

INDEX OF PLANS

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

ACNHP-P050(137)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN YOLO COUNTY
IN WEST SACRAMENTO AT 0.4 MILE WEST
OF WESTBOUND ROUTE 80 ON-RAMP
ONTO EASTBOUND ROUTE 80

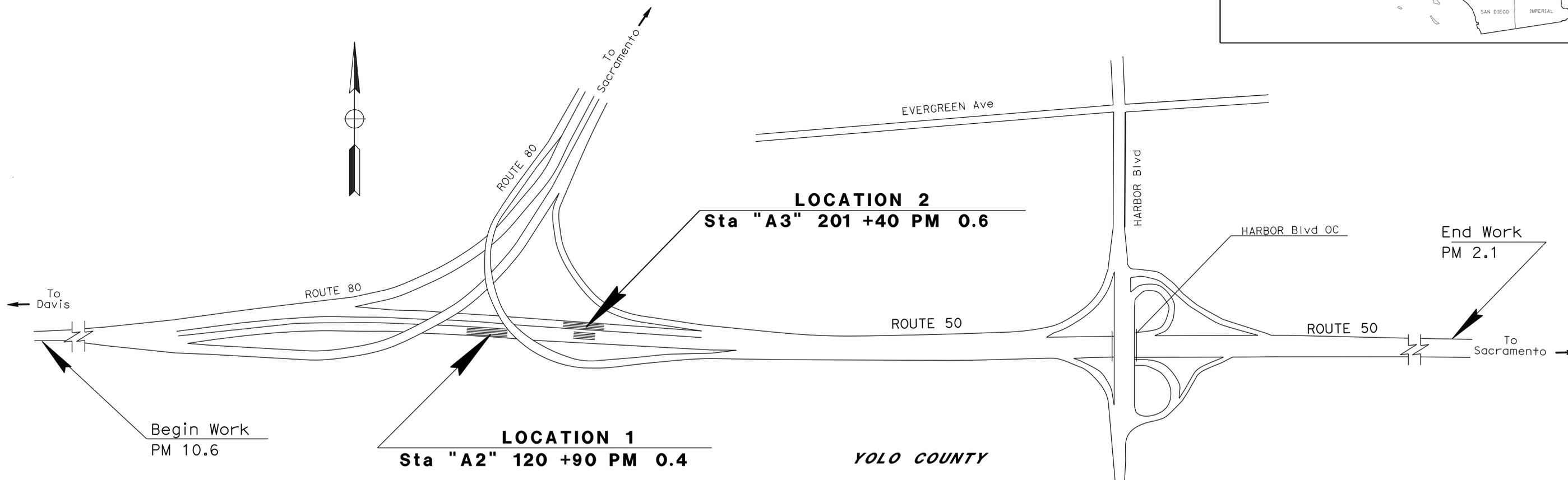
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	1	35





LOCATION MAP



PROJECT MANAGER
DOUGLAS LANGE
 DESIGN ENGINEER
MIKE HAGEN

Dennis G. Corcoran 6-15-15
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
 June 15, 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.



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

NO SCALE

CONTRACT No.	03-3F6904
PROJECT ID	0313000151

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC SAFETY
 FUNCTIONAL SUPERVISOR MIKE HAGEN
 CALCULATED/DESIGNED BY CHECKED BY
 DENNIS CORCORAN DAVINDER MINHAS
 REVISED BY DATE REVISED

NOTES:

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- FOR STRUCTURAL SECTION LIMITS, SEE LAYOUT SHEETS L-1 AND L-2.

ABBREVIATIONS:

- HMA-A HOT MIX ASPHALT-TYPE A
 JPCP (RSC) JOINTED PLANE CONCRETE PAVEMENT (RAPID SET CONCRETE)
 LT LIME TREATMENT

DESIGN DESIGNATION

ADT (2013)	86,000	D	60%
ADT (2036)	115,700	T	04%
DHV	7,140	V	65 mph
ESAL	10,268,700	TI ₂₀	12.5

PAVEMENT CLIMATE REGION: INLAND VALLEY

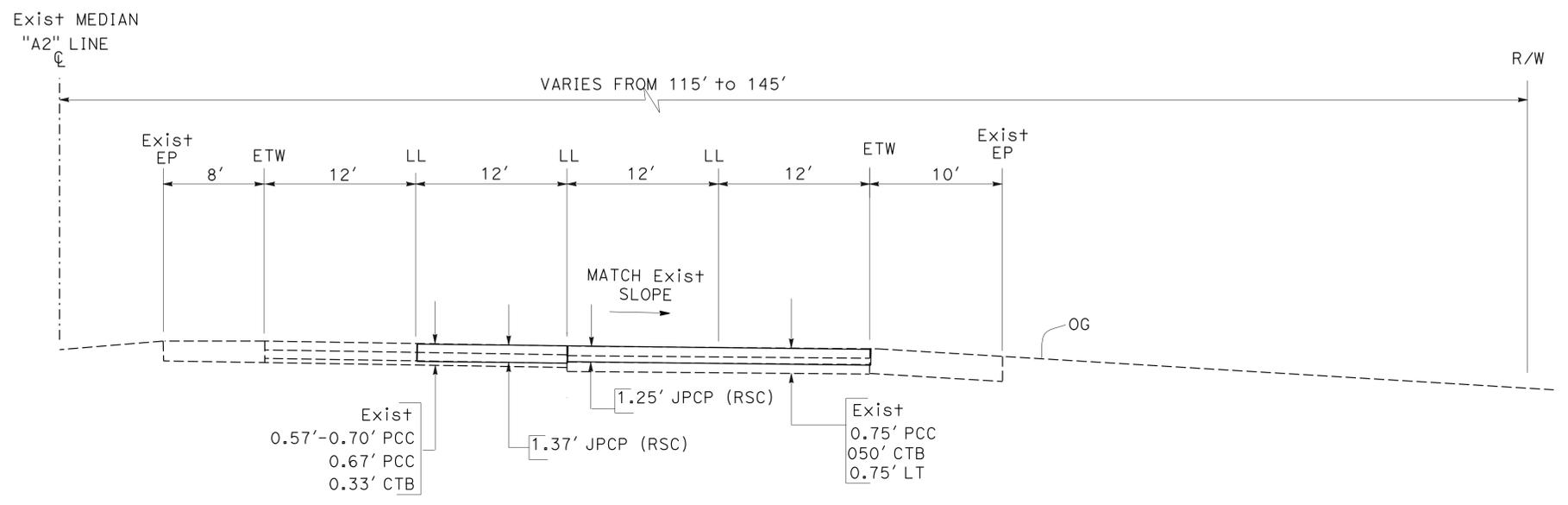
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	2	35

Dennis L. Corcoran 6-15-15
 REGISTERED CIVIL ENGINEER DATE

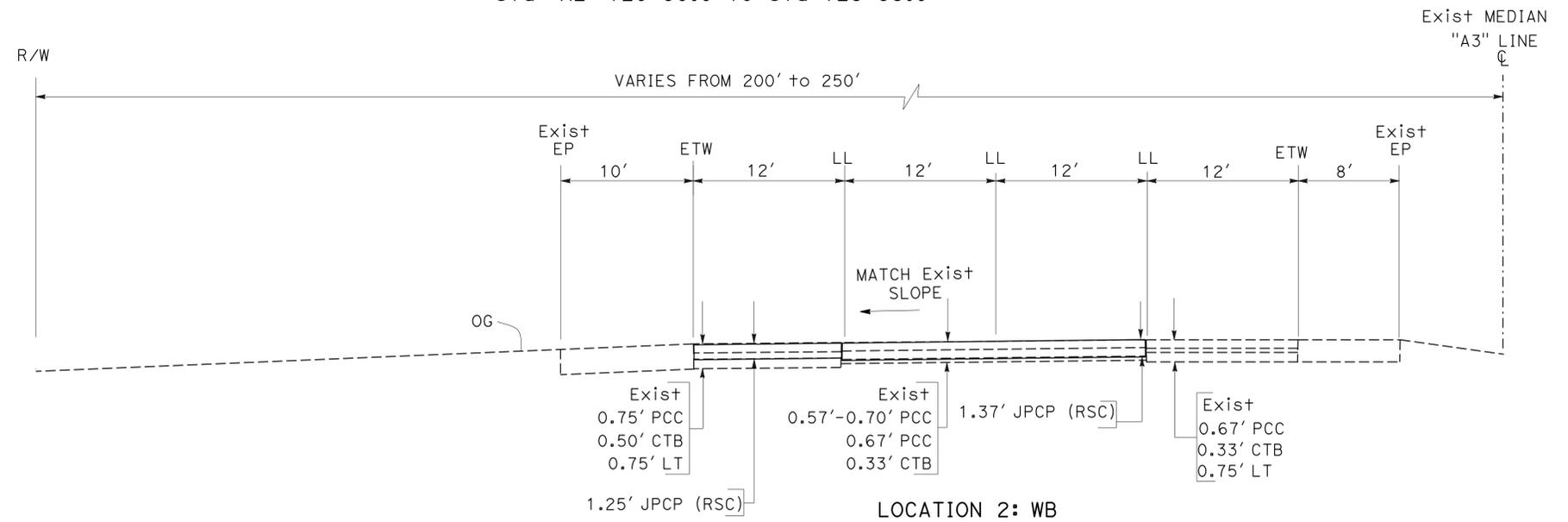
6-15-15
 PLANS APPROVAL DATE

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.

DENNIS CORCORAN
 No. 59438
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA



LOCATION 1: EB
 Sta "A2" 120+90.0 TO Sta 123+95.0



LOCATION 2: WB
 Sta "A3" 201+40.0 TO Sta 201+91.7
 Sta "A3" 203+16.5 TO Sta 204+45.0

ROUTE 50

TYPICAL CROSS SECTIONS
 NO SCALE X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC SAFETY
 FUNCTIONAL SUPERVISOR MIKE HAGEN
 CALCULATED/DESIGNED BY CHECKED BY
 DENNIS CORCORAN DAVINDER MINHAS
 REVISED BY DATE REVISED

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. FOR STRUCTURAL SECTION LIMITS, SEE LAYOUT SHEETS L-1 AND L-2.
3. THE WIM SYSTEM HERE WILL NOT BE REPLACED. SEE SHEETS X-1 AND L-1 FOR THE NEW EB WIM SYSTEM.

ABBREVIATIONS:

HMA-A HOT MIX ASPHALT-TYPE A
 JPCP (RSC) JOINTED PLANE CONCRETE PAVEMENT (RAPID SET CONCRETE)
 LT LIME TREATMENT

DESIGN DESIGNATION

ADT (2013)	86,000	D	60%
ADT (2036)	115,700	T	04%
DHV	7,140	V	65 mph
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PAVEMENT CLIMATE REGION: INLAND VALLEY

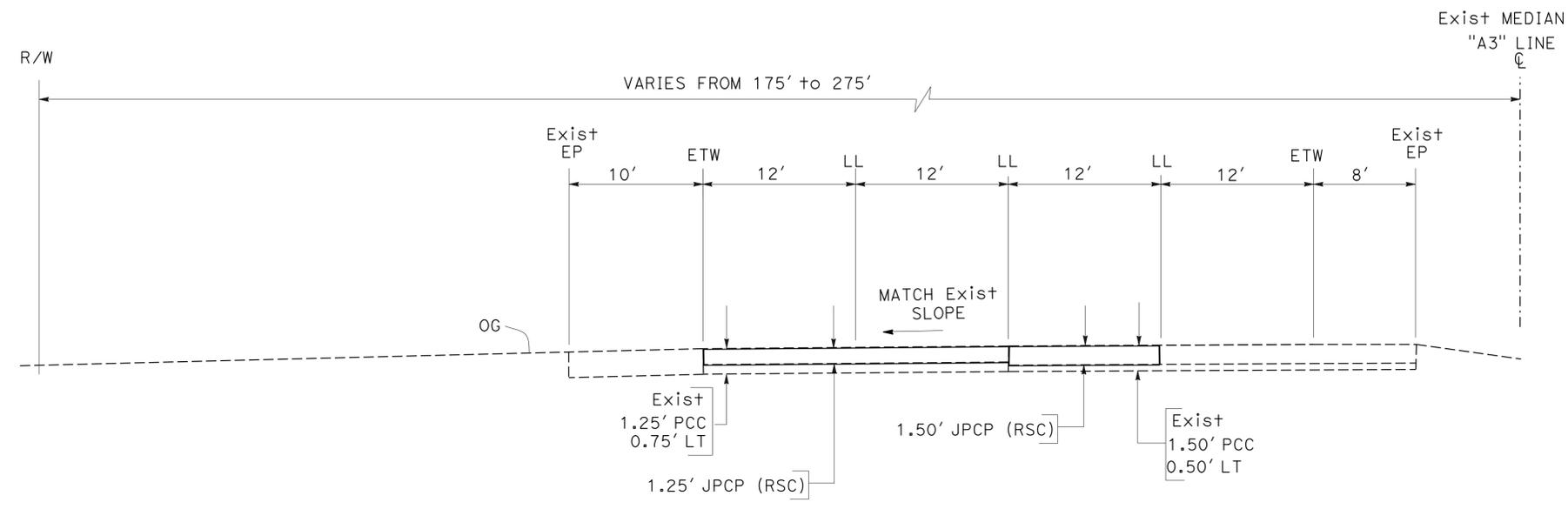
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	3	35

Dennis L. Corcoran 6-15-15
 REGISTERED CIVIL ENGINEER DATE

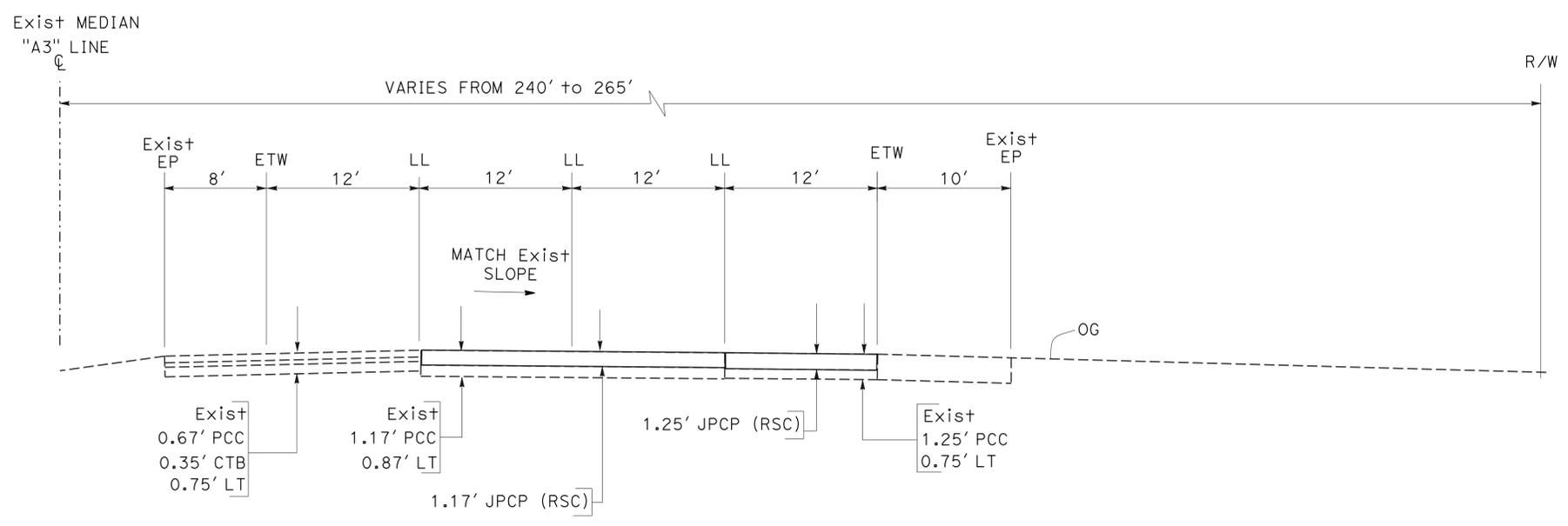
6-15-15
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REGISTERED PROFESSIONAL ENGINEER
 DENNIS CORCORAN
 No. 59438
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA



LOCATION 2: WB (EXISTING WIM SECTION)
 Sta "A3" 201+91.7 TO Sta 203+16.5



*LOCATION 2: EB (EXISTING WIM SECTION)
 Sta "A3" 202+70.0 TO Sta 203+20.0

TYPICAL CROSS SECTIONS
 NO SCALE **X-2**

*SEE NOTE 3.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC SAFETY

REVISOR
 DENNIS CORCORAN
 DAVINDER MINHAS

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

ABBREVIATIONS:

- WIM WEIGH IN MOTION
 AILTS ALTERNATIVE IN-LINE TERMINAL SYSTEM
 JPCP (RSC) JOINTED PLAIN CONCRETE PAVEMENT (RAPID SET CONCRETE)

LEGEND:

-  ROADWAY EXCAVATION
 REMOVE Conc Pvmt

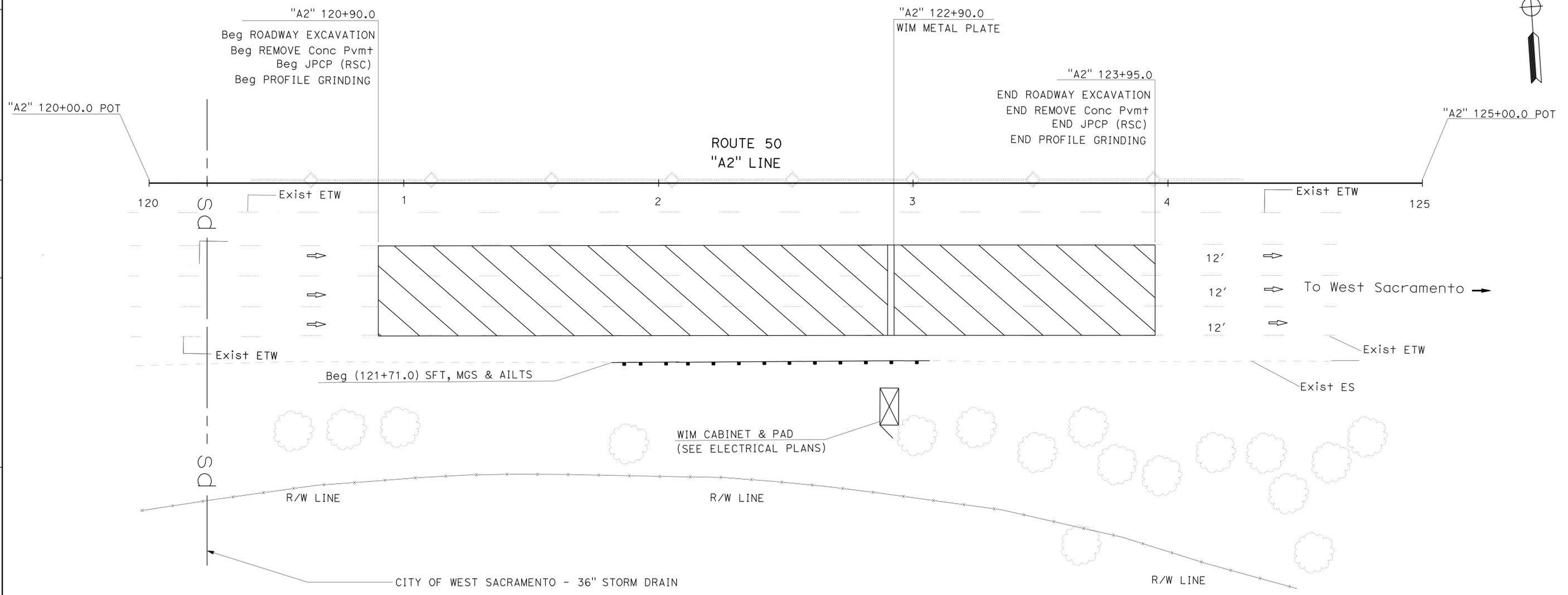
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	4	35

Dennis L. Corcoran 6-15-15
 REGISTERED CIVIL ENGINEER DATE

6-15-15
 PLANS APPROVAL DATE

No. 59438
 Exp. 12-31-15
 CIVIL

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LOCATION 1: EB ROUTE 50 PM 0.4

LAYOUT
 SCALE: 1" = 20'
L-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	5	35

Dennis L. Corcoran 6-15-15
 REGISTERED CIVIL ENGINEER DATE

6-15-15
 PLANS APPROVAL DATE

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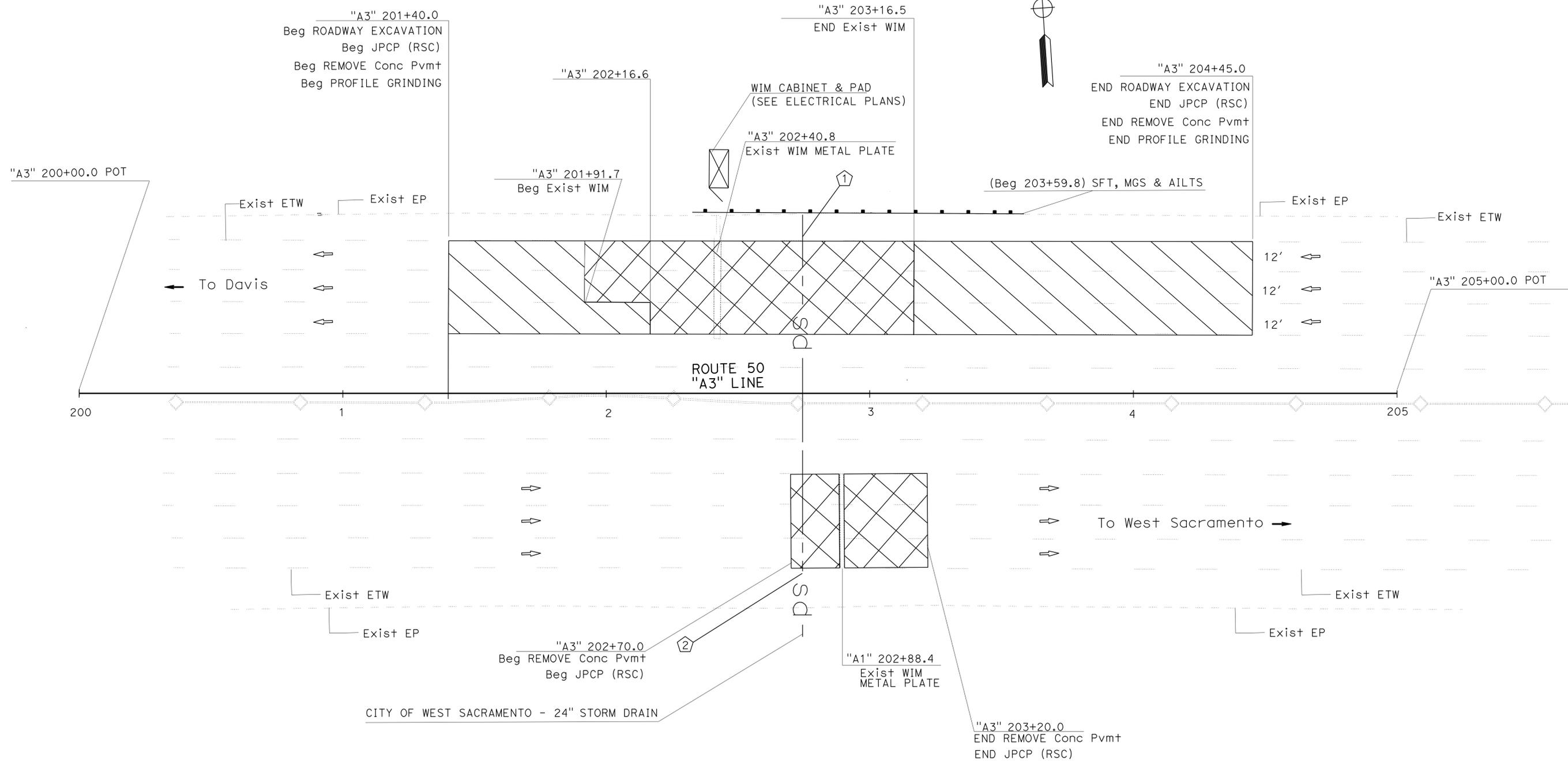
REGISTERED PROFESSIONAL ENGINEER
 DENNIS CORCORAN
 No. 59438
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

LEGEND:

-  ROADWAY EXCAVATION
-  REMOVE Conc Pvmt
-  EXIST WIM



POSITIVE LOCATION INFORMATION

No.	LOCATION	ELEVATION	METHOD
1	58.45' Lt "A3" LINE STA 202+74	15.5	ELECTRONIC DETECTION
2	67.24' Rt "A3" LINE STA 202+74	15.5	ELECTRONIC DETECTION

**LOCATION 2: WB (UPPER SECTION) & EB (LOWER SECTION)
ROUTE 50 PM 0.6**

LAYOUT
SCALE: 1" = 20'
L-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR MIKE HAGEN
 CALCULATED/DESIGNED BY
 CHECKED BY
 DENNIS CORCORAN
 DAVINDER MINHAS
 REVISED BY
 DATE REVISED

LAST REVISION DATE PLOTTED => 29-JUL-2015
 06-17-15 TIME PLOTTED => 15:08

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	6	35

Kris M. Albers 6-15-15
REGISTERED CIVIL ENGINEER DATE

6-15-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KRIS M. ALBERS
No. 49986
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

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STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LOCATION AND DESCRIPTION	FACING TRAFFIC		SIGN CODE		SIGN MESSAGE	PANEL SIZE	NUMBER AND SIZE OF POST	NUMBER OF SIGNS
	WB	EB	FEDERAL	CALIFORNIA				
800 FT BEFORE BEGIN CONSTRUCTION	1		W20-1	C23	ROAD WORK AHEAD	60" X 60"	2-4"X6"	1
500 FT BEFORE BEGIN CONSTRUCTION		1		C14	END ROAD WORK	48" X 24"	1-4"X6"	1
500 FT AFTER END CONSTRUCTION	1			C14	END ROAD WORK	48" X 24"	1-4"X6"	1
800 FT AFTER END CONSTRUCTION		1	W20-1	C23	ROAD WORK AHEAD	60" X 60"	2-4"X6"	1
ON CONNECTOR FROM WB Rte 50 TO EB Rte 80	1			C14	END WORK AHEAD	48" X 24"	1-4"X6"	1

NOTES:

- EXACT SIGN LOCATION TO BE DETERMINED BY THE ENGINEER.

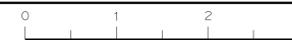
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
FUNCTIONAL SUPERVISOR
MASTRI ALVANDI
CALCULATED/DESIGNED BY
CHECKED BY
KRIS ALBERS
JACK KEMMERLY
REVISED BY
DATE REVISED

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CONSTRUCTION AREA SIGNS

NO SCALE

CS-1



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	7	35

Kris M. Albers 6-15-15
 REGISTERED CIVIL ENGINEER DATE

6-15-15
 PLANS APPROVAL DATE

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PAVEMENT MARKER

DETAIL NUMBER	RETROREFLECTIVE
	TYPE G
12	EA
12	51
TOTAL	51

PAVEMENT DELINEATION QUANTITIES

LOCATION	4" THERMOPLASTIC TRAFFIC STRIPE	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 36-12)
	DETAIL 27B	DETAIL 12
	LF	LF
PM 0.4/0.6	736	2208
TOTAL	736	2208

PAVEMENT DELINEATION QUANTITIES PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR MIKE HAGEN
 CALCULATED/DESIGNED BY CHECKED BY
 DENNIS CORCORAN DAVINDER MINHAS
 REVISED BY DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	8	35

Dennis L. Corcoran 6-15-15
 REGISTERED CIVIL ENGINEER DATE

6-15-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 DENNIS CORCORAN
 No. 59438
 Exp. 12-31-15
 CIVIL
 STATE OF CALIFORNIA

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ROADWAY QUANTITIES AND EARTHWORK

SHEET No.	STATION	TRAFFIC LANE No. (N)	LENGTH OF WORK (N)	REMOVE Conc Pvmt	JOINTED PLAIN CONCRETE PAVEMENT (RAPID SET CONCRETE)	ROADWAY EXCAVATION	GUARD RAILING (N) LAYOUT	MIDWEST GUARDRAIL SYSTEM	ALTERNATIVE IN-LINE TERMINAL SYSTEM	END ANCHOR ASSEMBLY (TYPE SFT)
				LF	CY	CY	CY	TYPE	LF	EA
L-1	"A2" 120+90.0 TO 123+95.0	EB 2,3,4	305.0	389	525	136	16A	75	1	1
L-2	"A3" 201+40.0 TO 201+91.7 & 203+16.5 to 204+45.0	WB 2,3,4	180.2	279	320	40				
L-2	"A3" 201+91.7 TO 203+16.5	WB 2,3,4	124.8	222	222		16A	75	1	1
L-2	"A3" 202+70.0 TO 203+20.0	EB 2,3,4	50.0	80	80					
TOTAL				970	1147	176		150	2	2

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

**SUMMARY OF QUANTITIES
 Q-1**

REVISOR
 DATE

NATHAN DEKENS
 HABIB GOLBAN

CALCULATED-DESIGNED BY
 CHECKED BY

FUNCTIONAL SUPERVISOR
 DAVE GAMBOA

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	9	35

H. Golban 6-15-15
 REGISTERED ELECTRICAL ENGINEER DATE

6-15-15
 PLANS APPROVAL DATE

HABIB GOLBAN
 No. 17928
 Exp. 09-30-16
 ELECTRICAL

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.

ABBREVIATIONS

EXISTING	NEW
sli	SLI - SCALE LEAD-IN-CABLE
stc	STC - SCREENED TRANSMISSION CABLE
	TC - TELEPHONE CABLE
	PP - PERFORATED PLASTIC PIPE

WIRING DIAGRAM SYMBOLS

- CONTACTOR (LIGHTING)
- SOLID NEUTRAL BUS
- AUTO-TEST SWITCH
- PHOTOELECTRIC UNIT
- METER SOCKET WITH MANUAL CIRCUIT CLOSING DEVICE

EQUIPMENT

- Exist MICROWAVE VIDEO DETECTION SYSTEM
- Exist MICROWAVE VIDEO DETECTION ZONE
- PIEZO ELECTRIC AXLE SENSOR
- EXISTING PIEZO ELECTRIC AXLE SENSOR

LEGEND:

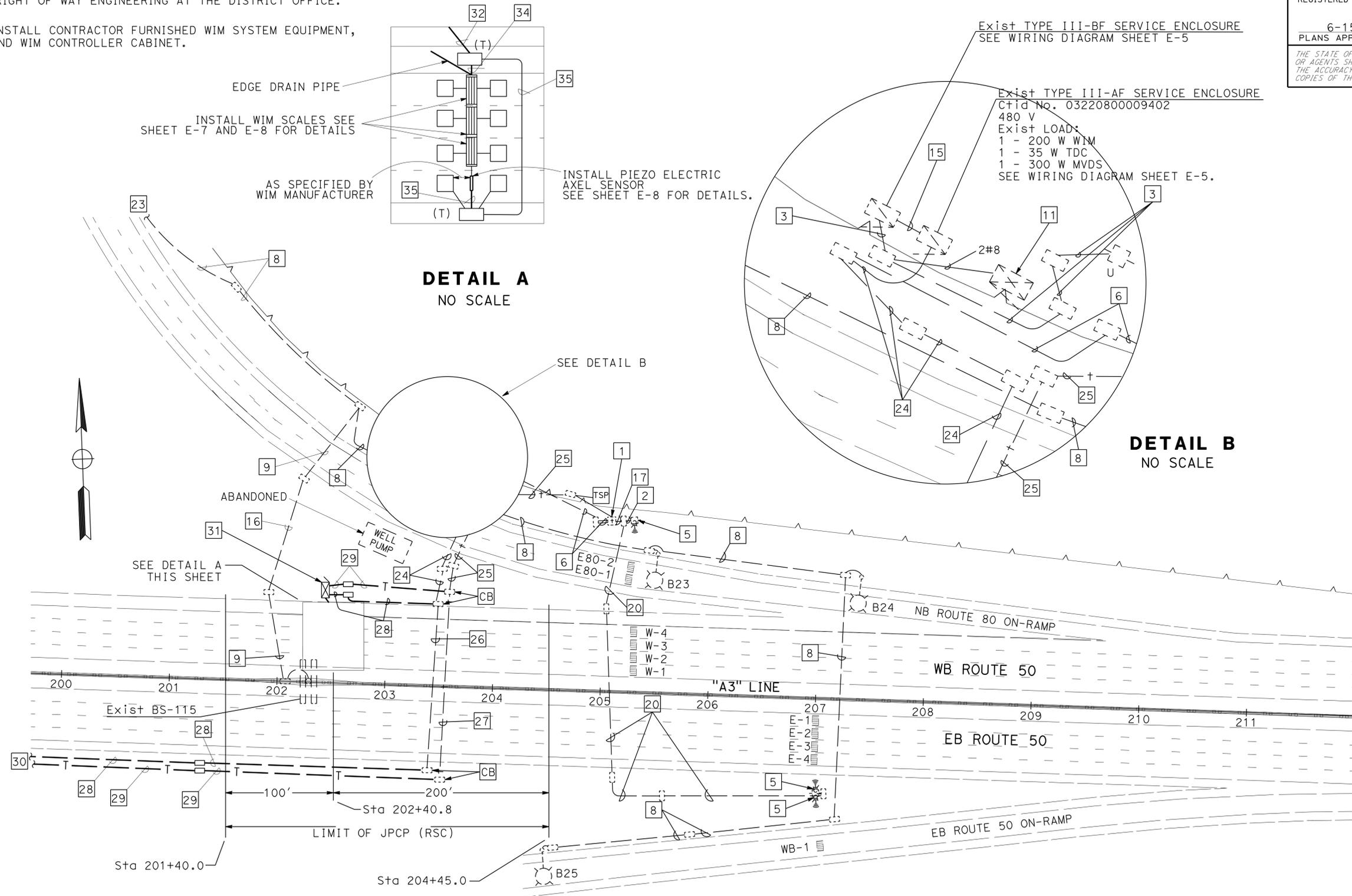
- 1 Exist TYPE 'B' TELEPHONE DEMARCATION CABINET.
- 2 Exist 2"C, 1MVDS CABLE.
- 3 Exist 2"C, 3#2(SERVICE).
- 4 Exist MODEL 334 CABINET FOR WEIGH-IN-MOTION SYSTEM.
- 5 Exist TYPE B MVDS.
- 6 Exist 1-1/2"C, 2#8(tdc).
- 7 Exist 2"C, 2 TC
- 8 Exist 1-1/2"C, 2#6(ltg).
- 9 Exist 3"C, 2#6(LTG).
- 10 Exist PUMP MOTOR CONTROLLER CABINET WITH WIM SUBPANEL.
- 11 Exist IRRIGATION CONTROLLER CABINET.
- 12 Exist 3"C, 3#2(PUMP MOTOR POWER).
- 13 Exist 1-1/2"C, 4#8(WIM EB/WB).
- 14 Exist 1-1/2"C, 4#8(WIM EB/WB)(CONTROLLER POWER)
- 15 Exist 2"C, 3#2(SUBPANEL).
- 16 Exist 2"C, 2#6.
- 17 Exist 3"C, 3 MVDS CABLES.
- 18 Exist 2"C, 1TC.
- 19 Exist 3"C, 8 dlc, 6 slc, 1 stc, 2#8.
- 20 Exist 3"C, 2 MVDS CABLES.
- 21 Exist 2"C, 2#8
- 22 Exist 2"C, 1 TC
- 23 TO EXISTING LIGHTING.
- 24 Exist 1-1/2"C, ADD 4#8(WIM EB/WB).
- 25 Exist 2"C, ADD 2 TC
- 26 Exist 2"C, ADD 2#8
- 27 Exist 2"C, ADD 1 TC
- 28 2"C, 2#8
- 29 2"C, 1 TC
- 30 TO EB WIM LOCATION. SEE SHEET E-4.
- 31 WIM CABINET. SEE DETAIL SHEET E-6.
- 32 3" C, 8 DLC, 6 SLC, 1 STC.
- 33 SEE SHEET E-3 FOR CONTINUATION.
- 34 3" C, 4 SLI, 6 LOOP PAIRS
- 35 3" C, 2 SLI, 1 STC, 2 LOOP PAIRS

HIGH SPEED WEIGH-IN-MOTION SYSTEM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	11	35
H. Golban REGISTERED ELECTRICAL ENGINEER			6-15-15 DATE		
6-15-15 PLANS APPROVAL DATE			HABIL GOLBAN No. 17928 Exp. 09-30-16 ELECTRICAL		
<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.
- INSTALL CONTRACTOR FURNISHED WIM SYSTEM EQUIPMENT, AND WIM CONTROLLER CABINET.



DETAIL A
NO SCALE

DETAIL B
NO SCALE

LOCATION 2

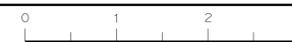
HIGH SPEED WEIGH-IN-MOTION SYSTEM

SCALE 1" = 50'

E-3

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISIONS
Caltrans	DAVE GAMBOA	NATHAN DEKENS	
ELECTRICAL DESIGN	CHECKED BY	HABIB GOLBAN	DATE REVISED



LAST REVISION DATE PLOTTED => 29-JUL-2015
06-15-15 TIME PLOTTED => 15:08

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR
 DAVE GAMBOA

CALCULATED/DESIGNED BY
 CHECKED BY

NATHAN DEKENS
 HABIB GOLBAN

REVISED BY
 DATE

NOTE:
 1- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
 2- INSTALL CONTRACTOR FURNISHED WIM SYSTEM EQUIPMENT, AND WIM CONTROLLER CABINET.

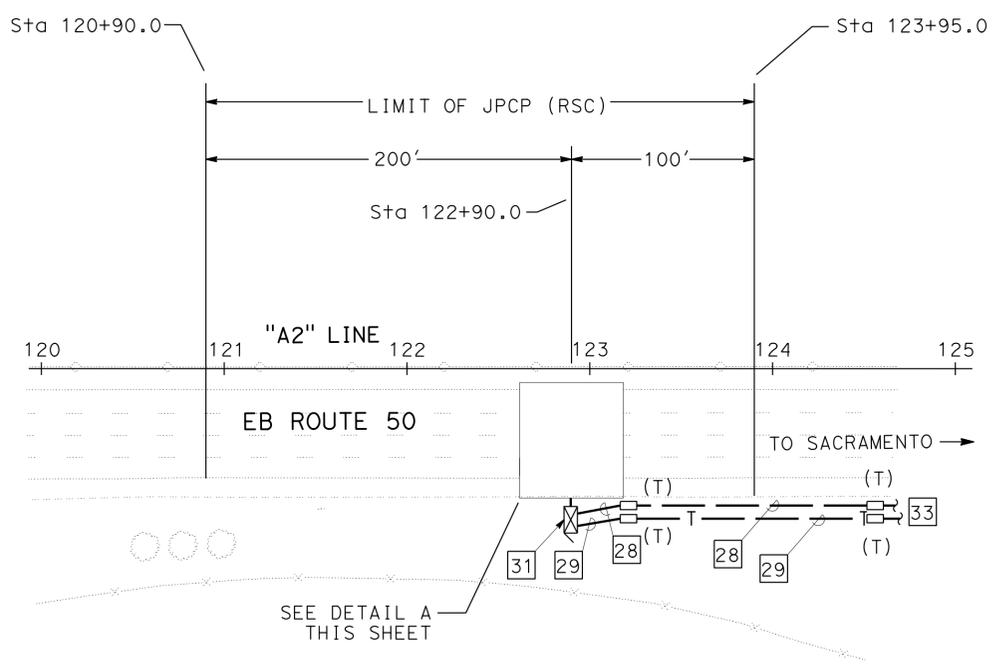
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	12	35

H. Golban 6-15-15
 REGISTERED ELECTRICAL ENGINEER DATE

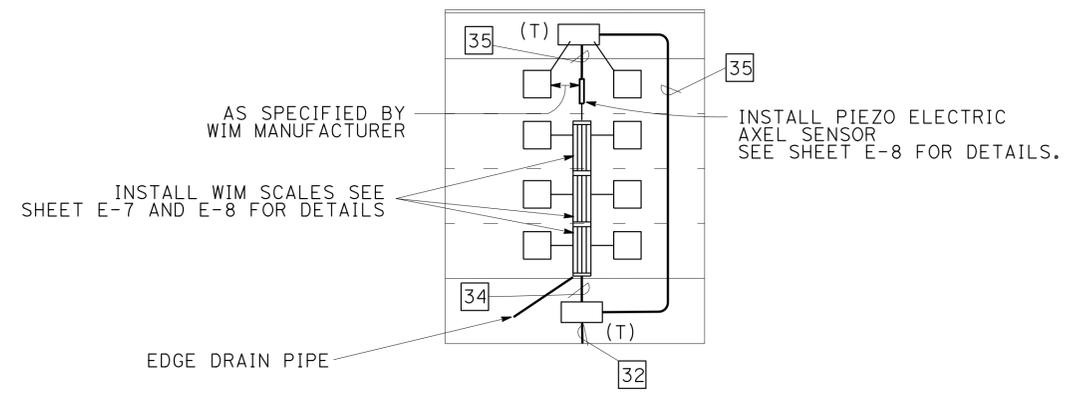
6-15-15
 PLANS APPROVAL DATE

HABIB GOLBAN
 No. 17928
 Exp. 09-30-16
 ELECTRICAL

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LOCATION 1



DETAIL A
 NO SCALE

HIGH SPEED WEIGH-IN-MOTION SYSTEM

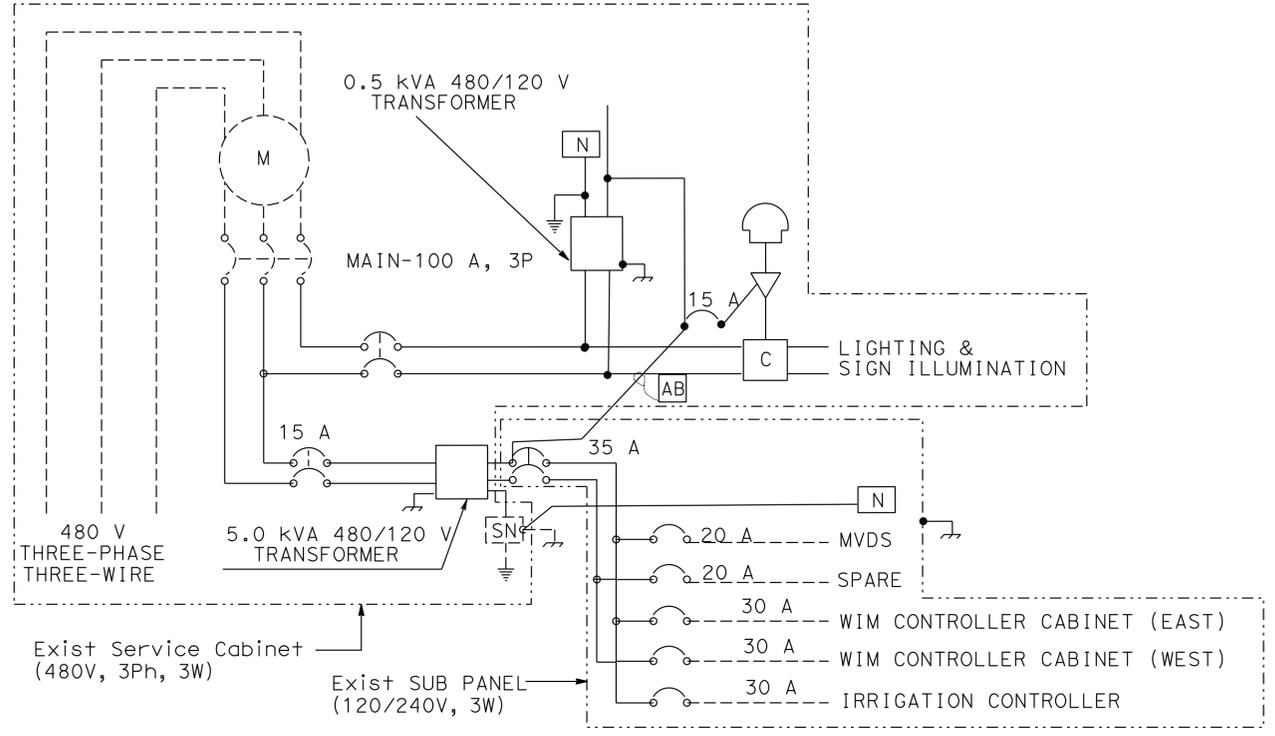
SCALE 1" = 50'

E-4

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR	DATE
Caltrans	DAVE GAMBOA	NATHAN DEKENS	HABIB GOLBAN	
ELECTRICAL DESIGN		CHECKED BY	DATE	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	13	35
<i>H. Golban</i> REGISTERED ELECTRICAL ENGINEER		6-15-15 DATE			
6-15-15 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>					



MODIFIED SERVICE WIRING DIAGRAM
 CTID No. 032208000009402

HIGH SPEED WEIGH-IN-MOTION SYSTEM

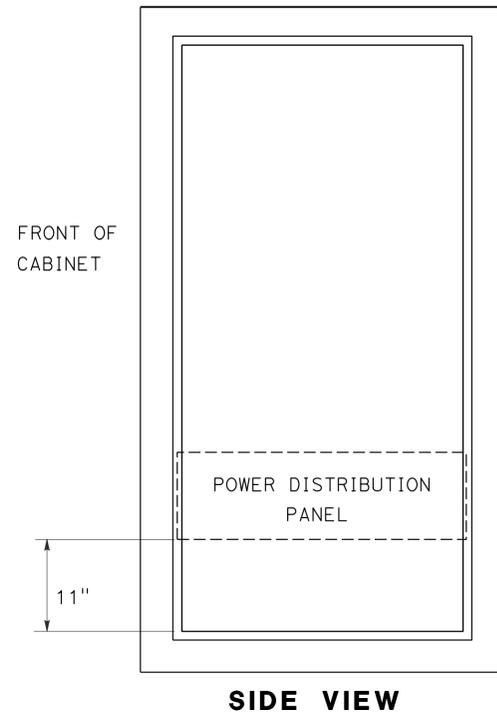
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03	Yol	50	0.4/0.6	14	35

H. Golban 6-15-15
REGISTERED ELECTRICAL ENGINEER DATE

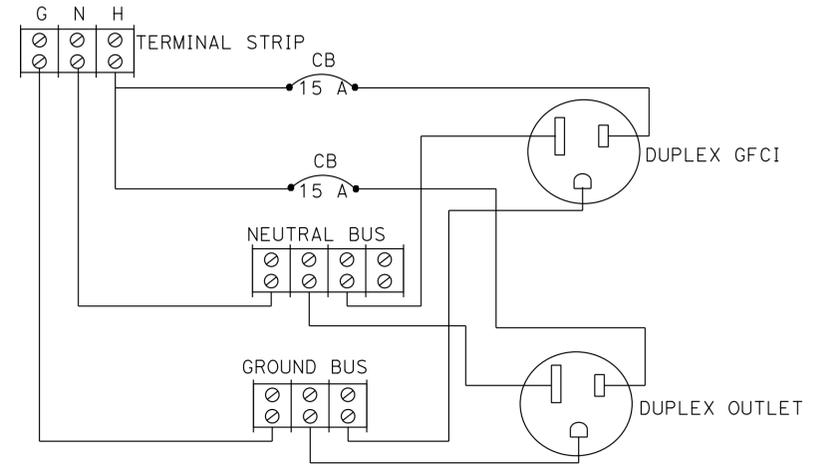
6-15-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HABIB GOLBAN
No. 17928
Exp. 09-30-16
ELECTRICAL
STATE OF CALIFORNIA

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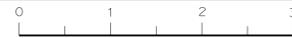
HIGH SPEED WEIGH-IN-MOTION CONTROLLER CABINET



POWER PANEL WIRING DIAGRAM

HIGH SPEED WEIGH-IN-MOTION SYSTEM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans ELECTRICAL DESIGN	FUNCTIONAL SUPERVISOR DAVE GAMBOA	CALCULATED/DESIGNED BY CHECKED BY	NATHAN DEKENS HABIB GOLBAN	REVISED BY DATE REVISED
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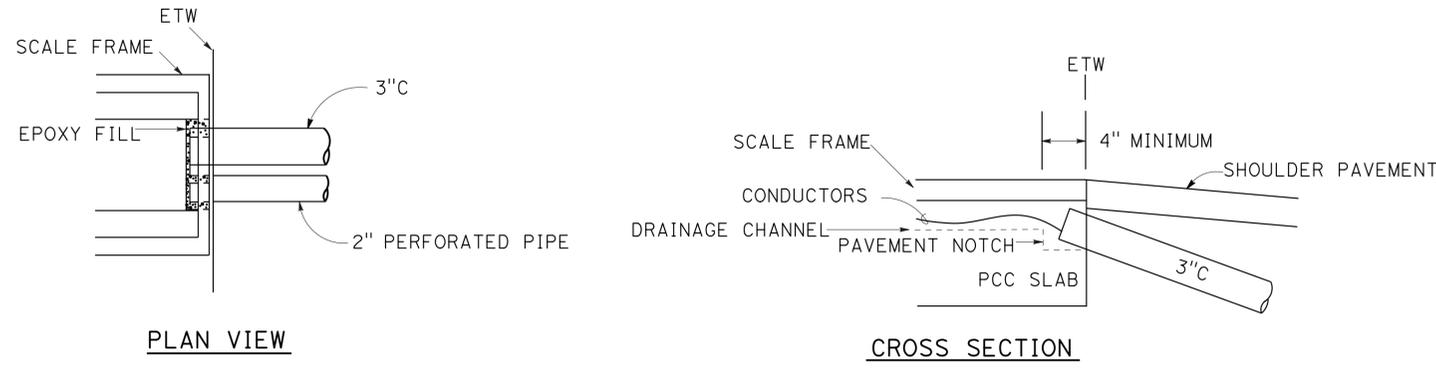


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yo1	50	0.4/0.6	15	35

<i>H. Golban</i> 6-15-15	
REGISTERED ELECTRICAL ENGINEER	DATE
6-15-15	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
HABIB GOLBAN
No. 17928
Exp. 09-30-16
ELECTRICAL

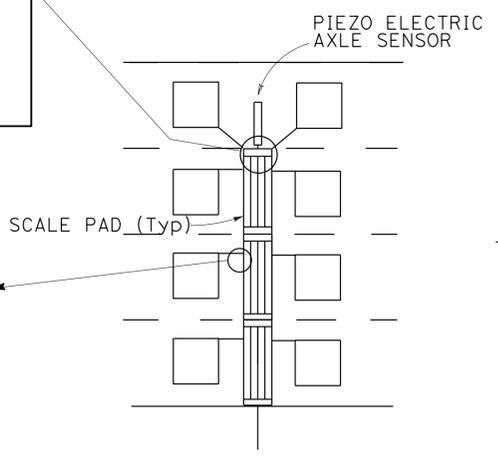
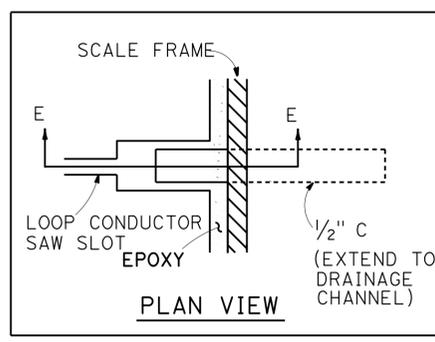
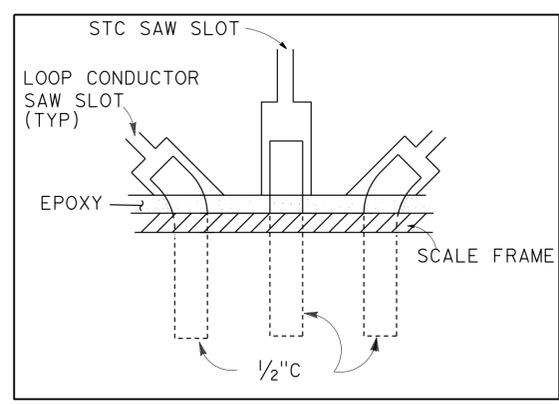
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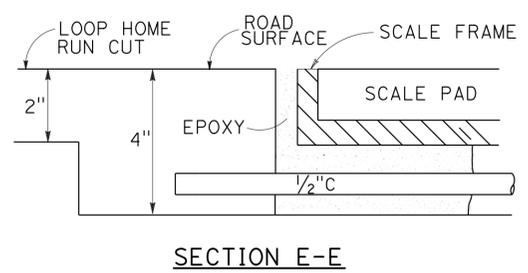
CONDUIT AND 2" PP TERMINATION DETAILS

NOTES:

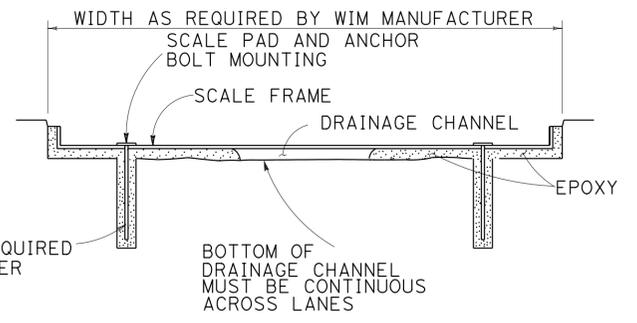
1. INSTALL NON-METALLIC BUSHING AT ROADWAY END OF CONDUIT.
2. INSTALL DUCT SEAL COMPOUND TO EACH END OF ROADWAY CONDUIT BEFORE INSTALLING EPOXY, OR OTHER APPROVED MATERIALS.
3. END OF 3" C AND 2" PP RESTS ON BOTTOM OF PAVEMENT NOTCH; 3" C BOTTOM MUST BE ABOVE 2" PP BOTTOM.
4. THE WIM ENGINEER WILL VERIFY THE FINAL LOCATION OF THE WIM SCALES PRIOR TO ANY WORK IN THE TRAVELLED WAY OR SHOULDERS.
5. EDGE DRAIN OUTLET MUST CONFORM TO TYPE C OUTLET WITH OUTLET COVER AS SHOWN ON STANDARD PLAN D99B EXCEPT THAT PIPE SHALL BE 2". OUTLET COVER SHALL COMPLY WITH WIM VENDORS SPECIFICATIONS.
6. WIM SCALE MUST MATCH EXISTING ROADWAY PROFILE AND CROSS-SLOPE.
7. EXACT CONFIGURATION AND INSTALLATION PROCEDURES OF SCALE FRAME AND LOOP DETECTORS MUST CONFORM TO THE REQUIREMENTS OF THE WIM MANUFACTURER.
8. NO WORK SHALL BE PERFORMED ON THE WIM STATION WITHOUT WIM VENDOR SUPERVISION.



LOOP CONDUCTOR SAW SLOT DETAILS



SECTION E-E

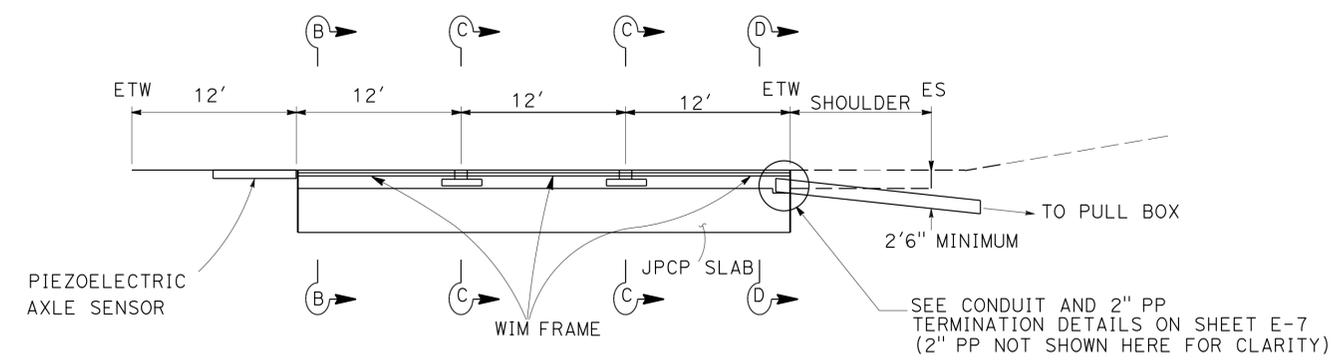


SCALE FRAME INSTALLATION DETAIL (Typ)

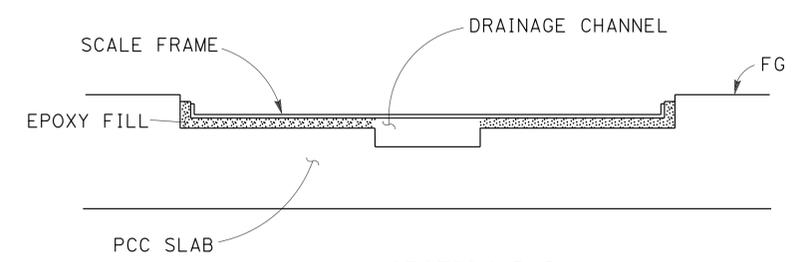
HIGH SPEED WEIGH-IN-MOTION SYSTEM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
Caltrans	NATHAN DEKENS	
	HABIB GOLBAN	
FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	CHECKED BY
DAVE GAMBOA		
ELECTRICAL DESIGN		

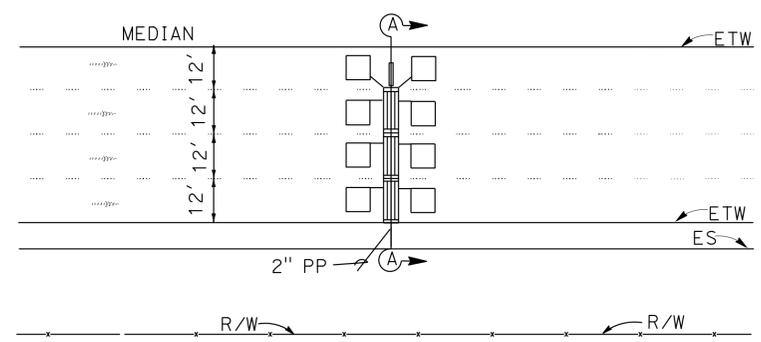
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	16	35
<i>H. Golban</i> REGISTERED ELECTRICAL ENGINEER			6-15-15 DATE		
6-15-15 PLANS APPROVAL DATE			THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		



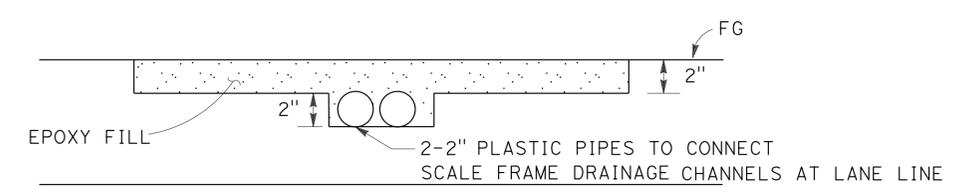
SECTION A-A



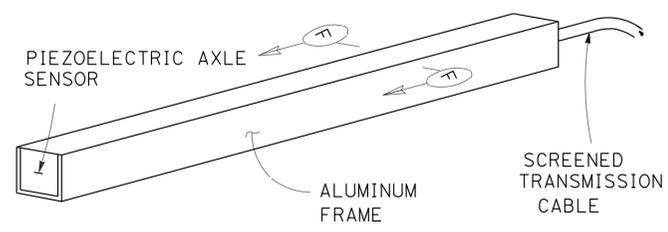
SECTION B-B



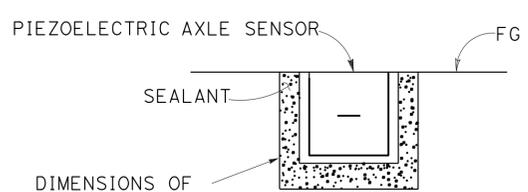
TYPICAL INSTALLATION DETAIL



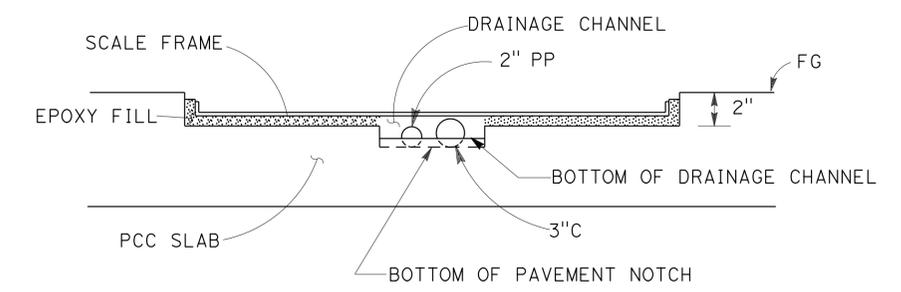
SECTION C-C



TYPICAL PIEZOELECTRIC AXLE SENSOR



SECTION F-F



SECTION D-D

HIGH SPEED WEIGH-IN-MOTION SYSTEM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans®
 ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: DAVE GAMBOA
 CALCULATED/DESIGNED BY: NATHAN DEKENS
 CHECKED BY: HABIB GOLBAN
 REVISED BY: NATHAN DEKENS
 DATE REVISION: HABIB GOLBAN

LAST REVISION | DATE PLOTTED => 29-JUL-2015
 06-15-15 | TIME PLOTTED => 15:08

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	17	35

H. Golban 6-15-15
REGISTERED ELECTRICAL ENGINEER DATE

6-15-15
PLANS APPROVAL DATE

HABIB GOLBAN
No. 17928
Exp. 09-30-16
ELECTRICAL

REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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

HIGH SPEED WEIGH-IN-MOTION SYSTEM

SHEET No.	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)
	No. 5(T) PB	TYPE A LOOP	PIEZOELECTRIC SENSOR	SCALE PAD	WIM SYSTEM EQUIPMENT	2" TYPE 1 PVC CONDUIT	3" TYPE 1 PVC CONDUIT	DLC CABLE	SCALE LEAD IN CABLE	SCREENED TRANSMISSION CABLE	#8 AWG	TELEPHONE CABLE
	EA	EA	EA	EA	EA	LFT	LFT	LFT	LFT	LFT	LFT	LFT
E-3	6	8	1	6	1	2000	100	800	300	100	2000	1000
E-4	6	8	1	6	1	400	100	800	300	100	400	200

ELECTRICAL QUANTITIES

E-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: DAVE GAMBOA
 CALCULATED/DESIGNED BY: NATHAN DEKENS
 CHECKED BY: HABIB GOLBAN
 REVISED BY: DATE
 REVISIONS:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	18	35

Grace M. Tsushima
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 6-15-15

UNIT OF MEASUREMENT SYMBOLS:

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

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:

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
∅	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kíp	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS
(SHEET 2 OF 2)**

NO SCALE

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

REVISED STANDARD PLAN RSP A10B

	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
⊥	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
WWLOL	WINGWALL LAYOUT LINE
	X
X Sec	CROSS SECTION
Xing	CROSSING
	Y
Yr	YEAR
Yrs	YEARS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	19	35

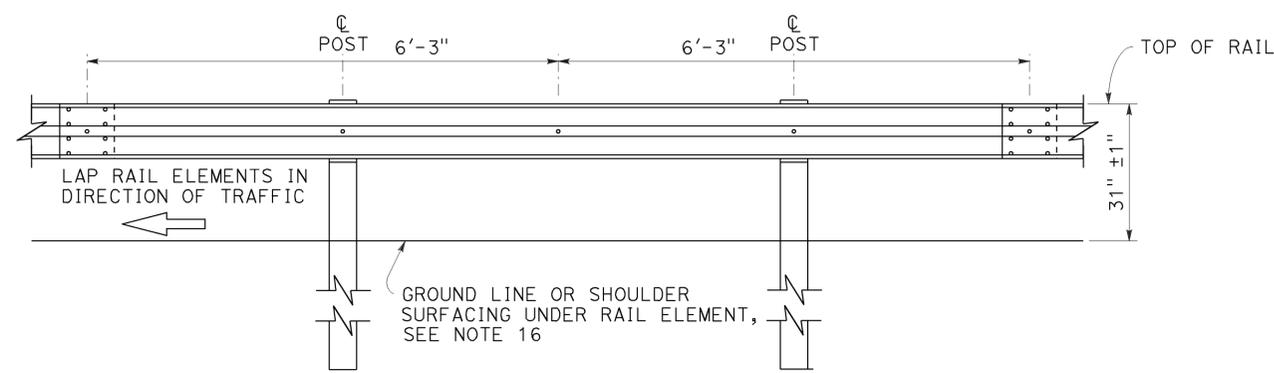
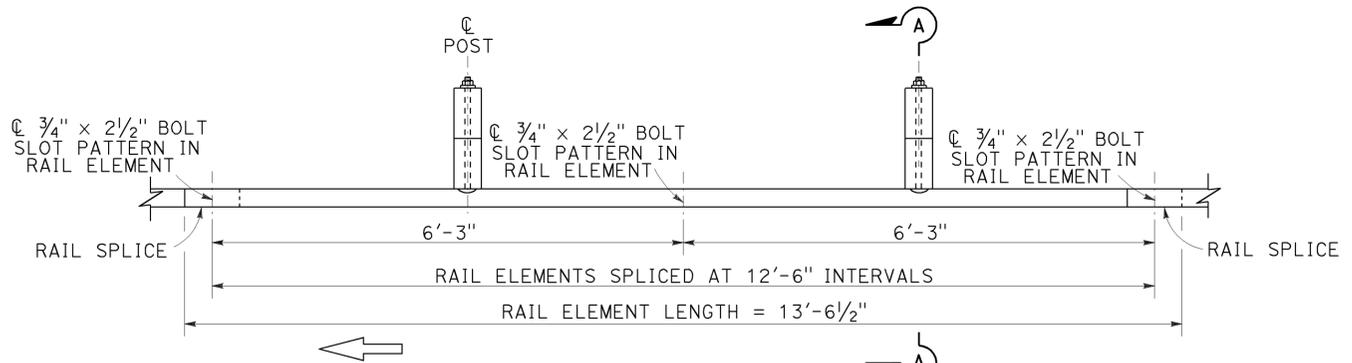
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

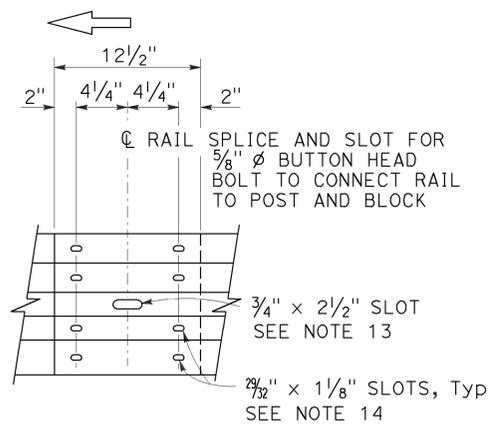
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NO. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

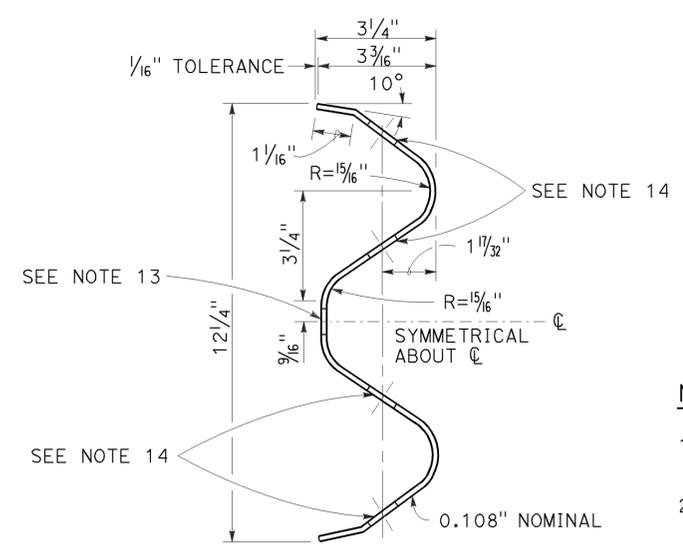
TO ACCOMPANY PLANS DATED 6-15-15



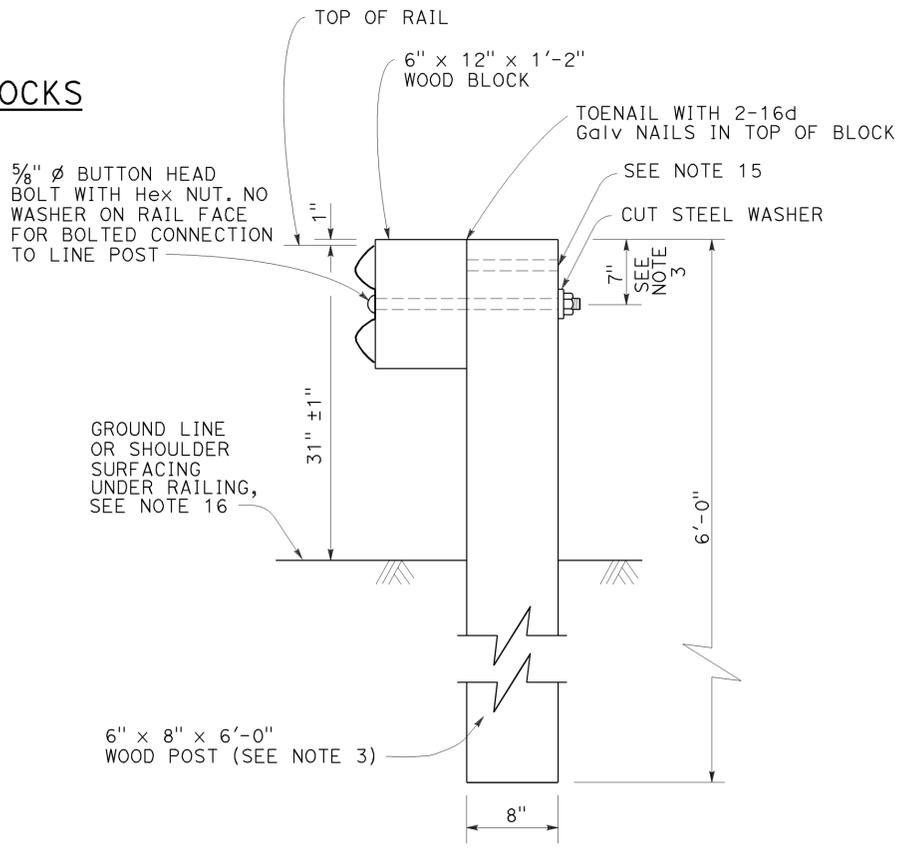
MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



- Connect the over lapped end of the rail elements with 5/8" ϕ x 1 3/8" button head oval shoulder splice bolts inserted into the 7/32" x 1 1/8" slots and bolted together with 5/8" ϕ 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.



SECTION THRU RAIL ELEMENT



SECTION A-A TYPICAL WOOD LINE POST INSTALLATION

See Note 4

NOTES:

- For details of steel post installations, see Revised Standard Plan RSP A77L2.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
- 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 railing, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For MGS connection details to abutments and walls, see Revised Standard Plan RSP A77U3.
- For typical MGS delineation and dike positioning details, see Revised Standard Plan RSP A77N4.
- 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".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Revised Standard Plan RSP A77N1.
- Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

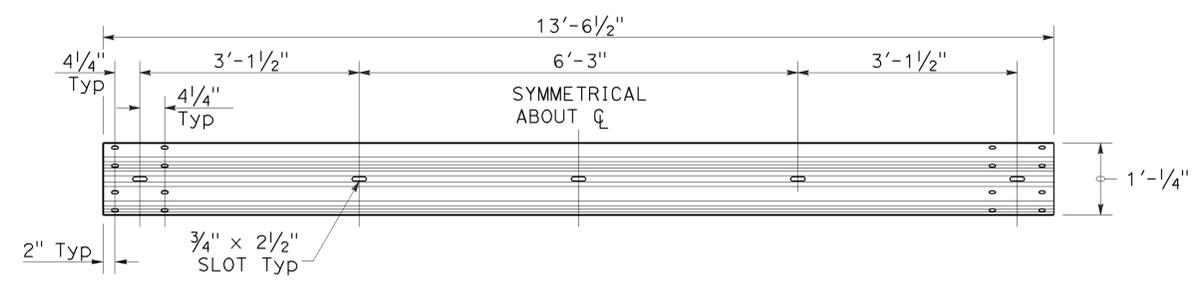
NO SCALE

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

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

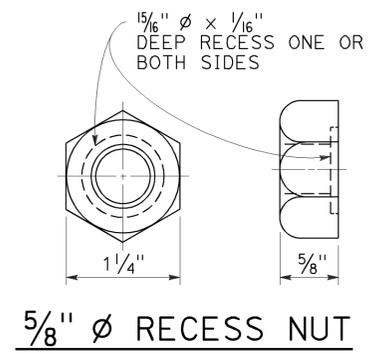
TO ACCOMPANY PLANS DATED 6-15-15



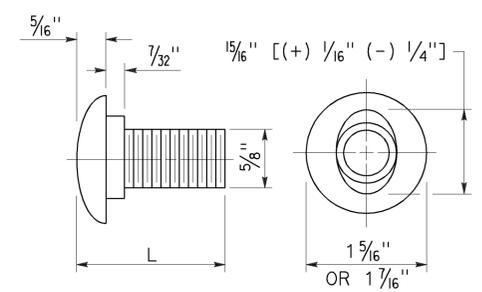
TYPICAL RAIL ELEMENT

NOTE:

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



5/8" Ø RECESS NUT

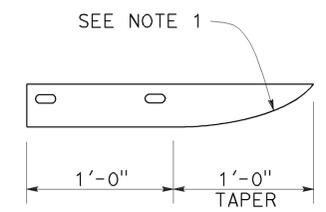


5/8" Ø BUTTON HEAD BOLT

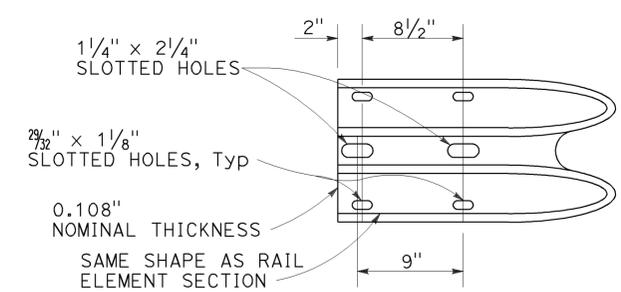
BUTTON HEAD BOLT

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.



PLAN



ELEVATION
END CAP
(TYPE A)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
STANDARD HARDWARE**

NO SCALE

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

REVISED STANDARD PLAN RSP A77M1

2010 REVISED STANDARD PLAN RSP A77M1

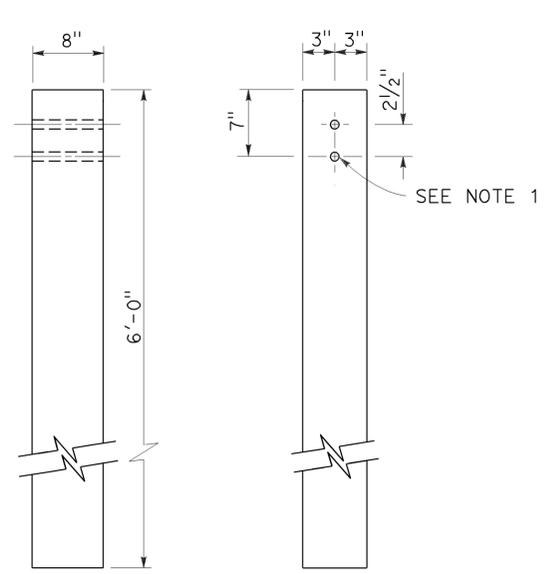
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	21	35

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

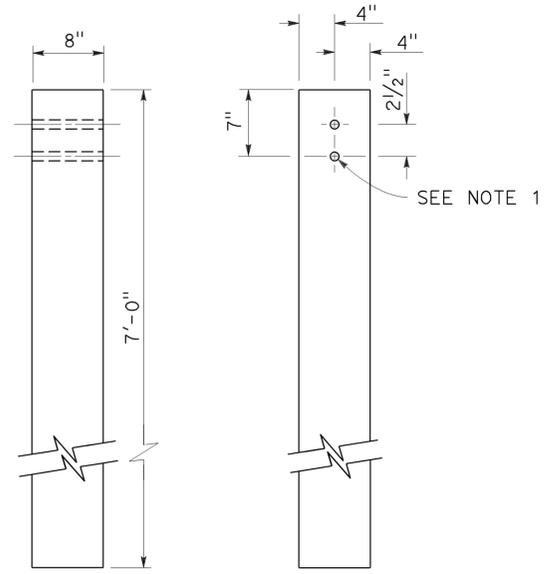
July 19, 2013
PLANS APPROVAL DATE

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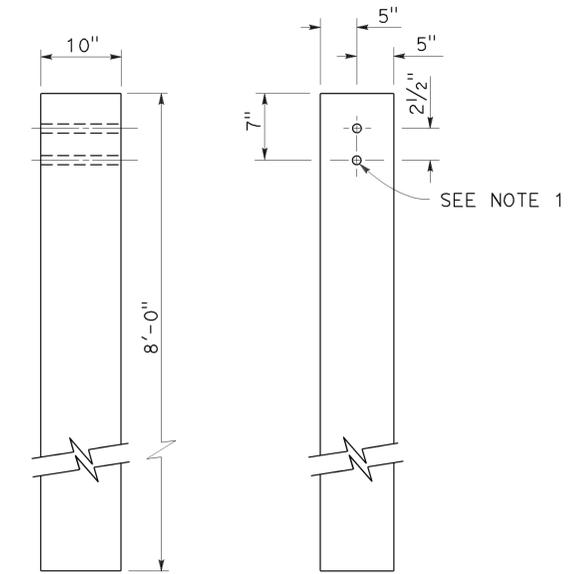
TO ACCOMPANY PLANS DATED 6-15-15



SIDE FRONT
6" x 8" WOOD POST
See Note 3



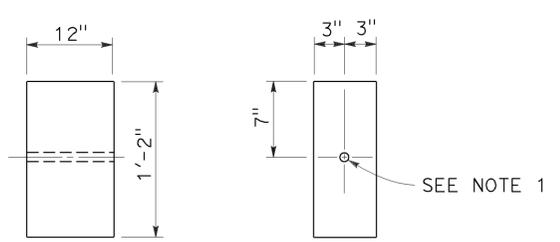
SIDE FRONT
8" x 8" WOOD POST
See Note 4



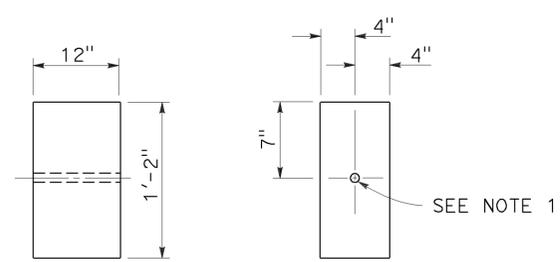
SIDE FRONT
10" x 10" WOOD POST
See Note 5

NOTES:

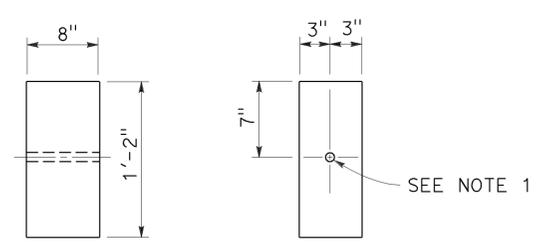
1. All holes in wood posts and blocks shall be 3/4" Dia ± 1/16".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post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



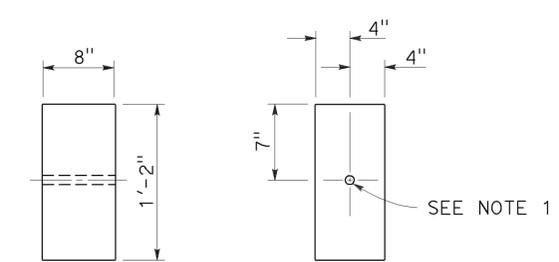
SIDE FRONT
6" x 12" WOOD BLOCK
See Note 3



SIDE FRONT
8" x 12" WOOD BLOCK



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



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
WOOD POST AND
WOOD BLOCK DETAILS**

NO SCALE

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

REVISED STANDARD PLAN RSP A77N1

2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	22	35

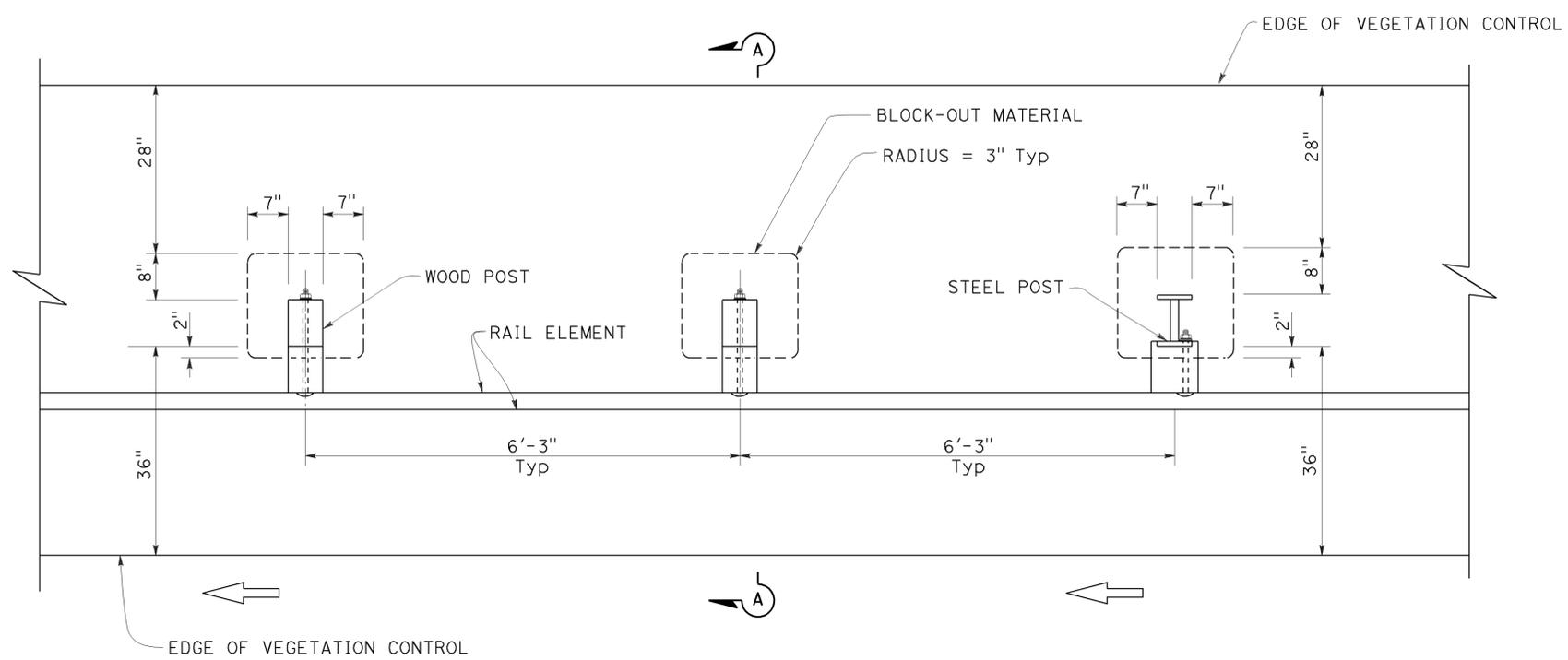
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

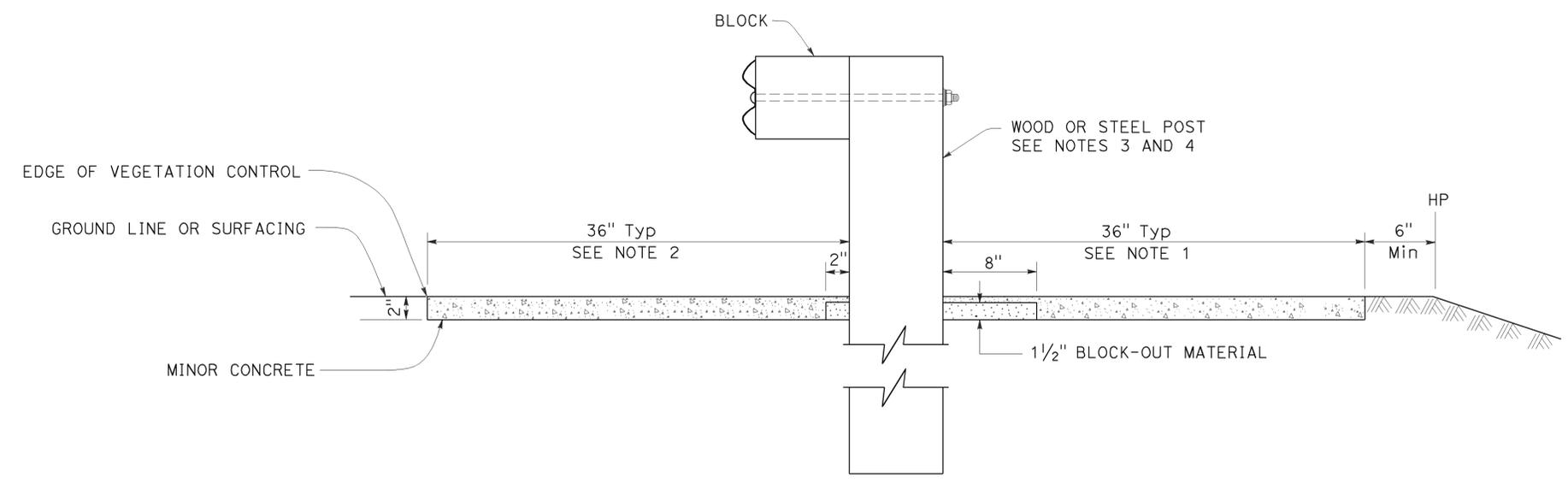
TO ACCOMPANY PLANS DATED 6-15-15



PLAN

NOTES:

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



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
STANDARD RAILING SECTION**

NO SCALE

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

REVISED STANDARD PLAN RSP A77N5

2010 REVISED STANDARD PLAN RSP A77N5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	23	35

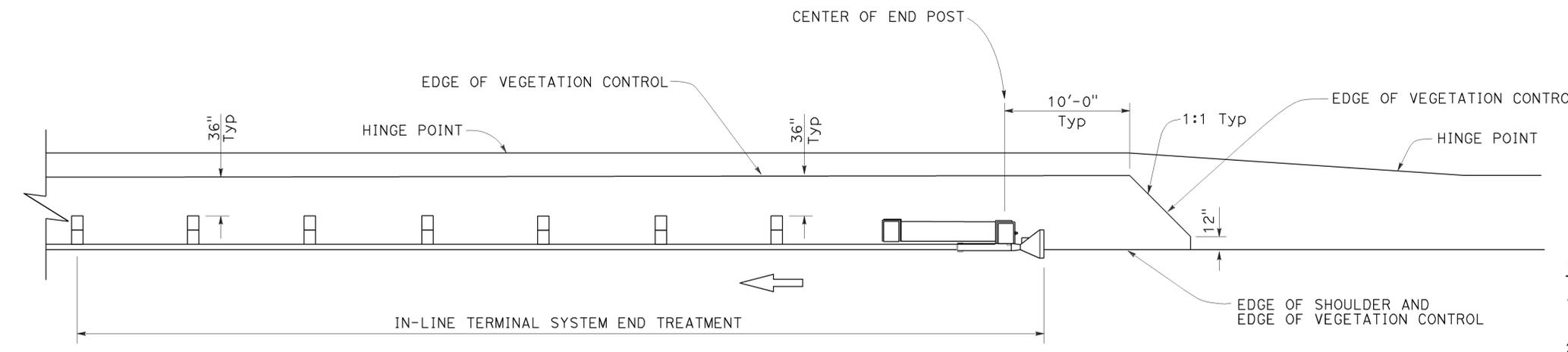
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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STATE OF CALIFORNIA

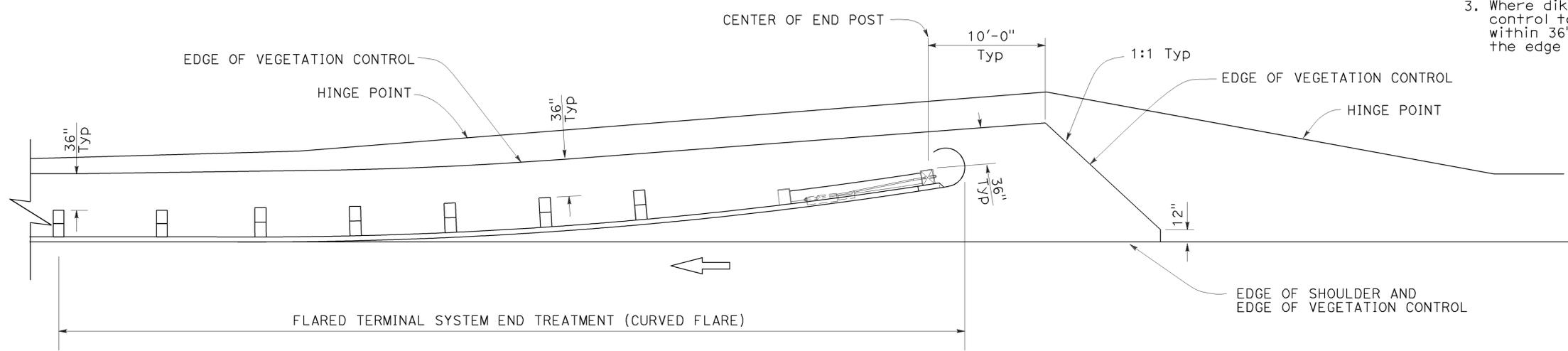
TO ACCOMPANY PLANS DATED 6-15-15



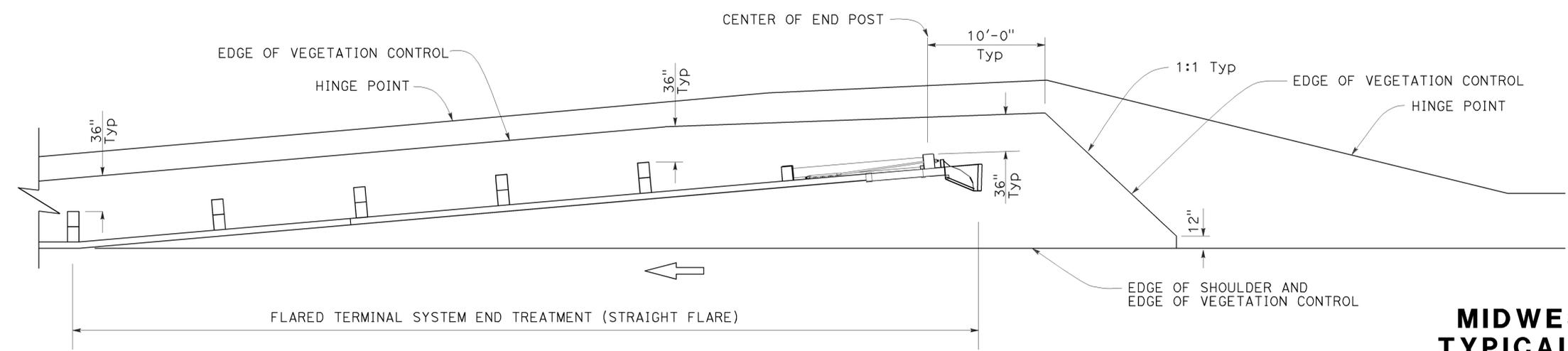
PLAN

NOTES:

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



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE

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

REVISED STANDARD PLAN RSP A77N6

2010 REVISED STANDARD PLAN RSP A77N6

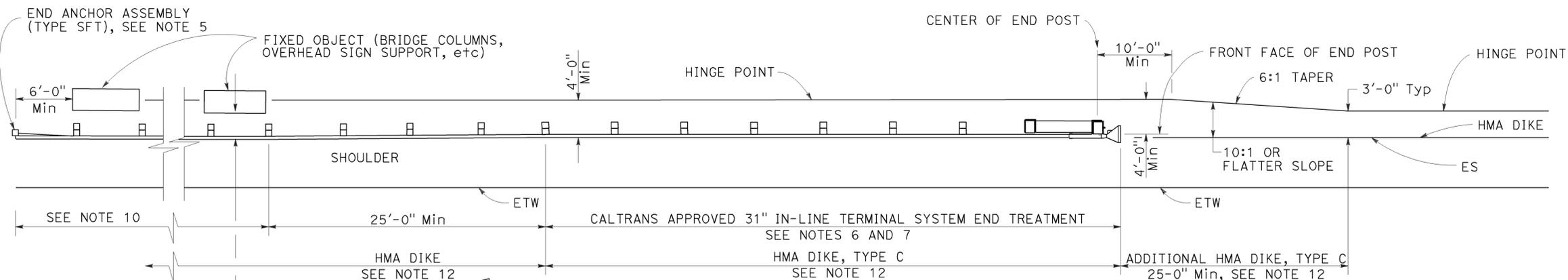
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	24	35

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

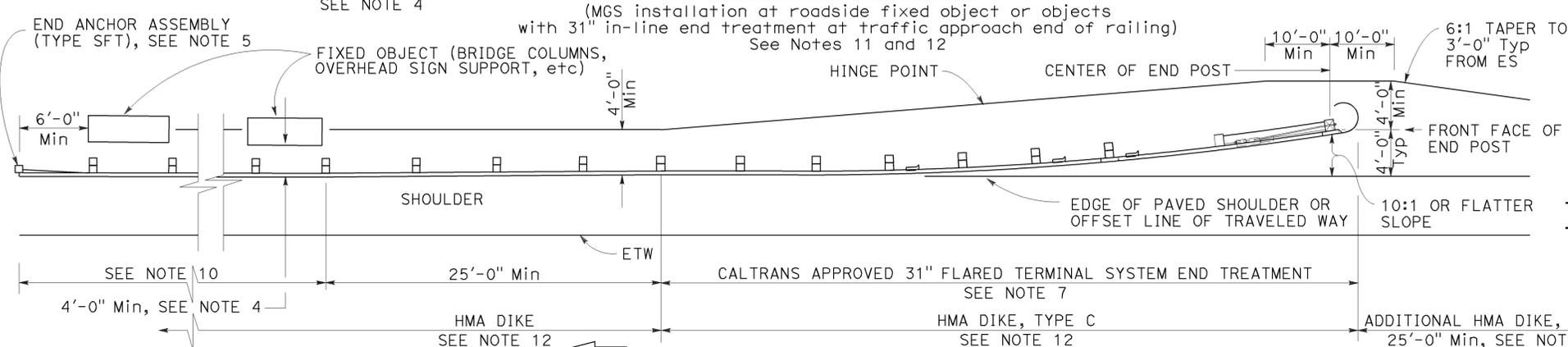
July 19, 2013
PLANS APPROVAL DATE

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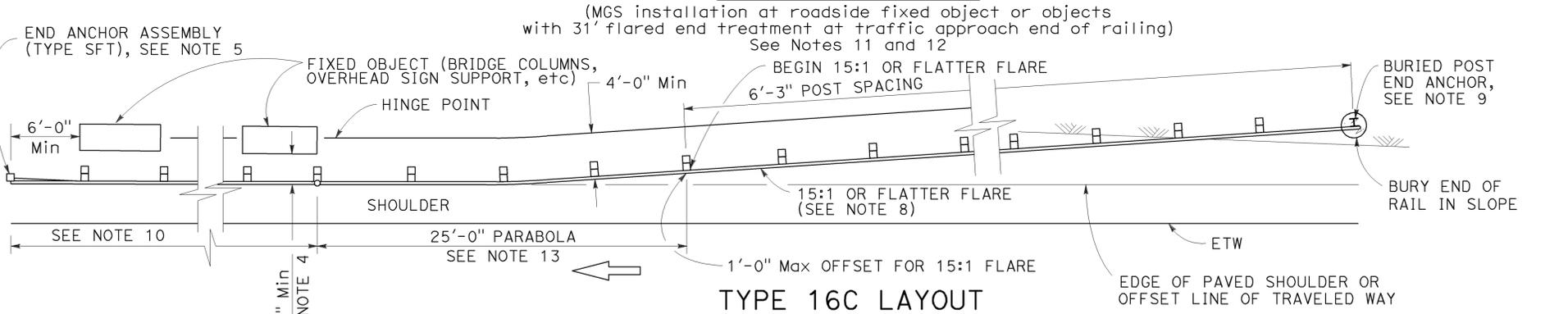
NO. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA



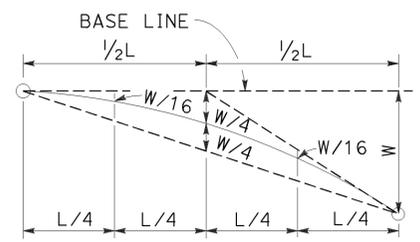
TYPE 16A LAYOUT



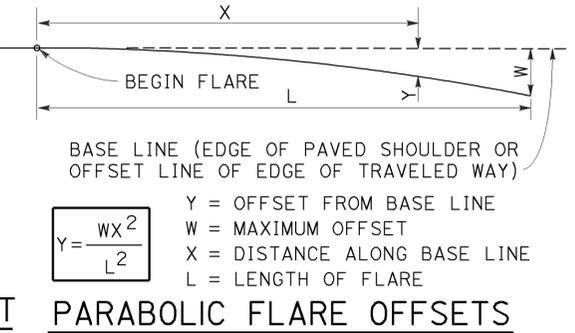
TYPE 16B LAYOUT



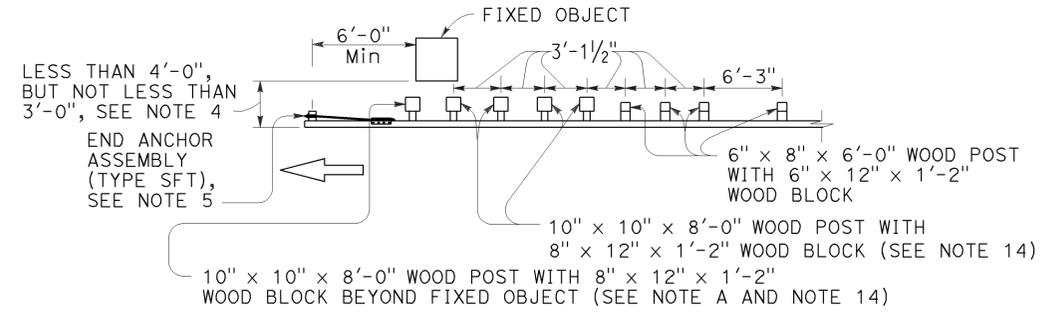
TYPE 16C LAYOUT



TYPICAL PARABOLIC LAYOUT



PARABOLIC FLARE OFFSETS



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

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

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 notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS sections with post spacing of 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 3'-0". Where the clearance is less than 3'-0", a concrete wall or barrier should be constructed to shield the fixed object(s).
- For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
- 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 to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Revised Standard Plan RSP A77T2.
- As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for only one direction of traffic.
- Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
ROADSIDE FIXED OBJECTS**

NO SCALE

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

REVISED STANDARD PLAN RSP A77R3

2010 REVISED STANDARD PLAN RSP A77R3

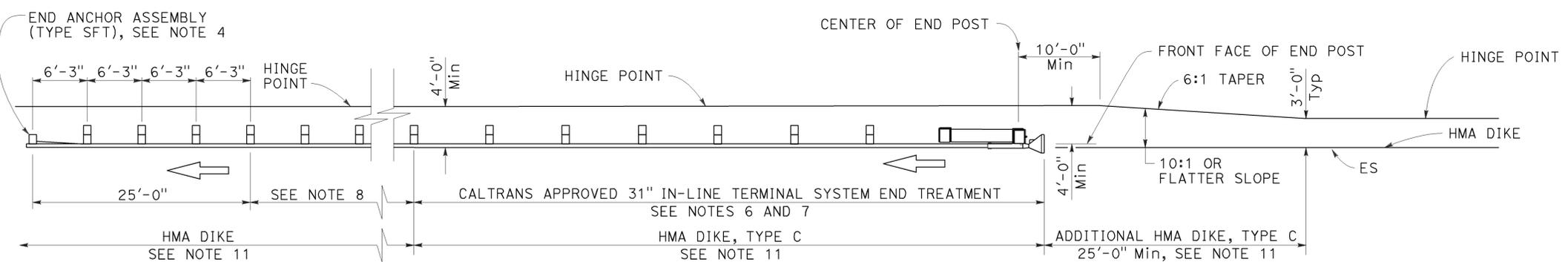
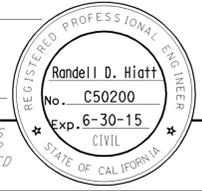
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	26	35

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

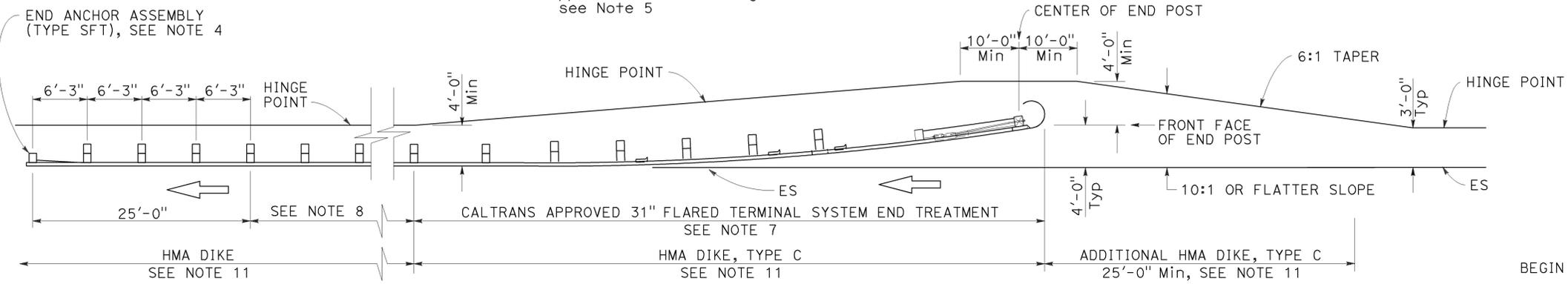
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TO ACCOMPANY PLANS DATED 6-15-15



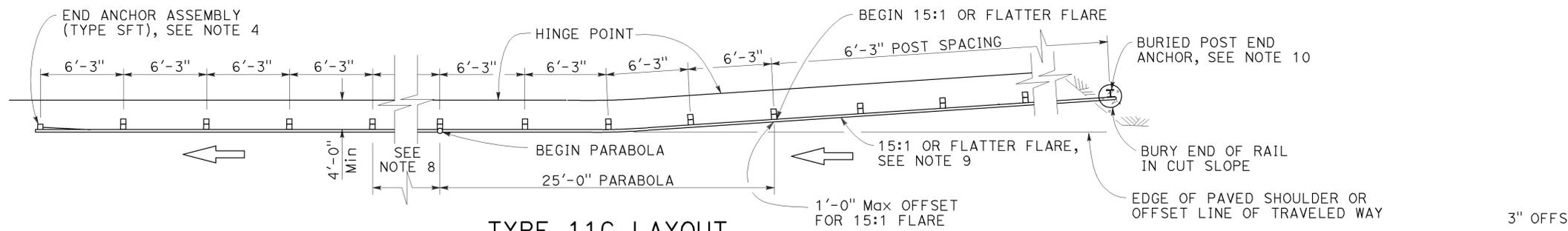
TYPE 11A LAYOUT

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



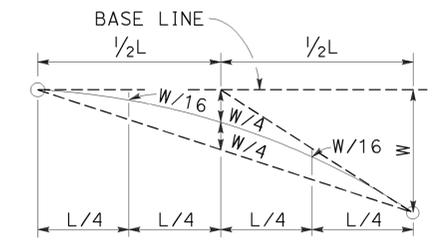
TYPE 11B LAYOUT

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

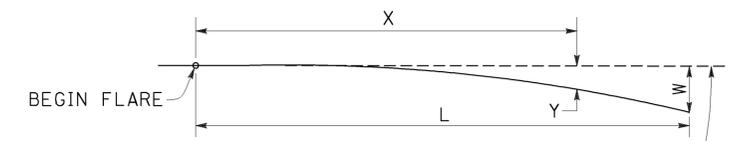


TYPE 11C LAYOUT

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



TYPICAL PARABOLIC LAYOUT

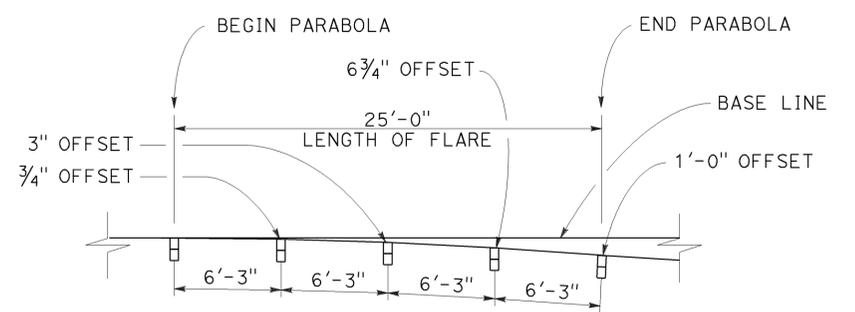


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT Max END OFFSET

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 recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
- Layout Types 11A, 11B or 11C are typically used where MGS is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 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 and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

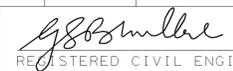
NO SCALE

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

REVISED STANDARD PLAN RSP A77P1

2010 REVISED STANDARD PLAN RSP A77P1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	27	35


 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED 6-15-15

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.

REVISED STANDARD PLAN RSP T9

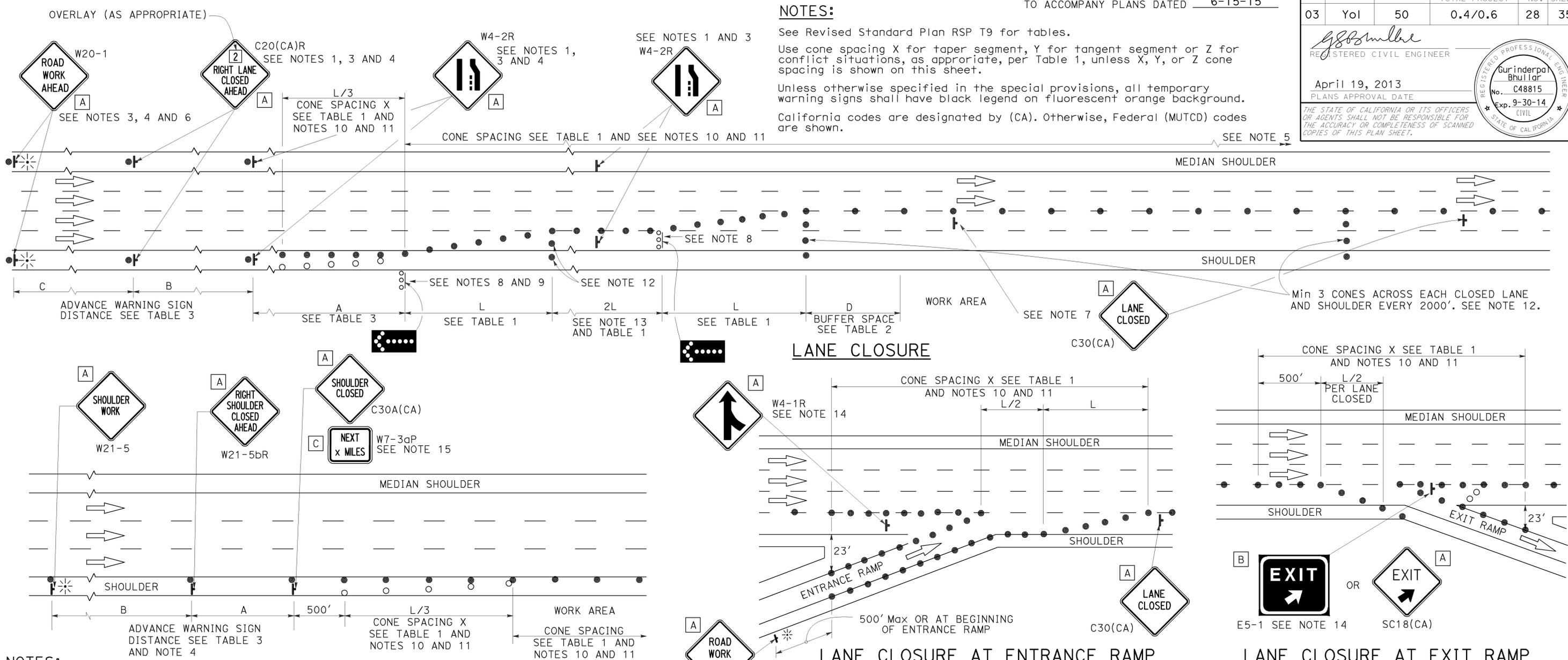
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	28	35

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

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



- 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.

- SHOULDER CLOSURE**
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.

- LANE CLOSURE AT ENTRANCE RAMP**
- LANE CLOSURE AT EXIT RAMP**
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**

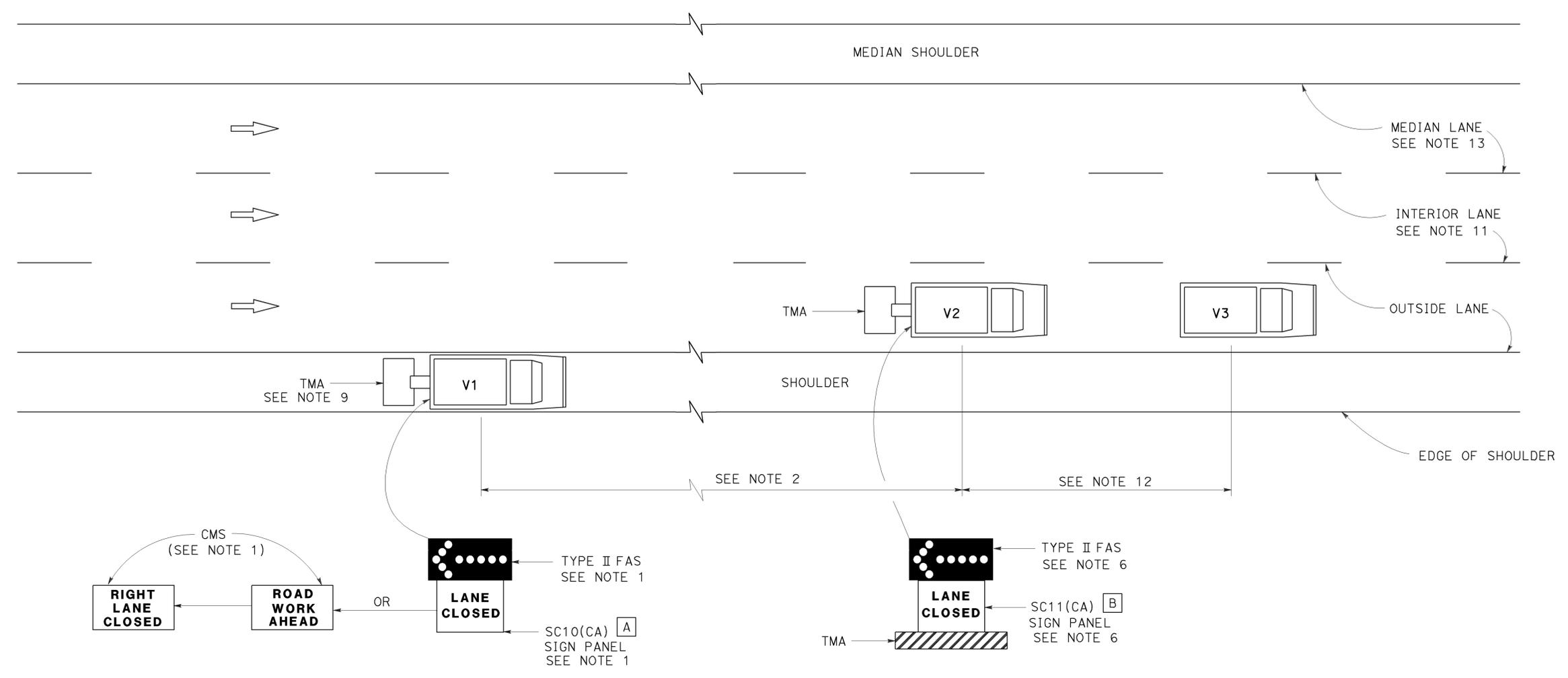
NO SCALE

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

TO ACCOMPANY PLANS DATED 6-15-15



SIGN PANEL SIZE (Min)

- A 66" x 36"
- B 54" x 42"

LEGEND

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
-  FLASHING ARROW SIGN (FAS)
- CMS CHANGEABLE MESSAGE SIGN
- TMA TRUCK-MOUNTED ATTENUATOR

MOVING LANE CLOSURE ON MEDIAN LANE OR OUTSIDE LANE OF MULTILANE HIGHWAYS

NOTES:

1. Either a changeable message sign or a SC10(CA) sign panel and a Type II flashing arrow sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "RIGHT LANE CLOSED" message. For median lane closure, the flashing arrow symbol shall be reversed with the arrowhead on the right and the changeable message sign shall show "LEFT LANE CLOSED".
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500' should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500'.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2. For median lane closure the flashing arrow sign symbol shall be displayed with the arrowhead on the right.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11, etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on interior lane of multilane highways, use Revised Standard Plan T16.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.
13. When the work/application vehicle V3 occupies the median lane, sign vehicle V1 should drive in the median shoulder and indicate left lane closed ahead.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS
NO SCALE

RSP T15 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T15 DATED MAY 20, 2011 - PAGE 243 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T15

2010 REVISED STANDARD PLAN RSP T15

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	30	35

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

Theresa
Aziz Gabriel
No. E15129
Exp. 6-30-14
ELECTRICAL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-15-15

SOFFIT AND WALL MOUNTED LUMINAIRES

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

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL USED	DEFINITIONS
Ω	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	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 NOTES OR PROJECT PLANS)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

NOTES:

- HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
- 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 JULY 19, 2013 SUPERSEDES 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
03	Yol	50	0.4/0.6	31	35

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

Theresa Aziz Gabriel
REGISTERED PROFESSIONAL ENGINEER
No. E15129
Exp. 6-30-14
ELECTRICAL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-15-15

CONDUIT

SIGNAL EQUIPMENT

NEW	EXISTING	
---	---	LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
---	---	TRAFFIC SIGNAL CONDUIT
---C---	---c---	COMMUNICATION CONDUIT
---T---	---t---	TELEPHONE CONDUIT
---F---	---f---	FIRE ALARM CONDUIT
---FO---	---fo---	FIBER OPTIC CONDUIT
---	---	CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN 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)

SIGNAL EQUIPMENT Cont

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

SERVICE EQUIPMENT

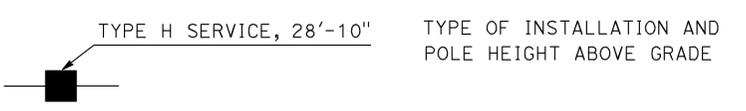
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

		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

NOTES:

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

POLE-MOUNTED SERVICE DESIGNATION



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

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

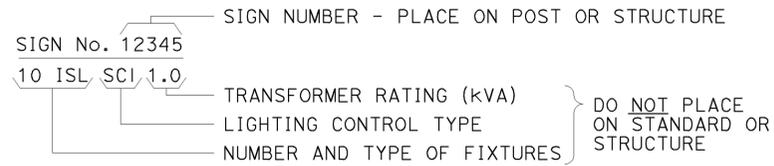
RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

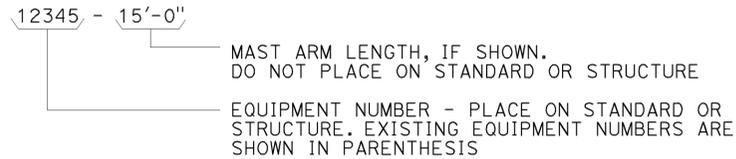
2010 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

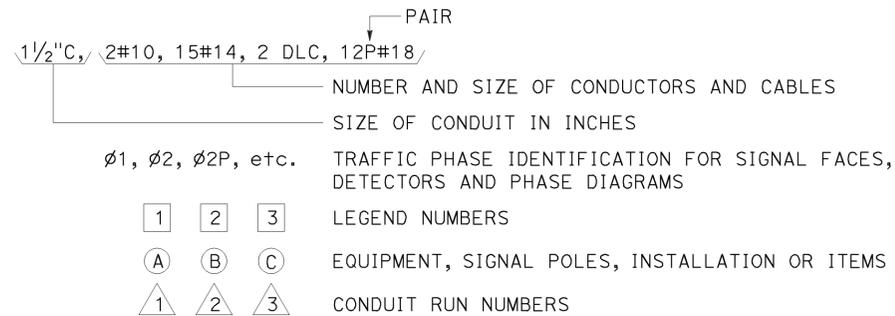
ILLUMINATED SIGN IDENTIFICATION NUMBER:



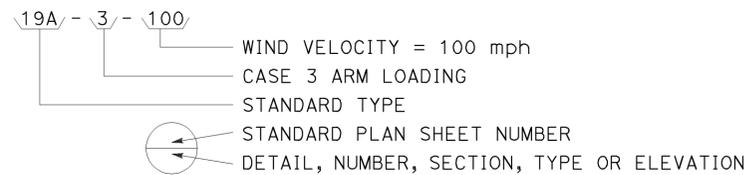
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



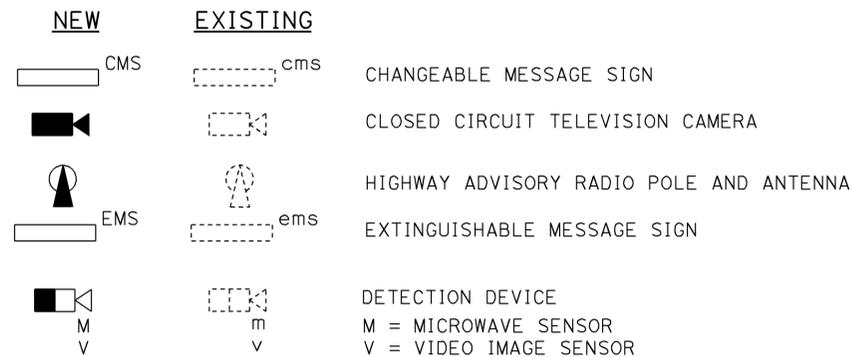
CONDUIT AND CONDUCTOR IDENTIFICATION:



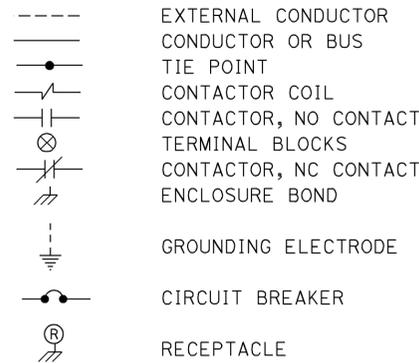
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



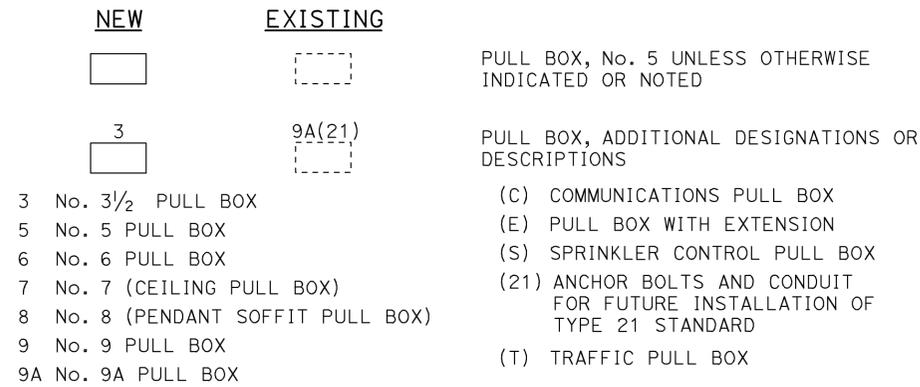
MISCELLANEOUS EQUIPMENT



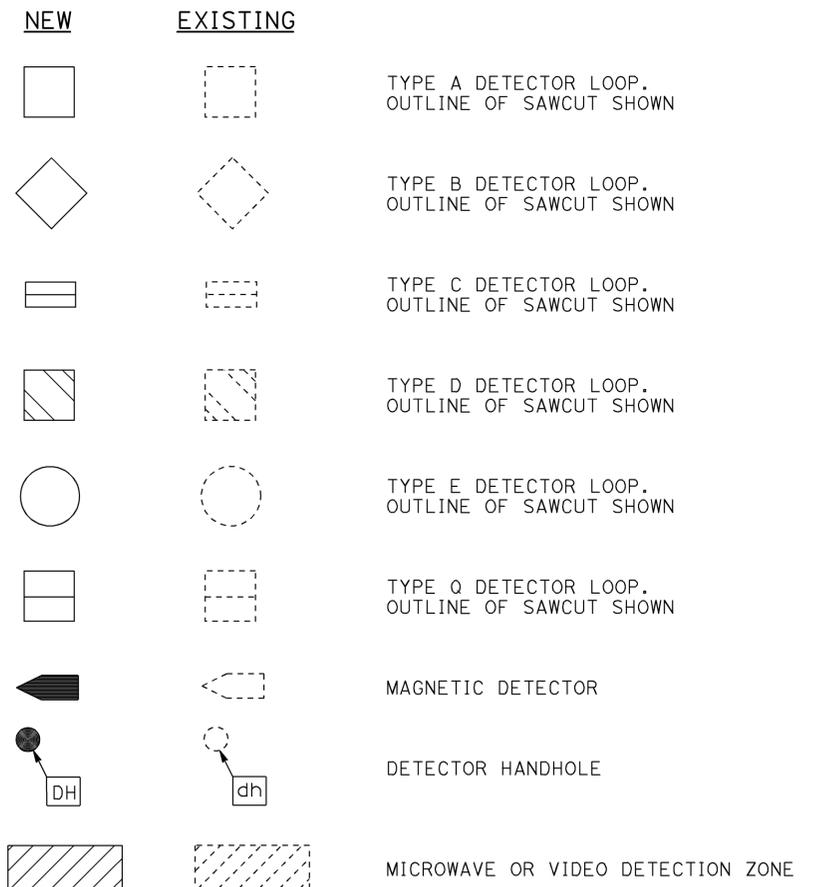
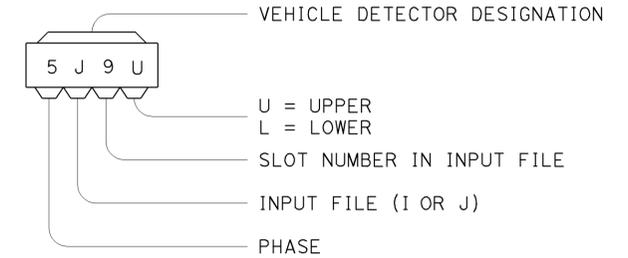
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

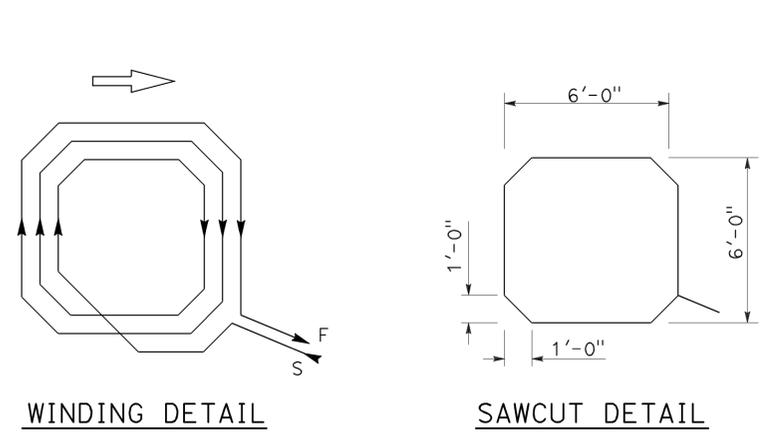
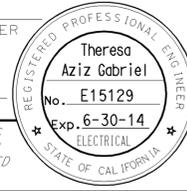
NO SCALE

RSP ES-1C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

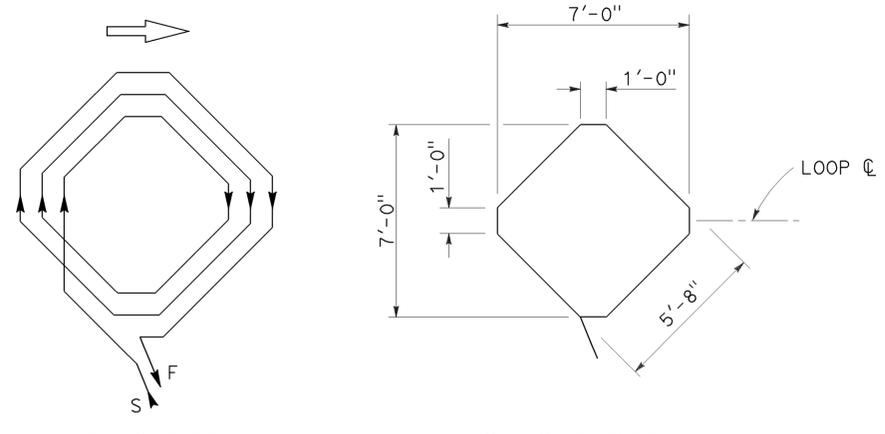
REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

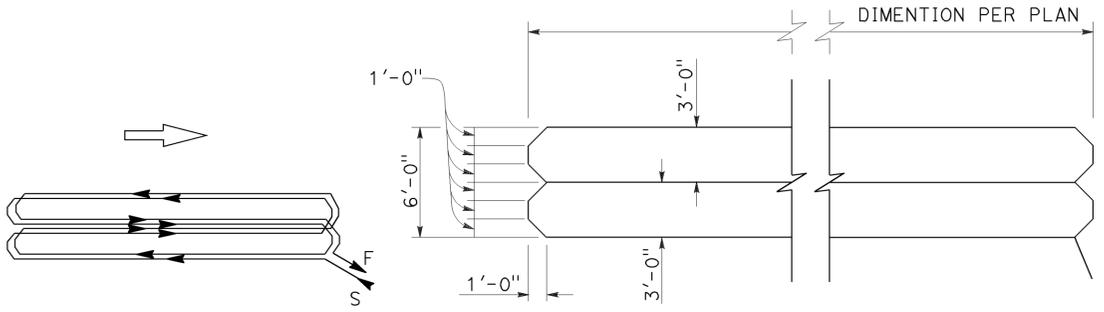
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Yol	50	0.4/0.6	33	35
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
TO ACCOMPANY PLANS DATED <u>6-15-15</u>					



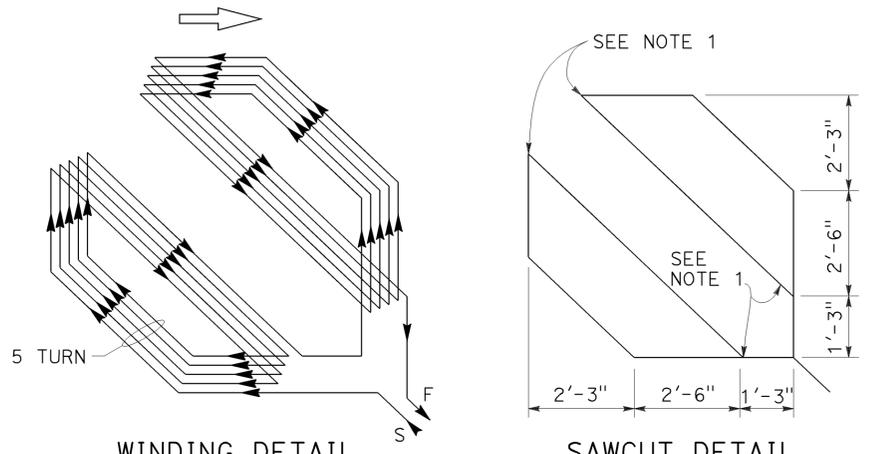
WINDING DETAIL
SAWCUT DETAIL
TYPE A LOOP DETECTOR CONFIGURATION



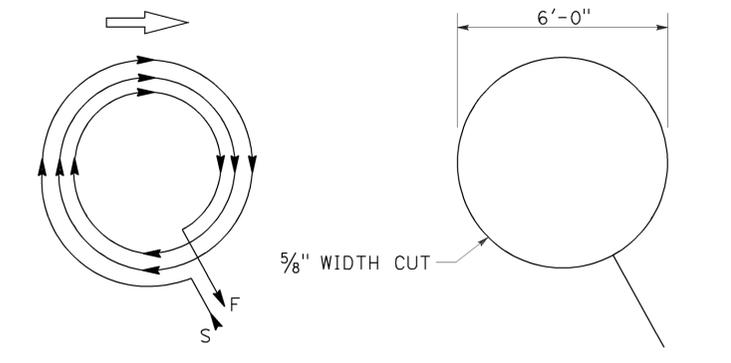
WINDING DETAIL
SAWCUT DETAIL
TYPE B LOOP DETECTOR CONFIGURATION



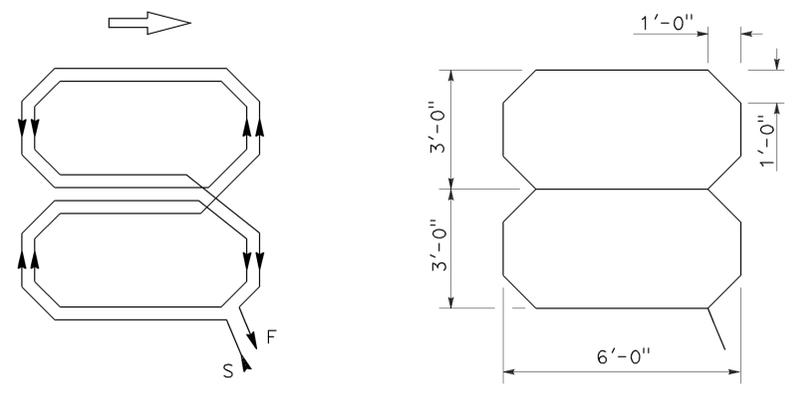
WINDING DETAIL
SAWCUT DETAIL
TYPE C LOOP DETECTOR CONFIGURATION



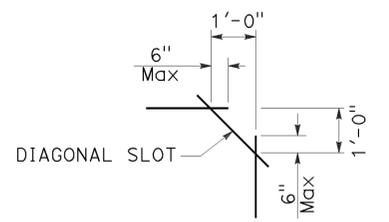
WINDING DETAIL
SAWCUT DETAIL
TYPE D LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAWCUT DETAIL
TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAWCUT DETAIL
TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF DIAGONAL SLOT AT CORNERS

- NOTES:**
1. Round corners of acute angle sawcuts 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.

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

RSP ES-5B DATED JULY 19, 2013 SUPERSEDES 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
03	Yol	50	0.4/0.6	34	35

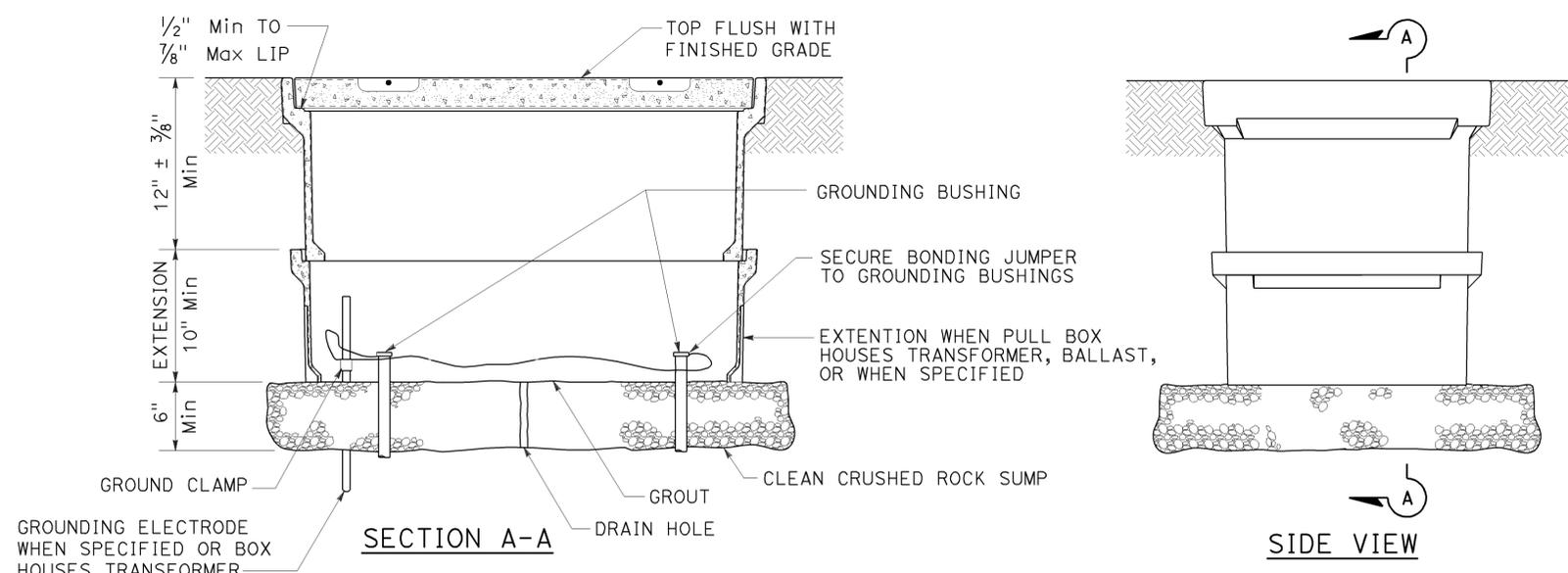
Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

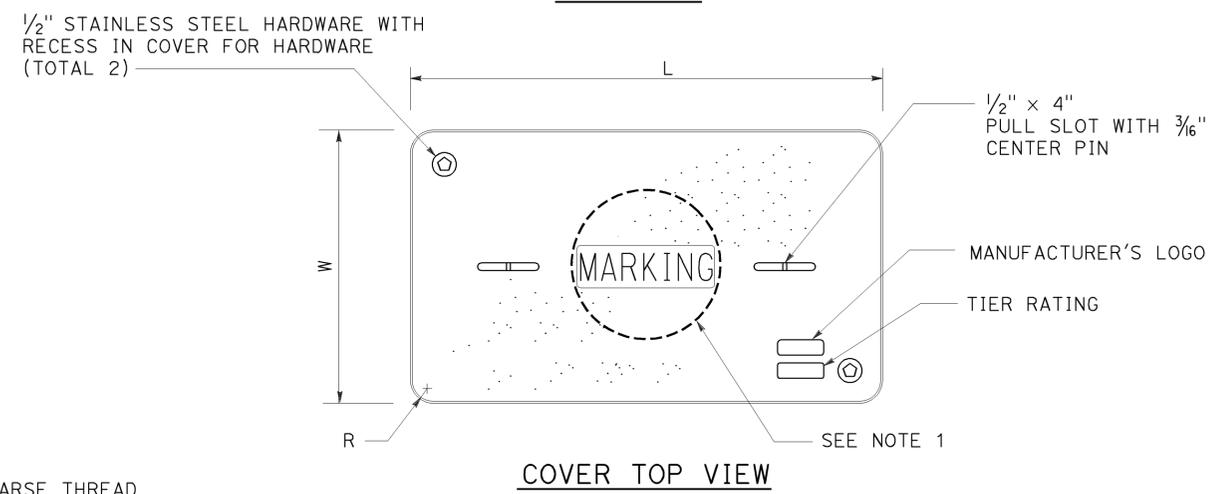
Theresa Aziz Gabriel
No. E15129
Exp. 6-30-14
ELECTRICAL
STATE OF CALIFORNIA

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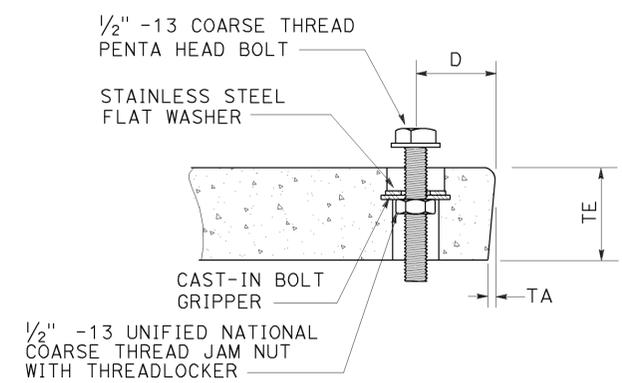
TO ACCOMPANY PLANS DATED 6-15-15



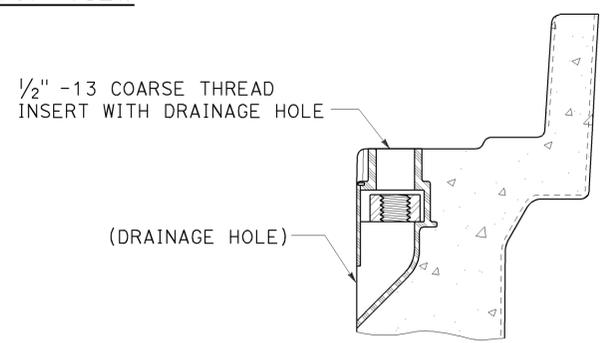
INSTALLATION DETAILS
DETAIL A



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
OR SIMILAR



TYPICAL THREADED INSERT
OR SIMILAR

NOTES:

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
 - No. 3 1/2 pull box.
 - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - No. 5, 6, 9 or 9A pull box.
 - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
 - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
 - "RAMP METER" - Ramp meter circuits.
 - "COUNT STATION" - Count or speed monitor circuits.
 - "COMMUNICATIONS" - Communication circuits.
 - "TOS COMMUNICATIONS" - TOS communication line.
 - "TOS POWER" - TOS power.
 - "TDC POWER" - Telephone demarcation cabinet power.
 - "CCTV" - Closed circuit television circuits.
 - "TMS" - Traffic monitoring station circuits.
 - "CMS" - Changeable message sign circuits.
 - "HAR" - Highway advisory radio circuits.
 - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(NON-TRAFFIC PULL BOX)
NO SCALE

RSP ES-8A DATED JULY 19, 2013 SUPERSEDES RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-8A

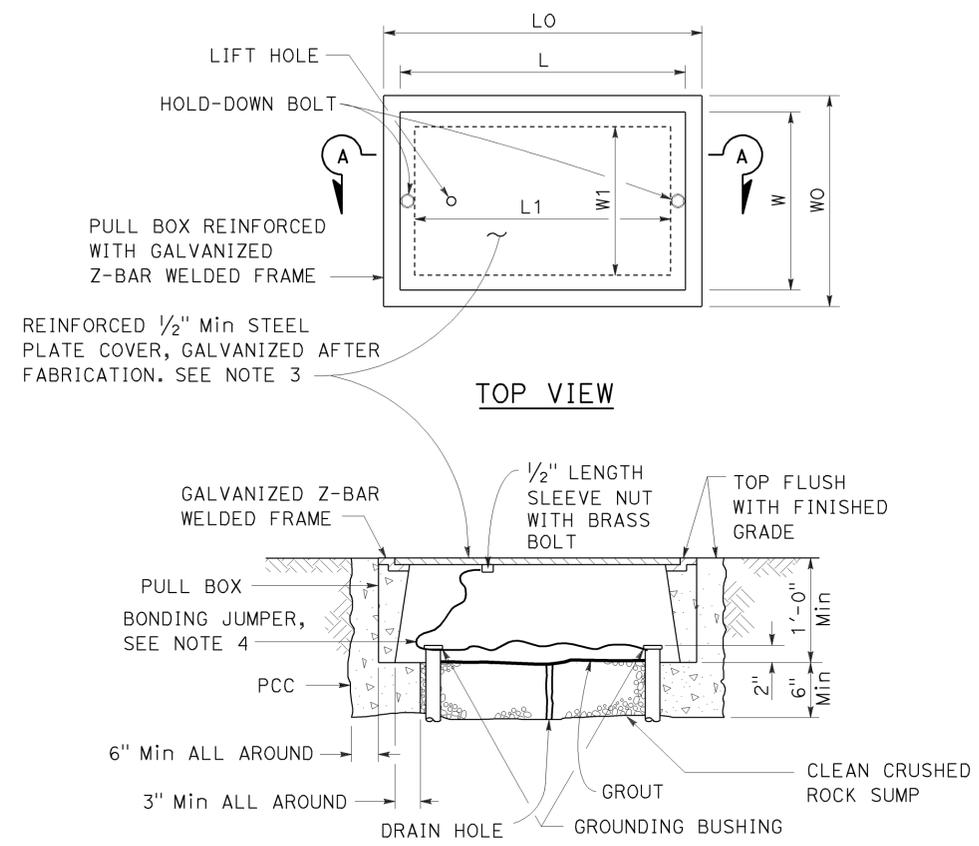
2010 REVISED STANDARD PLAN RSP ES-8A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol	50	0.4/0.6	35	35

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 6-15-15



SECTION A-A
No. 3 1/2(T), No. 5(T) AND
No. 6(T) TRAFFIC PULL BOX

NOTES:

- Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
- Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" Sprinkler control circuits, 50 V or less; "CALTRANS" On all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service.
 - No. 3 1/2(T) pull box.
 - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - No. 5(T) or 6(T) pull box.
 - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
 - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
 - "RAMP METER" - Ramp meter circuits.
 - "COUNT STATION" - Count or speed monitor circuits.
 - "COMMUNICATION" - Communication circuits.
 - "TOS COMMUNICATIONS" - TOS communications line.
 - "TOS POWER" - TOS power.
 - "TDC POWER" - Telephone demarcation cabinet power.
 - "CCTV" - Closed circuit television circuits.
 - "TMS" - Traffic monitoring station circuits.
 - "CMS" - Changeable message sign circuits.
 - "HAR" - Highway advisory radio circuits.
 - "BOOSTER PUMP" - Booster pump circuit.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8".

PULL BOX	PULL BOX						COVER				
	MINIMUM * THICKNESS	MINIMUM DEPTH BOX AND EXTENSION	W0	L0	L1	W1	L **	W **	R	EDGE THICKNESS	EDGE TAPER
No. 3 1/2(T)	1 1/2"	1'-0"	1'-5"± 1"	1'-8 3/8"±	1'-2 1/2"±	10 5/8"± 1"	1'-8"±	1'-1 3/4"±	0"	1/2"	NONE
No. 5(T)	1 3/4"	1'-0"	1'-11 1/2"± 1"	2'-5 1/2"±	1'-7"±	1'-1"± 1"	2'-3"±	1'-4"±	0"	1/2"	NONE
No. 6(T)	2"	1'-0"	2'-6"± 1"	2'-11 1/2"±	1'-11 1/2"±	1'-5"± 1"	2'-9"±	1'-8"±	0"	1/2"	NONE

* EXCLUDING CONDUIT WEB ** TOP DIMENSION

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(TRAFFIC PULL BOX)
 NO SCALE

RSP ES-8B DATED JULY 19, 2013 SUPERSEDES RSP ES-8B DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-8B

2010 REVISED STANDARD PLAN RSP ES-8B