

INDEX OF PLANS

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

STATE OF CALIFORNIA **ACHSSTPG-P090(013)E**
 DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY
IN LOS ANGELES COUNTY
IN LOS ANGELES
FROM CENTINELA AVENUE UNDERCROSSING TO ROUTE 405

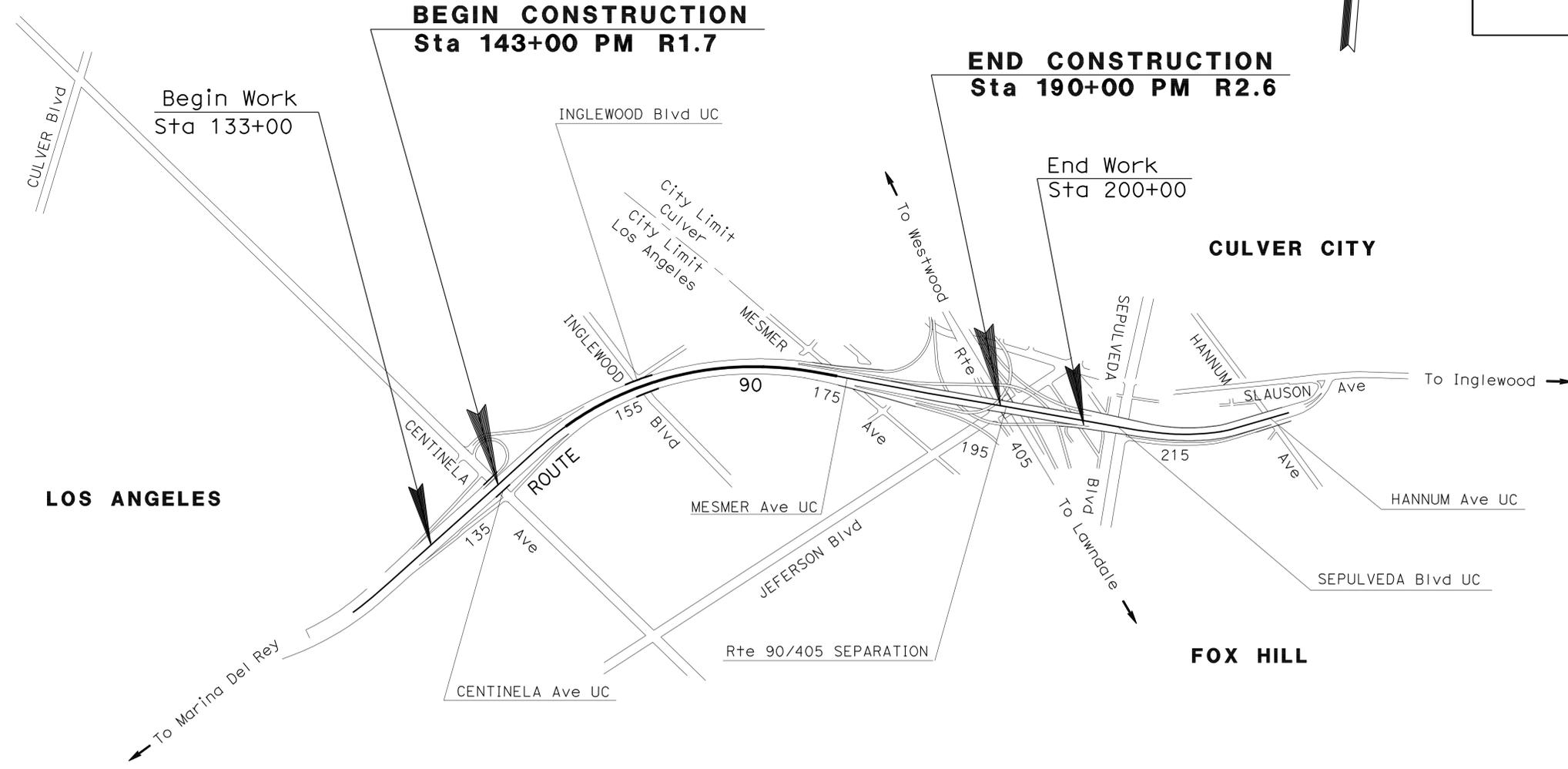
TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	1	83





LOCATION MAP



PROJECT MANAGER
 AHMED ABOU-ABDOU
 DESIGN ENGINEER
 SAIED MEHRANFARD


 PROJECT ENGINEER REGISTERED CIVIL ENGINEER
 DATE 06-10-11
August 22, 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.



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

NO SCALE

DATE PLOTTED => 11-JAN-2012
 TIME PLOTTED => 06:05
 LAST REVISION 05-10-11

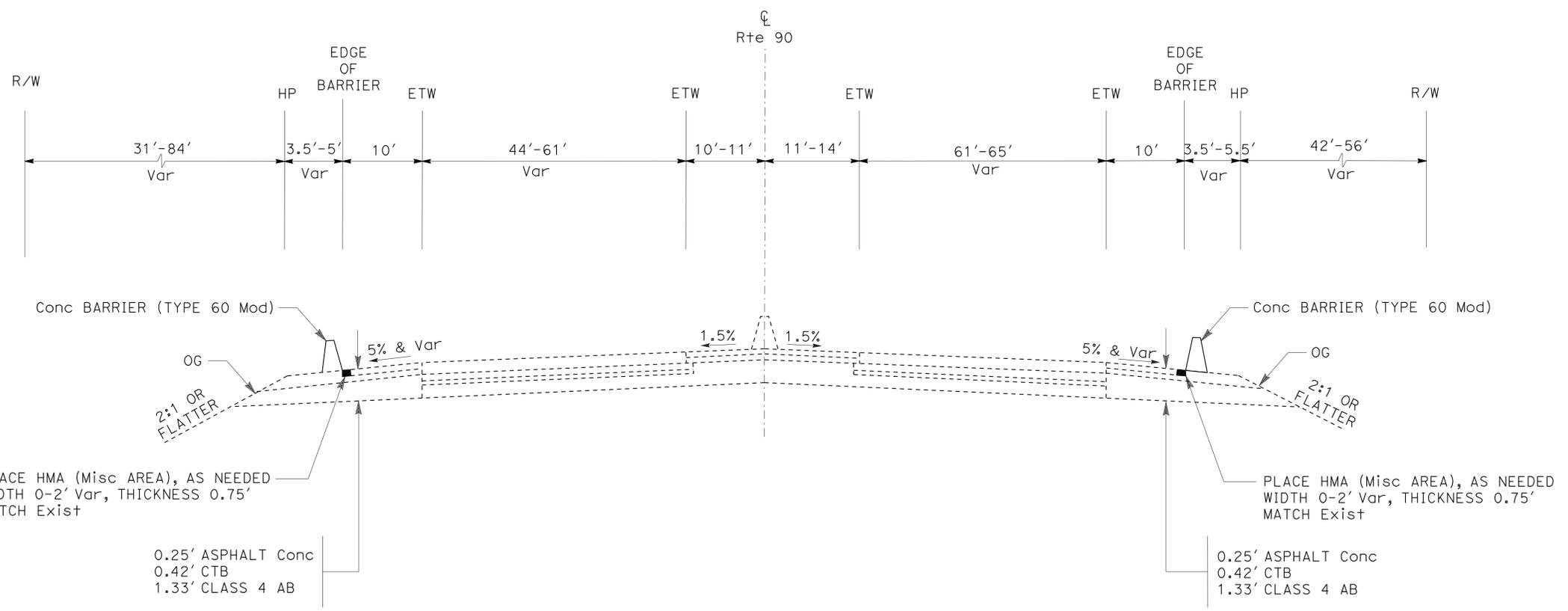
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	2	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 SAIED MEHRANFARD
 No. C 65290
 Exp 9/30/11
 STATE OF CALIFORNIA

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

NOTE:
FOR "EDGE OF BARRIER" TO "ETW" DETAILS, SEE SHEET C-1.



WESTBOUND
Sta 151+65.3 TO 154+65.4
Sta 158+55.5 TO 171+29.1

EASTBOUND
Sta 149+54.8 TO 156+11.9
Sta 158+44.2 TO 174+25.7

TYPICAL CROSS SECTION
NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN G

SALIM KHAFFAJI
 SAIED MEHRANFARD
 REVISOR BY DATE
 SAIED MEHRANFARD

SUSAN YEE
 FUNCTIONAL SUPERVISOR
 SUSAN YEE

SUSAN YEE
 FUNCTIONAL SUPERVISOR
 SUSAN YEE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN G

NOTES:

1. FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT DISTRICT OFFICE.
2. EXACT LOCATIONS OF DRAINAGE INLET PROTECTION TO BE DETERMINED BY THE ENGINEER.
3. SPACING OF BARRIER MARKERS TO MATCH SPACING OF RAISED PAVEMENT MARKERS ON THE ADJACENT EDGELINE DELINEATION.
4. FOR DETAILS ON CONCRETE BARRIER (TYPE 60 Mod) AND "100' TAPER TO Exist Br RAIL", SEE C-1.
5. FOR EXTENDED IRRIGATION CROSSOVERS, SEE PLANTING AND IRRIGATION PLAN SHEET PL-1 TO PL-3.
6. THE EXACT LOCATION OF BURIED SITE TO BE DETERMINED BY THE ENGINEER.

LEGEND:

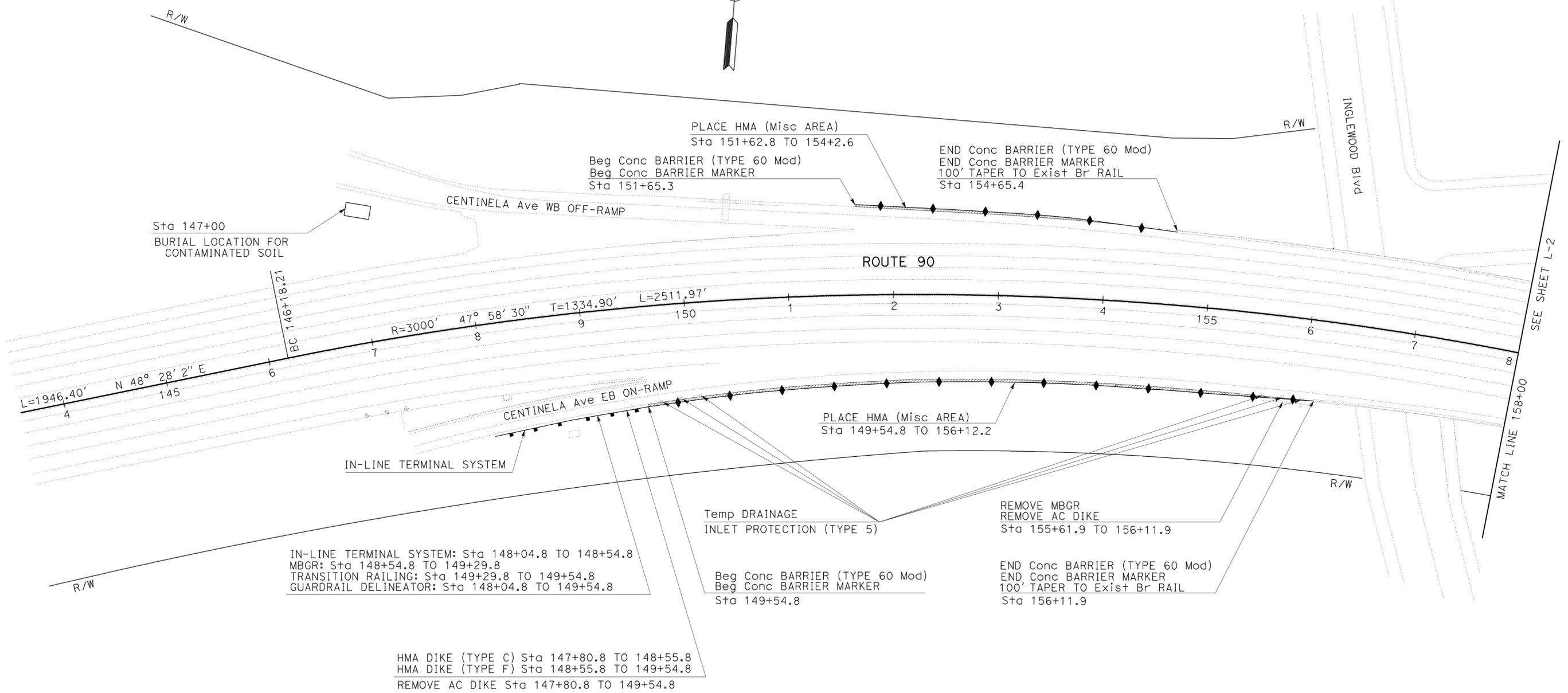
////// HOT MIX ASPHALT



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	3	83

REGISTERED CIVIL ENGINEER DATE 06-10-11
 SAIED MEHRANFARD
 No. C 65290
 Exp. 9/30/11
 PLANS APPROVAL DATE 8-22-11

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LAYOUT
 SCALE: 1" = 50'

L-1

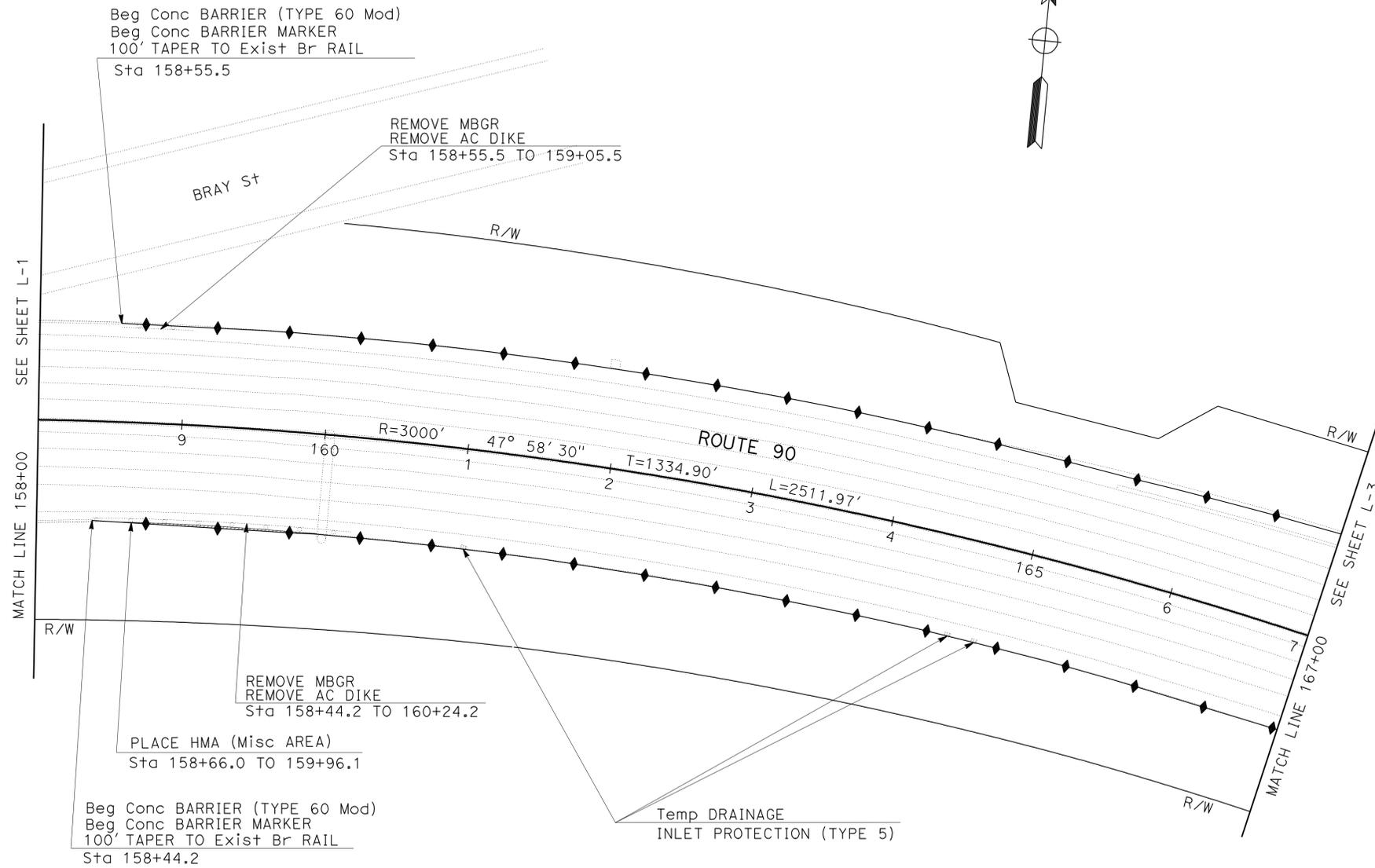
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	4	83

06-10-11
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 8-22-11
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REGISTERED PROFESSIONAL ENGINEER
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 No. C 65290
 Exp 9/30/11
 STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN G
FUNCTIONAL SUPERVISOR	SUSAN YEE
CALCULATED/DESIGNED BY	CHECKED BY
SALIM KHAFFAJI	SAIED MEHRANFARD
REVISED BY	DATE REVISED



LAYOUT
SCALE: 1" = 50'

L-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN G

FUNCTIONAL SUPERVISOR
 SUSAN YEE

CALCULATED/DESIGNED BY
 CHECKED BY

SALIM KHAFFAJI
 SAIED MEHRANFARD

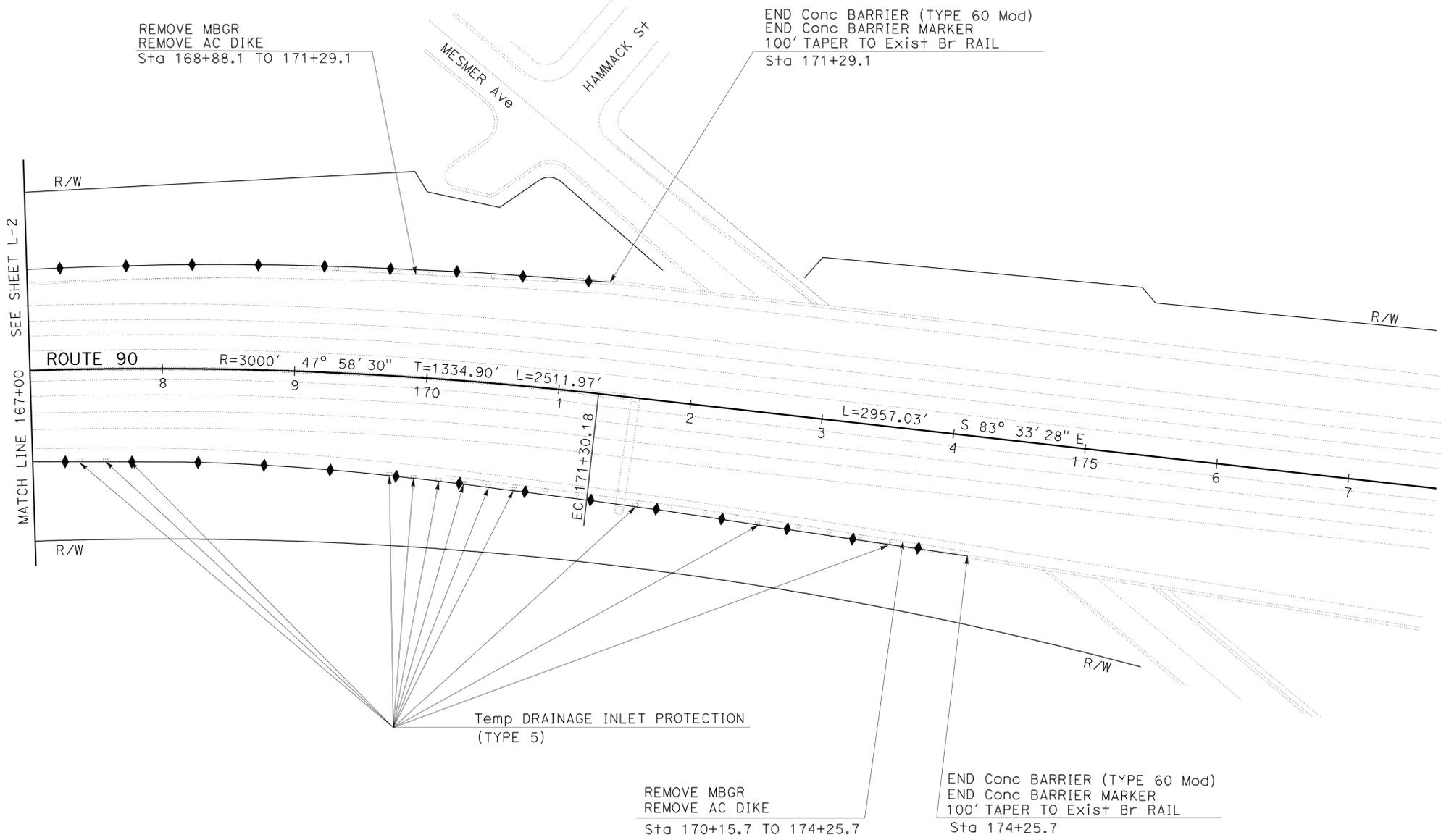
REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	5	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
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REGISTERED PROFESSIONAL ENGINEER
 SAIED MEHRANFARD
 No. C 65290
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LAYOUT
 SCALE: 1" = 50'

L-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	7	83

<i>H.P. Patel</i>	06-10-11
REGISTERED CIVIL ENGINEER	DATE
8-22-11	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
HITESH PATEL
No. C55984
Exp. 12-31-12
CIVIL
STATE OF CALIFORNIA

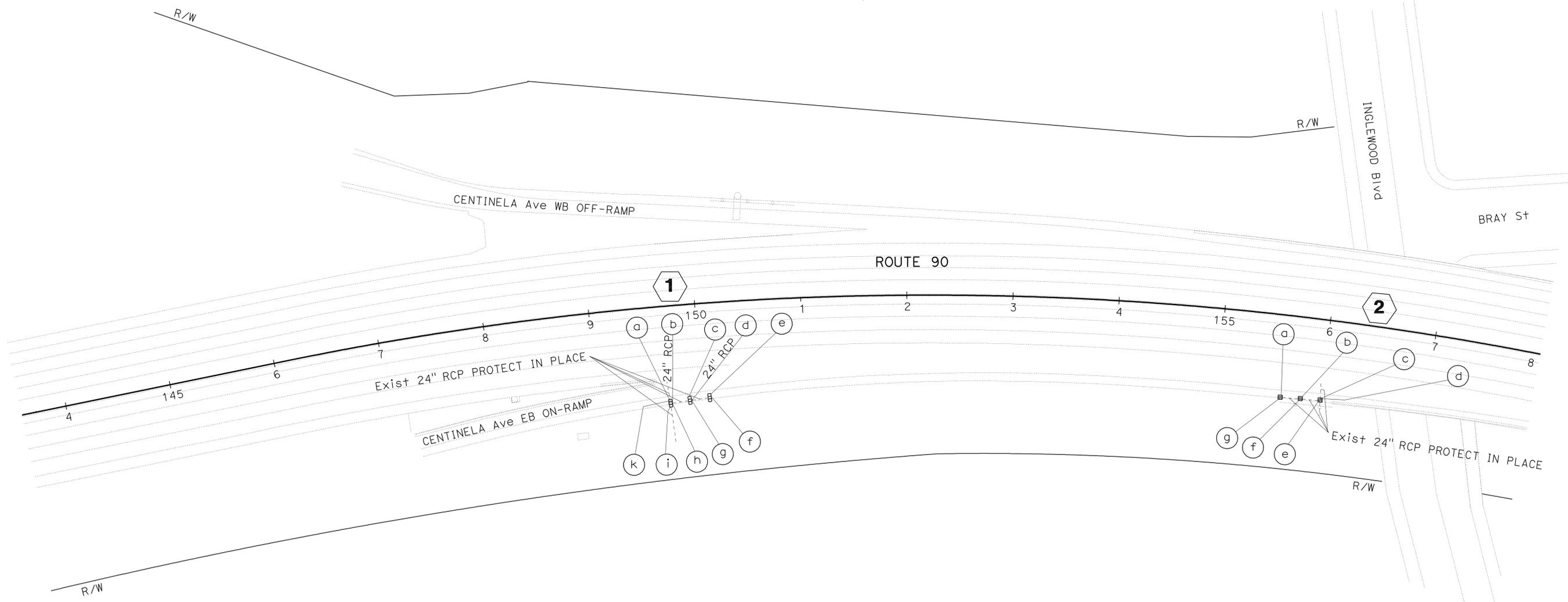
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

ALL REMAINING EXISTING DRAINAGE INLETS TO BE PROTECTED IN PLACE.

LEGEND:

-  DRAINAGE SYSTEM No.
-  DRAINAGE UNIT No.



DRAINAGE PLAN

SCALE: 1" = 50'

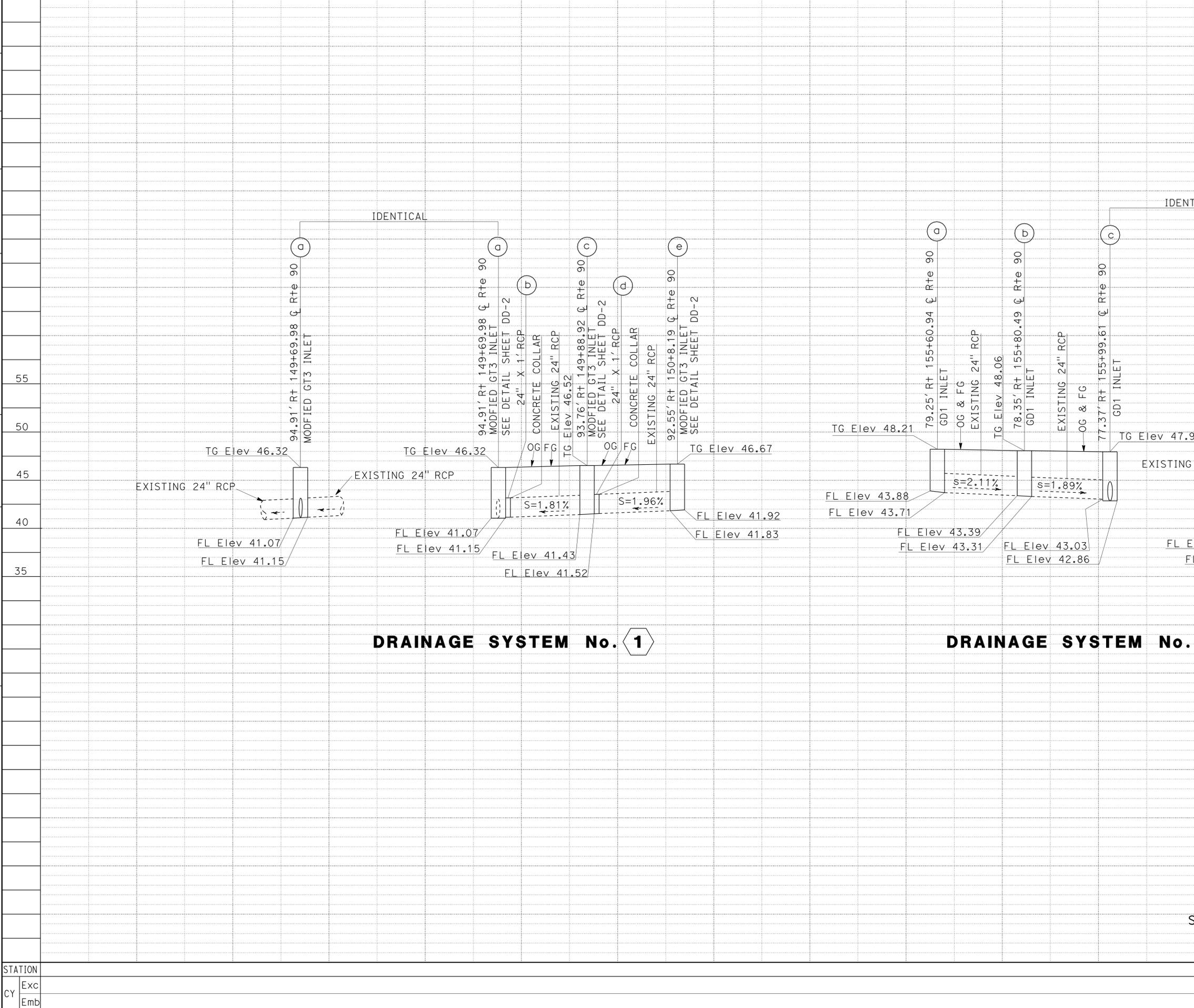
THIS PLAN IS ACCURATE FOR DRAINAGE WORK ONLY

D-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans HYDRAULICS	TAM NGUYEN	HITESH PATEL KIRIT BHATT	HITESH PATEL KIRIT BHATT
		CHECKED BY	DATE REVISED



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS
 FUNCTIONAL SUPERVISOR: TAM NGUYEN
 CALCULATED/DESIGNED BY: HITESH PATEL
 CHECKED BY: KIRIT BHATT
 REVISIONS: 55, 50, 45, 40, 35



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	8	83

Hitesh Patel
 REGISTERED CIVIL ENGINEER
 No. C55984
 Exp. 12-31-12
 CIVIL

06-10-11 DATE
 8-22-11 PLANS APPROVAL DATE

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DRAINAGE PROFILE

SCALE: Horiz 1" = 20'
 Vert 1" = 5'

DP-1

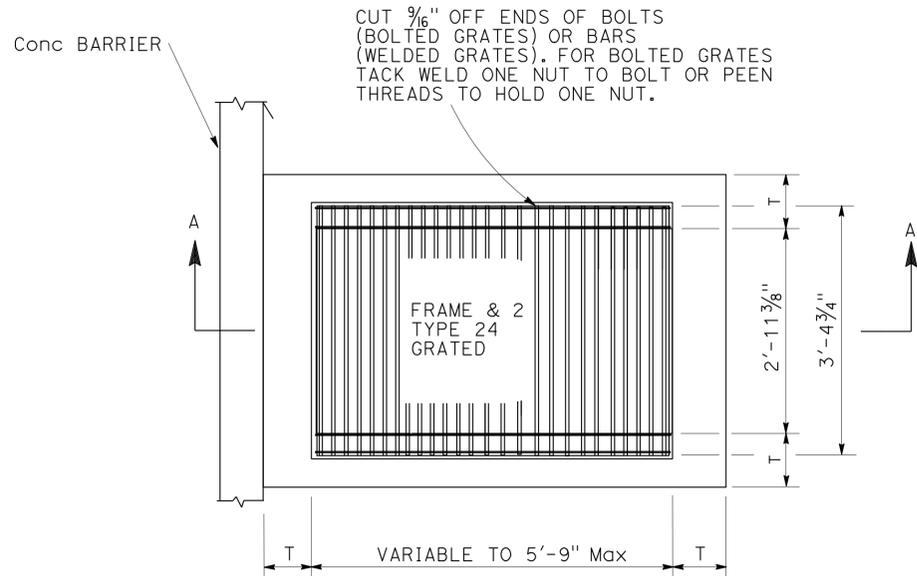
STATION	Exc	TOTAL
CY	Emb	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	9	83

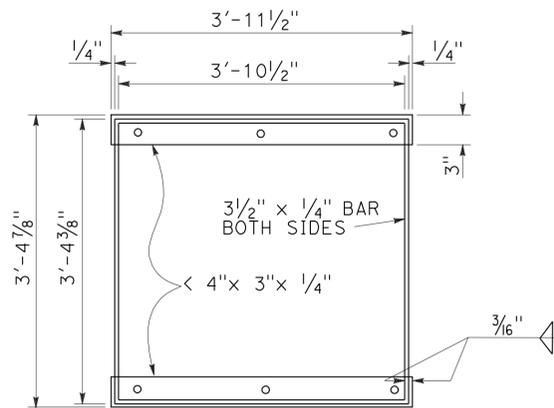
06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

HITESH PATEL
 No. C55984
 Exp. 12-31-12
 CIVIL

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PLAN

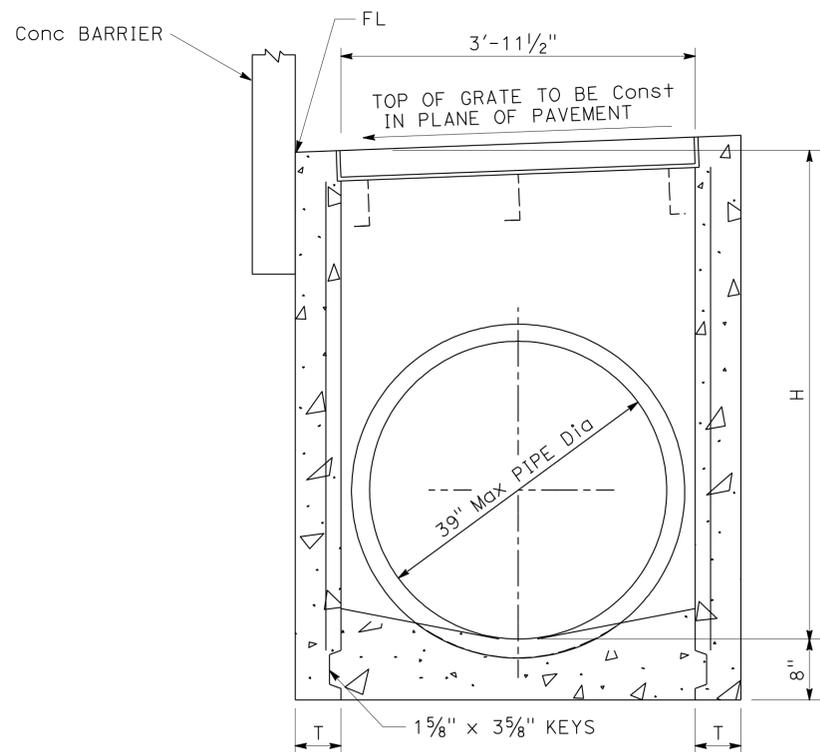


GRATE FRAME DETAIL

MISCELLANEOUS IRON AND STEEL

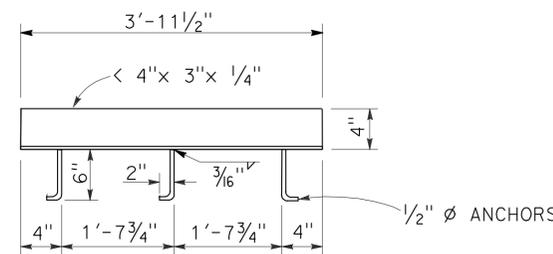
INLET TYPE	GRATE TYPE	WEIGHT
GD-1	24-12	580
	24-10C	379
	24-10S	433
	24-12X	453
	24-13	351

H	T
8'-0" OR LESS	6"
8'-1" TO 20'-0"	8"



SECTION A-A
(FOR PIPE DIAMETERS LESS THAN 39")

GD-1



ANCHOR PLACEMENT DETAIL

GENERAL NOTES:

- "H" IS THE DIFFERENCE IN ELEVATION BETWEEN THE OUTLET PIPE FLOW AND THE FLOW LINE OF THE GRATES.
- STEPS-NONE REQUIRED WHEN "H" IS 3'-6" OR LESS. INSTALL ONE STEP 16"± ABOVE FLOOR WHEN "H" IS MORE THEN 3'-6" AND LESS THAN 5'-0". WHERE "H" IS MORE THAN 5'-0" STEPS SHALL BE EVENLY PLACED @ 12"± OF THE TOP OF THE BOX. PLACE STEPS IN WALL WITHOUT PIPE OPENINGS. SEE STANDARD PLAN D-74C FOR STEPS DETAIL.
- PIPE(S) CAN BE PLACED IN ANY WALL.
- REINFORCING STEEL NOT REQUIRED IN WALLS WHEN H=6' OR LESS.
- REINFORCING STEEL IN WALLS SHALL BE #4 BARS @ 18"± CENTERS PLACES 1 1/2" CLEAR TO INSIDE OF BOX.
- WHEN CONCRETE CURB IS USED THE CURB SHALL BE MONOLITHICALLY CONSTRUCTED WITH THE INLET.

DRAINAGE DETAILS

SCALE: 1" = 50'

DD-1

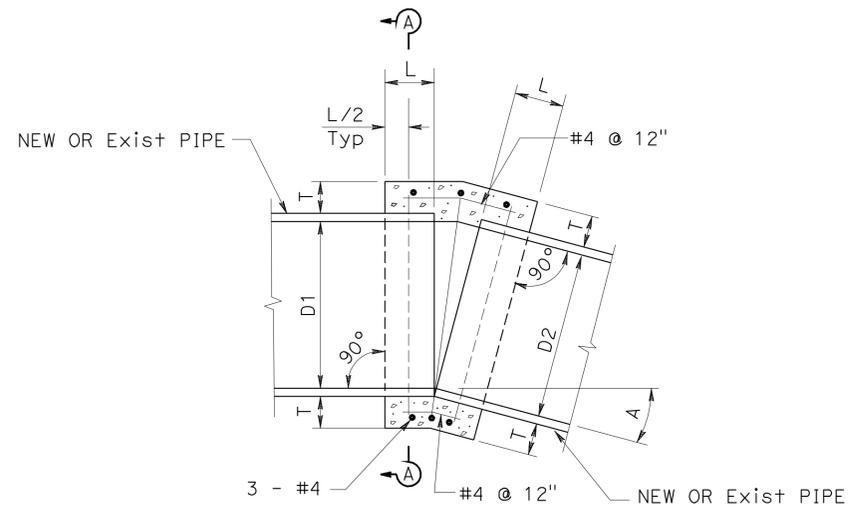
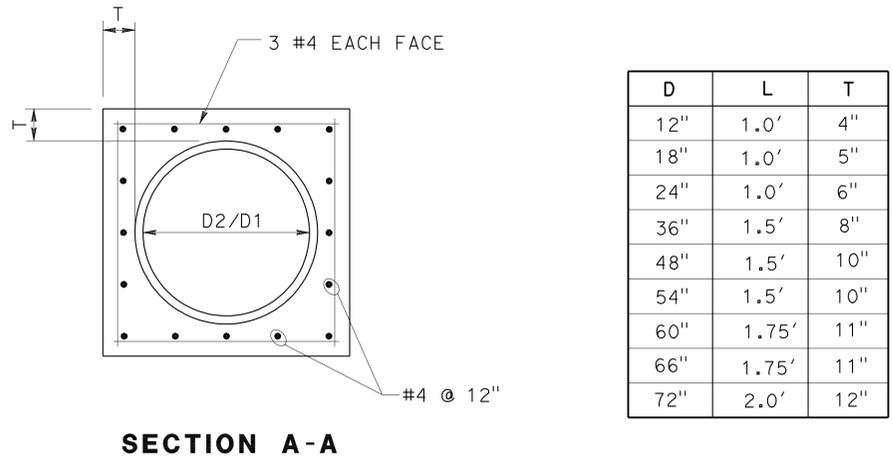
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans
 HYDRAULICS
 FUNCTIONAL SUPERVISOR
 TAM NGUYEN
 CALCULATED/DESIGNED BY
 CHECKED BY
 HITESH PATEL
 KIRIT BHATT
 REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	10	83

Hitesh Patel 06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

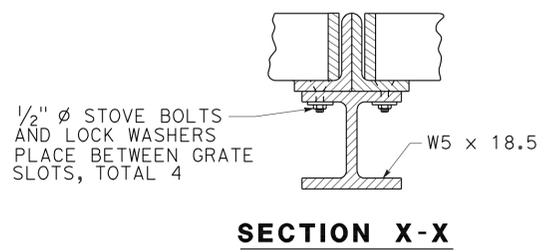
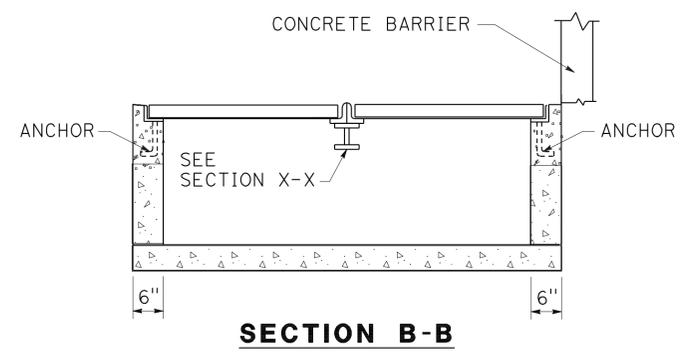
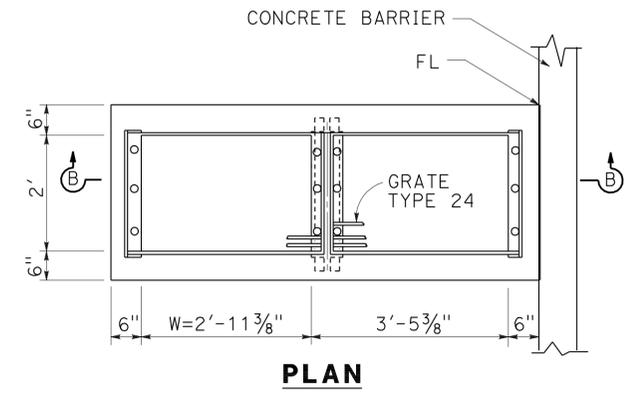
HITESH PATEL
 No. C55984
 Exp. 12-31-12
 CIVIL

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CONCRETE COLLAR

- NOTES FOR CONCRETE COLLAR:**
- WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR L & T SHALL BE THOSE OF THE LARGER PIPE D=D1 OR D2 WHICHEVER IS GREATER.
 - FOR PIPE SIZE NOT LISTED USE NEXT LARGER SIZE.
 - OMIT REINFORCING ON PIPES 24" AND LESS IN DIAMETER AND IN ALL PIPES WHERE ANGLE A IS LESS THAN 10°.
 - JOIN PIPES AT INVERT.
 - REINFORCEMENT SHALL BE PLACED 1/2" CLEAR FROM OUT SIDE DIAMETER OF PIPE.



MODIFIED GT3 INLET

FOR DRAINAGE SYSTEM ①, ② & ③
NOTE: FOR DETAILS NOT SHOWN AND NOTES SEE Std PLAN D74A

DRAINAGE DETAILS

SCALE: 1" = 50'

DD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 HITESH PATEL
 KIRIT BHATT
 TAM NGUYEN
 HYDRAULICS

ABBREVIATIONS:
 S = STANDARD JOINT TYPE
 Bet = BETWEEN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	11	83

 06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HITESH PATEL
 No. C55984
 Exp. 12-31-12
 CIVIL
 STATE OF CALIFORNIA

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DRAINAGE SYSTEM NUMBER	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MISCELLANEOUS IRON AND STEEL	FRAME & GRATE (24-12)	24" REINFORCED CONCRETE PIPE	REMOVE INLET	REMOVE CULVERT	PIPE JOINT CLASSIFICATION	MAXIMUM COVER	DESCRIPTION	STATION	DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM NUMBER	DRAINAGE UNIT
1	a	5.25	2.52	652	2						MODIFIED GT3 INLET	94.91' Rt 149+69.98 C Rte 90	D-1	1	a
	b					1			s	3.17	24" RCP	Bet 94.91' Rt 149+69.98 to 91.33' Rt 149+71.81 C Rte 90	D-1		b
	c	5.09	2.47	652	2						MODIFIED GT3 INLET	93.76' Rt 149+88.92 C Rte 90	D-1		c
	d					1			s	3.09	24" RCP	Bet 93.76' Rt 149+88.92 to 90.04' Rt 149+91.15 C Rte 90	D-1		d
	e	4.84	2.38	652	2						MODIFIED GT3 INLET	92.55' Rt 150+8.19 C Rte 90	D-1		e
	f						1				REMOVE INLET	90.24' Rt 150+8.54 C Rte 90	D-1		f
	g						1				REMOVE INLET	91.47' Rt 149+89.22 C Rte 90	D-1		g
	h						1				REMOVE INLET	92.76' Rt 149+69.87 C Rte 90	D-1		h
	i							2.2			REMOVE CULVERT	Bet 92.76' Rt 149+69.86 to 94.96' Rt 149+69.98 C Rte 90	D-1		i
	k							2.6			REMOVE CULVERT	Bet 90.17' Rt 149+69.68 to 87.59' Rt 149+69.45 C Rte 90	D-1		k
2	a	4.5	1.76	580	2						GD1 INLET	79.25' Rt 155+60.94 C Rte 90	D-1	2	a
	b	4.75	1.86	580	2						GD1 INLET	78.35' Rt 155+80.49 C Rte 90	D-1		b
	c	5.08	1.95	580	2						GD1 INLET	77.37' Rt 155+99.61 C Rte 90	D-1		c
	d							1.4			REMOVE CULVERT	Bet 74.89' Rt 155+99.60 to 73.41' Rt 155+99.48 C Rte 90	D-1		d
	e						1				REMOVE INLET	77.49' Rt 155+99.61 C Rte 90	D-1		e
	f						1				REMOVE INLET	78.01' Rt 155+80.46 C Rte 90	D-1		f
	g						1				REMOVE INLET	78.63' Rt 155+60.91 C Rte 90	D-1		g
SHEET TOTAL			12.94	3696	12	2	6	6.2							

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

DRAINAGE QUANTITIES

DQ-1

LAST REVISION DATE PLOTTED => 24-AUG-2011 11-19-10 TIME PLOTTED => 17:56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	12	83

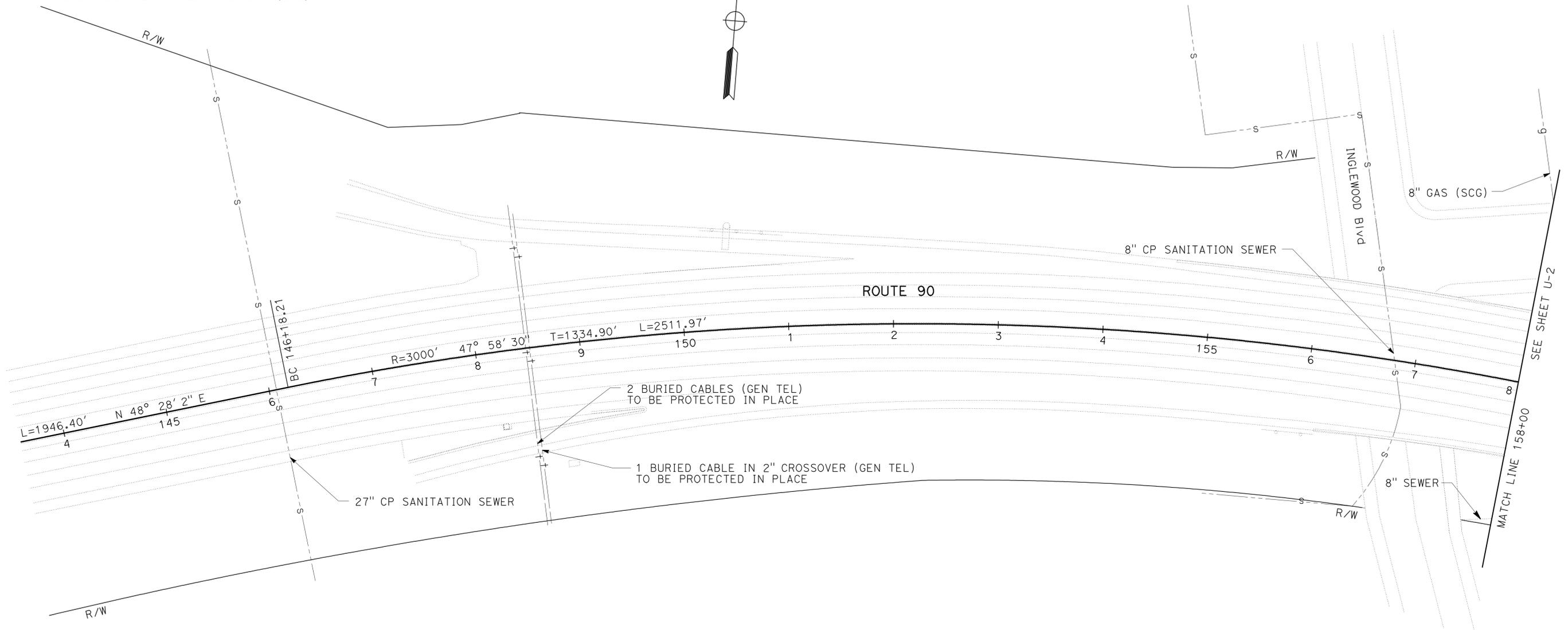
<i>Brandon Tran</i> 06-10-11 REGISTERED CIVIL ENGINEER DATE	
8-22-11 PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER BRANDON TRAN No. C 58283 Exp. 6-30-12 STATE OF CALIFORNIA

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

NOTES:

- FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
- LOCATIONS OF UTILITY FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- UTILITY OWNERSHIP ON THIS PROJECT:
 TELEPHONE - GENERAL TELEPHONE (GEN TEL)
 GAS - SOUTHERN CALIFORNIA GAS (SCG)



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN DIVISION
FUNCTIONAL SUPERVISOR	CHRISTOPHER LE
CALCULATED/DESIGNED BY	CHECKED BY
BRANDON TRAN	CHRISTOPHER LE
REVISED BY	DATE REVISED

UTILITY PLAN

SCALE: 1" = 50'

U-1

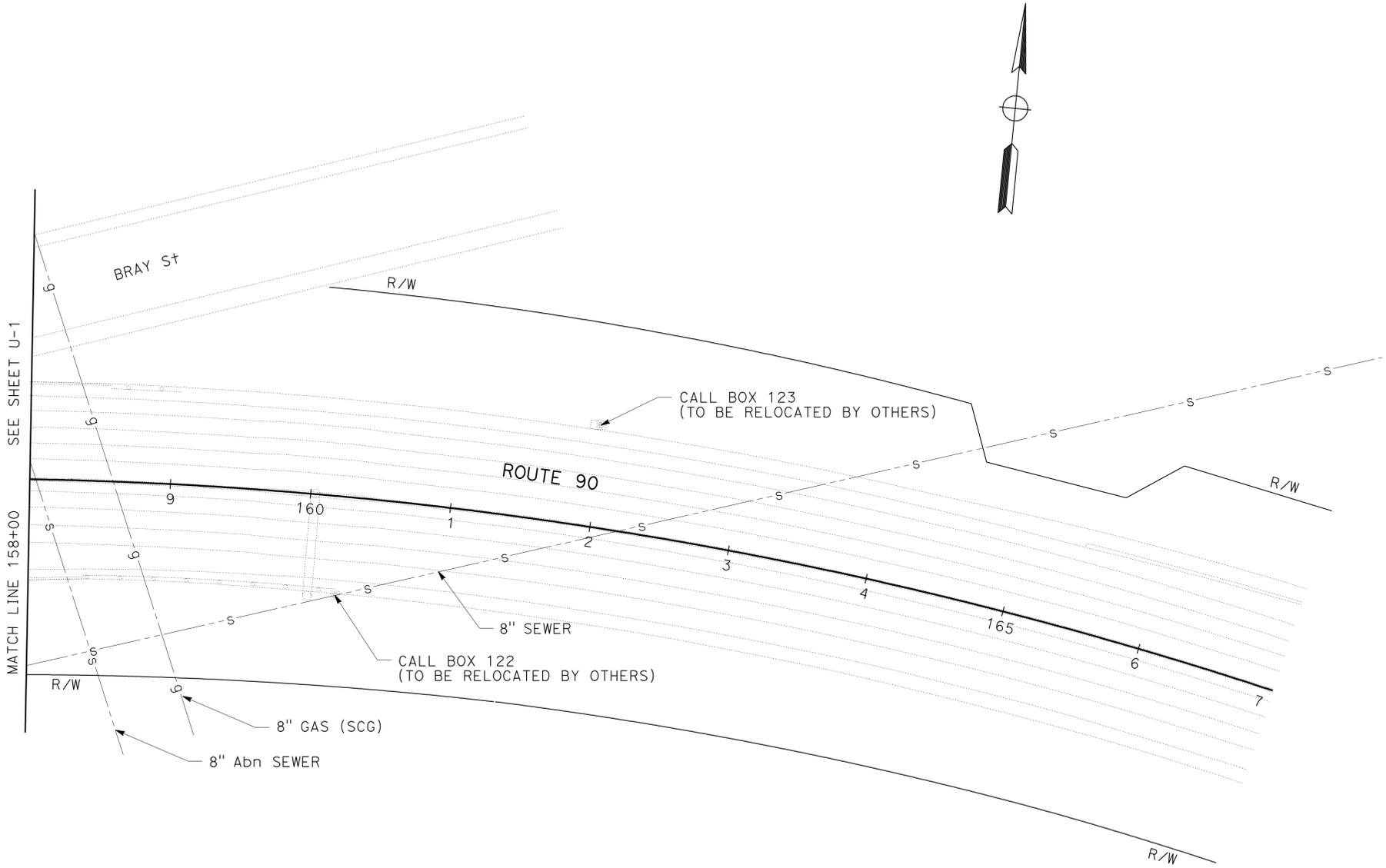
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	13	83

Brandon Tran 06-10-11
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 8-22-11
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REGISTERED PROFESSIONAL ENGINEER
 BRANDON TRAN
 No. C 58283
 Exp. 6-30-12
 STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	BRANDON TRAN	REVISOR	DATE
Caltrans	CHRISTOPHER LE	DESIGNER	
FUNCTIONAL SUPERVISOR	CHRISTOPHER LE	CHECKED BY	
CALCULATED/DESIGNED BY		DESIGNED BY	
		REVISOR	
		DATE	



UTILITY PLAN

SCALE: 1" = 50'

U-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	14	83

06-10-11
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 8-22-11
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REGISTERED PROFESSIONAL ENGINEER
 SAIED MEHRANFARD
 No. C 65290
 Exp 9/30/11
 STATE OF CALIFORNIA

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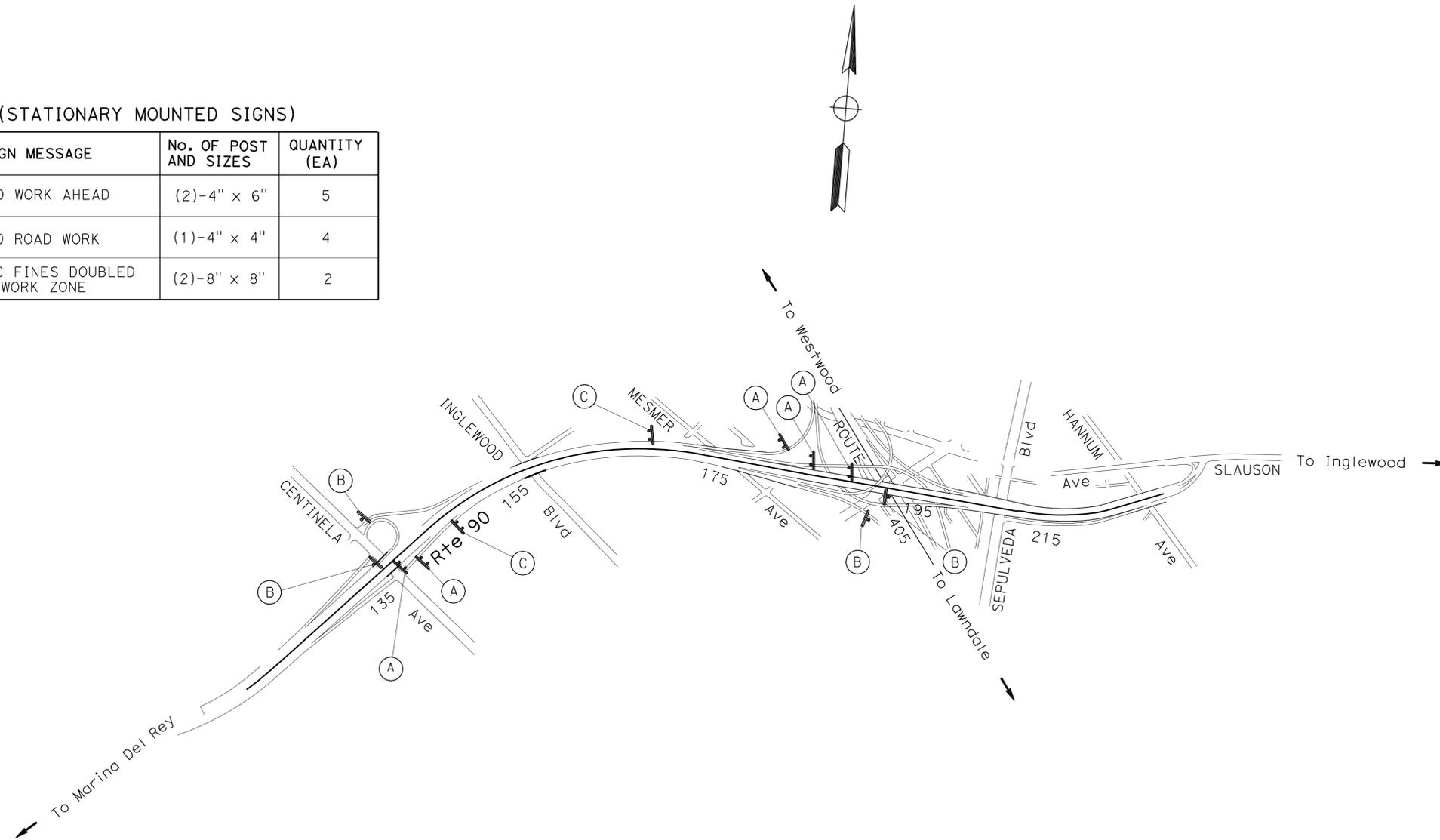
- SIGN LOCATION SHOWN ARE APPROXIMATE, EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER
- FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS, SEE SHEET THQ-1.

LEGEND:

- ⌄ CONSTRUCTION AREA SIGN 2 POST, STATIONARY MOUNTED
- ⌄ CONSTRUCTION AREA SIGN 1 POST, STATIONARY MOUNTED
- ⊗ CONSTRUCTION AREA SIGN No.

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED SIGNS)

SIGN	TYPE	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZES	QUANTITY (EA)
⊗ A	W20-1	48" x 48"	ROAD WORK AHEAD	(2)-4" x 6"	5
⊗ B	G20-2	18" x 36"	END ROAD WORK	(1)-4" x 4"	4
⊗ C	C40A(CA)	144" x 60"	TRAFFIC FINES DOUBLED IN WORK ZONE	(2)-8" x 8"	2



CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGNS ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN G
 SUSAN YEE
 FUNCTIONAL SUPERVISOR
 CHECKED BY
 SAIED MEHRANFARD
 SALIM KHAFFAJI
 REVISOR BY
 DATE REVISOR

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	15	83
 REGISTERED CIVIL ENGINEER			06-10-11	DATE	
8-22-11 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>					

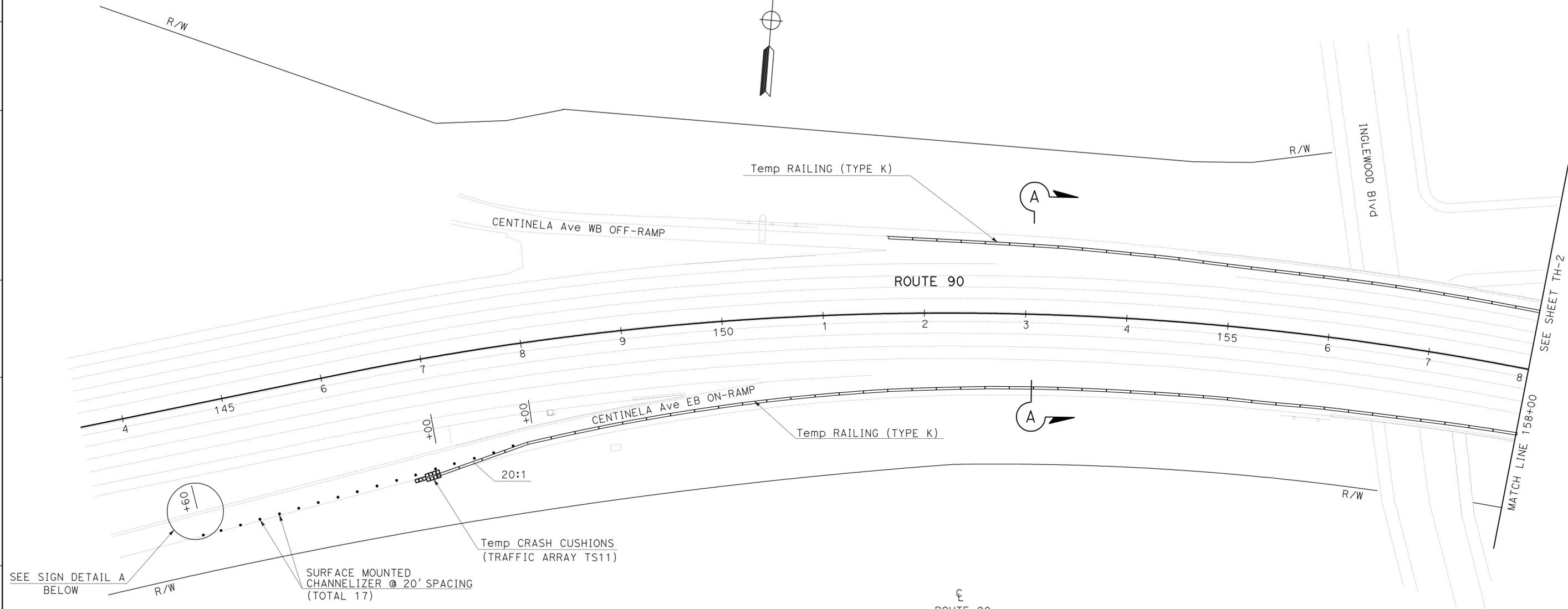


LEGEND:

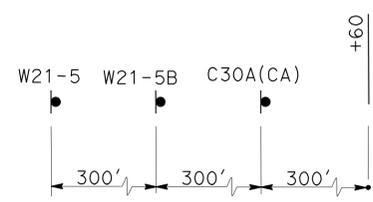
-  Temp CRASH CUSHION
-  Temp RAILING (TYPE K)
-  CHANNELIZER (SURFACE MOUNTED)
-  CONSTRUCTION AREA SIGN 1 POST, STATIONARY MOUNTED

NOTE:

1. LOCATION OF CONSTRUCTION AREA SIGN SHOWN, ARE APPROXIMATE, EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

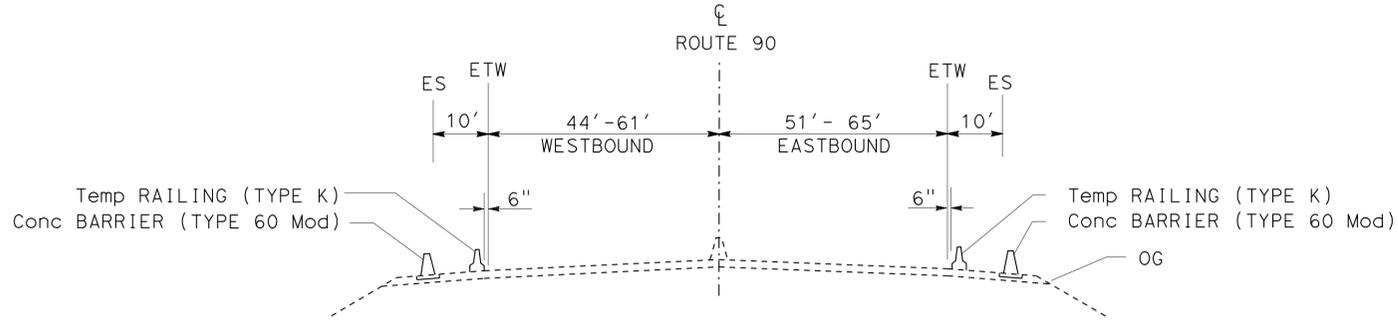


SEE SIGN DETAIL A BELOW



DETAIL A

NO SCALE



SECTION A-A

NO SCALE

TRAFFIC HANDLING PLAN

SCALE: 1" = 50'

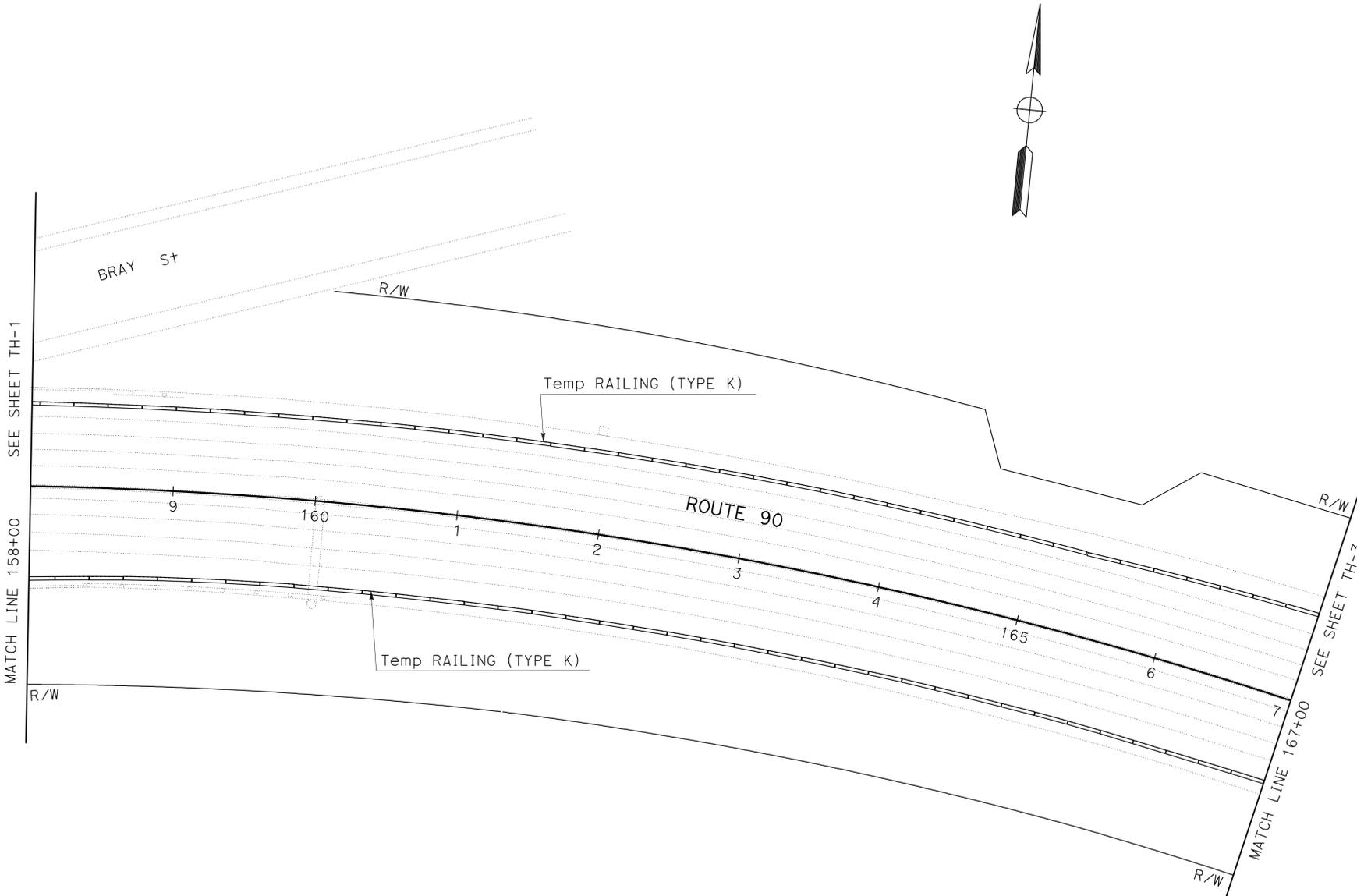
TH-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN G
FUNCTIONAL SUPERVISOR
SUSAN YEE
CALCULATED/DESIGNED BY
CHECKED BY
SALIM KHAFFAJI
SAIED MEHRANFARD
REVISED BY
DATE
REVISED
DATE



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN G	FUNCTIONAL SUPERVISOR	SUSAN YEE	CALCULATED/DESIGNED BY	SALIM KHAFFAJI	REVISOR	SAIED MEHRANFARD
		CHECKED BY		DATE		DATE	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	16	83
			06-10-11		
REGISTERED CIVIL ENGINEER			DATE		
8-22-11			PLANS APPROVAL DATE		
					
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TRAFFIC HANDLING PLAN

SCALE: 1" = 50'

TH-2

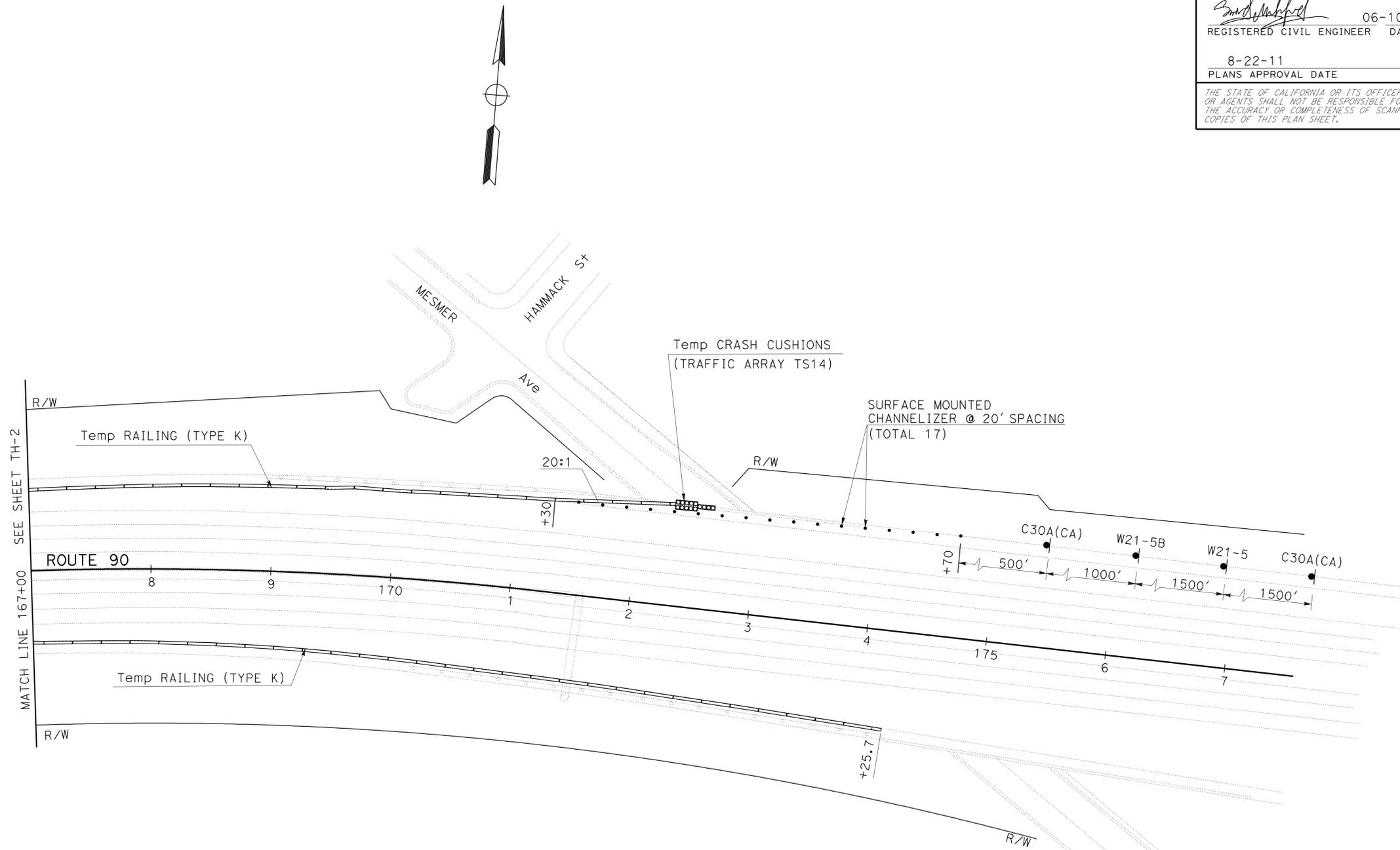
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	17	83

<i>Saied Mehranfard</i>	06-10-11
REGISTERED CIVIL ENGINEER	DATE
8-22-11	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
SAIED MEHRANFARD
No. C 65290
Exp. 9/30/11
STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN G
FUNCTIONAL SUPERVISOR
SUSAN YEE
CALCULATED/DESIGNED BY
CHECKED BY
SALIM KHAFFAJI
SAIED MEHRANFARD
REVISED BY
DATE
REVISED
DATE
REVISED
DATE



TRAFFIC HANDLING PLAN
SCALE: 1" = 50'

TH-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	18	83

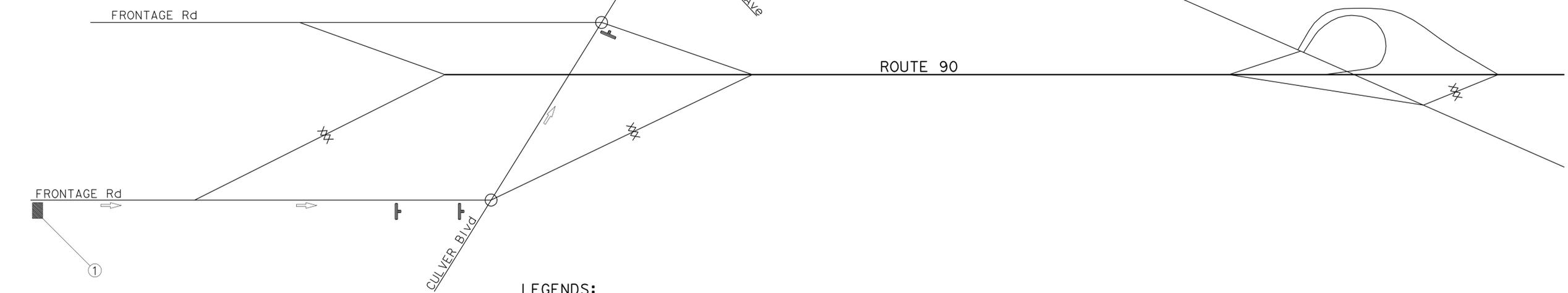
06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

ALBERT K. YU
 No. 43220
 Exp 3/31/12
 CIVIL

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PCMS	LOCATION	MESSAGE	
①	ON THE LEFT SHOULDER OF THE FRONTAGE ROAD EAST OF MINDANAO WAY 1500 FEET IN ADVANCE OF THE ON-RAMP TO EB Rte 90	1ST FLASH	FREEWAY/CLOSED
		2ND FLASH	DETOUR/CULVER/BIVD

Temp SIGN	Qty
SP-2	7
SP-6	2



- LEGENDS:**
- PORTABLE CHANGEABLE MESSAGE SIGN(PCMS)
 - ⊥ TEMPORARY SIGN
 - ⇒ DIRECTION OF TRAVEL
 - SIGNALIZED INTERSECTION
 - xxx CLOSE RAMP
 - ▷ EXISTING Fwy GUIDE SIGN

NOTES:

1. UNLESS AS OTHERWISE SPECIFIED, ALL SIGNS SHALL BE SP-2.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
3. SEE THD-8 FOR SIGNS SP-2 AND SP-6 DETAILS.
4. DETOUR SIGNS SHALL BE REMOVED AT THE END OF EACH CLOSURE.

TRAFFIC HANDLING DETAILS
FULL FREEWAY DETOUR PLAN
FOR WORK SHIFT CLOSURES
EASTBOUND Rte 90
FROM BEGIN OF FREEWAY TO Rte 405

NO SCALE

THD-1

THIS PLAN ACCURATE FOR DETOUR LAYOUT ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DT M
 FUNCTIONAL SUPERVISOR JOHN YANG
 CALCULATED/DESIGNED BY
 CHECKED BY
 KIT LIU ALBERT YU
 REVISED BY DATE REVISED
 USERNAME => s109858
 DGN FILE => 0700000523me001.dgn

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	19	83

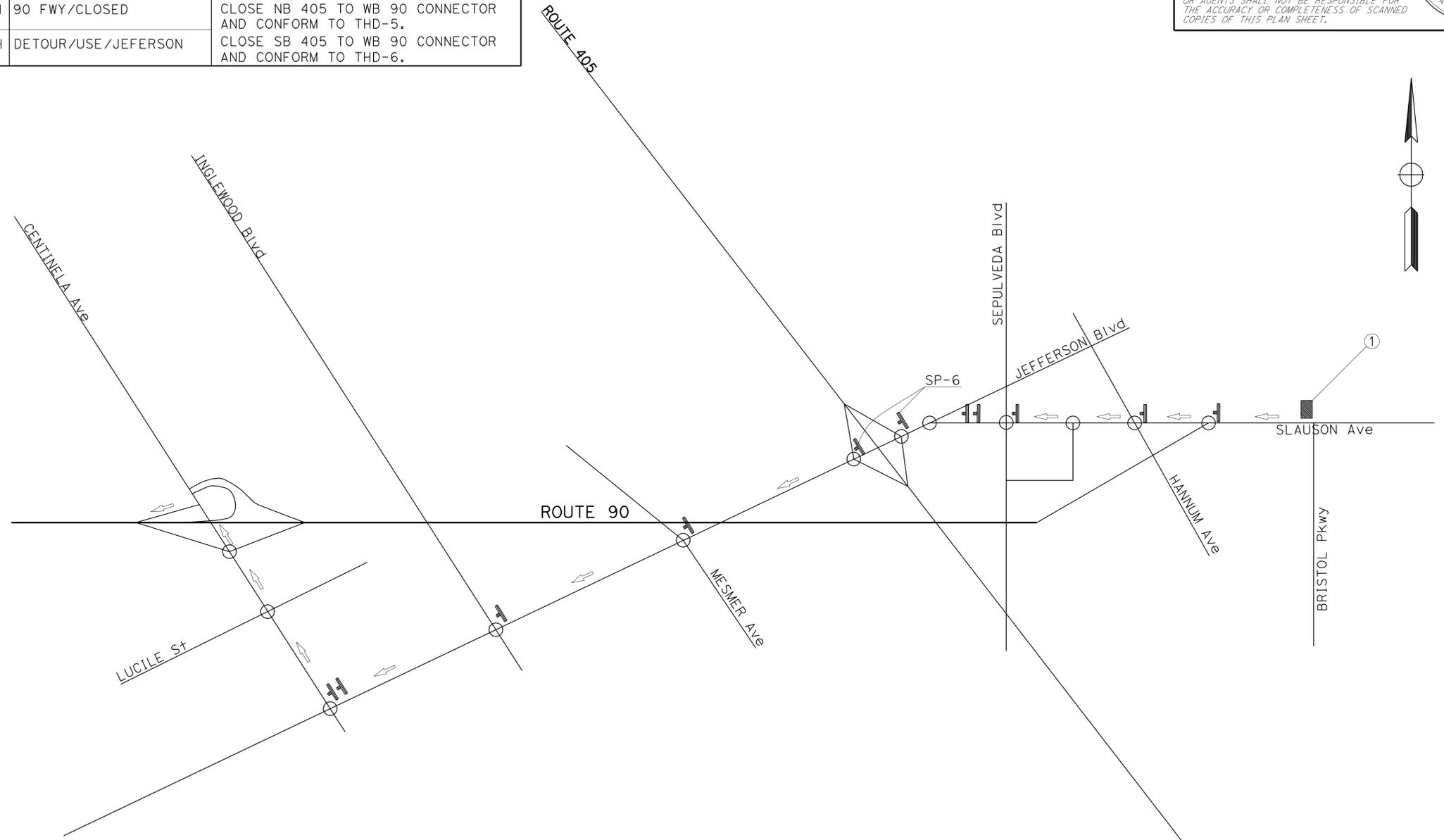
06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

ALBERT K. YU
 No. 43220
 Exp 3/31/12
 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.

PCMS	LOCATION	MESSAGE	REMARK
①	ON THE STRIPED MEDIAN ISLAND JUST WEST OF BRISTOL PKWY	1ST FLASH	90 FWY/CLOSED CLOSE NB 405 TO WB 90 CONNECTOR AND CONFORM TO THD-5.
		2ND FLASH	DETOUR/USE/JEFERSON CLOSE SB 405 TO WB 90 CONNECTOR AND CONFORM TO THD-6.

Temp	SIGN	Qty
SP-2		9
SP-6		2



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DT M
 FUNCTIONAL SUPERVISOR JOHN YANG
 CALCULATED/DESIGNED BY CHECKED BY
 KIT LIU ALBERT YU
 REVISED BY DATE REVISED
 x
 x
 x
 x
 x

TRAFFIC HANDLING DETAILS
FULL FREEWAY DETOUR PLAN
FOR WORK SHIFT CLOSURES
WESTBOUND Rte 90
FROM BEGINNING OF FREEWAY TO
CENTINELA Ave OFF-RAMP
 NO SCALE
THD-2

THIS PLAN ACCURATE FOR DETOUR LAYOUT ONLY

LAST REVISION | DATE PLOTTED => 24-AUG-2011 05-11-11 TIME PLOTTED => 14:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	20	83

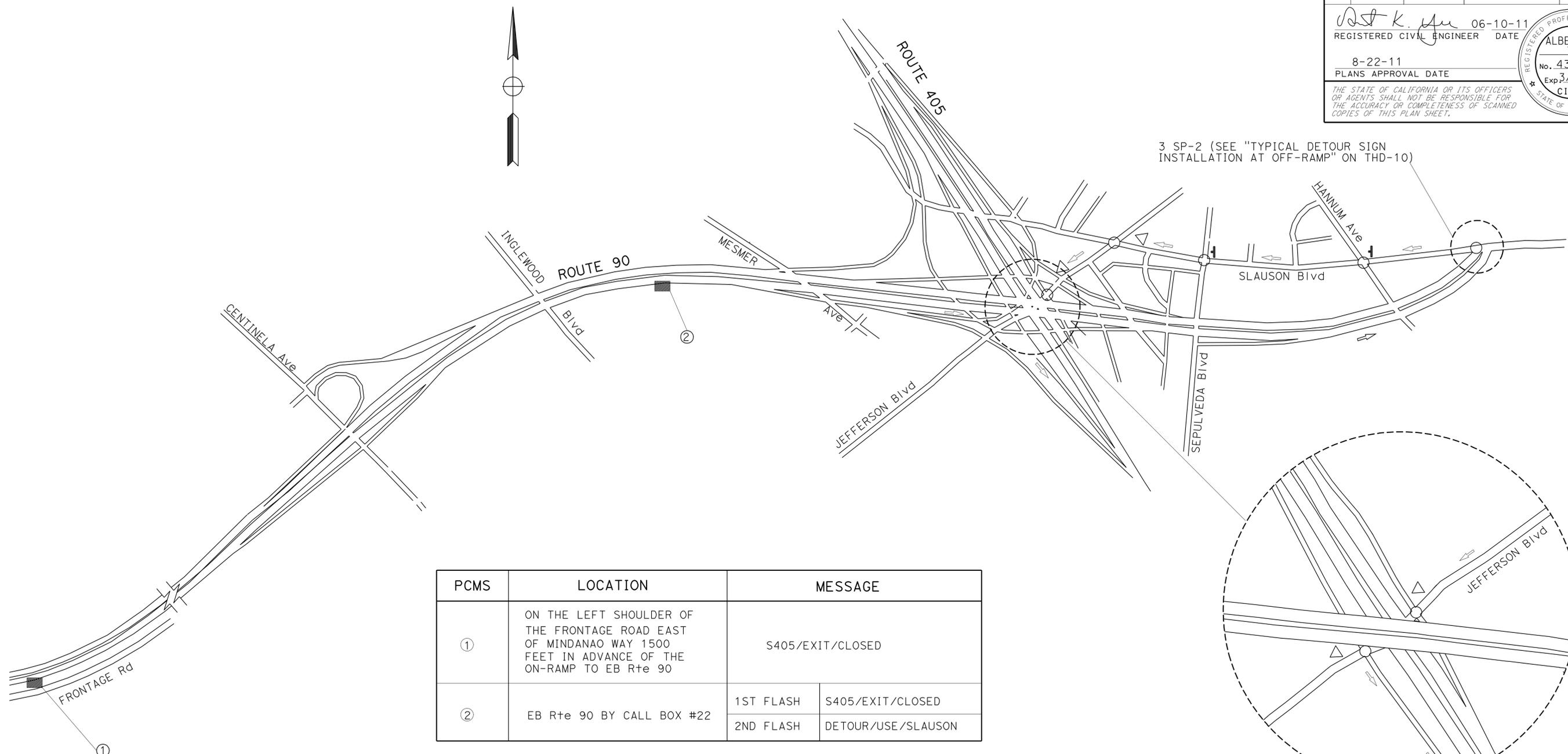
06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

ALBERT K. YU
 No. 43220
 Exp 3/31/12
 CIVIL

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DTM

FUNCTIONAL SUPERVISOR	JOHN YANG
CALCULATED/DESIGNED BY	ALBERT K YU
CHECKED BY	JOCELYN C CHIANG
REVISOR	JC
DATE	8/10



PCMS	LOCATION	MESSAGE	
①	ON THE LEFT SHOULDER OF THE FRONTAGE ROAD EAST OF MINDANAO WAY 1500 FEET IN ADVANCE OF THE ON-RAMP TO EB Rte 90	S405/EXIT/CLOSED	
②	EB Rte 90 BY CALL BOX #22	1ST FLASH	S405/EXIT/CLOSED
		2ND FLASH	DETOUR/USE/SLAUSON

TEMP SIGN Q+y	
SP-2	5

NOTE:

1. UNLESS AS OTHERWISE SPECIFIED, PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE PLACED ON THE RIGHT SHOULDER.

TRAFFIC HANDLING DETAILS
CONNECTOR DETOUR PLAN
FOR WORK SHIFT CLOSURES
EB Rte 90 TO SB Rte 405

NO SCALE

THIS PLAN ACCURATE FOR DETOUR LAYOUT ONLY

THD-3

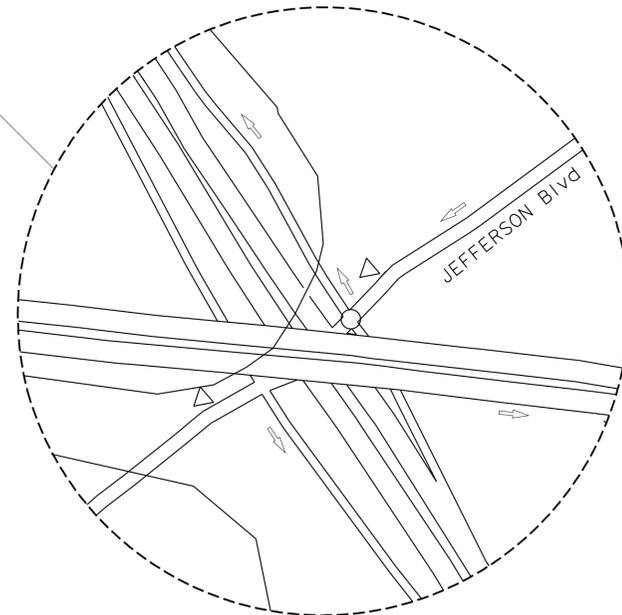
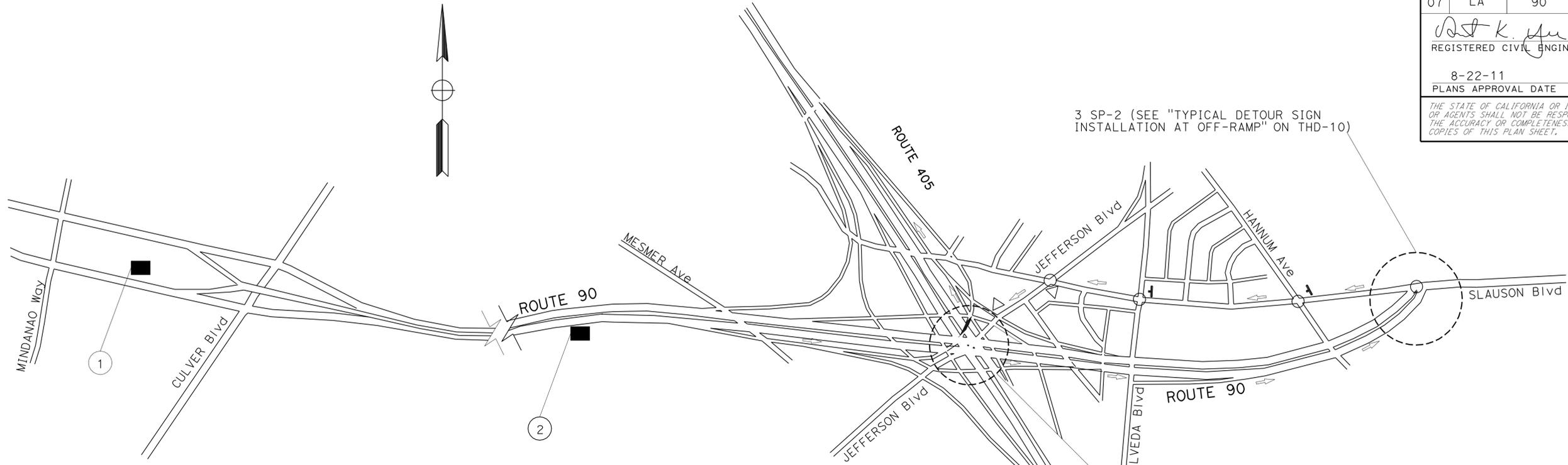
LAST REVISION DATE PLOTTED => 24-AUG-2011 TIME PLOTTED => 14:57
 05-11-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	21	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 ALBERT K. YU
 No. 43220
 Exp 3/31/12
 CIVIL
 STATE OF CALIFORNIA



PCMS	LOCATION	MESSAGE	
①	ON THE LEFT SHOULDER OF THE FRONTAGE ROAD EAST OF MINDANAO WAY 1500 FEET IN ADVANCE OF THE ON-RAMP TO EB Rte 90	405 FWY/EXITS/CLOSED	
②	EB Rte 90 BY CALL BOX #14	1ST FLASH	405 FWY/EXITS/CLOSED
		2ND FLASH	DETOUR/USE/SLAUSON

TEMP SIGN Qty	
SP-2	5

NOTE:

1. UNLESS AS OTHERWISE SPECIFIED, PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE PLACED ON THE RIGHT SHOULDER.

TRAFFIC HANDLING DETAILS
CONNECTOR DETOUR PLAN
FOR WORK SHIFT CLOSURES
EB Rte 90 TO Rte 405

NO SCALE

THD-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DTM
 FUNCTIONAL SUPERVISOR: JOHN YANG
 CALCULATED/DESIGNED BY: ALBERT K YU
 CHECKED BY: JOCELYN C CHIANG
 REVISED BY: JC
 DATE REVISED: 8/10

THIS PLAN ACCURATE FOR DETOUR LAYOUT ONLY

LAST REVISION: 05-18-11 DATE PLOTTED => 24-AUG-2011 TIME PLOTTED => 14:57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	22	83

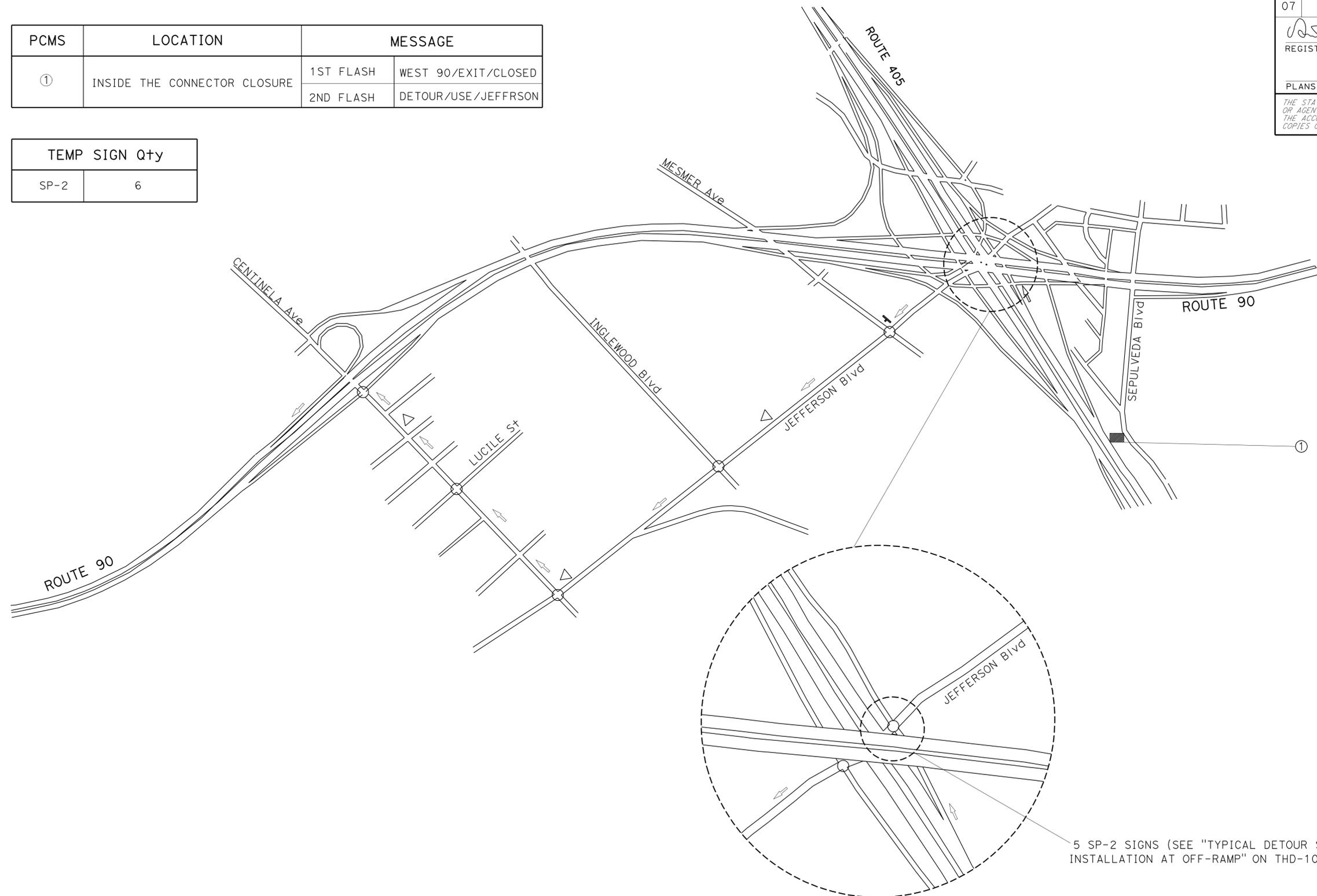
06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

ALBERT K. YU
 No. 43220
 Exp 3/31/12
 CIVIL
 STATE OF CALIFORNIA

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PCMS	LOCATION	MESSAGE	
①	INSIDE THE CONNECTOR CLOSURE	1ST FLASH	WEST 90/EXIT/CLOSED
		2ND FLASH	DETOUR/USE/JEFFERSON

TEMP SIGN Qty	
SP-2	6



TRAFFIC HANDLING DETAILS
CONNECTOR DETOUR PLAN
FOR WORK SHIFT CLOSURES
NB Rte 405 TO WB Rte 90

NO SCALE

THD-5

THIS PLAN ACCURATE FOR DETOUR LAYOUT ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DTM

FUNCTIONAL SUPERVISOR: JOHN YANG
 CHECKED BY: JOCELYN C CHIANG
 DESIGNED BY: ALBERT K YU
 REVISIONS: JC 8/10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DTM

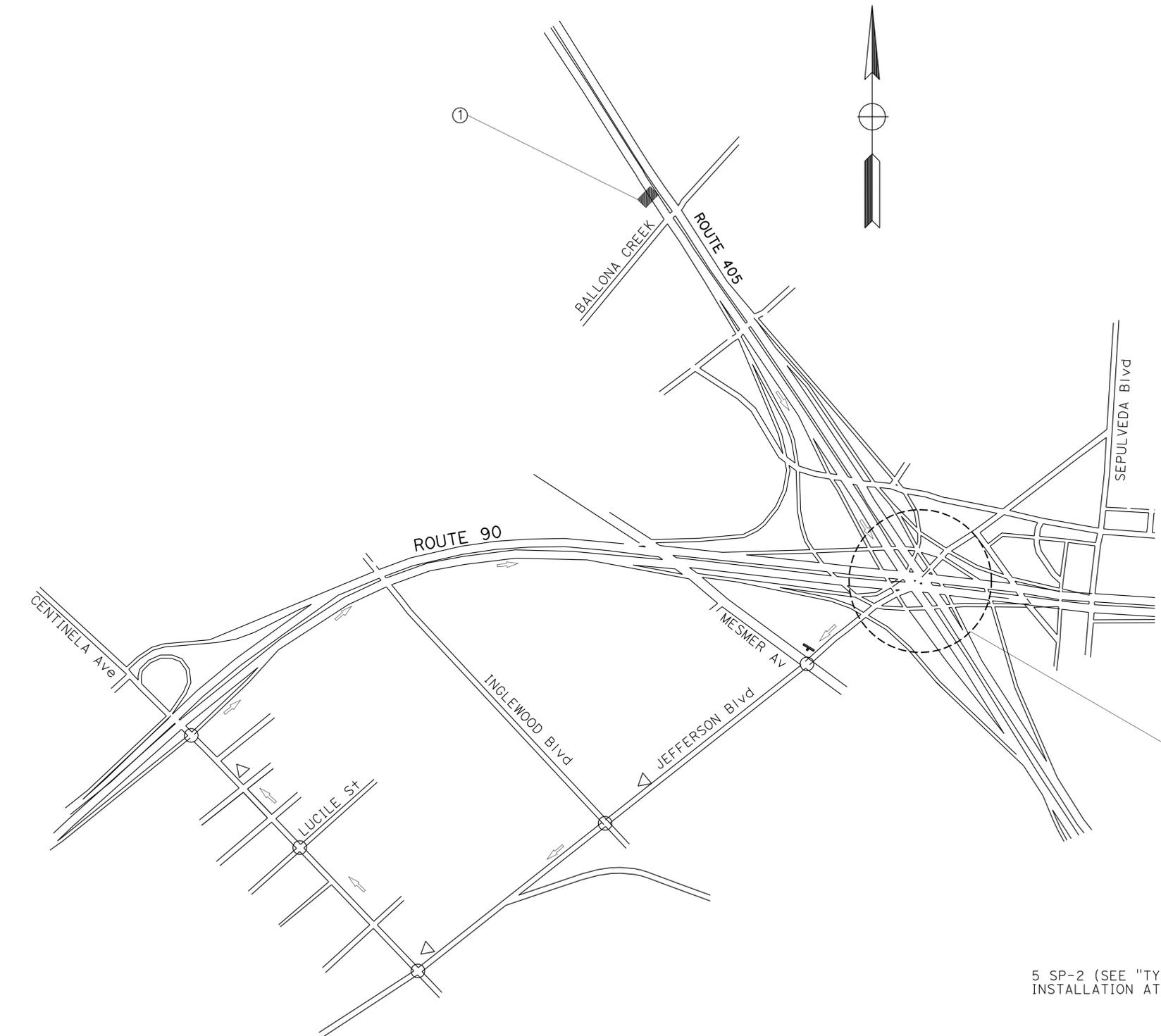
FUNCTIONAL SUPERVISOR: JOHN YANG
 CALCULATED/DESIGNED BY: [blank]
 CHECKED BY: [blank]
 REVISIONS:
 REVISED BY: JC
 DATE REVISED: 8/10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	23	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

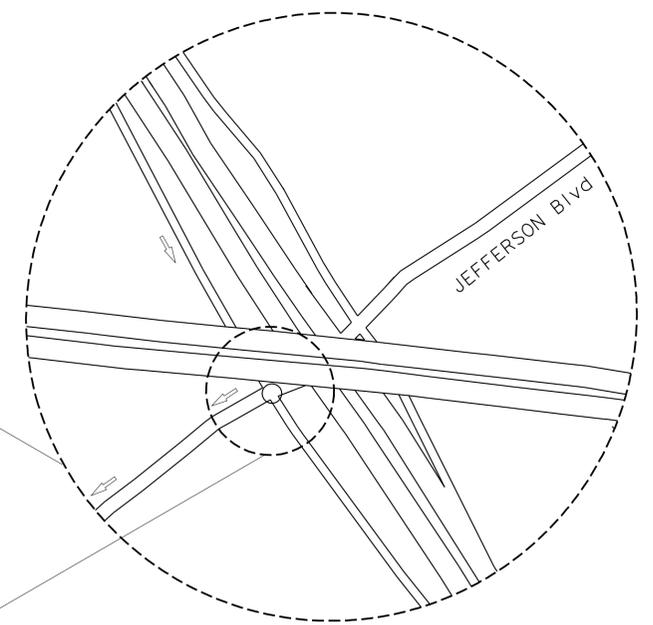
ALBERT K. YU
 No. 43220
 Exp 3/31/12
 CIVIL

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PCMS	LOCATION	MESSAGE	
①	ON THE RIGHT SHOULDER OF SOUTHBOUND ROUTE 405 BY BALLONA CREEK BRIDGE	1ST FLASH	EAST 90/EXIT/CLOSED
		2ND FLASH	DETOUR/USE/JEFFERSON

TEMP SIGN QTY	
SP-2	6



5 SP-2 (SEE "TYPICAL DETOUR SIGN INSTALLATION AT OFF-RAMP" ON THD-10)

TRAFFIC HANDLING DETAILS
CONNECTOR DETOUR PLAN
FOR WORK SHIFT CLOSURES
SB Rte 405 TO WB Rte 90

NO SCALE

THD-6

THIS PLAN ACCURATE FOR DETOUR LAYOUT ONLY

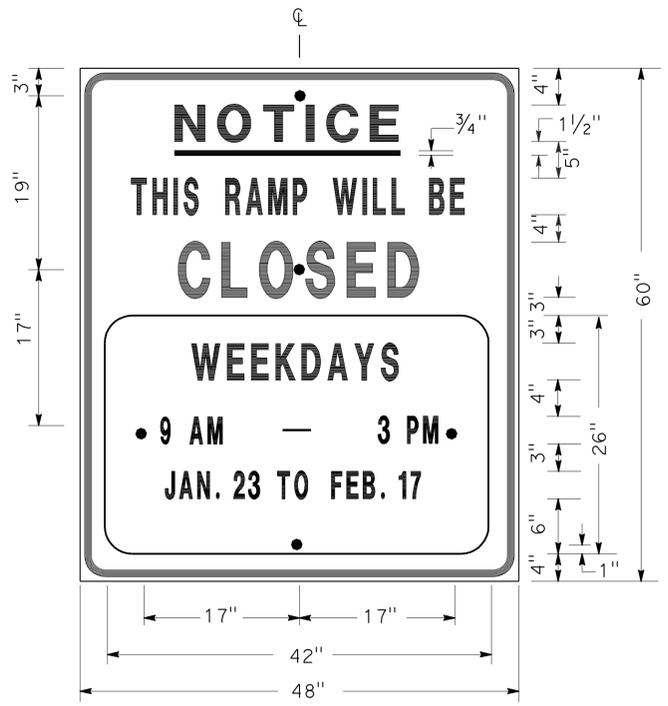
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	24	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

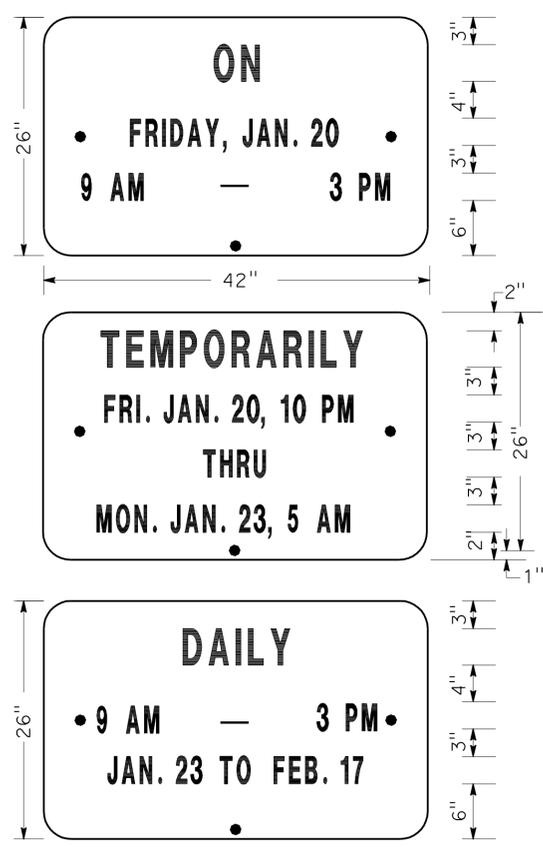
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REGISTERED PROFESSIONAL ENGINEER
 ALBERT K. YU
 No. 43220
 Exp. 3/31/12
 CIVIL
 STATE OF CALIFORNIA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans®
 DTM
 FUNCTIONAL SUPERVISOR: JOHN YANG
 CHECKED BY: JOCELYN C CHIANG
 DESIGNED BY: ALBERT K YU
 REVISIONS: JC 7/10
 REVISIONS: DATE REVISIONS:



SIGN SP-1



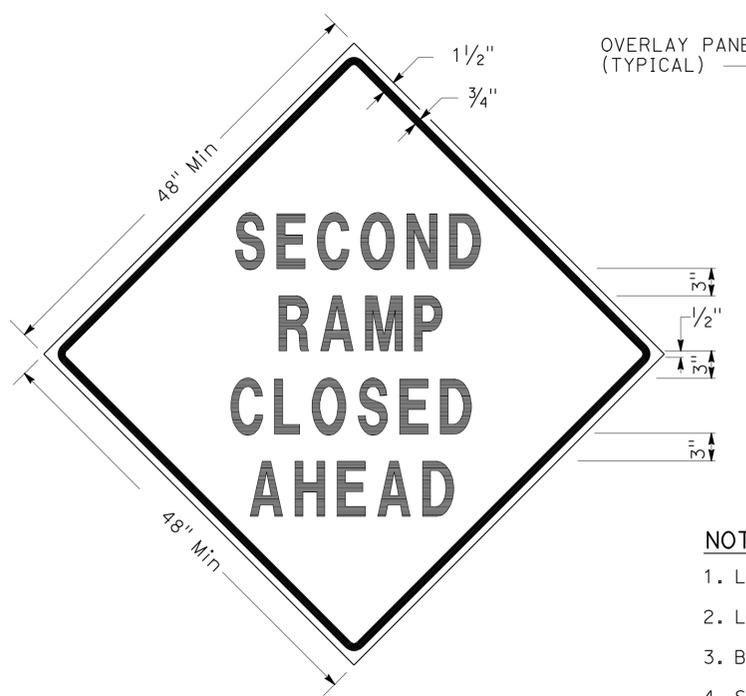
ALTERNATE OVERLAY PANELS (TYPICAL)

- NOTES: (SIGN SP-1)
- SIGNS SHALL HAVE ORANGE RETROREFLECTORIZED BACKGROUND WITH BLACK BORDER AND LETTERS.
 - BOLT HOLES SHALL BE 3/8" DIAMETER.
 - BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
 - SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.

SIZE	BORDER		LETTER SIZE					CORNER RADIUS
	WIDTH	MARGIN WIDTH	LINE 1	LINE 2*	LINE 3	LINE 4	LINE 5,6 & 7*	
48" x 60"	1 1/4"	3/4"	4E	4D	6E	4D		3"
42" x 26"	OVERLAY						3D	1 1/2"

* CONDENSED SPACING IF NECESSARY

SPECIAL ADVANCE NOTICE PUBLICITY SIGN



SIGN SP-3



SIGN SP-5

- NOTES: (SIGNS SP-3 & SP-5)
- LETTERS - 6" SERIES D.
 - LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
 - BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
 - SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.

SPECIAL SIGN FOR EXIT RAMP CLOSURES



SIGN SP-4

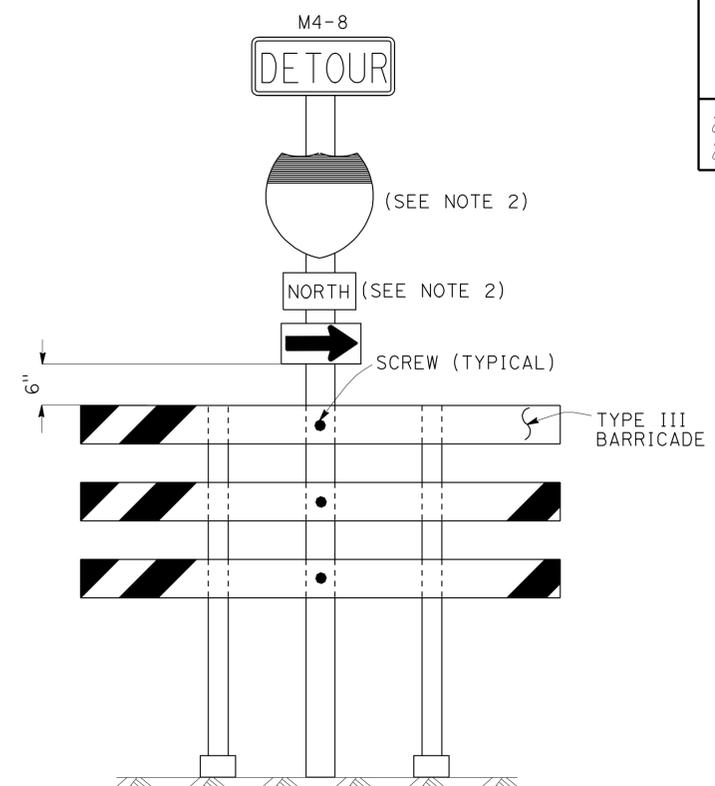
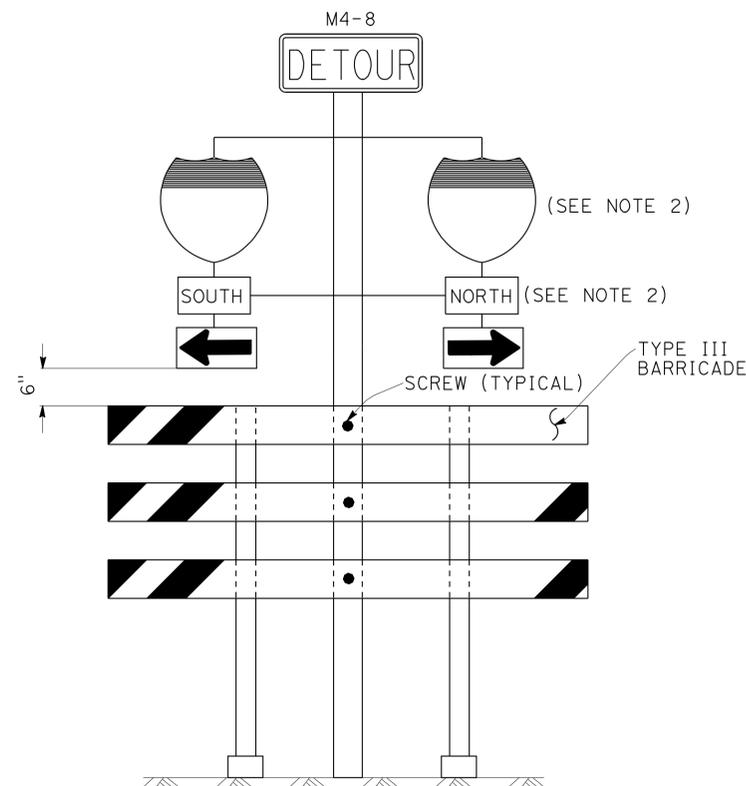
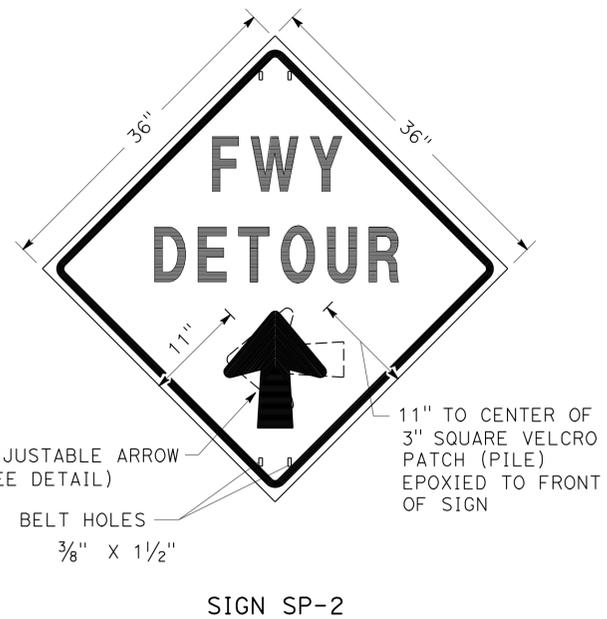
- NOTES: (SIGN SP-4)
- LETTERS - 6" SERIES C.
 - LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED WHITE BACKGROUND.
 - BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
 - SIGNS SHALL BE PLACED AT RAMP ENTRANCES IN ADDITION TO SIGNS POSTED IN ACCORDANCE WITH STANDARD PLAN T14.

SPECIAL SIGN FOR ENTRANCE RAMP CLOSURES

**TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR RAMP CLOSURES, DETOUR SIGNS
AND MISCELLANEOUS DETAILS
SHEET 1 OF 2**

NO SCALE

THD-7

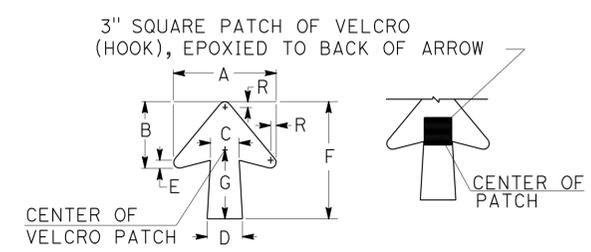


- NOTES: (SIGN SP-2)**
- LETTERS -6" SERIES E.
 - LETTERS, BORDER AND ARROW - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
 - BASE MATERIAL FOR SIGNS AND ARROWS SHALL BE ALUMINUM (MINIMUM 0.06").
 - BELTS (LUGGAGE STRAPS) SHALL BE 1" WIDE BY 48" LONG, MADE OF COTTON OR POLYPROPYLENE WEB MATERIAL.
 - SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND EXCEPT AS OTHERWISE SHOWN ON OTHER TRAFFIC HANDLING DETAILS PLANS.

ABBREVIATION:
(CA) CALIFORNIA CODE

- NOTES: (SIGNS SP-6 & SP-7)**
- IN LIEU OF PLACING SIGNS ON TYPE III BARRICADES, SIGNS, INCLUDING POSTS, MAY BE PLACED INTO THE GROUND OR FASTENED ONTO ELECTROLIERS.
 - USE APPROPRIATE ROUTE SHIELD [G26-2(CA), G27-2(CA), G28-2(CA)] AND CARDINAL DIRECTION [NORTH (M3-1), SOUTH (M3-3), EAST (M3-2), WEST (M3-4)].

SPECIAL PORTABLE FREEWAY DETOUR SIGNS



DIMENSIONS							
A	B	C	D	E	F	G	R
11 1/4"	7 1/4"	3 3/8"	4"	7/8"	13"	7 1/2"	5/8"

SPECIAL PORTABLE FREEWAY DETOUR SIGN

ADJUSTABLE ARROW DETAIL

**TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR RAMP CLOSURES, DETOUR SIGNS
AND MISCELLANEOUS DETAILS
SHEET 2 OF 2**

NO SCALE

THD-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DT M
 FUNCTIONAL SUPERVISOR JOHN YANG
 CHECKED BY
 CALCULATED/DESIGNED BY
 ALBERT K YU
 JOCELYN C CHIANG
 REVISOR BY JC
 DATE REVISOR 7/10
 07/2/2010

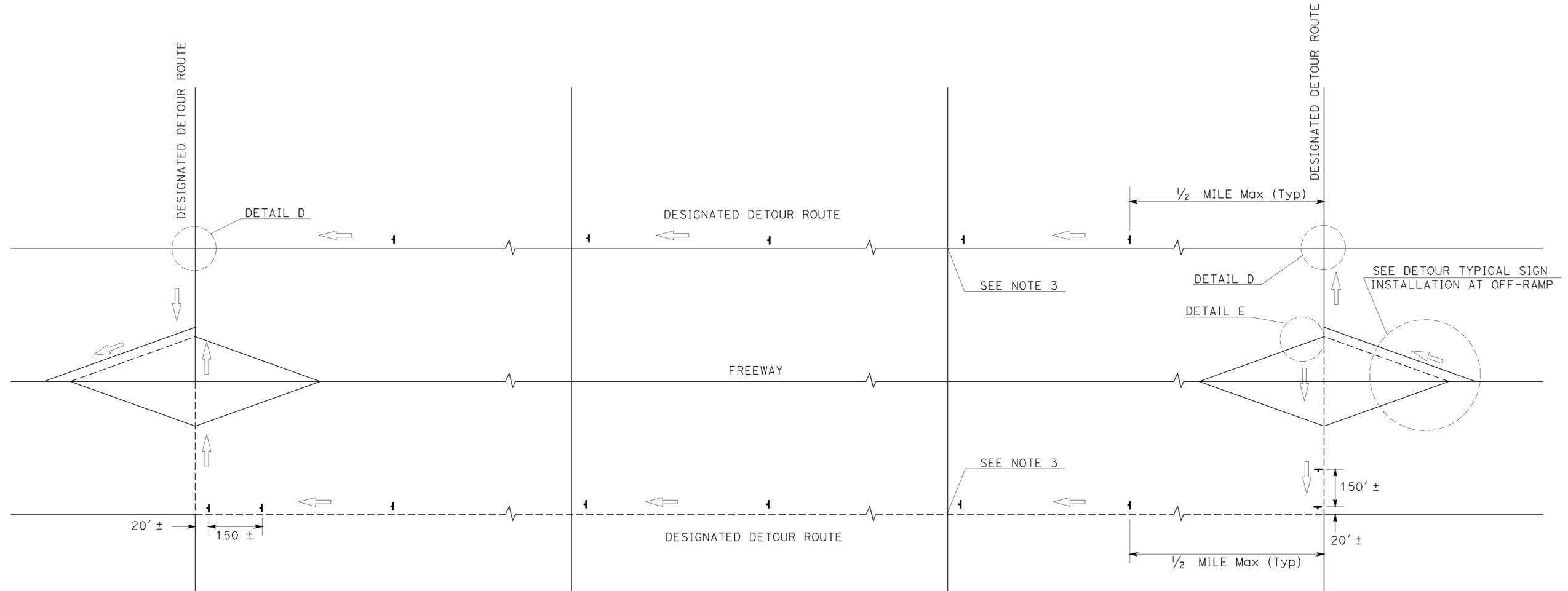
LAST REVISION DATE PLOTTED => 24-AUG-2011
 05-12-11 TIME PLOTTED => 15:49

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	26	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

ALBERT K. YU
 No. 43220
 Exp 3/31/12
 CIVIL

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TYPICAL DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE

LEGEND:

_____ AND/OR _____
 _____ DESIGNATED DETOUR ROUTE

NOTES:

1. SP-2 SIGNS SHALL NOT BE INSTALLED ON BARRICADES EXCEPT AS OTHERWISE SHOWN.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
3. SP-2 SIGNS SHALL BE POSTED AT SIGNALIZED INTERSECTIONS ALONG THE DESIGNATED DETOUR ROUTE OR 1/2 MILE MAXIMUM APART.

TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR DETOUR SIGN INSTALLATION
ALONG DESIGNATED DETOUR ROUTE
SHEET 1 OF 2

NO SCALE

THD-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	ALBERT K YU	REVISOR	JC
DTM	JOCELYN C CHIANG	DATE REVISION	7/10
FUNCTIONAL SUPERVISOR	JOHN YANG	CHECKED BY	
CALCULATED/DESIGNED BY			

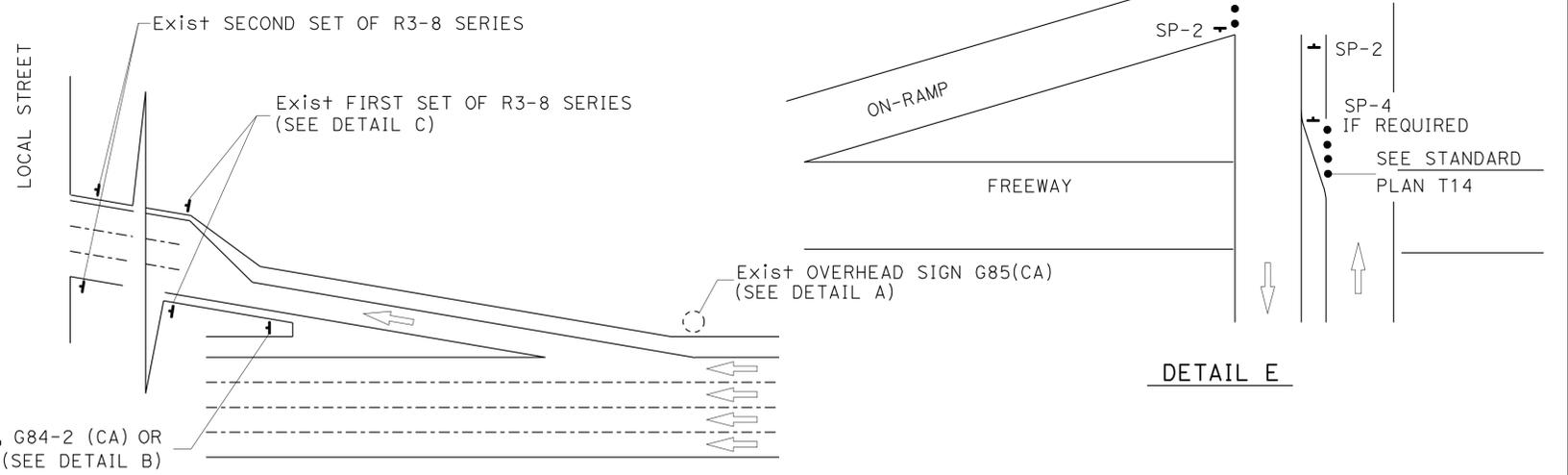
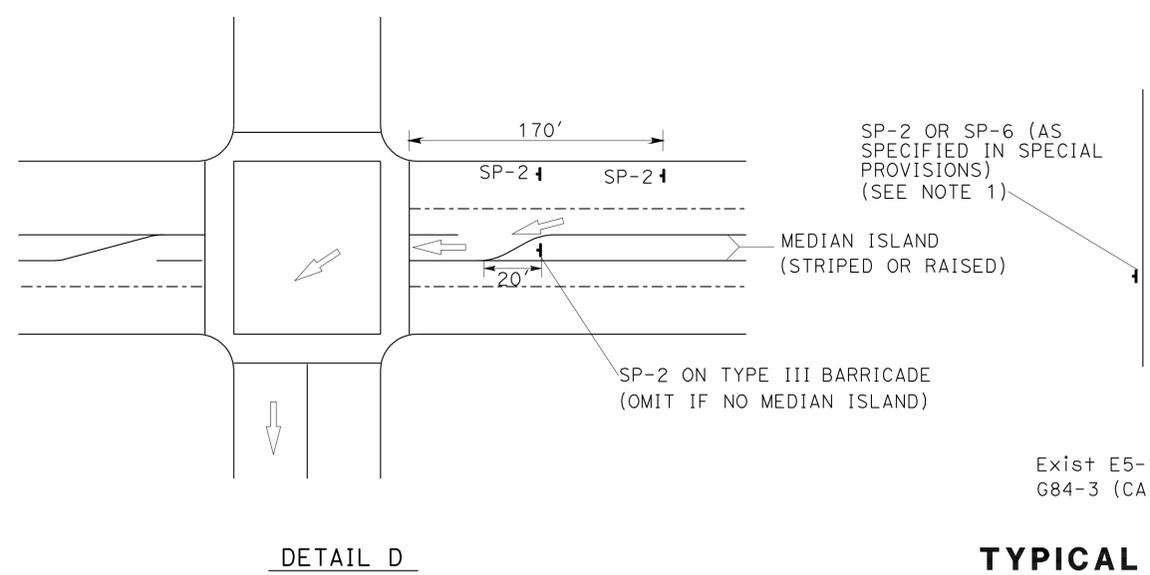
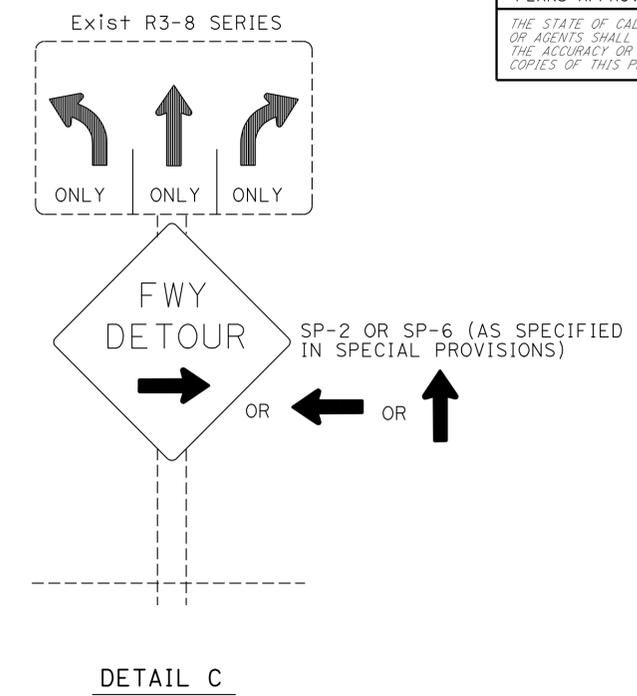
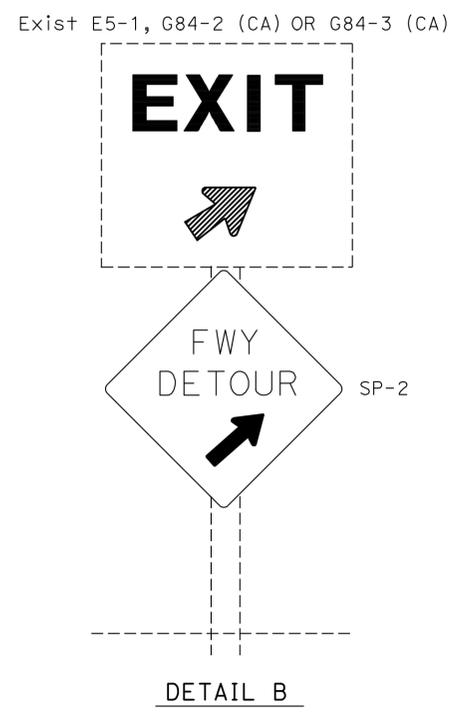
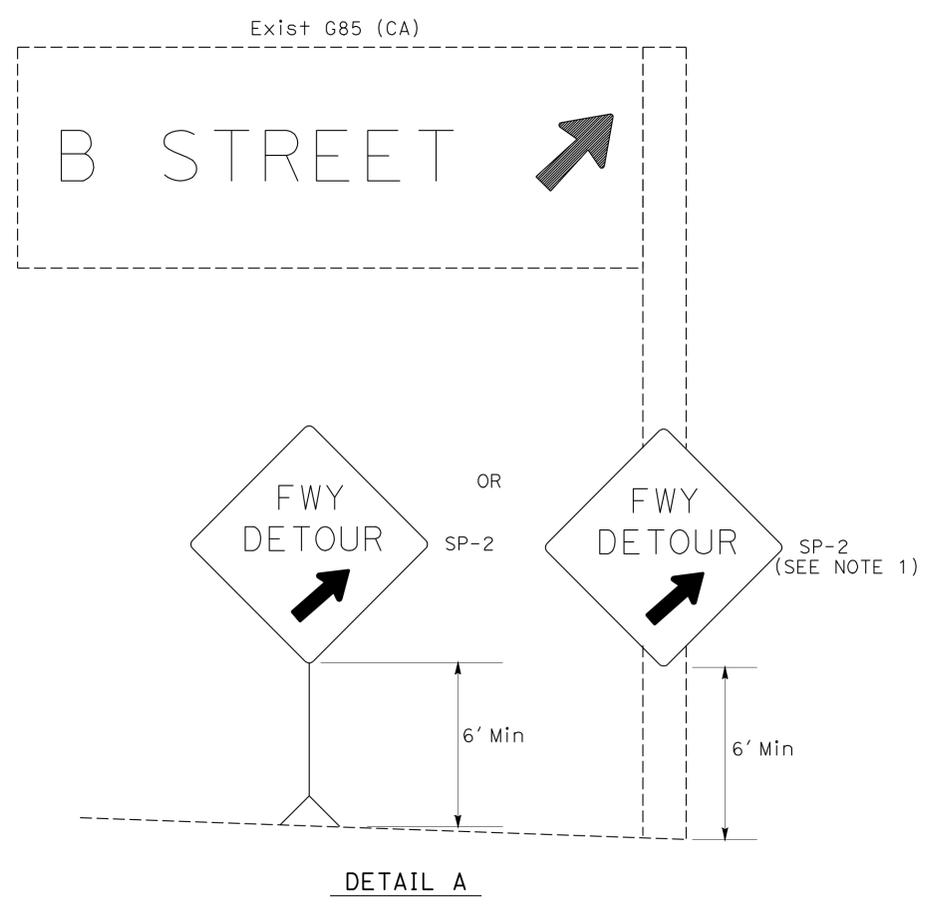


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	27	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

ALBERT K. YU
 No. 43220
 Exp 3/31/12
 CIVIL
 STATE OF CALIFORNIA

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TYPICAL DETOUR SIGN INSTALLATION AT OFF-RAMP

- NOTES:**
- TEMPORARY SIGNS MAY BE STRAPPED ON EXISTING ELECTROLIER, SIGNAL POSTS, OR SIGN POSTS.
 - OMIT DETAIL A AND DETAIL B FOR FULL FREEWAY CLOSURES.
 - SEE TRAFFIC HANDLING DETAILS PLAN-TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURES, DETOUR SIGNS AND MISCELLANEOUS DETAILS SHEET 2 OF 2 FOR SP-6.

ABBREVIATION:
(CA) CALIFORNIA CODE

- LEGENDS:**
- TRAFFIC CONE
 - EXISTING OVERHEAD SIGN

**TRAFFIC HANDLING DETAILS
TRAFFIC CONTROL SYSTEM
FOR DETOUR SIGN INSTALLATION
ALONG DESIGNATED DETOUR ROUTE
SHEET 2 OF 2**

NO SCALE

THD-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DTM

ALBERT K YU

JOCELYN C CHIANG

JOHN YANG

JC

8/10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN G
 FUNCTIONAL SUPERVISOR
 SUSAN YEE
 CALCULATED/DESIGNED BY
 CHECKED BY
 SALIM KHAFFAJI
 SAIED MEHRANFARD
 REVISED BY
 DATE REVISED

NOTE:

1. FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS, SEE SHEET CS-1.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	28	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

SAIED MEHRANFARD
 No. C 65290
 Exp 9/30/11
 REGISTERED PROFESSIONAL ENGINEER
 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.

TRAFFIC HANDLING QUANTITIES

SHEET No.	STATION LIMITS	Temp RAILING (TYPE K)	CHANNELIZER (SURFACE MOUNTED)	Temp CRASH CUSHION MODULE
		LF	EA	EA
TH-1	146+97.3 TO 158+00	1103	17	11
	151+65.3 TO 158+00	635		
TH-2	158+00 TO 167+00	900		
	158+00 TO 167+00	900		
TH-3	167+00 TO 172+30	530		
	167+00 TO 174+25.7	726	17	14
TOTAL		4794	34	25

CONSTRUCTION AREA SIGNS (TRAFFIC HANDLING)

SHEET No.	CODE	PANEL SIZE	POST NUMBER AND SIZE	QUANTITY (N)	SIGN MESSAGE
TH-1	W21-5	36" X 36"	(1)-4" X 6"	1	SHOULDER WORK
TH-3				1	
TH-1	W21-5B	36" X 36"	(1)-4" X 6"	1	RIGHT SHOULDER CLOSED
TH-3				1	
TH-1	C30A(CA)	36" X 36"	(1)-4" X 6"	1	SHOULDER CLOSED
TH-3				2	
TOTAL				7	

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

TRAFFIC HANDLING QUANTITIES

NO SCALE

THQ-1

LAST REVISION | DATE PLOTTED => 24-AUG-2011
 01-10-11 | TIME PLOTTED => 15:49

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	29	83

06-10-11
 REGISTERED CIVIL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 SAIED MEHRANFARD
 No. C 65290
 Exp 9/30/11
 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.

EARTHWORK QUANTITIES

DESCRIPTION	ROADWAY EXCAVATION	ROADWAY EXCAVATION (TYPE Y-1) AERIALY DEPOSITED LEAD	IMPORTED BORROW
	(CY)	(CY)	(CY)
EASTBOUND Rte 90		15	10
WESTBOUND Rte 90	66	25	10
TOTAL	66	40	20

METAL BEAM GUARD RAILING (WOOD POST)

SHEET No.	STATION LIMITS	TRANSITION RAILING (TYPE WB)	MBGR	REMOVE MBGR	ALTERNATIVE IN-LINE TERMINAL SYSTEM	GUARD RAILING DELINEATOR	VEGETATION CONTROL (MINOR Conc)
		EA	LF	LF	EA	EA	SQYD
L-1	148+05.8 TO 149+58.3	1	75		1	8	60
	155+61.9 TO 156+11.9			50			
L-2	158+44.2 TO 160+24.2			180			
	158+55.5 TO 159+05.5			50			
L-3	168+88.1 TO 171+29.1			240			
	170+15.7 TO 174+25.7			410			
	TOTAL	1	75	930	1	8	60

HOT MIX ASPHALT

SHEET No.	STATION LIMITS	PLACE HOT MIX ASPHALT DIKE		PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	HOT MIX ASPHALT (TYPE A)	REMOVE AC DIKE
		(TYPE C)	(TYPE F)	SQYD	TON	LF
		LF	LF			
L-1	149+54.8 TO 156+12.2			146	74	
	147+80.8 TO 149+54.8	75	99		3.3	174
	151+62.8 TO 154+02.6			53	27	
L-2	155+61.9 TO 156+11.9					50
	158+66.0 TO 159+96.1			17	8.8	180
L-3	158+55.5 TO 159+05.5					50
	168+88.1 TO 171+29.1					240
	170+15.7 TO 174+25.7					410
	TOTAL	75	99	216	113.1	1104

CONCRETE BARRIER

SHEET No.	STATION LIMITS	Conc BARRIER (TYPE 60 Mod)	Conc BARRIER MARKER
		LF	EA
L-1	149+54.8 TO 156+11.9	657	14
	151+65.3 TO 154+65.4	300	7
L-2	158+44.2 TO 167+00	856	18
	158+55.5 TO 167+00	845	17
L-3	167+00 TO 171+29.1	429	9
	167+00 TO 174+25.7	726	15
	TOTAL	3813	80

TEMPORARY CONSTRUCTION SITE BMPs

SHEET No.	Temp DRAINAGE INLET PROTECTION (TYPE 5)
	EA
L-1	6
L-2	3
L-3	12
TOTAL	21

SUMMARY OF QUANTITIES

NO SCALE

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN G
 FUNCTIONAL SUPERVISOR: SUSAN YEE
 CALCULATED/DESIGNED BY: SAIED MEHRANFARD
 CHECKED BY:
 SALIM KHAFFAJI
 REVISOR: SAIED MEHRANFARD
 REVISION DATE:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	30	83

Ronald Wong 06-10-11
 LICENSED LANDSCAPE ARCHITECT
 Signature: *Ronald Wong*
 Renewal Date: 01-31-12
 Date: 06-10-11
 STATE OF CALIFORNIA

8-22-11
 PLANS APPROVAL DATE

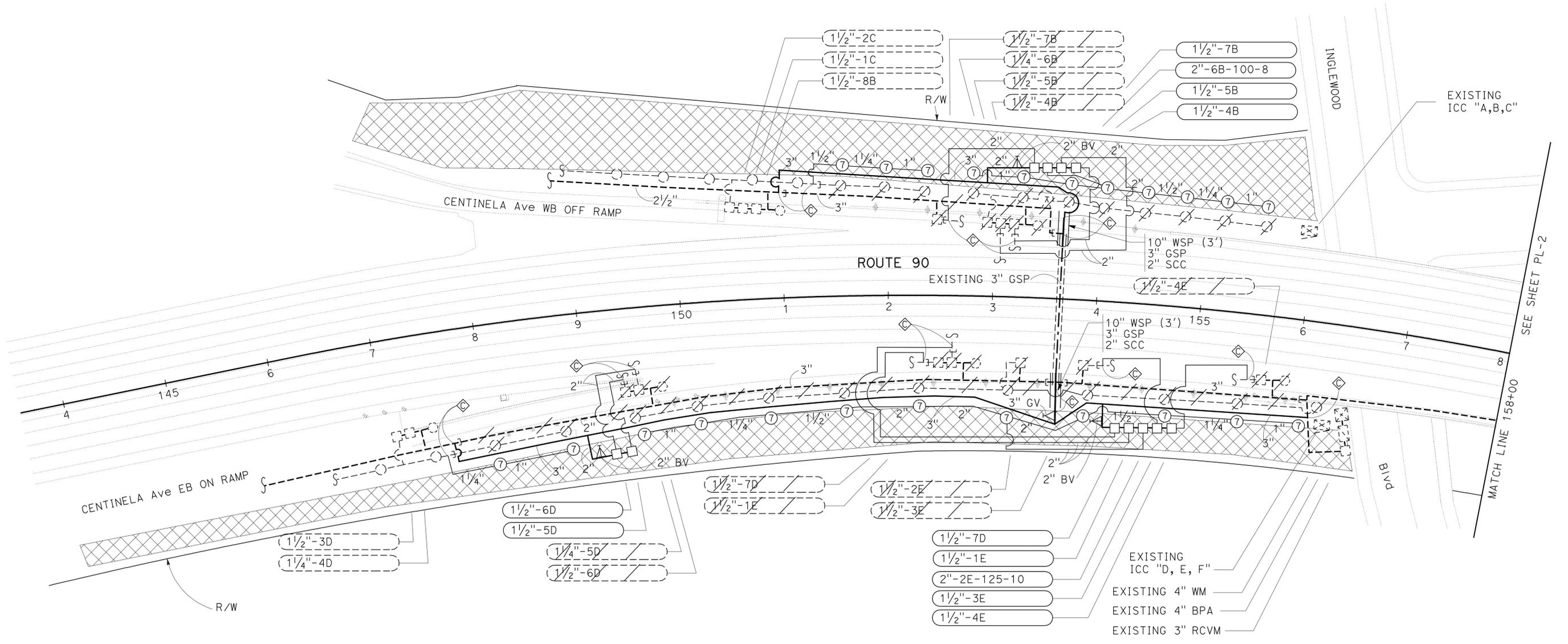
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:

 MAINTAIN EXISTING PLANTED AREAS



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 ERIC DICKSON
 CALCULATED/DESIGNED BY
 CHECKED BY
 VATHANA CHY
 RONALD WONG
 REVISED BY
 DATE REVISED



PLANTING AND IRRIGATION PLAN

SCALE 1"=50'

PI-1

THIS PLAN ACCURATE FOR PLANTING AND IRRIGATION WORK ONLY

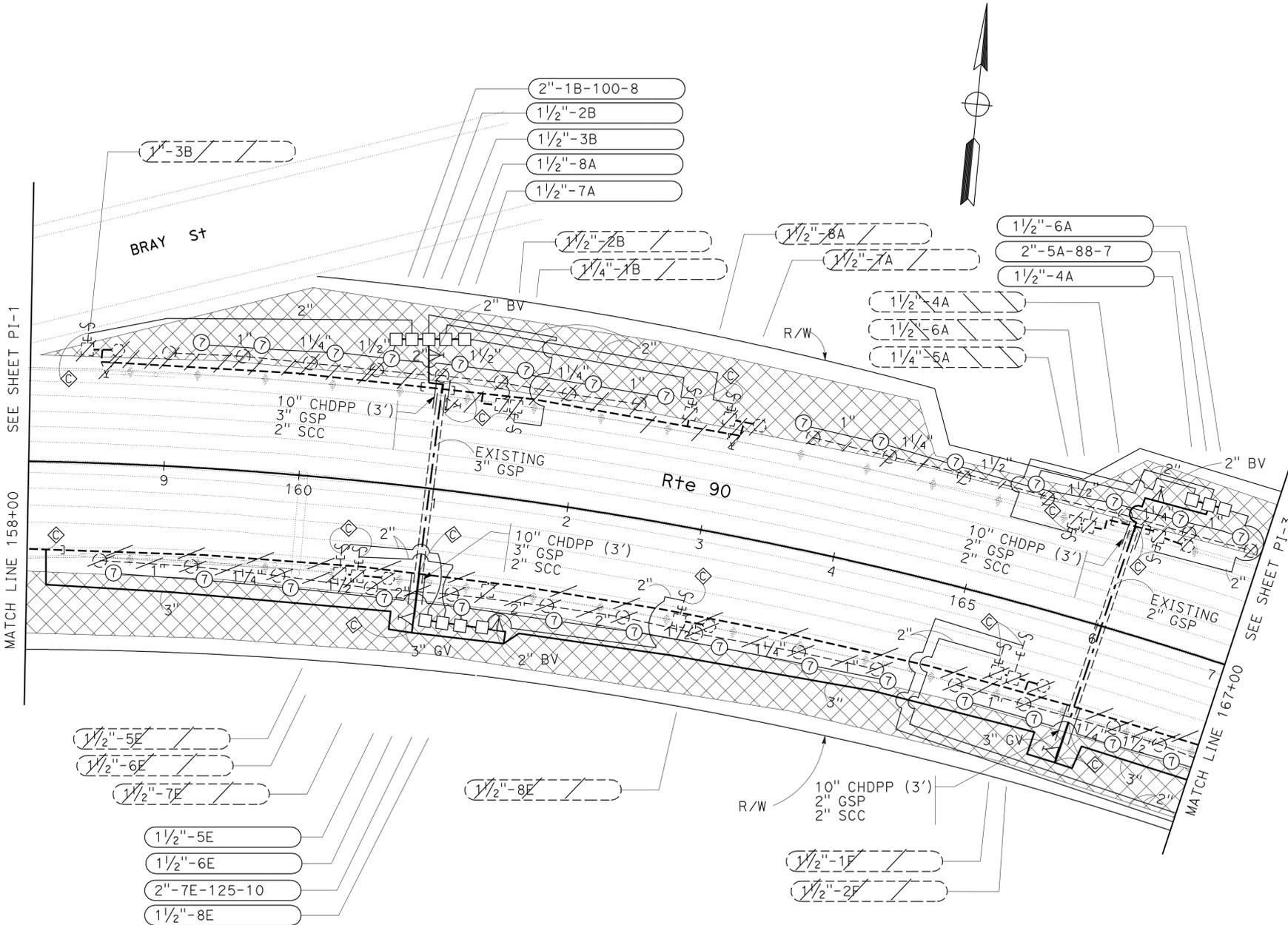
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	31	83

Ronald Wong 06-10-11
 LICENSED LANDSCAPE ARCHITECT

8-22-11
 PLANS APPROVAL DATE

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	LANDSCAPE ARCHITECTURE	SENIOR LANDSCAPE ARCHITECT	VATHANA CHY	REVISOR	DATE
Eric Caltrans	ERIC DICKSON	ERIC DICKSON	RONALD WONG		
		CALCULATED/DESIGNED BY		REVISOR	DATE
		CHECKED BY			



PLANTING AND IRRIGATION PLAN

SCALE 1"=50'

THIS PLAN ACCURATE FOR PLANTING AND IRRIGATION WORK ONLY

PI-2

LAST REVISION DATE PLOTTED => 25-AUG-2011 TIME PLOTTED => 13:34

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 VATHANA GHY
 ERIC DICKSON
 CALCULATED/DESIGNED BY
 CHECKED BY
 REVISIONS:
 REVISED BY
 DATE REVISED

SPRINKLER SCHEDULE

SYMBOL	TYPE	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (PSI)	PRESSURE COMPENSATING	PLUS/MINUS 5% ②		RADIUS (F+)	WIDTH x LENGTH (F+)	MATERIAL	NOZZLE SIZE (INCH)	INLET CONNECTION (NPT INCH)	POSITIVE-LOCKING ADJ ARC STOP	BACKSLASH PREVENTER	DIFFUSER PIN	DISTANCE CONTROL FLAP	ADJ DISCHARGE	RISER			SWING JOINT (TYPE)	RISER SUPPORT	SPRINKLER PROTECTOR (TYPE)	REMARKS			
						GALLONS PER MINUTE (GPM)	GALLONS PER HOUR (GPH)											TYPE	PLASTIC	GALVANIZED					SIZE (IPS INCH)	HEIGHT (INCH)	FLOW SHUTOFF DEVICE
⑦	A-7	Gear driven	Q/H	50	--	12.6	--	60	--	PL	--	1	--	--	--	--	--	IV	X	--	1	12	--	I	--	--	

ABBREVIATIONS

- F — full circle
- P — part circle
- F/P — full/part circle
- Q — quarter circle
- T — third circle
- H — half circle
- TT — two third circle
- TQ — three quarter circle
- CST — center strip
- SST — side strip
- EST — end strip
- F+ — feet/foot
- GPM — gallons per minute
- GPH — gallons per hour
- Adj — adjustable
- PL — plastic

X IN BOX DENOTES REQUIREMENT

- B/B — brass/bronze
- B/PL — brass/plastic
- B/B/PL — brass/bronze/plastic
- NPT — national pipe thread
- IPS — iron pipe size
- PSI — pounds per square inch

NOTES:
 PLASTIC PIPE SUPPLY LINES (MAINLINES) SHALL BE PR 315 AND LATERAL LINES SHALL BE PR 200.

APPLICABLE WHEN CIRCLED BELOW:

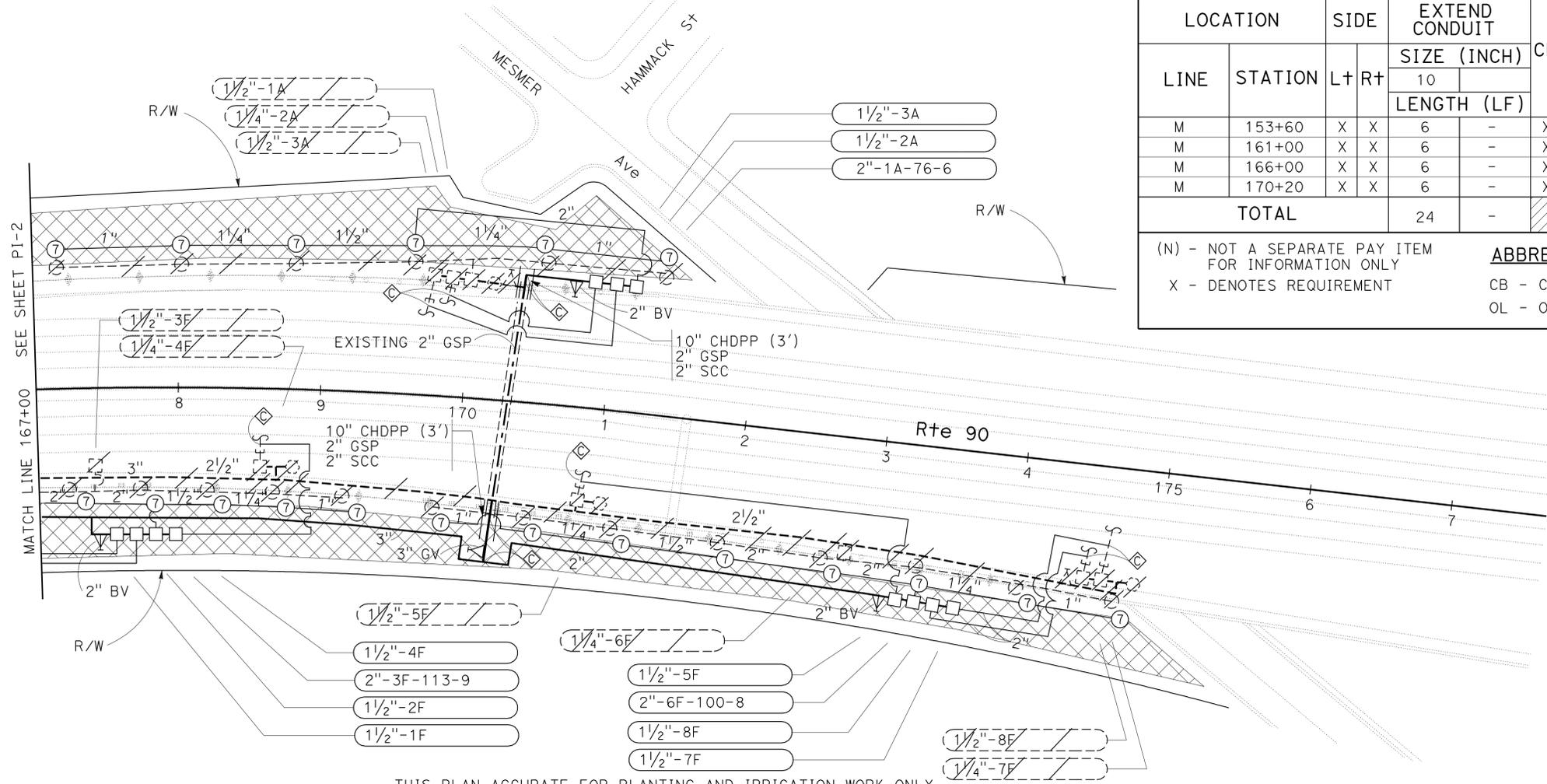
- 1 - See Special Provisions.
- ② - If a pressure compensating device is specified, the discharge and radii shown reflect its use.
- 3 - Arc Stop shall be fitted with a nut and bolt.
- 4 - Vinyl-coated cast iron housing.
- ⑤ - Swing Joints required adjacent to shoulders, curbs, sidewalks, and dikes.
- 6 - Unless otherwise shown on plans.

EXTEND IRRIGATION CROSSOVERS

LINE	STATION	SIDE	L+R+	EXTEND CONDUIT		CB	OL	(N) WATER LINE CROSSOVER SIZE (INCH)	(N) SPRINKLER CONTROL CROSSOVER SIZE (INCH)
				SIZE (INCH)	LENGTH (LF)				
M	153+60	X	X	6	-	X	-	3	2
M	161+00	X	X	6	-	X	-	3	2
M	166+00	X	X	6	-	X	-	2	2
M	170+20	X	X	6	-	X	-	2	2
TOTAL				24	-				

(N) - NOT A SEPARATE PAY ITEM FOR INFORMATION ONLY
 X - DENOTES REQUIREMENT

ABBREVIATIONS:
 CB - COUPLING BAND
 OL - OVERLAP



THIS PLAN ACCURATE FOR PLANTING AND IRRIGATION WORK ONLY

PLANTING AND IRRIGATION PLAN

SCALE 1"=50'

PI-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	32	83

Signature: Ronald Wong
 06-10-11
 LICENSED LANDSCAPE ARCHITECT
 8-22-11
 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: (THIS SHEET)

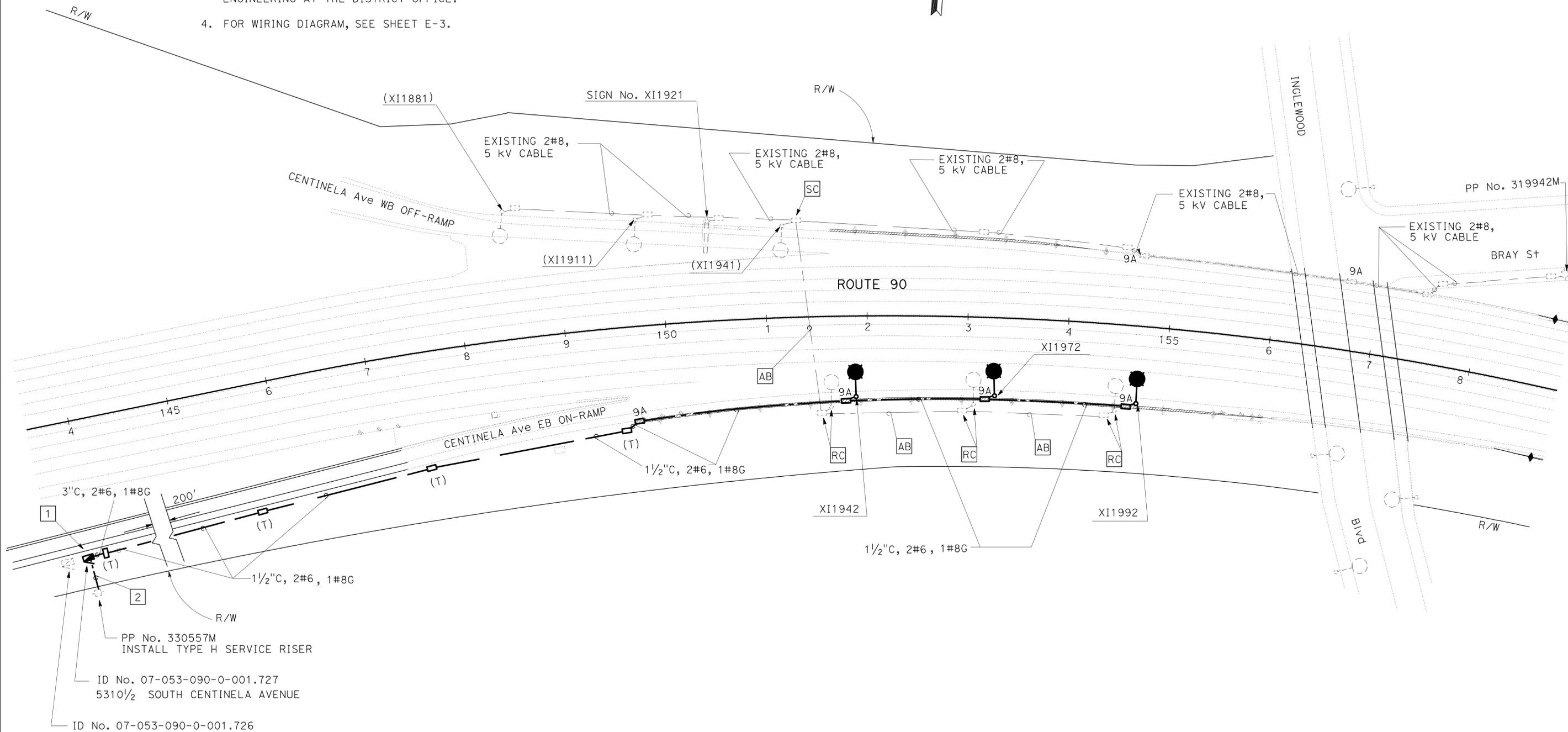
1. INSTALL TYPE III-BF SERVICE EQUIPMENT ENCLOSURE, PROVIDE ITEMS ① THROUGH ⑧, ⑮, ⑯, ⑳ THROUGH ㉓. SEE STANDARD PLAN ES-2E.
2. CONDUIT SIZE PER UTILITY REQUIREMENT, CONDUCTORS BY UTILITY COMPANY.
3. FOR COMPLETE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
4. FOR WIRING DIAGRAM, SEE SHEET E-3.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	33	83

Mansour Feiz 06-10-11
 REGISTERED ELECTRICAL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MANSOUR FEIZ
 No. E 015688
 Exp. 6/30/12
 ELECT

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.



WARNING
 BEFORE STARTING WORK ON EXISTING SERIES STREET LIGHTING CIRCUITS, THE CONTRACTOR MUST OBTAIN DAILY CIRCUIT CLEARANCE FROM THE SERVICE COMPANY. CUT-OUT PLUGS MUST BE PULLED AND "MEN AT WORK" SIGN POSTED. BEFORE ANY WORK IS DONE OR CONNECTIONS MADE.

MODIFY LIGHTING AND SIGN ILLUMINATION

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: FEDRICO HORMOZI
 CHECKED BY: MANSOUR FEIZ
 REVISED BY: DATE REVISED:

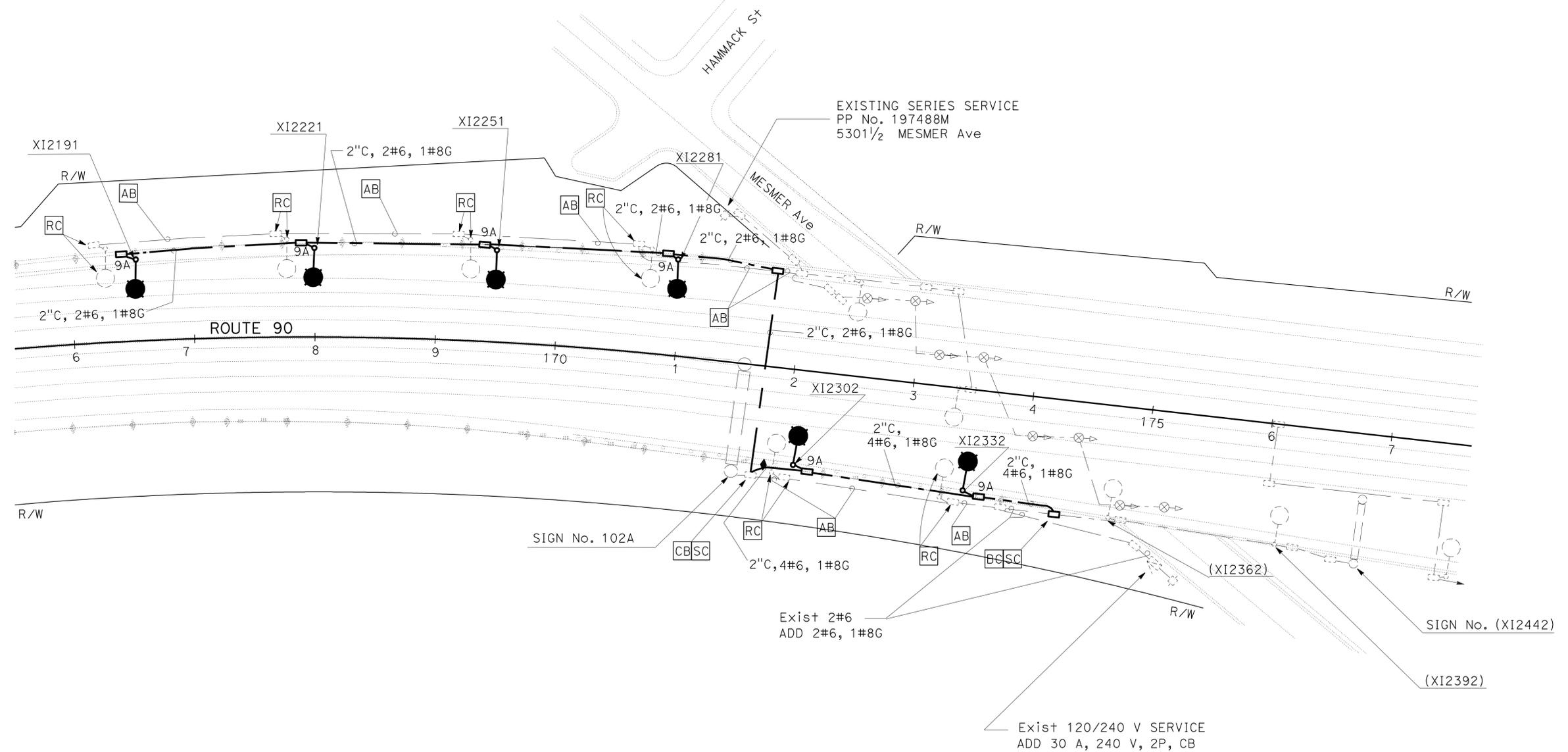
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LAST REVISION: DATE PLOTTED => 24-AUG-2011
 01-19-11 TIME PLOTTED => 16:53

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	34	83
<i>Mansour Feiz</i> 06-10-11 REGISTERED ELECTRICAL ENGINEER DATE			REGISTERED PROFESSIONAL ENGINEER MANSOUR FEIZ No. E 015688 Exp. 6/30/12 ELECT		
8-22-11			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTES: (THIS SHEET)

- FOR COMPLETE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- FOR WIRING DIAGRAM, SEE SHEETS E-4.



WARNING
 BEFORE STARTING WORK ON EXISTING SERIES STREET LIGHTING CIRCUITS, THE CONTRACTOR MUST OBTAIN DAILY CIRCUIT CLEARANCE FROM THE SERVICE COMPANY. CUT-OUT PLUGS MUST BE PULLED AND "MEN AT WORK" SIGN POSTED. BEFORE ANY WORK IS DONE OR CONNECTIONS MADE.

MODIFY LIGHTING AND SIGN ILLUMINATION

SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: CHECKED BY:
 FEDRICO HORMOZI MANSOUR FEIZ
 REVISED BY: DATE REVISED:

LAST REVISION: DATE PLOTTED => 29-AUG-2011
 01-19-11 TIME PLOTTED => 11:01

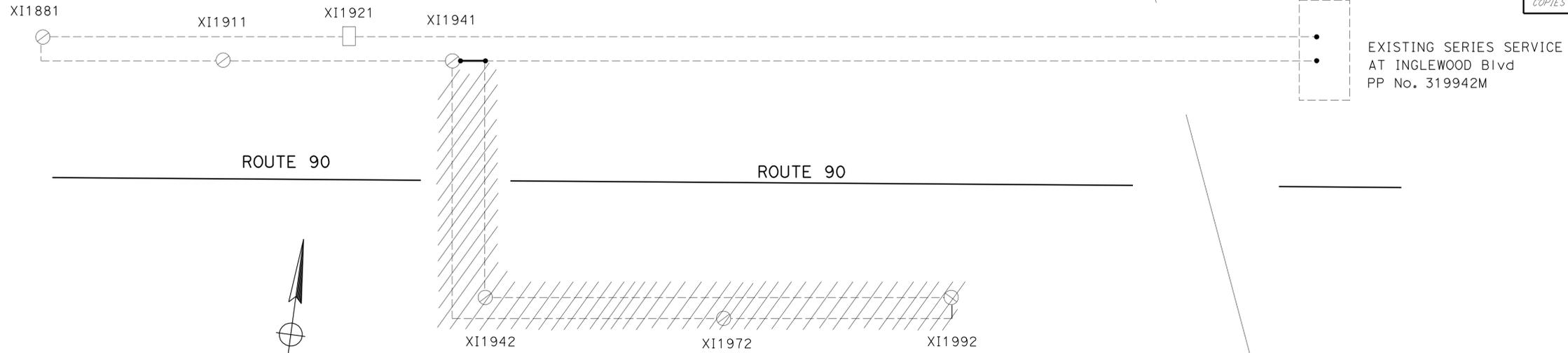
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	35	83

Mansour Feiz 06-10-11
 REGISTERED ELECTRICAL ENGINEER DATE
 8-22-11
 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
MANSOUR FEIZ
 No. E015688
 Exp. 6/30/12
 ELECT.
 STATE OF CALIFORNIA

WARNING

BEFORE STARTING WORK ON EXISTING SERIES STREET LIGHTING CIRCUITS, THE CONTRACTOR MUST OBTAIN DAILY CIRCUIT CLEARANCE FROM THE SERVICE COMPANY. CUT-OUT PLUGS MUST BE PULLED AND "MEN AT WORK" SIGN POSTED. BEFORE ANY WORK IS DONE OR CONNECTIONS MADE.



EXISTING SERIES SERVICE
 AT INGLEWOOD Blvd
 PP No. 319942M

LEGEND:

- EXISTING 400 W MERCURY VAPOR LAMP AND BALLAST TO REMAIN
- EXISTING 400 W MERCURY VAPOR LAMP AND BALLAST TO BE REMOVED
- SPLICE CONDUCTOR
- EXISTING SIGN LIGHTING FIXTURE TO REMAIN
- NEW 310 W HIGH PRESSURE SODIUM LUMINAIRE AND INTEGRAL BALLAST TO BE INSTALLED
- EXISTING CONDUCTOR TO REMAIN
- EXISTING CONDUCTOR TO BE REMOVED
- NEW CONDUCTOR TO BE INSTALLED
- NEW SERVICE POINT TO BE INSTALLED
- EXISTING SERVICE POINT TO REMAIN



**MODIFY LIGHTING AND SIGN ILLUMINATION
 (WIRING DIAGRAM)**
 NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: FEDRICO HORMOZI
 CHECKED BY: MANSOUR FEIZ
 REVISED BY: DATE
 REVISIONS:

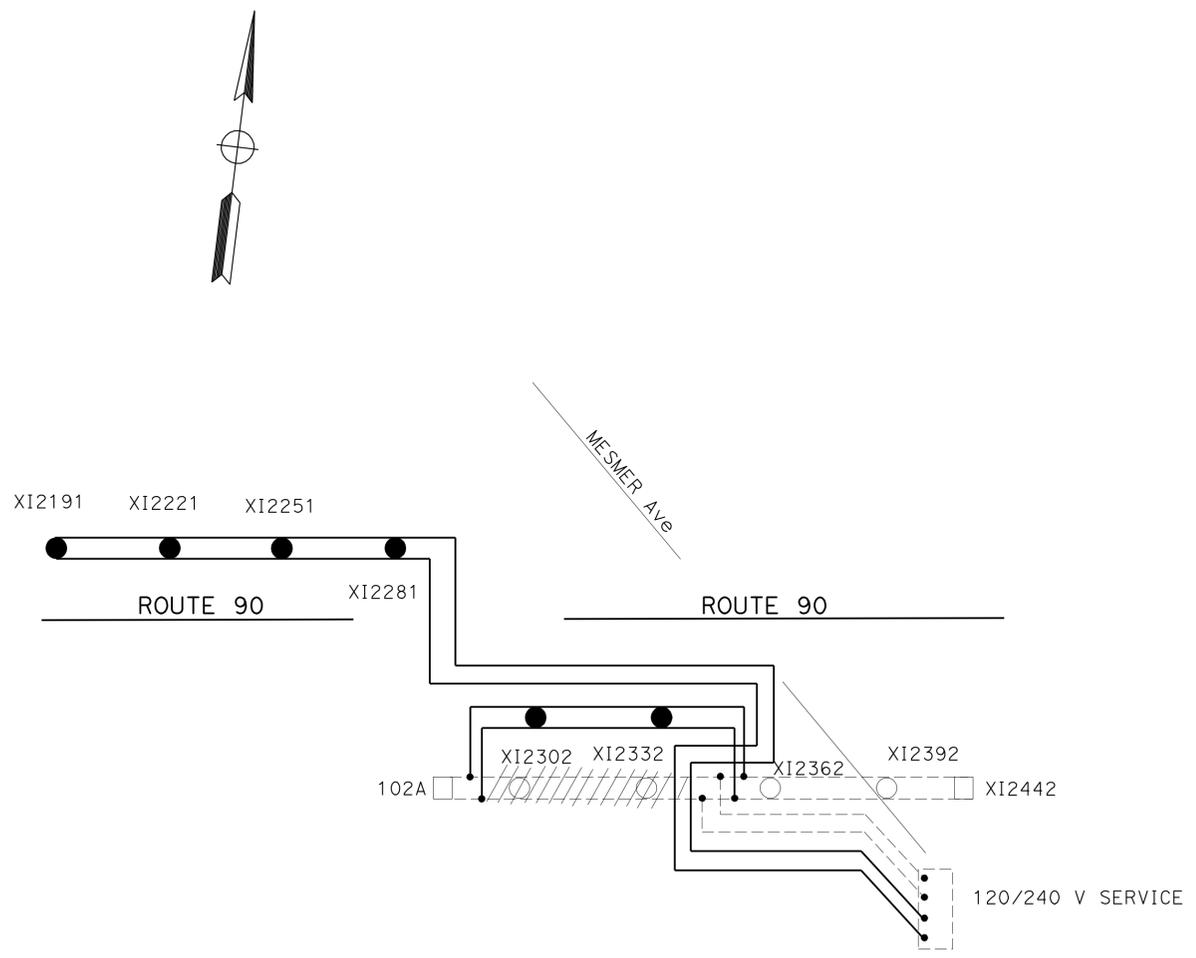
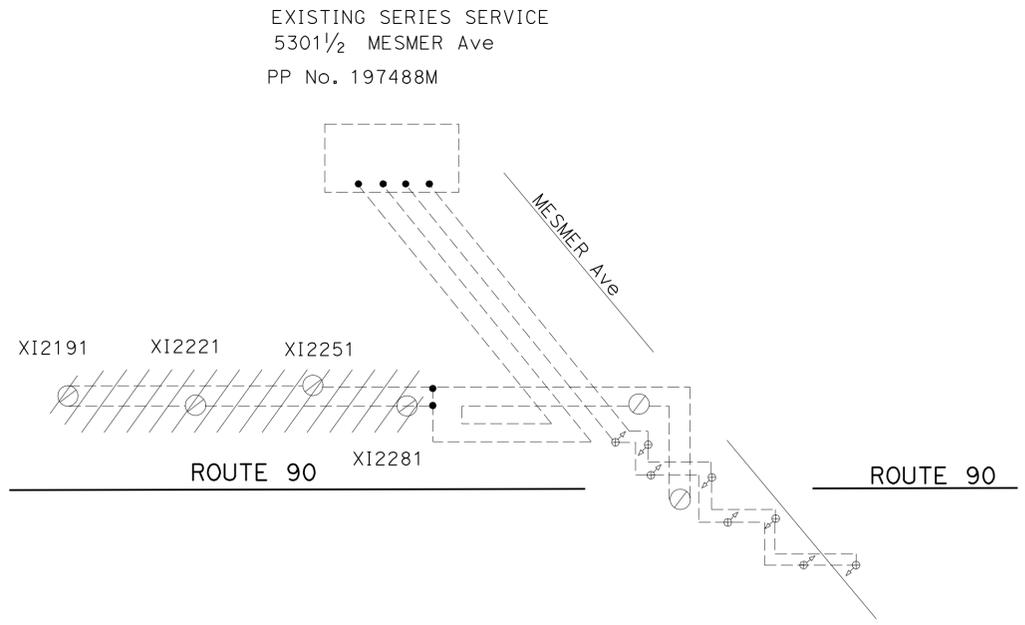
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	36	83
<i>Mansour Feiz</i> 06-10-11 REGISTERED ELECTRICAL ENGINEER DATE					
8-22-11			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

WARNING
 BEFORE STARTING WORK ON EXISTING SERIES STREET LIGHTING CIRCUITS, THE CONTRACTOR MUST OBTAIN DAILY CIRCUIT CLEARANCE FROM THE SERVICE COMPANY. CUT-OUT PLUGS MUST BE PULLED AND "MEN AT WORK" SIGN POSTED. BEFORE ANY WORK IS DONE OR CONNECTIONS MADE.

LEGEND:

- EXISTING 400 W MERCURY VAPOR LAMP AND BALLAST TO REMAIN
- ⊘ EXISTING 400 W MERCURY VAPOR LAMP AND BALLAST TO BE REMOVED
- SPLICE CONDUCTOR
- EXISTING SIGN LIGHTING FIXTURE TO REMAIN
- ⊕ EXISTING 175 W MERCURY VAPOR SOFFIT FIXTURE TO REMAIN
- EXISTING HIGH PRESSURE SODIUM LUMINAIRE AND INTEGRAL BALLAST TO REMAIN
- NEW 310 W HIGH PRESSURE SODIUM LUMINAIRE AND INTEGRAL BALLAST TO BE INSTALLED
- EXISTING CONDUCTOR TO REMAIN
- //// EXISTING CONDUCTOR TO BE REMOVED
- NEW CONDUCTOR TO BE INSTALLED
- ⊠ EXISTING SERVICE POINT TO REMAIN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: FEDRICO HORMOZI / MANSOUR FEIZ
 CHECKED BY: MANSOUR FEIZ
 REVISED BY: MANSOUR FEIZ
 DATE REVISED:



**MODIFY LIGHTING AND SIGN ILLUMINATION
 (WIRING DIAGRAM)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

LAST REVISION: DATE PLOTTED => 29-AUG-2011 11-16-10 TIME PLOTTED => 10:21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	37	83

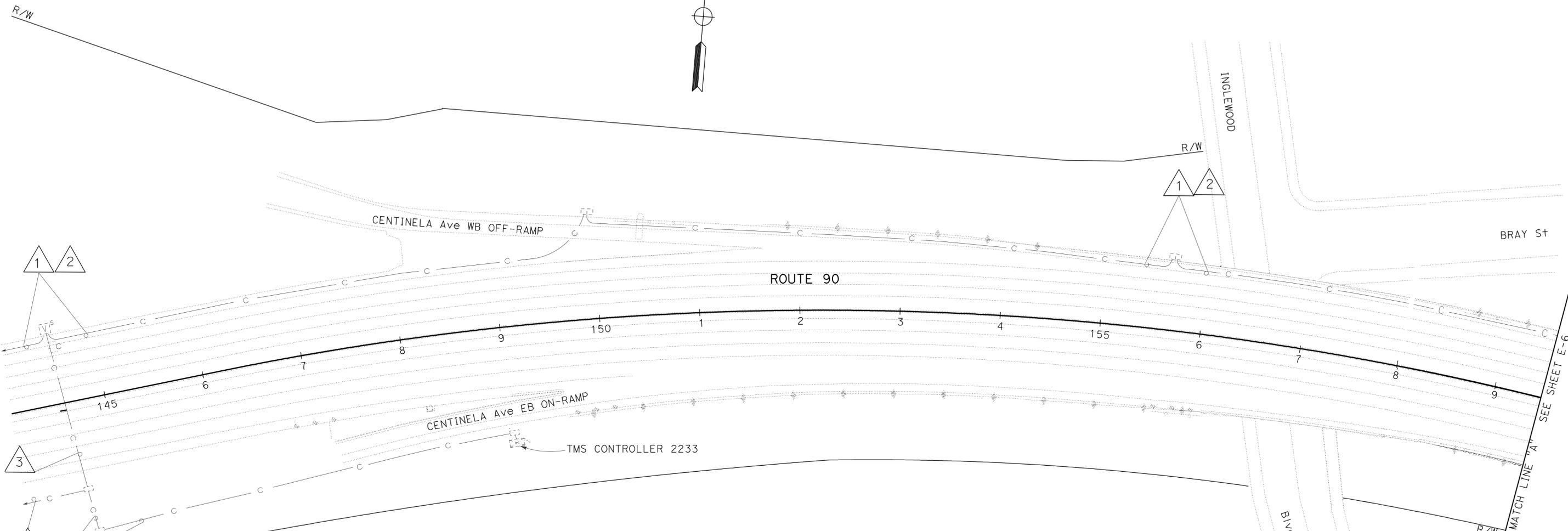
Mansour Feiz 06-10-11
 REGISTERED ELECTRICAL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 MANSOUR FEIZ
 No. E015688
 Exp. 6/30/12
 ELECT

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

- LEGEND:**
- COMMUNICATION PULL BOX
 - EXISTING COMMUNICATION PULL BOX
 - ▽^S EXISTING SPLICE VAULT WITH SPLICE CLOSURE
 - ▽^S NEW SPLICE VAULT WITH SPLICE CLOSURE



EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4
50P22 CABLE	DATA/VOICE	1			
24 SMFO CABLE	VIDEO/DATA	1			
12 SMFO CABLE	VIDEO DISTRIBUTION		1		
6P22 CABLE	DATA/VOICE			2	1
	INNERDUCT (1 1/4")	1	1		
	CONDUIT SIZE	4"	4"	3"	3"

50P22= TWISTED PAIR CABLE, 50 PAIR 22 AWG CONDUCTORS
 6P22= TWISTED PAIR CABLE, 6 PAIR 22 AWG CONDUCTORS
 24SMFO= FIBER OPTIC CABLE, 24 SINGLEMODE FIBERS
 12SMFO= FIBER OPTIC CABLE, 12 SINGLEMODE FIBERS

NO WORK. THIS SHEET IS FOR INFORMATION ONLY

MODIFY COMMUNICATION SYSTEM
 SCALE: 1" = 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

E-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: FEDRICO HORMOZI
 CHECKED BY: MANSOUR FEIZ
 REVISED BY: DATE REVISED:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/2.6	38	161

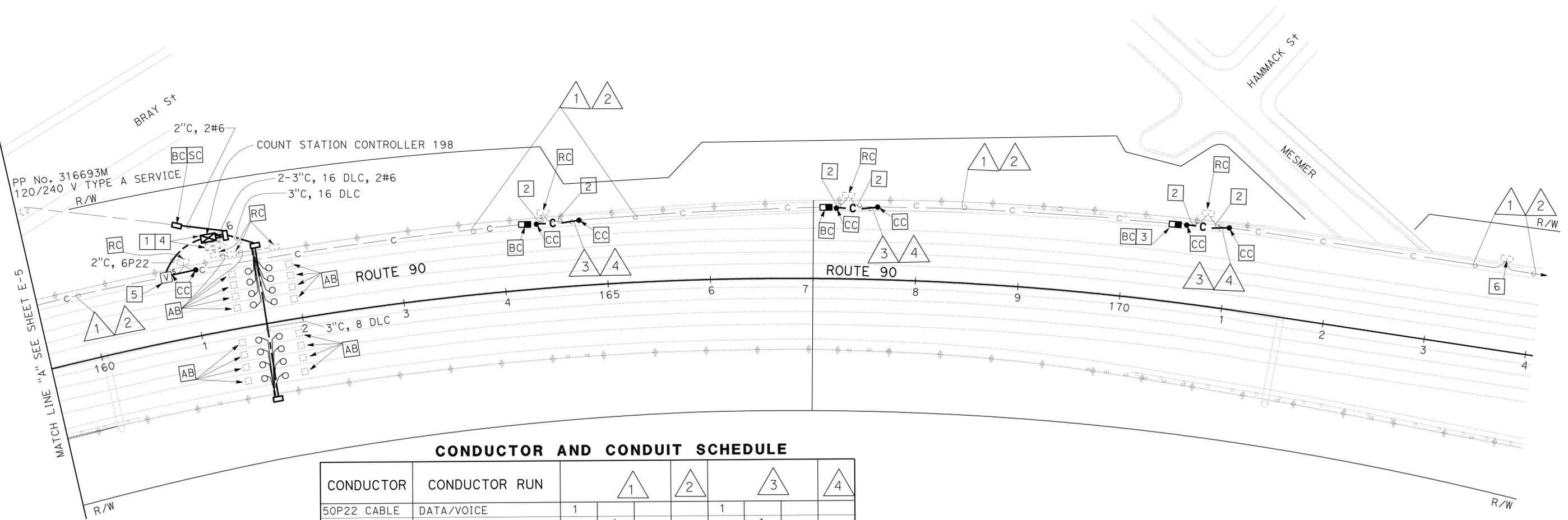
Mansour Feiz 06-10-11
 REGISTERED ELECTRICAL ENGINEER DATE
 8-22-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 MANSOUR FEIZ
 No. E015688
 Exp. 6/30/12
 ELECT

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

- NOTES: (THIS SHEET ONLY)**
- 1 RL EXISTING MODEL 170 CONTROLLER ASSEMBLY.
 - 2 AB EXISTING CONDUIT.
 - 3 PULL OUT EXISTING CABLES FROM AND REINSTALL TO NEW SPLICE VAULT AT COUNT STATION CONTROLLER 198.
 - 4 COIL 5' 6P22 IN CABINET.
 - 5 CUT ALL EXISTING CABLES. SPLICE BACK ALL EXISTING CABLES AFTER REINSTALLED.
 - 6 PULL AND PROTECT ALL EXISTING CABLES FROM COMMUNICATION PULL BOX AT Sta 160+75 FOR REUSE.
 7. FOR COMPLETE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 REVISIONS: REVISOR: FEDRICO HORMOZI, DATE: 06-10-11; REVISOR: MANSOUR FEIZ, DATE: 08-22-11
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI, CHECKED BY: MANSOUR FEIZ



CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	CONDUIT RUN			
		1	2	3	4
50P22 CABLE	DATA/VOICE	1		1	
24 SMFO CABLE	VIDEO/DATA	1		1	
12 SMFO CABLE	VIDEO DISTRIBUTION		1		1
	INNERDUCT (1 1/4")	1	1	1 ^N	1 ^N
	CONDUIT SIZE	4"	4"	4" ^N	4" ^N

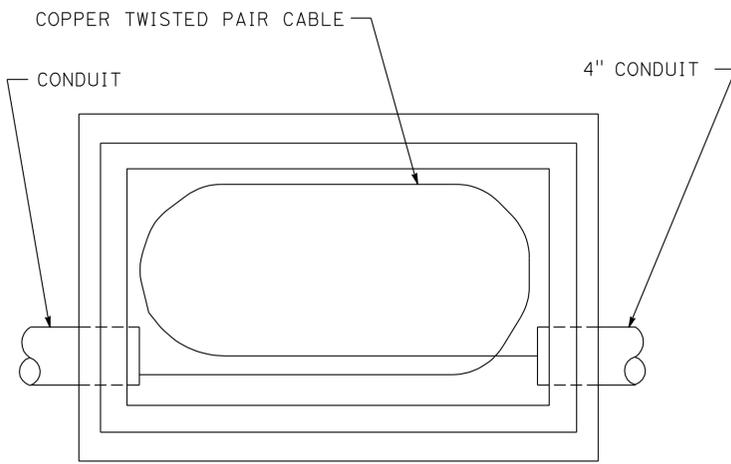
ALL CONDUCTOR AND CONDUIT ARE EXISTING UNLESS OTHERWISE SHOWN.
 50P22= TWISTED PAIR CABLE, 50 PAIR 22 AWG CONDUCTORS
 24SMFO= FIBER OPTIC CABLE, 24 SINGLEMODE FIBERS
 12SMFO= FIBER OPTIC CABLE, 12 SINGLEMODE FIBERS
 N= NEW

**MODIFY COMMUNICATION SYSTEM AND
MODIFY TRAFFIC MONITORING STATION**

SCALE: 1" = 50'

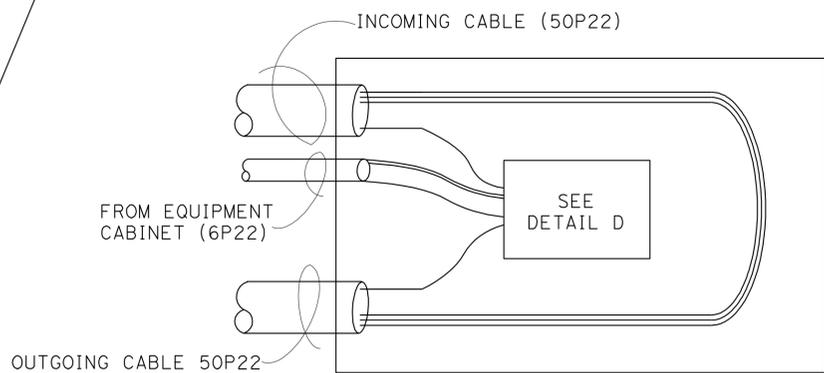
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	40	83
 REGISTERED ELECTRICAL ENGINEER			06-10-11 DATE		
8-22-11 PLANS APPROVAL DATE					
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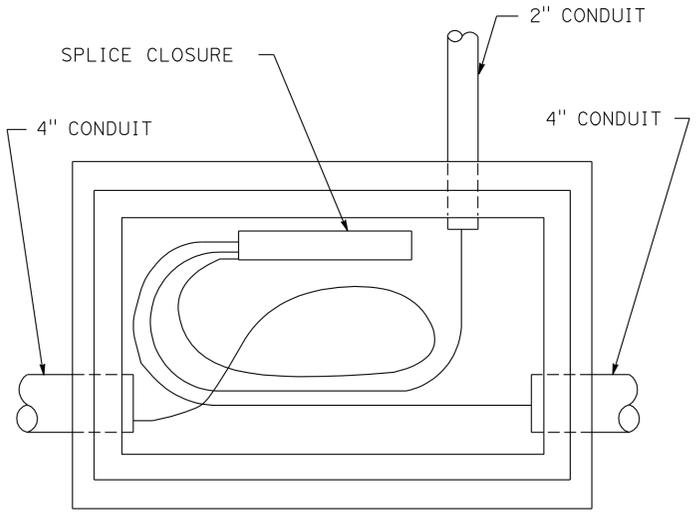


No. 6(T) (MODIFIED) PULL BOX
WITH TWISTED PAIR CABLE - NO SPLICE

DETAIL A

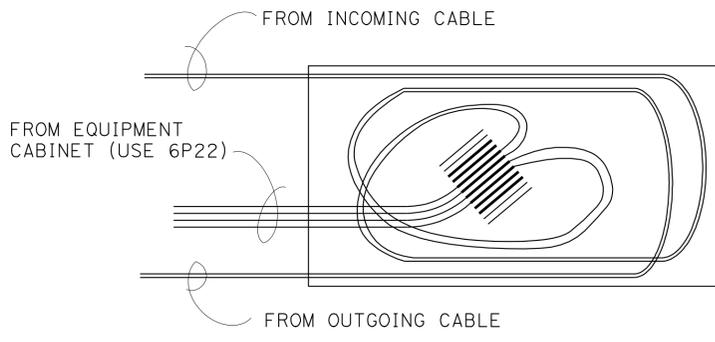


DETAIL C
TYPICAL TWISTED PAIR SPLICE CLOSURE

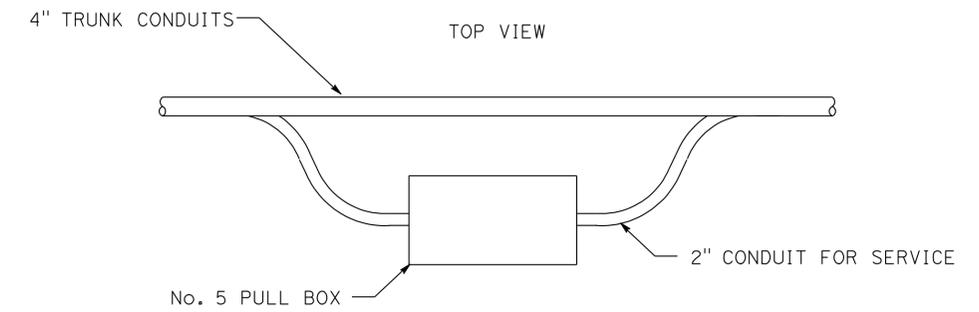


No. 6(T) (MODIFIED) PULL BOX
WITH TWISTED PAIR CABLE - WITH SPLICE

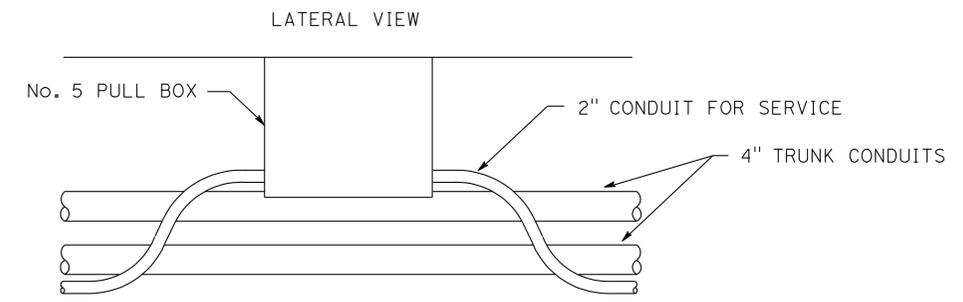
DETAIL B



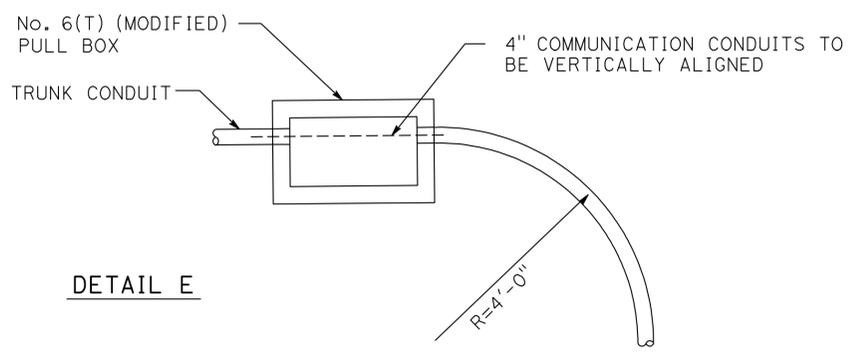
DETAIL D
TYPICAL TWISTED PAIR SPLICE TRAY



ROUTE SERVICE CONDUIT UP FROM BENEATH CONDUITS INTO
No. 5 PULL BOX LOCATED ALONGSIDE TRUNK. TRUNK CONDUITS
REMAIN IN TRENCH.



DETAIL F



DETAIL E

NOTES: (THIS SHEET)

1. DIMENSIONS VARY ACCORDING TO SIZE OF CONDUIT ETC. BUT THE MINIMUM BEND RADIUS OF 4'-0" SHALL BE MAINTAINED ON ALL TRUNK CONDUITS CONTAINING FIBER OPTIC CABLE AND SIX TIMES THE CONDUIT DIAMETER FOR ALL OTHER CONDUITS.
2. ALL BENDS SHALL BE FACTORY BENDS.
3. THE CONTRACTOR SHALL ADAPT CONDUIT STUBOUTS FOR SPECIFIC PROJECT REQUIREMENTS.
4. ADDITIONAL CONDUIT ENTRANCES AS REQUIRED.
5. TOP CONDUIT TO BE SPARE.

**MODIFY COMMUNICATION SYSTEM
(DETAILS FOR No. 5(T) AND No. 6(T) PULL BOXES)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

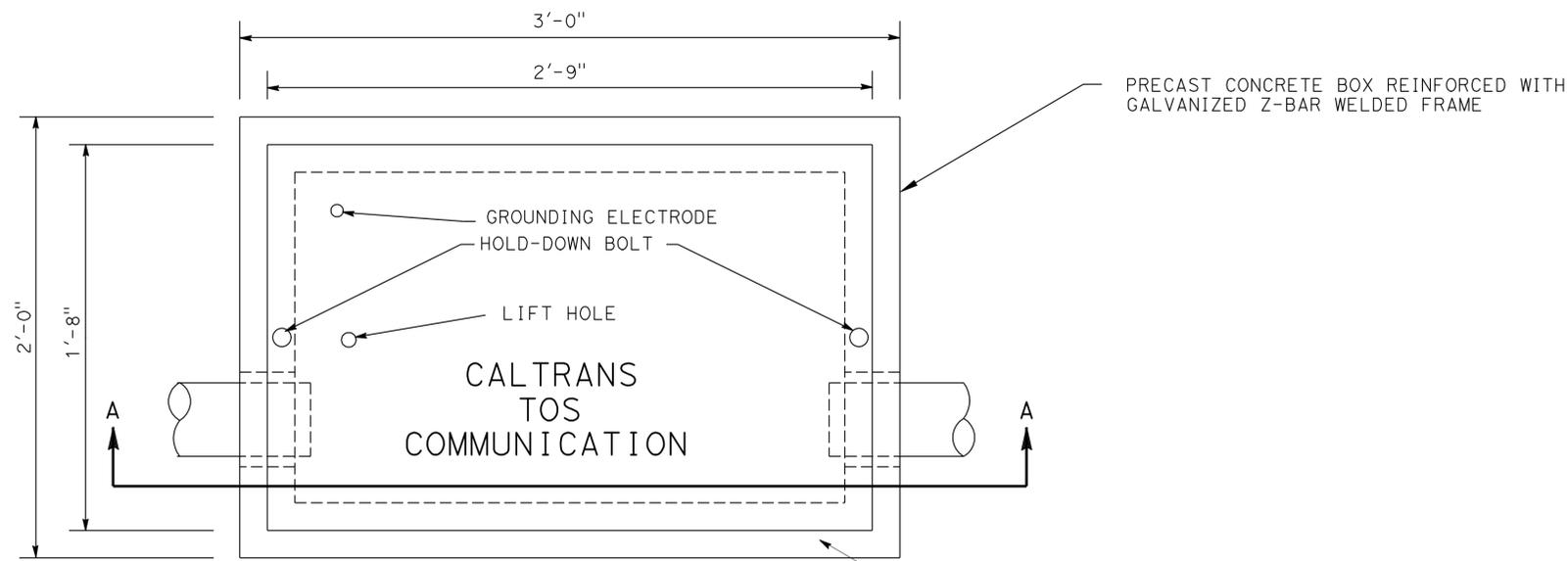


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: [Blank]
 CHECKED BY: [Blank]
 REVISIONS: [Blank]
 REVISOR: [Blank] DATE: [Blank]
 REVISOR: [Blank] DATE: [Blank]

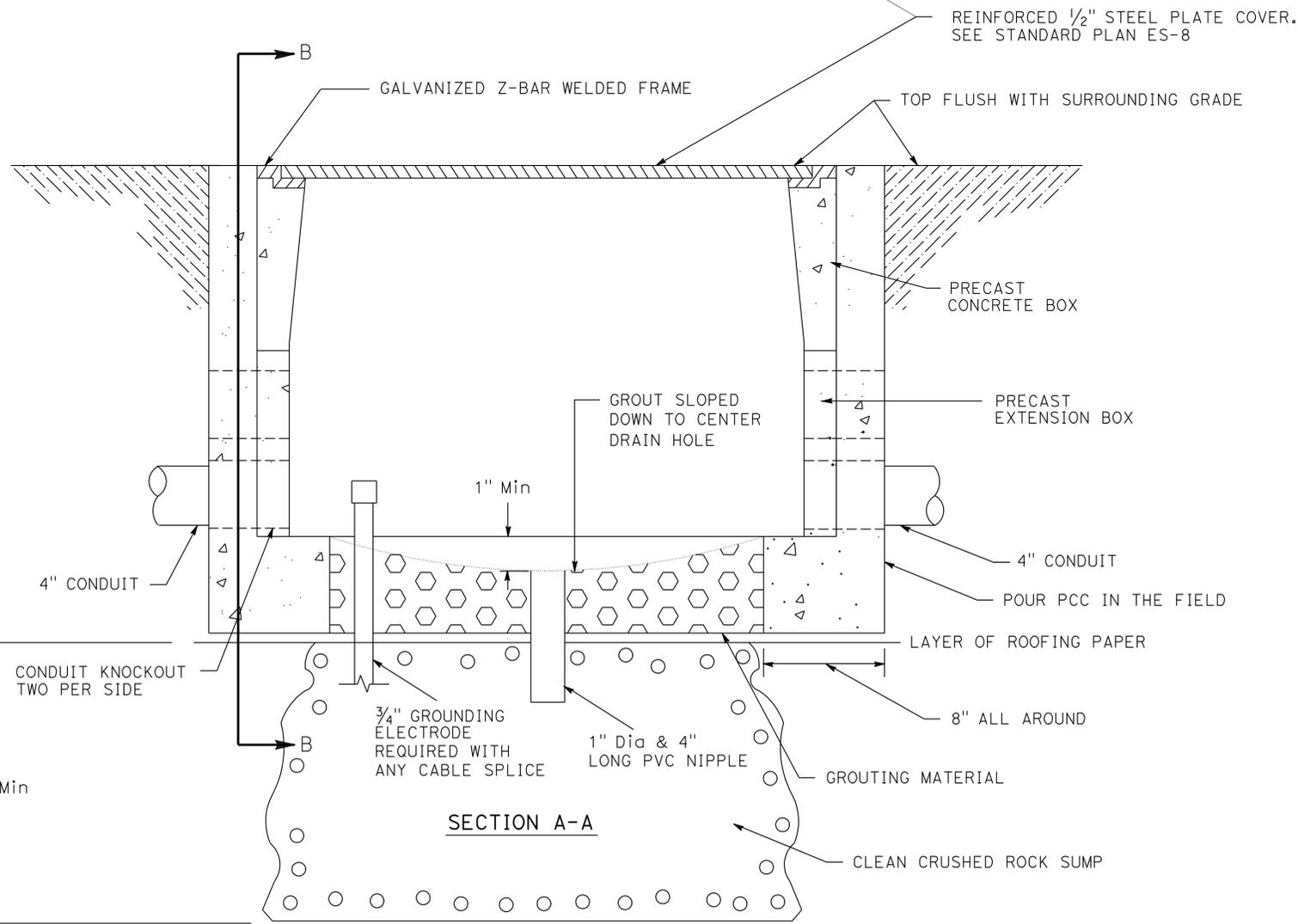
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 REGISTERED ELECTRICAL ENGINEER			DATE		
			06-10-11		
			8-22-11		
			PLANS APPROVAL DATE		
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NOTES: (THIS SHEET)

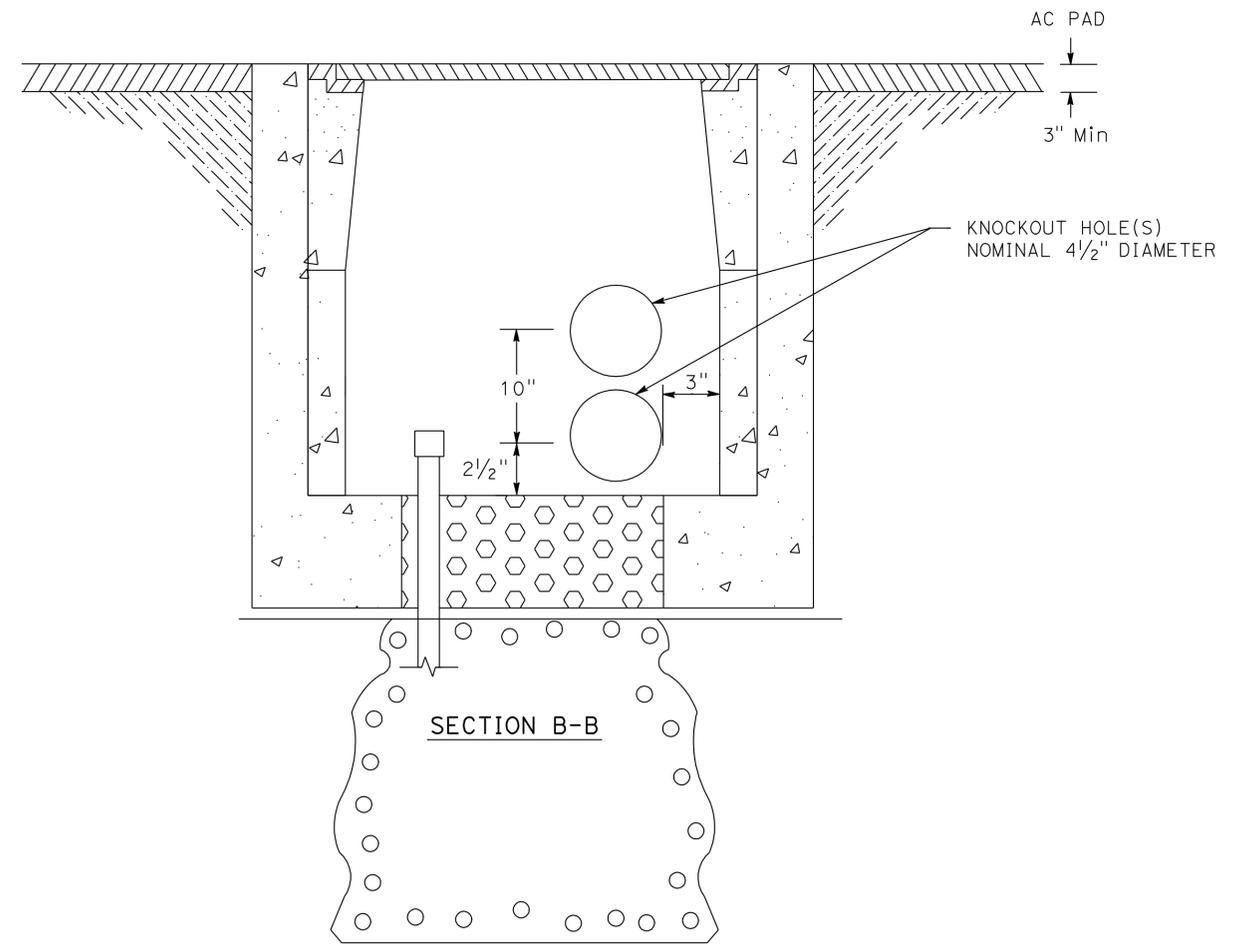
- SERVICE CONDUITS APPEAR IN PULL BOXES AS SHOWN ON PLANS.
- ADDITIONAL CONDUIT ENTRANCES AS SHOWN IN THE PLANS.
- WHERE FURNISHED, TOP CONDUIT TO BE SPARE.
- 4'-0" x 5'-0" AC PAD WITH PULL BOX IN CENTER SHALL BE INSTALLED FLUSH WITH PULL BOX COVER.



TOP VIEW



SECTION A-A



SECTION B-B

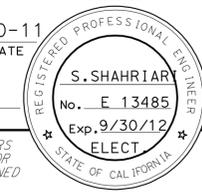
**MODIFY COMMUNICATION SYSTEM
(COMMUNICATION PULL BOX
DETAILS)**

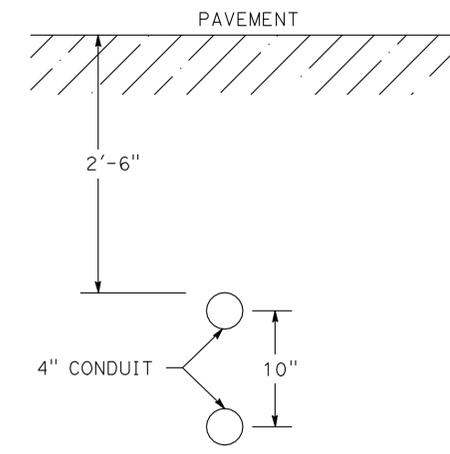
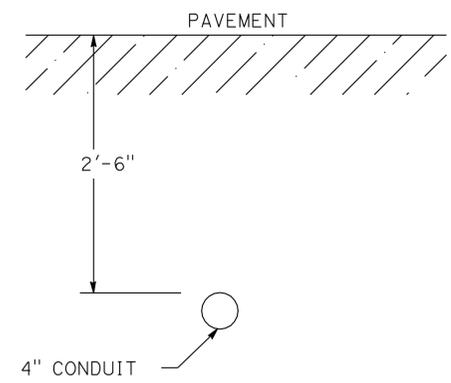
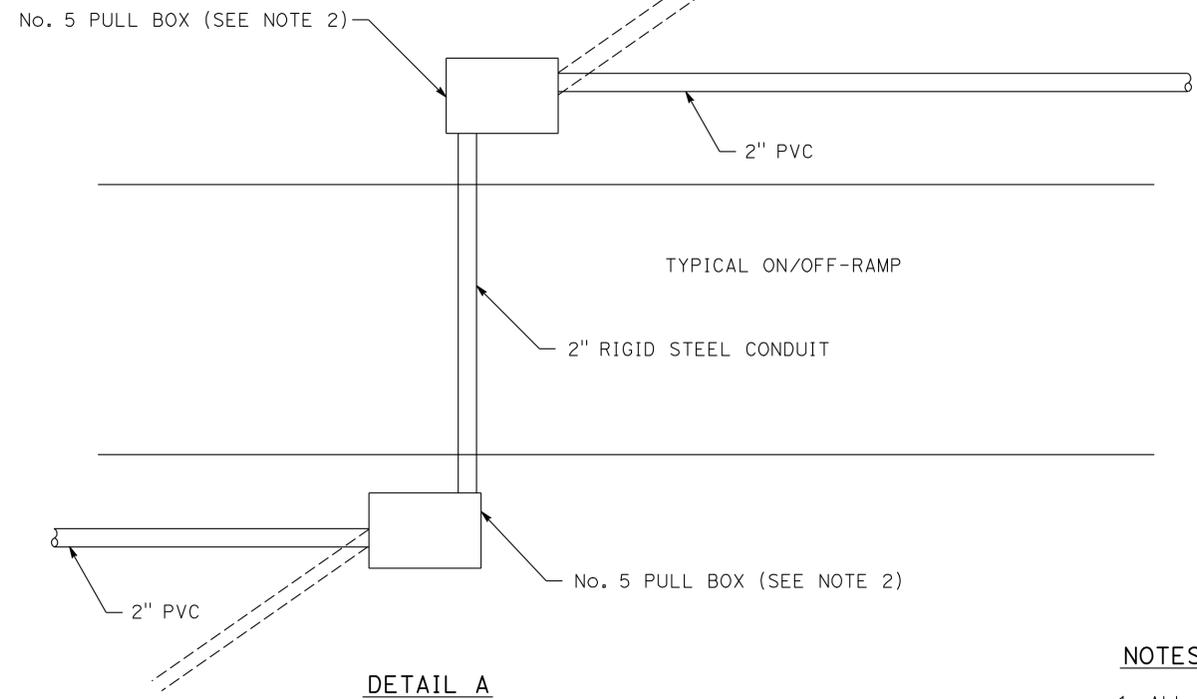
NO SCALE

E-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: FEDRICO HORMOZI
 CHECKED BY: MANSOUR FEIZ
 REVISED BY: DATE
 REVISIONS:

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	42	83
 REGISTERED ELECTRICAL ENGINEER			06-10-11	DATE	
8-22-11 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>					

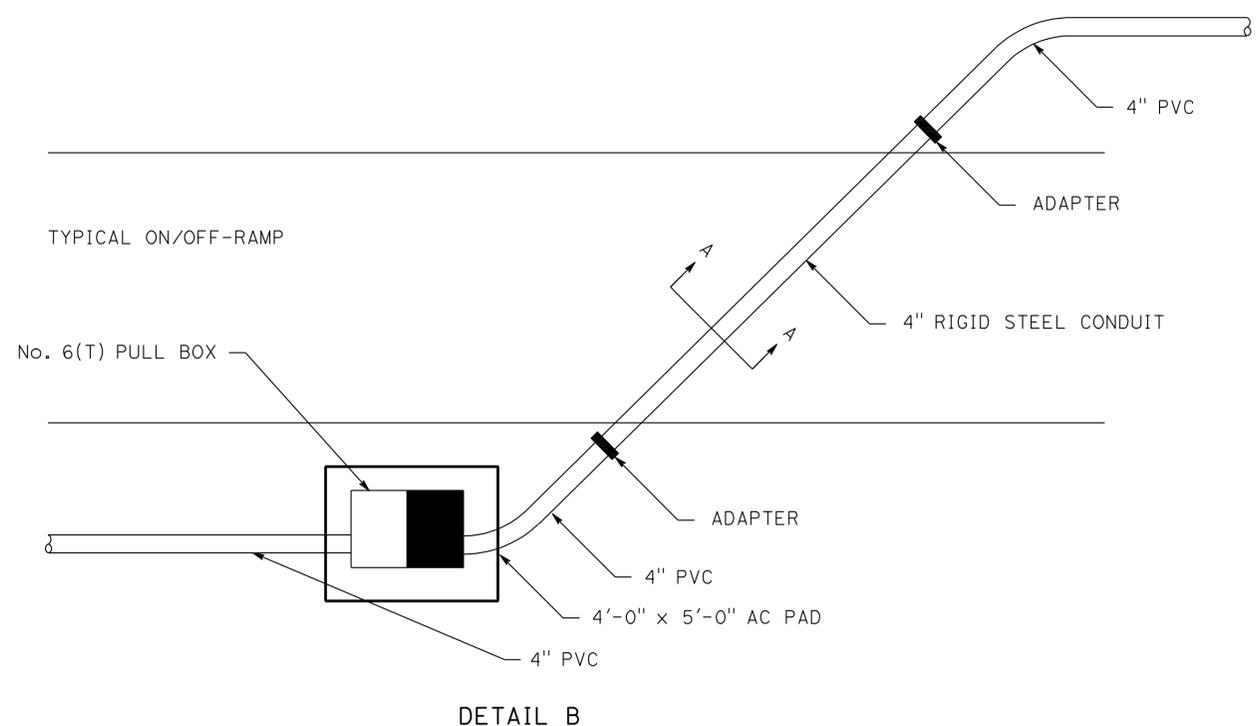


SECTION A-A

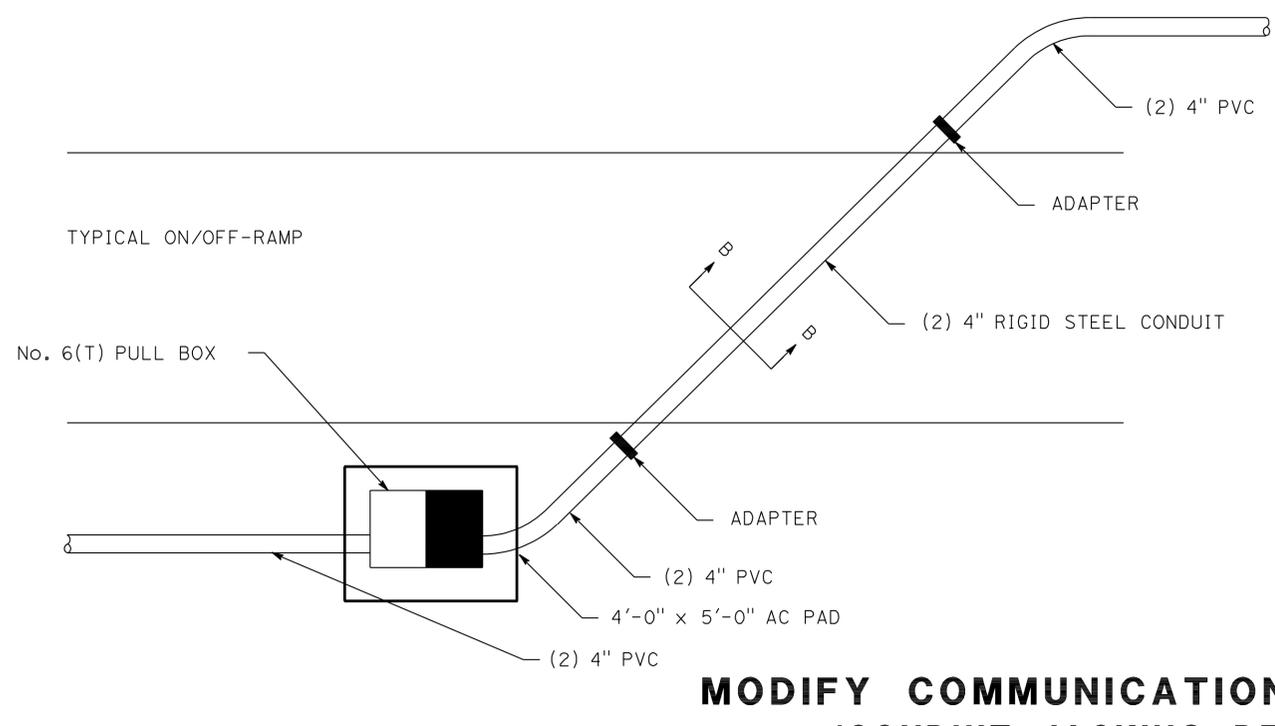
SECTION B-B

NOTES: (THIS SHEET)

1. ALL CONDUITS SHALL BE 2'-6" BELOW FINISHED GRADE.
2. PLACE PULL BOX AS SHOWN ON THE PLANS.
3. ALL BENDS SHALL BE FACTORY BENDS.
4. BEND ANGLES AND CONDUIT DIRECTION VARY AS SHOWN IN PLANS.



DETAIL B



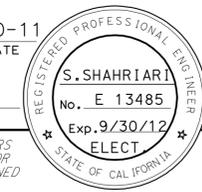
DETAIL C

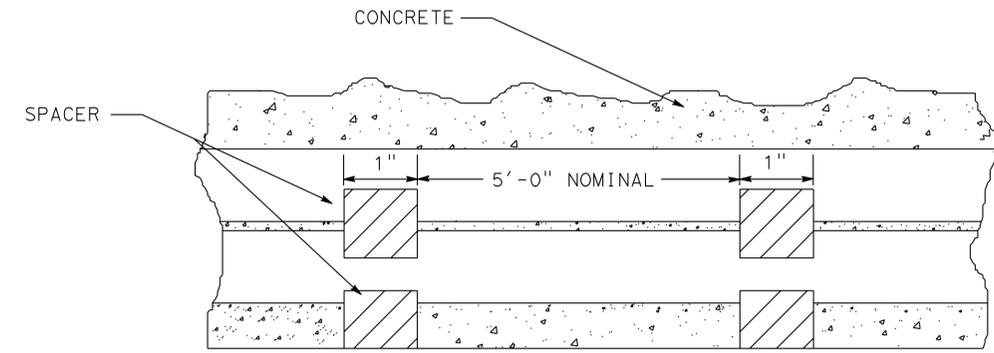
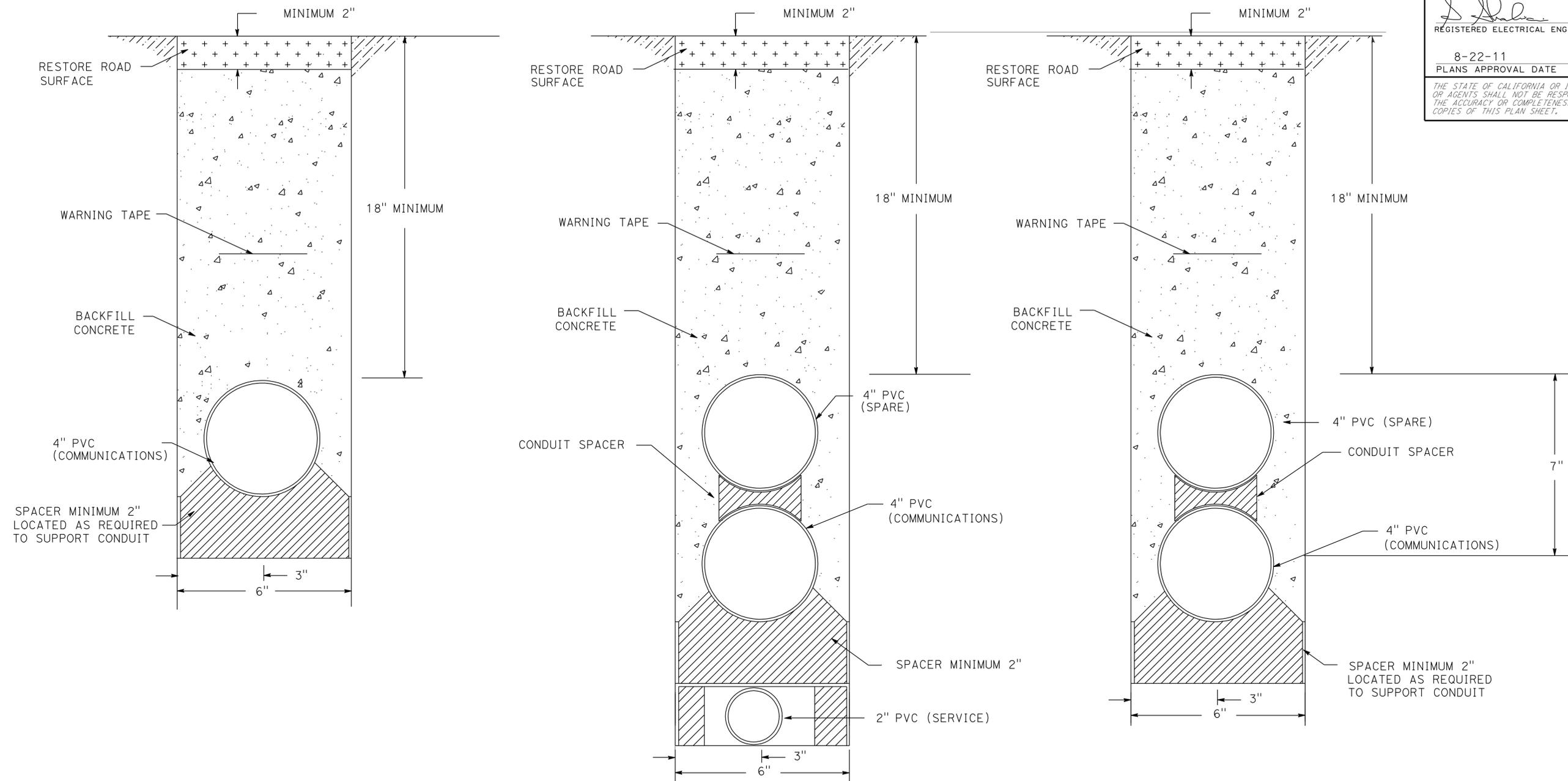
**MODIFY COMMUNICATION SYSTEM
(CONDUIT JACKING DETAILS)**

NO SCALE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 REVISIONS: (None)
 DESIGNED BY: (None)
 CHECKED BY: (None)
 CALCULATED BY: (None)
 FEDERAL REGISTERED ELECTRICAL ENGINEER: FEDRICO HORMOZI
 FEDERAL REGISTERED ELECTRICAL ENGINEER: MANSOUR FEIZ
 REVISIONS: (None)
 DATE: (None)
 DATE: (None)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	43	83
 REGISTERED ELECTRICAL ENGINEER			06-10-11	DATE	
8-22-11 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>					



CONDUIT SPACER PLACEMENT, SIDE VIEW

NOTES: (THIS SHEET)
 WHEN TRENCH TRANSITIONS FROM ASPHALT TO DIRT AREAS, CONDUIT TO GRADUALLY DROP FROM 18" MIN DEPTH TO 2'-6" MIN DEPTH WITHIN ASPHALT AREA.

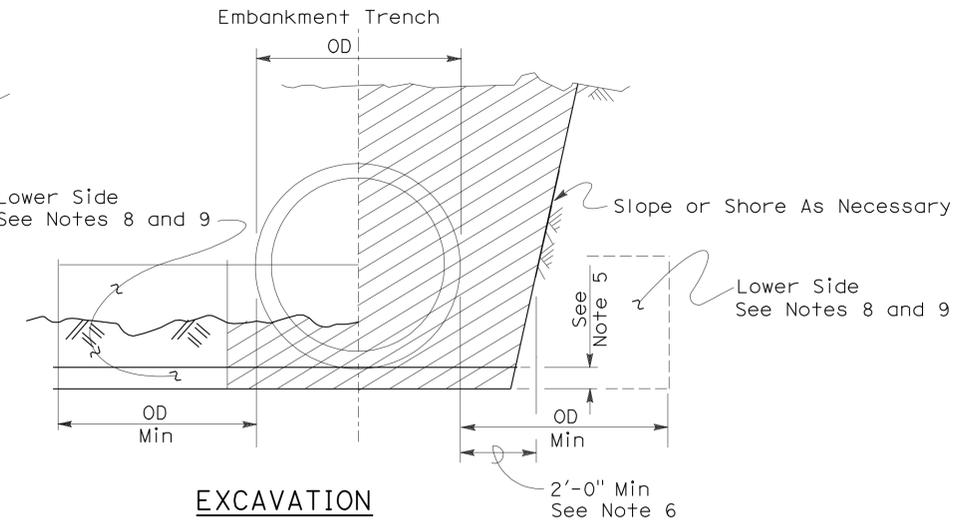
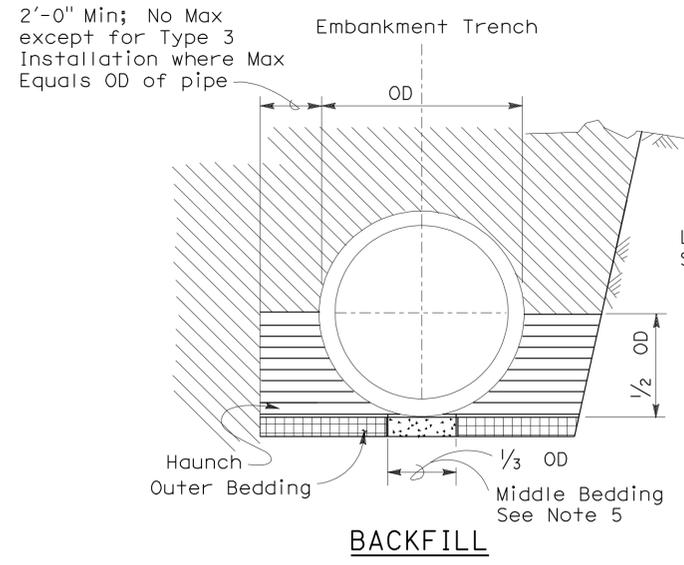
**MODIFY COMMUNICATION SYSTEM
 (TRENCH IN PAVEMENT DETAILS)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: CHECKED BY:
 FEDRICO HORMOZI MANSOUR FEIZ
 REVISED BY: DATE REVISED:
 USERNAME => s121614
 DGN FILE => 0700000523u011.dgn

To accompany plans dated 8-22-11



- | | | | |
|--|---|--|--------------------------------|
| | Roadway Embankment | | Excavation Structure (Culvert) |
| | Structure Backfill (Culvert) See Note 6 | | |
| | Structure Backfill (Culvert) See Note 6 | | |
| | Loose Backfill | | |

TYPE 1 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 μm sieve size shall be 12.

TYPE 2 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

TYPE 3 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or 1/2 OD.

NOTES:

- Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.
 Example: 24" RCP culvert with maximum cover of 19'-0" the options are:
 a) Class III or stronger with Installation Type 1.
 b) Class III Special or stronger with Installation Type 2.
 c) Class IV Special or stronger with Installation Type 3.
 Cover is defined as the maximum vertical distance from top of the pipe to finished grade within the length of any given culvert.
- The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
- The "length of any culvert" is defined as the culvert between:
 a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).
 b) A drainage structure and the inlet or outlet end of the culvert.
 c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
- Oval and arch shaped RCP shall not be used.
- 1/25 OD Min, not less than 3".
- Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used the outer and middle beddings shall be omitted. Prior to installation the soil under the middle 1/3 of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of 1/25 OD, but not less than 3". Where slurry cement backfill is used clear distance to trench wall may be reduced as set forth in Section 19-3.062 of the Standard Specifications.
- Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
- Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.
- Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height or up to not less than 12" from the grading plane, the firmness of the soil in the lower side need not be considered.
- Non-reinforced precast concrete pipe sizes 3'-0" or smaller may be placed under installation Types 1, 2 or 3.

INSTALLATION TYPE 1

MINIMUM CLASS AND D-LOAD	COVER	
	108" Dia AND SMALLER	OVER 108" Dia
Class II 1000D	14.9'	12.9'
Class III 1350D	15.0' - 20.9'	13.0' - 18.9'
Class III Special 1700D	21.0' - 26.9'	19.0' - 24.9'
Class IV 2000D	27.0' - 31.9'	25.0' - 29.9'
Class IV Special 2500D	32.0' - 40.9'	30.0' - 38.9'
Class V 3000D	41.0' - 49.9'	39.0' - 46.9'
Class V Special 3600D	50.0' - 59.0'	47.0' - 58.0'

INSTALLATION TYPE 2

MINIMUM CLASS AND D-LOAD	COVER
Class II 1000D	9.9'
Class III 1350D	10.0' - 14.9'
Class III Special 1700D	15.0' - 19.9'
Class IV 2000D	20.0' - 24.9'
Class IV Special 2500D	25.0' - 31.9'
Class V 3000D	32.0' - 38.9'
Class V Special 3600D	39.0' - 47.0'

INSTALLATION TYPE 3

MINIMUM CLASS AND D-LOAD	COVER	
	48" Dia AND SMALLER	OVER 48" Dia
Class II 1000D	7.9'	5.9'
Class III 1350D	8.0' - 10.9'	6.0' - 8.9'
Class III Special 1700D	11.0' - 14.9'	9.0' - 12.9'
Class IV 2000D	15.0' - 17.9'	13.0' - 15.9'
Class IV Special 2500D	18.0' - 21.9'	16.0' - 19.9'
Class V 3000D	22.0' - 26.9'	20.0' - 24.9'
Class V Special 3600D	30.0' - 33.0'	25.0' - 31.0'

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**EXCAVATION AND BACKFILL
CONCRETE PIPE CULVERTS**

NO SCALE

RSP A62DA DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A62DA DATED MAY 1, 2006 - PAGE 20 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A62DA

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	46	83

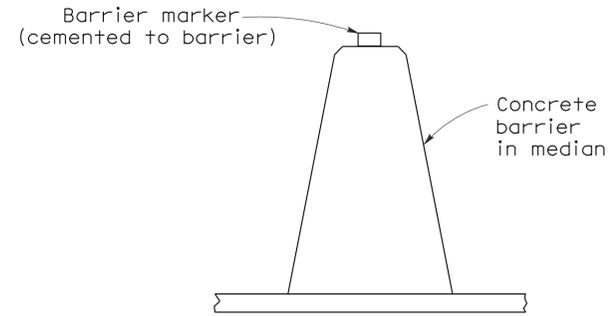
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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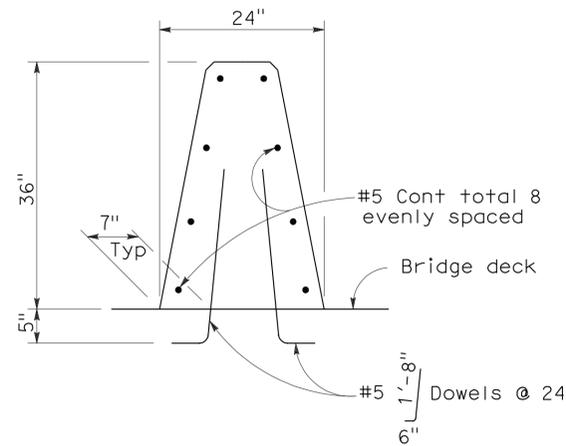
To accompany plans dated 8-22-11

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA



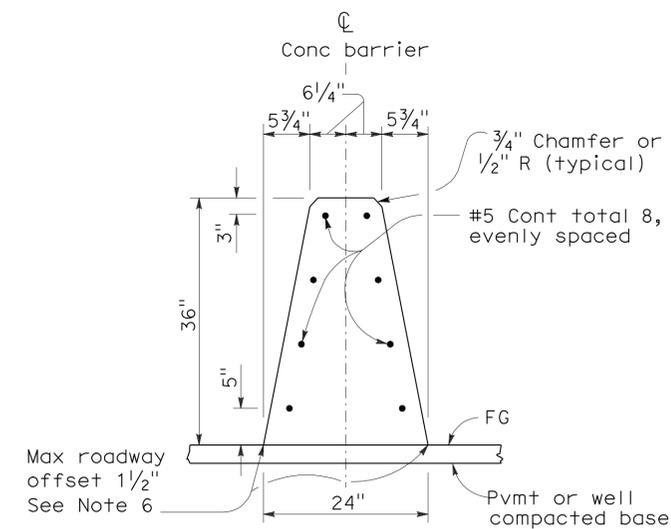
CONCRETE BARRIER TYPE 60 DELINEATION

See Notes 7 and 8



CONCRETE BARRIER TYPE 60A

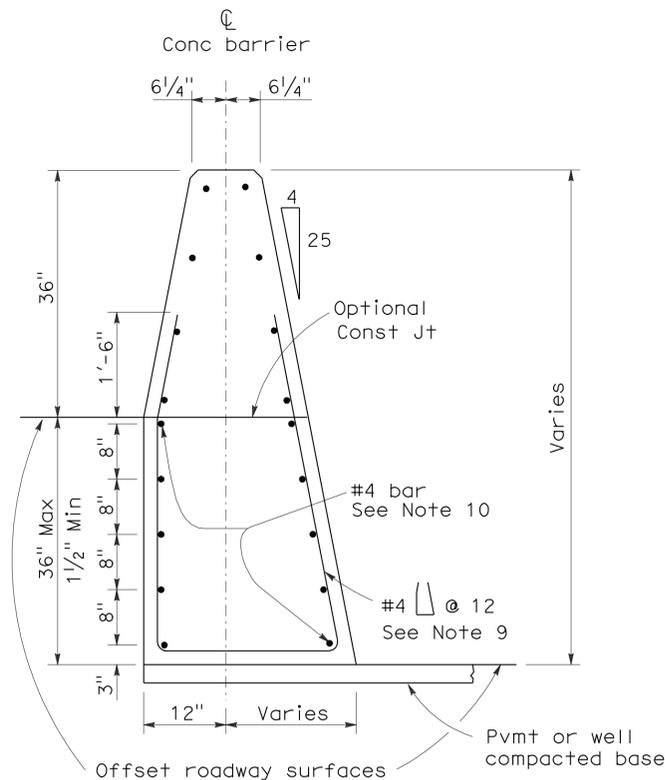
Details similar to Type 60 except as noted.



CONCRETE BARRIER TYPE 60

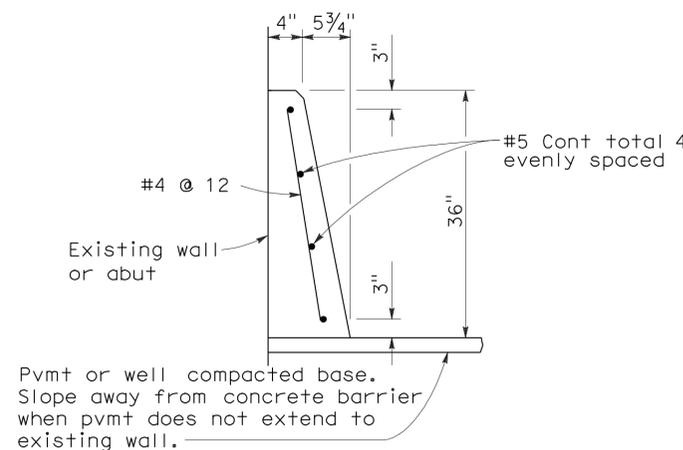
NOTES:

- See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
- Expansion joints in concrete barrier shall be located at all deck, pavement and principal wall joints. Expansion joint filler material shall be the same size as joint or 1/2" minimum.
- Where roadway offset is greater than 1/2", see Concrete Barrier Type 60C.
- Barrier delineation to be used when required by the Special Provisions.
- Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
- Reinforcing stirrup not required for roadway offsets less than 1'-0".
- For roadway surfaces offset greater than 1 1/2" to 3", no rebars required. For roadway surfaces offset greater than 3" to 8" use two #4 rebars at 3" above the lower roadway surface. For roadway surfaces offset greater than 8" to 12", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface. For roadway surfaces offset greater than 12" to 36", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increment vertical spacing above the first two #4 rebars.



CONCRETE BARRIER TYPE 60C

Details similar to Type 60 except as noted. Concrete barrier end anchor when necessary. 36" roadway surfaces offset shown.



CONCRETE BARRIER TYPE 60D

CONCRETE BARRIER TYPE 60

NO SCALE

RSP A76A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76A DATED MAY 1, 2006 - PAGE 29 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A76A

2006 REVISED STANDARD PLAN RSP A76A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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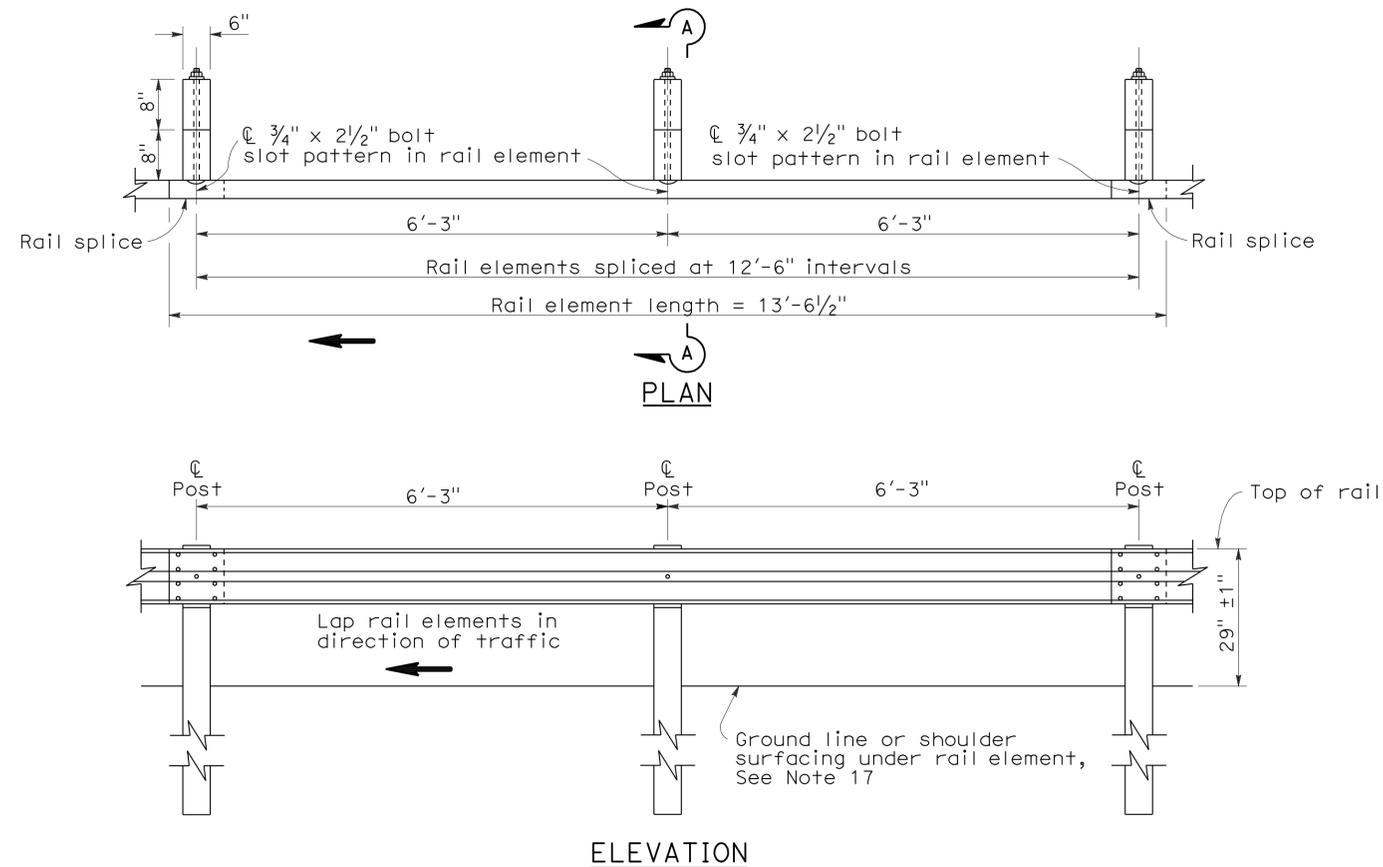
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

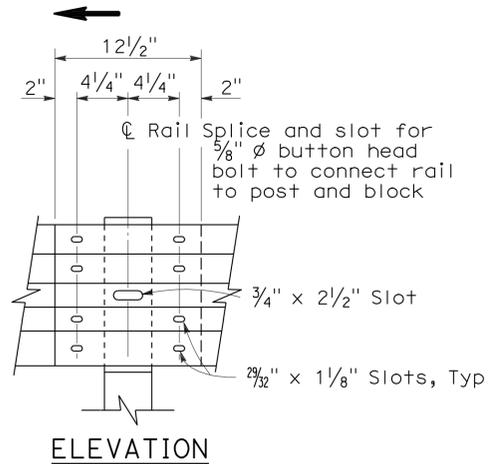
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 8-22-11

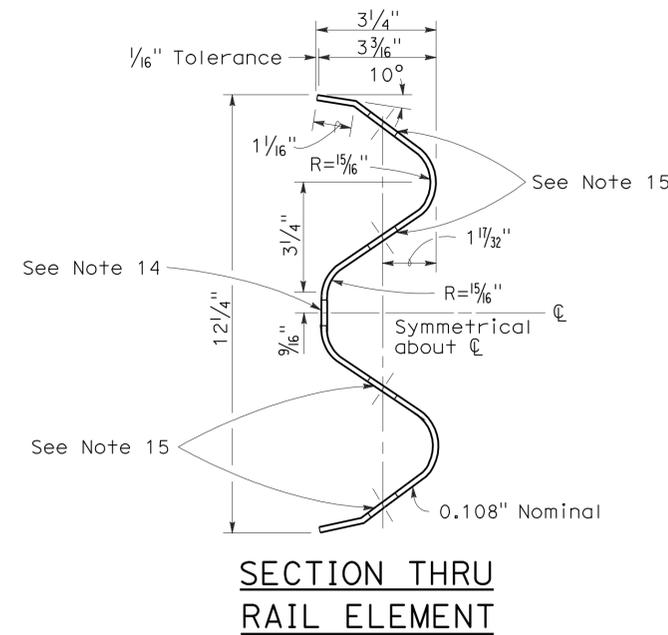


METAL BEAM GUARD RAILING WITH WOOD POST AND BLOCKS

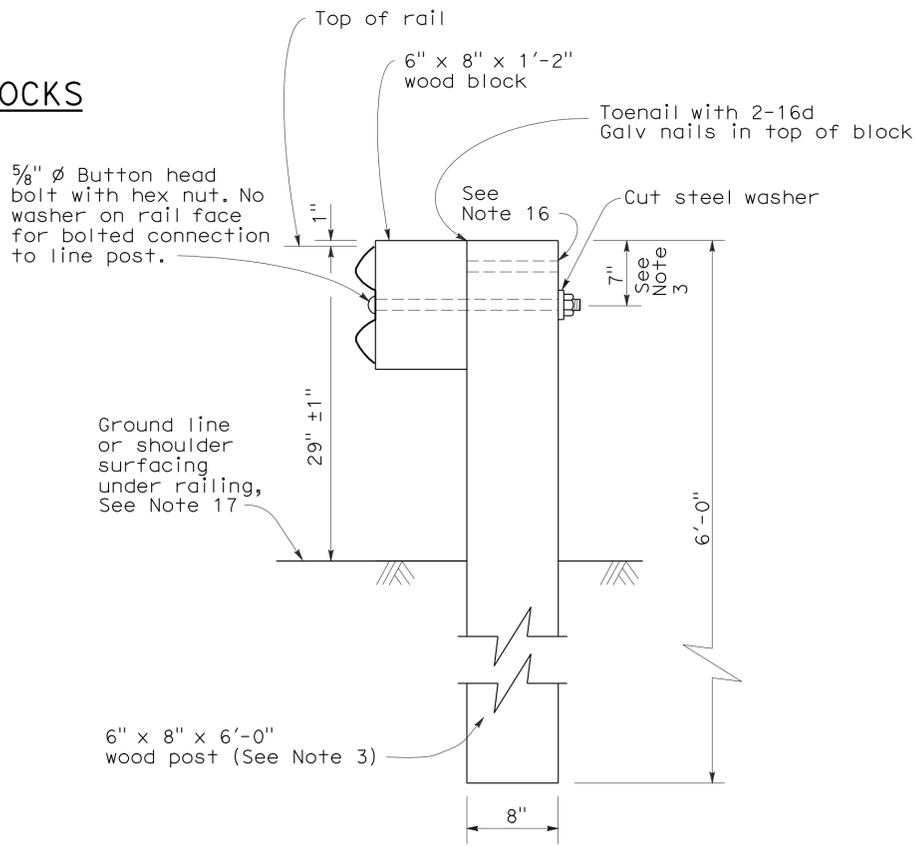


RAIL ELEMENT SPLICE DETAIL

- Connect the over lapped end of the rail elements with $\frac{5}{8}$ " ϕ x $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the $\frac{23}{32}$ " x $1\frac{1}{8}$ " slots and bolted together with $\frac{5}{8}$ " ϕ recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



SECTION THRU RAIL ELEMENT



**SECTION A-A
TYPICAL WOOD LINE
POST INSTALLATION**

See Note 4

NOTES:

- For details of steel post installations, see Standard Plan A77A2.
- For details of standard hardware used to construct guard railing, see Standard Plan A77B1.
- For details of wood posts and wood blocks used to construct guard railing, see Standard Plan A77C1.
- For additional installation details, see Standard Plan A77C3.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- For guard railing typical layouts, see the A77E, A77F and A77G Series of Standard Plans.
- For terminal system end treatment details, see the A77L Series of Standard Plans. To connect railing to terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
- For guard railing end anchor details, see Standard Plans A77H1 and A77I2.
- For details of guard railing transition to bridge railing, see Standard Plan A77J4.
- For additional details of guard railing connection to bridge railings, see Standard Plans A77J1, A77J2 and A77K1.
- For guard railing connection details to abutments and walls, see Standard Plan A77J3.
- Direction of adjacent traffic indicated by \rightarrow .
- For typical guard railing delineation and dike positioning details, see Standard Plan A77C4.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Standard Plan A77C1.
- Install posts in soil.

**METAL BEAM GUARD RAILING
STANDARD RAILING SECTION
(WOOD POST WITH
WOOD BLOCK)**

NO SCALE

RSP A77A1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77A1
DATED MAY 1, 2006 - PAGE 41 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77A1

2006 REVISED STANDARD PLAN RSP A77A1

To accompany plans dated 8-22-11

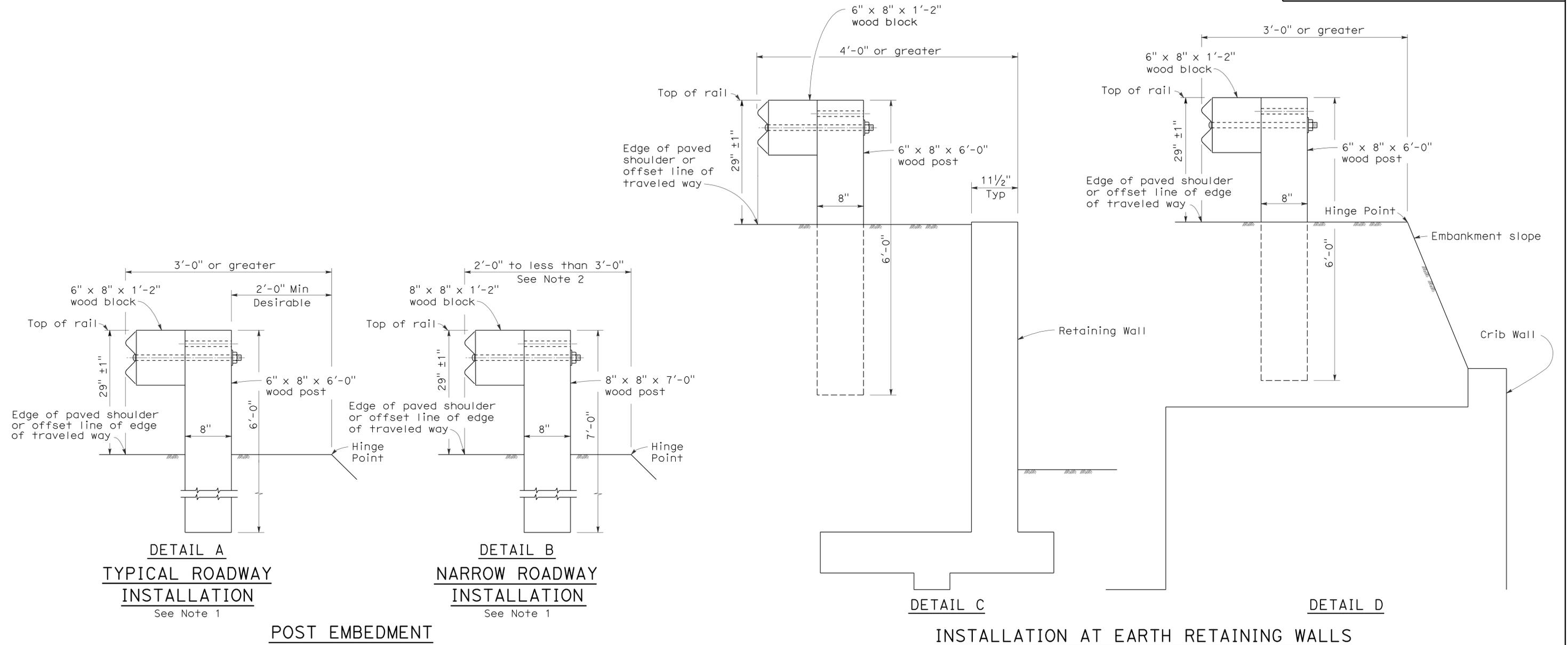
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	48	83

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

Randell D. Hiatt
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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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 9 steel post, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 9 steel post, 7'-0" in length, with 6" x 8" 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 Standard Plans A77A1 and A77A2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-0", see the Project Plans for special details.
3. For dike positioning with guard railing installations, see Standard Plan A77C4.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LINE POST
EMBEDMENT AND
HINGE POINT OFFSET DETAILS**

NO SCALE

RSP A77C3 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77C3
DATED MAY 1, 2006 - PAGE 46 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C3

2006 REVISED STANDARD PLAN RSP A77C3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	49	83

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

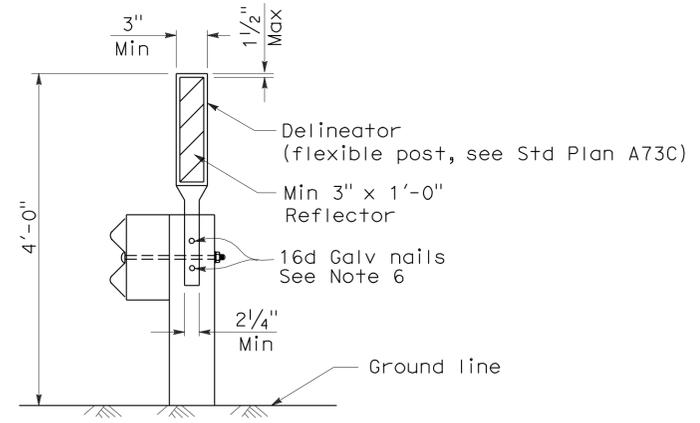
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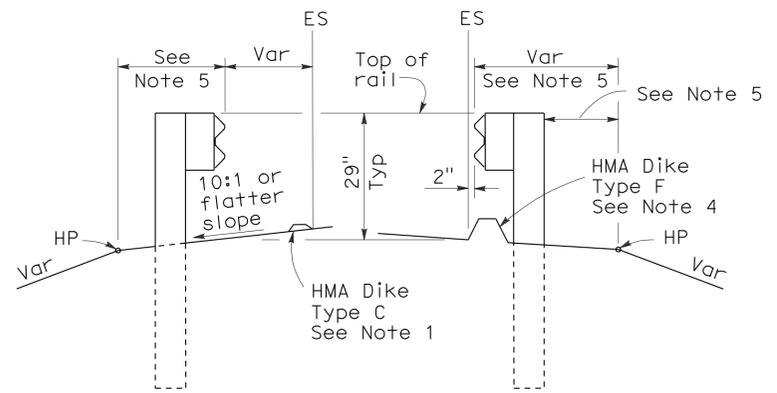
To accompany plans dated 8-22-11

NOTES:

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Standard Plans A87A and A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.
6. For steel line posts, use 1/4" - 20 self-tapping screws in 0.22" diameter holes or 1/4" bolts in 3/32" diameter holes.



GUARD RAILING DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL RAILING DELINEATION
AND DIKE POSITIONING DETAILS**

NO SCALE

RSP A77C4 DATED MAY 20, 2011 SUPERSEDES RSP A77C4 DATED JUNE 6, 2008 AND STANDARD PLAN A77C4 DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C4

2006 REVISED STANDARD PLAN RSP A77C4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	50	83

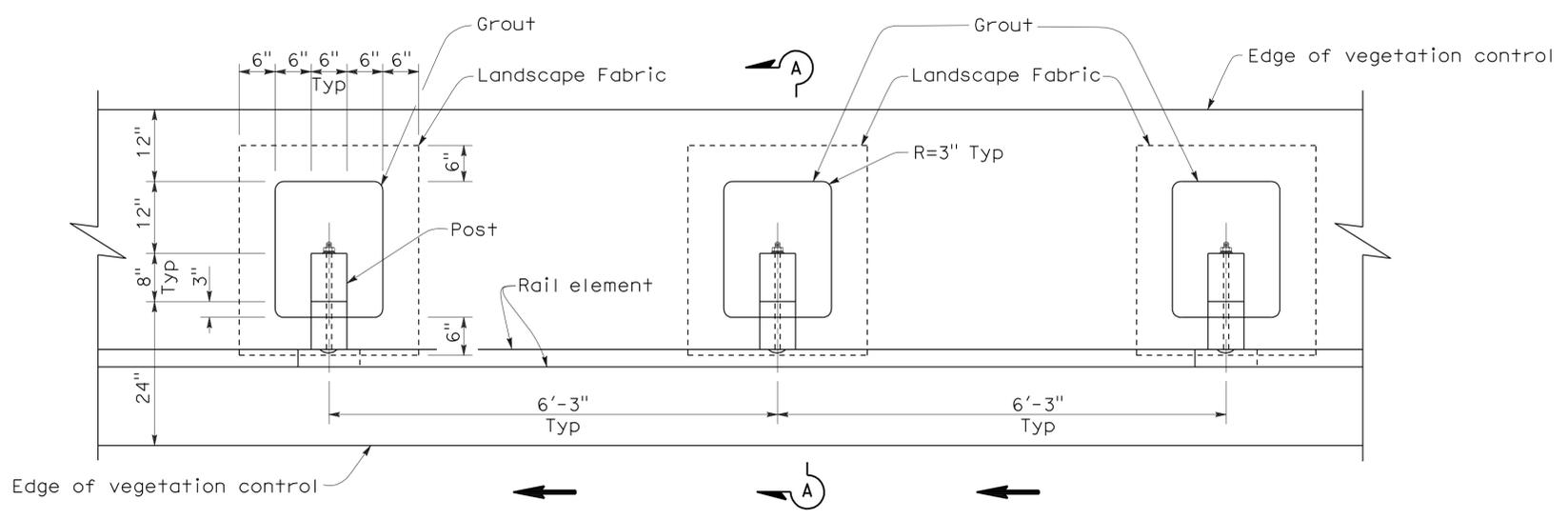
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

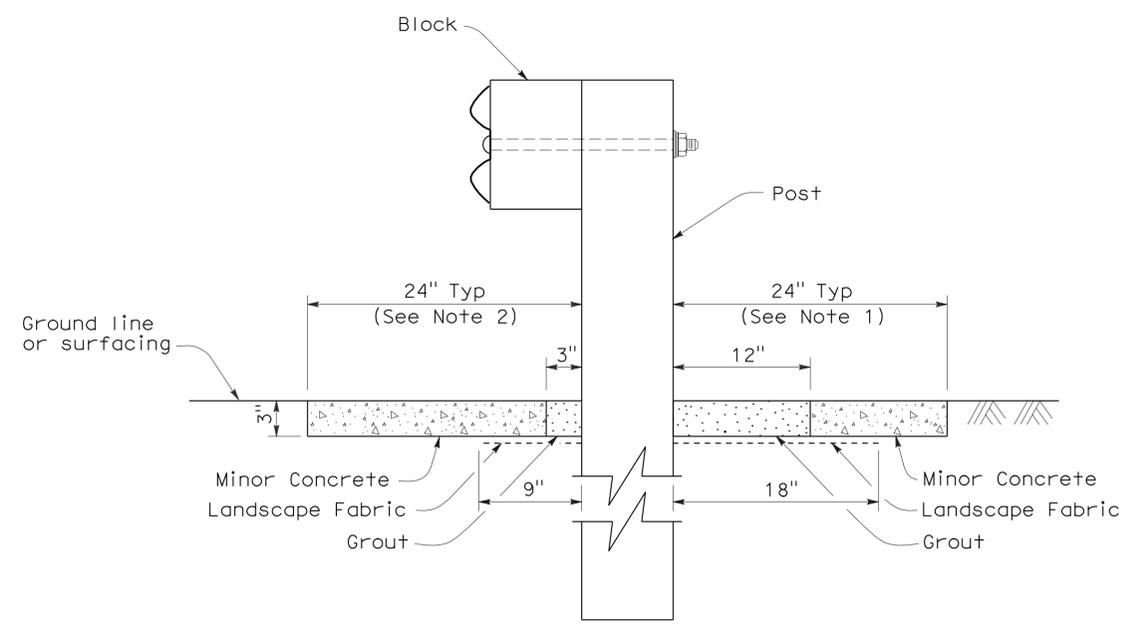
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Exp. 6-30-07
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To accompany plans dated 8-22-11



PLAN



SECTION A-A

NOTES:

1. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ← .

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
STANDARD RAILING SECTION**

NO SCALE

NSP A77C5 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C5

2006 NEW STANDARD PLAN NSP A77C5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	51	83

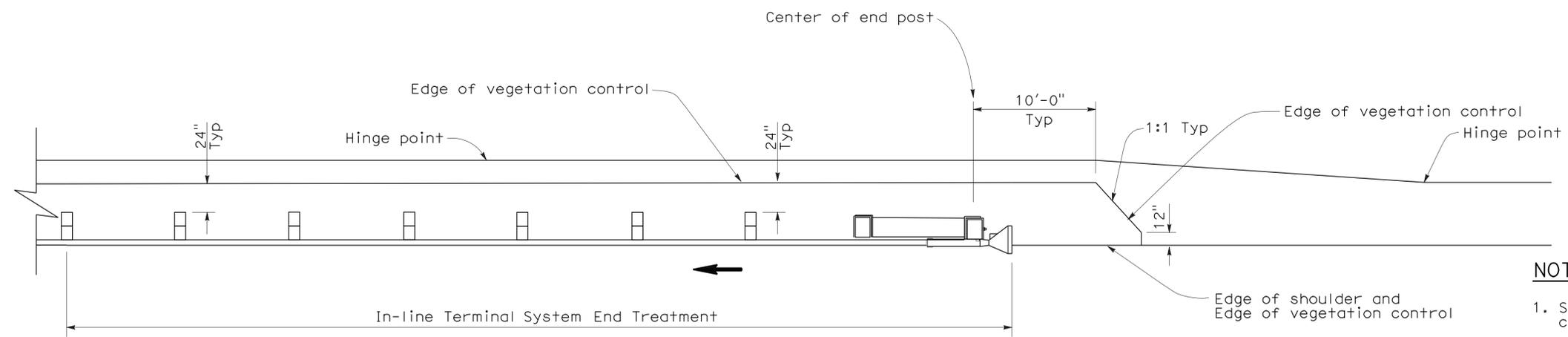
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October 20, 2006
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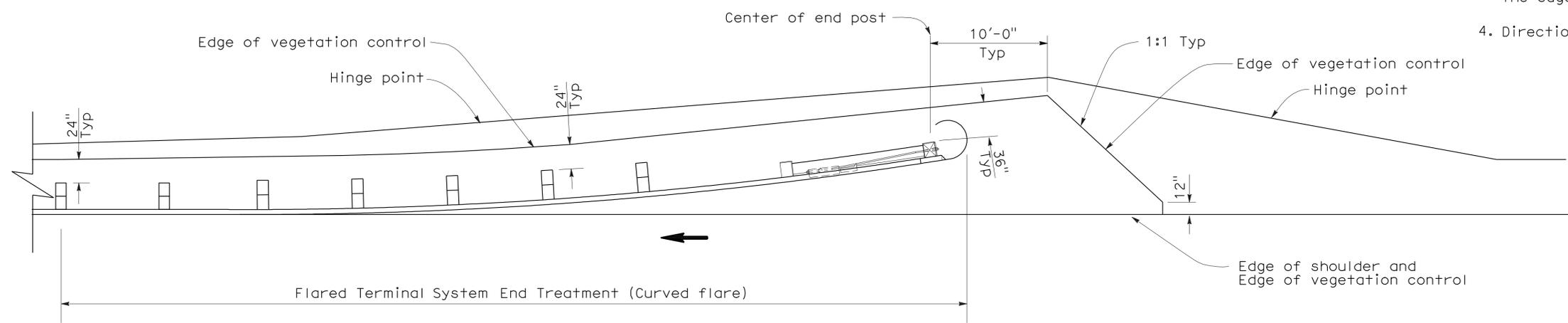
To accompany plans dated 8-22-11



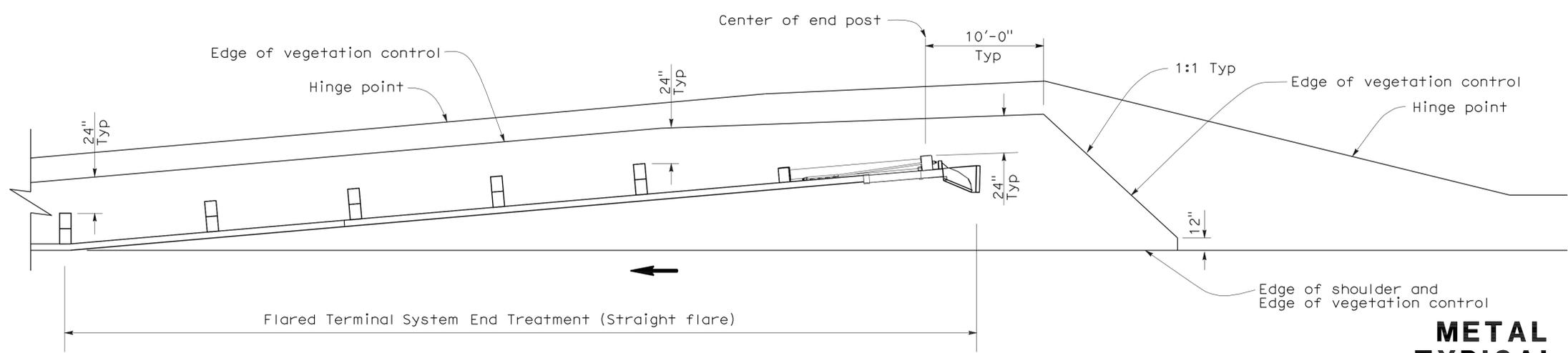
PLAN

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. Direction of adjacent traffic indicated by ←.



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE
NSP A77C6 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C6

2006 NEW STANDARD PLAN NSP A77C6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	52	83

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

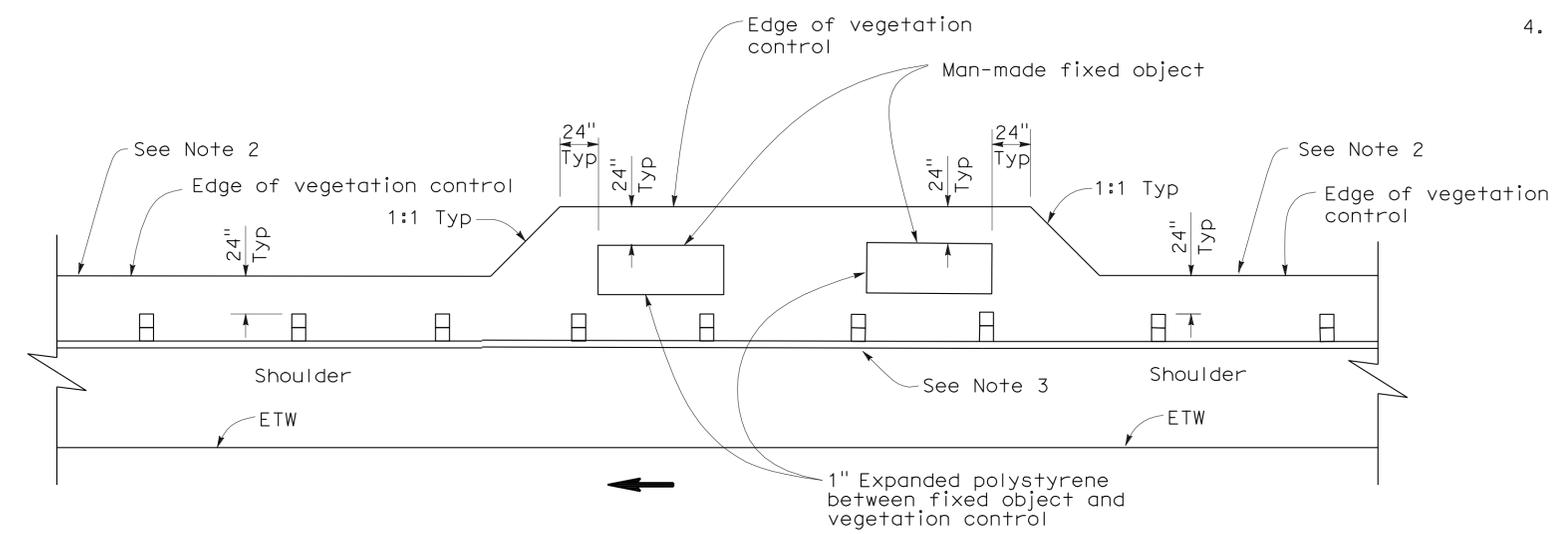
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STATE OF CALIFORNIA

To accompany plans dated 8-22-11

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. Direction of adjacent traffic indicated by ←.



PLAN
FIXED OBJECT(S) ON SHOULDER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT FIXED OBJECT**

NO SCALE
NSP A77C8 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C8

2006 NEW STANDARD PLAN NSP A77C8

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ←.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	53	83

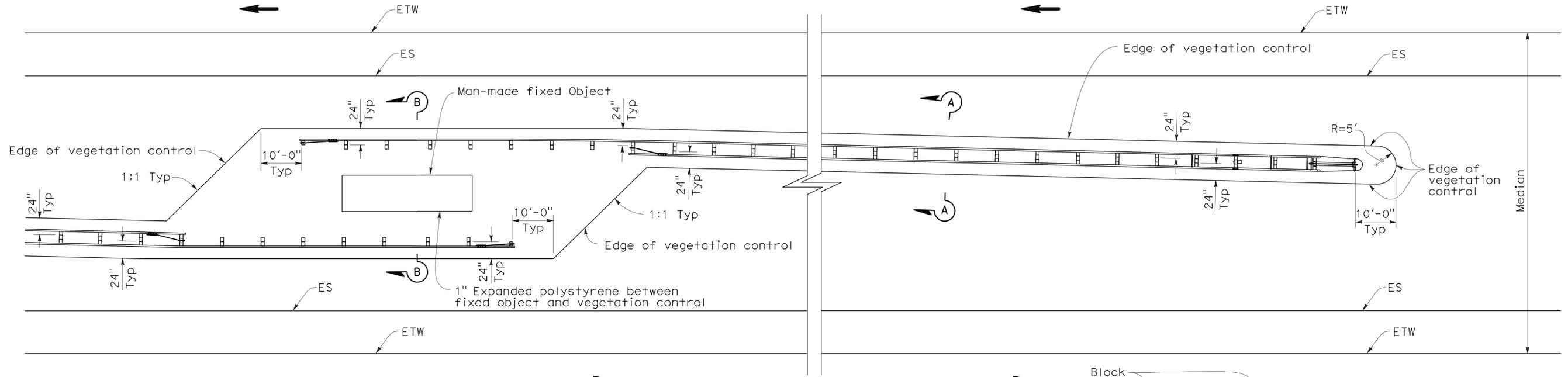
Randell D. Hiatt
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October 20, 2006
PLANS APPROVAL DATE

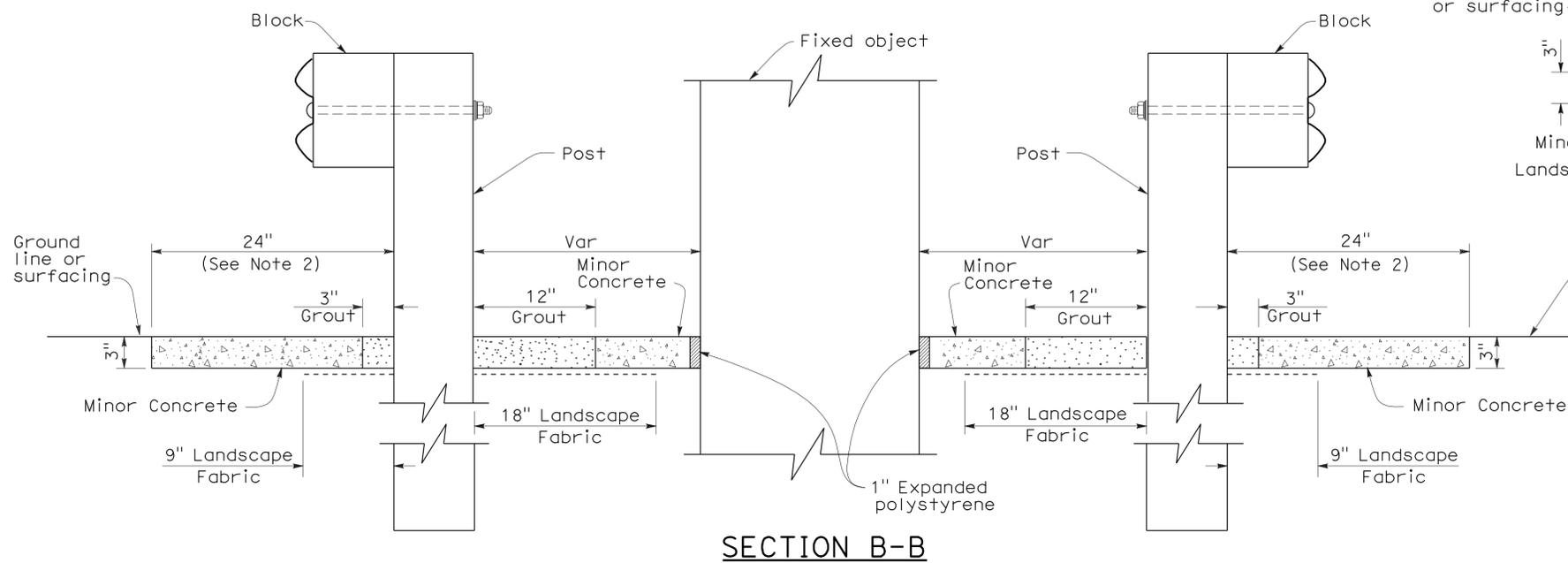
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STATE OF CALIFORNIA

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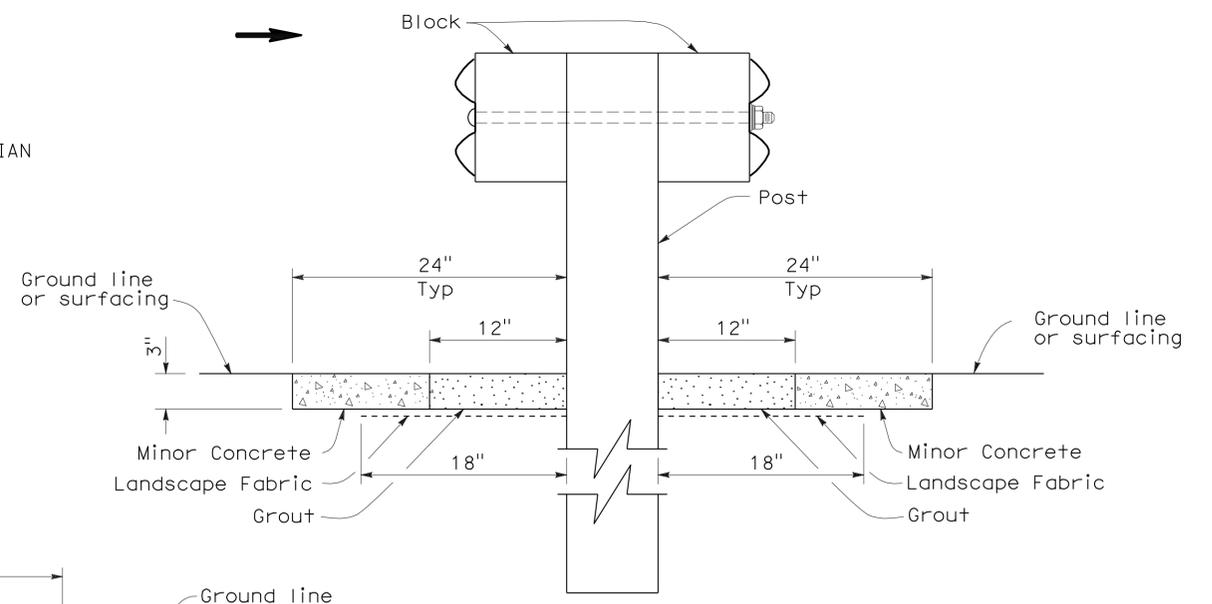
To accompany plans dated 8-22-11



PLAN
FIXED OBJECT(S) IN MEDIAN



SECTION B-B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT FIXED OBJECT**

NO SCALE
NSP A77C9 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ←.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	54	83

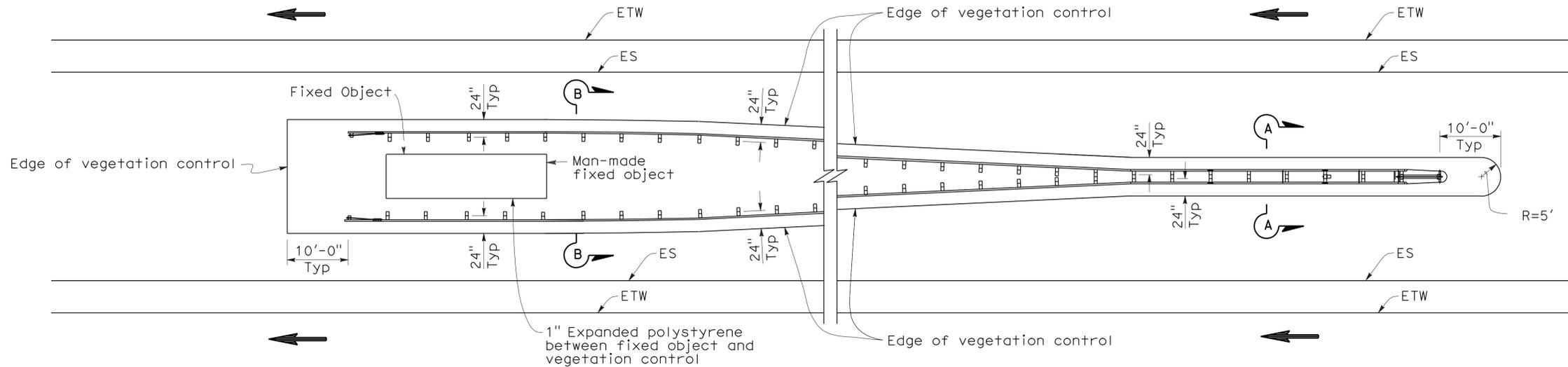
Randell D. Hiatt
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October 20, 2006
PLANS APPROVAL DATE

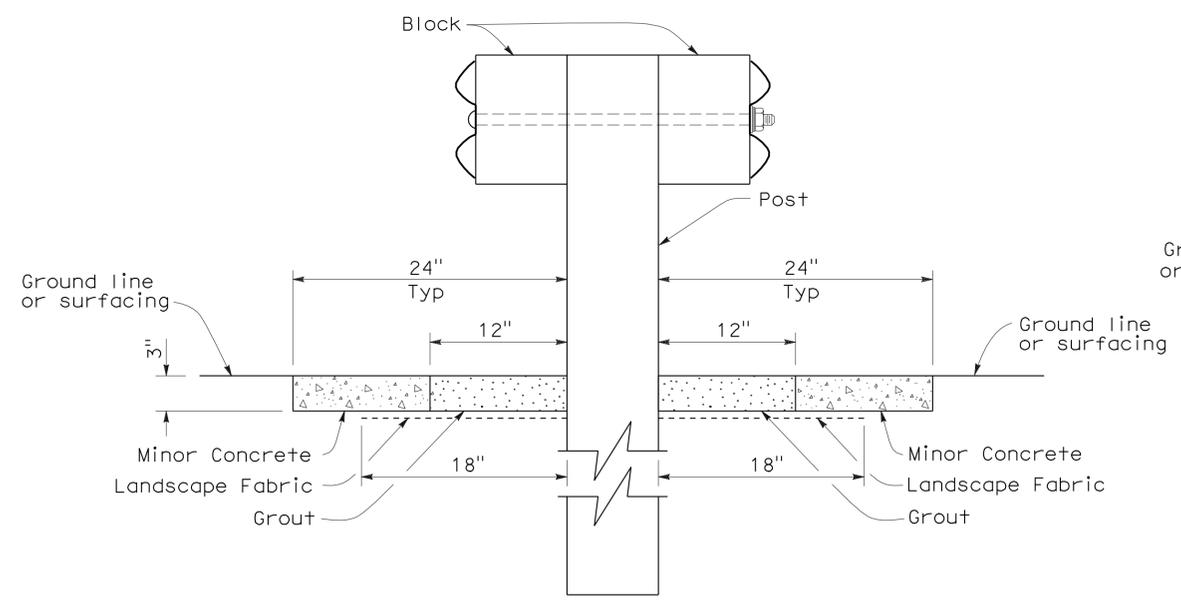
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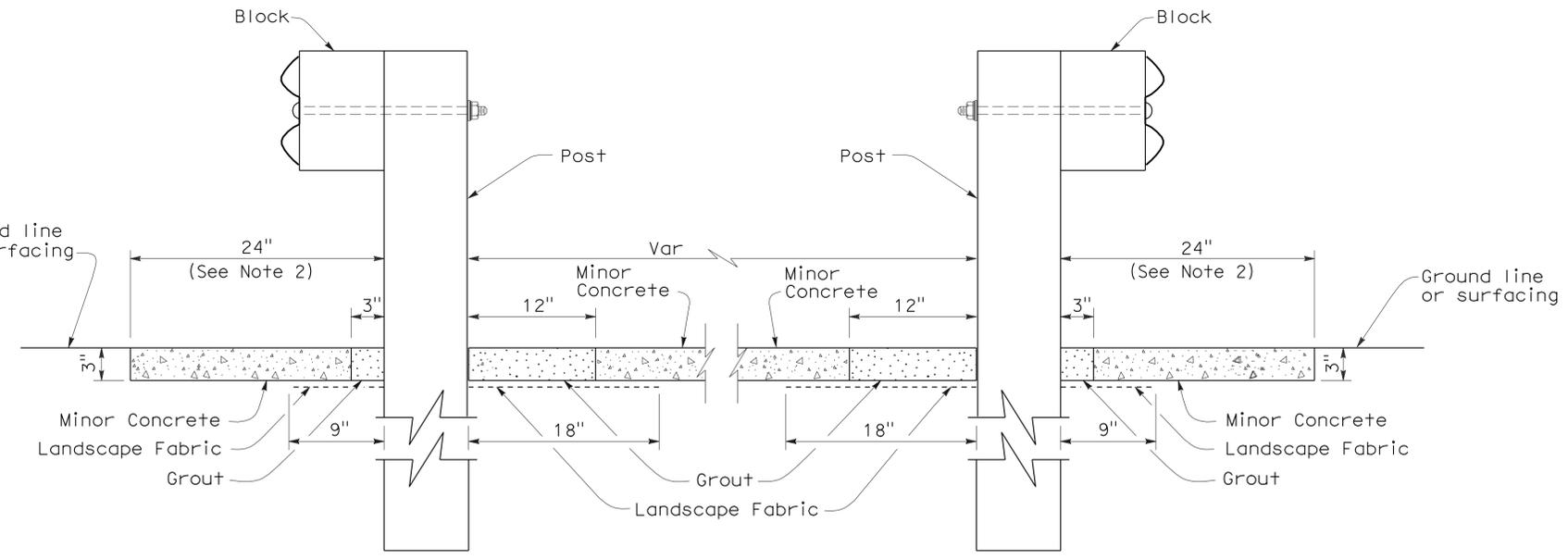
To accompany plans dated 8-22-11



PLAN
FIXED OBJECT(S) BETWEEN SEPARATE ROADBEDS
(ONE-WAY TRAFFIC)



SECTION A-A



SECTION B-B

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT FIXED OBJECT**

NO SCALE

NSP A77C10 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	55	83

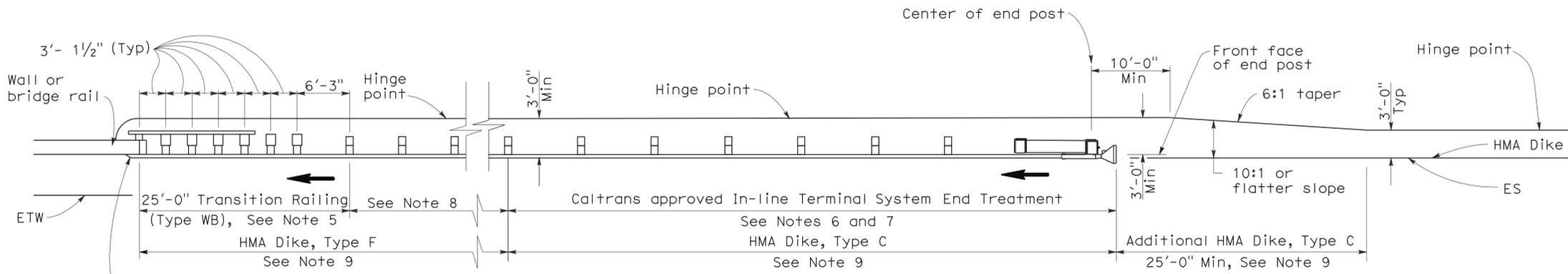
Randell D. Hiatt
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June 6, 2008
PLANS APPROVAL DATE

Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

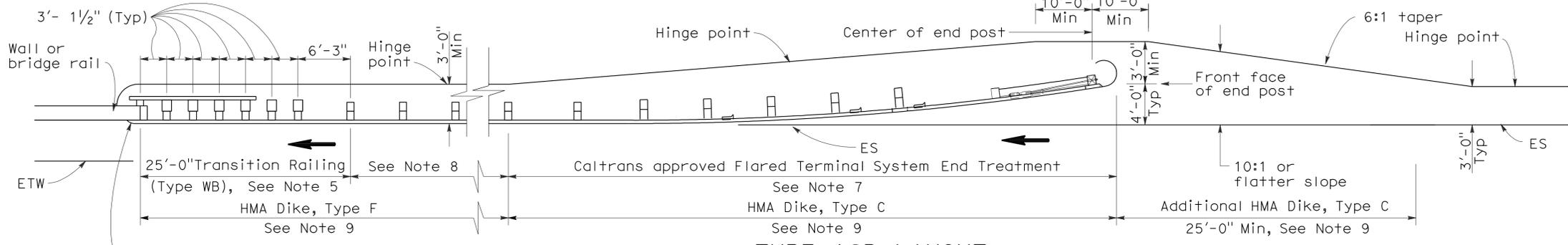
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To accompany plans dated 8-22-11



TYPE 12A LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10



TYPE 12B LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
 - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.

- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F1

2006 REVISED STANDARD PLAN RSP A77F1

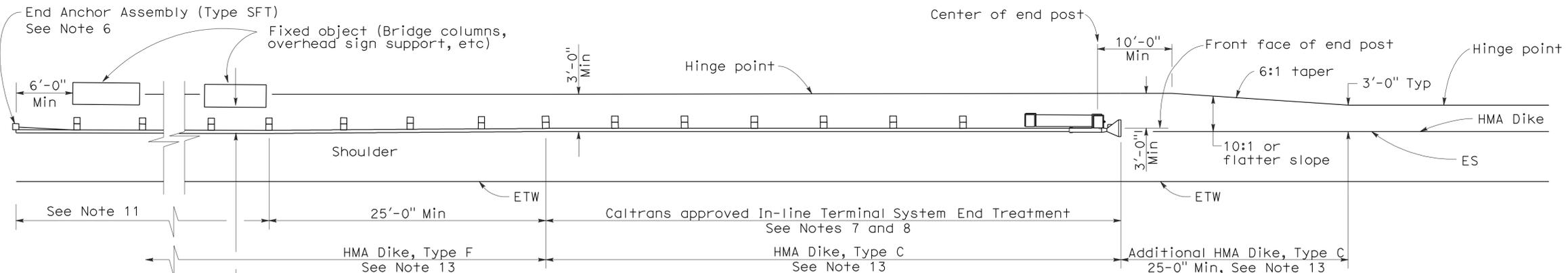
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	56	83

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

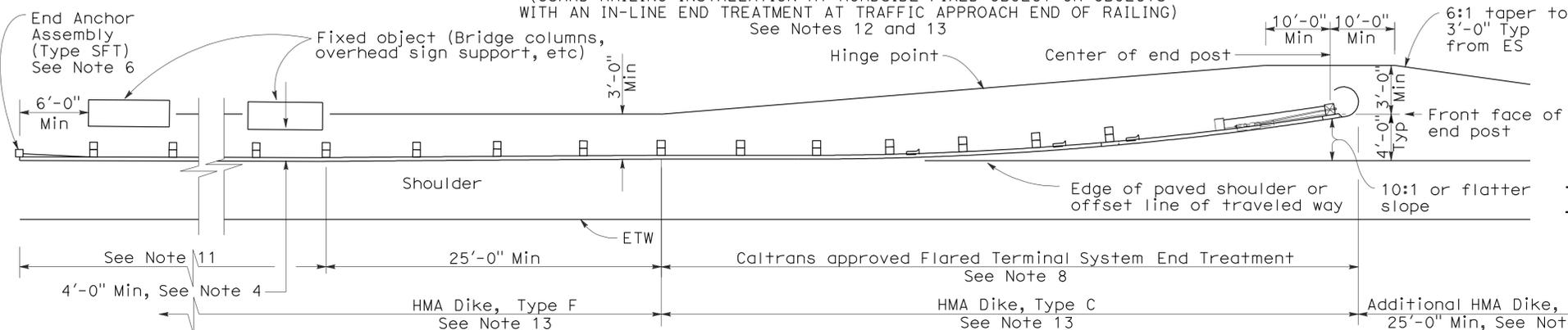
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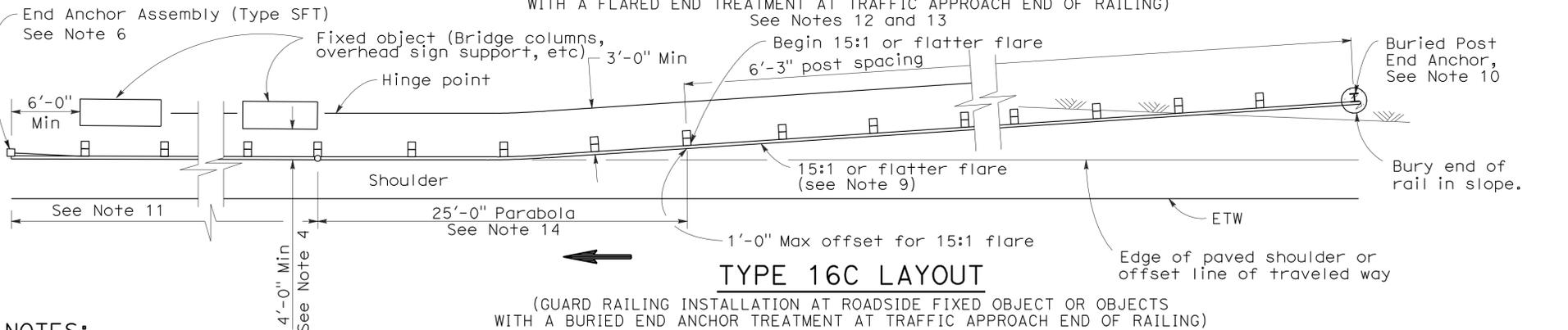
TYPE 16A LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



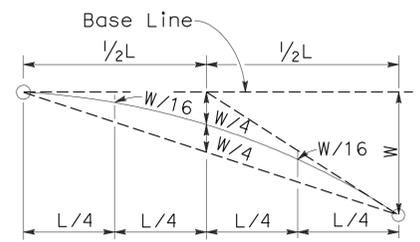
TYPE 16B LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13

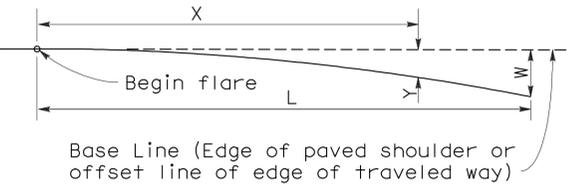


TYPE 16C LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



TYPICAL PARABOLIC LAYOUT

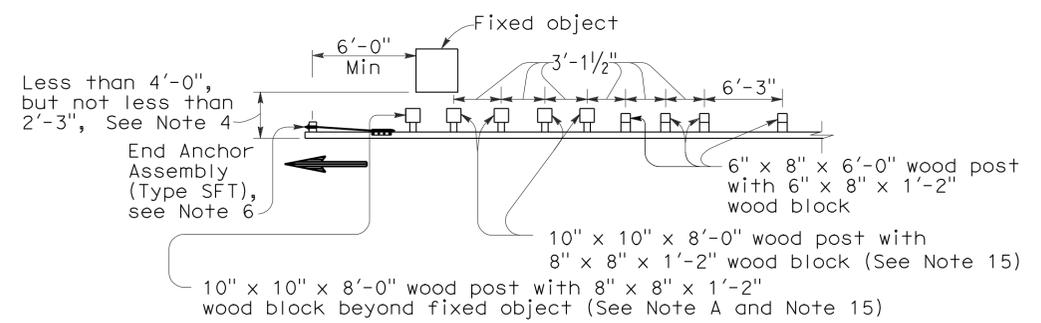


Base Line (Edge of paved shoulder or offset line of edge of traveled way)
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by \rightarrow .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



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

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Types 16A, 16B or 16C Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE
RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3
DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G3

2006 REVISED STANDARD PLAN RSP A77G3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	57	83

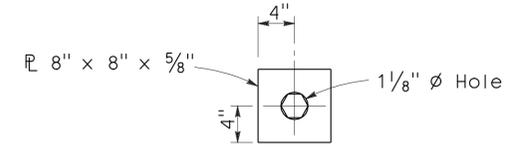
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

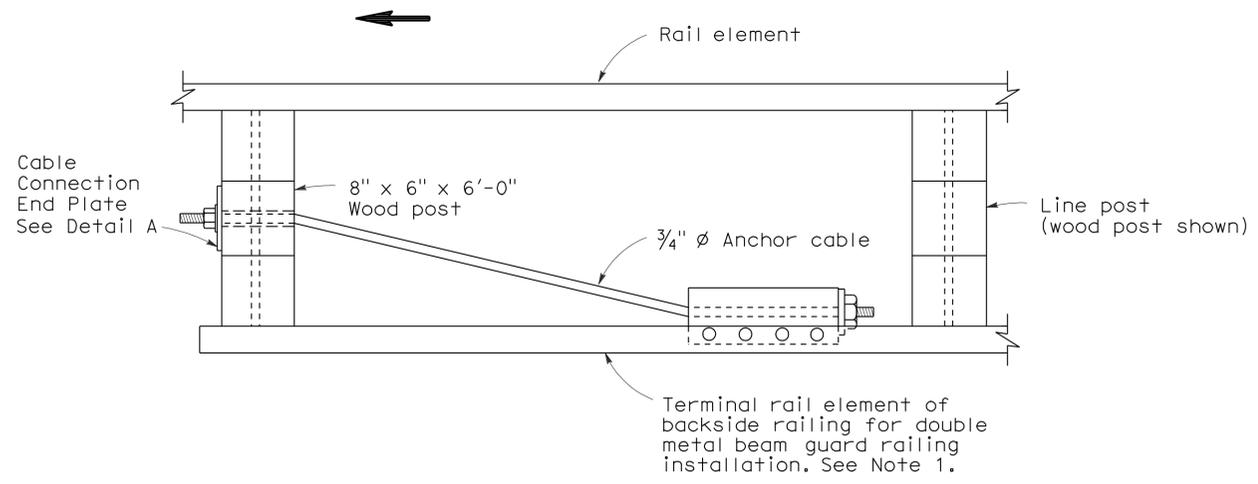
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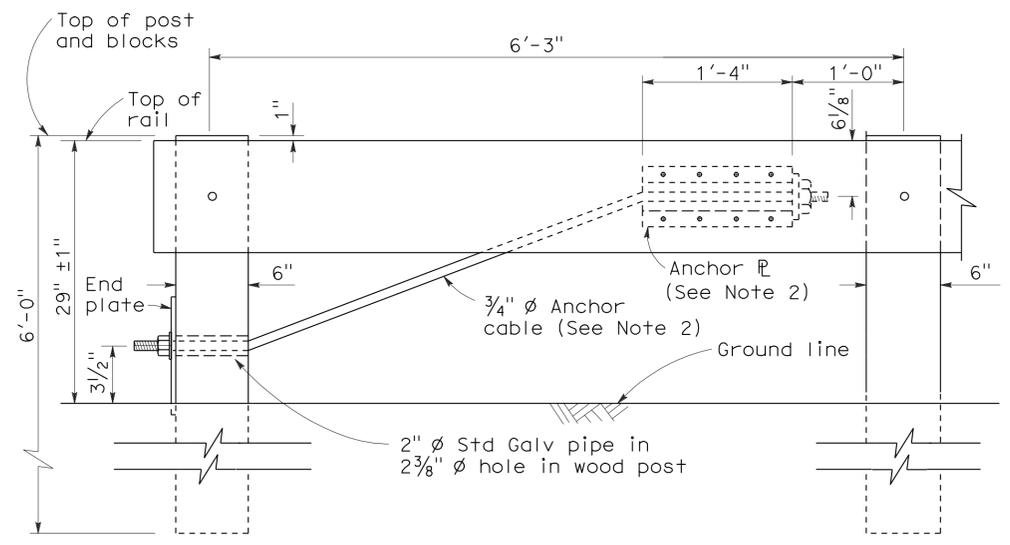
To accompany plans dated 8-22-11



DETAIL A
CABLE CONNECTION
END PLATE



PLAN



ELEVATION
RAIL TENSIONING
ASSEMBLY
See Note 1

NOTES:

1. See Standard Plan A77F3 and Standard Plan A77G1 for typical use of rail tensioning assembly.
2. For details of the anchor plate and 3/4 inch cable, see Standard Plan A77H3.
3. Direction of traffic indicated by →.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL RAILING
RAIL TENSIONING ASSEMBLY

NO SCALE

RSP A77H2 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77H2
DATED MAY 1, 2006 - PAGE 68 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77H2

2006 REVISED STANDARD PLAN RSP A77H2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	58	83

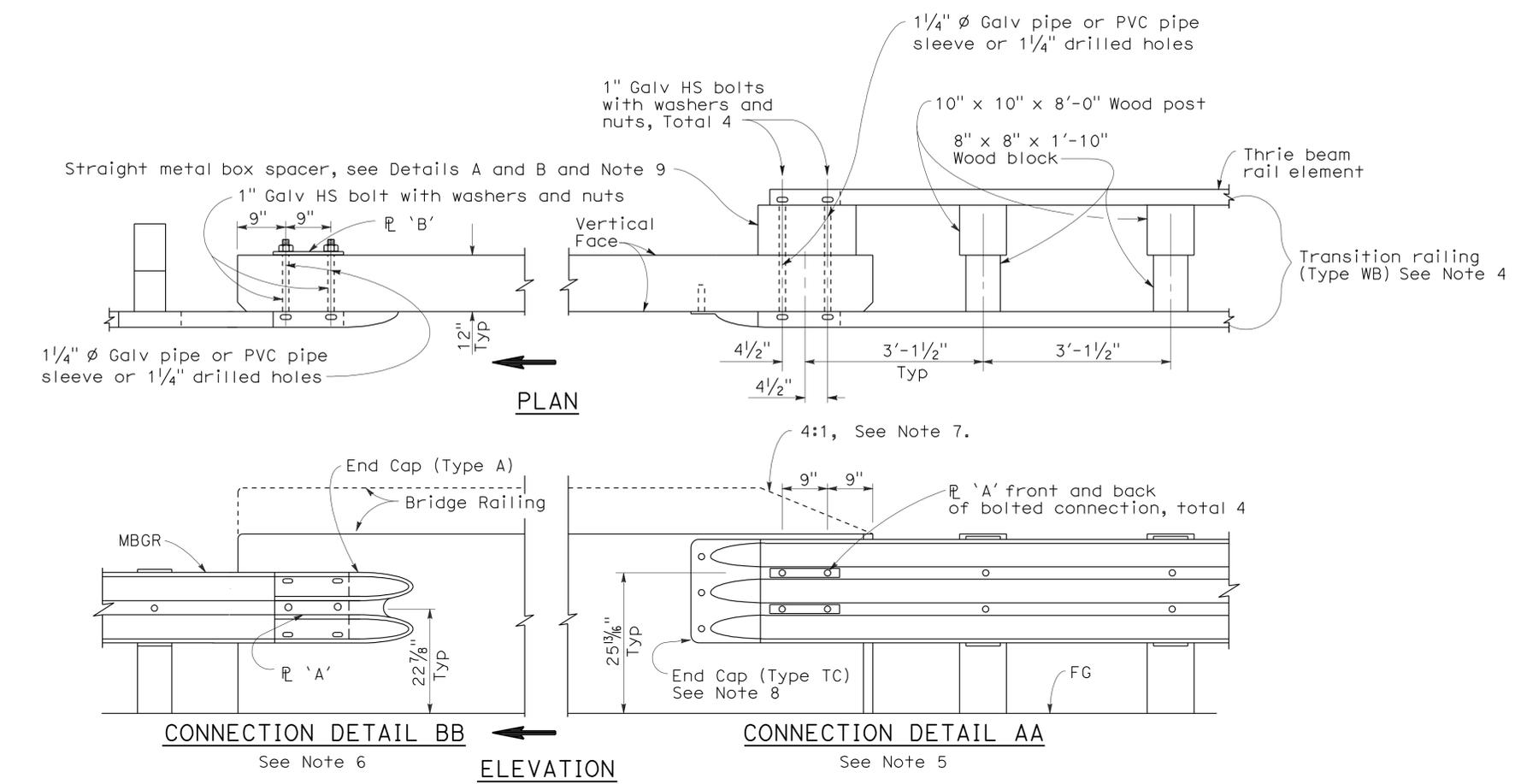
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May 20, 2011
PLANS APPROVAL DATE

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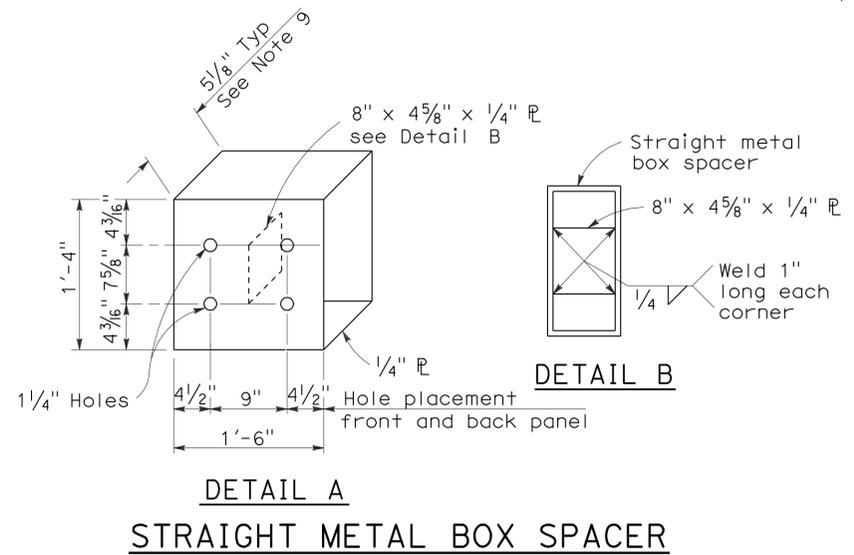
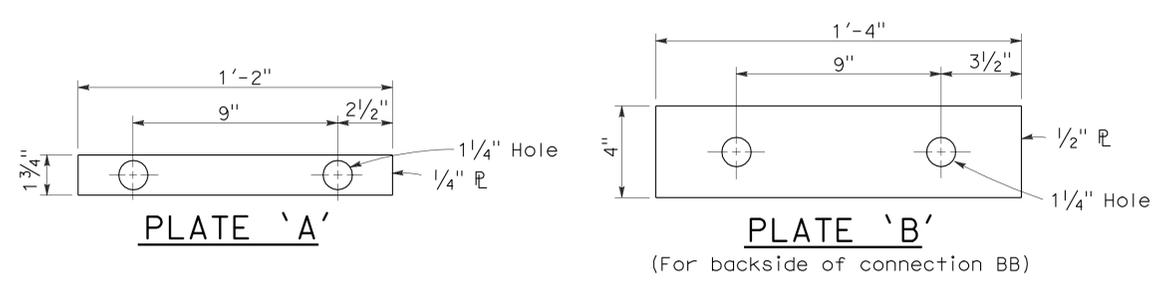
To accompany plans dated 8-22-11



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by \rightarrow .
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
8. For details of End Cap (Type TC), see Standard Plan A77J4.
9. See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
CONNECTIONS TO
BRIDGE RAILINGS
WITHOUT SIDEWALKS
DETAILS No.1**

NO SCALE

RSP A77J1 DATED MAY 20, 2011 SUPERSEDES RSP A77J1 DATED JUNE 6, 2008 AND STANDARD PLAN A77J1 DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	59	83

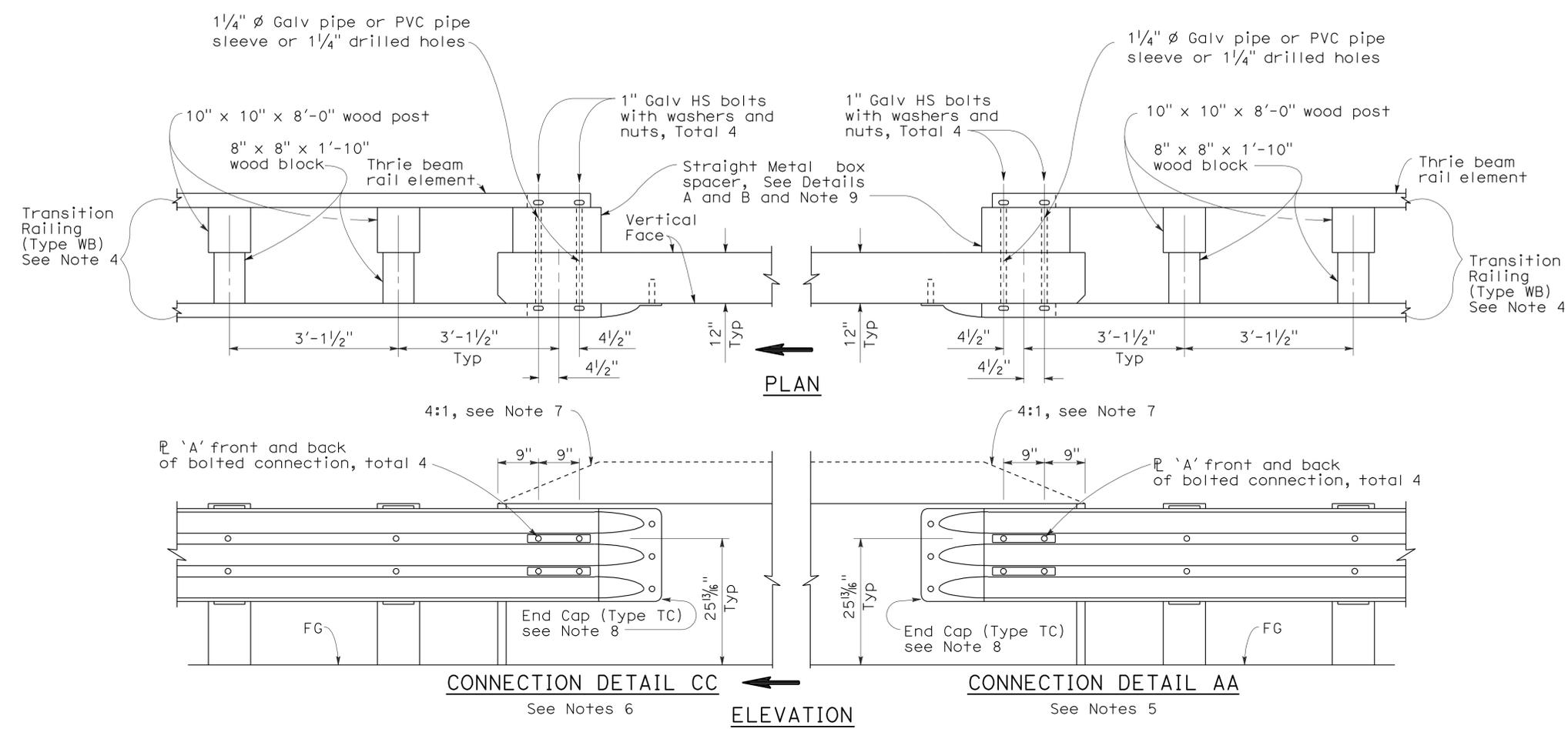
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

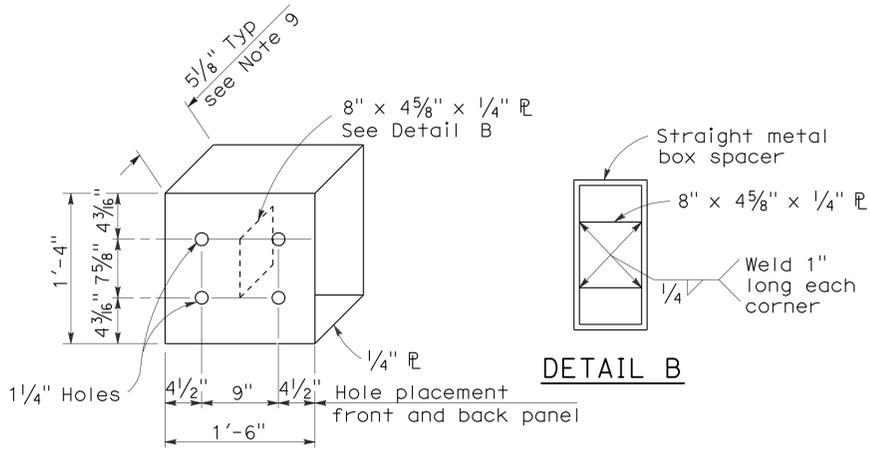
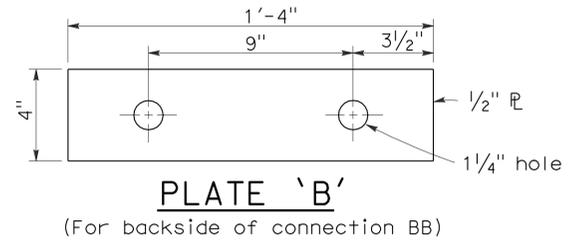
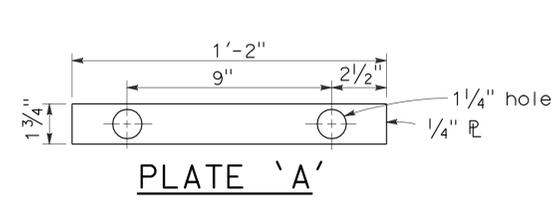
To accompany plans dated 8-22-11



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by →.
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
8. For details of End Cap (Type TC), see Standard Plans A77J4.
9. See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



**DETAIL A
STRAIGHT METAL BOX SPACER**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
CONNECTIONS TO BRIDGE RAILINGS
WITHOUT SIDEWALKS DETAILS No.2**

NO SCALE
RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J2

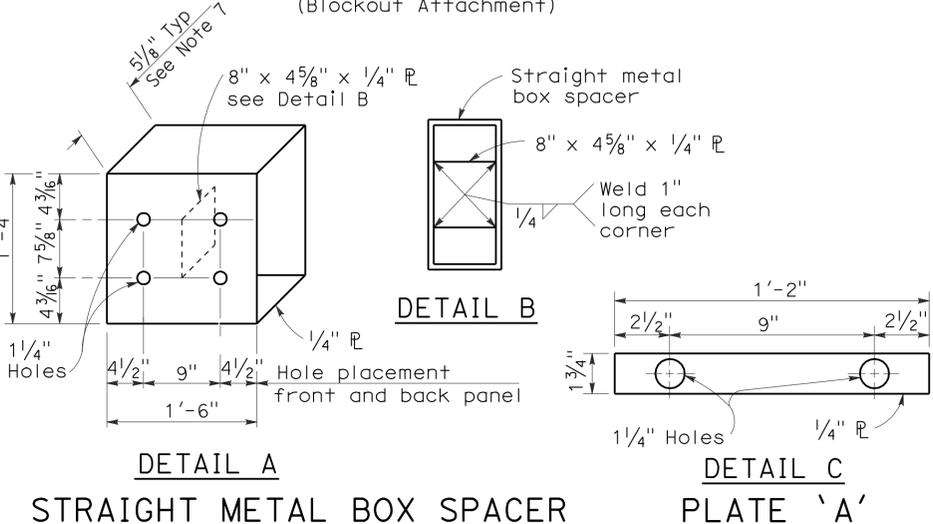
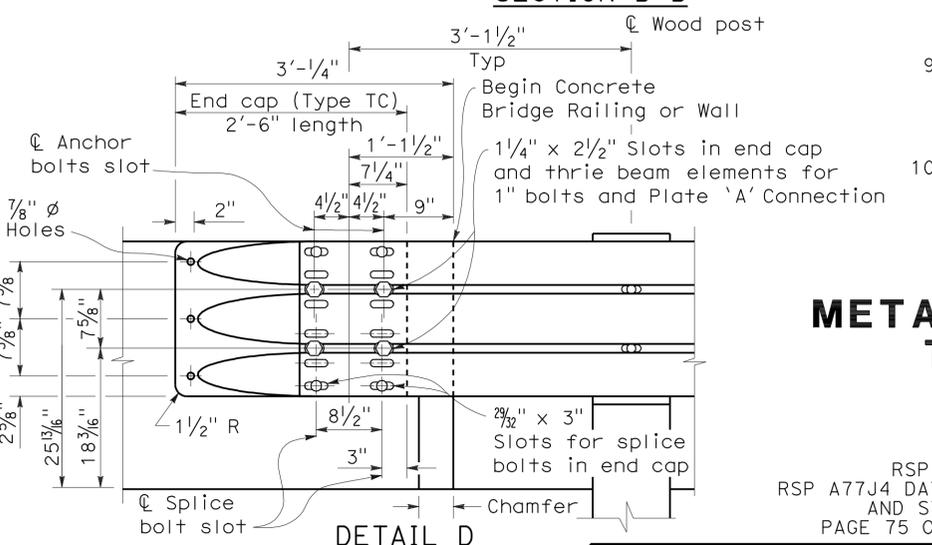
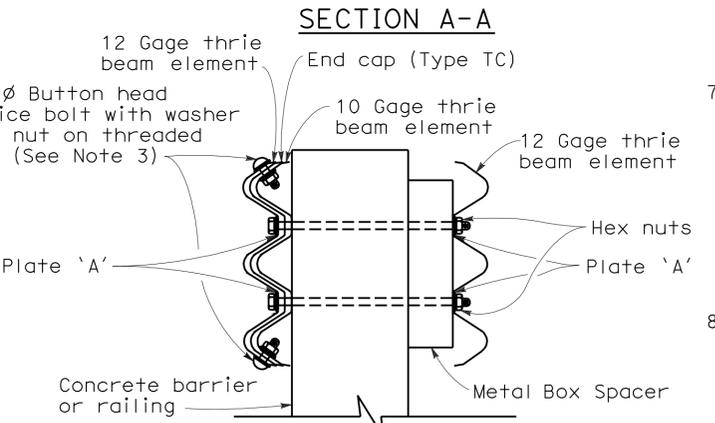
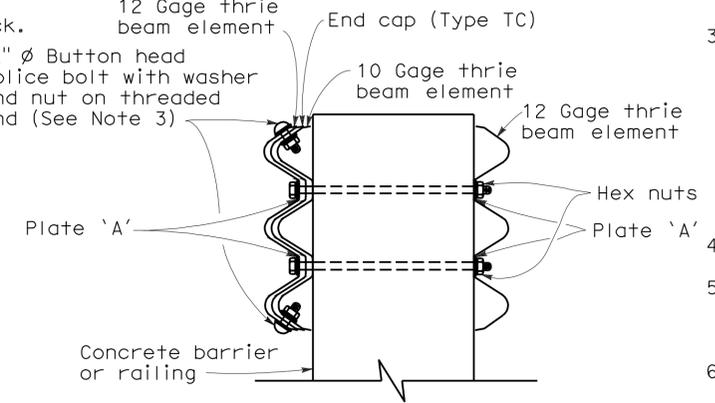
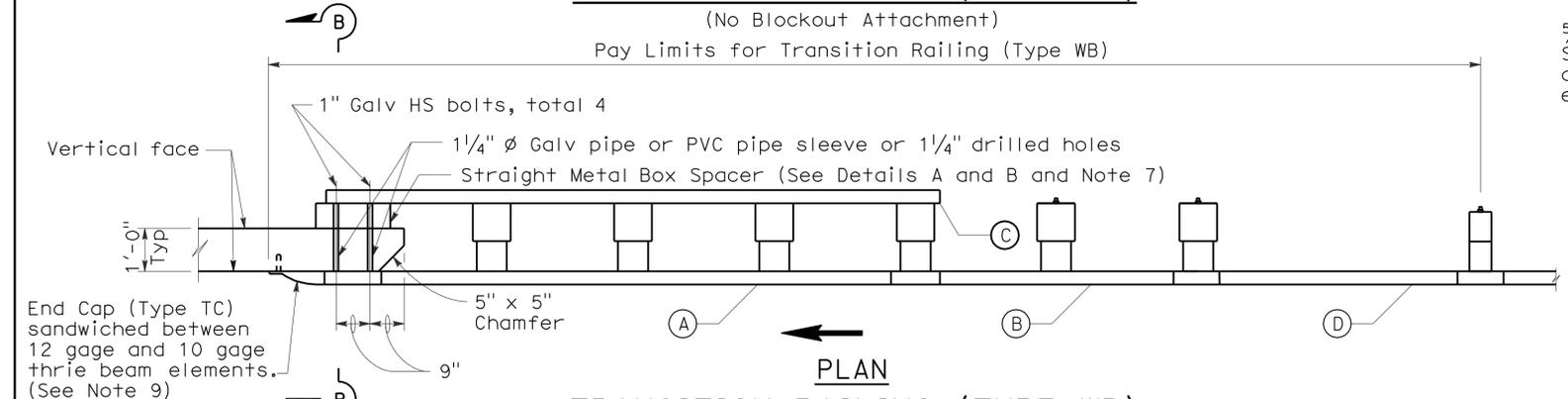
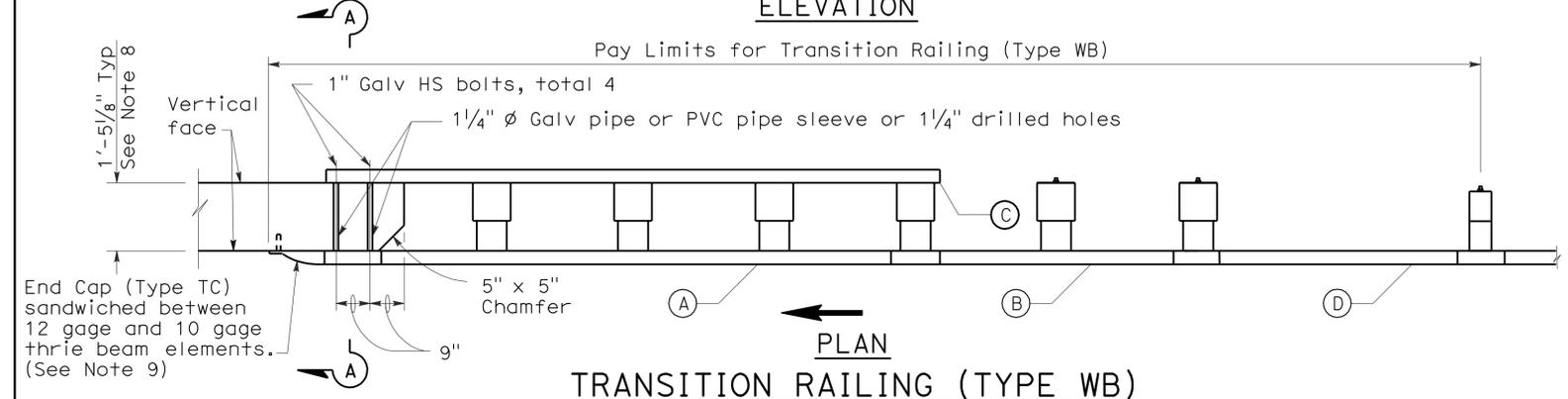
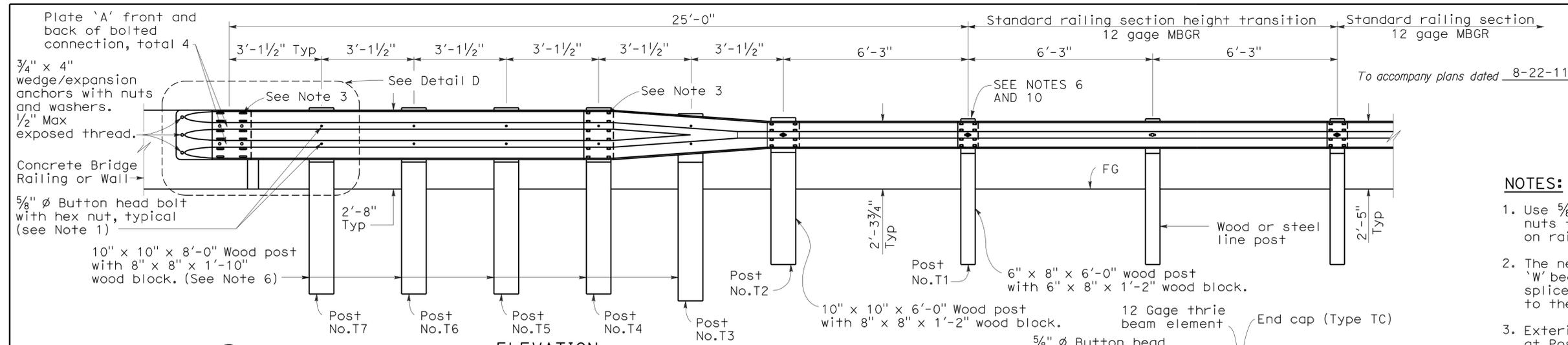
2006 REVISED STANDARD PLAN RSP A77J2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	60	83

Randell D. Hiatt
 REGISTERED CIVIL ENGINEER
 No. C50200
 Exp. 6-30-11
 STATE OF CALIFORNIA

May 20, 2011
 PLANS APPROVAL DATE

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- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
 - (B) One 10 gage "W" beam to thrie beam element.
 - (C) One 12 gage thrie beam element.
 - (D) One 10 gage "W" beam rail element (7'-3 1/2" length)
- 10 gage = 0.135" thick
12 gage = 0.108" thick

- NOTES:**
- Use 5/8" Ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 - The nested rail elements, end cap, and "W" beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
 - Exterior splice bolt holes for rail element splices at Post No. T4 and the connection to the concrete barrier or railing shall be the standard 7/32" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4" Ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
 - Direction of adjacent traffic indicated by →.
 - The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
 - Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing with height transition ratio of 120:1 or an approved Caltrans end treatment attached to Post No. T1.
 - The depth of the metal box spacer varies from the 5/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 - Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T4 through No. T7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 - End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.
 - Conform standard railing section height to 2'-3 3/4" at Post No. T1 using height transition ratio of 120:1.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
 TRANSITION RAILING
 (TYPE WB)**
 NO SCALE
 RSP A77J4 DATED MAY 20, 2011 SUPERSEDES
 RSP A77J4 DATED JUNE 5, 2009, RSP A77J4 DATED JUNE 6, 2008
 AND STANDARD PLAN A77J4 DATED MAY 1, 2006 -
 PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	61	83

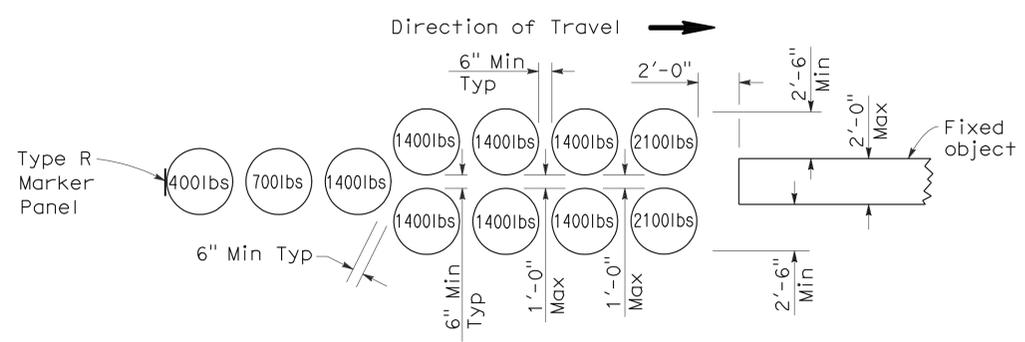
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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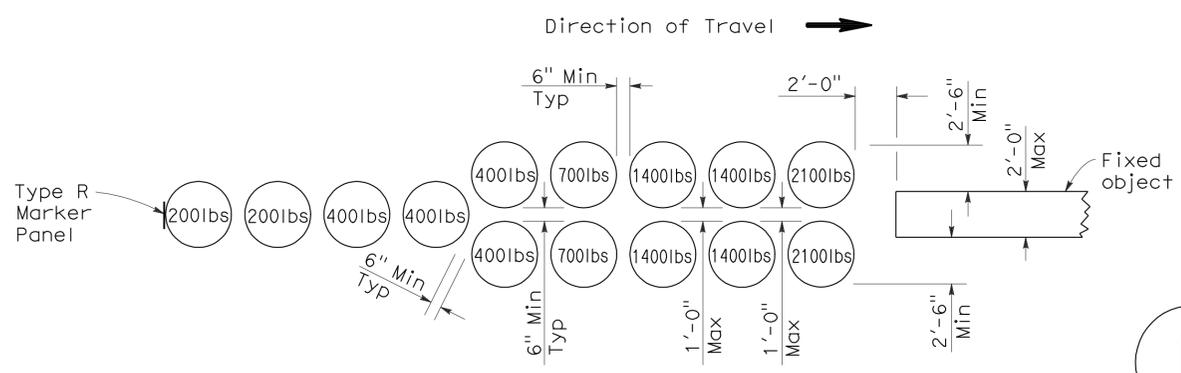
To accompany plans dated 8-22-11

2006 REVISED STANDARD PLAN RSP A81A



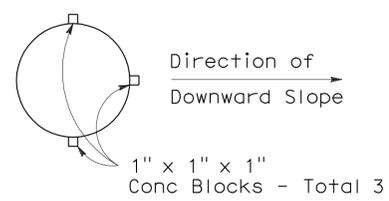
ARRAY 'U11'

Approach speed less than 45 mph

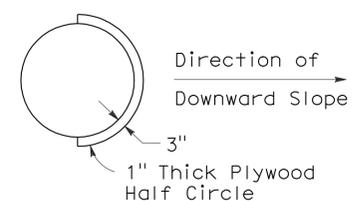


ARRAY 'U14'

Approach speed 45 mph or more

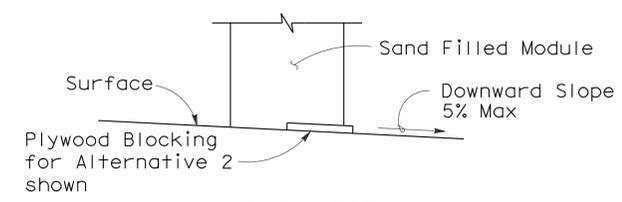


ALTERNATIVE 1



ALTERNATIVE 2

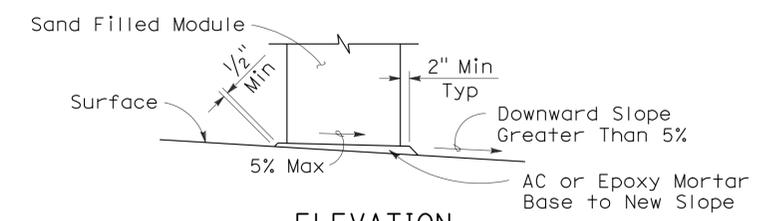
PLAN



ELEVATION

BRIDGE DECK MODULE BLOCKING DETAILS

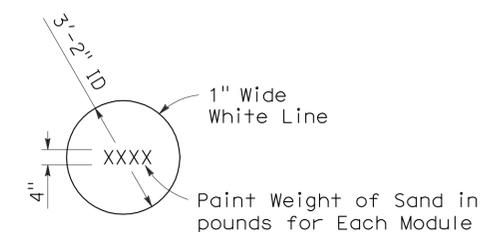
(See Note 6)



ELEVATION

SLOPED SEAT DETAIL

(See Note 4)



PAINTING DETAIL

(See Note 5)

NOTES:

1. (xxx) Indicates module location and mass of sand in pounds for each module. Module spacing is based on the greater diameter of the modules.
2. All sand weights are nominal.
3. Each module is to contain amount of sand indicated, supported according to the manufacturer's instructions.
4. Modules shall be placed on asphalt concrete, epoxy mortar or concrete surface. Modules to be placed on surfacing with greater than 5% downward slope shall be seated as shown.
5. Mass of sand and outline of each module shall be painted on the surface at each module location.
6. Module blocking, epoxied to the deck surface, is required for all modules placed on bridge decks. Two acceptable alternatives are shown. Other alternatives recommended by the manufacturer and approved by the Engineer will be accepted.
7. Place the top of the Type R marker panel 1" below the module lid.
8. Approach speeds indicated conform to NCHRP Report criteria.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

RSP A81A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A81A
DATED MAY 1, 2006 - PAGE 99 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A81A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	62	83

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

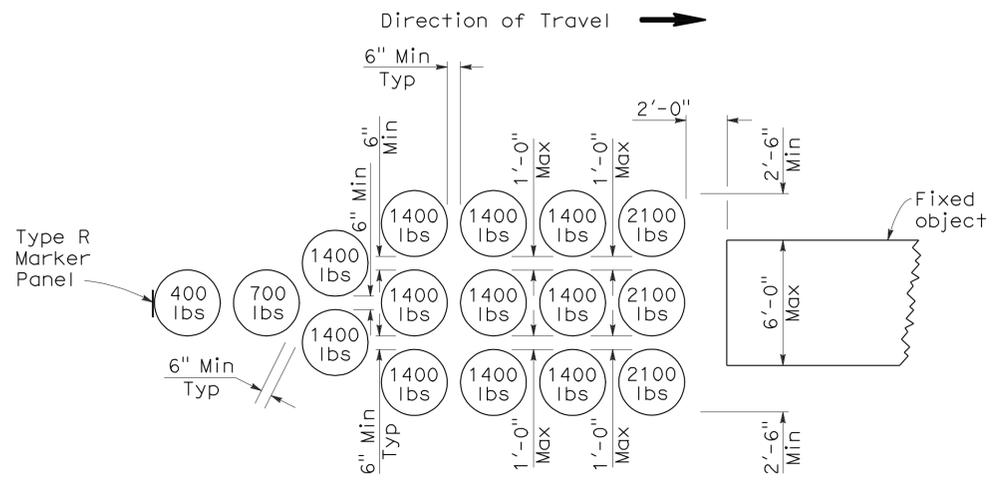
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

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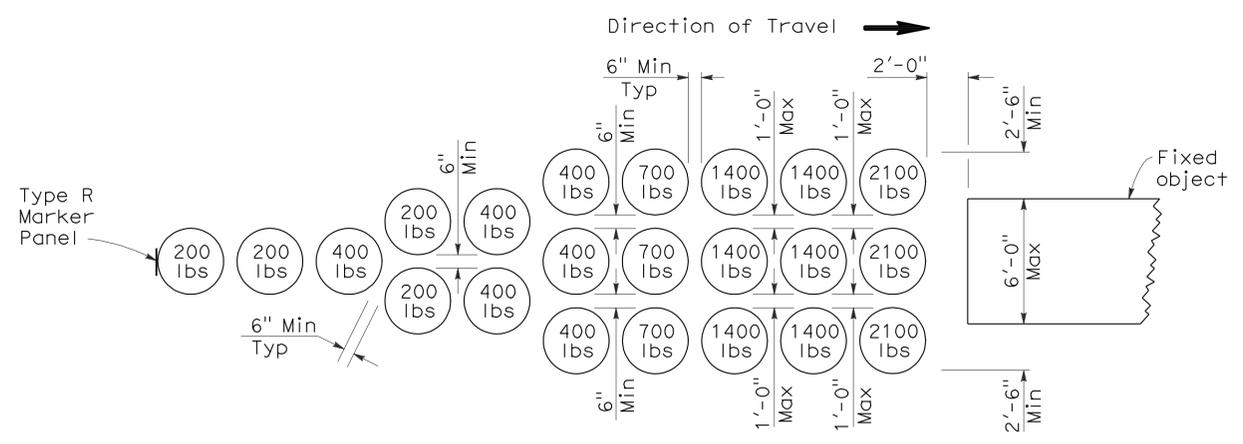
To accompany plans dated 8-22-11

NOTES:

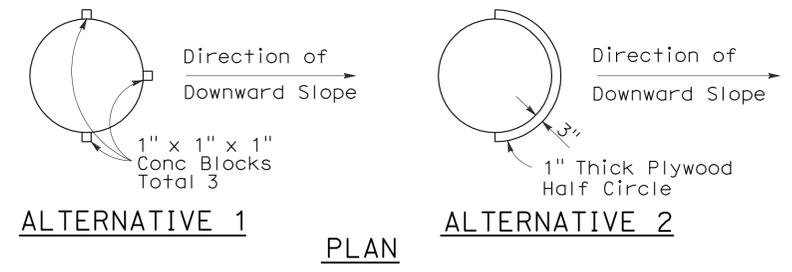
1. (XXX) Indicates module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the modules.
2. All sand weights are nominal.
3. Each module is to contain amount of sand indicated, supported according to the manufacturer's instructions.
4. Modules shall be placed on asphalt concrete, epoxy mortar or concrete surface. Modules to be placed on surfacing with greater than 5% downward slope shall be seated as shown.
5. Mass of sand and outline of each module shall be painted on the surface at each module location.
6. Module blocking, epoxied to the deck surface, is required for all modules placed on bridge decks. Two acceptable alternatives are shown. Other alternatives recommended by the manufacturer and approved by the Engineer will be accepted.
7. Place the top of the Type R marker panel 1" below the module lid.
8. Approach speeds indicated conform to NCHRP Report criteria.



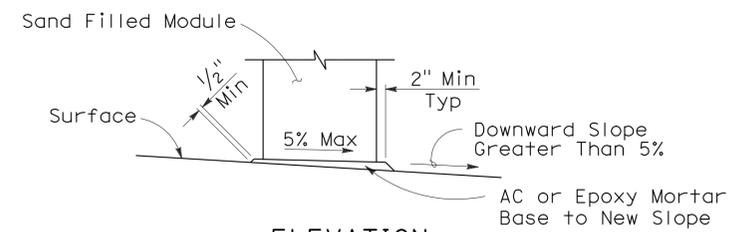
ARRAY 'U16'
Approach speed less than 45 mph



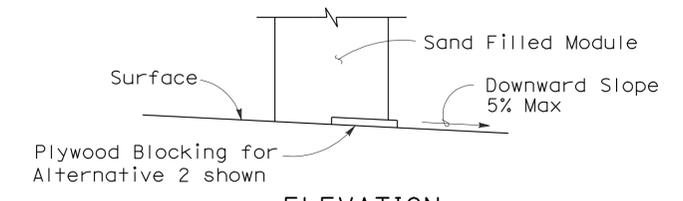
ARRAY 'U21'
Approach speed 45 mph or more



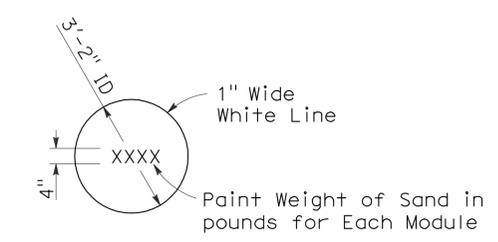
ALTERNATIVE 1 **ALTERNATIVE 2**
PLAN



ELEVATION
SLOPED SEAT DETAIL
(See Note 4)



ELEVATION
BRIDGE DECK MODULE BLOCKING DETAILS
(See Note 6)

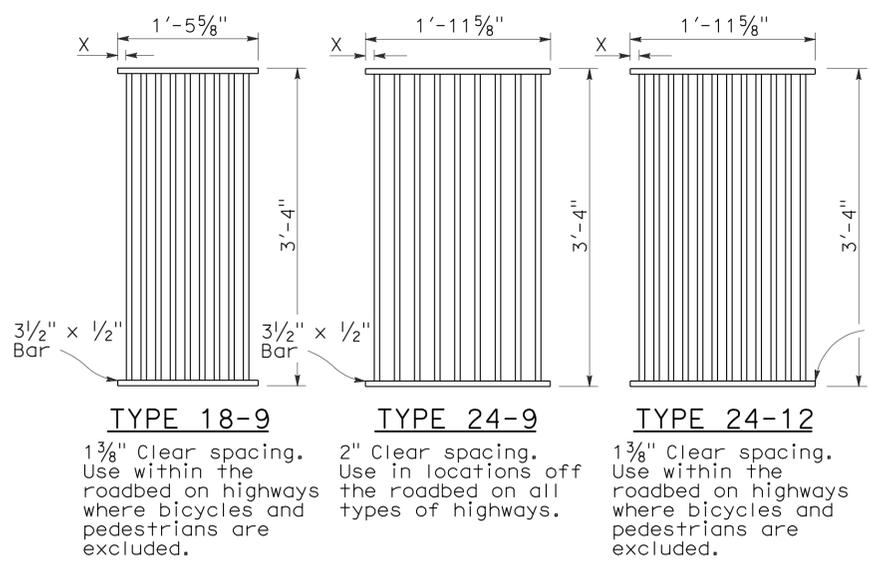


PAINTING DETAIL
(See Note 5)

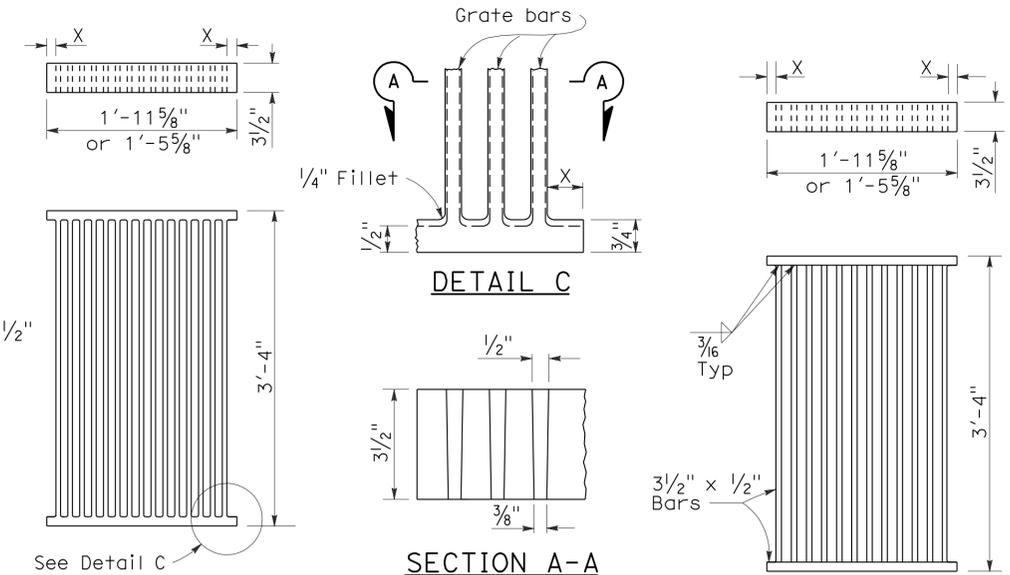
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**
NO SCALE

RSP A81B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A81B
DATED MAY 1, 2006 - PAGE 100 OF THE STANDARD PLANS BOOK DATED MAY 2006.

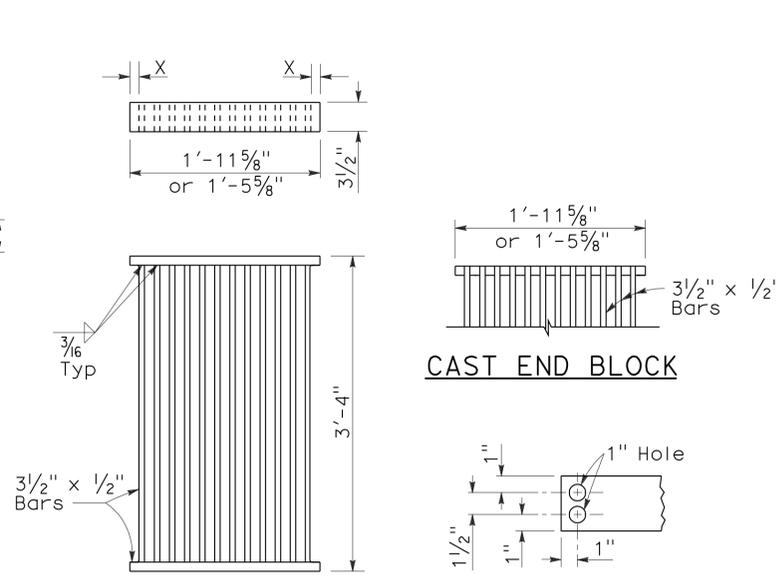
2006 REVISED STANDARD PLAN RSP A81B



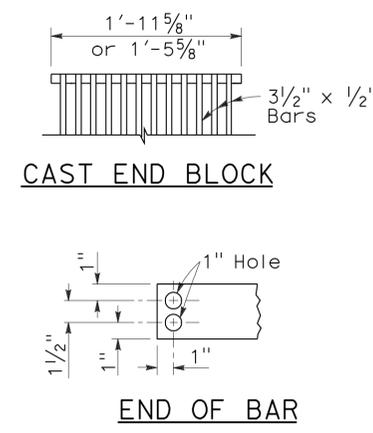
RECTANGULAR GRATE DETAILS
(See table below)



ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE



ALTERNATIVE WELDED GRATE

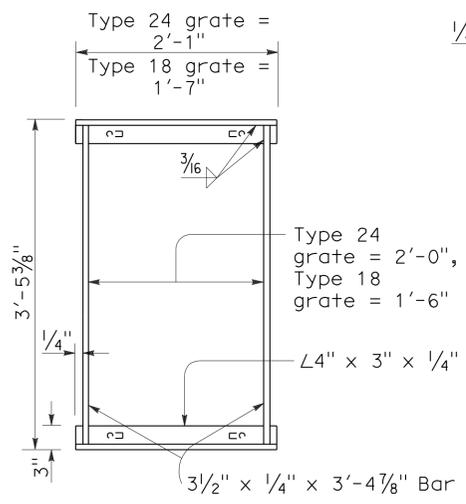


CAST END BLOCK

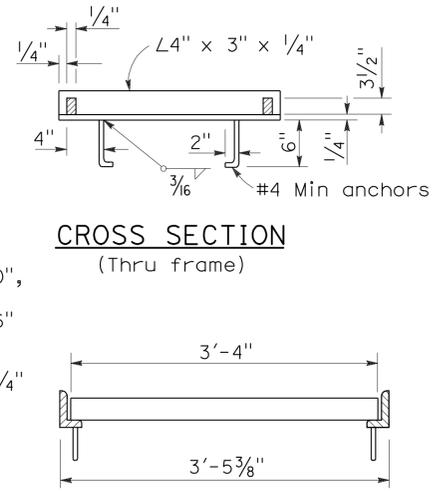
END OF BAR

NOTES:

1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
3. See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of grates and frames.
4. Rounded top of bars optional on all grates.
5. Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
6. Full penetration butt welds may be substituted for the fillet welds on all anchors.
7. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
8. Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).

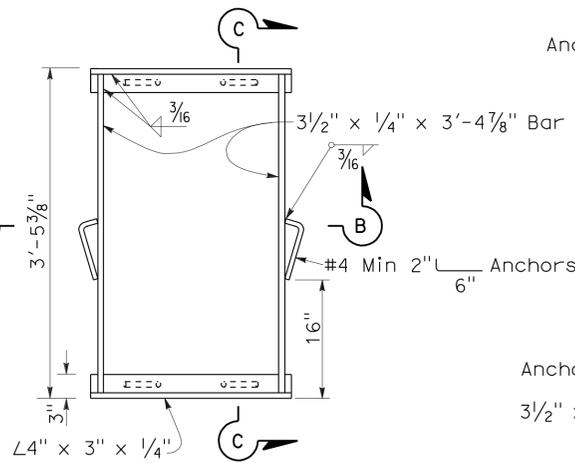


TYPICAL FRAME

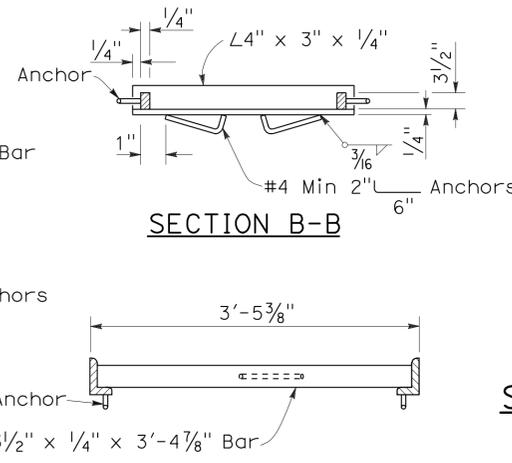


CROSS SECTION (Thru frame)

LONGITUDINAL SECTION (Thru frame and grate)



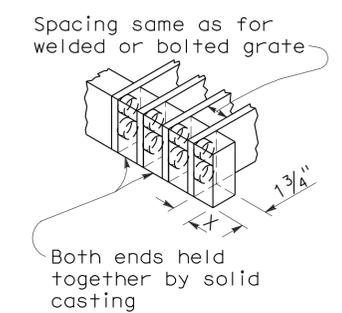
TYPICAL FRAME



SECTION B-B

SECTION C-C

ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME
(For details not shown, See Rectangular Frame Details)



ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE

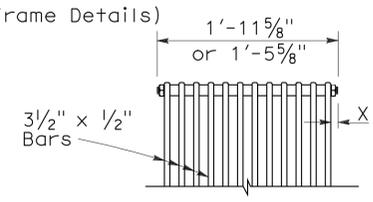
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

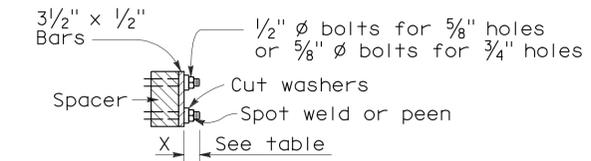
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22

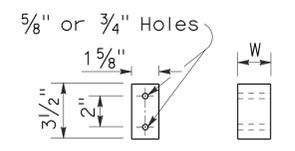


BOLTED END BLOCK

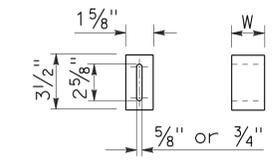


BOLTING DETAIL

ALTERNATIVE BOLTED GRATE



BAR SPACER



ALTERNATIVE SPACER
W = 1 3/8" or 2"

BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS
(See General Notes, No 8)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	64	83

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

June 5, 2009
PLANS APPROVAL DATE

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT
2-28-11
5-14-09
date

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.

To accompany plans dated 8-22-11

2006 REVISED STANDARD PLAN RSP H1

A

AB aggregate base
 ABS acrylonitrile-butadiene-styrene
 AC asphalt concrete
 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 C+D bituminous coated
 BP booster pump
 BPA backflow preventer assembly
 BPAE backflow preventer assembly in enclosure
 BPE backflow preventer enclosure
 BV ball valve

C

CAP corrugated aluminum pipe
 CARV combination air release valve
 CCA cam coupler assembly
 CEC controller enclosure cabinet
 CHDPE corrugated high density polyethylene
 CL chain link
 CNC control and neutral conductors
 Conc concrete
 Cond conduit
 CSP corrugated steel pipe
 CST center strip
 CV check valve

D

Dia diameter
 DIP ductile iron pipe
 DN diameter nominal

E

EA each
 Elect electric/electrical
 Elev elevation
 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
 FAU filter assembly unit
 FCV flow control valve
 FERT fertilizer
 FG finished grade
 FIPT female iron pipe thread
 FIS fertilizer injector system
 FL flow line
 FM flow monitor
 FS flow sensor
 Ft foot/feet
 FV flush valve

G

GAL Gallon(s)
 Galv galvanized
 GARV garden valve
 GPH gallons per hour
 GPM gallons per minute
 GSP galvanized steel pipe
 GV gate valve

H

H half circle
 HB hose bib
 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
 In inches
 IFS irrigation filtration system
 IPS iron pipe size
 IPT iron pipe thread
 Irr irrigation

L

L length
 LF linear foot

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
 M+I 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
 Oz ounce

P

P part circle
 PB pull box
 PCC portland cement concrete
 PE polyethylene
 PK+ packet
 PL plastic
 PLT plant/planting
 PLT ESTB plant establishment
 PM post mile
 PR pressure rated
 PRLV pressure relief valve
 PSFM polymer stabilized fiber matrix
 PSI pounds per square inch
 PRV pressure reducing valve
 PVC polyvinyl chloride
 Pvm+ pavement

Q

Q quarter circle
 QCV quick coupling valve

R

R radius
 RCP reinforced concrete pipe
 RCV remote control valve
 RCVM remote control valve (master)
 RCVMF remote control valve (master) w/ flow meter
 RCW recycled/reclaimed water
 RECP rolled erosion control product
 REQ required
 R/W right of way

S

S slip
 SCC sprinkler control conduit
 SCH schedule
 SF state-furnished
 Shld shoulder
 SQFT square foot/feet
 SQYD square yard(s)
 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
 TRVD traveled
 TT two third circle
 Typ typical

U

UG underground

V

VAU valve assembly unit

W

W width
 W/ with
 WM water meter
 WS wye strainer
 WSP welded steel pipe
 WWM welded wire mesh

NOTE:
 FOR ADDITIONAL ABBREVIATIONS,
 SEE STANDARD PLANS A10A AND A10B.

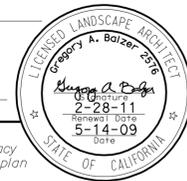
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**PLANTING AND IRRIGATION
 ABBREVIATIONS**

NO SCALE
 RSP H1 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H1
 DATED MAY 1, 2006 - PAGE 201 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	65	83

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
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.



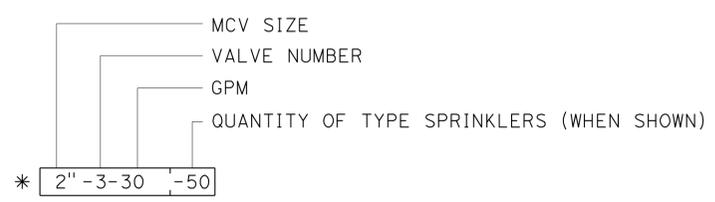
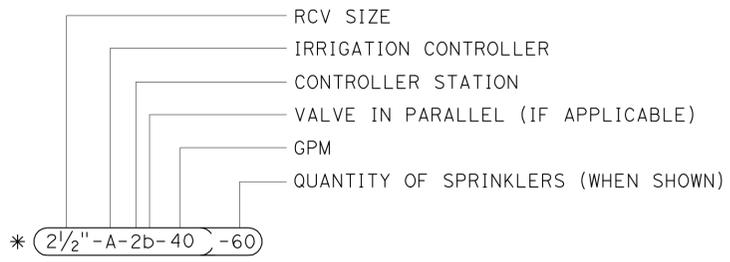
To accompany plans dated 8-22-11

2006 REVISED STANDARD PLAN RSP H2

EXISTING	PROPOSED	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ASSEMBLY IN ENCLOSURE (BPAE)
		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(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
		CONTROL AND NEUTRAL CONDUCTORS (CNC)
		SPRINKLER CONTROL CONDUIT (SCC)
		IRRIGATION CROSSOVER
		EXTEND IRRIGATION CROSSOVER
		IRRIGATION SLEEVE
		DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (PR 200) (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (PR 200) (SUPPLY LINE) (LATERAL)
		PLASTIC PIPE (IRRIGATION LINE)
		REMOTE CONTROL VALVE (RCV) REMOTE CONTROL VALVE (MASTER) (RCVM) REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		MANUAL CONTROL VALVE (MCV)
		VALVE ASSEMBLY UNIT (VAU)
		WYE STRAINER (WS)
		FILTER ASSEMBLY UNIT (FAU)
		GATE VALVE (GV)
		BALL VALVE (BV)

EXISTING	PROPOSED	ITEM DESCRIPTION
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		PRESSURE REDUCING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		NOZZLE LINE W/TURNING UNION
		IRRIGATION SYSTEM
		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

VALVE CODE



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

PLANTING AND IRRIGATION SYMBOLS

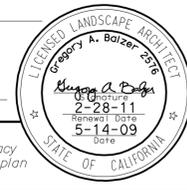
NO SCALE

RSP H2 DATED JUNE 5, 2009 SUPERSEDES RSP H2 DATED MARCH 7, 2008 AND STANDARD PLAN H2 DATED MAY 1, 2006 - PAGE 202 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H2

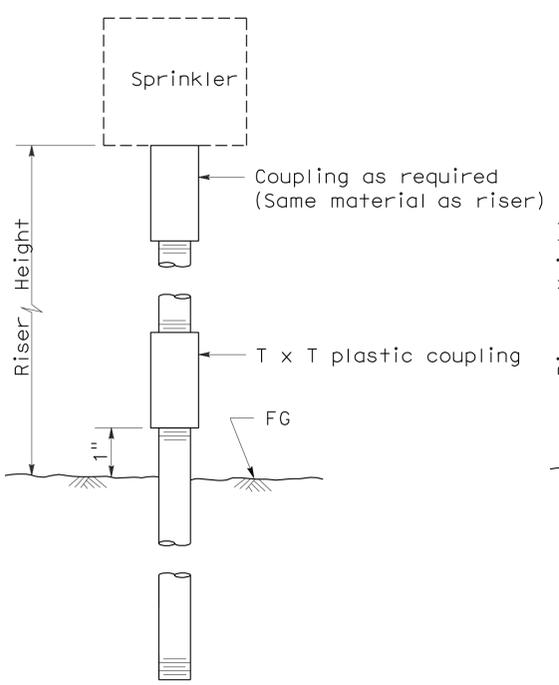
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	66	83

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
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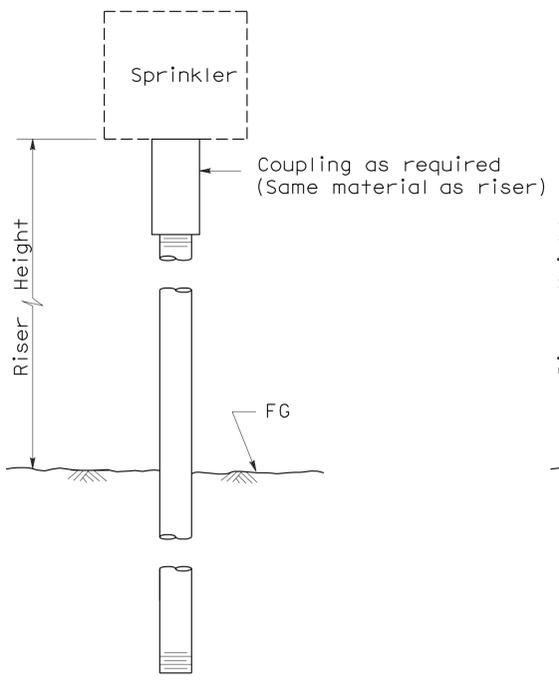


To accompany plans dated 8-22-11

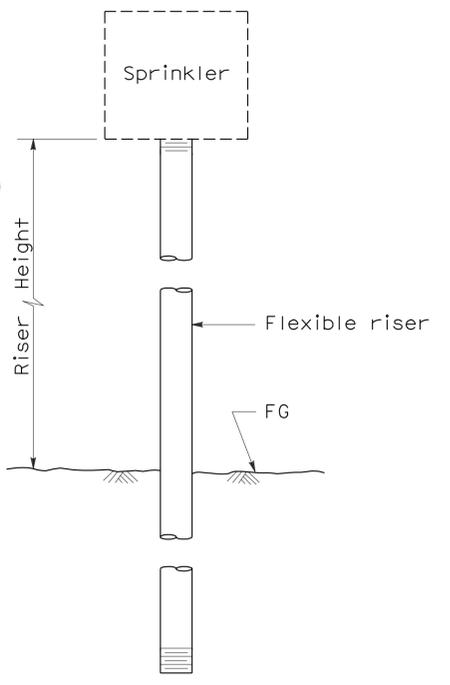
2006 REVISED STANDARD PLAN RSP H5



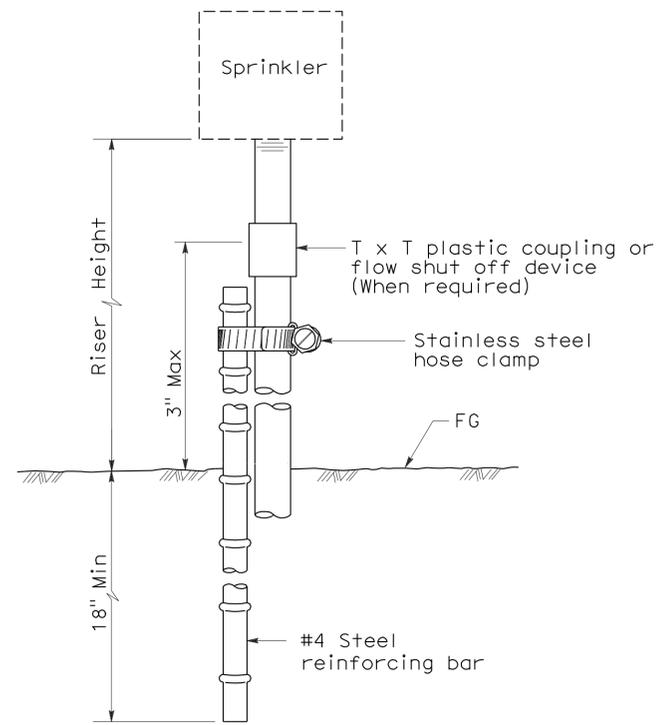
ELEVATION
RISER TYPE I



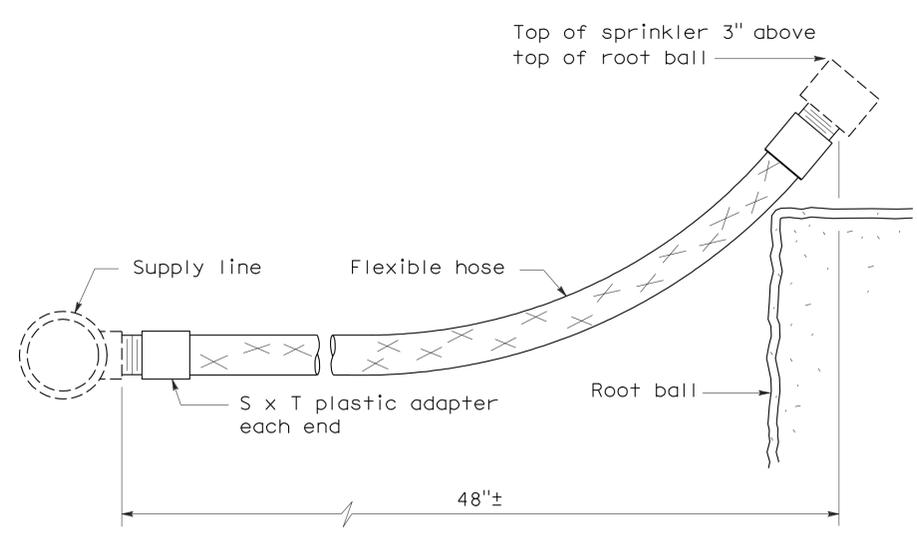
ELEVATION
RISER TYPE II



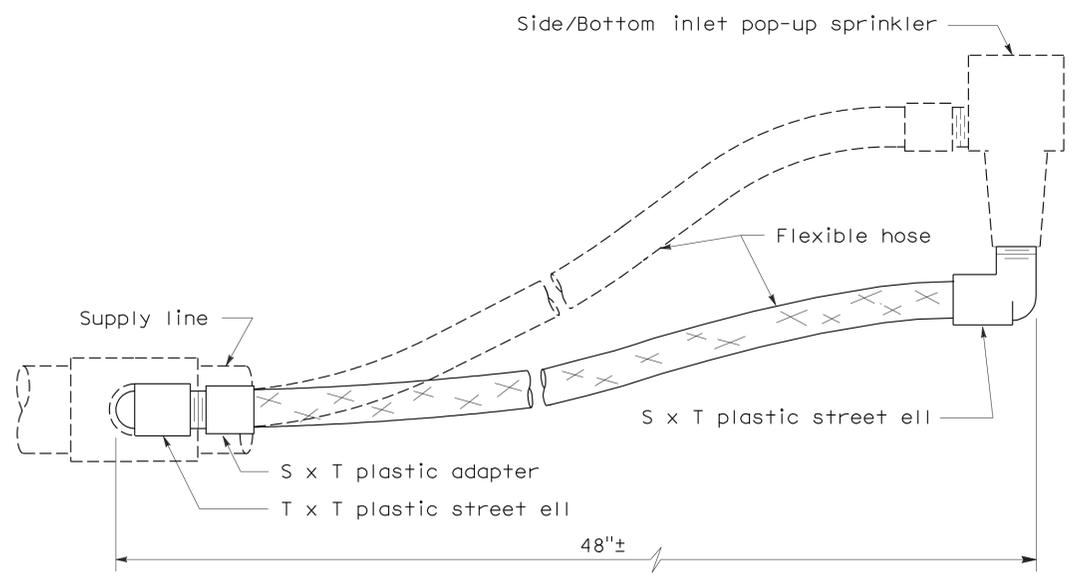
ELEVATION
RISER TYPE III



ELEVATION
RISER TYPE IV



ELEVATION
RISER TYPE V



ELEVATION
RISER TYPE VI

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PLANTING AND IRRIGATION
DETAILS**
NO SCALE

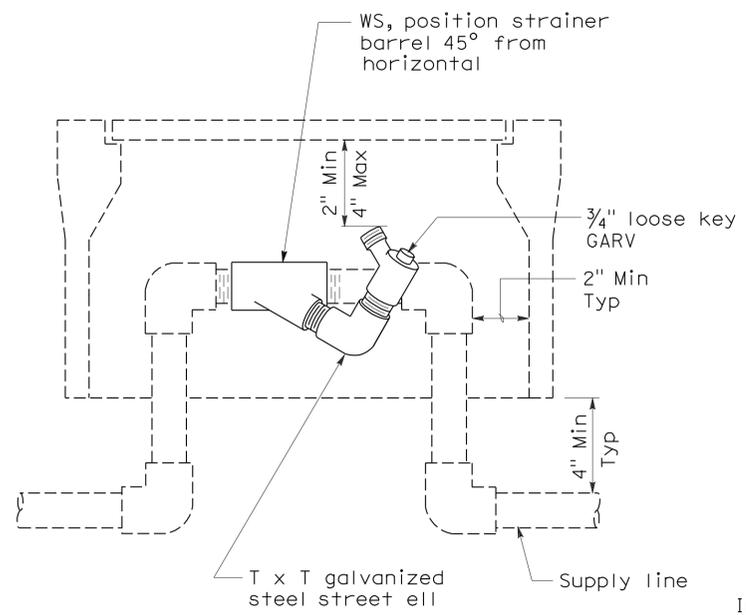
RSP H5 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H5
DATED MAY 1, 2006 - PAGE 205 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H5

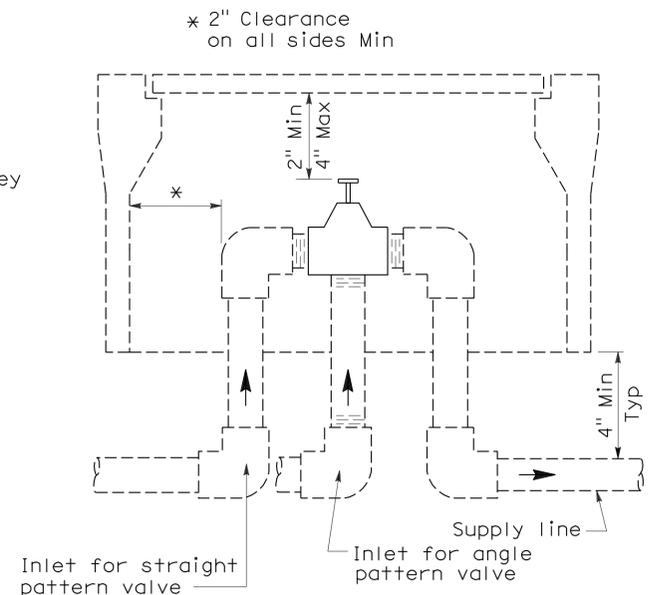
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	67	83

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 License No. 22868
 Signature Date: 2-28-11
 Renewal Date: 5-14-09
 State of California

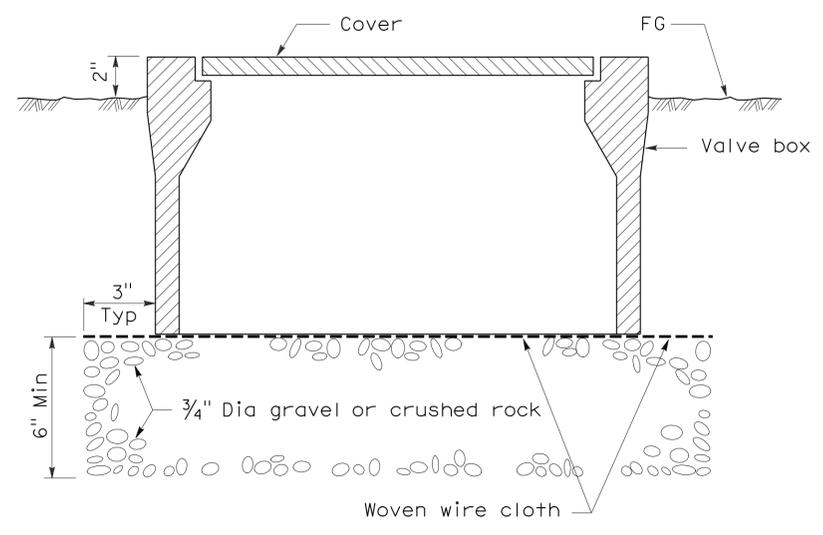
June 5, 2009
 PLANS APPROVAL DATE
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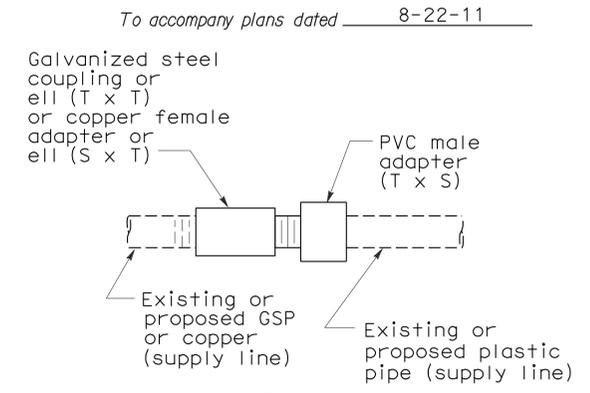
**ELEVATION
WYE STRAINER**



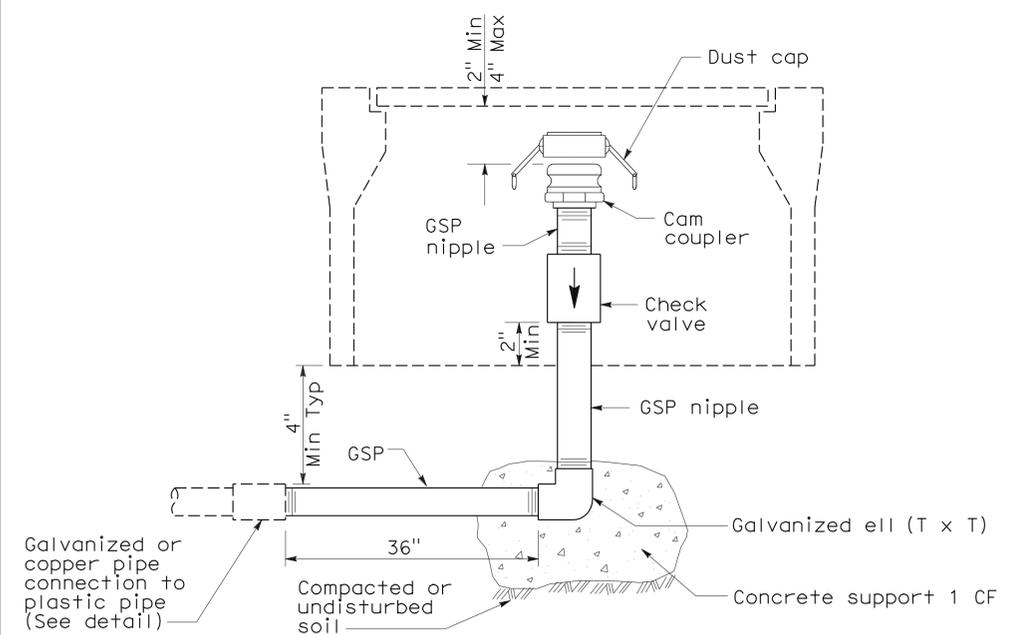
**ELEVATION
VALVE**



**SECTION
VALVE BOX**

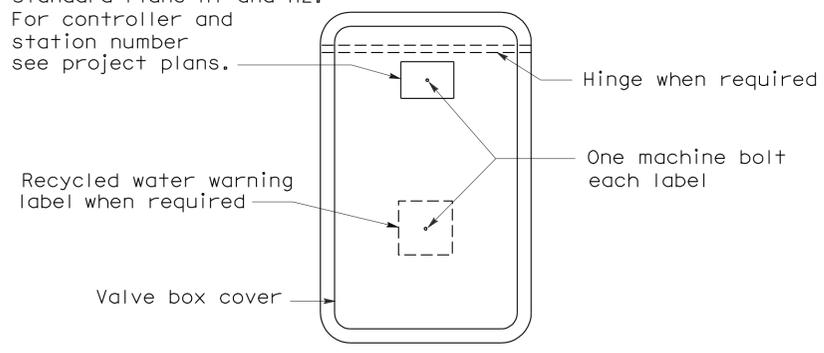


**PLAN
GALVANIZED OR COPPER PIPE
CONNECTION TO PLASTIC PIPE**

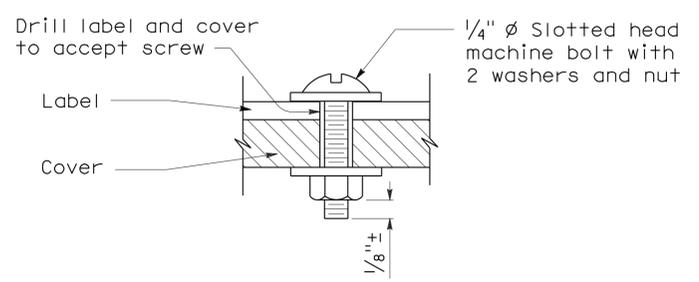


**ELEVATION
CAM COUPLER ASSEMBLY**

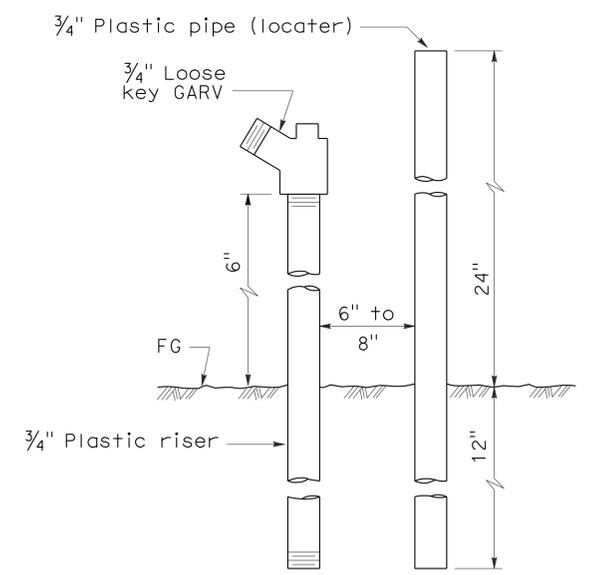
Identification label:
 For abbreviations see Revised Standard Plans H1 and H2.
 For controller and station number see project plans.



**PLAN
VALVE BOX IDENTIFICATION**



**SECTION
VALVE BOX IDENTIFICATION**



**ELEVATION
FLUSH VALVE**

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**PLANTING AND IRRIGATION
DETAILS**

NO SCALE

RSP H7 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H7
 DATED MAY 1, 2006 - PAGE 207 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H7

2006 REVISED STANDARD PLAN RSP H7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	68	83

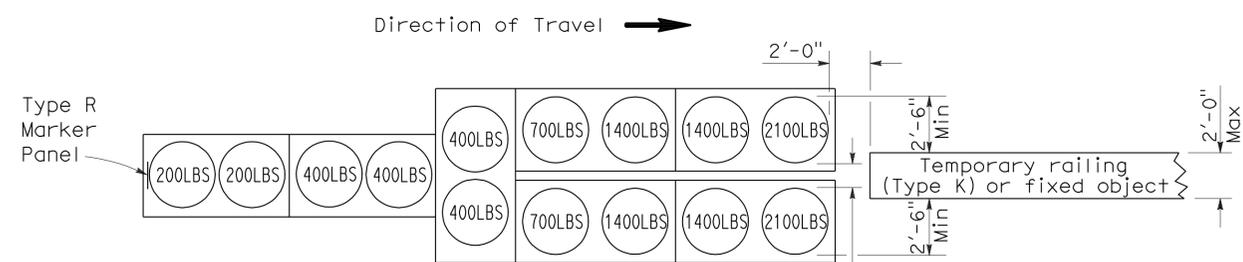
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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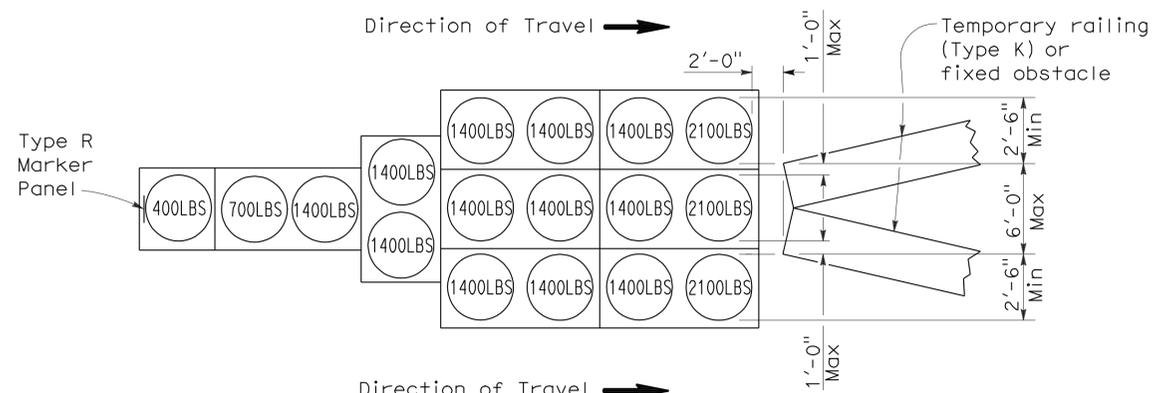
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 8-22-11



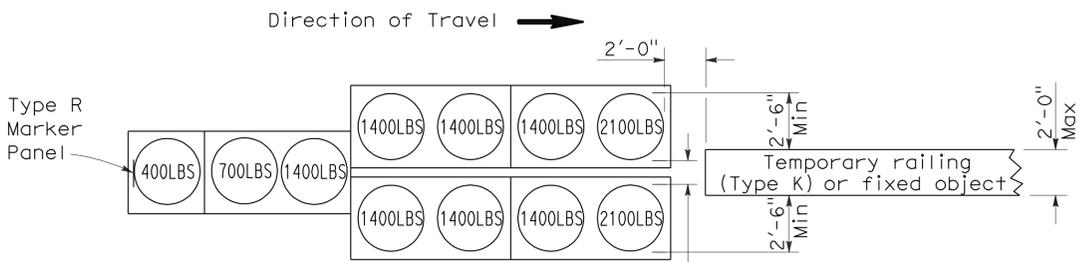
ARRAY 'TU14'

Approach speed 45 mph or more



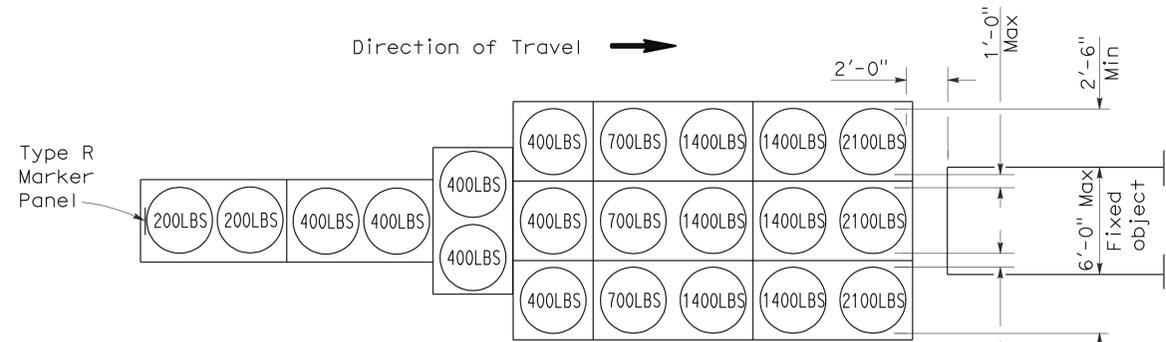
ARRAY 'TU17'

Approach speed less than 45 mph



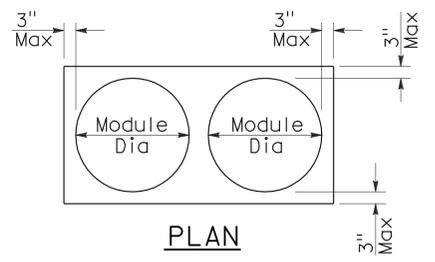
ARRAY 'TU11'

Approach speed less than 45 mph

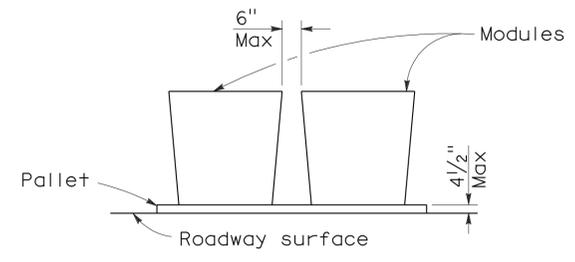


ARRAY 'TU21'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the top of Type R marker panel 1" below the module lid.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1A

2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	69	83

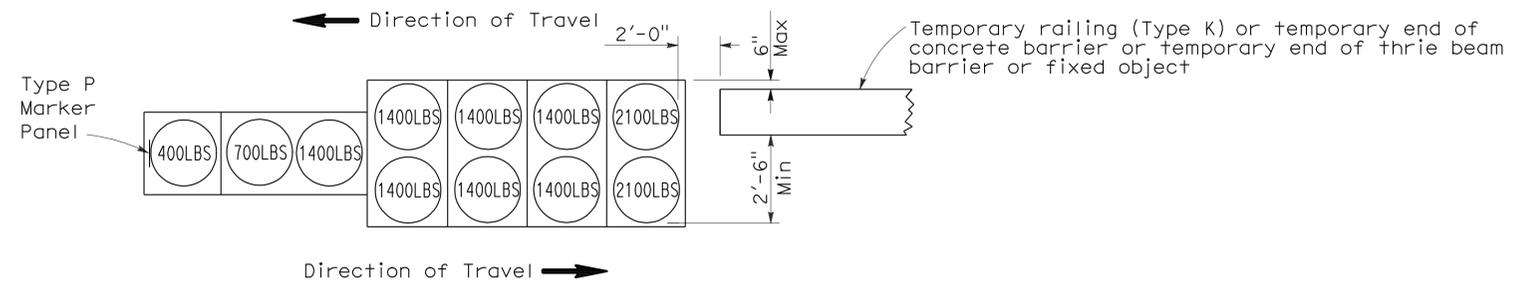
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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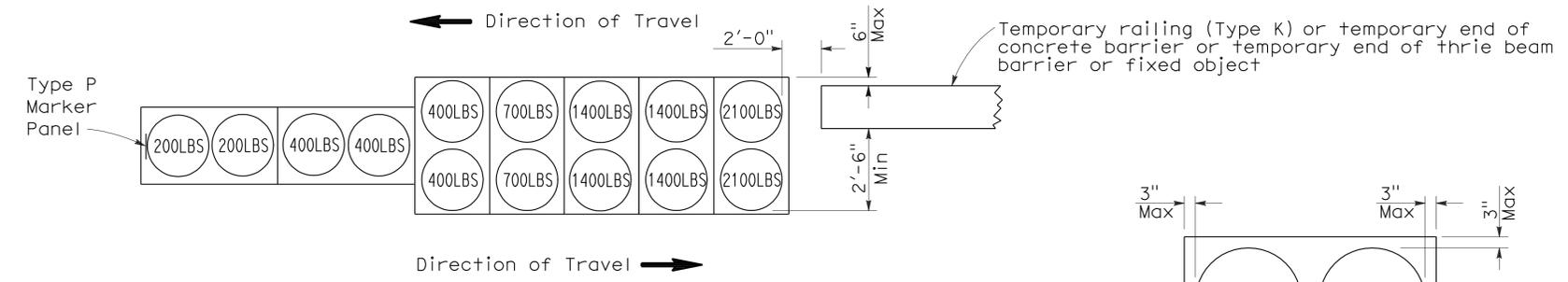
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 8-22-11



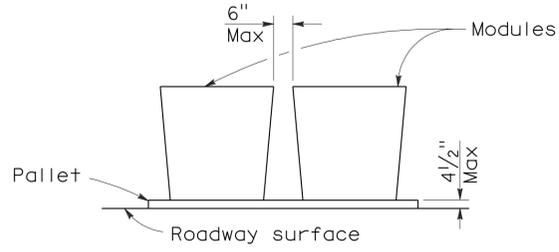
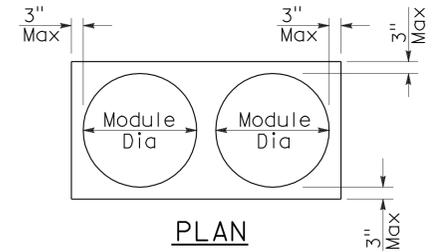
ARRAY 'TB11'

Approach speed less than 45 mph



ARRAY 'TB14'

Approach speed 45 mph or more



CRASH CUSHION PALLET DETAIL
See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TEMPORARY CRASH CUSHION,
SAND FILLED
(BIDIRECTIONAL)**

NO SCALE

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

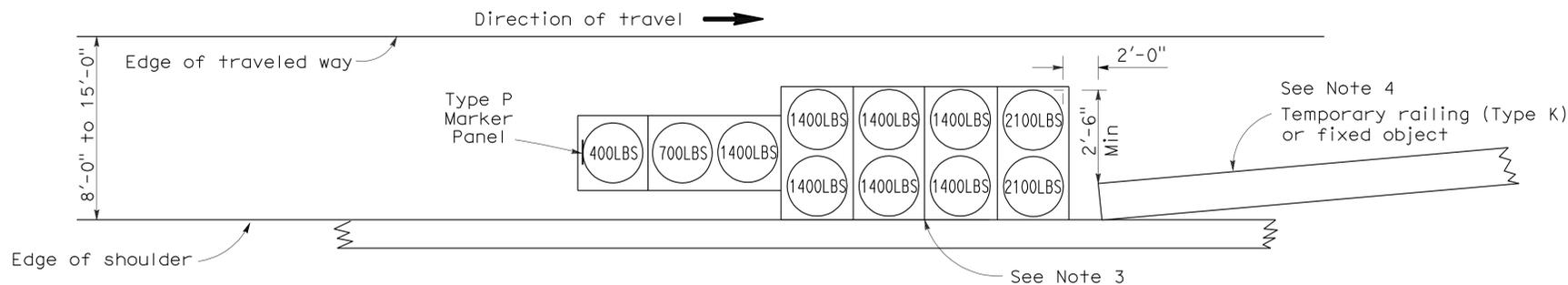
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	70	83

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

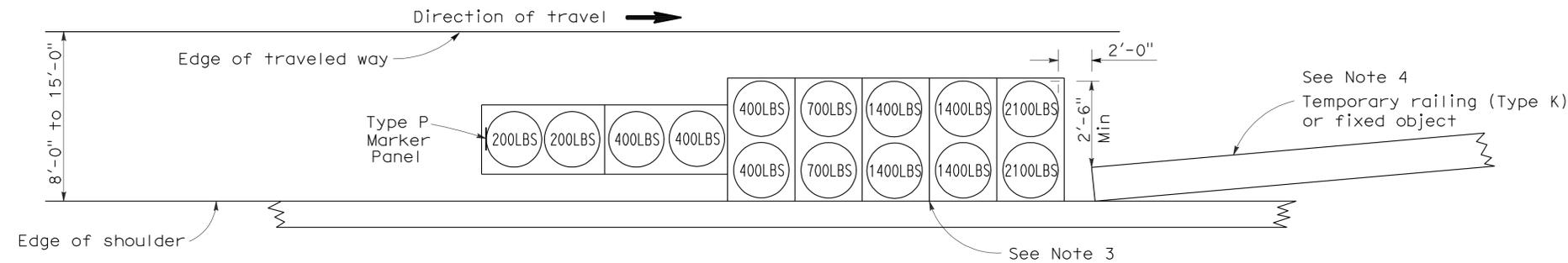
June 6, 2008
PLANS APPROVAL DATE

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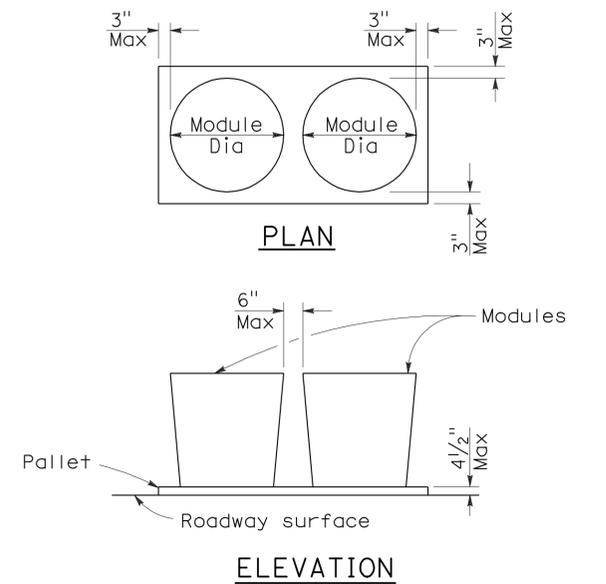
To accompany plans dated 8-22-11



ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



ARRAY 'TS14'
Approach speed 45 mph or more
See Note 9



CRASH CUSHION PALLET DETAIL
See Note 11

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
4. If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
5. Temporary crash cushion arrays shall not encroach on the traveled way.
6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
7. Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
8. Refer to Standard Plan A73B for marker details.
9. For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
10. Approach speeds indicated conform to NCHRP 350 Report criteria.
11. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**

NO SCALE
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

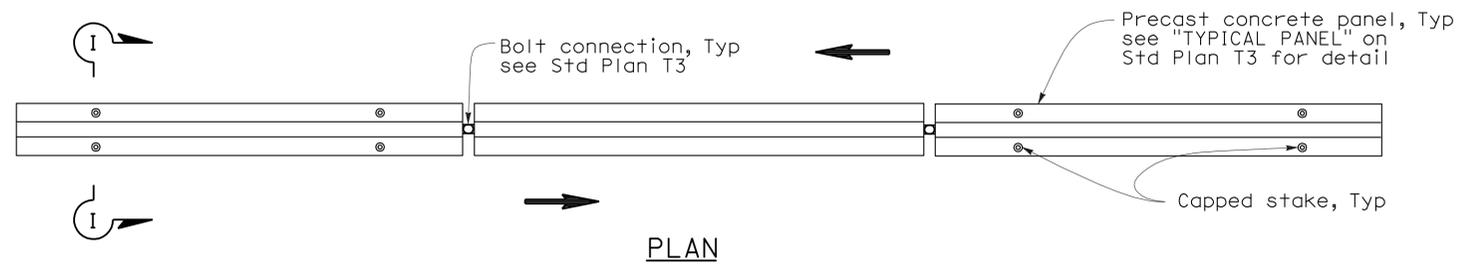
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	71	83

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

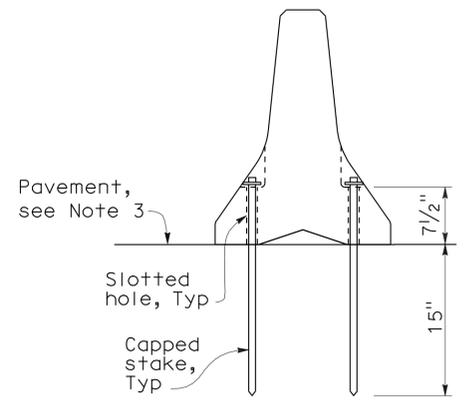
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 8-22-11



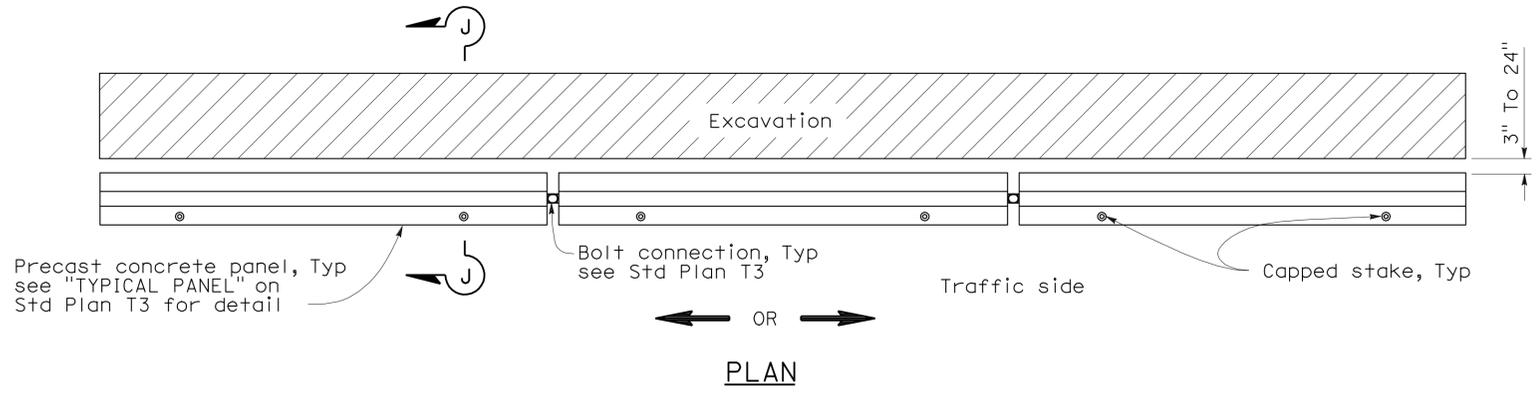
RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC

See Note 1



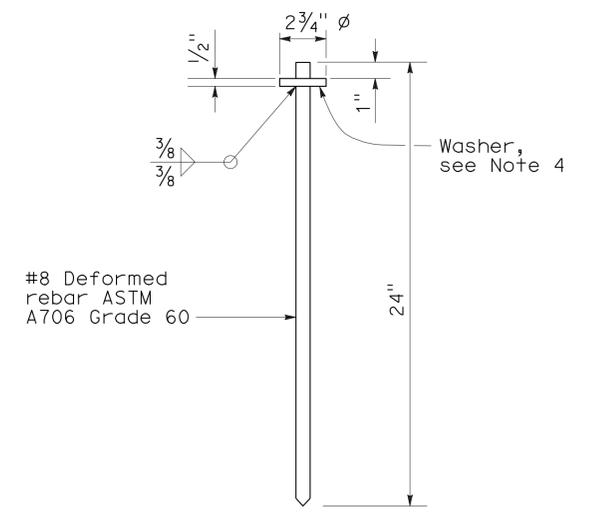
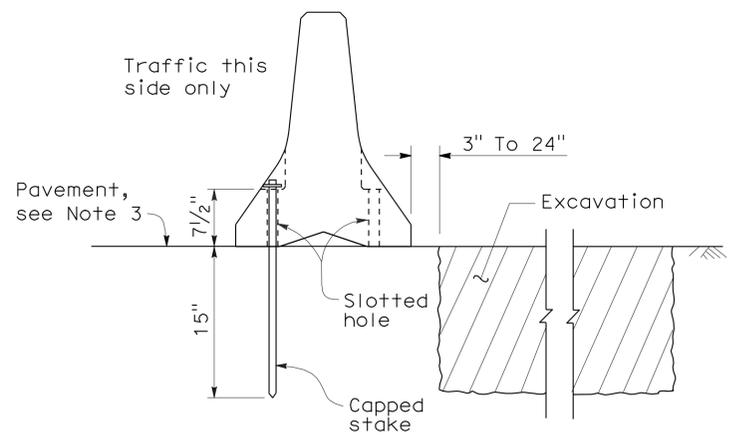
NOTES:

1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by \Rightarrow .



RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION

See Note 2



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY RAILING
(TYPE K)**

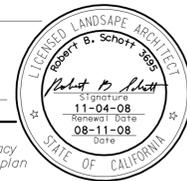
NO SCALE

NSP T3A DATED MAY 20, 2011 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

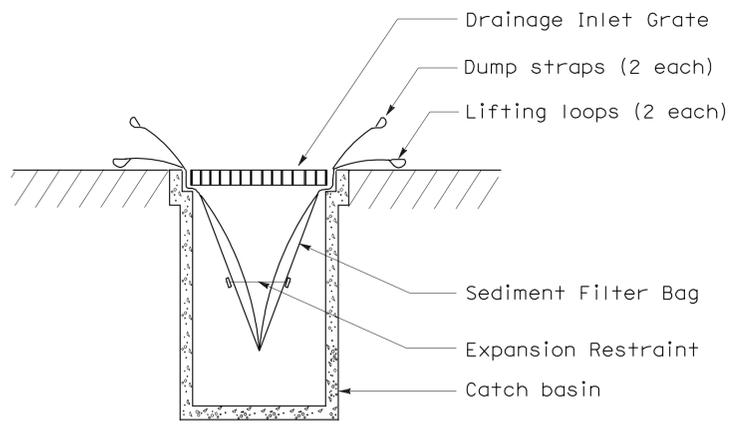
2006 NEW STANDARD PLAN NSP T3A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	73	83

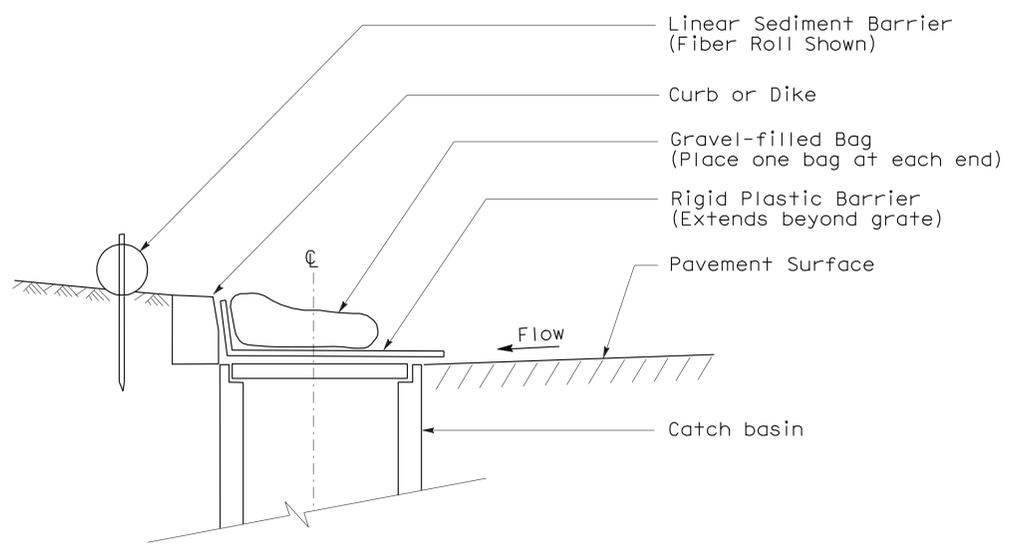
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



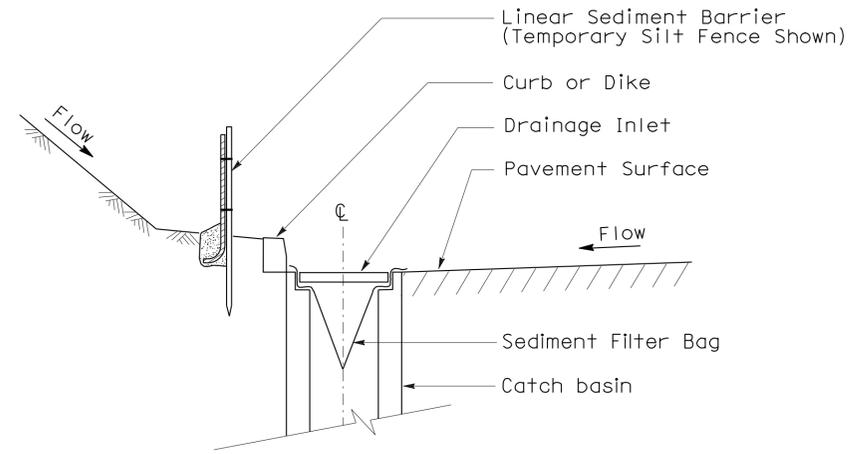
To accompany plans dated 8-22-11



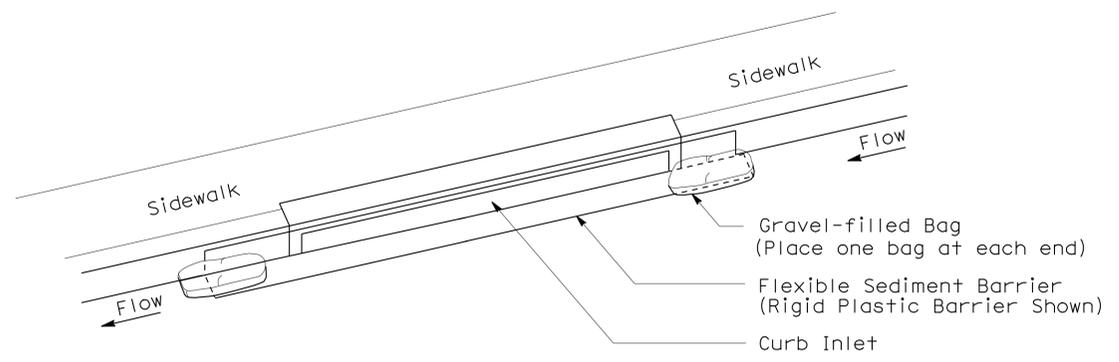
SECTION B-B
SEDIMENT FILTER BAG DETAIL



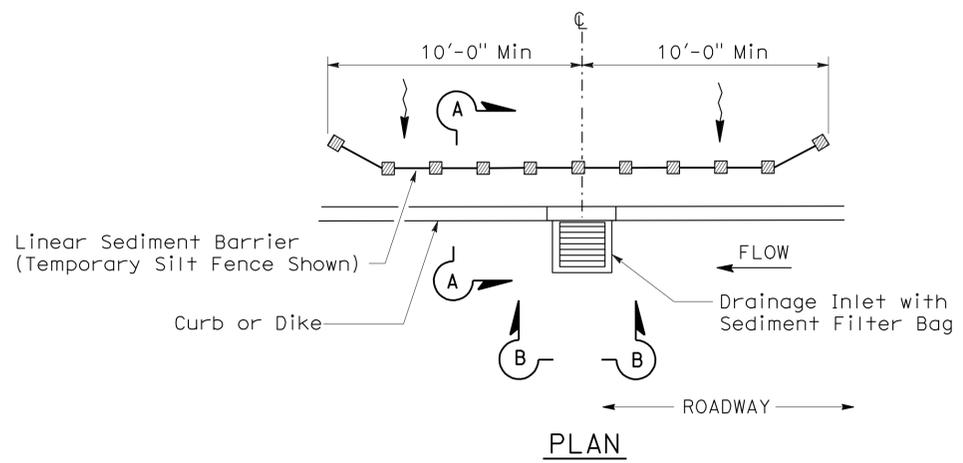
SECTION
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



SECTION A-A



PERSPECTIVE
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6B)
(CURB INLET WITHOUT GRATE)



PLAN
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 5)
(SEDIMENT FILTER BAG)

NOTES:

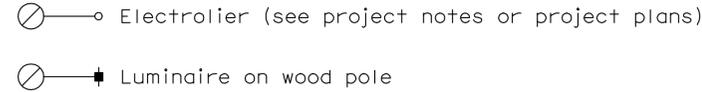
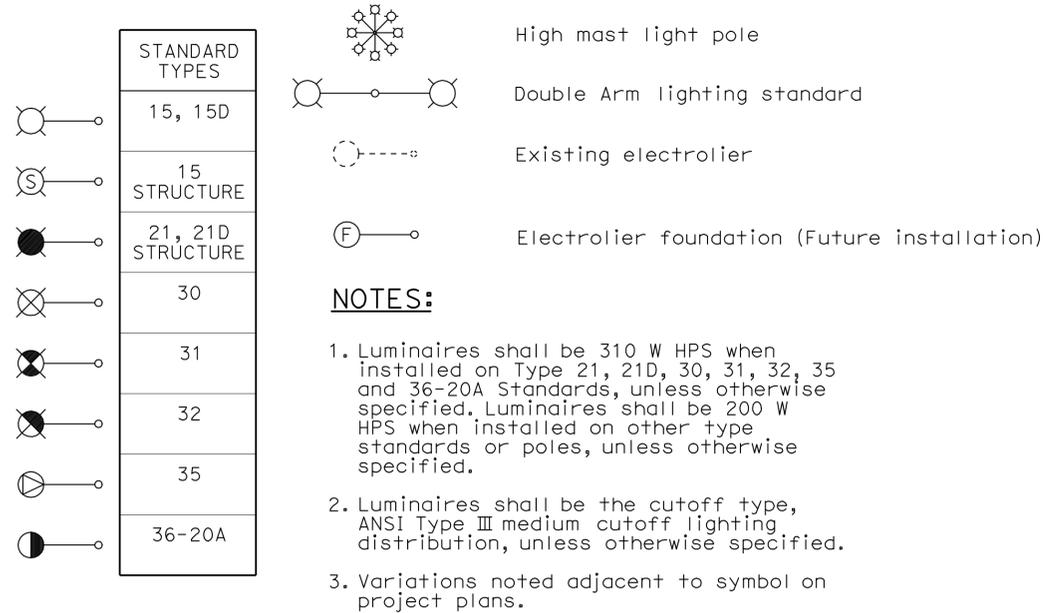
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS
(TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE
NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T64

ELECTROLIERS



STANDARD NOTES:

- 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 wire or rope.
- 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.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, top attachment
MAS-4B	mas-4B	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4C	mas-4C	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, top attachment
MAS-5B	mas-5B	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL	rl	Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	74	83

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

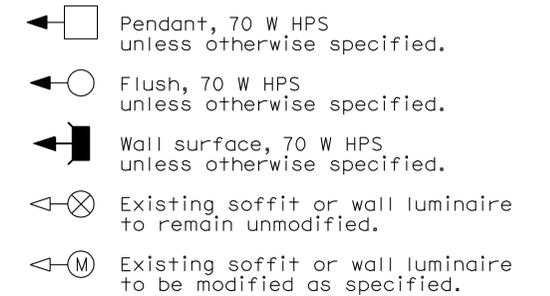
October 5, 2007
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Jeffery G. McRae
No. E14512
Exp. 6-30-08
ELECTRICAL
STATE OF CALIFORNIA

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To accompany plans dated 8-22-11

SOFFIT AND WALL MOUNTED LUMINAIRES



NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

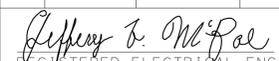
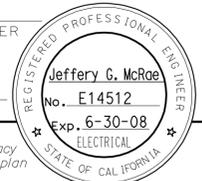
NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1A

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	75	83


 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
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CONDUIT

PROPOSED	EXISTING	
		Lighting Conduit, unless otherwise indicated or noted
		Traffic signal conduit
		Communication conduit
		Telephone conduit
		Fire alarm conduit
		Fiber optic conduit
		Conduit termination 
		Conduit riser in/on structure or service pole

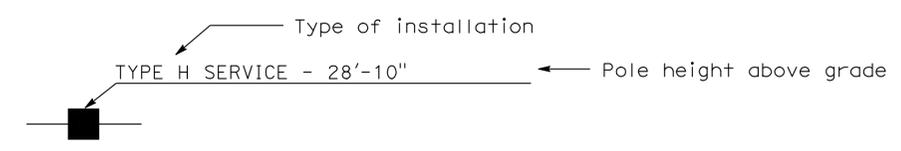
SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
		Modifications of basic symbols: "L" indicates all non-arrow sections louvered "LG" indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
		Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

SERVICE EQUIPMENT

PROPOSED	EXISTING	
		Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

NOTES:

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SYMBOLS AND ABBREVIATIONS)**
 NO SCALE

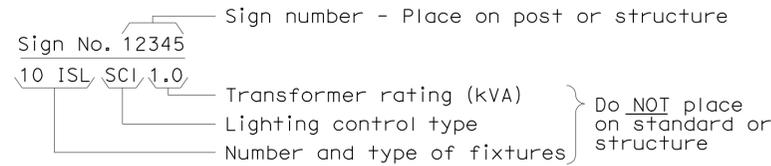
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

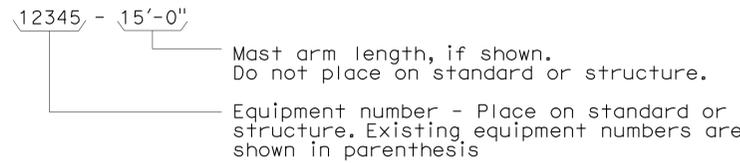
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

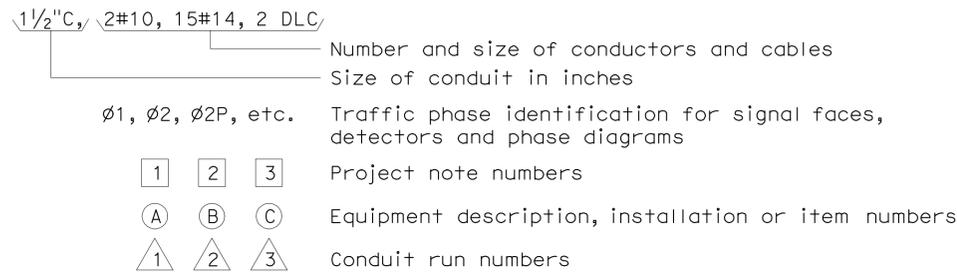
ILLUMINATED SIGN IDENTIFICATION NUMBER:



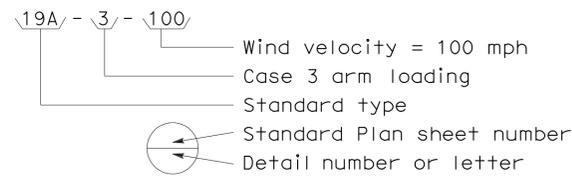
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



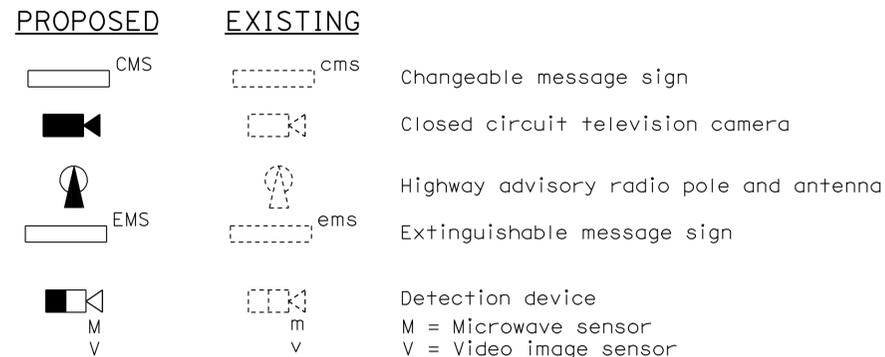
CONDUIT AND CONDUCTOR IDENTIFICATION:



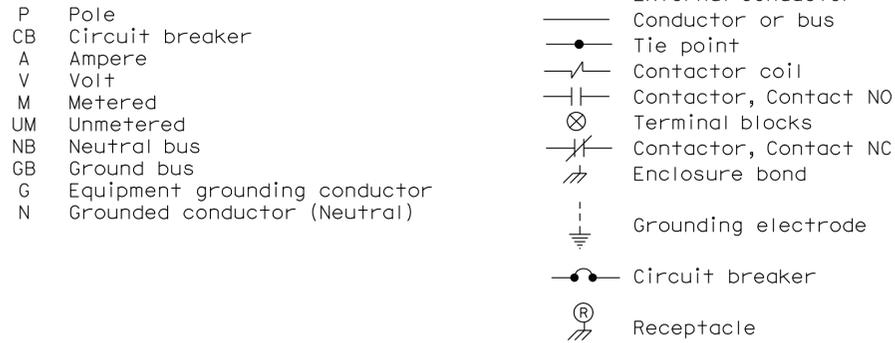
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



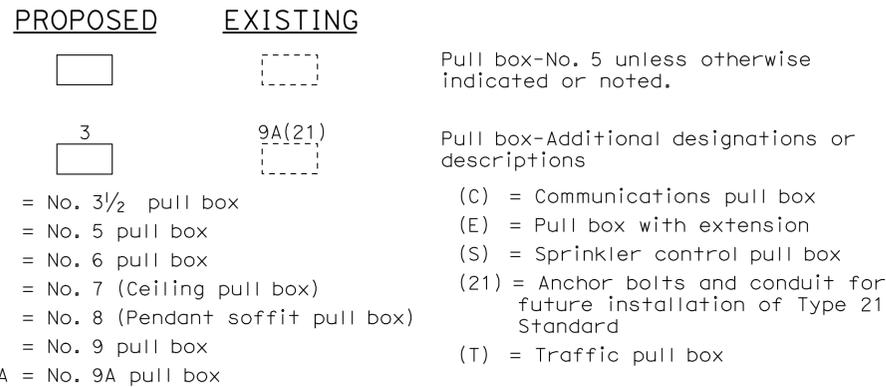
MISCELLANEOUS EQUIPMENT



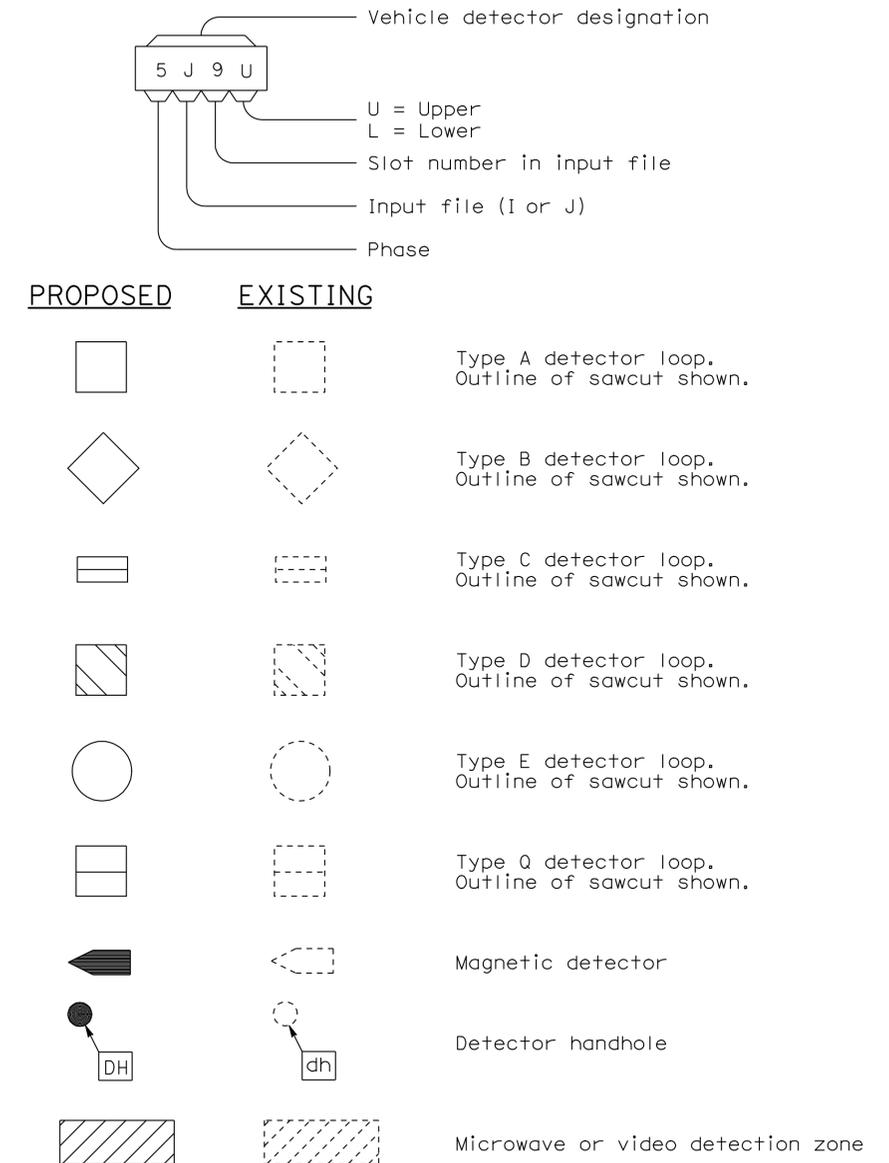
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C
DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1C

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	77	83

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER

October 5, 2007
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 Jeffery G. McRae
 No. E14512
 Exp. 6-30-08
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 STATE OF CALIFORNIA

NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
2. Service equipment enclosures shall be factory wired and conform to NEMA standards.
3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.
4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of $\frac{1}{16}$ ".
6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.
7. Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.
8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:
 - a) Incoming terminals (landing lugs)
 - b) Neutral lugs
 - c) Solid neutral terminal strip
9. At least 6 standard single pole circuit breaker spaces, $\frac{3}{4}$ " nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.
10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.
11. Main bus shall be rated for 125 A and shall be tin-plated copper.
12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
 - a) Adjacent to the breaker or device with character size a minimum of $\frac{1}{8}$ ".
 - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of $\frac{3}{16}$ ".
14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
19. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
20. Type III-AR and Type III-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

To accompany plans dated 8-22-11

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

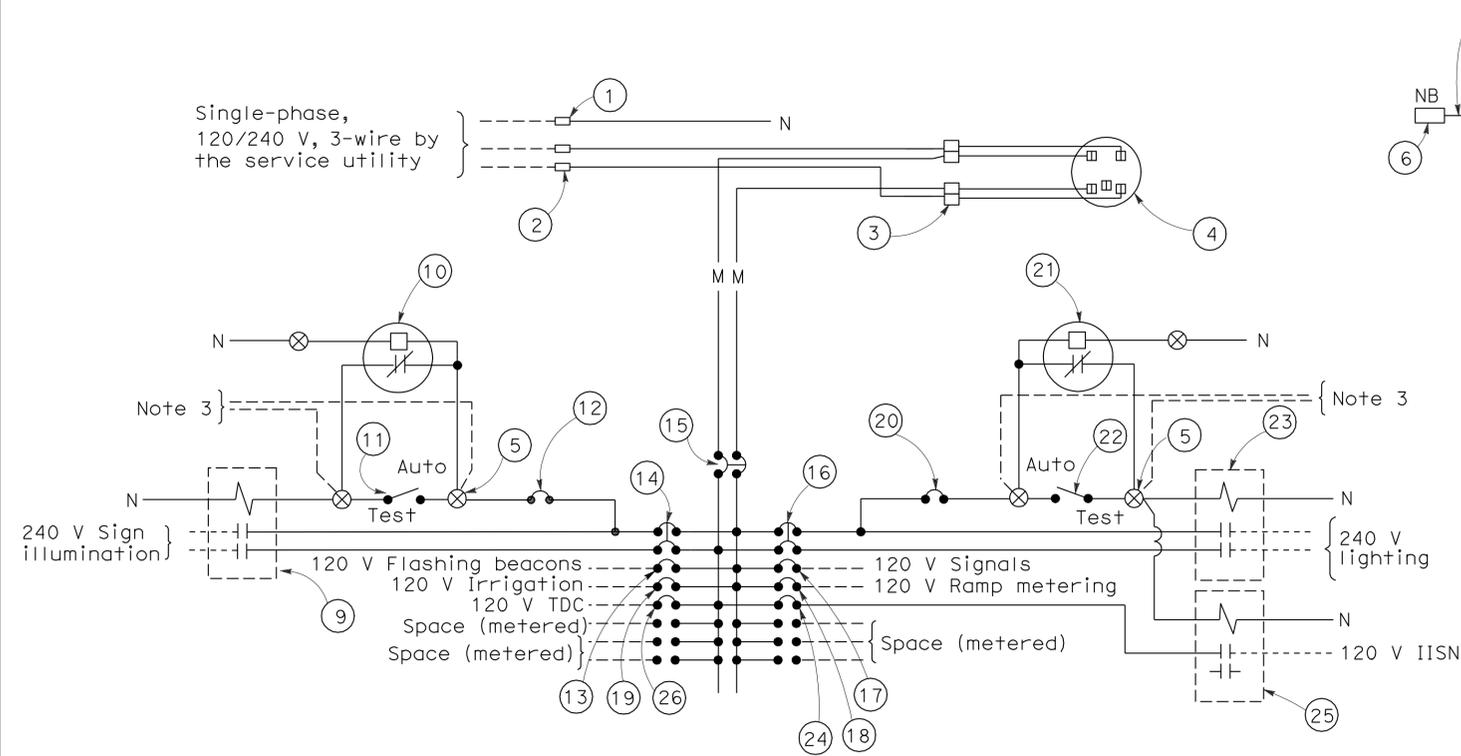
**ELECTRICAL SYSTEMS
 (SERVICE EQUIPMENT NOTES
 TYPE III SERIES)**

NO SCALE

RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C
 DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

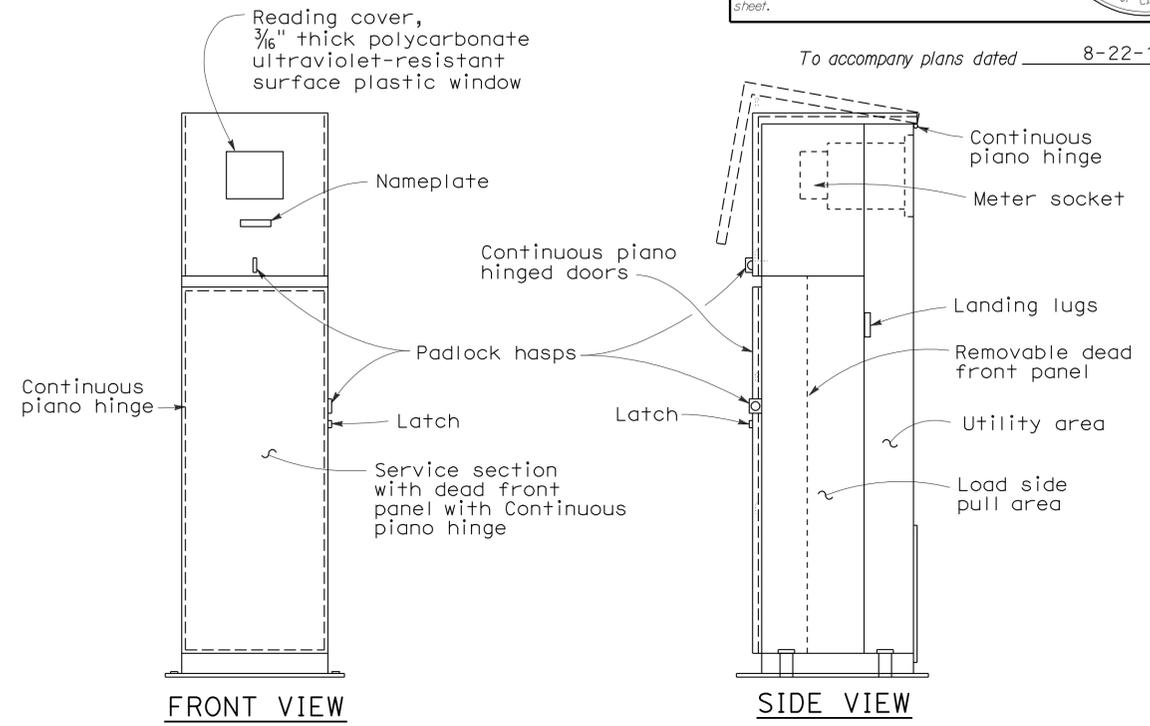
REVISED STANDARD PLAN RSP ES-2C

2006 REVISED STANDARD PLAN RSP ES-2C



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)

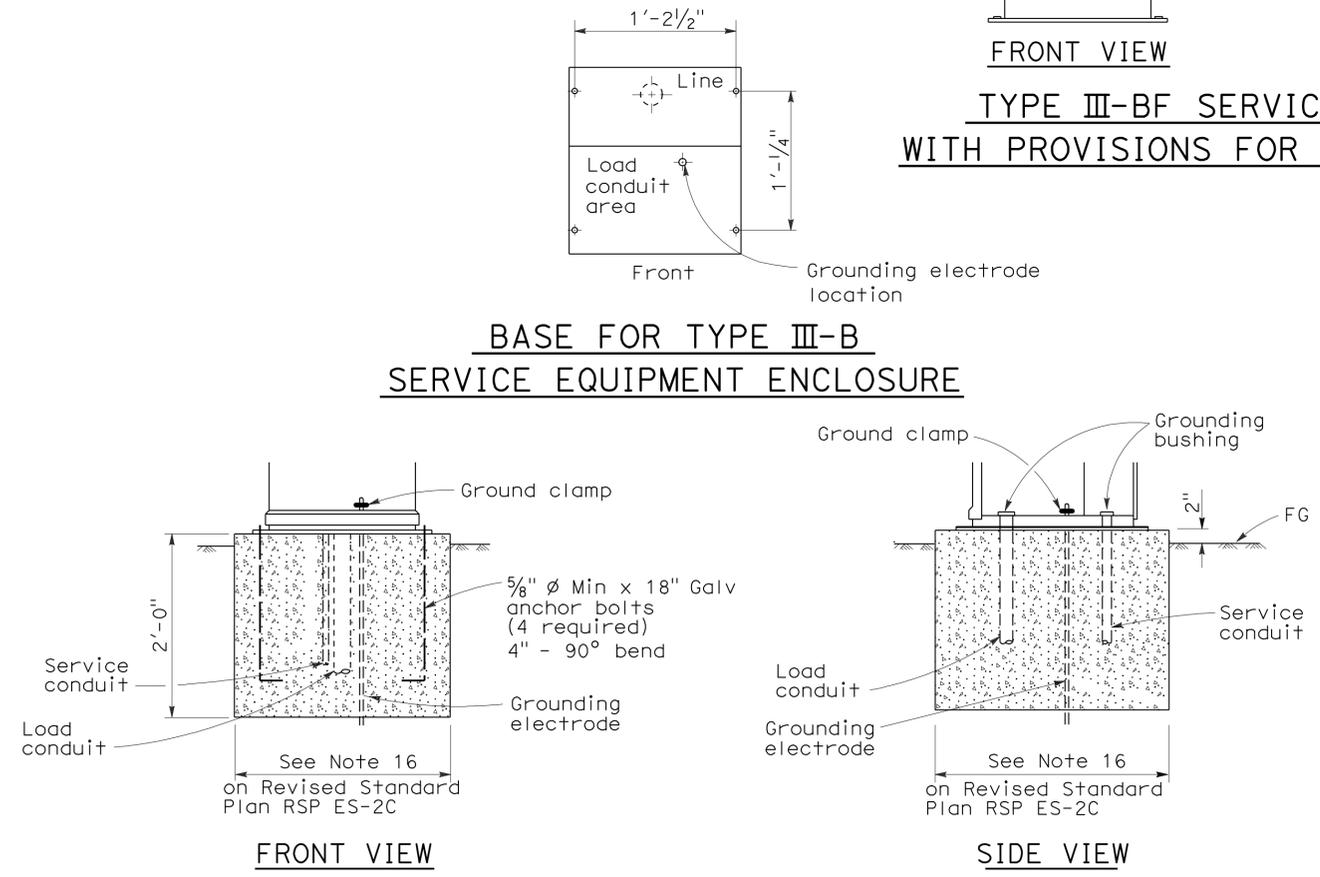
TYPE III-B SERVICE (120/240 V) EQUIPMENT LEGEND		
ITEM No.	COMPONENT	NAME PLATE DESCRIPTION
①	Neutral lug	
②	Landing lug (Note 6)	
③	Test bypass facility	
④	Meter socket and support	
⑤	Terminal blocks	
⑥	Neutral bus	
⑦	Ground bus	
⑧	Grounding electrode	
⑨	30 A, 2PNO Contactor	Sign Illumination
⑩	Photoelectric unit (Note 7)	
⑪	15 A, 1P, Test switch	Sign Illumination Test Switch
⑫	15 A, 120 V, 1P, CB	Sign Illumination Control
⑬	15 A, 120 V, 1P, CB	Flashing Beacon
⑭	30 A, 240 V, 2P, CB	Sign Illumination
⑮	100 A, 240 V, 2P, CB	Main Breaker
⑯	30 A, 240 V, 2P, CB	Lighting
⑰	50 A, 120 V, 1P, CB	Signals
⑱	30 A, 120 V, 1P, CB	Ramp Metering
⑲	20 A, 120 V, 1P, CB	Irrigation
⑳	15 A, 120 V, 1P, CB	Lighting Control
㉑	Photoelectric unit (Note 7)	
㉒	15 A, 1P, Test switch	Lighting Test Switch
㉓	60 A, 2PNO Contactor	Lighting
㉔	15 A, 120 V, 1P, CB	IISNS
㉕	30 A, 2PNO Contactor	IISNS
㉖	20 A, 120 V, 1P, CB	Telephone Demarcation Cabinet



TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR ONE 100 A METER (TYPICAL)

- NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)**
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
 - Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
 - Connect to remote test switch mounted on lighting standards, sign post or structure when required.
 - Items No. ① and ⑥ shall be isolated from the service equipment enclosure.
 - Meter sockets shall be 5 clip type.
 - The landing lug shall be suitable for multiple conductors.
 - Type I photoelectric control shall be used unless otherwise indicated on the plans.

BASE FOR TYPE III-B SERVICE EQUIPMENT ENCLOSURE



TYPE III-B SERVICE EQUIPMENT ENCLOSURE FOUNDATION DETAILS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SERVICE EQUIPMENT AND TYPICAL WIRING DIAGRAM, TYPE III-B SERIES)

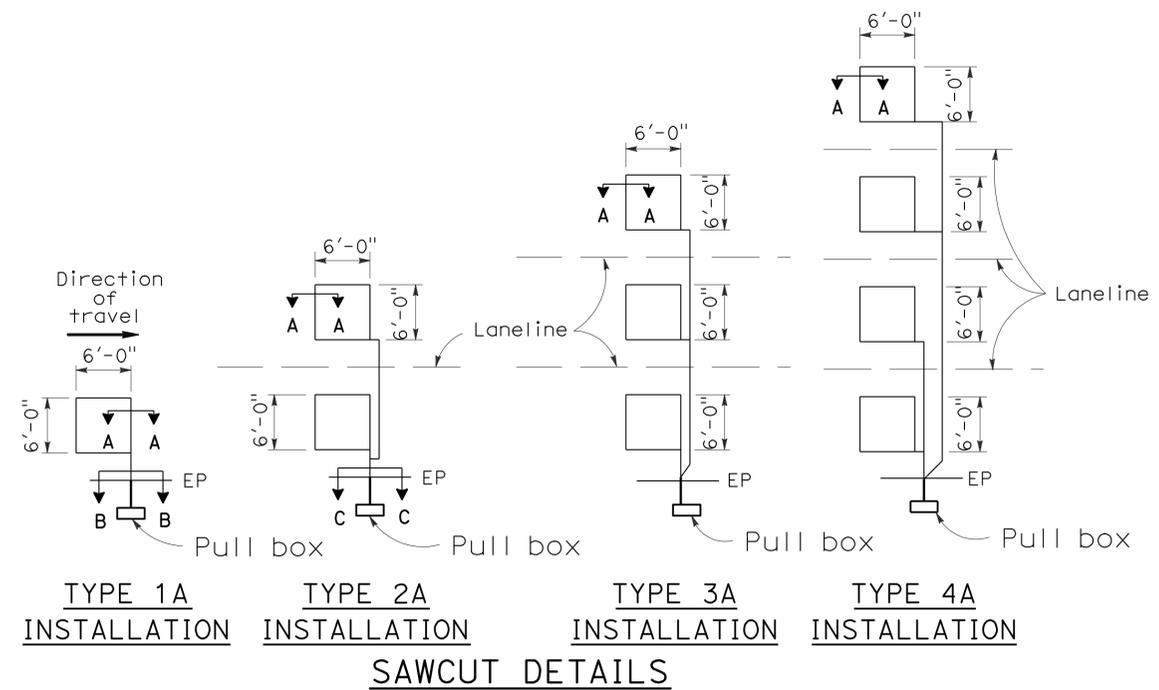
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RSP ES-2E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2E DATED MAY 1, 2006 - PAGE 407 OF THE STANDARD PLANS BOOK DATED MAY 2006.

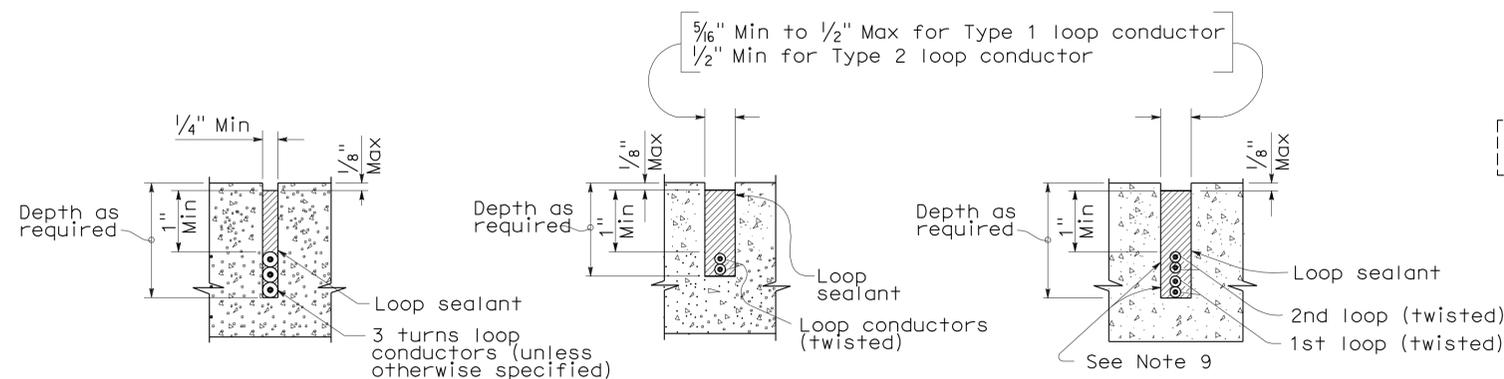
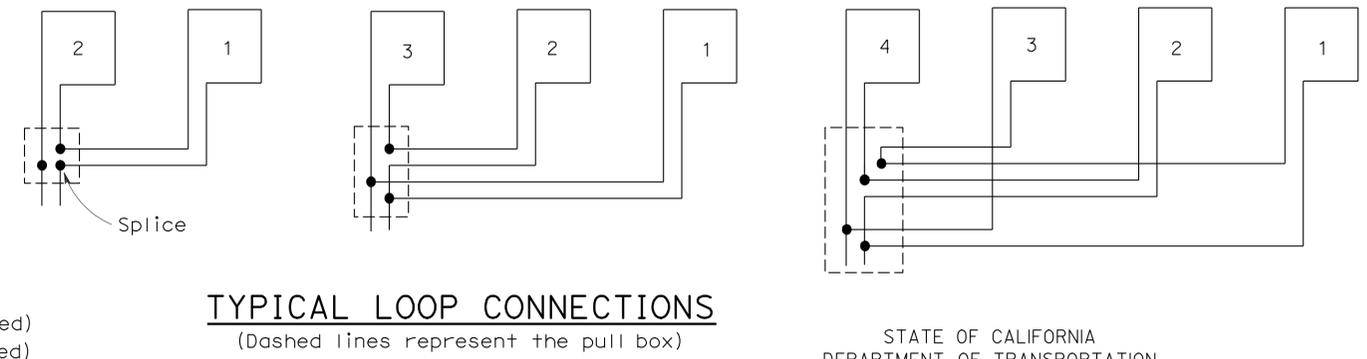
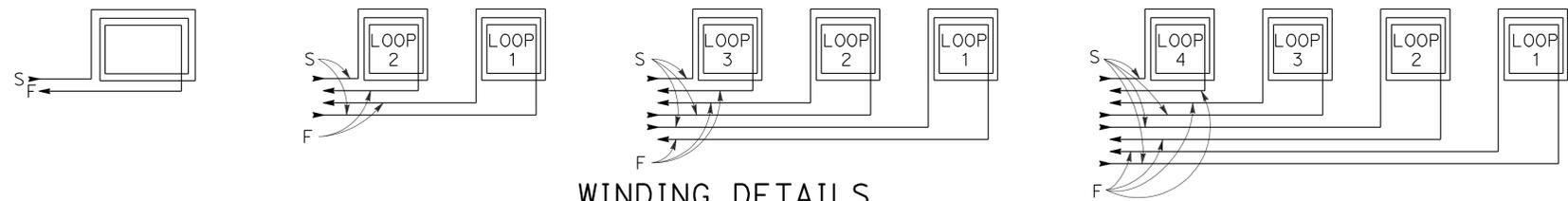
2006 REVISED STANDARD PLAN RSP ES-2E

LOOP INSTALLATION PROCEDURE

- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no sharp edges.
- Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
- Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
- Identify and tag loop circuit pairs in the pull box with loop number, start (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
- Install loop conductor in slot using a 3/16" to 1/4" thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
- No more than 2 twisted pairs shall be installed in one sawed slot.
- Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
- The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
- Fill slots as shown in details.
- Splice loop conductors to lead-in-cable. Splices shall be soldered.
- End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
- Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
- Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.



- 1A thru 4A = 1 Type A loop configuration in each lane.
- 1B thru 4B = 1 Type B loop configuration in each lane.
- 1C = 1 Type C loop configuration entering lanes as required.
- 1D thru 4D = 1 Type D loop configuration in each lane.
- 1E thru 4E = 1 Type E loop configuration in each lane.
- 1Q thru 4Q = 1 Type Q loop configuration in each lane.
(Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)



ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-5A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	79	83

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 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

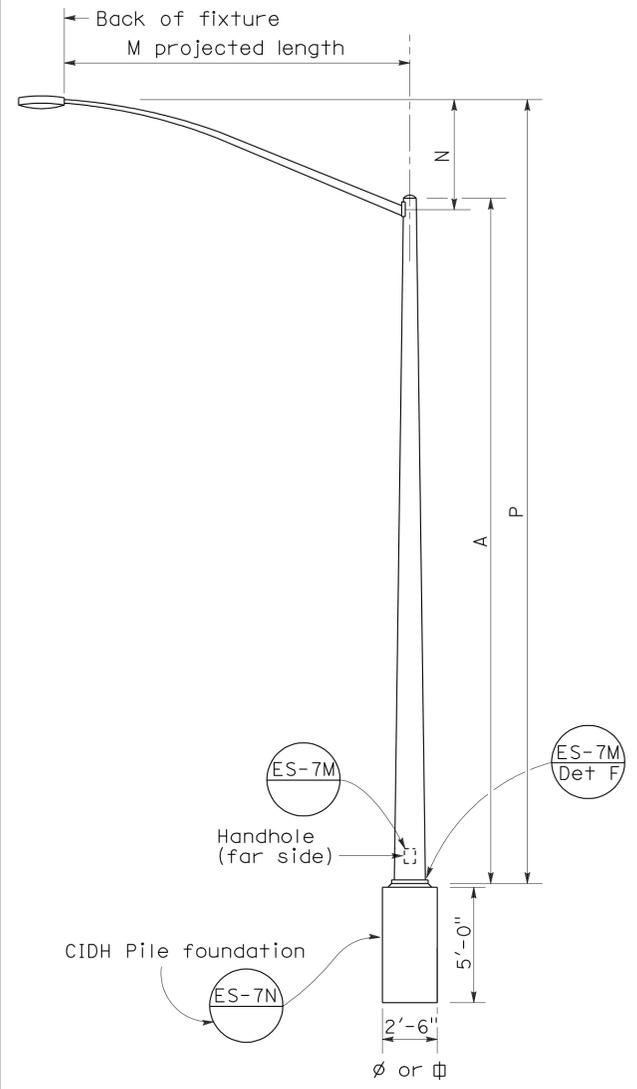
October 5, 2007
PLANS APPROVAL DATE

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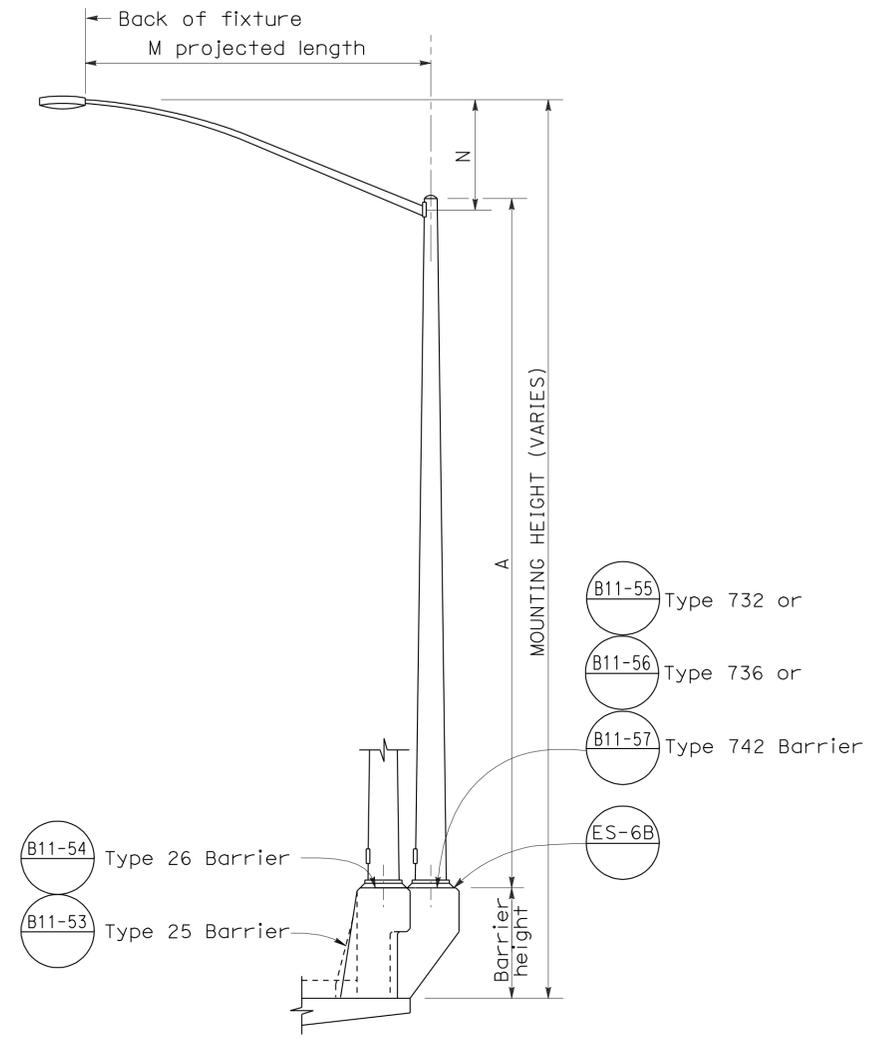
To accompany plans dated 8-22-11

2006 REVISED STANDARD PLAN RSP ES-5A

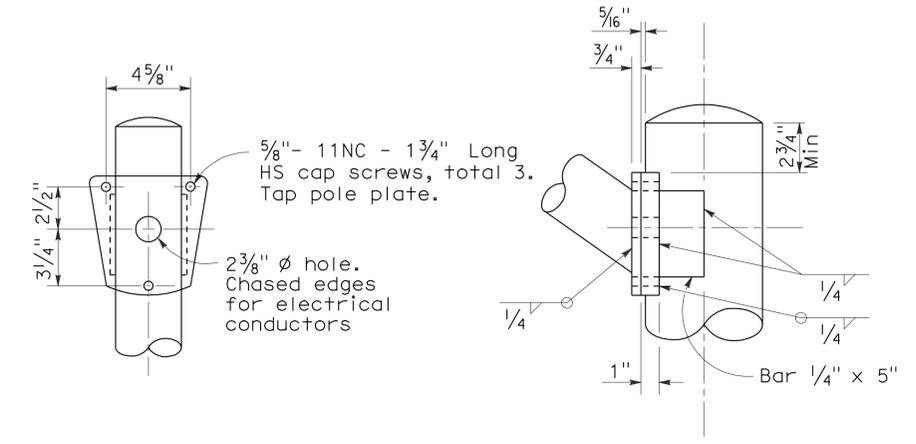
To accompany plans dated 8-22-11



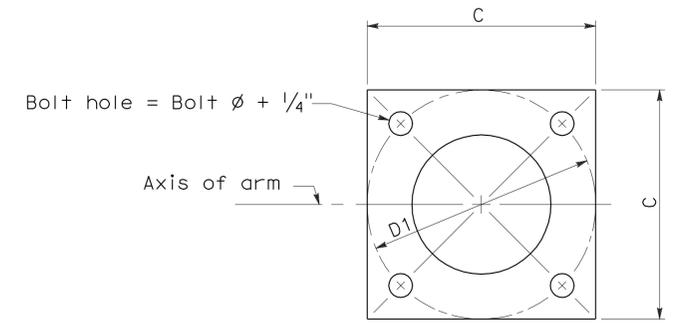
ELEVATION
TYPE 15 AND TYPE 21



ELEVATION
TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED



DETAIL R
LUMINAIRE ARM CONNECTION



BASE PLATE

POLE TYPE	POLE DATA				BASE PLATE DATA				LUMINAIRE ARM
	A Height	Min OD		Wall Thickness	C	D1 Bolt Circle	Thick-ness	Anchor Bolts Size	
15	30'	8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1" ̕ x 3'-0" x 4"*	6' - 15' 12'
21	35'	8 5/8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1 1/4" ̕ x 3'-0" x 4"*	6' - 15' 12'

* For barrier rail bolts, see Standard Plan ES-6B.

M Projected Length	N Rise	Min OD At Pole	Nominal Thickness	LUMINAIRE ARM DATA	
				Type 15	Type 21
6'-0"	2'-0"±	3/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3/2"	0.1196"	32'-0"±	37'-0"±
10'-0"	3'-3"±	3 3/8"	0.1196"	32'-9"±	37'-9"±
12'-0"	4'-3"±	3 3/8"	0.1196"	33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"	0.1196"	34'-3"±	39'-3"±

NOTES:

- Indicates arm length to be used unless otherwise noted on the plans.
- For Type 15-SB, use Type 15 standard with Type 30 slip base plate details, see Standard Plan ES-6F.
- For additional notes, see Standard Plan ES-7M and ES-7N.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(LIGHTING STANDARD
TYPES 15 AND 21)

NO SCALE

RSP ES-6A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-6A
 DATED MAY 1, 2006 - PAGE 427 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-6A

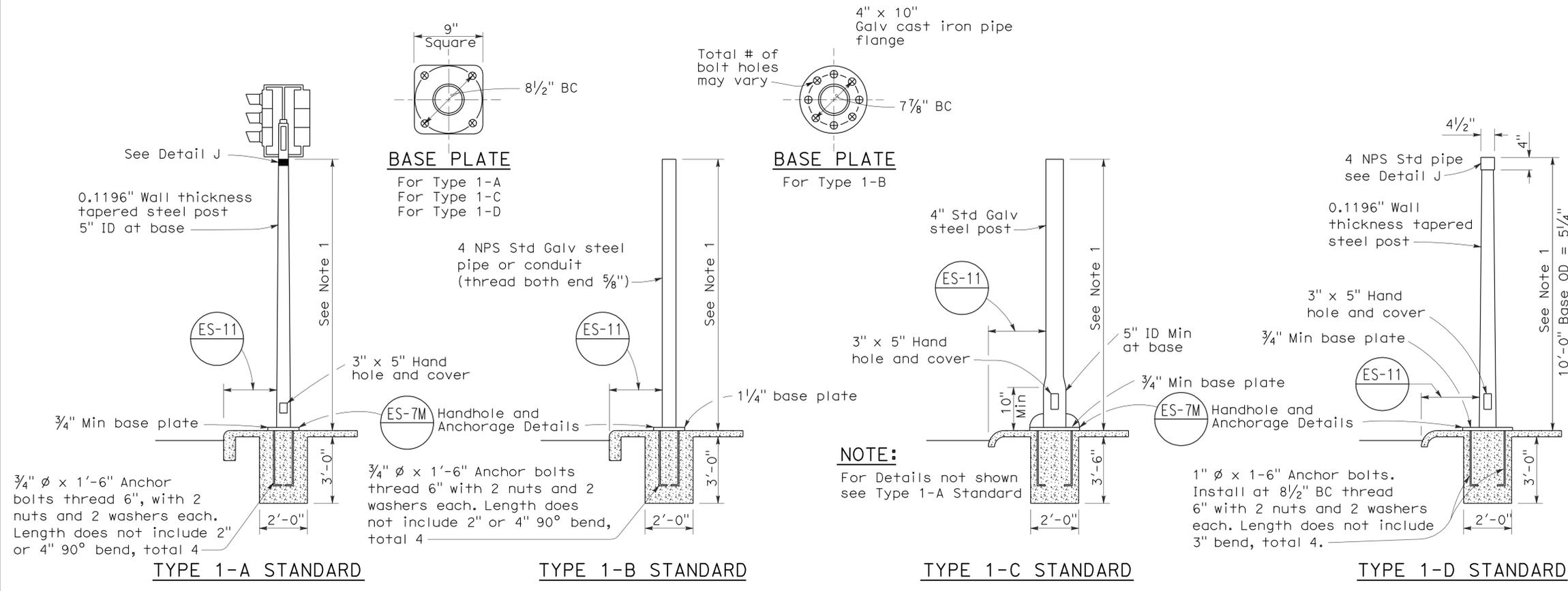
2006 REVISED STANDARD PLAN RSP ES-6A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	81	83

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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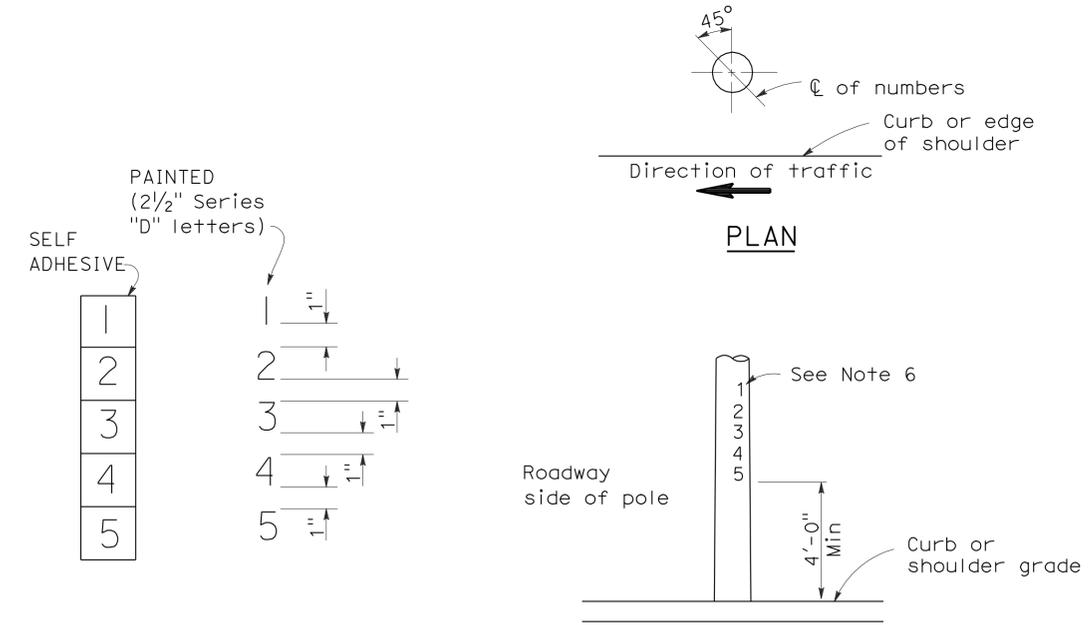
REGISTERED PROFESSIONAL ENGINEER
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA

To accompany plans dated 8-22-11

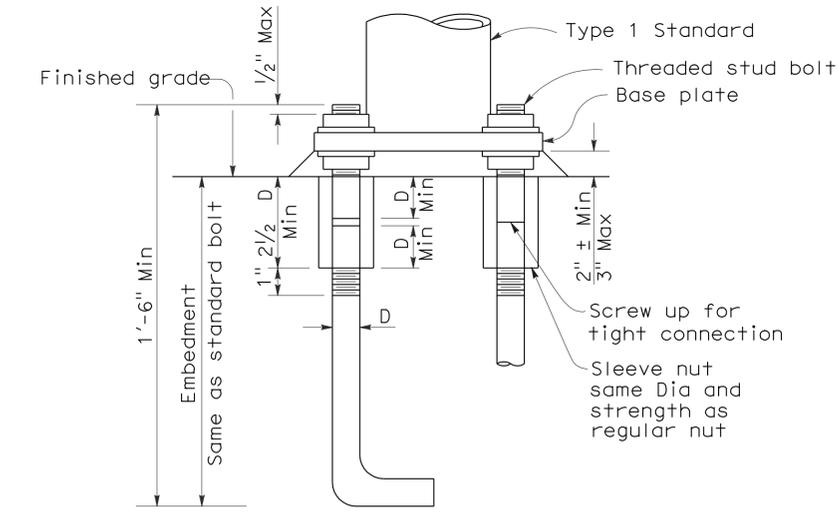


- NOTES:**
- Standards shall be 10'-0" ± 2" for vehicle signals and 7'-0" ± 2" for pedestrian signals unless otherwise noted on plans.
 - Top of standards shall be 4 1/2" OD.
 - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
 - Anchor bolts shall be bonded to conduit or grounding conductor.
 - Conduit between standard and adjacent pull box shall be 2" minimum.
 - Paint numbers on roadway side facing traffic when electrolier or post is left of direction of traffic.

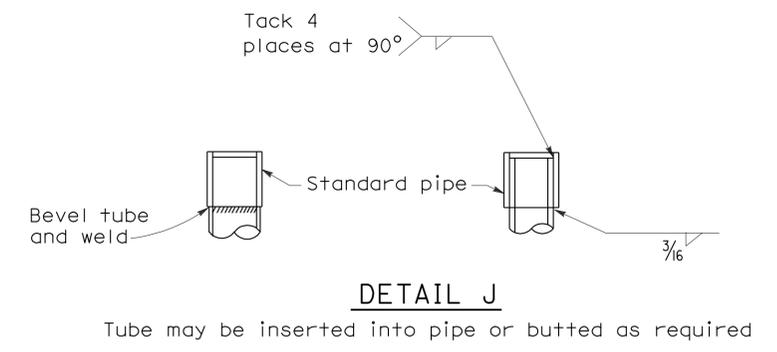
TYPE 1 SIGNAL STANDARDS



LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS



ANCHOR BOLTS WITH SLEEVE NUTS
 Sleeve nuts to be used only when shown or specified on Project Plans
 D = Diameter of anchor bolt



ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)
 NO SCALE

RSP ES-7B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7B DATED MAY 1, 2006 - PAGE 438 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-7B

2006 REVISED STANDARD PLAN RSP ES-7B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	82	83

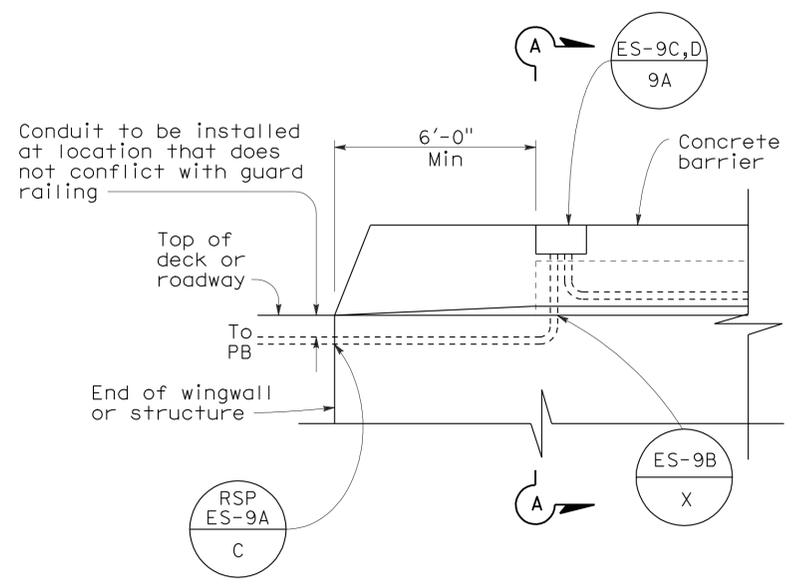
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-08
 STATE OF CALIFORNIA

October 5, 2007
 PLANS APPROVAL DATE

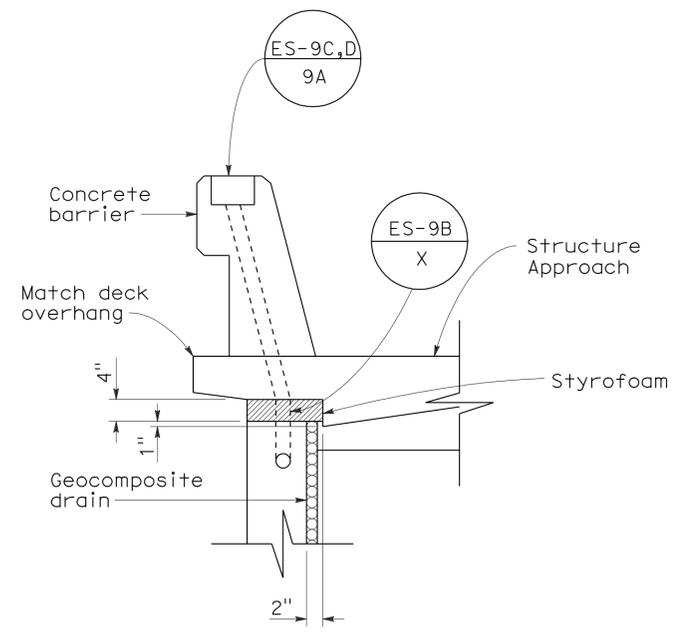
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To accompany plans dated 8-22-11

2006 REVISED STANDARD PLAN RSP ES-9A

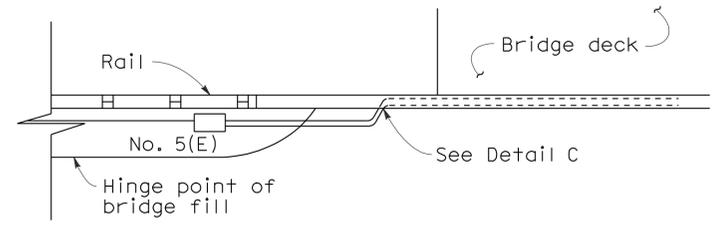


SIDEVIEW

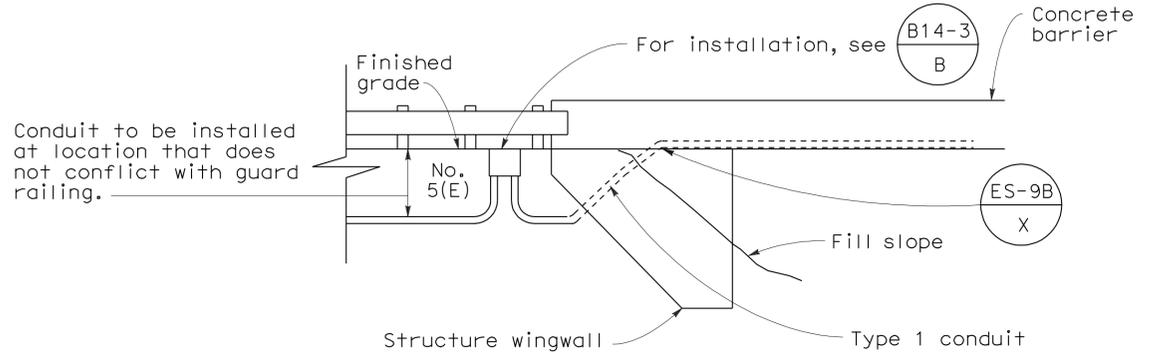


SECTION A-A

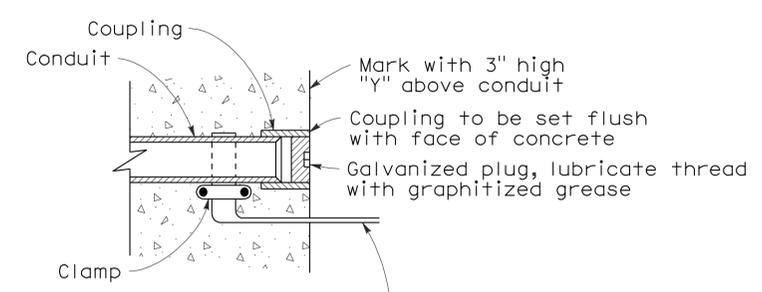
**DETAIL A
CONDUIT TERMINATION**



TOP VIEW



**SIDE VIEW
DETAIL I
CONDUIT TERMINATION**



**DETAIL C
CONDUIT TERMINATION**

Copper bonding strap install only at structure construction joint, extend at least 6" from face of concrete

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(ELECTRICAL DETAILS
STRUCTURE INSTALLATIONS)**

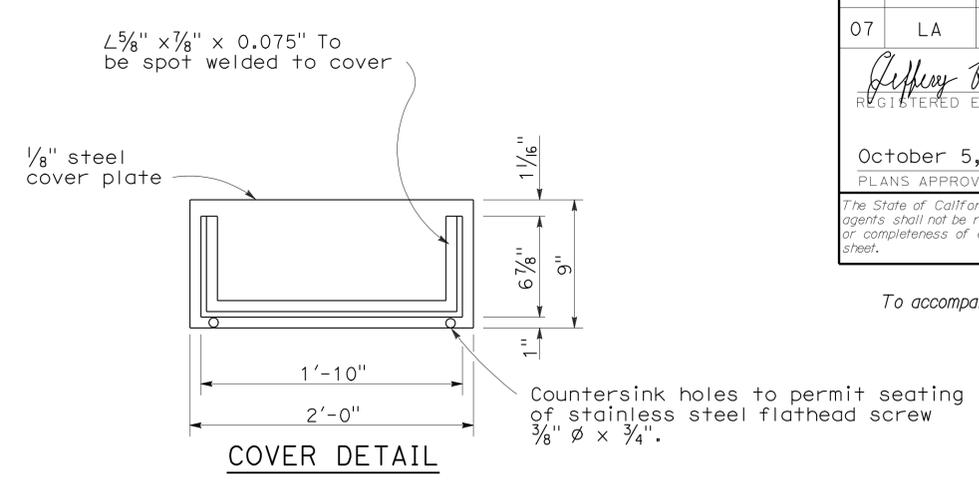
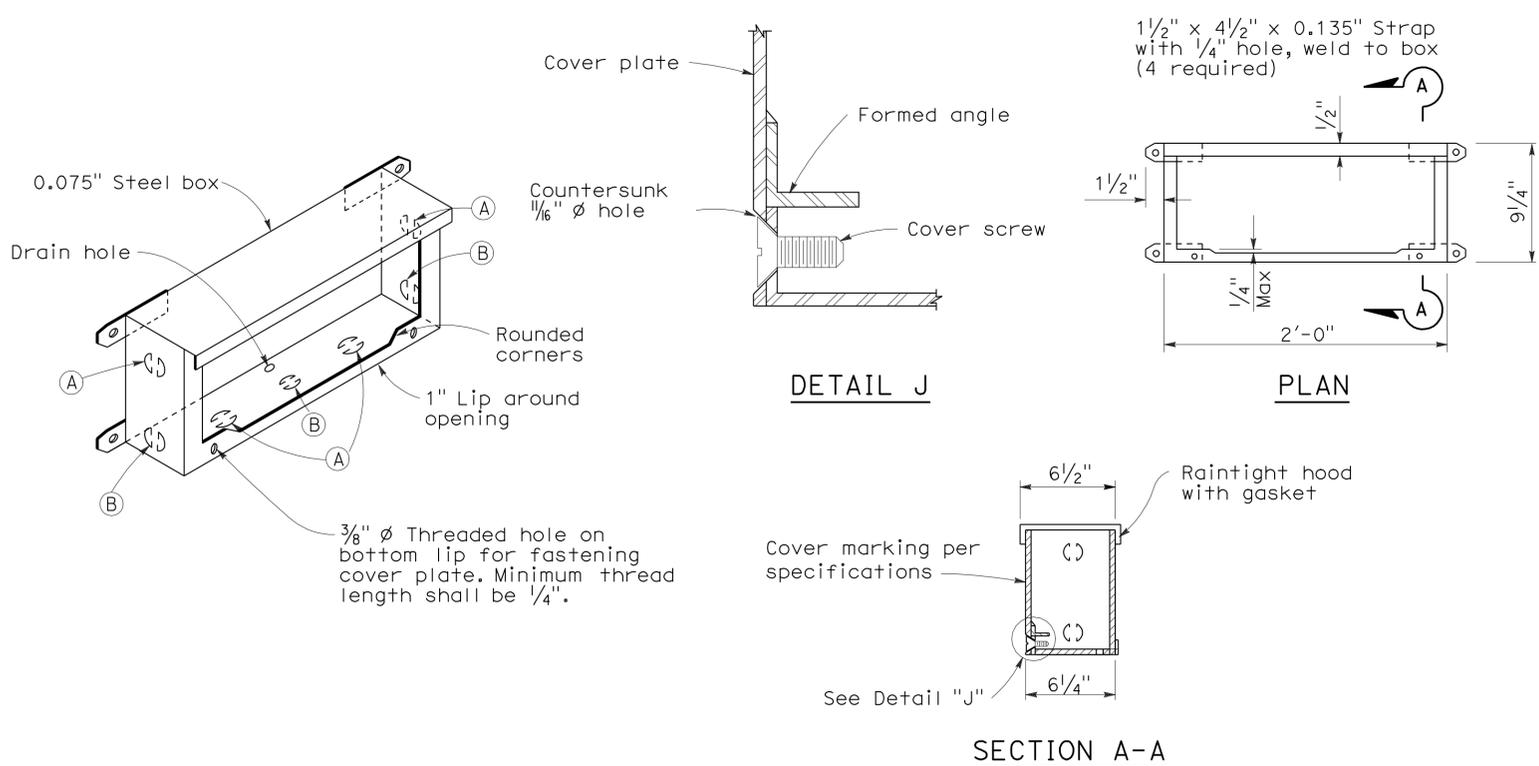
NO SCALE

RSP ES-9A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-9A DATED MAY 1, 2006 - PAGE 454 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-9A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	90	R1.7/R2.6	83	83

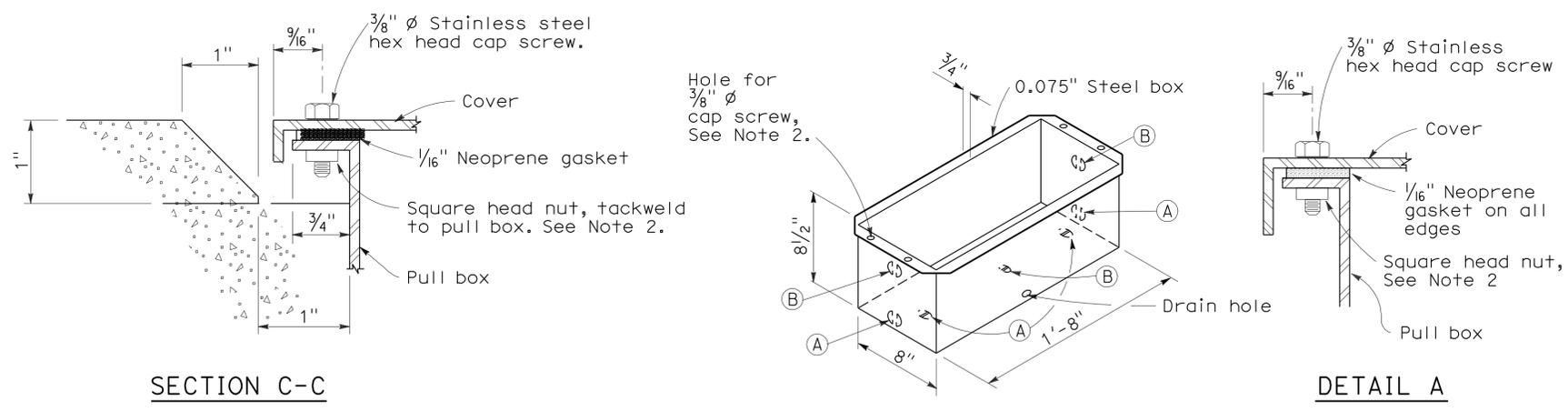
Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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 REGISTERED PROFESSIONAL ENGINEER
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA



INSTALLATION NOTE:
 Box shall be parallel to top of railing. Close cover box during pouring with 1/4" plywood of sufficient size to provide 1:1 chamfer on 3 sides of cover. Upper edge of plywood shall fit against lower edge of raintight hood.

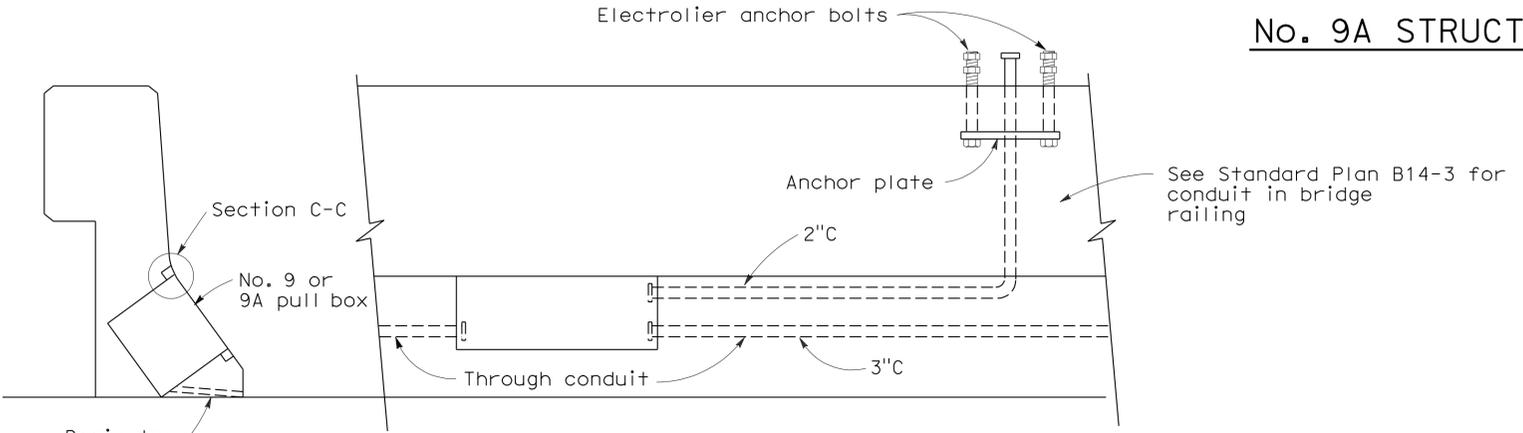
To accompany plans dated 8-22-11

No. 9 STRUCTURE PULL BOX



- NOTES:** No. 9 and 9A Pull Box
- Corner joints shall be lapped and secured by spot welding or riveting.
 - Where cap screws are used to attach cover to box, either of the following methods of providing adequate threading may be used:
 - Tack weld square nut to bottom of flange (Total 4), or
 - Tack weld a 1/4" x 5/8" x 8" bar beneath flange (Total 2).
 - Pound knockouts flat after punching.
 - Multiple size knockouts shall not be permitted.
 - Pull box covers shall be marked as shown on Standard Plan ES-8.

No. 9A STRUCTURE PULL BOX



INSTALLATION IN SLOPING PARAPETS

For reinforcement in area of electrolier, see railing sheets. For electrolier anchor bolts, see Standard Plan ES-6B.

- KNOCKOUT SCHEDULE**
No. 9 AND 9A PULL BOX
- (A) 2"C, 1 each end, 2 on bottom.
 - (B) 3"C, 1 each end, 1 on bottom.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(ELECTRICAL DETAILS
STRUCTURE INSTALLATIONS)

NO SCALE
 RSP ES-9C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-9C
 DATED MAY 1, 2006 - PAGE 456 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-9C