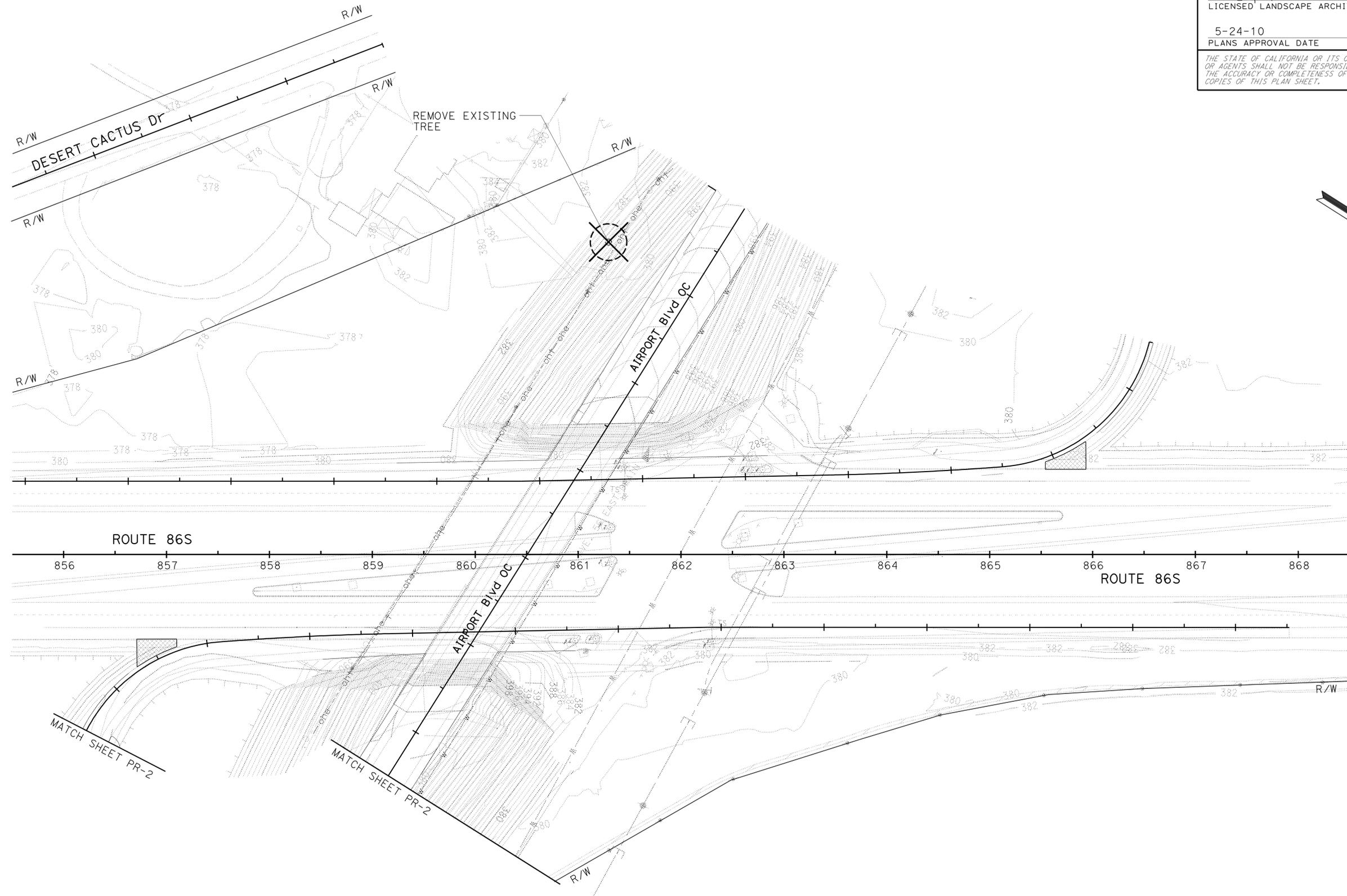


NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	101	170


 LICENSED LANDSCAPE ARCHITECT
 5-24-10
 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
Caltrans LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 BYRON STROUT
 CALCULATED/DESIGNED BY
 CHECKED BY
 ALFREDO CORNEJO
 BYRON STROUT
 REVISED BY
 DATE REVISED

PLANT REMOVAL PLAN

SCALE: 1" = 50'

PR-1

THIS PLAN IS ACCURATE FOR LANDSCAPE WORK ONLY.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT
 BYRON STROUT

CALCULATED/DESIGNED BY
 CHECKED BY

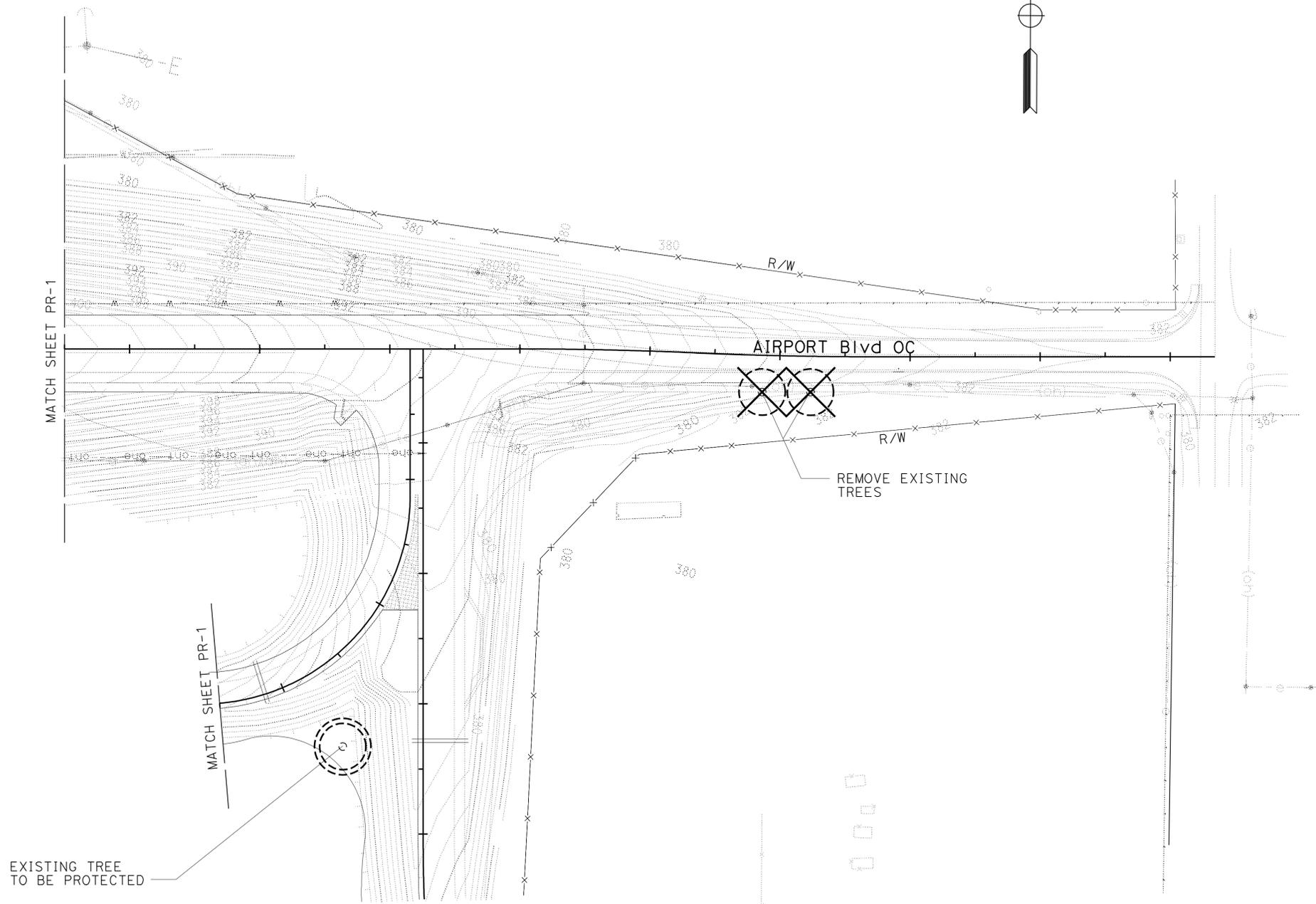
ALFREDO CORNEJO
 BYRON STROUT

REVISED BY
 DATE REVISED

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	102	170


 LICENSED LANDSCAPE ARCHITECT
 5-24-10
 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.

THIS PLAN IS ACCURATE FOR LANDSCAPE WORK ONLY.

PLANT REMOVAL PLAN
 SCALE: 1" = 50'
PR-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	104	170

<i>Dilara Zaman</i>	2-24-10
REGISTERED ELECTRICAL ENGINEER	DATE
5-24-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
DILARA H. ZAMAN
No. E 18356
Exp. 6-30-10
ELECTRICAL
STATE OF CALIFORNIA

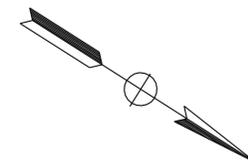
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

GENERAL NOTES:

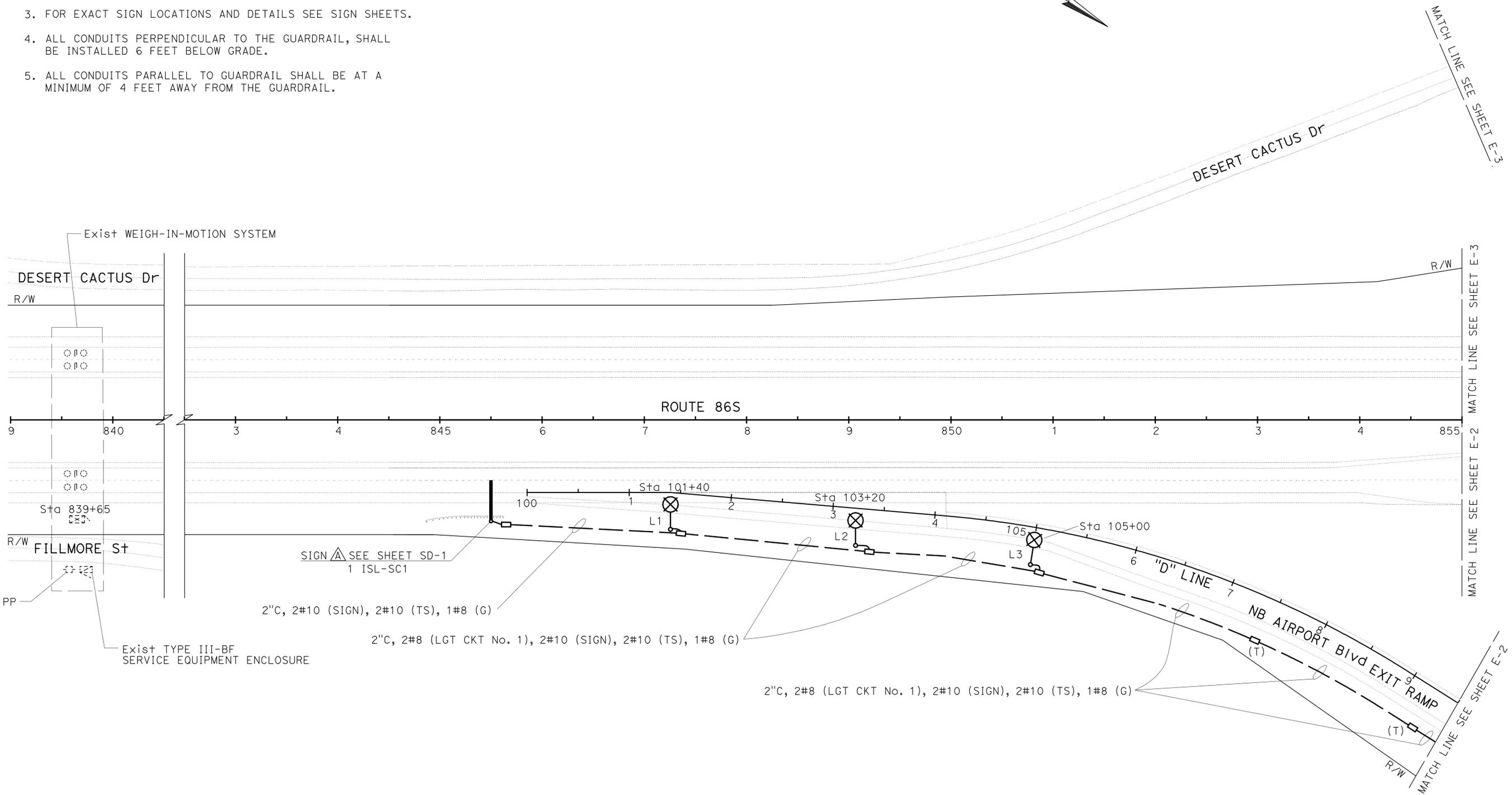
- FOR ACCURATE RIGHT OF WAY AND DATA, CONTACT RIGHT OF WAY ENGINEER AT THE DISTRICT OFFICE.
- FOR IID SERVICE POINT LOCATIONS NOT SHOWN ON THE PLANS, THE CONTRACTOR SHALL INSTALL 3" SERVICE CONDUIT UP TO 100 FEET AT NO EXTRA COST TO THE STATE. ANY SERVICE POINT MORE THAN 100 FEET WILL BE PAID AS EXTRA WORK.
- FOR EXACT SIGN LOCATIONS AND DETAILS SEE SIGN SHEETS.
- ALL CONDUITS PERPENDICULAR TO THE GUARDRAIL, SHALL BE INSTALLED 6 FEET BELOW GRADE.
- ALL CONDUITS PARALLEL TO GUARDRAIL SHALL BE AT A MINIMUM OF 4 FEET AWAY FROM THE GUARDRAIL.

ABBREVIATIONS:

IID: IMPERIAL IRRIGATION DISTRICT
 TS: SIGN TEST SWITCH



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN A
 FUNCTIONAL SUPERVISOR: DAVID A. GONZALEZ
 CALCULATED/DESIGNED BY: FRANCISCO MARTINEZ
 CHECKED BY: DILARA ZAMAN
 REVISIONS: DZ 04/2009
 BORDER LAST REVISED 4/11/2008



2" C, 2#10 (SIGN), 2#10 (TS), 1#8 (G)
 2" C, 2#8 (LGT CKT No. 1), 2#10 (SIGN), 2#10 (TS), 1#8 (G)
 2" C, 2#8 (LGT CKT No. 1), 2#10 (SIGN), 2#10 (TS), 1#8 (G)

LIGHTING AND SIGN ILLUMINATION
 SCALE: 1" = 50'
E-1

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trmikes1
 DGN FILE => 847860ua001.dgn

CU 08395 EA 478601

LAST REVISION: 02-22-10
 DATE PLOTTED => 25-MAY-2010
 TIME PLOTTED => 10:11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	106	170

<i>Dilara Zaman</i>	2-24-10
REGISTERED ELECTRICAL ENGINEER	DATE
5-24-10	PLANS APPROVAL DATE
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	

NOTE:

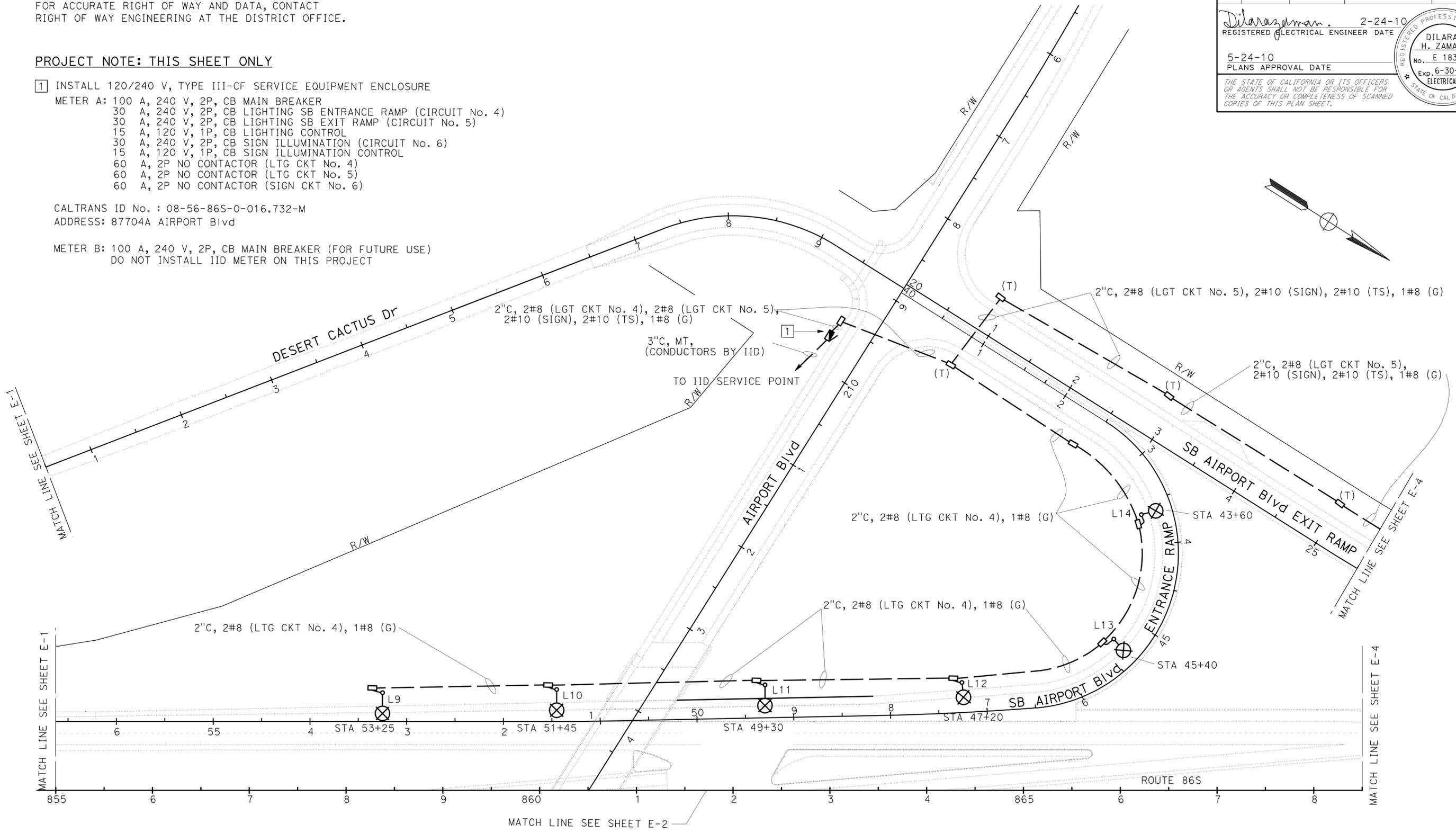
FOR ACCURATE RIGHT OF WAY AND DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

PROJECT NOTE: THIS SHEET ONLY

- 1] INSTALL 120/240 V, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE
- METER A: 100 A, 240 V, 2P, CB MAIN BREAKER
 30 A, 240 V, 2P, CB LIGHTING SB ENTRANCE RAMP (CIRCUIT No. 4)
 30 A, 240 V, 2P, CB LIGHTING SB EXIT RAMP (CIRCUIT No. 5)
 15 A, 120 V, 1P, CB LIGHTING CONTROL
 30 A, 240 V, 2P, CB SIGN ILLUMINATION (CIRCUIT No. 6)
 15 A, 120 V, 1P, CB SIGN ILLUMINATION CONTROL
 60 A, 2P NO CONTACTOR (LTG CKT No. 4)
 60 A, 2P NO CONTACTOR (LTG CKT No. 5)
 60 A, 2P NO CONTACTOR (SIGN CKT No. 6)

CALTRANS ID No. : 08-56-86S-0-016.732-M
 ADDRESS: 87704A AIRPORT Blvd

METER B: 100 A, 240 V, 2P, CB MAIN BREAKER (FOR FUTURE USE)
 DO NOT INSTALL IID METER ON THIS PROJECT



LIGHTING AND SIGN ILLUMINATION
 SCALE: 1" = 50'
E-3

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FRANCISCO MARTINEZ	DZ
Caltrans ELECTRICAL DESIGN A	DILARA ZAMAN	04/2009
FUNCTIONAL SUPERVISOR	CHECKED BY	DATE REVISED
DAVID A. GONZALEZ		
CALCULATED/DESIGNED BY		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	107	170

Dilara Zaman 2-24-10
 REGISTERED ELECTRICAL ENGINEER DATE

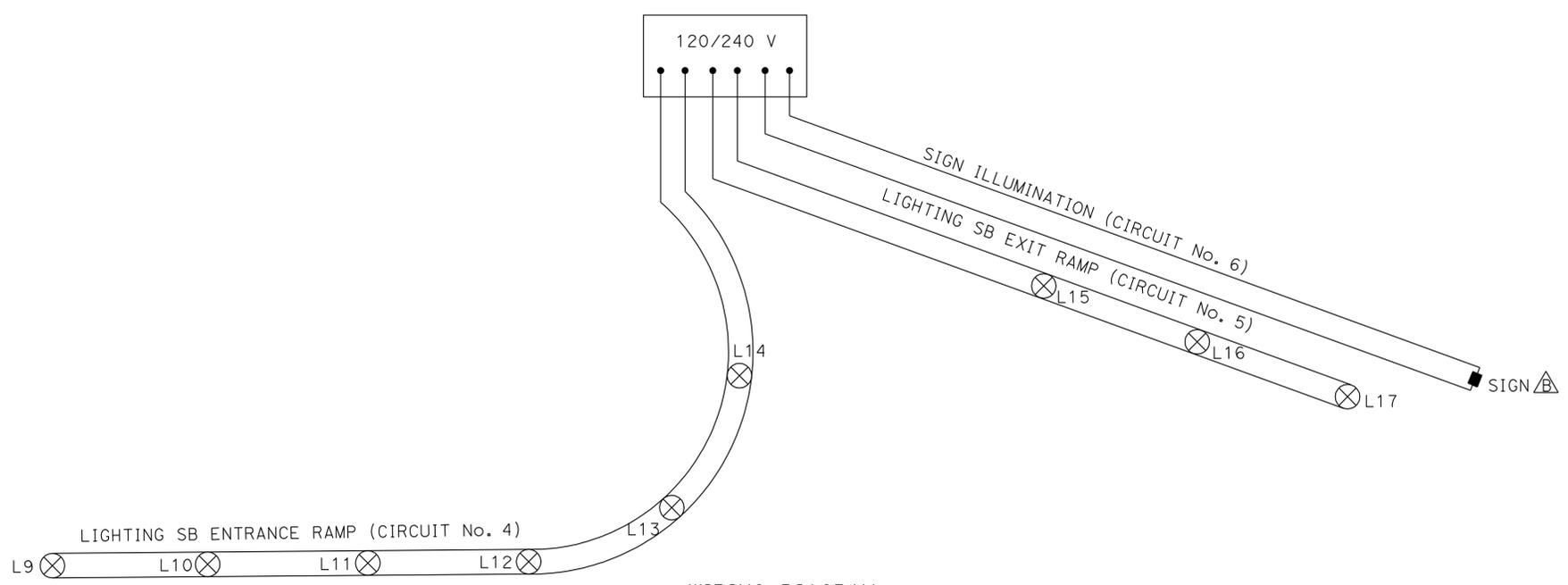
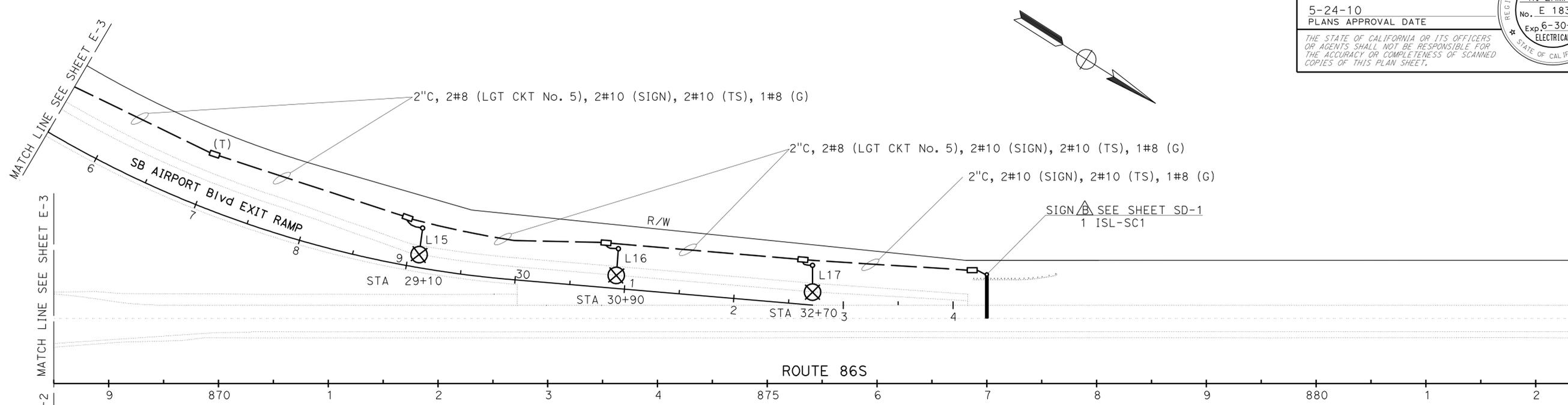
5-24-10
 PLANS APPROVAL DATE

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
 DILARA H. ZAMAN
 No. E 18356
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA

NOTE:

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



WIRING DIAGRAM

LIGHTING AND SIGN ILLUMINATION
SCALE: 1" = 50' **E-4**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans ELECTRICAL DESIGN A	DAVID A. GONZALEZ	FRANCISCO MARTINEZ	04/2009
	CHECKED BY	DATE REVISED	
		DILARA ZAMAN	
	DESIGNED BY		

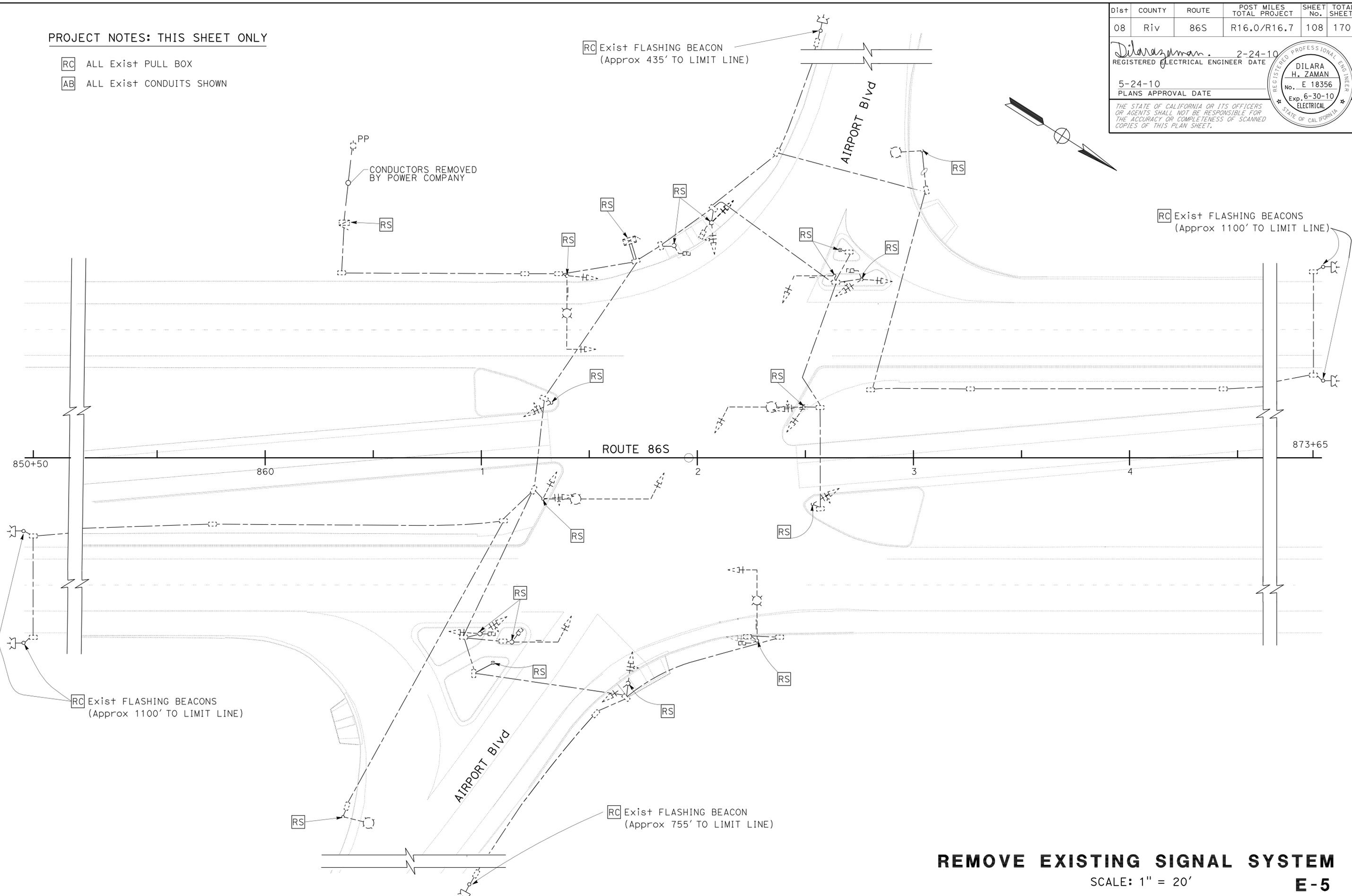
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	108	170

Dilara Zaman 2-24-10
 REGISTERED ELECTRICAL ENGINEER DATE
 5-24-10
 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
 DILARA H. ZAMAN
 No. E 18356
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA

PROJECT NOTES: THIS SHEET ONLY

- RC ALL Exist PULL BOX
- AB ALL Exist CONDUITS SHOWN



REMOVE EXISTING SIGNAL SYSTEM
 SCALE: 1" = 20'
E-5

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trcarol
 DGN FILE => 847860Ua005.dgn

CU 08395 EA 478601

BORDER LAST REVISED 4/11/2008

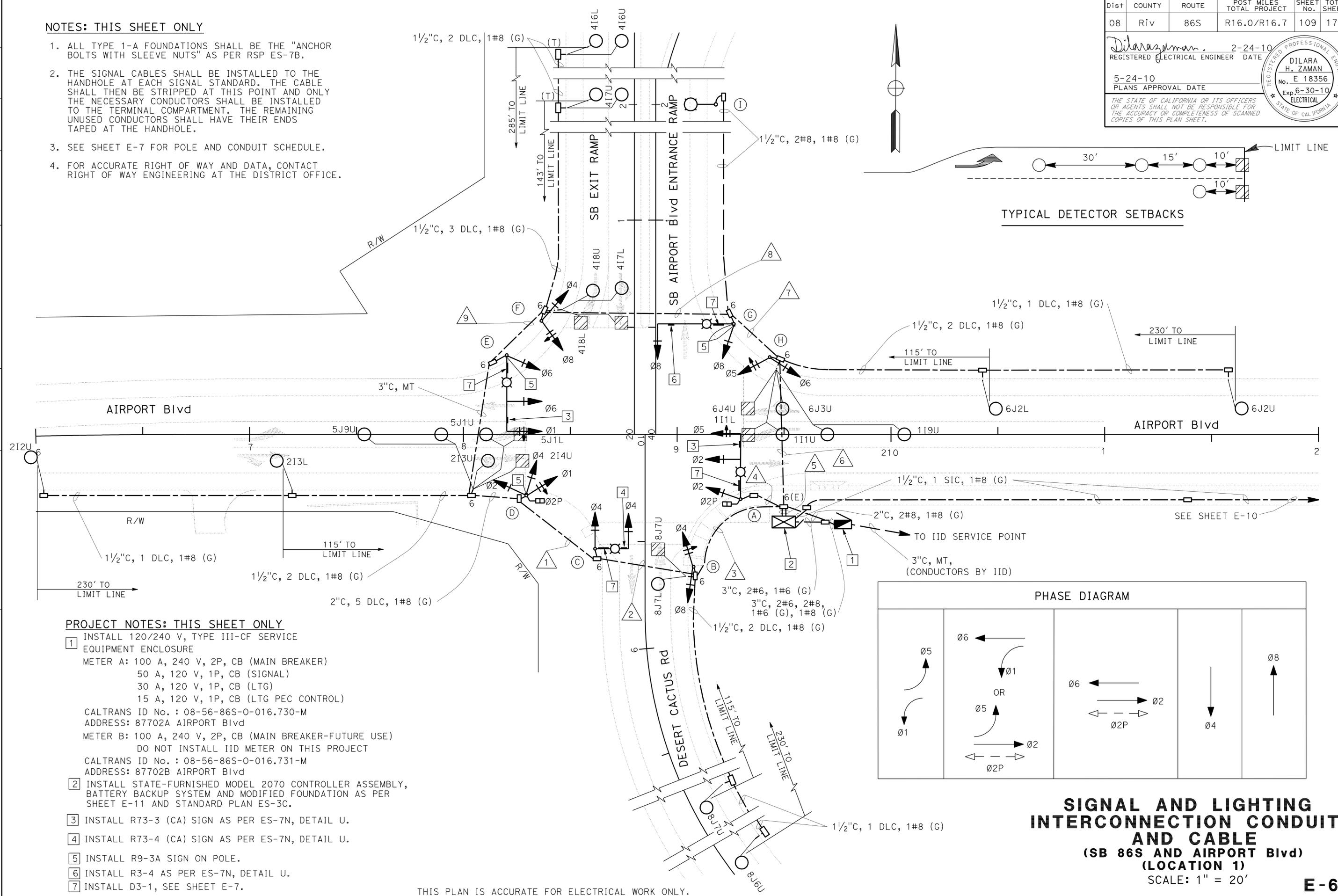
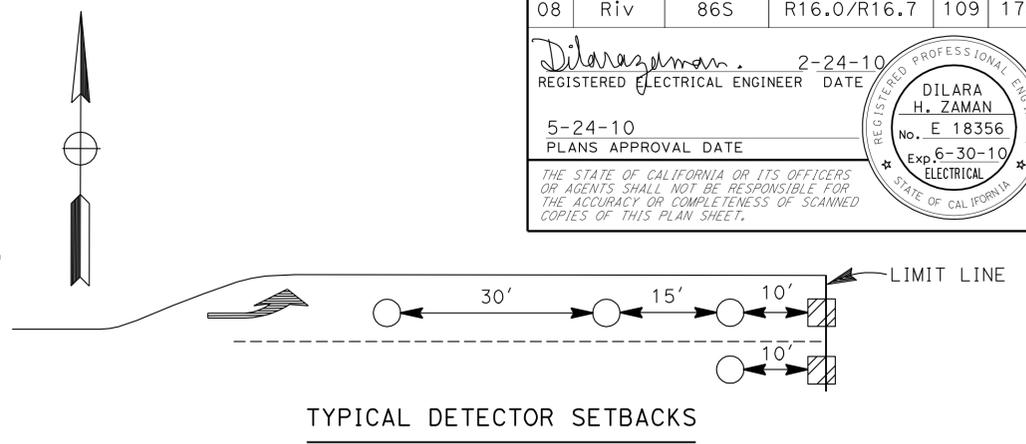
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN A
 FUNCTIONAL SUPERVISOR DAVID A. GONZALEZ
 CALCULATED/DESIGNED BY CHECKED BY
 FRANCISCO MARTINEZ DILARA ZAMAN
 REVISED BY DATE REVISED
 DZ 04/2009

LAST REVISION DATE PLOTTED => 25-MAY-2010
 02-22-10 TIME PLOTTED => 11:31

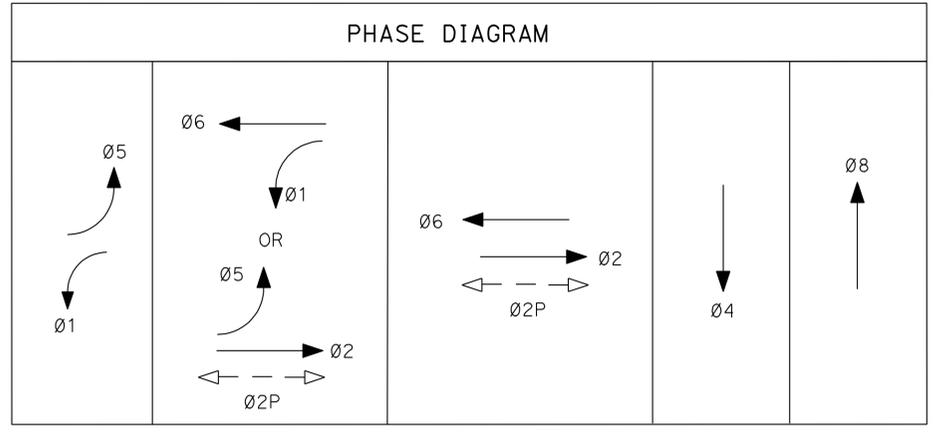
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	109	170

Dilara Zaman 2-24-10
 REGISTERED ELECTRICAL ENGINEER DATE
 5-24-10
 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 ONLY**
- ALL TYPE 1-A FOUNDATIONS SHALL BE THE "ANCHOR BOLTS WITH SLEEVE NUTS" AS PER RSP ES-7B.
 - THE SIGNAL CABLES SHALL BE INSTALLED TO THE HANDHOLE AT EACH SIGNAL STANDARD. THE CABLE SHALL THEN BE STRIPPED AT THIS POINT AND ONLY THE NECESSARY CONDUCTORS SHALL BE INSTALLED TO THE TERMINAL COMPARTMENT. THE REMAINING UNUSED CONDUCTORS SHALL HAVE THEIR ENDS TAPED AT THE HANDHOLE.
 - SEE SHEET E-7 FOR POLE AND CONDUIT SCHEDULE.
 - FOR ACCURATE RIGHT OF WAY AND DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



- PROJECT NOTES: THIS SHEET ONLY**
- INSTALL 120/240 V, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE
 METER A: 100 A, 240 V, 2P, CB (MAIN BREAKER)
 50 A, 120 V, 1P, CB (SIGNAL)
 30 A, 120 V, 1P, CB (LTG)
 15 A, 120 V, 1P, CB (LTG PEC CONTROL)
 CALTRANS ID No. : 08-56-86S-O-016.730-M
 ADDRESS: 87702A AIRPORT Blvd
 METER B: 100 A, 240 V, 2P, CB (MAIN BREAKER-FUTURE USE)
 DO NOT INSTALL IID METER ON THIS PROJECT
 CALTRANS ID No. : 08-56-86S-O-016.731-M
 ADDRESS: 87702B AIRPORT Blvd
 - INSTALL STATE-FURNISHED MODEL 2070 CONTROLLER ASSEMBLY, BATTERY BACKUP SYSTEM AND MODIFIED FOUNDATION AS PER SHEET E-11 AND STANDARD PLAN ES-3C.
 - INSTALL R73-3 (CA) SIGN AS PER ES-7N, DETAIL U.
 - INSTALL R73-4 (CA) SIGN AS PER ES-7N, DETAIL U.
 - INSTALL R9-3A SIGN ON POLE.
 - INSTALL R3-4 AS PER ES-7N, DETAIL U.
 - INSTALL D3-1, SEE SHEET E-7.



SIGNAL AND LIGHTING INTERCONNECTION CONDUIT AND CABLE (SB 86S AND AIRPORT Blvd) (LOCATION 1)
 SCALE: 1" = 20'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - **Caltrans** ELECTRICAL DESIGN A

FUNCTIONAL SUPERVISOR: DAVID A. GONZALEZ
 CALCULATED/DESIGNED BY: NASIMA HYDER
 CHECKED BY: DILARA ZAMAN
 REVISOR: DZ
 DATE REVISED: 04/2009

BORDER LAST REVISED 4/11/2008
 RELATIVE BORDER SCALE 1/8" = 1'-0"
 USERNAME => trmikes1
 DGN FILE => 847860ua006.dgn
 CU 08395
 EA 478601
 LAST REVISION: 02-22-10
 DATE PLOTTED => 27-MAY-2010
 TIME PLOTTED => 12:49

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	110	170

Dilaraman 2-24-10
 REGISTERED ELECTRICAL ENGINEER DATE
 5-24-10
 PLANS APPROVAL DATE
 DILARA H. ZAMAN
 No. E 18356
 Exp. 6-30-10
 ELECTRICAL
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONDUIT AND CONDUCTOR SCHEDULE

CABLE, AWG, AND DLC SCHEDULE		CONDUIT RUN NUMBER												
CABLE TYPE	Standard	PHASE	1	2	3	4	5	6	7	8	9			
VEH-PED 12CSC	(A)	2, 5, 2P				1	1							
	(B)	4, 8	2		2	1	2	1						
	(C)	4	2	1	1	1	1	1						
	(D)	1, 2, 4, 2P	2	2	2		2							
	(E)	1, 6					1	1	1	1	1			
	(F)	4, 8					2	2	2	2				
	(G)	8					1	1	1					
	(H)	5, 6					1	1						
PPB 3CSC		TOTAL	2	3	1	5	2	1	1	2	5	4	3	1
AWG	CIRCUIT													
#8	LUMINAIRE			2	2	2		2	2	2	2			
#8	GROUND	1	1	1	1	2	1	1	1	1	1			
LOOP DETECTOR														
DLC	Ø1						2	2						
	Ø2	3	3	3		3								
	Ø3													
	Ø4						5	5	5	5				
	Ø5	2	2	2		2								
	Ø6						3	3						
	Ø7													
	Ø8				3		3							
	TOTAL DLC	5	5	8		18	10	5	5					
CONDUIT SIZE		3"	3"	3"	2"	2-3"	3"	3"	3"	3"	2"			

POLE AND EQUIPMENT SCHEDULE

No.	TYPE	STANDARD		VEH SIG MTG		PED SIGNAL MTG	PPB		HPS LUMINAIRE (W)	RETROREFLECTIVE SHEETING SIGNS D3-1
		SMA (F+)	LMA (F+)	MAST ARM	POLE		Ø	ARROW		
(A)	19-4-100	30.0	12.0	2-MAS	SV-1-T	SP-1-T	-	-	200	DESERT CACTUS Rd → ← Rte 86S South
(B)	1-A	-	-	-	TV-2-T	-	2	→	-	-
(C)	17-3-100	15.0	12.0	1-MAS	SV-1-T	-	2	←	200	AIRPORT Blvd
(D)	1-A	-	-	-	TV-3-T	SP-1-T	-	-	-	-
(E)	24-4-100	35.0	12.0	2-MAS	SV-1-T	-	-	-	200	← DESERT CACTUS Rd Rte 86S South →
(F)	1-A	-	-	-	TV-2-T	-	-	-	-	-
(G)	24-3-100	35.0	12.0	1-MAS	SV-1-T	-	-	-	200	AIRPORT Blvd
(H)	1-A	-	-	-	TV-2-T	-	-	-	-	-
(I)	15-SB	-	8.0	-	-	-	-	-	200	-

SEE SHEETS SQ-2 AND SQ-3 FOR SIGN QUANTITIES AND DESCRIPTION.

SIGNAL AND LIGHTING (SB 86S AND AIRPORT Blvd) (LOCATION 1)

E-7

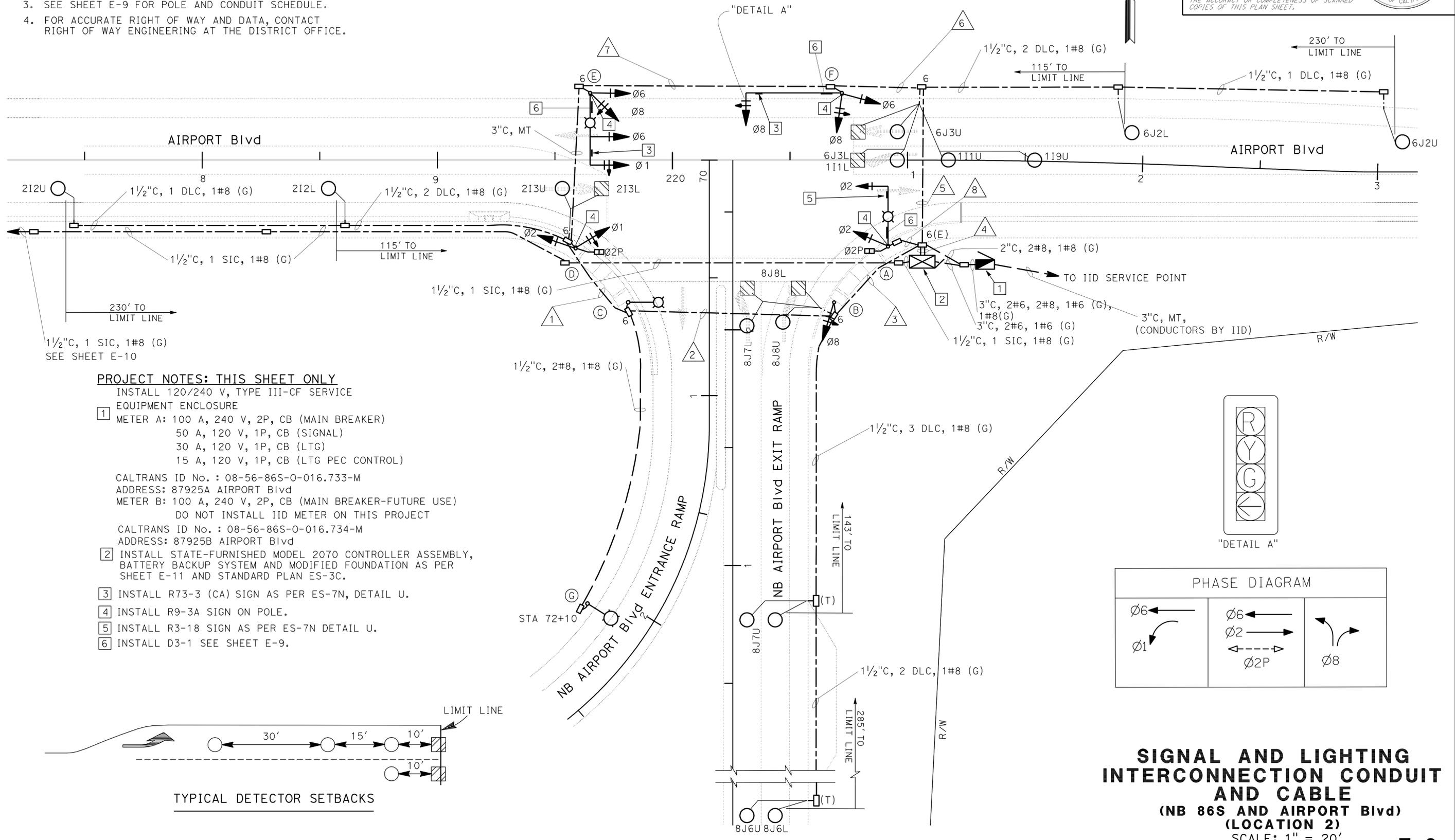
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	111	170

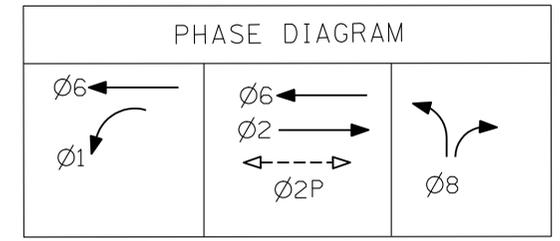
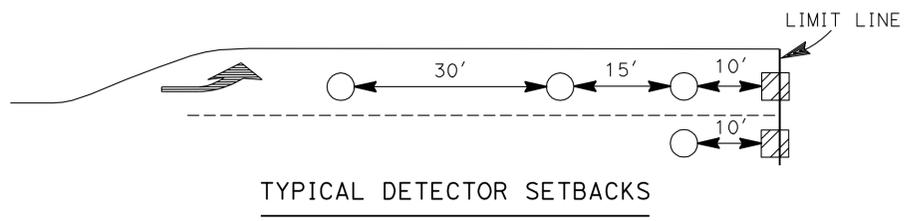
Dilara Zaman, 2-24-10
 REGISTERED ELECTRICAL ENGINEER DATE
 5-24-10
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 DILARA H. ZAMAN
 No. E 18356
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA

- NOTES: THIS SHEET ONLY**
- ALL TYPE 1-A FOUNDATIONS SHALL BE THE "ANCHOR BOLTS WITH SLEEVE NUTS" AS PER RSP ES-7B.
 - THE SIGNAL CABLES SHALL BE INSTALLED TO THE HANDHOLE AT EACH SIGNAL STANDARD. THE CABLE SHALL THEN BE STRIPPED AT THIS POINT AND ONLY THE NECESSARY CONDUCTORS SHALL BE INSTALLED TO THE TERMINAL COMPARTMENT. THE REMAINING UNUSED CONDUCTORS SHALL HAVE THEIR ENDS TAPED AT THE HANDHOLE.
 - SEE SHEET E-9 FOR POLE AND CONDUIT SCHEDULE.
 - FOR ACCURATE RIGHT OF WAY AND DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



- PROJECT NOTES: THIS SHEET ONLY**
- INSTALL 120/240 V, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE
- 1 METER A: 100 A, 240 V, 2P, CB (MAIN BREAKER)
 50 A, 120 V, 1P, CB (SIGNAL)
 30 A, 120 V, 1P, CB (LTG)
 15 A, 120 V, 1P, CB (LTG PEC CONTROL)
- CALTRANS ID No. : 08-56-86S-0-016.733-M
 ADDRESS: 87925A AIRPORT Blvd
 METER B: 100 A, 240 V, 2P, CB (MAIN BREAKER-FUTURE USE)
 DO NOT INSTALL IID METER ON THIS PROJECT
- CALTRANS ID No. : 08-56-86S-0-016.734-M
 ADDRESS: 87925B AIRPORT Blvd
- 2 INSTALL STATE-FURNISHED MODEL 2070 CONTROLLER ASSEMBLY, BATTERY BACKUP SYSTEM AND MODIFIED FOUNDATION AS PER SHEET E-11 AND STANDARD PLAN ES-3C.
- 3 INSTALL R73-3 (CA) SIGN AS PER ES-7N, DETAIL U.
- 4 INSTALL R9-3A SIGN ON POLE.
- 5 INSTALL R3-18 SIGN AS PER ES-7N DETAIL U.
- 6 INSTALL D3-1 SEE SHEET E-9.



SIGNAL AND LIGHTING INTERCONNECTION CONDUIT AND CABLE
 (NB 86S AND AIRPORT Blvd)
 (LOCATION 2)
 SCALE: 1" = 20'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN A

FUNCTIONAL SUPERVISOR: DAVID A. GONZALEZ
 REVISIONS: DZ 04/2009
 NASIMA HYDER
 DILARA ZAMAN
 CALCULATED/DESIGNED BY: DILARA ZAMAN
 CHECKED BY: DILARA ZAMAN

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	112	170

Dilara Zaman 2-24-10
REGISTERED ELECTRICAL ENGINEER DATE

5-24-10
PLANS APPROVAL DATE

DILARA H. ZAMAN
No. E 18356
Exp. 6-30-10
ELECTRICAL

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

CONDUIT AND CONDUCTOR SCHEDULE

CABLE, AWG, AND DLC SCHEDULE		CONDUIT RUN NUMBER								
CABLE TYPE	S + d	PHASE	△1	△2	△3	△4	△5	△6	△7	△8
VEH-PED 12CSC	Ⓐ	2, 2P				1				1
	Ⓑ	8	2		1	1	1			
	Ⓒ									
	Ⓓ	1, 2, 2P	2	1	1	1	1	1		
	Ⓔ	1, 6, 8				2	2	2	2	
PPB 3CSC	Ⓕ	6, 8				2	2	2		
		TOTAL	1	1	1	2	2	7	4	2

AWG	CIRCUIT								
#8	LUMINAIRE		2	2		2	2	2	2
#8	GROUND	1	1	2	2	1	1	1	1

LOOP DETECTOR									
	Ø1				2	2			
	Ø2	3	3	3	3				
DLC	Ø3								
	Ø4								
	Ø5								
	Ø6				3	3			
	Ø7								
	Ø8			5	5				
		TOTAL DLC	3	3	8	13	5		

CONDUIT SIZE	3"	3"	2-3"	2-3"	3"	3"	2"	2"

POLE AND EQUIPMENT SCHEDULE

No.	TYPE	STANDARD		VEH SIG MTG		PED SIGNAL MTG	PPB		HPS LUMINAIRE (W)	RETROREFLECTIVE SHEETING SIGNS
		SMA (F+)	LMA (F+)	MAST ARM	POLE		Ø	ARROW		
Ⓐ	19-3-100	25.0	12.0	1-MAS	SV-1-T	SP-1-T		-	200	Rte 86S North →
Ⓑ	1-A	-	-	-	TV-1-T	-	2	→	-	-
Ⓒ	15	-	12.0	-	-	-	-	-	200	-
Ⓓ	1-A	-	-	-	TV-2-T	SP-1-T	2	→	-	-
Ⓔ	19-4-100	30.0	12.0	2-MAS	SV-2-T	-	-	-	200	← Rte 86S North
Ⓕ	18-4-100	30.0	-	2-MAS	SV-2-T	-	-	-	-	AIRPORT Blvd
Ⓖ	15-SB	-	8.0	-	-	-	-	-	200	-

SEE SHEETS SQ-2 AND SQ-3 FOR SIGN QUANTITIES AND DESCRIPTION.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FUNCTIONAL SUPERVISOR: DAVID A. GONZALEZ

CALCULATED/DESIGNED BY: NASIMA HYDER

CHECKED BY: DILARA ZAMAN

REVISOR: DZ

DATE REVISED: 04/2009

SIGNAL AND LIGHTING

(NB 86S AND AIRPORT Blvd)
(LOCATION 2)

E-9

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	113	170

<i>Dilaraman</i>	2-24-10
REGISTERED ELECTRICAL ENGINEER	DATE
5-24-10	
PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	

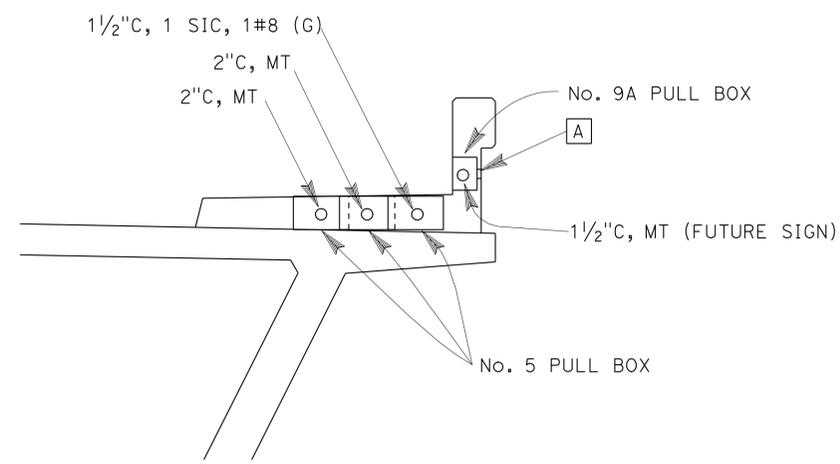
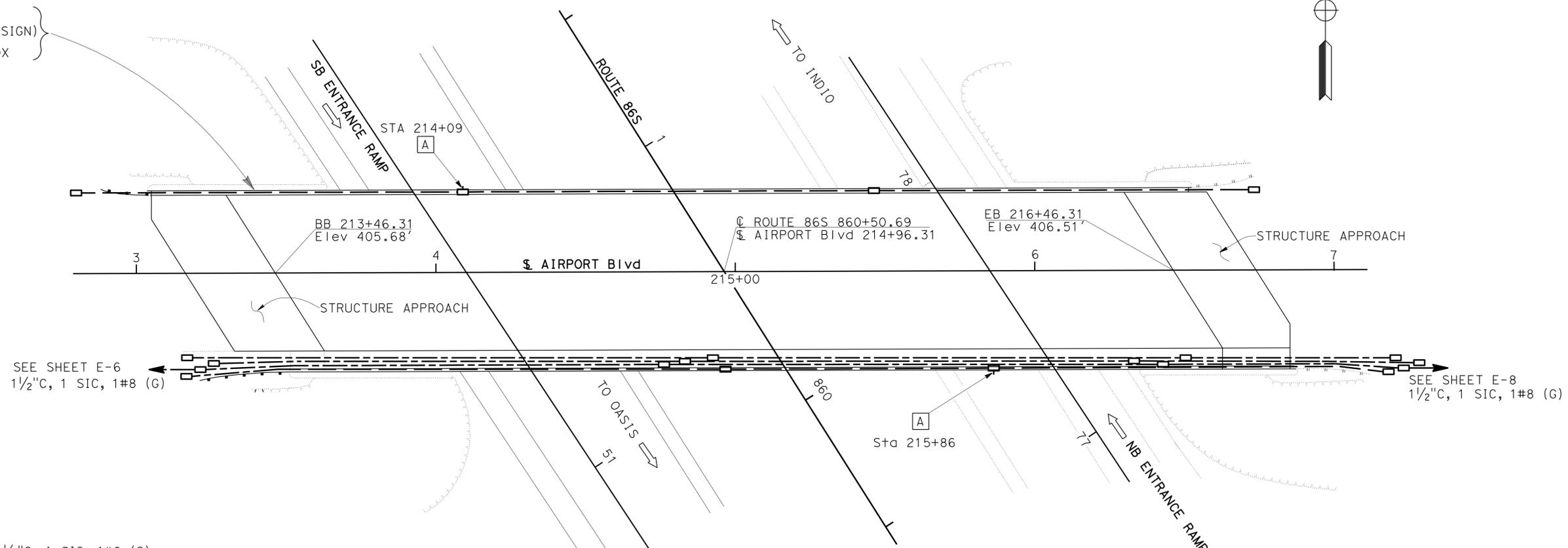
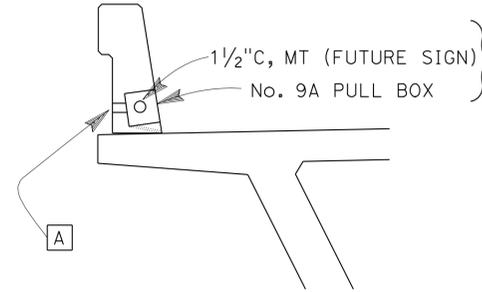
NOTES - THIS SHEET ONLY:

- EXPANSION-DEFLECTION FITTINGS SHALL BE USED AT ALL EXPANSION JOINTS. SEE DETAIL XY ON ES-9B.
- ALL BRIDGE CONDUITS SHALL TERMINATE IN No. 5 PULL BOXES AT BOTH ENDS OF THE BRIDGE APPROACH AND MEET THE REQUIREMENTS OF ITEM 1 ABOVE. ALL PULL BOXES IN SIDEWALK SHALL BE No. 5.

PROJECT NOTES: THIS SHEET ONLY

[A] 1" C, AS PER STANDARD PLAN RSP ES-9A DETAIL C, FOR FUTURE SIGN ILLUMINATION.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN A
 FUNCTIONAL SUPERVISOR: DAVID A. GONZALEZ
 CALCULATED/DESIGNED BY: FRANCISCO MARTINEZ
 CHECKED BY: DILARA ZAMAN
 REVISED BY: DZ
 DATE REVISED: 04/2009



LIGHTING AND SIGN ILLUMINATION INTERCONNECTION CONDUIT AND CABLE 2" CONDUIT (STRUCTURE ELECTRICAL DETAILS) (AIRPORT Blvd OVERCROSSING) SCALE: 1" = 20'

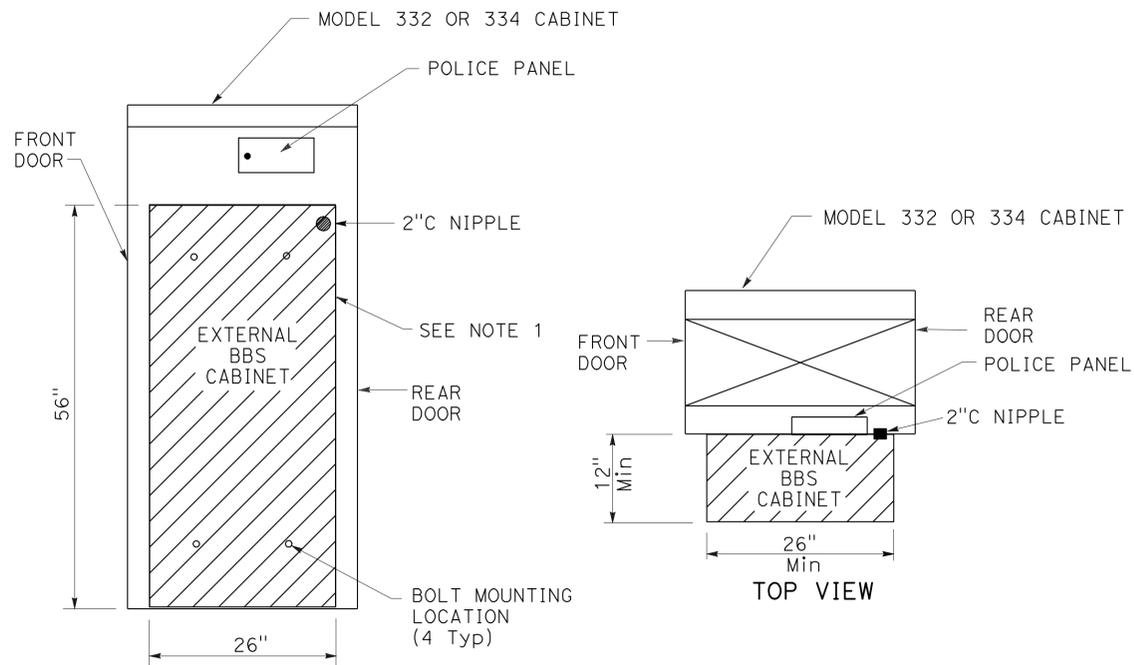
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



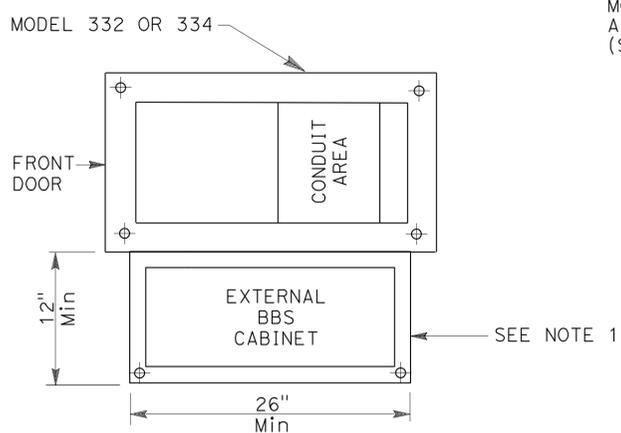
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CU 08395 EA 478601

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	114	170
Theresa Gabriel REGISTERED CIVIL ENGINEER			2-24-10 DATE		
5-24-10 PLANS APPROVAL DATE					
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EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332 OR 334 CABINET

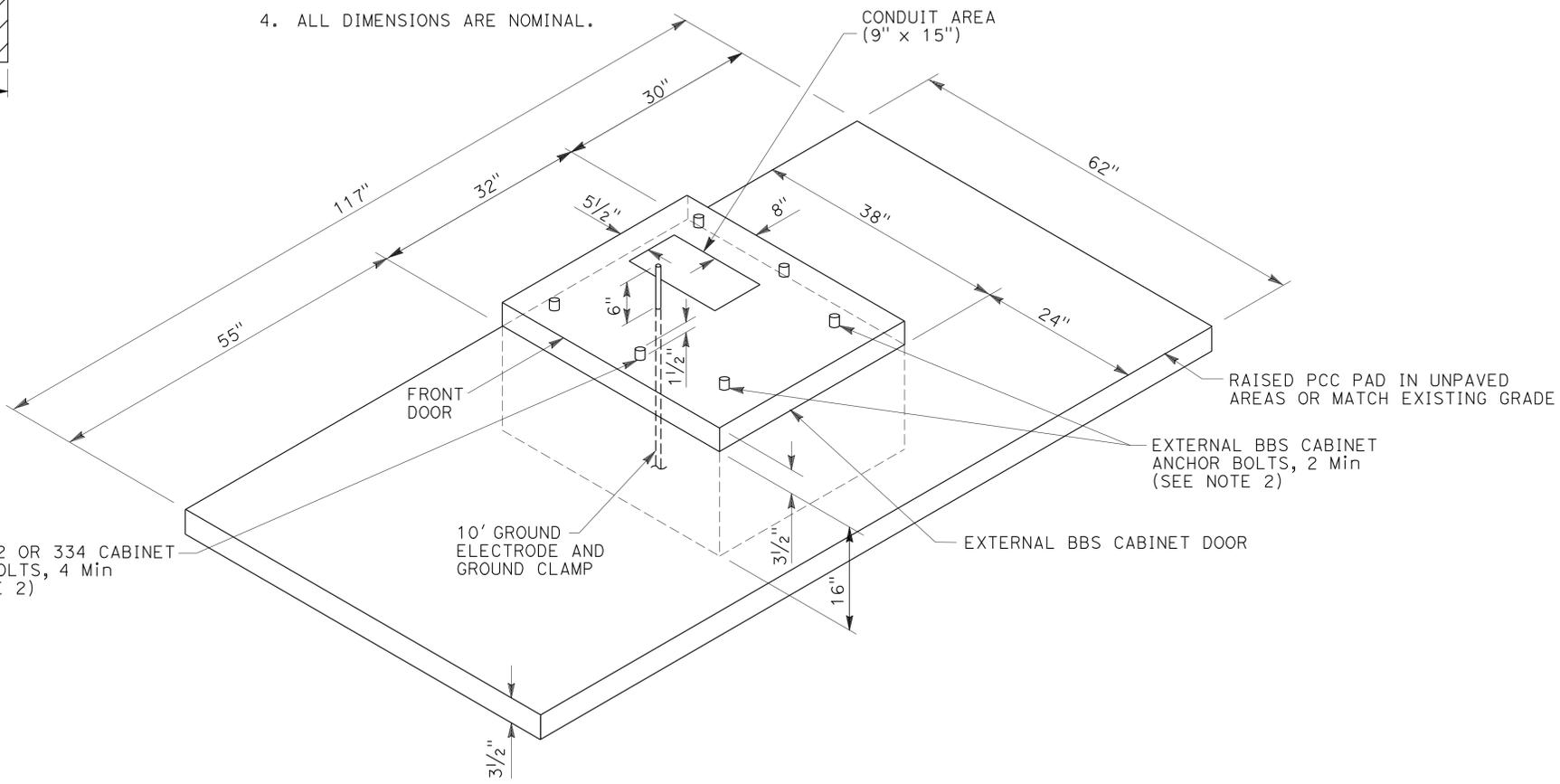


BASE PLAN FOR BBS MOUNTED TO THE MODEL 332 OR 334 CABINET

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

NOTE: (THIS SHEET ONLY)

1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332 OR 334 CABINET WITH FOUR 18-8 STAINLESS STEEL HEX HEAD, FULLY-THREADED, 3/8"-16 X 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR 3/8" BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A HEX-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS SHALL BE 3/4" Dia X 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION SHALL DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE MODIFIED PORTION OF THE S+D MODEL 332 AND 334 CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.



MODIFIED MODEL 332 AND 334 CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)

(FOR DIMENSIONS AND DETAILS NOT SHOWN AND ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332 AND 334 CABINETS)

SIGNAL AND LIGHTING (BBS FOUNDATION DETAILS) (LOCATIONS 1 AND 2) NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trcarol
DGN FILE => 847860ua011.dgn

CU 08395

EA 478601

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans®
 FUNCTIONAL SUPERVISOR: DAVID A. GONZALEZ
 CALCULATED/DESIGNED BY: THERESA A. GABRIEL
 CHECKED BY: DILARA ZAMAN
 REVISED BY: THERESA A. GABRIEL
 DATE REVISED: [blank]

LAST REVISION: 02-22-10
 DATE PLOTTED => 25-MAY-2010
 TIME PLOTTED => 11:03

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	115	170

Theresa Gabriel 2-24-10
 REGISTERED CIVIL ENGINEER DATE
 5-24-10
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

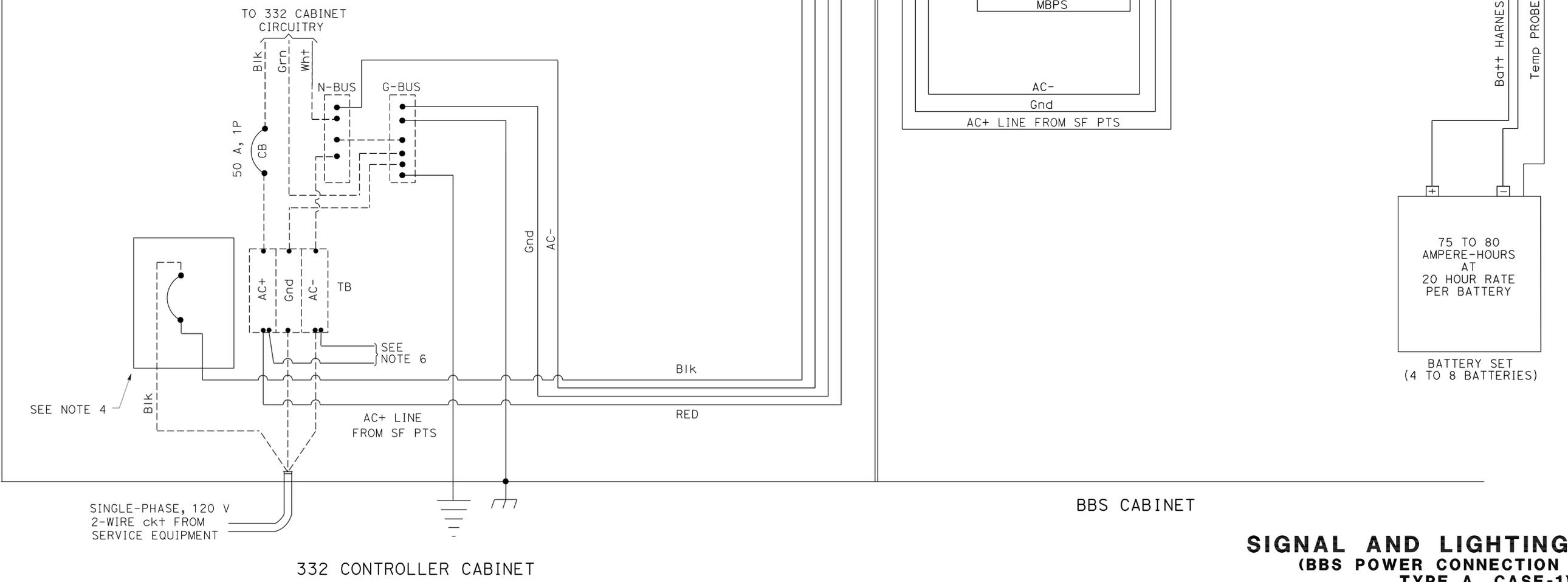
REGISTERED PROFESSIONAL ENGINEER
 Theresa A. Gabriel
 No. E15129
 Exp. 6-30-10
 ELECT
 STATE OF CALIFORNIA

LEGEND: (THIS SHEET ONLY)

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- Blk = BLACK
- Wh+ = WHITE
- SF = STATE-FURNISHED
- TB = TERMINAL BOARD
- Cn+I = CONTROL
- Gnd = GROUND
- Temp = TEMPERATURE
- Bat+ = BATTERY

NOTES: (THIS SHEET ONLY)

1. TYPE A REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER A.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



SIGNAL AND LIGHTING DETAILS
 (BBS POWER CONNECTION DIAGRAM,
 TYPE A, CASE-1)
 NO SCALE

E-12

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trcarol
 DGN FILE => 847860ua012.dgn

CU 08395

EA 478601

BORDER LAST REVISED 4/11/2008

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Et Caltrans®
 FUNCTIONAL SUPERVISOR: DAVID A. GONZALEZ
 CALCULATED/DESIGNED BY: THERESA A. GABRIEL
 CHECKED BY: DILARA ZAMAN
 REVISED BY: THERESA A. GABRIEL
 DATE REVISED:

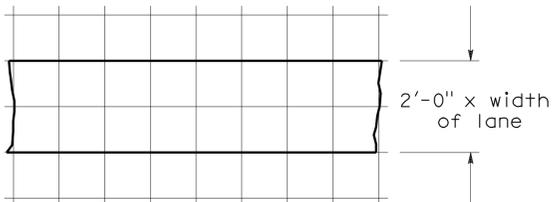
LAST REVISION: 02-22-10
 DATE PLOTTED => 25-MAY-2010
 TIME PLOTTED => 11:04

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	117	170

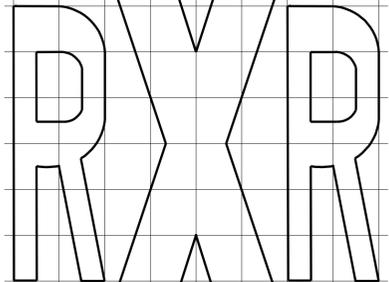
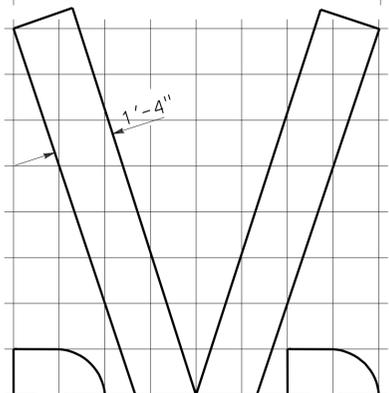
Donald E. Howe
 REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Donald E. Howe
 No. C46402
 Exp. 3-31-09
 CIVIL
 STATE OF CALIFORNIA

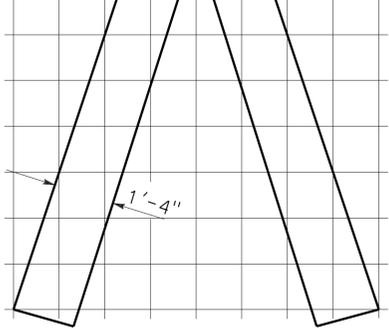
To accompany plans dated 5-24-10



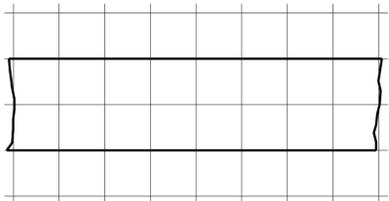
8'-0"



20'-0"



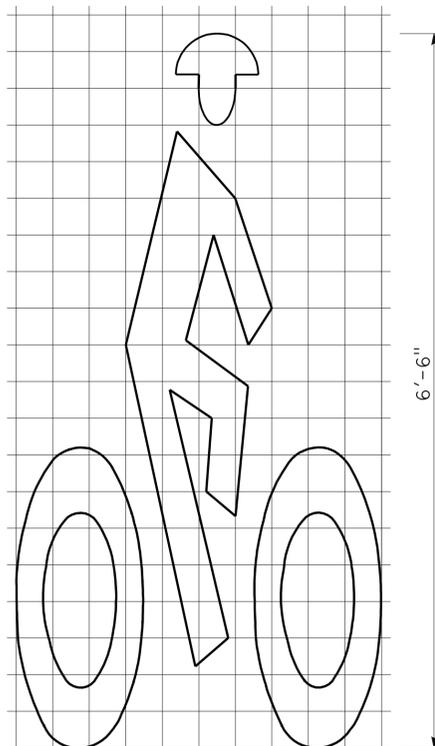
14'-0"



1'-0" GRID
A=70 sq ft *

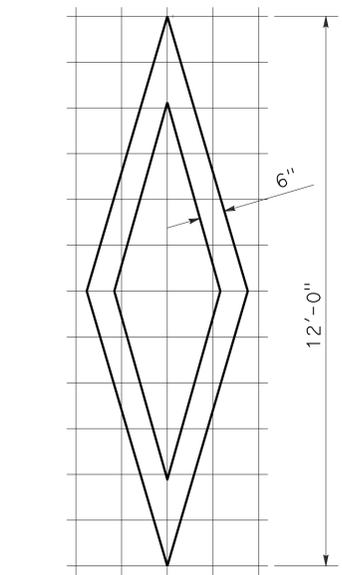
RAILROAD CROSSING SYMBOL

*70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



A=7 sq ft

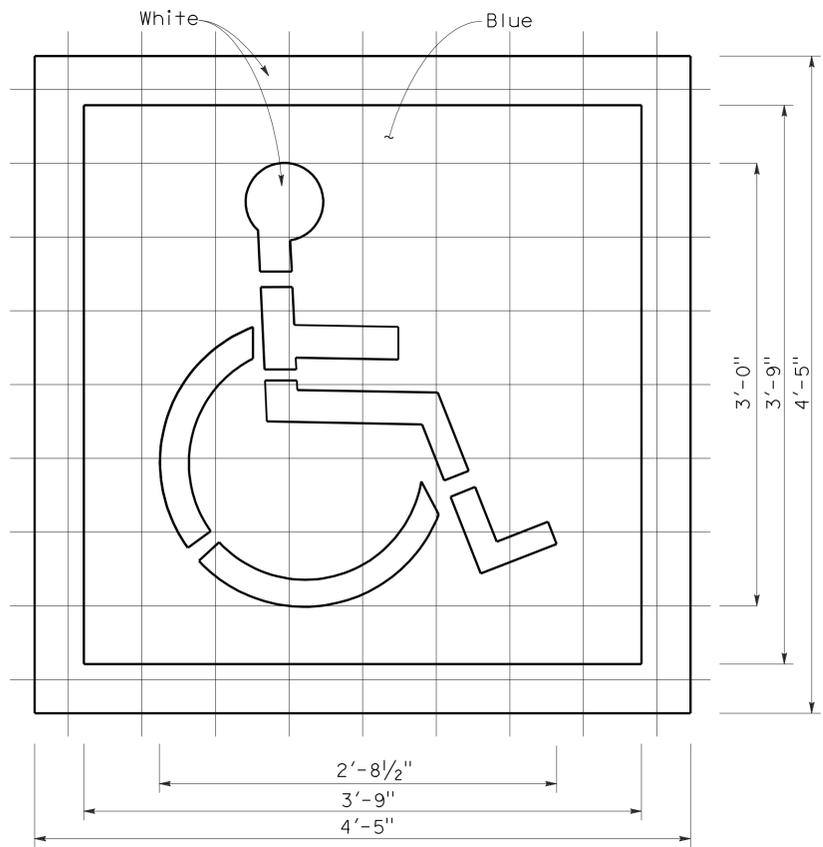
BIKE LANE SYMBOL



1'-0" GRID
3'-3"

A=11 sq ft

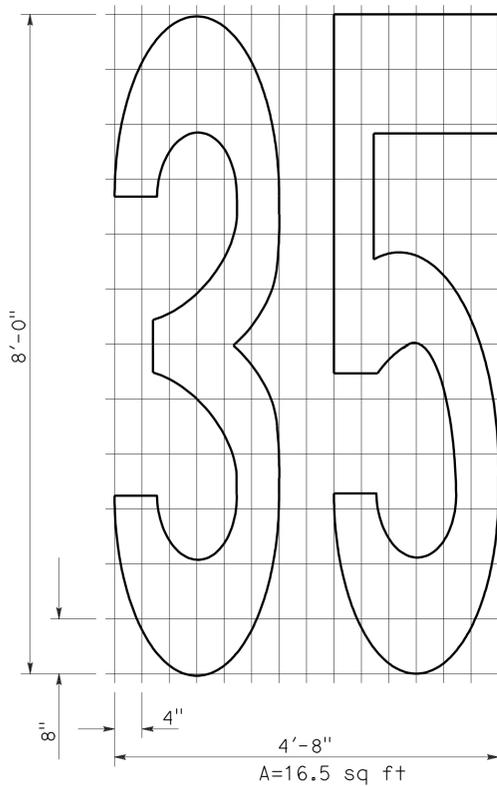
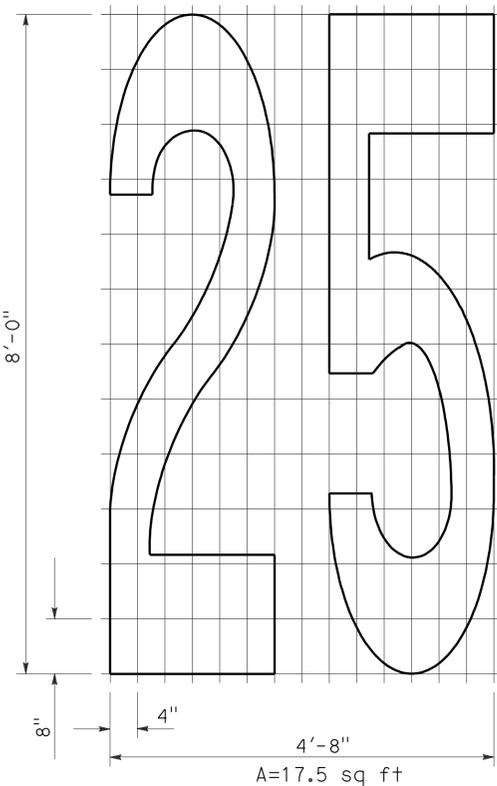
DIAMOND SYMBOL



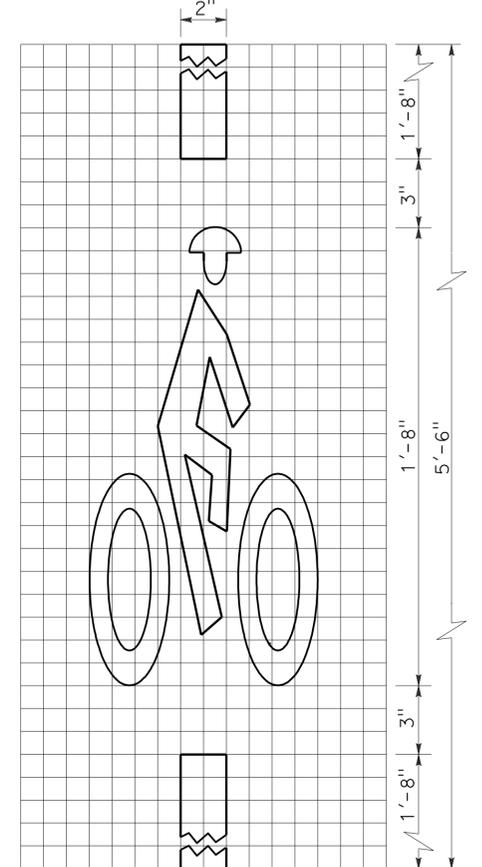
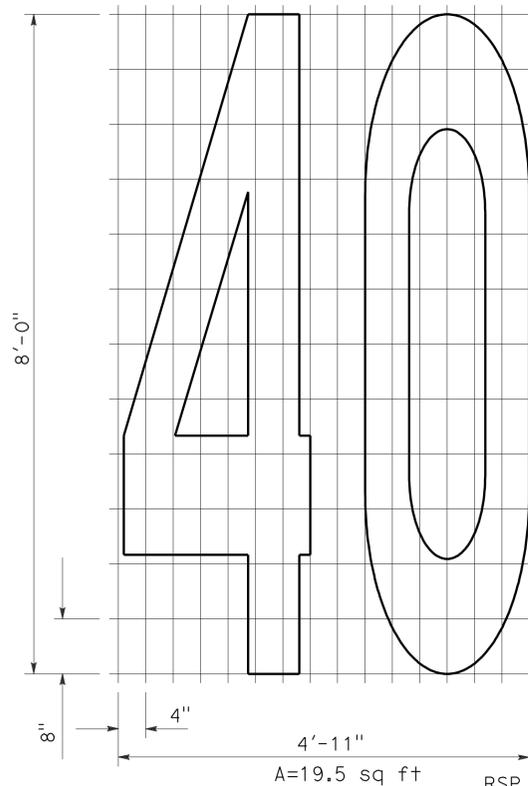
6" GRID

A (White) = 9 sq ft
A (Blue) = 14 sq ft

INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING



NUMERALS



A=2 sq ft

BICYCLE LOOP DETECTOR SYMBOL

NOTE:

1. Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS SYMBOLS AND NUMERALS

NO SCALE

RSP A24C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A24C DATED MAY 1, 2006 - PAGE 11 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A24C

2006 REVISED STANDARD PLAN RSP A24C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	118	170

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

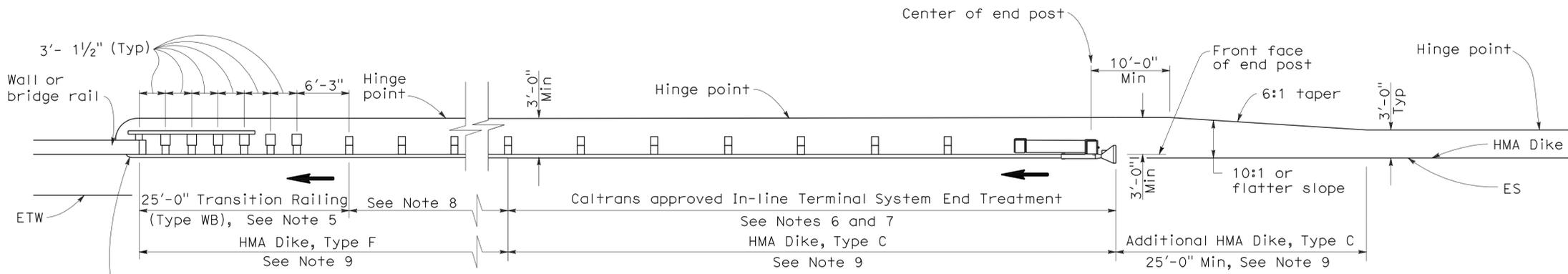
June 6, 2008
PLANS APPROVAL DATE

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

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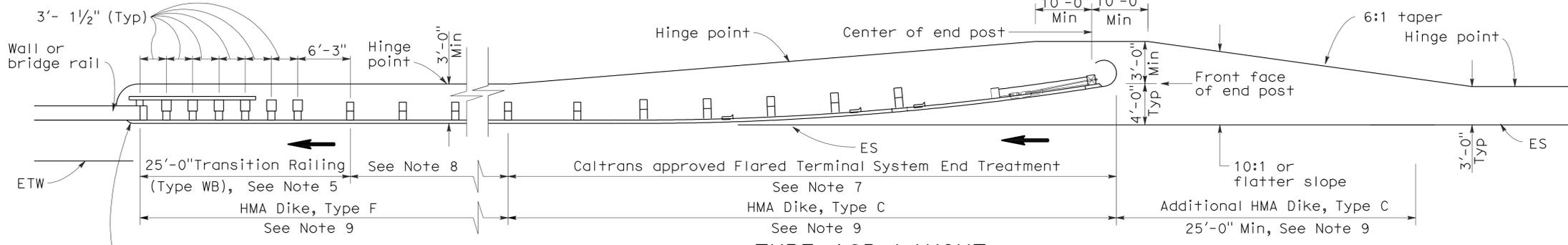
To accompany plans dated 5-24-10

2006 REVISED STANDARD PLAN RSP A77F1



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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	119	170

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

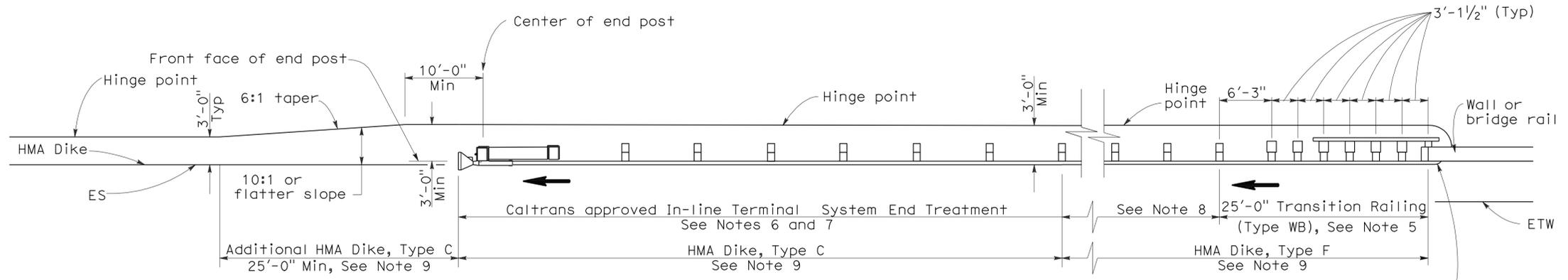
June 6, 2008
PLANS APPROVAL DATE

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

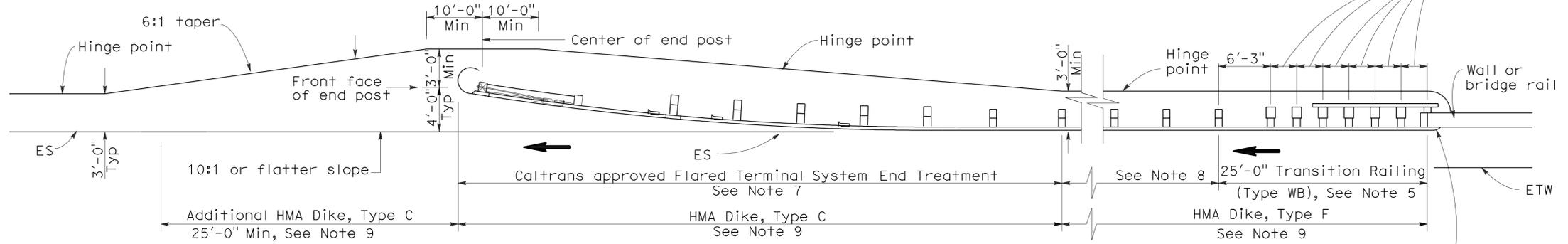
To accompany plans dated 5-24-10

2006 REVISED STANDARD PLAN RSP A77F4



TYPE 12AA LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH AN IN-LINE END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10



TYPE 12BB LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH A FLARED END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 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 notched recycled 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 →.
- For Transition Railing (Type WB) details for Types 12AA and 12BB Layouts, see Standard Plan A77J4.
- In-line Terminal System 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.
- Dependent on site conditions (embankment height, side slopes, 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 treatments.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12AA or Type 12BB Layouts are typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77J2 and Connection Detail HH on Standard Plans A77K2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77F4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F4
DATED MAY 1, 2006 - PAGE 57 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F4

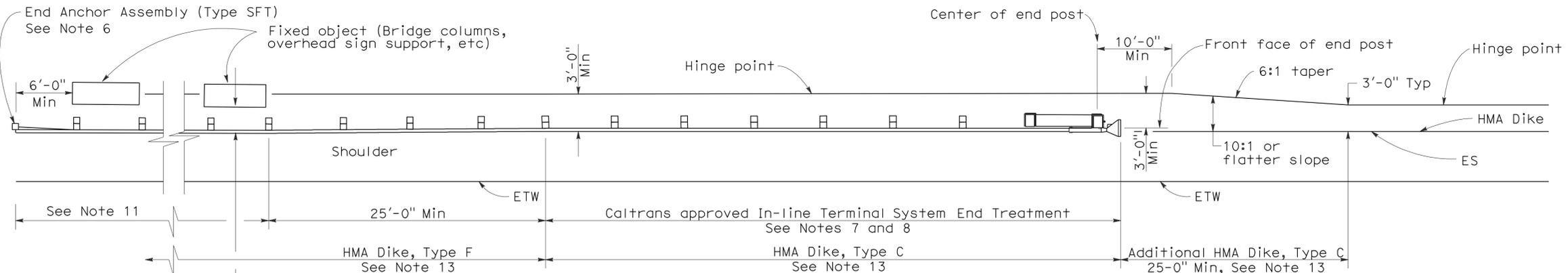
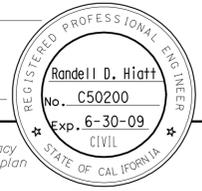
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	120	170

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

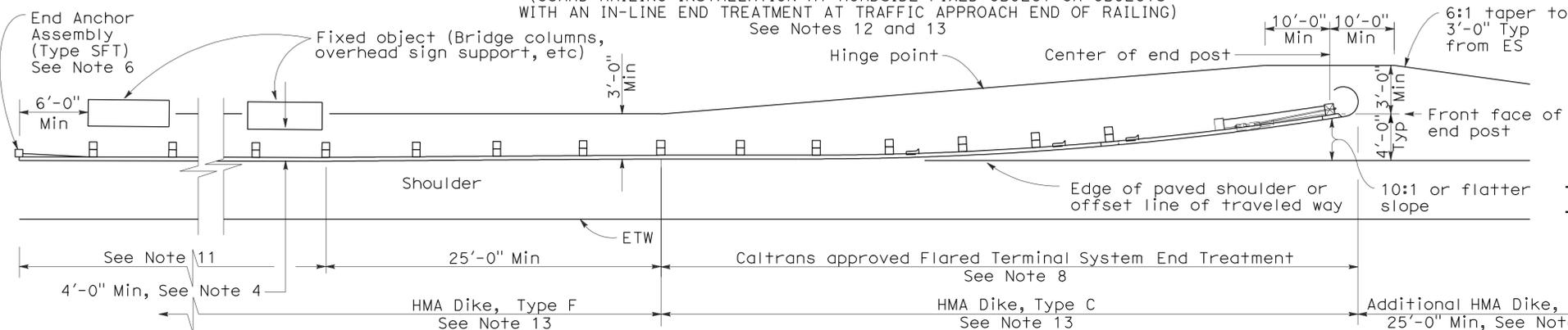
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To accompany plans dated 5-24-10



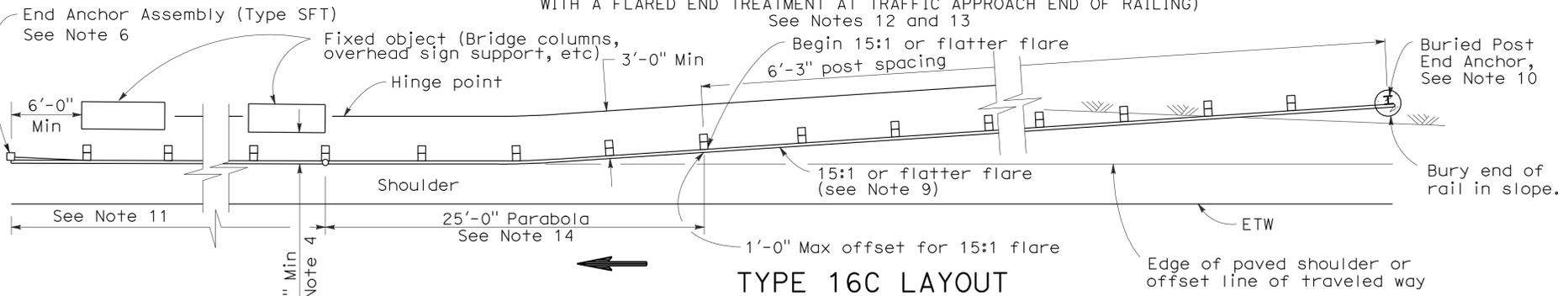
TYPE 16A LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 7 and 8



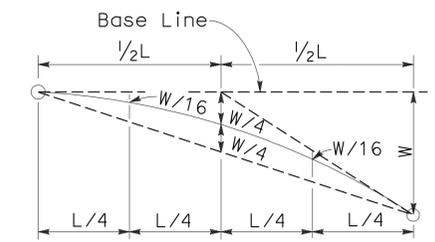
TYPE 16B LAYOUT

(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

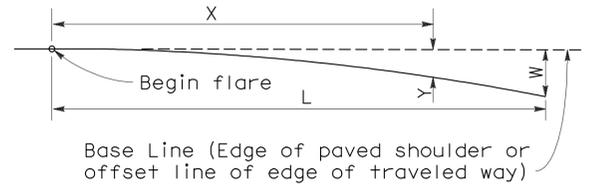


TYPE 16C LAYOUT

(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

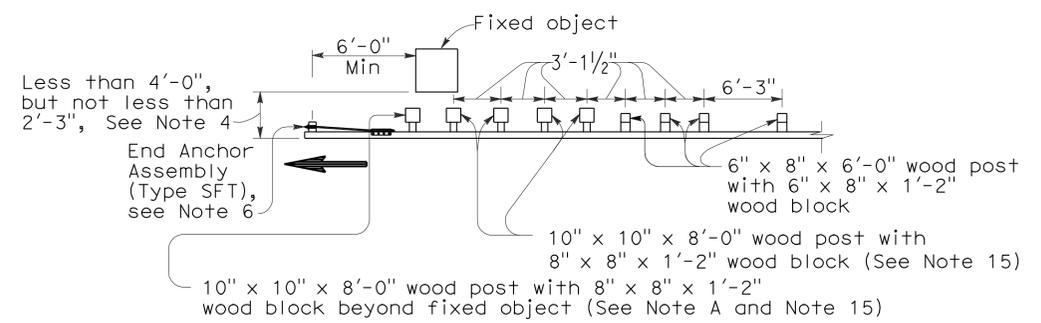


Base Line (Edge of paved shoulder or offset line of edge of traveled way)
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

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

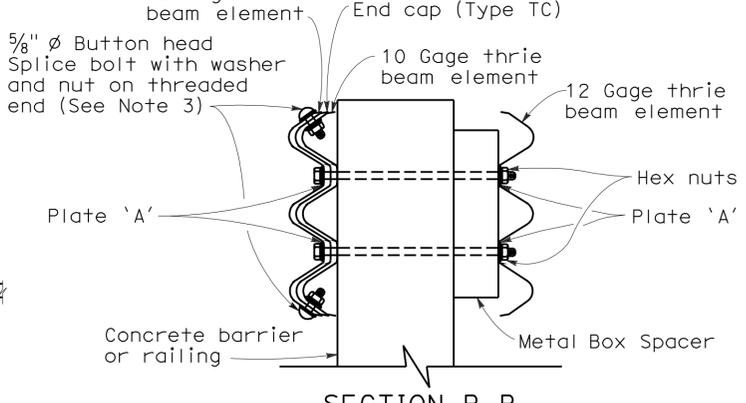
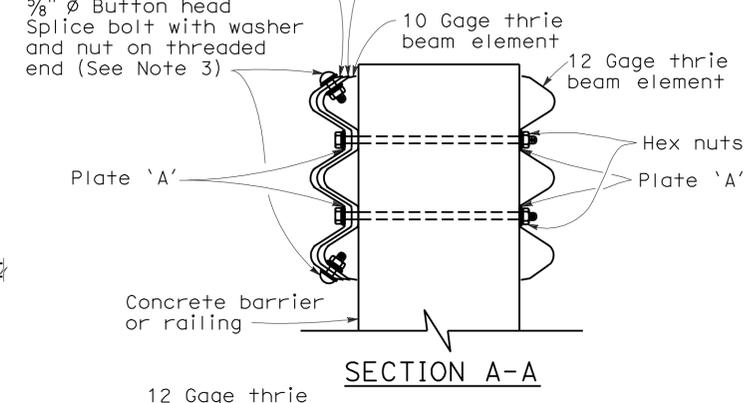
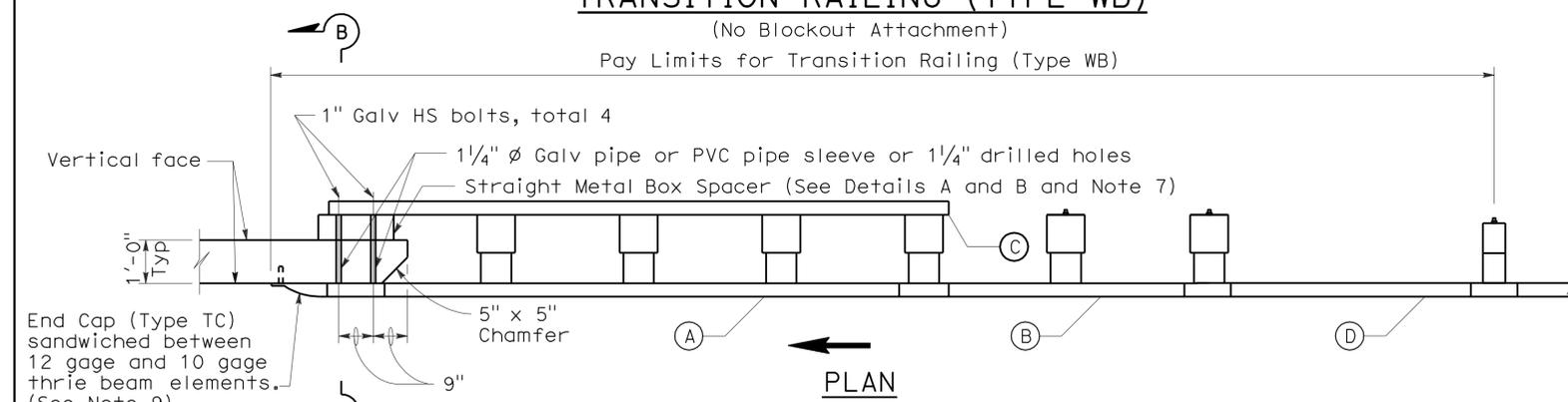
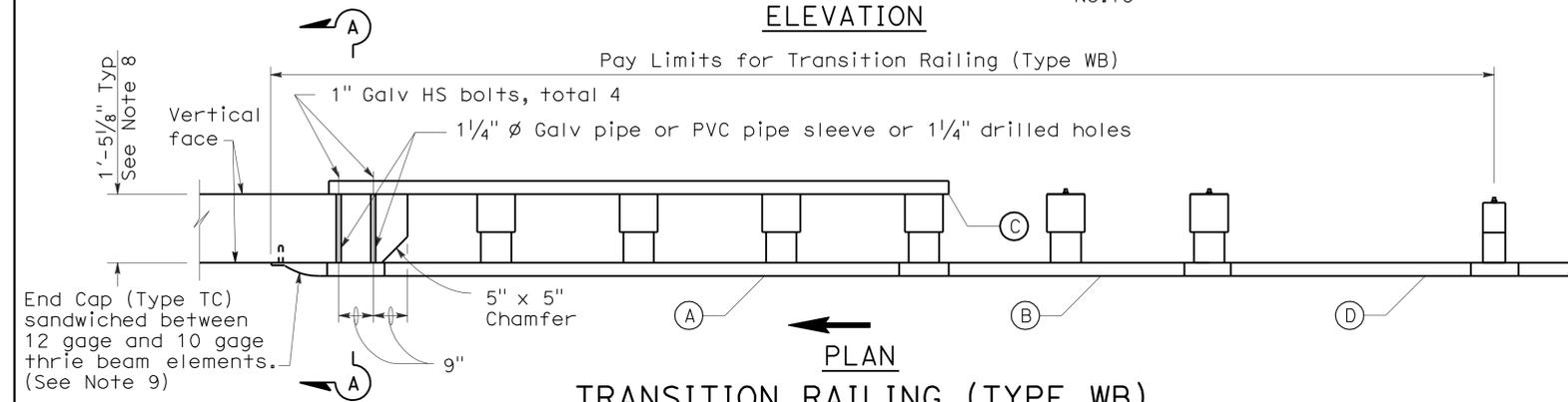
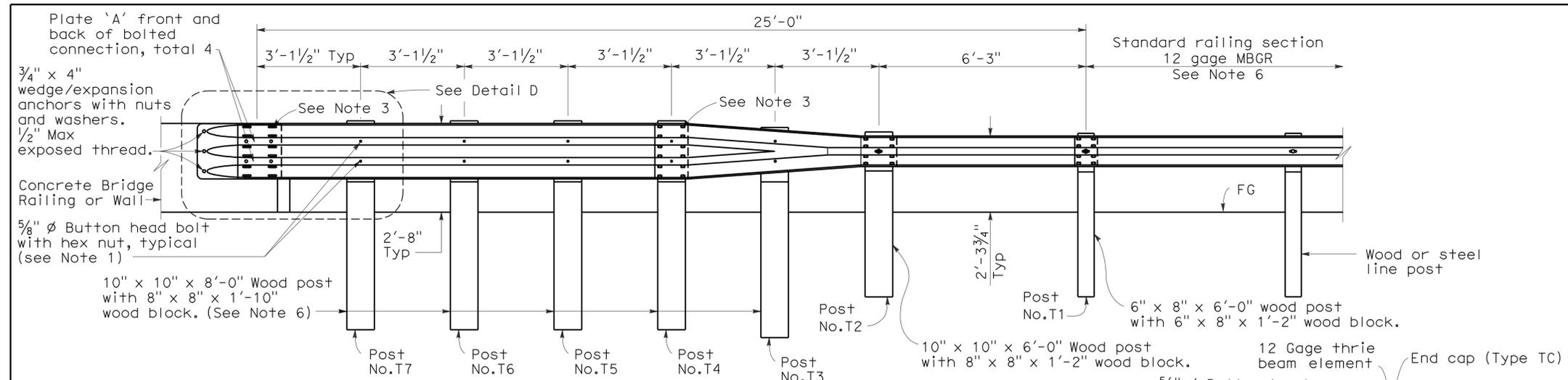
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	121	170

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 5, 2009
PLANS APPROVAL DATE

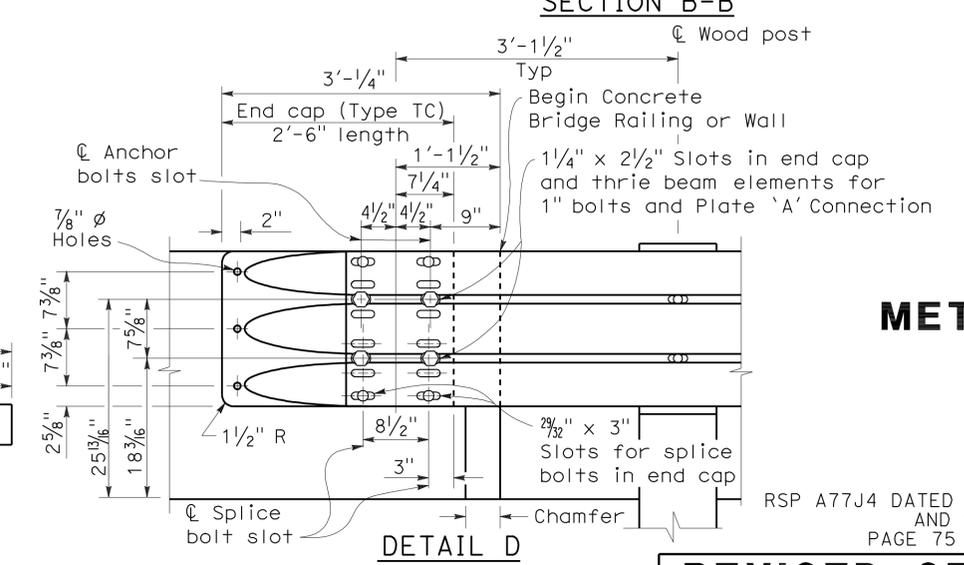
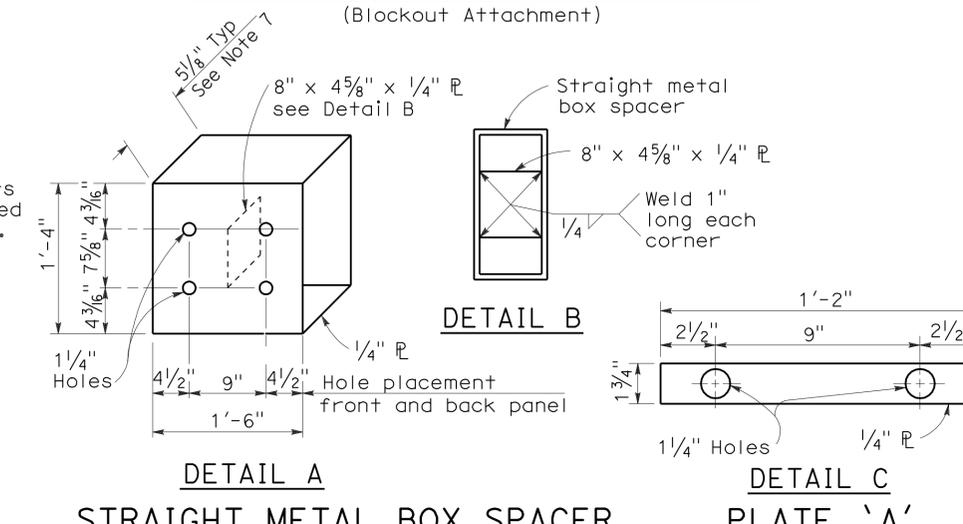
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
STATE OF CALIFORNIA
CIVIL



- NOTES:** To accompany plans dated 5-24-10
- Use 5/8 " ϕ 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 29/32 " x 1 1/8 " slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4 " ϕ . 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 \rightarrow .
 - The top elevation of Post Nos.T2 through 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 or an approved Caltrans end treatment attached to Post No.T1.
 - The depth of the metal box spacer varies from the 5 1/8 " to 1 1/2 " and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 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.4 through No.7 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.

- 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



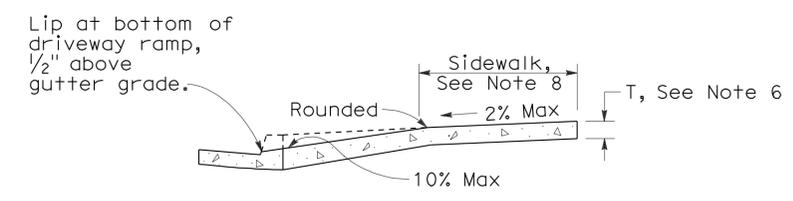
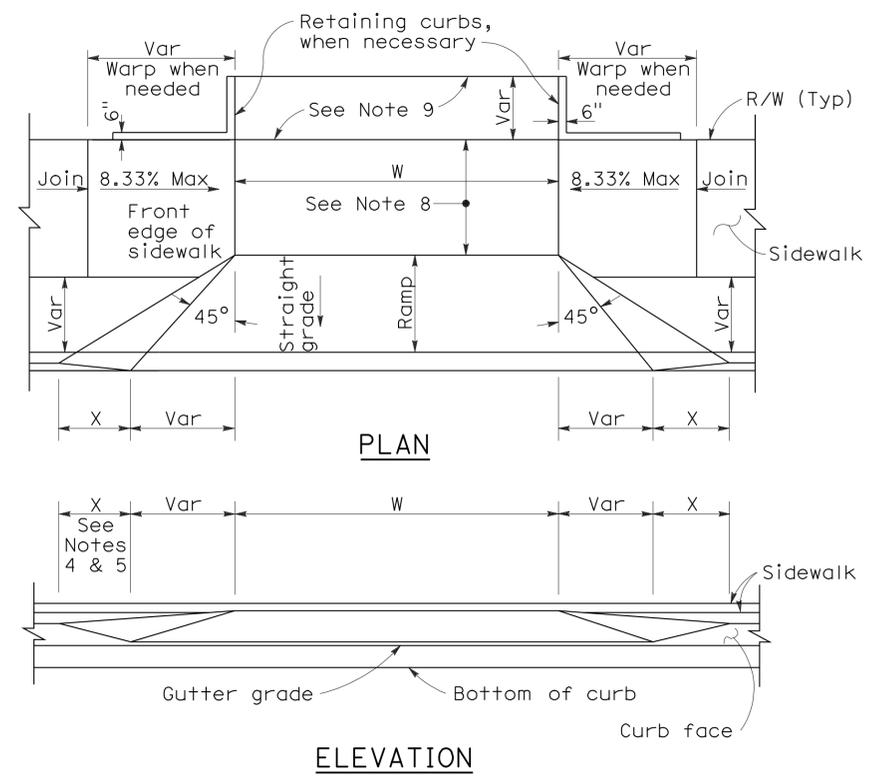
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TRANSITION RAILING (TYPE WB)

NO SCALE

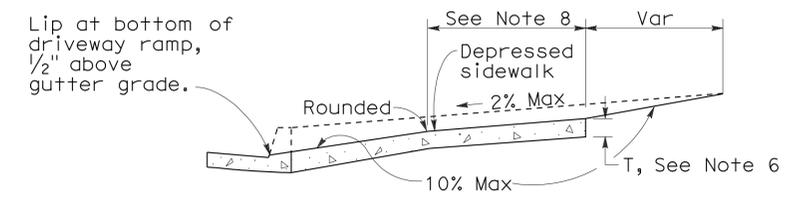
RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008
AND STANDARD PLAN A77J4 DATED MAY 1, 2006 -
PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J4



CASE A

Typical driveway, sidewalk not depressed



CASE B

Driveway with depressed sidewalk

SECTIONS

CURB QUANTITIES

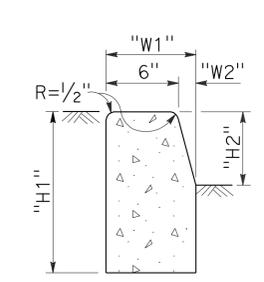
TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

TABLE A

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7 1/2"	1 1/2"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7 1/2"	1 1/2"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7 1/4"	1 1/4"
A3-8	8"	7"	7 3/4"	1 3/4"
B1-4	1'-0"	4"	7 1/2"	2 1/2"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7 1/2"	2 1/2"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8 1/2"	3 1/2"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-8"

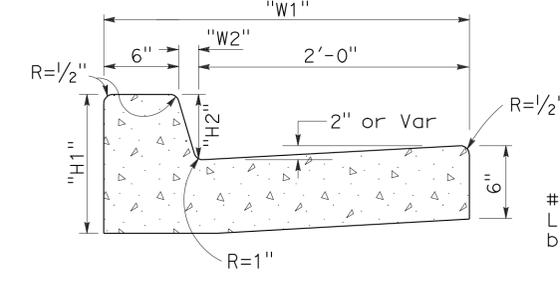
To accompany plans dated 5-24-10

DRIVEWAYS



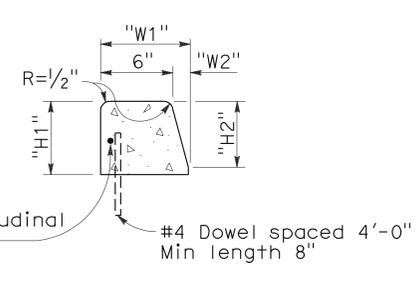
TYPE A1 CURBS

See Table A



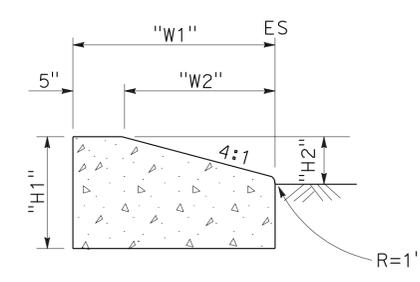
TYPE A2 CURBS

See Table A



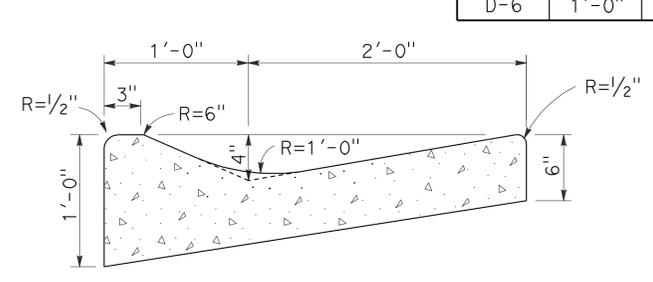
TYPE A3 CURBS

Superimposed on existing pavement
See Table A

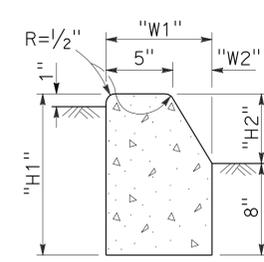


TYPE D CURBS

See Table A

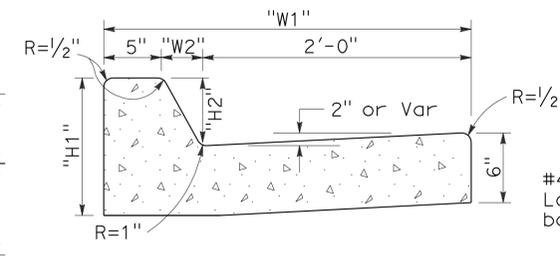


TYPE E CURB



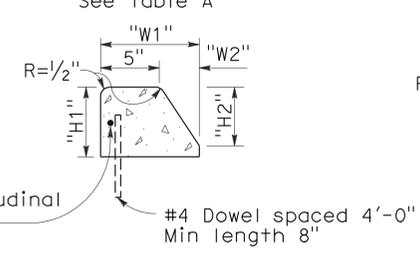
TYPE B1 CURBS

See Table A



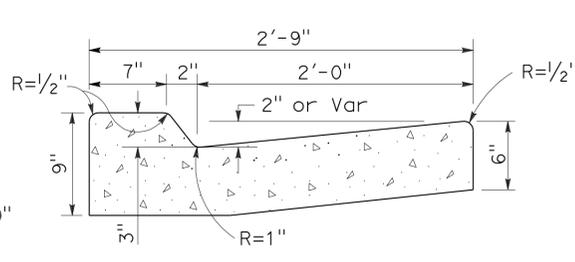
TYPE B2 CURBS

See Table A

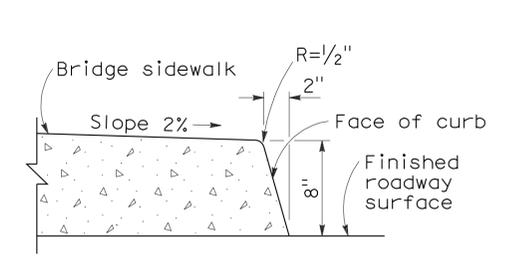


TYPE B3 CURBS

Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB

On Bridges

NOTES:

- Case A driveway section typically applies.
- Use Case B driveway section when ramp slopes would exceed 10% in Case A.
- Use Case B driveway section when sidewalk cross slope would exceed 2% in Case A.
- X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
- X is a variable when sidewalk is located where wheelchairs may traverse the surface. Slopes shall not exceed 8.33%.
- Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
- Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
- Minimum width of clear passageway for sidewalk shall be 4'-0".
- Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
- Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

CURBS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

NO SCALE

RSP A87A DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A87A
DATED MAY 1, 2006 - PAGE 113 OF THE STANDARD PLANS BOOK DATED MAY 2006.

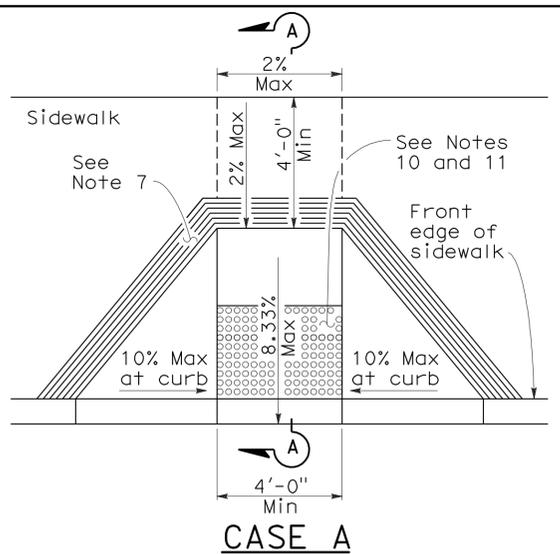
REVISED STANDARD PLAN RSP A87A

2006 REVISED STANDARD PLAN RSP A87A

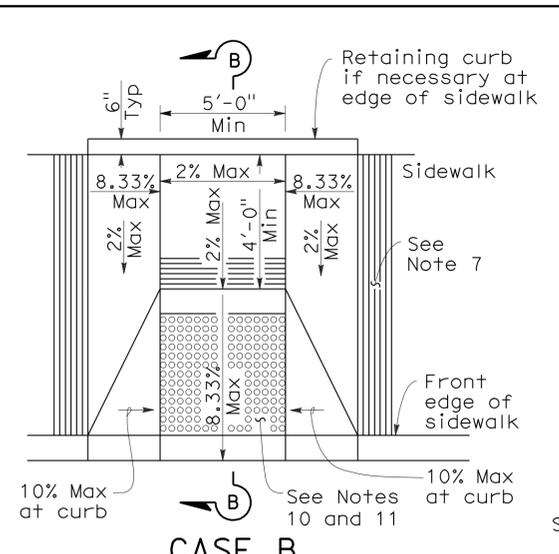
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	123	170

H. David Cordova
 REGISTERED CIVIL ENGINEER
 September 1, 2006
 PLANS APPROVAL DATE
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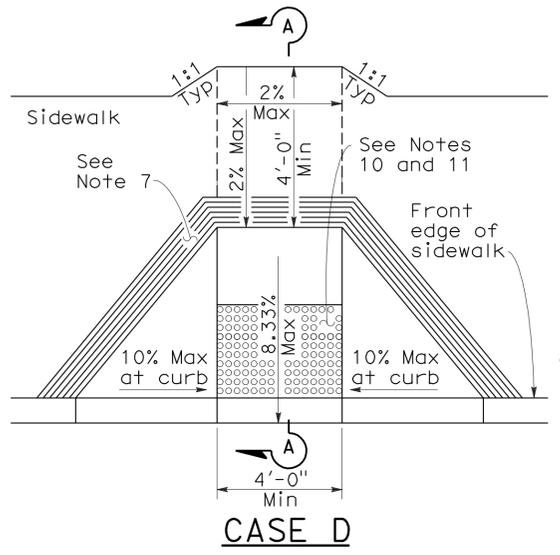
REGISTERED PROFESSIONAL ENGINEER
Hector David Cordova
No. C41957
Exp. 3-31-08
CIVIL
STATE OF CALIFORNIA



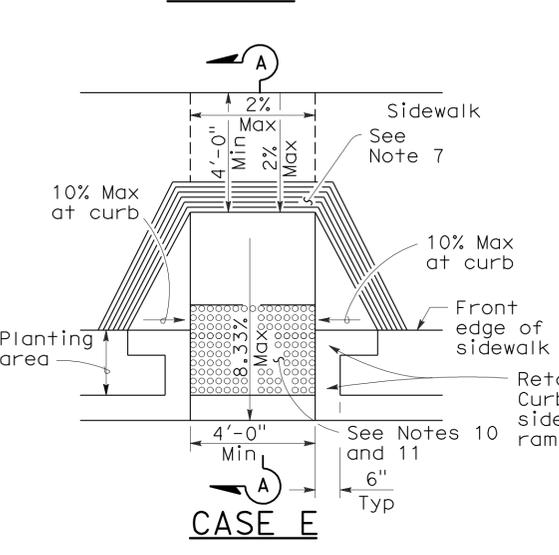
CASE A



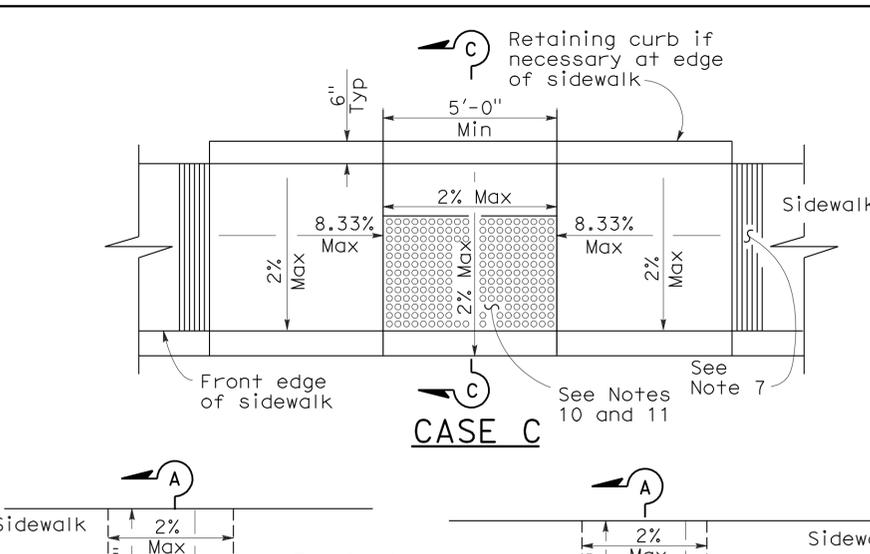
CASE B



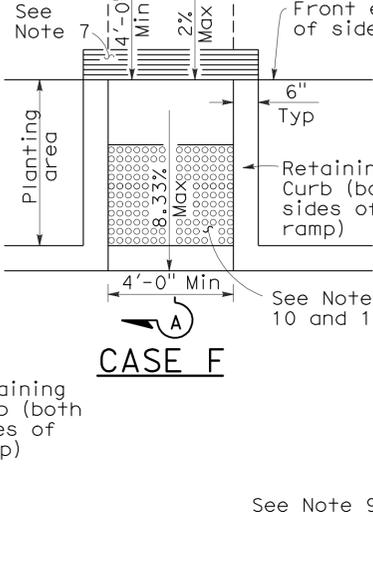
CASE D



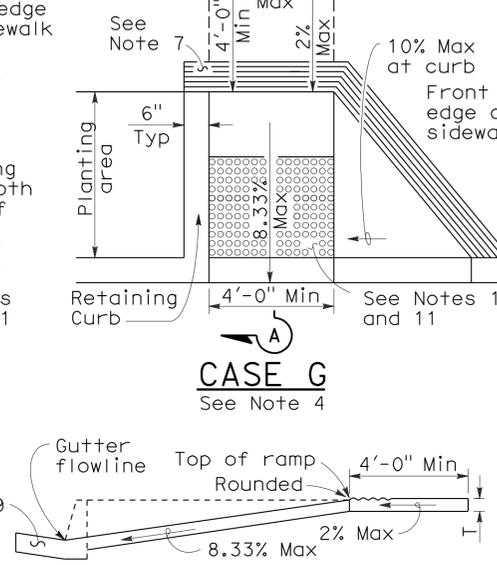
CASE E



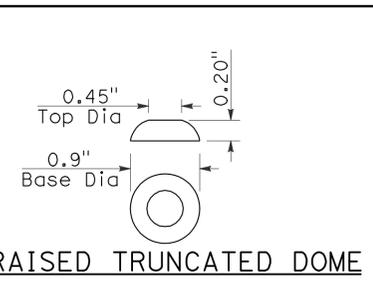
CASE C



CASE F



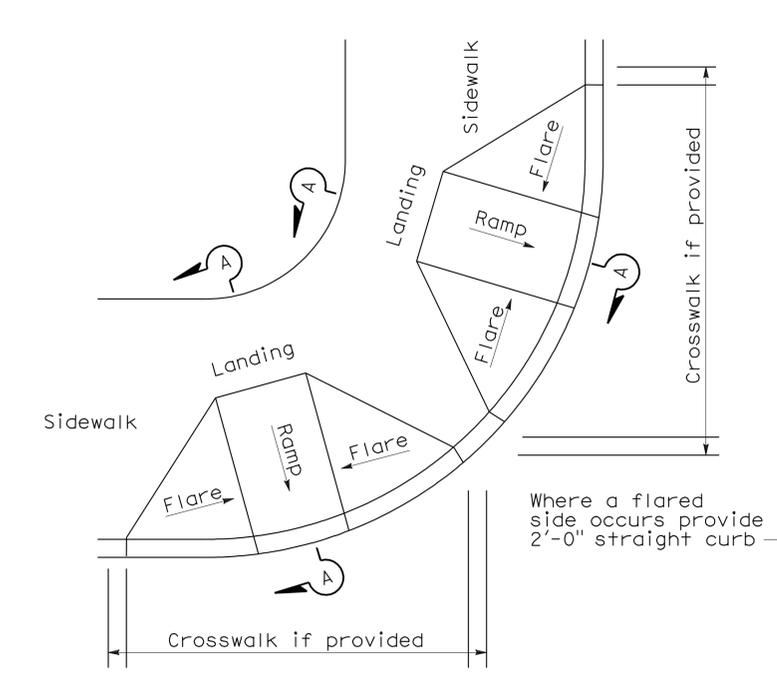
CASE G



RAISED TRUNCATED DOME

NOTES:

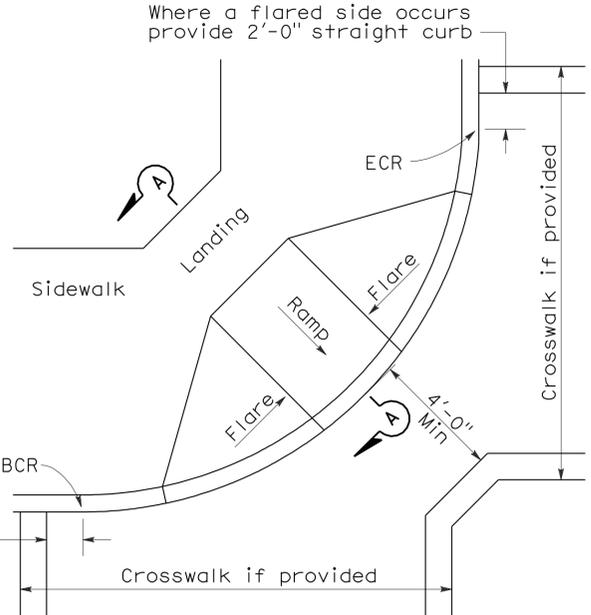
- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
- Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
- Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
- Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
- The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
- Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.



DETAIL A

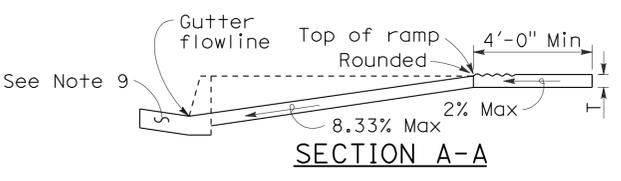
TYPICAL TWO-RAMP CORNER INSTALLATION

See Note 1

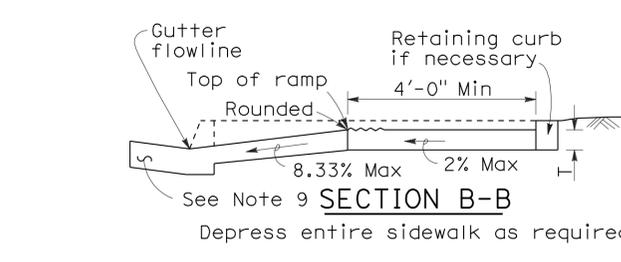


DETAIL B
TYPICAL ONE-RAMP CORNER INSTALLATION

See Notes 1 and 3

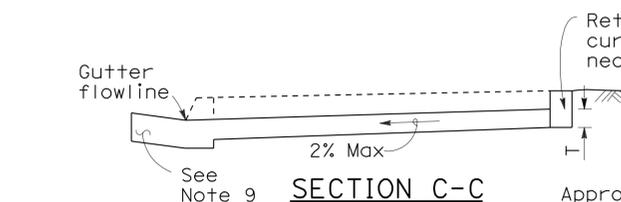


SECTION A-A

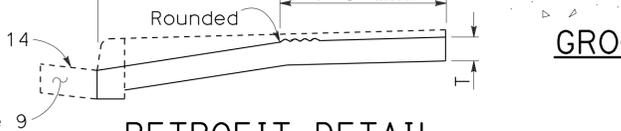


SECTION B-B

Depress entire sidewalk as required

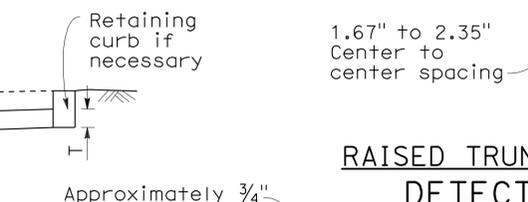


SECTION C-C



RETROFIT DETAIL

Existing curb and sidewalk



GROOVING DETAIL

1.67" to 2.35"
Center to
center spacing

**RAISED TRUNCATED DOME PATTERN (IN-LINE)
DETECTABLE WARNING SURFACE**

See Note 10

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURB RAMP DETAILS

NO SCALE

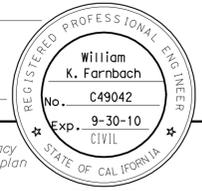
RSP A88A DATED SEPTEMBER 1, 2006 SUPERSEDES STANDARD PLAN A88A
DATED MAY 1, 2006 - PAGE 115 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A88A

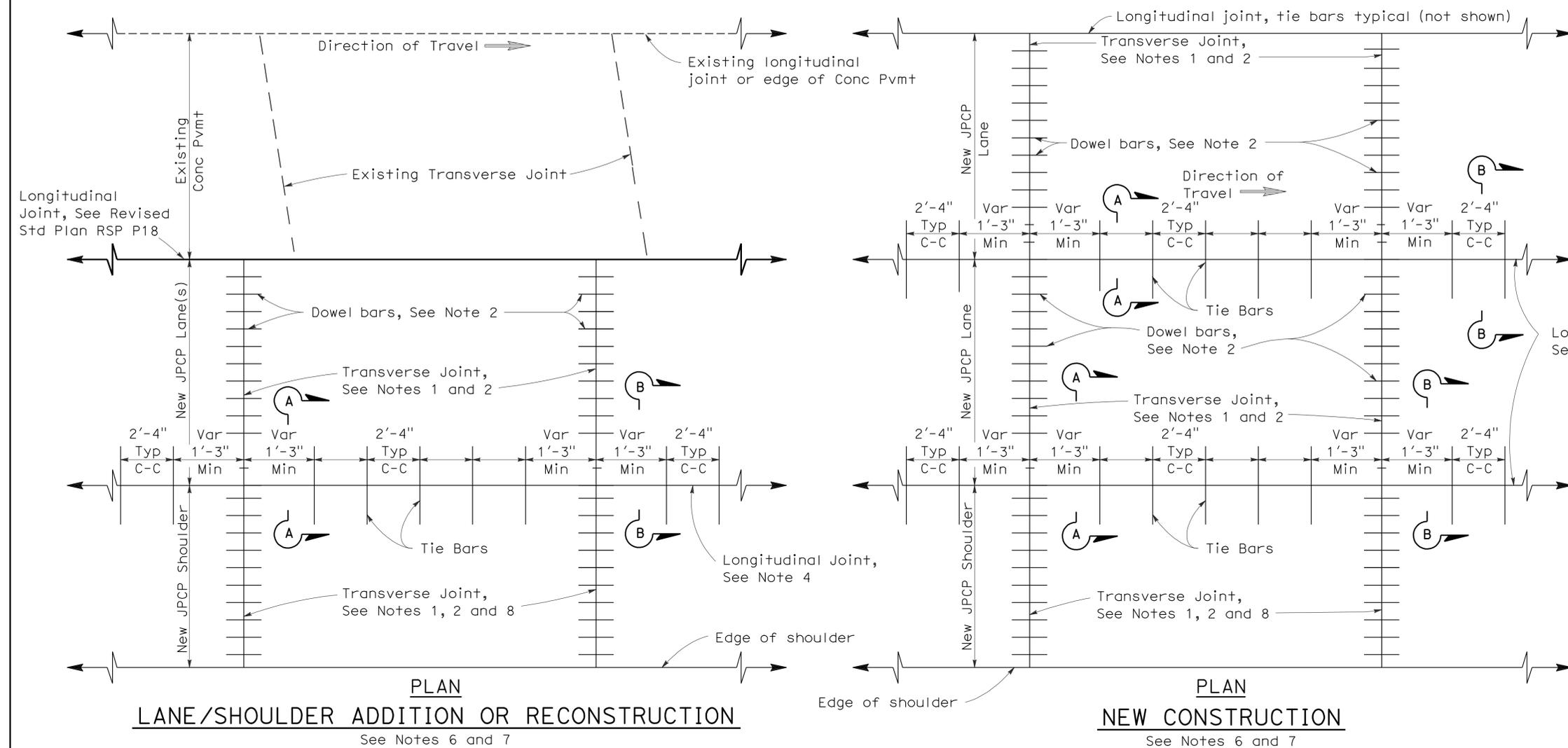
2006 REVISED STANDARD PLAN RSP A88A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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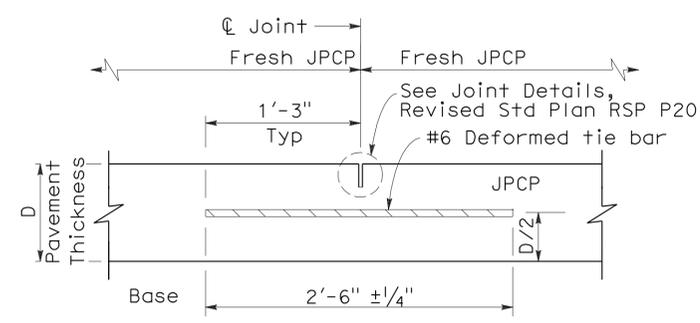
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE
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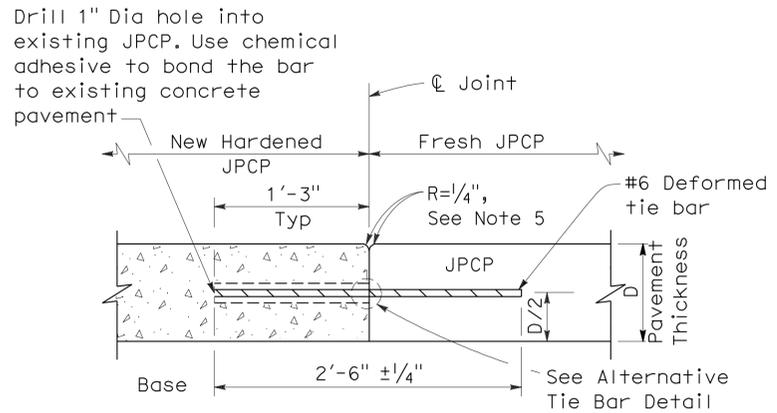
To accompany plans dated 5-24-10



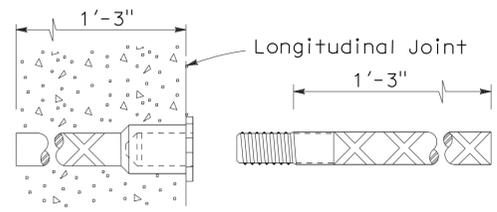
- NOTES:**
1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new jointed plain concrete pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
 2. For transverse joint and dowel bar details not shown, See Revised Standard Plan RSP P10.
 3. Construct longitudinal contraction joints as shown in Section A-A when more than one lane or shoulder widths are placed at one time. If constructing one lane at a time, use longitudinal construction joint, as shown in Section B-B.
 4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
 5. If fresh concrete is placed adjacent to existing concrete, the top corner of the new hardened concrete does not need to be rounded to the 1/4" radius as shown.
 6. Joint spacing patterns do not apply to intersections.
 7. Details can also apply to inside widening.
 8. Dowel bars may be omitted from shoulders when the shoulder cross slope is not the same as the adjacent traffic lane.



SECTION A-A
LONGITUDINAL CONTRACTION JOINT



SECTION B-B
LONGITUDINAL CONSTRUCTION JOINT



ALTERNATIVE TIE BAR SPLICE DETAIL
(Splice Coupler)

TIE BAR DETAILS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**JOINTED PLAIN
CONCRETE PAVEMENT**

NO SCALE

RSP P1 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P1
DATED MAY 1, 2006 - PAGE 119 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P1

2006 REVISED STANDARD PLAN RSP P1

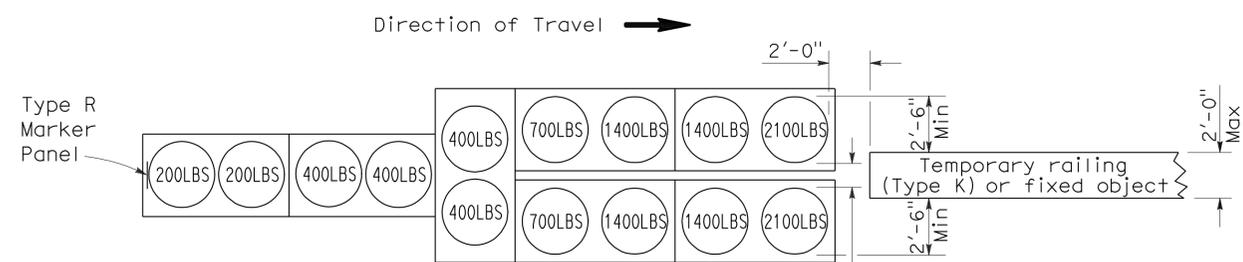
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Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

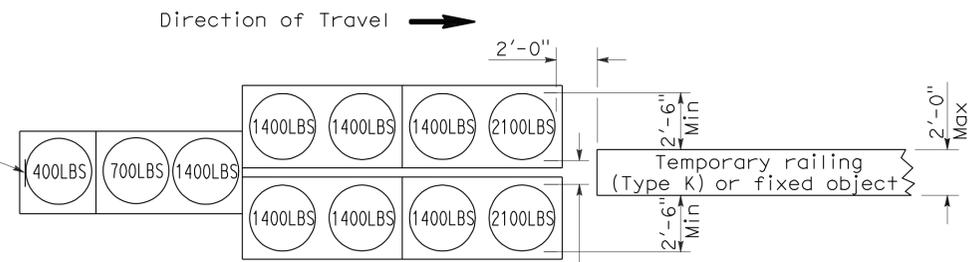
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To accompany plans dated 5-24-10



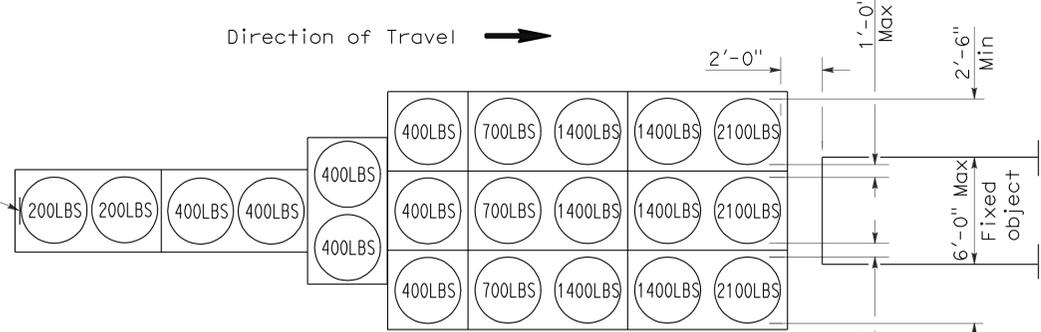
ARRAY 'TU14'

Approach speed 45 mph or more



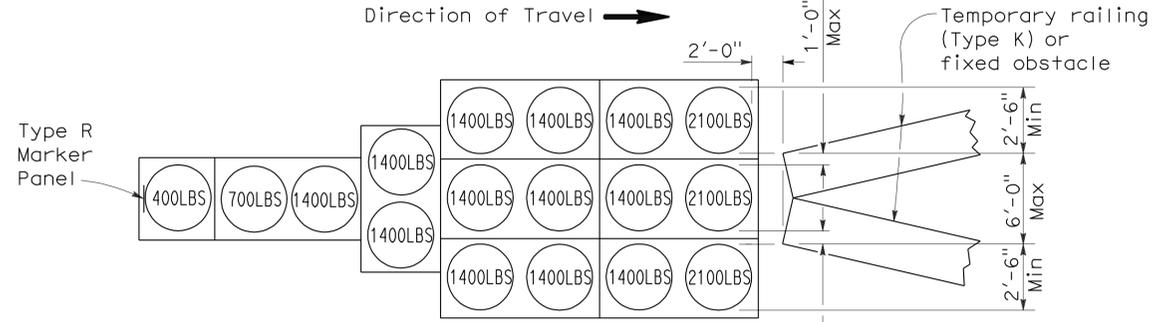
ARRAY 'TU11'

Approach speed less than 45 mph



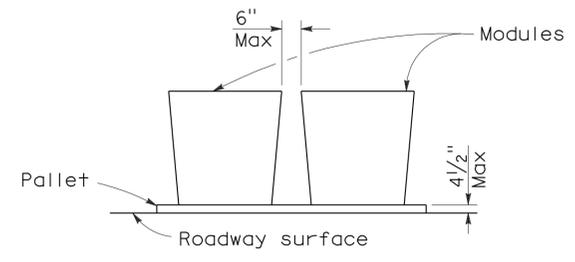
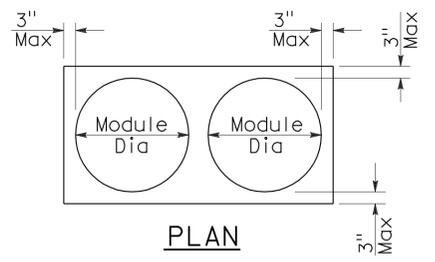
ARRAY 'TU21'

Approach speed 45 mph or more



ARRAY 'TU17'

Approach speed less than 45 mph



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
08	Riv	86S	R16.0/R16.7	126	170

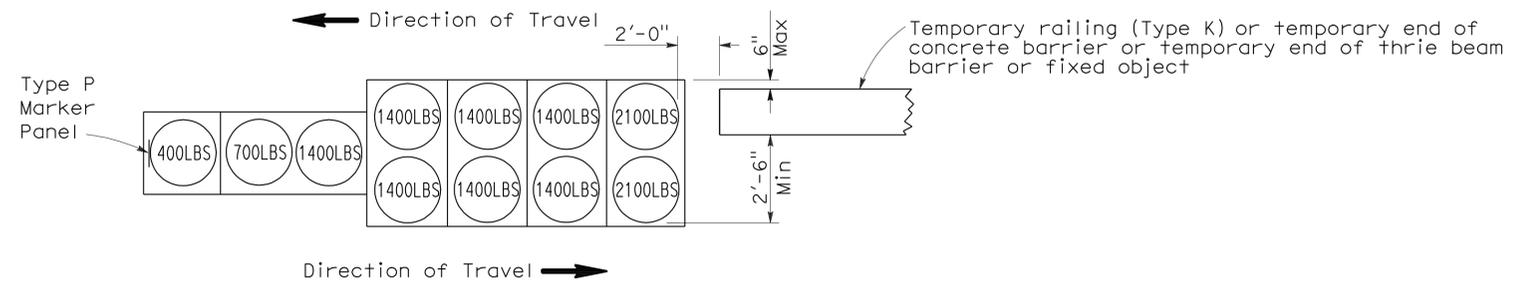
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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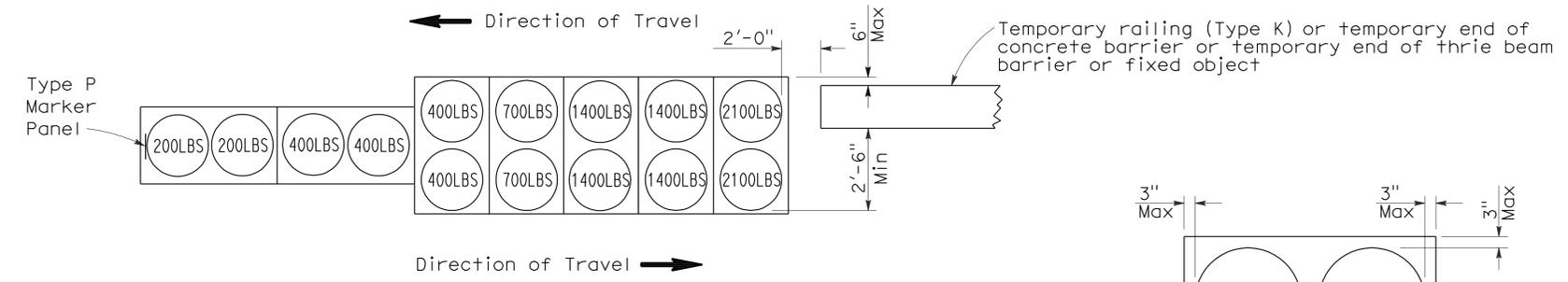
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 5-24-10



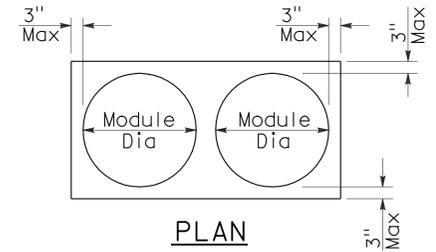
ARRAY 'TB11'

Approach speed less than 45 mph

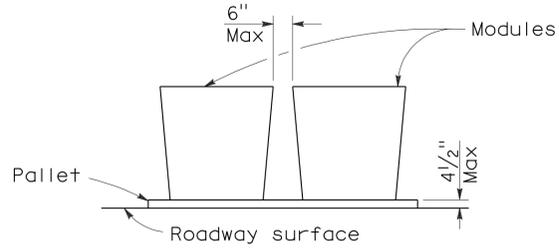


ARRAY 'TB14'

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 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

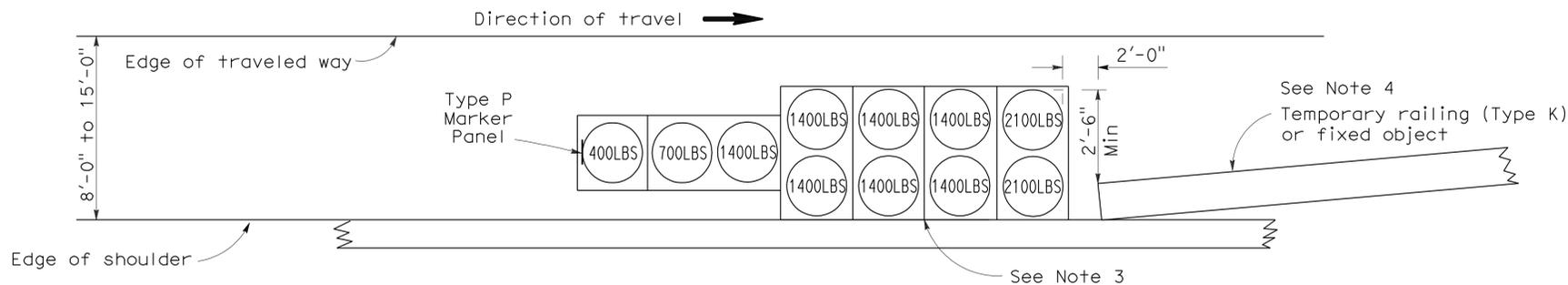
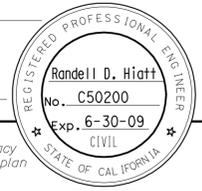
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	127	170

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

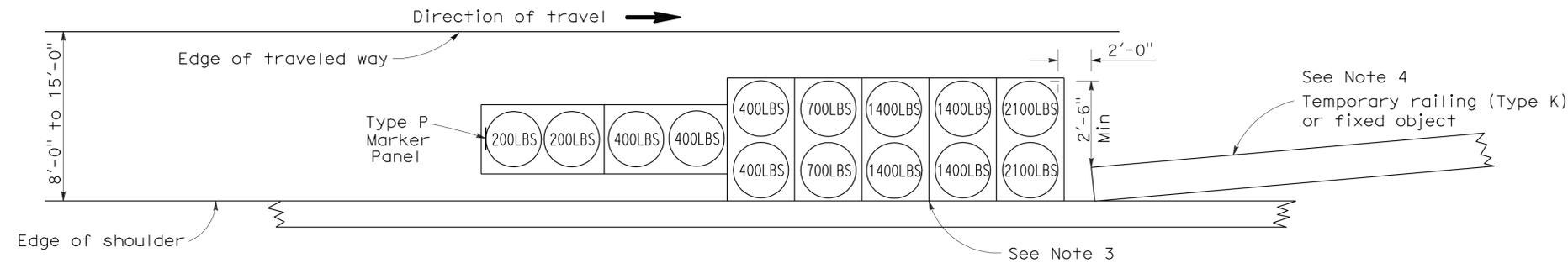
June 6, 2008
PLANS APPROVAL DATE

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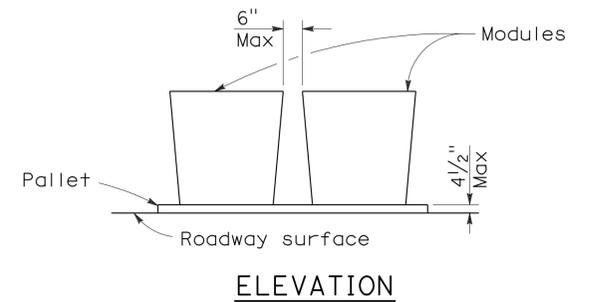
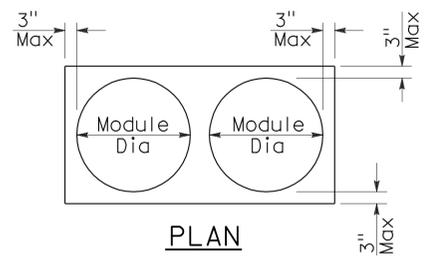
To accompany plans dated 5-24-10



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:

- (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.
- All sand weights are nominal.
- 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.
- 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.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
- Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
- Refer to Standard Plan A73B for marker details.
- 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.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- 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.

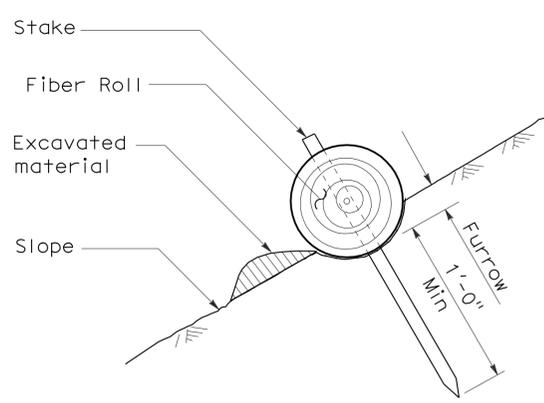
REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

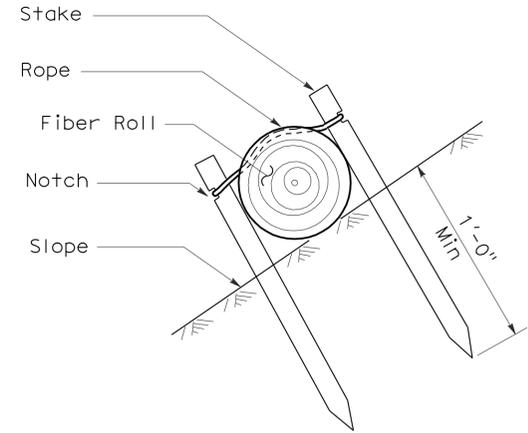
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	129	170

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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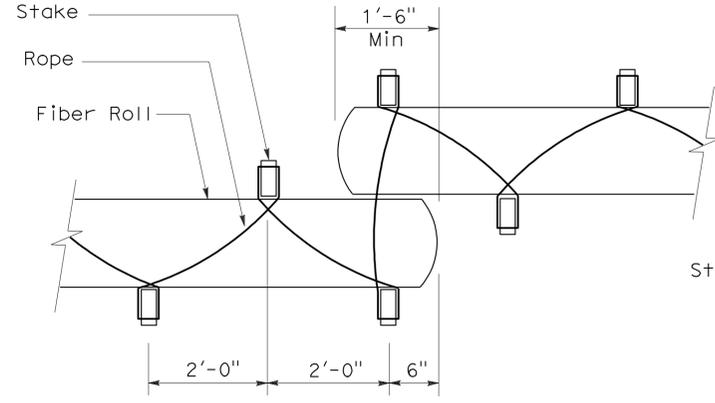
To accompany plans dated 5-24-10



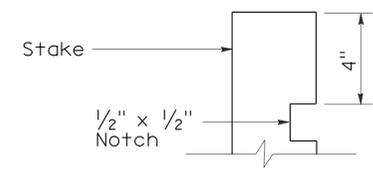
SECTION
TEMPORARY FIBER ROLL
(TYPE 1)



SECTION
TEMPORARY FIBER ROLL
(TYPE 2)

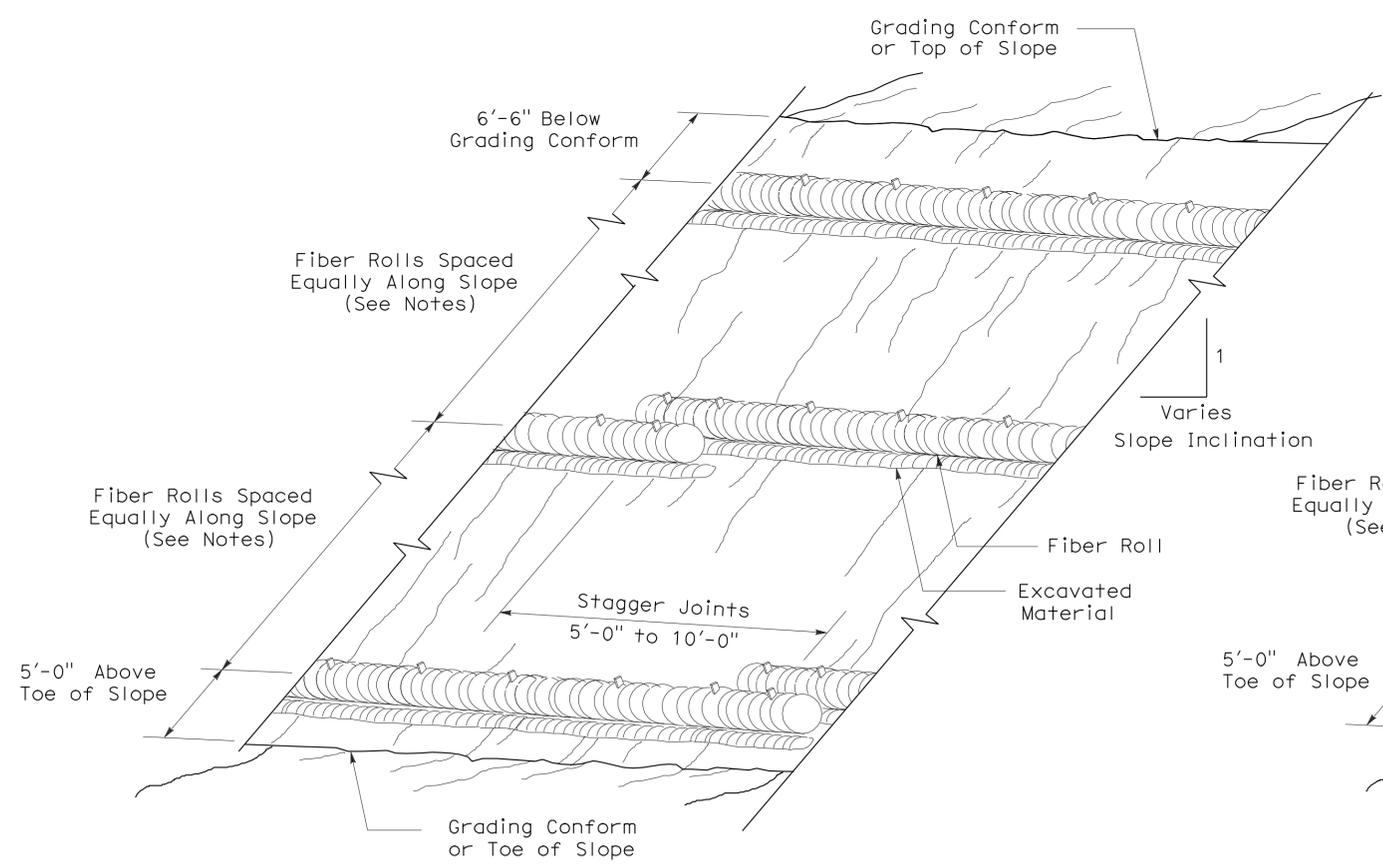


PLAN

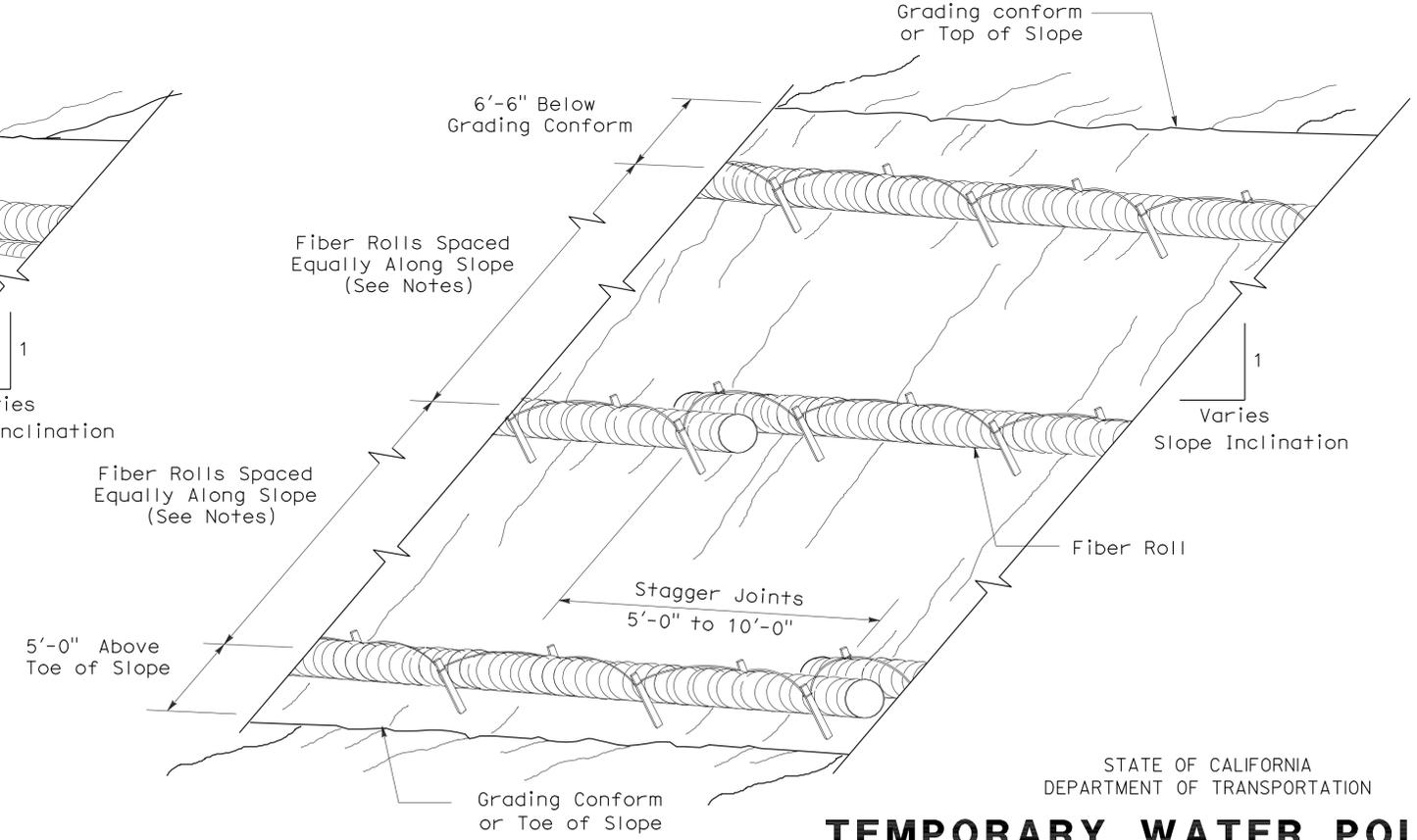


ELEVATION
STAKE NOTCH DETAIL

- NOTES:**
1. Temporary fiber roll spacing varies depending upon slope inclination.
 2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



PERSPECTIVE
TEMPORARY FIBER ROLL (TYPE 1)



PERSPECTIVE
TEMPORARY FIBER ROLL (TYPE 2)

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS
(TEMPORARY FIBER ROLL)

NO SCALE

RSP T56 DATED APRIL 3, 2009 SUPERSEDES STANDARD PLAN T56
 DATED MAY 1, 2006 - PAGE 232 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T56

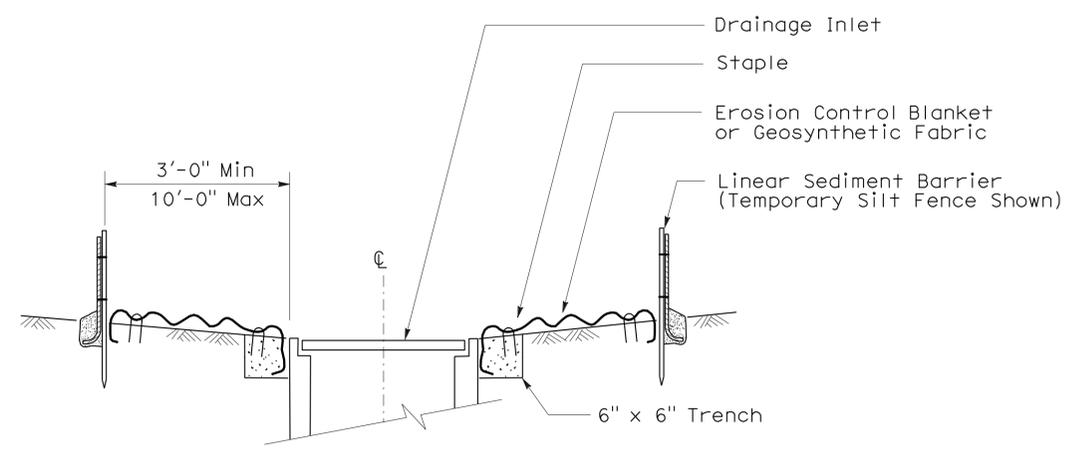
2006 REVISED STANDARD PLAN RSP T56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	130	170

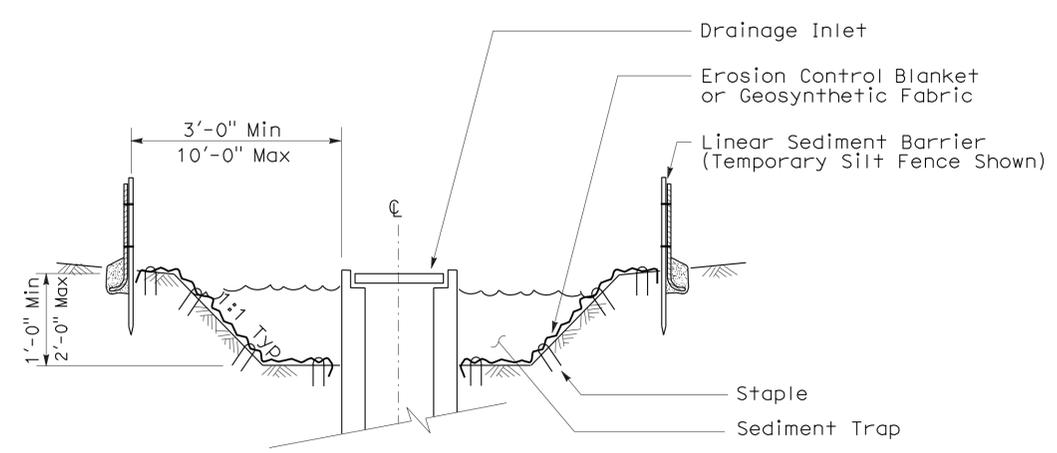
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS Approval DATE
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To accompany plans dated 5-24-10

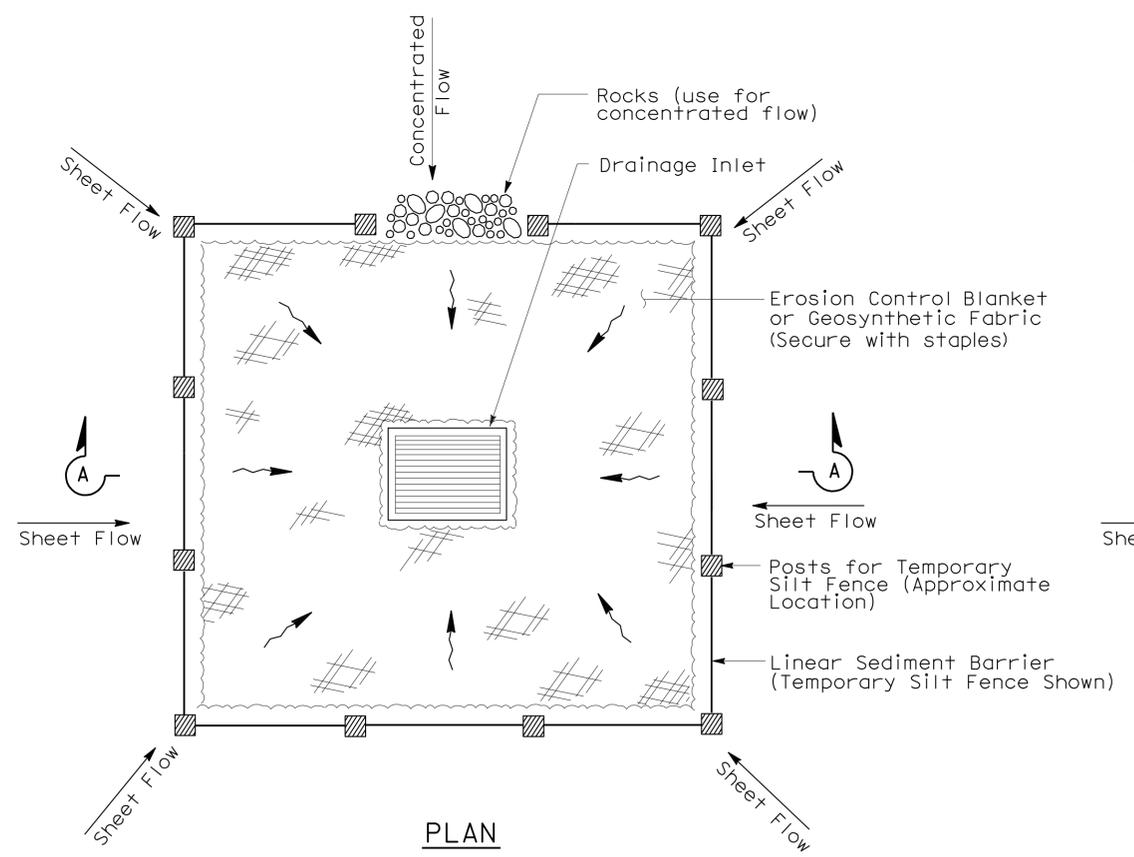
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
 - Dimensions may vary to fit field conditions.



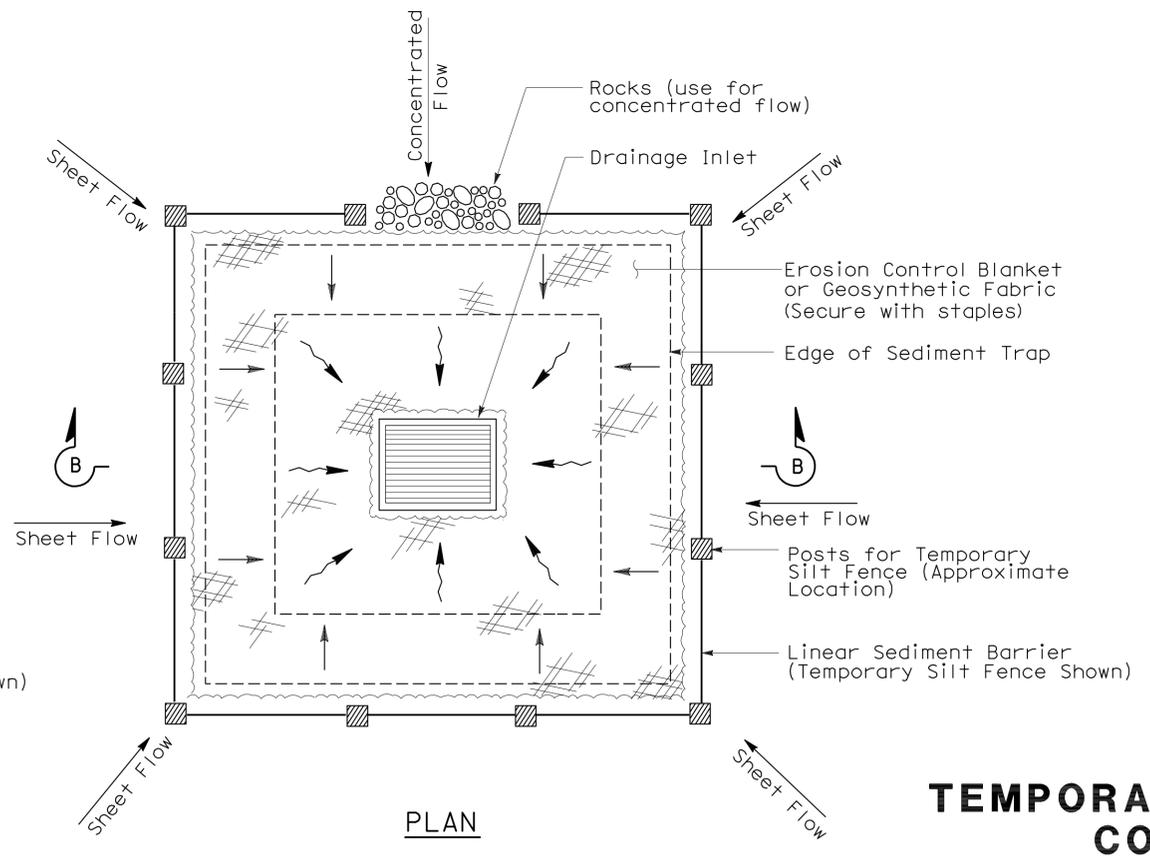
SECTION A-A



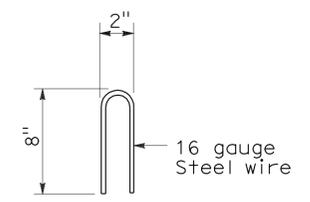
SECTION B-B



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 2) (EXCAVATED SEDIMENT TRAP)



STAPLE DETAIL

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)
 NO SCALE

NSP T61 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T61

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	131	170

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT

August 15, 2008
 PLANS APPROVAL DATE

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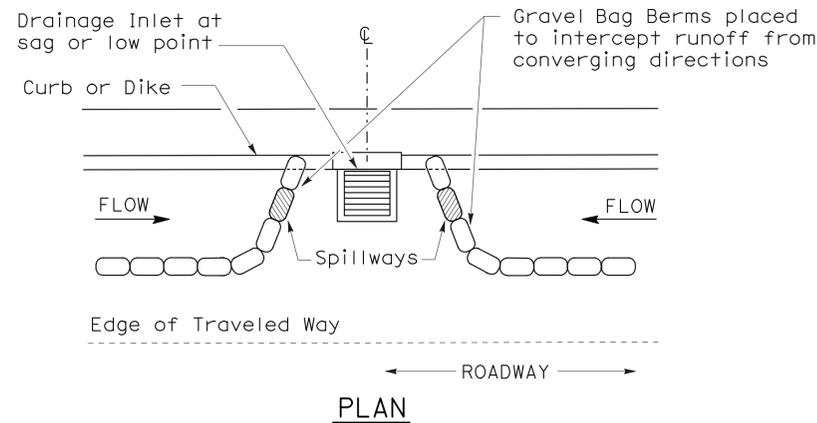
To accompany plans dated 5-24-10

2006 NEW STANDARD PLAN NSP T62

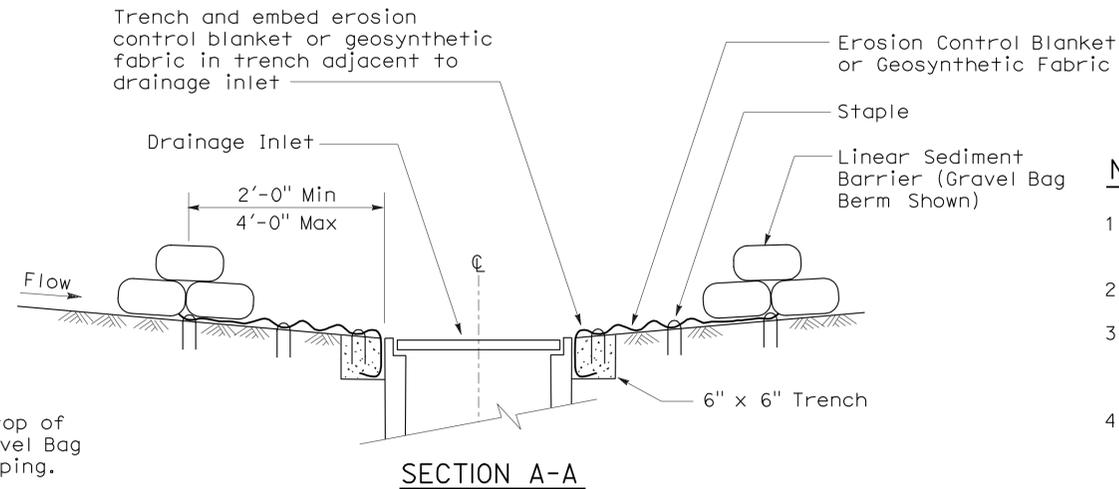
GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent



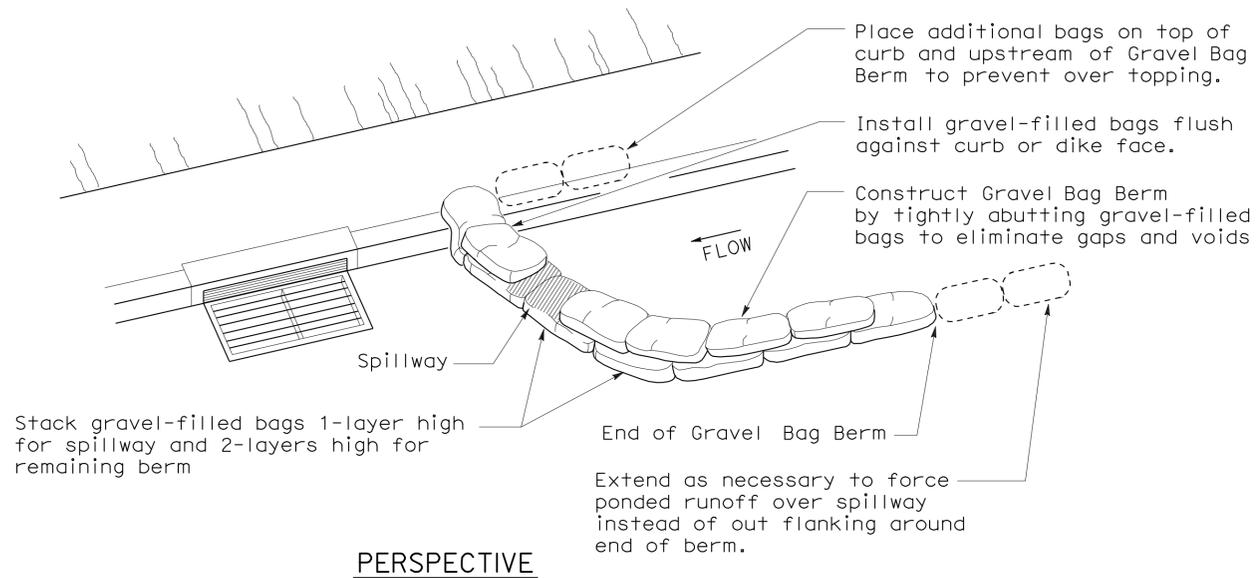
PLAN
CONFIGURATION FOR SAG POINT INLET (GRAVEL BAG BERM)



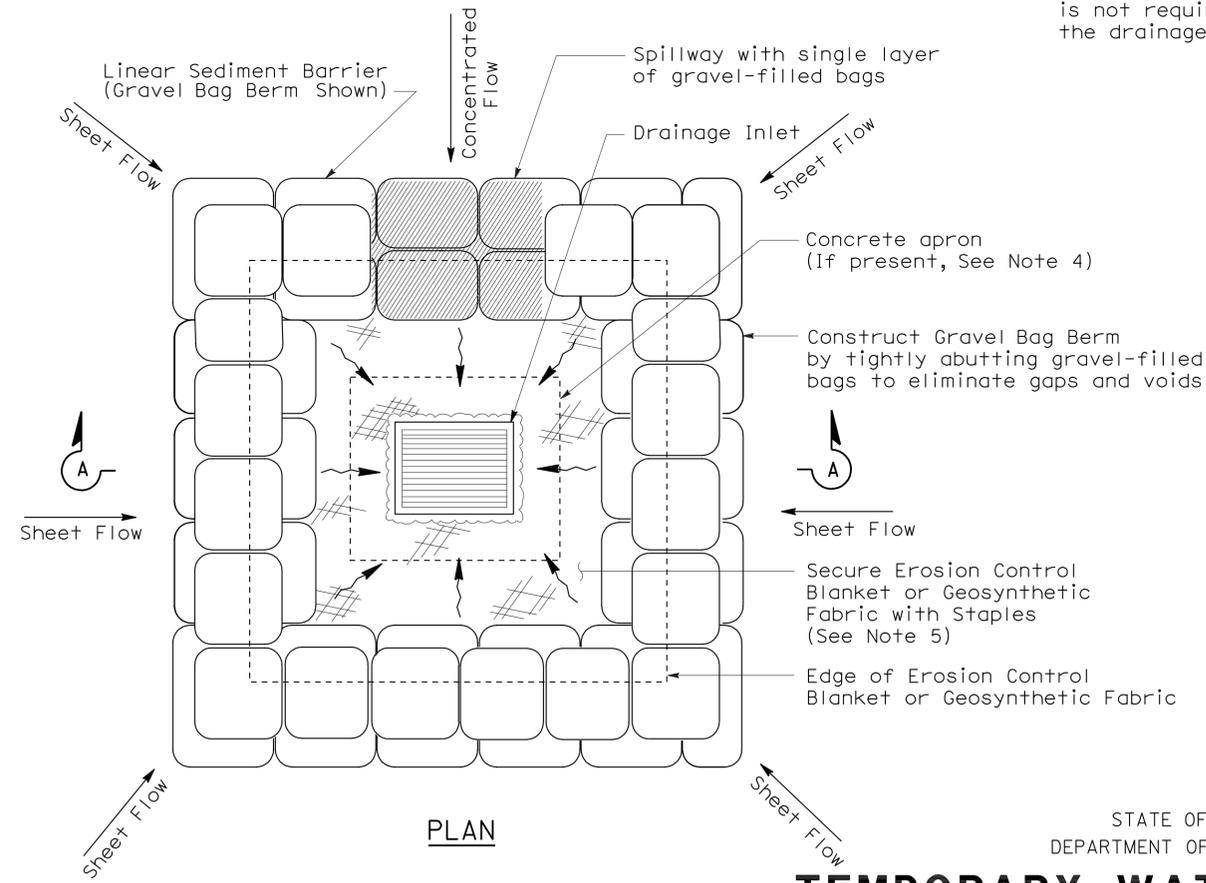
SECTION A-A

NOTES:

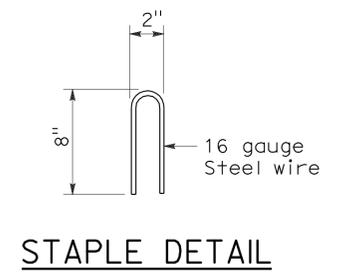
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated or paved.



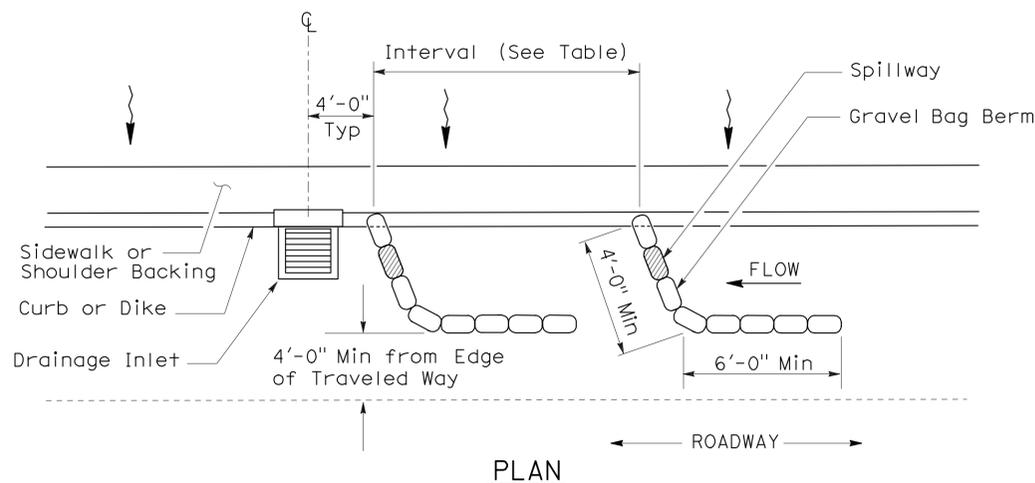
PERSPECTIVE



PLAN
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)



STAPLE DETAIL



PLAN
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3A) (GRAVEL BAG BERM)

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

FLEXIBLE SEDIMENT BARRIER SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	0 to 0.9	1 to 1.9	2 to 2.9	3 to 4	5+
INTERVAL BETWEEN BARRIERS	50'	35'	30'	25'	20'
ANGLE FROM FACE OF CURB	70°	70°	70°	45°	45°
SUGGESTED BARRIER LENGTH	6'	6'	6'	6'	6'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	132	170

Robert B. Schott
LICENSED LANDSCAPE ARCHITECT

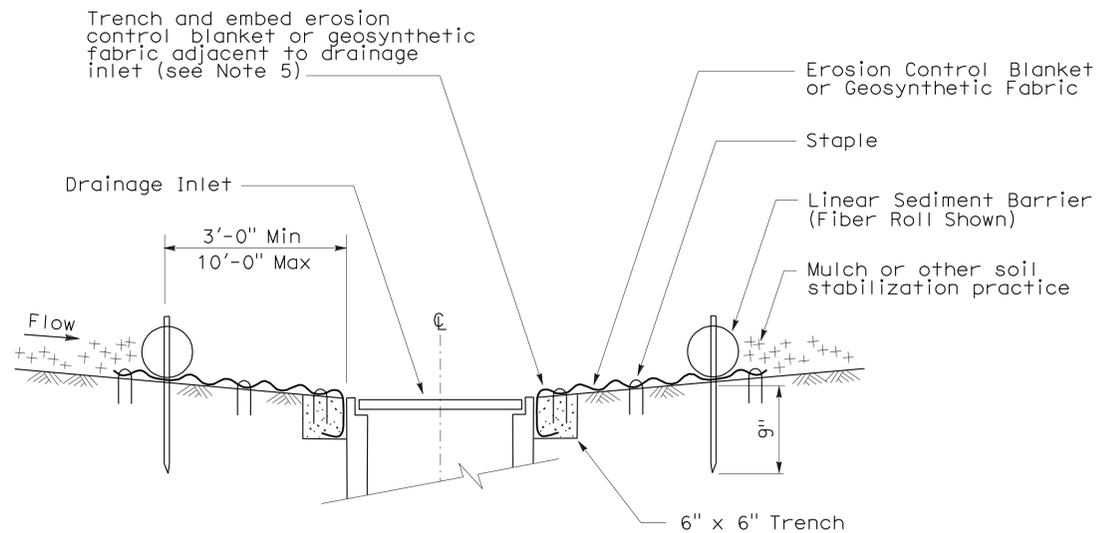
August 15, 2008
PLANS APPROVAL DATE

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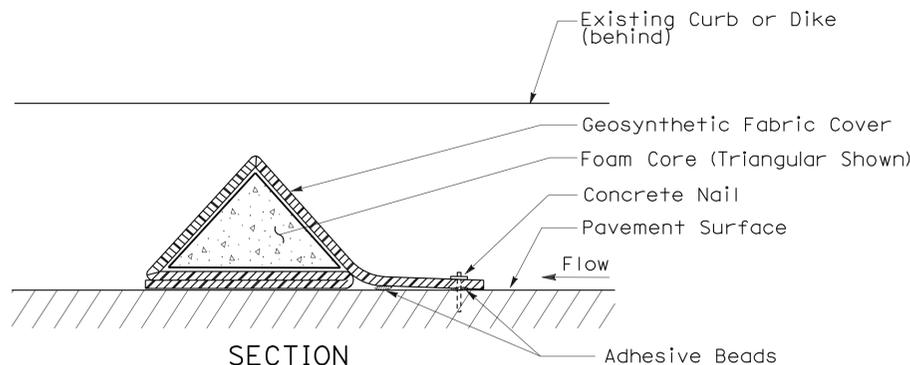
To accompany plans dated 5-24-10

NOTES:

- See Standard Plan T51 for Temporary Silt Fence.
- Dimensions may vary to fit field conditions.
- Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
- Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
- Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.

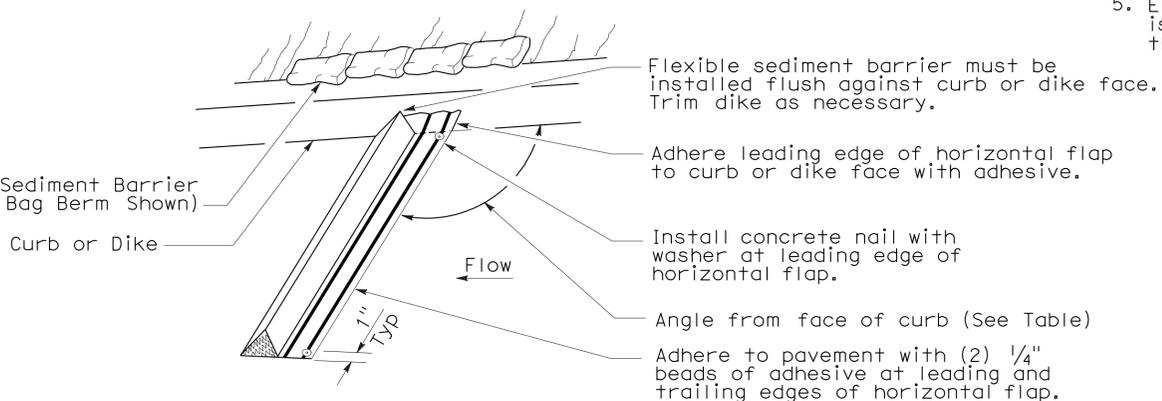


SECTION A-A

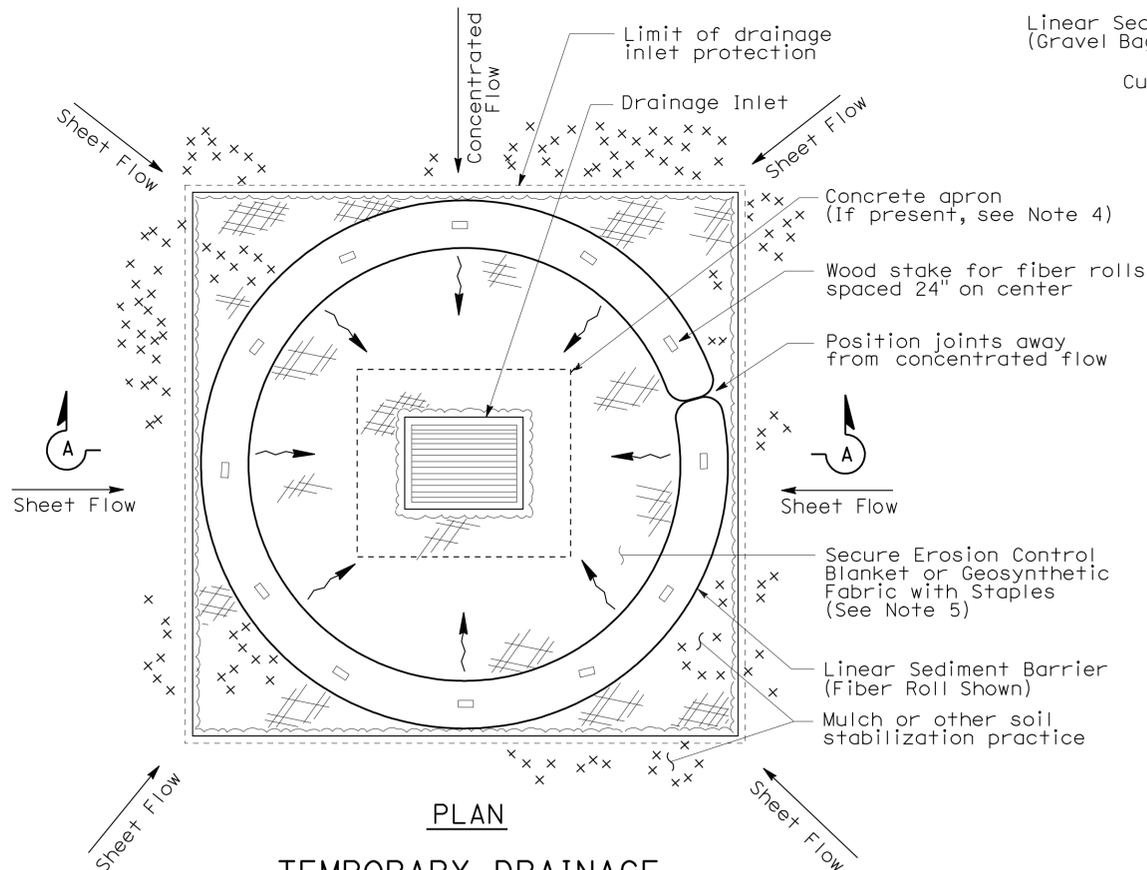


SECTION

FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)

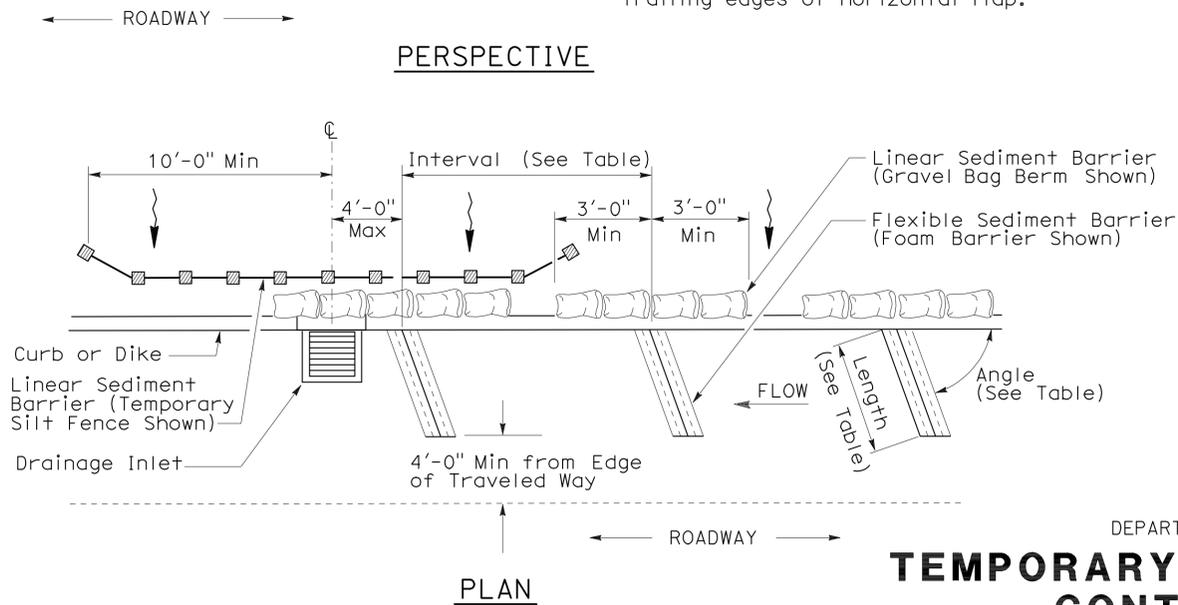


PERSPECTIVE



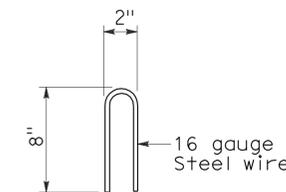
PLAN

TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)



PLAN

TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4B) FLEXIBLE SEDIMENT BARRIER



STAPLE DETAIL

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

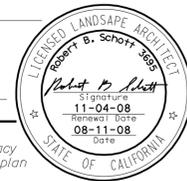
NO SCALE
NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T63

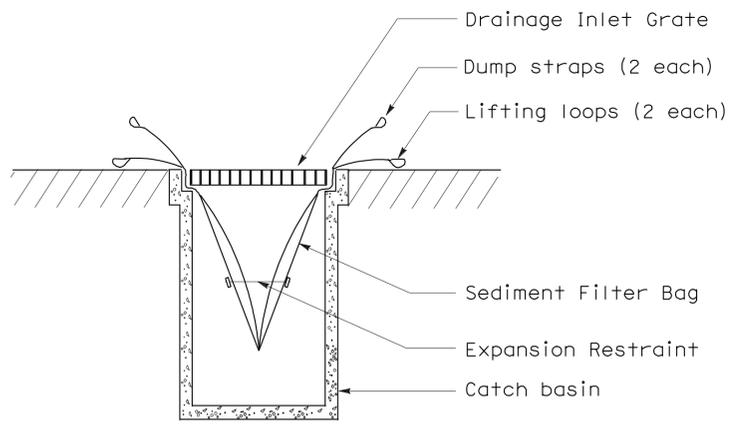
2006 NEW STANDARD PLAN NSP T63

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	133	170

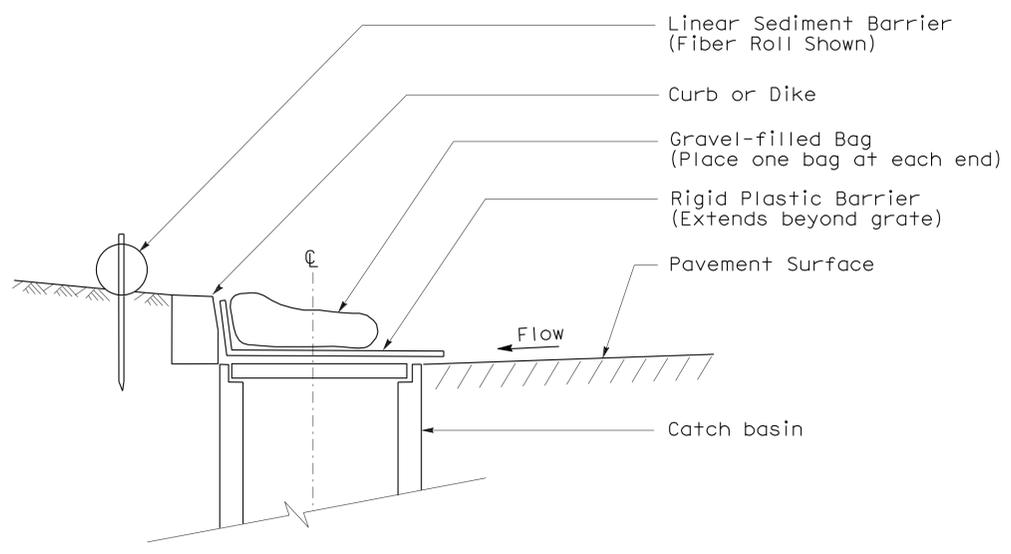
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
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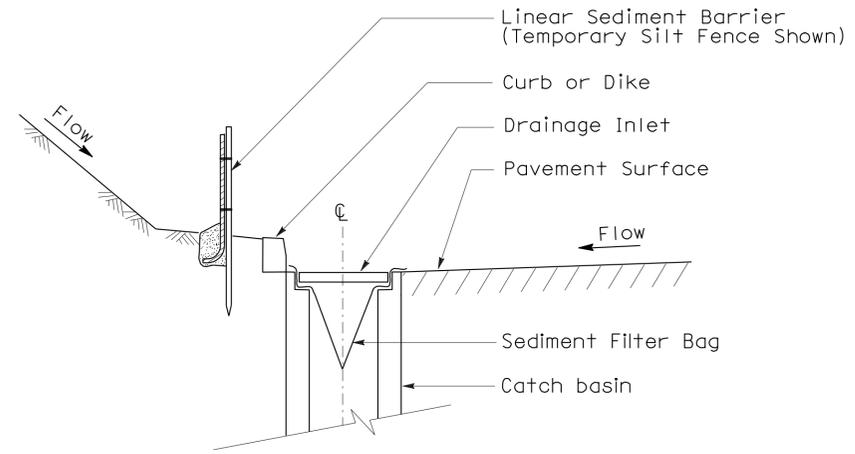
To accompany plans dated 5-24-10



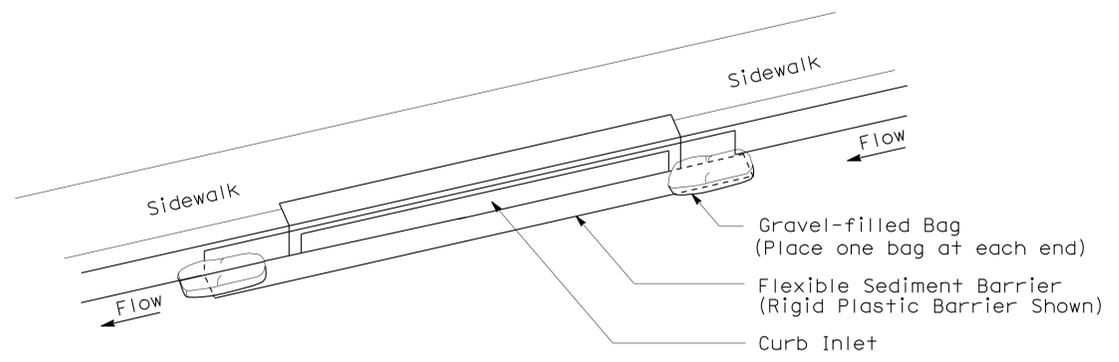
SECTION B-B
SEDIMENT FILTER BAG DETAIL



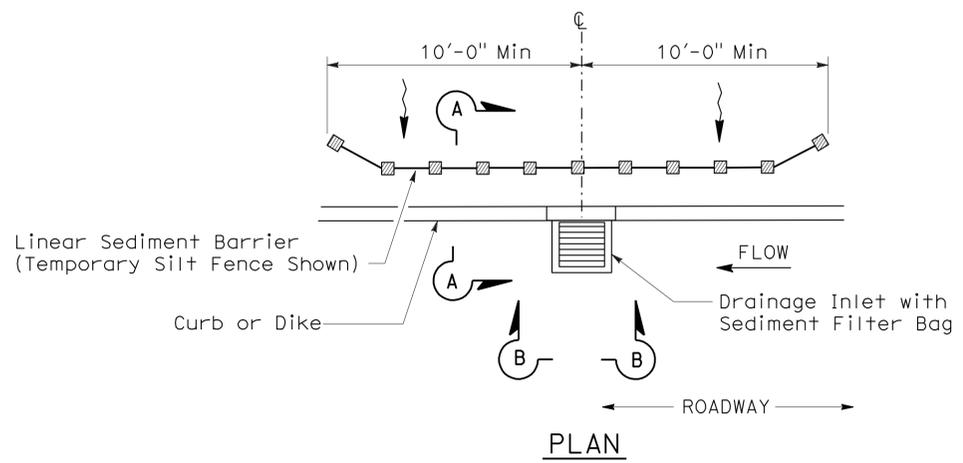
SECTION
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



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

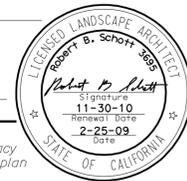
NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T64

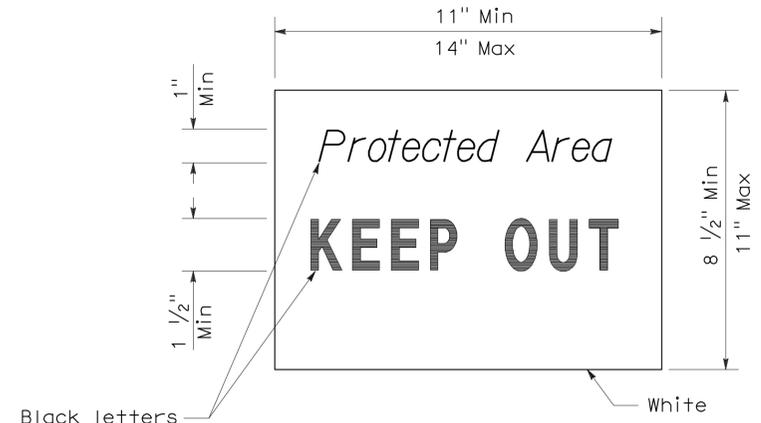
2006 NEW STANDARD PLAN NSP T64

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	134	170

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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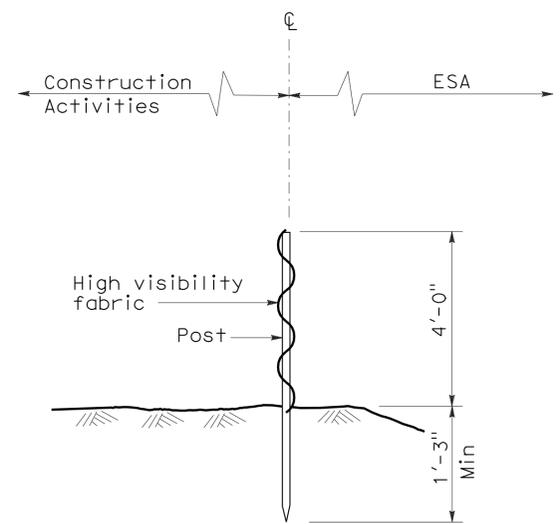
To accompany plans dated 5-24-10



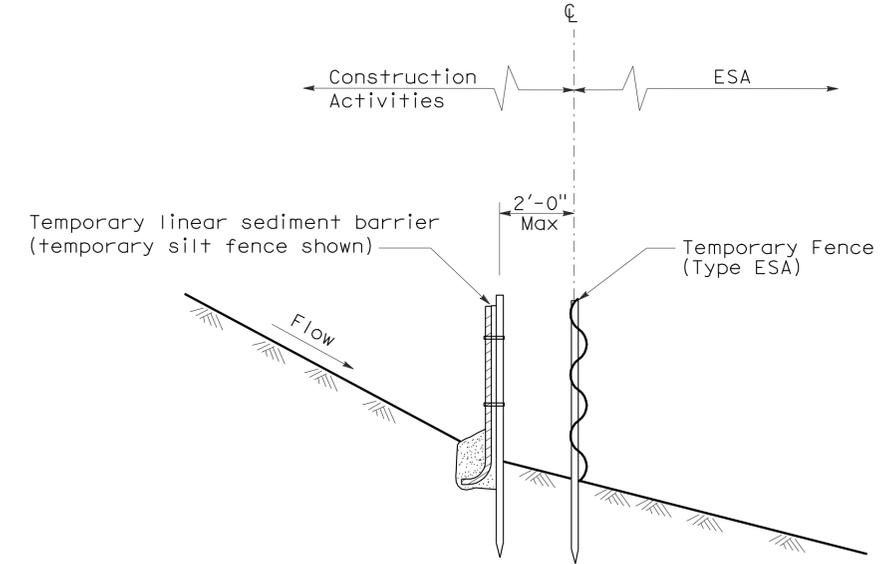
SIGN DETAIL

NOTE:

1. Temporary silt fence and temporary straw bale barrier shown for reference purposes only.

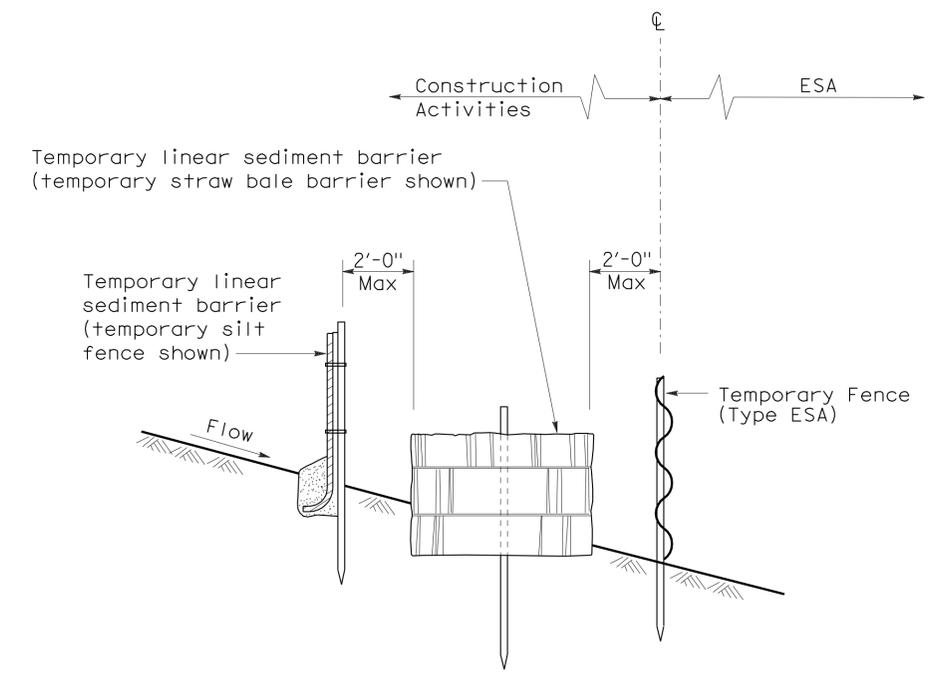


SECTION
TEMPORARY FENCE (TYPE ESA)



SECTION
PLACEMENT DETAIL
FOR TEMPORARY LINEAR SEDIMENT BARRIER
USED WITH TEMPORARY FENCE (TYPE ESA)

(See Note 1)



SECTION
PLACEMENT DETAIL
FOR TEMPORARY SILT FENCE
AND TEMPORARY STRAW BALE BARRIER
USED WITH TEMPORARY FENCE (TYPE ESA)

(See Note 1)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

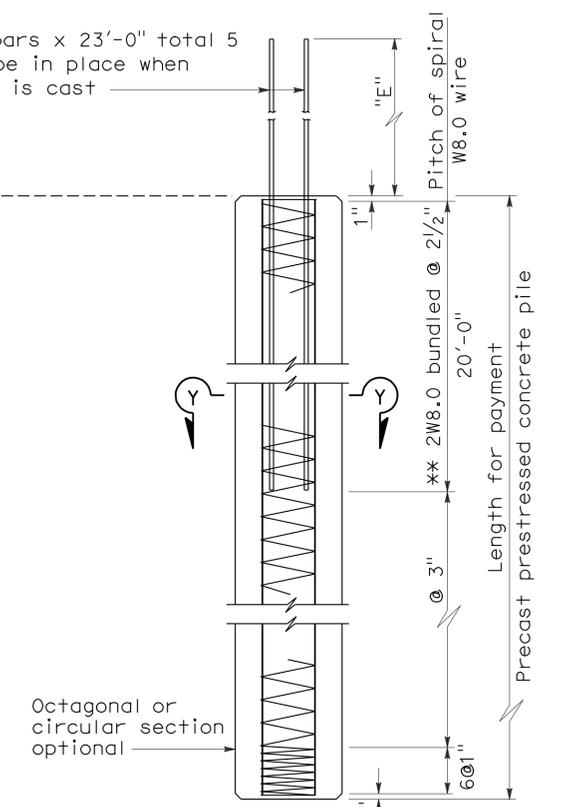
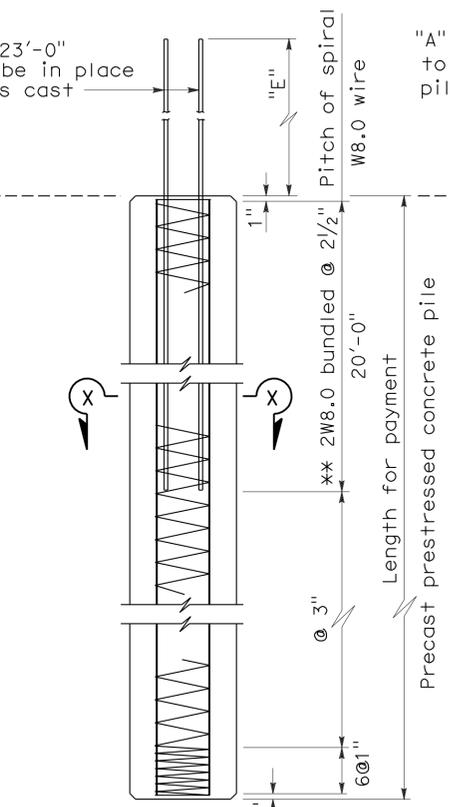
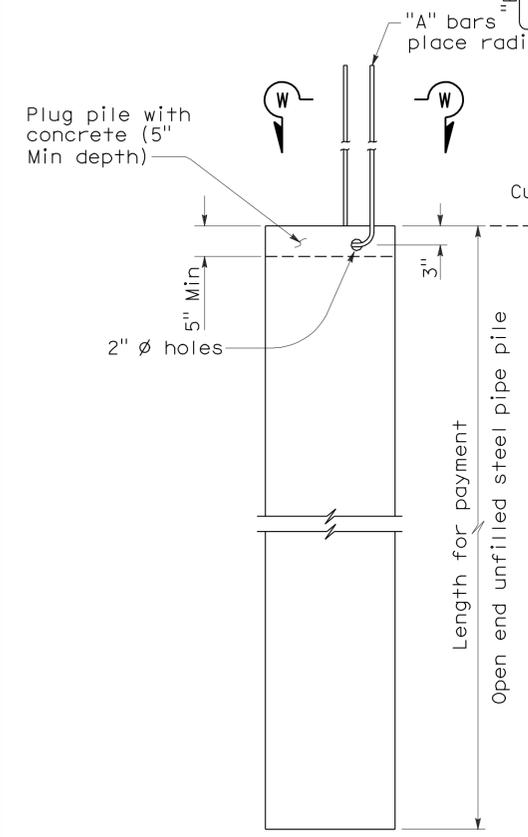
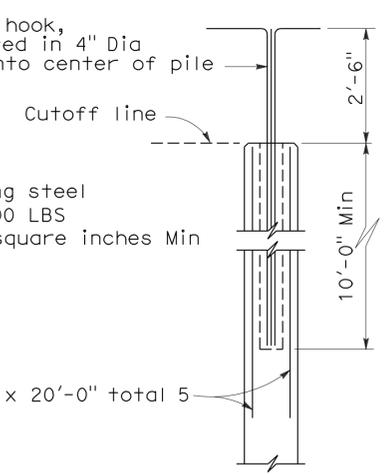
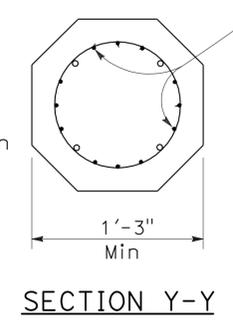
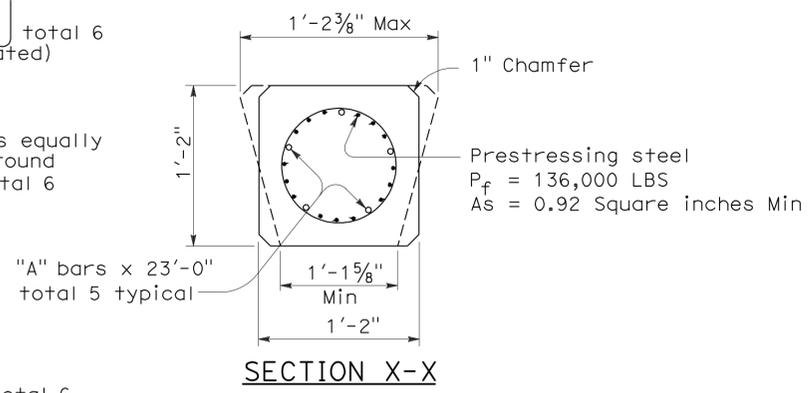
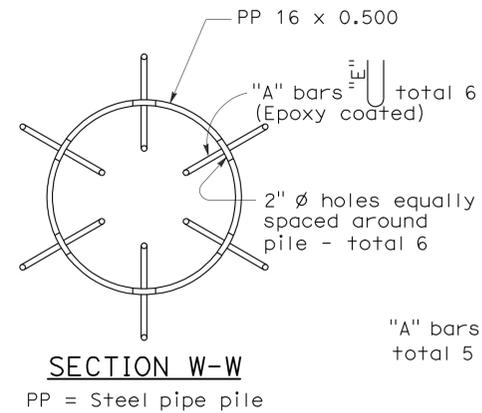
TEMPORARY WATER POLLUTION CONTROL DETAILS
[TEMPORARY FENCE (TYPE ESA)]

NO SCALE

NSP T65 DATED APRIL 3, 2009 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

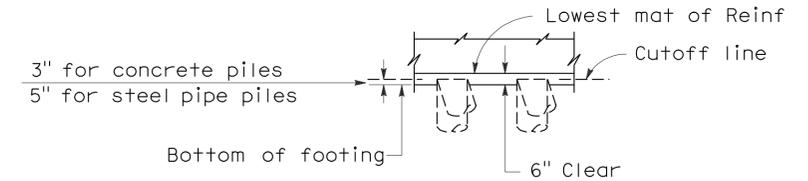
2006 NEW STANDARD PLAN NSP T65

2006 REVISED STANDARD PLAN RSP B2-8



	Nominal Resistance (Tension) *	
	Not Required	Required
"A" bars	#6	#8
"E" Dimension	2'-0"	2'-10"

* See Pile Data Table in the Project Plans for Nominal Resistance (Tension) Requirements



DESIGN NOTES:

DESIGN CAPACITY :

- Compression = 200 kip (Service state)
- = 400 kip (Nominal axial strength)
- Tension = 80 kip (Service state)
- = 200 kip (Nominal axial strength)

REINFORCED CONCRETE

$f'_c = 4,000$ psi
 $f_y = 60,000$ psi

PRECAST PRESTRESSED PILES

P_f = Prestress Force (After losses)
Concrete Strength f'_c @ 28 days = 7,000 psi
 f'_c @ transfer = 4,000 psi

STEEL PIPE PILE

F_y (minimum yield strength) = 45,000 psi
 F_u (minimum tensile strength) = 66,000 psi

NOTES:

- Pile reinforcement extending into footing shall be hooked as required to provide clearance to top of footing.
- Lapped splices in spiral pile reinforcement shall be lapped 80 wire diameters minimum. Spiral pile reinforcement at splices and at ends shall be terminated by a 135° hook with 6" tail hooked around a longitudinal bar or strand.
- At the Contractor's option, alternative steel pipe with at least the diameter and wall thickness shown on these plans may be used. The diameter shall not exceed 1'-6".
- Alternative "W" piles shall not be used for corrosive environments.
- Maximum cut-off length at the top of the Alternative "X" and Alternative "Y" piles is 10'-0".

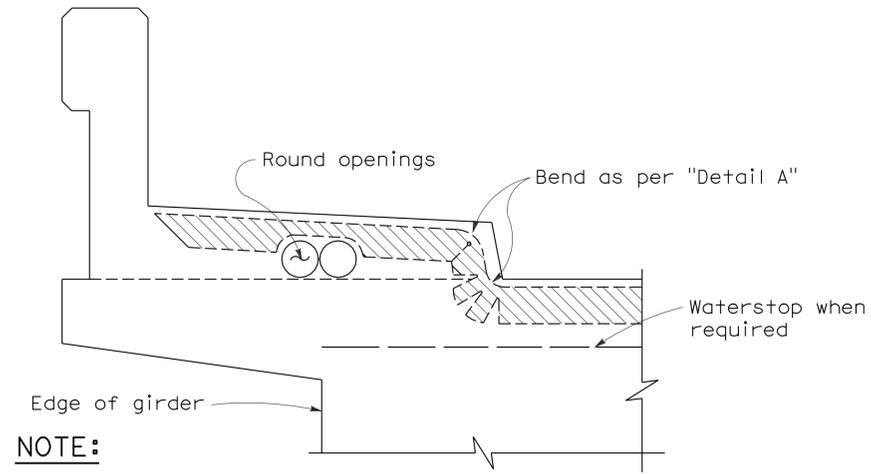
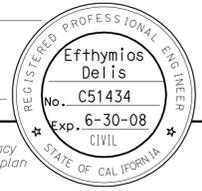
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PILE DETAILS CLASS 200

NO SCALE

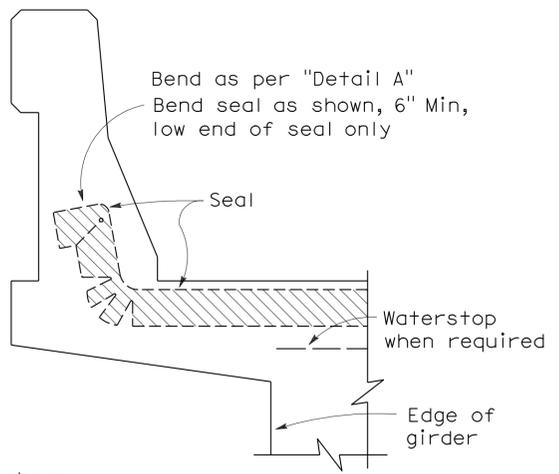
RSP B2-8 DATED OCTOBER 20, 2006 SUPERSEDES STANDARD PLAN B2-8 DATED MAY 1, 2006-PAGE 242 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B2-8

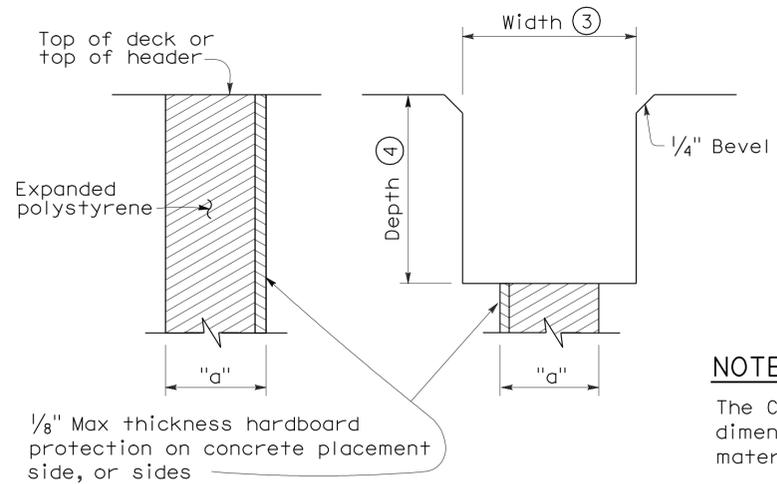


NOTE:
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend Type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

CONCRETE BARRIER AND SIDEWALK



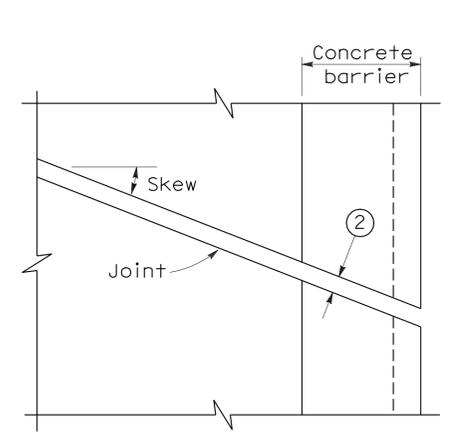
CONCRETE BARRIER



FORMING DETAIL SAWCUT DETAIL

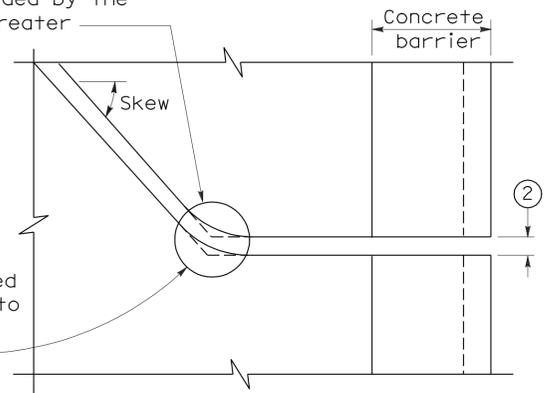
NOTE:
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

JOINT SEALS DETAILS



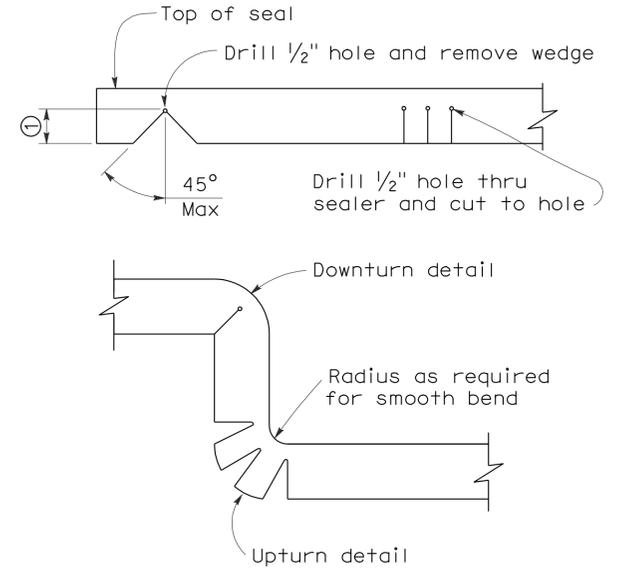
PLAN OF JOINT (SKEW ≤ 20°)

Min ϕ radius to be 4 times uncompressed width of seal or as recommended by the manufacturer, whichever is greater



PLAN OF JOINT (SKEW > 20°)

In lieu of saw cutting, this area may be blocked out and reconstructed to match saw cutting on both sides.

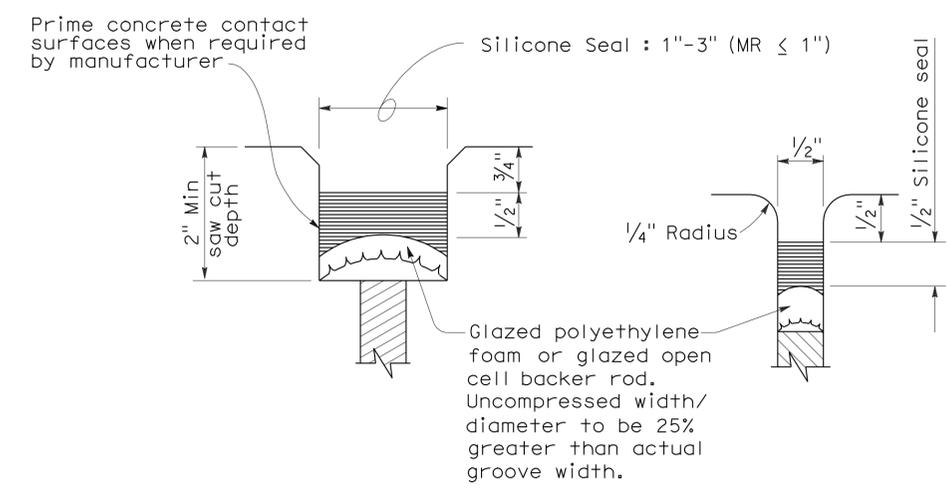


DETAIL A

- NOTES:**
- Make smooth cuts from the bottom of seal to 1 1/2" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
 - Opening in barrier to match width of sawn deck joint.
 - Sawcut groove widths shall be as ordered by the Engineer.
 - Depth of sawcut: Type A - Depth to be 2" minimum.
 Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position (W₂) plus dimensions shown.
 - MR (movement rating) as shown on other plan sheets.
 - Other depths must be approved by the Engineer.

DIMENSIONS "a" OF JOINT REQUIRED

Movement Rating (MR) ⑤	Bridge Type	"a" Dimension		
		Deck Concrete Placed		
		Winter	Fall-Spring	Summer
2"	All except CIP/PS	1 1/2"	1 1/4"	3/4"
	CIP/PS	1 1/4"	1"	1/2"
1 1/2"	All except CIP/PS	1 1/4"	1"	1/2"
	CIP/PS	1"	3/4"	1/2"
1"	All except CIP/PS	1"	3/4"	1/2"
	CIP/PS	3/4"	1/2"	1/2"
1/2"	All except CIP/PS	3/4"	3/4"	1/2"
	CIP/PS	1/2"	1/2"	1/2"

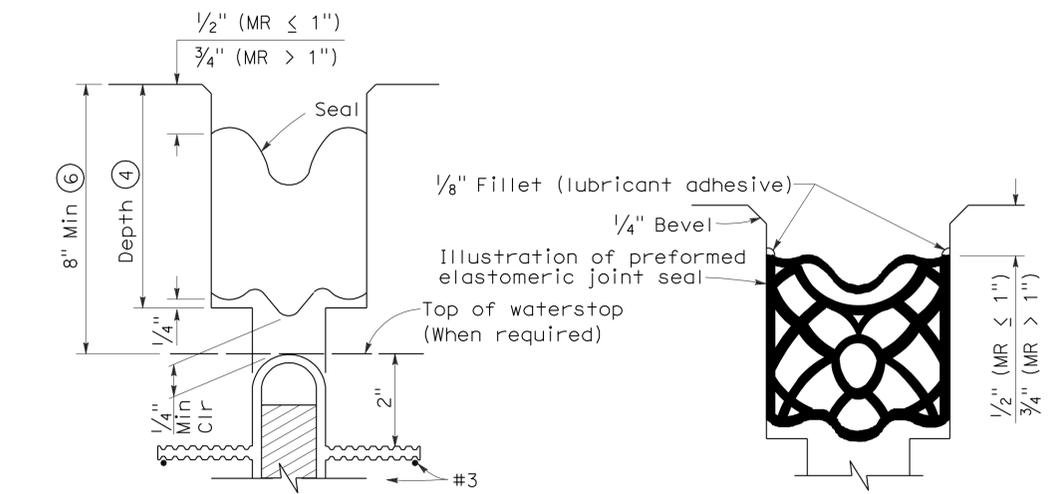


TYPE A SEAL

Movement rating : Silicone = 1" Max

TYPE AL SEAL

Longitudinal joints only



TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W₂)

TYPE B SEAL

Movement Rating ≤ 2"

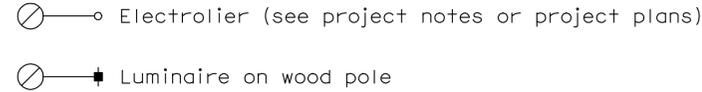
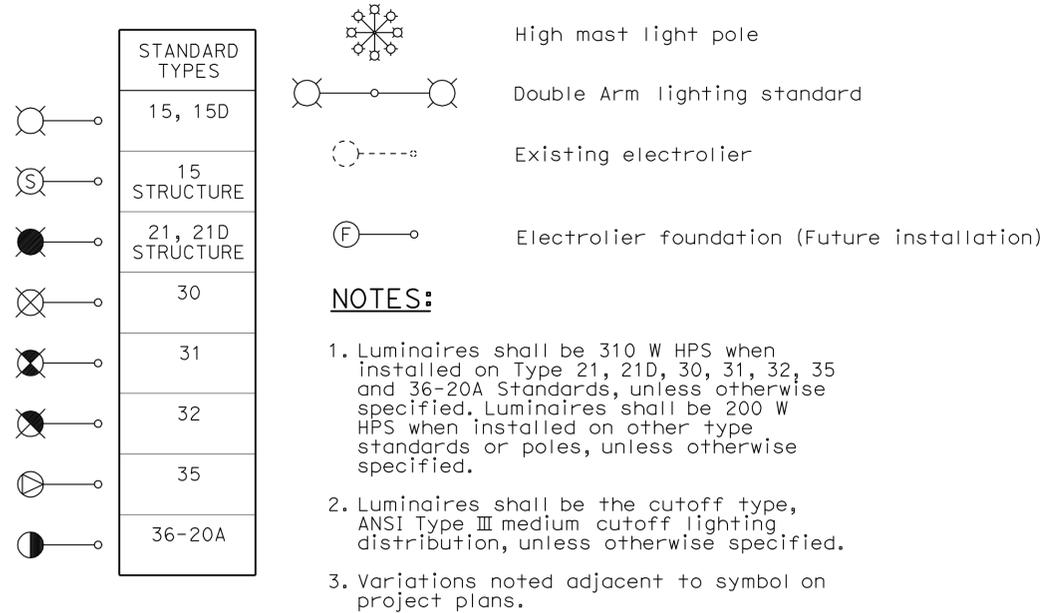
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
JOINT SEALS
(MAXIMUM MOVEMENT RATING = 2")
 NO SCALE

RSP B6-21 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B6-21 DATED MAY 1, 2006 - PAGE 258 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B6-21

2006 REVISED STANDARD PLAN RSP B6-21

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

PROPOSED	EXISTING	DESCRIPTION
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, side attachment - 4 signal section
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, side attachment - 5 signal section
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
N	N	Mercury vapor lighting fixture
NC	NC	Neutral (Grounded Conductor)
NO	NO	Normally closed
PB	pb	Normally open
PEC	pec	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
08	Riv	86S	R16.0/R16.7	137	170

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

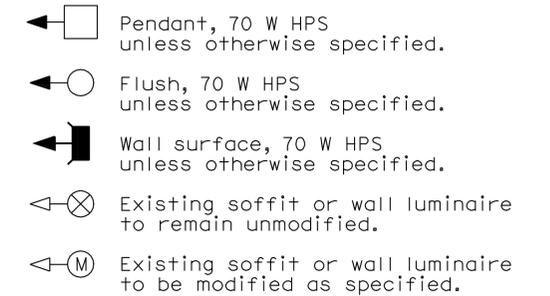
October 5, 2007
PLANS APPROVAL DATE

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

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 5-24-10

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
08	Riv	86S	R16.0/R16.7	138	170

Jeffery 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

To accompany plans dated 5-24-10

CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination
		Conduit riser in/on structure or service pole

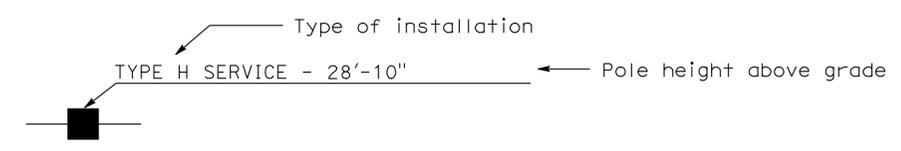
SIGNAL EQUIPMENT

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 lowered "LG" indicates lowered 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	
---OH---	---oh---	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

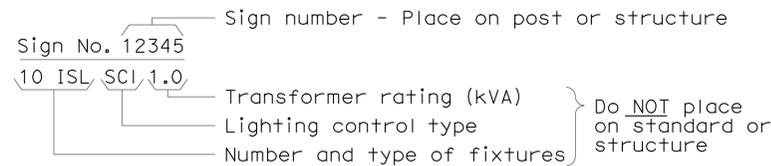
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

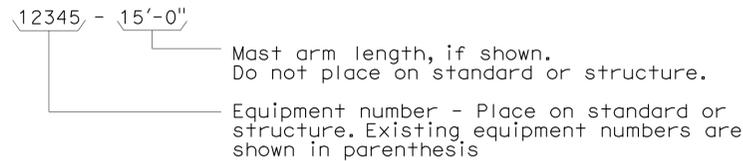
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

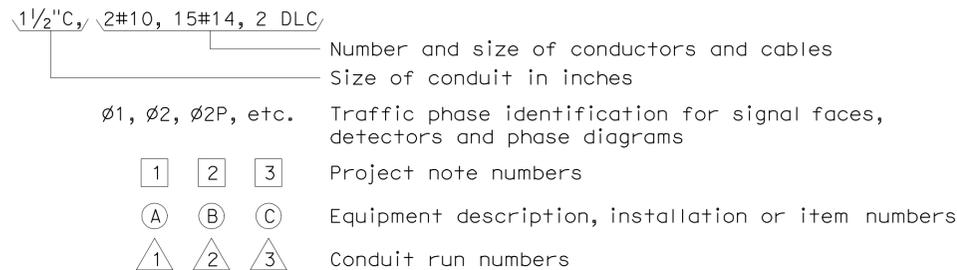
ILLUMINATED SIGN IDENTIFICATION NUMBER:



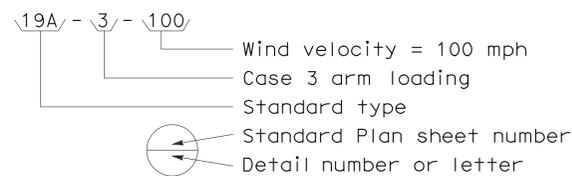
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



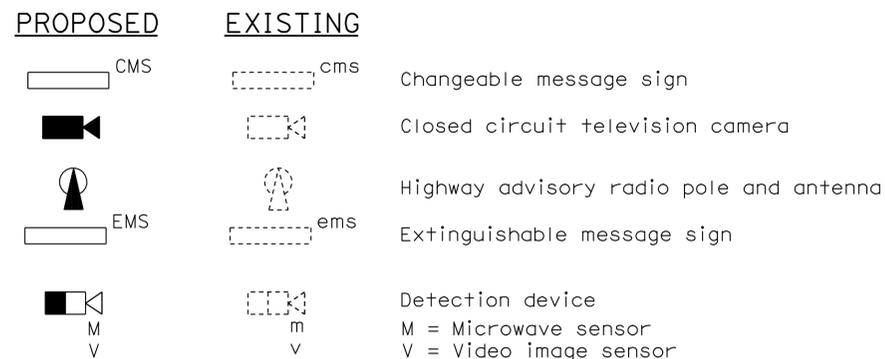
CONDUIT AND CONDUCTOR IDENTIFICATION:



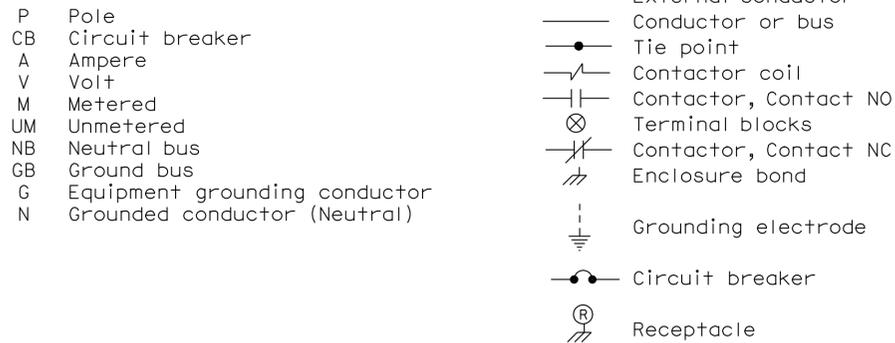
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



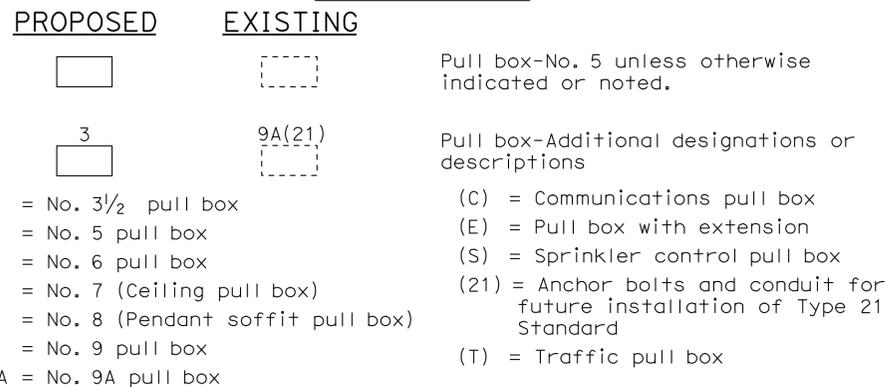
MISCELLANEOUS EQUIPMENT



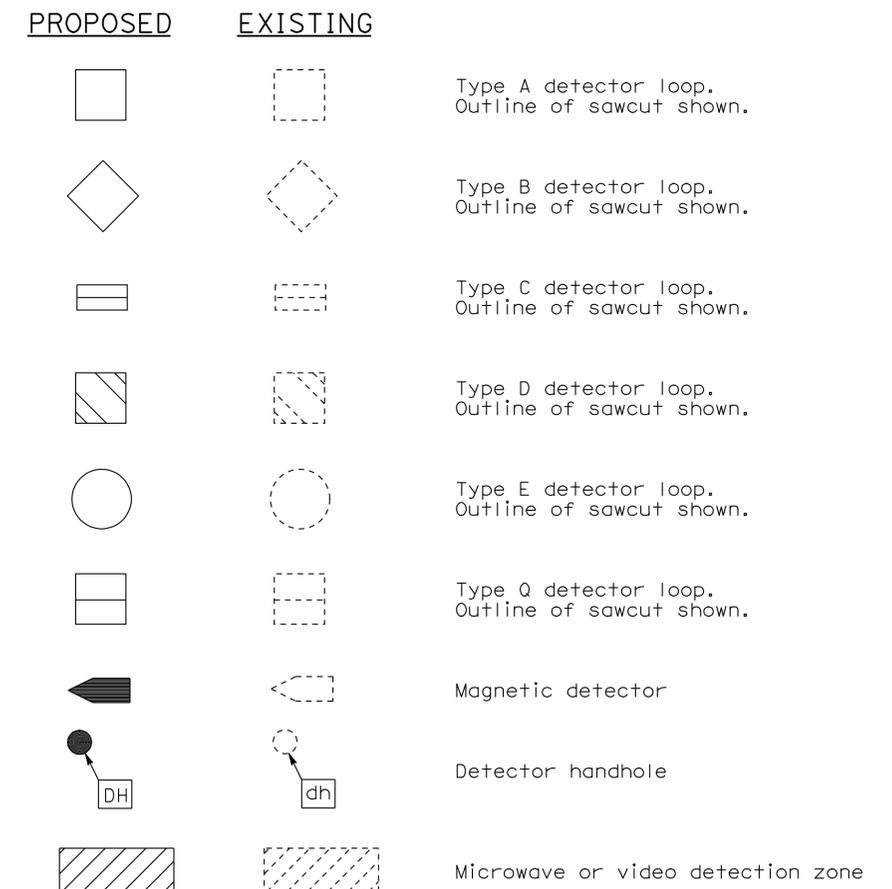
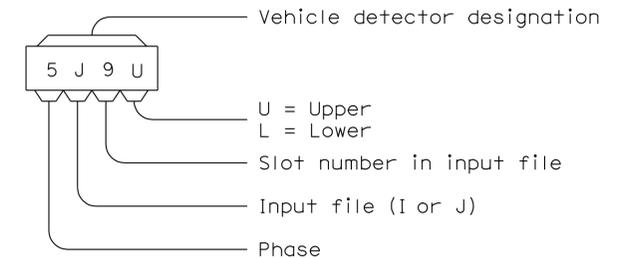
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS

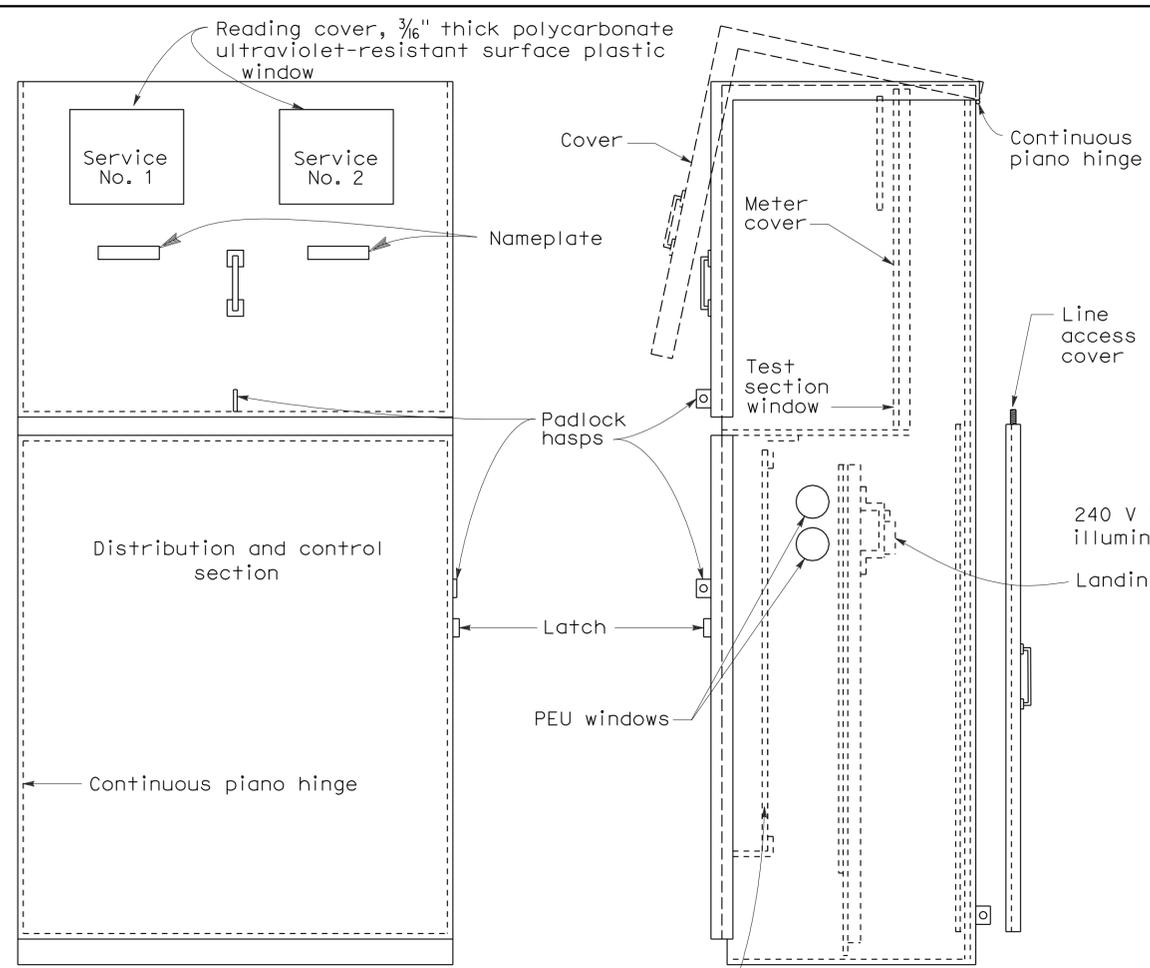


STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

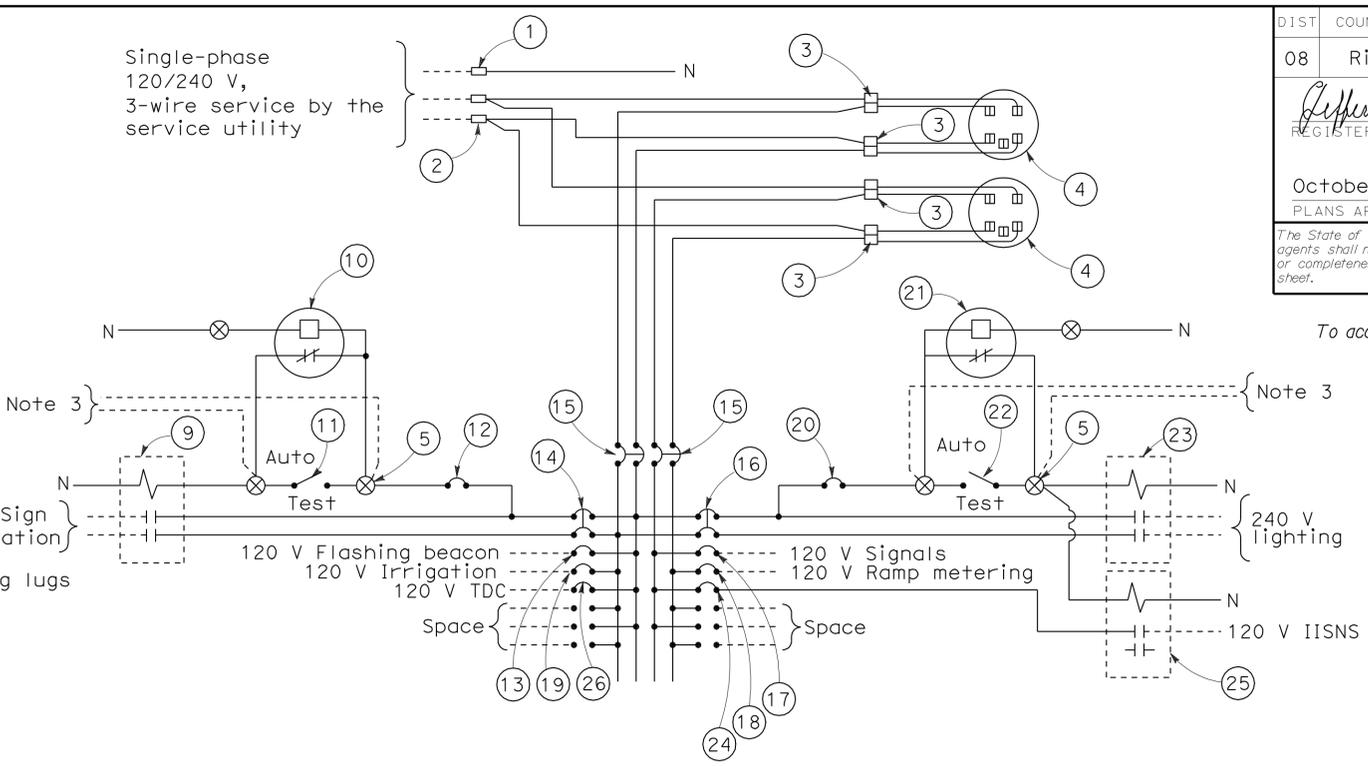
RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.



FRONT VIEW **SIDE VIEW**

Continuous piano hinge dead front panel latch

TYPE III-CF SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR TWO 100 A METERS (TYPICAL)



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)

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

NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)

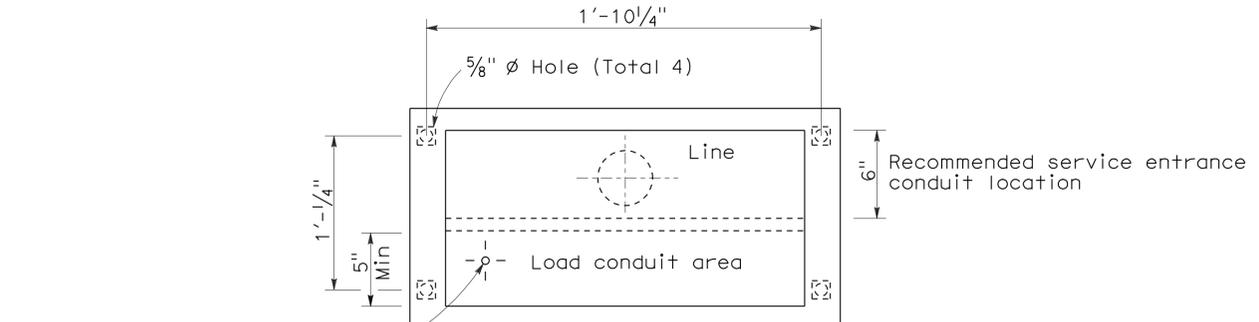
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
- Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
- Connect to remote test switch mounted on lighting standards, sign 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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

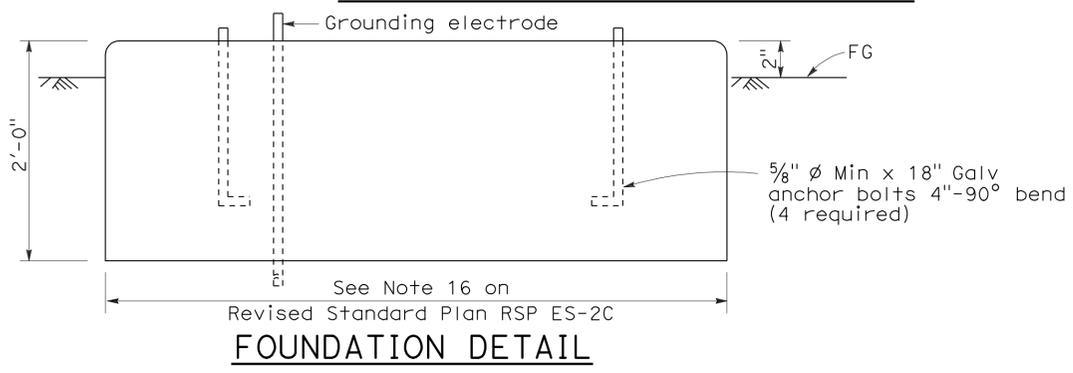
**ELECTRICAL SYSTEMS
(SERVICE EQUIPMENT AND
TYPICAL WIRING DIAGRAM
TYPE III-C SERIES)**

NO SCALE

RSP ES-2F DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2F DATED MAY 1, 2006 - PAGE 408 OF THE STANDARD PLANS BOOK DATED MAY 2006.



BASE FOR TYPE III-C SERVICE EQUIPMENT ENCLOSURE



FOUNDATION DETAIL

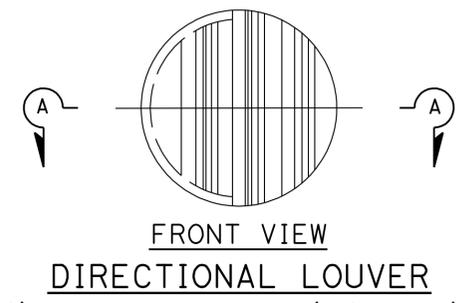
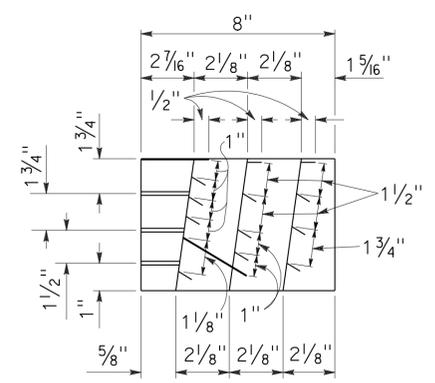
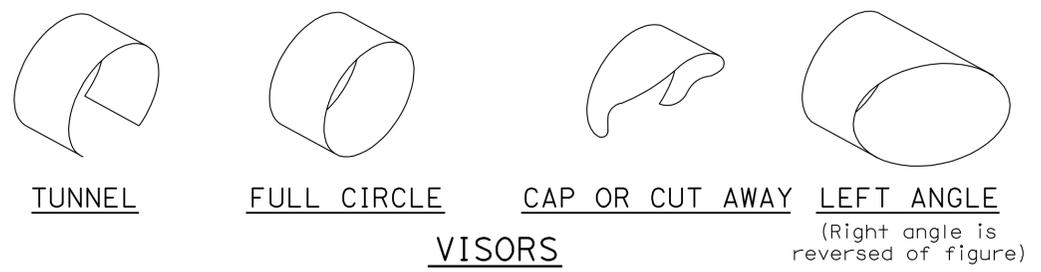
2006 REVISED STANDARD PLAN RSP ES-2F

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	141	170

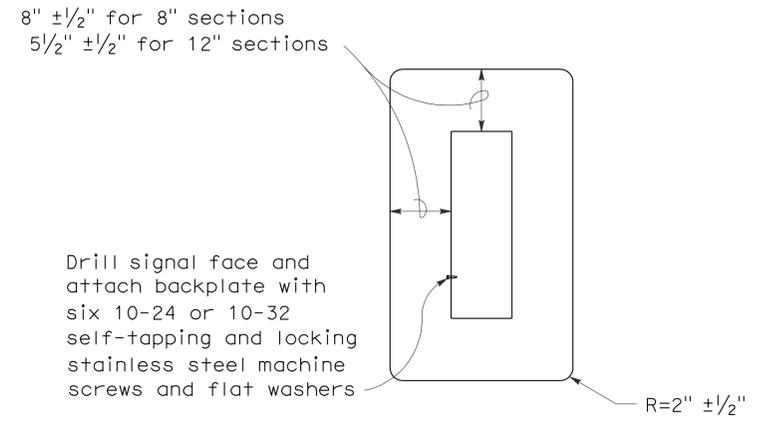
Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA

June 6, 2008
 PLANS APPROVAL DATE

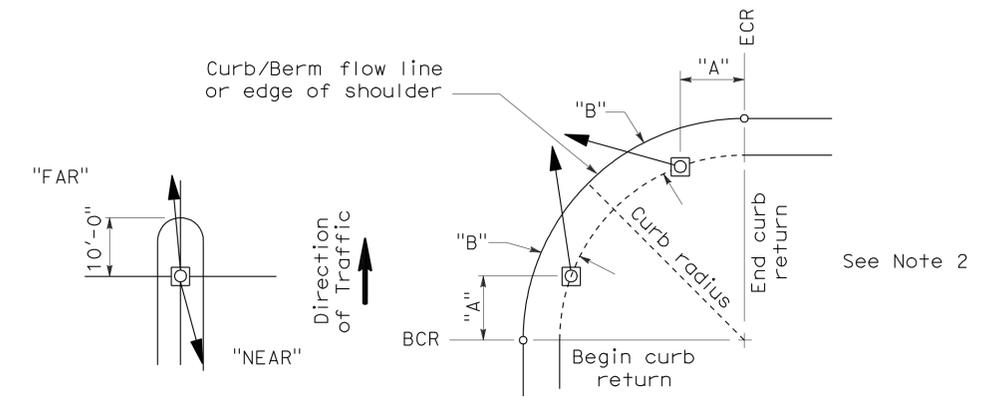
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Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.

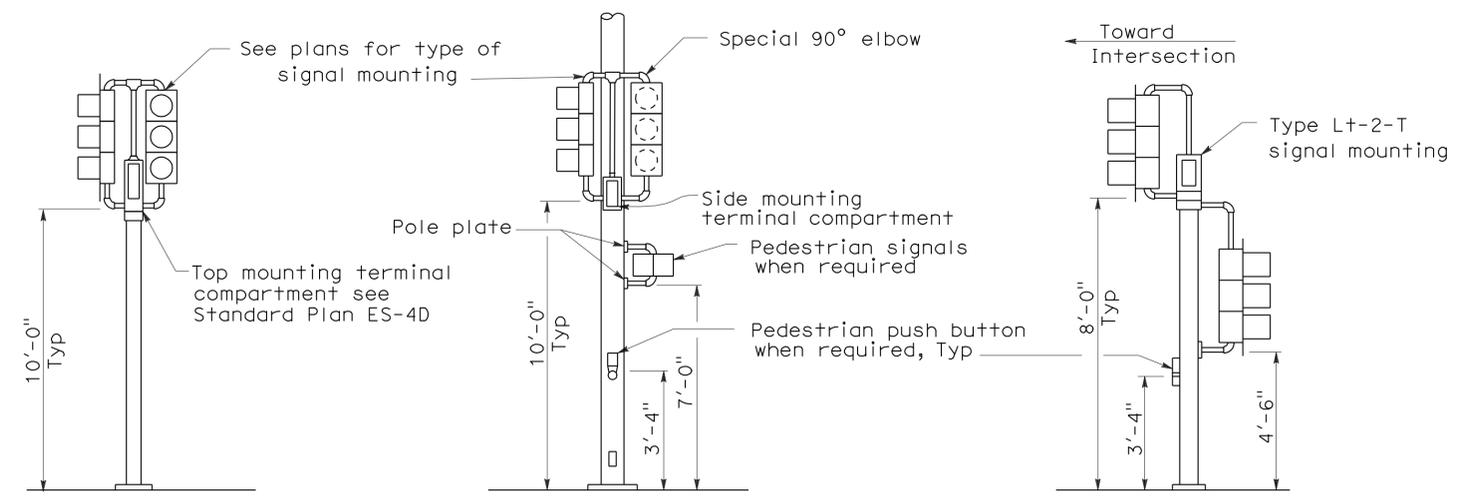


8" AND 12" SECTIONS
BACKPLATE
 1/16" minimum thickness
 3001-14 aluminum, or plastic when specified



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

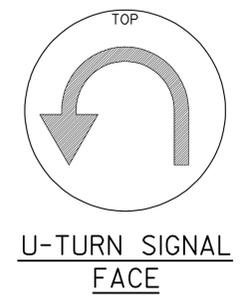
SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS



TOP MOUNTED SIGNALS (TV)
 Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

SIDE MOUNTED SIGNALS (SV AND SP)
 Normally used on standards with luminaire or signal mast arm

LEFT TURN LANE SIGNAL
 Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans



TYPICAL SIGNAL INSTALLATIONS

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN ES-4C DATED MAY 1, 2006 - PAGE 420 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-4C

2006 REVISED STANDARD PLAN RSP ES-4C

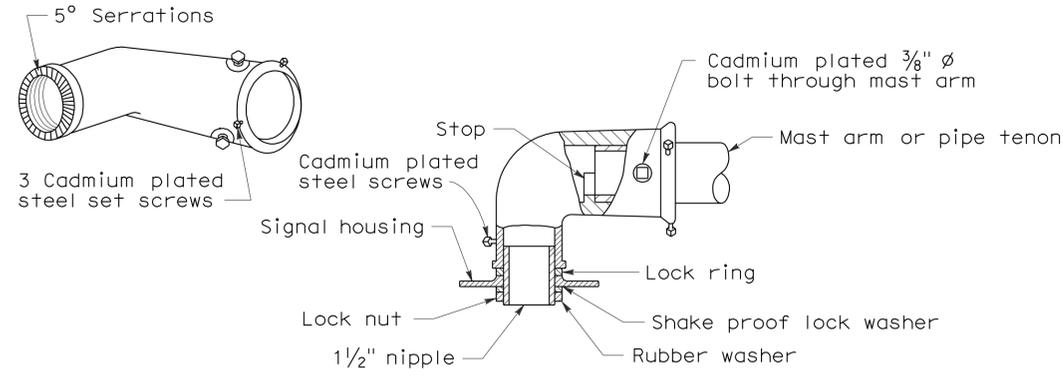
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	142	170

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-10
 STATE OF CALIFORNIA

June 6, 2008
 PLANS APPROVAL DATE

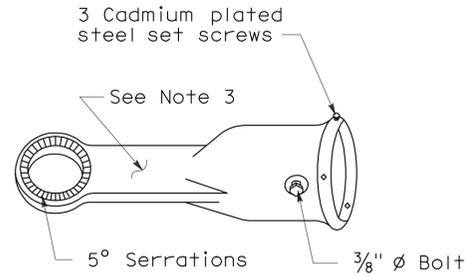
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5-24-10



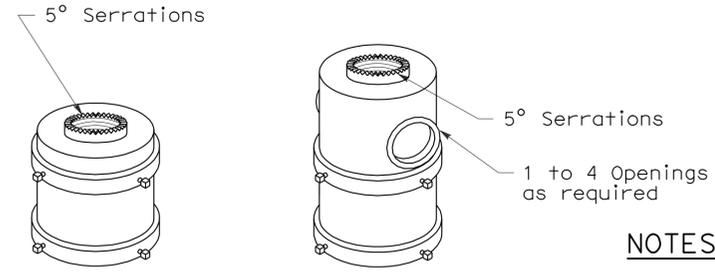
MAST ARM MOUNTING - TYPE "MAT"

For 2 NPS pipe, see Note 1.



MAST ARM MOUNTING - TYPE "MAS"

For 2 NPS pipe. See Note 1.

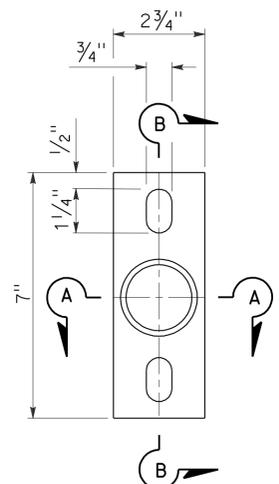


For one mounting For multiple mountings

TOP MOUNTINGS

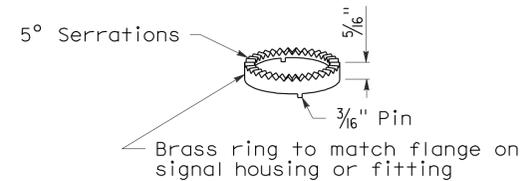
For 4 NPS pipe, see Note 2.

SIGNAL SLIP FITTERS



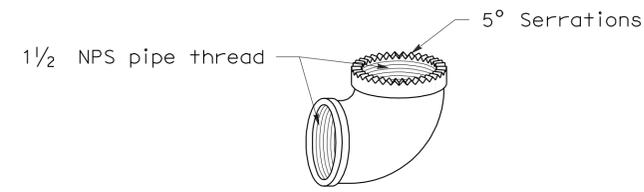
POLE PLATE

For side mountings



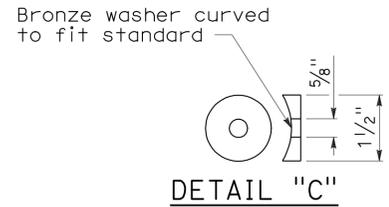
LOCK RING

Use where locking ring is not integral with signal housing or fitting.



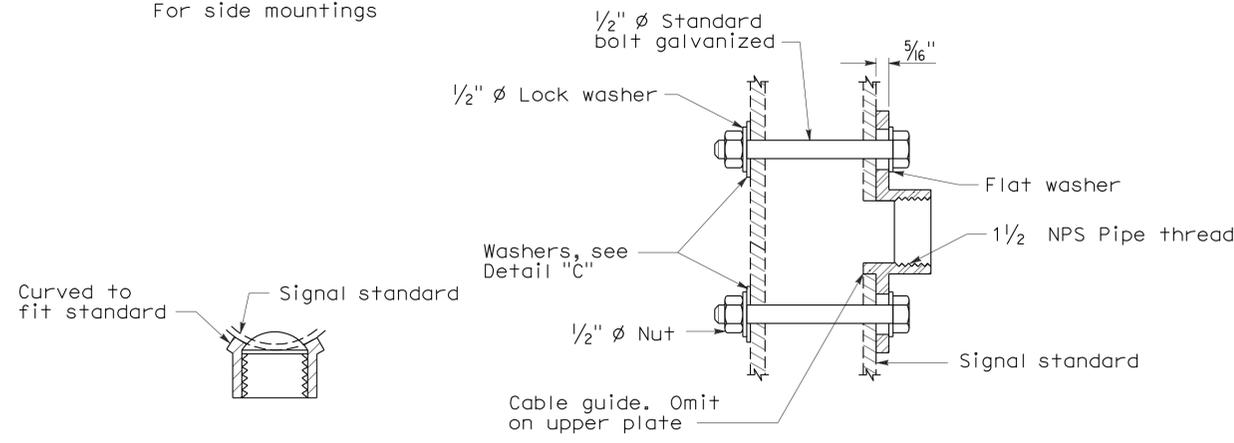
SPECIAL 90° ELBOW

One for each signal head, except those with special slip fitter mounting



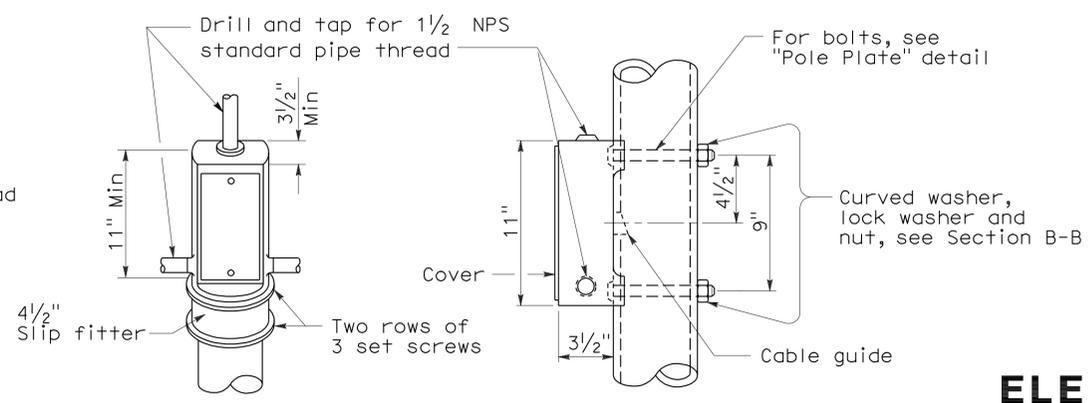
DETAIL "C"

MISCELLANEOUS MOUNTING HARDWARE



SECTION A-A

SECTION B-B



TOP MOUNTING

SIDE MOUNTING

TERMINAL COMPARTMENTS

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

NO SCALE

RSP ES-4D DATED June 6, 2008 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 1, 2006 - PAGE 421 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-4D

2006 REVISED STANDARD PLAN RSP ES-4D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	143	170

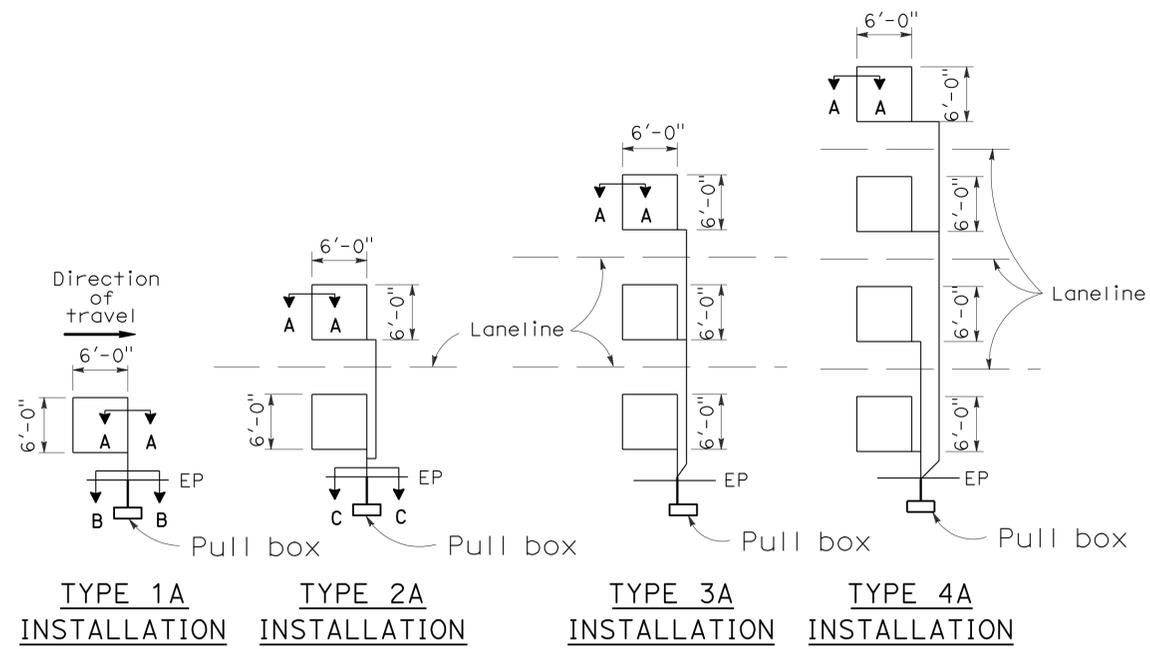
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

October 5, 2007
 PLANS APPROVAL DATE

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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.



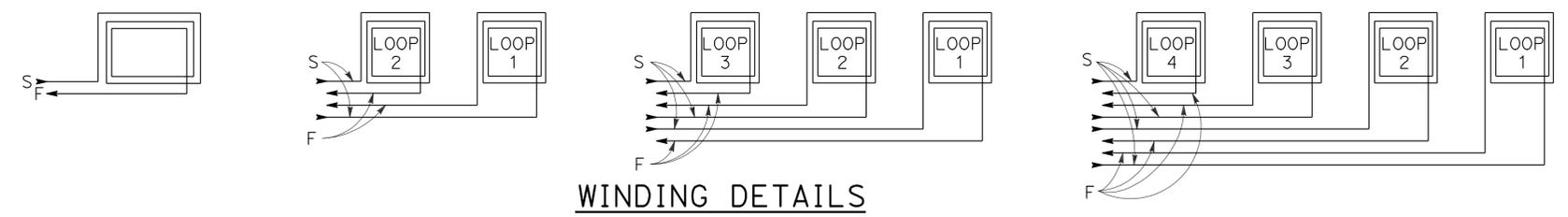
TYPE 1A INSTALLATION TYPE 2A INSTALLATION TYPE 3A INSTALLATION TYPE 4A INSTALLATION

SAWCUT DETAILS

- (Type A loop detector configurations illustrated)
- 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)

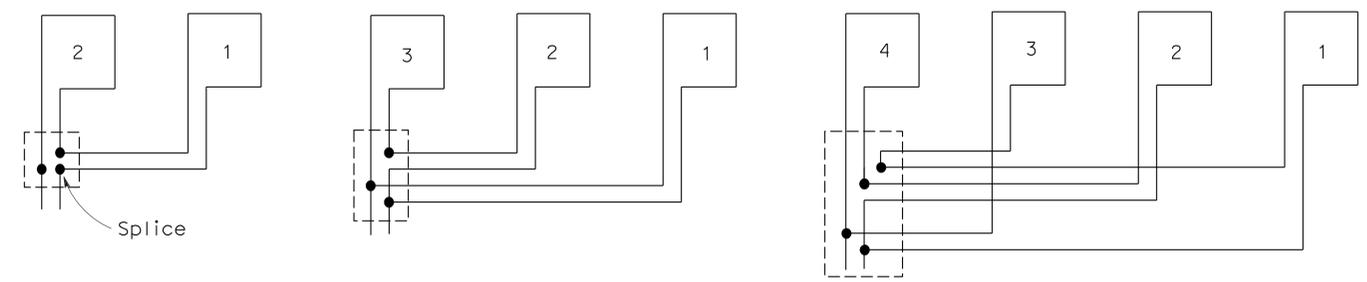
To accompany plans dated 5-24-10

2006 REVISED STANDARD PLAN RSP ES-5A



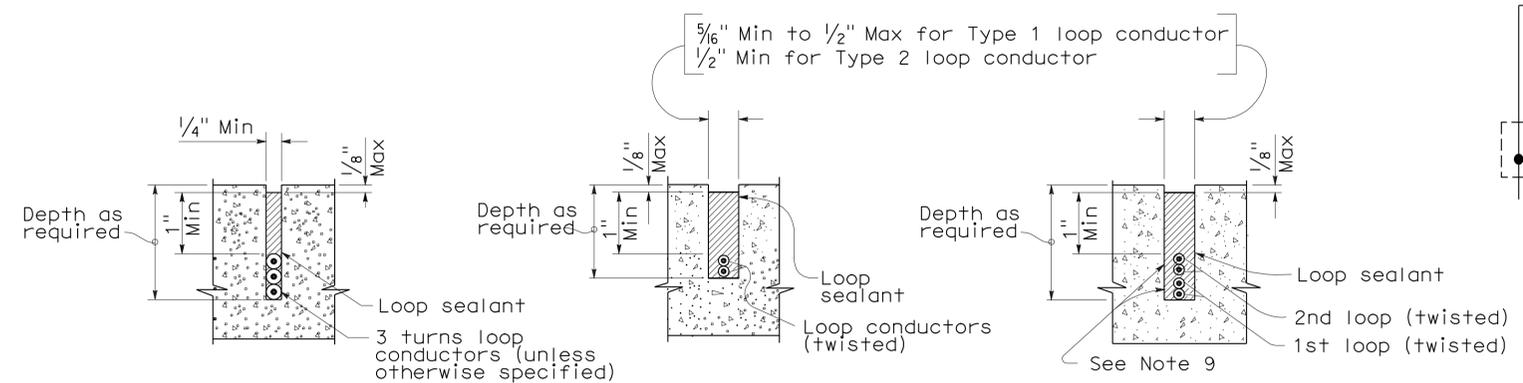
WINDING DETAILS

See Notes 6 and 7



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



SECTION A-A SECTION B-B SECTION C-C
SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

ELECTRICAL SYSTEMS (DETECTORS)

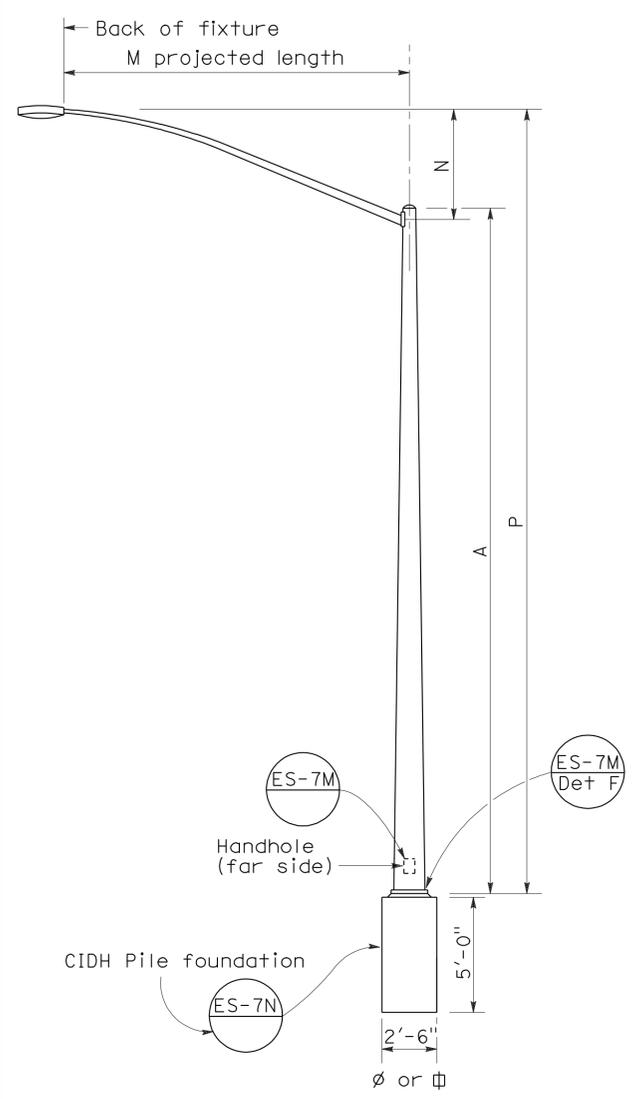
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

NO SCALE

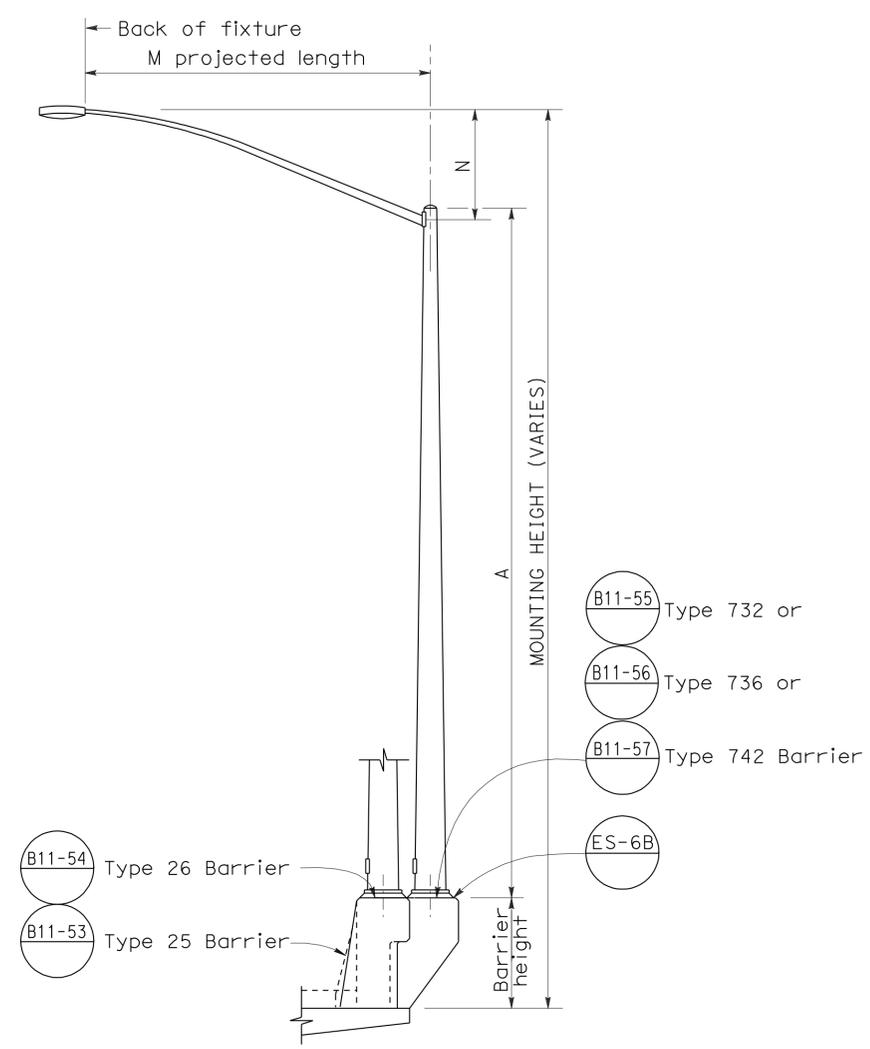
RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-5A

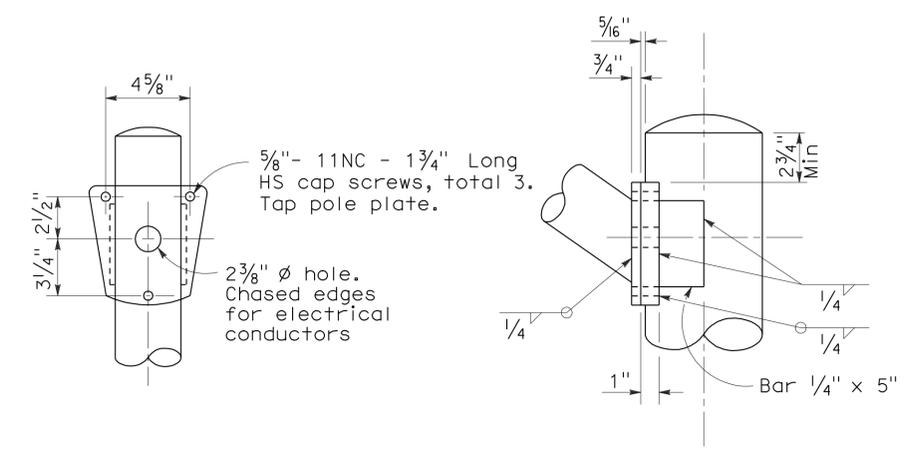
To accompany plans dated 5-24-10



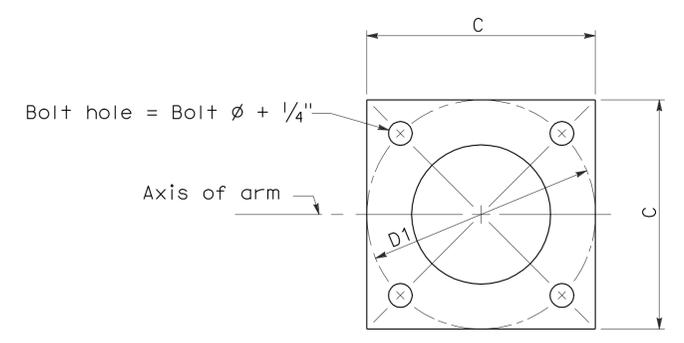
ELEVATION
TYPE 15 AND TYPE 21



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	Bolt Thickness	Anchor Bolts Size	
		Base	Top						
15	30'	8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1" ø 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" ø x 3'-0" x 4"*	6' - 15' 12'

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

LUMINAIRE ARM DATA						
M Projected Length	N Rise	Min OD At Pole	Nominal Thickness	P		
				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 7/8"	0.1196"	32'-9"±	37'-9"±	
12'-0"	4'-3"±	3 7/8"	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.

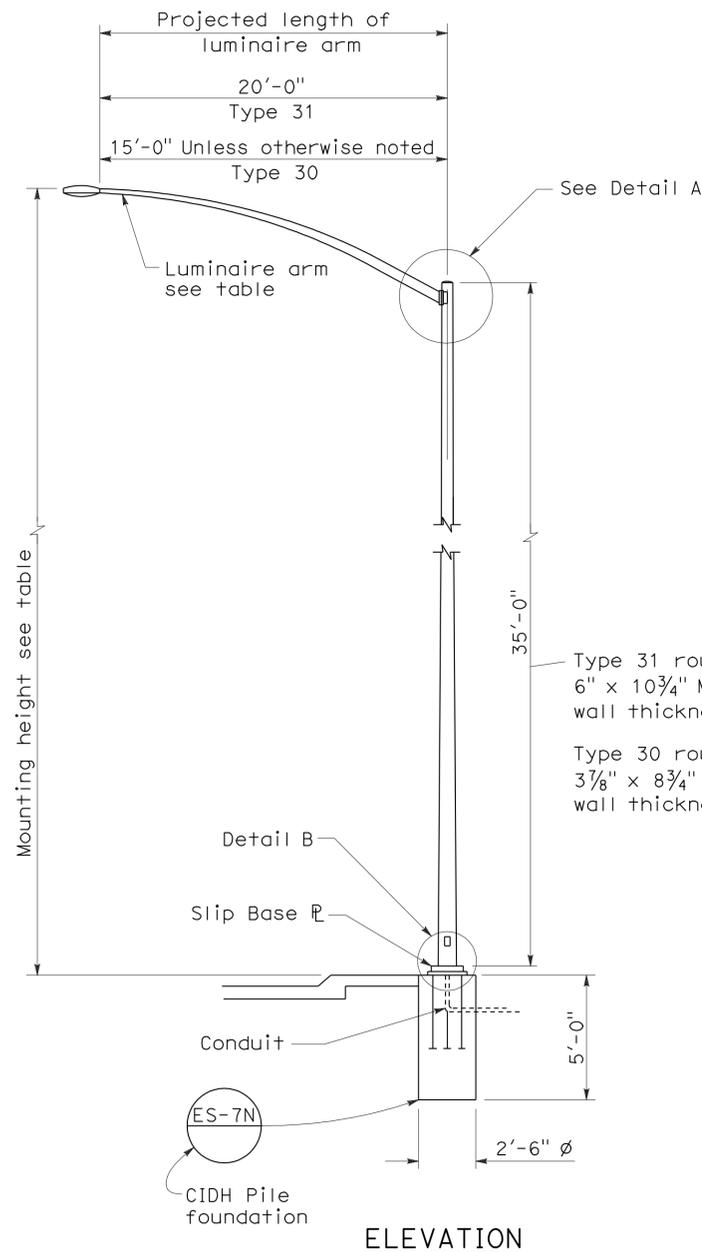
REVISED STANDARD PLAN RSP ES-6A

2006 REVISED STANDARD PLAN RSP ES-6A

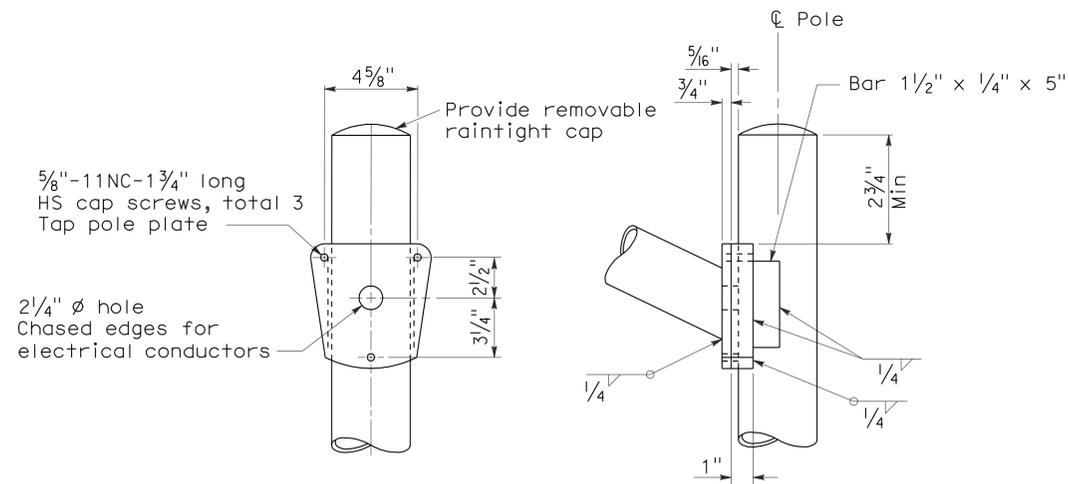
LUMINAIRE ARM DATA

PROJECTED LENGTH	THICKNESS	MINIMUM OD @ POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3 1/4"	36'-9"±
8'-0"		3 1/2"	37'-3"±
10'-0"		3 3/4"	38'-0"±
12'-0"		3 3/4"	39'-0"±
15'-0"		4 1/4"	39'-6"±
** 20'-0"	0.1793"	5"	37'-0"±

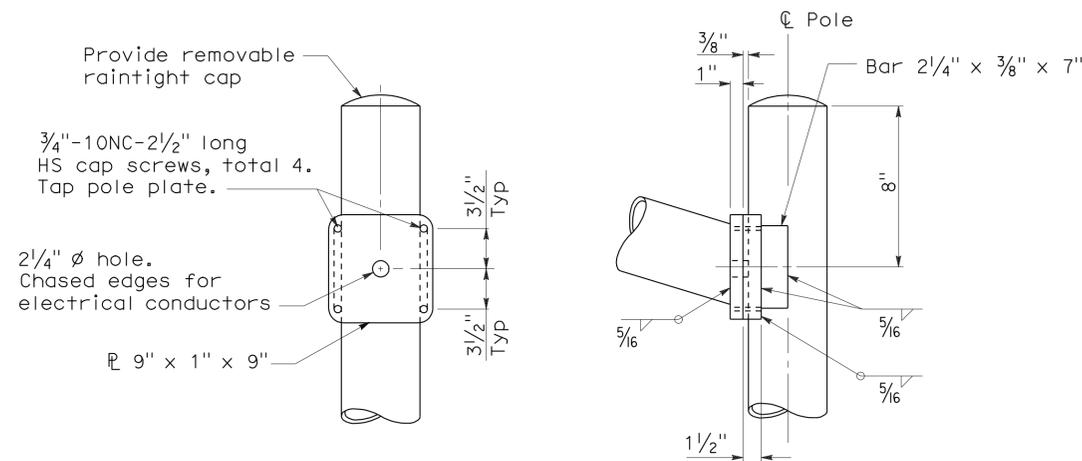
* Type 30 - arm length 6'-0" - 15'-0" maximum
 ** Type 31 - arm lengths 20'-0"



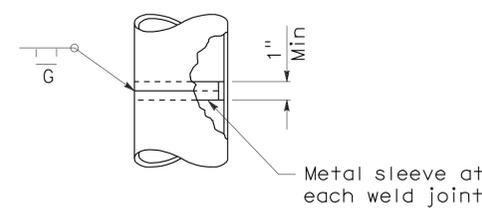
ELEVATION



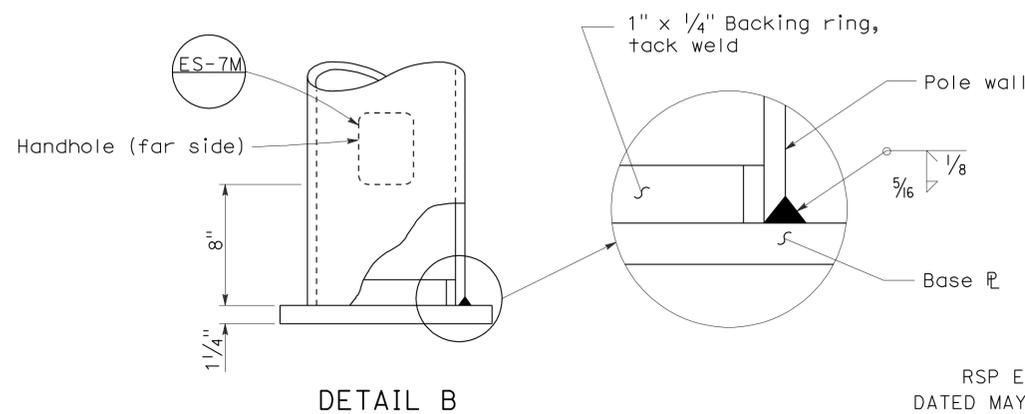
DETAIL A - TYPE 30



DETAIL A - TYPE 31



POLE SPLICE



DETAIL B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	145	170

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 No. C57793
 Exp. 03-31-08
 CIVIL
 STATE OF CALIFORNIA

January 18, 2008
 PLANS APPROVAL DATE

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To accompany plans dated 5-24-10

NOTES:

- Sheet steel shall have a minimum yield of 48,000 psi.
- For slip base details see Standard Plan ES-6F.
- For Type 30 fixed base use Type 15 base plate, and foundation shown on Revised Standard Plan RSP ES-6A. Use 1 1/4" Dia x 3'-6" x 4" anchor bolts.
- For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Standard Plan ES-6G.
- Handhole shall be located on downstream side of traffic unless noted otherwise on plans.
- For additional general notes refer to Standard Plan ES-7M.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LIGHTING STANDARD
 TYPES 30 AND 31)**

NO SCALE

RSP ES-6E DATED JANUARY 18, 2008 SUPERCEDES STANDARD PLAN ES-6E
 DATED MAY 1, 2006 - PAGE 430 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-6E

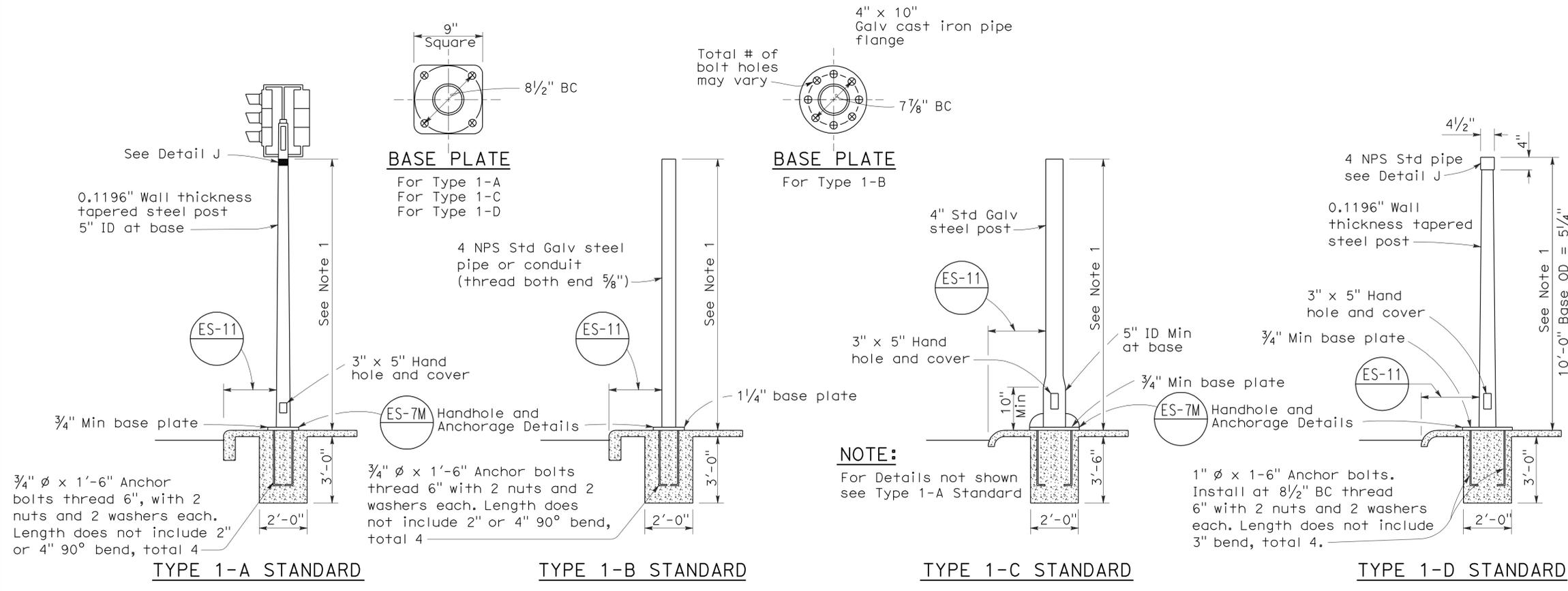
2006 REVISED STANDARD PLAN RSP ES-6E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	146	170

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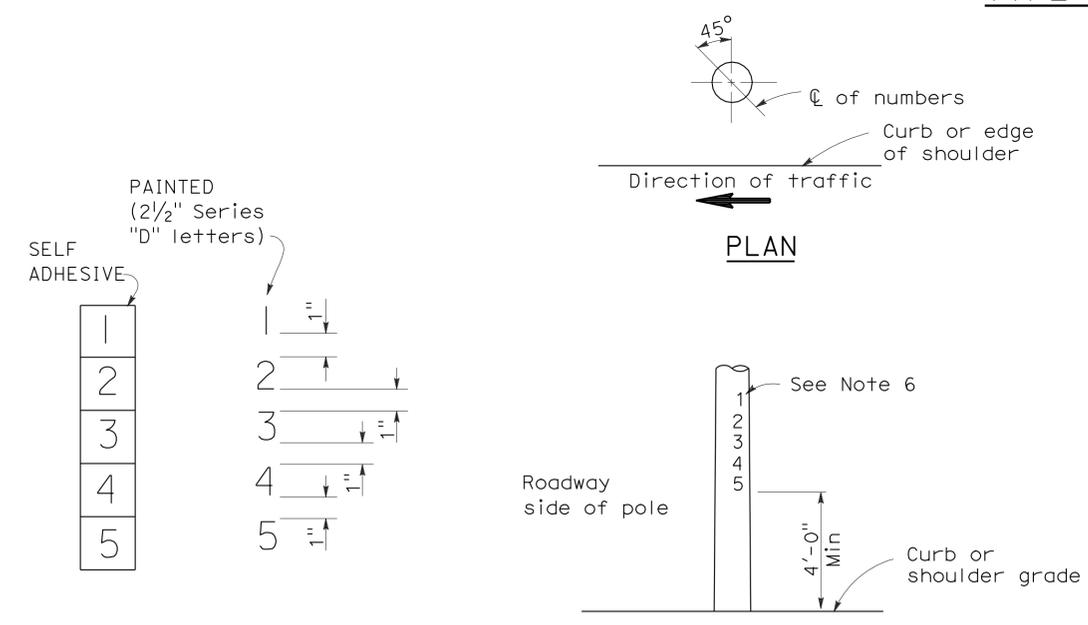
REGISTERED PROFESSIONAL ENGINEER
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA

To accompany plans dated 5-24-10

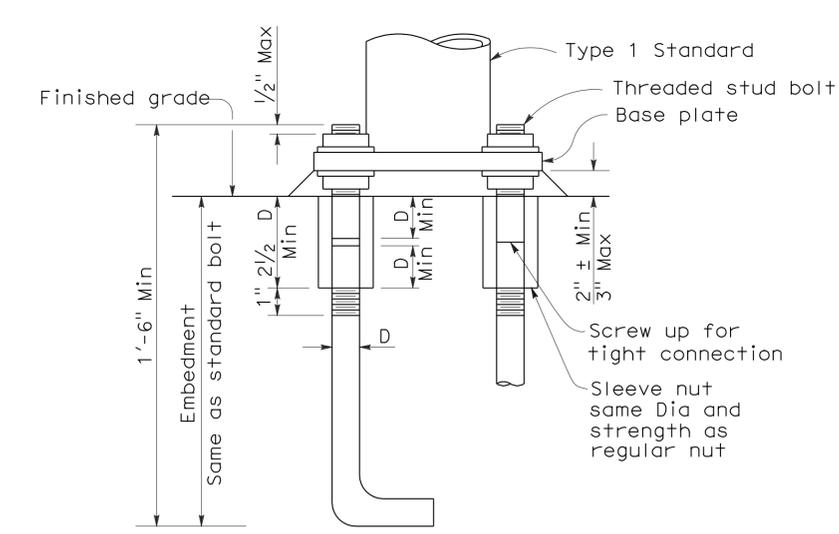


- NOTES:**
- Standards shall be 10'-0" \pm 2" for vehicle signals and 7'-0" \pm 2" for pedestrian signals unless otherwise noted on plans.
 - Top of standards shall be 4 1/2" OD.
 - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward 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.

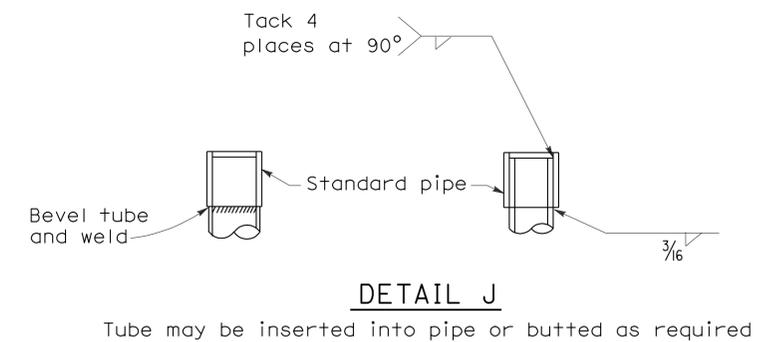
TYPE 1 SIGNAL STANDARDS



NUMBER DETAIL
TYPICAL NUMBER FORMAT
LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS

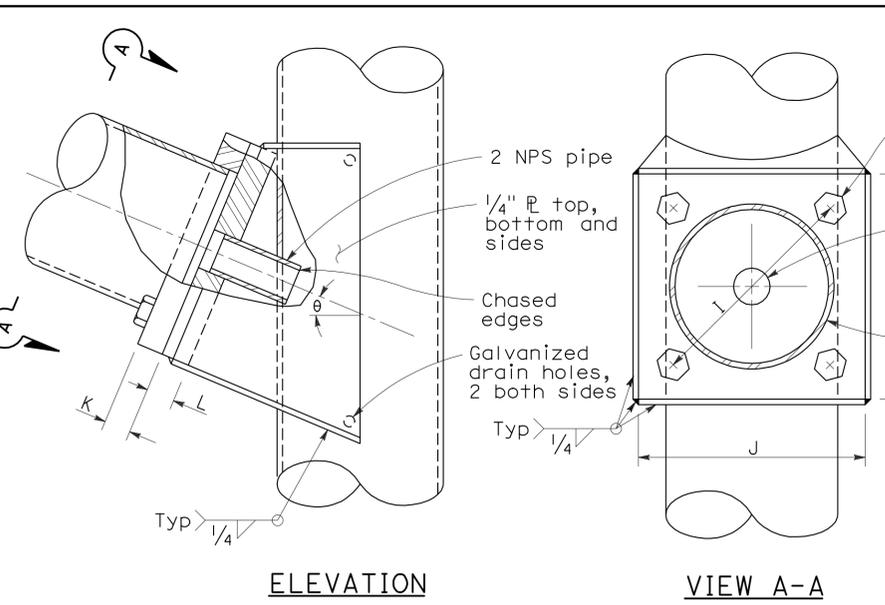
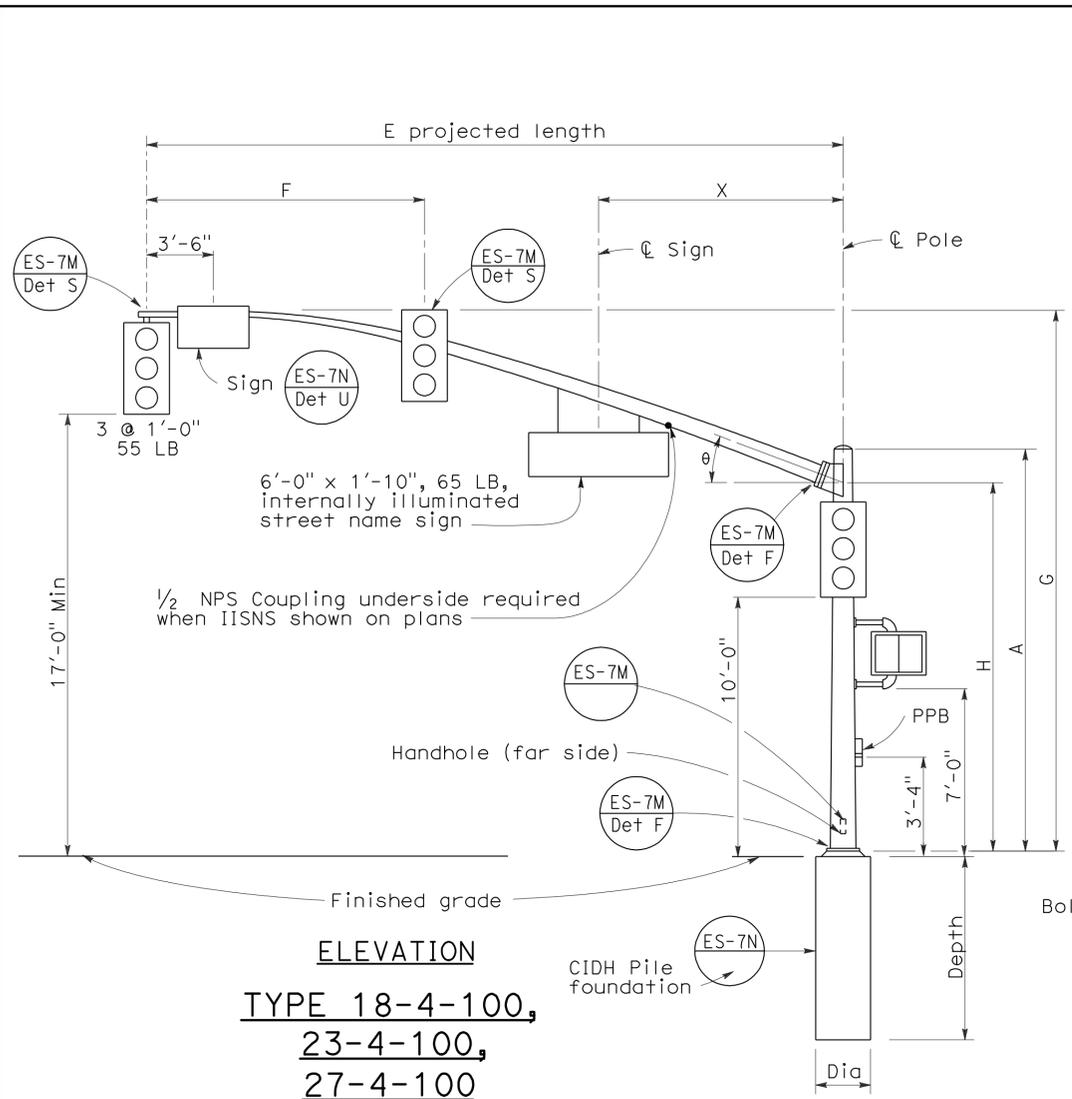


ANCHOR BOLTS WITH SLEEVE NUTS
Sleeve nuts to be used only when shown or specified on Project Plans
D = Diameter of anchor bolt

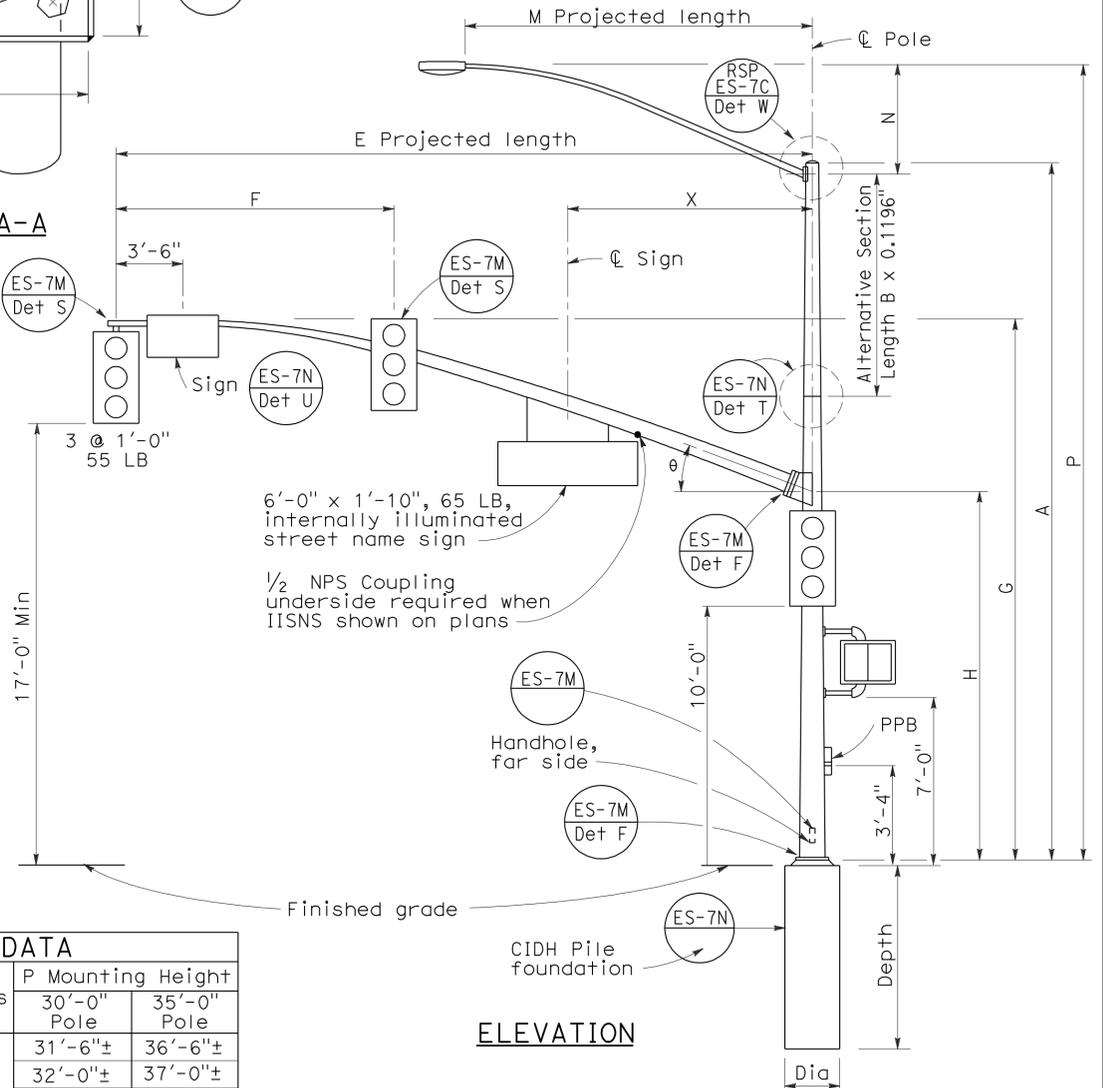
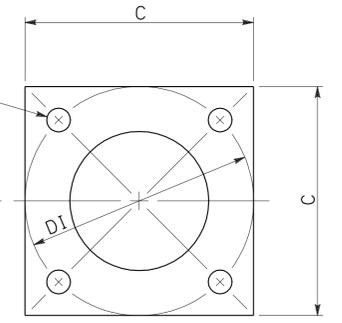


STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)
NO SCALE

2006 REVISED STANDARD PLAN RSP ES-7B



SIGNAL ARM CONNECTION DETAILS



ELEVATION

TYPE 19-4-100, 19A-4-100,
 24-4-100, 24A-4-100,
 26-4-100, 26A-4-100

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm ϕ Thickness	L Pole ϕ Thickness	θ	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 5/16"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	12'-0"	8"										
35'-0"	14'-0"	23'-0"±		8 1/16"								
40'-0"	15'-0"	9 3/8"										
45'-0"		23'-8"±		10 1/4"								

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height	
				30'-0" Pole	35'-0" Pole
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±			33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

Pole Type	Load Case	Wind Velocity mph	POLE DATA						BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION				
			A Height	Min OD		Thickness	Alternative Section			C	DI Bolt Circle	Thickness			Anchor Bolts Size	Dia	Depth	Reinforced	
				Base	Top		B Length	Bottom	Top										
18-4-100	4	100	17'-0"	12"	0.2391"	None	9 3/8"	8"	1'-6"	1'-6"	1 1/2"	2" ϕ x 42" x 6"	None	25'-0", 30'-0"	3'-0"	9'-0"	Yes		
19-4-100			30'-0"			8"												None	8"
19A-4-100			35'-0"			7 5/16"												15'-0"	7 5/16"
23-4-100			17'-0"			9"												None	None
24-4-100			30'-0"			8"												10'-0"	8"
24A-4-100			35'-0"	7 5/16"	15'-0"	7 5/16"													
26-4-100			30'-0"	8"	10'-0"	8 3/8"													
26A-4-100			35'-0"	7 5/16"	15'-0"	9 3/4"	7 1/16"												
27-4-100			17'-0"	9 3/4"	None	None													

□ Indicates arm length to be used unless otherwise noted on plans.

REVISED STANDARD PLAN RSP ES-7F

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD
CASE 4 ARM LOADING
WIND VELOCITY=100 MPH
ARM LENGTHS 25' TO 45')
 NO SCALE

RSP ES-7F DATED OCTOBER 5, 2007 SUPERCEDES RSP ES-7F DATED
 NOVEMBER 17, 2006 AND STANDARD PLAN ES-7F DATED MAY 1, 2006 -
 PAGE 442 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7F

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	149	170

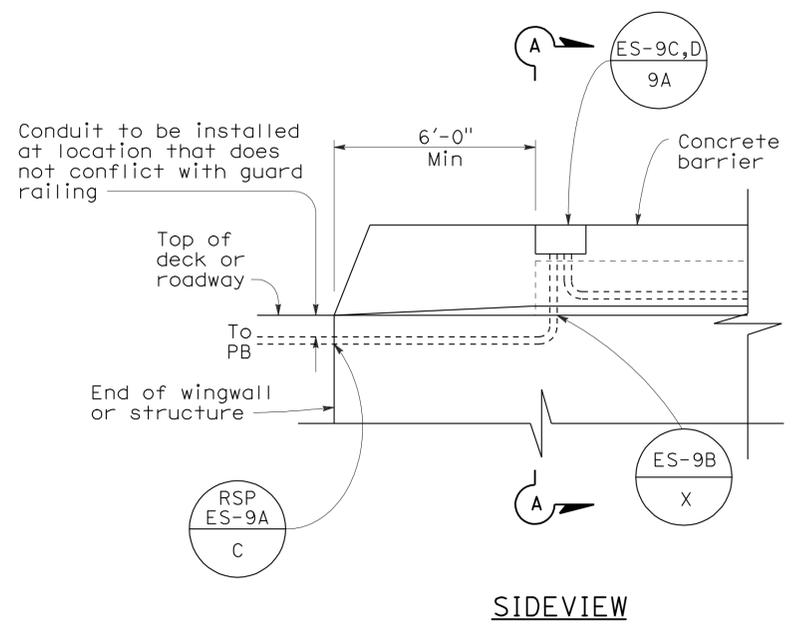
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-08
 STATE OF CALIFORNIA

October 5, 2007
 PLANS APPROVAL DATE

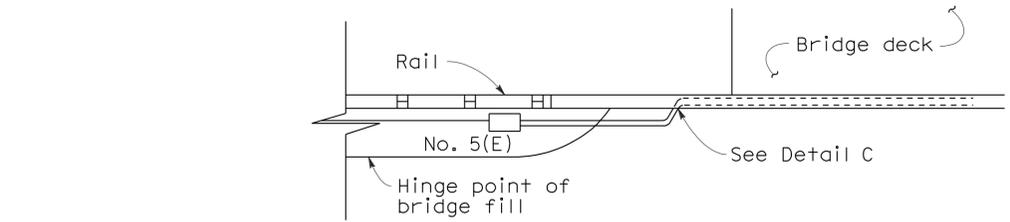
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To accompany plans dated 5-24-10

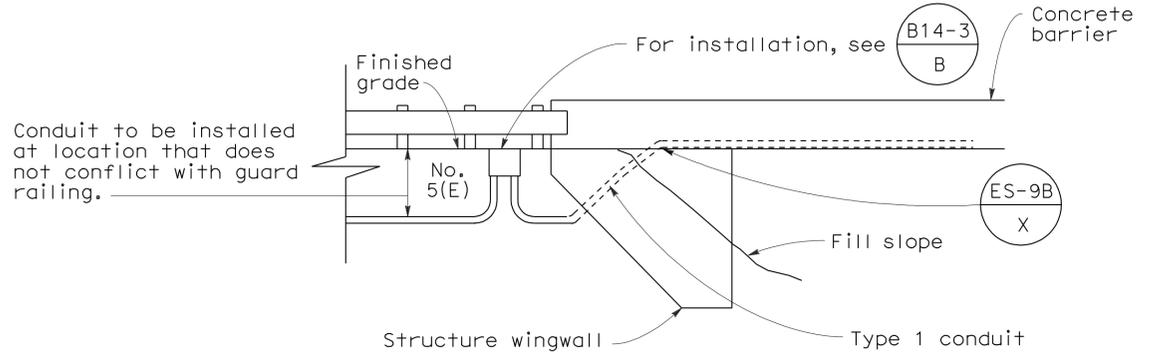
2006 REVISED STANDARD PLAN RSP ES-9A



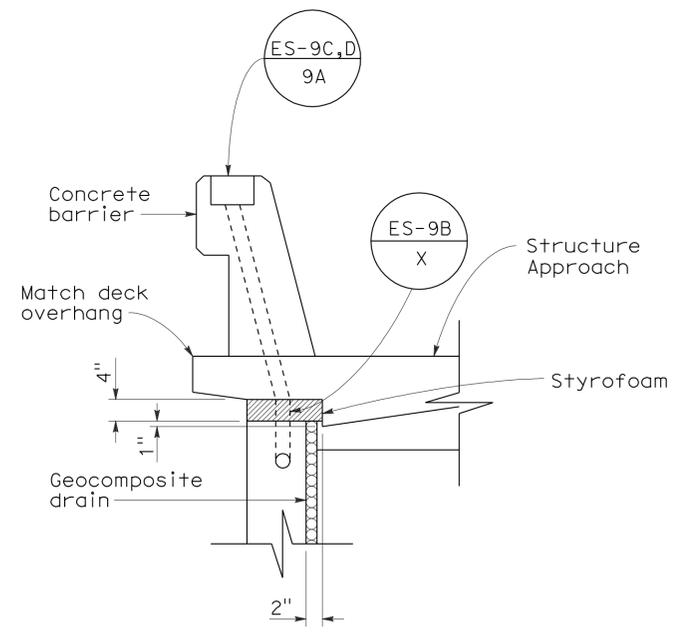
SIDEVIEW



TOP VIEW

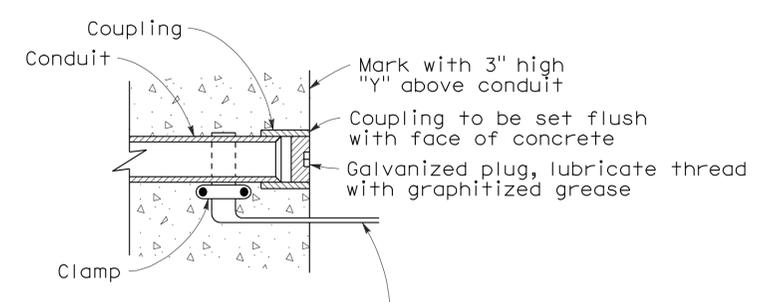


**SIDE VIEW
DETAIL I
CONDUIT TERMINATION**



SECTION A-A

**DETAIL A
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

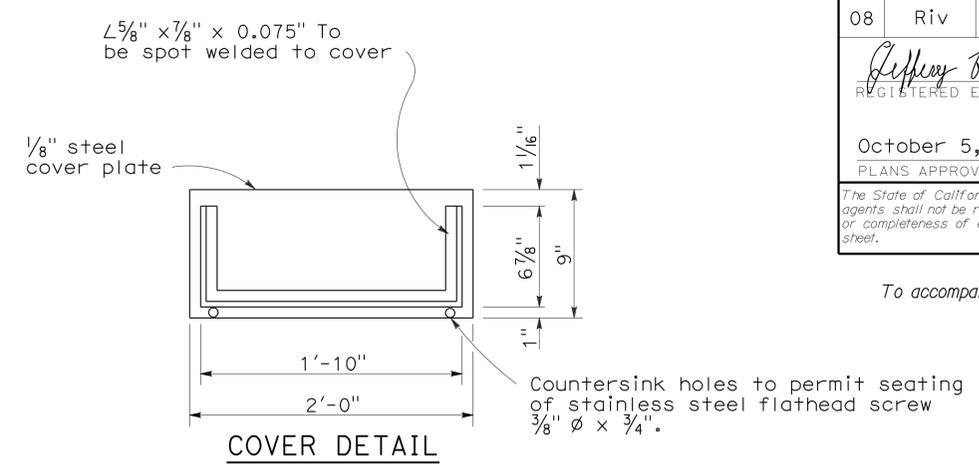
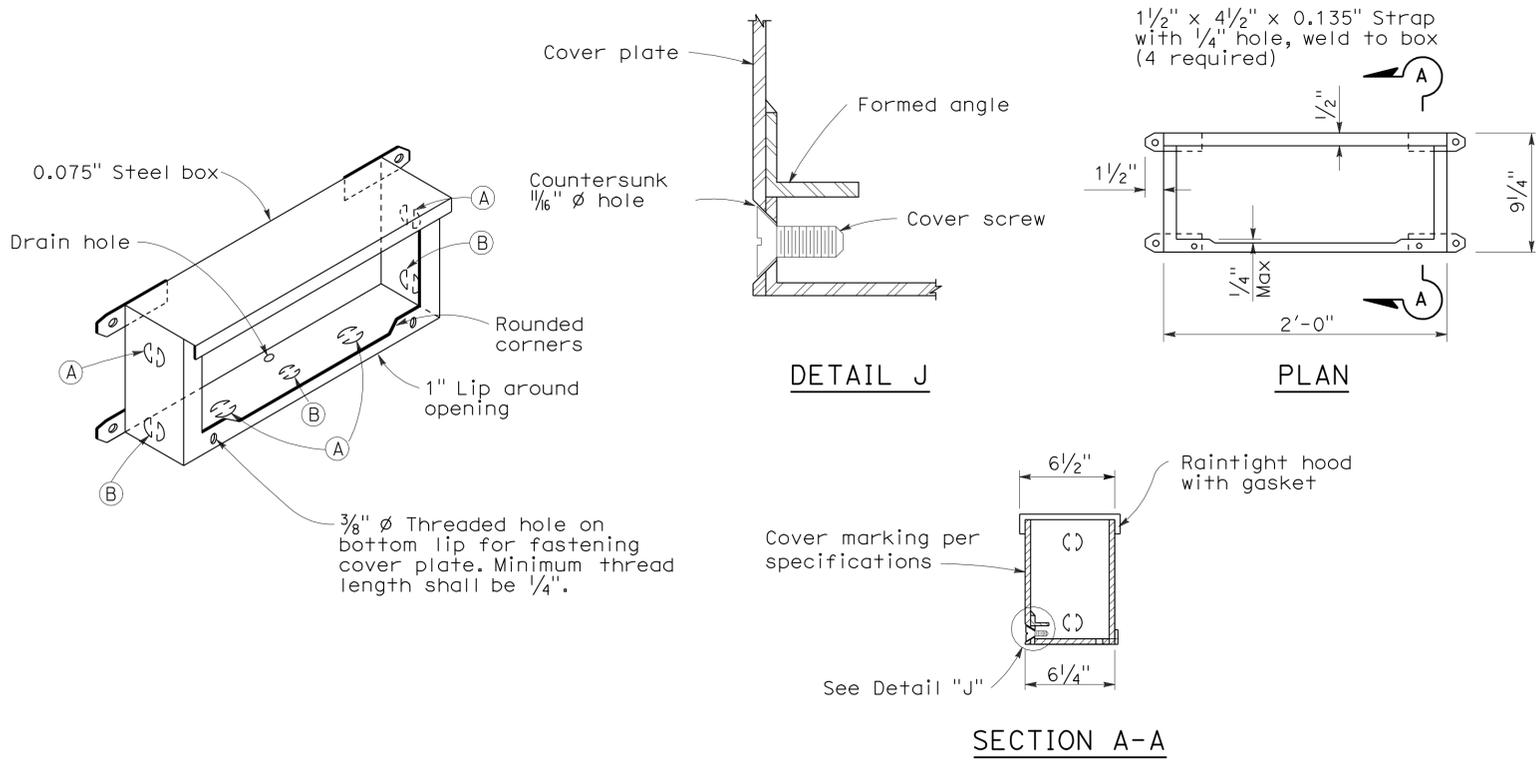
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	150	170

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

October 5, 2007
 PLANS APPROVAL DATE

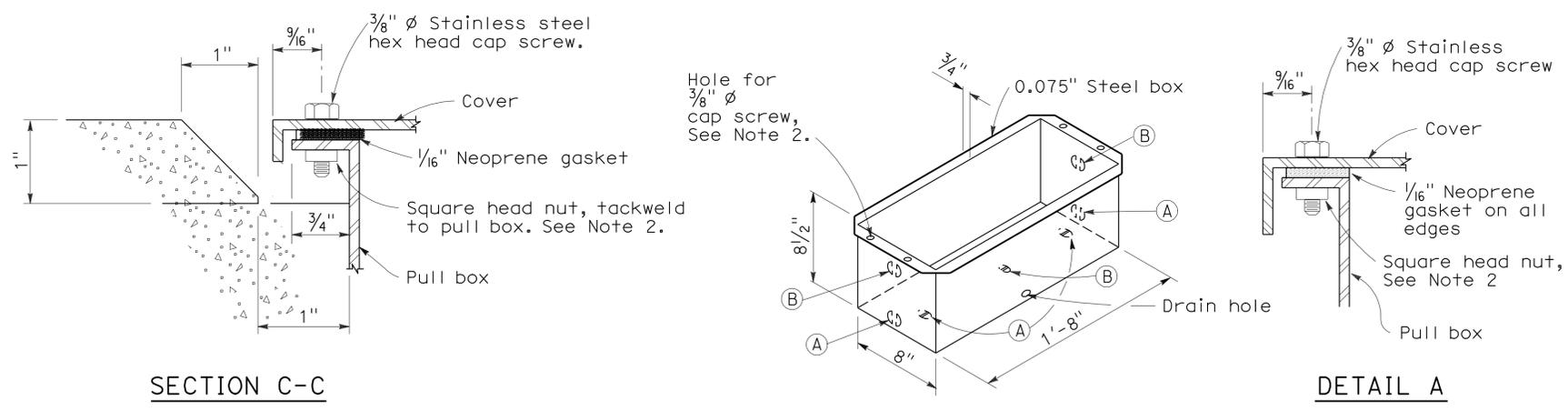
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5-24-10



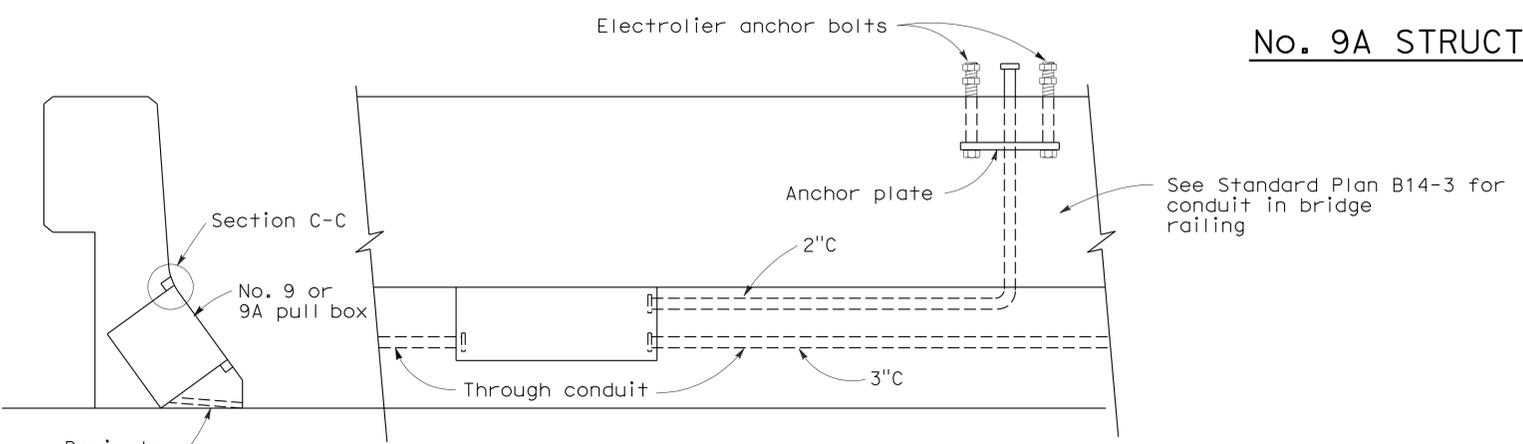
INSTALLATION NOTE:
 Box shall be parallel to top of railing. Close cover box during pouring with 1/4" plywood of sufficient size to provide 1:1 chamfer on 3 sides of cover. Upper edge of plywood shall fit against lower edge of raintight hood.

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.

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	151	170

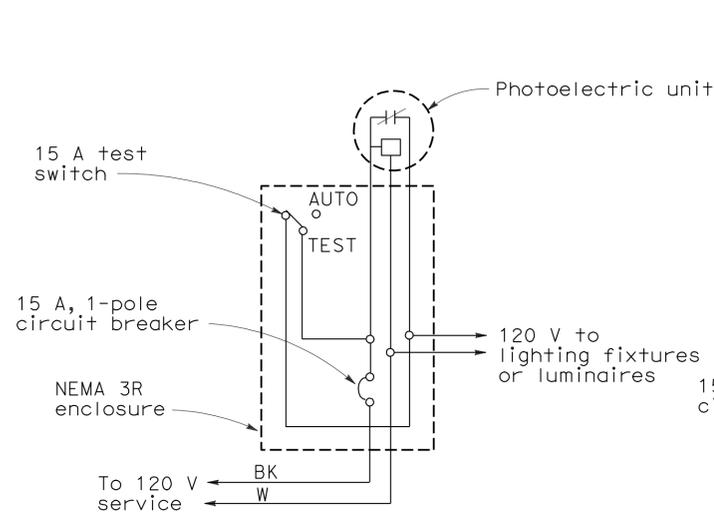
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

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NOTES: (FOR LIGHTING AND SIGN ILLUMINATION CONTROL)

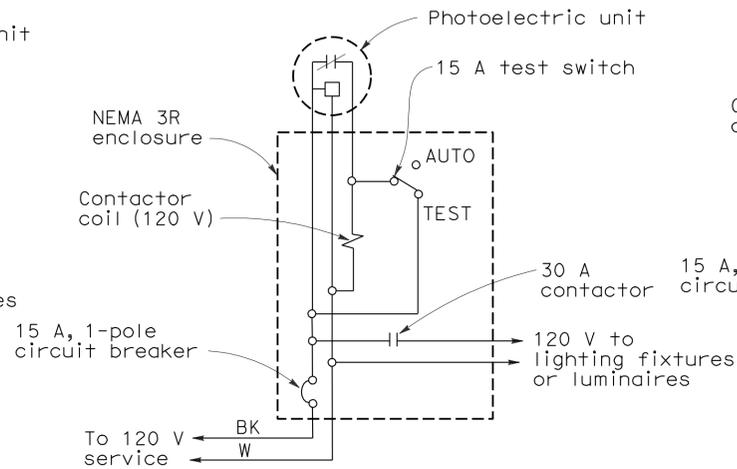
1. The ballast voltages of lighting fixtures and luminaires shall match line service voltages.
2. Voltage rating of photoelectric controls shall conform to the service voltage indicated on the plans.
3. Terminal strip shall be provided for wiring to fixtures.
4. Type SC1A, SC2A, SC3A controls are similar to Types SC1, SC2 and SC3 controls respectively except test switch and wiring are not required.

To accompany plans dated 5-24-10



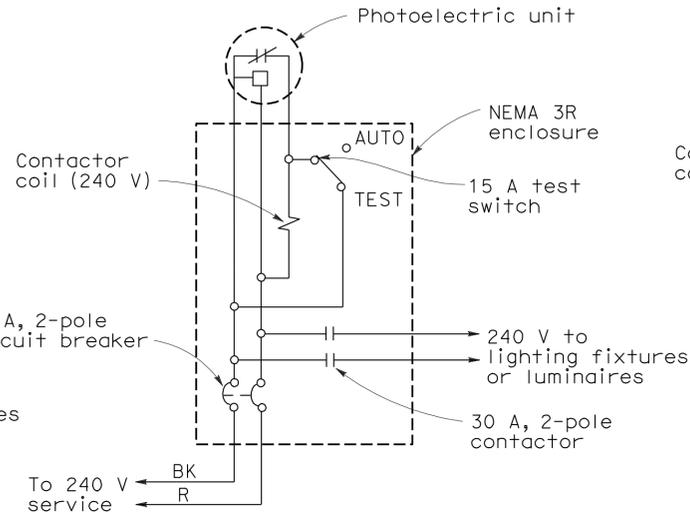
TYPE LC1 CONTROL

For 120 V unswitched circuit with no more than 800 W load.



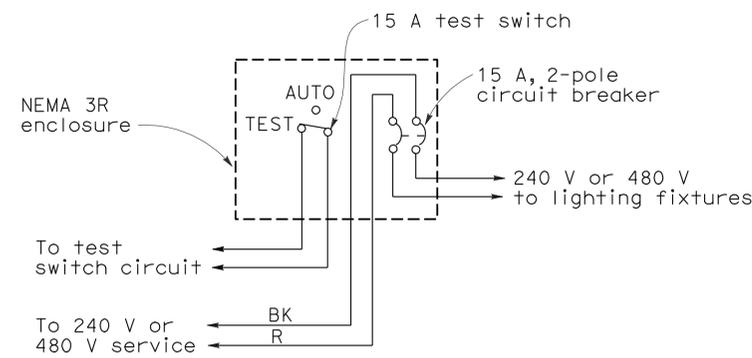
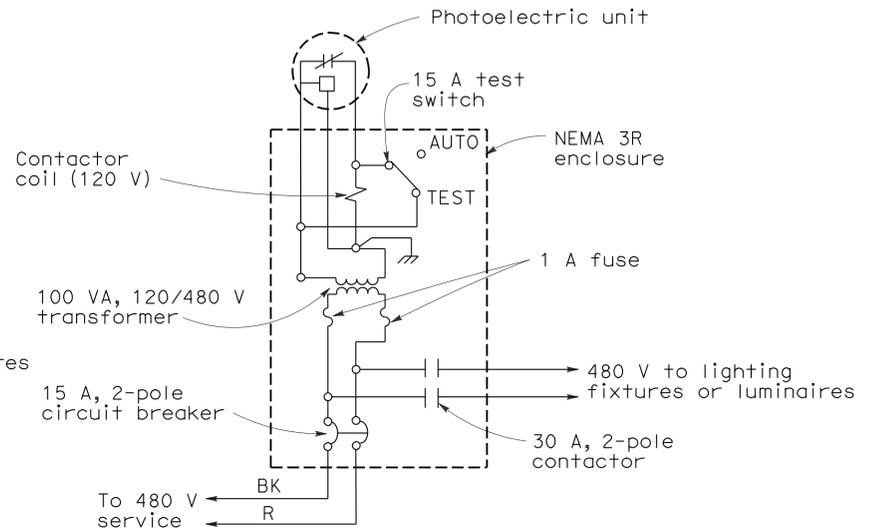
TYPE LC2 CONTROL

For 120 V unswitched circuit



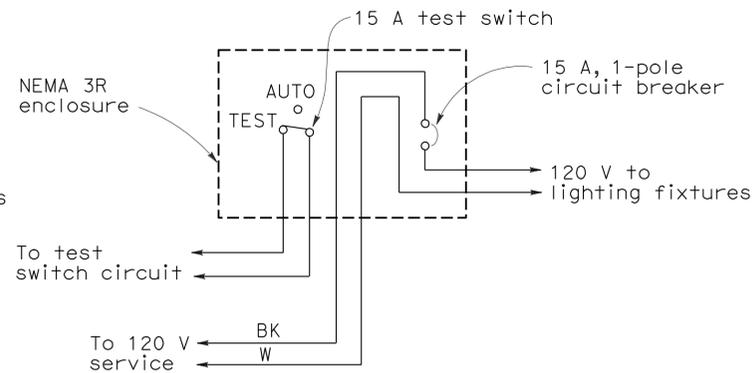
TYPE LC3 CONTROL

For 240 V and 480 V unswitched circuits



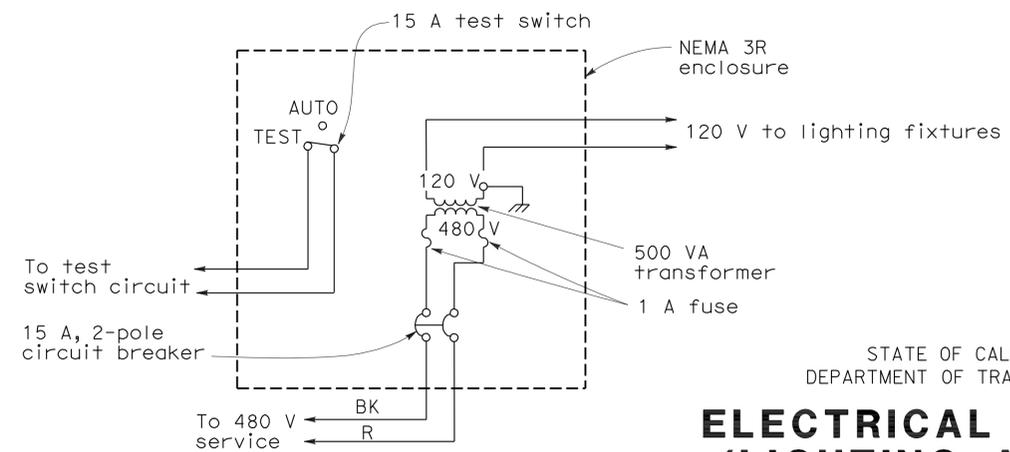
TYPE SC1 CONTROL

For 240 V or 480 V switched circuit, see Note 4 for Type SC1A



TYPE SC2 CONTROL

For 120 V switched circuit, see Note 4 for Type SC2A



TYPE SC3 CONTROL

For 480 V switched sign circuit, see Note 4 for Type SC3A

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LIGHTING AND SIGN
 ILLUMINATION CONTROL)**

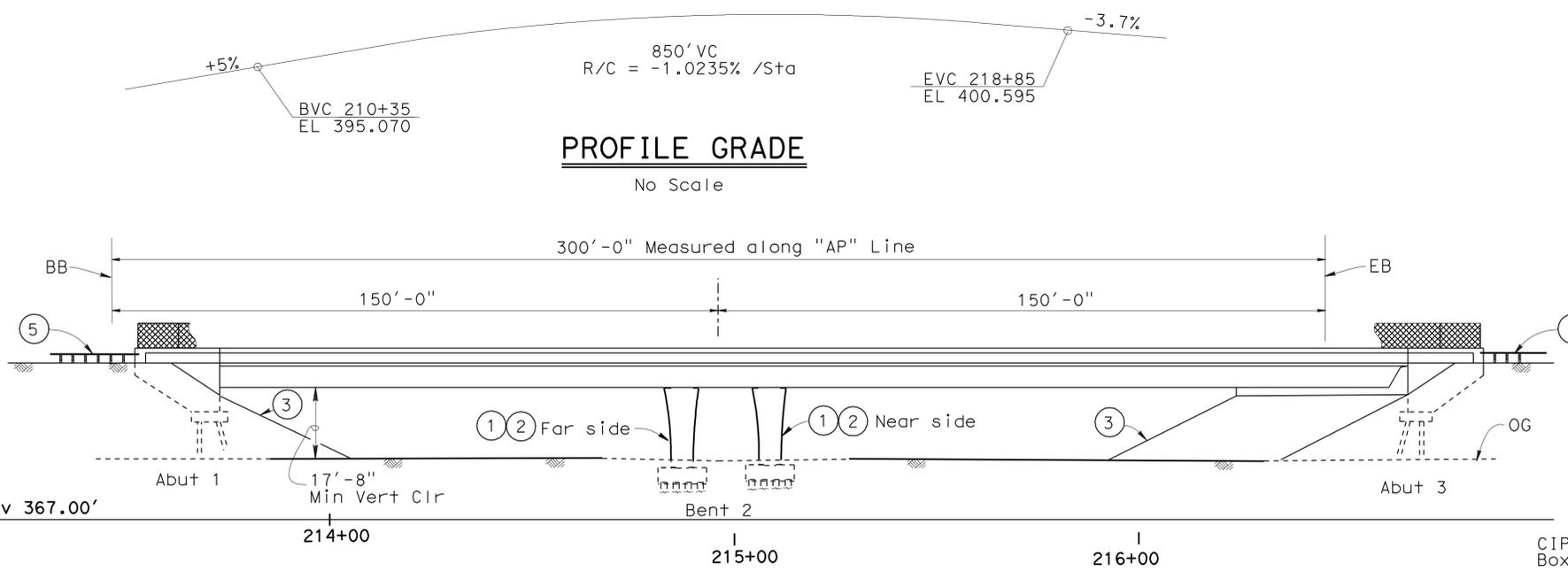
NO SCALE

RSP ES-15D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-15D DATED MAY 1, 2006 - PAGE 472 OF THE STANDARD PLANS BOOK DATED MAY 2006.

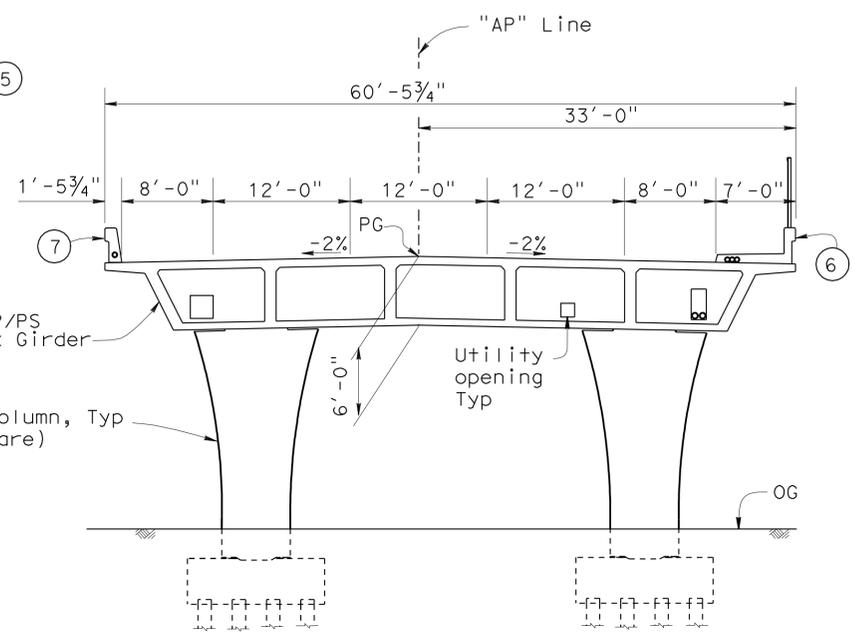
REVISED STANDARD PLAN RSP ES-15D

2006 REVISED STANDARD PLAN RSP ES-15D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	152	170
Feiruz Aberra			01/27/10	REGISTERED CIVIL ENGINEER DATE	
5-24-10			PLANS APPROVAL DATE		
No. C59376			Exp. 12/31/11		
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.			REGISTERED PROFESSIONAL ENGINEER FEIRUZ ADEM ABERRA CIVIL STATE OF CALIFORNIA		

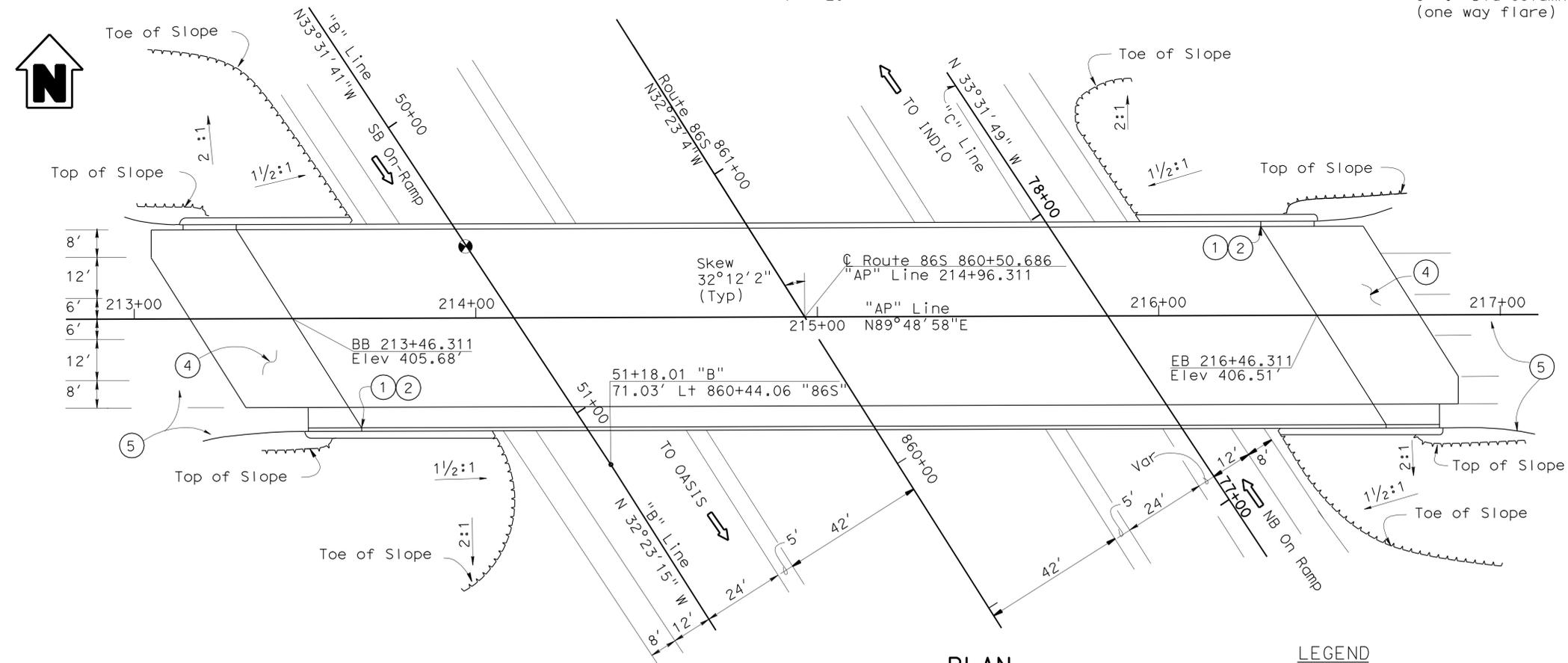


PROFILE GRADE
No Scale



TYPICAL SECTION
1/8" = 1'-0"

- NOTES:**
- ① Paint "Br No. 56-0833"
 - ② Paint "AIRPORT BLVD OC"
 - ③ Slope Paving, see "SLOPE PAVING-FULL SLOPE" sheet
 - ④ Structure Approach Type N(30S)
 - ⑤ MBGR, see "Road Plans"
 - ⑥ Concrete Barrier Type 26 (Mod) with Type 7 Chain link railing
 - ⑦ Concrete Barrier Type 736
- For General Notes, Quantities and Pile data, see "INDEX TO PLANS" sheet
- For utilities and utility openings, see "TYPICAL SECTION" sheet



PLAN
1" = 20'

LEGEND

- Point of minimum vertical clearance

HOWARD NG DESIGN ENGINEER	DESIGN	BY Feiruz Aberra	CHECKED Carl Duan	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO.	56-0833	AIRPORT BLVD OVERCROSSING GENERAL PLAN																								
	DETAILS	BY Kay Farahzadi	CHECKED Feiruz Aberra/Carl Duan	LAYOUT	BY Feiruz Aberra			CHECKED Carl Duan	POST MILE		R16.73																							
	QUANTITIES	BY Feiruz Aberra	CHECKED Carl Duan	SPECIFICATIONS	BY Erwin Rufino			PLANS AND SPECS COMPARED	Erwin Rufino																									
STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05)																																		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						CU 08231 EA 478601		DISREGARD PRINTS BEARING EARLIER REVISION DATES																										
<table border="1" style="width: 100%;"> <tr> <td colspan="10">REVISION DATES</td> <td>SHEET</td> <td>OF</td> </tr> <tr> <td>04/25/08</td> <td>07/08/08</td> <td>07/24/08</td> <td>07/26/08</td> <td>3/2/09</td> <td>05/07/09</td> <td>07/14/09</td> <td>07/25/09</td> <td>12/09/09</td> <td>01/07/10</td> <td>1</td> <td>19</td> </tr> </table>											REVISION DATES										SHEET	OF	04/25/08	07/08/08	07/24/08	07/26/08	3/2/09	05/07/09	07/14/09	07/25/09	12/09/09	01/07/10	1	19
REVISION DATES										SHEET	OF																							
04/25/08	07/08/08	07/24/08	07/26/08	3/2/09	05/07/09	07/14/09	07/25/09	12/09/09	01/07/10	1	19																							

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	153	170

Feiruz Aberra 02/04/10
 REGISTERED CIVIL ENGINEER DATE
 5-24-10
 PLANS APPROVAL DATE
 No. C59376
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA
 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.

INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN
2	INDEX TO PLANS
3	DECK CONTOURS
4	FOUNDATION PLAN
5	ABUTMENT LAYOUT
6	ABUTMENT DETAIL NO.1
7	ABUTMENT DETAIL NO.2
8	BENT LAYOUT
9	BENT DETAILS
10	TYPICAL SECTION
11	GIRDER LAYOUT
12	GIRDER REINFORCEMENT
13	GIRDER DETAILS
14	STRUCTURE APPROACH DRAINAGE
15	STRUCTURE APPROACH TYPE N(30S)
16	SLOPE PAVING-FULL SLOPE
17	LOG OF TEST BORINGS 1 OF 3
18	LOG OF TEST BORINGS 2 OF 3
19	LOG OF TEST BORINGS 3 OF 3

GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition dated 2007 and Caltrans Amendments, preface dated 2008; except that bridge barrier and railing details taken from Standard Plans May 2006 version, are designed using Bridge Design Specifications (1996 AASHTO w/Revisions by Caltrans)

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC), Version 1.4 June 2006

DEAD LOADING: Include 35 psi for future wearing surface

LIVE LOADING: HL-93 and Permit Design Load

SEISMIC LOADING: Modified SDC ARS Curve for soil profile Type D, (Mw = 7.75± 0.25)
Peak Bedrock Acceleration (PBA) = 0.60g

REINFORCED CONCRETE: $f_y = 60,000$ psi
 $f'_c =$ see CONCRETE STRENGTH AND TYPE LIMITS on "DECK CONTOURS" sheet

PRESTRESSED CONCRETE: See PRESTRESSING NOTES on "GIRDER LAYOUT" sheet

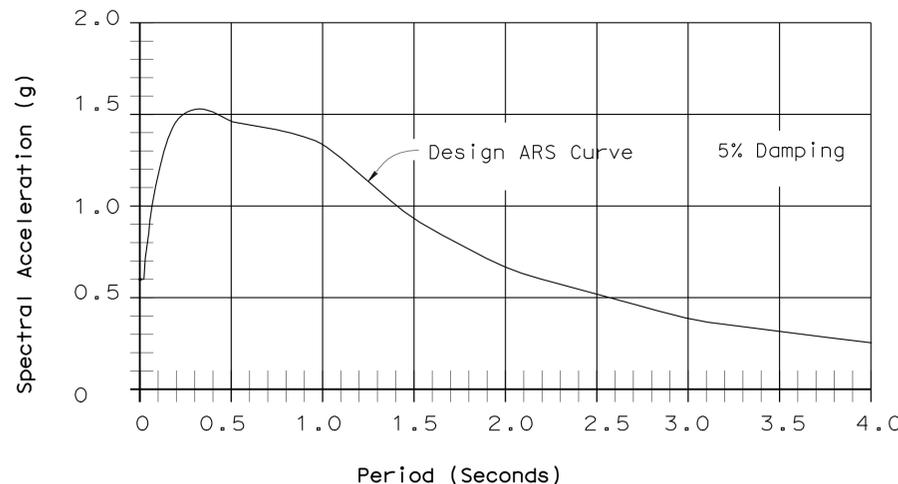
PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEV (Ft)	SPECIFIED TIP ELEV (Ft)	Nominal Driving Resistance Required (kips)
		COMPRESSION	TENSION			
Abut 1	Class 200 Alternative "X"	350	0	347(a1)	347	370
Bent 2	Class 200 Alternative "X"	350	0	331(a1)	331	350
Abut 3	Class 200 Alternative "X"	350	0	347(a1)	347	370

Design Tip Elevation are controlled by:
(a1) Compression (Service-I Limit)

STANDARD PLANS Dated May 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B0-13	BRIDGE DETAILS
(RSP) B2-8	PILE DETAILS CLASS 200
(RSP) B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
B7-1	BOX GIRDER DETAIL
B7-10	UTILITY OPENING BOX GIRDER
B8-5	CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
B11-52	CHAIN LINK RAILING TYPE 7
B11-54	CONCRETE BARRIER TYPE 26
B11-56	CONCRETE BARRIER TYPE 736
B14-3	COMMUNICATION AND SPRINKLER CONDUITS (CONDUIT LESS THAN 4")
B14-5	WATER SUPPLY LINE (DETAILS) PIPE SIZE LESS THAN 4"



MODIFIED ARS CURVE
No Scale

QUANTITIES

STRUCTURE EXCAVATION (BRIDGE)	610	CY
STRUCTURE BACKFILL (BRIDGE)	296	CY
FURNISH PILING (CLASS 200) (ALTERNATIVE X)	3,455	LF
DRIVE PILE (CLASS 200) (ALTERNATIVE X)	76	EA
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP	SUM
STRUCTURAL CONCRETE, BRIDGE FOOTING	165	CY
STRUCTURAL CONCRETE, BRIDGE	1,594	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	124	CY
JOINT SEAL (MR 2")	136	LF
BAR REINFORCING STEEL (BRIDGE)	396,445	LB
SLOPE PAVING (CONCRETE)	61	CY
CHAIN LINK RAILING (TYPE 7)	332	LF
CONCRETE BARRIER (TYPE 26 MODIFIED)	332	LF
CONCRETE BARRIER (TYPE 736)	332	LF



DESIGN	BY Feiruz Aberra	CHECKED Carl Duan
DETAILS	BY Kay Farahzadi	CHECKED Feiruz Aberra/Carl Duan
QUANTITIES	BY Feiruz Aberra	CHECKED Carl Duan

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

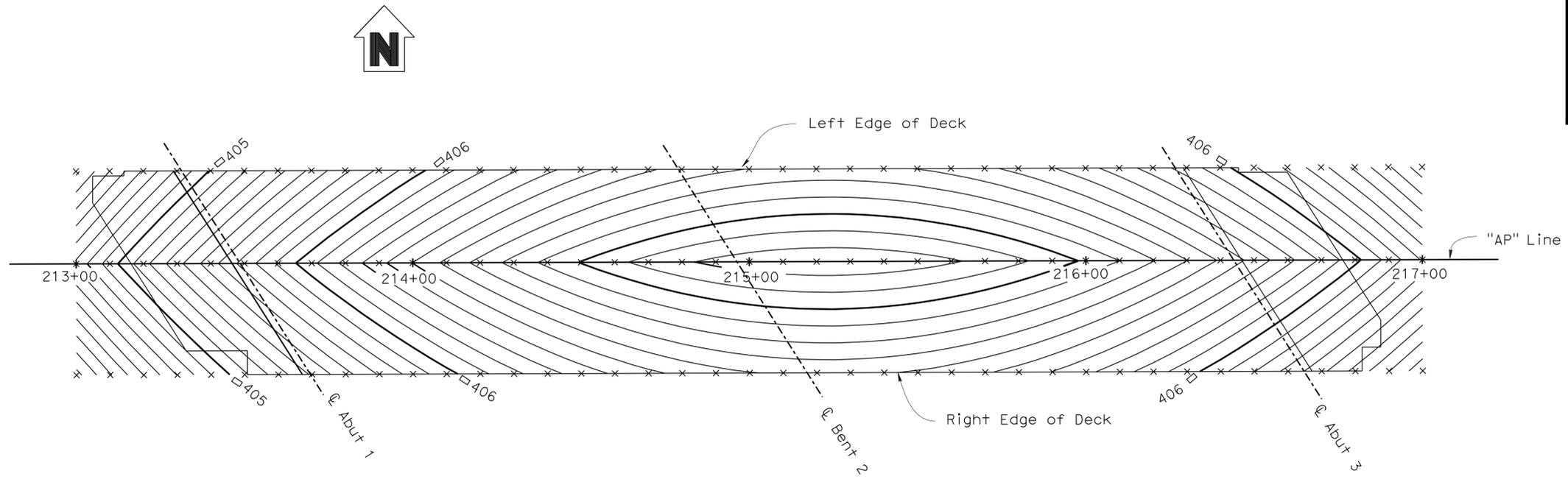
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 20

BRIDGE NO.
56-0833
POST MILE
R16.73

AIRPORT BLVD OVERCROSSING

INDEX TO PLANS

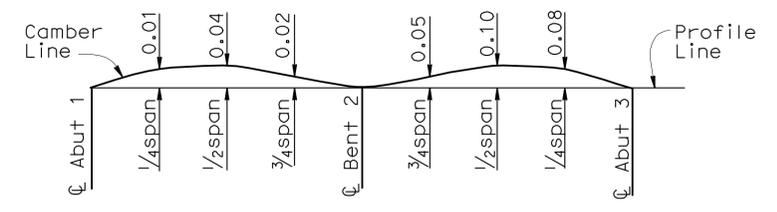
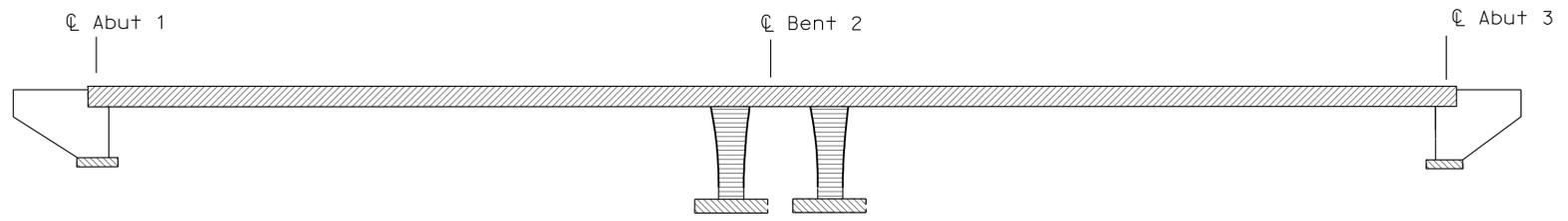
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	154	170
Feiruz Aberra			01/27/10		
REGISTERED CIVIL ENGINEER			DATE		
5-24-10			PLANS APPROVAL DATE		
No. C59376			Exp. 12/31/11		
CIVIL			STATE OF CALIFORNIA		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



DECK CONTOURS
1" = 20'

NOTES:

1. X indicates 10'-0" Intervals along station line.
2. ⊕ indicates even 1'-0" contours.
3. Contour intervals = 0.1'.
4. Contours do not include camber.



CAMBER DIAGRAM
Not to Scale

NOTES:

Value shown does not include allowance for falsework settlement.

- Structural Concrete, Bridge
- ▨ Structural Concrete, Bridge (4500 Psi @ 28 days)
- ▩ Structural Concrete, Bridge Footing
- ▧ Structural Concrete, Bridge (4000 Psi @ 28 days)

CONCRETE STRENGTH AND TYPE LIMITS
No Scale

DESIGN	BY Feiruz Aberra	CHECKED Carl Duan
DETAILS	BY Kay Farahzadi	CHECKED Feiruz Aberra
QUANTITIES	BY Feiruz Aberra	CHECKED Carl Duan

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 20

BRIDGE NO.	56-0833
POST MILE	R16.73

AIRPORT BLVD OVERCROSSING
DECK CONTOURS

CURVE DATA				
No.	R	Δ	T	L
①	3000.000	03°11'29"	83.572	167.101

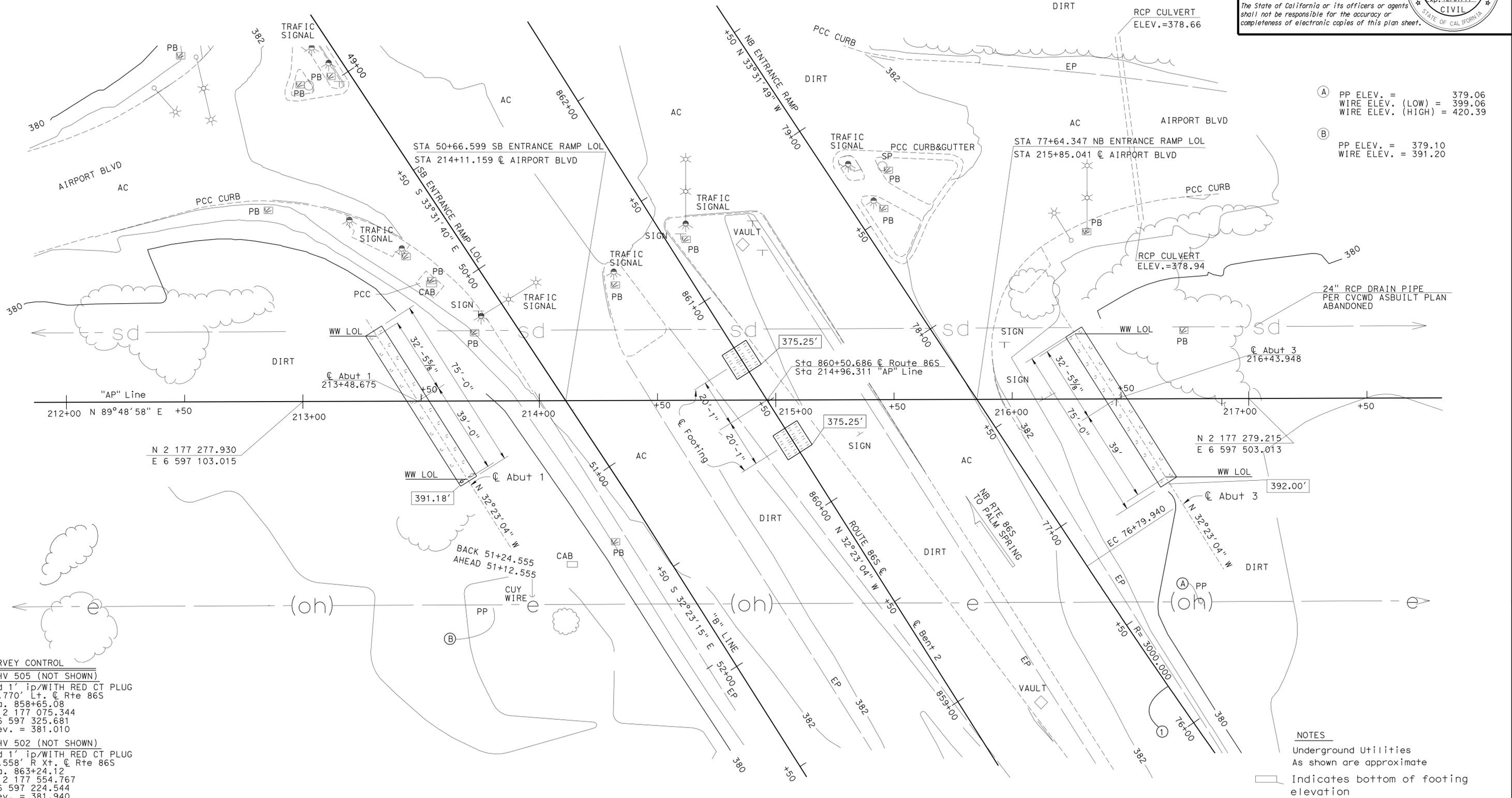


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	155	170

Feiruz Aberra
REGISTERED CIVIL ENGINEER DATE 01/27/10

5-24-10
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.



- (A) PP ELEV. = 379.06
WIRE ELEV. (LOW) = 399.06
WIRE ELEV. (HIGH) = 420.39
- (B) PP ELEV. = 379.10
WIRE ELEV. = 391.20

SURVEY CONTROL
 SUHV 505 (NOT SHOWN)
 Fnd 1' ip/WITH RED CT PLUG
 86.770' Lt. C. Rte 86S
 Sta. 858+65.08
 N 2 177 075.344
 E 6 597 325.681
 Elev. = 381.010

SUHV 502 (NOT SHOWN)
 Fnd 1' ip/WITH RED CT PLUG
 84.558' R Xt. C. Rte 86S
 Sta. 863+24.12
 N 2 177 554.767
 E 6 597 224.544
 Elev. = 381.940

NOTES
 Underground Utilities
 As shown are approximate

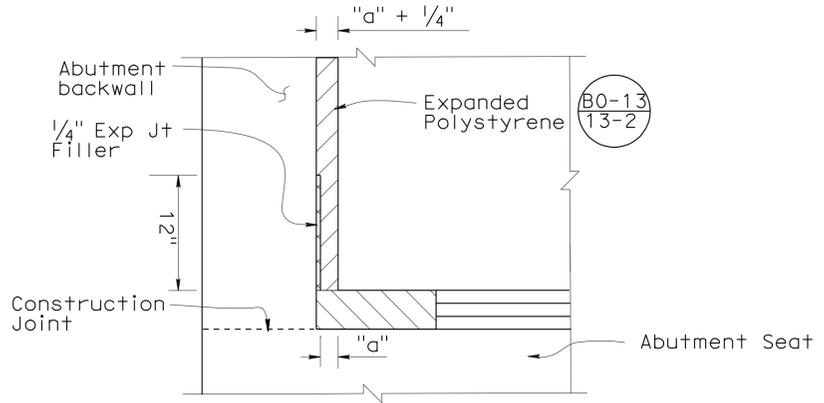
□ Indicates bottom of footing elevation

PRELIMINARY INVESTIGATION SECTION				DESIGN BY Feiruz Aberra	CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO. 56-0833	AIRPORT BLVD OVERCROSSING FOUNDATION PLAN
SCALE VERT. DATUM NGVD 29 + 500'	PHOTOGRAMMETRY AS OF:		DETAILS BY Kay Farahzadi	CHECKED Feiruz Aberra	POST MILE R16.3				
1"=20'	HORIZ. DATUM NAD 83	SURVEYED BY C. Stewart 06/07	CHECKED BY L. Mnabo 06/06	QUANTITIES BY Feiruz Aberra	CHECKED Carl Duan				
ALIGNMENT TIES DIST. TRAV. SEETS		DRAFTED BY M Sadaghiani 07/07	CHECKED BY L. Manabo 07/07	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 08231 EA 478600	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 4 OF 19

USERNAME => H:\engard DATE PLOTTED => 25-MAY-2010 TIME PLOTTED => 07:49

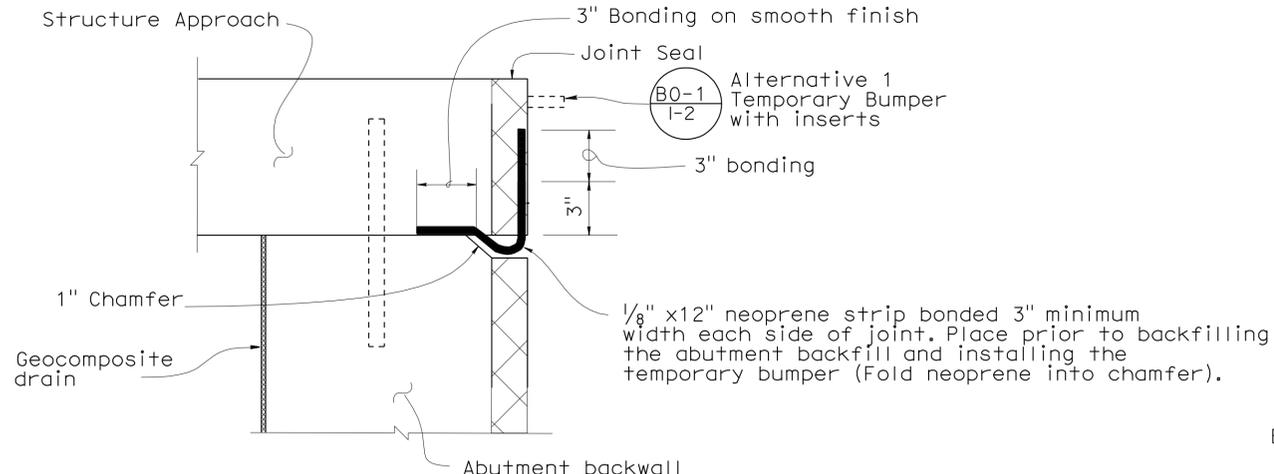
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	157	170

Feiruz Aberra 01/27/10
 REGISTERED CIVIL ENGINEER DATE
 5-24-10
 PLANS APPROVAL DATE
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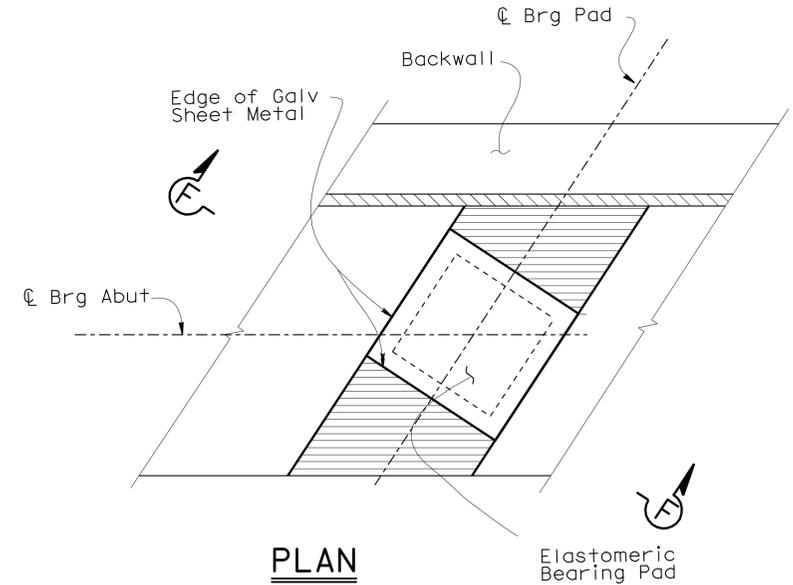


BACKWALL BASE DETAIL
No Scale

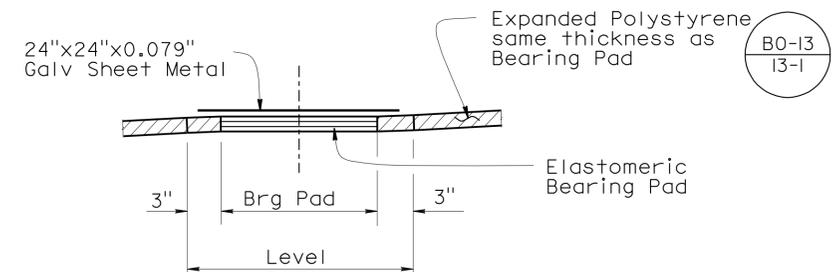
For "a" dimension, see JOINT SEAL (B6-21) (MAXIMUM MOVEMENT RATING = 2")



JOINT PROTECTION DETAIL
No Scale

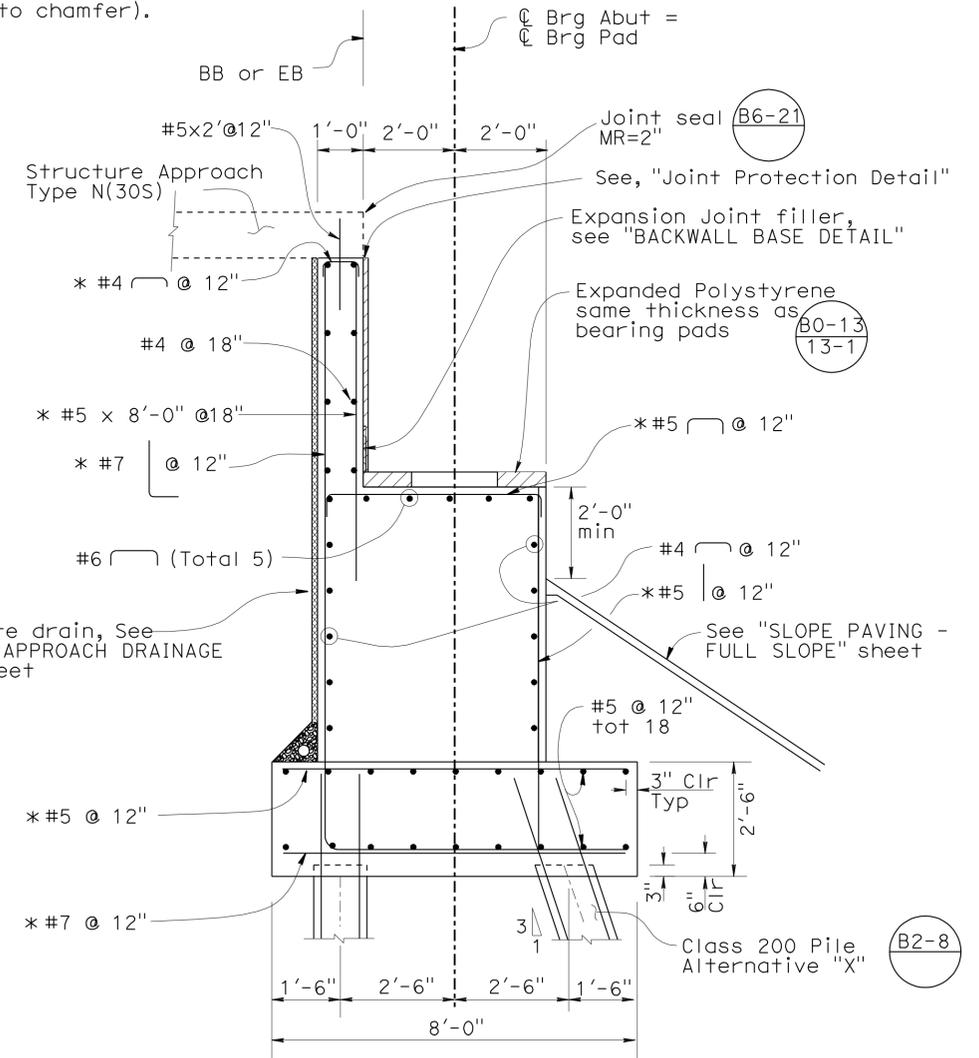


BEARING PAD DETAIL
No Scale



SECTION F - F
Details typical at all Bearing pads

NOTE:
Coat top of Bearing Pad with grease prior to placing sheet metal.



TYPICAL SECTION
1/2" = 1'-0"

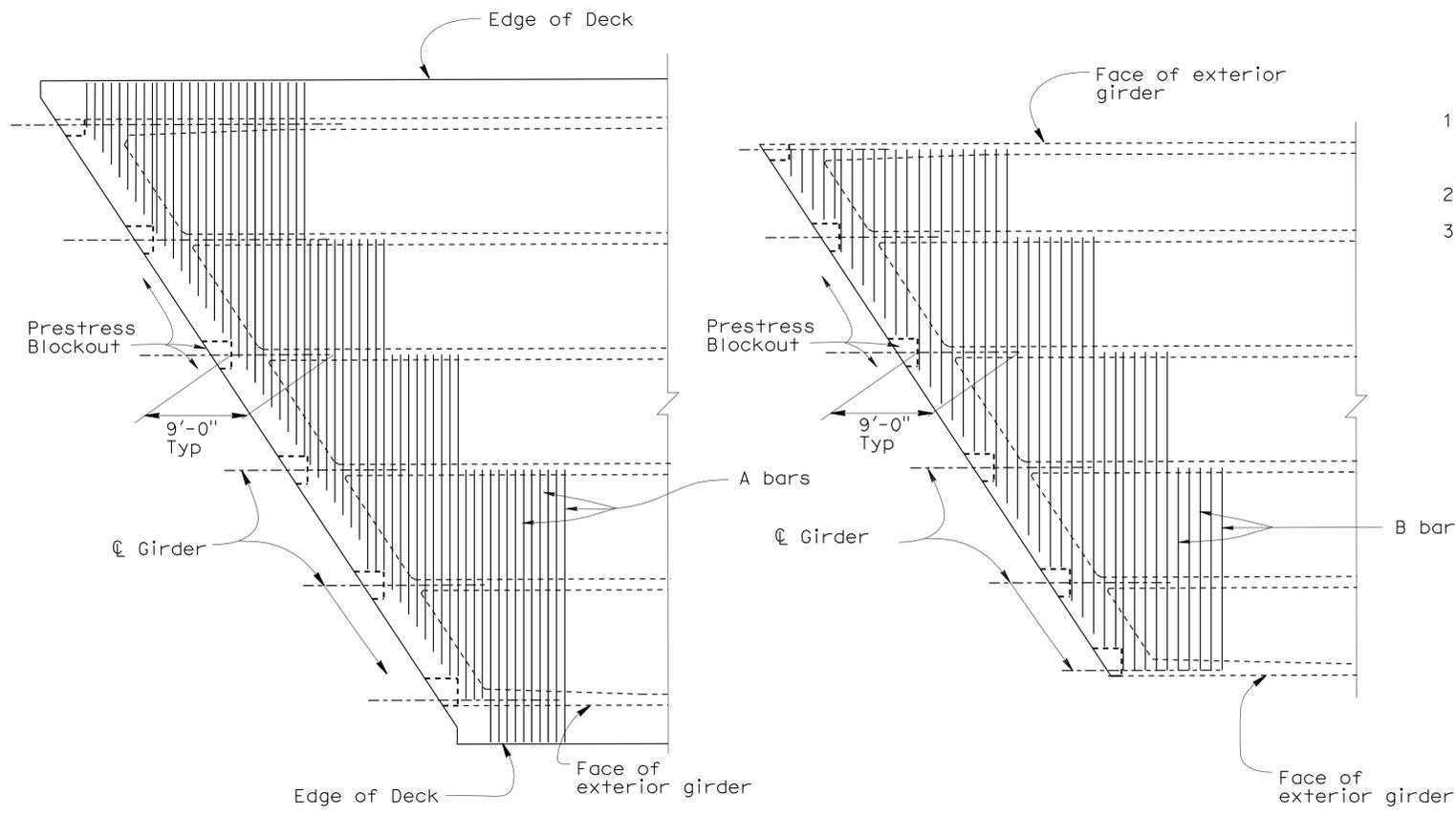
* All Abutment transverse reinf shall be placed normal to C/Brg Abut

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Feiruz Aberra	CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO.	56-0833	AIRPORT BLVD OVERCROSSING ABUTMENT DETAILS No. 1	
	DETAILS	BY Kay Farahzadi	CHECKED Feiruz Aberra			POST MILE	R16.73		
	QUANTITIES	BY Feiruz Aberra	CHECKED Carl Duan			REVISION DATES	10/16/08 07/28/09 12/16/09 01/25/09 01/28/09 03/04/09 03/11/09 05/02/09 07/15/09		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 08231 EA 478601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET	6	OF	19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	158	170

Feiruz Aberra	01/27/10
REGISTERED CIVIL ENGINEER	DATE
5-24-10	
PLANS APPROVAL DATE	

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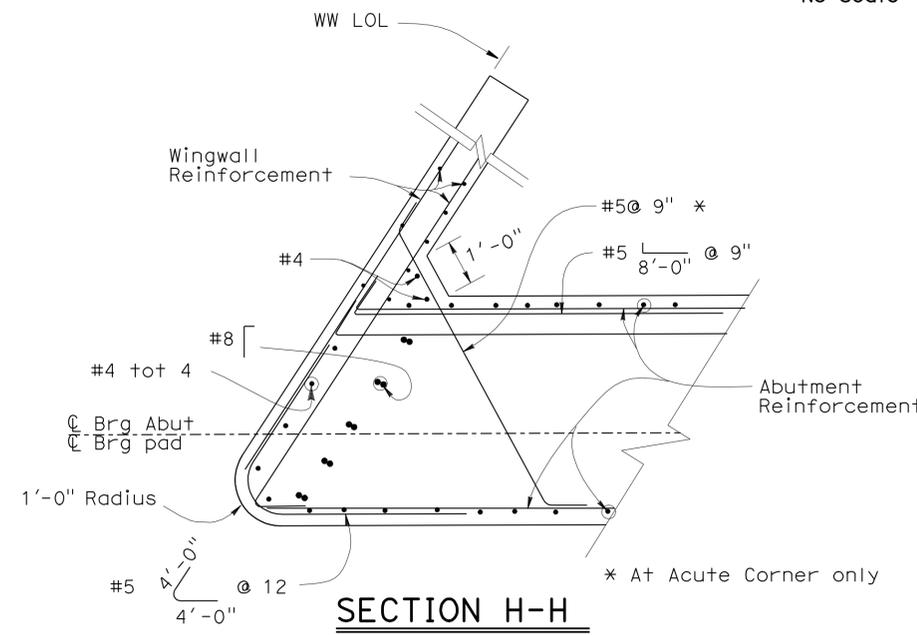


DECK SLAB
(See NOTE 1)
1/8"=1'

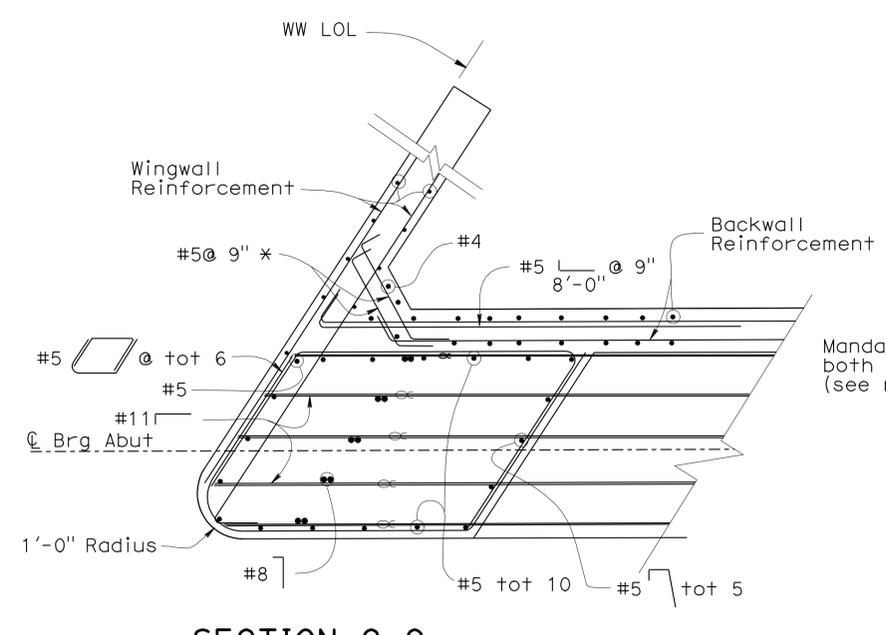
BOTTOM SLAB
(See NOTE 1)
1/8"=1'

GENERAL ZONE ANCHORAGE REINFORCEMENT DETAIL

No Scale



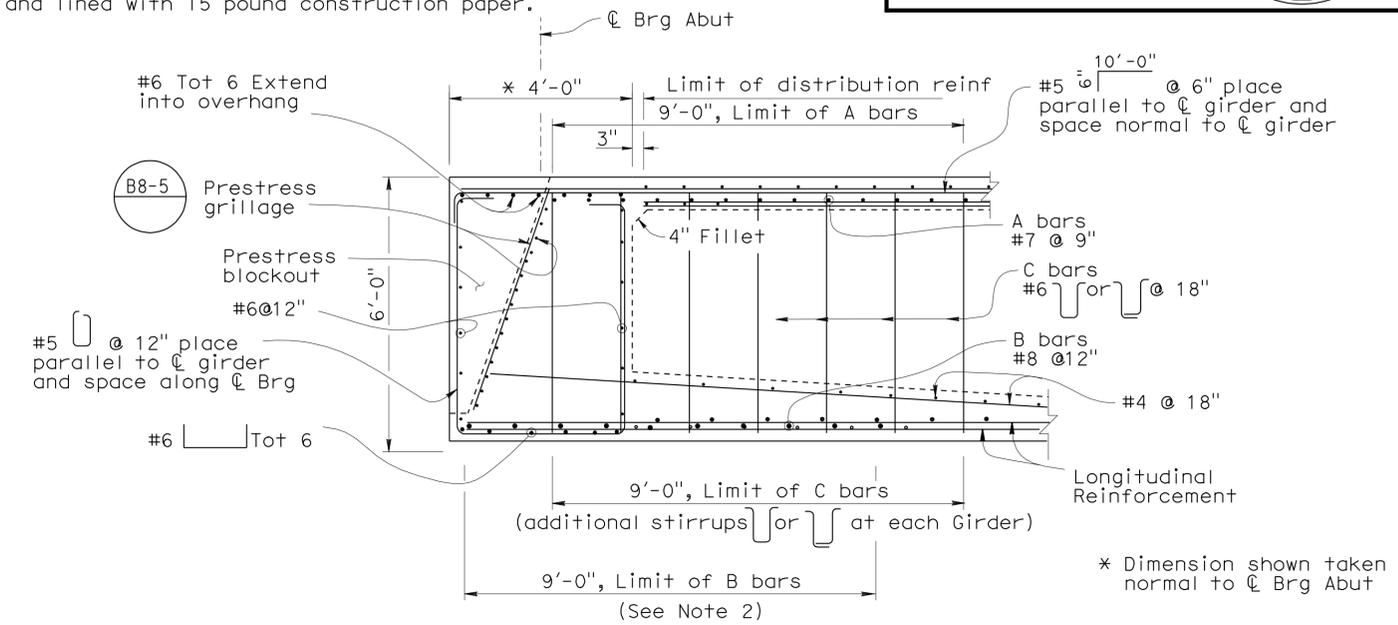
SECTION H-H
1/2"= 1'-0"



SECTION G-G
1/2"= 1'-0"

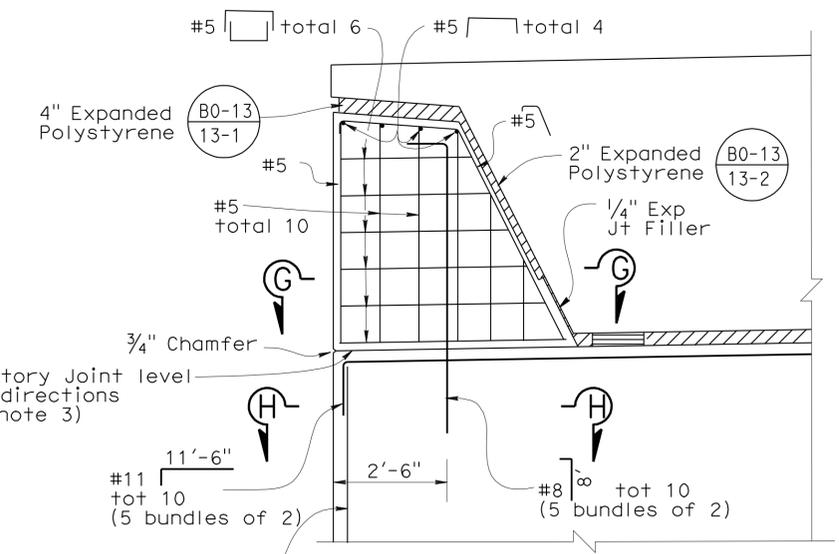
NOTES:

1. Extend reinforcement to at least the second interior girder beyond girder of note, 9'-0" from bearing plate. See "General Zone Anchorage reinforcement detail".
2. B bars can be placed as shown or as directed by the Engineer.
3. Mandatory Joint surface to be smooth finished and lined with 15 pound construction paper.



ANCHORAGE- GENERAL ZONE REINFORCEMENT

1/2"= 1'-0"



SHEAR KEY DETAIL

1/2"= 1'-0"

Abutment 1 shown
Abutment 3 similar

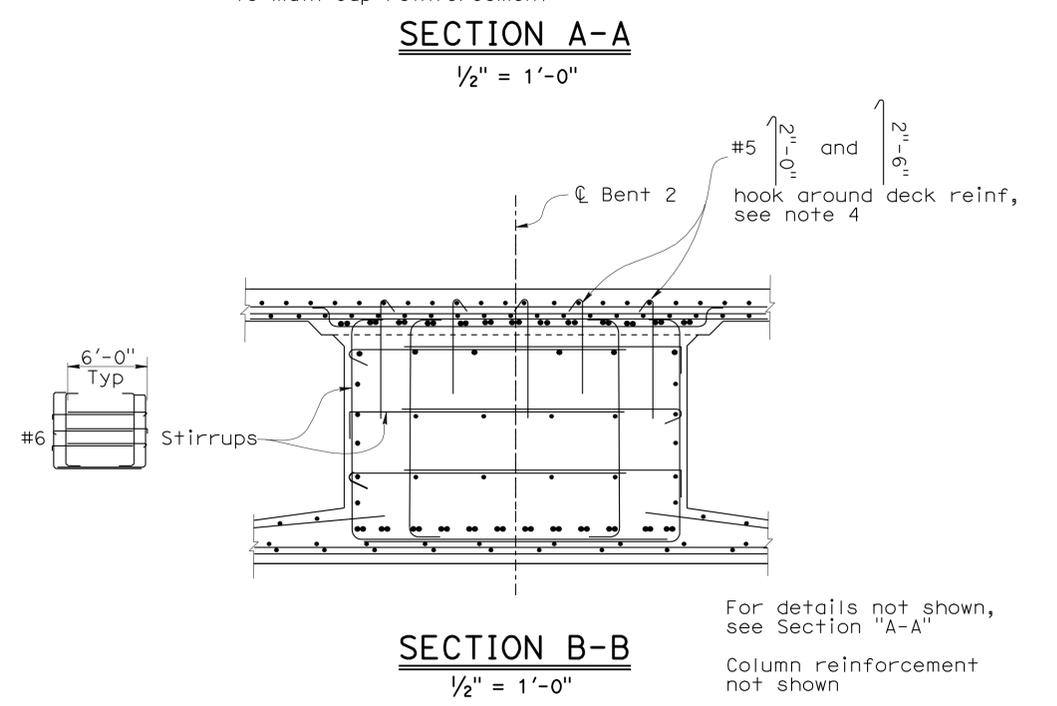
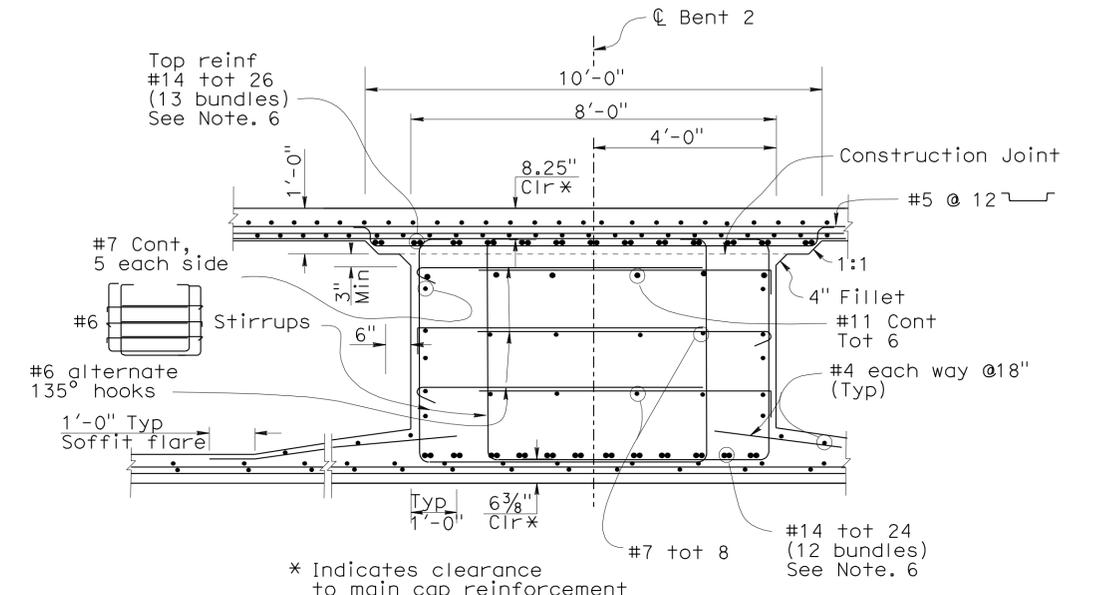
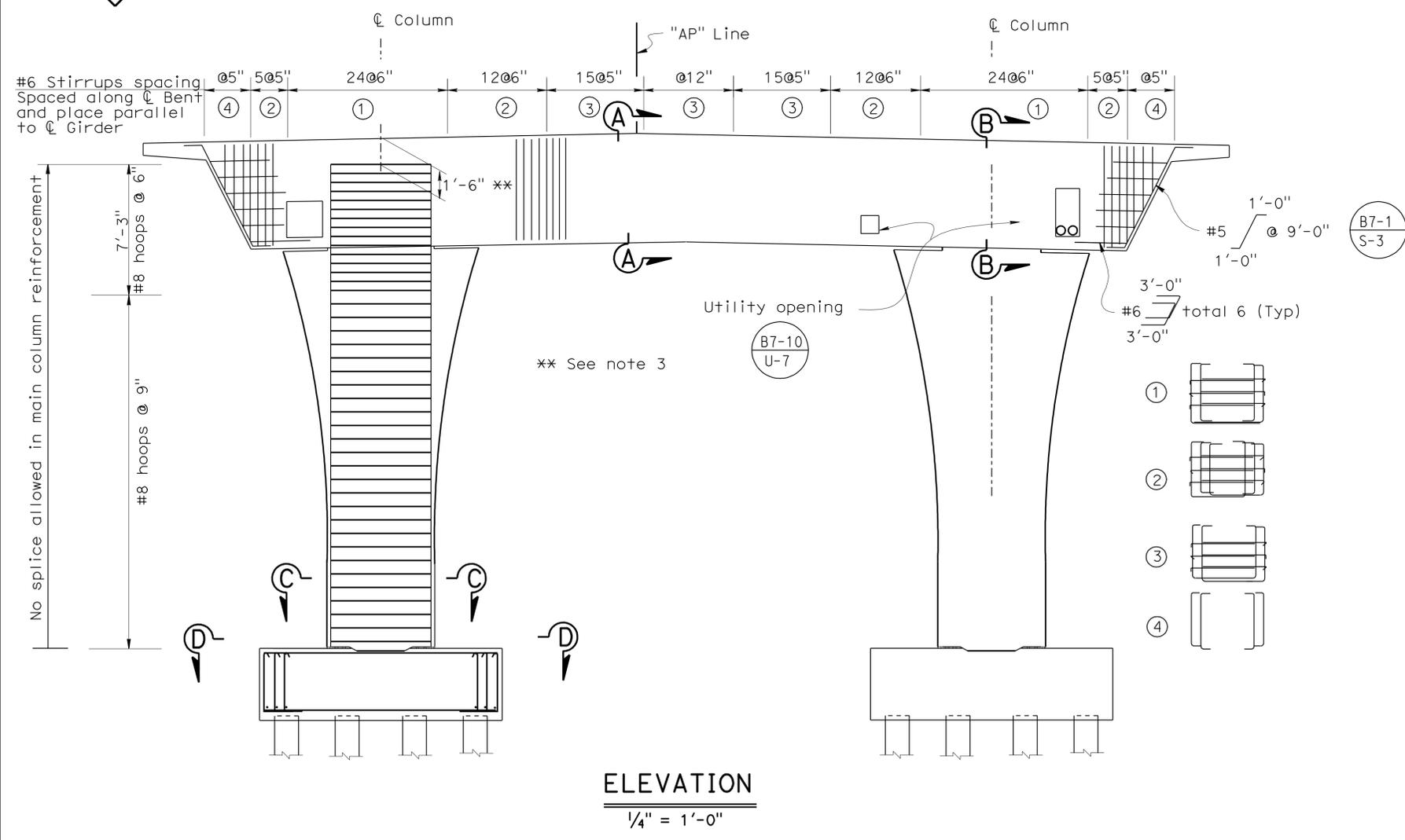
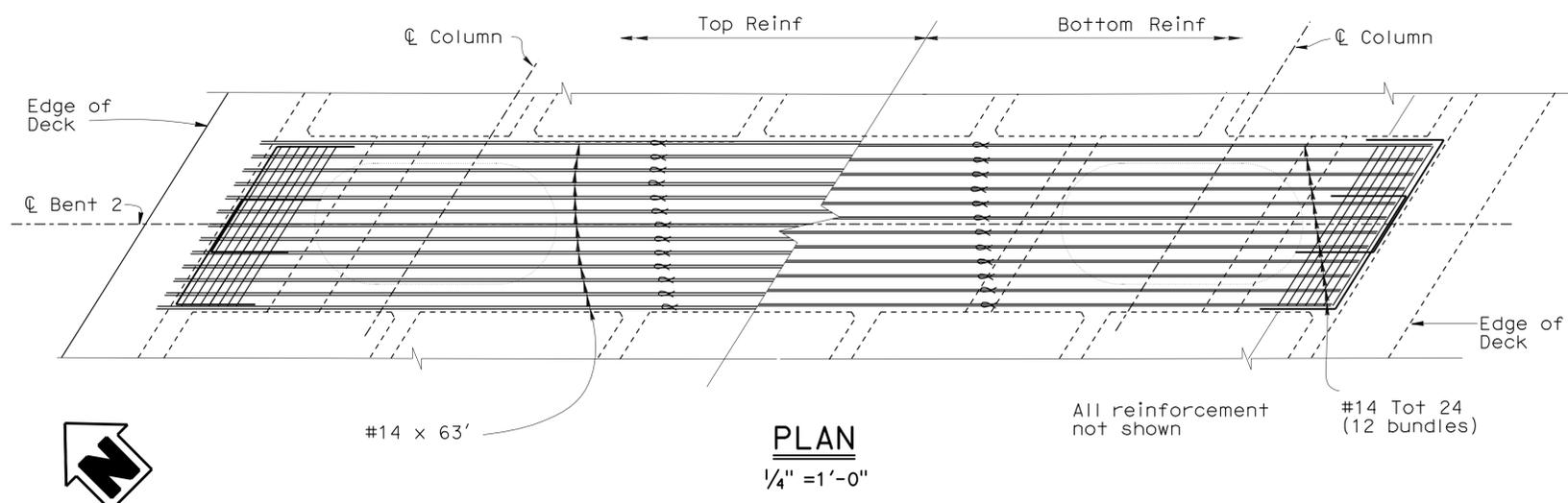
DESIGN	BY Feiruz Aberra	CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO. 56-0833	AIRPORT BLVD OVERCROSSING ABUTMENT DETAILS No. 2	
	DETAILS BY Kay Farahzadi	CHECKED Feiruz Aberra			POST MILE R16.73		
	QUANTITIES BY Feiruz Aberra	CHECKED Carl Duan					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08231 EA 478601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	
			0 1 2 3	FILE => 56-0833-f-a-dt02.dgn	10/16/08	12/17/09 01/05/10 01/07/09 01/17/09 03/05/09 03/17/09 05/07/09 07/29/09	SHEET 7 OF 19

USERNAME => fplanner DATE PLOTTED => 25-MAY-2010 TIME PLOTTED => 07:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	159	170
Feiruz Aberra REGISTERED CIVIL ENGINEER DATE 01/27/10			5-24-10 PLANS APPROVAL DATE		
No. C59376 Exp. 12/31/11 CIVIL			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.		

NOTES:

1. Reinforcement may be adjusted to clear P/S ducts
 2. For section "C-C" and "D-D" see, "BENT DETAILS" sheet
 3. Reinforcement may be trimmed to provide clearance for prestressing ducts as approved by the Engineer
 4. For transverse distribution of J-dowels, see "J Dowels Distribution Detail" at "Bent Details" sheet
 5. All hoops in columns shall be "Ultimate" butt spliced continuous
 6. No lap splices allowed in top and bottom longitudinal reinforcement
- ∞ Indicates bundle bars

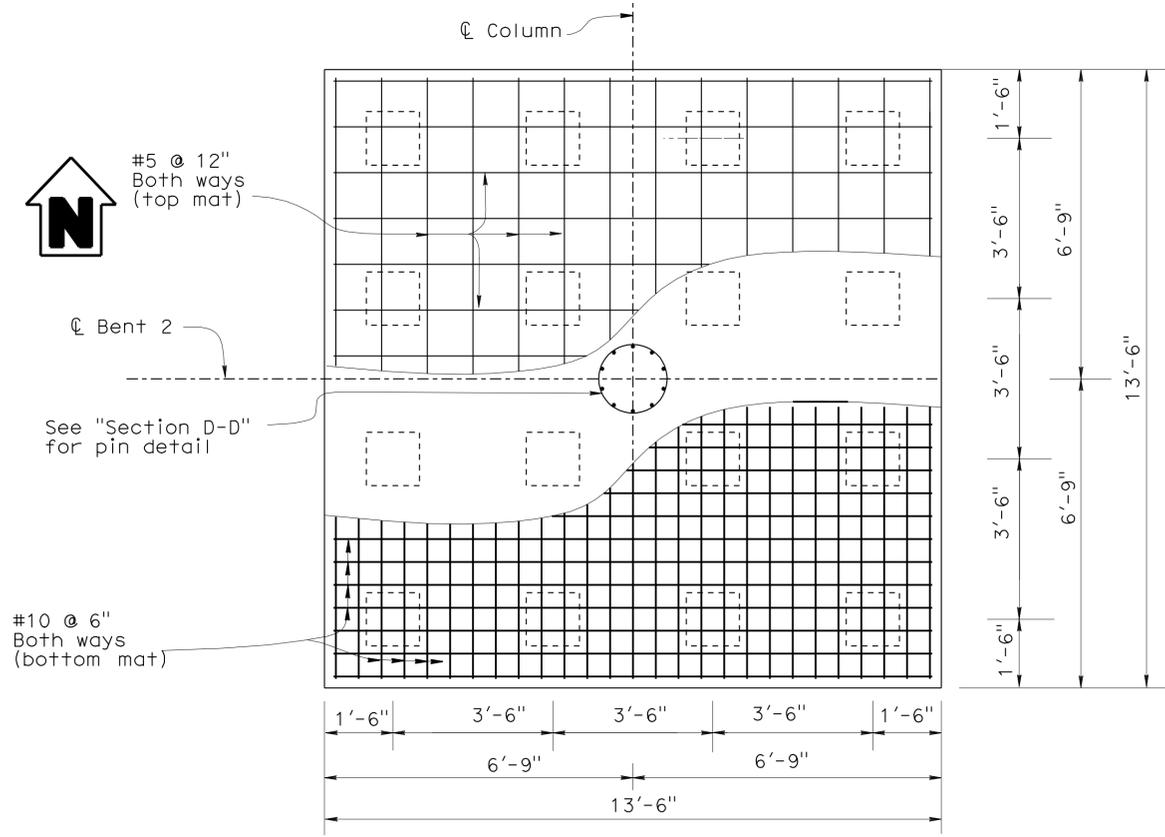


DESIGN BY Feiruz Aberra CHECKED Carl Duan DETAILS BY Kay Farahzadi CHECKED Feiruz Aberra QUANTITIES BY Feiruz Aberra CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO. 56-0833	AIRPORT BLVD OVERCROSSING BENT LAYOUT
			POST MILE R16.73	
			REVISION DATES	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08231 EA 478601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 8 OF 19

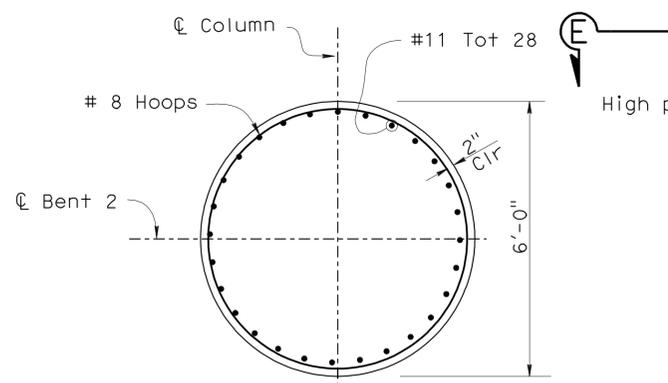
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	160	170

Feiruz Aberra 01/27/10
 REGISTERED CIVIL ENGINEER DATE
 5-24-10
 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.

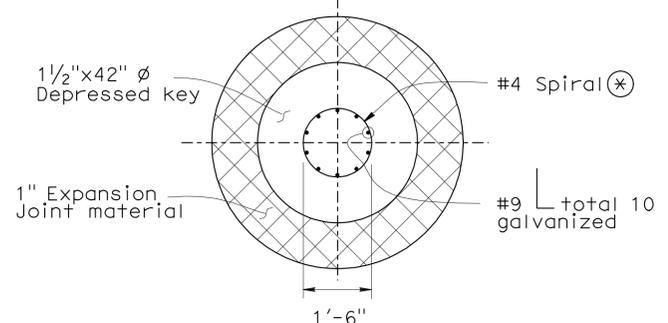
REGISTERED PROFESSIONAL ENGINEER
 FEIRUZ ADEM ABERRA
 No. C59376
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA



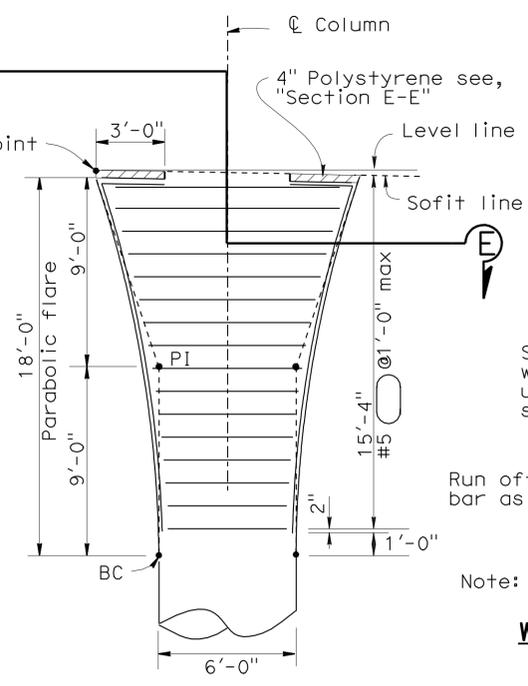
PLAN
1/2" = 1'-0"



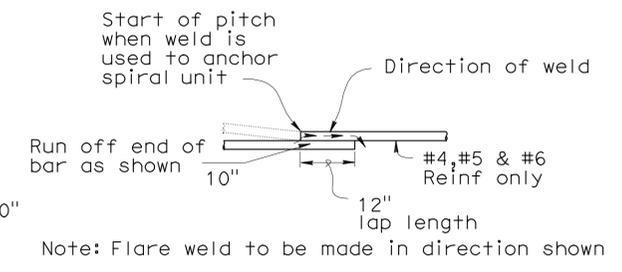
SECTION C-C
1/2" = 1'-0"



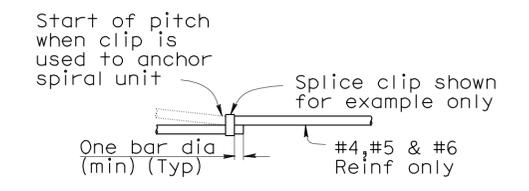
SECTION D-D
1/2" = 1'-0"



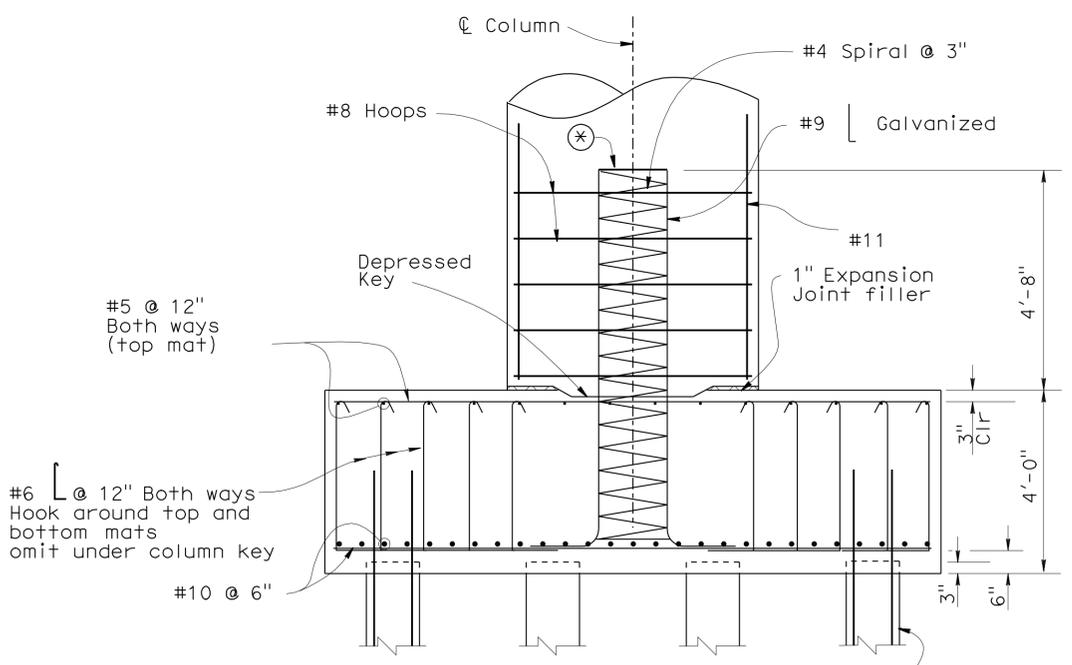
FLARE DETAIL
1/4" = 1'-0"



WELDED LAP SPLICE AND ANCHOR

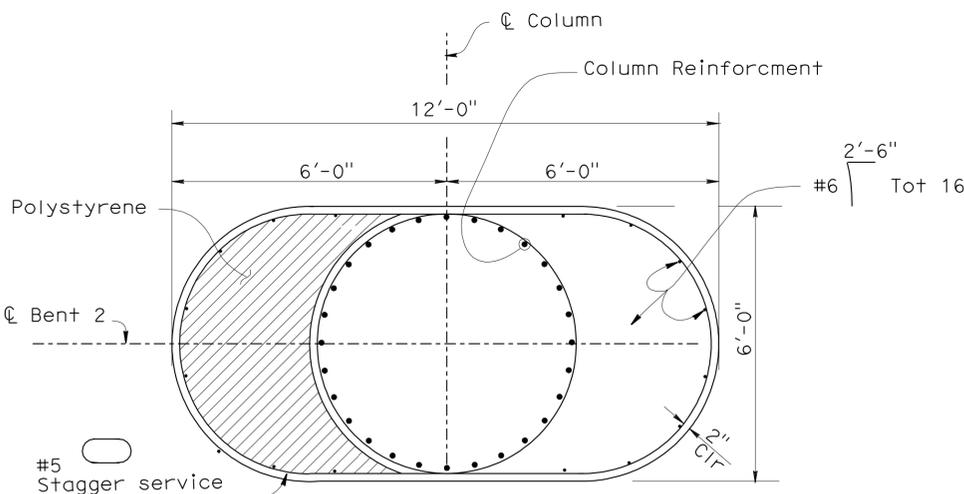


MECHANICAL LAP SPLICE AND ANCHOR
SPIRAL SPLICE AND ANCHOR DETAIL
No Scale

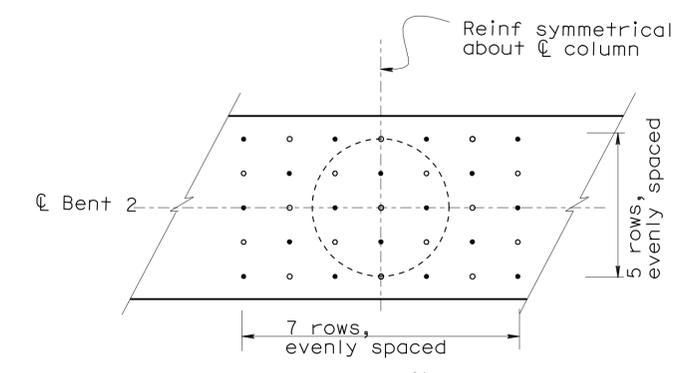


ELEVATION

FOOTING DETAILS
1/2" = 1'-0"



SECTION E-E
1/2" = 1'-0"



J-DOWEL DISTRIBUTION DETAIL
1/4" = 1'-0"

⊗ For end anchorage, see "SPIRAL END ANCHOR AND SPLICE DETAIL"

Class 200 Alternative "X" Piles (B2-8)

DESIGN	BY Feiruz Aberra	CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO.	AIRPORT BLVD OVERCROSSING BENT DETAILS
DETAILS	BY Kay Farahzadi	CHECKED Feiruz Aberra			56-0833	
QUANTITIES	BY Feiruz Aberra	CHECKED Carl Duan			R16.73	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 CU 08231 EA 478601 DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES						SHEET	OF
09/26/08	12/14/09	01/06/10	01/26/09	01/28/09	05/04/09	9	19

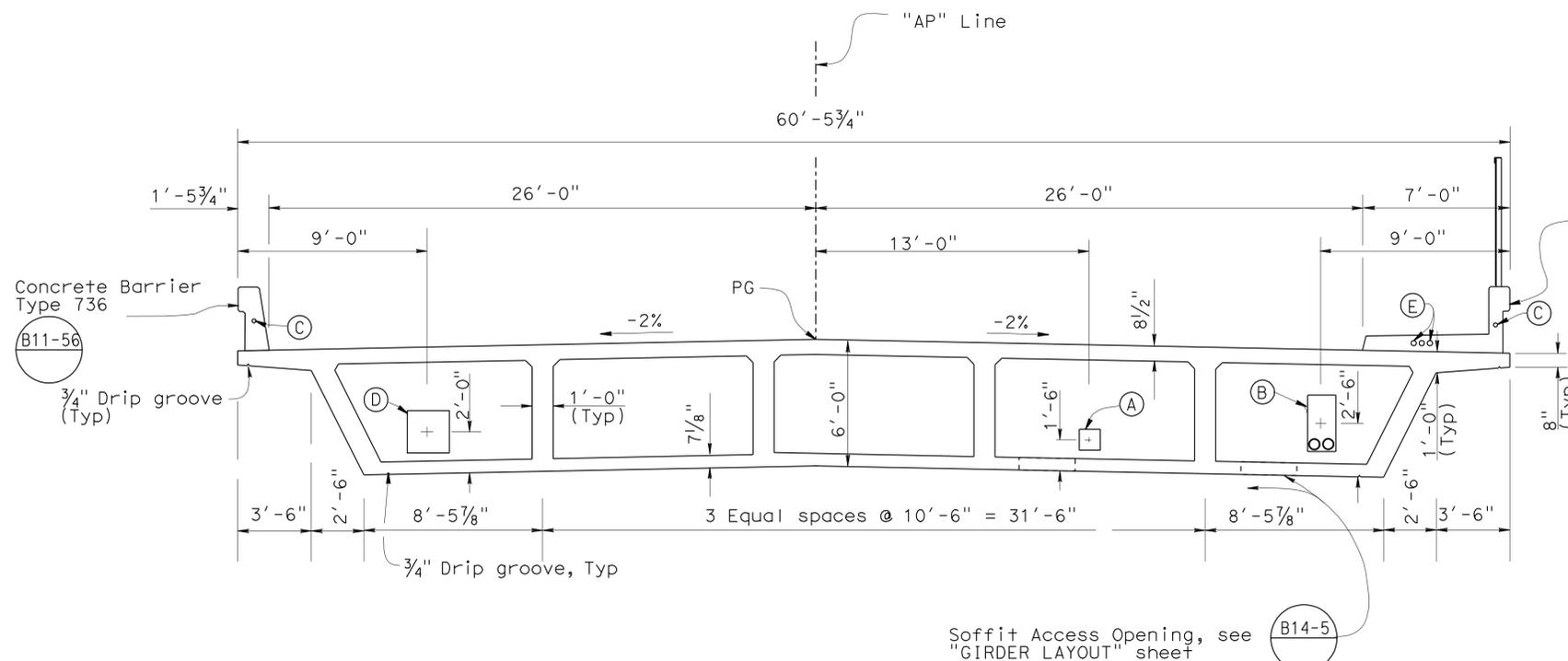
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	161	170

Feiruz Aberra
REGISTERED CIVIL ENGINEER 01/27/10 DATE

5-24-10
PLANS APPROVAL DATE

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Concrete Barrier Type 26 (Mod) with Chain Link Railing Type 7

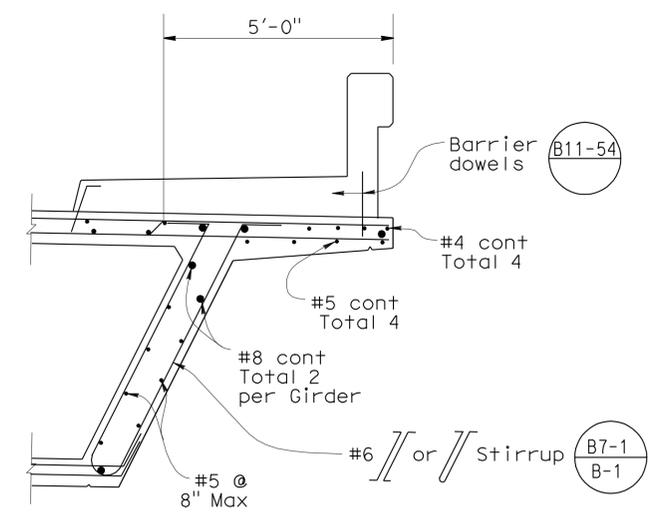
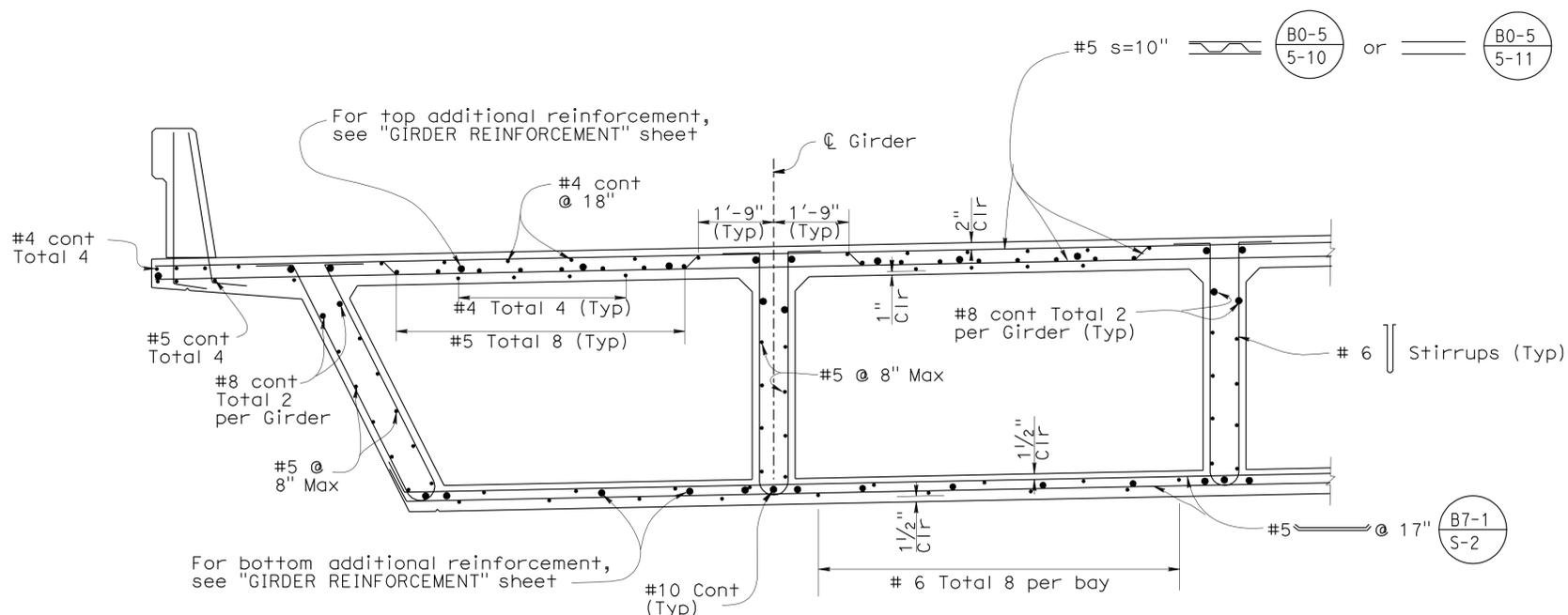
B11-54 B11-52

UTILITY OPENINGS					
LOCATION	UTILITY	OWNER	CONDUIT SIZE	UTILITY OPENING SIZE WXH (in)	
				END DIAPHRAGM	BENT
A	COMMUNICATION	VERIZON	4-4"	12x12	12x12
B	ELECTRICAL	IID	8-6"	16x32	16x32
C	FUTURE SIGN LIGHTING	CALTRANS	1-1/2"	N/A	N/A
D	FUTURE UTILITY	CALTRANS	N/A	24x24	24x24
E	SIGNAL INTERCONNECT AND FUTURE	CALTRANS	3-2"	N/A	N/A

TYPICAL SECTION
1/4" = 1'-0"

NOTE: See "Road Plans" for more information

B14-3

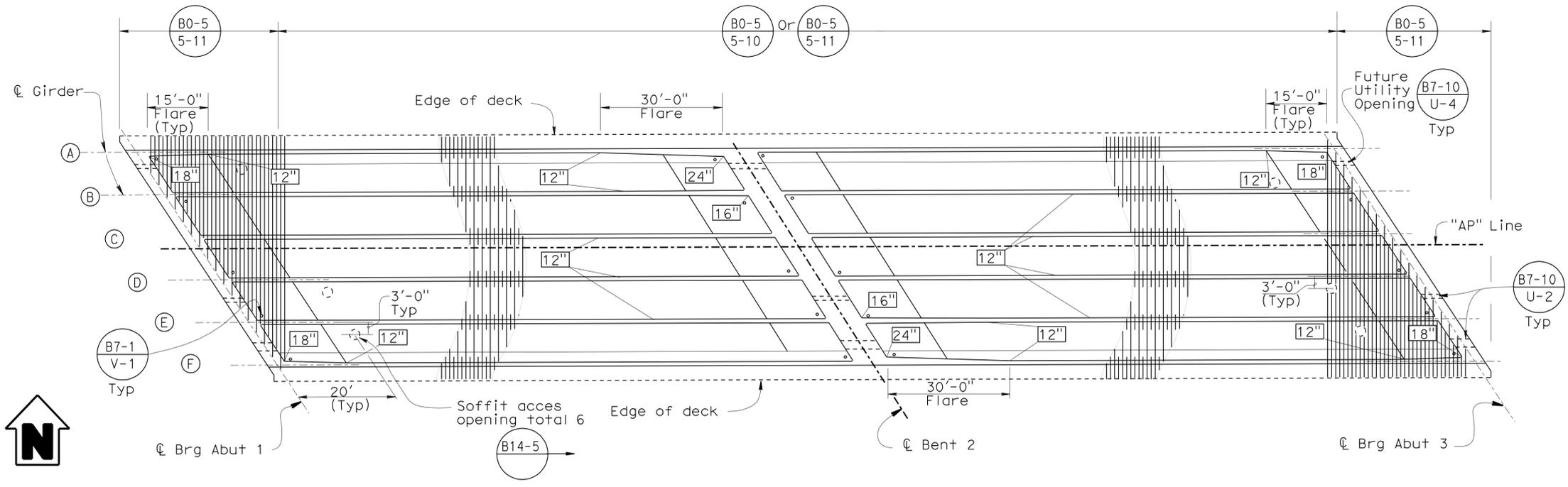


PART TYPICAL SECTION
1/2" = 1'-0"

DESIGN BY Feiruz Aberra CHECKED Carl Duan	DETAILS BY Kay Farahzadi CHECKED Feiruz Aberra	QUANTITIES BY Feiruz Aberra CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO. 56-0833	AIRPORT BLVD OVERCROSSING TYPICAL SECTION
					POST MILE R16.73	
					REVISION DATES	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)						FILE => 56-0833-k-ts.dgn
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						DISREGARD PRINTS BEARING EARLIER REVISION DATES
0 1 2 3						CU 08231 EA 478601
12/17/02 01/06/10 07/07/02 01/25/02 03/14/02 05/04/02 07/28/02 08/04/02						SHEET 10 OF 19

USERNAME => FT:tenara DATE PLOTTED => 25-MAY-2010 TIME PLOTTED => 07:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	162	170
Feiruz Aberra REGISTERED CIVIL ENGINEER DATE 01/27/10			5-24-10 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.			REGISTERED PROFESSIONAL ENGINEER FEIRUZ ADEM ABERRA No. C59376 Exp. 12/31/11 CIVIL STATE OF CALIFORNIA		



GIRDER LAYOUT
 $\frac{1}{16}'' = 1'$

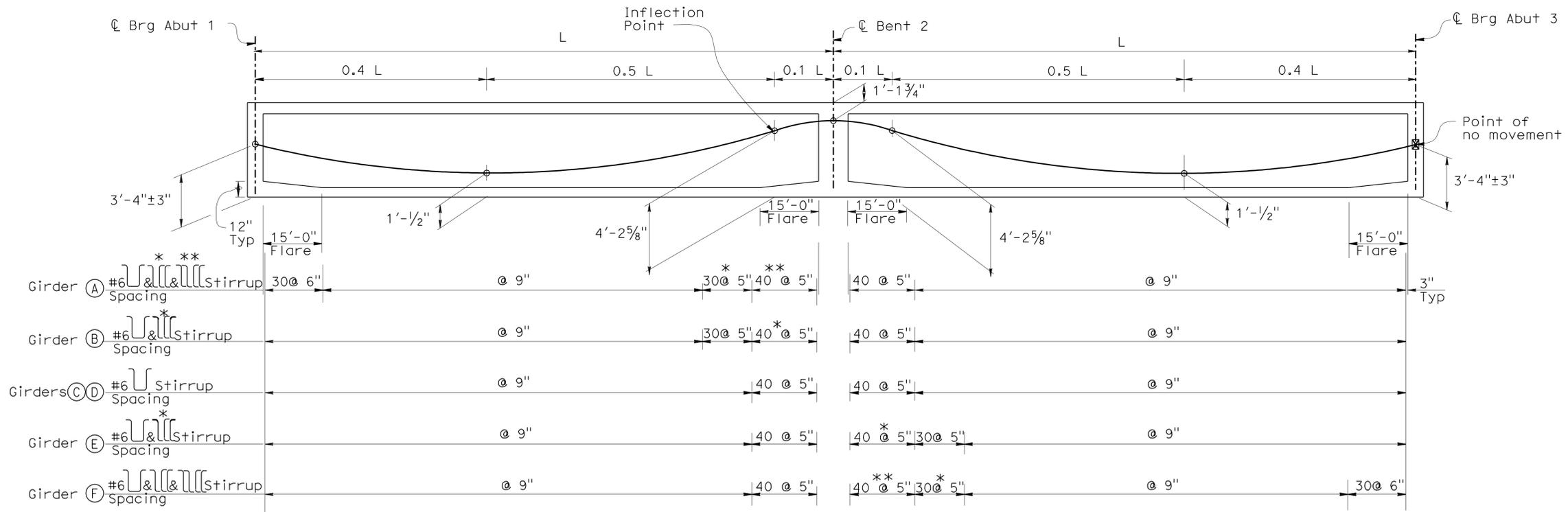
PRESTRESSING NOTES
 270 KSI Low Relaxation Strand:
 $P_{jack} = 13\ 992$ kips
 Anchor Set = $\frac{3}{8}$ in
 Total Number of Girders = 6

Distribution of prestress force (P_{jack}) between girders shall not exceed the ratio of 3:2.
 Maximum final force variation between girders shall not exceed 725 kips.
 Concrete: $f'_c = 4\ 500$ psi @ 28 days
 $f'_{ci} = 3\ 500$ psi @ time of stressing

Contractor shall submit elongation calculations based on initial stress at
 $\lambda = 0.8785$ times jacking stress.

One end stressing shall be performed from Abutment 1 end only.

- NOTES:**
- Indicates stem width
 - 1. For End Diaphragm details, see Anchorage General Zone Reinforcement on "ABUTMENT DETAILS NO. 2" sheet
 - 2. For additional deck corner reinforcement, see "GIRDER DETAILS" sheet



LONGITUDINAL SECTION
 $\frac{1}{16}'' = 1''$ Horizi
 $\frac{1}{4}'' = 1'$ Vert

DESIGN	BY Feiruz Aberra	CHECKED Carl Duan
DETAILS	BY Kay Farahzadi	CHECKED Feiruz Aberra
QUANTITIES	BY Feiruz Aberra	CHECKED Carl Duan

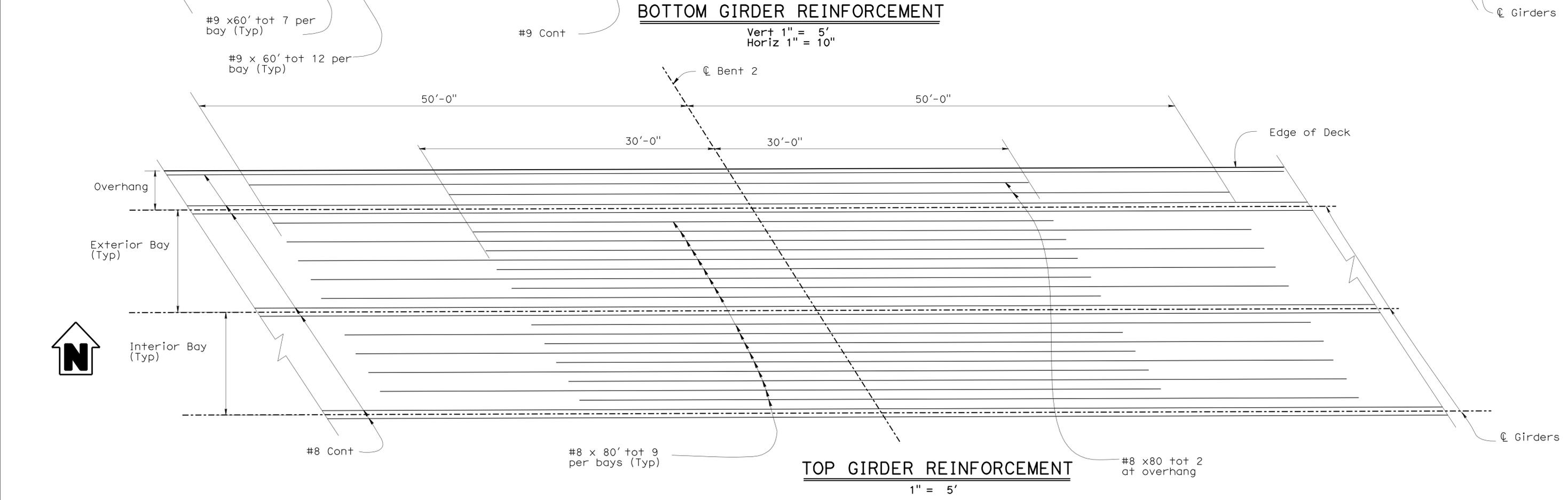
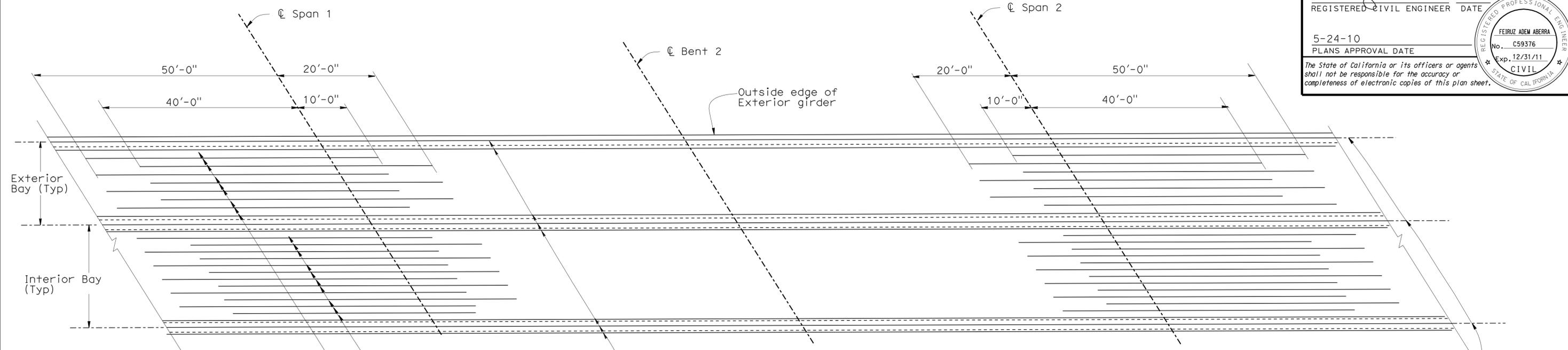
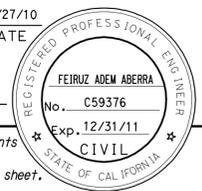
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH **20**

BRIDGE NO.	56-0833	AIRPORT BLVD OVERCROSSING GIRDER LAYOUT
POST MILE	R16.73	

USERNAME => h1tenard DATE PLOTTED => 25-MAY-2010 TIME PLOTTED => 07:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	163	170
Feiruz Aberra		01/27/10	REGISTERED CIVIL ENGINEER DATE		
5-24-10		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.					

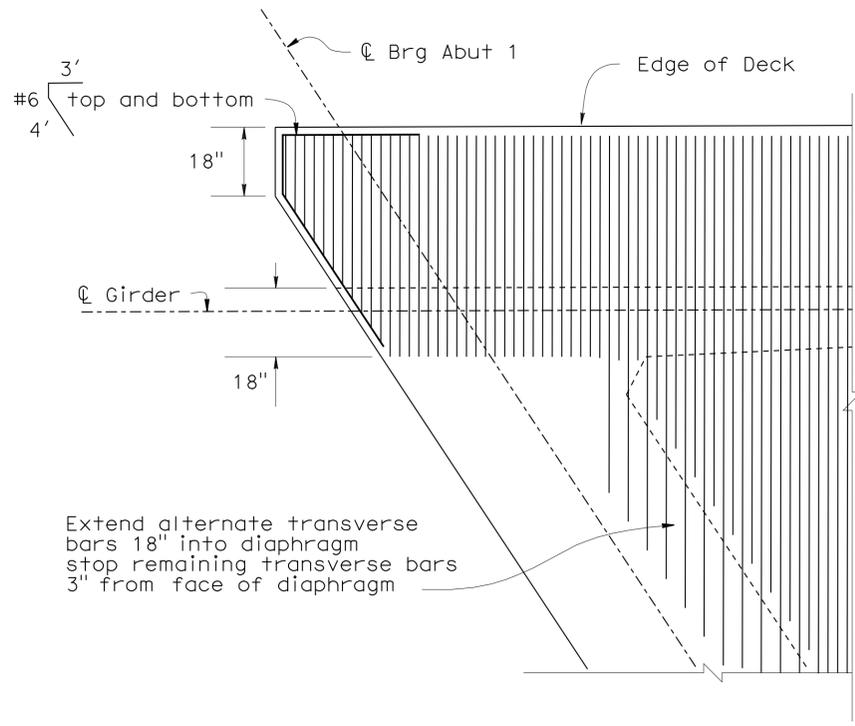


STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Feiruz Aberra	CHECKED Carl Duan	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 20	BRIDGE NO.	56-0833	AIRPORT BLVD OVERCROSSING GIRDER REINFORCEMENT
	DETAILS	BY Kay Farahzadi	CHECKED Feiruz Aberra			POST MILE	R16.73	
	QUANTITIES	BY Feiruz Aberra	CHECKED Carl Duan			REVISION DATES	09/24/08 11/29/08 11/29/08 01/26/09 02/10/09 05/01/09	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					0 1 2 3	CU 08231 EA 478601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 12 OF 19

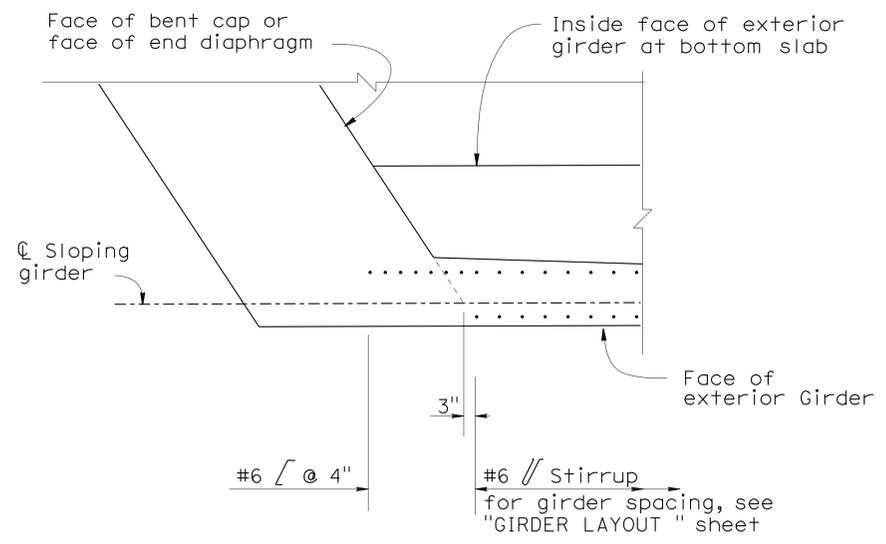
USERNAME => h1lenard DATE PLOTTED => 25-MAY-2010 TIME PLOTTED => 07:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	164	170

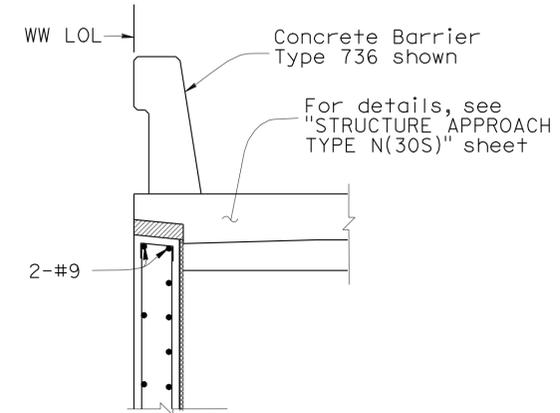
Feiruz Aberra 01/27/10
 REGISTERED CIVIL ENGINEER DATE
 5-24-10
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



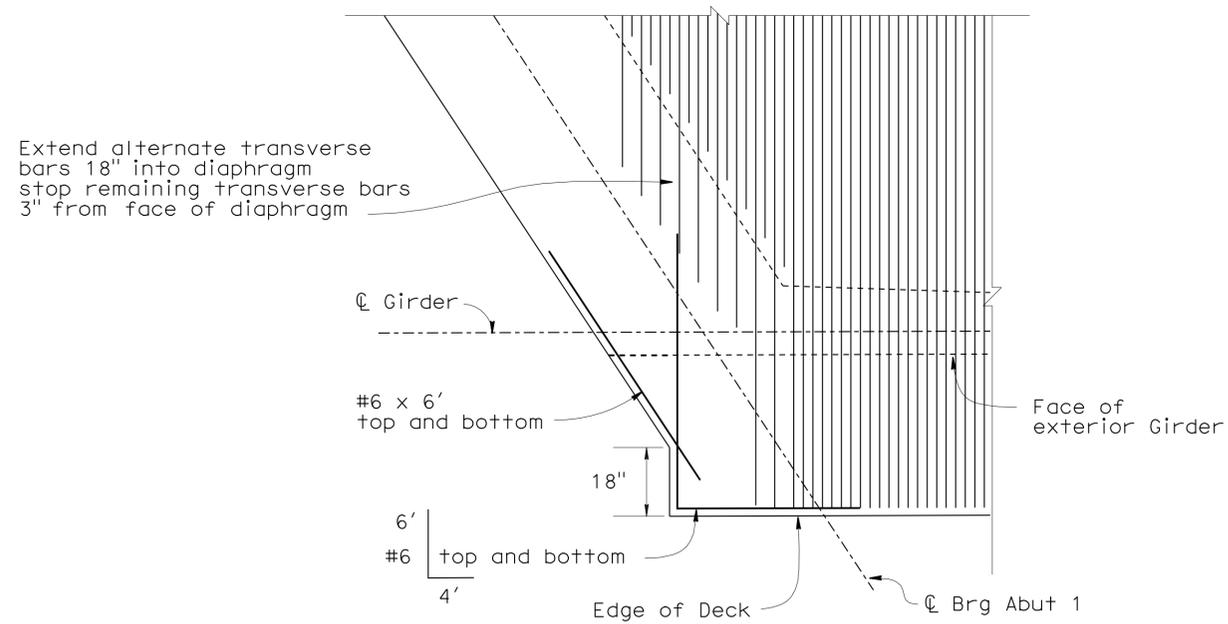
**DECK CORNER DETAIL
ACUTE SIDE**
1/2"=1'-0"



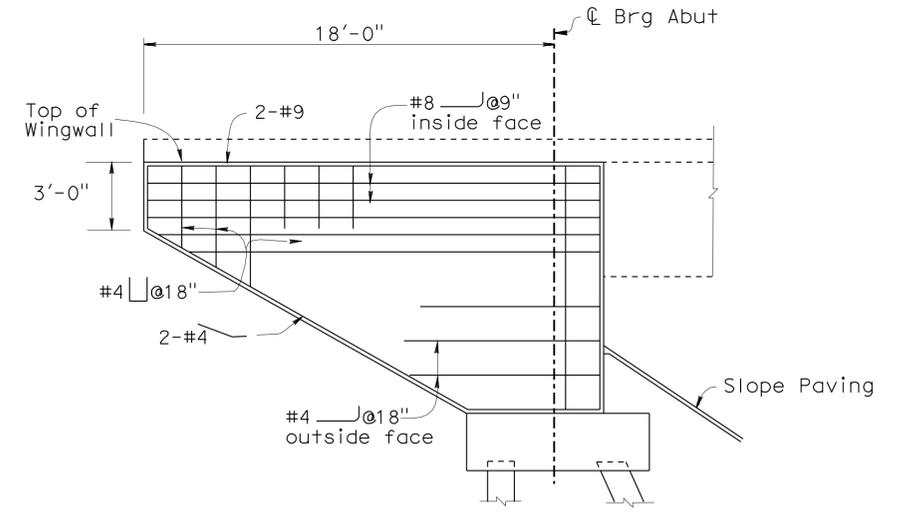
OBTUSE CORNER STIRRUP DETAIL
1/2"=1'-0"



WINGWALL SECTION
1/2"=1'-0"



**DECK CORNER DETAIL
OBTUSE SIDE**
1/2"=1'-0"



WINGWALL ELEVATION
1/4"=1'-0"

Abutment 1 shown
Abutment 3 similar

For more details, see (B0-1)

DESIGN	BY Feiruz Aberra	CHECKED Carl Duan
DETAILS	BY Kay Farahzadi	CHECKED Feiruz Aberra
QUANTITIES	BY Feiruz Aberra	CHECKED Carl Duan

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 20

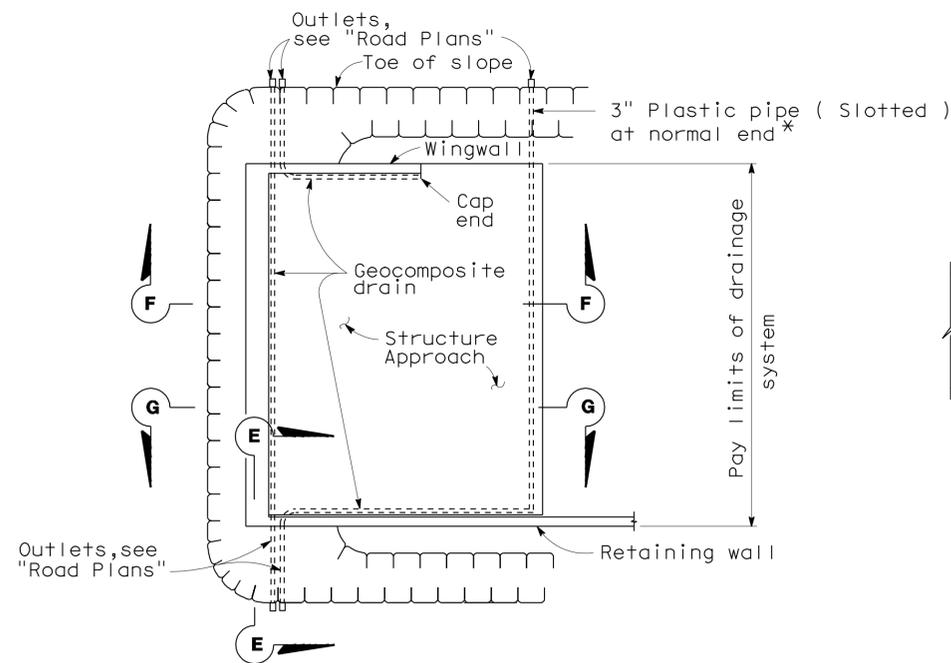
BRIDGE NO.	56-0833
POST MILE	R16.73

AIRPORT BLVD OVERCROSSING
GIRDER DETAILS

REVISION DATES	
01/27/09	03/11/09
05/07/09	07/29/09
08/04/09	12/17/09
01/19/10	

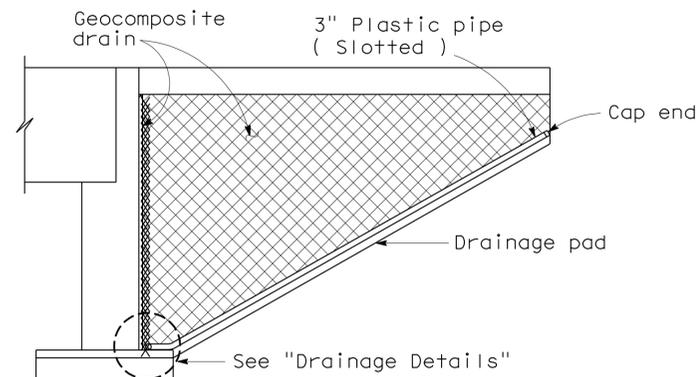
USERNAME => flennard DATE PLOTTED => 25-MAY-2010 TIME PLOTTED => 07:50

DIST.	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	165	170
Feiruz Aberra 01/27/10 REGISTERED ENGINEER - CIVIL No. C59376 Exp. 12/31/11 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.					

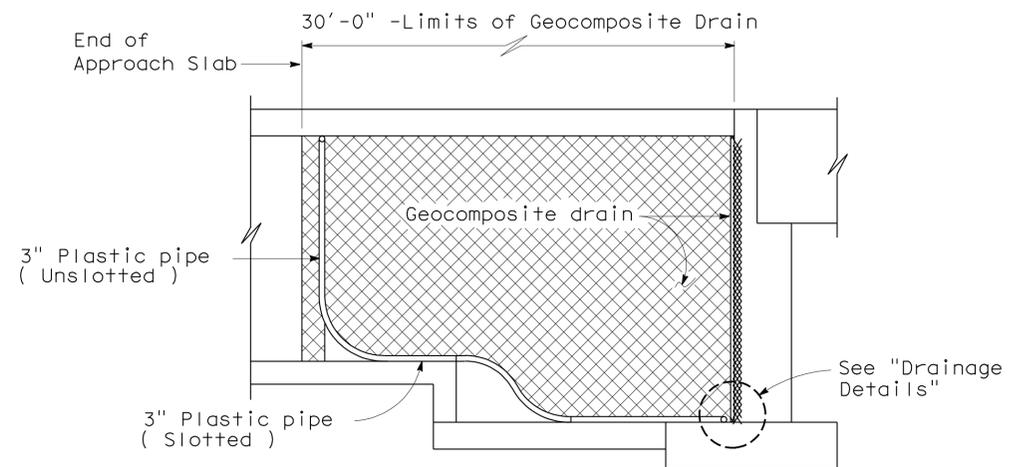


TYPICAL PLAN
1"=10'

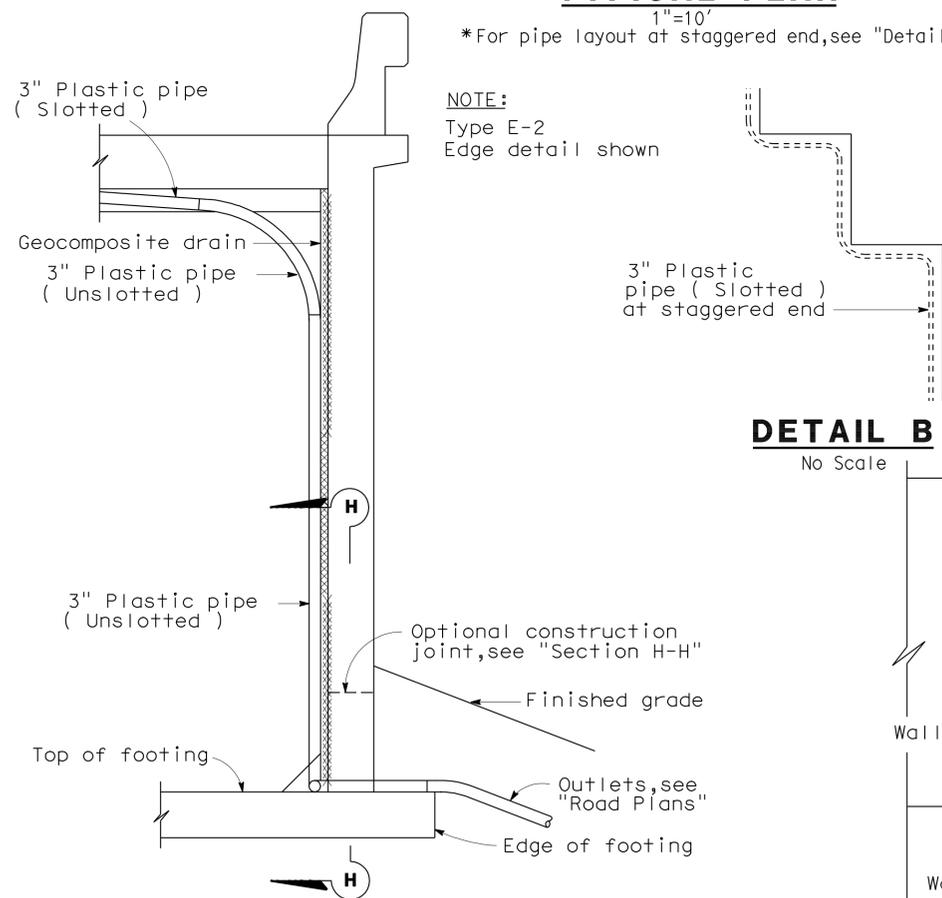
*For pipe layout at staggered end, see "Detail B".



CANTILEVER WINGWALL SECTION F-F
1/4"=1'-0"



RETAINING WALL WINGWALL SECTION G-G
1/4"=1'-0"



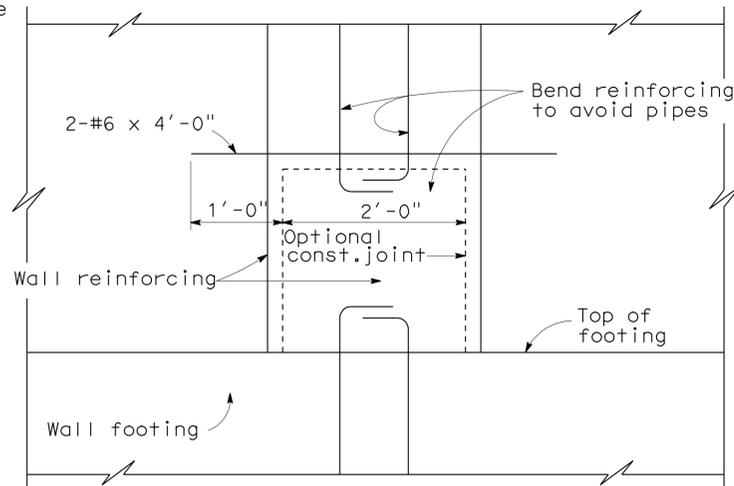
SECTION E-E
1/2"=1'-0"

NOTE: Bends and junctions in 3" plastic pipe are 30" radius min.

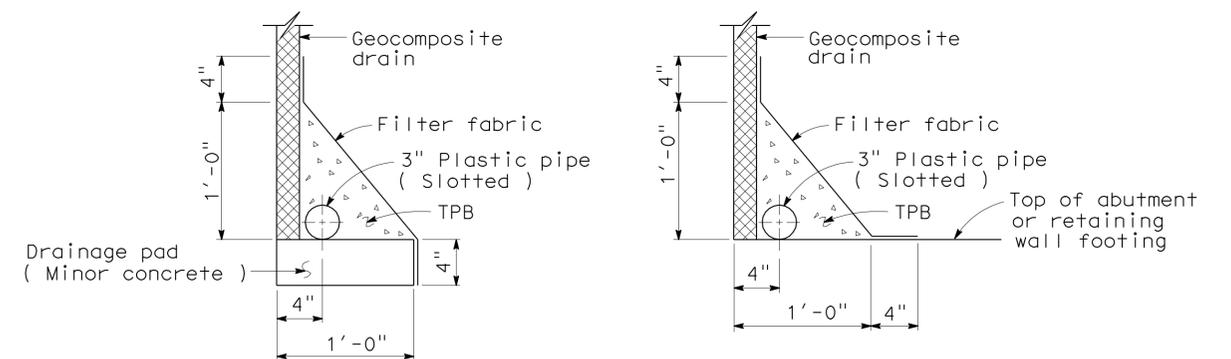
NOTE:
Type E-2
Edge detail shown



DETAIL B
No Scale



SECTION H-H
1"=1'



WITHOUT FOOTING

WITH FOOTING

DRAINAGE DETAILS

1/2"=1'-0"

STANDARD DRAWING

RELEASE DATE 4/23/98	DESIGN BY <i>M. TRAFFALIS</i>	CHECKED <i>E. THORKILDSEN</i>	RELEASED BY <i>[Signature]</i>
FILE NO. xs3-110e	DETAILS BY <i>R. YEE</i>	CHECKED <i>E. THORKILDSEN</i>	OFFICE CHIEF <i>[Signature]</i>
	SUBMITTED BY <i>M. HA</i>	DRAWING DATE <i>4/98</i>	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

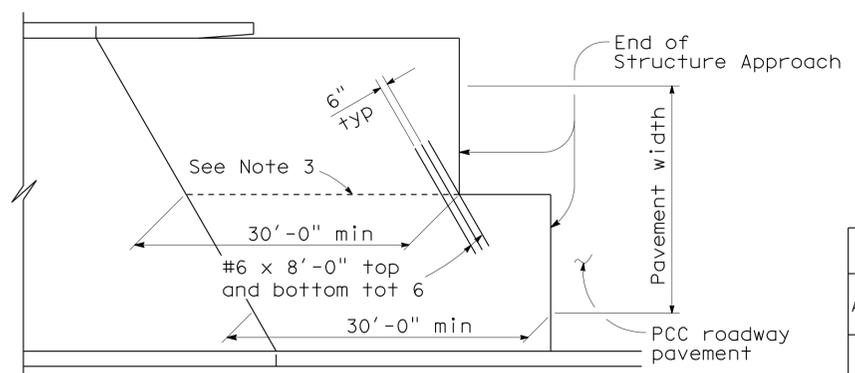
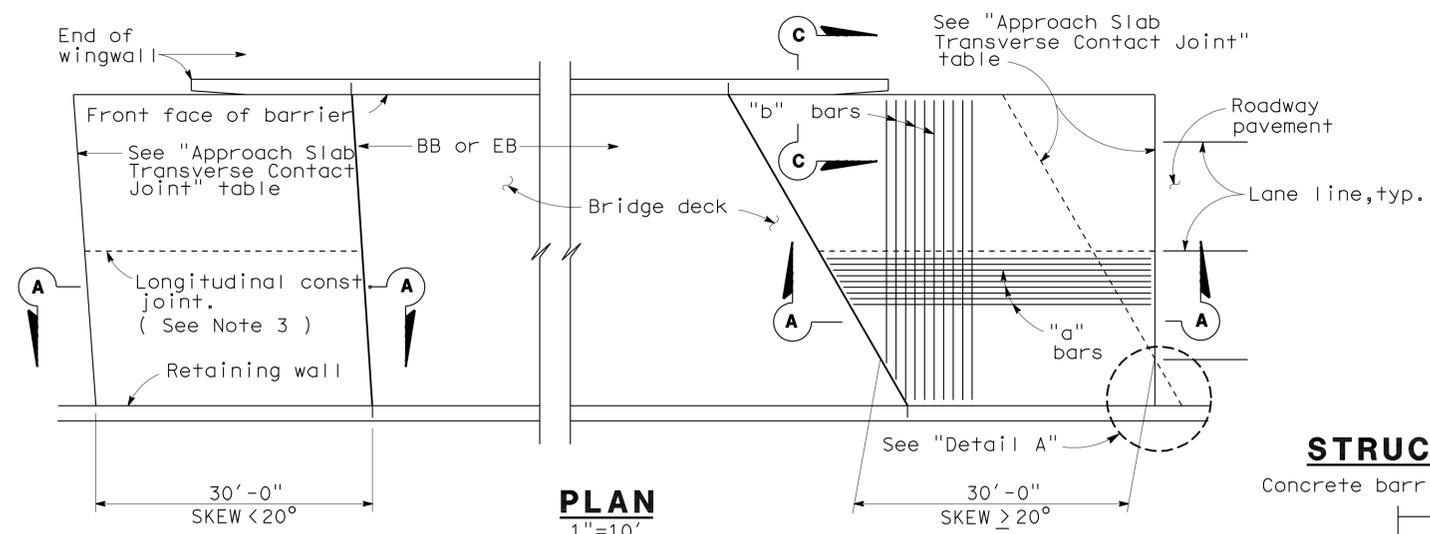
BRIDGE NO.
56-0833
MILE POST
R16.73

AIRPORT BLVD OVERCROSSING
STRUCTURE APPROACH DRAINAGE DETAILS

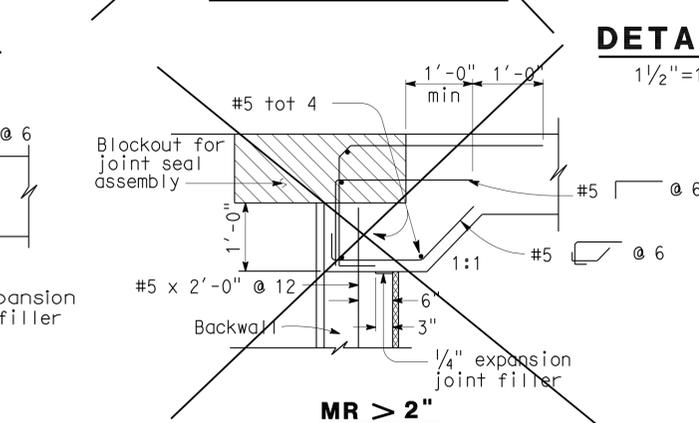
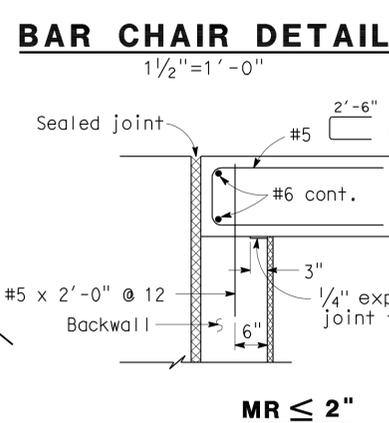
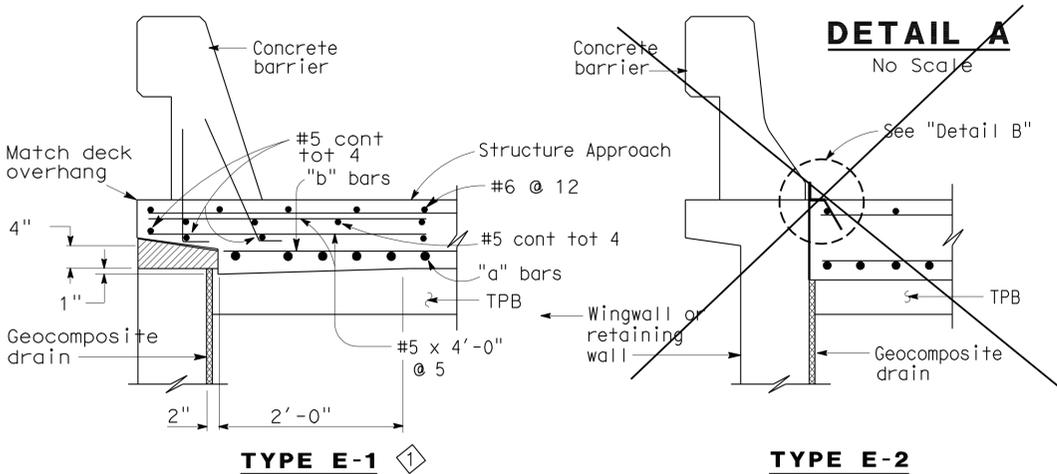
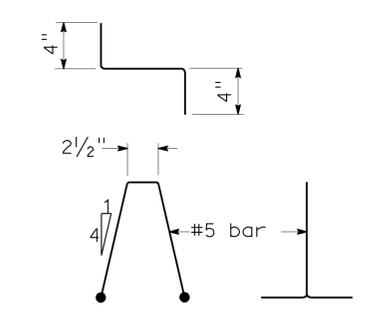
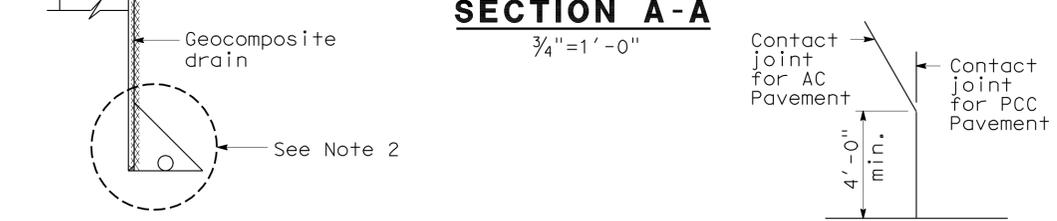
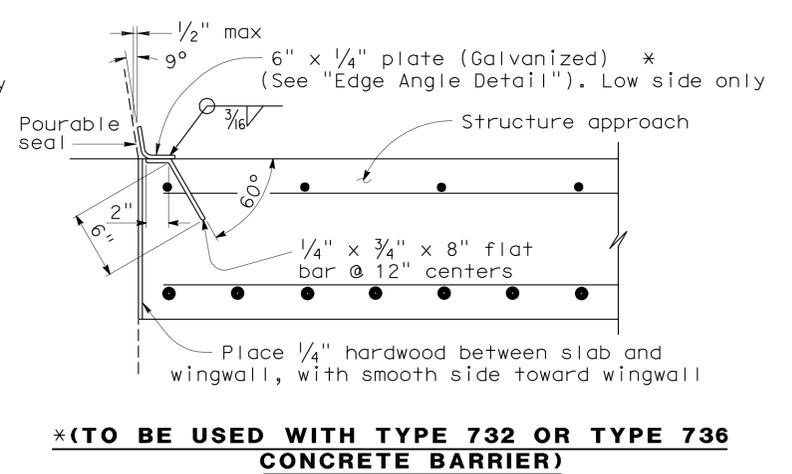
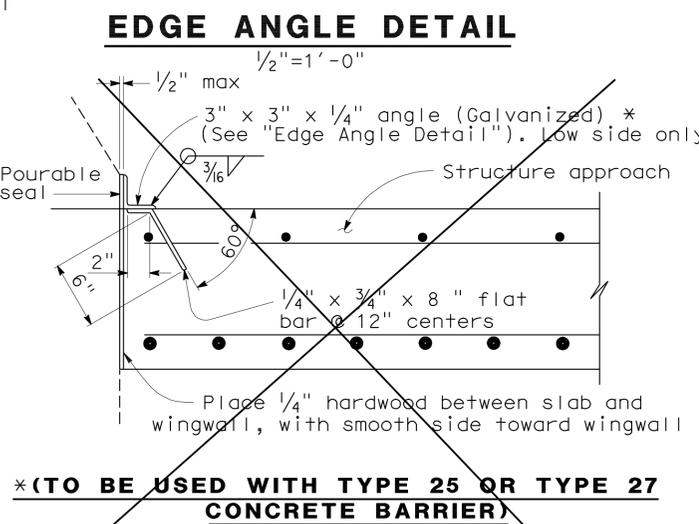
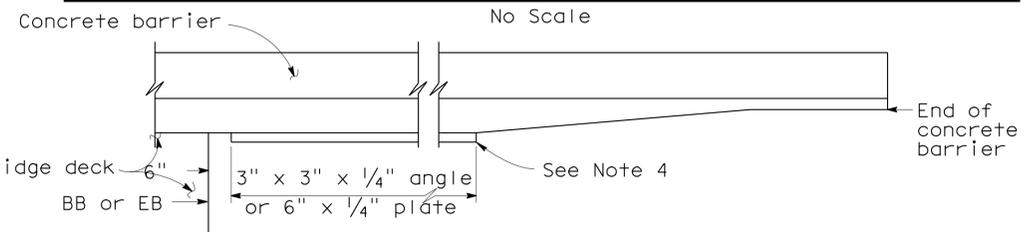
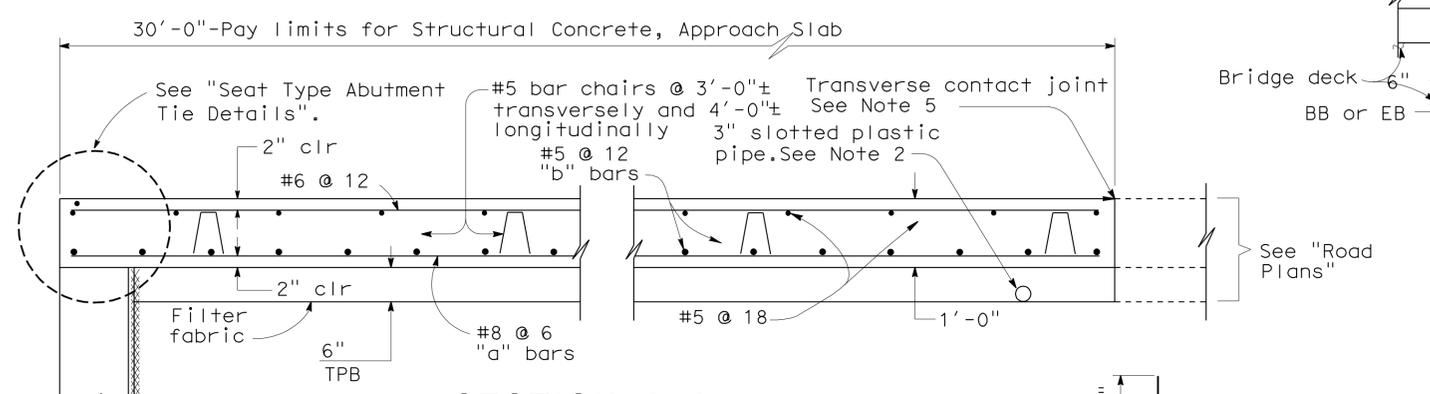
DIST.	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	166	170

Fevuz Abera 01/27/10
 REGISTERED ENGINEER - CIVIL
 No. C59376
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA

5-24-10
 PLANS APPROVAL DATE
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APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart.
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line.



- NOTES:**
- For details not shown, see Structure Plans. For MR ≤ 2, adjust bar reinforcement to clear a sawcut for sealed joint, when required.
 - For drainage details, see "Structure Approach Drainage Details" sheet.
 - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
 - At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along roadway.
- Remove all polystyrene.

STANDARD DRAWING				Detail Modified RELEASED BY: <i>[Signature]</i> OFFICE CHIEF
RELEASE DATE	DESIGN BY	CHECKED	RELEASED BY	
3/14/05	M. TRAFFALIS	E. THORKILDSEN	E. THORKILDSEN	
FILE NO. xs3-120e	DETAILS BY R. YEE	CHECKED E. THORKILDSEN		
	SUBMITTED BY M. HA	DRAWING DATE 4/98		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

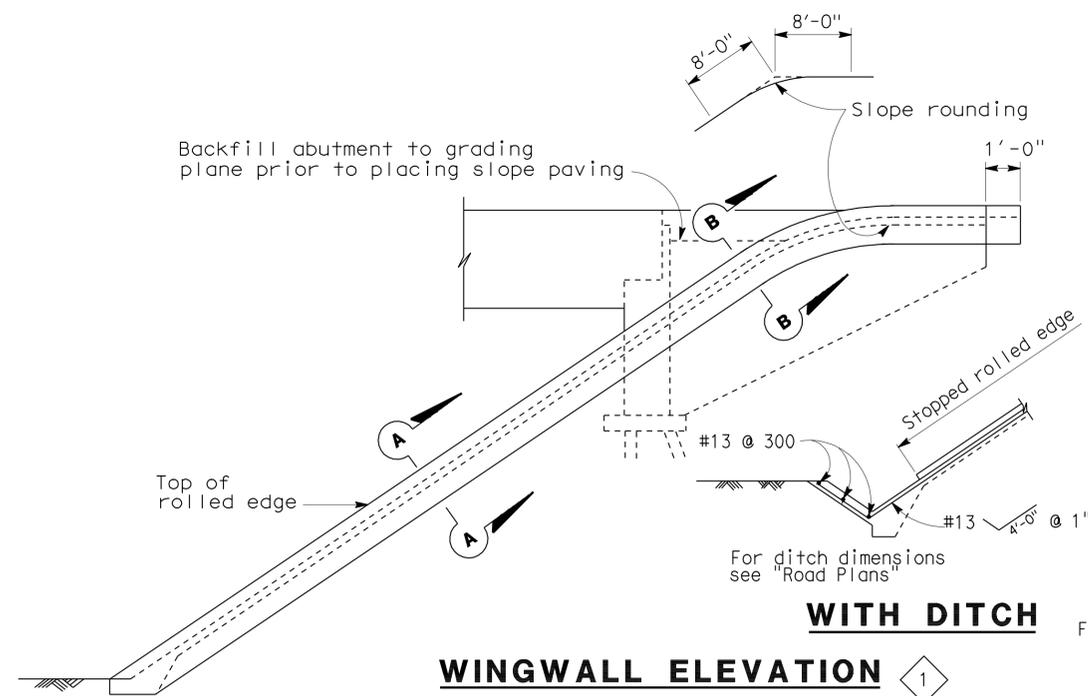
DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 56-0833
MILE POST R16.73

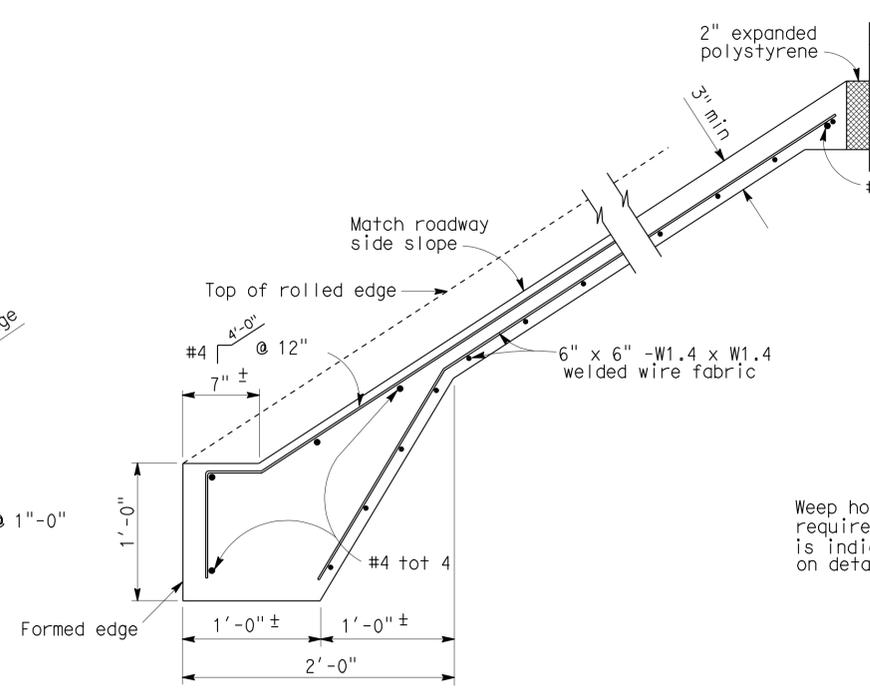
AIRPORT BLVD OVERCROSSING
STRUCTURE APPROACH TYPE N(30S)

DIST.	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	167	170

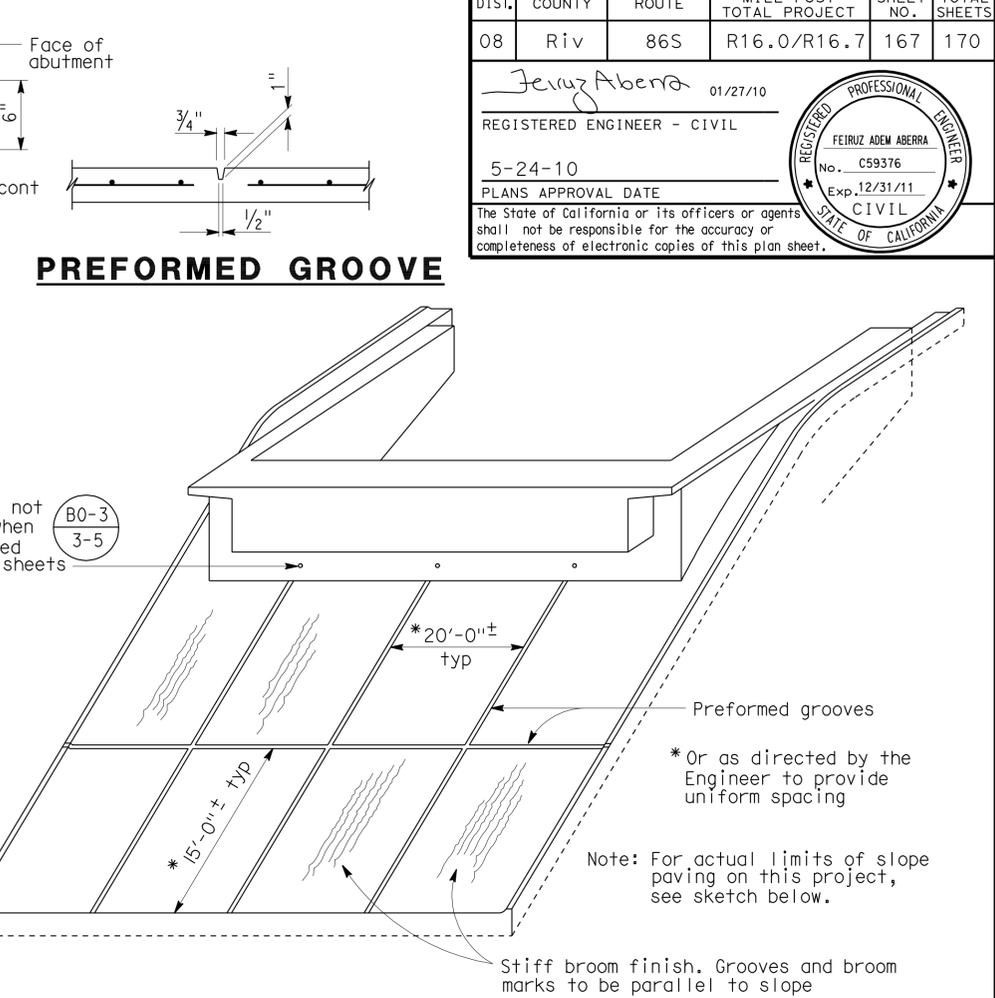
Feiruz Abera 01/27/10
 REGISTERED ENGINEER - CIVIL
 No. C59376
 Exp. 12/31/11
 PLANS APPROVAL DATE
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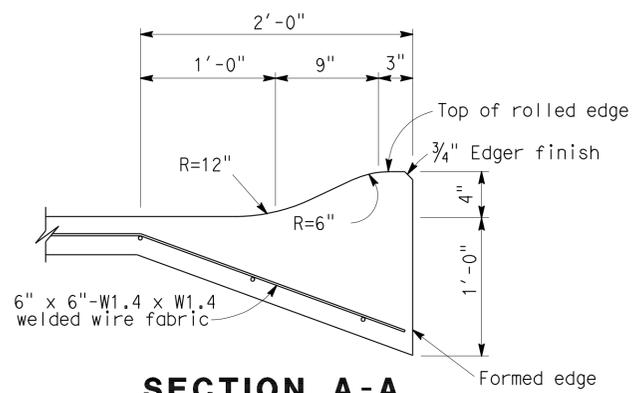
WINGWALL ELEVATION 1



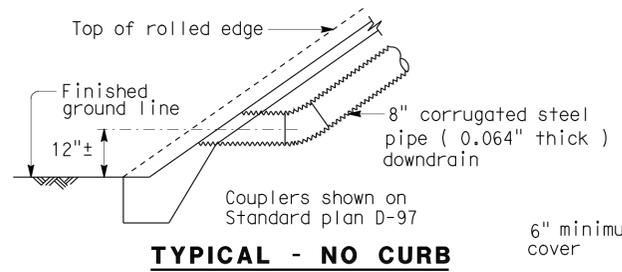
TYPICAL SECTION - CONCRETE PAVING



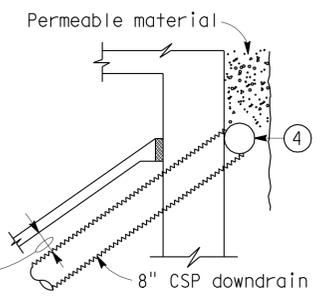
PICTORIAL VIEW OF TYPICAL INSTALLATION



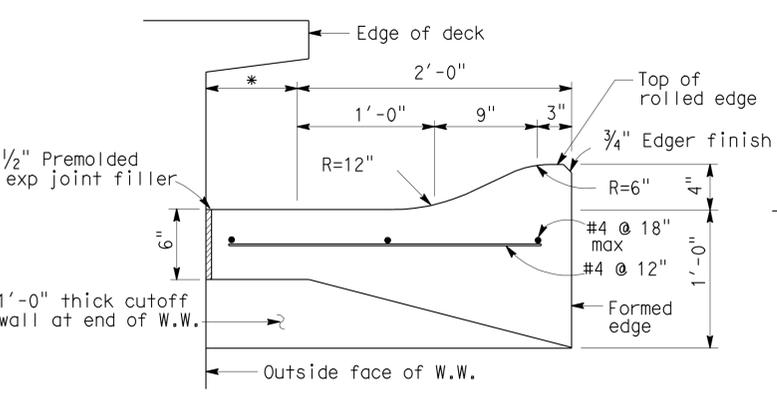
SECTION A-A



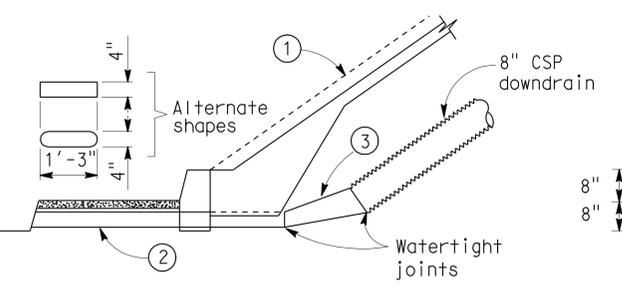
TYPICAL - NO CURB



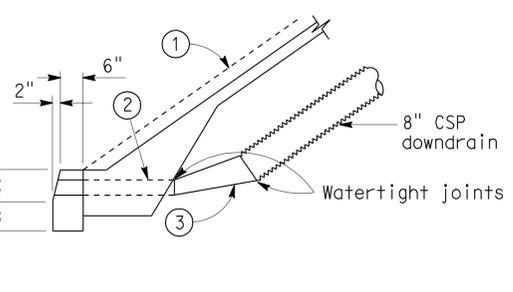
TYPICAL - DRAIN CONNECTION



SECTION B-B



TYPICAL - WITH SIDEWALK



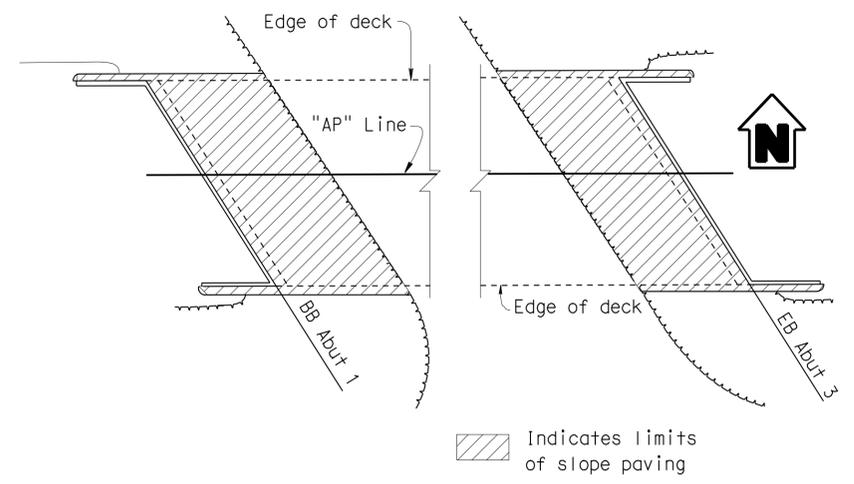
TYPICAL - WITH CURB

DRAINAGE DETAILS

Note: Drainage details are only applicable when is indicated on detail sheets.

- ① Top of rolled edge
- ② Conduit: 0.064" galv corrugated steel or 0.11" smooth galv steel
- ③ Taper: { 0.064" / 0.11" smooth galv steel
- ④ 8" perforated steel pipe (0.064" thick) underdrain behind abutment. Connect to down drain as shown on limits of Slope Paving & Drainage layout.

LIMITS OF SLOPE PAVING & DRAINAGE LAYOUT



Indicates limits of slope paving

No Scale

*This dimension becomes zero when edge of deck is at outside face of W.W.

STANDARD DRAWING			
RELEASE DATE	DESIGN BY	CHECKED	RELEASED BY
	BY D. Wooton	CHECKED	Tom Ostrom
FILE NO. xs4-210e	SUBMITTED BY Dan Adams	DRAWING DATE 6/07	OFFICE CHIEF

1 Detail modified

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 56-0833
MILE POST R16.73

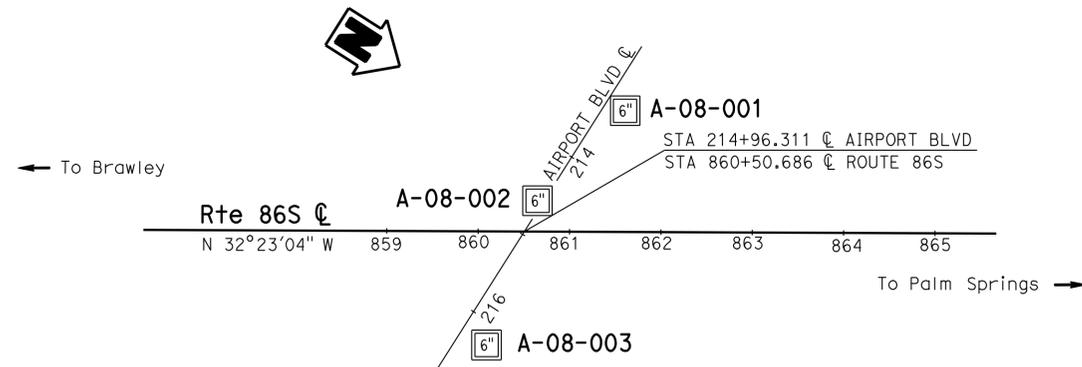
AIRPORT BLVD OVERCROSSING
SLOPE PAVING - FULL SLOPE

BENCH MARK

SURVEY CONTROL

SUHV 505
 Fnd 1' ip/WITH RED CT PLUG
 86.770' Lt. C Rte 86S
 Sta. 858+65.08
 N 2 177 075.344
 E 6 597 325.681
 Elev. = 381.010

SUHV 502
 Fnd 1' ip/WITH RED CT PLUG
 84.558' R Xt. C Rte 86S
 Sta. 863+24.12
 N 2 177 554.767
 E 6 597 224.544
 Elev. = 381.940



PLAN

1" = 100'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Riv	86S	R16.0/R16.7	168	170

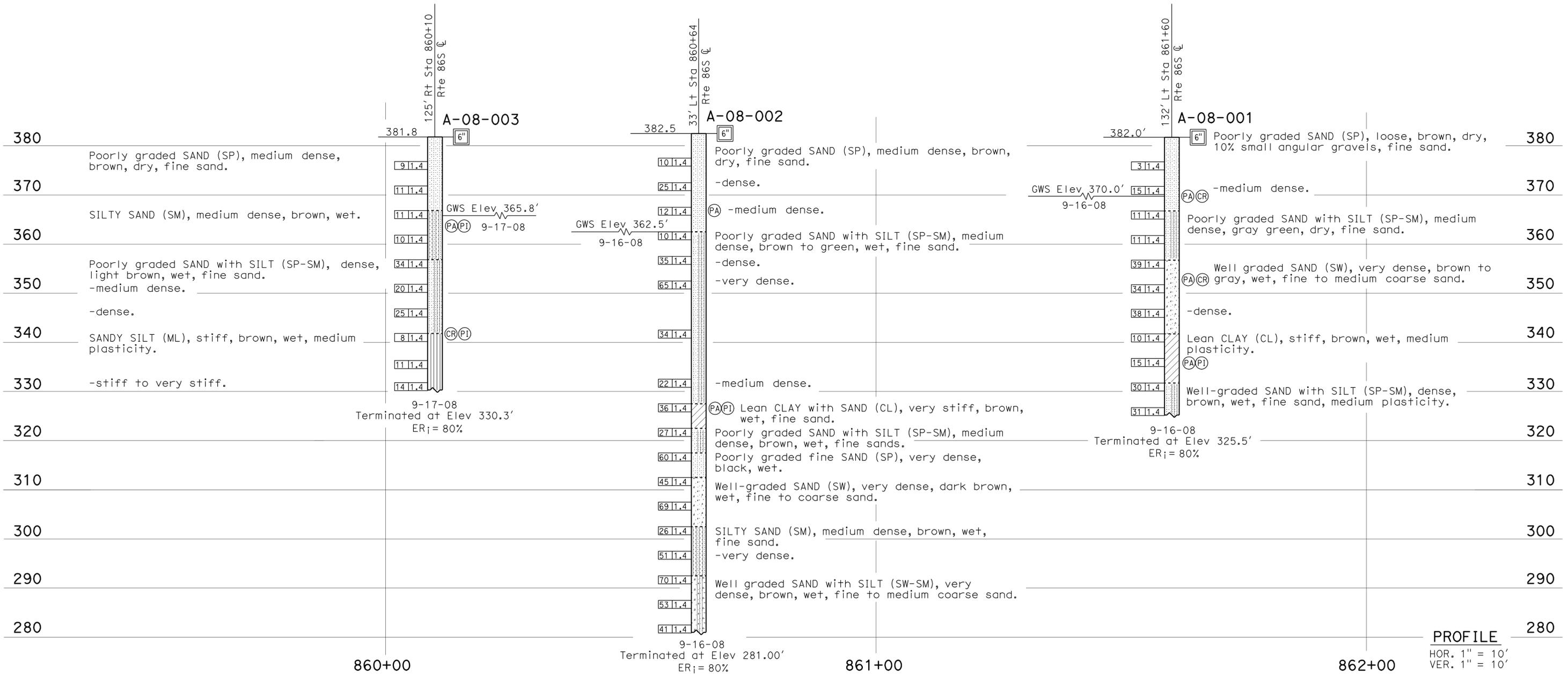
Brian Gutierrez 1-29-10
 REGISTERED CIVIL ENGINEER

5-24-10
 PLANS APPROVAL DATE

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Brian Gutierrez
 No. C66258
 Exp. 6-3-10
 CIVIL
 STATE OF CALIFORNIA

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).



PROFILE

HOR. 1" = 10'
 VER. 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		AIRPORT BLVD OC	
FUNCTIONAL SUPERVISOR		DRAWN BY: C. Christian, I.G-Remmen 4/09		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		56-0833		LOG OF TEST BORINGS 1 OF 3	
NAME: S. Wei		CHECKED BY: B. Levine		FIELD INVESTIGATION BY: B. Gutierrez		DESIGN BRANCH		POST MILES 16.73			
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 08 EA 478601		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 17 OF 19	

USERNAME => H:\lenard DATE PLOTTED => 25-MAY-2010 TIME PLOTTED => 07:50

Brian Gutierrez 1-29-10
 REGISTERED CIVIL ENGINEER

5-24-10
 PLANS APPROVAL DATE

Brian Gutierrez
 No. C66258
 Exp. 6-3-10
 CIVIL
 STATE OF CALIFORNIA

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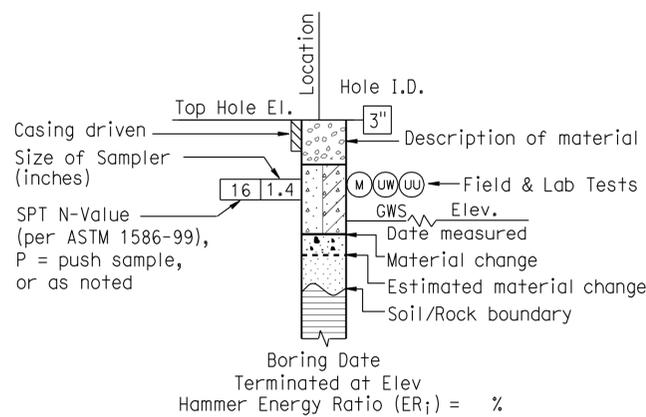
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

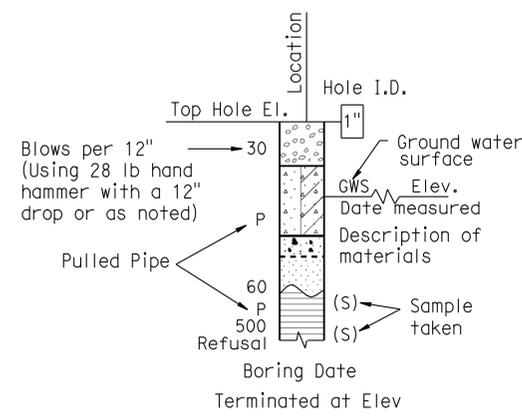
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

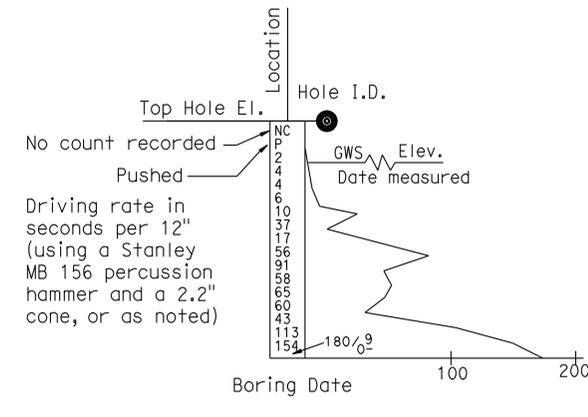
PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



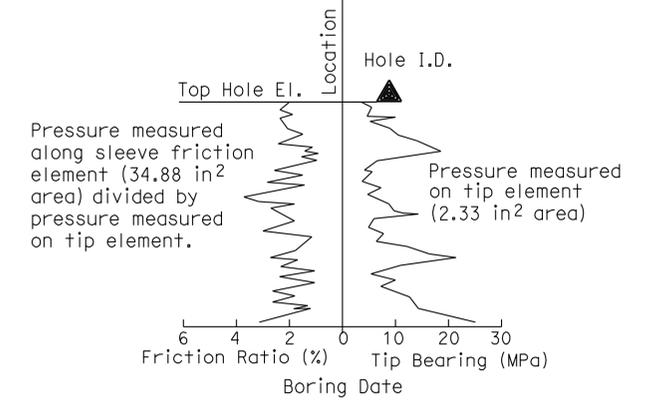
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 56-0833	AIRPORT BLVD OC LOG OF TEST BORINGS 2 OF 3
	PREPARED BY: I. G-Remmen, 4/09			POST MILE 16.73	
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08 EA 478601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 18 OF 19

USERNAME => H:\lenard DATE PLOTTED => 25-MAY-2010 TIME PLOTTED => 07:50

Brian Gutierrez 1-29-10
 REGISTERED CIVIL ENGINEER
 No. C66258
 Exp. 6-3-10
 CIVIL
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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		Lean CLAY
	Well-graded GRAVEL with SAND		Lean CLAY with SAND
	Poorly graded GRAVEL		Lean CLAY with GRAVEL
	Poorly graded GRAVEL with SAND		SANDY lean CLAY
	Well-graded GRAVEL with SILT		SANDY lean CLAY with GRAVEL
	Well-graded GRAVEL with SILT and SAND		GRAVELLY lean CLAY
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		GRAVELLY lean CLAY with SAND
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SILTY CLAY
	Poorly graded GRAVEL with SILT		SILTY CLAY with SAND
	Poorly graded GRAVEL with SILT and SAND		SILTY CLAY with GRAVEL
	Poorly graded GRAVEL with CLAY (or SILTY CLAY)		SANDY SILTY CLAY
	Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SANDY SILTY CLAY with GRAVEL
	SILTY GRAVEL		GRAVELLY SILTY CLAY
	SILTY GRAVEL with SAND		GRAVELLY SILTY CLAY with SAND
	CLAYEY GRAVEL		SILT
	CLAYEY GRAVEL with SAND		SILT with SAND
	SILTY, CLAYEY GRAVEL		SILT with GRAVEL
	SILTY, CLAYEY GRAVEL with SAND		SANDY SILT
	Well-graded SAND		SANDY SILT with GRAVEL
	Well-graded SAND with GRAVEL		GRAVELLY SILT
	Poorly graded SAND		GRAVELLY SILT with SAND
	Poorly graded SAND with GRAVEL		ORGANIC lean CLAY
	Well-graded SAND with SILT		ORGANIC lean CLAY with SAND
	Well-graded SAND with SILT and GRAVEL		ORGANIC lean CLAY with GRAVEL
	Well-graded SAND with CLAY (or SILTY CLAY)		SANDY ORGANIC lean CLAY
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		SANDY ORGANIC SILT
	Poorly graded SAND with SILT		SANDY ORGANIC SILT with GRAVEL
	Poorly graded SAND with SILT and GRAVEL		GRAVELLY ORGANIC SILT
	Poorly graded SAND with CLAY (or SILTY CLAY)		GRAVELLY ORGANIC SILT with SAND
	Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		ORGANIC fat CLAY
	SILTY SAND		ORGANIC fat CLAY with SAND
	SILTY SAND with GRAVEL		ORGANIC fat CLAY with GRAVEL
	CLAYEY SAND		SANDY ORGANIC fat CLAY
	CLAYEY SAND with GRAVEL		SANDY ORGANIC fat CLAY with GRAVEL
	SILTY, CLAYEY SAND		GRAVELLY ORGANIC fat CLAY
	SILTY, CLAYEY SAND with GRAVEL		GRAVELLY ORGANIC fat CLAY with SAND
	PEAT		ORGANIC elastic SILT
	COBBLES		ORGANIC elastic SILT with SAND
	COBBLES and BOULDERS		ORGANIC elastic SILT with GRAVEL
	BOULDERS		SANDY ORGANIC elastic SILT
			SANDY ORGANIC elastic SILT with GRAVEL
			GRAVELLY ORGANIC elastic SILT
			GRAVELLY ORGANIC elastic SILT with SAND
			ORGANIC SOIL
			ORGANIC SOIL with SAND
			ORGANIC SOIL with GRAVEL
			SANDY ORGANIC SOIL
			SANDY ORGANIC SOIL with GRAVEL
			GRAVELLY ORGANIC SOIL
			GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(PP)	Pocket Penetrometer
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(TV)	Pocket Torvane
(UC)	Unconfined Compression-Soil (ASTM D 2166)
	Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40