Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	101	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

NOTES:

1. ALL STRIPES AND PAVEMENT MARKINGS MUST BE THERMOPLASTIC, UNLESS OTHERWISE NOTED.
2. CHEVRON AND DIAGONAL MARKINGS MUST BE APPLIED AT A 45 DEGREE ANGLE FROM THE ETW.
3. ALL CONFLICTING STRIPING MUST BE REMOVED.
4. ALL LIMIT LINES, CROSSWALKS, CHEVRONS AND DIAGONALS MUST BE 12" SOLID, UNLESS OTHERWISE NOTED.

PAVEMENT DELINEATION QUANTITIES

SHEET No.	PAINT TRAFFIC STRIPE (2-COAT) (4" BLACK)	THERMOPLASTIC TRAFFIC STRIPE													
		4" (BROKEN 17-7)		4" (BROKEN 36-12)		4"					8"				8" (BROKEN 12-3)
		DETAIL 8	DETAIL 9	DETAIL 13 (Mod)	DETAIL 14 (Mod)	WHITE STRIPE	DETAIL 25A	DETAIL 25	DETAIL 27B	DETAIL 29	DETAIL 36	DETAIL 36B	DETAIL 38	DETAIL 38B	DETAIL 37
	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
S-1	2,400			2,400				800	1,200		500	400		150	
S-2	8,730		219	7,578	1,152	100	750	2,600	3,818		200	70		700	900
S-3	8,250	100		7,674	576		535	2,400	3,191		300				1,200
S-4	9,500			8,924	576			2,600	2,600						900
S-5	10,400	450		9,824	576	50	399	2,600	3,079		510	190	100		170
S-6	10,400	250		8,672	1,728		472	2,600	1,633		153	8			
S-7	10,400	120		9,824	576		70	2,600	2,700		120	30			
S-8	11,200			10,624	576			2,800	2,800						
S-9	11,200	200	329	10,624	576	50	521	2,800	3,258		1,040	516			
S-10	9,200		932	8,768	432	50	2,941	2,800	6,491		1,800	750	100		
S-11	7,280			7,136	144		3,970	2,800	7,000		1,120	750			
S-12	8,620	115	385	8,620		50	4,106	2,800	7,809	1,840	610	631			
S-13	6,600		540	6,312	288		4,930	2,200	6,150		2,668	400		180	880
S-14	6,750			6,750			400	1,950	3,050		600	500		800	1,450
S-15	9,450	140		8,298	1,152		450	2,700	3,310		620				
S-16	10,050		569	10,050		200	2,168	2,600	4,533		770				350
S-17	9,100	130	92	8,524	576		540	2,600	3,610		600	200			1,300
S-18	9,780		540	9,204	576	100	740	2,800	2,983		295	315	150		1,105
S-19	9,757		913	9,325	432		3,037	2,600	6,041		534	306			
S-20	10,256		520	10,256			2,945	2,600	6,774		622	487			
S-21	8,320		338	7,744	576	50	545	2,600	3,291		964	125		340	440
S-22	7,000			7,000				2,000	2,000						
S-23	715	105		715			1,085		1,053			145			
S-24	1,271			1,127			1,665		1,985		420				
SUB-TOTAL	196,629	1,610	5,377	186,117	10,512	650	32,269	54,850	90,359	1,840	14,446	5,823	350	2,170	8,695
TOTAL	196,629	6,987		196,629		179,968					23,313				8,695

PAVEMENT DELINEATION QUANTITIES
PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	102	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

PAVEMENT DELINEATION QUANTITIES

SHEET No.	THERMOPLASTIC PAVEMENT MARKING					PAVEMENT MARKER					REMOVE PAVEMENT MARKER
	ARROWS	WORDS	LIMIT LINE/ CROSSWALK	DIAGONALS	CHEVRONS	(NON-REFLECTIVE)	(RETROREFLECTIVE)				
						TYPE A	TYPE C	TYPE D	TYPE G	TYPE H	
	SQFT	SQFT	SQFT	SQFT	SQFT	EA	EA	EA	EA	EA	EA
S-1						200			100	17	317
S-2	213	150	94			728	40		290	85	1,143
S-3	31		93		22	688	24		253	72	1,037
S-4					58	792	24		240	54	1,110
S-5	228	22	53	588		867	24		245	71	1,207
S-6	161			373		867	48		190	74	1,179
S-7	33					867	16		211	57	1,151
S-8						933	16		221	58	1,228
S-9	115	44	47	150	98	933	16		295	80	1,324
S-10	296	150	146	679	257	767	12		315	181	1,275
S-11	159			377		607	4		227	224	1,062
S-12	610	106	76	284	69	718		38	247	229	1,232
S-13	64		116	252	216	550	16		338	251	1,155
S-14					106	563	8		344	57	972
S-15	33	63				788	32		199	75	1,094
S-16	362	44	352			838	8		282	145	1,273
S-17	117	63		96		758	24		305	77	1,164
S-18	296		359		30	815	24		306	89	1,234
S-19	128		118			813	12		248	181	1,254
S-20	188		146			855			271	177	1,303
S-21	229		166			693	24		267	77	1,061
S-22						583			146	42	771
S-23	64		86			60			21	45	126
S-24						106			44	69	219
	3,327	642	1,852	2,799	856	16,389	372	38	5,605	2,487	24,891
TOTAL	9,476					16,389	8,502				24,891

PAVEMENT DELINEATION QUANTITIES

PDQ-2

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

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
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REVISED BY
DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	103	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

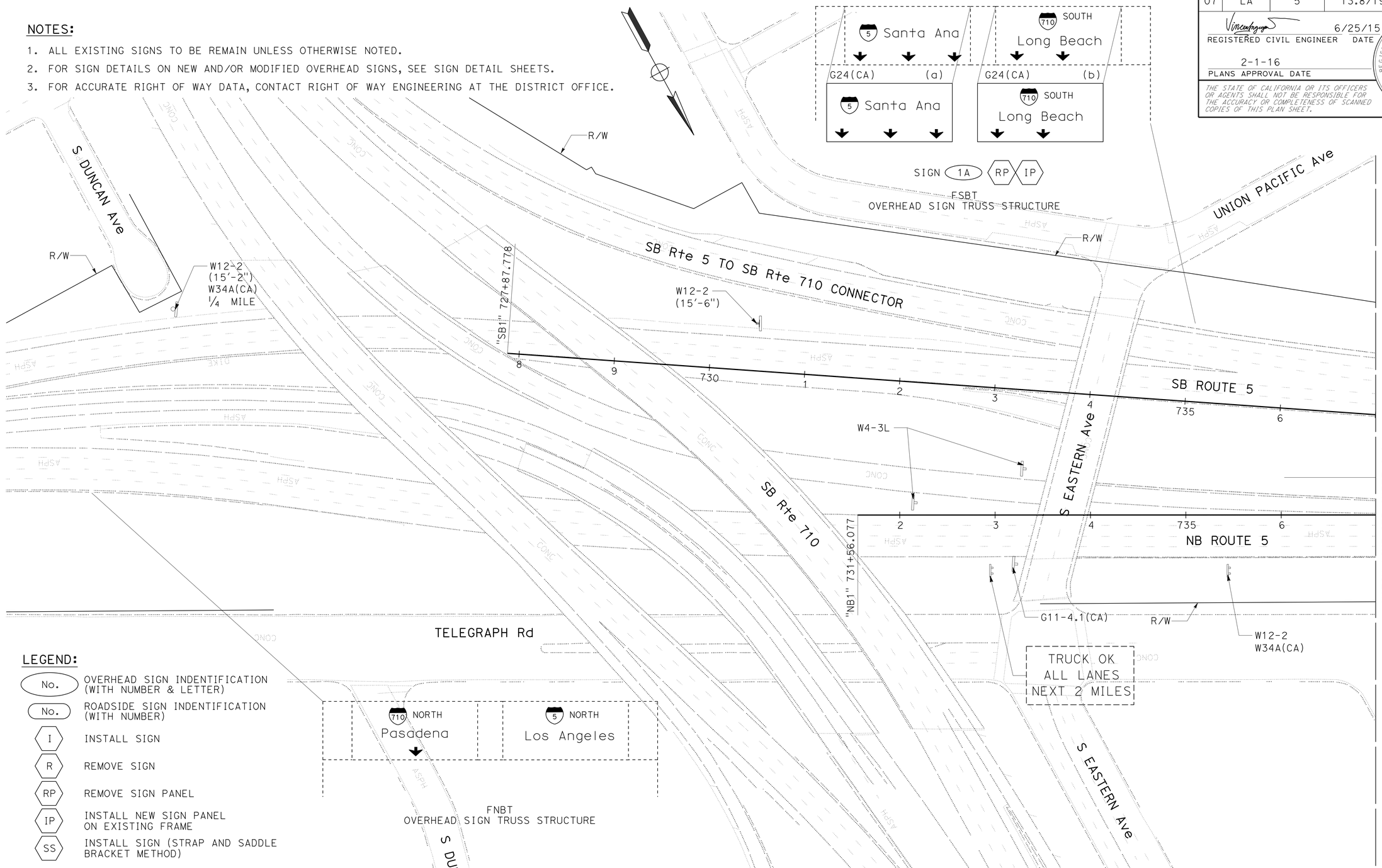
2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

NOTES:

1. ALL EXISTING SIGNS TO BE REMAIN UNLESS OTHERWISE NOTED.
2. FOR SIGN DETAILS ON NEW AND/OR MODIFIED OVERHEAD SIGNS, SEE SIGN DETAIL SHEETS.
3. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



LEGEND:

No.	OVERHEAD SIGN INDENTIFICATION (WITH NUMBER & LETTER)
No.	ROADSIDE SIGN INDENTIFICATION (WITH NUMBER)
I	INSTALL SIGN
R	REMOVE SIGN
RP	REMOVE SIGN PANEL
IP	INSTALL NEW SIGN PANEL ON EXISTING FRAME
SS	INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)
	SINGLE POST SIGN
	DOUBLE POST SIGN

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY / DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
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REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp 03/31/16 CIVIL STATE OF CALIFORNIA

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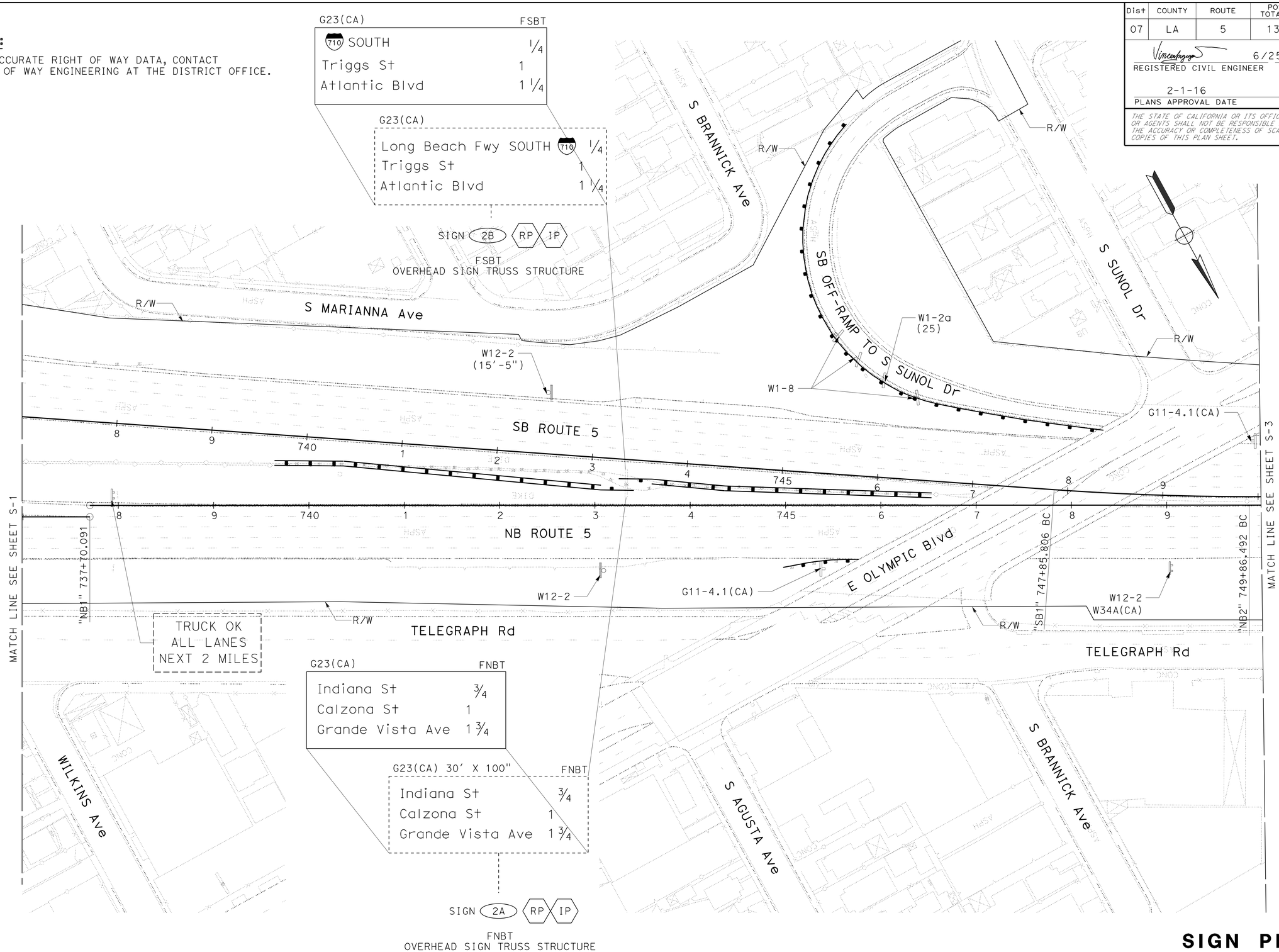

SIGN PLAN

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S-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	105	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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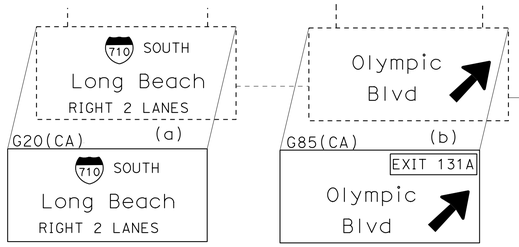
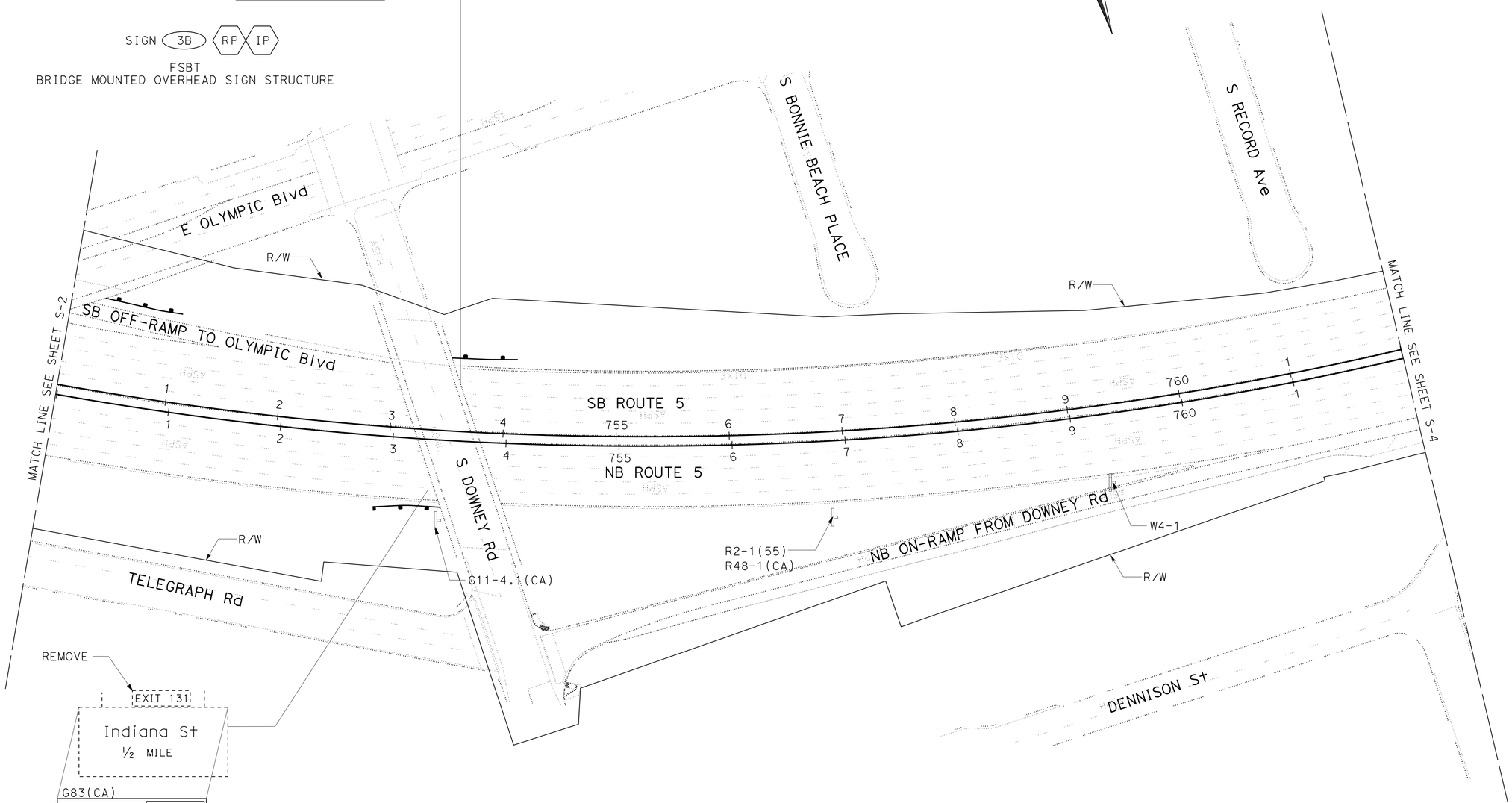


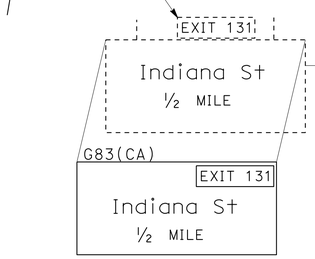
SIGN 3B RP IP

FSBT
BRIDGE MOUNTED OVERHEAD SIGN STRUCTURE

NOTE:

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





SIGN 3A RP IP

FNBT
BRIDGE MOUNTED OVERHEAD SIGN STRUCTURE

APPROVED FOR SIGN WORK ONLY

SIGN PLAN

S-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	106	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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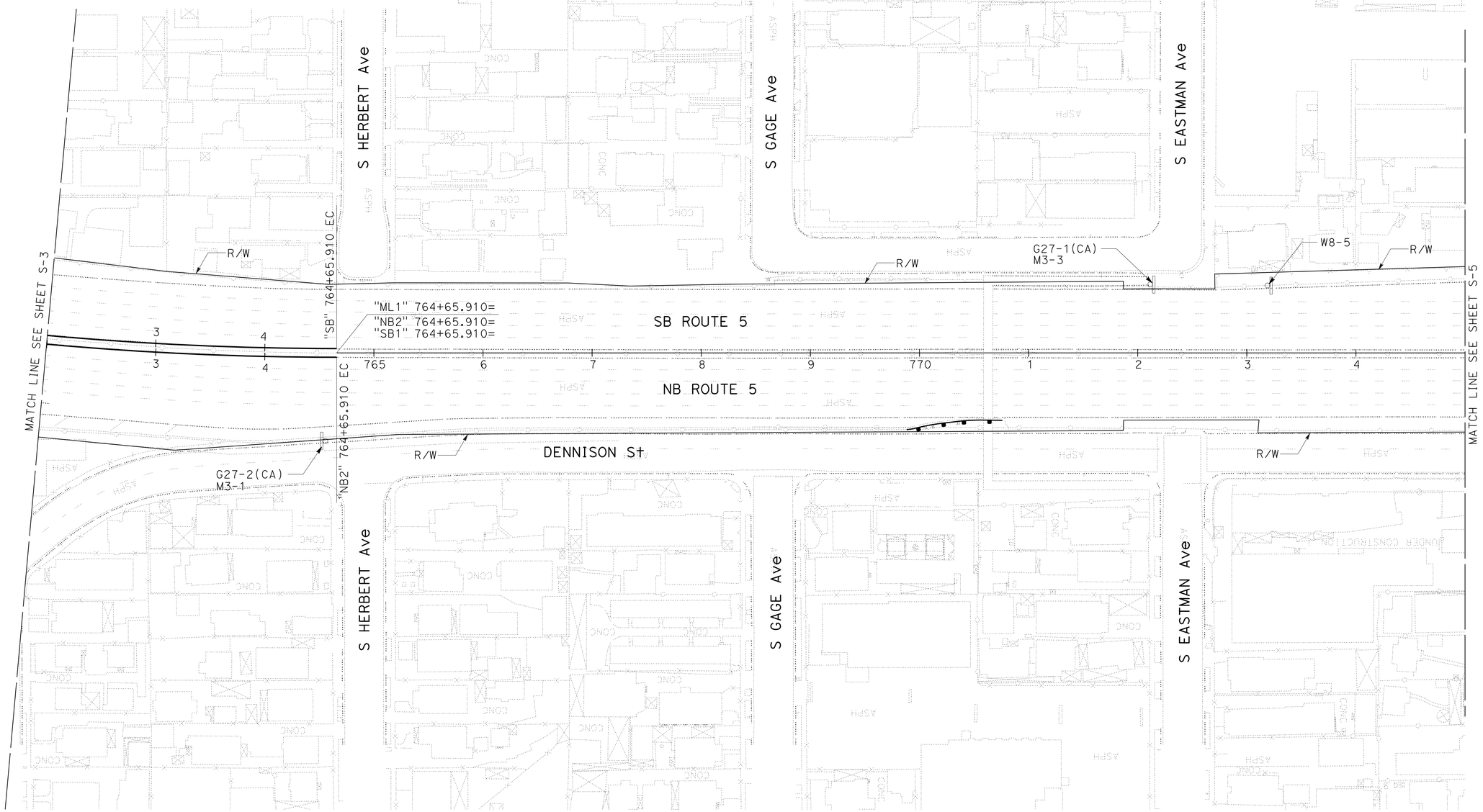
NOTE:

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



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

BORDER LAST REVISED 7/2/2010
USERNAME => s119140
DGN FILE => 730070oa004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1877
PROJECT NUMBER & PHASE 07130004921

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	107	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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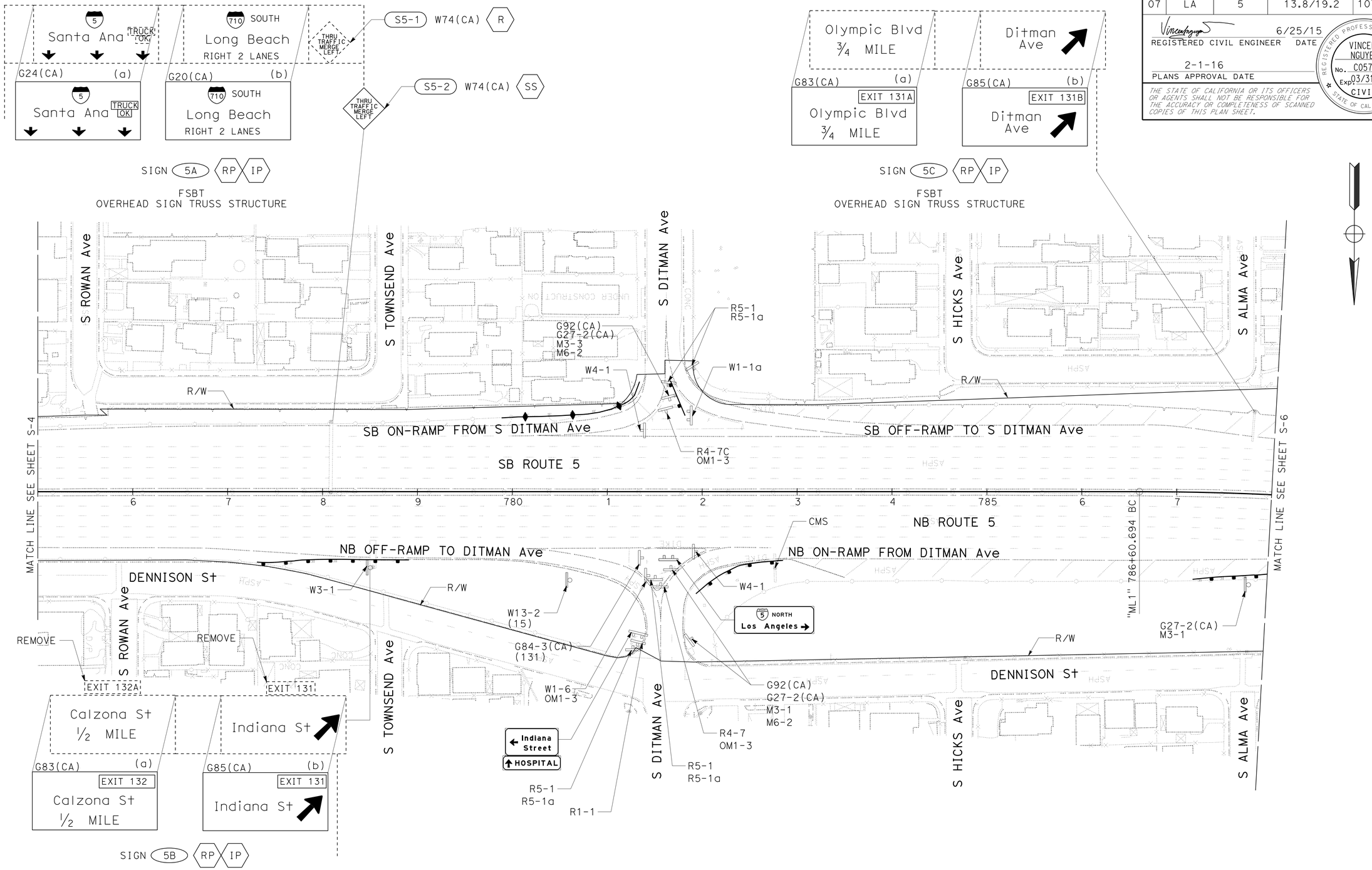

NOTE:

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

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-5

REVISED BY | DATE REVISED
EUGENE BRAVO | VINCENT NGUYEN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	108	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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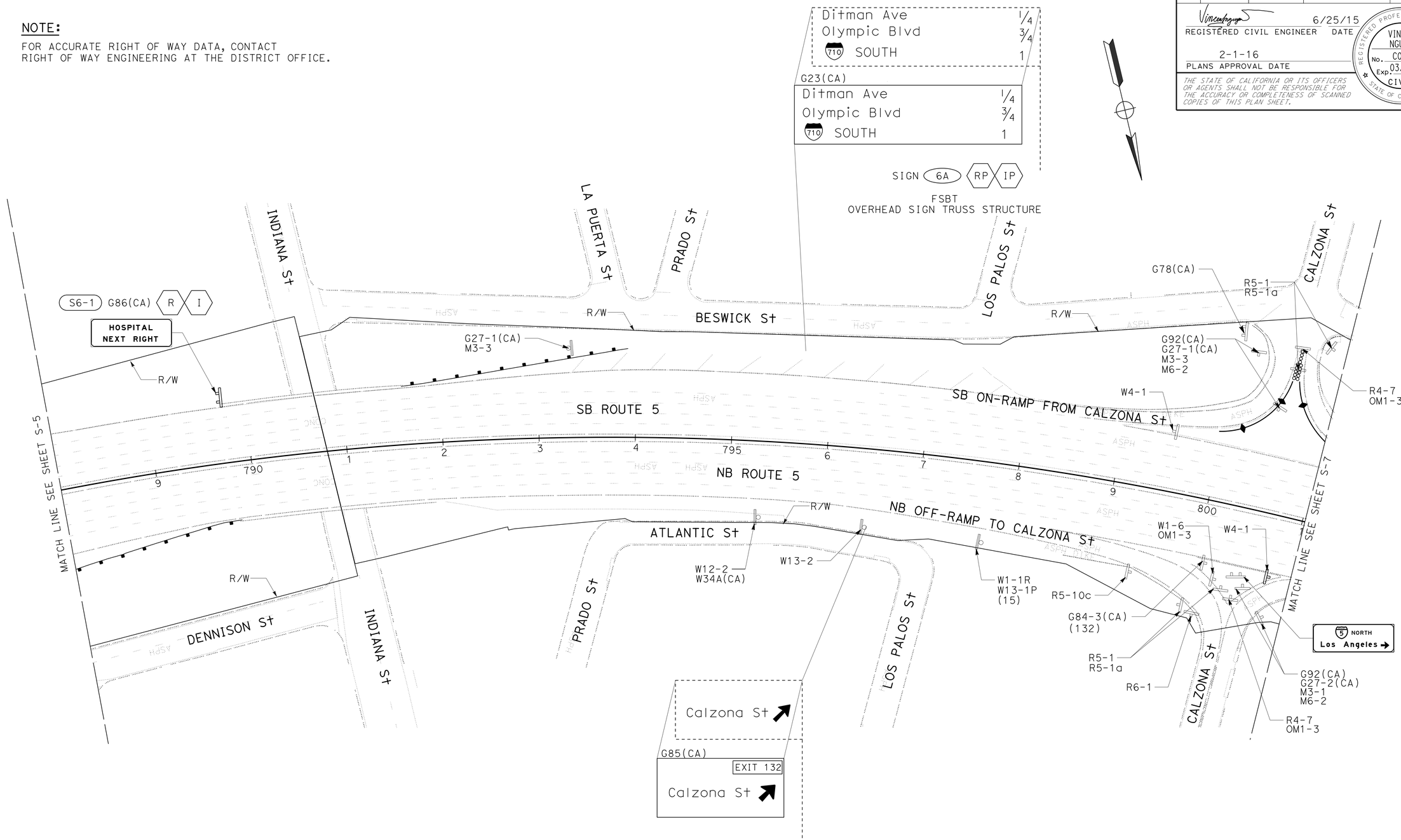
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: VINCENT NGUYEN
CHECKED BY: EUGENE BRAVO
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

BORDER LAST REVISED 7/2/2010
USERNAME => s119140
DGN FILE => 730070oa006.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1877
PROJECT NUMBER & PHASE 07130004921

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	109	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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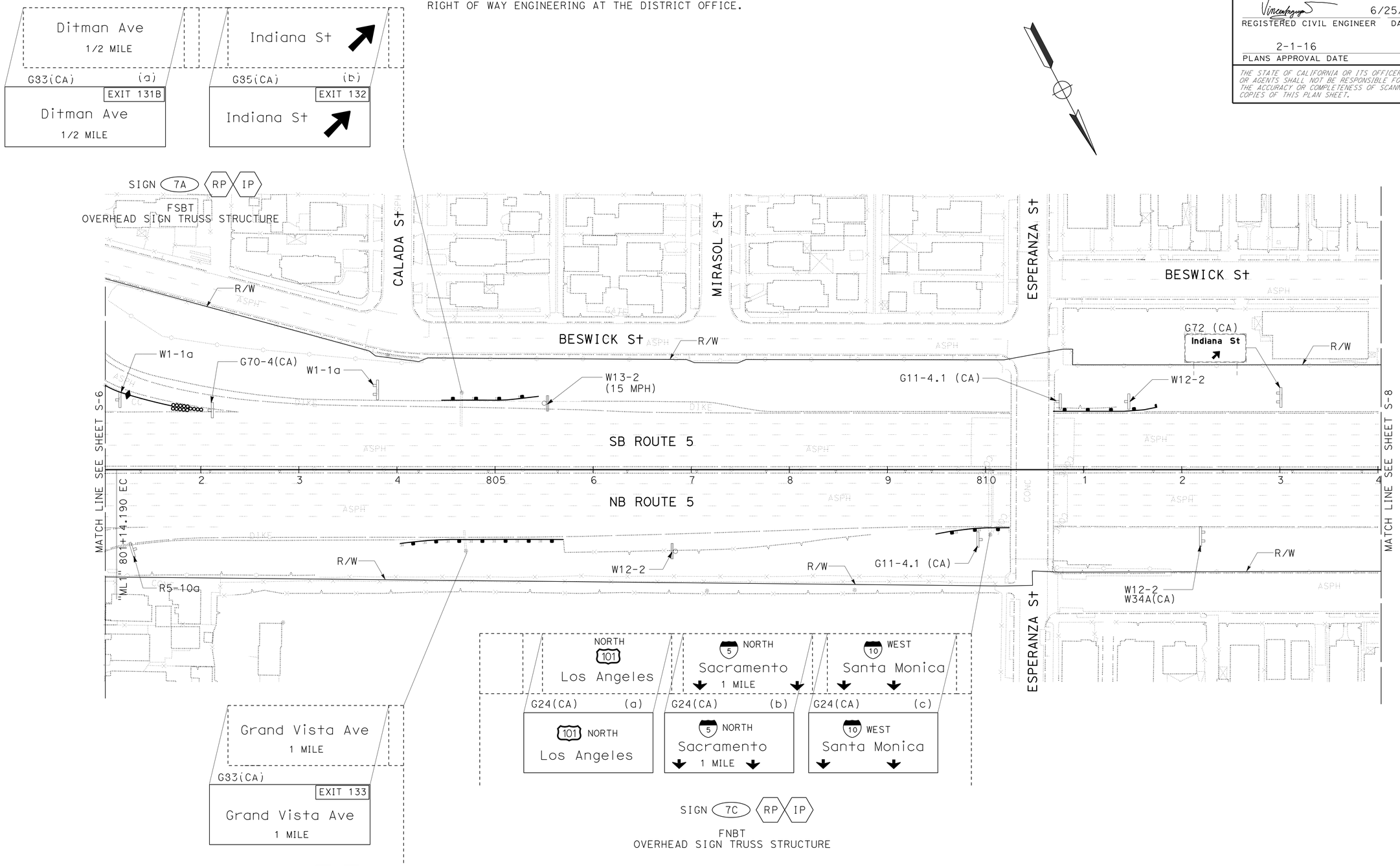

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

CALCULATED-DESIGNED BY: EUGENE BRAVO

CHECKED BY: VINCENT NGUYEN

REVISED BY / DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:57

BORDER LAST REVISED 7/2/2010 | USERNAME => s119140 | DGN FILE => 730070oa007.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1877 | PROJECT NUMBER & PHASE 07130004921

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	110	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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NOTE:
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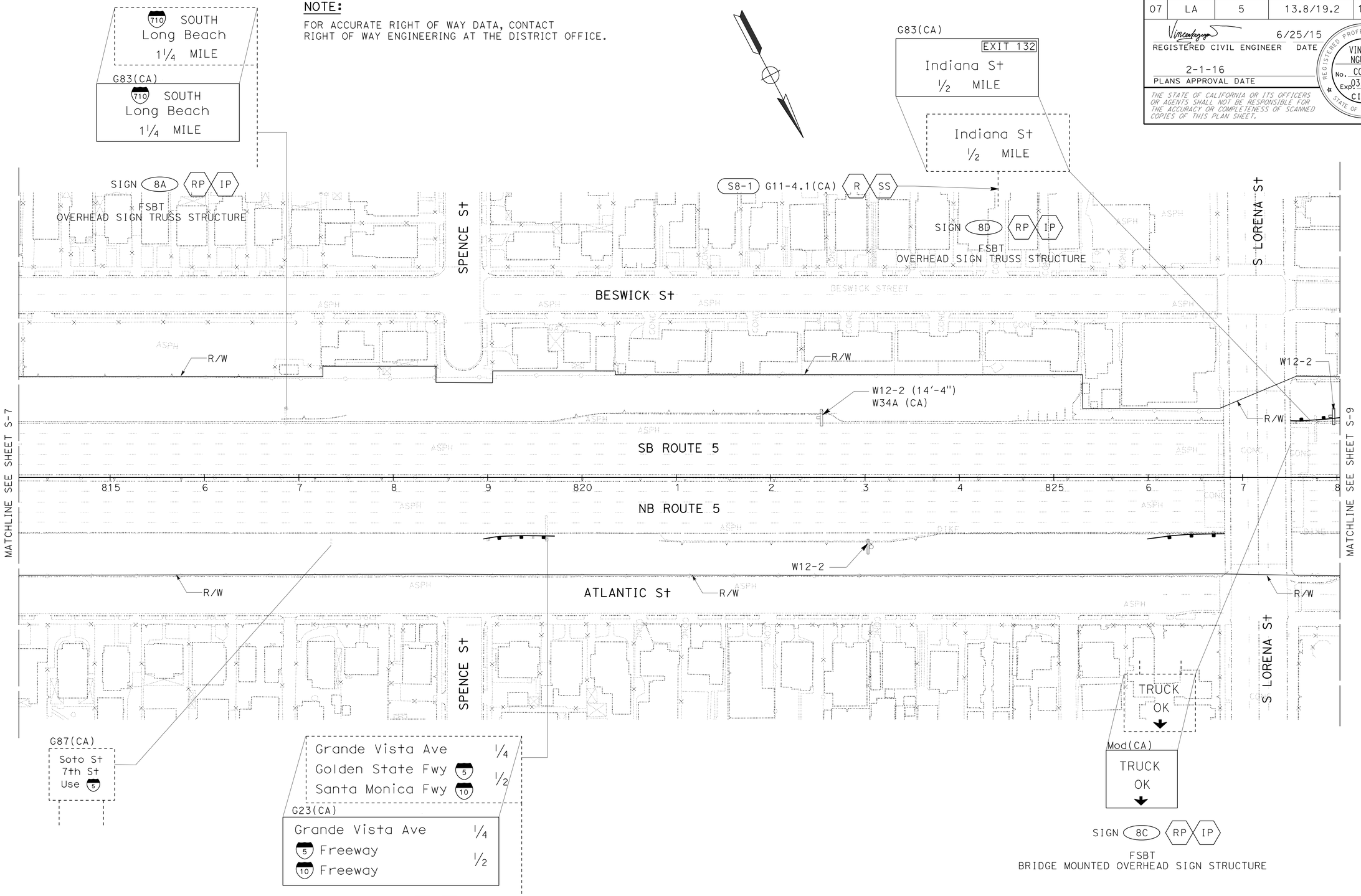

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	111	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp 03/31/16 CIVIL STATE OF CALIFORNIA

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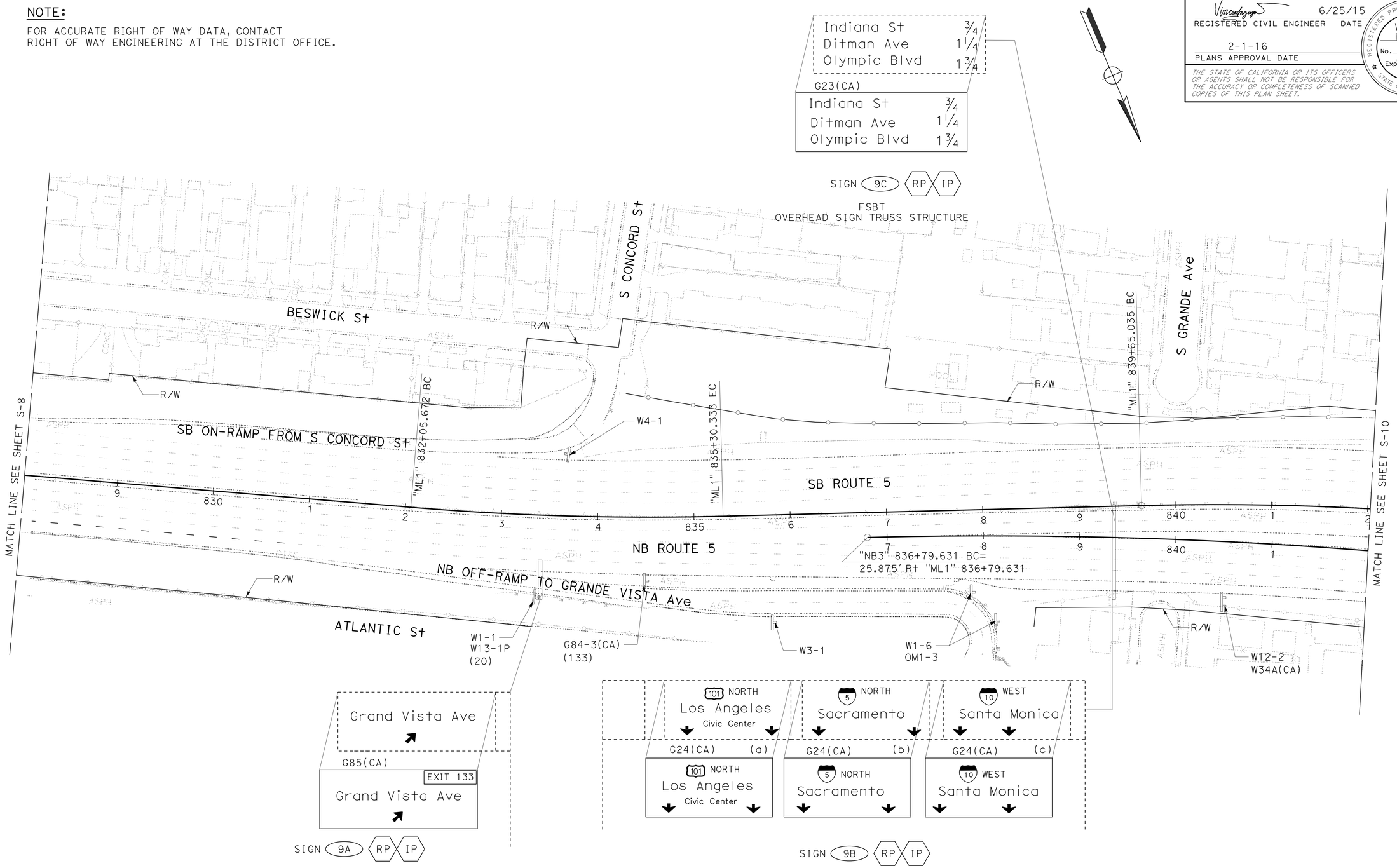
NOTE:

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



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

CALCULATED-DESIGNED BY: EUGENE BRAVO

CHECKED BY: VINCENT NGUYEN

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 28-JAN-2016

TIME PLOTTED => 11:57

BORDER LAST REVISED 7/2/2010

USERNAME => s119140

DGN FILE => 730070oa009.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1877

PROJECT NUMBER & PHASE 07130004921

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	112	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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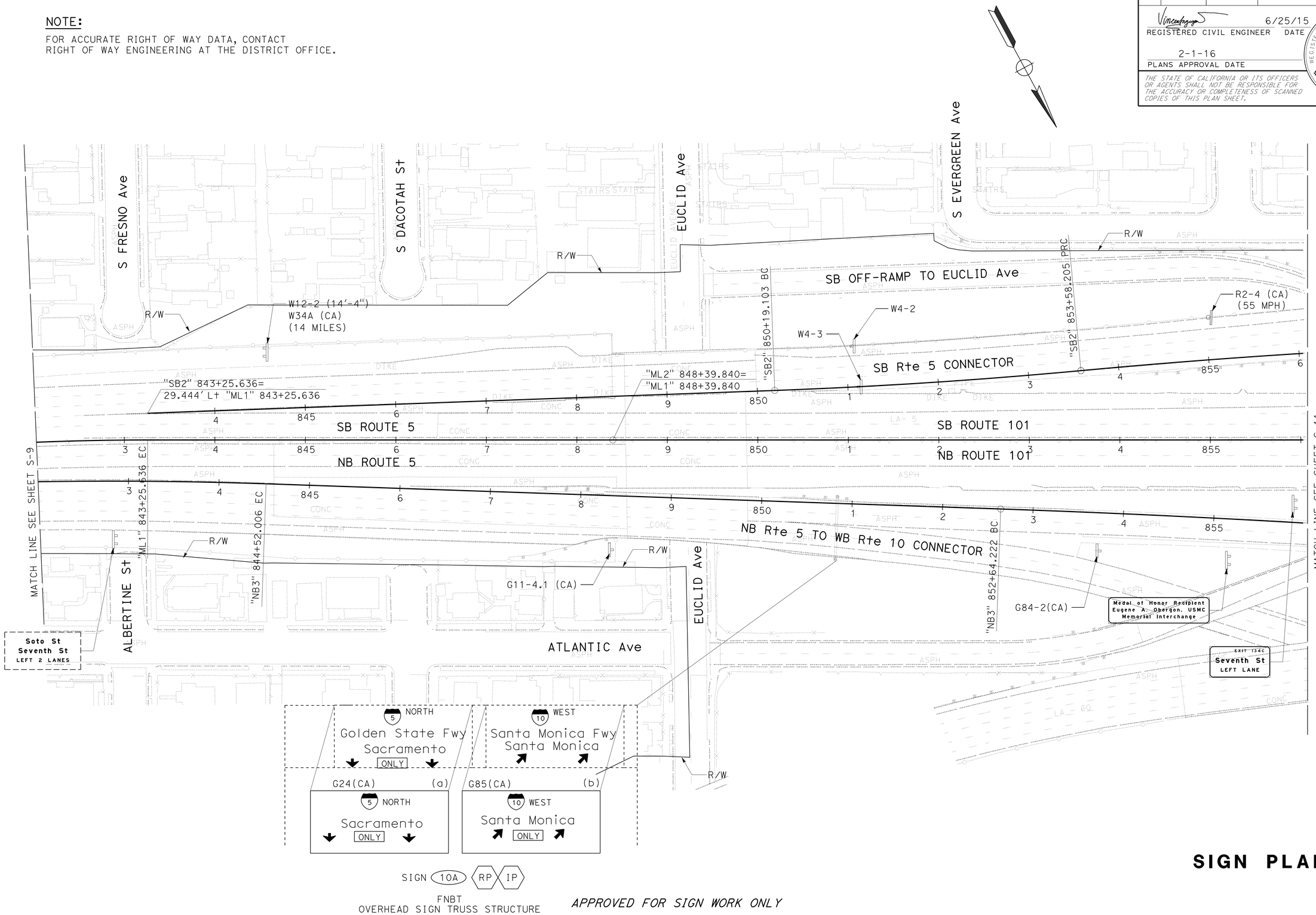


APPROVED FOR SIGN WORK ONLY

SIGN PLAN

S-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

CALCULATED-DESIGNED BY: EUGENE BRAVO

CHECKED BY: VINCENT NGUYEN

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 28-JAN-2016

TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	113	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

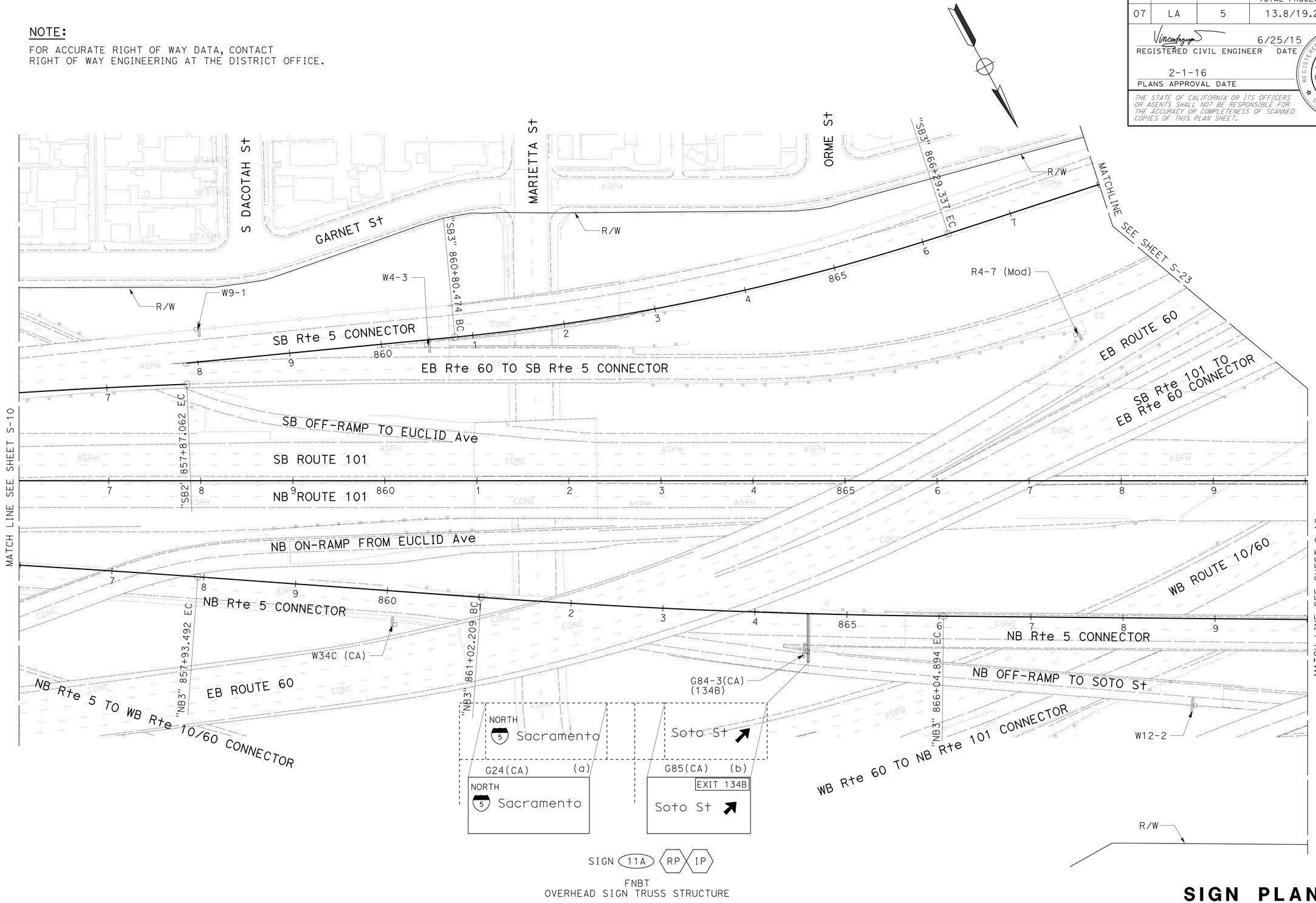
2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

NOTE:

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



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	114	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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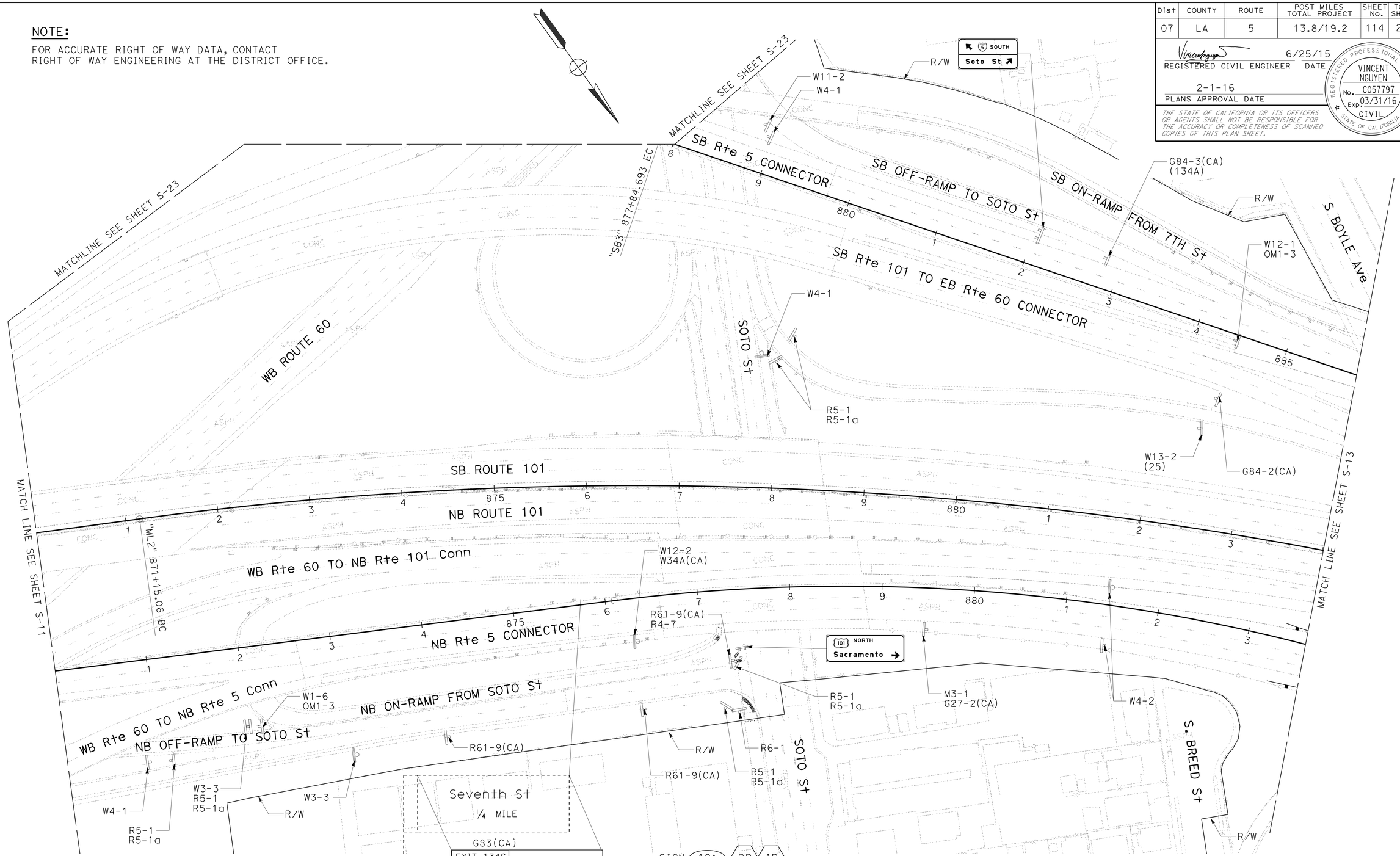

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY / DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	115	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp 03/31/16 CIVIL STATE OF CALIFORNIA

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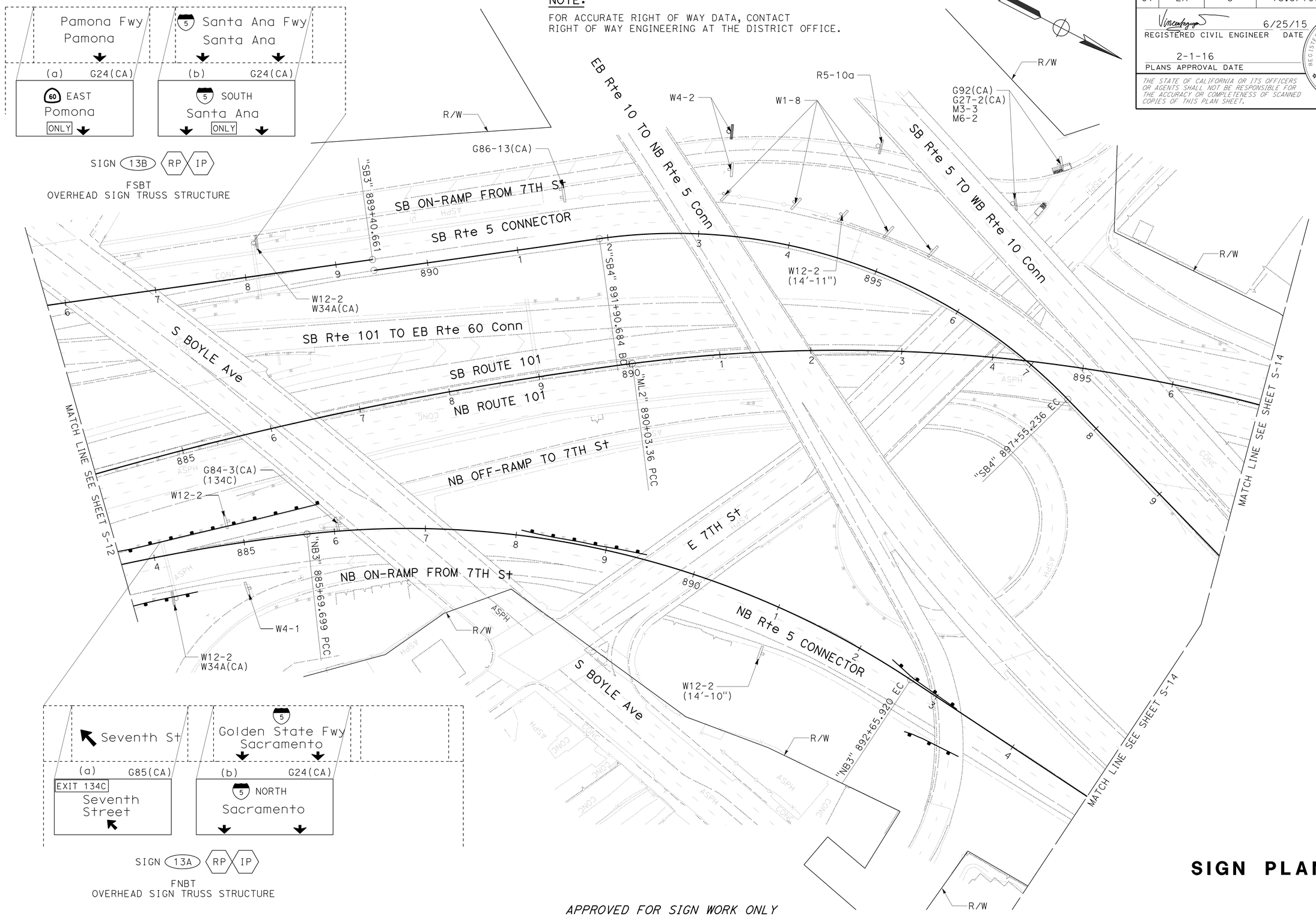
NOTE:

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



APPROVED FOR SIGN WORK ONLY

SIGN PLAN

S-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	116	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

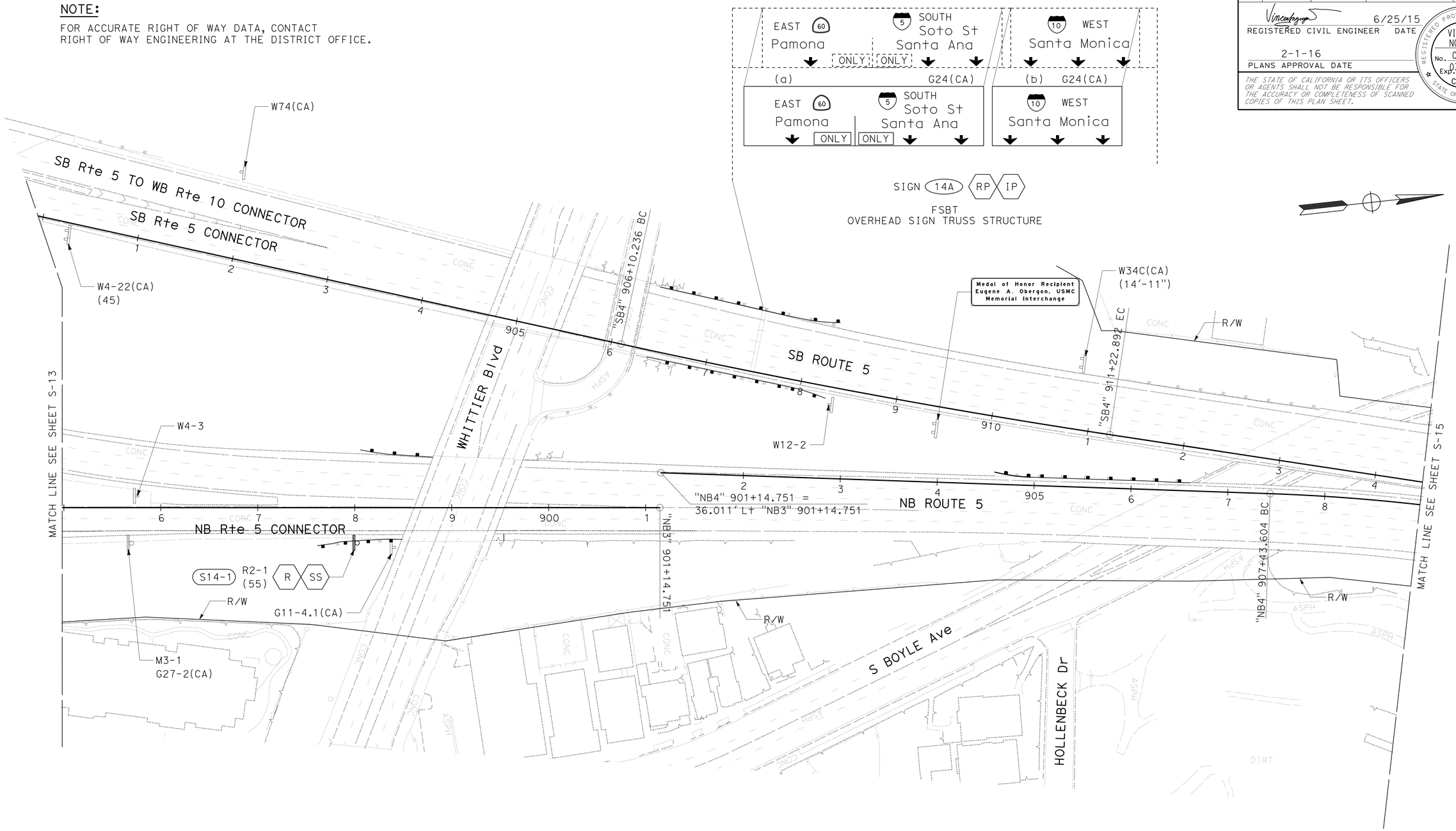
2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

NOTE:

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



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	117	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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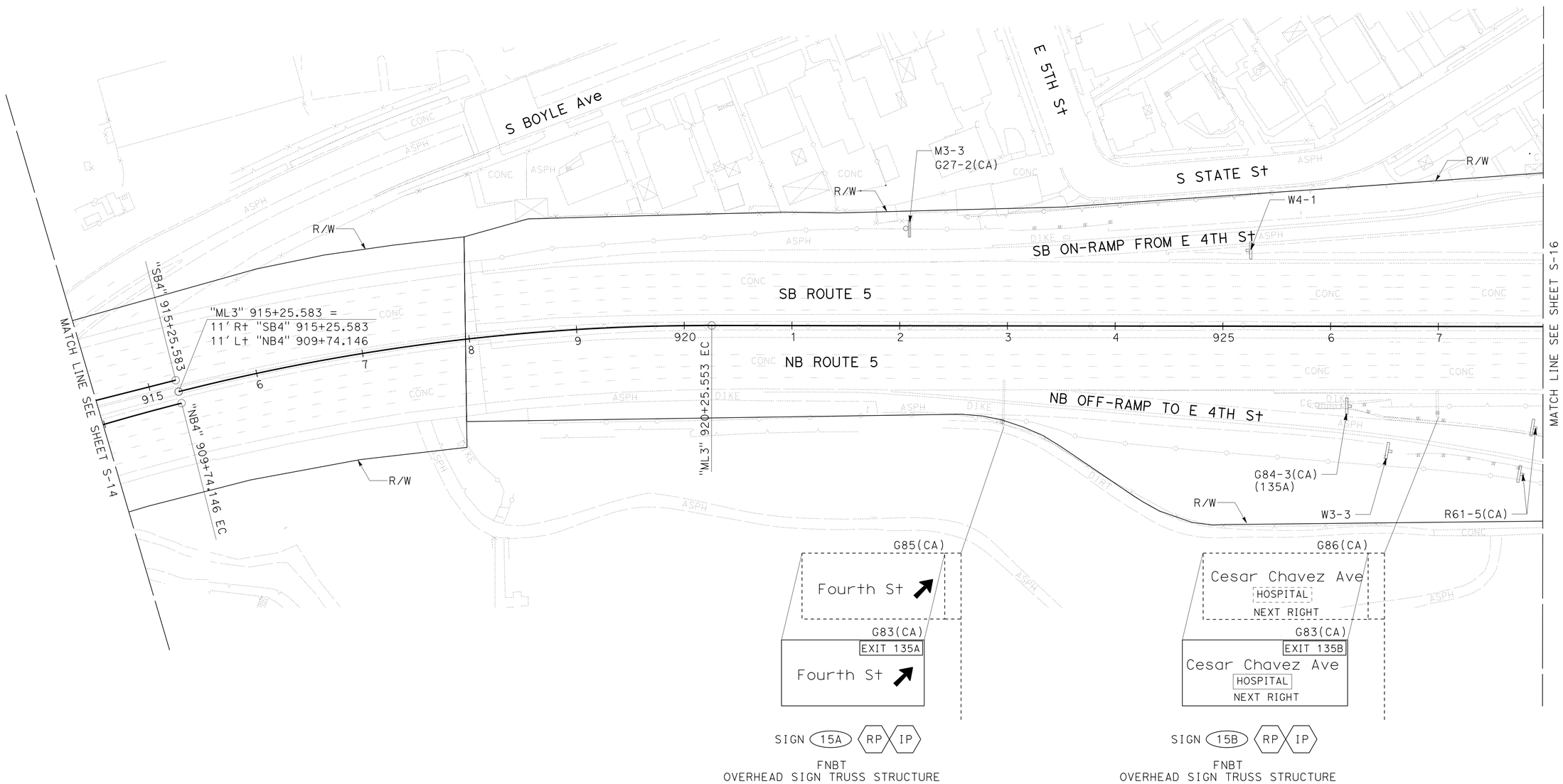
NOTE:

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



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

CALCULATED-DESIGNED BY: EUGENE BRAVO

CHECKED BY: VINCENT NGUYEN

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 28-JAN-2016

TIME PLOTTED => 11:57

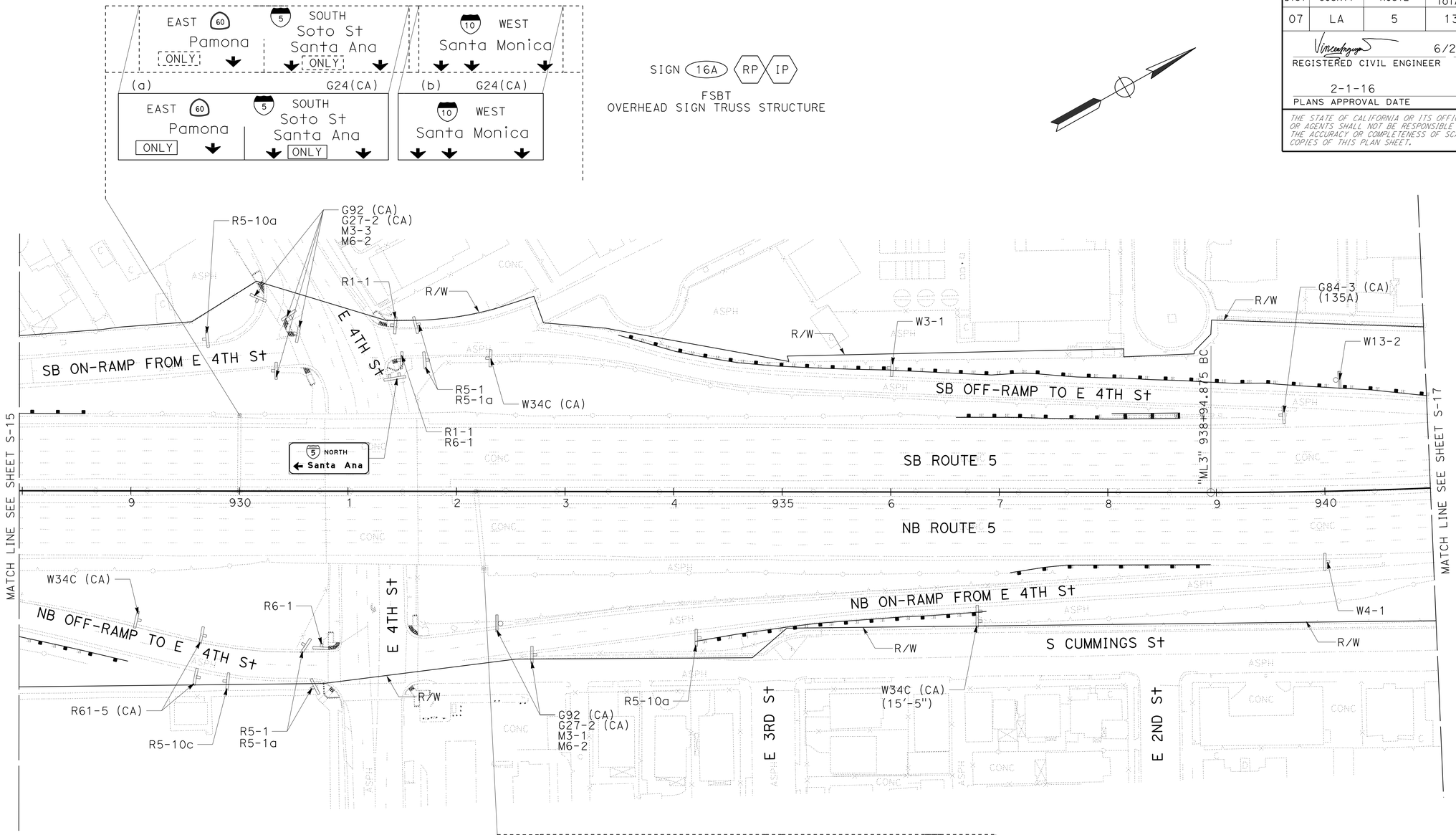
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	118	262

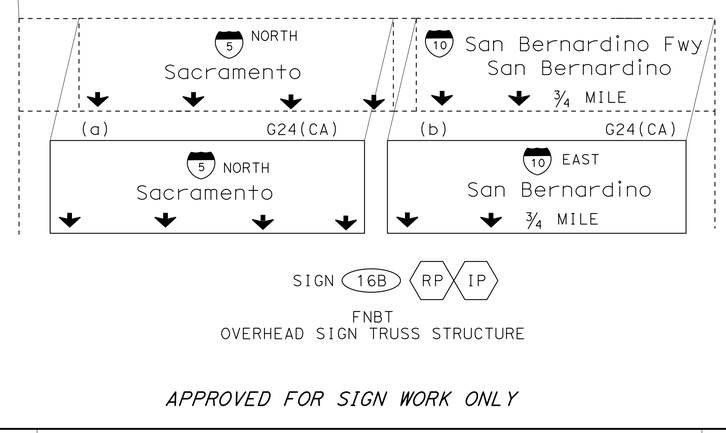
REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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





NOTE:

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

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	119	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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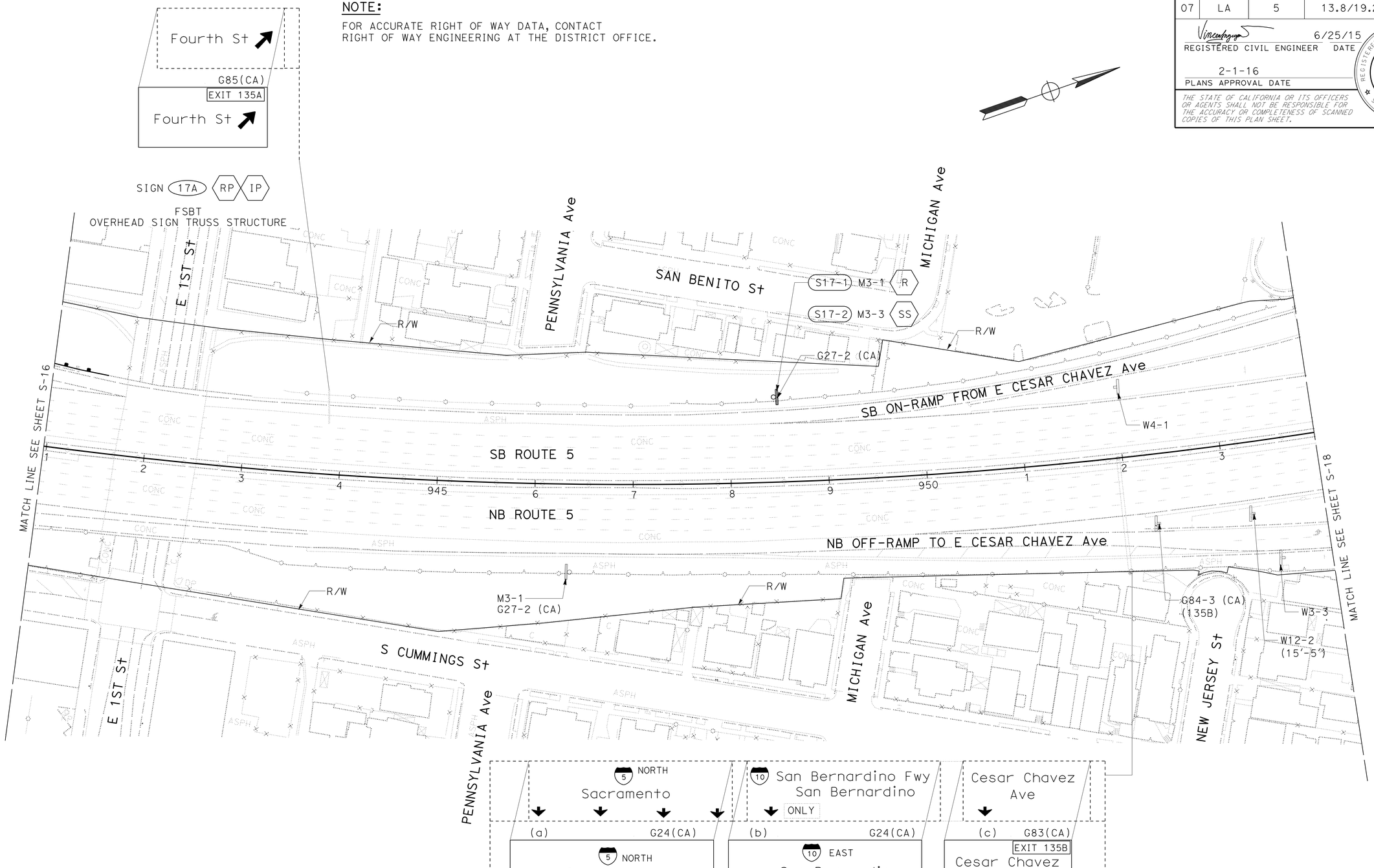

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-17

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

CALCULATED-DESIGNED BY: EUGENE BRAVO

CHECKED BY: VINCENT NGUYEN

REVISED BY / DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:57

BORDER LAST REVISED 7/2/2010 | USERNAME => s119140 | DGN FILE => 730070oa017.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1877 | PROJECT NUMBER & PHASE 07130004921

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	120	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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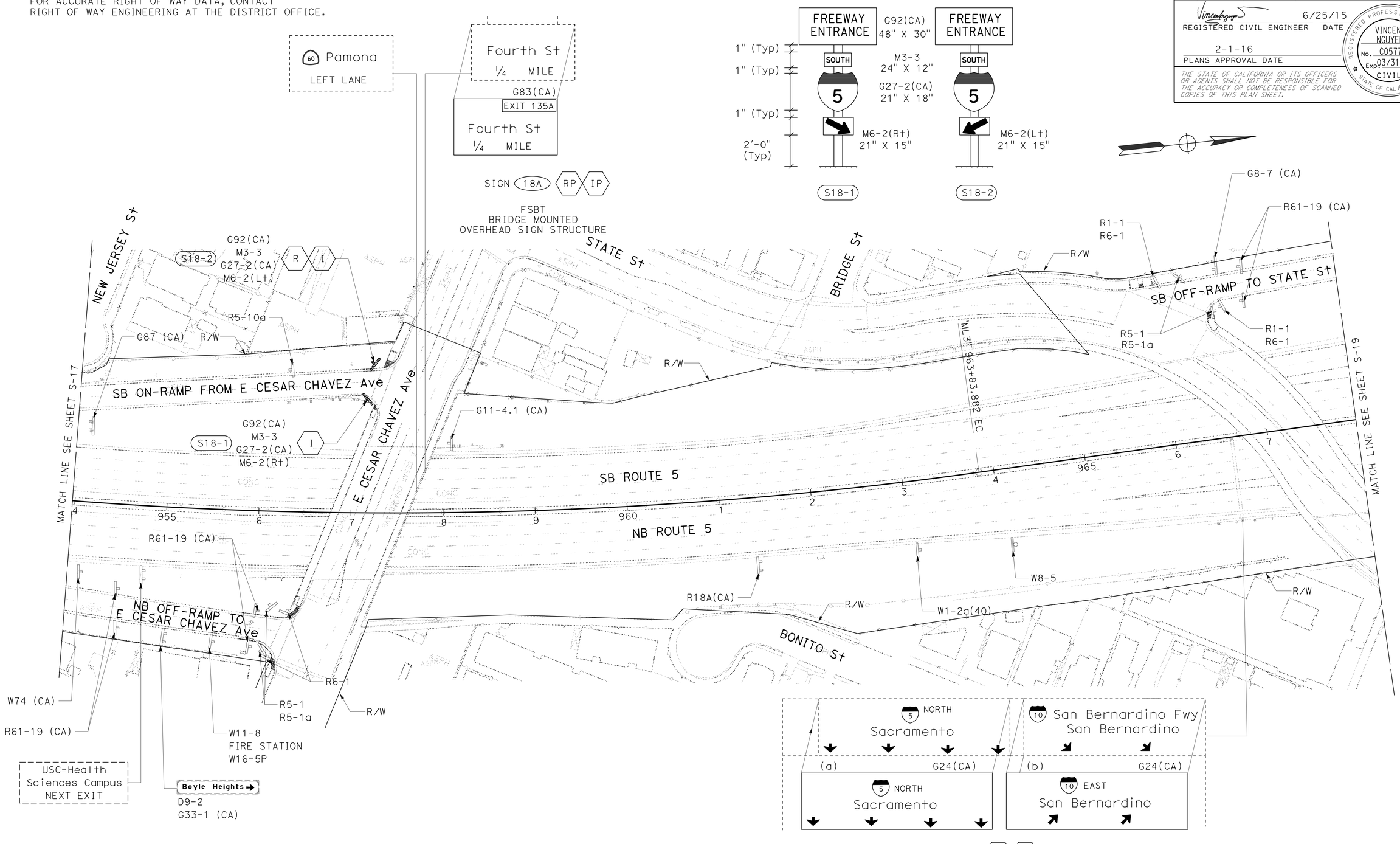

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	121	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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NOTE:

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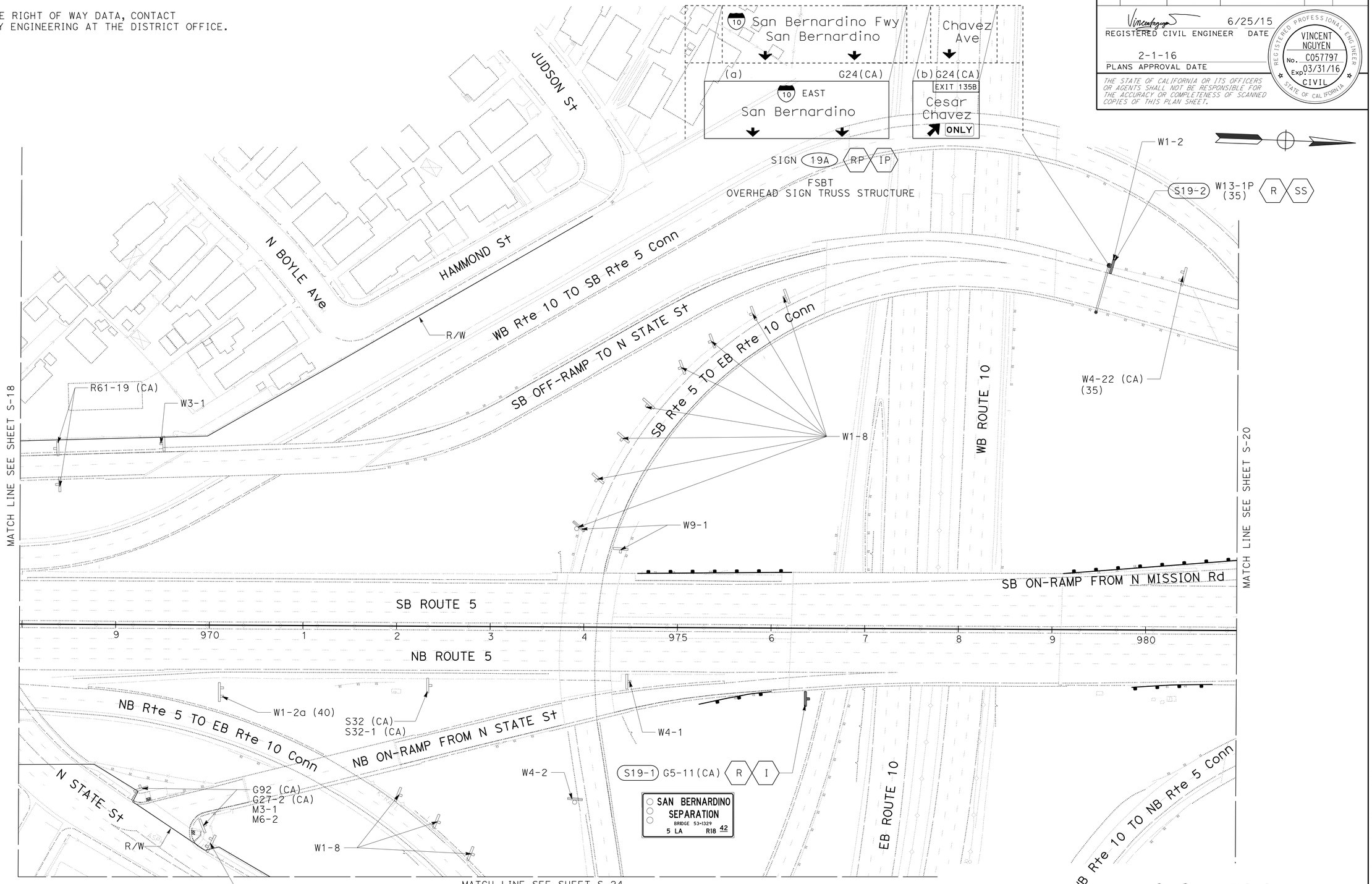

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-19

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	122	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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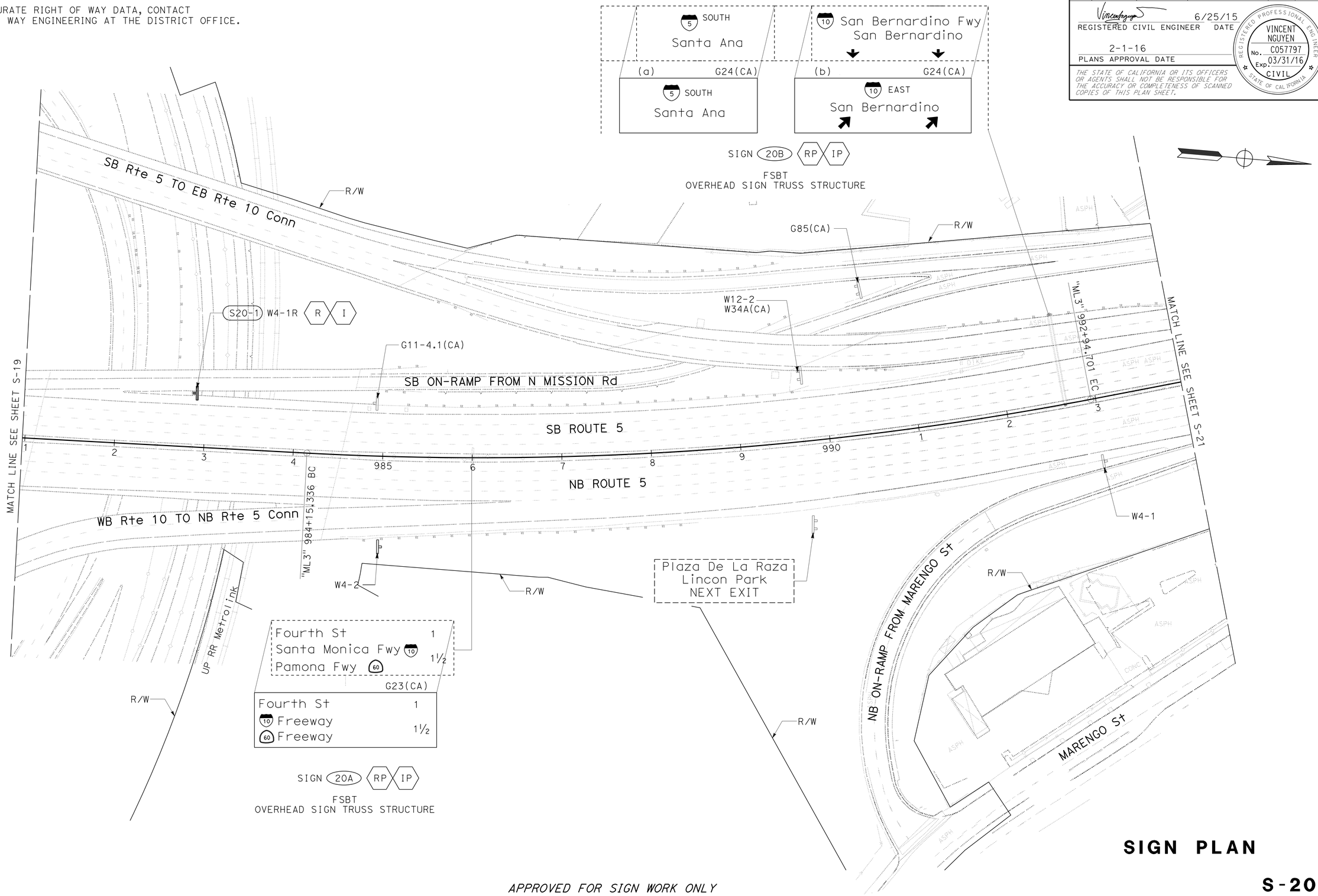
NOTE:

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



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-20

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	123	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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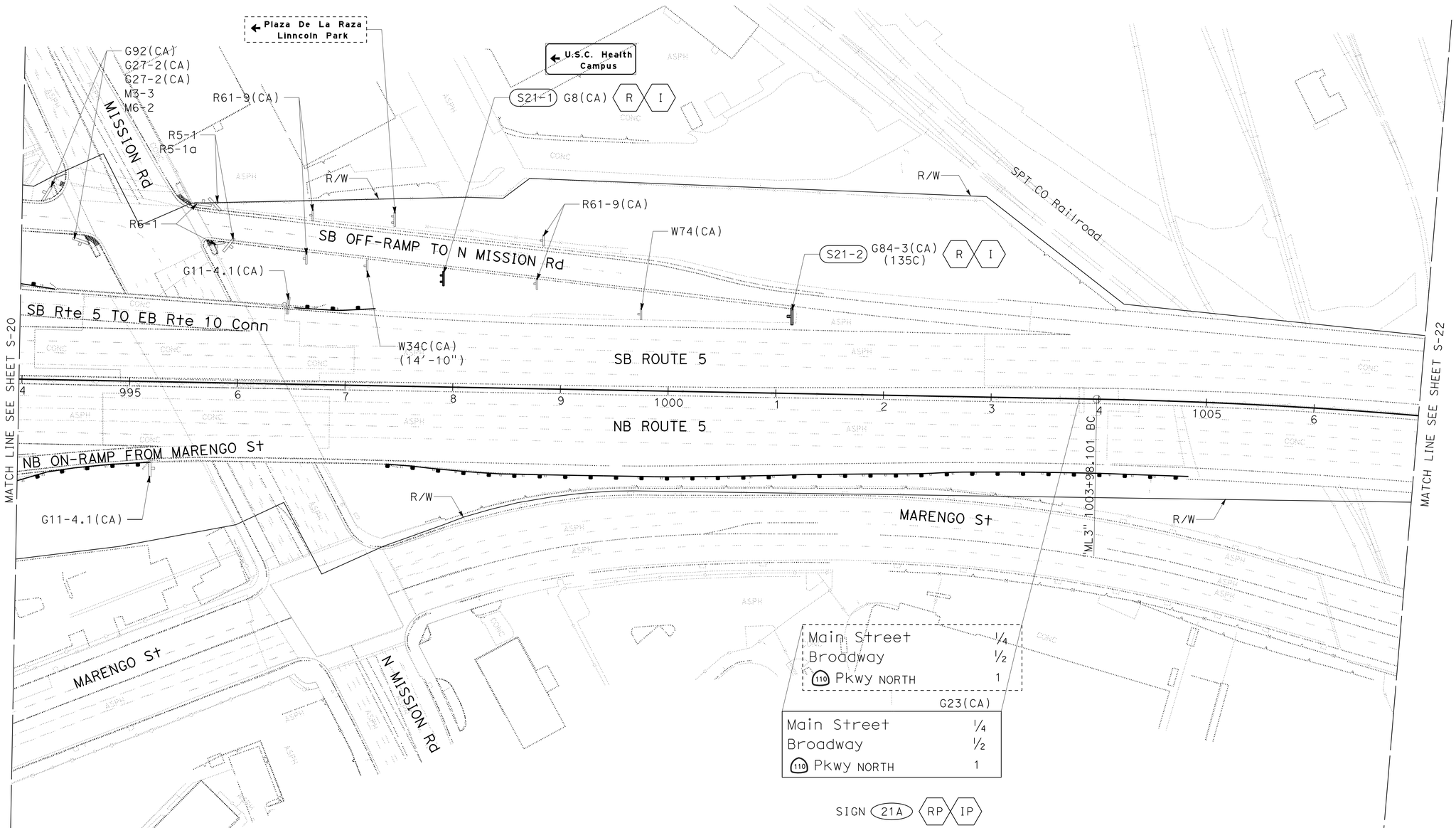
NOTE:

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



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-21

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

BORDER LAST REVISED 7/2/2010
USERNAME => s119140
DGN FILE => 730070oa021.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1877
PROJECT NUMBER & PHASE 07130004921

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	124	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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NOTE:

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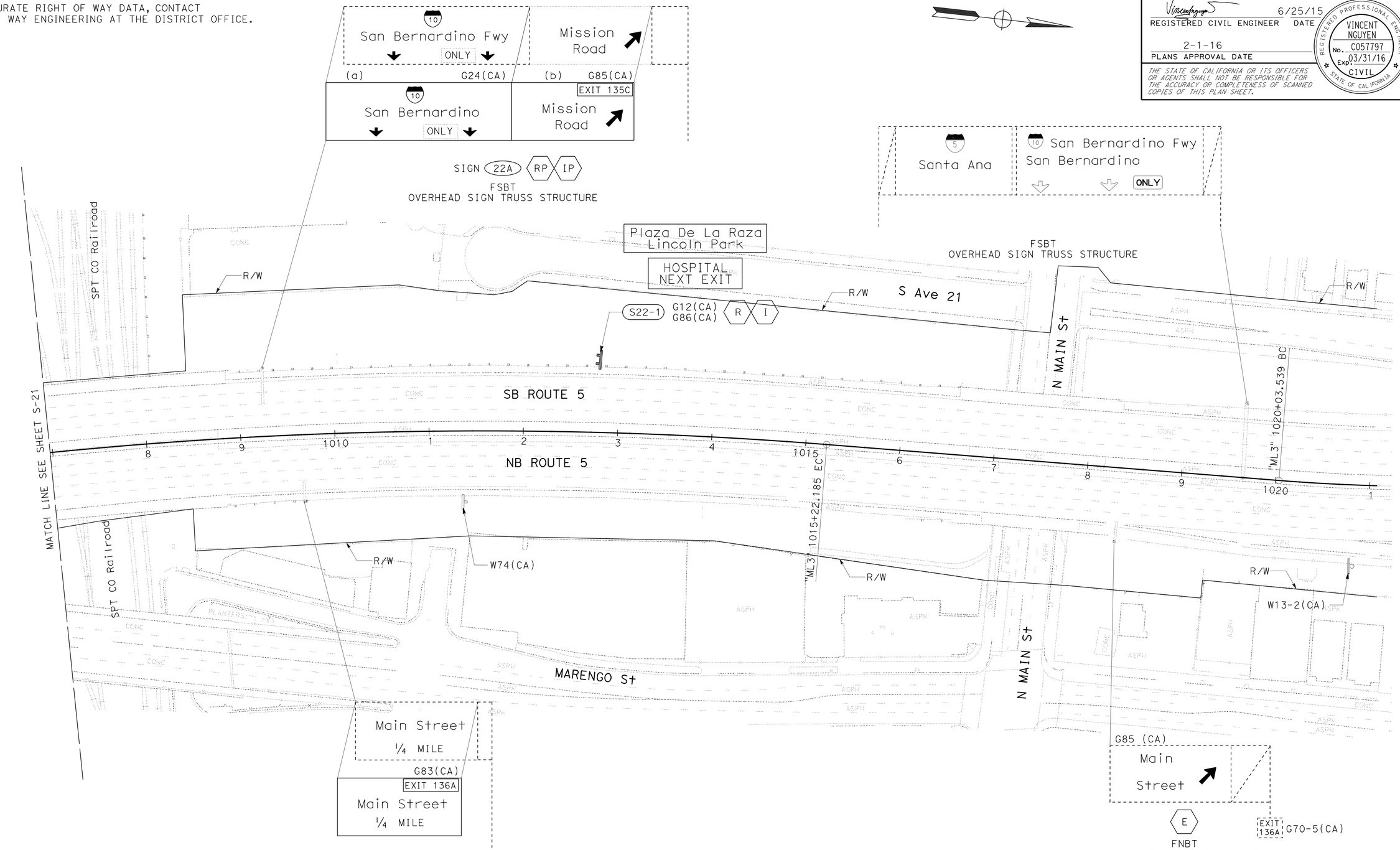

SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-22

REVISED BY	DATE REVISED
EUGENE BRAVO	VINCENT NGUYEN

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	125	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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NOTE:

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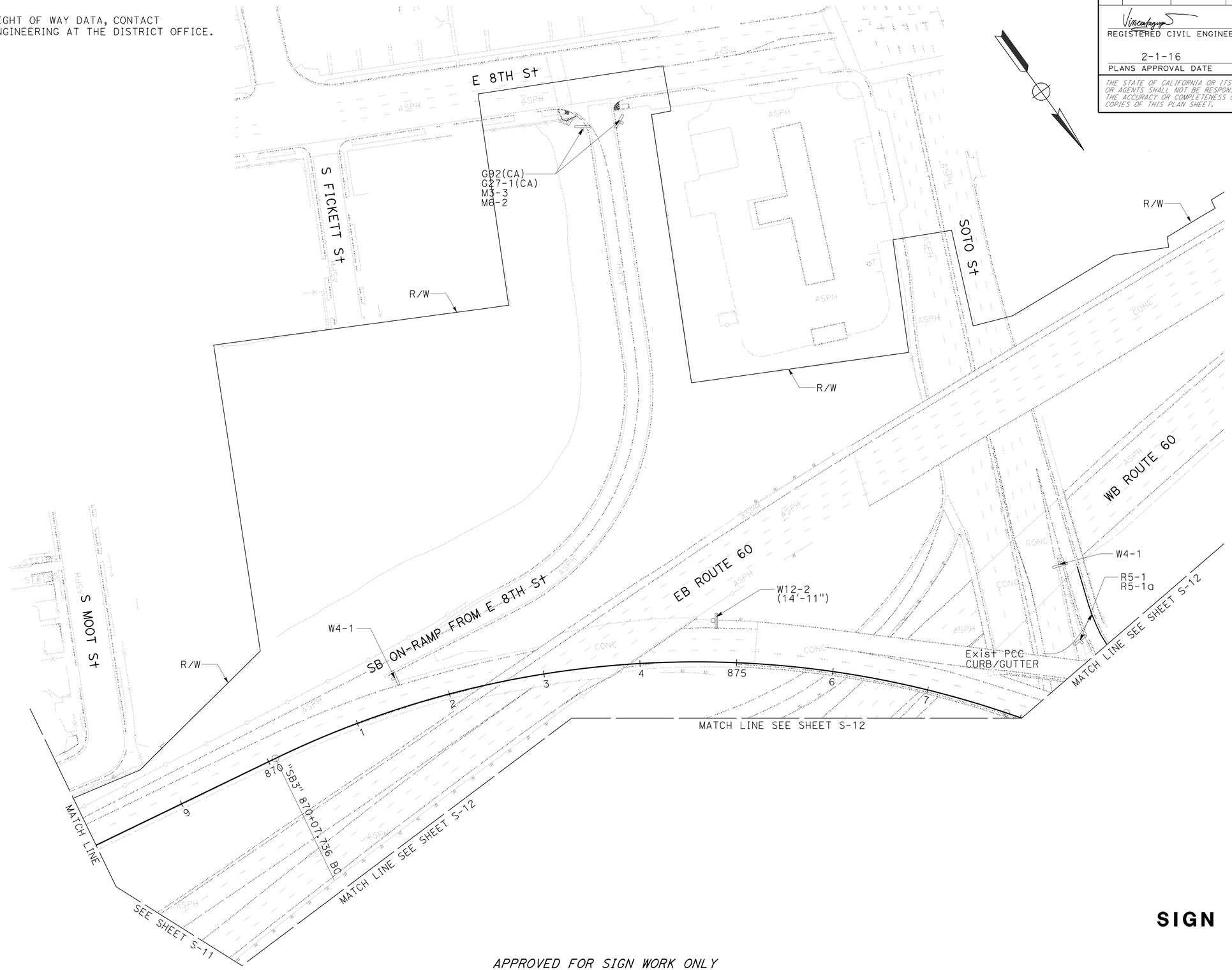


SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-23

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	126	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

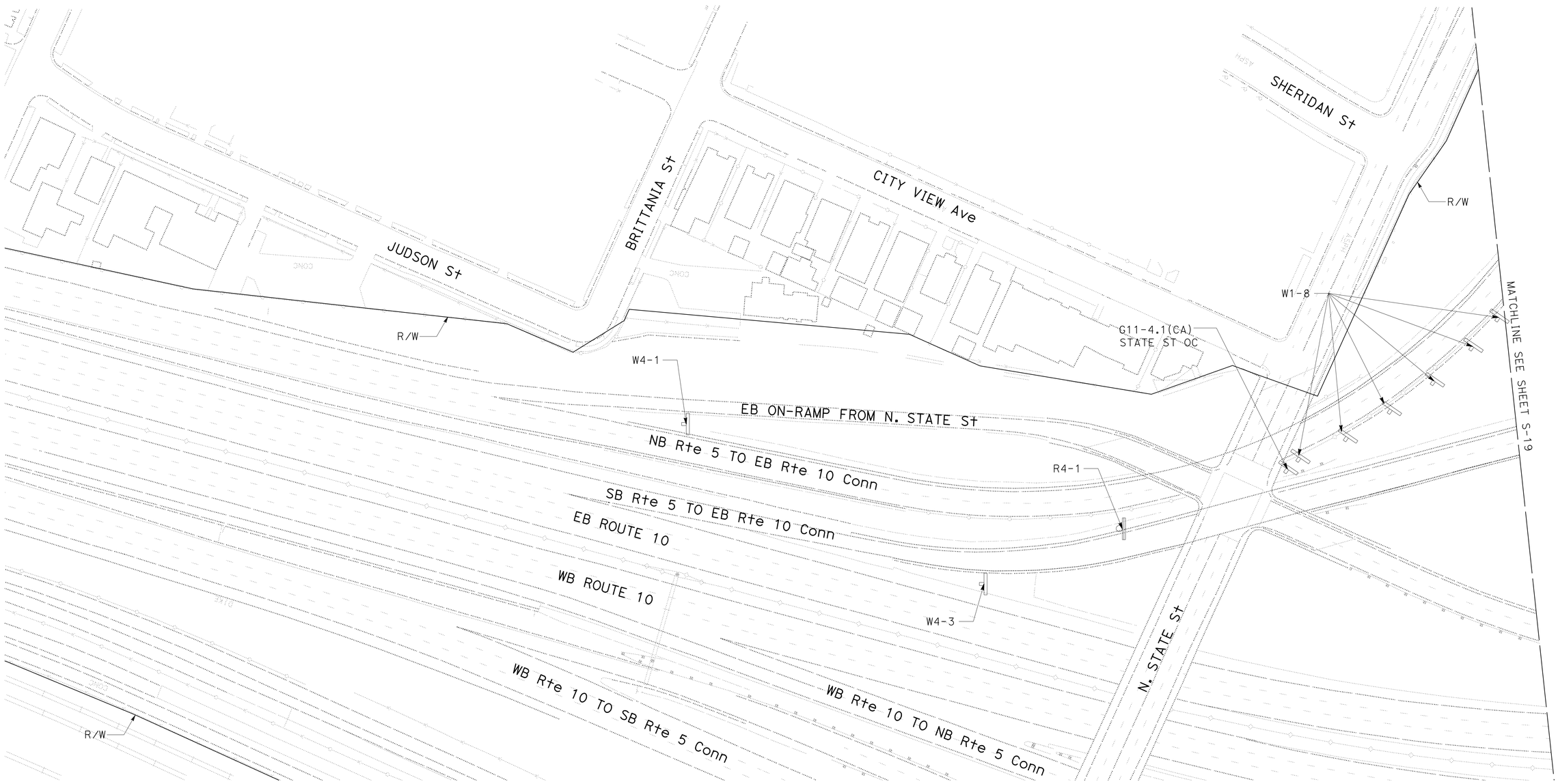
2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
VINCENT NGUYEN
No. C057797
Exp. 03/31/16
CIVIL
STATE OF CALIFORNIA

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

NOTE:

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



SIGN PLAN

APPROVED FOR SIGN WORK ONLY

S-24

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	127	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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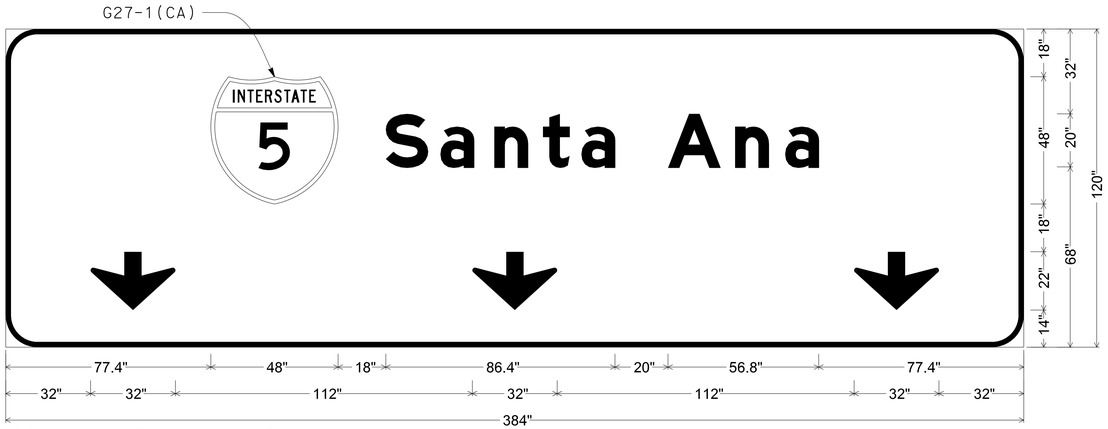
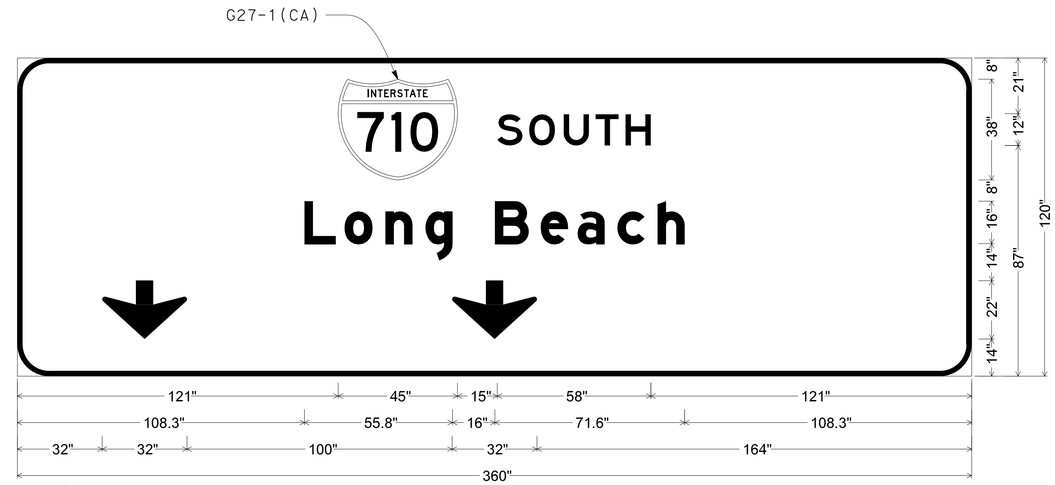
NOTE:
ALL DIMENSIONS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE ORDERING MATERIAL.



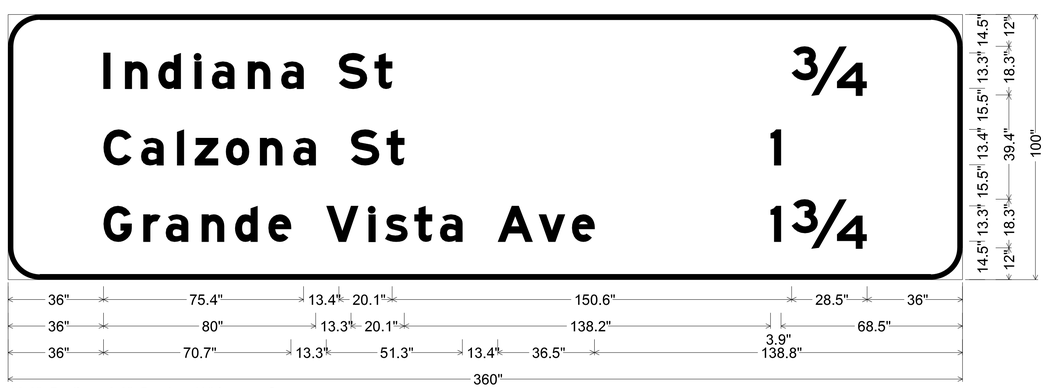
12.0" Radius, 2.0" Border, White on Green;
[Santa Ana] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 1A



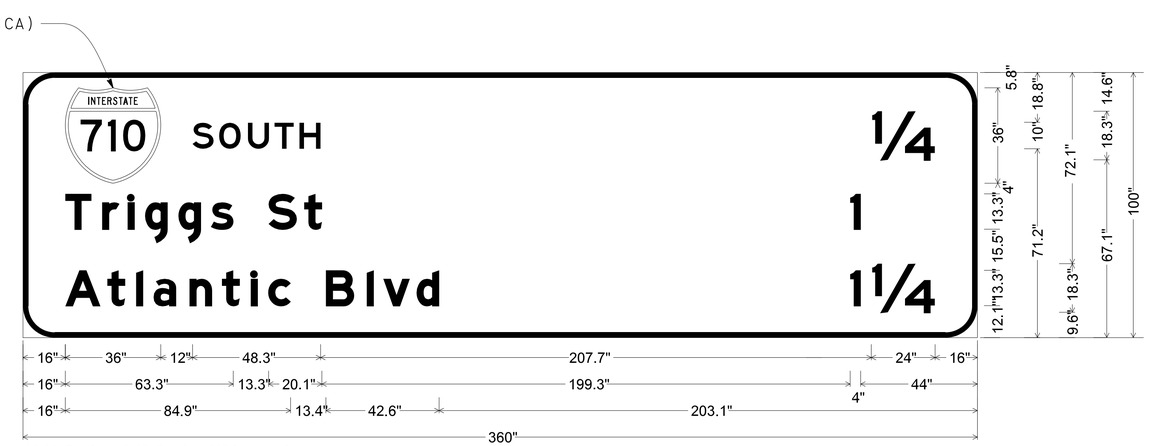
12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [Long Beach] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 1A



12.0" Radius, 2.0" Border, White on Green;
[Indiana St] E Mod; [3/4] E Mod; [Calzona St] E Mod; [1] E Mod; [Grande Vista Ave] E Mod; [1] E Mod; [3/4] E Mod;

SIGN 2A



12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [1/4] E Mod; [Triggs St] E Mod; [1] E Mod; [Atlantic Blvd] E Mod; [1] E Mod; [1/4] E Mod;

SIGN 2B

SIGN DETAILS
NO SCALE

SD-1

REVISED BY | DATE REVISED
EUGENE BRAVO | VINCENT NGUYEN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	128	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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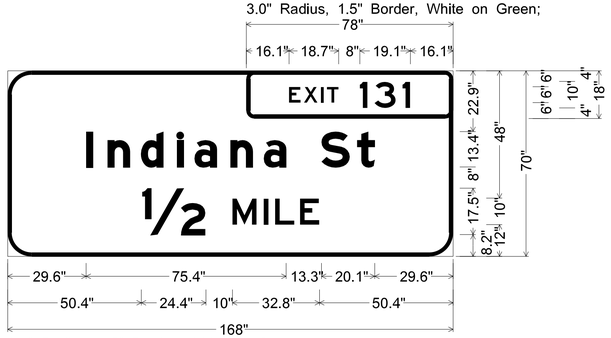
G70-3(CA)
[EXIT] E; [131] E;
3.0" Radius, 1.5" Border, White on Green;

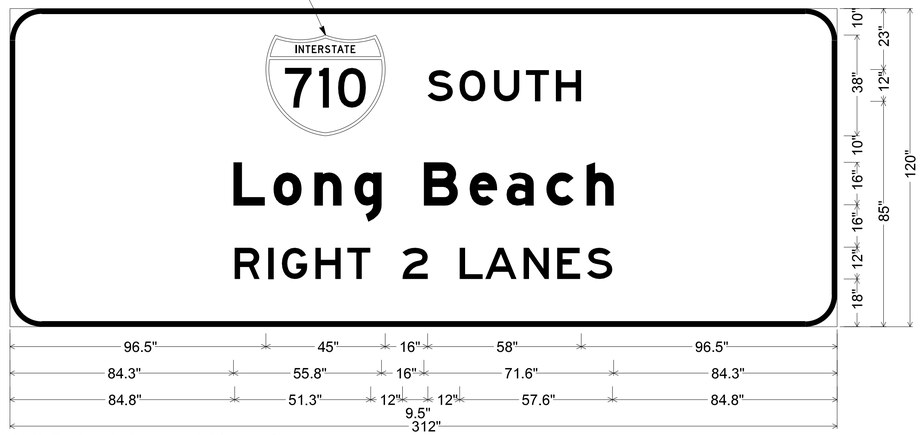


9.0" Radius, 1.5" Border, White on Green;
[Indiana St] E Mod; [1/2] E Mod [MILE] E;

SIGN 3A

(a)

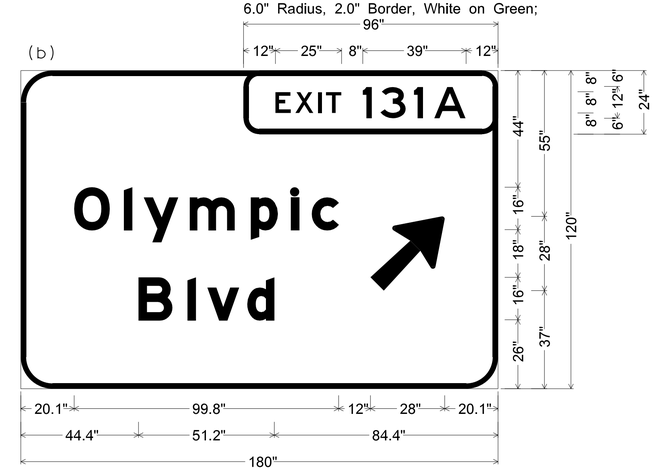
G27-1(CA)



12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [Long Beach] E Mod; [RIGHT 2 LANES] E;

(b)

G70-3(CA)
[EXIT] E; [131A] E;
6.0" Radius, 2.0" Border, White on Green;

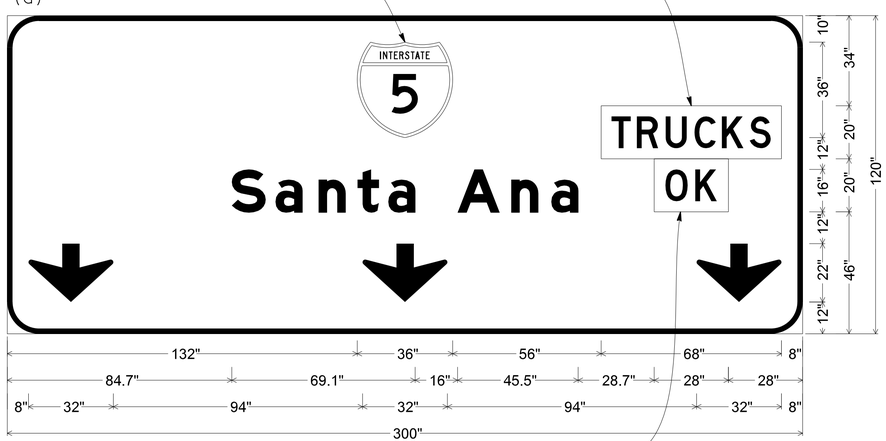


12.0" Radius, 2.0" Border, White on Green;
[Olympic] E Mod; [Blvd] E Mod; Arrow 16CAP-2LV - 35.6" 45°;

SIGN 3B

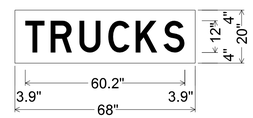
(a)

G27-1(CA) DETAIL TRUCK



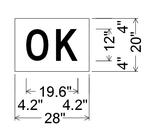
DETAIL OK

12.0" Radius, 2.0" Border, White on Green;
[Santa Ana] E Mod;
Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;



No border, Black on White;
[TRUCKS] D;

DETAIL TRUCKS



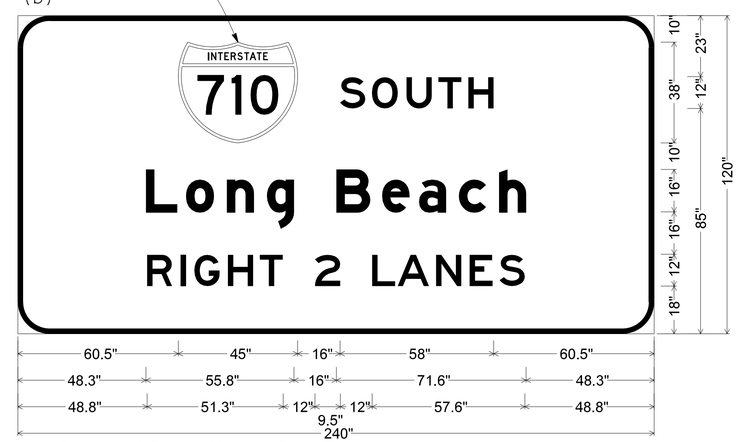
No border, Black on White;
[OK] D;

DETAIL OK

SIGN 5A

(b)

G27-1(CA)



12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [Long Beach] E Mod; [RIGHT 2 LANES] E;

SIGN DETAILS

NO SCALE

SD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	129	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

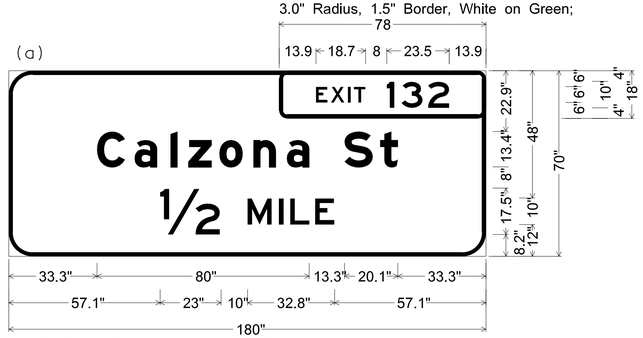
2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp 03/31/16 CIVIL STATE OF CALIFORNIA

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

G70-3(CA)
[EXIT] E; [132A] E;
3.0" Radius, 1.5" Border, White on Green;

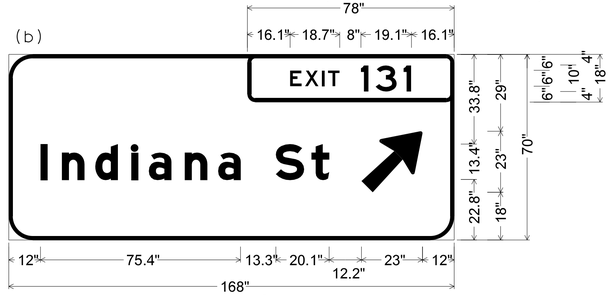
(a)



9.0" Radius, 1.5" Border, White on Green;
[Calzona St] E Mod; [1/2 MILE] E;

G70-3(CA)
[EXIT] E; [131] E;
3.0" Radius, 1.5" Border, White on Green;

(b)

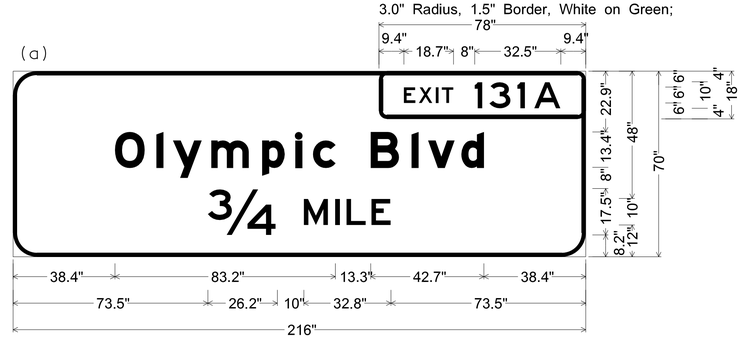


9.0" Radius, 1.5" Border, White on Green;
[Indiana St] E Mod; Arrow 13.33UC-2LV - 29.3" 45°;

SIGN 5B

G70-3(CA)
[EXIT] E; [131A] E;
3.0" Radius, 1.5" Border, White on Green;

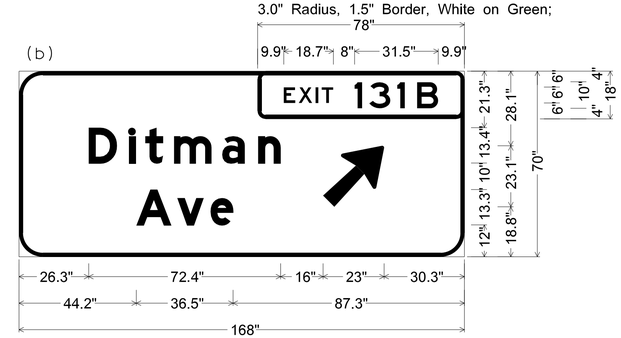
(a)



9.0" Radius, 1.5" Border, White on Green;
[Olympic Blvd] E Mod; [3/4 MILE] E;

G70-3(CA)
[EXIT] E; [131B] E;
3.0" Radius, 1.5" Border, White on Green;

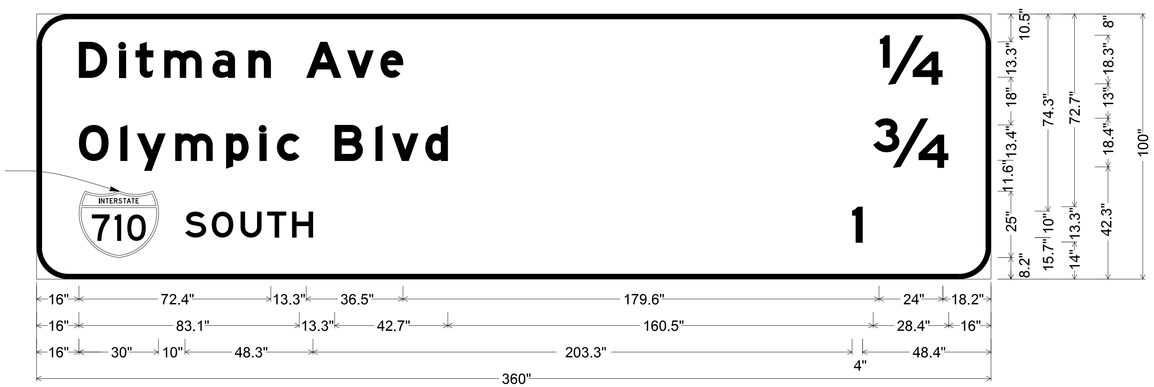
(b)



9.0" Radius, 1.5" Border, White on Green;
[Ditman] E Mod; [Ave] E Mod;
Arrow 13.33UC-2LV - 29.3" 45°;

SIGN 5C

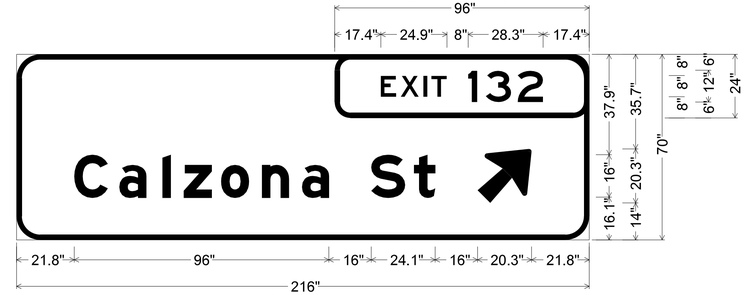
G27-1(CA)



12.0" Radius, 2.0" Border, White on Green;
[Ditman Ave] E Mod; [1/4] E Mod; [Olympic Blvd] E Mod; [3/4] E Mod; [SOUTH] E; [1] E Mod;

SIGN 6A

G70-3(CA)
[EXIT] E; [132] E;
6.0" Radius, 2.0" Border, White on Green;



9.0" Radius, 2.0" Border, White on Green;
[Calzona St] E Mod; Arrow 16CAP-1L - 25.0" 45°;

SIGN 6B

SIGN DETAILS
NO SCALE

SD-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

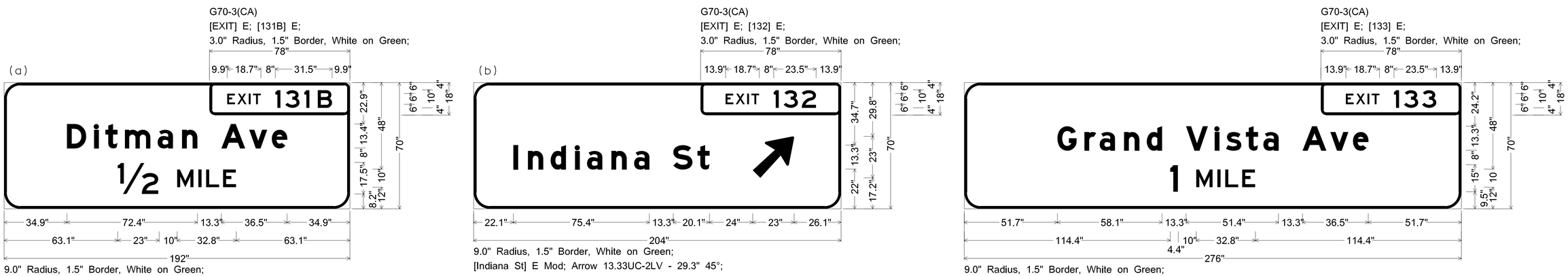
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	130	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

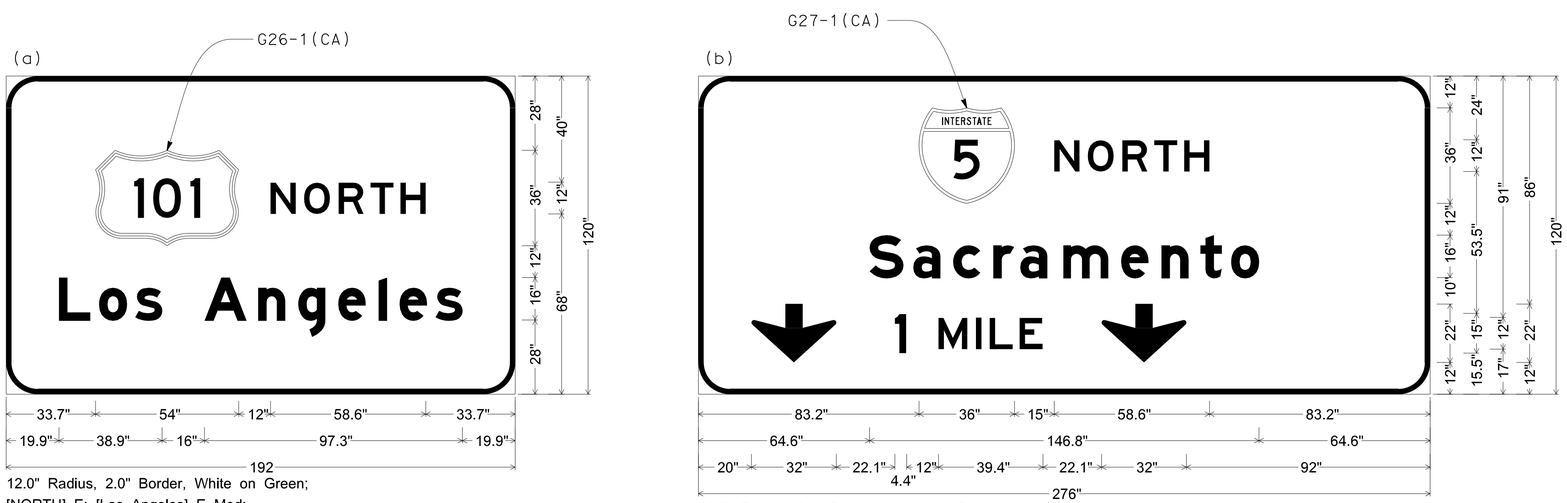
REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp 03/31/16 CIVIL STATE OF CALIFORNIA

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



SIGN 7A

SIGN 7B



SIGN 7C

SIGN DETAILS

NO SCALE

SD-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

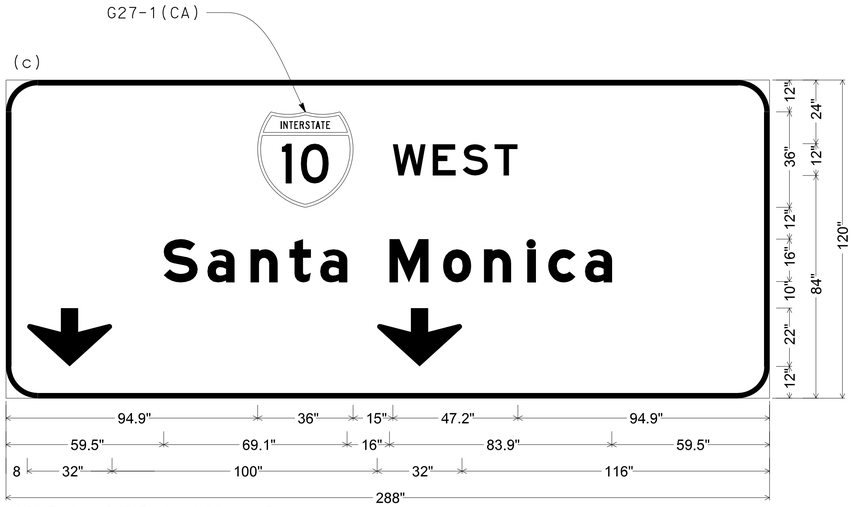
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	131	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

PLANS APPROVAL DATE 2-1-16

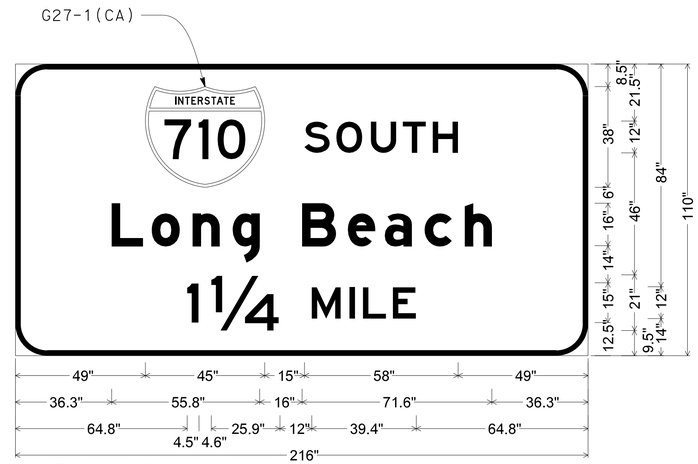
REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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



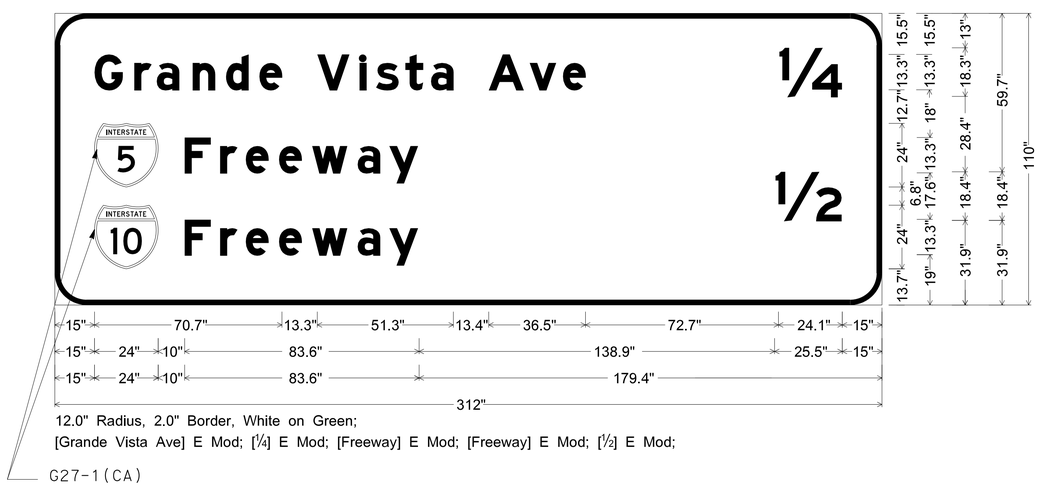
12.0" Radius, 2.0" Border, White on Green;
[WEST] E; [Santa Monica] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 7C



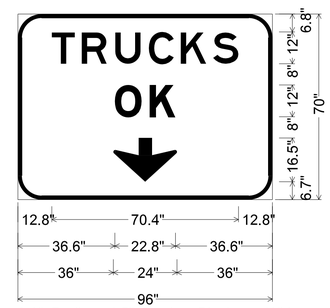
12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [Long Beach] E Mod; [1¼ MILE] E;

SIGN 8A



12.0" Radius, 2.0" Border, White on Green;
[Grande Vista Ave] E Mod; [¼] E Mod; [Freeway] E Mod; [Freeway] E Mod; [½] E Mod;

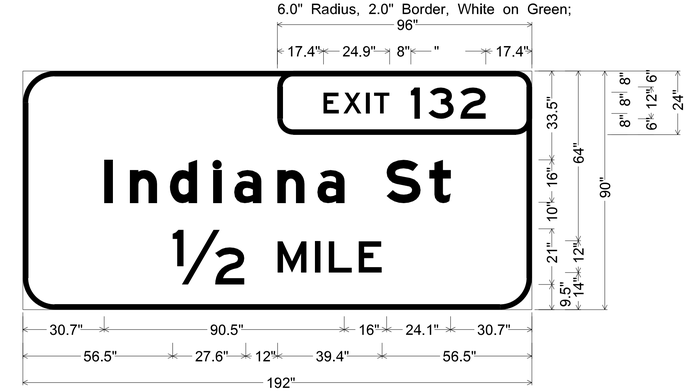
SIGN 8B



9.0" Radius, 1.5" Border, Black on White;
[TRUCKS] E; [OK] E Mod;
Down Arrow 16.0" 270°;

SIGN 8C

G70-3(CA)
[EXIT] E; [132] E;
6.0" Radius, 2.0" Border, White on Green;



12.0" Radius, 2.0" Border, White on Green;
[Indiana St] E Mod; [½ MILE] E;

SIGN 8D

SIGN DETAILS

NO SCALE

SD-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY / DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	132	262

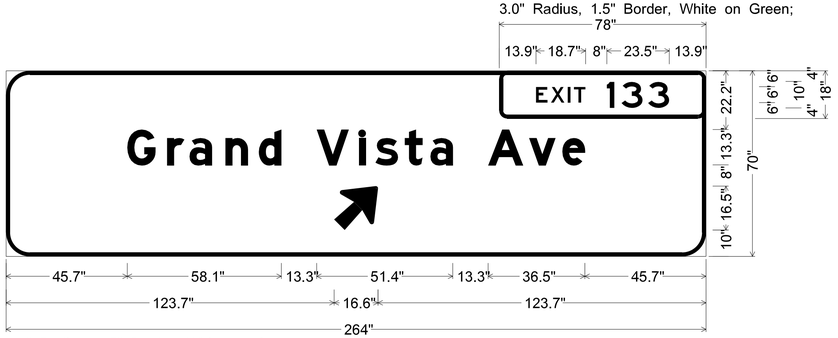
REGISTERED CIVIL ENGINEER DATE 6/25/15

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

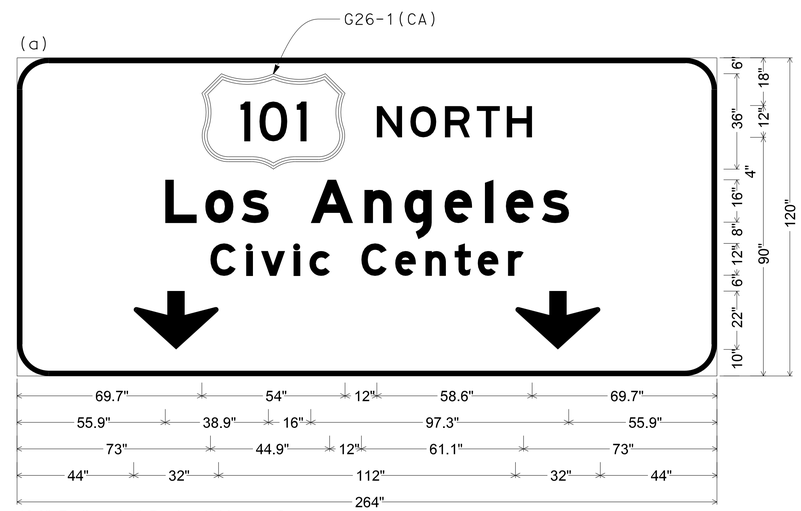
G70-3(CA)
[EXIT] E; [133] E;
3.0" Radius, 1.5" Border, White on Green;



9.0" Radius, 1.5" Border, White on Green;
[Grand Vista Ave] E Mod; Arrow 13.33UC-1L - 20.3" 45°;

SIGN 9A

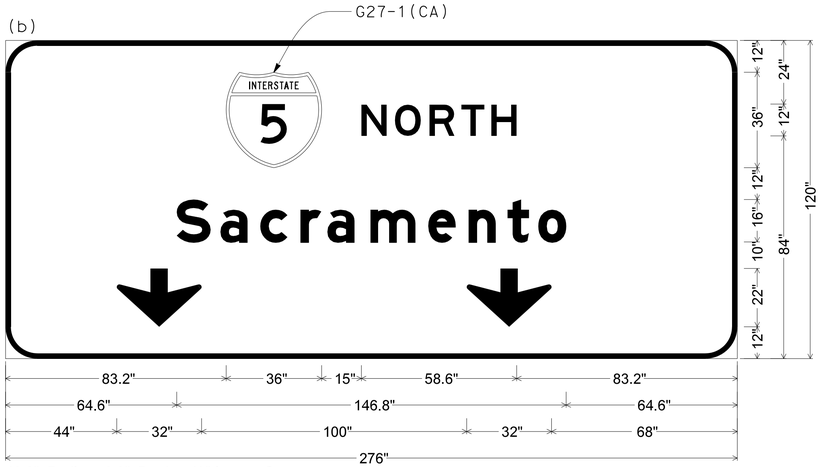
(a)



12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [Los Angeles] E Mod; [Civic Center] E Mod; Down Arrow 22.0" 270°;
Down Arrow 22.0" 270°;

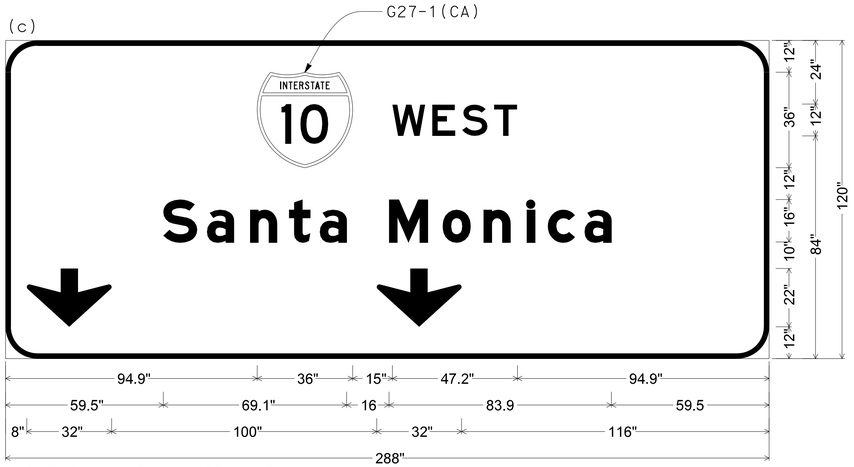
SIGN 9B

(b)



12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [Sacramento] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

(c)



12.0" Radius, 2.0" Border, White on Green;
[WEST] E; [Santa Monica] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 9B

SIGN DETAILS

NO SCALE

SD-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

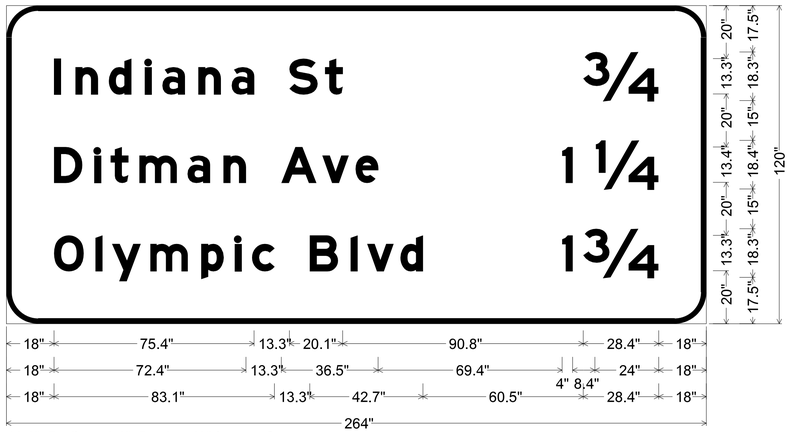
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	133	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

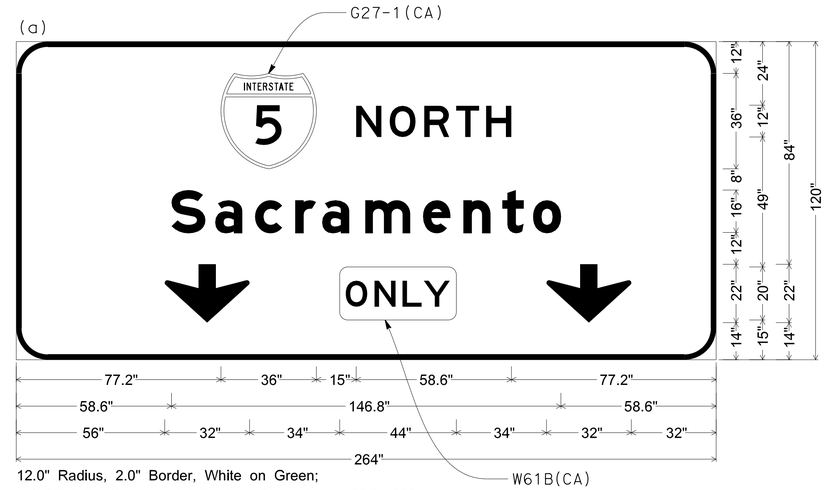
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



12.0" Radius, 2.0" Border, White on Green;
[Indiana St] E Mod; [3/4] E Mod; [Ditman Ave] E Mod; [1] E Mod; [1/4] E Mod;
[Olympic Blvd] E Mod; [1] E Mod; [3/4] E Mod;

SIGN 9C

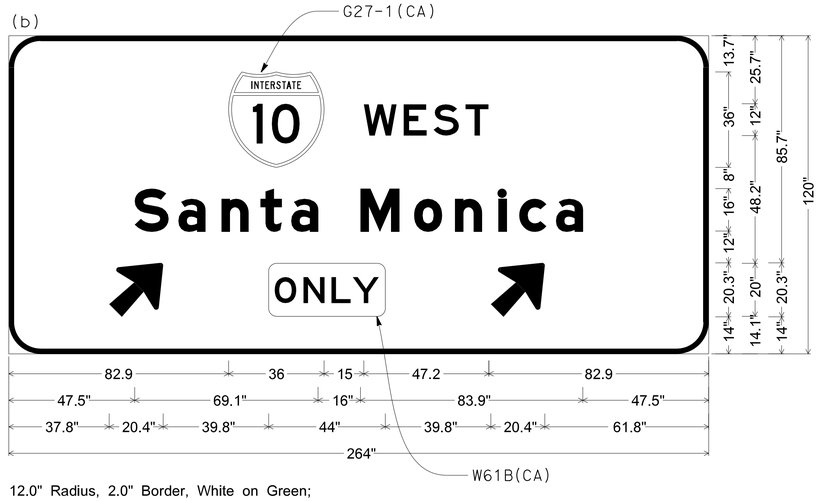
(a)



12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [Sacramento] E Mod; Down Arrow 22.0" 270°;
Rounded Rectangle 3.0" Radius Yellow;
Down Arrow 22.0" 270°;

SIGN 10A

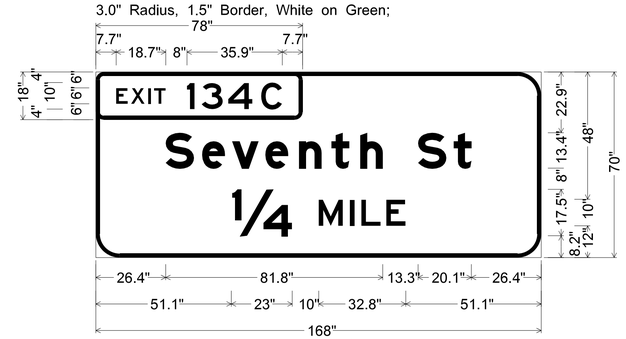
(b)



12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [Santa Monica] E Mod; Arrow 16CAP-1L - 25.0" 45°;
Rounded Rectangle 3.0" Radius Yellow;
Arrow 16CAP-1L - 25.0" 45°;

SIGN 10A

G70-3(CA)
[EXIT] E; [134C] E;
3.0" Radius, 1.5" Border, White on Green;



9.0" Radius, 1.5" Border, White on Green;
[Seventh St] E Mod; [1/4] E Mod [MILE] E;

SIGN 12A

SIGN DETAILS

NO SCALE

SD-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY / DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	134	262

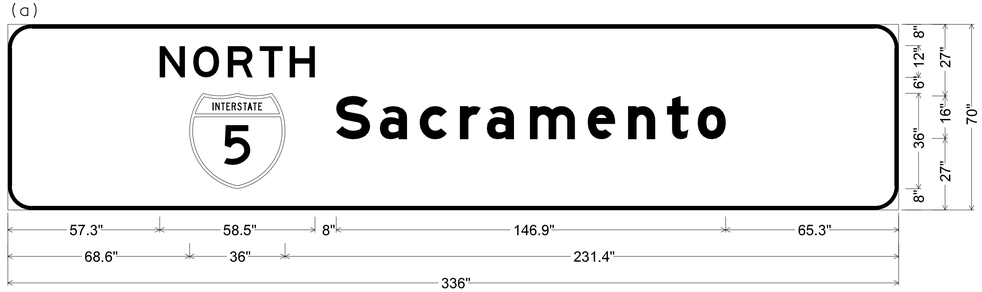
REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

(a)

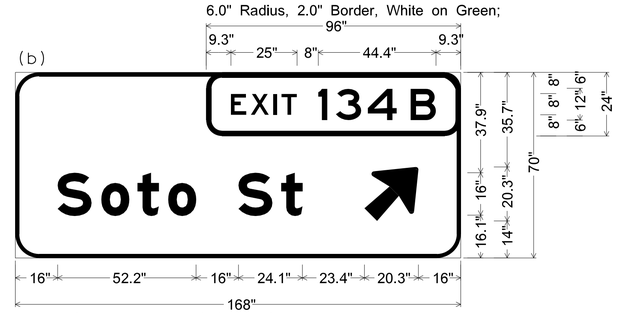


9.0" Radius, 1.5" Border, White on Green;
[NORTH] E; [Sacramento] E Mod;

SIGN 11A

G70-3(CA)
[EXIT] E; [134B] E;
6.0" Radius, 2.0" Border, White on Green;

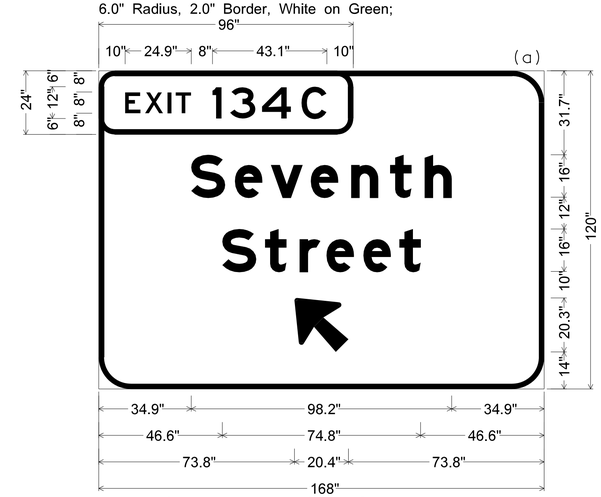
(b)



9.0" Radius, 1.5" Border, White on Green;
[Soto St] E Mod; Arrow 16CAP-1L - 25.0" 45°;

G70-3(CA)
[EXIT] E; [134C] E;
6.0" Radius, 2.0" Border, White on Green;

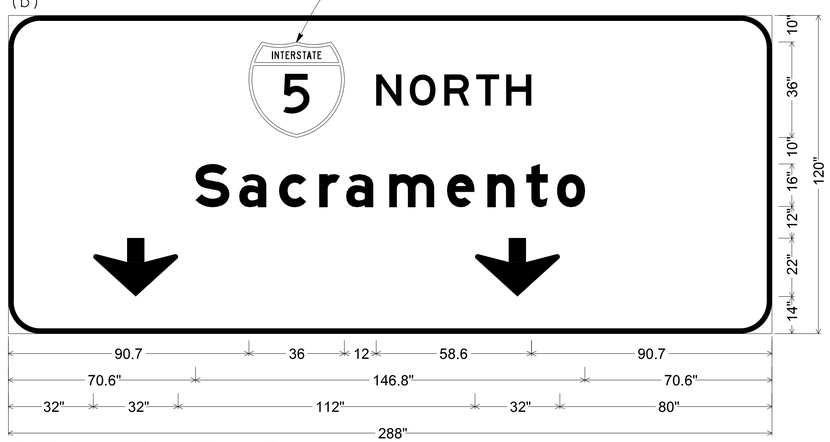
(a)



12.0" Radius, 2.0" Border, White on Green;
[Seventh] E Mod; [Street] E Mod;
Arrow 16CAP-1L - 25.0" 135°;

SIGN 13A

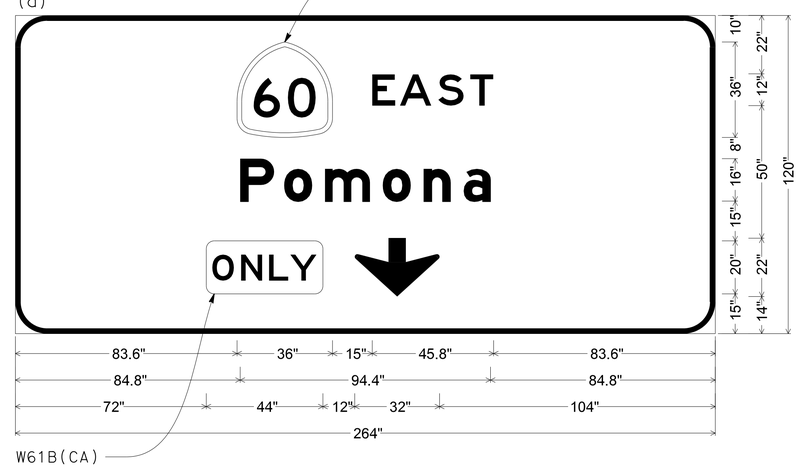
(b)



12.0" Radius, 2.0" Border, White on Green;
[Sacramento] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 13A

(a)



12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [Pomona] E Mod; Rounded Rectangle 3.0" Radius Yellow;
Down Arrow 22.0" 270°;

SIGN 13B

SIGN DETAILS

NO SCALE

SD-8

REVISED BY | DATE REVISED
EUGENE BRAVO | VINCENT NGUYEN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	135	262

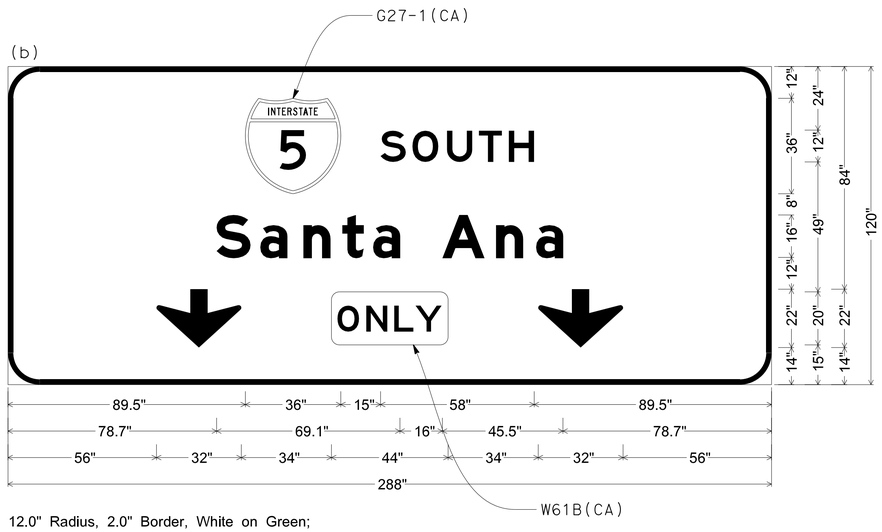
REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

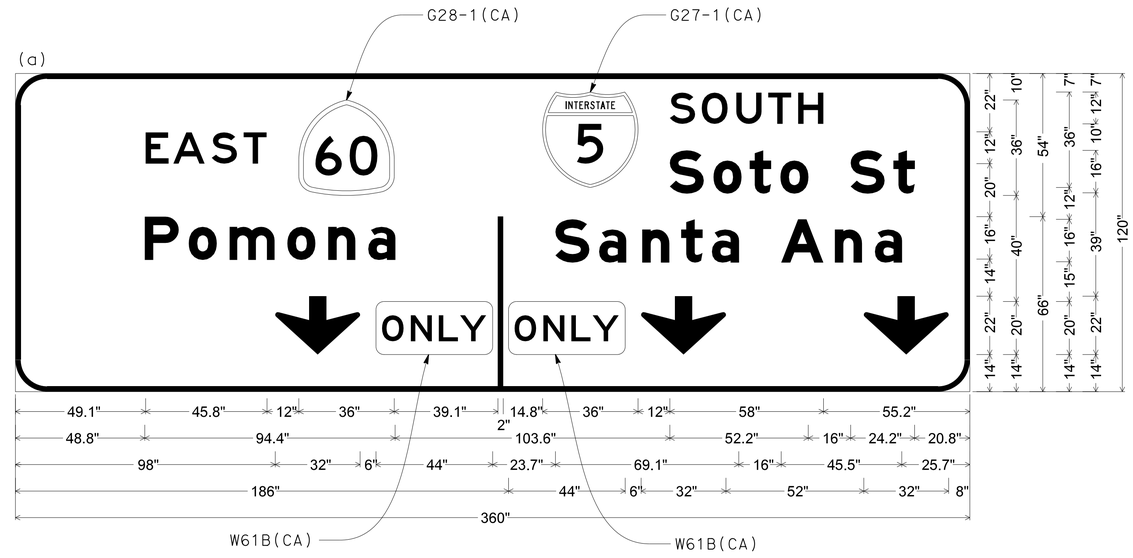
(b)



12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [Santa Ana] E Mod; Down Arrow 22.0" 270°; Rounded Rectangle 3.0" Radius Yellow;
Down Arrow 22.0" 270°;

SIGN 13B

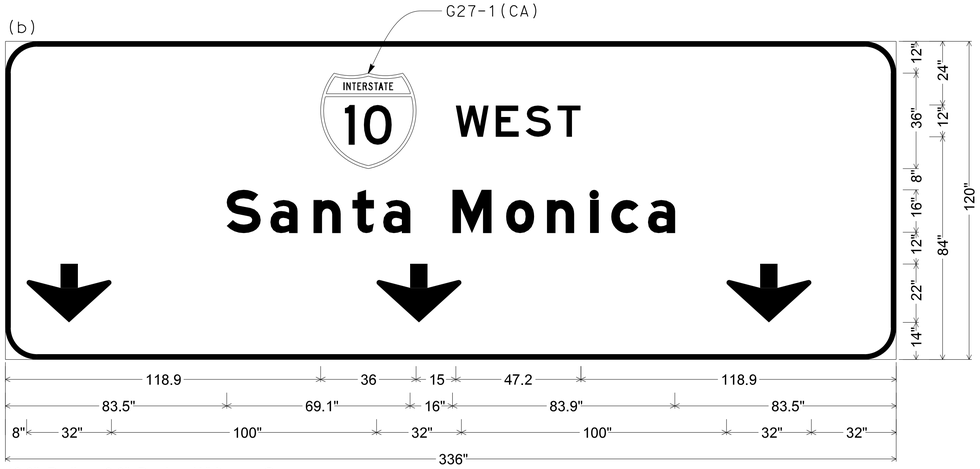
(a)



12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [Pomona] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Rounded Rectangle 3.0" Radius Yellow;
[SOUTH] E; [Soto St] E Mod; [Santa Ana] E Mod; Rounded Rectangle 3.0" Radius Yellow;
Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 14A

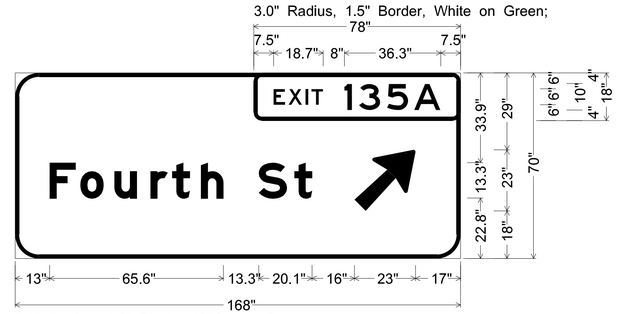
(b)



12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [Santa Monica] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 14A

G70-3(CA)
[EXIT] E; [135A] E;
3.0" Radius, 1.5" Border, White on Green;



9.0" Radius, 1.5" Border, White on Green;
[Fourth St] E Mod; Arrow 13.33UC-2LV - 29.3" 45°;

SIGN 15A 17A

SIGN DETAILS
NO SCALE

SD-9

REVISED BY | DATE REVISED
EUGENE BRAVO | VINCENT NGUYEN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	136	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

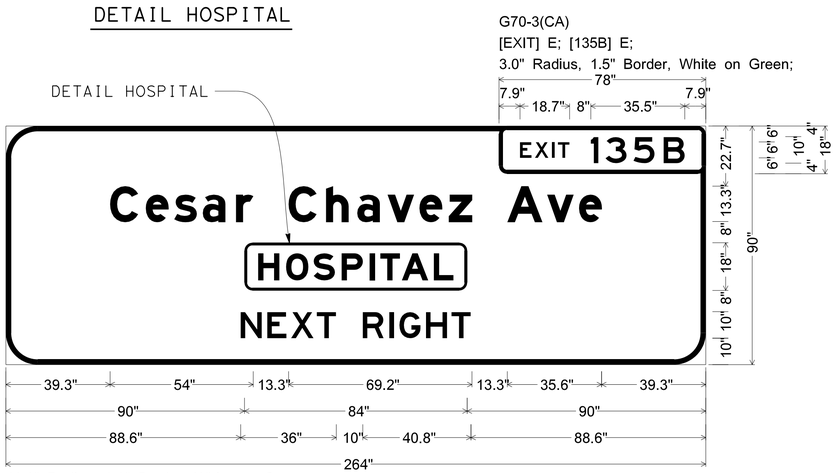
2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

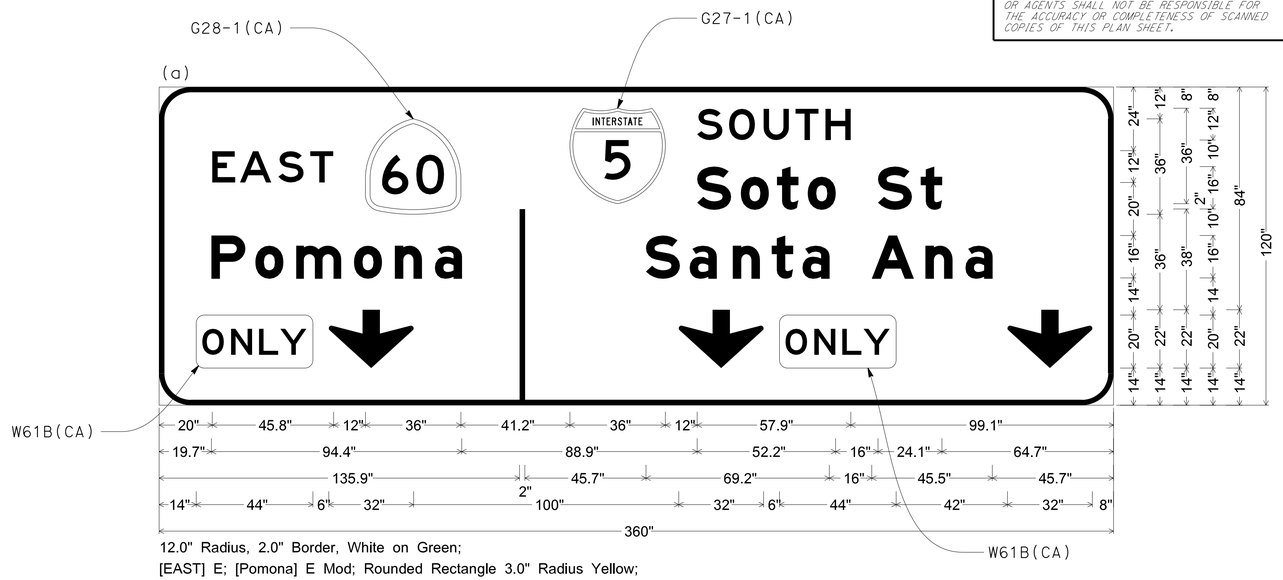
3.0" Radius, 1.0" Border, White on Blue;
[HOSPITAL] E Mod;

DETAIL HOSPITAL



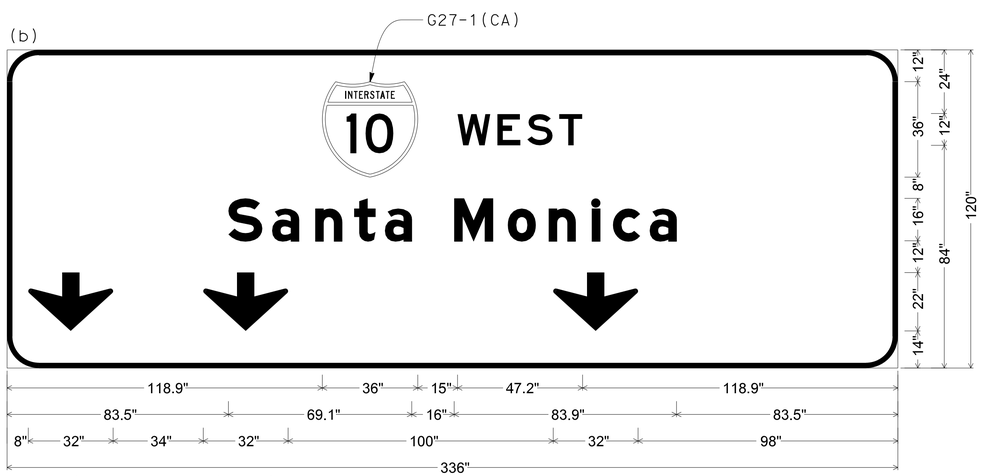
12.0" Radius, 2.0" Border, White on Green;
[Ceasar Chavez Ave] E Mod 80% spacing; Rounded Rectangle 3.0" Radius;
[NEXT RIGHT] E 80% spacing;

SIGN 15B



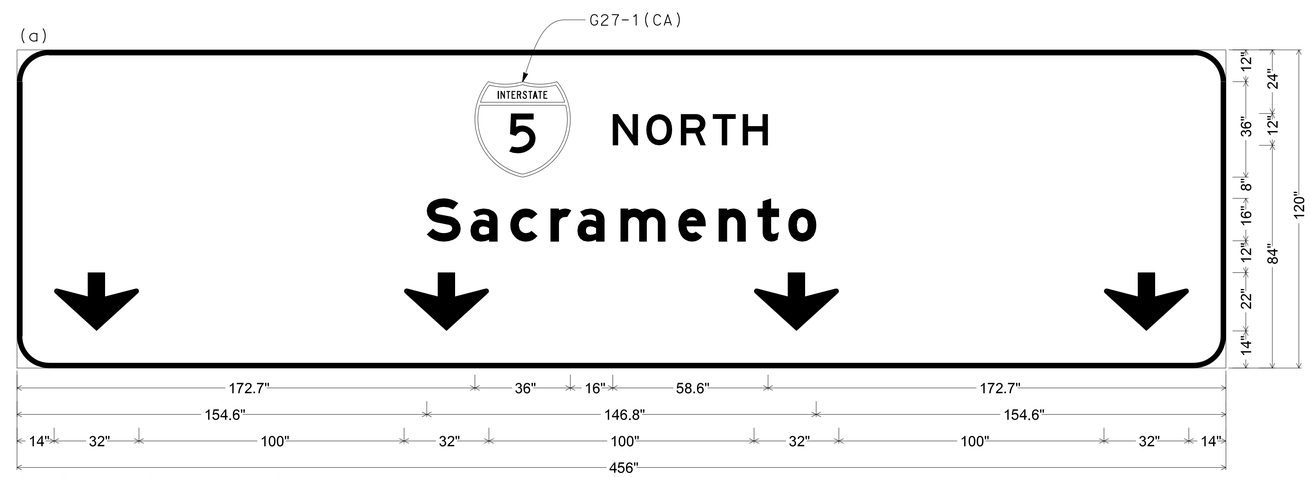
12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [Pomona] E Mod; Rounded Rectangle 3.0" Radius Yellow;
Down Arrow 22.0" 270°; [SOUTH] E; [Soto St] E Mod; [Santa Ana] E Mod; Down Arrow 22.0" 270°;
Rounded Rectangle 3.0" Radius Yellow;
Down Arrow 22.0" 270°;

SIGN 16A



12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [Santa Monica] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 16A



12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [Sacramento] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

SIGN 17B

SIGN DETAILS

NO SCALE

SD-10

REVISED BY | DATE REVISED
EUGENE BRAVO | VINCENT NGUYEN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
GRISH BIGLARIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	137	262

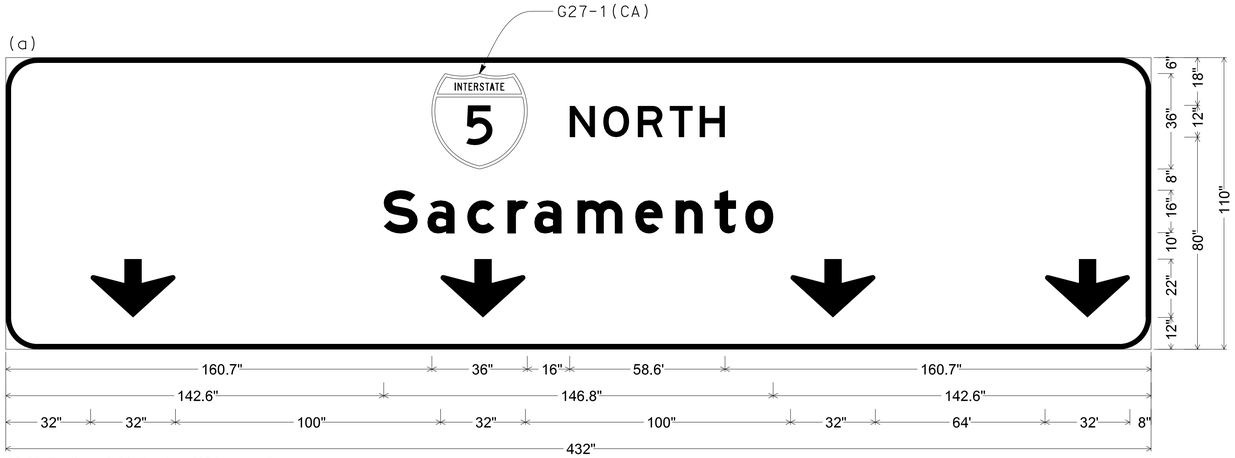
REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

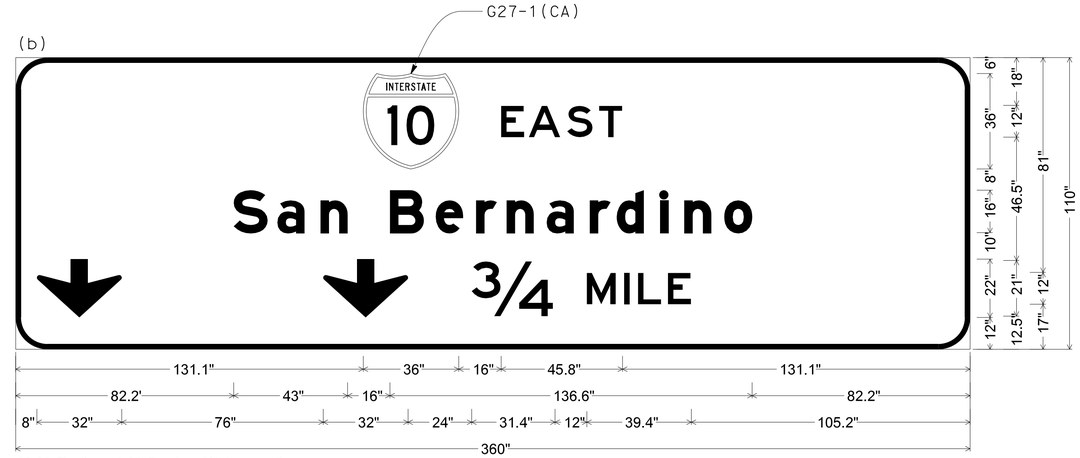
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

(a)



12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [Sacramento] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

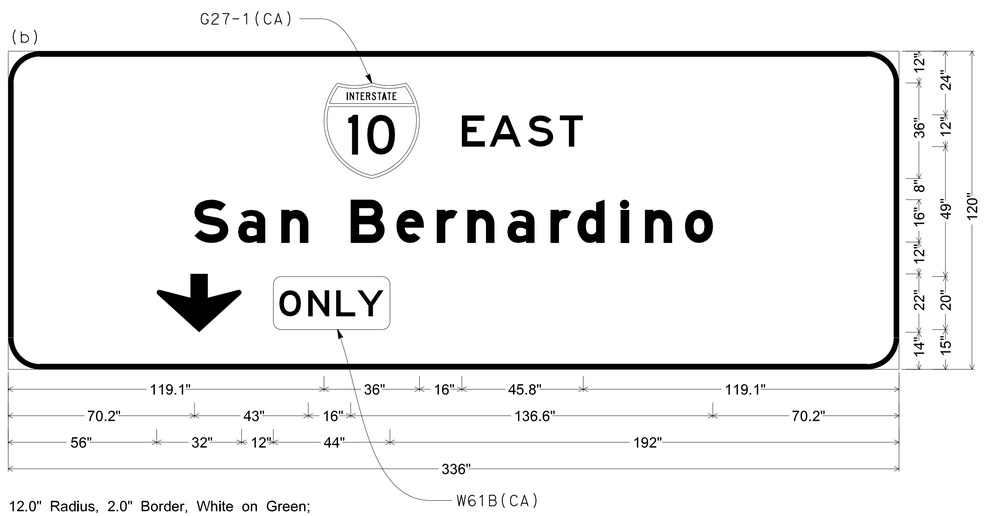
(b)



12.0" Radius, 2.0" Border, White on Green;
[WEST] E; [Sacramento] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; [3/4 MILE] E;

SIGN 16B

(b)

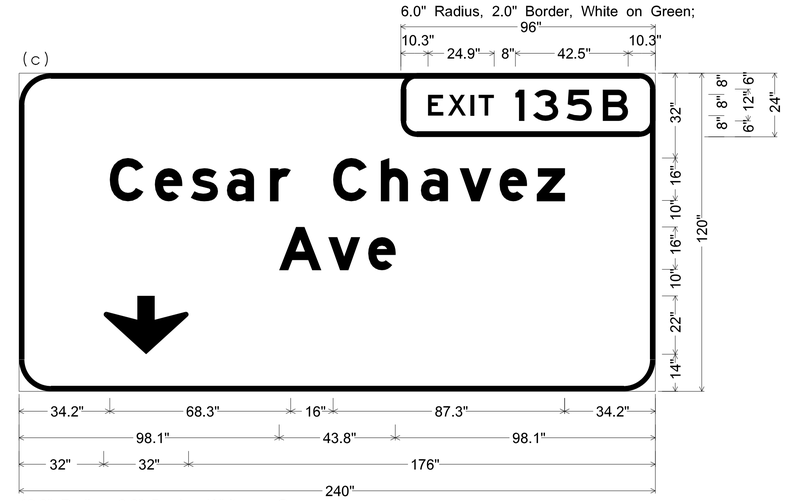


12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [San Bernardino] E Mod; Down Arrow 22.0" 270°; Rounded Rectangle 3.0" Radius Yellow;

SIGN 17B

G70-3(CA)
[EXIT] E; [135B] E;
6.0" Radius, 2.0" Border, White on Green;

(c)



12.0" Radius, 2.0" Border, White on Green;
[Ceasar Chavez] E Mod; [Ave] E Mod; Down Arrow 22.0" 270°;

SIGN DETAILS

NO SCALE

SD-11

REVISED BY | DATE REVISED
EUGENE BRAVO | VINCENT NGUYEN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	138	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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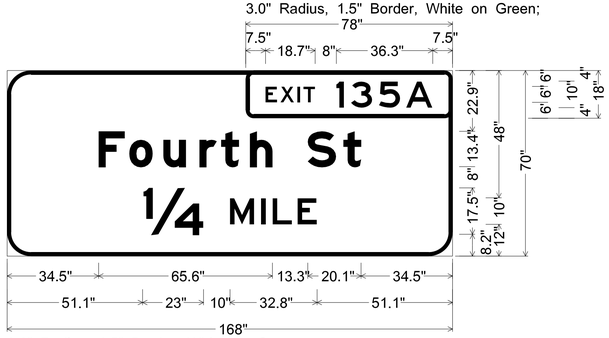
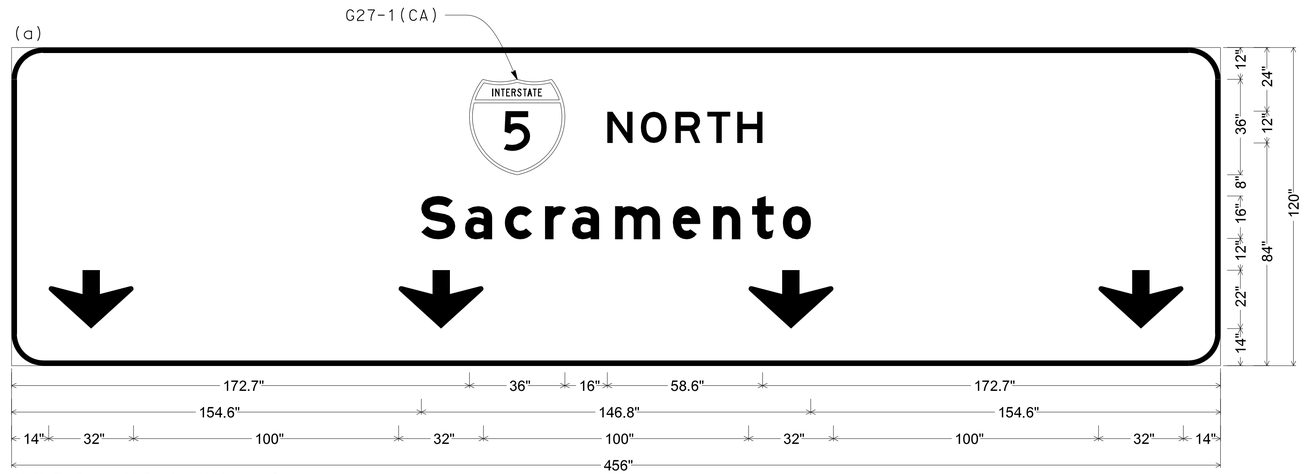
G70-3(CA)
[EXIT] E; [135A] E;
3.0" Radius, 1.5" Border, White on Green;



9.0" Radius, 1.5" Border, White on Green;
[Fourth St] E Mod; [1/4] E Mod [MILE] E;

SIGN 18A

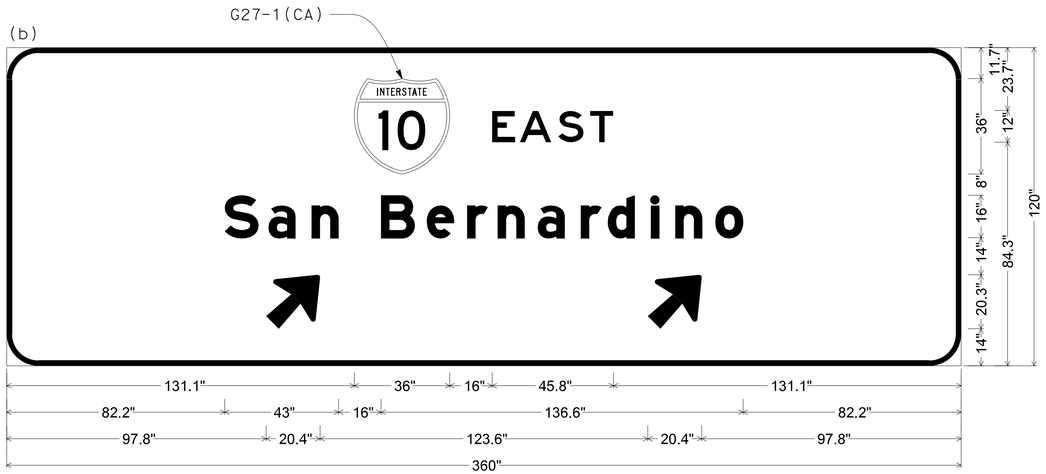
(a)



12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [Sacramento] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

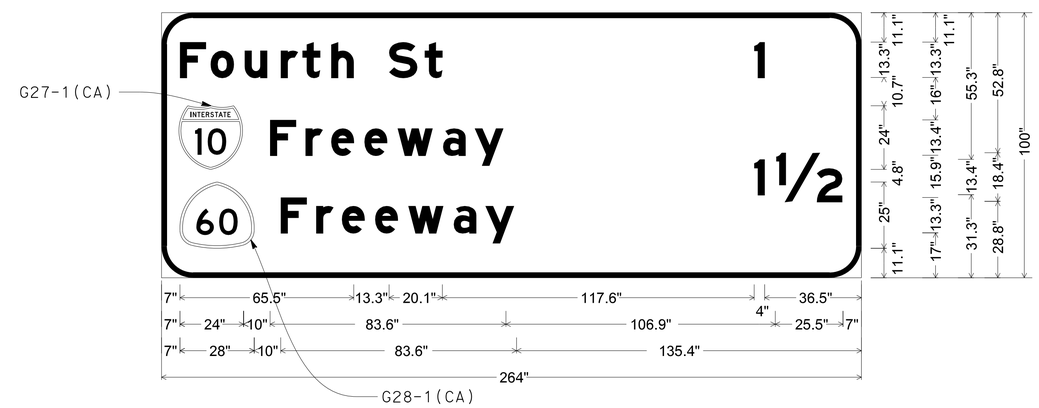
SIGN 18B

(b)



12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [San Bernardino] E Mod; Arrow 16CAP-1L - 25.0" 45°; Arrow 16CAP-1L - 25.0" 45°;

SIGN 18B



12.0" Radius, 2.0" Border, White on Green;
[Fourth St] E Mod; [1] E Mod; [Santa Monica Fwy] E Mod 75% spacing; [Pomona Fwy] E Mod;
[1] E Mod; [1/2] E Mod;

SIGN 20A

SIGN DETAILS

NO SCALE

SD-12

REVISED BY	DATE REVISED
EUGENE BRAVO	VINCENT NGUYEN
CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	GRISH BIGLARIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	139	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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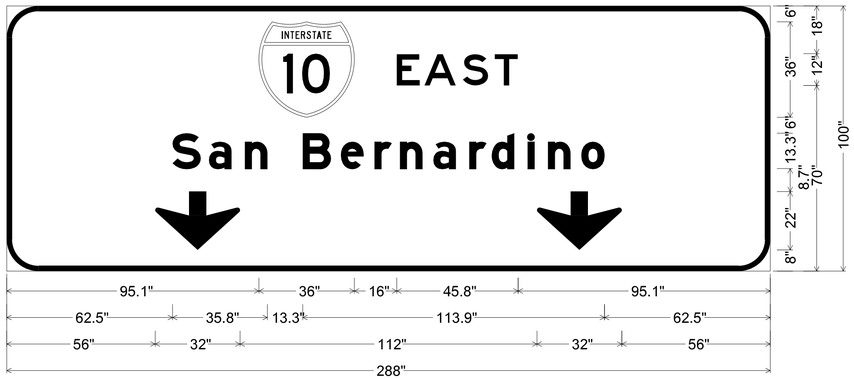
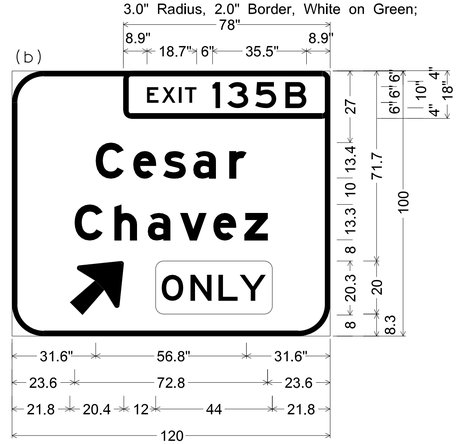
(a)



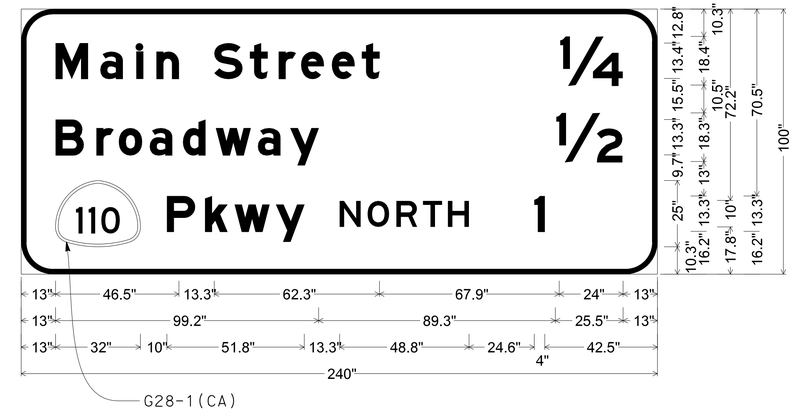
12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [San Bernardino] E Mod; Down Arrow 22.0" 270°; Down Arrow 22.0" 270°;

G70-3(CA)
[EXIT] E; [135B] E;
3.0" Radius, 2.0" Border, White on Green;

(b)



12.0" Radius, 2.0" Border, White on Green;
[Caesar] E Mod; [Chavez] E Mod;
Arrow 16CAP-1L - 25.0" 45°;
Rounded Rectangle 3.0" Radius Yellow;

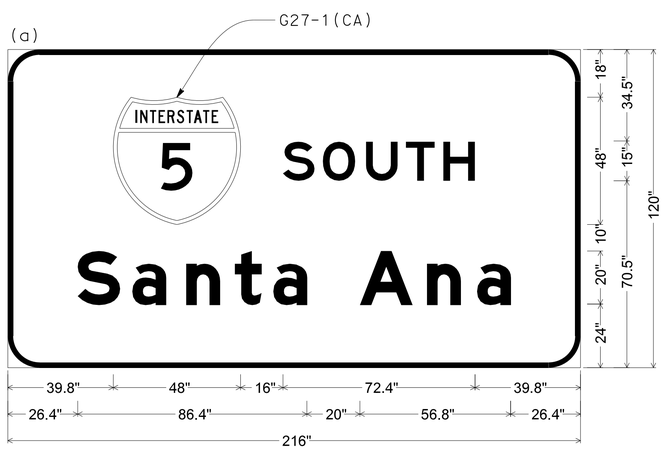


12.0" Radius, 2.0" Border, White on Green;
[Main Street] E Mod; [1/4] E Mod; [Broadway] E Mod; [1/2] E Mod;
[Pkwy] E Mod [NORTH] E; [1] E Mod;

SIGN 19A

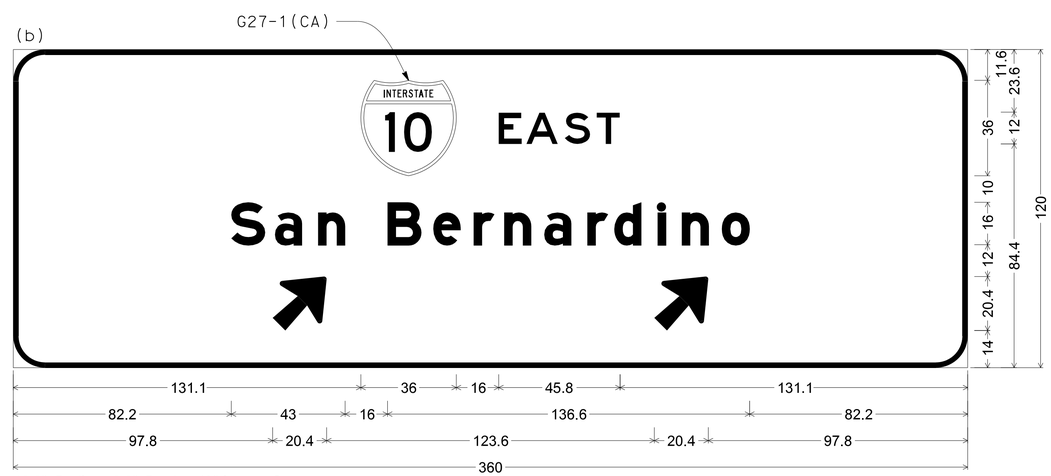
SIGN 21A

(a)



12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [Santa Ana] E Mod;

(b)



12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [San Bernardino] E Mod; Arrow 16CAP-1L - 25.0" 45°; Arrow 16CAP-1L - 25.0" 45°;

SIGN 20B

SIGN DETAILS

NO SCALE

SD-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 26-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	140	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

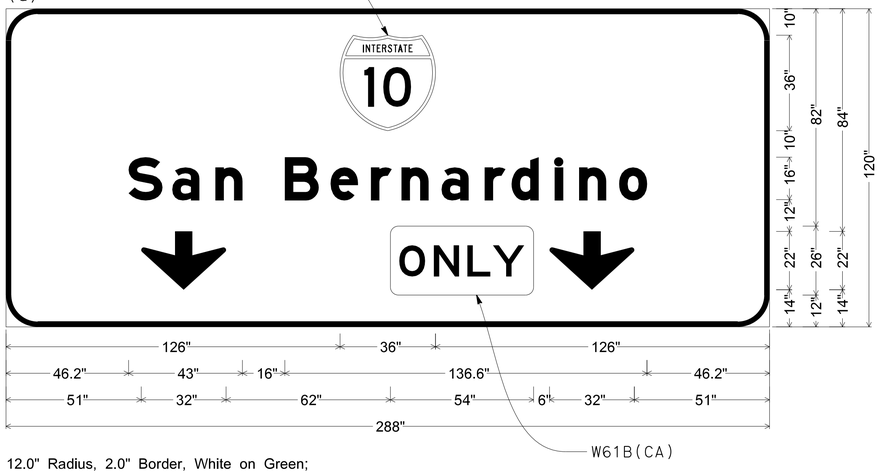
2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

(a)

G27-1(CA)

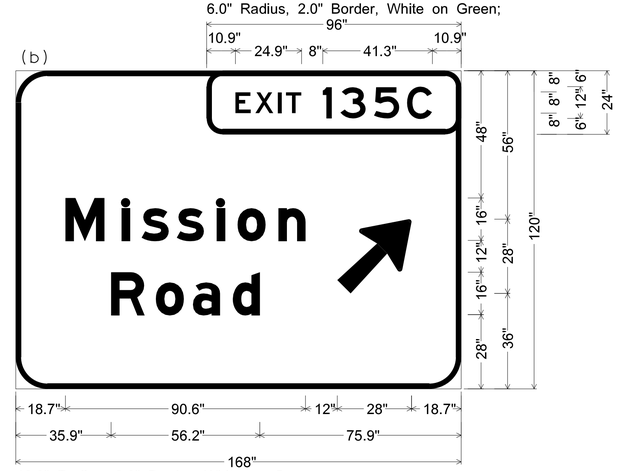


12.0" Radius, 2.0" Border, White on Green;
[San Bernardino] E Mod; Down Arrow 22.0" 270°; Rounded Rectangle 3.0" Radius Yellow;
Down Arrow 22.0" 270°;

SIGN 22A

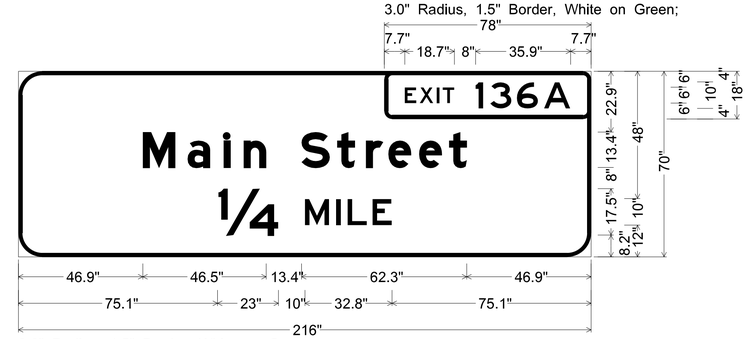
(b)

G70-3(CA)
[EXIT] E; [135C] E;
6.0" Radius, 2.0" Border, White on Green;



12.0" Radius, 2.0" Border, White on Green;
[Mission] E Mod; [Road] E Mod;
Arrow 16CAP-2LV - 35.6" 45°;

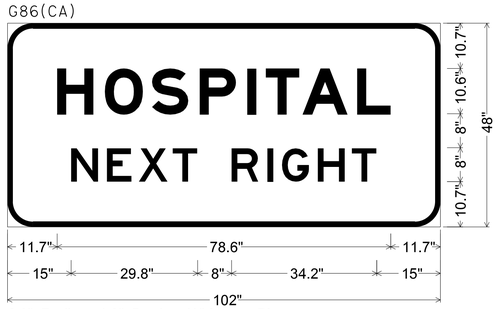
G70-3(CA)
[EXIT] E; [136A] E;
3.0" Radius, 1.5" Border, White on Green;



9.0" Radius, 1.5" Border, White on Green;
[Main Street] E Mod; [1/4] E Mod [MILE] E;

SIGN 22B

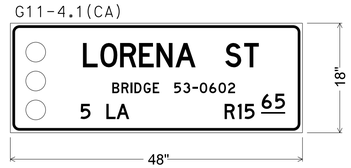
G86(CA)



6.0" Radius, 1.3" Border, White on Green;
[HOSPITAL] E Mod; [NEXT RIGHT] E;

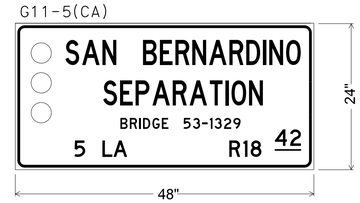
S6-1 S22-1

G11-4.1(CA)



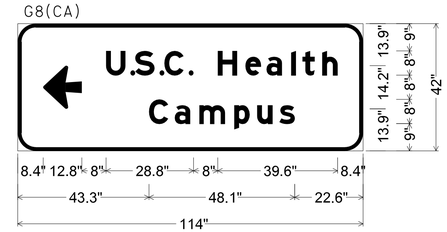
S8-1

G11-5(CA)



S19-1

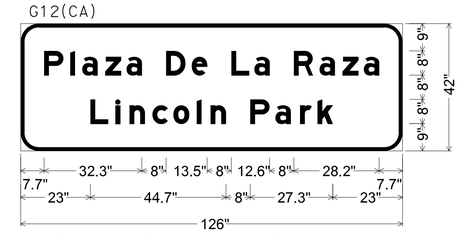
G8(CA)



6.0" Radius, 1.3" Border, White on Green;
Arrow 8UC-2LH - 12.8" 180°;
[U.S.C. Health] E Mod; [Campus] E Mod;

S21-1

G12(CA)



6.0" Radius, 1.3" Border, White on Green;
[Plaza De La Raza] E Mod; [Lincoln Park] E Mod;

S22-1

SIGN DETAILS

NO SCALE

SD-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY / DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	141	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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

NOTES:

1. EXACT LOCATION AND POSITION OF ROADSIDE SIGNS WILL BE DETERMINED BY THE ENGINEER.
2. SIGNS ARE MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, NOVEMBER 2014 EDITION) CODED EXCEPT AS NOTED.
3. (CA) DENOTES CALIFORNIA CODED SIGNS.
4. FOR SIGN SPECIFICATIONS SEE CALTRANS WEBSITE: http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm
5. ALL DIMENSIONS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE ORDERING MATERIAL.

LEGEND:

(N) = NOT A SEPARATE PAY ITEM

OVERHEAD SIGN QUANTITIES

SIGN No.		LOCATION	SIGN CODE	SIGN PANEL L X D	REMOVE SIGN PANEL (N) SQFT	INSTALL SIGN PANEL ON EXISTING FRAME SQFT	MATERIAL SUMMARY: SINGLE FACED	BACKGROUND: SHEETING COLOR	BACKGROUND: RETROREFLECTIVE ASTM TYPE	LEGEND: SHEETING COLOR	LEGEND: RETROREFLECTIVE ASTM TYPE	GRAFFITI: STANDARD	GRAFFITI: PREMIUM	FURNISH FORMED PANEL SIGN (OVERHEAD) FOR RETROREFLECTIVE SHEETING (TYPE XI) SQFT	FURNISH LAMINATED PANEL SIGN (1" - TYPE A) FOR RETROREFLECTIVE SHEETING (TYPE XI) SQFT	RETROREFLECTIVE SHEETING (TYPE XI) SQFT	REMARKS
1A	(a)	FSBT	G24(CA)	384" X 120"	320.0	320.0	X	GREEN	XI	WHITE	XI		X	320.0		320.0	
	(b)	FSBT	G24(CA)	360" X 120"	300.0	300.0	X	GREEN	XI	WHITE	XI		X		300.0	300.0	
2A		FNBT	G23(CA)	360" X 100"	250.0	250.0	X	GREEN	XI	WHITE	XI		X	250.0		250.0	
2B		FSBT	G23(CA)	360" X 100"	250.0	250.0	X	GREEN	XI	WHITE	XI		X	250.0		250.0	
3A		FNBT	G83(CA)	168" X 70"	81.7	81.7	X	GREEN	XI	WHITE	XI		X		81.7	81.7	REMOVE Exist G70(CA) (EXIT No.)
3B	(a)	FSBT	G20(CA)	312" X 120"	260.0	260.0	X	GREEN	XI	WHITE	XI		X		260.0	260.0	
	(b)	FSBT	G85(CA)	180" X 120"	150.0	150.0	X	GREEN	XI	WHITE	XI		X		150.0	150.0	
5A	(a)	FSBT	G24(CA)	300" X 120"	250.0	250.0	X	GREEN	XI	WHITE	XI		X		250.0	250.0	
	(b)	FSBT	G20(CA)	240" X 120"	200.0	200.0	X	GREEN	XI	WHITE	XI		X		200.0	200.0	
5B	(a)	FNBT	G83(CA)	180" X 70"	87.5	87.5	X	GREEN	XI	WHITE	XI		X		87.5	87.5	REMOVE Exist G70(CA) (EXIT No.)
	(b)	FNBT	G85(CA)	168" X 70"	81.7	81.7	X	GREEN	XI	WHITE	XI		X		81.7	81.7	REMOVE Exist G70(CA) (EXIT No.)
5C	(a)	FSBT	G83(CA)	216" X 70"	105.0	105.0	X	GREEN	XI	WHITE	XI		X		105.0	105.0	
	(b)	FSBT	G85(CA)	168" X 70"	81.7	81.7	X	GREEN	XI	WHITE	XI		X		81.7	81.7	
6A		FSBT	G23(CA)	360" X 100"	250.0	250.0	X	GREEN	XI	WHITE	XI		X		250.0	250.0	
6B		FNBT	G85(CA)	216" X 70"	105.0	105.0	X	GREEN	XI	WHITE	XI		X		105.0	105.0	
TOTAL SHEET SQ-1						2,772.6								820.0	1,952.6	2,772.6	

SIGN QUANTITIES
SQ-1

REVISED BY | DATE REVISED

EUGENE BRAVO | VINCENT NGUYEN

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	142	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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OVERHEAD SIGN QUANTITIES

SIGN No.		LOCATION	SIGN CODE	SIGN PANEL L X D	REMOVE SIGN PANEL (N) SQFT	INSTALL SIGN PANEL ON EXISTING FRAME SQFT	MATERIAL SUMMARY: SINGLE FACED	BACKGROUND: SHEETING COLOR	BACKGROUND: RETROREFLECTIVE ASTM TYPE	LEGEND: SHEETING COLOR	LEGEND: RETROREFLECTIVE ASTM TYPE	GRAFFITI: STANDARD	GRAFFITI: PREMIUM	FURNISH FORMED PANEL SIGN (OVERHEAD) FOR RETROREFLECTIVE SHEETING (TYPE XI) SQFT	FURNISH LAMINATED PANEL SIGN (1" - TYPE A) FOR RETROREFLECTIVE SHEETING (TYPE XI) SQFT	RETROREFLECTIVE SHEETING (TYPE XI) SQFT	REMARKS
7A	(a)	FSBT	G83(CA)	192" X 70"	93.3	93.3	X	GREEN	XI	WHITE	XI		X		93.3	93.3	
	(b)	FSBT	G85(CA)	204" X 70"	99.2	99.2	X	GREEN	XI	WHITE	XI		X		99.2	99.2	
7B		FNBT	G83(CA)	276" X 70"	134.2	134.2	X	GREEN	XI	WHITE	XI		X		134.2	134.2	
7C	(a)	FNBT	G24(CA)	192" X 120"	160.0	160.0	X	GREEN	XI	WHITE	XI		X		160.0	160.0	
	(b)	FNBT	G24(CA)	276" X 120"	230.0	230.0	X	GREEN	XI	WHITE	XI		X		230.0	230.0	
	(c)	FNBT	G24(CA)	288" X 120"	240.0	240.0	X	GREEN	XI	WHITE	XI		X		240.0	240.0	
8A		FSBT	G83(CA)	216" X 110"	165.0	165.0	X	GREEN	XI	WHITE	XI		X		165.0	165.0	
8B		FNBT	G23(CA)	312" X 110"	238.3	238.3	X	GREEN	XI	WHITE	XI		X	238.3		238.3	
8C		FSBT	Mod(CA)	96" X 70"	46.7	46.7	X	WHITE	XI	BLACK			X		46.7	46.7	
8D		FSBT	G83(CA)	192" X 90"	120.0	120.0	X	GREEN	XI	WHITE	XI		X		120.0	120.0	
9A		FNBT	G85(CA)	264" X 70"	128.3	128.3	X	GREEN	XI	WHITE	XI		X	128.3		128.3	
9B	(a)	FNBT	G24(CA)	264" X 120"	220.0	220.0	X	GREEN	XI	WHITE	XI		X	220.0		220.0	
	(b)		G24(CA)	276" X 120"	230.0	230.0	X	GREEN	XI	WHITE	XI		X		230.0	230.0	
	(c)		G24(CA)	288" X 120"	240.0	240.0	X	GREEN	XI	WHITE	XI		X		240.0	240.0	
9C		FSBT	G23(CA)	264" X 120"	220.0	220.0	X	GREEN	XI	WHITE	XI		X	220.0		220.0	
10A	(a)	FNBT	G24(CA)	264" X 120"	220.0	220.0	X	GREEN	XI	WHITE	XI		X	220.0		220.0	
	(b)	FNBT	G85(CA)	264" X 120"	220.0	220.0	X	GREEN	XI	WHITE	XI		X	220.0		220.0	
11A	(a)	FNBT	G24(CA)	336" X 70"	163.3	163.3	X	GREEN	XI	WHITE	XI		X	163.3		163.3	
	(b)	FNBT	G85(CA)	168" X 70"	81.7	81.7	X	GREEN	XI	WHITE	XI		X	81.7		81.7	
12A		FNBT	G83(CA)	168" X 70"	81.7	81.7	X	GREEN	XI	WHITE	XI		X	81.7		81.7	
13A	(a)	FNBT	G85(CA)	168" X 120"	140.0	140.0	X	GREEN	XI	WHITE	XI		X	140.0		140.0	
	(b)	FNBT	G24(CA)	288" X 120"	240.0	240.0	X	GREEN	XI	WHITE	XI		X	240.0		240.0	
13B	(a)	FNBT	G24(CA)	264" X 120"	220.0	220.0	X	GREEN	XI	WHITE	XI		X	220.0		220.0	
	(b)	FNBT	G24(CA)	288" X 120"	240.0	240.0	X	GREEN	XI	WHITE	XI		X	240.0		240.0	
TOTAL SHEET SQ-2						4,171.7								2,413.3	1,758.4	4,171.7	

SIGN QUANTITIES

SQ-2

REVISED BY | DATE REVISED

EUGENE BRAVO | VINCENT NGUYEN

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	143	262

REGISTERED CIVIL ENGINEER 6/25/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp. 03/31/16 CIVIL STATE OF CALIFORNIA

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OVERHEAD SIGN QUANTITIES

SIGN No.		LOCATION	SIGN CODE	SIGN PANEL L X D	REMOVE SIGN PANEL (N) SQFT	INSTALL SIGN PANEL ON EXISTING FRAME SQFT	MATERIAL SUMMARY: SINGLE FACED	BACKGROUND: SHEETING COLOR	BACKGROUND: RETROREFLECTIVE ASTM TYPE	LEGEND: SHEETING COLOR	LEGEND: RETROREFLECTIVE ASTM TYPE	GRAFFITI: STANDARD	GRAFFITI: PREMIUM	FURNISH FORMED PANEL SIGN (OVERHEAD) FOR RETROREFLECTIVE SHEETING (TYPE XI) SQFT	FURNISH LAMINATED PANEL SIGN (1" - TYPE A) FOR RETROREFLECTIVE SHEETING (TYPE XI) SQFT	RETROREFLECTIVE SHEETING (TYPE XI) SQFT	REMARKS
14A	(a)	FSBT	G24(CA)	360" X 120"	300.0	300.0	X	GREEN	XI	WHITE	XI		X		300.0	300.0	
	(b)	FSBT	G24(CA)	336" X 120"	280.0	280.0	X	GREEN	XI	WHITE	XI		X		280.0	280.0	
15A		FNBT	G85(CA)	168" X 70"	81.7	81.7	X	GREEN	XI	WHITE	XI		X	81.7		81.7	
15B		FNBT	G86(CA)	264" X 90"	165.0	165.0	X	GREEN	XI	WHITE	XI		X	165.0		165.0	
16A	(a)	FSBT	G24(CA)	360" X 120"	300.0	300.0	X	GREEN	XI	WHITE	XI		X		300.0	300.0	
	(b)	FSBT	G24(CA)	336" X 120"	280.0	280.0	X	GREEN	XI	WHITE	XI		X		280.0	280.0	
16B	(a)	FNBT	G24(CA)	432" X 110"	330.0	330.0	X	GREEN	XI	WHITE	XI		X	330.0		330.0	
	(b)	FNBT	G24(CA)	360" X 110"	275.0	275.0	X	GREEN	XI	WHITE	XI		X	275.0		275.0	
17A		FSBT	G85(CA)	168" X 70"	81.7	81.7	X	GREEN	XI	WHITE	XI		X	81.7		81.7	
17B	(a)	FNBT	G24(CA)	456" X 120"	380.0	380.0	X	GREEN	XI	WHITE	XI		X	380.0		380.0	
	(b)	FNBT	G24(CA)	336" X 120"	280.0	280.0	X	GREEN	XI	WHITE	XI		X	280.0		280.0	
	(c)	FNBT	G83(CA)	240" X 120"	200.0	200.0	X	GREEN	XI	WHITE	XI		X	200.0		200.0	
18A		FSBT	G83(CA)	168" X 70"	81.7	81.7	X	GREEN	XI	WHITE	XI		X	81.7		81.7	
18B	(a)	FNBT	G24(CA)	456" X 120"	380.0	380.0	X	GREEN	XI	WHITE	XI		X	380.0		380.0	
	(b)	FNBT	G24(CA)	360" X 120"	300.0	300.0	X	GREEN	XI	WHITE	XI		X	300.0		300.0	
19A	(a)	FSBT	G24(CA)	288" X 100"	200.0	200.0	X	GREEN	XI	WHITE	XI		X	200.0		200.0	
	(b)	FSBT	G24(CA)	120" X 100"	83.3	83.3	X	GREEN	XI	WHITE	XI		X	83.3		83.3	
20A		FNBT	G23(CA)	264" X 100"	183.3	183.3	X	GREEN	XI	WHITE	XI		X	183.3		183.3	
20B	(a)	FSBT	G24(CA)	216" X 120"	180.0	180.0	X	GREEN	XI	WHITE	XI		X	180.0		180.0	
	(b)	FSBT	G24(CA)	360" X 120"	300.0	300.0	X	GREEN	XI	WHITE	XI		X	300.0		300.0	
21A		FNBT	G23(CA)	240" X 100"	166.7	166.7	X	GREEN	XI	WHITE	XI		X	166.7		166.7	
22A	(a)	FSBT	G24(CA)	288" X 120"	240.0	240.0	X	GREEN	XI	WHITE	XI		X		240.0	240.0	
	(b)	FSBT	G85(CA)	168" X 120"	140.0	140.0	X	GREEN	XI	WHITE	XI		X		140.0	140.0	
22B		FNBT	G83(CA)	216" X 70"	105.0	105.0	X	GREEN	XI	WHITE	XI		X	105.0		105.0	
TOTAL SHEET SQ-3						5,313.4								3,773.4	1,540.0	5,313.4	
TOTAL SHEET SQ-2						4,171.7								2,413.3	1,758.4	4,171.7	
TOTAL SHEET SQ-1						2,772.6								820.0	1,952.6	2,772.6	
TOTAL SHEET SQ-4																267.1	
GRAND TOTAL						12,257.7								7,006.7	5,251.0	12,524.8	

SIGN QUANTITIES

SQ-3

REVISED BY | DATE REVISED

EUGENE BRAVO | VINCENT NGUYEN

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	144	262

REGISTERED CIVIL ENGINEER DATE 6/25/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VINCENT NGUYEN No. C057797 Exp 03/31/16 CIVIL STATE OF CALIFORNIA

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ROADSIDE SIGN QUANTITIES

SIGN No.	SIGN CODE	SIGN PANEL L X D	POST DATA SIZE	MATERIAL SUMMARY: SINGLE FACED	DOUBLE FACED	BACKGROUND: SHEETING COLOR	BACKGROUND: RETROREFLECTIVE ASTM TYPE	LEGEND: SHEETING COLOR	LEGEND: RETROREFLECTIVE ASTM TYPE	NON-REFLECTIVE	GRAFFITI: STANDARD	GRAFFITI: PREMIUM	FURNISH SINGLE SHEET ALUMINUM SIGN FOR RETROREFLECTIVE SHEETING (TYPE XI): UNFRAMED ALUMINUM 0.063" SQFT	UNFRAMED ALUMINUM 0.080" SQFT	FRAMED ALUMINUM 0.080" SQFT	RETROREFLECTIVE SHEETING (TYPE XI) SQFT	ROADSIDE SIGN: ONE POST EA	ROADSIDE SIGN: TWO POST EA	REMOVE ROADSIDE SIGN EA	INSTALL SIGN (STRAP & SADDLE BRACKET METHOD) EA	REMARKS
S5-1	W74(CA)																		1		
S5-2	W74(CA)	48 " X 48 "		X		YELLOW	XI	BLACK		X		X		16.0		16.0				1	THRU TRAFFIC MERGE LEFT
S6-1	G86(CA)	102 " X 48 "	6X6	X		BLUE	XI	WHITE	XI			X			34.0	34.0		1	1		HOSPITAL NEXT RIGHT
S8-1	G11-4.1(CA)	48 " X 18 "		X		WHITE	XI	BLACK		X		X		6.0		6.0			1	1	LORENA ST OC 53-0602 STRAP TO SIGN 8D
S14-1	R2-1	48 " X 60 "		X		WHITE	XI	BLACK		X		X		20.0		20.0			1	1	SPEED LIMIT 55
S17-1	M3-1																		1		NORTH
S17-2	M3-3	30 " X 15 "		X		BLUE	XI	WHITE	XI			X	3.1			3.1				1	SOUTH
S18-1	G92(CA)	48 " X 30 "	4X6	X		GREEN	XI	WHITE	XI			X		10.0		10.0	1				FREEWAY ENTRANCE
	M3-3	24 " X 12 "		X		BLUE	XI	WHITE	XI			X	2.0			2.0					SOUTH
	G27-2(CA)	21 " X 18 "		X		BLUE/RED	XI	WHITE	XI			X	2.6			2.6					INTERSTATE ROUTE 5
	M6-2 (R†)	21 " X 15 "		X		BLUE	XI	WHITE	XI			X	2.2			2.2					
S18-2	G92(CA)	48 " X 30 "	4X6	X		GREEN	XI	WHITE	XI			X		10.0		10.0	1		1		FREEWAY ENTRANCE
	M3-3	24 " X 12 "		X		BLUE	XI	WHITE	XI			X	2.0			2.0					SOUTH
	G27-2(CA)	21 " X 18 "		X		BLUE/RED	XI	WHITE	XI			X	2.6			2.6					INTERSTATE ROUTE 5
	M6-2 (L†)	21 " X 15 "		X		BLUE	XI	WHITE	XI			X	2.2			2.2					
S19-1	G5-11(CA)	48 " X 24 "	4X6	X		WHITE	XI	BLACK		X		X		8.0		8.0	1		1		SAN BERNARDINO SEPARATION
S19-2	W13-1P	30 " X 30 "		X		YELLOW	XI	BLACK		X		X	6.3			6.3			1	1	35 MPH
S20-1	W4-1R	48 " X 48 "	4X6	X		YELLOW	XI	BLACK		X		X		16.0		16.0	1		1		
S21-1	G8(CA)	114 " X 42 "	6X6	X		GREEN	XI	WHITE	XI			X			33.3	33.3		1	1		U.S.C.HEALTH CAMPUS
S21-2	G84-3(CA)	48 " X 60 "	4X6	X		GREEN	XI	WHITE	XI			X		20.0		20.0	1		1		EXIT 135C
S22-1	G12(CA)	126 " X 42 "	6X8	X		GREEN	XI	WHITE	XI			X			36.8	36.8		1	1		PLAZA DE LA RAZA LINCOLN PARK
	G86(CA)	102 " X 48 "		X		BLUE	XI	WHITE	XI			X			34.0	34.0					HOSPITAL NEXT RIGHT
SUB TOTAL													23.0	106.0	138.1	267.1	5	3	12	5	
GRAND TOTAL													23.0	106.0	138.1	**	5	3	12	5	

** - SEE OVERHEAD SIGN QUANTITIES SQ-3 FOR GRAND TOTAL

SIGN QUANTITIES

SQ-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: GRISH BIGLARIAN
CALCULATED-DESIGNED BY: EUGENE BRAVO
CHECKED BY: VINCENT NGUYEN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	145	262

REGISTERED CIVIL ENGINEER 6-25-15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER RICHARD TRAN No. C68250 Exp. 9-30-17 CIVIL STATE OF CALIFORNIA

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

MAINLINE

SHEET No.	LOCATIONS	STATIONS	STATION LINE	DIRECTION	NUMBER OF SLABS (EACH) (N) LANE No. #1	#2	#3	#4	#5	INDIVIDUAL PRECAST SLAB REPLACEMENT CY	INDIVIDUAL SLAB REPLACEMENT (RSC) * CY	DRILL AND BOND (DOWEL BAR) * EA	BASE BOND BREAKER ** SQYD	REPLACE BASE CY
L-7	UNDER ESPERANZA St OC	FROM 809+85.439 TO 810+89.536	"ML1"	NB		1	1	2	1	23.8		40	106.7	4.8
				SB			1			4.8		8	21.3	1.0
L-9	BEFORE EUCLID Ave UC	FROM 844+65.235 TO 848+44.147	"ML1"	NB	11	18	1			142.8		240	640.0	28.6
			"NB3"	NB	10	5				71.4		120	320.0	14.3
L-9, L-10	FROM EUCLID Ave UC TO MARIETTA St UC	FROM 849+87.506 TO 860+97.502	"ML2"	NB	12	27				185.6		312	832.0	37.1
				SB	3	13				76.2		128	341.3	15.2
L-9, L-10	FROM EUCLID Ave UC TO MARIETTA St UC	FROM 849+84.542 TO 860+77.017	"NB3"	NB	24	24					228.5	768	1,024.0	45.7
			"SB2/3"	SB		2	2	6		47.6		80	213.3	9.5
L-10, L-11	FROM MARIETTA St UC TO ROUTE 60 UC	FROM 862+30.696 TO 869+26.056	"ML2"	NB	6	6	5			80.9		136	362.7	16.2
				SB		1	3			19.0		32	85.3	3.8
L-11	FROM ROUTE 60 UC TO SOTO St UC	FROM 872+09.323 TO 876+94.022	"ML2"	NB	7	16				109.5		184	490.7	21.9
				SB		7				33.3		56	149.3	6.7
L-11	FROM ROUTE 60 UC TO SOTO St UC	FROM 872+62.152 TO 876+58.040	"NB3"	NB	17	10	3				142.8	480	640.0	28.6
				SB										
L-11	FROM ROUTE 60 UC TO SOTO St UC	FROM 872+34.720 TO 875+18.702	"SB3"	NB										
				SB	11	22					157.1	528	704.0	31.4
L-11, L-12	FROM SOTO St UC TO BOYLE Ave OC	FROM 878+57.220 TO 885+49.796	"ML2"	NB	5	4	1			47.6		80	213.3	9.5
				SB		2	1			14.3		24	64.0	2.9
L-11, L-12	FROM SOTO St UC TO BOYLE Ave OC	878+57.220 - 886+50	"NB3"	NB	43	34	3				380.8	1,280	1,706.7	76.2
		879+75.259 - 886+50	"SB3"	SB	8	15					109.5	368	490.7	21.9
L-12, L-13	FROM BOYLE Ave OC TO 7TH St OC	FROM 885+49.796 TO 895+00	"ML2"	NB	5	6	5			76.2		128	341.3	15.2
				SB										
L-12, L-13	FROM BOYLE Ave OC TO 7TH St OC	886+50 - 895+00	"NB3"	NB	17	6					109.5	368	490.7	21.9
		886+50 - 894+70.800	"SB3/4"	SB	23	23	22				323.7	1,088	1,450.7	64.7
L-13, L-14	FROM 7TH St OC TO WHITTIER Blvd OC	895+00 - 901+14.751	"NB3"	NB	5	4				42.8		72	192.0	8.6
		900+00 - 902+94.028	"SB4"	SB	4	1				23.8		40	106.7	4.8
L-13, L-14	FROM WHITTIER Blvd OC TO S BOYLE Ave UC	FROM 901+14.751 TO 906+00	"NB4"	NB		1	1		5	33.3		56	149.3	6.7
				SB	10	5				71.4		120	320.0	14.3
L-14, L-15	FROM S BOYLE Ave UC TO 4TH St UC	FROM 918+07.613 TO 930+79.238	"ML3"	NB	6	2	5	4		80.9		136	362.7	16.2
				SB	8	1				42.8		72	192.0	8.6
L-15, L-16	FROM 4TH St UC TO 1ST St UC	FROM 931+64.185 TO 941+69.923	"ML3"	NB	4	2	4			47.6		80	213.3	9.5
				SB		4				19.0		32	85.3	3.8
L-16, L-17	FROM 1ST St UC TO CESAR CHVEZ Ave OC	FROM 942+53.300 TO 957+00	"ML3"	NB	2	8	9		1	95.2		160	426.7	19.0
				SB	1	5	6			57.1		96	256.0	11.4
L-17	FROM CESAR CHVEZ Ave OC TO STATE St OC	FROM 957+00 TO 967+00	"ML3"	NB	1	3	6		2	57.1		96	256.0	11.4
				SB	1	1				9.5		16	42.7	1.9
L-18	FROM STATE St OC TO SB 5-EB 10 Conn UC	FROM 967+00 TO 973+75.537	"ML3"	NB	1	4	5			47.6		80	213.3	9.5
				SB		3	1	2		28.6		48	128.0	5.7
L-18	FROM SB 5-EB 10 Conn UC TO ROUTE 10 UC	FROM 974+24.594 TO 976+21.684	"ML3"	NB	3	2	3	2		47.6		80	213.3	9.5
				SB	3	5				38.1		64	170.7	7.6
L-19	FROM ROUTE 10 UC TO MISSION Rd UC	FROM 984+50.000 TO 994+00	"ML3"	NB	1	3	4	3		52.4		88	234.7	10.5
				SB	4	2	1	1		38.1		64	170.7	7.6
SUBTOTAL										1,765.9	1,451.9	7,848.0	14,421.4	643.7
SHEET TOTAL										1,865.9			14,869.4	663.7
GRAND TOTAL										1,865.9	1,451.9	7,848.0		663.7

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY
* SEE RSP P7, P8 FOR DETAILS.
** SEE SHEET Q-2, FOR GRAND TOTAL

SLAB REPLACEMENT QUANTITIES

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CONNECTOR

SHEET No.	LOCATIONS	DIRECTION	NUMBER OF SLABS (EACH) (N) LANE No. #1	#2	#3	INDIVIDUAL SLAB REPLACEMENT (RSC) CY	BASE BOND BREAKER SQYD	REPLACE BASE CY
L-10	NB Rte 5 TO WB Rte 10 Conn	NB	1	3		19.0	85.3	3.8
L-13	SB Rte 101 TO EB Rte 60 Conn	SB	1	2		14.3	64.0	2.9
L-23	NB Rte 5 TO EB Rte 10 Conn	NB	1	1		9.5	42.7	1.9
L-19, L-20	SB Rte 5 TO EB Rte 10 Conn	SB	4	7	1	57.1	256.0	11.4
SUBTOTAL						100.0	448.0	20.0

SUMMARY OF QUANTITIES
Q-1

REVISED BY	DATE REVISED
HUNG TIEU	RICHARD TRAN
CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	ASADOUR TERTERIAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	146	262

REGISTERED CIVIL ENGINEER 6-25-15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER RICHARD TRAN No. C68250 Exp. 9-30-17 CIVIL STATE OF CALIFORNIA

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PAVEMENT STRUCTURE QUANTITIES

SHEET No.	DIRECTION	COLD PLANE ASPHALT CONCRETE PAVEMENT	TACK COAT	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	REMOVE ASPHALT CONCRETE DIKE	PLACE HOT MIX ASPHALT DIKE (TYPE A)	MINOR HOT MIX ASPHALT	REMOVE CONCRETE (CURB AND GUTTER)	MINOR CONCRETE (CURB, SIDEWALK, AND CURB RAMP)	HOT MIX ASPHALT (TYPE A)	LEAN CONCRETE BASE RAPID SETTING	CLASS 3 AGGREGRATE BASE	GRIND EXISTING CONCRETE PAVEMENT	ROADWAY EXCAVATION		JOINTED PLAIN CONCRETE PAVEMENT (RSC)		BASE BOND BREAKER	ALTERNATE TREATED BASE	MINOR CONCRETE (STAMPED CONCRETE)
														GORE	RAMP TERMINI	GORE	RAMP TERMINI			
		SQYD	TON	TON	LF	LF	TON	LF	CY	TON	CY	CY	SQYD	CY	CY	CY	CY	SQYD	CY	SQFT
L-1	NB	3,208.0	0.5	433.1	259.0	259.0	7.1													
	SB	3,934.8	0.6	531.2	462.0	462.0	12.6													
L-2	NB	9,651.7	1.4	1,303.0	145.5	145.5	4.0			35.1	10.1	33.2								
	SB	12,176.4	1.8	1,643.8	572.5	572.5	15.7	451.7	28.8	35.1	10.1	33.2								
L-3	NB	11,575.3	1.7	1,562.7	349.0	349.0	9.5													
	SB	9,228.0	1.4	1,245.8	258.0	258.0	7.1													
L-4	NB	9,627.6	1.4	1,299.7	82.0	82.0	2.2													
	SB	9,222.9	1.4	1,245.1																
L-5	NB	11,591.6	1.7	1,564.9	257.5	257.5	7.0													1,894.0
	SB	12,055.4	1.8	1,627.5	108.5	108.5	3.0													2,232.0
L-6	NB	10,351.3	1.5	1,397.4	250.0	250.0	6.8													
	SB	11,131.4	1.7	1,502.7	538.0	538.0	14.7													
L-7	NB	9,041.6	1.3	1,220.6	557.0	557.0	15.2													
	SB	9,037.3	1.3	1,220.0	536.0	536.0	14.7													
L-8	NB	10,961.2	1.6	1,479.8	395.0	395.0	10.8	259.0	16.5											
	SB	10,238.0	1.5	1,382.1	612.5	612.5	16.7													
L-9	NB	9,352.3	1.4	1,262.6	632.0	632.0	17.3						5,315.9	241.4		181.0				
	SB	8,607.1	1.3	1,162.0	348.0	348.0	9.5						1,782.1		208.4		147.6	521.0	60.8	
L-10	NB	5,549.9	0.8	749.2	685.0	685.0	18.7	239.3	15.3				7,375.8							
	SB	5,795.6	0.9	782.4	223.5	223.5	6.1						6,853.7							
L-11	NB	4,874.2	0.7	658.0	111.5	111.5	3.0						6,511.8							
	SB	5,410.7	0.8	730.4				383.3	24.5				6,108.9							
L-12	NB	6,090.1	0.9	822.2	345.0	345.0	9.4	632.7	40.4				9,067.3							
	SB	4,661.3	0.7	629.3	345.0	345.0	9.4	966.0	61.6				8,129.4	263.7		197.8				
L-13	NB	3,647.9	0.5	492.5	221.0	221.0	6.0	720.0	45.9				1,555.9	162.4		121.8				
	SB	2,351.0	0.4	317.4	721.5	721.5	19.7	743.3	47.4				701.2							
L-14	NB	1,509.6	0.2	203.8	107.5	107.5	2.9	81.0	5.2											
	SB	2,266.0	0.3	305.9	187.5	187.5	5.1	50.3	3.2											
L-15	NB	6,143.9	0.9	829.4				815.7	52.0						198.3		140.4	495.7	57.8	
	SB	5,447.0	0.8	735.3				888.7	56.7						222.4		157.5	555.9	64.9	
L-16	NB	6,514.9	1.0	879.5				291.3	18.6											
	SB	4,043.4	0.6	545.9				600.0	38.3											
L-17	NB	3,548.2	0.5	479.0				733.0	46.8					44.6		33.4				
	SB	3,591.4	0.5	484.8				795.0	50.7					44.5		33.4				
L-18	NB	3,373.4	0.5	455.4				1,032.3	65.9					73.9		55.4				
	SB	3,875.4	0.6	523.2				877.3	56.0					29.2		21.9				
L-19	NB	3,408.4	0.5	460.1				452.3	28.9											
	SB	6,048.9	0.9	816.6				1,288.0	82.2											
L-20	NB	1,360.9	0.2	183.7				115.0	7.3											
	SB	1,956.8	0.3	264.2				377.3	24.1											
L-21	NB							151.7	9.7											
	SB							142.3	9.1											
L-22	NB																			
	SB	1,160.1	0.2	156.6																
L-23	NB	1,973.1	0.3	266.4				751.7	47.9											
	SB																			
SUBTOTAL					9,310.5		254.2		882.7					859.7	629.0	644.8	445.6	1,572.6		
FROM Q-1																		14,869.3		
FROM Q-3					16.7				166.0											
FROM Q-4					2,425.0		19.0													
GRAND TOTAL		265,594.0	39.6	35,855.2	11,752.2	9,310.5	273.2	13,838.3	1,048.7	70.2	20.2	66.4	53,402.0	1,488.8		1,090.4		16,441.9	183.5	4,126.0

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SUMMARY OF QUANTITIES
Q-2

REVISED BY | DATE REVISED
HUNG TIEU | RICHARD TRAN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
ASADOUR TERTERIAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	147	262

REGISTERED CIVIL ENGINEER 6-25-15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER RICHARD TRAN No. C68250 Exp. 9-30-17 CIVIL STATE OF CALIFORNIA

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CURB RAMPS QUANTITIES

SHEET No.	DIRECTION	LOCATION	REMOVE Conc (MISCELLANEOUS)	* MINOR Conc (CURB, SW, AND CURB RAMP)		DETECTABLE WARNING SURFACE	ADJUST PULL BOX	REMOVE CHAIN LINK FENCE	CHAIN LINK FENCE (TYPE CL-6)	Rdwy EXCAVATION (TYPE Z-2) (ADL)	PRE/POST Const SURVEYS
				SW AND CURB RAMP	CURB TYPE A2-8 (Typ)						
			SQFT	CY	CY	SQFT	EA	LF	LF	CY	EA
L-3,C-2	NB	NB-1, NB-2	472.2	3.1	4.4	33.8				1.4	2
	SB										
L-8, C-3	NB	NB-3	259.1	2.5	2.9	12.5					1
	SB										
L-9, C-4, C-17	NB	NB-4, NB-5	643.1	3.3	4.5	40.8		29.4	24.6		2
	SB	SB-16, SB-17	590.8	3.4	4.0	22.8	1				2
L-11, C-5	NB	NB-6, NB-7, NB-8	657.9	5.5	8.7	63.8	1				3
	SB										
L-22, C-16	NB										
	SB	SB-14, SB-15	633.0	2.4	3.6	24.9					2
L-12, C-6	NB	NB-9	324.3	2.1	3.8	17.7					1
	SB										
L-13, C-15	NB										
	SB	SB-12, SB-13	489.6	5.2	5.0	26.2				1.6	2
L-15, C-7, C-14	NB	NB-10, NB-11, NB-12, NB-13	1,383.5	13.2	8.3	33.0	3				4
	SB	SB-7, SB-8, SB-9, SB-10, SB-11	1,124.4	10.4	11.7	69.3		23.2	21.6		5
L-17, C-8, C-12, C-13	NB	NB-14, NB-15	359.2	2.6	6.1	22.9	2				2
	SB	SB-3, SB-4, SB-5, SB-6	1,263.6	10.6	12.3	55.0	3			0.7	4
L-18, C-9	NB	NB-16, NB-17	544.5	5.0	3.8	21.0					2
	SB										
L-19, C-10, C-11	NB	NB-18, NB-19	476.2	4.0	4.4	25.4					2
	SB	SB-1, SB-2	357.5	3.0	3.4	23.0	1	38.0	38.0	0.4	2
L-6, C-18	NB										
	SB	SB OFF RAMP TO CALZONA St	167.8	1.3	1.6						
SUBTOTAL				166.0						4.1	
GRAND TOTAL			9,746.7			492.1	11	90.6	84.2		36

* SEE SHEET Q-2, FOR GRAND TOTAL

AERIALLY DEPOSITED LEAD

SHEET No.	ROADWAY EXCAVATION (TYPE Z-2) (ADL)
	CY
L-2, C-19	36.0
L-5, C-20	51.0
TOTAL FROM CURB RAMP TABLE	4.1
TOTAL FROM Conc BARRIER TABLE	103.4
TOTAL FROM Q-4	13.4
GRAND TOTAL	207.9

CONCRETE BARRIER , CRASH CUSHION AND Misc QUANTITIES

SHEET No.	* REMOVE ASPHALT CONCRETE DIKE	** REMOVE GUARDRAIL	REMOVE Conc BARRIER (TYPE K)	REMOVE CRASH CUSHION SAND FILLED	REMOVE CRASH CUSHION	CONCRETE BARRIER (TYPE 60 MODIFIED)	** CRASH CUSHION (TYPE SCI-100GM)	CRASH CUSHION (TYPE SCI-70GM)	** CONCRETE TRANSITION BLOCK (MODIFIED)	Rdwy EXCAVATION (TYPE Z-2) (ADL)	MISCELLANEOUS METAL
	LF	LF	LF	EA	EA	LF	EA	EA	LF	CY	LB
L-2, C-30					1		1		2.5		
L-4, C-31	16.7	58.5				50.5				7.5	
L-5, C-31,C-32		135.2				146.0	1	1	20.0	22.1	407
L-6, C-33			189.8	2		167.7	1	1	30.0	25.8	
L-9, C-28		172.0				159.5			60.0	22.3	
L-15, C-34					1	172.0				25.7	
TOTAL	16.7	365.7					3		112.5	103.4	
GRAND TOTAL			189.8	2	2	695.7		2			407

* SEE SHEET Q-2, FOR GRAND TOTAL
** SEE SHEET Q-4, FOR GRAND TOTAL

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

LOCATION	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY FIBER ROLL	TEMPORARY HYDRAULIC MULCH	TEMPORARY COVER	TEMPORARY GRAVEL BAG BERM	TEMPORARY CONSTRUCTION ENTRANCE
	EA	LF	SQYD	SQYD	LF	EA
PM 13.8 TO 19.2	31	18,109.0	10,000.0	2,000.0	800.0	2
GRAND TOTAL	31	18,109.0	10,000.0	2,000.0	800.0	2

SUMMARY OF QUANTITIES
Q-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN
FUNCTIONAL SUPERVISOR: ASADOUR TERTERIAN
CALCULATED-DESIGNED BY: HUNG TIEU
CHECKED BY: RICHARD TRAN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
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MIDWEST GUARDRAIL SYSTEM QUANTITIES

SHEET No.	TYPE LAYOUT	LOCATIONS	DOUBLE THRIE BEAM BARRIER	SINGLE THRIE BEAM BARRIER	TRANSITION RAILING (TYPE DTB/STB)	REMOVE GUARDRAIL	* REMOVE ASPHALT CONCRETE DIKE	REMOVE ASPHALT CONCRETE SURFACING	TREATED WOOD WASTE	TRANSITION RAILING (TYPE WB-31)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	ALTERNATIVE FLARED TERMINAL SYSTEM	MIDWEST GUARDRAIL SYSTEM (WOOD POST)	END ANCHOR ASSEMBLY (TYPE SFT)	END CAP (TYPE A)	PLACE HOT MIX ASPHALT DIKE (TYPE C)	* MINOR HOT MIX ASPHALT	VEGETATION CONTROL (MINOR CONCRETE)	CONCRETE TRANSITION BLOCK (MODIFIED)	GUARD RAILING DELINEATOR TYPE F	GUARD RAILING DELINEATOR TYPE G	** ROADWAY EXCAVATION (TYPE Z-2) (ADL)	CRASH CUSHION (TYPE SCI 100GM)
			LF	LF	EA	LF	LF	SQFT	LB	EA	EA	EA	LF	EA	EA	LF	TON	SQYD	LF	EA	EA	CY	EA
L-1	DTB	MEDIAN BARRIER	362.5		1	499.8			4,655.7									258.0			29		
L-2	DTB	MEDIAN BARRIER	550.0	550.0	1	852.0			7,859.9									818.8	9.0		44	0.5	
L-2	12C	Loc 1(NB)				75.4	100.0		751.2	1			75.0			100.0	0.8	51.7	9.3	8		0.7	
	12C	Loc 2(NB)				57.0			581.9	1			75.0					105.0	9.3	8		0.7	
	12C	Loc 14(SB)				49.2	125.0		510.1	1			75.0			125.0	1.0	117.2	9.3	8		0.7	
	STB	Loc 15(SB)		487.5	1									1				249.9			41		
L-3	12C	Loc 13(SB)				62.8	100.0		635.3	1			75.0			100.0	0.8	92.6	9.3	8		0.7	
L-4	16C	Loc 3(NB)				138.0		70.8	1,327.1				212.5	1	1			141.7		17			
L-5	16B	Loc 4(NB)				87.0	200.0		857.9			1	125.0	1		200.0	1.5	116.7		14			
	12C	Loc 5(NB)				257.5		200.3	2,426.5	1			575.0		1			400.6	6.0	48		0.6	
	12C	Loc 12(SB)				237.6		76.1	2,243.4	1			225.0		1			152.1	6.0	20		0.6	
L-6	16B	Loc 11(SB)				82.0	112.5	41.8	811.9			1	37.5	1		112.5	0.9	83.7		7			
L-7	16C	Loc 6(NB)				76.0	100.0		756.7				100.0	1		100.0	0.8	43.9		8			
L-8	16B	Loc 7(NB)				140.0			1,345.5			1	87.5	1				80.1		11			
	16A	Loc 8(NB)				102.5			1,000.5		1		62.5	1				50.8		9			
	16A	Loc 10(SB)				39.5	112.5		420.9		1		37.5	1		112.5	0.9	29.7		7			
	16A	Loc 9(SB)				326.4			3,060.4		1		275.0	1				216.8		26			
L-9	12A	Loc 9(NB)				818.5	125.0		7,587.7	1	1		737.5			125.0	1.0	537.4	5.0	65		0.4	
	STB	Loc 10(NB)		387.5	2	143.0	437.5		1,373.1							437.5	3.4	180.7	16.5		31	0.8	1
	16A	Loc 9(SB) Cont				985.8			9,126.9		1		937.5					656.0		79			
L-12	16B	Loc 11(NB)				34.0		45.8	370.3				137.5	1	1			91.7		11			
L-13	12A	Loc 12(NB)				103.6	137.5	37.5	1,010.6		1		62.5			137.5	1.1	75.0			9		
L-14	12A	Loc 12(NB) Cont				99.0	125.0	33.0	968.3	1	1		25.0			125.0	1.0	66.0	10.5		8	0.8	
	12B	Loc 8(SB)				96.6			946.2	1		1	25.0					73.4	9.3	8		0.7	
L-15	16A	Loc 13(NB)				141.5			1,359.3	2			100.0					88.2		4	8		1
	11B	Loc 14(NB)				208.5			1,975.7			1	175.0	1				173.9		18			
	11A	Loc 15(NB)				263.5		91.7	2,481.7		1		225.0	1				183.3		22			
	16C	Loc 16(NB)				134.6			1,295.8				250.0		1			158.0		20			
	12A	Loc 7(SB)				215.4		158.0	2,039.2	1			162.5					158.0	9.3	15			
	12A	Loc 6(SB)				487.0		108.3	4,537.9	1			300.0					216.7	20.0	26		0.8	
L-16	16C	Loc 16(NB) Cont				18.0		29.2	223.1				87.5	1				58.3		7			
	12A	Loc 7(SB) Cont				94.4		47.9	926.0	1			125.0					47.9	8.0	12		0.8	1
	12A	Loc 6(SB) Cont				284.3		155.4	2673.1		1		225.0					310.8		22			
L-17	12B	Loc 5(SB)				118.5			1,147.7	1		1	25.0					87.6	9.3	8		0.7	
L-18	12B	Loc 17(NB)				61.0			618.7	1		1	12.5					46.7	6.0	7		0.4	
	12A	Loc 18(NB)				57.5			586.5	1	1		12.5					58.3	6.0	7		0.4	
	12C	Loc 4(SB)				88.0			867.1	1			75.0					73.8	6.0	8		0.7	
L-19	12DD	Loc 19(NB)				832.3		291.7	7,714.7				875.0	1				583.3		70			
	12B	Loc 20(NB)				124.0			1,198.3	1		1	50.0					64.4	6.0	10		0.4	
	12A	Loc 3a(SB)				49.6			513.8	1	1		25.0					66.7	6.0	8		0.4	
	12B	Loc 3b(SB)				50.2			519.3	1	1		12.5						6.0	7		0.4	
	12B	Loc 2(SB)				467.5		165.0	4,358.5	1		1	400.0					330.0	6.0	38		0.4	
	12A	Loc 1(SB)				69.5			696.9	1			50.0					43.3	6.0	6		0.4	
L-20	12D	Loc 21(NB)				738.6	750.0	250.0	6,852.6	1			725.0			750.0	5.8	500.0	6.0	60		0.4	
	12A	Loc 1(SB) Cont				62.4		83.3	631.6	1	1		175.0					166.7		20			
SUBTOTAL			912.5	1,425.0	5	9,929.5	2,425.0	1,885.8	93,881.4	25	13	9	8,050.0	14	5	2,425.0	19.0	8,105.1	200.1	757	170	13.4	3
TOTAL FROM Q-3						365.7													112.5				3
GRAND TOTAL			912.5	1,425.0	5	10,295.2		1,885.8	93,881.4	25	13	9	8,050.0	14	5	2,425.0		8,105.1	312.6	927			6

* SEE SHEET Q-2, FOR GRAND TOTAL
** SEE SHEET Q-3, FOR GRAND TOTAL

NOTE:

LOCATIONS OF WORK THAT ARE FLEXIBLE MAYBE ADJUSTED TO MITIGATE ANY CONFLICTS WITH EXISTING UTILITY FACILITIES. EXISTING UTILITY FACILITIES WERE ONLY INVESTIGATED WITHIN 5-FOOT RADIUS OF PROPOSED CURB RAMPS, TRANSITION RAILINGS, CONCRETE ANCHOR BLOCK, AND MAINTENANCE VEHICLE PULLOUTS.

SUMMARY OF QUANTITIES
Q-4

REVISED BY | DATE REVISED
HUNG TIEU | RICHARD TRAN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: ASADOUR TERTERIAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	149	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
OHANNES ANSERLIAN
No. E16682
Exp. 6/30/16
ELECTRICAL
STATE OF CALIFORNIA

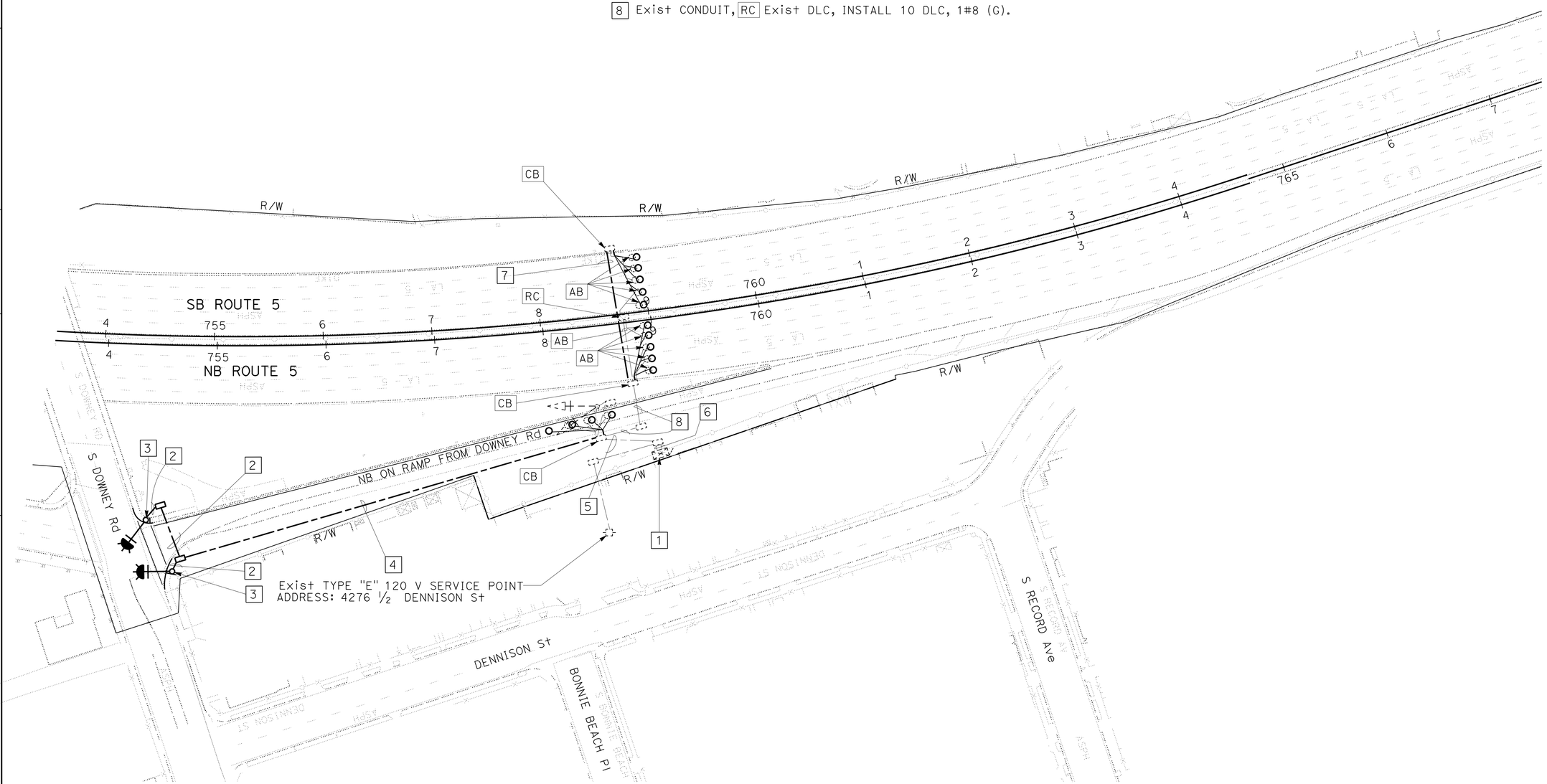
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LEGEND: (THIS SHEET ONLY)

1. Exist MODEL 170 CONTROLLER ASSEMBLY.
2. INSTALL 2"C, 3 CSC, 1#8 (G).
3. INSTALL FLASHING BEACON CONTROL ASSEMBLY. SEE DETAIL ON STRUCTURAL PLAN SES-1.
4. INSTALL 2"C, (2) 3 CSC, 1#8 (G).
5. Exist CONDUIT, RC Exist DLC, INSTALL 14 DLC, (2) 3 CSC, 1#8 (G).
6. Exist 2-3"C, 2#8, RC Exist DLC, INSTALL 14 DLC,(2) 3 CSC, 1#8 (G).
7. INSTALL 2"C, 5 DLC, 1#8 (G).
8. Exist CONDUIT, RC Exist DLC, INSTALL 10 DLC, 1#8 (G).



MODIFY RAMP METERING SYSTEM

SCALE: 1"=50'

APPROVED FOR ELECTRICAL WORK ONLY

E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: OHANNES ANSERLIAN
CHECKED BY: OSWALD ELIZONDO
REVISED BY
DATE REVISED

LAST REVISION 07-10-14
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	150	262

REGISTERED ELECTRICAL ENGINEER DATE 4/29/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LEGEND: (THIS SHEET ONLY)

1 Exist MODEL 170 CONTROLLER ASSEMBLY.

2 SC NEW LOOP WIRE TO Exist LOOP DETECTOR LEAD-IN CABLE IN ADJACENT PULL BOX.

3 Exist 2"C, 2#8, 2DLC, RC 4#18, INSTALL 1#8 (G).

4 Exist 3-2"C, 2#8, 5#14, 1#10. 13 DLC, INSTALL 1#8(G).

5 Exist 2"C,1 DLC, INSTALL 1#8(G).

6 Exist 2"C, 2#8, 5#14, 1#10, 6 DLC, RC 4#18, INSTALL 1#8(G).

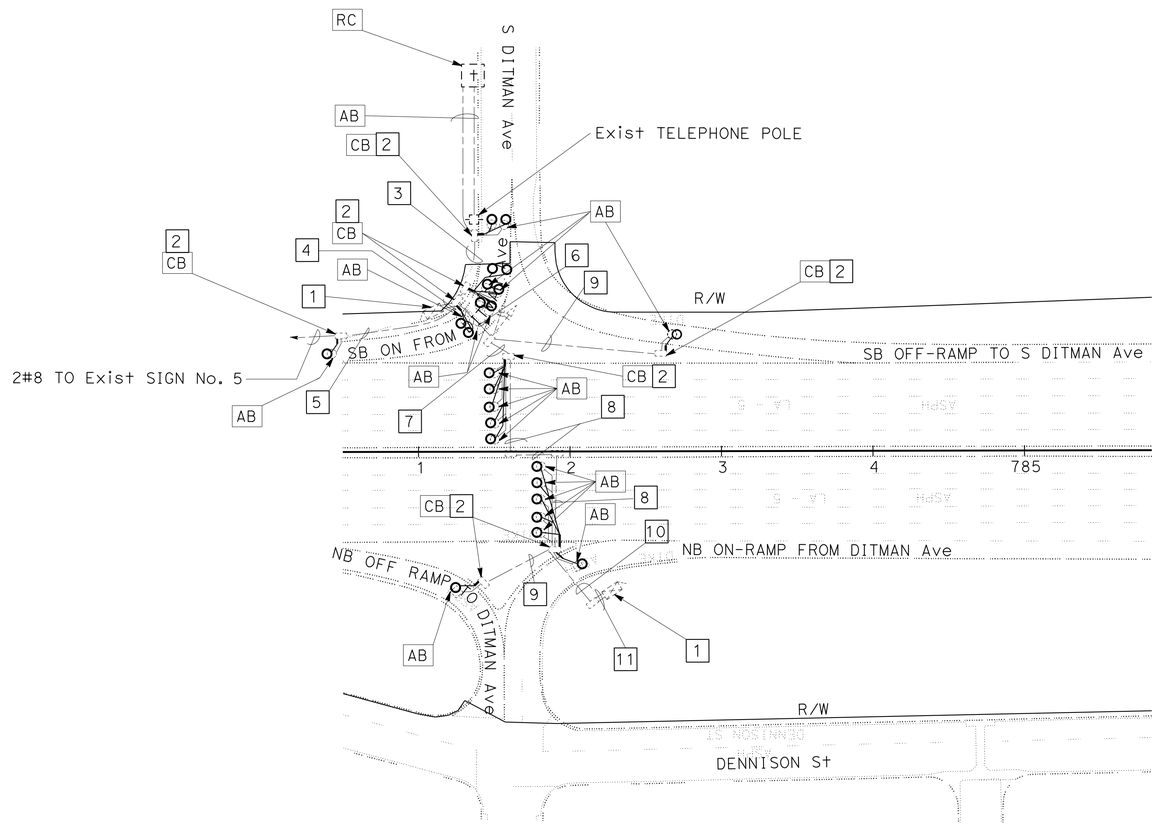
7 Exist 2"C, 2#8, 5 DLC, RC 4#18, INSTALL 1#8(G).

8 Exist 2"C, 2#8, RC 4#18, INSTALL 1#8(G).

9 Exist 1½"C, 1 DLC, INSTALL 1#8(G).

10 Exist 2"C, 2#8, 7 DLC, RC 4#18, INSTALL 1#8(G).

11 Exist 3-2"C, 2#8,7 DLC, RC 4#18, INSTALL 1#8(G).



MODIFY RAMP METERING SYSTEM

SCALE: 1"=50'

APPROVED FOR ELECTRICAL WORK ONLY

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: OHANNES ANSERLIAN
CHECKED BY: OSWALD ELIZONDO
REVISED BY
DATE REVISED

LAST REVISION 07-10-14
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	151	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 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.

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LEGEND: (THIS SHEET ONLY)

1 Exist MODEL 170 CONTROLLER ASSEMBLY.

2 Exist 2"C, 4#8. ADD 1#8 (G).

3 Exist 2"C, 3#8. ADD 1#8 (G).

4 Exist 120/240 V TYPE III-B METERED SERVICE EQUIPMENT ENCLOSURE WITH:
100 A, 240 V, 2P MAIN BREAKER
40 A, 120 V, 1P CB RAMP METERING
40 A, 120 V, 1P CB SIGN Ltg
40 A, 120 V, 1P CB SPARE
CTID 07-053-005-R-015.081M
ADDRESS: 1070 1/2 CALZONA St

5 Exist 120/240 V TYPE III-B METERED SERVICE EQUIPMENT ENCLOSURE WITH:
100 A, 240 V, 2P MAIN BREAKER
30 A, 120 V, 1P CB RAMP METERING
30 A, 240 V, 2P CB Ltg Ckt No. 18
15 A, 120 V, 1P CB SIGN
1-15 A, 120 V, 1P CB LIGHTING CONTROL
TYPE V PHOTOELECTRIC CONTROL PEC
CTID 07-053-005-R-015.080M
ADDRESS: 1120 1/2 CALZONA St

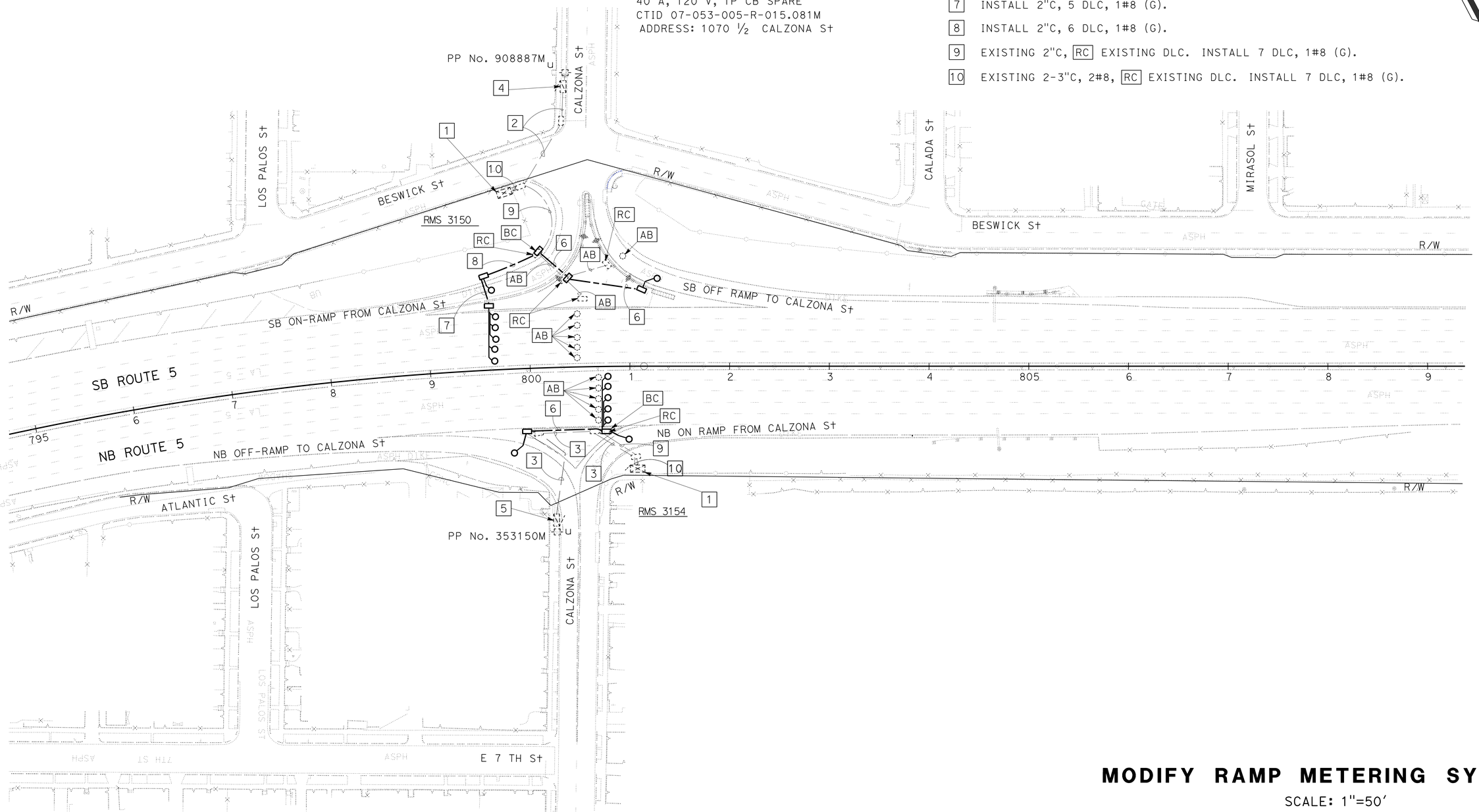
6 INSTALL 2"C, 1 DLC, 1#8 (G).

7 INSTALL 2"C, 5 DLC, 1#8 (G).

8 INSTALL 2"C, 6 DLC, 1#8 (G).

9 EXISTING 2"C, RC EXISTING DLC. INSTALL 7 DLC, 1#8 (G).

10 EXISTING 2-3"C, 2#8, RC EXISTING DLC. INSTALL 7 DLC, 1#8 (G).



APPROVED FOR ELECTRICAL WORK ONLY

MODIFY RAMP METERING SYSTEM

SCALE: 1"=50'

E-3

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

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: LIEN VO
CHECKED BY: OHANNES ANSERLIAN
REVISED BY
DATE REVISED

LAST REVISION 04-02-15
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	152	262

REGISTERED ELECTRICAL ENGINEER — DATE 4/29/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — OHANNES ANSERLIAN — No. E16682 — Exp. 6/30/16 — 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.

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.
3. AB Exist DEMAND, PASSAGE AND QUEUE LOOPS.

LEGEND: (THIS SHEET ONLY)

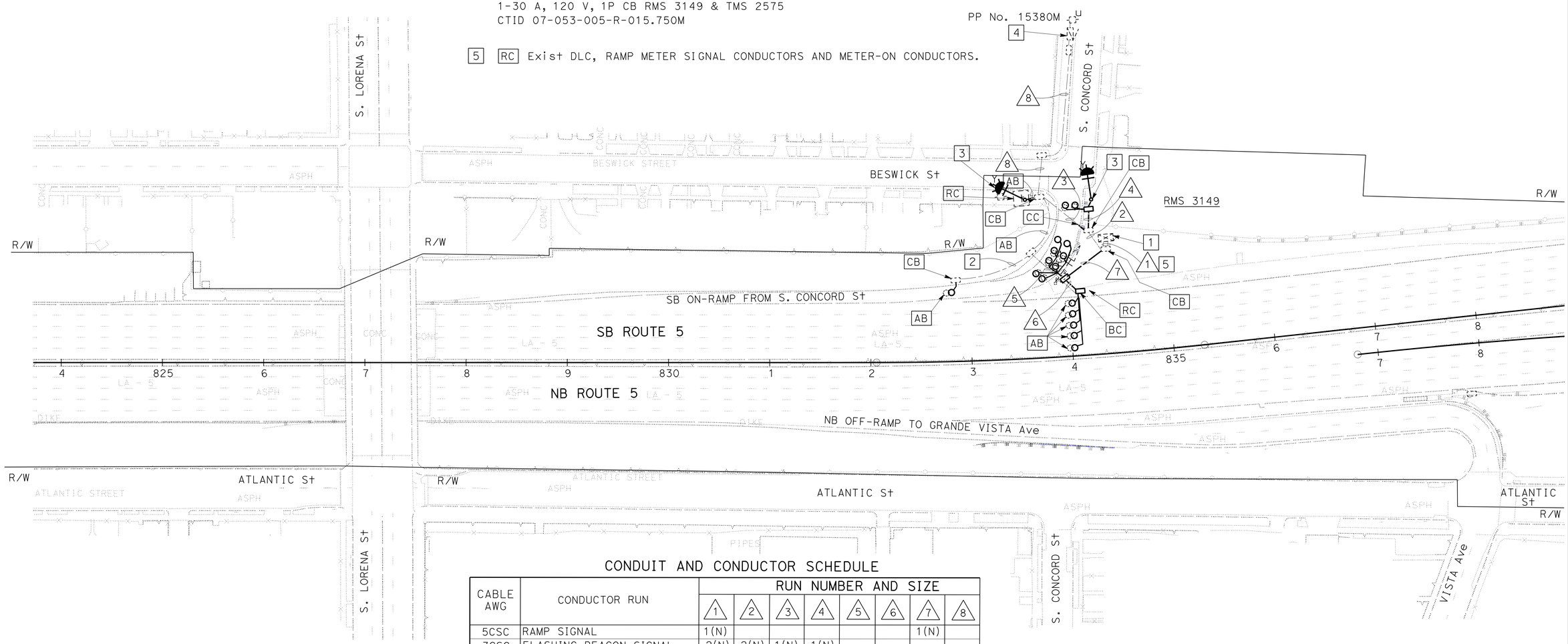
1 Exist MODEL 170 CONTROLLER ASSEMBLY.

2 Exist 1½"C, RC 1 Exist DLC. ADD 1 DLC AND 1#8 (G).

3 INSTALL FLASHING BEACON CONTROL ASSEMBLY, SEE DETAIL ON SES-1.

4 Exist 120/240 V TYPE III-B METERED SERVICE EQUIPMENT ENCLOSURE WITH:
100 A, 240 V, 2P MAIN BREAKER
30 A, 240 V, 2P CB Ltg
1-15 A, 120 V, 1P CB LIGHTING CONTROL
TYPE V PHOTOELECTRIC CONTROL PEC
1-30 A, 120 V, 1P CB RMS 3149 & TMS 2575
CTID 07-053-005-R-015.750M

5 RC Exist DLC, RAMP METER SIGNAL CONDUCTORS AND METER-ON CONDUCTORS.



CONDUIT AND CONDUCTOR SCHEDULE

CABLE AWG	CONDUCTOR RUN	RUN NUMBER AND SIZE							
		1	2	3	4	5	6	7	8
5CSC	RAMP SIGNAL	1(N)						1(N)	
3CSC	FLASHING BEACON SIGNAL	2(N)	2(N)	1(N)	1(N)				
#8	RMS CONTROLLER SERVICE	2	2	2(N)					2
#8	TMS SERVICE		2	2(N)					2
DLC	COUNT DETECTOR ON-RAMP	1(N)				1(N)		1(N)	
	DEMAND DETECTOR	2(N)						2(N)	
	PASSAGE DETECTOR	2(N)						2(N)	
	QUEUE DETECTOR	2(N)	2(N)		2(N)				
	MAIN LINE DETECTOR	5(N)					5(N)	5(N)	
#10	RC DEMARCATION								2
4#18	RC TELEPHONE CABLE	2	1	1					
#8	GROUND	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)
Exist CONDUIT SIZE		2-3"	2½"	2½"		2"	1½"		1½"
CONDUIT SIZE					2"(N)		3"(N)	3"(N)	

(N): NEW

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY RAMP METERING SYSTEM

SCALE: 1"=50'

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: LIEN VO
CHECKED BY: OHANNES ANSERLIAN
REVISED BY
DATE REVISED

LAST REVISION 04-02-15
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	153	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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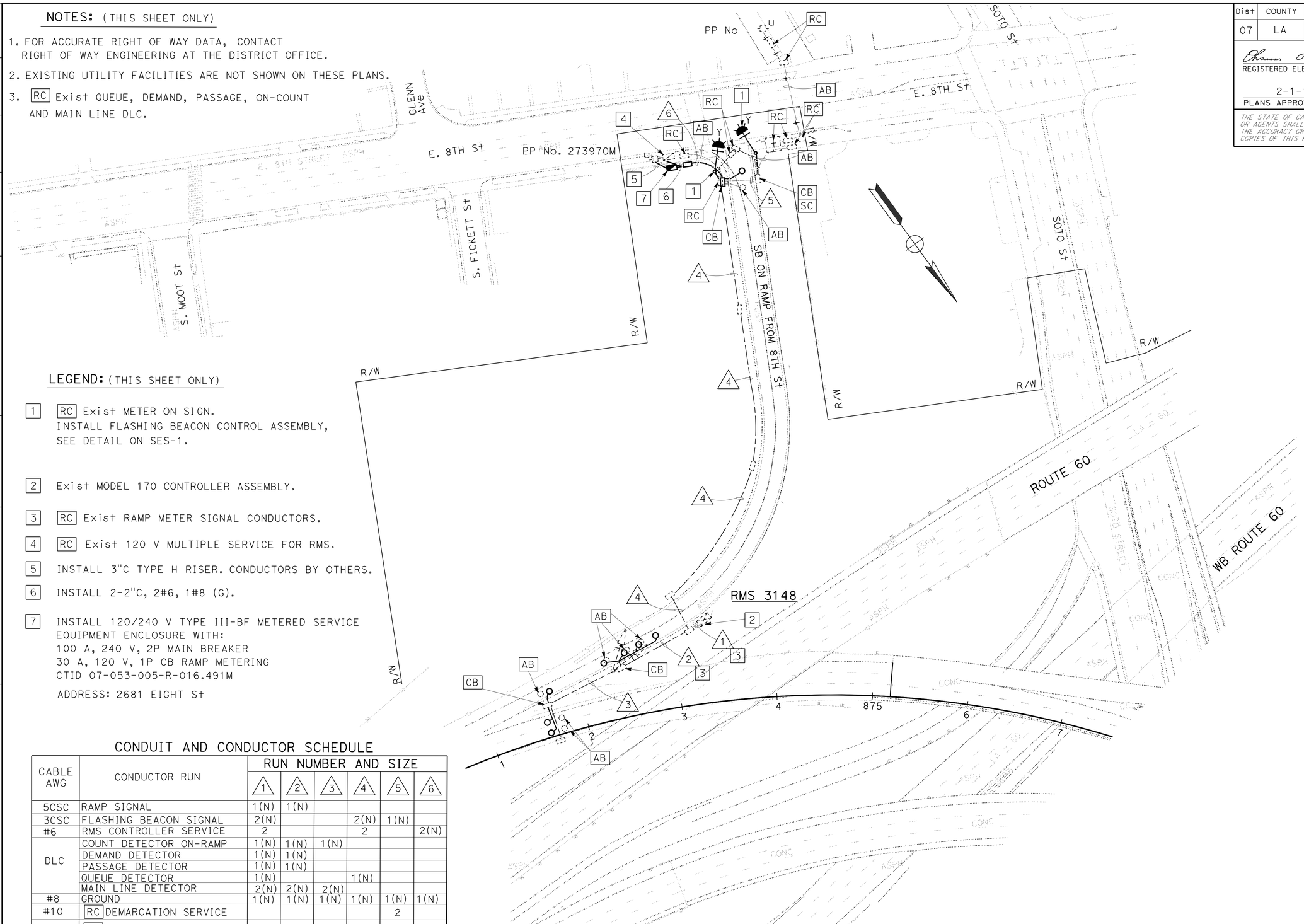
NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.
3. RC Exist QUEUE, DEMAND, PASSAGE, ON-COUNT AND MAIN LINE DLC.



LEGEND: (THIS SHEET ONLY)

1. RC Exist METER ON SIGN. INSTALL FLASHING BEACON CONTROL ASSEMBLY, SEE DETAIL ON SES-1.
2. Exist MODEL 170 CONTROLLER ASSEMBLY.
3. RC Exist RAMP METER SIGNAL CONDUCTORS.
4. RC Exist 120 V MULTIPLE SERVICE FOR RMS.
5. INSTALL 3"C TYPE H RISER. CONDUCTORS BY OTHERS.
6. INSTALL 2-2"C, 2#6, 1#8 (G).
7. INSTALL 120/240 V TYPE III-BF METERED SERVICE EQUIPMENT ENCLOSURE WITH:
   100 A, 240 V, 2P MAIN BREAKER
   30 A, 120 V, 1P CB RAMP METERING
   CTID 07-053-005-R-016.491M
   ADDRESS: 2681 EIGHT St

CONDUIT AND CONDUCTOR SCHEDULE

CABLE AWG	CONDUCTOR RUN	RUN NUMBER AND SIZE					
		1	2	3	4	5	6
5CSC	RAMP SIGNAL	1(N)	1(N)				
3CSC	FLASHING BEACON SIGNAL	2(N)			2(N)	1(N)	
#6	RMS CONTROLLER SERVICE	2			2		2(N)
DLC	COUNT DETECTOR ON-RAMP	1(N)	1(N)	1(N)			
	DEMAND DETECTOR	1(N)	1(N)				
	PASSAGE DETECTOR	1(N)	1(N)				
	QUEUE DETECTOR	1(N)			1(N)		
	MAIN LINE DETECTOR	2(N)	2(N)	2(N)			
#8	GROUND	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)
#10	RC DEMARCATION SERVICE					2	
4#18	RC TELEPHONE CABLE	1			1	1	
#14	RC METER ON CONDUCTOR	2			2	1	
Exist CONDUIT SIZE		2-3"	2½"	2½"	2"	2"	
CONDUIT SIZE							2"(N)

(N): NEW

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY RAMP METERING SYSTEM

SCALE: 1"=50'

E-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: LIEN VO
CHECKED BY: OHANNES ANSERLIAN
REVISED BY
DATE REVISED

LAST REVISION 04-02-15 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	154	262

REGISTERED ELECT ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VUONG HONG No. E16613 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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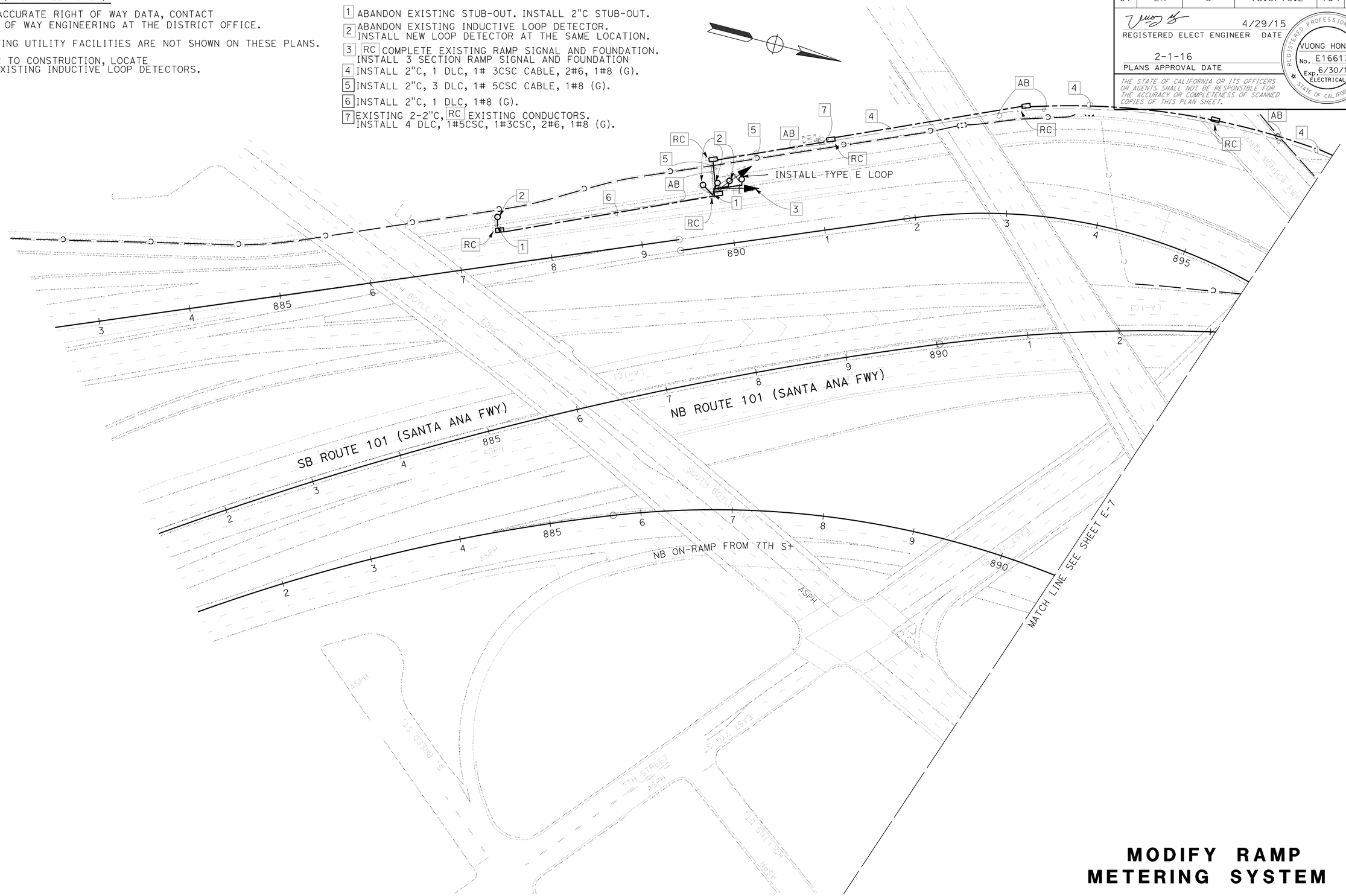
NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.
3. PRIOR TO CONSTRUCTION, LOCATE ALL EXISTING INDUCTIVE LOOP DETECTORS.

LEGEND: (THIS SHEET ONLY)

1. ABANDON EXISTING STUB-OUT. INSTALL 2"C STUB-OUT.
2. ABANDON EXISTING INDUCTIVE LOOP DETECTOR. INSTALL NEW LOOP DETECTOR AT THE SAME LOCATION.
3. RC COMPLETE EXISTING RAMP SIGNAL AND FOUNDATION. INSTALL 3 SECTION RAMP SIGNAL AND FOUNDATION
4. INSTALL 2"C, 1 DLC, 1# 3CSC CABLE, 2#6, 1#8 (G).
5. INSTALL 2"C, 3 DLC, 1# 5CSC CABLE, 1#8 (G).
6. INSTALL 2"C, 1 DLC, 1#8 (G).
7. EXISTING 2-2"C, RC EXISTING CONDUCTORS. INSTALL 4 DLC, 1#5CSC, 1#3CSC, 2#6, 1#8 (G).



MODIFY RAMP METERING SYSTEM

E-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZODO
CALCULATED-DESIGNED BY: VONG HONG
CHECKED BY: OSWALD ELIZODO
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	155	262

REGISTERED ELECT ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VUONG HONG No. E16613 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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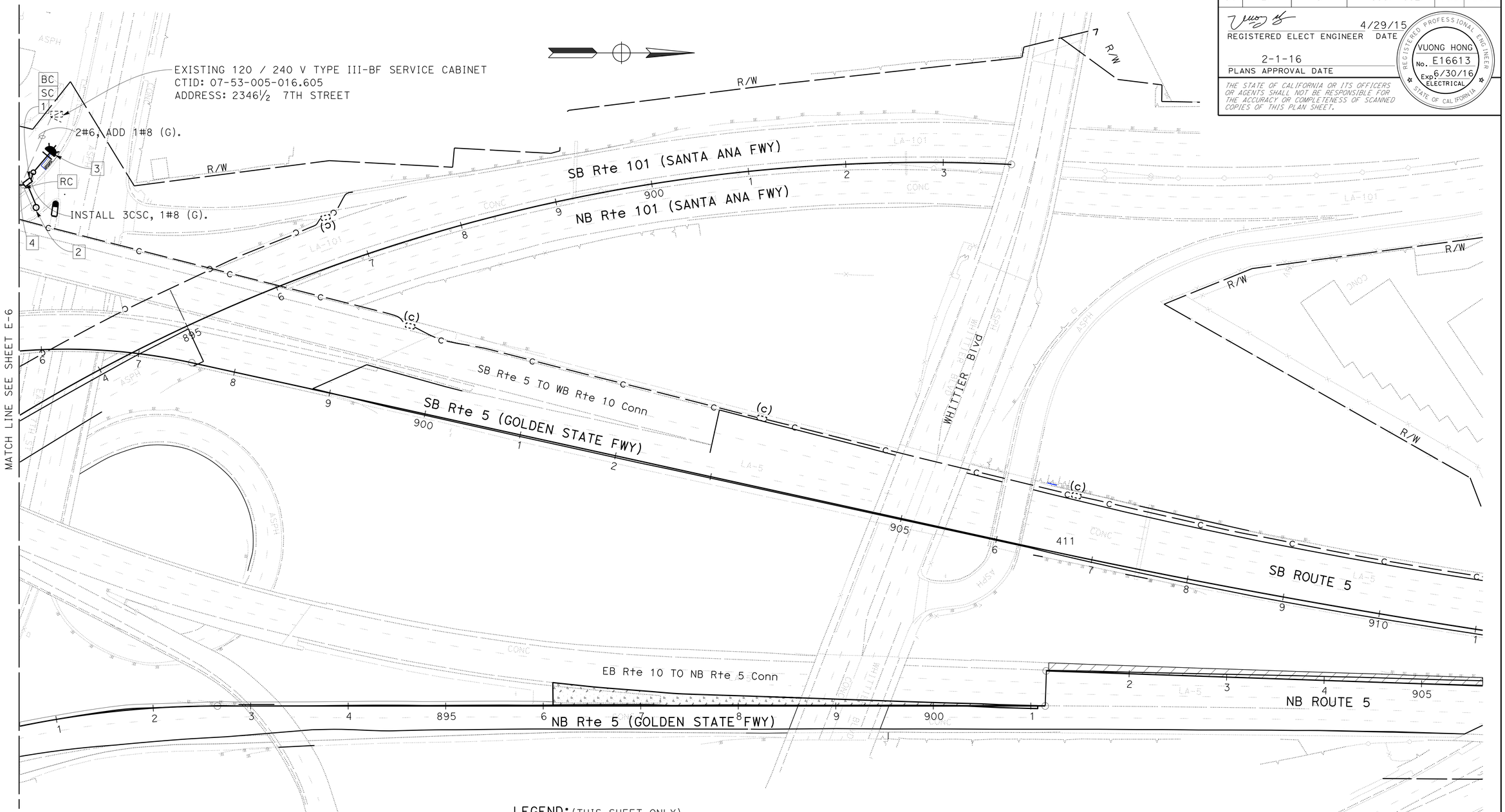


NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.
3. PRIOR TO CONSTRUCTION, LOCATE ALL EXISTING INDUCTIVE LOOP DETECTORS.

LEGEND: (THIS SHEET ONLY)

1. ABANDON EXISTING STUB-OUT. INSTALL 2"C STUB-OUT.
2. ABANDON EXISTING INDUCTIVE LOOP DETECTOR. INSTALL NEW LOOP DETECTOR AT THE SAME LOCATION.
3. INSTALL TYPE 1D (MOD) POLE AND FLASHING BEACON. SEE SHEET SES-1 FOR DETAILS.
4. INSTALL 2"C, 1 DLC, 1# 3CSC CABLE, 2#6, 1#8 (G)

MODIFY RAMP METERING SYSTEM

SCALE 1":50'

E-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® OFFICE OF DESIGN A

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: VUONG HONG
CHECKED BY: OSWALD ELIZONDO
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	156	262

REGISTERED ELECT ENGINEER 4/29/15 DATE

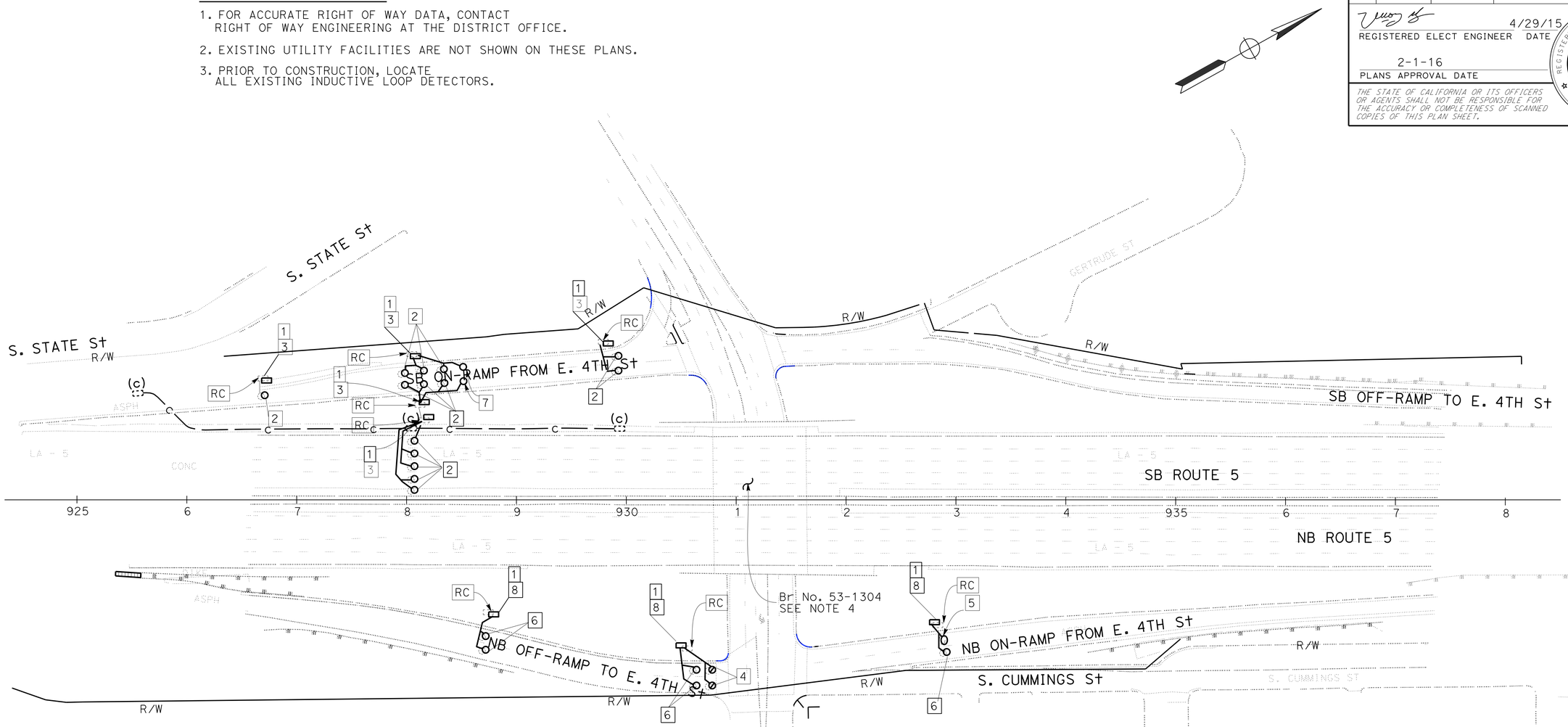
2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VUONG HONG No. E16613 Exp. 6/30/16 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.

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.
3. PRIOR TO CONSTRUCTION, LOCATE ALL EXISTING INDUCTIVE LOOP DETECTORS.



LEGEND: (THIS SHEET ONLY)

1. ABANDON EXISTING STUB-OUT. INSTALL 2"C STUB-OUT.
2. ABANDON EXISTING TYPE "E" INDUCTIVE LOOP DETECTOR. INSTALL NEW TYPE "E" LOOP DETECTOR AT THE SAME LOCATION.
3. SPLICE NEW LOOP WIRE TO EXISTING LOOP DETECTOR LEAD-IN CABLE IN ADJACENT PULL BOX.
4. ABANDON EXISTING CITY BICYCLE LOOP DETECTOR. INSTALL NEW CITY BICYCLE LOOP DETECTOR AT THE SAME LOCATION.
5. ABANDON EXISTING CITY LOOP DETECTOR. INSTALL NEW 6' X 8' CITY LOOP DETECTOR AT THE SAME LOCATION.
6. ABANDON EXISTING CITY LOOP DETECTOR. INSTALL NEW CITY LOOP DETECTOR AT THE SAME LOCATION.
7. INSTALL NEW TYPE "E" LOOP DETECTOR.
8. INSTALL NEW CITY PULL BOX OF TYPE 3.

MODIFY RAMP METERING SYSTEM

E-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZODO
CALCULATED-DESIGNED BY: VONG HONG
CHECKED BY: OSWALD ELIZODO
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	157	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

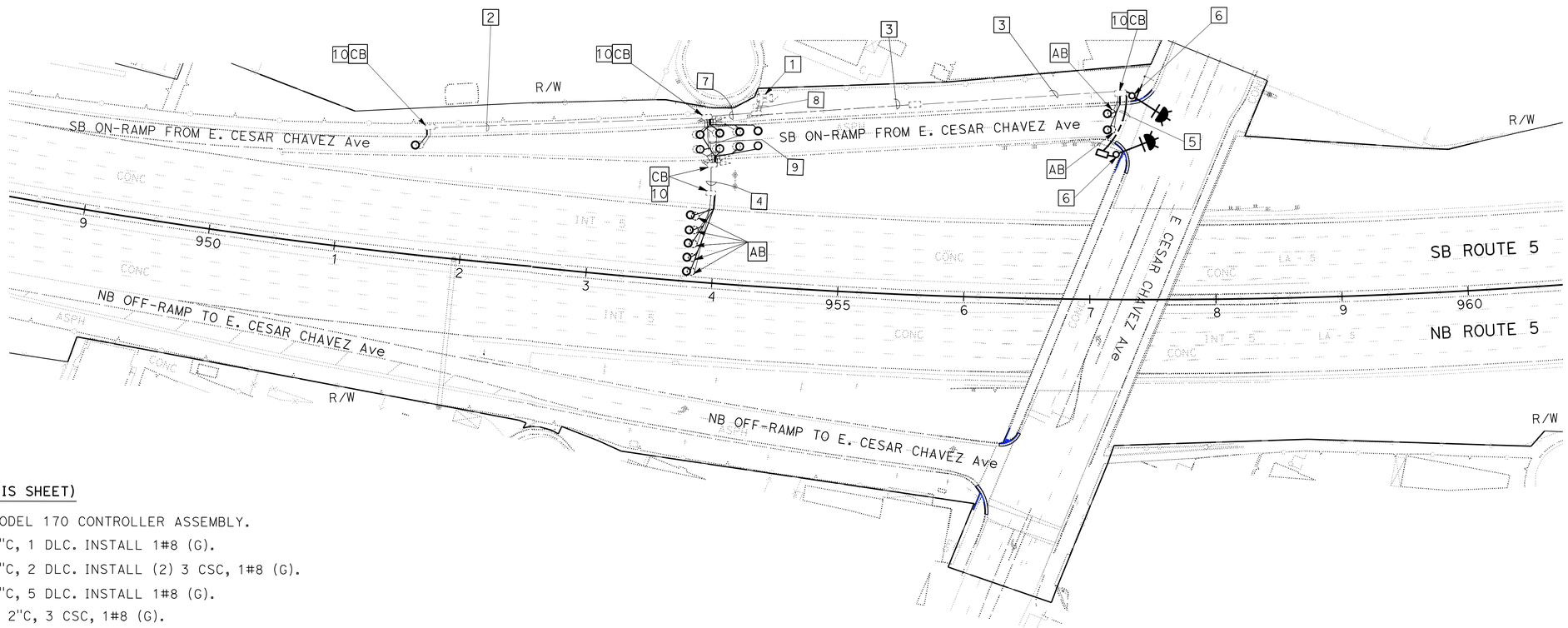
2-1-16
PLANS APPROVAL DATE

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
OHANNES ANSERLIAN
No. E16682
Exp. 6/30/16
ELECTRICAL
STATE OF CALIFORNIA

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.



LEGEND (THIS SHEET)

1. Exist MODEL 170 CONTROLLER ASSEMBLY.
2. Exist 2"C, 1 DLC. INSTALL 1#8 (G).
3. Exist 2"C, 2 DLC. INSTALL (2) 3 CSC, 1#8 (G).
4. Exist 2"C, 5 DLC. INSTALL 1#8 (G).
5. INSTALL 2"C, 3 CSC, 1#8 (G).
6. INSTALL FLASHING BEACON CONTROL ASSEMBLY, SEE DETAIL ON SES-1.
7. Exist 2"C, 10 DLC. INSTALL 1#8 (G)
8. Exist (2) 3"C, 6#14, 1#10, 2#8, 12 DLC, INSTALL (2) 3CSC AND 1#8 (G).
9. Exist 2½"C, 7 DLC, 6#14, 1#10. INSTALL 1#8 (G)
10. SC NEW LOOP WIRE TO Exist LOOP DETECTOR LEAD-IN CABLE IN ADJACENT PULL BOX.

MODIFY RAMP METERING SYSTEM

SCALE: 1"=50'

APPROVED FOR ELECTRICAL WORK ONLY

E-9

REVISED BY | DATE REVISED
OHANNES ANSERLIAN | OSWALD ELIZONDO
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

LAST REVISION 07-10-14 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	158	262

REGISTERED ELECTRICAL ENGINEER DATE 4/29/15

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

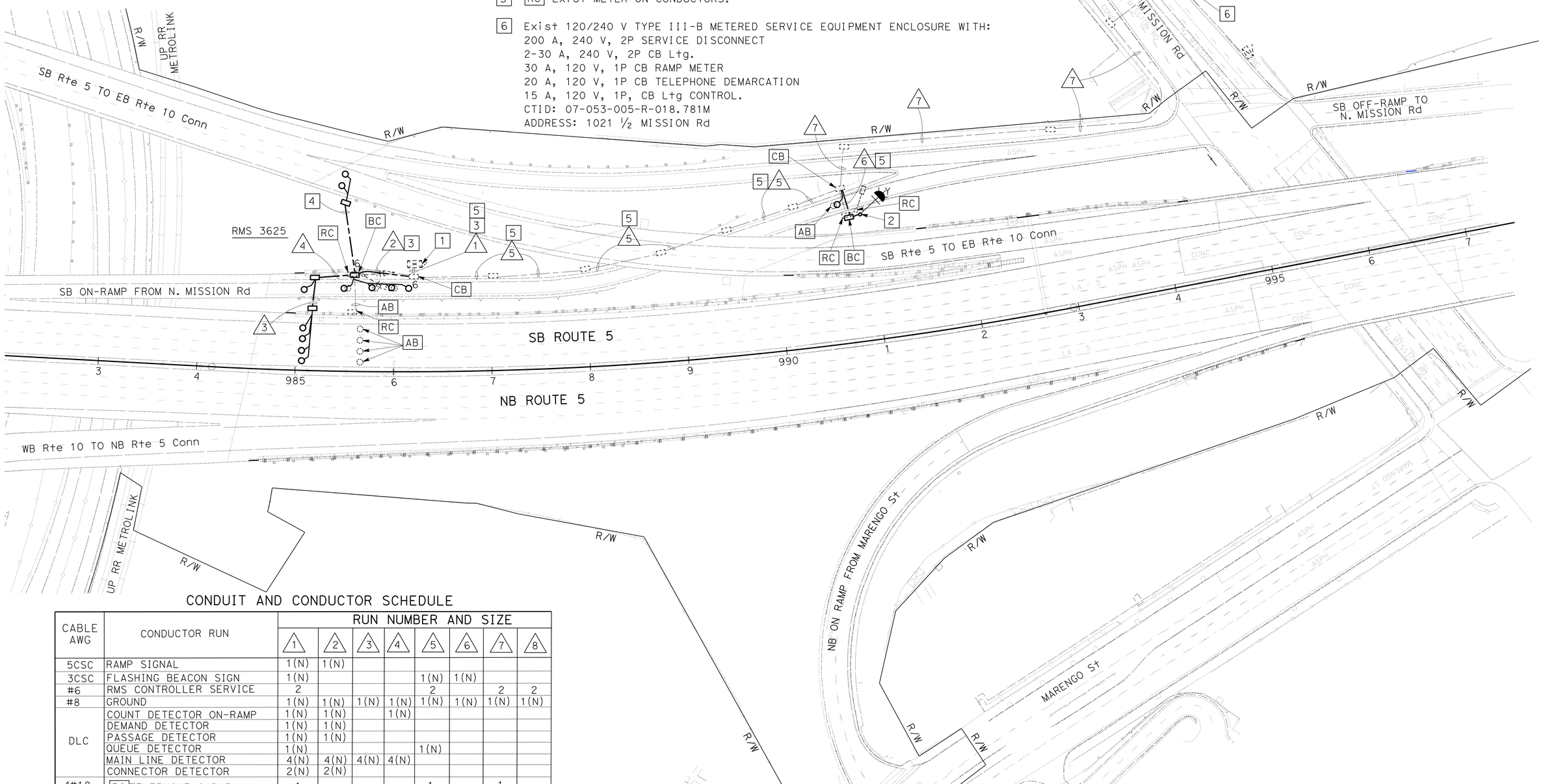
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.
3. AB Exist DEMAND, AND PASSAGE LOOPS.
4. RC Exist COUNT, DEMAND, PASSAGE, QUEUE AND MAIN LINE DLC.

LEGEND: (THIS SHEET ONLY)

1. Exist MODEL 170 CONTROLLER ASSEMBLY.
2. INSTALL FLASHING BEACON CONTROL ASSEMBLY, SEE DETAIL ON SES-1.
3. RC Exist RAMP METER SIGNAL CONDUCTORS.
4. INSTALL 2"C, 2 DLC, 1#8 (G).
5. RC Exist METER-ON CONDUCTORS.
6. Exist 120/240 V TYPE III-B METERED SERVICE EQUIPMENT ENCLOSURE WITH:
   200 A, 240 V, 2P SERVICE DISCONNECT
   2-30 A, 240 V, 2P CB Ltg.
   30 A, 120 V, 1P CB RAMP METER
   20 A, 120 V, 1P CB TELEPHONE DEMARCATION
   15 A, 120 V, 1P, CB Ltg CONTROL.
   CTID: 07-053-005-R-018.781M
   ADDRESS: 1021 ½ MISSION Rd



CONDUIT AND CONDUCTOR SCHEDULE

CABLE AWG	CONDUCTOR RUN	RUN NUMBER AND SIZE							
		1	2	3	4	5	6	7	8
5CSC	RAMP SIGNAL	1(N)	1(N)						
3CSC	FLASHING BEACON SIGN	1(N)				1(N)	1(N)		
#6	RMS CONTROLLER SERVICE	2				2		2	2
#8	GROUND	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)
DLC	COUNT DETECTOR ON-RAMP	1(N)	1(N)		1(N)				
	DEMAND DETECTOR	1(N)	1(N)						
	PASSAGE DETECTOR	1(N)	1(N)						
	QUEUE DETECTOR	1(N)				1(N)			
	MAIN LINE DETECTOR	4(N)	4(N)	4(N)	4(N)				
	CONNECTOR DETECTOR	2(N)	2(N)						
4#18	RC TELEPHONE CABLE	1				1		1	
#12	RC DEMARCATION SERVICE								2
Exist CONDUIT SIZE		2-2½"	1½"			2"	1½"	1½"	1½"
CONDUIT SIZE			3"(N)	2"(N)	2"(N)		2"(N)		

(N): NEW

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY RAMP METERING SYSTEM

SCALE: 1"=50'

E-10

REVISED BY	DATE REVISED
LIEN VO	OHANNES ANSERLIAN

CALCULATED-DESIGNED BY / CHECKED BY

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® **TRAFFIC DESIGN**

LAST REVISION 04-02-15 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	159	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

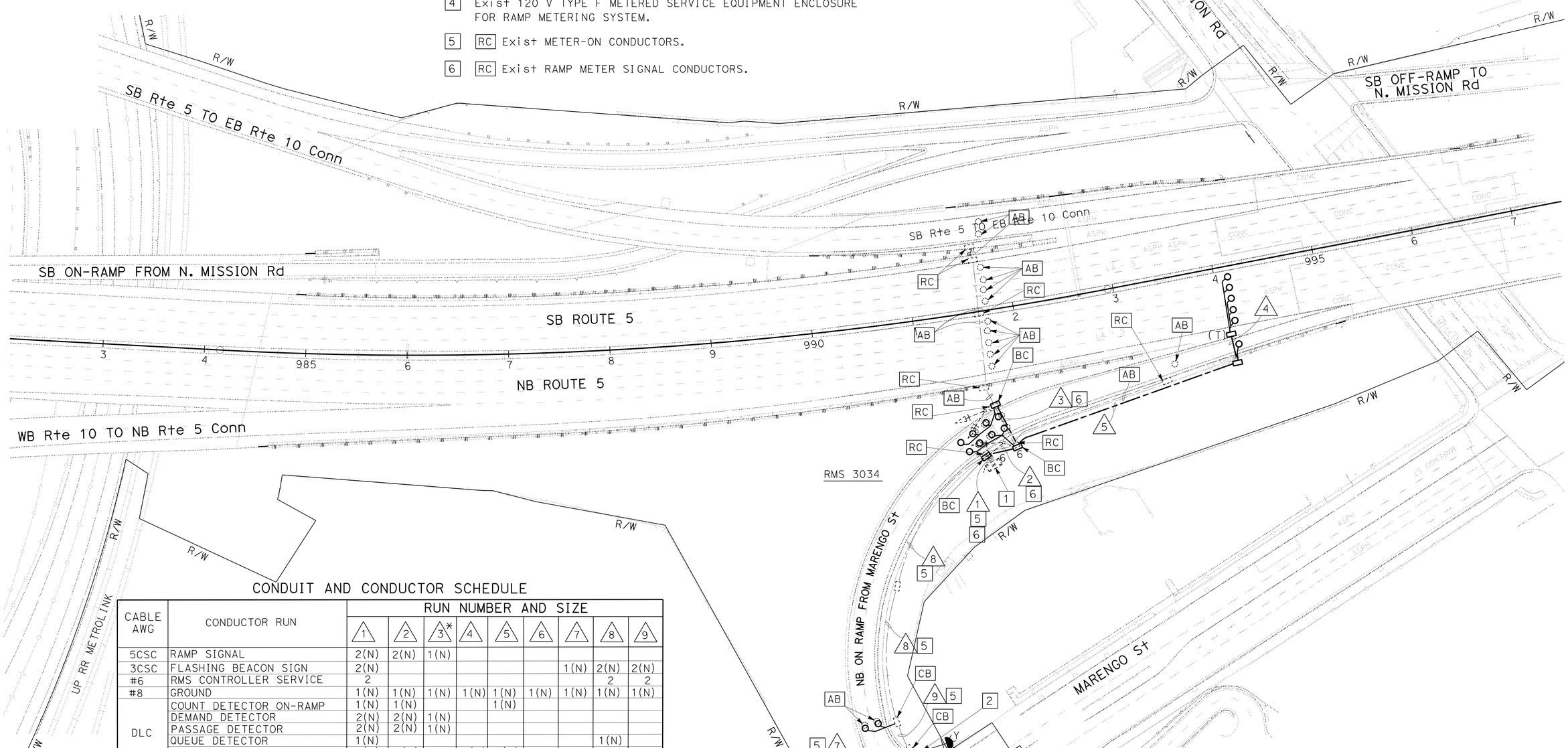
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.
3. AB Exist DEMAND, AND PASSAGE LOOPS.
4. RC Exist COUNT, DEMAND, PASSAGE, QUEUE AND MAIN LINE DLC.

LEGEND: (THIS SHEET ONLY)

1. Exist MODEL 170 CONTROLLER ASSEMBLY.
2. INSTALL FLASHING BEACON CONTROL ASSEMBLY, SEE DETAIL ON SES-1.
3. Exist 1½"C, RC 1 DLC. ADD 1 DLC, 1#8 (G).
4. Exist 120 V TYPE F METERED SERVICE EQUIPMENT ENCLOSURE FOR RAMP METERING SYSTEM.
5. RC Exist METER-ON CONDUCTORS.
6. RC Exist RAMP METER SIGNAL CONDUCTORS.



CONDUIT AND CONDUCTOR SCHEDULE

CABLE AWG	CONDUCTOR RUN	RUN NUMBER AND SIZE 1	2	3*	4	5	6	7	8	9
5CSC	RAMP SIGNAL	2(N)	2(N)	1(N)						
3CSC	FLASHING BEACON SIGN	2(N)						1(N)	2(N)	2(N)
#6	RMS CONTROLLER SERVICE	2							2	2
#8	GROUND	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)	1(N)
DLC	COUNT DETECTOR ON-RAMP	1(N)	1(N)			1(N)				
	DEMAND DETECTOR	2(N)	2(N)	1(N)						
	PASSAGE DETECTOR	2(N)	2(N)	1(N)						
	QUEUE DETECTOR	1(N)							1(N)	
	MAIN LINE DETECTOR	5(N)	5(N)		5(N)	5(N)				
4#18	RC TELEPHONE CABLE	1						1	1	1
#12	RC DEMARCATION SERVICE							2		
Exist CONDUIT SIZE		2-2½"	1½"	2½"		2"	1½"	2"	1½"	2"
CONDUIT SIZE			3"(N)	2"(N)	2"(N)	2"(N)				

(N): NEW
(*): AB Exist CONDUIT

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY RAMP METERING SYSTEM

SCALE: 1"=50'

E-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: LIEN VO
CHECKED BY: OHANNES ANSERLIAN
REVISED BY / DATE REVISED

LAST REVISION 04-02-15
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	160	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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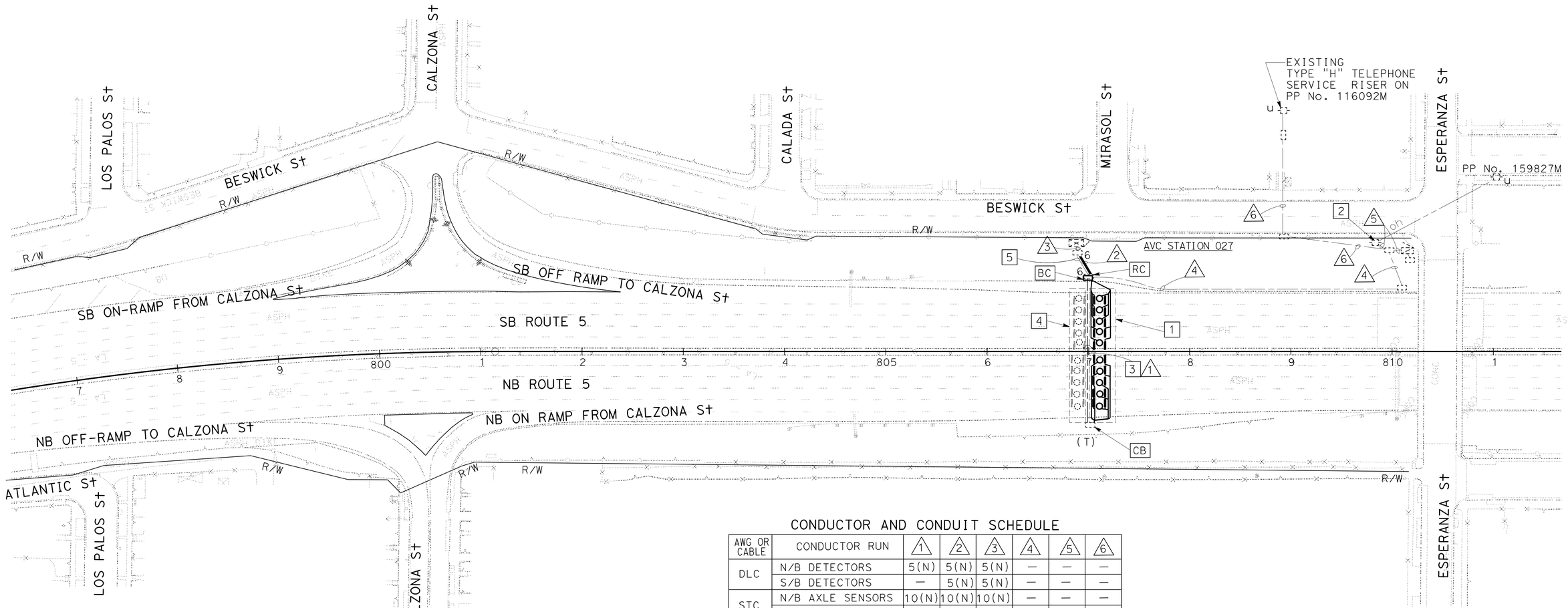
NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LEGEND: (THIS SHEET ONLY)

1. INSTALL 10 LOOPS, 20 AXLE SENSORS, 1#8 (G). SEE DETAILS SHEET E-17 FOR INSTALLATION.
2. Exist 120 V METERED SERVICE METER No. 106-14075B.
3. RC 5 EXISTING N/B DLC AND 10 STC CABLE N/B AXLE SENSORS.
4. AB Exist 10 LOOPS, 20 AXLE SENSORS.
5. RC Exist 10 DLC, 20 STC.



CONDUCTOR AND CONDUIT SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	1	2	3	4	5	6
DLC	N/B DETECTORS	5(N)	5(N)	5(N)	—	—	—
	S/B DETECTORS	—	5(N)	5(N)	—	—	—
STC	N/B AXLE SENSORS	10(N)	10(N)	10(N)	—	—	—
	S/B AXLE SENSORS	—	10(N)	10(N)	—	—	—
#10	SERVICE	—	2	2	2	2	—
4#18	TELEPHONE CABLE	—	1	1	1		1
#8	GROUND	1(N)	1(N)	1(N)	1(N)	1(N)	
	EXISTING CONDUIT	2"	2"	2-3"	2"	2"	2"
	NEW CONDUIT		2-3"				

N = NEW
STC-SCREEN TRANSMISSION CABLE

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY AUTOMATIC VEHICLE CLASSIFICATION STATION

SCALE: 1"=50'

E-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **TRAFFIC DESIGN**
FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: LIEN VO
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LAST REVISION 04-02-15 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	161	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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NOTES: (THIS SHEET ONLY)

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2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LEGEND: (THIS SHEET ONLY)

1 Exist MODEL 170 CONTROLLER ASSEMBLY.

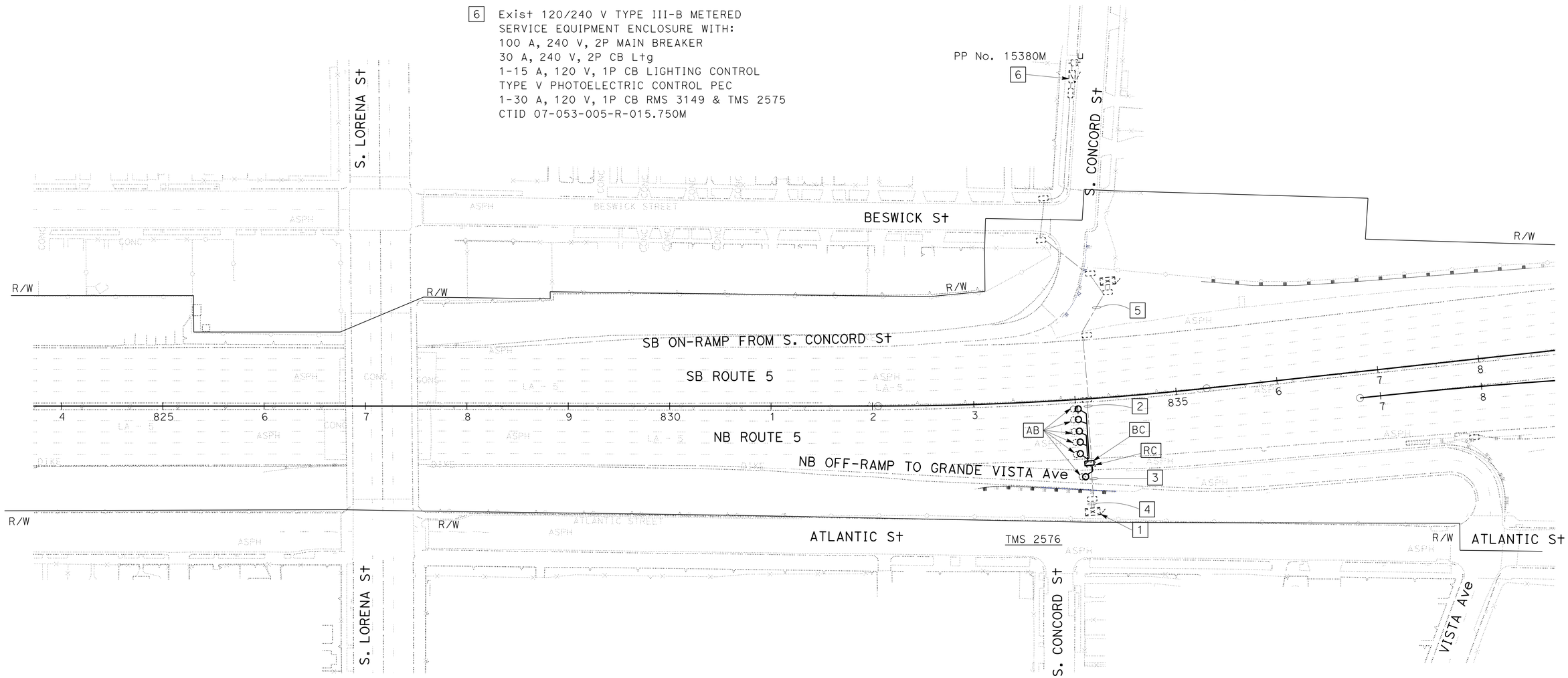
2 Exist 2"C, 2#8. RC 1-4#18 SHIELDED TELEPHONE CABLE. ADD 1#8 (G).

3 Exist 2"C, 2#8, 6 DLC. RC 6 DLC, 1-4#18 SHIELDED TELEPHONE CABLE. ADD 6 DLC, 1#8 (G).

4 Exist 2-3"C, 2#8, 6 DLC. RC 6 DLC, 1-4#18 SHIELDED TELEPHONE CABLE. ADD 6 DLC, 1#8 (G).

5 Exist 1 1/2 "C, 2#8. RC 1-4#18 SHIELDED TELEPHONE CABLE. ADD 1#8 (G).

6 Exist 120/240 V TYPE III-B METERED
SERVICE EQUIPMENT ENCLOSURE WITH:
100 A, 240 V, 2P MAIN BREAKER
30 A, 240 V, 2P CB Ltg
1-15 A, 120 V, 1P CB LIGHTING CONTROL
TYPE V PHOTOELECTRIC CONTROL PEC
1-30 A, 120 V, 1P CB RMS 3149 & TMS 2575
CTID 07-053-005-R-015.750M



MODIFY TRAFFIC MONITORING STATION

SCALE: 1"=50'

E-13

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: LIEN VO
CHECKED BY: OHANNES ANSERLIAN
REVISED BY
DATE REVISED

LAST REVISION 04-02-15
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

BORDER LAST REVISED 7/2/2010
USERNAME => s119140
DGN FILE => 730070ua013.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1878
PROJECT NUMBER & PHASE 07130004921

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	162	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
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.

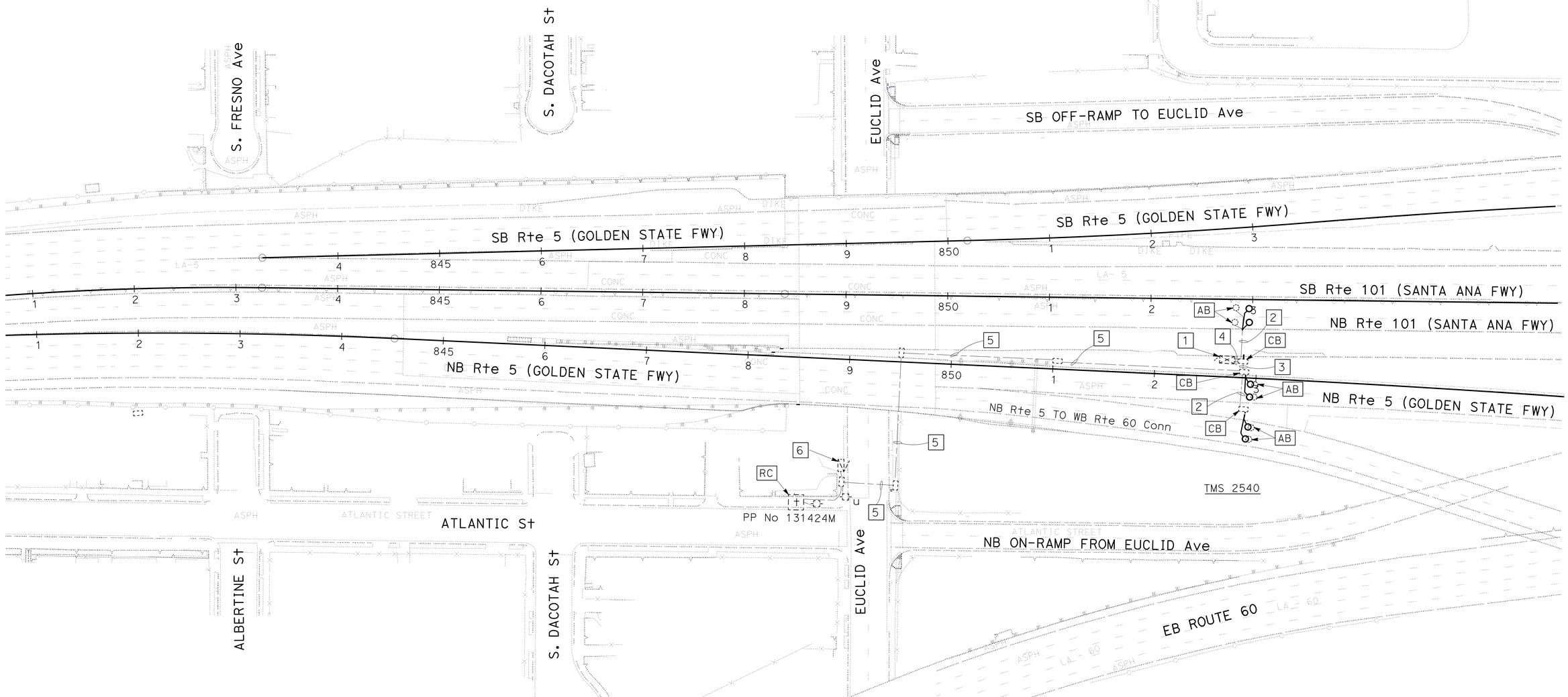
REGISTERED PROFESSIONAL ENGINEER
OHANNES ANSERLIAN
No. E16682
Exp. 6/30/16
ELECTRICAL
STATE OF CALIFORNIA

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

LEGEND: (THIS SHEET ONLY)

1. Exist 170 CONTROLLER ASSEMBLY.
2. Exist 2"C. RC 2 DLC. ADD 2 DLC AND 1#8 (G).
3. Exist 2"C, 2#10. RC 4 DLC. ADD 4 DLC, 1#8 (G).
4. Exist 3-2"C, 2#10. RC 6 DLC. ADD 6 DLC, 1#8 (G).
5. Exist 1½"C, 2#10.
6. Exist 120/240 V TYPE III-B METERED SERVICE EQUIPMENT ENCLOSURE WITH:
   100 A, 3P SERVICE DISCONNECT
   30 A, 240 V, 2P CB Ltg
   15 A, 120 V, 1P CB SIGN
   30 A, 120 V, 1P CB (TMS 2540)
   CTID 07-053-005-R-016.080M
   ADDRESS: 1044 ½ EUCLID Ave.



MODIFY TRAFFIC MONITORING STATION

SCALE: 1"=50'

APPROVED FOR ELECTRICAL WORK ONLY

E-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: LIEN VO
CHECKED BY: OHANNES ANSERLIAN
REVISED BY
DATE REVISED

LAST REVISION 04-02-15
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

BORDER LAST REVISED 7/2/2010
USERNAME => s119140
DGN FILE => 730070ua014.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1878
PROJECT NUMBER & PHASE 07130004921

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	163	262

REGISTERED ELECT ENGINEER 4/17/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VUONG HONG No. E16613 Exp 6/30/16 ELEC 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.

NOTE:

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

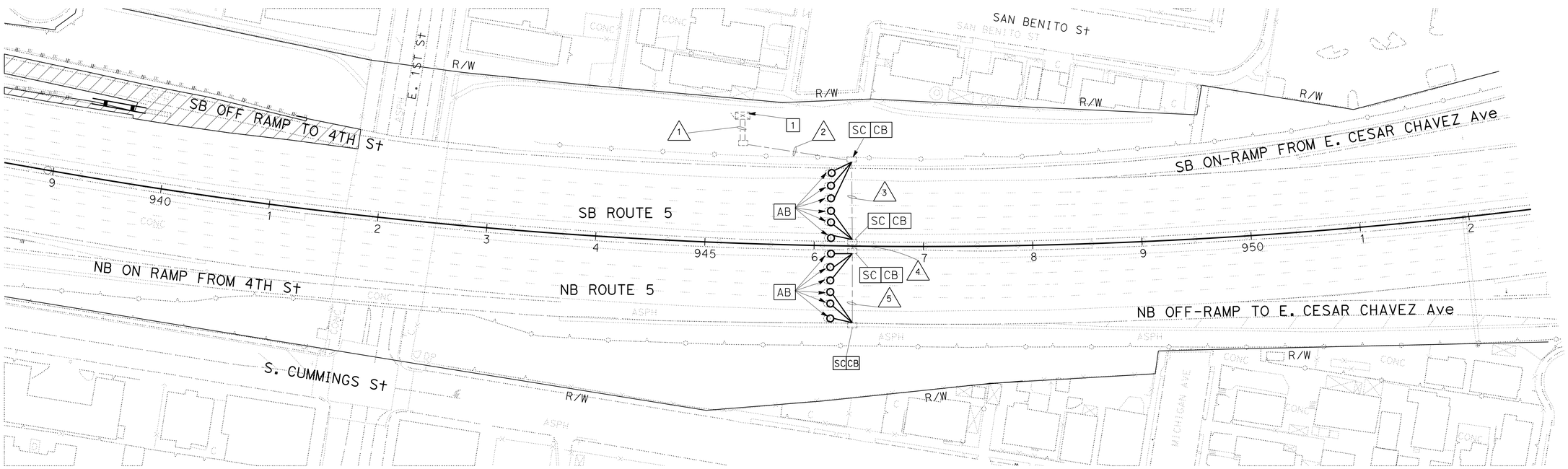
LEGEND: (THIS SHEET ONLY)

[1] EXISTING MODEL 334 CABINET.

CONDUIT AND CONDUCTOR SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	RUN NUMBER AND SIZE				
		1	2	3	4	5
DLC	MAIN LINE DETECTOR	12	12	9	6	3
#6	SERVICE	2	2			
#8	GROUND	1	1	1	1	1
	CONDUIT SIZE	2-3"	2"	2"	2"	2"

ALL CONDUCTORS ARE EXISTING, UNLESS OTHERWISE NOTED.



APPROVED FOR ELECTRICAL WORK ONLY

MODIFY TRAFFIC MONITORING STATION

SCALE: 1"=50'

E-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: HOSSAIN KIAN
CHECKED BY: VUONG HONG
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	164	262

REGISTERED ELECT ENGINEER DATE 4/29/15

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VUONG HONG No. E16613 Exp 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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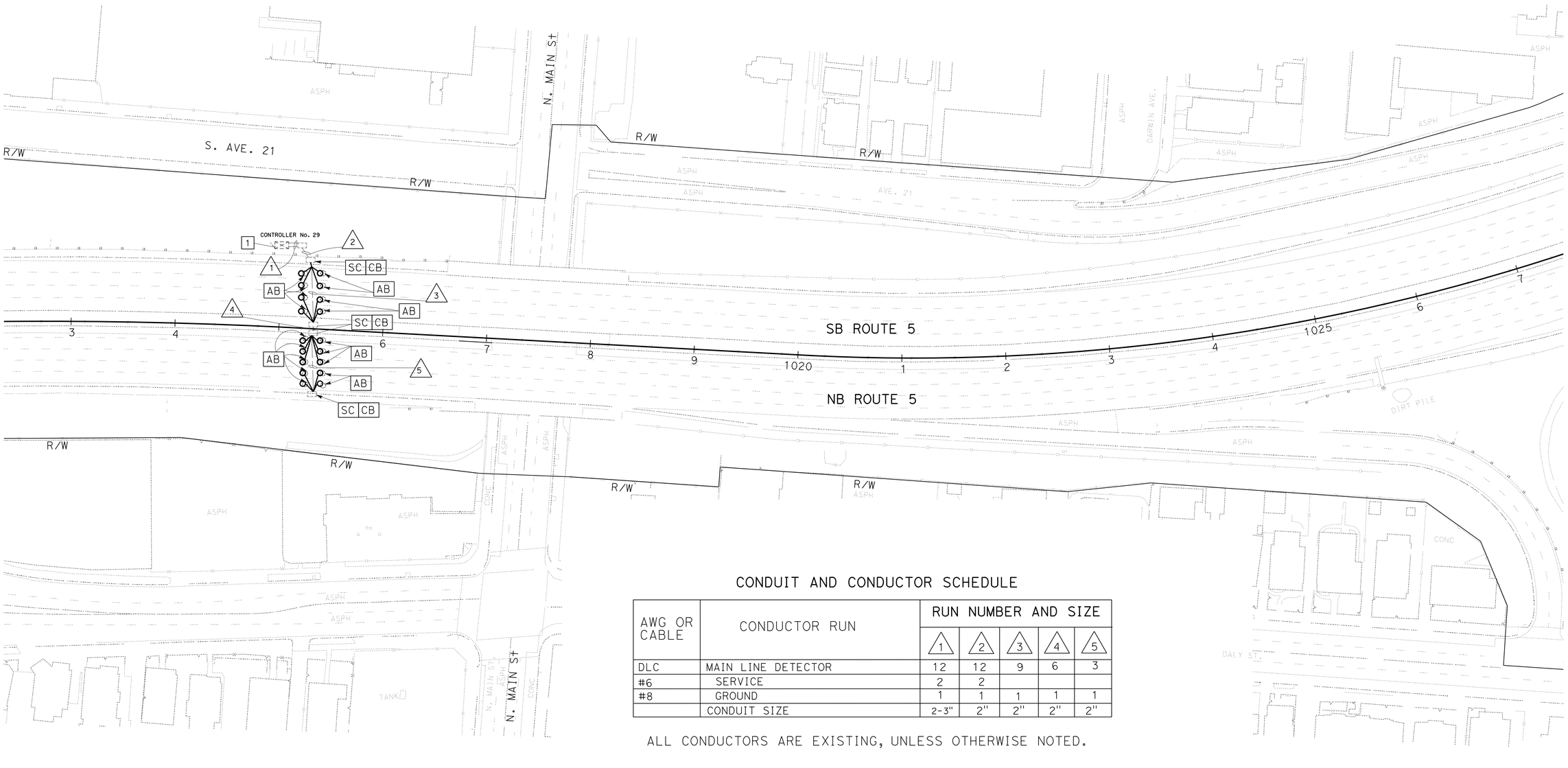
NOTE:

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

LEGEND: (THIS SHEET ONLY)

1 EXISTING MODEL 334 CABINET.



CONDUIT AND CONDUCTOR SCHEDULE

AWG OR CABLE	CONDUCTOR RUN	RUN NUMBER AND SIZE				
		1	2	3	4	5
DLC	MAIN LINE DETECTOR	12	12	9	6	3
#6	SERVICE	2	2			
#8	GROUND	1	1	1	1	1
	CONDUIT SIZE	2-3"	2"	2"	2"	2"

ALL CONDUCTORS ARE EXISTING, UNLESS OTHERWISE NOTED.

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY TRAFFIC MONITORING STATION

SCALE: 1"=50'

E-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

CALCULATED-DESIGNED BY: HOSSAIN KIAN
CHECKED BY: OSWALD ELIZONDO

REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/9.2	165	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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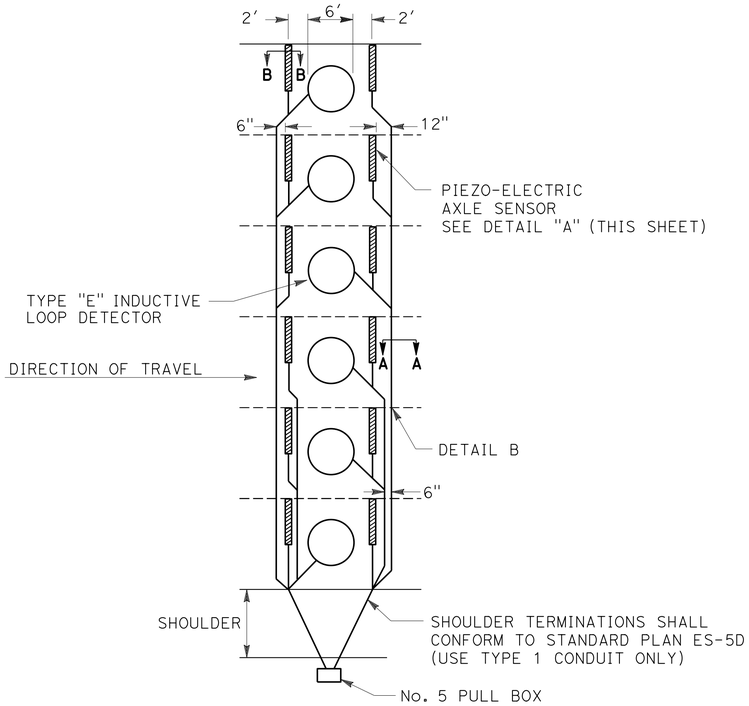
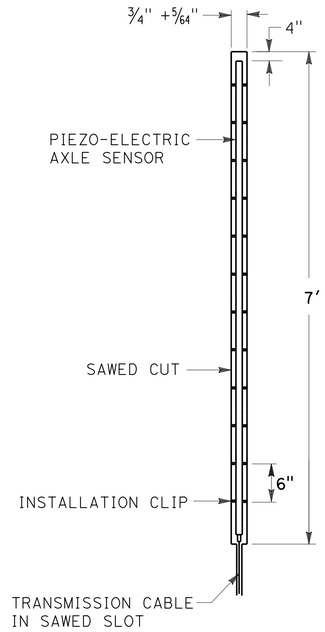
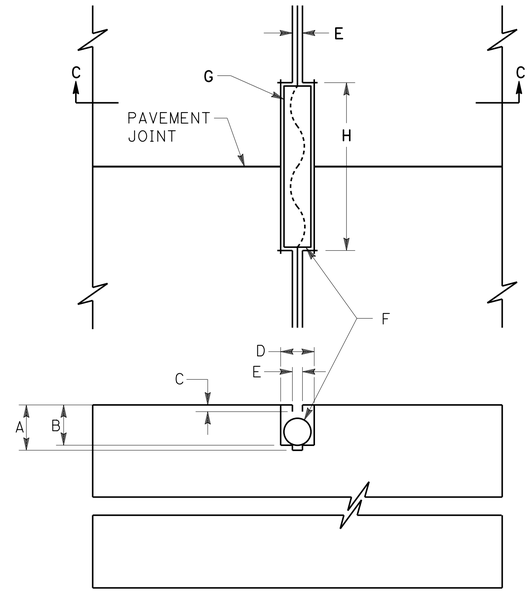


TYPICAL AXLE SENSOR INSTALLATION
NO SCALE

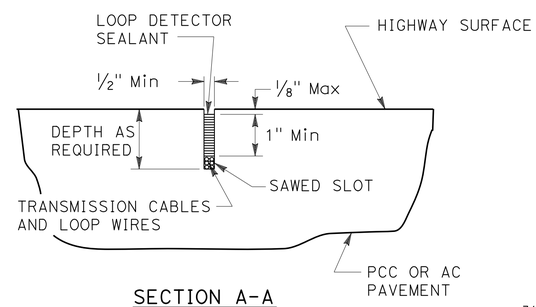


DETAIL A
NO SCALE

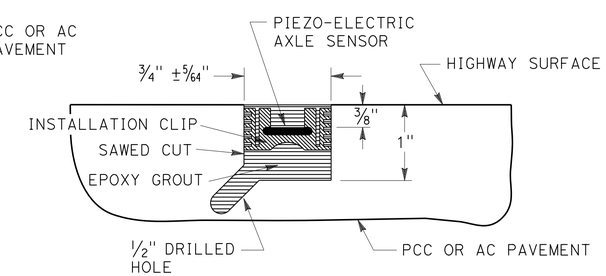


SECTION C-C

DETAIL B (TYPICAL LEAD-IN AT PAVEMENT JOINT)
NO SCALE



SECTION A-A
NO SCALE



SECTION B-B
NO SCALE

MODIFY AUTOMATIC VEHICLE CLASSIFICATION (DETAIL)
NO SCALE

E-17

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	166	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER VUONG HONG No. E16613 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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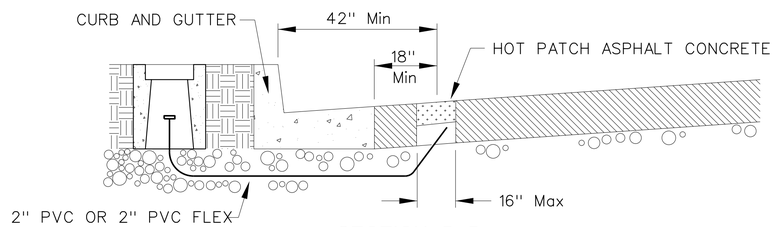
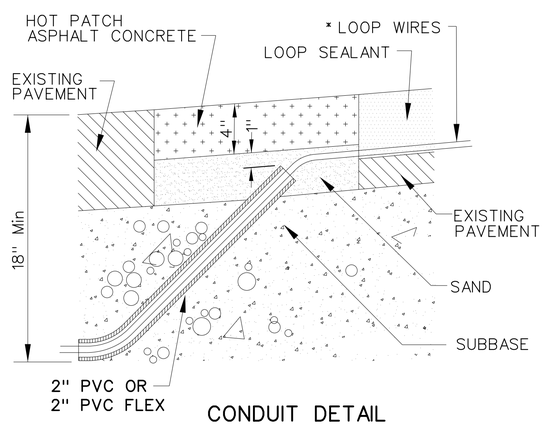
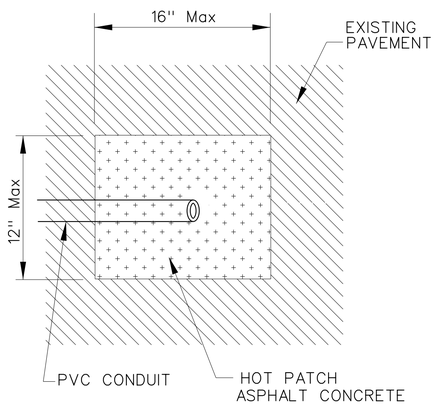


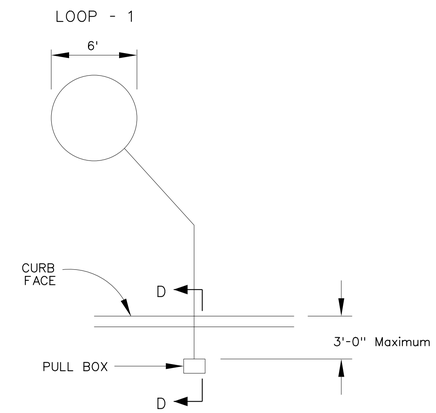
SECTION D-D
NOT TO SCALE

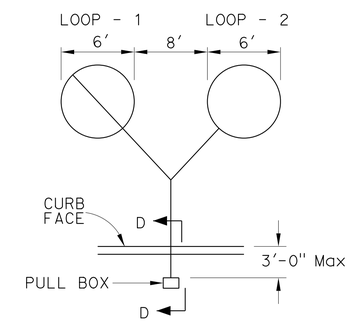


CONDUIT DETAIL
NOT TO SCALE



STUB-OUT DETAIL
(Top View)
NOT TO SCALE





NOTES:
PERFORM LOOP INSTALLATION IN THE FOLLOWING ORDER:

1. OPEN THE PAVEMENT AT LEAST 42" FROM CURB FACE AND AT LEAST 18" FROM EDGE OF GUTTER USING A STAR DRILL OR A JACK HAMMER (ASPHALT CONCRETE ONLY). OPEN NO MORE THAN A 12" X16" AREA. IN CASES WHERE THERE IS A CONCRETE BUS PAD ADJACENT TO THE GUTTER, INSTALL THE STUB-OUT BEYOND THE EDGE OF THE BUS PAD.
2. INSTALL 2" PVC (SCHEDULE 80) OR PVC FLEX (SCHEDULE 40) FROM THE PULL BOX PIT WITH A 45? ELBOW AT THE STUB-OUT AS SHOWN. DEPTH OF THE CONDUIT SHALL BE AT LEAST 18" BELOW THE STREET GRADE.
3. PATCH STREET USING HOT PATCH ASPHALT CONCRETE AND SAND.
4. INSTALL DUCT SEAL WHERE WIRES ENTER 2" PVC OR 2" PVC FLEX.
5. FILL SAW CUT SLOT WITH HOT-MELT RUBBERIZED ASPHALT SEALANT.

* NO MORE THAN 8 LOOPS OR 16 WIRES PER STUB-OUT.

APPROVED FOR ELECTRICAL WORK ONLY

ELECTRICAL DETAILS
NO SCALE

E-18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: VUONG HONG
CHECKED BY: OSWALD ELIZONDO
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JAN-2016
TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	167	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

PLANS APPROVAL DATE 2-1-16

REGISTERED PROFESSIONAL ENGINEER VUONG HONG No. E16613 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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NOTES: (THIS SHEET ONLY)

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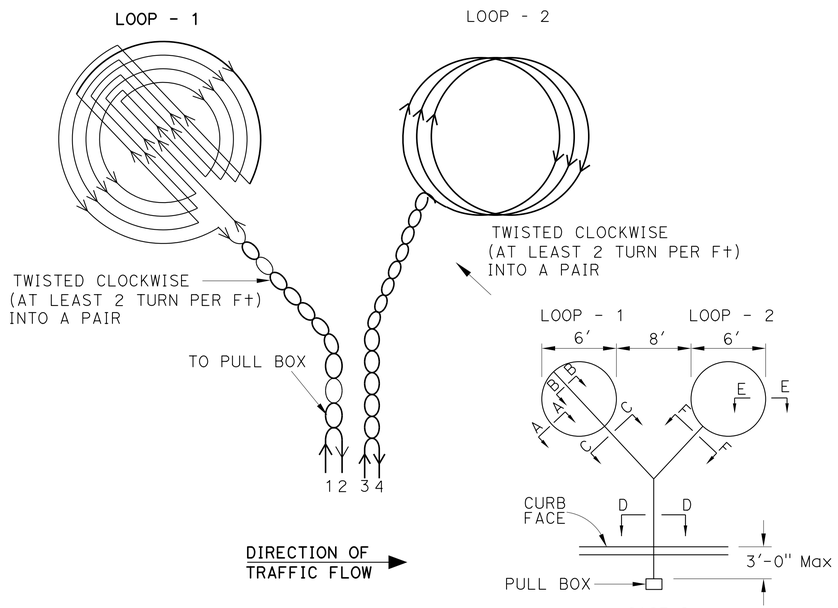
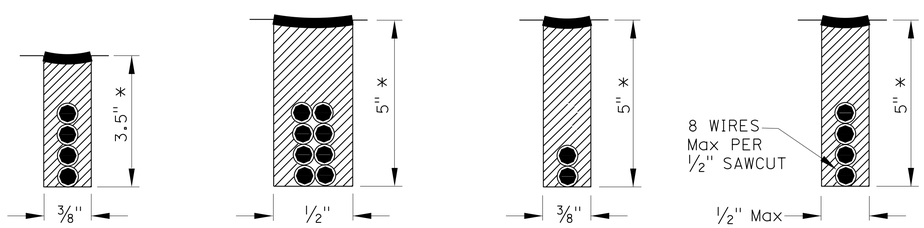


CASE I
(BICYCLE & VEHICLE)

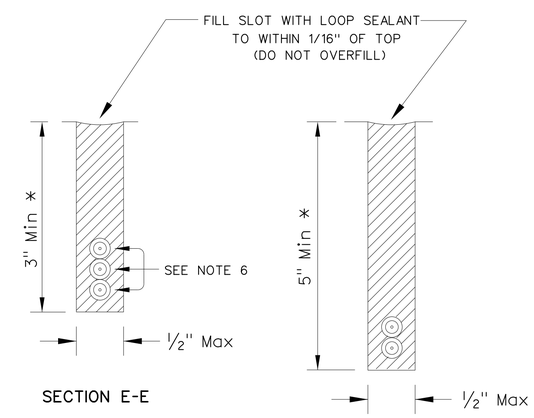
NOTES:

1. INSTALL FOUR (4) COMPLETE ALTERNATING TURNS OF LOOP CONDUCTORS FOR BICYCLE LOOP, UNLESS OTHERWISE SPECIFIED.
2. FOR STUB-OUT AND CONDUIT DETAILS REFER TO SHEET E-5.
3. USE CASE I LOOPS WHEN VEHICULAR LOOPS ARE INTENDED TO DETECT BICYCLES.
4. AN OCTAGONAL SHAPED LOOP OR OTHER NON ROUND SHAPED LOOP MAY BE USED INSTEAD OF THE ROUND LOOP.
5. SAME WINDING PATTERN TO BE USED IN BOTH LOOPS WITH (1) PAIR FROM EACH LOOP LEADING TO THE PULL BOX.
6. INSTALL 3 CLOCKWISE TURNS OF LOOP WIRE FOR VEHICLE DETECTOR, UNLESS OTHERWISE SHOWN ON SIGNAL PLAN.
7. ANY NON-ROUND SHAPED LOOPS MUST CONFORM TO ALL OTHER SPECIFICATIONS SHOWN ON THIS SHEET.



SECTION A-A SECTION B-B SECTION C-C SECTION D-D

* DEPTH OF SLOT NOT TO EXCEED DEPTH OF PAVEMENT



SECTION E-E SECTION F-F

ELECTRICAL DETAILS

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

E-19

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
CALCULATED-DESIGNED BY: VUONG HONG
CHECKED BY: OSWALD ELIZONDO
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
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TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	168	262

4/29/15
REGISTERED ELECTRICAL ENGINEER DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
VUONG HONG
No. E16613
Exp. 6/30/16
ELECTRICAL
STATE OF CALIFORNIA

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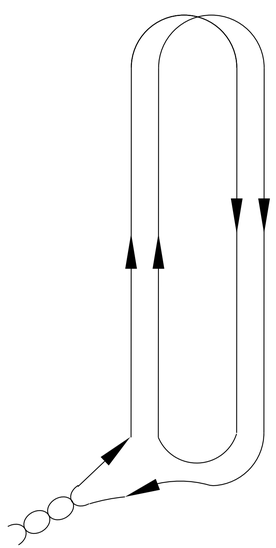
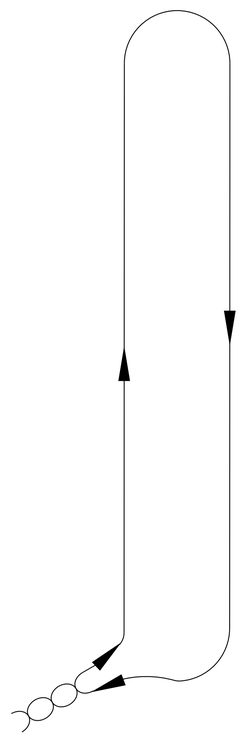
LENGTH OF LOOP	NUMBER OF TURNS
< 40′	2
≥ 40′	1



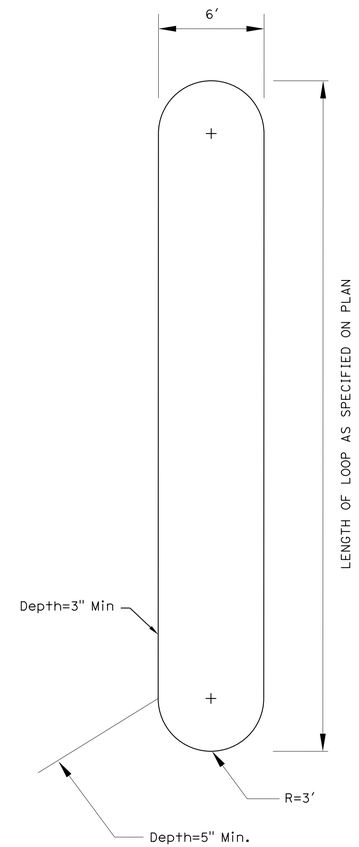
2 TURN

WINDING DETAIL



1 TURN

SAW SLOT DETAIL



TRANSIT PRIORITY LOOP (INSTALLATION DETAILS)

ELECTRICAL DETAILS

NO SCALE

E-20

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

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DATE PLOTTED => 28-JAN-2016
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	169	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
VUONG HONG
No. E16613
Exp. 6/30/16
ELECTRICAL
STATE OF CALIFORNIA

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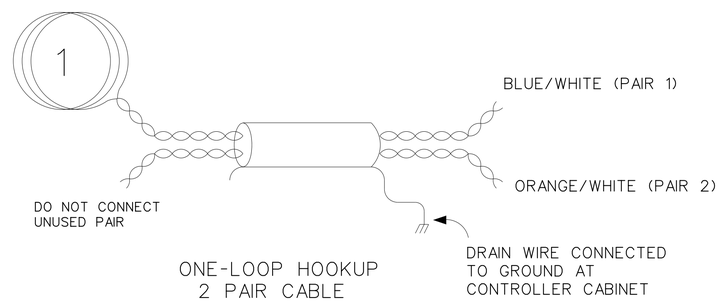
NOTES:

1. THIS SHEET DESCRIBES A TWO PAIR LOOP DETECTOR LEAD-IN CABLE, INDIVIDUALLY SHIELDED AND JACKETED AND SUITABLE FOR INSTALLATION IN A PAVEMENT SAWCUT, CONDUIT, OR DIRECT BURIAL.
2. ELECTRICAL CONNECTIONS MUST BE SOLDERED AND WATERPROOFED.
3. SYSTEM LOOPS USE A SINGLE PAIR FOR EACH LOOP.



ONE-LOOP HOOKUP
2 PAIR CABLE

ELECTRICAL DETAILS

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

E-21

REVISED BY | DATE REVISED
VUONG HONG | OSWALD ELIZONDO
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LAST REVISION 00-00-00 | DATE PLOTTED => 28-JAN-2016 | TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	170	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
VUONG HONG
No. E16613
Exp. 6/30/16
ELECTRICAL
STATE OF CALIFORNIA

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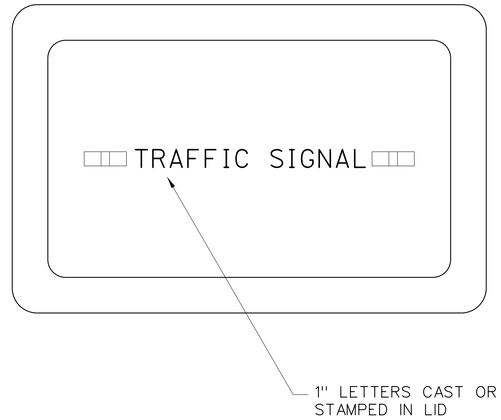

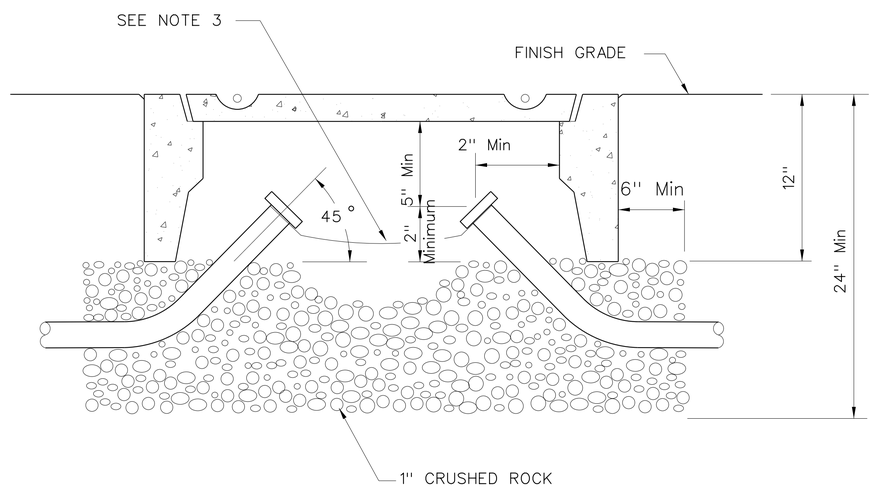

NOTES: (THIS SHEET ONLY)

1. PULL BOX DETAILS NOT SHOWN ON THIS PLAN SHALL CONFORM TO SHEET E-10.
2. OUTSIDE DIMENSION: TYPE PB2 - 15" X 25", TYPE PB3 - 22" X 34"
3. GALVANIZED CONDUITS MUST BE BONDED WITH COPPER GROUND STRAP AROUND THE NECK OF EACH CONDUIT. PVC CONDUITS MUST HAVE THEIR GROUND WIRES SPLICED TOGETHER.

ELECTRICAL DETAILS

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

E-22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

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CALCULATED-DESIGNED BY: VUONG HONG
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REVISED BY
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LAST REVISION 00-00-00
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TIME PLOTTED => 11:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	171	262

REGISTERED ELECTRICAL ENGINEER 4/29/15 DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER OHANNES ANSERLIAN No. E16682 Exp. 6/30/16 ELECTRICAL STATE OF CALIFORNIA

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NOTE:(THIS SHEET ONLY)
ITEMS SHOWN IN THIS TABLE ARE NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

MODIFY RAMP METERING SYSTEM

SHEET No.	PB-5 (EA)	PB-6 (EA)	TYPE III-BF (EA)	2"C (LF)	3"C (LF)	DLC (LF)	5CSC (LF)	POLE 1A (EA)	FLASHING BEACON (EA)	LADOT BICYCLE LOOP (EA)	AWG 1#8 (G) (LF)	3CSC (LF)	LADOT PULL BOX (EA)	SIGNAL HEAD (EA)	TYPE E LOOP (EA)	LADOT 6' X 8' LOOP (EA)	TYPE 1-D POLE (MODIFIED) (EA)	LADOT VEHICULAR LOOP (EA)
E-1	2			686					2		615	615			14		2	
E-2															20			
E-3	7			260							600				14			
E-4	3			15	150	1600	100		2		1300	300			16		2	
E-5	1	1	1	60		1700	110		2		700	1200			8		2	
E-6	6			1300			1000	1			2900			5	5			
E-7	1								1		100			1	1		1	
E-8	10									2			3		21	1		2
E-9	1			50					2		950	950			15		2	
E-10	5			280		100			1		1400				12		1	
E-11	3	2			20				2		450				16		2	

MODIFY AUTOMATIC VEHICLE CLASSIFICATION STATION

SHEET No.	AUTOMATIC VEHICLE CLASSIFICATION STATION (EA)
E-12	1

MODIFY TRAFFIC MONITORING STATION

SHEET NO.	TYPE E LOOP (EA)	DLC (LF)	1#8 (G) (LF)
E-13	6	600	350
E-14	6	500	50
E-15	12		
E-16	18		

ELECTRICAL QUANTITIES

E-23

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OSWALD ELIZONDO
CALCULATED-DESIGNED BY
CHECKED BY
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OSWALD ELIZONDO
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	13.8/19.2	172	262

Mahfoud A. Licha 4-3-15
REGISTERED CIVIL ENGINEER DATE

2-1-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MAHFOUD A. LICHA No. C62816 Exp. 6/30/16 CIVIL STATE OF CALIFORNIA

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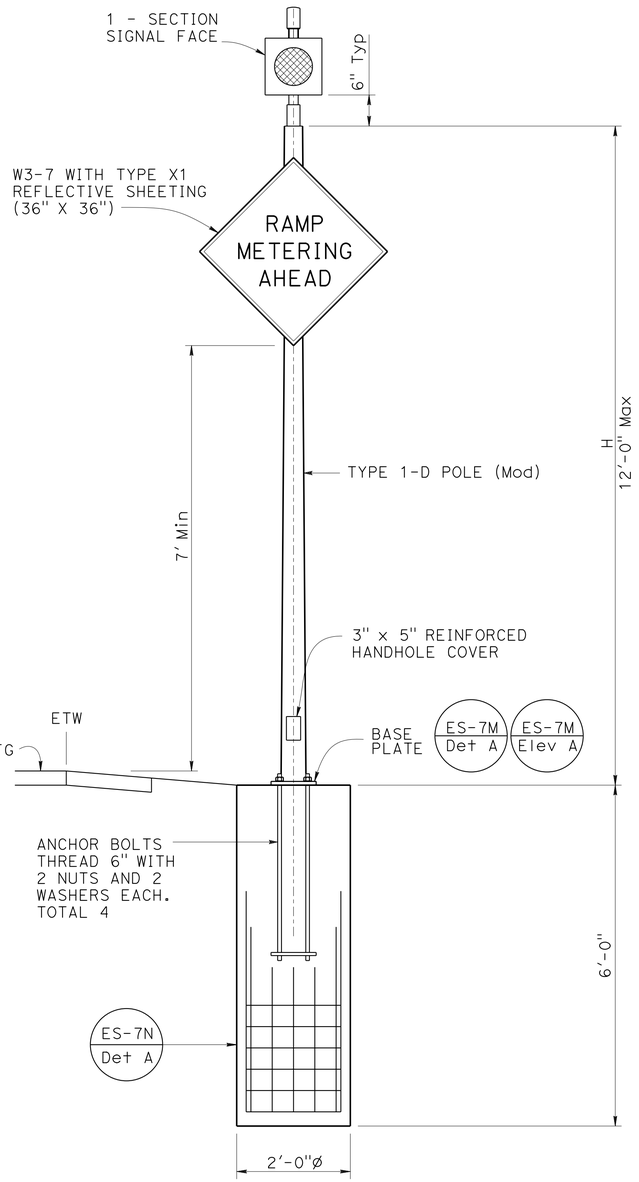
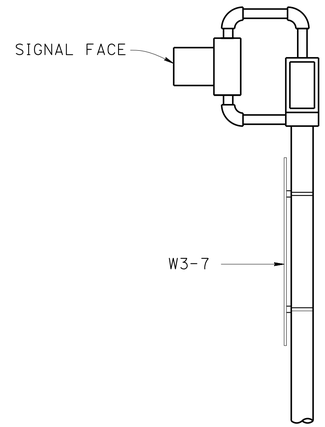
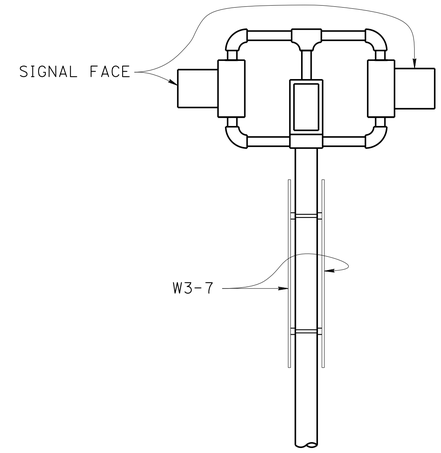


FRONT VIEW



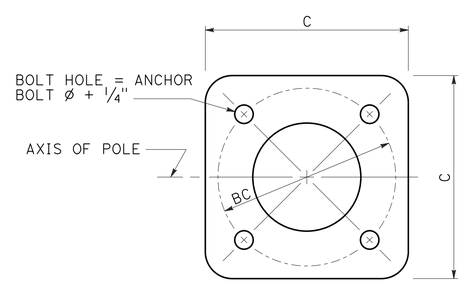
SIDE VIEW



SIDE VIEW

TABLE A

POLE TYPE	POLE DATA				BASE PLATE DATA			
	H HEIGHT	Min OD BASE	Min OD TOP	THICKNESS	C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLTS SIZE
1-D (MODIFIED)	12'-0"	5¼"	3 13/16"	0.1196"	9½"	8½"	¾" Min	1" ø x 3'-0"



BASE PLATE

GENERAL NOTES:

SPECIFICATIONS

Design: AASHTO standard specifications for structural supports for highway signs, luminaires and traffic signals, sixth edition.

LOADING

Wind Loading: 100 mph (3-sec gust)

UNIT STRESSES

Structural Steel: fy = 55,000 PSI tapered steel tube
fy = 50,000 PSI unless otherwise noted.

Anchor Bolts: fy = 55,000 PSI

Reinforced Concrete: f'c = 3,600 PSI
fy = 60,000 PSI

NOTES:

1. For pole locations, see "Roadway Plans".
2. All steel must be galvanized after fabrication.
3. During pole erection the pole must be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
4. The foundation must be treated as level ground condition if the slope inclination is flatter than 4H:1V.
5. Foundation design is based on AASHTO LTS-6 Article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of internal friction used is 30 degrees and unit weight of soil is 120 lb/ft^3.
6. W3-7 Sign, unless otherwise noted, must be mounted to pole with stainless steel straps or other method without drilling holes in pole.
7. For details not shown, see "2010 STANDARD PLANS" and "2010 REVISED STANDARD PLANS".
8. Handhole must be located on down side of traffic.

NOTE:
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STANDARD PLAN SHEET No.
DETAIL No.

NO SCALE

BRANCH CHIEF *JEFF WOODY*

	BY	CHECKED
DESIGN	MAHFOUD LICHA	EUSEO LOPEZ
DETAILS	T. NGUYEN	EUSEO LOPEZ
QUANTITIES		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
DESIGN AND TECHNICAL SERVICES
SPECIAL DESIGNS BRANCH A

BRIDGE NO. N/A
POST MILE Var

RAMP METER FLASHING BEACON
POLE DETAILS

SES-1

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 4-1-14)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3619
PROJECT NUMBER & PHASE: 0713000492
CONTRACT NO.: 07-300704

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 4-1-15

REVISION DATES | SHEET 1 | OF 1

FILE => /2015sd/07-300704

USERNAME => s119140 DATE PLOTTED => 28-JAN-2016 TIME PLOTTED => 11:58

M

Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED,
	MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EMBANKMENT
Mt	MOUNTAIN, MOUNT
Mtl	MATERIAL
MVP	MAINTENANCE VEHICLE PULLOUT

N

N	NORTH
NB	NORTHBOUND
No.	NUMBER (MUST HAVE PERIOD)
Nos.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NSP	NEW STANDARD PLAN
NTS	NOT TO SCALE

O

Oblr	OBLITERATE
OC	OVERCROSSING
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OGFC	OPEN GRADED FRICTION COURSE
OH	OVERHEAD
OHWM	ORDINARY HIGH WATER MARK
O-O	OUT TO OUT
Opp	OPPOSITE
OSD	OVERSIDE DRAIN

P

P	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE,
	PRECAST
PCC	POINT OF COMPOUND CURVE,
	PORTLAND CEMENT CONCRETE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PCP	PERFORATED CONCRETE PIPE,
	PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PEC	PERMIT TO ENTER AND CONSTRUCT
Ped	PEDESTRIAN
Ped OC	PEDESTRIAN OVERCROSSING
Ped UC	PEDESTRIAN UNDERCROSSING
Perm Mtl	PERMEABLE MATERIAL

P continued

PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
Pkwy	PARKWAY
ℙ,PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE,
	TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POC	POINT OF HORIZONTAL CURVE
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE,
	PLASTIC PIPE,
	POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE
PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
Pvmt	PAVEMENT

Q

Qty	QUANTITY

R

R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
Rd	ROAD
Reinf	REINFORCED,
	REINFORCEMENT,
	REINFORCING
Rel	RELOCATE
Repl	REPLACEMENT
Ret	RETAINING
Rev	REVISED, REVISION
Rdwy	ROADWAY
RHMA	RUBBERIZED HOT MIX ASPHALT
Riv	RIVER
RM	ROAD-MIXED
RP	RADIUS POINT,
	REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION,
	REVISED STANDARD PLAN
Rt	RIGHT
Rte	ROUTE
RW	REDWOOD,
	RETAINING WALL
R/W	RIGHT OF WAY
Rwy	RAILWAY

S

S	SOUTH,
	SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND,
	SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
℄	STATION LINE
SM	SELECTED MATERIAL
Spec	SPECIAL,
	SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE
SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
St	STREET
Sta	STATION
STBB	SINGLE THRIE BEAM BARRIER
Std	STANDARD
Str	STRUCTURE
Surf	SURFACING
SW	SIDEWALK,
	SOUND WALL
Swr	SEWER
Sym	SYMMETRICAL
S4S	SURFACE 4 SIDES

T

T	SEMI-TANGENT
Tan	TANGENT
TBB	THRIE BEAM BARRIER
Tbr	TIMBER
TC	TOP OF CURB
TCB	TRAFFIC CONTROL BOX
TCE	TEMPORARY CONSTRUCTION EASEMENT
Tel	TELEPHONE
Temp	TEMPORARY
TG	TOP OF GRADE
Tot	TOTAL
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
Trans	TRANSITION

T continued

TS	TRANSVERSE,
	TRAFFIC SIGNAL,
	TUBULAR STEEL
Typ	TYPICAL

U

UC	UNDERCROSSING
UD	UNDERDRAIN
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS

V

V	VALVE,
	DESIGN SPEED
Var	VARIABLE,
	VARIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
Vert	VERTICAL
Via	VIADUCT
Vol	VOLUME

W

W	WEST,
	WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
Wt	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWLOL	WINGWALL LAYOUT LINE

X

X Sec	CROSS SECTION
Xing	CROSSING

Y

Yr	YEAR
Yrs	YEARS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	173	262

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Grace M. Tsushima
No. C49814
Exp. 9-30-14
CIVIL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 2-1-16

UNIT OF MEASUREMENT SYMBOLS:

Some of the symbols used in the project plan quantity tables and in the Bid Item List are:

TABLE A

SYMBOL USED	DEFINITIONS
ACRE	ACRE
CF	CUBIC FOOT
CY	CUBIC YARD
EA	EACH
GAL	GALLON
LB	POUND
LF	LINEAR FOOT
SQFT	SQUARE FOOT
SQYD	SQUARE YARD
STA	100 FEET
TAB	TABLET
TON	2,000 POUNDS

Some of the symbols used in the plans other than in the project plan quantity tables are:

TABLE B

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft^3, pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kip	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ABBREVIATIONS (SHEET 2 OF 2)

NO SCALE

RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A10B

2010 REVISED STANDARD PLAN RSP A10B

6-7-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	174	262

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Roberta L. McLaughlin No. C40375 Exp. 3-31-15 CIVIL STATE OF CALIFORNIA

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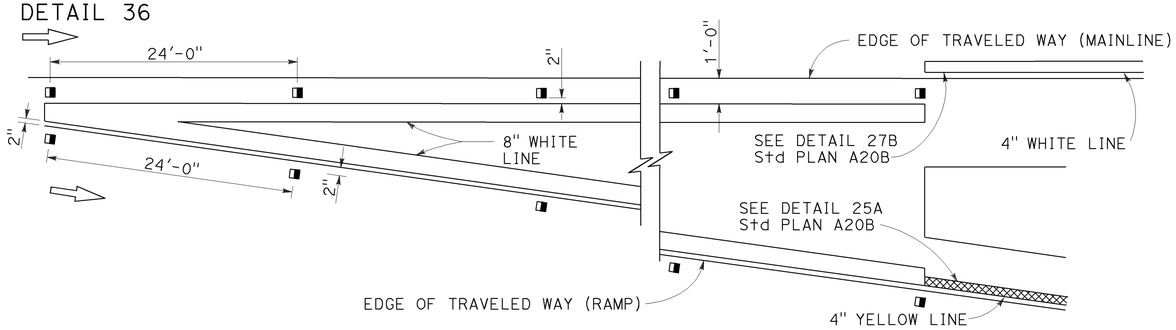
TO ACCOMPANY PLANS DATED 2-1-16

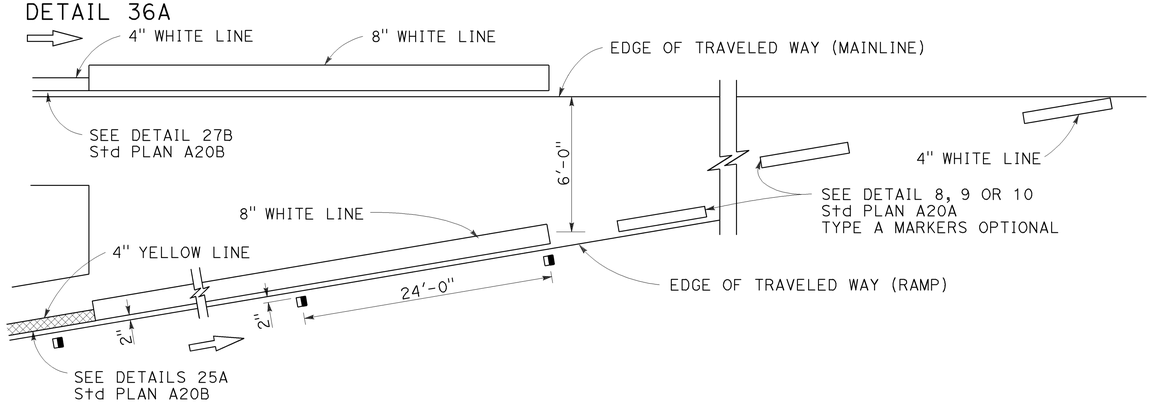
EXIT RAMP NEUTRAL AREA (GORE) TREATMENT

DETAIL 36



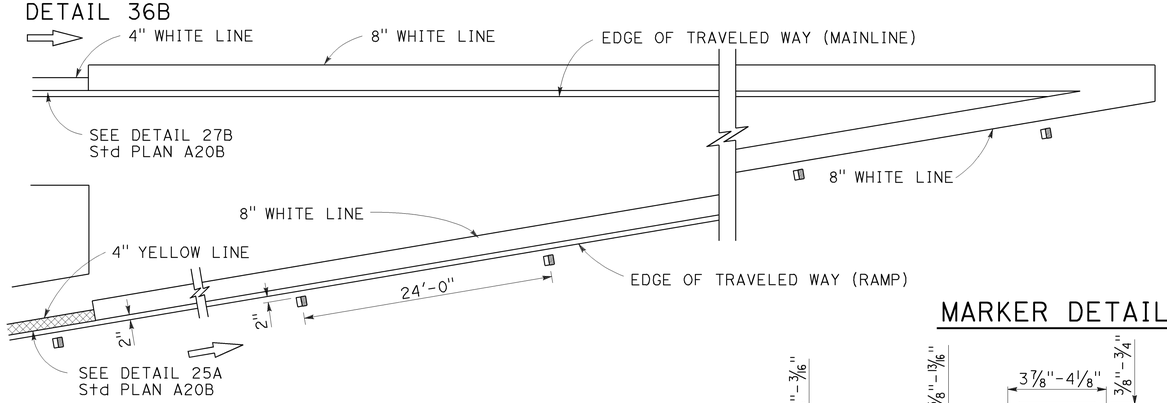
ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT

DETAIL 36A



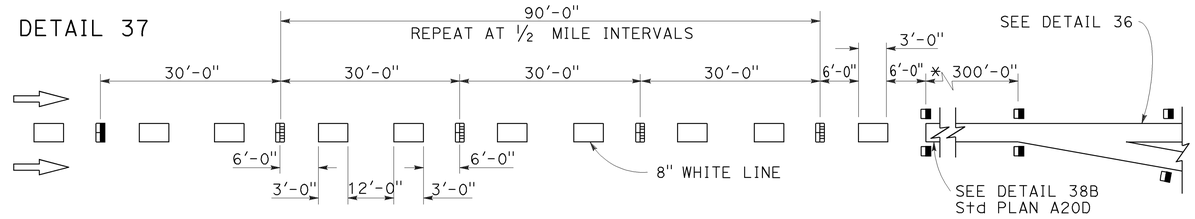
ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT

DETAIL 36B

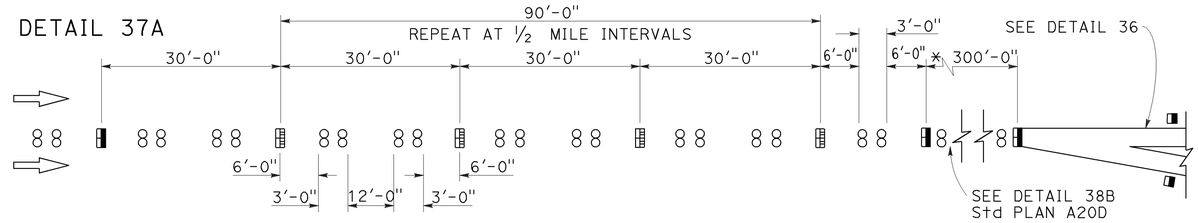


LANE DROP AT EXIT RAMPS

DETAIL 37



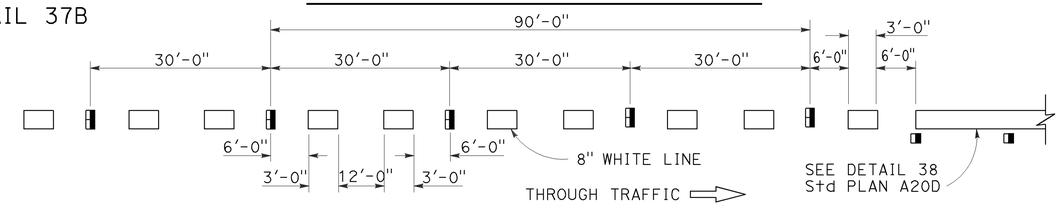
DETAIL 37A



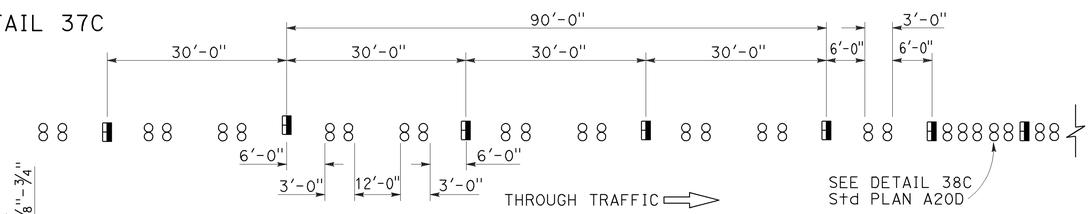
* The solid channelizing line shown may be omitted on short auxiliary lanes where weaving length is critical.

LANE DROP AT INTERSECTIONS

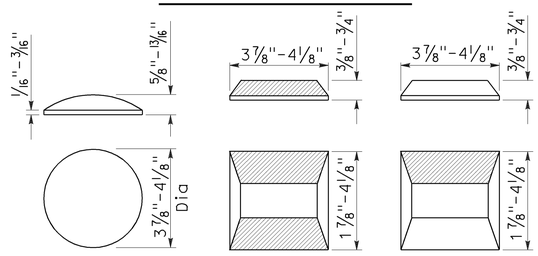
DETAIL 37B



DETAIL 37C



MARKER DETAILS



RETROREFLECTIVE FACE

LEGEND:

MARKERS

- ○ TYPE A WHITE NON-REFLECTIVE
- ⊟ TYPE C RED-CLEAR RETROREFLECTIVE
- ◨ TYPE G ONE-WAY CLEAR RETROREFLECTIVE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKERS AND TRAFFIC LINE TYPICAL DETAILS

NO SCALE

RSP A20C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A20C DATED MAY 20, 2011 - PAGE 11 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A20C

2010 REVISED STANDARD PLAN RSP A20C

4-29-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	175	262

REGISTERED CIVIL ENGINEER

April 20, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Roberta L. McLaughlin
No. C40375
Exp. 3-31-13
CIVIL
STATE OF CALIFORNIA

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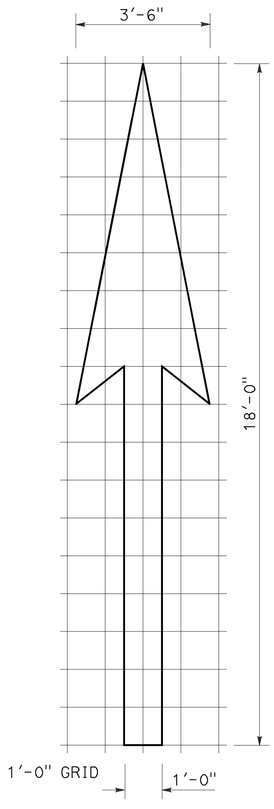
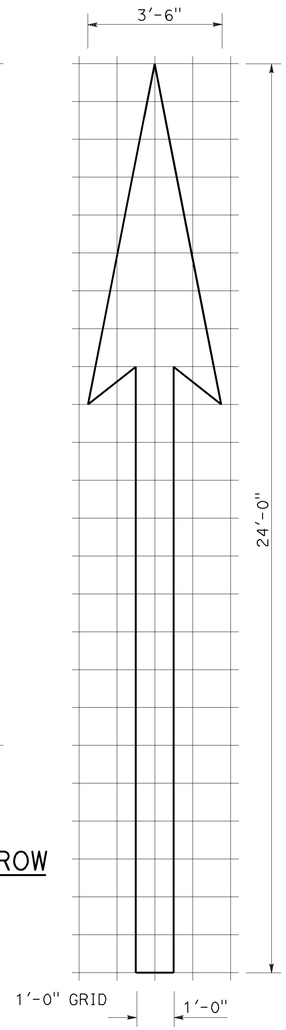
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A24A



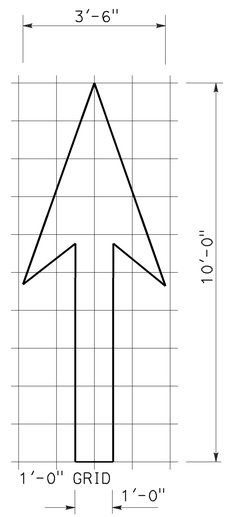
A=25 ft^2

TYPE I 18'-0" ARROW



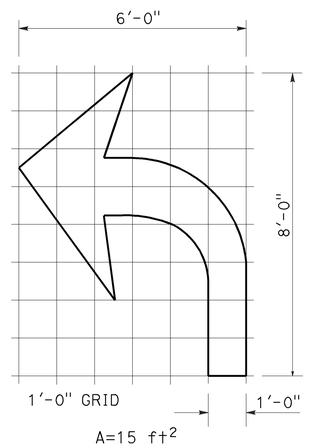
A=31 ft^2

TYPE I 24'-0" ARROW



A=14 ft^2

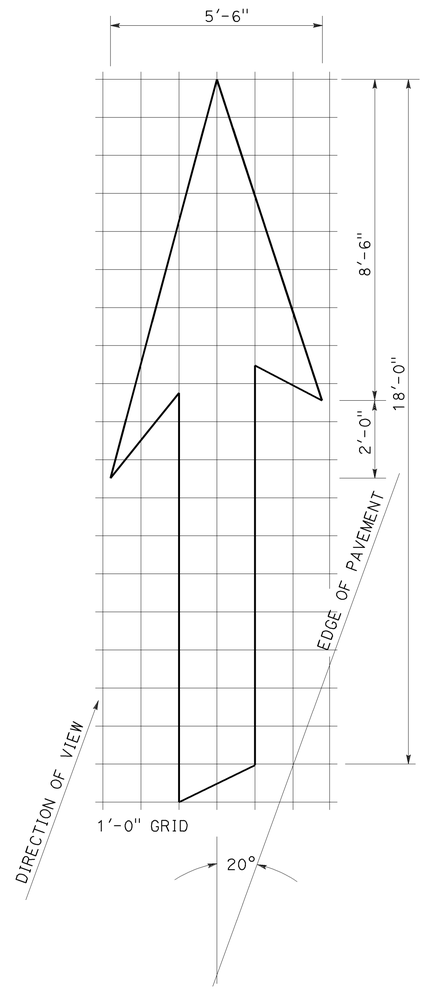
TYPE I 10'-0" ARROW



A=15 ft^2

TYPE IV (L) ARROW

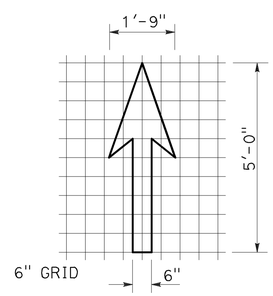
(For Type IV (R) arrow, use mirror image)



A=42 ft^2

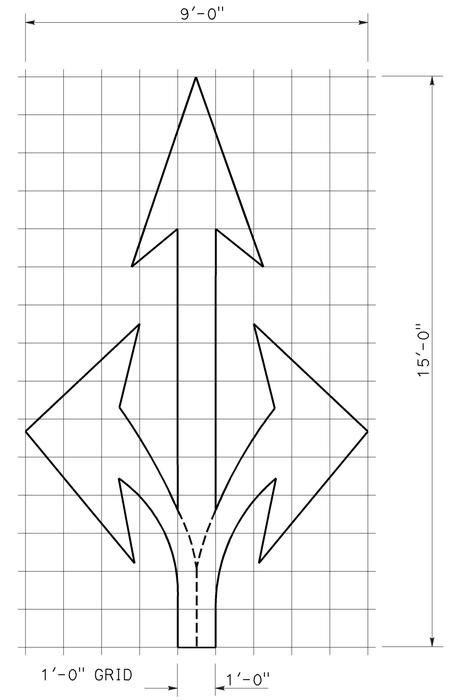
TYPE VI ARROW

Right lane drop arrow
(For left lane, use mirror image)



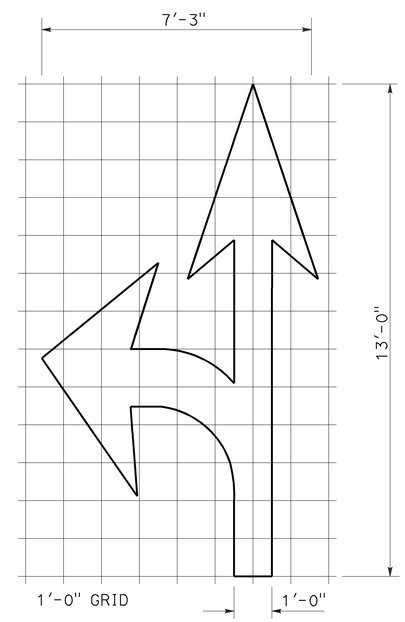
A=3.5 ft^2

BIKE LANE ARROW



A=36 ft^2

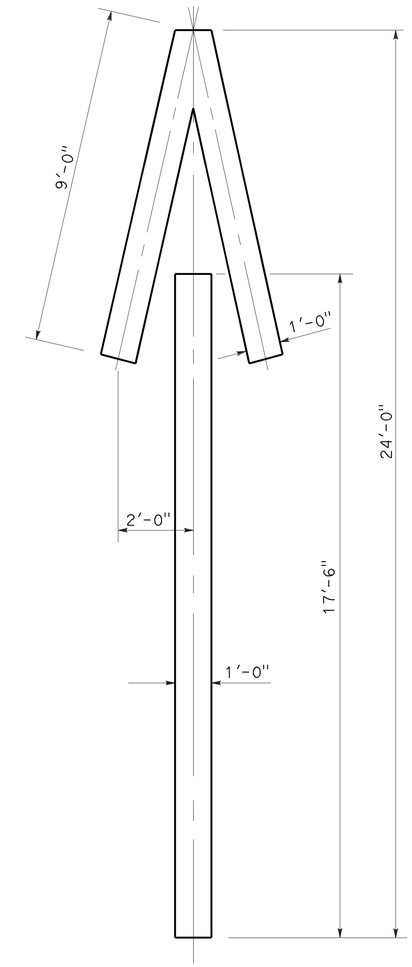
TYPE VIII ARROW



A=27 ft^2

TYPE VII (L) ARROW

(For Type VII (R) arrow, use mirror image)



A=33 ft^2

TYPE V ARROW

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS ARROWS

NO SCALE

RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A24A

3-14-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	176	262

REGISTERED CIVIL ENGINEER

October 19, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Roberta L. McLaughlin
No. C40375
Exp. 3-31-13
CIVIL
STATE OF CALIFORNIA

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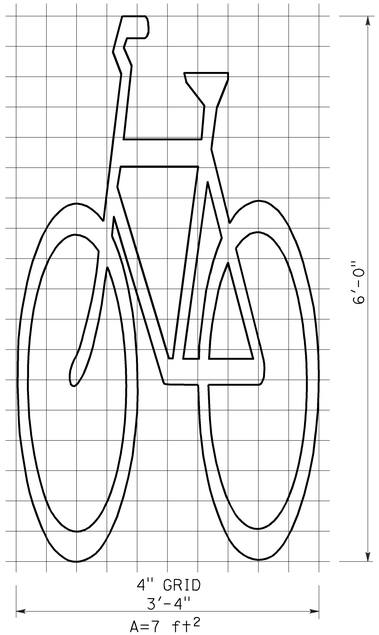
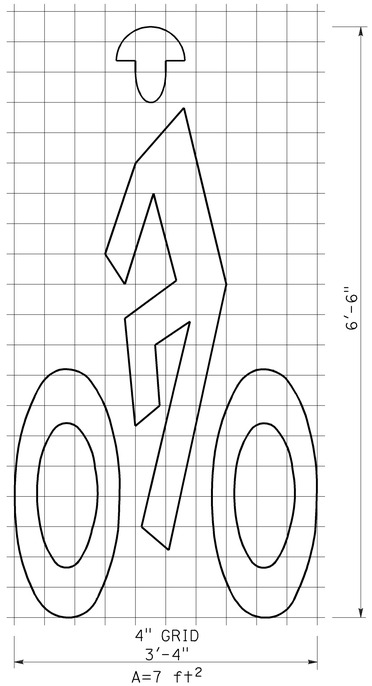
NOTE: TO ACCOMPANY PLANS DATED 2-1-16

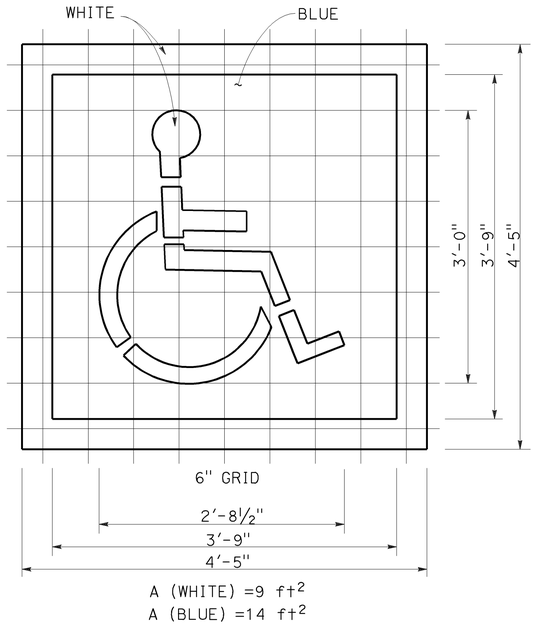
Minor variations in dimensions may be accepted by the Engineer.



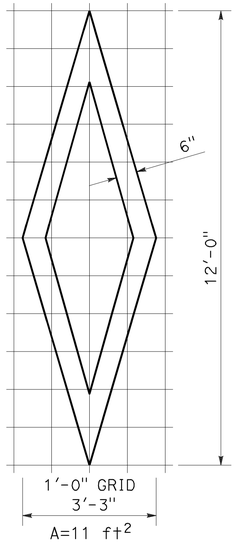
BIKE LANE SYMBOL WITHOUT PERSON



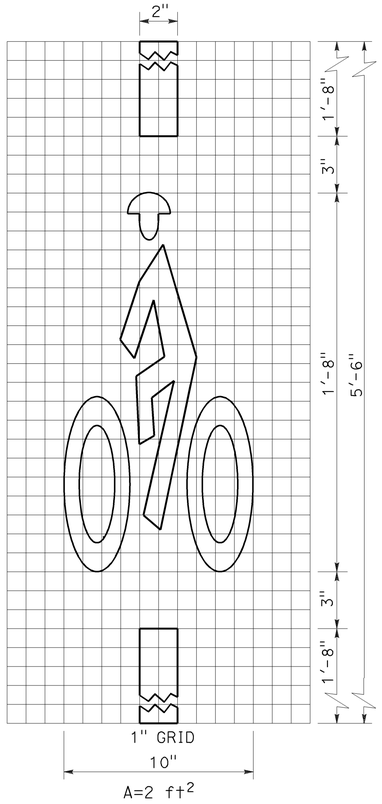
BIKE LANE SYMBOL WITH PERSON



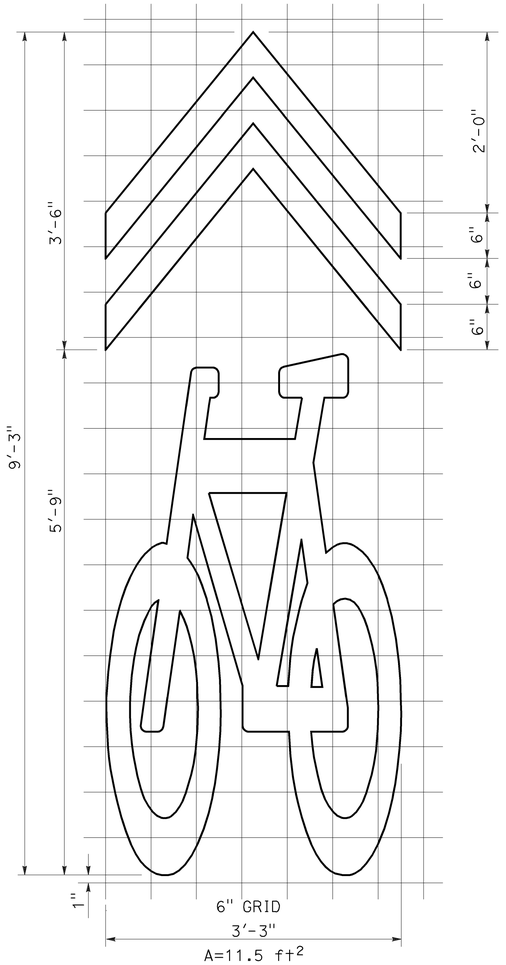
INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) MARKING



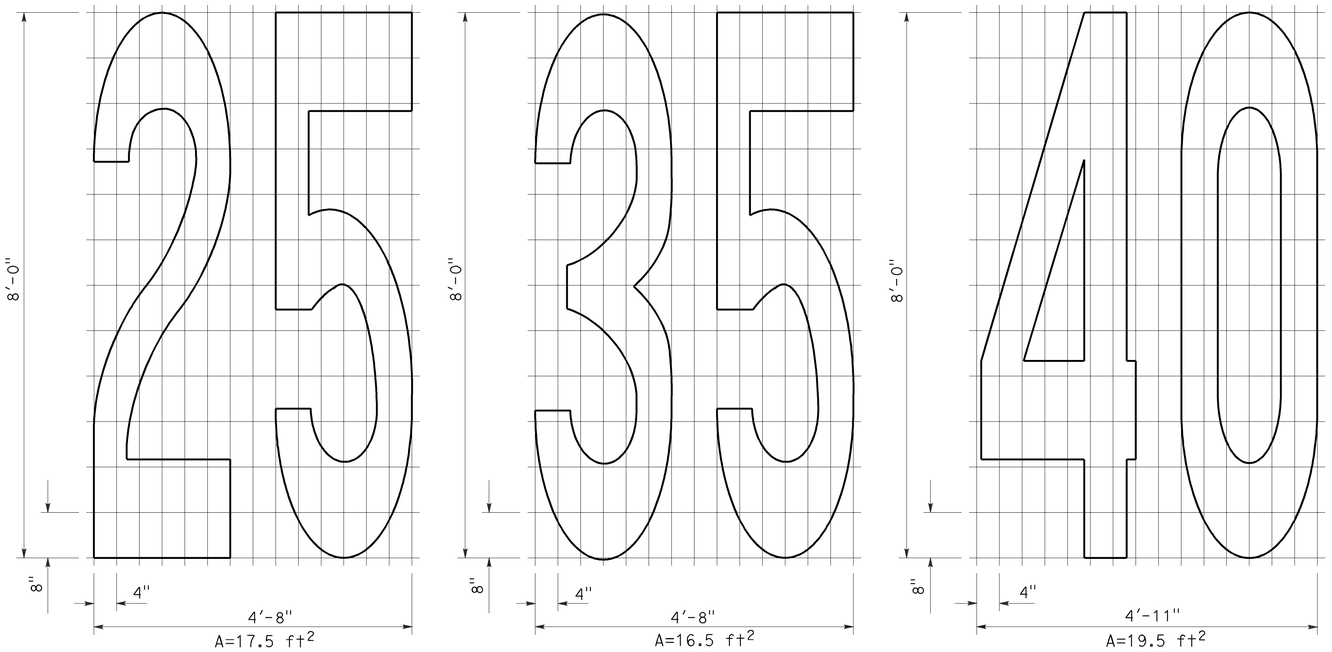
DIAMOND SYMBOL



BICYCLE LOOP DETECTOR SYMBOL



SHARED ROADWAY BICYCLE MARKING



NUMERALS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS SYMBOLS AND NUMERALS

NO SCALE

RSP A24C DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A24C DATED MAY 20, 2011 - PAGE 15 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A24C

2010 REVISED STANDARD PLAN RSP A24C

6-28-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	177	262

REGISTERED CIVIL ENGINEER

July 20, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Roberta L. McLaughlin
No. C40375
Exp. 3-31-13
CIVIL
STATE OF CALIFORNIA

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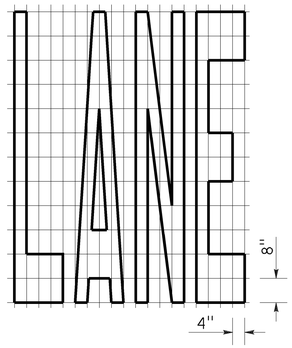
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A24E



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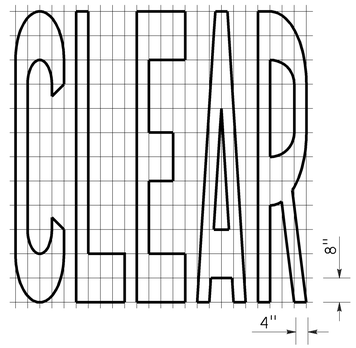
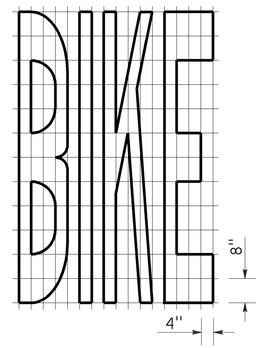


A=27 ft^2



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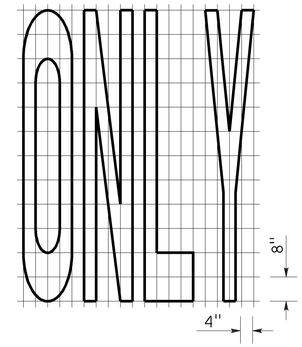
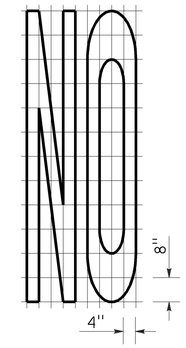
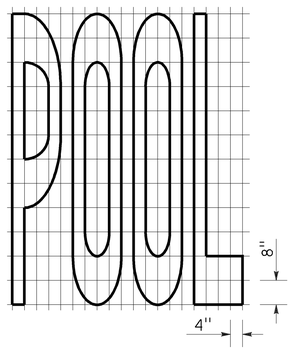


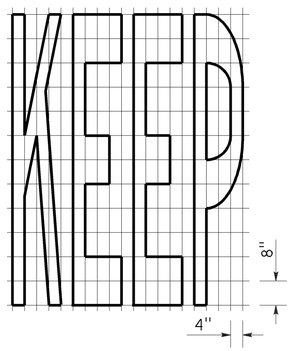
A=22 ft^2



A=14 ft^2



A=23 ft^2



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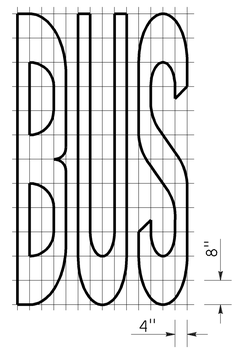
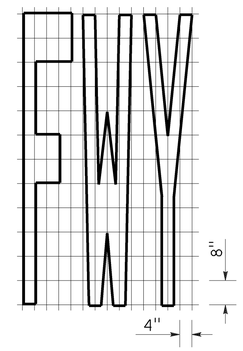


A=20 ft^2



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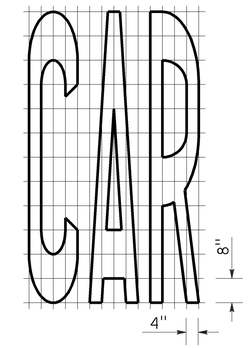
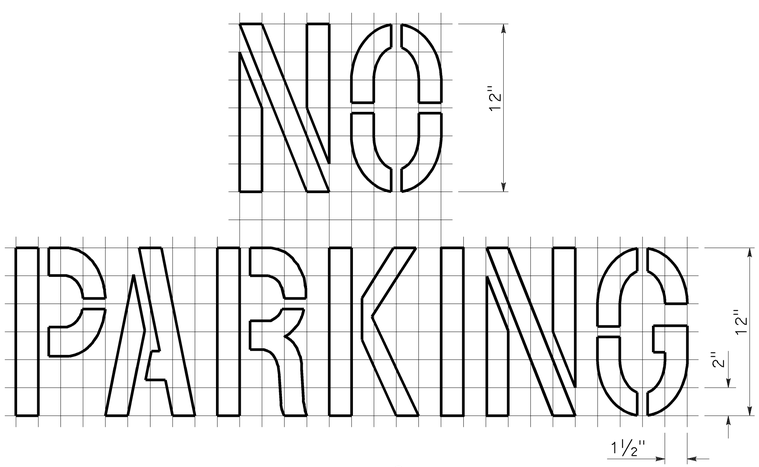
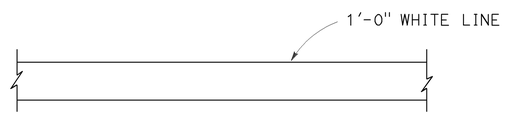


A=17 ft^2

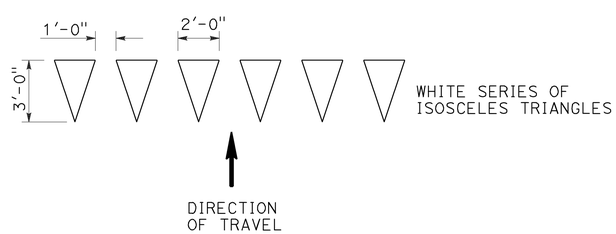
WORD MARKINGS			
ITEM	ft^2	ITEM	ft^2
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft^2
See Notes 6 and 7



LIMIT LINE (STOP LINE)



YIELD LINE

NOTES:

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS WORDS, LIMIT AND YIELD LINES

NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A24E

6-12-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	178	262

REGISTERED CIVIL ENGINEER

July 20, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Roberta L. McLaughlin
No. C40375
Exp. 3-31-13
CIVIL
STATE OF CALIFORNIA

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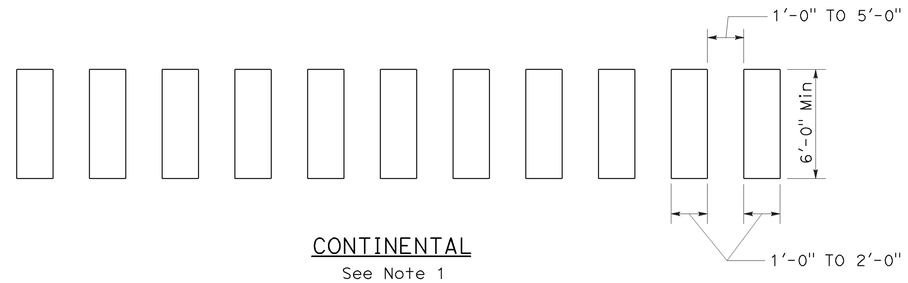
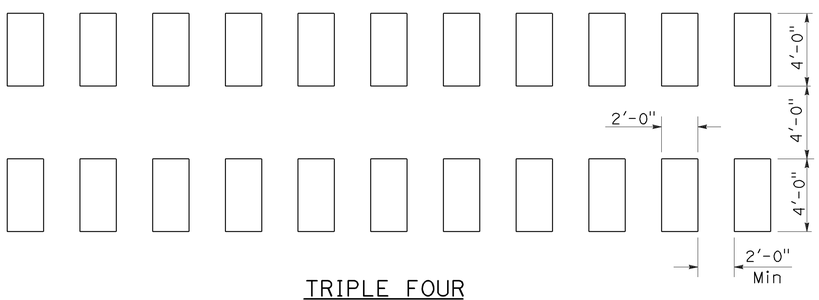
TO ACCOMPANY PLANS DATED 2-1-16

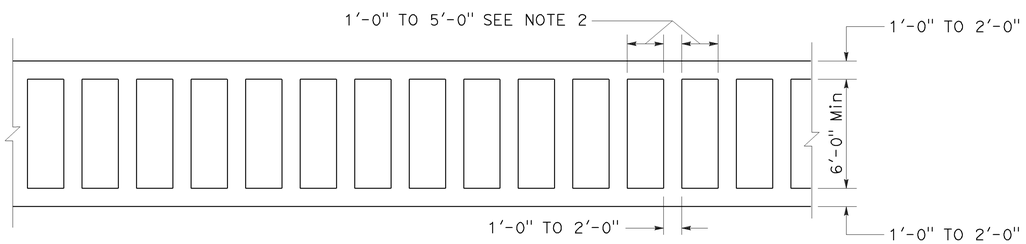
2010 REVISED STANDARD PLAN RSP A24F



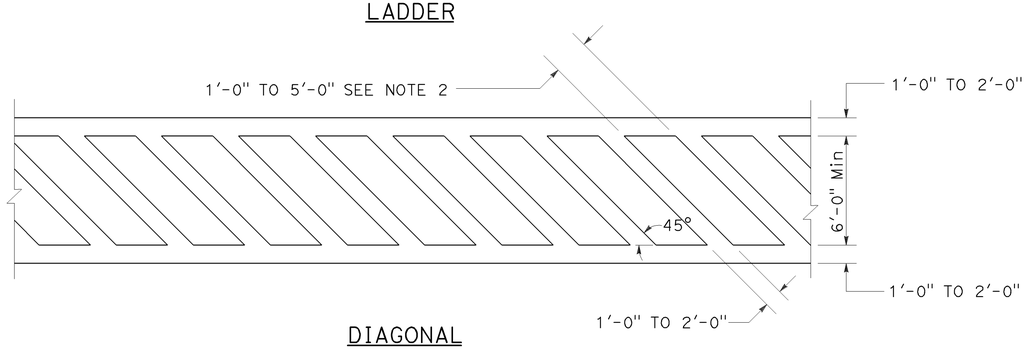
CONTINENTAL
See Note 1



TRIPLE FOUR
See Note 1



LADDER

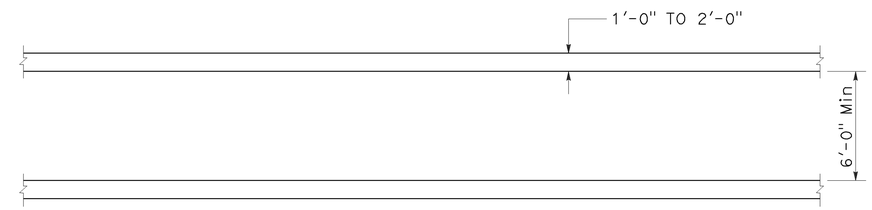


DIAGONAL

HIGHER VISIBILITY CROSSWALKS

NOTES:

1. Spaces between markings should be placed in wheel tracks of each lane.
2. Spacings not to exceed 2.5 times width of longitudinal line.
3. All crosswalk markings must be white except for those near schools must be yellow.



BASIC

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS CROSSWALKS

NO SCALE

RSP A24F DATED JULY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A24F

6-28-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	179	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

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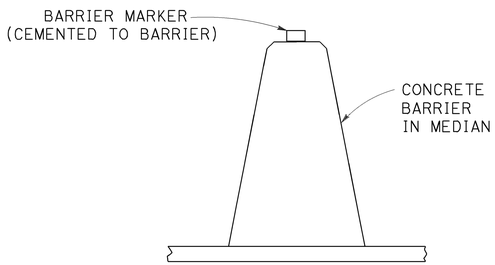
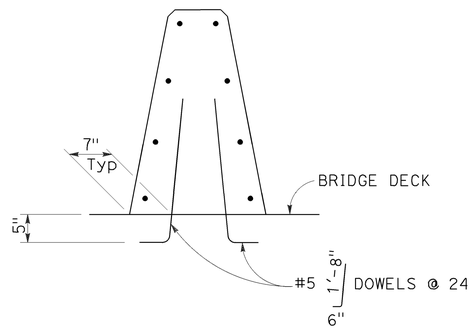
TO ACCOMPANY PLANS DATED 2-1-16



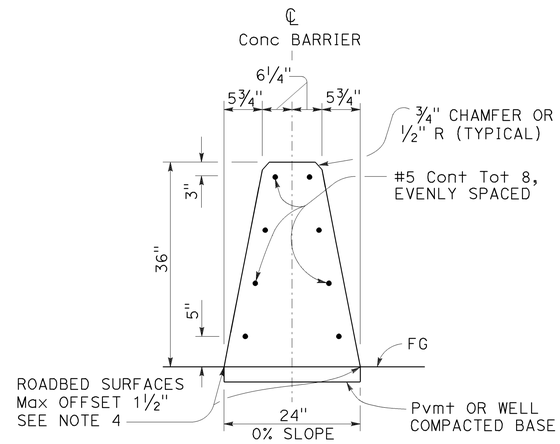
CONCRETE BARRIER TYPE 60 DELINEATION

See Note 5



CONCRETE BARRIER TYPE 60A

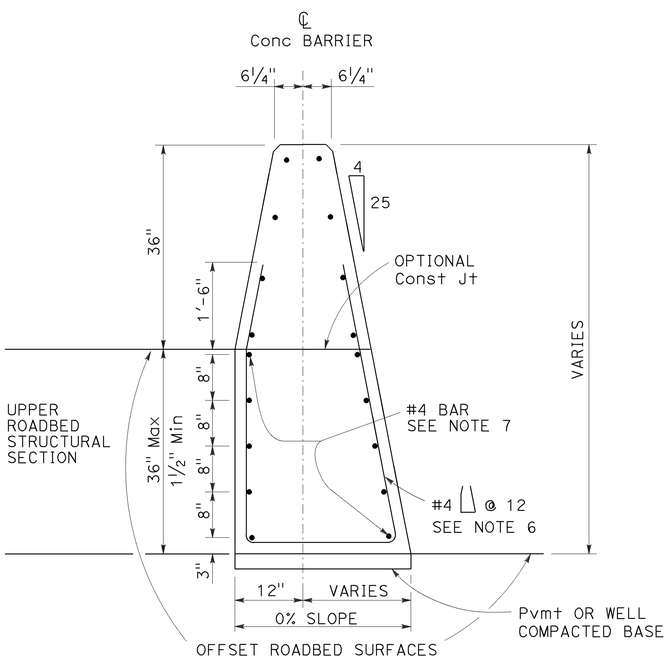
Details similar to Type 60 except as noted.



CONCRETE BARRIER TYPE 60

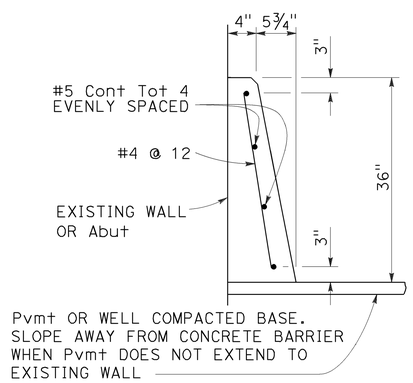
NOTES:

1. 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.
2. See Revised Standard Plan RSP A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
3. Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
4. Where roadbed offset is greater than 1½", see Concrete Barrier Type 60C.
5. See Project Plans for barrier delineation locations.
6. Reinforcing stirrup not required for roadbed offsets less than 1'-0".
7. For roadbed surfaces offset greater than 1½" and less than or equal to 3", no reinforcement required. For roadbed surfaces offset greater than 3" and less than or equal to 8", use two #4 Reinf at 3" above the lower roadbed surface. For roadbed surfaces offset greater than 8" and less than or equal to 12", use two #4 Reinf at 3" above the lower roadbed surface and two #4 Reinf at 8" above the lower roadbed surface. For roadbed surfaces offset greater than 12" and less than or equal to 36", use two #4 Reinf at 3" above the lower roadbed surface and two #4 Reinf at every 8" increment vertical spacing above the first two #4 Reinf.



CONCRETE BARRIER TYPE 60C

Details similar to Type 60 except as noted.
Use concrete barrier end anchor when necessary.
36" roadbed surfaces offset shown.



CONCRETE BARRIER TYPE 60D

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER TYPE 60

NO SCALE

RSP A76A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN A76A DATED MAY 20, 2011 - PAGE 34 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A76A

2010 REVISED STANDARD PLAN RSP A76A

10-7-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	180	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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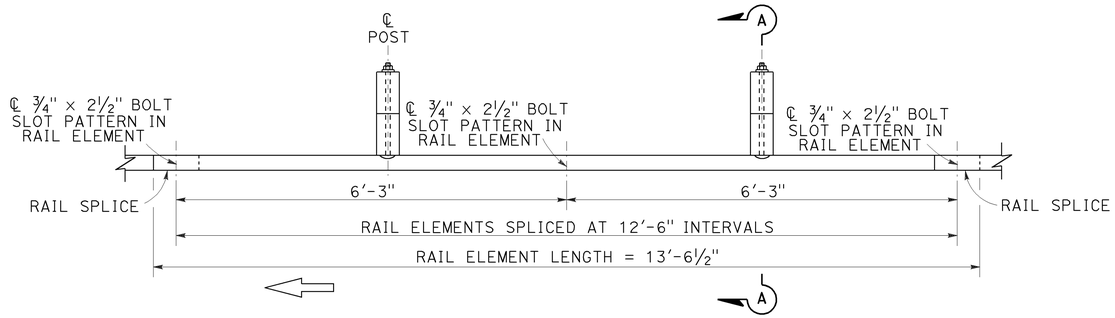
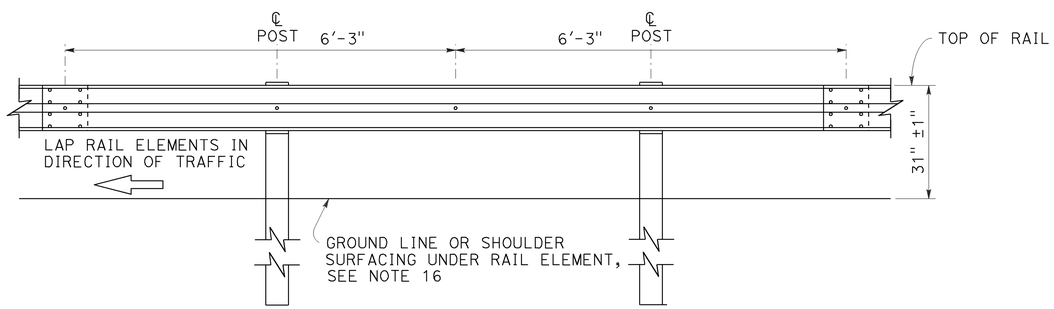
TO ACCOMPANY PLANS DATED 2-1-16

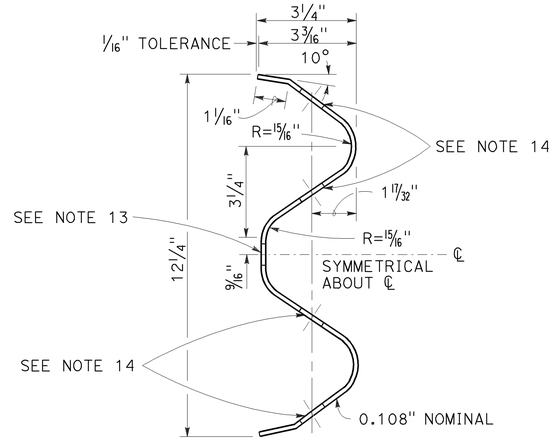


PLAN

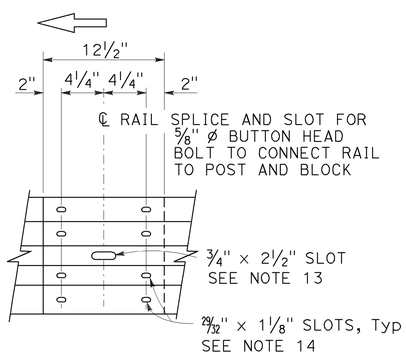


ELEVATION

MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



SECTION THRU RAIL ELEMENT



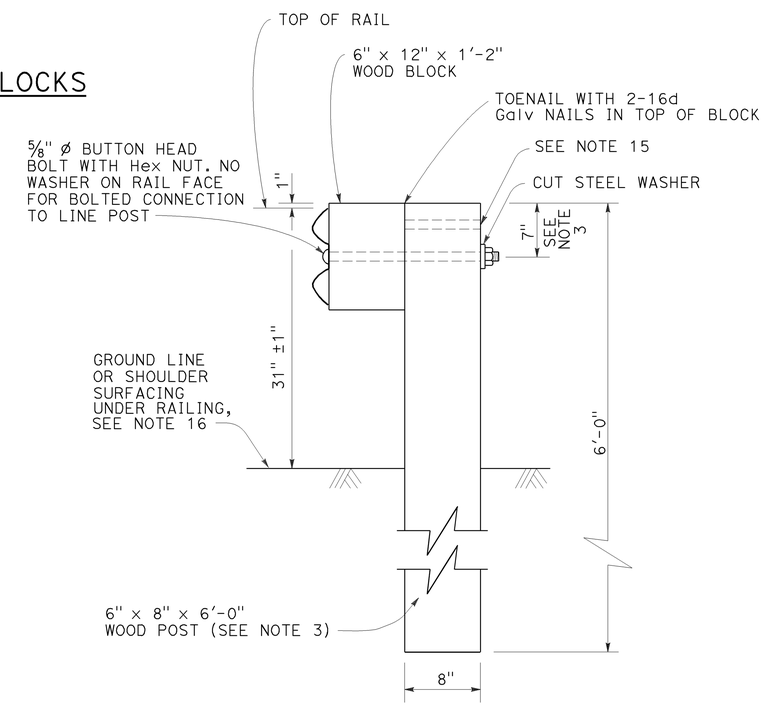
ELEVATION

RAIL ELEMENT SPLICE DETAIL

a) Connect the over lapped end of the rail elements with ⅝" ø × 1⅜" button head oval shoulder splice bolts inserted into the 29⁄32" × 1⅛" slots and bolted together with ⅝" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.

b) The ends of the rail elements are to be overlapped in the direction of traffic (see details).

c) Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



SECTION A-A

TYPICAL WOOD LINE POST INSTALLATION

See Note 4

NOTES:

1. For details of steel post installations, see Revised Standard Plan RSP A77L2.
2. For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
3. For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
4. For additional installation details, see Revised Standard Plan RSP A77N3.
5. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
6. For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
7. If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
8. For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
9. For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
10. For additional details of MSG connection to bridge railing, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
11. For MGS connection details to abutments and walls, see Revised Standard Plan RSP A77U3.
12. For typical MGS delineation and dike positioning details, see Revised Standard Plan RSP A77N4.
13. Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
14. Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
15. Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Revised Standard Plan RSP A77N1.
16. Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (WOOD POST WITH WOOD BLOCK)

NO SCALE

RSP A77L1 DATED JULY 19, 2013 SUPPLEMENTS STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	181	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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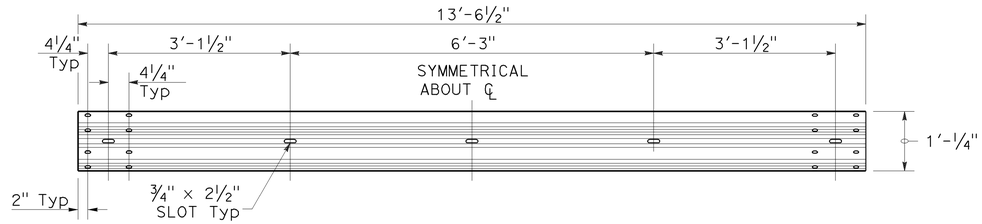
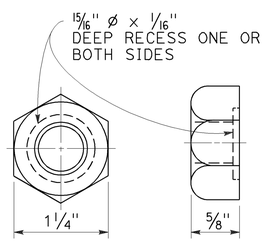
TO ACCOMPANY PLANS DATED 2-1-16



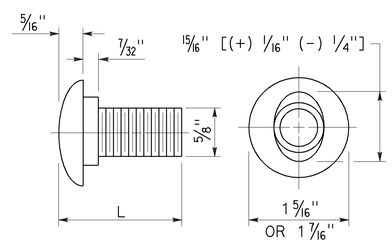
TYPICAL RAIL ELEMENT

NOTE:

1. Slotted holes for splice bolts to overlap ends of rail element.



⅝" ø RECESS NUT

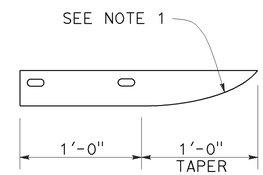


⅝" ø BUTTON HEAD BOLT

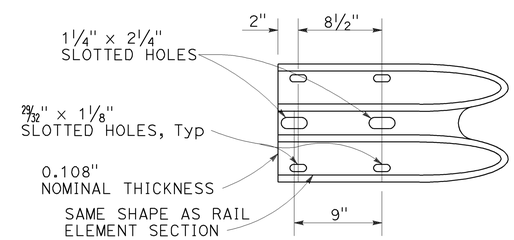
BUTTON HEAD BOLT

L	THREAD LENGTH
1⅜"	FULL THREAD LENGTH
2"	FULL THREAD LENGTH
10"	4" Min THREAD LENGTH
18"	4" Min THREAD LENGTH
20"	4" Min THREAD LENGTH
22"	4" Min THREAD LENGTH
26"	4" Min THREAD LENGTH
36"	4" Min THREAD LENGTH
** 2¾"	2" Min THREAD LENGTH
** 19"	4" Min THREAD LENGTH

** For nested rail applications.



PLAN



ELEVATION

END CAP
(TYPE A)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM STANDARD HARDWARE

NO SCALE

RSP A77M1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77M1

2010 REVISED STANDARD PLAN RSP A77M1

7-3-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	182	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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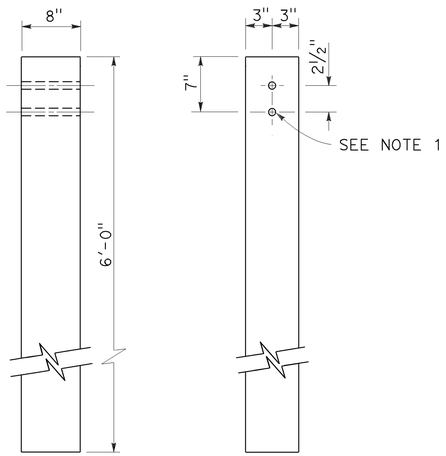
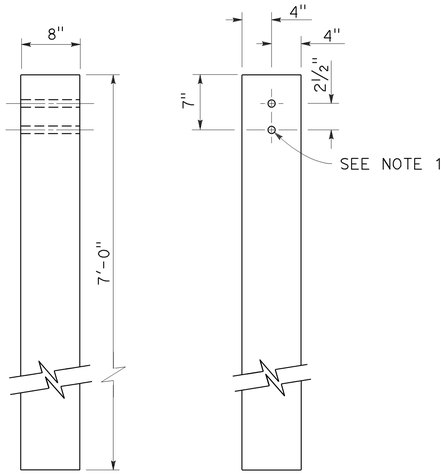
TO ACCOMPANY PLANS DATED 2-1-16



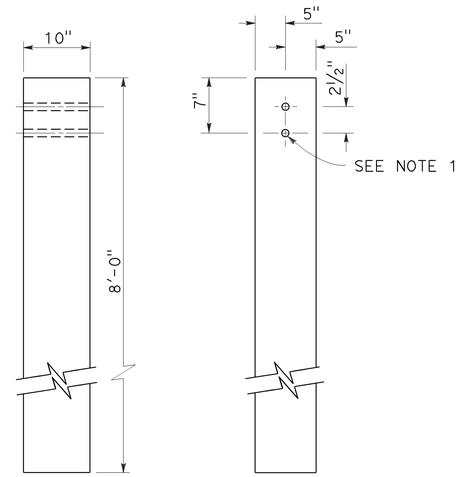
SIDE FRONT

6" x 8" WOOD POST
See Note 3



SIDE FRONT

8" x 8" WOOD POST
See Note 4

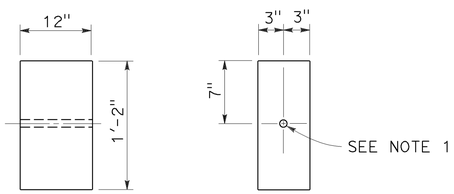


SIDE FRONT

10" x 10" WOOD POST
See Note 5

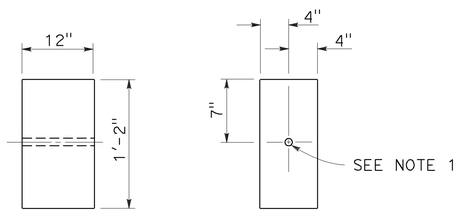
NOTES:

1. All holes in wood posts and blocks shall be ¾" Dia ± 1/16".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post and 8" x 12" block combination is typically used where strengthened line post sections of MGS are warranted to shield fixed objects.
6. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" wood blocks.



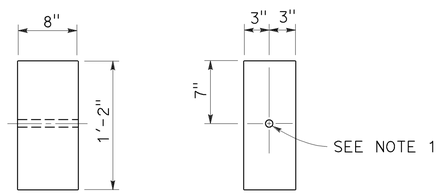
SIDE FRONT

6" x 12" WOOD BLOCK
See Note 3



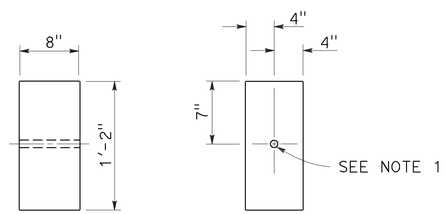
SIDE FRONT

8" x 12" WOOD BLOCK



SIDE FRONT

6" x 8" WOOD BLOCK
Only for use with metal beam guard rail see Note 6



SIDE FRONT

8" x 8" WOOD BLOCK
Only for use with metal beam guard rail see Note 6

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM WOOD POST AND WOOD BLOCK DETAILS

NO SCALE

RSP A77N1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N1

2010 REVISED STANDARD PLAN RSP A77N1

7-3-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	183	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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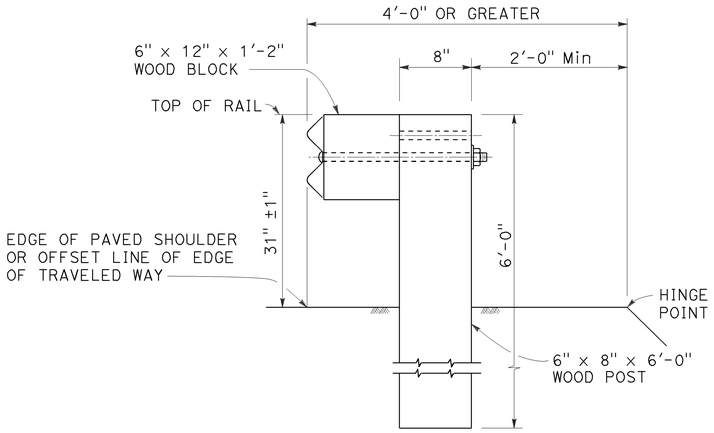
TO ACCOMPANY PLANS DATED 2-1-16

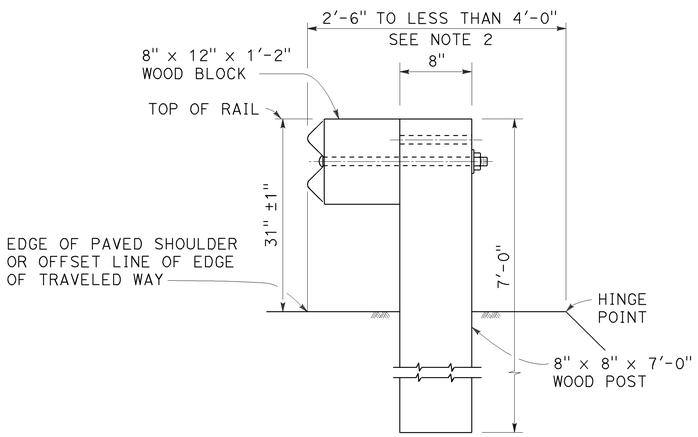
2010 REVISED STANDARD PLAN RSP A77N3



DETAIL A

TYPICAL ROADWAY INSTALLATION

See Note 1

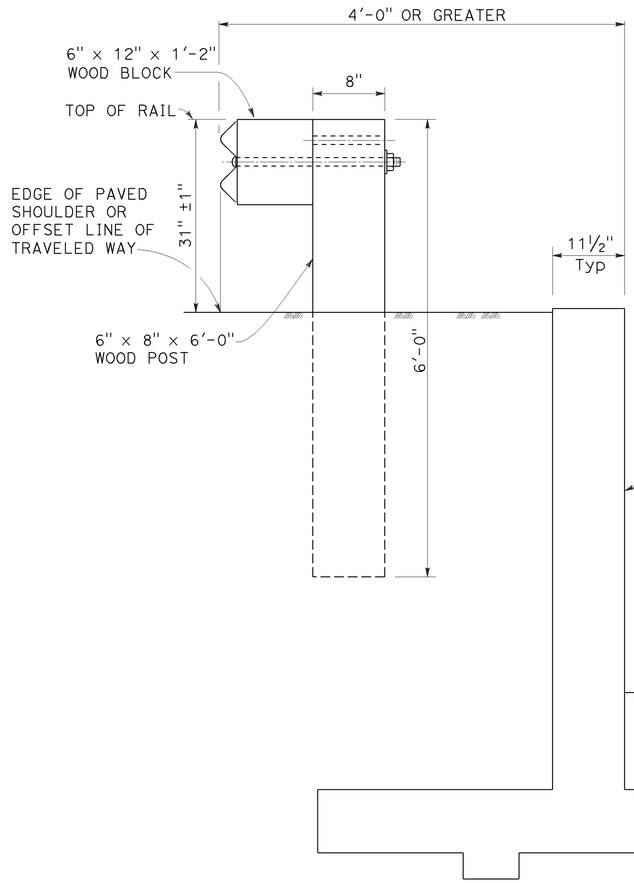


DETAIL B

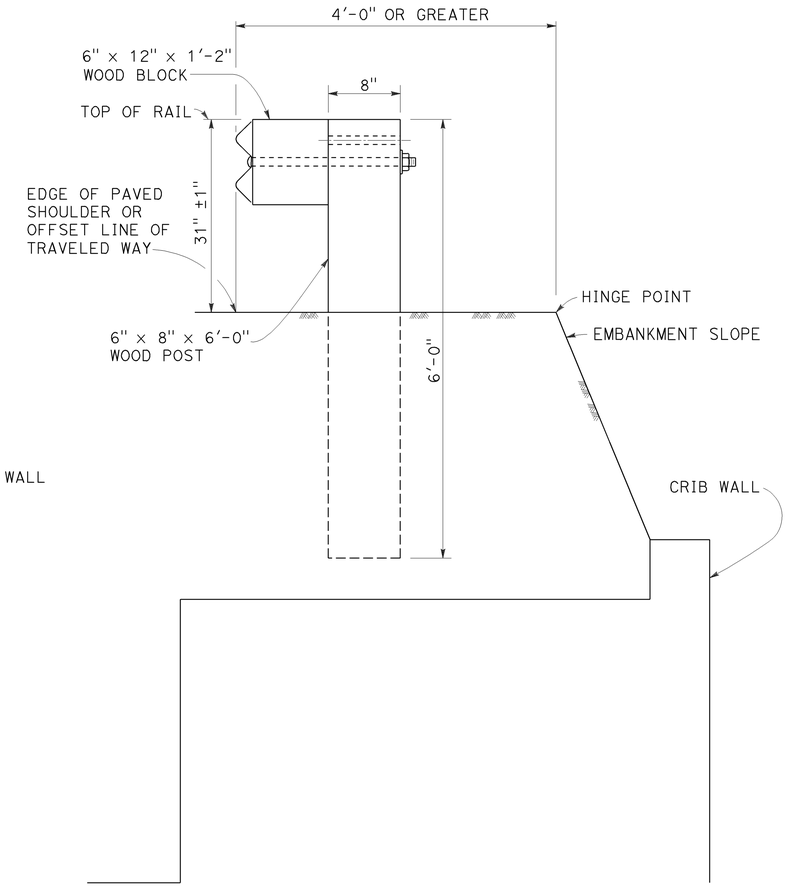
NARROW ROADWAY INSTALLATION

See Note 1

POST EMBEDMENT



DETAIL C



DETAIL D

INSTALLATION AT EARTH RETAINING WALLS

NOTES:

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Revised Standard Plan RSP A77L1 and RSP A77L2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-6", see the Project Plans for special details.
3. For dike positioning with MGS installations, see Revised Standard Plan RSP A77N4.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LINE POST EMBEDMENT AND HINGE POINT OFFSET DETAILS

NO SCALE

RSP A77N3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N3
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	184	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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No. C50200
Exp. 6-30-15
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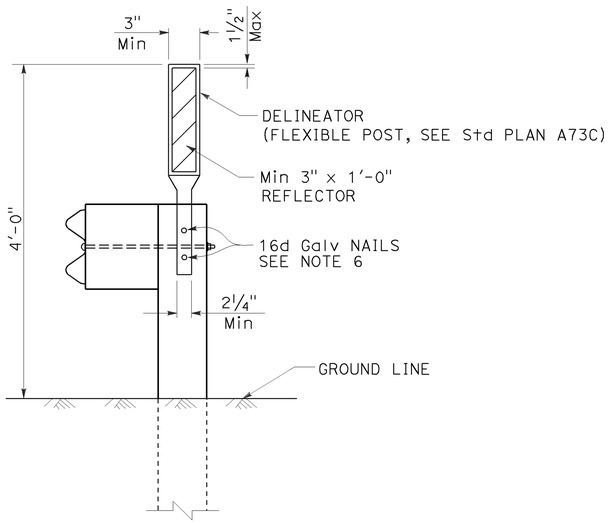
TO ACCOMPANY PLANS DATED 2-1-16

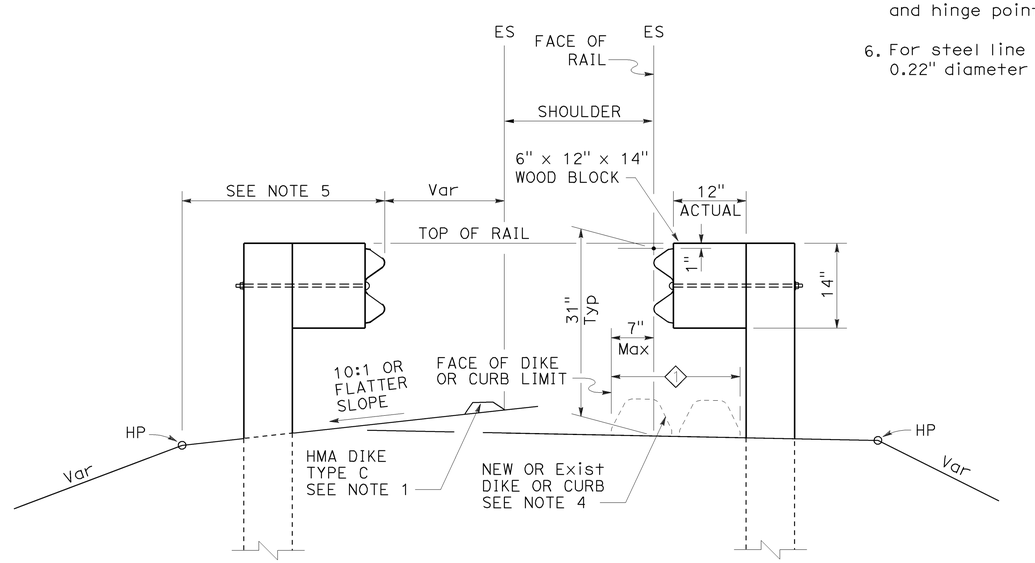
NOTES:

1. When necessary to place dike more than 7" in front of face of MGS, only Type C dike may be used. For dike details, see Revised Standard Plan RSP A87B.
2. For standard railing post embedment, see Revised Standard Plan RSP A77N3.
3. MGS delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under MGS, the maximum height of the dike or curb shall be 6". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and RSP A87B.
5. For details of typical distance between the face of rail and hinge point, see Revised Standard Plan RSP A77N3.
6. For steel line posts, use 1/4 - 20 self-tapping screws in 0.22" diameter holes or 1/4" bolts in 9/32" diameter holes.



MGS DELINEATION

See Note 3



DIKE POSITIONING

See Note 1

1 PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL RAILING DELINEATION AND DIKE POSITIONING DETAILS

NO SCALE

RSP A77N4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N4

2010 REVISED STANDARD PLAN RSP A77N4

7-10-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	185	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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No. C50200
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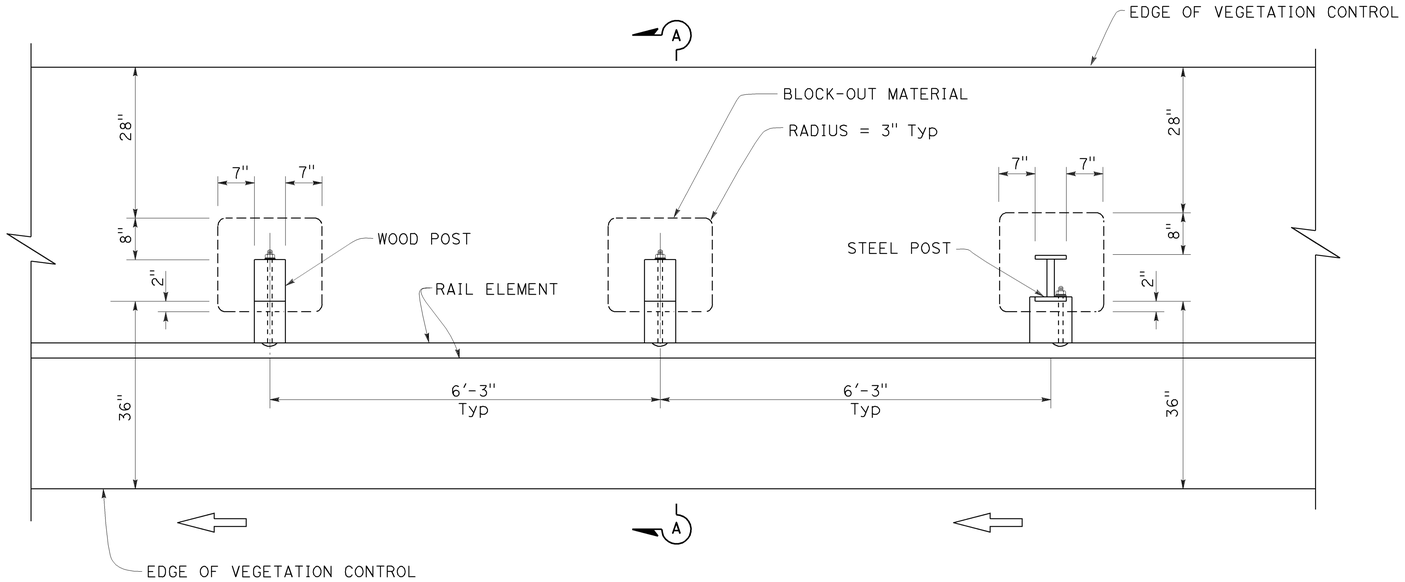
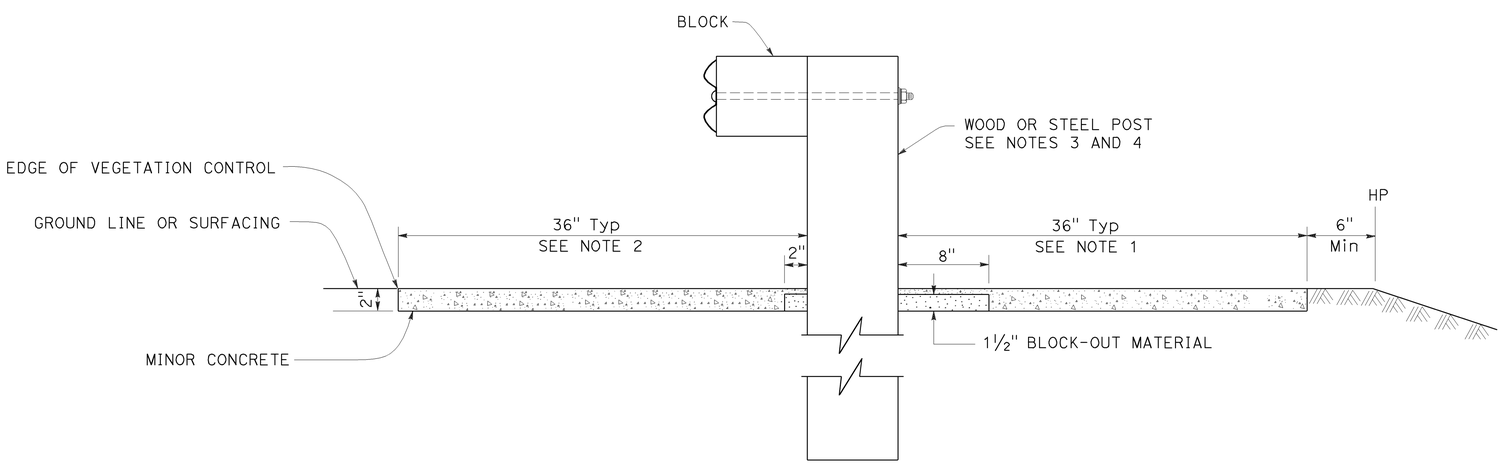
TO ACCOMPANY PLANS DATED 2-1-16



PLAN



SECTION A-A

NOTES:

1. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
3. For wood post sizes, see Revised Standard Plan RSP A77N1.
4. For steel post sizes, see Revised Standard Plan RSP A77N2.
5. For details not shown, see Revised Standard Plans RSP A77L1 and RSP A77L2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL STANDARD RAILING SECTION

NO SCALE

RSP A77N5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N5

2010 REVISED STANDARD PLAN RSP A77N5

7-3-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	186	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
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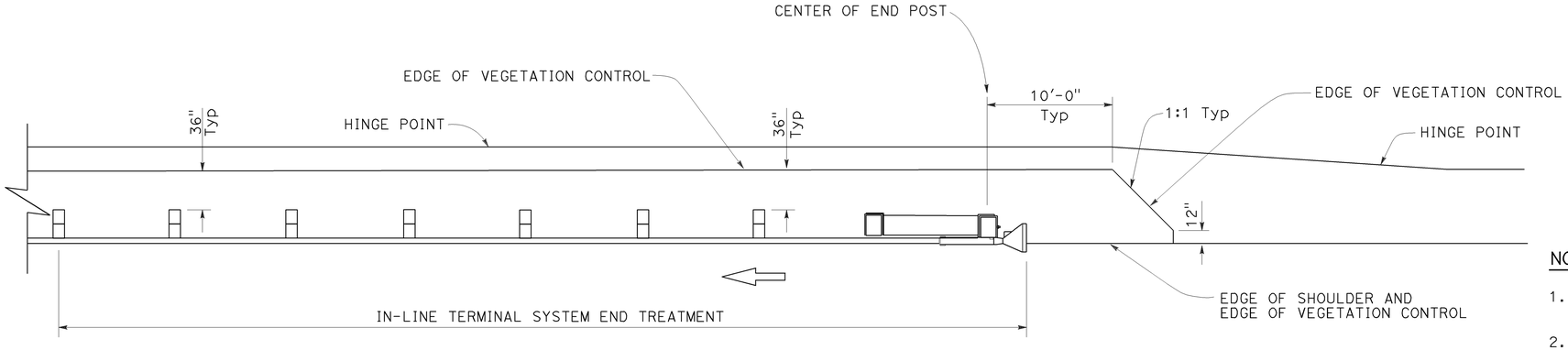
TO ACCOMPANY PLANS DATED 2-1-16



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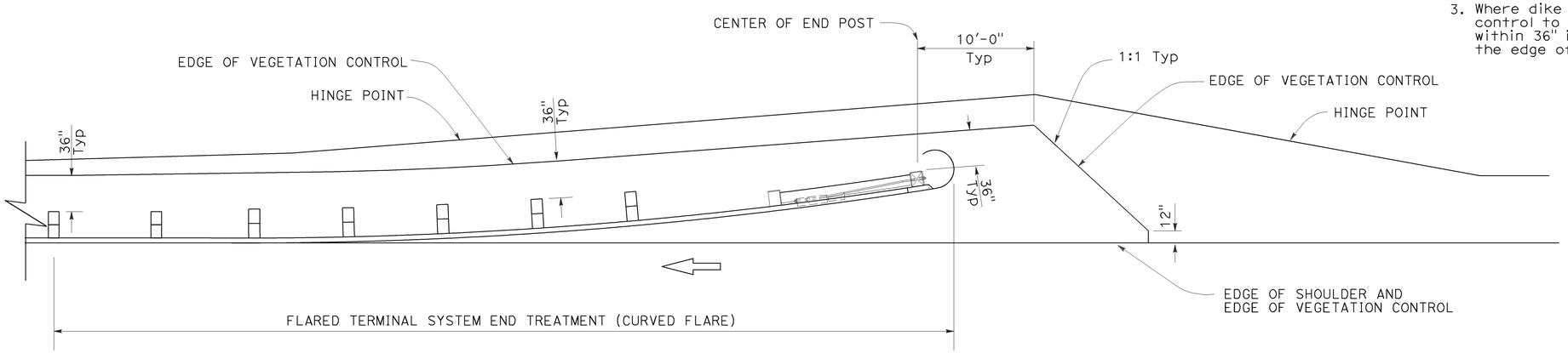

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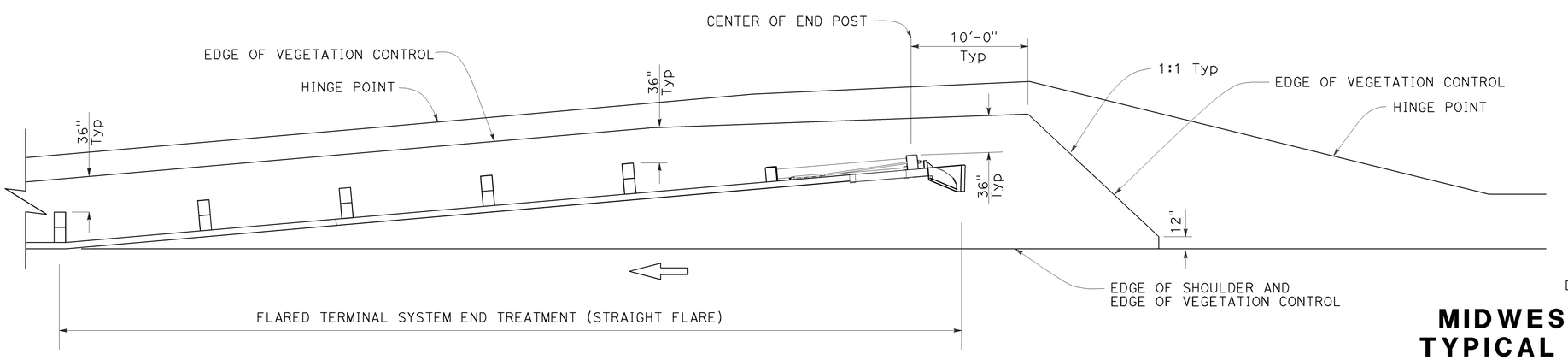

PLAN

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL FOR TERMINAL SYSTEM END TREATMENTS

NO SCALE

RSP A77N6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N6

2010 REVISED STANDARD PLAN RSP A77N6

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	187	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
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No. C50200
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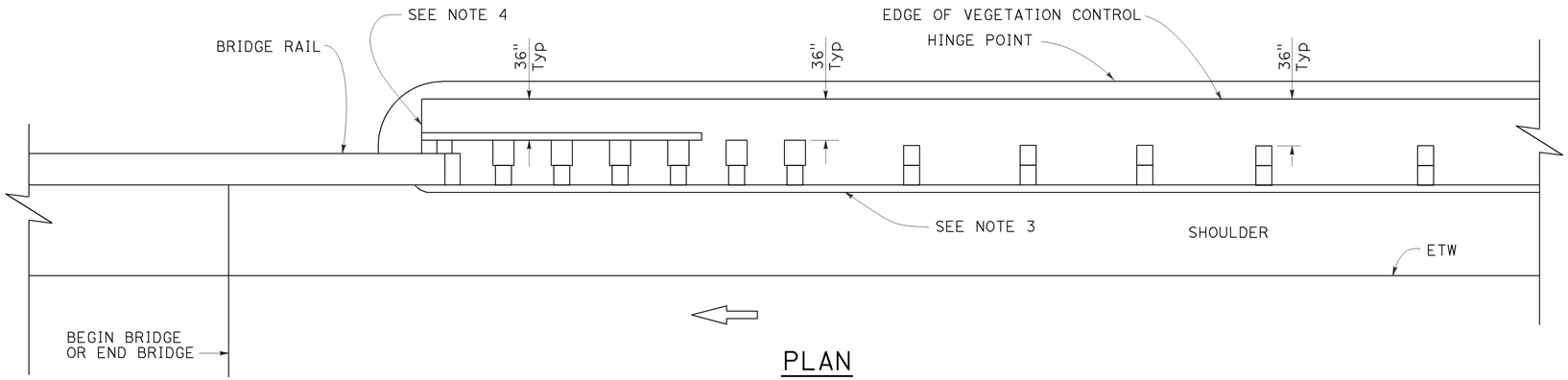
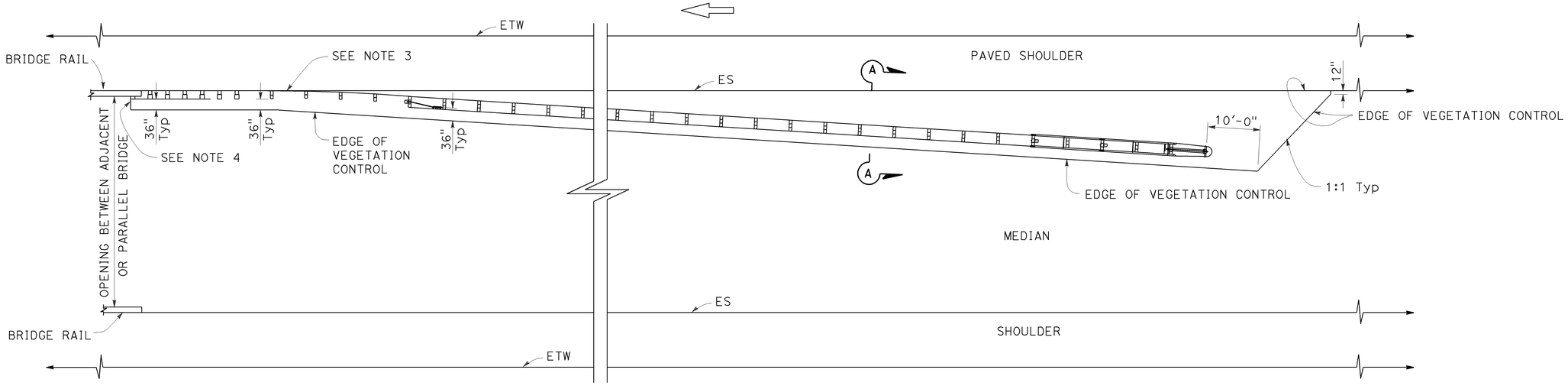
TO ACCOMPANY PLANS DATED 2-1-16



PLAN



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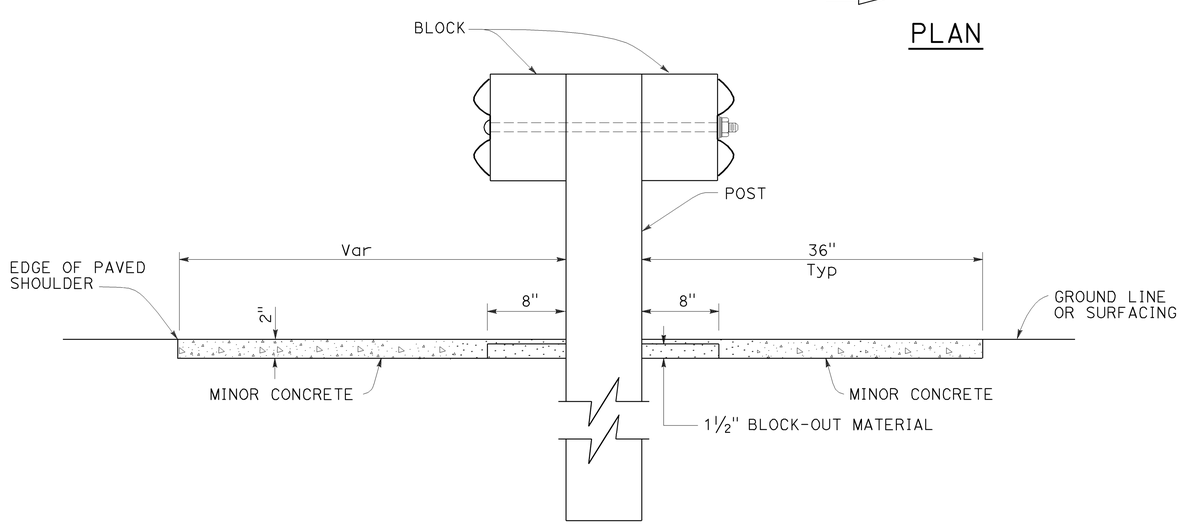

SECTION A-A

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
4. End vegetation control at end of backside rail element.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL AT STRUCTURE APPROACH

NO SCALE

RSP A77N7 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N7

2010 REVISED STANDARD PLAN RSP A77N7

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	188	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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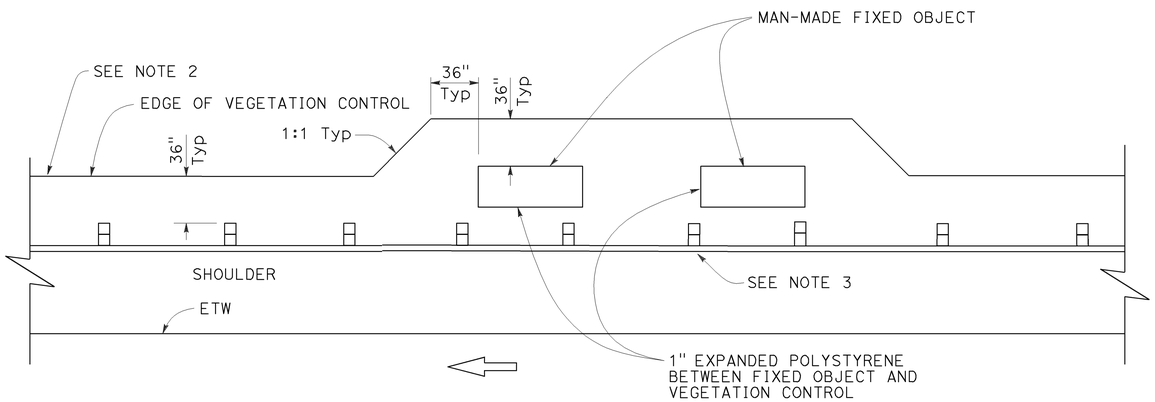
TO ACCOMPANY PLANS DATED 2-1-16

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.



PLAN

Fixed object(s) on shoulder

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL AT FIXED OBJECT

NO SCALE

RSP A77N8 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N8

2010 REVISED STANDARD PLAN RSP A77N8

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	189	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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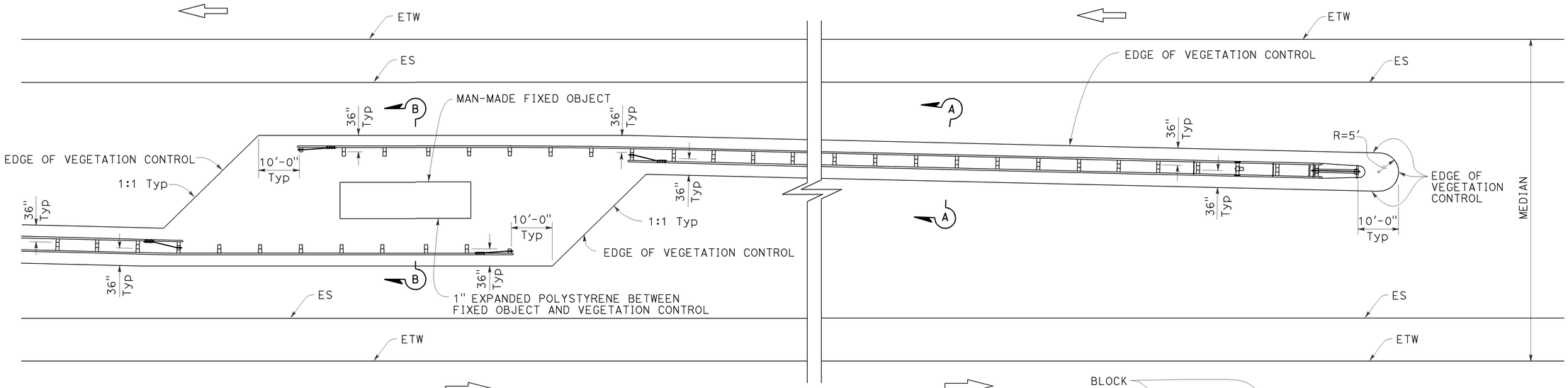
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A77N9

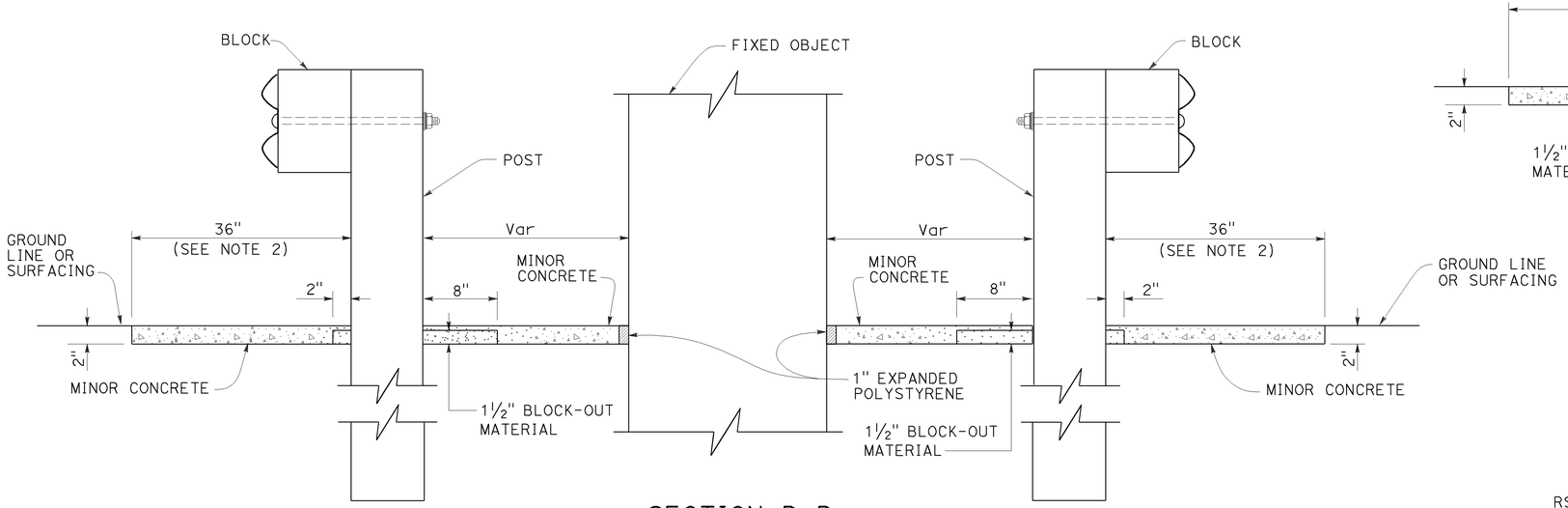
NOTES:

1. See Revised Standard Plan RSP A77N5 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 36" in front of the post, construct vegetation control to the edge of paved shoulder.

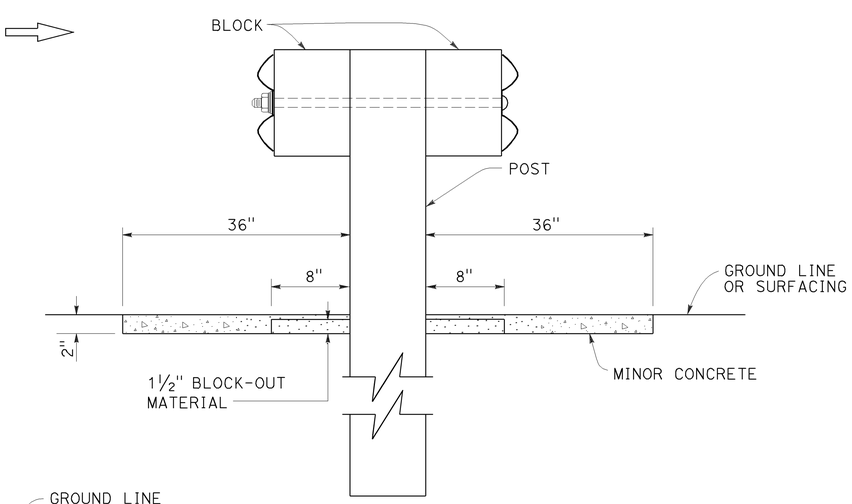


PLAN

Fixed object(s) in median



SECTION B-B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL AT FIXED OBJECT

NO SCALE

RSP A77N9 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N9

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	190	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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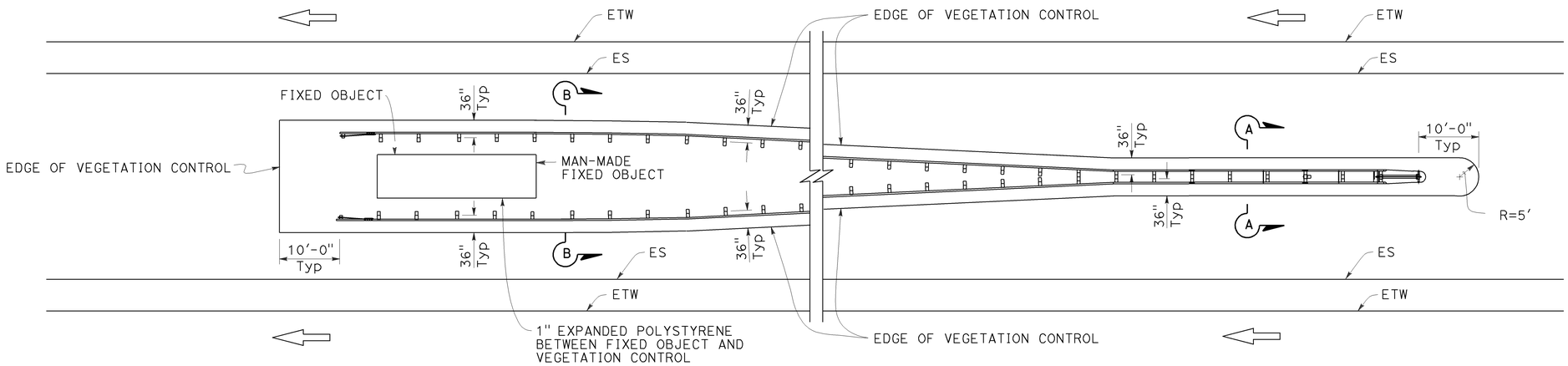
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A77N10

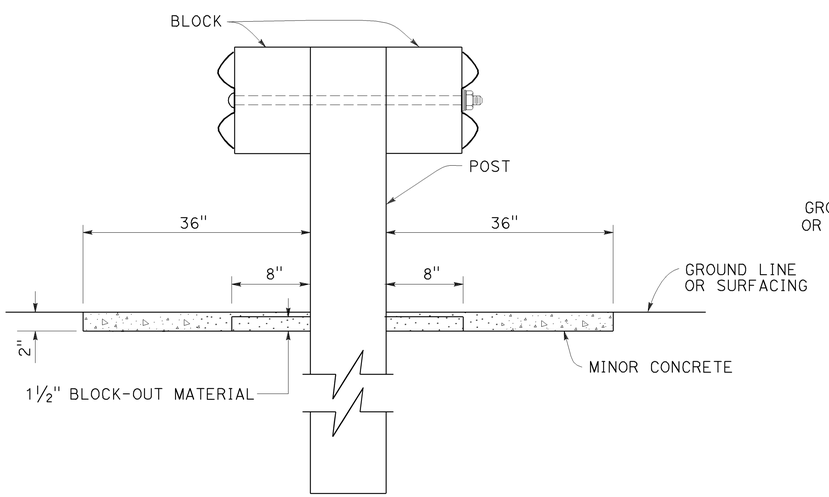
NOTES:

1. See Revised Standard Plan RSP A77N5 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 36" in front of the post, construct vegetation control to the edge of paved shoulder.

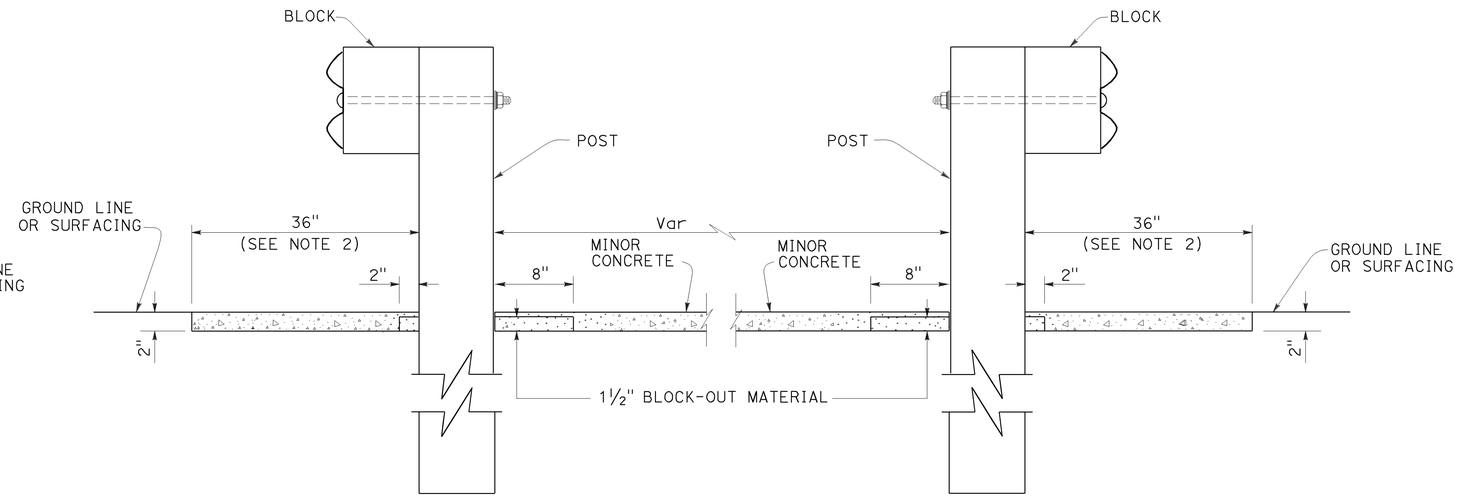


PLAN

Fixed object(s) between separate roadbeds
(One-Way Traffic)



SECTION A-A



SECTION B-B

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL AT FIXED OBJECT

NO SCALE

RSP A77N10 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N10

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	191	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
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STATE OF CALIFORNIA

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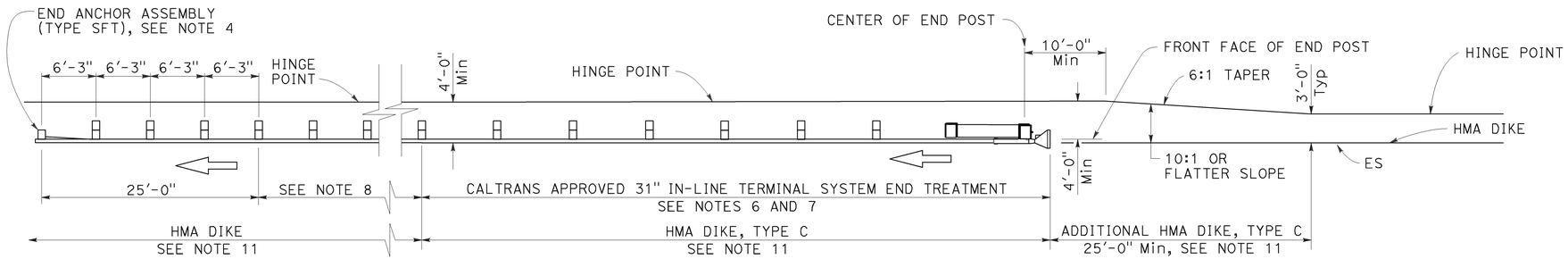
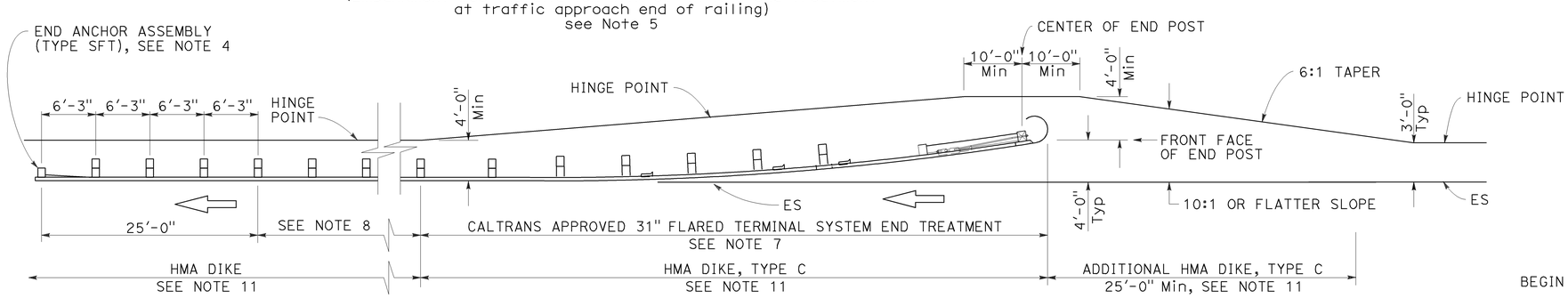
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A77P1



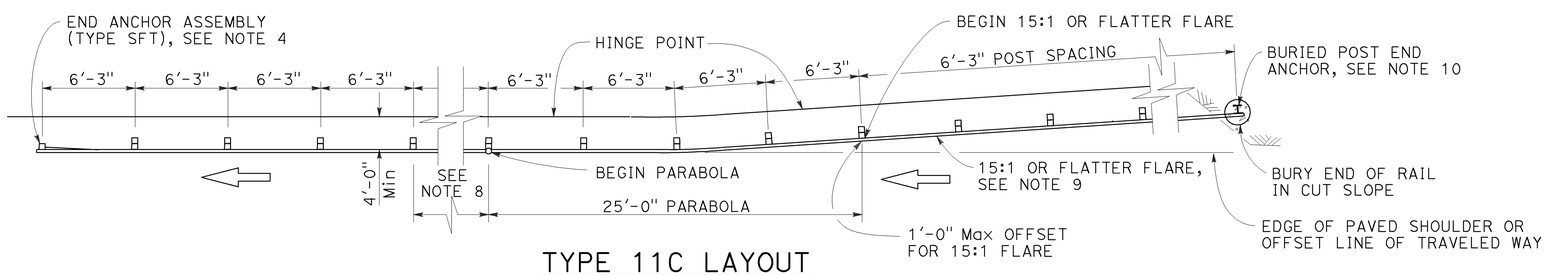
TYPE 11A LAYOUT

(Embankment MGS installation with 31" in-line end treatment at traffic approach end of railing) see Note 5



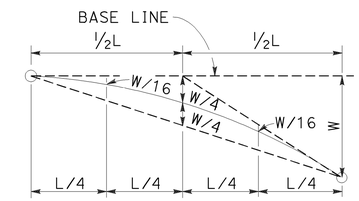
TYPE 11B LAYOUT

(Embankment MGS installation with 31" flared end treatment at traffic approach end of railing) see Note 5

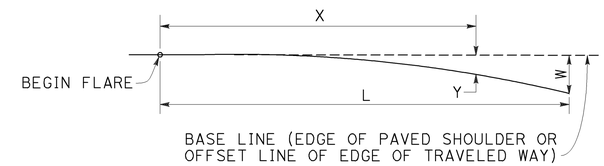


TYPE 11C LAYOUT

(Embankment MGS installation with buried end anchor treatment at traffic approach end of railing) see Notes 5 and 11



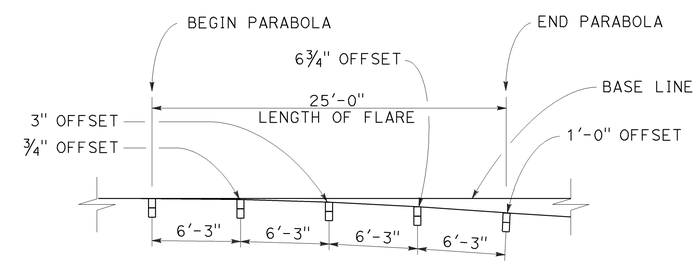
TYPICAL PARABOLIC LAYOUT



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

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT Max END OFFSET

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
5. Layout Types 11A, 11B or 11C are typically used where MGS is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
6. 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
7. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
8. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
9. The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
10. For details of the buried post end anchor used with Type 11C Layout, see Revised Standard Plan RSP A77T2.
11. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77P1 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77P1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P1

10-4-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	192	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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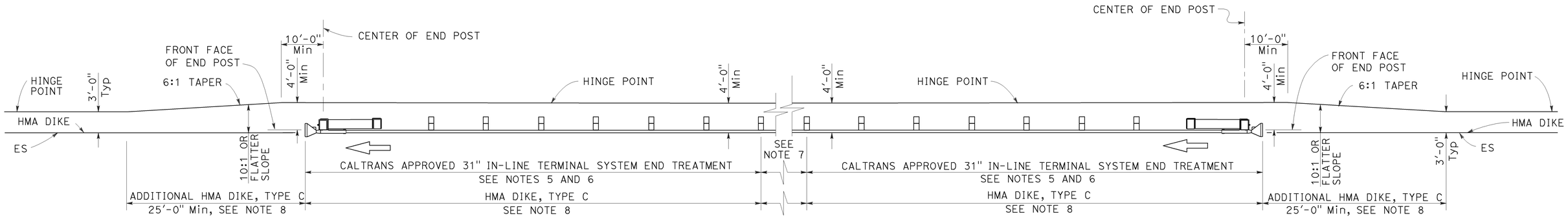
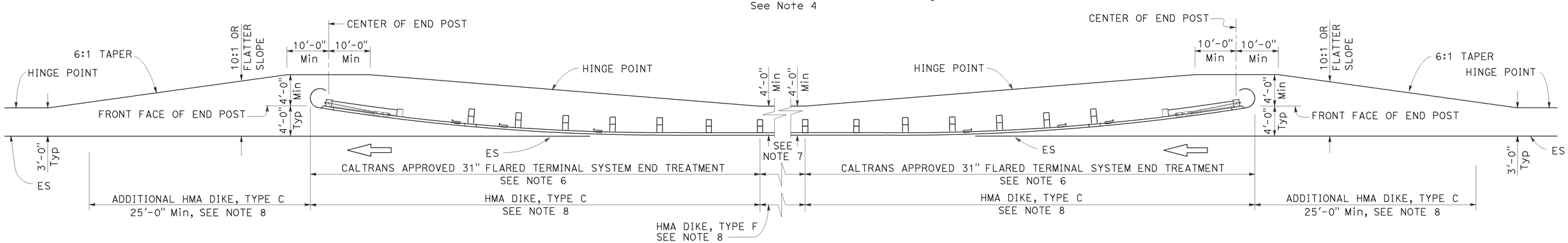
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A77P2



TYPE 11D LAYOUT

(Embankment MGS installation with
31" in-line end treatment at each end of railing)
See Note 4



TYPE 11E LAYOUT

(Embankment MGS installation with
31" flared end treatment at each end of railing)
See Note 4

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77P2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	193	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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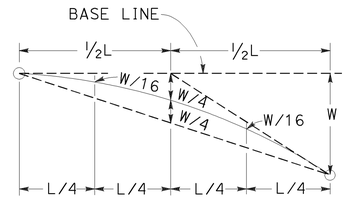
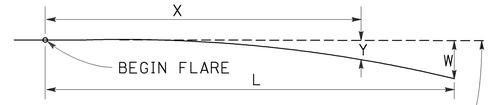
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A77P3



TYPICAL PARABOLIC LAYOUT

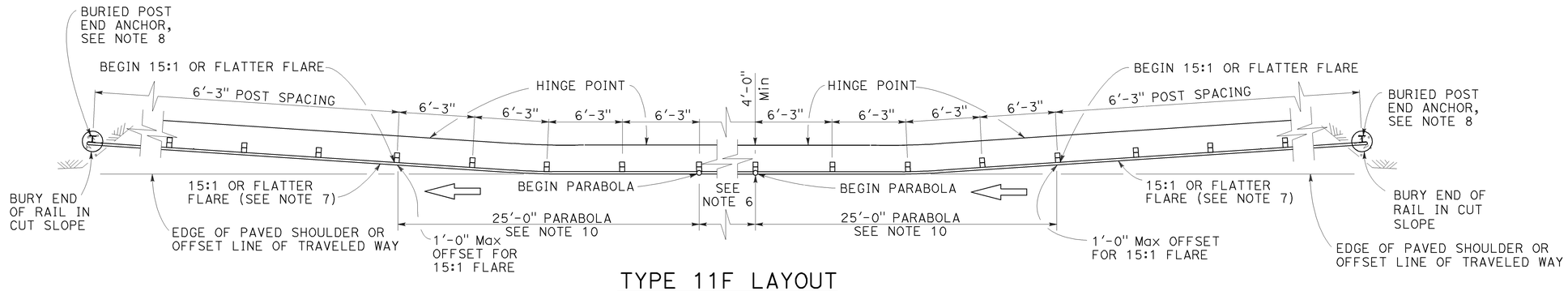


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

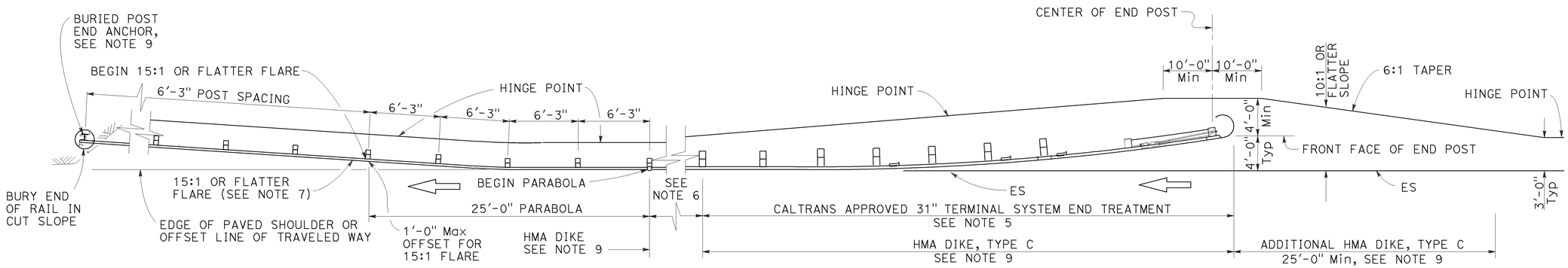
Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPE 11F LAYOUT

(Embankment MGS installation with a buried end anchor treatment at each end of railing)
See Notes 4 and 9



TYPE 11G LAYOUT

(Embankment MGS installation with 31" flared end treatment and a buried end anchor treatment at the ends of railing)
See Notes 4 and 9

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
6. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
7. The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
8. For details of the buried post end anchor used with Type 11F and 11G Layouts, see Revised Standard Plan RSP A77T2.
9. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
10. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77P3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P3

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	194	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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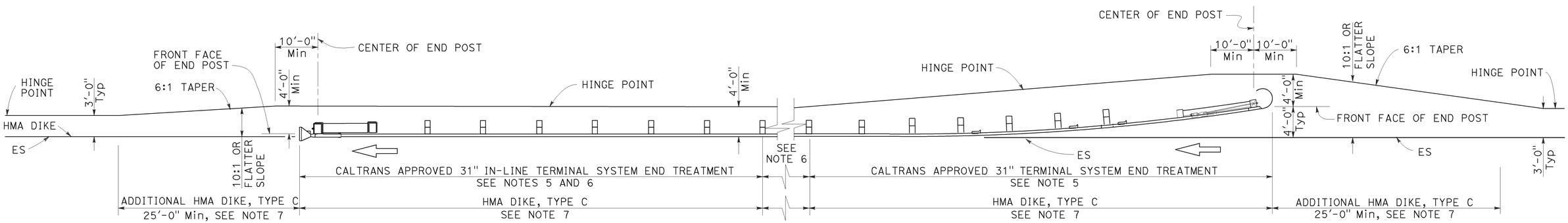
TO ACCOMPANY PLANS DATED 2-1-16



TYPE 11H LAYOUT

(Embankment MGS installation with 31" flared end treatment
and 31" in-line treatment at the ends of railing)
See Notes 4 and 7

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
6. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
7. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77P4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P4

2010 REVISED STANDARD PLAN RSP A77P4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	195	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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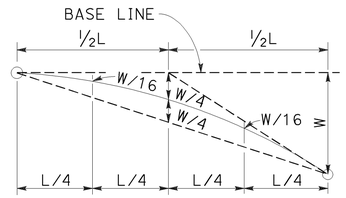
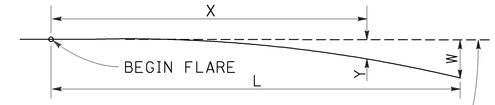
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A77P5



TYPICAL PARABOLIC LAYOUT

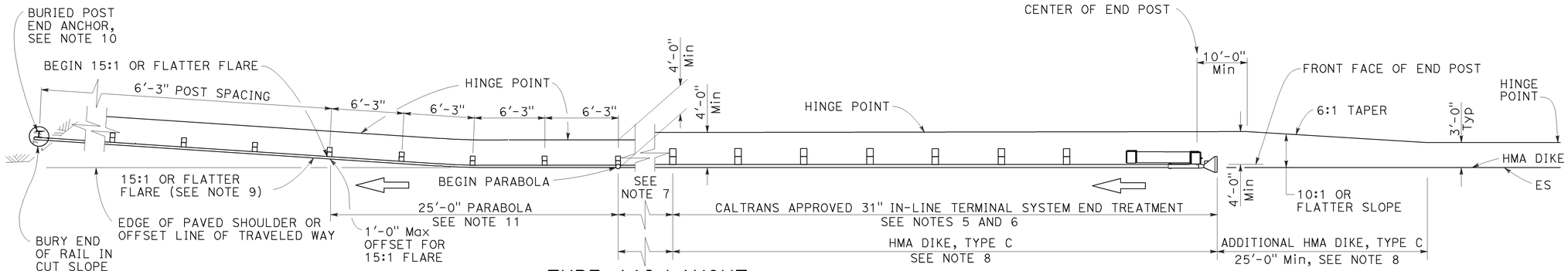


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

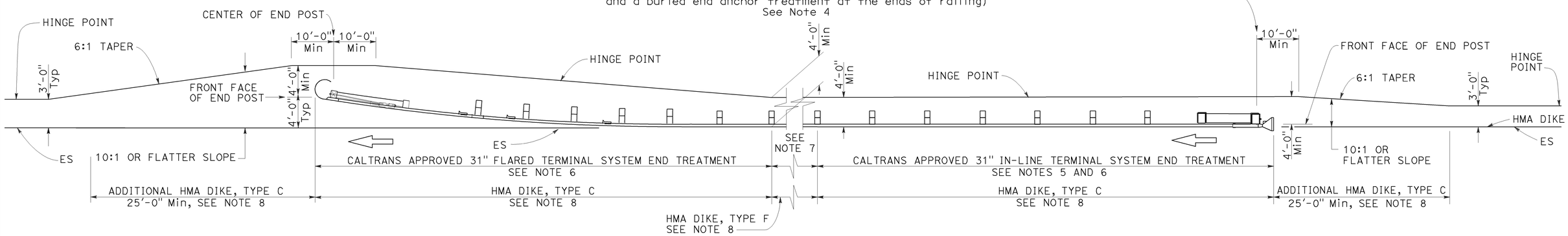
Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPE 11I LAYOUT

(Embankment MGS installation with 31" in-line end treatment and a buried end anchor treatment at the ends of railing)
See Note 4



TYPE 11J LAYOUT

(Embankment MGS installation with 31" in-line end treatment and 31" flared end treatment at the ends of railing)
See Note 4

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embamkment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
9. The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
10. For details of the buried post end anchor used with Type 11I Layout, see Revised Standard Plan RSP A77T2.
11. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77P5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P5

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	196	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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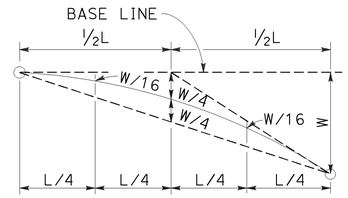
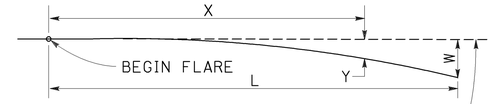
TO ACCOMPANY PLANS DATED 2-1-16



TYPICAL PARABOLIC LAYOUT

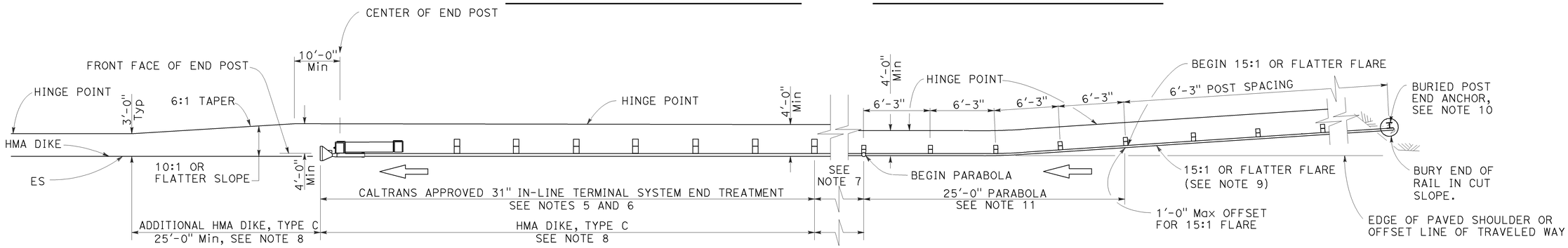


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

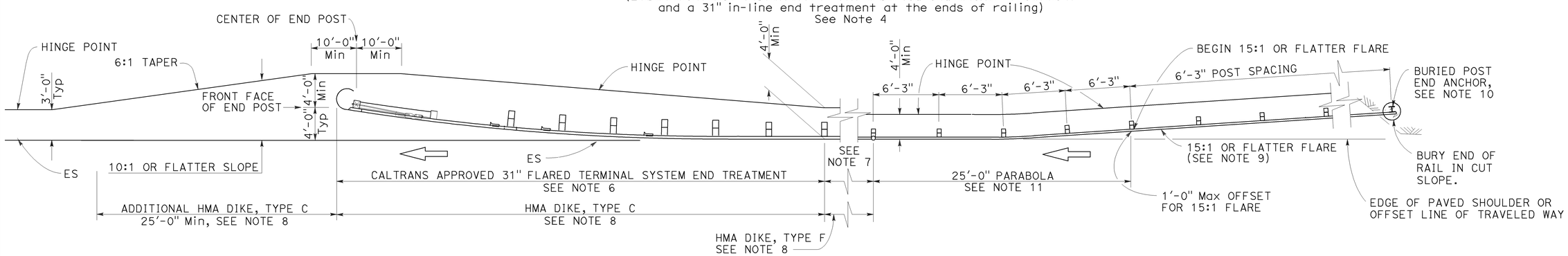
Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPE 11K LAYOUT

(Embankment MGS installation with a buried end anchor treatment and a 31" in-line end treatment at the ends of railing)
See Note 4



TYPE 11L LAYOUT

(Embankment MGS installation with a buried end anchor treatment and a 31" flared end treatment at the ends of railing)
See Note 4

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embamkment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
9. The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
10. For details of the buried post end anchor used with Type 11K and 11L Layouts, see Revised Standard Plan RSP A77T2.
11. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77P6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P6

2010 REVISED STANDARD PLAN RSP A77P6

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	197	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

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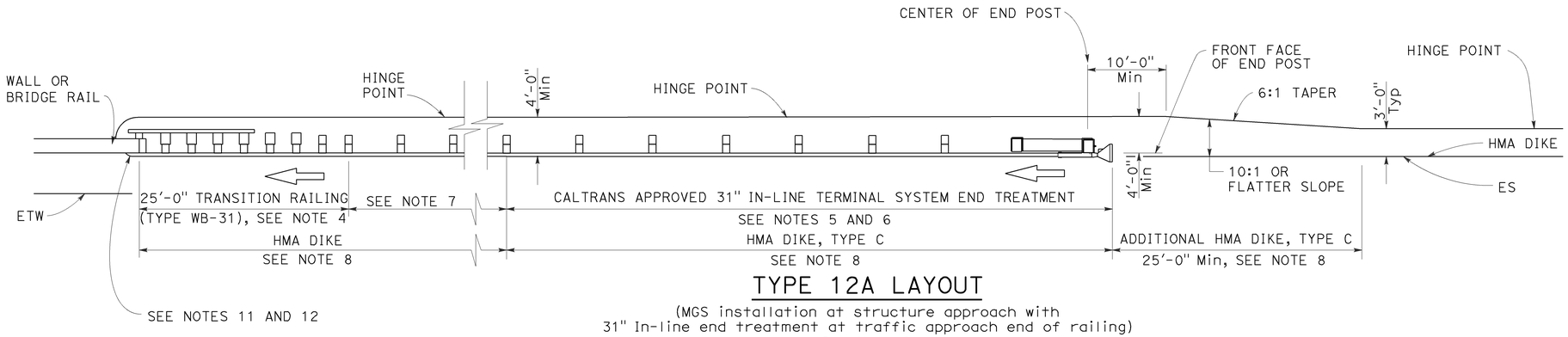
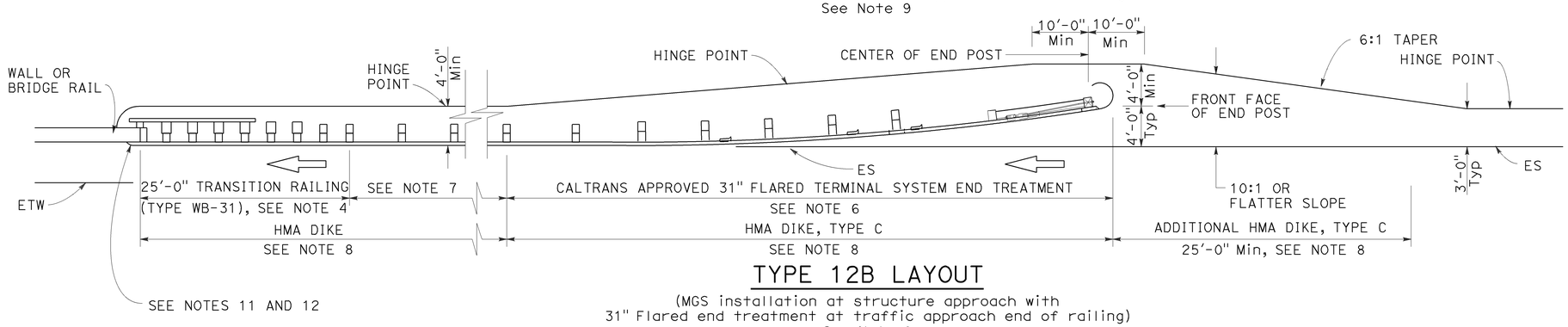
TO ACCOMPANY PLANS DATED 2-1-16



TYPE 12A LAYOUT

(MGS installation at structure approach with
31" In-line end treatment at traffic approach end of railing)
See Note 9



TYPE 12B LAYOUT

(MGS installation at structure approach with
31" Flared end treatment at traffic approach end of railing)
See Note 9

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. For Transition Railing (Type WB-31) details for Types 12A and 12B Layouts, see Revised Standard Plan RSP A77U4.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment. A 12.5 degree angle of departure can be drawn on the Project Plans from the edge of traveled way through the outer most point of the fixed object to determine the additional length of railing needed.
8. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
9. Type 12A or Type 12B Layouts are typically used:
   a. To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
   b. To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
   c. To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
   d. To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
10. See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
11. For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
12. For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR STRUCTURE APPROACH

NO SCALE

RSP A77Q1 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q1

2010 REVISED STANDARD PLAN RSP A77Q1

8-12-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	198	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

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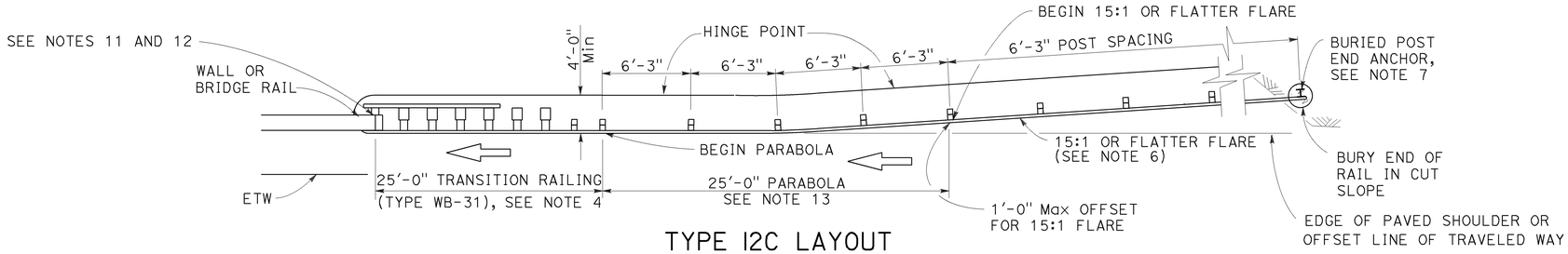
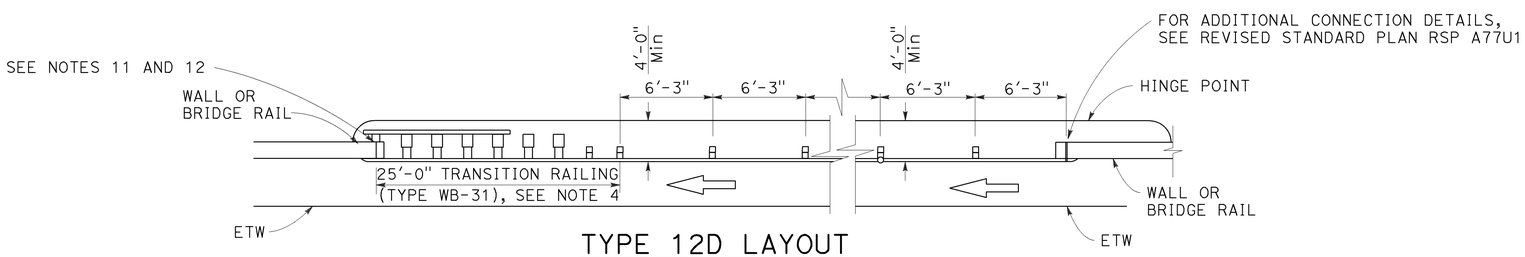
TO ACCOMPANY PLANS DATED 2-1-16



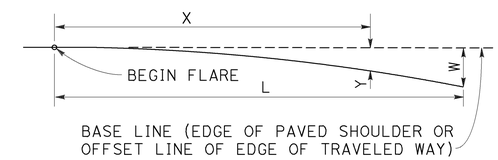
TYPE 12C LAYOUT

(MGS installation at structure approach with a
Buried end anchor treatment at traffic approach end of railing)
See Notes 8 and 9



TYPE 12D LAYOUT

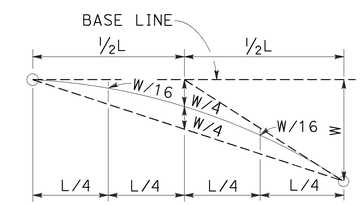
(Continuous MGS installation between structures)
See Notes 5 and 9



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

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" m wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. For Transition Railing (Type WB-31) details for Types 12C and 12D Layouts, see Revised Standard Plan RSP A77U4.
5. Type 12D layout is typically used where continous MGS is recommended between structures.
6. The 15:1 or flatter flare for Type 12C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS with the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
7. For details of the buried post end anchor used with Type 12C Layout, see Revised Standard Plan RSP A77T2.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
9. Type 12C Layout is typically used:
   a. To the right of approaching traffic, at the end of the structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
   b. To the left of approaching traffic, at each of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
   c. To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
   d. To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
10. See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
11. For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
12. For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.
13. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR STRUCTURE APPROACH AND BETWEEN STRUCTURES

NO SCALE

RSP A77Q2 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q2 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q2

2010 REVISED STANDARD PLAN RSP A77Q2

8-12-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	199	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

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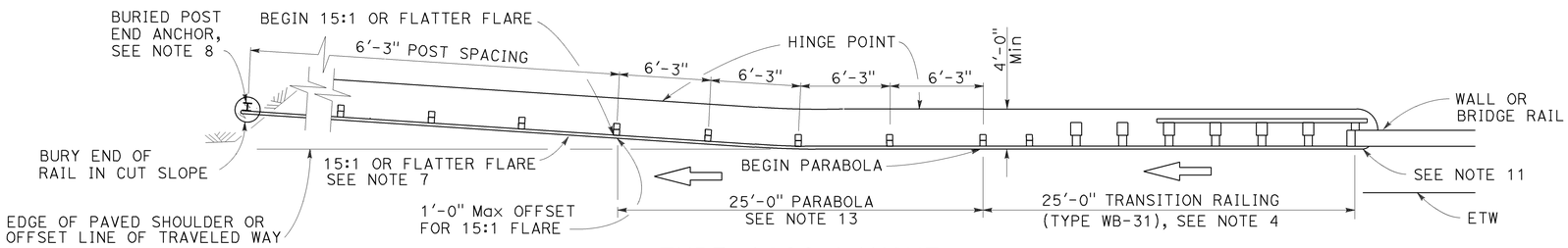
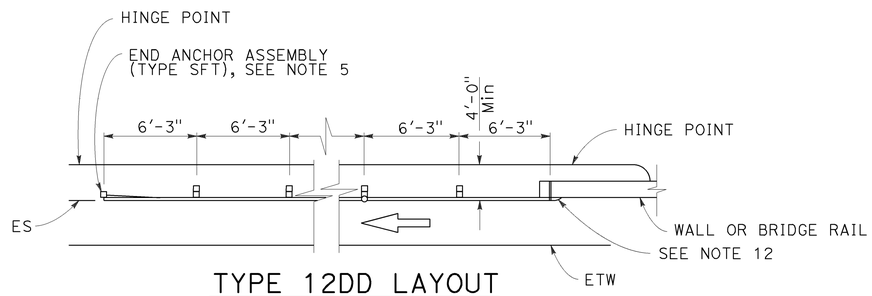
TO ACCOMPANY PLANS DATED 2-1-16



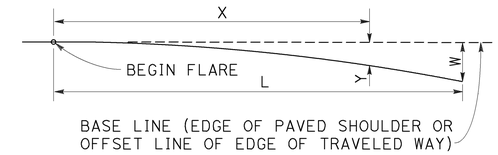
TYPE 12CC LAYOUT

(MGS installation at structure departure with a Buried end anchor treatment at trailing end of railing)
See Notes 9 and 10



TYPE 12DD LAYOUT

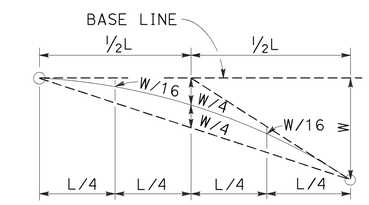
(MGS installation at structure departure With end anchor assembly at trailing end of railing)
See Notes 6 and 9



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

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MSG post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" 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 12" x 1'-2" wood blocks where applicable and when specified.
4. For Transition Railing (Type WB-31) details for Type 12CC Layout, see Revised Standard Plan RSP A77U4.
5. For details of End Anchor Assembly (Type SFT) used with Type 12DD Layout, see Revised Standard Plan RSP A77S1.
6. Type 12DD layout is typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is equal to or greater than 40 feet and MGS is recommended (embankment height, side slopes, other fixed objects). Length of railing to be equal to multiples of 12'-6". For MGS connection details to bridge rail, see Revised Standard Plans RSP A77U1 and RSP A77V1. For MGS connection details to wall, see Revised Standard Plan RSP A77U3.
7. The 15:1 or flatter flare for Type 12CC Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
8. For details of the buried post end anchor used with Type 12CC Layout, see Revised Standard Plan RSP A77T2.
9. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
10. Type 12CC Layout is typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
11. For additional details of a typical connection to bridge rail for Layout Type 12CC, see Connection Detail CC on Revised Standard Plan RSP A77U2 and Connection Detail HH on Revised Standard Plan RSP A77V2.
12. For additional details of a typical connection to bridge rail for Layout Type 12DD, see Connection Detail BB on Revised Standard Plan RSP A77U1 and Connection Detail GG on Revised Standard Plan RSP A77V1.
13. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR STRUCTURE DEPARTURE

NO SCALE

RSP A77Q5 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q5 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q5

2010 REVISED STANDARD PLAN RSP A77Q5

8-13-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	13.8/19.2	200	262

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Randell D. Hiatt No. C50200 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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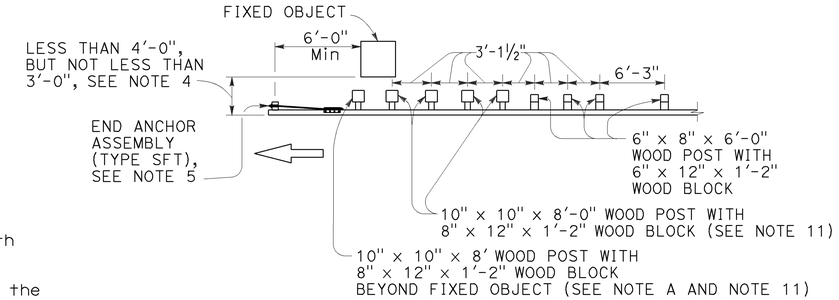
TO ACCOMPANY PLANS DATED 2-1-16

2010 REVISED STANDARD PLAN RSP A77R1

NOTES:

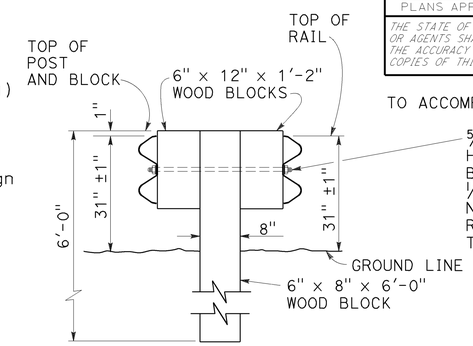
1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1, and RSP A77N2.
2. MGS post spacing to be 6′-3″ center to center, except as otherwise noted.
3. Except as noted, line posts are 6″ x 8″ x 6′-0″ wood with 6″ x 12″ x 1′-2″ wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6′-0″ in length, with 6″ x 12″ 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 12″ x 1′-2″ wood blocks where applicable and when specified.
4. A 4′-0″ minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS sections with post spacing of 6′-3″. Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object" 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 3′-0″. Where the clearance is less than 3′-0″, a concrete wall or barrier should be constructed to shield the fixed object(s).
5. For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
6. For details of Rail Tensioning Assembly, see Revised Standard Plan RSP A77S2.
7. The type of crash cushion to be used will be shown on the Project Plans.
8. Type 14A layout is typically used on multilane freeways or expressways to shield fixed objects where a median type barrier is not constructed between the separated roadbeds.
9. For typical flare offsets for 25′-0″ length parabola with maximum offset of 1′-0″, see Revised Standard Plan RSP A77P1.
10. The 15:1 or flatter flare is measured off of the edge of traveled way.
11. W6 x 15 steel post, 8′-0″ in length, with 8″ x 12″ x 1′-2″ notched wood block or notched recycled plastic block may be used in place of the 10″ x 10″ x 8′-0″ wood post with 8″ x 12″ x 1′-2″ wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".



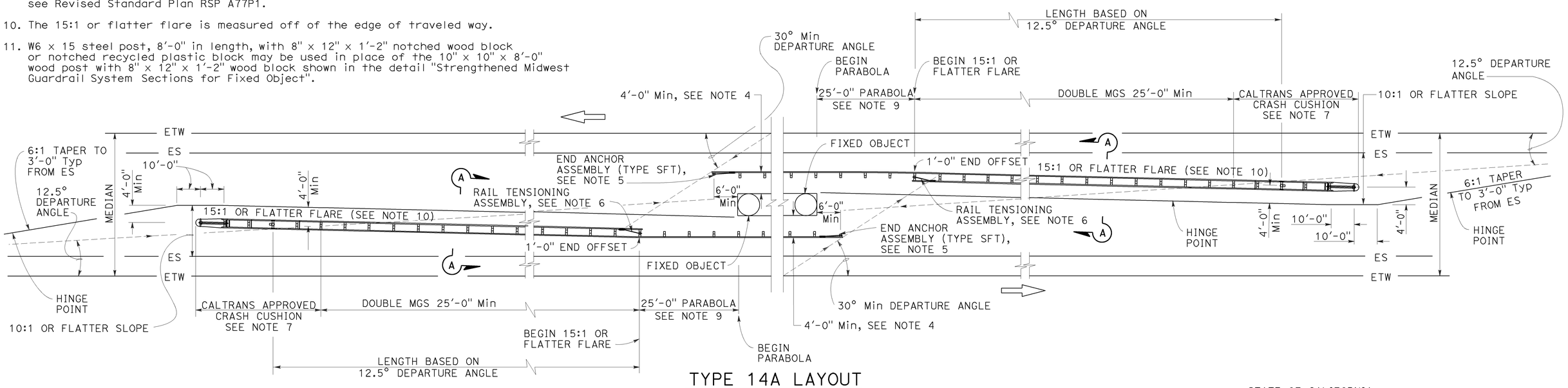
NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10″ x 10″ x 8′-0″ wood post with 8″ x 12″ x 1′-2″ wood blocks at 3′-1½″ center to center spacing are to be used between fixed objects.

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

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

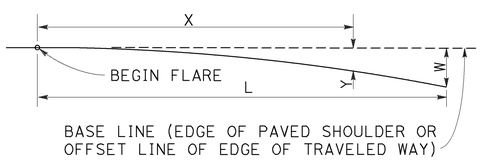


SECTION A-A
TYPICAL DOUBLE MIDWEST GUARDRAIL SYSTEM



TYPE 14A LAYOUT

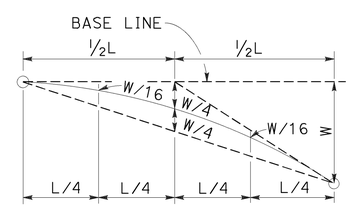
See Note 8



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

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR FIXED OBJECTS BETWEEN SEPARATE ROADBEDS (TWO-WAY TRAFFIC)

NO SCALE

RSP A77R1 DATED AUGUST 14, 2015 SUPERSEDES RSP A77R1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R1

7-8-15