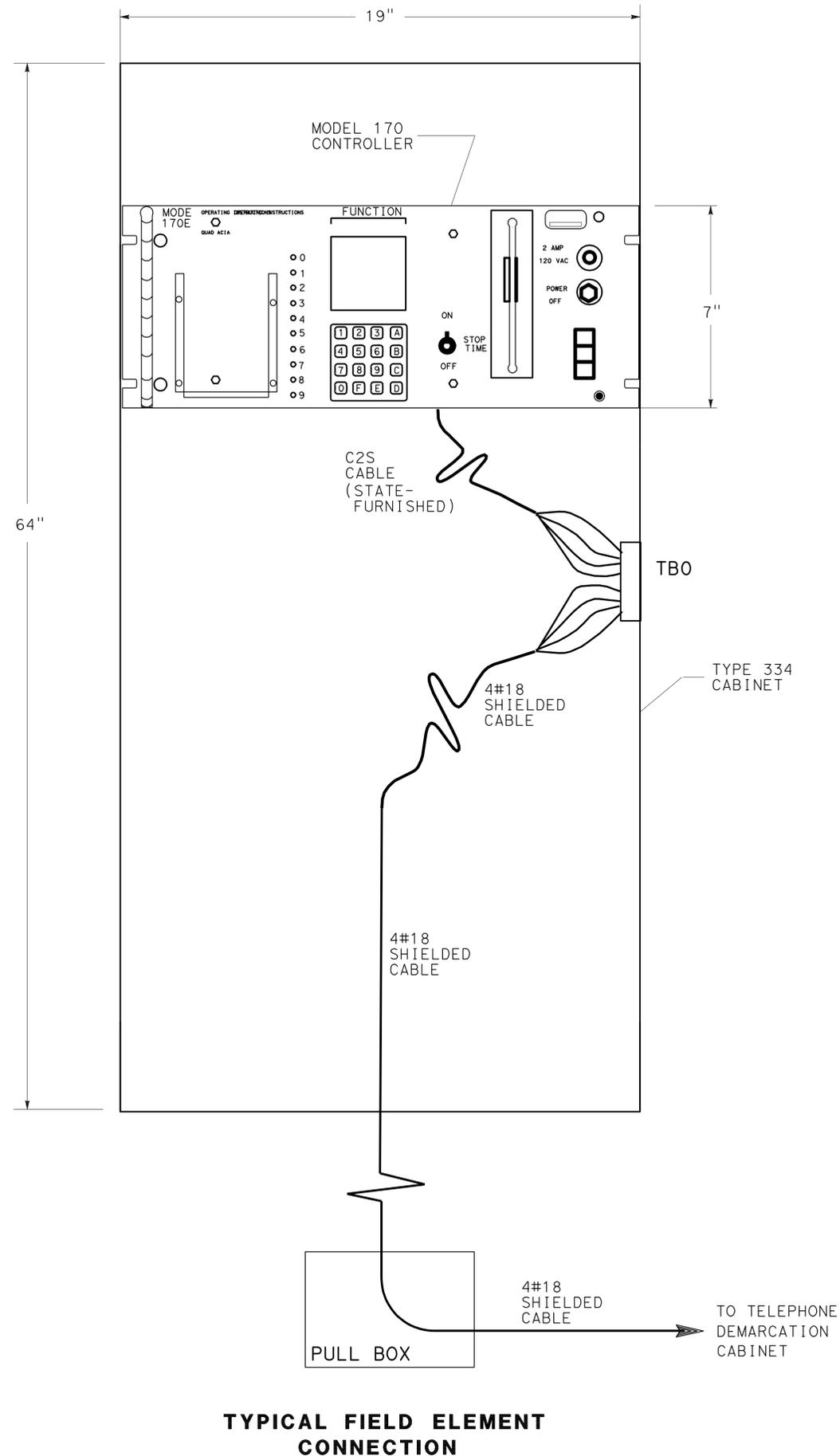
**COMMUNICATION SYSTEM (EQUIPMENTS AT LOCATION 3,4,5)**

NO SCALE

**E-12**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	50	70
 REGISTERED ELECTRICAL ENGINEER			2/26/10	DATE	
6-21-10 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>					



**TYPICAL CONNECTION FROM 170 CONTROLLER TO THE TELEPHONE DEMARCATION CABINET**

**TYPICAL FIELD ELEMENT CONNECTION**

**COMMUNICATION SYSTEM (EQUIPMENTS AT LOCATIONS 6)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

RELATIVE BORDER SCALE IS IN INCHES



USERNAME => fmmikes1  
DGN FILE => c0H232ua014.dgn

CU 12391

EA 0H2321

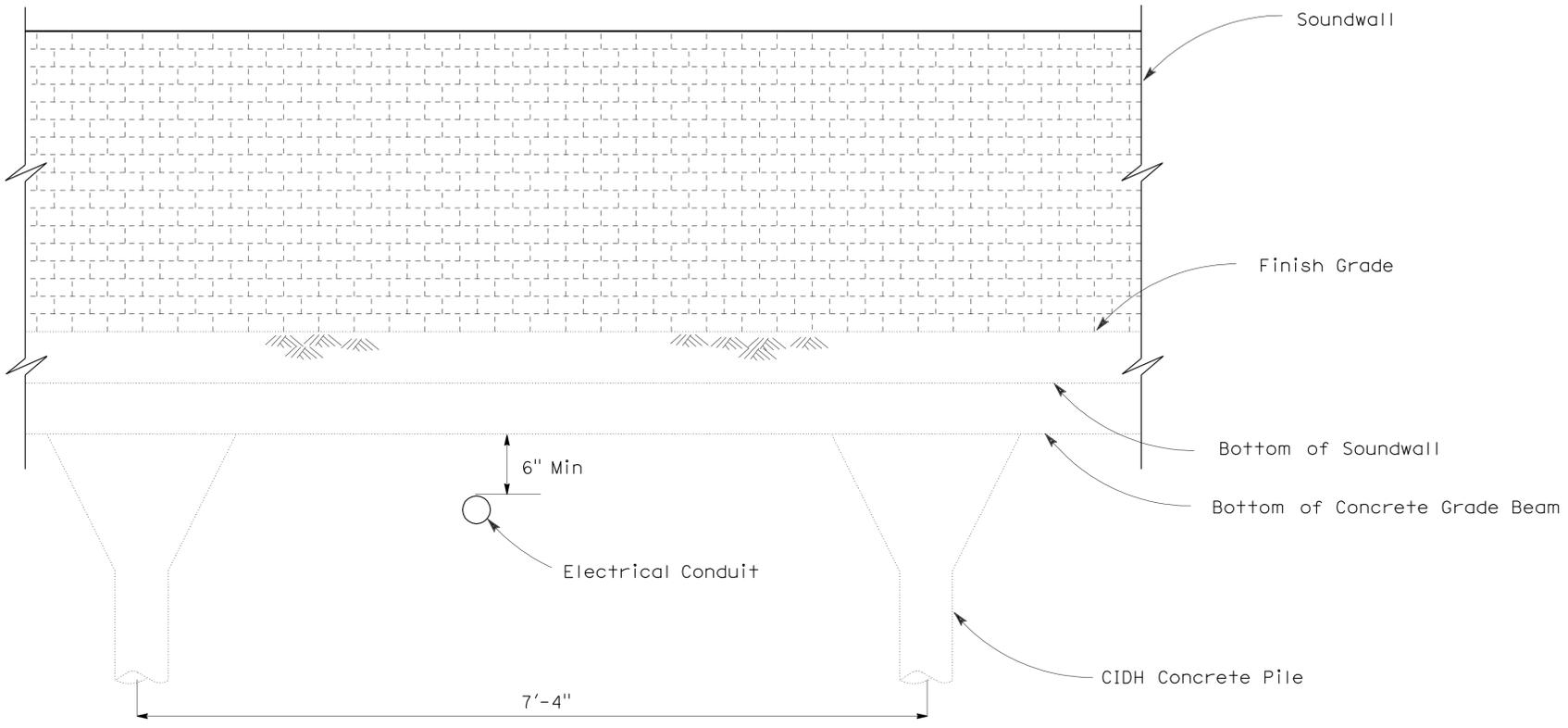
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR	SHAHRAM SHAHRIARI
CALCULATED/DESIGNED BY	CHECKED BY
Judy Kennedy	Anthony C Fernandez
REVISOR	DATE
	12-08-09

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	51	70
REGISTERED ELECTRICAL ENGINEER			DATE	2/26/10	
PLANS APPROVAL DATE			6-21-10		



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**DETAIL**  
 CONDUIT CROSS OVER UNDER  
 EXISTING SOUND WALL

**CHANGEABLE MESSAGE SIGN SYSTEM  
 (CONSTRUCTION DETAIL)**

NO SCALE

**E-14**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	52	70

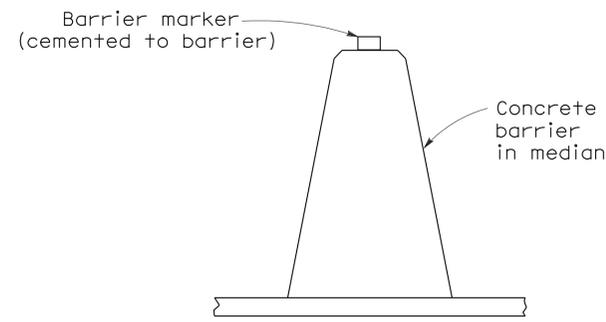
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

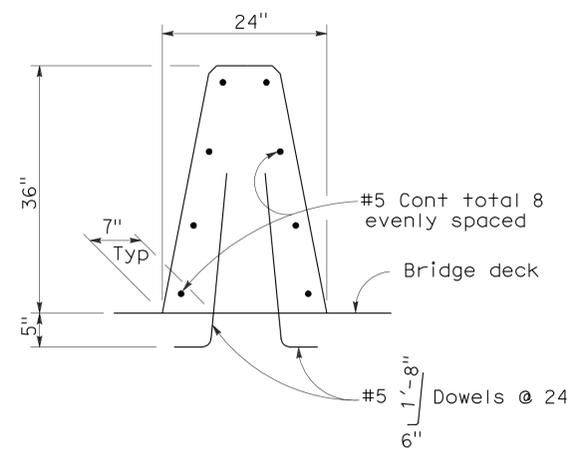
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To accompany plans dated 6-21-10

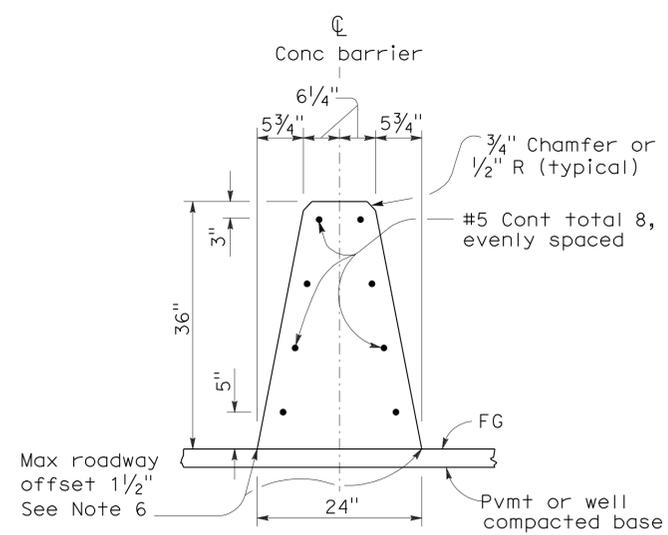
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA



**CONCRETE BARRIER TYPE 60 DELINEATION**  
See Notes 7 and 8



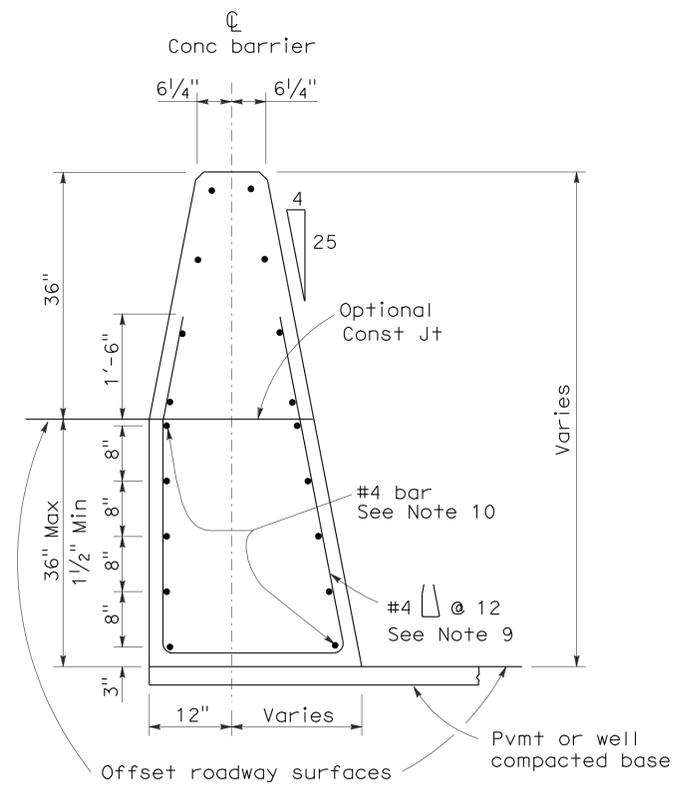
**CONCRETE BARRIER TYPE 60A**  
Details similar to Type 60 except as noted.



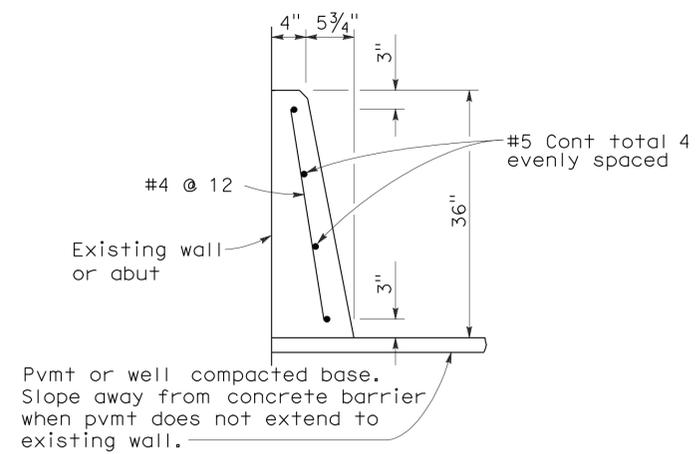
**CONCRETE BARRIER TYPE 60**

**NOTES:**

- See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
- Expansion joints in concrete barrier shall be located at all deck, pavement and principal wall joints. Expansion joint filler material shall be the same size as joint or 1/2" minimum.
- Where roadway offset is greater than 1 1/2", see Concrete Barrier Type 60C.
- Barrier delineation to be used when required by the Special Provisions.
- Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
- Reinforcing stirrup not required for roadway offsets less than 1'-0".
- For roadway surfaces offset greater than 1 1/2" to 3", no rebars required. For roadway surfaces offset greater than 3" to 8" use two #4 rebars at 3" above the lower roadway surface. For roadway surfaces offset greater than 8" to 12", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface. For roadway surfaces offset greater than 12" to 36", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increment vertical spacing above the first two #4 rebars.



**CONCRETE BARRIER TYPE 60C**  
Details similar to Type 60 except as noted. Concrete barrier end anchor when necessary. 36" roadway surfaces offset shown.



**CONCRETE BARRIER TYPE 60D**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CONCRETE BARRIER TYPE 60**  
NO SCALE

RSP A76A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76A  
DATED MAY 1, 2006 - PAGE 29 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A76A**

2006 REVISED STANDARD PLAN RSP A76A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	53	70

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

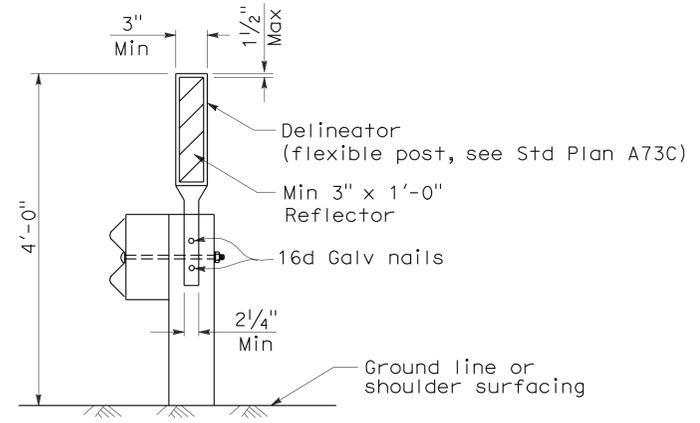
June 6, 2008  
PLANS APPROVAL DATE

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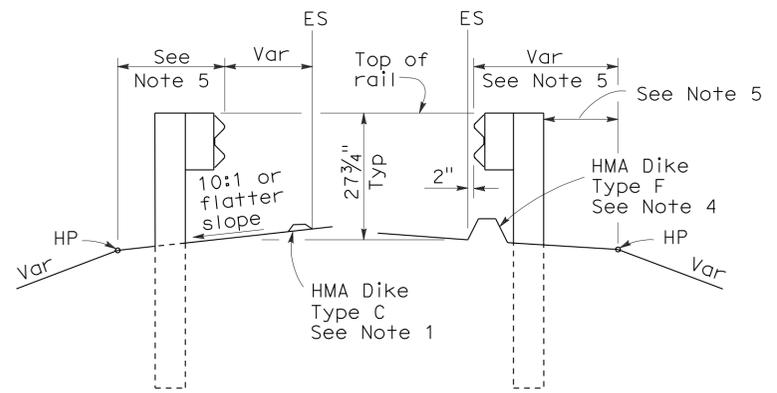
To accompany plans dated 6-21-10

**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
12	Ora	5,22, 73,74	Var	54	70

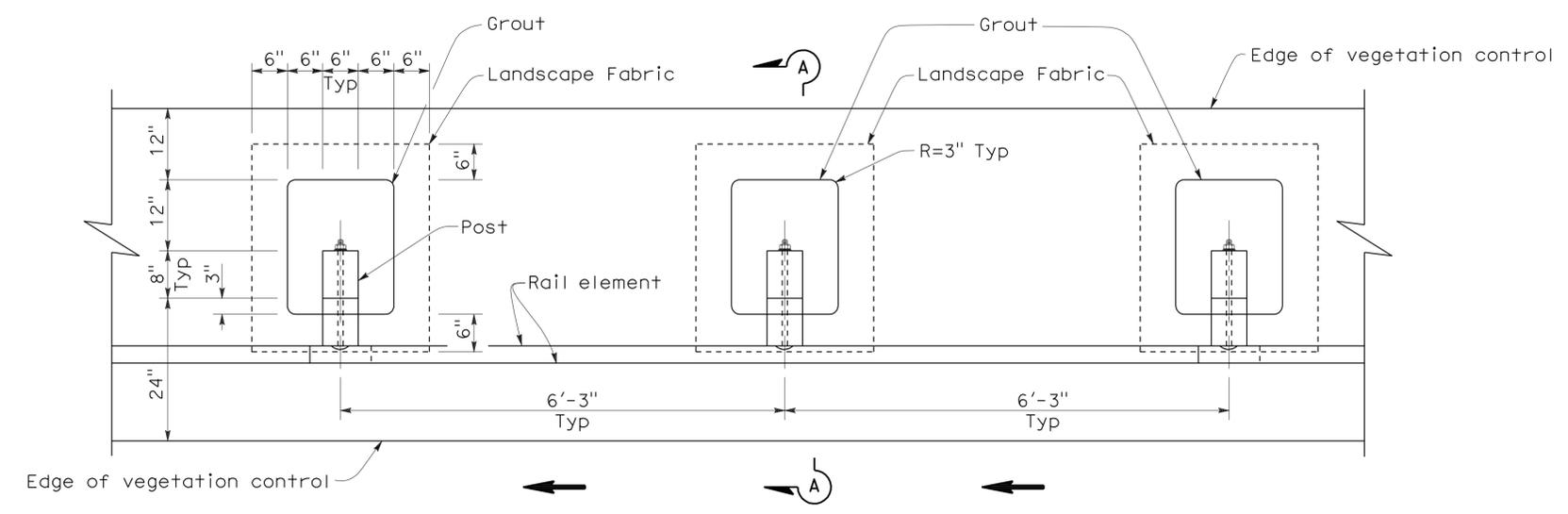
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

October 20, 2006  
PLANS APPROVAL DATE

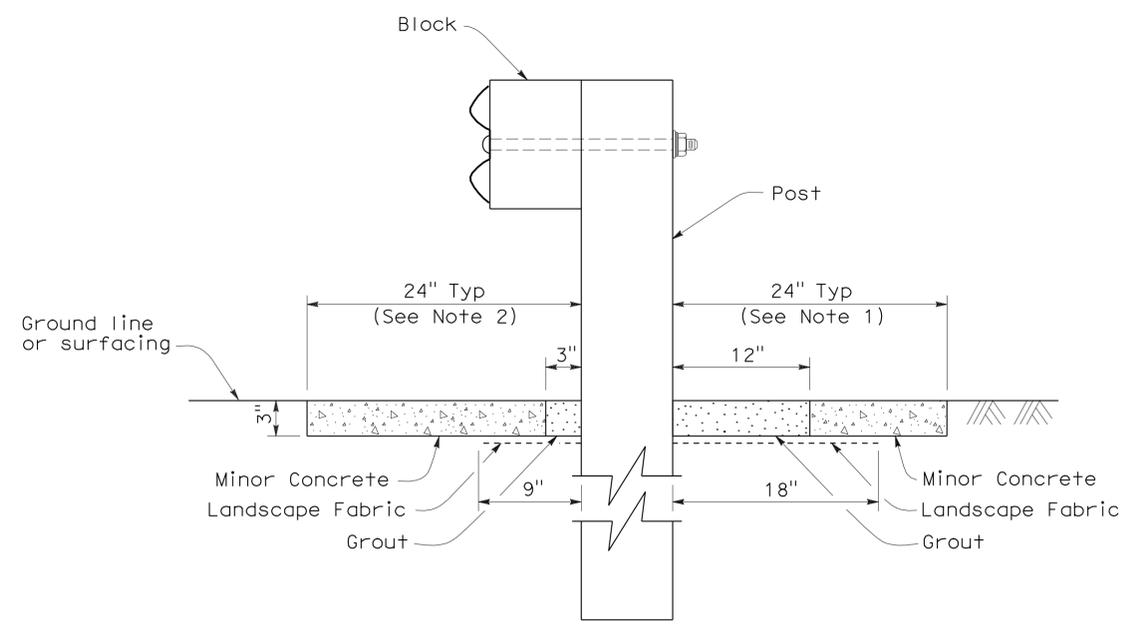
*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-07  
CIVIL  
STATE OF CALIFORNIA

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To accompany plans dated 6-21-10



PLAN



SECTION A-A

NOTES:

1. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ← .

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL VEGETATION CONTROL  
STANDARD RAILING SECTION**

NO SCALE

NSP A77C5 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD  
PLANS BOOK DATED MAY 2006.

**NEW STANDARD PLAN NSP A77C5**

2006 NEW STANDARD PLAN NSP A77C5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	55	70

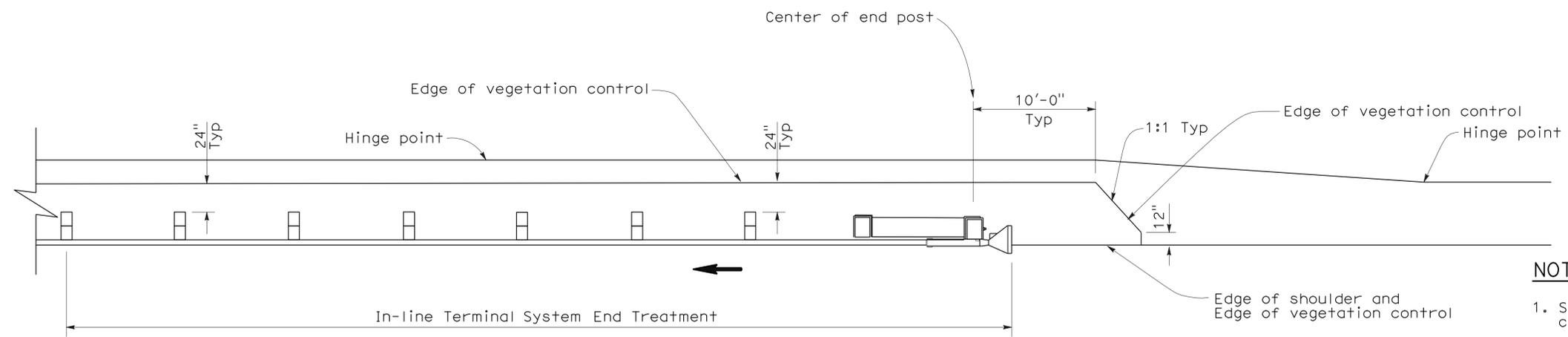
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

October 20, 2006  
PLANS APPROVAL DATE

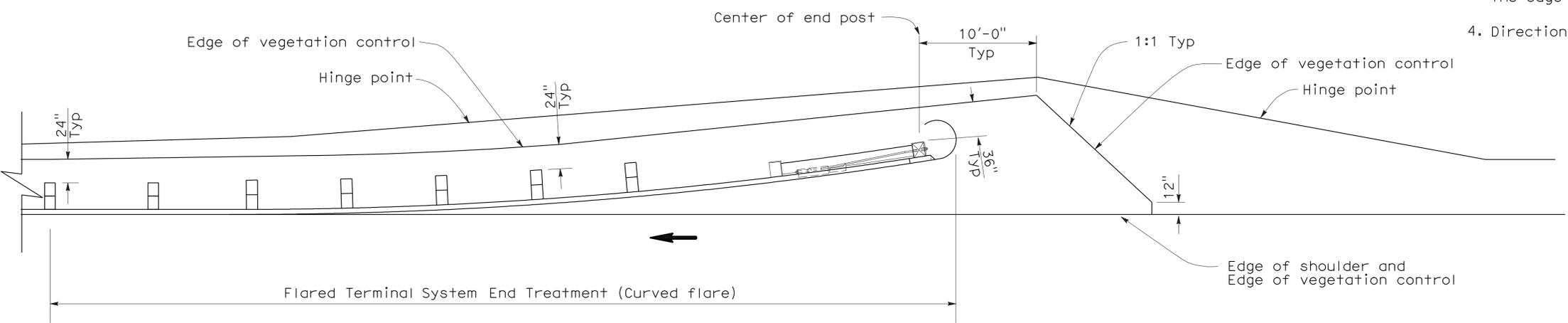
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To accompany plans dated 6-21-10

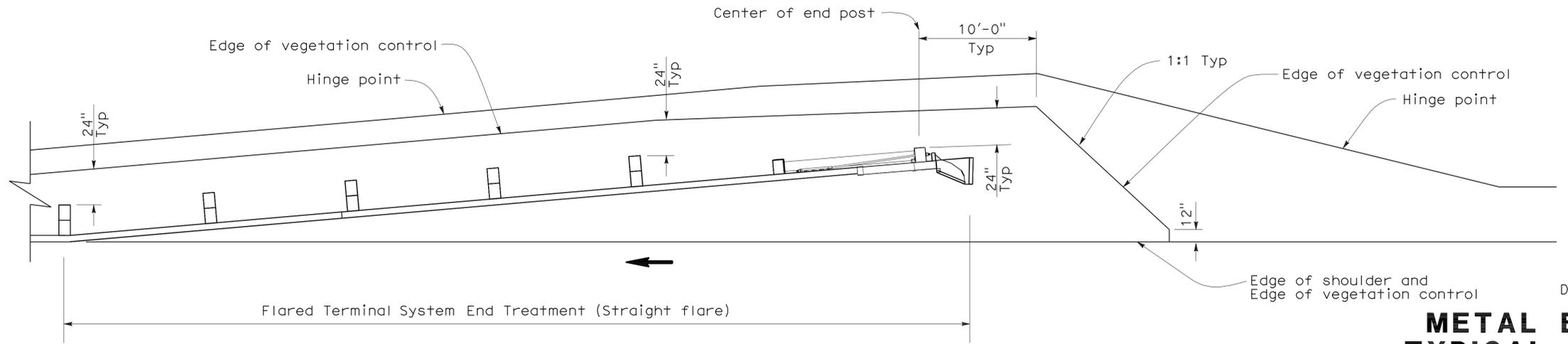
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-07  
CIVIL  
STATE OF CALIFORNIA



PLAN



PLAN



PLAN

**NOTES:**

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. Direction of adjacent traffic indicated by ←.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL VEGETATION CONTROL  
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE  
NSP A77C6 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD  
PLANS BOOK DATED MAY 2006.

**NEW STANDARD PLAN NSP A77C6**

2006 NEW STANDARD PLAN NSP A77C6

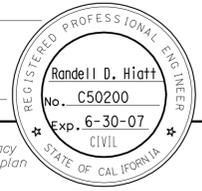
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	56	70

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

October 20, 2006  
PLANS APPROVAL DATE

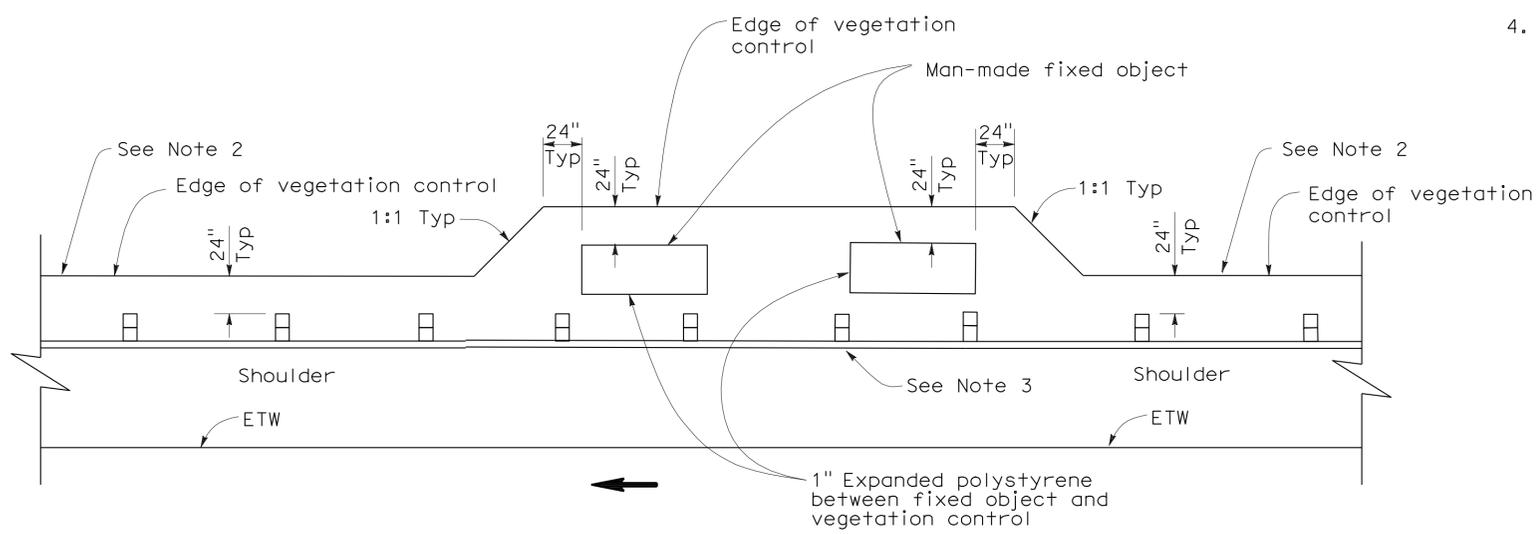
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To accompany plans dated 6-21-10



**NOTES:**

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. Direction of adjacent traffic indicated by ←.



**PLAN**  
FIXED OBJECT(S) ON SHOULDER

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL VEGETATION CONTROL  
AT FIXED OBJECT**

NO SCALE  
NSP A77C8 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD  
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C8

**NOTES:**

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ← .

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	57	70

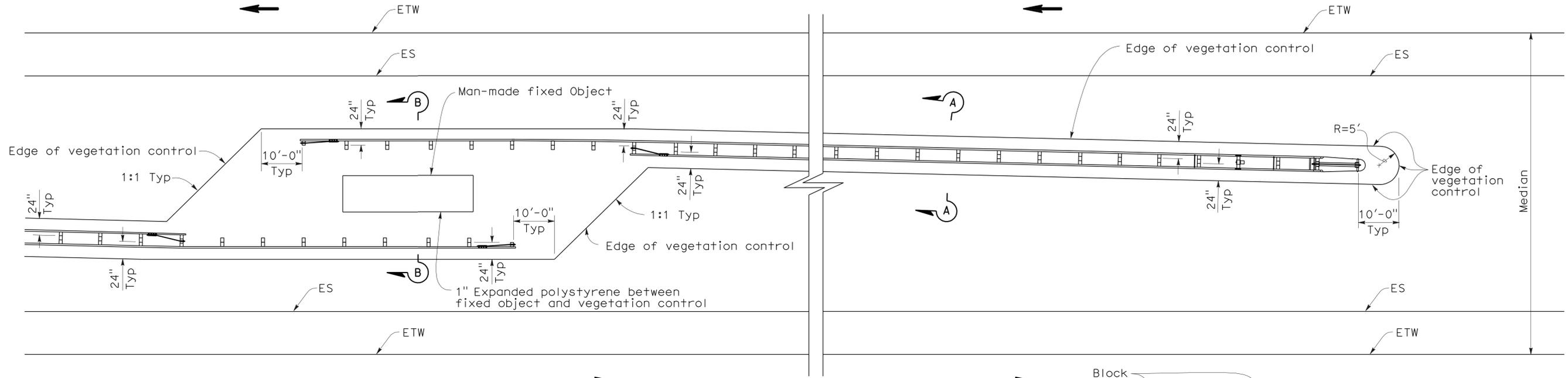
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

October 20, 2006  
PLANS APPROVAL DATE

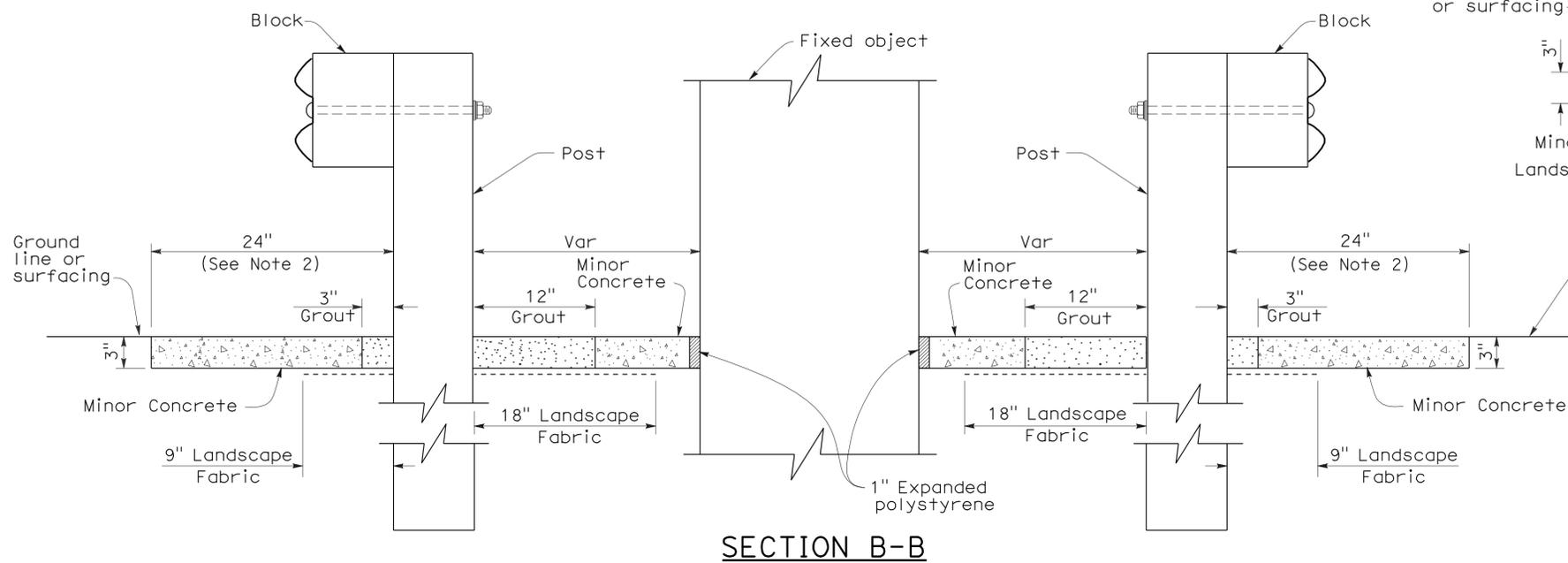
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-07  
CIVIL  
STATE OF CALIFORNIA

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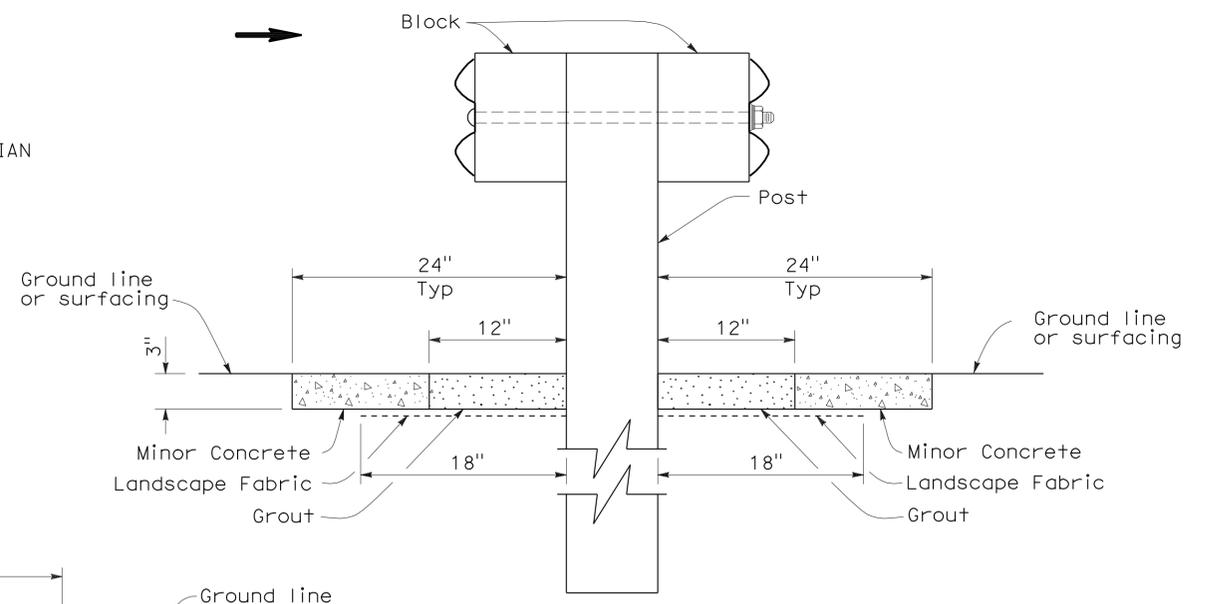
To accompany plans dated 6-21-10



**PLAN**  
FIXED OBJECT(S) IN MEDIAN



**SECTION B-B**



**SECTION A-A**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
TYPICAL VEGETATION CONTROL  
AT FIXED OBJECT**

NO SCALE  
NSP A77C9 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD  
PLANS BOOK DATED MAY 2006.

**NOTES:**

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ←.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	58	70

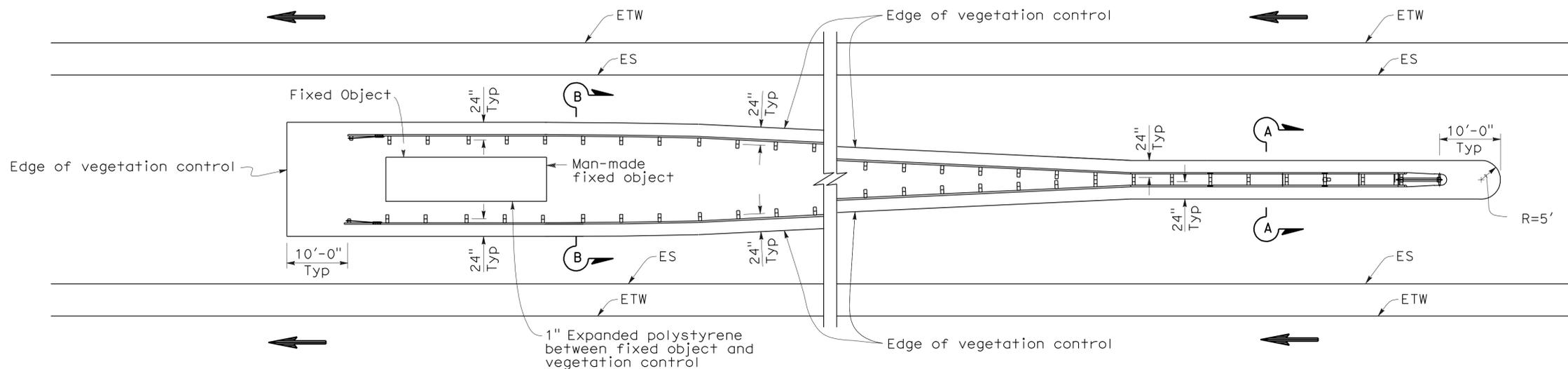
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

October 20, 2006  
PLANS APPROVAL DATE

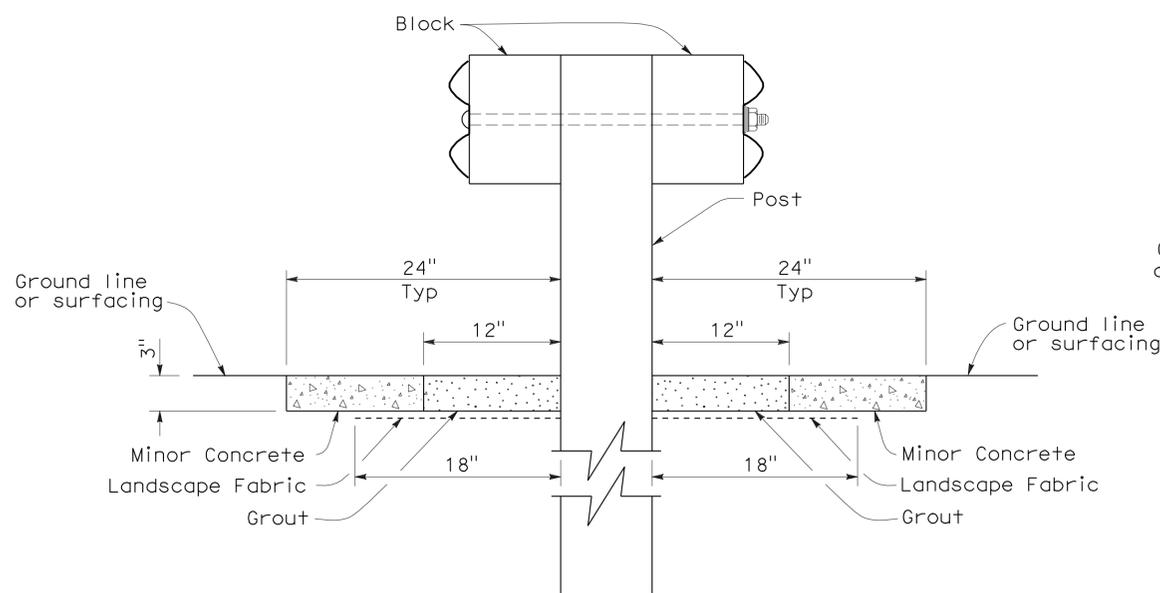
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-07  
CIVIL  
STATE OF CALIFORNIA

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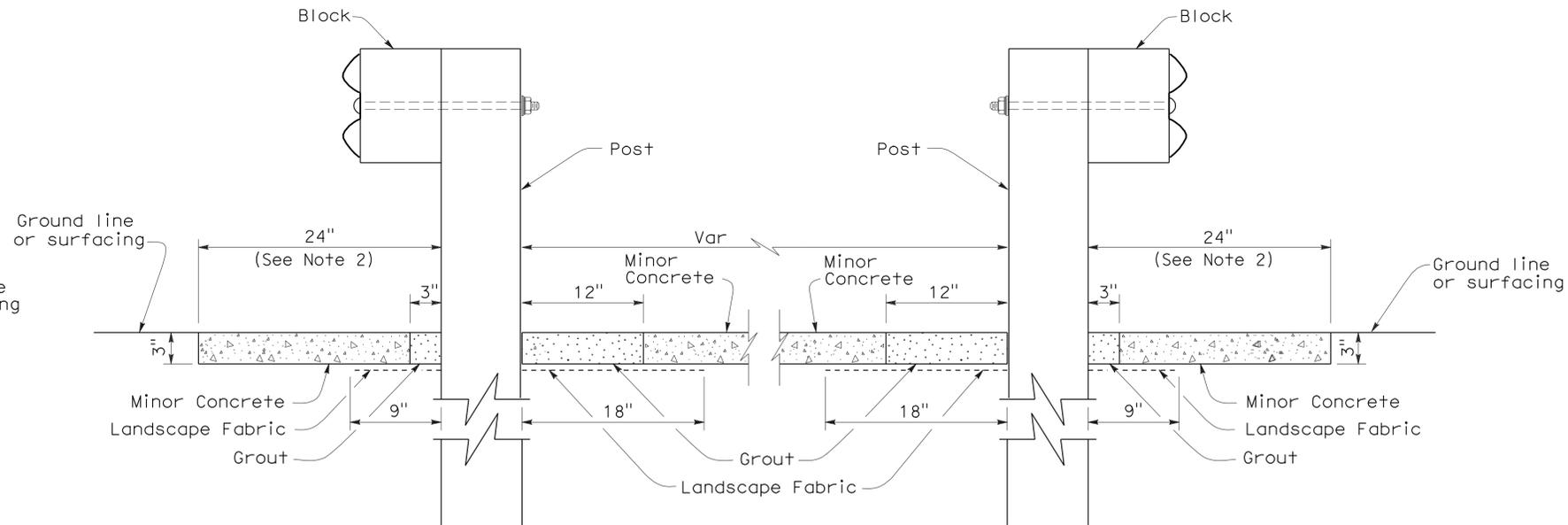
To accompany plans dated 6-21-10



**PLAN**  
FIXED OBJECT(S) BETWEEN SEPARATE ROADBEDS  
(ONE-WAY TRAFFIC)



**SECTION A-A**



**SECTION B-B**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL VEGETATION CONTROL  
AT FIXED OBJECT**

NO SCALE

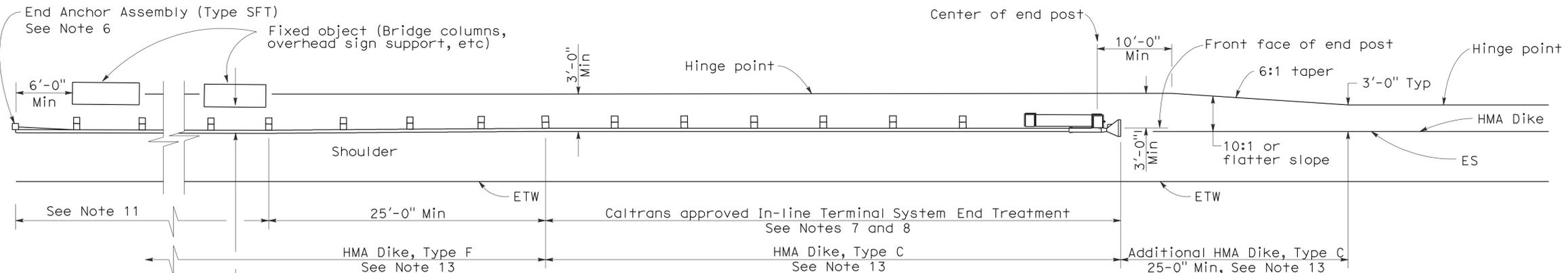
NSP A77C10 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD  
PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	59	70

RANDALL D. HIATT  
 REGISTERED CIVIL ENGINEER  
 No. C50200  
 Exp. 6-30-09  
 CIVIL  
 STATE OF CALIFORNIA

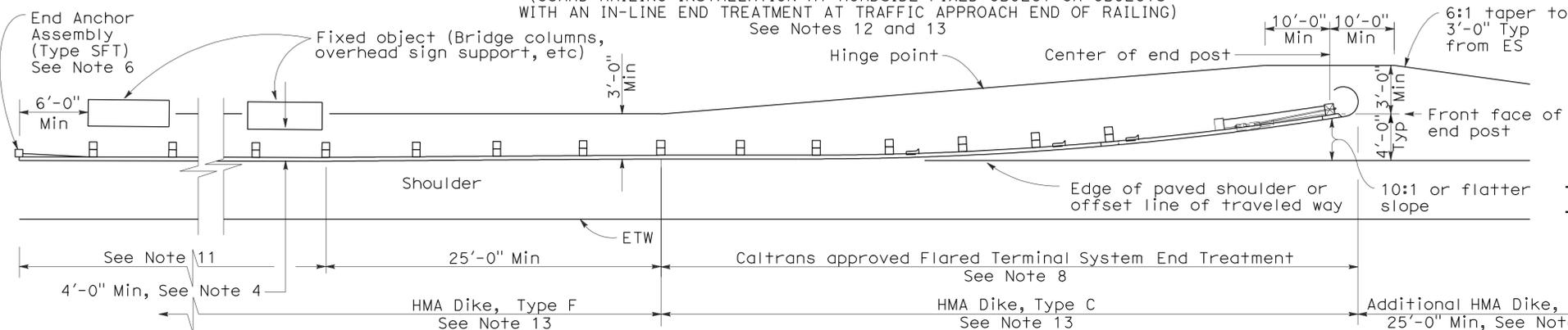
June 6, 2008  
 PLANS APPROVAL DATE

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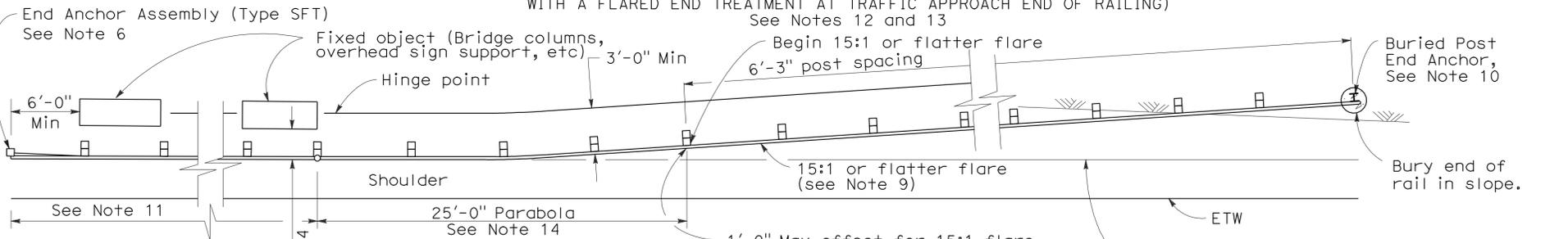
**TYPE 16A LAYOUT**

(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



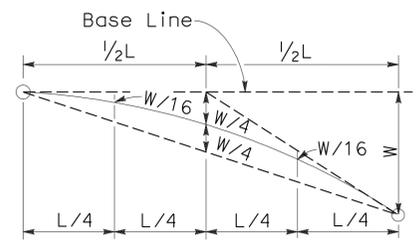
**TYPE 16B LAYOUT**

(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

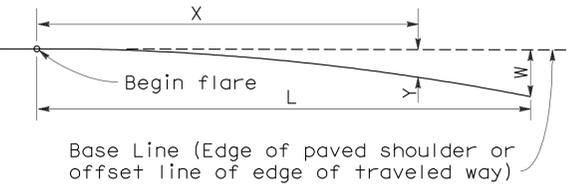


**TYPE 16C LAYOUT**

(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**

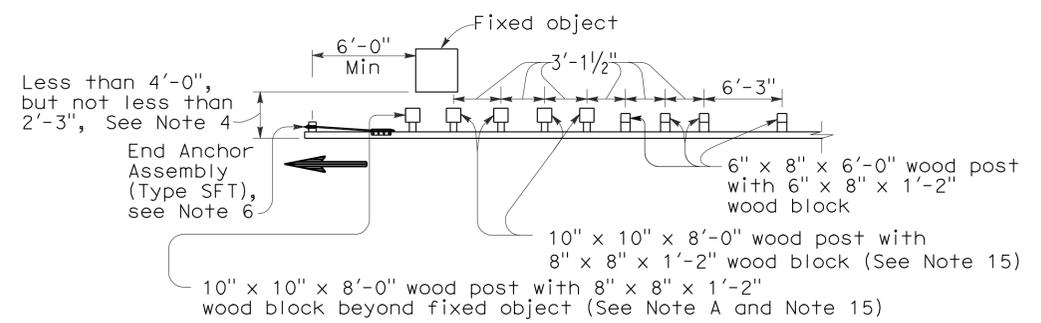


Base Line (Edge of paved shoulder or offset line of edge of traveled way)  
 $Y = \frac{WX^2}{L^2}$   
 Y = Offset from base line  
 W = Maximum offset  
 X = Distance along base line  
 L = Length of flare

**PARABOLIC FLARE OFFSETS**

**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

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

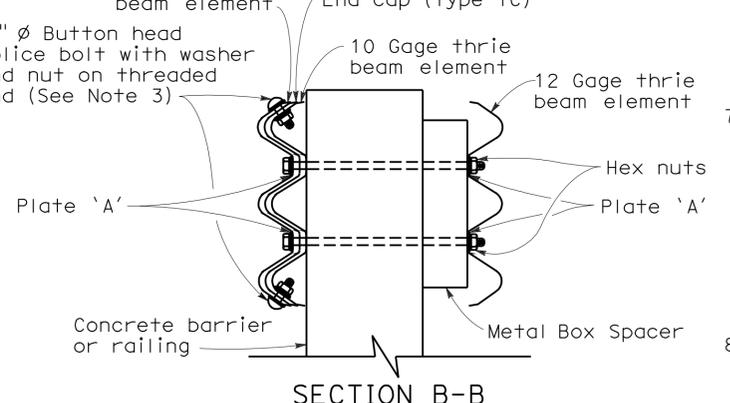
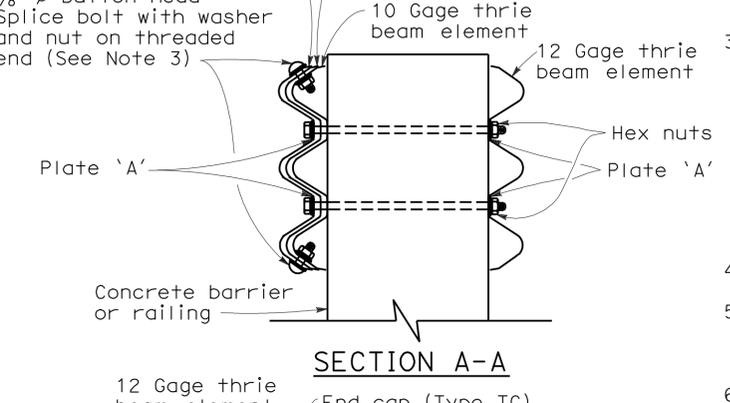
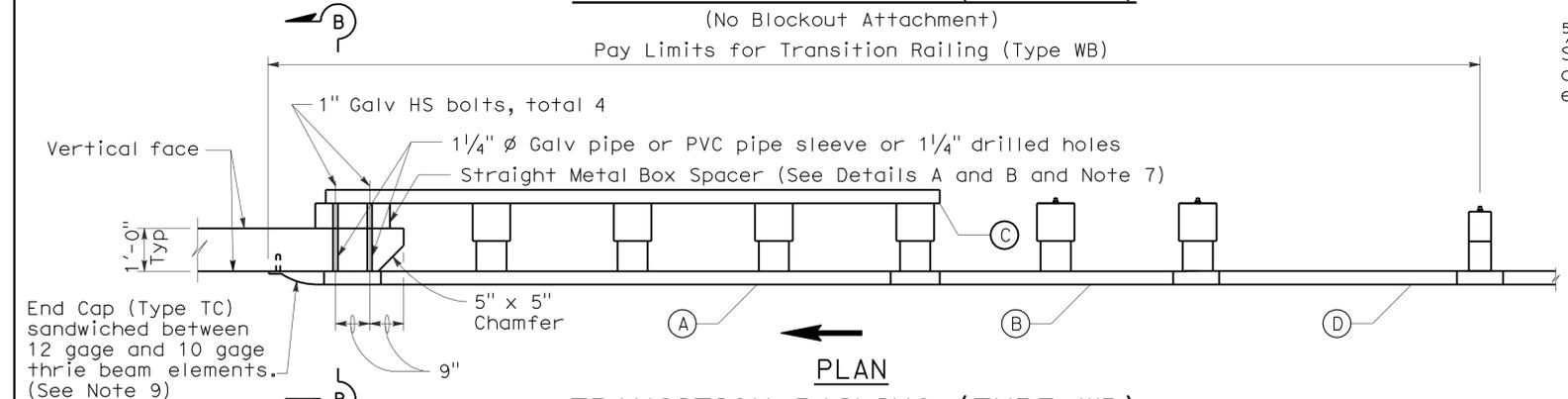
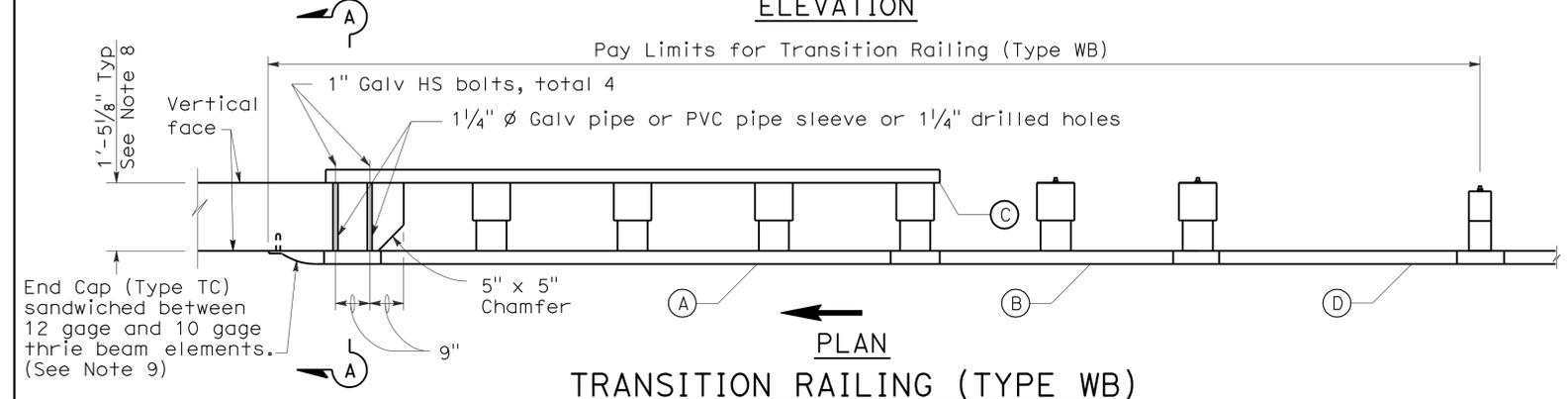
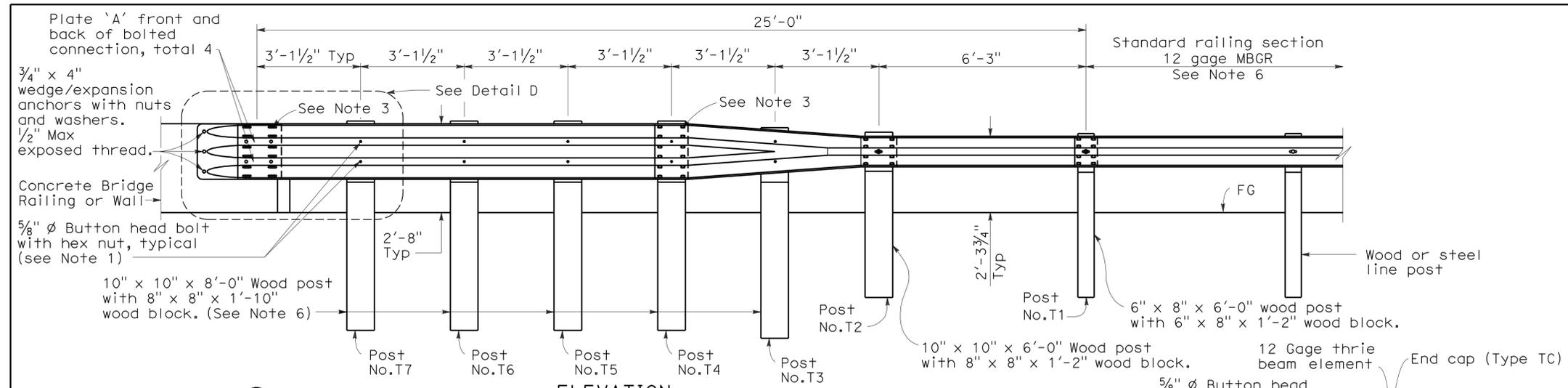
NO SCALE  
RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3 DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77G3**

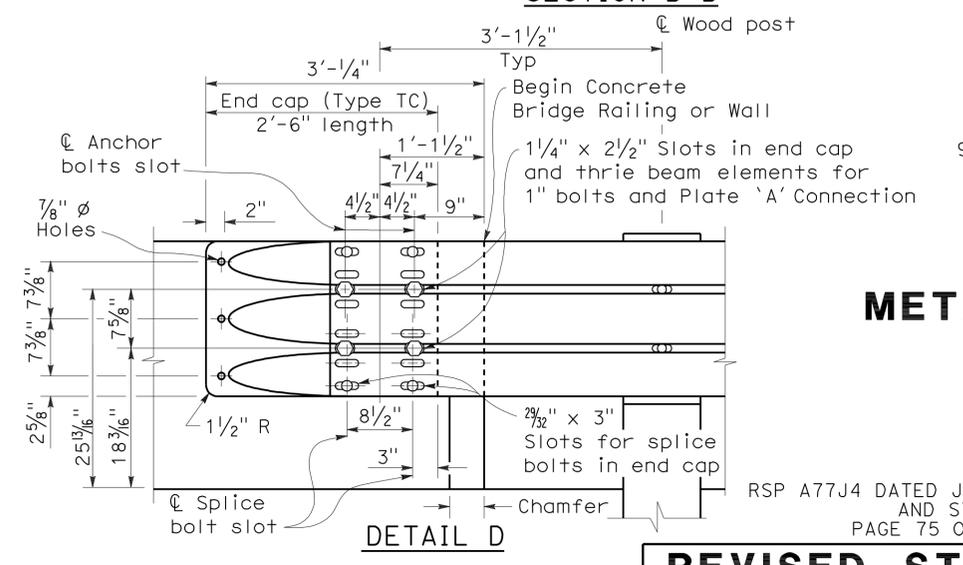
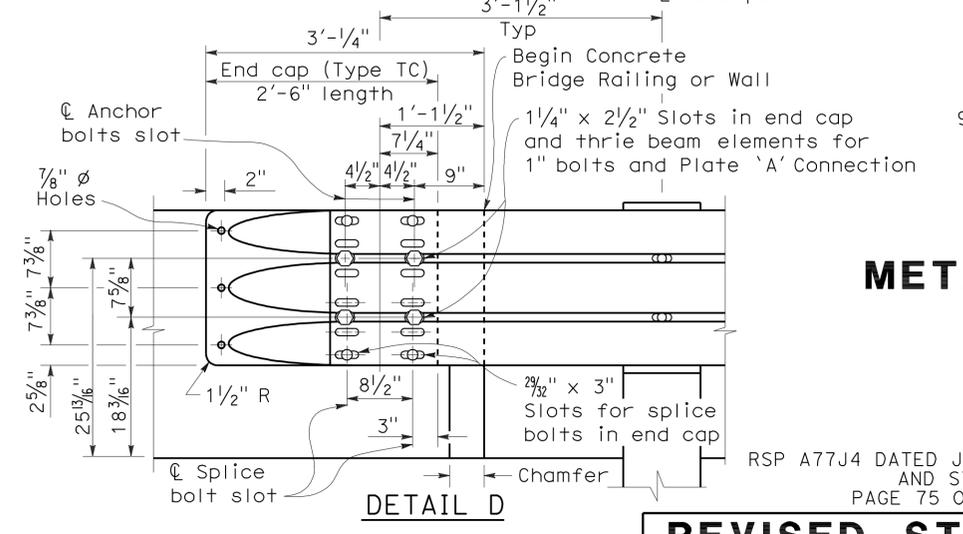
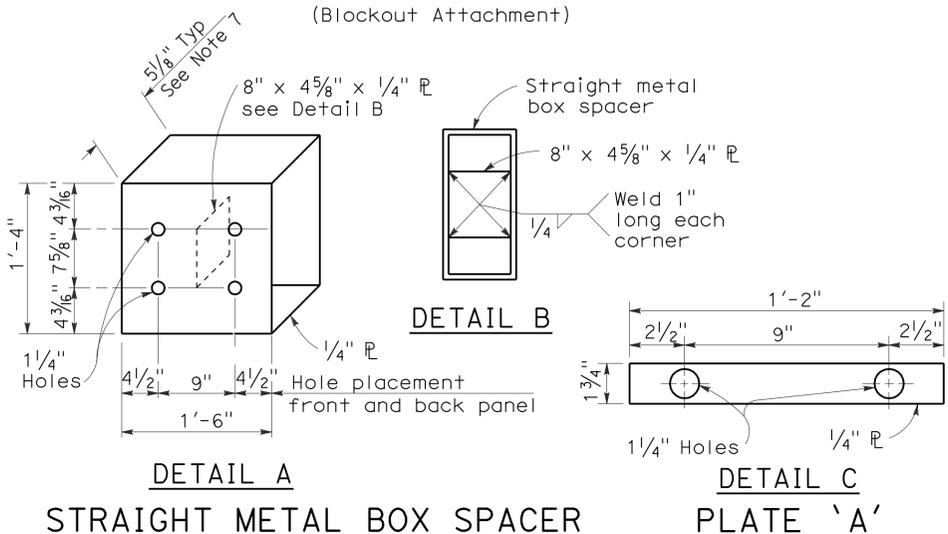
2006 REVISED STANDARD PLAN RSP A77G3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	60	70

RANDALL D. HIATT  
 REGISTERED CIVIL ENGINEER  
 June 5, 2009  
 PLANS APPROVAL DATE  
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- 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 6-21-10
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
12	Ora	5,22, 73,74	Var	61	70

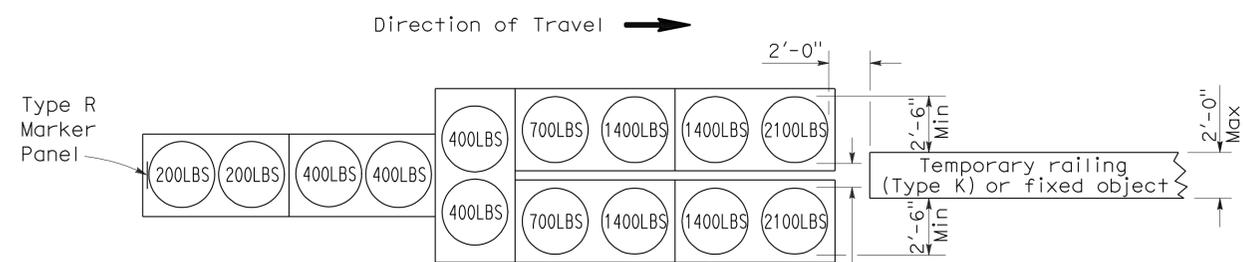
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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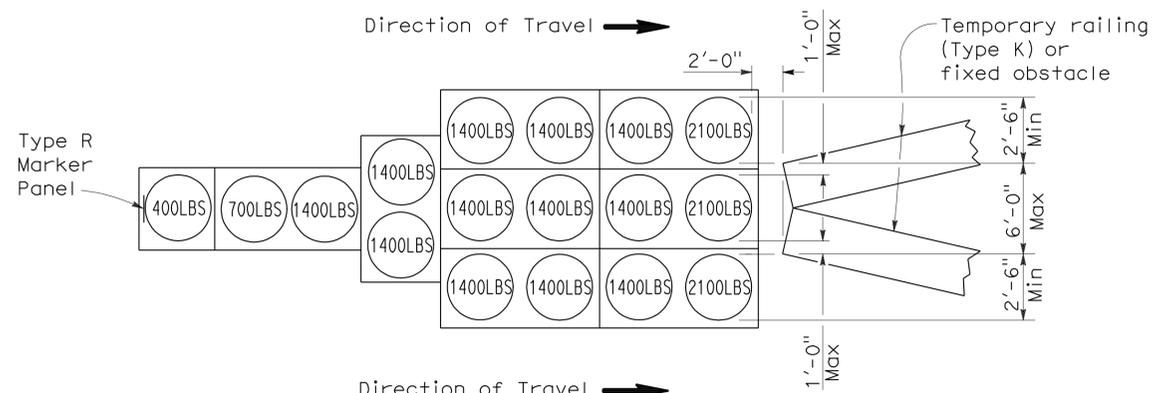
To accompany plans dated 6-21-10

2006 REVISED STANDARD PLAN RSP T1A



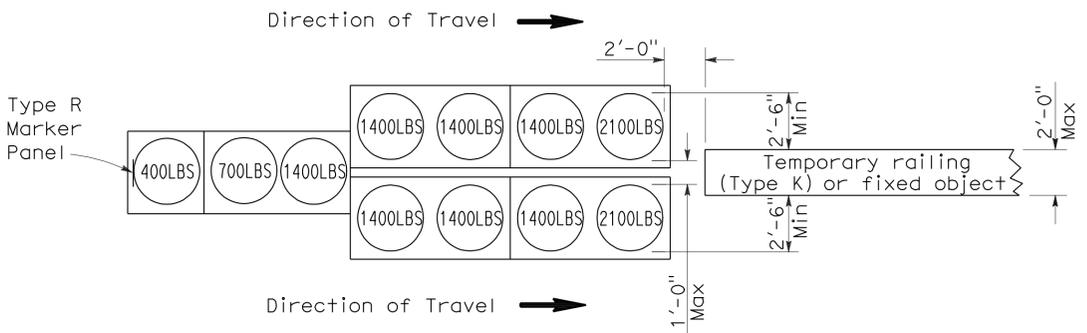
**ARRAY 'TU14'**

Approach speed 45 mph or more



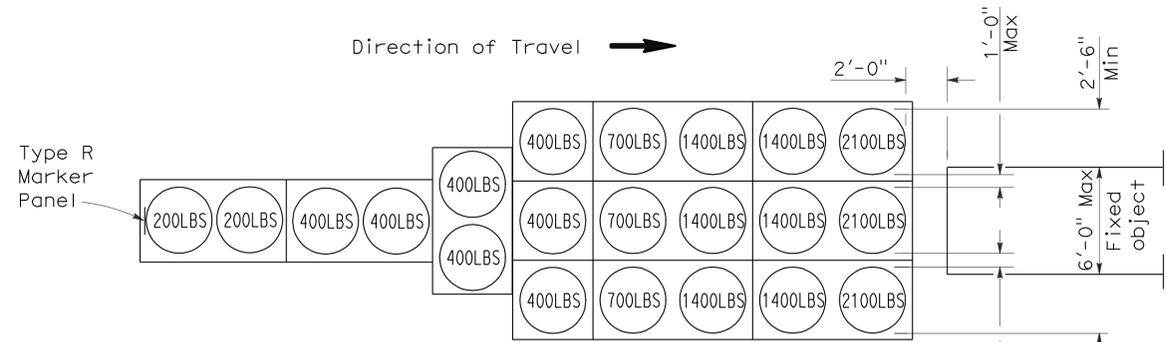
**ARRAY 'TU17'**

Approach speed less than 45 mph



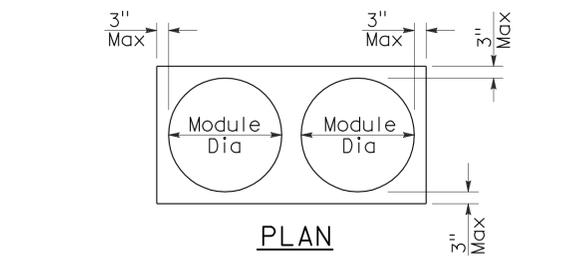
**ARRAY 'TU11'**

Approach speed less than 45 mph

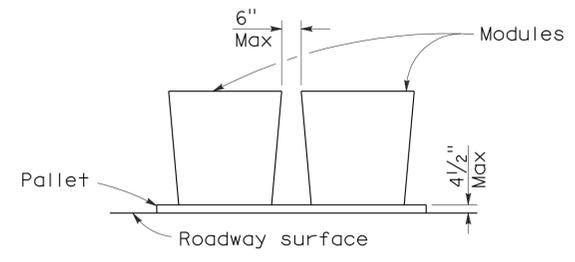


**ARRAY 'TU21'**

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	5,22, 73,74	Var	62	70

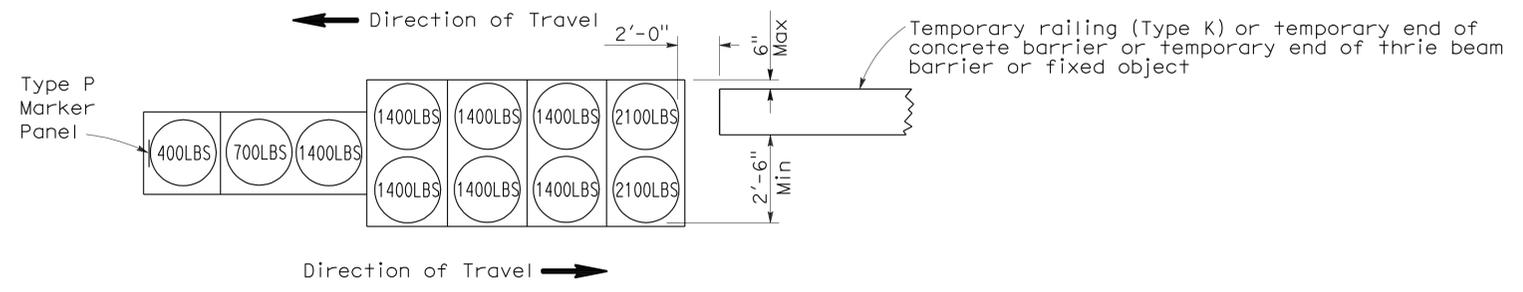
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

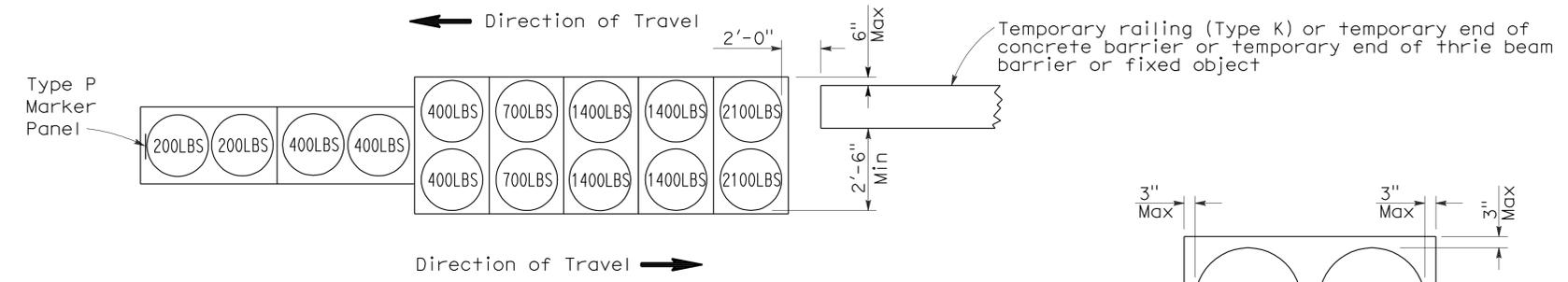
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To accompany plans dated 6-21-10



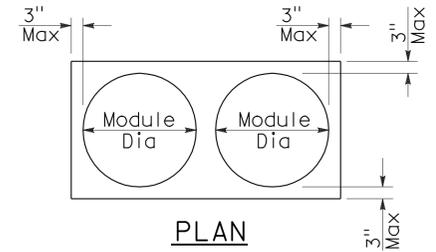
**ARRAY 'TB11'**

Approach speed less than 45 mph

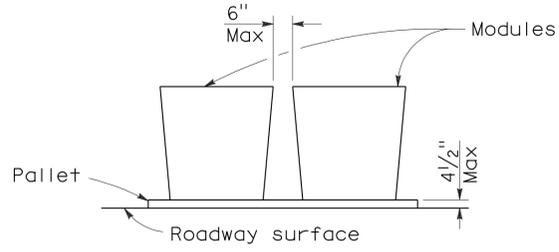


**ARRAY 'TB14'**

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

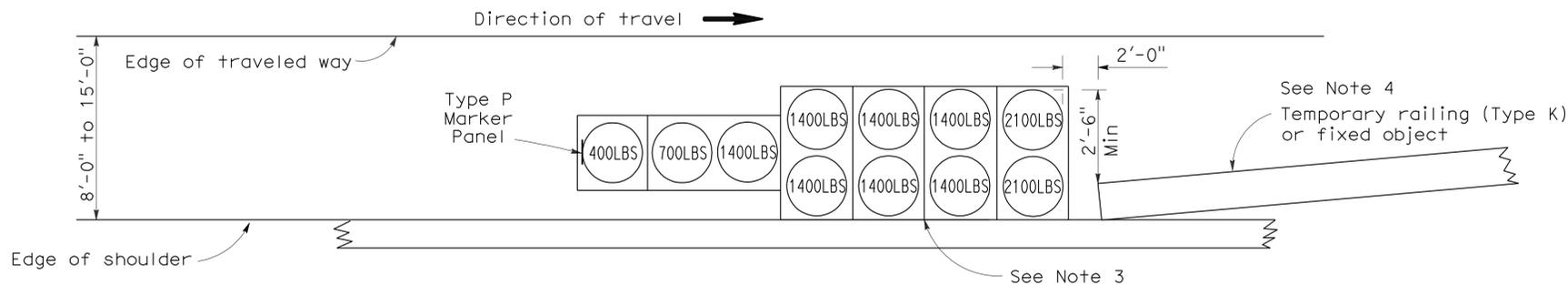
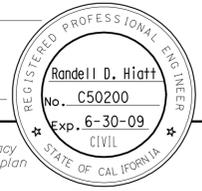
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	63	70

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

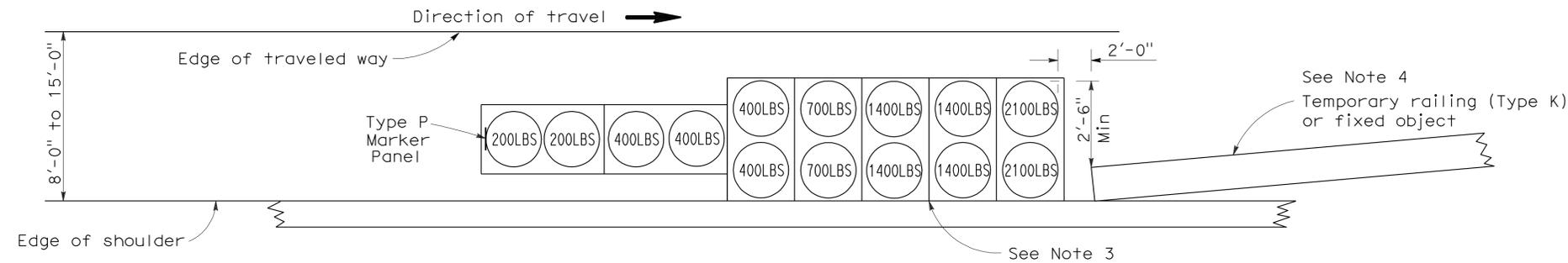
June 6, 2008  
PLANS APPROVAL DATE

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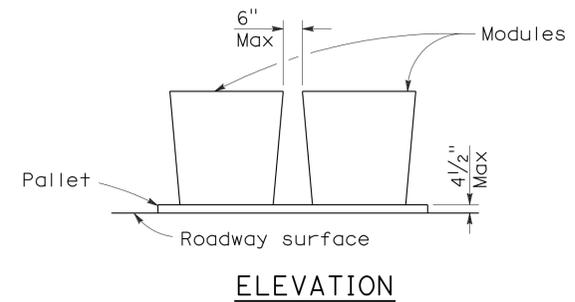
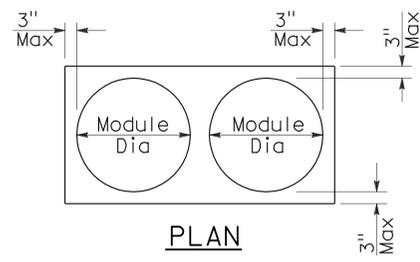
To accompany plans dated 6-21-10



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**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.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

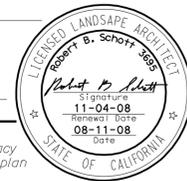
NO SCALE  
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2  
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	64	70

Robert B. Schott  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS APPROVAL DATE  
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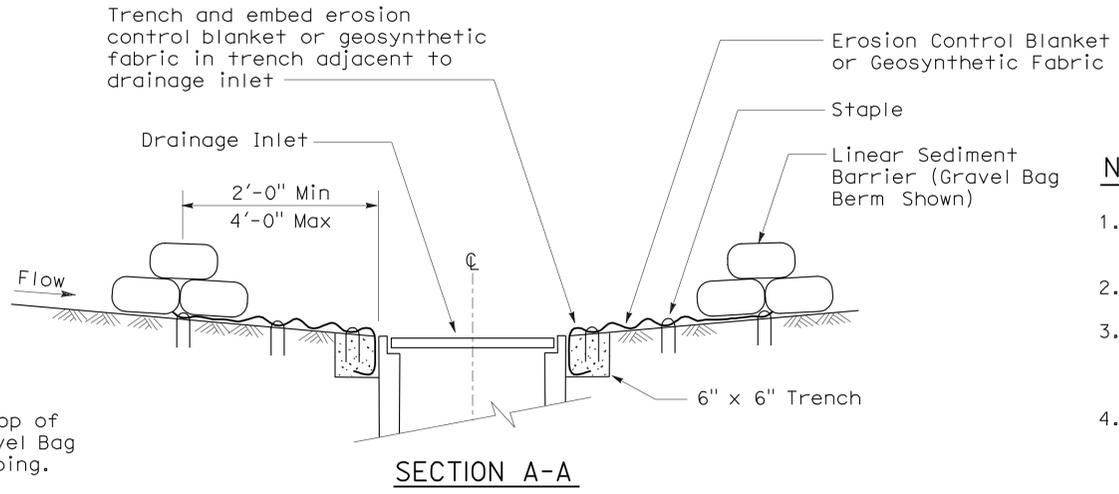
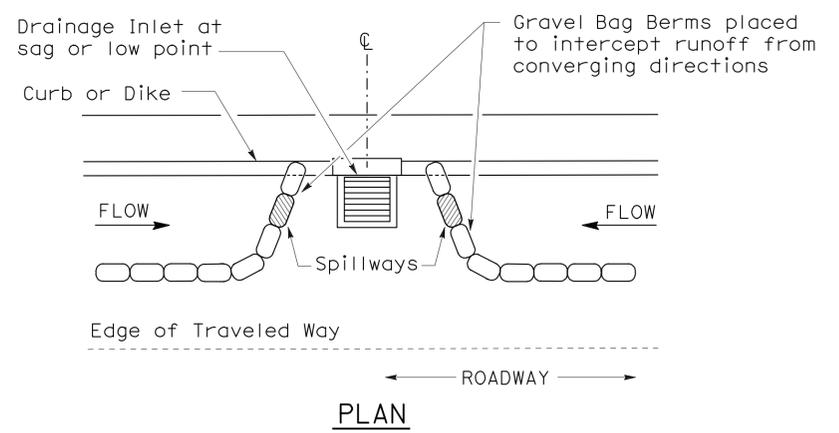


To accompany plans dated 6-21-10

### GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

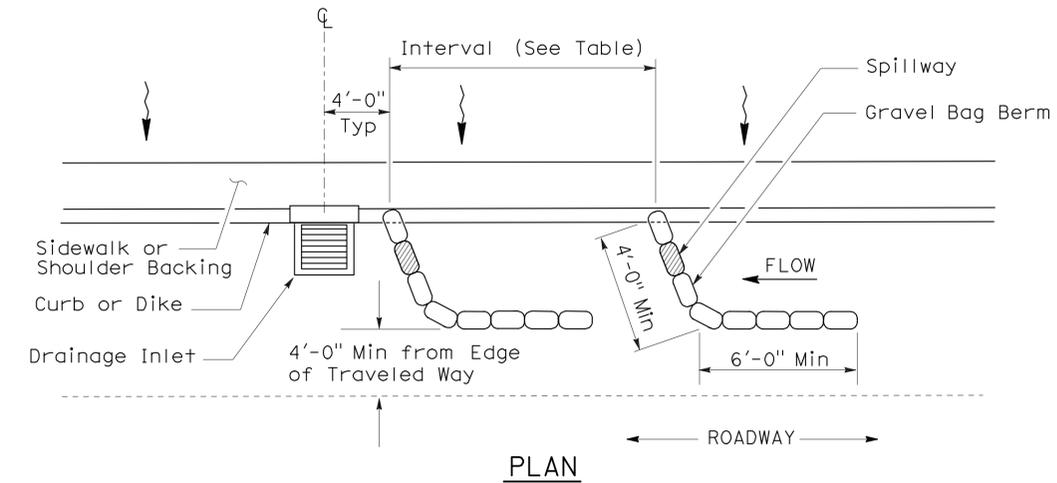
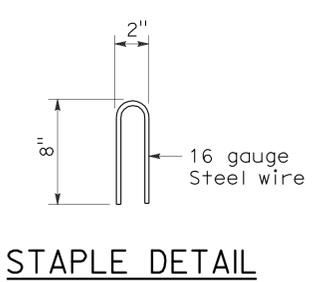
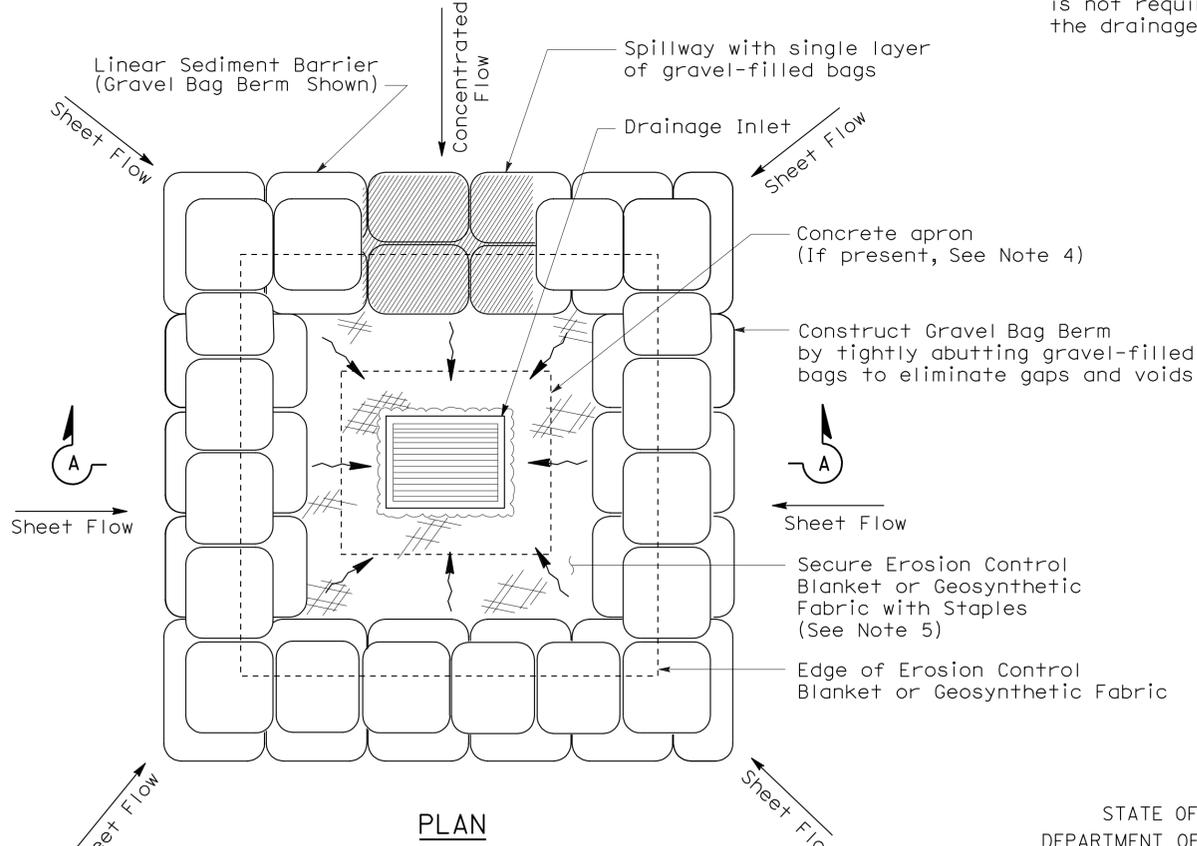
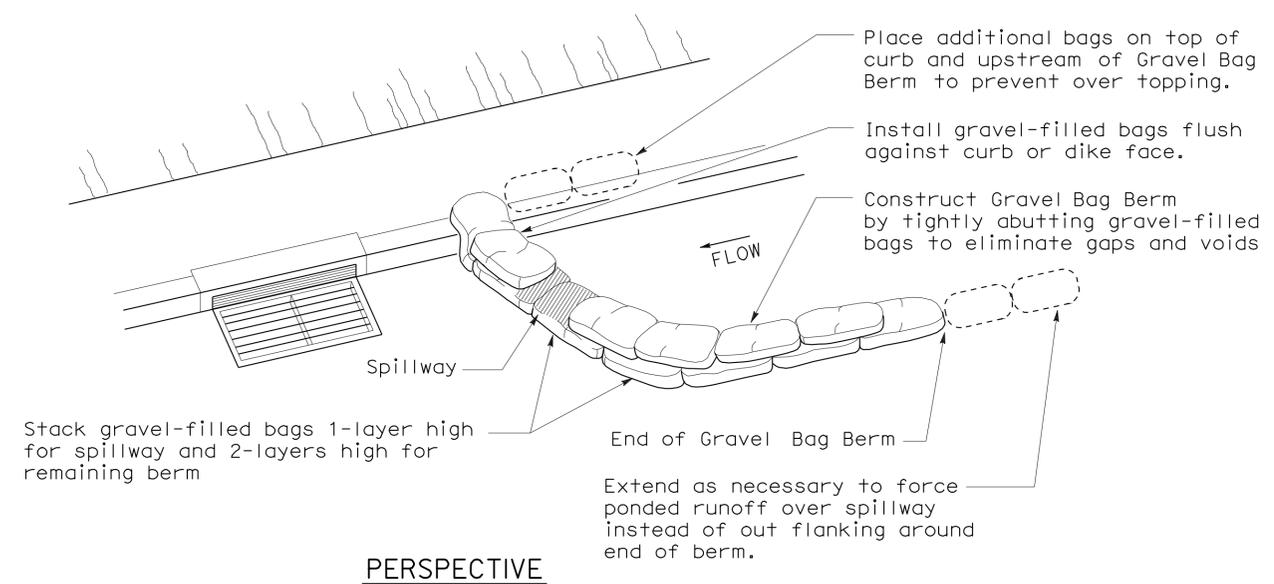
SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent



#### NOTES:

1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated or paved.



**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3A) (GRAVEL BAG BERM)**

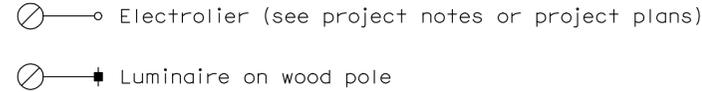
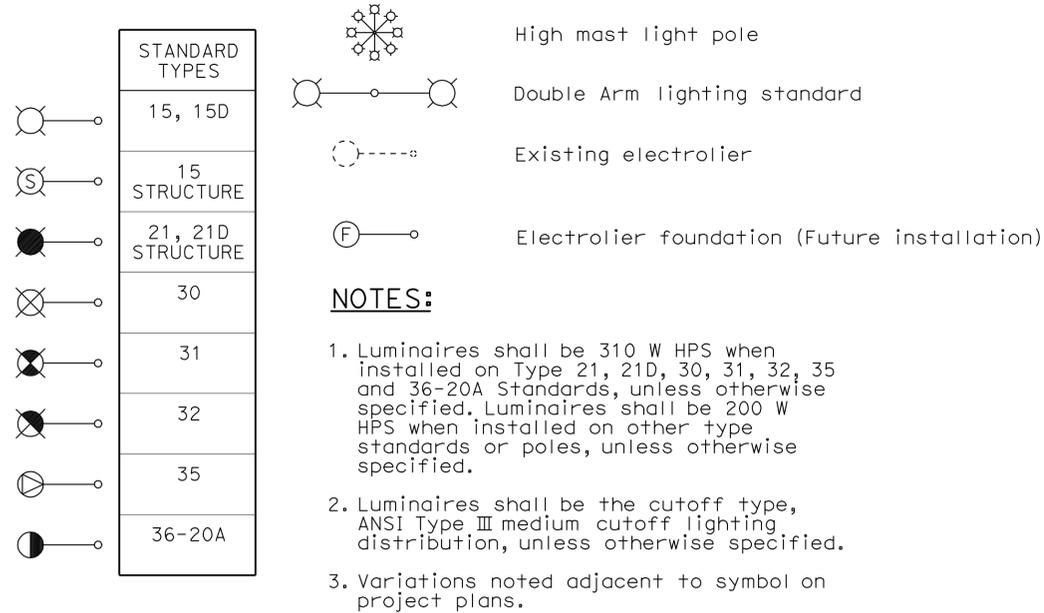
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)**

## TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE  
 NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T62

# 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

PROPOSED	EXISTING	DESCRIPTION
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	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4C	mas-4C	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
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	5,22, 73,74	Var	65	70

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

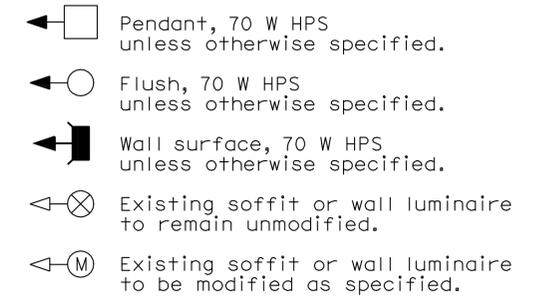
October 5, 2007  
PLANS APPROVAL DATE

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

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To accompany plans dated 6-21-10

## 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

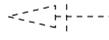
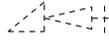
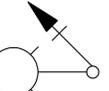
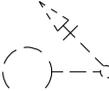
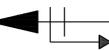
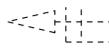
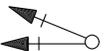
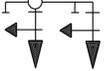
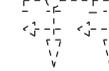
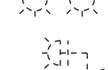
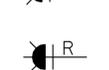
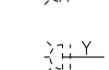
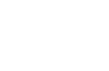
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	66	70

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  
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.

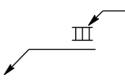
### CONDUIT

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

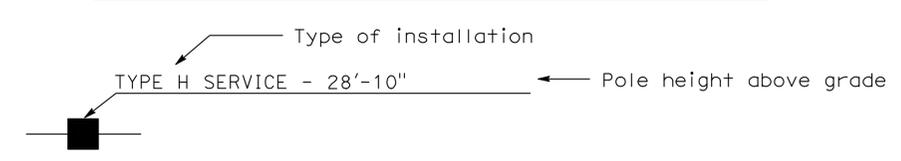
### SIGNAL EQUIPMENT

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

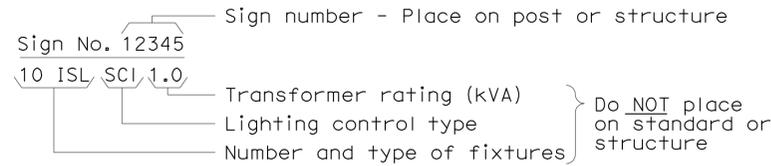
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

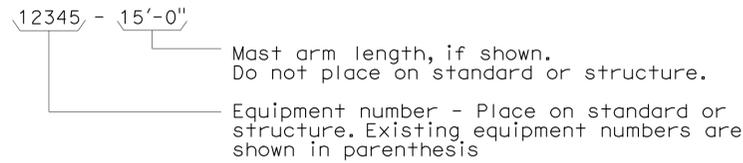
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

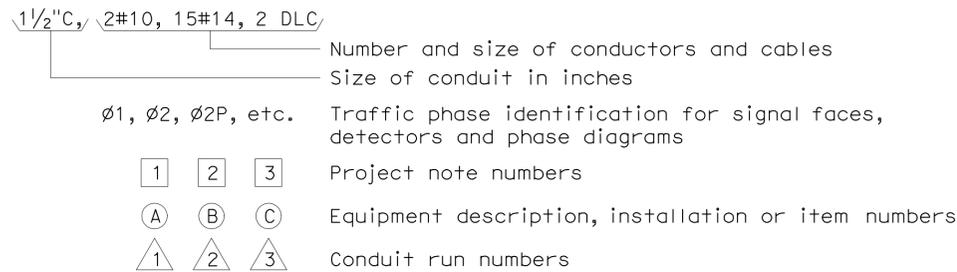
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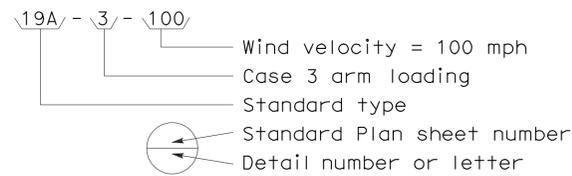
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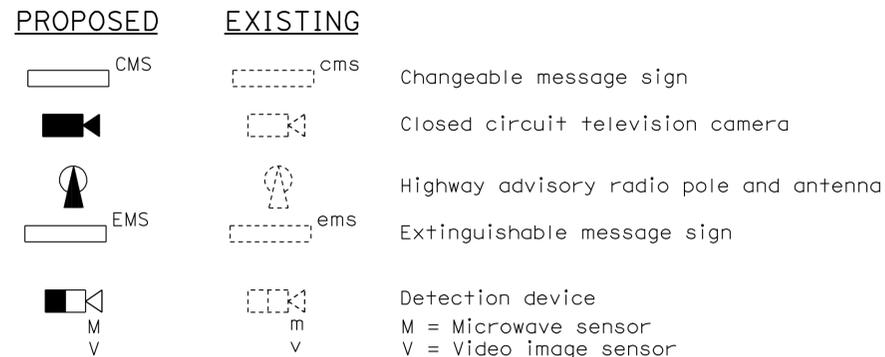
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



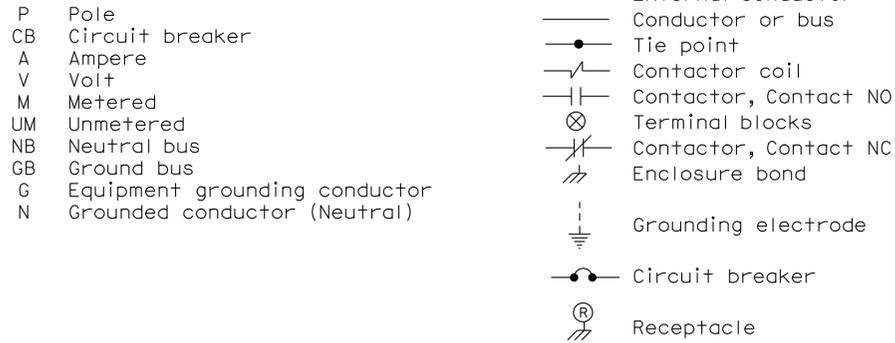
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



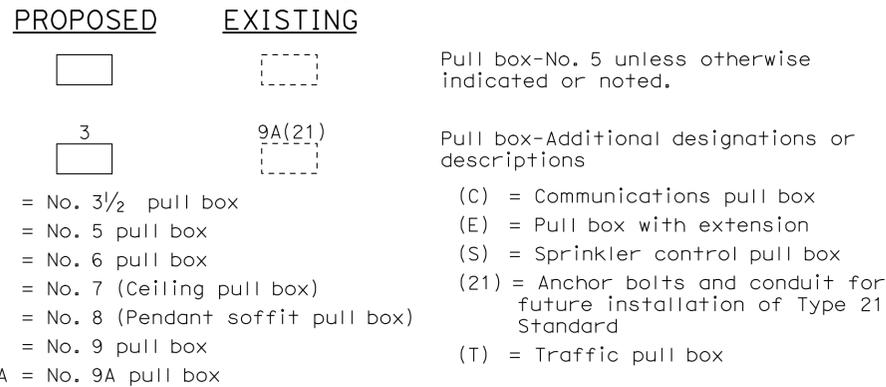
### MISCELLANEOUS EQUIPMENT



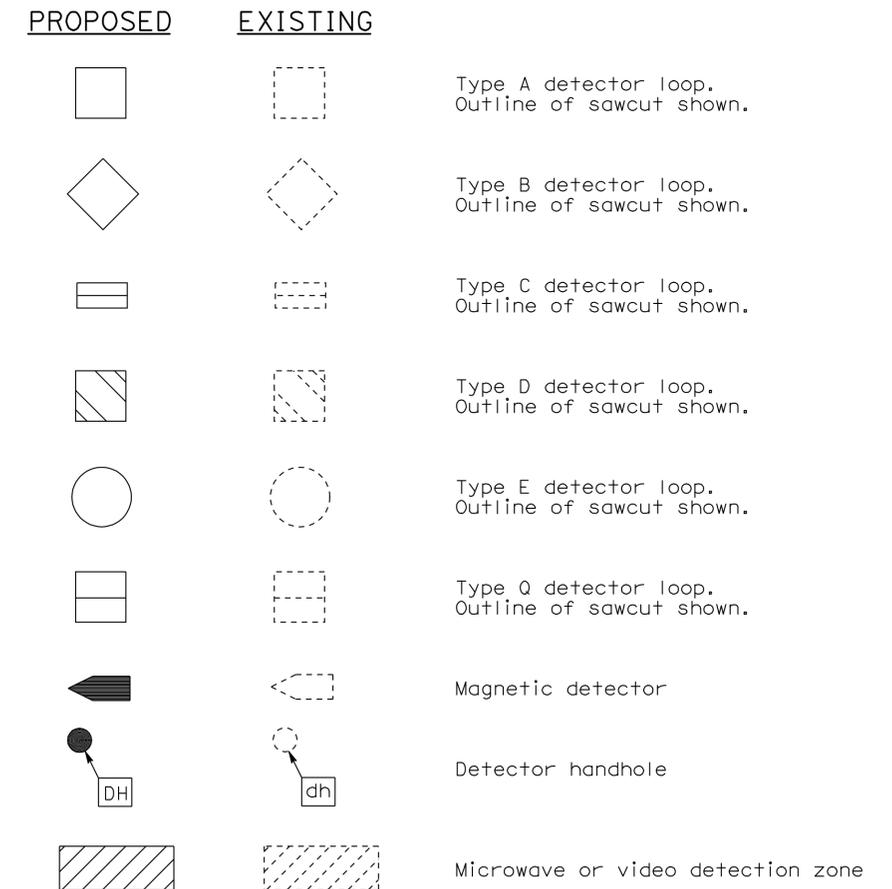
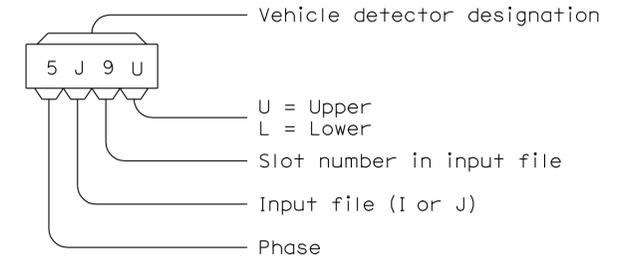
### WIRING DIAGRAM LEGEND



### 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.

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	68	70

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

To accompany plans dated 6-21-10

**NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:**

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
2. Service equipment enclosures shall be factory wired and conform to NEMA standards.
3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.
4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of  $\frac{1}{16}$ ".
6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.
7. Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.
8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:
  - a) Incoming terminals (landing lugs)
  - b) Neutral lugs
  - c) Solid neutral terminal strip
9. At least 6 standard single pole circuit breaker spaces,  $\frac{3}{4}$ " nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.
10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.
11. Main bus shall be rated for 125 A and shall be tin-plated copper.
12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
  - a) Adjacent to the breaker or device with character size a minimum of  $\frac{1}{8}$ ".
  - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of  $\frac{3}{16}$ ".
14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
19. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
20. Type III-AR and Type III-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

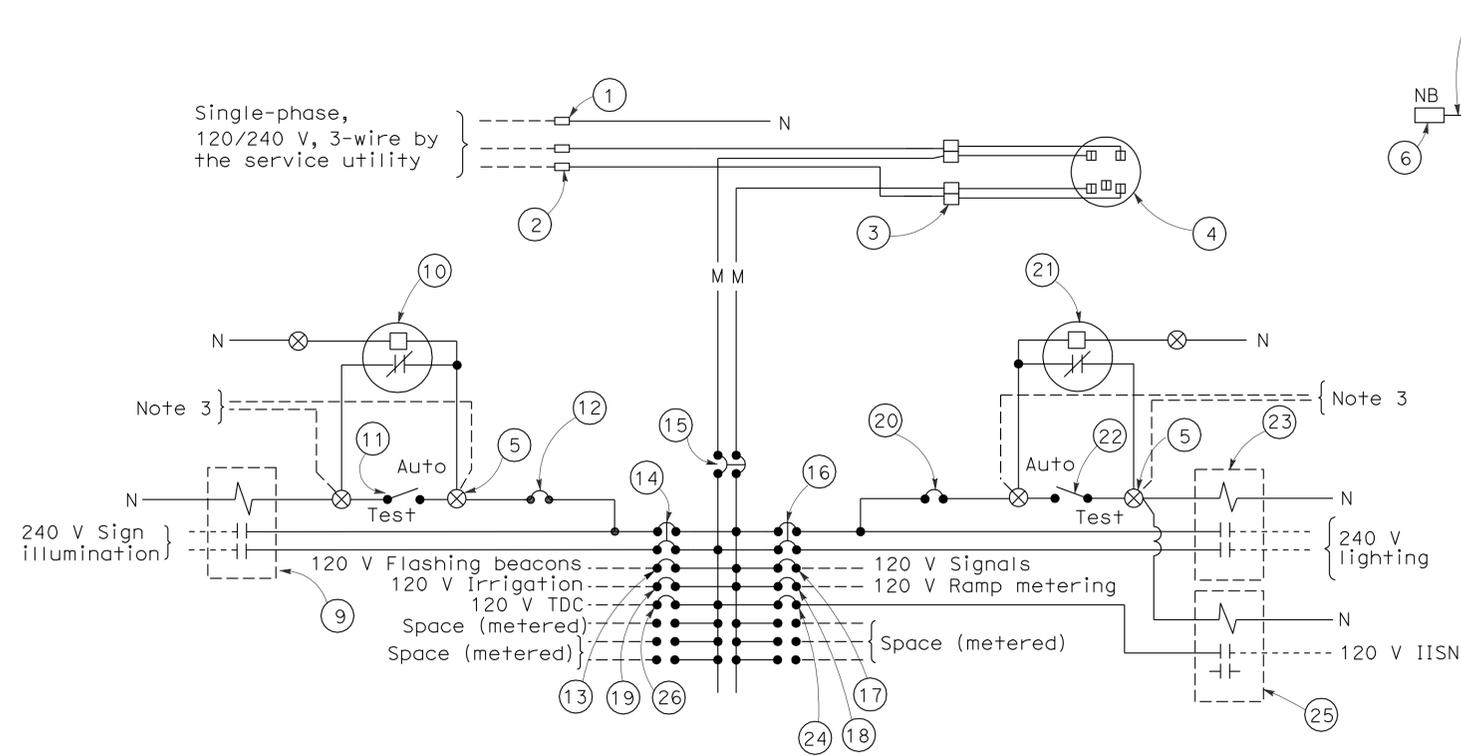
**ELECTRICAL SYSTEMS  
 (SERVICE EQUIPMENT NOTES  
 TYPE III SERIES)**

NO SCALE

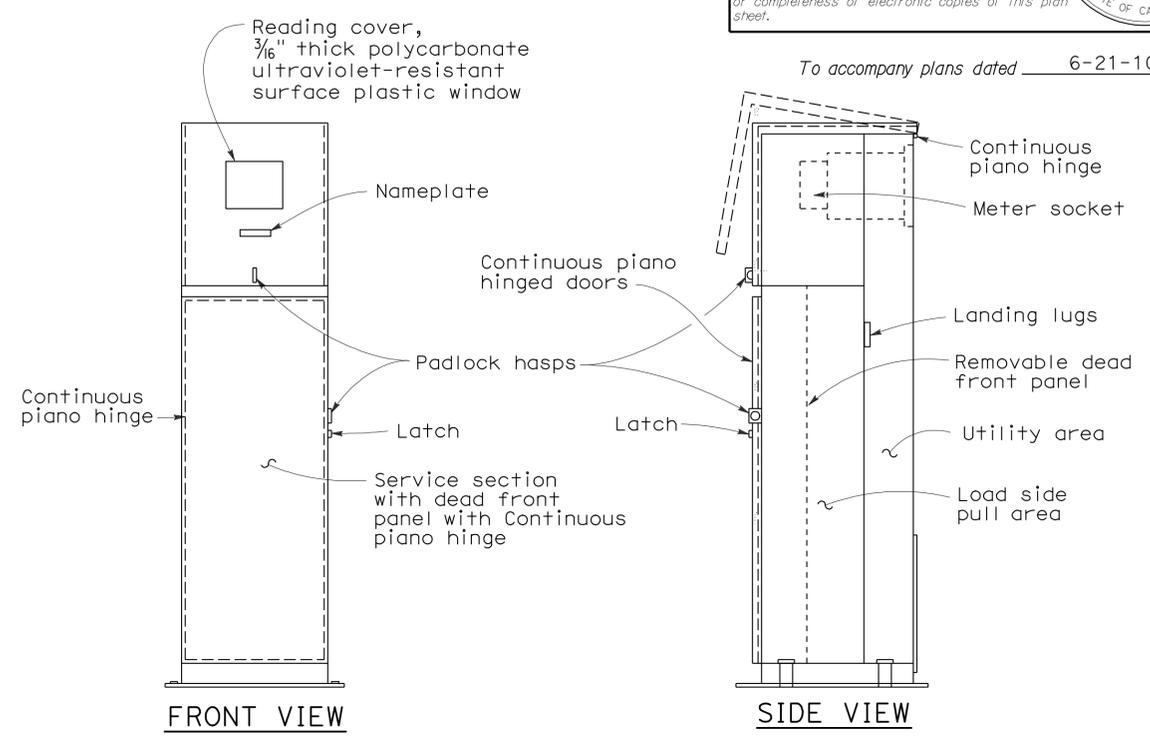
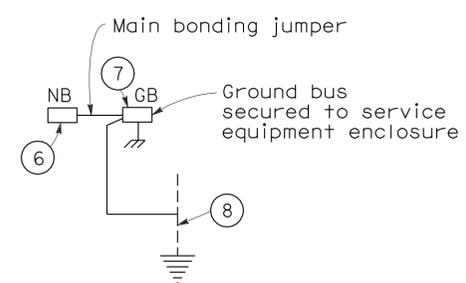
RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C  
 DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-2C**

2006 REVISED STANDARD PLAN RSP ES-2C



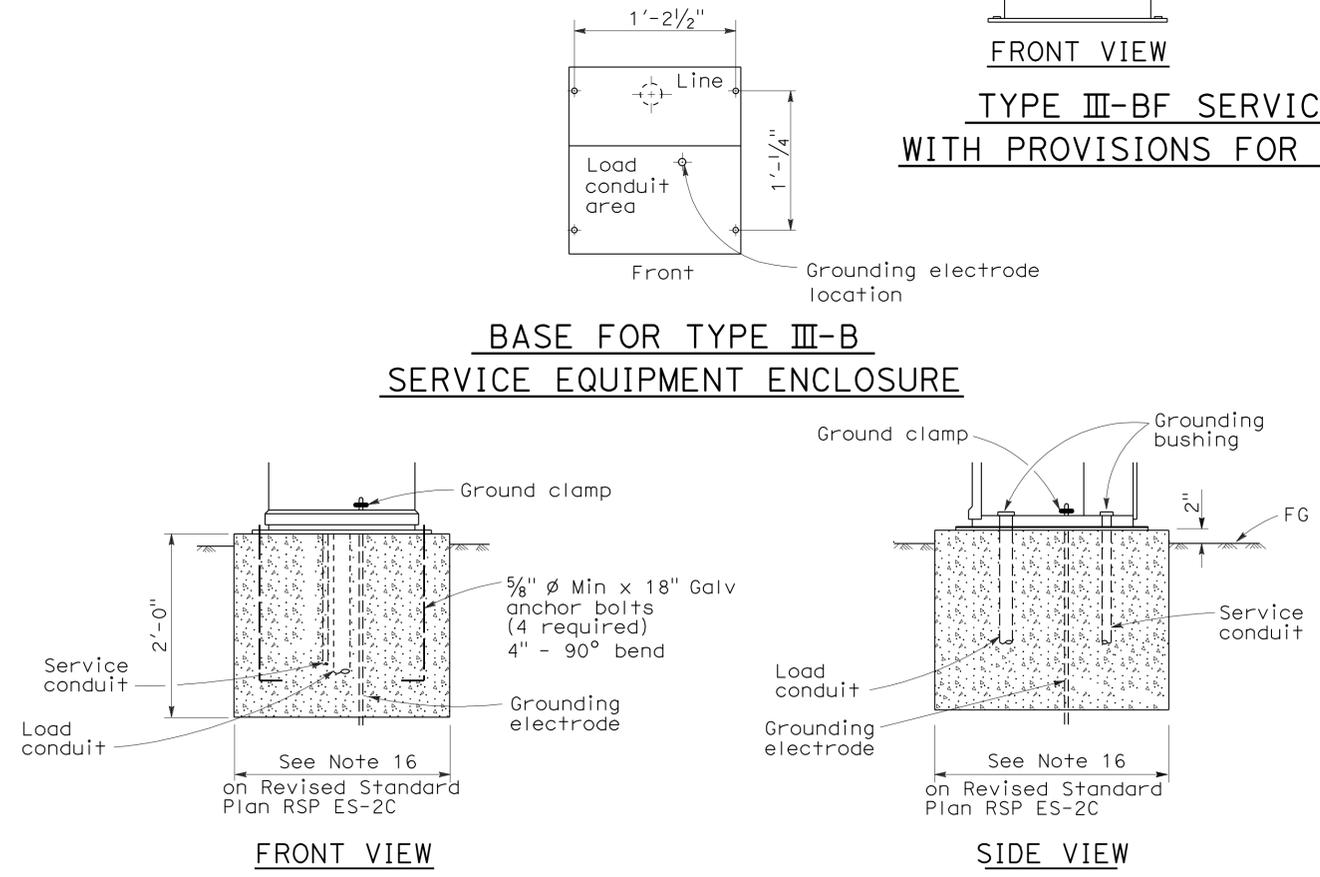
**120/240 V SERVICE WIRING DIAGRAM (TYPICAL)**



**TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR ONE 100 A METER (TYPICAL)**

TYPE III-B SERVICE (120/240 V) EQUIPMENT LEGEND		
ITEM No.	COMPONENT	NAME PLATE DESCRIPTION
①	Neutral lug	
②	Landing lug (Note 6)	
③	Test bypass facility	
④	Meter socket and support	
⑤	Terminal blocks	
⑥	Neutral bus	
⑦	Ground bus	
⑧	Grounding electrode	
⑨	30 A, 2PNO Contactor	Sign Illumination
⑩	Photoelectric unit (Note 7)	
⑪	15 A, 1P, Test switch	Sign Illumination Test Switch
⑫	15 A, 120 V, 1P, CB	Sign Illumination Control
⑬	15 A, 120 V, 1P, CB	Flashing Beacon
⑭	30 A, 240 V, 2P, CB	Sign Illumination
⑮	100 A, 240 V, 2P, CB	Main Breaker
⑯	30 A, 240 V, 2P, CB	Lighting
⑰	50 A, 120 V, 1P, CB	Signals
⑱	30 A, 120 V, 1P, CB	Ramp Metering
⑲	20 A, 120 V, 1P, CB	Irrigation
⑳	15 A, 120 V, 1P, CB	Lighting Control
㉑	Photoelectric unit (Note 7)	
㉒	15 A, 1P, Test switch	Lighting Test Switch
㉓	60 A, 2PNO Contactor	Lighting
㉔	15 A, 120 V, 1P, CB	IISNS
㉕	30 A, 2PNO Contactor	IISNS
㉖	20 A, 120 V, 1P, CB	Telephone Demarcation Cabinet

**BASE FOR TYPE III-B SERVICE EQUIPMENT ENCLOSURE**



**TYPE III-B SERVICE EQUIPMENT ENCLOSURE FOUNDATION DETAILS**

- NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)**
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
  - Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
  - Connect to remote test switch mounted on lighting standards, sign post or structure when required.
  - Items No. ① and ⑥ shall be isolated from the service equipment enclosure.
  - Meter sockets shall be 5 clip type.
  - The landing lug shall be suitable for multiple conductors.
  - Type I photoelectric control shall be used unless otherwise indicated on the plans.

STATE OF CALIFORNIA  
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**ELECTRICAL SYSTEMS  
 (SERVICE EQUIPMENT AND  
 TYPICAL WIRING DIAGRAM,  
 TYPE III-B SERIES)**  
 NO SCALE

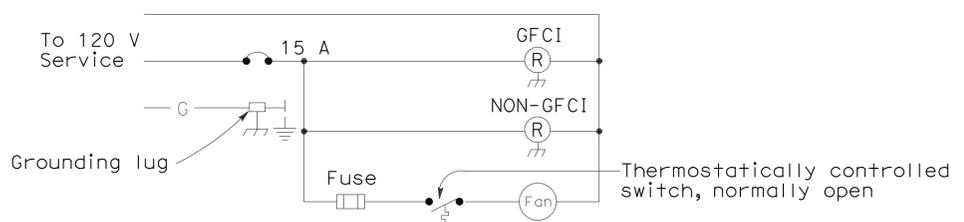
RSP ES-2E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2E  
 DATED MAY 1, 2006 - PAGE 407 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-2E

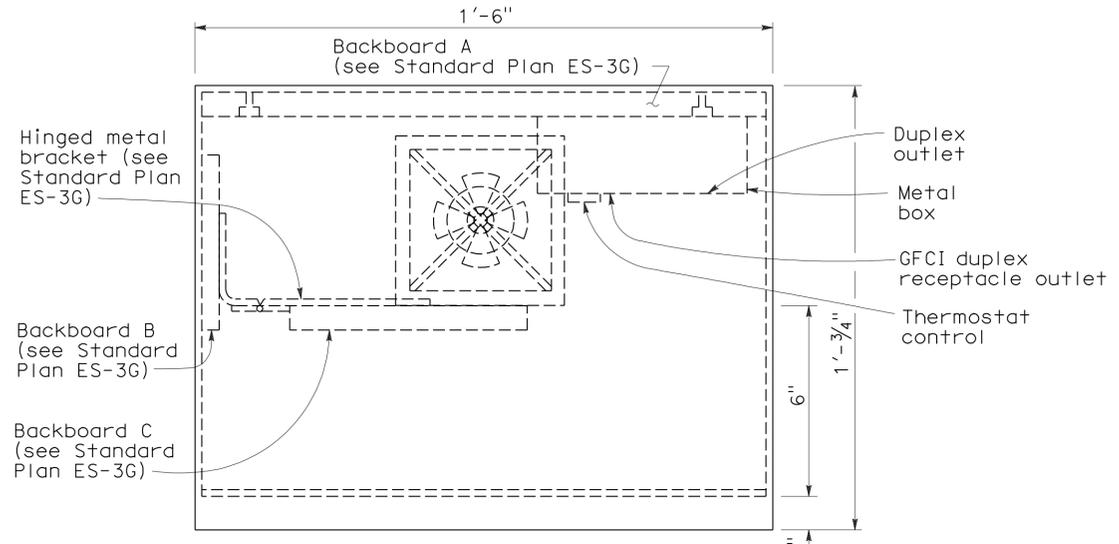
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,22, 73,74	Var	70	70

REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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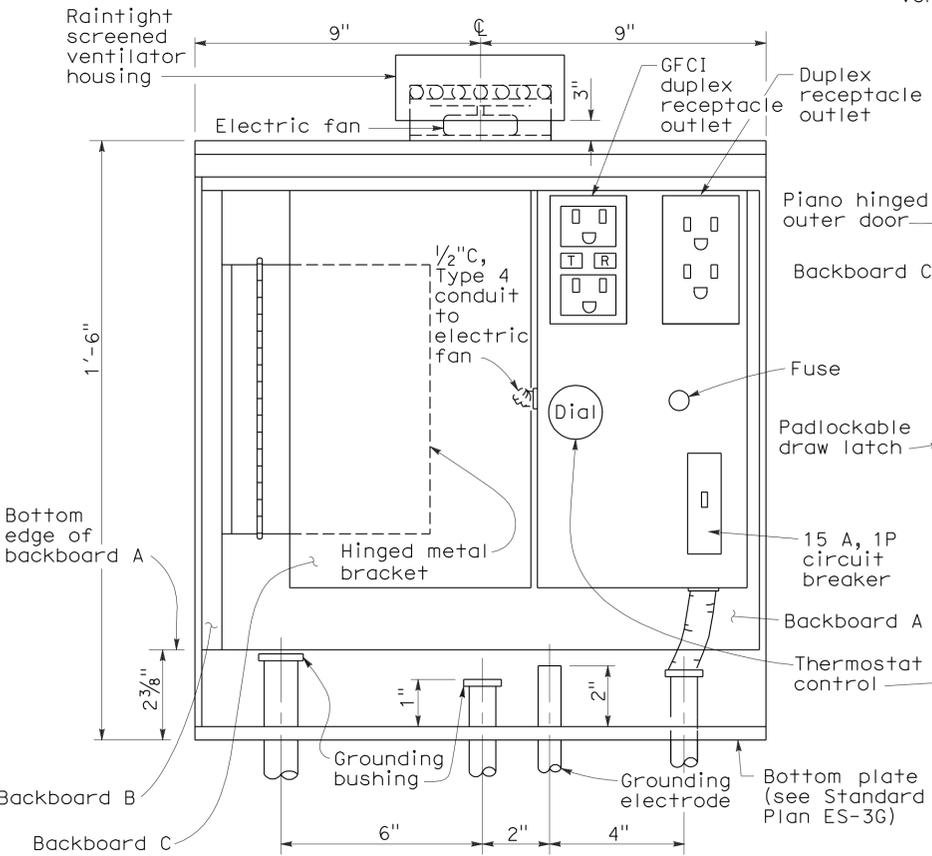
2006 REVISED STANDARD PLAN RSP ES-3F



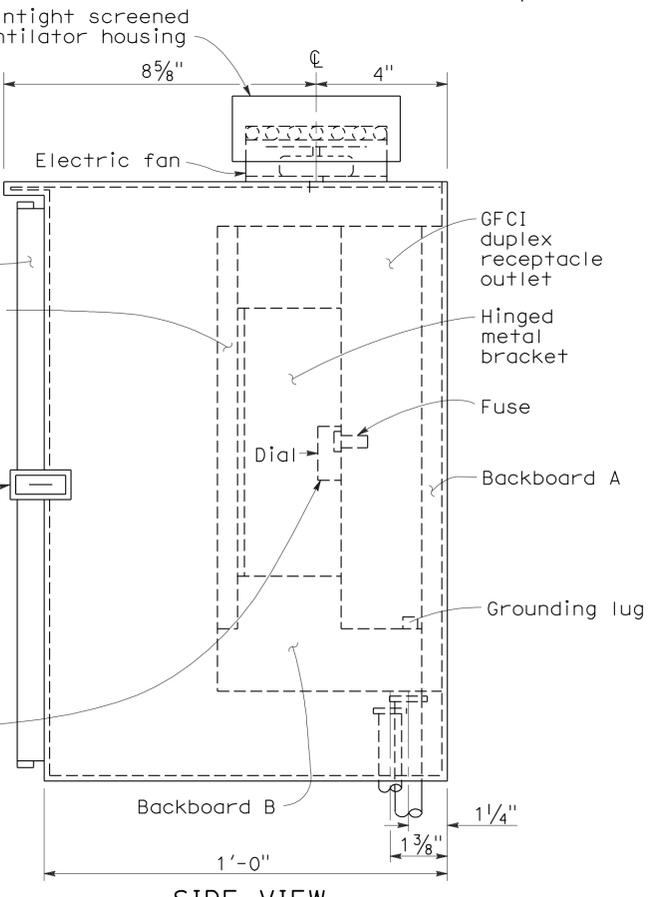
**WIRING DIAGRAM**



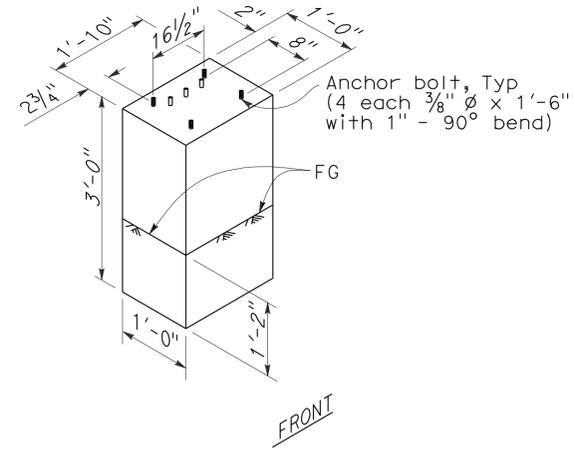
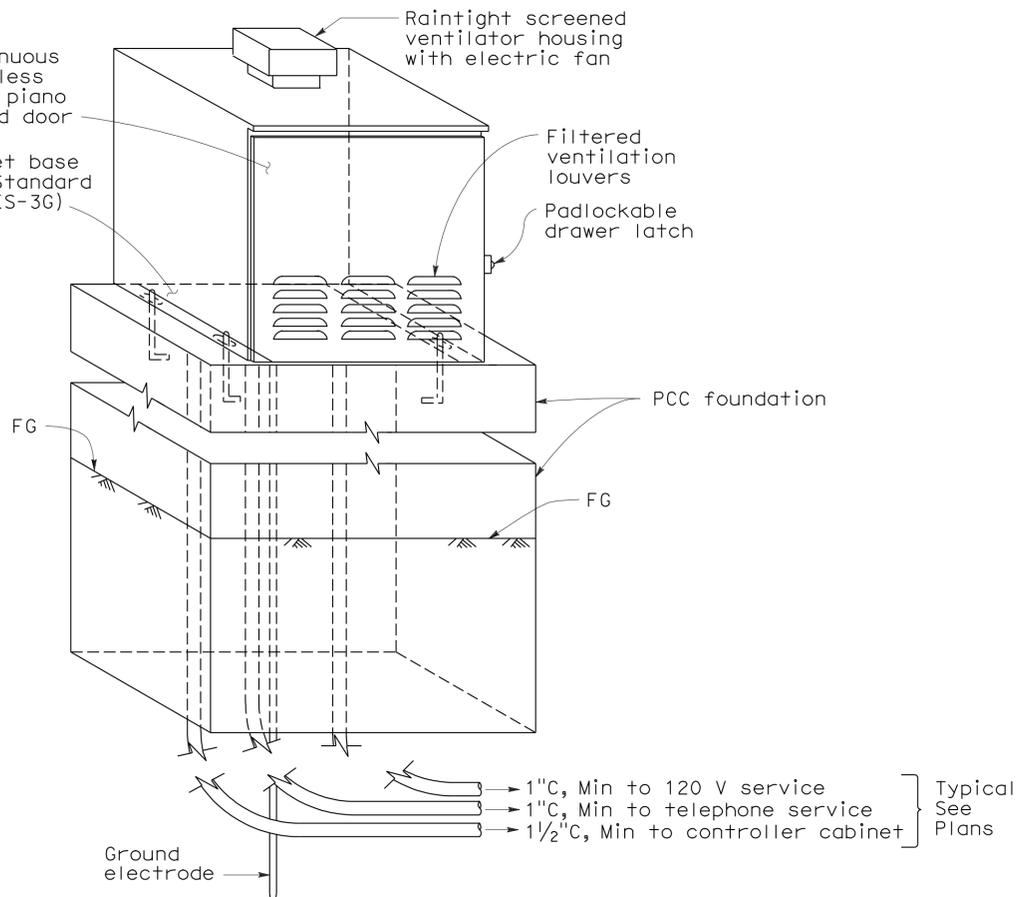
**TOP VIEW**



**FRONT VIEW**  
(Outer door removed)



**SIDE VIEW**



**FOUNDATION DETAILS**

**NOTES:**

- Telephone demarcation cabinet shall be furnished with mounting boards, thermostat, fan, outlet box, circuit breaker and outlet plate. Dimensions are nominal.
- An approved mastic or caulking compound shall be placed on the foundation prior to placing the cabinet to seal openings between bottom of cabinet and foundation.
- In unpaved areas, a raised PCC pad shall be placed in front of the telephone demarcation cabinet. Pad shall be 1'-10" x 3'-0" x 4" thick, with 2" above the finished grade.
- All conduits shall be bonded to the enclosure.
- Telephone demarcation cabinet:
  - Material shall be anodized aluminum (1/8" thick).
  - Fabrication shall conform to the requirements of the Standard Specifications.
  - Ventilation louvers shall be located in door.
  - Door shall be lockable with padlock.
  - Fan shall be mounted in a ventilator housing.
  - Fan capacity shall be at least 25 cubic feet per minute.
  - Fan shall be thermostatically controlled and adjustable to turn on between 80°F and 130°F.
  - Fan circuit shall be fused at 175 percent of the fan motor capacity.
- Hardware for fastening of mounting boards:
  - Fasten backboard A and backboard B to telephone demarcation cabinet with 3/16" diameter x 3/4" stainless steel carriage bolts (8 required).
  - Fasten hinged metal bracket to backboard B and backboard C to hinged metal bracket with number No. 10 x 3/4" wood screws (9 required).

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(TELEPHONE DEMARICATION  
CABINET, TYPE C)**

NO SCALE

RSP ES-3F DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-3F  
DATED MAY 1, 2006 - PAGE 415 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-3F**