ACNHP-Q101(262)E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	1	130

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN SANTA BARBARA COUNTY
IN AND NEAR GOLETA
FROM MARIA YGNACIO CREEK BRIDGE
TO 0.2 MILE NORTH OF CATHEDRAL OAKS OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
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26-29	UTILITY PLANS
30	CONSTRUCTION AREA SIGNS
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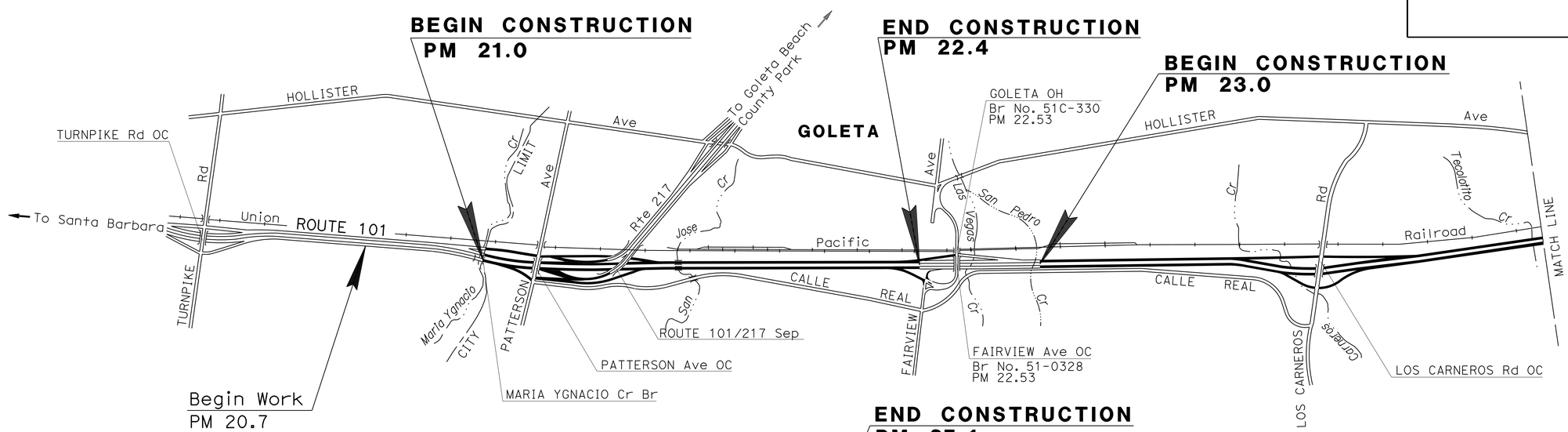
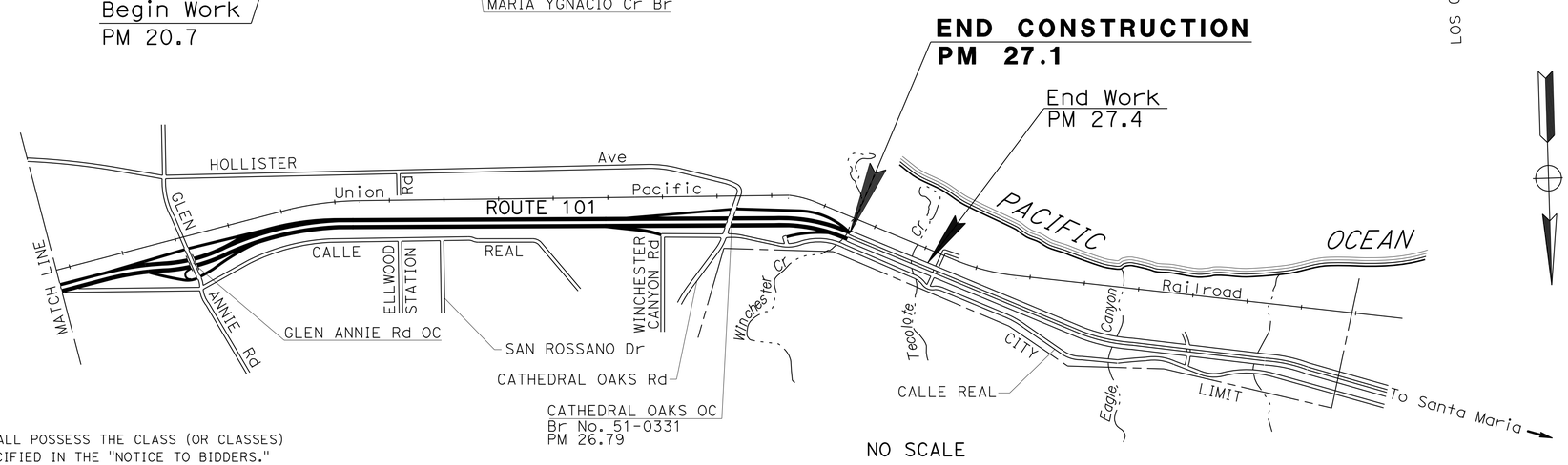
34-36	PAVEMENT DELINEATION QUANTITIES
37-48	SUMMARY OF QUANTITIES
49-67	ELECTRICAL PLANS
68-118	REVISED STANDARD PLANS

STRUCTURE PLANS

119	GENERAL PLAN
120-122	FAIRVIEW Ave OC, Br No. 51-328
123-126	GOLETA OH, Br No. 51C-330
127-130	CATHEDRAL OAKS Rd OC, Br No. 51-0331

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





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

NO SCALE

Mark S. Leichtfuss 11-24-14
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

November 24, 2014
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.

CONTRACT No.	05-1A7204
PROJECT ID	0512000012

PROJECT MANAGER: STEVE DiGRAZIA
DESIGN ENGINEER: RON KRAEMER

LAST REVISION 11-24-14 DATE PLOTTED => 30-DEC-2014 TIME PLOTTED => 10:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	2	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATIONS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. COLD PLANE Exist 0.06' OPEN GRADE SB FROM PM 22.98 TO 25.15 AND NB FROM PM 22.98 TO 25.05 OR AS DIRECTED BY THE ENGINEER.
4. SEE SUMMARY OF QUANTITIES SHEETS FOR EXACT LOCATION AND TYPES OF HMA DIKE.

PAVEMENT CLIMATE REGION

CENTRAL COAST

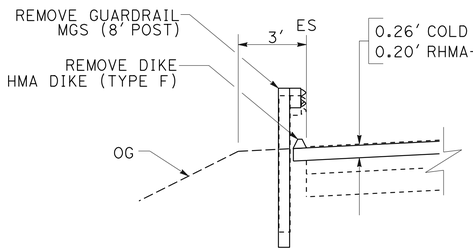
Exist STRUCTURAL SECTION

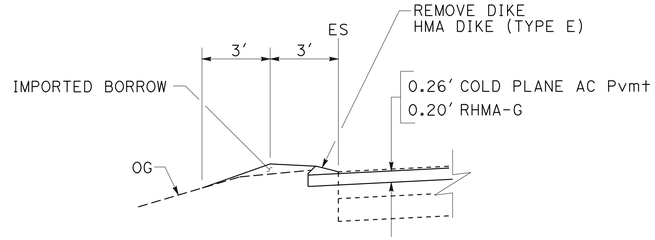
1
- 0.06' OPEN GRADE AC
- 0.20' AC
- 0.50' AC
- 1.50' Cl 2 AB

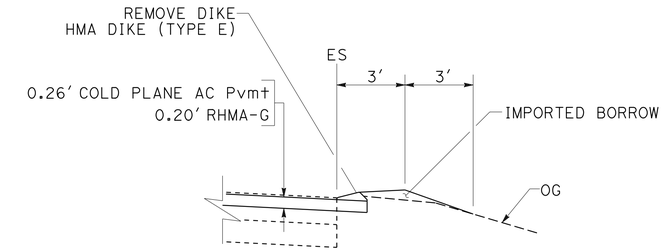
2
- 0.20' HMA
- 0.50' HMA
- 1.50' Cl 2 AB

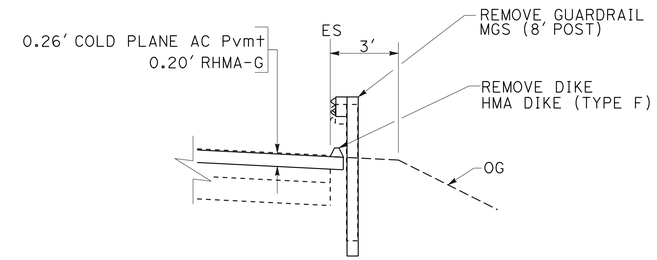
ABBREVIATION:

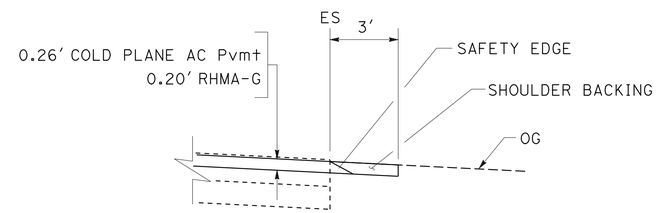
RHMA-G RUBBERIZED HOT MIX ASPHALT, (GAP GRADED)

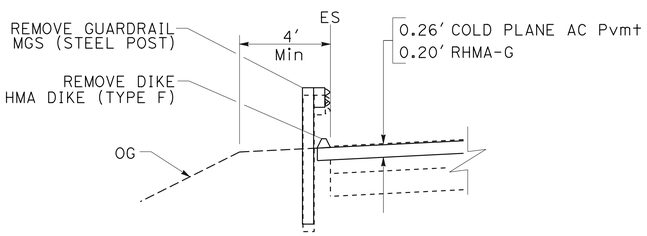


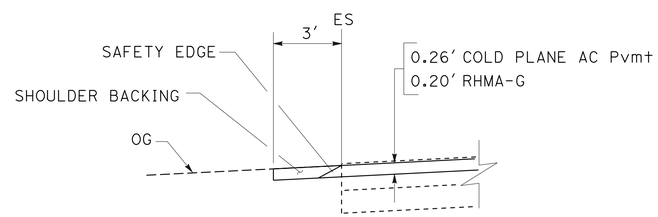


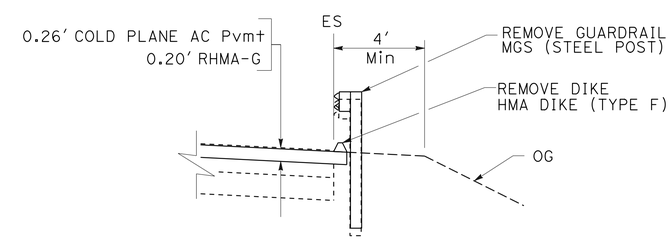


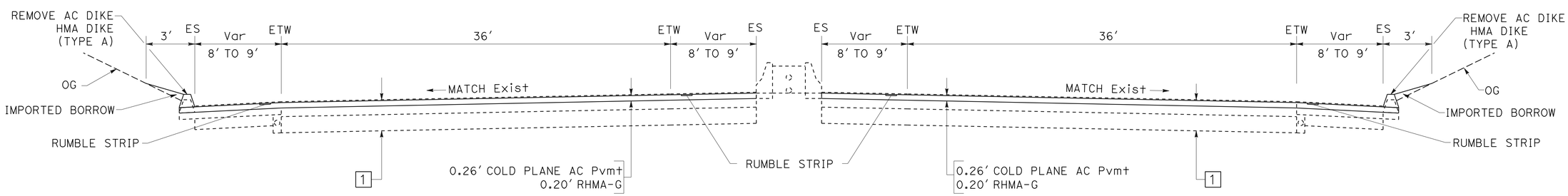












SB PM 21.00 TO 22.37

ROUTE 101

NB PM 21.00 TO 22.37

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN
FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	3	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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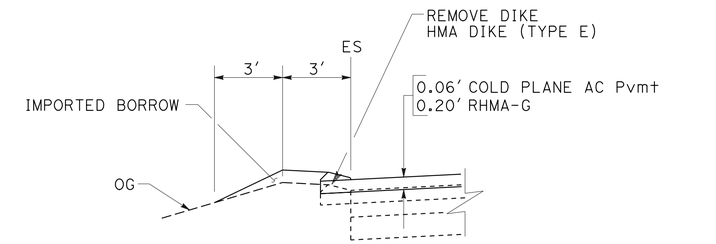

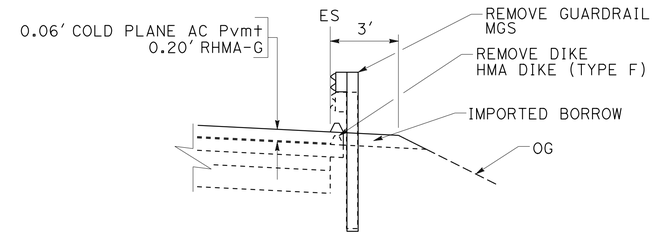

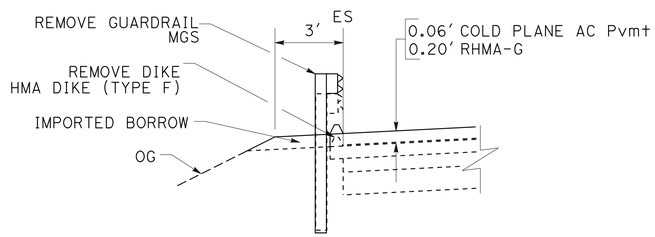

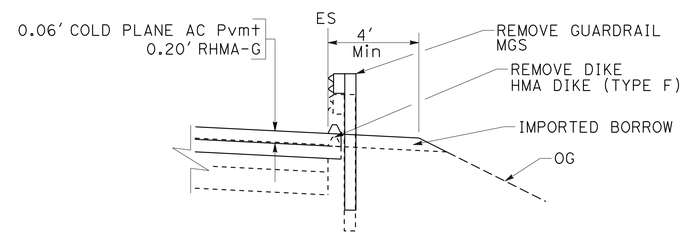

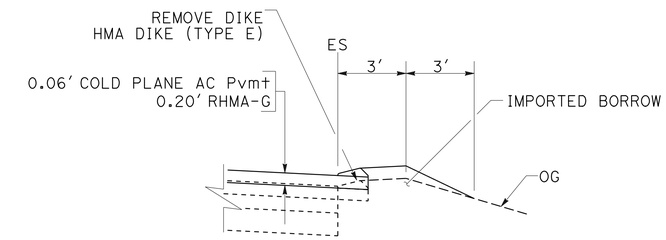

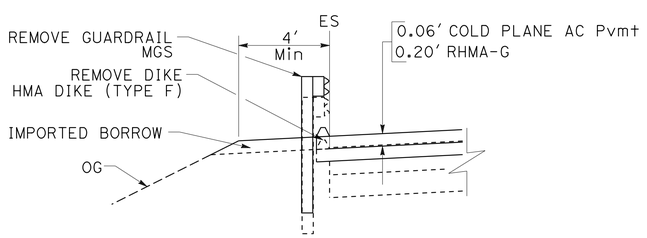

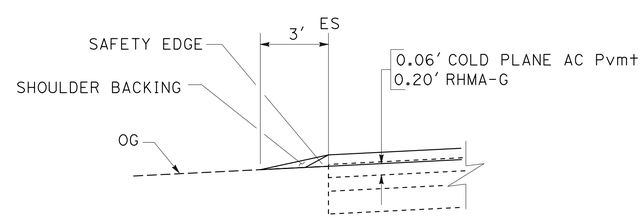

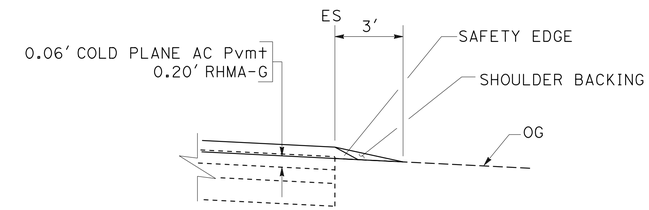

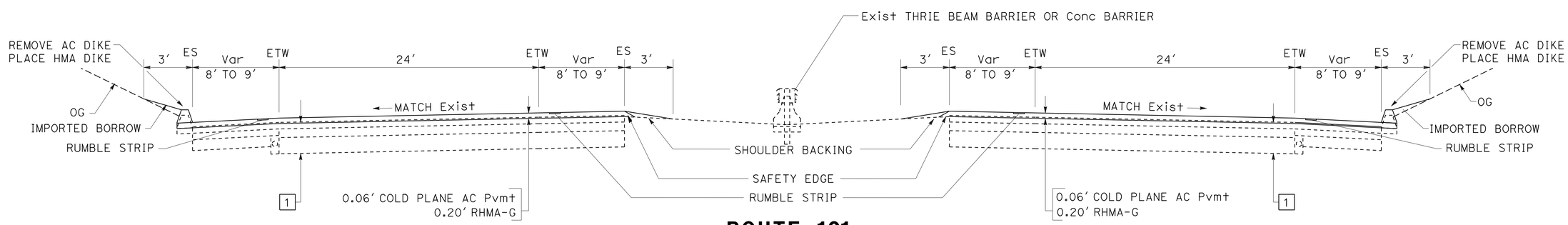

ROUTE 101

SB PM 22.98 TO 25.15

NB PM 22.98 TO 25.05

TYPICAL CROSS SECTIONS

NO SCALE

X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS

CHECKED BY: AMJED HETTINI

REVISED BY

DATE REVISED

LAST REVISION 11-24-14

DATE PLOTTED => 25-NOV-2014

TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	4	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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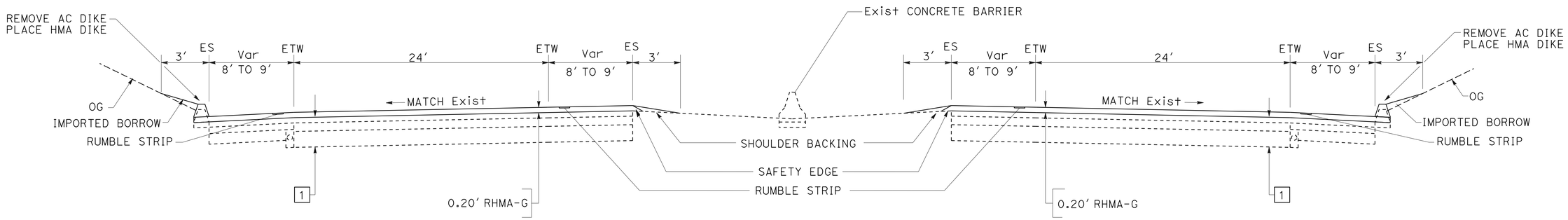
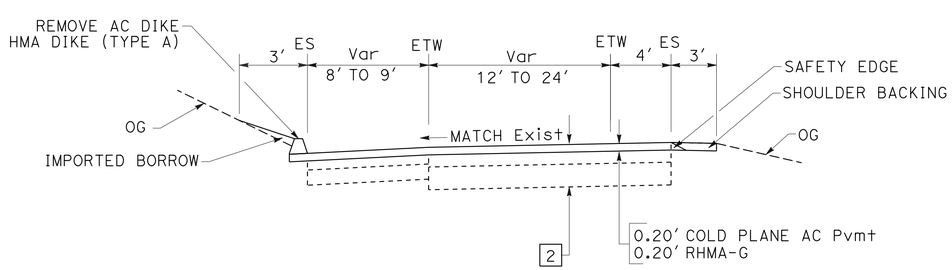


ROUTE 101

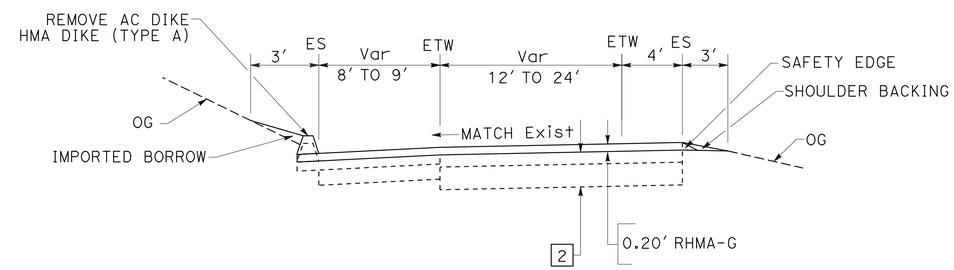
SB PM 25.15 TO 27.10

NB PM 25.05 TO 27.10



TYPICAL RAMP CROSS SECTION

PATTERSON Ave SB ON RAMP
PATTERSON Ave/Rte 217 SB OFF RAMP
PATTERSON Ave NB OFF RAMP
PATTERSON Ave/Rte 217 NB ON RAMP
FAIRVIEW Ave SB ON RAMP
FAIRVIEW Ave NB OFF RAMP
FAIRVIEW Ave NB ON RAMP
GLEN ANNIE Rd NB ON RAMP
GLEN ANNIE Rd NB OFF RAMP



TYPICAL RAMP CROSS SECTION

LOS CARNEROS Rd SB ON RAMP
LOS CARNEROS Rd SB OFF RAMP
LOS CARNEROS Rd NB OFF RAMP
LOS CARNEROS Rd NB ON RAMP
GLEN ANNIE Rd SB ON RAMP
GLEN ANNIE Rd SB OFF RAMP
CATHEDRAL OAKS Rd NB OFF RAMP
CATHEDRAL OAKS Rd SB ON RAMP
CATHEDRAL OAKS Rd SB OFF RAMP
CALLE REAL NB ON RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN
FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	5	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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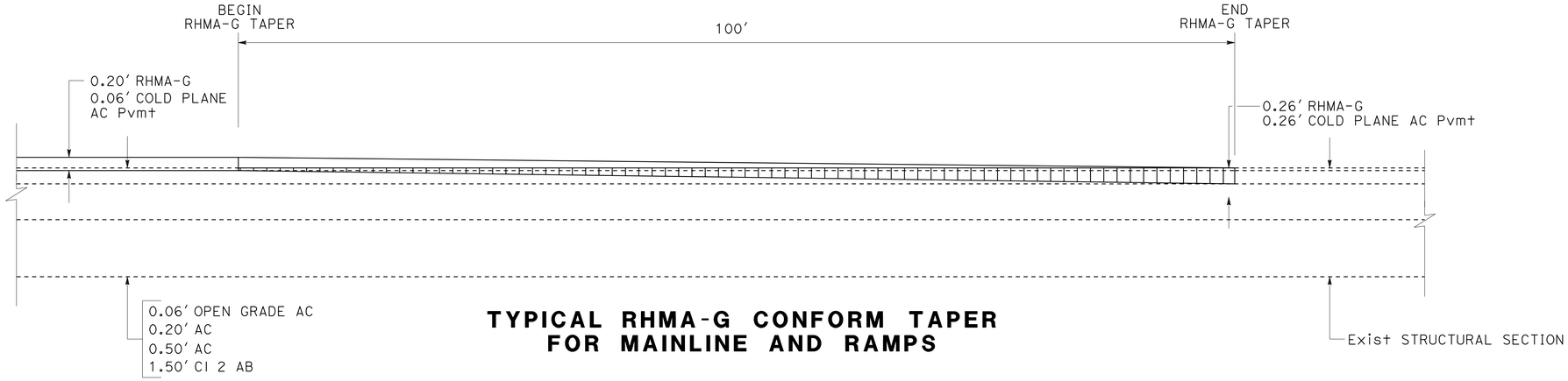
LEGEND:

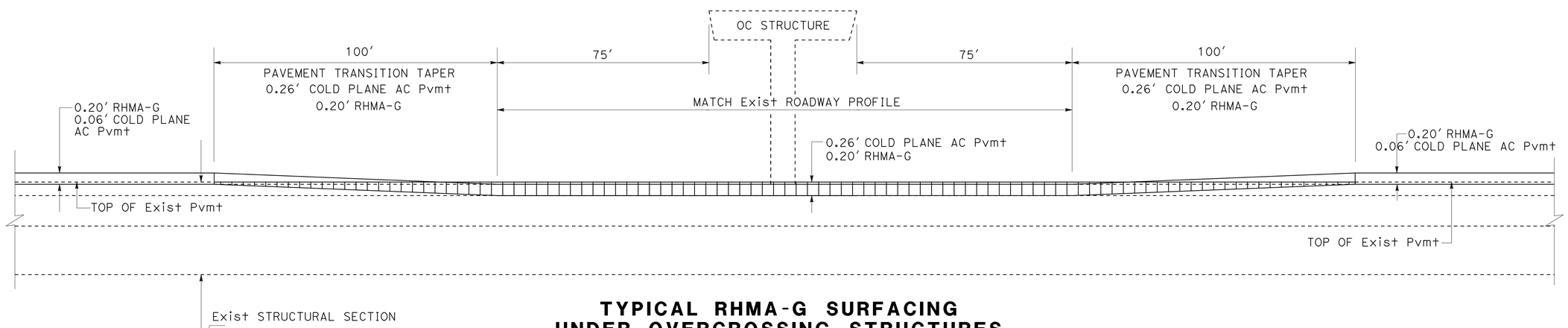
COLD PLANE AC PAVEMENT

ABBREVIATION:

RHMA-G RUBBERIZED HOT MIX ASPHALT, (GAP GRADED)



TYPICAL RHMA-G CONFORM TAPER FOR MAINLINE AND RAMPS



TYPICAL RHMA-G SURFACING UNDER OVERCROSSING STRUCTURES

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: RON KRAEMER
CHECKED BY: MARK S. LEICHTFUSS

REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	6	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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NOTE:

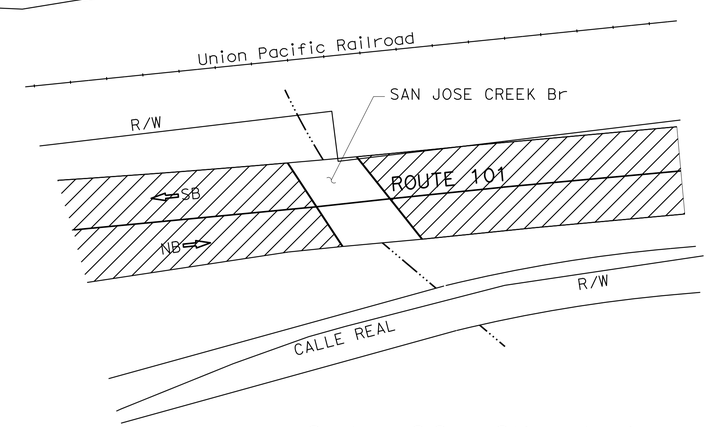
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

LEGEND:

- 0.26' COLD PLANE AC Pvmt AND 0.20' RHMA-G
- RHMA-G CONFORM TAPER (SEE SHEET C-1 FOR DETAILS
- REMOVE AND CONSTRUCT CURB RAMPS
- CURB RAMP NUMBER (X)

PATTERSON Ave OC AND Rte 217

PM 21.15



SAN JOSE CREEK Br

PM 21.62

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	7	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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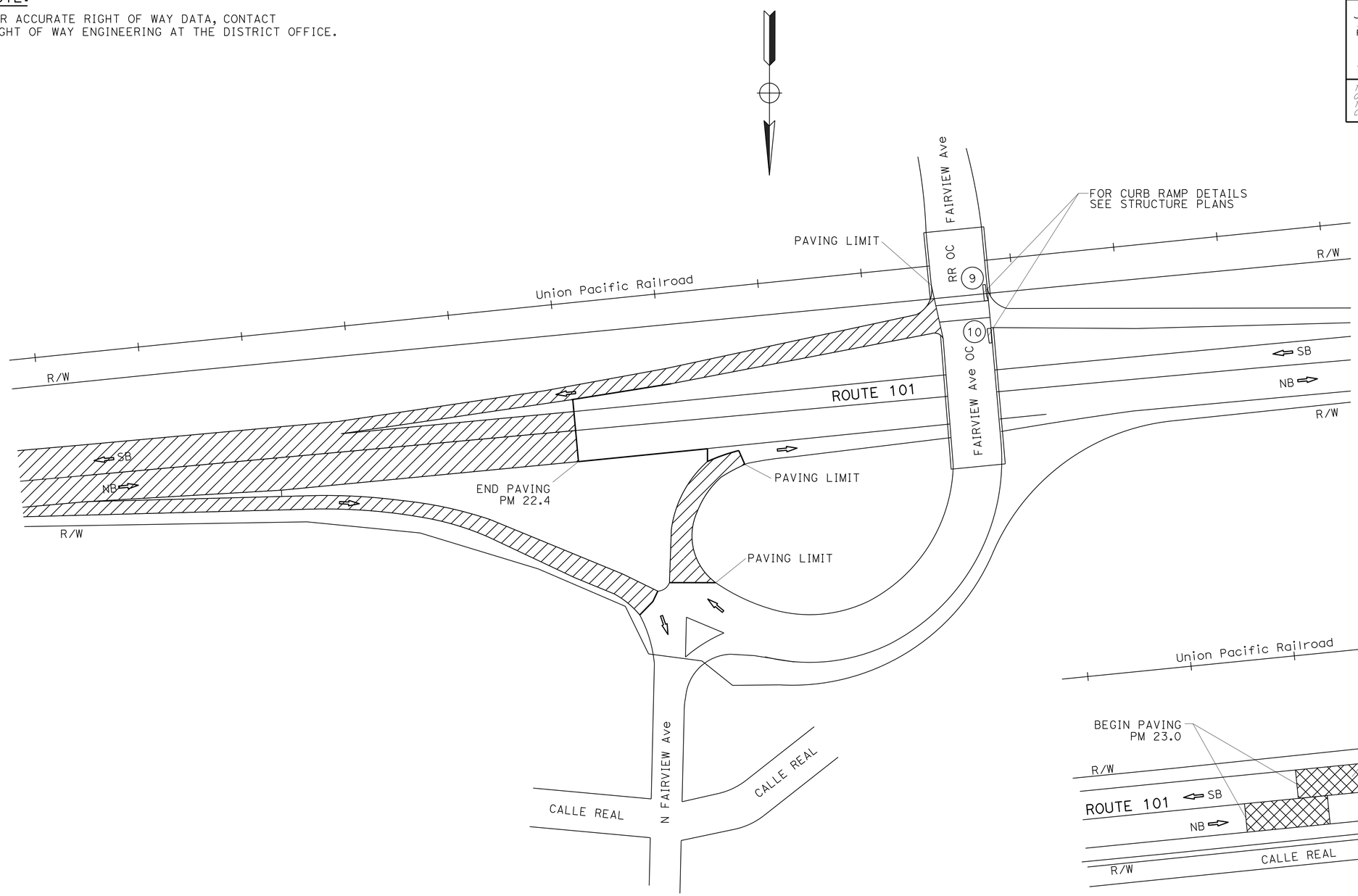
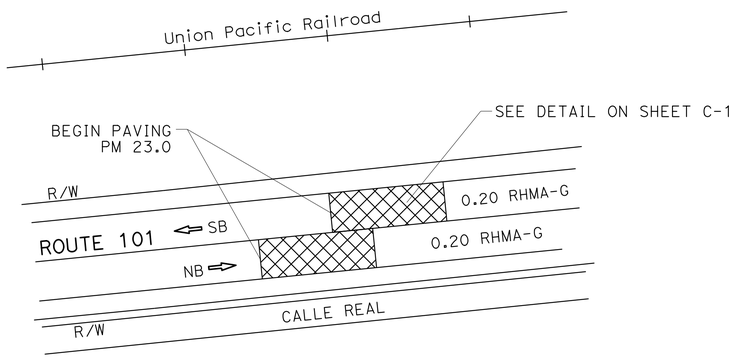


FAIRVIEW Ave OC

PM 22.54



BEGIN PAVING

PM 23.0

CONSTRUCTION DETAILS

NO SCALE

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: AMJED HETTINI

CHECKED BY: MARK S. LEICHTFUSS

REVISED BY

DATE REVISED

LAST REVISION 11-24-14

DATE PLOTTED => 25-NOV-2014

TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	8	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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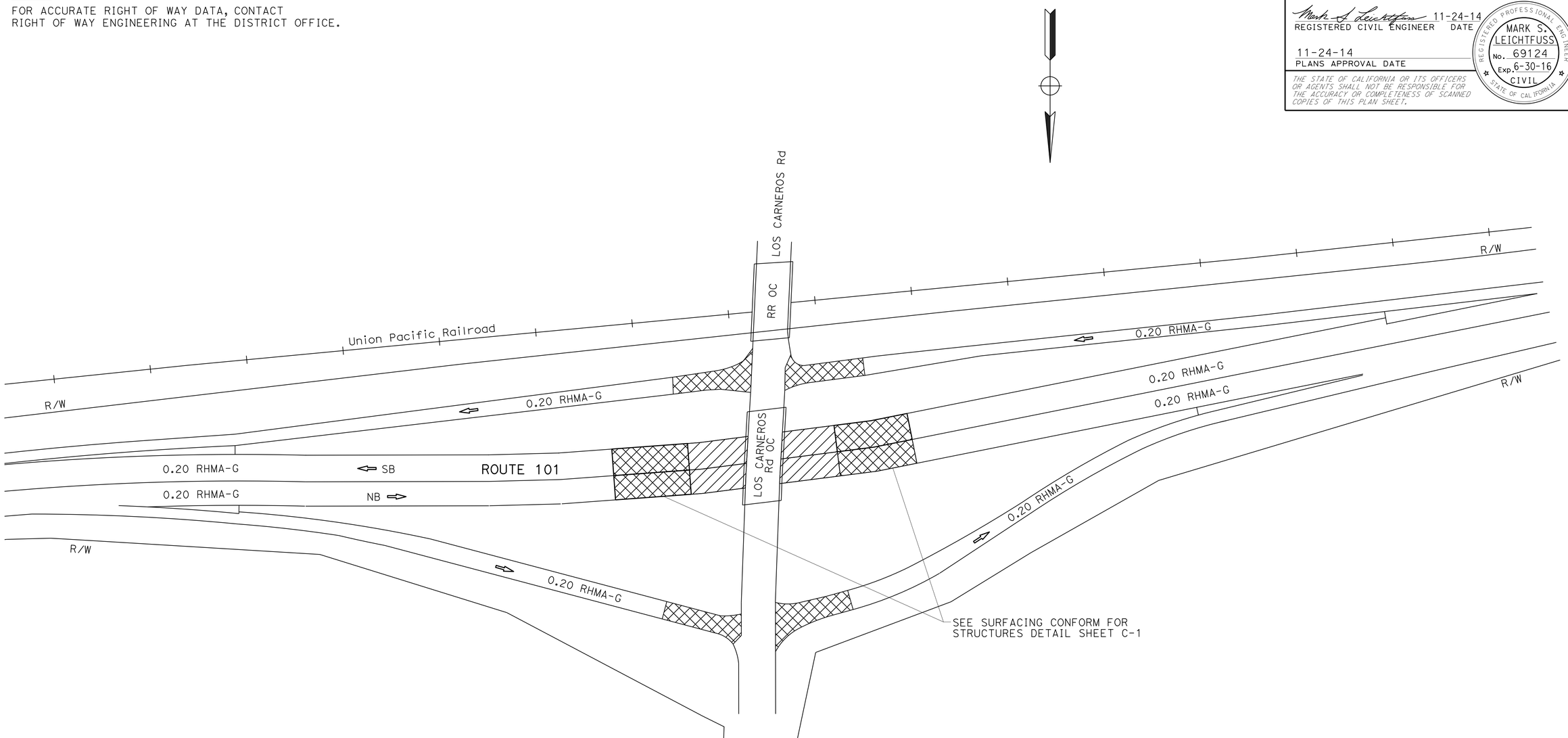
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



LOS CARNEROS Rd OC

PM 23.72

CONSTRUCTION DETAILS

NO SCALE

C-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS

REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	9	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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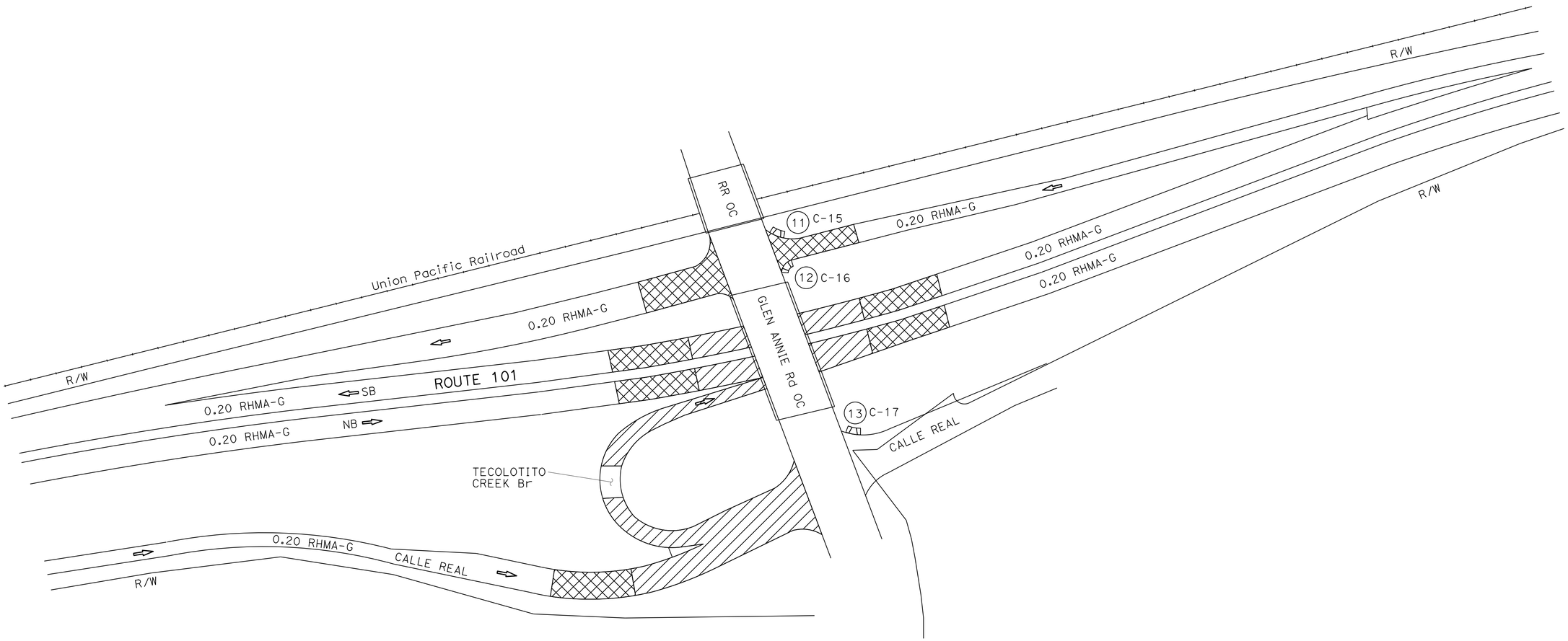
NOTE:

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



GLEN ANNIE Rd OC

PM 24.77

CONSTRUCTION DETAILS

NO SCALE

C-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: AMJED HETTINI

CHECKED BY: MARK S. LEICHTFUSS

REVISED BY

DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	10	130

Mark S. Leichtfuss 11-24-14
REGISTERED CIVIL ENGINEER DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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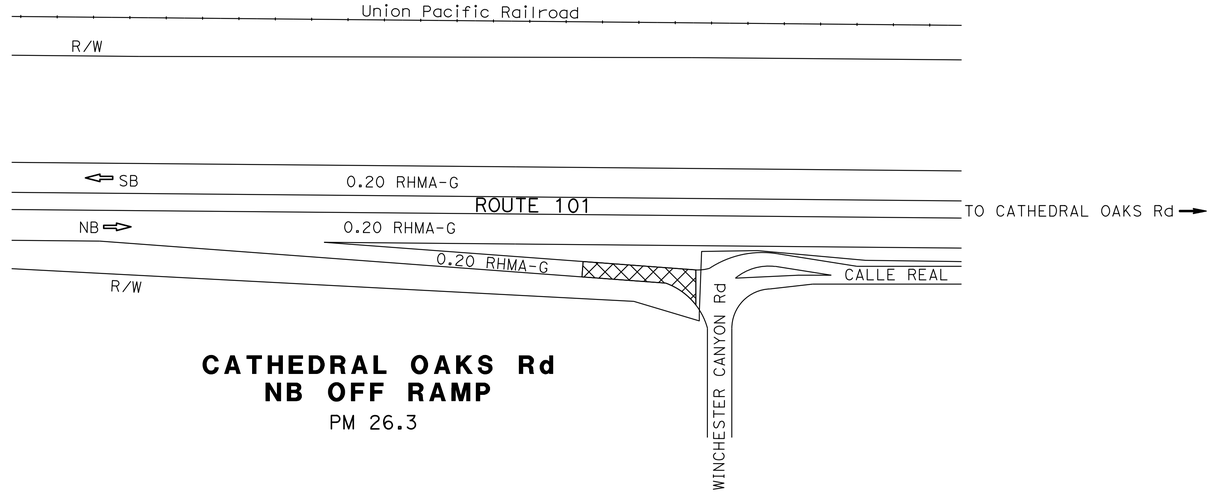
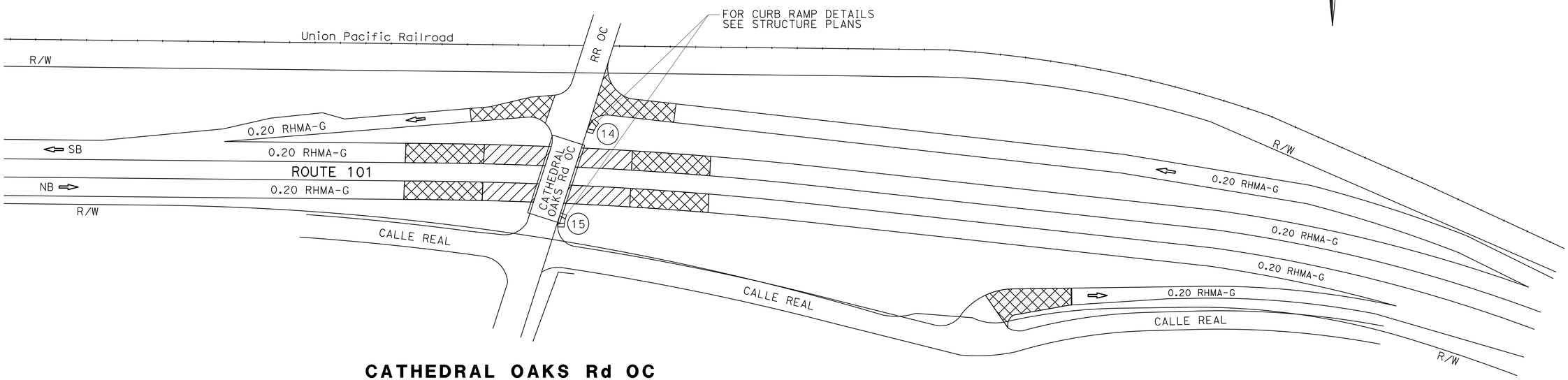
NOTE:

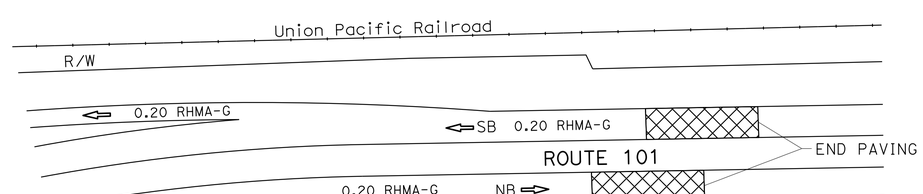
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CATHEDRAL OAKS Rd
NB OFF RAMP
PM 26.3



CATHEDRAL OAKS Rd OC
PM 26.79



PROJECT LIMIT
END PAVING
PM 27.1

CONSTRUCTION DETAILS

NO SCALE

C-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS

REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	11	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

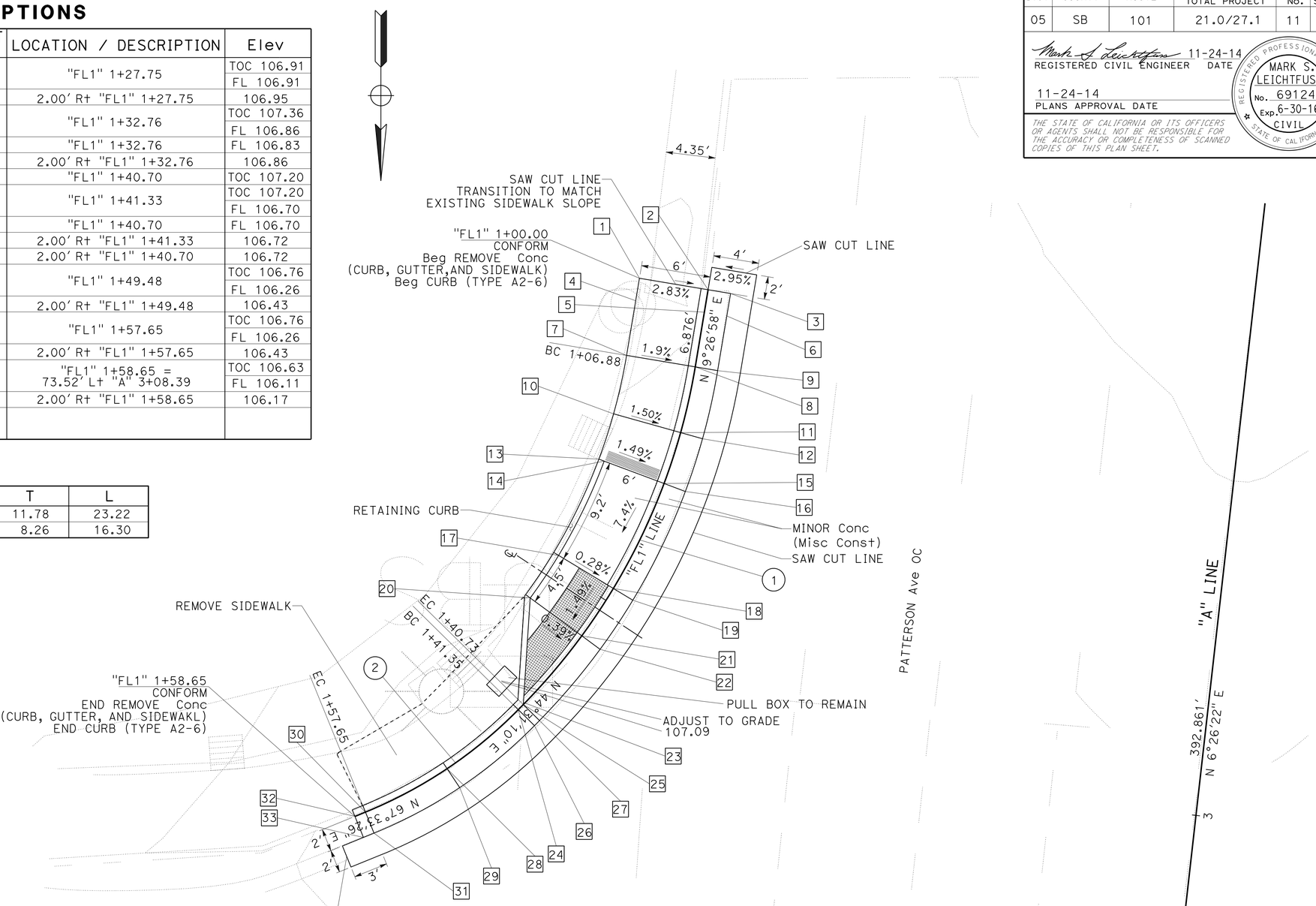
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

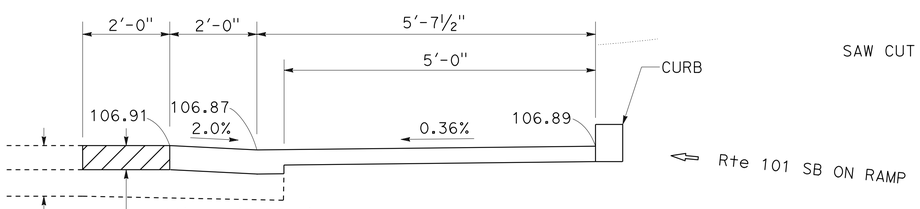
POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev	POINT No.	LOCATION / DESCRIPTION	Elev
1	6.00' Lt "FL1" 1+00.00	108.32	18	"FL1" 1+27.75	TOC 106.91
2	"FL1" 1+00.00 = 47.83' Lt "A" 2+58.89	TOC 108.15			FL 106.91
		FL 107.50	19	2.00' Rt "FL1" 1+27.75	106.95
3	2.00' Rt "FL1" 1+00.00	107.61	20	"FL1" 1+32.76	TOC 107.36
4	6.00' Lt "FL1" 1+02.00	108.24			FL 106.86
5	"FL1" 1+02.00	TOC 108.07	21	"FL1" 1+32.76	FL 106.83
		FL 107.40	22	2.00' Rt "FL1" 1+32.76	106.86
6	2.00' Rt "FL1" 1+02.00	107.56	23	"FL1" 1+40.70	TOC 107.20
7	6.00' Lt "FL1" 1+06.88	107.97	24	"FL1" 1+41.33	TOC 107.20
8	"FL1" 1+06.88	TOC 107.86			FL 106.70
		FL 107.36	25	"FL1" 1+40.70	FL 106.70
9	2.00' Rt "FL1" 1+06.88	107.45	26	2.00' Rt "FL1" 1+41.33	106.72
10	6.00' Lt "FL1" 1+12.80	107.74	27	2.00' Rt "FL1" 1+40.70	106.72
11	"FL1" 1+12.80	TOC 107.65	28	"FL1" 1+49.48	TOC 106.76
		FL 107.15			FL 106.26
12	2.00' Rt "FL1" 1+12.80	107.31	29	2.00' Rt "FL1" 1+49.48	106.43
13	6.00' Lt "FL1" 1+17.51	107.66	30	"FL1" 1+57.65	TOC 106.76
14	"FL1" 1+17.51	TOC 107.66			FL 106.26
		FL 107.66	31	2.00' Rt "FL1" 1+57.65	106.43
15	"FL1" 1+17.51	TOC 107.58	32	"FL1" 1+58.65 = 73.52' Lt "A" 3+08.39	TOC 106.63
		FL 107.08			FL 106.11
16	2.00' Rt "FL1" 1+17.51	107.24	33	2.00' Rt "FL1" 1+58.65	106.17
17	"FL1" 1+27.75	TOC 107.42			
		FL 106.92			

CURVE DATA

No. Ⓗ	R	Δ	T	L
1	55.36	24°02'01"	11.78	23.22
2	40.00	23°20'40"	8.26	16.30





CENTERLINE OF CURB RAMP

NO SCALE

PATTERSON Ave / Rte 101 SB ON RAMP

CURB RAMP (Mod CASE C)

SE CORNER / ADA RAMP #1

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS

CHECKED BY: AMJED HETTINI

REVISED BY

DATE REVISED

LAST REVISION 11-24-14 DATE PLOTTED => 25-NOV-2014 TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	12	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

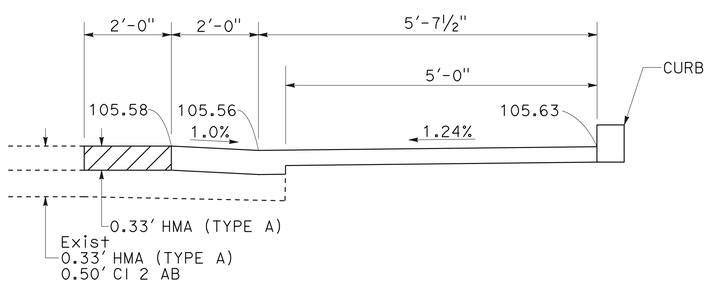
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

POINT DESCRIPTIONS

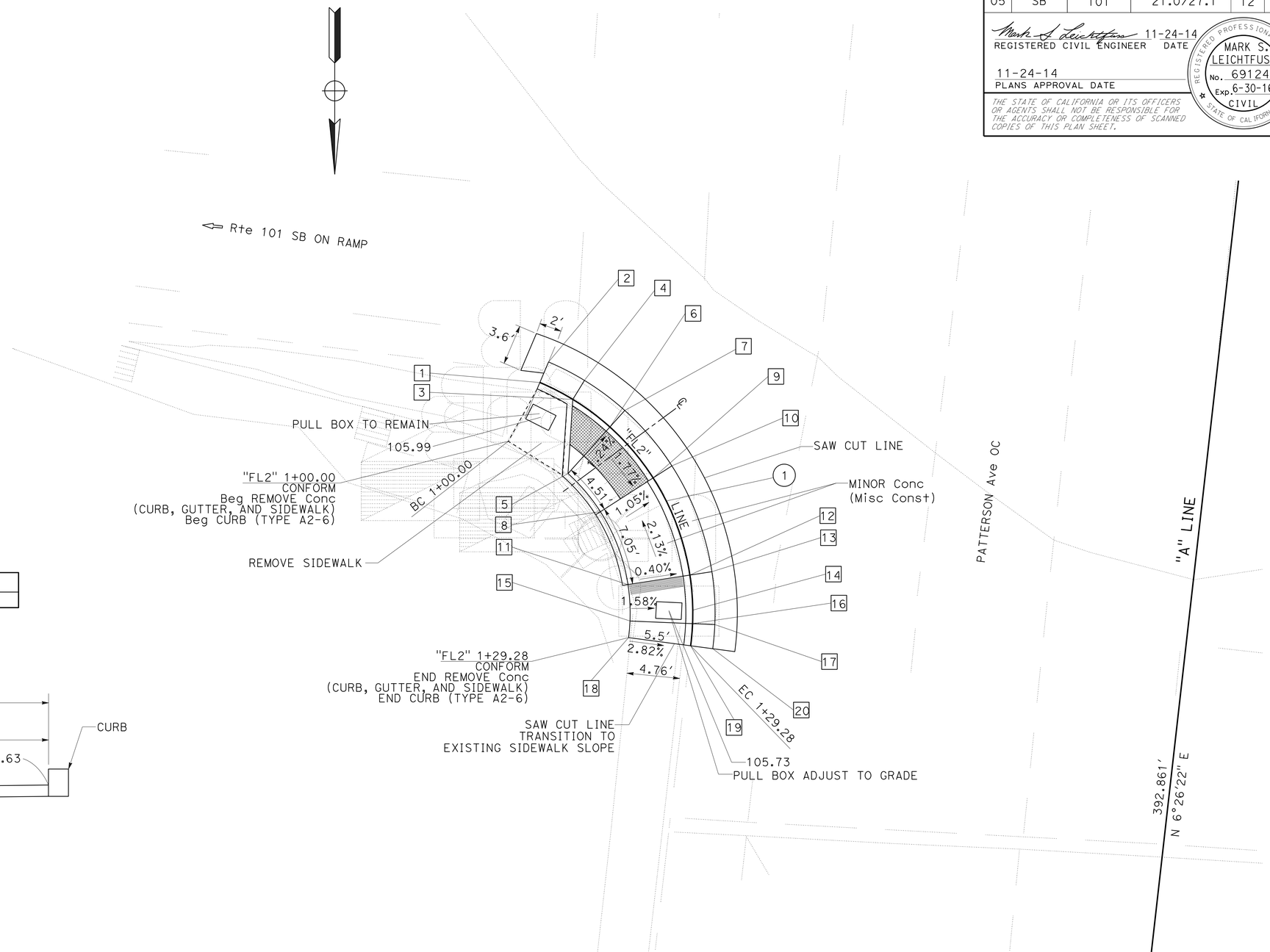
POINT No.	LOCATION / DESCRIPTION	Elev
1	"FL2" 1+00.00 = 60.31' Lt "A" 3+52.84	FL 105.66
		TOC 106.10
2	2.00' Rt "FL2" 1+00.00	105.66
3	"FL2" 1+03.33	TOC 106.15
		FL 105.65
4	2.00' Rt "FL2" 1+03.33	105.67
5	"FL2" 1+07.48	FL 105.67
		TOC 106.17
6	"FL2" 1+07.48	FL 105.60
7	2.00' Rt "FL2" 1+07.48	105.62
8	"FL2" 1+13.50	FL 105.579
		TOC 106.09
9	"FL2" 1+13.50	TOC 105.51
		FL 105.51
10	2.00' Rt "FL2" 1+13.50	105.53
11	"FL2" 1+24.27	TOC 105.74
		FL 105.74
12	"FL2" 1+24.27	FL 105.22
		TOC 105.72
13	2.00' Rt "FL2" 1+24.27	105.27
14	"FL2" 1+27.45	TOC 105.69
		FL 105.19
15	5.50' Lt "FL2" 1+28.65	105.78
16	"FL2" 1+28.65	TOC 105.67
		FL 105.17
17	2.00' Rt "FL2" 1+28.65	105.18
18	5.50' Lt "FL2" 1+29.28	105.79
19	"FL2" 1+29.28 = 44.20' Lt "A" 3+74.83	TOC 105.64
		FL 105.07
20	2.00' Rt "FL2" 1+29.28	105.12

CURVE DATA

No.	R	Δ	T	L
1	22.50	74°34'12"	17.13	29.28



CENTERLINE OF CURB RAMP
NO SCALE



PATTERSON Ave / Rte 101 SB ON RAMP

CURB RAMP (Mod CASE C)
NE CORNER / ADA RAMP #2

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	13	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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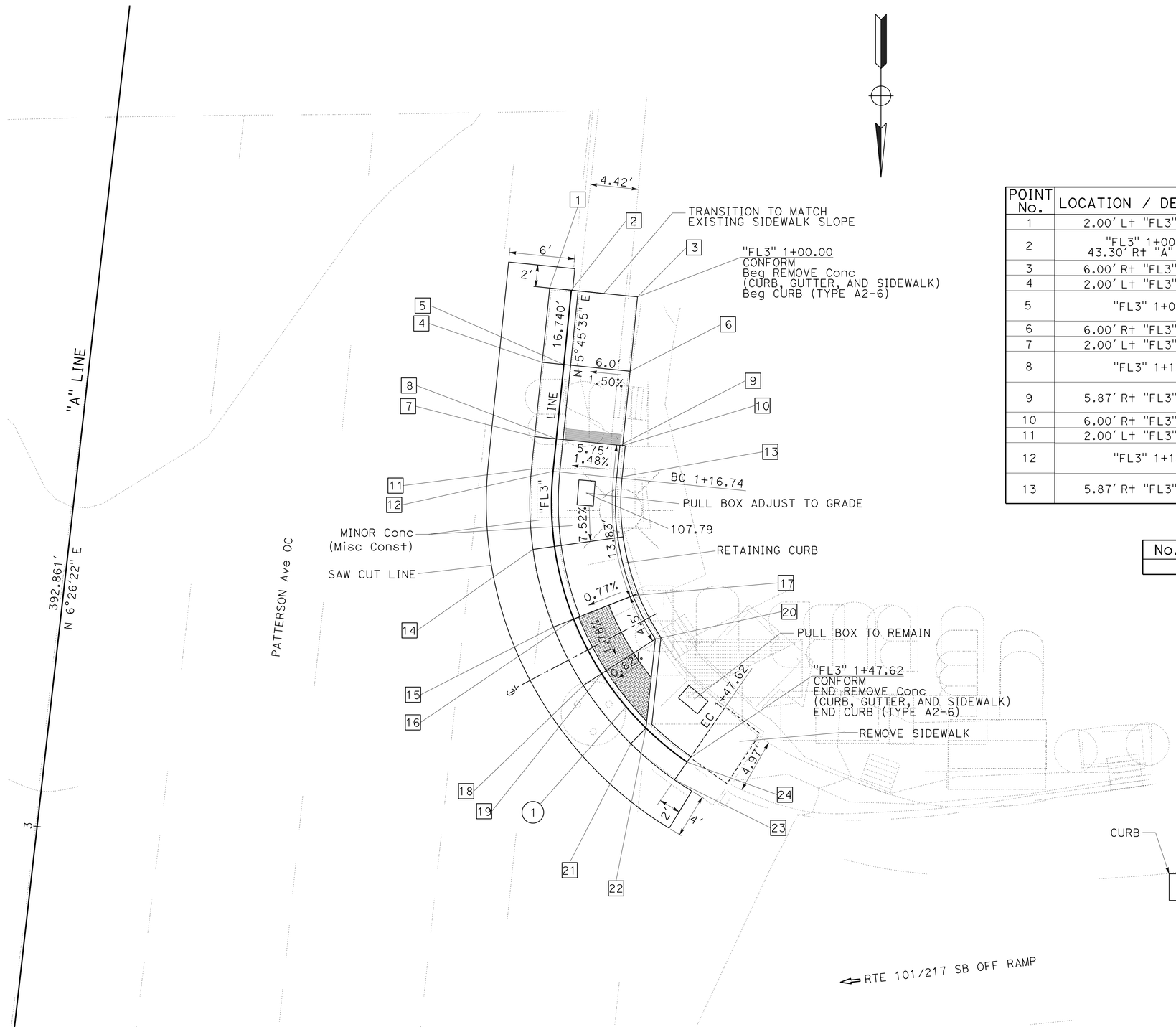
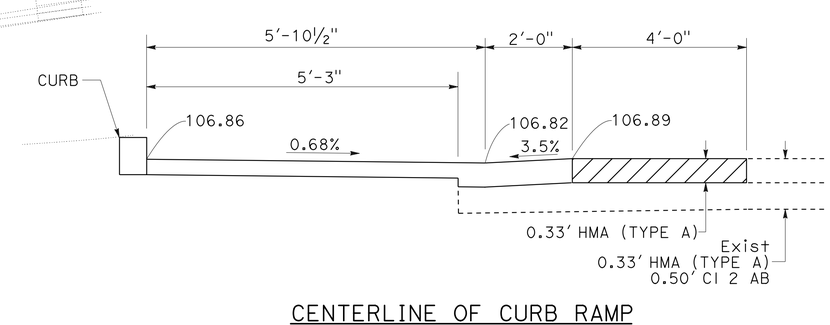


POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev	POINT No.	LOCATION / DESCRIPTION	Elev
1	2.00' L+ "FL3" 1+00.00	107.57	14	2.00' L+ "FL3" 1+23.67	107.24
2	"FL3" 1+00.00 = 43.30' R+ "A" 2+45.48	TOC 108.27	15	2.00' L+ "FL3" 1+30.59	106.94
		FL 107.72	16	"FL3" 1+30.59	TOC 106.86
3	6.00' R+ "FL3" 1+00.00	108.34			FL 106.86
4	2.00' L+ "FL3" 1+06.87	107.50	17	5.87' L+ "FL3" 1+30.59	TOC 107.40
5	"FL3" 1+06.87	TOC 107.94			FL 106.90
		FL 107.44	18	2.00' L+ "FL3" 1+36.24	106.83
6	6.00' R+ "FL3" 1+06.87	108.03	19	"FL3" 1+36.24	FL 106.78
7	2.00' L+ "FL3" 1+13.74	107.42	20	5.87' R+ "FL3" 1+36.24	TOC 107.32
8	"FL3" 1+13.74	TOC 107.85			FL 106.82
		FL 107.35	21	2.00' L+ "FL3" 1+42.72	106.70
9	5.87' R+ "FL3" 1+13.74	TOC 107.94	22	"FL3" 1+42.72	TOC 107.18
		FL 107.94			FL 106.68
10	6.00' R+ "FL3" 1+13.74	107.94	23	2.00' L+ "FL3" 1+47.62	106.49
11	2.00' L+ "FL3" 1+16.74	107.38	24	"FL3" 1+47.62 = 58.75' R+ "A" 2+87.40	TOC 106.94
12	"FL3" 1+16.74	TOC 107.68			FL 106.44
		FL 107.32			
13	5.87' R+ "FL3" 1+16.74	TOC 107.72			
		FL 107.72			

CURVE DATA

No. ⊕	R	Δ	T	L
1	29'	61°00'11"	17.08'	30.88'



CENTERLINE OF CURB RAMP
NO SCALE

PATTERSON Ave / Rte 101/217 OFF RAMP

CURB RAMP (Mod CASE C)
SW CORNER /ADA RAMP #3

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN
FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY
REVISED BY
DATE REVISED
QUAY CHESTER

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	14	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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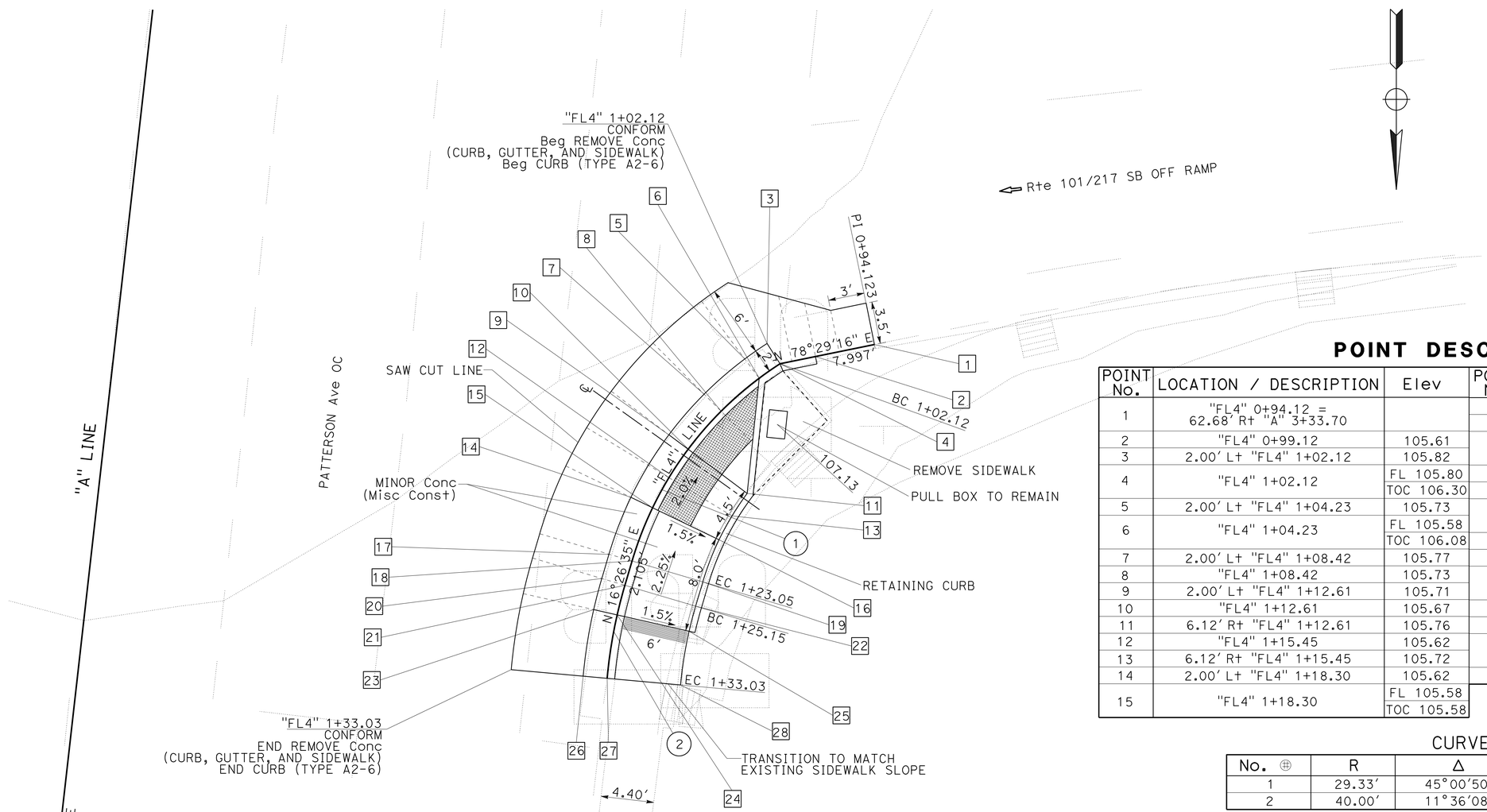
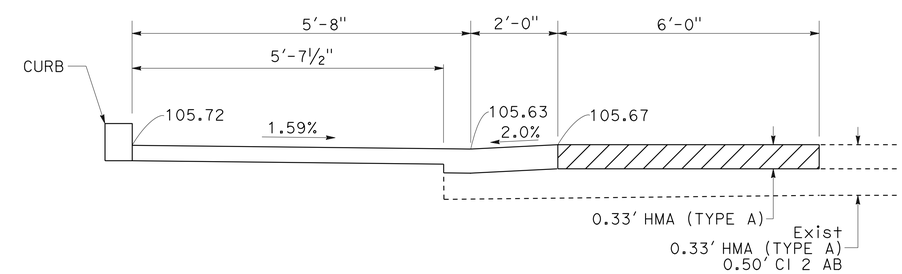


POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev	POINT No.	LOCATION / DESCRIPTION	Elev
1	"FL4" 0+94.12 = 62.68' Rt "A" 3+33.70		16	6.12' Rt "FL4" 1+18.30	105.67
			17	2.00' Lt "FL4" 1+23.04	105.30
2	"FL4" 0+99.12	105.61	18	"FL4" 1+23.04	FL 105.42
3	2.00' Lt "FL4" 1+02.12	105.82			TOC 105.64
4	"FL4" 1+02.12	FL 105.80	19	6.12' Rt "FL4" 1+23.04	
		TOC 106.30	20	2.00' Lt "FL4" 1+25.15	105.28
5	2.00' Lt "FL4" 1+04.23	105.73	21	"FL4" 1+25.15	FL 105.35
6	"FL4" 1+04.23	FL 105.58			TOC 105.78
		TOC 106.08	22	6.12' Rt "FL4" 1+25.15	
7	2.00' Lt "FL4" 1+08.42	105.77	23	2.00' Lt "FL4" 1+27.70	105.26
8	"FL4" 1+08.42	105.73	24	"FL4" 1+27.70	FL 105.26
9	2.00' Lt "FL4" 1+12.61	105.71			TOC 105.76
10	"FL4" 1+12.61	105.67	25	6.00' Rt "FL4" 1+27.70	105.85
11	6.12' Rt "FL4" 1+12.61	105.76	26	2.00' Lt "FL4" 1+33.03	105.21
12	"FL4" 1+15.45	105.62	27	"FL4" 1+33.30 = 43.73' Rt "A" 3+63.75	FL 105.08
13	6.12' Rt "FL4" 1+15.45	105.72			TOC 105.76
14	2.00' Lt "FL4" 1+18.30	105.62	28	6.12' Rt "FL4" 1+33.03	105.87
15	"FL4" 1+18.30	FL 105.58			
		TOC 105.58			

CURVE DATA

No. ⊕	R	Δ	T	L
1	29.33'	45°00'50"	12.16'	23.05'
2	40.00'	11°36'08"	4.06'	8.10'



CENTERLINE OF CURB RAMP
NO SCALE

PATTERSON Ave / Rte 101/217 OFF RAMP

CURB RAMP (Mod CASE C)
NW CORNER / ADA RAMP #4

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	15	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

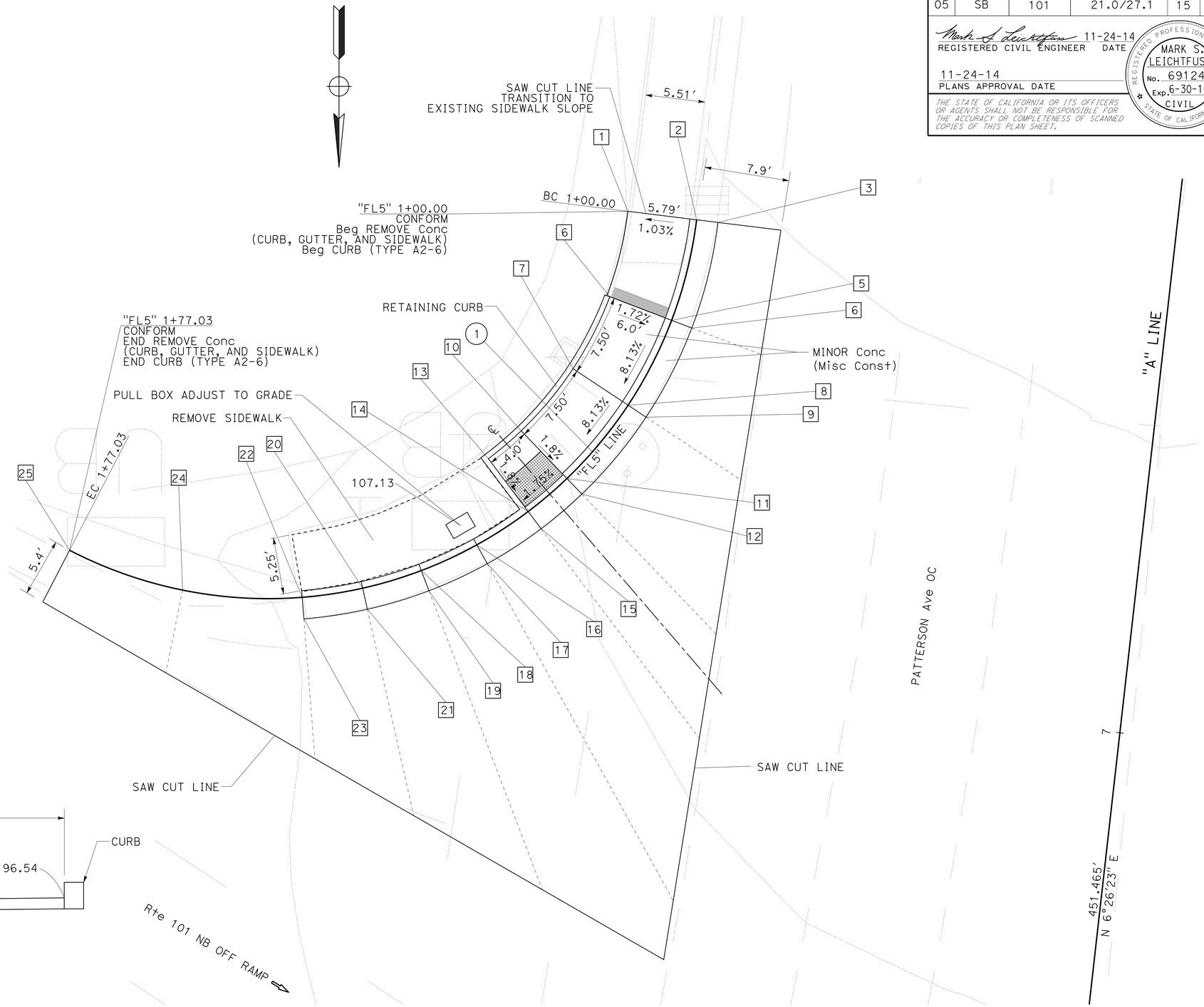
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

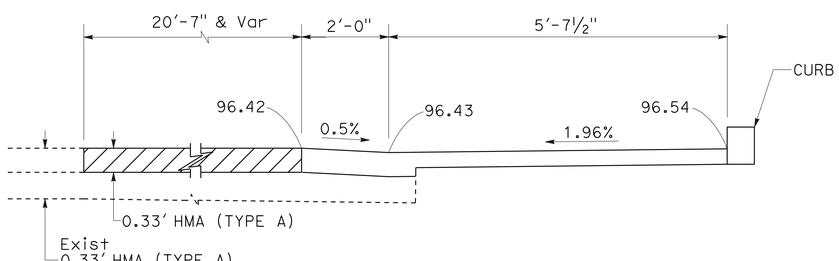
POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev
1	"FL5" 1+00.00 = 44.30' Lt "A" 6+57.19	98.17
2	"FL5" 1+00.00	FL 97.75
		TOC 98.24
3	2.00' Rt "FL5" 1+00.00	97.81
4	6.12' Lt "FL5" 1+09.62	FL 97.79
		TOC 97.79
5	"FL5" 1+09.62	FL 97.17
		TOC 97.69
6	2.00' Rt "FL5" 1+09.62	97.24
7	6.12' Lt "FL5" 1+18.47	FL 97.18
		TOC 97.68
8	"FL5" 1+18.47	FL 96.80
		TOC 97.30
9	2.00' Rt "FL5" 1+18.47	96.84
10	6.12' Lt "FL5" 1+27.33	FL 96.57
		TOC 97.07
11	"FL5" 1+27.33	FL 96.46
		TOC 96.96
12	2.00' Rt "FL5" 1+27.33	96.46
13	6.12' Lt "FL5" 1+32.05	FL 96.50
		TOC 97.00
14	"FL5" 1+32.05	FL 96.39
		TOC 96.89
15	2.00' Rt "FL5" 1+32.05	96.37
16	"FL5" 1+37.73	FL 95.80
		TOC 96.30
17	2.00' Rt "FL5" 1+37.73	95.80
18	"FL5" 1+43.40	FL 95.44
		TOC 95.94
19	2.00' Rt "FL5" 1+43.40	95.42
20	"FL5" 1+49.08	FL 94.92
		TOC 95.42
21	2.00' Rt "FL5" 1+49.08	94.89
22	"FL5" 1+54.75	FL 94.40
		TOC 94.90
23	2.00' Rt "FL5" 1+54.75	FL 94.36
24	"FL5" 1+65.89	FL 93.47
25	"FL5" 1+77.03 = 98.60' Lt "A" 6+94.12	92.77

CURVE DATA

No. Ⓡ	R	Δ	T	L
1	40.00	08°07'40"	2.84	5.67





CENTERLINE OF CURB RAMP
NO SCALE

PATTERSON Ave / Rte 101 NB OFF RAMP

CURB RAMP (Mod CASE C)
SE CORNER / ADA RAMP #5

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: QUAY CHESTER
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	16	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

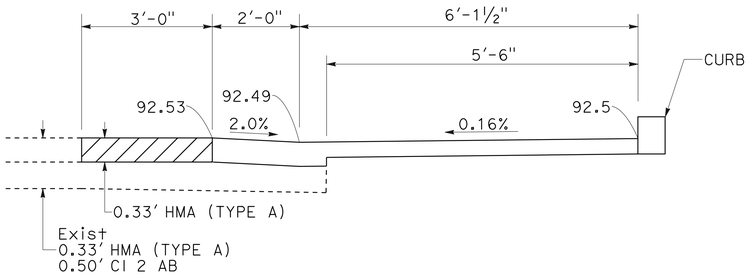
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

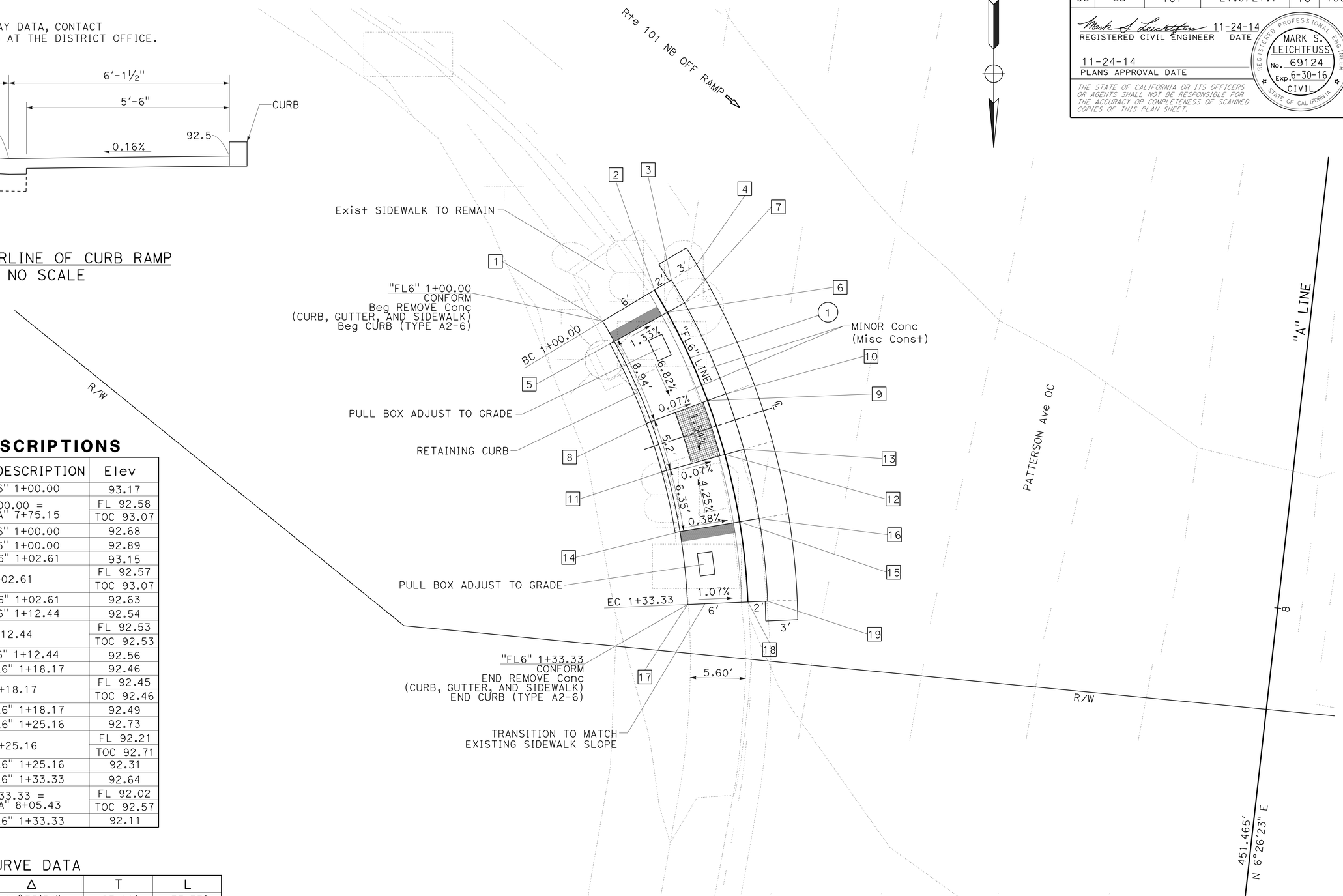
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

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



CENTERLINE OF CURB RAMP
NO SCALE



POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev
1	6.00' Lt "FL6" 1+00.00	93.17
2	"FL6" 1+00.00 = 66.45' Lt "A" 7+75.15	FL 92.58 TOC 93.07
3	2.00' Rt "FL6" 1+00.00	92.68
4	5.00' Rt "FL6" 1+00.00	92.89
5	6.00' Lt "FL6" 1+02.61	93.15
6	"FL6" 1+02.61	FL 92.57 TOC 93.07
7	2.00' Rt "FL6" 1+02.61	92.63
8	6.00' Lt "FL6" 1+12.44	92.54
9	"FL6" 1+12.44	FL 92.53 TOC 92.53
10	2.00 Rt "FL6" 1+12.44	92.56
11	6.00' Lt "FL6" 1+18.17	92.46
12	"FL6" 1+18.17	FL 92.45 TOC 92.46
13	2.00' Rt "FL6" 1+18.17	92.49
14	6.00' Lt "FL6" 1+25.16	92.73
15	"FL6" 1+25.16	FL 92.21 TOC 92.71
16	2.00' Rt "FL6" 1+25.16	92.31
17	6.00' Lt "FL6" 1+33.33	92.64
18	"FL6" 1+33.33 = 53.52' Lt "A" 8+05.43	FL 92.02 TOC 92.57
19	2.00' Rt "FL6" 1+33.33	92.11

CURVE DATA

No. ⊕	R	Δ	T	L
1	66.77'	28°35'54"	17.02'	33.33'

PATTERSON Ave / Rte 101 NB OFF RAMP

CURB RAMP (Mod CASE C)

NE CORNER / ADA RAMP #6

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS

CHECKED BY

REVISED BY

DATE REVISED

QUAY CHESTER

LAST REVISION 11-24-14

DATE PLOTTED => 25-NOV-2014

TIME PLOTTED => 10:39

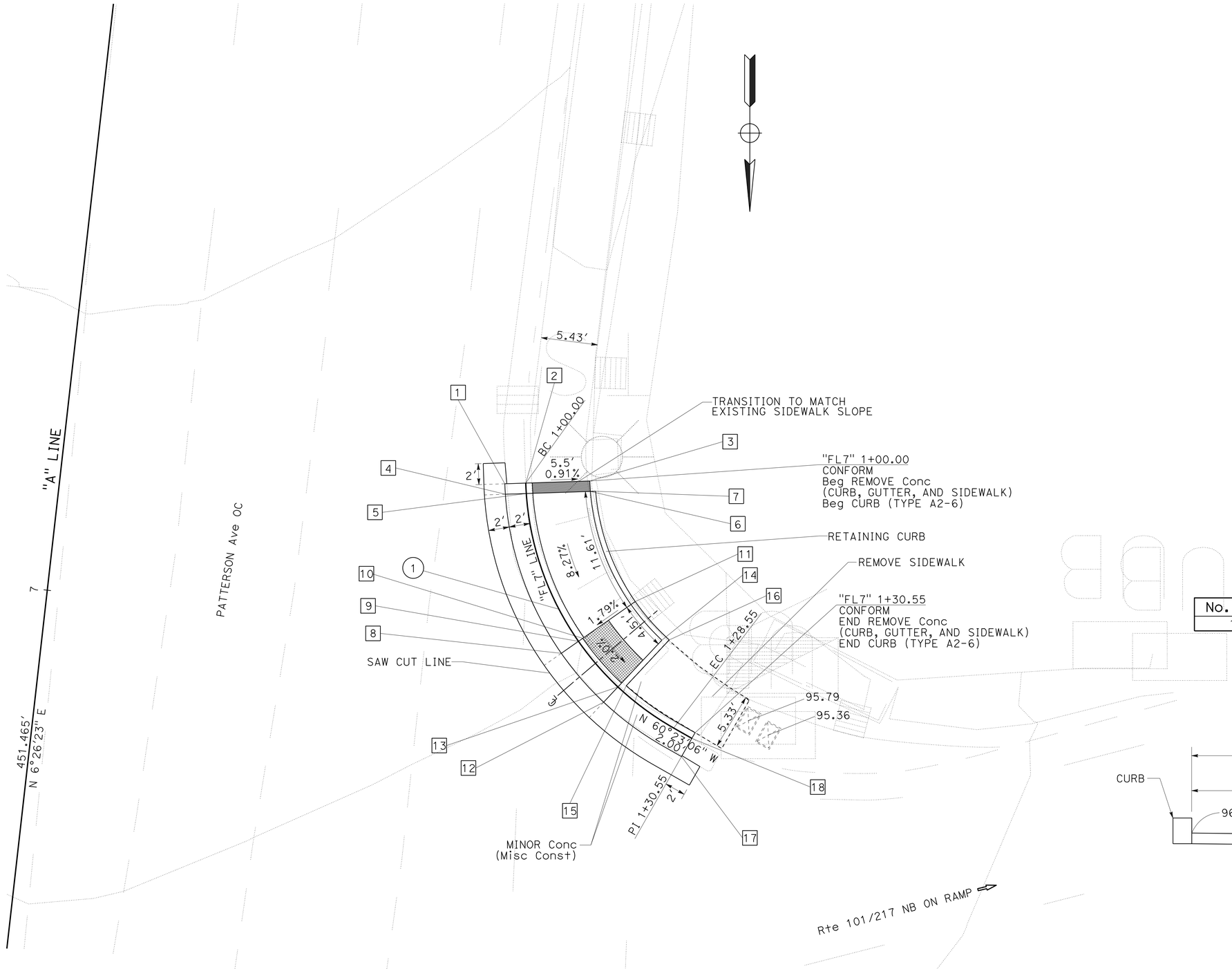
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	17	130

Mark S. Leichtfuss 11-24-14
REGISTERED CIVIL ENGINEER DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.

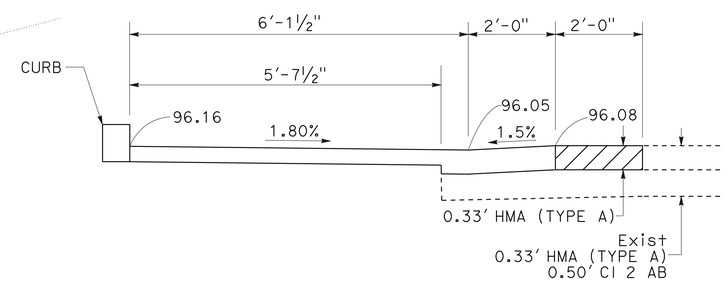


POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev
1	2.00' Lt "FL7" 1+00.00	96.71
2	"FL7" 1+00.00 = 44.27' Rt "A" 6+84.72	FL 96.69 TOC 97.26
3	6.12' Rt "FL7" 1+00.00	97.21
4	2.00' Lt "FL7" 1+01.00	96.70
5	"FL7" 1+01.00	FL 96.68 TOC 97.21
6	6.12' Rt "FL7" 1+01.00	97.16
6	6.62' Rt "FL7" 1+01.00	97.16
7	2.00' Lt "FL7" 1+16.15	96.09
8	"FL7" 1+16.15	FL 96.01 TOC 96.01
9	0.62' Rt "FL7" 1+16.15	96.01
10	6.12' Rt "FL7" 1+16.15	96.20 96.70
11	2.00' Lt "FL7" 1+21.92	95.07
12	"FL7" 1+21.92	FL 96.00 TOC 96.50
13	6.12' Rt "FL7" 1+21.92	96.11
14	0.62' Rt "FL7" 1+22.43	96.48
15	6.62' Rt "FL7" 1+22.43	96.61
16	2.00' Lt "FL7" 1+30.55	95.55
17	"FL7" 1+30.55 = 60.94' Rt "A" 7+06.37	FL 95.50 TOC 96.00
18	"FL7" 1+30.55	96.00

CURVE DATA

No. ⊕	R	Δ	T	L
1	27.96	58°30'15"	15.66	28.55



CENTERLINE OF CURB RAMP

NO SCALE

PATTERSON Ave / Rte 101/217 ON RAMP

CURB RAMP (Mod CASE C)

SW CORNER / ADA RAMP #7

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS

CHECKED BY: QUAY CHESTER

REVISED BY

DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	18	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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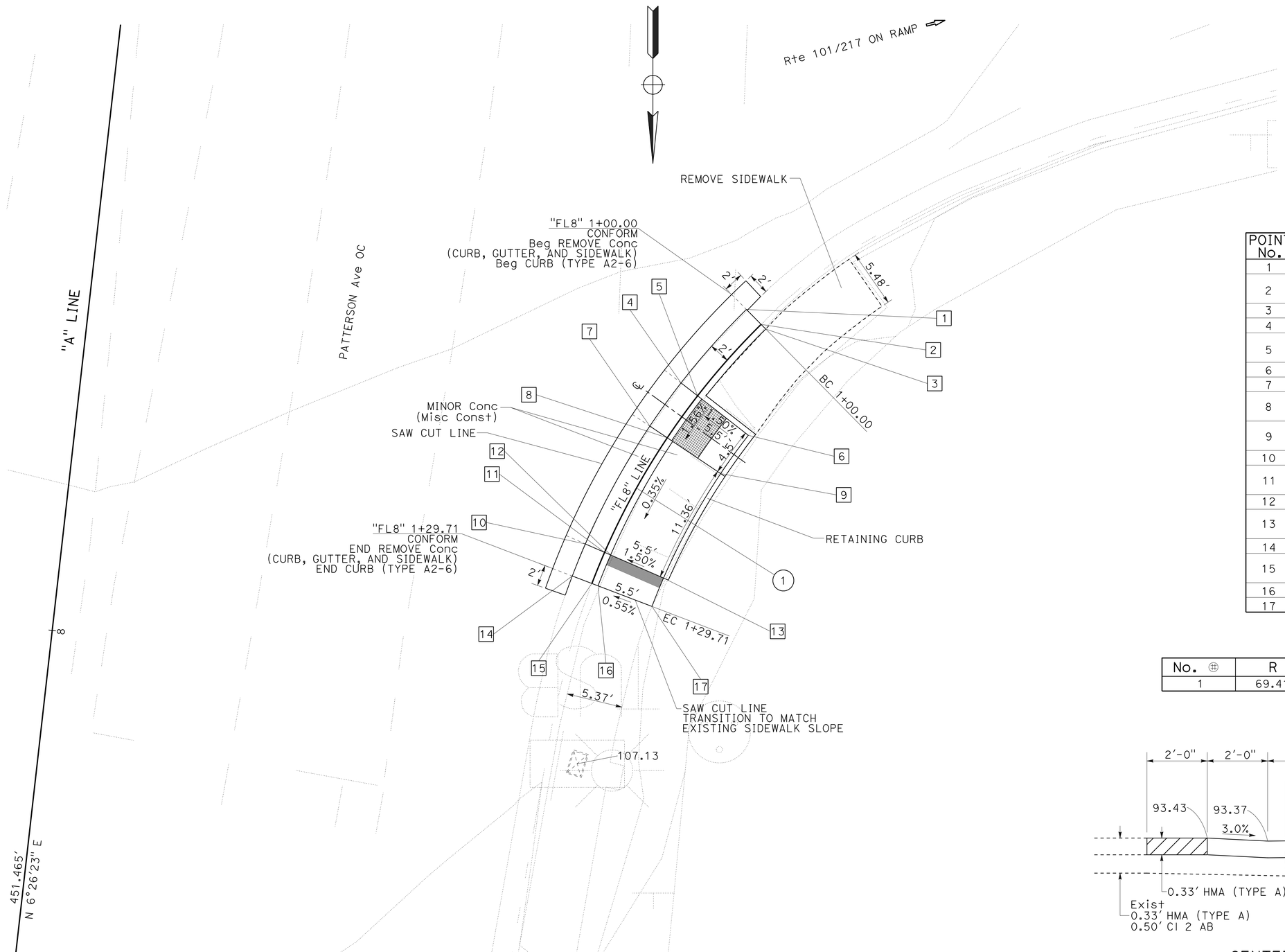
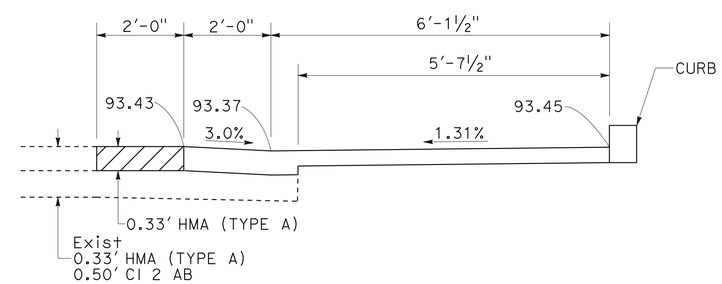


POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev
1	2.00' Lt "FL8" 1+00.00	93.64
2	"FL8" 1+00.00 = 63.85' Rt "A" 7+63.45	FL 93.57 TOC 94.10
3	0.62' Rt "FL8" 1+00.00	94.10
4	2.00' Lt "FL8" 1+09.11	93.47
5	"FL8" 1+09.11	FL 93.40 TOC 93.90
6	5.50' Rt "FL8" 1+09.11	93.48
7	2.00' Lt "FL8" 1+14.05	93.38
8	"FL8" 1+14.05	FL 93.33 TOC 93.33
9	5.50' Rt "FL8" 1+14.05	FL 93.41 TOC 93.91
10	2.00' Lt "FL8" 1+26.51	92.94
11	"FL8" 1+26.51	FL 92.87 TOC 93.37
12	0.50' Rt "FL8" 1+26.51	93.37
13	5.50' Rt "FL8" 1+26.51	FL 93.45 TOC 93.45
14	2.00' Lt "FL8" 1+29.71	92.81
15	"FL8" 1+29.71 = 50.60' Rt "A" 7+89.79	FL 92.74 TOC 93.29
16	0.50' Rt "FL8" 1+29.71	93.29
17	5.5' Rt "FL8" 1+29.71	93.32

CURVE DATA

No. ⊕	R	Δ	T	L
1	69.41'	24°31'31"	15.09'	29.71'



CENTERLINE OF CURB RAMP
NO SCALE

PATTERSON Ave / Rte 101/217 ON RAMP

CURB RAMP (Mod CASE C)
NW CORNER / ADA RAMP #8

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: QUAY CHESTER
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	19	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

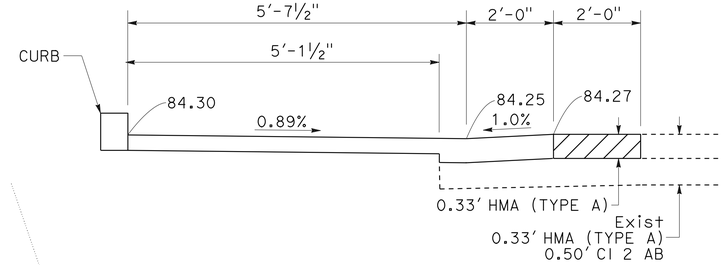
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.



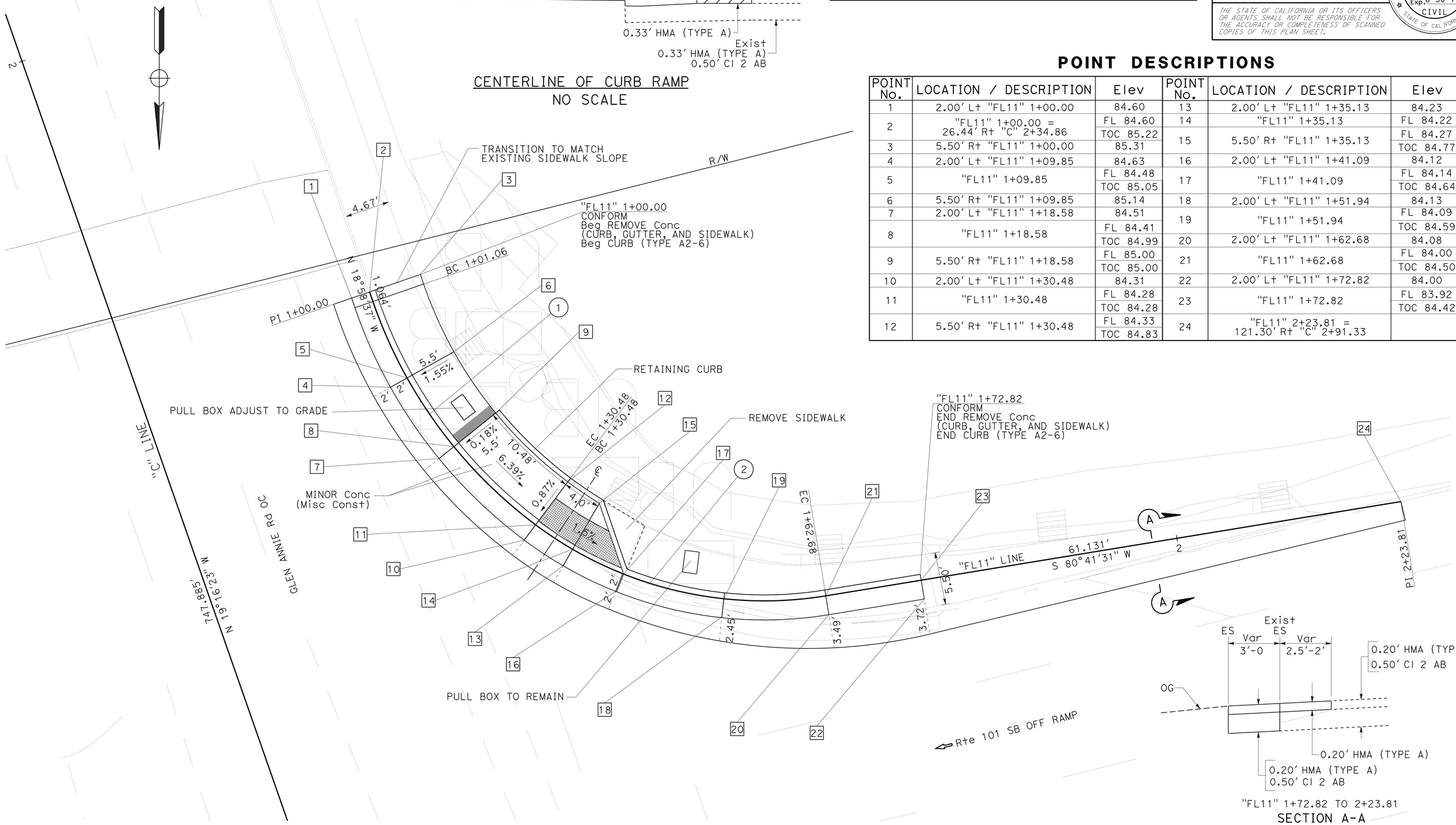
CENTERLINE OF CURB RAMP
NO SCALE

CURVE DATA

No. ⊕	R	Δ	T	L
1	49.27'	34°12'42"	15.16'	29.42'
2	40.00'	46°07'10"	17.03'	32.20'

POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev	POINT No.	LOCATION / DESCRIPTION	Elev
1	2.00' Lt "FL11" 1+00.00	84.60	13	2.00' Lt "FL11" 1+35.13	84.23
2	"FL11" 1+00.00 = 26.44' Rt "C" 2+34.86	FL 84.60	14	"FL11" 1+35.13	FL 84.22
		TOC 85.22	15	5.50' Rt "FL11" 1+35.13	FL 84.27
3	5.50' Rt "FL11" 1+00.00	85.31			TOC 84.77
4	2.00' Lt "FL11" 1+09.85	84.63	16	2.00' Lt "FL11" 1+41.09	84.12
5	"FL11" 1+09.85	FL 84.48	17	"FL11" 1+41.09	FL 84.14
		TOC 85.05			TOC 84.64
6	5.50' Rt "FL11" 1+09.85	85.14	18	2.00' Lt "FL11" 1+51.94	84.13
7	2.00' Lt "FL11" 1+18.58	84.51	19	"FL11" 1+51.94	FL 84.09
8	"FL11" 1+18.58	FL 84.41			TOC 84.59
		TOC 84.99	20	2.00' Lt "FL11" 1+62.68	84.08
9	5.50' Rt "FL11" 1+18.58	FL 85.00	21	"FL11" 1+62.68	FL 84.00
		TOC 85.00			TOC 84.50
10	2.00' Lt "FL11" 1+30.48	84.31	22	2.00' Lt "FL11" 1+72.82	84.00
11	"FL11" 1+30.48	FL 84.28	23	"FL11" 1+72.82	FL 83.92
		TOC 84.28			TOC 84.42
12	5.50' Rt "FL11" 1+30.48	FL 84.33	24	"FL11" 2+23.81 = 121.30' Rt "C" 2+91.33	
		TOC 84.83			



GLEN ANNIE Rd / Rte 101 SB OFF RAMP

CURB RAMP (Mod CASE C)

SW CORNER / ADA RAMP #11

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: QUAY CHESTER

CHECKED BY: MARK S. LEICHTFUSS

REVISED BY

DATE REVISED

LAST REVISION 11-24-14

DATE PLOTTED => 25-NOV-2014

TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	20	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

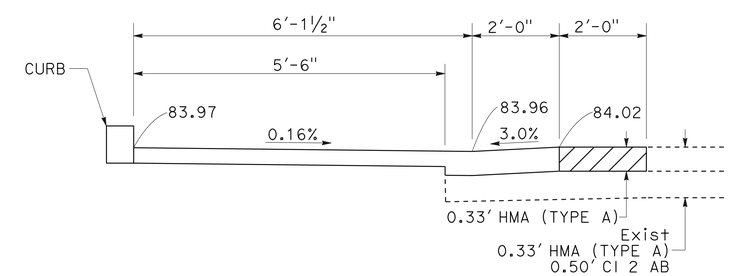
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev
1	2.00' Lt "FL12" 1+00.00	84.00
2	"FL12" 1+00.00 = 36.18' Rt "C" 3+18.74	FL 83.97 TOC 83.97
3	2.00' Lt "FL12" 1+03.54	84.02
4	"FL12" 1+03.54	FL 83.96 TOC 83.96
5	2.00' Lt "FL12" 1+09.01	83.86
6	"FL12" 1+09.01	FL 83.86 TOC 83.86
7	6.00' Rt "FL12" 1+09.01	FL 83.97 TOC 84.36
8	2.00' Lt "FL12" 1+15.01	83.70
9	"FL12" 1+15.01	FL 83.60 TOC 84.10
10	6.00' Rt "FL12" 1+15.01	FL 84.15 TOC 84.15
11	2.00' Lt "FL12" 1+18.01	83.64
12	"FL12" 1+18.01 = 29.80' Rt "C" 3+32.79	FL 83.48 TOC 84.03
13	6.00' Rt "FL12" 1+18.01	84.08

CURVE DATA

No. ⊕	R	Δ	T	L
1	6.74'	30°02'10"	1.81'	3.54'
2	5.00'	62°44'15"	3.05'	5.47'



CENTERLINE OF CURB RAMP
NO SCALE

GLEN ANNIE Rd / Rte 101 SB OFF RAMP

CURB RAMP (Mod CASE CM)
NW CORNER / ADA RAMP #12

CONSTRUCTION DETAILS

SCALE: 1" = 5'

C-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY
REVISED BY
DATE REVISED

QUAY CHESTER

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	21	130

Mark S. Leichtfuss 11-24-14
REGISTERED CIVIL ENGINEER DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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NOTE:

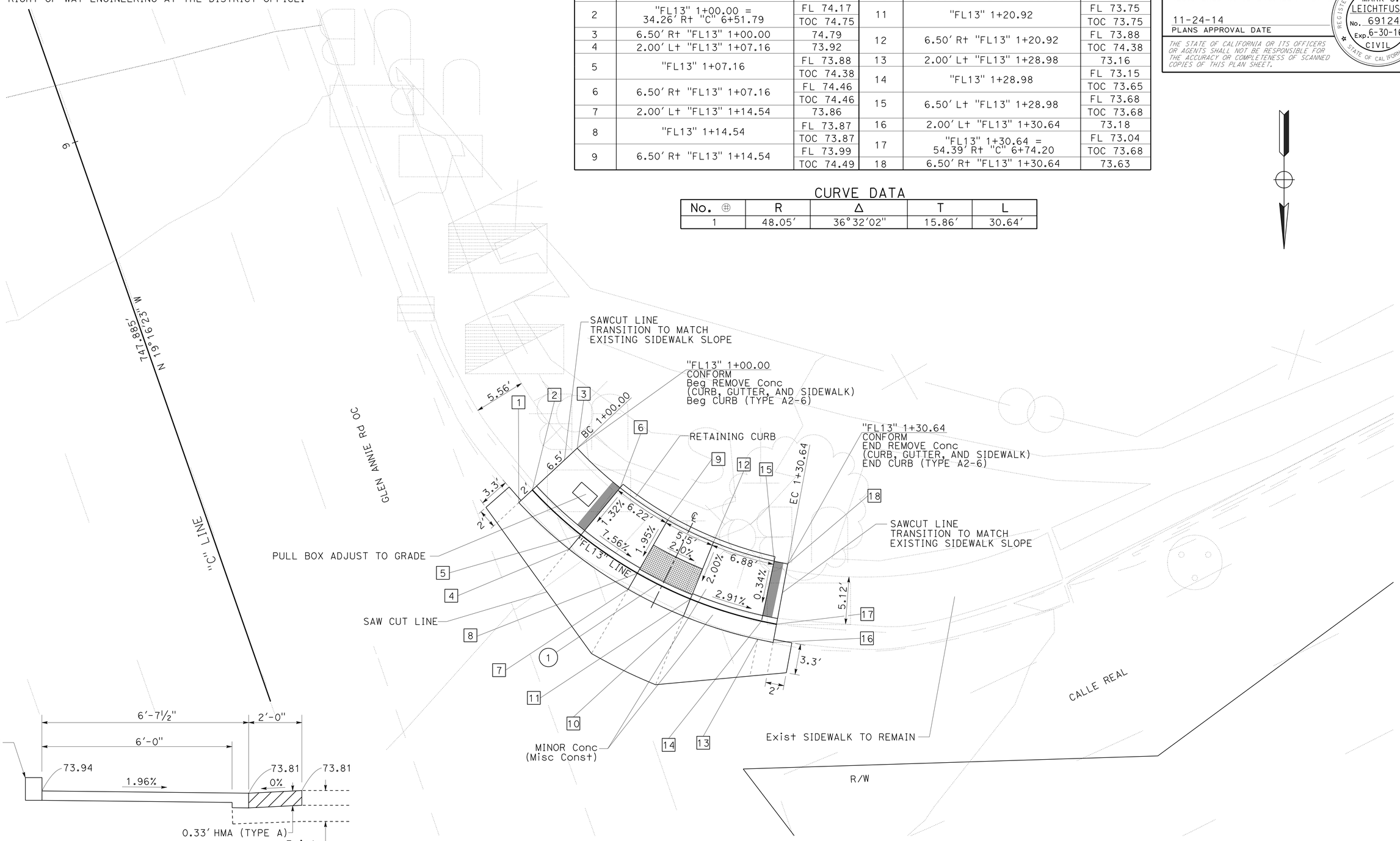
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

POINT DESCRIPTIONS

POINT No.	LOCATION / DESCRIPTION	Elev	POINT No.	LOCATION / DESCRIPTION	Elev
1	2.00′ L+ "FL13" 1+00.00	74.29	10	2.00′ L+ "FL13" 1+20.92	73.75
2	"FL13" 1+00.00 = 34.26′ R+ "C" 6+51.79	FL 74.17	11	"FL13" 1+20.92	FL 73.75
		TOC 74.75			TOC 73.75
3	6.50′ R+ "FL13" 1+00.00	74.79	12	6.50′ R+ "FL13" 1+20.92	FL 73.88
4	2.00′ L+ "FL13" 1+07.16	73.92			TOC 74.38
5	"FL13" 1+07.16	FL 73.88	13	2.00′ L+ "FL13" 1+28.98	73.16
		TOC 74.38	14	"FL13" 1+28.98	FL 73.15
6	6.50′ R+ "FL13" 1+07.16	FL 74.46			TOC 73.65
		TOC 74.46	15	6.50′ L+ "FL13" 1+28.98	FL 73.68
7	2.00′ L+ "FL13" 1+14.54	73.86			TOC 73.68
8	"FL13" 1+14.54	FL 73.87	16	2.00′ L+ "FL13" 1+30.64	73.18
		TOC 73.87	17	"FL13" 1+30.64 = 54.39′ R+ "C" 6+74.20	FL 73.04
9	6.50′ R+ "FL13" 1+14.54	FL 73.99			TOC 73.68
		TOC 74.49	18	6.50′ R+ "FL13" 1+30.64	73.63

CURVE DATA

No. ⊕	R	Δ	T	L
1	48.05′	36°32′02"	15.86′	30.64′



CENTERLINE OF CURB RAMP
NO SCALE

GLEN ANNIE Rd / CALLE REAL

CURB RAMP (Mod CASE C)

SW CORNER / ADA RAMP #13

CONSTRUCTION DETAILS

SCALE: 1" = 5′

C-17

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 11-24-14

DATE PLOTTED => 25-NOV-2014

TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	22	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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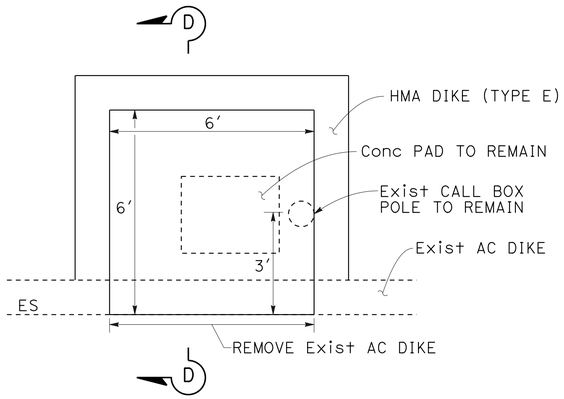
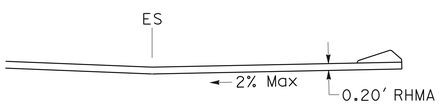
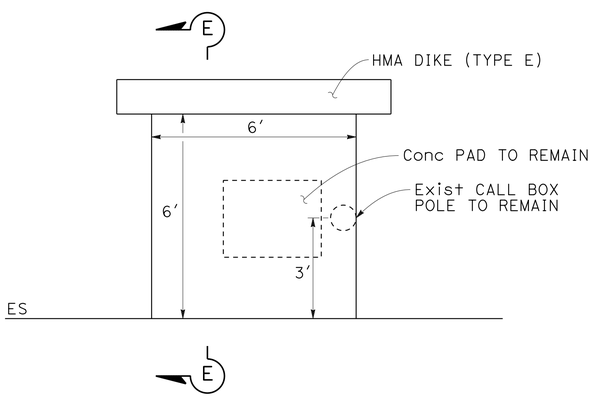


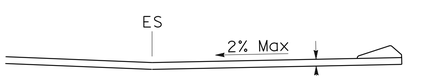
PLAN
CALL BOX PAD



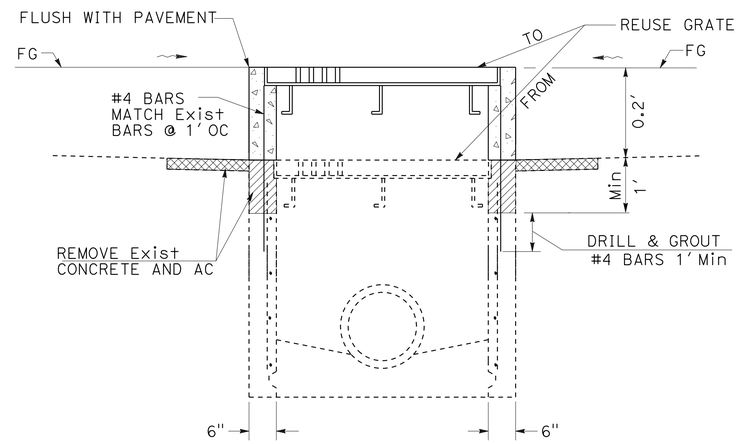
SECTION D-D



PLAN
CALL BOX PAD



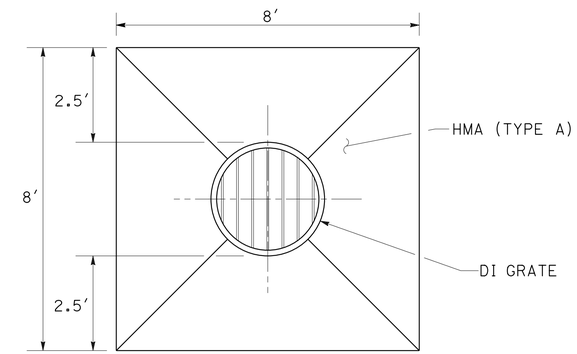
SECTION E-E



ADJUST INLET

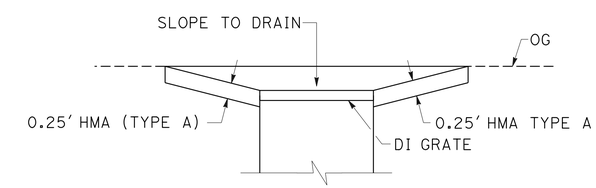
NOTES: (ADJUST INLET)

1. INLETS AT EDGES OF SHOULDER (TYPE G1 & G2) ARE TIED TO THE INSIDE FACE OF FAR SIDE WALL OF THE INLET.
2. G1 D1 SHOWN. SEE Std PLANS FOR TYPE GO AND GDO INLETS CURB OPENING ADJUSTMENT.



PLAN VIEW

INLET DEPRESSION
IN Rte 101 MEDIAN



TYPICAL CROSS SECTION

CONSTRUCTION DETAILS
NO SCALE

C-18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	23	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

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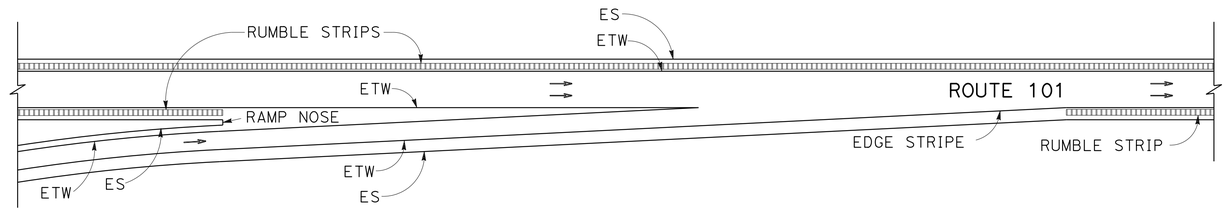
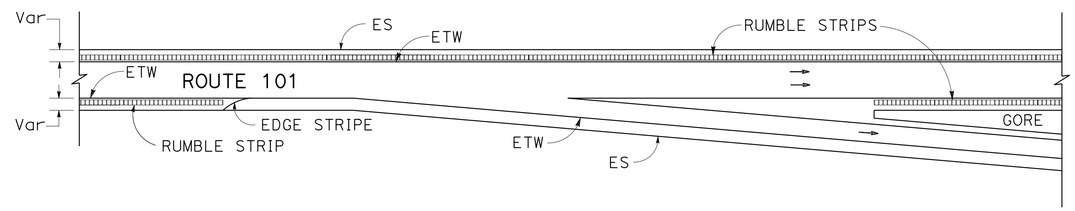
LEGEND:

RUMBLE STRIP

FAILED AREA

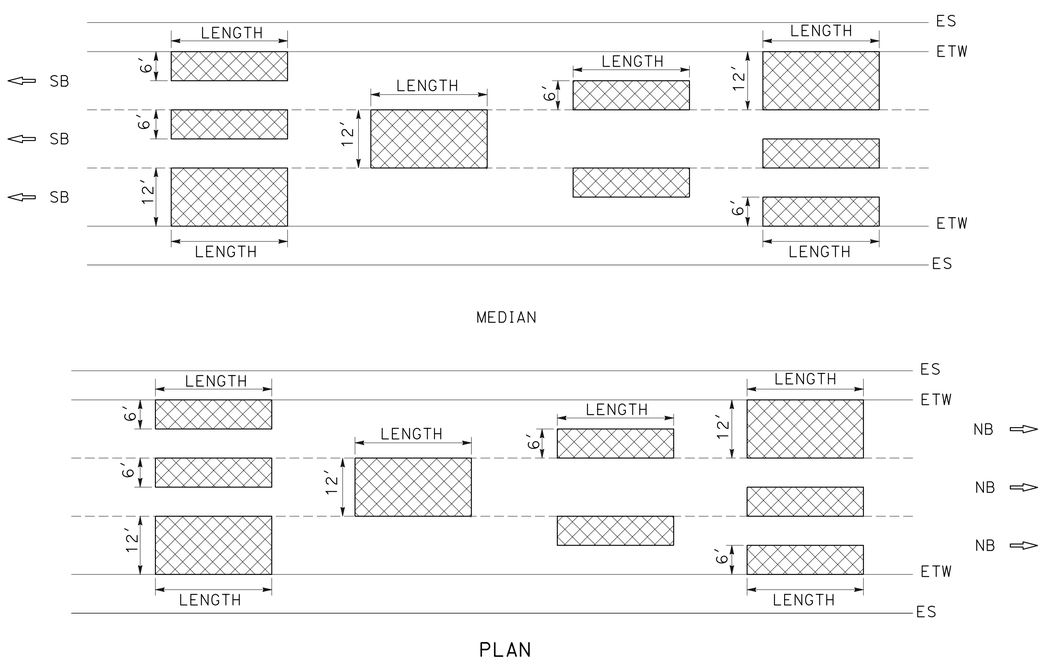


TYPICAL RUMBLE STRIP PLACEMENT AT ON RAMP



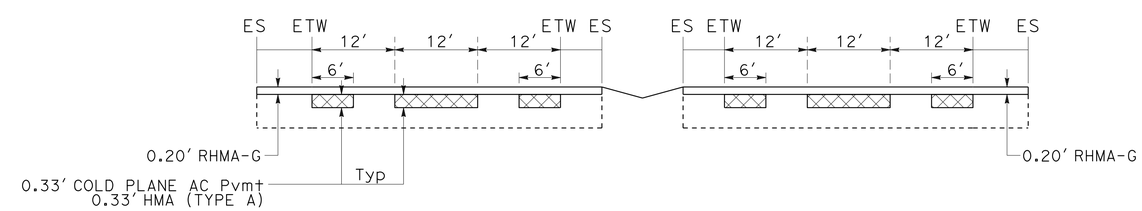
TYPICAL RUMBLE STRIP PLACEMENT AT OFF RAMP

NOTE: FOR ADDITIONAL RUMBLE STRIP DETAILS SEE Std PLANS, A40B.



REPAIR FAILED AREAS DETAIL

NOTE: FOR LOCATIONS SEE SHEETS Q-9 THROUGH Q-11.



REPAIR FAILED AREA

TYPICAL SECTION

CONSTRUCTION DETAILS

NO SCALE

C-19

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS

CHECKED BY: AMJED HETTINI

REVISED BY | DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

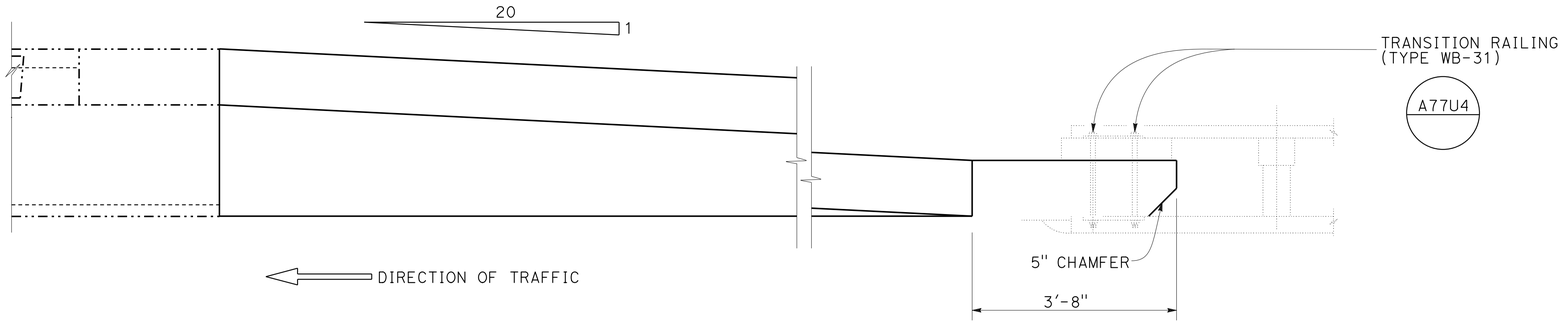
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	24	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

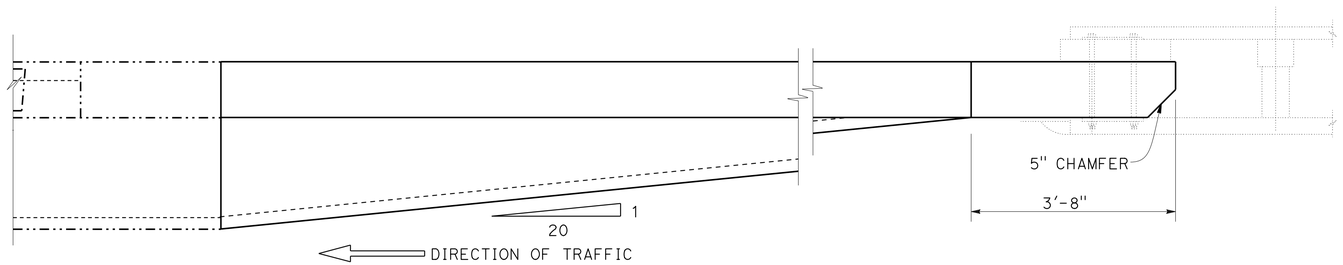
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

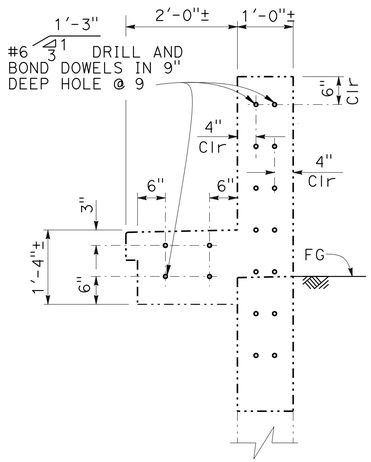
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



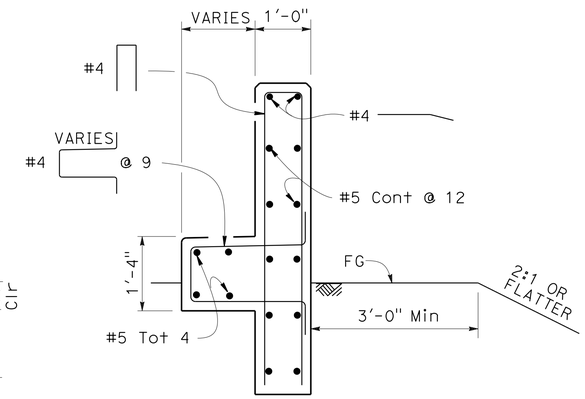
PLAN - ALTERNATIVE No. 1



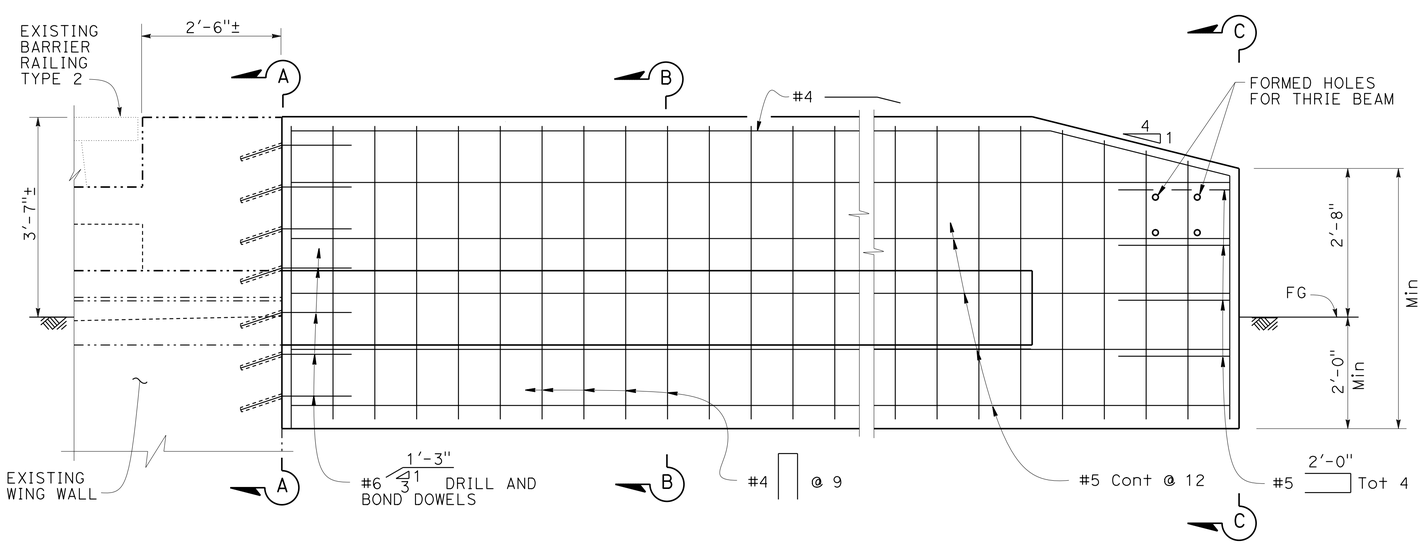
PLAN - ALTERNATIVE No.2



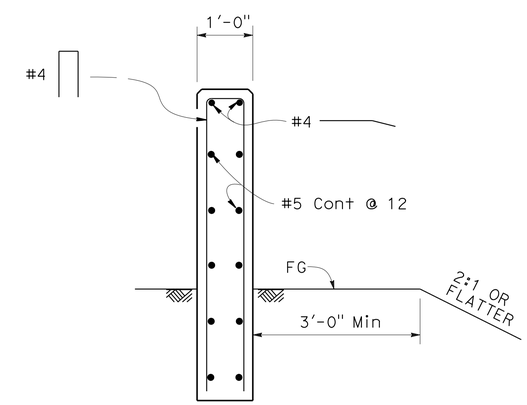
SECTION A-A



SECTION B-B



ELEVATION



SECTION C-C

NOTE:

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

LEGEND:

INDICATES EXISTING STRUCTURE

INDICATES NEW STRUCTURE

CONCRETE BARRIER (TRANSITION)
TRANSITION RAILING CONNECTION DETAILS

PM 21.36 NB 101 TO 217 CONNECTOR L†
PM 21.38 NB 101 TO 217 CONNECTOR R†
PM 21.38 SB PATTERSON OFF RAMP R†

CONSTRUCTION DETAILS

NO SCALE

C-20

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK LEITCHFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	25	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

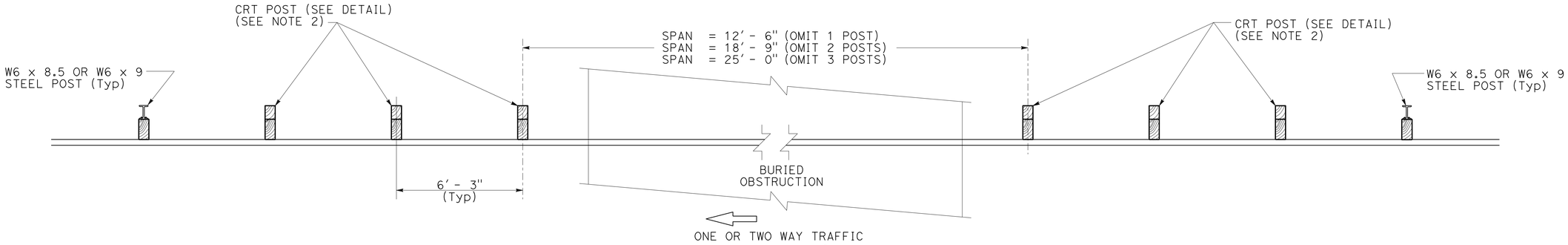
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

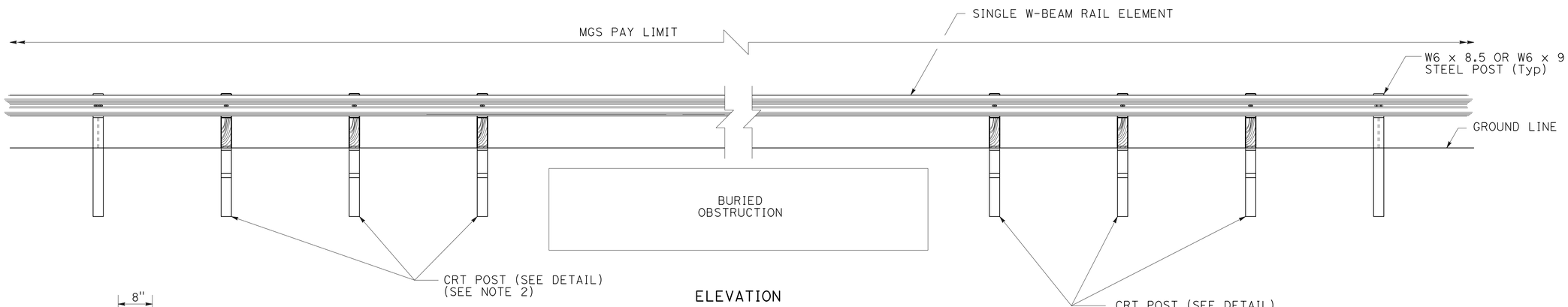
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

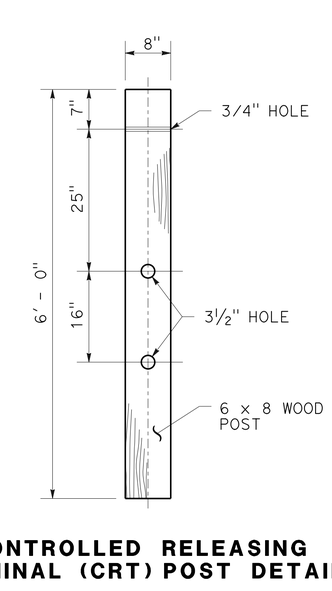
1. FOR ADDITIONAL DETAILS NOT SHOWN ON THIS PLAN, REFER TO RSP A77L1 AND RSP A77L2.
2. CRT POST TO BE WOOD ONLY.



PLAN



ELEVATION



CONTROLLED RELEASING TERMINAL (CRT) POST DETAIL

MGS LOCATIONS

PATTERSON AVE SB OFFRAMP INSIDE SHOULDER, PM 21.16
PATTERSON AVE SB OFFRAMP OUTSIDE SHOULDER, PM 21.16
PATTERSON AVE SB ONRAMP INSIDE SHOULDER, PM 21.16
PATTERSON AVE SB ONRAMP OUTSIDE SHOULDER, PM 21.16
PATTERSON AVE NB ONRAMP INSIDE SHOULDER, PM 21.16
FAIRVIEW AVE SB ONRAMP INSIDE SHOULDER, PM 22.54
FAIRVIEW AVE SB ONRAMP OUTSIDE SHOULDER, PM 22.54
ELLWOOD STATION RD SB OUTSIDE SHOULDER, PM 25.62
ELLWOOD STATION RD NB OUTSIDE SHOULDER, PM 25.62

MIDWEST GUARDRAIL SYSTEM

CONSTRUCTION DETAILS

NO SCALE

C-21

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: RON KRAEMER
CHECKED BY: MARK S. LEICHTFUSS
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 09-DEC-2014
TIME PLOTTED => 13:39

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	26	130

Mark S. Leichtfuss 11-24-14
REGISTERED CIVIL ENGINEER DATE

11-24-14
PLANS APPROVAL DATE

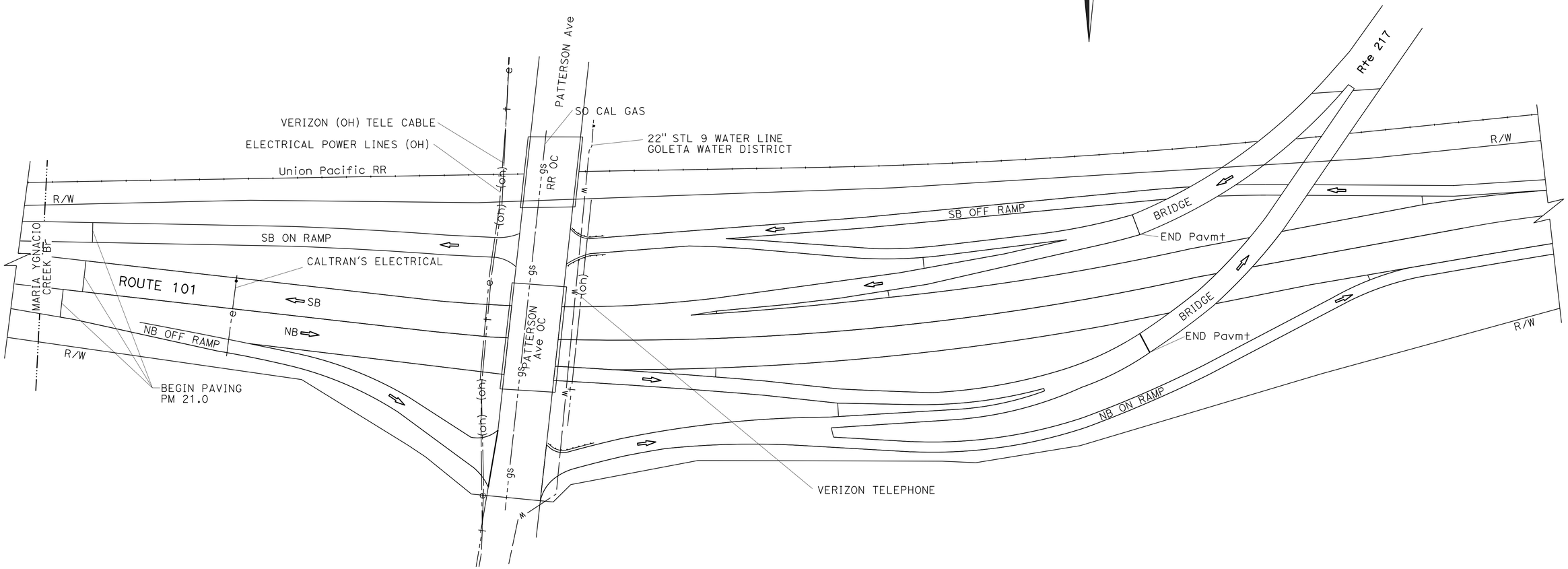
REGISTERED PROFESSIONAL ENGINEER
MARK S. LEICHTFUSS
No. 69124
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

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. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. UTILITY OWNERSHIP:

   WATER - GOLETA WATER DISTRICT
   NATURAL GAS - SOUTHERN CALIFORNIA GAS COMPANY
   TELEPHONE - VERIZON
   ELECTRICAL - PACIFIC GAS AND ELECTRIC
   SEWER - GOLETA SANITARY DISTRICT



PATTERSON Ave OC / Rte 217

PM 21.16

APPROVED FOR UTILITY INFORMATION ONLY

NO SCALE

UTILITY PLAN
U-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	27	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

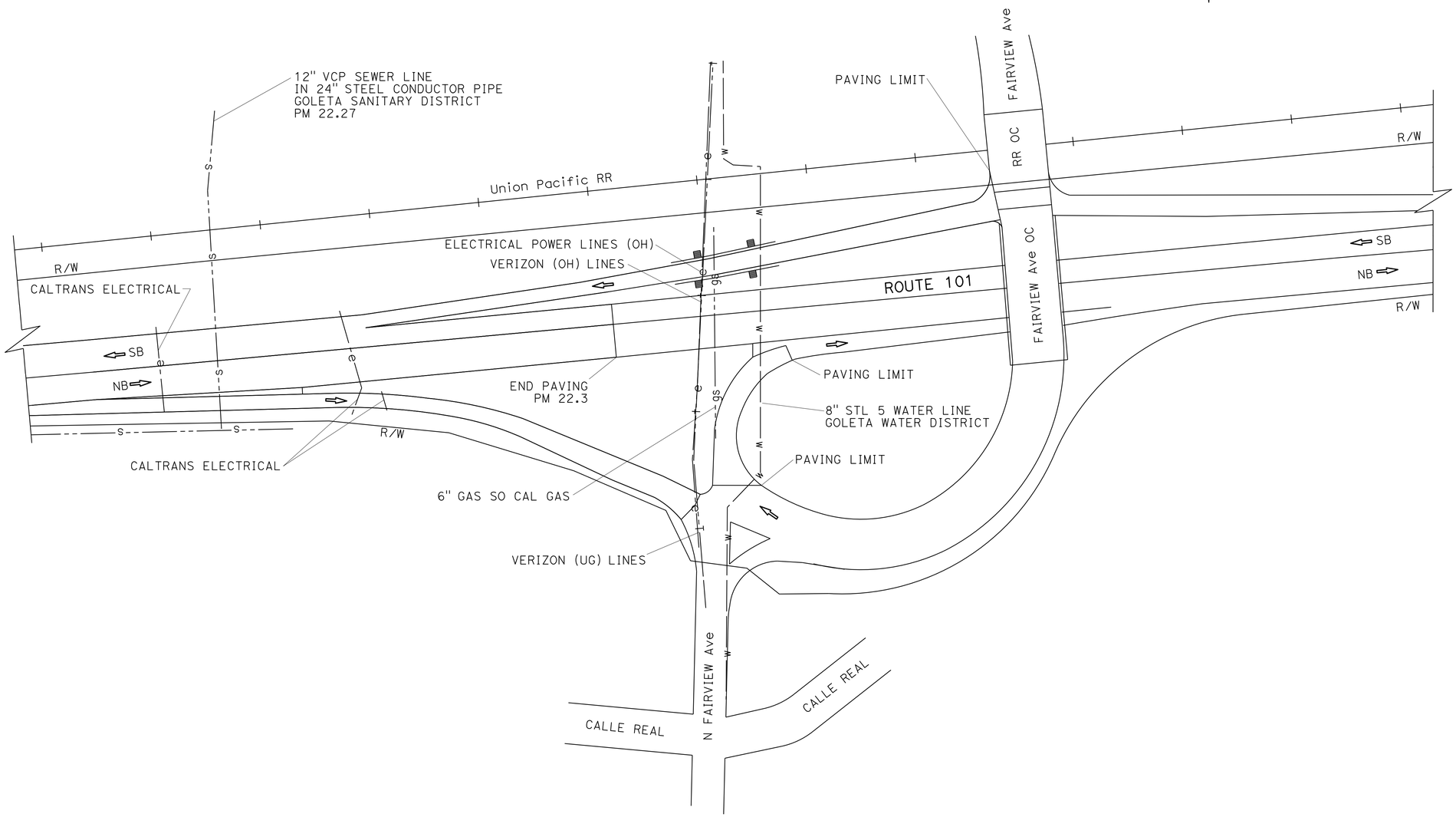
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.



FAIRVIEW Ave OC

PM 22.54

UTILITY PLAN

NO SCALE

U-2

APPROVED FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	28	130

Mark S. Leichtfuss 11-24-14
REGISTERED CIVIL ENGINEER DATE

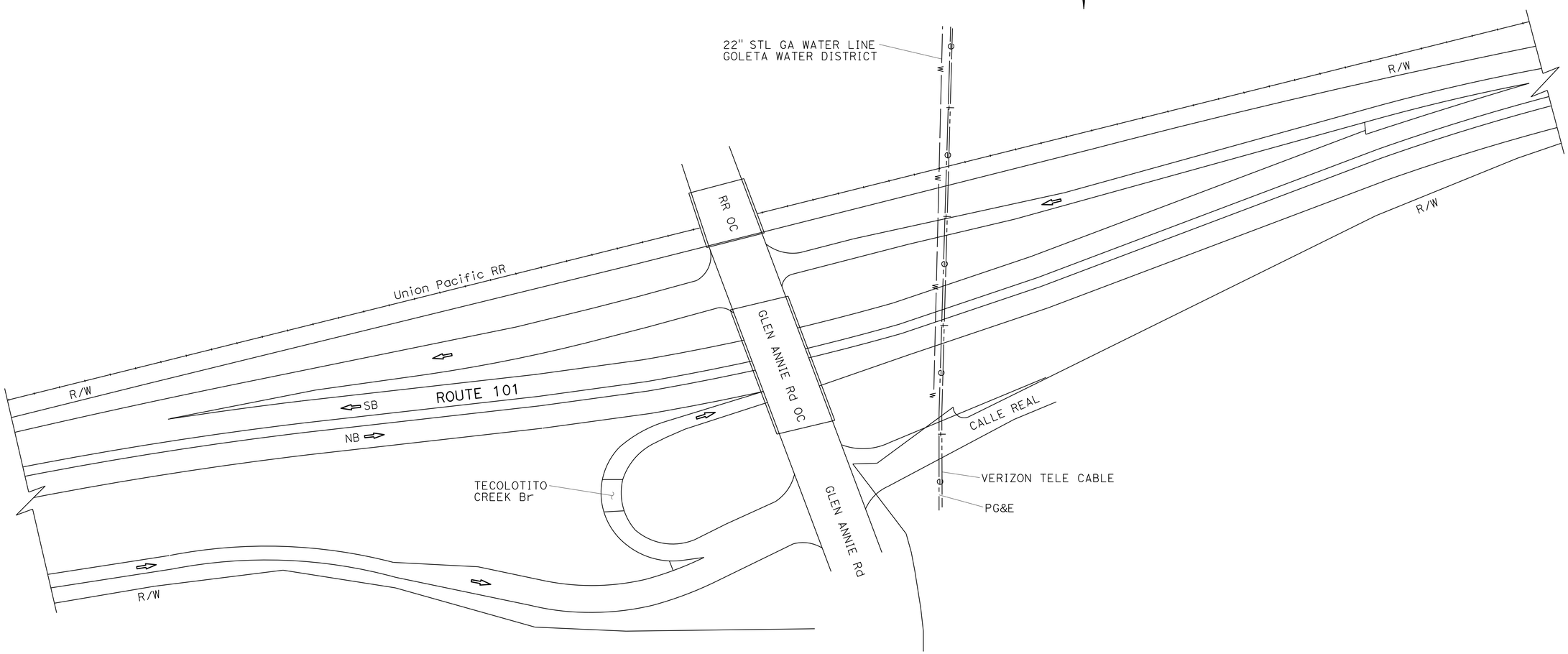
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK S. LEICHTFUSS
No. 69124
Exp. 6-30-16
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.



GLEN ANNIE Rd OC

PM 24.79

APPROVED FOR UTILITY INFORMATION ONLY

UTILITY PLAN

NO SCALE

U-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS

REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

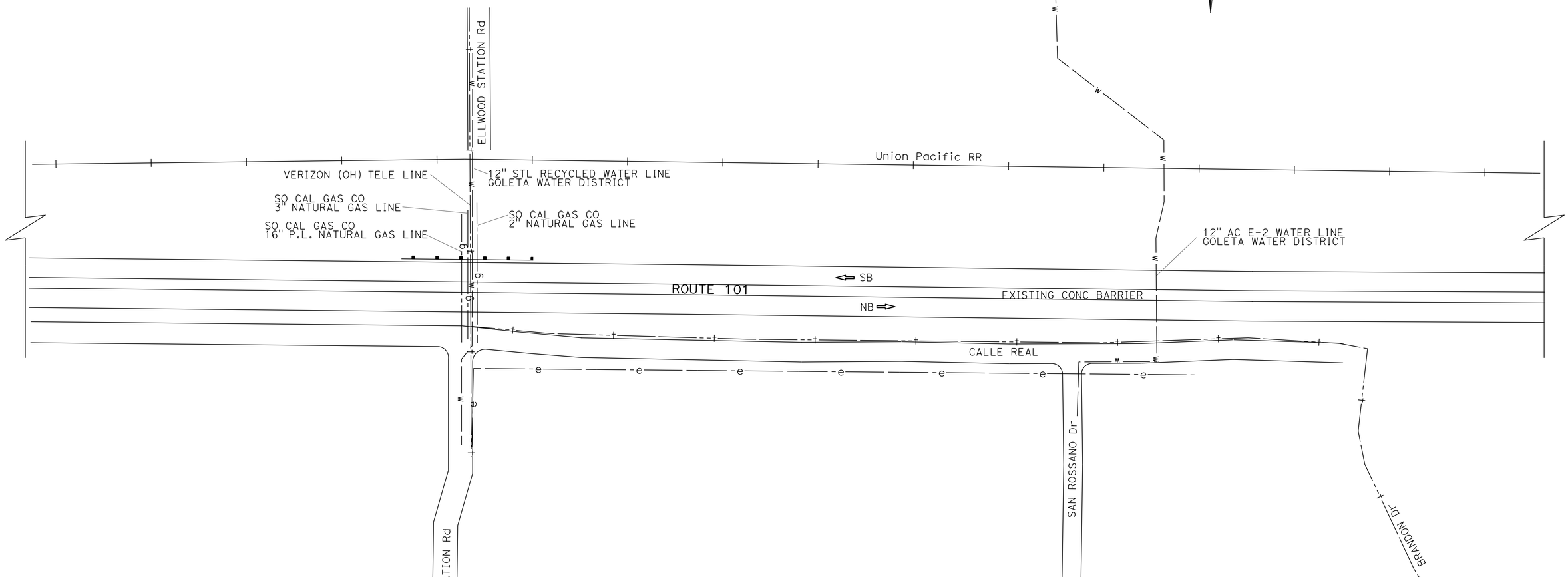
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	29	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.



ELLWOOD STATION Rd
PM 25.62

APPROVED FOR UTILITY INFORMATION ONLY

UTILITY PLAN
NO SCALE **U-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	30	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FAWZI YAGHMOUR No. C-54750 Exp. 12/31/15 CIVIL STATE OF CALIFORNIA

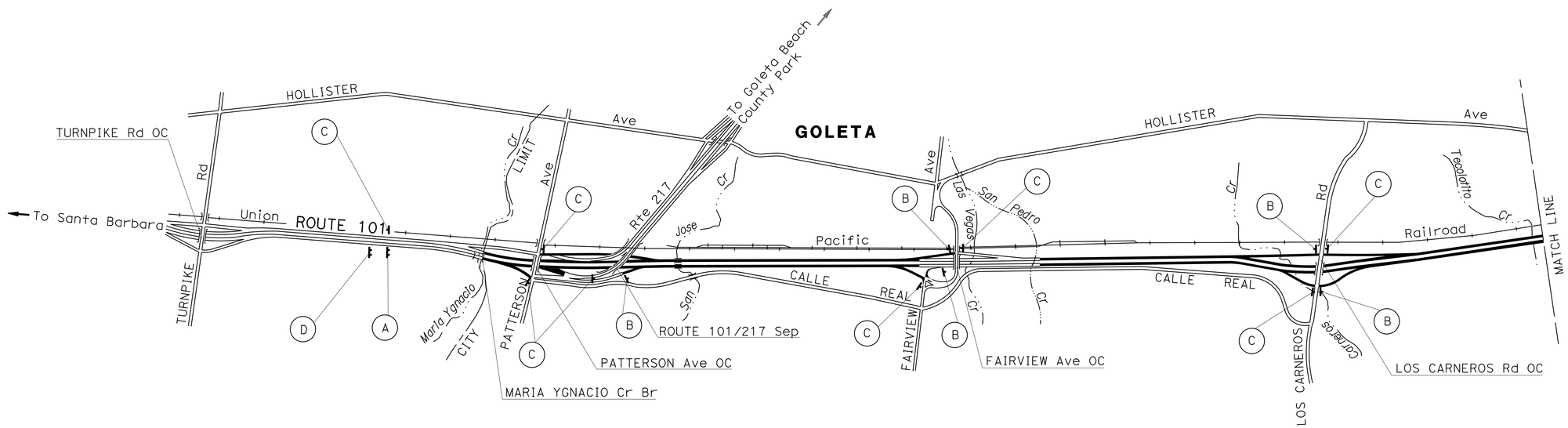
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

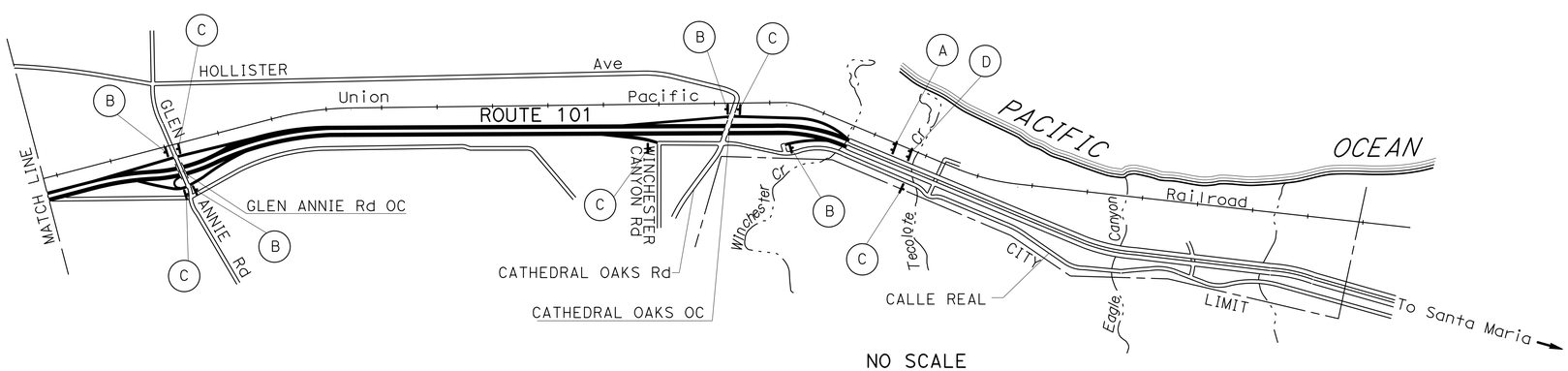
CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

SIGN No. (X)	SIGN CODE FEDERAL	SIGN CODE CALIFORNIA	PANEL SIZE	SIGN MESSAGE	No. OF POSTS AND SIZE	No. OF SIGNS
A	W20-1		60" X 60"	ROAD WORK AHEAD	2-6" X 6"	2
B	W20-1	C23	36" X 36"	ROAD WORK AHEAD	1-6" X 6"	9
C	G20-2	C14	36" X 24"	END ROAD WORK	1-4" X 6"	13
D		C40	102" X 42"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2-6" X 6"	2

NOTES:

1. EXACT CONSTRUCTION AREA SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. FOR SIGN "C40" (TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES), ALL LETTERS SHALL BE BLACK ON WHITE BACKGROUND.
3. FOR ADDITINAL CONSTRUCTION AREA SIGNS, SEE TRAFFIC HANDLING PLANS.





NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CONSTRUCTION AREA SIGNS
NO SCALE
CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI
CALCULATED-DESIGNED BY: DAVID BLACK
CHECKED BY: FAWZI YAGHMOUR
REVISED BY
DATE REVISED

LAST REVISION 08-22-13
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	31	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

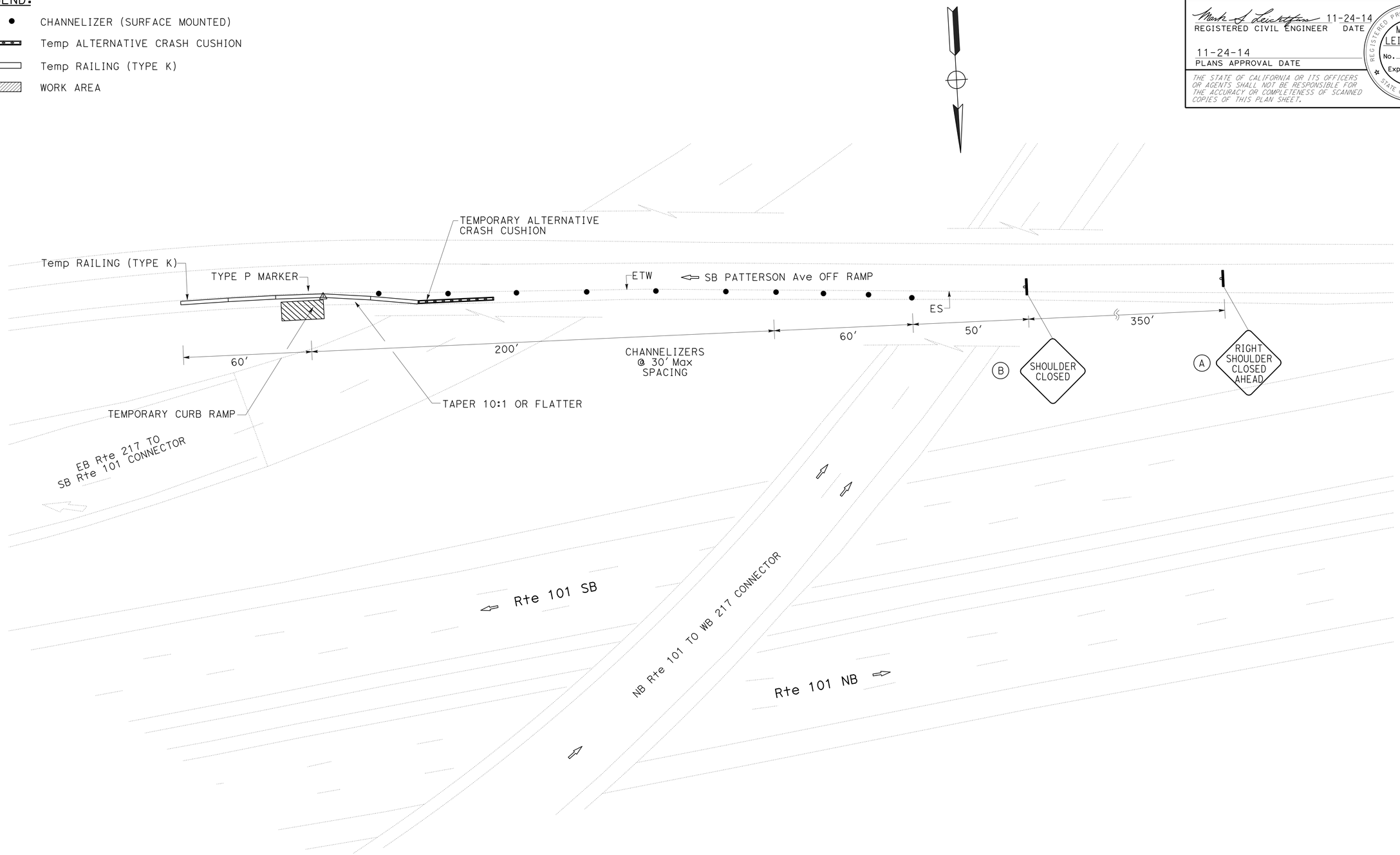
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.

LEGEND:

- CHANNELIZER (SURFACE MOUNTED)
- Temp ALTERNATIVE CRASH CUSHION
- Temp RAILING (TYPE K)
- WORK AREA



SHOULDER CLOSURE WITH TEMPORARY RAILING (TYPE K)
SB PATTERSON Ave OFF RAMP

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN

NO SCALE

TH-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	32	

Mark S. Leichtfuss 10-27-14
REGISTERED CIVIL ENGINEER DATE

10-27-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK S. LEICHTFUSS
No. 69124
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

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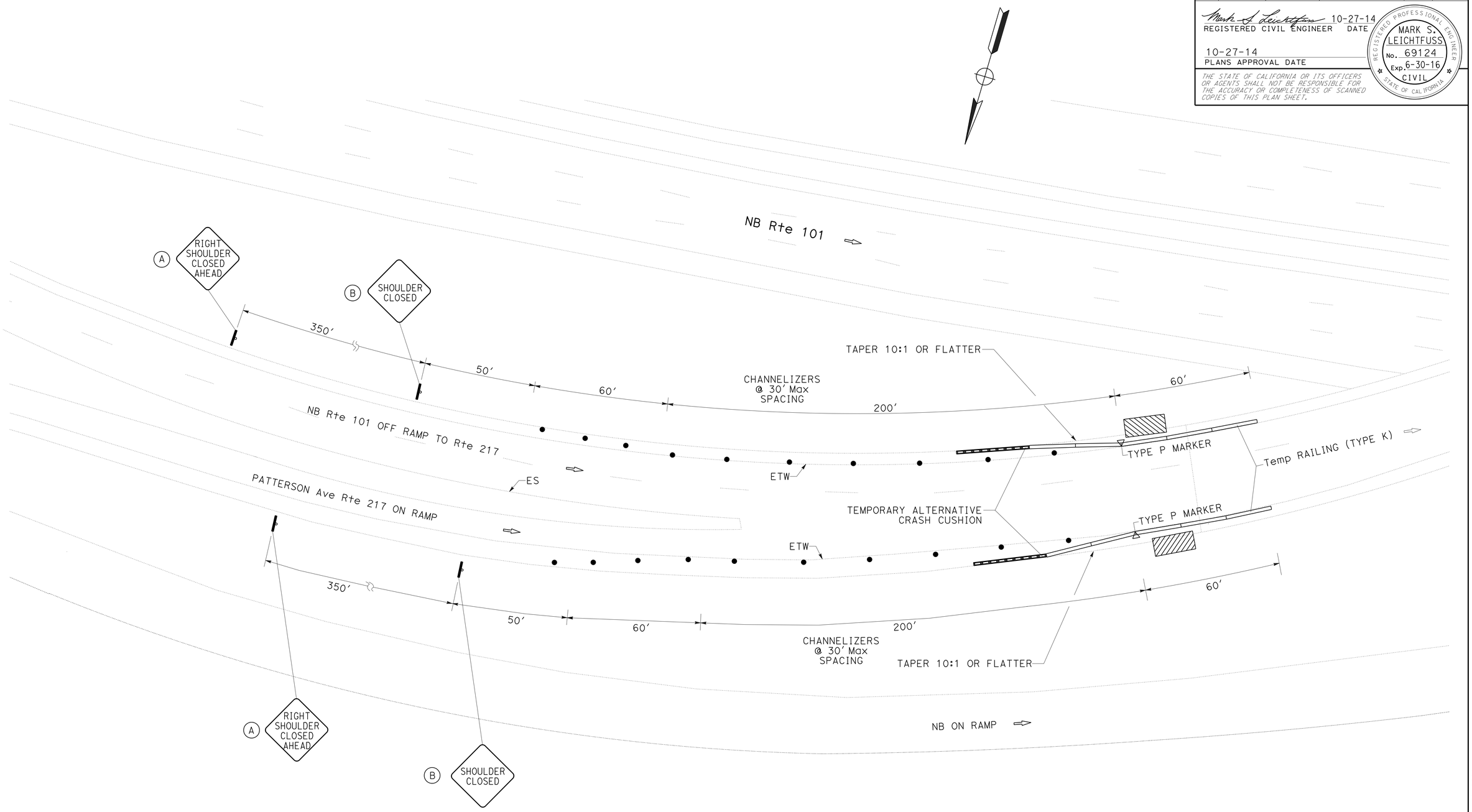


SHOULDER CLOSURE WITH TEMPORARY RAILING (TYPE K)
NB 101 TO 217 CONNECTOR

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN

NO SCALE

TH-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTTINI

REVISED BY
DATE REVISED

LAST REVISION 10-27-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	33	

Mark S. Leichtfuss 10-27-14
REGISTERED CIVIL ENGINEER DATE

10-27-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

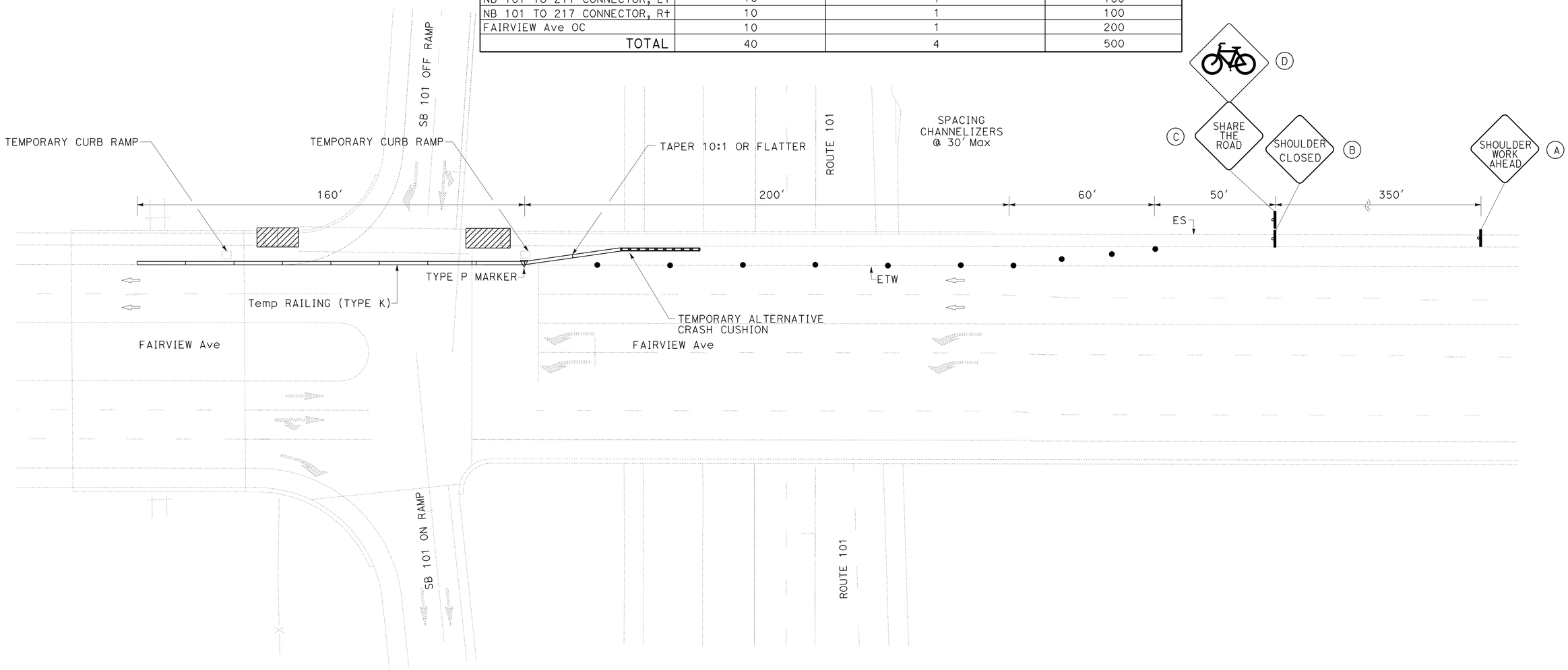
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS (TRAFFIC HANDLING)

SIGN No. (X)	SIGN CODE FEDERAL	SIGN CODE CALIFORNIA	PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
A		C24(CA)	30" x 30"	SHOULDER WORK AHEAD	1-4" x 6"	4
B		C30A(CA)	30" x 30"	SHOULDER CLOSED	1-4" X 6"	4
C		W11-1	30" x 30"	BIKE SYMBOL	1-4" X 6"	1
D		W16-1	30" x 30"	SHARE THE ROAD	1-4" X 6"	1

TRAFFIC HANDLING

LOCATION	CHANNELIZERS (SURFACE MOUNTED)	TEMPORARY ALTERNATIVE CRASH CUSHION	TEMPORARY RAILING (TYPE K)
	EA	EA	LF
SB PATTERSON Ave OFF RAMP	10	1	100
NB 101 TO 217 CONNECTOR, L†	10	1	100
NB 101 TO 217 CONNECTOR, R†	10	1	100
FAIRVIEW Ave OC	10	1	200
TOTAL	40	4	500



SHOULDER CLOSURE WITH TEMPORARY RAILING (TYPE K) AT 8' SHOULDERS
FAIRVIEW Ave ADA RAMPS CONSTRUCTION

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN AND QUANTITIES

NO SCALE

TH-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 10-27-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	34	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FAWZI YAGHMOUR No. C-54750 Exp. 12/31/15 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

LOCATION	DIRECTION	DETAIL No.	PAVEMENT MARKER RETROREFLECTIVE TYPE C	PAVEMENT MARKER RETROREFLECTIVE TYPE G	PAVEMENT MARKER RETROREFLECTIVE TYPE H	PAVEMENT MARKER NON-REFLECTIVE TYPE A	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	REMOVE PAVEMENT MARKER	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 4" WHITE	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 4" YELLOW	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 8" WHITE	DELINEATOR (CLASS-1) TYPE F-1	DELINEATOR (CLASS-1) TYPE G-1	OBJECT MARKER (TYPE L)
			EA				LF	EA	LF		LF	EA		EA
MAINLINE NB SB 101 21/27.1	NB	11/13		570		2,280		2,850	27,397			10	20	37
		11/14	27			112		139	1,296					
		25			599			599		28,692				
		27B							22,755					
MAINLINE SB SB 101 21/27.1	SB	11/13		568		2,272		2,840	27,217			11	11	30
		11/14	31			130		161	1504					
		25			599			599		28,721				
		37	8	160			966	168			2,411			
		27B							23,473					
CATHEDERAL OAKS OC/ 101 INTERCHANGE	NB-OFF	36		26			1,236	26			618	5	2	2
		27B							890					
		25A			15			15		340				
	NB-ON	36A		8			322	8			161	7	4	3
		27B							1,478					
		25A			32			32		754				
		8							189					
	SB-OFF	38B		6			258	6			129	8	6	2
		36		26			1,204	26			602			
		27B							1,629					
		25A			49			49		1,150				
	SB-ON	38		9			352	9			176	10	6	1
		36A		6			238	6			119			
		27B							1,185					
		25A			38			38		878				
		8							191					
SUB-TOTAL PDQ-1			2,777			4,794	4,576	7,571	169,739		4,216	100		75

THERMOPLASTIC PAVEMENT MARKINGS

LOCATION	REMOVE TYPE I (24') ARROW 31 SQFT	REMOVE TYPE V ARROW	REMOVE TYPE VI ARROW	REMOVE SIGNAL	REMOVE AHEAD	REMOVE CROSS WALK	REMOVE LIMIT LINE	REMOVE CHP SPEED MARKING	PLACE TYPE I (24') ARROW	PLACE TYPE V ARROW	PLACE TYPE VI ARROW	PLACE SIGNAL	PLACE AHEAD	PLACE CROSS WALK	PLACE LIMIT LINE	PLACE CHP SPEED MARKING
	SQFT								SQFT							
CATHEDERAL OAKS NB OFF		66		32	31		33			66		32	31		33	
CATHEDERAL OAKS NB ON	31								31							
CATHEDERAL OAKS SB OFF		132		96	31		37			132		96	31		37	
CATHEDERAL OAKS SB ON	62								62							
NB MAINLINE 101			126					264			126					264
SB MAINLINE 101								36								36
SUB-TOTAL PDQ-1	977								977							

PAVEMENT DELINEATION QUANTITIES
PDQ-1

REVISED BY | DATE REVISED
DAVID BLACK | FAWZI YAGHMOUR
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	35	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FAWZI YAGHMOUR No. C-54750 Exp. 12/31/15 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

LOCATION	DIRECTION	DETAIL No.	PAVEMENT MARKER RETROREFLECTIVE TYPE C	PAVEMENT MARKER RETROREFLECTIVE TYPE G	PAVEMENT MARKER RETROREFLECTIVE TYPE H	PAVEMENT MARKER NON-REFLECTIVE TYPE A	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	REMOVE PAVEMENT MARKER	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 4" WHITE	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 4" YELLOW	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 8" WHITE	DELINEATOR (CLASS-1) TYPE F-1	DELINEATOR (CLASS-1) TYPE G-1	OBJECT MARKER (TYPE L)
			EA				LF	EA	LF		LF	EA		EA
PATTERSON/101 INTERCHANGE	NB-OFF	38B		8			214	8			107	8	5	2
		36		28			1,260	28			630			
		27B							897					
		25A			19			19		418				
	NB-ON	36A		18			762	18			381	11	5	1
		27B							1,346					
		25A			24			24		542				
		8							103					
	SB-OFF	38B		6			264	6			132	25	12	1
		36		24			1,090	24			545			
		36A		9			396	9			198			
		27B							2,558					
		25A			54			54		1,265				
	SB-ON	27B							846			8	8	1
		25A			37			37		846				
		8							349					
217/101 SEPERATION	PARTIAL	36		31			1,388	31			694			
		27B							1,140					
		25A			14			14		306				
		11/13		5		20		25	213					
SUB-TOTAL PDQ-2			277			20	5,374	297	10,829		2,687	82		5

THERMOPLASTIC PAVEMENT MARKINGS

LOCATION	REMOVE TYPE I (24') ARROW 31 SQFT	REMOVE TYPE III ARROW	REMOVE TYPE II (B) ARROW	REMOVE TYPE V ARROW	REMOVE SIGNAL	REMOVE AHEAD	REMOVE CROSS WALK	PLACE TYPE I (24') ARROW	PLACE TYPE III ARROW	PLACE TYPE II (B) ARROW	PLACE TYPE V ARROW	PLACE SIGNAL	PLACE AHEAD	PLACE CROSS WALK
	SQFT							SQFT						
PATTERSON OC NB OFF		126	118	33	32	31	183		126	118	33	32	31	183
PATTERSON OC SB OFF		84	118	33	32	31	110		84	118	33	32	31	110
PATTERSON OC SB ON	62						130	62						130
SUB-TOTAL PDQ-2	1,123							1,123						

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI
CALCULATED-DESIGNED BY: DAVID BLACK
CHECKED BY: FAWZI YAGHMOUR
REVISED BY
DATE REVISED

PAVEMENT DELINEATION QUANTITIES
PDQ-2

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	36	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FAWZI YAGHMOUR No. C-54750 Exp. 12/31/15 CIVIL STATE OF CALIFORNIA

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PAVEMENT DELINEATION

LOCATION	DIRECTION	DETAIL No.	PAVEMENT MARKER RETROREFLECTIVE TYPE C	PAVEMENT MARKER RETROREFLECTIVE TYPE G	PAVEMENT MARKER RETROREFLECTIVE TYPE H	PAVEMENT MARKER NON-REFLECTIVE TYPE A	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	REMOVE PAVEMENT MARKER	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 4" WHITE	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 4" YELLOW	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 8" WHITE	DELINEATOR (CLASS-1) TYPE F-1	DELINEATOR (CLASS-1) TYPE G-1	OBJECT MARKER (TYPE L)
			EA				LF	EA	LF		LF	EA		EA
LOS CANAROS OC/ 101 INTERCHANGE	NB-OFF	38B		48			1,118	48			559	9	6	2
		36		23			1,030	23			515			
		27B							1,767					
		25A			43			43		1,001				
	NB-ON	38B		10			210	10			105	9	5	1
		36A		15			648	15			324			
		27B							1,882					
		25A			39			39		905				
		8							158					
	SB-OFF	38B		12			266	12			133	7	6	1
		36		29			1,320	29			660			
		27B							1,490					
		25A			43			43		1,160				
	SB-ON	36A		25			1,148	25			574	12	7	
		27B							2,458					
		25A			50			50		1,346				
		8							287					
GLEN ANNIE OC/ 101 INTERCHANGE	NB-OFF	38B		38			804	38			402	16	13	1
		36		25			1,154	25			577			
		27B							3,337					
		25A			109			109		2,573				
	NB-ON	36A		15			658	15			329	9	4	1
		27B							1,750					
		25A			32			32		732				
		8							327					
	SB-OFF	38B		8			180	8			90	10	6	1
		36		26			1,244	26			622			
		27B							2,084					
		25A			48			48		1,119				
	SB-ON	38B		50			600	50			50	7	5	1
		36A		26			1,224	26			612			
		27B							1,455					
		25A			36			36		832				
SUB-TOTAL PDQ-3				750			11,604	750	26,663		5,552	131		8
SUB-TOTAL PDQ-2				277		20	5,374	297	10,829		2,687	82		5
SUB-TOTAL PDQ-1				2,777		4,794	4,576	7,571	169,739		4,216	100		75
TOTAL				3,804		4,814	21,554	8,618	219,686			313		88

THERMOPLASTIC PAVEMENT MARKINGS

LOCATION	REMOVE TYPE I (24') ARROW 31 SQFT	REMOVE TYPE III ARROW	REMOVE TYPE II (B) ARROW	REMOVE TYPE II (L) ARROW	REMOVE TYPE V ARROW	REMOVE TYPE VI ARROW	REMOVE SIGNAL	REMOVE AHEAD	REMOVE CROSS WALK	REMOVE LIMIT LINE	PLACE TYPE I (24') ARROW	PLACE TYPE III ARROW	PLACE TYPE II (B) ARROW	PLACE TYPE II (L) ARROW	PLACE TYPE V ARROW	PLACE TYPE VI ARROW	PLACE SIGNAL	PLACE AHEAD	PLACE CROSS WALK	PLACE LIMIT LINE
	SQFT										SQFT									
LOS CANAROS NB OFF		126	177		33		32	31		62		126	177		33		32	31		62
LOS CANAROS NB ON	31										31									
LOS CANAROS SB OFF		84		90	33		32	31	135			84		90	33		32	31	135	
LOS CANAROS SB ON	62								146		62								146	
GLEN ANNIE NB OFF		168		360	33		32	31		50		168		360	33		32	31		50
GLEN ANNIE NB ON	62										62									
GLEN ANNIE SB OFF		84		90	66		32	31	95			84		90	66		32	31	95	
GLEN ANNIE SB ON	62					126					62					126				
SUB-TOTAL PDQ-3	2,427										2,427									
SUB-TOTAL PDQ-2	1,123										1,123									
SUB-TOTAL PDQ-1	977										977									
TOTAL	4,527										4,527									

PAVEMENT DELINEATION QUANTITIES
PDQ-3

REVISED BY | DATE REVISED

DAVID BLACK | FAWZI YAGHMOUR

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	37	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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 STRUCTURE

LOCATION	POSTMILE SOUTHBOUND	IMPORTED BORROW (CY)	COLD PLANE AC PAVEMENT 0.06′	COLD PLANE AC PAVEMENT 0.26′	COLD PLANE AC PAVEMENT 0.33′	TACK COAT	HOT MIX ASPHALT (TYPE A)	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)
		CY	SQYD			TON	TON	TON
"MAINLINE"	21.00 TO 22.30	154.5		46,497.1		9.68		6,277.2
"MAINLINE"	23.00 TO 23.02			422.2				
"MAINLINE"	22.98 TO 25.15		30,272.0					
"MAINLINE"	23.00 TO 27.25	323.8				23.10		14,970.9
LOS CARNEROS Rd OC "MAINLINE"	23.72			1,790.2				
GLEN ANNIE Rd OC "MAINLINE"	24.76			1,900.0				
CATHEDRAL OAKS OC "MAINLINE"	26.78			1,722.7				
PATTERSON Ave ON RAMP	20.99 TO 21.15	21.9		3,067.7		0.64		414.1
PATTERSON Ave OFF RAMP	21.17 TO 21.50	58.7		4,312.3		0.90		582.2
Rte 217/PATTERSON Ave OFF RAMP	21.17 TO 21.38			2,653.1		0.55		358.2
Rte 217/Rte 101 SB ON RAMP	21.29 TO 21.38			2,281.7		0.48		308.0
FAIRVIEW Ave ON RAMP	22.41 TO 22.52	39.5		2,417.5		0.50		326.4
LOS CARNEROS Rd ON RAMP	22.55 TO 23.71	51.7		553.9		0.76		491.7
LOS CARNEROS Rd OFF RAMP	23.73 TO 23.96	32.7		531.2		0.66		430.5
GLEN ANNIE Rd ON RAMP	24.62 TO 24.77	47.8		686.1		0.86		556.1
GLEN ANNIE Rd OFF RAMP	24.79 TO 27.99	30.0		540.7		0.69		447.2
CATHEDRAL OAKS ON RAMP	26.69 TO 26.79	18.6		526.3		0.43		279.6
CATHEDRAL OAKS OFF RAMP	26.80 TO 27.11	29.8		540.9		1.20		778.7
"MAINLINE"	27.23 TO 27.25			422.2				
	SB SUBTOTAL		30,272.0	70,865.8				
	SB TOTAL	809.0		101,137.8		40.45		26,220.8

LOCATION	POSTMILE NORTHBOUND	IMPORTED BORROW (CY)	COLD PLANE AC PAVEMENT 0.06′	COLD PLANE AC PAVEMENT 0.26′	COLD PLANE AC PAVEMENT 0.33′	TACK COAT	HOT MIX ASPHALT (TYPE A)	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)
		CY	SQYD			TON	TON	TON
"MAINLINE"	21.00 TO 22.30	110.2		50,672.2		10.55		6,840.7
"MAINLINE"	23.00 TO 25.02			422.2				
"MAINLINE"	22.98 TO 25.05		28,864.0					
"MAINLINE"	23.00 TO 27.17	236.6				21.16		13,709.7
LOS CARNEROS Rd OC "MAINLINE"	23.72			1,790.2				
GLEN ANNIE Rd OC "MAINLINE"	24.76			1,900.0				
CATHEDRAL OAKS OC "MAINLINE"	26.78			1,722.7				
PATTERSON Ave OFF RAMP	21.08 TO 21.15	23.6		2,227.7		0.46		300.7
PATTERSON Ave ON RAMP	21.17 TO 21.46	25.3		4,899.9		1.02		661.5
PATTERSON Ave ON RAMP/Rte 217W	21.17 TO 21.38	0.31		1,607.2		0.34		217.0
Rte 101/Rte 217W	21.23 TO 21.38	26.1		4,942.3		1.03		667.2
FAIRVIEW Ave OFF RAMP	22.30 TO 22.42	54.8		2,492.8		0.52		336.5
FAIRVIEW Ave ON RAMP	22.43 TO 22.45	23.2		1,224.6		0.26		165.3
LOS CARNEROS Rd OFF RAMP	22.52 TO 23.71	44.8		460.6		0.75		487.7
LOS CARNEROS Rd ON RAMP	23.72 TO 23.71	32.8		547.0		0.68		439.3
GLEN ANNIE Rd OFF RAMP	24.30 TO 24.79	66.6		2,059.0		1.87		1,209.3
GLEN ANNIE Rd ON RAMP	24.75 TO 24.79	10.9		3,161.3		0.66		426.8
CATHEDRAL OAKS OFF RAMP	26.41 TO 26.46	26.5		319.6		0.18		117.8
CATHEDRAL OAKS ON RAMP	26.92 TO 27.05	64.9		683.4		0.42		272.4
"MAINLINE"	27.15 TO 27.17			570.0				
NB SUBTOTAL			28,864.0	81,702.7				
NB TOTAL		746.6		110,566.7		39.90		25,851.9
SB TOTAL		809.0		101,137.8		40.45		26,220.8
HMA DIKE						1.08	1,031.42	
HMA Misc AREAS						0.02	178.01	
SAFTY EDGE						1.98		988.29
REPAIR FAILED AREAS				9,880.0		4.86	2,223.90	
SW & CURB RAMPS						0.01	74.87	
CALL BOX						0.01	17.82	
GRAND TOTAL		1,555.6		221,584.5		88.31	3,526.02	53,060.99

SUMMARY OF QUANTITIES
Q-1

REVISED BY | DATE REVISED
AMJED HETTINI | MARK S. LEICHTFUSS
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: RON KRAEMER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	38	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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MIDWEST GUARDRAIL SYSTEM

LOCATION	POSTMILE	DIRECTION	SIDE	REMOVE GUARDRAIL	MIDWEST GUARDRAIL SYSTEM (STEEL POST)	MIDWEST GUARDRAIL SYSTEM (8' POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	ALTERNATIVE IN-LINE TERMINAL SYSTEM	(N) BURIED POST END ANCHOR	END ANCHOR ASSEMBLY (TYPE SFT)	TRANSITION RAILING (TYPE WB-31)	CONCRETE BARRIER (TRANSITION)	TREATED WOOD WASTE
				LF	LF	LF	EA	EA	EA	EA	EA	LF	lb
Rte 101, N OF MARIA YGNACIO Cr Br	20.99	SB	Lt	50.0							1		961
Rte 101, N OF MARIA YGNACIO Cr Br	20.99 TO 21.02	SB	Lt	175.0	175.0								629
Rte 101, N OF MARIA YGNACIO Cr Br	21.02 TO 21.03	SB	Lt	50.0			1						108
Rte 101, N OF PATTERSON Ave, UNDER Rte 217 OC	21.43 TO 21.44	SB	Lt	50.0			1						108
Rte 101, N OF PATTERSON Ave, UNDER Rte 217 OC	21.43 TO 21.44	SB	Lt	62.5	62.5					1			2,677
Rte 101, S OF SAN JOSE Cr Br	21.58 TO 21.61	SB	Lt	87.5	87.5					1			1,522
Rte 101, N OF SAN JOSE Cr Br	21.63	SB	Lt	50.0							1		108
Rte 101, N OF SAN JOSE Cr Br	21.63 TO 21.91	SB	Lt	1,500.0	1,500.0								19,459
Rte 101, N OF SAN JOSE Cr Br	21.91 TO 21.92	SB	Lt	50.0				1					108
Rte 101 MAINLINE	23.95 TO 24.40	SB	Lt	3,589.0	3,589.0					1			69
Rte 101 MAINLINE	25.12 TO 25.22	SB	Lt	512.5	512.5					1			618
Rte 101 MAINLINE	25.22 TO 25.23	SB	Lt	50.0			1						108
Rte 101 MAINLINE	25.28 TO 25.61	SB	Lt	1,800.0	1,800.0					1			755
Rte 101 MAINLINE	25.61 TO 25.62	SB	Lt	50.0					1				108
Rte 101 MAINLINE	25.88 TO 25.94	SB	Lt	300.0	300.0								618
Rte 101 MAINLINE	25.94 TO 25.95	SB	Lt	50.0			1						108
Rte 101 MAINLINE	26.06 TO 26.26	SB	Lt	1,062.5	1,062.5								618
Rte 101 MAINLINE	26.26 TO 26.27	SB	Lt	50.0				1					108
ON RAMP AT PATTERSON Ave	20.99	SB	Lt	50.0							1		961
ON RAMP AT PATTERSON Ave	21.01 TO 21.02	SB	Lt	50.0			1						108
ON RAMP AT PATTERSON Ave	21.12 TO 21.15	SB	Lt	200.0	200.0					1			2,723
ON RAMP AT PATTERSON Ave	20.99	SB	Rt	50.0							1		108
ON RAMP AT PATTERSON Ave	20.99 TO 21.00	SB	Rt	50.0			1						108
ON RAMP AT PATTERSON Ave	21.12 TO 21.15	SB	Rt	160.0	160.0					1			1,979
OFF RAMP AT PATTERSON Ave	21.17 TO 21.28	SB	Lt	575.0	575.0								1,956
OFF RAMP AT PATTERSON Ave	21.29 TO 21.30	SB	Lt	50.0				1					108
OFF RAMP AT PATTERSON Ave	21.44 TO 21.45	SB	Lt	50.0			1						108
OFF RAMP AT PATTERSON Ave	21.41 TO 21.44	SB	Lt	112.5	112.5								1,682
OFF RAMP AT PATTERSON Ave	21.38	SB	Rt								1	3.5	
OFF RAMP AT PATTERSON Ave	21.47 TO 21.48	SB	Rt	50.0			1						108
OFF RAMP AT PATTERSON Ave	21.39 TO 21.45	SB	Rt	361.0	361.0								4,118
OFF RAMP AT Rte 217 TO PATTERSON Ave	21.26 TO 21.27	SB	Rt	50.0				1					108
OFF RAMP AT Rte 217 TO PATTERSON Ave	21.17 TO 21.26	SB	Rt	562.5	562.5								1,922
OFF RAMP AT Rte 217 TO Rte 101	21.39	SB	Rt										
OFF RAMP AT Rte 217 TO Rte 101	21.28 TO 21.37	SB	Rt	485.0	485.0					1			69
ON RAMP AT FAIRVIEW Ave	22.43 TO 22.51	SB	Lt	462.5	462.5					1			6,006
ON RAMP AT FAIRVIEW Ave	22.43 TO 22.52	SB	Rt	475.0	475.0					1			6,166
ON RAMP AT LOS CARNEROS Ave	23.69 TO 23.71	SB	Lt	125.0	125.0					1			1,327
ON RAMP AT LOS CARNEROS Ave	23.69 TO 23.71	SB	Rt	125.0	125.0					1			1,853
OFF RAMP AT LOS CARNEROS Ave	23.73 TO 23.95	SB	Lt	1,137.5	1,137.5					1			69
ON RAMP AT GLEN ANNIE Rd	24.65 TO 24.77	SB	Lt	662.5	662.5					1			69
ON RAMP AT GLEN ANNIE Rd	24.70 TO 24.77	SB	Rt	387.5	387.5					1			5,045
OFF RAMP AT GLEN ANNIE Rd	24.76 TO 24.89	SB	Lt	700.0	700.0								4,050
OFF RAMP AT GLEN ANNIE Rd	24.89 TO 24.90	SB	Lt	50.0			1						108
ON RAMP AT CATHEDRAL OAKS Rd	26.59	SB	Lt							1			
ON RAMP AT CATHEDRAL OAKS Rd	26.59 TO 26.64	SB	Lt	275.0	275.0								618
	Q-2 SUBTOTAL			16,795.0	15,895.0		9	4	1	16	5	3.5	70,267

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

SUMMARY OF QUANTITIES
Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS
REVISED BY
DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	39	130

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11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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MIDWEST GUARDRAIL SYSTEM

LOCATION * REPLACE WOOD POSTS WITH STEEL POSTS	POSTMILE	DIRECTION	SIDE	REMOVE GUARDRAIL LF	MIDWEST GUARDRAIL SYSTEM (STEEL POST) LF	MIDWEST GUARDRAIL SYSTEM (8' POST) LF	ALTERNATIVE FLARED TERMINAL SYSTEM EA	ALTERNATIVE IN-LINE TERMINAL SYSTEM EA	(N) BURIED POST END ANCHOR EA	END ANCHOR ASSEMBLY (TYPE SFT) EA	TRANSITION RAILING (TYPE WB-31) EA	CONCRETE BARRIER (TRANSITION) LF	TREATED WOOD WASTE lb
ON RAMP AT CATHEDRAL OAKS Rd	26.57 TO 26.79	SB	L+	175.0	175.0					1			69
ON RAMP AT CATHEDRAL OAKS Rd	26.64 TO 26.65	SB	L+	50.0			1						108
ON RAMP AT CATHEDRAL OAKS Rd	26.71 TO 26.78	SB	R+	362.5	362.5					1			69
OFF RAMP AT CATHEDRAL OAKS Rd	26.84 TO 26.85	SB	L+	50.0			1						108
OFF RAMP AT CATHEDRAL OAKS Rd	26.81	SB	L+	50.0							1		108
OFF RAMP AT CATHEDRAL OAKS Rd	26.81 TO 26.84	SB	L+	150.0	150.0								1,098
OFF RAMP AT CATHEDRAL OAKS Rd	26.80	SB	R+	50.0							1		108
OFF RAMP AT CATHEDRAL OAKS Rd	27.10 TO 27.11	SB	L+	50.0				1					108
OFF RAMP AT CATHEDRAL OAKS Rd	27.00 TO 27.10	SB	L+	550.0	550.0					1			618
OFF RAMP AT CATHEDRAL OAKS Rd	27.01 TO 27.02	SB	R+	50.0				1					108
OFF RAMP AT CATHEDRAL OAKS Rd	26.81 TO 27.01	SB	R+	1,100.0		1,100.0							1,178
R+e 101 MAINLINE	21.34 TO 21.35	NB	L+	50.0			1						108
R+e 101 MAINLINE	21.34 TO 21.41	NB	L+	337.5	337.5					1			3,981
R+e 101 MAINLINE	21.59 TO 21.60	NB	L+	50.0			1						108
R+e 101 MAINLINE	21.62	NB	L+	50.0							1		108
R+e 101 MAINLINE	21.61 TO 21.62	NB	L+	62.5	62.5								2,265
R+e 101 MAINLINE	21.92 TO 21.93	NB	L+	50.0			1						108
R+e 101 MAINLINE	21.92 TO 22.15	NB	L+	1,200.0	1,200.0					1			2,608
R+e 101 MAINLINE	23.29 TO 23.30	NB	L+	50.0			1						108
R+e 101 MAINLINE	23.30 TO 23.41	NB	L+	525.0	525.0					1			1,991
R+e 101 MAINLINE	24.12 TO 24.13	NB	L+	50.0				1					108
R+e 101 MAINLINE	24.13 TO 24.21	NB	L+	387.5	387.5					1			686
R+e 101 MAINLINE	24.40 TO 24.41	NB	L+	50.0			1						108
R+e 101 MAINLINE	24.41 TO 24.43	NB	L+	125.0	125.0					1			1,922
R+e 101 MAINLINE	25.11 TO 25.12	NB	L+	50.0			1						108
R+e 101 MAINLINE	25.13 TO 25.61	NB	L+	2,475.0	2,475.0					1			618
ON RAMP AT PATTERSON Ave TO R+e 217	21.30	NB	R+	50.0				1					108
NB 101 TO R+e 217 CONNECTOR	21.38	NB	R+								1	3.5	
ON RAMP AT PATTERSON Ave TO R+e 217	21.30 TO 21.38	NB	R+	425.0		425.0							5,846
ON RAMP AT PATTERSON Ave TO R+e 217	21.16 TO 21.17	NB	L+	112.5	112.5								1,579
NB 101 TO R+e 217 CONNECTOR	21.36	NB	L+	50.0							1	3.5	108
OFF RAMP AT R+e 101 TO R+e 217	21.36	NB	L+	50.0				1					108
OFF RAMP AT R+e 101 TO R+e 217	21.36 TO 21.37	NB	L+	25.0		25.0							1,167
OFF RAMP AT LOS CARNEROS Ave	23.52 TO 23.53	NB	R+	50.0			1						108
OFF RAMP AT LOS CARNEROS Ave	23.52 TO 23.66	NB	R+	687.5	687.5					1			1,785
ON RAMP AT GLEN ANNIE Rd	24.73	NB	R+	50.0							1		108
ON RAMP AT GLEN ANNIE Rd	24.73 TO 24.75	NB	R+	400.0		400.0							5,526
ON RAMP AT GLEN ANNIE Rd	24.70 TO 24.71	NB	L+	50.0	25.0		1						1,030
ON RAMP AT GLEN ANNIE Rd	24.70	NB	L+								1		
ON RAMP AT GLEN ANNIE Rd	24.73 TO 24.74	NB	L+	137.5						1			1,579
OFF RAMP AT GLEN ANNIE Rd	24.71 TO 24.72	NB	R+	50.0				1					461
OFF RAMP AT GLEN ANNIE Rd	24.71 TO 24.76	NB	R+	287.5	287.5								3,775
ON RAMP AT CATHEDRAL OAKS Rd	26.91 TO 27.06	NB	L+	750.0		750.0				1			6,795
Q-3 SUBTOTAL				11,325.0	7,462.5	2,700.0	10	6		12	7	7.0	48,698
Q-2 SUBTOTAL				16,795.0	11,325.0	4,570.0	9	4	1	16	5	3.5	70,267
GRAND TOTAL				28,120.0	18,787.5	7,270.0	19	10	1	28	12	10.5	118,965

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

SUMMARY OF QUANTITIES
Q-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS
REVISED BY
DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	40	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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:

1. BEGIN POSTMILE AND DIKE LENGTH SHOWN ARE APPROXIMATE.

HOT MIX ASPHALT DIKE

LOCATION	POSTMILE SB	SIDE	(TYPE A) LF	(TYPE C) LF	(TYPE E) LF	(TYPE F) LF	HMA (TYPE A) TON	REMOVE AC DIKE LF	LOCATION	POSTMILE SB	SIDE	(TYPE A) LF	(TYPE C) LF	(TYPE E) LF	(TYPE F) LF	HMA (TYPE A) TON	REMOVE AC DIKE LF
ROUTE 101 MAINLINE	20.99 TO 21.02	R+				178	2.38	178	PATTERSON Ave OFF RAMP	21.18 TO 21.28	R+				542	7.24	542
	21.03 TO 21.05			61			0.47	61	PATTERSON Ave OFF RAMP	21.28 TO 21.30	R+		91			0.70	91
	21.04 TO 21.06				147		3.87	147	PATTERSON Ave OFF RAMP	21.30 TO 21.42	R+			600		15.80	600
	21.14 TO 21.17		138				3.77	138	PATTERSON Ave OFF RAMP	21.42 TO 21.44	R+				110	1.47	110
	21.29 TO 21.40		549				15.01	549	PATTERSON Ave OFF RAMP	21.44 TO 21.45	R+		77			0.59	77
	21.59 TO 21.61					85	1.14	85	PATTERSON Ave OFF RAMP	21.45 TO 21.50	R+			300		7.90	300
	21.63 TO 21.92					1,521	20.32	1,521	ROUTE 217 OFF RAMP	21.37 TO 21.38	R+			49		1.29	49
	21.92 TO 21.94			116			0.89	116	PATTERSON Ave ON RAMP	21.03 TO 21.11	R+			479		12.61	479
	21.94 TO 22.30				1,932		50.87	1,932	FAIRVIEW Ave ON RAMP	22.30 TO 22.43	R+			429		11.29	429
	22.98 TO 23.07				480		12.64	480	FAIRVIEW Ave ON RAMP	22.43 TO 22.51	R+				460	6.15	460
	23.07 TO 23.13		299				8.17	299	LOS CARNEROS Rd ON RAMP	23.47 TO 23.69	R+			1,162		30.59	1,162
	23.13 TO 23.25				614		16.16	614	LOS CARNEROS Rd OFF RAMP	23.74 TO 23.92	R+				915	12.23	915
	24.03 TO 24.40					1,920	25.66	1,920	LOS CARNEROS Rd OFF RAMP	23.92 TO 23.96	R+			152		4.00	152
	25.21 TO 25.22					50	0.67	50	LOS CARNEROS Rd OFF RAMP	23.96 TO 24.03	R+				406	5.43	406
	25.22 TO 25.23			63			0.49	63	GLEN ANNIE Rd ON RAMP	24.40 TO 24.63	R+				1,165	15.57	1,165
	25.23 TO 25.27		211				5.77	211	GLEN ANNIE Rd ON RAMP	24.63 TO 24.65	R+			106		2.79	106
	25.27 TO 25.28				26		0.69	26	GLEN ANNIE Rd ON RAMP	24.63 TO 24.76	R+				657	8.78	657
	25.28 TO 25.61					1,785	23.85	1,785	GLEN ANNIE Rd ON RAMP	24.70 TO 24.77	L+				251	3.35	251
	25.61 TO 25.64			148			1.14	148	GLEN ANNIE Rd OFF RAMP	24.80 TO 24.92	R+				645	8.62	645
	25.64 TO 25.87		1,199				32.77	1,199	GLEN ANNIE Rd OFF RAMP	24.92 TO 24.93	R+		60			0.46	60
	25.87 TO 25.88				58		1.53	58	GLEN ANNIE Rd OFF RAMP	24.93 TO 24.99	R+			308		8.11	308
	25.88 TO 25.94					312	4.16	312	GLEN ANNIE Rd OFF RAMP	24.79 TO 24.80	L+			164		4.32	164
	25.94 TO 25.95			84			0.65	84	CATHEDRAL OAKS ON RAMP	26.57 TO 26.59	R+			87		2.29	87
	25.96 TO 26.06				578		15.22	578	CATHEDRAL OAKS ON RAMP	26.59 TO 26.64	R+				274	3.66	274
	26.06 TO 26.27					1,063	14.21	1,063	CATHEDRAL OAKS ON RAMP	26.64 TO 26.66	R+		88			0.68	88
	26.27 TO 26.29			73			0.56	73	CATHEDRAL OAKS ON RAMP	26.66 TO 26.67	R+			50		1.32	50
	26.29 TO 26.46				970		25.54	970	CATHEDRAL OAKS ON RAMP	26.77 TO 26.79	R+				172	2.30	172
	26.76 TO 26.80				199		5.24	199	CATHEDRAL OAKS ON RAMP	26.76 TO 26.77	R+			24		0.63	24
	26.80 TO 27.05		1,312				35.88	1,312	CATHEDRAL OAKS OFF RAMP	26.80 TO 26.82	R+				152	2.03	152
	27.18 TO 27.21				153		4.03	153	CATHEDRAL OAKS OFF RAMP	26.97 TO 27.01	L+				218	2.91	218
	27.21 TO 27.24		180				4.91	180	CATHEDRAL OAKS OFF RAMP	27.01 TO 27.03	L+		88			0.68	88
									CATHEDRAL OAKS OFF RAMP	27.03 TO 27.08	L+			297		7.82	297
										SB SUBTOTAL		0	404	4,207	5,967	193.61	10,578
	SB SUBTOTAL		3,888	545	5,157	6,914	338.66	16,504		SB TOTAL		3,888	949	9,364	12,881	532.27	27,082

SUMMARY OF QUANTITIES
Q-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS
REVISED BY
DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	41	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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HOT MIX ASPHALT DIKE

LOCATION	POSTMILE NB	SIDE	(TYPE A)	(TYPE C)	(TYPE E)	(TYPE F)	HMA (TYPE A)	REMOVE AC DIKE
			LF	LF	LF	LF	TON	LF
ROUTE 101 MAINLINE	21.38 TO 21.41	R†				166	2.22	166
	21.41 TO 21.43				119		3.13	119
	21.56 TO 21.59				158		4.17	158
	21.59 TO 21.61			100			0.77	100
	21.61 TO 21.66					77	1.03	77
	21.64 TO 21.91				1,398		36.80	1,398
	21.91 TO 21.92			53			0.41	53
	21.92 TO 22.15					1,200	16.04	1,200
	22.15 TO 22.19				221		5.82	221
	22.44 TO 22.45				42		1.11	42
	23.38 TO 23.41					148	1.98	148
	23.41 TO 23.44				187		4.92	187
	23.70 TO 23.74		184				5.03	184
	24.12 TO 24.14			77			0.59	77
	24.14 TO 24.21					386	5.16	386
	24.21 TO 24.22				53		1.40	53
	25.26 TO 25.61					1,845	24.66	1,845
	25.61 TO 25.63				153		4.03	153
	25.66 TO 26.06		2,144				58.60	2,144
	26.06 TO 26.29				1,268		33.38	1,268
	26.87 TO 26.91				207		5.45	207
	26.91 TO 27.06		725				19.82	725
	NB SUBTOTAL		3,053	230	3,806	3,822	236.52	10,911

LOCATION	POSTMILE NB	SIDE	(TYPE A)	(TYPE C)	(TYPE E)	(TYPE F)	HMA (TYPE A)	REMOVE AC DIKE
			LF	LF	LF	LF	TON	LF
PATTERSON Ave OFF RAMP	21.00 TO 21.01	R†			56		1.47	56
PATTERSON Ave OFF RAMP	21.07 TO 21.14	R†			491		12.93	491
PATTERSON Ave ON RAMP	21.19 TO 21.25	R†			327		8.61	327
ROUTE 217 OFF RAMP	21.26 TO 21.35	L†			517		13.61	517
ROUTE 217 OFF RAMP	21.35 TO 21.37	L†		87			0.67	87
ROUTE 217 OFF RAMP	21.37 TO 21.37	L†				33	0.44	33
FAIRVIEW Ave ON RAMP	22.45 TO 22.52	R†			541		14.24	541
FAIRVIEW Ave OFF RAMP	22.19 TO 22.42	R†			1,456		38.33	1,456
LOS CARNEROS Rd ON RAMP	23.73 TO 23.90	R†	1,491				40.77	1,491
LOS CARNEROS Rd ON RAMP	23.40 TO 24.12	R†			588		15.48	588
LOS CARNEROS Rd OFF RAMP	23.44 TO 23.52	R†			398		10.98	398
LOS CARNEROS Rd OFF RAMP	23.52 TO 23.53	R†		70			0.54	70
LOS CARNEROS Rd OFF RAMP	23.53 TO 23.66	R†				688	9.20	688
LOS CARNEROS Rd OFF RAMP	23.66 TO 23.69	R†			208		5.48	208
GLEN ANNIE Rd ON RAMP	24.73 TO 24.78	R†				441	5.89	441
GLEN ANNIE Rd ON RAMP	24.73 TO 24.73	R†			56		1.47	56
GLEN ANNIE Rd OFF RAMP	24.42 TO 24.64	R†			1,133		29.83	1,133
GLEN ANNIE Rd OFF RAMP	24.77 TO 24.79	R†				108	1.44	108
GLEN ANNIE Rd OFF RAMP	24.69 TO 24.73	L†			280		7.38	280
CATHEDRAL OAKS ON RAMP	27.02 TO 27.16	R†			718		18.90	718
WINCHESTER CANYON Rd OFF RAMP	26.29 TO 26.32	R†			168		4.42	168
WINCHESTER CANYON Rd OFF RAMP	26.32 TO 26.45	R†	614				16.79	614
WINCHESTER CANYON Rd OFF RAMP	26.45 TO 26.47	R†			143		3.76	143
NB SUBTOTAL			2,105	157	7,080	1,270	262.63	10,612
NB SUBTOTAL			3,053	230	3,806	3,822	236.52	10,911
SB TOTAL (Q-4)			3,888	949	9,364	12,881	532.27	27,082
GRAND TOTAL			9,046	1,336	20,250	17,973	1031.42*	48,605

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE QUANTITY SUMMARY

SUMMARY OF QUANTITIES
Q-5

REVISED BY | DATE REVISED
AMJED HETTINI | MARK S. LEICHTFUSS
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: RON KRAEMER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	42	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA

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HOT MIX ASPHALT OVERSIDE DRAIN

LOCATION	POSTMILE SB	SIDE	(N) LEGNTH LF	PLACE HMA (Misc AREA) SQYD	HOT MIX ASPHALT (TYPE A) TON	REMOVE OVERSIDE DRAIN EA	REMOVE OVERSIDE DRAIN LF(N)
Rte 101 MAINLINE	21.06	R+	9	8.21	1.22	1	9
Rte 101 MAINLINE	22.00	R+	8	7.85	1.16	1	8
Rte 101 MAINLINE	22.06	R+	13	9.68	1.47	1	13
Rte 101 MAINLINE	22.12	R+	12	9.31	1.41	1	12
Rte 101 MAINLINE	22.17	R+	5	6.75	0.97	1	5
Rte 101 MAINLINE	22.23	R+	10	8.58	1.28	1	10
Rte 101 MAINLINE	22.30	R+	9	8.21	1.22	1	9
Rte 101 MAINLINE	23.05	R+	6	7.11	1.03	1	6
Rte 101 MAINLINE	23.07	R+	10	8.58	1.28	1	10
Rte 101 MAINLINE	24.14	R+	8	7.85	1.16	1	8
Rte 101 MAINLINE	24.26	R+	6	7.11	1.03	1	6
Rte 101 MAINLINE	24.31	R+	8	7.85	1.16	1	8
Rte 101 MAINLINE	25.25	R+	5	6.75	0.97	1	5
Rte 101 MAINLINE	25.42	R+	5	6.75	0.97	1	5
Rte 101 MAINLINE	25.61	R+	5	6.75	0.97	1	5
Rte 101 MAINLINE	25.92	R+	15	10.41	1.59	1	15
Rte 101 MAINLINE	26.04	R+	15	10.41	1.59	1	15
Rte 101 MAINLINE	26.26	R+	13	9.68	1.47	1	13
Rte 101 MAINLINE	26.35	R+	15	10.41	1.59	1	15
Rte 101 MAINLINE	26.46	R+	7	7.48	1.10	1	7
ON RAMP AT PATTERSON Ave	20.99	R+	5	6.75	0.97	1	5
OFF RAMP AT PATTERSON Ave	21.40	R+	5	6.75	0.97	1	5
OFF RAMP AT PATTERSON Ave	21.47	R+	4	6.38	0.91	1	4
OFF RAMP AT LOS CARNEROS Ave	23.92	R+	6	7.11	1.03	1	6
OFF RAMP AT LOS CARNEROS Ave	23.96	R+	6	7.11	1.03	1	6
ON RAMP AT GLEN ANNIE Rd	24.58	R+	12	9.31	1.41	1	12
ON RAMP AT GLEN ANNIE Rd	24.60	R+	12	9.31	1.41	1	12
OFF RAMP AT GLEN ANNIE Rd	24.93	R+	15	10.41	1.59	1	15
ON RAMP AT CATHEDRAL OAKS Rd	26.67	R+	20	12.25	1.90	1	20
OFF RAMP AT CATHEDRAL OAKS Rd	26.84	R+	15	10.41	1.59	1	15
OFF RAMP AT CATHEDRAL OAKS Rd	27.08	L+	30	15.92	2.52	1	30
	SB TOTAL			267.44	39.97	31	314.0

LOCATION	POSTMILE NB	SIDE	(N) LEGNTH LF	PLACE HMA (Misc AREA) SQYD	HOT MIX ASPHALT (TYPE A) TON	REMOVE OVERSIDE DRAIN EA	REMOVE OVERSIDE DRAIN LF(N)
Rte 101 MAINLINE	21.73	R+	6	7.11	1.03	1	6
Rte 101 MAINLINE	21.78	R+	13	9.68	1.47	1	13
Rte 101 MAINLINE	21.84	R+	10	8.58	1.28	1	10
Rte 101 MAINLINE	21.90	R+	7	7.48	1.10	1	7
Rte 101 MAINLINE	24.00	R+	8	7.85	1.16	1	8
Rte 101 MAINLINE	25.25	R+	6	7.11	1.03	1	6
Rte 101 MAINLINE	25.28	R+	6	7.11	1.03	1	6
Rte 101 MAINLINE	25.38	R+	5	6.75	0.97	1	5
Rte 101 MAINLINE	25.48	R+	5	6.75	0.97	1	5
Rte 101 MAINLINE	25.58	R+	5	6.75	0.97	1	5
Rte 101 MAINLINE	25.88	R+	5	6.75	0.97	1	5
Rte 101 MAINLINE	25.89	R+	2	5.64	0.79	1	2
Rte 101 MAINLINE	26.17	R+	10	8.58	1.28	1	10
Rte 101 MAINLINE	26.27	R+	4	6.38	0.91	1	4
Rte 101 MAINLINE	26.31	R+	10	8.58	1.28	1	10
Rte 101 MAINLINE	27.16	R+	13	9.68	1.47	1	13
Rte 101 MAINLINE	27.18	R+	5	6.75	0.97	1	5
OFF RAMP AT PATTERSON Ave	21.00	R+	8	7.85	1.16	1	8
OFF RAMP AT PATTERSON Ave	21.07	R+	5	6.75	0.97	1	5
ON RAMP AT PATTERSON Ave	21.26	R+	6	7.11	1.03	1	6
OFF RAMP AT FAIRVIEW Ave	22.31	R+	6	7.11	1.03	1	5
OFF RAMP AT FAIRVIEW Ave	22.38	R+	6	7.11	1.03	1	6
OFF RAMP AT FAIRVIEW Ave	22.42	R+	6	7.11	1.03	1	5
OFF RAMP AT GLEN ANNIE Rd	24.21	R+	12	9.31	1.41	1	12
OFF RAMP AT GLEN ANNIE Rd	24.41	R+	5	6.75	0.97	1	5
OFF RAMP AT GLEN ANNIE Rd	24.50	R+	6	7.11	1.03	1	6
OFF RAMP AT GLEN ANNIE Rd	24.55	R+	7	7.48	1.10	1	7
OFF RAMP AT GLEN ANNIE Rd	24.67	L+	7	7.48	1.10	1	7
OFF RAMP AT GLEN ANNIE Rd	24.71	L+	20	12.25	1.90	1	20
OFF RAMP AT CATHEDRAL OAKS Rd	26.45	R+	6	7.11	1.03	1	6
NB TOTAL				228.06	33.47	30	218.0
SB TOTAL				267.44	39.97	31	314.0
GRAND TOTAL				495.50*	73.44*	61	532.0

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE TABLE
(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

SUMMARY OF QUANTITIES
Q-6

REVISED BY | DATE REVISED
AMJED HETTINI | MARK S. LEICHTFUSS
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: RON KRAEMER
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	43	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.

DOWNDRAIN

LOCATION	POSTMILE	DIRECTION	SIDE	12" ENTRANCE TAPER	12" CSP DOWNDRAIN	PLACE HMA (Misc AREA)	HOT MIX ASPHALT (TYPE A)	REMOVE DOWNDRAIN (EA)	
				EA	LF	SQYD	TON	EA	LF(N)
Rte 101 MAINLINE	21.00	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	21.77	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	21.83	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	21.89	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	21.94	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	23.16	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	25.27	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	25.50	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	26.09	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	26.14	SB	Rt	1	6	2.00	0.27	1	6
OFF RAMP AT PATTERSON Ave	21.25	SB	Rt	1	6	2.00	0.27	1	6
OFF RAMP AT PATTERSON Ave	21.37	SB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT FAIRVIEW Ave	22.38	SB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT LOS CARNEROS Ave	23.65	SB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT LOS CARNEROS Ave	23.55	SB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT LOS CARNEROS Ave	23.48	SB	Rt	1	6	2.00	0.27	1	6
OFF RAMP AT LOS CARNEROS Ave	23.74	SB	Lt	1	6	2.00	0.27	1	6
ON RAMP AT GLEN ANNIE Rd	24.71	SB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT GLEN ANNIE Rd	24.70	SB	Lt	1	6	2.00	0.27	1	6
OFF RAMP AT GLEN ANNIE Rd	24.83	SB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT CATHEDRAL OAKS Rd	26.61	SB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	21.67	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	21.96	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	22.01	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	22.07	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	22.12	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	22.17	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	23.39	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	23.42	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	24.08	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	24.15	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	24.17	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	26.07	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	26.26	NB	Rt	1	6	2.00	0.27	1	6
Rte 101 MAINLINE	26.27	NB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT PATTERSON Ave TO Rte 217	21.32	NB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT PATTERSON Ave TO Rte 217	21.37	NB	Rt	1	6	2.00	0.27	1	6
OFF RAMP AT Rte 101 TO Rte 217	21.28	NB	Lt	1	6	2.00	0.27	1	6
OFF RAMP AT LOS CARNEROS Ave	23.52	NB	Rt	1	6	2.00	0.27	1	6
OFF RAMP AT LOS CARNEROS Ave	23.66	NB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT GLEN ANNIE Rd	24.76	NB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT GLEN ANNIE Rd	24.70	NB	Rt	1	6	2.00	0.27	1	6
OFF RAMP AT GLEN ANNIE Rd	24.75	NB	Rt	1	6	2.00	0.27	1	6
ON RAMP AT CATHEDRAL OAKS Rd	27.11	NB	Rt	1	6	2.00	0.27	1	6
			TOTAL	44	264	88.0*	11.88*	44	

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

* QUANTITY INCLUDED IN HMA (Misc AREA) QUANTITY SUMMARY

ADJUST INLET

LOCATION	POSTMILE	DIRECTION	SIDE	ADJUST INLET
				EA
Rte 101 MAINLINE (GORE AREA)	24.60	SB	Rt	1
Rte 101 MAINLINE (GORE AREA)	26.68	SB	Rt	1
Rte 101 MAINLINE	26.89	SB	Rt	1
Rte 101 MAINLINE	27.98	SB	Rt	1
ON RAMP AT GLEN ANNIE Rd	24.60	SB	Rt	1
OFF RAMP AT CATHEDRAL OAKS Rd	26.97	SB	Lt	1
Rte 101 MAINLINE	27.03	NB	Rt	1
ON RAMP AT LOS CARNEROS Ave	23.85	NB	Rt	1
ON RAMP AT LOS CARNEROS Ave	23.86	NB	Rt	1
ON RAMP AT CATHEDRAL OAKS Rd	27.10	NB	Lt	1
			TOTAL	10

INLET DEPRESSION

LOCATION/POSTMILE	INLET DEPRESSION	REMARKS
	EA	
PM 27.10, MEDIAN	1	DI APRON 2'x3'x0.2'
TOTAL	1	

SUMMARY OF QUANTITIES
Q-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	44	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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. RUMBLE STRIP QUANTITY EXCLUDES LEFT TURN LANES AND ON/OFF-RAMPS.
2. PLACEMENT OF RUMBLE STRIP AS DIRECTED BY ENGINEER.

ABBREVIATION:

RHMA-G = RUBBERIZED HOT MIX ASPHALT, (GAP GRADED)

SAFETY EDGE AND SHOULDER BACKING

LOCATION	POSTMILE SB	SIDE	(N) SAFETY EDGE CASE C LF	RHMA-G TON	SHOULDER BACKING TON
Rte 101 MAINLINE	21.06 TO 21.14	R+	398	2.99	16.12
Rte 101 MAINLINE	21.40 TO 21.43	R+	154	1.16	6.24
Rte 101 MAINLINE	21.45 TO 21.48	R+	211	1.58	8.55
Rte 101 MAINLINE	23.25 TO 23.31	R+	312	2.34	12.64
Rte 101 MAINLINE	23.46 TO 23.95	R+	2,594	19.46	105.06
Rte 101 MAINLINE	24.60 TO 24.97	R+	1,959	14.69	79.34
Rte 101 MAINLINE	26.68 TO 26.76	R+	403	3.02	16.32
Rte 101 MAINLINE	27.05 TO 27.12	R+	352	2.64	14.26
Rte 101 MAINLINE	22.98 TO 27.24	L+	22,590	169.43	914.90
ON RAMP AT PATTERSON Ave	21.00 TO 21.01	R+	88	0.66	3.56
ON RAMP AT PATTERSON Ave	21.00 TO 21.12	L+	622	4.67	25.19
OFF RAMP AT PATTERSON Ave	21.50 TO 21.58	R+	472	3.54	19.12
OFF RAMP AT PATTERSON Ave	21.47 TO 21.48	L+	117	0.88	4.74
OFF RAMP AT PATTERSON Ave	21.25 TO 21.39	L+	690	5.18	27.95
OFF RAMP AT Rte 217 TO PATTERSON Ave	21.27 TO 21.29	L+	36	0.27	1.46
ON RAMP AT Rte 217 TO Rte 101	21.17 TO 21.29	R+	631	4.73	25.56
ON RAMP AT FAIRVIEW Ave	22.39 TO 22.43	L+	176	1.32	7.13
ON RAMP AT LOS CARNEROS Ave	23.31 TO 23.47	R+	868	6.51	35.15
ON RAMP AT LOS CARNEROS Ave	23.47 TO 23.69	L+	1,148	8.61	46.49
OFF RAMP AT LOS CARNEROS Ave	23.74 TO 23.95	L+	1,081	8.11	43.78
ON RAMP AT GLEN ANNIE Rd	24.60 TO 24.70	L+	355	2.66	14.38
OFF RAMP AT GLEN ANNIE Rd	24.99 TO 25.12	R+	744	5.58	30.13
OFF RAMP AT GLEN ANNIE Rd	24.80 TO 24.97	L+	923	6.92	37.38
ON RAMP AT CATHEDRAL OAKS Rd	26.67 TO 26.75	R+	430	3.23	17.42
ON RAMP AT CATHEDRAL OAKS Rd	26.46 TO 26.57	R+	628	4.71	25.43
ON RAMP AT CATHEDRAL OAKS Rd	26.68 TO 26.71	L+	134	1.01	5.43
OFF RAMP AT CATHEDRAL OAKS Rd	26.84 TO 27.00	R+	797	5.98	32.28
OFF RAMP AT CATHEDRAL OAKS Rd	27.10 TO 27.18	R+	421	3.16	17.05
OFF RAMP AT CATHEDRAL OAKS Rd	27.08 TO 27.12	L+	167	1.25	6.76
	SB TOTAL			296.29	1,599.82

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

LOCATION	POSTMILE NB	SIDE	(N) SAFETY EDGE CASE C LF	RHMA-G TON	SHOULDER BACKING TON
Rte 101 MAINLINE	21.23 TO 21.34	R+	587	4.40	23.77
Rte 101 MAINLINE	21.43 TO 21.46	R+	164	1.23	6.64
Rte 101 MAINLINE	22.30 TO 22.37	R+	394	2.96	15.96
Rte 101 MAINLINE	22.96 TO 23.29	R+	1,740	13.05	70.47
Rte 101 MAINLINE	23.52 TO 23.70	R+	915	6.86	37.06
Rte 101 MAINLINE	23.73 TO 23.88	R+	769	5.77	31.14
Rte 101 MAINLINE	24.31 TO 24.40	R+	393	2.95	15.92
Rte 101 MAINLINE	24.43 TO 24.73	R+	1,653	12.40	66.95
Rte 101 MAINLINE	24.81 TO 25.11	R+	1,610	12.08	65.21
Rte 101 MAINLINE	26.40 TO 26.87	R+	2,488	18.66	100.76
Rte 101 MAINLINE	22.98 TO 27.24	L+	22,486	168.65	910.68
ON RAMP AT PATTERSON Ave	21.25 TO 21.56	R+	1,668	12.51	67.6
ON RAMP AT PATTERSON Ave	21.26 TO 21.46	L+	1,056	7.92	44.2
ON RAMP AT PATTERSON TO Rte 217	21.17 TO 21.27	L+	528	3.96	21.4
FROM Rte 101 TO Rte 217	21.07 TO 21.27	R+	1,030	7.72	41.6
FROM Rte 101 TO Rte 217	21.23 TO 21.26	L+	153	1.15	6.4
OFF RAMP AT PATTERSON Ave	21.00 TO 21.06	R+	97	347.18	12.3
OFF RAMP AT PATTERSON Ave	21.07 TO 21.14	L+	349	2.62	14.1
ON RAMP AT FAIRVIEW Ave	22.44 TO 22.45	R+	300	2.25	12.15
ON RAMP AT FAIRVIEW Ave	22.43 TO 22.45	R+	259	1.94	10.49
ON RAMP AT FAIRVIEW Ave	22.48 TO 22.51	L+	150	1.13	6.08
OFF RAMP AT FAIRVIEW Ave	22.30 TO 22.42	L+	672	5.04	27.22
ON RAMP AT LOS CARNEROS Ave	23.72 TO 23.88	L+	883	6.62	35.76
OFF RAMP AT LOS CARNEROS Ave	23.52 TO 23.69	L+	933	7.00	37.79
ON RAMP AT GLEN ANNIE Rd	24.73 TO 24.81	R+	567	4.25	22.96
ON RAMP AT GLEN ANNIE Rd	24.70 TO 24.71	L+	97	0.73	3.93
ON RAMP AT GLEN ANNIE Rd	24.73 TO 24.74	L+	61	0.46	2.47
OFF RAMP AT GLEN ANNIE Rd	24.21 TO 24.42	R+	1,050	7.88	42.53
OFF RAMP AT GLEN ANNIE Rd	24.64 TO 24.73	R+	450	3.38	18.23
OFF RAMP AT GLEN ANNIE Rd	24.31 TO 24.65	L+	1,800	13.50	72.90
ON RAMP AT CATHEDRAL OAKS Rd	26.93 TO 27.03	R+	450	3.38	18.23
OFF RAMP AT WINCHESTER CANYON Rd	26.40 TO 26.46	L+	316	2.37	12.80
	NB TOTAL			692.00	1,875.70
	SB TOTAL			296.29	1,599.82
	GRAND TOTAL			988.29*	3,475.52

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE QUANTITES SUMMARY

SUMMARY OF QUANTITIES
Q-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER

CALCULATED-DESIGNED BY: AMJED HETTINI
CHECKED BY: MARK S. LEICHTFUSS

REVISED BY | DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	45	130

Mark S. Leichtfuss 11-24-14
REGISTERED CIVIL ENGINEER DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.

REPAIR FAILED AREA LOCATIONS

SOUTHBOUND

SB BEGIN PM	SB END PM	(N) LENGTH LF	COLD PLANE ASPHALT CONCRETE PAVEMENT #1 LANE 12' SQYD	#1 LANE 6' SQYD	#1 LANE IN-SIDE	#1 LANE OUT-SIDE	#2 LANE 12' SQYD	#2 LANE 6' SQYD	#2 LANE IN-SIDE	#2 LANE OUT-SIDE	#3 LANE 12' SQYD	#3 LANE 6' SQYD	#3 LANE IN-SIDE	#3 LANE OUT-SIDE	HMA (TYPE A) TON	TACK COAT TON
21.01		15						10.0		X					2.2	0.01
21.08		15						10.0		X					2.2	0.01
21.29		55						36.7	X						8.2	0.02
21.42		8						5.3	X						1.2	0.01
21.48		20					26.7		X	X					6.0	0.01
21.56		15					20.0		X	X					4.5	0.01
21.61		15						10.0		X					2.2	0.01
21.71		35						23.3		X					5.2	0.01
21.73		8						5.3		X					1.2	0.01
21.85		8						5.3		X					1.2	0.01
21.90		22						14.7		X					3.3	0.01
21.97		22						14.7		X					3.3	0.01
22.04		35						23.3		X					5.2	0.01
22.09		25						16.7		X					3.7	0.01
22.12		20						13.3		X					3.0	0.01
22.18		20						13.3		X					3.0	0.01
22.20		8						5.3		X					1.2	0.01
22.23		25						16.7	X						3.7	0.01
22.25		8					10.7		X	X					2.4	0.01
21.27	22.30	2,000									2,666.7		X	X	599.4	1.22
22.31		8					10.7		X	X					2.4	0.01
22.33		8						5.3		X					1.2	0.01
22.37		8						5.3		X					1.2	0.01
22.40		18						12.0		X					2.7	0.01
22.44		18					24.0			X					5.4	0.01
22.48		12						8.0		X					1.8	0.01
22.55		8						5.3		X					1.2	0.01
22.61		8						5.3		X					1.2	0.01
22.66		8						5.3		X					1.2	0.01
23.00		8						5.3		X					1.2	0.01
23.11		8						5.3		X					1.2	0.01
23.18		35						23.3		X					5.2	0.01
23.27	23.44	350						233.3		X					52.4	0.11
23.44	23.51	120					160.0		X	X					36.0	0.07
23.57		25						16.7	X						3.7	0.01
23.74		25					33.3		X	X					7.5	0.01
23.76		20						13.3	X						3.0	0.01
23.78		45						30.0	X						6.7	0.01
23.82		65						43.3		X					9.7	0.02
23.84	23.92	200						133.3		X					30.0	0.06
24.33		8									10.7		X	X	2.4	0.01
24.43		20					26.7		X	X					6.0	0.01
24.45		5										3.3	X		0.7	0.01
24.47		20									26.7		X	X	6.0	0.01
24.49		5						3.3		X					0.7	0.01
24.68		20						13.3	X						3.0	0.01
24.78		35	46.7		X	X									10.5	0.02
24.84		35	46.7		X	X									10.5	0.02
24.86		25						16.7		X					3.7	0.01
24.90		35	46.7		X	X									10.5	0.02
24.92		10		6.7		X									1.5	0.01
25.00		35		23.3		X									5.2	0.01
25.05		8					10.7		X	X					2.4	0.01
25.11		8					10.7		X	X					2.4	0.01
			170.1				1,141.0				2,707.4					
SB SUBTOTAL			4,018.5												902.7	2.01

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

SUMMARY OF QUANTITIES
Q-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	46	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.

REPAIR FAILED AREA LOCATIONS

SOUTHBOUND

SB BEGIN PM	SB END PM	(N) LENGTH LF	COLD PLANE ASPHALT CONCRETE PAVEMENT #1 LANE 12′ SQYD	#1 LANE 6′ SQYD	#1 LANE IN-SIDE	#1 LANE OUT-SIDE	#2 LANE 12′ SQYD	#2 LANE 6′ SQYD	#2 LANE IN-SIDE	#2 LANE OUT-SIDE	#3 LANE 12′ SQYD	#3 LANE 6′ SQYD	#3 LANE IN-SIDE	#3 LANE OUT-SIDE	HMA (TYPE A) TON	TACK COAT TON
25.17		160					213.3		X	X					48.0	0.10
25.22		40					53.3		X	X					12.0	0.02
25.28		30					40.0		X	X					9.0	0.02
25.32		30					40.0		X	X					9.0	0.02
25.39		70					93.3		X	X					21.0	0.04
25.41		30						20.0	X						4.5	0.01
25.44		40					53.3		X	X					12.0	0.02
25.47		70					93.3		X	X					21.0	0.04
25.49		12					16.0		X	X					3.6	0.01
25.52		35					46.7		X	X					10.5	0.02
25.61		12					16.0		X	X					3.6	0.01
25.69		12					16.0		X	X					3.6	0.01
25.74		12					16.0		X	X					3.6	0.01
25.77		10					13.3		X	X					3.0	0.01
25.87		20					26.7		X	X					6.0	0.01
25.89		20					26.7		X	X					6.0	0.01
25.92		20					26.7		X	X					6.0	0.01
26.01		10						6.7	X						1.5	0.01
26.05		10						6.7	X						1.5	0.01
26.13		50						33.3	X						7.5	0.01
26.19		10						6.7	X						1.5	0.01
26.21		10						6.7		X					1.5	0.01
26.24		15						10.0		X					2.2	0.01
26.26		80					106.7		X	X					24.0	0.05
26.30		10						6.7	X						1.5	0.01
26.33		10						6.7		X					1.5	0.01
26.38		10						6.7		X					1.5	0.01
26.40		10						6.7		X					1.5	0.01
26.42		10						6.7		X					1.5	0.01
26.46		85						56.7		X					12.7	0.03
26.53		10						6.7		X					1.5	0.01
26.58		10						6.7		X					1.5	0.01
26.61		15						10.0		X					2.2	0.01
26.62		15					20.0		X	X					4.5	0.01
26.67		40					53.3		X	X					12.0	0.02
26.81		15						10.0	X						2.2	0.01
26.87		10		6.7		X									1.5	0.01
26.91		15						10.0		X					2.2	0.01
26.94		10						6.7		X					1.5	0.01
26.96		10						6.7		X					1.5	0.01
27.01		10						6.7		X					1.5	0.01
27.06		35						23.3		X					5.2	0.01
27.09		30						20.0		X					4.5	0.01
27.11		25						16.7		X					3.7	0.01
27.17		60						40.0		X					9.0	0.02
27.21		10						6.7	X						1.5	0.01
			6.7				1,321.1				0.0					
SB SUBTOTAL			1,327.8												298.3	0.74
Q-9 SB SUBTOTAL			4,018.5												902.7	2.01
SB TOTAL			5,346.3												1,201.0	2.75

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

SUMMARY OF QUANTITIES
Q-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	47	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.

REPAIR FAILED AREA LOCATIONS

NORTHBOUND																
NB BEGIN PM	NB END PM	(N) LENGTH LF	COLD PLANE ASPHALT CONCRETE PAVEMENT												HMA (TYPE A) TON	TACK COAT TON
			#1 LANE				#2 LANE				#3 LANE					
			12′ SQYD	6′ SQYD	IN-SIDE	OUT-SIDE	12′ SQYD	6′ SQYD	IN-SIDE	OUT-SIDE	12′ SQYD	6′ SQYD	IN-SIDE	OUT-SIDE		
21.02		25						16.7		X					3.7	0.01
21.03	21.20	250									333.3		X	X	74.9	0.15
21.20	21.26	100										66.7		X	15.0	0.03
21.32		30										20.0		X	4.5	0.01
21.42	21.47	100										66.7		X	15.0	0.03
21.49	21.61	100										66.7		X	15.0	0.03
21.65		35									46.7		X	X	10.5	0.02
21.69		25									33.3		X	X	7.5	0.01
22.01	22.18	150										100.0		X	22.5	0.05
22.19		20									26.7		X	X	6.0	0.01
22.34	22.48	200										133.3		X	30.0	0.06
22.66	22.85	300						200.0		X					45.0	0.09
22.91	23.01	100						66.7		X					15.0	0.03
23.02	23.09	180					240.0		X	X					53.9	0.11
23.09	23.15	100						66.7		X					15.0	0.03
23.43	23.52	100						66.7		X					15.0	0.03
23.58	23.62	80						53.3		X					12.0	0.02
23.82		40						26.7		X					6.0	0.01
23.92	24.22	600						400.0		X					89.9	0.18
24.12		10						6.7		X					1.5	0.01
24.24		10						6.7		X					1.5	0.01
24.55		10						6.7		X					1.5	0.01
24.68		10						6.7		X					1.5	0.01
24.75		10						6.7		X					1.5	0.01
24.82		10						6.7		X					1.5	0.01
25.05	25.42	250					333.3		X	X					74.9	0.15
25.42	25.91	800						533.3		X					119.9	0.24
26.13	26.34	100						66.7		X					15.0	0.03
26.39	26.81	600					800.0		X	X					179.8	0.37
26.81	26.88	100						66.7		X					15.0	0.03
26.88	27.06	500					666.7		X	X					149.9	0.31
27.16		20		13.3	X										3.0	0.01
			13.3				3,627.0				893.4					
NB TOTAL			4,533.7												1,022.9	2.11
SB TOTAL			5,346.3												1,201.0	2.75
GRAND TOTAL			9,880.0												2,223.9*	4.86*

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE QUANTITIES SUMMARY
(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

SUMMARY OF QUANTITIES
Q-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY
DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 10:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	48	130

REGISTERED CIVIL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK S. LEICHTFUSS No. 69124 Exp. 6-30-16 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.

SIDEWALKS AND CURB RAMPS

PLAN SHEET No.	LOCATION	STATION	REMOVE CONCRETE (CURB, GUTTER, AND SIDEWALK)	REMOVE ASPHALT CONCRETE PAVEMENT (SQFT)	HMA (TYPE A)	PLACE HMA (Misc AREA)	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION) CURB RAMP & SIDEWALK	CURB & GUTTER	RETAINING CURB	DETECTABLE WARNING SURFACE
			CY	SQFT	TON	SQYD	CY			SQFT
C-7	No. 1 PATTERSON Ave "A"	"A" 2+58.89	7.0	135.4	3.37	15.0	2.3	3.5	0.4	30.3
C-8	No. 2 PATTERSON Ave "A"	"A" 2+52.84	3.3	73.1	1.80	8.1	1.5	1.7	0.3	24.6
C-9	No. 3 PATTERSON Ave "A"	"A" 2+45.48	6.0	228.0	5.70	25.3	2.4	2.8	0.5	28.9
C-10	No. 4 PATTERSON Ave "A"	"A" 3+34.89	3.8	255.3	6.40	28.4	1.6	1.8	0.4	33.5
C-11	No. 5 PATTERSON Ave "A"	"A" 6+57.19	6.8	1,491.0	37.20	165.7	2.0	3.2	0.4	13.5
C-12	No. 6 PATTERSON Ave "A"	"A" 7+75.15	4.5	118.1	2.90	13.1	2.1	2.0	0.3	16.7
C-13	No. 7 PATTERSON Ave "A"	"A" 6+84.72	4.1	75.3	3.50	8.4	1.3	1.8	0.4	16.1
C-14	No. 8 PATTERSON Ave "A"	"A" 7+63.45	4.4	70.5	3.50	7.8	1.3	1.8	0.3	14.4
C-15	No. 11 GLEN ANNIE Rd "C"	"C" 2+34.86	6.9	382.2	3.50	42.5	2.2	4.3	0.3	25.0
C-16	No. 12 GLEN ANNIE Rd "C"	"C" 3+18.74	1.9	61.5	3.50	6.8	0.9	1.1	0.2	21.2
C-17	No. 13 GLEN ANNIE Rd "C"	"C" 6+51.79	3.2	212.0	3.50	23.6	2.1	1.8	0.3	18.3
		SUBTOTAL					19.7	25.8	3.8	
		TOTAL	51.9	3,102.4	74.87*	344.7**	49.3			242.5

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE TABLE

** QUANTITY INCLUDED IN PLACE HOT MIX ASPHALT (Misc AREA) TABLE

SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)

POSTMILE/SB	SIDE	Sta	POSTMILE/NB	SIDE	Sta
SB 21.00 TO 21.15	R+	8.98	NB 21.23 TO 21.46	R+	12.14
SB 21.28 TO 21.48	R+	10.56	NB 21.64 TO 22.16	R+	27.46
SB 21.63 TO 22.30	R+	35.37	NB 22.30 TO 22.37	R+	3.70
SB 22.98 TO 23.25	R+	14.25	NB 22.96 TO 23.41	R+	23.76
SB 23.55 TO 23.95	R+	21.12	NB 23.52 TO 23.88	R+	19.01
SB 24.03 TO 24.35	R+	16.89	NB 24.04 TO 24.17	R+	6.86
SB 24.60 TO 24.97	R+	19.54	NB 24.31 TO 24.73	R+	22.18
SB 25.12 TO 26.46	R+	70.75	NB 24.92 TO 26.28	R+	71.81
SB 26.68 TO 27.12	R+	23.23	NB 26.40 TO 27.06	R+	34.85
SB 27.24 TO 27.25	R+	0.53	NB 27.22 TO 27.25	R+	1.58
SB 20.99 TO 22.37	L+	72.86	NB 20.99 TO 21.62	L+	33.26
SB 23.00 TO 23.70	L+	38.02	NB 21.64 TO 22.37	L+	38.54
SB 23.74 TO 27.10	L+	178.46	NB 22.98 TO 27.10	L+	225.46
SB TOTAL		510.56	NB TOTAL		520.61
			GRAND TOTAL		1,031.17

PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)

LOCATION/POSTMILE	PLACE HMA (Misc AREA)	HOT MIX ASPHALT (TYPE A)	REMARKS
	SQYD	TON	
DOWNDRAIN	88.0	11.88	
OVERSIDE DRAIN	495.50	73.44	
CALL BOX	84.0	17.82	
HMA FOR SW CONSTRUCTION	344.70	74.87	
TOTAL	1,012.20	178.01*	

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE TABLE

CALL BOX

LOCATION	POSTMILE	DIRECTION	SIDE	PLACE HMA (Misc AREA)	HOT MIX ASPHALT (TYPE A)
				SQYD	TON
Rte 101 MAINLINE	21.18	SB	R+	4	0.77
Rte 101 MAINLINE	21.46	SB	R+	4	0.77
Rte 101 MAINLINE	21.71	SB	R+	4	1.10
Rte 101 MAINLINE	21.97	SB	R+	4	1.10
Rte 101 MAINLINE	22.43	SB	R+	4	0.77
Rte 101 MAINLINE	22.99	SB	R+	4	1.10
Rte 101 MAINLINE	23.56	SB	R+	4	0.77
Rte 101 MAINLINE	23.80	SB	R+	4	0.77
Rte 101 MAINLINE	24.81	SB	R+	4	0.77
Rte 101 MAINLINE	26.08	SB	R+	4	0.77
Rte 101 MAINLINE	26.84	SB	R+	4	1.10
Rte 101 MAINLINE	21.41	NB	R+	4	0.77
Rte 101 MAINLINE	21.66	NB	R+	4	0.77
Rte 101 MAINLINE	21.96	NB	R+	4	0.77
Rte 101 MAINLINE	22.40	NB	R+	4	0.77
Rte 101 MAINLINE	22.99	NB	R+	4	0.77
Rte 101 MAINLINE	23.55	NB	R+	4	0.77
Rte 101 MAINLINE	23.81	NB	R+	4	0.77
Rte 101 MAINLINE	24.66	NB	R+	4	0.77
Rte 101 MAINLINE	26.08	NB	R+	4	1.10
Rte 101 MAINLINE	26.84	NB	R+	4	0.77
			TOTAL	84**	17.82*

* QUANTITY INCLUDED IN HMA (Misc AREA) TABLE

** QUANTITY INCLUDED IN PLACE HOT MIX ASPHALT (Misc AREA) TABLE

PRE/POST CONSTRUCTION SURVEYS

PLAN SHEET No.	LOCATION	STATION	NUMBER OF CONSTRUCTION SURVEYS	DESCRIPTION
			EA	
C-7	No. 1 PATTERSON Ave "A"	"A" 2+58.89	1	CURB RAMP
C-9	No. 3 PATTERSON Ave "A"	"A" 2+45.48	1	CURB RAMP
C-10	No. 4 PATTERSON Ave "A"	"A" 3+34.89	1	CURB RAMP
C-11	No. 5 PATTERSON Ave "A"	"A" 6+57.19	1	CURB RAMP
C-13	No. 7 PATTERSON Ave "A"	"A" 6+84.72	1	CURB RAMP
C-16	No. 12 GLEN ANNIE Rd "C"	"C" 3+18.74	1	CURB RAMP
C-17	No. 13 GLEN ANNIE Rd "C"	"C" 6+51.79	1	CURB RAMP
Str Sht	CATHEDRAL OAKS Rd SW CORNER		1	CURB RAMP
Str Sht	CATHEDRAL OAKS Rd SW CORNER		1	CURB RAMP
		TOTAL	9	

SUMMARY OF QUANTITIES
Q-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: RON KRAEMER
CALCULATED-DESIGNED BY: MARK S. LEICHTFUSS
CHECKED BY: AMJED HETTINI
REVISED BY / DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 10:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	49	130

REGISTERED ELECTRICAL ENGINEER 11-24-14 DATE

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DANIEL THANH VO No. 17408 Exp. 9-30-16 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.

LEGEND: (FOR SHEETS E-1 THROUGH E-7)

1 RC Exist VEHICLE SENSOR NODE, ADD VEHICLE SENSOR NODE.
SEE SHEET E-18 FOR INSTALLATION DETAILS.

NOTE:

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

ABBREVIATIONS:

SCE - SOUTHERN CALIFORNIA EDISON
PSM - PEDESTRIAN SIGNAL MODULE
CAT5E - CATEGORY 5E CABLE
VSN - VEHICLE SENSOR NODE

SYMBOLS:

Exist WIRELESS MODEM WITH DIRECTIONAL ANTENNA

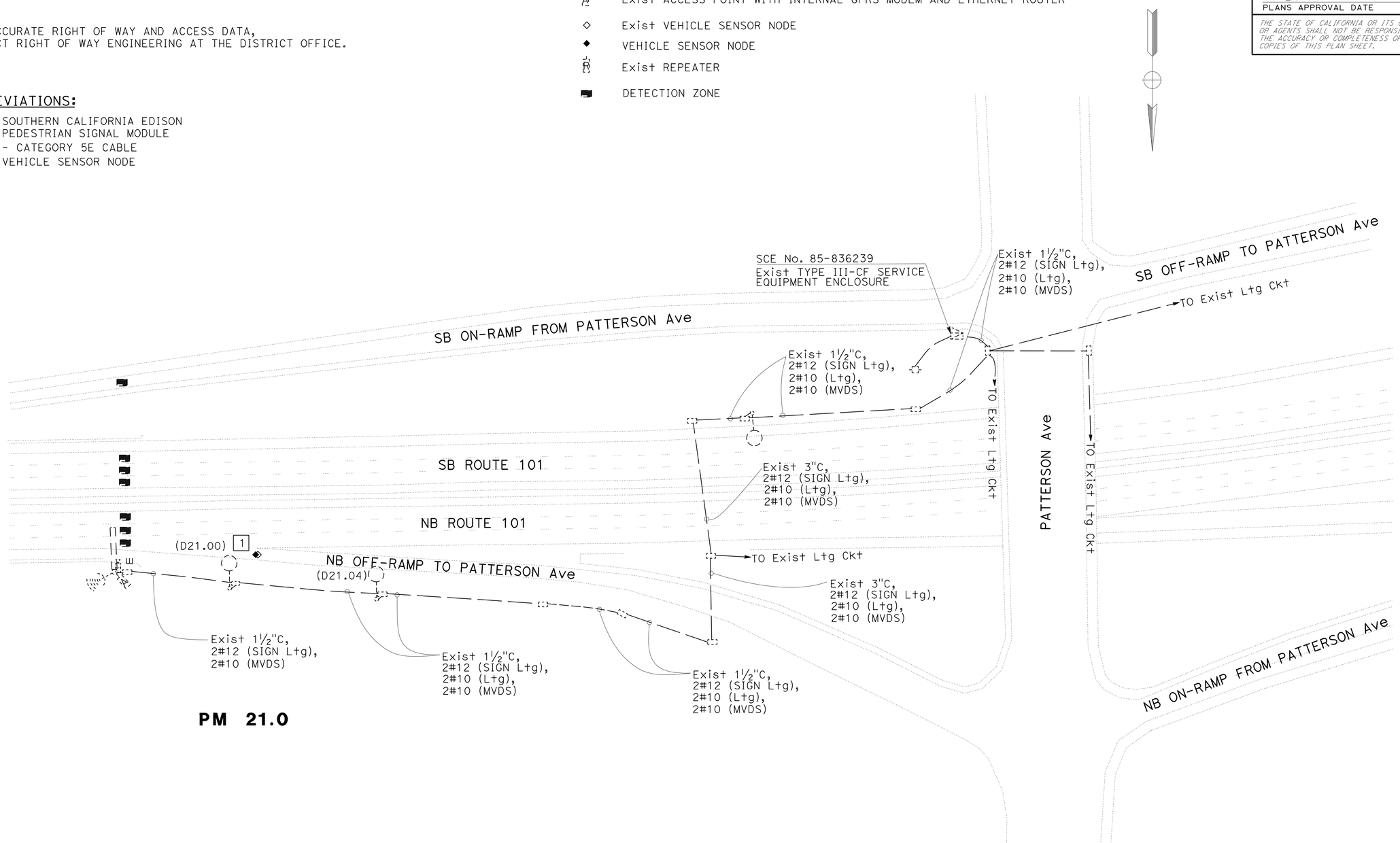
Exist ACCESS POINT WITH INTERNAL GPRS MODEM AND ETHERNET ROUTER

◇ Exist VEHICLE SENSOR NODE

◆ VEHICLE SENSOR NODE

Exist REPEATER

DETECTION ZONE



MODIFY WIRELESS VEHICLE DETECTOR SYSTEM
E-1

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN
CHECKED BY: DANIEL VO
REVISED BY / DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	50	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

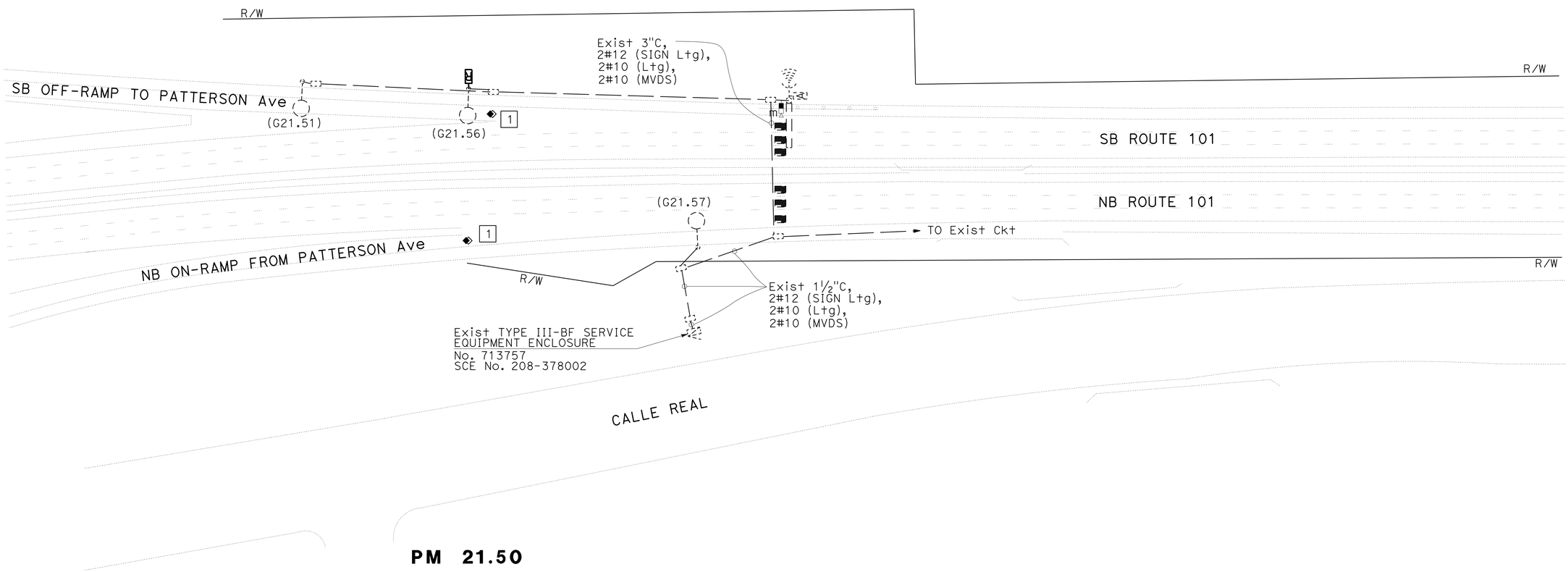
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — 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:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR LEGEND SEE SHEET E-1.



PM 21.50

MODIFY WIRELESS VEHICLE DETECTOR SYSTEM

E-2

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN
CHECKED BY: DANIEL VO
REVISED BY
DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	51	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

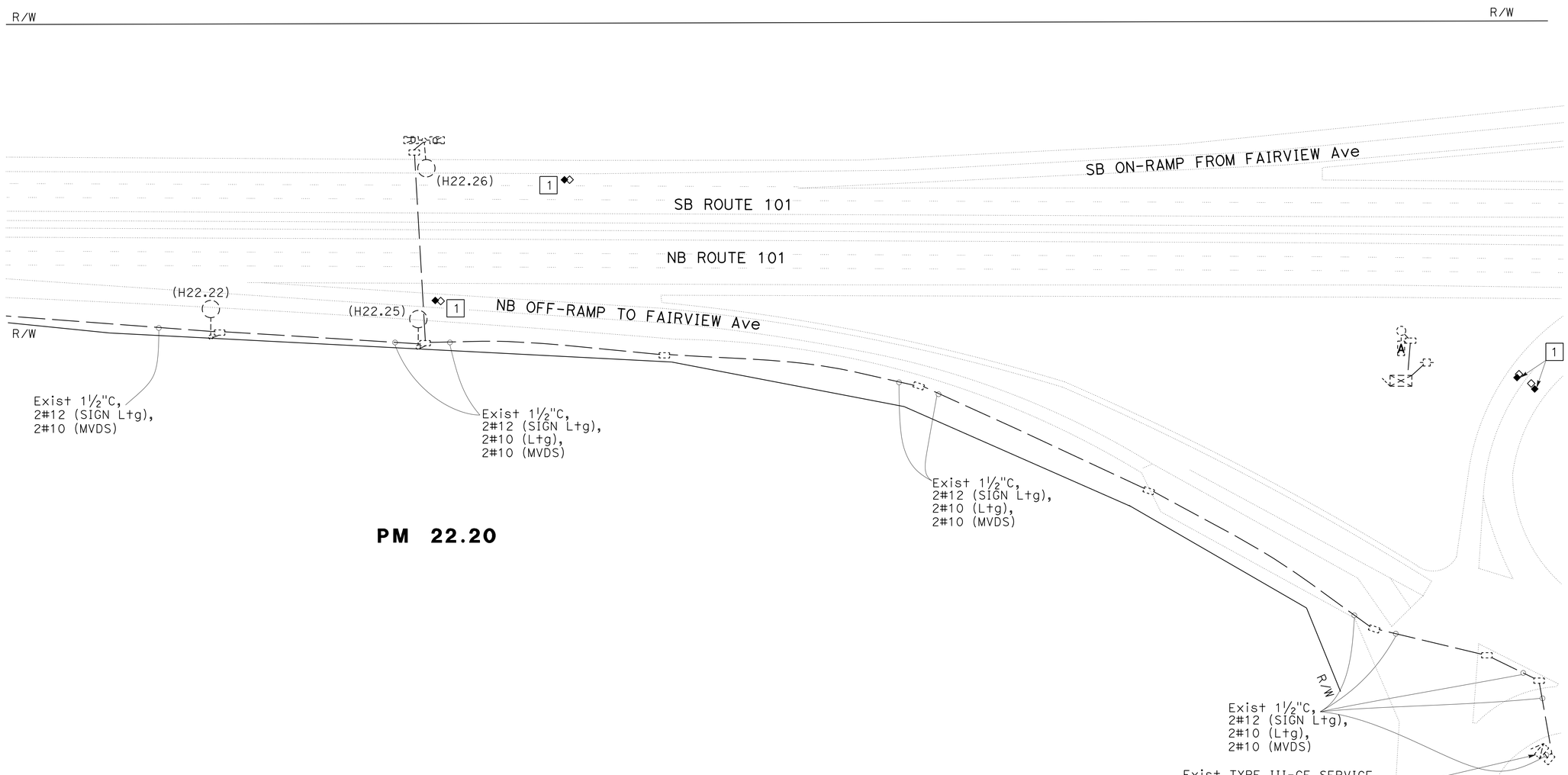
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — 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:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR LEGEND SEE SHEET E-1.



MODIFY WIRELESS VEHICLE DETECTOR SYSTEM
E-3

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN
CHECKED BY: DANIEL VO
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	52	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

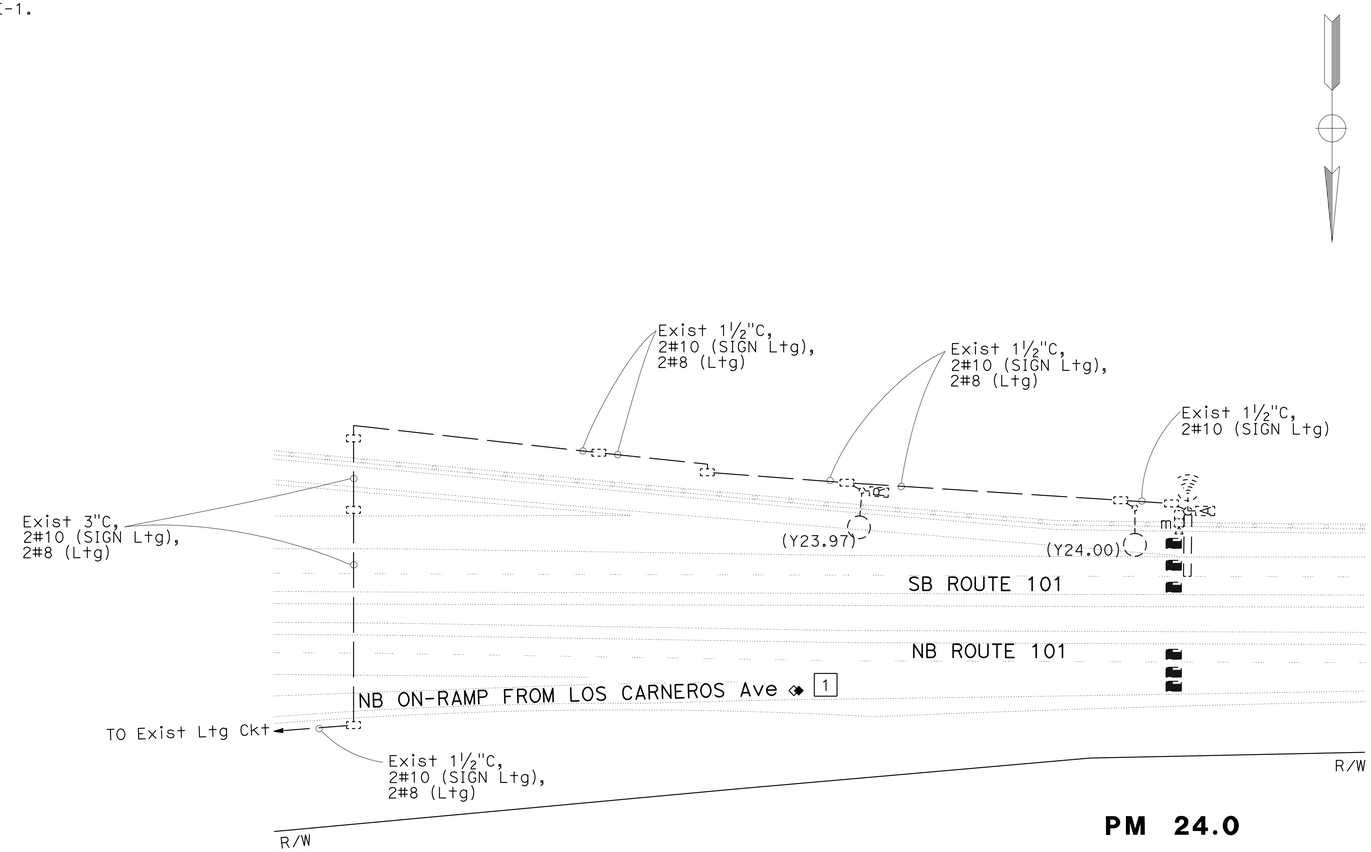
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
DANIEL THANH VO
No. 17408
Exp. 9-30-16
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:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR LEGEND SEE SHEET E-1.



MODIFY WIRELESS VEHICLE DETECTOR SYSTEM

E-4

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN
CHECKED BY: DANIEL VO
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	53	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
DANIEL THANH VO
No. 17408
Exp. 9-30-16
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:

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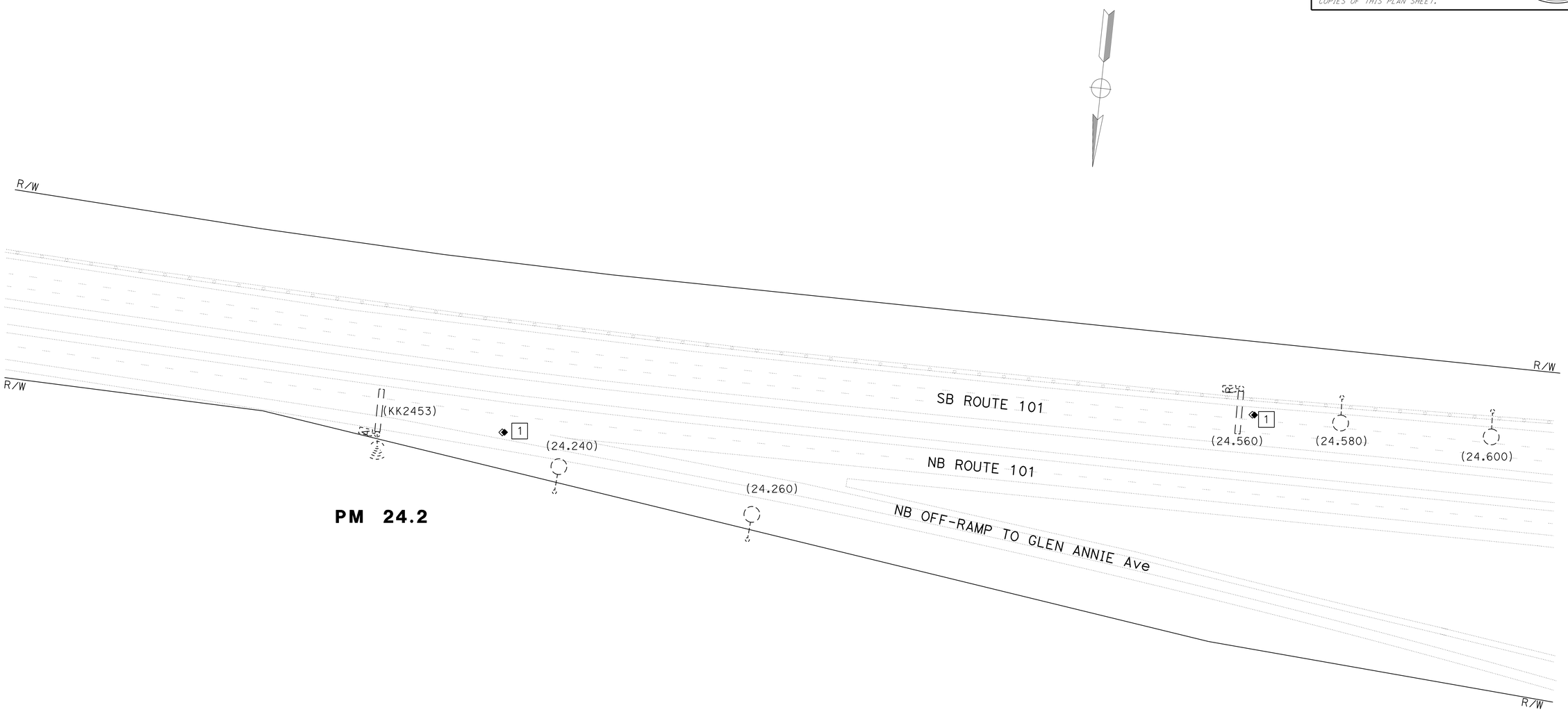
2. FOR LEGEND SEE SHEET E-1.



MODIFY WIRELESS VEHICLE DETECTOR SYSTEM

E-5

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN
CHECKED BY: DANIEL VO
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	54	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

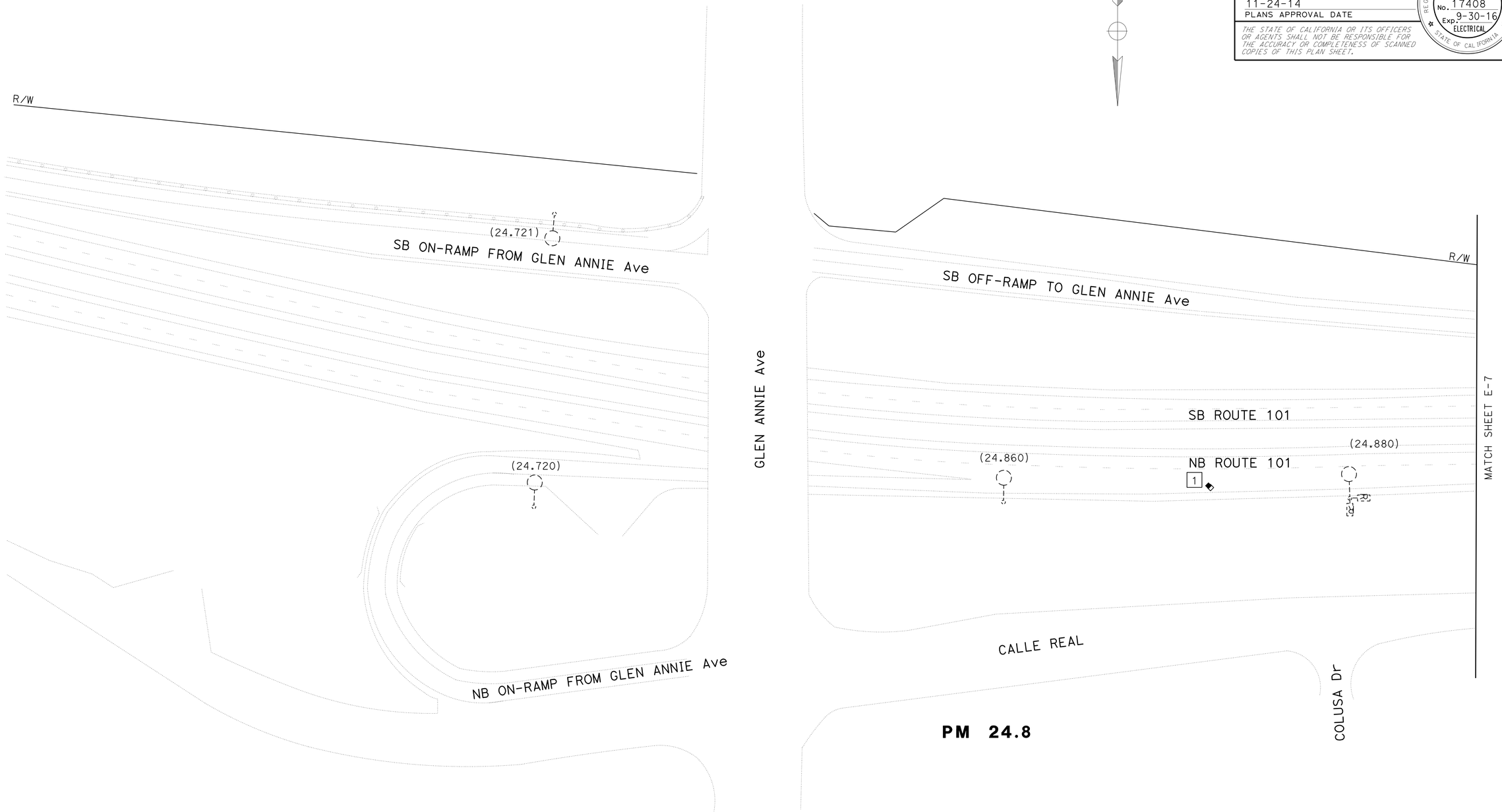
11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — 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:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR LEGEND SEE SHEET E-1.



MODIFY WIRELESS VEHICLE DETECTOR SYSTEM

E-6

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN
CHECKED BY: DANIEL VO
REVISED BY
DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	55	130

REGISTERED ELECTRICAL ENGINEER — DATE: 11-24-14

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — 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:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR LEGEND SEE SHEET E-1.

MODIFY WIRELESS VEHICLE DETECTOR SYSTEM

E-7

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® 06-ELECTRICAL DESIGN

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05	SB	101	21.0/27.1	56	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

PLANS APPROVAL DATE 11-24-14

REGISTERED PROFESSIONAL ENGINEER DANIEL THANH VO No. 17408 Exp. 9-30-16 ELECTRICAL STATE OF CALIFORNIA

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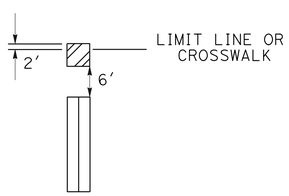
LEGEND: (FOR SHEETS E-8 AND E-9)

1. RC Exist Ped Sig HEAD.
2. INSTALL Ped Sig HEAD WITH LED COUNTDOWN Sig MODULE AND SP-1-T MOUNTING HARDWARE.
3. RC Exist PBA, AND SEAL THE HOLE IN THE POLE SHAFT.
4. RR 2#14 (PBA Ø2). ADD APS CABLE.
5. 1½"C, INSTALL Exist 2#14 AS INDICATED IN NOTE 4 . ADD APS CABLE.
6. RC 2#14 (PBA Ø2), 3#14 (PSM Ø2).
7. 1½"C, 2#14 (PBA Ø2), 3#14 (PSM Ø2).
8. RC Exist PBA. INSTALL APS FOR Ø6.
9. AB CONDUIT, RR 2#14 (PBA Ø2), 3#14 (PSM Ø2).
10. 1½"C, INSTALL Exist 5#14 AS INDICATED IN NOTE 9 .
11. 7′ TYPE 1-A POLE WITH LED COUNTDOWN PSF MODULE, TP-1-T MOUNTING HARDWARE AND APS for Ø6.
12. ADD APS CABLE BETWEEN PBA AND Ped Sig HEAD.
13. 7′ TYPE 1-A POLE WITH LED COUNTDOWN PSF MODULE, TP-1-T MOUNTING HARDWARE AND APS for Ø2.
14. INSTALL PBA POST WITH APS FOR Ø2.
15. RC 2#14 (PBA Ø6), 3#14 (PSM Ø6).
16. 1½"C, 2#14 (PBA Ø6), 3#14 (PSM Ø6).
17. AB CONDUIT, RR 2#14 (PBA Ø6), 3#14 (PSM Ø6).
18. 1½"C, INSTALL Exist 5#14 AS INDICATED IN NOTE 17.
19. RR 2#14 (PBA Ø6), 3#14 (PSM Ø6).
20. 1½"C, INSTALL Exist 5#14 AS INDICATED IN NOTE 19 .
21. TYPE D LOOP DETECTORS MUST BE SPLICED IN SERIES WITH TYPE C LOOP DETECTORS. SEE DETAIL A.
22. RR 2#14 (PBA Ø2), 3#14 (PSM Ø2).
23. 1½"C, INSTALL Exist 5#14 AS INDICATED IN NOTE 22 .

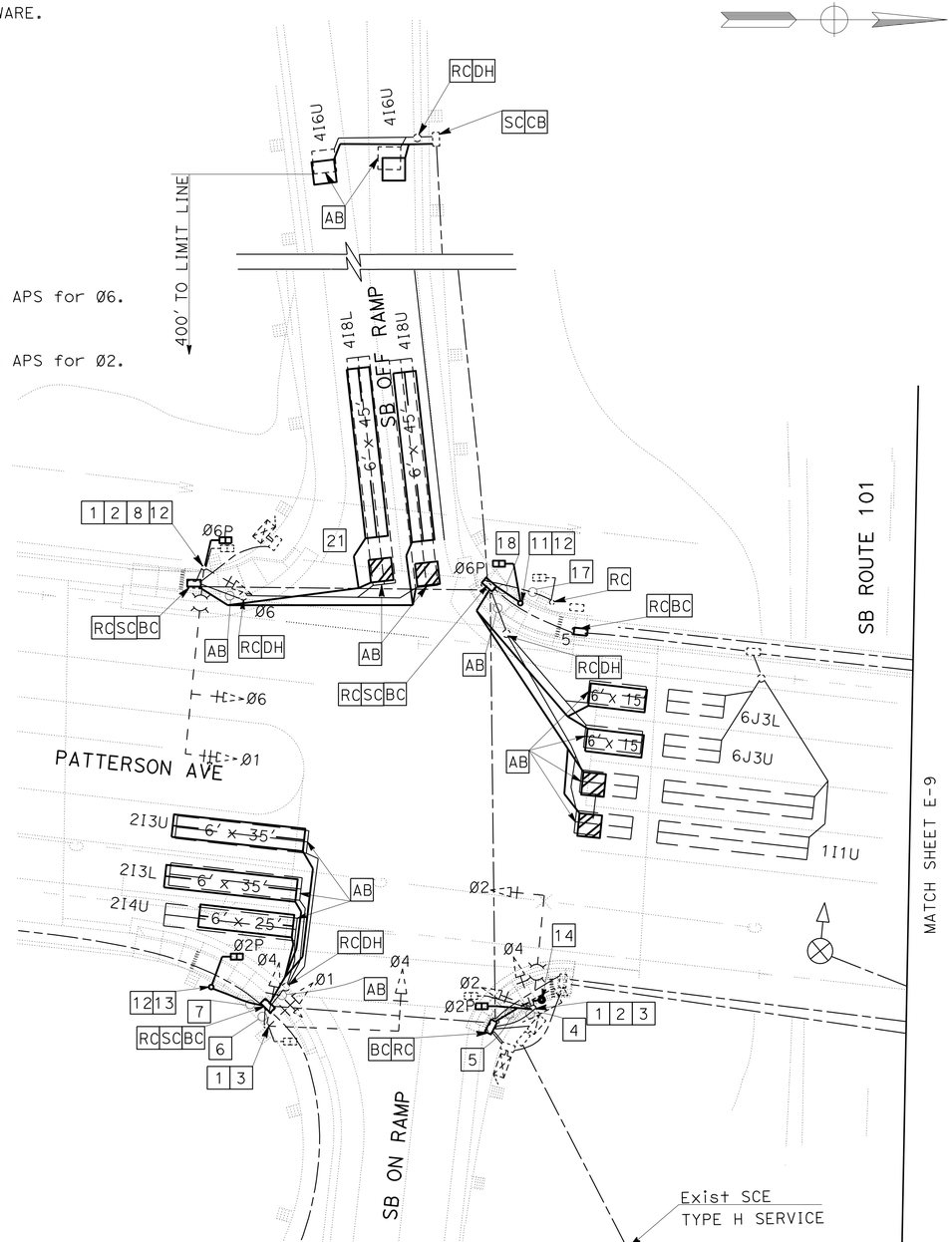
NOTES:

1. ALL PULL BOXES MUST BE No. 6 UNLESS OTHERWISE SHOWN.
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



DETAIL A

DETECTOR LOOP PLACEMENT



APPROVED FOR ELECTRICAL WORK ONLY

MODIFY SIGNAL
E-8

SCALE: 1" = 20′

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® 06-ELECTRICAL DESIGN

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CHECKED BY: DANIEL VO
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LAST REVISION 11-24-14
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REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — ELECTRICAL — STATE OF CALIFORNIA

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NOTES:

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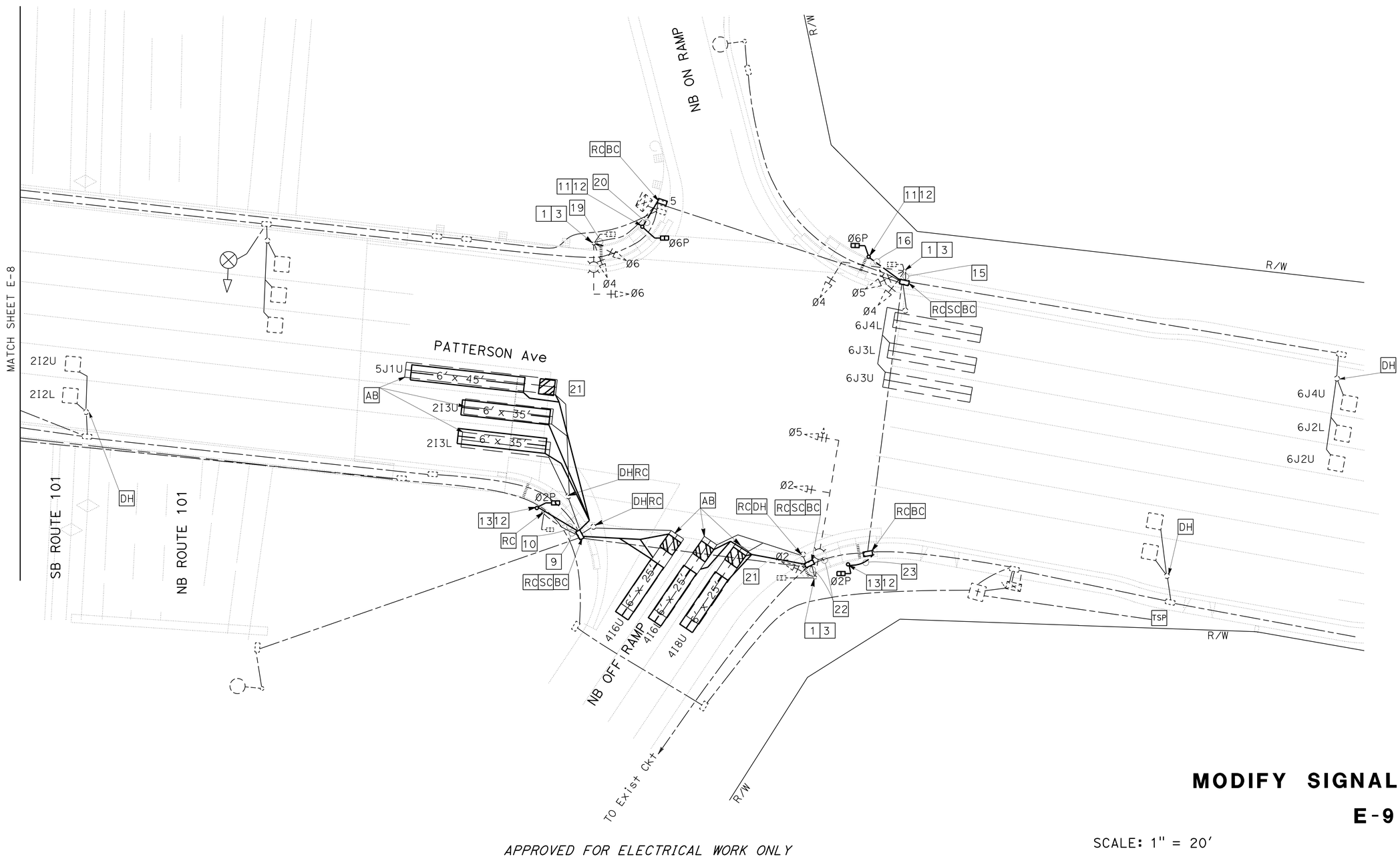
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
3. FOR LEGEND SEE SHEET E-8.



MODIFY SIGNAL

E-9

SCALE: 1" = 20'

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	58	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

PLANS APPROVAL DATE 11-24-14

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — ELECTRICAL — STATE OF CALIFORNIA

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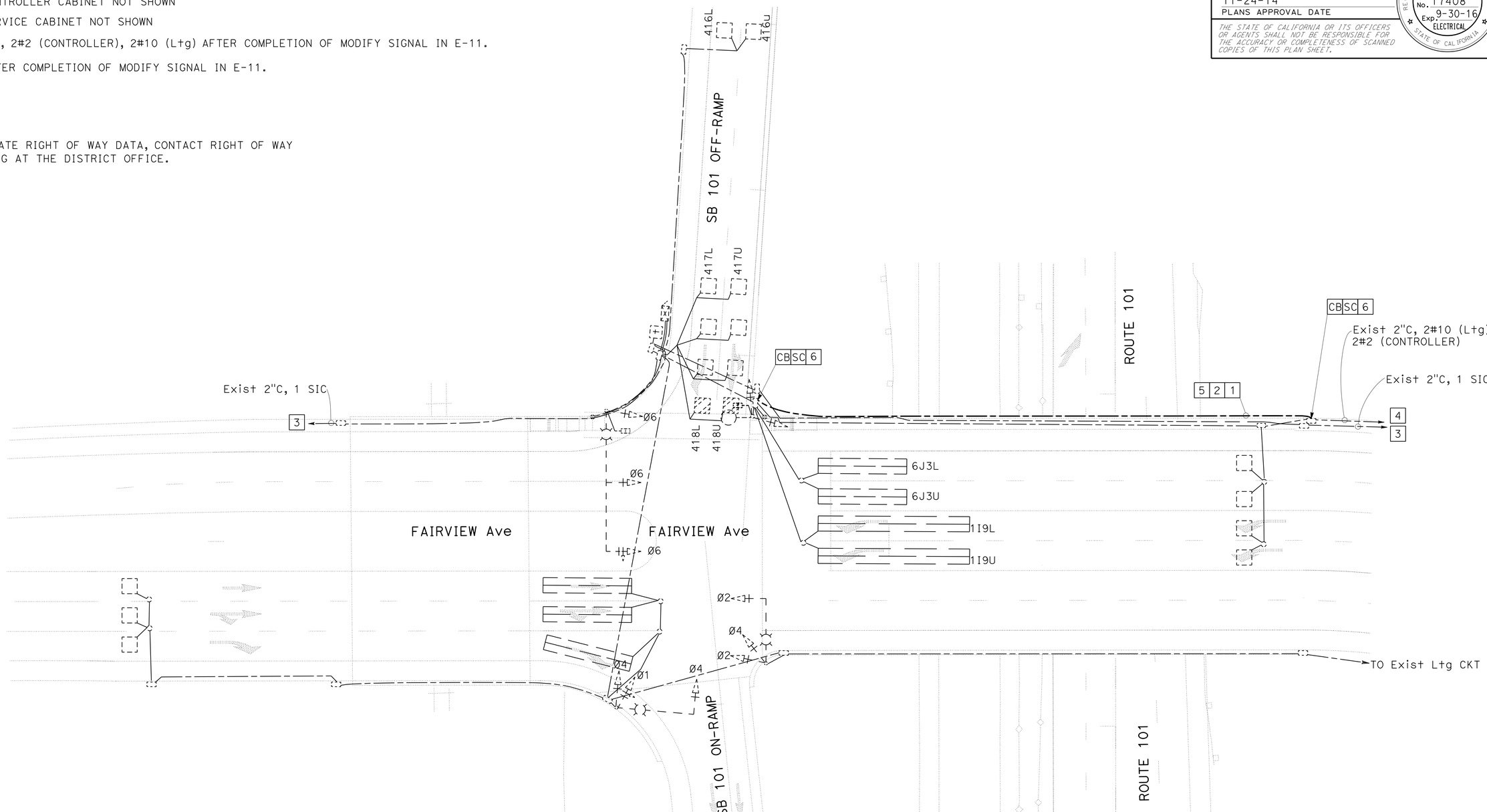
LEGEND: (FOR THIS SHEET ONLY)

1. TIE 2" C TO Exist CHAIN LINK RAILING.
2. 2"C, 2#2 (CONTROLLER), 2#10 (Ltg)
3. TO CONTROLLER CABINET NOT SHOWN
4. TO SERVICE CABINET NOT SHOWN
5. RC 2"C, 2#2 (CONTROLLER), 2#10 (Ltg) AFTER COMPLETION OF MODIFY SIGNAL IN E-11.
6. SC AFTER COMPLETION OF MODIFY SIGNAL IN E-11.

NOTE:

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



TEMPORARY SIGNAL POWER
E-10

SCALE: 1" = 20'

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD

CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN

CHECKED BY: DANIEL VO

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LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO No. 17408 Exp. 9-30-16 ELECTRICAL — STATE OF CALIFORNIA

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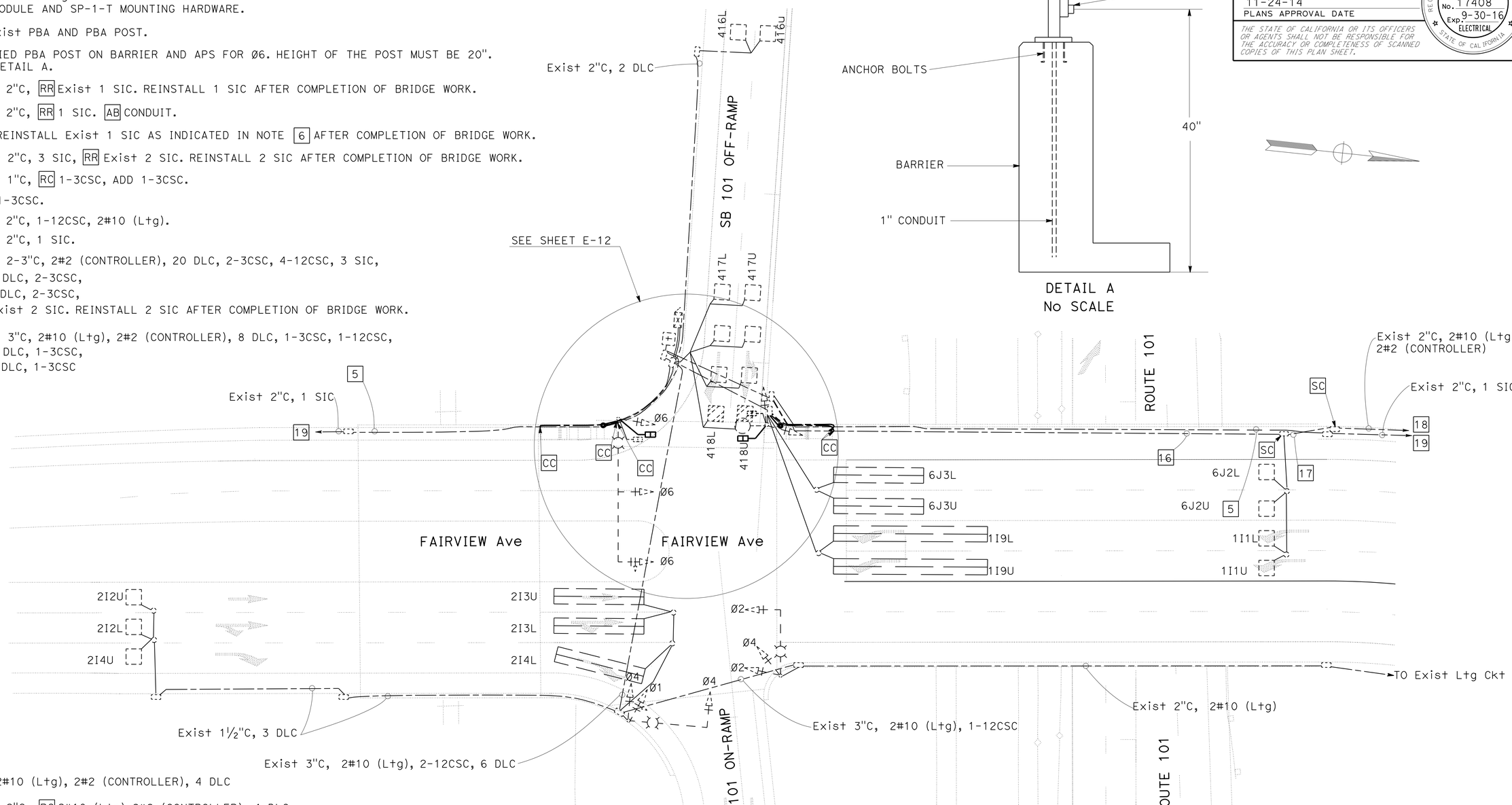
LEGEND: (FOR SHEET E-11 AND E-12)

1. RC Exist Ped Sig HEAD.
2. INSTALL Ped Sig HEAD WITH LED COUNTDOWN Sig MODULE AND SP-1-T MOUNTING HARDWARE.
3. RC Exist PBA AND PBA POST.
4. MODIFIED PBA POST ON BARRIER AND APS FOR Ø6. HEIGHT OF THE POST MUST BE 20". SEE DETAIL A.
5. Exist 2"C, RR Exist 1 SIC. REINSTALL 1 SIC AFTER COMPLETION OF BRIDGE WORK.
6. Exist 2"C, RR 1 SIC. AB CONDUIT.
7. 2"C, REINSTALL Exist 1 SIC AS INDICATED IN NOTE 6 AFTER COMPLETION OF BRIDGE WORK.
8. Exist 2"C, 3 SIC, RR Exist 2 SIC. REINSTALL 2 SIC AFTER COMPLETION OF BRIDGE WORK.
9. Exist 1"C, RC 1-3CSC, ADD 1-3CSC.
10. 1"C, 1-3CSC.
11. Exist 2"C, 1-12CSC, 2#10 (Ltg).
12. Exist 2"C, 1 SIC.
13. Exist 2-3"C, 2#2 (CONTROLLER), 20 DLC, 2-3CSC, 4-12CSC, 3 SIC, RC 4 DLC, 2-3CSC, ADD 4DLC, 2-3CSC, RR Exist 2 SIC. REINSTALL 2 SIC AFTER COMPLETION OF BRIDGE WORK.
14. Exist 3"C, 2#10 (Ltg), 2#2 (CONTROLLER), 8 DLC, 1-3CSC, 1-12CSC, RC 4 DLC, 1-3CSC, ADD 4DLC, 1-3CSC

NOTE:

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



15. 2"C, 2#10 (Ltg), 2#2 (CONTROLLER), 4 DLC
16. Exist 2"C, RC 2#10 (Ltg),2#2 (CONTROLLER), 4 DLC, ADD 2#10 (Ltg), 2#2 (CONTROLLER), 4 DLC.
17. Exist 2"C, RC 2#10 (Ltg), 2#2 (CONTROLLER), ADD 2#10 (Ltg), 2#2 (CONTROLLER).
18. Exist 1"C, 2 DLC REMAIN AND PROTECTED DURING CONSTRUCTION.
19. TO CONTROLLER CABINET NOT SHOWN.
20. TO SERVICE CABINET NOT SHOWN.

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY SIGNAL
E-11

SCALE: 1" = 20'

REVISED BY | DATE REVISED
KARIM ABDOLLAHIAN | DANIEL VO
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: ALI BAKHDOUD

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

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REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

PLANS APPROVAL DATE 11-24-14

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — ELECTRICAL — STATE OF CALIFORNIA

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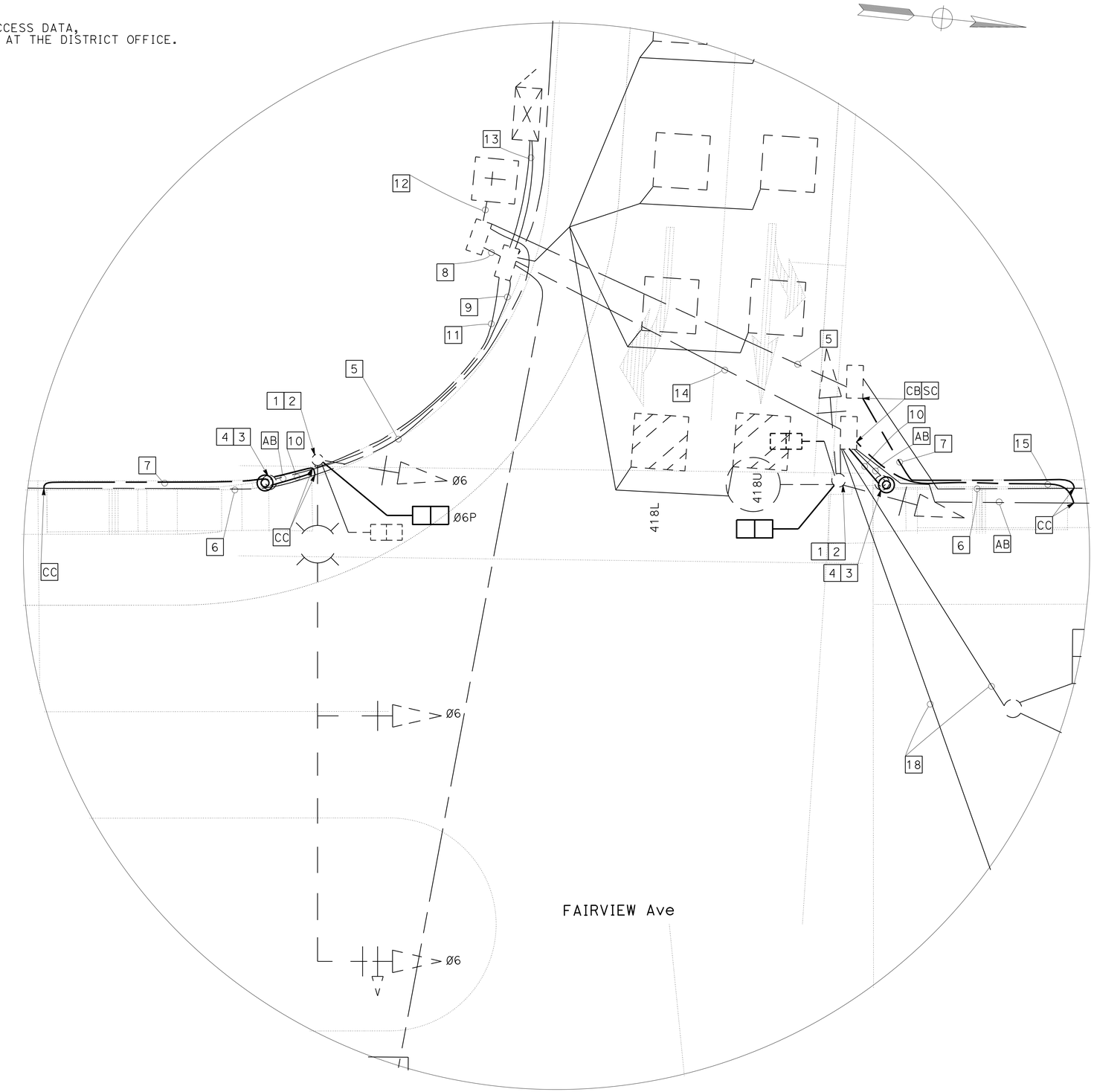
NOTES:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR LEGEND SEE SHEET E-11.



APPROVED FOR ELECTRICAL WORK ONLY

NO SCALE

MODIFY SIGNAL
E-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® 06-ELECTRICAL DESIGN

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CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN

CHECKED BY: DANIEL VO

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DATE REVISED

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	61	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — ELECTRICAL — STATE OF CALIFORNIA

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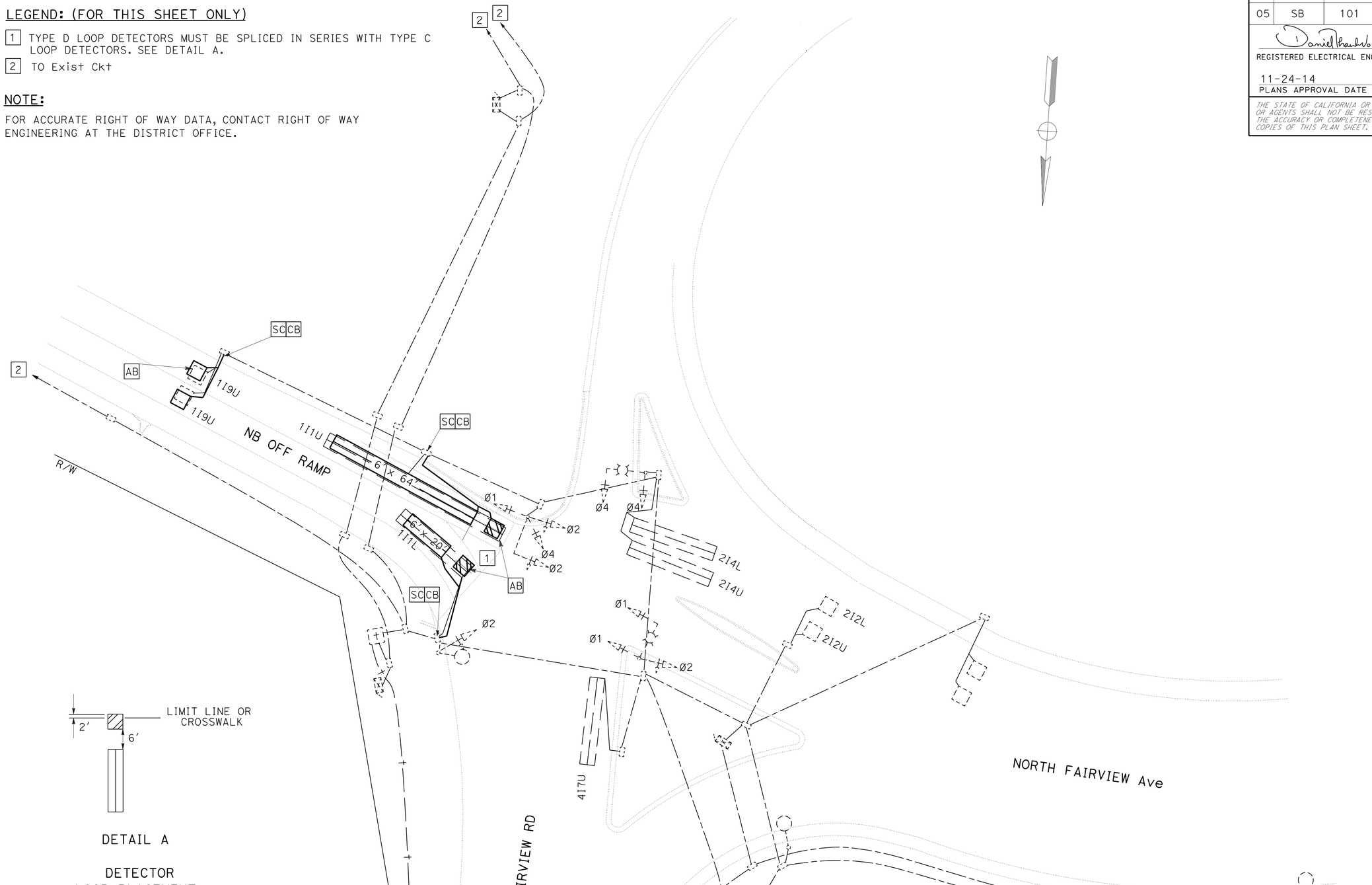
LEGEND: (FOR THIS SHEET ONLY)

1 TYPE D LOOP DETECTORS MUST BE SPLICED IN SERIES WITH TYPE C LOOP DETECTORS. SEE DETAIL A.

2 TO Exist Ckt

NOTE:

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



DETAIL A

DETECTOR LOOP PLACEMENT

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MODIFY SIGNAL E-13

SCALE: 1" = 20'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

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05	SB	101	21.0/27.1	62	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

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REGISTERED PROFESSIONAL ENGINEER DANIEL THANH VO No. 17408 Exp. 9-30-16 ELECTRICAL STATE OF CALIFORNIA

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LEGEND: (FOR SHEET E-14 AND E-15)

1 TYPE D LOOP DETECTORS MUST BE SPLICED IN SERIES WITH TYPE C LOOP DETECTORS. SEE DETAIL A.

NOTE:

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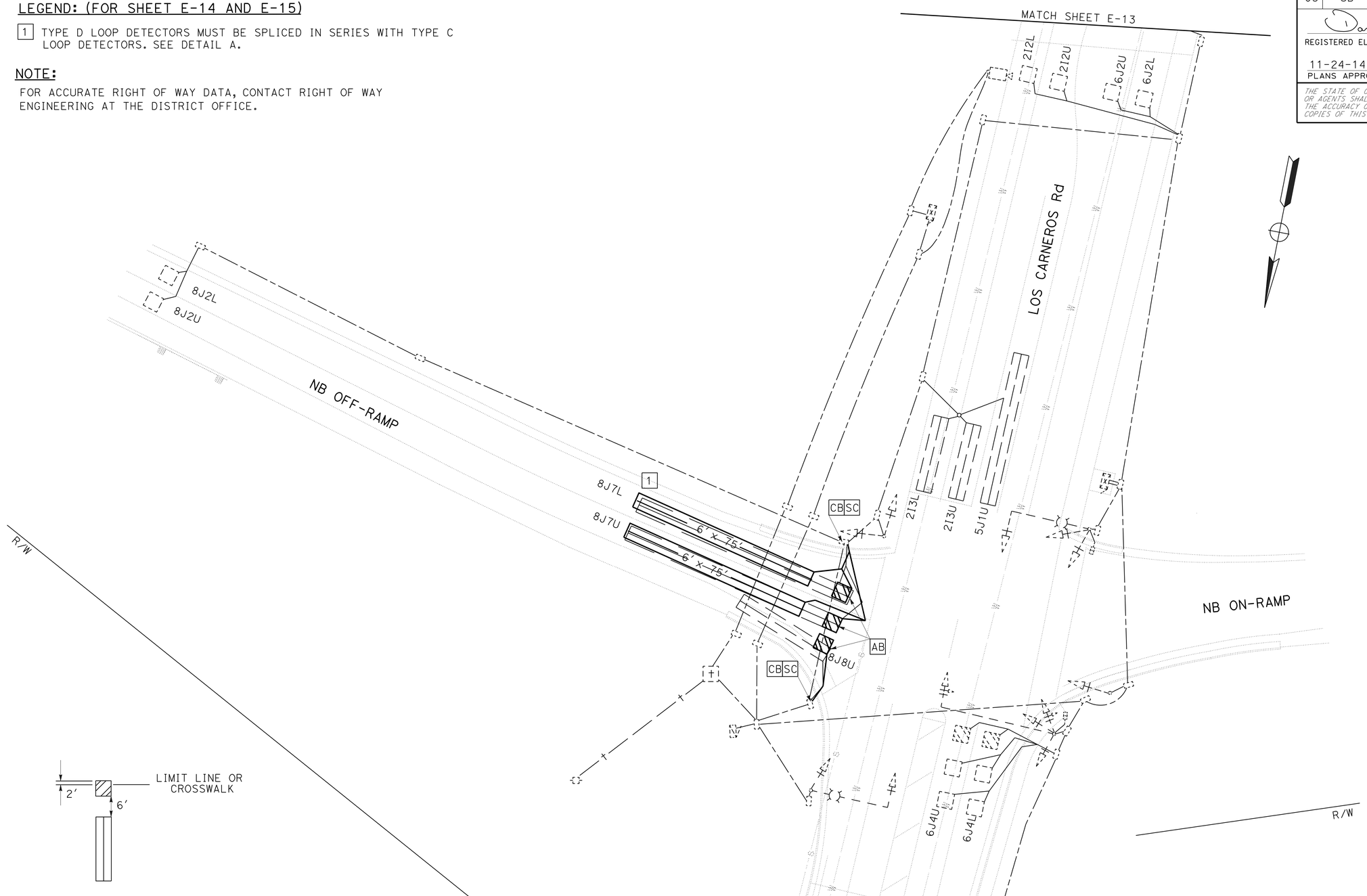

DETAIL A

DETECTOR LOOP PLACEMENT

APPROVED FOR ELECTRICAL WORK ONLY

MODIFY SIGNAL

E-14

SCALE: 1" = 20'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

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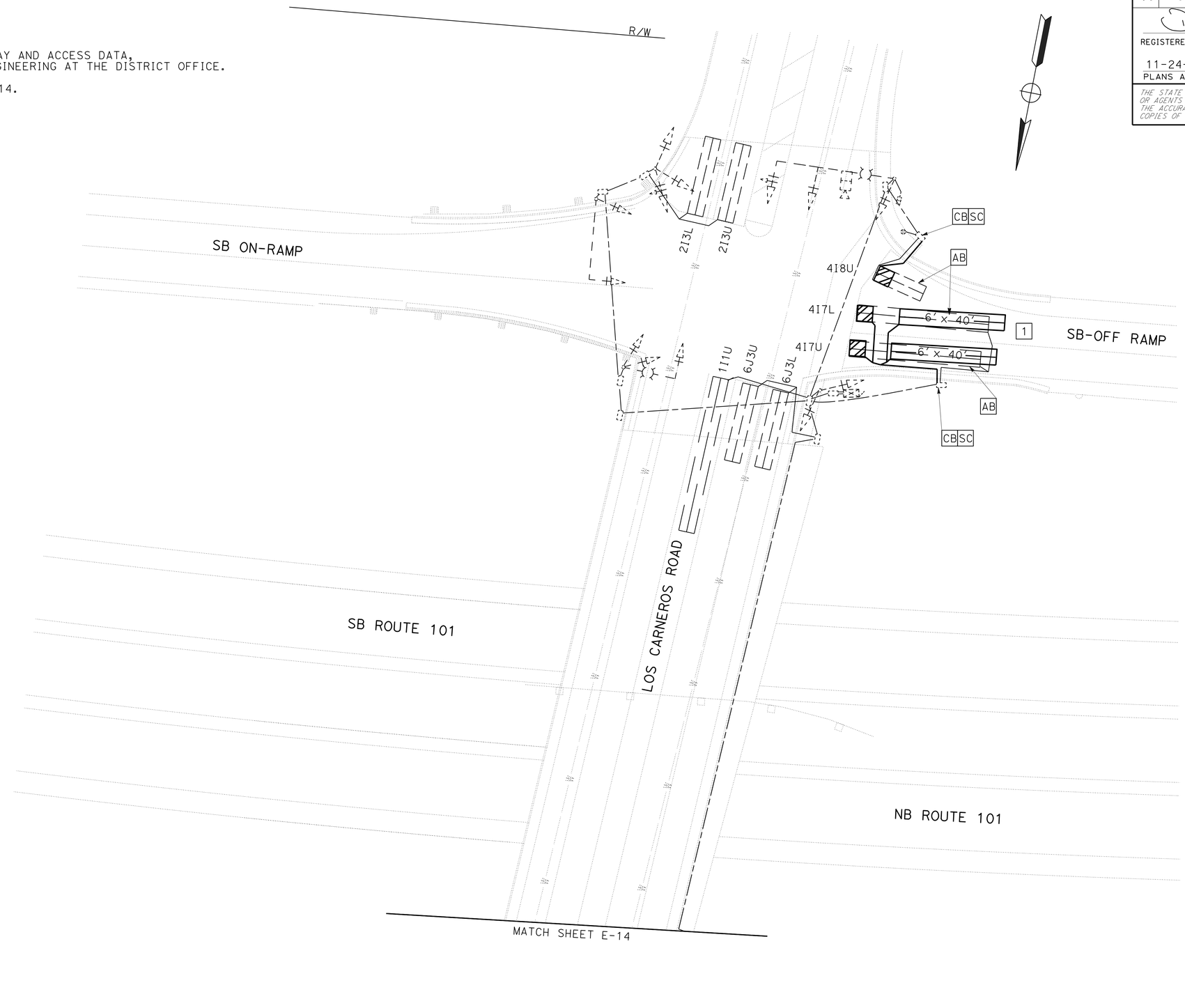
2. FOR LEGEND SEE SHEET E-14.



MODIFY SIGNAL
E-15

SCALE: 1" = 20'

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

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DATE REVISED

LAST REVISION 11-24-14
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PLANS APPROVAL DATE

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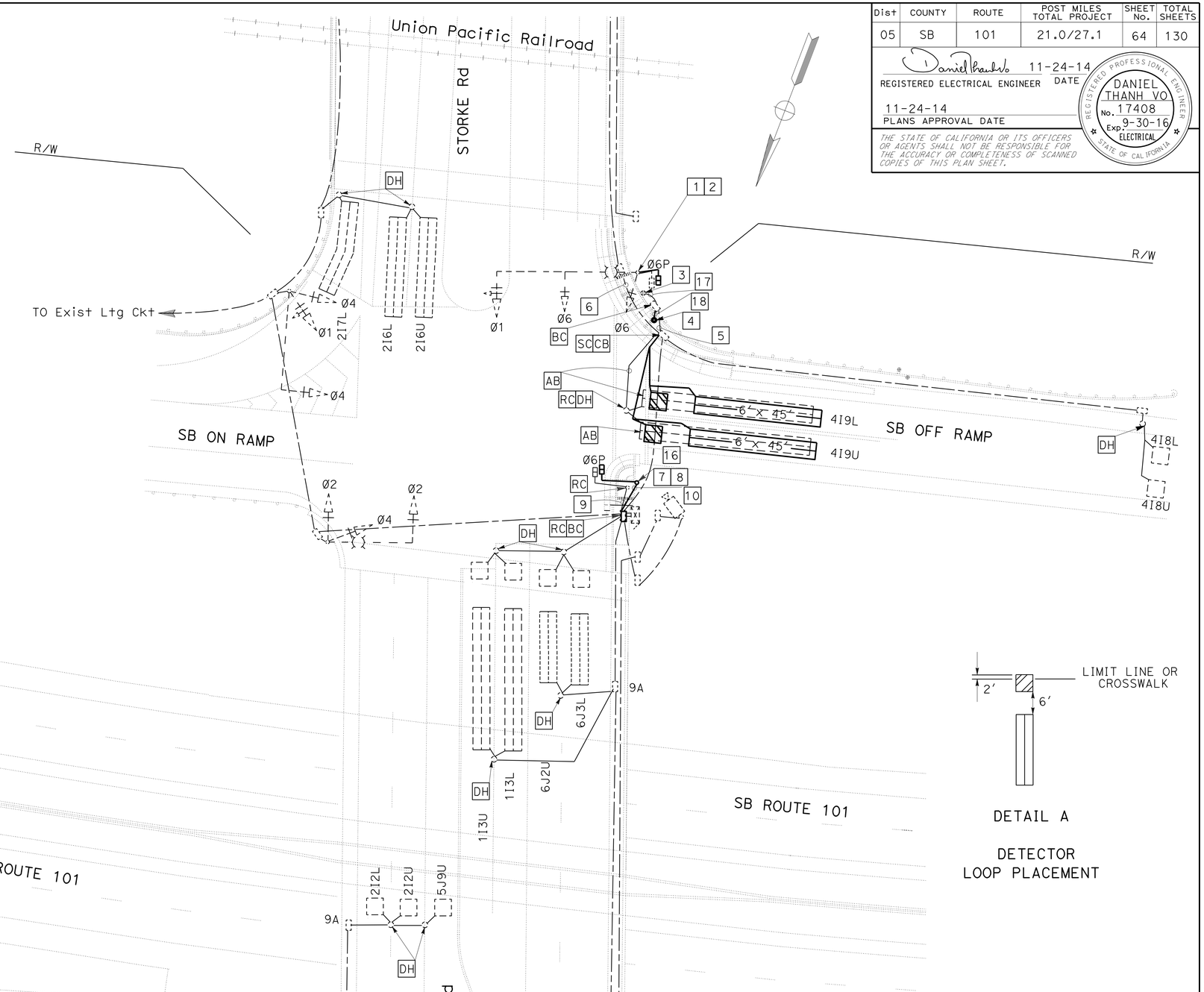
LEGEND: (FOR SHEETS E-16 AND E-17)

1. RC Exist Ped Sig HEAD.
2. INSTALL Ped Sig HEAD WITH LED COUNTDOWN SIGNAL MODULE AND SP-1-T MOUNTING HARDWARE.
3. RC PBA POST WITH APS FOR Ø6.
4. INSTALL APS FOR Ø6 ON PBA POST.
5. Exist 1½"C, 2#14 (PBA Ø6). ADD APS CABLE.
6. Exist 3"C, 11#14 (SIG), 1#10 (SIG COMMON), 2#8 (Ltg). ADD APS CABLE.
7. 7' TYPE 1-A POLE WITH LED COUNTDOWN PSF MODULE AND APS FOR Ø6.
8. ADD APS CABLE BETWEEN PBA AND Ped Sig HEAD.
9. AB CONDUIT, RR 2#14 (PBA Ø6), 3#14 (PSM Ø6).
10. 1½"C, INSTALL Exist 5#14 AS INDICATED IN NOTE 9.
11. Exist 3"C, 11#14 (SIGNAL), 1#10 (SIGNAL COMMON), 4#8 (Ltg), 1 SIC, 2#10 (TDC), 2#10 (HAR), 2#6 (CONTROLLER). ADD APS CABLE.
12. RC Exist PBA.
13. Exist 2"C, 11#14 (Sig), 1#10 (Sig COMMON). ADD APS CABLE.
14. Exist 2"C, 8#14 (Sig), 1#10 (Sig COMMON), 2#8 (Ltg). ADD APS CABLE. RR 2#14 (PBA Ø6).
15. Exist 3"C, 25#14 (Sig), 1#10 (Sig COMMON), 6#8 (Ltg), 22 DLC, 4#12 (ILLUMINATION), 2#12 (Irr), 1#10 (Sig COMMON), ADD APS CABLE.
16. TYPE D LOOP DETECTORS MUST BE SPLICED IN SERIES WITH TYPE C LOOP DETECTORS. SEE DETAIL A.
17. AB CONDUIT, RR 2#14 (PBA Ø6).
18. 1½"C, 1 APS CABLE. INSTALL Exist 2#14 AS INDICATED IN NOTE 17.
19. 1½"C, 1 APS CABLE. INSTALL Exist 2#14 AS INDICATED IN NOTE 14.

NOTES:

1. ALL PULL BOXES MUST BE No. 6(E) UNLESS OTHERWISE SHOWN.
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



DETAIL A

DETECTOR LOOP PLACEMENT

MODIFY SIGNAL
E-16
SCALE: 1" = 20'

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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NOTES:

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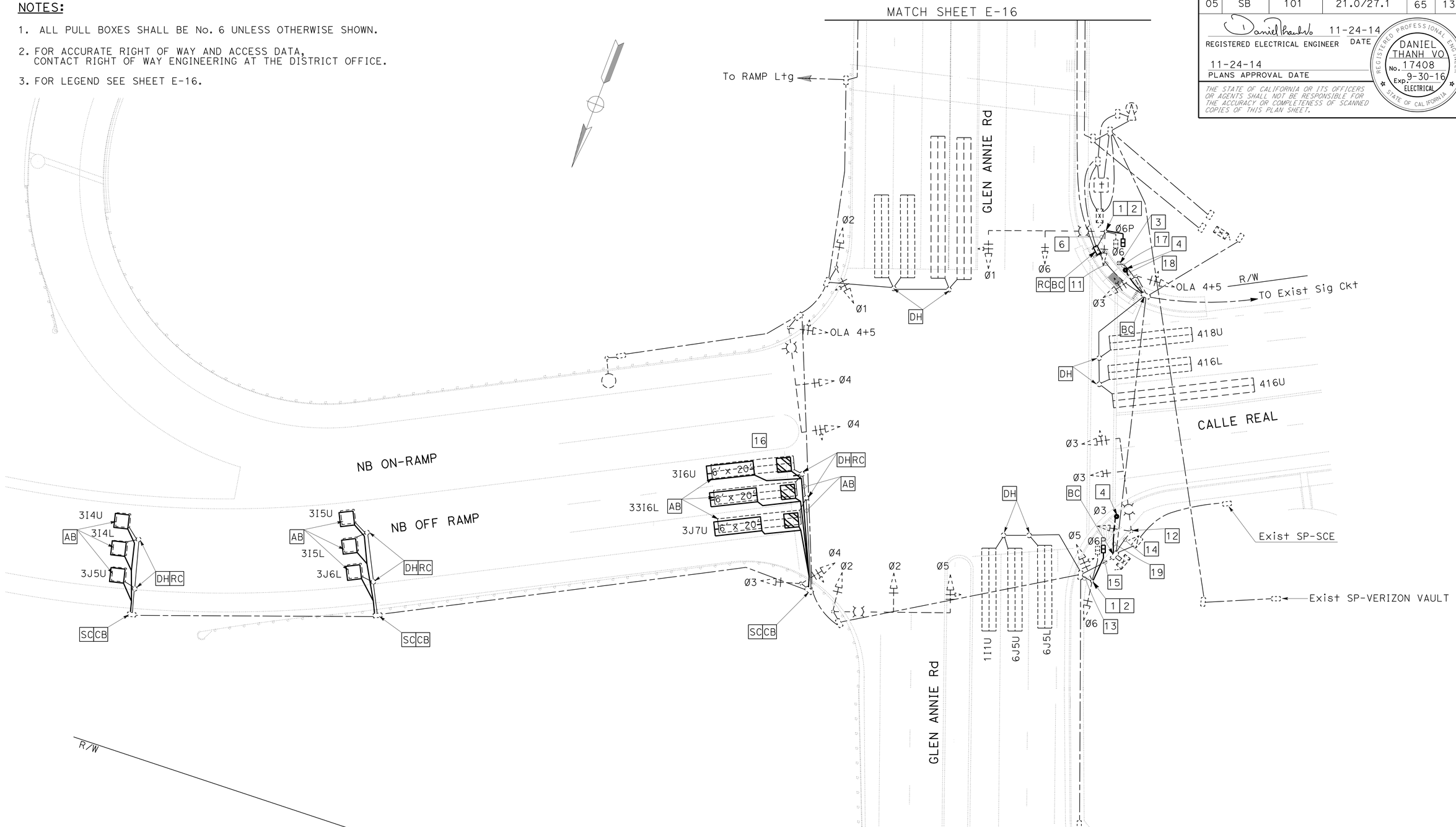
3. FOR LEGEND SEE SHEET E-16.



MODIFY SIGNAL
E-17
SCALE: 1" = 20'

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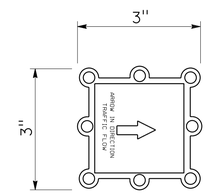
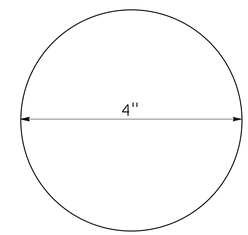
NOTES:

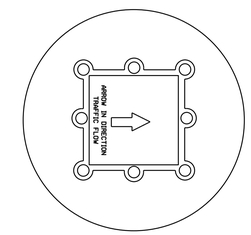
1. PRIOR TO INSTALLATION, NOTE SENSOR'S ID, LANE NUMBER, AND LOCATION IN LANE.
2. UNLESS OTHERWISE SPECIFIED, INSTALL SENSOR IN THE MIDDLE OF THE LANE.
3. USE DOUBLE-CYLINDER 4" CORING BIT, WITH 1.25" STANDARD MACHINE THREADED SLEEVE.
4. MARK A LINE 2.25" FROM THE BOTTOM OF THE DOUBLE-CYLINDER CORING BIT, AND DRILL THROUGH THE ASPHALT CONCRETE OR PORTLAND CEMENT TO THIS DEPTH.
5. CORE A HOLE AT LEAST 2.25" DEEP SO THAT WHEN INSTALLED THE TOP OF THE SENSOR IS AT LEAST 0.25" BELOW THE SURFACE.
6. MAKE SURE THE SENSOR INSTALLS FLAT IN THE CORED HOLE AND IS NOT TILTED.
7. ONCE THE CORRECT DEPTH IS REACHED, USE THE HAMMER DRILL TO REMOVE THE INNER AND OUTER CYLINDRICAL "SHELLS", AND THE BUSHING BIT TO FLATTEN THE SURFACE.
8. ONCE COMPLETE, REMOVE ALL DUST AND DEBRIS OUT OF THE CORED HOLE.
9. USE THE HEAT-GUN OR HOT COMPRESSED AIR TO DRY THE INSIDE OF THE CORED HOLE.
10. IF THE HOLE IS TOO DEEP OR UNEVEN, SAND CAN BE USED TO FLATTEN THE SURFACE.
11. FILL THE HOLE ABOUT 1/4 FULL OF THE SENSOR EPOXY/ADHESIVE.
12. PLACE SENSOR IN THE HOLE WITH ARROW POINTING IN THE DIRECTION OF TRAFFIC. THE EPOXY SHOULD STILL HAVE WORK TIME, SO THE SENSOR CAN BE ROTATED TO THE RIGHT POSITION. PUSH SENSOR DOWN SO IT LAYS FLAT ON THE BOTTOM OF THE HOLE. THIS ASSURES THAT THERE IS A BOND UNDERNEATH THE SENSOR WITH THE EPOXY.
13. FILL IN THE REMAINING EMPTY SPACE OF THE HOLE WITH EPOXY AND COVER THE SENSOR WITH EPOXY TO MAKE IT LEVEL WITH THE SURFACE OF THE ROAD.
14. THERE MUST BE ABSOLUTELY NO MOISTURE ON THE APPLIED SURFACE.
15. AFTER THE FIRST APPLICATION, DO NOT LET THE EPOXY SIT FOR MORE THAN 30 SECONDS BEFORE THE NEXT APPLICATION.
16. DEPENDING ON AMBIENT TEMPERATURE AND HUMIDITY, EPOXY DRYING TIME CAN VARY FROM 5 MINUTES TO 15 MINUTES. VERIFY HARDNESS OF EPOXY BEFORE REOPENING THE LANE FOR TRAFFIC.
17. INSTALL AT TEMPERATURE GREATER THAN -37°C.



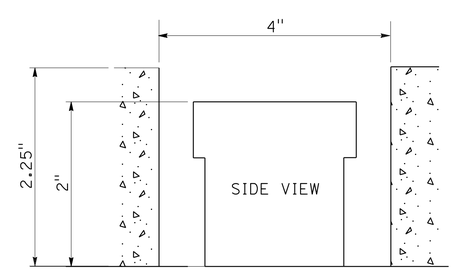
VEHICLE SENSOR NODE



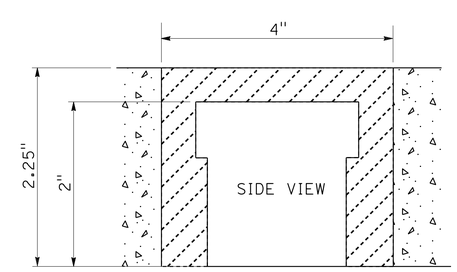
VEHICLE SENSOR NODE CORED HOLE



VEHICLE SENSOR NODE IN HOLE



VEHICLE SENSOR NODE IN HOLE



VEHICLE SENSOR NODE IN HOLE WITH EPOXY

APPROVED FOR ELECTRICAL WORK ONLY

ELECTRICAL DETAILS
E-18

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN
CHECKED BY: DANIEL VO
REVISED BY
DATE REVISED

LAST REVISION 11-24-14 | DATE PLOTTED => 25-NOV-2014 | TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	67	130

REGISTERED ELECTRICAL ENGINEER — DATE 11-24-14

11-24-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — DANIEL THANH VO — No. 17408 — Exp. 9-30-16 — ELECTRICAL — STATE OF CALIFORNIA

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NOTE:

THE QUANTITIES SHOWN IN TABLES ARE NOT SEPARATE PAY ITEMS, FOR INFORMATION ONLY. FOR COMPLETE ELECTRICAL WORK, SEE ELECTRICAL PLAN SHEETS.

MODIFY SIGNAL

SHEET No.	1"C, TYPE 1	2"C, TYPE 1	1½"C, TYPE 1	APS CABLE	No. 14 CONDUCTOR	No. 10 CONDUCTOR (COMMON)	No. 6 PB	No. 6(E) PB	No. 5 PB	TYPE A DETECTOR LOOP	TYPE C DETECTOR LOOP	TYPE D DETECTOR LOOP	PBA POST	PBA FOUNDATION	LED COUNTDOWN PSF MODULE AND MOUNTING	APS	TYPE 1-A POLE	TYPE 1-A POLE FOUNDATION
	LF						EA											
E-8			40	80	150	75	4		1	2	7	4	1	1	4	4	2	2
E-9			70	160	150	75	4		1		6	4			4	4	4	4
E-11	5	27		55									2		2	2		
E-13										2	2	2						
E-14											2	3						
E-15											2	3						
E-16			30	80				1			2	2	1	1	2	2	1	1
E-17			40	180			1			6	3	3	2	2	2	2		

MODIFY WIRELESS VEHICLE DETECTOR SYSTEM

SHEET No.	VSN
	EA
E-1	1
E-2	2
E-3	4
E-4	1
E-5	2
E-6	1
E-7	1

TEMPORARY SIGNAL POWER

SHEET No.	2"C, TYPE 3	No. 2 CONDUCTOR	No. 10 CONDUCTOR	No. 8 CONDUCTOR (G)
	LF			
E-10	230	470	470	235

ELECTRICAL QUANTITIES
E-19

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
CALCULATED-DESIGNED BY: KARIM ABDOLLAHIAN
CHECKED BY: DANIEL VO
REVISED BY
DATE REVISED

LAST REVISION 11-24-14
DATE PLOTTED => 25-NOV-2014
TIME PLOTTED => 13:26

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
05	SB	101	21.0/27.1	68	130

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 11-24-14

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
05	SB	101	21.0/27.1	69	130

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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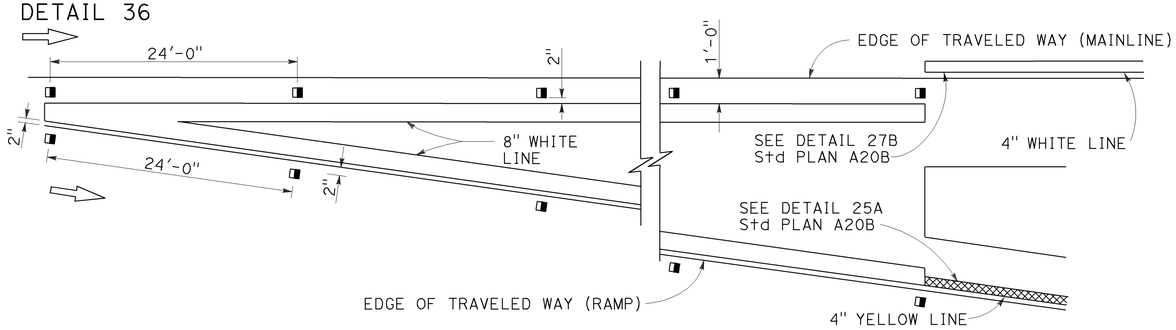
TO ACCOMPANY PLANS DATED 11-24-14

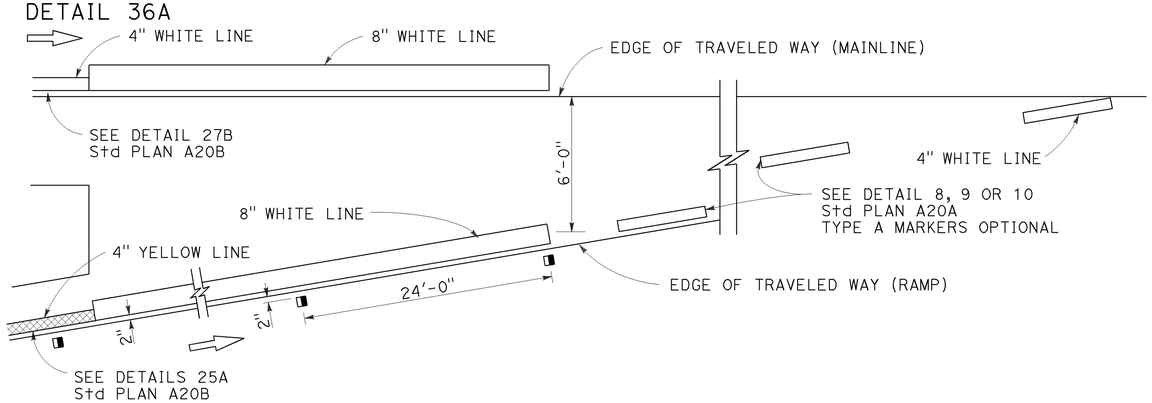
EXIT RAMP NEUTRAL AREA (GORE) TREATMENT

DETAIL 36



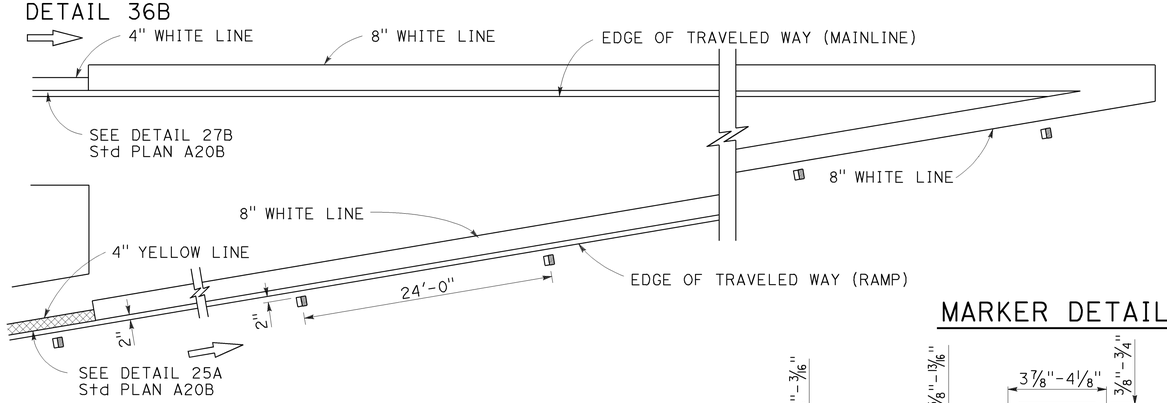
ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT

DETAIL 36A



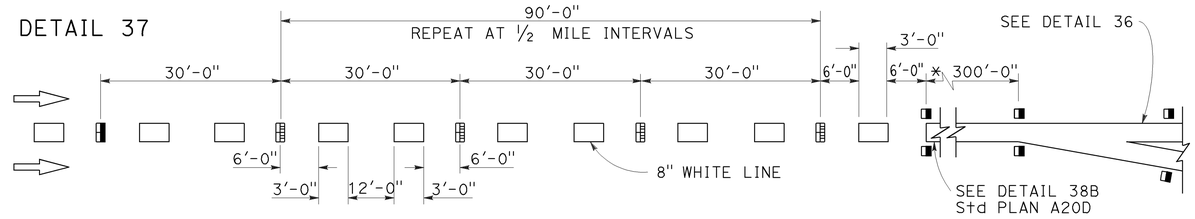
ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT

DETAIL 36B

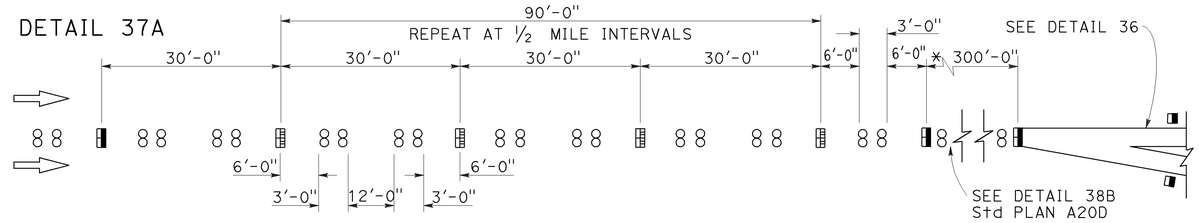


LANE DROP AT EXIT RAMPS

DETAIL 37



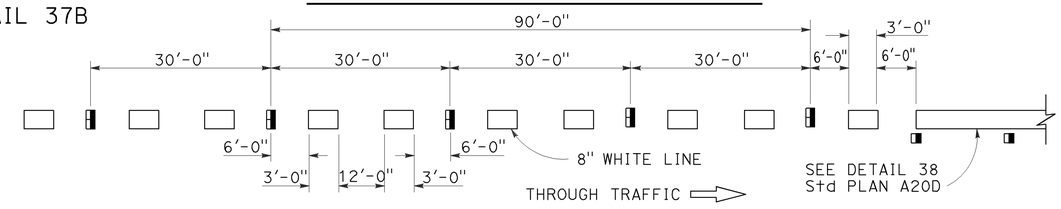
DETAIL 37A



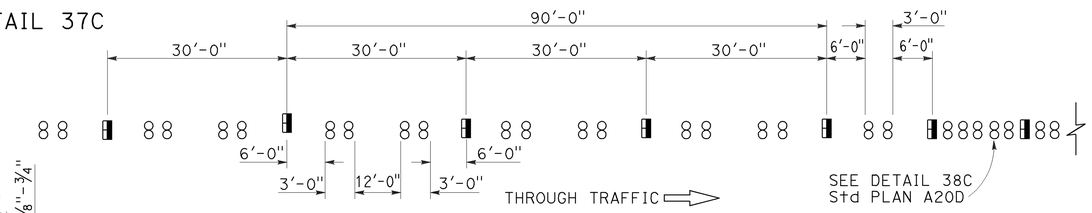
* The solid channelizing line shown may be omitted on short auxiliary lanes where weaving length is critical.

LANE DROP AT INTERSECTIONS

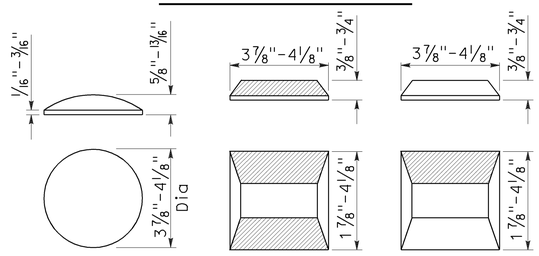
DETAIL 37B



DETAIL 37C



MARKER DETAILS



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
05	SB	101	21.0/27.1	70	130

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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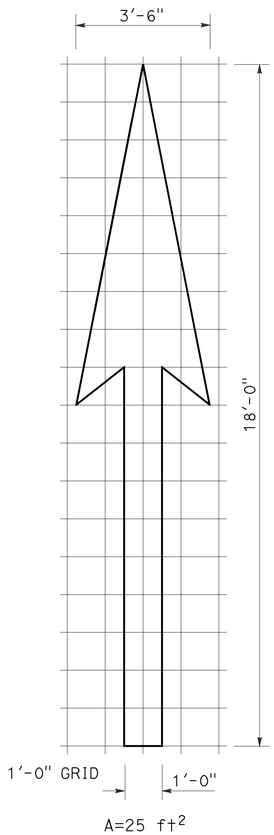
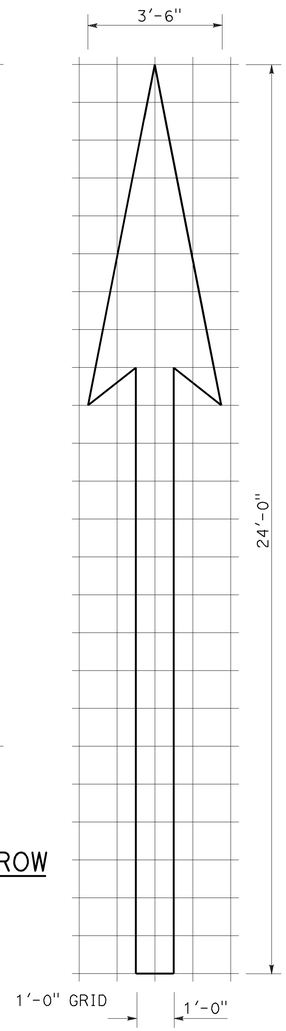
TO ACCOMPANY PLANS DATED 11-24-14



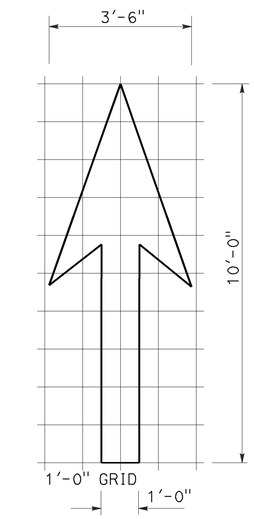
A=25 ft^2

TYPE I 18'-0" ARROW



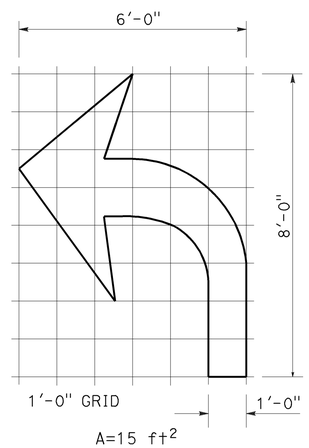
A=31 ft^2

TYPE I 24'-0" ARROW



A=14 ft^2

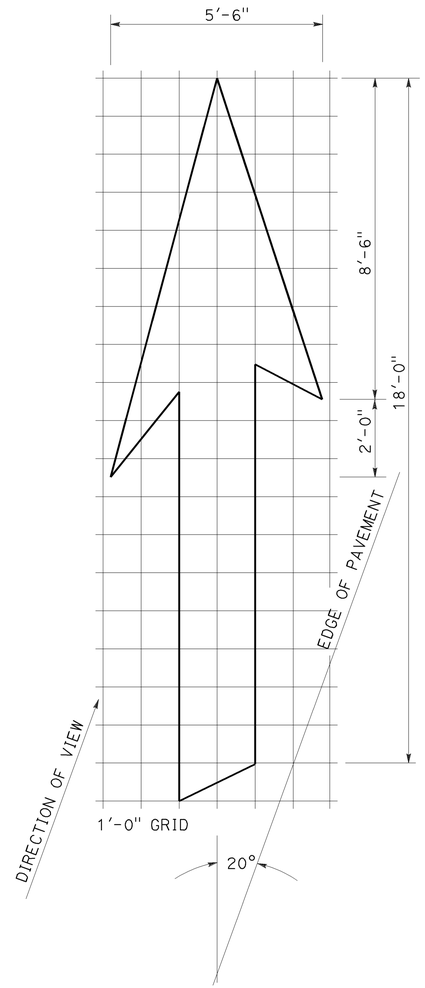
TYPE I 10'-0" ARROW



A=15 ft^2

TYPE IV (L) ARROW

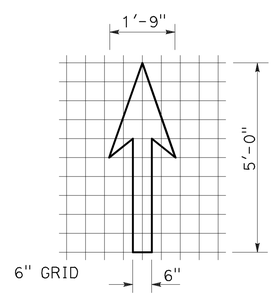
(For Type IV (R) arrow, use mirror image)



A=42 ft^2

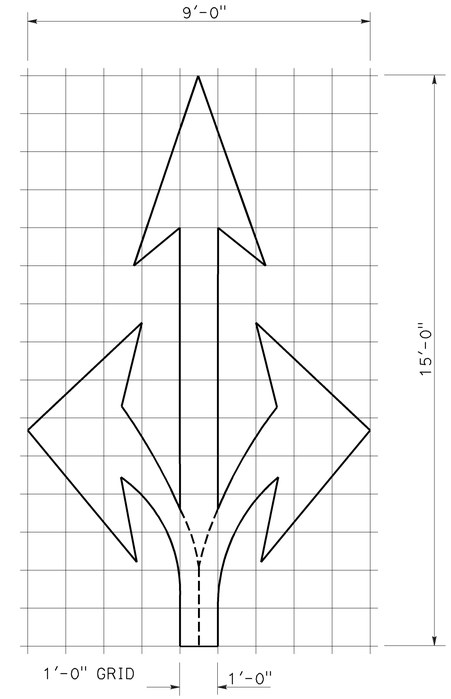
TYPE VI ARROW

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



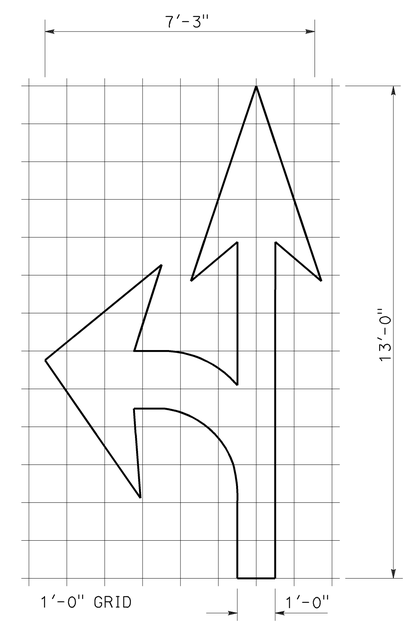
A=3.5 ft^2

BIKE LANE ARROW



A=36 ft^2

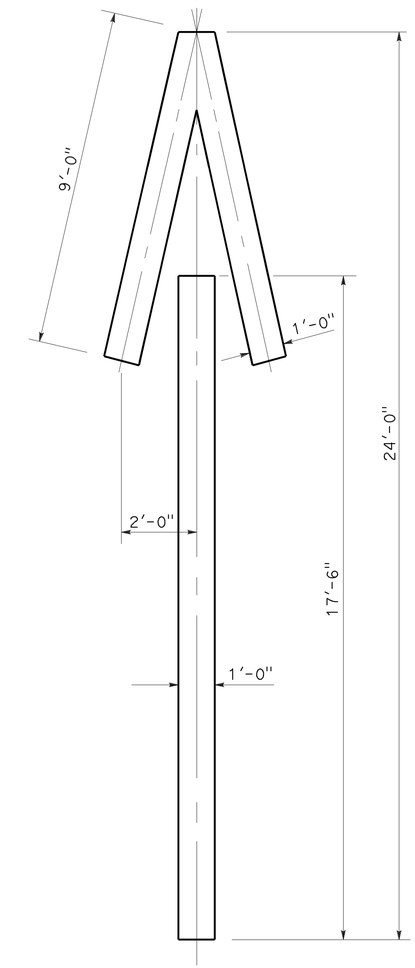
TYPE VIII ARROW



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

2010 REVISED STANDARD PLAN RSP A24A

3-14-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	71	130

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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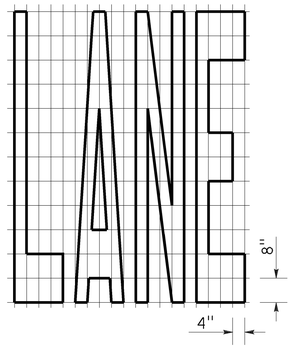
TO ACCOMPANY PLANS DATED 11-24-14

2010 REVISED STANDARD PLAN RSP A24E



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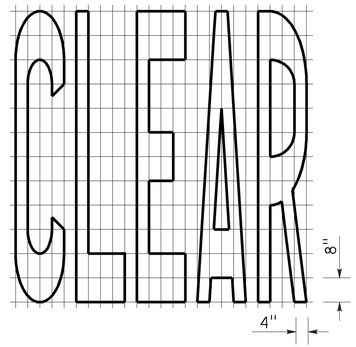

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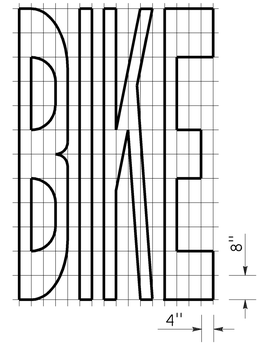

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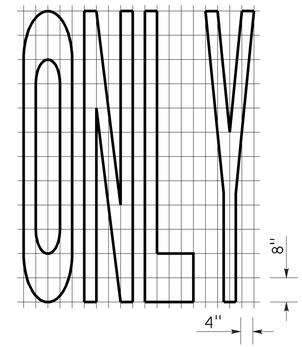

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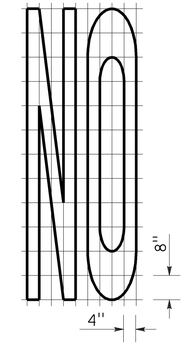

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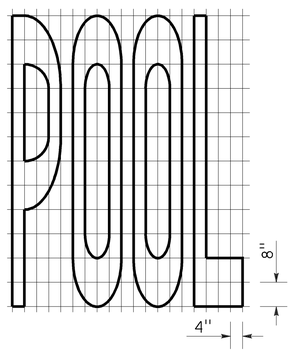

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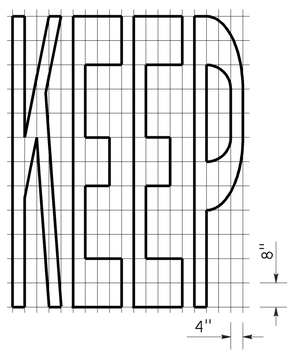

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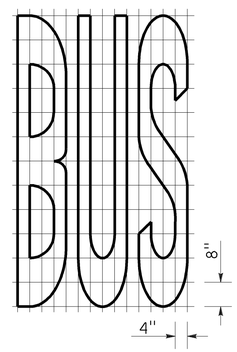

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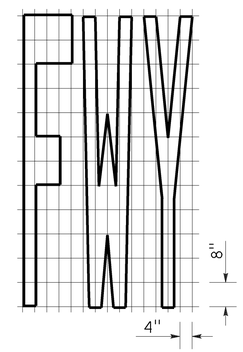

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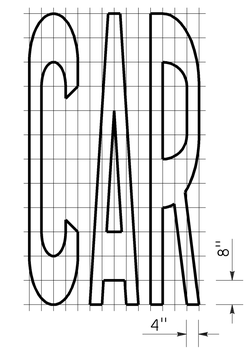
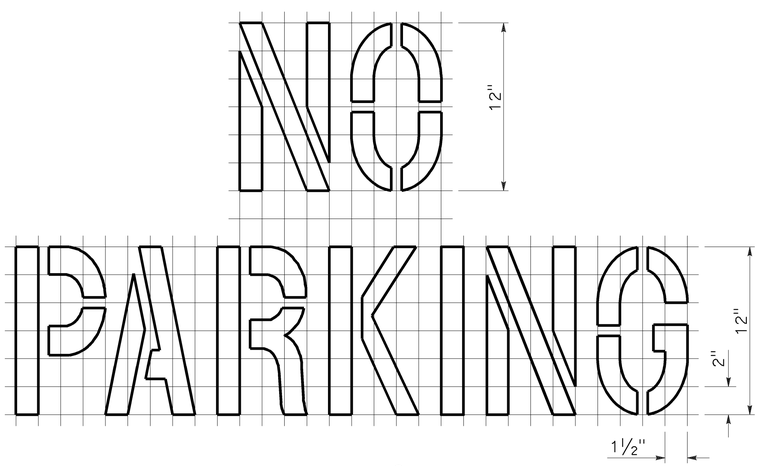


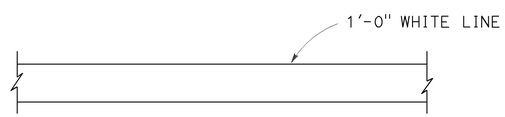
A=17 ft^2

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

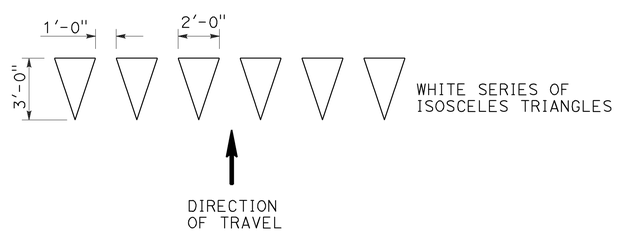


A=2 ft^2

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
05	SB	101	21.0/27.1	72	130

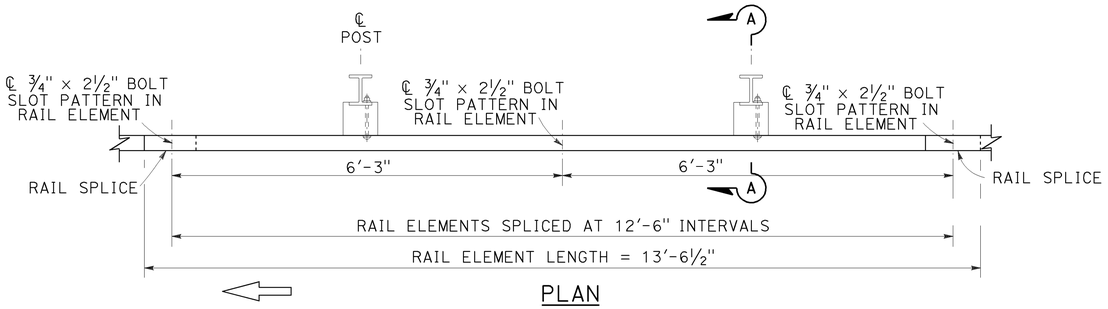
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

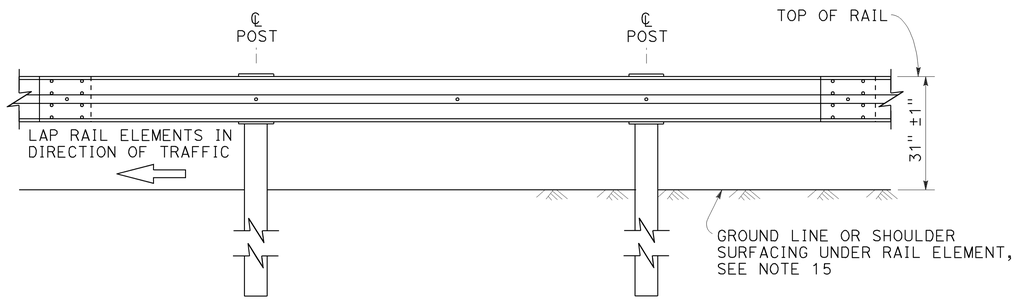
REGISTERED PROFESSIONAL ENGINEER Randell D. Hiatt No. C50200 Exp. 6-30-15 CIVIL STATE OF CALIFORNIA

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.

TO ACCOMPANY PLANS DATED 11-24-14

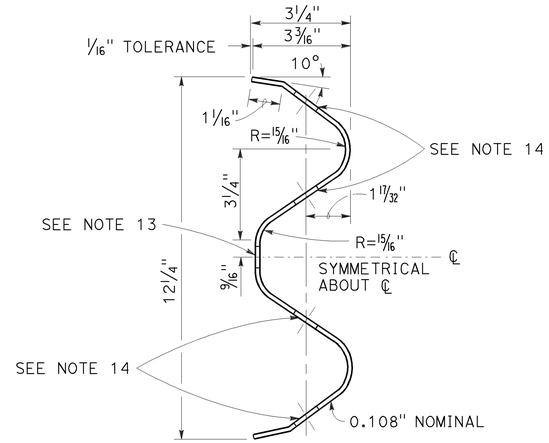


PLAN

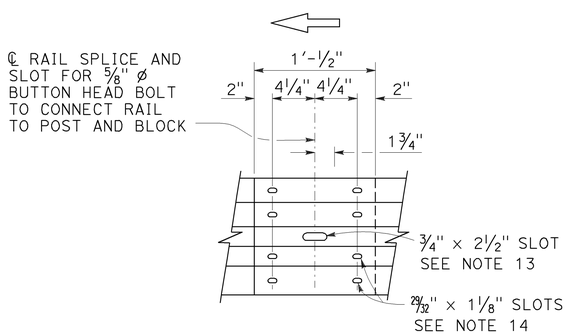


ELEVATION

MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS



SECTION THRU RAIL ELEMENT



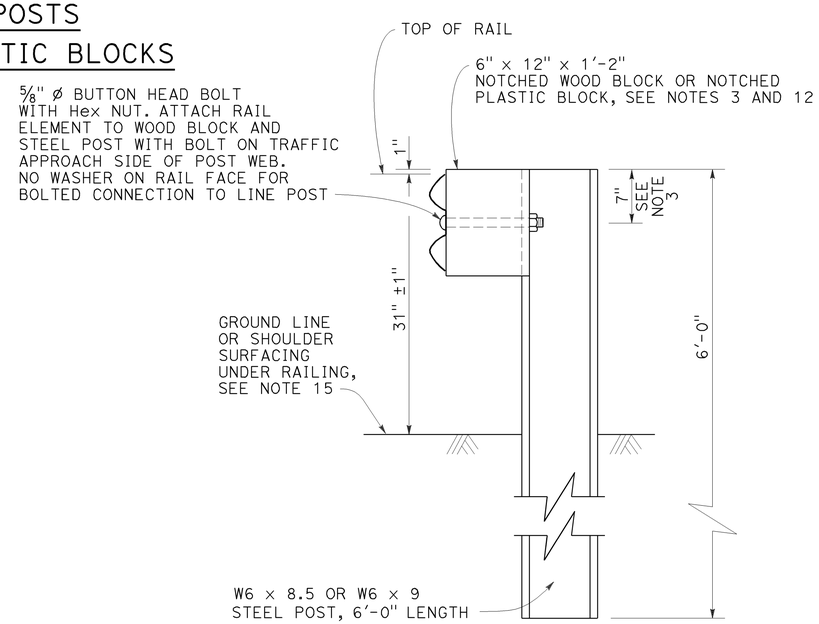
ELEVATION

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 STEEL LINE POST INSTALLATION

See Note 4

NOTES:

1. For details of wood post installations, see Revised Standard Plan RSP A77L1.
2. For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
3. For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
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 MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
11. For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
12. Notched face of block faces steel post.
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. Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

NO SCALE

RSP A77L2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L2

2010 REVISED STANDARD PLAN RSP A77L2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	73	130

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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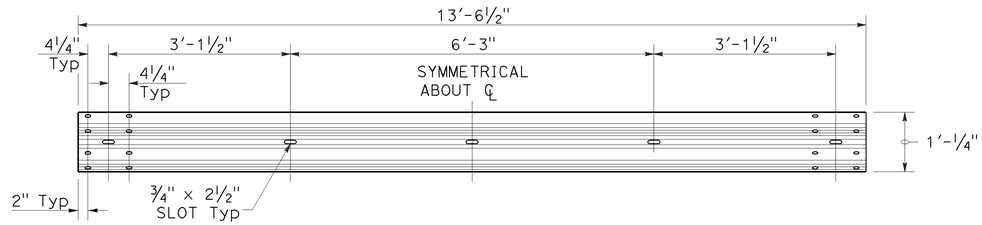
TO ACCOMPANY PLANS DATED 11-24-14

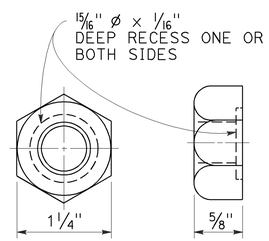
2010 REVISED STANDARD PLAN RSP A77M1



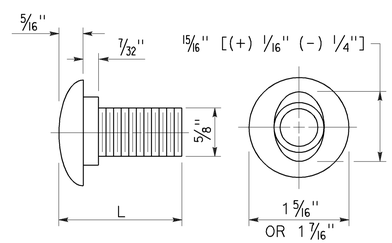
TYPICAL RAIL ELEMENT

NOTE:

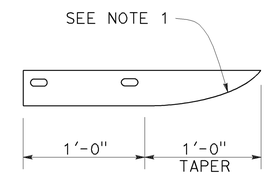
1. Slotted holes for splice bolts to overlap ends of rail element.



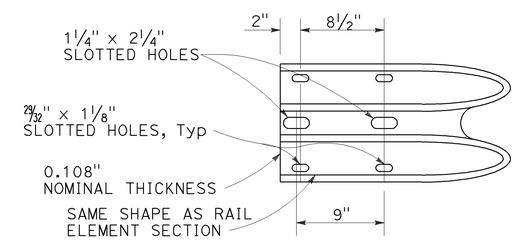
⅝" Ø RECESS NUT



⅝" Ø BUTTON HEAD BOLT



PLAN



ELEVATION

END CAP (TYPE A)

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.

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	74	130

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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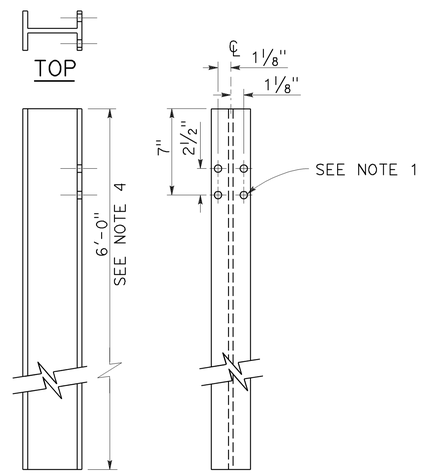
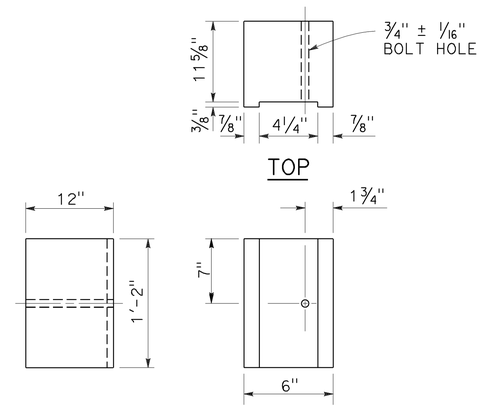
TO ACCOMPANY PLANS DATED 11-24-14



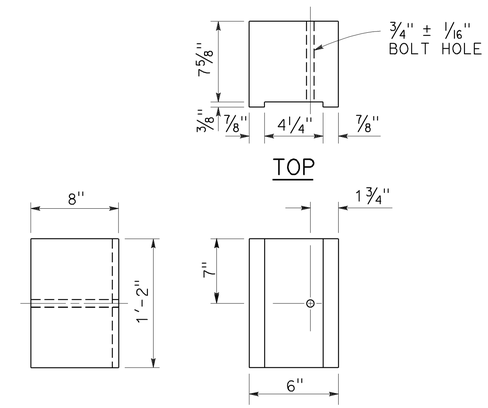
SIDE FRONT

W6 x 9 OR W6 x 8.5
STEEL POST
See Note 4



SIDE FRONT

6" x 12"
NOTCHED WOOD BLOCK
See Notes 2 and 3

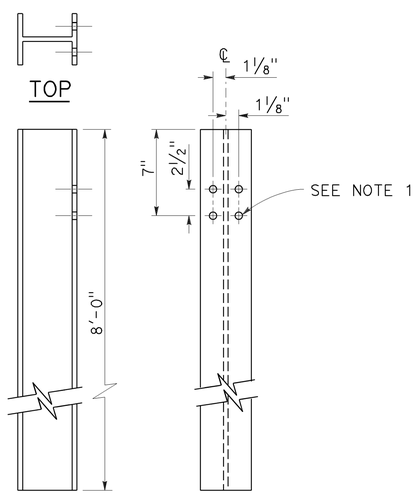


SIDE FRONT

6" x 8"
NOTCHED WOOD BLOCK
Only for use with metal beam guard railing. See Note 5

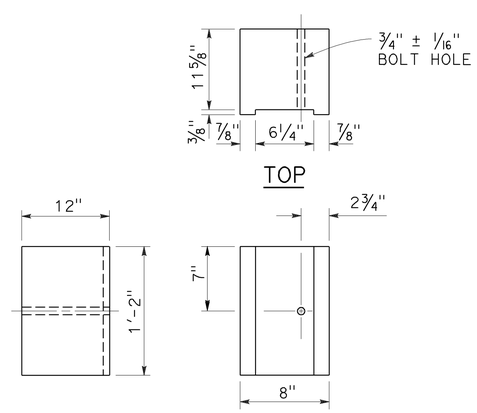
NOTES:

1. All holes in steel post shall be 13/16" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.



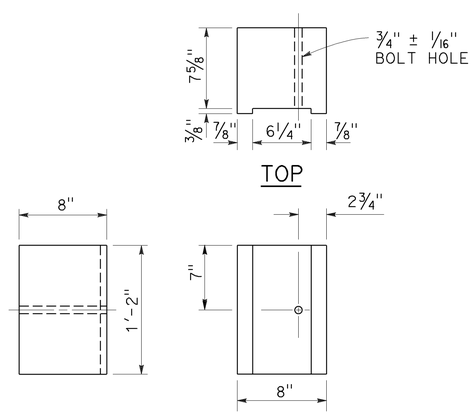
SIDE FRONT

W6 x 15
STEEL POST
See Note 6



SIDE FRONT

8" x 12"
NOTCHED WOOD BLOCK
See Notes 2 and 3



SIDE FRONT

8" x 8"
NOTCHED WOOD BLOCK
Only for use with metal beam guard railing. See Note 5

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM STEEL POST AND NOTCHED WOOD BLOCK DETAILS

NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N2

2010 REVISED STANDARD PLAN RSP A77N2

10-29-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	75	130

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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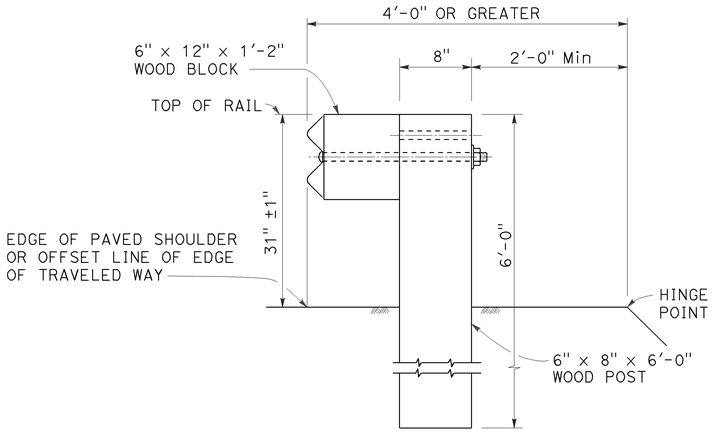
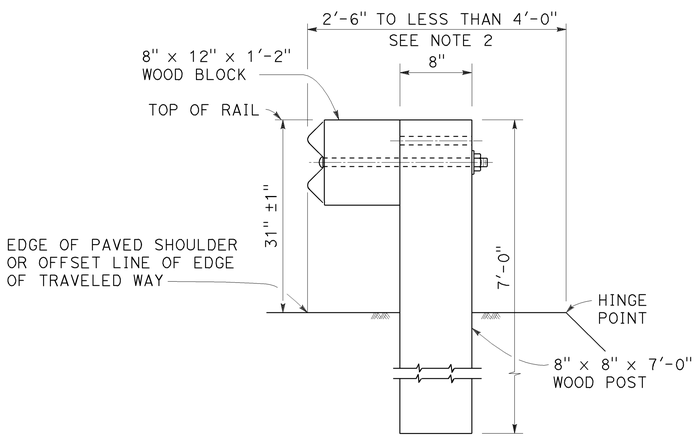
TO ACCOMPANY PLANS DATED 11-24-14



DETAIL A

TYPICAL ROADWAY INSTALLATION

See Note 1

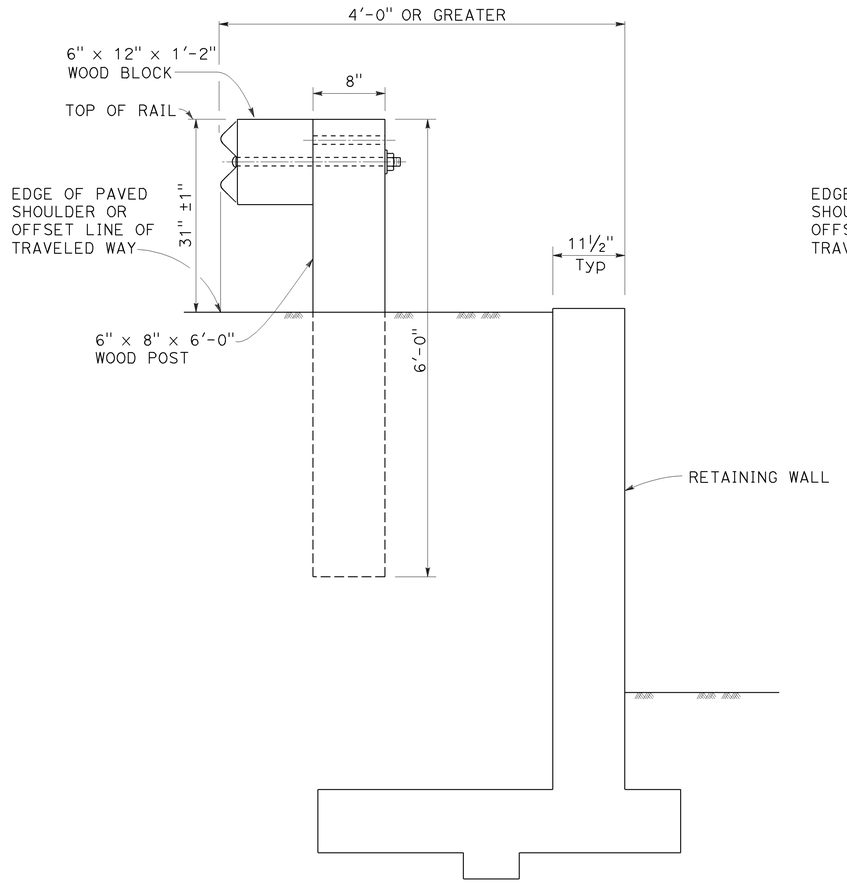


DETAIL B

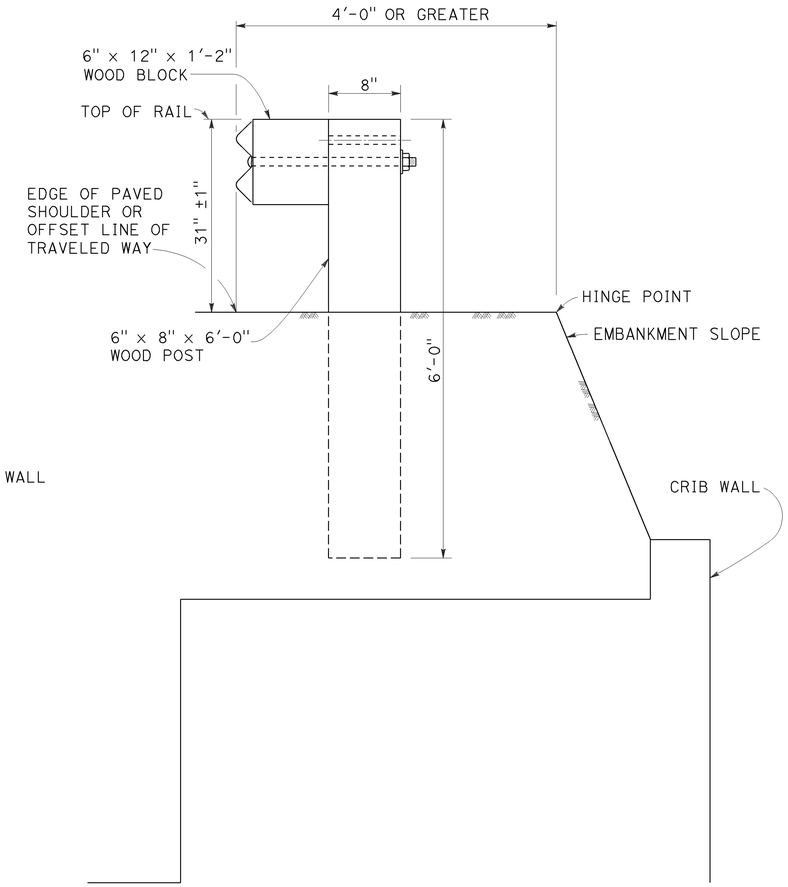
NARROW ROADWAY INSTALLATION

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

2010 REVISED STANDARD PLAN RSP A77N3

10-29-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	76	130

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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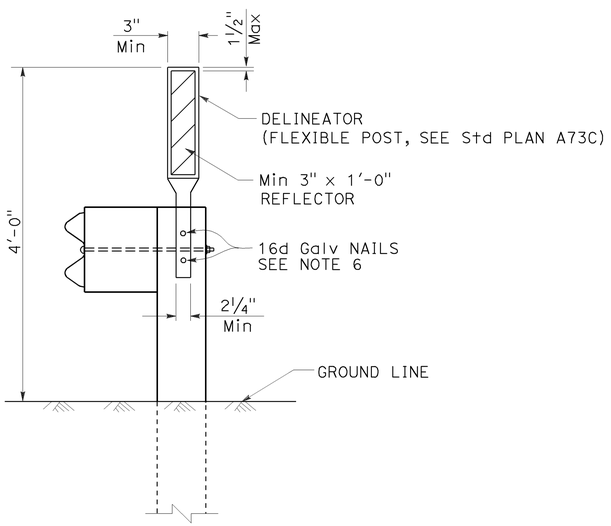
TO ACCOMPANY PLANS DATED 11-24-14

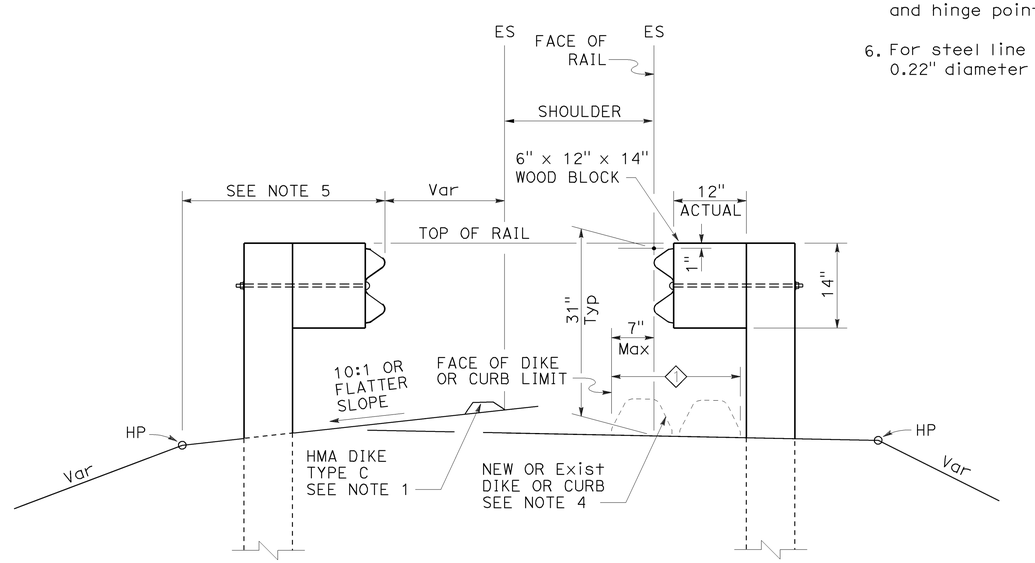
NOTES:

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
05	SB	101	21.0/27.1	77	130

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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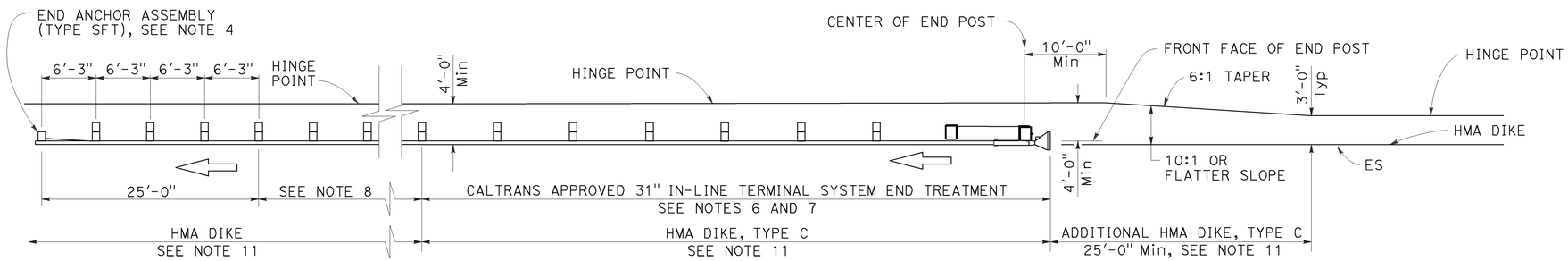
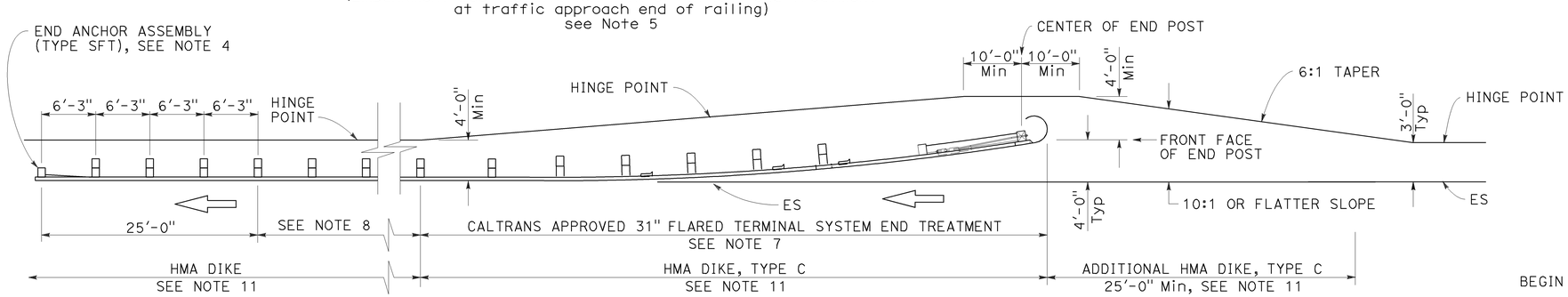
TO ACCOMPANY PLANS DATED 11-24-14



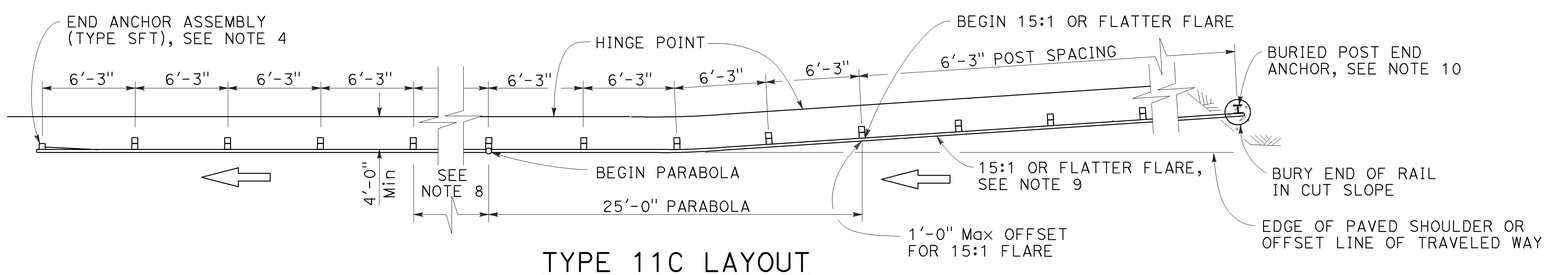
TYPE 11A LAYOUT

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



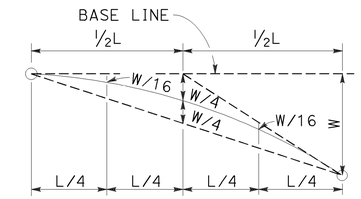
TYPE 11B LAYOUT

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

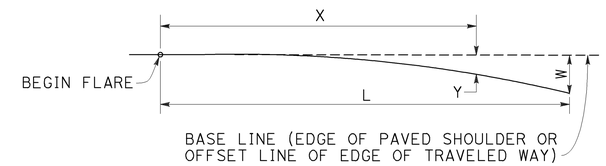


TYPE 11C LAYOUT

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



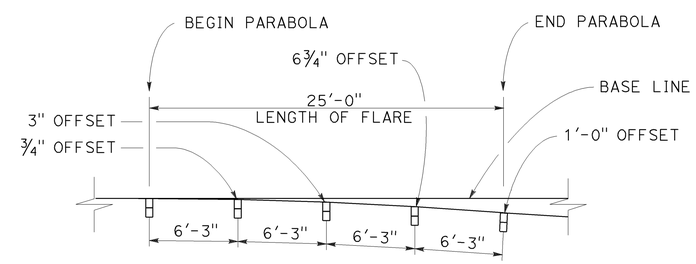
TYPICAL PARABOLIC LAYOUT



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

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

2010 REVISED STANDARD PLAN RSP A77P1

10-4-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	78	130

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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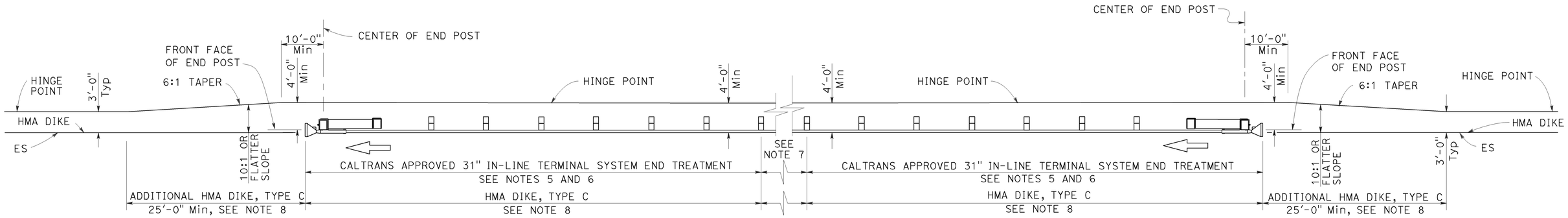
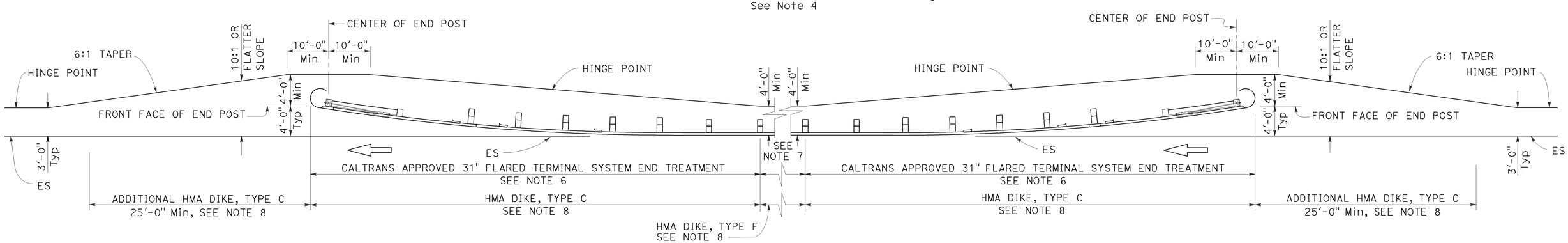
TO ACCOMPANY PLANS DATED 11-24-14

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
05	SB	101	21.0/27.1	79	130

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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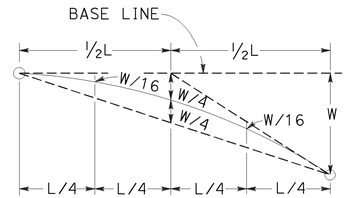
TO ACCOMPANY PLANS DATED 11-24-14

2010 REVISED STANDARD PLAN RSP A77P3



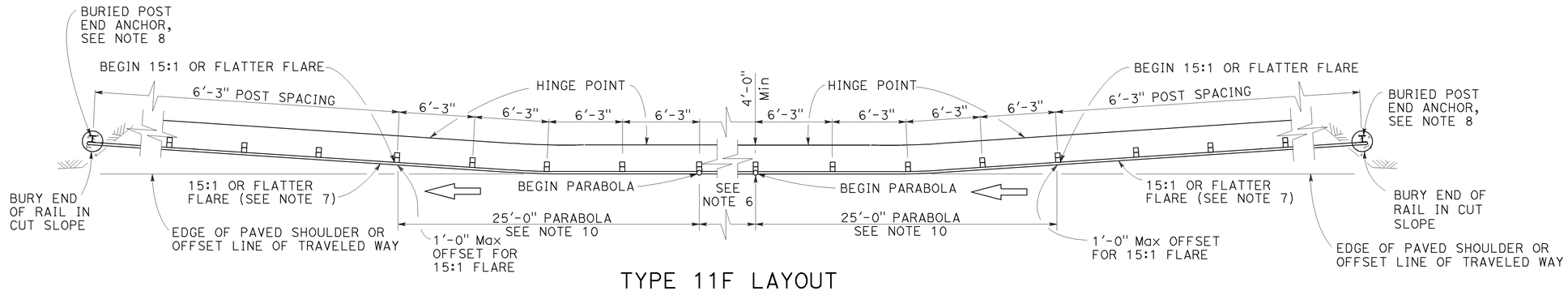
TYPICAL PARABOLIC LAYOUT

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

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

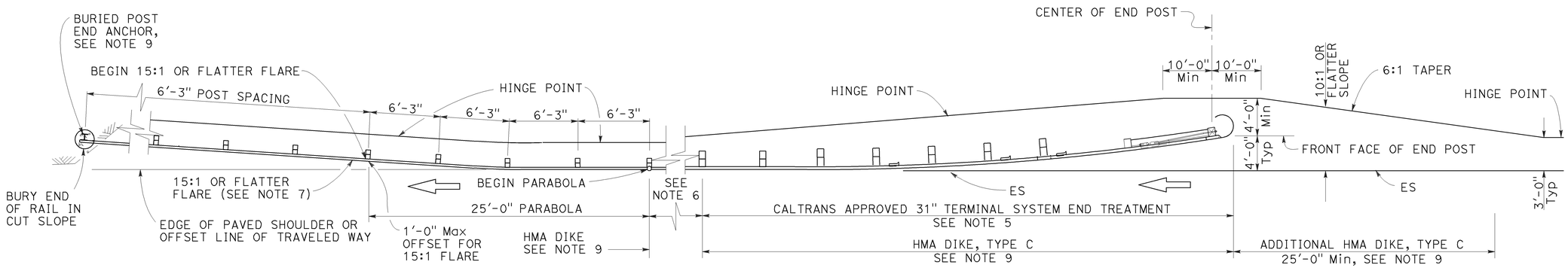
Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

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
05	SB	101	21.0/27.1	80	130

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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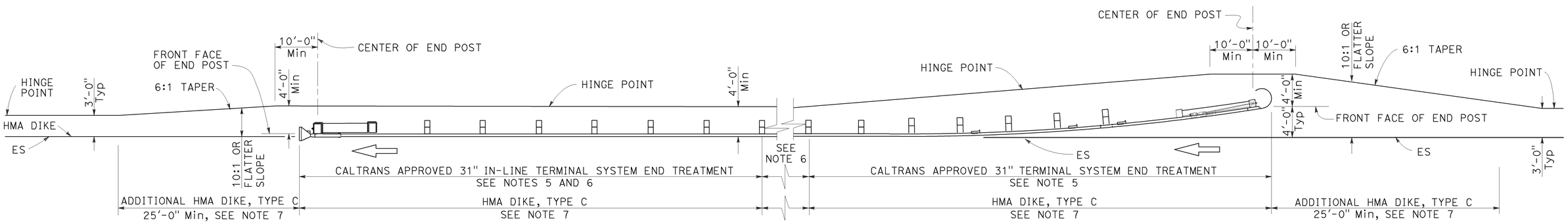
TO ACCOMPANY PLANS DATED 11-24-14



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
05	SB	101	21.0/27.1	81	130

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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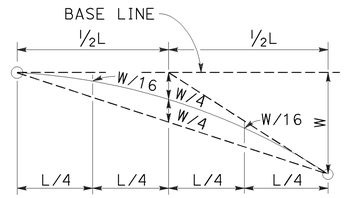
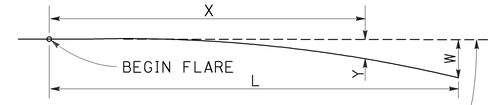
TO ACCOMPANY PLANS DATED 11-24-14

2010 REVISED STANDARD PLAN RSP A77P5



TYPICAL PARABOLIC LAYOUT

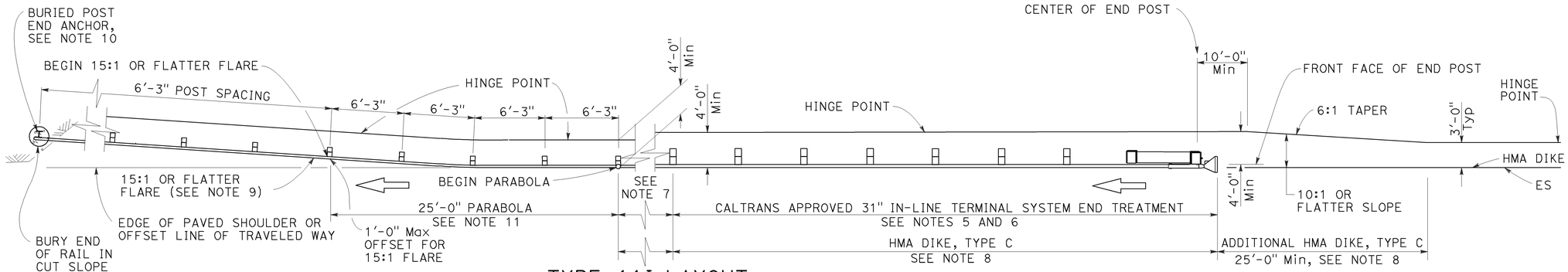


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

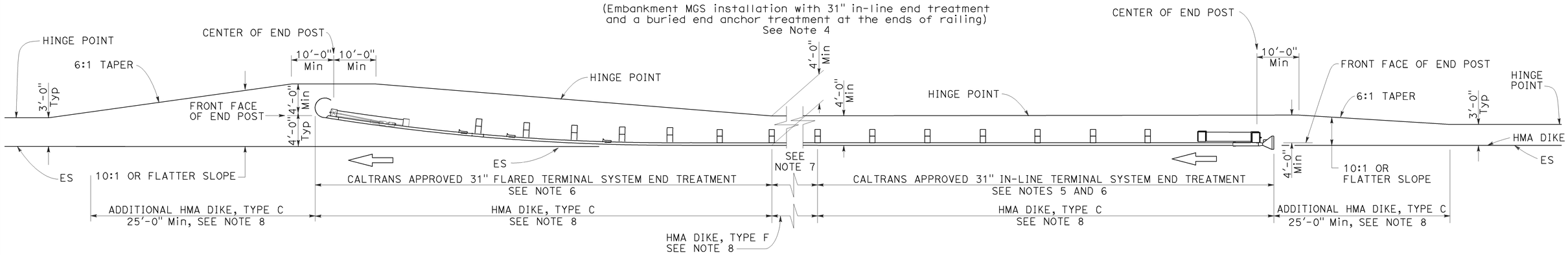
Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

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
05	SB	101	21.0/27.1	82	130

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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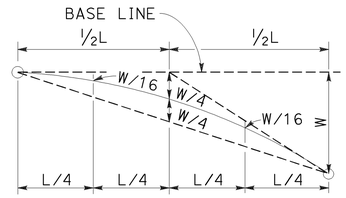
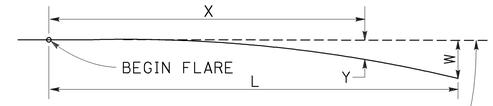
TO ACCOMPANY PLANS DATED 11-24-14

2010 REVISED STANDARD PLAN RSP A77P6



TYPICAL PARABOLIC LAYOUT

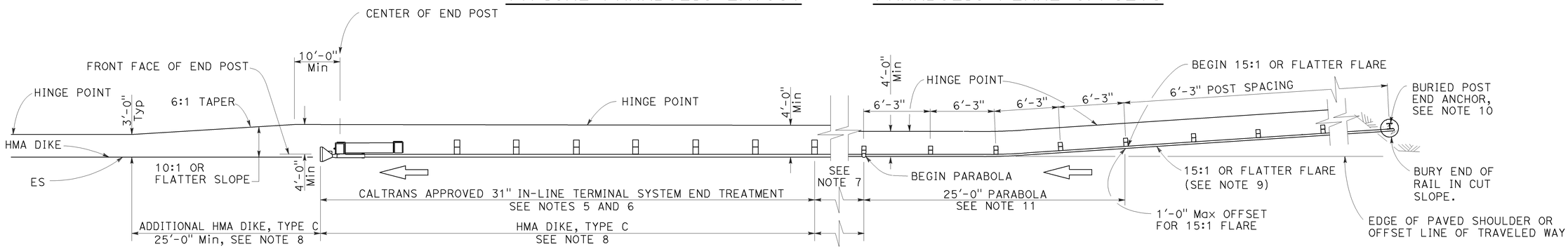


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

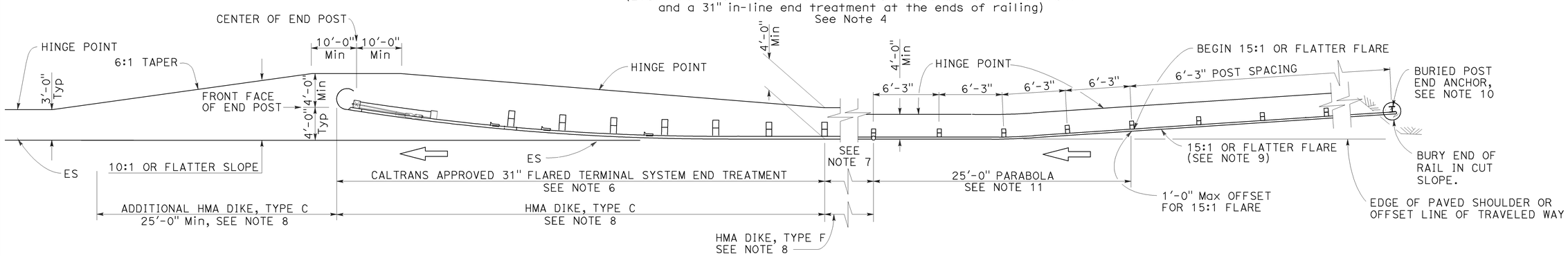
Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

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

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	83	130

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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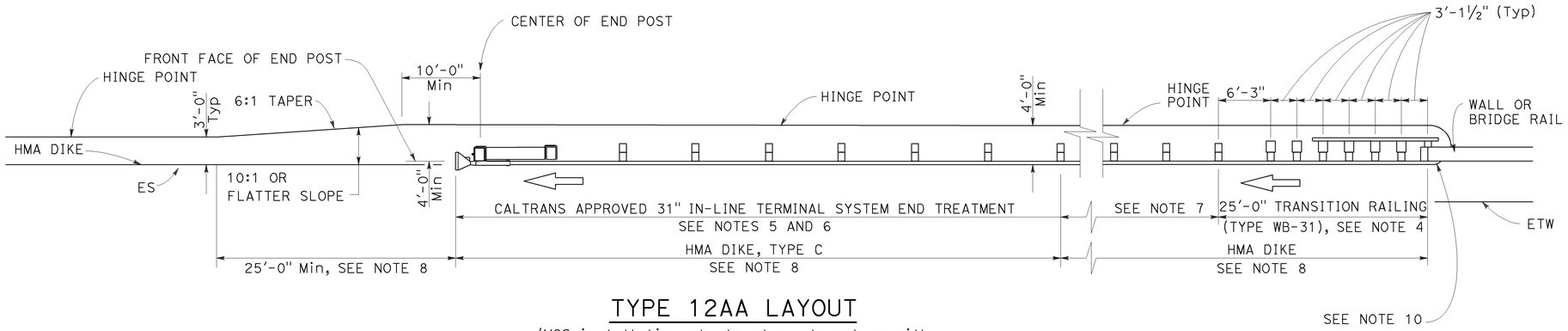
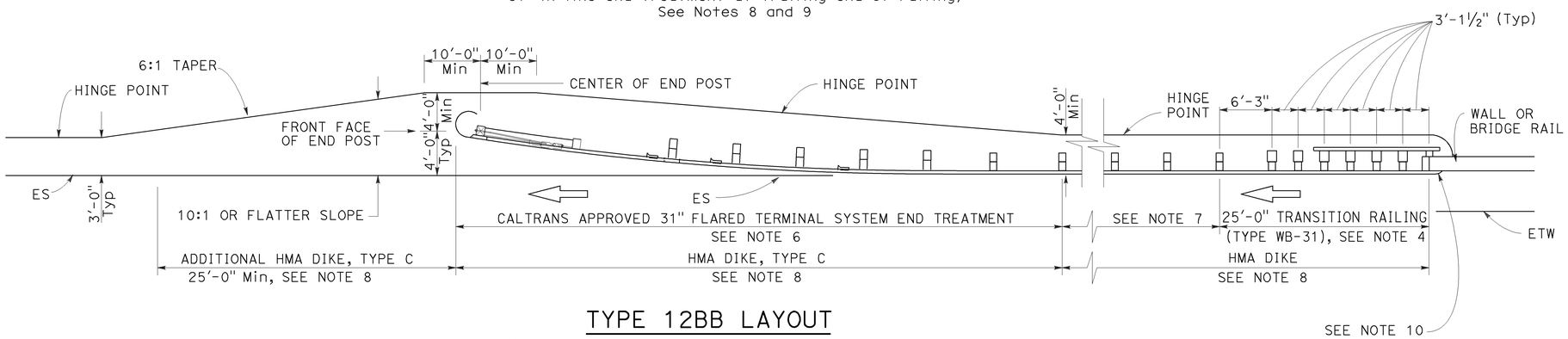
TO ACCOMPANY PLANS DATED 11-24-14

2010 REVISED STANDARD PLAN RSP A77Q4



TYPE 12AA LAYOUT

(MGS installation at structure departure with
31" in-line end treatment at trailing end of railing)
See Notes 8 and 9



TYPE 12BB LAYOUT

(MGS installation at structure departure with
31" flared end treatment at trailing end of railing)
See Notes 8 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 notched recycled 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 12AA and 12BB Layouts, see Revised Standard Plan RSP A77U4.
5. 31" in-line terminal system treatments are used where site conditions will not accommodate a 31" flared end treatment.
6. The type of 31" terminal system to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height, side slopes, other fixed objects), it may be advisable to construct additional MGS (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and 31" end treatments.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
9. Type 12AA or Type 12BB Layouts are 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.
10. For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77U2 and Connection Detail HH on Revised Standard Plan RSP A77V2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR STRUCTURE DEPARTURE

NO SCALE

RSP A77Q4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q4

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	84	130

Randell D. Hiatt
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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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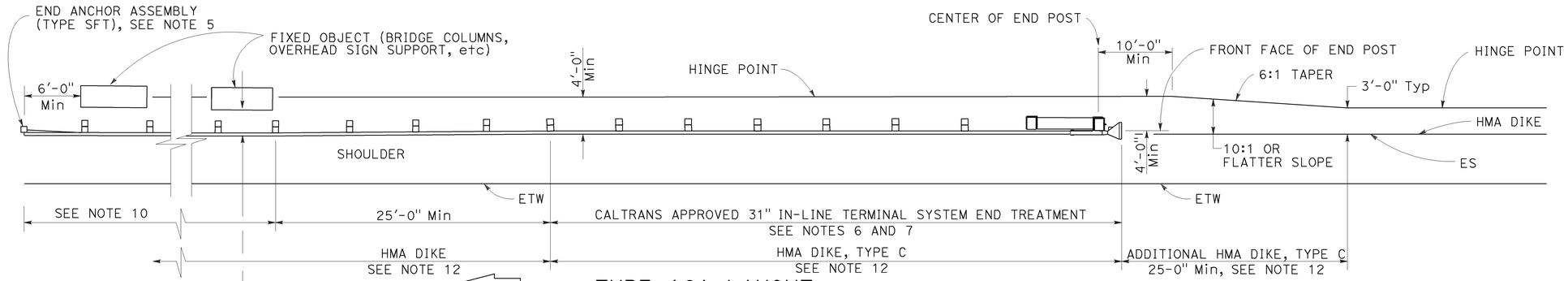
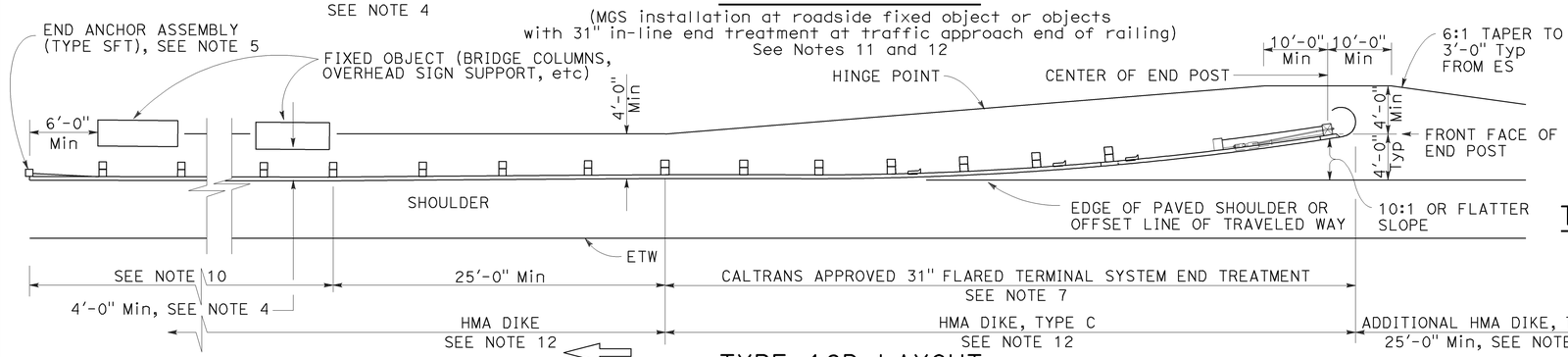
TO ACCOMPANY PLANS DATED 11-24-14

2010 REVISED STANDARD PLAN RSP A77R3



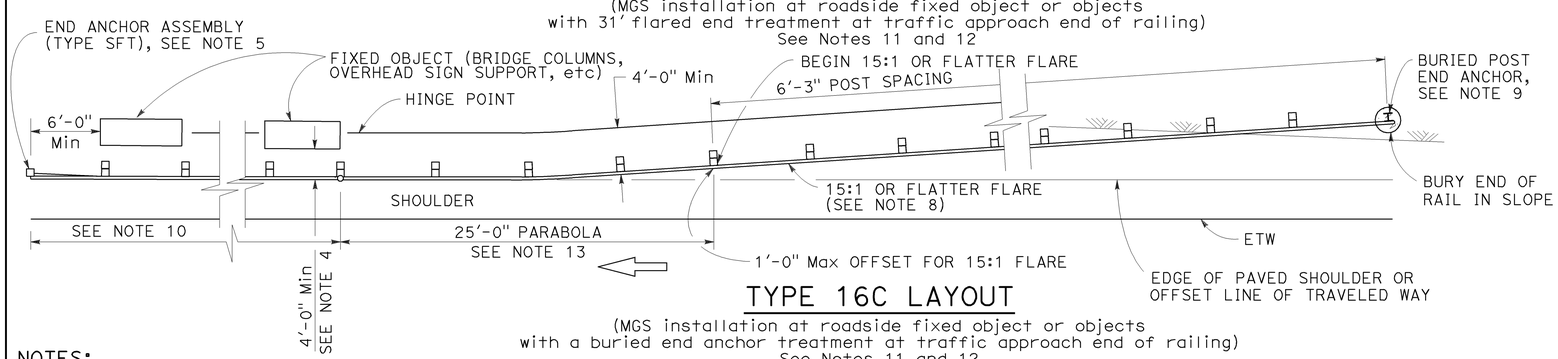
TYPE 16A LAYOUT

(MGS installation at roadside fixed object or objects with 31" in-line end treatment at traffic approach end of railing)
See Notes 11 and 12



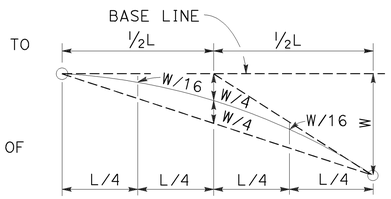
TYPE 16B LAYOUT

(MGS installation at roadside fixed object or objects with 31' flared end treatment at traffic approach end of railing)
See Notes 11 and 12

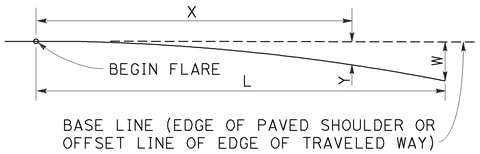


TYPE 16C LAYOUT

(MGS installation at roadside fixed object or objects with a buried end anchor treatment at traffic approach end of railing)
See Notes 11 and 12



TYPIC AL PARABOLIC LAYOUT

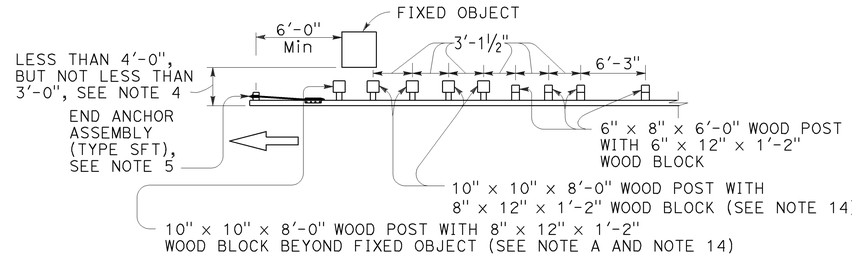


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

PARABOLIC FLARE OFFSETS



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 Types 16A, 16B or 16C layouts 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

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. 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
7. The type of 31" terminal system to be used will be shown on the Project Plans.
8. The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
9. For details of the Buried Post End Anchor used with Type 16C Layout, see Revised Standard Plan RSP A77T2.
10. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
11. Layout Types 16A, 16B or 16C are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for only one direction of traffic.
12. Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
13. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
14. W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R3

6-20-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	85	130

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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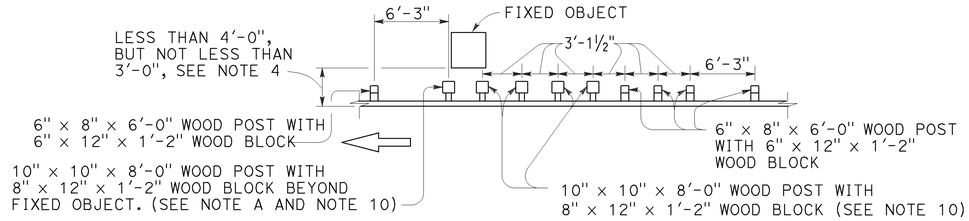
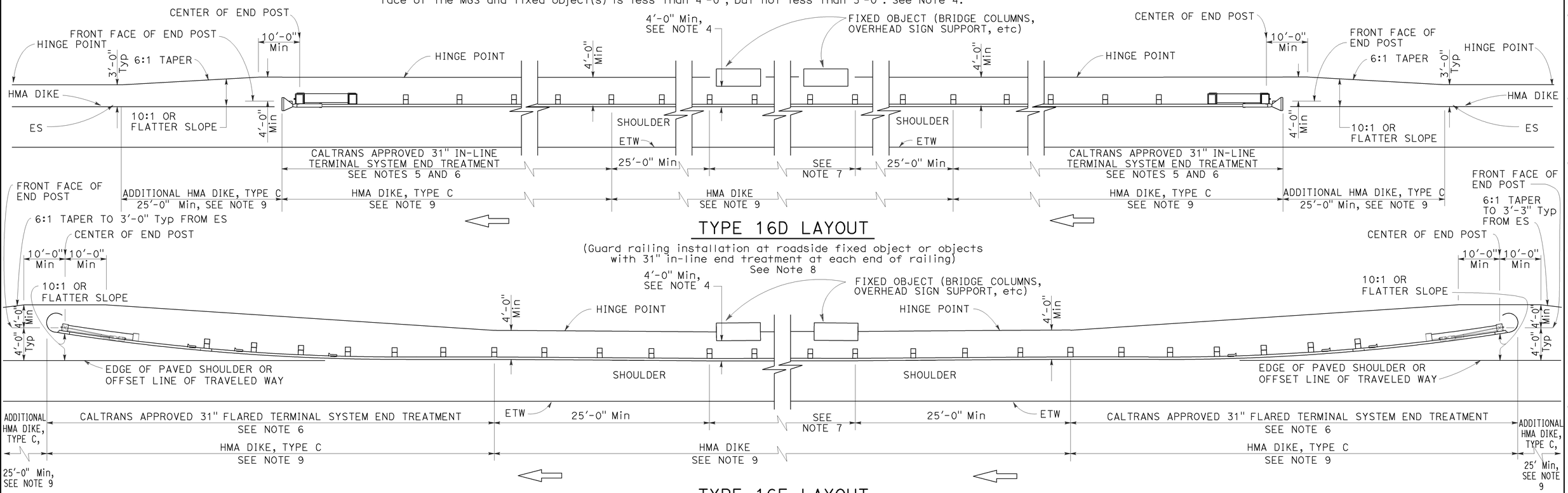
TO ACCOMPANY PLANS DATED 11-24-14



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 object(s).

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

Use strengthened MGS sections with layout Types 16D or 16E where minimum clearance between the face of the MGS and fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



TYPE 16D LAYOUT

(Guard railing installation at roadside fixed object or objects with 31" in-line end treatment at each end of railing)
See Note 8

TYPE 16E LAYOUT

(MGS installation at roadside fixed object or objects with 31" flared end treatment at each end of railing)
See Note 8

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 at 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. 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 to be used will be shown on the Project Plans.
7. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
8. Layout Types 16D through 16L, shown on the A77R Series of Standard Plans, are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for both directions of traffic.
9. Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
10. 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".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R4

2010 REVISED STANDARD PLAN RSP A77R4

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	86	130

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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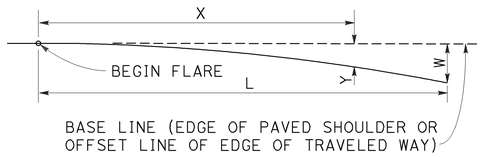
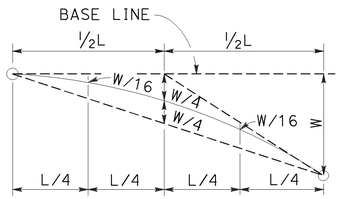
TO ACCOMPANY PLANS DATED 11-24-14



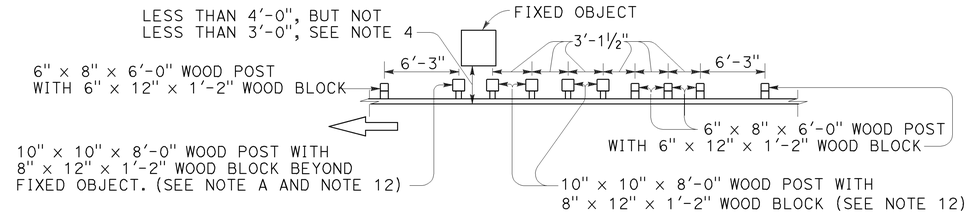
$$Y = \frac{WX^2}{L^2}$$

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

PARABOLIC FLARE OFFSETS



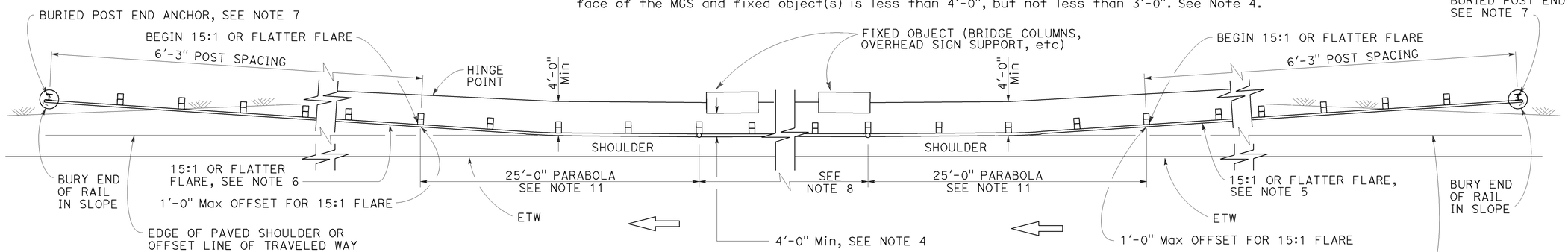
TYPICAL PARABOLIC LAYOUT



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 object(s).

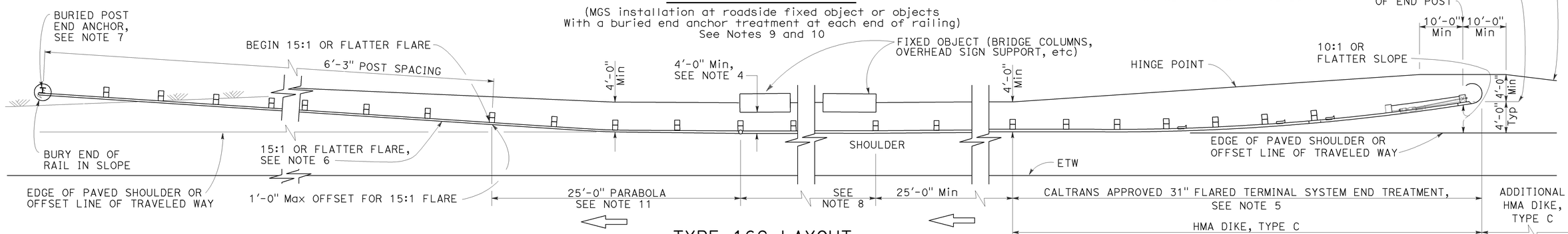
STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

Use strengthened MGS sections with layout Types 16F or 16G where minimum clearance between the face of the MGS and fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



TYPE 16F LAYOUT

(MGS installation at roadside fixed object or objects
With a buried end anchor treatment at each end of railing)
See Notes 9 and 10



TYPE 16G LAYOUT

(MGS installation at roadside fixed object or objects
with 31" flared end treatment and a buried end anchor treatment at the ends of railing)
See Notes 9 and 10

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 8" x 12" x 1'-2" notched wood blocks or notched recycled 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. 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 at 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 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. The type of 31" terminal system to be used will be shown on the Project Plans.
6. The 15:1 or flatter flare for the buried post anchor 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".
7. For details of the Buried Post End Anchor, see Revised Standard Plan RSP A77T2.
8. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
9. Layout Types 16D through 16L, shown on the A77R Series of Standard Plans, are typically used on highways where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for both directions of traffic.
10. Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
11. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
12. W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R5

2010 REVISED STANDARD PLAN RSP A77R5

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	87	130

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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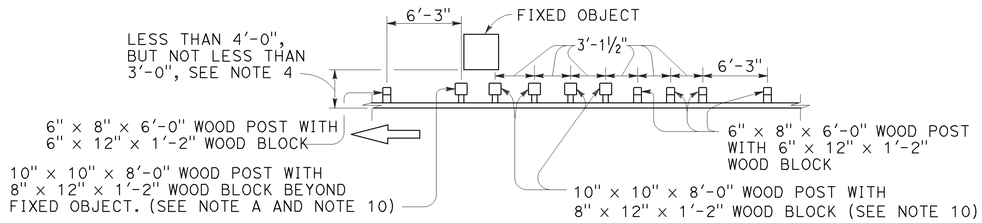
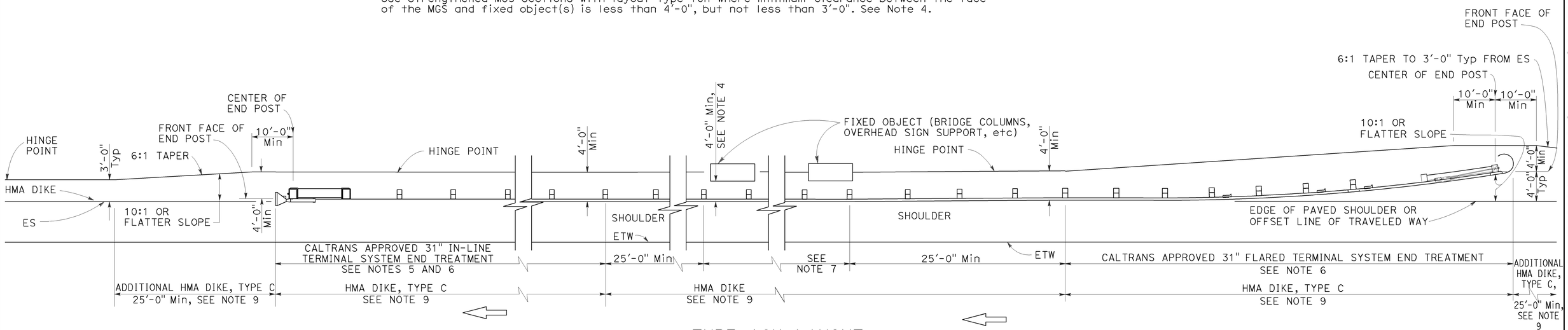
TO ACCOMPANY PLANS DATED 11-24-14



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 object(s).

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

Use strengthened MGS sections with layout Type 16H where minimum clearance between the face of the MGS and fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



TYPE 16H LAYOUT

(MGS installation at roadside fixed object or objects with 31" flared end treatment and 31" in-line end treatment at the ends of railing)
See Note 8

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 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 at 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 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. 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 to be used will be shown on the Project Plans.
7. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
8. Layout Types 16D through 16L, shown on the A77R Series of Standard PLans, typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for both directions of traffic.
9. Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
10. W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R6

2010 REVISED STANDARD PLAN RSP A77R6

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	88	130

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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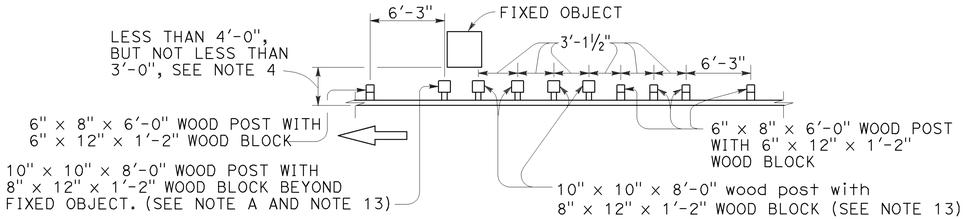
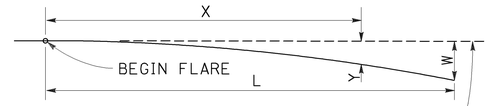
TO ACCOMPANY PLANS DATED 11-24-14



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 object(s).

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

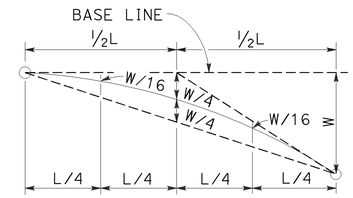


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

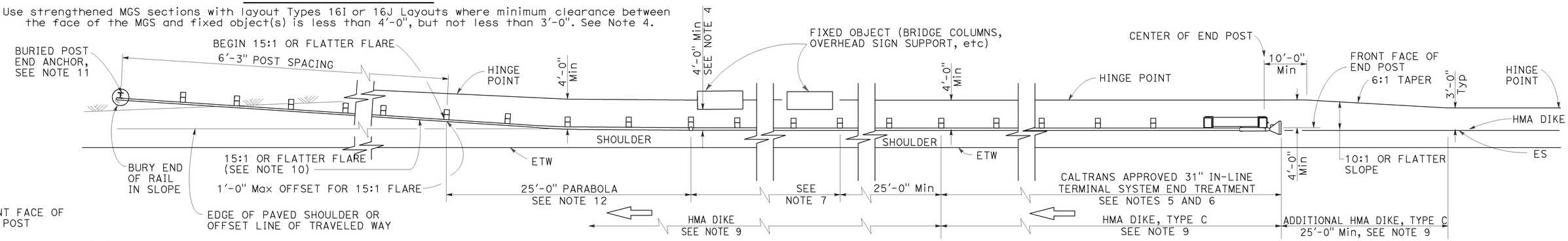
Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



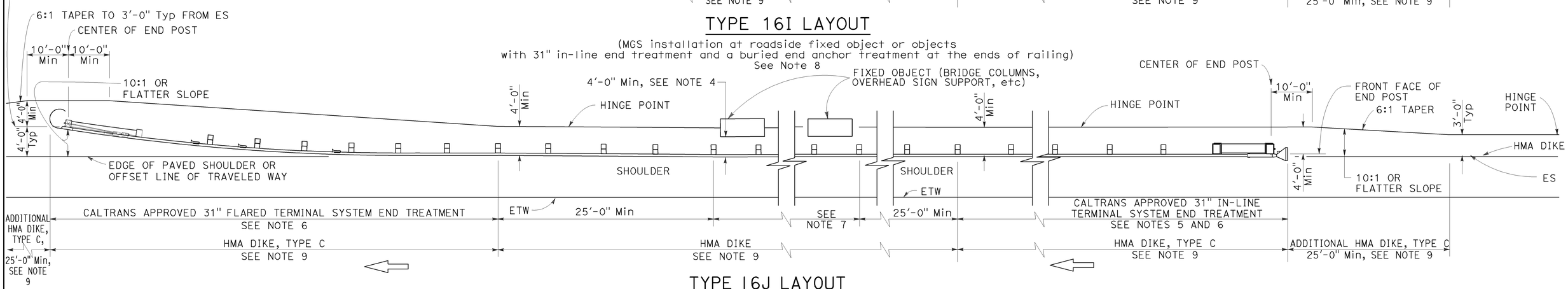
TYPICAL PARABOLIC LAYOUT

Use strengthened MGS sections with layout Types 16I or 16J Layouts where minimum clearance between the face of the MGS and fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



TYPE 16I LAYOUT

(MGS installation at roadside fixed object or objects with 31" in-line end treatment and a buried end anchor treatment at the ends of railing) See Note 8



TYPE 16J LAYOUT

(MGS installation at roadside fixed object or objects With a 31" in-line end treatment and a 31" flared end treatment at the ends of railing) See Note 8

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 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 at 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 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. 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 to be used will be shown on the Project Plans.
7. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
8. Layout Types 16D through 16L, shown on the A77R Series of Standard Plans, are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for both directions of traffic.
9. Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77N4 for dike positioning details.
10. The 15:1 or flatter flare for the buried post anchor 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".
11. For details of Buried Post End Anchor, see Revised Standard Plan RSP A77T2.
12. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
13. W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R7 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R7

2010 REVISED STANDARD PLAN RSP A77R7

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	89	130

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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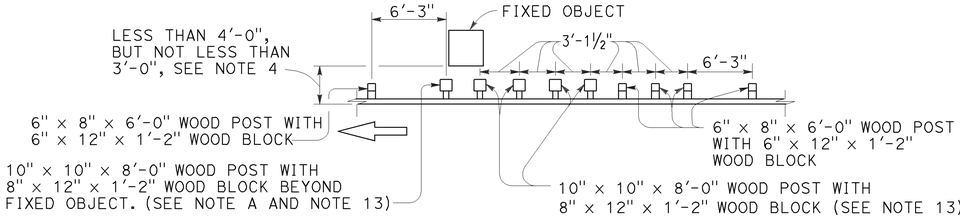
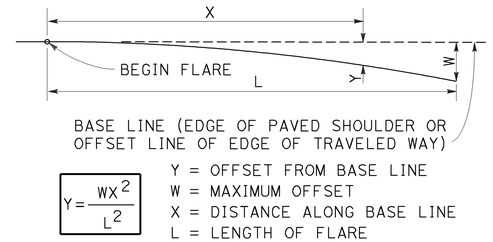
TO ACCOMPANY PLANS DATED 11-24-14



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 object(s).

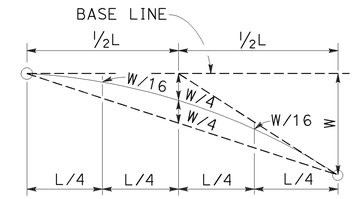
STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT



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

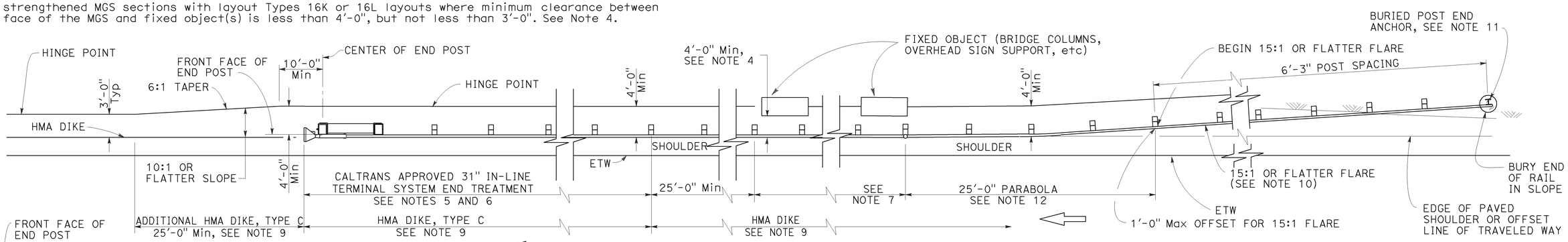
Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



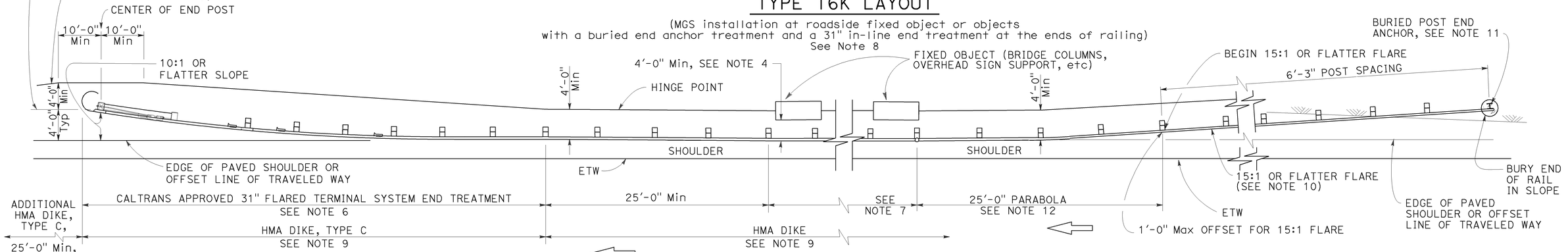
TYPICAL PARABOLIC LAYOUT

Use strengthened MGS sections with layout Types 16K or 16L layouts where minimum clearance between the face of the MGS and fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



TYPE 16K LAYOUT

(MGS installation at roadside fixed object or objects with a buried end anchor treatment and a 31" in-line end treatment at the ends of railing) See Note 8



TYPE 16L LAYOUT

(MGS installation at roadside fixed object or objects with a buried end anchor treatment and a 31" flared end treatment at the ends of railing) See Note 8

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 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 at 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 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. 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 to be used will be shown on the Project Plans.
7. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
8. Layout Types 16D through 16L, shown on the A77R Series of Standard Plans are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for both directions of traffic.
9. Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
10. The 15:1 or flatter flare for the buried post anchor 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".
11. For details of Buried Post End Anchor, see Revised Standard Plan RSP A77T2.
12. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
13. W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R8 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R8

2010 REVISED STANDARD PLAN RSP A77R8

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	90	130

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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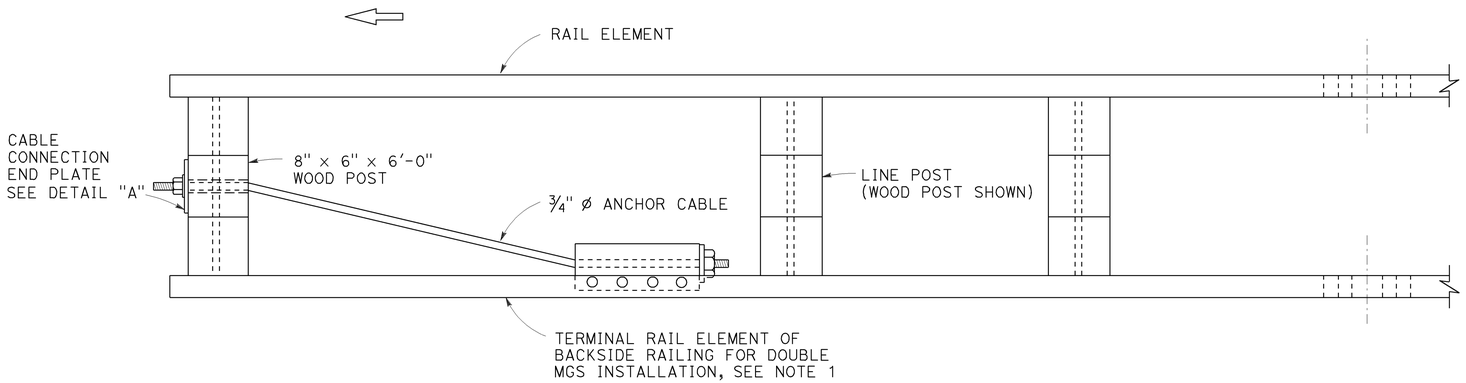
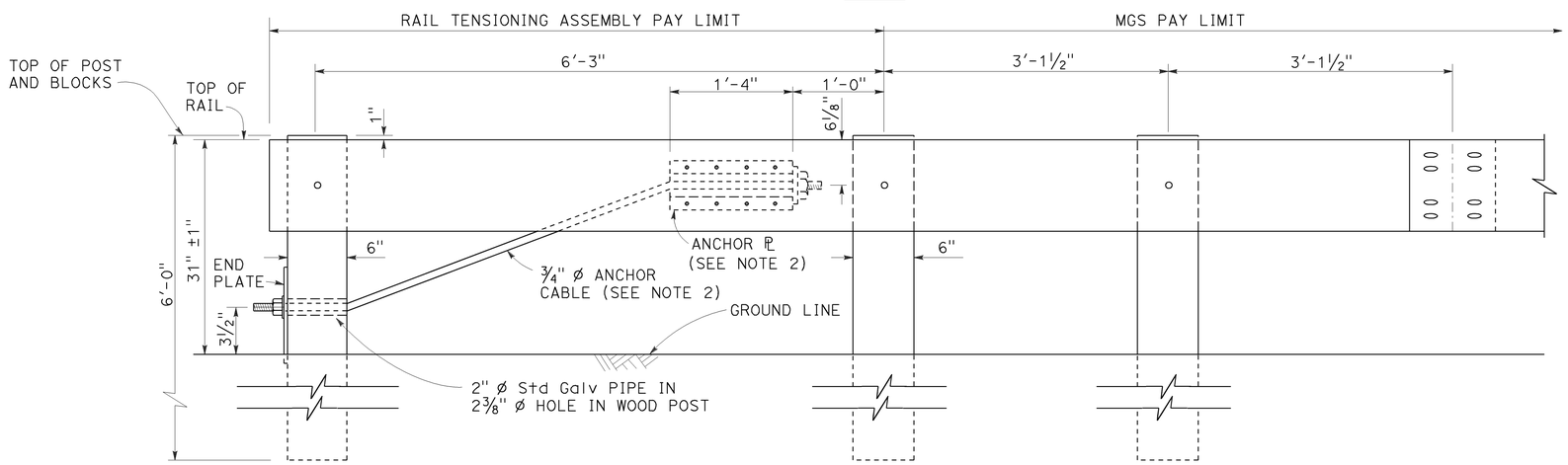
TO ACCOMPANY PLANS DATED 11-24-14



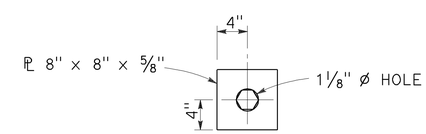
PLAN



ELEVATION
RAIL TENSIONING ASSEMBLY
See Note 1

NOTES:

1. See Revised Standard Plans RSP A77Q3 and RSP A77R1 for typical use of rail tensioning assembly.
2. For details of the anchor plate and ¾" cable, see Revised Standard Plan RSP A77S3.



DETAIL "A"
CABLE CONNECTION END PLATE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM RAIL TENSIONING ASSEMBLY

NO SCALE

RSP A77S2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77S2

2010 REVISED STANDARD PLAN RSP A77S2

7-3-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	91	130

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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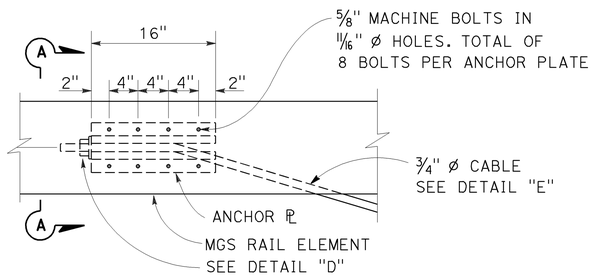
TO ACCOMPANY PLANS DATED 11-24-14

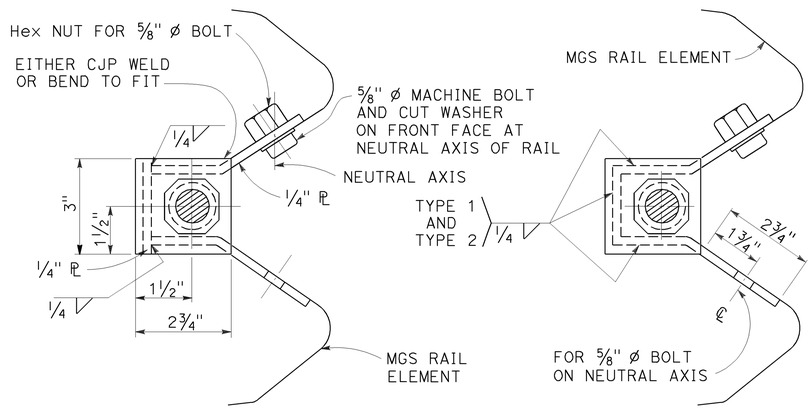
2010 REVISED STANDARD PLAN RSP A77S3

NOTE:

See Revised Standard Plans RSP A77S1, RSP A77S2 and RSP A77T1 for typical use of anchor cable and anchor plate.



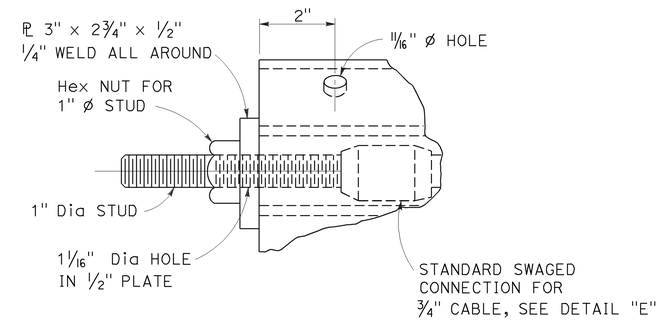
ANCHOR PLATE DETAIL
(MGS shown, TBB similar)



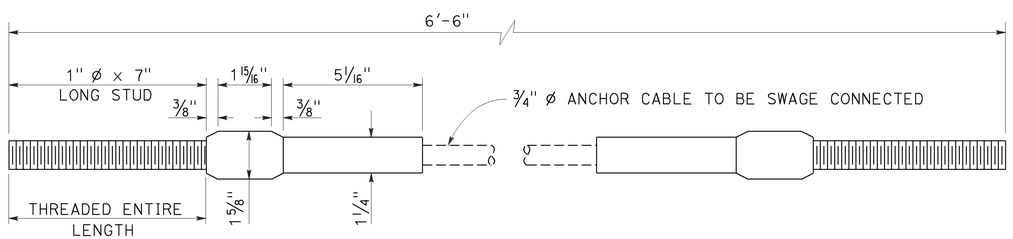
NOTE:
Dimensioning applies to both types.

SECTION A-A
(ALTERNATIVE TYPE 1)

SECTION A-A
(ALTERNATIVE TYPE 2)



DETAIL "D"



ANCHOR CABLE WITH
SWAGED FITTING AND STUD
DETAIL "E"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL RAILING ANCHOR CABLE AND ANCHOR PLATE DETAILS

NO SCALE

RSP A77S3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S3
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77S3

10-4-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	92	130

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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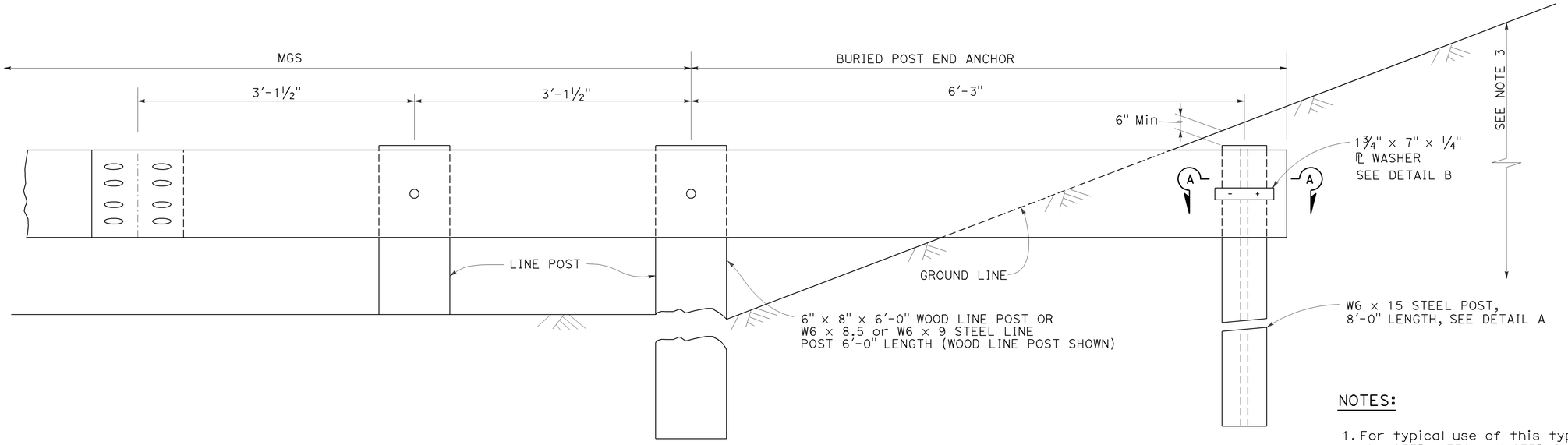
TO ACCOMPANY PLANS DATED 11-24-14

2010 REVISED STANDARD PLAN RSP A77T2

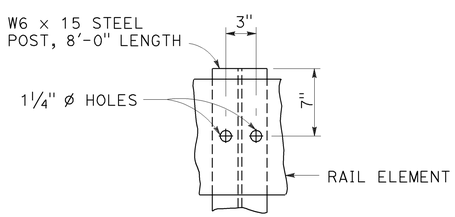


BURIED POST END ANCHOR

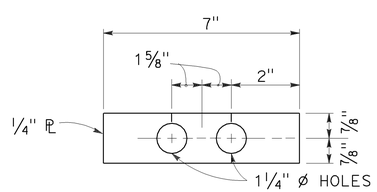
See Note 3

NOTES:

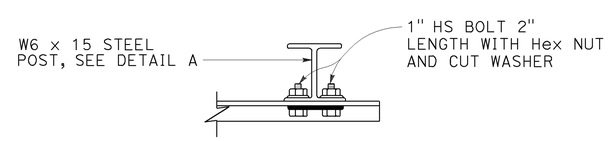
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.
3. The buried post end anchor shall only be constructed at those locations where the slope perpendicular to the roadway is non-traversable.



DETAIL A



DETAIL B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM BURIED POST END ANCHOR

NO SCALE

RSP A77T2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77T2
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77T2

10-4-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	93	130

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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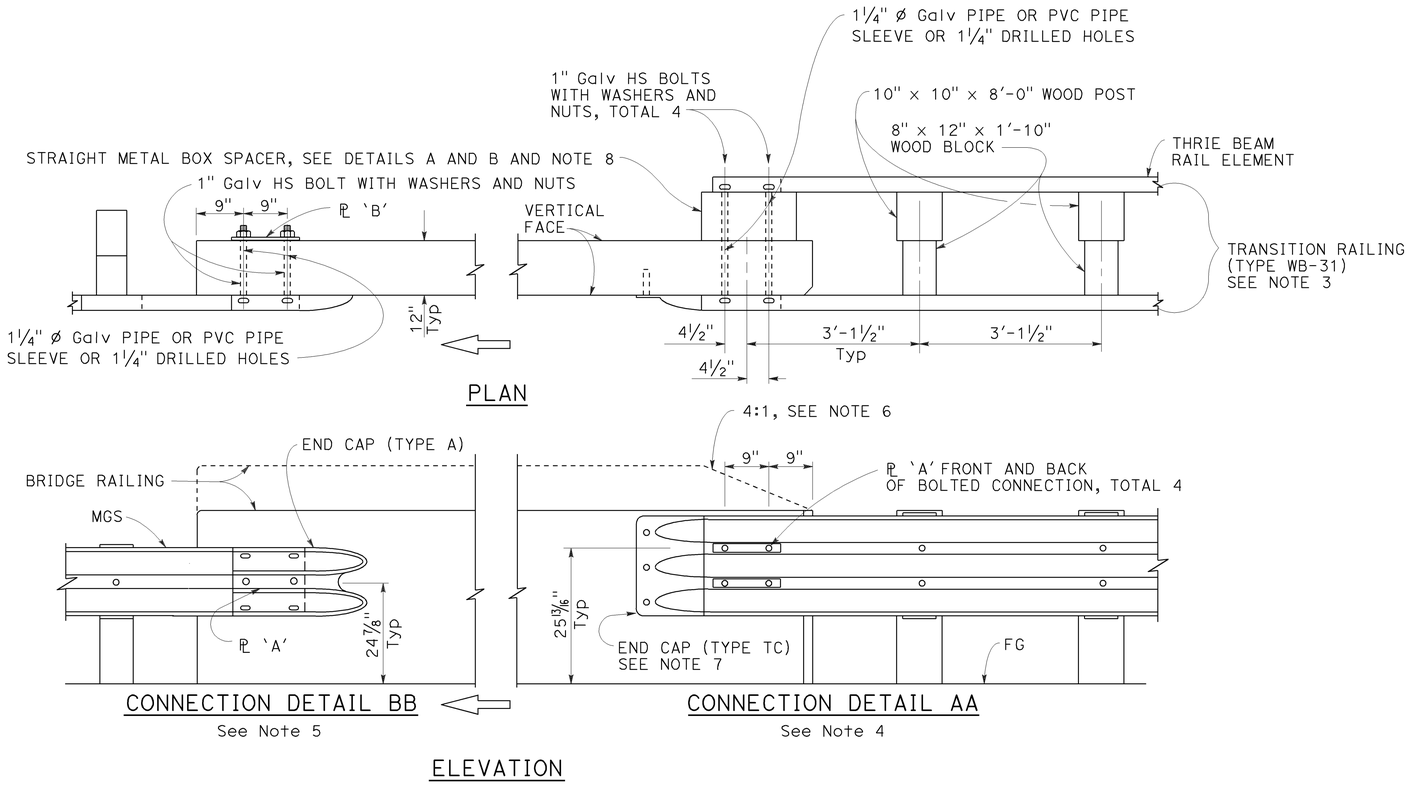
TO ACCOMPANY PLANS DATED 11-24-14



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77U2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.

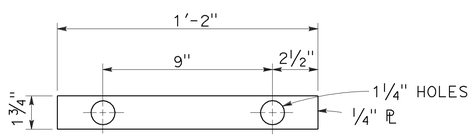


PLATE 'A'

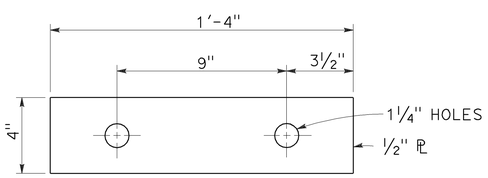
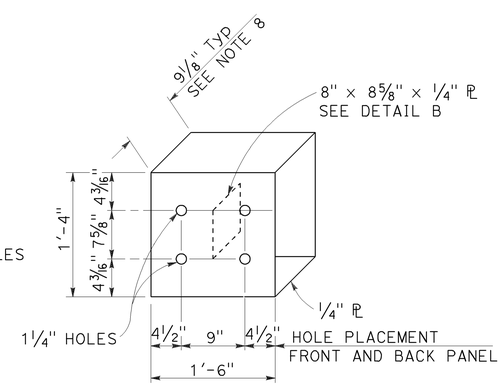
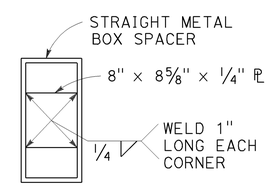


PLATE 'B'
(For backside of connection BB)



DETAIL A



DETAIL B

STRAIGHT METAL BOX SPACER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1

NO SCALE

RSP A77U1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U1

2010 REVISED STANDARD PLAN RSP A77U1

7-8-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	94	130

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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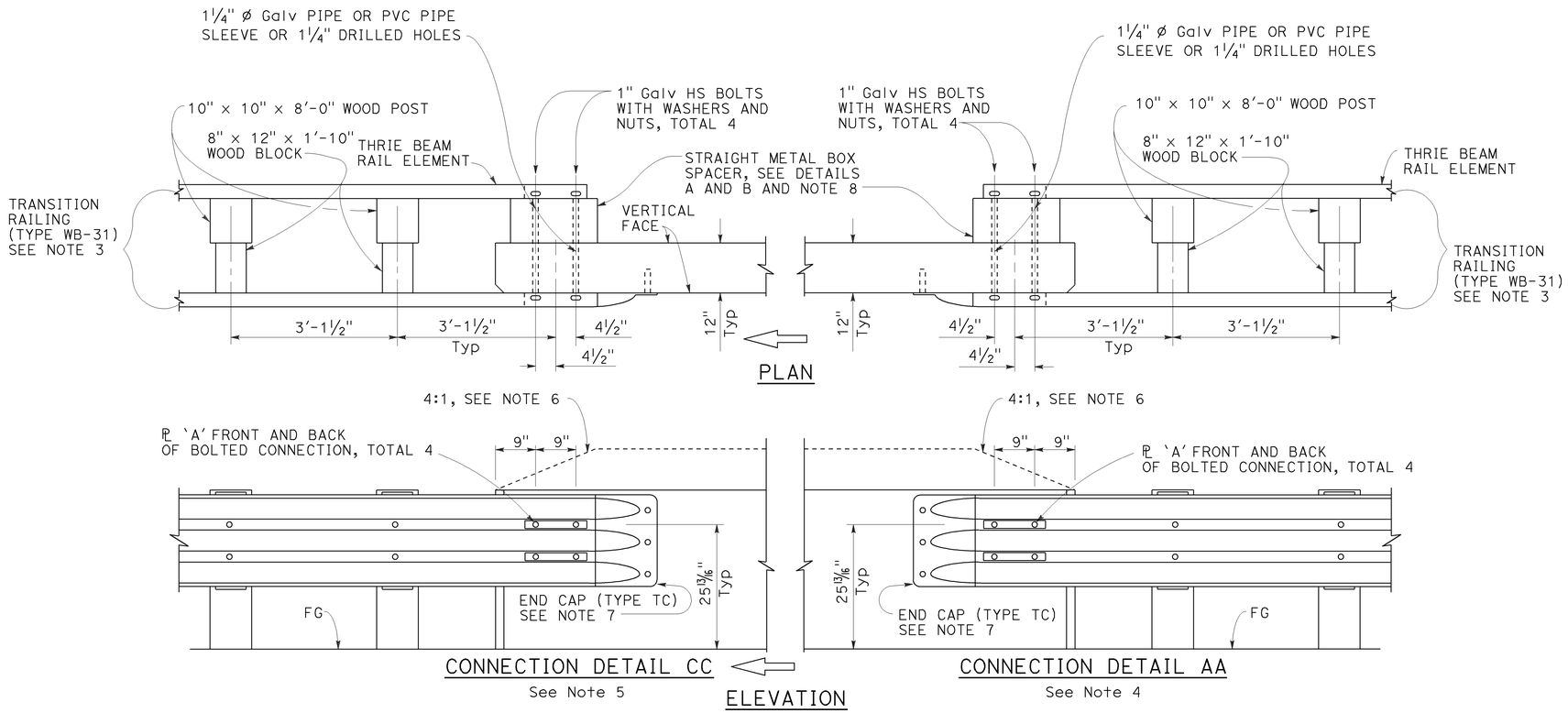
TO ACCOMPANY PLANS DATED 11-24-14



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77U1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Revised Standard Plan RSP A77Q4 and Layout Type 12CC on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.

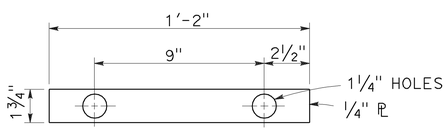


PLATE 'A'

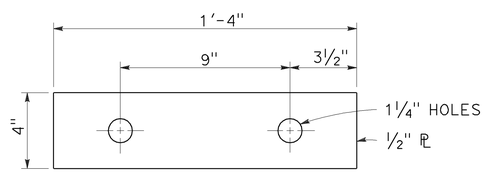
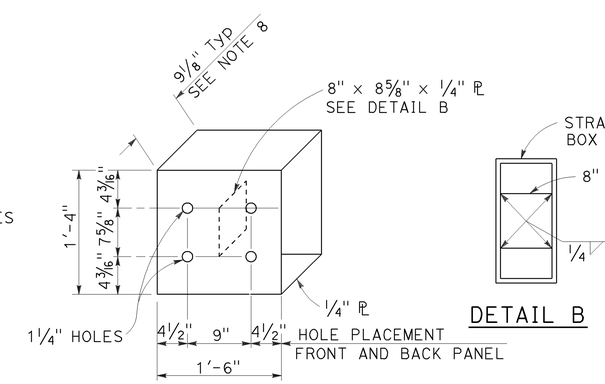


PLATE 'B'
(For backside of connection BB)



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2

NO SCALE

RSP A77U2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U2

2010 REVISED STANDARD PLAN RSP A77U2

6-20-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	95	130

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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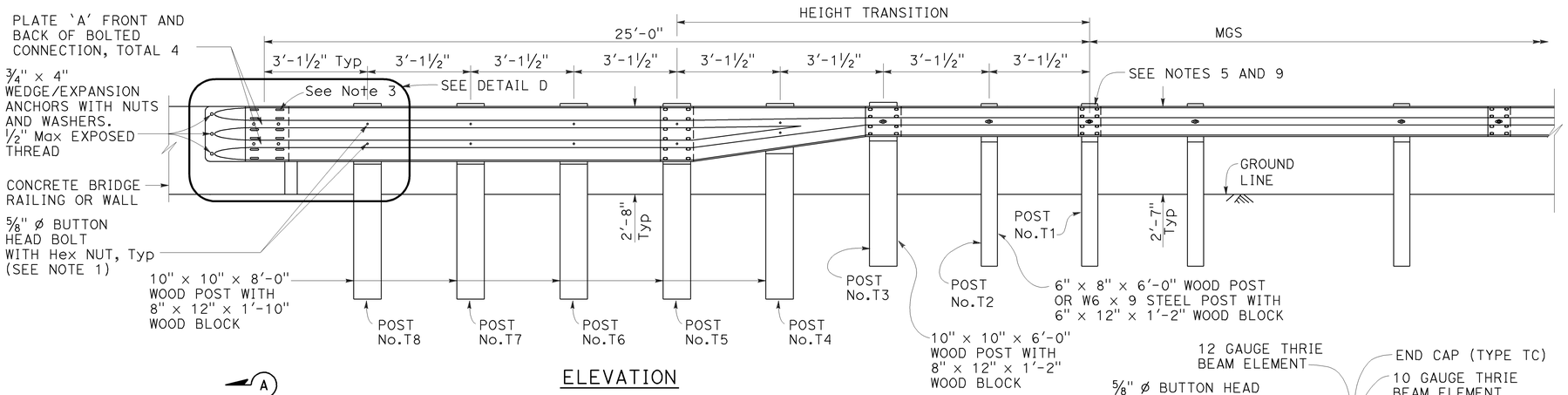
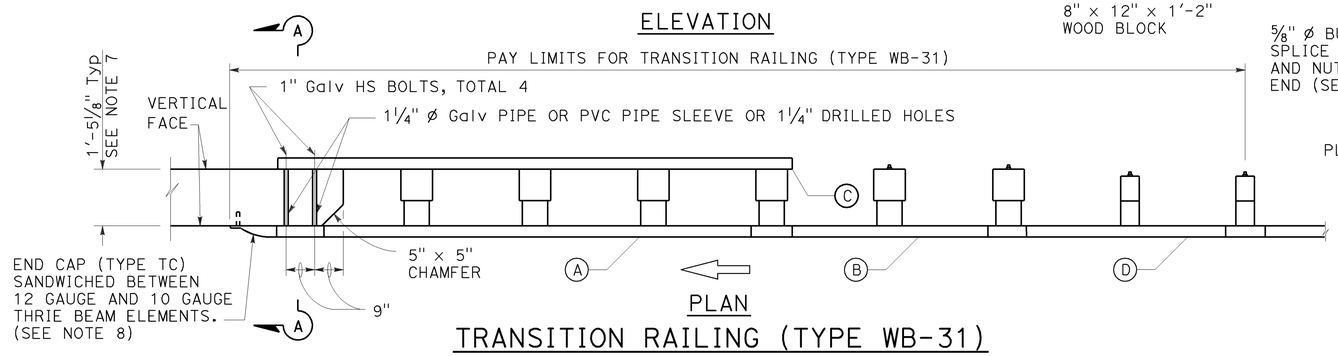


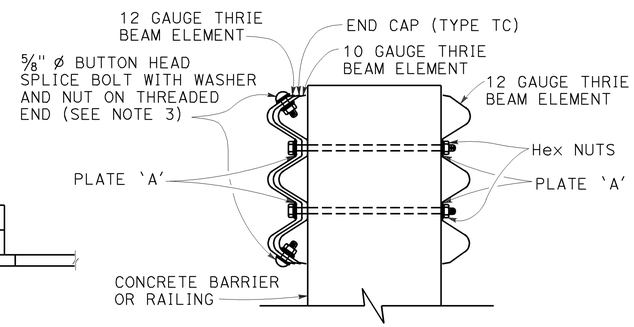
ELEVATION



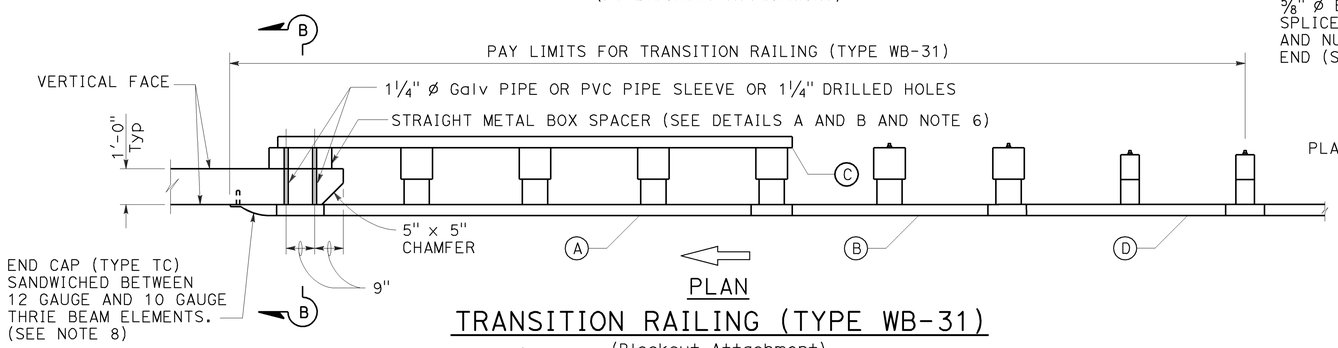
PLAN

TRANSITION RAILING (TYPE WB-31)

(No Blockout Attachment)



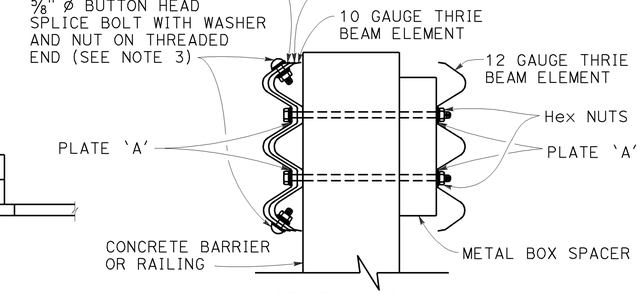
SECTION A-A



PLAN

TRANSITION RAILING (TYPE WB-31)

(Blockout Attachment)



SECTION B-B

NOTES:

TO ACCOMPANY PLANS DATED 11-24-14

1. Use 5/8" ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
2. The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
3. Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" ø. Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
6. The depth of the metal box spacer varies from the 9 1/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

LEGEND:

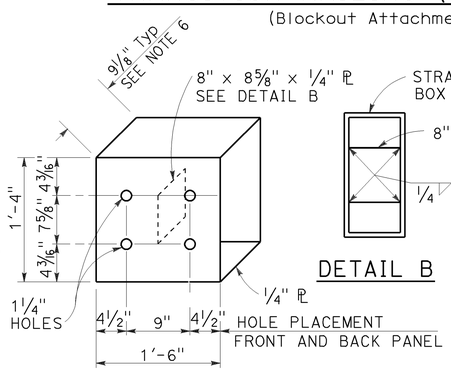
(A) NESTED THRIE BEAM ELEMENTS (ONE 12 GAUGE ELEMENT NESTED OVER ONE 10 GAUGE ELEMENT).

(B) ONE ASYMMETRICAL 10 GAUGE "W" BEAM TO THRIE BEAM ELEMENT.

(C) ONE 12 GAUGE THRIE BEAM ELEMENT.

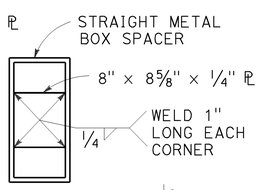
(D) ONE 10 GAUGE "W" BEAM RAIL ELEMENT (7'-3 1/2"LENGTH)

10 GAUGE = 0.138" THICK
12 GAUGE = 0.108" THICK

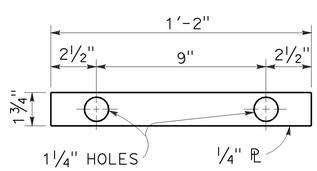


DETAIL A

STRAIGHT METAL BOX SPACER

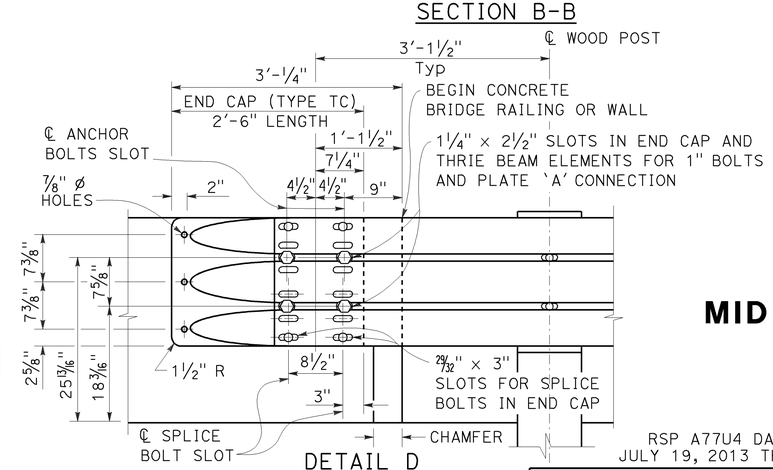


DETAIL B



DETAIL C

PLATE 'A'



DETAIL D

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TRANSITION RAILING (TYPE WB-31)

NO SCALE

RSP A77U4 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U4

2010 REVISED STANDARD PLAN RSP A77U4

10-4-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	96	130

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Michael Janzen No. 44788 Exp. 03-31-14 CIVIL STATE OF CALIFORNIA

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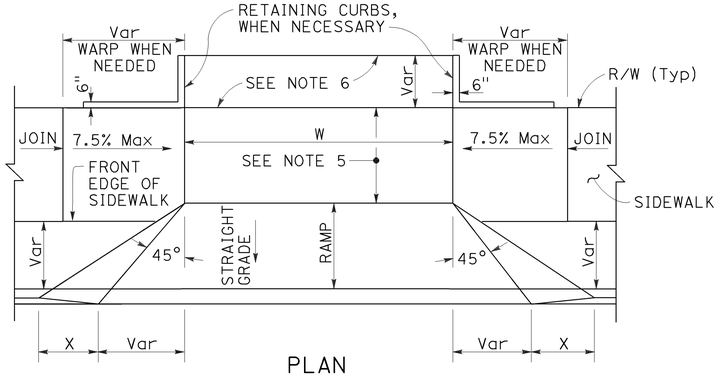
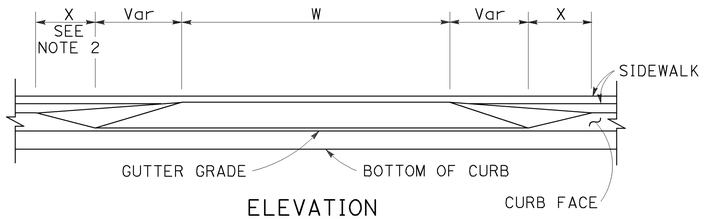
TO ACCOMPANY PLANS DATED 11-24-14

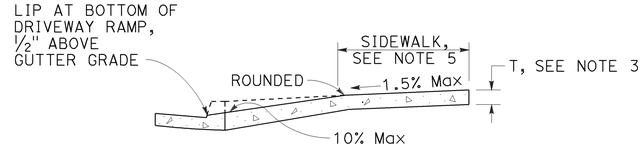
2010 REVISED STANDARD PLAN RSP A87A



PLAN

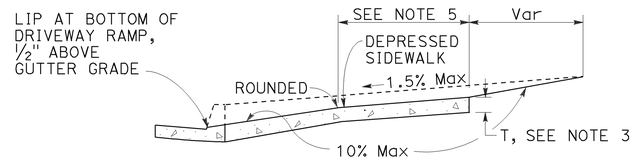


ELEVATION



CASE A

Typical driveway, sidewalk not depressed

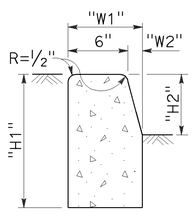


CASE B

Driveway with depressed sidewalk

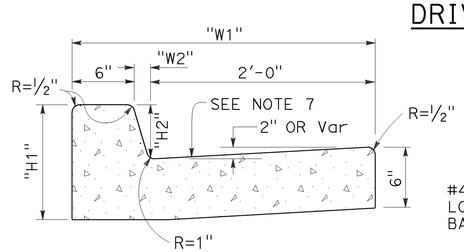
SECTIONS

DRIVEWAYS



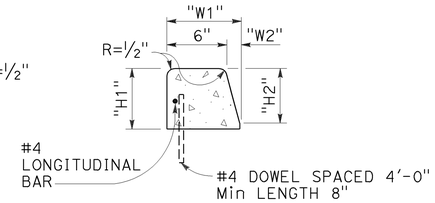
TYPE A1 CURBS

See Table A



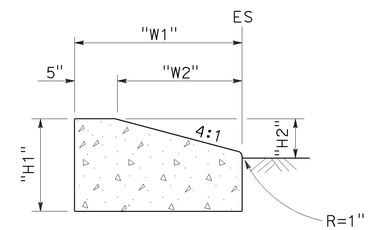
TYPE A2 CURBS

See Table A



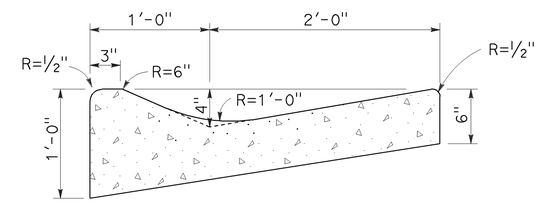
TYPE A3 CURBS

Superimposed on existing pavement
See Table A

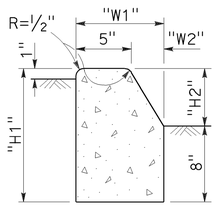


TYPE D CURBS

See Table A

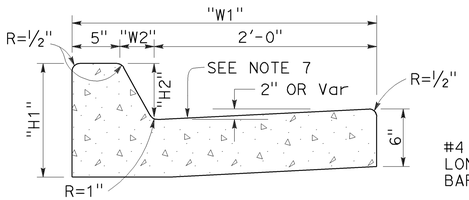


TYPE E CURB



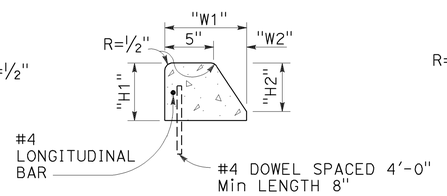
TYPE B1 CURBS

See Table A



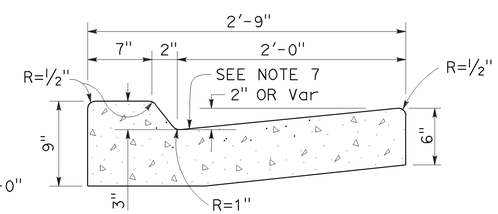
TYPE B2 CURBS

See Table A

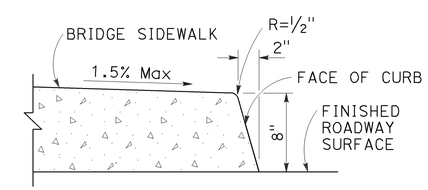


TYPE B3 CURBS

Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB

On Bridges

CURBS

TABLE A

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7½"	1½"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7½"	1½"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7¼"	1¼"
A3-8	8"	7"	7¾"	1¾"
B1-4	1'-0"	4"	7½"	2½"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7½"	2½"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8½"	3½"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-9"

CURB QUANTITIES

TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

NOTES:

1. Case A driveway section typically applies.
2. X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
3. Sidewalk and ramp thickness "T" at driveway shall be 4" for residental and 6" for commercial.
4. Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
5. Minimum width of clear passageway for sidewalk shall be 4'-2".
6. Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
7. Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

NO SCALE

RSP A87A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87A
DATED MAY 20, 2011 - PAGE 119 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A87A

7-8-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	97	130

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Michael Janzen
No. 44788
Exp. 03-31-14
CIVIL
STATE OF CALIFORNIA

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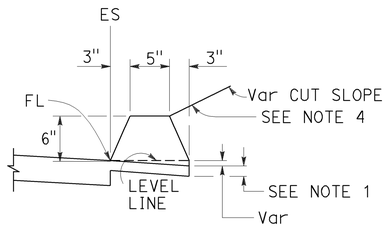
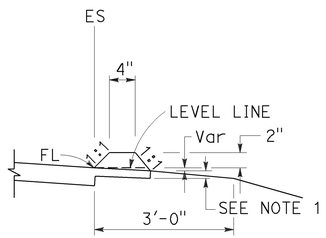
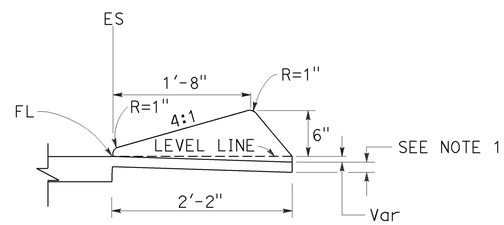
TO ACCOMPANY PLANS DATED 11-24-14



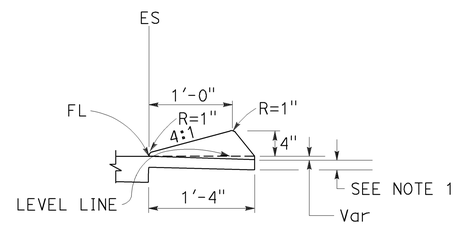
TYPE A
See Note 3



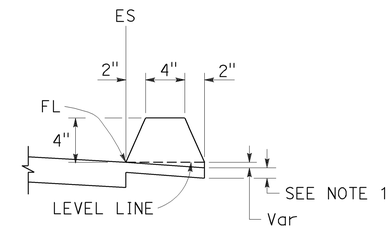
TYPE C



TYPE D

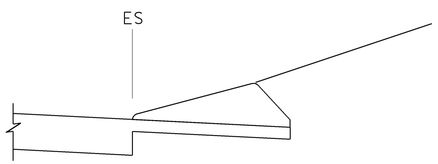


TYPE E

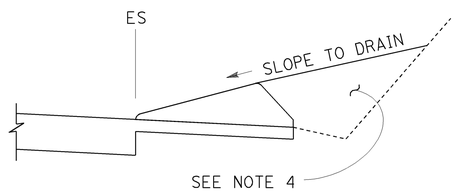


TYPE F
See Note 5

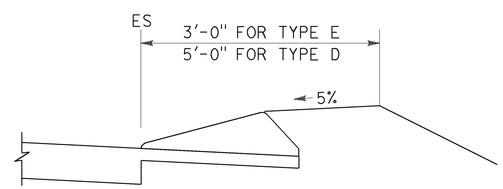
DIKES



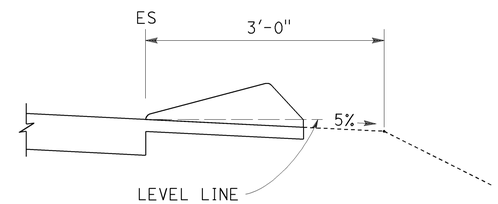
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

1. For HMA shoulders only, extend top layer of HMA placed on the shoulder under dike with no joint at the ES. For projects with OGFC shoulders, do not extend OGFC under dike. See project plans for modified dike detail.
2. Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
3. Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
4. Fill and compact with excavated material to top of dike.
5. Use Type F dike, where dike is required with guard railing installations. See Revised Standard Plan RSP A77N4 for dike positioning details.

DIKE QUANTITIES

TYPE	CUBIC YARDS PER LINEAR FOOT
A	0.0135
C	0.0038
D	0.0293
E	0.0130
F	0.0066

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

RSP A87B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87B DATED MAY 20, 2011 - PAGE 120 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A87B

2010 REVISED STANDARD PLAN RSP A87B

6-27-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	98	130

REGISTERED CIVIL ENGINEER

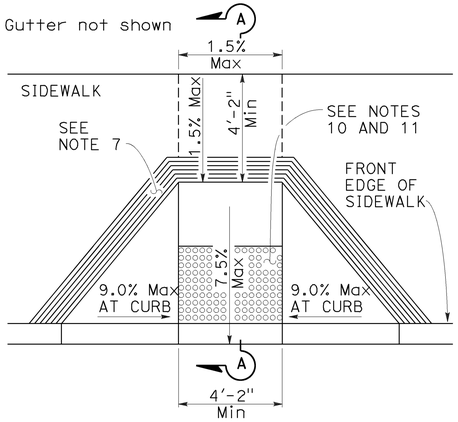
March 21, 2014
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Hector David Cordova No. C41957 Exp. 3-31-14 CIVIL STATE OF CALIFORNIA

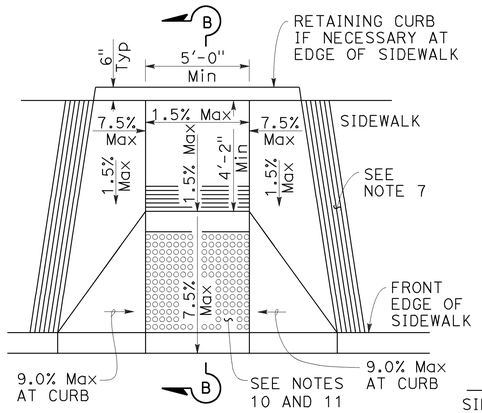
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 11-24-14

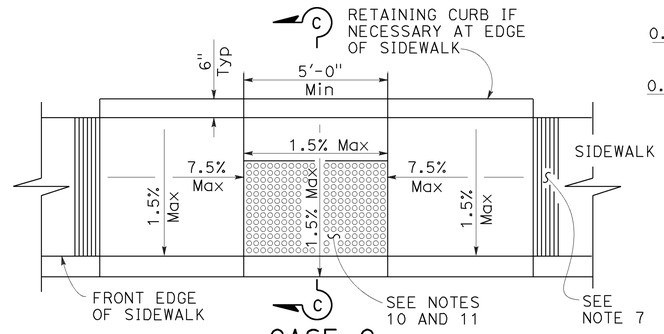
2010 REVISED STANDARD PLAN RSP A88A



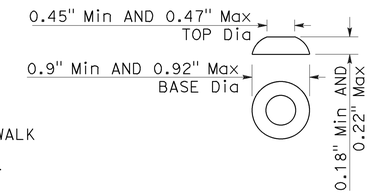
CASE A



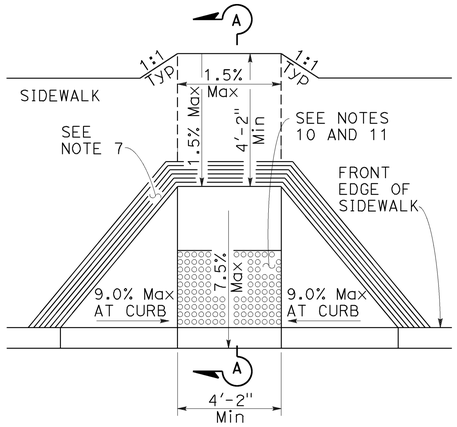
CASE B



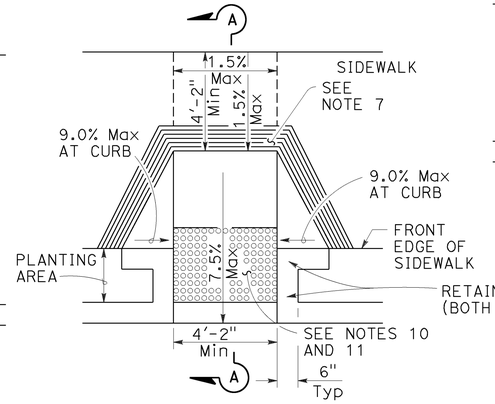
CASE C



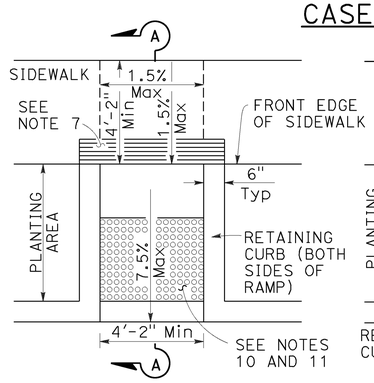
RAISED TRUNCATED DOME



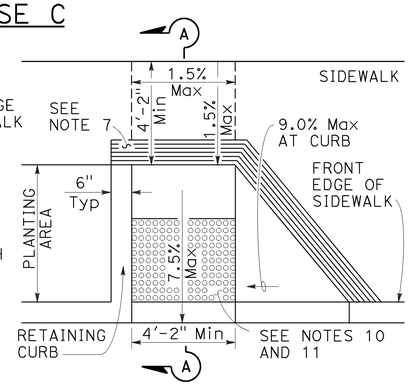
CASE D



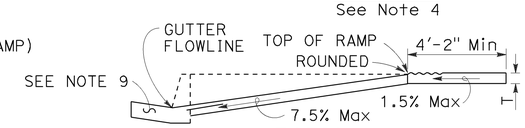
CASE E



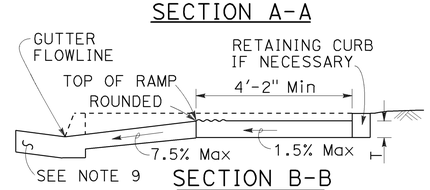
CASE F



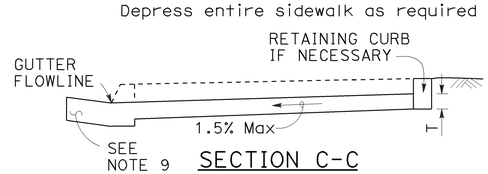
CASE G
See Note 4



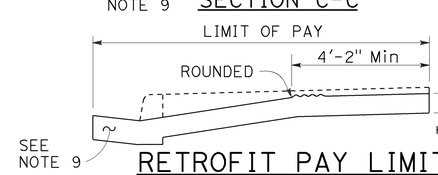
SECTION A-A



SECTION B-B
Depress entire sidewalk as required



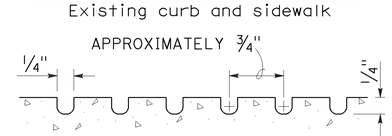
SECTION C-C



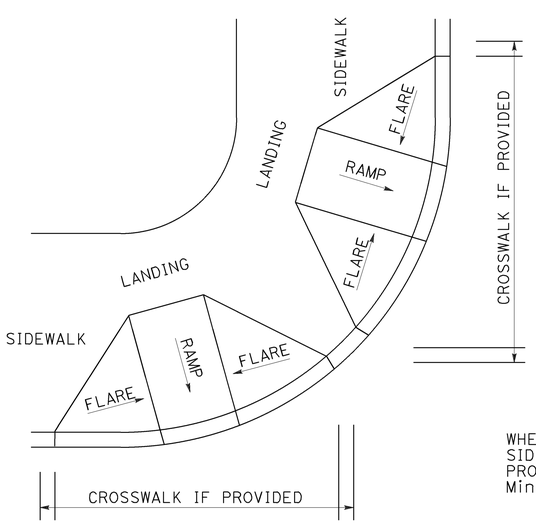
RETROFIT PAY LIMITS
Existing curb and sidewalk

RAISED TRUNCATED DOME PATTERN (IN-LINE)

DETECTABLE WARNING SURFACE
See Note 10

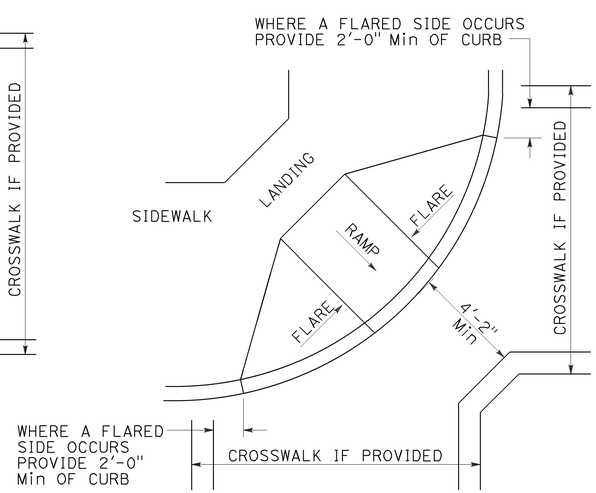


GROOVING DETAIL



DETAIL A

TYPICAL TWO-RAMP CORNER INSTALLATION
See Note 1



DETAIL B

TYPICAL ONE-RAMP CORNER INSTALLATION
See Notes 1 and 3

NOTES:

1. As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
2. If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
3. When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
4. As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
5. If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-2".
6. Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
7. The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
8. Transitions from ramps and landing to walks, gutters or streets shall be flush (no lip) and free of abrupt changes.
9. Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1:20 (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
10. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. A 4'-0" wide detectable warning surface may be used on a 4'-2" wide curb ramp. Detectable Warning Surfaces shall conform to the requirements in the Standard Specifications.
11. The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
12. Sidewalk and ramp thickness, "T", shall be 3½" minimum.
13. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
14. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining full detectable warning width and depth.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURB RAMP DETAILS

NO SCALE

RSP A88A DATED MARCH 21, 2014 SUPERSEDES RSP A88A DATED JULY 19, 2013 AND STANDARD PLAN A88A DATED MAY 20, 2011 - PAGE 121 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A88A

2-25-14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	99	130

REGISTERED CIVIL ENGINEER

March 21, 2014
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Hector David Cordova
No. C41957
Exp. 3-31-14
CIVIL
STATE OF CALIFORNIA

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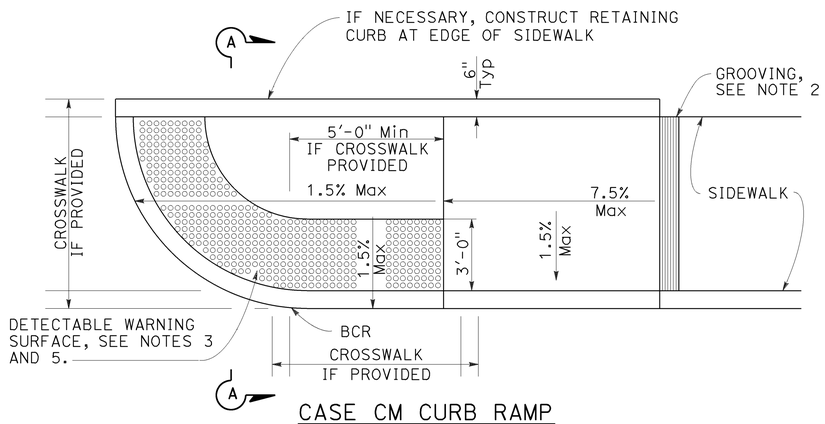
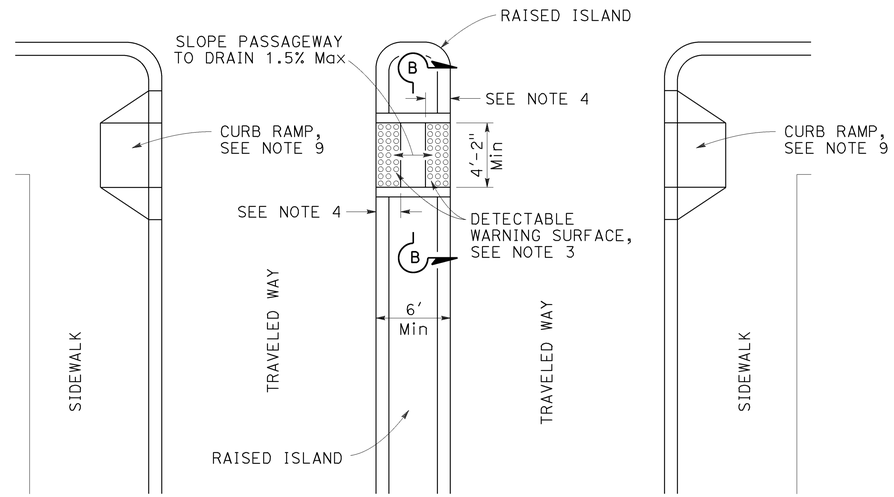
TO ACCOMPANY PLANS DATED 11-24-14

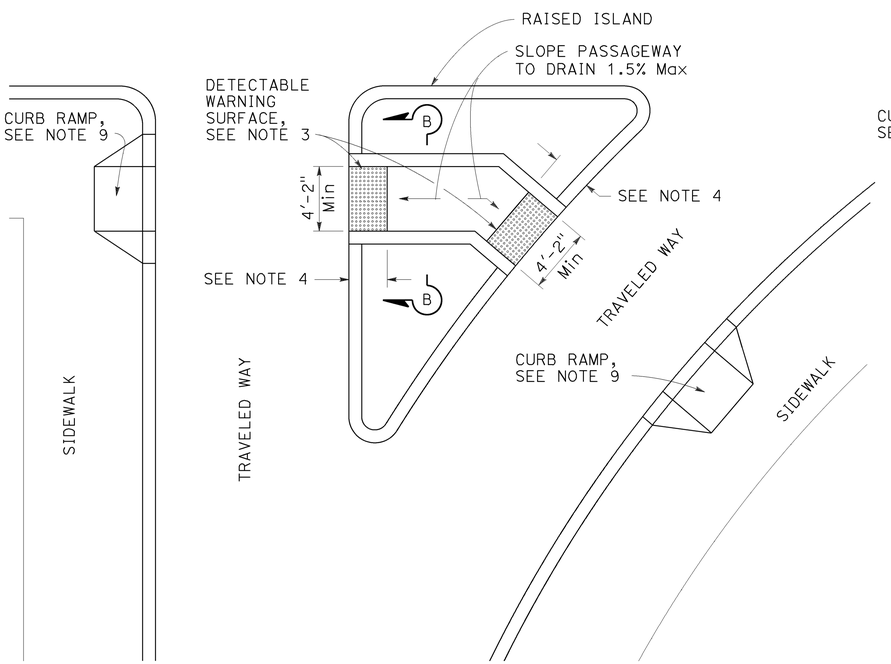
Gutter not shown



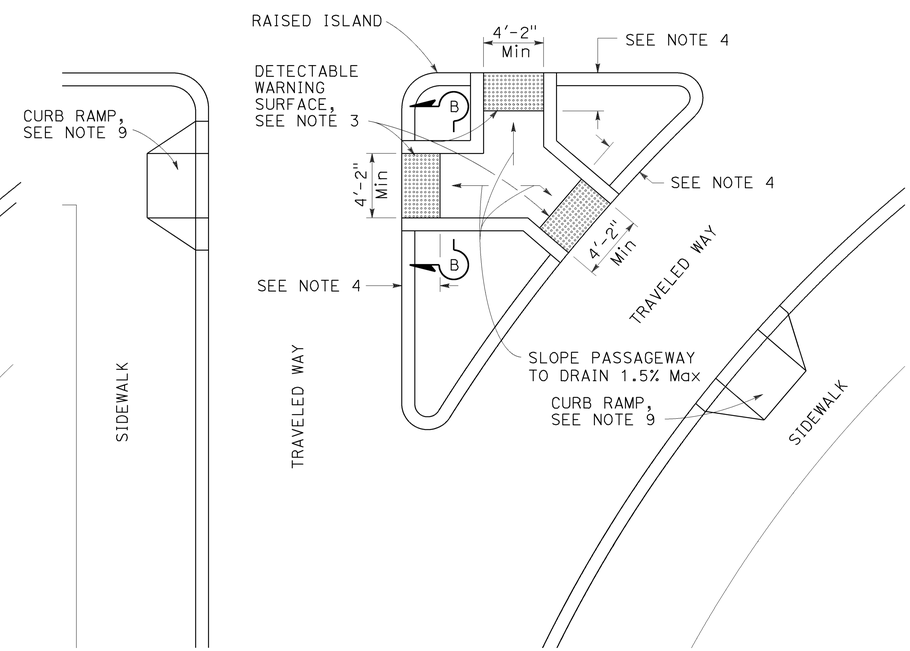
CASE CM CURB RAMP



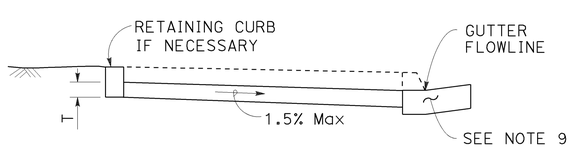
TYPE A PASSAGEWAY



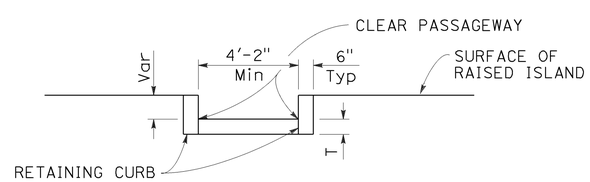
TYPE B PASSAGEWAY



TYPE C PASSAGEWAY



SECTION A-A



SECTION B-B

NOTES:

1. Sidewalk, ramp and passageway thickness, "T", shall be 3½" minimum.
2. For details of grooving used with Case CM curb ramp, see Revised Standard Plan RSP A88A.
3. For details of detectable warning surfaces, see Revised Standard Plan RSP A88A.
4. Where an island passageway length is greater than or equal to 6'-0", but less than 8'-0", each detectable warning surface shall extend the full width and 2'-0" depth of the passageway length. Where an island passageway length is greater than or equal to 8'-0", each detectable warning surface shall extend the full width and 3'-0" depth of the passageway length. A 4'-0" wide detectable warning surface may be used on a 4'-2" wide island passageway.
5. For Case CM curb ramp, the edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
6. Transitions from ramps to walks, gutters or streets shall be flush (no lip) and free of abrupt changes.
7. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
8. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining full detectable warning width and depth.
9. For additional curb ramp details, see Revised Standard Plan RSP A88A.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURB RAMP AND ISLAND PASSAGEWAY DETAILS

NO SCALE

RSP A88B DATED MARCH 21, 2014 SUPERSEDES RSP A88B DATED JULY 19, 2013 AND STANDARD PLAN A88B DATED MAY 20, 2011 - PAGE 122 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A88B

2010 REVISED STANDARD PLAN RSP A88B

2-25-14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	101	21.0/27.1	100	130

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Gurinderpal Bhullar
No. C48815
Exp. 9-30-14
CIVIL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 11-24-14

2010 REVISED STANDARD PLAN RSP T9

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING

SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
					X	Y	Z **
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

* - For other offsets, use the following merging taper length formula for L:
For speed of 40 mph or less, $L = WS^2/60$
For speed of 45 mph or more, $L = WS$

Where: L = Taper length in feet
W = Width of offset in feet
S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING

SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
mph	ft	ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Longitudinal buffer space or flagger station spacing

*** - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommmended distances.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM TABLES FOR LANE AND RAMP CLOSURES

NO SCALE

RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T9