

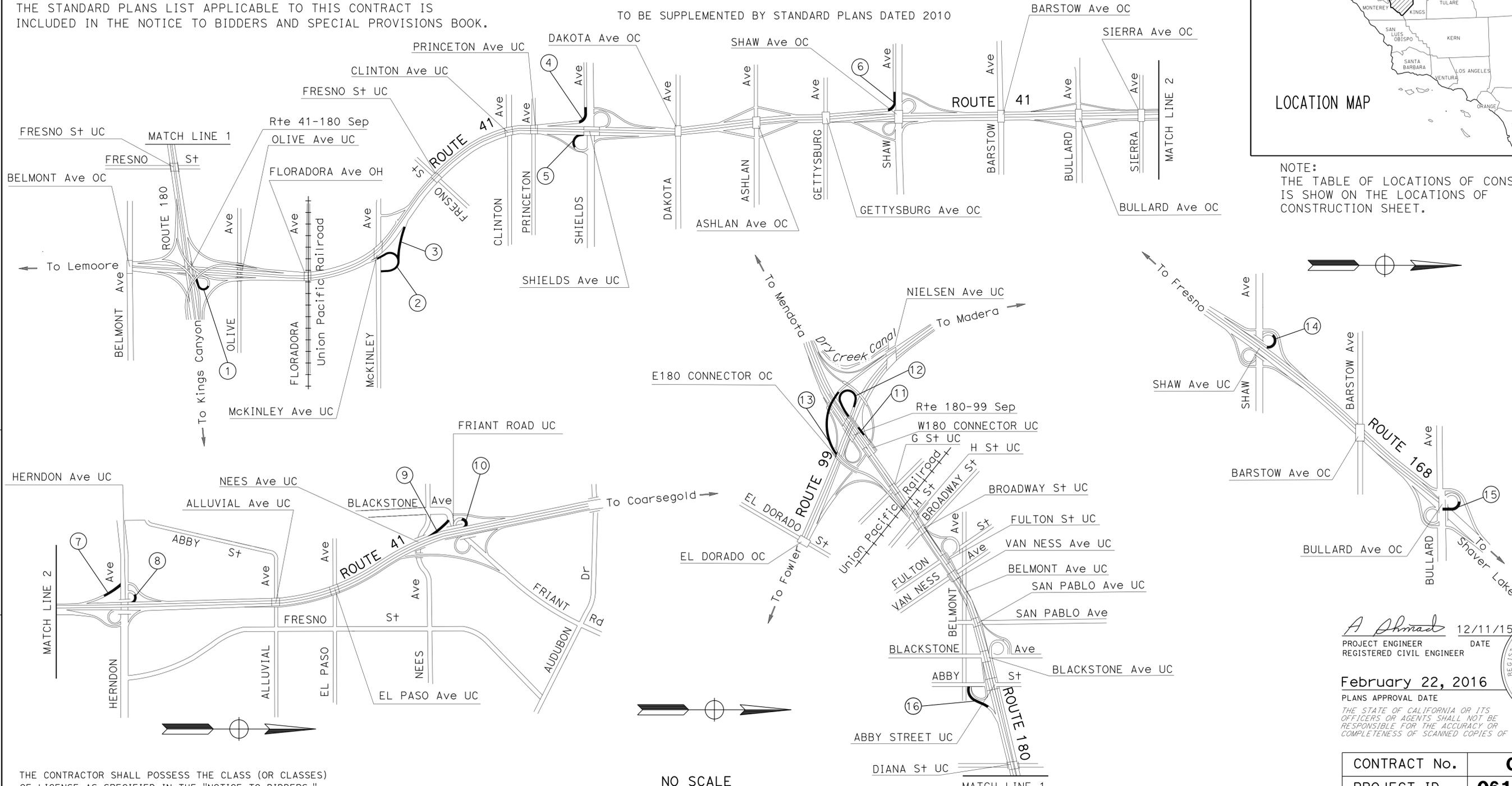
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	LOCATIONS OF CONSTRUCTION
3-9	TYPICAL CROSS SECTIONS
10-14	CONSTRUCTION DETAILS
15	CONSTRUCTION AREA SIGNS
16-19	MOTORIST INFORMATION PLANS
20-22	TRAFFIC HANDLING PLANS AND QUANTITIES
23	PAVEMENT DELINEATION PLANS, DETAILS AND QUANTITIES
24	SIGN PLANS, DETAILS AND QUANTITIES
25-27	SUMMARY OF QUANTITIES
28-29	LANDSCAPE PLANS
30-36	ELECTRICAL PLANS
37-61	REVISED STANDARD PLANS

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

STATE OF CALIFORNIA **ACHSNHP - X019(030)E**
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN FRESNO COUNTY
AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	1	61

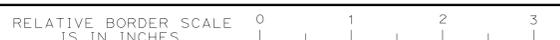
LOCATION MAP

NOTE: THE TABLE OF LOCATIONS OF CONSTRUCTION IS SHOW ON THE LOCATIONS OF CONSTRUCTION SHEET.

PROJECT MANAGER
JEANNIE WILEY
 DESIGN MANAGER
ALI ALOATAMI

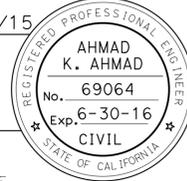
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE



USERNAME => s113541
 DGN FILE => 0614000060ab001.dgn

A Ahmad 12/11/15
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
February 22, 2016
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CONTRACT No.	06-OR2304
PROJECT ID	0614000060

LAST REVISION: 02-08-16
 DATE PLOTTED => 27-APR-2016
 TIME PLOTTED => 11:03

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	2	61

A Ahmad 12/11/15
REGISTERED CIVIL ENGINEER DATE

2-22-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AHMAD K. AHMAD
No. 69064
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.

LOCATIONS OF CONSTRUCTION

LOCATION No.	COUNTY	LOCATION	PM
①	Fre	NB 41 CONNECTOR TO WB 180	R24.50
②	Fre	NB 41 OFF-RAMP TO McKINLEY Ave	R25.21
③	Fre	NB 41 ON-RAMP FROM McKINLEY Ave	R25.43
④	Fre	SB 41 ON-RAMP FROM EB SHIELDS Ave	R26.31
⑤	Fre	NB 41 ON-RAMP FROM EB SHIELDS Ave	R26.44
⑥	Fre	SB 41 ON-RAMP FROM EB SHAW Ave	R28.32
⑦	Fre	SB 41 ON-RAMP FROM EB HERNDON Ave	R30.29
⑧	Fre	SB 41 ON-RAMP FROM WB HERNDON Ave	R30.51
⑨	Fre	SB 41 ON-RAMP FROM EB FRIANT Rd	R31.55
⑩	Fre	SB 41 ON-RAMP FROM WB FRIANT Rd	R31.73
⑪	Fre	WB 180 CONNECTOR TO SB 99	56.25
⑫	Fre	SB 99 CONNECTOR FROM WB 180	21.92
⑬	Fre	SB 99 CONNECTOR TO EB 180	22.22
⑭	Fre	WB 168 ON-RAMP FROM WB SHAW Ave	R4.31
⑮	Fre	WB 168 ON-RAMP FROM WB BULLARD Ave	R5.64
⑯	Fre	EB 180 ON-RAMP FROM ABBY St	R58.03

LOCATIONS OF CONSTRUCTION

NO SCALE

LC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

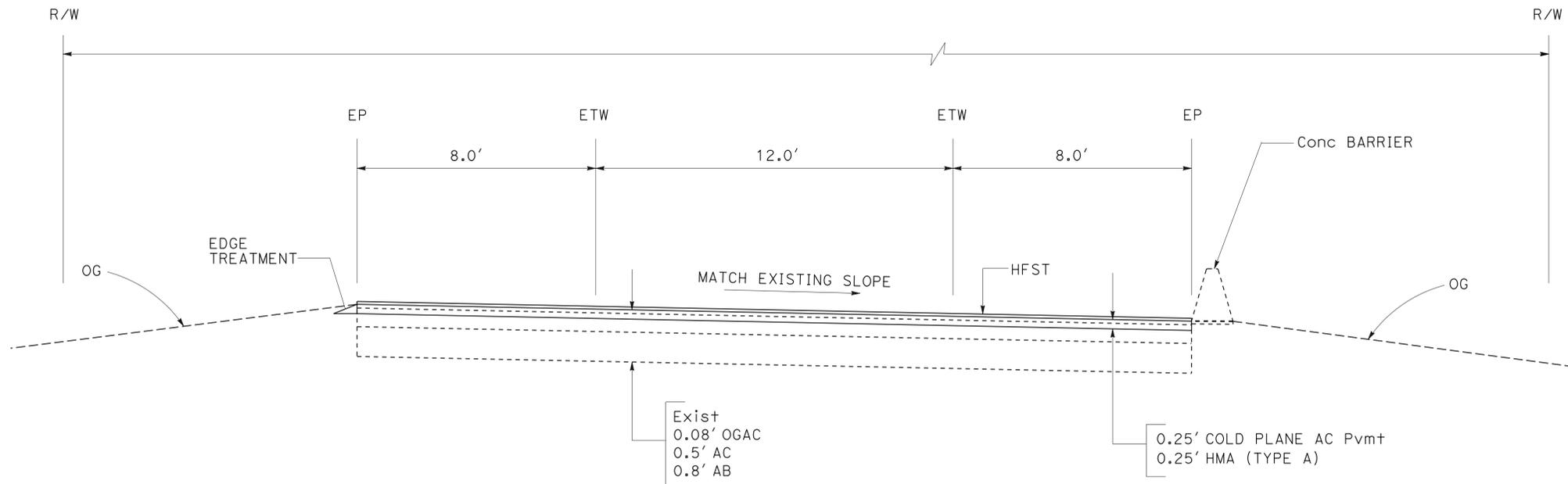
FUNCTIONAL SUPERVISOR
ALI ALOATAMI

CALCULATED/DESIGNED BY
CHECKED BY

AHMAD AHMAD
ALI ALOATAMI

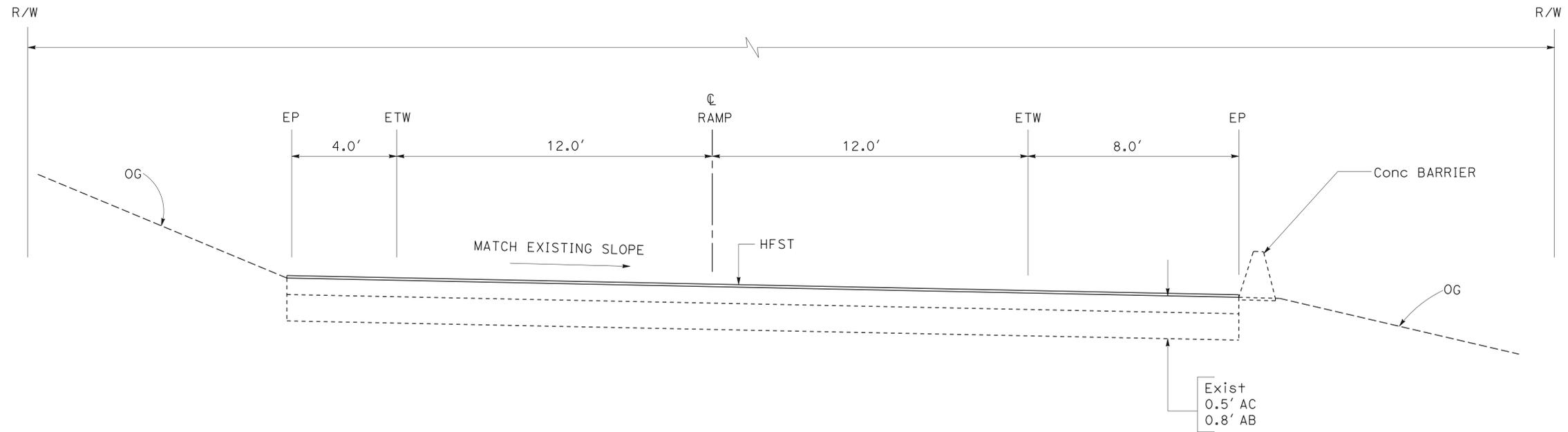
REVISED BY
DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	4	61
A Ahmad		12/11/15		REGISTERED CIVIL ENGINEER DATE	
2-22-16		PLANS APPROVAL DATE			
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



LOCATION 3

NB 41 ON-RAMP FROM McKINLEY Ave
PM R25.433



LOCATION 4

SB 41 ON-RAMP FROM EB SHIELDS Ave
PM R26.312

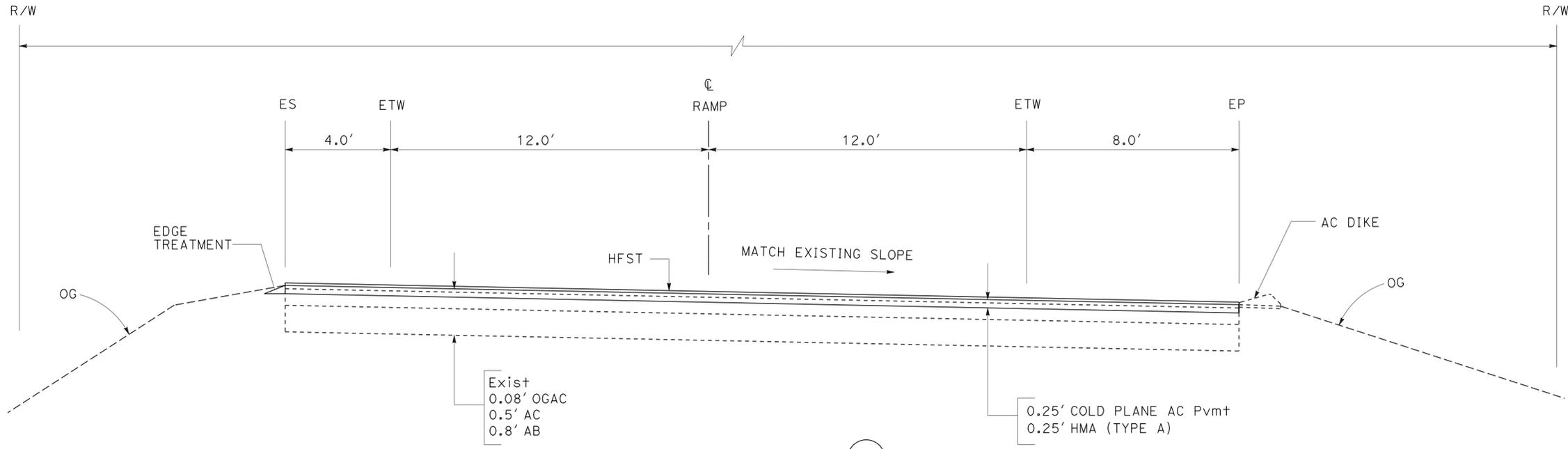
TYPICAL CROSS SECTIONS

NO SCALE

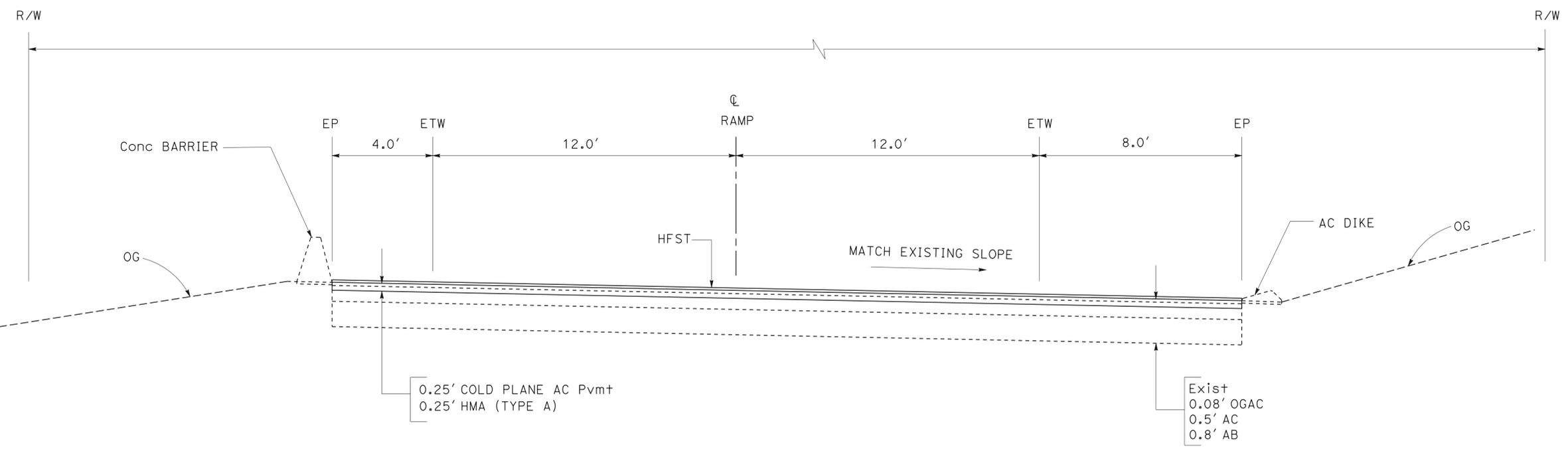
X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	ALI ALOATAMI
CALCULATED/DESIGNED BY	CHECKED BY
AHMAD AHMAD	ALI ALOATAMI
REVISOR BY	DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	5	61
A Ahmad		12/11/15		REGISTERED CIVIL ENGINEER DATE	
2-22-16		PLANS APPROVAL DATE			
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



LOCATION 5
 NB 41 ON-RAMP FROM EB SHIELDS Ave
 PM R26.441



LOCATION 6
 SB 41 ON-RAMP FROM EB SHAW Ave
 PM R28.323

TYPICAL CROSS SECTIONS
 NO SCALE
X-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: ALI ALOATAMI
 REVISIONS: AHMAD AHMAD, ALI ALOATAMI
 CALCULATED/DESIGNED BY: ALI ALOATAMI
 CHECKED BY: ALI ALOATAMI
 REVISOR: AHMAD AHMAD, ALI ALOATAMI
 DATE: 7/2/2010

USERNAME => s113541
 DGN FILE => 0614000060ca003.dgn

RELATIVE BORDER SCALE IS IN INCHES
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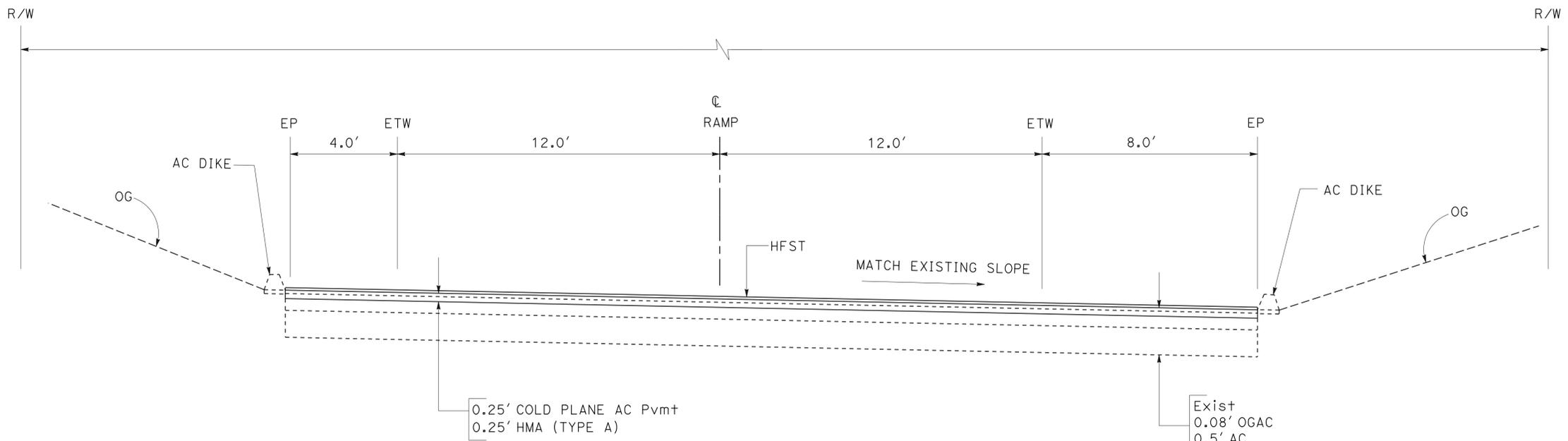
UNIT 1458

PROJECT NUMBER & PHASE 06140000601

LAST REVISION: DATE PLOTTED => 21-APR-2016
 TIME PLOTTED => 13:54

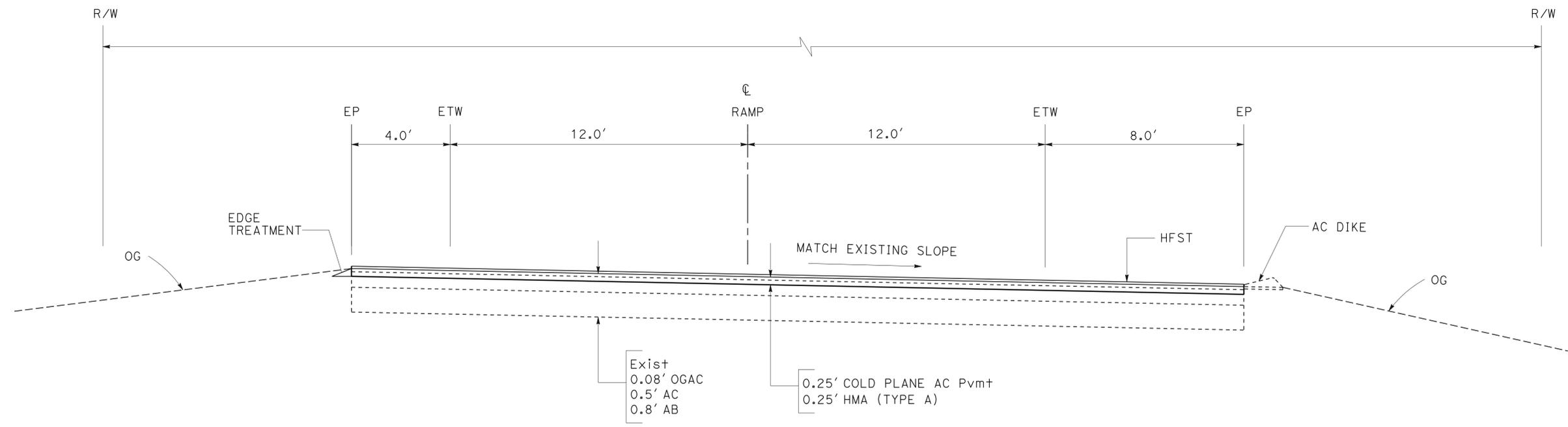
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	6	61
A Ahmad		12/11/15		REGISTERED CIVIL ENGINEER DATE	
2-22-16		PLANS APPROVAL DATE			
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	ALI ALOATAMI
CALCULATED/DESIGNED BY	CHECKED BY
AHMAD AHMAD	ALI ALOATAMI
REVISOR	DATE



LOCATION 7

SB 41 ON-RAMP FROM EB HERNDON Ave
PM R30.293



LOCATION 8

SB 41 ON-RAMP FROM WB HERNDON Ave
PM R30.505

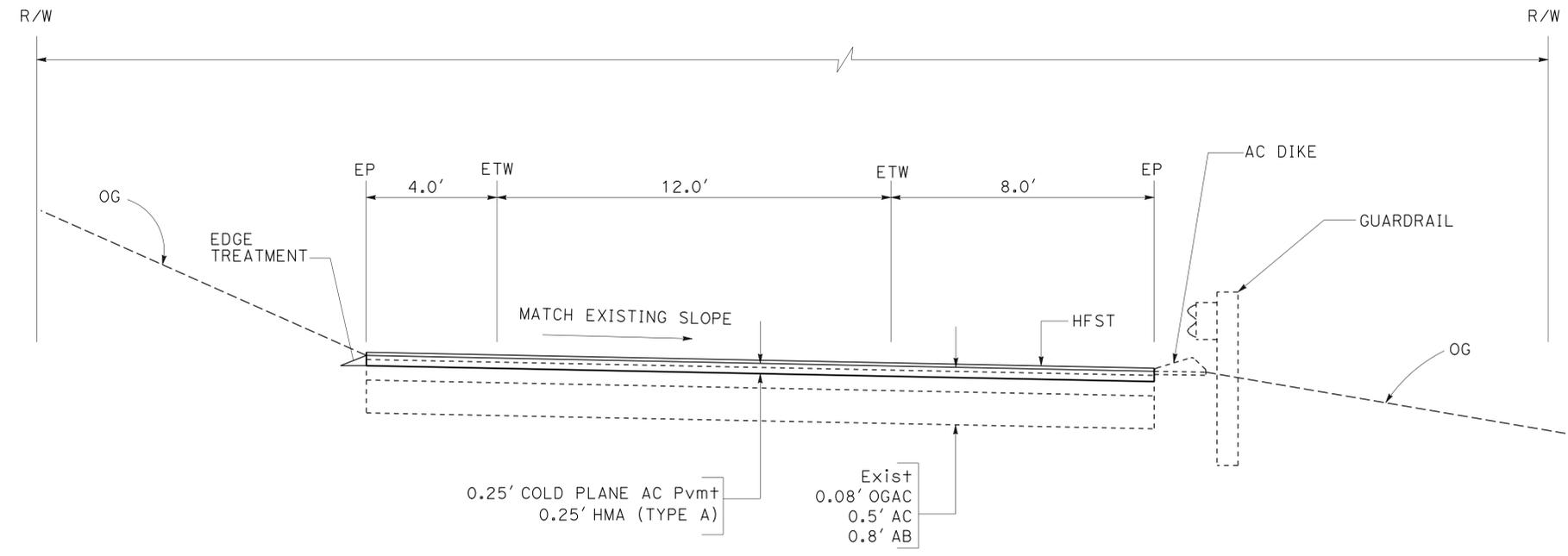
TYPICAL CROSS SECTIONS

NO SCALE

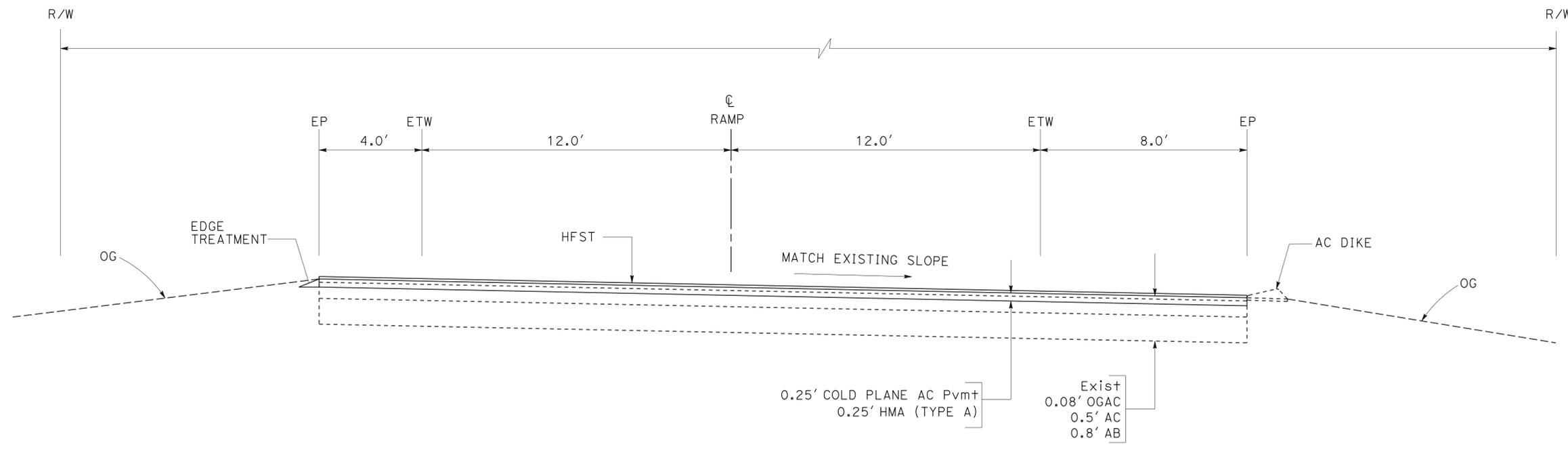
X-4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	7	61
		A Ahmad		12/11/15	
		REGISTERED CIVIL ENGINEER		DATE	
		2-22-16		PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	ALT ALOATAMI
CALCULATED/DESIGNED BY	CHECKED BY
AHMAD AHMAD	ALT ALOATAMI
REVISOR BY	DATE



LOCATION 9
 SB 41 ON-RAMP FROM EB FRIANT Rd
 PM R31.554

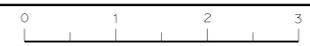


LOCATION 10
 SB 41 ON-RAMP FROM WB FRIANT Rd
 PM R31.732

TYPICAL CROSS SECTIONS

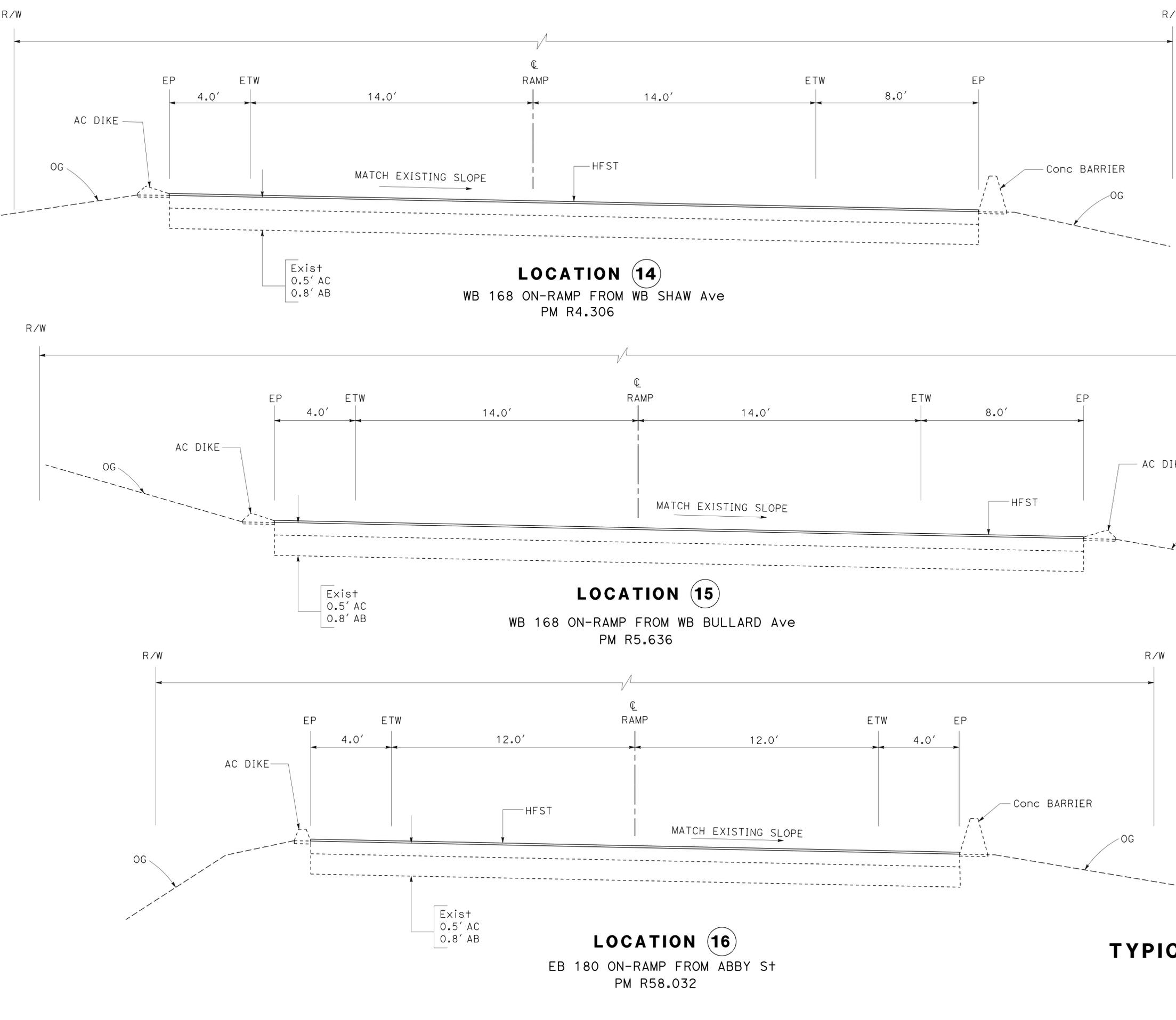
NO SCALE

X-5



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR: ALI ALOATAMI
 CHECKED BY: ALI ALOATAMI
 DESIGNED BY: AHMAD AHMAD
 REVISIONS: (None listed)



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	9	61

A Ahmad 12/11/15
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 AHMAD K. AHMAD
 No. 69064
 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.

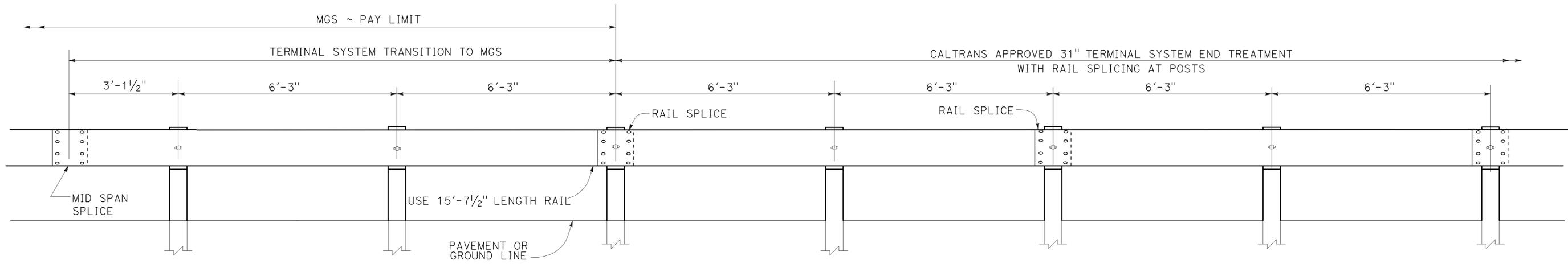
TYPICAL CROSS SECTIONS

NO SCALE

X-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	11	61
<i>A Ahmad</i> REGISTERED CIVIL ENGINEER			DATE	12/11/15	
PLANS APPROVAL DATE			2-22-16		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN
 FUNCTIONAL SUPERVISOR: ALI ALOATAMI
 CALCULATED/DESIGNED BY: AHMAD AHMAD
 CHECKED BY: ALI ALOATAMI
 REVISED BY: AHMAD AHMAD
 DATE REVISED: ALI ALOATAMI



TRANSITION DETAIL FOR 31" TERMINAL SYSTEM END TREATMENT WITH RAIL SPLICING AT POSTS TO MIDWEST GUARDRAIL SYSTEM

CONSTRUCTION DETAILS

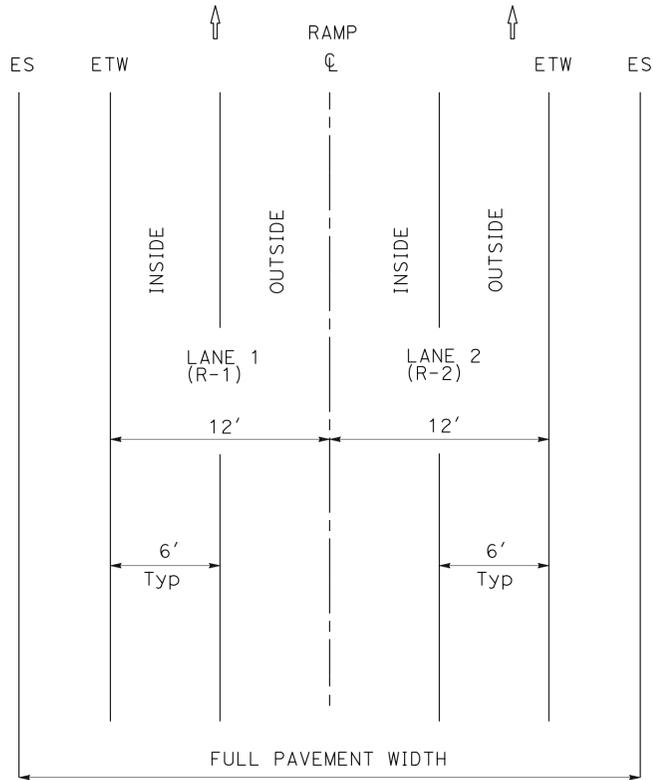
C-2

NO SCALE

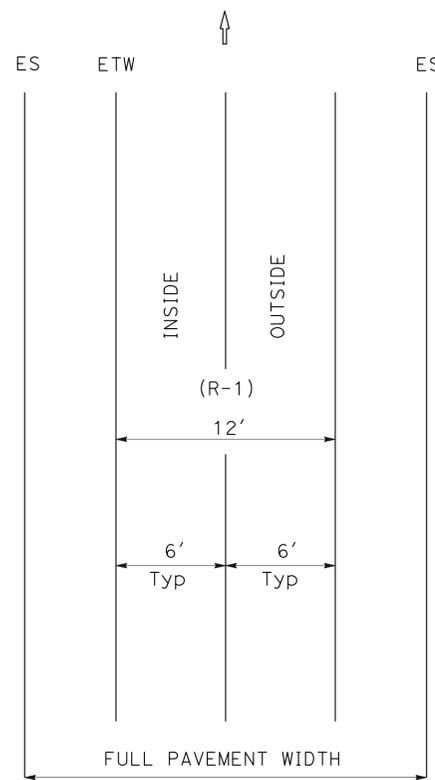


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	12	61
<i>A Ahmad</i> REGISTERED CIVIL ENGINEER			DATE	12/11/15	
PLANS APPROVAL DATE			2-22-16		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	AHMAD AHMAD	REVISOR BY	
Caltrans	ALI ALOATAMI	CHECKED BY	ALI ALOATAMI	DATE REVISED	
DESIGN					



TWO LANE RAMP



ONE LANE RAMP

COLD PLANE LOCATION CHART

CONSTRUCTION DETAILS

NO SCALE

C-3

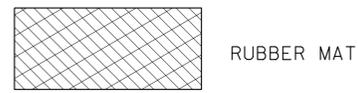


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

NOTES (THIS SHEET ONLY):

1. RUBBER MAT MUST BE 48" WIDE INDIVIDUAL MATS OR 48" WIDE CONTINUOUS ROLL PRODUCT. INDIVIDUAL MATS ARE SHOWN.
2. EDGES OF MAT TO ABUT EDGES OF POST.
3. WHERE EDGE OF PAVED SHOULDER IS MORE THAN 24" FROM BACK OF POST, EDGE OF RUBBER MAT MUST BE 24" FROM BACK OF POST. WHERE PAVED SHOULDER IS CONSTRUCTED 24" OR LESS FROM BACK OF POST, ABUT EDGE OF RUBBER MAT AGAINST EDGE OF PAVED SHOULDER. WHERE DIKE IS CONSTRUCTED UNDER RAILING, ABUT EDGE OF RUBBER MAT AGAINST BACK OF DIKE.
4. LAP RUBBER MAT IN DIRECTION OF WATER FLOW.
5. FOR CONTINUOUS ROLL PRODUCT LOCATE OVERLAP JOINT AT OR BETWEEN POSTS AS SHOWN.

LEGEND (THIS SHEET ONLY):

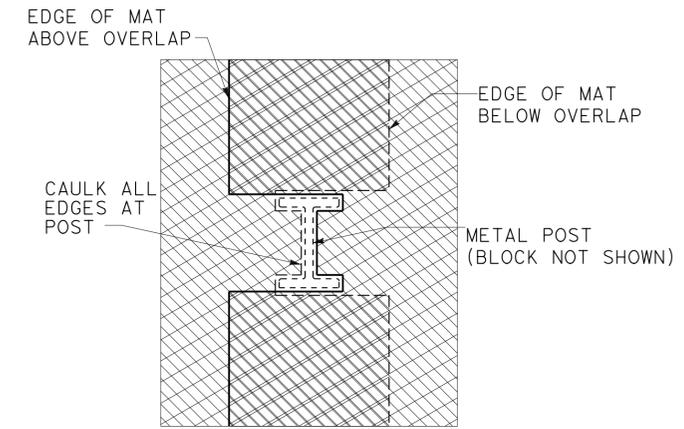
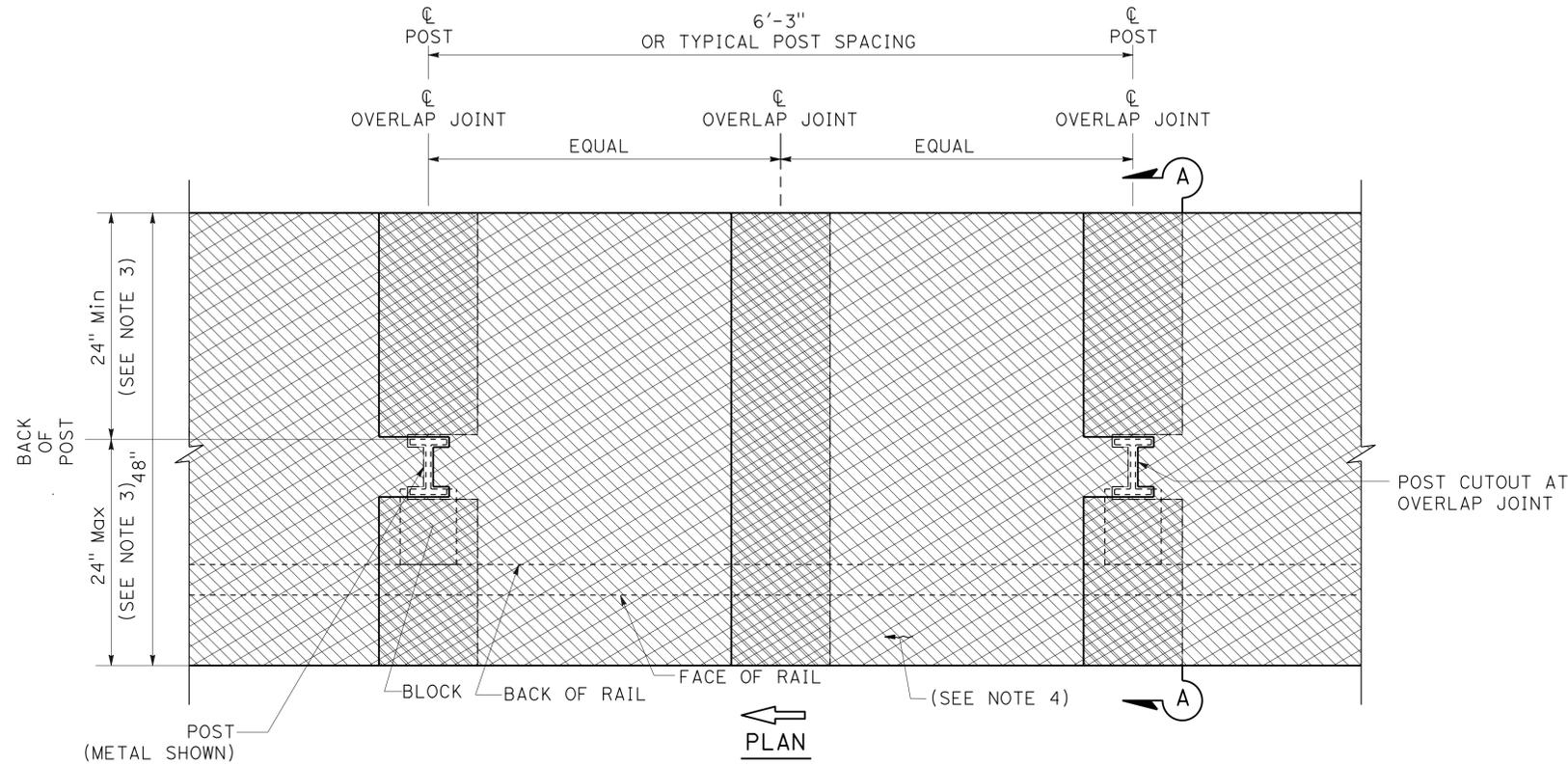


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	13	61

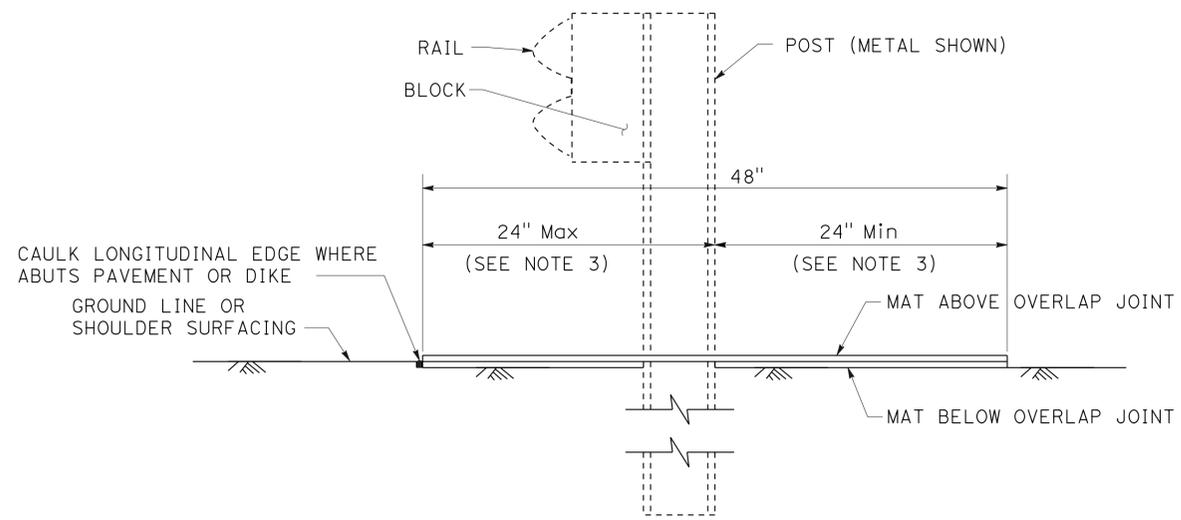
A. Ahmad 12/11/15
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 AHMAD K. AHMAD
 No. 69064
 Exp. 3-30-16
 CIVIL
 STATE OF CALIFORNIA

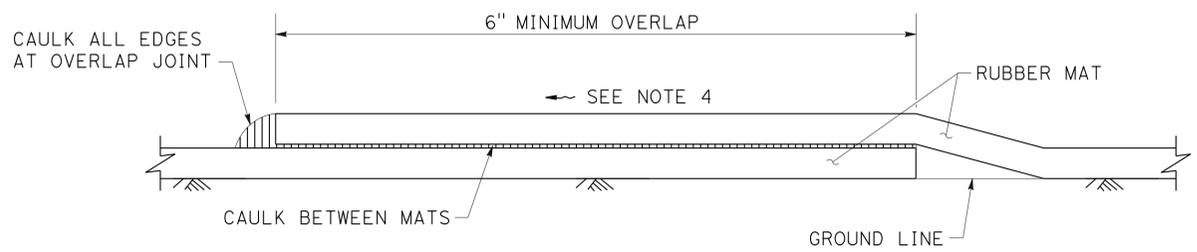
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



POST CUTOUT AT OVERLAP JOINT
 (SEE NOTE 2)



RUBBER MAT UNDER MIDWEST GUARDRAIL SYSTEM
 (SEE NOTE 1)



SECTION OVERLAP JOINT

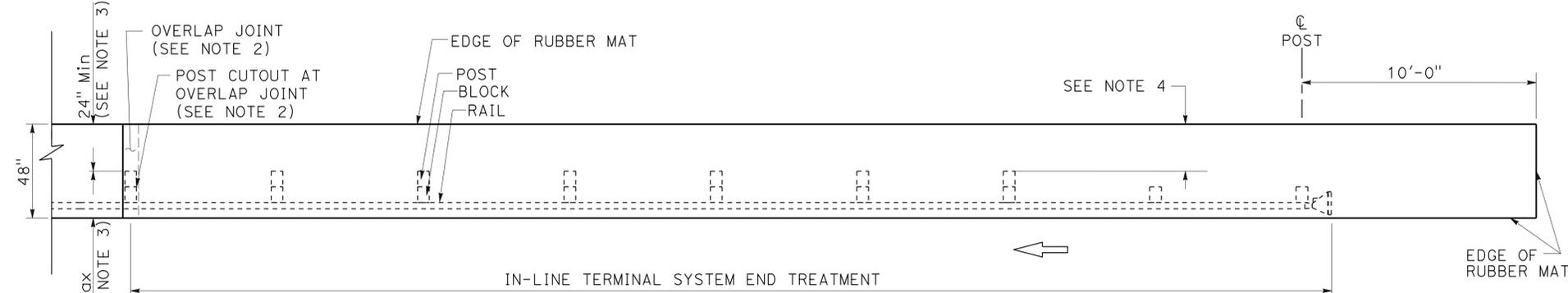
CONSTRUCTION DETAILS
 NO SCALE
C-4

LAST REVISION: DATE PLOTTED => 21-APR-2016 TIME PLOTTED => 13:54

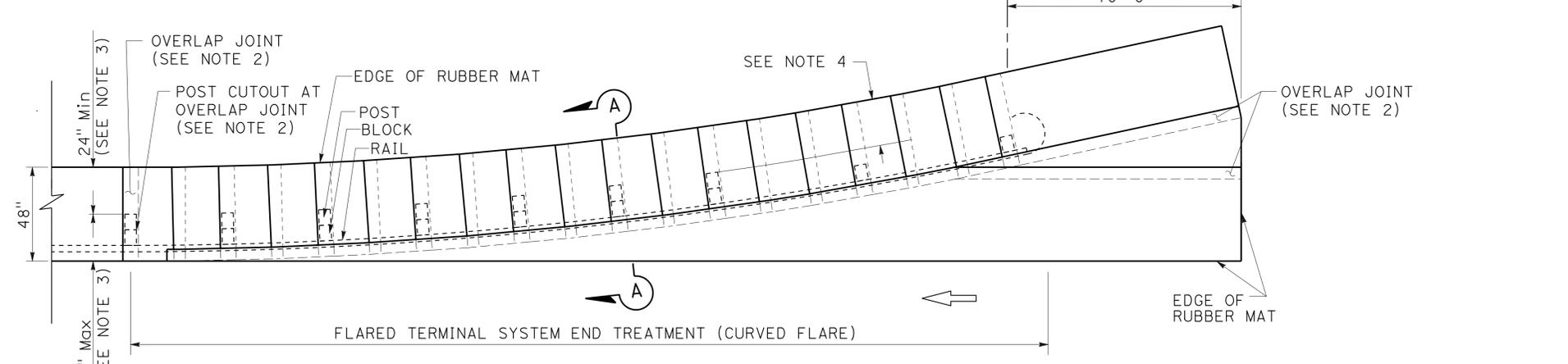
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	14	61
<i>A Ahmad</i> REGISTERED CIVIL ENGINEER			DATE	12/11/15	
2-22-16 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTES (THIS SHEET ONLY):

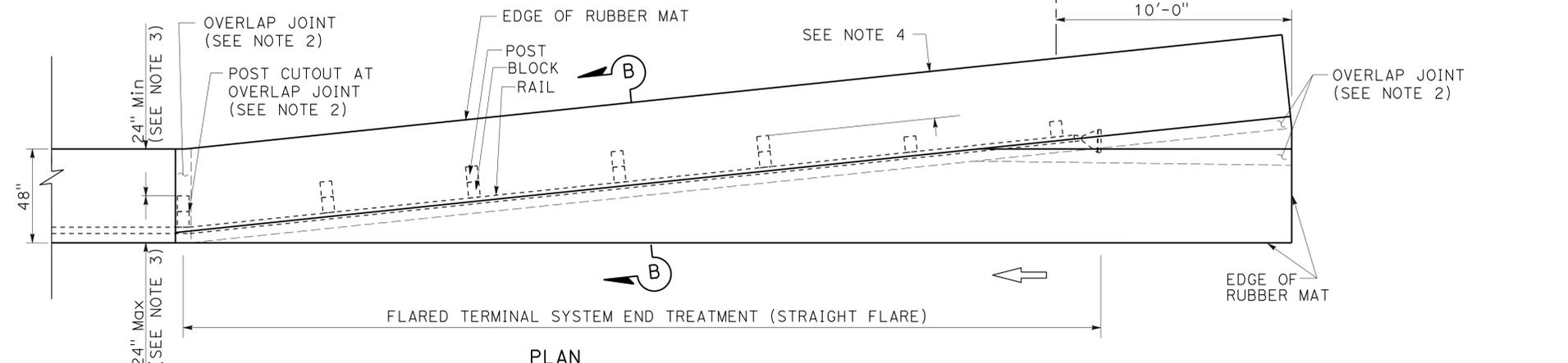
- RUBBER MAT MUST BE 48" WIDE INDIVIDUAL MATS OR 48" WIDE CONTINUOUS ROLL PRODUCT. INDIVIDUAL MATS AND CONTINUOUS ROLL PRODUCT SHOWN.
- SEE RUBBER MAT UNDER METAL GUARDRAIL FOR ADDITIONAL POST CUTOUT AND OVERLAP JOINT DETAILS.
- WHERE EDGE OF PAVED SHOULDER IS MORE THAN 24" FROM BACK OF POST, EDGE OF RUBBER MAT MUST BE 24" FROM BACK OF POST. WHERE PAVED SHOULDER IS CONSTRUCTED 24" OR LESS FROM BACK OF POST, ABUT EDGE OF RUBBER MAT AGAINST EDGE OF PAVED SHOULDER. WHERE DIKE IS CONSTRUCTED UNDER RAILING, ABUT EDGE OF RUBBER MAT AGAINST BACK OF DIKE.
- CONTINUE ALIGNMENT OF MAT EDGE AT OFFSET FROM BACK OF POST.
- LAP RUBBER MAT IN DIRECTION OF WATER FLOW.



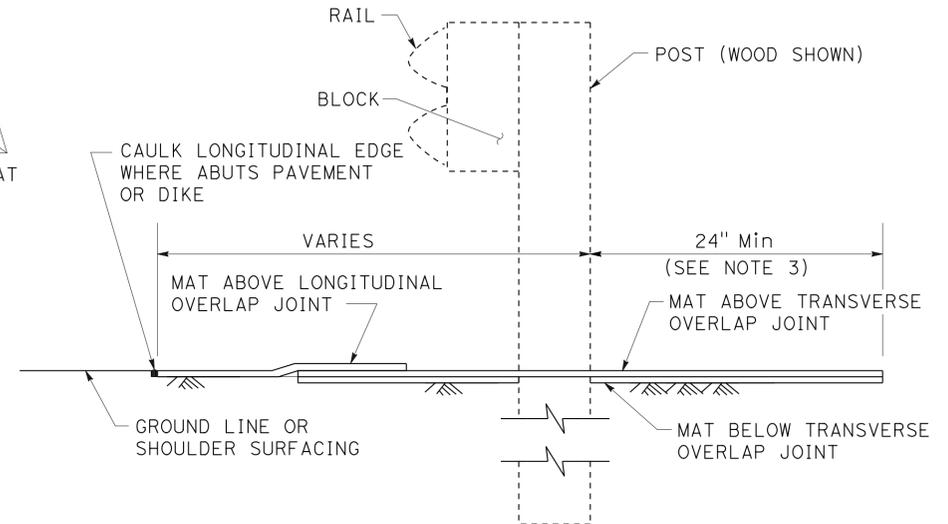
PLAN
IN-LINE TERMINAL SYSTEM END TREATMENT



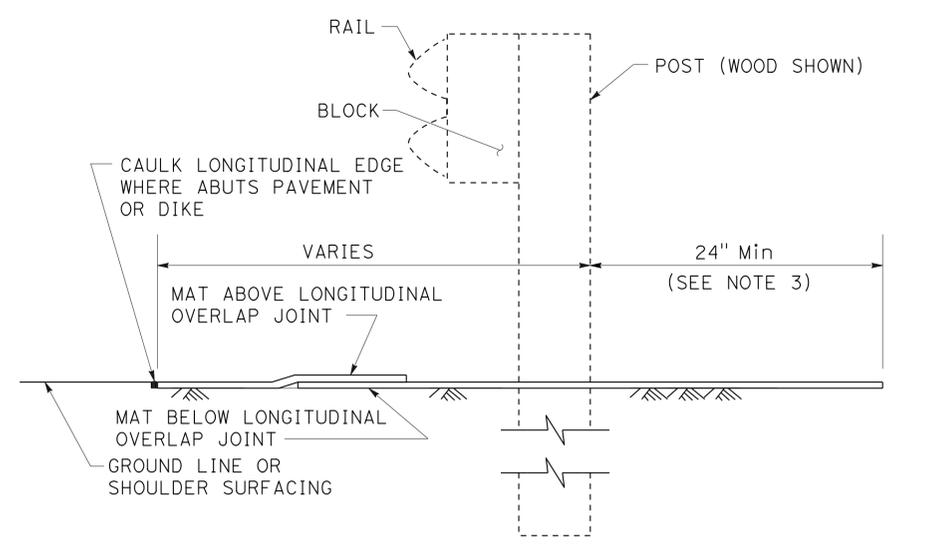
PLAN
FLARED TERMINAL SYSTEM END TREATMENT (CURVED FLARE)



PLAN
FLARED TERMINAL SYSTEM END TREATMENT (STRAIGHT FLARE)



SECTION A-A



SECTION B-B

RUBBER MAT UNDER TERMINAL SYSTEM END TREATMENT
(SEE NOTE 1)

CONSTRUCTION DETAILS
NO SCALE
C-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 FUNCTIONAL SUPERVISOR: ALI ALOATAMI
 CALCULATED/DESIGNED BY: AHMAD AHMAD
 CHECKED BY: ALI ALOATAMI
 REVISED BY: AHMAD AHMAD
 DATE REVISED: ALI ALOATAMI

NOTES:

1. EXACT SIGN LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, REFER TO MOTORIST INFORMATION PLANS AND TRAFFIC HANDLING PLANS.

**STATIONARY MOUNTED
CONSTRUCTION AREA SIGNS**

SIGN No. ⊗	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF POSTS AND POST SIZE	No. OF SIGNS
(A)	W20-1 Alternate	48" x 48"	RAMP WORK AHEAD	1 - 6" x 6"	4
(B)	W20-1 Alternate	36" x 36"	RAMP WORK AHEAD	1 - 4" x 6"	14
(C)	G20-2	48" x 24"	END ROAD WORK	1 - 4" x 6"	6
(D)	G20-2	36" x 18"	END ROAD WORK	1 - 4" x 6"	7

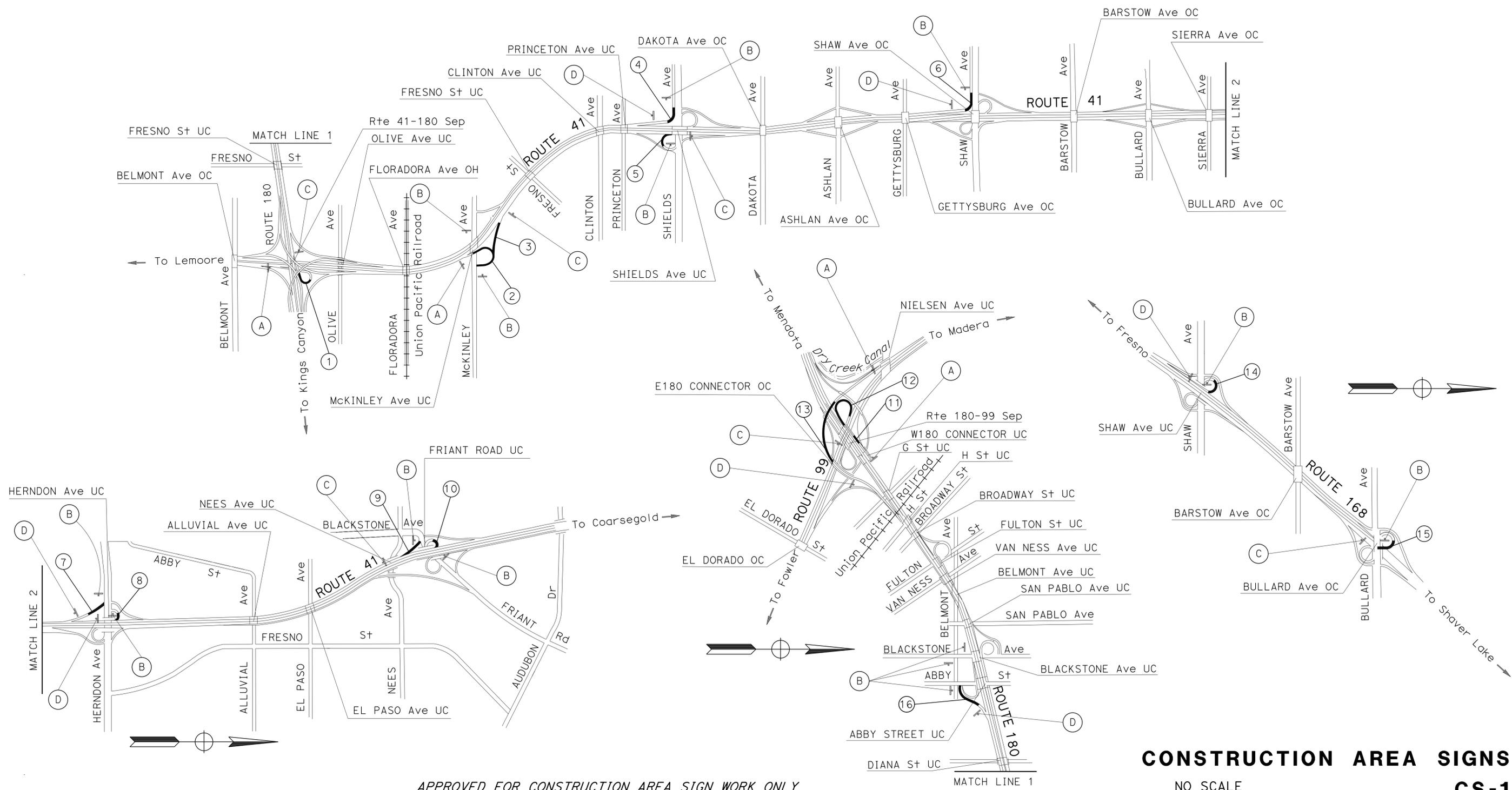
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99,168,180	Var	15	61

01-21-16
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

KAMRUL KHAN
 No. 74112
 Exp. 06/30/17
 CIVIL

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Kamrul Khan
 Hassan Taha
 Mohammed Oatami
 TRAFFIC DESIGN



APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CONSTRUCTION AREA SIGNS
NO SCALE
CS-1

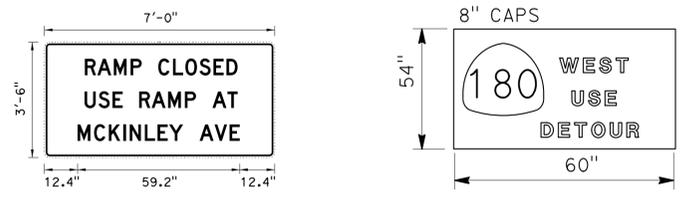
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI
 CALCULATED/DESIGNED BY: HASSAN TAHA
 CHECKED BY: KAMRUL KHAN
 REVISIONS: REVISED BY: DATE REVISED:

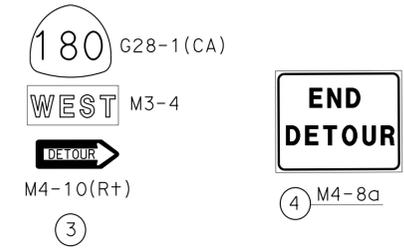
NOTES:

1. EXACT LOCATION AND POSITION OF SIGNS WILL BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, REFER TO CONSTRUCTION AREA SIGNS AND TRAFFIC HANDLING PLANS.
3. CALIFORNIA SIGN CODES ARE DESIGNATED BY (CA). OTHERWISE, FEDERAL (MUTCD) CODES ARE SHOWN.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99,168,180	Var	16	61
Kamrul Khan REGISTERED CIVIL ENGINEER			01-21-16 DATE		
2-22-16 PLANS APPROVAL DATE			KAMRUL KHAN No. 74112 Exp. 06/30/17 CIVIL		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

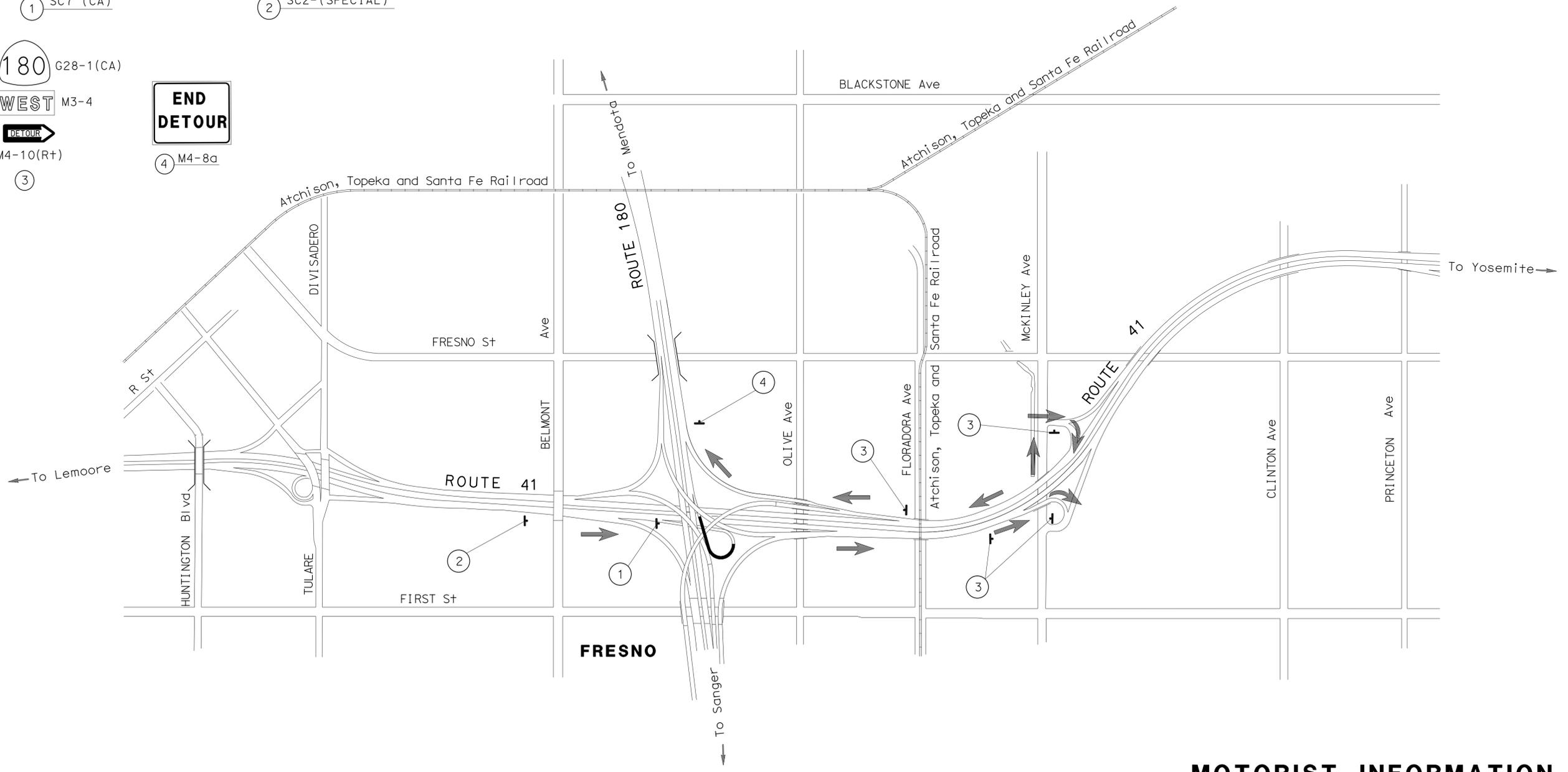


1 SC7 (CA)
 2 SC2-(SPECIAL)



LEGEND:

- ➔ DIRECTION OF DETOURED TRAFFIC
- WORK AREA
- ⊕ CONSTRUCTION AREA SIGN No.



MOTORIST INFORMATION PLAN
 (NB 41 TO WB 180 CLOSURE)

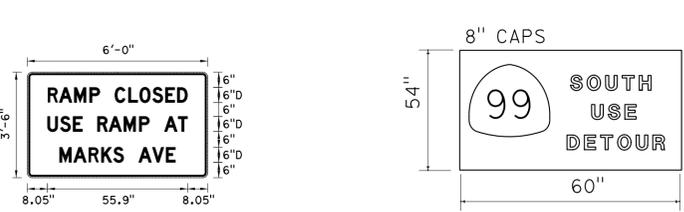
NO SCALE

MI-1

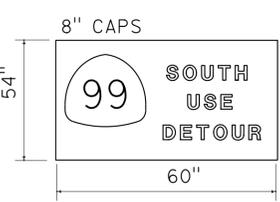
APPROVED FOR MOTORIST INFORMATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

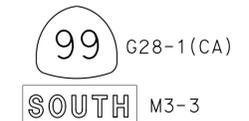
FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI
 CALCULATED/DESIGNED BY: HASSAN TAHA
 CHECKED BY: KAMRUL KHAN
 REVISOR: HASSAN TAHA
 DATE: 01-21-16



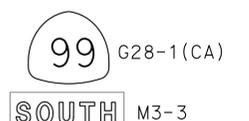
5 SC7 (CA)



6 SC2-(SPECIAL)



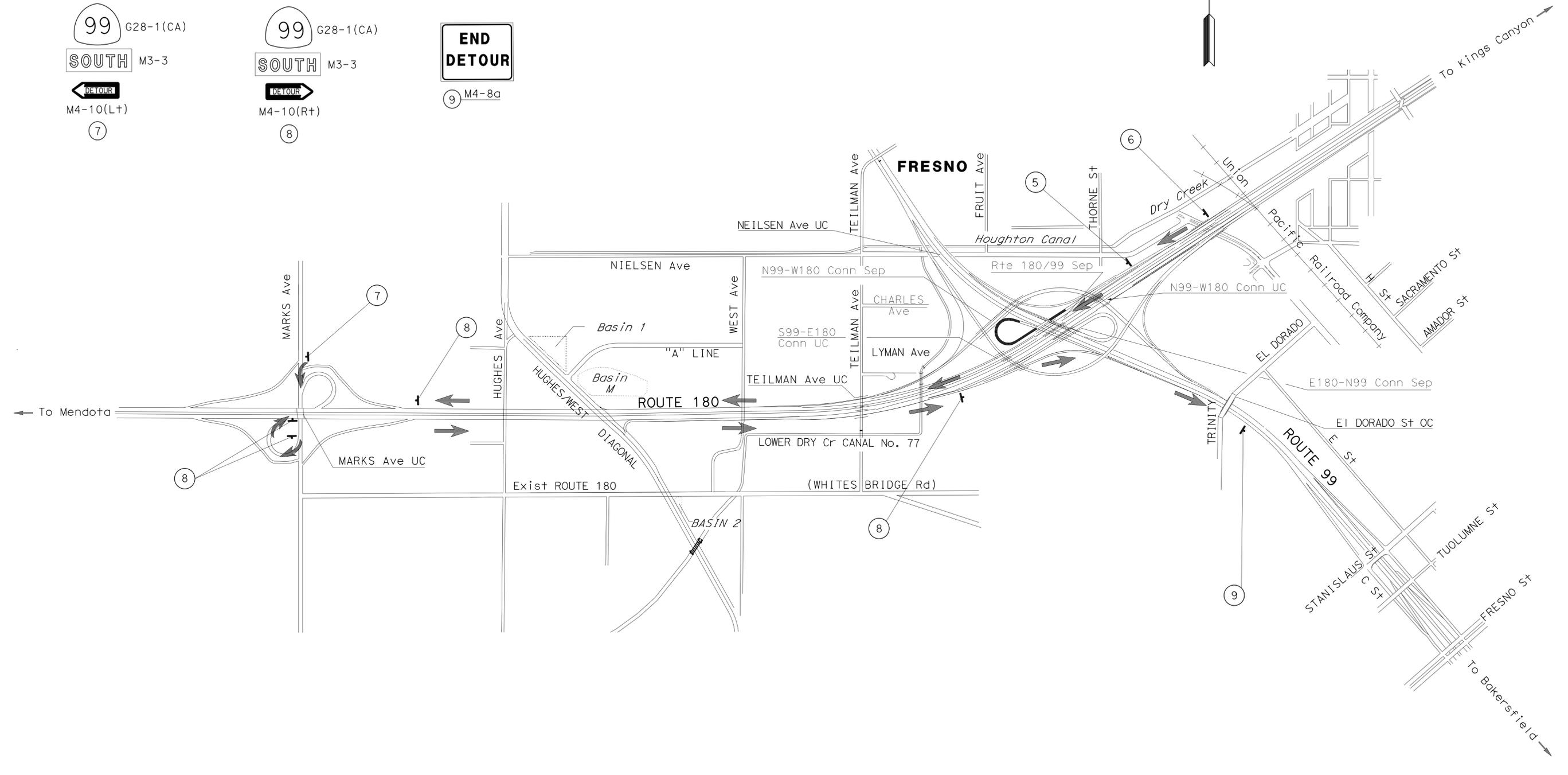
7 M4-10(L+)



8 M4-10(R+)



9 M4-8a



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	17	61

REGISTERED CIVIL ENGINEER: Kamrul Khan
 DATE: 01-21-16
 PLANS APPROVAL DATE: 2-22-16
 No. 74112
 Exp. 06/30/17
 CIVIL

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

MOTORIST INFORMATION PLAN
 (WB 180 TO SB 99 CLOSURE)

MI-2

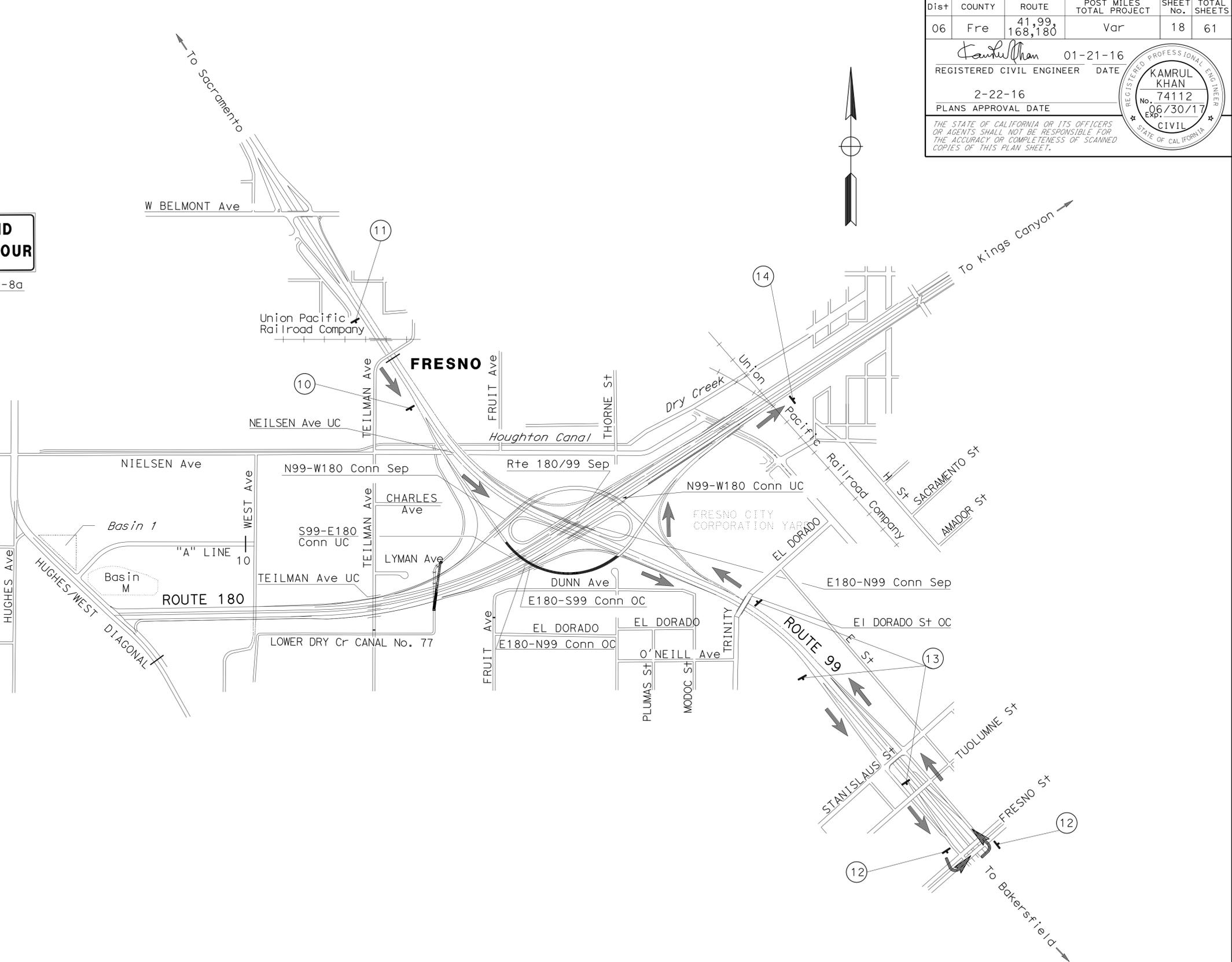
APPROVED FOR MOTORIST INFORMATION WORK ONLY

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI
 CALCULATED/DESIGNED BY: [Blank]
 CHECKED BY: [Blank]
 KAMRUL KHAN
 HASSAN TAHA
 REVISOR: [Blank]
 DATE: [Blank]

SC7 (CA) [Symbol 10]
 SC2-(SPECIAL) [Symbol 11]
 G28-1(CA) [Symbol 180]
 M3-2 [Symbol EAST]
 M4-10(L+) [Symbol 12]
 G28-1(CA) [Symbol 180]
 M3-2 [Symbol EAST]
 M4-10(R+) [Symbol 13]
 M4-8a [Symbol 14]
 END DETOUR [Symbol]



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	18	61

KAMRUL KHAN 01-21-16
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KAMRUL KHAN
 No. 74112
 Exp. 06/30/17
 CIVIL
 STATE OF CALIFORNIA

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MOTORIST INFORMATION PLAN
 (SB 99 TO EB 180 CLOSURE)

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NO SCALE

MI-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR MOHAMMED OATAMI
 CALCULATED/DESIGNED BY CHECKED BY
 KAMRUL KHAN HASSAN TAHA
 REVISED BY DATE REVISED

NOTE:

CALIFORNIA SIGN CODES ARE DESIGNATED BY (CA). OTHERWISE, FEDERAL (MUTCD) CODES ARE SHOWN.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	19	61

1-22-16
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

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

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SHEET No.	SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POSTS AND POST SIZE	No. OF SIGNS
MI-1	1	SC7 (CA)	AS SHOWN ON PLAN	42" x 84"	2-6"x6"	1
	2	SC2-(SPECIAL)	AS SHOWN ON PLAN	54" x 60"	2-6"x6"	1
	3	G28-1(CA)	AS SHOWN ON PLAN	24" x 28"	1-6"x6"	4
		M3-4	AS SHOWN ON PLAN	26" x 12"		
4	M4-10 (Rt)	AS SHOWN ON PLAN	48" x 18"	1-4"x4"	1	
MI-2	5	SC1-(SPECIAL)	AS SHOWN ON PLAN	42" x 72"	2-6"x6"	1
	6	SC2-(SPECIAL)	AS SHOWN ON PLAN	54" x 60"	2-6"x6"	1
	7	G28-1(CA)	AS SHOWN ON PLAN	24" x 28"	1-6"x6"	1
		M3-3	AS SHOWN ON PLAN	26" x 12"		
	8	M4-10 (Lt)	AS SHOWN ON PLAN	48" x 18"	1-6"x6"	4
MI-3	9	G28-1(CA)	AS SHOWN ON PLAN	24" x 28"	1-4"x4"	1
	10	M3-3	AS SHOWN ON PLAN	26" x 12"		
		M4-10 (Rt)	AS SHOWN ON PLAN	48" x 18"	1-6"x6"	1
	11	M4-8a	AS SHOWN ON PLAN	30" x 18"	2-6"x6"	1
MI-3	12	SC7 (CA)	AS SHOWN ON PLAN	42" x 84"	1-6"x6"	2
	13	SC2-(SPECIAL)	AS SHOWN ON PLAN	54" x 60"		
		G28-1(CA)	AS SHOWN ON PLAN	24" x 28"	1-6"x6"	3
	M3-2	AS SHOWN ON PLAN	26" x 12"			
	M4-10 (Lt)	AS SHOWN ON PLAN	48" x 18"			
14	G28-1(CA)	AS SHOWN ON PLAN	24" x 28"	1-4"x4"	1	

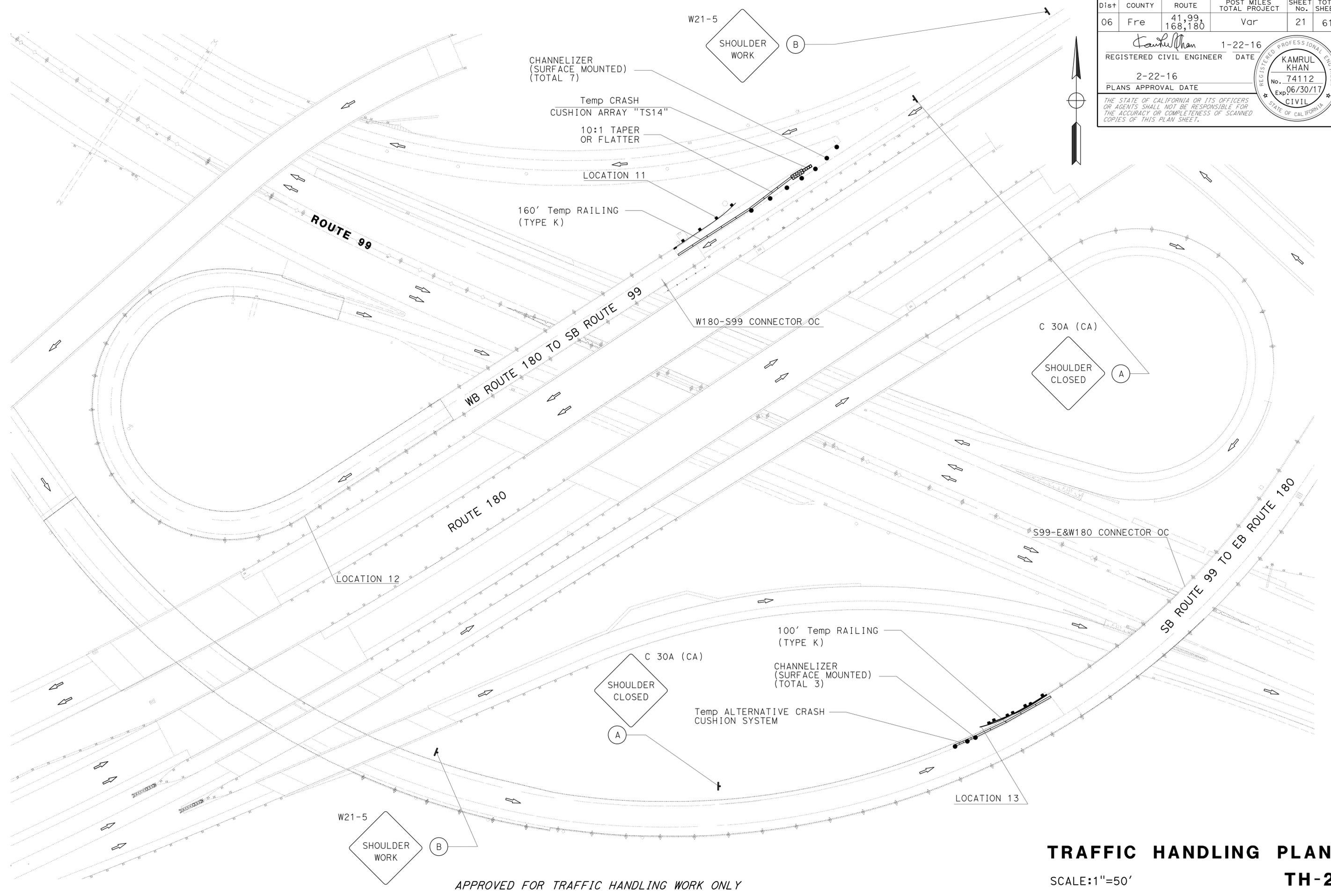
**MOTORIST INFORMATION QUANTITIES
MIQ-1**



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI
 CALCULATED/DESIGNED BY: CHECKED BY:
 KAMRUL KHAN HASSAN TAHA
 REVISED BY: DATE REVISED:

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	21	61

1-22-16
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE
 KAMRUL KHAN
 No. 74112
 Exp. 06/30/17
 CIVIL
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN
 TH-2
 SCALE: 1"=50'

LAST REVISION: DATE PLOTTED => 21-APR-2016
 01-22-16 TIME PLOTTED => 13:55

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

FUNCTIONAL SUPERVISOR
 MOHAMMED OATAMI

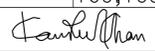
DESIGNED BY
 KAMRUL KHAN

CHECKED BY
 HASSAN TAHA

REVISIONS

NOTE:
 CALIFORNIA SIGN CODES ARE DESIGNATED BY (CA). OTHERWISE, FEDERAL (MUTCD) CODES ARE SHOWN.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	22	61

 1-22-16
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KAMRUL KHAN
 No. 74112
 Exp. 06/30/17
 CIVIL
 STATE OF CALIFORNIA

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TRAFFIC HANDLING QUANTITIES

LOCATION	LOCATION OF WORK	CHANNELIZER (SURFACE MOUNTED)	Temp CRASH CUSHION MODULE	Temp ALTERNATIVE CRASH CUSHION	Temp RAILING (TYPE K)
		EA	EA	EA	LF
NB ROUTE 41 TO WB ROUTE 180	OFF-RAMP (OUTSIDE SHOULDER)	8	14		160
NB ROUTE 41 TO WB ROUTE 180	OFF-RAMP (INSIDE SHOULDER)	3		1	240
WB ROUTE 180 TO SB ROUTE 99	OFF-RAMP (OUTSIDE SHOULDER)	7	14		160
SB ROUTE 99 TO EB ROUTE 180	OFF-RAMP (INSIDE SHOULDER)	3		1	100
TOTAL		21	28	2	660

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS (TRAFFIC HANDLING)

SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POST AND SIZE	No. OF SIGNS
(A)	C 30A (CA)	AS SHOWN ON PLAN	48" x 48"	1-6" x 6"	4
(B)	W21-5	AS SHOWN ON PLAN	48" x 48"	1-6" x 6"	4

TRAFFIC HANDLING QUANTITIES
THQ-1

LAST REVISION: 01-22-16 DATE PLOTTED => 21-APR-2016 TIME PLOTTED => 13:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99,168,180	Var	24	61

1-22-16
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

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NOTE:
CALIFORNIA SIGN CODES ARE DESIGNATED BY (CA). OTHERWISE, FEDERAL (MUTCD) CODES ARE SHOWN.

SIGN QUANTITIES

LOCATION DESCRIPTION	SIGN CODE	SIGN MESSAGE	PANEL SIZE	POST SIZE	SINGLE FACED	BACKGROUND		LEGEND		GRAFFITI FLOW		FURNISH SINGLE SHEET ALUMINUM SIGN		RETROREFLECTIVE SHEETING (TYPE XI)	INSTALL SIGN (SSBM)	OBJECT MARKER (TYPE P)
						SHEETING COLOR	RETROREFLECTIVITY ASTM TYPE	SHEETING COLOR	RETROREFLECTIVITY ASTM TYPE	STANDARD	PREMIUM	UNFRAMED				
												0.063" FOR RETROREFLECTIVE SHEETING (TYPE XI)	0.080" FOR RETROREFLECTIVE SHEETING (TYPE XI)			
WB 168 ON-RAMP FROM WB SHAW Ave PM 4.306 (ON EXISTING LIGHT POLE ADJACENT TO CROSS WALK)	W1-15	270-DEGREE CURVE	48" x 48"		X	YELLOW	XI	BLACK			X		16.00	16.00	1	
	W13-3	ADVISORY RAMP SPEED	48" x 60"		X	YELLOW	XI	BLACK			X		20.00	20.00	1	
LOCATION # 1	TYPE P (CA)	TYPE P OBJECT MARKER	12" x 36"	1 - 4" x 4"	X	YELLOW	XI	BLACK			X	3.00		3.00		2
LOCATION # 11	TYPE P (CA)	TYPE P OBJECT MARKER	12" x 36"	1 - 4" x 4"	X	YELLOW	XI	BLACK			X	3.00		3.00		1
LOCATION # 13	TYPE P (CA)	TYPE P OBJECT MARKER	12" x 36"	1 - 4" x 4"	X	YELLOW	XI	BLACK			X	3.00		3.00		1
SHEET TOTAL												9.00	36.00	45.00	2	4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI
 CALCULATED/DESIGNED BY: KAMRUL KHAN
 CHECKED BY: HASSAN TAHA
 REVISED BY: DATE REVISED:

SIGN QUANTITIES
SQ-1

LAST REVISION: DATE PLOTTED => 21-APR-2016
 01-22-16
 TIME PLOTTED => 13:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	25	61

A Ahmad 12/11/15
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 AHMAD K. AHMAD
 No. 69064
 Exp. 6-30-16
 CIVIL
 STATE OF CALIFORNIA

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MIDWEST GUARDRAIL SYSTEM QUANTITIES

LOCATION No.	LOCATION	SIDE		LAYOUT TYPE (N)	REMOVE GUARDRAIL		ALTERNATIVE FLARED TERMINAL SYSTEM	ALTERNATIVE IN-LINE TERMINAL SYSTEM	TRANSITION RAILING (TYPE WB-31)	TREATED WOOD WASTE	CONCRETE BARRIER (TRANSITION)	HMA (TYPE A)	REMARKS	
		L+	R+		STEEL POST	MGS (8' POST)								
		LF	LF		LF	EA								
①	NB 41 CONNECTOR TO WB 180	X		12A	225	162.5		1	1	3116	3.5	1.2	N41-W180 CONNECTOR SEP APPROACH	
①	NB 41 CONNECTOR TO WB 180		X	12B	75		25	1	1	1312	3.5	1.2	N41-W180 CONNECTOR SEP APPROACH	
⑪	WB 180 CONNECTOR TO SB 99 OC		X	12B	75		25	1	1	1312	3.5	1.2	W180-S99 CONNECTOR OC APPROACH	
⑬	SB 99 CONNECTOR TO EB 180	X		12B	75	25.0		1	1	1312	3.5	1.2	E180 CONNECTOR OC APPROACH	
TOTAL					450	187.5	50	3	1	4	7052	14.0	4.8*	

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

HIGH FRICTION SURFACE TREATMENT

LOCATION No.	LOCATION	SQYD	REMARKS**
①	NB 41 CONNECTOR TO WB 180	1,050	FROM 410' EAST OF N41-W180 CONNECTOR Sep APPROACH SLAB TO N41-W180 CONNECTOR Sep APPROACH SLAB
②	NB 41 OFF-RAMP TO MCKINLEY Ave	2,927	FROM MCKINLEY Ave UC DEPARTURE SLAB TO 10' FROM CROSSWALK LINE AT MCKINLEY Ave
③	NB 41 ON-RAMP FROM MCKINLEY Ave	2,595	FROM 10' TO 545' FROM CROSSWALK LINE AT MCKINLEY Ave
④	SB 41 ON-RAMP FROM EB SHIELDS Ave	853	FROM 100' TO 315' FROM RAISED PCC CURB AT RAMP ENTRANCE GORE ON SHIELDS Ave
⑤	NB 41 ON-RAMP FROM EB SHIELDS Ave	841	FROM 275' SOUTH OF SHIELDS Ave UC APPROACH SLAB TO SHIELDS Ave UC APPROACH SLAB
⑥	SB 41 ON-RAMP FROM EB SHAW Ave	945	FROM 40' TO 310' FROM CROSSWALK LINE AT SHAW Ave
⑦	SB 41 ON-RAMP FROM EB HERNDON Ave	710	FROM 45' TO 265' FROM RAISED PCC CURB AT RAMP ENTRANCE GORE ON HERNDON Ave
⑧	SB 41 ON-RAMP FROM WB HERNDON Ave	795	FROM 360' FROM CROSSWALK LINE AT HERNDON Ave TO HERNDON Ave UC APPROACH SLAB
⑨	SB 41 ON-RAMP FROM EB FRIANT Rd	953	FROM 105' TO 455' FROM CROSSWALK LINE AT FRIANT ROAD
⑩	SB 41 ON-RAMP FROM WB FRIANT Rd	798	FROM 365' FROM CROSSWALK LINE AT FRIANT ROAD TO FRIANT ROAD UC APPROACH SLAB
⑫	SB 99 CONNECTOR FROM WB 180	3,052	FROM 0' FROM END OF W180-N99 CONNECTOR OC TO RAISED PCC CURB AT RAMP GORE
⑬	SB 99 CONNECTOR TO EB 180	6,424	FROM 1330' WEST OF E180 CONNECTOR OC APPROACH SLAB TO E180 CONNECTOR OC APPROACH SLAB
⑭	WB 168 ON-RAMP FROM WB SHAW Ave	1,865	FROM 185' FROM CROSSWALK AT SHAW Ave TO SHAW Ave UC APPROACH SLAB
⑮	WB 168 ON-RAMP FROM WB BULLARD Ave	1,868	FROM 310' TO 735' FROM CROSSWALK LINE AT BULLARD Ave
⑯	EB 180 ON-RAMP FROM ABBY St	1,264	FROM 110' TO 495' FROM CROSSWALK LINE AT ABBY St
TOTAL		26,940	

** EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 FUNCTIONAL SUPERVISOR: ALI ALOATAMI
 CALCULATED/DESIGNED BY: AHMAD AHMAD
 CHECKED BY: ALI ALOATAMI
 REVISED BY: AHMAD AHMAD
 DATE REVISED:

LAST REVISION: DATE PLOTTED => 21-APR-2016 TIME PLOTTED => 13:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	26	61

A. Ahmad 12/11/15
 REGISTERED CIVIL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

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COLD PLANE AC PAVEMENT QUANTITIES

LOCATION No.		RAMPS					COLD PLANE AC Pvm+ **	HMA (TYPE A)	EDGE TREATMENT	TACK COAT	
		BEGIN	END	LENGTH	WIDTH	LANE*					CONTROL POINT
				FT	FT						
①	NB 41 CONNECTOR TO WB 180	0	23	23	6	R-1 OUTSIDE	230' EAST OF N41-W180 CONNECTOR SEP APPROACH SLAB	15	3		0.007
		98	177	79	6	R-1 OUTSIDE		53	9		0.024
		177	230	53	12	R-1 FULL WIDTH		71	12		0.032
②	NB 41 OFF-RAMP TO MCKINLEY Ave	0	490	490	30	FULL PAVEMENT WIDTH	MCKINLEY Ave UC DEPARTURE SLAB	1633	278		0.749
③	NB 41 ON-RAMP FROM MCKINLEY Ave	10	545	535	28	FULL PAVEMENT WIDTH	CROSSWALK LINE AT MCKINLEY Ave	1664	283	5.03	0.763
⑤	NB 41 ON-RAMP FROM EB SHIELDS Ave	0	275	275	34	FULL PAVEMENT WIDTH	275' SOUTH OF SHIELDS Ave UC APPROACH SLAB	1039	177	2.59	0.476
⑥	SB 41 ON-RAMP FROM EB SHAW Ave	40	310	270	36	FULL PAVEMENT WIDTH	CROSSWALK LINE AT SHAW Ave	1080	184		0.495
⑦	SB 41 ON-RAMP FROM EB HERNDON Ave	45	265	220	34	FULL PAVEMENT WIDTH	RAISED PCC CURB AT RAMP ENTRANCE GORE ON HERNDON Ave	831	141		0.381
⑧	SB 41 ON-RAMP FROM WB HERNDON Ave	360	595	235	34	FULL PAVEMENT WIDTH	CROSSWALK LINE AT HERNDON Ave	888	151	2.21	0.407
⑨	SB 41 ON-RAMP FROM EB FRIANT Rd	105	455	350	22	FULL PAVEMENT WIDTH	CROSSWALK LINE AT FRIANT Rd	856	145	3.29	0.392
⑩	SB 41 ON-RAMP FROM WB FRIANT Rd	365	585	220	34	FULL PAVEMENT WIDTH	CROSSWALK LINE AT FRIANT Rd	831	141	2.08	0.381
⑫	SB 99 CONNECTOR FROM WB 180	28	104	76	12	R-1 FULL WIDTH	END OF W180-S99 CONNECTOR OC	101	17		0.046
		116	143	27	6	R-1 OUTSIDE		18	3		0.008
		166	178	12	6	R-1 OUTSIDE		8	1		0.004
		195	218	23	6	R-1 OUTSIDE		15	3		0.007
		241	310	69	6	R-1 OUTSIDE		46	8		0.021
		399	443	44	6	R-1 OUTSIDE		29	5		0.013
635	670	35	12	R-1 FULL WIDTH	47	8		0.021			
⑬	SB 99 CONNECTOR TO EB 180	0	44	44	6	R-2 INSIDE	820' WEST OF E180 CONNECTOR OC APPROACH SLAB	29	5		0.013
		84	111	27	6	R-1 OUTSIDE		18	3		0.008
		142	347	205	6	R-1 OUTSIDE		137	23		0.063
		299	314	15	12	R-2 FULL WIDTH		20	3		0.009
		379	504	125	6	R-1 OUTSIDE		83	14		0.038
		519	632	113	12	R-1 FULL WIDTH		151	26		0.069
		709	756	47	6	R-1 OUTSIDE		31	5		0.014
		784	805	21	6	R-2 OUTSIDE		14	2		0.006
							SUBTOTAL	9708	1650	15.20	4.447
							TOTAL	9708	1665.20***		4.447

* SEE CONSTRUCTION DETAIL C-3.
 ** EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.
 *** QUANTITY INCLUDED IN HMA (TYPE A) TABLE.

SUMMARY OF QUANTITIES

Q-2

LAST REVISION: DATE PLOTTED => 21-APR-2016 13:55
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	27	61

A Ahmad 12/11/15
REGISTERED CIVIL ENGINEER DATE

2-22-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AHMAD K. AHMAD
No. 69064
Exp. 3-30-16
CIVIL
STATE OF CALIFORNIA

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AC DIKE QUANTITIES

LOCATION No.	LOCATION	SIDE		REMOVE AC DIKE	PLACE HMA DIKE (TYPE F)	PLACE HMA DIKE (TYPE C)	HMA (TYPE A)	REMARKS
		L+	R+	LF	LF	LF	TON	
⑪	WB 180 CONNECTOR TO SB 99 OC		X	91	53.5	37.5	9.3	W180-S99 CONNECTOR OC APPROACH
⑬	SB 99 CONNECTOR TO EB 180	X		91	53.5	37.5	9.3	E180 CONNECTOR APPROACH
TOTAL				182	107	75	18.6*	

* QUANTITY INCLUDED IN HMA (TYPE A) TABLE.

RUBBER MAT

LOCATION	DESCRIPTION	SIDE		SQYD
		L+	R+	
①	NB 41 CONNECTOR TO WB 180		X	47
①	NB 41 CONNECTOR TO WB 180	X		117
⑪	WB 180 CONNECTOR TO SB 99		X	47
⑬	SB 99 CONNECTOR TO EB 180	X		47
TOTAL				258

HMA (TYPE A)

DESCRIPTION	TON
COLD PLANE AC QUANTITIES	1665.20
AC DIKES QUANTITIES	18.60
MGS QUANTITIES	4.80
TOTAL	1688.60

SUMMARY OF QUANTITIES

Q-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 Caltrans®
 FUNCTIONAL SUPERVISOR: ALI ALOATAMI
 AHMAD AHMAD
 ALI ALOATAMI
 REVISIONS: 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	28	61

LICENSED LANDSCAPE ARCHITECT
 2-22-16
 PLANS APPROVAL DATE

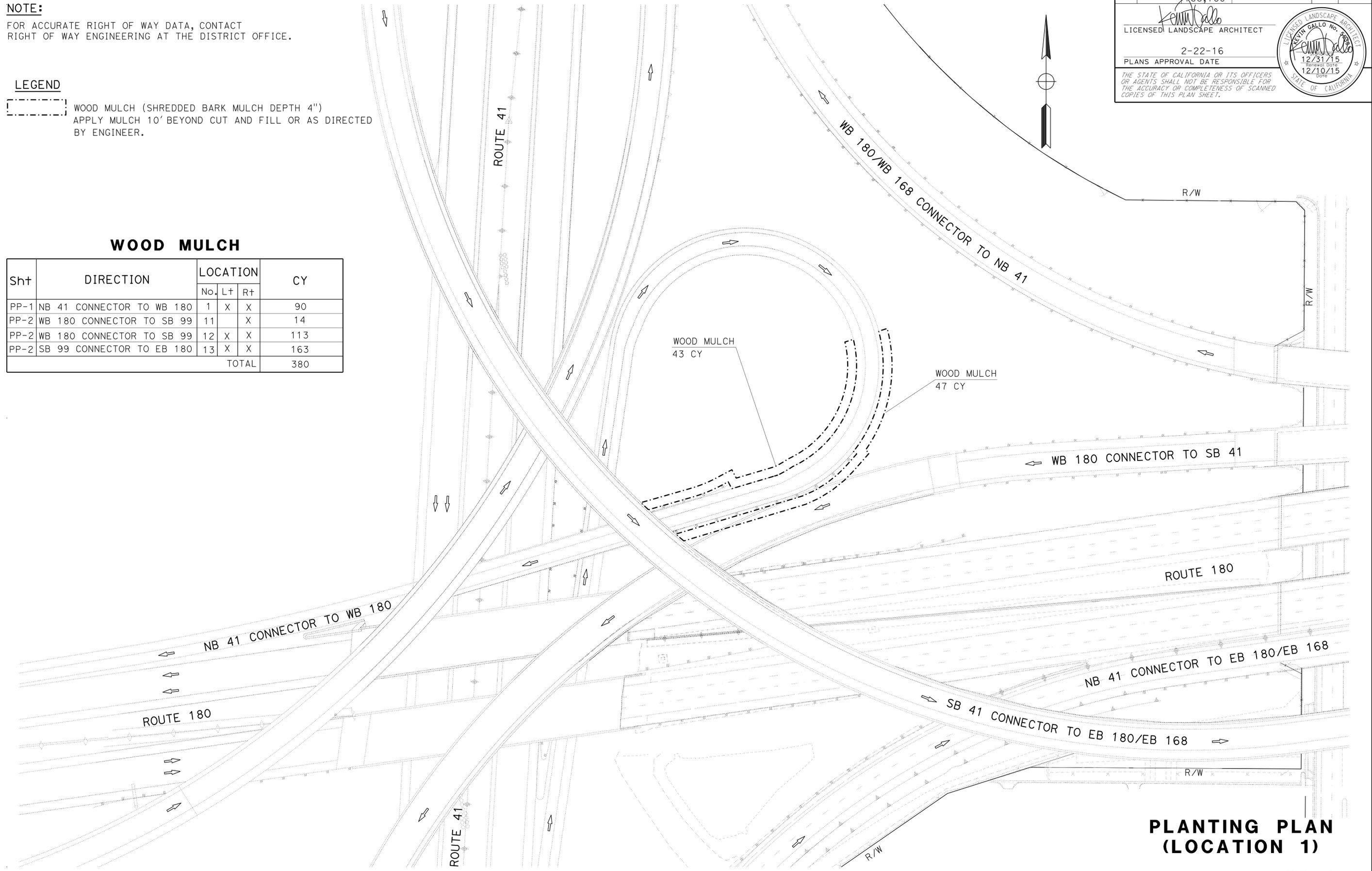
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

LEGEND
 WOOD MULCH (SHREDDED BARK MULCH DEPTH 4")
 APPLY MULCH 10' BEYOND CUT AND FILL OR AS DIRECTED BY ENGINEER.

WOOD MULCH

Sht	DIRECTION	LOCATION			CY
		No.	L+	R+	
PP-1	NB 41 CONNECTOR TO WB 180	1	X	X	90
PP-2	WB 180 CONNECTOR TO SB 99	11		X	14
PP-2	WB 180 CONNECTOR TO SB 99	12	X	X	113
PP-2	SB 99 CONNECTOR TO EB 180	13	X	X	163
TOTAL					380



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 BRAD COLE
 CALCULATED/DESIGNED BY
 CHECKED BY
 RAYMOND SEGURA
 KEVIN GALLO
 REVISED BY
 DATE REVISED

APPROVED FOR PLANTING WORK ONLY

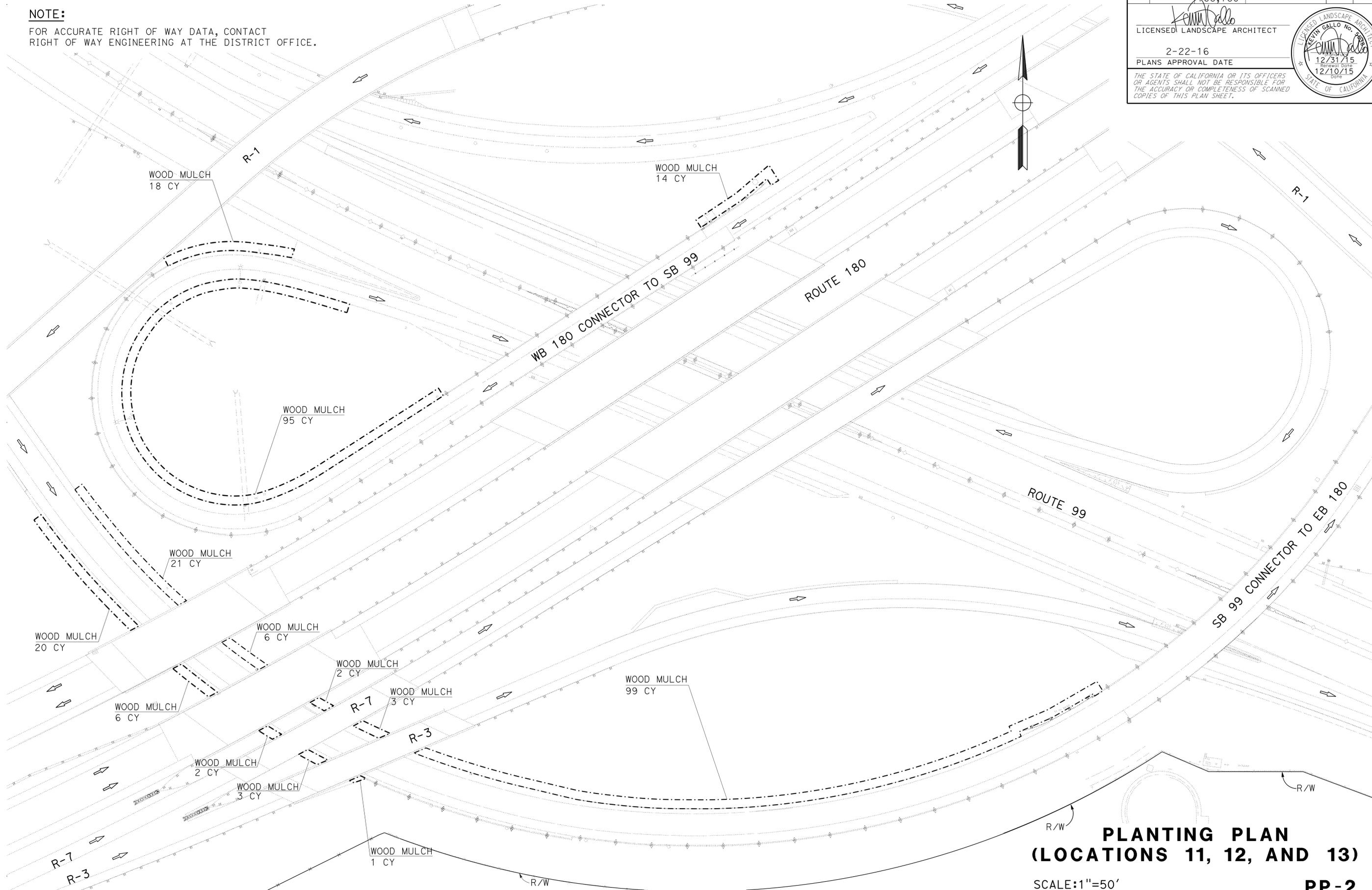
**PLANTING PLAN
 (LOCATION 1)**

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

LAST REVISION DATE PLOTTED => 21-APR-2016
 02-19-16 TIME PLOTTED => 13:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	29	61
 LICENSED LANDSCAPE ARCHITECT					
2-22-16 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

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



**PLANTING PLAN
(LOCATIONS 11, 12, AND 13)**
SCALE: 1"=50'
PP-2

APPROVED FOR PLANTING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT
BRAD COLE

CALCULATED/DESIGNED BY
CHECKED BY

RAYMOND SEGURA
KEVIN GALLO

REVISED BY
DATE REVISED

REVISIONS

USERNAME => s113541
DGN FILE => 0614000060su002.dgn

RELATIVE BORDER SCALE
1" = 10' IN INCHES



UNIT 1501

PROJECT NUMBER & PHASE

06140000601

LAST REVISION DATE PLOTTED => 21-APR-2016
01-21-16 TIME PLOTTED => 13:55

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR
 ALI BAKHDOUD

CALCULATED/DESIGNED BY
 CHECKED BY

GURVINDERJIT S. BAINS
 PAUL MATOS

REVISOR
 DATE REVISOR

CSB
 02-10-16

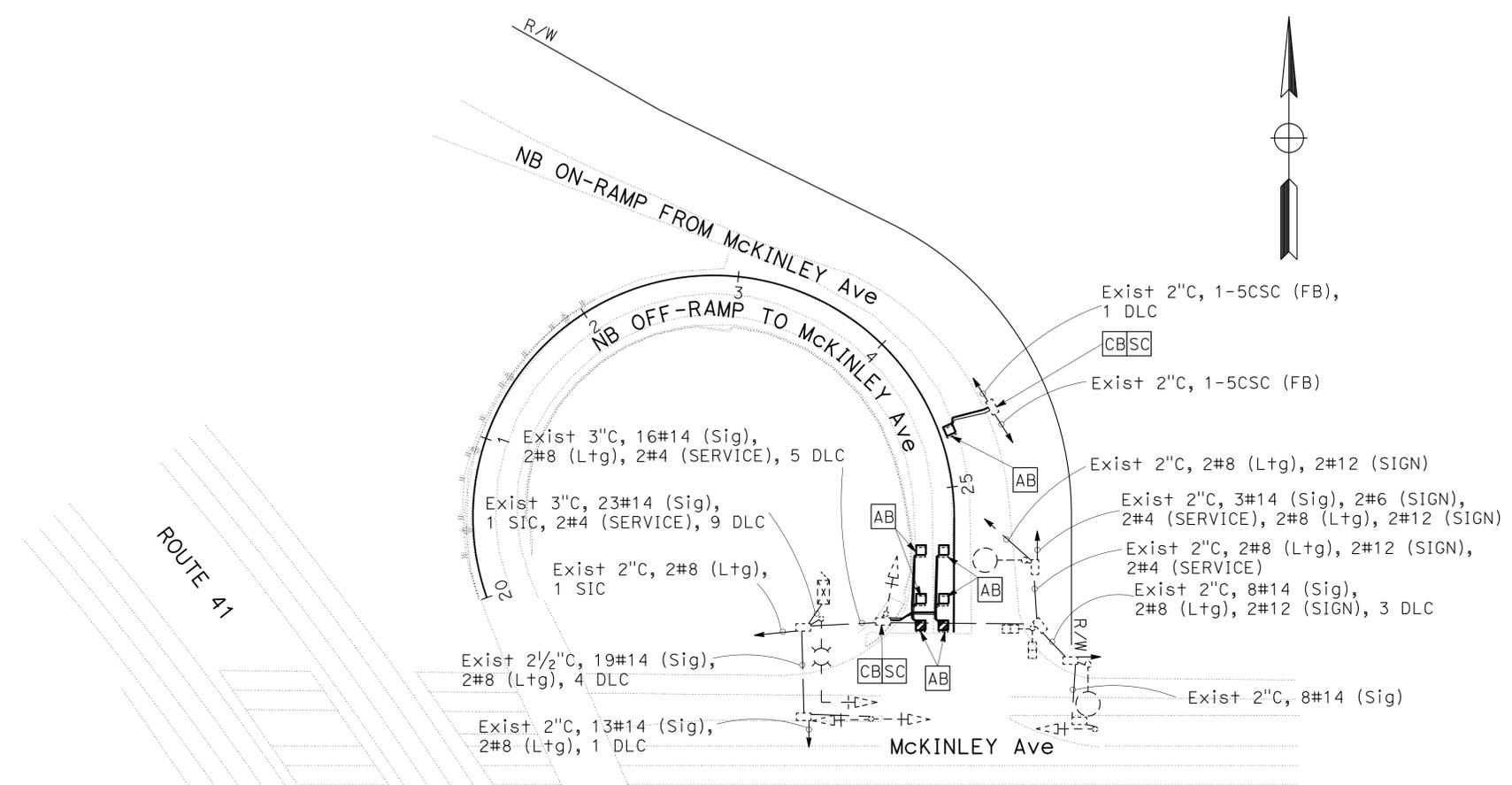
NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	30	61

Paul Matos 2-11-16
 REGISTERED ELECTRICAL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
PAUL MATOS
 No. 18757
 Exp. 6/30/17
 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.



APPROVED FOR ELECTRICAL WORK ONLY

INDUCTIVE LOOP DETECTOR

SCALE: 1"=50'

E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
Caltrans ELECTRICAL DESIGN	ALI BAKHOUD	PAUL MATOS	PAUL MATOS	02-10-16
PROJECT TITLE	DESIGNED BY	CHECKED BY	DATE	REVISION

NOTE:

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

LEGEND:

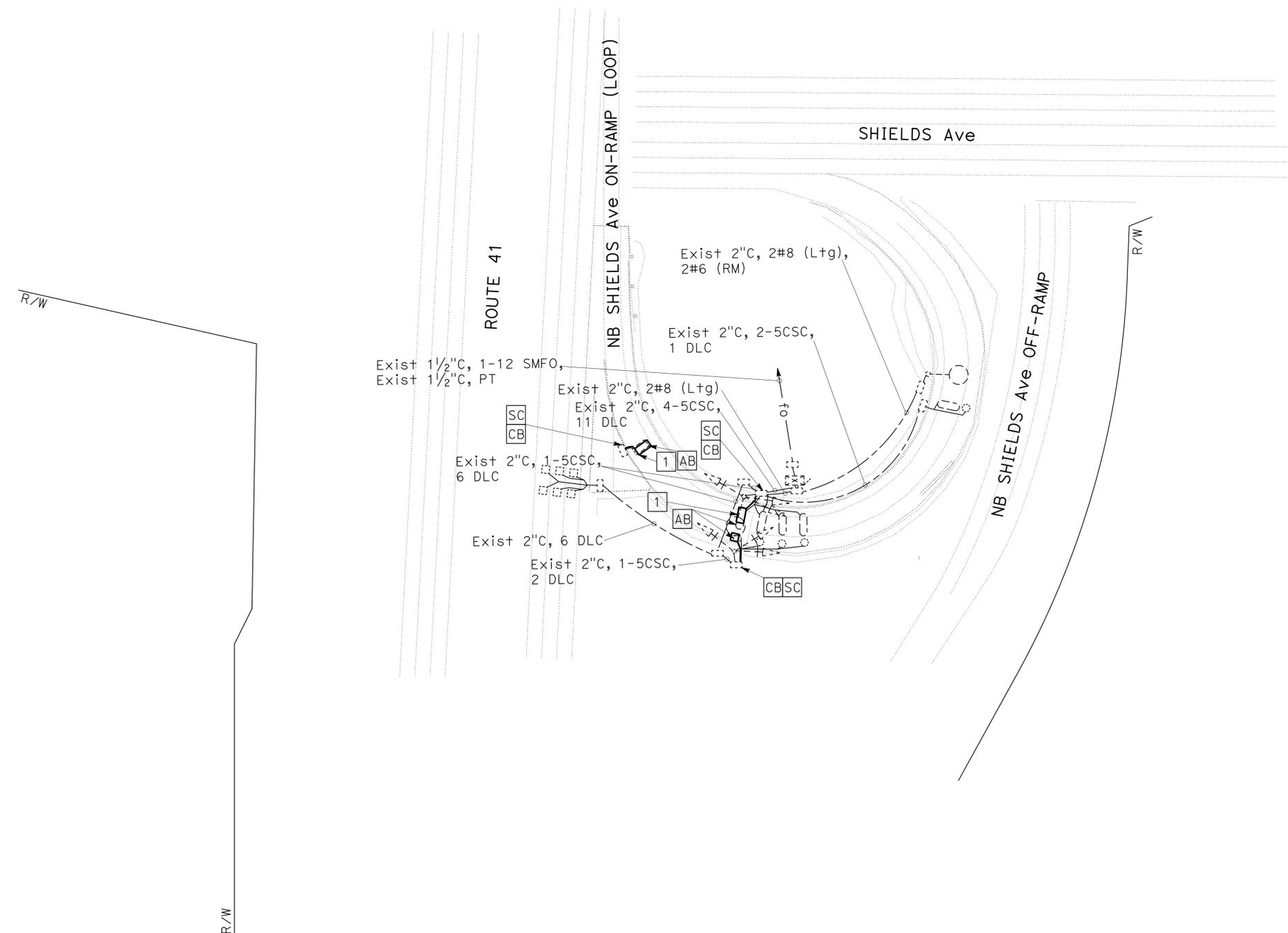
- 1 THE DIMENSIONS FOR THE DETECTOR LOOP ARE 12'X6'.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	31	61

Paul Matos 2-11-16
 REGISTERED ELECTRICAL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
PAUL MATOS
 No. 18757
 Exp. 6/30/17
 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.



APPROVED FOR ELECTRICAL WORK ONLY

INDUCTIVE LOOP DETECTOR

E-2

SCALE: 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR
 ALI BAKHDOUD

CALCULATED/DESIGNED BY
 CHECKED BY

GURVINDERJIT S. BAINS
 PAUL MATOS

REVISOR BY
 DATE REVISED

CSB
 02-10-16

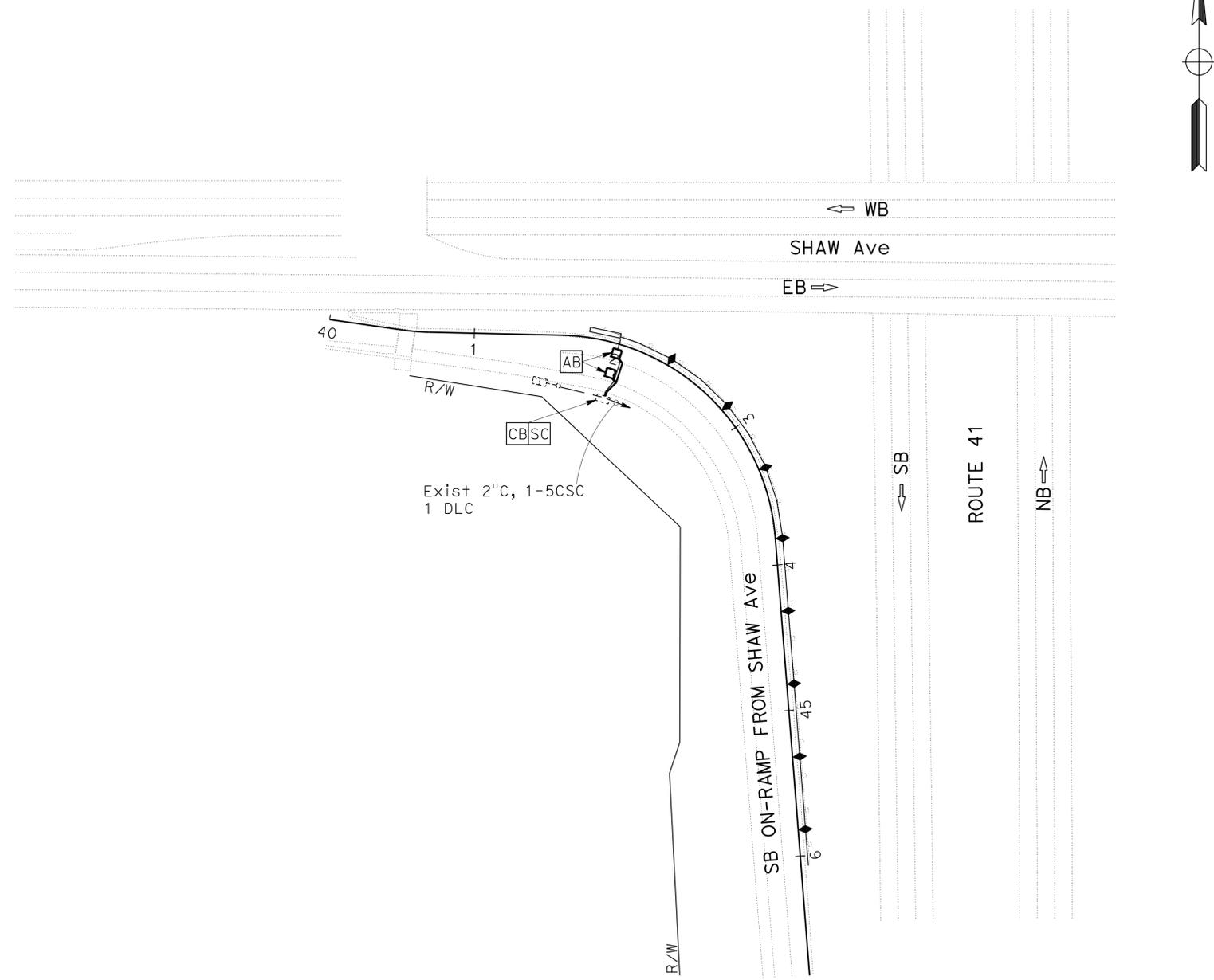
NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99,168,180	Var	32	61

Paul Matos 2-11-16
 REGISTERED ELECTRICAL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
PAUL MATOS
 No. 18757
 Exp. 6/30/17
 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.



APPROVED FOR ELECTRICAL WORK ONLY

INDUCTIVE LOOP DETECTOR

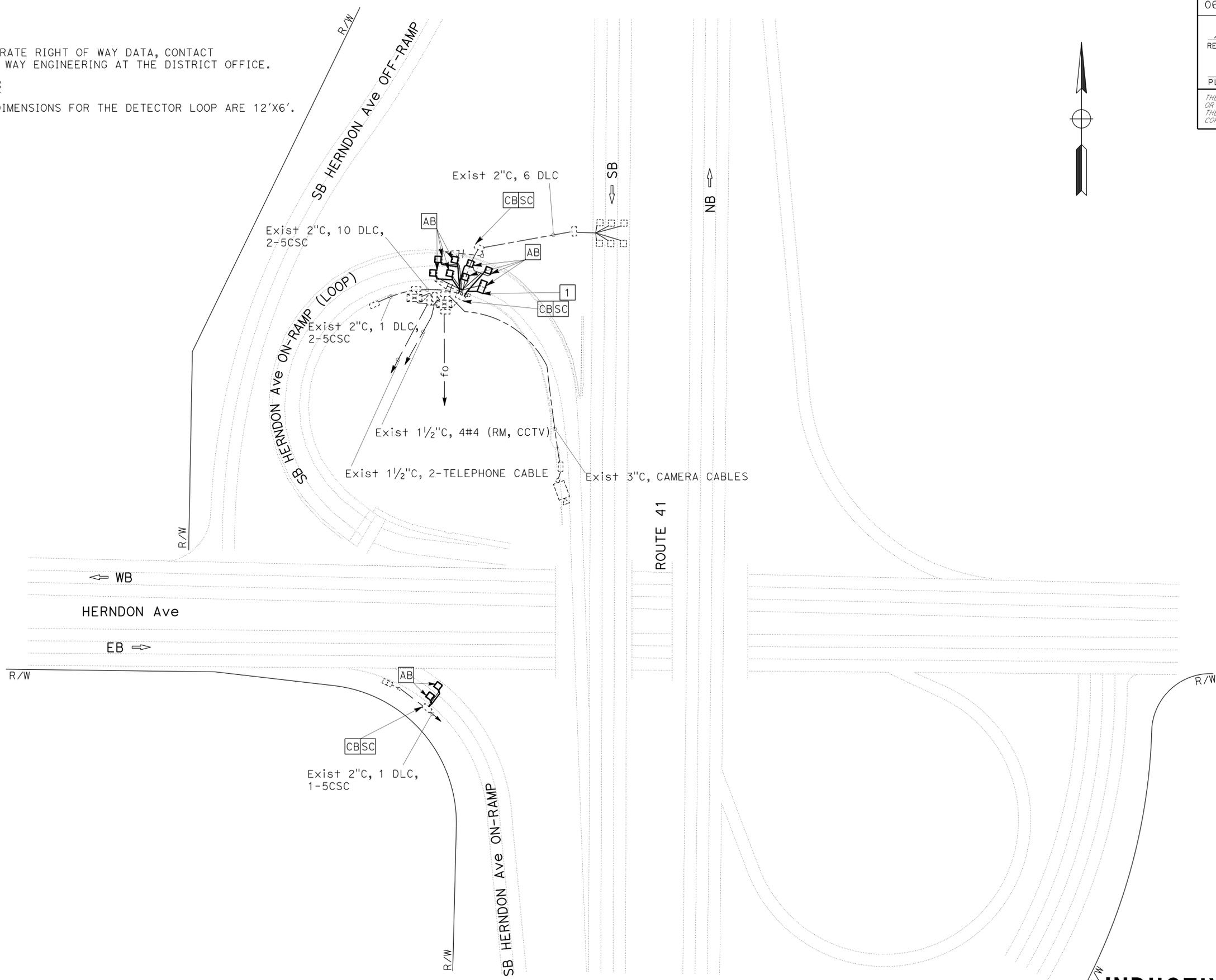
E-3

SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	33	61
<i>Paul Matos</i> 2-11-16 REGISTERED ELECTRICAL ENGINEER DATE					
2-22-16			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

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

LEGEND:
 1 THE DIMENSIONS FOR THE DETECTOR LOOP ARE 12'X6'.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISIONS	DATE
Caltrans ELECTRICAL DESIGN	ALI BAKHOUD	REVISOR	DATE
		PAUL MATOS	02-10-16
	CHECKED BY	DESIGNED BY	
		GURVINDERJIT S. BAINS	
		GSB	

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1"=50'

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
Caltrans ELECTRICAL DESIGN	ALI BAKHDOUD	PAUL MATOS	GSB	02-10-16

NOTE:

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

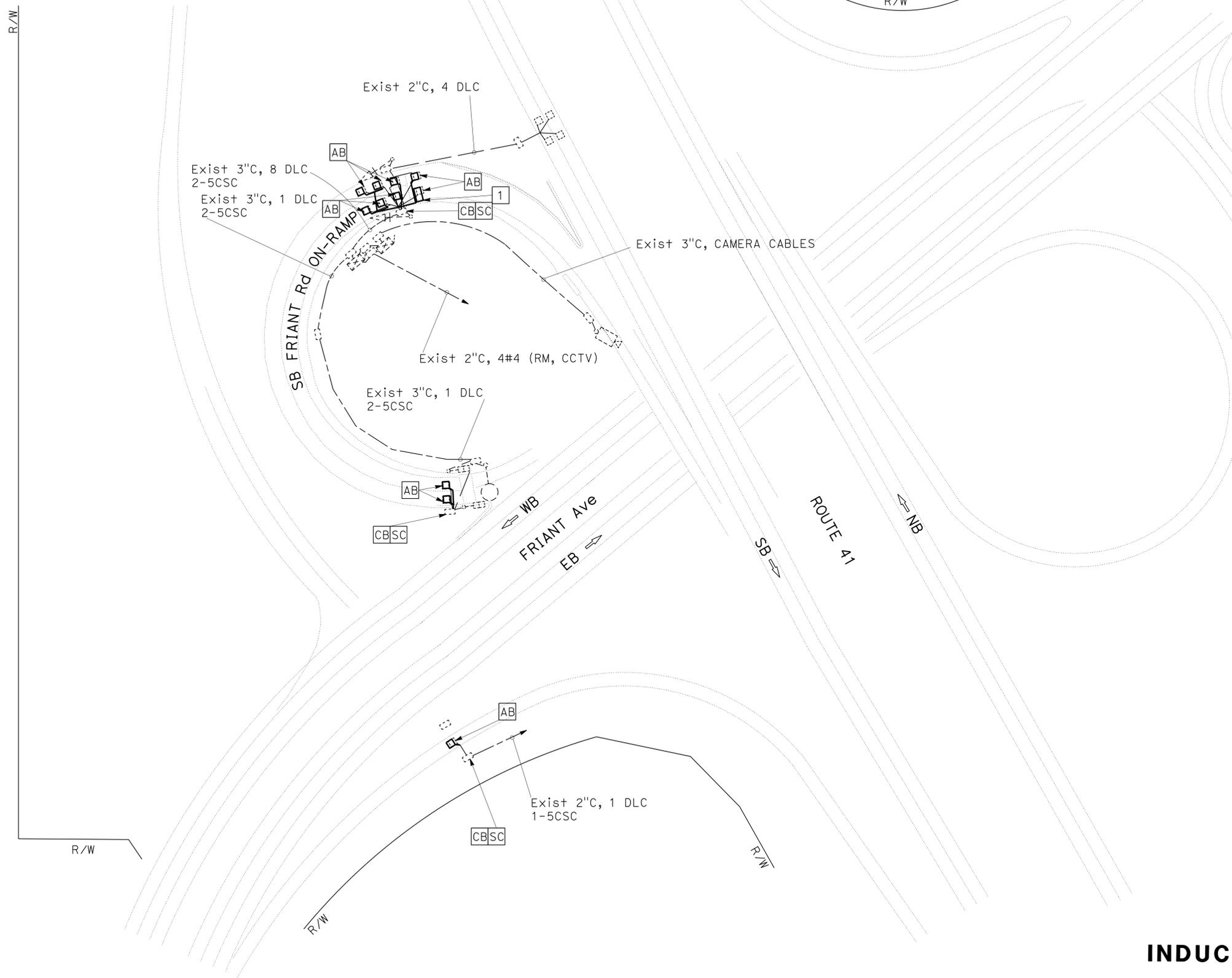
LEGEND:

- 1 THE DIMENSIONS FOR THE DETECTOR LOOP ARE 12'X6'.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	34	61

Paul Matos 2-11-16
 REGISTERED ELECTRICAL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

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



INDUCTIVE LOOP DETECTOR

E-5

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1"=50'

LAST REVISION DATE PLOTTED => 21-APR-2016 TIME PLOTTED => 13:55

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

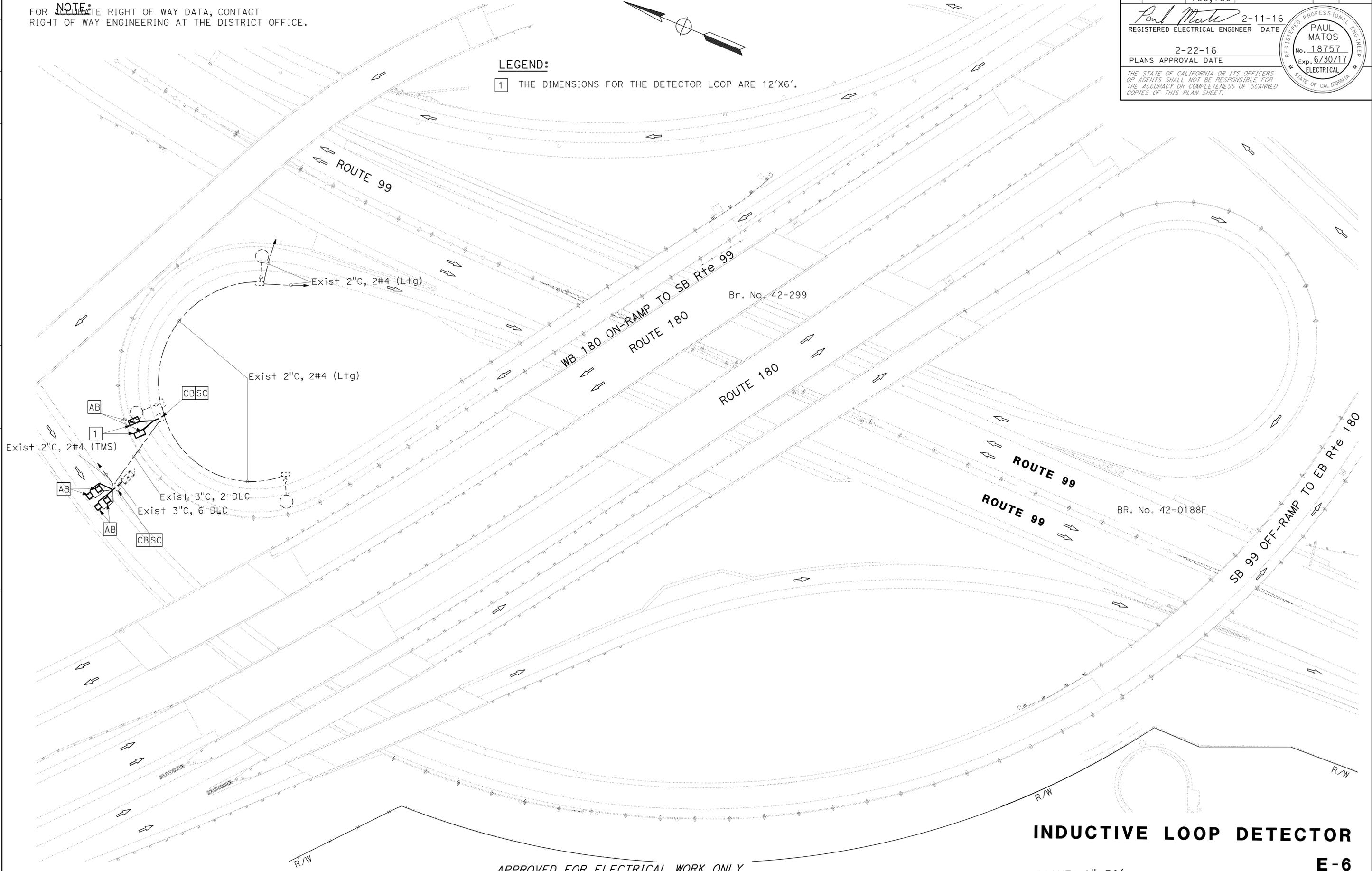
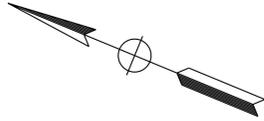
FUNCTIONAL SUPERVISOR: ALI BAKHDOUD
 CALCULATED/DESIGNED BY: GURVINDERJIT S. BAINS
 CHECKED BY: PAUL MATOS
 REVISIONS:
 02-10-16: GSB, REVISED BY: PAUL MATOS, DATE REVISED: 02-10-16

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	35	61

Paul Matos 2-11-16
 REGISTERED ELECTRICAL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:
 1 THE DIMENSIONS FOR THE DETECTOR LOOP ARE 12'X6'.



APPROVED FOR ELECTRICAL WORK ONLY

INDUCTIVE LOOP DETECTOR
E-6
 SCALE: 1"=50'

LAST REVISION DATE PLOTTED => 21-APR-2016 02-10-16 TIME PLOTTED => 13:55

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	36	61

Paul Matos 2-11-16
 REGISTERED ELECTRICAL ENGINEER DATE
 2-22-16
 PLANS APPROVAL DATE

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

INDUCTIVE LOOP DETECTOR

SHEET No.	DETECTOR LOOP TYPE A, 6'X12'	DETECTOR LOOP TYPE A	DETECTOR LOOP TYPE D
	EA		
E-1		5	2
E-2	2	1	
E-3		2	
E-4	1	9	
E-5	1	10	
E-6	2	4	

ELECTRICAL QUANTITIES

E-7

	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	
MtI	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	
Obir	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 MtI	PERMEABLE MATERIAL	

	P continued	
PG	PROFILE GRADE	
PI	POINT OF INTERSECTION	
PJP	PARTIAL JOINT PENETRATION	
Pkwy	PARKWAY	
PL, 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	
SL	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	
TeI	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	
WWL	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
06	Fre	41,99, 168,180	Var	37	61

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 2-22-16

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

TABLE A

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

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

TABLE B

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

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS
(SHEET 2 OF 2)**

NO SCALE

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

2010 REVISED STANDARD PLAN RSP A10B

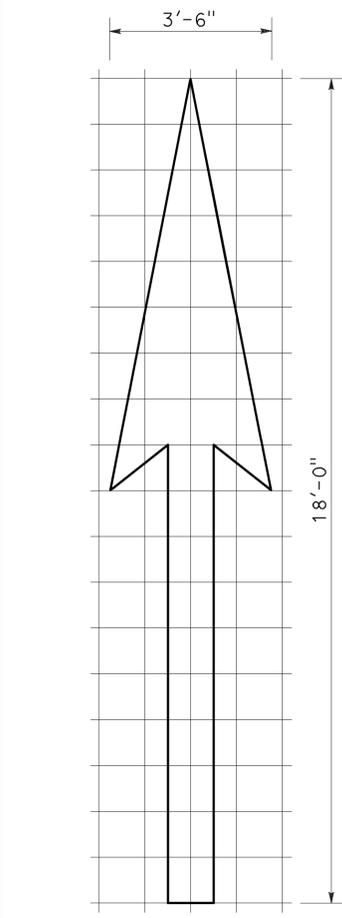
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	38	61

Registered Professional Engineer
 Roberto L. McLaughlin
 No. C40375
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

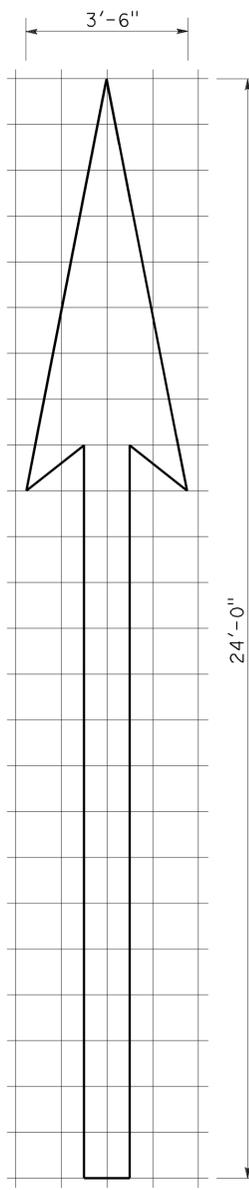
April 20, 2012
 PLANS APPROVAL DATE

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

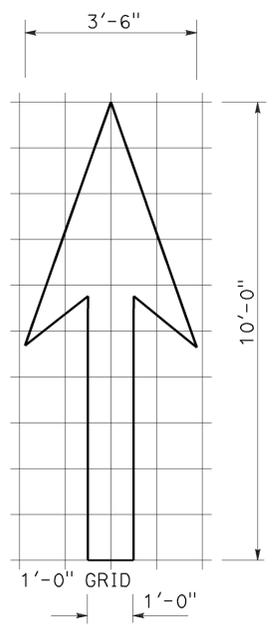
TO ACCOMPANY PLANS DATED 2-22-16



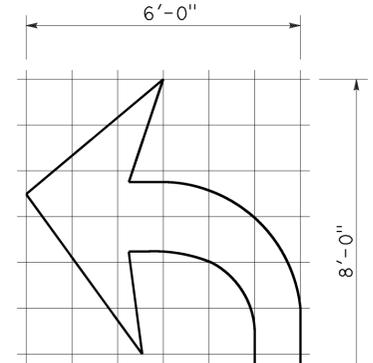
A=25 ft²
TYPE I 18'-0" ARROW



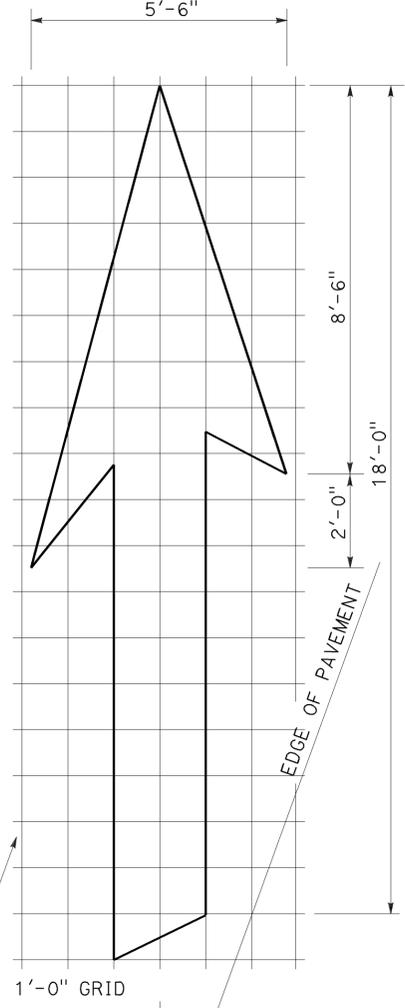
A=31 ft²
TYPE I 24'-0" ARROW



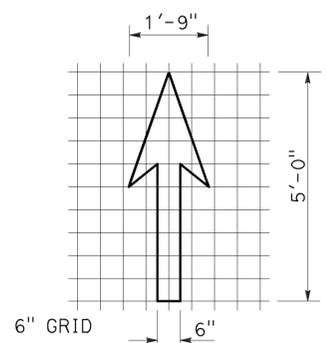
A=14 ft²
TYPE I 10'-0" ARROW



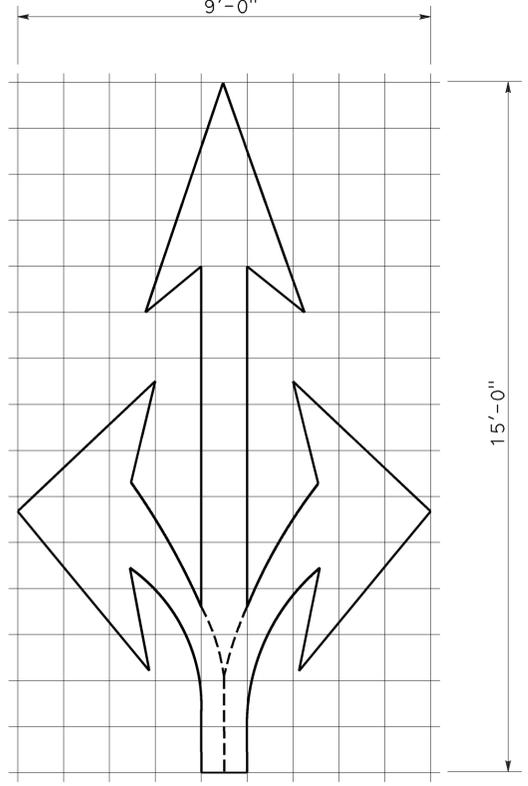
A=15 ft²
TYPE IV (L) ARROW
 (For Type IV (R) arrow, use mirror image)



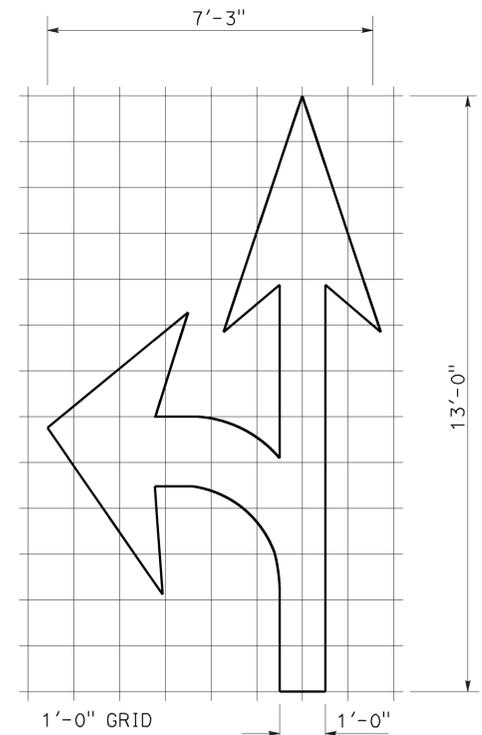
A=42 ft²
TYPE VI ARROW
 Right lane drop arrow
 (For left lane, use mirror image)



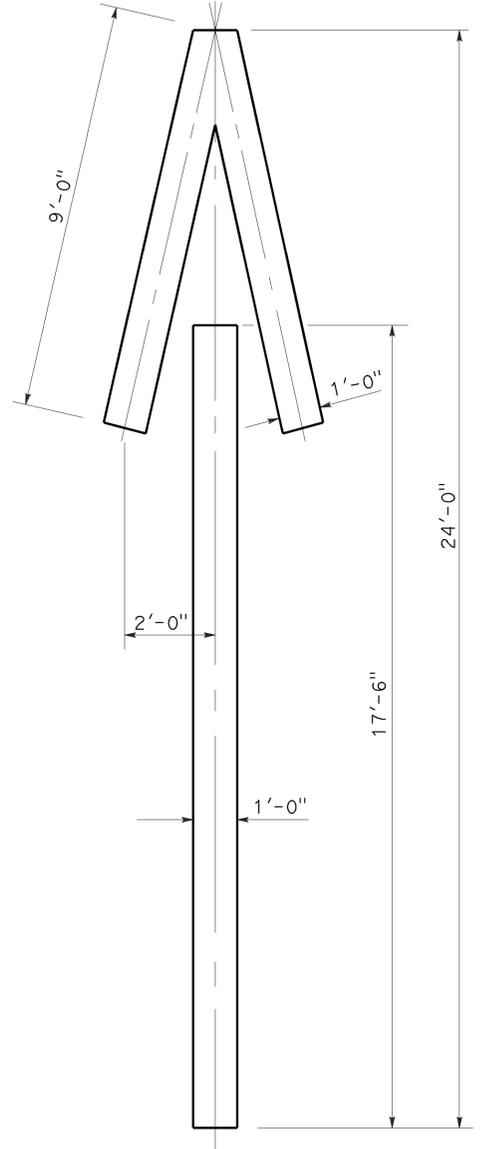
A=3.5 ft²
BIKE LANE ARROW



A=36 ft²
TYPE VIII ARROW



A=27 ft²
TYPE VII (L) ARROW
 (For Type VII (R) arrow, use mirror image)



A=33 ft²
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.

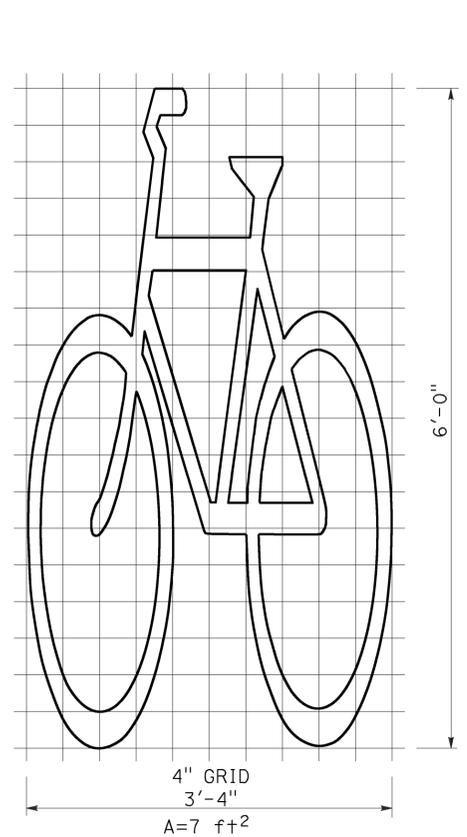
REVISED STANDARD PLAN RSP A24A

2010 REVISED STANDARD PLAN RSP A24A

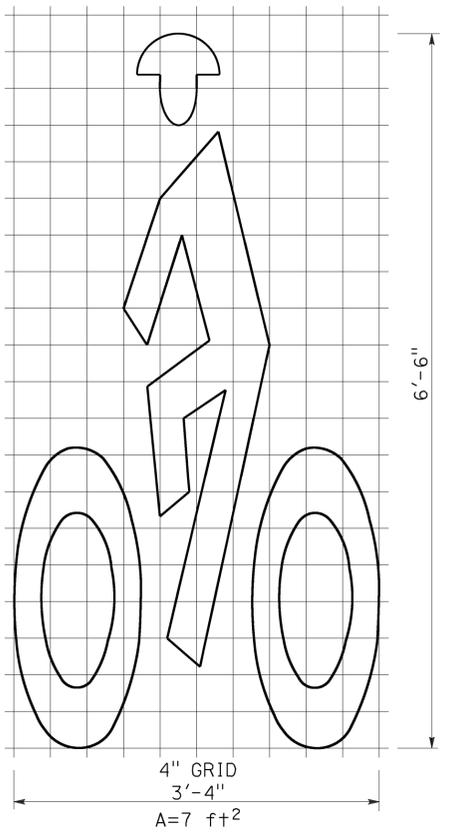
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	39	61

Registered Professional Engineer
 Roberto L. McLaughlin
 No. C40375
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

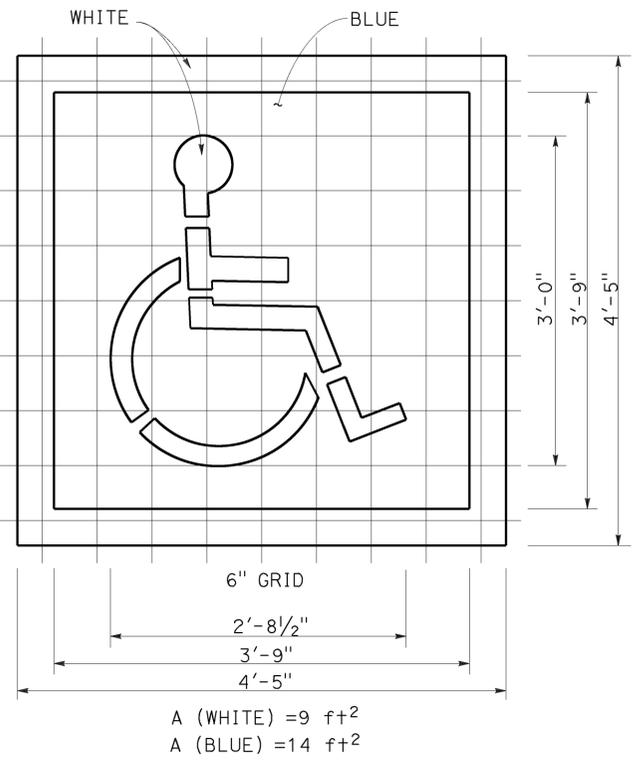
October 19, 2012
 PLANS APPROVAL DATE
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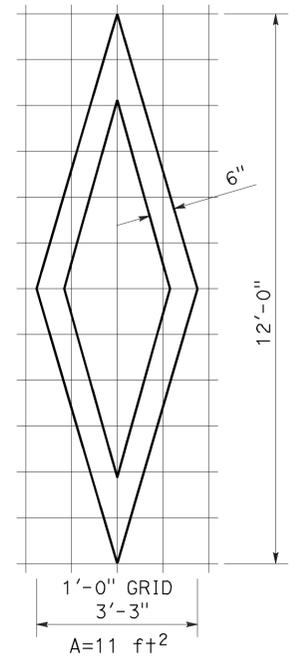
BIKE LANE SYMBOL WITHOUT PERSON



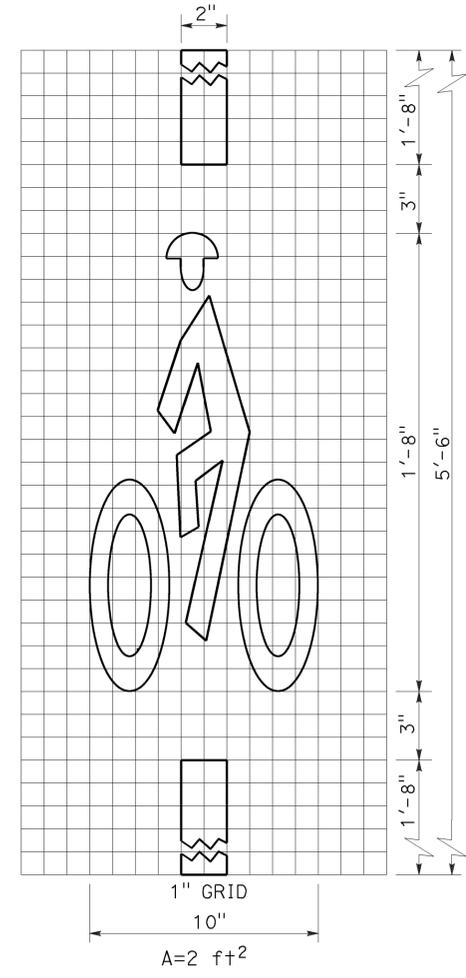
BIKE LANE SYMBOL WITH PERSON



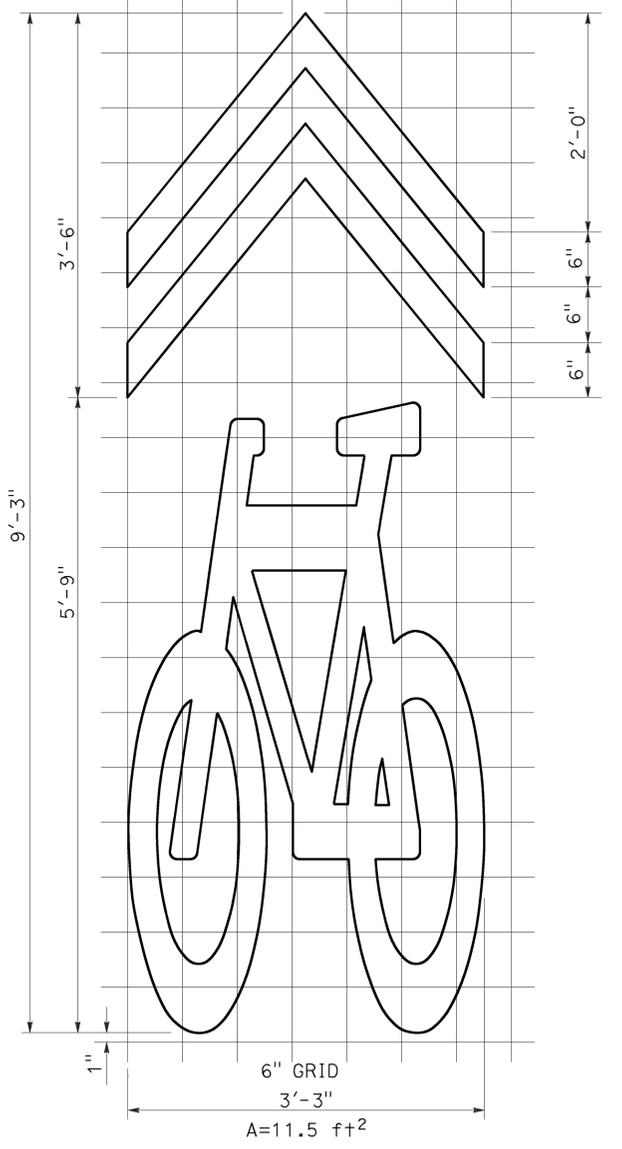
INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) MARKING



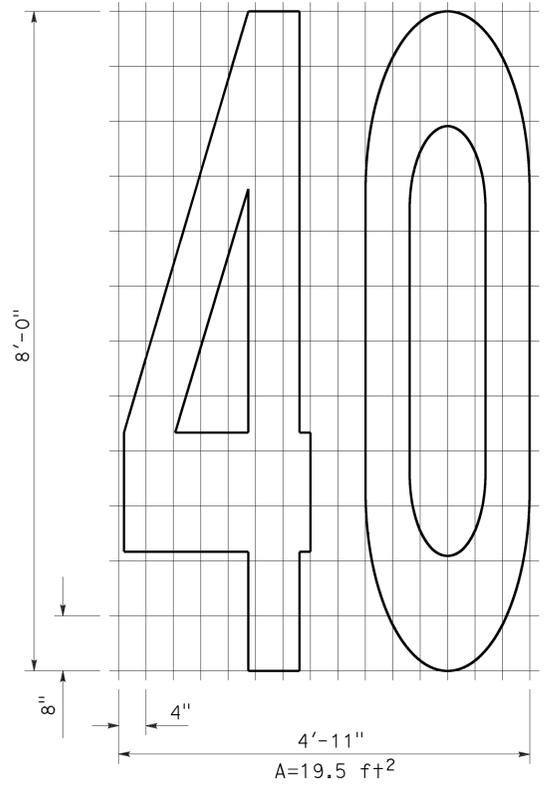
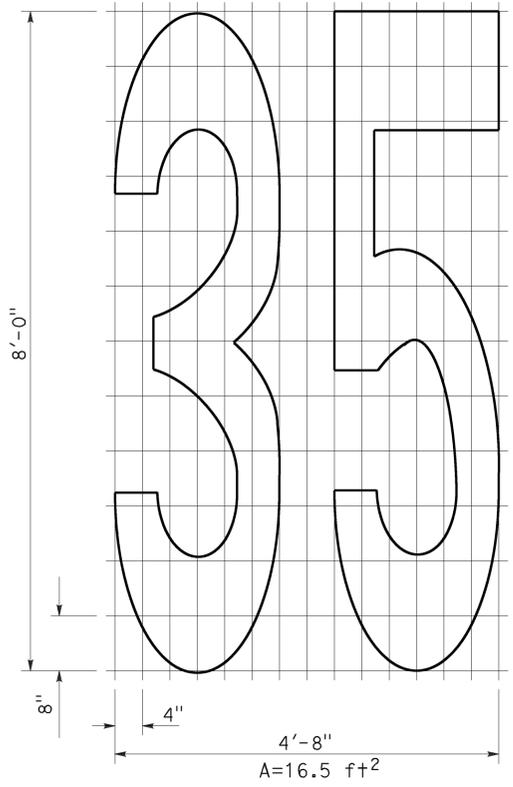
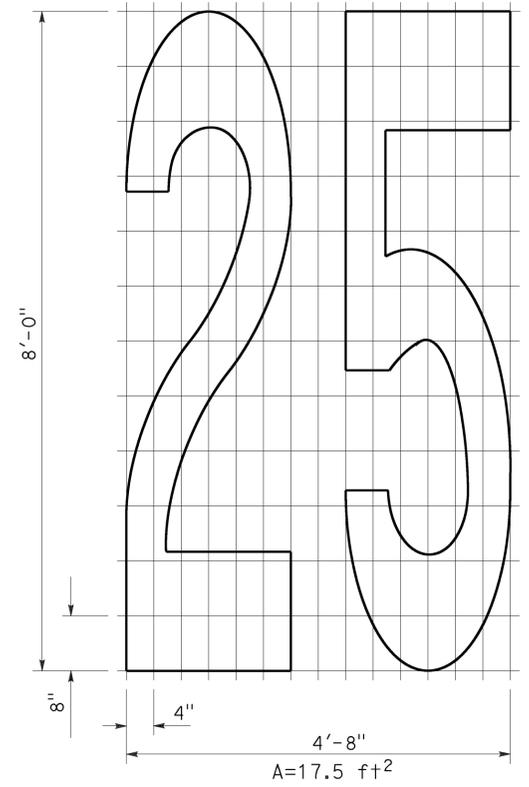
DIAMOND SYMBOL



BICYCLE LOOP DETECTOR SYMBOL



SHARED ROADWAY BICYCLE MARKING



NUMERALS

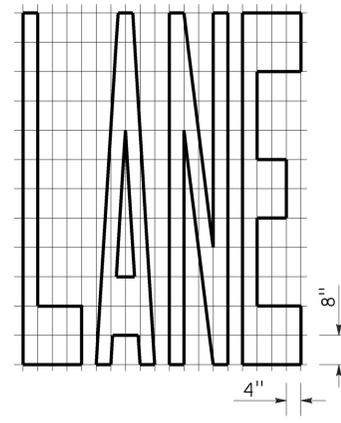
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKINGS SYMBOLS AND NUMERALS
NO SCALE

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

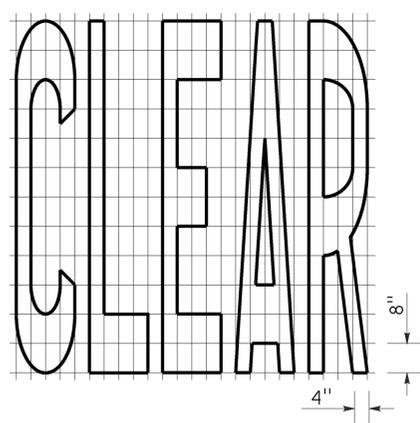
REVISED STANDARD PLAN RSP A24C

2010 REVISED STANDARD PLAN RSP A24C

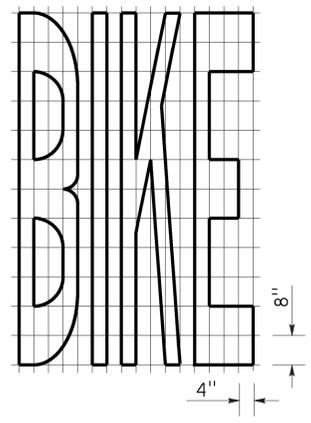
TO ACCOMPANY PLANS DATED 2-22-16



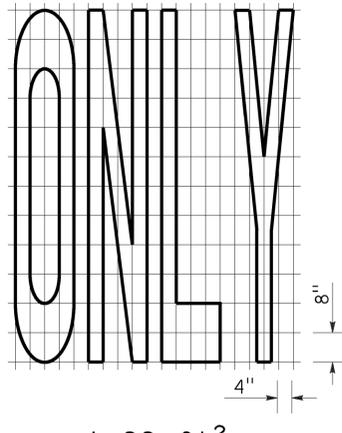
A=24 ft²



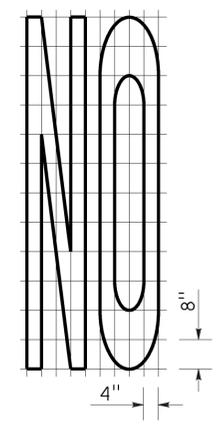
A=27 ft²



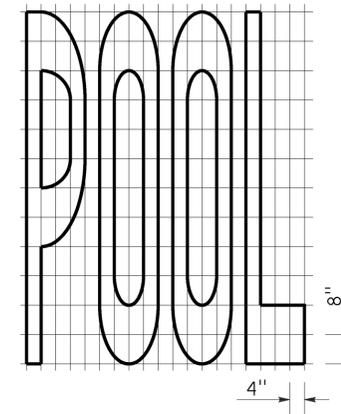
A=21 ft²



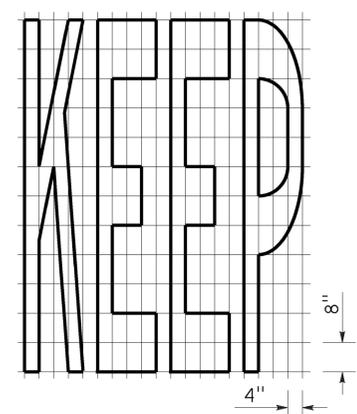
A=22 ft²



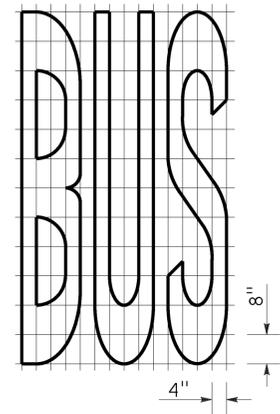
A=14 ft²



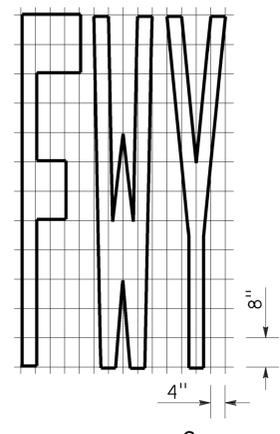
A=23 ft²



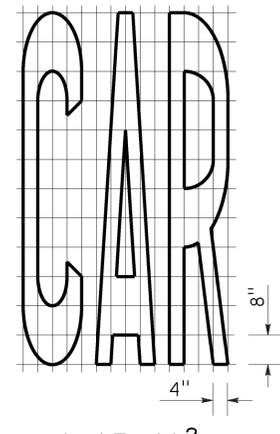
A=24 ft²



A=20 ft²

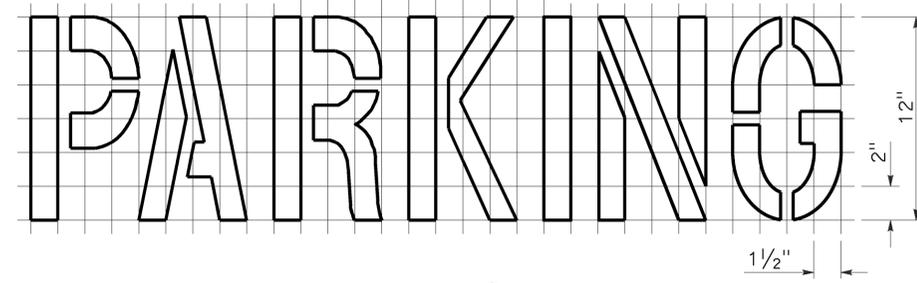
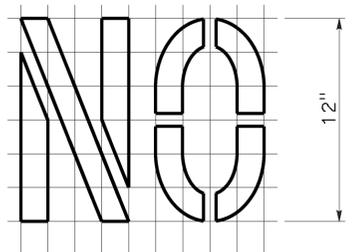


A=16 ft²

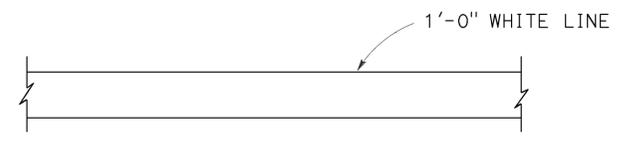


A=17 ft²

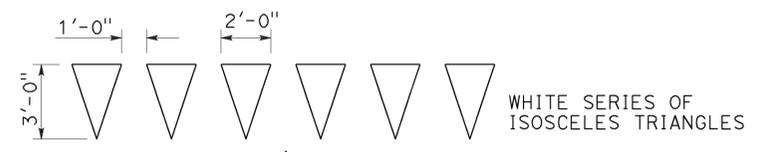
WORD MARKINGS			
ITEM	ft ²	ITEM	ft ²
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft²
See Notes 6 and 7



LIMIT LINE (STOP LINE)



DIRECTION OF TRAVEL
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.

2010 REVISED STANDARD PLAN RSP A24E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	41	61

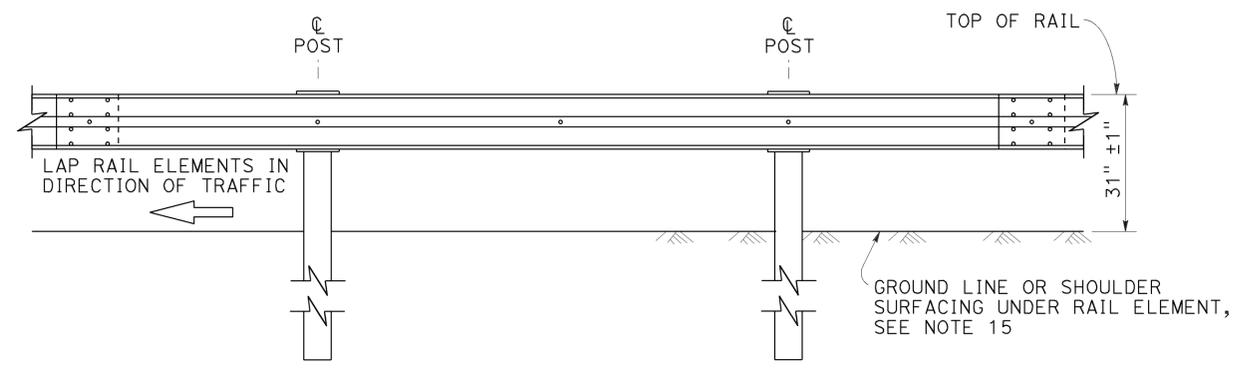
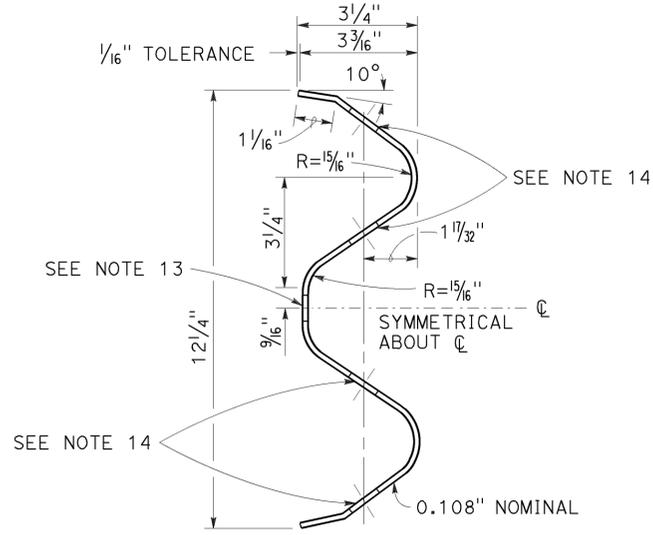
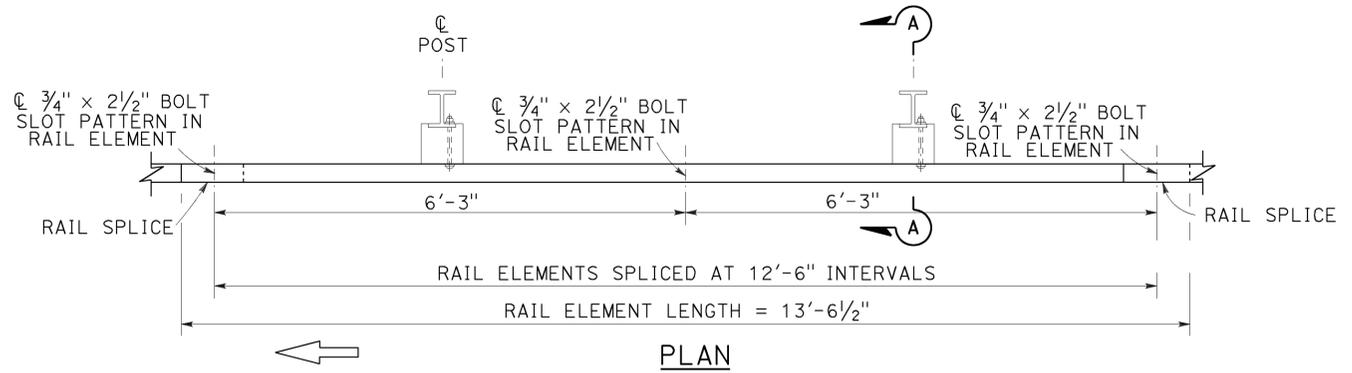
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

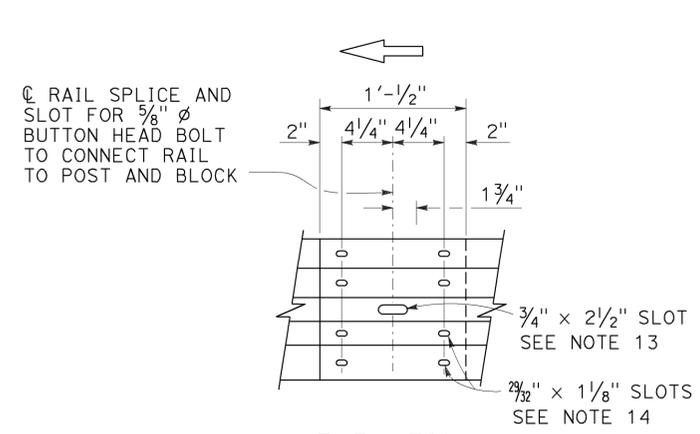
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 2-22-16

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

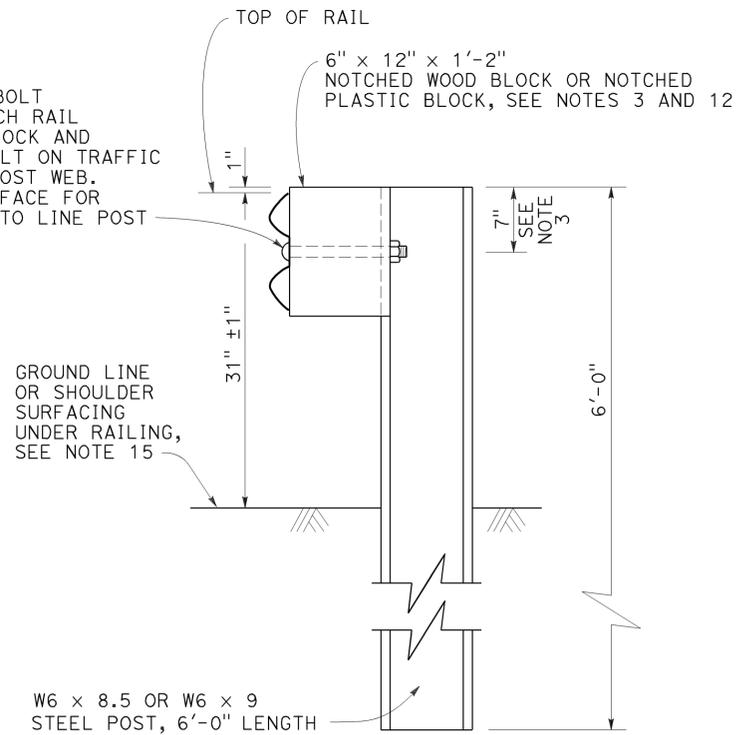


MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS



- Connect the over lapped end of the rail elements with 5/8" ø x 1 3/8" button head oval shoulder splice bolts inserted into the 2 3/32" x 1 1/8" slots and bolted together with 5/8" 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.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- 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.

5/8" ø BUTTON HEAD BOLT WITH Hex NUT. ATTACH RAIL ELEMENT TO WOOD BLOCK AND STEEL POST WITH BOLT ON TRAFFIC APPROACH SIDE OF POST WEB. NO WASHER ON RAIL FACE FOR BOLTED CONNECTION TO LINE POST



SECTION A-A
TYPICAL STEEL LINE POST INSTALLATION
See Note 4

NOTES:

- For details of wood post installations, see Revised Standard Plan RSP A77L1.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
- Notched face of block faces steel post.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

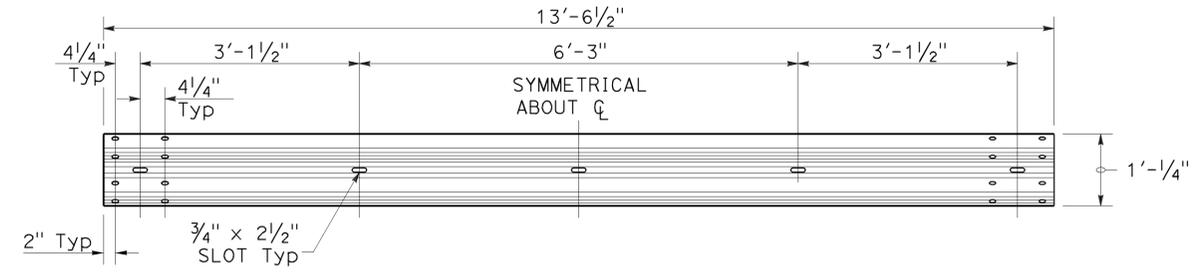
MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

NO SCALE

2010 REVISED STANDARD PLAN RSP A77L2



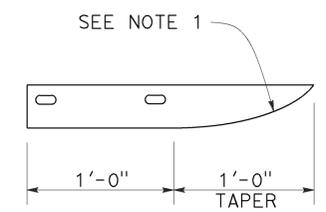
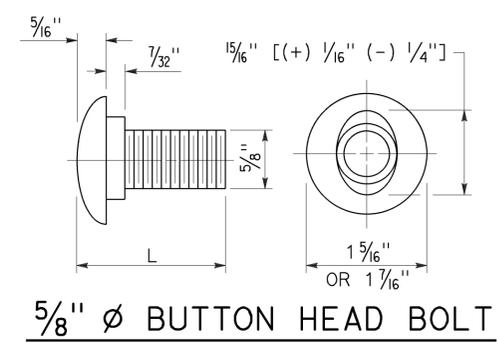
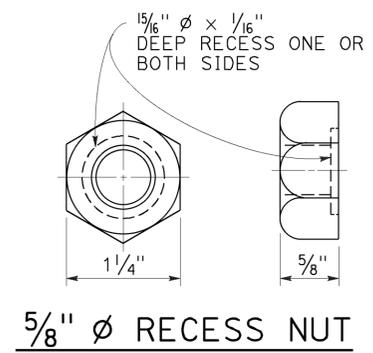
TO ACCOMPANY PLANS DATED 2-22-16



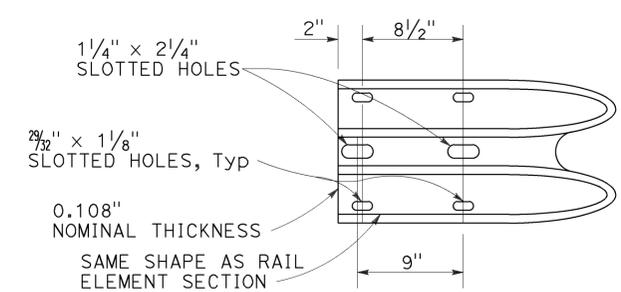
TYPICAL RAIL ELEMENT

NOTE:

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



PLAN



**ELEVATION
END CAP
(TYPE A)**

BUTTON HEAD BOLT

L	THREAD LENGTH
1 3/8"	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
** 2 3/4"	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.

2010 REVISED STANDARD PLAN RSP A77M1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	43	61

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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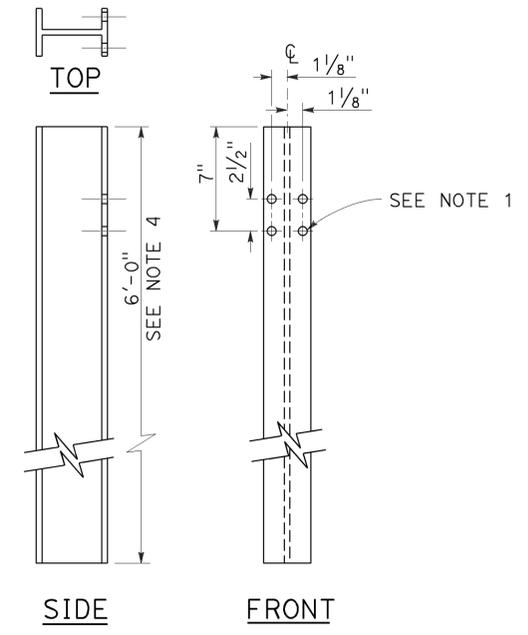
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 2-22-16

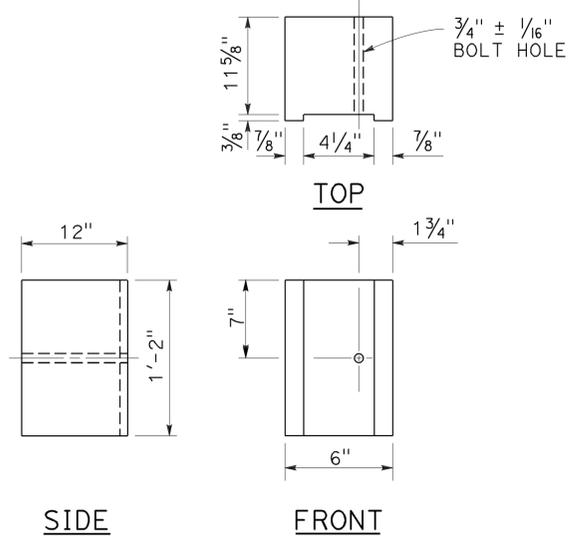
NOTES:

1. All holes in steel post shall be 1 3/8" 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.

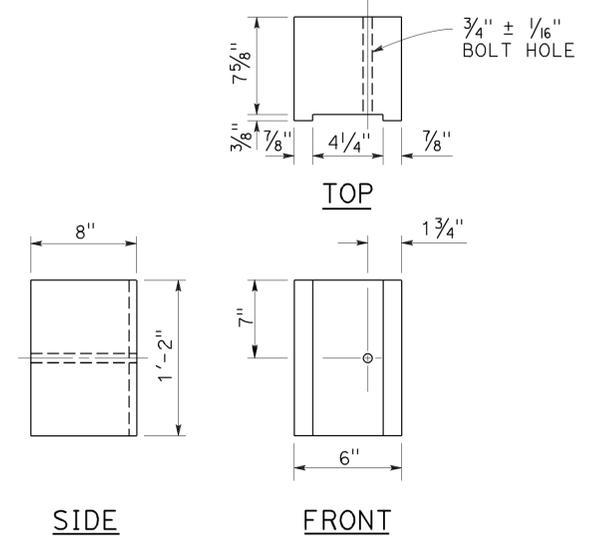
2010 REVISED STANDARD PLAN RSP A77N2



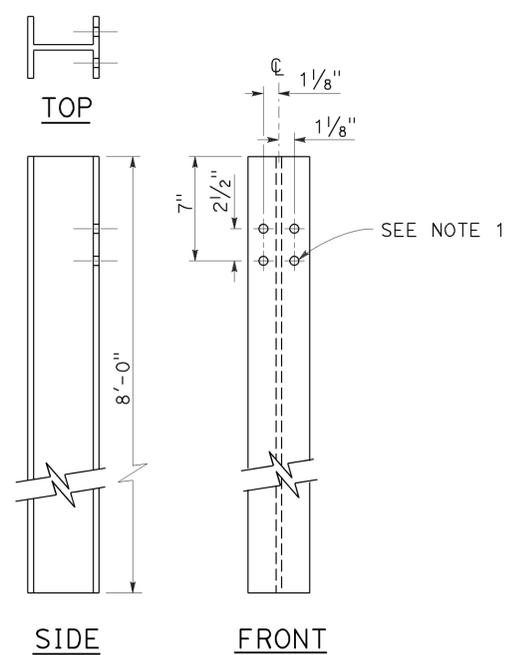
**W6 x 9 OR W6 x 8.5
STEEL POST**
See Note 4



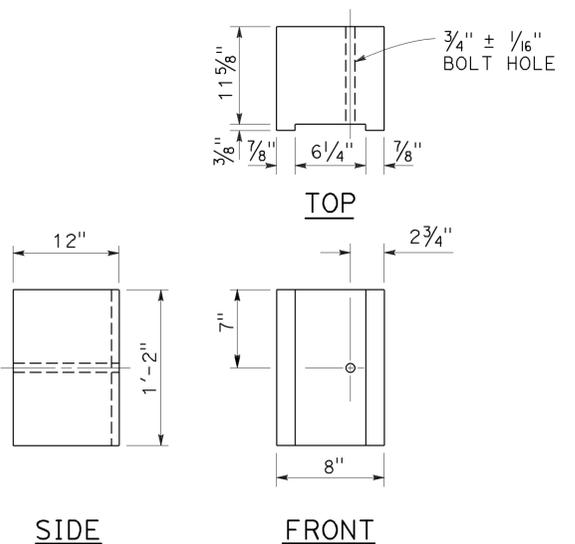
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



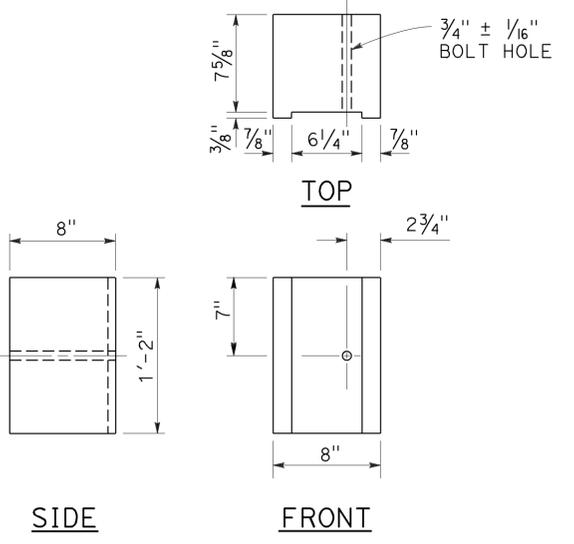
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5



**W6 x 15
STEEL POST**
See Note 6



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



**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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	44	61

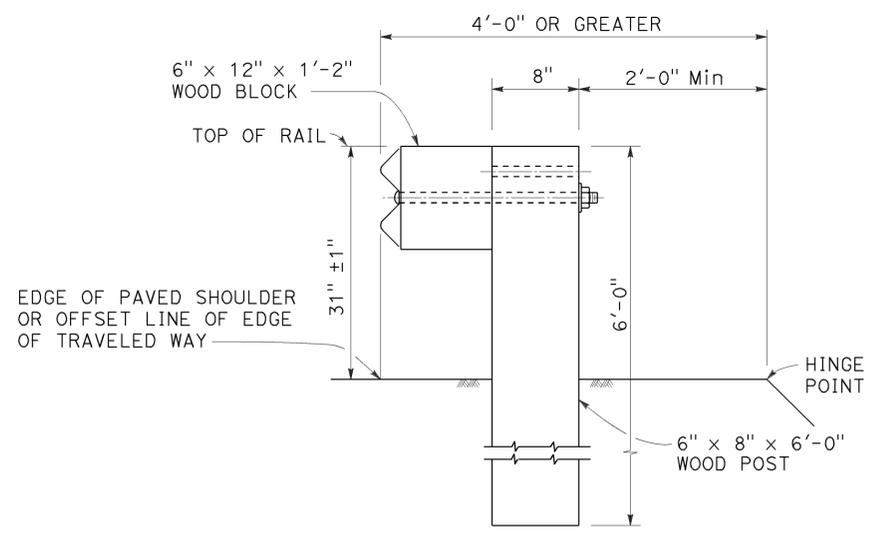
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

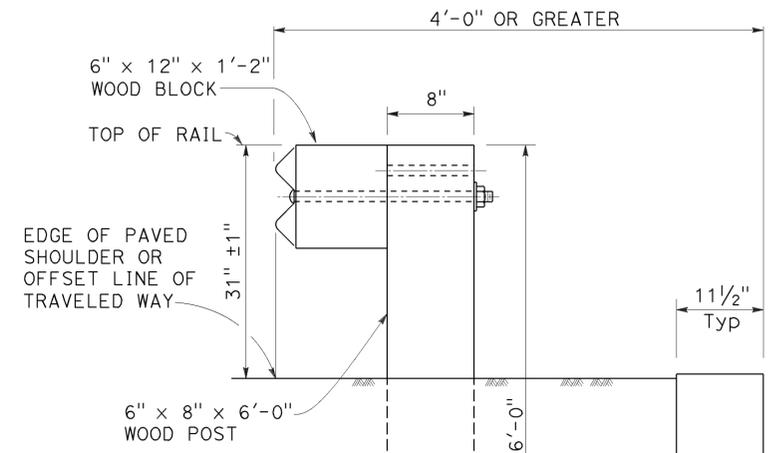
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STATE OF CALIFORNIA

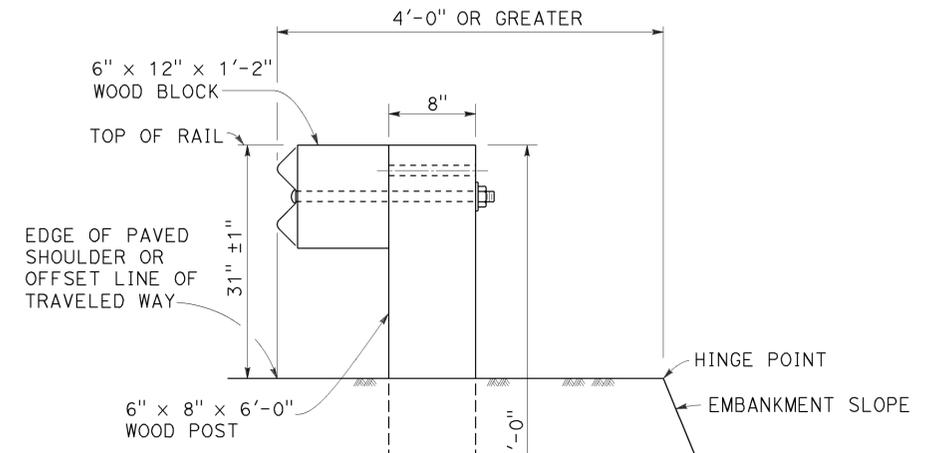
TO ACCOMPANY PLANS DATED 2-22-16



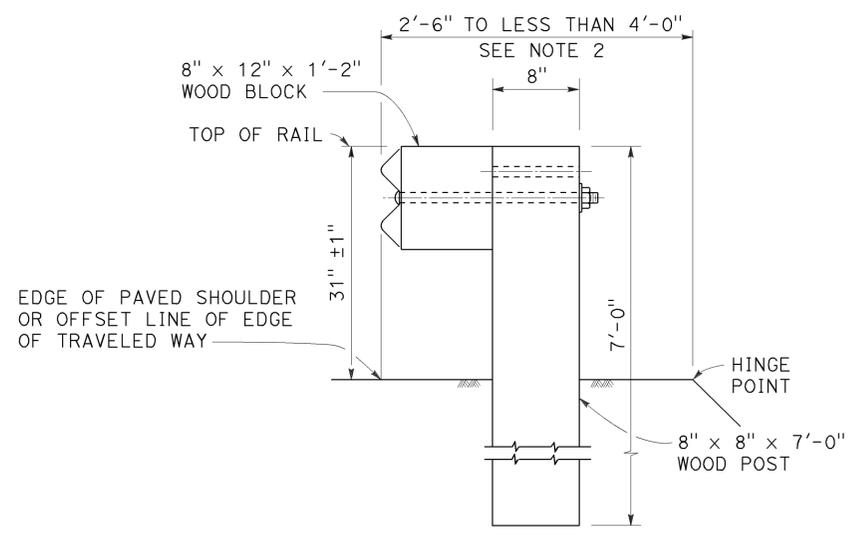
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL C



DETAIL D



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	45	61

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

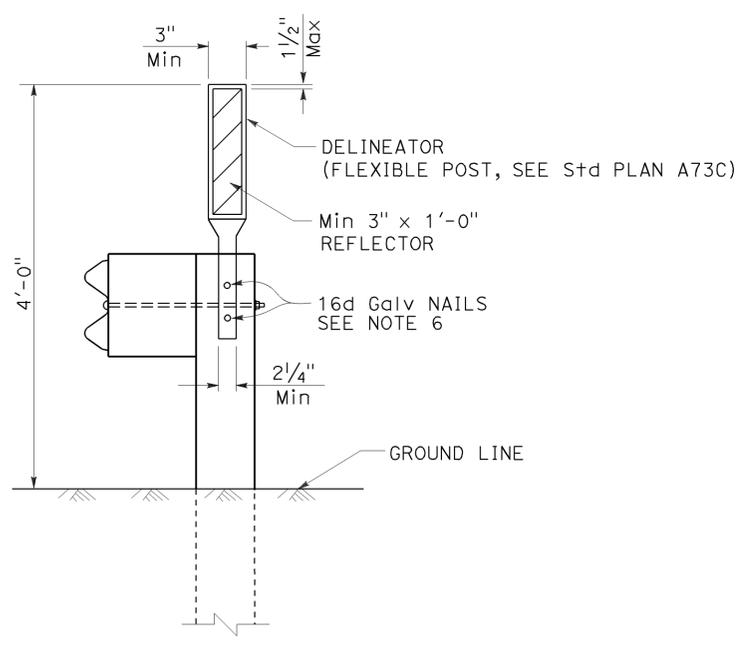
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STATE OF CALIFORNIA

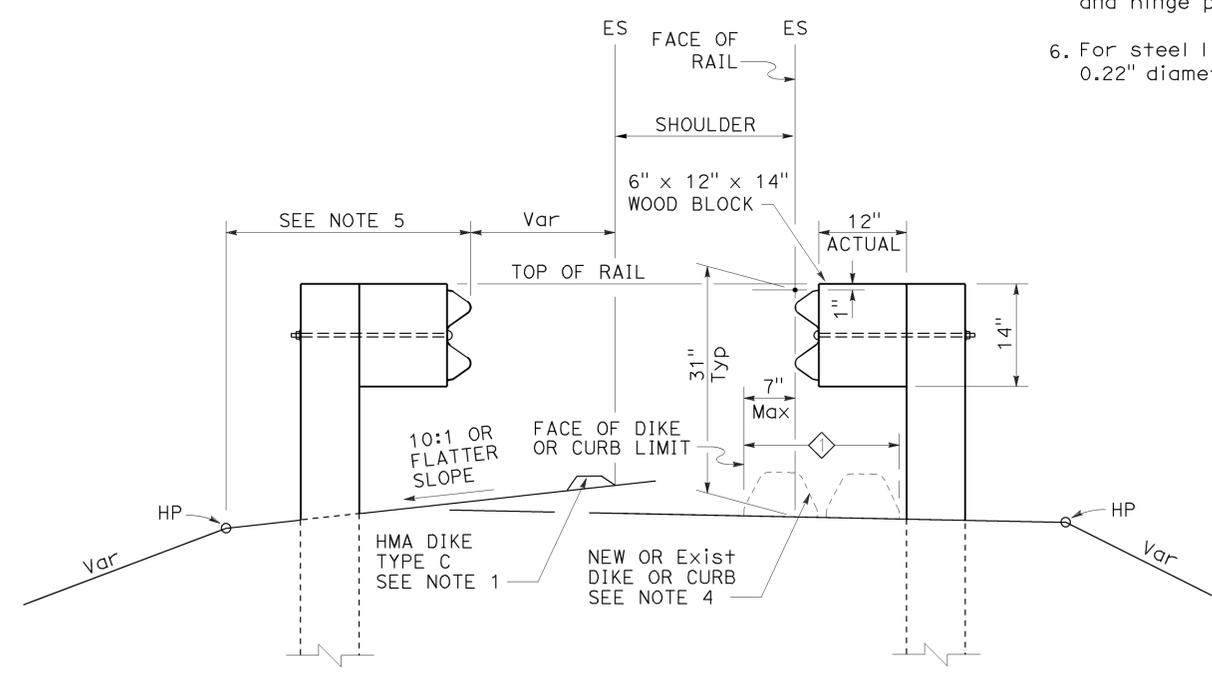
TO ACCOMPANY PLANS DATED 2-22-16

NOTES:

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



MGS DELINEATION
See Note 3



DIKE POSITIONING
See Note 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.

2010 REVISED STANDARD PLAN RSP A77N4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	46	61

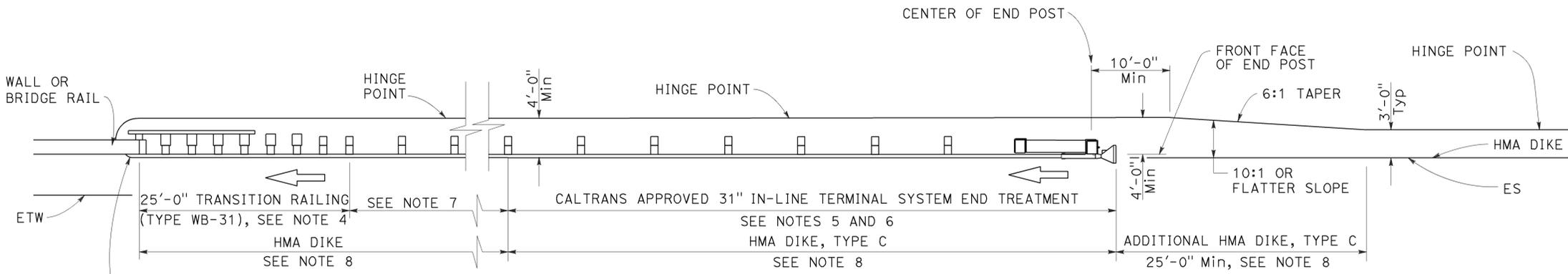
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

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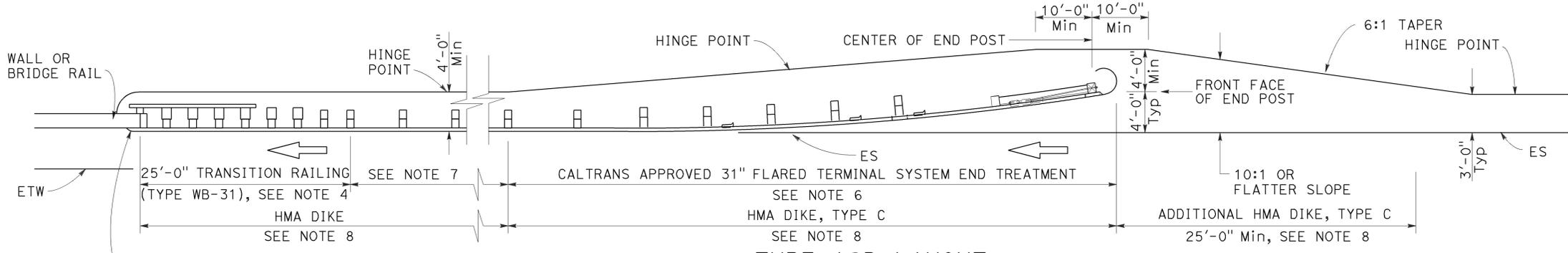


TO ACCOMPANY PLANS DATED 2-22-16



TYPE 12A LAYOUT

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



TYPE 12B LAYOUT

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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

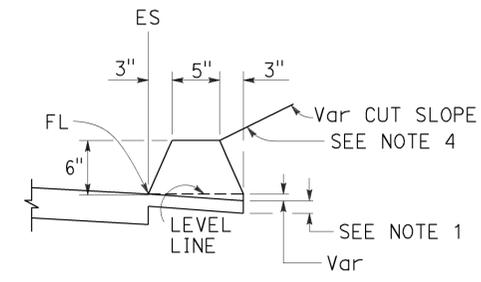
**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

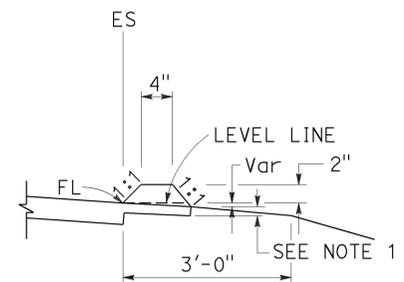
RSP A77Q1 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77Q1

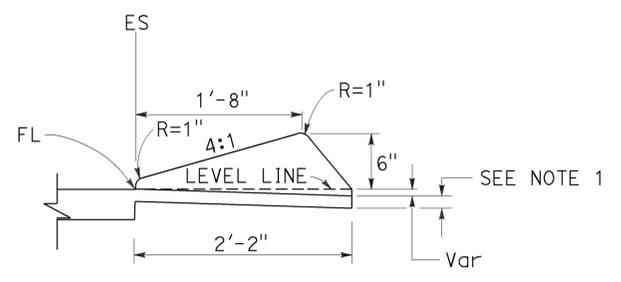
TO ACCOMPANY PLANS DATED 2-22-16



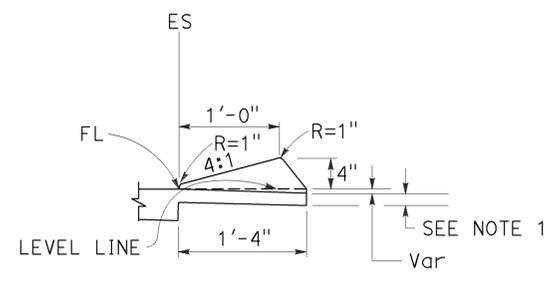
TYPE A
See Notes 3 and 5



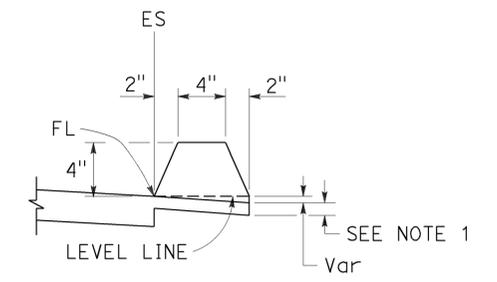
TYPE C



TYPE D

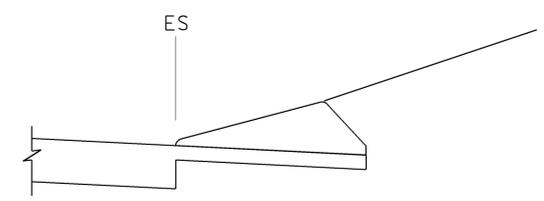


TYPE E

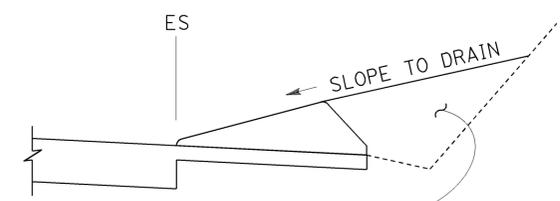


TYPE F
See Note 5

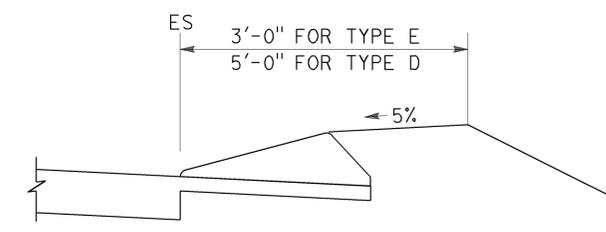
DIKES



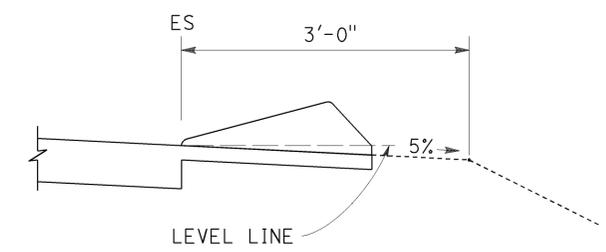
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

- 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.
- Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
- Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
- Fill and compact with excavated material to top of dike.
- Use Type A or F dike, where dike is required with guardrail installations. See Standard Plan A77N4 for dike positioning details. See Standard Plan A77N3 for hinge point offsets with guardrail.

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 JANUARY 15, 2016 SUPERSEDES STANDARD PLAN A87B DATED OCTOBER 30, 2015 - PAGE 126 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP A87B

2015 REVISED STANDARD PLAN RSP A87B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	49	61

Srikanth N. Balasubramanian
REGISTERED CIVIL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

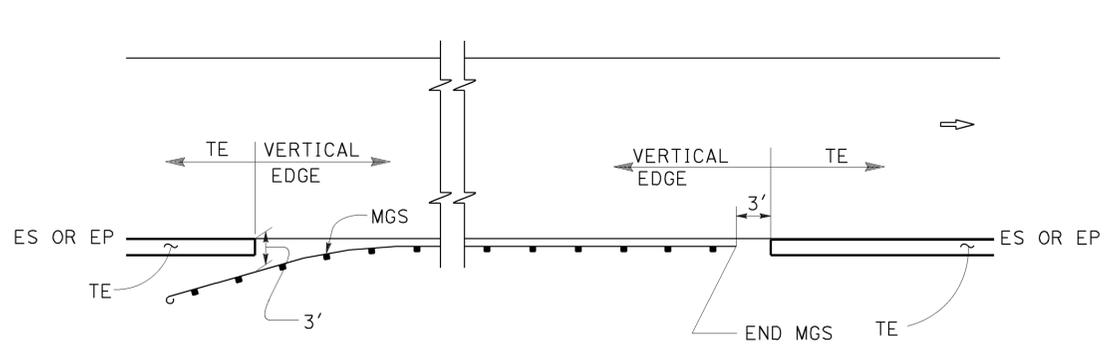
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Srikanth N. Balasubramanian
REGISTERED PROFESSIONAL ENGINEER
No. C56426
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

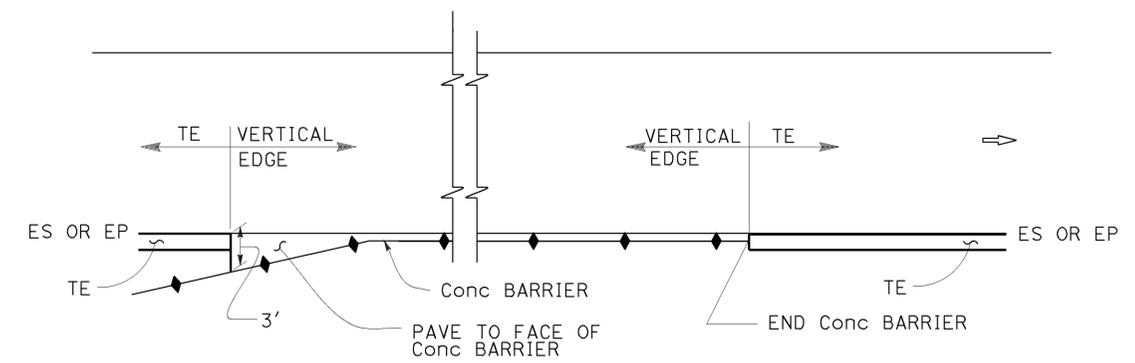
TO ACCOMPANY PLANS DATED 2-22-16

ABBREVIATIONS:

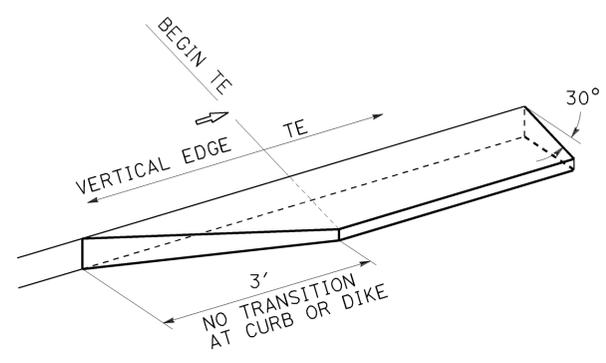
TE TAPERED EDGE



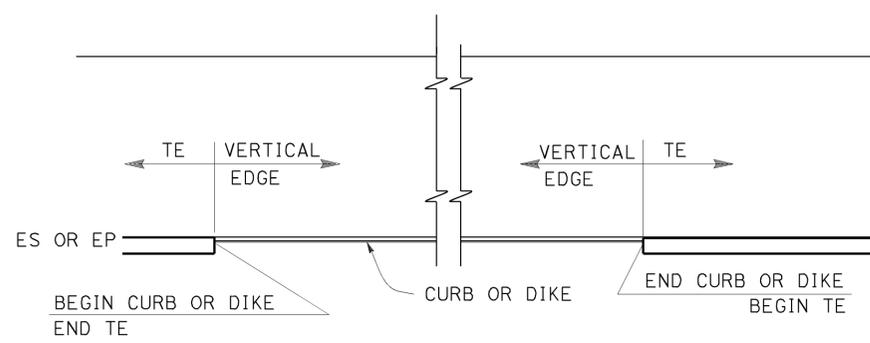
MGS



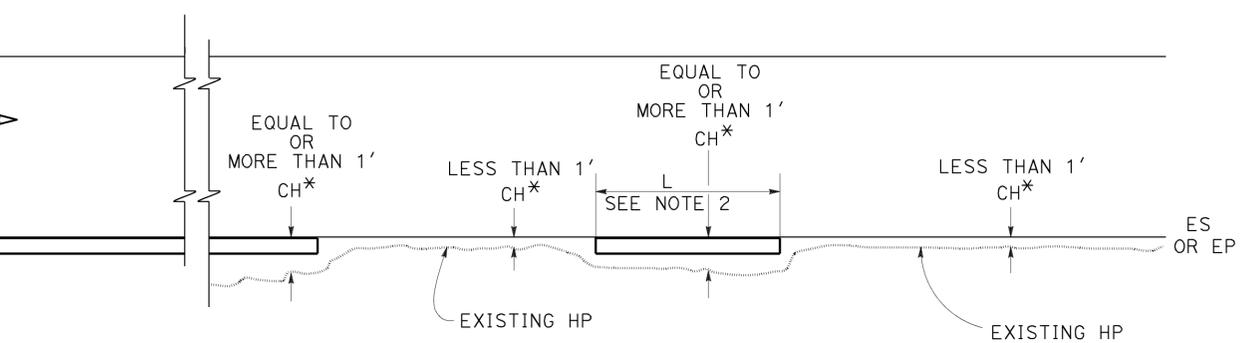
CONCRETE BARRIER



TRANSITION DETAIL FOR CONCRETE ONLY

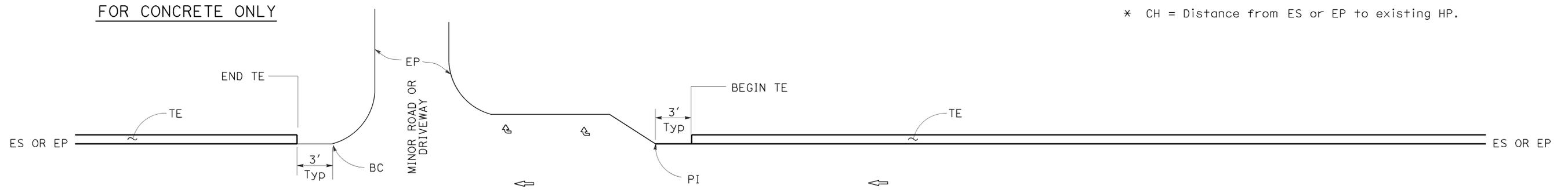


CURB OR DIKE



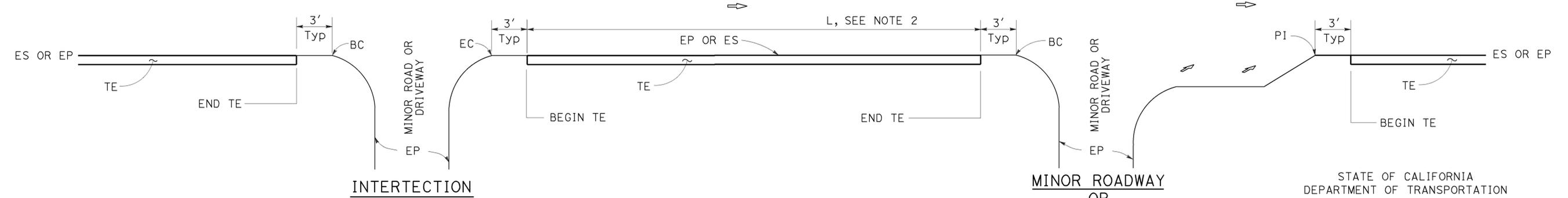
NARROW SIDE SLOPE

* CH = Distance from ES or EP to existing HP.



STATE ROUTE

STATE ROUTE



INTERSECTION

DRIVEWAY AND INTERSECTION

MINOR ROADWAY OR DRIVEWAY

PAVEMENT EDGE TREATMENTS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

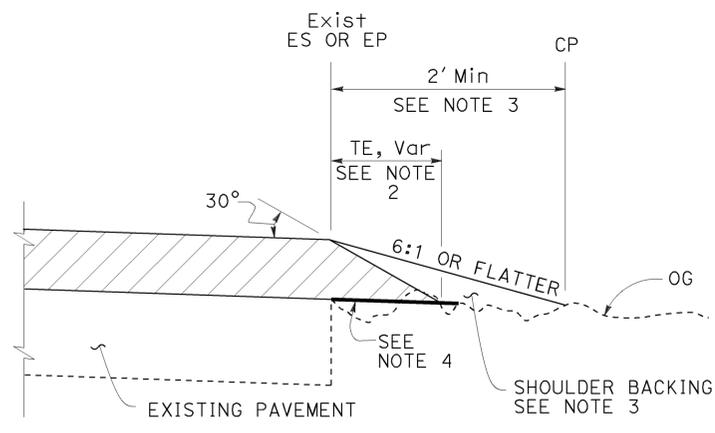
NOTES:

1. For details not shown, see Revised Standard Plans RSP P75 and RSP P76.
2. Tapered edge is optional when L is less than 30'.

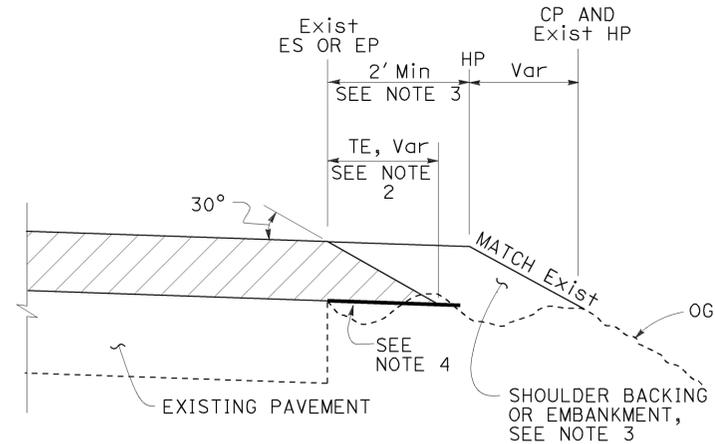
RSP P74 DATED OCTOBER 30, 2015 SUPERSEDES RSP P74 DATED NOVEMBER 15, 2013 AND RSP P74 DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P74

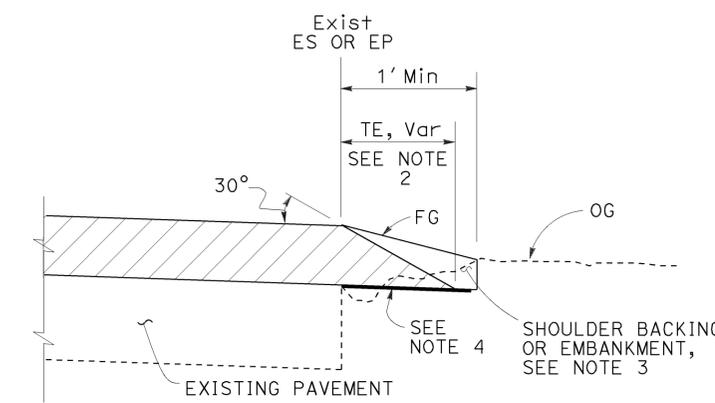
2010 REVISED STANDARD PLAN RSP P74



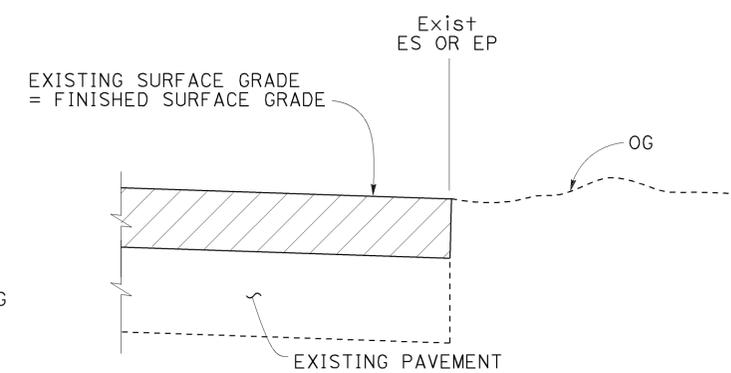
CASE A
Tapered Edge



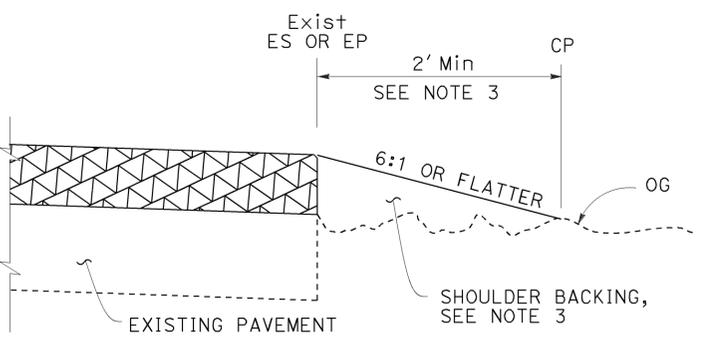
CASE B
Tapered Edge



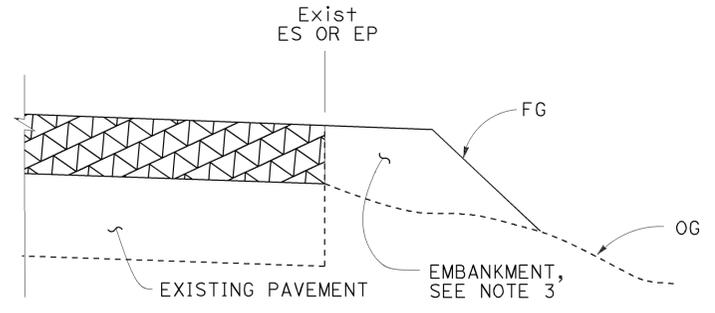
CASE C
Tapered Edge



CASE D
Vertical Edge



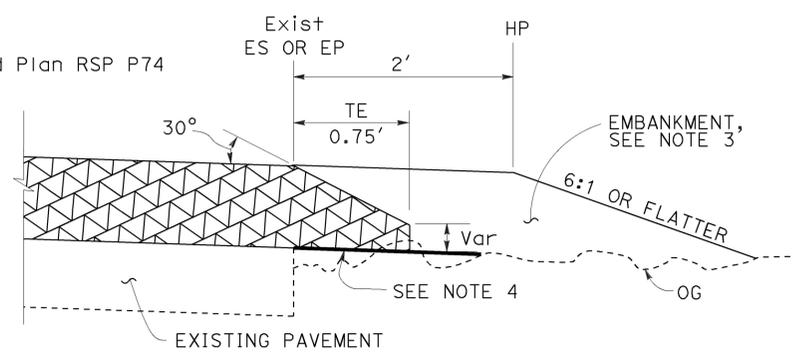
CASE E
Vertical Edge



CASE F
Vertical Edge

* See Table A and Revised Std Plan RSP P74

- NOTES:**
1. For limits of tapered edge and vertical edge treatments, see Revised Standard Plan RSP P74.
 2. Details shown for HMA overlay thickness less than 0.43'. See Detail "A" for HMA overlay thickness more than 0.43' or concrete overlay.
 3. For locations and limits of shoulder backing or embankment see project plans.
 4. Grade existing ground to place tapered edge. 1' minimum width
 5. Tapered edge transverse joint must match overlay transverse joint. End of #6 longitudinal bar must be 2" ± 1/2" clear from transverse joint.
 6. Tapered edge is not needed in the area of MGS, barrier, right turn lane and acceleration lane. See Revised Standard Plan RSP P74.



DETAIL "A"

For HMA overlay thickness more than 0.43' or concrete overlay

LEGEND:

- HMA OVERLAY
- HMA OR CONCRETE OVERLAY
- CONCRETE OVERLAY

ABBREVIATIONS:

- TE TAPERED EDGE
- TT TOTAL THICKNESS OF TE

TABLE A
EDGE TREATMENT FOR VARIOUS OVERLAY THICKNESS AND CONDITIONS

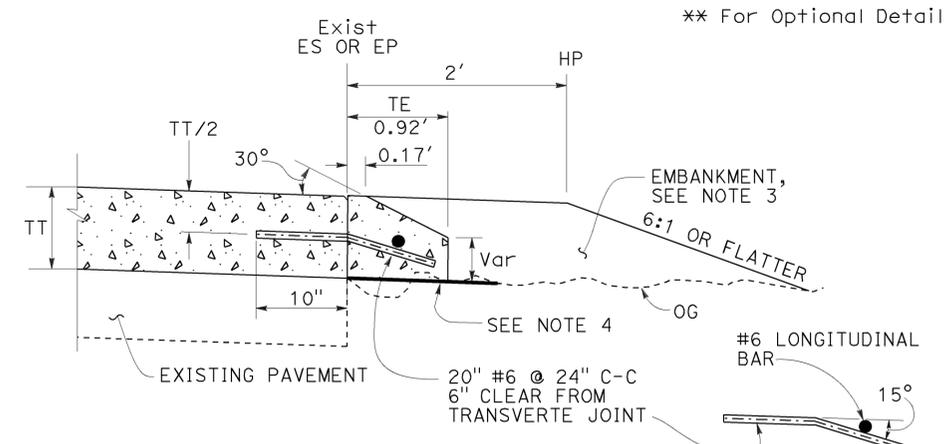
FIELD CONDITION	OVERLAY THICKNESS	
	LESS THAN 0.15'	0.15' OR MORE
Exist SLOPE 6:1 OR FLATTER	CASE E	CASE A
Exist SLOPE 3:1 TO 6:1	CASE E	CASE B
Exist SLOPE STEEPER THAN 3:1	CASE F	CASE F
CUT SECTION (REPLACE, COLD PLANE, MILL PAVEMENT)	CASE D	CASE C

TO ACCOMPANY PLANS DATED 2-22-16

ADDITIONAL HMA OR CONCRETE QUANTITIES FOR TE/SIDE/MILE

TYPICAL CROSS SECTION	TT	TOTAL ADDITIONAL MATERIAL FOR TE/SIDE/MILE		
		HMA (TON)	CONCRETE (CY)*	CONCRETE (CY)**
	0.15'	7.7	NA	NA
	0.20'	13.7	NA	NA
	0.30'	30.9	NA	NA
	0.40'	54.9	NA	NA
	0.45'	69.4	NA	NA
	0.50'	84.2	NA	NA
	0.60'	113.9	NA	NA
	0.70'	143.6	70.9	94.2
	0.80'	173.3	85.6	112.2
	0.90'	203.0	100.3	130.2
	1.00'	232.7	114.9	148.2
	1.10'	262.4	129.6	166.2
1.20'	292.1	144.3	184.2	

* For Detail "A"
** For Optional Detail "A"



OPTIONAL DETAIL "A"
For concrete overlay
See Note 5

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

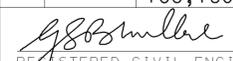
PAVEMENT EDGE TREATMENTS- OVERLAYS

NO SCALE

RSP P75 DATED OCTOBER 30, 2015 SUPERSEDES RSP P75 DATED NOVEMBER 15, 2013 AND RSP P75 DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP P75

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	51	61


 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
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TO ACCOMPANY PLANS DATED 2-22-16

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		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					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%
		ft	ft	ft
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 recommended 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.

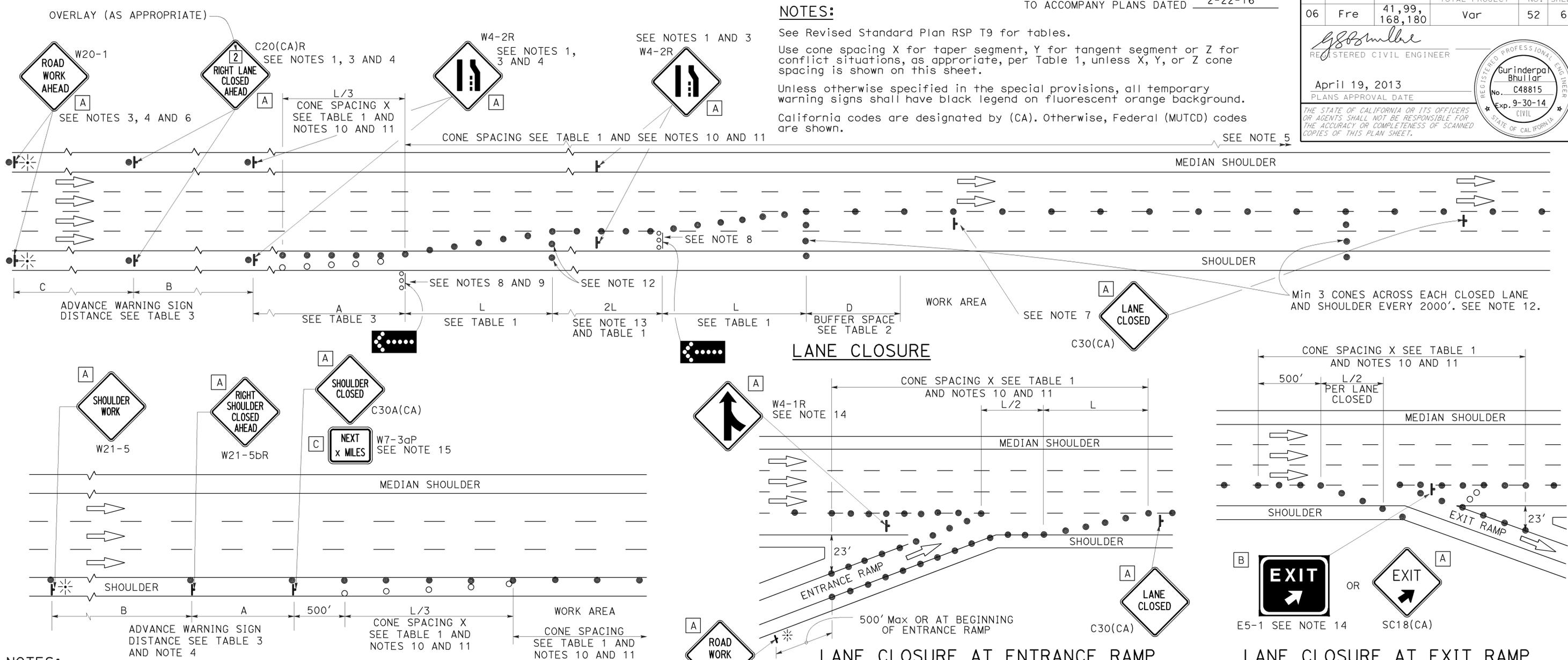
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	52	61

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 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.



- NOTES:**
1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
 2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 3. Duplicate sign installations are not required:
 - a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
 - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
 5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA)L and W4-2L signs shall be used.
7. Place a C30(CA) sign every 2000' throughout length of lane closure.
8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
15. A W7-3aP "NEXT _____ MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

A	48" x 48"
B	72" x 60"
C	36" x 30"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURE ON
 FREEWAYS AND EXPRESSWAYS**

NO SCALE

RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

TYPICAL RAMP CLOSURES

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 30"
- C 36" x 36"
- D 48" x 36"

LEGEND

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⚡ PORTABLE FLASHING BEACON

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168,180	Var	53	61

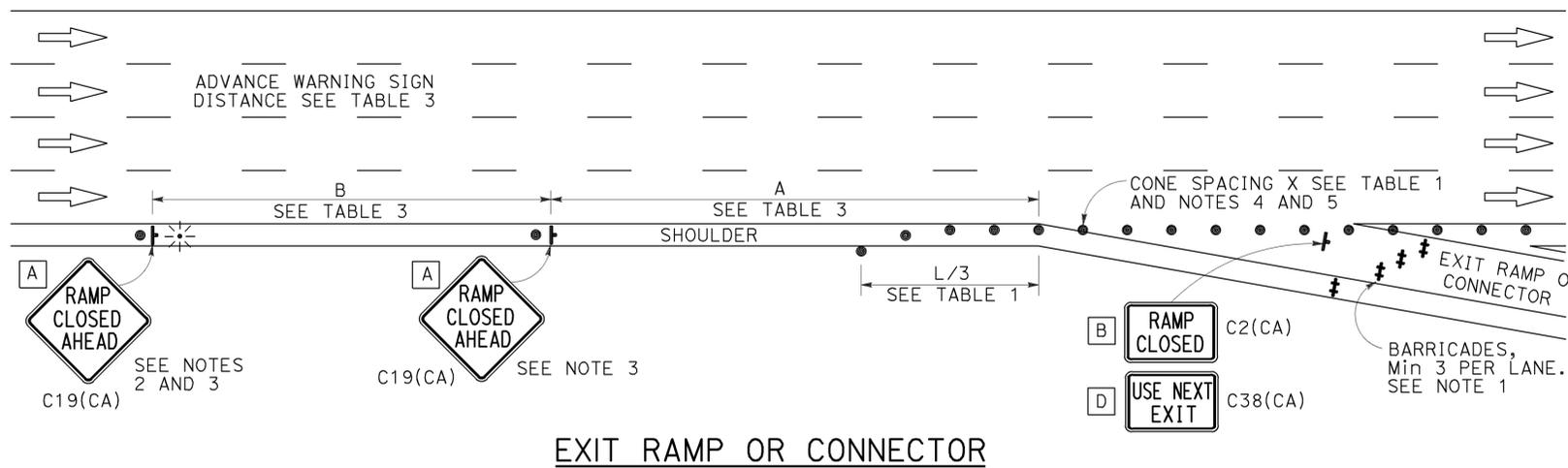
Gurinderpal Bhullar
 REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

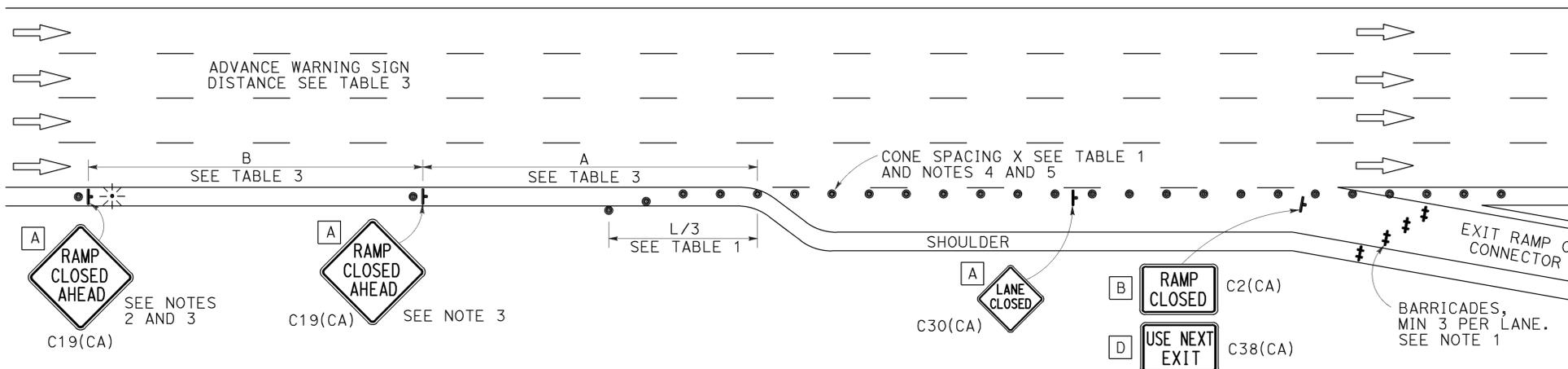
TO ACCOMPANY PLANS DATED 2-22-16

NOTES:

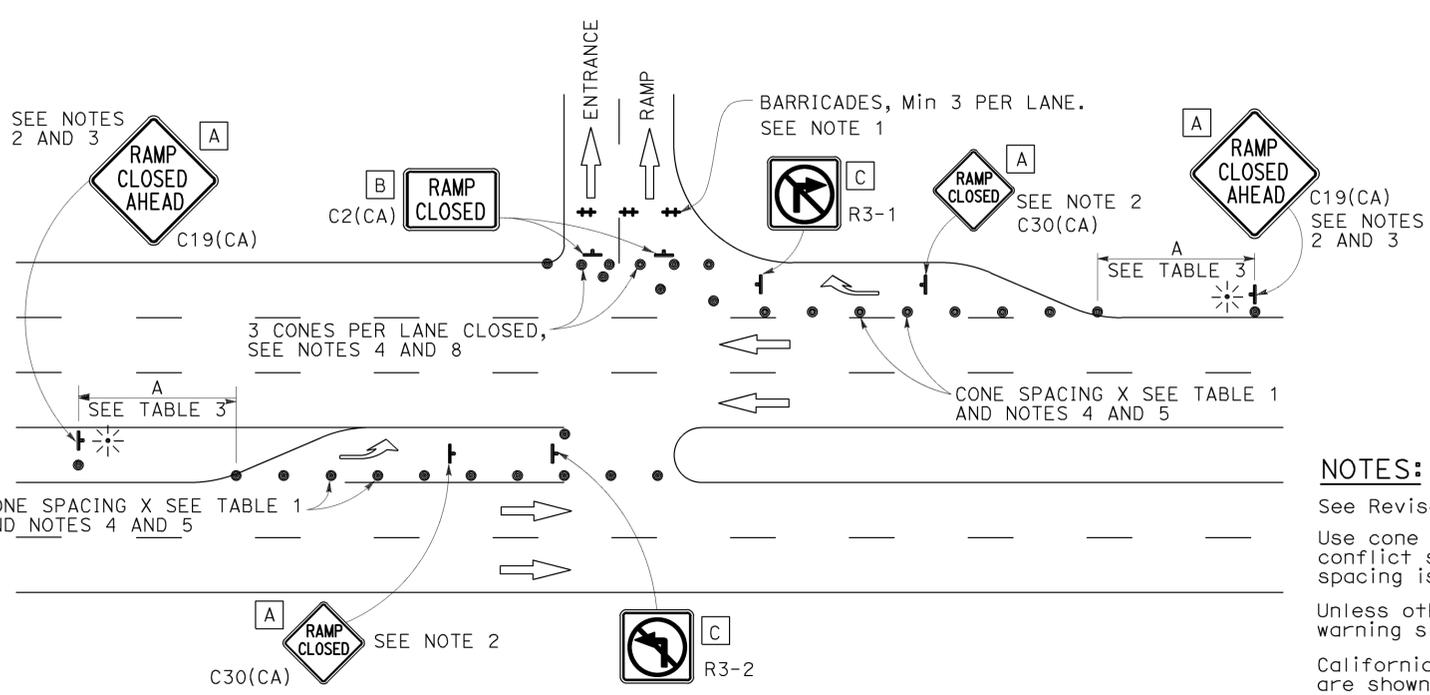
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
- Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
- All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
- At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
- The existing "EXIT" signs shall be covered during ramp closures.
- A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.



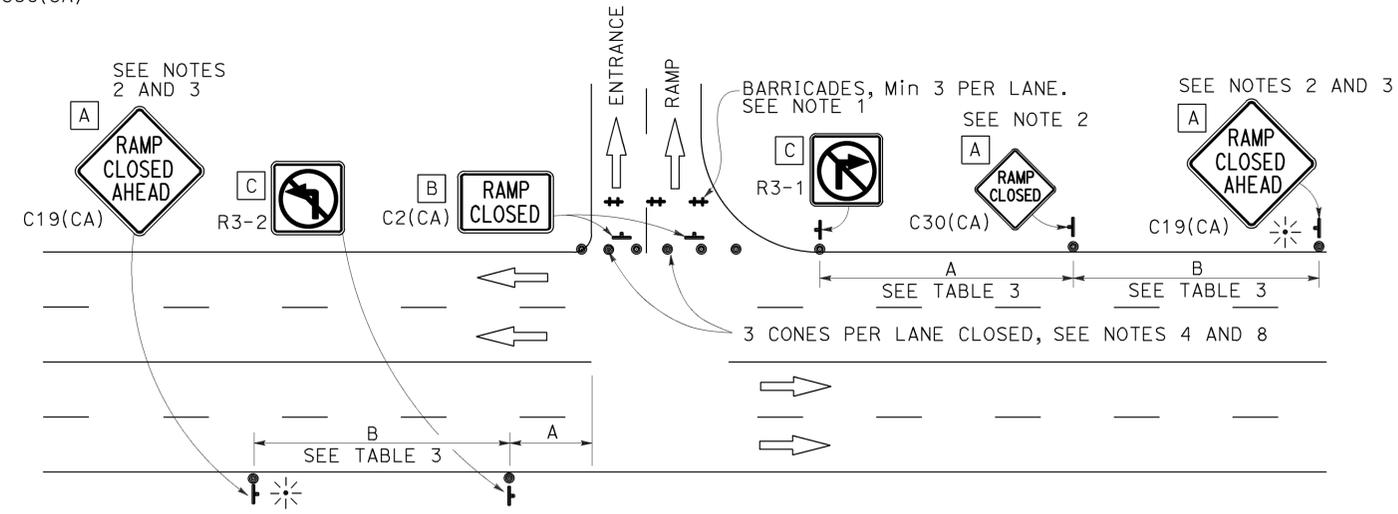
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

NOTES:

- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR RAMP CLOSURE**
 NO SCALE

RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14
 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T14

2010 REVISED STANDARD PLAN RSP T14

LEGEND:

- AB** ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- BC** INSTALL PULL BOX IN EXISTING CONDUIT RUN
- BP** PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
- CB** INSTALL CONDUIT INTO EXISTING PULL BOX
- CC** CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
- CF** CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
- DH** DETECTOR HANDHOLE
- FA** FOUNDATION TO BE ABANDONED
- IS** INSTALL SIGN ON SIGNAL MAST ARM
- NS** NO SLIP BASE ON STANDARD
- PEC** PHOTOELECTRIC CONTROL
- PEU** PHOTOELECTRIC UNIT
- RC** EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
- RE** REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
- RL** RELOCATE EQUIPMENT
- RR** REMOVE AND REUSE EQUIPMENT
- RS** REMOVE AND SALVAGE EQUIPMENT
- SC** SPLICE NEW TO EXISTING CONDUCTORS
- SD** SERVICE DISCONNECT
- TSP** TELEPHONE SERVICE POINT

ABBREVIATIONS

- | | | | |
|-------|---|-------|---|
| AC+ | UNDERGROUNDED CONDUCTOR | MAT | MAST ARM MOUNTING TOP ATTACHMENT |
| APS | ACCESSIBLE PEDESTRIAN SIGNAL | MAS | MAST ARM MOUNTING SIDE ATTACHMENT |
| Batt | BATTERY | MBPS | MANUAL BYPASS SWITCH |
| BBS | BATTERY BACKUP SYSTEM | M/M | MULTIPLE TO MULTIPLE TRANSFORMER |
| BC | BOLT CIRCLE | Mtg | MOUNTING |
| BIK | BLACK | MV | MERCURY VAPOR LIGHTING FIXTURE |
| BP | BYPASS | MVDS | MICROWAVE VEHICLE DETECTION SYSTEM |
| BPB | BICYCLE PUSH BUTTON | N | NEUTRAL (GROUNDED CONDUCTOR) |
| C | CONDUIT | NB | NEUTRAL BUS |
| CB | CIRCUIT BREAKER | NC | NORMALLY CLOSE |
| CCTV | CLOSED CIRCUIT TELEVISION | NO | NORMALLY OPEN |
| Ckt | CIRCUIT | P | CIRCUIT BREAKER'S POLE |
| CMS | CHANGEABLE MESSAGE SIGN | PB | PULL BOX |
| Ctid | CALTRANS IDENTIFICATION | PBA | PUSH BUTTON ASSEMBLY |
| Comm | COMMUNICATION | PEC | PHOTOELECTRIC CONTROL |
| Cntl | CONTROL | Ped | PEDESTRIAN |
| DF | DEPARTMENT-FURNISHED | PEU | PHOTOELECTRIC UNIT |
| DLC | LOOP DETECTOR LEAD-IN CABLE | PT | CONDUIT WITH PULL TAPE |
| EMS | EXTINGUISHABLE MESSAGE SIGN | PTR | POWER TRANSFER RELAY |
| EVUC | EMERGENCY VEHICLE UNIT CABLE | RE | RELOCATED EQUIPMENT |
| EVUD | EMERGENCY VEHICLE UNIT DETECTOR | RM | RAMP METERING |
| FB | FLASHING BEACON | RWIS | ROADSIDE WEATHER INFORMATION SYSTEM |
| FBCA | FLASHING BEACON CONTROL ASSEMBLY | SB | SLIP BASE |
| FBS | FLASHING BEACON WITH SLIP BASE | SIC | SIGNAL INTERCONNECT CABLE |
| FO | FIBER OPTIC | Sig | SIGNAL |
| G | EQUIPMENT GROUNDING CONDUCTOR | SMA | SIGNAL MAST ARM |
| GB | GROUND BUS | SNS | STREET NAME SIGN |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER | SP | SERVICE POINT |
| Grn | GREEN | TB | TERMINAL BOARD |
| HAR | HIGHWAY ADVISORY RADIO | TDC | TELEPHONE DEMARCATION CABINET |
| Hex | HEXAGONAL | Temp | TEMPERATURE |
| HPS | HIGH PRESSURE SODIUM | TMS | TRAFFIC MONITORING STATION |
| IISNS | INTERNALLY ILLUMINATED STREET NAME SIGN | TOS | TRAFFIC OPERATIONS SYSTEM |
| ISL | INDUCTION SIGN LIGHTING | UPS | UNINTERRUPTABLE POWER SUPPLY |
| LED | LIGHT EMITTING DIODE | UPSC | UNINTERRUPTABLE POWER SUPPLY CONTROLLER |
| LMA | LUMINAIRE MAST ARM | Veh | VEHICLE |
| LPS | LOW PRESSURE SODIUM | VIVDS | VIDEO IMAGE VEHICLE DETECTION SYSTEM |
| Ltg | LIGHTING | Wht | WHITE |
| Lum | LUMINAIRE | WIM | WEIGH-IN-MOTION |
| M | METERED | Xfmr | TRANSFORMER |

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168, 180	Var	54	61

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Theresa Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 2-22-16

SOFFIT AND WALL-MOUNTED LUMINAIRES

- PENDANT SOFFIT LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- FLUSH-MOUNTED SOFFIT LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- WALL-MOUNTED LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- EXISTING SOFFIT OR WALL-MOUNTED LUMINAIRE TO REMAIN UNMODIFIED
- EXISTING SOFFIT OR WALL-MOUNTED LUMINAIRE TO BE MODIFIED AS SPECIFIED

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL	DEFINITIONS
Ω	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(ac)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
μ	MICRO
P	PICO
Hz	HERTZ

MISCELLANEOUS ELECTROLIERS

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT LEGEND)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

- NOTES:**
- LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
 - Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

STANDARD ELECTROLIER

NEW	EXISTING	STANDARD TYPE
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1A DATED JULY 19, 2013 AND STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1A

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168, 180	Var	55	61

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Theresa Aziz Gabriel
No. E15129
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ELECTRICAL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 2-22-16

CONDUIT

NEW	EXISTING	
		LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
		TRAFFIC SIGNAL CONDUIT
		COMMUNICATION CONDUIT
		TELEPHONE CONDUIT
		FIRE ALARM CONDUIT
		FIBER OPTIC CONDUIT
		CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

SIGNAL EQUIPMENT

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)
		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

SERVICE EQUIPMENT

NEW	EXISTING	
		OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

POLE-MOUNTED SERVICE DESIGNATION

	TYPE H SERVICE, 28'-10"	TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE
--	-------------------------	--

FLASHING BEACON

NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

SIGNAL EQUIPMENT Cont

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION

NOTES:

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

ILLUMINATED OVERHEAD SIGN

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(LEGEND AND ABBREVIATIONS)**

NO SCALE

RSP ES-1B DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1B DATED JULY 19, 2013 AND STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

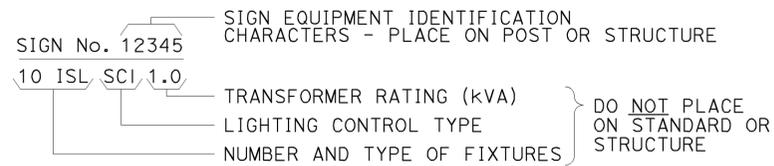
2010 REVISED STANDARD PLAN RSP ES-1B



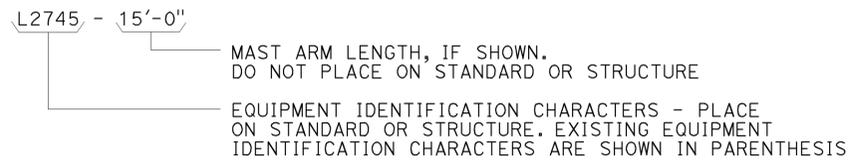
TO ACCOMPANY PLANS DATED 2-22-16

EQUIPMENT IDENTIFICATION

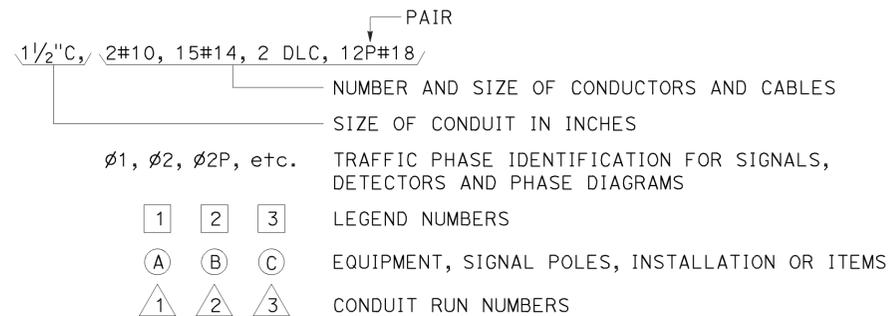
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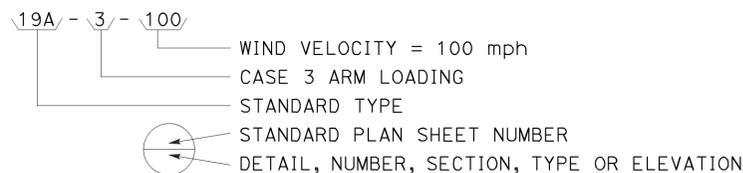
ELECTROLIER OR EQUIPMENT IDENTIFICATION:



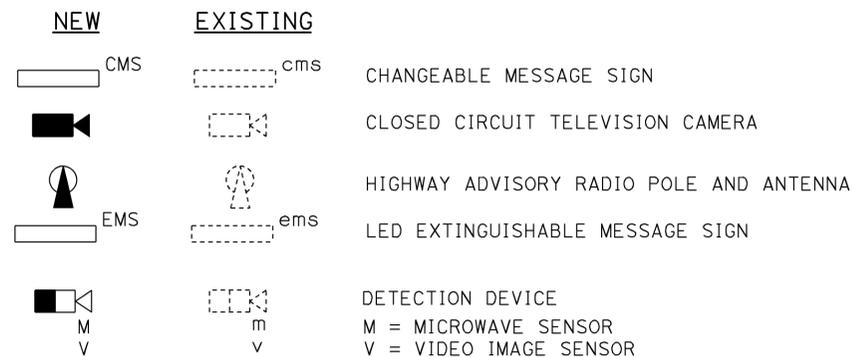
CONDUIT AND CONDUCTOR IDENTIFICATION:



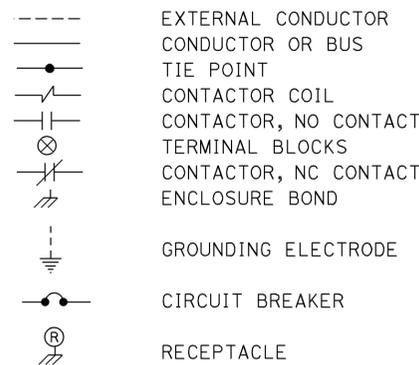
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



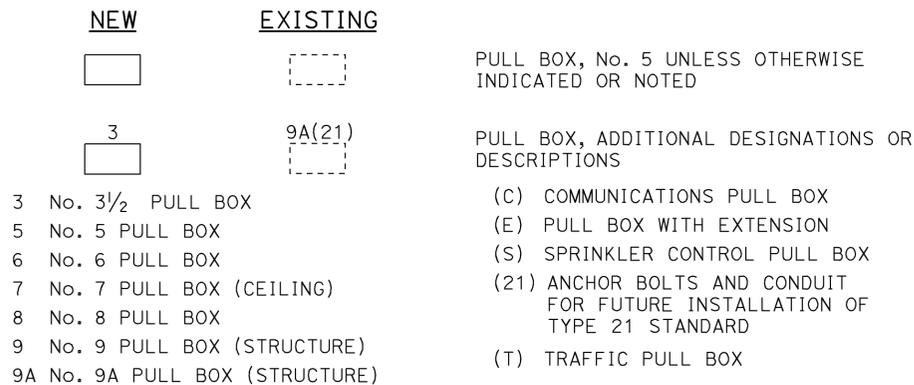
MISCELLANEOUS EQUIPMENT



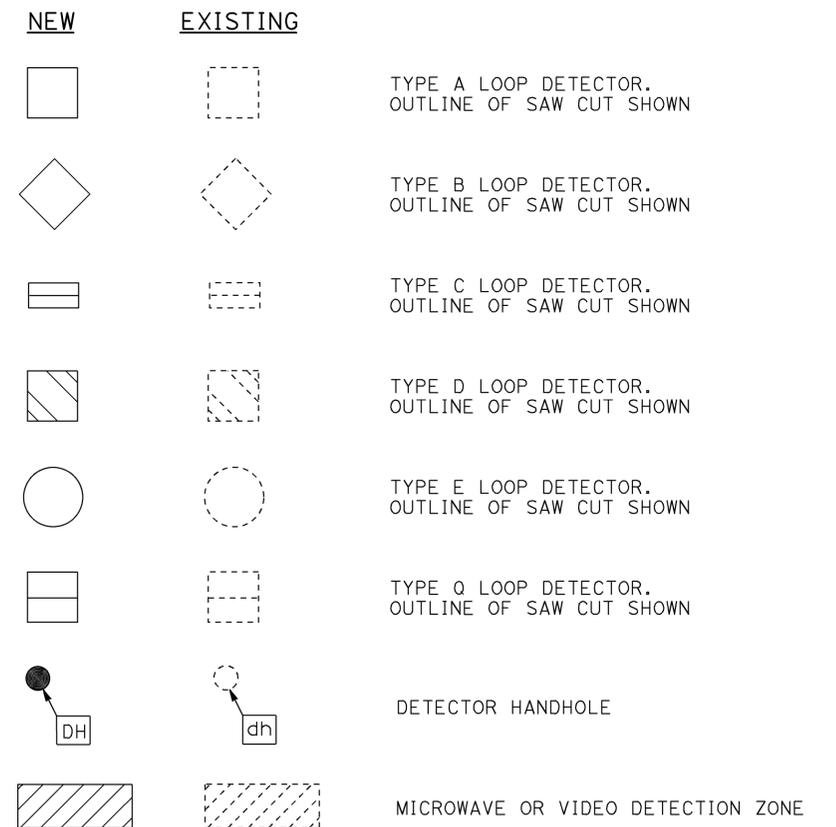
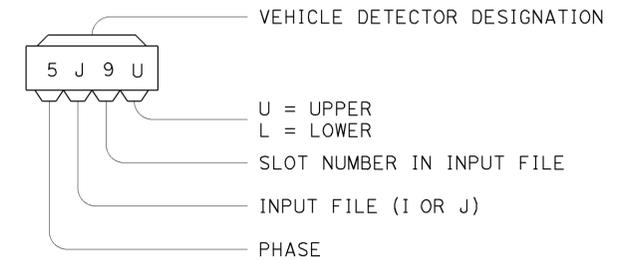
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED APRIL 15, 2016 SUPERSEDES RSP ES-1C DATED OCTOBER 30, 2015 AND RSP ES-1C DATED JULY 19, 2013 AND STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1C

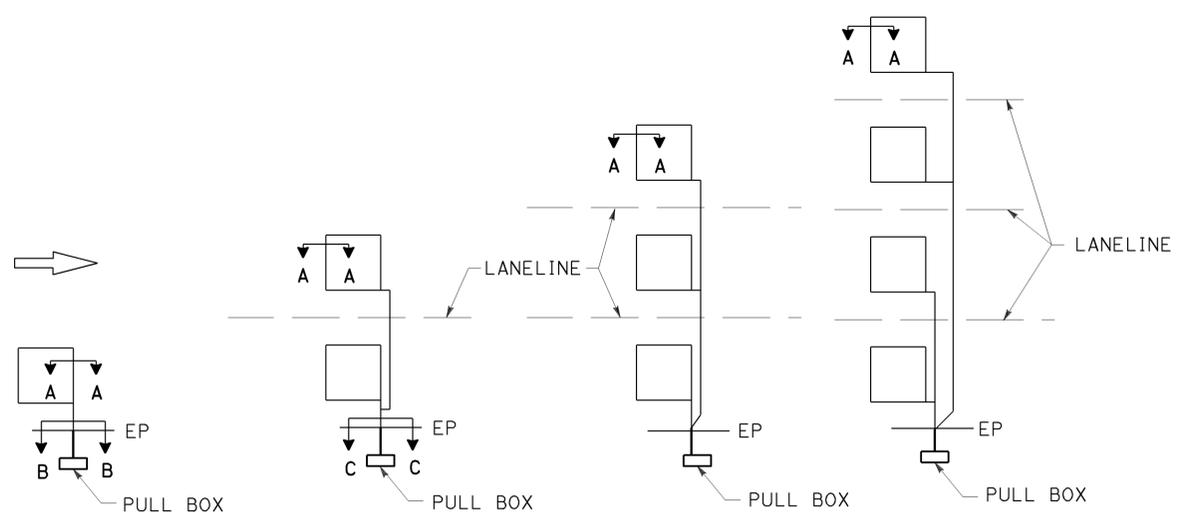
2010 REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	57	61

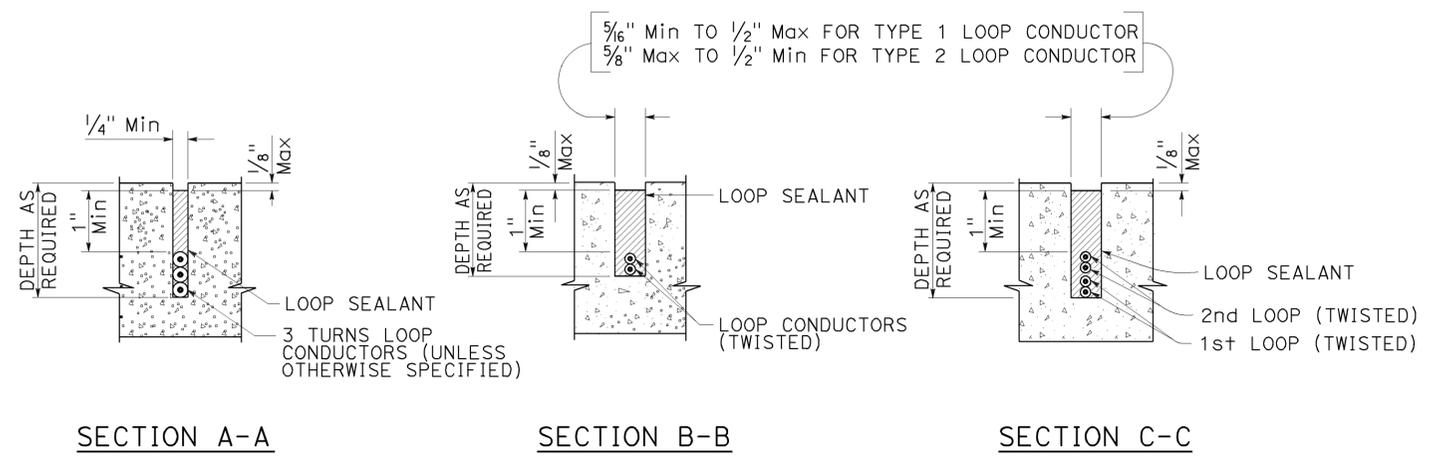
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 April 15, 2016
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

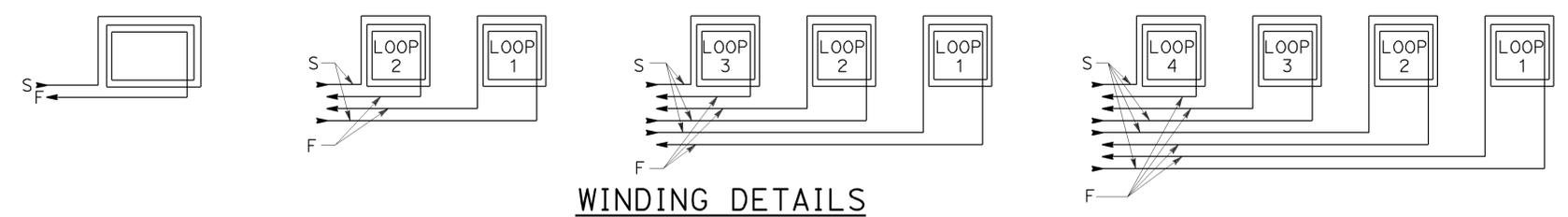
TO ACCOMPANY PLANS DATED 2-22-16



SAW CUT DETAILS
Type A loop detector configurations illustrated

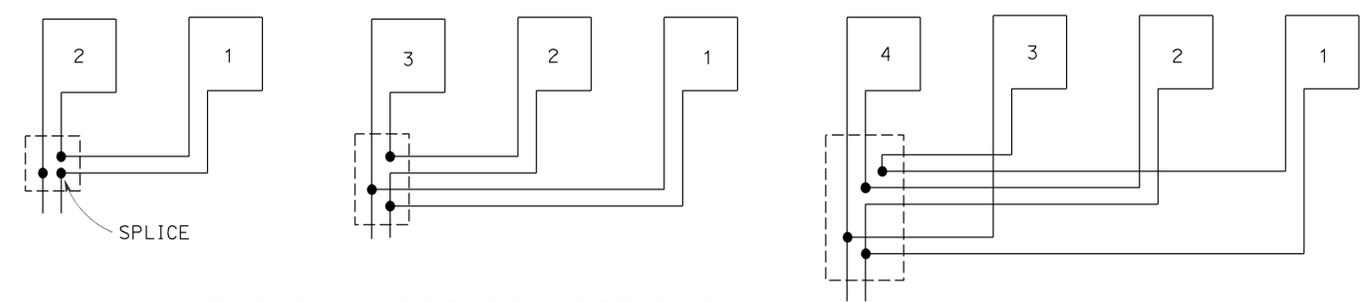


SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



WINDING DETAILS

ABBREVIATIONS:
 S - START
 F - FINISH



TYPICAL LOOP CONNECTIONS
Dashed lines represent the pull box

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LOOP DETECTORS)**
 NO SCALE

RSP ES-5A DATED APRIL 15, 2016 SUPERSEDES RSP ES-5A DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-5A DATED MAY 20, 2011 - PAGE 448 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-5A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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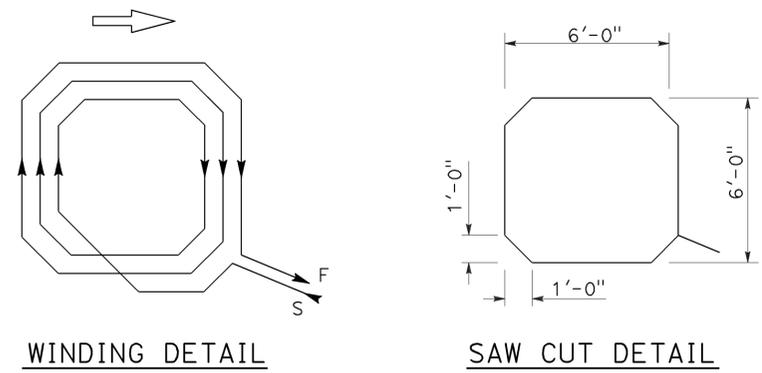
Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

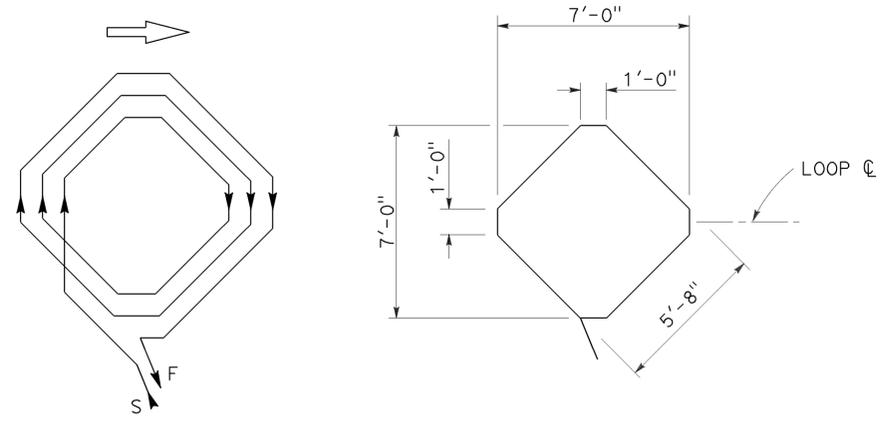
Theresa Aziz Gabriel
REGISTERED PROFESSIONAL ENGINEER
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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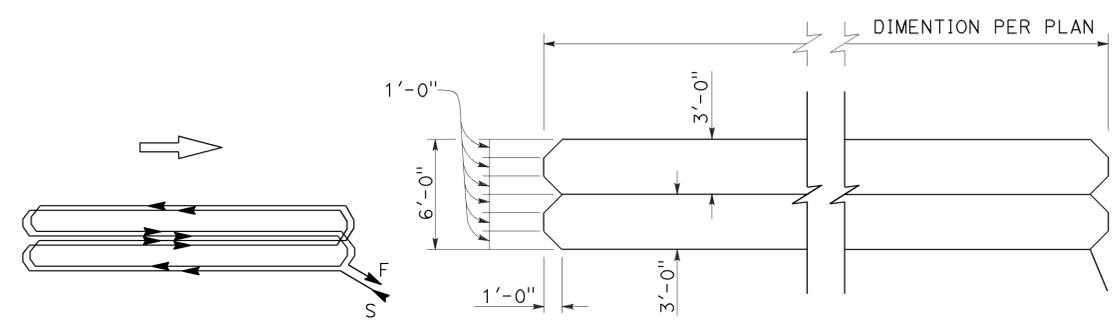
TO ACCOMPANY PLANS DATED 2-22-16



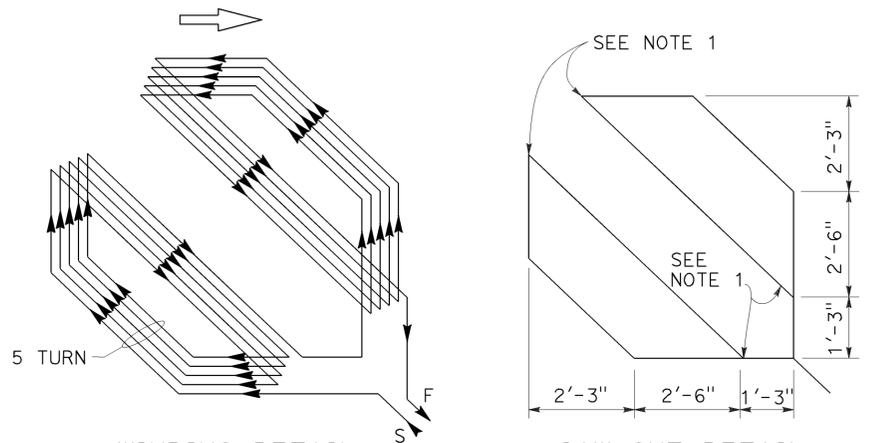
WINDING DETAIL
SAW CUT DETAIL
TYPE A LOOP DETECTOR CONFIGURATION



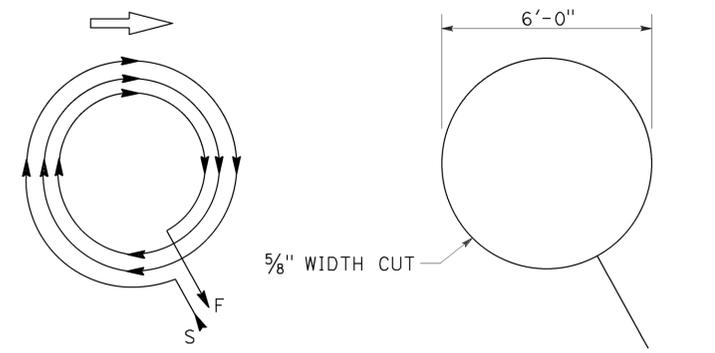
WINDING DETAIL
SAW CUT DETAIL
TYPE B LOOP DETECTOR CONFIGURATION



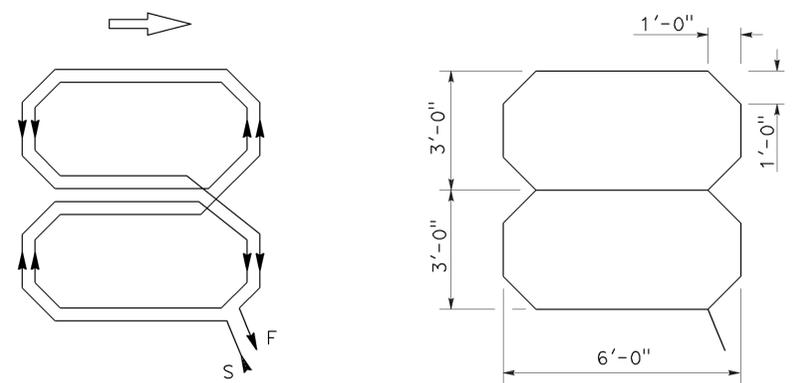
WINDING DETAIL
SAW CUT DETAIL
TYPE C LOOP DETECTOR CONFIGURATION



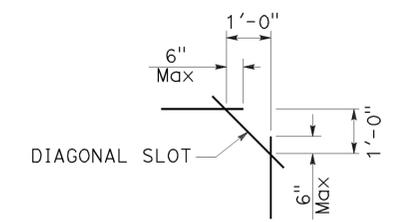
WINDING DETAIL
SAW CUT DETAIL
TYPE D LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAW CUT DETAIL
TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAW CUT DETAIL
TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF
DIAGONAL SLOT
AT CORNERS

- NOTES:**
1. Round corners of acute angle saw cuts to prevent damage to conductors.
 2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.
 3. Use Type D loops for limit line detection and bicycle lanes.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(DETECTORS)**
NO SCALE

RSP ES-5B DATED APRIL 15, 2016 SUPERSEDES RSP ES-5B DATED OCTOBER 30, 2015 AND RSP ES-5B DATED JULY 19, 2013 AND STANDARD PLAN ES-5B DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

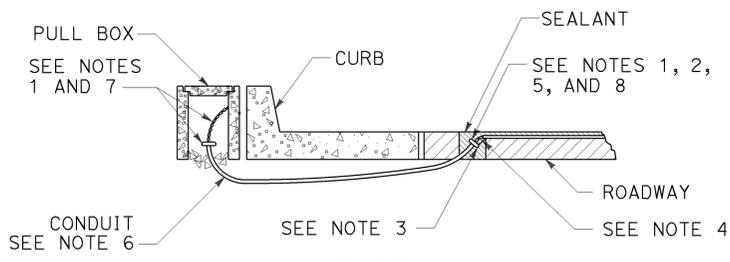
2010 REVISED STANDARD PLAN RSP ES-5B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99, 168, 180	Var	59	61

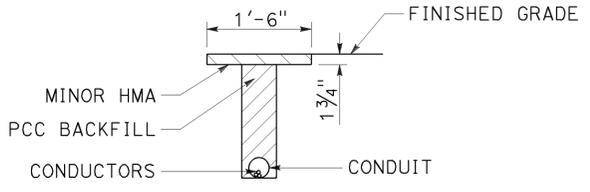
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 2-22-16

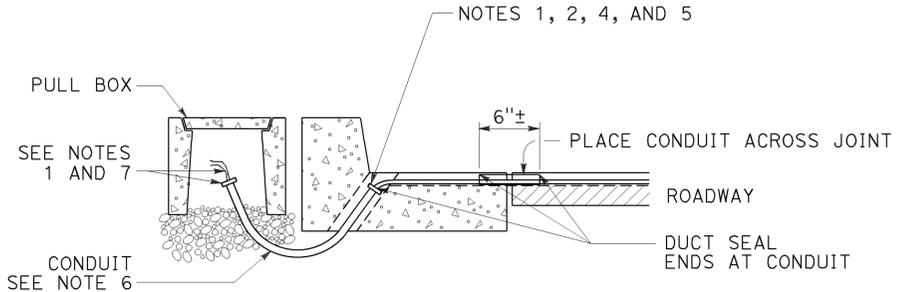
2010 REVISED STANDARD PLAN RSP ES-5D



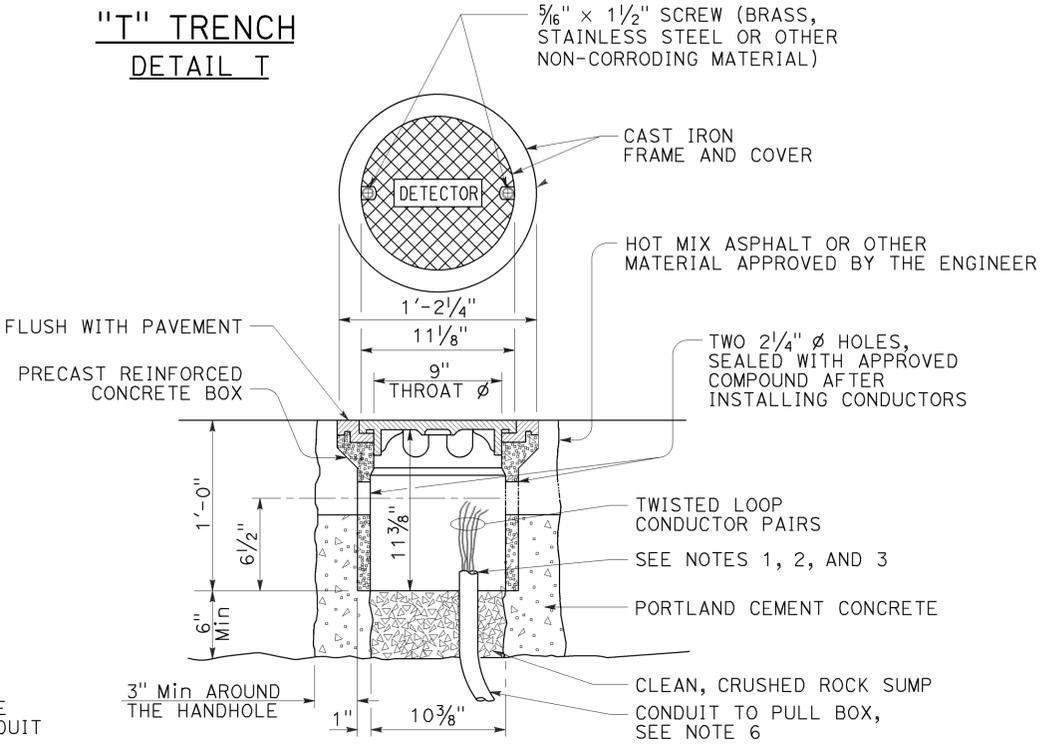
**TYPE A
CURB TERMINATION DETAIL**



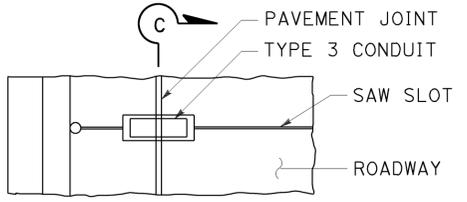
**"T" TRENCH
DETAIL 1**



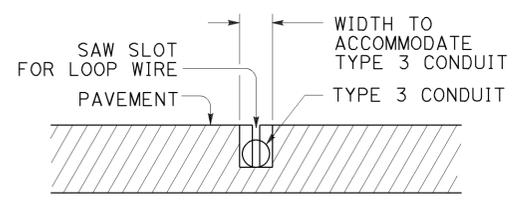
CROSS SECTION



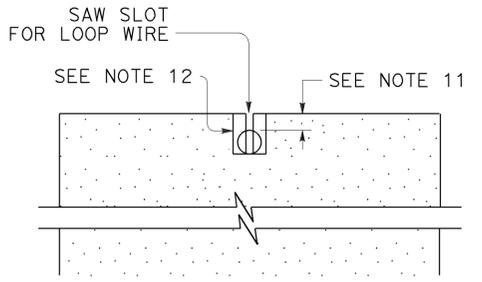
DETECTOR HANDHOLE DETAIL



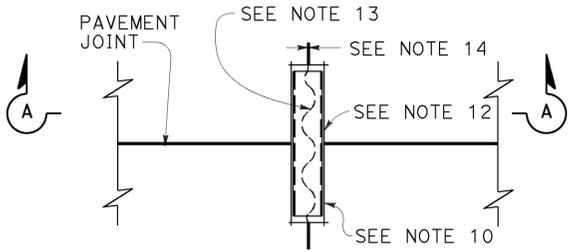
PLAN VIEW



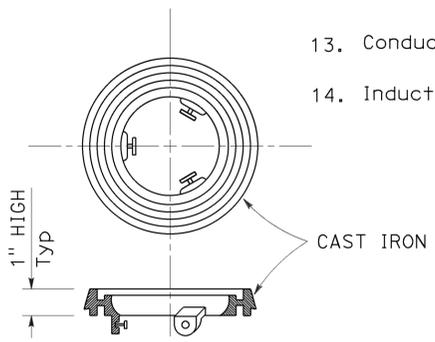
SECTION C-C



SECTION A-A



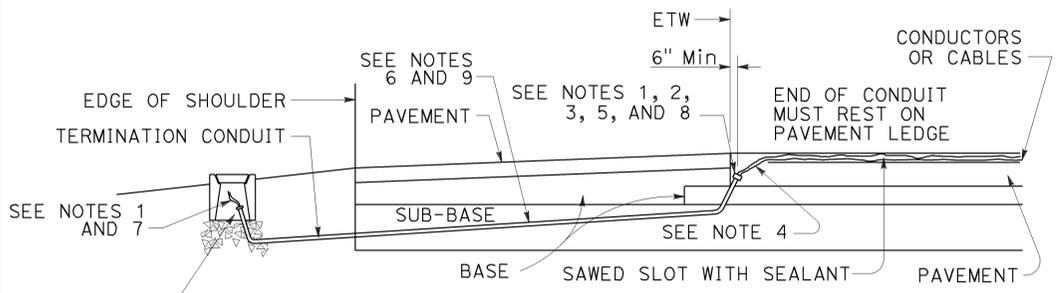
**PLAN VIEW
TYPICAL LOOP LEAD-IN DETAIL
AT PAVEMENT JOINT**



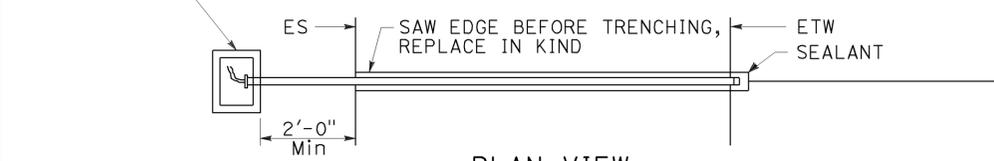
LOCKING GRADE RING

NOTES:

- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- | | |
|---------------------|------------------------|
| <u>Conduit size</u> | <u>Loop conductors</u> |
| 1"C minimum | 1 to 2 pairs |
| 1 1/2"C minimum | 3 to 4 pairs |
| 2"C minimum | 5 or more pairs |
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.



CROSS SECTION



**PLAN VIEW
SHOULDER TERMINATION DETAILS**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

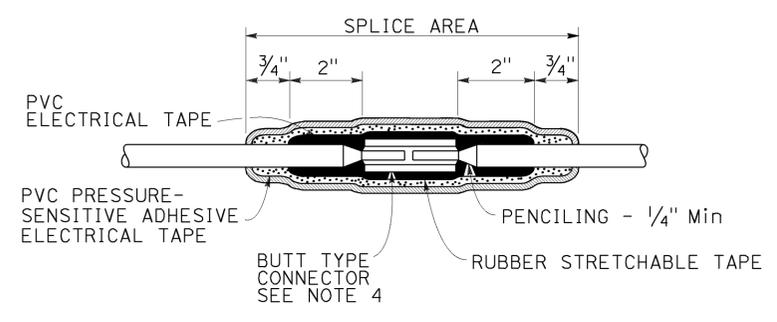
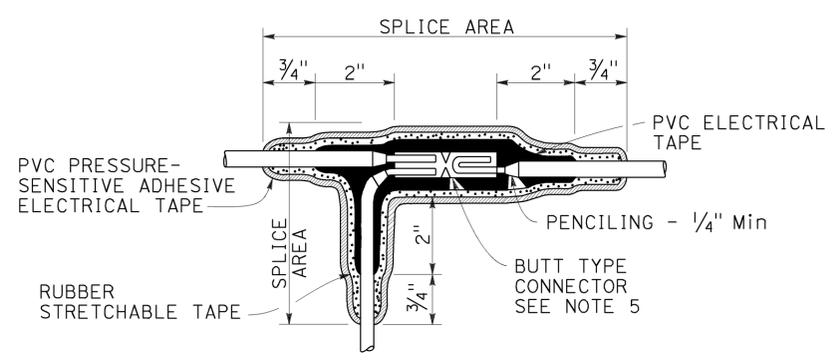
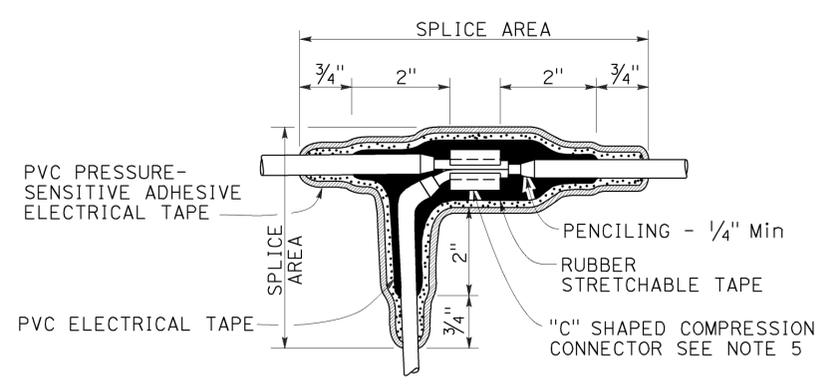
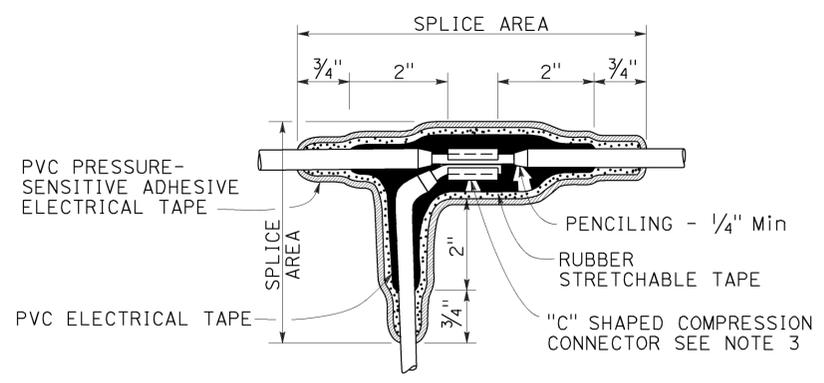
**ELECTRICAL SYSTEMS
(CURB AND SHOULDER TERMINATION,
TRENCH, AND HANDHOLE DETAILS)**

NO SCALE

RSP ES-5D DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-5D DATED JULY 19, 2013 AND STANDARD PLAN ES-5D DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

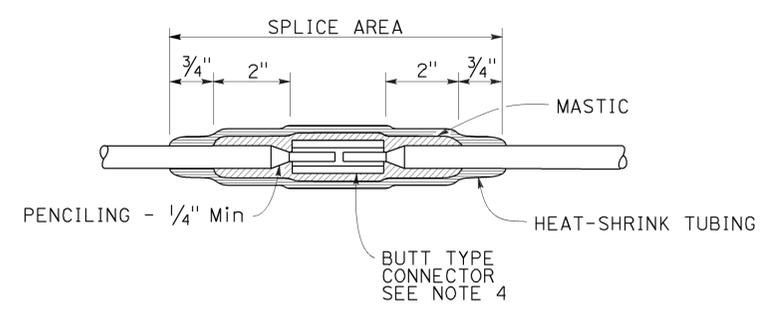
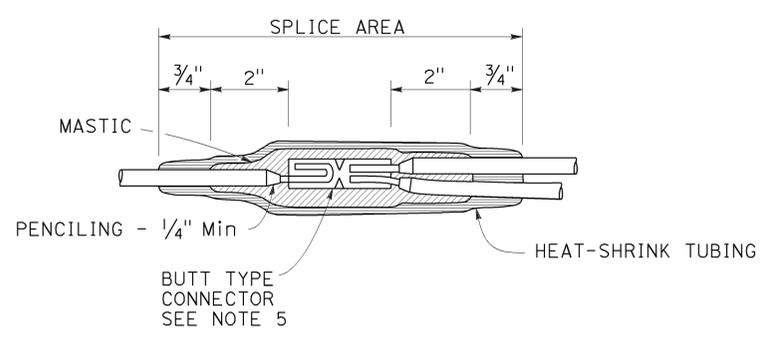
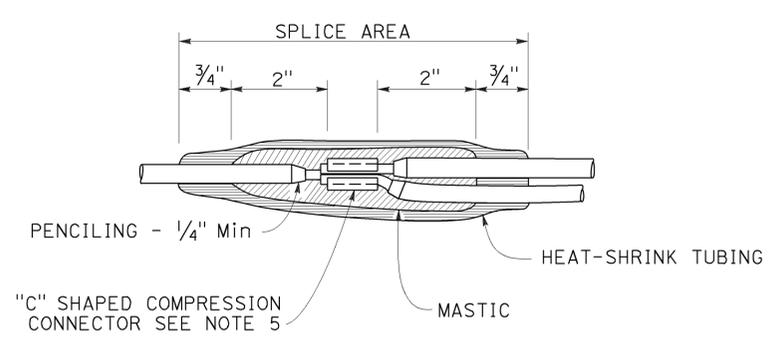
REVISED STANDARD PLAN RSP ES-5D

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	60	61
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER April 15, 2016 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
TO ACCOMPANY PLANS DATED 2-22-16					



- NOTES:**
1. Dimensions are minimum.
 2. Rubber tapes shall be rolled after application.
 3. Between 1 free-end and 1 through conductor.
 4. Between 2 free-end conductors.
 5. Between 3 free-end conductors.

TYPICAL SPLICE INSULATION METHOD B



TYPICAL SPLICE INSULATION HEAT-SHRINK TUBING

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SPLICE INSULATION METHODS DETAILS)

NO SCALE
RSP ES-13A DATED APRIL 15, 2016 SUPERSEDES RSP ES-13A DATED OCTOBER 30, 2015 AND
STANDARD PLAN ES-13A DATED MAY 20, 2011 - PAGE 491 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-13A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,99 168,180	Var	61	61

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 April 15, 2016
 PLANS APPROVAL DATE

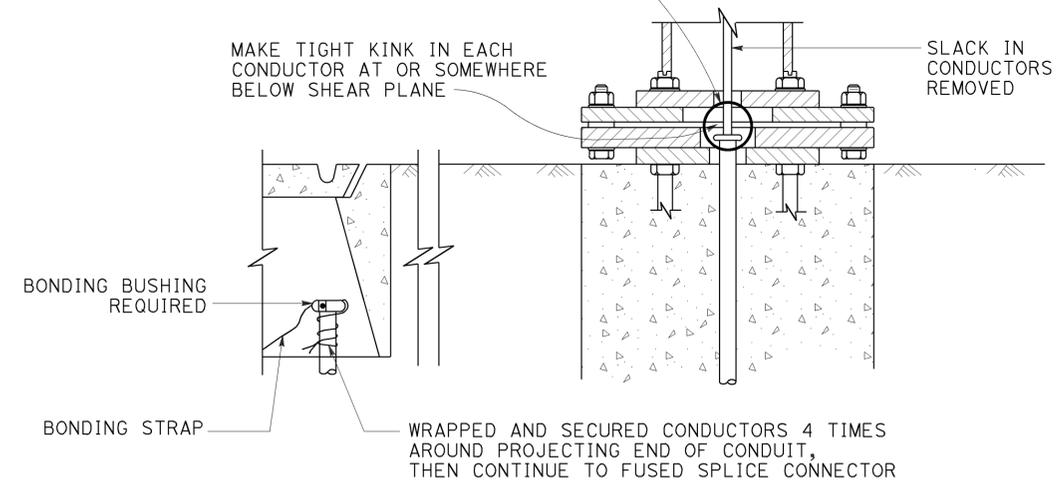
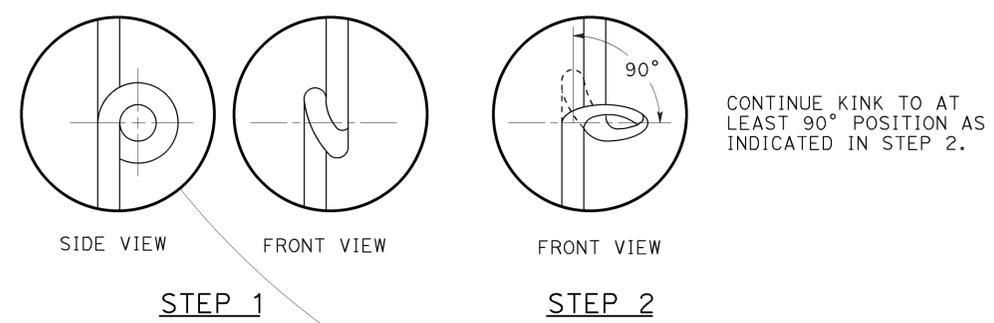
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TO ACCOMPANY PLANS DATED 2-22-16

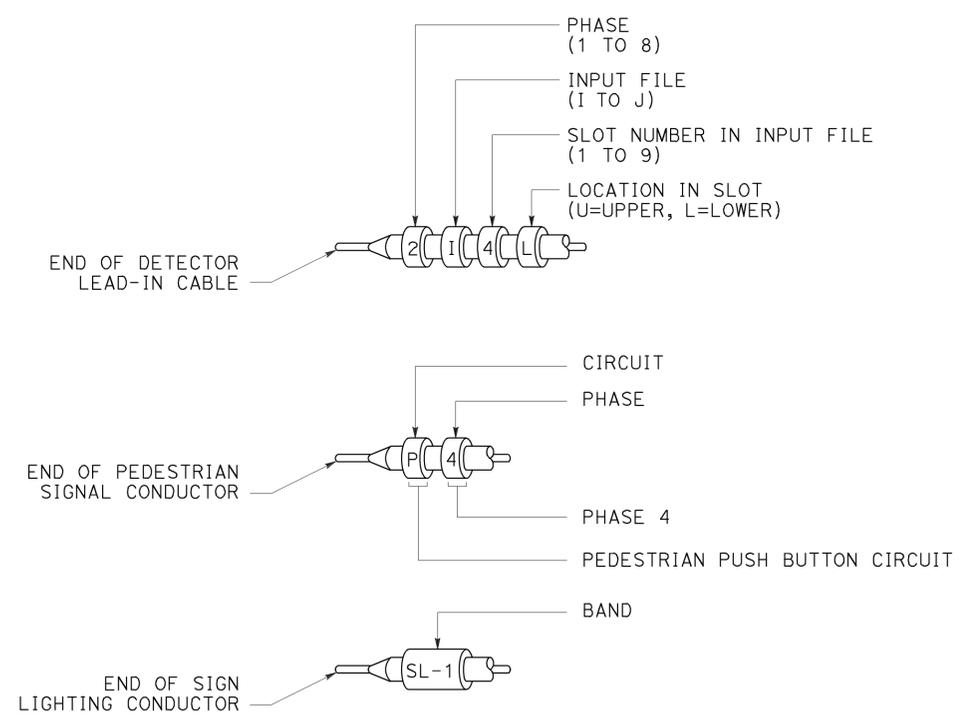
CIRCUIT VOLTAGE	FUSE VOLTAGE RATING	FUSE CURRENT RATING						
		HPS LAMP BALLAST		LOW PRESSURE SODIUM BALLAST	INDUCTION SIGN LIGHTING	SINGLE PHASE (TWO WIRE) TRANSFORMERS (PRIMARY SIDE)		
		70 W	100 W	180 W	85 W	1 KVA	2 KVA	3 KVA
120 V	250 V	5 A	5 A	5 A	5 A	10 A	20 A	30 A
240 V	250 V	5 A	5 A	5 A	5 A	6 A	10 A	20 A
480 V	500-600 V	5 A	5 A	3 A	1 A (SEE NOTE 2)	3 A	6 A	10 A

- NOTES:**
- Primary lines of multiple ballasts shall be provided with fused connectors. Fuse ratings shall be as noted above.
 - See Revised Standard Plan RSP ES-15D, Type SC3 control.

FUSE RATINGS FOR FUSED CONNECTORS



KINKING DETAIL FOR SLIP BASE STANDARDS
DETAIL A



TYPICAL BANDING DETAILS
DETAIL B

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(FUSE RATING, KINKING AND BANDING DETAIL)

NO SCALE

RSP ES-13B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-13B DATED MAY 20, 2011 - PAGE 492 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-13B