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

STATE OF CALIFORNIA **ACSTP-P001(581)E**
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SONOMA COUNTY
NEAR TIMBER COVE
AT 2.0 MILES SOUTH OF FORT ROSS HISTORIC PARK

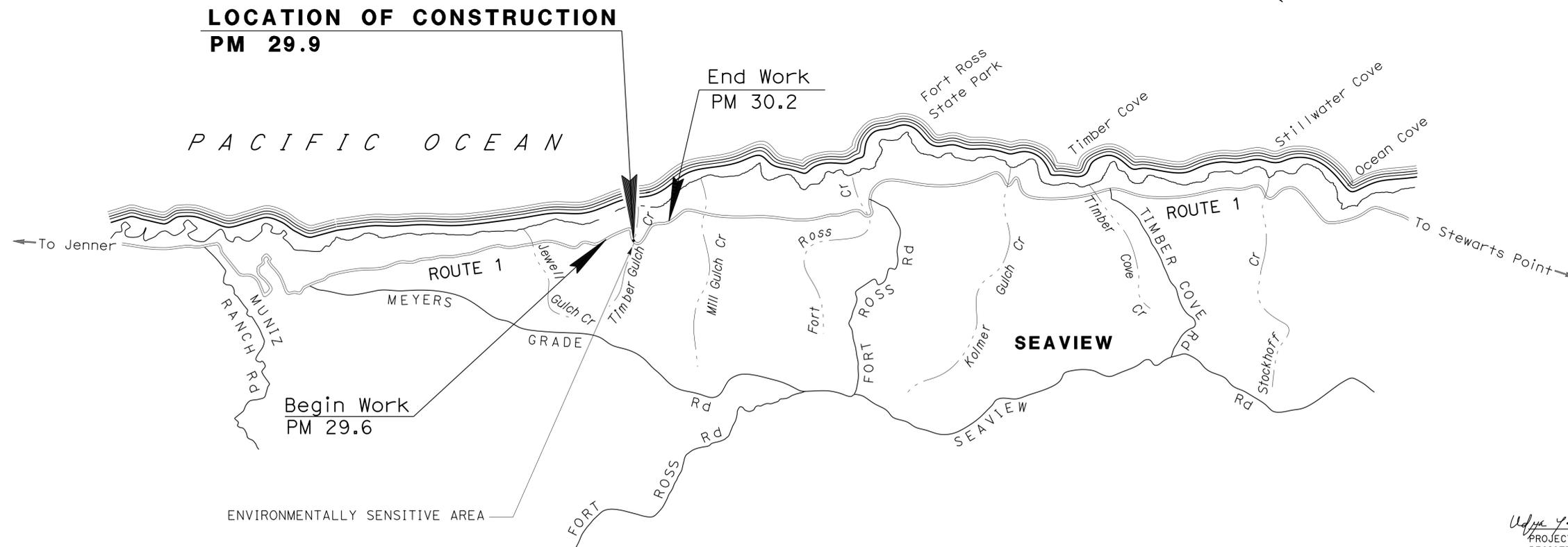
TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	1	64





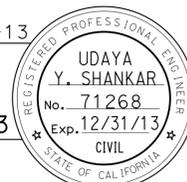
LOCATION MAP



NO SCALE

PROJECT MANAGER
LILIAN ACORDA
 DESIGN ENGINEER
GURBHAY BRAR

 01-30-13
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
September 30, 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.



CONTRACT No.	04-3G7401
PROJECT ID	0412000168

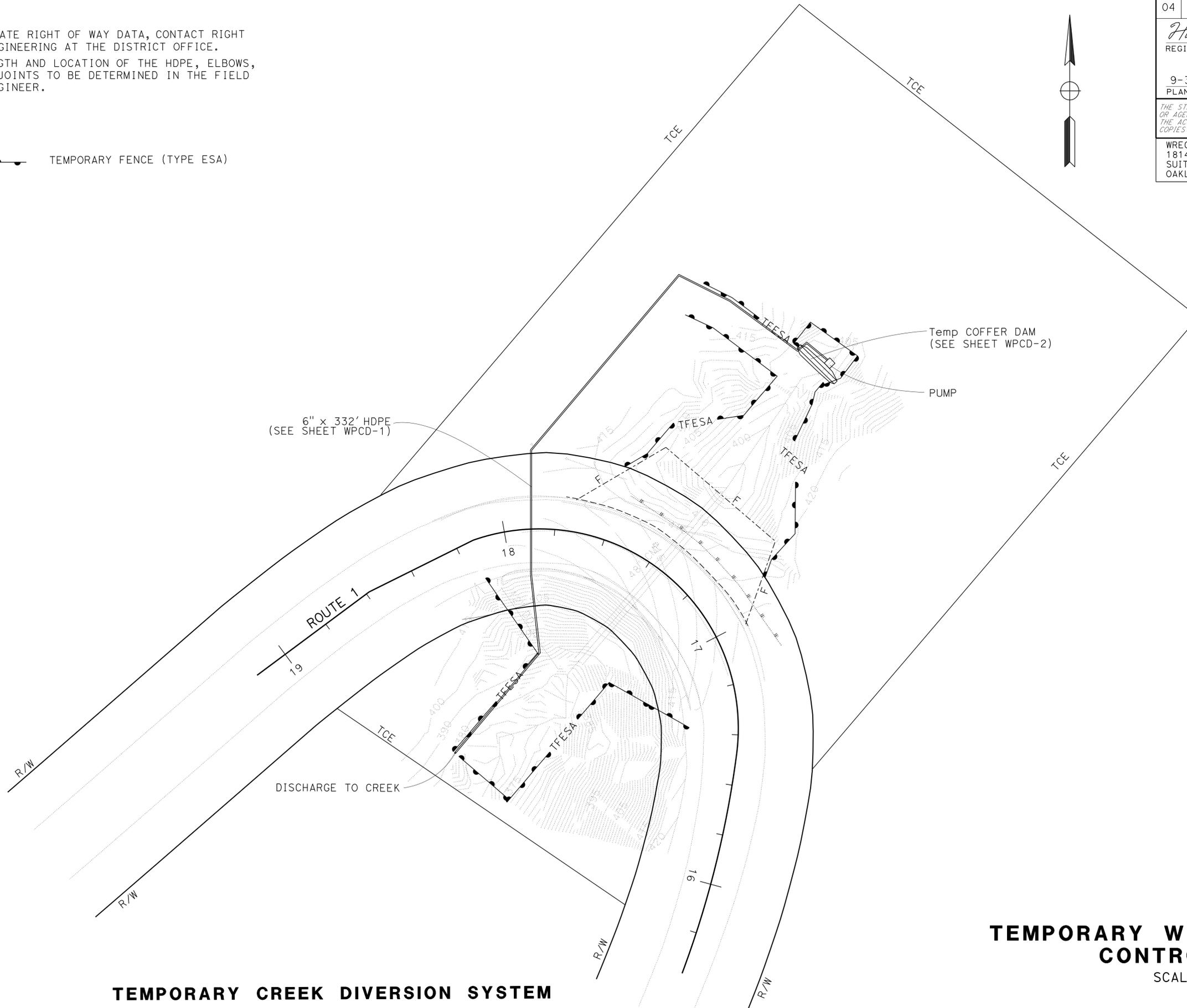
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	3	64
<i>Han-Bin Liang</i> REGISTERED CIVIL ENGINEER		06-26-13 DATE			
9-30-13 PLANS APPROVAL DATE					
WRECO 1814 FRANKLIN STREET SUITE 608 OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXACT LENGTH AND LOCATION OF THE HDPE, ELBOWS, AND PIPE JOINTS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

LEGEND:

—●—●—●—●— TFESA TEMPORARY FENCE (TYPE ESA)



TEMPORARY WATER POLLUTION CONTROL PLAN
 SCALE: 1" = 20'

TEMPORARY CREEK DIVERSION SYSTEM

THIS PLAN ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY.

WPC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	TERENCE XIAO	REVISOR	TX
	HAN-BIN LIANG	DATE	06-26-13
CONSULTANT - FUNCTIONAL SUPERVISOR	ANALETTE OCHOA	CALCULATED/DESIGNED BY	
		CHECKED BY	



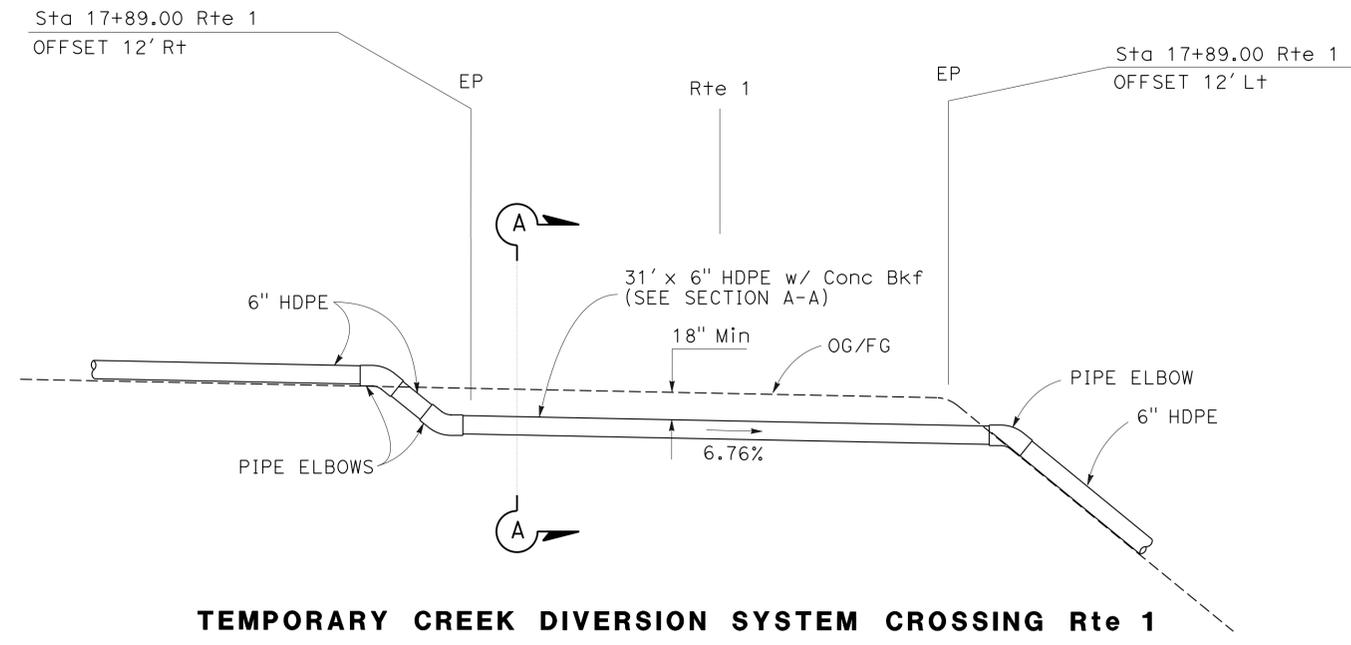
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: FUNCTIONAL SUPERVISOR: ANALETTE OCHOA
 CALCULATED/DESIGNED BY: CHECKED BY:
 TERENCE XIAO HAN-BIN LIANG
 REVISED BY: DATE REVISED: 08-20-13
 TX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	4	64

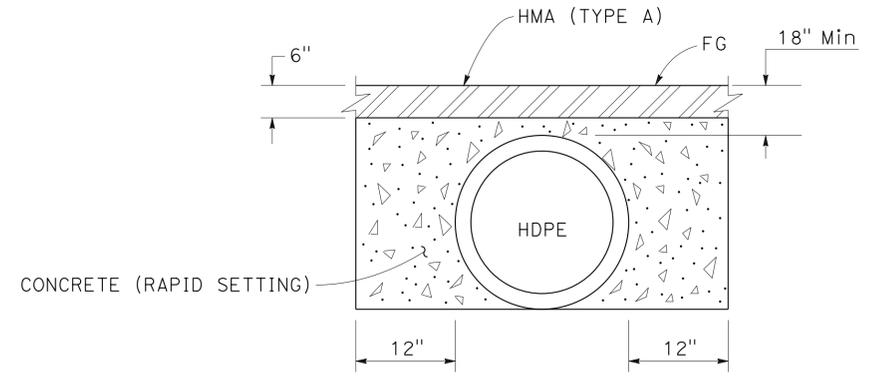
Han-Bin Liang 08/20/13
 REGISTERED CIVIL ENGINEER DATE
 9-30-13
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
HAN-BIN LIANG
 No. 48404
 Exp. 6/30/14
 CIVIL
 STATE OF CALIFORNIA

WRECO 1814 FRANKLIN STREET SUITE 608 OAKLAND, CA 94612	CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612
---	---



TEMPORARY CREEK DIVERSION SYSTEM CROSSING Rte 1



SECTION A-A
Conc Bkf

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

ITEM	QUANTITY	UNIT
CONCRETE RAPID SETTING (N)	4.3	CY
HOT MIX ASPHALT (TYPE A) (N)	2.8	TON

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

TEMPORARY WATER POLLUTION CONTROL DETAIL

NO SCALE

WPCD-1

LAST REVISION | DATE PLOTTED => 02-OCT-2013
 08-20-13 | TIME PLOTTED => 13:55

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: FUNCTIONAL SUPERVISOR ANALETTE OCHOA
 CALCULATED/DESIGNED BY: TERENCE XIAO
 CHECKED BY: HAN-BIN LIANG
 REVISED BY: TX
 DATE REVISED: 08-20-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	5	64

Han-Bin Liang 08/20/13
 REGISTERED CIVIL ENGINEER DATE
 9-30-13
 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.

WRECO
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 OAKLAND, CA 94612

CALTRANS
 111 GRAND AVENUE
 OAKLAND, CA 94612

REGISTERED PROFESSIONAL ENGINEER
HAN-BIN LIANG
 No. 48404
 Exp. 6/30/14
 CIVIL
 STATE OF CALIFORNIA

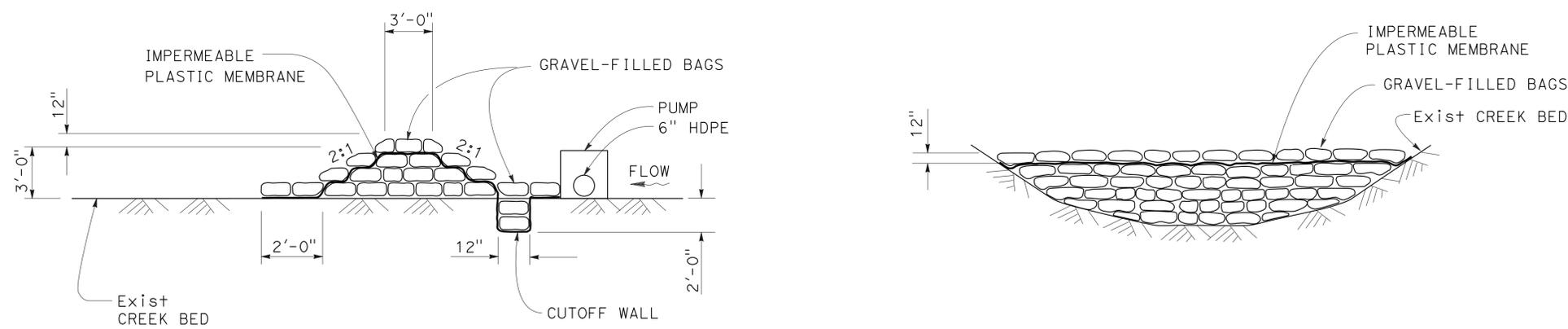
HYDROLOGIC SUMMARY

CREEK NAME	MAXIMUM SLOPE (PERCENT)	AVERAGE FLOW (F+ ³ /S)	PEAK FLOW (F+ ³ /S)	PIPE Dia (INCHES)
TIMBER GULCH	32.1	0	800	6

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

ITEM	QUANTITY	UNIT
GRAVEL-FILLED BAGS (N)	37	CY
IMPERMEABLE PLASTIC MEMBRANE (N)	87	SQYD
6" HDPE (N)	280	LF

- NOTES:
 1. (N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
 2. EXACT QUANTITIES TO BE DETERMINED BY ENGINEER IN THE FIELD.



TEMPORARY COFFER DAM DETAILS

TEMPORARY WATER POLLUTION CONTROL DETAIL AND QUANTITIES

NO SCALE

WPCD-2

LAST REVISION | DATE PLOTTED => 02-OCT-2013
 08-20-13 | TIME PLOTTED => 13:55

REVISOR BY
 DATE REVISED

CHRIS PADICK

CALCULATED/DESIGNED BY
 CHECKED BY

SENIOR LANDSCAPE ARCHITECT
 DAVID YAM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	6	64

Chris Padick
 LICENSED LANDSCAPE ARCHITECT

9-30-13
 PLANS APPROVAL DATE

11-30-16
 1-30-13
 Signature
 Renewal Date
 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.

SEED MIX

SEED	BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
MIX 1	DESCHAMPSIA CAESPITOSA VAR. HOLCIFORMIS ¹ (COASTAL HAIRGRASS)	40	10
	ELYMUS GLAUCUS, BERKELEY ¹ (BLUE WILD RYE, BERKELEY TYPE)	40	10
	FESTUCA RUBRA VAR. MOLATE POINT ¹ (RED FESCUE, MOLATE POINT TYPE)	40	10
	HORDEUM CALIFORNICUM ¹ (CALIFORNIA BARLEY)	40	12
	NEMOPHILA MENZIESII ¹ (BABY BLUE EYES)	40	1
	TRIFOLIUM WILDENOVII ¹ (TOMCAT CLOVER)	50	3
	VULPIA MICROSTACHYS ¹ (THREE WEEK FESCUE)	45	10

¹SEED PRODUCED IN CALIFORNIA ONLY.

EROSION CONTROL TYPE 1*

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE
		DESCRIPTION	TYPE	
STEP 1	ROLLED EROSION CONTROL PRODUCT (NETTING)	NETTING	TYPE A	
STEP 2	DUFF**	DUFF**		537 CY/ACRE

* SEE FIBER ROLL SEQUENCE.
 ** USE STOCK PILED MATERIAL

EROSION CONTROL TYPE 2*

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE
		DESCRIPTION	TYPE	
STEP 1	ROLLED EROSION CONTROL PRODUCT (NETTING)	NETTING	TYPE A	
STEP 2	HYDROSEED	SEED	MIX 1	56 LB/ACRE
		FIBER	WOOD	500 LB/ACRE
STEP 3	HYDROMULCH	FIBER	WOOD	1,500 LB/ACRE
		TACKIFIER	GUAR	125 LB/ACRE

* SEE FIBER ROLL SEQUENCE.

FIBER ROLLS

SEQUENCE	ITEM	MATERIAL	
		DESCRIPTION	TYPE
	FIBER ROLLS	FIBER ROLL	8" TO 10" Dia

Fiber Rolls must be installed after RECP (Netting) and before Hydroseed or Duff.

**EROSION CONTROL LEGEND
 ECL-1**

DATE PLOTTED => 02-OCT-2013
 TIME PLOTTED => 1:31:56
 LAST REVISION 4-22-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	7	64

Chris Padick
 LICENSED LANDSCAPE ARCHITECT
 9-30-13
 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 DISTRICT OFFICE.

LEGEND:

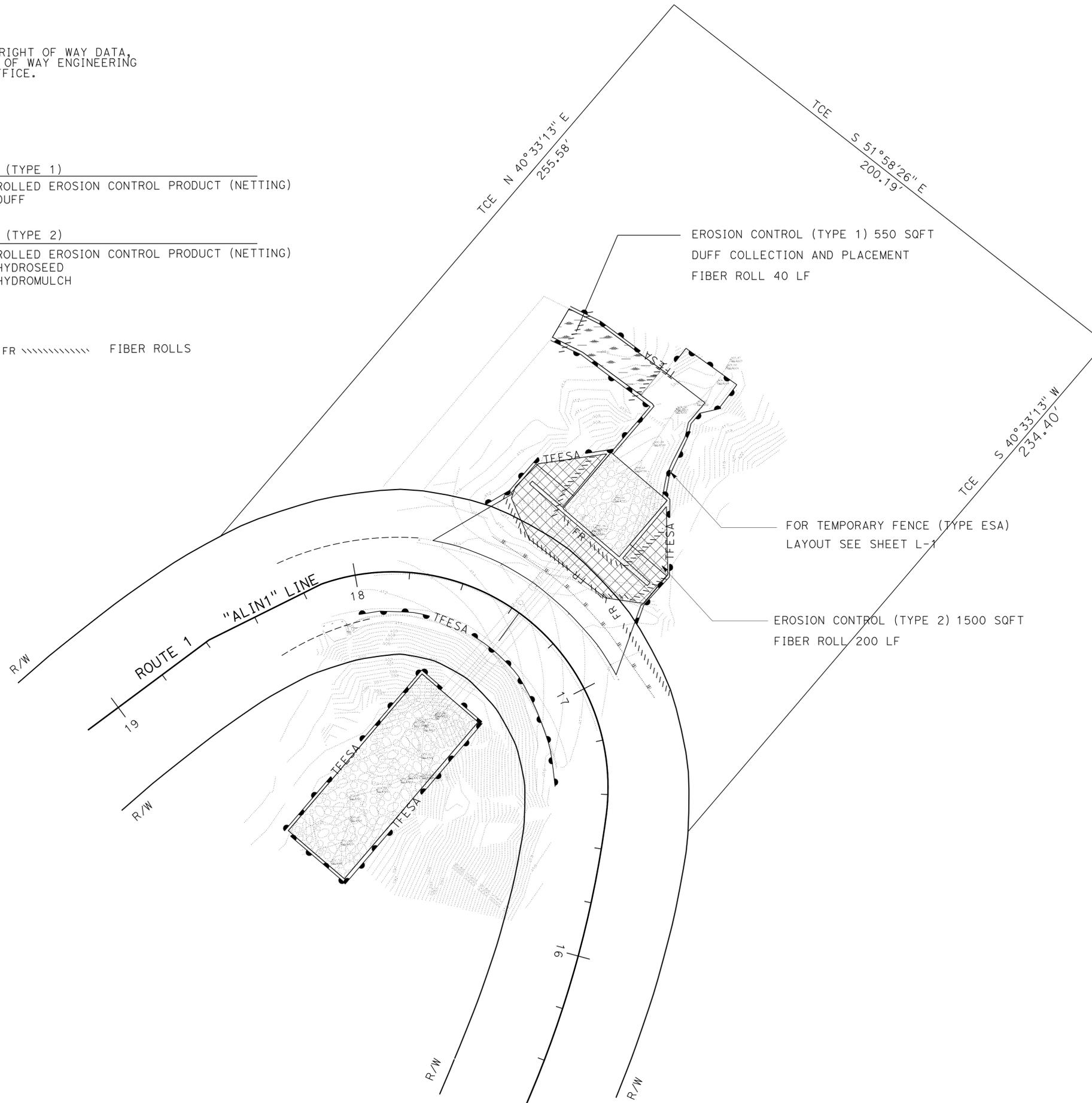
EROSION CONTROL (TYPE 1)

ROLLED EROSION CONTROL PRODUCT (NETTING)
DUFF

EROSION CONTROL (TYPE 2)

ROLLED EROSION CONTROL PRODUCT (NETTING)
HYDROSEED
HYDROMULCH

FR FIBER ROLLS



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SENIOR LANDSCAPE ARCHITECT	REVISOR	DATE
Water Quality	DAVID YAM	CHRIS PADICK	
		ALEX McDONALD	

APPROVED FOR EROSION CONTROL WORK ONLY

EROSION CONTROL PLAN
SCALE: 1" = 20' **EC-1**



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans WATER QUALITY

SENIOR LANDSCAPE ARCHITECT
 DAVID YAM

CALCULATED/DESIGNED BY
 CHECKED BY

CHRIS PADICK

REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	8	64

Chris Padick
 LICENSED LANDSCAPE ARCHITECT

9-30-13
 PLANS APPROVAL DATE

11-30-14
 1-30-13
 Signature Date

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EROSION CONTROL QUANTITIES

SHEET NUMBER	DESCRIPTION	DUFF	HYDROSEED	HYDROMULCH	ROLLED EROSION CONTROL PRODUCT (NETTING)	FIBER ROLLS
		ACRE	SQFT	SQFT	SQFT	LF
EC-1	EC (TYPE 1)	0.013			550	
	EC (TYPE 2)		1500	1500	1500	
	FIBER ROLLS					240
	TOTAL	0.013	1500	1500	2050	240

**EROSION CONTROL QUANTITIES
 ECQ-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	9	64

Han-Bin Liang 06/26/13
 REGISTERED CIVIL ENGINEER DATE
 9-30-13
 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.

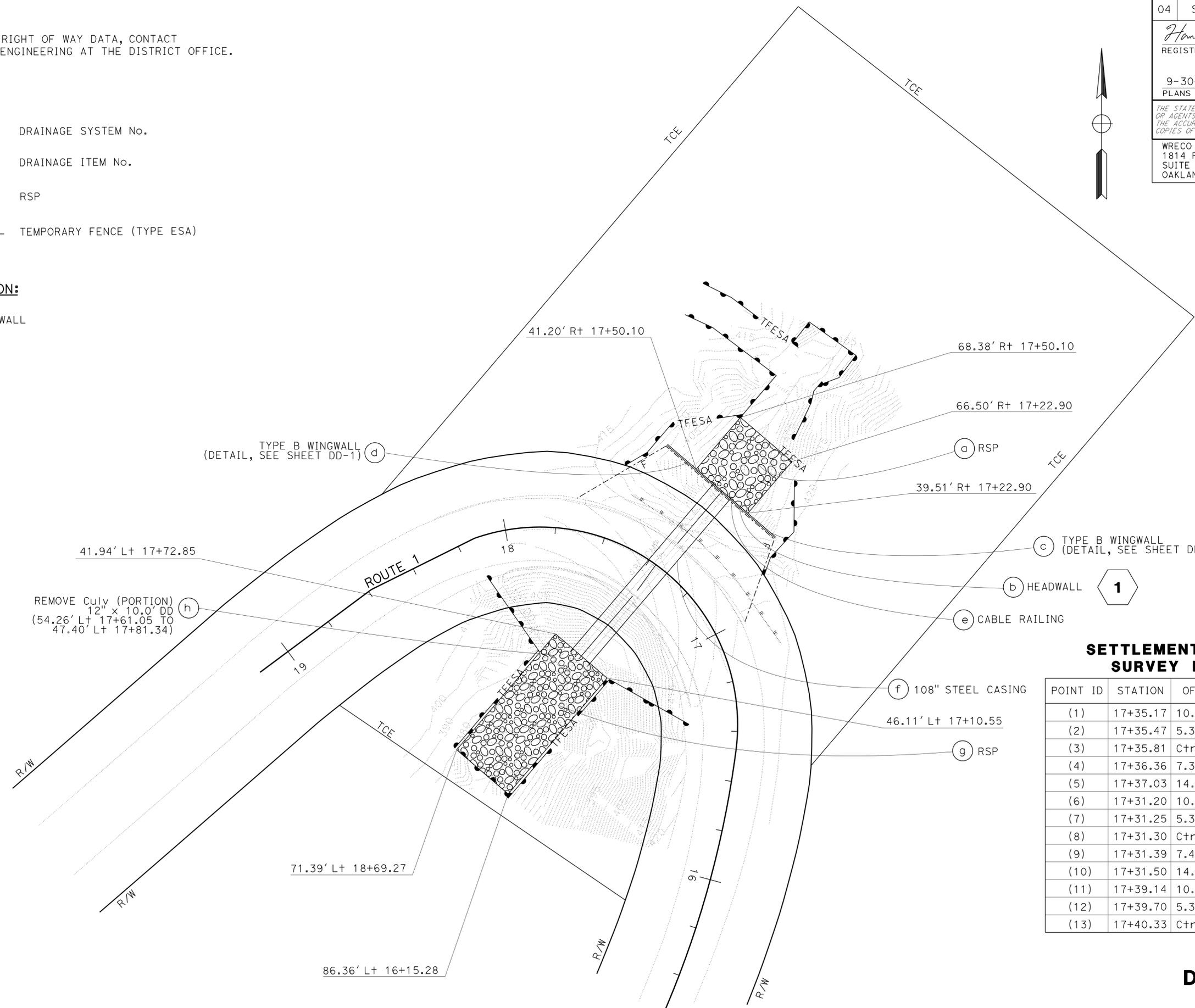
WRECO
 1814 FRANKLIN STREET
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 OAKLAND, CA 94612

CALTRANS
 111 GRAND AVENUE
 OAKLAND, CA 94612

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

- LEGEND:**
- DRAINAGE SYSTEM No.
 - DRAINAGE ITEM No.
 - RSP
 - TEMPORARY FENCE (TYPE ESA)

ABBREVIATION:
 TW - TOP OF WALL



SETTLEMENT AND MONITORING SURVEY POINT LOCATION

POINT ID	STATION	OFFSET	POINT ID	STATION	OFFSET
(1)	17+35.17	10.70' Rt	(14)	17+41.33	7.17' Lt
(2)	17+35.47	5.35' Rt	(15)	17+42.54	14.32' Lt
(3)	17+35.81	Ctr	(16)	17+22.30	10.77' Rt
(4)	17+36.36	7.30' Lt	(17)	17+22.30	5.39' Rt
(5)	17+37.03	14.59' Lt	(18)	17+22.30	Ctr
(6)	17+31.20	10.76' Rt	(19)	17+22.30	15.52' Lt
(7)	17+31.25	5.38' Rt	(20)	17+22.30	7.76' Lt
(8)	17+31.30	Ctr	(21)	17+49.33	10.83' Rt
(9)	17+31.39	7.46' Lt	(22)	17+49.33	5.42' Rt
(10)	17+31.50	14.93' Lt	(23)	17+49.33	Ctr
(11)	17+39.14	10.75' Rt	(24)	17+49.33	13.77' Lt
(12)	17+39.70	5.37' Rt	(25)	17+49.33	6.88' Lt
(13)	17+40.33	Ctr			

DRAINAGE PLAN
 SCALE: 1" = 20'
D-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans
 CONSULTANT SUPERVISOR: ANALETTE OCHOA
 CALCULATED/DESIGNED BY: TERENCE XIAO
 CHECKED BY: HAN-BIN LIANG
 REVISIONS: TX 06-26-13
 REVISIONS: REVISED BY DATE

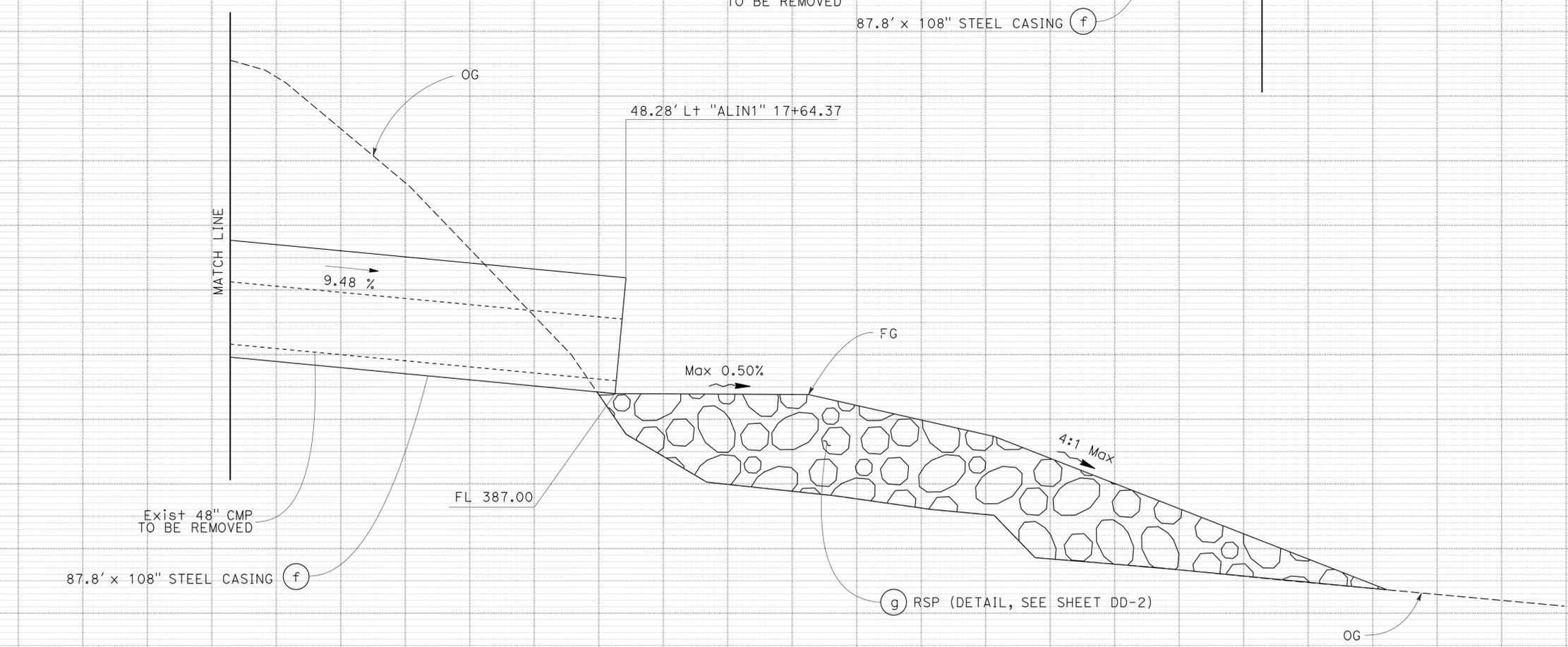
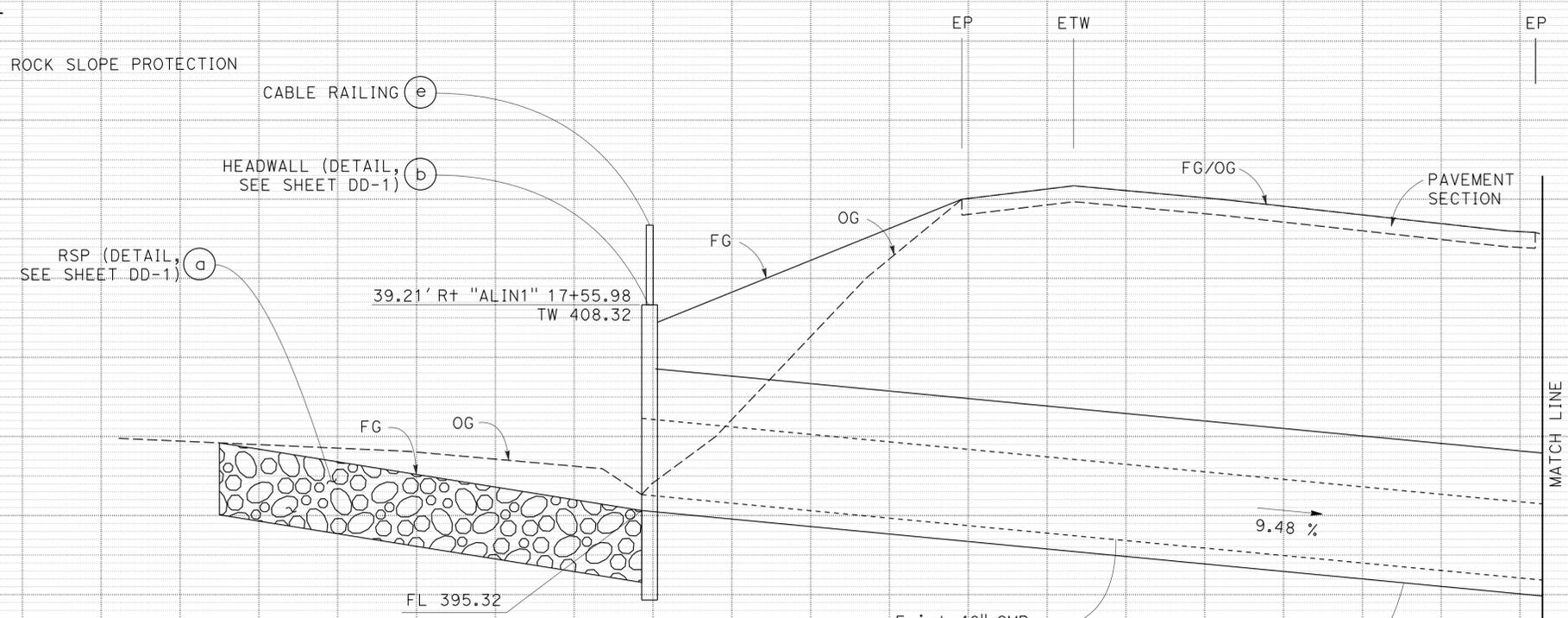
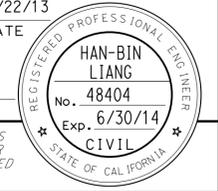
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: FUNCTIONAL SUPERVISOR
 ANALETTE OCHOA
 CHECKED BY
 TERENCE XIAO
 HAN-BIN LIANG
 REVISIONS BY
 DATE REVISION
 410
 400
 390
 410
 400
 390
 380
 370

LEGEND:



ROCK SLOPE PROTECTION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	10	64
<i>Han-Bin Liang</i> REGISTERED CIVIL ENGINEER			03/22/13	DATE	
9-30-13 PLANS APPROVAL DATE					
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DRAINAGE SYSTEM No. 1

DRAINAGE PROFILES
 SCALE: Horiz 1"=5'
 Vert 1"=5'

DP-1

LAST REVISION DATE PLOTTED => 02-OCT-2013 04-11-13 TIME PLOTTED => 13:59

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT - FUNCTIONAL SUPERVISOR: ANALETTE OCHOA
 DESIGNED BY: TERENCE XIAO
 CHECKED BY: HAN-BIN LIANG
 REVISIONS: (Table with columns for REVISION NO., DATE, REVISION BY, and DATE REVISIED)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	11	64

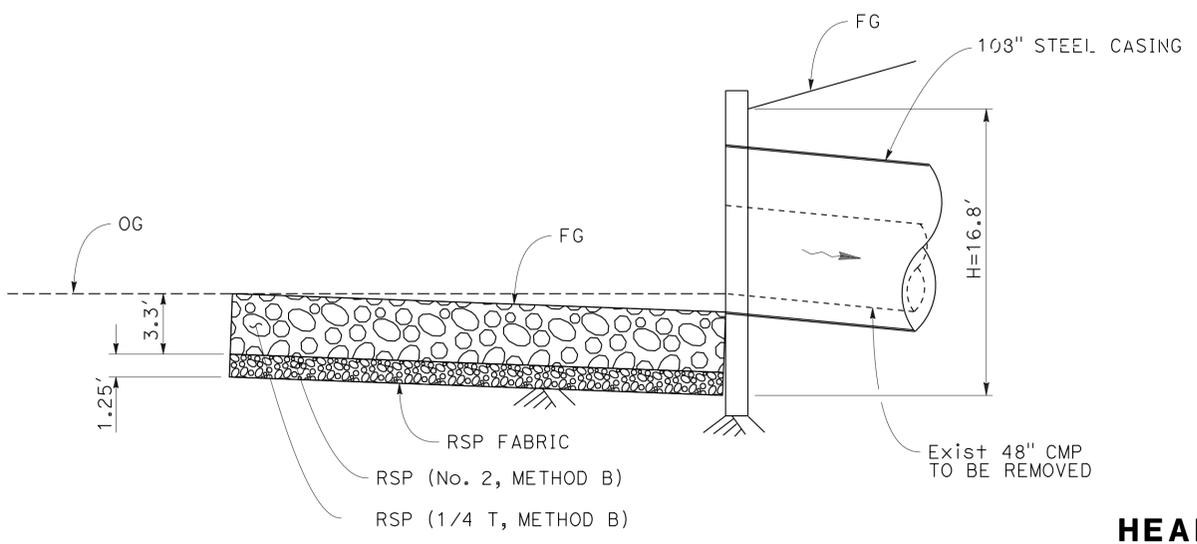
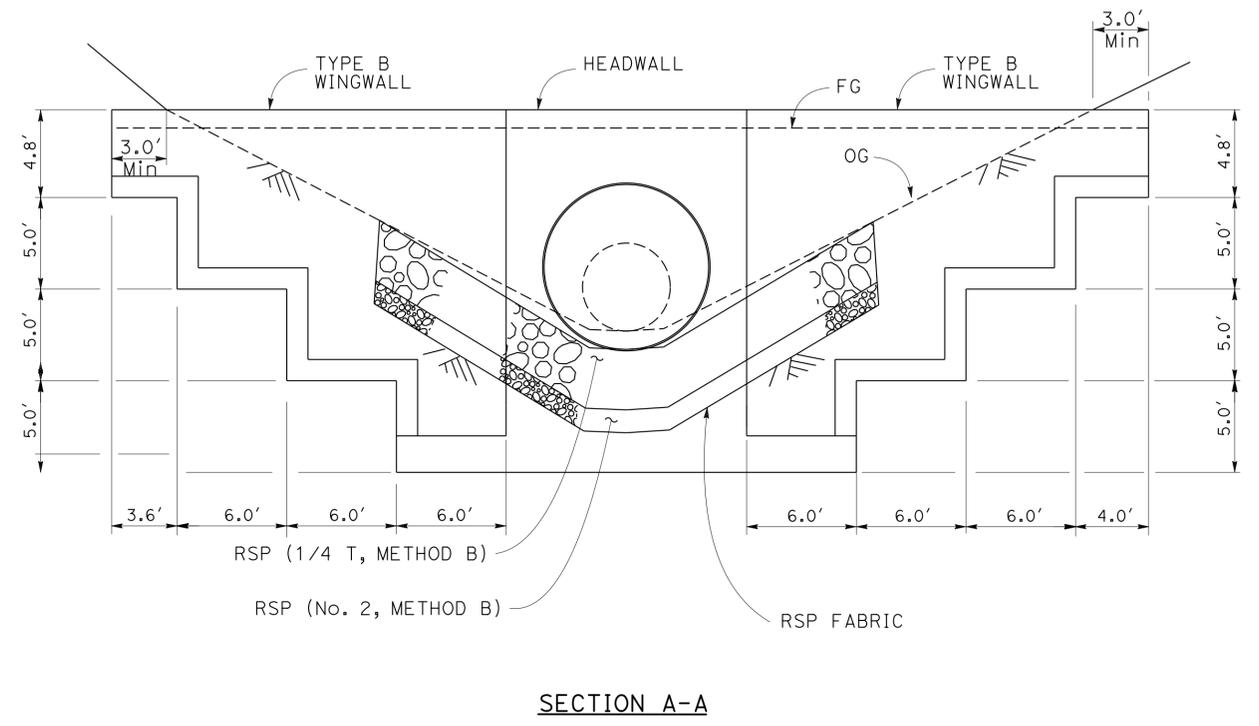
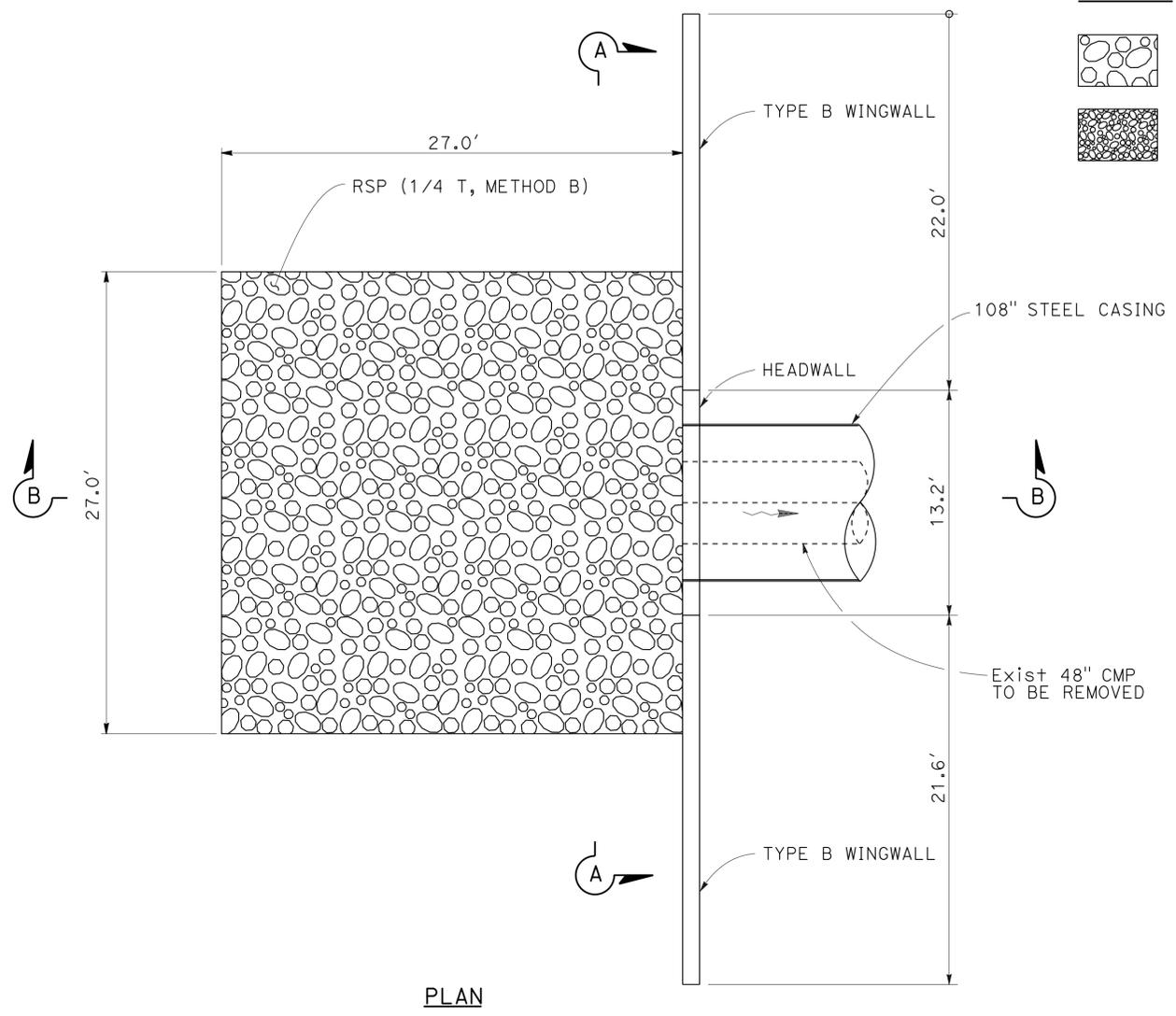
HAN-BIN LIANG
 REGISTERED CIVIL ENGINEER
 DATE: 03/22/13
 PLANS APPROVAL DATE: 9-30-13
 No. 48404
 Exp. 6/30/14
 CIVIL
 STATE OF CALIFORNIA

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 SUITE 608
 OAKLAND, CA 94612

CALTRANS
 111 GRAND AVENUE
 OAKLAND, CA 94612

LEGEND:

-  RSP (1/4 T)
-  RSP (No. 2)



NOTES:

1. FOR DETAILS NOT SHOWN, SEE STANDARD PLANS D86B AND D90.
2. RSP FABRIC SHALL BE PLACED ON ALL SIDES OF RSP EXCEPT FOR TOP SIDE.

HEADWALL, TYPE B WINGWALLS, AND RSP

DRAINAGE DETAILS
NO SCALE

1 a b c d

DD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: TERENCE XIAO
 SUPERVISOR: ANALETTE OCHOA
 DESIGNED BY: TERENCE XIAO
 CHECKED BY: HAN-BIN LIANG
 REVISIONS: [Grids for revision tracking]

LEGEND:
 RSP (1/2 T)
 RSP (No. 1)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	12	64

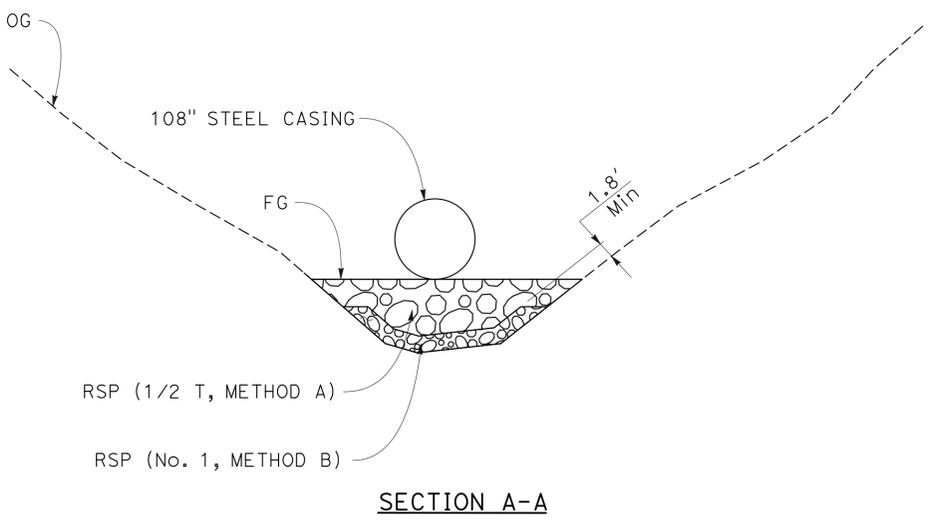
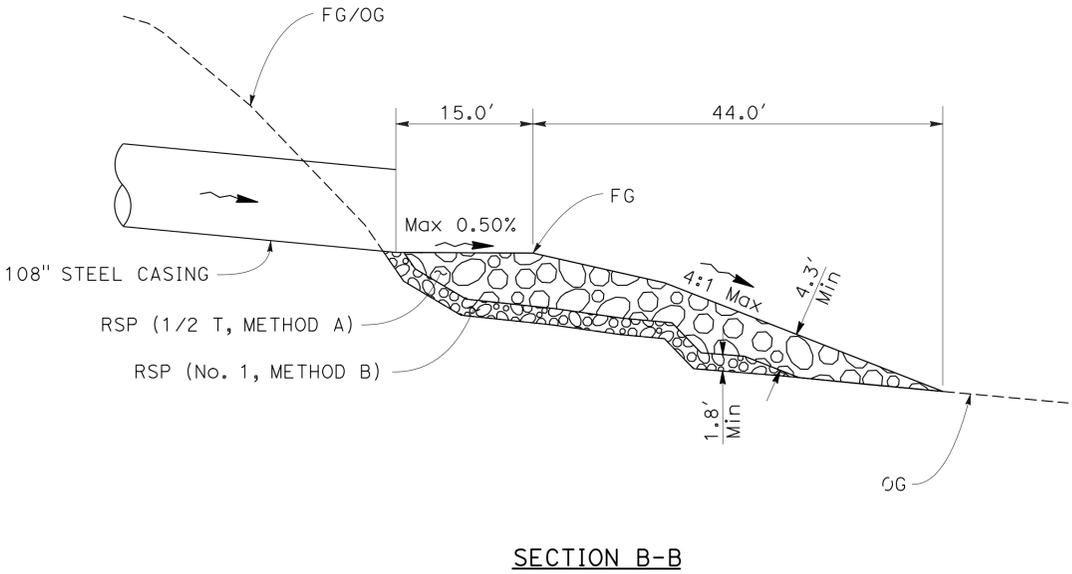
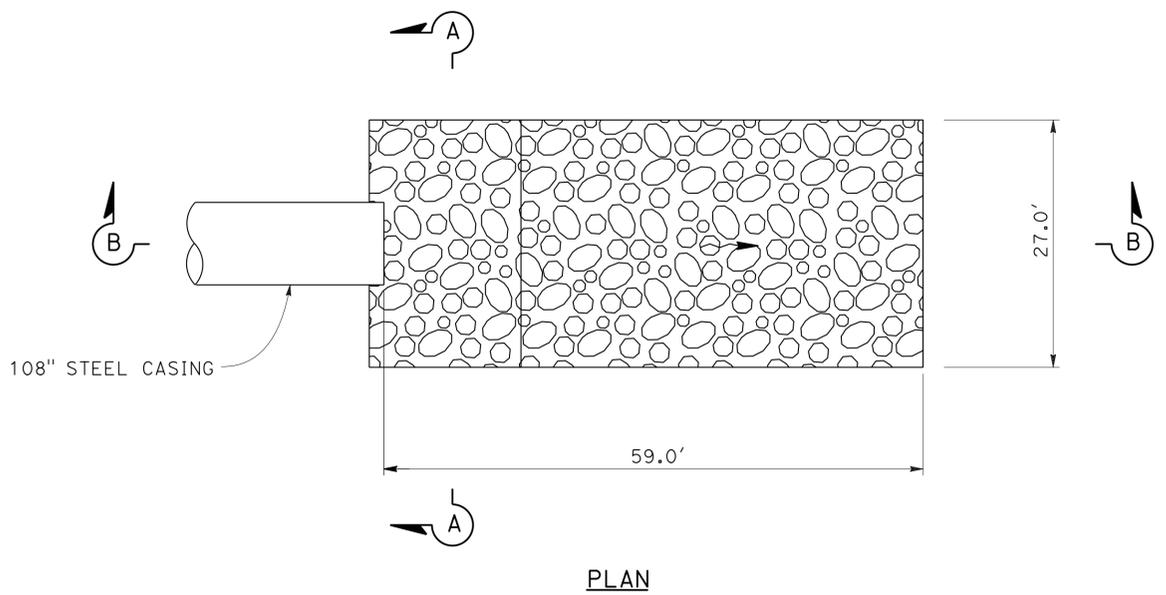
Han-Bin Liang
 REGISTERED CIVIL ENGINEER DATE 03/22/13
 9-30-13
 PLANS APPROVAL DATE



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RSP AT CULVERT OUTLET

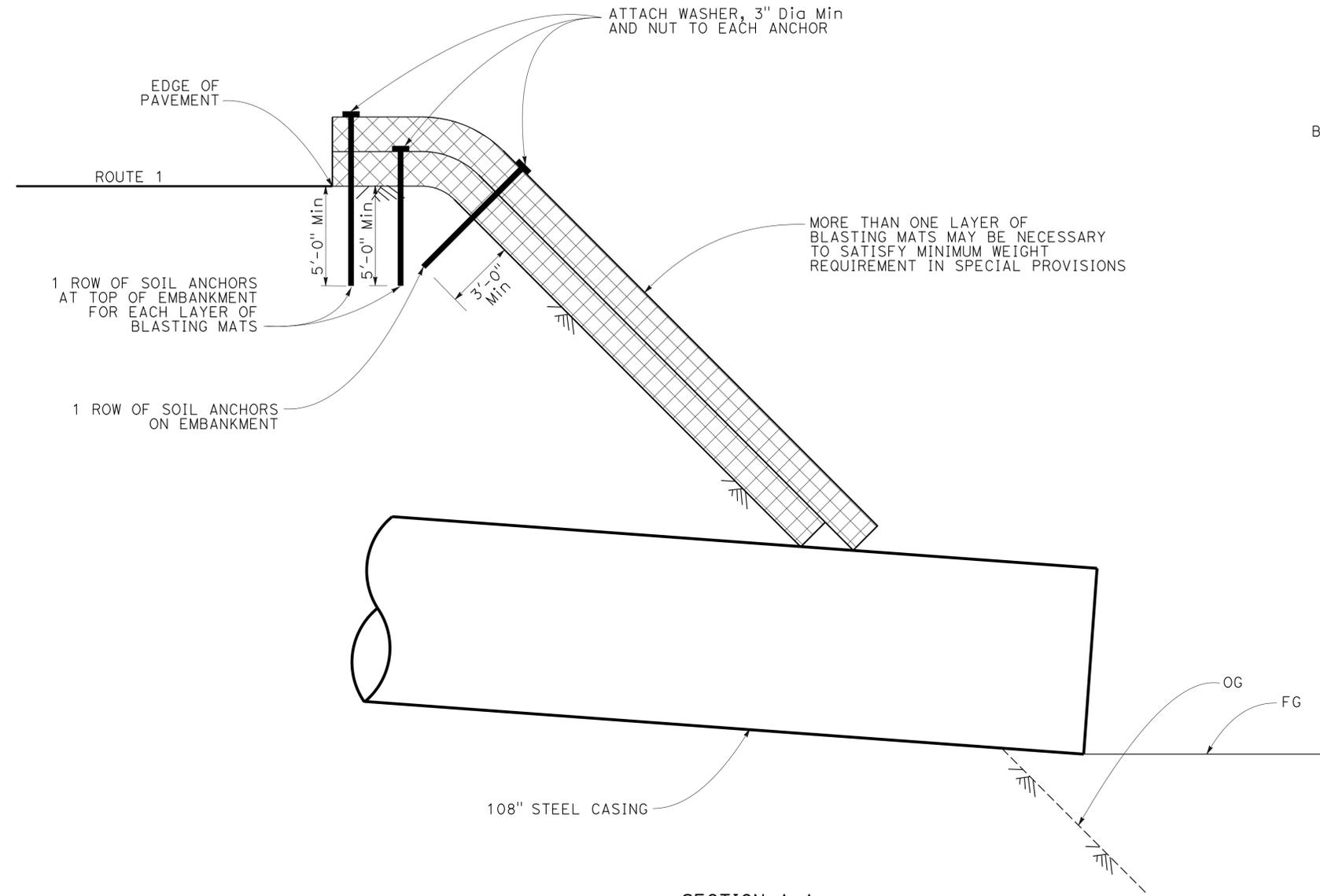
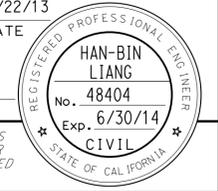
1 g

DRAINAGE DETAILS
 NO SCALE
DD-2

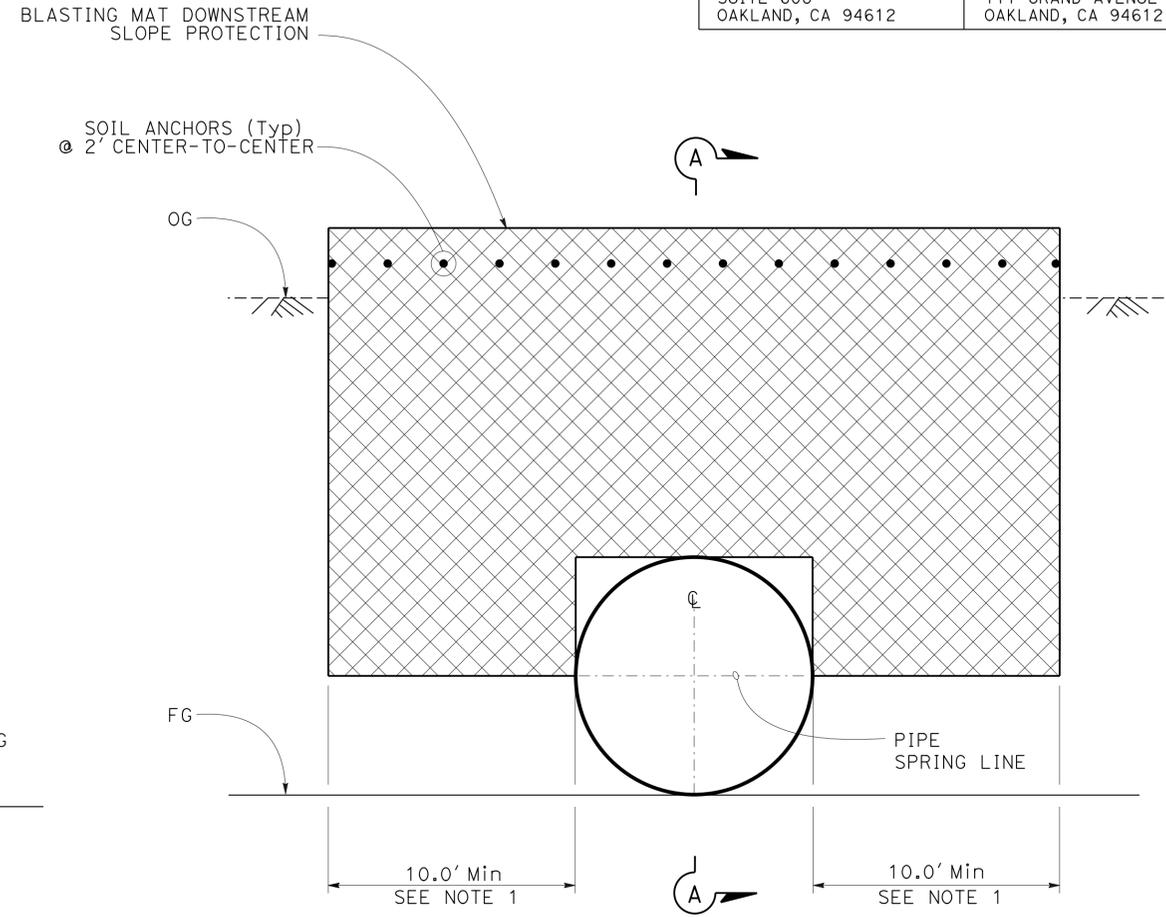
LAST REVISION | DATE PLOTTED => 02-OCT-2013
 04-11-13 | TIME PLOTTED => 13:59

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	TERENCE XIAO	TX
ANALETTE OCHOA	HAN-BIN LIANG	10/26/10
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DATE REVISED
DESIGNED BY		
CALCULATED		
DESIGNED BY		
CHECKED BY		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	13	64
<i>Han-Bin Liang</i> REGISTERED CIVIL ENGINEER			03/22/13	DATE	
9-30-13			PLANS APPROVAL DATE		
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SECTION A-A



NOTES:

1. TRIM BLASTING MAT, IF NECESSARY, TO MAKE SPACE FOR EXISTING TREE TRUNKS.
2. SLOPE PROTECTION DETAILS SHOWN ARE FOR ILLUSTRATION ONLY.
3. DETAILED SLOPE PROTECTION AND ANCHOR DESIGN IS CONTRACTOR'S RESPONSIBILITY.

END VIEW

TEMPORARY DOWNSTREAM SLOPE PROTECTION

DRAINAGE DETAILS
NO SCALE

DD-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	14	64

Han-Bin Liang 03/22/13
 REGISTERED CIVIL ENGINEER DATE
 9-30-13
 PLANS APPROVAL DATE

WRECO
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 SUITE 608
 OAKLAND, CA 94612

CALTRANS
 111 GRAND AVENUE
 OAKLAND, CA 94612

DRAINAGE QUANTITIES

DRAINAGE SYSTEM No.	DRAINAGE UNIT No.	DESCRIPTION											STATION			DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT No.	
		REMOVE CULVERT	108" STEEL CASING	ROCK SLOPE PROTECTION (No. 2, METHOD B)	ROCK SLOPE PROTECTION (No. 1, METHOD B)	ROCK SLOPE PROTECTION (1/4 T, METHOD B)	ROCK SLOPE PROTECTION (1/2 T, METHOD A)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	BAR REINFORCING STEEL	STRUCTURAL CONCRETE	CABLE RAILING								
1	a			40.0		102.3		151.6							RSP	39.21' R+ "ALIN1" 17+55.98	D-1	1	a
	b								994	7.2					HEADWALL	39.21' R+ "ALIN1" 17+55.98			b
	c								3,982	39.0					TYPE B WINGWALL	39.21' R+ "ALIN1" 17+55.98			c
	d								3,910	38.3					TYPE B WINGWALL	39.21' R+ "ALIN1" 17+55.98			d
	e											56.8			CABLE RAILING	40.80' R+ "ALIN1" 17+15.27 TO 43.42' R+ "ALIN1" 17+52.66			e
	f		87.8												108" STEEL CASING	39.21' R+ "ALIN1" 17+55.98 TO 48.28' L+ "ALIN1" 17+64.37			f
	g				74.1		260								RSP	48.28' L+ "ALIN1" 17+64.37			g
	h	10.0													REMOVE CULV (PORTION)	54.26' L+ "ALIN1" 17+61.05 TO 47.40' L+ "ALIN1" 17+81.34			h
GRANT TOTAL		10.0	87.8	40.0	74.1	102.3	260	151.6	8,886	84.5	56.8			GRANT TOTAL					

DRAINAGE QUANTITIES

DQ-1

NOTES:

1. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, REFER TO TRAFFIC HANDLING PLANS.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POST AND SIZE	No. OF SIGNS
A	W20-1	ROAD WORK AHEAD	48" x 48"	1 - 6" x 6"	2
	R2-1	SPEED LIMIT(25)	24" x 30"		
B	G20-2	END ROAD WORK	36" x 18"	1 - 4" x 4"	2
	R3(CA)	END SPEED LIMIT(25)	36" x 45"		

LOCATION OF CONSTRUCTION (PM 29.90)



CONSTRUCTION AREA SIGNS
NO SCALE
CS-1

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

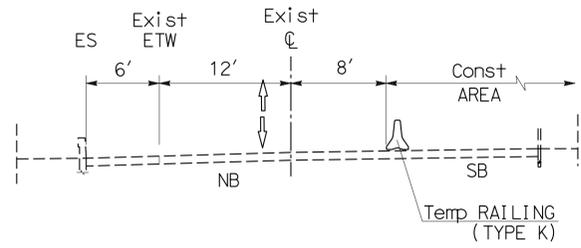
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI
DESIGNED BY: [blank]
CHECKED BY: [blank]
REVISOR: VANK POGOSYAN
DATE: [blank]
REVISOR: HASSAN TAHA
DATE: [blank]

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	17	64

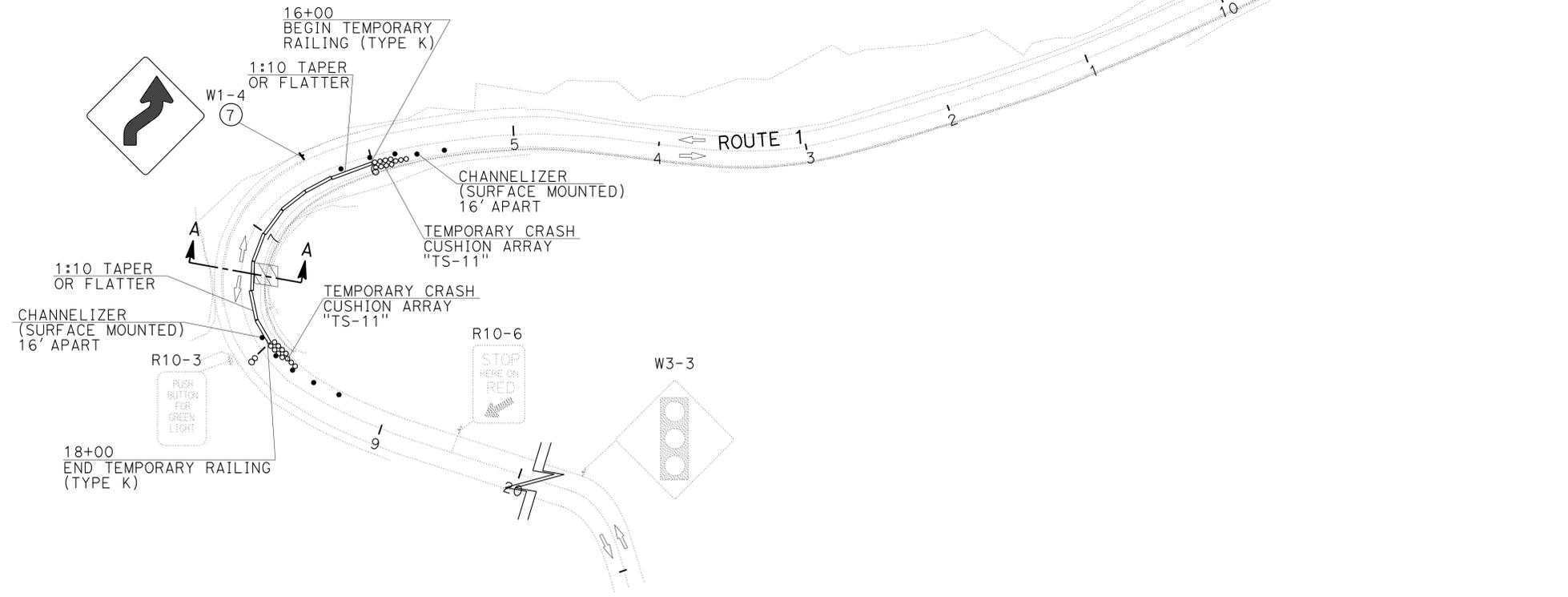
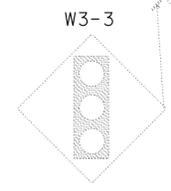
<i>Hassan M. Taaha</i> 01-30-13	
REGISTERED CIVIL ENGINEER	DATE
9-30-13	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
HASSAN M. TAHA
No. 60130
Exp. 06/30/14
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.



SECTION A-A
NO SCALE



**TRAFFIC HANDLING PLAN
(STAGE 2)**
SCALE: 1" = 50'
TH-2

APPROVED FOR TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans 06-TRAFFIC DESIGN	MOHAMMED OATAMI	VANK POGOSYAN	HASSAN TAHA
		CALCULATED/DESIGNED BY	CHECKED BY

USERNAME => s128843
DGN FILE => 0412000168md002.dgn

RELATIVE BORDER SCALE 1" = 10' INCHES

UNIT 1513

PROJECT NUMBER & PHASE 04120001681

LAST REVISION | DATE PLOTTED => 02-OCT-2013
03-13-13 | TIME PLOTTED => 1:3:50

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06 - TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI
 CALCULATED/DESIGNED BY: CHECKED BY:
 VANTK POGOSYAN HASSAN TAHA
 REVISED BY: DATE REVISED:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	18	64

Hassan Tahe 01-30-13
 REGISTERED CIVIL ENGINEER DATE

9-30-13
 PLANS APPROVAL DATE

HASSAN M. TAHA
 No. 60130
 Exp. 06/30/14
 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.

CONSTRUCTION AREA SIGNS

SHEET No.	SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POST AND SIZE	No. OF SIGNS
TH-1	①	W3-3	AS SHOWN ON PLAN	36" x 36"	MOUNT ON BEACON	1
	②	R10-6	AS SHOWN ON PLAN	36" x 24"	1-4" x 4"	1
	③	W1-4	AS SHOWN ON PLAN	30" x 30"	1-4" x 4"	1
	④	R10-6	AS SHOWN ON PLAN	36" x 24"	1-4" x 4"	1
	⑤	W3-3	AS SHOWN ON PLAN	36" x 36"	MOUNT ON BEACON	1
	⑥	R10-3	AS SHOWN ON PLAN	12" x 9"	MOUNT ON POLE	1
TH-2	⑦	W1-4	AS SHOWN ON PLAN	30" x 30"	1-4" x 4"	1

TEMPORARY RAILING (TYPE K)

SHEET No.	Sta TO Sta	LF
TH-1	16+00 to 17+80	180
TH-2	16+00 to 18+00	200
TOTAL		380

TEMPORARY CRASH CUSHION MODULE

SHEET No.	EA
TH-1	11
TH-2	22
TOTAL	33

CHANNELIZER (SURFACE MOUNTED)

SHEET No.	EA
TH-1	10
TH-2	10
TOTAL	20

TEMPORARY PAVEMENT DELINEATION

SHEET No.	STATION	DETAIL No.	REMOVE PAVEMENT MARKER	REMOVE THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	TEMPORARY PAVEMENT MARKING (TAPE)	
			EA	LF	DESCRIPTION	SQUARE YARDS
TH-1	"ROUTE 1" 14+70 TO 19+50	22	42	960	2-LIMIT LINE	2.7
TOTAL			42	960		2.7

TRAFFIC HANDLING QUANTITIES

THQ-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	19	64

Hassan Cohe 01-30-13
REGISTERED CIVIL ENGINEER DATE

9-30-13
PLANS APPROVAL DATE

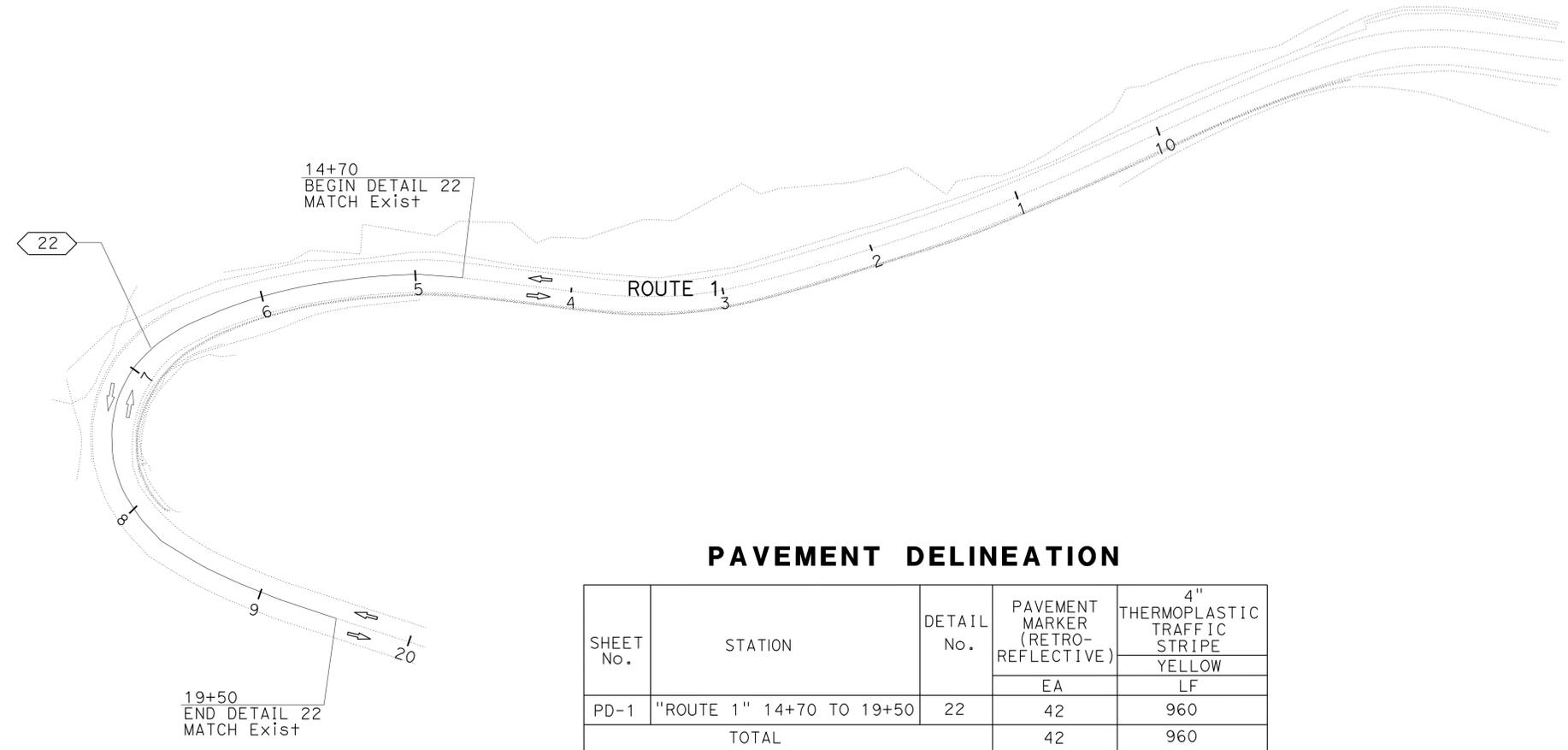
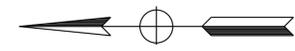
REGISTERED PROFESSIONAL ENGINEER
HASSAN M. TAHA
No. 60130
Exp. 06/30/14
CIVIL
STATE OF CALIFORNIA

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.

LEGEND:

XX TRAFFIC STRIPE DETAIL

⇨ DIRECTION OF TRAFFIC



PAVEMENT DELINEATION

SHEET No.	STATION	DETAIL No.	PAVEMENT MARKER (RETRO-REFLECTIVE)	4" THERMOPLASTIC TRAFFIC STRIPE
			EA	LF
PD-1	"ROUTE 1" 14+70 TO 19+50	22	42	960
TOTAL			42	960

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06 - TRAFFIC DESIGN
 FUNCTIONAL SUPERVISOR: MOHAMMED QATANI
 CALCULATED/DESIGNED BY: CHECKED BY:
 VANK POGOSYAN HASSAN TAHA
 REVISED BY: DATE REVISED:

PAVEMENT DELINEATION PLAN AND QUANTITIES

SCALE: 1" = 50'

PD-1

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	20	64

Daniel Thinh Vo 03-13-13
 REGISTERED ELECTRICAL ENGINEER DATE
 9-30-13
 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.

NOTES:

1. LOWEST SAG POINT OF MESSENGER WIRE MUST BE 25' MINIMUM CLEARANCE FROM FINISHED GRADE OR ROADWAY.
2. OVERHEAD ENTRANCE CONDUIT FITTING MUST BE INSTALLED SO THAT RAINWATER WILL NOT SEEP INTO ELECTRICAL EQUIPMENT THROUGH THE ENTRANCE FITTING. FORM A DRIP LOOP AT ENTRANCE FITTING.
3. PROVIDE GUY WIRE, GUY GUARDS AND ANCHOR AS REQUIRED. POLE GUY WIRE MUST BE INSTALLED AS DIRECTED BY THE ENGINEER.
4. ESTABLISH CONTINUOUS GROUND WITH SYSTEM GROUND TO ALL METAL PARTS IN SYSTEM BY BONDING JUMPERS AND CONDUITS.
5. GROUNDING ELECTRODE MUST BE INSTALLED IN PULL BOX ADJACENT TO WOOD POLES AND BONDED TO RIGID METAL CONDUIT, UNLESS OTHERWISE NOTED.
6. REFER TO SES SHEETS FOR TEMPORARY WOOD POLE DETAILS AND MAXIMUM SPACING BETWEEN WOOD POLES WITH OVERHEAD CONDUCTORS.
7. SIGNS SHOWN ARE "CONSTRUCTION AREA SIGNS". SEE TRAFFIC HANDLING PLANS FOR DETAILS.

LEGEND:

- 1 POWER MUST BE PROVIDED BY A GENERATOR WITH A BACKUP GENERATOR. SEE DETAIL 6 ON E-6.
- 2 INSTALL DEPARTMENT-FURNISHED MODEL 170E CONTROLLER ASSEMBLY ON TEMPORARY FOUNDATION PLATFORM FOR MODEL 332L CABINET PER DETAIL 4 ON SHEET E-5. INSTALL UPS IN CONTROLLER CABINET.
- 3 2"C, 2#6 (SIG), 2#8 (LTG), 2#8 (SB FB), 2#10 (NB FB), 1#8 (G)
- 4 2"C, 2#6 (SIG), 24#14 (Ø1-3, Ø1 PPB-2, Ø2-3, Ø2 PPB-2, Ø3-3, Ø3 PPB-2, SPARE-9), 2#10 (SIG NEUTRAL), 1#8 (G), 4 DLC
- 5 2"C, 4#8 (LTG), 2#8 (SB FB), 2#10 (NB FB), 24#14 (Ø1-3, Ø1 PPB-2, Ø2-3, Ø2 PPB-2, Ø3-3, Ø3 PPB-2, SPARE-9), 3#10 (SIG NEUTRAL), 1#8 (G), 4 DLC
- 6 2#8 (LTG), 2#10 (SB FB), 8#14 (Ø3-3, Ø3 PPB-2, SPARE-3), 2 DLC, 1#10 (SIG NEUTRAL), 1#8 (G)
- 7 2#10 (SB FB), 1#8 (G), 1 DLC
- 8 1 DLC
- 9 2#8 (LTG), 2#8 (NB FB), 16#14 (Ø1-3, Ø1 PPB-2, Ø2-3, Ø2 PPB-2, SPARE-6), 2#10 (SIG NEUTRAL), 1#8 (G), 2 DLC
- 10 2#8 (LTG), 8#14 (Ø1-3 PPB-2, SPARE-3), 1#8 (G).
- 11 2#8 (LTG), 2#8 (NB FB), 8#14 (Ø2-3, Ø2 PPB-2, SPARE-3), 1#10 (SIG NEUTRAL), 1#8 (G), 2 DLC
- 12 2#8 (NB FB), 1#8 (G), 1 DLC
- 13 LOOPS MUST HAVE 5 TURNS.
- 14 SEE DETAIL 5 FOR SIGNAL WOOD POLE ON SHEET E-5.
- 15 SEE SHEET E-6 DETAIL 9 FOR 4 SECTION SIGNAL HEAD.
- 16 LOOP DETECTORS MUST BE CONNECTED IN PB AS SHOWN IN SHEET E-6 DETAIL 10 FOR 1 TYPE D AND 3 TYPE A LOOPS ON ONE SENSOR UNIT CHANNEL.
- 17 SEE DETAIL 2 SHEET E-5 FOR SIGNAL WOOD POLE.
- 18 3#14 (Ø2-3), 1#10 (SIG NEUTRAL), 1#8 (G)

INDEX TO ELECTRICAL PLANS:

DRAWING No.	TITLE
E-1	NOTES, LEGEND, SYMBOLS AND ABBREVIATIONS
E-2 TO E-4	TEMPORARY SIGNAL SYSTEM
E-5 TO E-6	ELECTRICAL DETAILS
E-7	ELECTRICAL QUANTITIES

ABBREVIATIONS:

UPS UNINTERRUPTIBLE POWER SUPPLY

SYMBOLS:

- PROPOSED
- ADVANCE FLASHING BEACON WITH A W3-3 SIGN AND SIGN LIGHTING MOUNTED ON A WOOD POLE. SEE DETAIL 1 ON SHEET E-5.
- WOOD POLE WITH 200 W HPS LUMINAIRE (ON MAST ARM), SIGNAL HEAD, PPB, R10-6 SIGN OR R10-3 SIGN AS SHOWN ON SIGN PLANS, AND CONDUIT RISER. SEE DETAIL 3 ON SHEET E-5.
- WOOD POST WITH NEMA 3R ENCLOSURE. SEE DETAILS 6, 7, AND 8 ON SHEET E-6.
- GENERATOR WITH A BACKUP GENERATOR.
- 3/8" OVERHEAD 7 STRAND GALVANIZED MESSENGER WIRE WITH CONDUCTORS AS NOTED.
- FUEL TANK
- TEMPORARY CHAIN LINK FENCE (TYPE CL-6) WITH 4' CHAIN LINK GATE (TYPE CL-6)
- FUEL LINE

NOTES, LEGEND, SYMBOLS AND ABBREVIATIONS

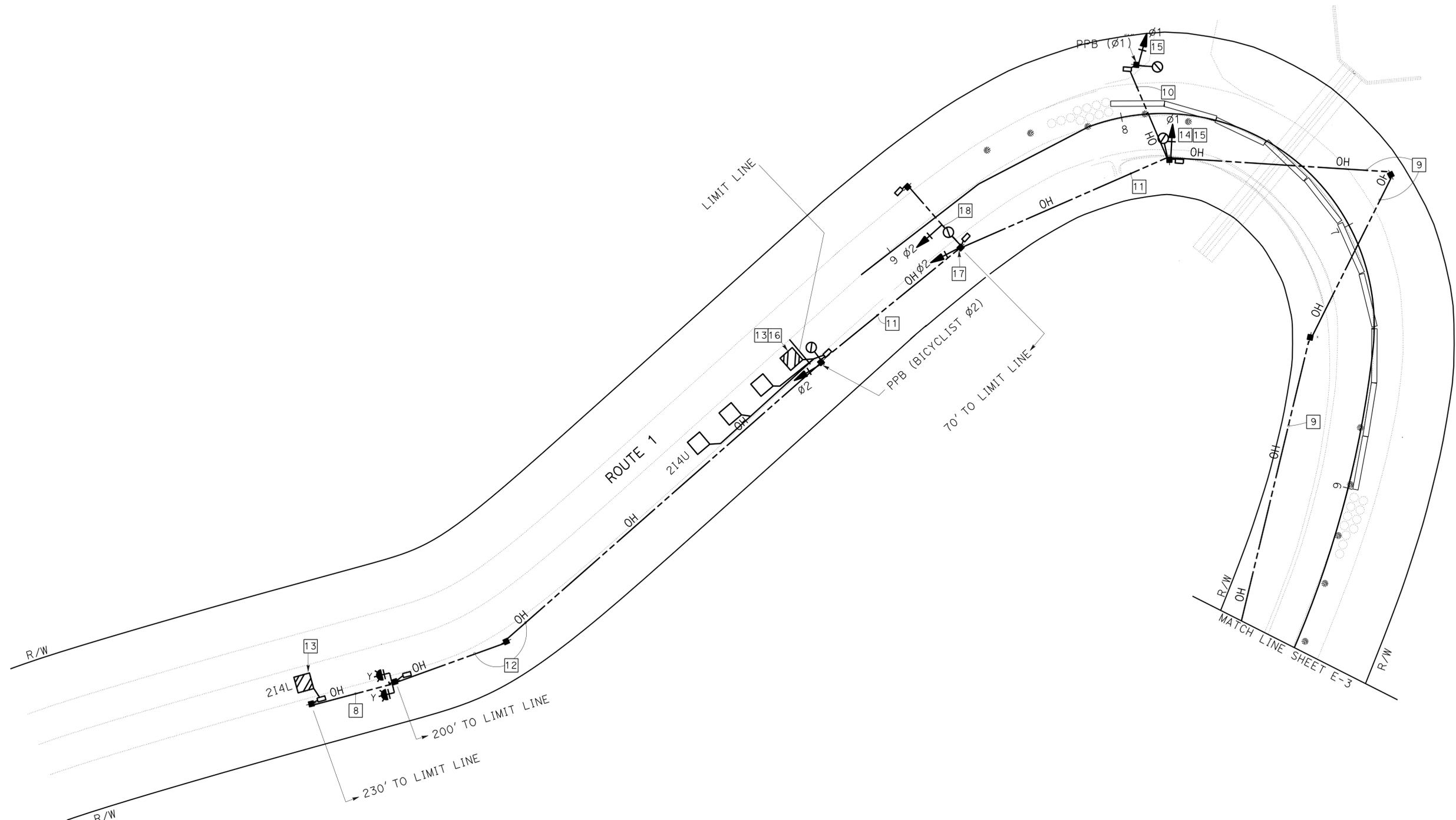
E-1

APPROVED FOR ELECTRICAL WORK ONLY

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	21	64
Daniel Pauls REGISTERED ELECTRICAL ENGINEER			04-11-13 DATE		
9-30-13 PLANS APPROVAL DATE			Daniel Thanh Vo No. 17408 Exp. 9/30/14 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.



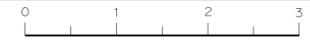
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans 06-ELECTRICAL DESIGN	ALI BAKHDOUD	CHECKED BY	DANIEL VO
			MONA ATTALLAH
			DATE REVISED

TEMPORARY SIGNAL SYSTEM

SCALE: 1" = 20'

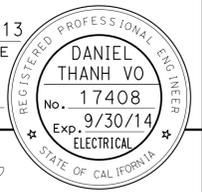
E-2

APPROVED FOR ELECTRICAL WORK ONLY

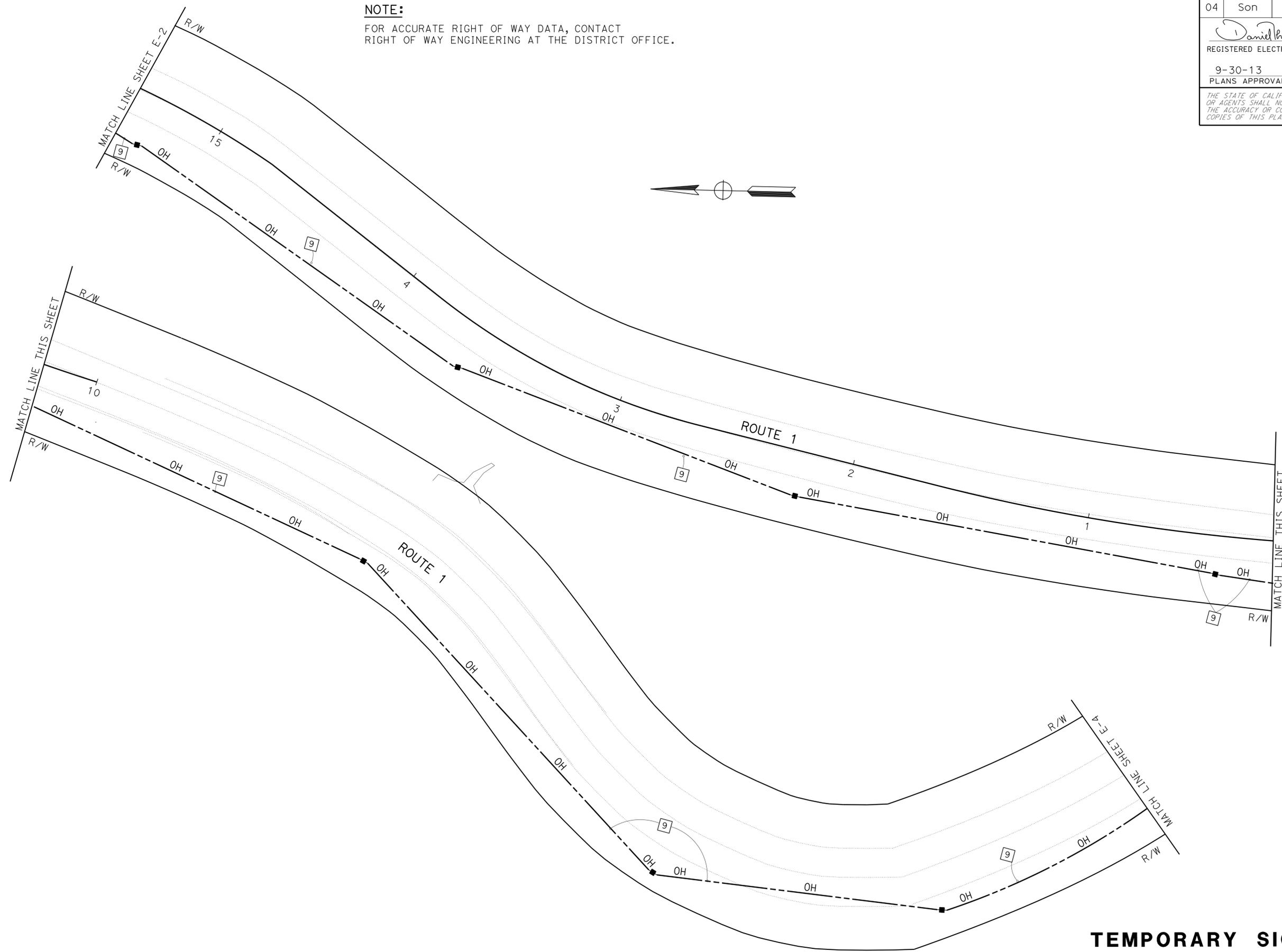


LAST REVISION | DATE PLOTTED => 02-OCT-2013
 04-11-13 | TIME PLOTTED => 13:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	22	64
			04-11-13	DATE	
REGISTERED ELECTRICAL ENGINEER			DATE		
9-30-13			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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans 06-ELECTRICAL DESIGN	ALI BAKHDOUD	CHECKED BY	DANIEL VO
			MONA ATTALLAH
			DATE REVISOR

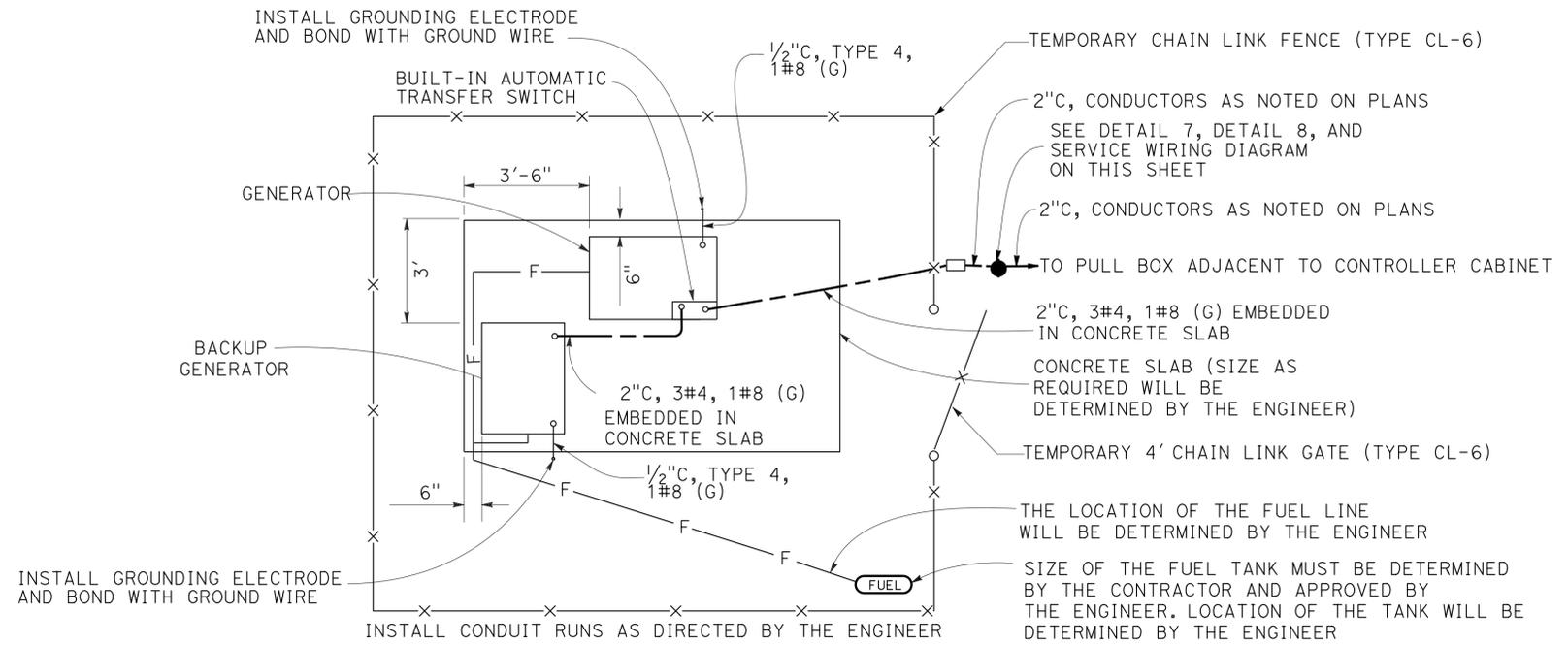
TEMPORARY SIGNAL SYSTEM
SCALE: 1" = 20'
E-3

APPROVED FOR ELECTRICAL WORK ONLY

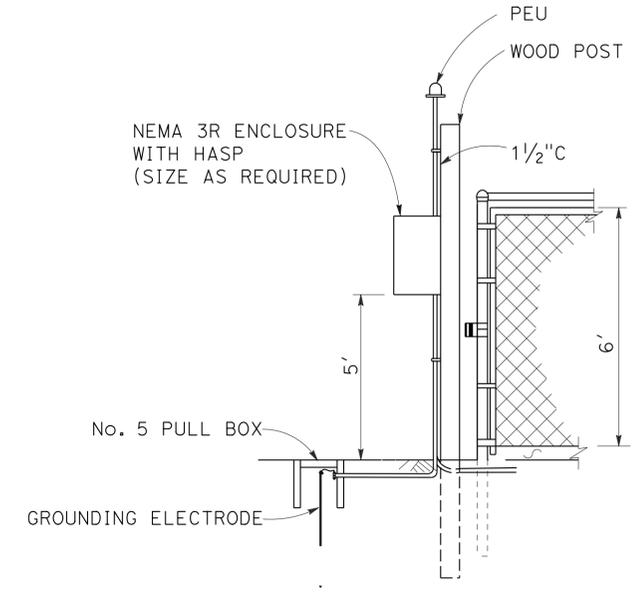
LAST REVISION | DATE PLOTTED => 02-OCT-2013
04-11-13 | TIME PLOTTED => 13:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	25	64
			04-11-13	DATE	
REGISTERED ELECTRICAL ENGINEER			DATE		
9-30-13			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>					
					

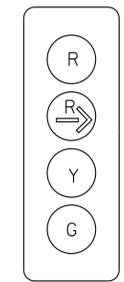
NOTE:
1. SEE SES SHEETS FOR WOOD POLE DETAILS.



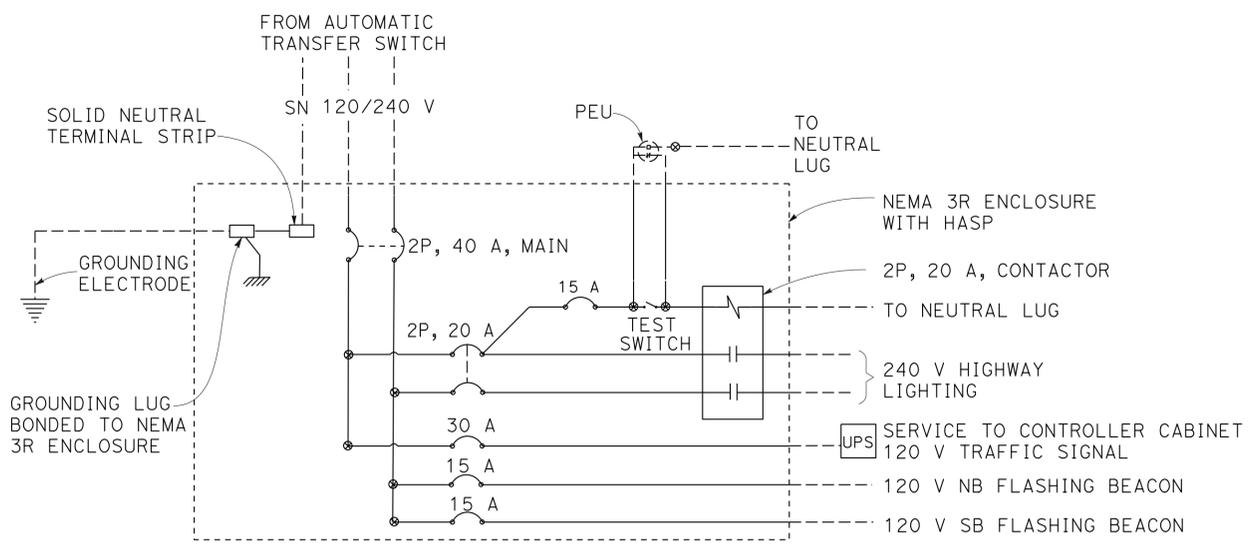
**GENERATOR WITH BACKUP GENERATOR
DETAIL 6**



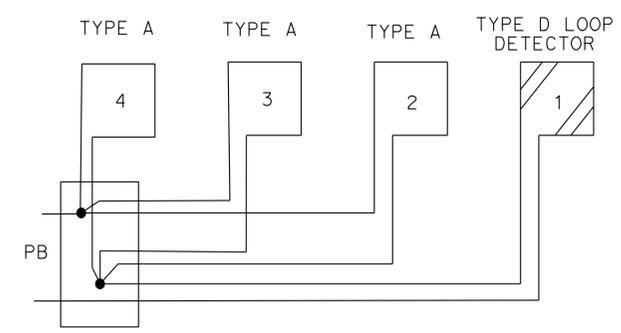
**ELECTRICAL SERVICE SIDE VIEW
DETAIL 7**



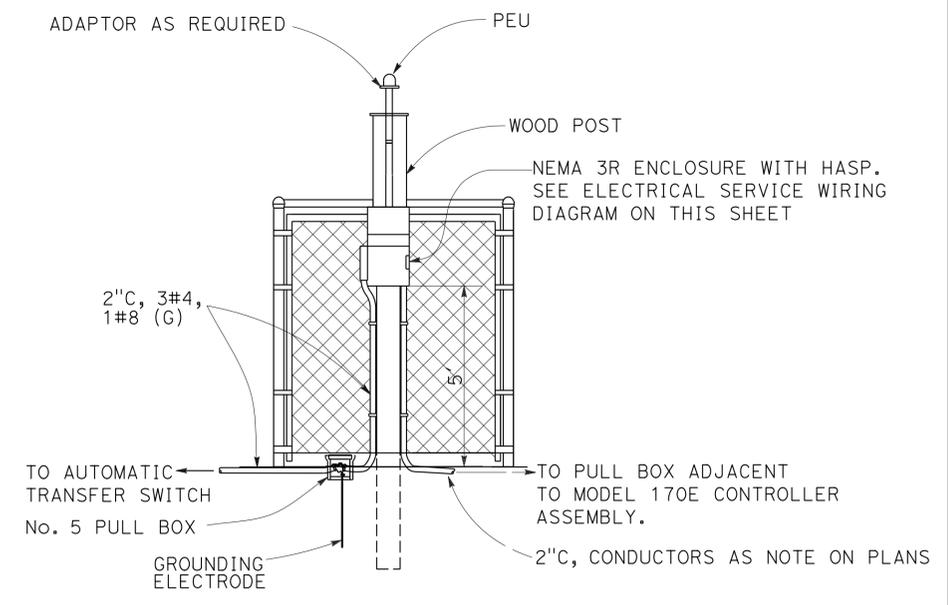
**4 SECTION SIGNAL HEAD
DETAIL 9**



ELECTRICAL SERVICE WIRING DIAGRAM



**1 TYPE D + 3 TYPE A LOOP CONNECTION
DETAIL 10**



**ELECTRICAL SERVICE FRONT VIEW
DETAIL 8**

ELECTRICAL DETAILS
NO SCALE

E-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Daniel Thanh Vo
 Mona Attallah
 Ali Bakhdoud
 06-ELECTRICAL DESIGN
 Caltrans

APPROVED FOR ELECTRICAL WORK ONLY



UNIT 1515

PROJECT NUMBER & PHASE

04000201571

BORDER LAST REVISED 7/2/2010

USERNAME => s128843
DGN FILE => 0412000168u006.dgn

LAST REVISION | DATE PLOTTED => 02-OCT-2013
 04-11-13 | TIME PLOTTED => 1:31:51

NOTE:

THE QUANTITIES ON THIS SHEET ARE NOT SEPARATE PAY ITEMS, AND ARE FOR INFORMATION ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	26	64

04-11-13
 REGISTERED ELECTRICAL ENGINEER DATE
 9-30-13
 PLANS APPROVAL DATE

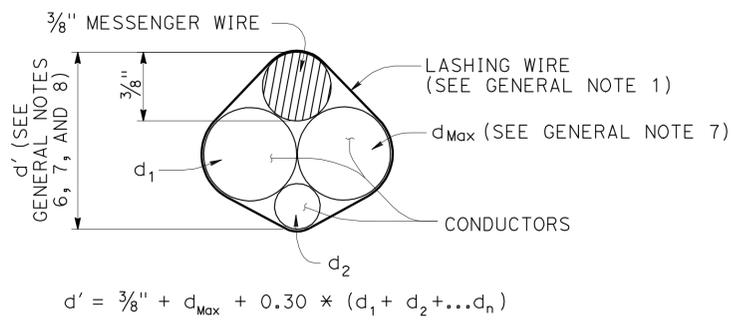
DANIEL THANH VO
 No. 17408
 Exp. 9-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

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.

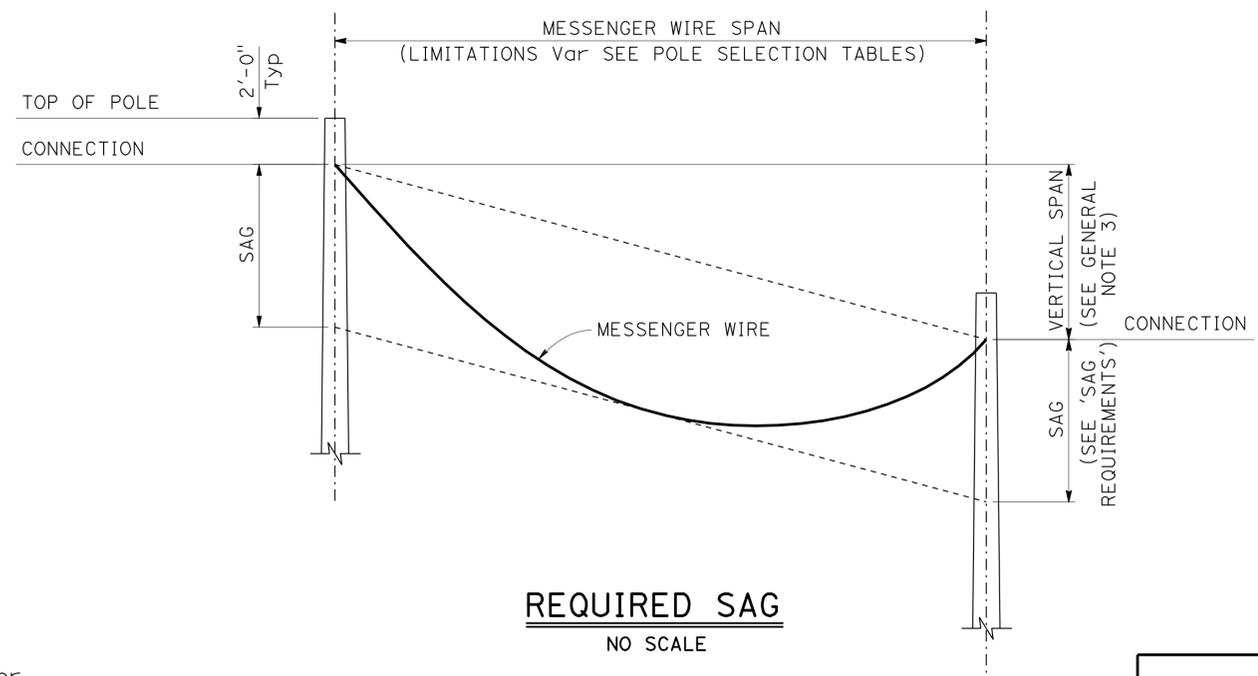
TEMPORARY SIGNAL SYSTEM

SHEET No.	WOOD POLE	2" CONDUIT TYPE 3	GENERATOR	No. 5 PULL BOX	4 SECTION SIGNAL HEAD	3 SECTION SIGNAL HEAD	2 SECTION SIGNAL HEAD	FBCA	SIGN LIGHTING FIXTURE	200 W HPS LUMINAIRE	MESSENGER CABLE	TYPE D LOOP	TYPE A LOOP	DLC	#4 CONDUCTORS	#8 CONDUCTORS	#8 CONDUCTORS (G)	#10 CONDUCTORS	#14 CONDUCTORS	NEMA 3R SERVICE ENCLOSURE	MODEL 332L CABINET FOUNDATION PLATFORM	PPB	UPS	FUEL TANK	CHAIN LINK FENCE (TYPE CL-6)	4' CHAIN LINK GATE (TYPE CL-6)
E-2	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA	LF	EA	EA	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	EA
	10	100		7	2	3	1	1	1	4	635	2	3	998		2617	635	404	5272			2				
E-3											1054			2108		4216	1054	1054	16864							
E-4	8	150	2	7		3	1	1	1	2	397	2	3	688	180	1084	397	175	1880	1	1	1	1	1	80	1

ELECTRICAL QUANTITIES
E-7



GUIDELINE FOR PROJECTED WIND DEPTH CALCULATION, (d')



AMBIENT TEMPERATURE	SAG
ABOVE 121°F	5.2% ± 0.2%
81°F THROUGH 120°F	5.1% ± 0.2%
41°F THROUGH 80°F	5.0% ± 0.2%
1°F THROUGH 40°F	4.9% ± 0.2%
-30°F THROUGH 0°F	4.8% ± 0.2%

DESIGN NOTES:

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition (LTS-5).

GROUP LOAD COMBINATIONS:

- I Dead Load
- II Dead Load + Wind Load
- III Dead Load + 0.5 (Wind Load) + Ice Load
- IV Fatigue: Not used

LOADING:

Wind Loading: 100 mph (3-second gust)
 Wind Recurrence Interval: 10 years
 Combined height, exposure, and elevated terrain factor = 1.05
 (Exposure C, structure is not located on or over the top half of a ridge, hill, or escarpment)

Ice Loading: 3.0 psf on surfaces, 0.60 in radial thickness of ice at a unit weight of 60 pcf on bundles

BASIC DESIGN VALUES:

Timber Poles: F_b = 1850 psi
 F_v = 110 psi
 F_{cp} = 230 psi
 F_c = 950 psi
 E = 1500 x 10³ psi

DESIGN WIRE BREAKING STRENGTHS:

ASTM A475, Utilities Grade, 7 strand modified by termination efficiency factor of 0.8

FOUNDATION DESIGN NOTES:

1. Pole embedment depth design is based on Broms' approximate procedure as described in Article 13.6 of AASHTO LTS-5.
2. Embedment depth is calculated based on following soil parameters,
 Cohesive Soil:
 Shear strength of soil c = 1500 psf.
 Cohesionless Soil:
 φ = 30 deg, γ = 120 pcf.
 Soil assumed to be unsaturated.
3. An overload factor of 2.0 and an undercapacity factor of 0.7 were used for safety factor of 2.86.
4. Allowable vertical bearing pressure at the end bearing of poles is 3000 psf at 6 feet or more embedment.

GENERAL NOTES:

1. Conductors must be suspended from messenger wire as follows: Continuous lashing wire. No spare wire conductors allowed except as noted.
2. The messenger wire and any combination of overhead conductors must not exceed either a self weight of 3.0 lb/ft or a d' of 2.0" unless otherwise noted.
3. Maximum vertical span is 10% of messenger wire span.
4. For poles with adjacent unbalanced span lengths, the shortest span shall be a minimum 50% of the largest span.
5. Standard embedment depth is calculated based on level ground assumption (up to slope 1V:4H). If pole is located on or near a steep slope (greater than 1V:4H through 1V:2H), add 2 feet extra embedment to the table value.
6. Use this sheet to calculate d' unless otherwise shown.
7. d_{Max} is the conductor with the largest diameter. Add d_{Max} to the diameter of the messenger wire and add the sum of the diameters of the remaining conductors multiplied by a factor of 0.30.
8. Value of "d'" may vary between adjacent spans and are not to exceed "d'" selected on the table. When selecting a pole supporting more than one span, use the greater d' value of the spans.
9. For 12FOC, 24FOC, and 36FOC, use the value of 48FOC.
10. Protect poles from traffic as required.
11. Attachments to pole shown represent the maximum allowed. Include attachments if required.

POWER OR DATA CONDUCTOR TYPE	DIAMETER d (in)	WEIGHT w (plf)
3 CONDUCTOR SIGNAL CABLE (3CSC)	0.400	0.0980
5 CONDUCTOR SIGNAL CABLE (5CSC)	0.500	0.1560
9 CONDUCTOR SIGNAL CABLE (9CSC)	0.650	0.2760
12 CONDUCTOR SIGNAL CABLE (12CSC)	0.800	0.3970
28 CONDUCTOR SIGNAL CABLE (28CSC)	0.900	0.6490
1#14	0.166	0.0235
1#12	0.185	0.0330
1#10	0.210	0.0476
1#8	0.271	0.0774
1#6	0.310	0.1130
1#4	0.359	0.1690
1#3	0.388	0.2080
1#2	0.420	0.2560
6-CONDUCTOR SIGNAL INTERCONNECT CABLE (SIC)	0.350	0.0860
12-CONDUCTOR SIGNAL INTERCONNECT CABLE (SIC)	0.500	0.1440
DETECTOR LEAD-IN CABLE (DLC)	0.310	0.0440
48-STRAND FIBER OPTIC CABLE (48FOC)	0.424	0.0600
72-STRAND FIBER OPTIC CABLE (72FOC)	0.484	0.0770
96-STRAND FIBER OPTIC CABLE (96FOC)	0.535	0.1050
144-STRAND FIBER OPTIC CABLE (144FOC)	0.670	0.1890
3/8" Ø MESSENGER	0.375	0.2730

BRANCH CHIEF JAMES SAGAR	DESIGN BY VICTOR LOPEZ	CHECKED LANCE WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO. X	TEMPORARY WOOD POLES GENERAL NOTES	SES-1
	DETAILS BY SHUMEI JIANG	CHECKED LANCE WARREN			POST MILE X		
	QUANTITIES BY X	CHECKED X					

POLE SELECTION TABLE

LEGEND

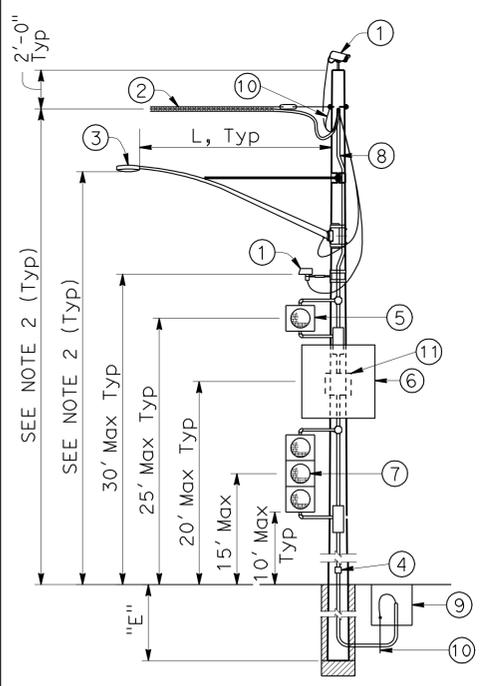
- Wood Pole No Attachments
- Wood Pole with Attachments
- Overhead Conductor

	CASE 1N			CASE 2N			CASE 3N			CASE 4N			CASE 5N			CASE 6N	
	1"	1.5"	(*) 2.0"	1"	1.5"	(*) 2.0"	1"	1.5"	(*) 2.0"	1"	1.5"	(*) 2.0"	1"	1.5"	(*) 2.0"	N/A	
MAXIMUM ALLOWABLE VERTICAL DIMENSION OF CONDUCTORS d'																	
MAXIMUM OH CONDUCTOR SPAN LENGTH	50'			9'			9'			11'			12'			CLASS 1 E = 10'	
	MINIMUM POLE CLASS			H-1 H-2 H-2			4 3 2			3 3 2			H-2 H-2 H-3				H4 H-4 H-4
	POLE EMBEDMENT (E)			10'			9'			9'			11'				12'
	100'			H-2 H-3 H-4			1 1 H-1			1 H-1 H-2			H-4 H-5 H-5				H-5 H-5 H-6
MINIMUM POLE CLASS			H-4 H-5 H-6			H-1 H-2 H-3			H-1 H-2 H-3			H-6 N/A N/A			H-6 N/A N/A		
POLE EMBEDMENT (E)			11'			10'			10'			12'			12'		
150'			H-4 H-5 H-6			H-1 H-2 H-3			H-1 H-2 H-3			H-6 N/A N/A			H-6 N/A N/A		
MINIMUM POLE CLASS			H-4 H-5 H-6			H-1 H-2 H-3			H-1 H-2 H-3			H-6 N/A N/A			H-6 N/A N/A		
POLE EMBEDMENT (E)			12'			11'			11'			12'			N/A		
200'			H-5 H-6 N/A			H-2 H-3 H-5			H-3 H-4 H-6			N/A N/A N/A			N/A N/A N/A		
MINIMUM POLE CLASS			H-5 H-6 N/A			H-2 H-3 H-5			H-3 H-4 H-6			N/A N/A N/A			N/A N/A N/A		
POLE EMBEDMENT (E)			12'			12'			12'			N/A			N/A		

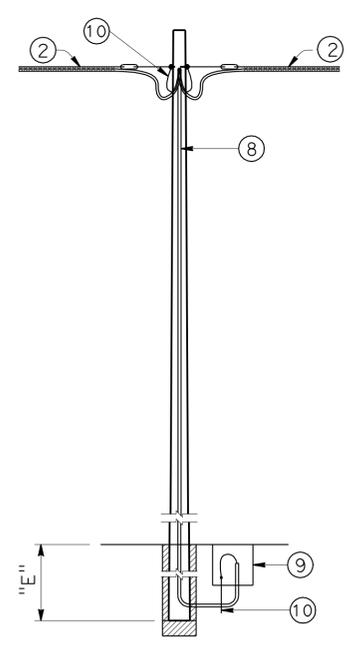
- ① CCTV Camera or vehicle detection systems
- ② 3/8" Ø 7 strand messenger wire, (utilities grade), and conductors.
- ③ Luminaire with mast arm, L = 12' Max
- ④ Pedestrian pushbutton
- ⑤ Single section flashing beacon or single sheet sign panel (4 SQFT Max)
- ⑥ Single sheet sign panel (4' x 4' Max) or signal face with 3 indications
- ⑦ Signal face with 3 indications or single sheet sign panel (10 SQFT Max)
- ⑧ Riser with weatherhead as required
- ⑨ Pull box as required
- ⑩ Grounding as required
- ⑪ Flashing beacon control assembly
- ⑫ NEMA 3R enclosure 26"(W) x 56"(H) x 12"(D) Max dimensions. Max weight including batteries, 450 lb
- ⑬ 25' SQFT Max total photovoltaic panels mounted as shown as required
- ⑭ 2-section 12" flashing beacon

NOTES:

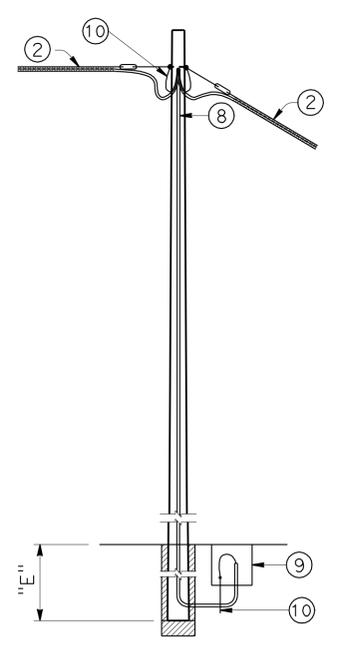
1. In addition to other restrictions on maximum span, this span shall not exceed 100'.
2. 35' max messenger wire mounting height for 40' mounting height of luminaire or 38' messenger wire mounting height for 34' mounting height of luminaire.
3. Cases 1N, 4N and 5N may substitute the attachments shown in Case 6N if the solar panel is not included.



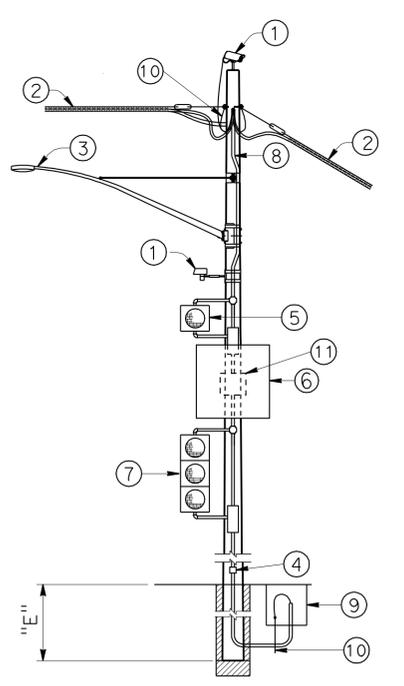
**CASE 1N
POLE AT DEAD END
WITH ATTACHMENTS**
SEE NOTE 3



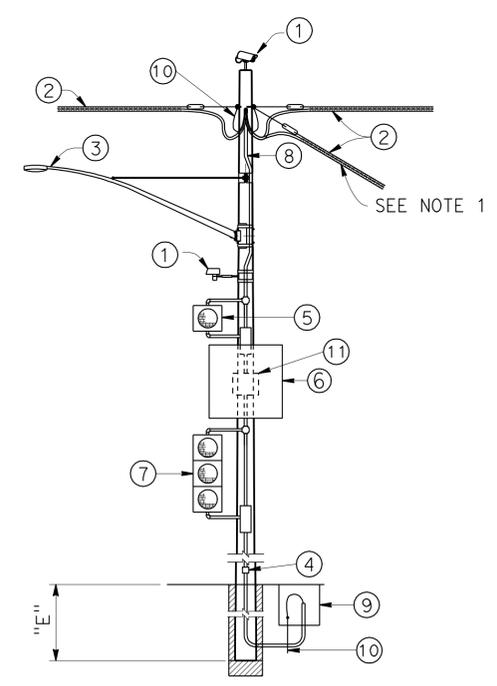
**CASE 2N
POLE AT TANGENT
WITHOUT ATTACHMENTS**



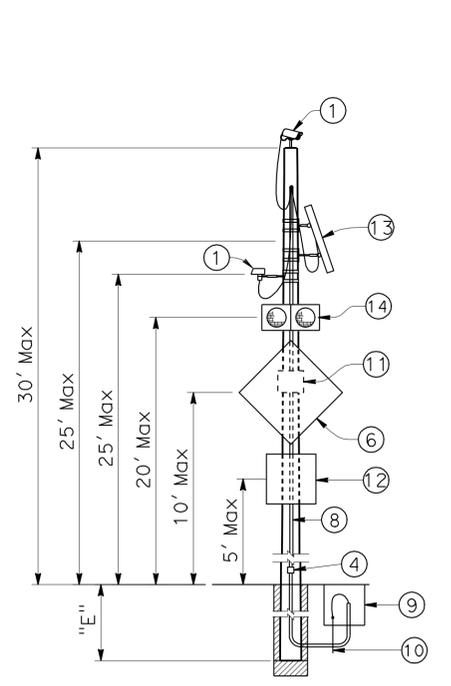
**CASE 3N
POLE AT TANGENT
WITHOUT ATTACHMENTS**



**CASE 4N
POLE AT CORNER
WITH ATTACHMENTS**
SEE NOTE 3



**CASE 5N
POLE AT JUNCTION
WITH ATTACHMENTS**
SEE NOTE 3



**CASE 6N
POLE WITHOUT CONDUCTORS
WITH ATTACHMENTS**

BRANCH CHIEF JAMES SAGAR

DESIGN	BY VICTOR LOPEZ	CHECKED LANCE WARREN
DETAILS	BY SHUMEI JIANG	CHECKED LANCE WARREN
QUANTITIES	BY X	CHECKED X

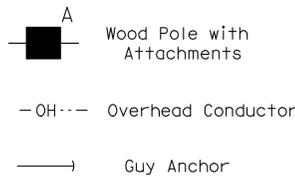
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
SPECIAL DESIGN BRANCH

BRIDGE NO.	X
POST MILE	X

**TEMPORARY WOOD POLES
NON-GUYED-NO SIGNALS ON SPANS**

NO SCALE
SES-2

LEGEND



POLE SELECTION TABLE

MAXIMUM OH CONDUCTOR SPAN LENGTH	MAXIMUM ALLOWABLE VERTICAL DIMENSION OF CONDUCTORS 'd'	CASE 1G			CASE 2G			CASE 3G			CASE 4G		
		1"	1.5"	(*) 2.0"	1"	1.5"	(*) 2.0"	1"	1.5"	(*) 2.0"	1"	1.5"	(*) 2.0"
		50'	MINIMUM POLE CLASS	H-1	H-1	H-2	1	1	1	1	1	1	H-2
	POLE EMBEDMENT (E)	10'			8'			8'			11'		
100'	MINIMUM POLE CLASS	H-2	H-2	H-3	1	H-1	H-1	1	H-1	H-2	H-3	H-3	H-4
	POLE EMBEDMENT (E)	11'			9'			9'			12'		
150'	MINIMUM POLE CLASS	H-3	H-3	H-4	H-1	H-1	H-2	H-2	H-3	H-3	H-4	H-5	H-5
	POLE EMBEDMENT (E)	11'			9'			9'			12'		
200'	MINIMUM POLE CLASS	H-4	H-4	H-5	H-1	H-2	H-3	H-3	H-3	H-4	H-5	H-6	
	POLE EMBEDMENT (E)	11'			9'			9'			12'		

(*) An H-6 pole may be used to support a projected wind depth ('d') of 2.5" Max for a maximum span of 100'. The weight may not exceed 3.0 lb/ft

- ① CCTV camera assembly or vehicle detection system
- ② 3/8" ϕ 7 strand messenger wire, (utilities grade), and conductors
- ③ Luminaire with mast arm, L = 12' Max
- ④ Pedestrian pushbutton
- ⑤ Single section flashing beacon or single sheet sign panel (4 SQFT Max)
- ⑥ Single sheet sign panel (4' x 4' Max) or signal face with 3 indications
- ⑦ Signal face with 3 indications or single sheet sign panel (10 SQFT Max)
- ⑧ Riser with weatherhead as required
- ⑨ Pull box as required
- ⑩ Grounding as required
- ⑪ Flashing beacon control assembly
- ⑫ 1/2" ϕ 7-strand guy wire (utilities grade) with white guy marker and insulator (See Note 4)

NOTES:

1. In addition to other restrictions on maximum span, this span shall not exceed 100'.
2. 35' max messenger wire mounting height for 40' mounting height of luminaire or 38' messenger wire mounting height for 34' mounting height of luminaire.
3. Guy wire in line with opposing span \pm 5".
4. Refer to "DETAILS No. 2" sheet for anchorage of guy wires.

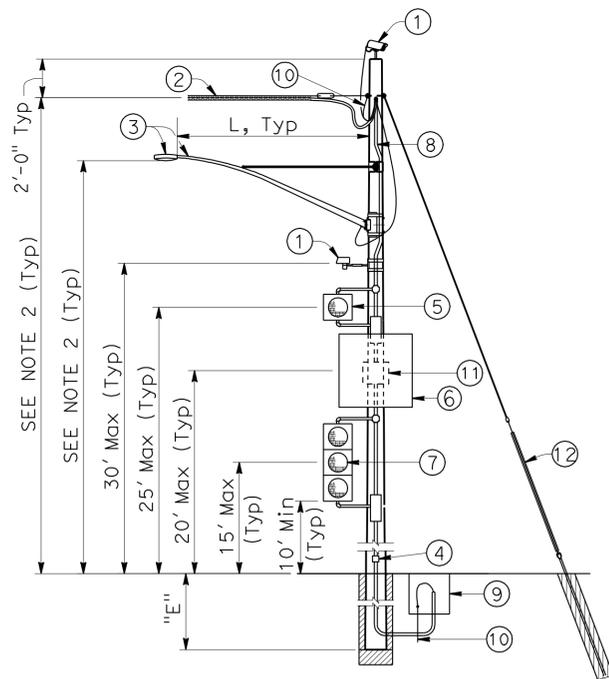
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	29	64

REGISTERED CIVIL ENGINEER DATE 10-29-12

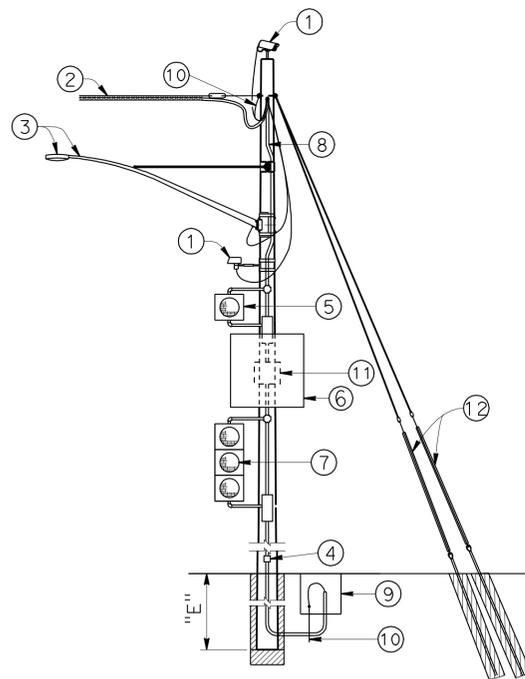
9-30-13 PLANS APPROVAL DATE

VICTOR O LOPEZ No. C61373 Exp. 6-30-2013 CIVIL STATE OF CALIFORNIA

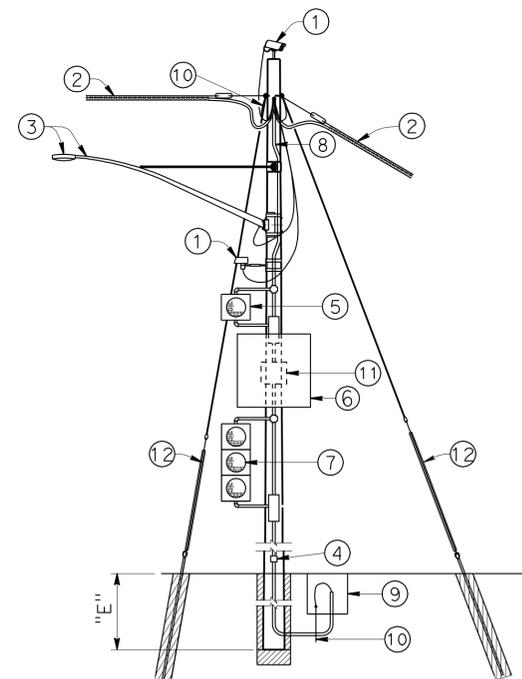
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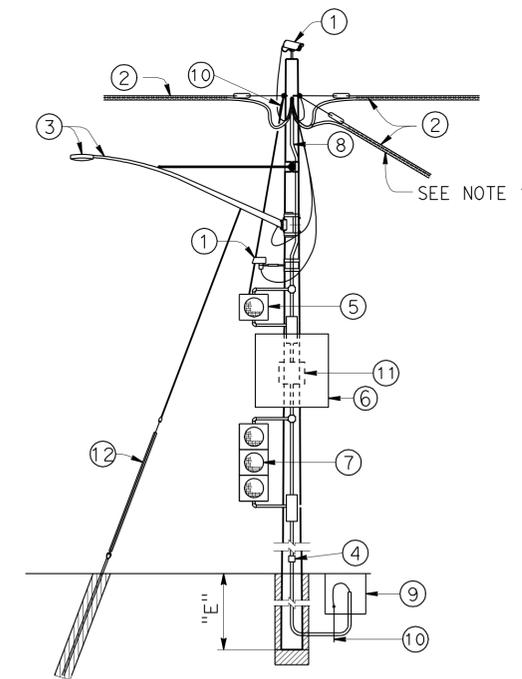
**CASE 1G
POLE AT DEAD END
WITH ATTACHMENTS**



**CASE 2G
POLE AT DEAD END
WITH ATTACHMENTS**



**CASE 3G
POLE AT CORNER
WITH ATTACHMENTS**



**CASE 4G
POLE AT JUNCTION
WITH ATTACHMENTS**

NO SCALE

BRANCH CHIEF JAMES SAGAR	DESIGN BY VICTOR LOPEZ	CHECKED LANCE WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO. X	TEMPORARY WOOD POLES GUYED-NO SIGNALS ON SPANS	SES-3
	DETAILS BY SHUMEI JIANG	CHECKED LANCE WARREN			POST MILE X		
	QUANTITIES BY X	CHECKED X					

LEGEND

- A Wood Pole with Attachments
- TS- Overhead Conductor with Signal Faces (See Note 1)
- OH- Overhead Conductor
- Guy Anchor

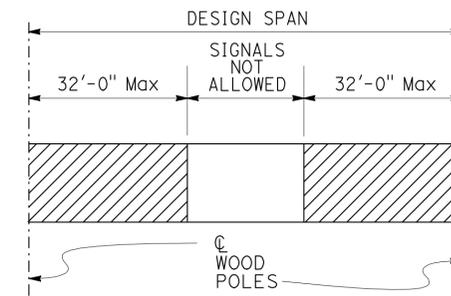
POLE SELECTION TABLE

MAXIMUM SPAN FOR OH CONDUCTOR WITH SIGNAL FACES	MAXIMUM ALLOWABLE VERTICAL DIMENSION OF CONDUCTORS 'd'	CASE 1GT			CASE 2GT			CASE 3GT		
		1"	1.5"	2.0"	1"	1.5"	2.0"	1"	1.5"	2.0"
50'	MINIMUM POLE CLASS	H-2	H-3	H-3	H-2	H-2	H-2	H-3	H-4	H-4
	POLE EMBEDMENT (E)	11'			12'			12'		
100'	MINIMUM POLE CLASS	H-3	H-3	H-4	H-2	H-3	H-3	H-4	H-4	H-5
	POLE EMBEDMENT (E)	11'			12'			12'		
150'	MINIMUM POLE CLASS	H-3	H-4	H-4	H-2	H-3	H-4	H-4	H-5	H-5
	POLE EMBEDMENT (E)	11'			12'			12'		

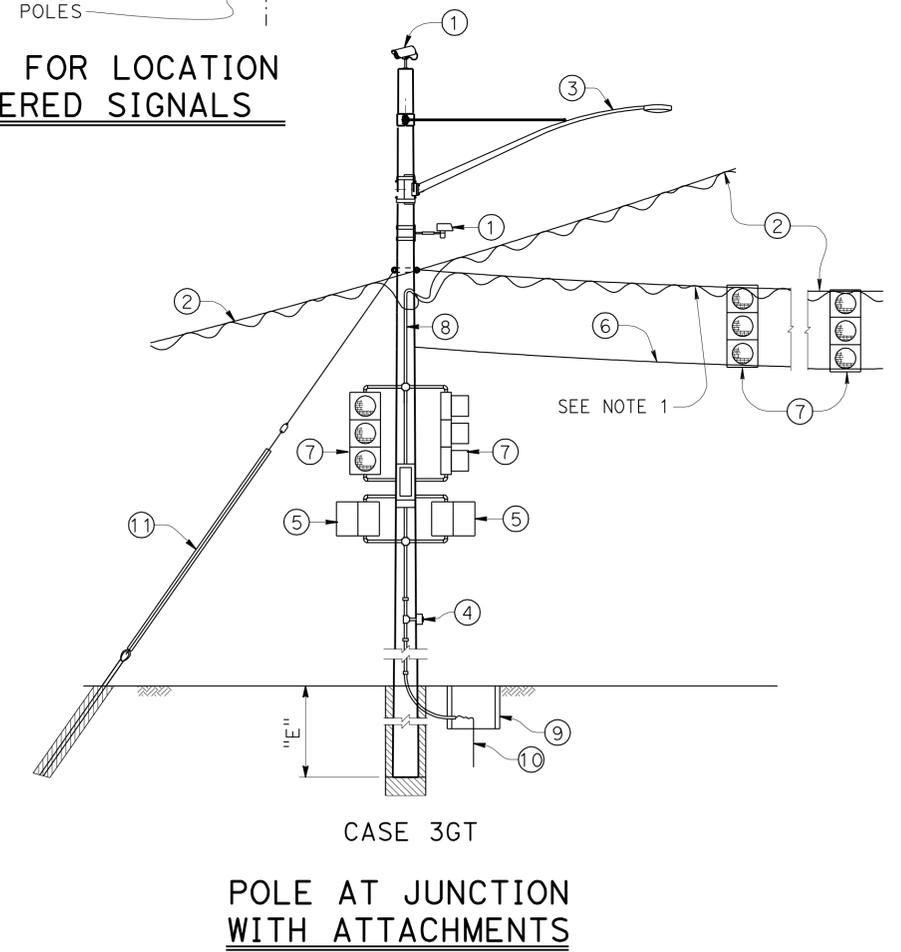
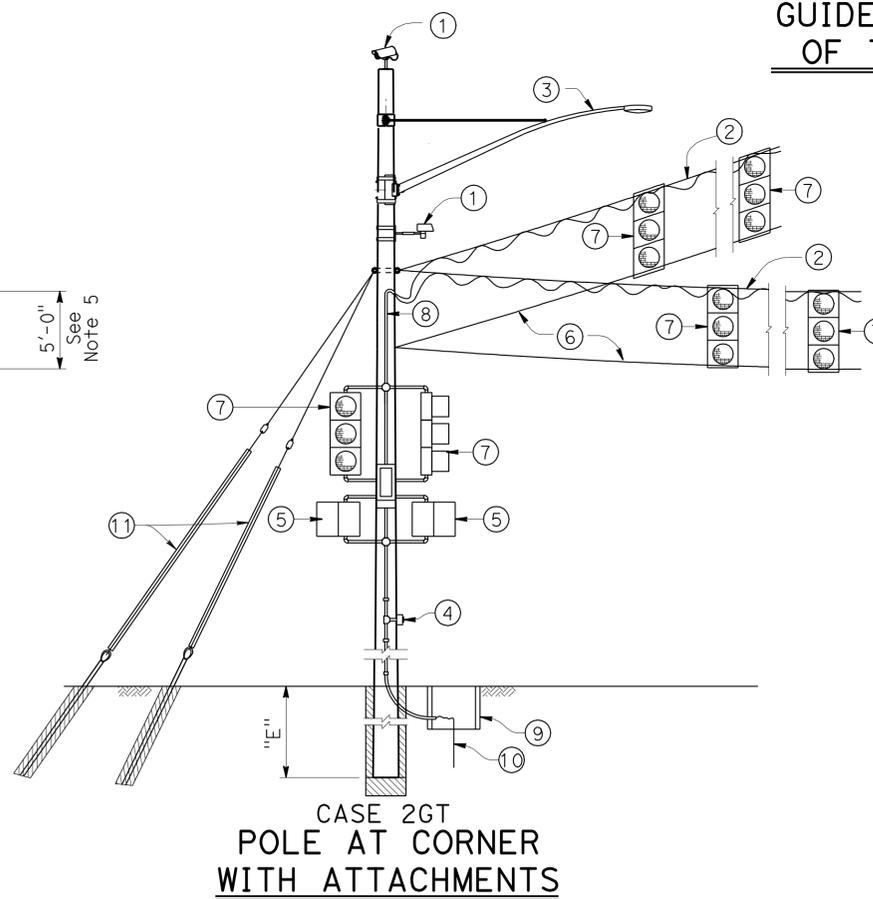
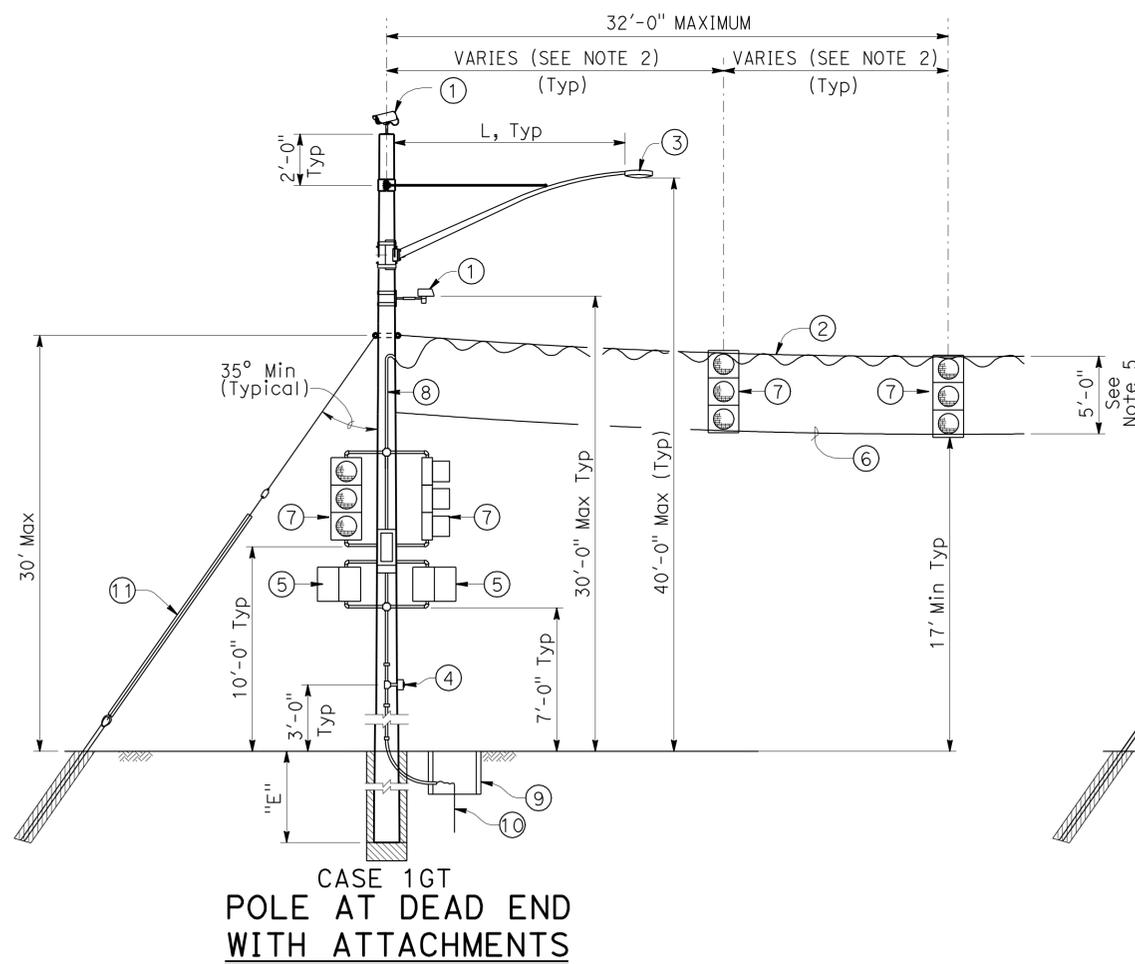
- ① CCTV camera assembly or vehicle detection system
- ② 3/8" Ø 7 strand messenger wire, (utilities grade) and conductors
- ③ Luminaire with mast arm, L = 12' Max
- ④ Pedestrian pushbutton
- ⑤ Pedestrian Signal
- ⑥ 3/8" Ø tether wire, 7 strand (utilities grade)
- ⑦ Signal face with 3 indications or single sheet sign panel (10 SQFT Max)
- ⑧ Riser with weatherhead as required
- ⑨ Pull box as required
- ⑩ Grounding as required
- ⑪ 1/2" Ø 7 strand Guy wire (utilities grade) with white guy marker and strain insulator, (See Note 4)

NOTES:

1. In addition to other restrictions on maximum span, this span shall not exceed 100'.
2. Maximum of 2 signals per span within the hatched regions indicated by "GUIDELINE FOR LOCATION OF TETHERED SIGNALS".
3. Guy wire in line with opposing span ± 5°.
4. Refer to "DETAILS No. 2" sheet for anchorage of guy wires.
5. Typical at signs and poles.



GUIDELINE FOR LOCATION OF TETHERED SIGNALS



BRANCH CHIEF JAMES SAGAR

DESIGN	BY VICTOR LOPEZ	CHECKED LANCE WARREN
DETAILS	BY SHUMEI JIANG	CHECKED LANCE WARREN
QUANTITIES	BY X	CHECKED X

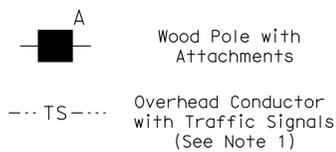
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
SPECIAL DESIGN BRANCH

BRIDGE NO.	X
POST MILE	X

**TEMPORARY WOOD POLES
GUYED-WITH SIGNALS ON SPANS**

NO SCALE
SES-4

LEGEND



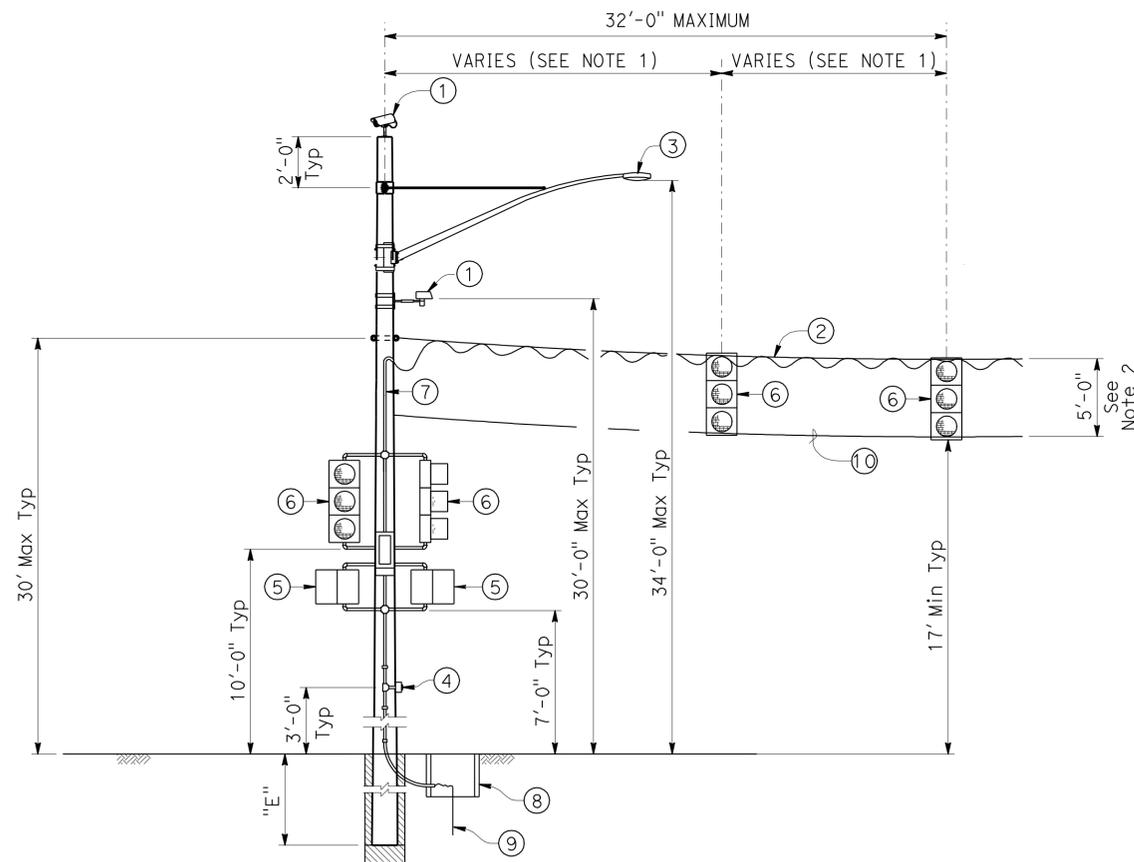
POLE SELECTION TABLE

CASE 1NT					
MAXIMUM SPAN FOR CONDUCTORS WITH SIGNAL FACES	75'	MAXIMUM ALLOWABLE VERTICAL DIMENSION OF CONDUCTORS d'	1"	1.5"	2.0"
		MINIMUM POLE CLASS	H-5	H-6	H-6
		POLE EMBEDMENT (E)	13'		

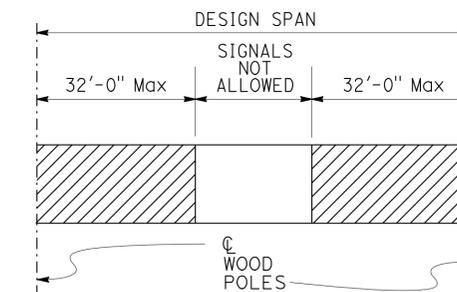
- ① CCTV camera assembly or vehicle detection system
- ② 3/8" ϕ 7 strand messenger wire, (utilities grade) and conductors
- ③ Luminaire with mast arm, L = 12' Max
- ④ Pedestrian pushbutton
- ⑤ Pedestrian Signal
- ⑥ Signal face with 3 indications or single sheet sign panel (10 SQFT Max)
- ⑦ Riser with weatherhead as required
- ⑧ Pull box as required
- ⑨ Grounding as required
- ⑩ 3/8" ϕ tether wire, 7 strand (utilities grade)

NOTES:

1. Maximum of 2 signals per span within the hatched regions indicated by "GUIDELINE FOR LOCATION OF TETHERED SIGNALS".
2. Typical at signals and poles.



**CASE 1NT
POLE AT DEAD END
WITH ATTACHMENTS**



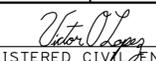
**GUIDELINE FOR LOCATION
OF TETHERED SIGNALS**

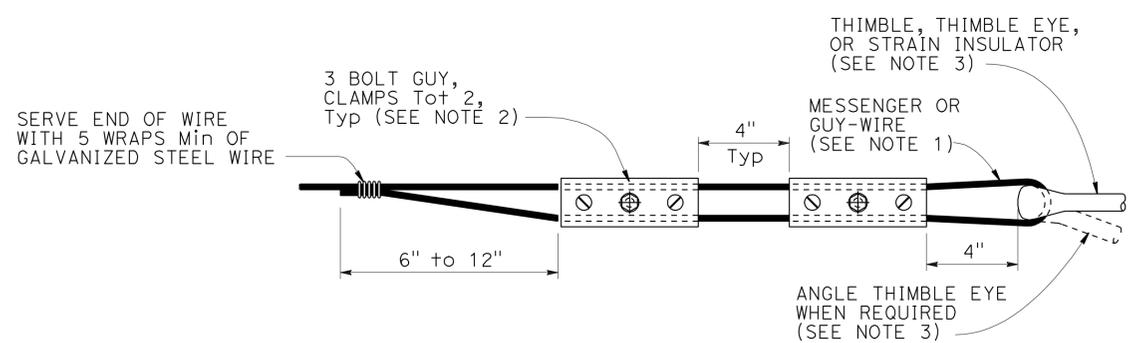
BRANCH CHIEF JAMES SAGAR

DESIGN	BY VICTOR LOPEZ	CHECKED LANCE WARREN
DETAILS	BY SHUMEI JIANG	CHECKED LANCE WARREN
QUANTITIES	BY X	CHECKED X

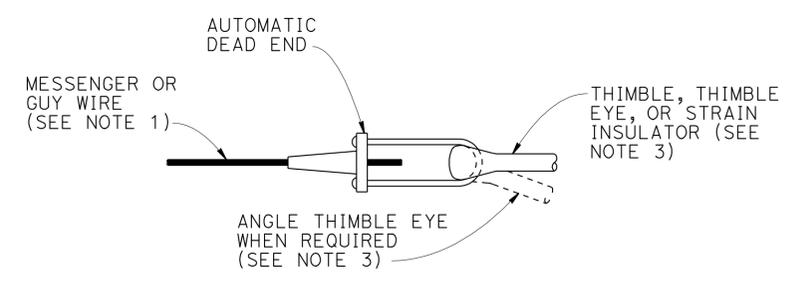
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 SPECIAL DESIGN BRANCH

BRIDGE NO. X
 POST MILE X
TEMPORARY WOOD POLES
NON-GUYED-WITH SIGNALS ON SPANS
SES-5

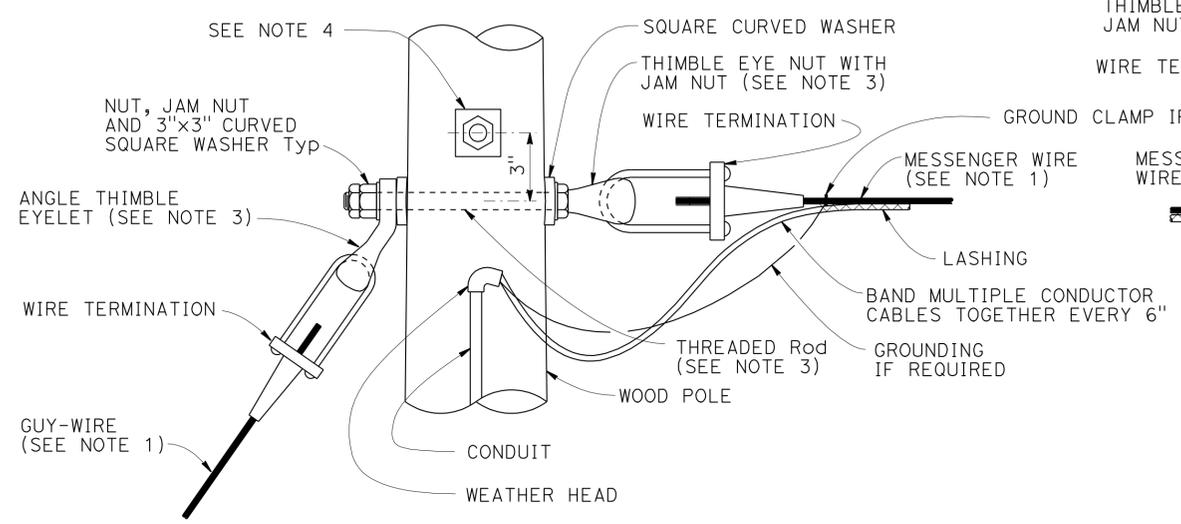
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	32	64
 REGISTERED CIVIL ENGINEER DATE 10-29-12					
9-30-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



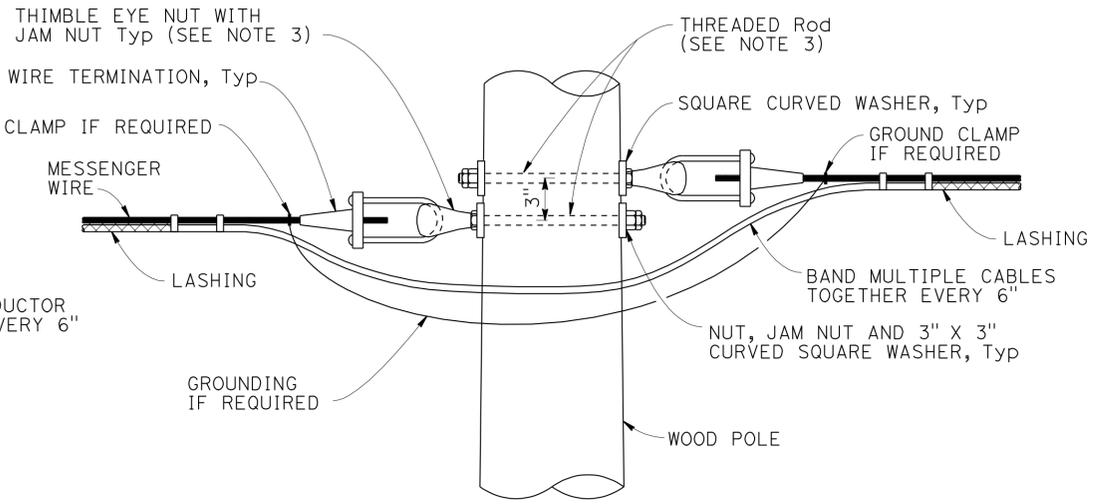
ALTERNATIVE TERMINATION OF MESSENGER WIRES USING GUY CLAMPS



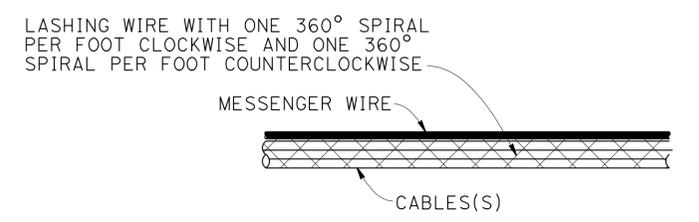
TERMINATION OF WIRES USING AUTOMATIC DEAD END



POLE AT DEAD END WITH GUY-WIRE CONNECTION

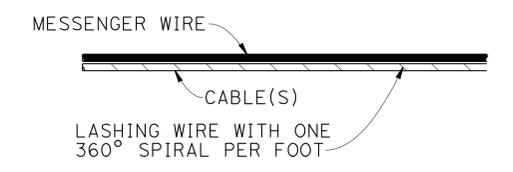


POLE AT TANGENT OR CORNER CONNECTION



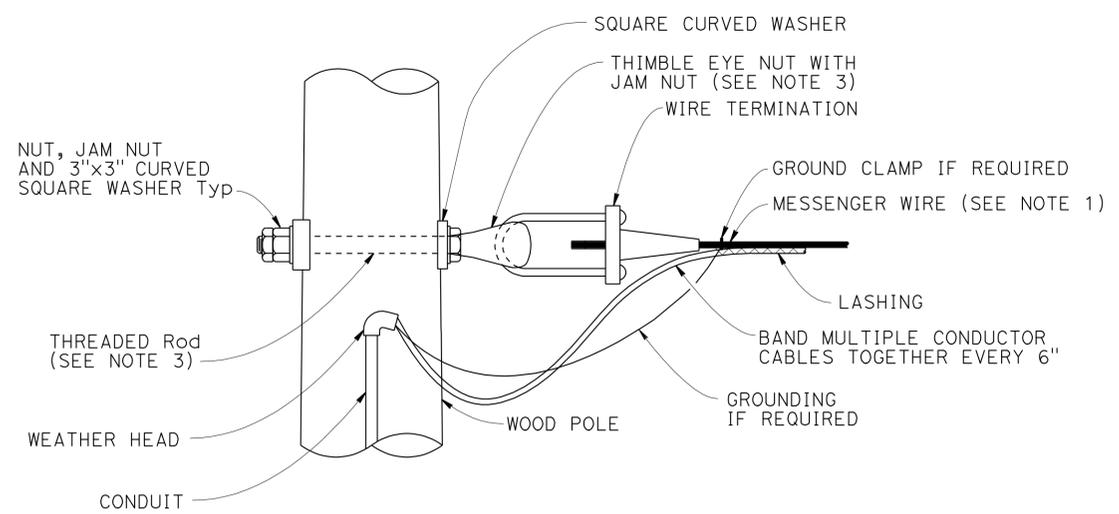
DOUBLE LASHING DETAIL

USE IF d' IS GREATER THAN 1/2"

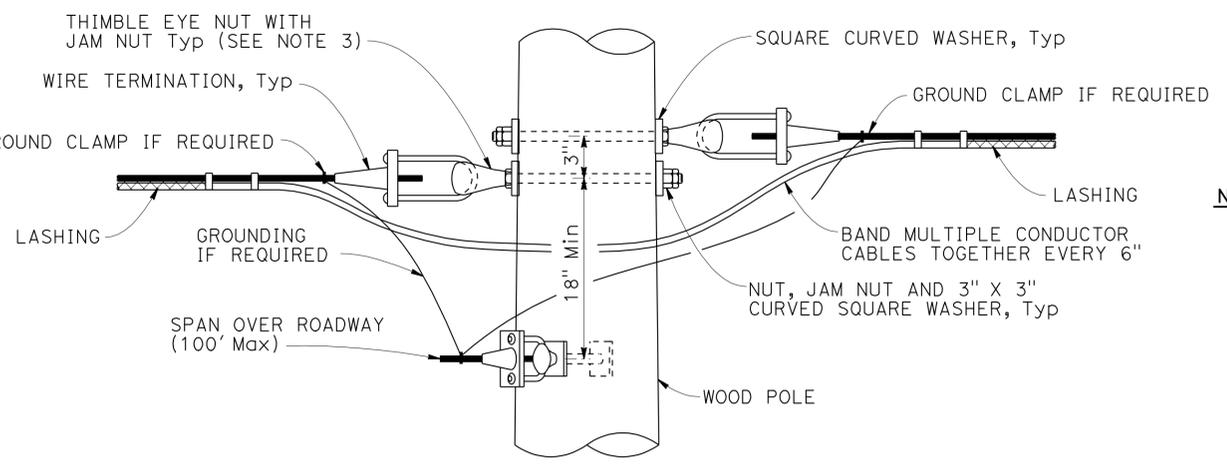


TYPICAL LASHING DETAIL

USE IF d' IS 1/2" OR LESS



POLE AT DEAD END CONNECTION



POLE AT JUNCTION CONNECTION

NOTES:

- All messenger wires are to be 3/8" ϕ and guy wires are to be 1/2" ϕ .
- For guy wires use 3 clamps.
- Use 5/8" ϕ for non-guyed poles & 3/4" ϕ for guyed wires
- Install additional angle thimble at poles with two guy anchors.

NO SCALE

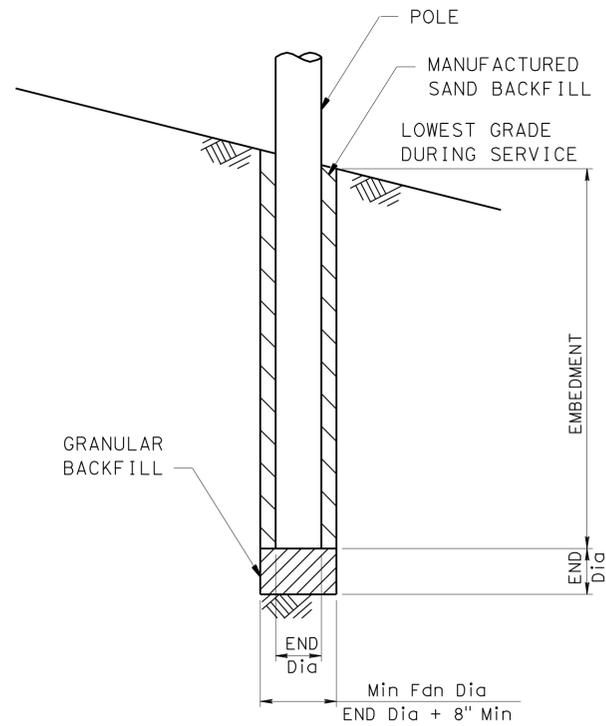
BRANCH CHIEF	JAMES SAGAR
--------------	-------------

DESIGN	BY VICTOR LOPEZ	CHECKED LANCE WARREN
DETAILS	BY SHUMEI JIANG	CHECKED LANCE WARREN
QUANTITIES	BY X	CHECKED X

STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.
DEPARTMENT OF TRANSPORTATION	STRUCTURE DESIGN	X
	SPECIAL DESIGN BRANCH	POST MILE
		X

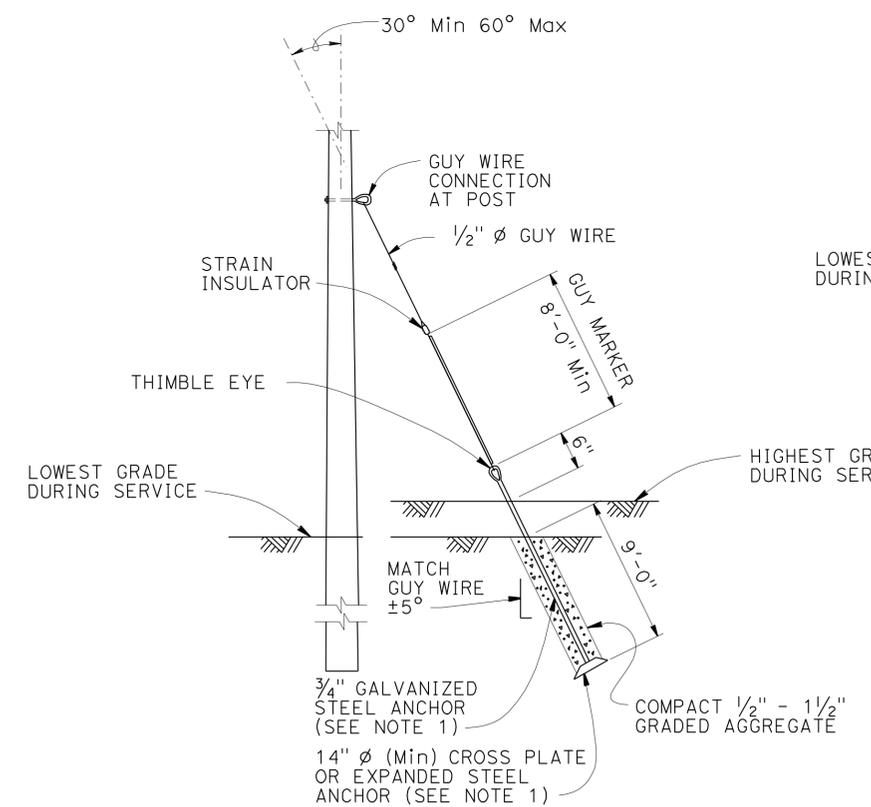
TEMPORARY WOOD POLES		SES-6
DETAILS No. 1		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	33	64
			10-29-12	REGISTERED CIVIL ENGINEER DATE	
			9-30-13	PLANS APPROVAL DATE	
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

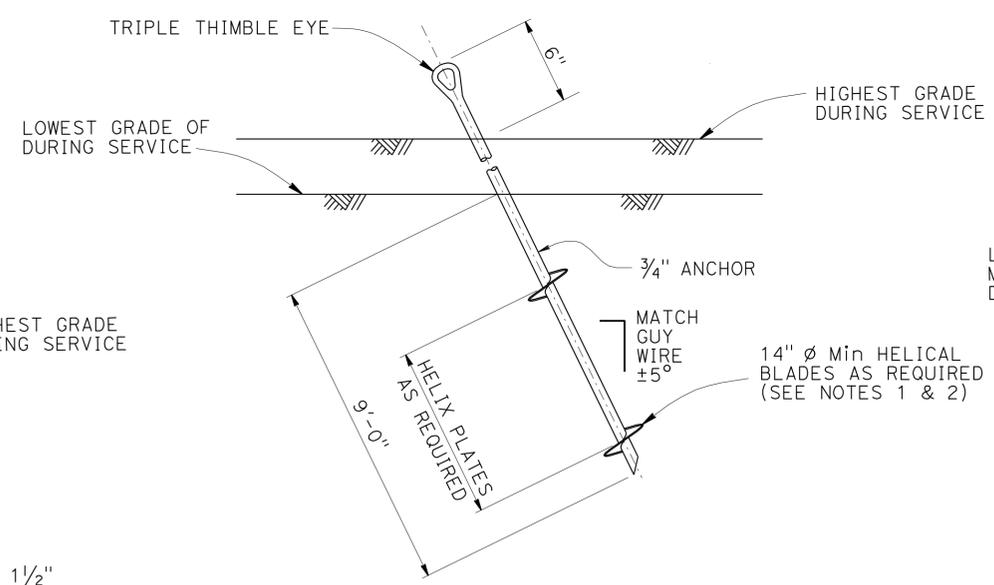


POLE FOUNDATION DETAIL

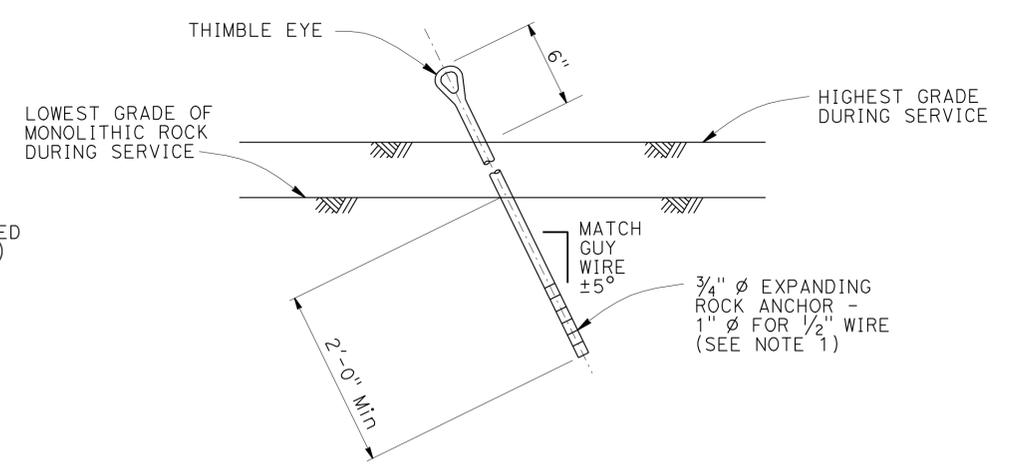
- NOTES:**
1. Minimum allowable tension capacity "Qa" = 8,900 lbs.
 2. Minimum installation torque "T" = 1780 lbs-ft.
 3. Helical anchor detail may be used in place of expanded steel anchor.



EXPANDED STEEL ANCHOR DETAIL
SEE NOTE 3



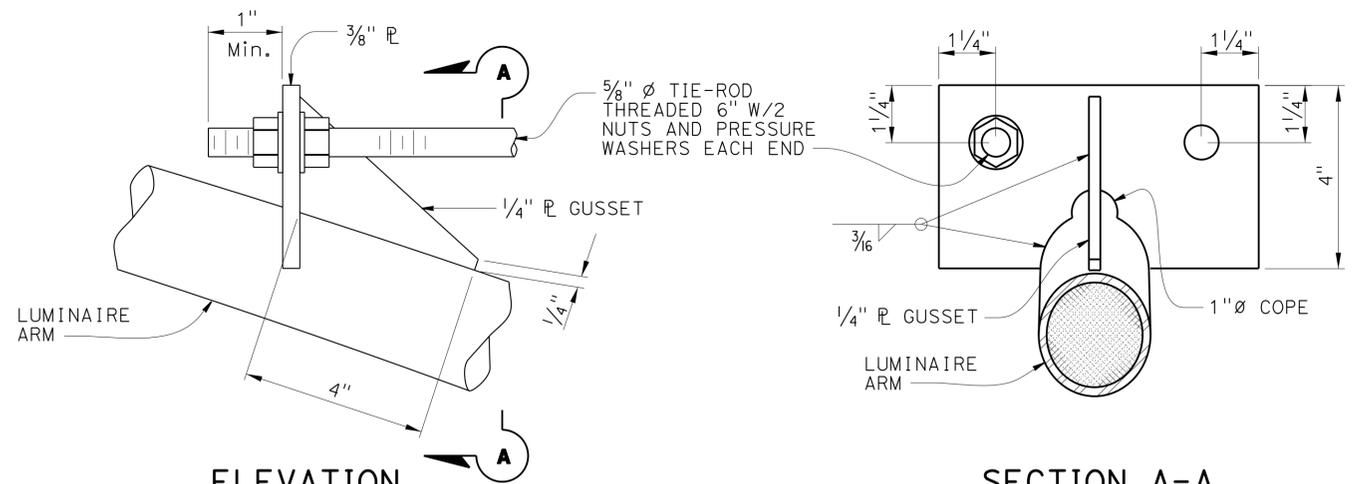
HELICAL ANCHOR DETAIL



EXPANDING ROCK ANCHOR DETAIL

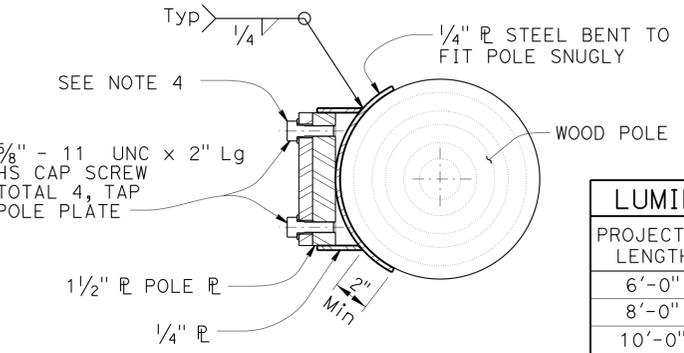
NO SCALE

BRANCH CHIEF	JAMES SAGAR	DESIGN BY	VICTOR LOPEZ	CHECKED	LANCE WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	X	TEMPORARY WOOD POLES DETAILS No. 2	SES-7
			DETAILS BY	SHUMEI JIANG	CHECKED			LANCE WARREN	POST MILE		
		QUANTITIES BY	X	CHECKED	X	UNIT: 3619	PROJECT NUMBER & PHASE: 0412000168	CONTRACT NO.: 04-3G7401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 7 OF 10
<small>STRUCTURES DESIGN SPECIAL DESIGN SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 FILE => ea-04-3g7401-u-misc-sheet07.dgn</small>											



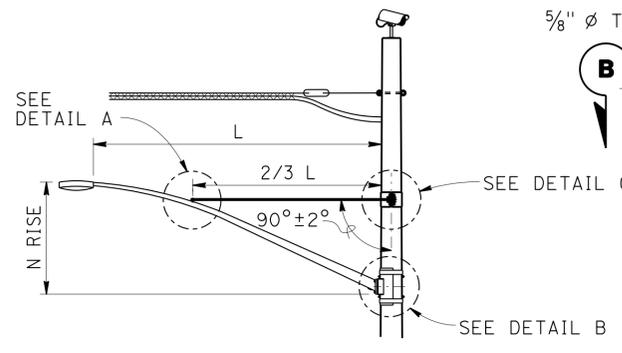
ELEVATION
SECTION A-A
DETAIL A
TIE-ROD AT LUMINAIRE ARM
 NO SCALE

- NOTES:**
- Luminaire mast arms must be in compliance with Standard Plan ES-6D with noted modifications.
 - Verify pole dimensions at tie-rod attachment height. Fabricate 8" flat bar with "L" Dimension to maintain an open gap between encasement in finished installation.
 - Not all screw heads and bolt heads are shown for clarity.
 - Mast arm not shown for clarity.

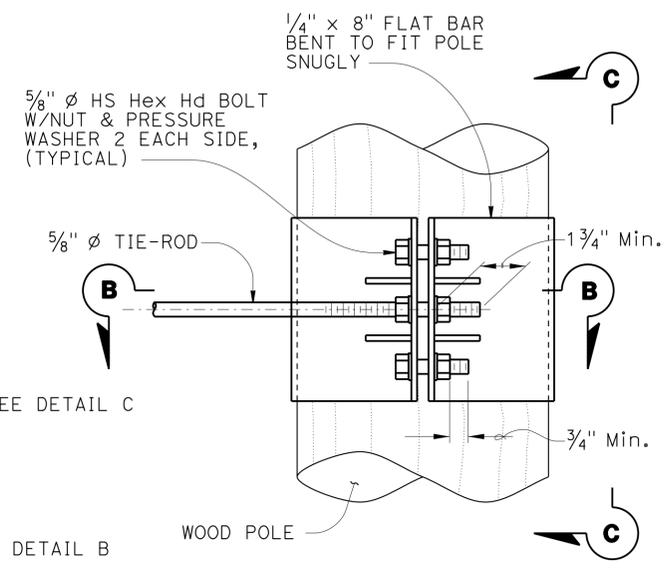


PROJECTED LENGTH	N RISE	Min OD AT POLE	NOMINAL THICKNESS
6'-0"	2'-0"±	3/4"	0.1196"
8'-0"	2'-6"±	3/2"	
10'-0"	3'-3"±	3 3/8"	
12'-0"	4'-3"±	3 7/8"	

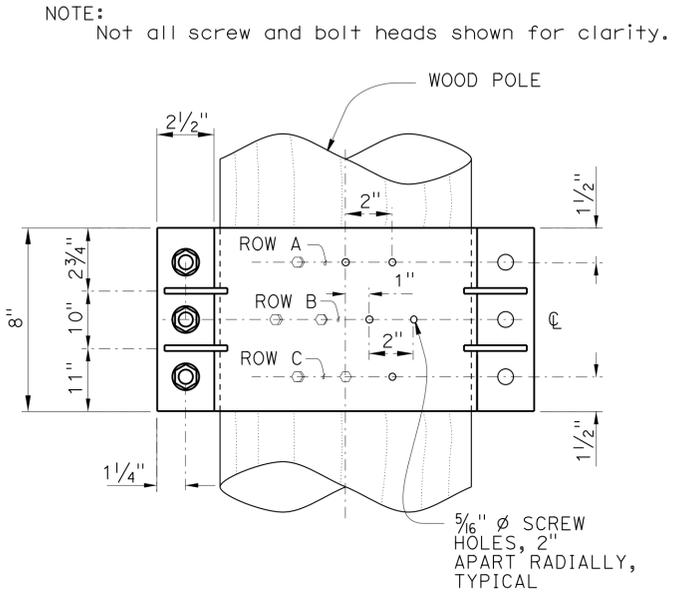
SECTION E-E



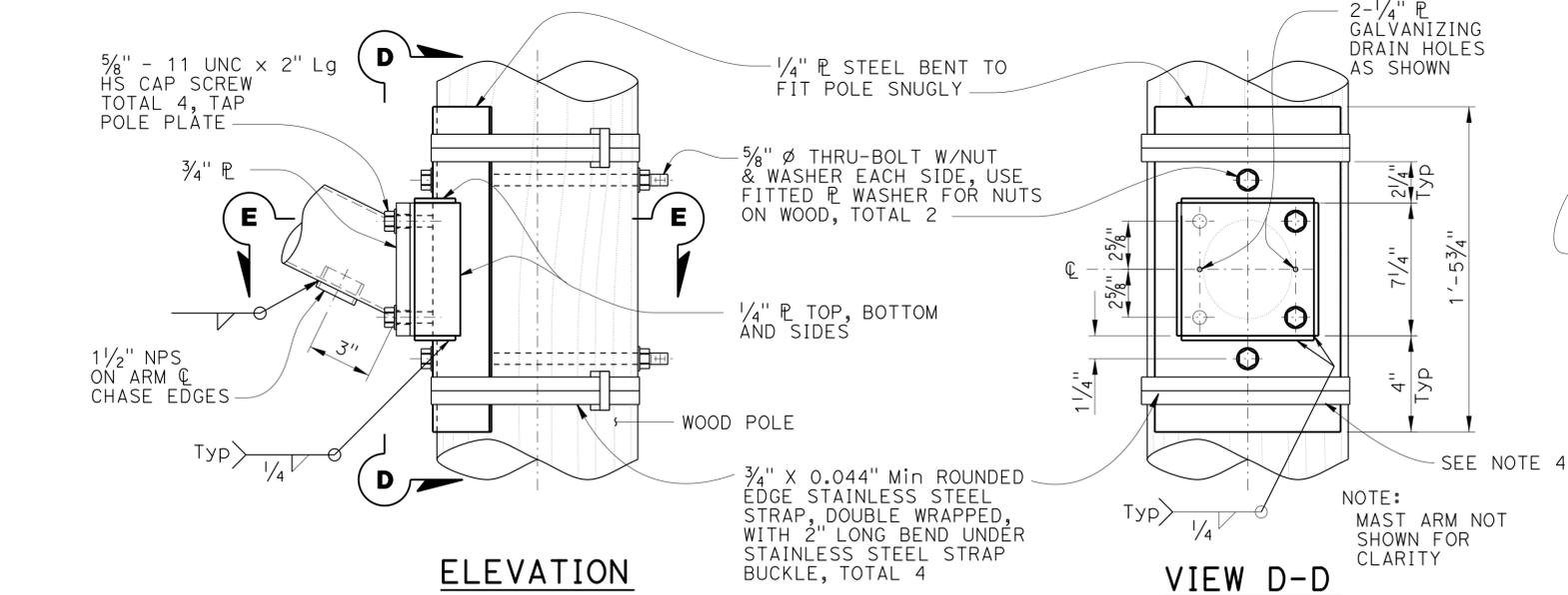
LUMINAIRE MAST ARM



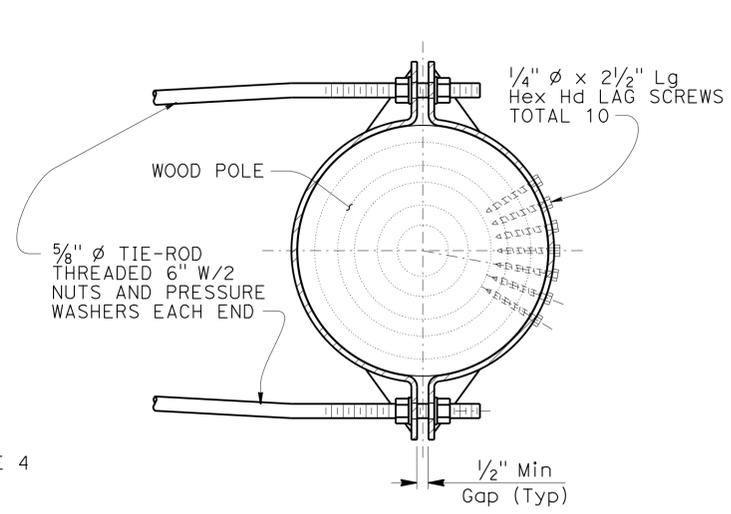
ELEVATION



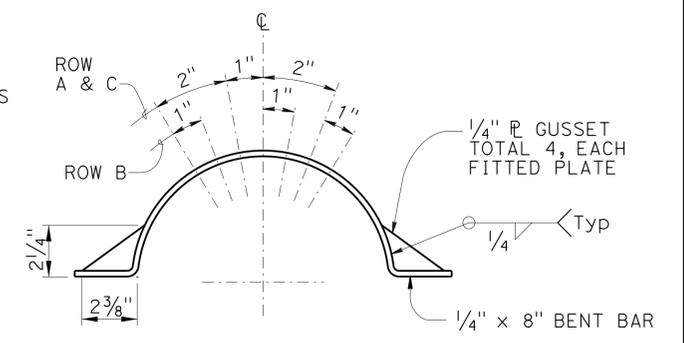
VIEW C-C



ELEVATION
VIEW D-D
DETAIL B
ARM CONNECTION DETAILS
 NO SCALE



SECTION B-B

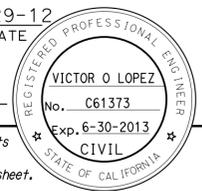


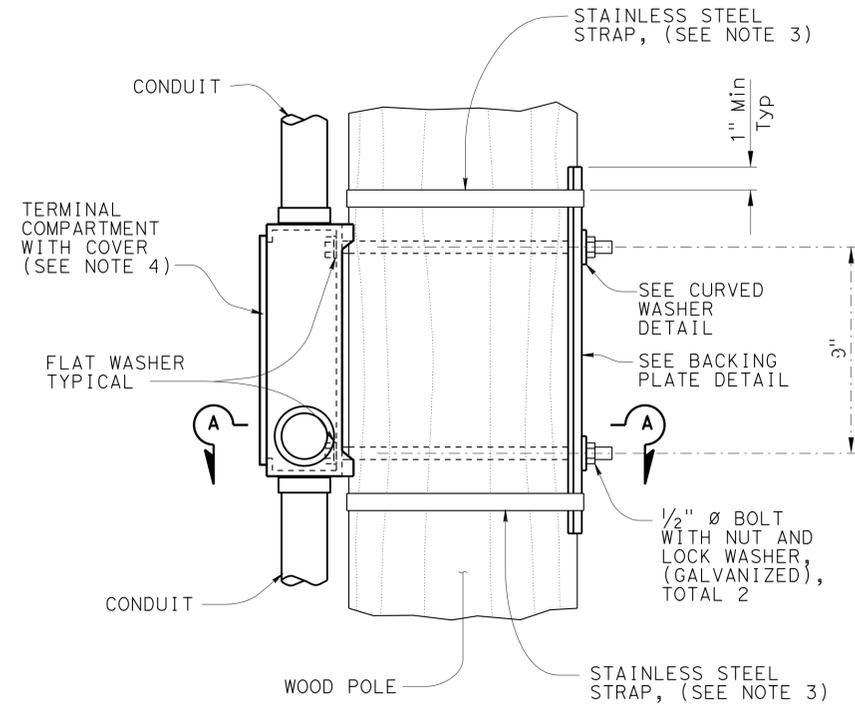
DETAIL C
TIE-ROD AT POLE
 NO SCALE

LAG SCREW AND GUSSET PLATE LAYOUT

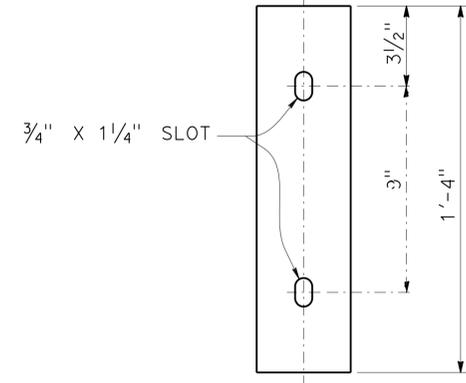
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BRANCH CHIEF JAMES SAGAR	DESIGN BY VICTOR LOPEZ CHECKED LANCE WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO. X POST MILE X	TEMPORARY WOOD POLES DETAILS No. 3	SES-8
	DETAILS BY SHUMEI JIANG CHECKED LANCE WARREN					
	QUANTITIES BY X CHECKED X					

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	35	64
 REGISTERED CIVIL ENGINEER			10-29-12	DATE	
9-30-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



ELEVATION

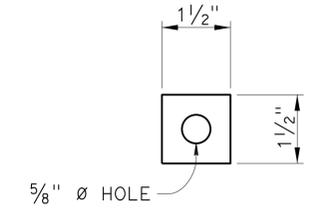


ELEVATION

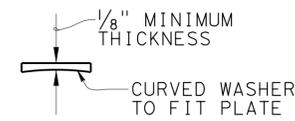


PLAN

BACKING PLATE DETAIL



ELEVATION

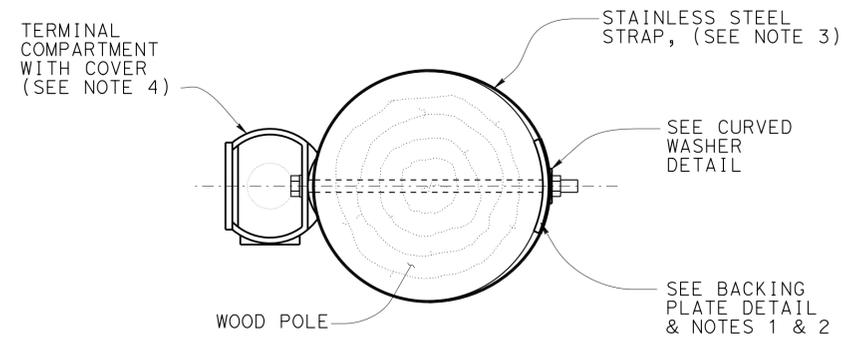


PLAN

CURVED WASHER DETAIL

NOTES:

1. Verify pole dimensions at terminal compartment for fabrication of backing plate and curved washer.
2. Backing plate to be galvanized after fabrication.
3. 3/4" x 0.044" minimum, rounded edge stainless steel straps, double wrapped with 2" long bend under stainless steel strap buckle.
4. For details not shown see Standard Plan ES-4D.



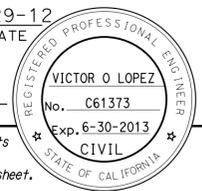
SECTION A-A

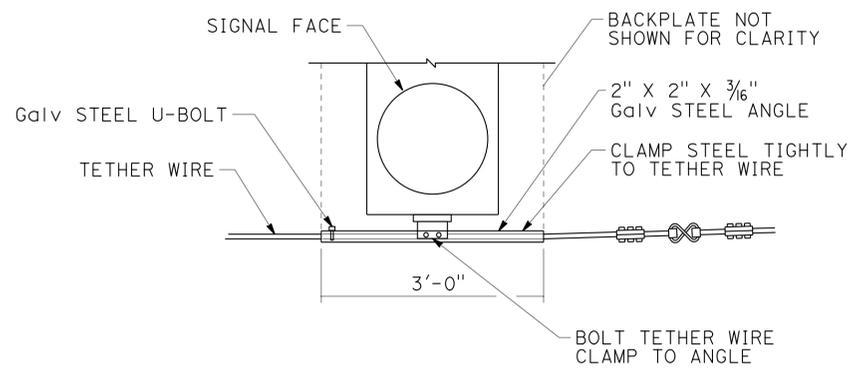
**SIDE MOUNTING
TERMINAL COMPARTMENT**

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

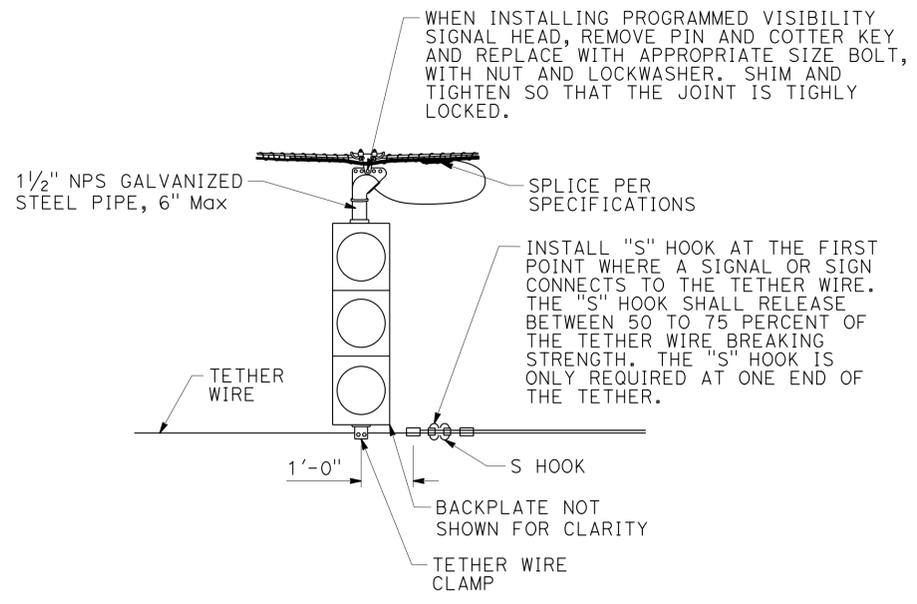
NO SCALE

BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN BY VICTOR LOPEZ	CHECKED LANCE WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO. X	TEMPORARY WOOD POLES DETAILS No. 4	SES-9
	DETAILS BY SHUMEI JIANG	CHECKED LANCE WARREN			POST MILE X		
	QUANTITIES BY X	CHECKED X			POST MILE X		

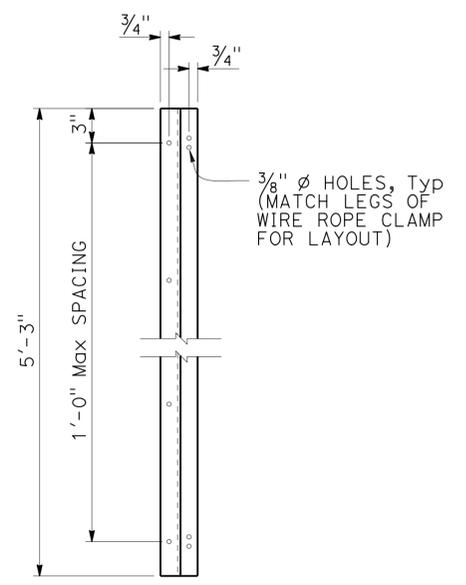
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	36	64
 REGISTERED CIVIL ENGINEER			10-29-12	DATE	
9-30-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



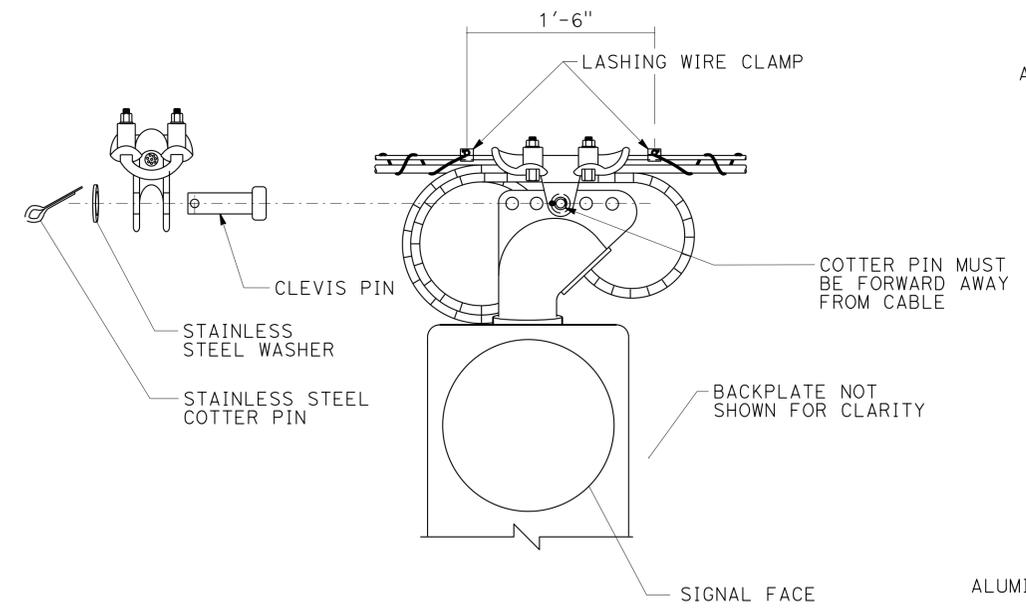
TETHER WIRE ATTACHMENT FOR PROGRAMMED VISIBILITY SIGNAL HEAD



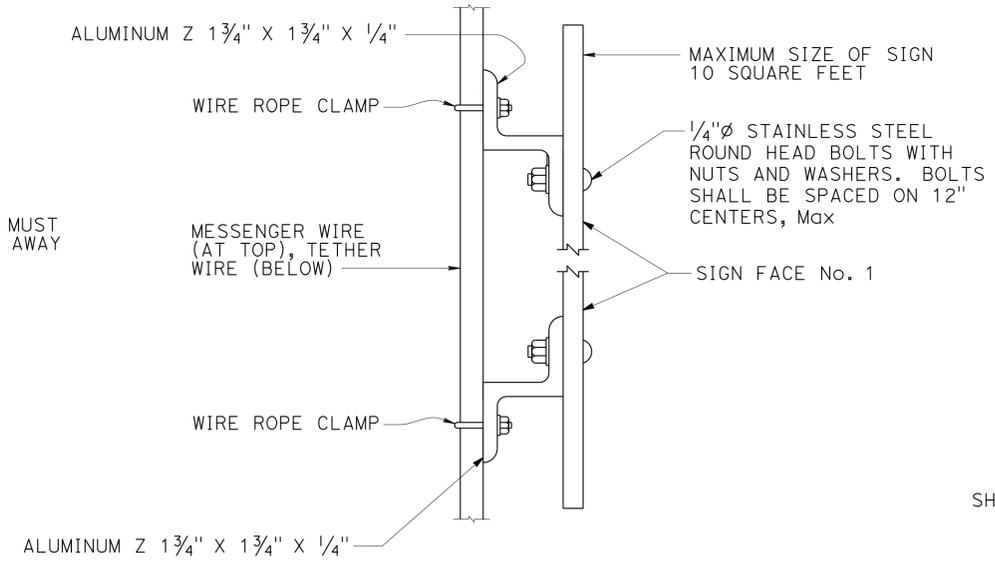
SPAN WIRE INSTALLATION WITH LOWER TETHER WIRE



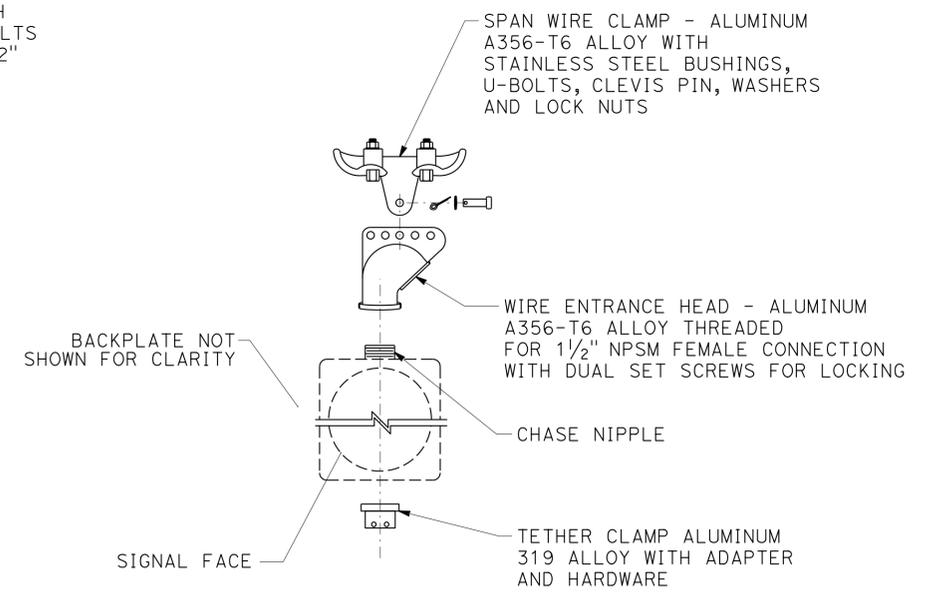
Z-BAR ELEVATION



SPAN WIRE CLAMP COTTER PIN DETAIL



SIGN MOUNTING DETAIL



SIGNAL FACE SUPPORT EXPLODED VIEW

NO SCALE

BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN BY <u>VICTOR LOPEZ</u>	CHECKED <u>LANCE WARREN</u>	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO. <u>X</u>	TEMPORARY WOOD POLES DETAILS No. 5	SES-10
	DETAILS BY <u>SHUMEI JIANG</u>	CHECKED <u>LANCE WARREN</u>			POST MILE <u>X</u>		
	QUANTITIES BY <u>X</u>	CHECKED <u>X</u>					

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	37	64

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 9-30-13

UNIT OF MEASUREMENT SYMBOLS:

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

TABLE A

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

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

TABLE B

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

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS
(SHEET 2 OF 2)**

NO SCALE

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

REVISED STANDARD PLAN RSP A10B

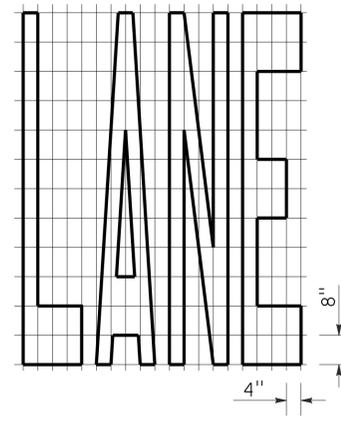
Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED, MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD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

M	
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
Qty	QUANTITY
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

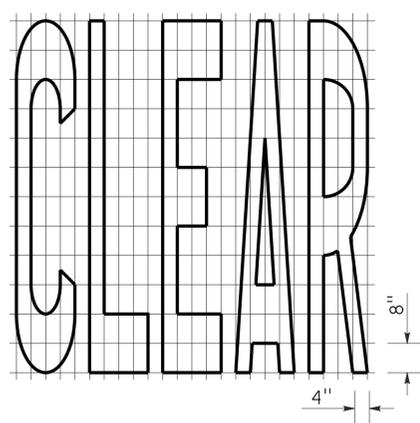
S	
S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND, SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
SL	STATION LINE
SM	SELECTED MATERIAL
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
UC	UNDERCROSSING
UD	UNDERDRAIN
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
V	VALVE, DESIGN SPEED
Var	VARIABLE, VARIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
Vert	VERTICAL
Via	VIADUCT
Vol	VOLUME
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 Sec	CROSS SECTION
Xing	CROSSING
Yr	YEAR
Yrs	YEARS

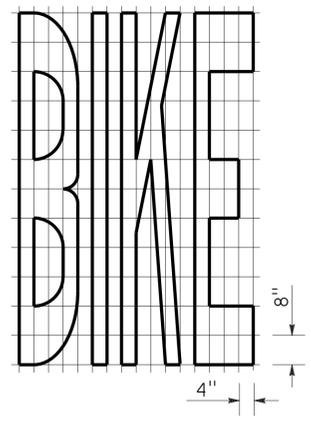
TO ACCOMPANY PLANS DATED 9-30-13



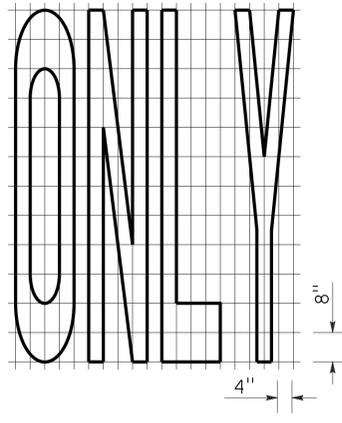
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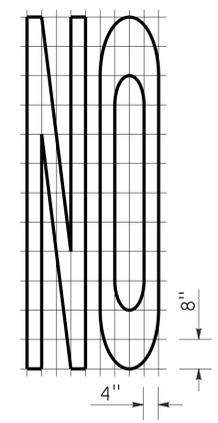
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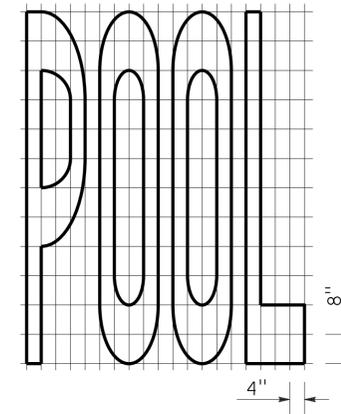
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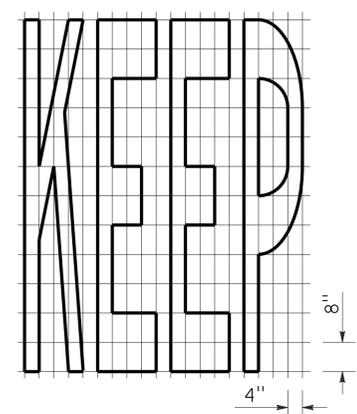
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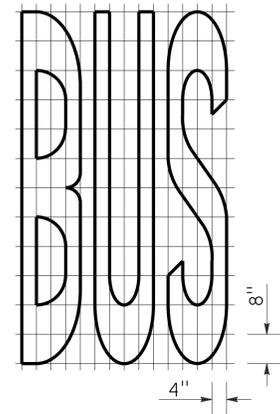
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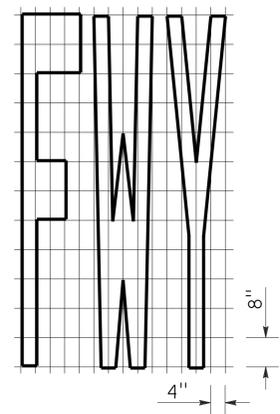
A=23 ft²



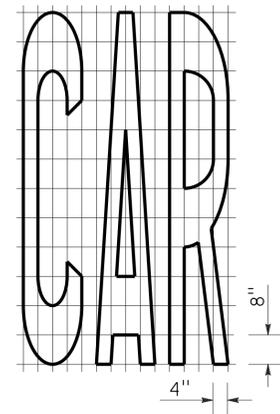
A=24 ft²



A=20 ft²

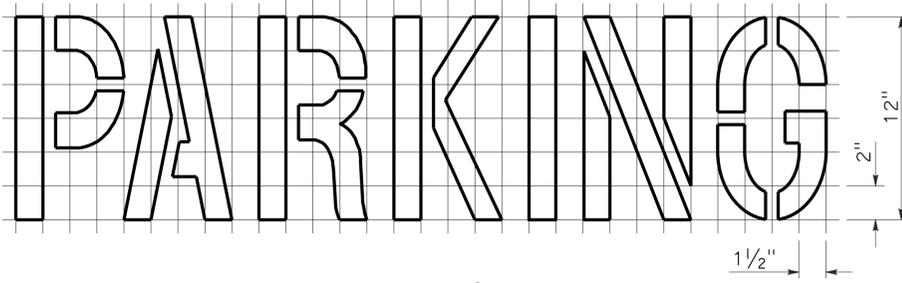
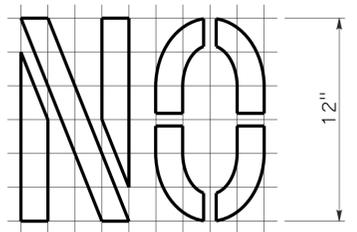


A=16 ft²

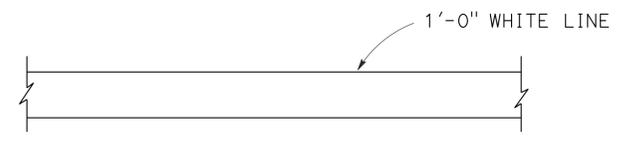


A=17 ft²

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)



YIELD LINE

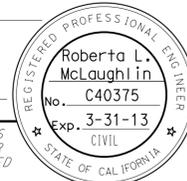
NOTES:

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

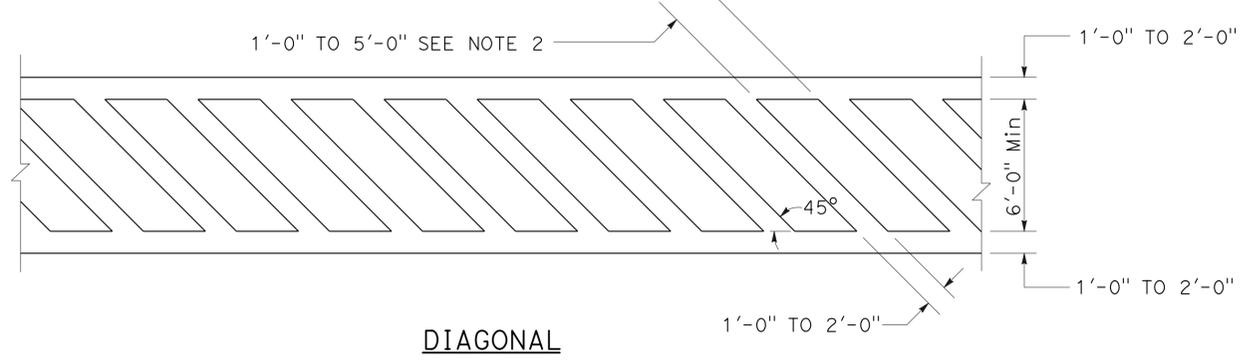
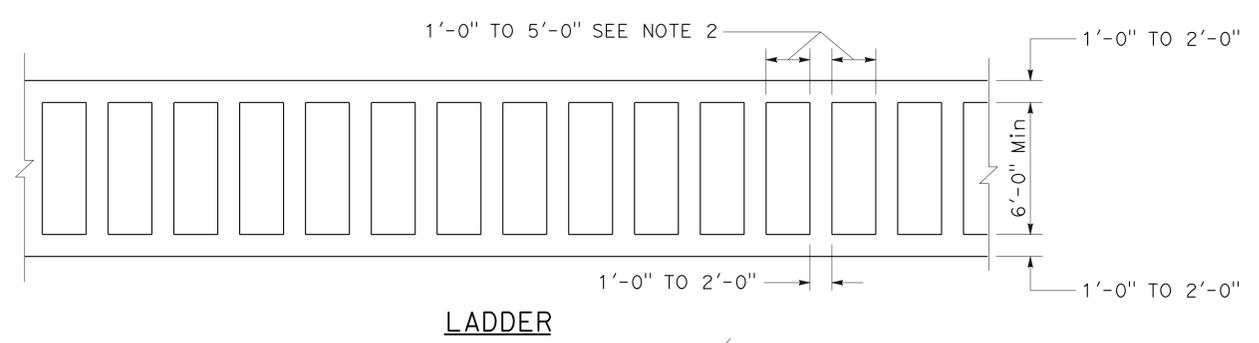
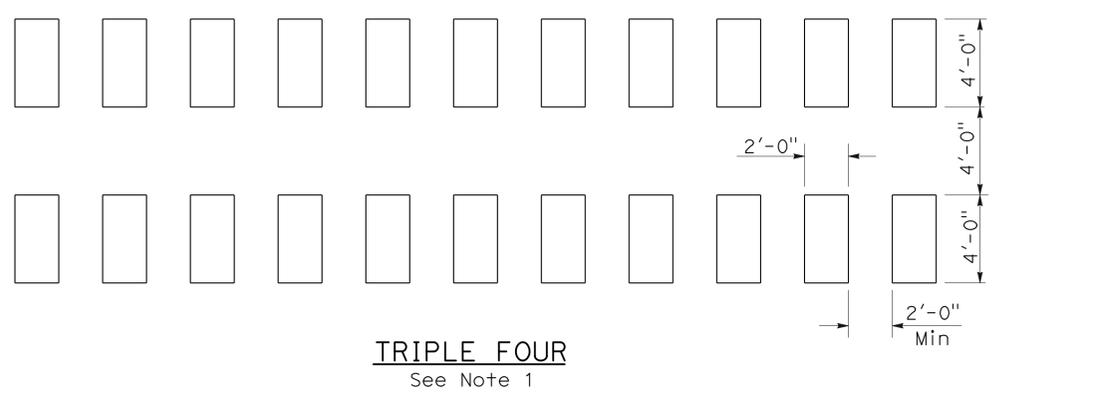
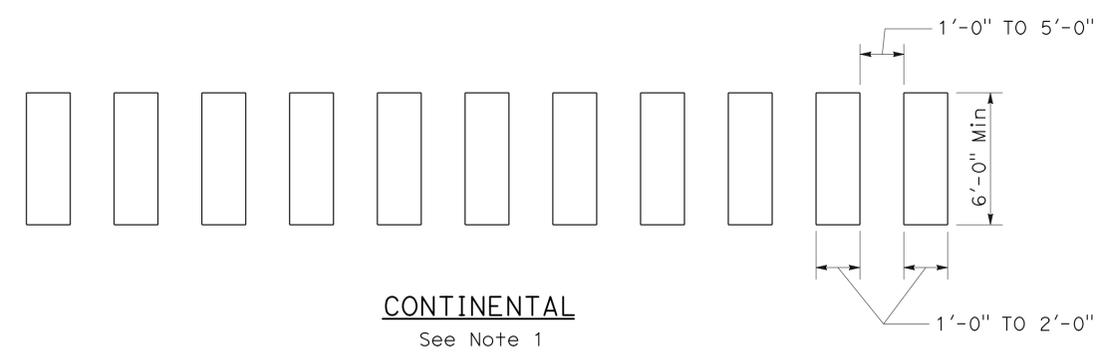
RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	39	64

 REGISTERED CIVIL ENGINEER		
July 20, 2012 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 9-30-13

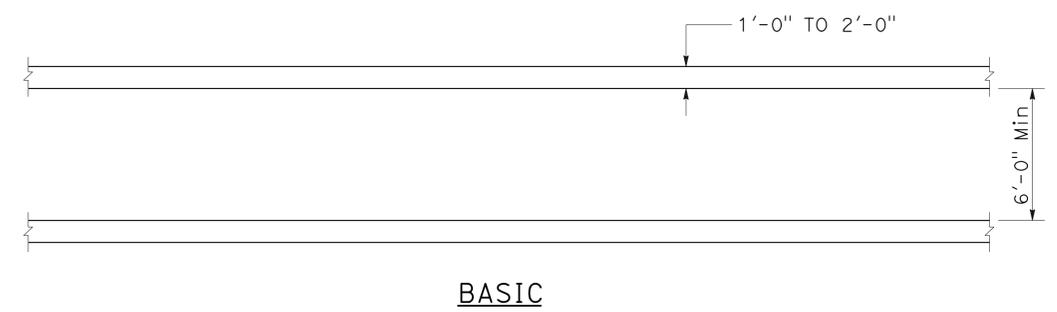
2010 REVISED STANDARD PLAN RSP A24F



HIGHER VISIBILITY CROSSWALKS

NOTES:

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



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
CROSSWALKS**
NO SCALE

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	40	64

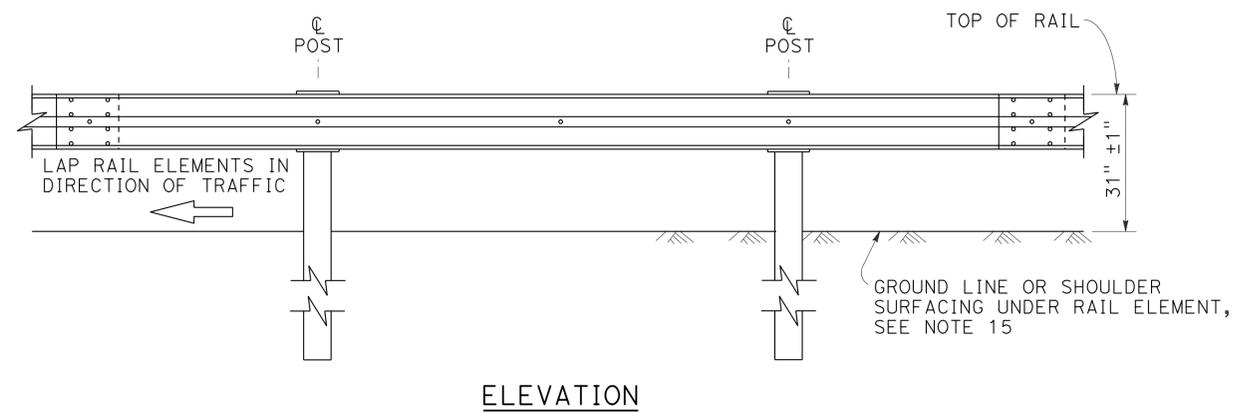
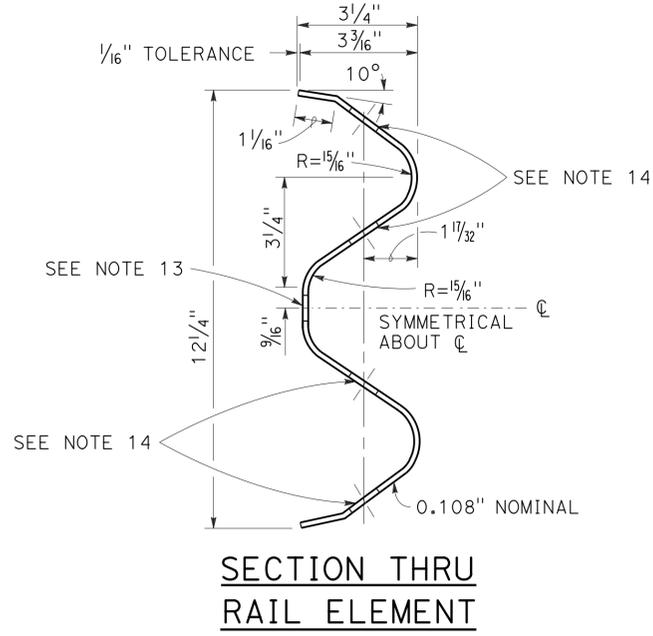
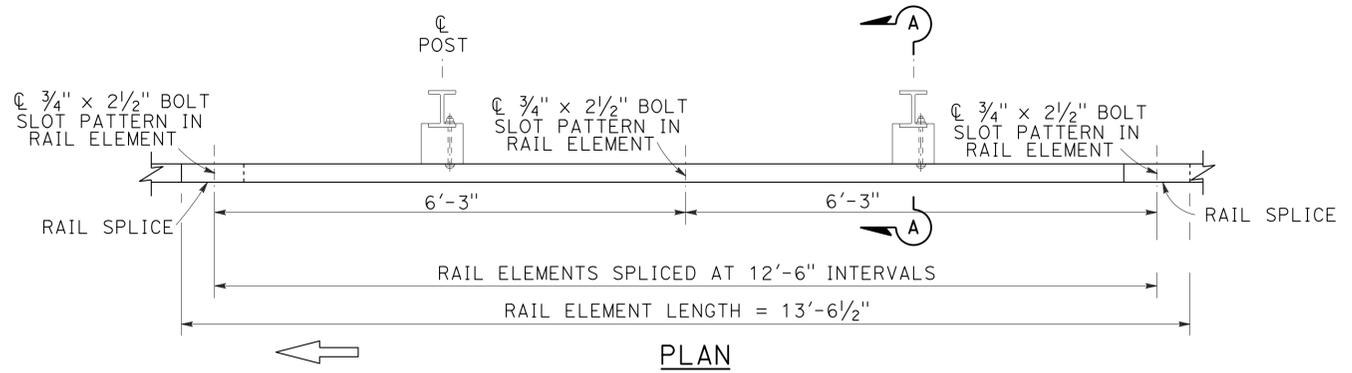
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REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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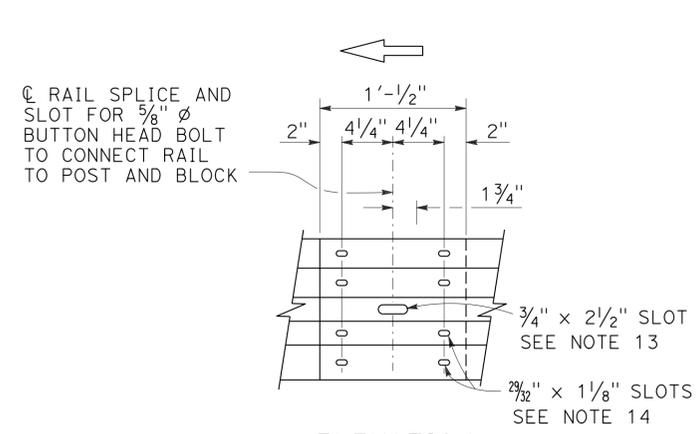
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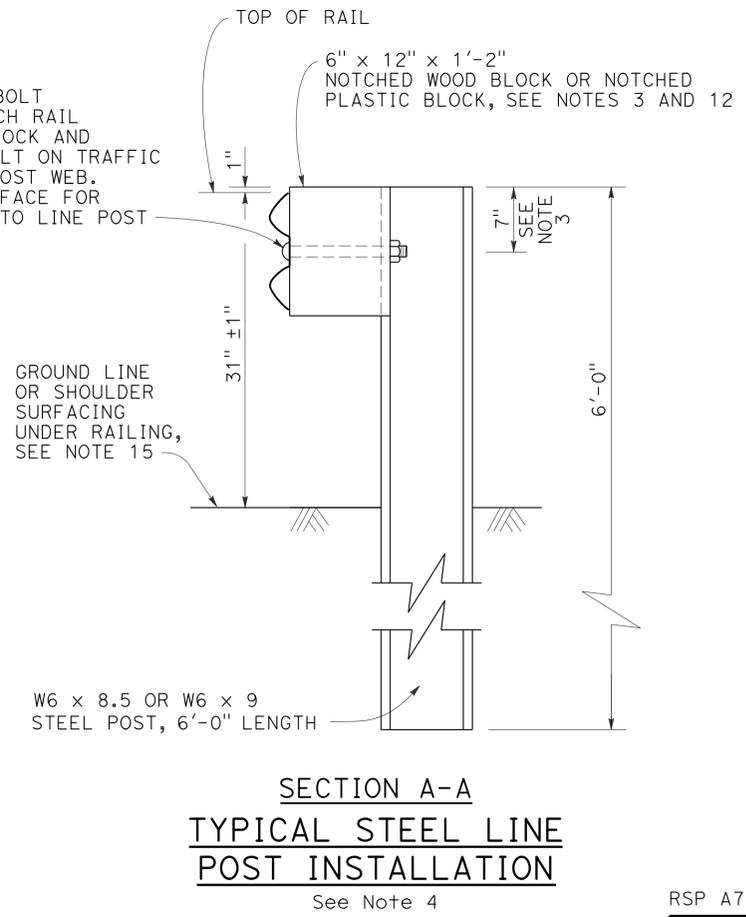
MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS

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.



- 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.



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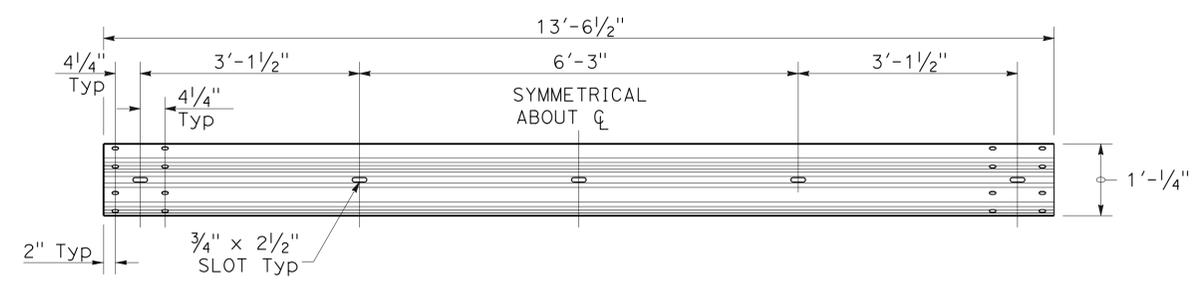
MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

NO SCALE

2010 REVISED STANDARD PLAN RSP A77L2



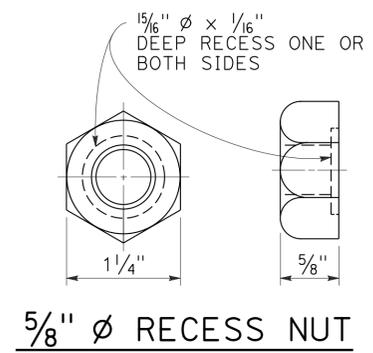
TO ACCOMPANY PLANS DATED 9-30-13



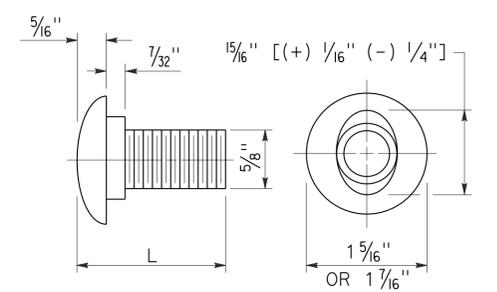
TYPICAL RAIL ELEMENT

NOTE:

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



5/8" Ø RECESS NUT

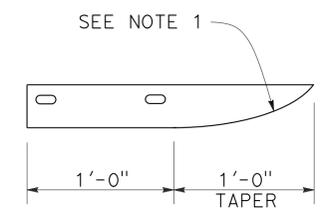


5/8" Ø BUTTON HEAD BOLT

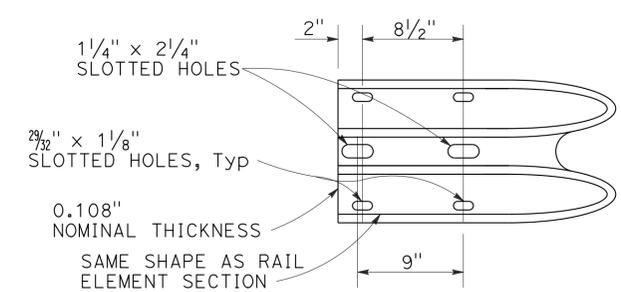
BUTTON HEAD BOLT

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
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**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
04	Son	1	29.9	42	64

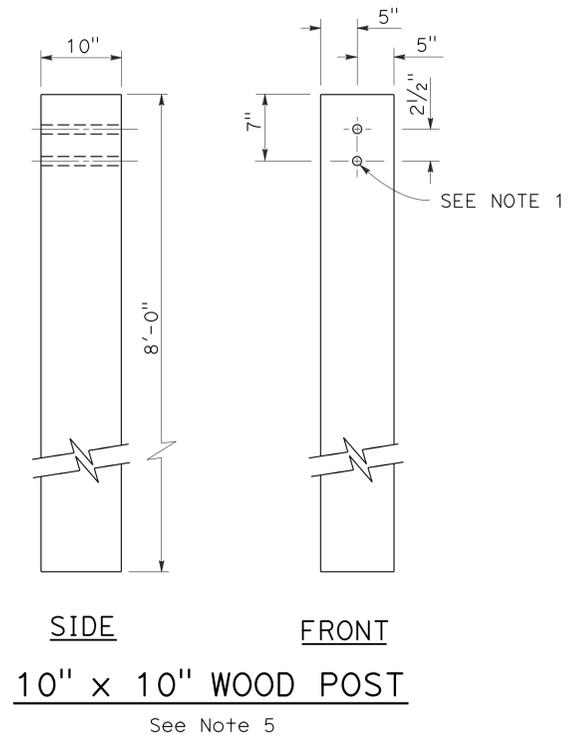
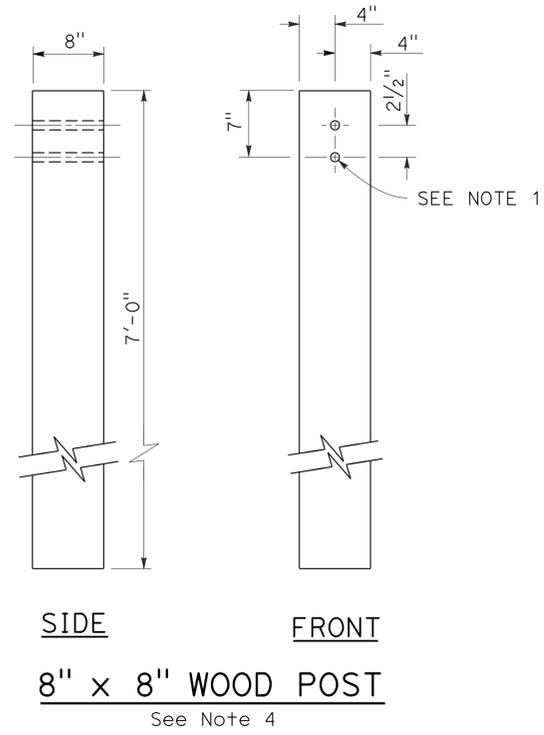
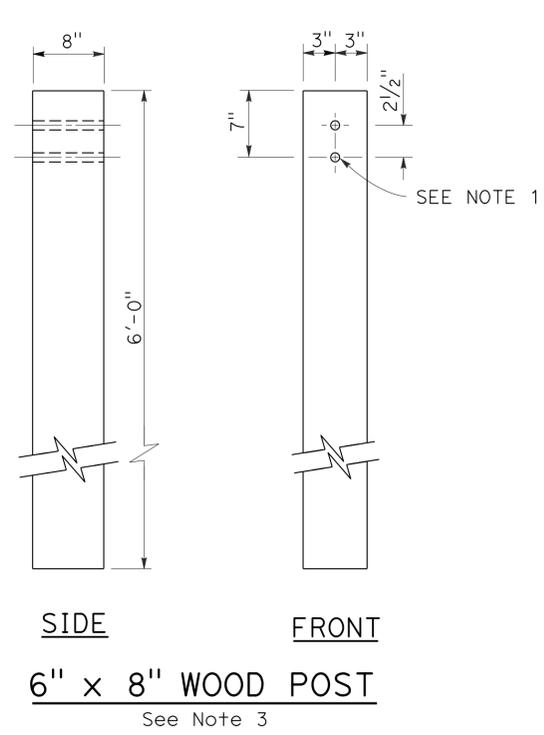
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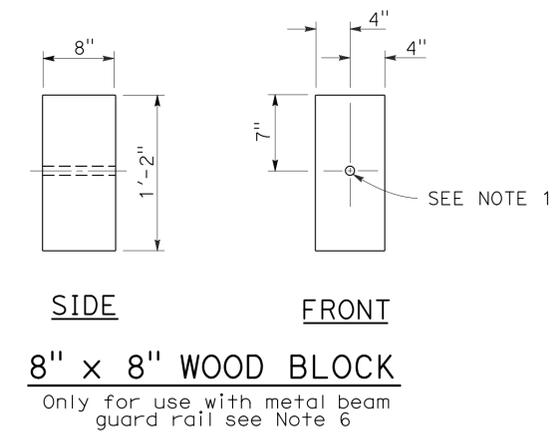
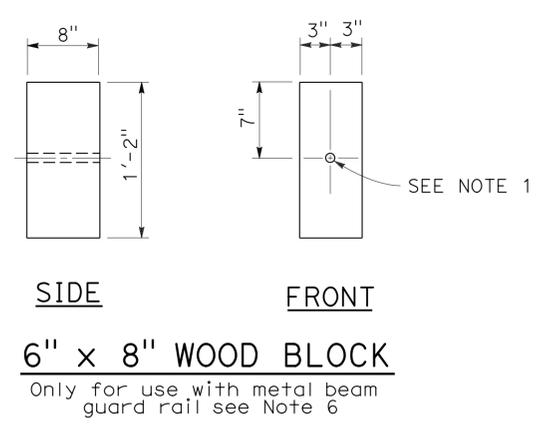
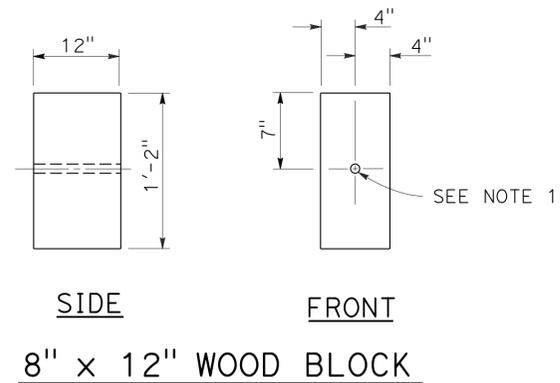
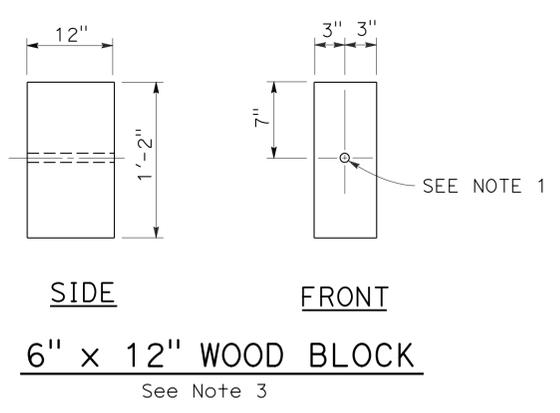
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TO ACCOMPANY PLANS DATED 9-30-13



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.



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**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
04	Son	1	29.9	43	64

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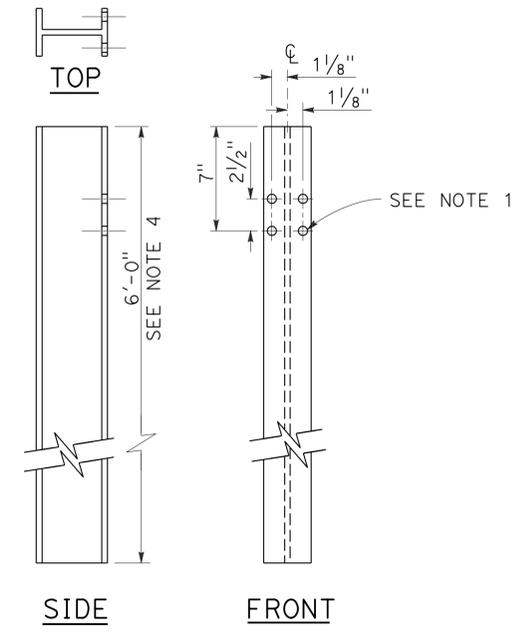
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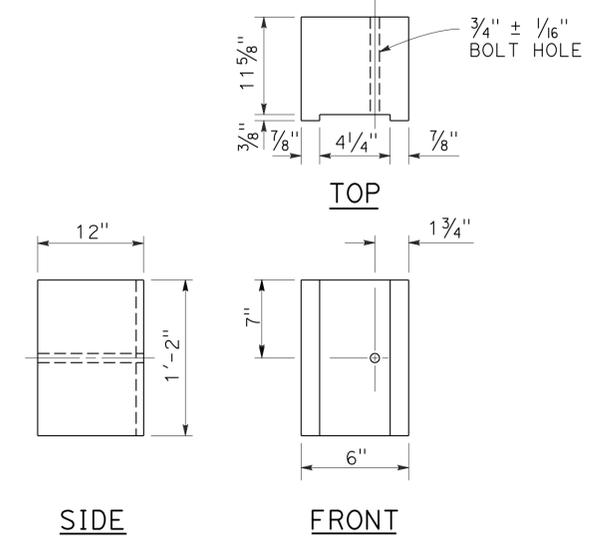
NOTES:

- All holes in steel post shall be 1 3/16" Dia maximum.
- Dimensions shown for wood block are nominal.
- Notched face of block faces steel post.
- 6'-0" length posts to be used for typical roadway installation. 7'-0" length posts to be used for narrow roadway installation. See Revised Standard Plan RSP A77N3.
- See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
- 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.

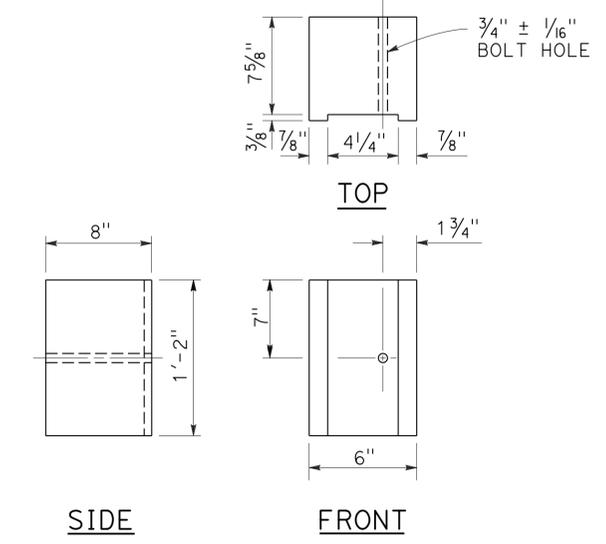
2010 REVISED STANDARD PLAN RSP A77N2



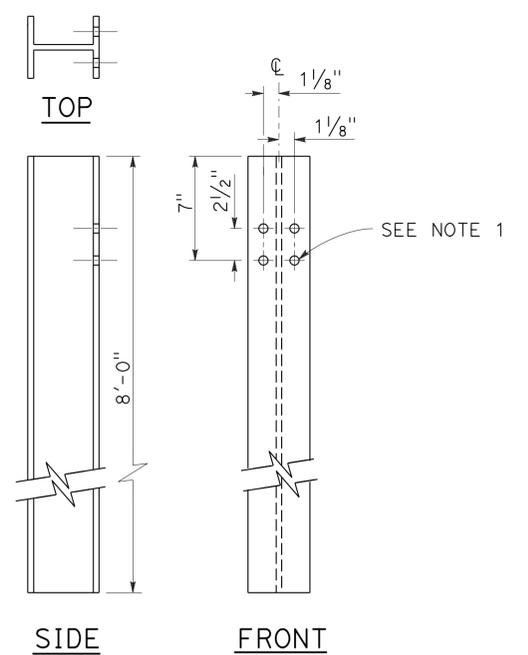
**W6 x 9 OR W6 x 8.5
STEEL POST**
See Note 4



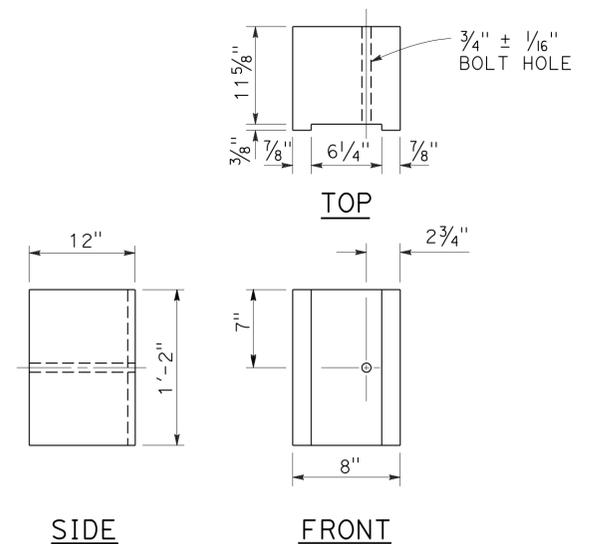
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



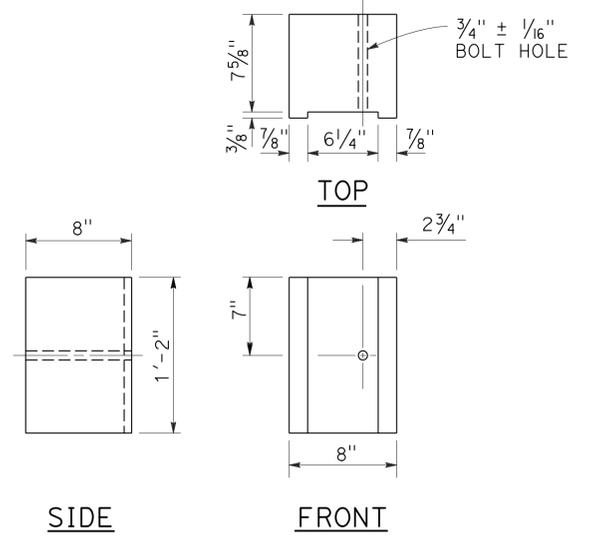
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5



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

REVISED STANDARD PLAN RSP A77N2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	44	64

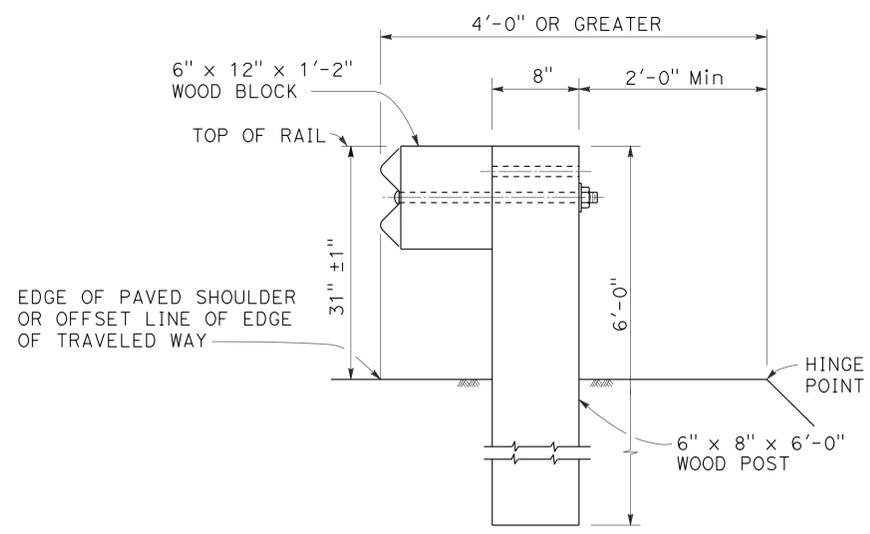
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July 19, 2013
PLANS APPROVAL DATE

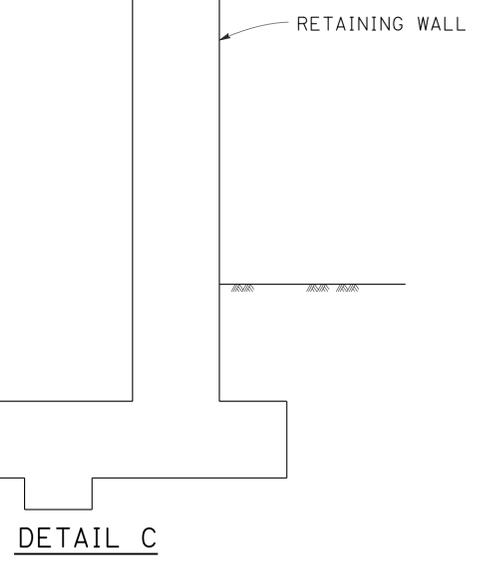
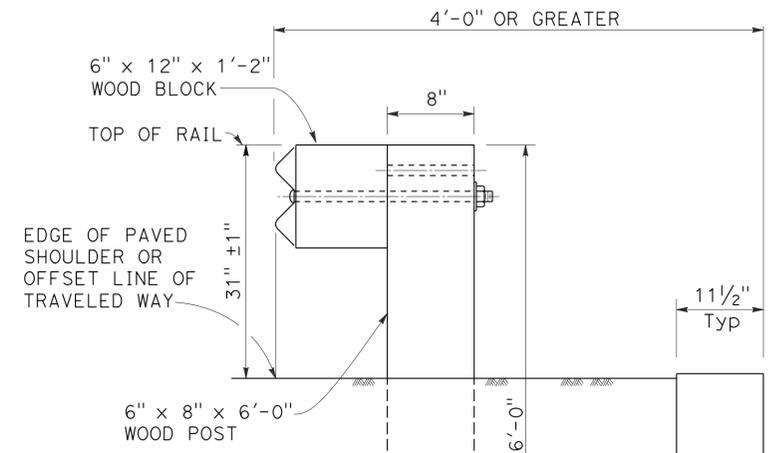
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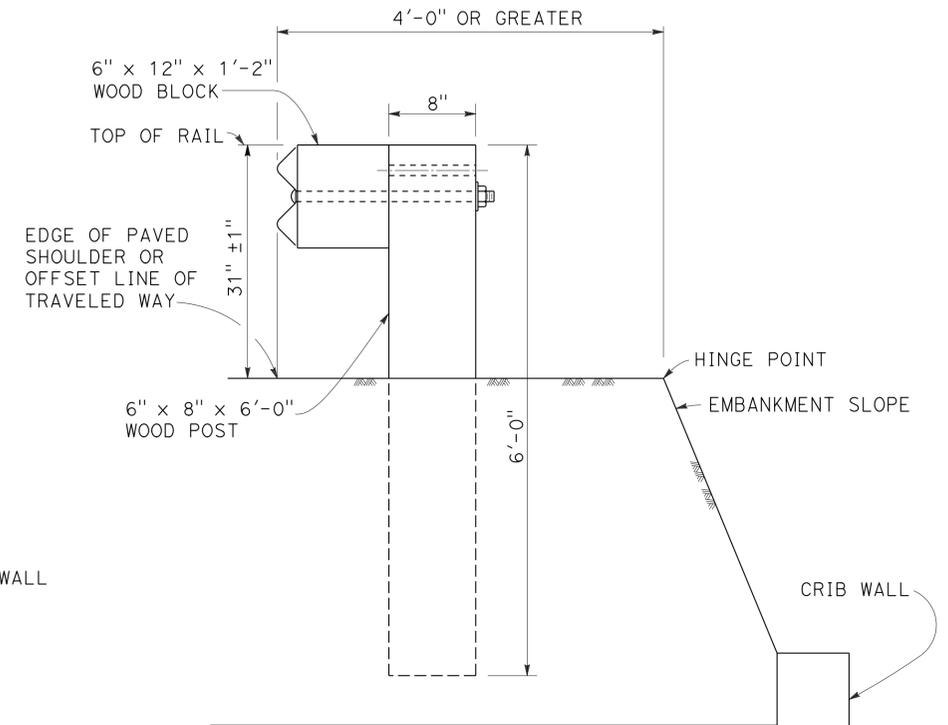
TO ACCOMPANY PLANS DATED 9-30-13



DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1



DETAIL D

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, or 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 JULY 19, 2013 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
04	Son	1	29.9	45	64

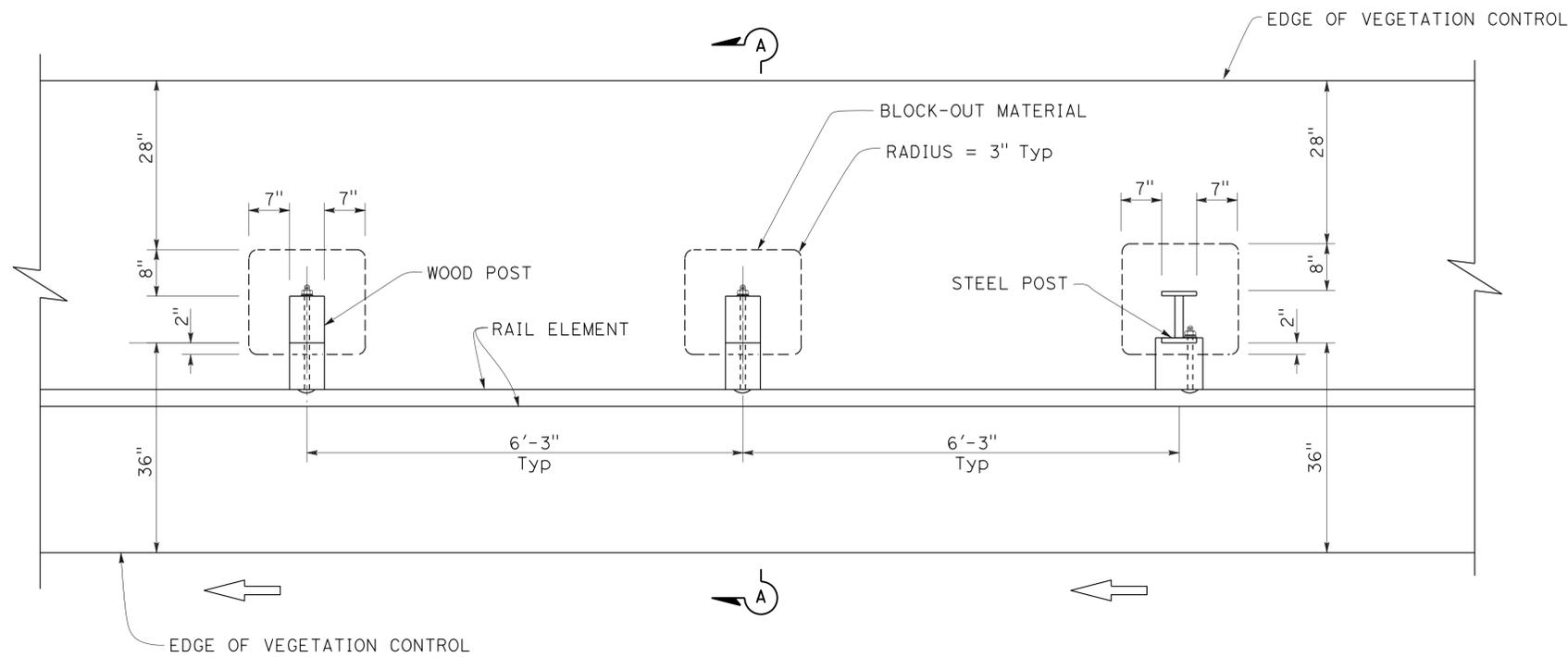
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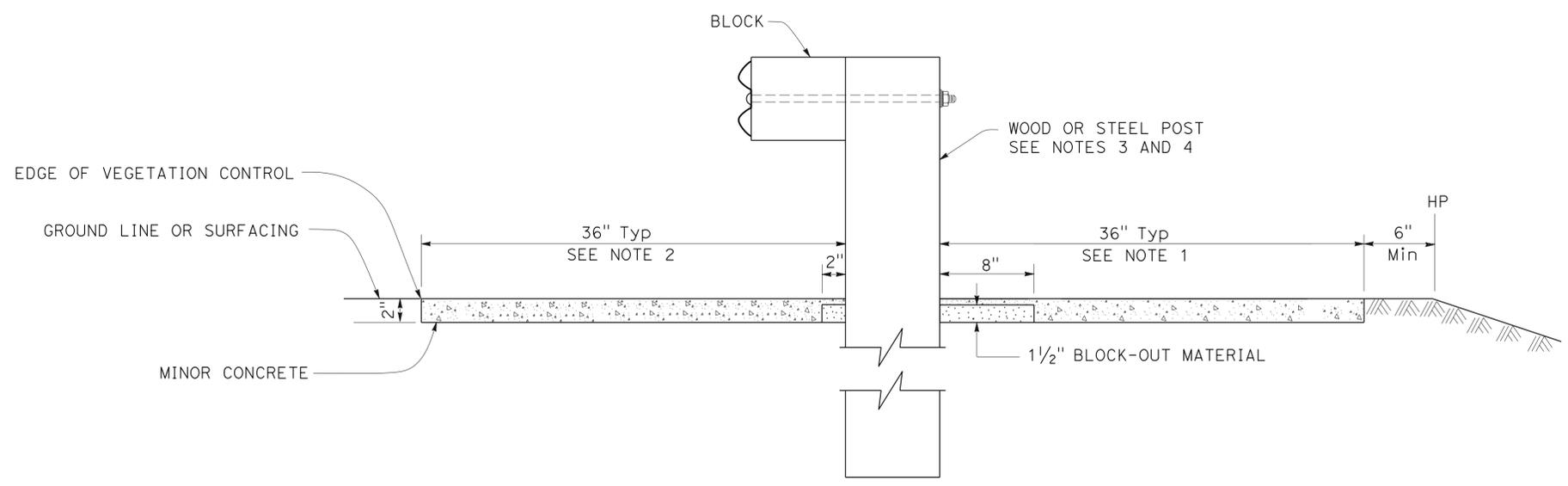
TO ACCOMPANY PLANS DATED 9-30-13



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

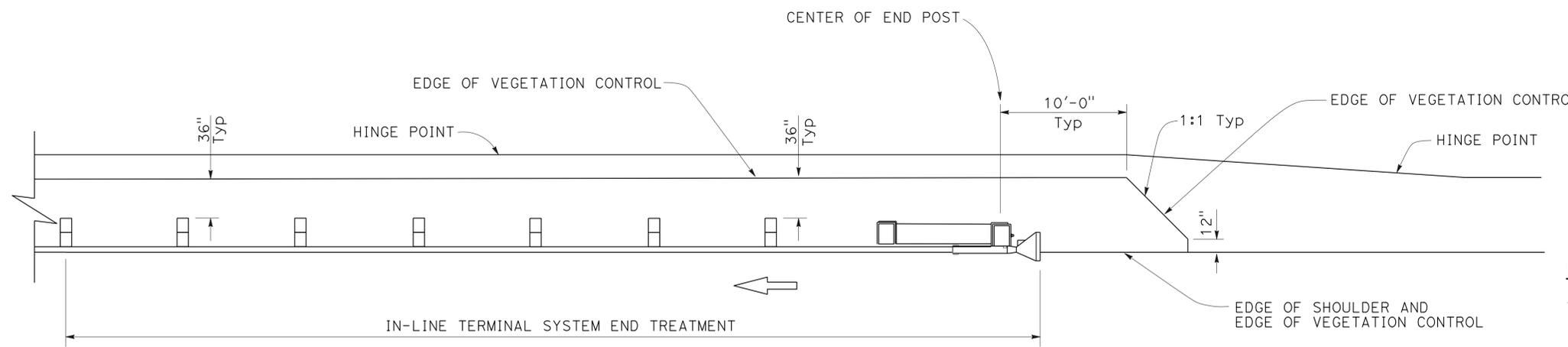
2010 REVISED STANDARD PLAN RSP A77N5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	46	64

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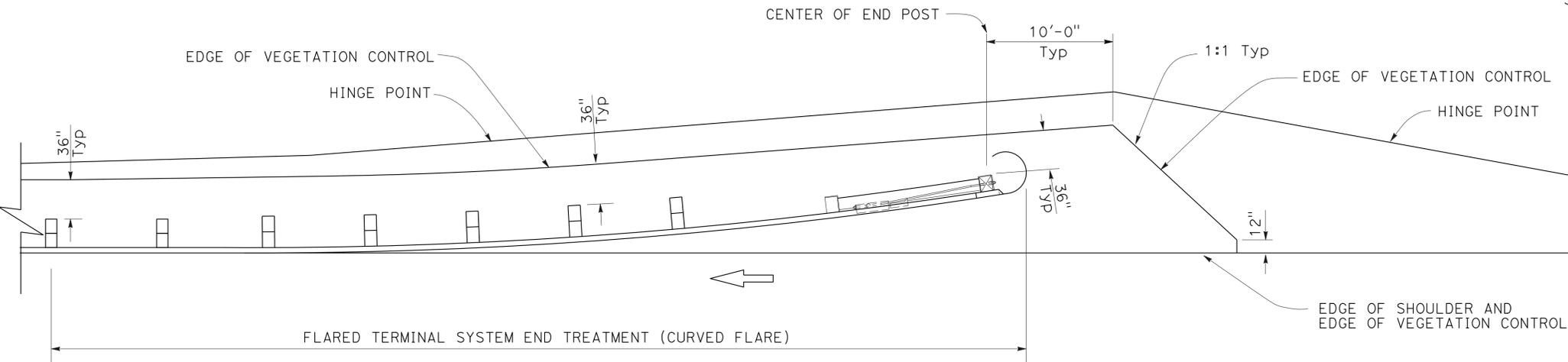
TO ACCOMPANY PLANS DATED 9-30-13



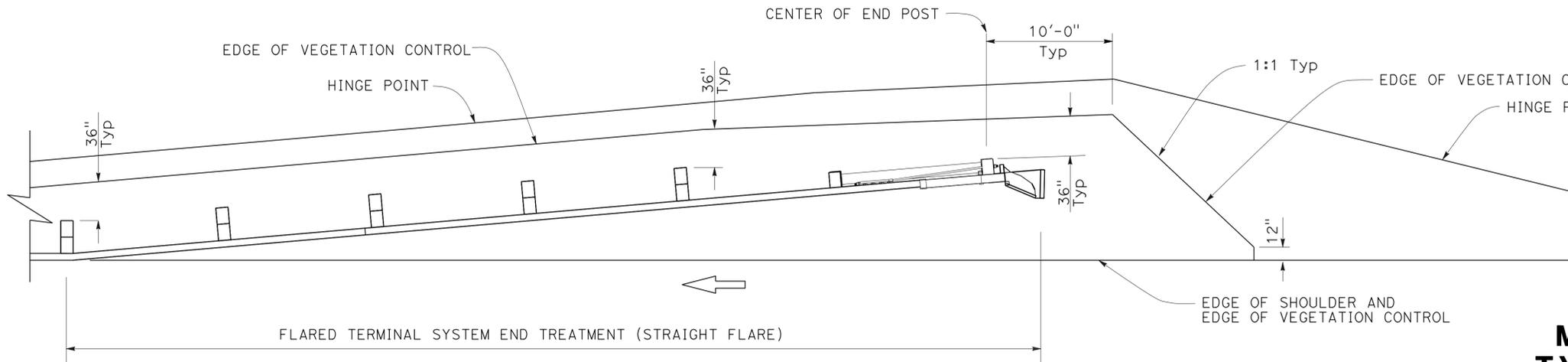
PLAN

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
04	Son	1	29.9	47	64

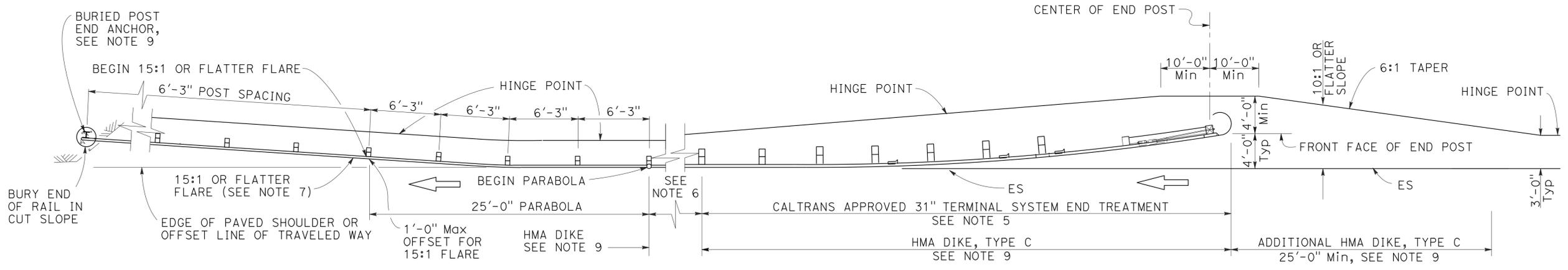
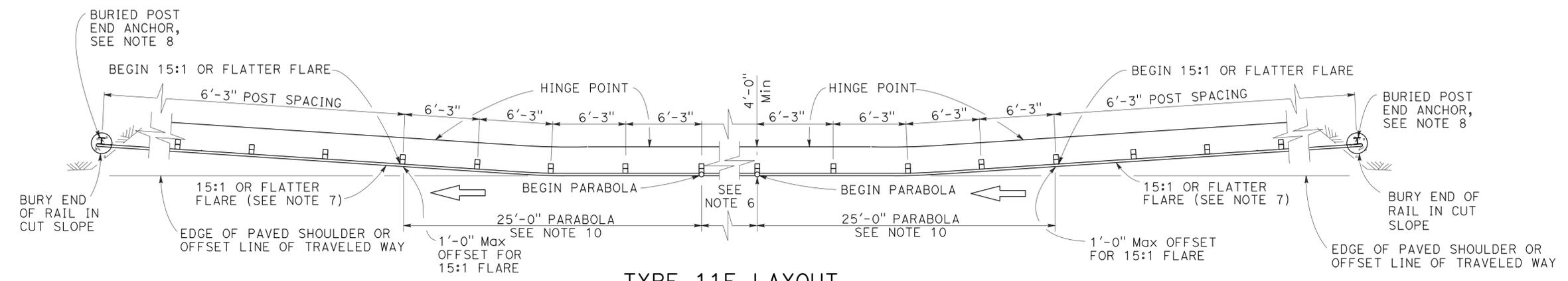
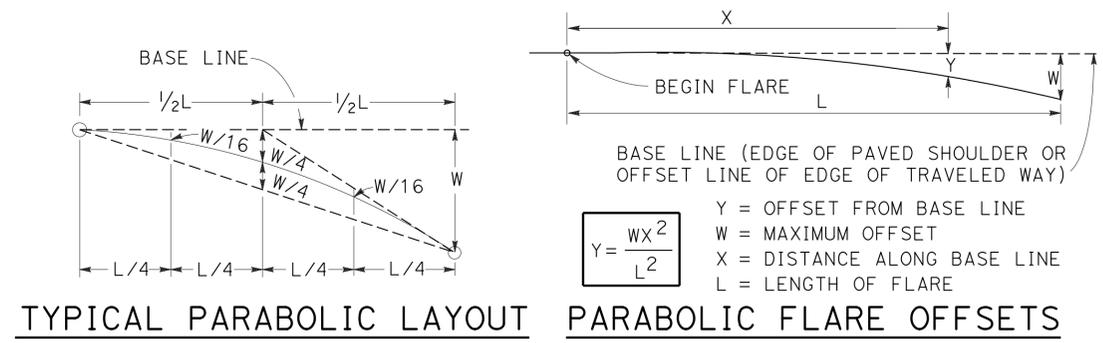
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TO ACCOMPANY PLANS DATED 9-30-13



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 post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- 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 11F and 11G Layouts, 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.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

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**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

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

REVISED STANDARD PLAN RSP A77P3

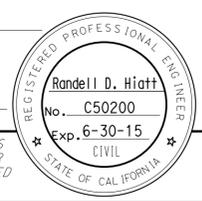
2010 REVISED STANDARD PLAN RSP A77P3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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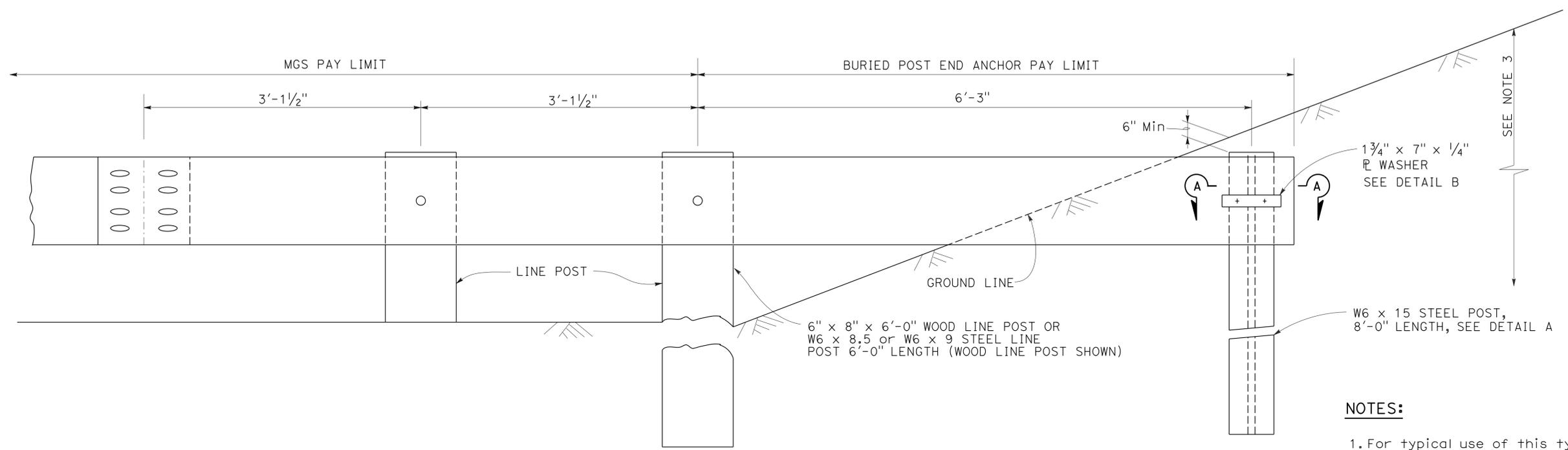
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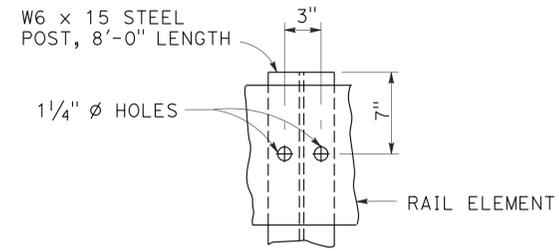


BURIED POST END ANCHOR

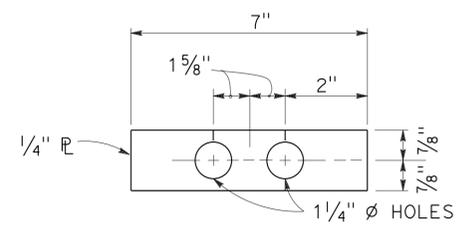
See Note 3

NOTES:

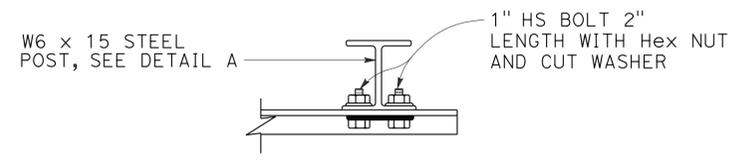
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened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



DETAIL A



DETAIL B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
BURIED POST END ANCHOR**

NO SCALE

RSP A77T2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

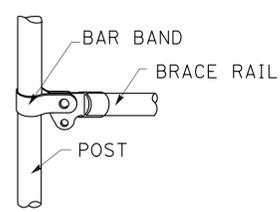
REVISED STANDARD PLAN RSP A77T2

2010 REVISED STANDARD PLAN RSP A77T2

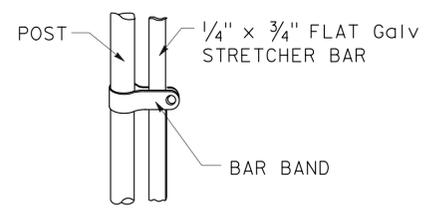
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	49	64

Glenn DeCou
 REGISTERED CIVIL ENGINEER
 October 19, 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.

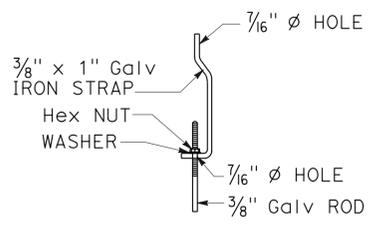
REGISTERED PROFESSIONAL ENGINEER
 Glenn DeCou
 No. C34547
 Exp. 9-30-13
 CIVIL
 STATE OF CALIFORNIA



BRACE RAIL



STRETCHER BAR

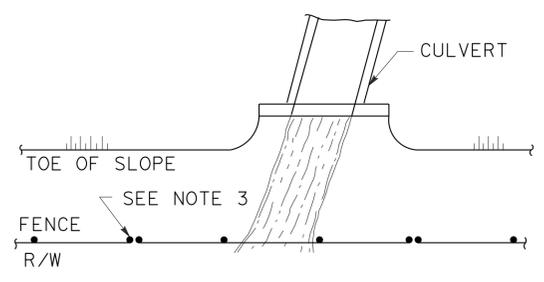


TRUSS TIGHTENER

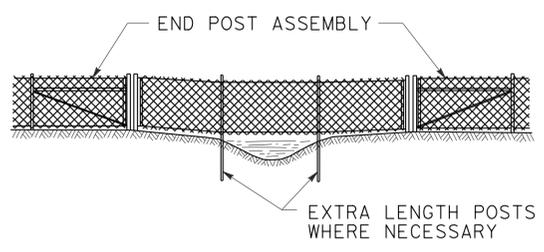
NOTES:

1. All material for abutment connection to be galvanized.
2. The chain link fabric shall be replaced by barbed wire strands at 12" maximum centers between the double posts.
3. When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device approved by the Engineer shall be used.
4. Fencing over stream and around headwall may also use Barbed Wire or Wire Mesh fencing with either wood post or steel post installation.
5. See Standard Plan A85 for Chain Link fence dimensions. See Standard Plan A86 for Barbed Wire and Wire Mesh fence dimensions and for wood post and steel post installation.

TO ACCOMPANY PLANS DATED 9-30-13

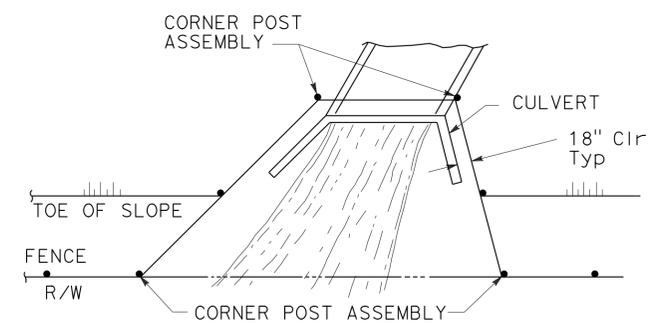


PLAN

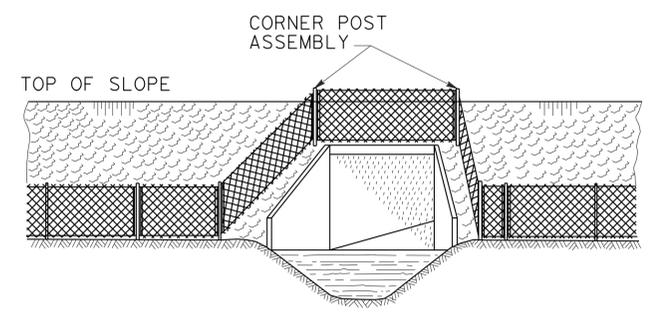


ELEVATION

INSTALLATION OVER STREAM



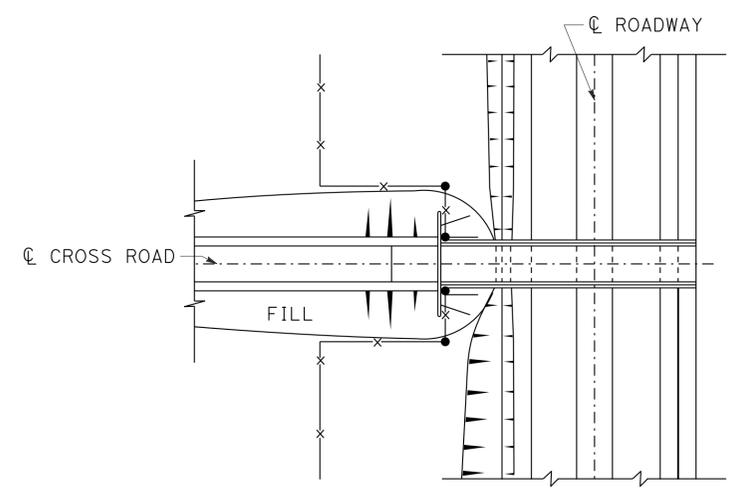
PLAN



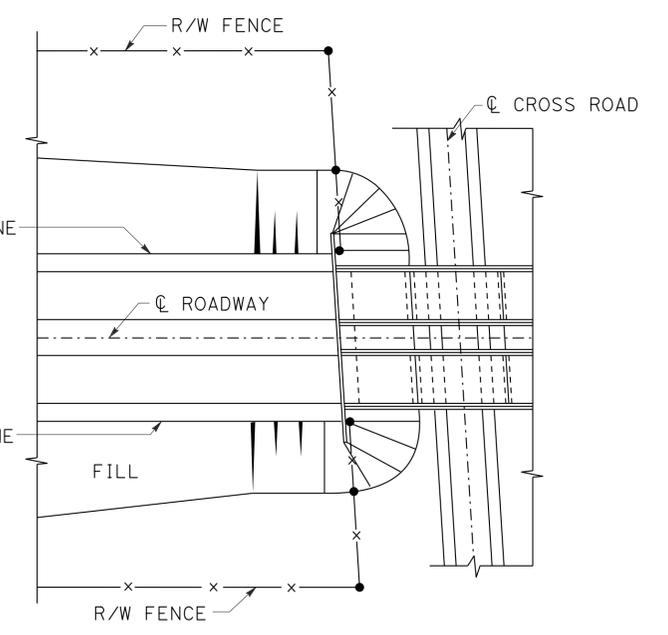
ELEVATION

INSTALLATION AROUND HEADWALL

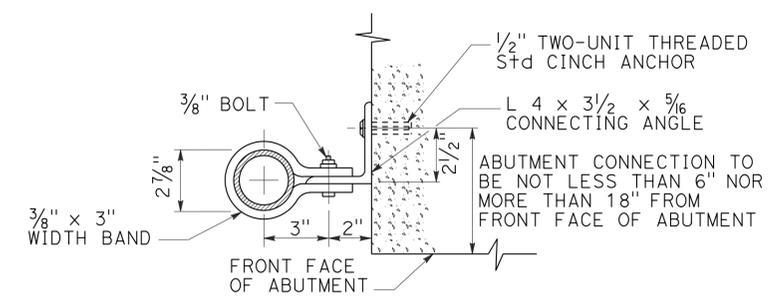
See Note 4



PLAN OF ROADWAY - OVERCROSSING



PLAN OF ROADWAY - UNDERCROSSING



ABUTMENT CONNECTION

TYPICAL INSTALLATION AT BRIDGES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CHAIN LINK FENCE DETAILS

NO SCALE

RSP A85B DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A85B DATED MAY 20, 2011 - PAGE 114 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A85B

2010 REVISED STANDARD PLAN RSP A85B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	50	64

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

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 9-30-13

A

AB AGGREGATE BASE
 ABS ACRYLONITRILE-BUTADIENE-STYRENE
 AC ASPHALT CONCRETE
 ACC ARMOR-CLAD CONDUCTORS
 Adj ADJACENT/ADJUSTABLE
 AIC AUXILIARY IRRIGATION CONTROLLER
 Alt ALTERNATIVE
 AMEND AMENDMENT
 ARV AIR RELEASE VALVE
 AUTO AUTOMATIC
 AUX AUXILIARY
 AVB ATMOSPHERIC VACUUM BREAKER

B

B&B BALLED AND BURLAPPED
 B/B BRASS/BRONZE
 B/B/PL BRASS/BRONZE/PLASTIC
 B/PL BRASS/PLASTIC
 BFM BONDED FIBER MATRIX
 Bit Ctd BITUMINOUS COATED
 BP BOOSTER PUMP
 BPA BACKFLOW PREVENTER ASSEMBLY
 BPE BACKFLOW PREVENTER ENCLOSURE
 BV BALL VALVE

C

C CONDUIT
 CAP CORRUGATED ALUMINUM PIPE
 CARV COMBINATION AIR RELEASE VALVE
 CB COUPLING BAND
 CCA CAM COUPLER ASSEMBLY
 CEC CONTROLLER ENCLOSURE CABINET
 CHDPE CORRUGATED HIGH DENSITY POLYETHYLENE
 CL CHAIN LINK
 CNC CONTROL AND NEUTRAL CONDUCTORS
 Conc CONCRETE
 CP COPPER PIPE
 CS COMPOST SOCK
 CSP CORRUGATED STEEL PIPE
 CST CENTER STRIP
 CV CHECK VALVE

D

Dia DIAMETER
 DIP DUCTILE IRON PIPE
 DIT DRIP IRRIGATION TUBING
 DG DECOMPOSED GRANITE
 DN DIAMETER NOMINAL
 DVA DRIP VALVE ASSEMBLY

E

EC EROSION CONTROL
 ECTC EROSION CONTROL TECHNOLOGY COUNCIL
 Elect ELECTRIC/ELECTRICAL
 Elev ELEVATION
 ELL ELBOW
 ENCL ENCLOSURE
 EP EDGE OF PAVEMENT
 ES EDGE OF SHOULDER
 EST END STRIP
 ESTB ESTABLISHMENT
 ETW EDGE OF TRAVELED WAY

F

F FULL CIRCLE
 F/P FULL/PART CIRCLE
 FCV FLOW CONTROL VALVE
 FERT FERTILIZER
 FG FINISHED GRADE
 FH FLEXIBLE HOSE
 FIPT FEMALE IRON PIPE THREAD
 FIS FERTILIZER INJECTOR SYSTEM
 FL FLOW LINE
 FR FIBER ROLL
 FS FLOW SENSOR
 FSC FLOW SENSOR CABLE
 FV FLUSH VALVE

G

Galv GALVANIZED
 GARV GARDEN VALVE
 GARVA GARDEN VALVE ASSEMBLY
 GM GRAVEL MULCH
 GPH GALLONS PER HOUR
 GPM GALLONS PER MINUTE
 GSP GALVANIZED STEEL PIPE
 GV GATE VALVE

H

H HALF CIRCLE
 HDPE HIGH DENSITY POLYETHYLENE
 HP HORSEPOWER/HINGE POINT
 HPL HIGH PRESSURE LINE
 Hwy HIGHWAY

I

IC IRRIGATION CONTROLLER
 ICC IRRIGATION CONTROLLER(S)
 IN CONTROLLER ENCLOSURE CABINET
 ID INSIDE DIAMETER
 IFS IRRIGATION FILTRATION SYSTEM
 IPS IRON PIPE SIZE
 IPT IRON PIPE THREAD
 Irr IRRIGATION

L

L LENGTH

M

Max MAXIMUM
 MBGR METAL BEAM GUARD RAILING
 MCV MANUAL CONTROL VALVE
 MIC MASTER IRRIGATION CONTROLLER
 Min MINIMUM
 MIPT MALE IRON PIPE THREAD
 Misc MISCELLANEOUS
 MtI MATERIAL
 MVP MAINTENANCE VEHICLE PULLOUT

N

NCN NO COMMON NAME
 NL NOZZLE LINE
 No. NUMBER
 NPT NATIONAL PIPE THREAD

O

O/C ON CENTER
 OD OUTSIDE DIAMETER
 OL OVERLAP

P

P PART CIRCLE
 PB PULL BOX
 PCC PORTLAND CEMENT CONCRETE
 PE POLYETHYLENE
 PKt PACKET
 PL PLASTIC
 PLS PURE LIVE SEED
 PLT PLANT/PLANTING
 PLT ESTB PLANT ESTABLISHMENT
 PM POST MILE
 PR PRESSURE RATED
 PRLV PRESSURE RELIEF VALVE
 PRV PRESSURE REGULATING VALVE
 PVC POLYVINYL CHLORIDE
 Pvmt PAVEMENT

Q

Q QUARTER CIRCLE
 QCV QUICK COUPLING VALVE

NOTE:
 For additional abbreviations,
 see Standard Plans A10A and A10B.

R

R RADIUS
 RCP REINFORCED CONCRETE PIPE
 RCV REMOTE CONTROL VALVE
 RCVM REMOTE CONTROL VALVE (MASTER)
 RCVMF REMOTE CONTROL VALVE (MASTER) W/FLOW SENSOR
 RCVP REMOTE CONTROL VALVE W/PRESSURE REGULATOR
 RCW RECYCLED WATER
 RECP ROLLED EROSION CONTROL PRODUCT
 REQ REQUIRED
 RICS REMOTE IRRIGATION CONTROL SYSTEM
 R/W RIGHT OF WAY

S

S SLIP
 SCH SCHEDULE
 SF STATE-FURNISHED
 Shld SHOULDER
 Sq SQUARE
 SST SIDE STRIP
 Sta STATION
 Std STANDARD
 SW SIDEWALK/SOUND WALL

T

T THIRD CIRCLE/THREAD
 TLS TRUCK LOADING STANDPIPE
 TQ THREE QUARTER CIRCLE
 TRM TURF REINFORCEMENT MAT
 TT TWO-THIRDS CIRCLE
 TWSA TREE WELL SPRINKLER ASSEMBLY
 Typ TYPICAL

U

UG UNDERGROUND

W

W WIDTH
 W/ WITH
 WM WATER METER
 WS WYE STRAINER
 WSA WYE STRAINER ASSEMBLY
 WSP WELDED STEEL PIPE
 WWM WELDED WIRE MESH

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**LANDSCAPE AND
 EROSION CONTROL ABBREVIATIONS**
 NO SCALE

RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1
 DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H1

2010 REVISED STANDARD PLAN RSP H1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	51	64

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

JULY 19, 2013
PLANS APPROVAL DATE

2-28-15
7-19-13
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 9-30-13

2010 REVISED STANDARD PLAN RSP H2

EXISTING	NEW	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ENCLOSURE (BPE)
		BOOSTER PUMP (BP)
		TRUCK LOADING STANDPIPE (TLS)
		FLOW SENSOR (FS)
		MASTER IRRIGATION CONTROLLER (MIC)
		AUXILIARY IRRIGATION CONTROLLER (AIC)
		IRRIGATION CONTROLLER (IC) IRRIGATION CONTROLLER (IC) (BATTERY) IRRIGATION CONTROLLER (IC) (SOLAR) IRRIGATION CONTROLLER (IC) (TWO WIRE) IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
		ARMOR-CLAD CONDUCTORS (ACC)
		CONTROL AND NEUTRAL CONDUCTORS (CNC)
		IRRIGATION CONDUIT
		EXTEND IRRIGATION CROSSOVER
		DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (SUPPLY LINE) (LATERAL)
		COPPER PIPE (SUPPLY LINE)
		DRIP IRRIGATION TUBING
		REMOTE CONTROL VALVE (RCV) REMOTE CONTROL VALVE (MASTER) (RCVM) REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		REMOTE CONTROL VALVE W/PRESSURE REGULATOR (RCVP)
		EXISTING MANUAL CONTROL VALVE (MCV)
		DRIP VALVE ASSEMBLY (DVA)
		WYE STRAINER ASSEMBLY (WSA)

EXISTING	NEW	ITEM DESCRIPTION
		GATE VALVE (GV)
		BALL VALVE (BV)
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		GARDEN VALVE ASSEMBLY (GARVA)
		PRESSURE REGULATING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		EXISTING NOZZLE LINE W/TURNING UNION
		EXISTING IRRIGATION SYSTEM
		EXISTING IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
		SPRINKLER W/SPRINKLER PROTECTOR
		CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING
		FIBER ROLL
		COMPOST SOCK



VALVE CODE

* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**LANDSCAPE AND EROSION
CONTROL SYMBOLS**
NO SCALE

RSP H2 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H2
DATED MAY 20, 2011 - PAGE 219 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H2

NOTES:

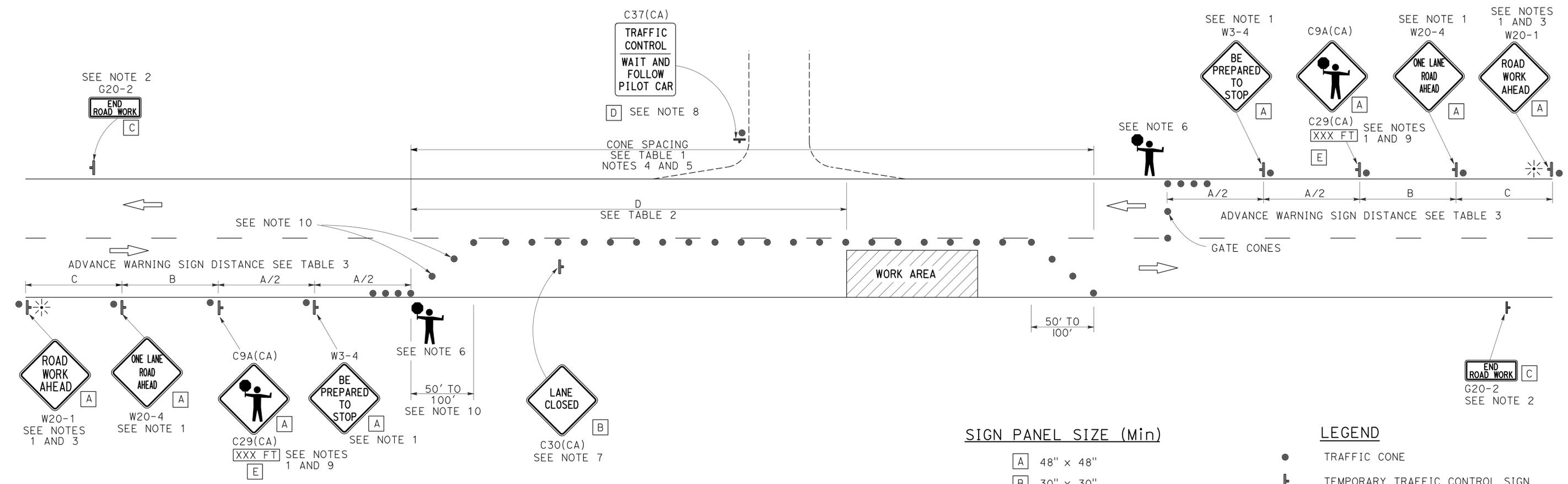
See Revised Standard Plan RSP T9 for tables.

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.

TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL



NOTES:

- Each advance warning sign in each direction of travel 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.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a W20-4 sign for the first advance warning sign.
- All cones used for lane 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 closures only.
- Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.

TO ACCOMPANY PLANS DATED 9-30-13

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURE ON
 TWO LANE CONVENTIONAL
 HIGHWAYS**
 NO SCALE

RSP T13 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T13
 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

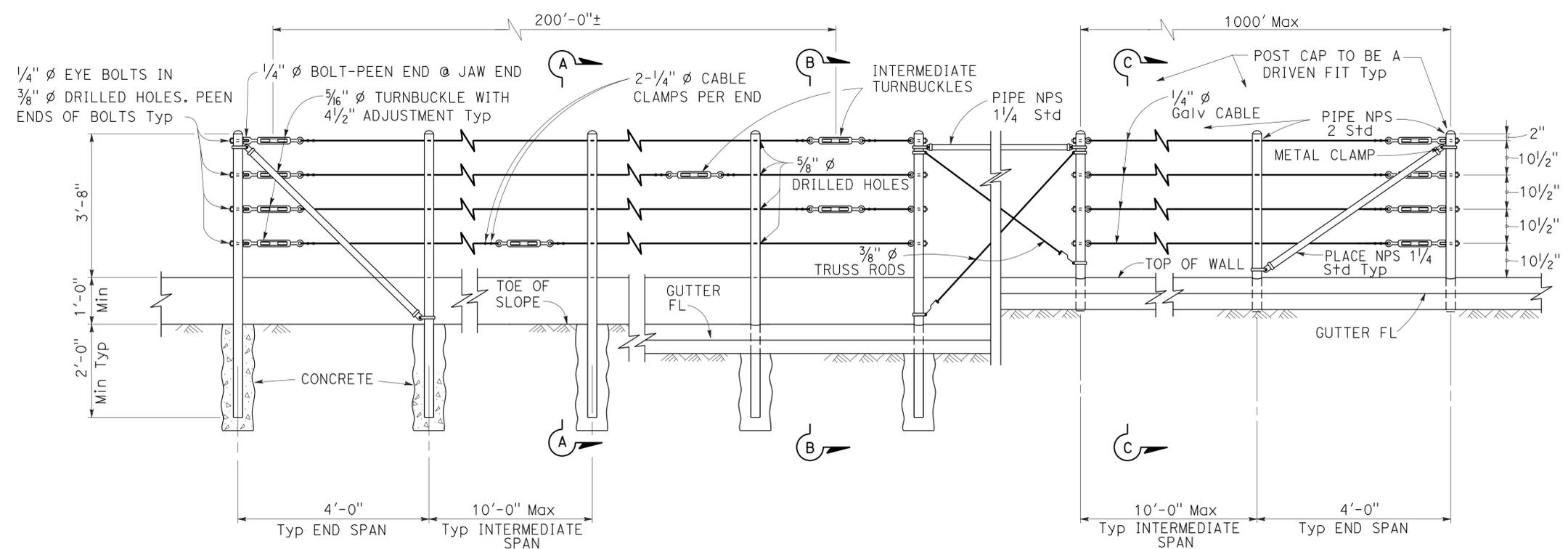
REVISED STANDARD PLAN RSP T13

2010 REVISED STANDARD PLAN RSP T13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	53	64

REGISTERED CIVIL ENGINEER
 October 21, 2011
 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.

Tilgat Satter
 No. C42892
 Exp. 3-31-12
 CIVIL
 STATE OF CALIFORNIA

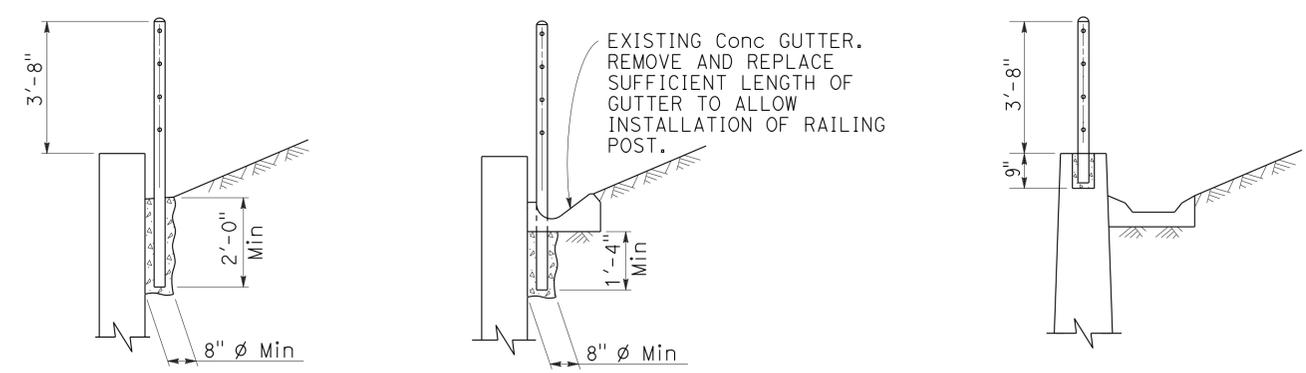


EXISTING WALL (WITHOUT GUTTER) Existing
RETAINING WALL (WITH GUTTER) Existing
RETAINING WALL (WITH GUTTER) New construction

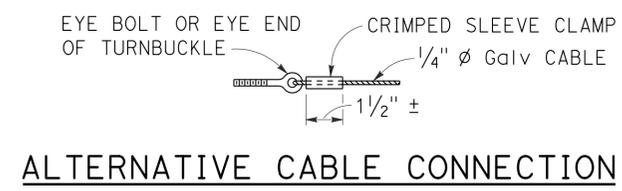
ELEVATION

NOTES:

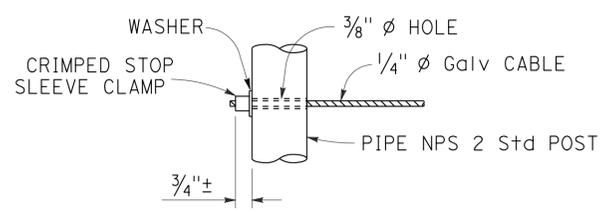
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining wall.
6. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.
7. Line posts shall be braced horizontally and trussed diagonally in both directions at intervals not to exceed 1000'.
8. Post pockets to be centered in top of wall.
9. Typical end spans, braced in both directions, shall be constructed at changes in line where the angle of deflection is 15° or more.
10. Provide thimbles at all cable loops.



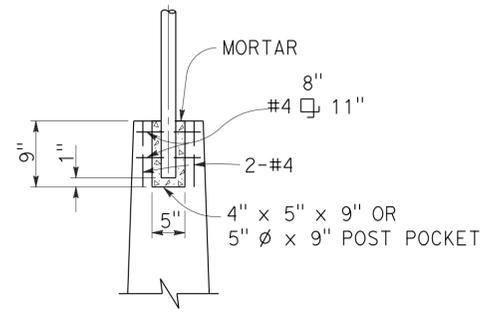
SECTION A-A Existing
SECTION B-B Existing
SECTION C-C New construction



ALTERNATIVE CABLE CONNECTION



ALTERNATIVE DEAD END ANCHORAGE



POST POCKET

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CABLE RAILING

NO SCALE

RSP B11-47 DATED OCTOBER 21, 2011 SUPERSEDES STANDARD PLAN B11-47 DATED MAY 20, 2011 - PAGE 293 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP B11-47

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
Ckt	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		

MISCELLANEOUS ELECTROLIERS

<u>NEW</u>	<u>EXISTING</u>	
		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

<u>NEW</u>	<u>EXISTING</u>	<u>STANDARD TYPE</u>
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	54	64

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

Theresa Aziz Gabriel
No. E15129
Exp. 6-30-14
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.

TO ACCOMPANY PLANS DATED 9-30-13

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

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
04	Son	1	29.9	55	64

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 9-30-13

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

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

		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.

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

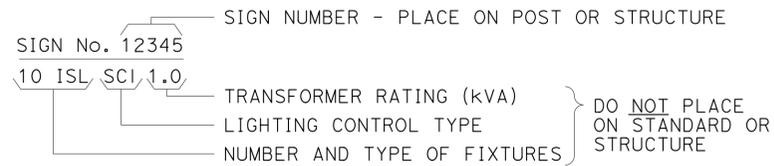
2010 REVISED STANDARD PLAN RSP ES-1B



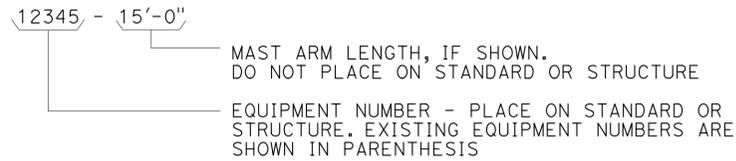
TO ACCOMPANY PLANS DATED 9-30-13

EQUIPMENT IDENTIFICATION

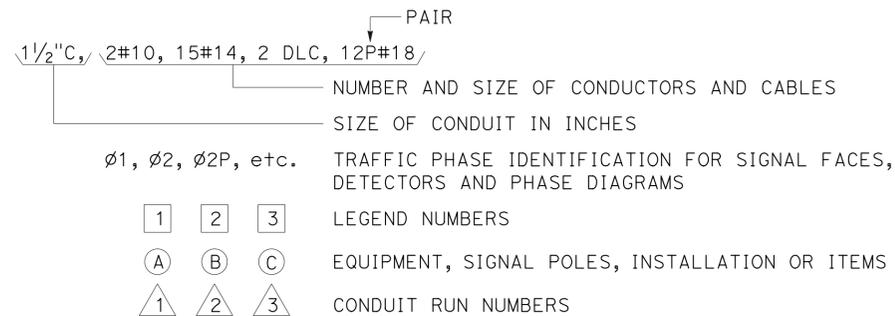
ILLUMINATED SIGN IDENTIFICATION NUMBER:



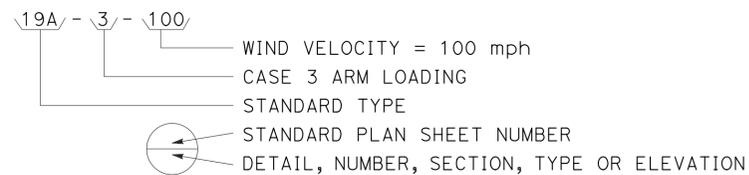
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



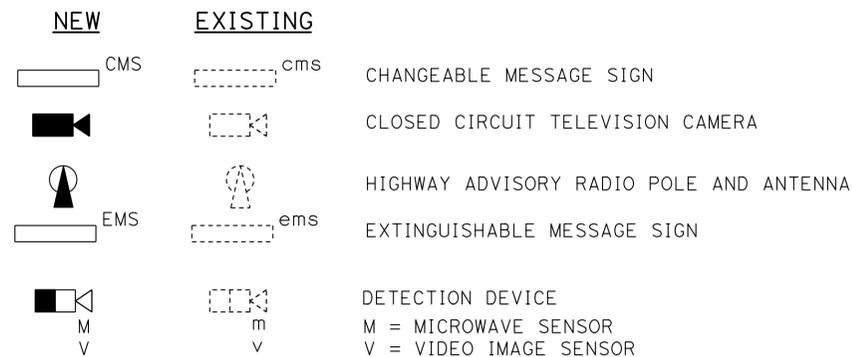
CONDUIT AND CONDUCTOR IDENTIFICATION:



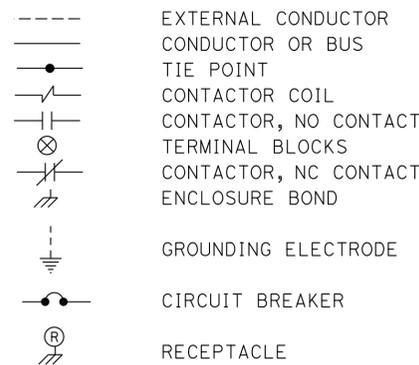
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



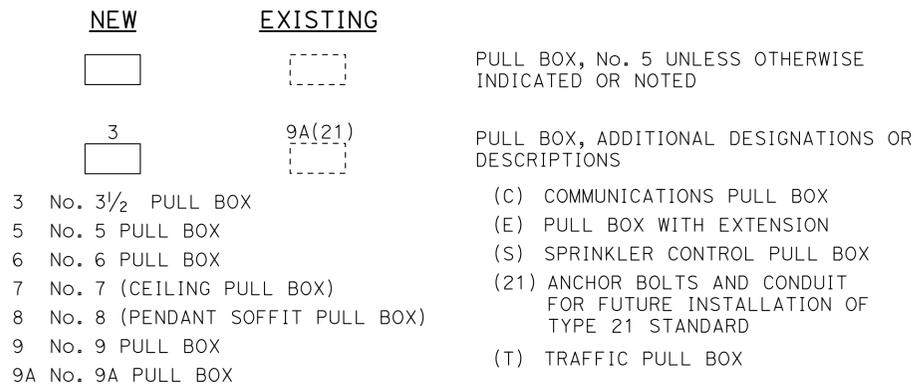
MISCELLANEOUS EQUIPMENT



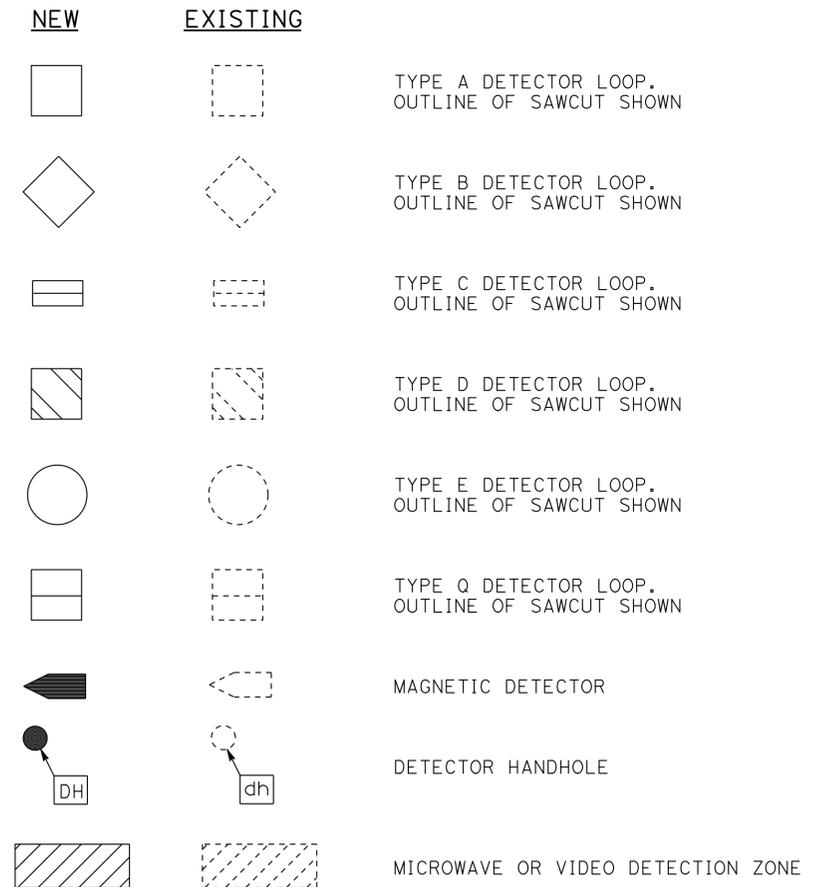
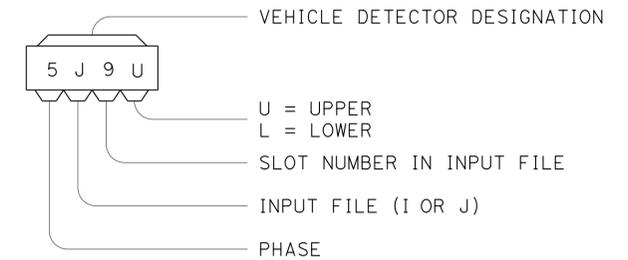
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

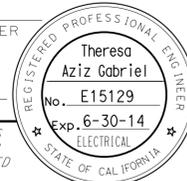
ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

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.

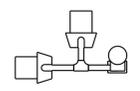
REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

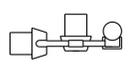
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	29.9	57	64
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE					
					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

TO ACCOMPANY PLANS DATED 9-30-13

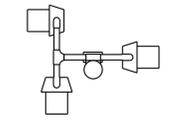
2010 REVISED STANDARD PLAN RSP ES-4A



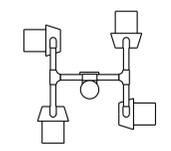
SV-2-TD



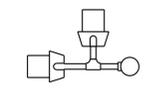
SV-2-TC



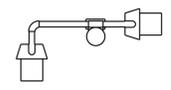
SV-3-TC



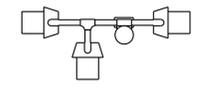
SV-4-TC



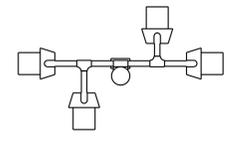
SV-2B



SV-2-TB

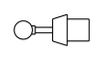


SV-3-TB

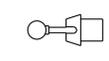


SV-4-TB

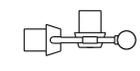
PLAN VIEW OF OTHER
SIDE MOUNTINGS



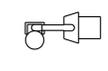
SV



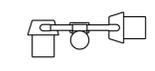
SV-1



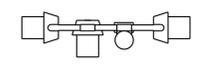
SV-2A



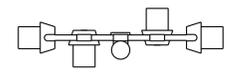
SV-1-T



SV-2-TA



SV-3-TA



SV-4-TA

SIDE MOUNTINGS

ABBREVIATIONS:

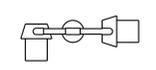
- SV SIDE MOUNTED VEHICLE SIGNALS
- T TERMINAL COMPARTMENT
- TV TOP MOUNTED VEHICLE SIGNALS
- 1, 2, 3, 4 NUMBER OF SIGNAL FACES
(3 - SECTION, UNLESS OTHERWISE INDICATED)
- A, B, C, D CONFIGURATION OF SIGNALS

NOTES:

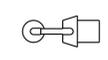
1. Mountings shall be oriented to provide maximum horizontal clearance to adjacent roadway.
2. Bracket arms shall be long enough to permit proper alignment of signals and backplate installation.
3. See Standard Plans ES-4D and ES-4E for attachment fitting details.



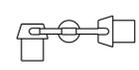
TV-1



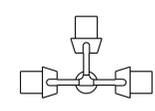
TV-2



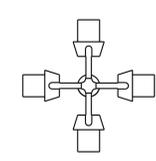
TV-1-T



TV-2-T



TV-3-T



TV-4-T

PLAN VIEW OF
TOP MOUNTINGS

TOP MOUNTINGS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(VEHICULAR SIGNAL HEADS
AND MOUNTINGS)**

NO SCALE

RSP ES-4A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4A
DATED MAY 20, 2011 - PAGE 443 OF THE STANDARD PLANS BOOK DATED 2010.

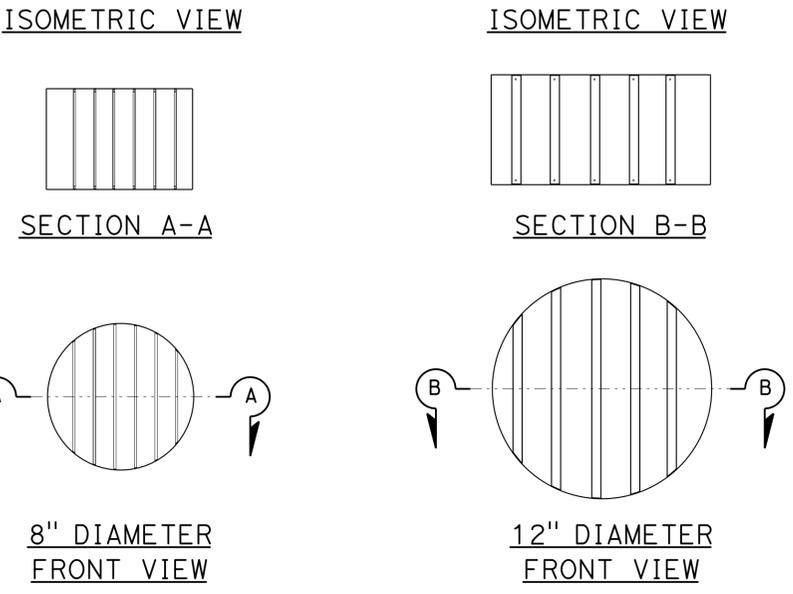
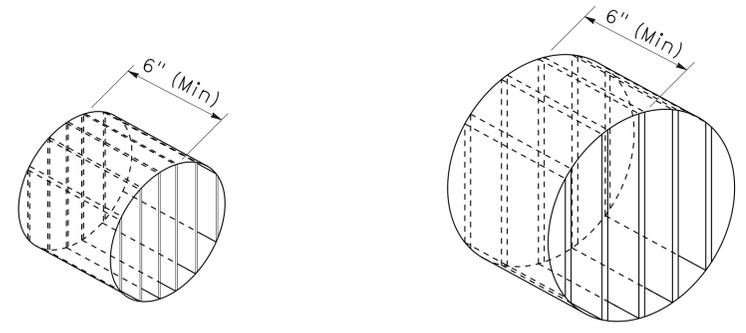
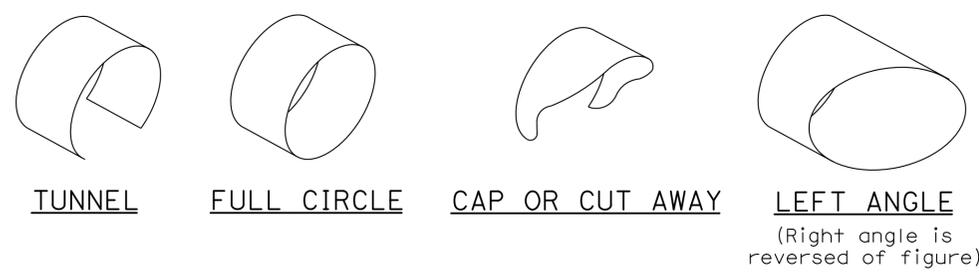
REVISED STANDARD PLAN RSP ES-4A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	29.9	58	64

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
 Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

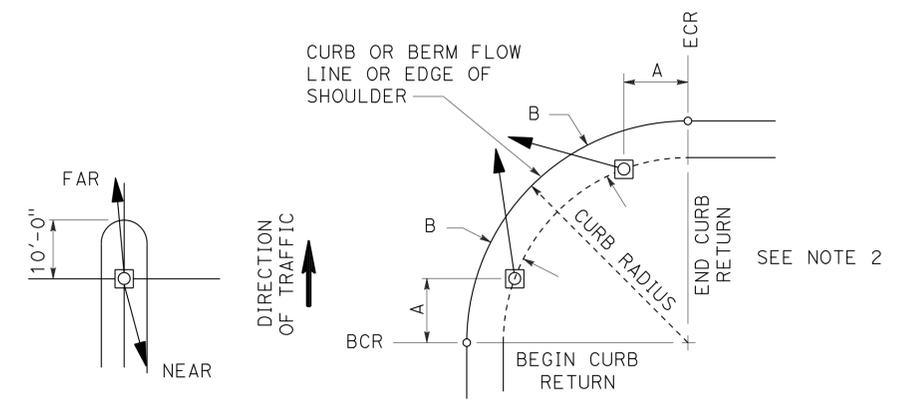
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TO ACCOMPANY PLANS DATED 9-30-13



DIRECTIONAL LOUVER

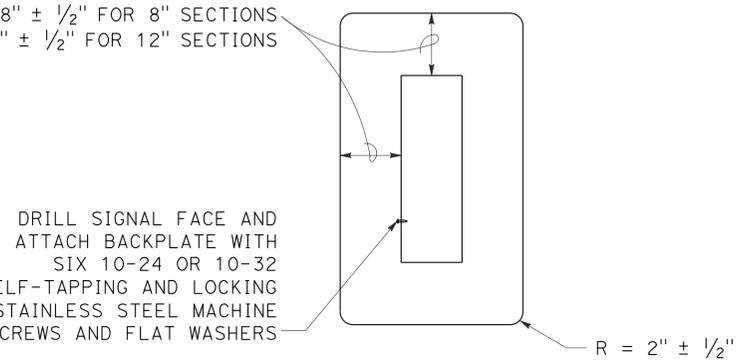
Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.



NOTES:

1. Typical signal pole placement unless dimensioned on plans.
2. For A and B dimensions, see Pole Schedule, or as directed by the Engineer.

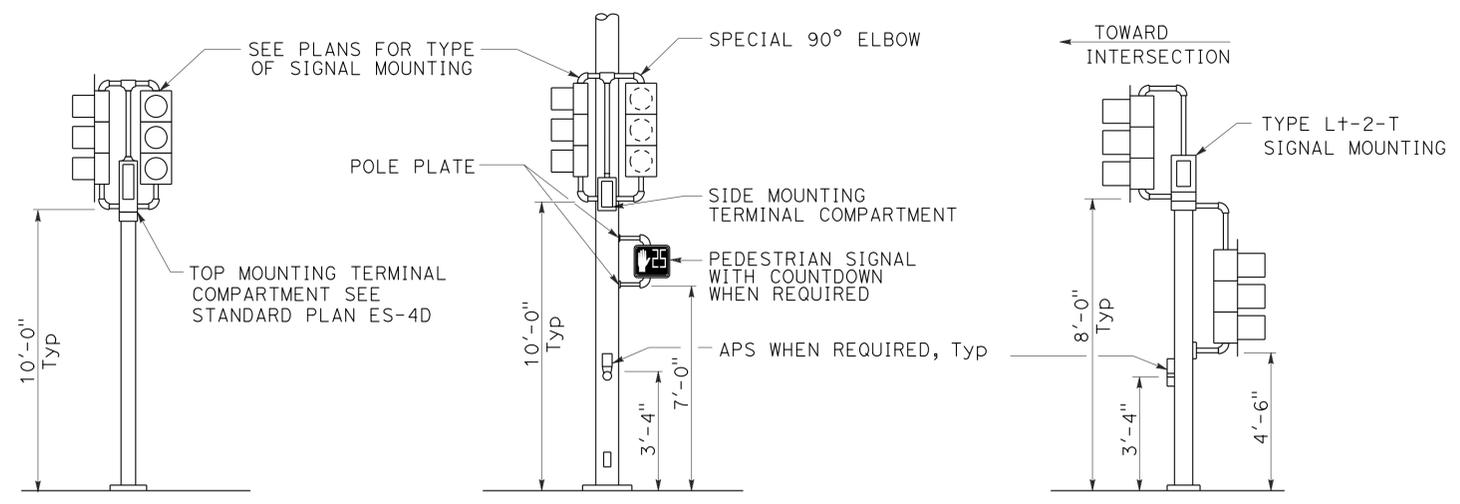
SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS



BACKPLATE

1/16" minimum thickness
3001-14 aluminum or plastic when specified

8" AND 12" SECTIONS



TOP MOUNTED SIGNALS (TV)

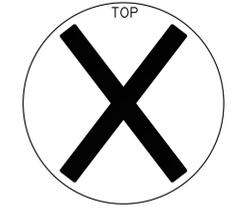
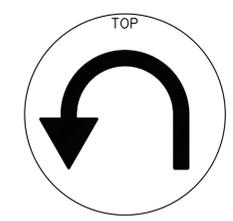
Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

SIDE MOUNTED SIGNALS (SV AND SP)

Normally used on standards with luminaire or signal mast arm

LEFT TURN LANE SIGNAL

Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans



SIGNAL FACES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (VEHICULAR SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-04C DATED MAY 20, 2011 - PAGE 445 OF THE STANDARD PLANS BOOK DATED 2010.

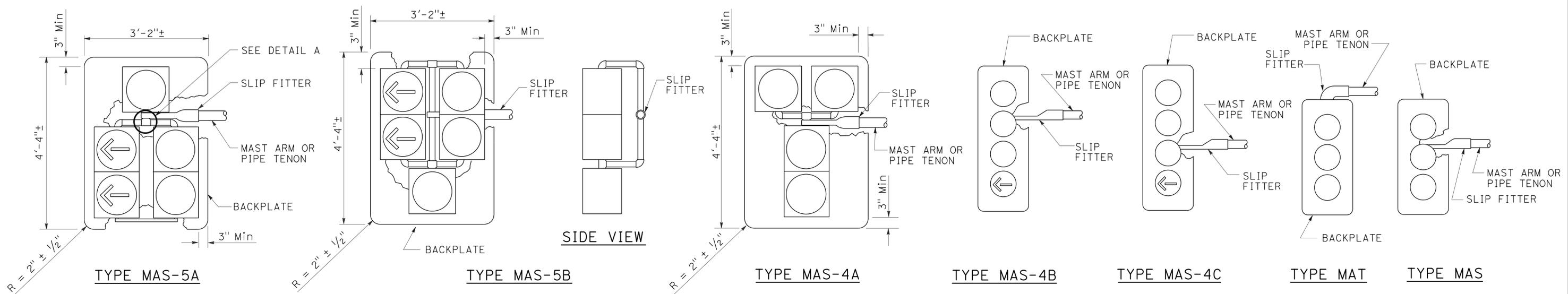
REVISED STANDARD PLAN RSP ES-4C

2010 REVISED STANDARD PLAN RSP ES-4C

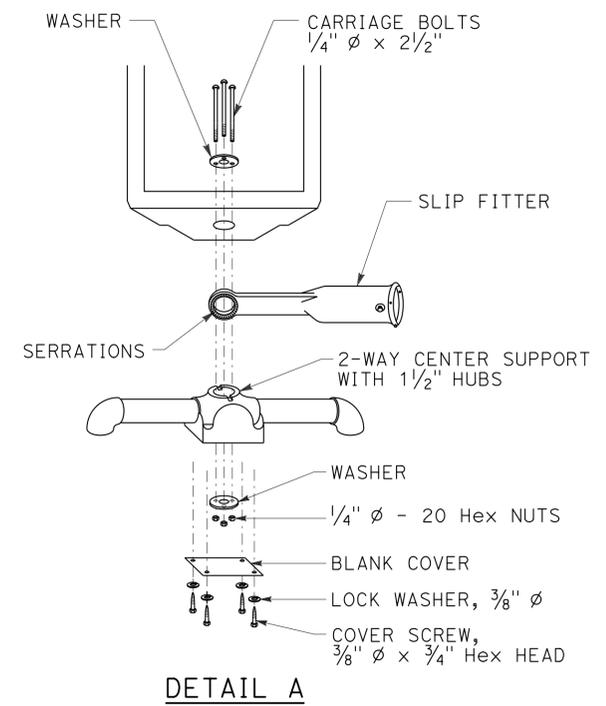
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	29.9	59	64

Theresa Gabriel
 REGISTERED ELECTRICAL 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.

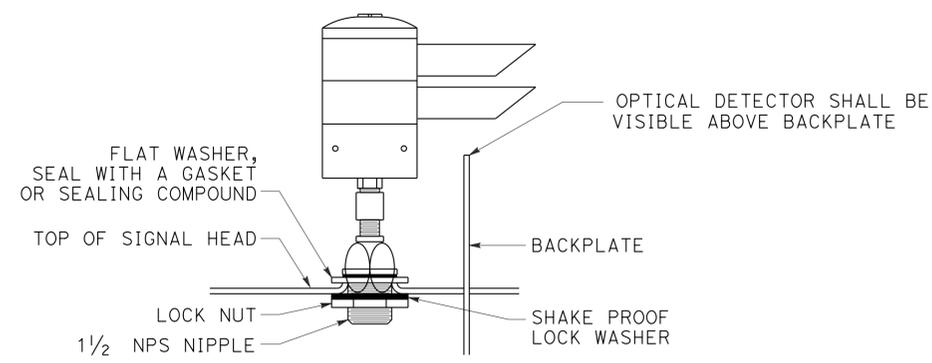
TO ACCOMPANY PLANS DATED 9-30-13



MAST ARM MOUNTINGS



DETAIL A



DETAIL B

OPTICAL DETECTOR MOUNTING FOR EMERGENCY VEHICLE DETECTION SYSTEM

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(VEHICULAR SIGNAL HEADS AND
OPTICAL DETECTOR MOUNTING)**

NO SCALE

RSP ES-4E DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4E DATED MAY 20, 2011 - 447 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4E

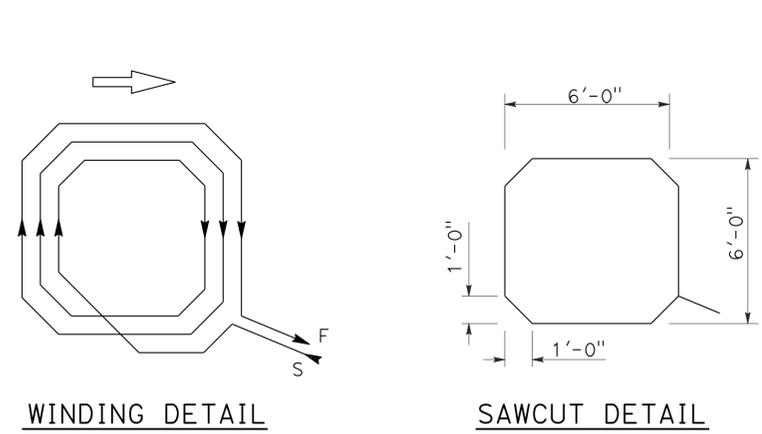
2010 REVISED STANDARD PLAN RSP ES-4E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	29.9	60	64

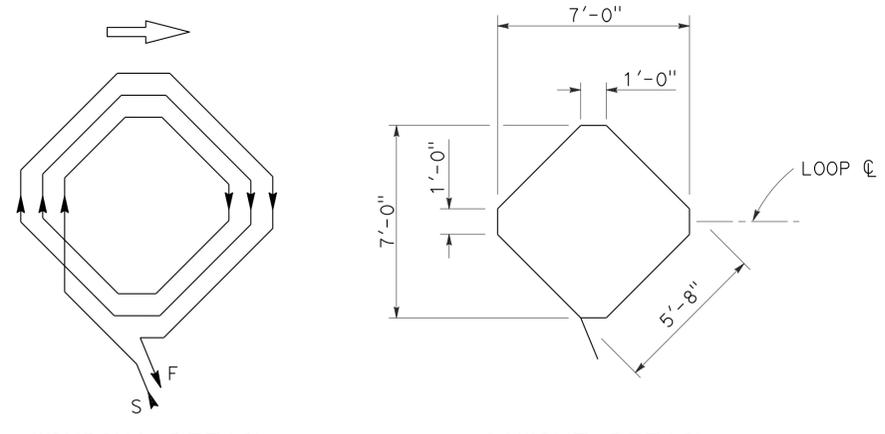
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

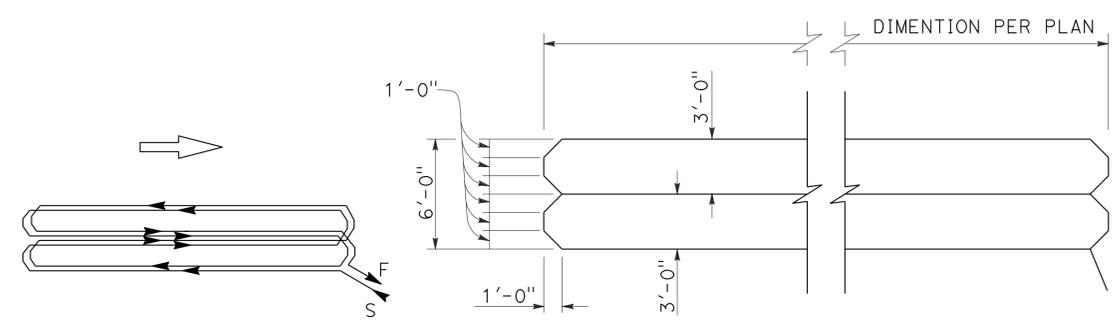
TO ACCOMPANY PLANS DATED 9-30-13



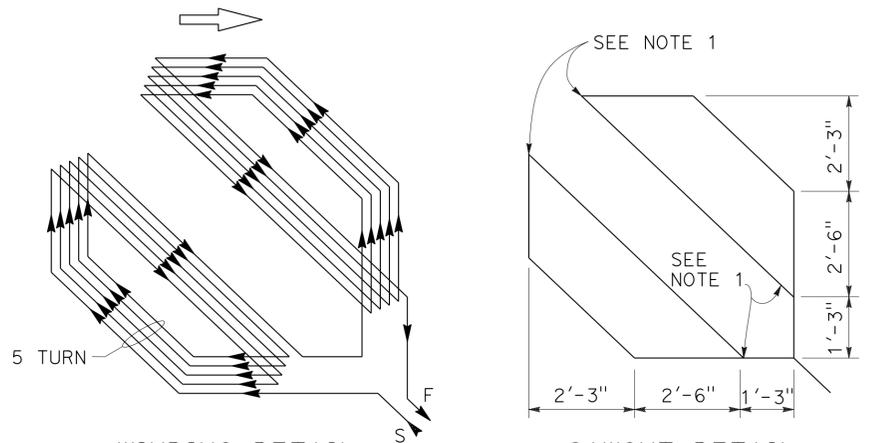
WINDING DETAIL
SAWCUT DETAIL
TYPE A LOOP DETECTOR CONFIGURATION



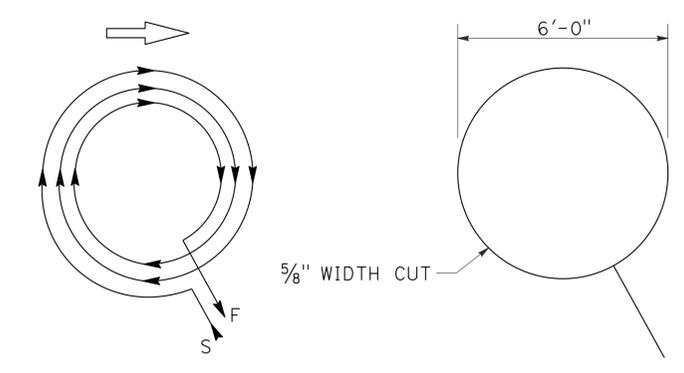
WINDING DETAIL
SAWCUT DETAIL
TYPE B LOOP DETECTOR CONFIGURATION



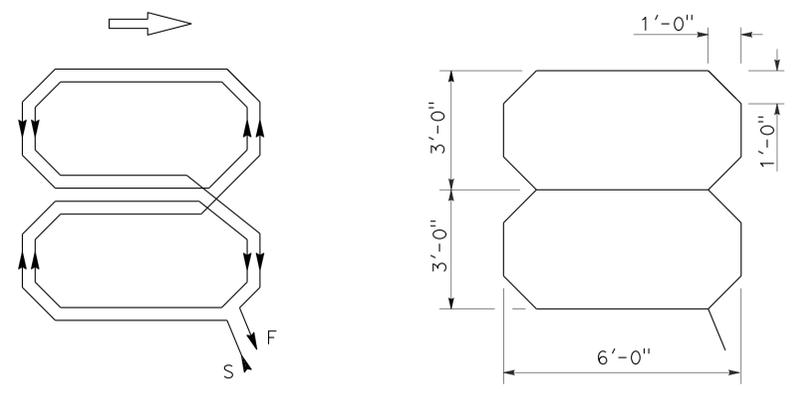
WINDING DETAIL
SAWCUT DETAIL
TYPE C LOOP DETECTOR CONFIGURATION



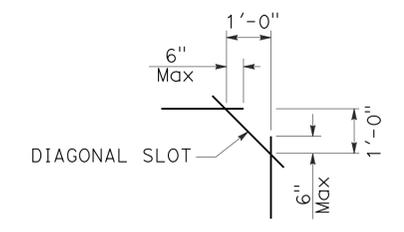
WINDING DETAIL
SAWCUT DETAIL
TYPE D LOOP DETECTOR CONFIGURATION



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
04	Son	1	29.9	61	64

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

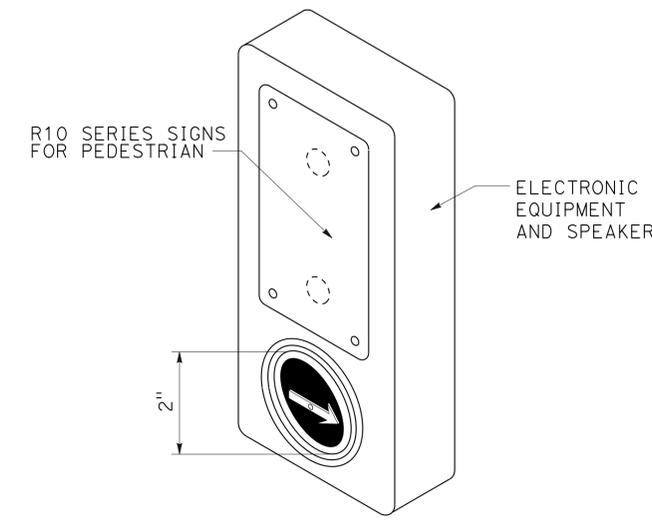
July 19, 2013
 PLANS APPROVAL DATE

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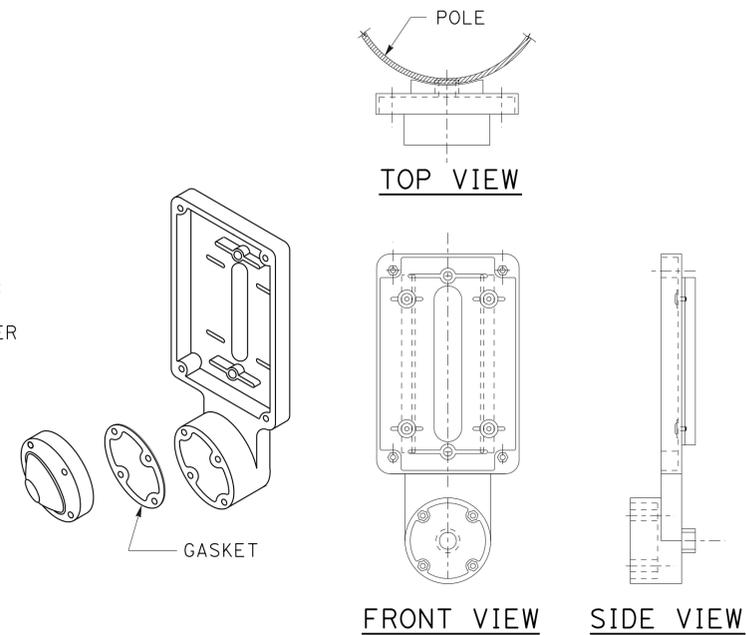
TO ACCOMPANY PLANS DATED 9-30-13

NOTES:

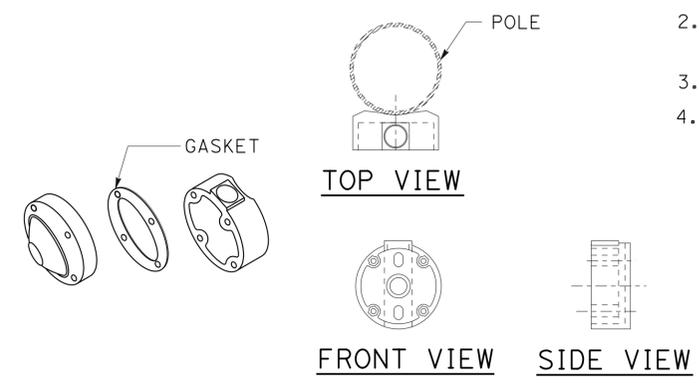
1. Back casting shape to fit curvature of pole.
2. Provide cover fitting for top of post, when PBA is mounted on push button assembly post.
3. Install push button on crosswalk side of standard.
4. Use R10 series regulatory signs and plaques for pedestrian and bicycle facilities.



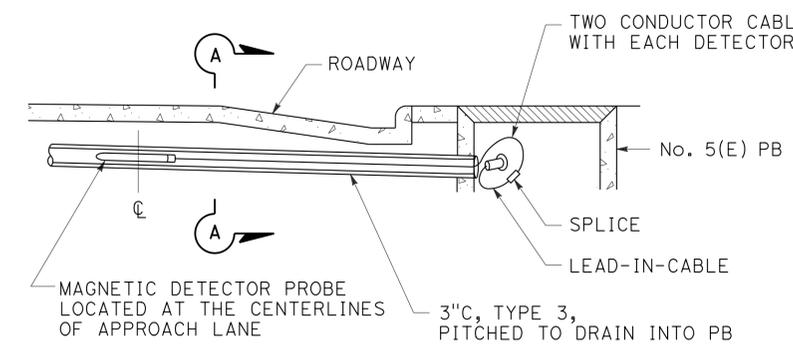
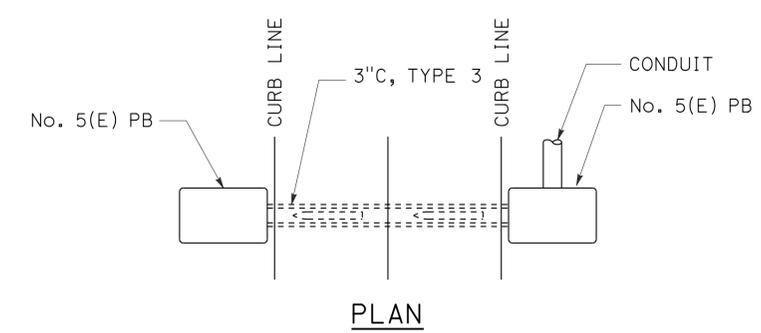
ACCESSIBLE PEDESTRIAN SIGNAL
DETAIL A
 (See note 1 to 4)



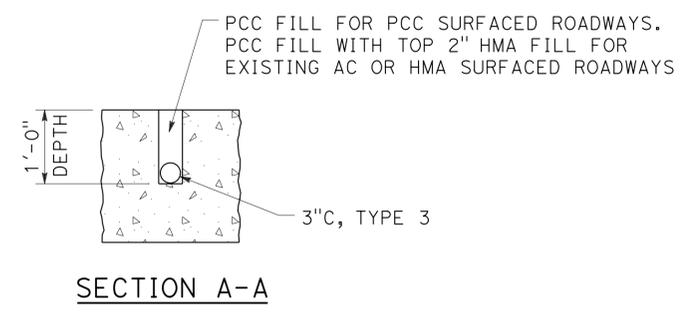
TYPE B PUSH BUTTON ASSEMBLY
DETAIL B
 (See note 1 to 4)



TYPE C PUSH BUTTON ASSEMBLY
DETAIL C
 (See note 1 to 4)



MAGNETIC VEHICLE DETECTOR
INSTALLATION DETAILS
DETAIL D



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS
(ACCESSIBLE PEDESTRIAN SIGNAL,
PUSH BUTTON ASSEMBLIES AND
MAGNETIC VEHICLE DETECTOR)

NO SCALE

RSP ES-5C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5C DATED MAY 20, 2011 - PAGE 450 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-5C

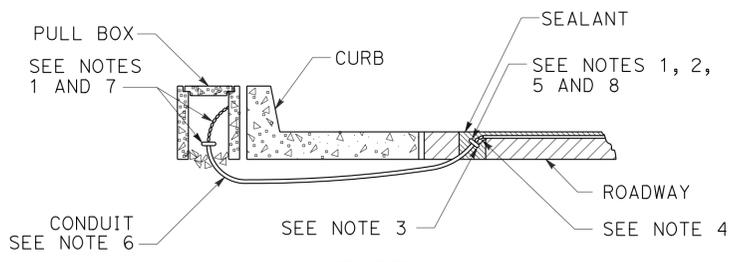
2010 REVISED STANDARD PLAN RSP ES-5C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	1	29.9	62	64

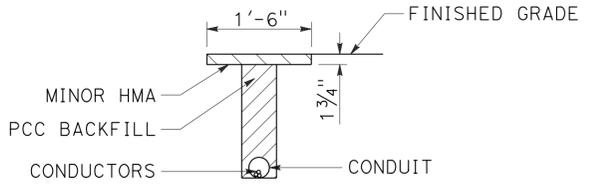
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

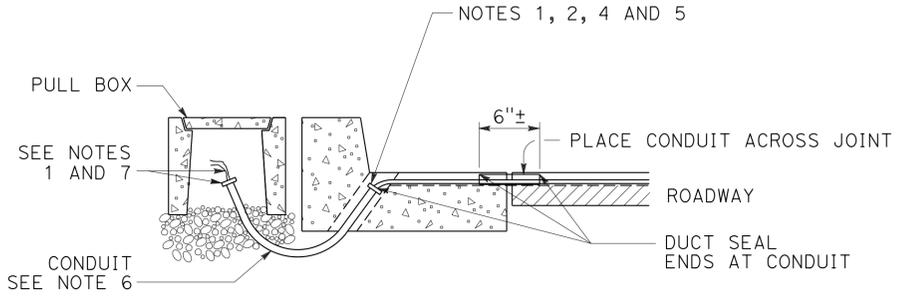
TO ACCOMPANY PLANS DATED 9-30-13



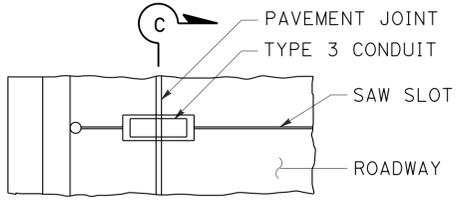
**TYPE A
CURB TERMINATION DETAIL**



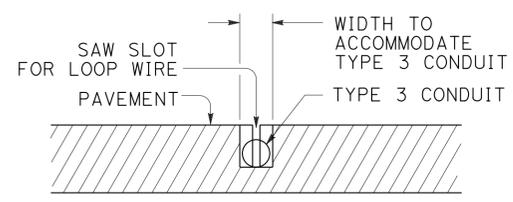
**"T" TRENCH
DETAIL 1**



CROSS SECTION

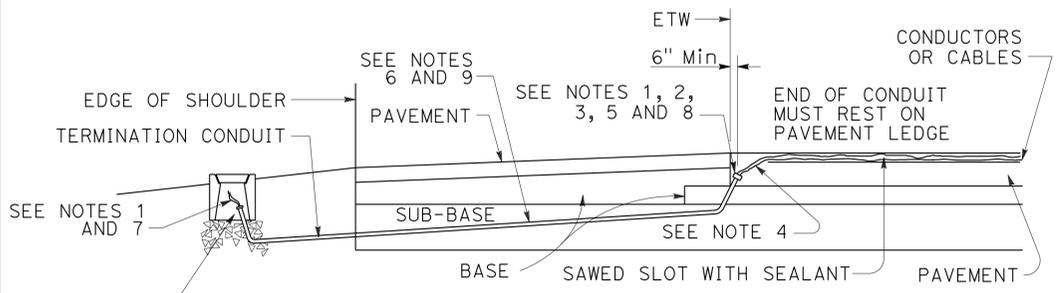


PLAN VIEW

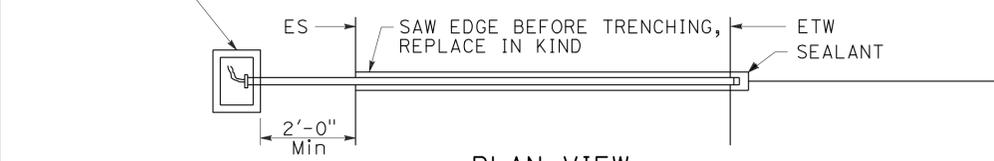


SECTION C-C

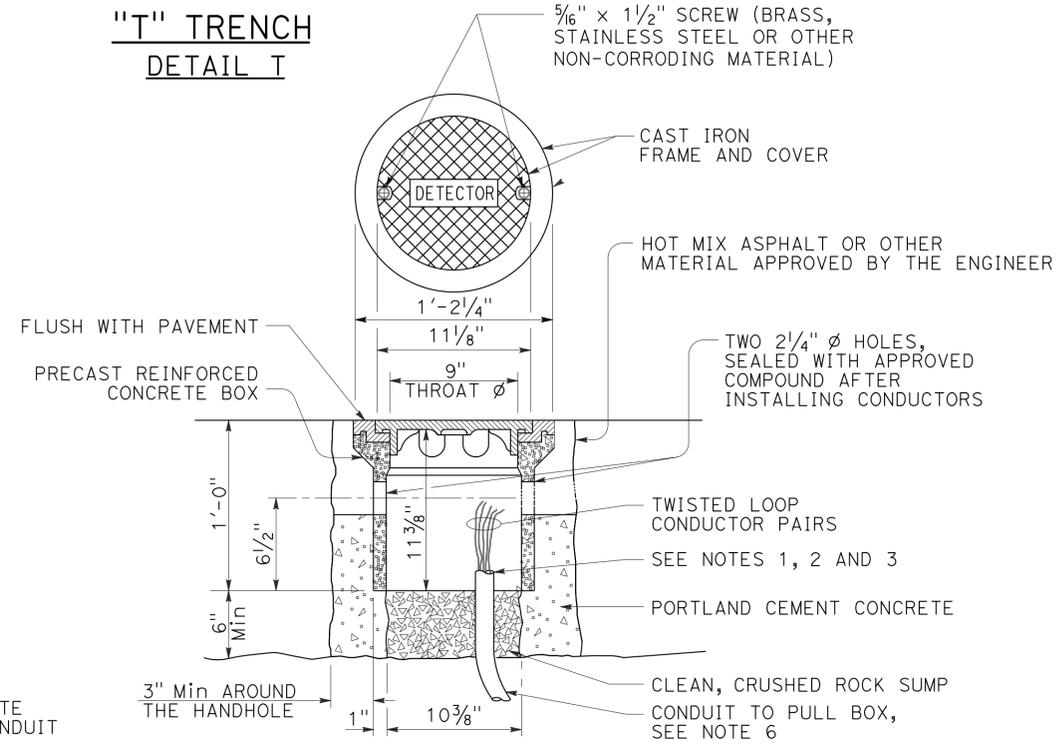
**TYPE B
CURB TERMINATION DETAIL**



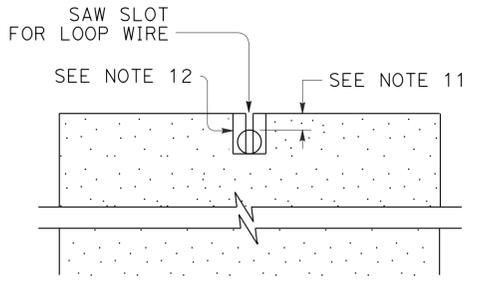
CROSS SECTION



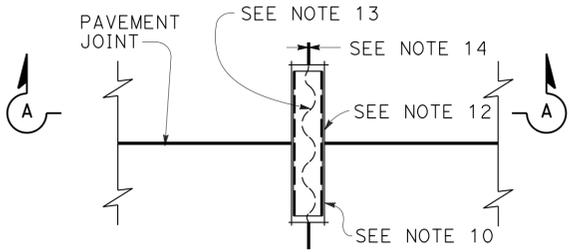
**PLAN VIEW
SHOULDER TERMINATION DETAILS**



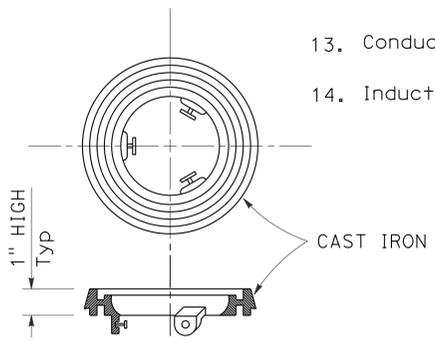
DETECTOR HANDHOLE DETAIL



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.
- | | |
|-----------------|-----------------|
| Conduit size | Loop conductors |
| 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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(CURB TERMINATION
AND HANDHOLE)**
NO SCALE

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

REVISED STANDARD PLAN RSP ES-5D

2010 REVISED STANDARD PLAN RSP ES-5D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	29.9	63	64

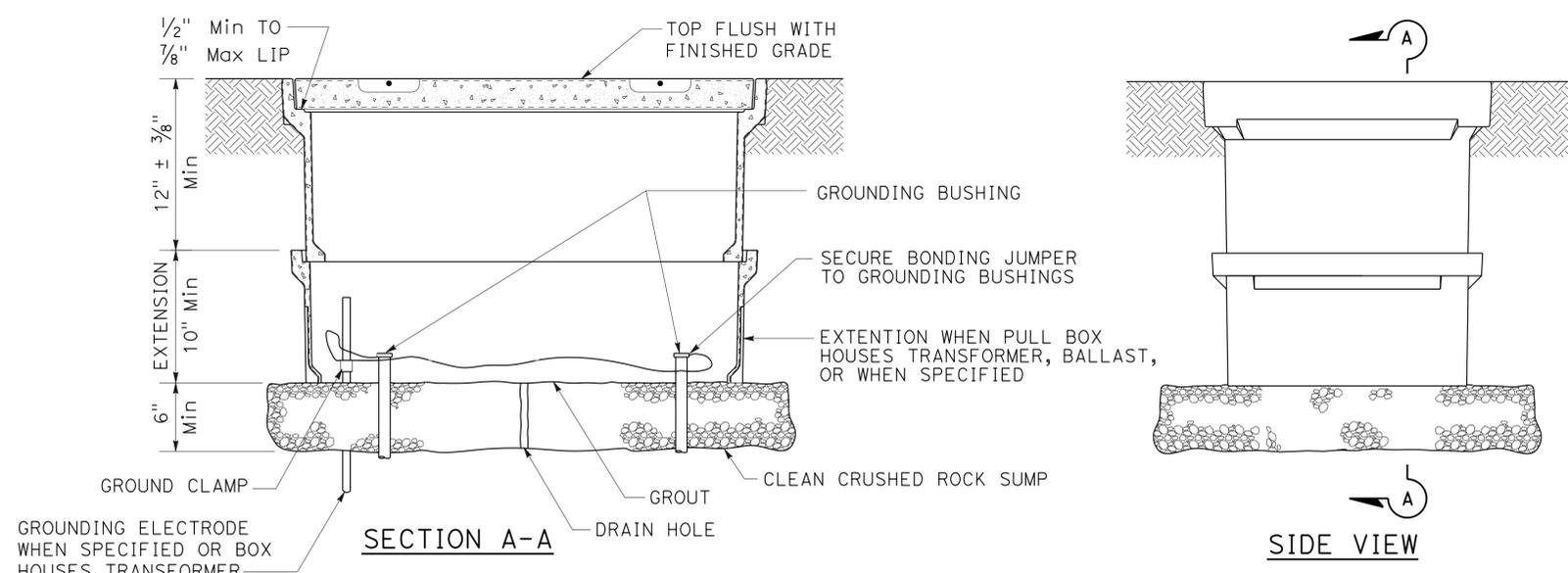
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

July 19, 2013
 PLANS APPROVAL DATE

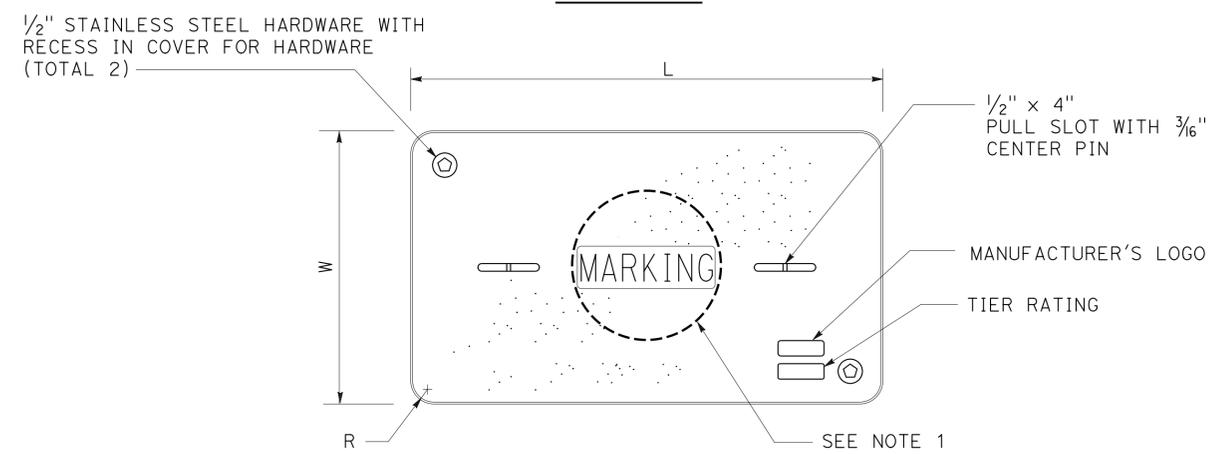
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TO ACCOMPANY PLANS DATED 9-30-13

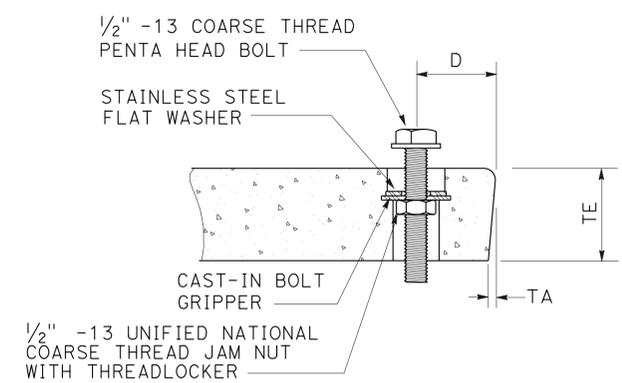
2010 REVISED STANDARD PLAN RSP ES-8A



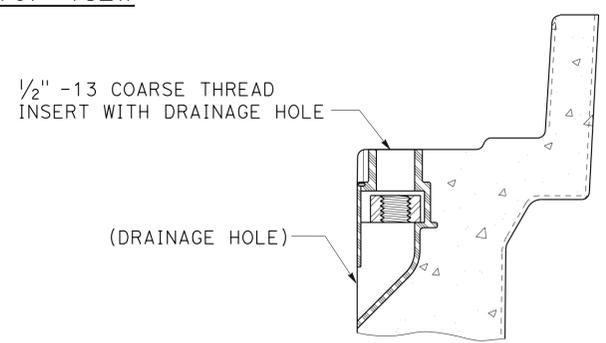
INSTALLATION DETAILS
DETAIL A



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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Son	1	29.9	64	64

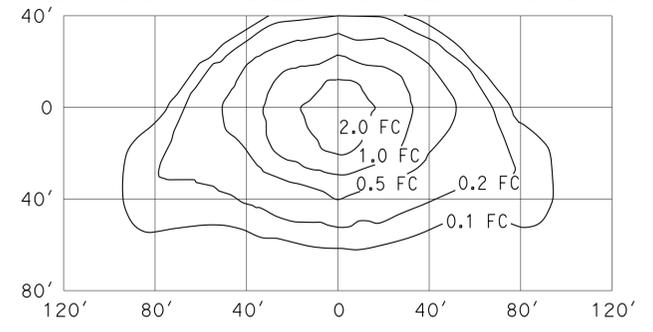
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

July 19, 2013
 PLANS APPROVAL DATE

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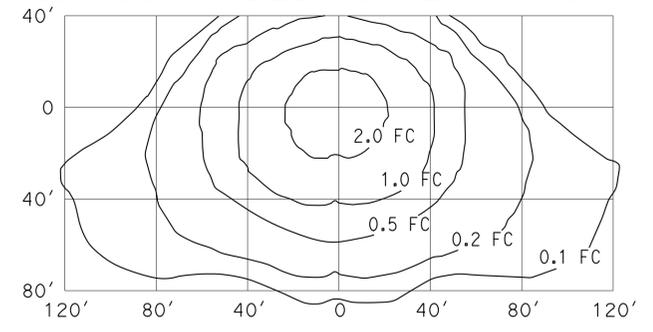
TO ACCOMPANY PLANS DATED 9-30-13

ISOFOOTCANDLE CURVE - MINIMUM



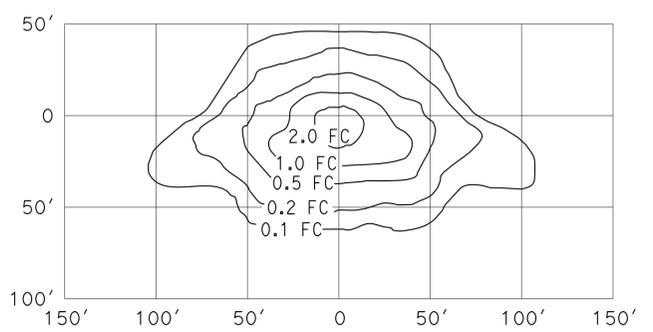
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 34' Mounting Height
 Lamp operated at 22,000 lm
 200-W high pressure sodium lamp
 ANSI Designation S66

ISOFOOTCANDLE CURVE - MINIMUM



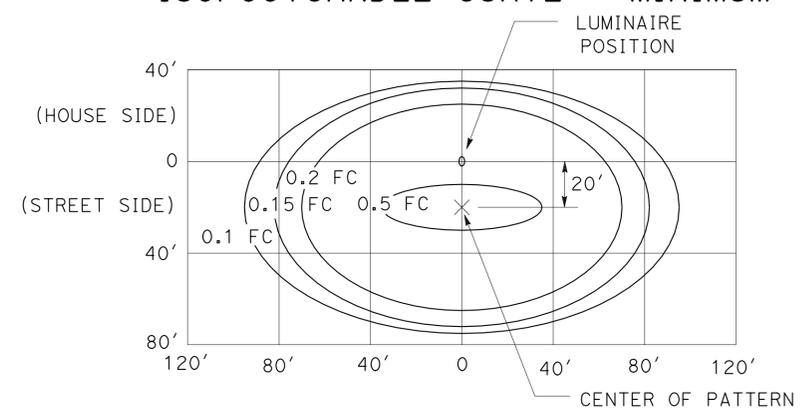
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 40' Mounting Height
 Lamp operated at 37,000 lm
 310-W high pressure sodium lamp
 ANSI Designation S67

ISOFOOTCANDLE CURVE - MINIMUM



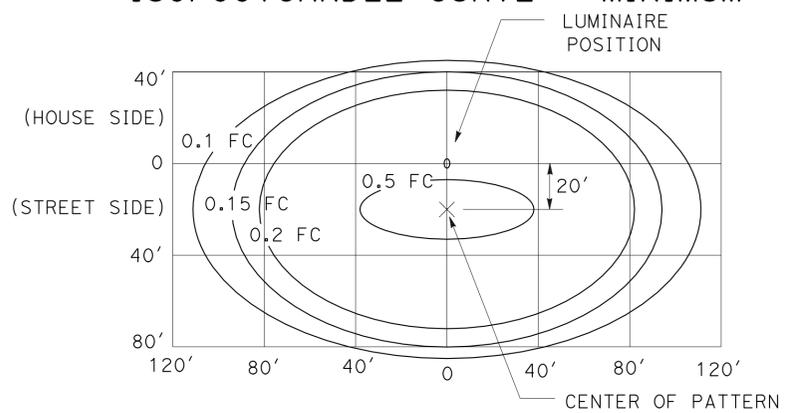
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 30' Mounting Height
 Lamp operated at 16,000 lm
 150-W high pressure sodium lamp
 ANSI Designation S55

ISOFOOTCANDLE CURVE - MINIMUM



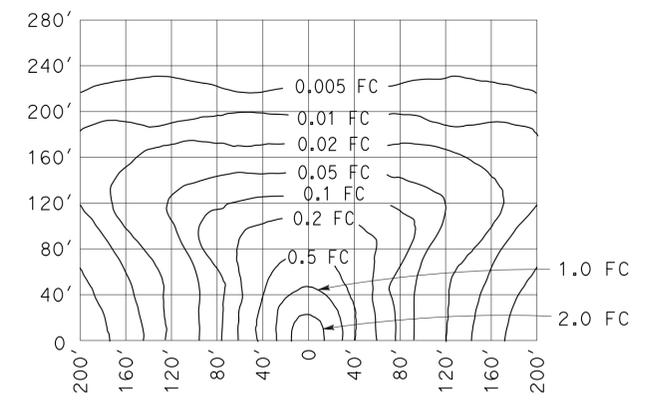
LED LUMINAIRE ROADWAY 1
 165-W at 34' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



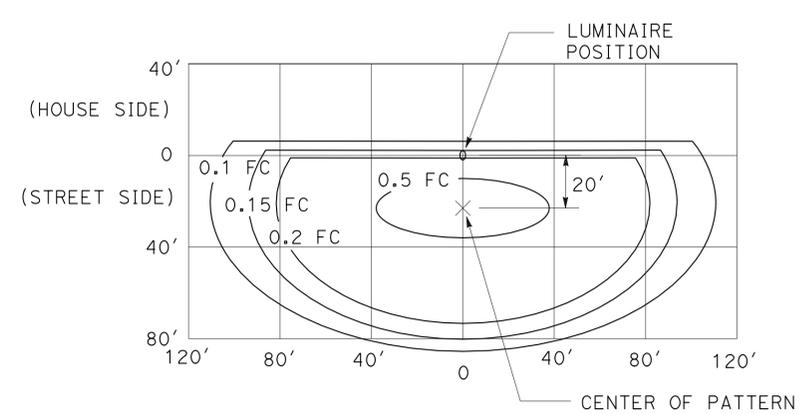
LED LUMINAIRE ROADWAY 2
 235-W at 40' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



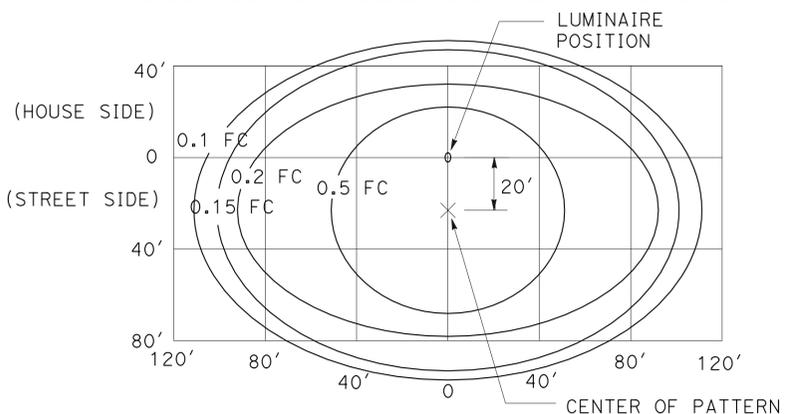
LOW PRESSURE SODIUM LUMINAIRE
 40' Mounting Height
 Lamp operated at 33,000 lm
 180-W low pressure sodium lamp

ISOFOOTCANDLE CURVE - MINIMUM



LED LUMINAIRE ROADWAY 3
 235-W at 40' Mounting Height
 with back side control

ISOFOOTCANDLE CURVE - MINIMUM



LED LUMINAIRE ROADWAY 4
 300-W at 40' Mounting Height

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE
 RSP ES-10A DATED JULY 19, 2013 SUPERSEDES RSP ES-10A DATED JULY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-10A