

**NOTES (FOR SHEETS E-15 & E-16 ONLY):**

- 1 - ALL EXISTING SIGNAL / LIGHTING EQUIPMENT AND CONDUCTORS ARE SHALL BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTE ON THE PLAN.  
[AB] CONDUIT AND LOOPS. [RC] PULL BOXES.
- 2 - FOR EQUIPMENT AND POLE SCHEDULE SEE SHEET E-16.
- 3 - ALL PULL BOXES SHALL BE THE NON-PCC TYPE UNLESS OTHERWISE NOTED.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	201	306

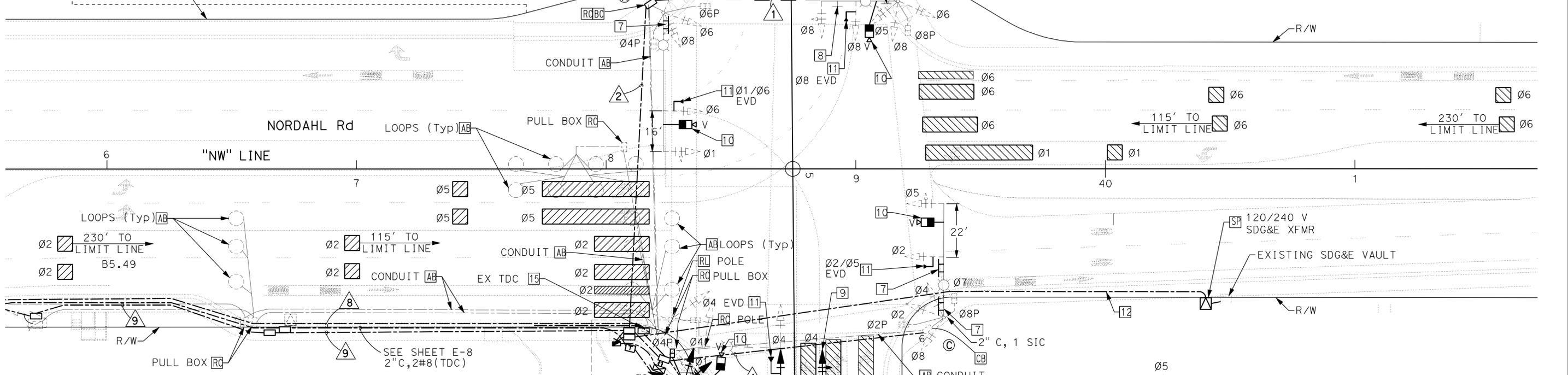
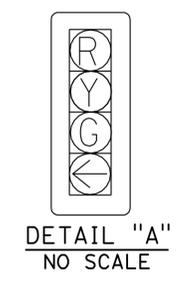
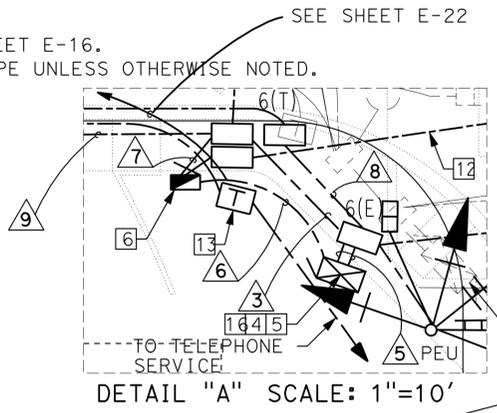
06-20-11  
REGISTERED CIVIL ENGINEER DATE  
7-18-11  
PLANS APPROVAL DATE

RYAN K. ZELLERS  
No. 69470  
Exp. 06-30-12  
CIVIL  
STATE OF CALIFORNIA

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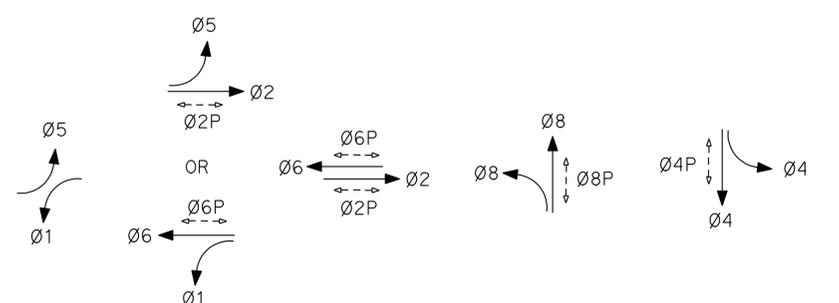
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5095 Murphy Canyon Rd  
Suite 300  
San Diego, CA 92123

CITY OF ESCONDIDO  
201 NORTH BROADWAY  
ESCONDIDO, CA 92025



**NOTES (FOR SHEETS E-15 & E-16 ONLY)- CONTINUED:**

- 4 - INSTALL STATE-FURNISHED MODEL 170E CONTROLLER ASSEMBLY IN TYPE 332 CABINET, FOUNDATION PER RSP ES-3C. INSTALL Exist. VIDEO DISPLAY, VDU AND COMMUNICATION CARD IN CABINET.
- 5 - INSTALL BATTERIES AND EXTERNAL BBS CABINET.
- 6 - INSTALL TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. SEE WIRING DIAGRAM "C", SHEET E-16.
- 7 - INSTALL SIGN PANEL AND MOUNTING HARDWARE. SEE SIGN SHEET S-1.
- 8 - INSTALL SIGN PANEL AND MOUNTING HARDWARE ON SIGNAL MAST ARM PER DETAIL U, ES-7N REQUIRED. SEE SIGN SHEET S-1.
- 9 - 4-SECTION HEAD SEE DETAIL "A" IN THIS SHEET.
- 10 - INSTALL VIDEO DETECTION CAMERA ON MAST ARM AND CONNECT TO CONTROLLER.
- 11 - INSTALL EVP DETECTION UNIT.
- 12 - INSTALL 3"C FROM SERVICE CABINET TO NEW 120/240 V XFMR FOR NEW SERVICE CONNECTION. CONDUCTORS BY SDG&E.
- 13 - INSTALL NEW TDC (TYPE A), PER ES-3D. CONNECT RAMP METER SYSTEMS PER SHEET E-22. ELECTRICAL SERVICE, SEE SHEET E-8 AND E-9.
- 14 - FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
- 15 - [RS] EXISTING tdc. MAINTAIN EXISTING, AT&T LEASE LINE COMMUNICATION CONNECTIONS UNTIL NEW TDC IS CONSTRUCTED AND OPERATIONAL.



16 - COIL 20' FOC (SAN MARCOS) IN CONTROLLER CABINET. FO EQUIPMENT INSTALLATION AND CONNECTIONS BY OTHERS.

MONTIEL Rd AND NORDAHL Rd  
**SIGNAL AND LIGHTING  
(LOCATION 3)**

SCALE: 1" = 20'

**E-15**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
Caltrans

REVISOR: MING GUAN, J. DE LA GARZA  
DATE: J. DE LA GARZA

LAST REVISION: DATE PLOTTED => 21-JUL-2011  
06-13-11 TIME PLOTTED => 09:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	202	306

REGISTERED CIVIL ENGINEER DATE 06-20-11  
 PLANS APPROVAL DATE 7-18-11

RYAN K. ZELLERS  
 No. 69470  
 Exp. 06-30-12  
 CIVIL

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CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans®  
 CONSULTANT: J. DE LA GARZA  
 SUPERVISOR: J. DE LA GARZA  
 DESIGNED BY: MING GUAN  
 CHECKED BY: J. DE LA GARZA  
 REVISIONS: (None shown)

CONDUCTOR AND CONDUIT SCHEDULE		CONDUIT SIZE AND RUN				
		3" 1	4" 2	4" 3	3" 4	2-4" 5
3CSC 12CSC	A		2	3	2	2
	B	2	2	2	2	2
	C				2	3
	D				2	2
TOTAL		2	4	5	5	10
CIRCUIT						
AWG	PEU					
14	LIGHTING	2	2	3	2	
10						
VIDEO CABLE HARNESS	Ø1/Ø6 POLE A		1	1		1
	Ø8 POLE B	1	1	1		1
	Ø2/Ø5 POLE C				1	1
	Ø4 POLE D					1
EVC		1	2	2	1	4
SIC				1		1
SIC (SAN MARCOS)						
FOC (SAN MARCOS)						
TOTAL CONDUCTORS / CABLES		8	15	19	9	29

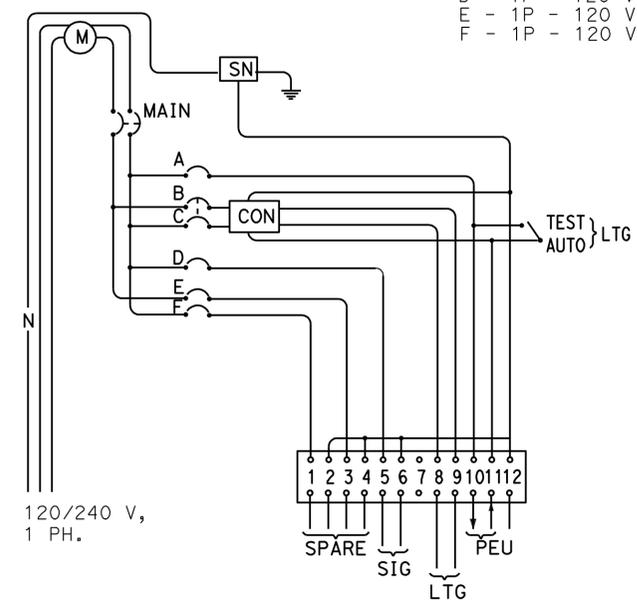
**CONDUIT NOTES (FOR SHEETS E-15 AND E-16):**

- △6 - 2"C, 2#6 (SIGNAL)
- △7 - 3"C, 3#14 (PEU), 2#10 (LTG)
- △8 - 3"C, 1 SIC (SAN MARCOS), 1-72 FOC (SAN MARCOS)
- △9 - 2"C, SIC

POLE AND EQUIPMENT SCHEDULE											
No.	TYPE	STANDARD MAST ARM		STANDARD PLACEMENT DIMENSIONS		SIGNAL MOUNTING AND PLACEMENT				LPS LUMINAIRE	SPECIAL REQUIREMENTS
		SMA	LMA	A	B	VEHICLE		PEDESTRIAN			
						POLE	MAST ARM	SIGNAL	PPB		
(A)*	29-4-100	55'	15'	23'	2.5'	SV-3-TD	MAT MAS	SP-2-T	Ø6 Ø4	180 W	SNS
(B)*	19-4-100	30'	15'	14'	2.5'	SV-3-TD	MAT MAS	SP-2-T	Ø6 Ø8	180 W	SNS
(C)*	26-4-100	45'	15'	12'	7.8'	SV-3-TD	MAT MAS	SP-2-T	Ø8 Ø2	180 W	SNS
(D)	29-4-100	55'	15'	12'	10.5'	SV-3-TD	MAT MAS	SP-2-T	Ø2 Ø4	180 W	SNS

\* - SIGNAL POLES AND EQUIPMENT (FURNISHED AND INSTALLED BY OTHERS PRIOR TO THIS PROJECT) TO REMAIN AND BE USED IN THIS PROJECT.

- CIRCUIT BREAKERS:**
- MAIN - 2P - 240 V - 100 A
  - A - 1P - 120 V - 15 A - PEU
  - B&C - 2P - 240 V - 30 A - LIGHTING
  - D - 1P - 120 V - 50 A - SIGNAL
  - E - 1P - 120 V - 15 A - SPARE
  - F - 1P - 120 V - 30 A - SPARE



**WIRING DIAGRAM "C" - 120/240 VOLT**  
 TYPE III-BF SERVICE EQUIPMENT ENCLOSURE  
 SEE DETAILS RSP ES-2C AND RSP ES-2E

**SIGNAL AND LIGHTING (LOCATION 3)**  
 NO SCALE

**MONTIEL Rd AND NORDAHL Rd**

**E-16**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	203	306

06-20-11  
 REGISTERED CIVIL ENGINEER DATE  
 7-18-11  
 PLANS APPROVAL DATE

RYAN K. ZELLERS  
 No. 69470  
 Exp. 06-30-12  
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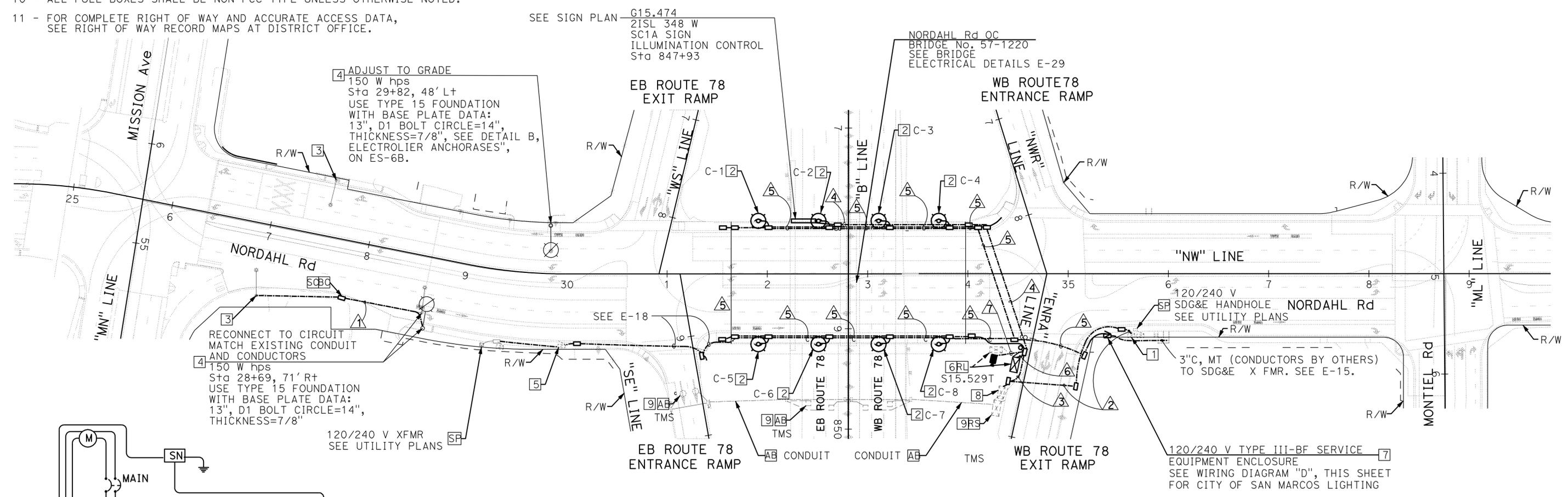
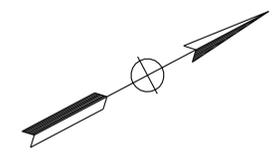
CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025

- NOTES (THIS SHEET ONLY):**
- TYPE III-CF SERVICE EQUIPMENT ENCLOSURE, INSTALLED PER SHEET E-8. SEE WIRING DIAGRAM "B", SHEET E-9.
  - CUSTOM STREET LIGHT. SEE BRIDGE ELECTRICAL DETAILS.
  - EXISTING CITY OF SAN MARCOS STREET LIGHT. PROTECT IN PLACE.
  - RELOCATE EXISTING CITY OF SAN MARCOS STREET LIGHT. SPLICE INTO EXISTING CIRCUIT OWNED AND MAINTAINED BY CITY OF SAN MARCOS.
  - TYPE III-BF SERVICE EQUIPMENT ENCLOSURE, INSTALLED PER SIGNAL AND LIGHTING (LOCATION 1) SHEET E-2. SEE WIRING DIAGRAM "A", SHEET E-3.
  - INSTALL TYPE 334 CABINET FOR CCTV ON NEW FOUNDATION, PER ES-2C. RELOCATE CCTV EQUIPMENT AND RECONNECT FOR FULL OPERATION. REFER TO FIBER OPTIC AND COMMUNICATIONS PLANS ON SHEETS E-22 TO SHEET E-26. ABANDON EXISTING CABINET FOUNDATION.
  - TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. SEE WIRING DIAGRAM "D", THIS SHEET.
  - IRRIGATION CONTROLLER ENCLOSURE CABINET. SEE IRRIGATION PLANS.
  - REMOVE AND SALVAGE EXISTING TRAFFIC MONITORING STATION CABINET AND ABANDON CONDUIT AND LOOPS.
- 10 - ALL PULL BOXES SHALL BE NON-PCC TYPE UNLESS OTHERWISE NOTED.
- 11 - FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

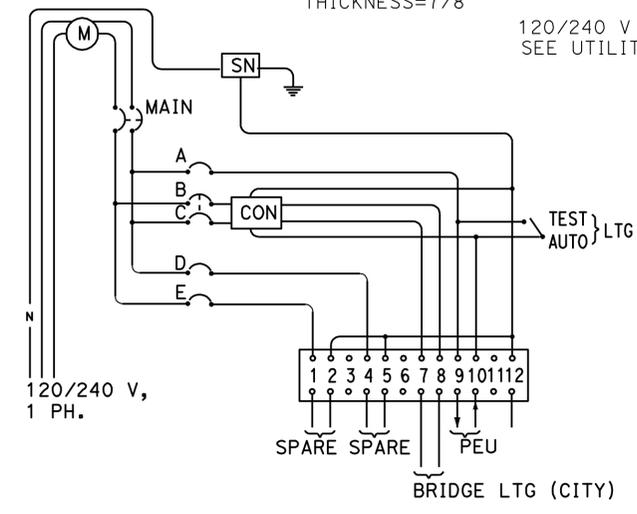
12 - RELOCATE EXISTING CCTV CAMERA ASSEMBLY AND TYPE CCTV 40 TO LOCATION SHOWN. EXISTING ASSEMBLY AND POLE ARE LOCATED WITHIN 15 FEET OF EXISTING BRIDGE STRUCTURE AND WITHIN 25 FEET OF NEW ASSEMBLY AND POLE POSITIONS. POLE FOUNDATION PER ES-16A. REMOVE AND REUSE CAMERA CABLE ASSEMBLY AND CONDUCTORS. ABANDON EXISTING CONDUITS AND POLE FOUNDATIONS.

**CONDUIT NOTES (THIS SHEET ONLY):**

- 1 - 2"C, 2#8 (CITY STREET LIGHT)
- 2 - 3"C, 2#8 (IRR), 2#8 (CCTV), 2#10 (SIGN LTG)
- 3 - 2"C, 2#8 (CCTV), 2#10 (SIGN LTG)
- 4 - 2"C, 2#10 (SIGN LTG)
- 5 - 2"C, 2#8 (BR LTG)
- 6 - 2"C, 2#8 (CCTV), REUSED CAMERA CABLE ASSEMBLY.
- 7 - 2"C, 1 REUSED CAMERA CABLE ASSEMBLY.



- CIRCUIT BREAKERS:**
- MAIN - 2P - 240 V - 100 A
  - A - 1P - 120 V - 15 A - PEU
  - B&C - 2P - 240 V - 30 A - BRIDGE LIGHTING
  - D - 1P - 120 V - 15 A - SPARE
  - E - 1P - 120 V - 15 A - SPARE



**WIRING DIAGRAM "D" - 120/240 VOLT**  
TYPE III-BF SERVICE EQUIPMENT ENCLOSURE  
SEE DETAILS RSP ES-2C AND RSP ES-2E

**LIGHTING (CITY STREET), SIGN ILLUMINATION,  
ELECTRICAL SERVICE (IRRIGATION), CLOSED CIRCUIT  
TELEVISION SYSTEM, AND REMOVE TRAFFIC  
MONITORING STATION**

SCALE: 1" = 50'

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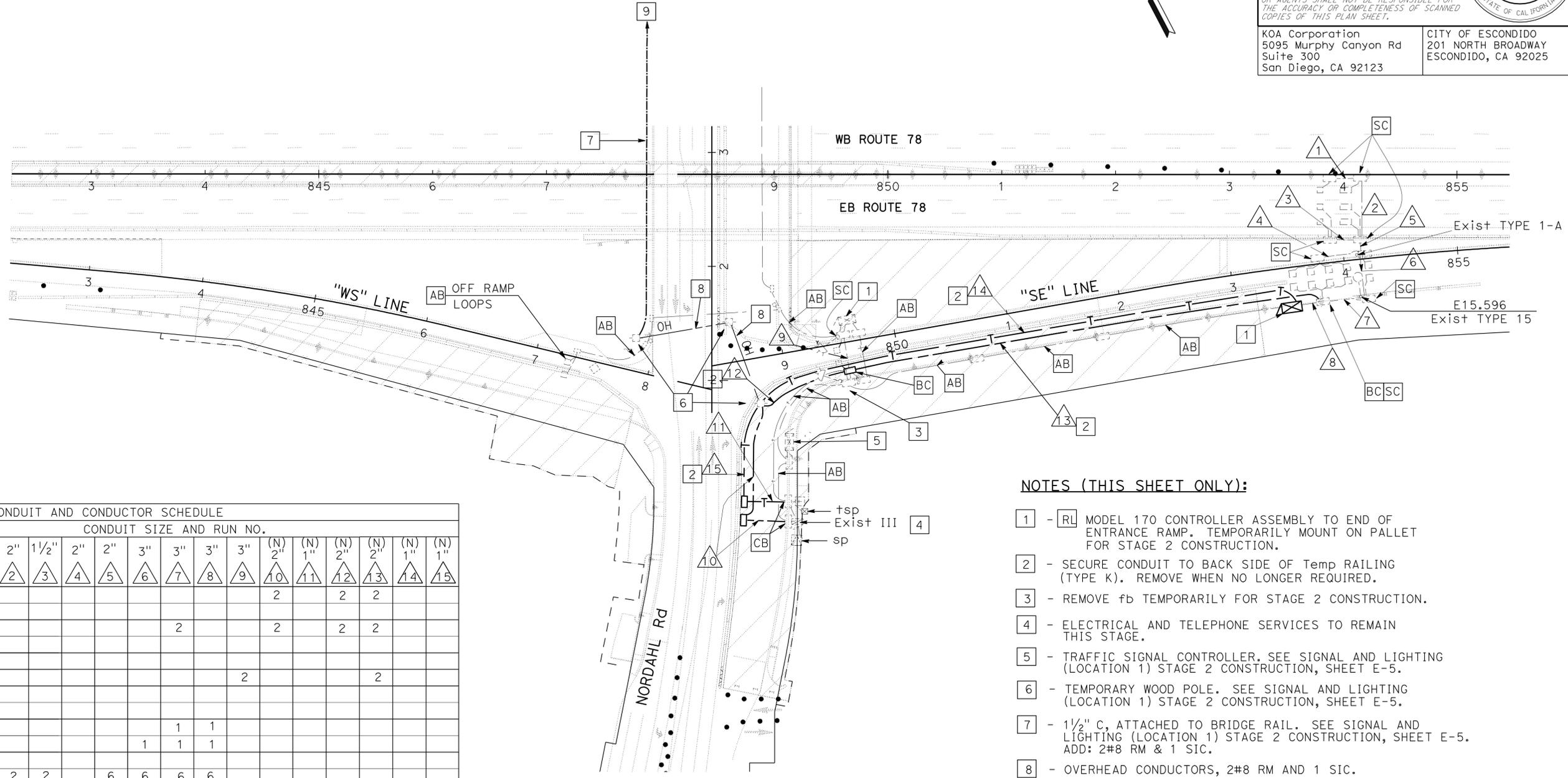
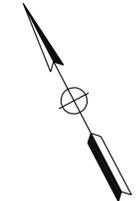
CONSULTANT SUPERVISOR: J. DE LA GARZA  
 CALCULATED/DESIGNED BY: J. DE LA GARZA  
 CHECKED BY: J. DE LA GARZA  
 REVISIONS BY: MING GUAN  
 DATE REVISED:



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER *by gel* DATE 06-20-11  
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 CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025



**NOTES (THIS SHEET ONLY):**

- 1 - [RL] MODEL 170 CONTROLLER ASSEMBLY TO END OF ENTRANCE RAMP. TEMPORARILY MOUNT ON PALLET FOR STAGE 2 CONSTRUCTION.
- 2 - SECURE CONDUIT TO BACK SIDE OF Temp RAILING (TYPE K). REMOVE WHEN NO LONGER REQUIRED.
- 3 - REMOVE fb TEMPORARILY FOR STAGE 2 CONSTRUCTION.
- 4 - ELECTRICAL AND TELEPHONE SERVICES TO REMAIN THIS STAGE.
- 5 - TRAFFIC SIGNAL CONTROLLER. SEE SIGNAL AND LIGHTING (LOCATION 1) STAGE 2 CONSTRUCTION, SHEET E-5.
- 6 - TEMPORARY WOOD POLE. SEE SIGNAL AND LIGHTING (LOCATION 1) STAGE 2 CONSTRUCTION, SHEET E-5.
- 7 - 1 1/2" C, ATTACHED TO BRIDGE RAIL. SEE SIGNAL AND LIGHTING (LOCATION 1) STAGE 2 CONSTRUCTION, SHEET E-5. ADD: 2#8 RM & 1 SIC.
- 8 - OVERHEAD CONDUCTORS, 2#8 RM AND 1 SIC.
- 9 - SEE RAMP METERING SYSTEM (LOCATION 2) STAGE 2 CONSTRUCTION FOR CONTINUATION, SHEET E-20.
- 10 - FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE DISTRICT OFFICE.

CABLE/ AWG SIZE	CIRCUIT ID	CONDUIT AND CONDUCTOR SCHEDULE														
		CONDUIT SIZE AND RUN NO.														
		1 1/2"	2"	1 1/2"	2"	2"	3"	3"	3"	3"	(N) 2"	(N) 1"	(N) 2"	(N) 2"	(N) 1"	(N) 1"
6	RM POWER										2	2	2			
8	LIGHTING							2			2	2	2			
14	FB									2			2			
9/14	STD R							1	1							
	STD L					1	1	1								
DLC	DETECTORS ML	1	2	2		6	6	6	6							
	D				1		1	1	2							
	P					1	2	2								
	Q									1			1			
SIC	TELEPHONE										2				1	2
TOTAL CONDUCTORS/ CABLES		1	2	2	1	6	9	13	12	3	4	2	4	7	1	2
NOTES													2	2	2	2

ALL CONDUCTORS NEW.  
 ALL CONDUIT EXISTING UNLESS NOTED: (N) = NEW

**RAMP METERING SYSTEM (LOCATION 1)  
(STAGE 2 CONSTRUCTION)**

SCALE: 1" = 50'

E-19

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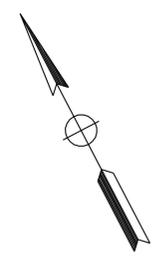


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CONSULTANT - FUNCTIONAL SUPERVISOR  
 MING GUAN  
 J. DE LA GARZA  
 J. DE LA GARZA  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

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11	SD	78	15.3/15.7	206	306

06-20-11 REGISTERED CIVIL ENGINEER DATE		
7-18-11 PLANS APPROVAL DATE		
KOA Corporation 5095 Murphy Canyon Rd Suite 300 San Diego, CA 92123		
CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025		



### CONDUCTOR AND CONDUIT SCHEDULE

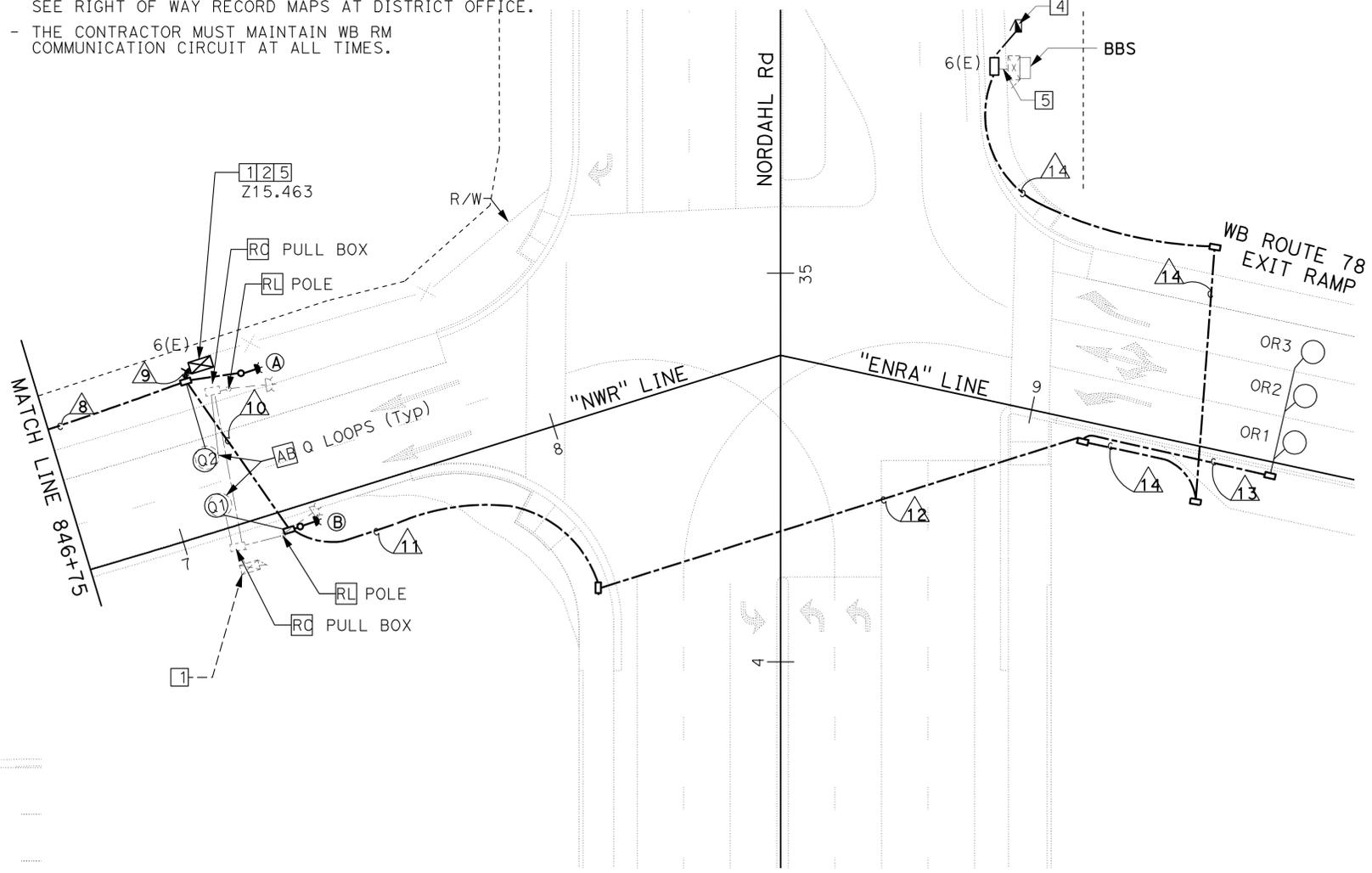
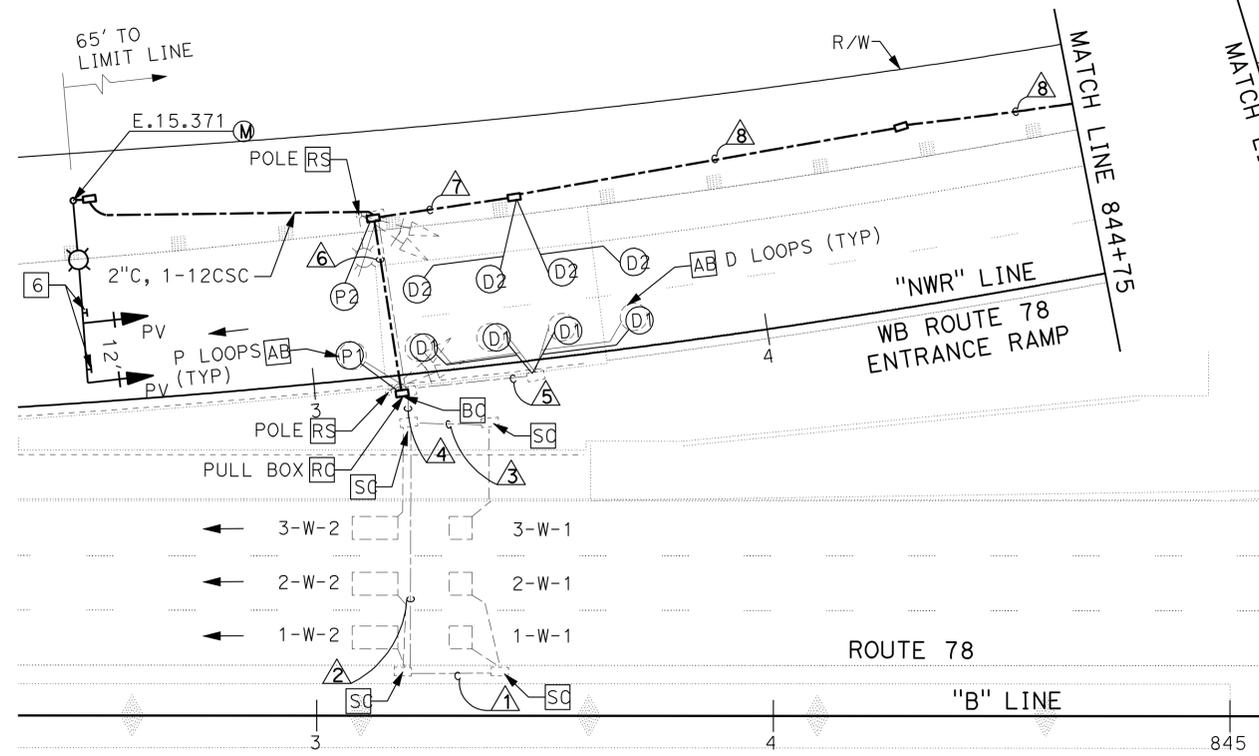
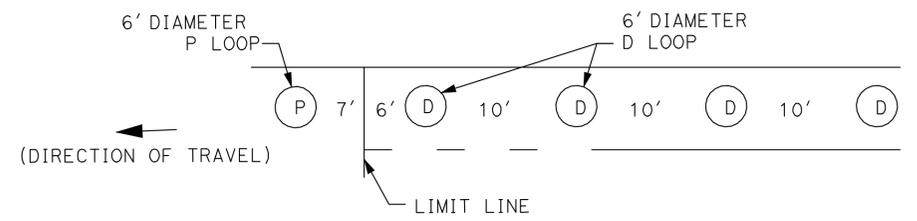
AWG SIZE OR CABLE TYPE	CIRCUIT ID	CONDUIT SIZE AND RUN													
		(Ex) 1 1/2"	(Ex) 2"	(Ex) 1 1/2"	(Ex) 2"	(Ex) 2 1/2"	3"	3"	3"	2-3"	3"	2"	3"	2"	3"
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
6	RM POWER									2	2	2	2		2
10	LIGHTING									2	2		2	2	2
14	FB									2	2				
12CSC	RM (M)									1	1	1			
DLC	DETECTORS ML (WB)	2	4	1	6		6	6	6	6					
	D					1	1	1	2	2					
	P						1	2	2	2					
	Q									2	1				
	OR									3	3	3	3	3	
TOTAL CONDUCTORS / CABLES		2	4	1	6	1	8	12	13	20	10	7	7	3	4

ALL CONDUIT NEW UNLESS NOTED: (Ex) = EXISTING  
ALL CONDUCTORS NEW

### POLE AND EQUIPMENT SCHEDULE

No.	STANDARD		LUMINAIRE		NOTES
	TYPE	MAST ARM	VEHICLE POLE	LPS	
(A)	1-A		TV-T		3
(B)	1-A		TV-T		3
(M)	26-4-100	40'	MAT, MAT	180 W 15'	

- NOTES (THIS SHEET ONLY):**
- RELOCATE EXISTING TYPE 334 CONTROLLER CABINET. CONSTRUCT NEW FOUNDATION PER ES-3C AND RESET EXISTING CONTROLLER CABINET AND EQUIPMENT. RECONNECT ALL WIRES TO RESTORE OPERATION.
  - CONNECT RAMP METER TO FIBER OPTIC NETWORK AND TDC FOR TRAFFIC MONITORING DATA. SEE SHEET E-22.
  - RESET FLASHING BEACONS.
  - SEE SHEETS E-8 AND E-9 FOR ELECTRICAL SERVICE INFORMATION.
  - SEE SHEET E-22 FOR COMMUNICATIONS CONDUIT AND CABLE CONNECTIONS INTO SIGNAL CONTROLLER.
  - DETAIL "U", ES-7N REQUIRED.
  - ALL PULL BOXES SHALL BE NON-PCC TYPE UNLESS OTHERWISE NOTED.
  - FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
  - THE CONTRACTOR MUST MAINTAIN WB RM COMMUNICATION CIRCUIT AT ALL TIMES.



**RAMP METER SYSTEM (LOCATION 2)**  
SCALE: 1" = 20'

**WB ROUTE 78 ENTRANCE RAMP** **E-20**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CONSULTANT SUPERVISOR: J. DE LA GARZA  
 CALCULATED/DESIGNED BY: MING GUAN  
 CHECKED BY: J. DE LA GARZA  
 REVISED BY: DATE  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

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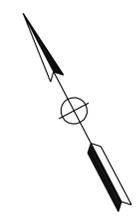
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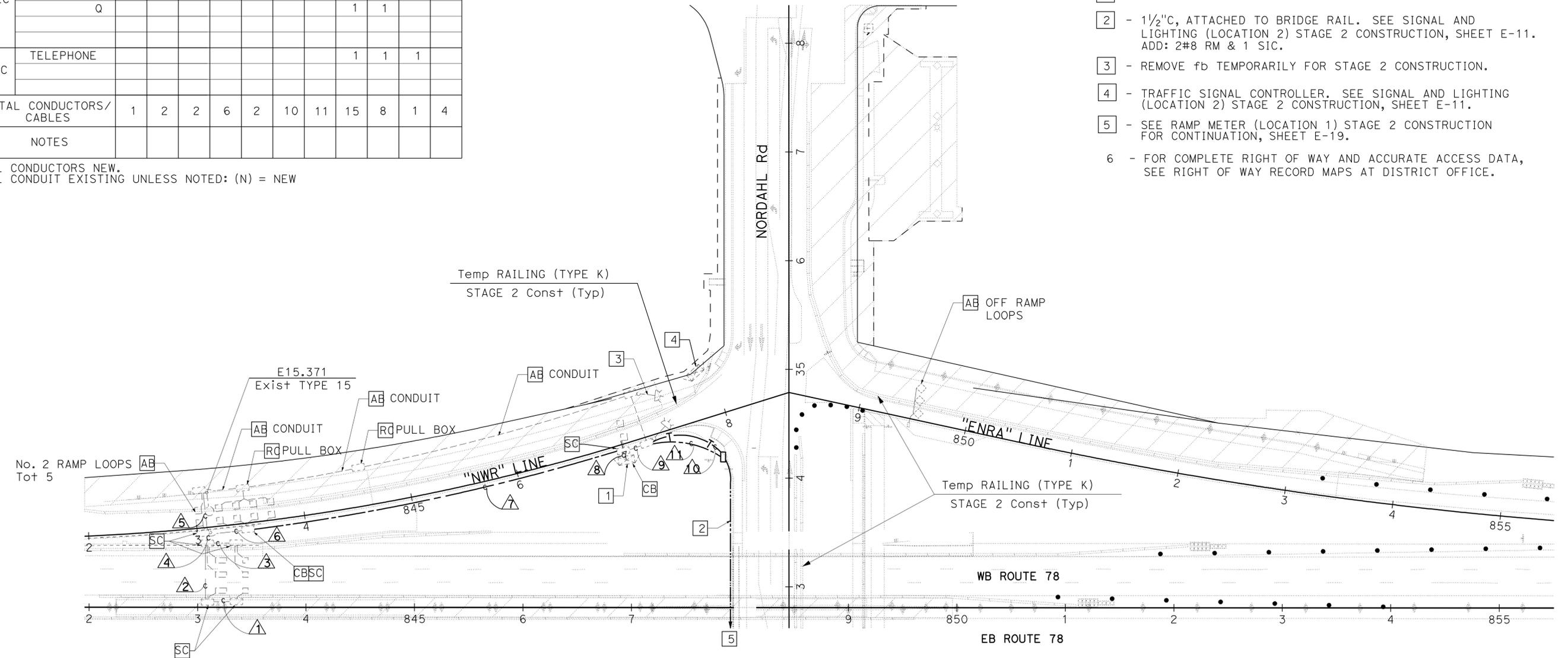


CABLE/ AWG SIZE	CONDUIT AND CONDUCTOR SCHEDULE											
	CIRCUIT ID	CONDUIT SIZE AND RUN NO.										
		1 1/2"	2"	1 1/2"	2"	2"	2"	(N) 3"	2-3"	3"	(N) 2"	(N) 1"
△ 1	△ 2	△ 3	△ 4	△ 5	△ 6	△ 7	△ 8	△ 9	△ 10	△ 11		
6	RM POWER							2	2		2	
8	LIGHTING					2	2	2		2	2	
14	FB							2	2			
9/14	STD L						1	1	1			
DLC	DETECTORS ML	1	2	2	6		6	6	6			
	D						1	1				
	P						1	1	1			
SIC	TELEPHONE								1	1	1	
	Q								1	1		
TOTAL CONDUCTORS/CABLES		1	2	2	6	2	10	11	15	8	1	4
NOTES												

ALL CONDUCTORS NEW.  
 ALL CONDUIT EXISTING UNLESS NOTED: (N) = NEW

**NOTES (THIS SHEET ONLY):**

- 1 - EXISTING MODEL 170 CONTROLLER ASSEMBLY.
- 2 - 1 1/2" C, ATTACHED TO BRIDGE RAIL. SEE SIGNAL AND LIGHTING (LOCATION 2) STAGE 2 CONSTRUCTION, SHEET E-11. ADD: 2#8 RM & 1 SIC.
- 3 - REMOVE fb TEMPORARILY FOR STAGE 2 CONSTRUCTION.
- 4 - TRAFFIC SIGNAL CONTROLLER. SEE SIGNAL AND LIGHTING (LOCATION 2) STAGE 2 CONSTRUCTION, SHEET E-11.
- 5 - SEE RAMP METER (LOCATION 1) STAGE 2 CONSTRUCTION FOR CONTINUATION, SHEET E-19.
- 6 - FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



**RAMP METERING SYSTEM (LOCATION 2)  
(STAGE 2 CONSTRUCTION)**

SCALE: 1" = 50'

**E-21**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CONSULTANT - FUNCTIONAL SUPERVISOR  
 J. DE LA GARZA  
 MING GUAN  
 J. DE LA GARZA  
 REVISOR BY  
 DATE REVISOR  
 CALCULATED/DESIGNED BY  
 CHECKED BY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	208	306

REGISTERED CIVIL ENGINEER *Ryan K. Zellers* DATE 06-20-11  
 PLANS APPROVAL DATE 7-18-11  
 RYAN K. ZELLERS  
 No. 69470  
 Exp. 06-30-12  
 CIVIL  
 STATE OF CALIFORNIA

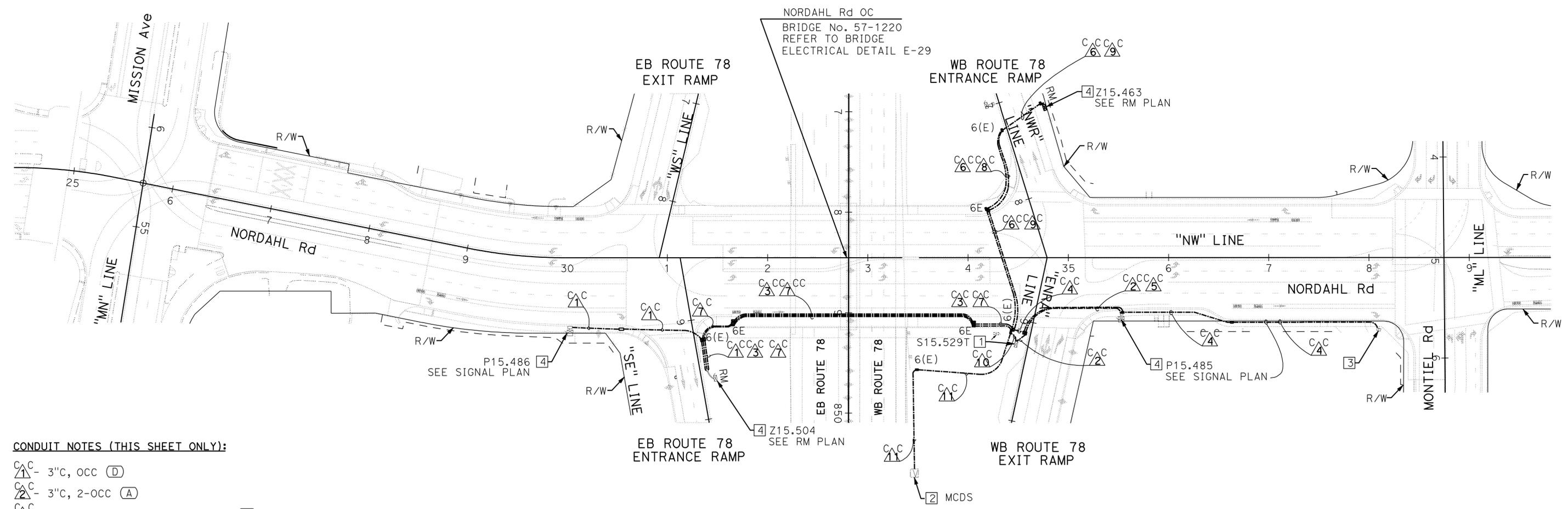
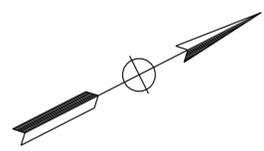
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

KOA Corporation  
 5095 Murphy Canyon Rd  
 Suite 300  
 San Diego, CA 92123

CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025

**NOTES (THIS SHEET ONLY):**

- 1 - SEE SHEET E-17 FOR CCTV CABINET RELOCATION NOTES.
- 2 - EXISTING FO SPLICE VAULT. SPLICE TO EXISTING FO 144. SEE SHEETS E-23 TO E-28 FOR FIBER OPTIC DETAILS AND CONNECTIONS. SEE E-27 FOR SPLICING AND E-28 FOR LABELING.
- 3 - CONNECT RAMP METER SYSTEMS TO TDC. SEE SHEET E-15 FOR TDC DETAILS.
- 4 - SEE TRAFFIC SIGNAL PLANS FOR CONDUIT AND CABLE CONNECTIONS INTO SIGNAL CONTROLLER. SEE RAMP METER PLANS FOR CONDUIT AND CABLE CONNECTIONS INTO RAMP SYSTEM CONTROLLER.
- 5 - ALL PULL BOXES SHALL BE NON-PCC TYPE UNLESS OTHERWISE NOTED.
- 6 - FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



- CONDUIT NOTES (THIS SHEET ONLY):**
- 1 - 3"C, OCC (D)
  - 2 - 3"C, 2-OCC (A)
  - 3 - 2"C, 1 SIC (RM INTERCONNECT) (E)
  - 4 - 2"C, 1 SIC (RM INTERCONNECT) (F)
  - 5 - 3"C, 1 SIC (RM INTERCONNECT) (F)
  - 6 - 3"C, 2 SIC (RM INTERCONNECT) (E) (F)
  - 7 - 2"C, 1 FO12 (C)
  - 8 - 2"C, 1 FO12 (B)
  - 9 - 3"C, 1 FO12 (B)
  - 10 - 2"C, 1 fo12
  - 11 - MDCS(2), 1 fo12, ADD: 2 FO12 (B) (C)

**COMMUNICATION SYSTEM,  
COMMUNICATION CONDUIT (BRIDGE)**  
SCALE: 1" = 50'

**E-22**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 MING GUAN  
 J. DE LA GARZA  
 J. DE LA GARZA  
 Et Caltrans

USERNAME => trminguye  
 DGN FILE => 1100000200Ua022.dgn

BORDER LAST REVISED 7/2/2010

UNIT 2777

PROJECT NUMBER & PHASE

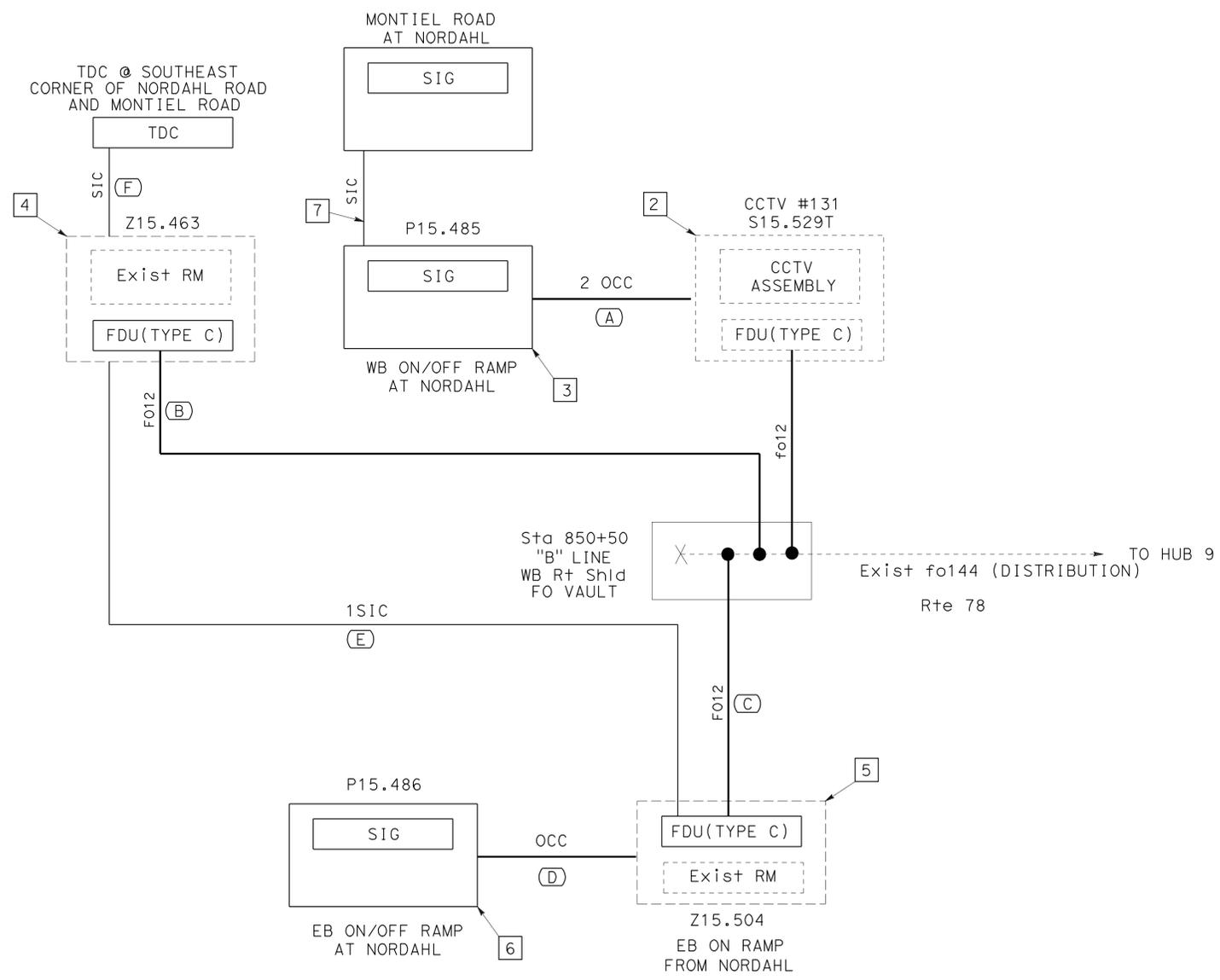
11000002001

LAST REVISION DATE PLOTTED => 21-JUL-2011  
 06-14-11 TIME PLOTTED => 11:22

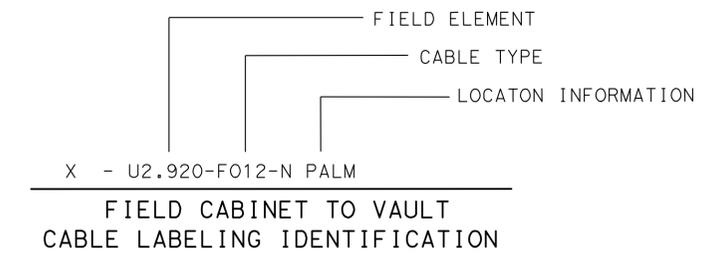
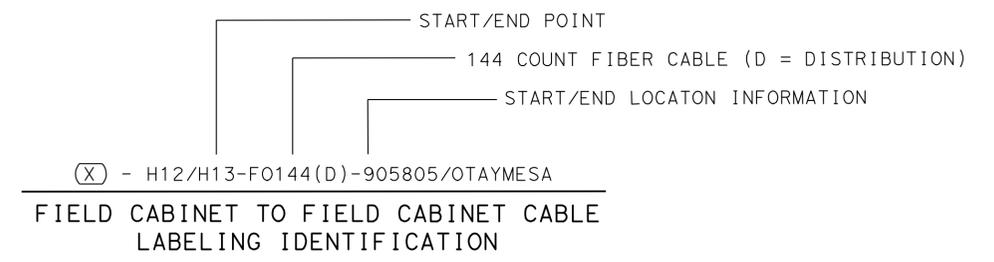
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT: J. DE LA GARZA  
 SUPERVISOR: J. DE LA GARZA  
 DESIGNED BY: MING GUAN  
 CHECKED BY: J. DE LA GARZA  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7

**NOTES:**

- 1 - FOR EQUIPMENT CONNECTIVITY IN CABINETS SEE ELECTRICAL DETAILS "COMPONENT DIAGRAM"
- 2 - SEE DETAIL "CCTV" ON E-24 FOR EQUIPMENT LOCATION IN CCTV CABINET.
- 3 - SEE DETAIL "SIG-1" ON E-24 FOR EQUIPMENT LOCATION IN SIGNAL CABINET.
- 4 - SEE DETAIL "RMS-1" ON E-25 FOR EQUIPMENT LOCATION IN RMS CABINET.
- 5 - SEE DETAIL "RMS-2" ON E-26 FOR EQUIPMENT LOCATION IN RMS CABINET.
- 6 - SEE DETAIL "SIG-2" ON E-26 FOR EQUIPMENT LOCATION IN SIGNAL CABINET.
- 7 - SEE SIGNAL AND LIGHTING LOCATIONS 2 AND 3.



COMMUNICATION CIRCUIT DIAGRAM  
 SHEET 1 OF 1



**COMMUNICATION SYSTEM  
 (FIBER OPTIC AND ELECTRICAL DETAILS)**

NO SCALE

**E-23**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	209	306

REGISTERED CIVIL ENGINEER DATE 06-20-11  
 7-18-11 PLANS APPROVAL DATE  
 RYAN K. ZELLERS No. 69470 Exp 06-30-12 CIVIL  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.  
 KOA Corporation 5095 Murphy Canyon Rd Suite 300 San Diego, CA 92123  
 CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	210	306

REGISTERED CIVIL ENGINEER	DATE
<i>Ryan K Zellers</i>	06-20-11
PLANS APPROVAL DATE	
7-18-11	

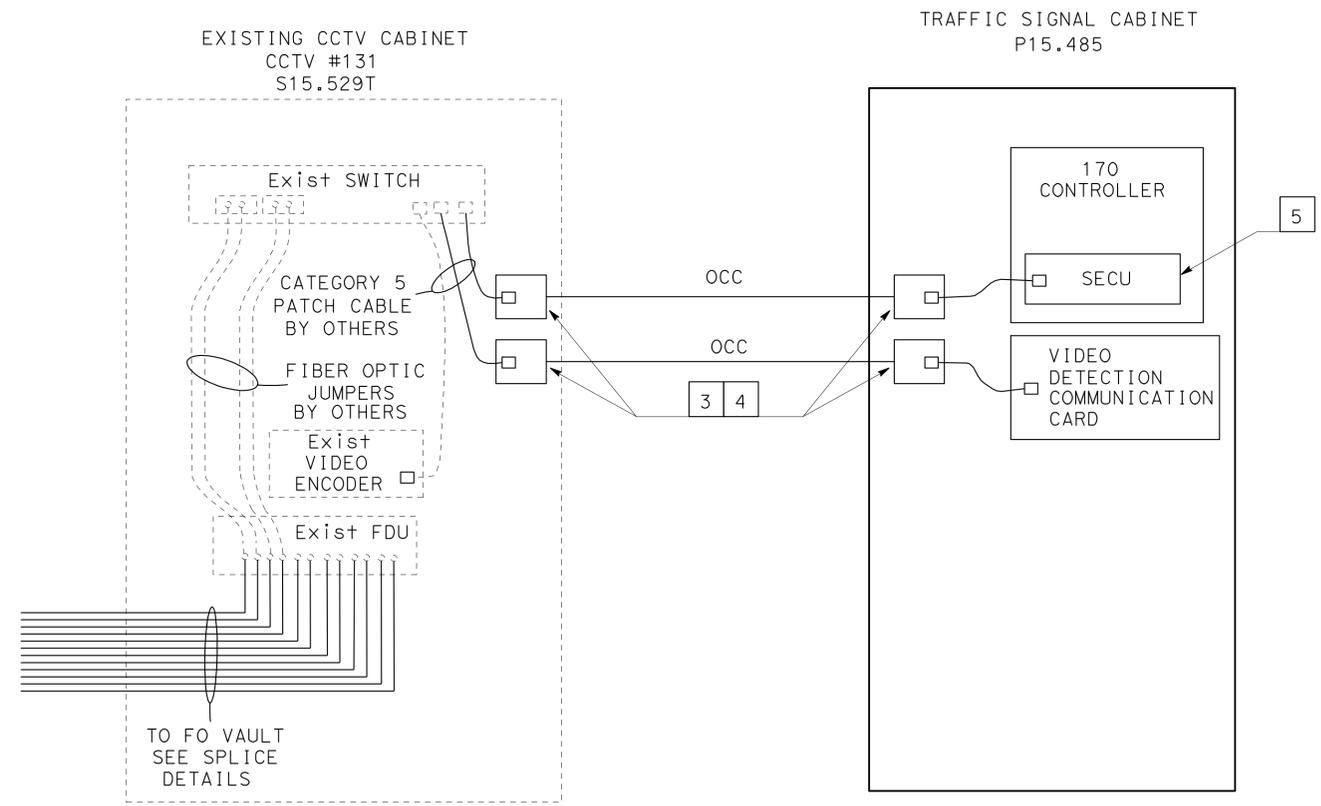
  

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	
KOA Corporation 5095 Murphy Canyon Rd Suite 300 San Diego, CA 92123	CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025

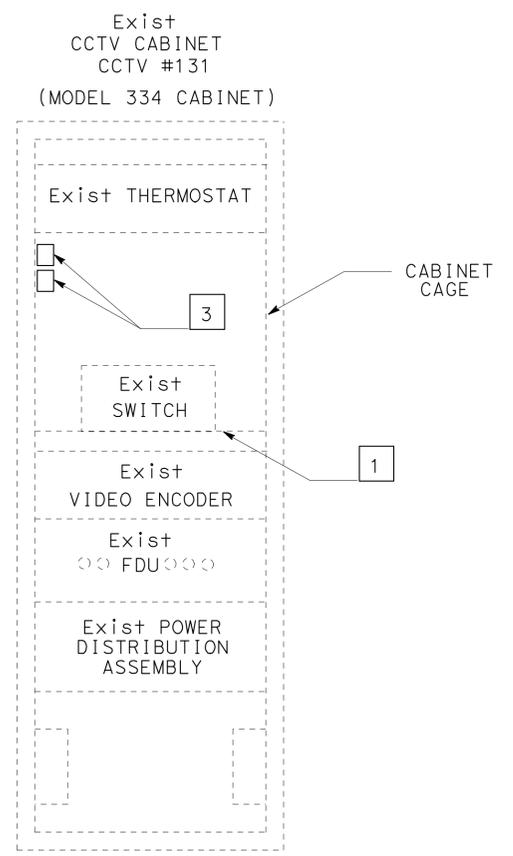
**NOTES:**

- 1 - SHELF REQUIRED FOR EQUIPMENT.
- 2 - VIDEO DETECTION COMMUNICATIONS CARD.
- 3 - 110 PUNCH DOWN BLOCK WITH RJ 45 CONNECTION.
- 4 - TERMINATE OCC PER EIA/TIA 568B.
- 5 - INSTALL SECU IN 170 CONTROLLER CARD SLOT.

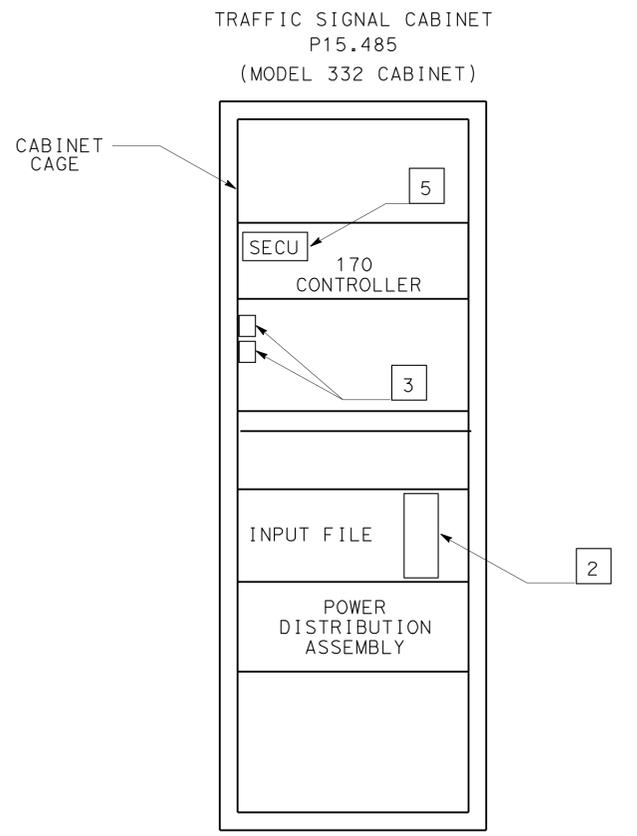
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans®  
 CONSULTANT - J. DE LA GARZA  
 SUPERVISOR - J. DE LA GARZA  
 DESIGNED BY - MING GUAN  
 CHECKED BY - J. DE LA GARZA  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100



**CCTV TO TRAFFIC SIGNAL CABINET  
COMPONENT DIAGRAM**



**CCTV SYSTEM CABINET  
EQUIPMENT PLACEMENT  
DETAIL "CCTV"**



**TRAFFIC SIGNAL CABINET  
EQUIPMENT PLACEMENT  
DETAIL "SIG-1"**

**COMMUNICATION SYSTEM  
(FIBER OPTIC AND ELECTRICAL DETAILS)**

NO SCALE

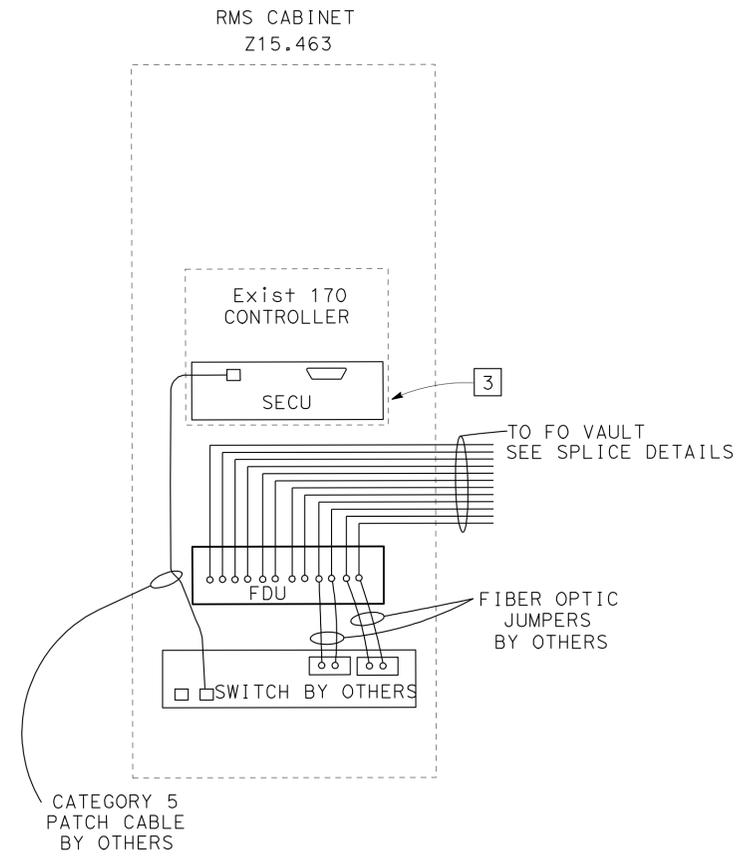
**E-24**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	211	306
			06-20-11	REGISTERED CIVIL ENGINEER DATE	
			7-18-11	PLANS APPROVAL DATE	
KOA Corporation 5095 Murphy Canyon Rd Suite 300 San Diego, CA 92123			CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025		

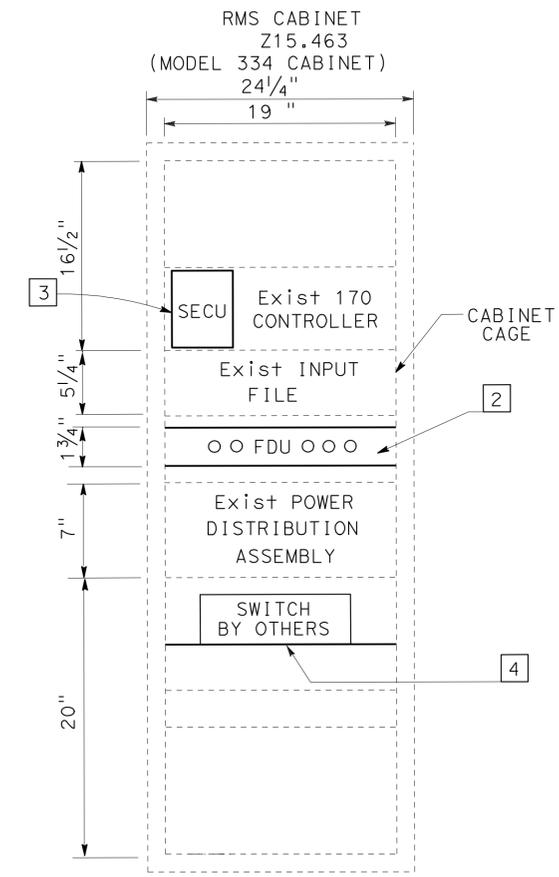
**NOTES:**

- 1 - THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING AND INSTALLING EQUIPMENT.
- 2 - REMOVE BLANK PANEL AND REPLACE WITH FDU.
- 3 - INSTALL SECU IN 170 CONTROLLER CARD SLOT.
- 4 - SHELF REQUIRED FOR EQUIPMENT.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
	MING GUAN	
CONSULTANT - FUNCTIONAL SUPERVISOR	CHECKED BY	DATE
J. DE LA GARZA	J. DE LA GARZA	
DESIGNED BY	REVISOR	DATE



**RMS CABINET COMPONENT DIAGRAM**



**RMS CABINET EQUIPMENT PLACEMENT DETAIL "RMS-1" (TYPICAL)**

**COMMUNICATION SYSTEM  
(FIBER OPTIC AND ELECTRICAL DETAILS)**

NO SCALE

**E-25**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	212	306

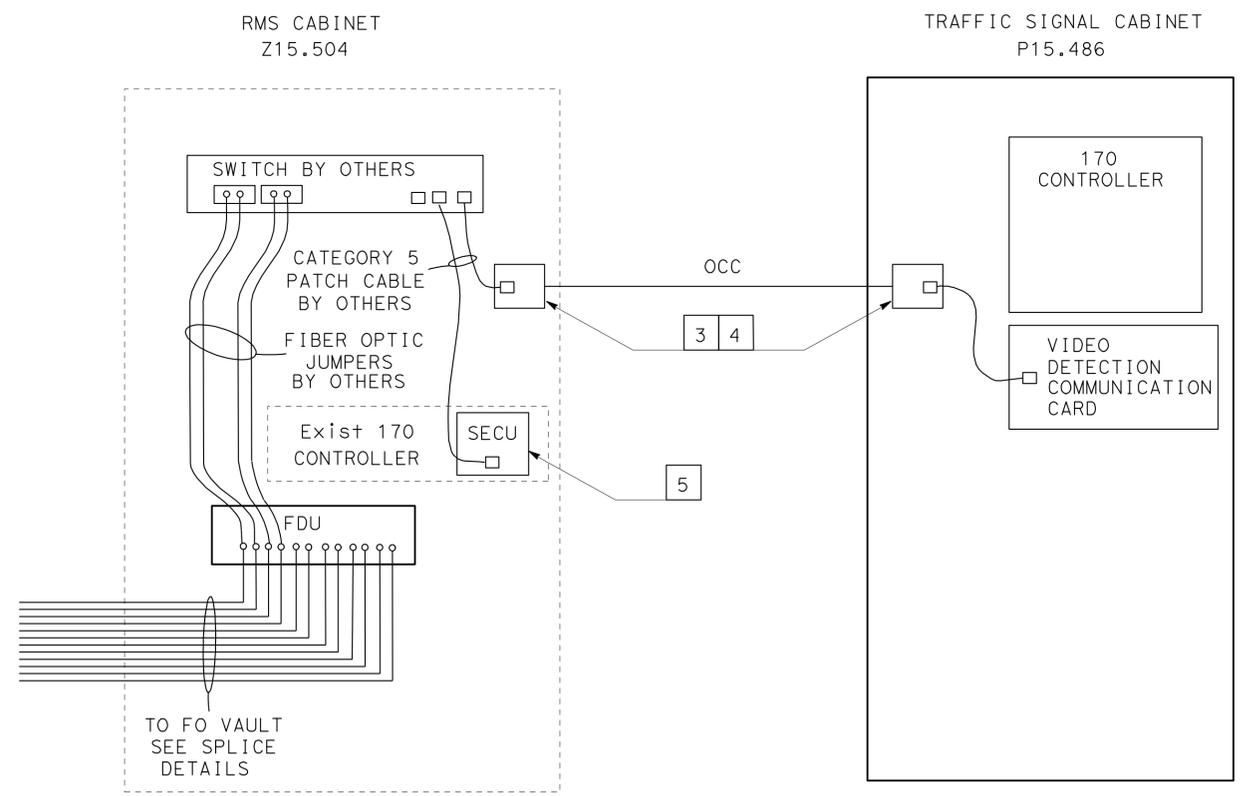
REGISTERED CIVIL ENGINEER	DATE	06-20-11
PLANS APPROVAL DATE		7-18-11

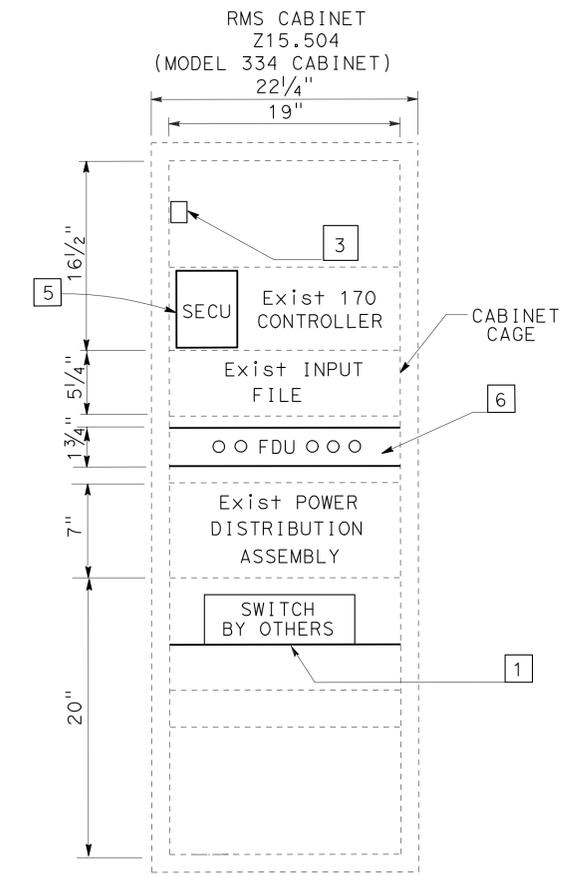
REGISTERED PROFESSIONAL ENGINEER <b>RYAN K ZELLERS</b> No. 69470 Exp. 06-30-12 CIVIL STATE OF CALIFORNIA	
KOA Corporation 5095 Murphy Canyon Rd Suite 300 San Diego, CA 92123	CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025

**NOTES:**

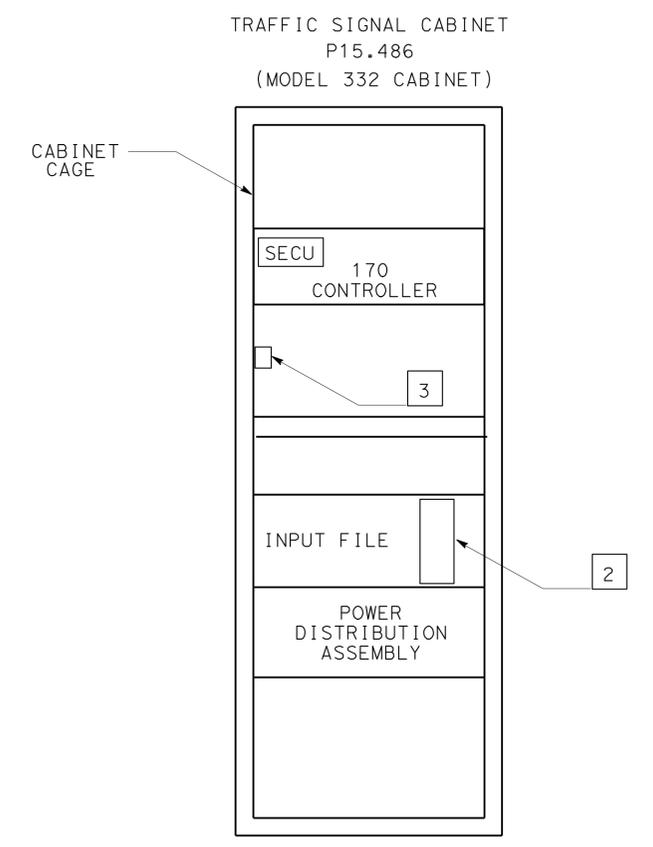
- 1 - SHELF REQUIRED FOR EQUIPMENT.
- 2 - VIDEO DETECTION COMMUNICATIONS CARD.
- 3 - 110 PUNCH DOWN BLOCK WITH RJ45 CONNECTION.
- 4 - TERMINATE OCC PER EIA/TIA 568B.
- 5 - INSTALL SECU IN 170 CONTROLLER CARD SLOT.
- 6 - REMOVE BLANK PANEL AND REPLACE WITH FDU.



**RMS TO TRAFFIC SIGNAL COMPONENT DIAGRAM**



**RMS CABINET EQUIPMENT PLACEMENT DETAIL "RMS-2" (TYPICAL)**



**TRAFFIC SIGNAL CABINET EQUIPMENT PLACEMENT DETAIL "SIG-2"**

**COMMUNICATION SYSTEM (FIBER OPTIC AND ELECTRICAL DETAILS)**

NO SCALE

**E-26**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans®  
 CONSULTANT: J. DE LA GARZA  
 SUPERVISOR: J. DE LA GARZA  
 DESIGNED BY: MING GUAN  
 CHECKED BY: J. DE LA GARZA  
 REVISIONS: REVISED BY: DATE REVISIONS: DATE

LAST REVISION DATE PLOTTED => 21-JUL-2011  
 06-14-11 TIME PLOTTED => 08:48



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT - FUNCTIONAL SUPERVISOR  
 J. DE LA GARZA  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 MING GUAN  
 J. DE LA GARZA  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	214	306

REGISTERED CIVIL ENGINEER DATE 06-20-11  
 7-18-11  
 PLANS APPROVAL DATE

RYAN K  
 ZELLERS  
 No. 69470  
 Exp 06-30-12  
 CIVIL  
 STATE OF CALIFORNIA

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KOA Corporation 5095 Murphy Canyon Rd Suite 300 San Diego, CA 92123	CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025
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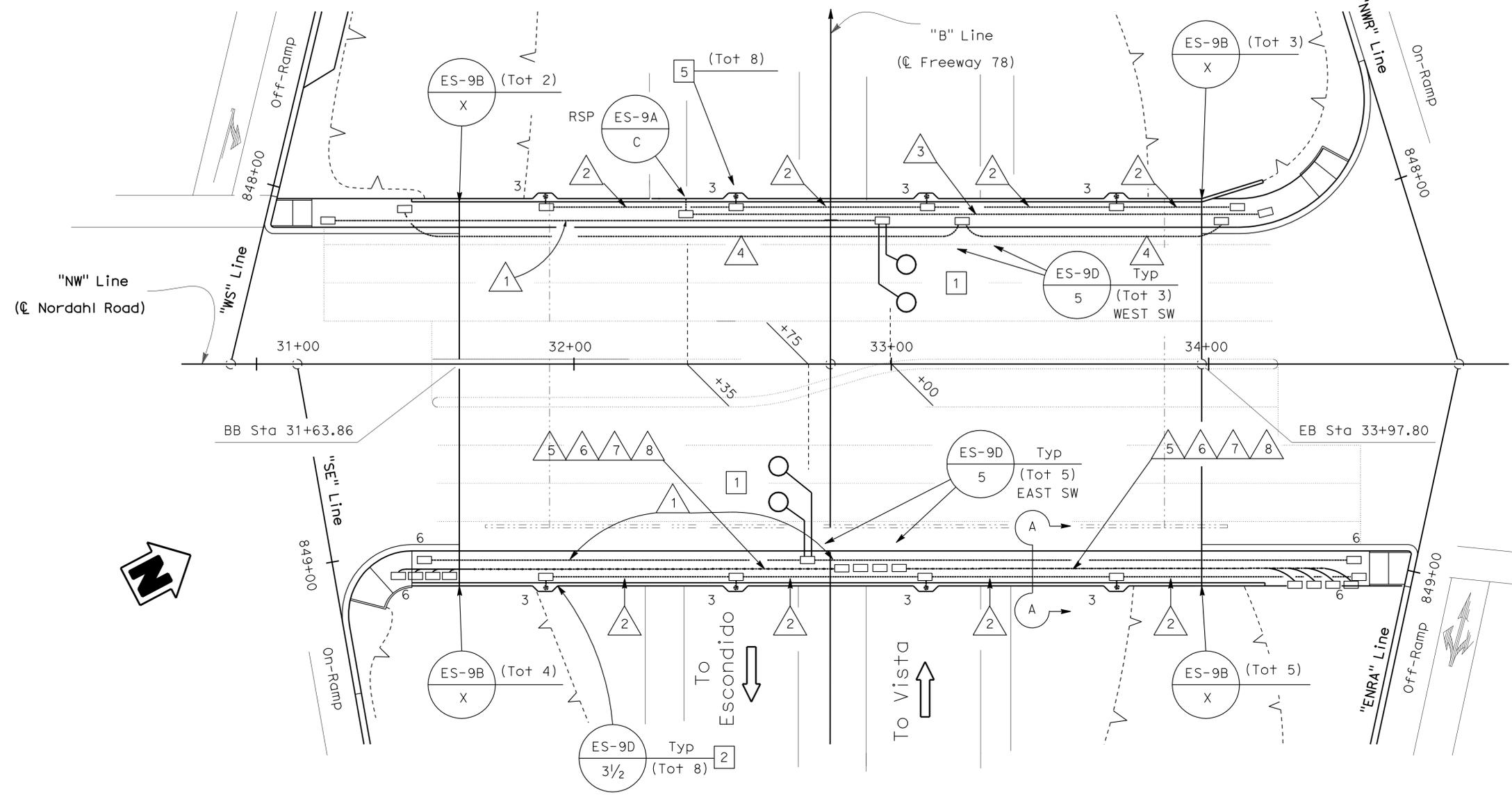
RMS-Z15.504 FDU POSITION NUMBER											
1	2	3	4	5	6	7	8	9	10	11	12
NORDAHL		RING 1				RING 2				HUB 9	
		RMS Z15.463	CCTV #131 S15.529T			RMS Z15.463	CCTV #131 S15.529T				
61	62	5	6	3	4	9	10	7	8	61	62

RMS-Z15.463 FDU POSITION NUMBER											
1	2	3	4	5	6	7	8	9	10	11	12
NORDAHL		RING 1				RING 2				HUB 9	
				RMS Z15.504				RMS Z15.504			
63	64	133	134	3	4	135	136	7	8	63	64

**COMMUNICATION SYSTEM**  
**(FIBER OPTIC AND ELECTRICAL DETAILS)**  
**E-28**

LAST REVISION DATE PLOTTED => 21-JUL-2011  
 06-14-11 TIME PLOTTED => 08:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	215	306
REGISTERED CIVIL ENGINEER RYAN K ZELLERS No. 69470 Exp 06-30-12 CIVIL STATE OF CALIFORNIA			06-20-11 DATE 7-18-11 PLANS APPROVAL DATE		
KOA Corporation 5095 Murphy Canyon Rd Suite 300 San Diego, CA 92123			CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025		

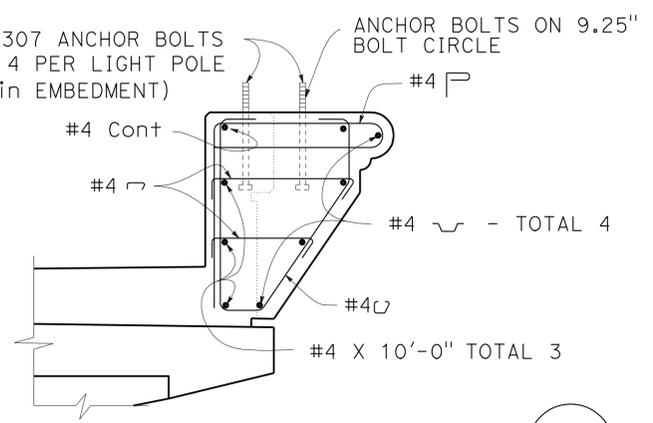


- NOTES:**
- 1 - PREFORMED INDUCTIVE LOOP DETECTORS. SEE SIGNAL AND LIGHTING PLANS.
  - 2 - LABEL No. 3 1/2 PULL BOXES "STREET LIGHTING". DO NOT LABEL PB "CALTRANS".
  - 3 - COMMUNICATIONS CONDUIT (BRIDGE), RIGHT SW. LIGHTING CONDUIT (BRIDGE), LEFT SW.
  - 4 - 2" C, COMMUNICATIONS CONDUIT, RIGHT SW. 2" C, SIGN ILLUMINATION, LEFT SW.
  - 5 - DECORATIVE ELECTROLIER ANCHORAGE. SEE ANCHORAGE DETAIL THIS SHEET.

**CONDUIT NOTES:**

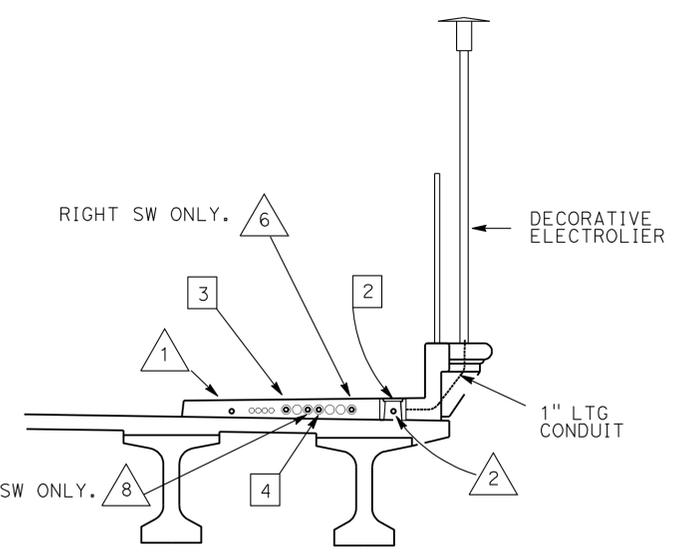
- 1 - 2" C, SEE TRAFFIC SIGNAL PLAN.
- 2 - 2" C, LIGHTING (CITY STREET).
- 3 - 2" C, SEE SIGN ILLUMINATION PLAN.
- 4 - 2" C, MT. LIGHTING CONDUIT (BRIDGE).
- 5 - 2" C, SEE COMMUNICATION SYSTEM PLAN.
- 6 - 3" C, FO CABLE. SEE COMMUNICATION SYSTEM PLAN.
- 7 - 2" C, SEE TRAFFIC SIGNAL PLAN (SAN MARCOS SIC).
- 8 - 3" C, SPRINKLER CONTROL. SEE IRRIGATION PLAN.

**PLAN**  
1" = 20'-0"



NOTE: TYPICAL BARRIER REINFORCEMENT NOT SHOWN. FOR DETAILS, SEE B11-54.

**ANCHORAGE DETAIL**  
NO SCALE



**SECTION A-A**

NO SCALE  
(RIGHT SIDE SW. LEFT SIDE SIMILAR)

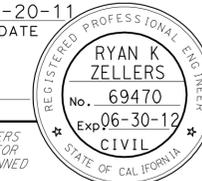
**LIGHTING CONDUIT (BRIDGE),  
COMMUNICATION CONDUIT (BRIDGE),  
(ELECTRICAL DETAILS)**

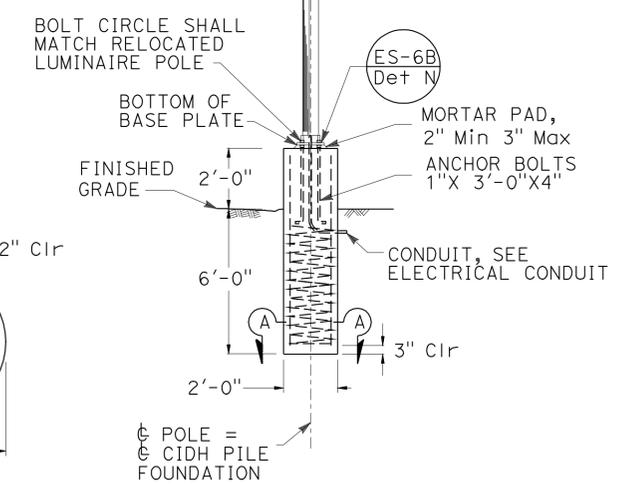
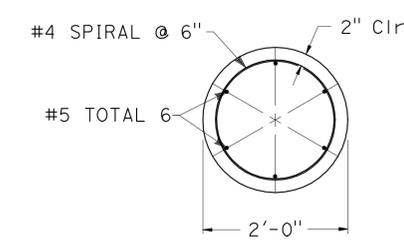
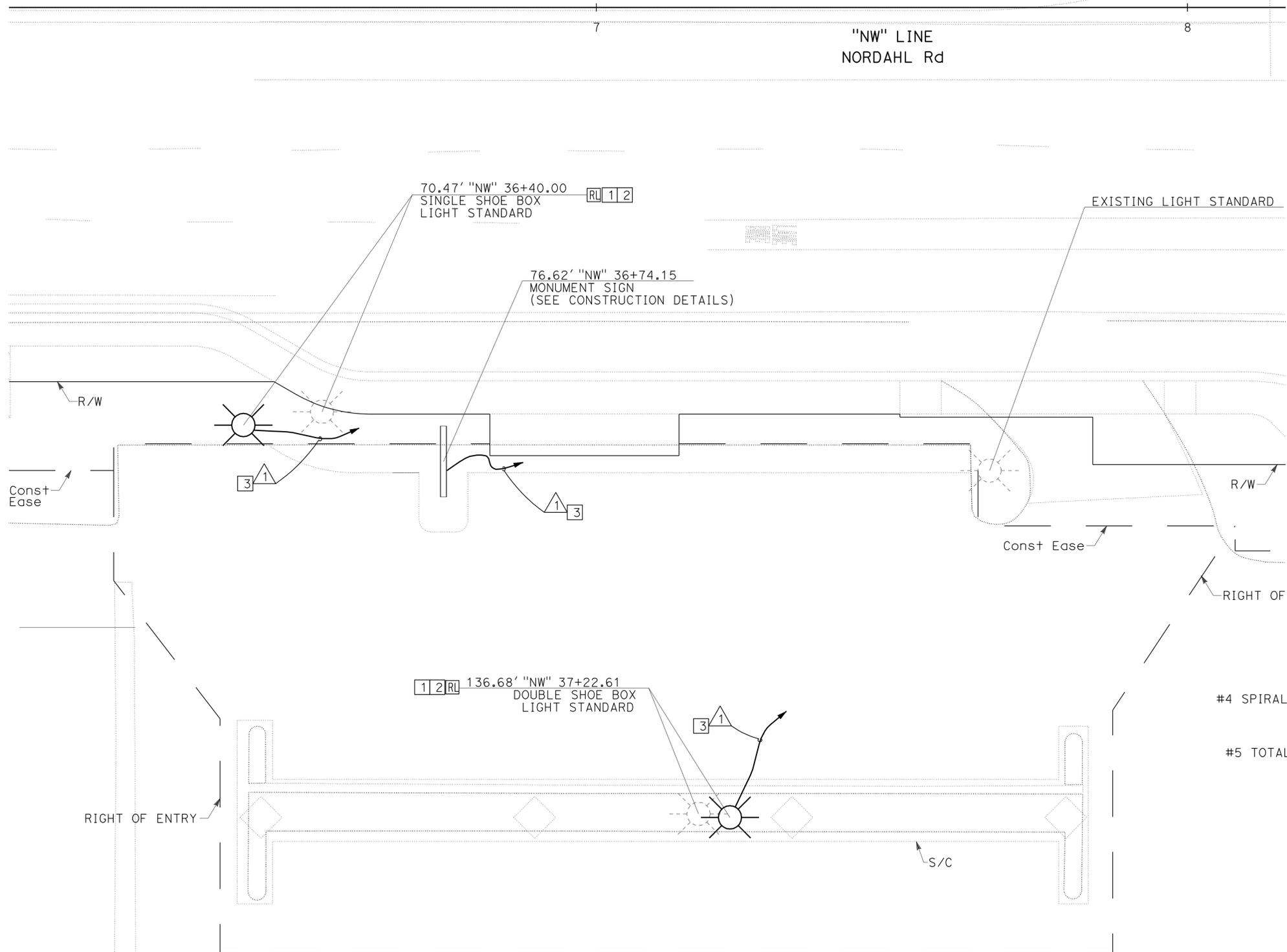
NORDAHL ROAD OC  
BRIDGE NO. 57-1220

SCALE AS NOTED

**E-29**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CONSULTANT - FUNCTIONAL SUPERVISOR  
 J. DE LA GARZA  
 CALCULATED - DESIGNED BY  
 CHECKED BY  
 J. DE LA GARZA  
 MING GUAN  
 J. DE LA GARZA  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	216	306
 REGISTERED CIVIL ENGINEER DATE 06-20-11					
7-18-11 PLANS APPROVAL DATE			THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		
KOA Corporation 5095 Murphy Canyon Rd Suite 300 San Diego, CA 92123			CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025		



**TYPICAL PARKING LOT LIGHT FOUNDATION DETAIL**

NOT TO SCALE

**LIGHTING (PARKING LOT)**

SCALE: 1" = 10'

**E-30**

**NOTES (THIS SHEET ONLY):**

- 1 - RELOCATE EXISTING LIGHT STANDARD TO NEW FOUNDATION.
- 2 - REMOVE EXISTING FOUNDATION COMPLETE. NEW FOUNDATION TO BE CONSTRUCTED PER DETAIL, THIS SHEET.
- 3 - LOCATE EXISTING ELECTRICAL CIRCUIT AND REESTABLISH BY INSTALLING NEW CONDUIT AND CONDUCTORS TO PREVIOUS LIGHT OR JUNCTION POINT FOR RECONNECTION.
- 4 - FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

**CONDUIT NOTES (THIS SHEET ONLY):**

- 1 - 1 1/2" C, 2#8 (LIGHTING)

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CONSULTANT FUNCTIONAL SUPERVISOR J. DE LA GARZA  
 CALCULATED-DESIGNED BY CHECKED BY  
 MING GUAN J. DE LA GARZA  
 REVISED BY DATE REVISIONS  
 7/2/2010  
 USERNAME => trpierce  
 DGN FILE => 1100000200uad030.dgn



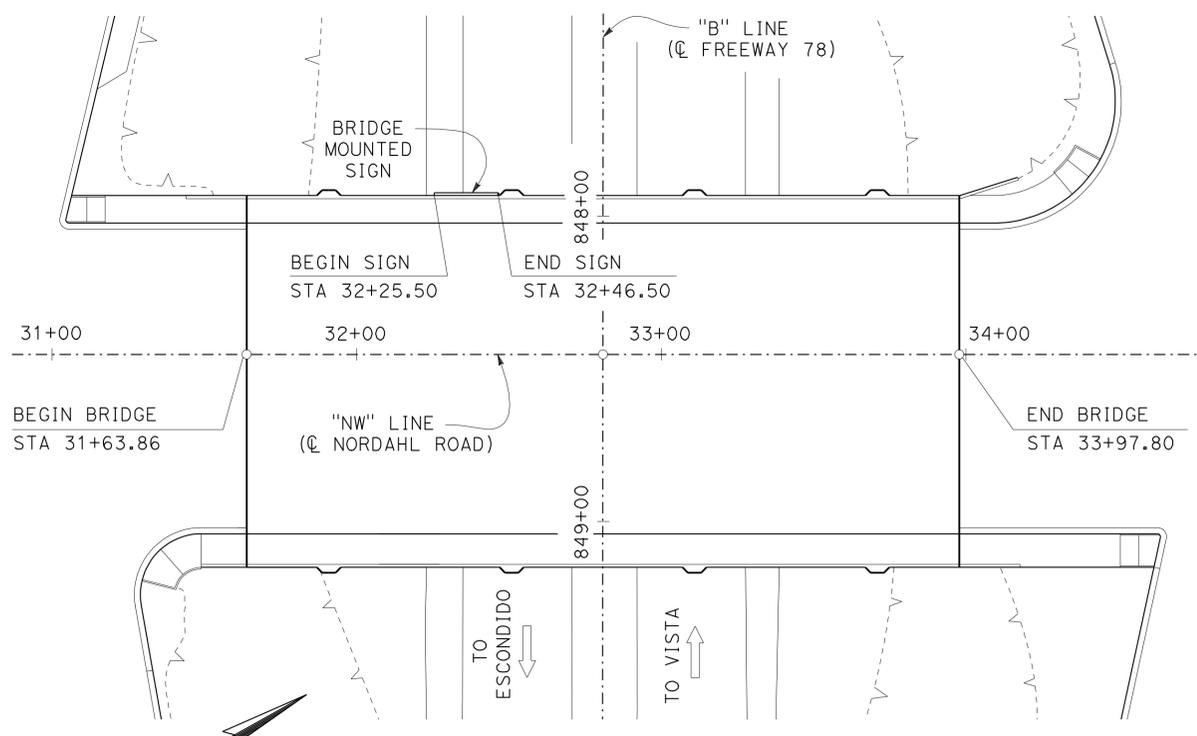
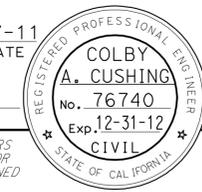
UNIT 2777

PROJECT NUMBER & PHASE

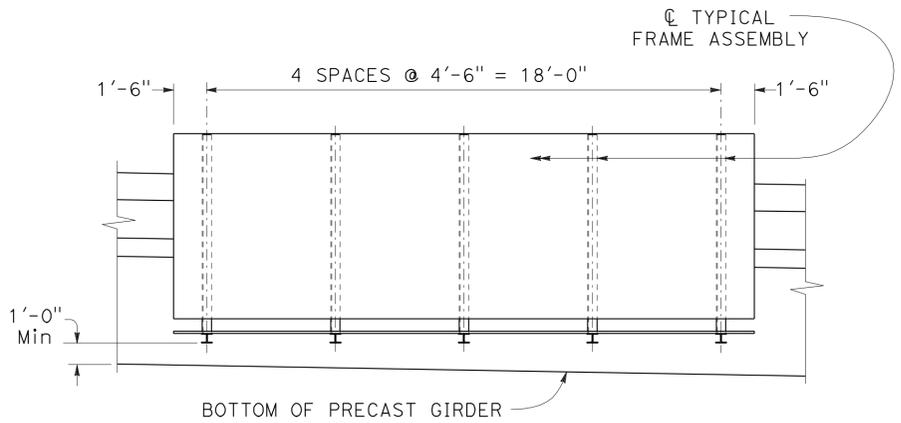
11000002001

LAST REVISION DATE PLOTTED => 21-JUL-2011  
 06-14-11 TIME PLOTTED => 08:48

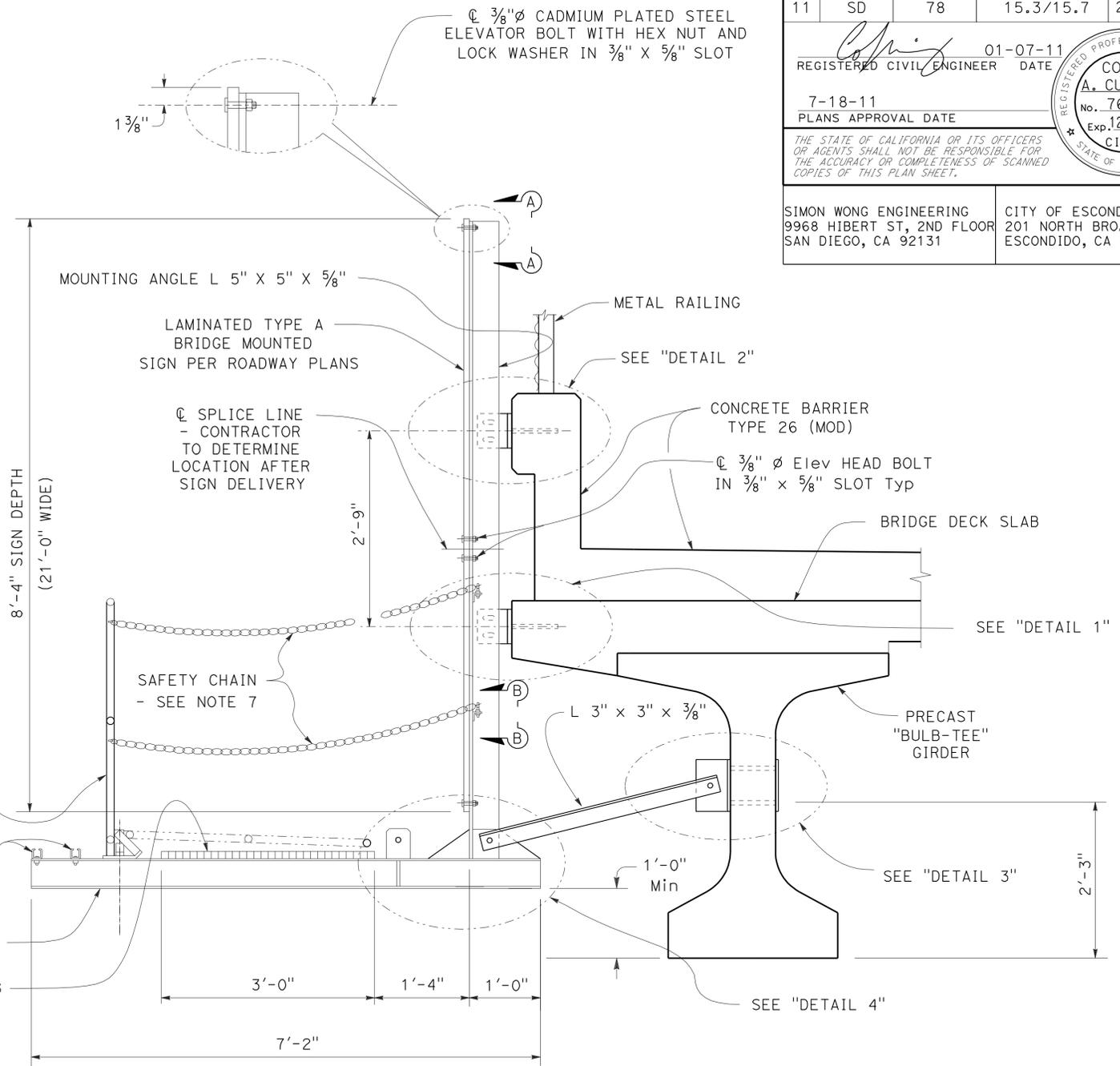
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	217	306
			01-07-11	DATE	
REGISTERED CIVIL ENGINEER			DATE		
7-18-11			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
SIMON WONG ENGINEERING 9968 HIBERT ST, 2ND FLOOR SAN DIEGO, CA 92131			CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025		



LOCATION PLAN  
SCALE: 1" = 30'-0"



FRONT ELEVATION  
NO SCALE



TYPICAL FRAME ASSEMBLY  
NO SCALE

NOTES:

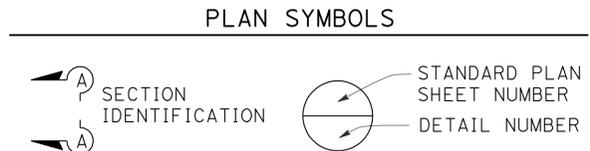
- FOR DETAILS NOT SHOWN, SEE "STANDARD PLANS" MAY 2006.
- UNLESS OTHERWISE SHOWN, ALL STEEL SHALL BE GALVANIZED AFTER FABRICATION.
- MINIMUM SIZE FILLET WELD IS 1/4" OR THICKNESS OF THINNER PART UNLESS NOTED OTHERWISE.
- CONTRACTOR TO PROVIDE ANCHOR BOLT LAYOUT BEFORE ANCHOR BOLTS ARE PLACED.
- ALL HIGH STRENGTH (HS) BOLTS SHALL BE SNUG TIGHTENED.
- FOR SIGN SPECIFICATIONS, SEE ROAD PLANS.
- SAFETY CHAIN IS LOCATED AT ENDS OF WALKWAY BUT IS SHOWN HERE FOR CLARITY.
- TOP OF SIGN TO BE LEVEL.

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

NOTE: FOR VIEWS A-A AND B-B, AND DETAILS 1 THROUGH 4, SEE SHEET SDS-2.

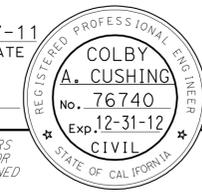
STANDARD PLANS DATED MAY 2006

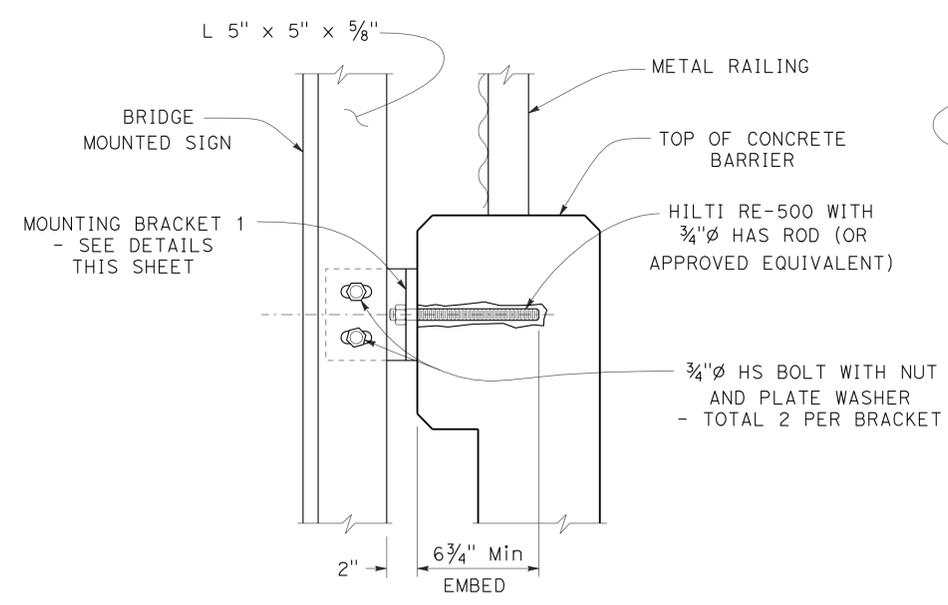
A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
S16	OVERHEAD SIGNS WALKWAY DETAILS NO. 1
S17	OVERHEAD SIGNS WALKWAY DETAILS NO. 2
S17A	OVERHEAD SIGNS WALKWAY DETAILS NO. 3
S18	OVERHEAD SIGNS WALKWAY SAFETY RAILING DETAILS



**SPECIAL DESIGN SIGN  
(BRIDGE MOUNTED SIGN)**  
NO SCALE  
**SDS-1**

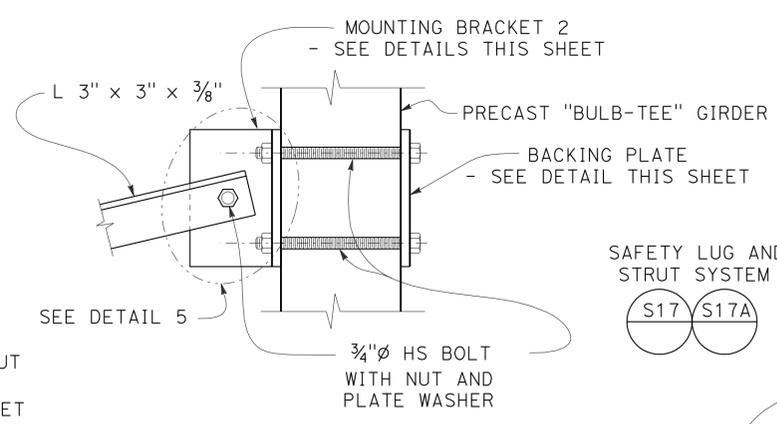
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CUSHING  
 SANFORD  
 SANFORD  
 CALTRANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	218	306
			01-07-11 REGISTERED CIVIL ENGINEER DATE 7-18-11 PLANS APPROVAL DATE		
SIMON WONG ENGINEERING 9968 HIBERT ST, 2ND FLOOR SAN DIEGO, CA 92131			CITY OF ESCONDIDO 201 NORTH BROADWAY ESCONDIDO, CA 92025		

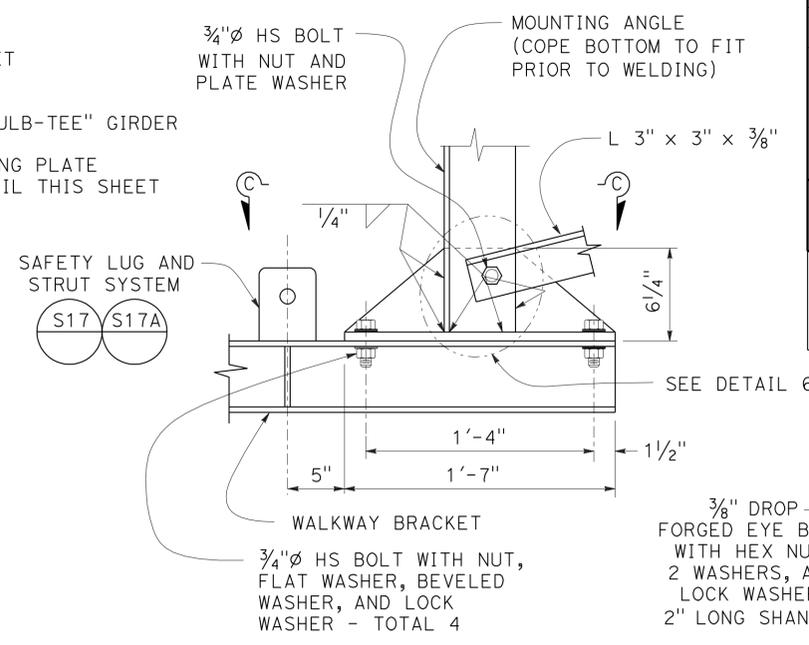


NOTE: ADJUST 3/4" HAS ROD AS NEEDED TO AVOID METAL RAILING ANCHORAGES OR AS APPROVED BY THE ENGINEER.

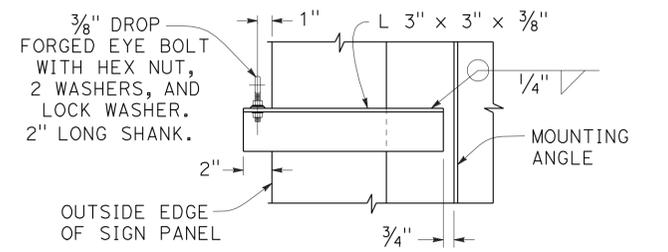
**DETAIL 2**  
NO SCALE



**DETAIL 3**  
NO SCALE

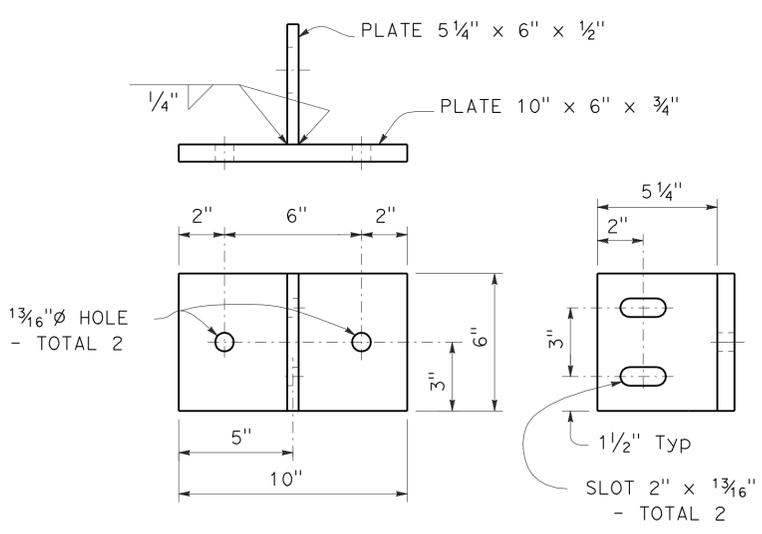


**DETAIL 4**  
NO SCALE

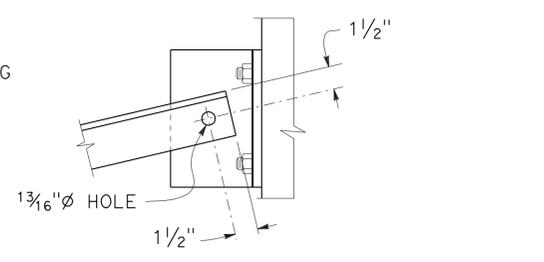


NOTE: EXTERIOR BRACKET ANGLE TO FACE OUTWARD TO ACCOMMODATE THE SAFETY CHAIN ANGLE.

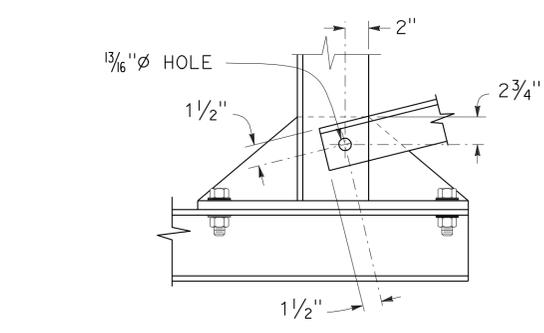
**VIEW B-B**  
NO SCALE



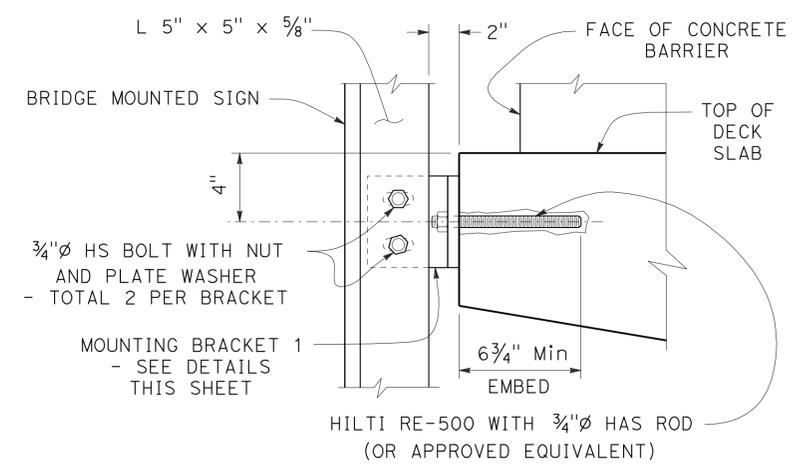
**MOUNTING BRACKET 1 DETAILS**  
NO SCALE



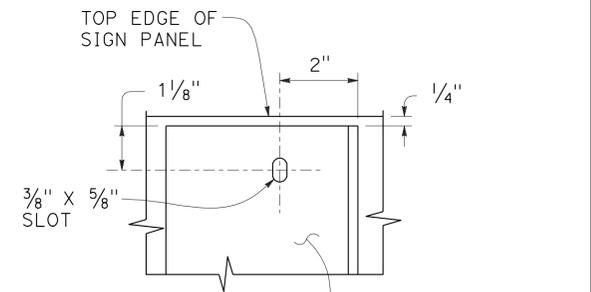
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NO SCALE



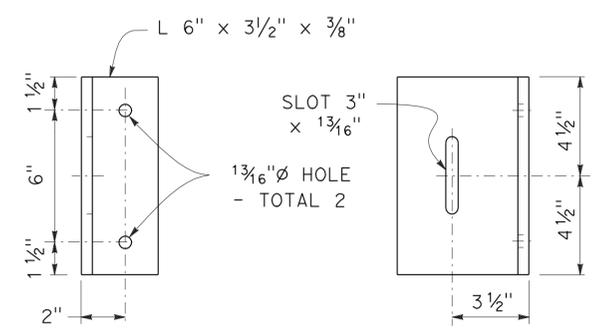
**DETAIL 6**  
NO SCALE



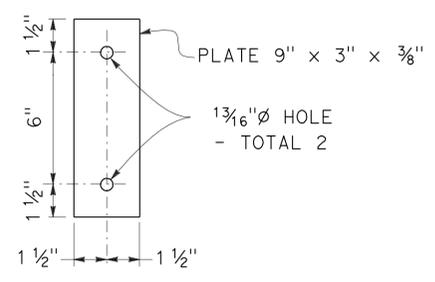
**DETAIL 1**  
NO SCALE



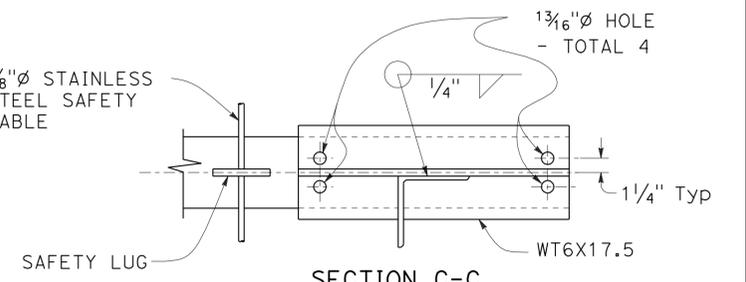
**VIEW A-A**  
NO SCALE



**MOUNTING BRACKET 2 DETAILS**  
NO SCALE



**BACKING PLATE DETAIL**  
NO SCALE



**SECTION C-C**  
NO SCALE

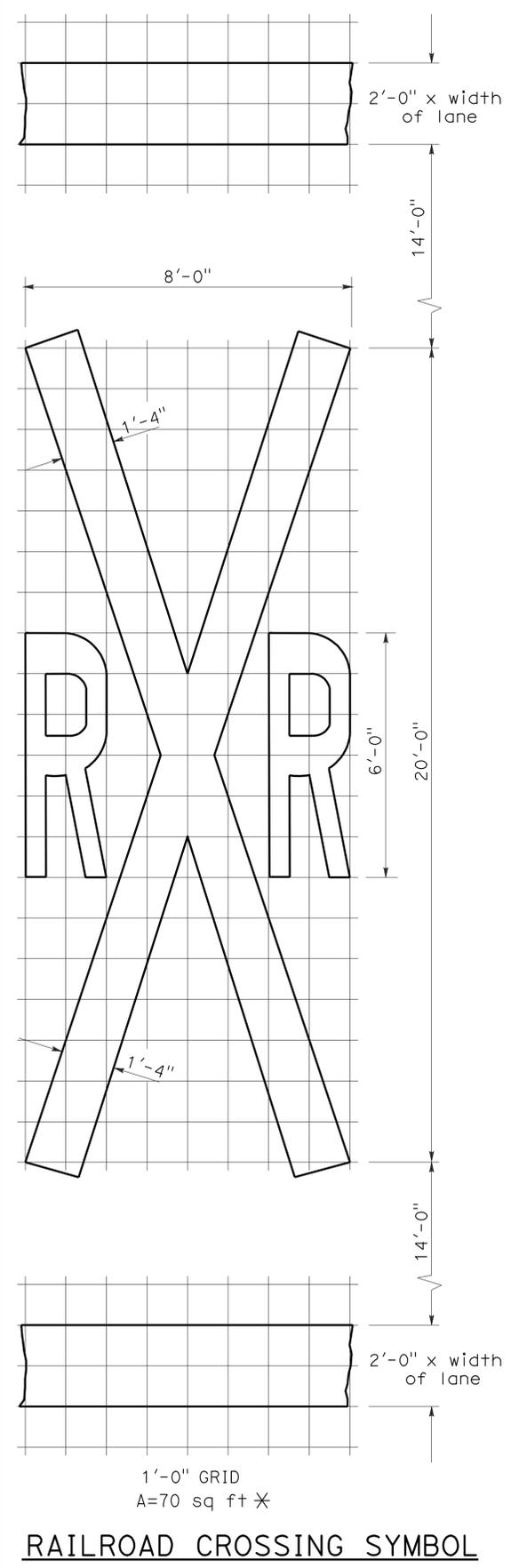
NOTE: THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

NOTE: FOR LOCATION OF VIEWS A-A AND B-B, AND DETAILS 1 THROUGH 4, SEE SHEET SDS-1.

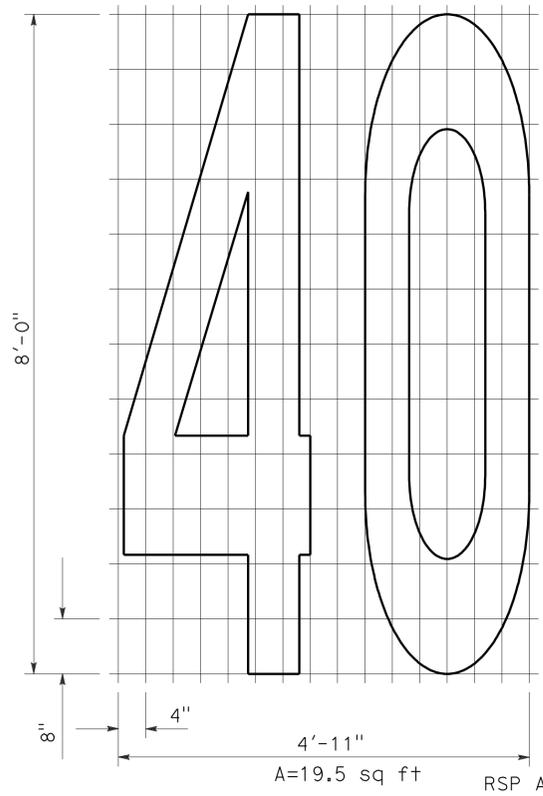
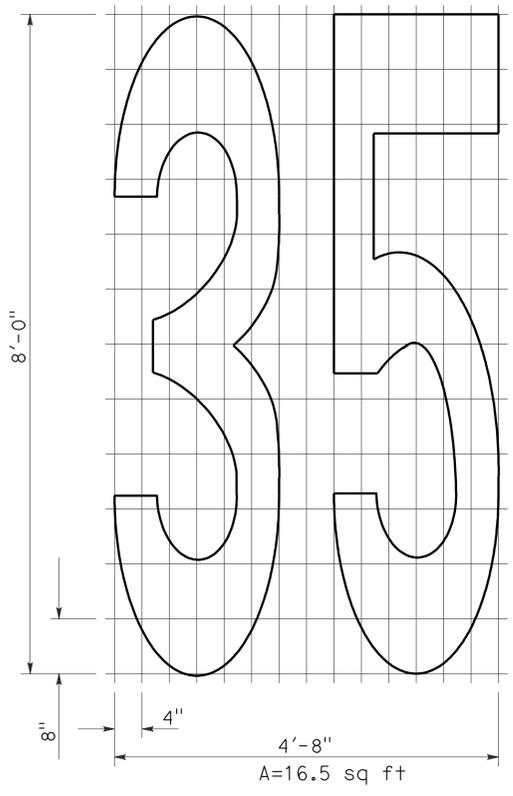
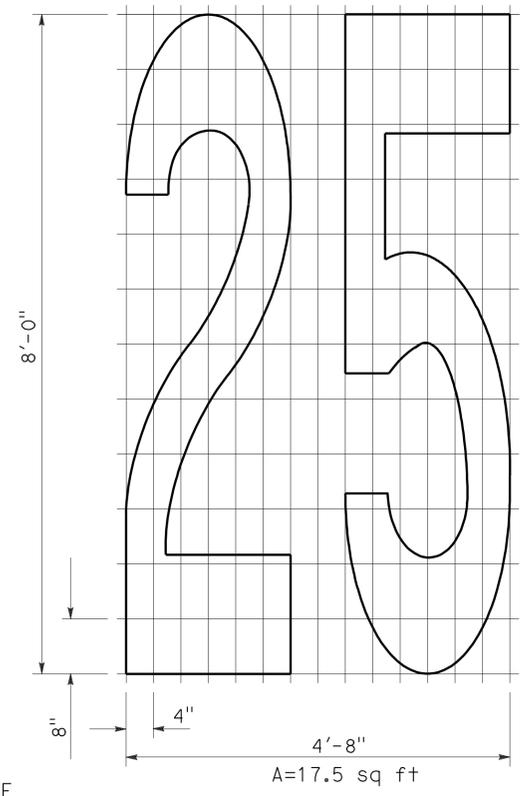
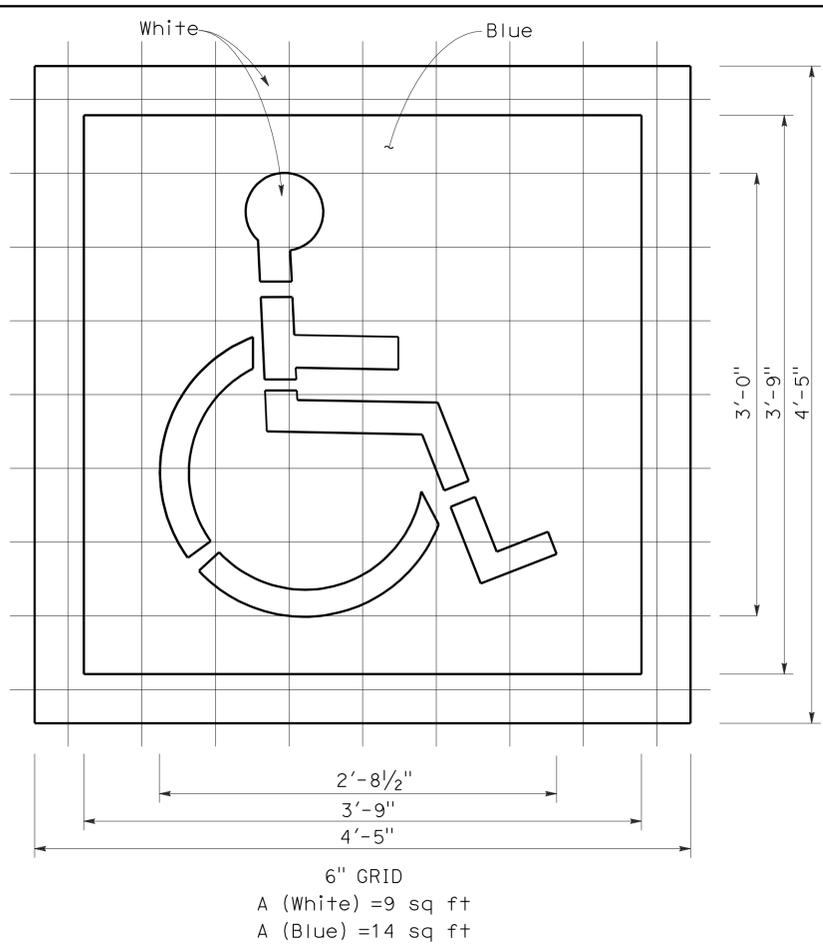
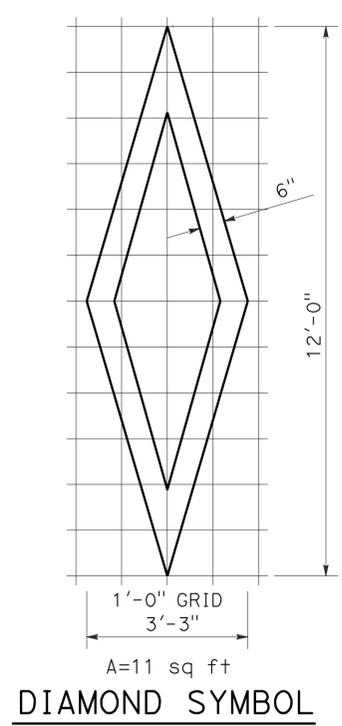
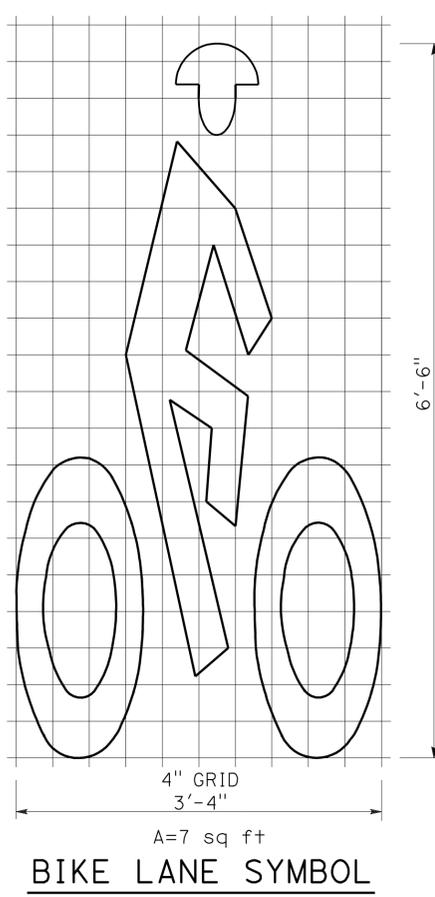
**SPECIAL DESIGN SIGN  
(BRIDGE MOUNTED SIGN)  
NO SCALE  
SDS-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Functional Supervisor: A. SANFORD  
 Calculated/Designed By: C. CUSHING  
 Checked By: A. SANFORD  
 Revised By: DATE REVISION

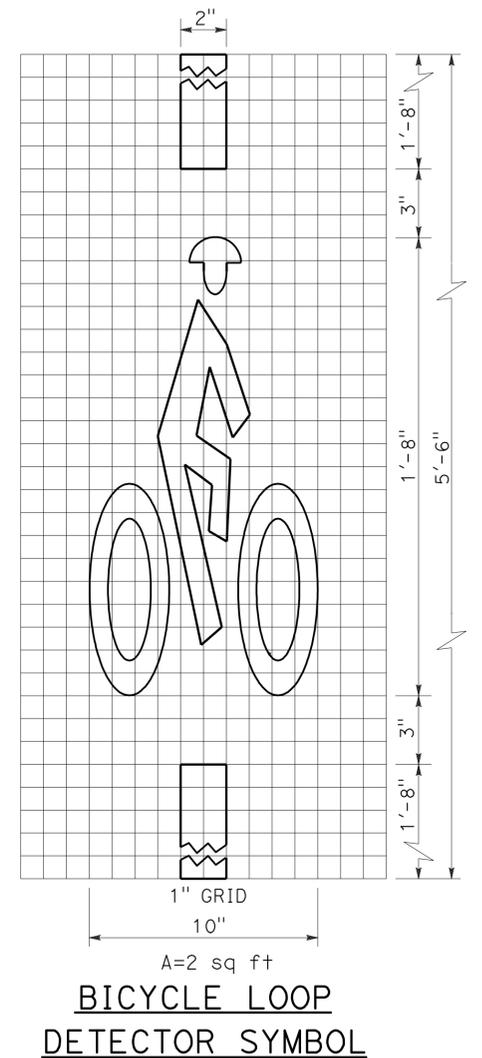
To accompany plans dated 7-18-11



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



**NUMERALS**



**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.

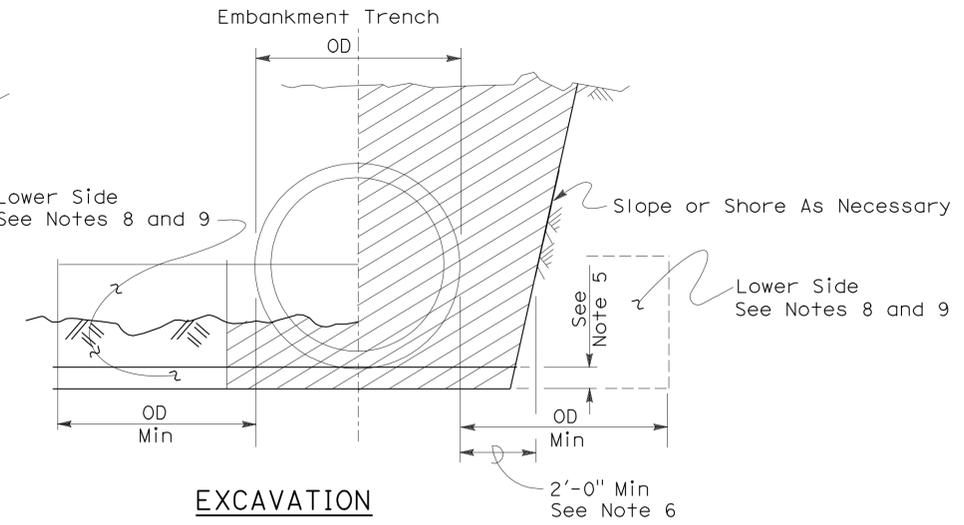
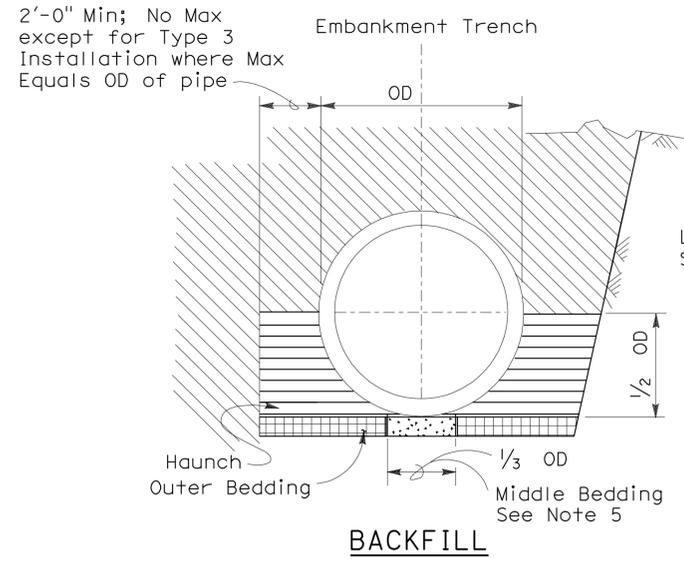
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	220	306

*Dallas Forester*  
 REGISTERED CIVIL ENGINEER  
 November 17, 2006  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 Dallas Forester  
 No. C37765  
 Exp. 12-31-06  
 CIVIL  
 STATE OF CALIFORNIA

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To accompany plans dated 7-18-11



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

**TYPE 1 INSTALLATION:**  
 The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 μm sieve size shall be 12.

**TYPE 2 INSTALLATION:**  
 The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

**TYPE 3 INSTALLATION:**  
 The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or 1/2 OD.

**NOTES:**

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

**INSTALLATION TYPE 1**

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

**INSTALLATION TYPE 2**

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

**INSTALLATION TYPE 3**

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**EXCAVATION AND BACKFILL  
 CONCRETE PIPE CULVERTS**  
 NO SCALE

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

**REVISED STANDARD PLAN RSP A62DA**

2006 REVISED STANDARD PLAN RSP A62DA

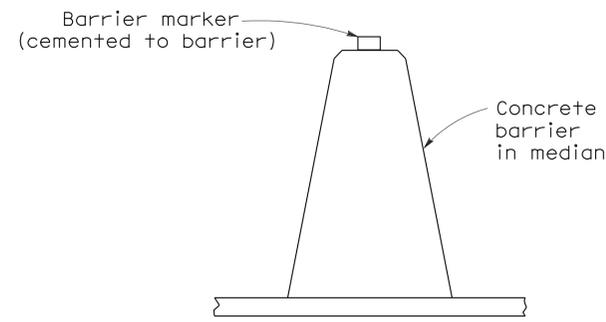
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	221	306

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

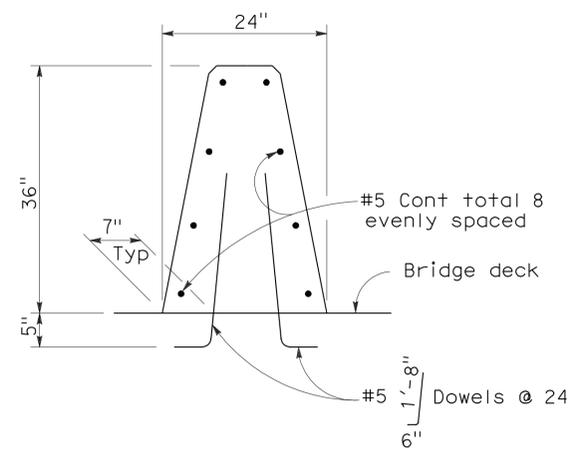
June 6, 2008  
PLANS APPROVAL DATE

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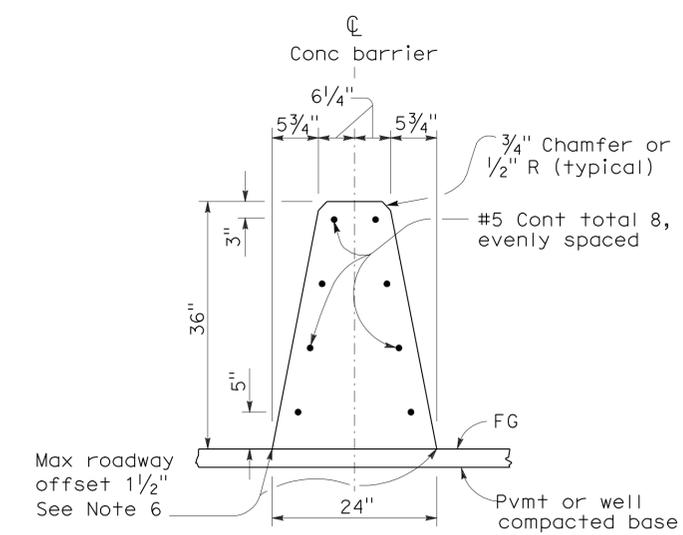
To accompany plans dated 7-18-11



**CONCRETE BARRIER TYPE 60 DELINEATION**  
See Notes 7 and 8



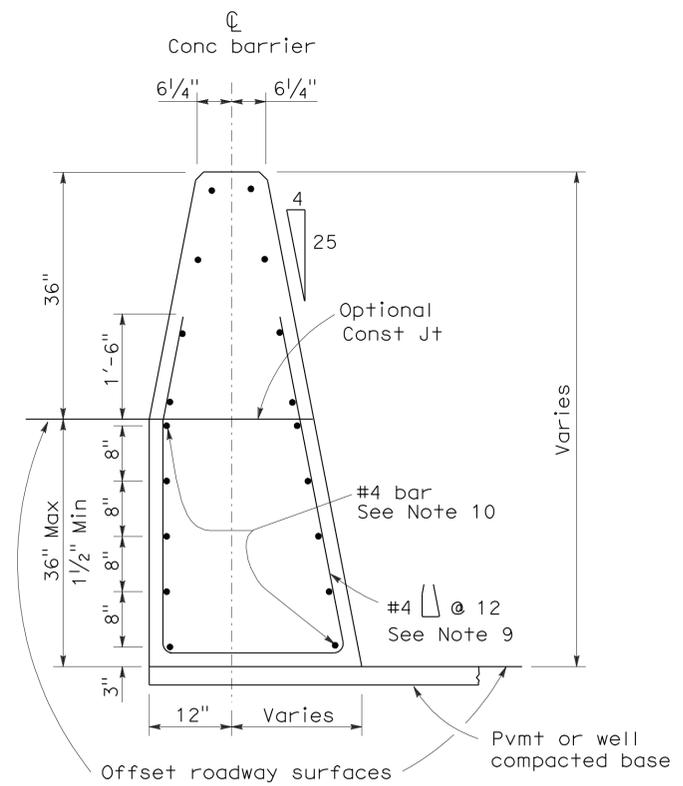
**CONCRETE BARRIER TYPE 60A**  
Details similar to Type 60 except as noted.



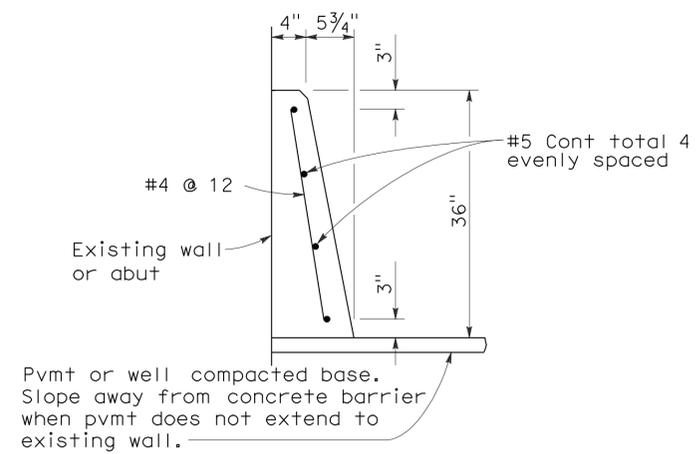
**CONCRETE BARRIER TYPE 60**

**NOTES:**

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



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



**CONCRETE BARRIER TYPE 60D**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CONCRETE BARRIER TYPE 60**

NO SCALE

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

**REVISED STANDARD PLAN RSP A76A**

2006 REVISED STANDARD PLAN RSP A76A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	222	306

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

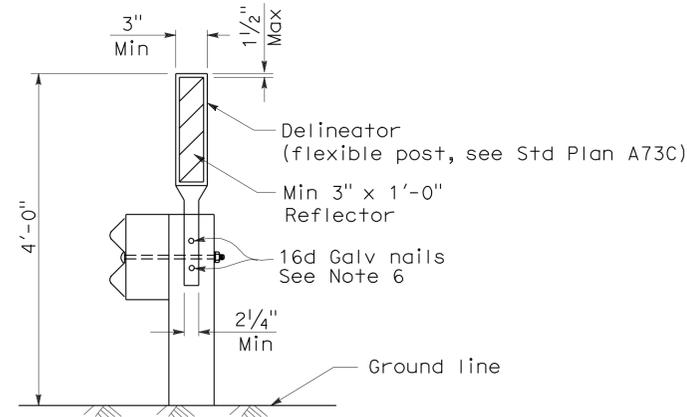
May 20, 2011  
PLANS APPROVAL DATE

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To accompany plans dated 7-18-11

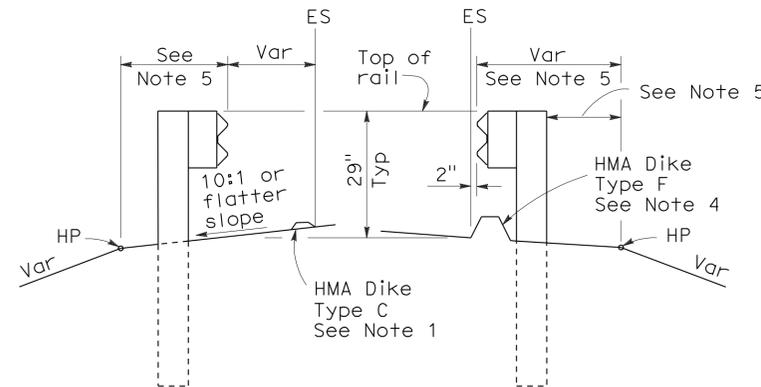
**NOTES:**

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



**GUARD RAILING DELINEATION**

See Note 3



**DIKE POSITIONING**

See Note 1

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP A77C4**

2006 REVISED STANDARD PLAN RSP A77C4

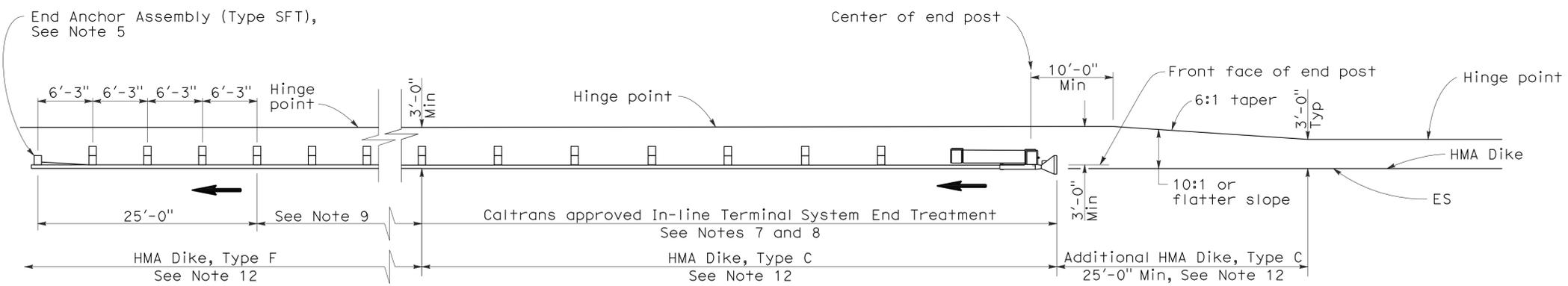
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	223	306

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

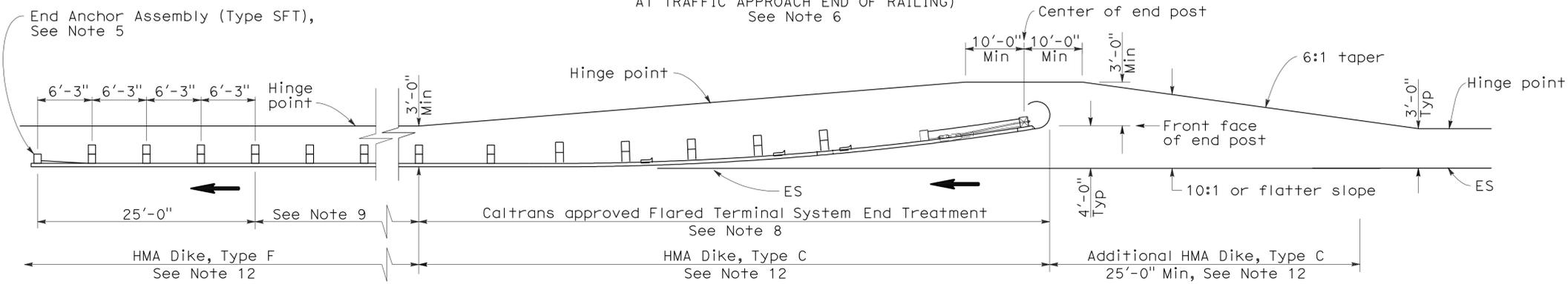
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 7-18-11



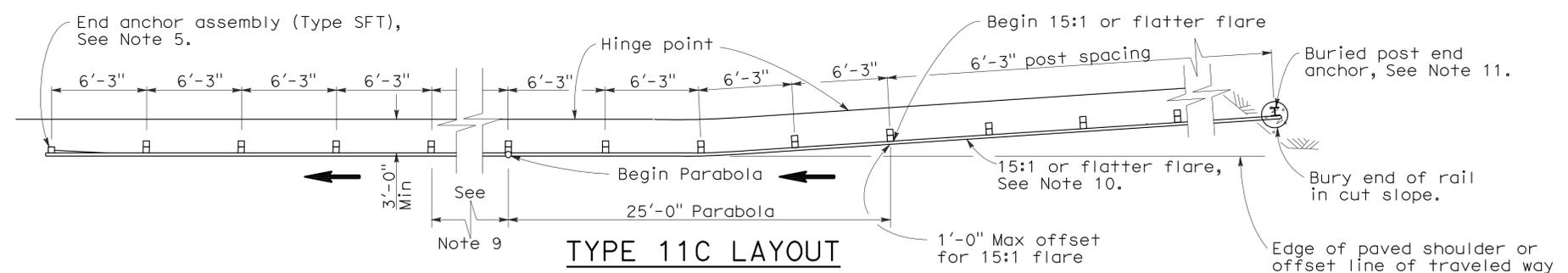
**TYPE 11A LAYOUT**

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Note 6



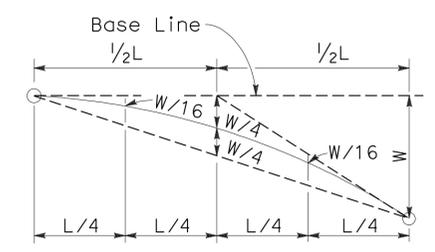
**TYPE 11B LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Note 6

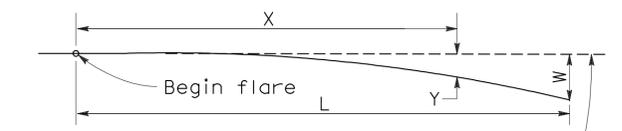


**TYPE 11C LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 6 and 12



**TYPICAL PARABOLIC LAYOUT**

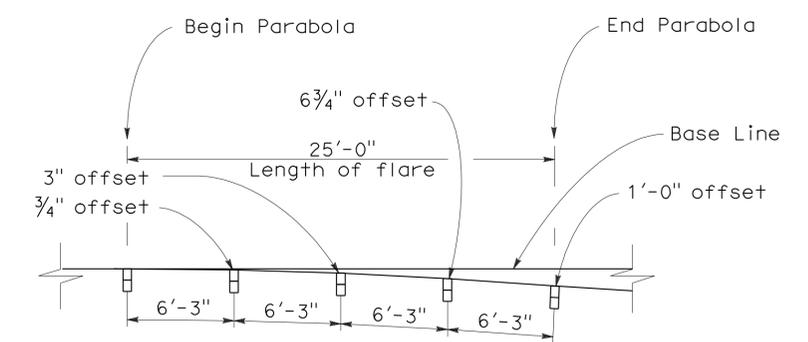


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare

**PARABOLIC FLARE OFFSETS**



**TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET**

**NOTES:**

- Line post, blocks and hardware to be used are shown on 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 recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- 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 and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of 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 11C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1  
DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77E1**

2006 REVISED STANDARD PLAN RSP A77E1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	224	306

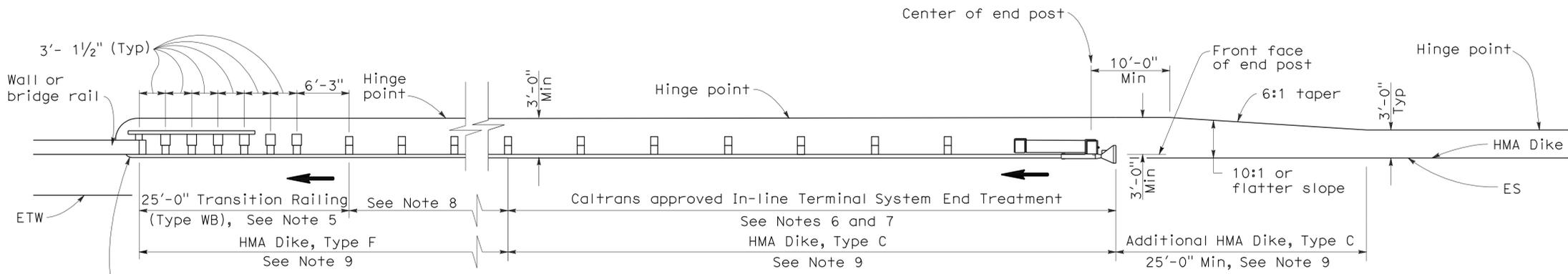
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

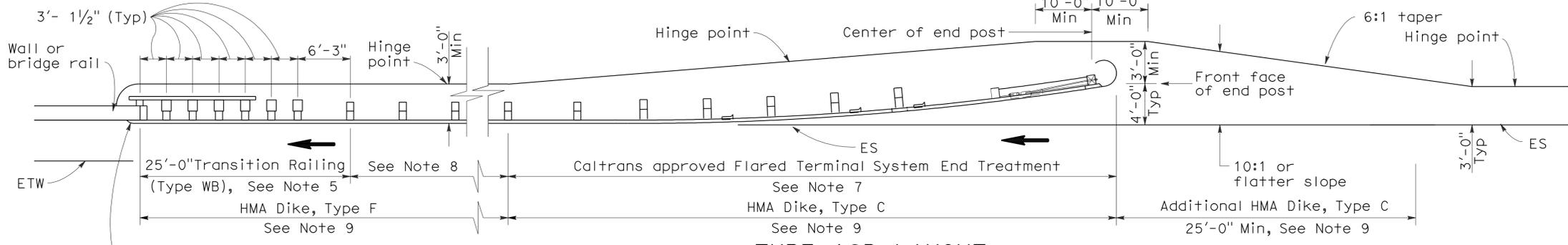
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To accompany plans dated 7-18-11



**TYPE 12A LAYOUT**

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



**TYPE 12B LAYOUT**

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

**NOTES:**

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

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

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

2006 REVISED STANDARD PLAN RSP A77F1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	225	306

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

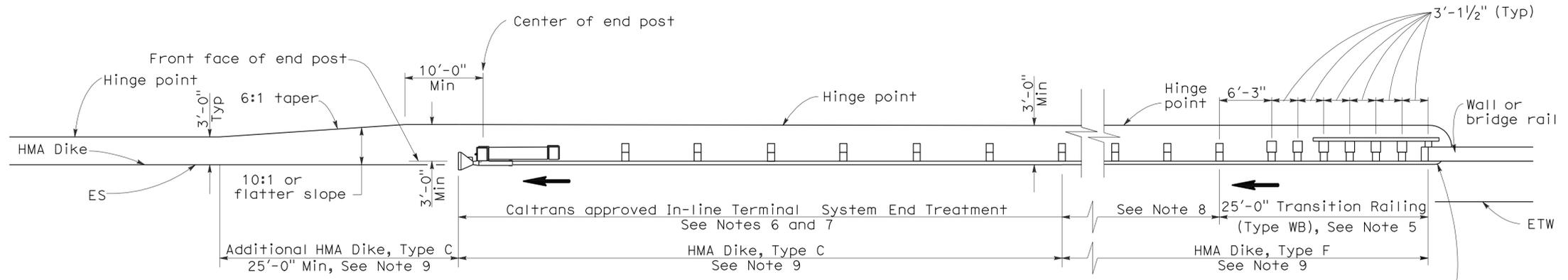
June 6, 2008  
PLANS APPROVAL DATE

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

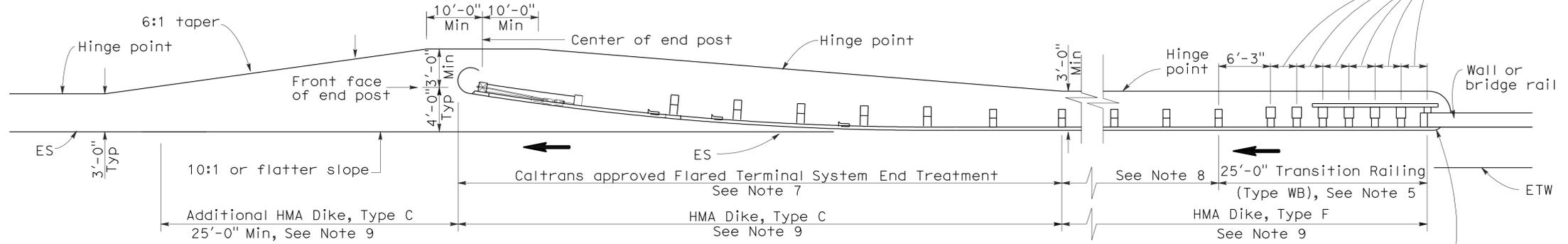
To accompany plans dated 7-18-11

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  $\rightarrow$ .
- 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.

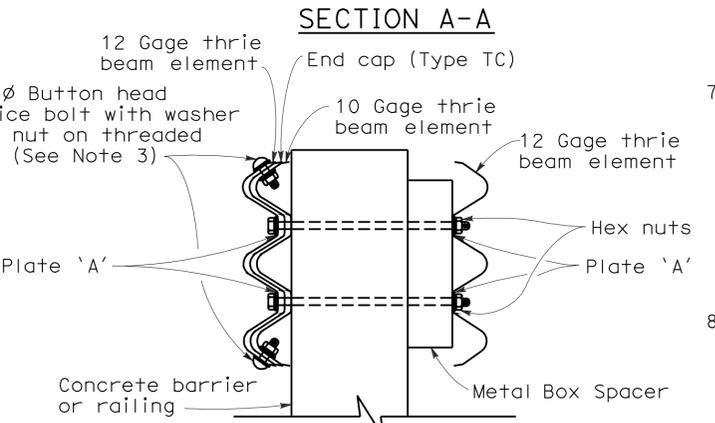
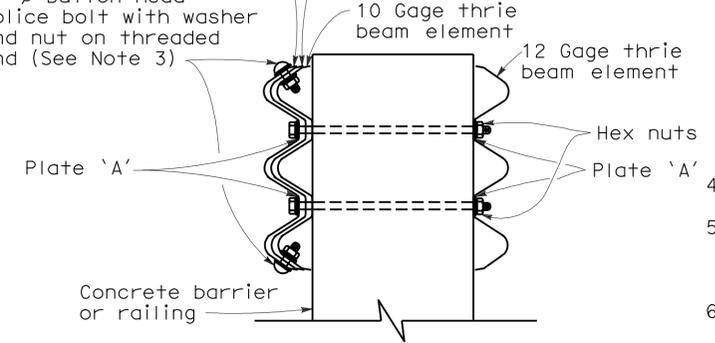
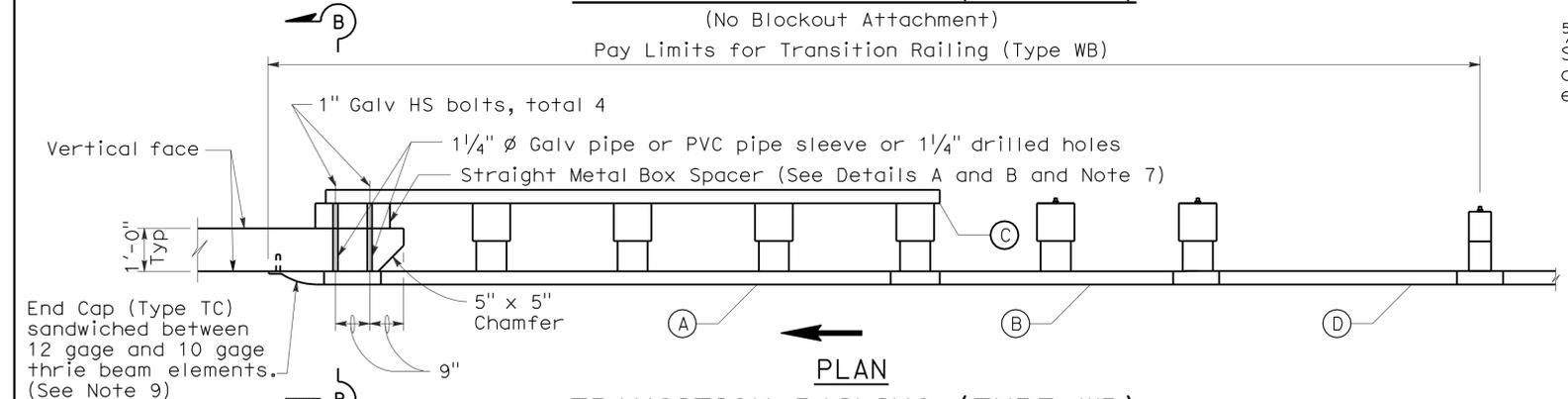
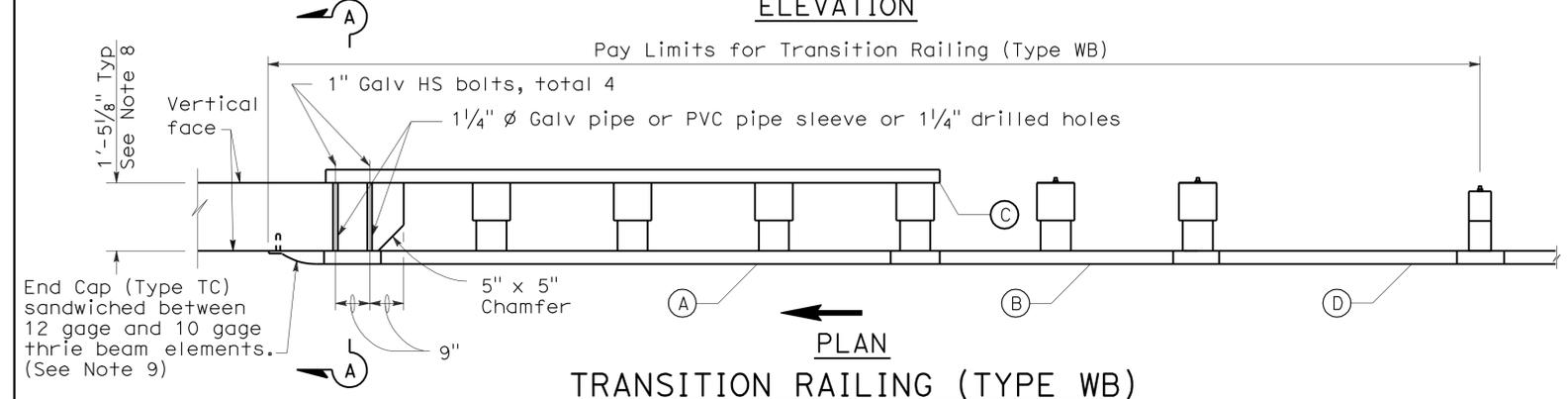
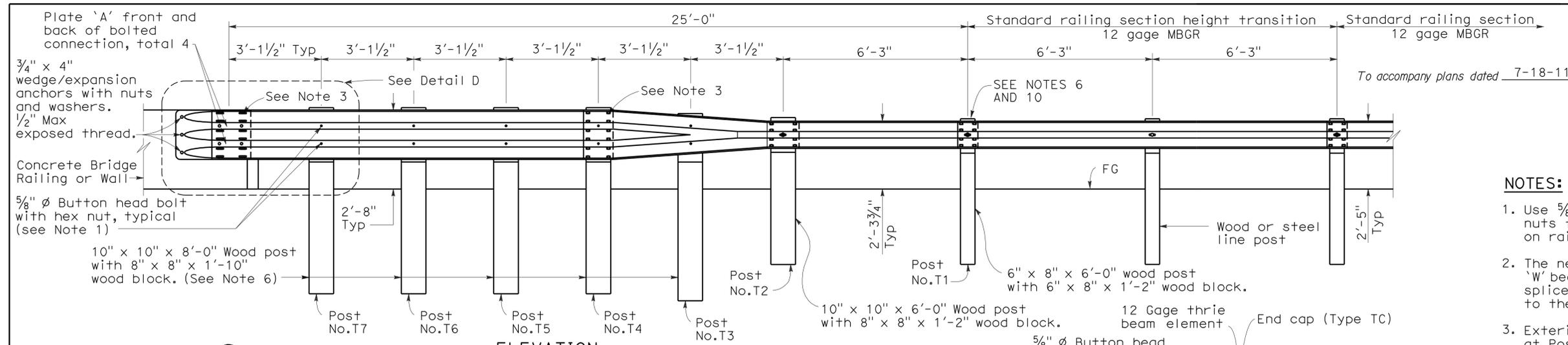
**REVISED STANDARD PLAN RSP A77F4**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	78	15.3/15.7	226	306

RANDALL D. HIATT  
 REGISTERED CIVIL ENGINEER  
 No. C50200  
 Exp. 6-30-11  
 STATE OF CALIFORNIA

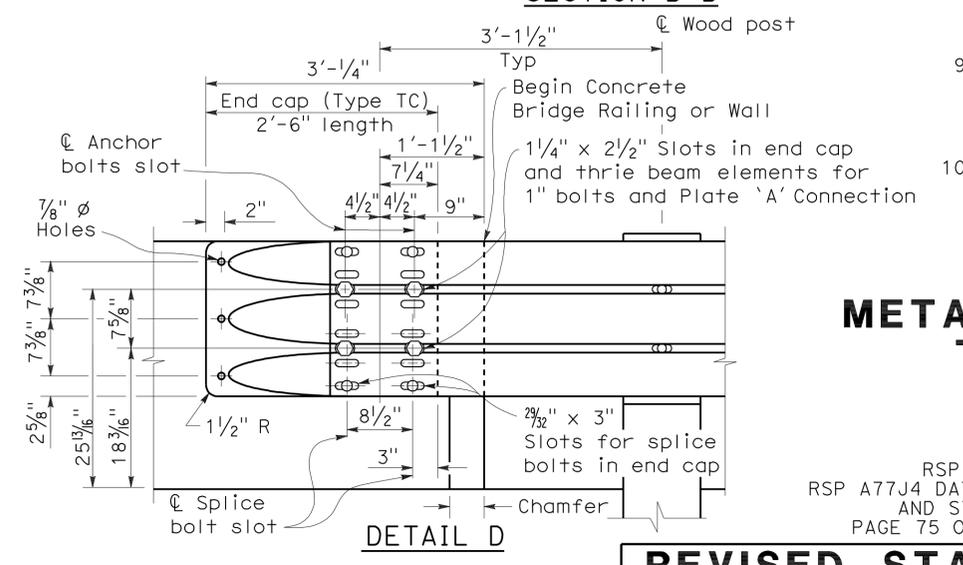
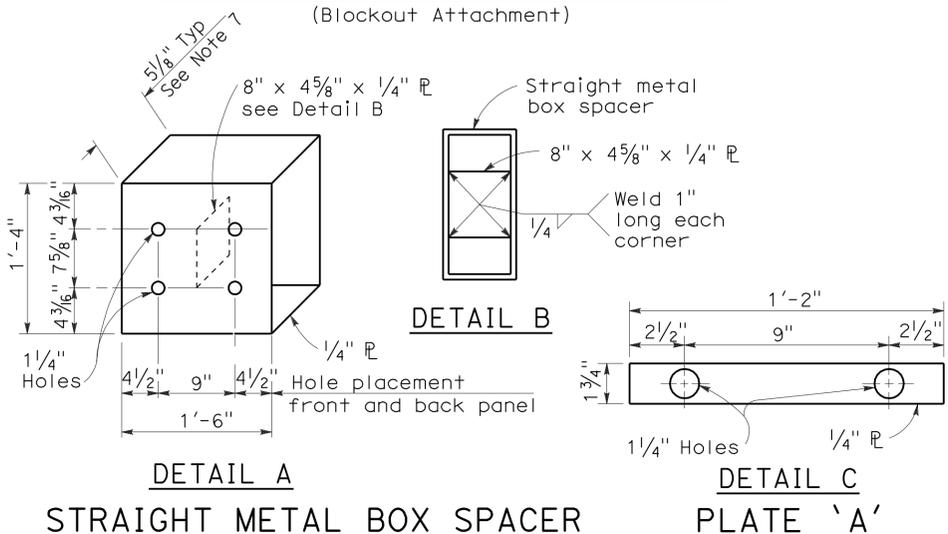
May 20, 2011  
 PLANS APPROVAL DATE

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

- 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

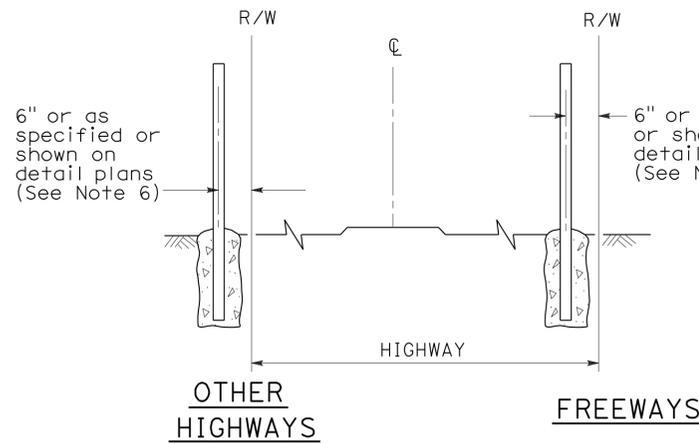


STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
 TRANSITION RAILING  
 (TYPE WB)**  
 NO SCALE  
 RSP A77J4 DATED MAY 20, 2011 SUPERSEDES  
 RSP A77J4 DATED JUNE 5, 2009, RSP A77J4 DATED JUNE 6, 2008  
 AND STANDARD PLAN A77J4 DATED MAY 1, 2006 -  
 PAGE 75 OF THE STANDARD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

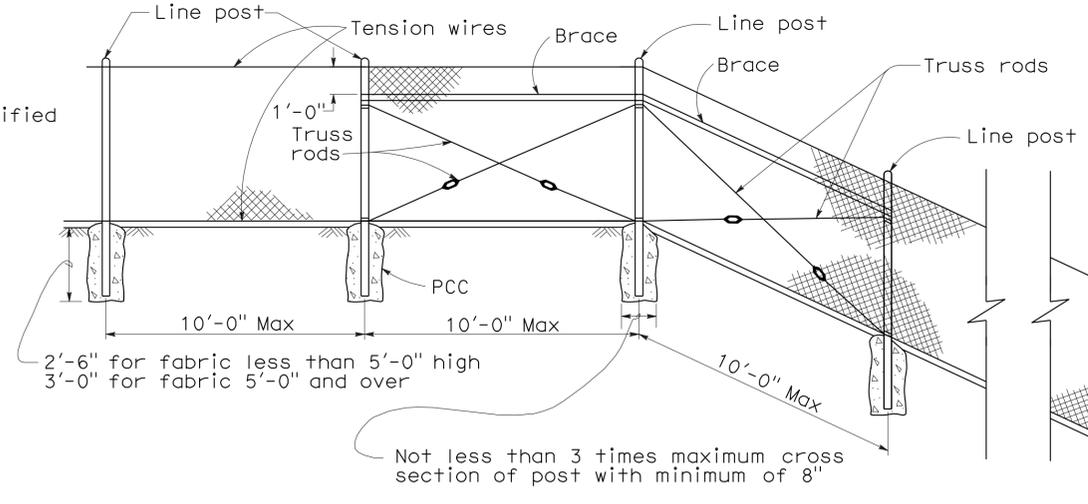
**REVISED STANDARD PLAN RSP A77J4**

2006 REVISED STANDARD PLAN RSP A77J4

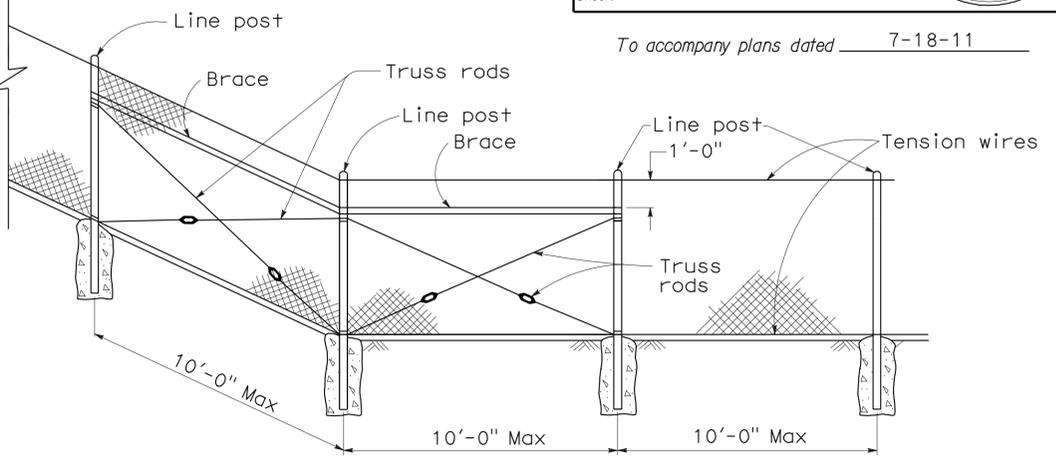
2006 REVISED STANDARD PLAN RSP A85



**FENCE LOCATION**

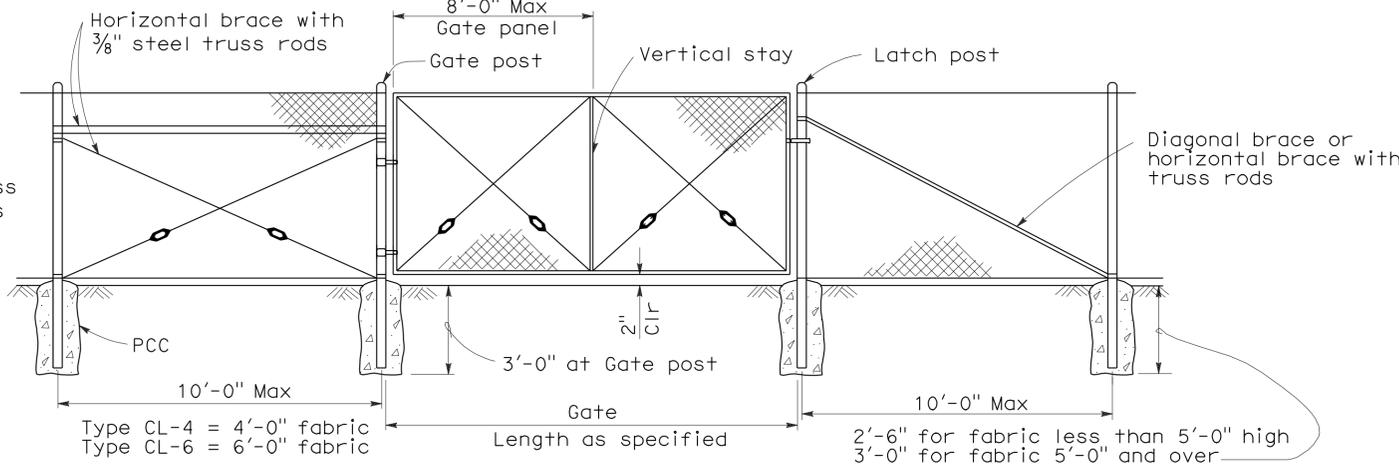
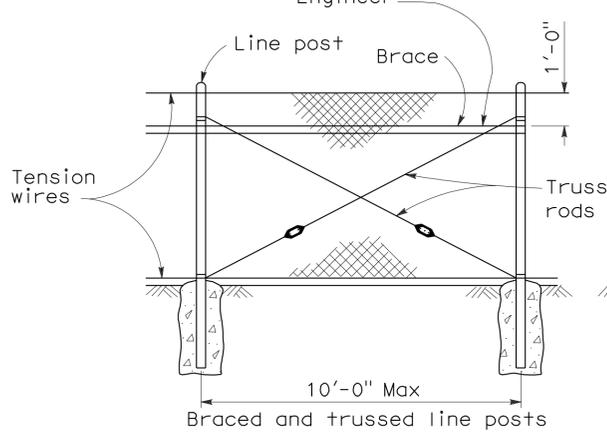


**CHAIN LINK FENCE ON SHARP BREAK IN GRADE**



To accompany plans dated 7-18-11

Brace to be removed after all other fence construction is completed unless otherwise directed by the Engineer



**CHAIN LINK GATE INSTALLATION**

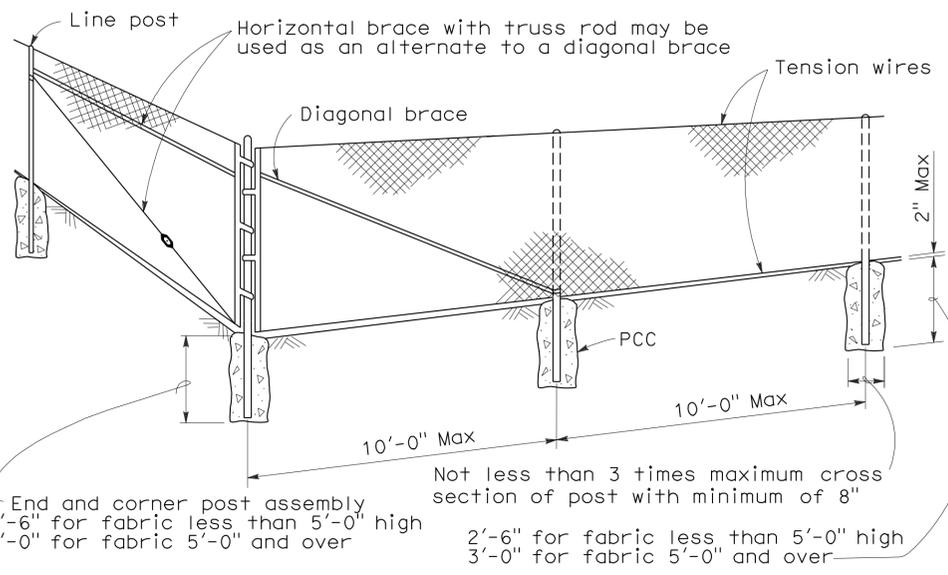
GATE POST			
FENCE HEIGHT	GATE WIDTHS	NOMINAL ID	WEIGHT PER FOOT
6'-0" and Less	Up thru 6'-0"	2 1/2"	4.95 LB
	Over 6'-0" thru 12'-0"	4"	10.79 LB
	Over 12'-0" thru 18'-0"	5"	14.62 LB
	Over 18'-0" to 24'-0" Max	6"	18.97 LB
Over 6'-0"	Up thru 6'-0"	3"	7.58 LB
	Over 6'-0" thru 12'-0"	5"	14.62 LB
	Over 12'-0" thru 18'-0"	6"	18.97 LB
	Over 18'-0" to 24'-0" Max	8"	28.55 LB

Above post dimensions and weights are minimums. Larger sizes may be used on approval of the Engineer.

**NOTES:**

- The below table shows examples of post and brace sections which may comply with the Specifications.
- Sections shown in the tables must also comply with the strength requirements and other provisions of the Specifications.
- Other sections which comply with the strength requirements and other provisions of the Specifications may be used on approval of the Engineer.
- Options exercised shall be uniform on any one project.
- Dimensions shown are nominal.
- Offset to be 2'-0" at monument locations, measured at right angles to R/W lines. Taper to achieve offset to be at least 20'-0" long.

FENCE HEIGHT	TYPICAL MEMBER DIMENSIONS (See Notes)									
	LINE POSTS			END, LATCH & CORNER POSTS			BRACES			
	ROUND ID	H	ROLL FORMED	ROUND ID	ROLL FORMED		ROUND ID	H	ROLL FORMED	
6' & less	1 1/2"	1 7/8" x 1 5/8"	1 7/8" x 1 5/8"	2"	3 1/2" x 3 1/2"	2" x 1 3/4"	1 1/4"	1 1/2" x 1 5/16"	1 5/8" x 1 1/4"	1 3/4" x 1 1/4"
Over 6'	2"	2 1/4" x 2"	2" x 1 3/4"	2 1/2"	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	1 1/4"	1 1/2" x 1 5/16"	1 5/8" x 1 1/4"	1 3/4" x 1 1/4"



**CORNER POST**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CHAIN LINK FENCE**

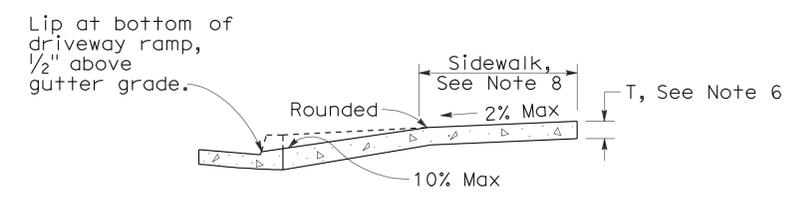
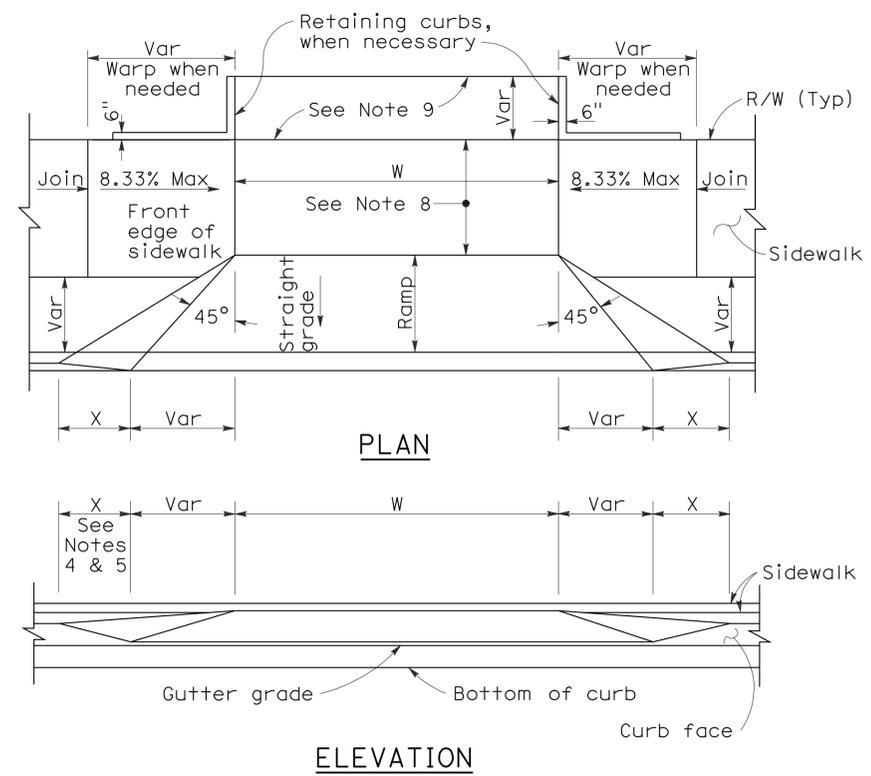
NO SCALE

RSP A85 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN A85  
DATED MAY 1, 2006 - PAGE 111 OF THE STANDARD PLANS BOOK DATED MAY 2006.

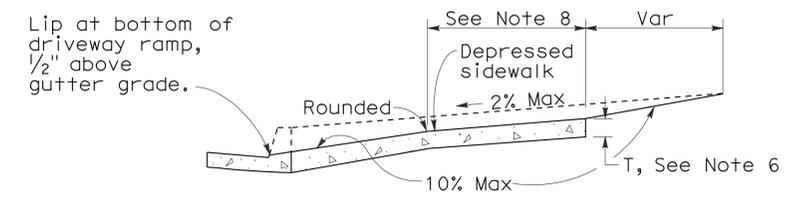
**REVISED STANDARD PLAN RSP A85**



To accompany plans dated 7-18-11



**CASE A**  
Typical driveway, sidewalk not depressed



**CASE B**  
Driveway with depressed sidewalk

**SECTIONS**

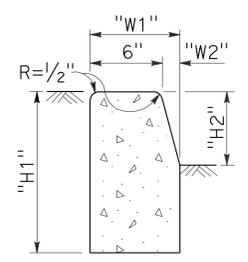
**CURB QUANTITIES**

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

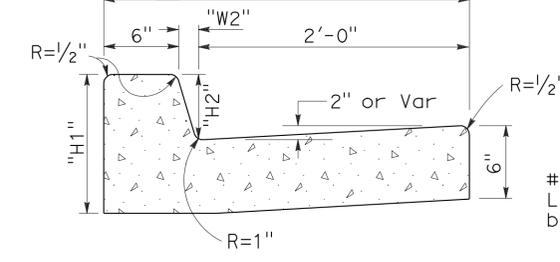
**TABLE A**

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"

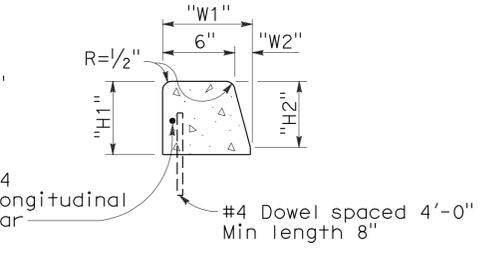
**DRIVEWAYS**



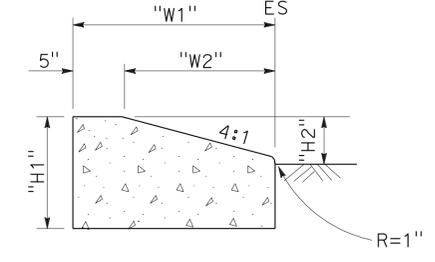
**TYPE A1 CURBS**  
See Table A



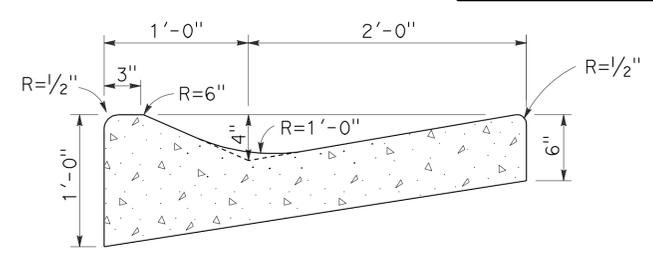
**TYPE A2 CURBS**  
See Table A



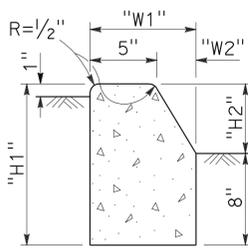
**TYPE A3 CURBS**  
Superimposed on existing pavement  
See Table A



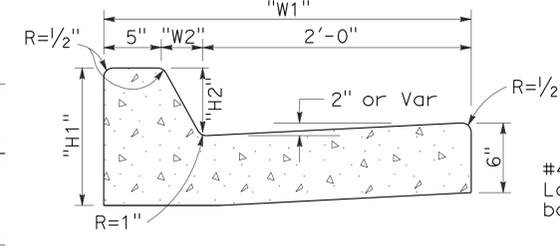
**TYPE D CURBS**  
See Table A



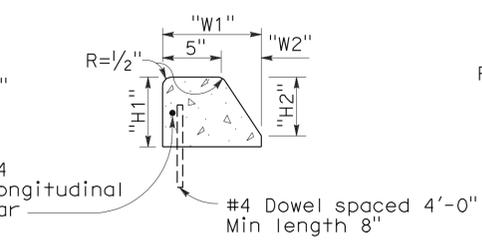
**TYPE E CURB**



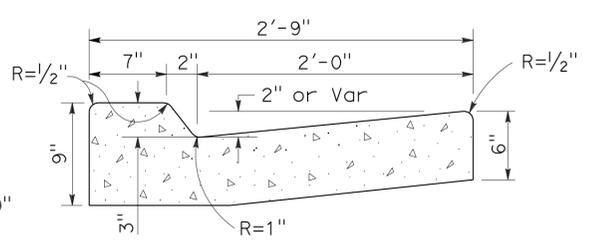
**TYPE B1 CURBS**  
See Table A



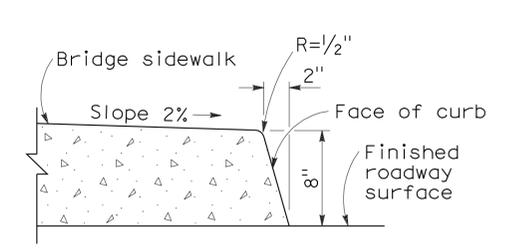
**TYPE B2 CURBS**  
See Table A



**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**

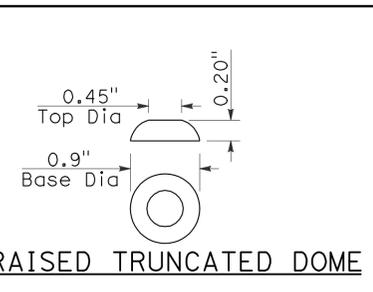
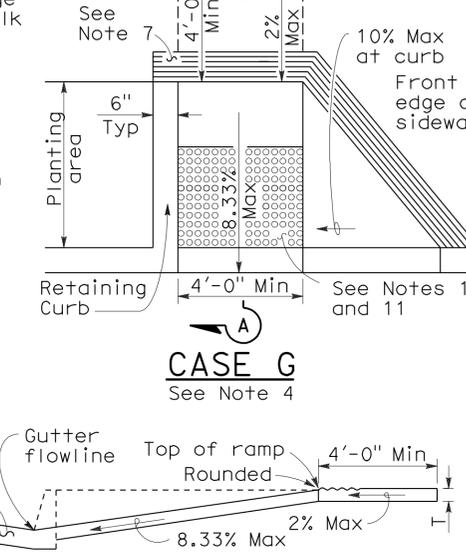
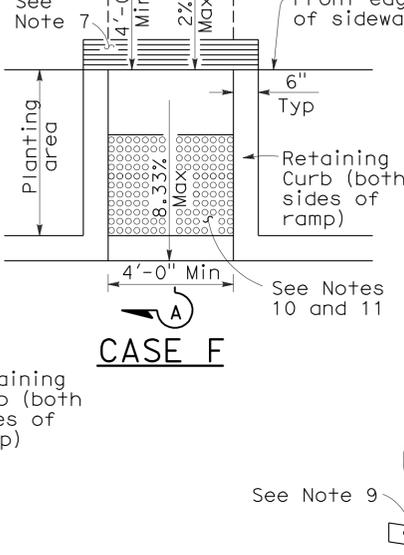
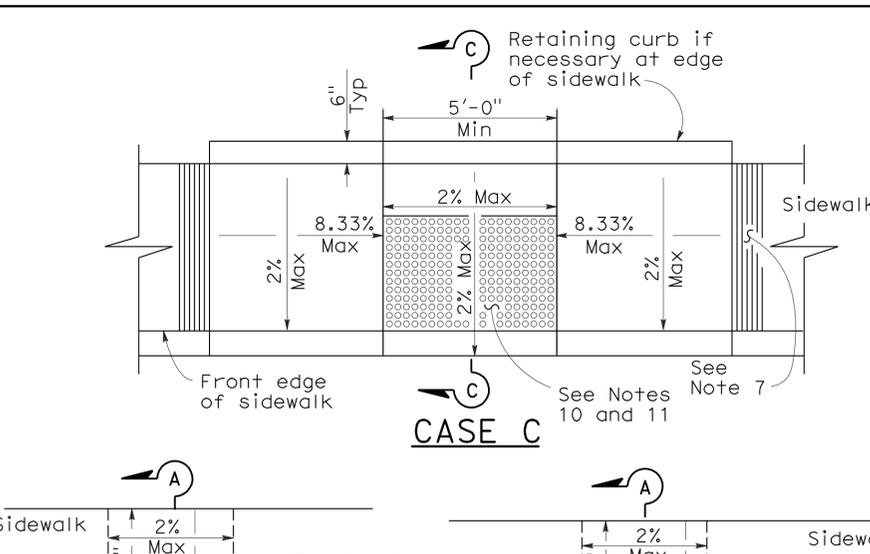
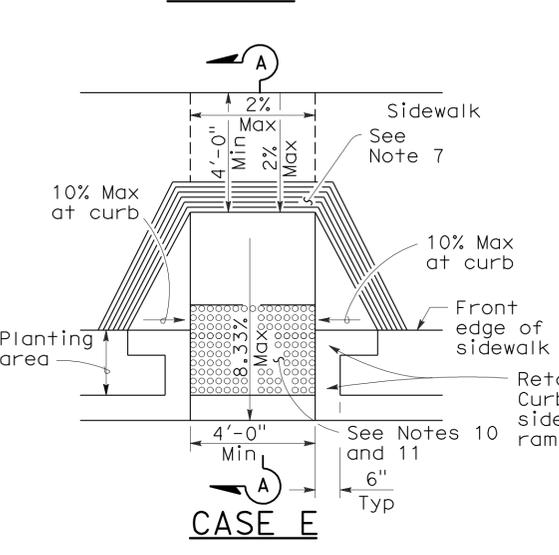
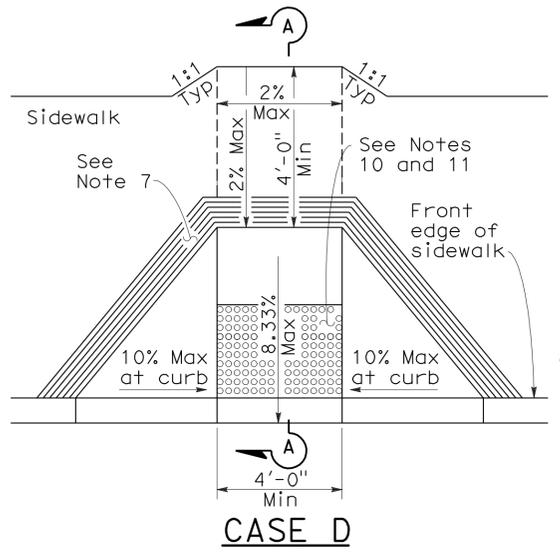
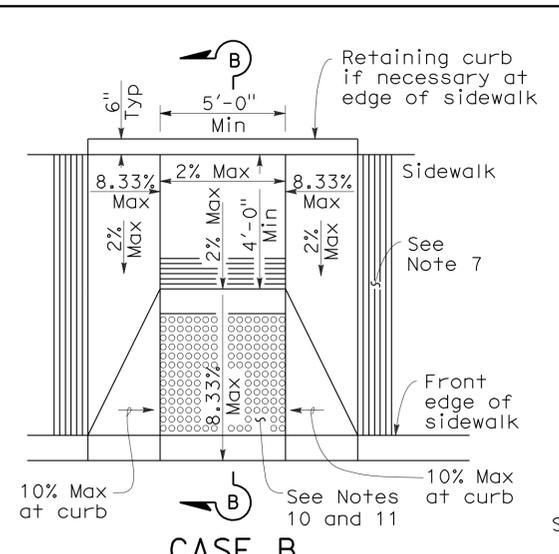
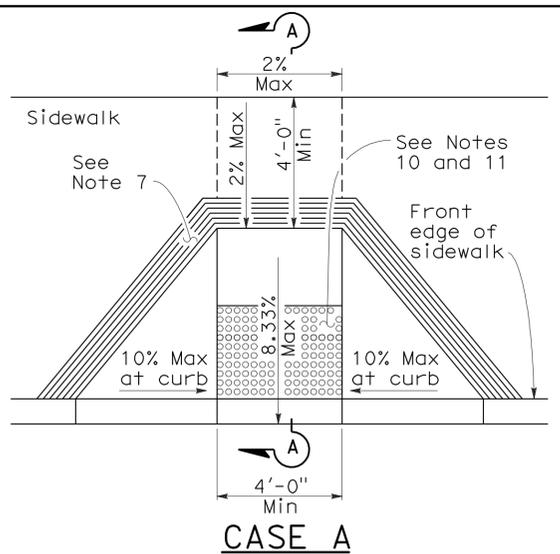
NO SCALE

2006 REVISED STANDARD PLAN RSP A87A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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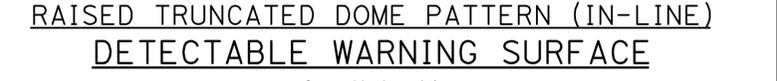
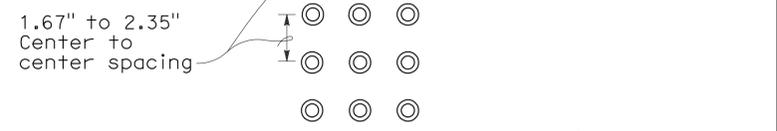
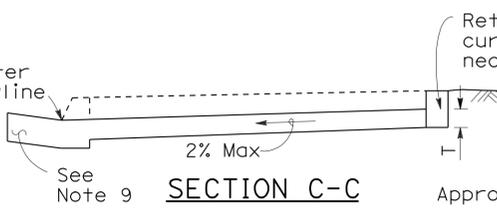
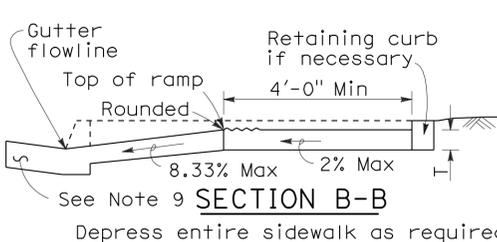
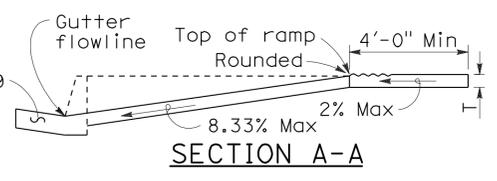
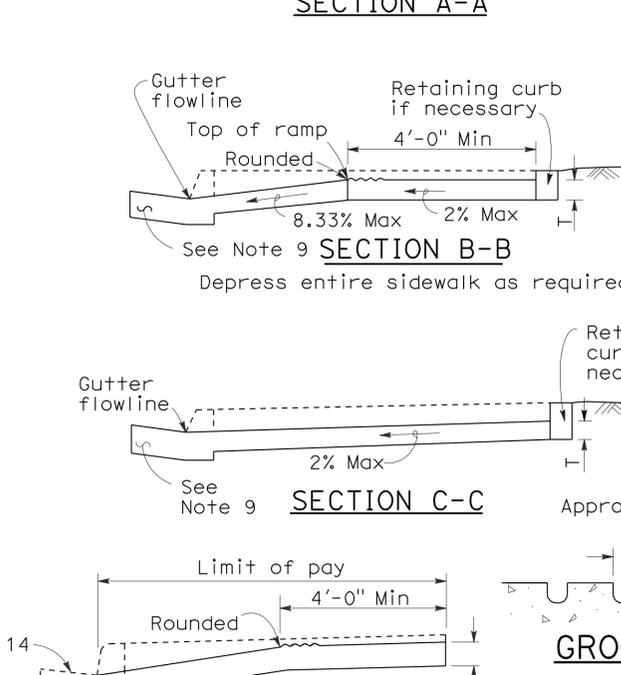
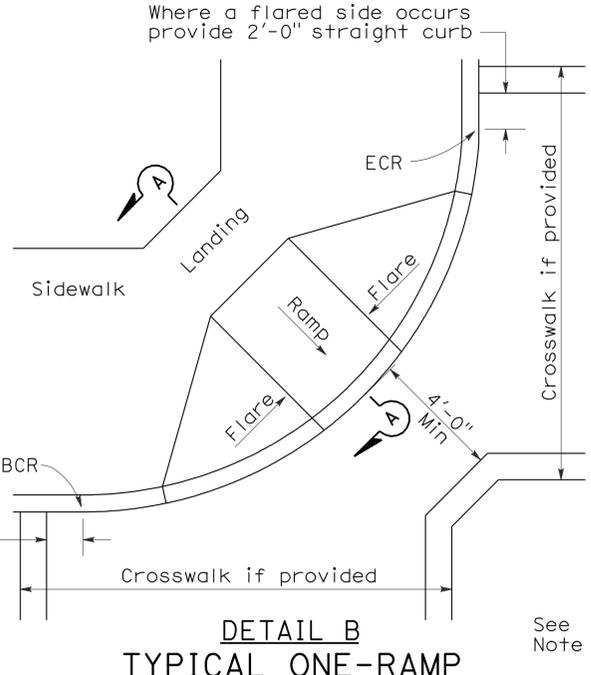
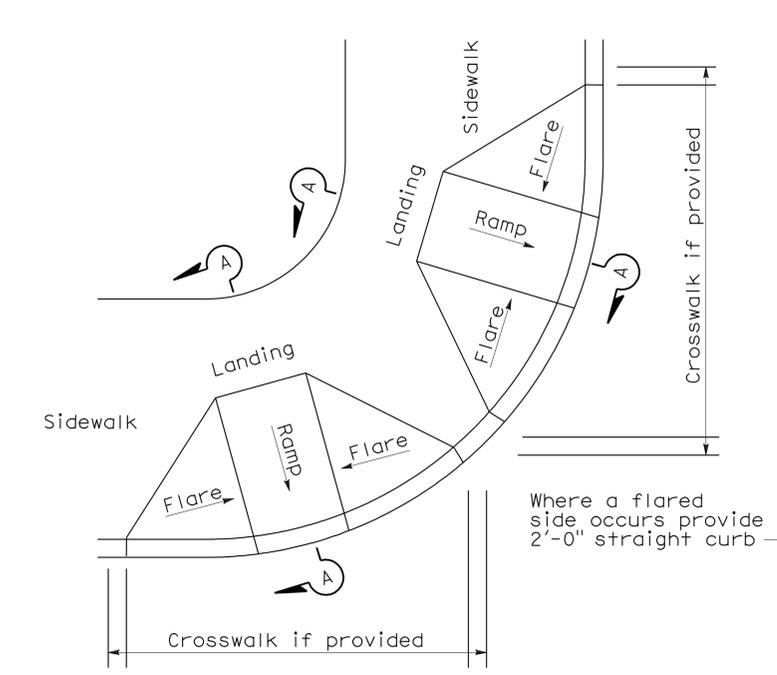
H. David Cordova  
 REGISTERED CIVIL ENGINEER  
 September 1, 2006  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Hector David Cordova  
 No. C41957  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA



**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.



**CURB RAMP DETAILS**  
NO SCALE

**TYPICAL TWO-RAMP CORNER INSTALLATION**  
See Note 1

**TYPICAL ONE-RAMP CORNER INSTALLATION**  
See Notes 1 and 3

**RETIROFIT DETAIL**  
Existing curb and sidewalk

**REVISED STANDARD PLAN RSP A88A**

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

2006 REVISED STANDARD PLAN RSP A88A

**NOTE:**

1. Tie bars, dowel bars, and reinforcement are not shown in joint seal details, see Revised Standard Plans RSP P1, RSP P3, RSP P10, RSP P35, RSP P45, or RSP P46 as applicable.

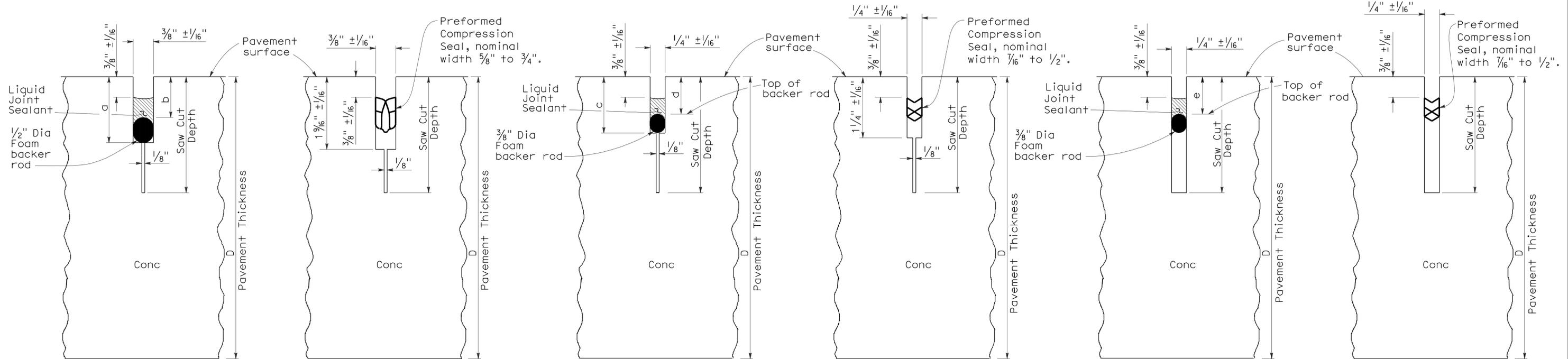
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	230	306

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 No. C49042  
 Exp. 9-30-10  
 CIVIL  
 STATE OF CALIFORNIA

May 15, 2009  
 PLANS APPROVAL DATE

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To accompany plans dated 7-18-11



LIQUID SEALANT      COMPRESSION SEAL      LIQUID SEALANT      COMPRESSION SEAL      LIQUID SEALANT      COMPRESSION SEAL

**TYPE A1**      **TYPE A2**      **TYPE B**

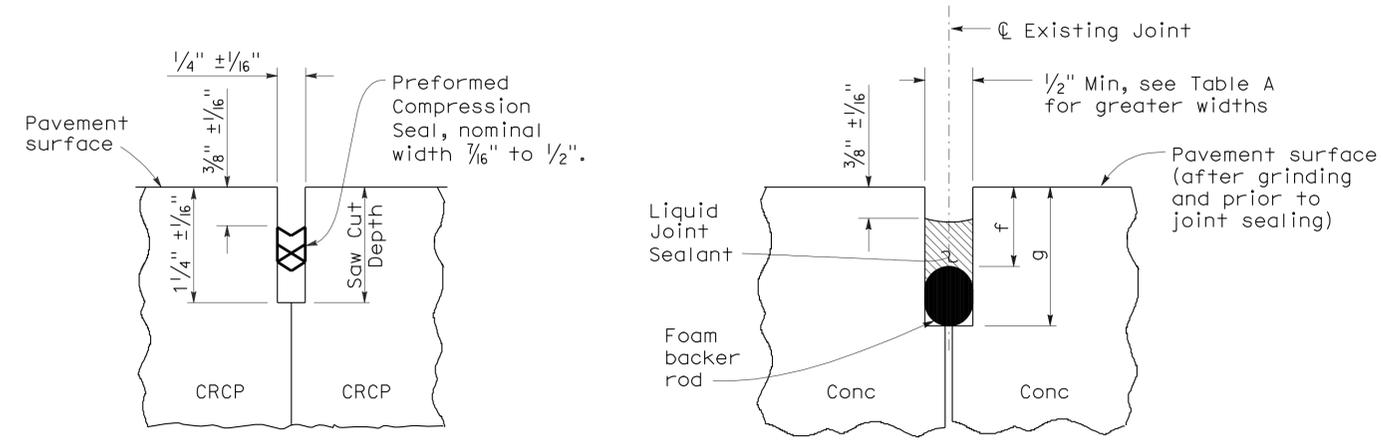
Transverse Contraction Joints      Longitudinal Contraction Joints      Longitudinal or Transverse Contraction Joint

**LIQUID SEALANT RESERVOIR DEPTH**

LIQUID SEALANT MATERIAL	3/8" Joint Width Type A1		1/4" Joint Width Type A2		1/4" Joint Width Type B
	DIMENSION		DIMENSION		DIMENSION
	a	b	c	d	e
SILICONE	1" ± 1/16"	5/8" ± 1/16"	15/16" ± 1/16"	9/16" ± 1/16"	9/16" ± 1/16"
ASPHALT RUBBER	1 3/16" ± 1/16"	3/4" ± 1/16"	1 1/16" ± 1/16"	11/16" ± 1/16"	11/16" ± 1/16"

**TABLE A (TYPE R JOINT)**

Sawn Joint Width	Backer Rod Diameter ± 1/16"	DIMENSION "f"	DIMENSION "g"
1"	1 5/16"	7/8"	2 1/4"
7/8"	1 3/16"	13/16"	2"
3/4"	1"	3/4"	1 3/4"
5/8"	7/8"	11/16"	1 1/2"
1/2"	11/16"	5/8"	1 1/4"



COMPRESSION SEAL      LIQUID SEALANT

**TYPE C**      **TYPE R**

Transverse and Longitudinal Construction Joints (For CRCP)      Retrofit Transverse and Longitudinal Joints

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CONCRETE PAVEMENT-JOINT DETAILS**  
 NO SCALE

RSP P20 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P20 DATED MAY 1, 2006 - PAGE 128 OF THE STANDARD PLANS BOOK DATED MAY 2006.

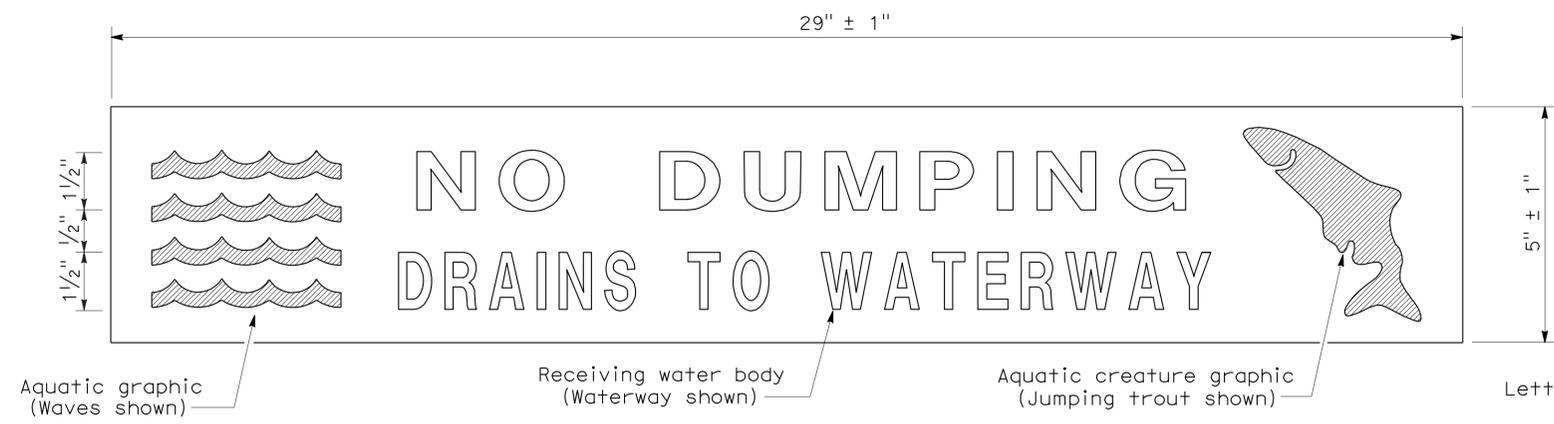
**REVISED STANDARD PLAN RSP P20**

2006 REVISED STANDARD PLAN RSP P20

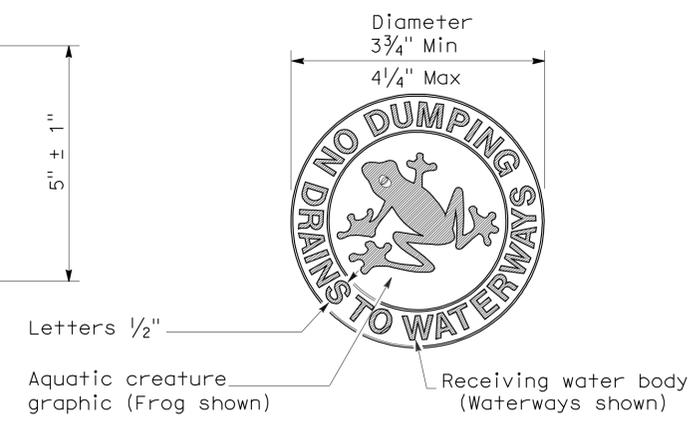
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	231	306

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 7-18-11



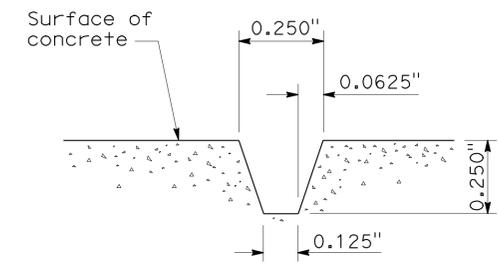
PLAN  
DRAINAGE INLET MARKER  
(PREFABRICATED THERMOPLASTIC)



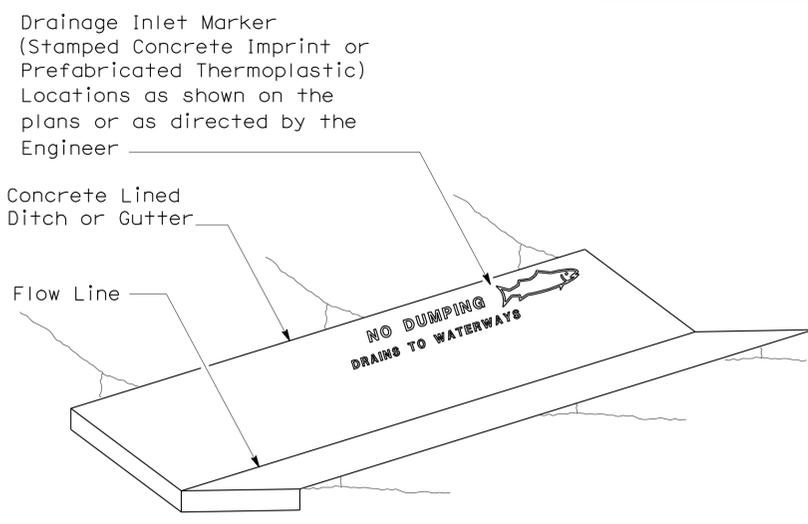
PLAN  
DRAINAGE INLET MARKER  
(MEDALLION)



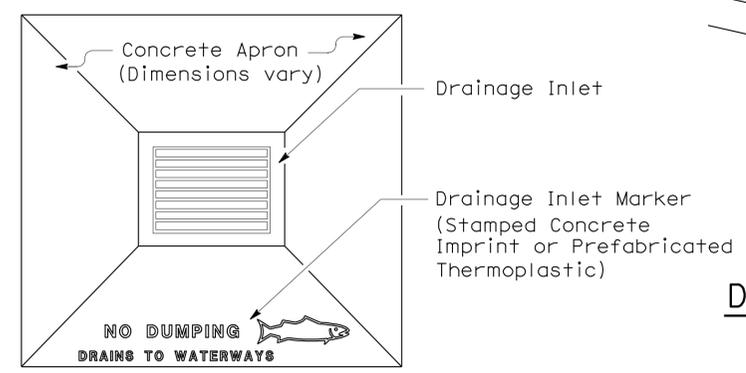
PLAN  
DRAINAGE INLET MARKER  
(STAMPED CONCRETE IMPRINT)



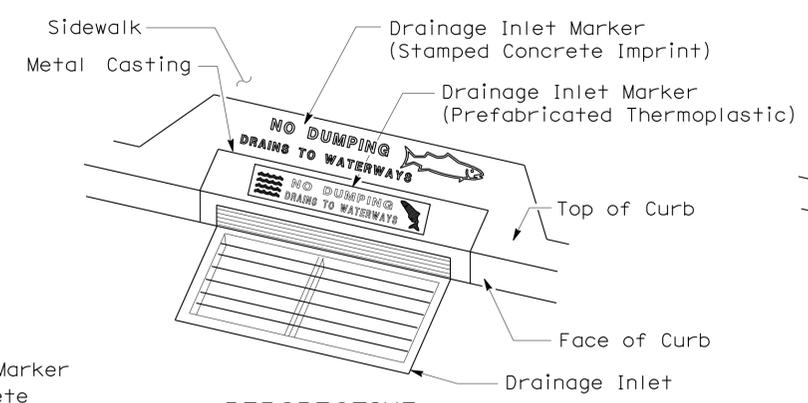
SECTION A-A  
STAMPED CONCRETE  
IMPRINT DETAIL



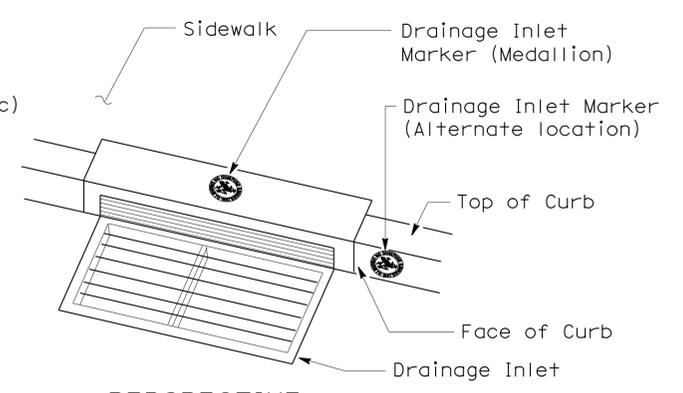
PERSPECTIVE  
DRAINAGE INLET MARKER ON  
CONCRETE LINED DITCH



PLAN  
DRAINAGE INLET MARKER ON  
DRAINAGE INLET APRON



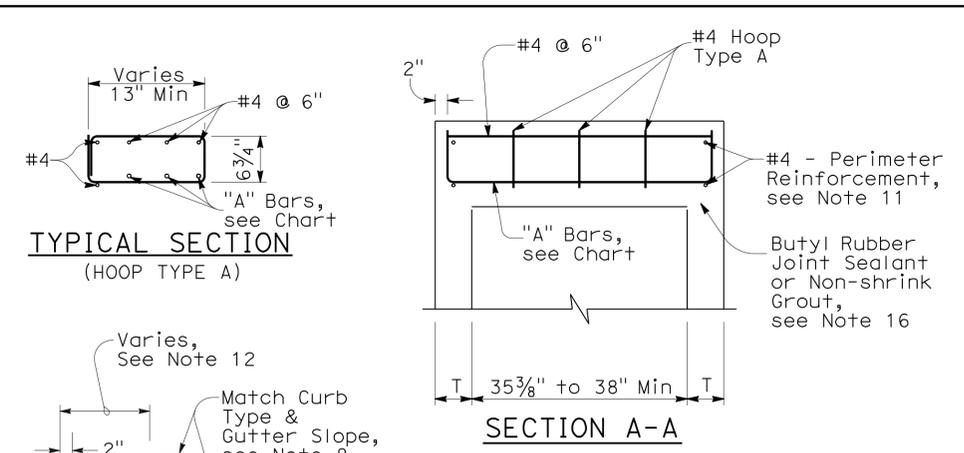
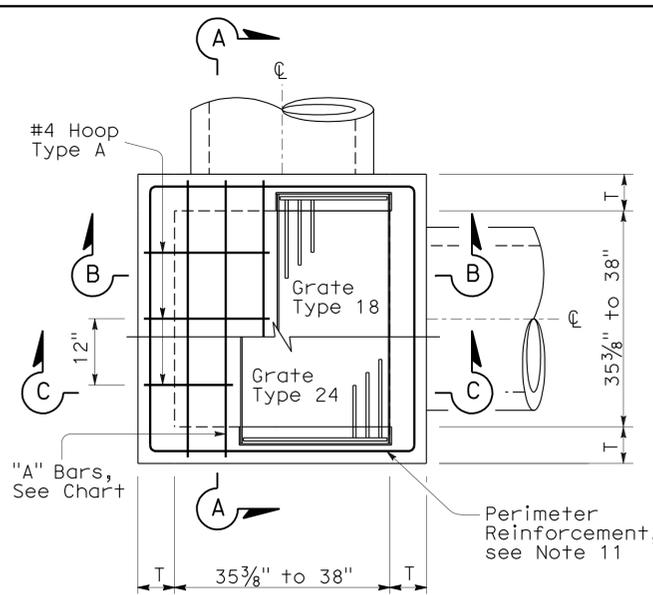
PERSPECTIVE  
DRAINAGE INLET MARKER ON  
DRAINAGE INLET



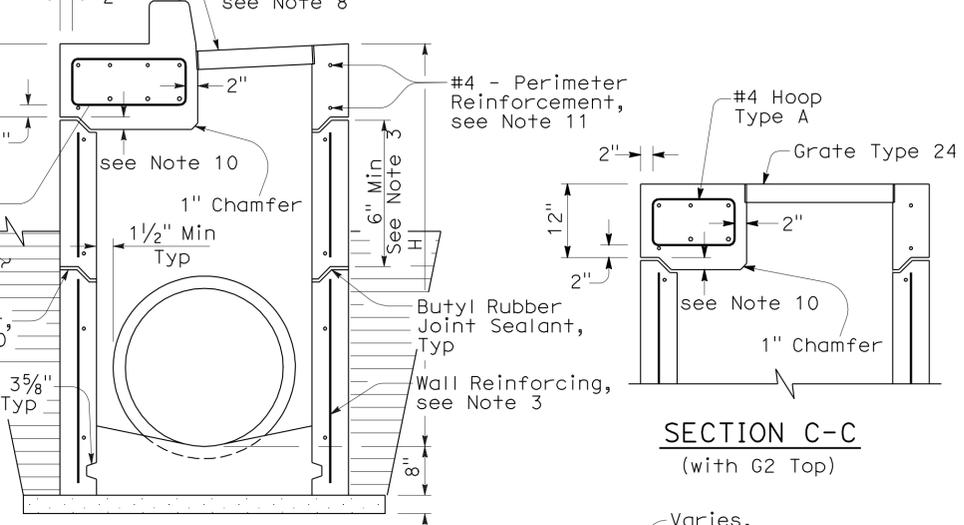
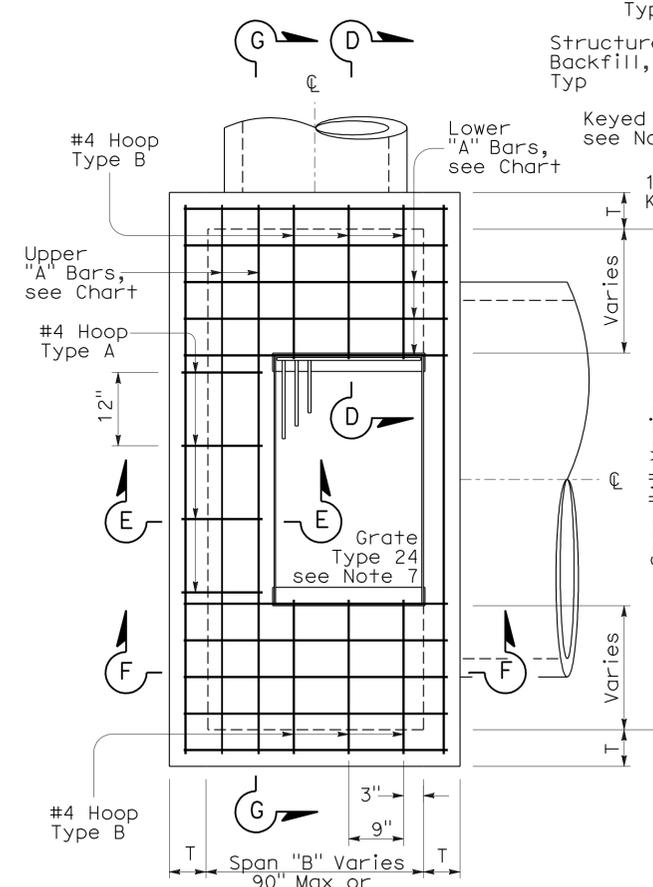
PERSPECTIVE  
DRAINAGE INLET MARKER (MEDALLION)  
ON DRAINAGE INLET

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**DRAINAGE INLET MARKERS**  
NO SCALE  
NSP D71 DATED APRIL 3, 2009 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

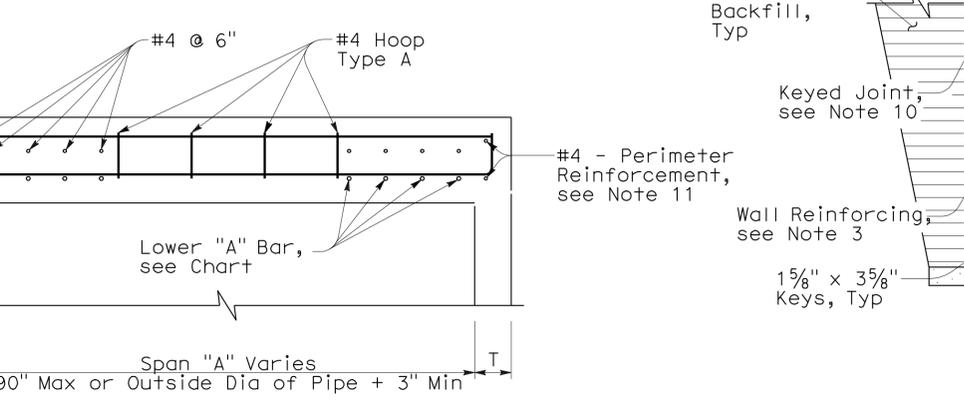
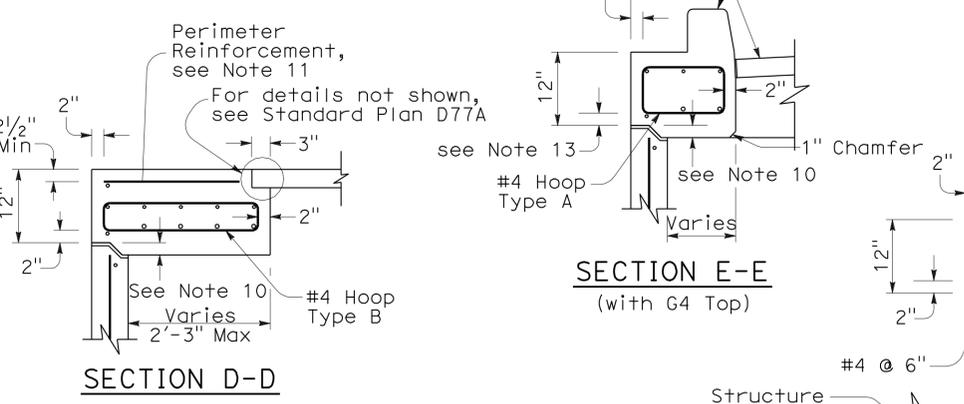
2006 NEW STANDARD PLAN NSP D73A



STANDARD TYPE G2 OR G4



SECTION B-B (with G4 Top)



- NOTES:**
- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
  - For "T" wall thickness: T=6" when "H" is 8' or less. T=8" when "H" is over 8'.
  - Wall reinforcing not required when "H" is 8' or less and the unsupported width or length is 6'-0" or less. Reinforce wall exceeding these limits with #4 bars @ 1'-6" ± centers placed 2" clear to the inside of inlet unless otherwise shown. Short independent wall sections or height adjustment rings 6" to 24" high must have a minimum of two #4 horizontal bars.
  - Seal pre-cast inlets connection openings between wall and pipe with non-shrink grout or resilient connectors as specified in the Special Provisions.
  - Steps - None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below bottom of lid. The distance between steps must not exceed 1'-0" and be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts must comply with State Industrial Safety Requirements. See Standard Plan D74C for step details.
  - Pipe(s) can be placed in any wall.
  - Set inlet so that grate bars are parallel to direction of principal surface flow.
  - Type G4 inlet can use Grate Type 18 or 24. Type G2 inlet uses Grate Type 24. See Revised Standard Plan RSP D77A and Standard Plan D77B for grate and frame details and weights of miscellaneous Iron and Steel.
  - G4 inlet details are the same as the G2 with the addition of a curb and sloped grate that matches the adjacent curb and gutter depression. See Standard Plans D78A & D78B for gutter and inlet depression details. See Revised Standard Plan RSP A87A & Standard Plan A87B for Curb and Dike Details.
  - Provide pre-cast inlets with separate top sections for final grade adjustment under Standard Specification Section 51-1.02. Provide keyed joints between the top and wall and multiple wall sections. Joint design may vary but must be 1" to 3" in depth.
  - Perimeter reinforcement serves as a rigid frame to position and attach the required structural reinforcement and may be tack welded at outer corners when using ASTM A706 weldable bars.
  - This dimension will vary with different grates, curbs types, box width and wall thickness.
  - 2" unless inlet is expanded in the Span "A" direction, then clearance is 2" plus the diameter of the lower "A" bar.
  - Place "A" Bars at an angle so hooked ends will maintain 2" clear coverage.
  - Refer to Standard Plan D73, Table A for concrete quantities.
  - Non-shrink grout can be used for upper most joint to facilitate final top grade adjustment.
  - Slope inlet floors 4:1 towards the outlet pipe. Pre-cast inlets may have monolithic sloped floors, flat floors, or no floors in which case a sloped floor must be cast in the field. Inlet floors do not require reinforcing.
  - Extend sand bedding under all structure backfill.

Span	"A" Bars	Required steel area per foot (in <sup>2</sup> /ft)
Under 38" with Type 24 Grate	#5 @ 7" C-C 2-#5 Min	0.525
Under 38" with Type 18 Grate	#5 @ 7" C-C 3-#5 Min	0.525
38"-60"	#5 @ 6" C-C	0.621
61"-72"	#5 @ 5" C-C	0.744
73"-90"	#6 @ 6" C-C	0.811

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**DRAINAGE INLETS (PRECAST)**

NO SCALE

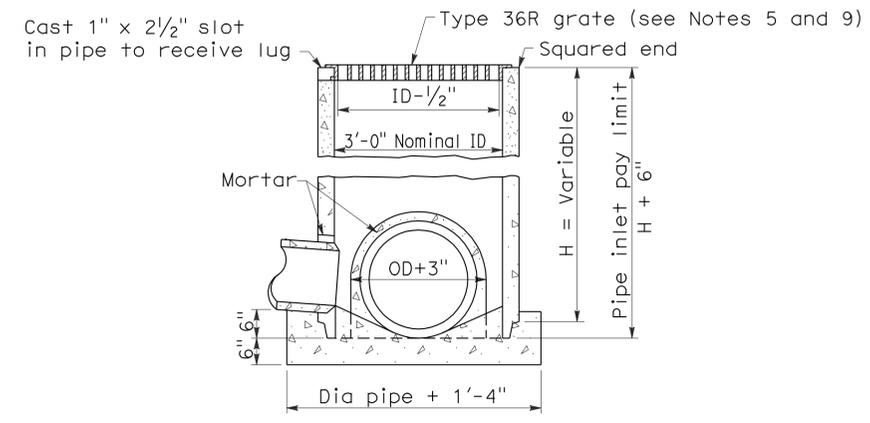
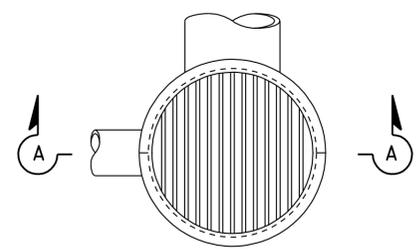
NSP D73A DATED JUNE 5, 2009 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	233	306

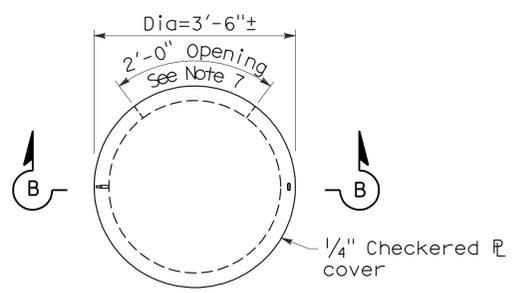
Raymond Don Tsztso  
 REGISTERED CIVIL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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 REGISTERED PROFESSIONAL ENGINEER  
 Raymond Don Tsztso  
 No. C37332  
 Exp. 6-30-08  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 7-18-11

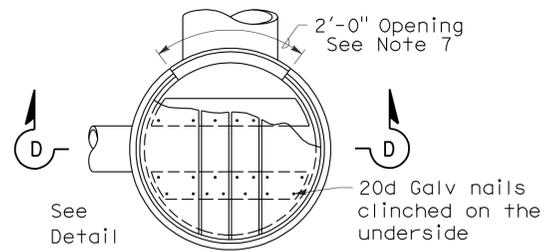
2006 REVISED STANDARD PLAN RSP D75B



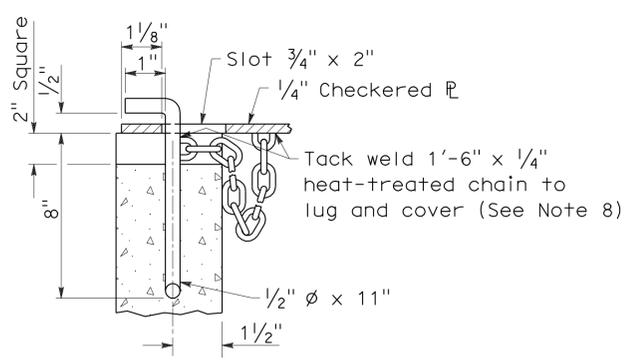
**SECTION A-A**  
**TYPE GCP**  
CONCRETE PIPE INLET WITH GRATE



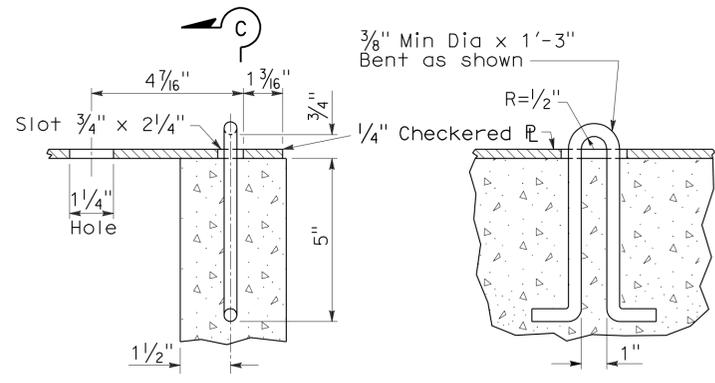
**SECTION B-B**  
**TYPE OCP or OCPI**  
CONCRETE PIPE INLET WITH STEEL COVER  
(See Note 6)



**SECTION D-D**  
**TYPE OCP or OCPI**  
CONCRETE PIPE INLET WITH REDWOOD COVER  
(See Notes 6 and 10)

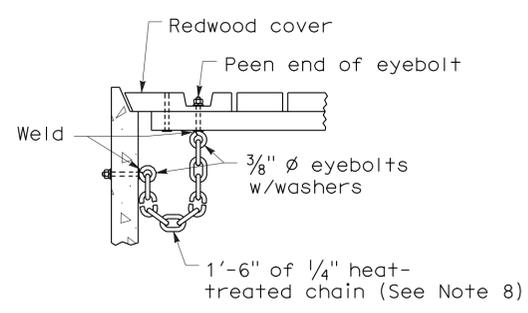


**DETAIL "E"**



**SECTION C-C**

**DETAIL "F"**



**DETAIL "G"**

**NOTES:**

- For details of steel pipe inlets, see Standard Plan D75A.
- For details of ladder and steps and when ladder or steps are required, see Standard Plan D75C.
- Inlet pipes shall not protrude into basin.
- Except for inlets used for junction boxes, basin floors shall have minimum slope of 4:1 from all directions toward outlet pipe, and a wood trowel finish.
- See Revised Standard Plan RSP D77A and Standard Plan D77B for Grate and Frame Details and Weights of Miscellaneous Iron and Steel.
- Designation of Type OCPI pipe inlets on plans indicates trash racks are to be furnished and installed on all side openings. See Standard Plan D75C for Trash Rack details.
- More than one side opening may be required. Location and number as ordered by the Engineer. Opening may be cast in pipe.
- Chain to be provided when specified.
- Place pipe so bars of grate will be parallel with main surface flow.
- Redwood covers shall only be placed at locations designated on the plans.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CONCRETE PIPE INLETS**

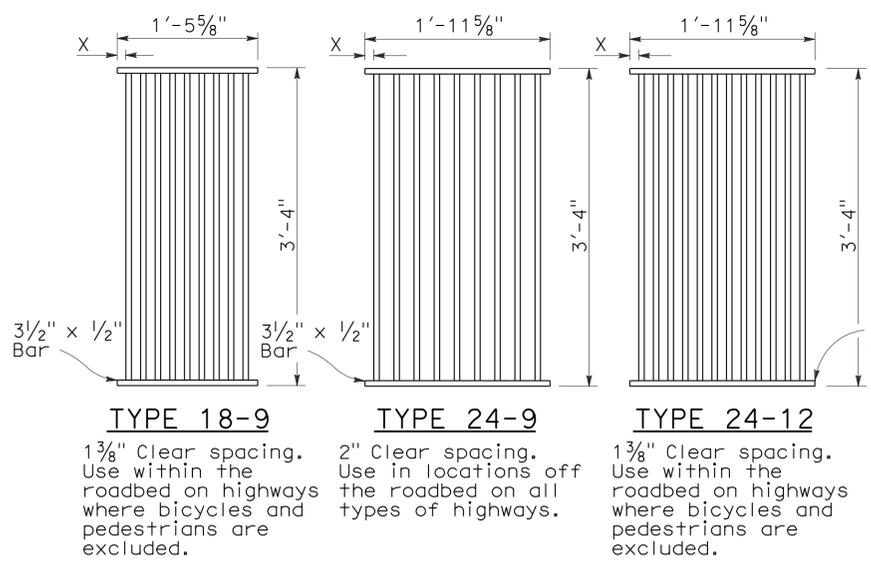
NO SCALE

RSP D75B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D75B  
DATED MAY 1, 2006 - PAGE 153 OF THE STANDARD PLANS BOOK DATED MAY 2006.

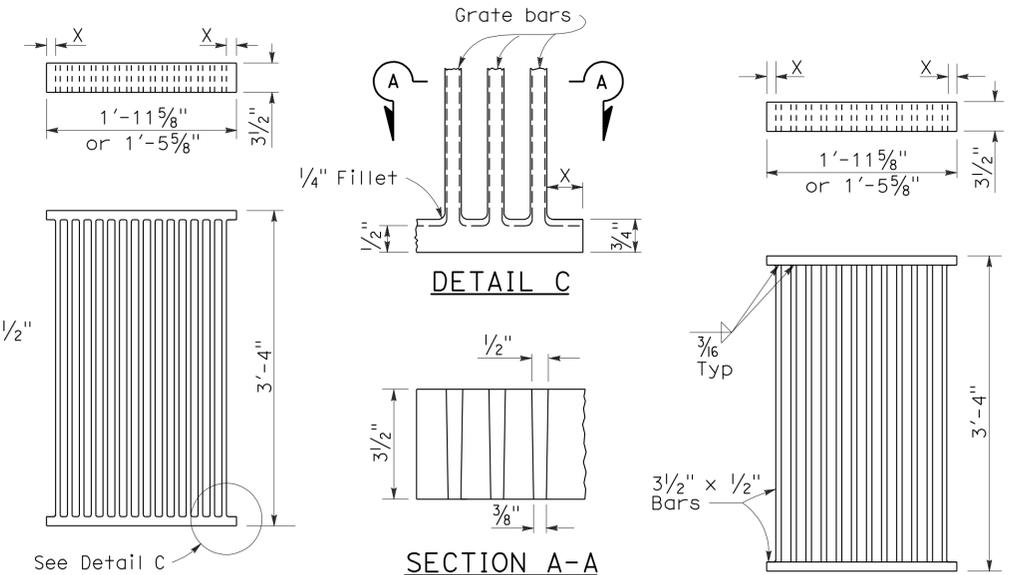
**REVISED STANDARD PLAN RSP D75B**



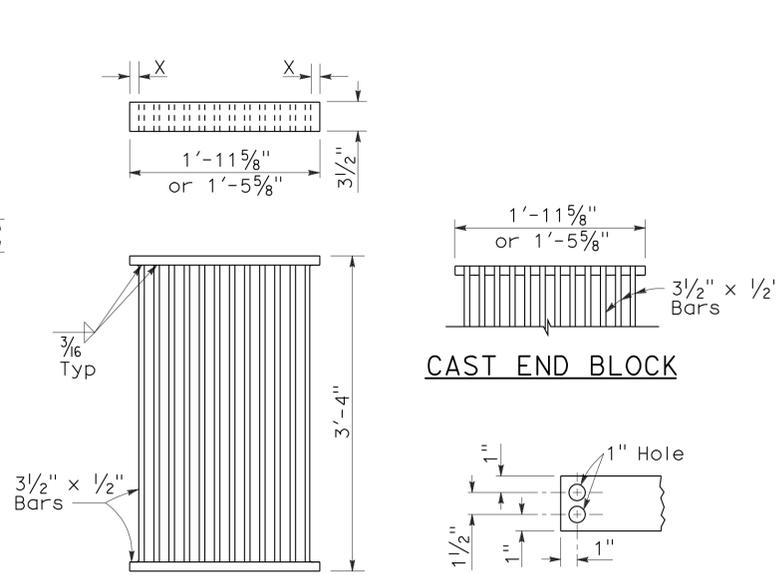
To accompany plans dated 7-18-11



**RECTANGULAR GRATE DETAILS**  
(See table below)



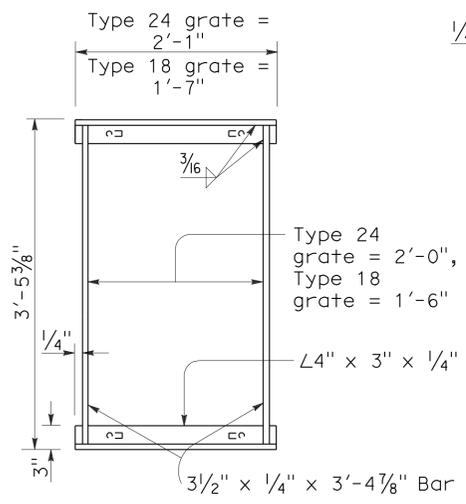
**ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE**



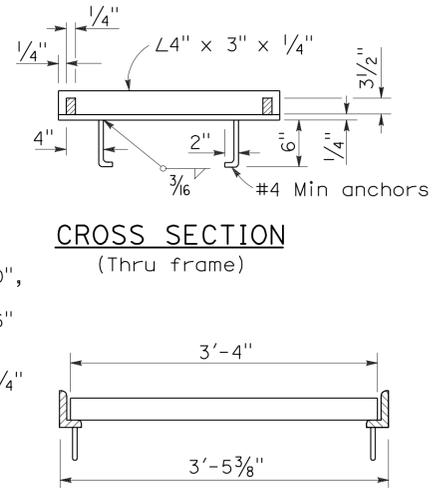
**ALTERNATIVE WELDED GRATE**

**NOTES:**

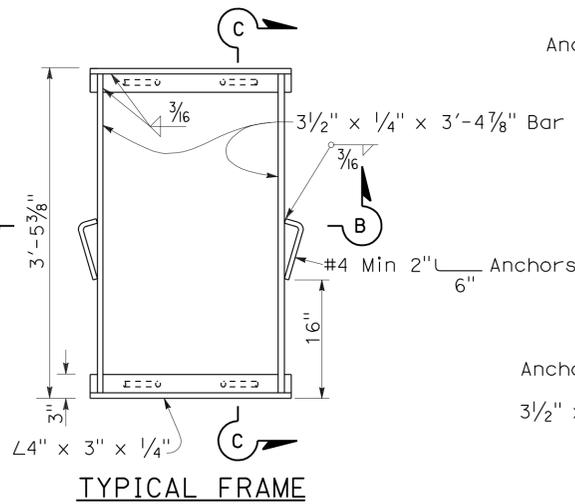
1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
3. See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of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



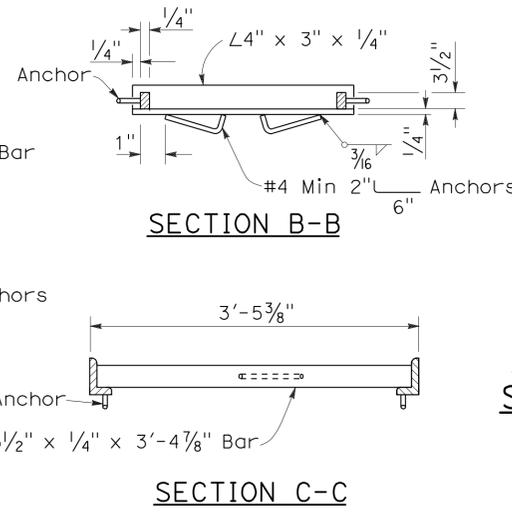
**TYPICAL FRAME**



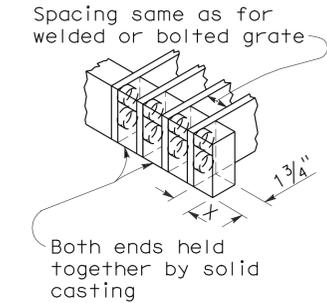
**LONGITUDINAL SECTION**  
(Thru frame and grate)



**TYPICAL FRAME**



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



**ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE**

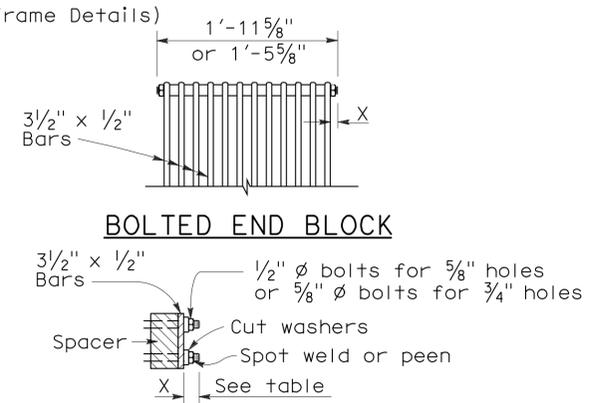
**RECTANGULAR FRAME DETAILS**  
(For all rectangular grates)

**GRATE BAR SPACING TABLE**

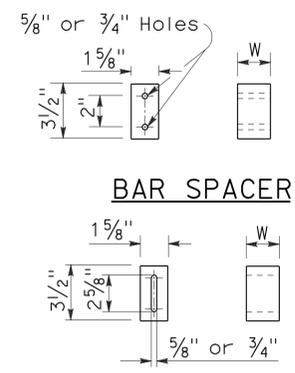
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

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



**BOLTING DETAIL**  
**ALTERNATIVE BOLTED GRATE**



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

**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**

(See General Notes, No 8)

2006 REVISED STANDARD PLAN RSP D77A

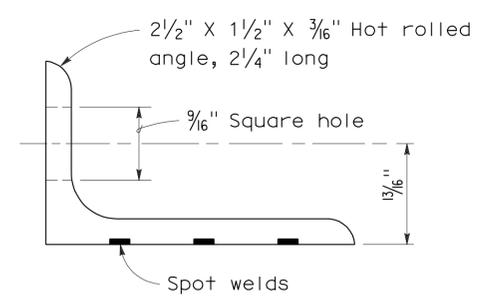
RSP D77A DATED JANUARY 18, 2008 SUPERSEDES STANDARD PLAN D77A DATED MAY 1, 2006 - PAGE 155 OF THE STANDARD PLANS BOOK DATED MAY 2006.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**GRATE DETAILS**  
NO SCALE

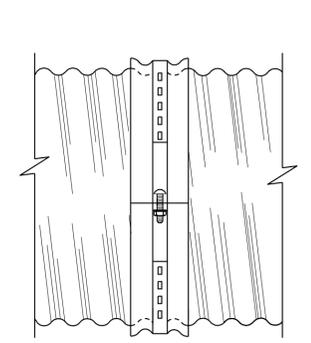
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	235	306

Raymond Don Tsztoo  
 REGISTERED CIVIL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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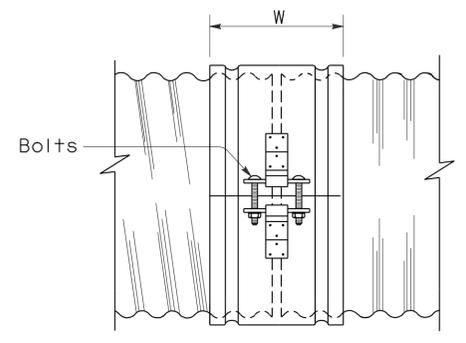
To accompany plans dated 7-18-11



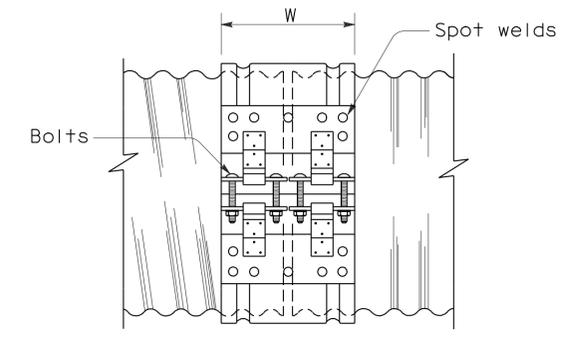
ANGLE



SIDE VIEW  
ANGLE



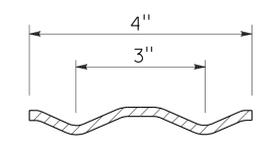
SIDE VIEW  
SINGLE BAR AND STRAP



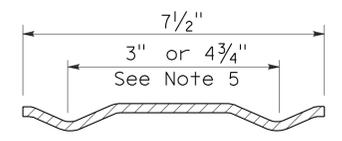
SIDE VIEW  
DOUBLE BAR AND STRAP

NOTES:

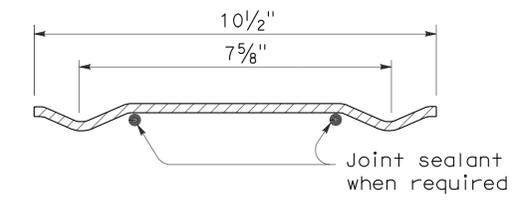
1. All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
2. Dimensions and thicknesses shown are minimum.
3. Spot welds shall develop minimum required strength of strap.
4. Fillet welds of equivalent strength may be substituted for spot welds or rivets.
5. Dimension depends upon whether end condition is lips up or lips down.



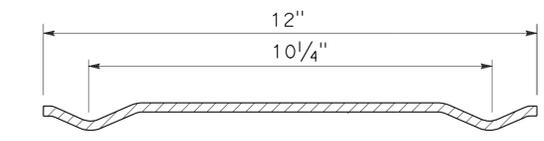
SECTION  
H-4 HUGGER BAND



SECTION  
H-7 HUGGER BAND



SECTION  
H-10 HUGGER BAND



SECTION  
H-12 HUGGER BAND

HUGGER COUPLING BANDS

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CORRUGATED METAL PIPE  
COUPLING DETAILS No. 4  
HUGGER COUPLING BANDS**

NO SCALE

RSP D97D DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97D  
DATED MAY 1, 2006 - PAGE 186 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP D97D**

2006 REVISED STANDARD PLAN RSP D97D

ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAR AND STRAP (CSP ONLY)				ANGLE							
				PIPE WALL THICKNESS		BAND THICKNESS		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
				CSP	CAP	CSP	CAP					CSP	CAP	CSP	CAP	CSP	CAP	CSP	CAP
TWO PIECE INTEGRAL FLANGE	1 1/2' x 1/4"	6"-10"	7"	0.052"-0.079"	0.048"-0.060"	0.052"	0.060"								2-3/8"	2-3/8"			
				12"-18"	7"	0.052"-0.079"		0.064"									2-1/2"		
UNIVERSAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"					2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-60"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"					2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		THROUGH 72"	12"	0.052"-0.168"	0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
ANNULAR	2 2/3" x 1/2"	THROUGH 36"	7"	0.064"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	2-1/2"	2-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-72"	12"	0.064"-0.168"	0.075"-0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
	3" x 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		4-3/8"			
HELICAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-72"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
	3" x 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		4-3/8"			
		42"-108"	14"		0.060"-0.135"		0.060"						2" x 2" x 3/16"		3-1/2"		3-3/8"		
	HUGGER	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
			60"-66"	4"	0.109"		0.064"						2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
			36"-48"	4"	0.138"		0.064"						2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
			THROUGH 72"	10 1/2"	0.052"-0.168"		0.052"		0.079"	1/2"	7/8"	32 ksi	2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
3" x 1"		THROUGH 72"	10 1/2"	0.052"-0.168"		0.052"		0.079"	1/2"	7/8"	32 ksi								
		78"-84"	10 1/2"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi								
		48"-90"	10 1/2"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi								
5" x 1"		THROUGH 72"	10 1/2"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi								
		48"-66"	7 1/2"	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi	2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"					3-1/2"
		72"-90"	7 1/2"	0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi	2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"					3-1/2"
	48"-90"	7 1/2"	0.064"-0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi									
	48"-120"	12" SEE	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi									
90"-120"	48"-84"	12" NOTE	0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi									
	90"-120"	12" 11	0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi									
					DOUBLE 0.079"	1/2"	7/8"	32 ksi											

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS				BAR AND STRAP (SSRP ONLY)				ANGLE						
				PIPE WALL THICKNESS		BAND THICKNESS		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				SSRP	ASRP	SSRP	ASRP					SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
ANNULAR	2 2/3" x 1/2" * REROLLED END	24"-36"	12"	0.064"-0.109"	0.060"-0.105"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		42"-60"	12"	0.064"-0.109"	0.075"-0.105"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		66"-72"	12"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		78"-114"	12"	0.079"-0.109"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
HUGGER	2 2/3" x 1/2" * REROLLED END	24"-72"	10 1/2"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi							
		78"-84"	10 1/2"	0.109"		0.079"		0.109"	1/2"	7/8"	45 ksi							

\* See Note 14.

14. All profiles of Spiral Rib Pipe (3/4" x 3/4" ribs at 7 1/2" pitch and 3/4" x 1" ribs at 11 1/2" pitch in both steel and aluminum and 3/4" x 1" ribs at 8 1/2" pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be 2 2/3" x 1/2" annual corrugations with a minimum of two full corrugations at each end.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	236	306

Raymond Don Tsztou  
REGISTERED CIVIL ENGINEER

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.

NOTES: To accompany plans dated 7-18-11

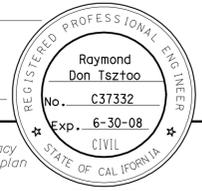
- All ferrous metal coupling band connection hardware shall be galvanized or electro-plated in accordance with the Standard Specifications.
- For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
- Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
- Use 1 1/4" gage line dimension on attached angle leg for rivets and spot welds.
- Band thickness shall not be less than:
  - 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
  - 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
- Dimensions, thicknesses and strengths shown are minimum.
- For pipe arches use same width band as for round pipe of equal periphery.
- Fillet welds of equivalent strength may be substituted for spot welds or rivets.
- Spot welds shall develop minimum required strength of strap.
- Pipe with rerolled ends having at least two 2 2/3" x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2 2/3" x 1/2" corrugations.
- In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
- Two piece bands are required for pipes greater than 42" diameter.
- The 2 1/4" x 2" x 0.109" thick galvanized die-formed angle connector may be used in lieu of the 2" x 2" x 3/16" angle connector for standard joints only on pipes through 72" diameter.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CORRUGATED METAL PIPE  
COUPLING DETAILS No. 5  
STANDARD JOINT**  
NO SCALE

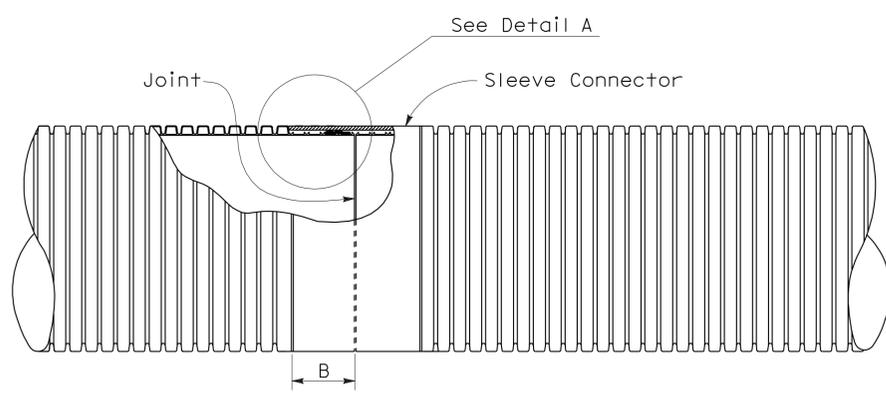
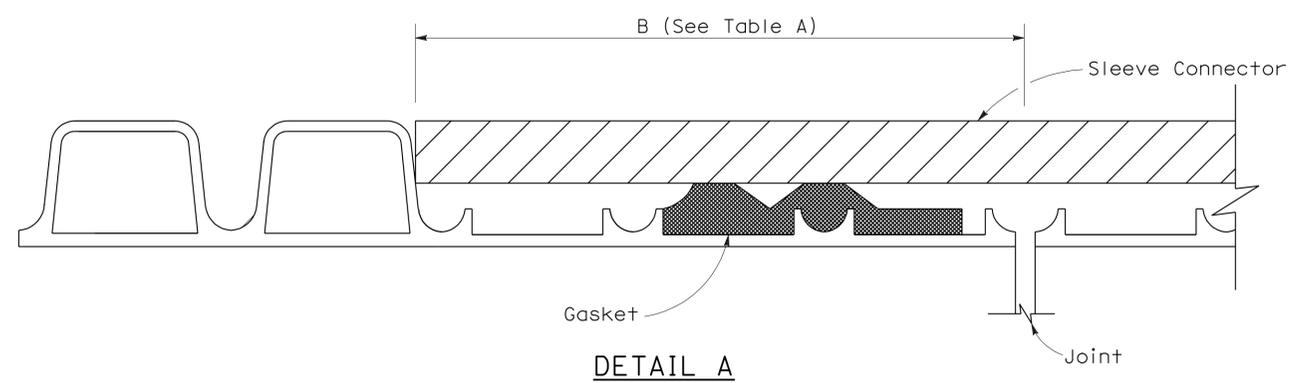
RSP D97E DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97E  
DATED MAY 1, 2006 - PAGE 187 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP D97E**

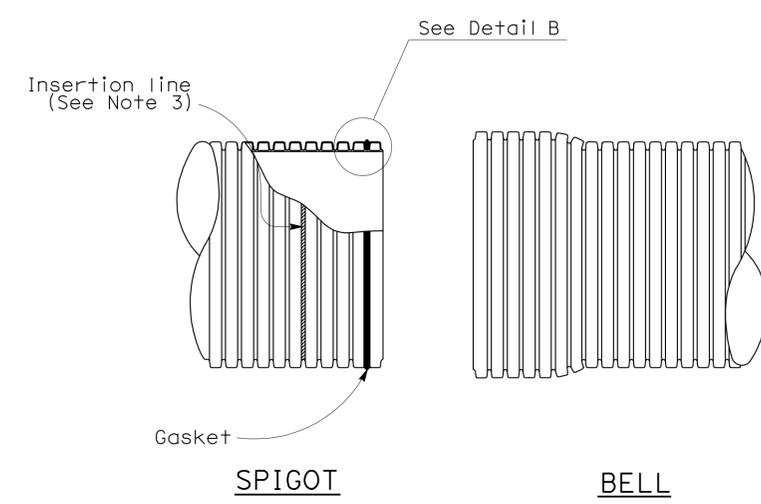
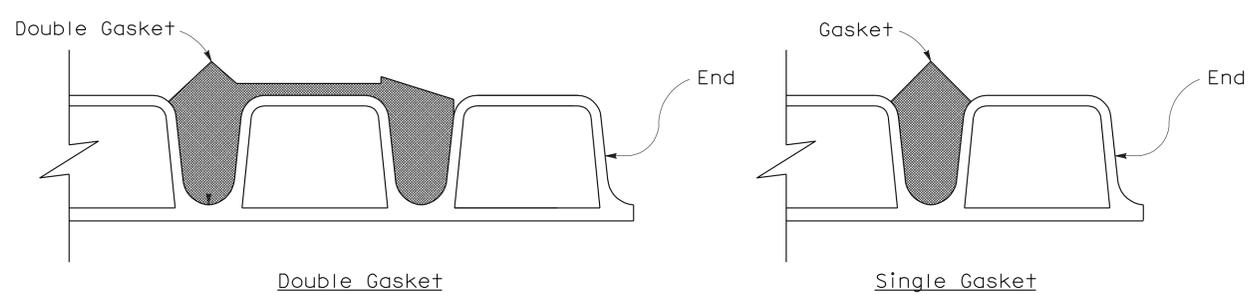
2006 REVISED STANDARD PLAN RSP D97E



To accompany plans dated 7-18-11

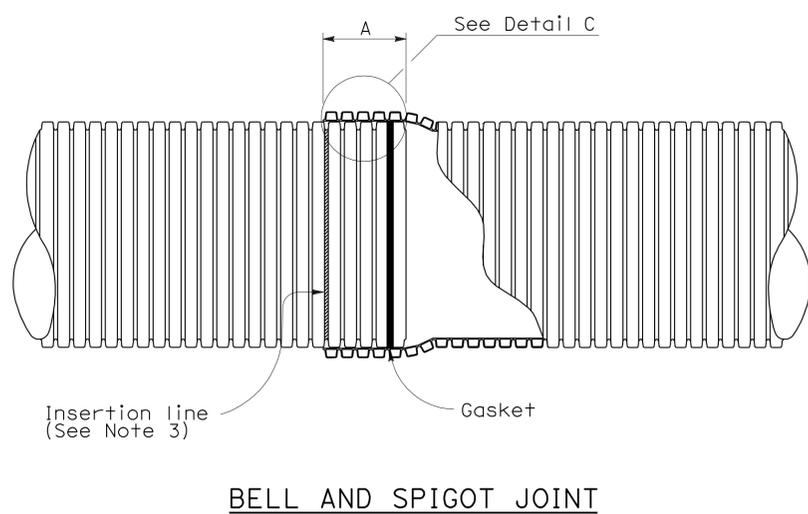
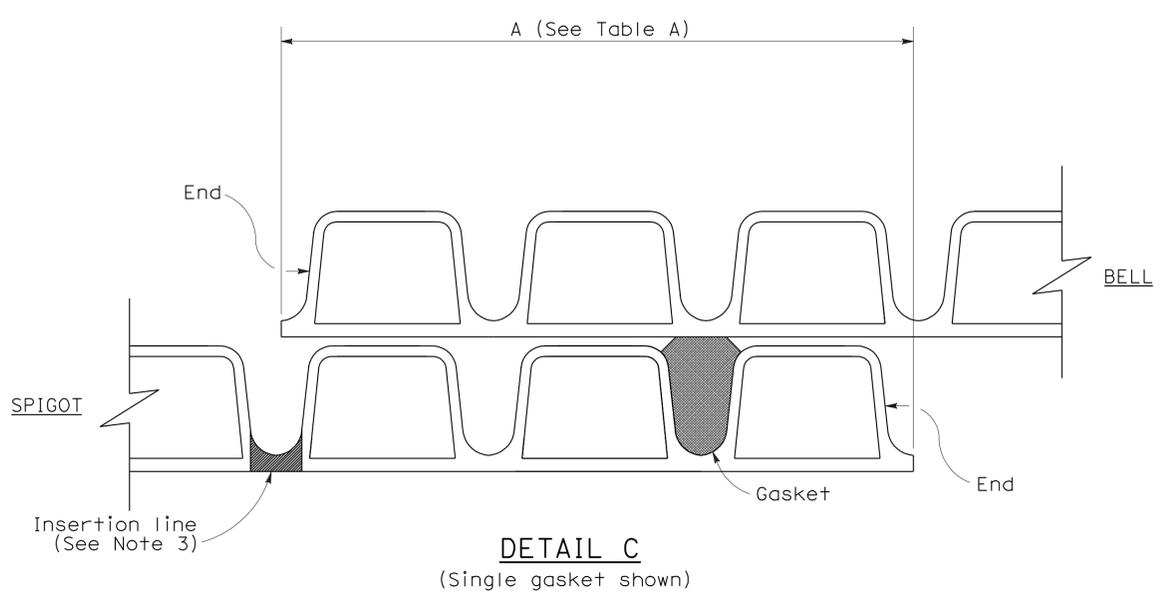


- NOTES:**
- For pipe sections installed on straight alignment, the pipe sections shall be joined to achieve maximum joint overlap at all points on the periphery as indicated in Table A where the plans call for positive or watertight joints. Maximum joint overlap is recommended where the plans call for standard joints, but in no case shall the joint overlap be less than 3/2".
  - For pipe sections installed on curved alignment, the maximum angle of deflection from straight alignment at any joint shall not exceed two degrees. Where the plans call for watertightness, field testing for compliance is required. Where plans call for positive joints, the pipe sections shall be joined to achieve Table A Dimensions on one side of the joint. Joints classified as standard shall have no less than 3/2" joint overlap at any point on the periphery.
  - Factory applied insertion line limit shall be placed on spigot.
  - Liner insert to be used inside of existing pipe.



**TABLE A**

JOINT OVERLAP DIMENSIONS		
PIPE Dia (NOMINAL)	A	B
12"	5 3/4"	4 1/4"
15"	6 3/4"	5 5/8"
18"	6 3/4"	5 5/8"
21"	8 1/2"	5 5/8"
24"	8 1/2"	6 1/8"
30"	8 1/2"	7 1/8"
36"	8 1/2"	8 1/8"



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CORRUGATED POLYVINYL CHLORIDE PIPE WITH SMOOTH INTERIOR STANDARD AND POSITIVE JOINTS**  
 NO SCALE  
 NSP D97I DATED MARCH 7, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP D97I

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	238	306

*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 June 5, 2009  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 7-18-11

2006 REVISED STANDARD PLAN RSP H1

**A**

AB aggregate base  
 ABS acrylonitrile-butadiene-styrene  
 AC asphalt concrete  
 Adj adjacent/adjustable  
 AIC auxiliary irrigation controller  
 Alt alternative  
 AMEND amendment  
 ARV air release valve  
 AUTO automatic  
 AUX auxiliary  
 AVB atmospheric vacuum breaker

**B**

B&B balled and burlapped  
 B/B brass/bronze  
 B/B/PL brass/bronze/plastic  
 B/PL brass/plastic  
 BFM bonded fiber matrix  
 Bit Ctd bituminous coated  
 BP booster pump  
 BPA backflow preventer assembly  
 BPAE backflow preventer assembly in enclosure  
 BPE backflow preventer enclosure  
 BV ball valve

**C**

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

**D**

Dia diameter  
 DIP ductile iron pipe  
 DN diameter nominal

**E**

EA each  
 Elect electric/electrical  
 Elev elevation  
 ENCL enclosure  
 EP edge of pavement  
 ES edge of shoulder  
 EST end strip  
 ESTB establishment  
 ETW edge of traveled way

**F**

F full circle  
 F/P full/part circle  
 FAU filter assembly unit  
 FCV flow control valve  
 FERT fertilizer  
 FG finished grade  
 FIPT female iron pipe thread  
 FIS fertilizer injector system  
 FL flow line  
 FM flow monitor  
 FS flow sensor  
 Ft foot/feet  
 FV flush valve

**G**

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

**H**

H half circle  
 HB hose bib  
 HDPE high density polyethylene  
 HP horsepower/hinge point  
 HPL high pressure line  
 Hwy highway

**I**

IC irrigation controller  
 ICC irrigation controller(s) in controller enclosure cabinet  
 ID inside diameter  
 In inches  
 IFS irrigation filtration system  
 IPS iron pipe size  
 IPT iron pipe thread  
 Irr irrigation

**L**

L length  
 LF linear foot

**M**

Max maximum  
 MBGR metal beam guard railing  
 MCV manual control valve  
 MIC master irrigation controller  
 Min minimum  
 MIPT male iron pipe thread  
 Misc miscellaneous  
 Mtl material  
 MVP maintenance vehicle pullout

**N**

NCN no common name  
 NL nozzle line  
 No. number  
 NPT national pipe thread

**O**

O/C on center  
 OD outside diameter  
 Oz ounce

**P**

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

**Q**

Q quarter circle  
 QCV quick coupling valve

**R**

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

**S**

S slip  
 SCC sprinkler control conduit  
 SCH schedule  
 SF state-furnished  
 Shld shoulder  
 SQFT square foot/feet  
 SQYD square yard(s)  
 SST side strip  
 Sta station  
 Std standard  
 SW sidewalk/sound wall

**T**

T third circle/thread  
 TLS truck loading standpipe  
 TQ three quarter circle  
 TRM turf reinforcement mat  
 TRVD traveled  
 TT two third circle  
 Typ typical

**U**

UG underground

**V**

VAU valve assembly unit

**W**

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

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

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

NO SCALE

RSP H1 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H1  
 DATED MAY 1, 2006 - PAGE 201 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP H1**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	239	306

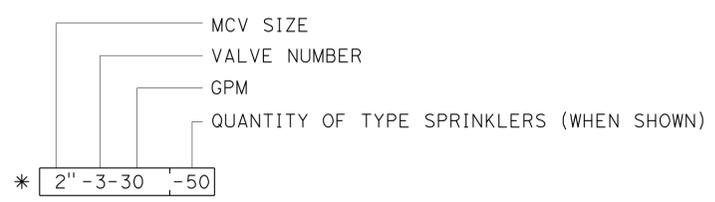
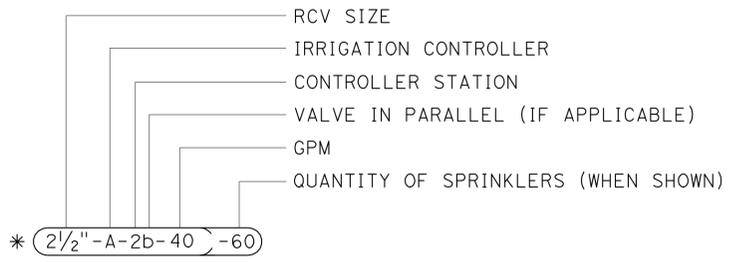
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 June 5, 2009  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 7-18-11

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

EXISTING	PROPOSED	ITEM DESCRIPTION
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		PRESSURE REDUCING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		NOZZLE LINE W/TURNING UNION
		IRRIGATION SYSTEM
		IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
		SPRINKLER W/SPRINKLER PROTECTOR
		CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING

**VALVE CODE**



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

**PLANTING AND IRRIGATION SYMBOLS**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

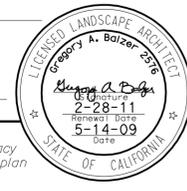
RSP H2 DATED JUNE 5, 2009 SUPERSEDES RSP H2 DATED MARCH 7, 2008 AND STANDARD PLAN H2 DATED MAY 1, 2006 - PAGE 202 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP H2**

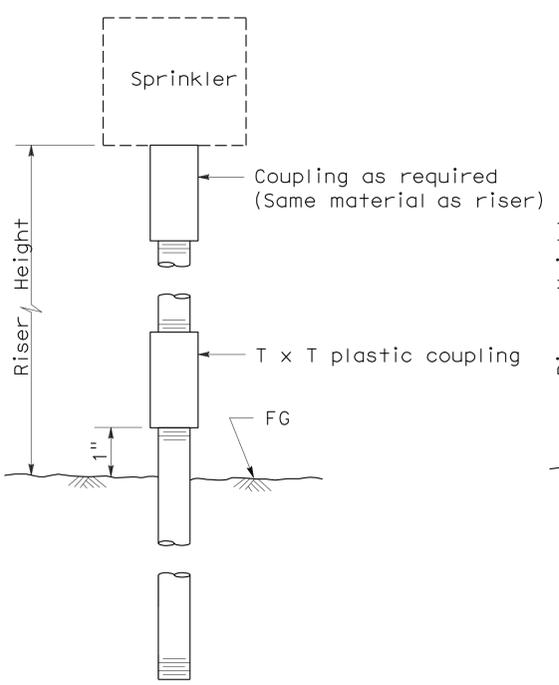
2006 REVISED STANDARD PLAN RSP H2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	240	306

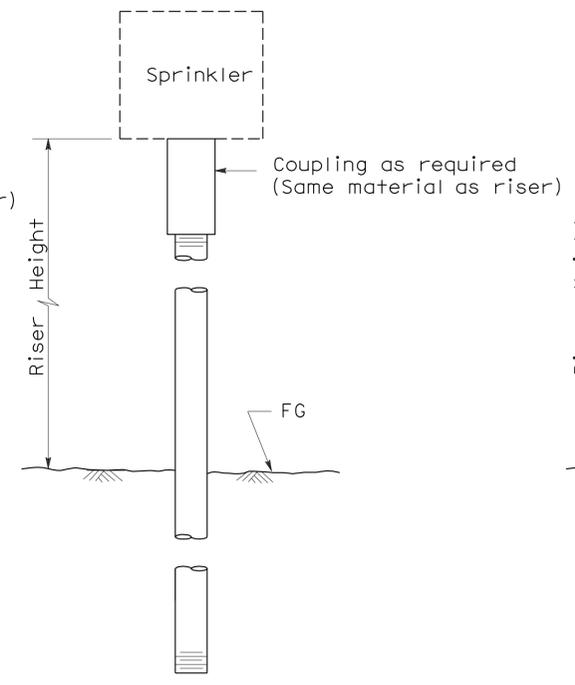
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 June 5, 2009  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



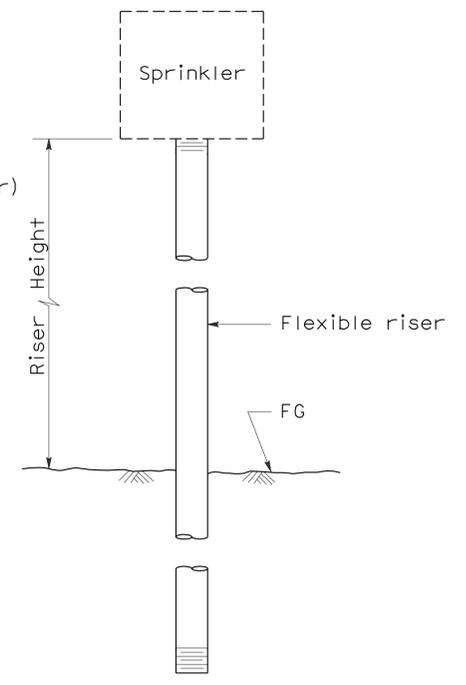
To accompany plans dated 7-18-11



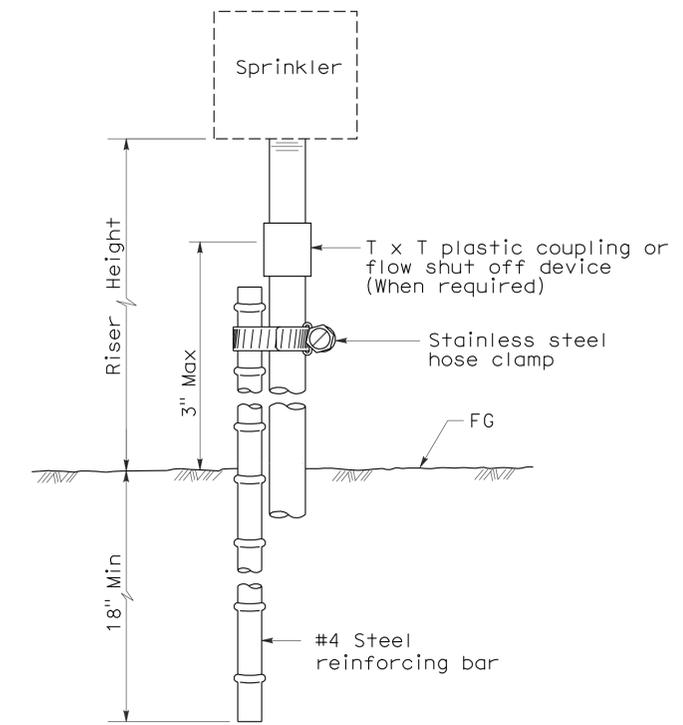
ELEVATION  
RISER TYPE I



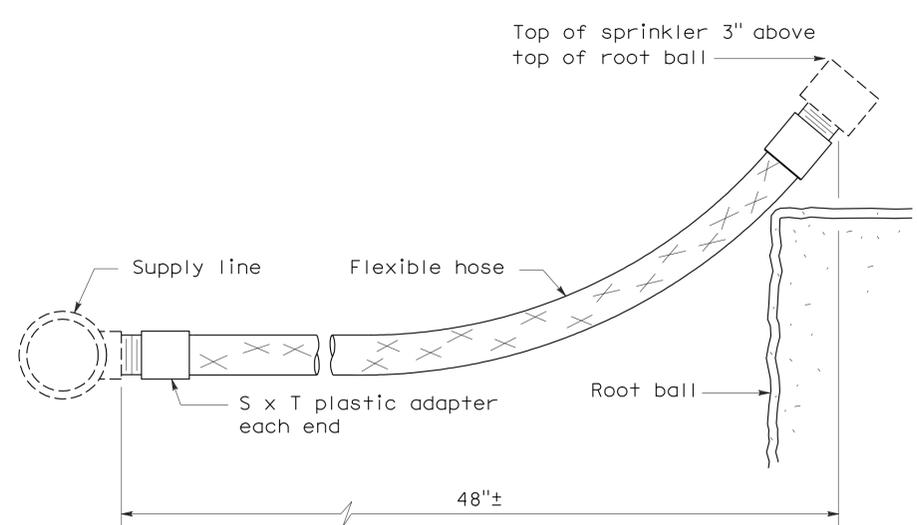
ELEVATION  
RISER TYPE II



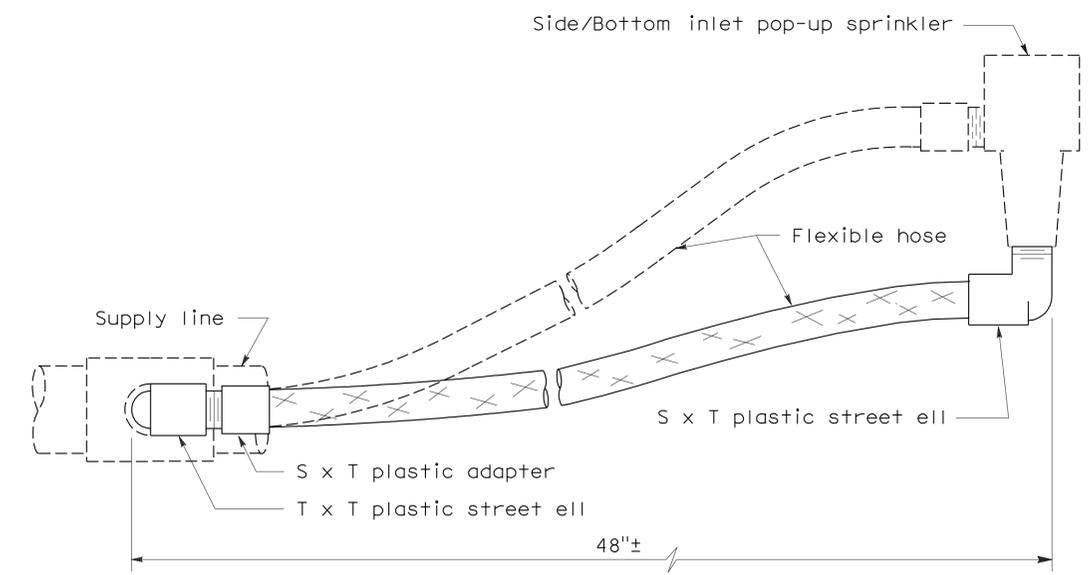
ELEVATION  
RISER TYPE III



ELEVATION  
RISER TYPE IV



ELEVATION  
RISER TYPE V



ELEVATION  
RISER TYPE VI

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

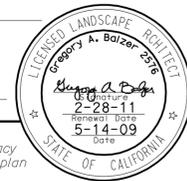
RSP H5 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H5  
DATED MAY 1, 2006 - PAGE 205 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP H5**

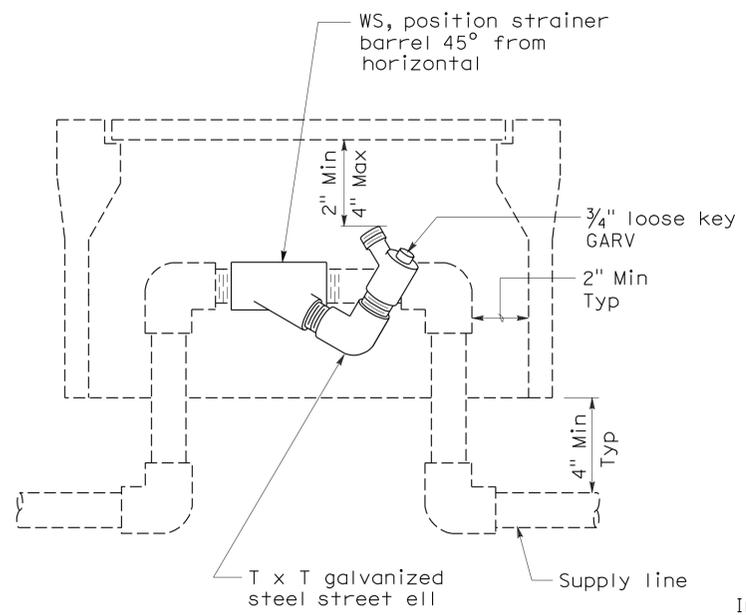
2006 REVISED STANDARD PLAN RSP H5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	241	306

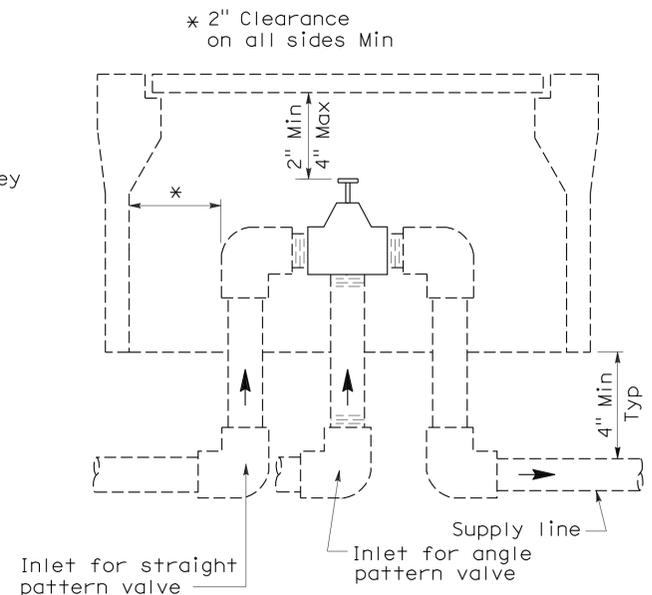
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 June 5, 2009  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



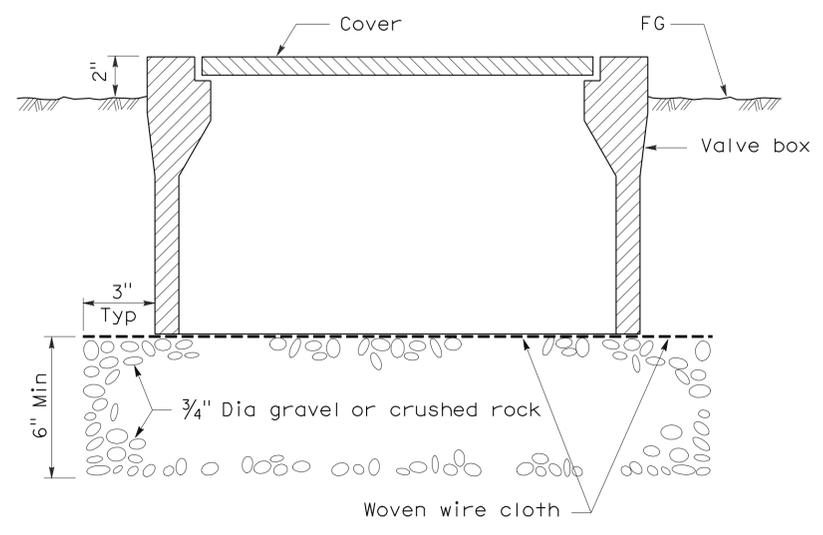
To accompany plans dated 7-18-11



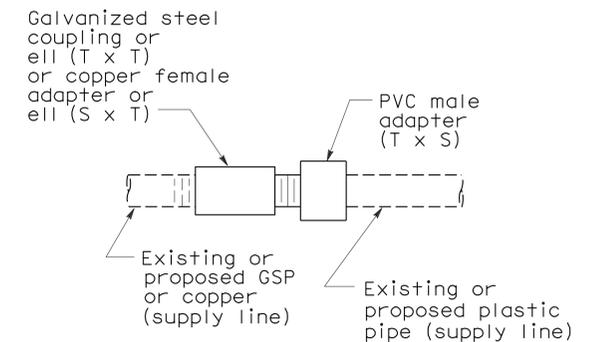
**ELEVATION  
WYE STRAINER**



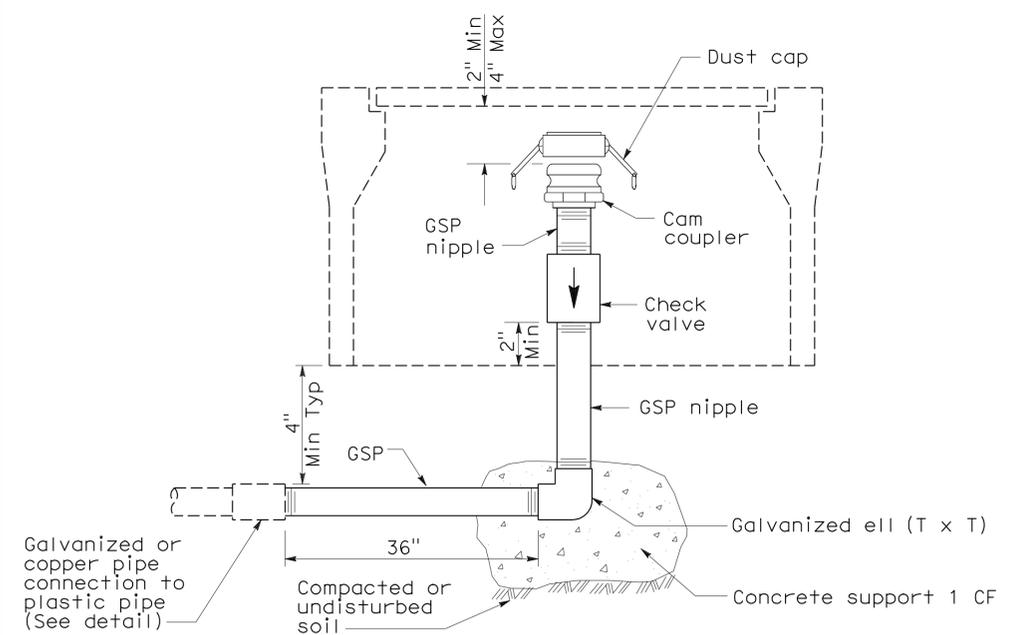
**ELEVATION  
VALVE**



**SECTION  
VALVE BOX**

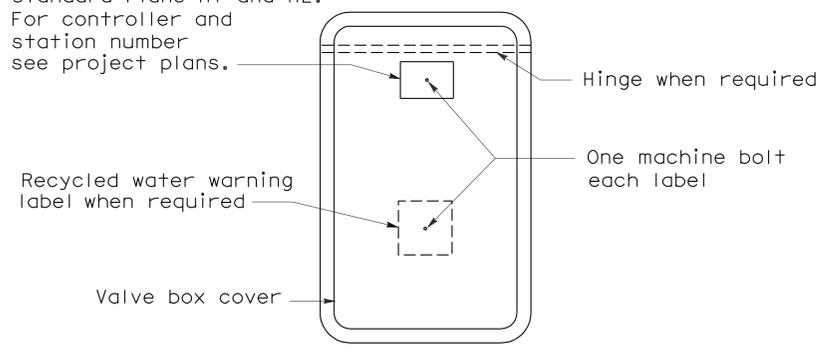


**PLAN  
GALVANIZED OR COPPER PIPE  
CONNECTION TO PLASTIC PIPE**

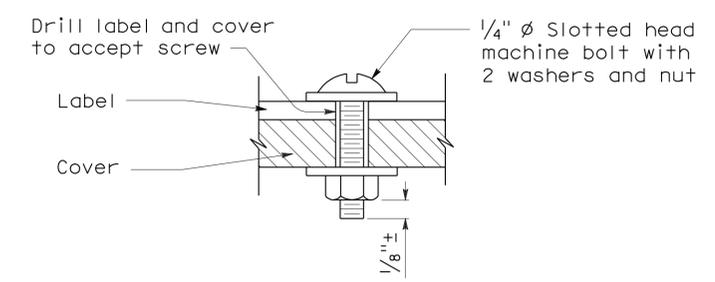


**ELEVATION  
CAM COUPLER ASSEMBLY**

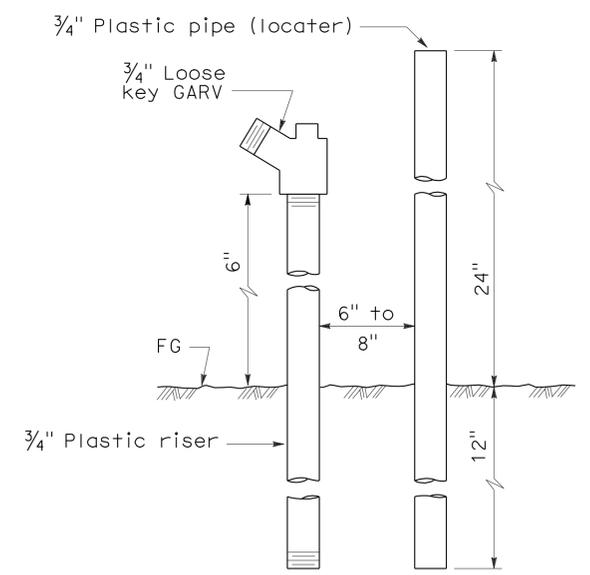
Identification label:  
 For abbreviations see Revised Standard Plans H1 and H2.  
 For controller and station number see project plans.



**PLAN**



**SECTION  
VALVE BOX IDENTIFICATION**



**ELEVATION  
FLUSH VALVE**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**PLANTING AND IRRIGATION  
DETAILS**

NO SCALE

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

**REVISED STANDARD PLAN RSP H7**

2006 REVISED STANDARD PLAN RSP H7

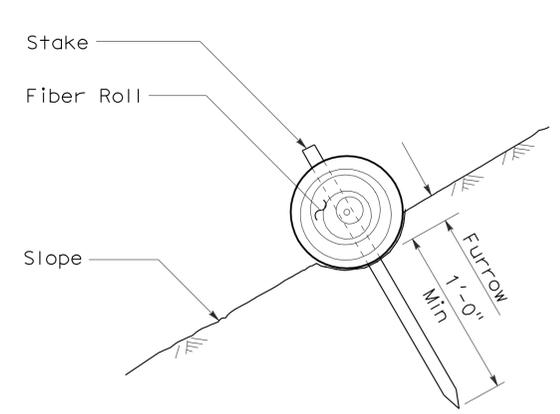
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	242	306

*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

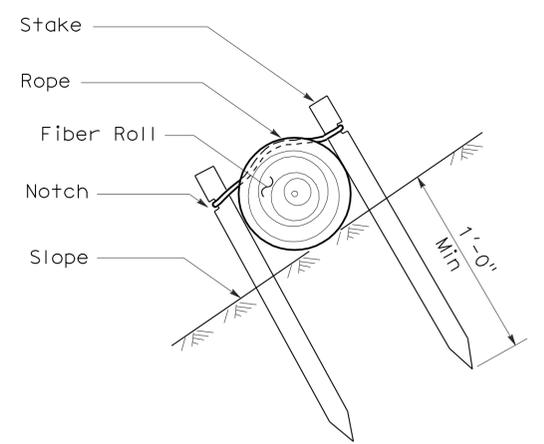
To accompany plans dated 7-18-11

**NOTES:**

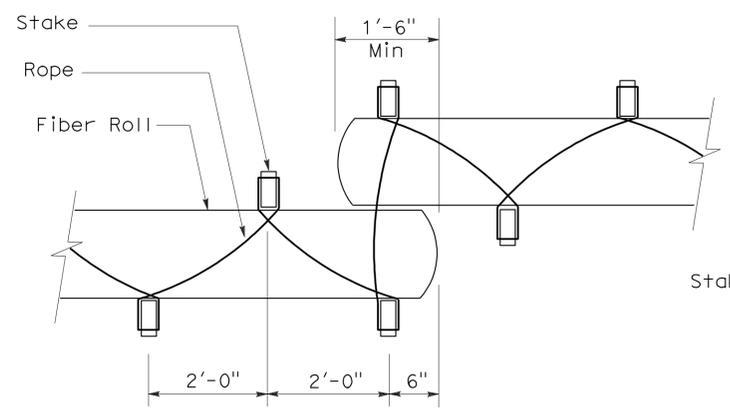
1. Fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



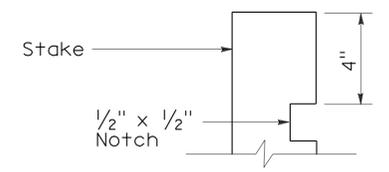
**SECTION**  
**FIBER ROLL**  
**(TYPE 1)**



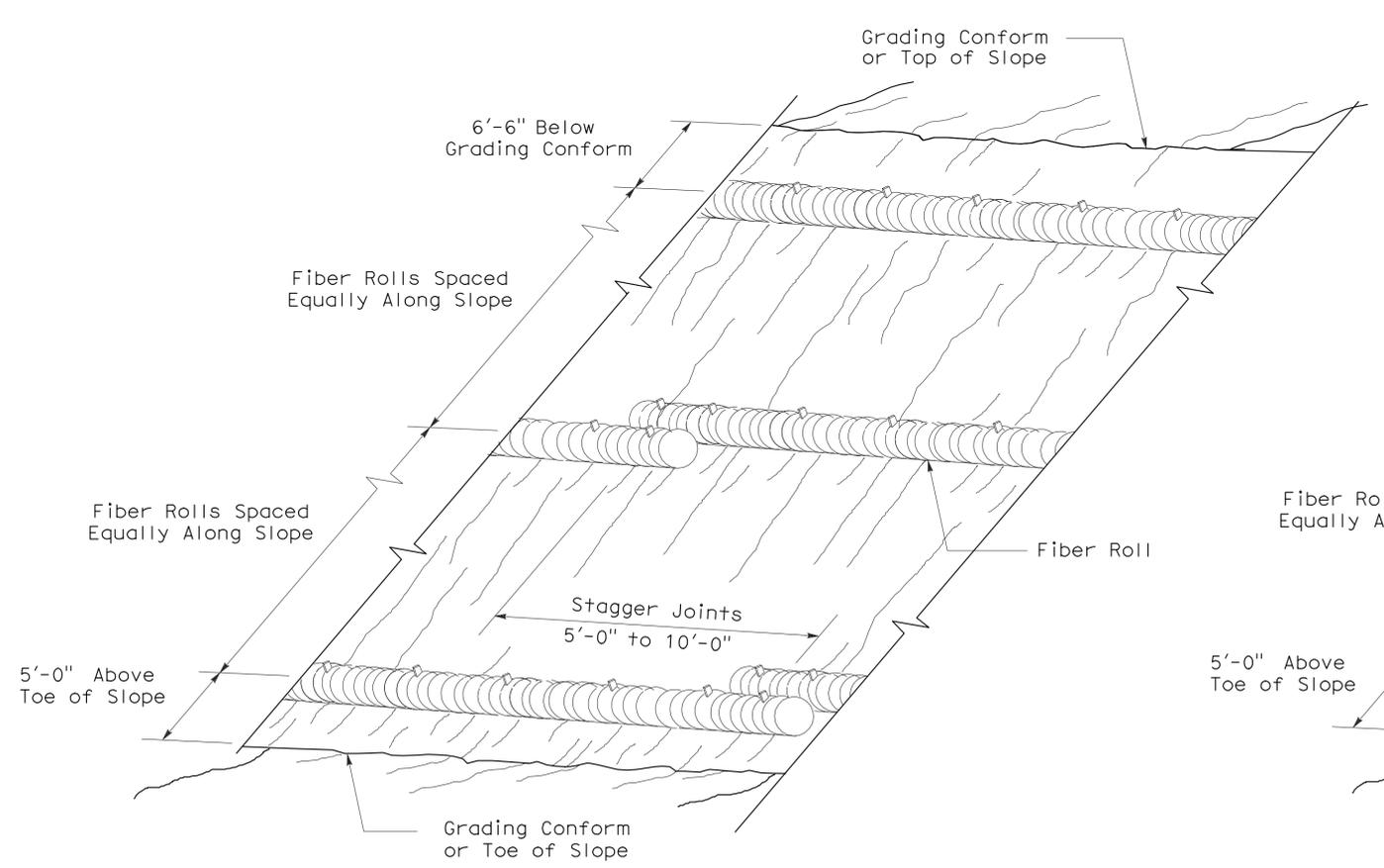
**SECTION**



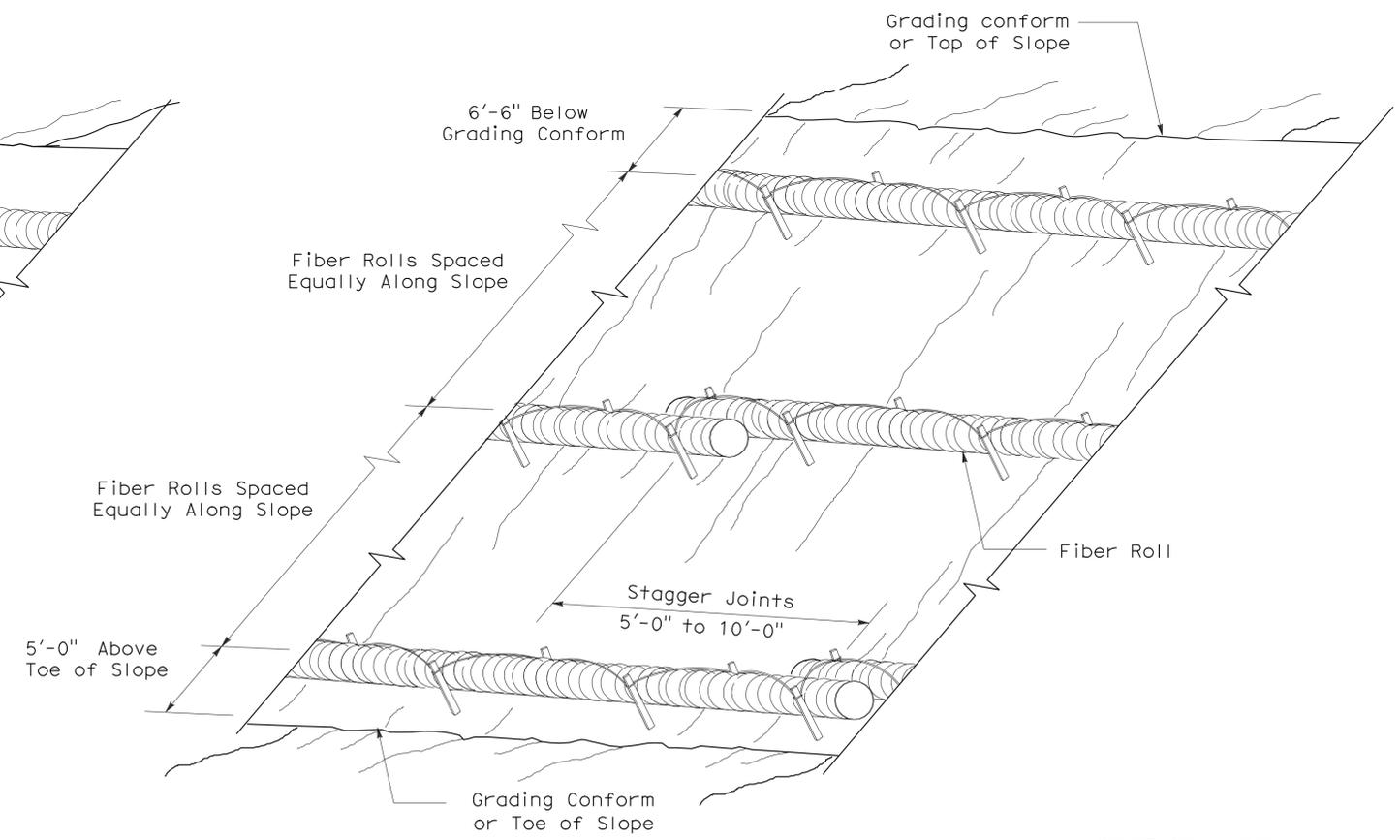
**PLAN**  
**FIBER ROLL**  
**(TYPE 2)**



**ELEVATION**  
**STAKE NOTCH DETAIL**



**PERSPECTIVE**  
**FIBER ROLL (TYPE 1)**



**PERSPECTIVE**  
**FIBER ROLL (TYPE 2)**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**EROSION CONTROL DETAILS**  
**(FIBER ROLL)**

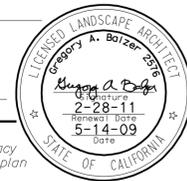
NO SCALE

RNSP H51 DATED APRIL 3, 2009 SUPERSEDES NSP H51 DATED DECEMBER 1, 2006 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED NEW STANDARD PLAN RNSP H51

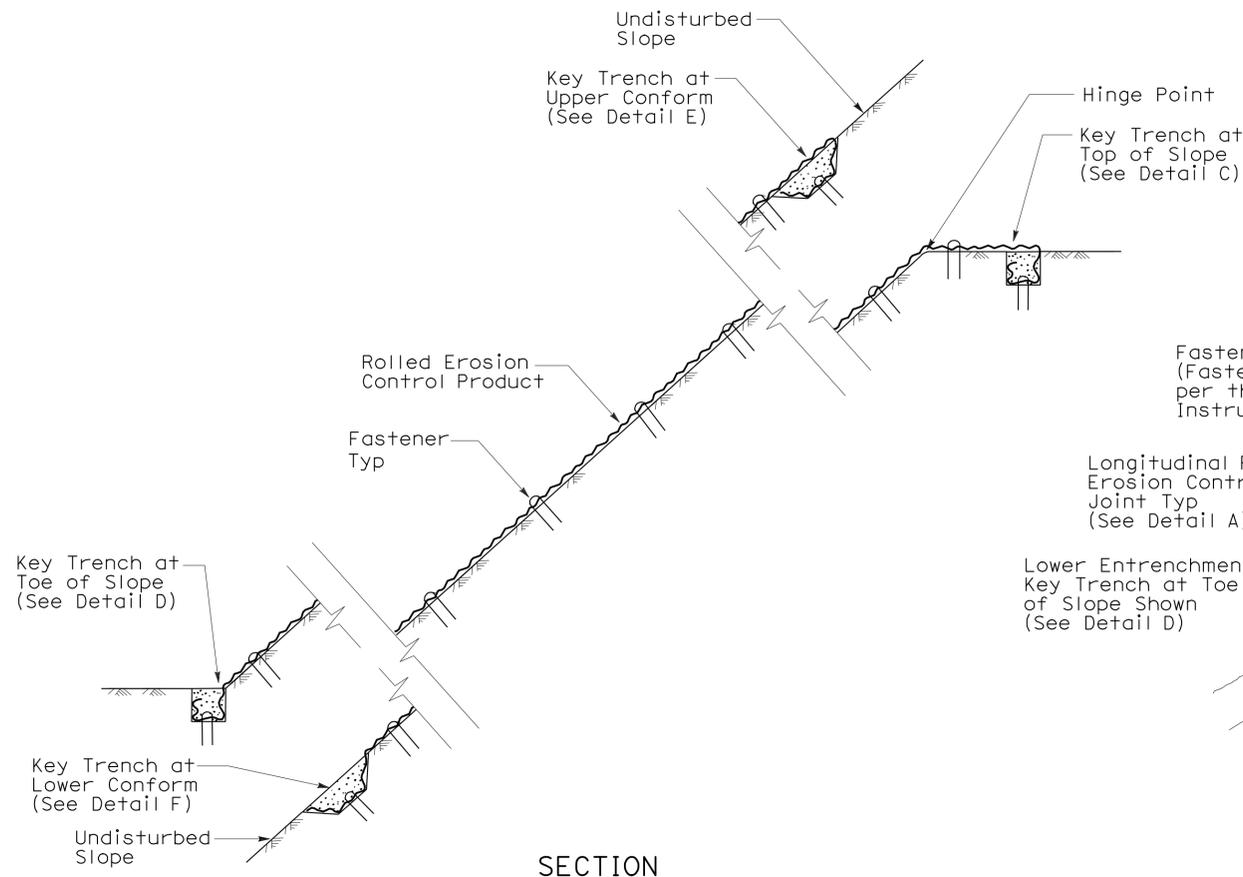
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	243	306

*Suzanne A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 June 5, 2009  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

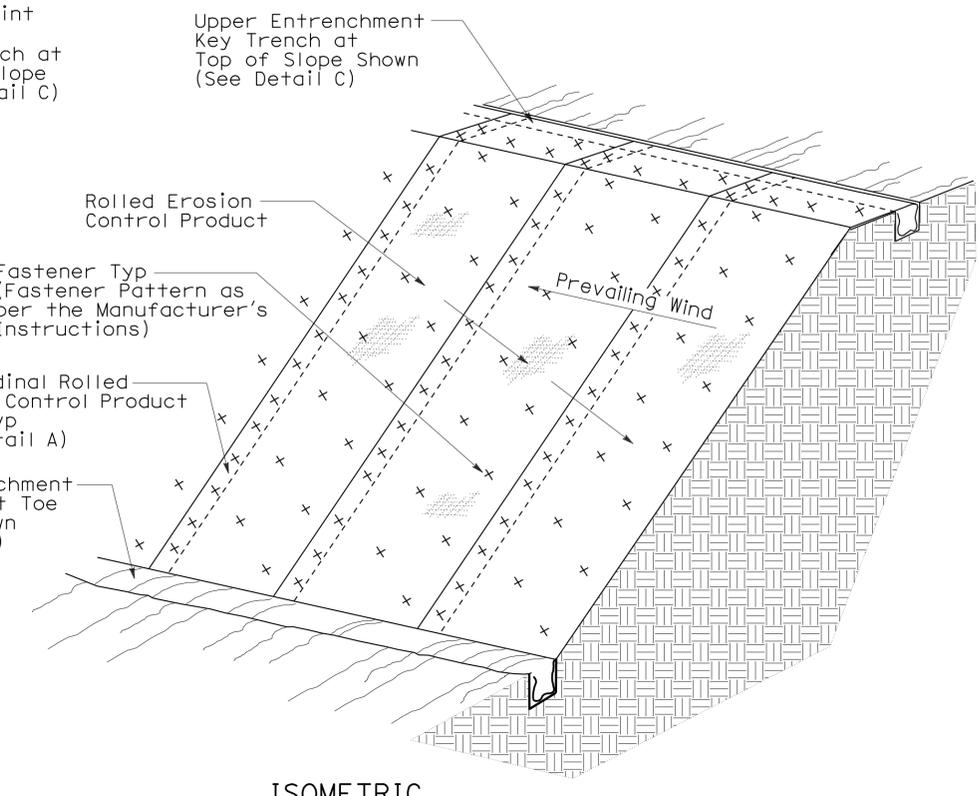


To accompany plans dated 7-18-11

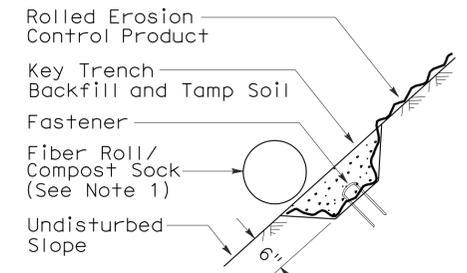
- NOTE:**
1. Fiber Roll/Compost Sock shown for reference purposes only.
  2. If transverse rolled erosion control product joints are required on slopes, see Detail B.



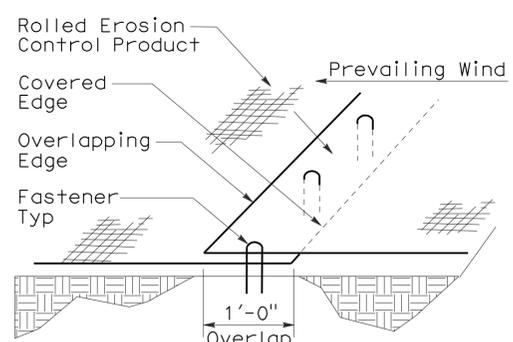
**SECTION**  
**ROLLED EROSION CONTROL PRODUCT ON SLOPE WITH VARIOUS KEY ENTRENCHMENTS**



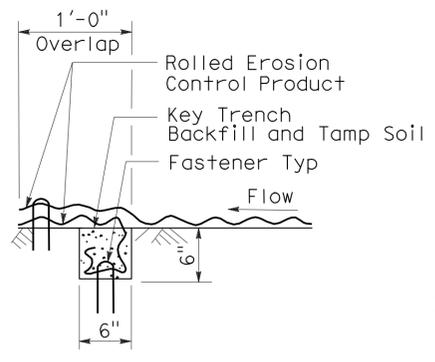
**ISOMETRIC**  
**ROLLED EROSION CONTROL PRODUCT ON SLOPE**



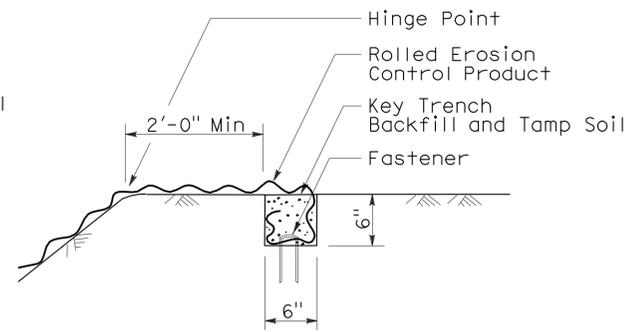
**SECTION**  
**DETAIL F**  
**KEY TRENCH AT LOWER CONFORM**



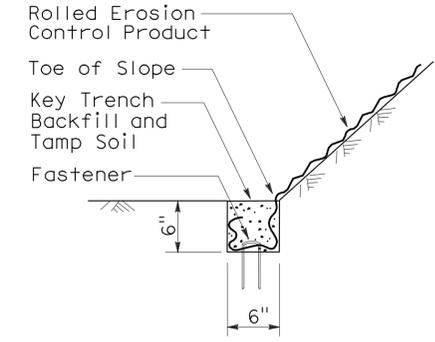
**PERSPECTIVE**  
**DETAIL A**  
**LONGITUDINAL ROLLED EROSION CONTROL PRODUCT JOINT**



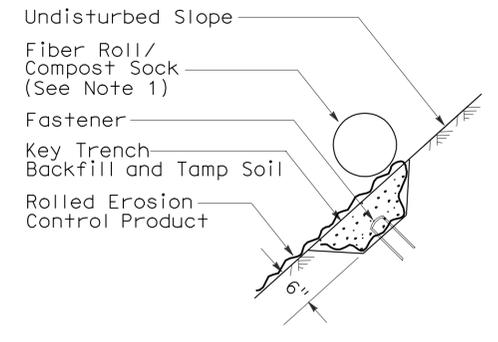
**SECTION**  
**DETAIL B**  
**TRANSVERSE ROLLED EROSION CONTROL PRODUCT JOINT**



**SECTION**  
**DETAIL C**  
**KEY TRENCH AT TOP OF SLOPE**



**SECTION**  
**DETAIL D**  
**KEY TRENCH AT TOE OF SLOPE**



**SECTION**  
**DETAIL E**  
**KEY TRENCH AT UPPER CONFORM**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**ROLLED EROSION CONTROL PRODUCT**

NO SCALE

NSP H53 DATED JUNE 5, 2009 SUPPLEMENTS  
 THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP H53

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	244	306

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

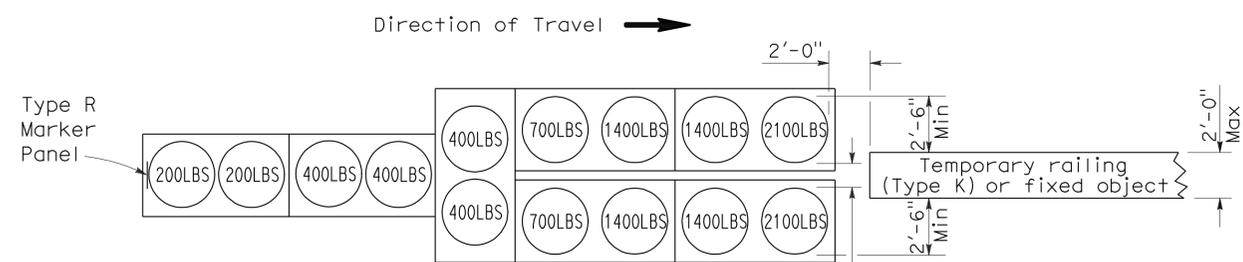
June 6, 2008  
PLANS APPROVAL DATE

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

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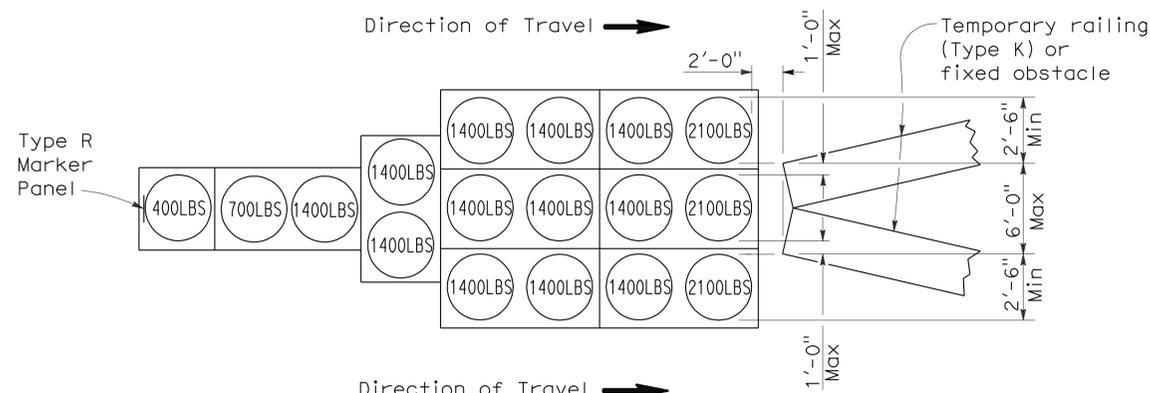
To accompany plans dated 7-18-11

2006 REVISED STANDARD PLAN RSP T1A



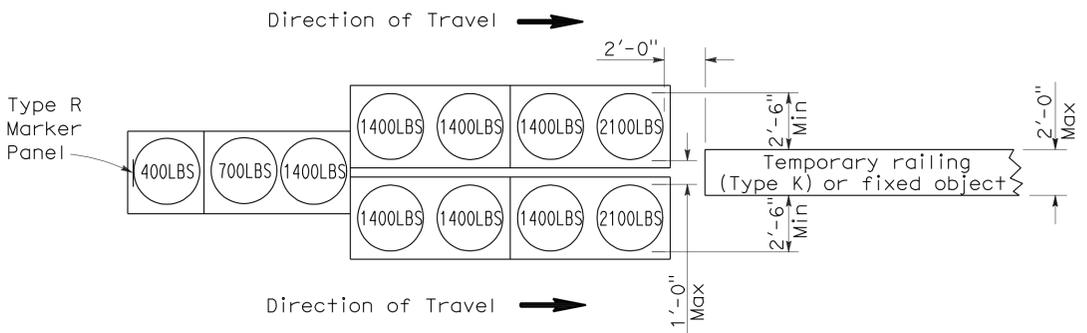
**ARRAY 'TU14'**

Approach speed 45 mph or more



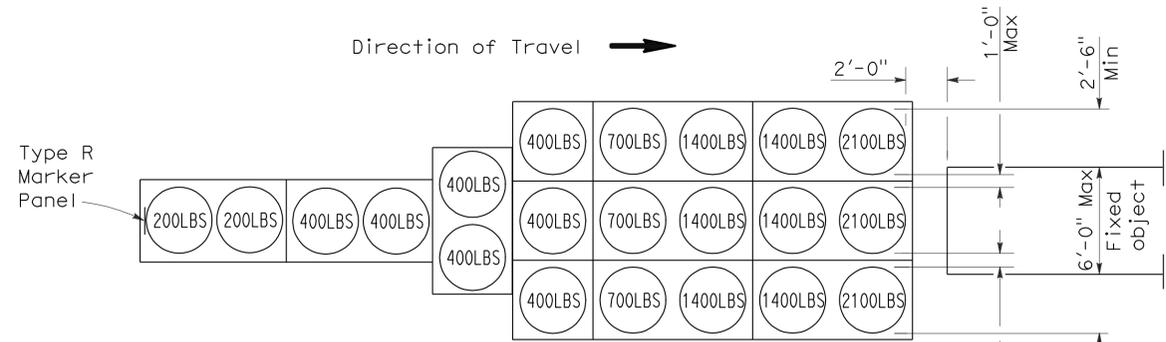
**ARRAY 'TU17'**

Approach speed less than 45 mph



**ARRAY 'TU11'**

Approach speed less than 45 mph

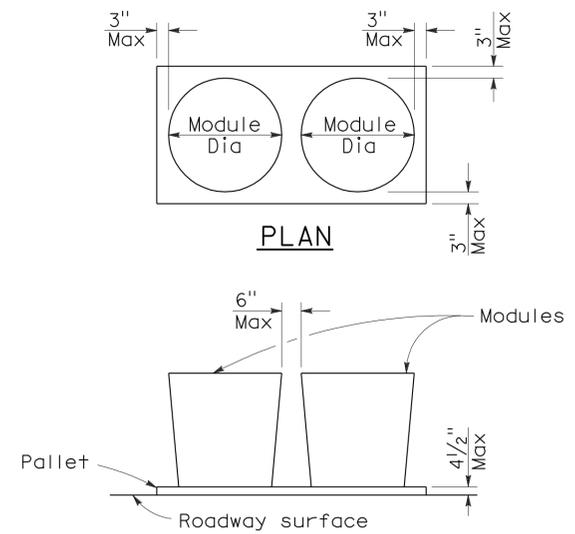


**ARRAY 'TU21'**

Approach speed 45 mph or more

**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.



**CRASH CUSHION PALLET DETAIL**  
See Note 7

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**

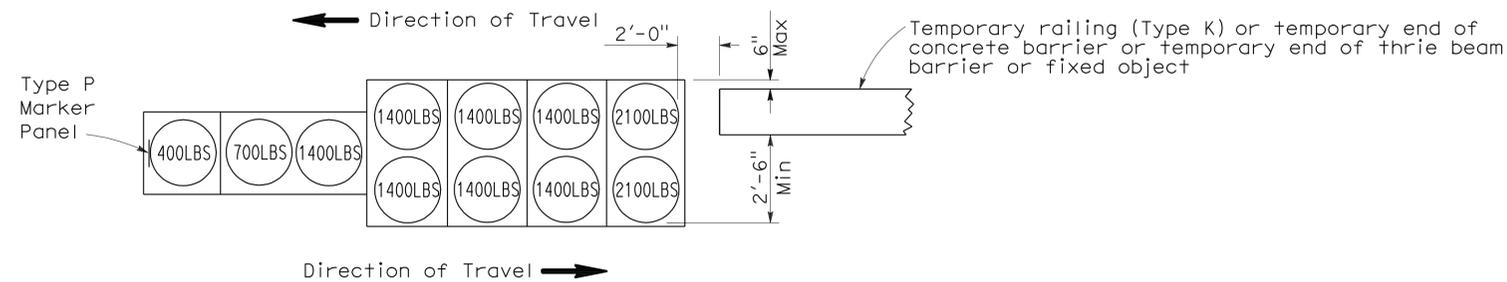
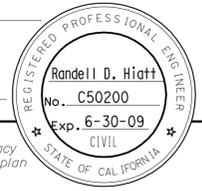
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	245	306

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

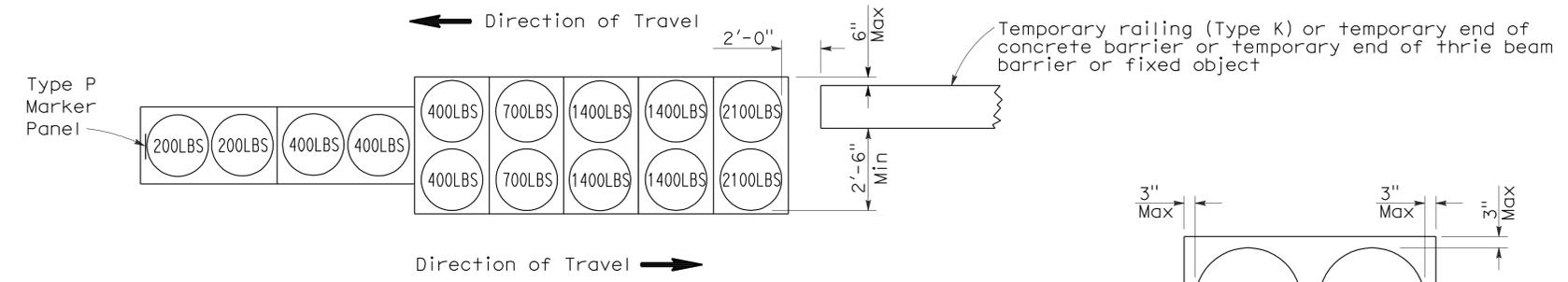
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 7-18-11



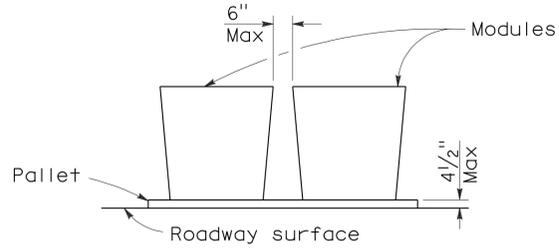
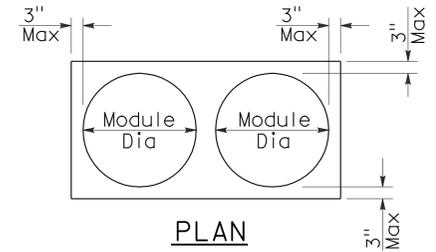
**ARRAY 'TB11'**

Approach speed less than 45 mph



**ARRAY 'TB14'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

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

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

NO SCALE  
RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B  
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

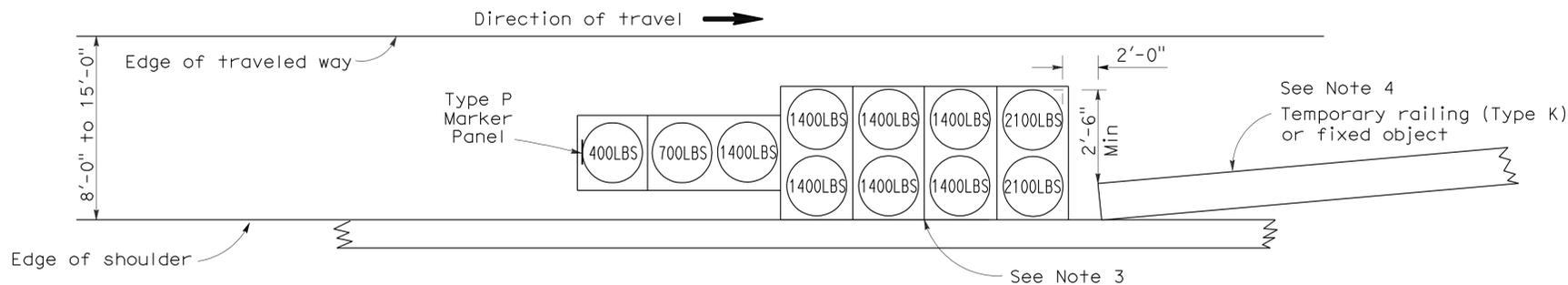
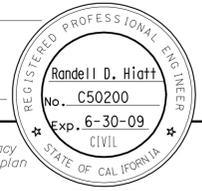
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	246	306

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

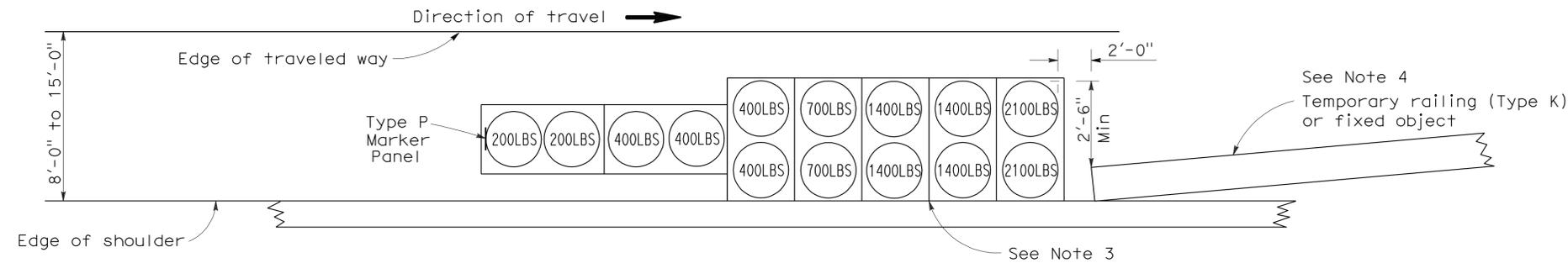
June 6, 2008  
PLANS APPROVAL DATE

*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.*

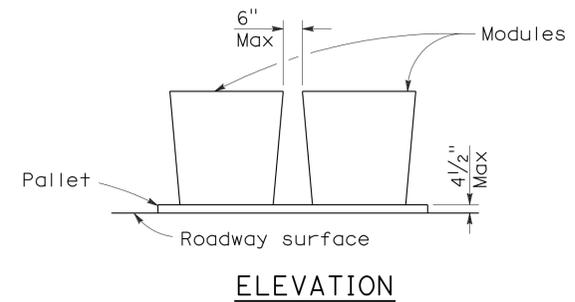
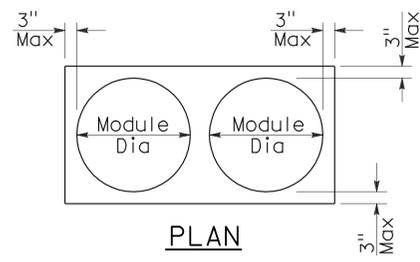
To accompany plans dated 7-18-11



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

- (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**

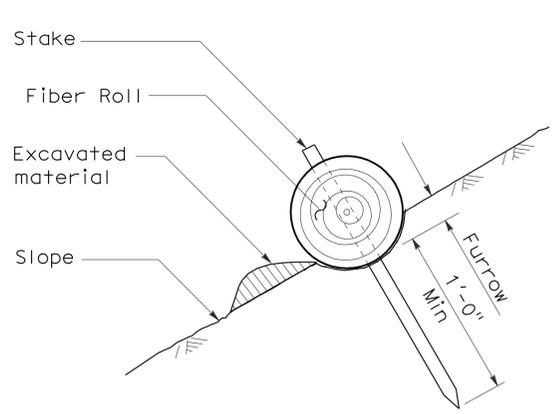
2006 REVISED STANDARD PLAN RSP T2



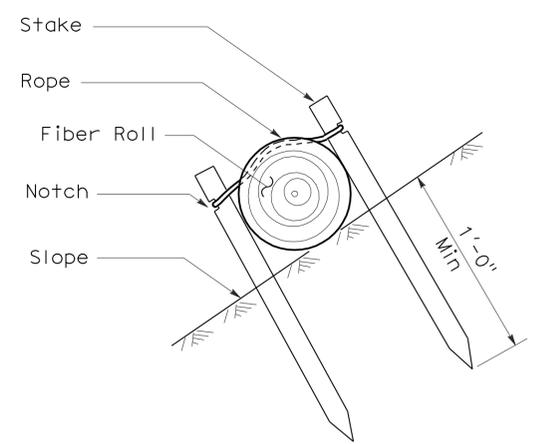
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	248	306

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

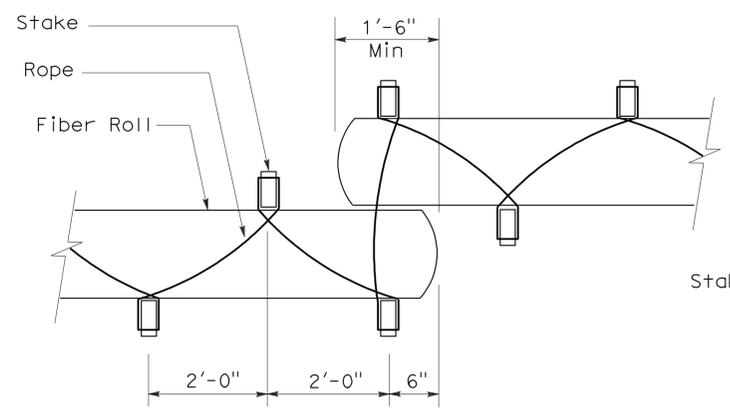
To accompany plans dated 7-18-11



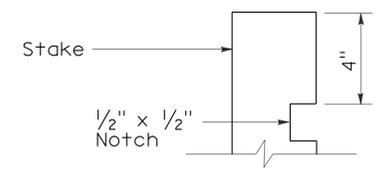
**SECTION**  
**TEMPORARY FIBER ROLL**  
**(TYPE 1)**



**SECTION**  
**TEMPORARY FIBER ROLL**  
**(TYPE 2)**



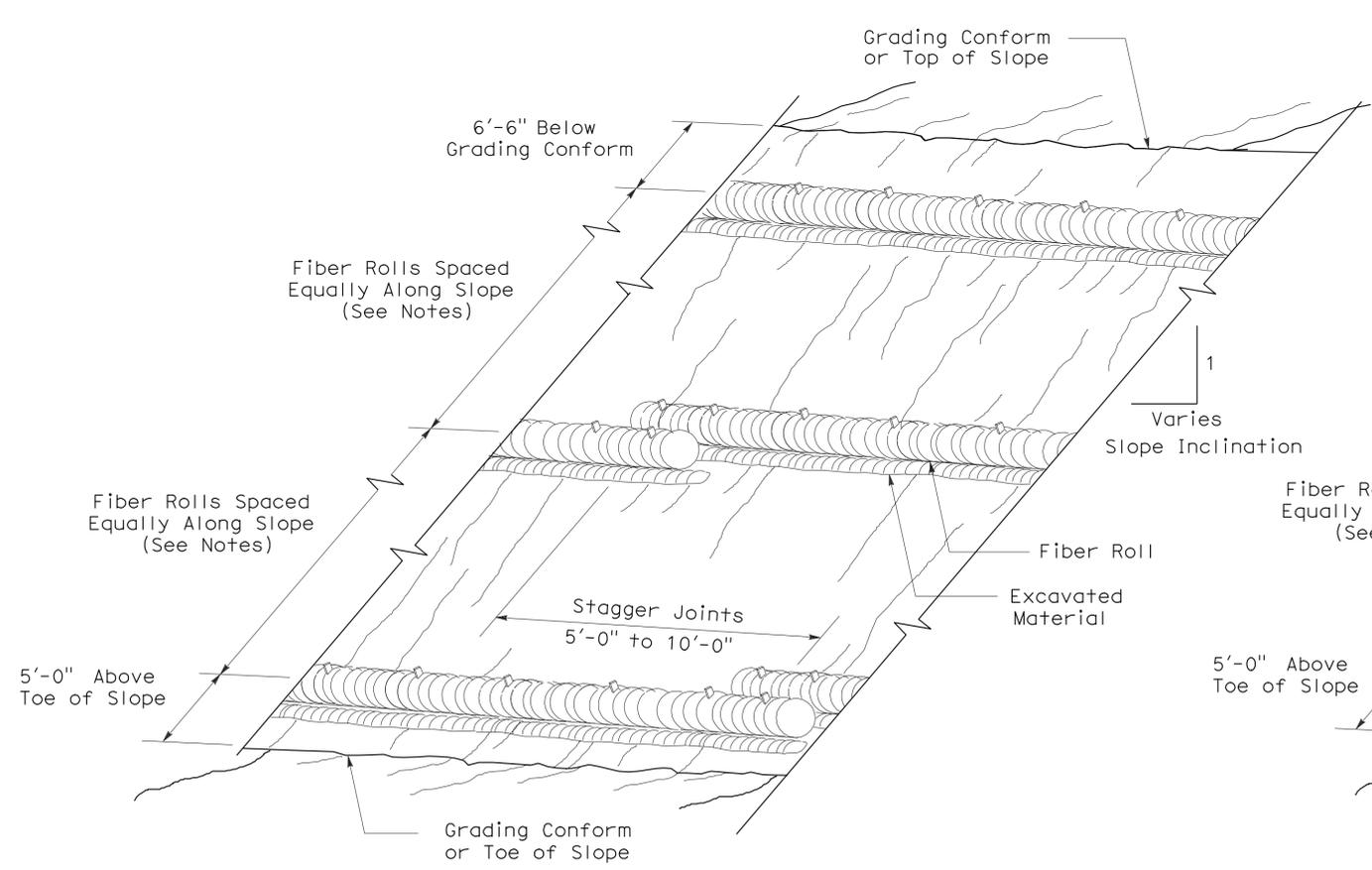
**PLAN**



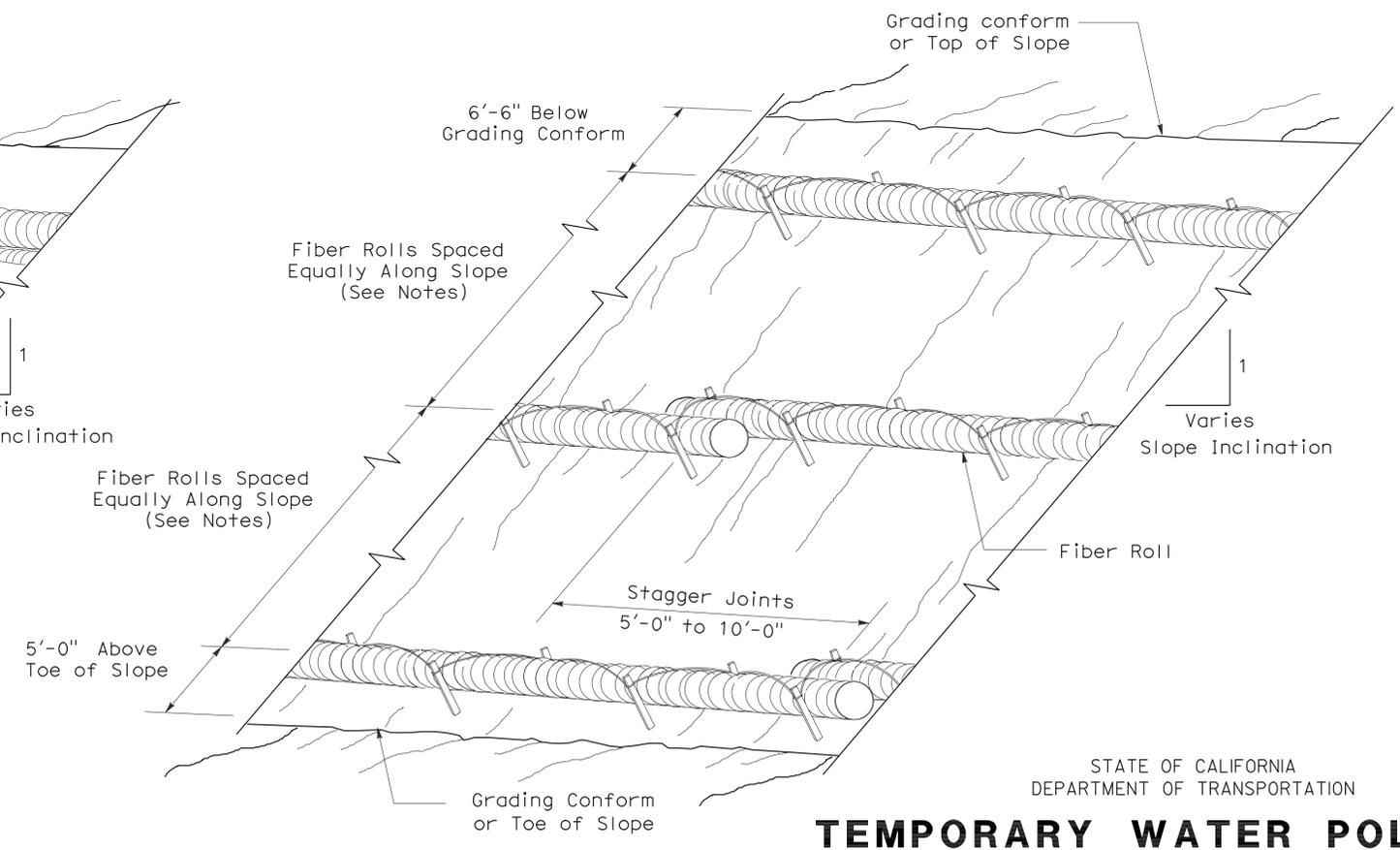
**ELEVATION**  
**STAKE NOTCH DETAIL**

**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
11	SD	78	15.3/15.7	249	306

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT

August 15, 2008  
 PLANS APPROVAL DATE

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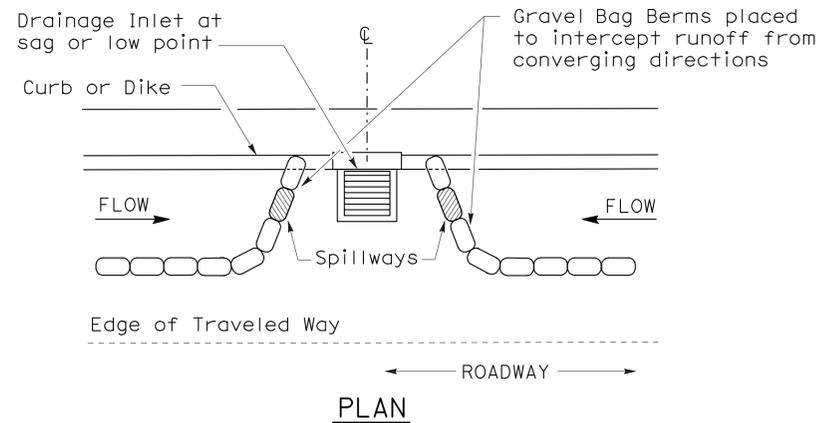
To accompany plans dated 7-18-11

2006 NEW STANDARD PLAN NSP T62

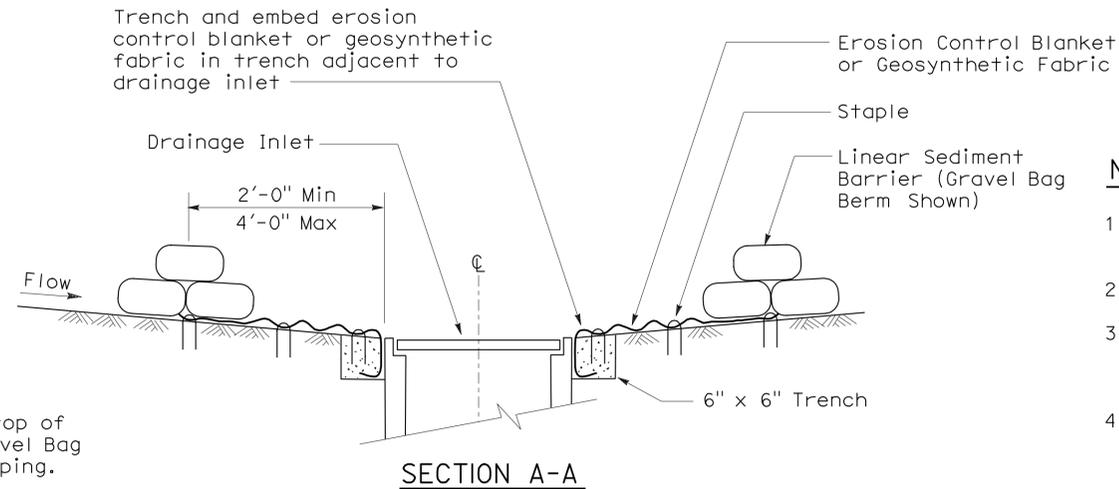
**GRAVEL BAG BERM (TYPE 3A) SPACING TABLE**

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



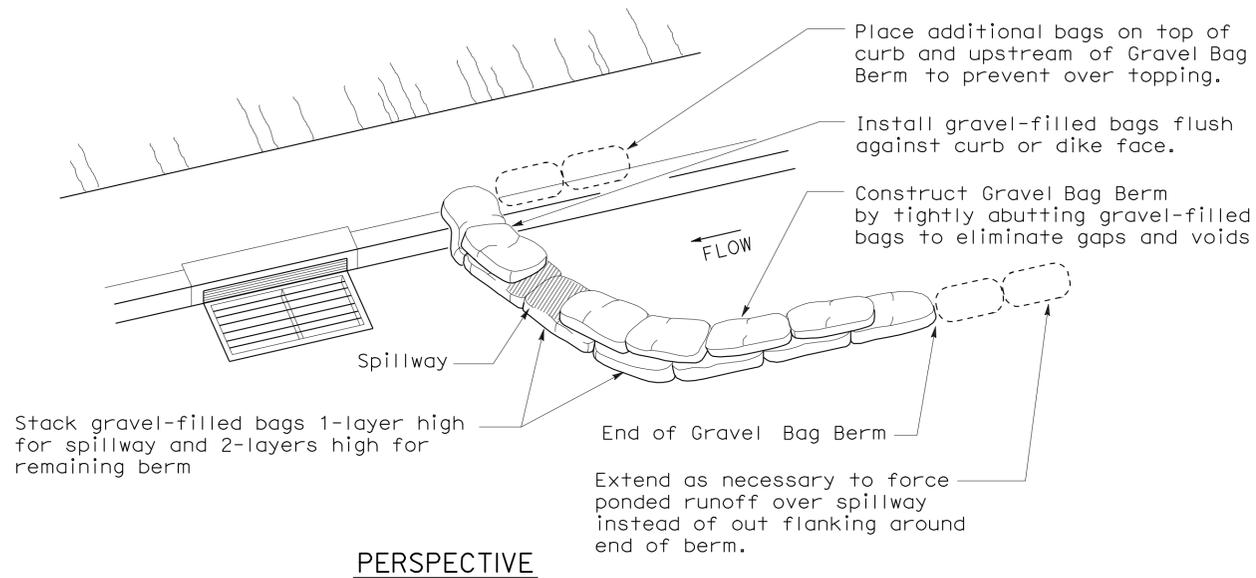
**PLAN**  
**CONFIGURATION FOR SAG POINT INLET (GRAVEL BAG BERM)**



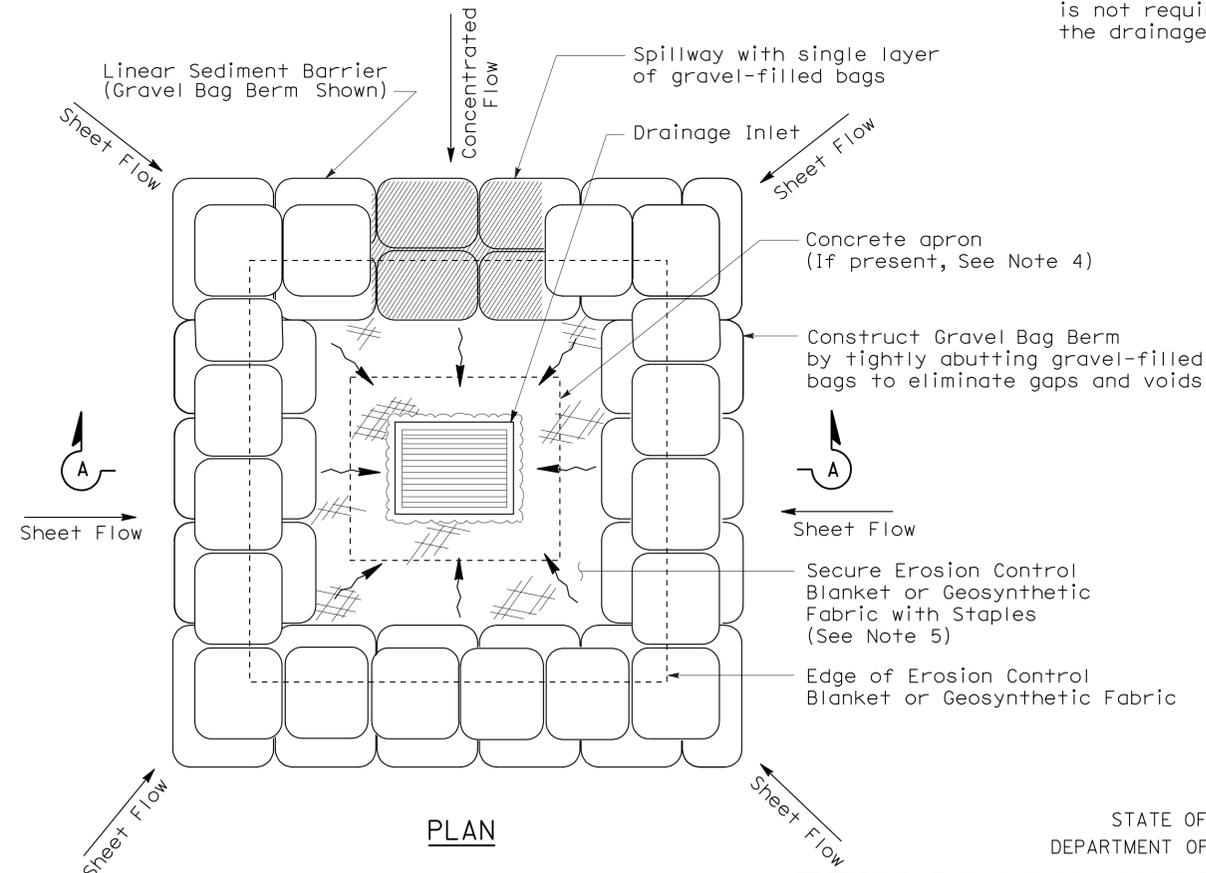
**SECTION A-A**

**NOTES:**

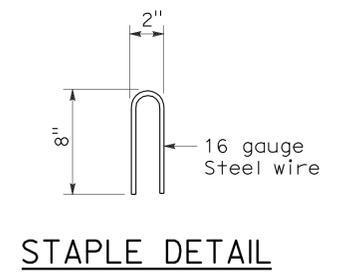
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



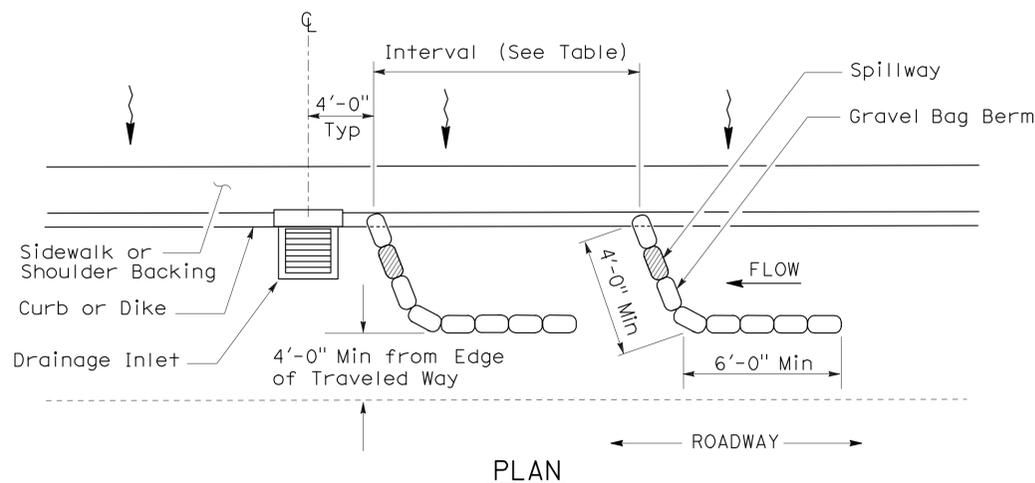
**PERSPECTIVE**



**PLAN**  
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)**



**STAPLE DETAIL**



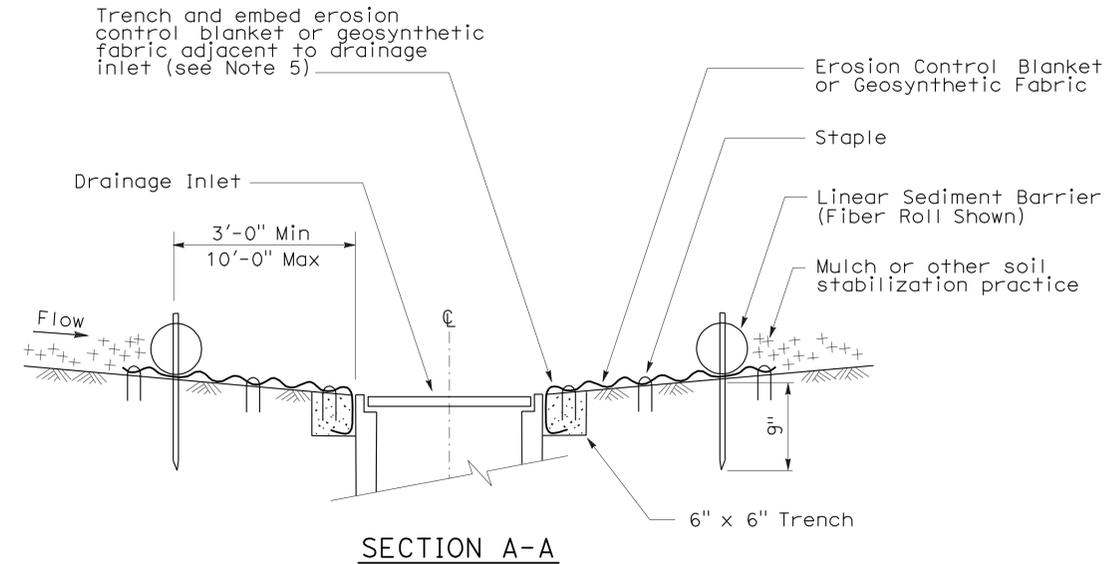
**PLAN**  
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3A) (GRAVEL BAG BERM)**

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

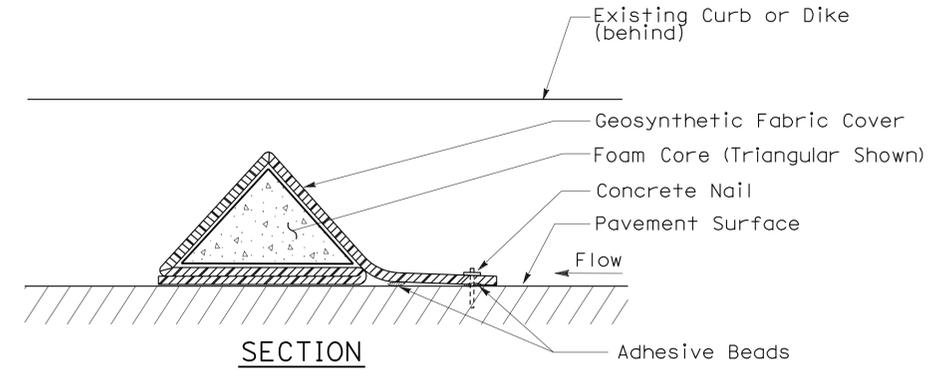
NO SCALE  
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

**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'



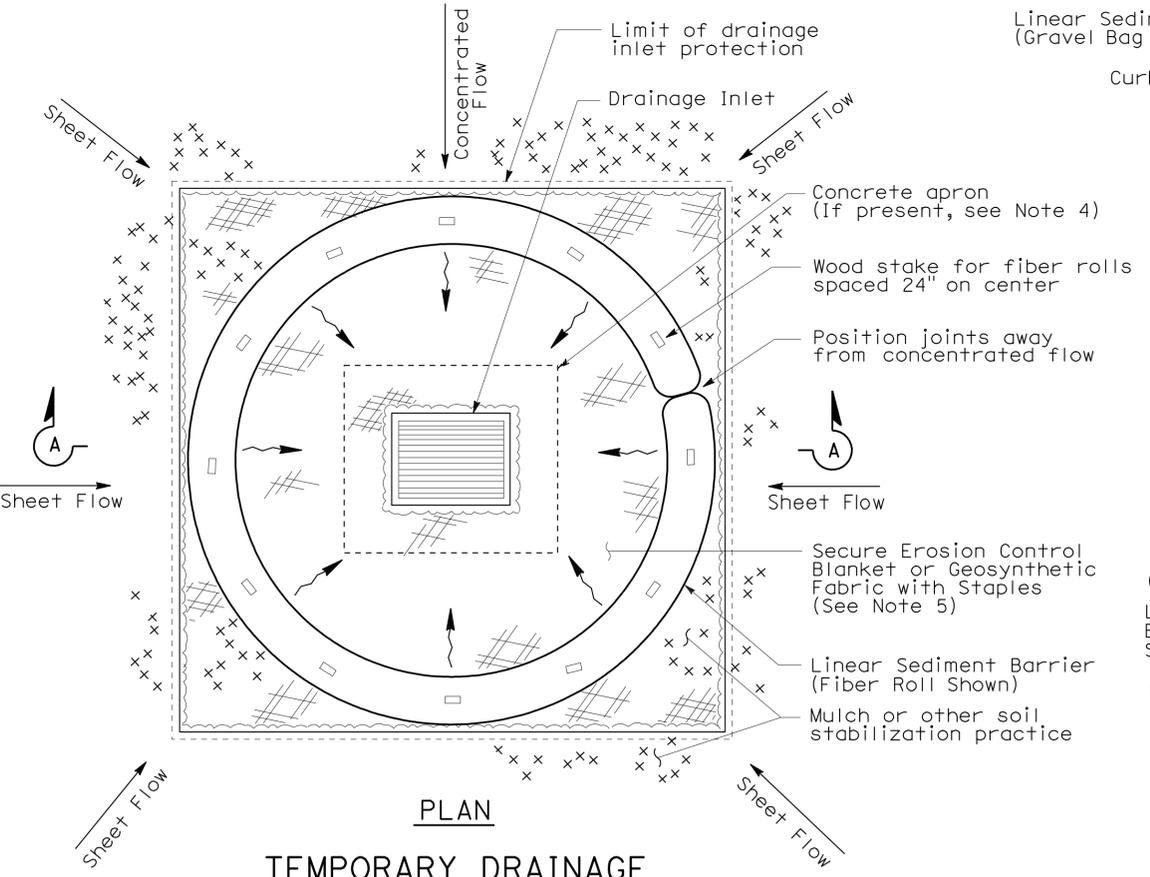
**SECTION A-A**



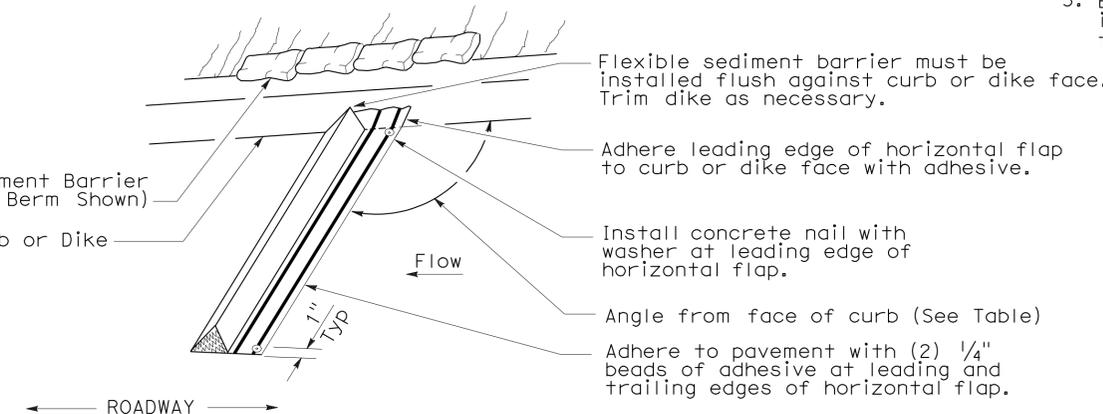
**FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)**

**NOTES:**

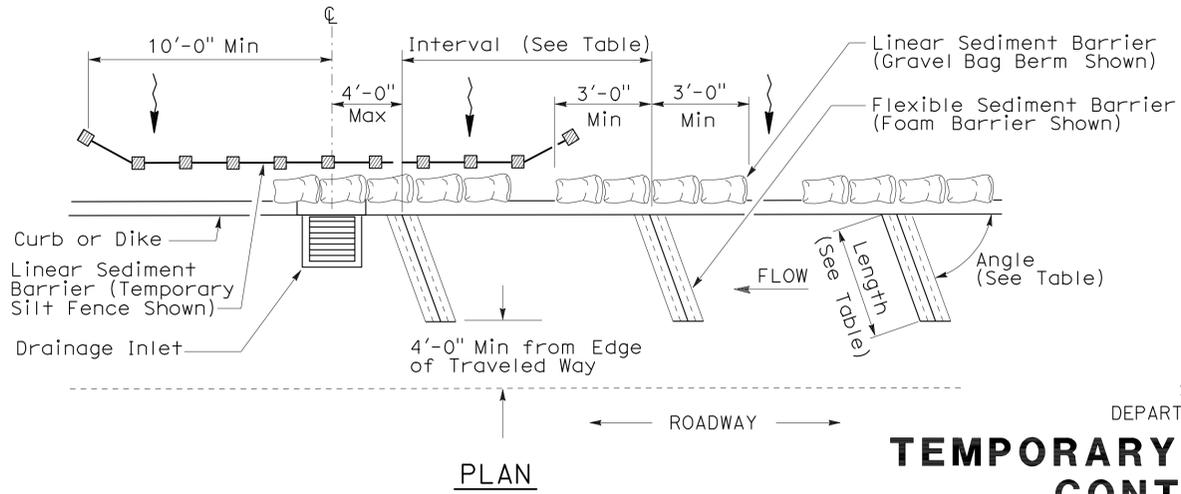
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



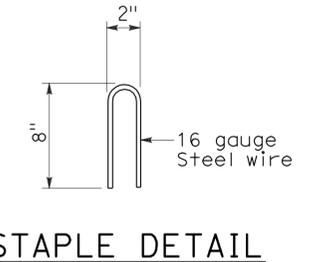
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)**



**PERSPECTIVE**



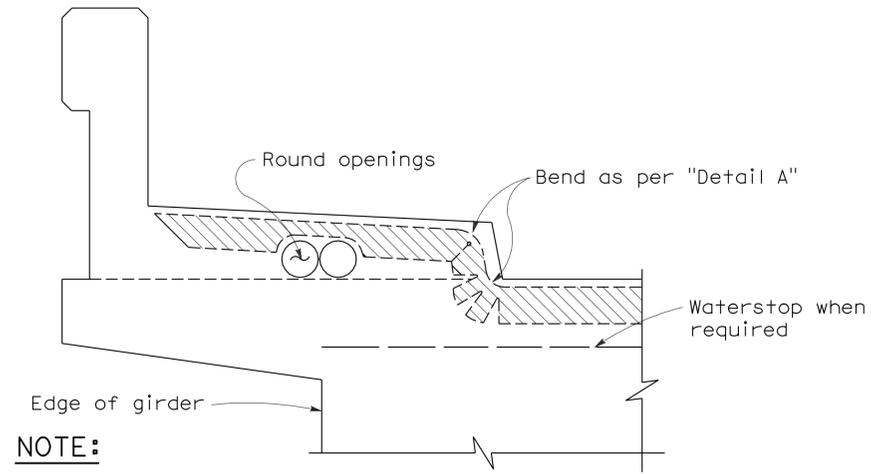
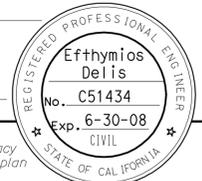
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4B) FLEXIBLE SEDIMENT BARRIER**



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

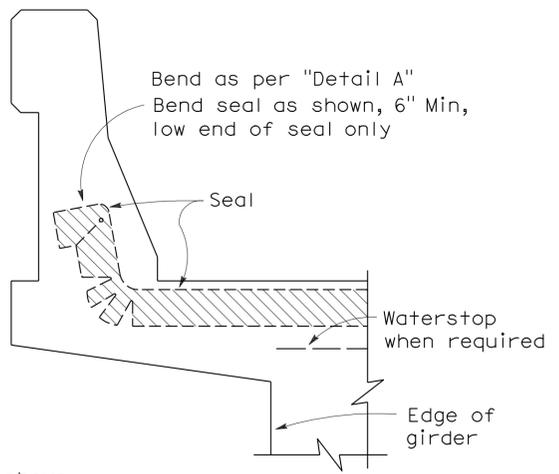
NO SCALE  
 NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T63

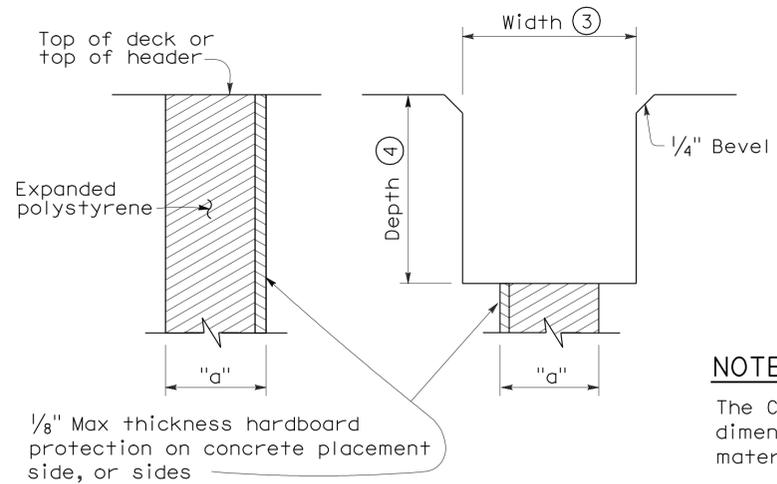


**NOTE:**  
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend Type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

**CONCRETE BARRIER AND SIDEWALK**



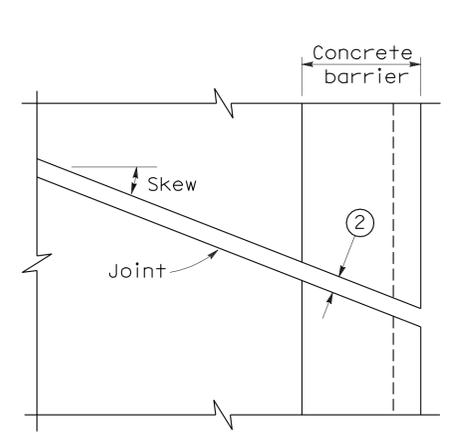
**CONCRETE BARRIER**



**FORMING DETAIL SAWCUT DETAIL**

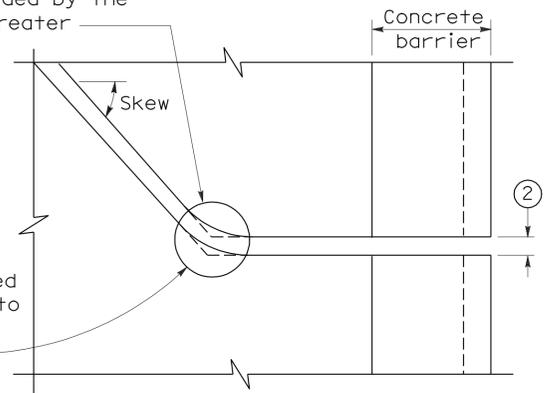
**NOTE:**  
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

**JOINT SEALS DETAILS**



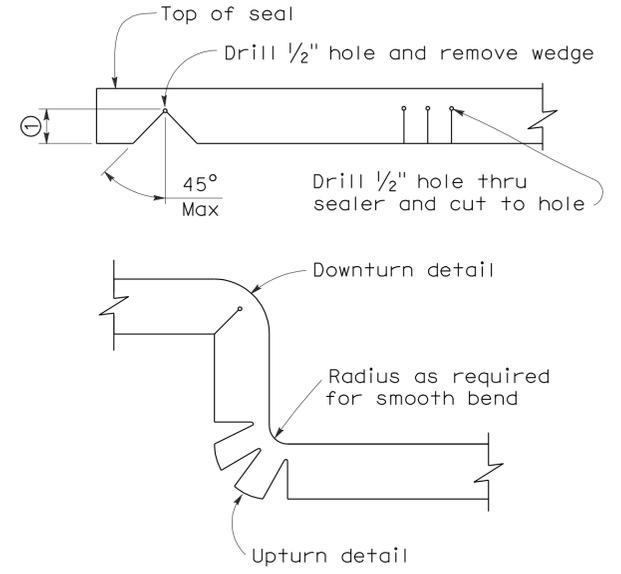
**PLAN OF JOINT (SKEW ≤ 20°)**

Min  $\phi$  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**

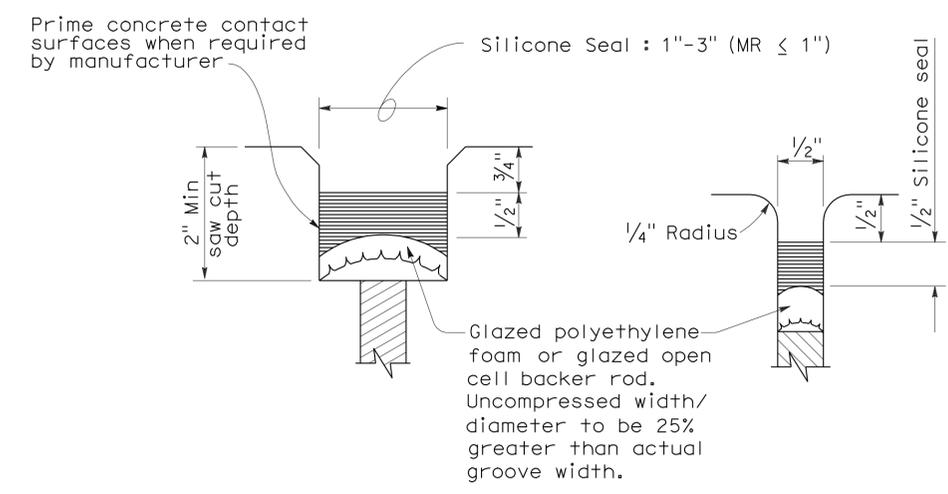
**NOTES:**

- 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 (W<sub>2</sub>) 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"

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

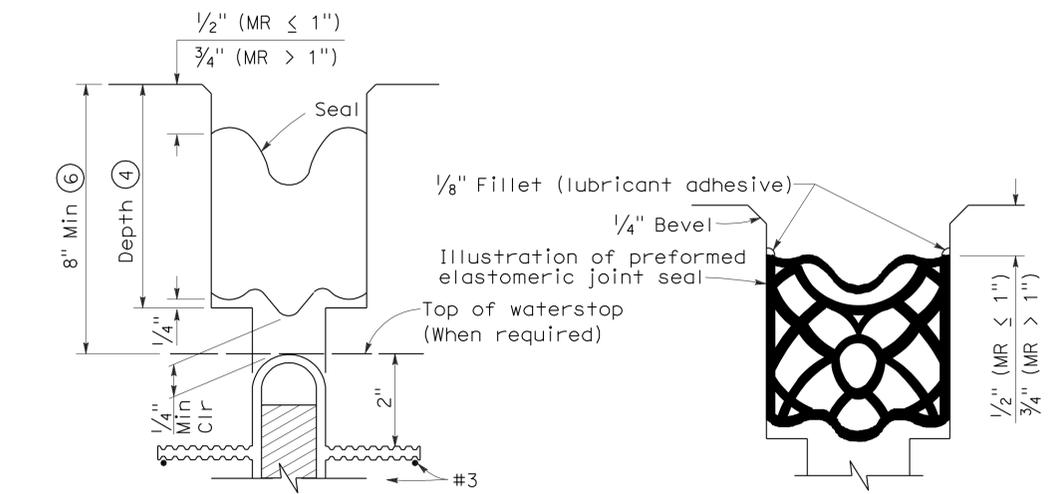


**TYPE A SEAL**

Movement rating : Silicone = 1" Max

**TYPE AL SEAL**

Longitudinal joints only



**TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W<sub>2</sub>)**

**TYPE B SEAL**

Movement Rating ≤ 2"

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.

2006 REVISED STANDARD PLAN RSP B6-21

# ELECTROLIERS

STANDARD TYPES		
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		
32		
35		
36-20A		

**NOTES:**

- Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
- Variations noted adjacent to symbol on project plans.

- Electrolier (see project notes or project plans)
- Luminaire on wood pole

## STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		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
11	SD	78	15.3/15.7	252	306

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE

*Jeffery G. McRae*  
REGISTERED PROFESSIONAL ENGINEER  
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 7-18-11

## SOFFIT AND WALL MOUNTED LUMINAIRES

- Pendant, 70 W HPS unless otherwise specified.
- Flush, 70 W HPS unless otherwise specified.
- Wall surface, 70 W HPS unless otherwise specified.
- Existing soffit or wall luminaire to remain unmodified.
- Existing soffit or wall luminaire to be modified as specified.

### NOTE:

Arrow indicates "street side" of luminaire.

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
11	SD	78	15.3/15.7	253	306

*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

### CONDUIT

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

### SIGNAL EQUIPMENT

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

### SERVICE EQUIPMENT

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

### 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.

### 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

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

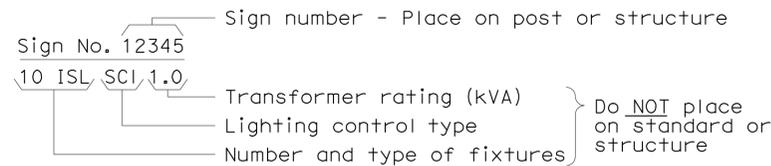
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1B**

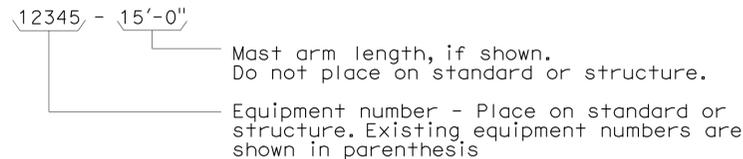
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

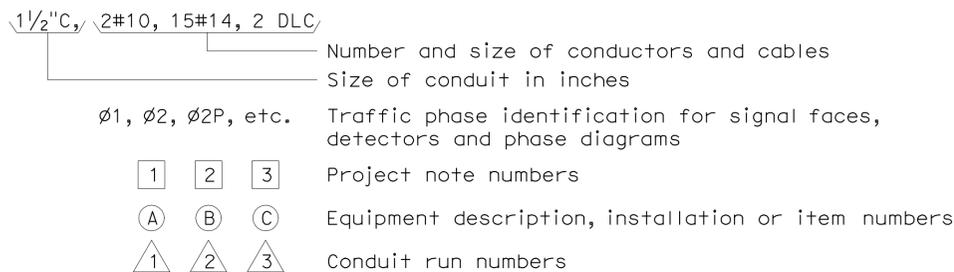
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



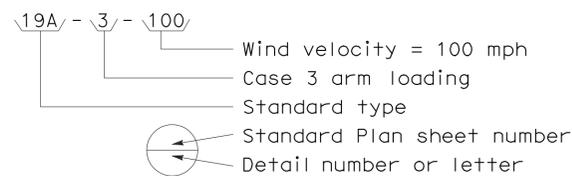
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



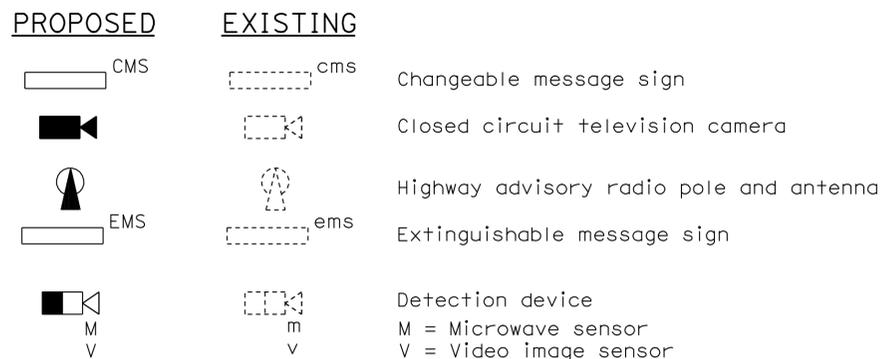
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



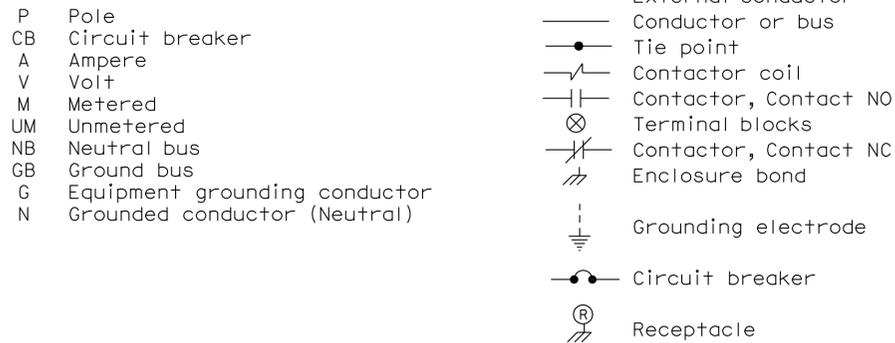
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



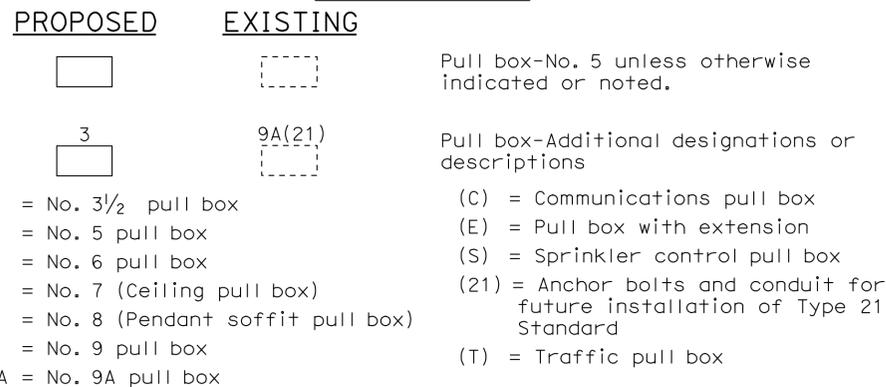
### MISCELLANEOUS EQUIPMENT



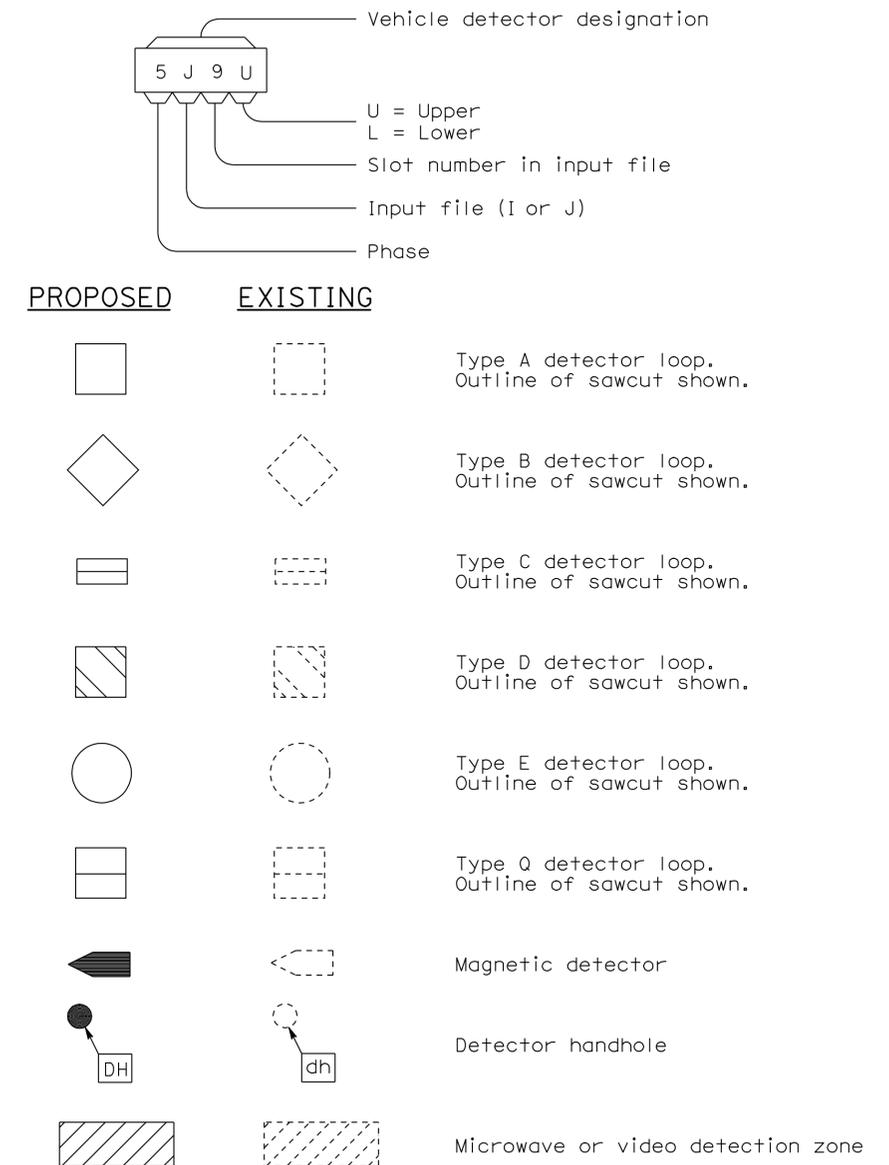
### WIRING DIAGRAM LEGEND



### 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.

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	255	306

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE

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

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To accompany plans dated 7-18-11

**NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:**

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

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

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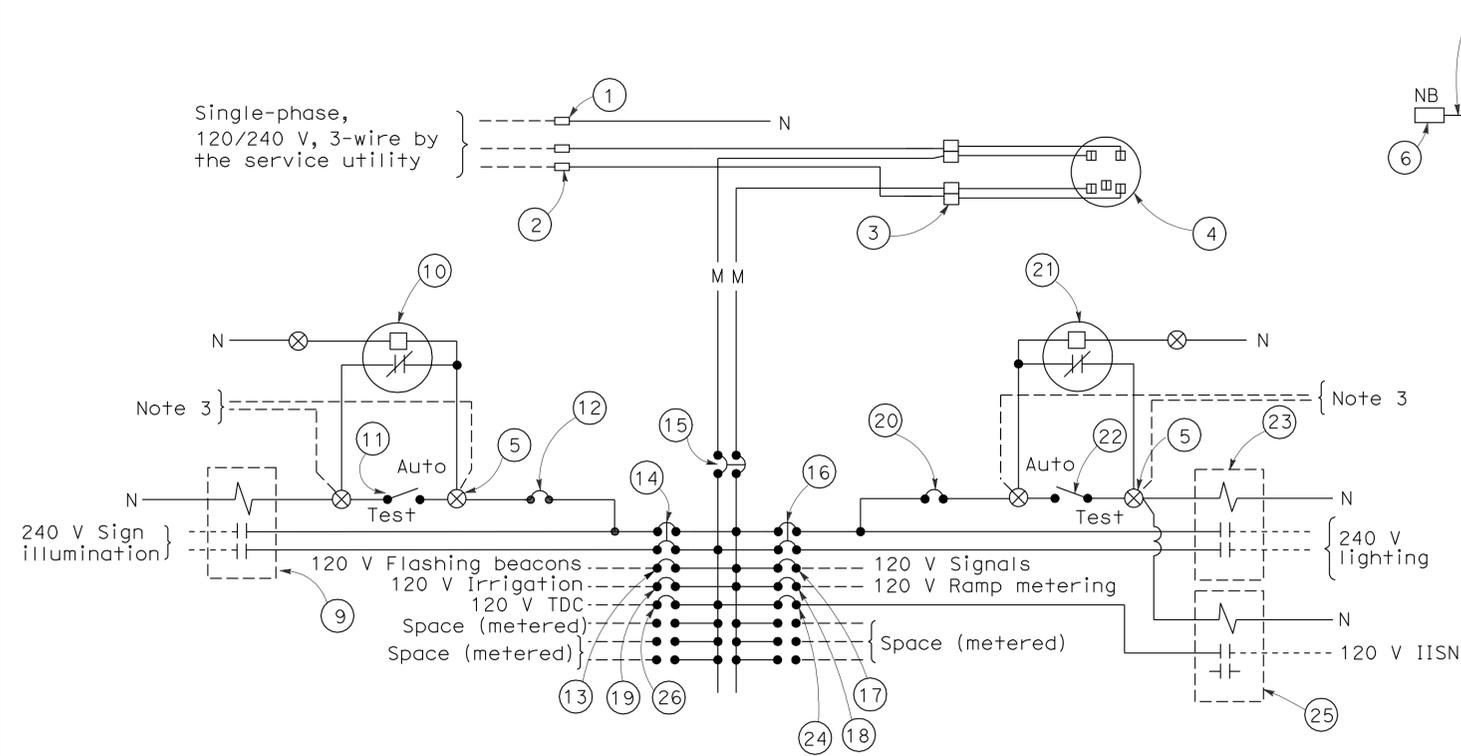
**ELECTRICAL SYSTEMS  
(SERVICE EQUIPMENT NOTES  
TYPE III SERIES)**

NO SCALE

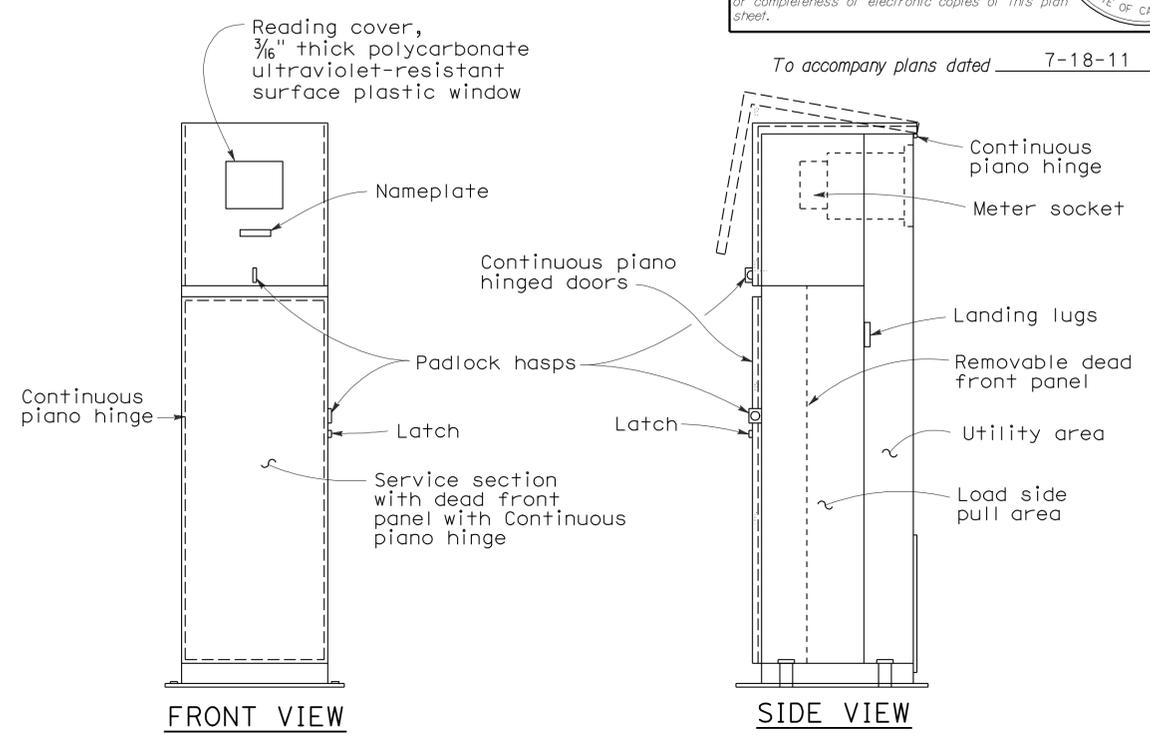
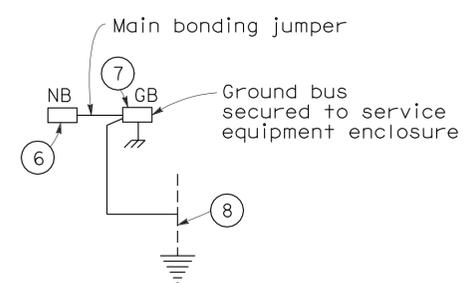
RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C  
DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-2C**

2006 REVISED STANDARD PLAN RSP ES-2C



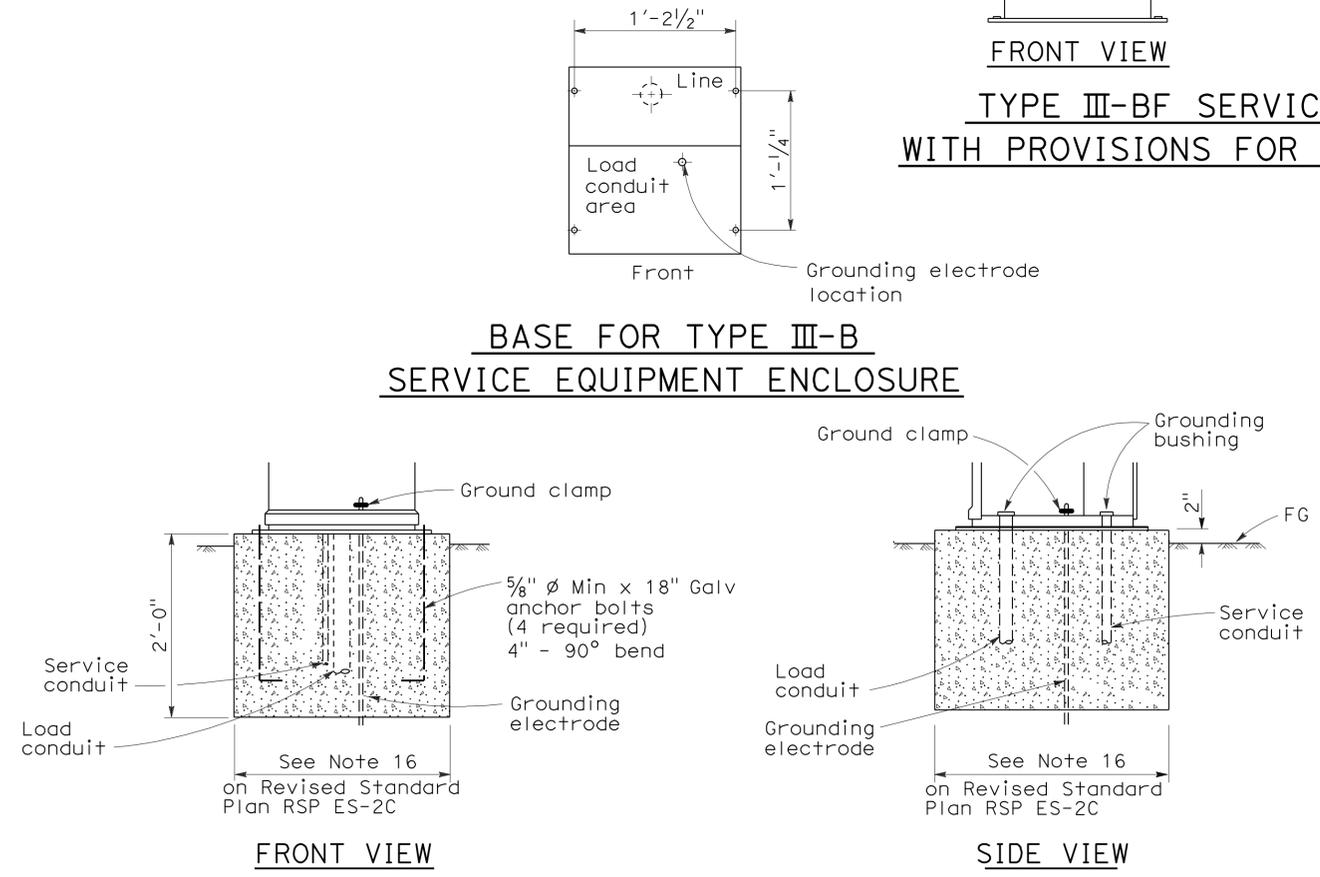
**120/240 V SERVICE WIRING DIAGRAM (TYPICAL)**



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

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

**BASE FOR TYPE III-B SERVICE EQUIPMENT ENCLOSURE**



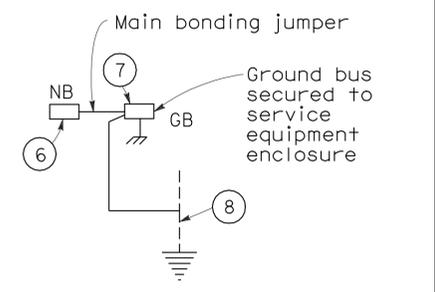
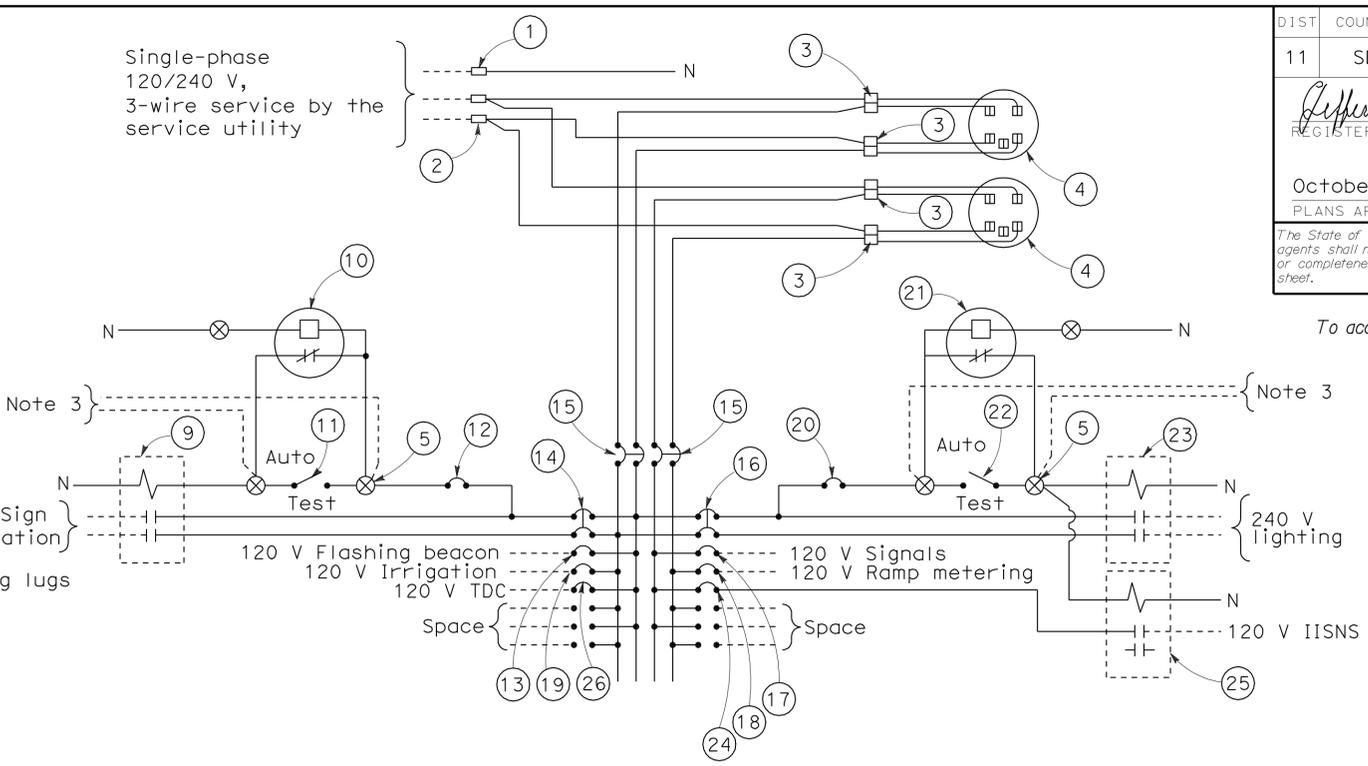
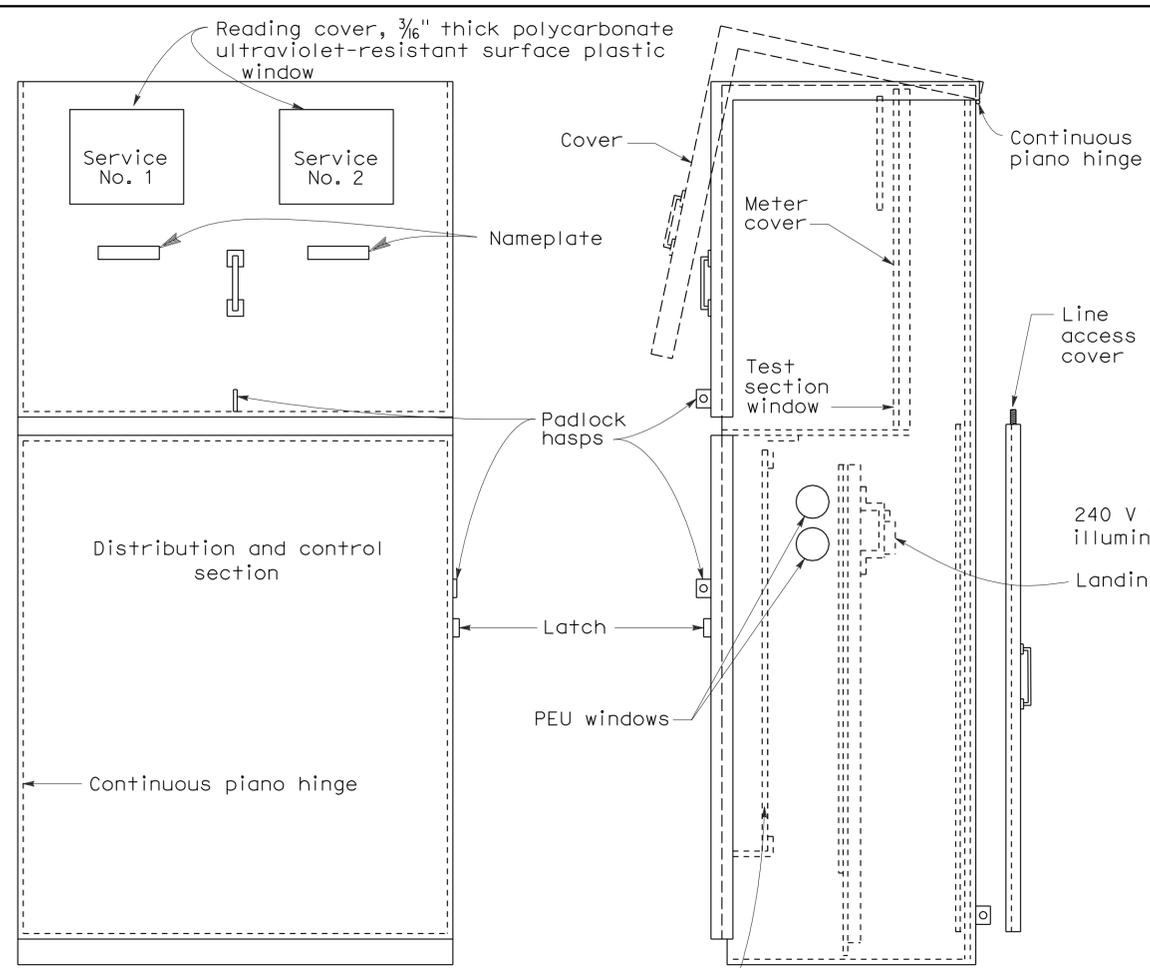
**TYPE III-B SERVICE EQUIPMENT ENCLOSURE FOUNDATION DETAILS**

- 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-B SERIES)**  
 NO SCALE

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

2006 REVISED STANDARD PLAN RSP ES-2E



**120/240 V SERVICE WIRING DIAGRAM (TYPICAL)**

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

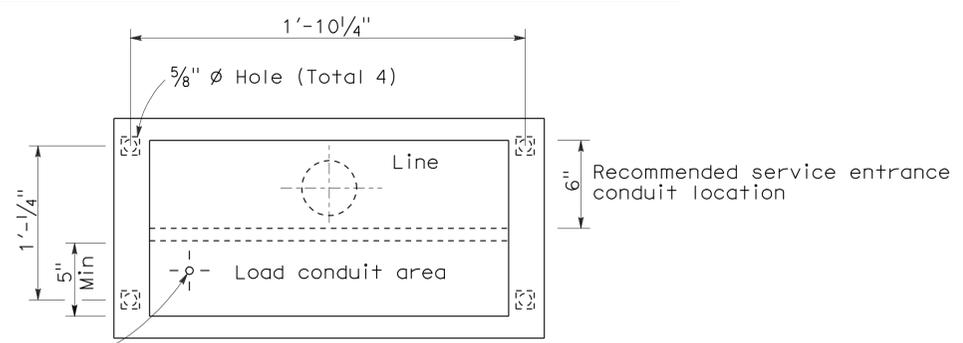
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
- Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
- Connect to remote test switch mounted on lighting standards, sign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

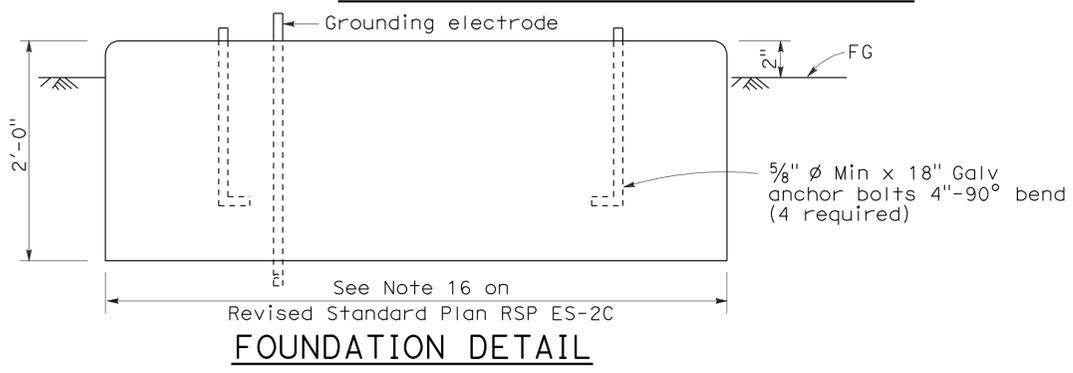
**ELECTRICAL SYSTEMS  
(SERVICE EQUIPMENT AND  
TYPICAL WIRING DIAGRAM  
TYPE III - C SERIES)**

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**

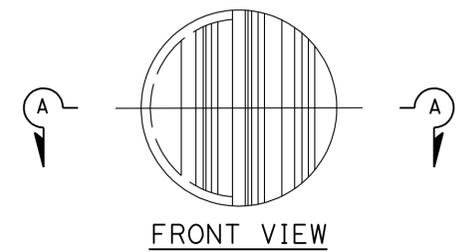
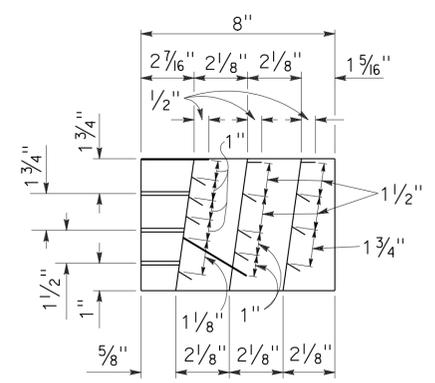
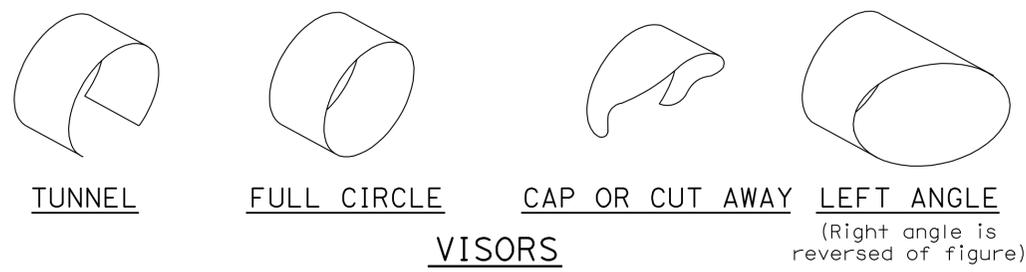
2006 REVISED STANDARD PLAN RSP ES-2F

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	258	306

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

June 6, 2008  
 PLANS APPROVAL DATE

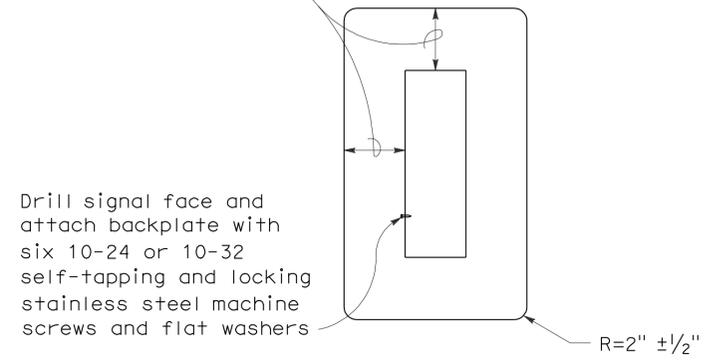
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**DIRECTIONAL LOUVER**

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

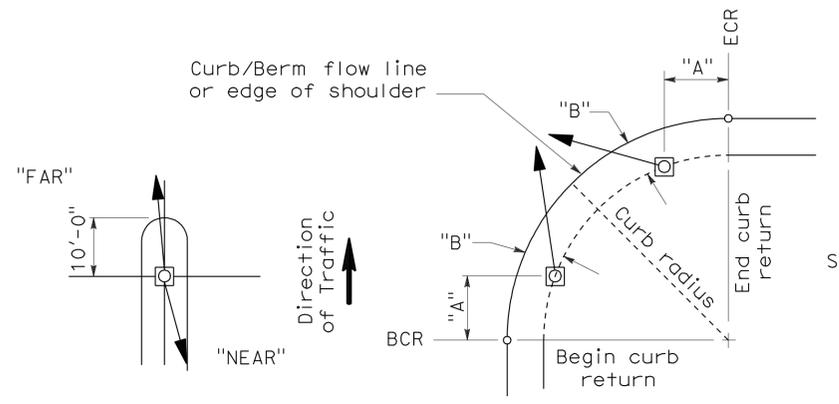
8" ± 1/2" for 8" sections  
 5 1/2" ± 1/2" for 12" sections



**8" AND 12" SECTIONS**

**BACKPLATE**

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

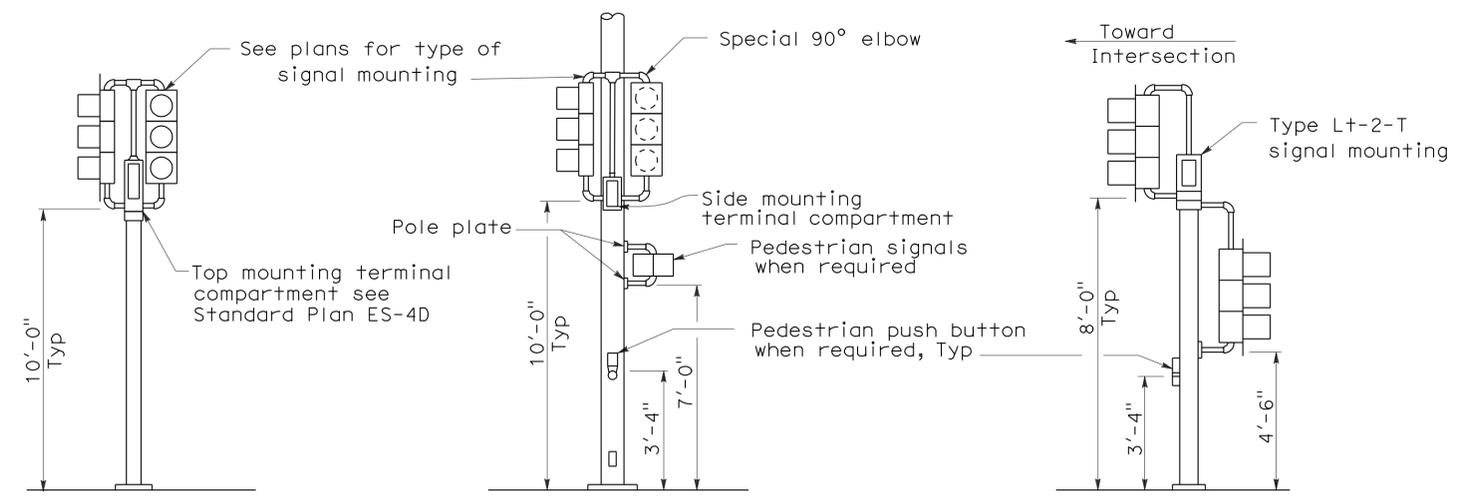


See Note 2

**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

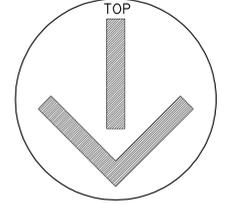
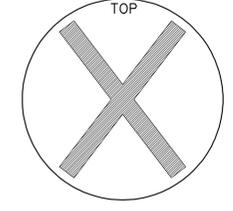
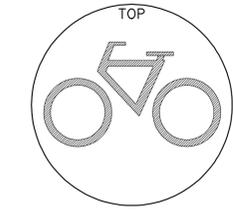
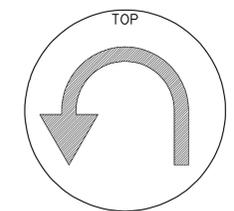
**SIDE MOUNTED SIGNALS (SV AND SP)**

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

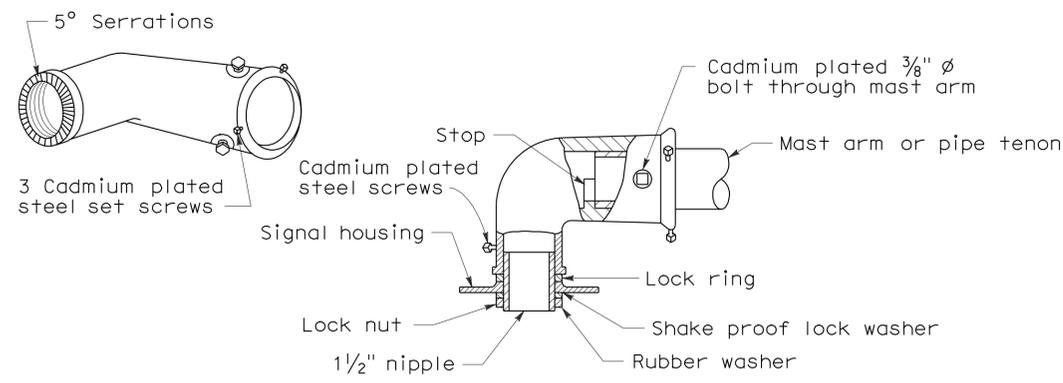
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	259	306

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

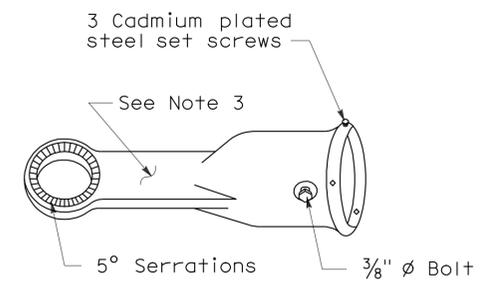
June 6, 2008  
 PLANS APPROVAL DATE

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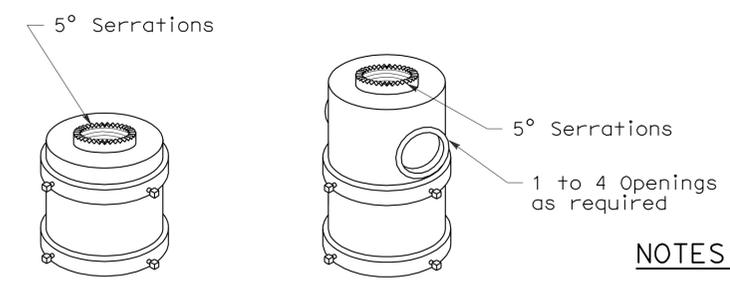
To accompany plans dated 7-18-11



**MAST ARM MOUNTING - TYPE "MAT"**  
For 2 NPS pipe, see Note 1.



**MAST ARM MOUNTING - TYPE "MAS"**  
For 2 NPS pipe. See Note 1.

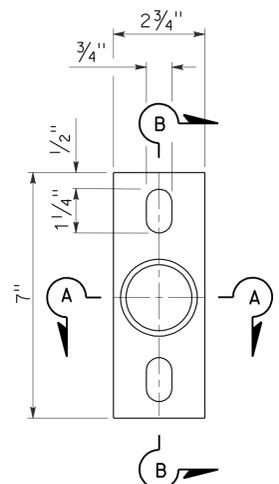


For one mounting For multiple mountings  
**TOP MOUNTINGS**  
For 4 NPS pipe, see Note 2.

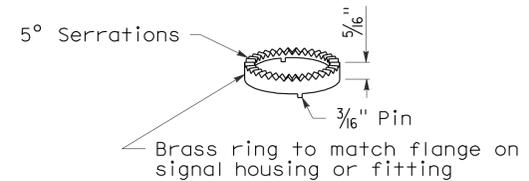
**NOTES:**

- After mast arm signal has been plumbed and secured, drill 7/16" hole through mast arm tenon in line with slip fitter hole. Place a cadmium plated 3/8" diameter galvanized bolt with washer under bolt head through hole and secure with washer, nut, and locknut. Seal openings between mast arm mountings and mast arm with mastic.
- (a) Threaded top mounted slip fitter openings shall be 1/2 NPS.  
(b) Serrations in fittings shall match those on bottom of signal heads or in lock ring.  
(c) Top opening shall be offset when backplate is used.
- Wireway shall have a cross section area of 0.95 square inch minimum. Minimum width of 1/2".

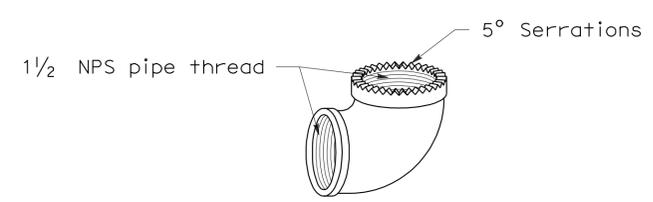
**SIGNAL SLIP FITTERS**



**POLE PLATE**  
For side mountings

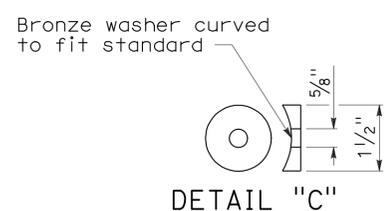


**LOCK RING**  
Use where locking ring is not integral with signal housing or fitting.

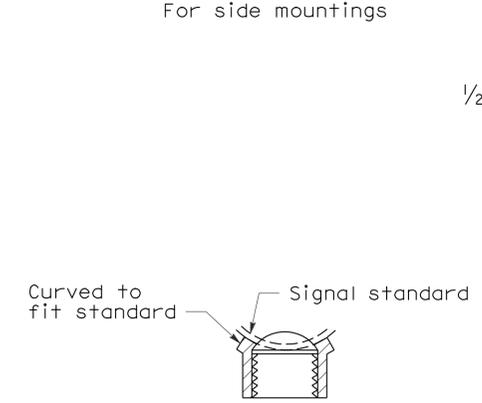


**SPECIAL 90° ELBOW**  
One for each signal head, except those with special slip fitter mounting

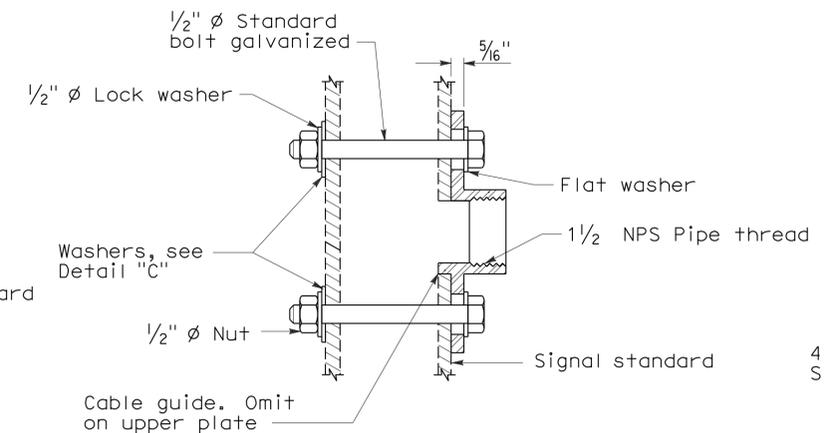
**MISCELLANEOUS MOUNTING HARDWARE**



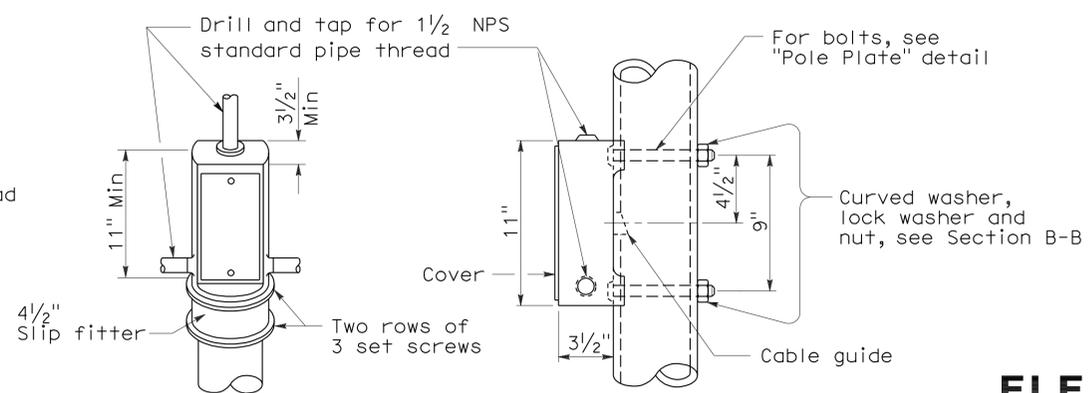
**DETAIL "C"**



**SECTION A-A**



**SECTION B-B**



**TOP MOUNTING**  
**SIDE MOUNTING**  
**TERMINAL COMPARTMENTS**

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

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

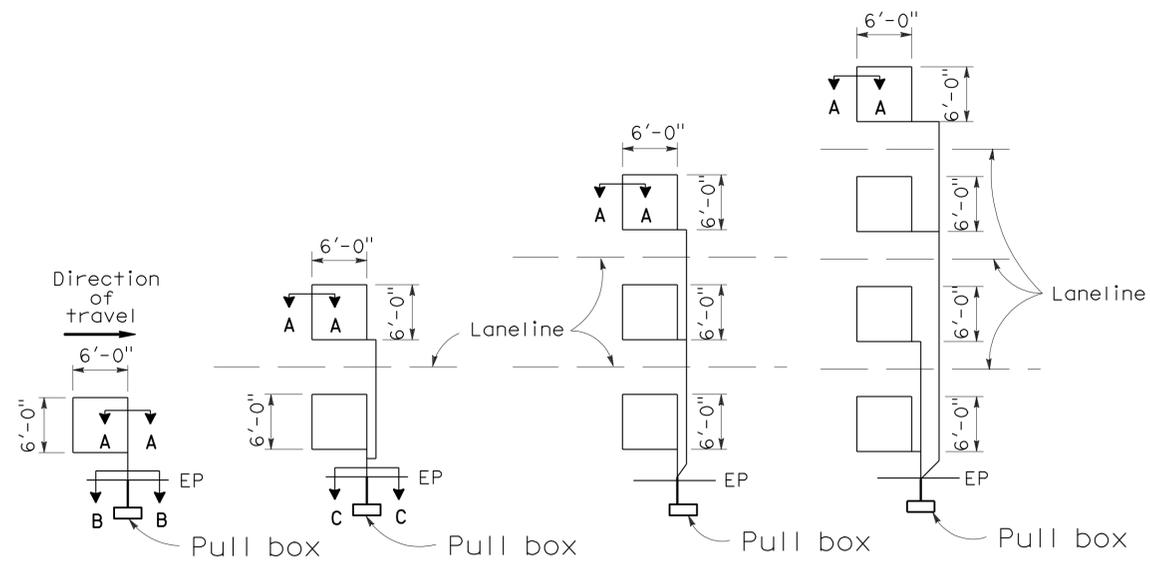
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	260	306

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

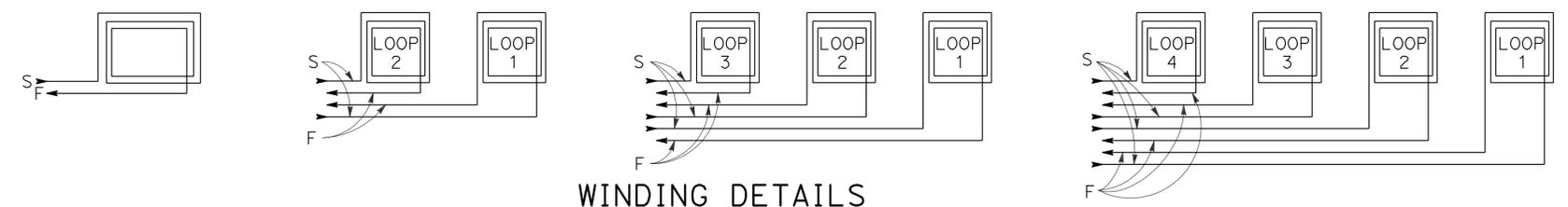
## LOOP INSTALLATION PROCEDURE

- 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.



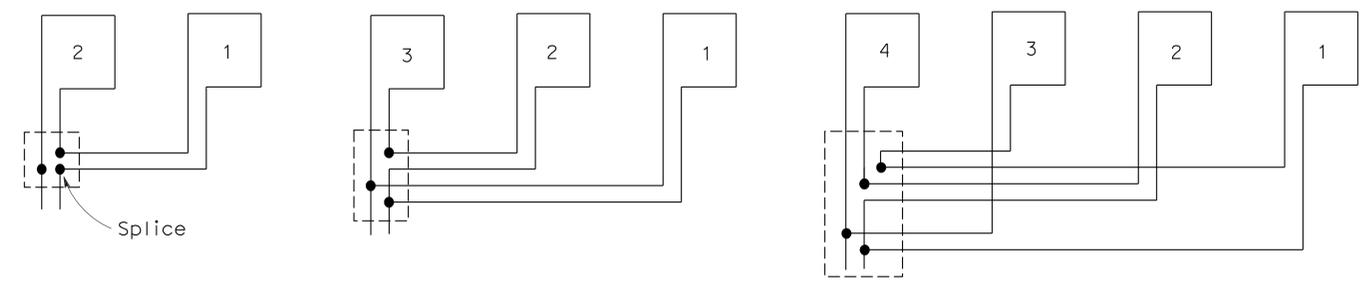
TYPE 1A INSTALLATION    TYPE 2A INSTALLATION    TYPE 3A INSTALLATION    TYPE 4A INSTALLATION  
**SAWCUT DETAILS**

- (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)



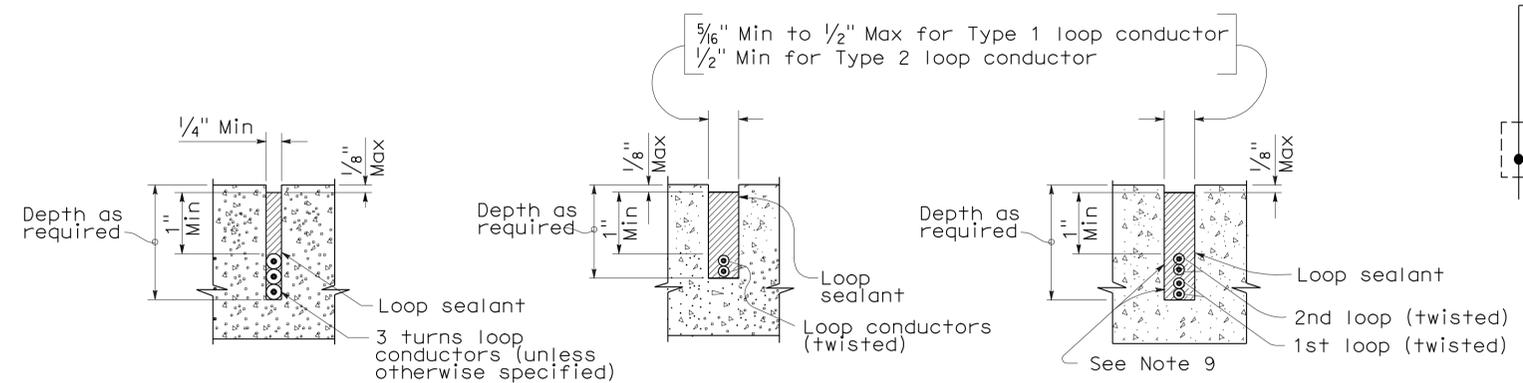
**WINDING DETAILS**

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**

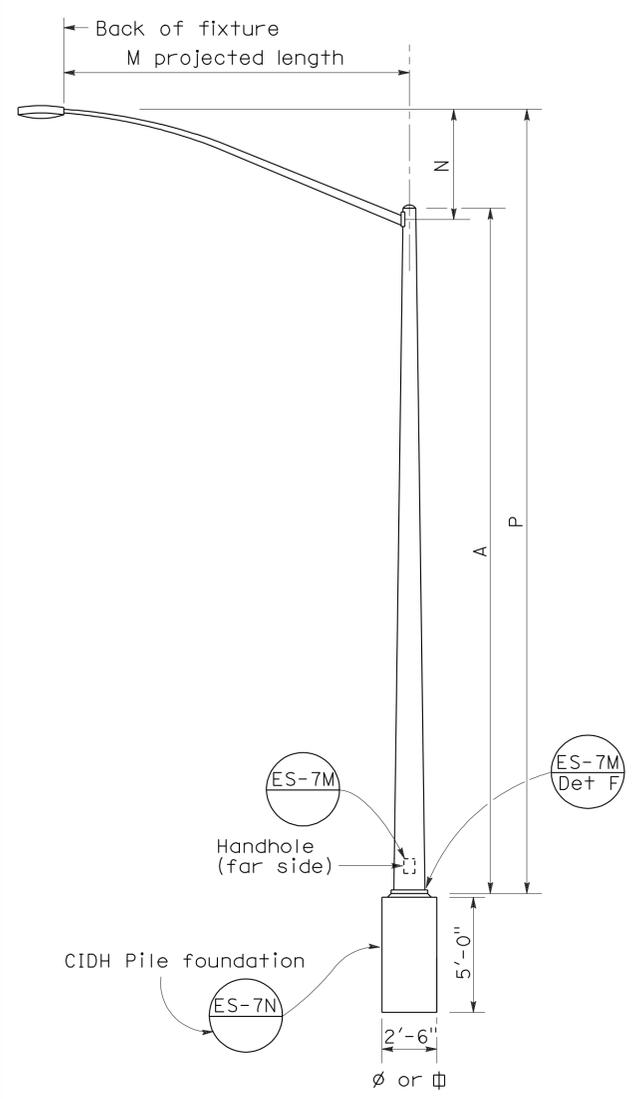
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS (DETECTORS)**

NO SCALE

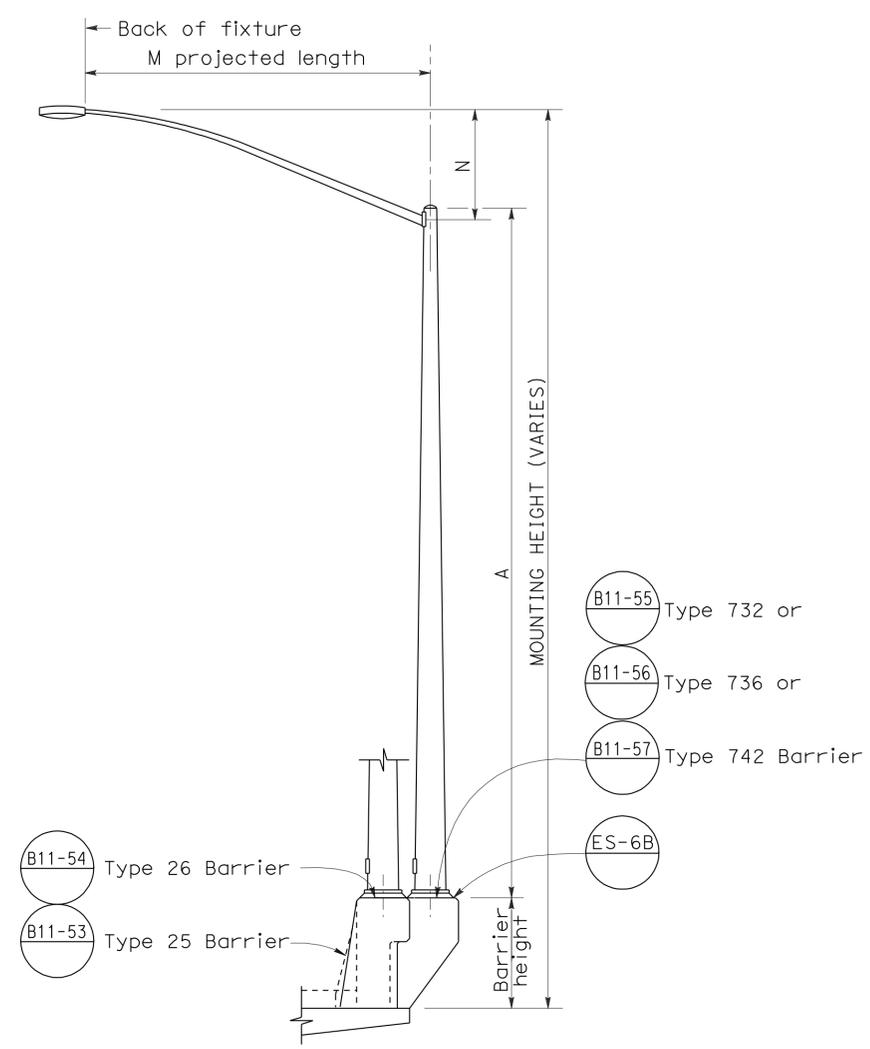
RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A  
 DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-5A

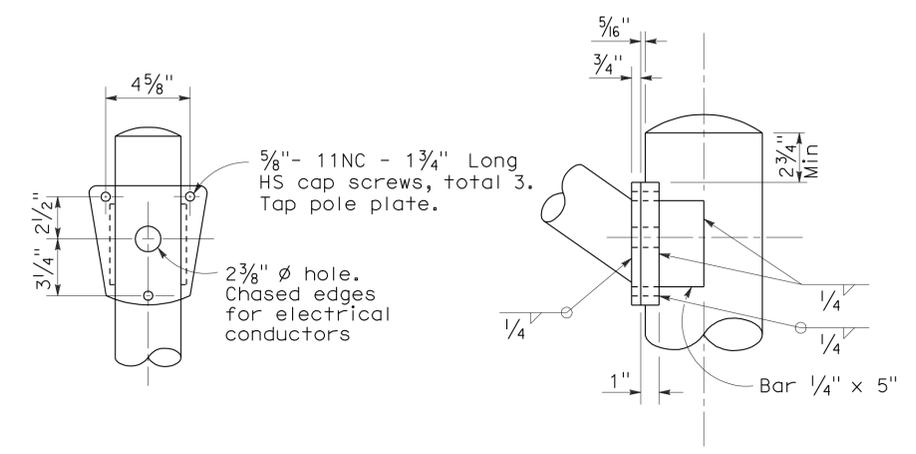
To accompany plans dated 7-18-11



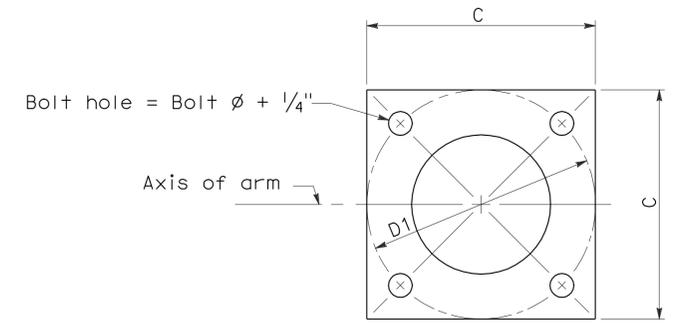
**ELEVATION**  
**TYPE 15 AND TYPE 21**



**ELEVATION**  
**TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED**



**DETAIL R**  
**LUMINAIRE ARM CONNECTION**



**BASE PLATE**

POLE TYPE	POLE DATA				BASE PLATE DATA				LUMINAIRE ARM
	A Height	Min OD Base	Min OD Top	Wall Thickness	C	D1 Bolt Circle	Thickness	Anchor Bolts Size	
15	30'	8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1" $\phi$ 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" $\phi$ x 3'-0" x 4"*	6' - 15' 12'

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

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

**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

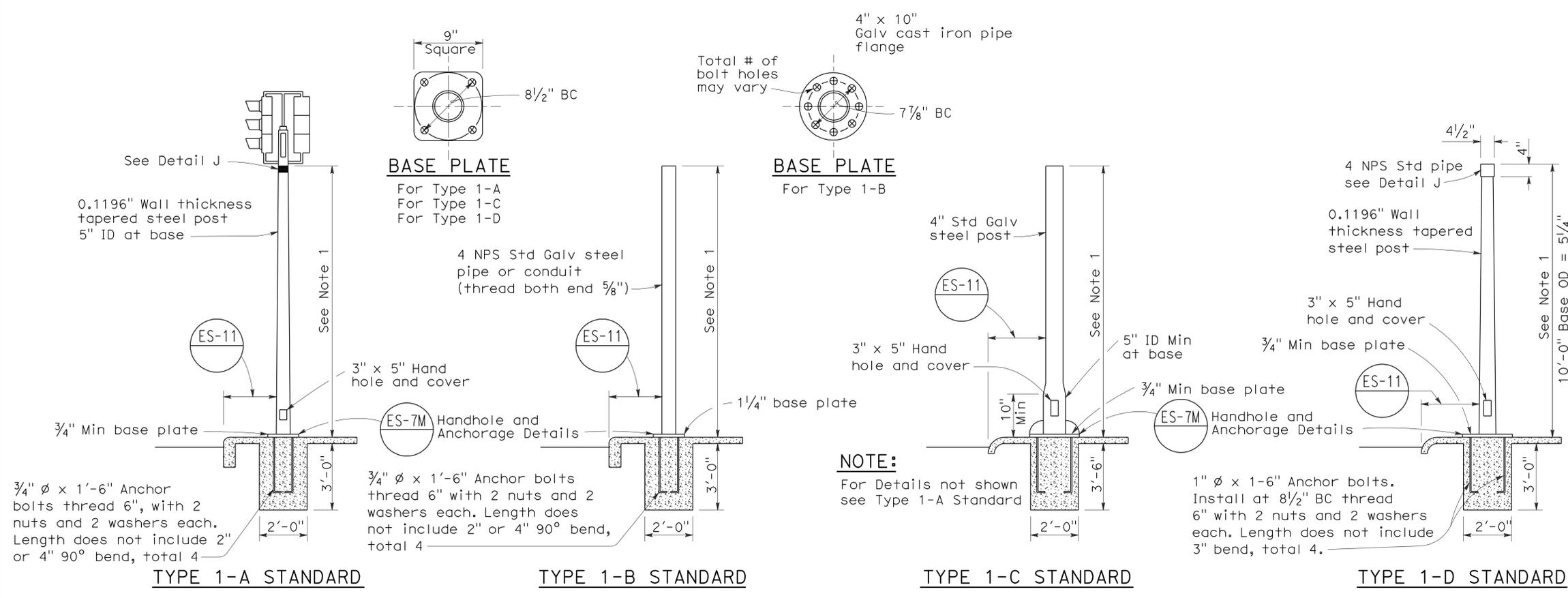
RSP ES-6A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-6A DATED MAY 1, 2006 - PAGE 427 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	262	306

Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 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.

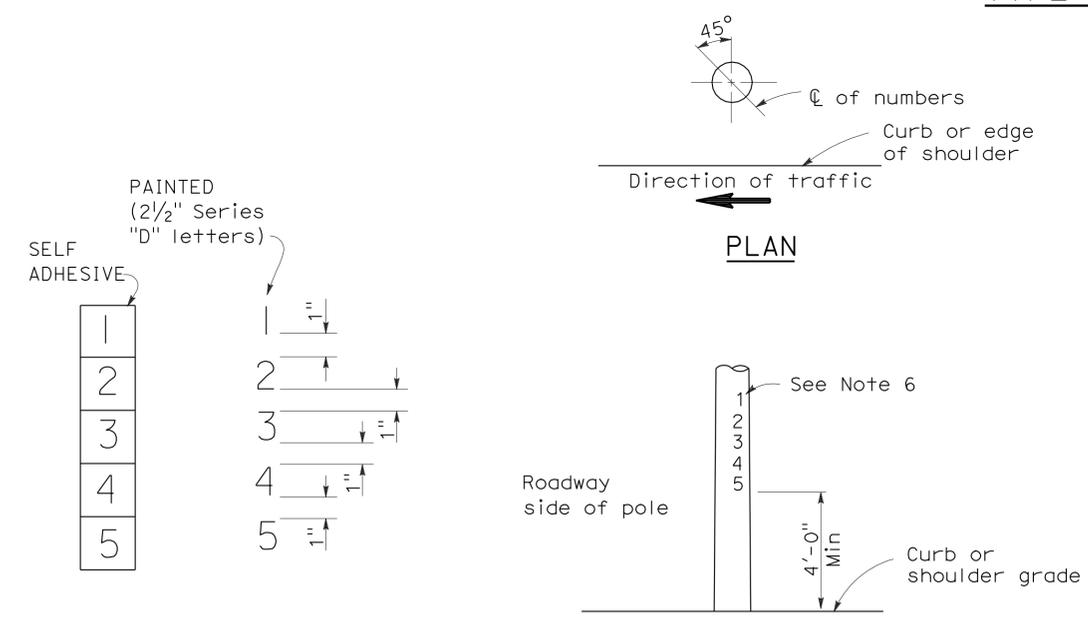
REGISTERED PROFESSIONAL ENGINEER  
 Stanley P. Johnson  
 No. C57793  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 7-18-11



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

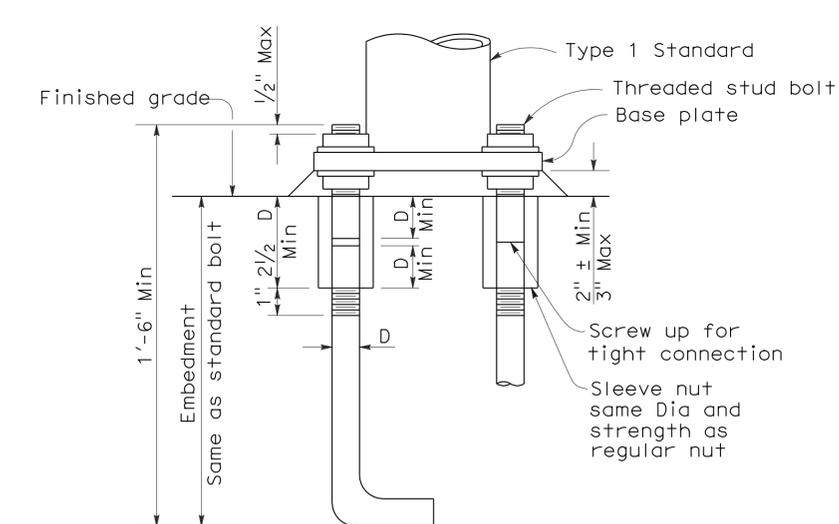
**TYPE 1 SIGNAL STANDARDS**



**NUMBER DETAIL**

**LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS**

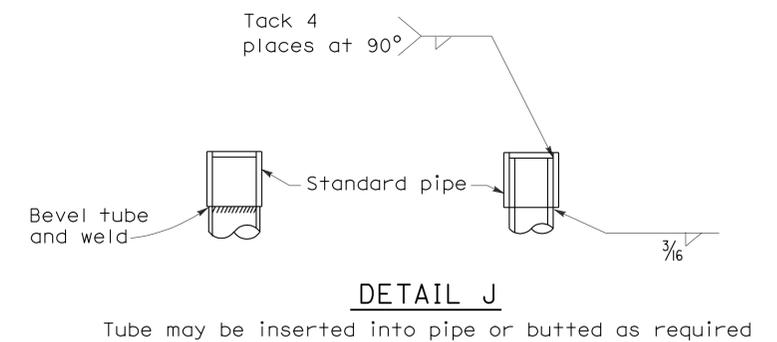
**TYPICAL NUMBER FORMAT**



**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

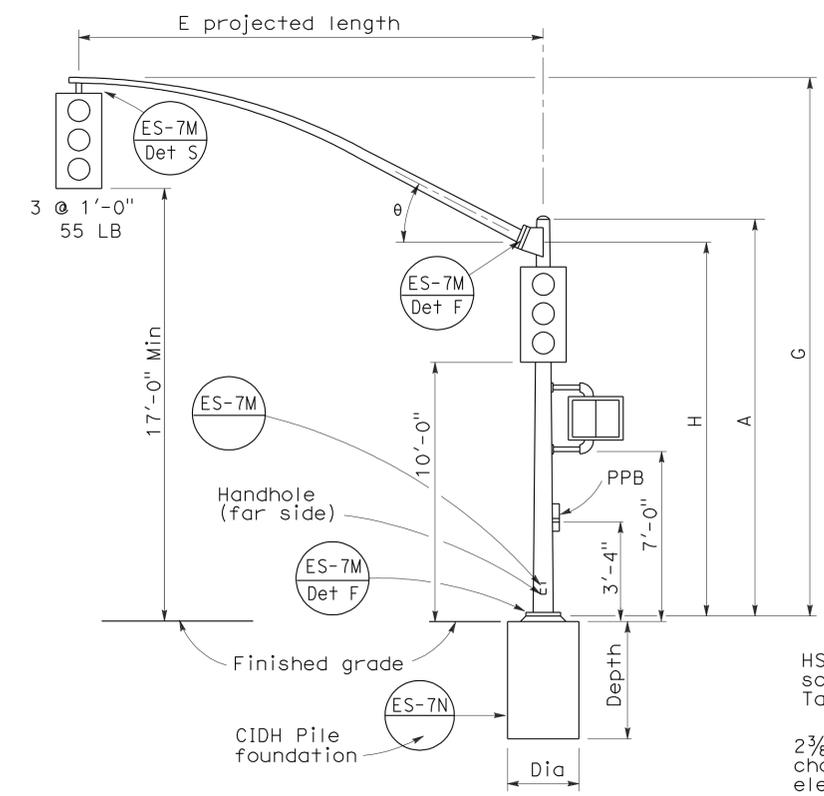
**ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)**

NO SCALE

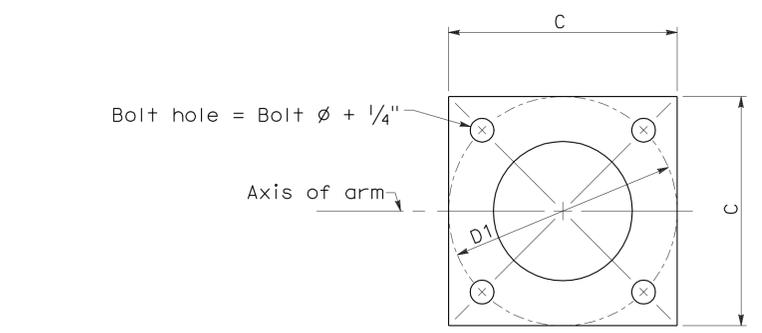
RSP ES-7B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7B DATED MAY 1, 2006 - PAGE 438 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7B

2006 REVISED STANDARD PLAN RSP ES-7C

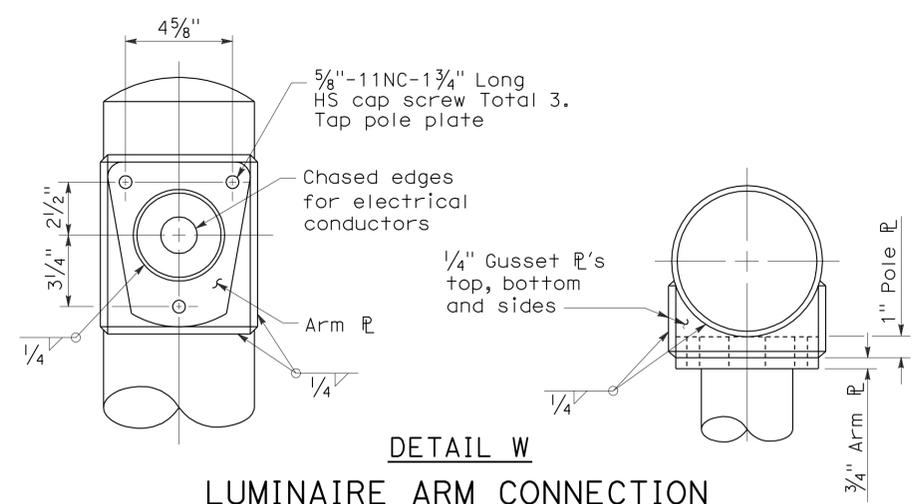


**ELEVATION**  
**TYPE 16-1-100, 18-1-100**

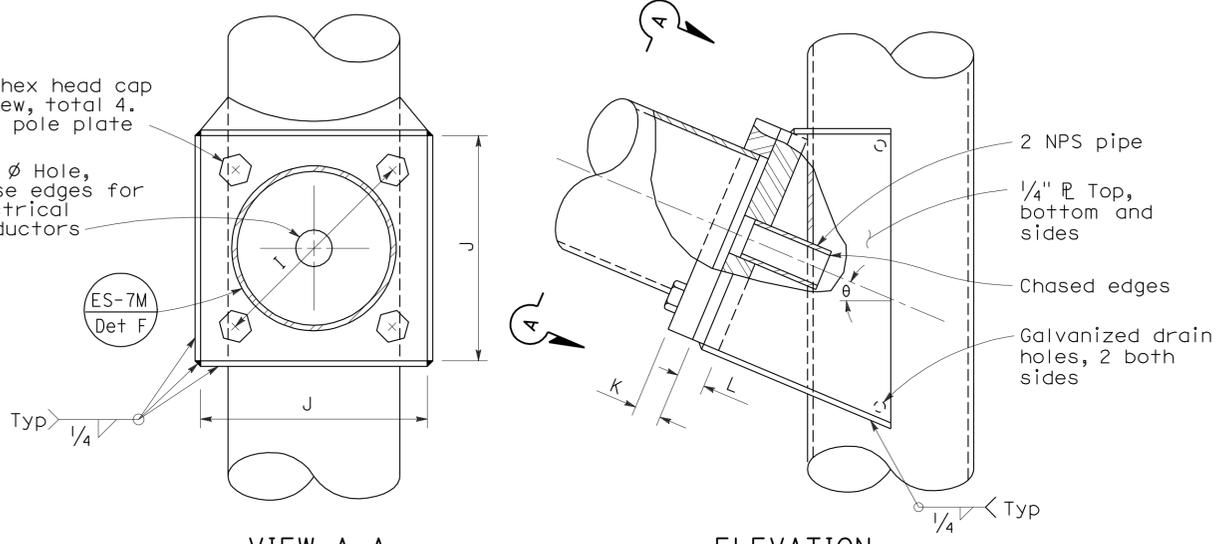


**BASE PLATE**

E Projected Length	G Mounting Height	H	Min OD At Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate size	K Arm $\phi$ Thickness	L Pole $\phi$ Thickness	$\theta$
15'-0"	21'-8"±	17'-6"	7"	0.1196"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°
20'-0"	21'-8"±		7 1/8"							
25'-0"	22'-8"±	16'-0"	7 5/8"							
30'-0"	23'-0"±		8"							

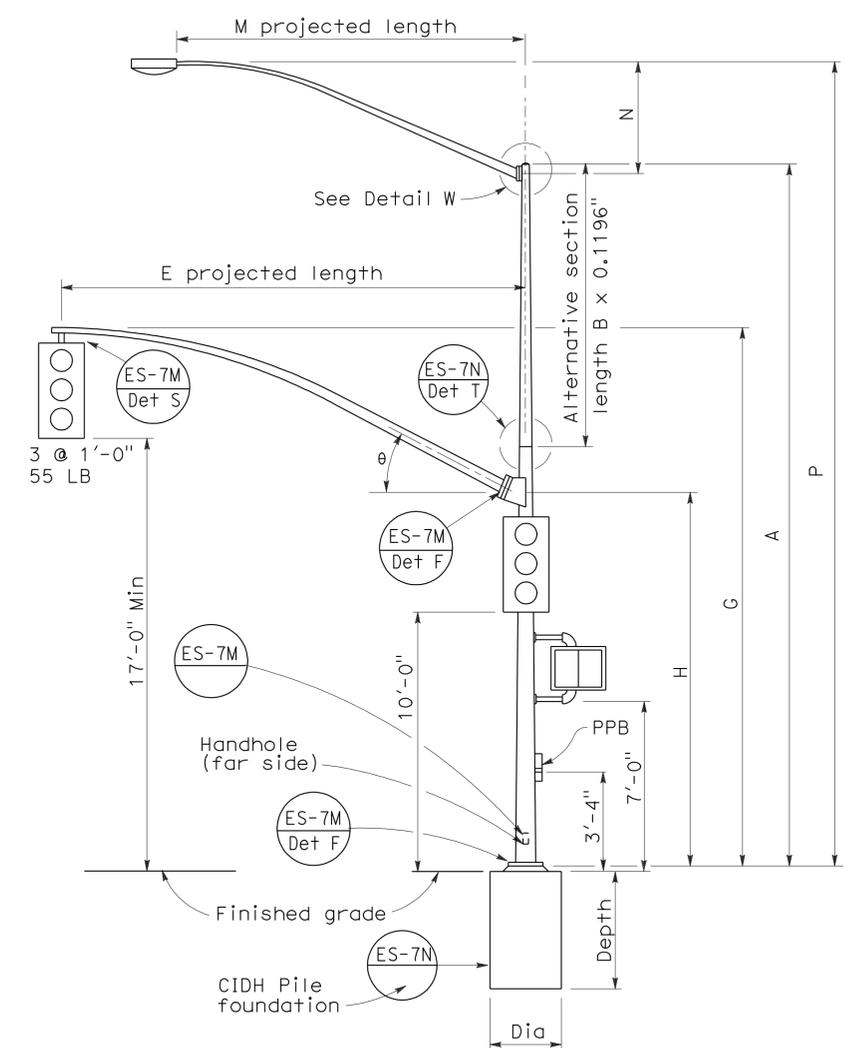


**DETAIL W**  
**LUMINAIRE ARM CONNECTION**



**VIEW A-A**  
**SIGNAL ARM CONNECTION DETAILS**

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 3/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±			33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±



**ELEVATION**  
**TYPE 19-1-100, 19A-1-100**

Pole Type	Load Case	Wind Velocity mph	POLE DATA					BASE PLATE DATA					CIDH PILE FOUNDATION						
			A Height	Min OD		Thickness	Alternative Section			C	D1 Bolt Circle	Thickness	Anchor Bolts		Luminaire Arm	Signal Arm	Diameter	Depth	Reinforced
				Base	Top		B Length	Bottom	Top				Size						
16-1-100	1	100	18'-6"	8 1/4"	0.1793"	None			1'-6"	1'-5 1/2"	1 1/4"	1 1/2" $\phi$ x 42" x 6"		None	15'-0"	2'-6"	7'-2"	Yes	
18-1-100			17'-0"	8 7/8"		None								None	20'-0"				
19-1-100			30'-0"	6 5/8"		10'-0"	8"	6 5/8"						6'-15' [12'-0"]	25'-0"				
19A-1-100			35'-0"	5 1/6"		15'-0"	5 1/6"	6'-15' [15'-0"]						30'-0"					

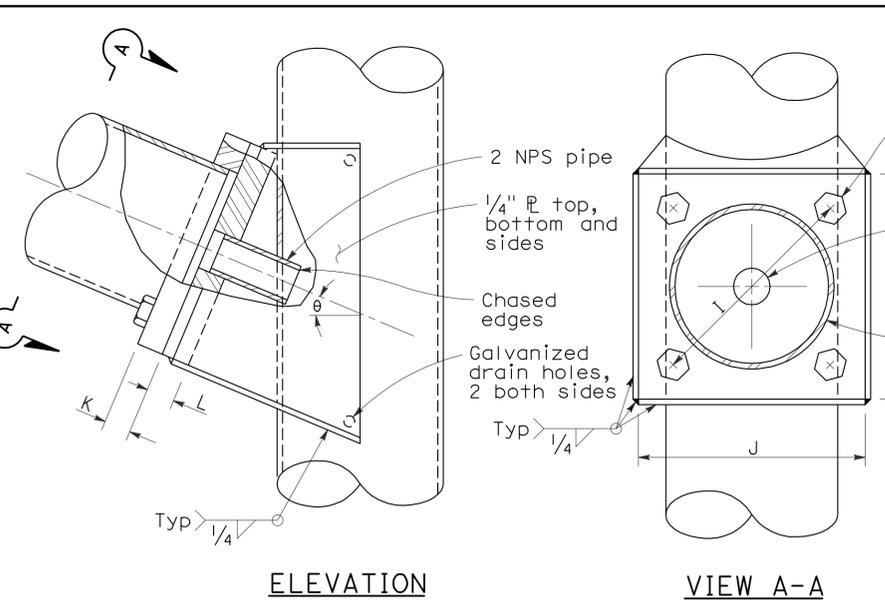
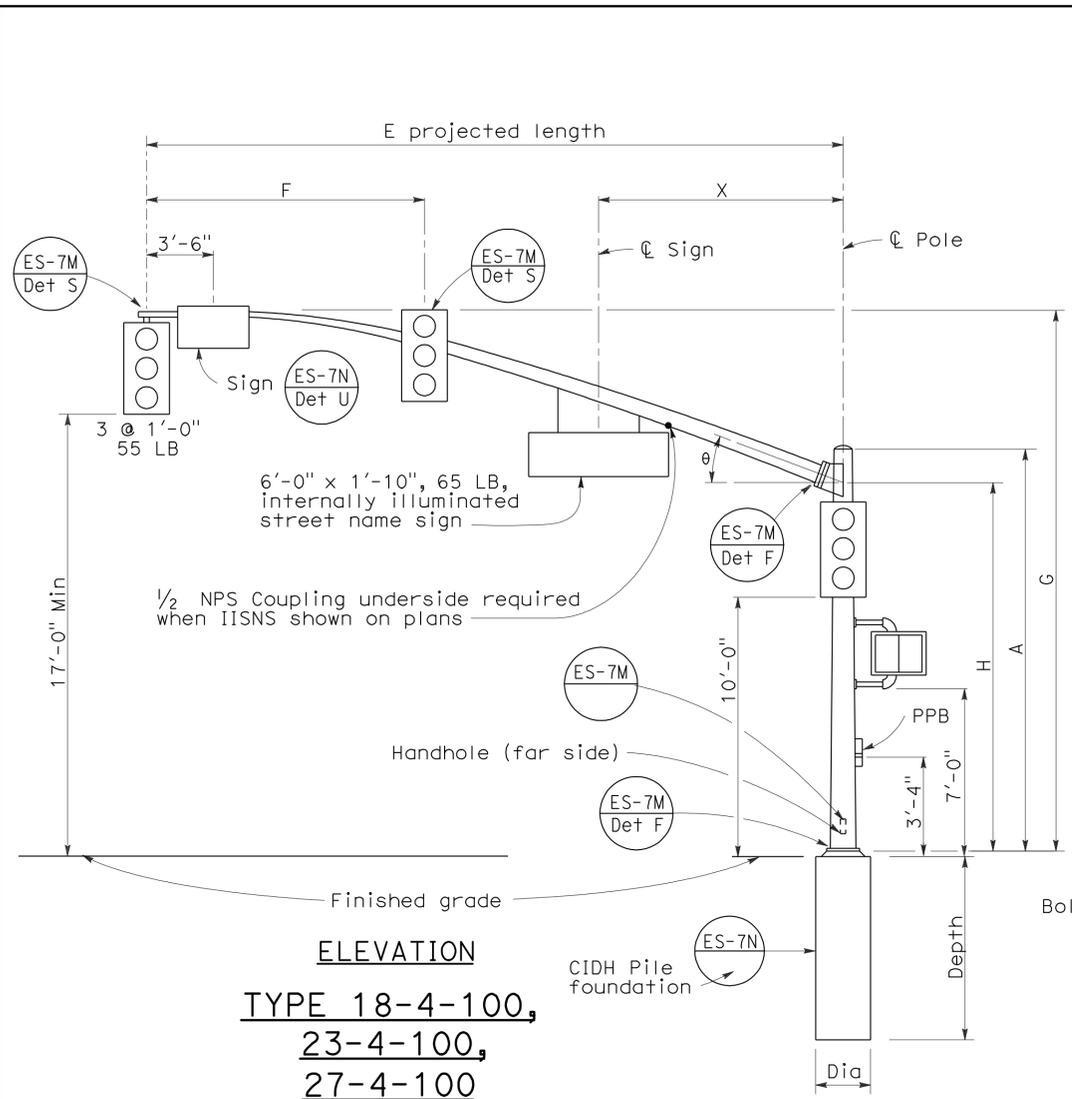
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD**  
**CASE 1 ARM LOADING**  
**WIND VELOCITY = 100 MPH**  
**ARM LENGTHS 15' TO 30')**  
 NO SCALE

RSP ES-7C DATED JUNE 15, 2007 SUPERSEDES STANDARD PLAN ES-7C DATED MAY 1, 2006 - PAGE 439 OF THE STANDARD PLANS BOOK DATED MAY 2006.

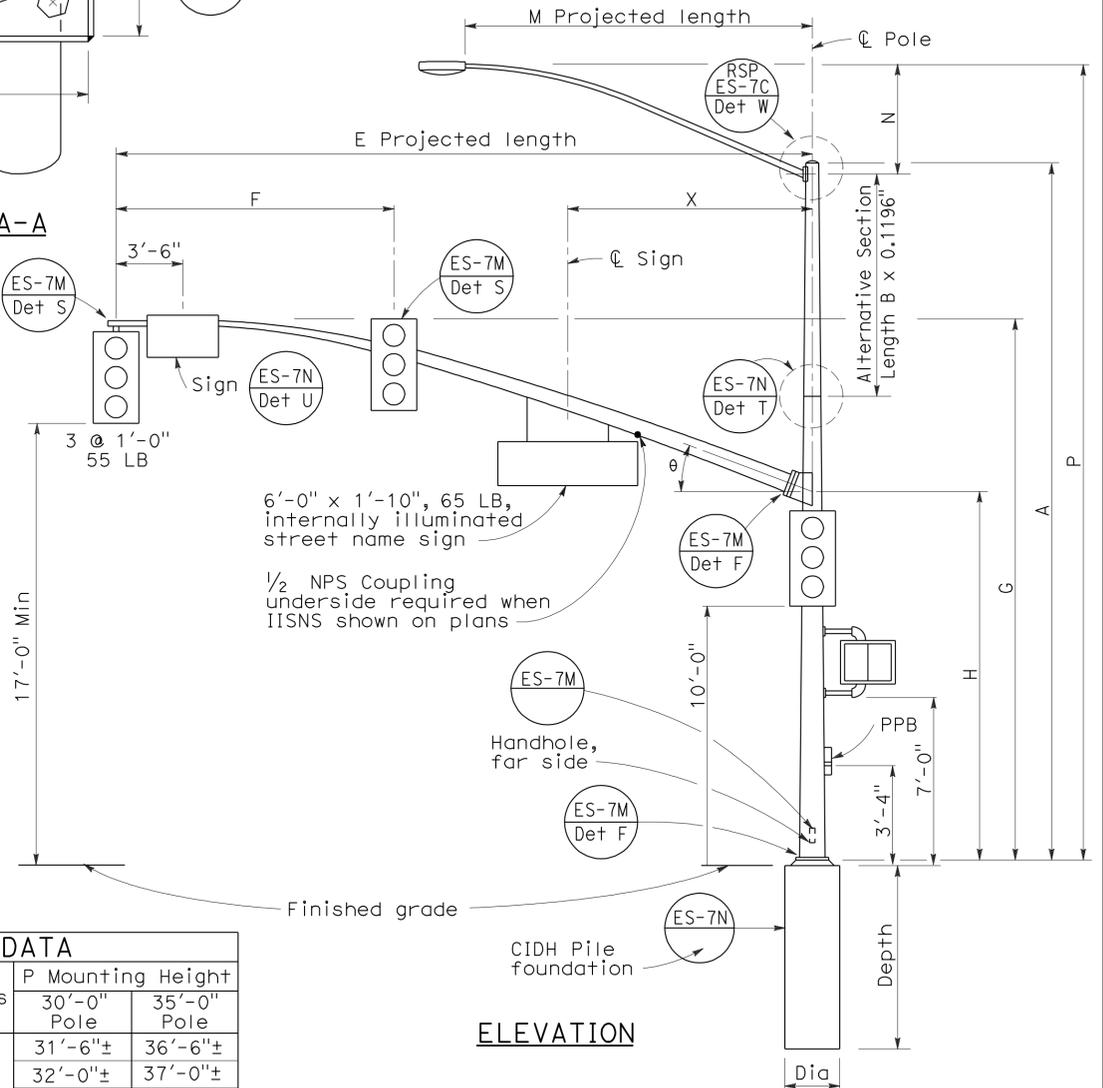
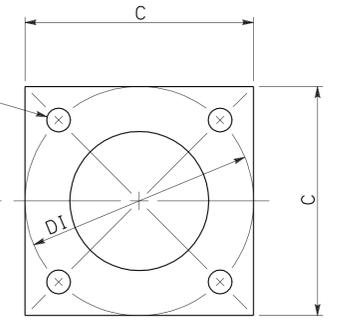
□ Indicates arm length to be used unless otherwise noted on plans.

**REVISED STANDARD PLAN RSP ES-7C**





**SIGNAL ARM CONNECTION DETAILS**



**ELEVATION**

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

SIGNAL ARM DATA												
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 P Thickness	L Pole P 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"	8 1/16"										
40'-0"	15'-0"	9 3/8"										
45'-0"	15'-0"	23'-8"±		10 1/4"		13 1/2"		1'-1 1/2"	1 1/2"	1 3/4"	15°	13'-0"

LUMINAIRE ARM DATA					
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"±

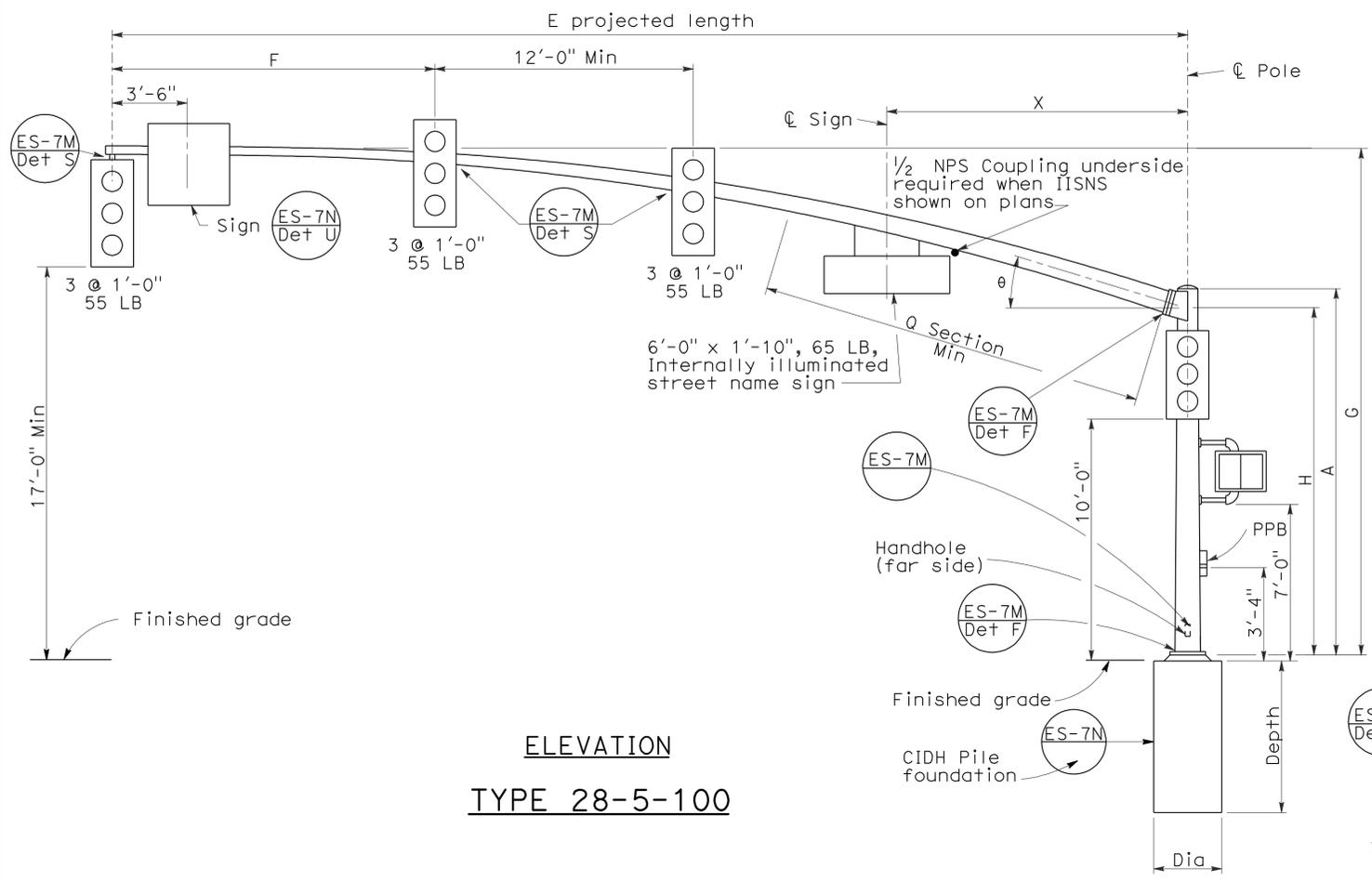
Pole Type	Load Case	Wind Velocity mph	POLE DATA						BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION			
			A Height	Min OD		Thickness	Alternative Section			C	DI Bolt Circle	Thickness			Anchor Bolts Size	Dia	Depth	Reinforced
				Base	Top		B Length	Bottom	Top									
18-4-100	4	100	17'-0"	12"	0.2391"	None	9 3/8"	8"	1'-6"	1'-6"	1 1/2"	2" Ø x 42" x 6"	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		
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													

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

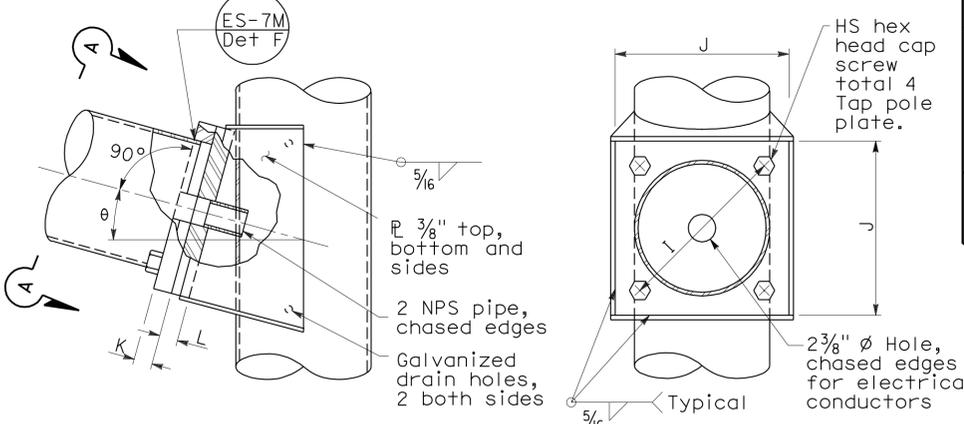
RSP ES-7F DATED OCTOBER 5, 2007 SUPERCEDES RSP ES-7F DATED  
 NOVEMBER 17, 2006 AND STANDARD PLAN ES-7F DATED MAY 1, 2006 -  
 PAGE 442 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

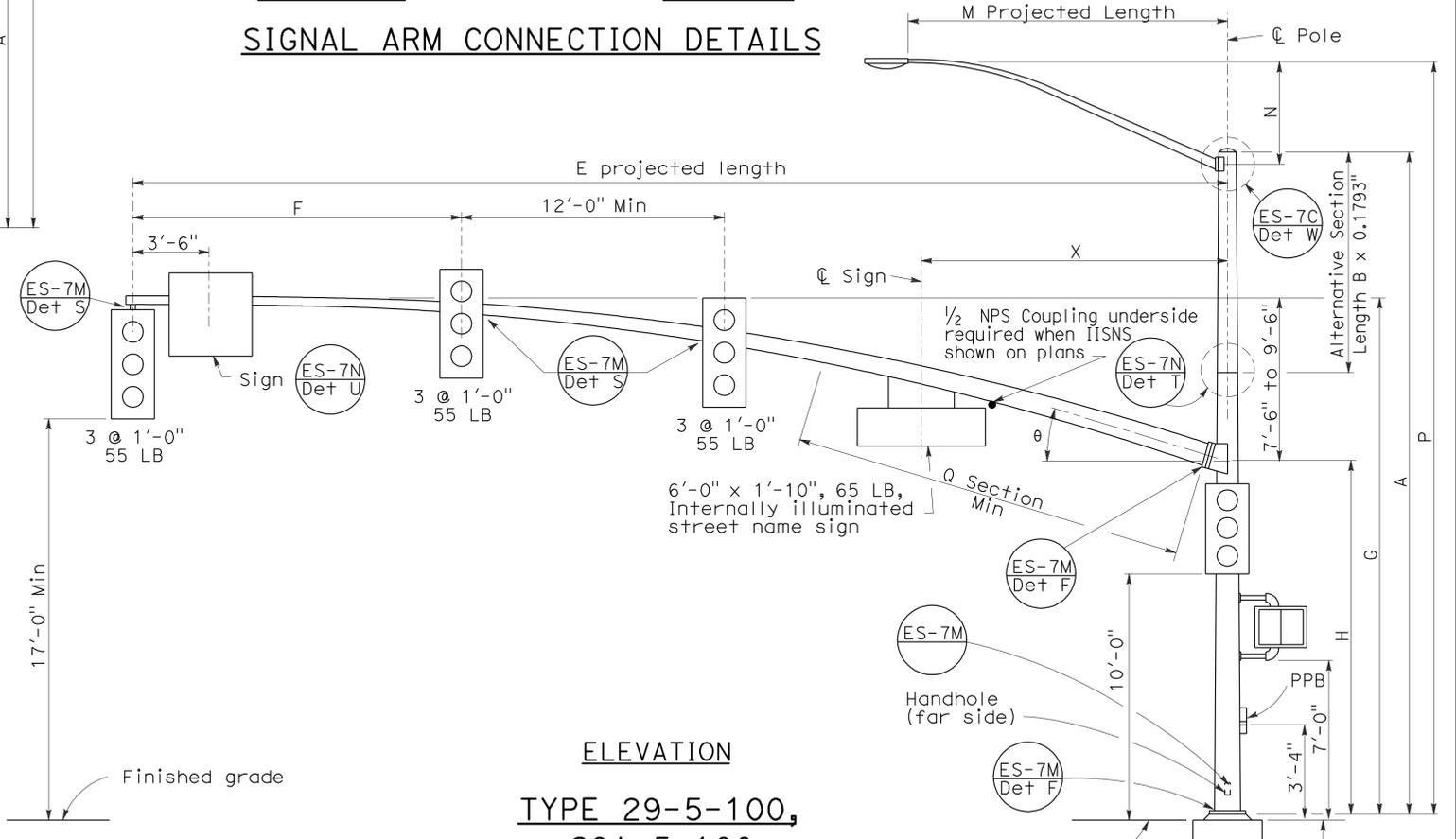
2006 REVISED STANDARD PLAN RSP ES-7F



**ELEVATION**  
**TYPE 28-5-100**

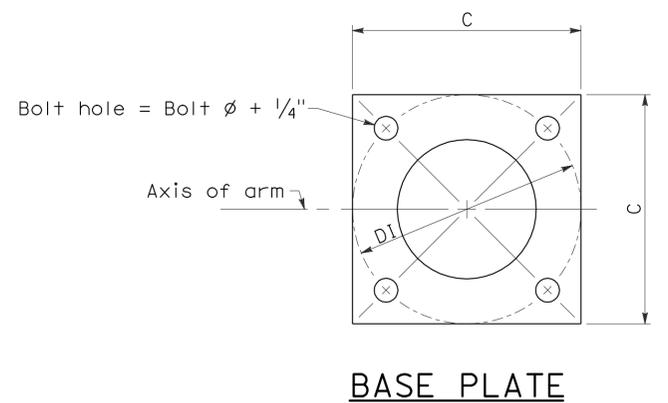


**ELEVATION**  
**SIGNAL ARM CONNECTION DETAILS**



**ELEVATION**  
**TYPE 29-5-100,**  
**29A-5-100**

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



**BASE PLATE**

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 R Thickness	L Pole R Thickness	θ	Q Section		X Max
												Length	Thickness	
50'-0"	15'-0"	23'-7"± to 25'-7"±	16'-0"	11 7/16"	0.1793"	16"	1 1/2"-6NC-3 1/4"	1'-4"	1 3/4"	1 3/4"	15°	18'-0"	0.2391"	14'-0"
55'-0"												23'-0"		

Pole Type	Load Case	Wind Velocity mph	POLE DATA				BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION								
			A Height	Min OD		Thickness	C	DI Bolt Circle	Thickness	Anchor Bolts Size			Dia	Depth	Reinforced						
				Base	Top											Alternative Section B Length	Bottom	Top			
28-5-100	5	100	17'-0"	14"	0.3125"	21"	21"	1 3/4"	2" ø x 42" x 6"	6'-15'	15'-0"	50'-0", 55'-0"	3'-0"	9'-2"	Yes						
29-5-100			30'-0"													11 1/16"	10'-0"	11 1/4"	9 7/8"	23"	23"
29A-5-100			35'-0"													9 7/8"	15'-0"	9 3/16"			

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD**  
**CASE 5 ARM LOADING**  
**WIND VELOCITY=100 MPH,**  
**ARM LENGTHS 50' TO 55')**  
 NO SCALE

RSP ES-7G DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN ES-7G  
 DATED MAY 1, 2006 - PAGE 443 OF THE STANDARD PLANS BOOK DATED MAY 2006.

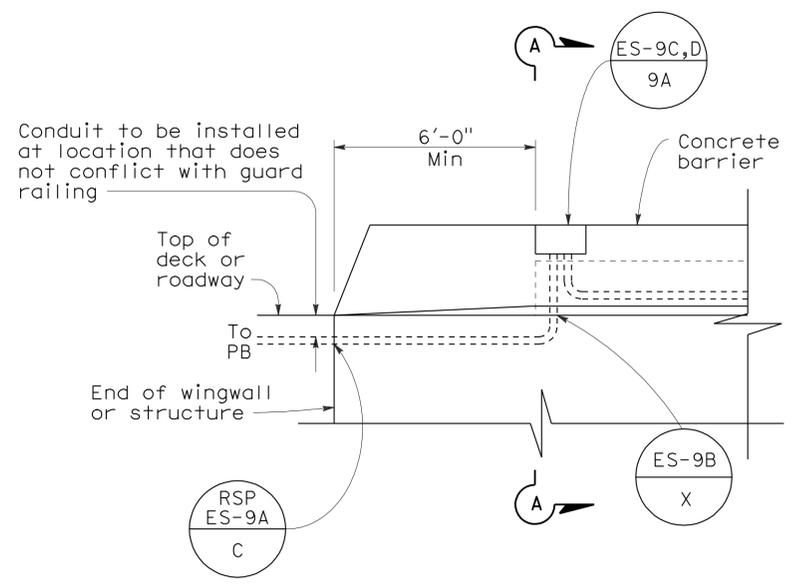
2006 REVISED STANDARD PLAN RSP ES-7G

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	267	306

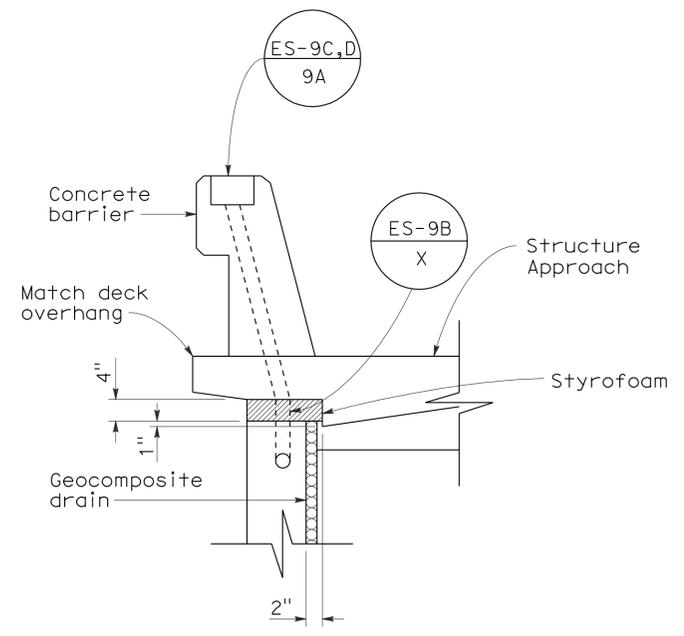
*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Jeffery G. McRae  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

To accompany plans dated 7-18-11

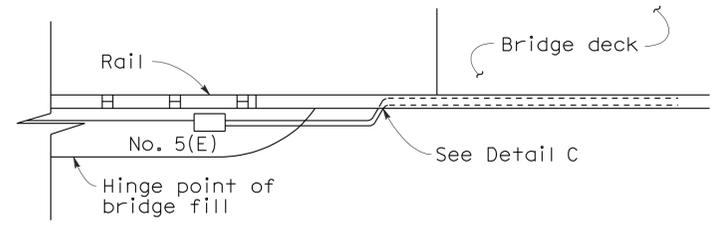


**SIDEVIEW**

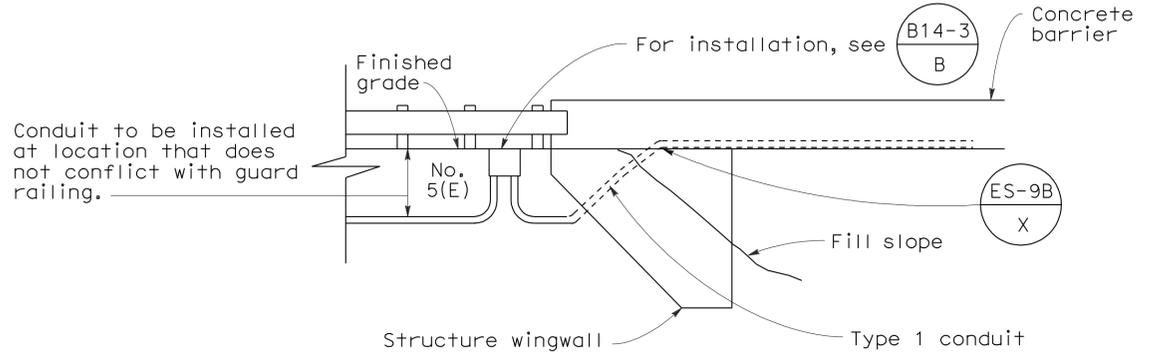


**SECTION A-A**

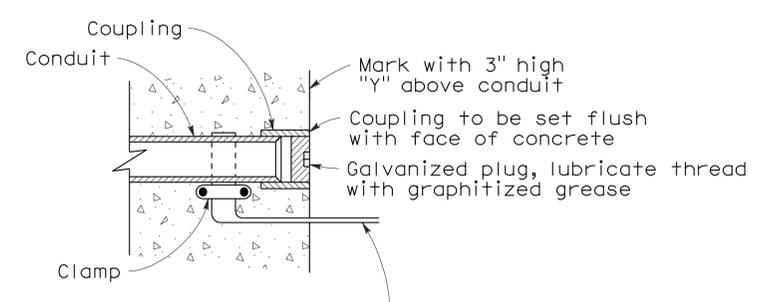
**DETAIL A  
CONDUIT TERMINATION**



**TOP VIEW**



**SIDE VIEW  
DETAIL I  
CONDUIT TERMINATION**



**DETAIL C  
CONDUIT TERMINATION**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (ELECTRICAL DETAILS STRUCTURE INSTALLATIONS)

NO SCALE

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

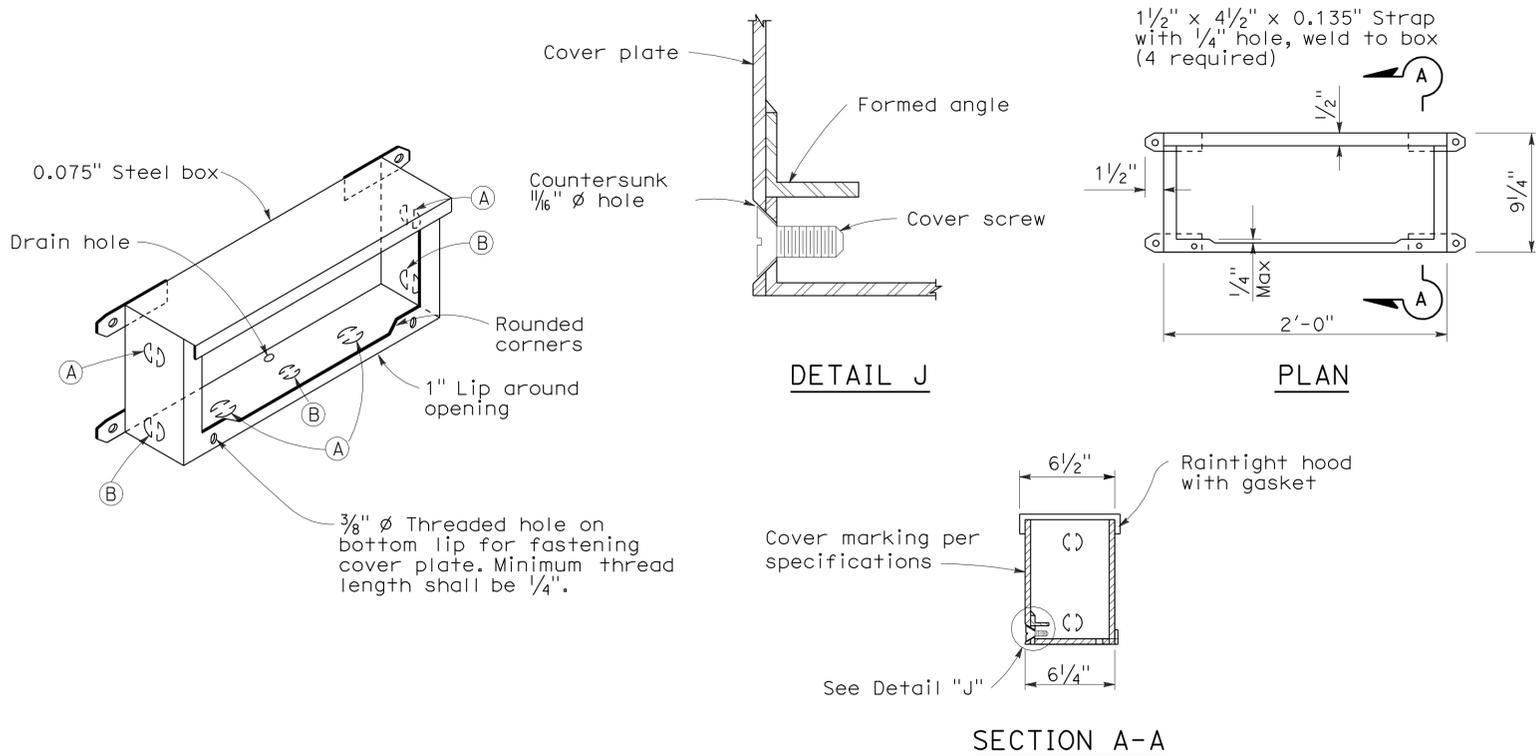
**2006 REVISED STANDARD PLAN RSP ES-9A**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	268	306

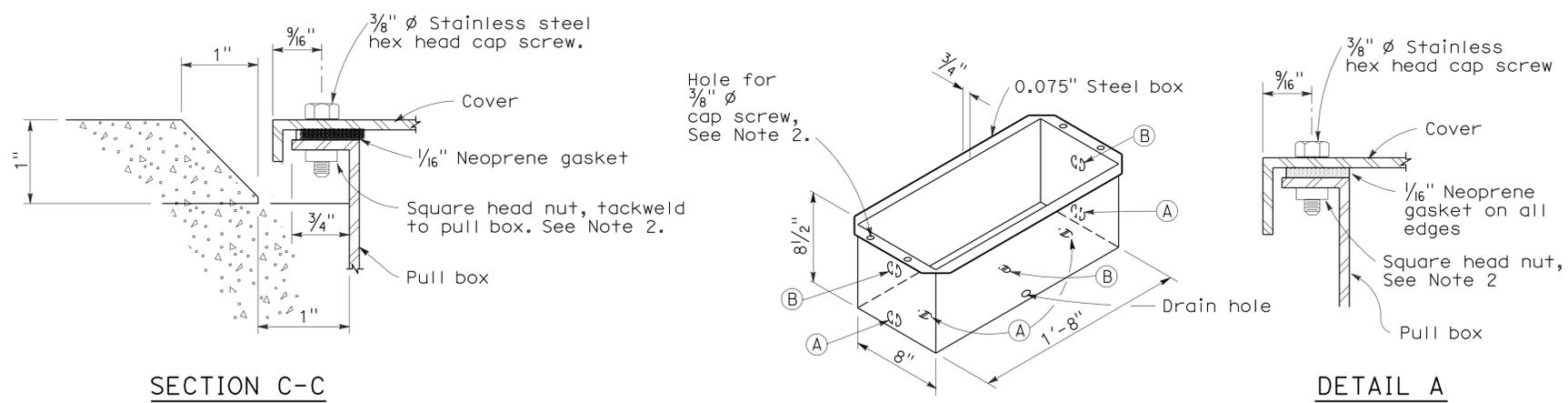
REGISTERED ELECTRICAL ENGINEER  
*Jeffery G. McRae*  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

October 5, 2007  
 PLANS APPROVAL DATE

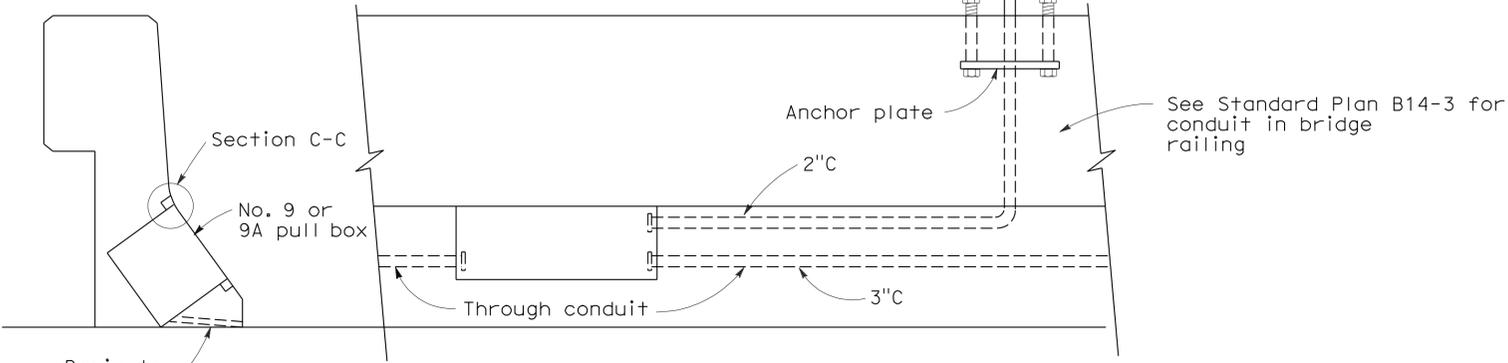
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**No. 9 STRUCTURE PULL BOX**



**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.

**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.

**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.

**KNOCKOUT SCHEDULE  
No. 9 AND 9A PULL BOX**

- (A) 2"C, 1 each end, 2 on bottom.
- (B) 3"C, 1 each end, 1 on bottom.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

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

2006 REVISED STANDARD PLAN RSP ES-9C

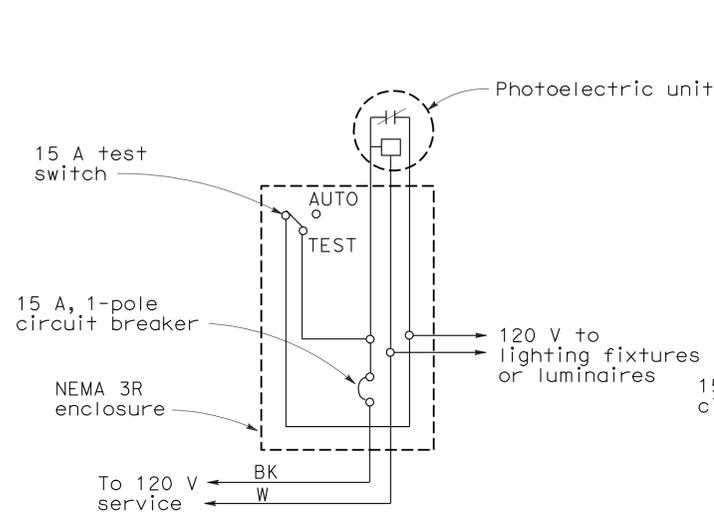
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	78	15.3/15.7	269	306

*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)

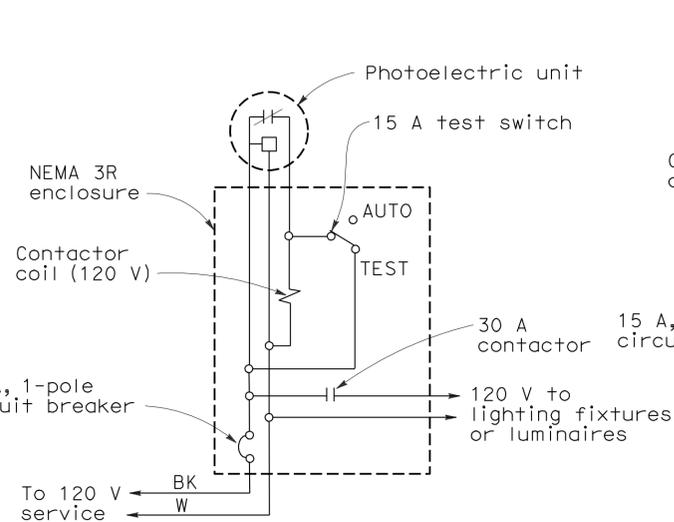
1. The ballast voltages of lighting fixtures and luminaires shall match line service voltages.
2. Voltage rating of photoelectric controls shall conform to the service voltage indicated on the plans.
3. Terminal strip shall be provided for wiring to fixtures.
4. Type SC1A, SC2A, SC3A controls are similar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

To accompany plans dated 7-18-11



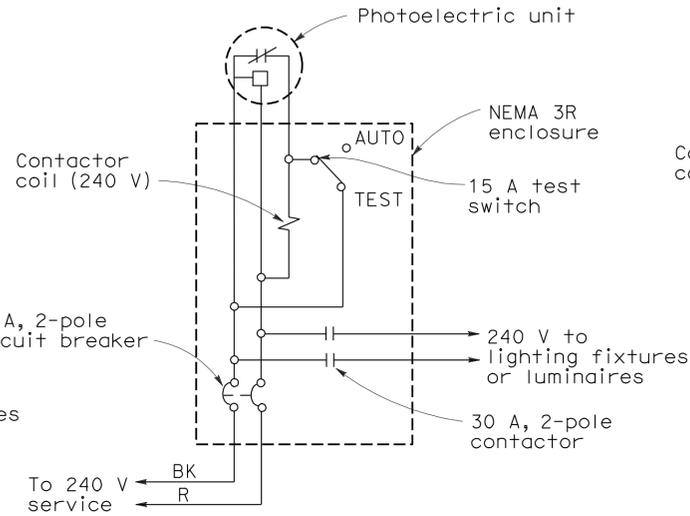
**TYPE LC1 CONTROL**

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



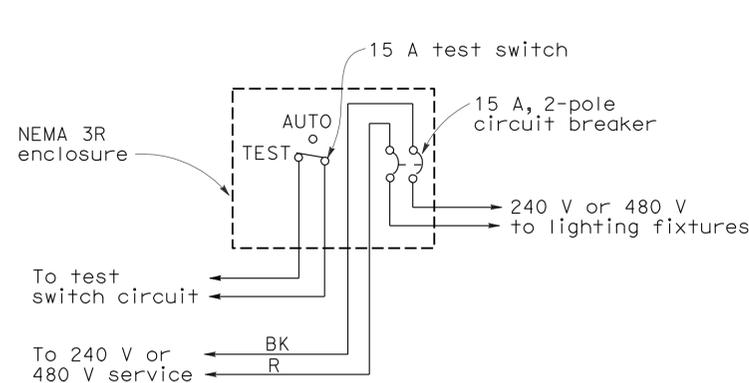
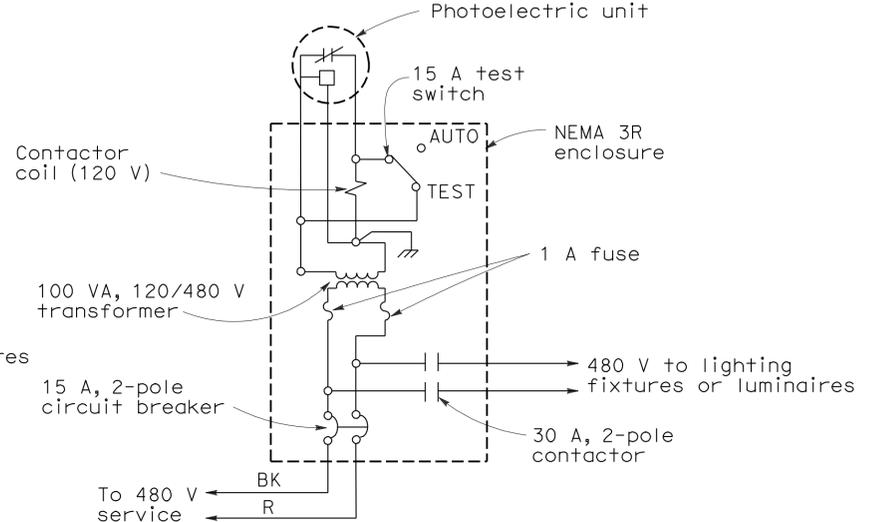
**TYPE LC2 CONTROL**

For 120 V unswitched circuit



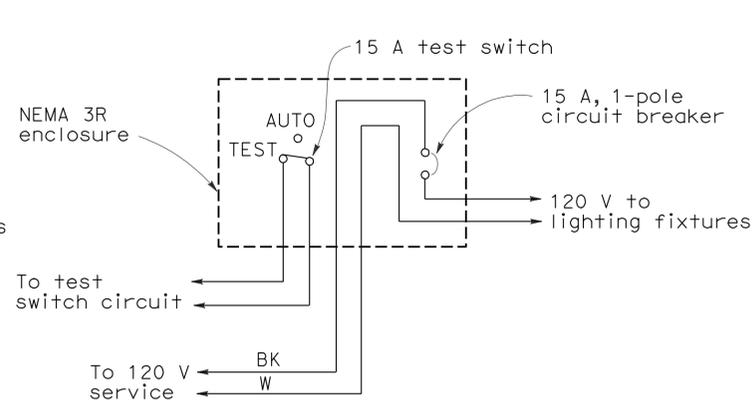
**TYPE LC3 CONTROL**

For 240 V and 480 V unswitched circuits



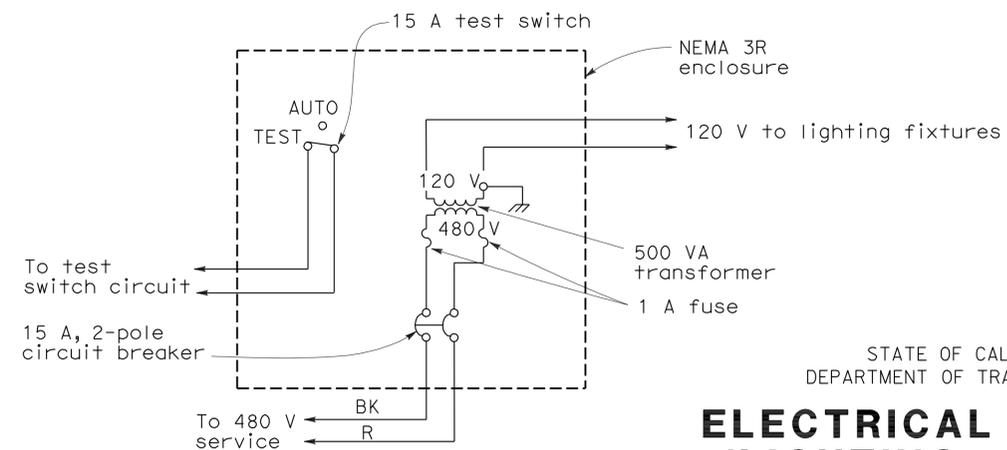
**TYPE SC1 CONTROL**

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)**

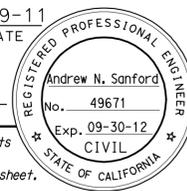
NO SCALE

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
11	SD	78	15.3/15.7	270	306

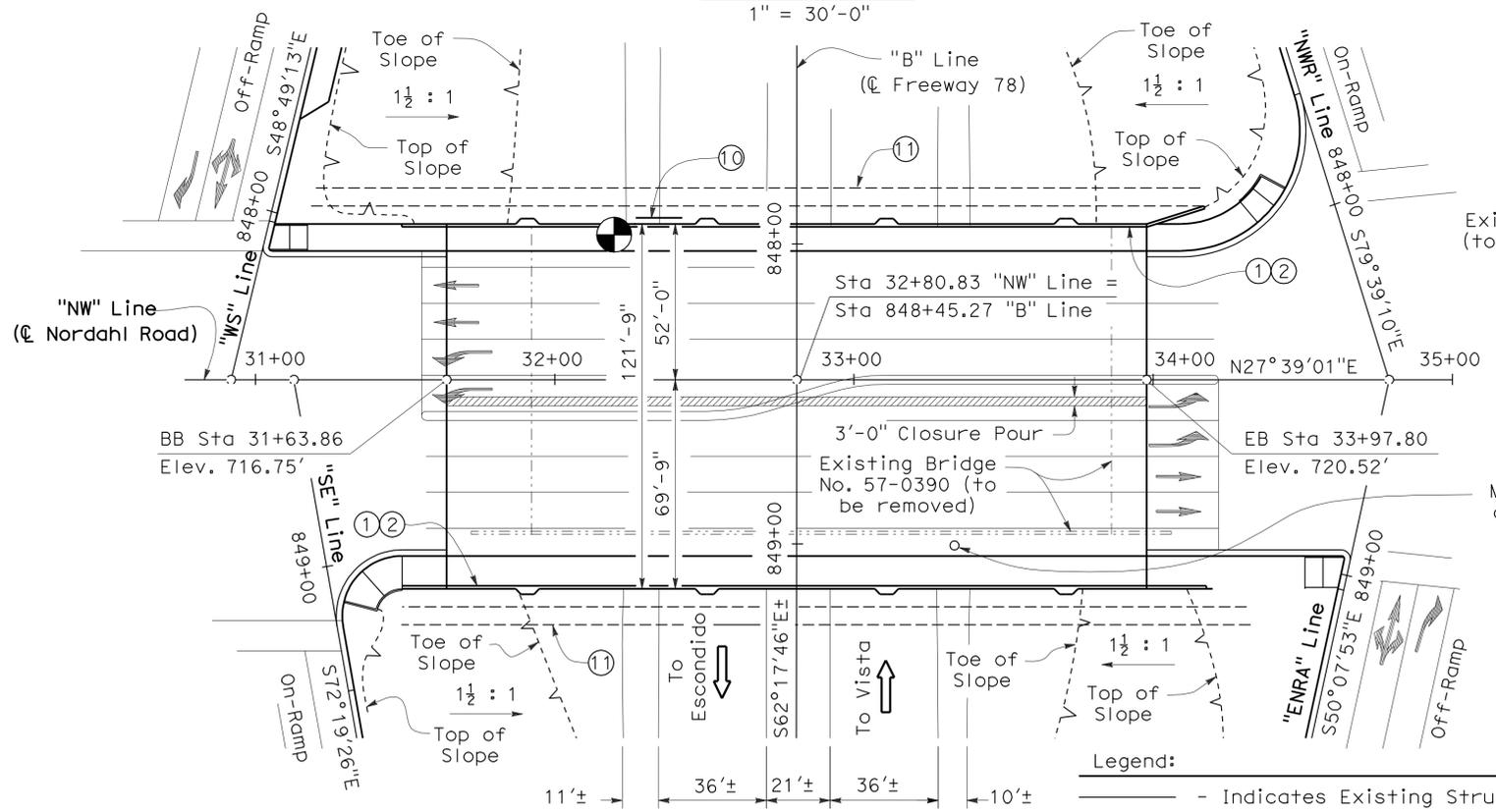
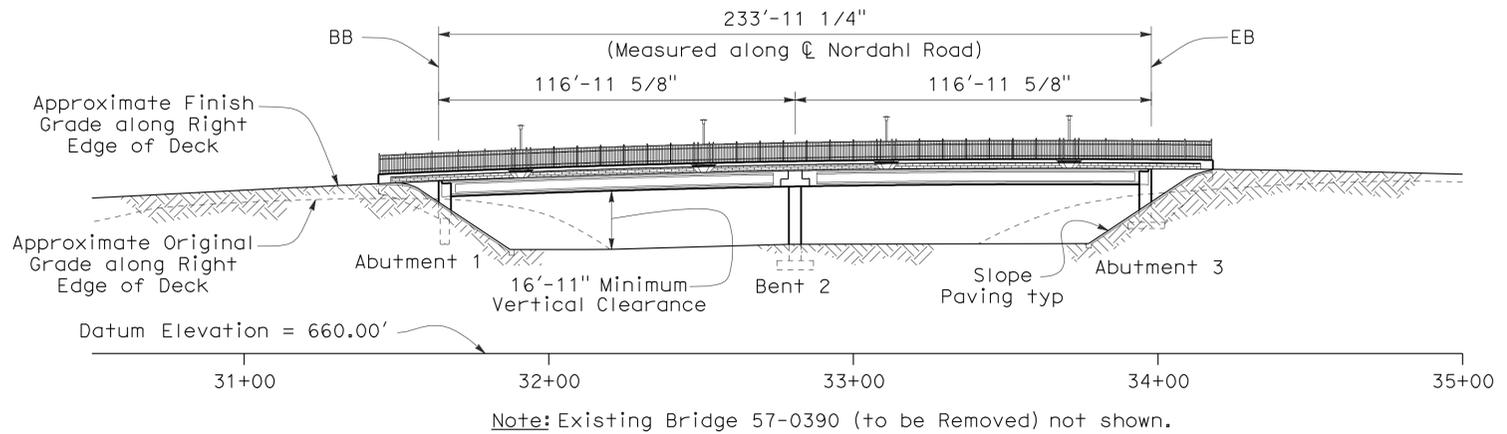
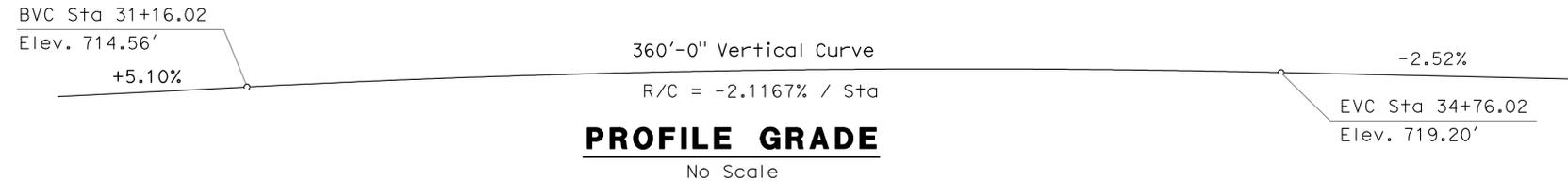

  
 REGISTERED CIVIL ENGINEER DATE 2-9-11

7-18-11  
 PLANS APPROVAL DATE

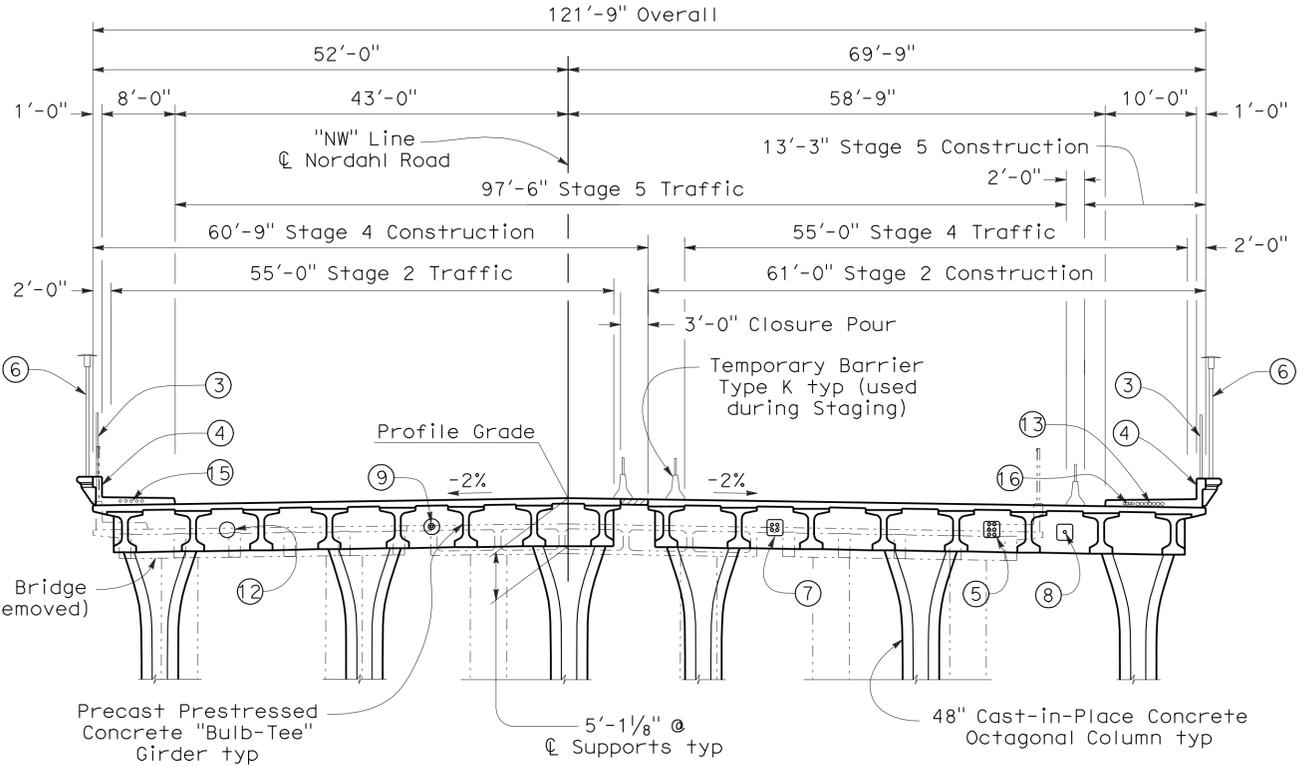
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**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025

**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



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



- Note: Existing Bridge 57-0390 to be removed.
- Notes:**
- ① Paint "Nordahl Road Overcrossing"
  - ② Paint "Bridge No. 57-1220" & the year constructed
  - ③ Metal Bridge Railing (Mod)
  - ④ Concrete Barrier Type 26 (Modified)
  - ⑤ 6 - 5"Ø Electrical Conduits - see plans by SDG&E
  - ⑥ Bridge Lighting - see Road Plans
  - ⑦ 4 - 4"Ø AT&T Conduits - see plans by AT&T
  - ⑧ 4"Ø Water Supply Line (Bridge)
  - ⑨ 4"Ø Gas Line in 8 5/8" Ø Casing - see plans by SDG&E
  - ⑩ Bridge Mounted Sign Structure - see Road Plans
  - ⑪ Temporary Pedestrian Bridge
  - ⑫ Future Utility Opening
  - ⑬ 7 - 2"Ø Cox Communications Conduits
  - ⑭ For Quantities, see "General Notes" sheet.
  - ⑮ 5 Electrical Conduits - see "Road Plans"
  - ⑯ 4 Electrical Conduits - see "Road Plans"

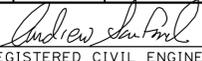
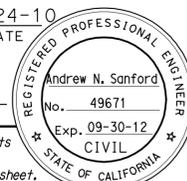
DESIGN OVERSIGHT: Norbert Gee  
 2-15-11  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS	BY T. Brittain	CHECKED A. Sanford	LAYOUT	BY A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing	SPECIFICATIONS	BY A. Sanford
				CHECKED C. Cushing
				PLANS AND SPECS COMPARED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION**  
 Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220	<b>NORDAHL ROAD OC (REPLACE)</b>
PROJECT MILES	15.5	
<b>GENERAL PLAN</b>		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	271	306

  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
  
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**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
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 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131

**NORDAHL ROAD OVERCROSSING #57-1220  
 QUANTITIES**

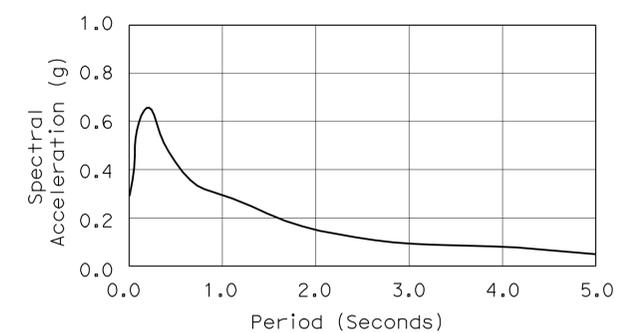
**INDEX TO BRIDGE PLANS**

SHEET NO.	TITLE
1	GENERAL PLAN
2	GENERAL NOTES
3	DECK CONTOURS
4	STAGED CONSTRUCTION DIAGRAM
5	DEMOLITION PLAN NO. 1
6	DEMOLITION PLAN NO. 2
7	FOUNDATION PLAN
8	ABUTMENT 1 LAYOUT
9	ABUTMENT 3 LAYOUT
10	OPTIONAL ABUTMENT 1 CONSTRUCTION DETAILS
11	ABUTMENT DETAILS NO. 1
12	ABUTMENT DETAILS NO. 2
13	ABUTMENT DETAILS NO. 3
14	BENT DETAILS NO. 1
15	BENT DETAILS NO. 2
16	BENT DETAILS NO. 3
17	BENT DETAILS NO. 4
18	TYPICAL SECTION
19	GIRDER LAYOUT
20	GIRDER DETAILS NO. 1
21	GIRDER DETAILS NO. 2
22	GIRDER DETAILS NO. 3
23	ADDITIONAL SLAB REINFORCEMENT
24	ARCHITECTURAL DETAILS NO. 1
25	ARCHITECTURAL DETAILS NO. 2
26	ARCHITECTURAL DETAILS NO. 3
27	SLOPE PAVING
28	UTILITY DETAILS NO. 1
29	MISCELLANEOUS DETAILS
30	LOG OF TEST BORINGS 1 OF 8
31	LOG OF TEST BORINGS 2 OF 8
32	LOG OF TEST BORINGS 3 OF 8
33	LOG OF TEST BORINGS 4 OF 8
34	LOG OF TEST BORINGS 5 OF 8
35	LOG OF TEST BORINGS 6 OF 8
36	LOG OF TEST BORINGS 7 OF 8
37	LOG OF TEST BORINGS 8 OF 8

TEMPORARY SUPPORT	LUMP	SUM
TEMPORARY PEDESTRIAN BRIDGE	LUMP	SUM
BRIDGE REMOVAL	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	1,240	CY
STRUCTURE BACKFILL (BRIDGE)	780	CY
4" SUPPLY LINE (BRIDGE)	280	LF
36" CAST-IN-DRILLED-HOLE CONCRETE PILING	309	LF
36" CAST-IN-DRILLED-HOLE CONCRETE PILING (ROCK SOCKET)	85	LF
STRUCTURAL CONCRETE, BRIDGE FOOTING	188	CY
STRUCTURAL CONCRETE, BRIDGE	1,480	CY
FURNISH PRECAST PRESTRESSED CONCRETE BULB-TEE GIRDER (110' -120')	32	EA
ERECT PRECAST PRESTRESSED CONCRETE GIRDER	32	EA
REFINISH BRIDGE DECK	870	SQFT
JOINT SEAL (MR 1")	244	LF
BAR REINFORCING STEEL (BRIDGE)	437,000	LB
SLOPE PAVING (ROCK COBBLE)	6,700	SQFT
METAL BRIDGE RAILING (MODIFIED)	536	LF
CONCRETE BARRIER (TYPE 26 MODIFIED)	538	LF

**GENERAL NOTES  
 LOAD AND RESISTANCE FACTOR DESIGN (LRFD)**

**DESIGN:** AASHTO LRFD Bridge Design Specifications, fourth edition and the Caltrans Amendments, preface dated Dec 2008; except that wingwalls, bridge barriers, and railing details are designed using Bridge Design Specifications (1996 AASHTO with revisions by Caltrans).  
**SEISMIC DESIGN:** 2009 Caltrans Seismic Design Criteria (SDC), Version 1.5.  
**DEAD LOAD:** Includes 0.035 ksf for future wearing surface, 10% increase in deck thickness between girders to allow for Stay-in-Place metal deck forms and 0.570 k/lf maximum for existing and future utilities. Maximum weight for any single utility shall be 0.210 k/ft as well as 0.285 k/ft combined weight for any two adjacent utilities.  
**LIVE LOAD:** HL93 with Low Boy and permit design load.  
**SEISMIC LOADING:** Soil Profile  $V_{s30} = 623$  m/s ( $M_{MAX} = 7.50$ ), see curve below (Peak Rock Acceleration = 0.24g)

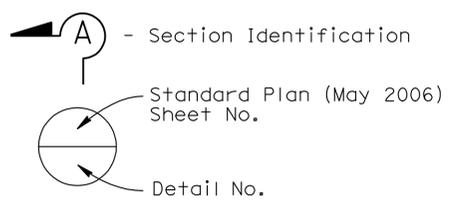


**REINFORCED CONCRETE:**  $f_y = 60$  ksi  
 $f'_c = 3.6$  ksi (Unless Otherwise Noted)  
 $n = 8$   
**PRESTRESSED CONCRETE:** See Prestressing Notes on "Girder Details No. 3" sheet and "Girder Schedule" on "Girder Details No. 1" sheet.

**STANDARD PLANS DATED MAY, 2006**

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
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
B6-10	UTILITY OPENINGS, T-BEAM
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
B7-10	UTILITY OPENING - BOX GIRDER
B7-11	UTILITY DETAILS
B11-54	CONCRETE BARRIER TYPE 26 (MOD)
D97C	CORRUGATED METAL PIPE COUPLING DETAILS NO. 3 HELICAL AND UNIVERSAL COUPLERS

**PLAN SYMBOLS**

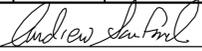


**NOTE:**  
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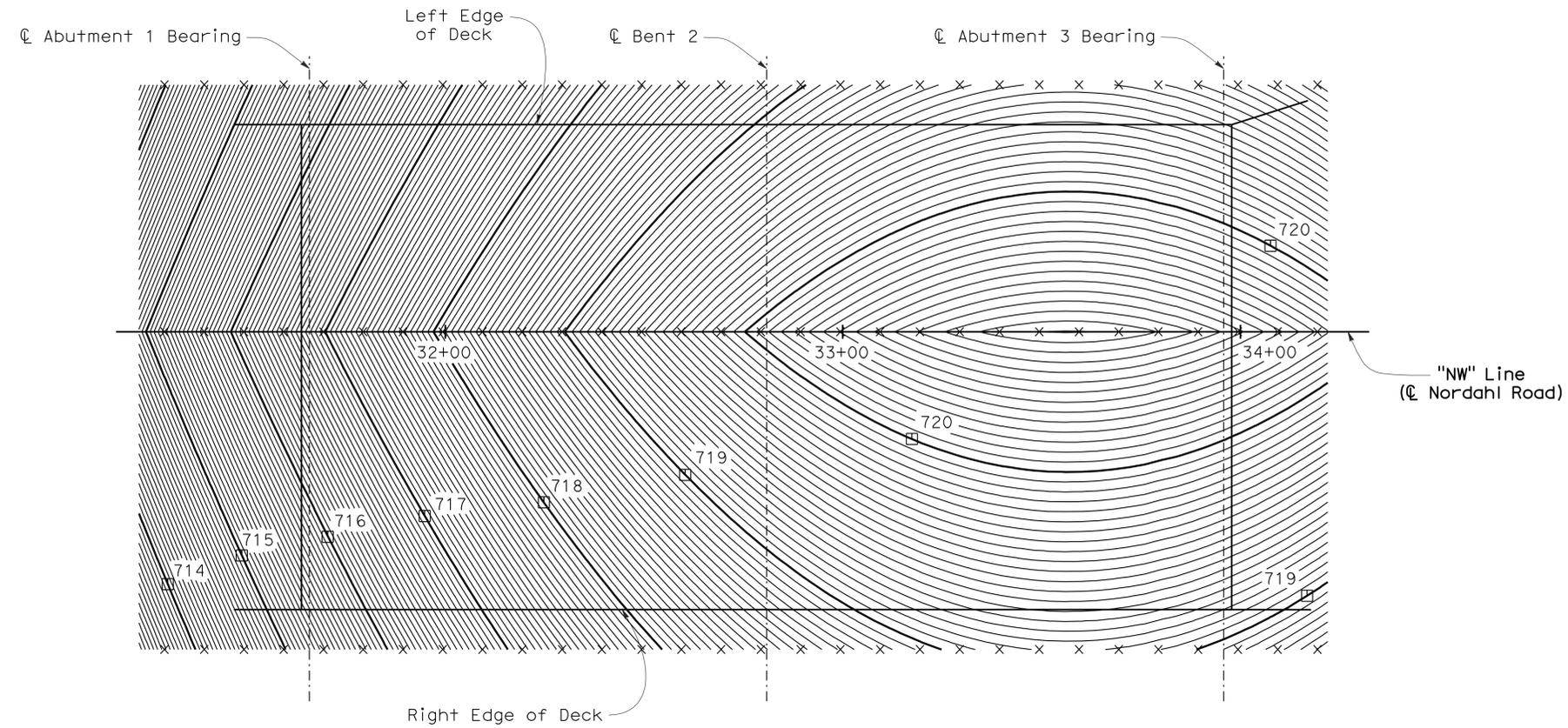
 DESIGN OVERSIGHT Norbert Gee 2-15-11 SIGN OFF DATE	DESIGN BY L. Muco DETAILS BY T. Brittain QUANTITIES BY E. Schroth-Nichols	CHECKED BY C. Cushing CHECKED BY A. Sanford CHECKED BY C. Cushing	<b>PREPARED FOR THE          STATE OF CALIFORNIA          DEPARTMENT OF TRANSPORTATION</b>	Andrew Sanford PROJECT ENGINEER	BRIDGE NO. 57-1220	<b>NORDAHL ROAD OC (REPLACE)          GENERAL NOTES</b>
					POST MILES 15.5	
DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 2777 PROJECT NUMBER & PHASE: 11000002001 CONTRACT NO.: 11-259804		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
			FILE => 57-1220-b-gn.dgn		REVISION DATES: 4-18-10, 6-04-10, 10-12-10, 11-24-10	

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	272	306

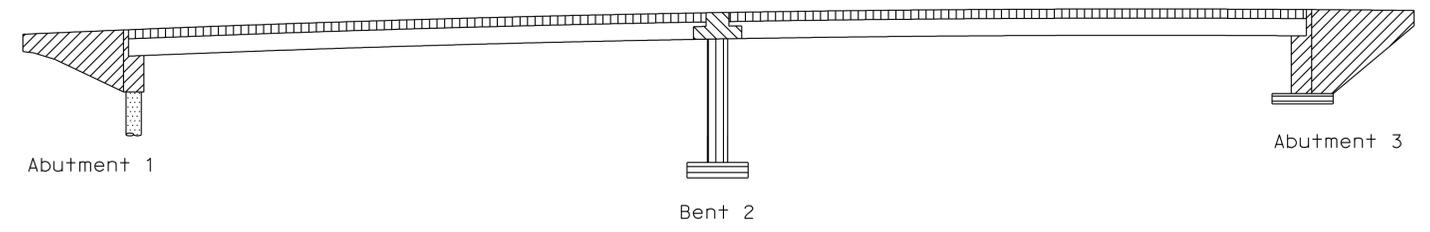
  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
 SIMON WONG ENGINEERING, INC.  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



- NOTES:
1. CONTOUR INTERVAL = 0.05 FT
  2. CONTOURS DO NOT INCLUDE CAMBER
  3. □ - INDICATES EVEN FOOT CONTOURS
  4. X - INDICATES 10 FT INTERVALS

**PLAN**  
1" = 20'



-  - Precast Prestressed Concrete Girders, see "Girder Details No. 1" sheet.
-  - Structural Concrete, Bridge (f'c = 5 ksi)
-  - Structural Concrete, Bridge (f'c = 4 ksi)
-  - Structural Concrete, Bridge Footing (f'c = 4 ksi)
-  - Structural Concrete, Bridge Pile (f'c = 4 ksi)
-  - Structural Concrete, Bridge

**CONCRETE STRENGTH AND TYPE LIMITS**

No Scale

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

  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION  
 Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE)**  
**DECK CONTOURS**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 CONTRACT NO.: 11-259804

CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
1-18-10	3	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:48

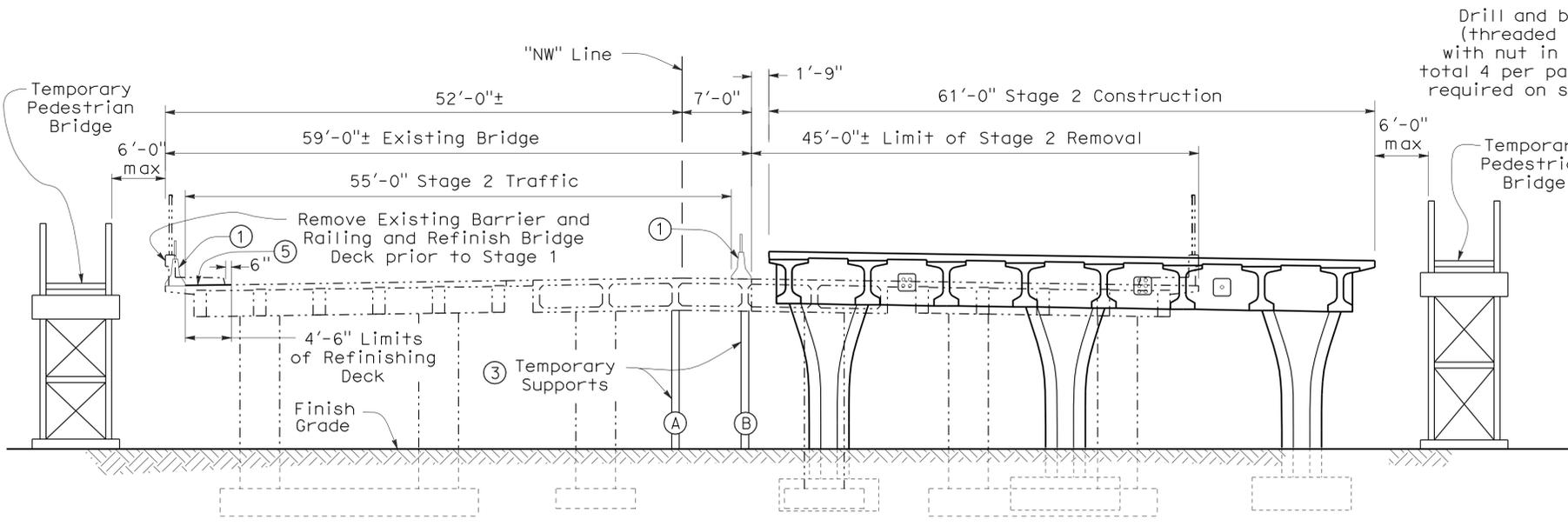
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	273	306

Andrew Sanford  
 REGISTERED CIVIL ENGINEER  
 DATE 2-9-11  
 7-18-11  
 PLANS APPROVAL DATE  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

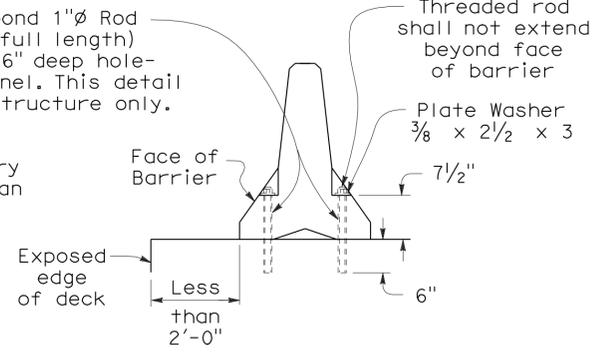
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 201 NORTH BROADWAY  
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 SAN DIEGO, CALIFORNIA 92131



**STAGE 2 CONSTRUCTION**  
1/8" = 1'-0"



**TYPE K RAILING ATTACHMENT DETAILS**  
No Scale

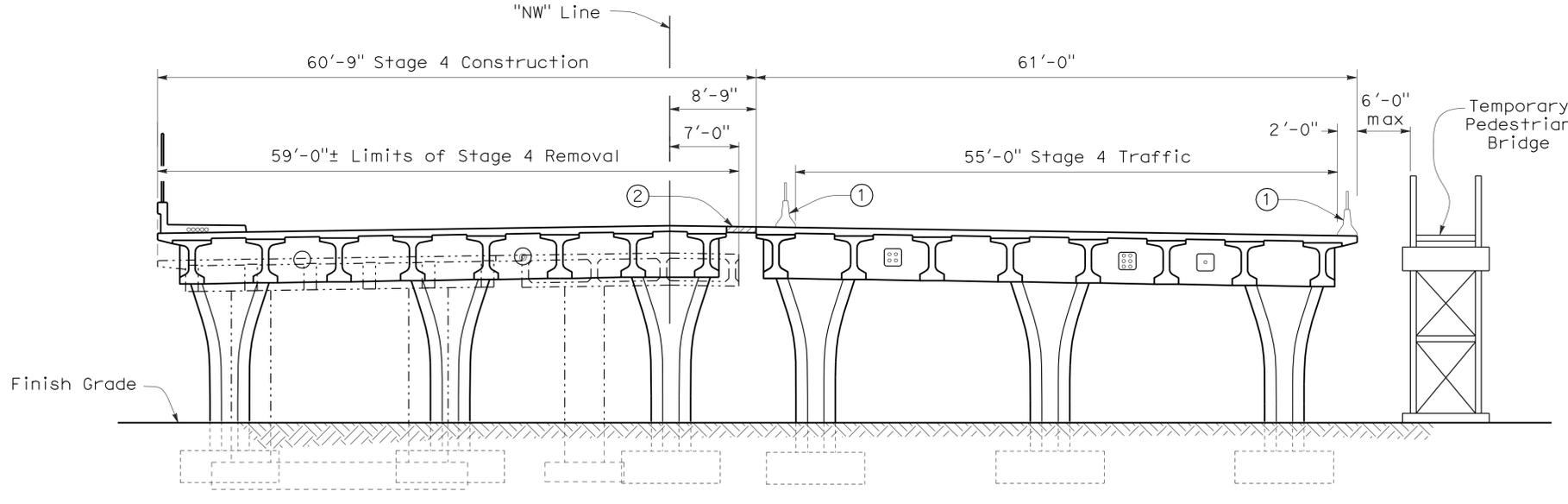
NOTES:

- ① Temporary Railing Type K, see "Road Plans"
- ② Closure Pour
- ③ Each Temporary support to be located at  $\ominus$  Existing Girder, and at  $\ominus$  Existing Bent.
- ④ Permit loads shall be prohibited on existing structure during construction.
- ⑤ Refinish Bridge Deck

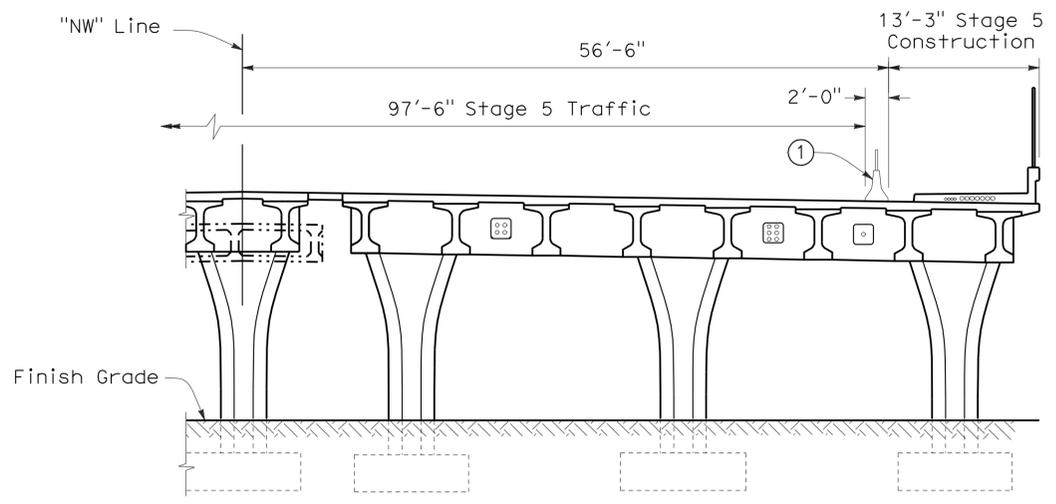
	Minimum Temporary Support Vertical Service Design Load		Minimum Temporary Support Lateral Design Loads			
	DL	LL+I	A	B	A	B
Bent 2	50k	85k	55k	50k	50k	50k
Bent 3	50k	85k	55k	50k	50k	50k
Bent 4	50k	85k	55k	50k	50k	50k

LEGEND:

- - - - - Indicates Existing Structure
- — — — — Indicates New Structure



**STAGE 4 CONSTRUCTION**  
1/8" = 1'-0"



**STAGE 5 CONSTRUCTION**  
1/8" = 1'-0"

NOTE:  
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Design Oversight: Norbert Gee  
 SIGN OFF DATE: 2-15-11

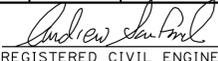
DESIGN	BY: L. Muco	CHECKED: C. Cushing
DETAILS	BY: T. Brittain	CHECKED: A. Sanford
QUANTITIES	BY: E. Schroth-Nichols	CHECKED: C. Cushing

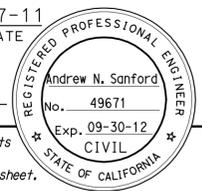
PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO.: 57-1220  
 POST MILES: 15.5

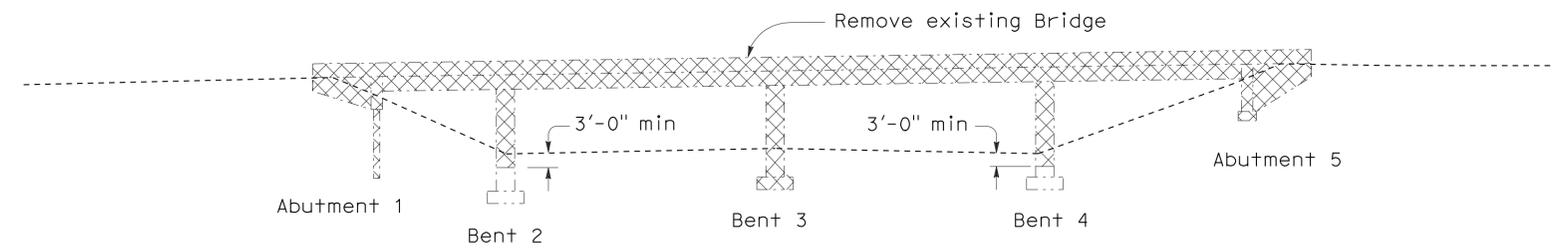
**NORDAHL ROAD OC (REPLACE)**  
**STAGED CONSTRUCTION DIAGRAM**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	274	306

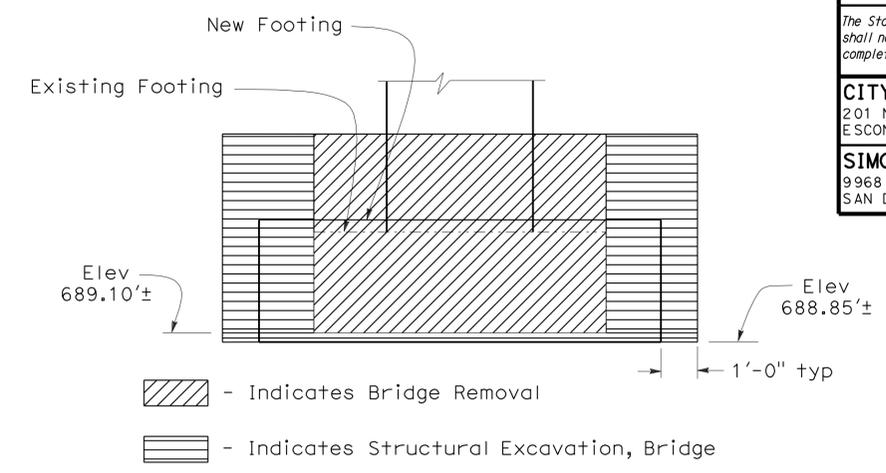
  
 REGISTERED CIVIL ENGINEER DATE 1-7-11  
 7-18-11  
 PLANS APPROVAL DATE  
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 SAN DIEGO, CALIFORNIA 92131

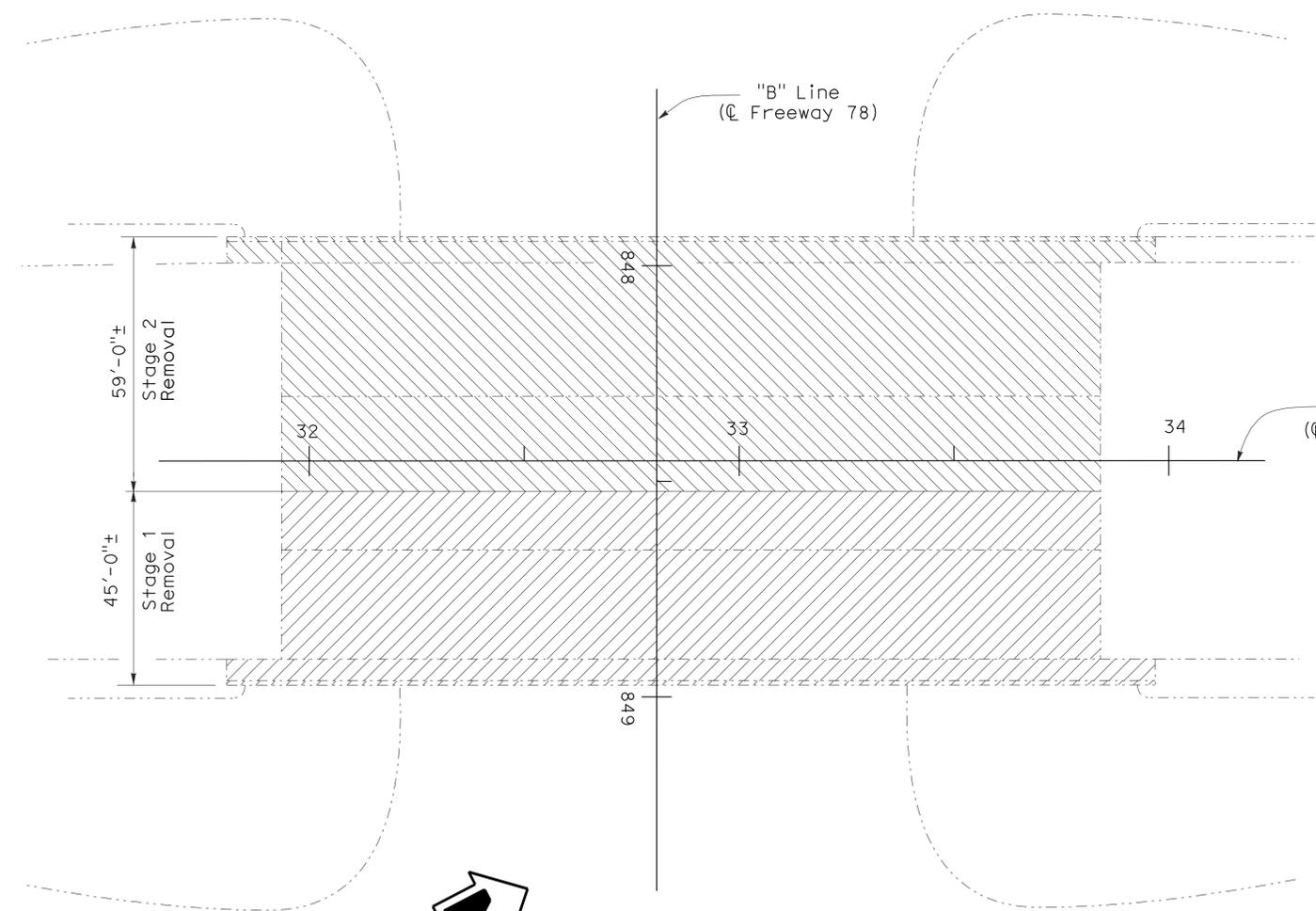


**ELEVATION**  
1" = 20'-0"



 - Indicates Bridge Removal  
 - Indicates Structural Excavation, Bridge

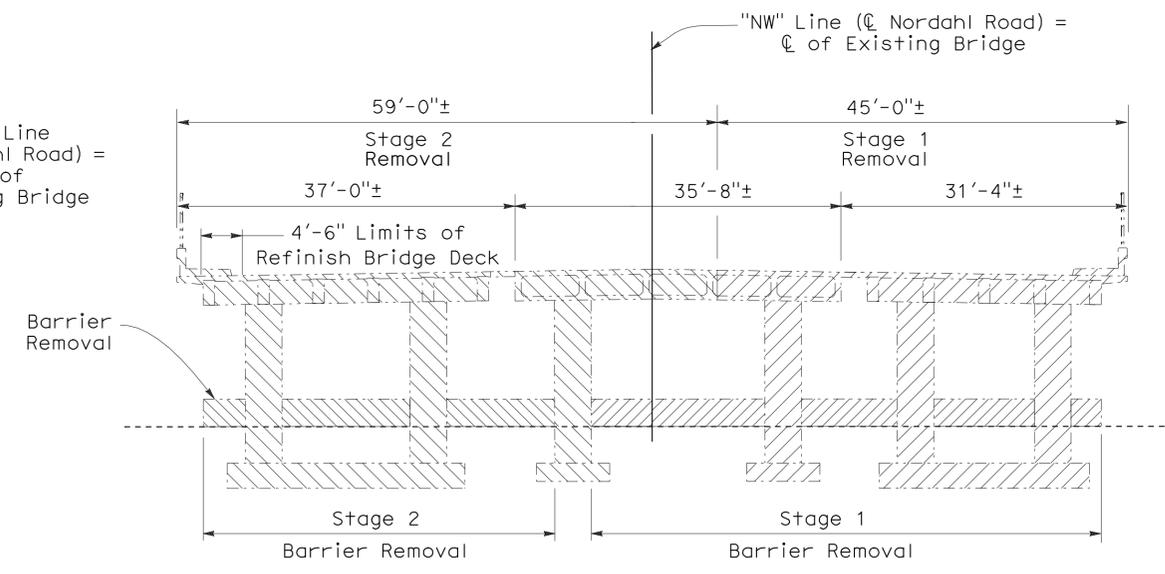
**BENT 2 STRUCTURAL EXCAVATION BRIDGE LIMITS**  
No Scale



**PLAN**  
1" = 20'-0"

 - Indicates Stage 1 removal  
 - Indicates Stage 2 removal

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



**TYPICAL SECTION**  
1" = 10'-0"

- Notes:**
- At Bent 3 of Existing Structure remove Columns and Footings located within the limits of removal completely.
  - Type 26 Concrete Barrier shall be removed and Bridge Deck Refinished prior to demolition of Stage 1.
  - At Bents 2 and 4 of Existing Structure remove Columns and if necessary, Footings to 3'-0" below finish grade.

  
 DESIGN OVERSIGHT Norbert Gee  
 2-15-11  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**DEMOLITION PLAN NO. 1**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



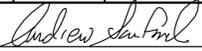
UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

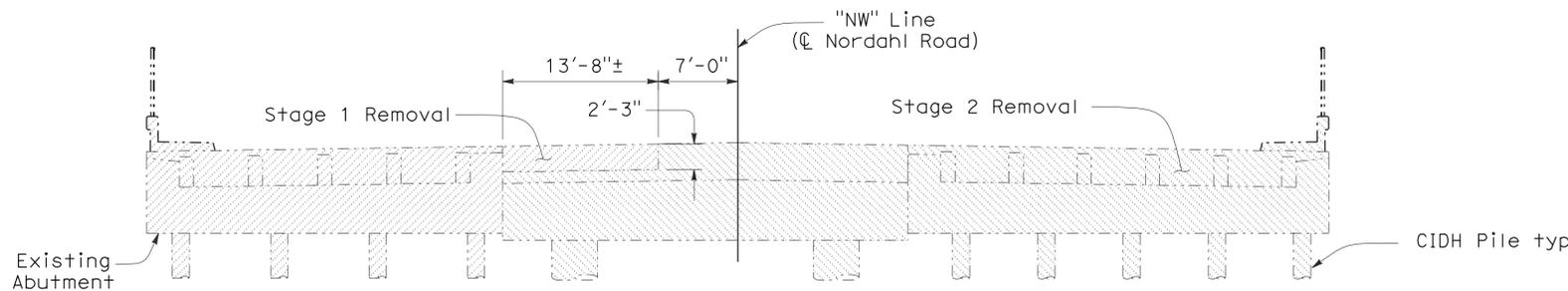
REVISION DATES	SHEET	OF
1-18-10	5	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	275	306

  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

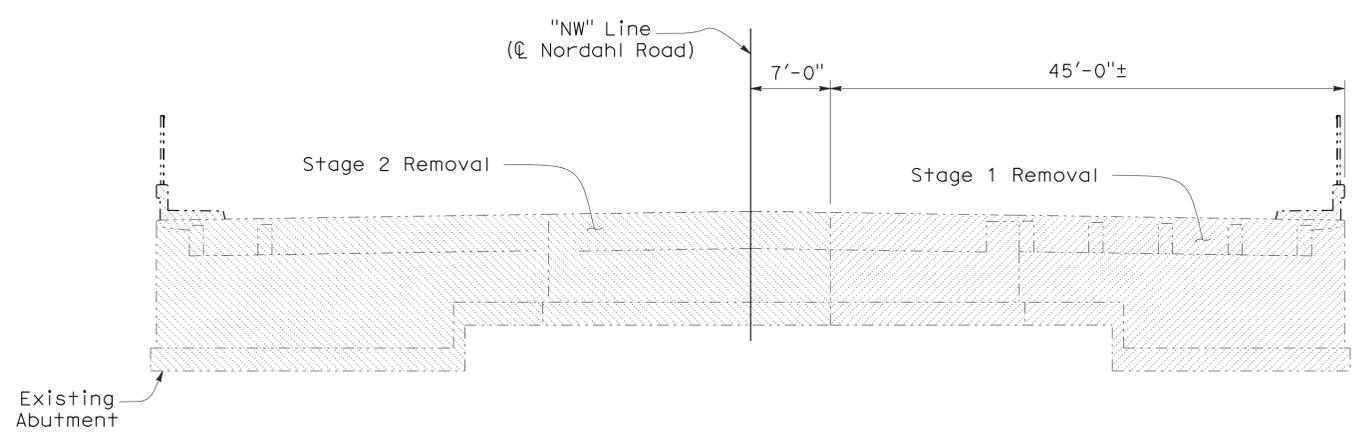
CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



Note: Remove CIDH Piles to 3'-0" below finish Grade.

**ELEVATION  
ABUTMENT 1 STAGED REMOVAL**

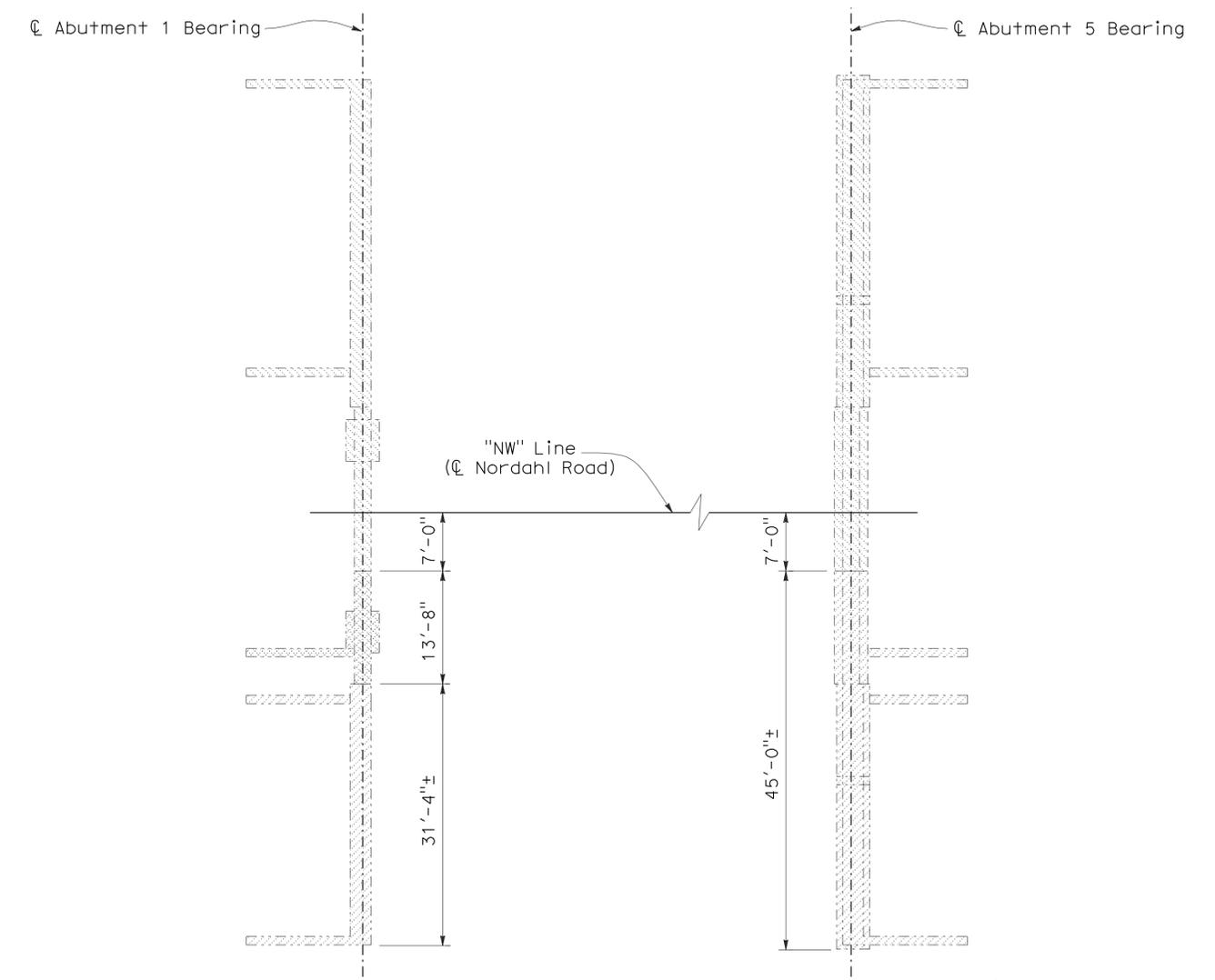
1/8" = 1'-0"



**ELEVATION  
ABUTMENT 5 STAGED REMOVAL**

1/8" = 1'-0"

-  - Indicates Stage 1 Removal
-  - Indicates Stage 2 Removal



**PLAN  
STAGED REMOVAL**

1" = 10'-0"

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

  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE  
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION**

Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE)  
DEMOLITION PLAN NO. 2**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 2777  
PROJECT NUMBER & PHASE: 11000002001

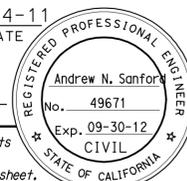
CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

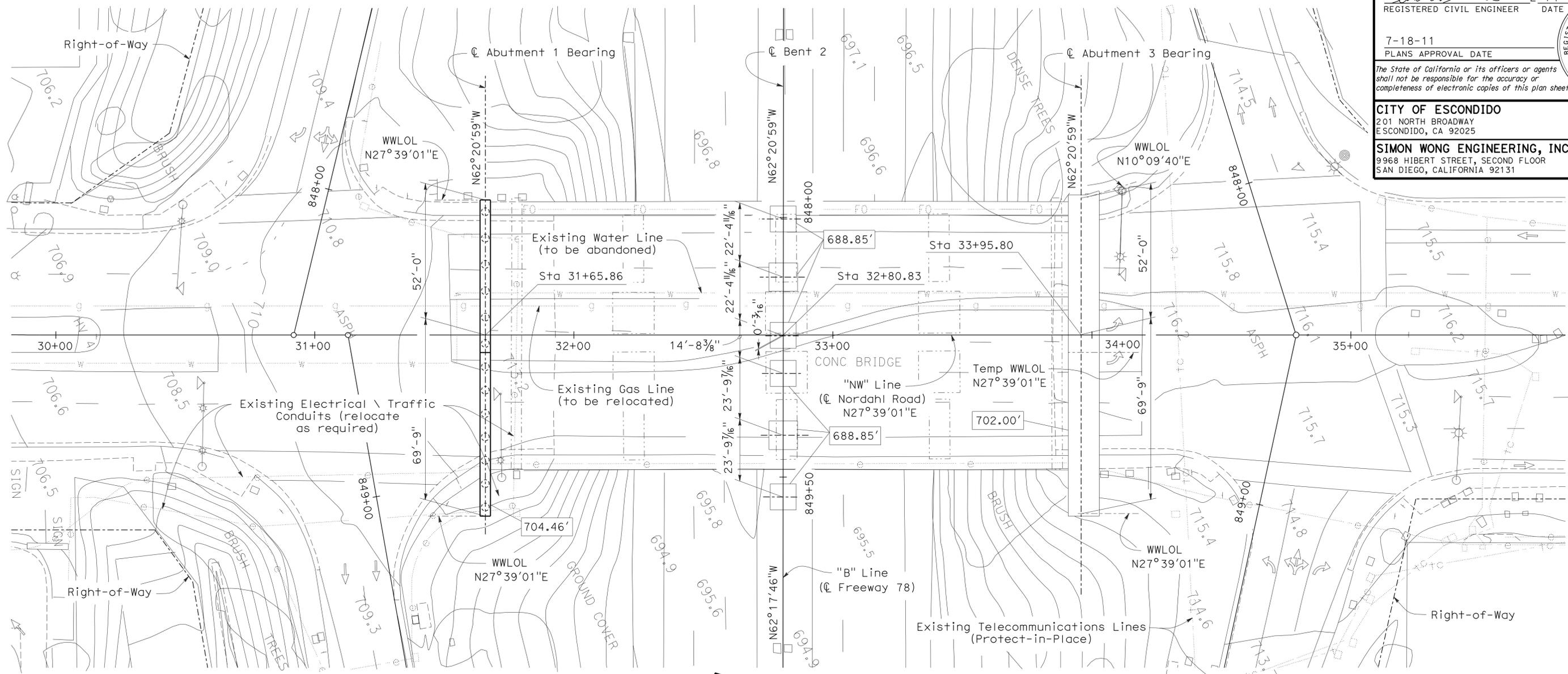
REVISION DATES	SHEET	OF
1-18-10	6	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	276	306


 Andrew N. Sanford  
 REGISTERED CIVIL ENGINEER  
 DATE: 2-14-11  
 PLANS APPROVAL DATE: 7-18-11  
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**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



**PLAN**  
1" = 20'-0"

Location	Pile Type *	Nominal Resistance		Design Tip Elevations (ft)	Specified Tip Elevation	Nominal Driving Resistance
		Compression	Tension			
Abutment 1	36" Ø CIDH Concrete Pile	570 k	0 k	674.50 (a) 676.00 (d)	674.50'	N/A

Note: Design Tip elevations are controlled by: (a) Compression, (c) Settlement, (d) Lateral Load.  
 \* See "Pile Limits of Payment" on "Abutment Details No.3" sheet.

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

- Legend:
-  - Indicates Bottom of Footing Elevation
  -  - Indicates 36" Ø CIDH Concrete Pile

Support Location	Working Stress Design (WSD)		Load and Resistance Factor Design (LRFD)		
	Permissible Gross Contact Stress (Settlement) (ksf)	Allowable Gross Bearing Capacity (ksf)	Service Permissible Net Contact Stress (Settlement) (ksf)	Strength Factored Gross Nominal Bearing Resistance $\phi_b = 0.07$ (ksf)	Extreme Event Factored Gross Nominal Bearing Resistance $\phi_b = 1.00$ (ksf)
Bent 2	N/A	N/A	15.0	31.5	45.0
Abutment 3	10.5	10.5	N/A	N/A	N/A

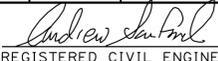
Note: For Bent footing Layout, see "Bent Details No. 1" sheet.

10-15-10 APPROVAL DATE  
 GEOTECHNICAL PROFESSIONAL

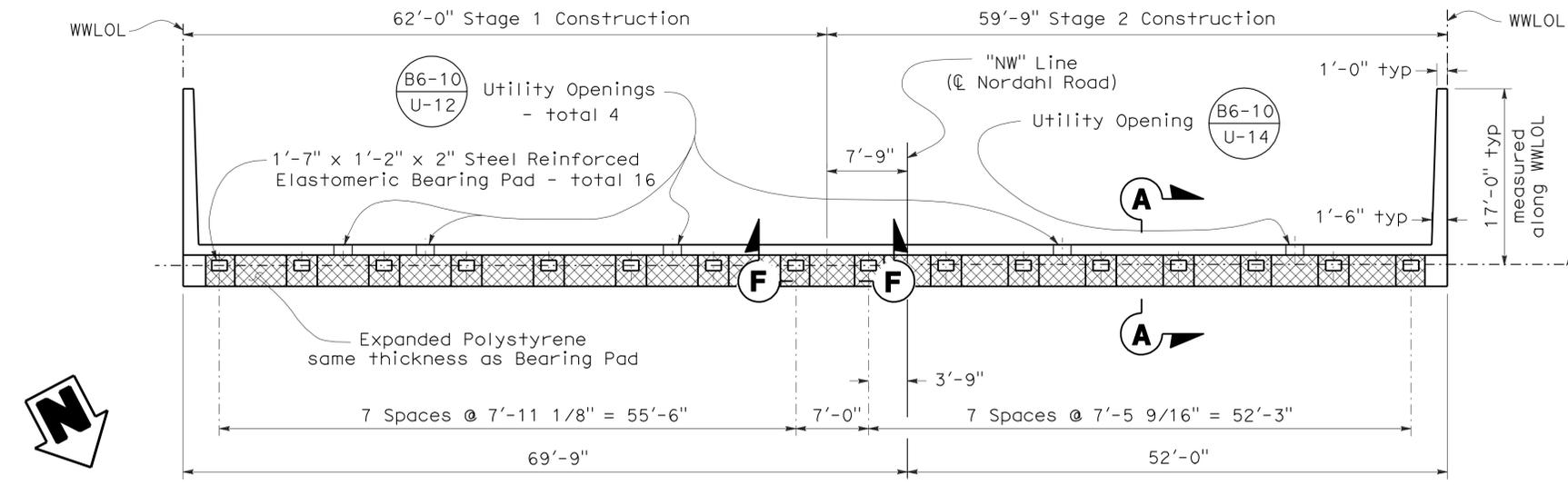
 DESIGN OVERSIGHT 2-15-11 SIGN OFF DATE	SCALE: PHOTOGRAMMETRY AS OF: SURVEYED BY: FIELD CHECKED BY:	VERT. DATUM: ALIGNMENT TIES: DRAFTED BY: CHECKED BY:	HORZ. DATUM: DESIGN BY: L. Muco DETAILS BY: T. Brittain QUANTITIES BY: E. Schroth-Nichols	CHECKED BY: C. Cushing CHECKED BY: A. Sanford CHECKED BY: C. Cushing	<b>PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION</b> Andrew Sanford PROJECT ENGINEER	BRIDGE NO.: 57-1220 POST MILES: 15.5	<b>NORDAHL ROAD OC (REPLACE) FOUNDATION PLAN</b>	REVISION DATES: 8-04-10 10-15-10 11-24-10 2-14-11	SHEET 7 OF 37
---	---	---	--	--	--	---	--	--	---------------

FOUNDATION PLAN SHEET (ENGLISH) (REV.7/16/10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3  
 UNIT: 2777 PROJECT NUMBER & PHASE: 11000002001 CONTRACT NO.: 11-259804  
 DISREGARD PRINTS BEARING EARLIER REVISION DATES  
 FILE => 57-1220-e-fp.dgn

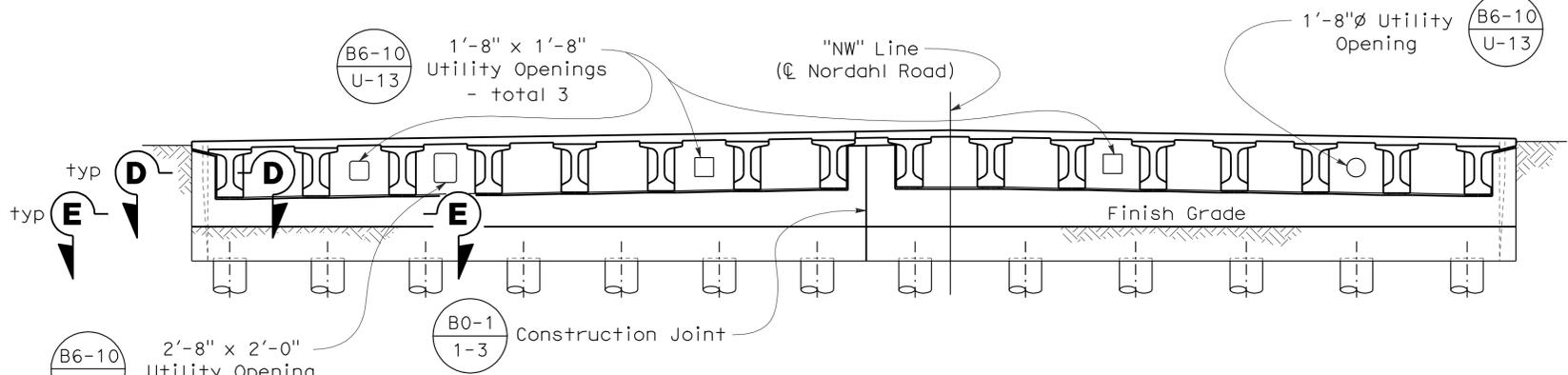
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	277	306

  
 REGISTERED CIVIL ENGINEER DATE 1-7-11  
 7-18-11  
 PLANS APPROVAL DATE  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

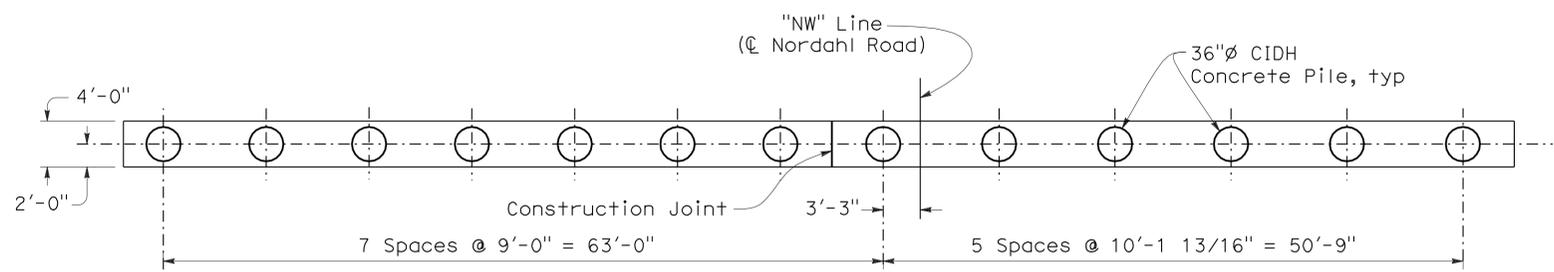
**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



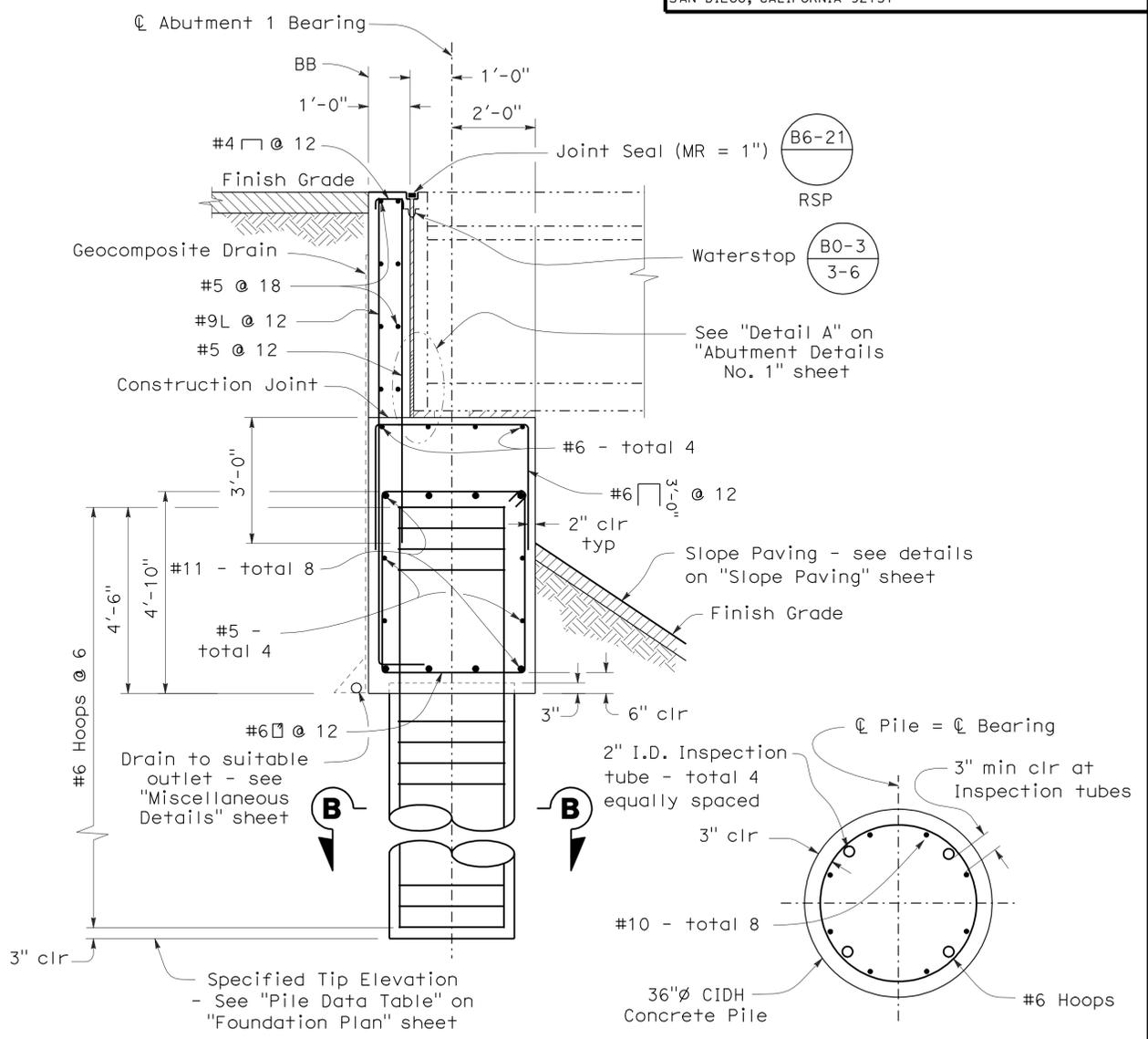
**PLAN**  
1/8" = 1'-0"



**ELEVATION**  
1/8" = 1'-0"



**PILE LAYOUT**  
1/8" = 1'-0"



**SECTION A-A**  
1/2" = 1'-0"

**SECTION B-B**  
3/4" = 1'-0"

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

Note: For Sections D-D, E-E, and F-F, see "Abutment Details No.1" sheet.

DESIGN OVERSIGHT Norbert Gee  
 1-10-11  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**ABUTMENT 1 LAYOUT**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

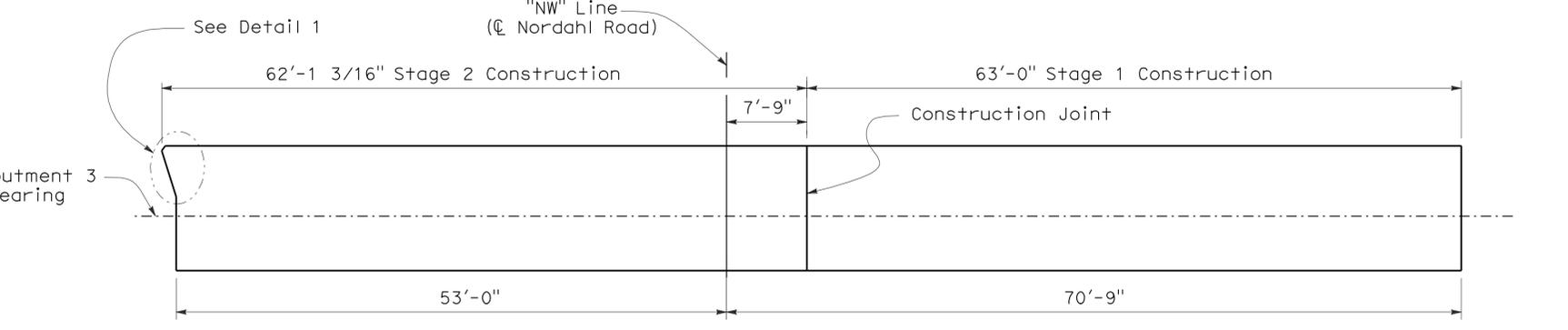
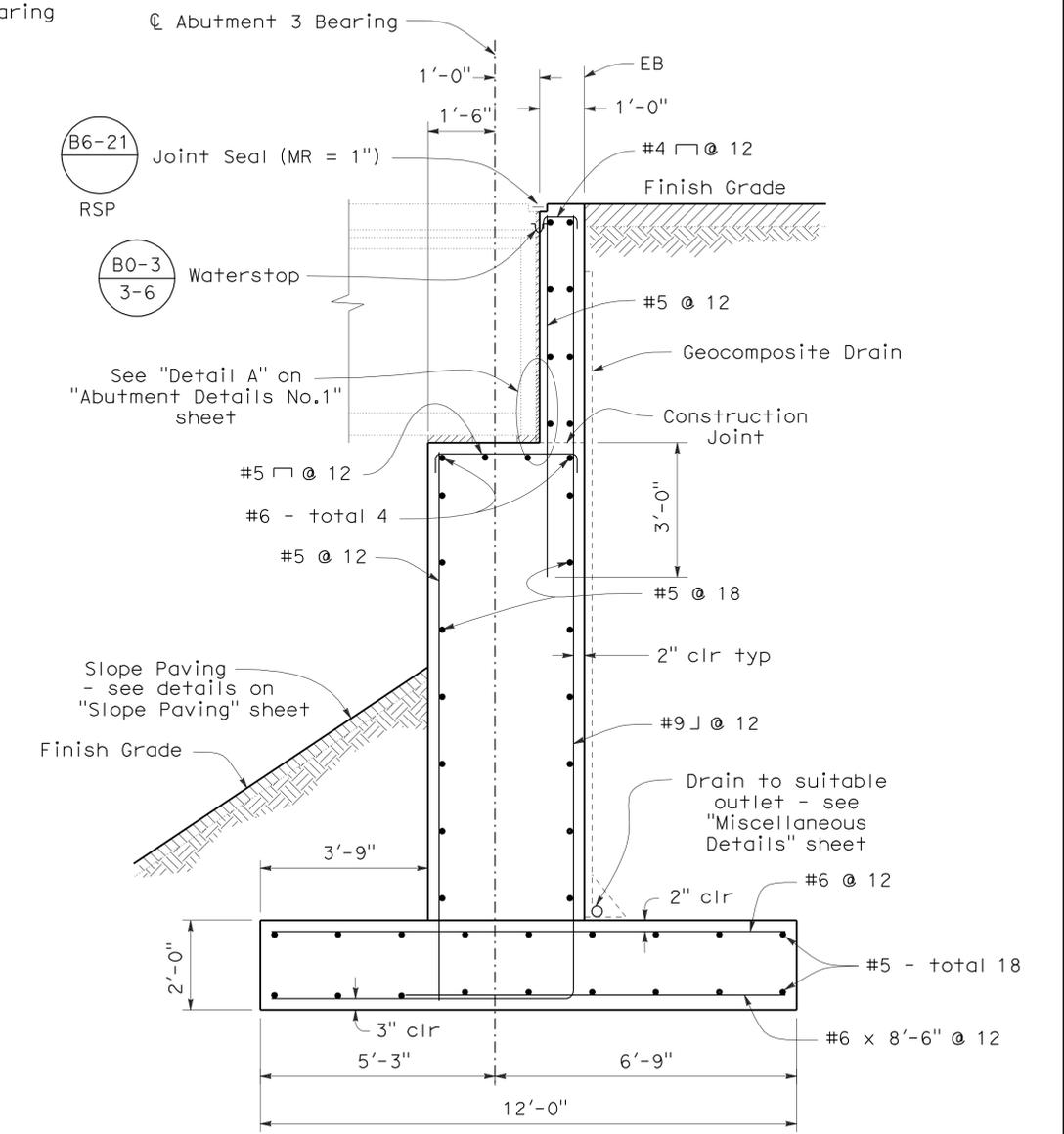
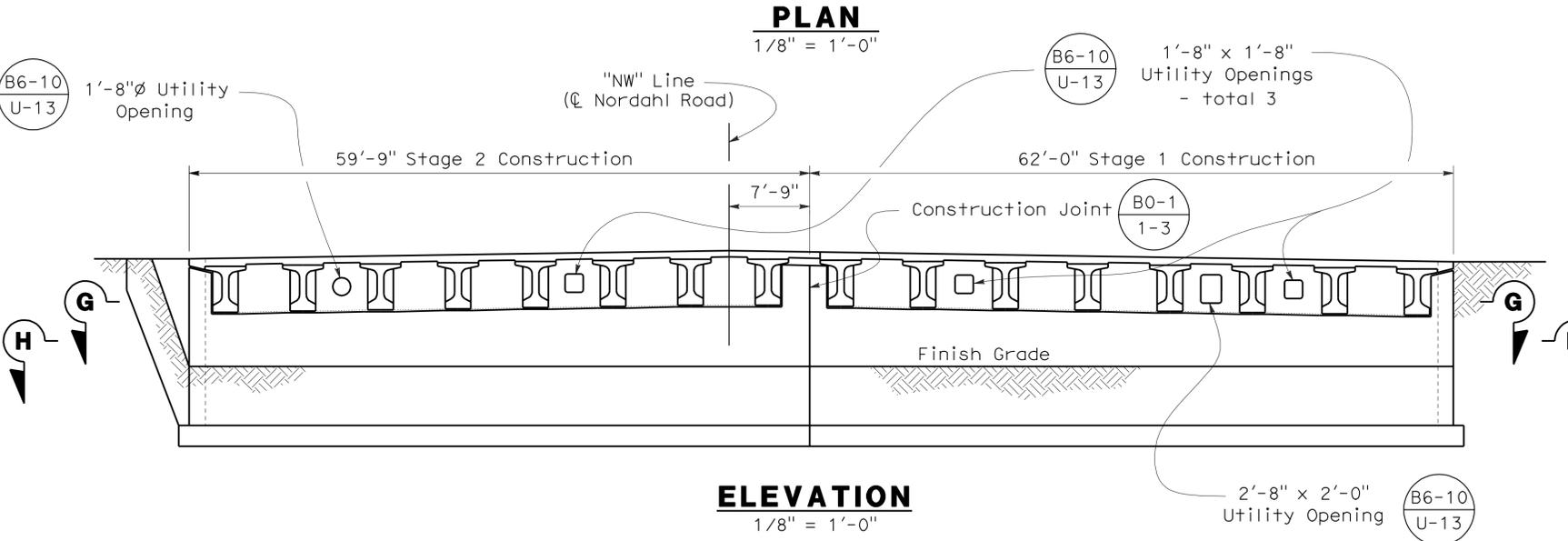
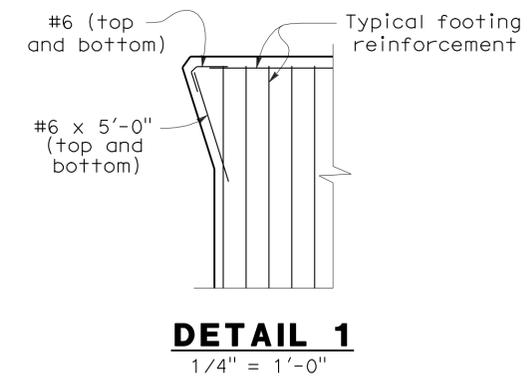
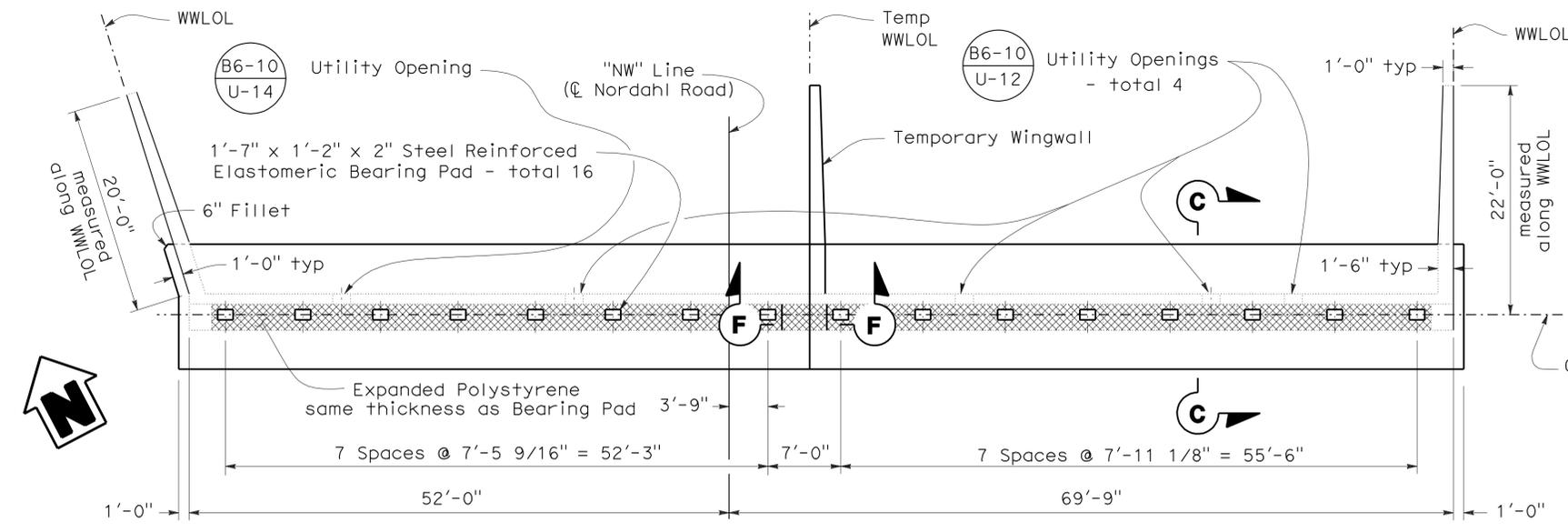
REVISION DATES	SHEET	OF
1-18-10	8	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	278	306

Andrew N. Sanford  
 REGISTERED CIVIL ENGINEER  
 DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
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 SAN DIEGO, CALIFORNIA 92131



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

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

Note: For Section F-F see "Abutment Details No.1" sheet. For Sections G-G and H-H, see "Abutment Details No.2" sheet.

Norbert Gee  
 DESIGN OVERSIGHT  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION**  
 Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE) ABUTMENT 3 LAYOUT**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: PROJECT NUMBER & PHASE: 2777 11000002001

CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

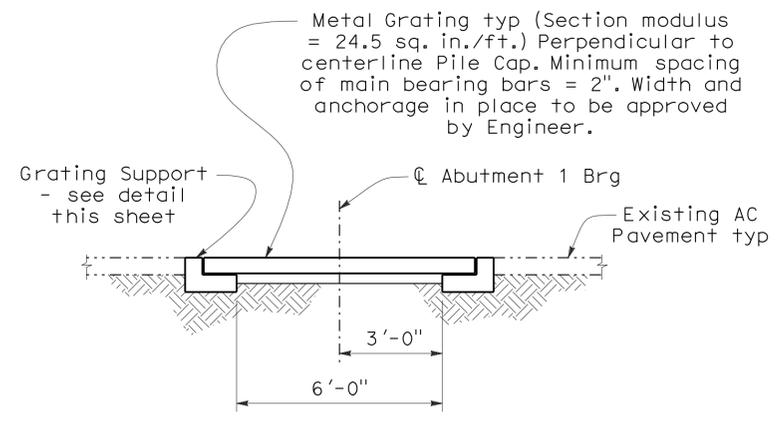
REVISION DATES	SHEET	OF
1-18-10	9	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	279	306

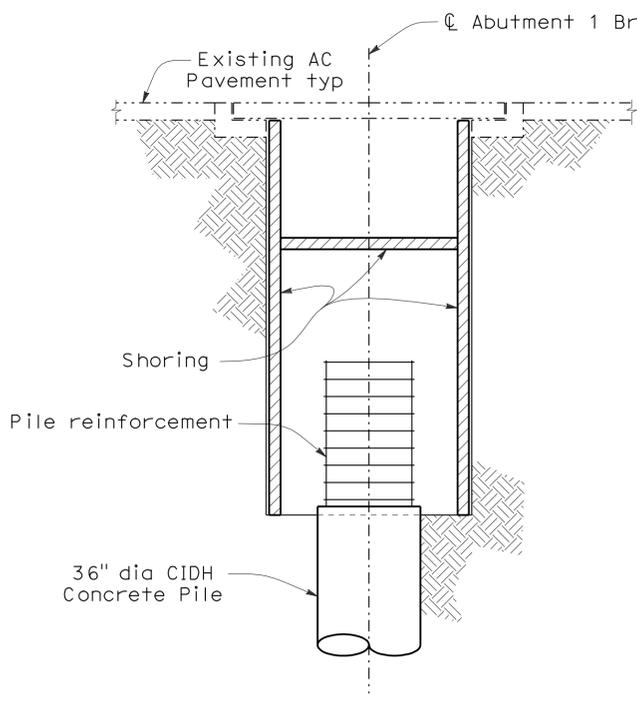
REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
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**CITY OF ESCONDIDO**  
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 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



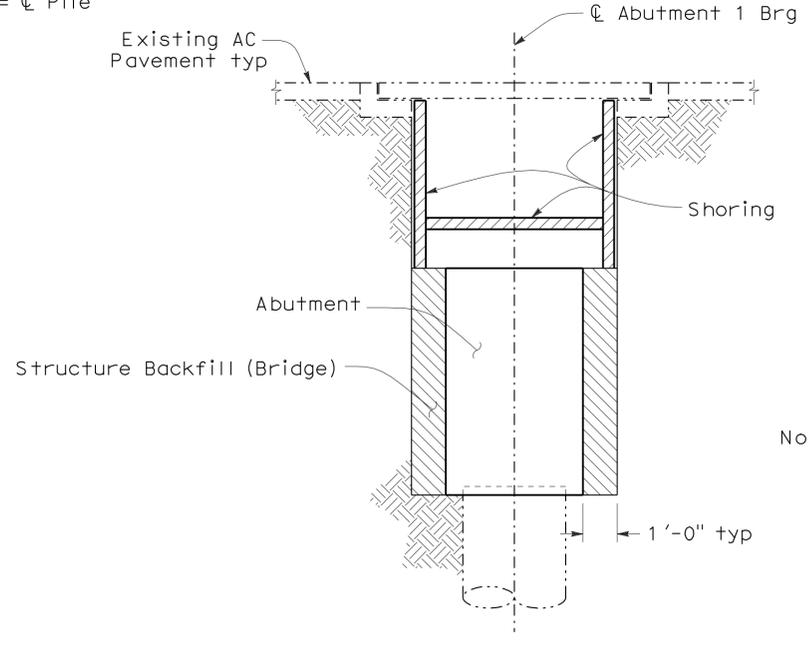
Task 1: Saw cut pavement, excavate and cast concrete supports, and install grate.

**TASK 1**  
3/8" = 1'-0"



Task 2: Complete excavation, install shoring, and drill piles.

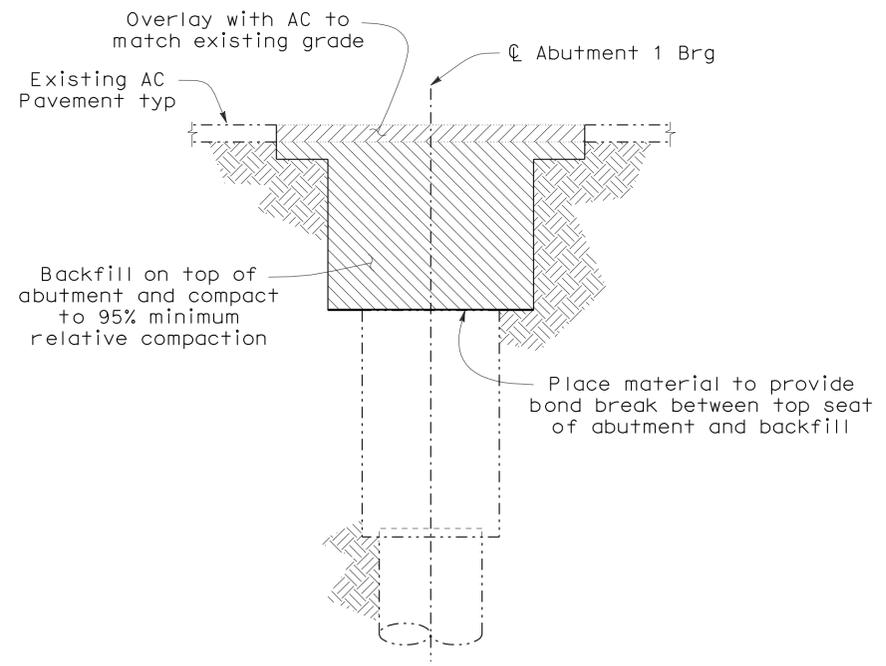
**TASK 2**  
3/8" = 1'-0"



Task 3: Place abutment reinforcement, cast abutment, remove lower shoring, and backfill to top of cap.

**TASK 3**  
3/8" = 1'-0"

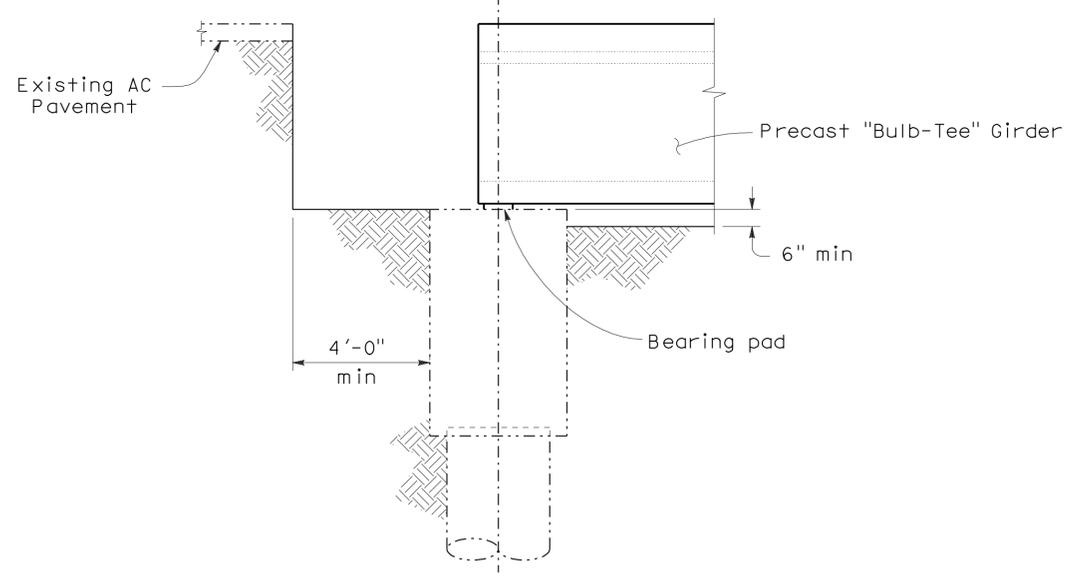
Note: If optional Abutment 1 construction details are used, threaded form savers shall be used for the construction of the backwall.



Task 4: Place bond breaking material, backfill on top of bond break to a minimum of 95% compaction, and place AC to match existing grade.

**TASK 4**  
3/8" = 1'-0"

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

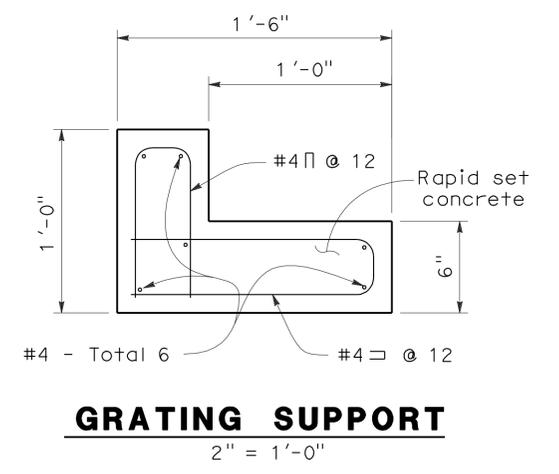


Task 5: Excavate down to top of abutment, place bearing pads, and place precast girders.

Note: Contractor to determine appropriate time to install abutment drainage.

**TASK 5**  
3/8" = 1'-0"

Note: Contractor is not allowed to bench excavation.



**GRATING SUPPORT**

DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

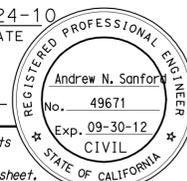
DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

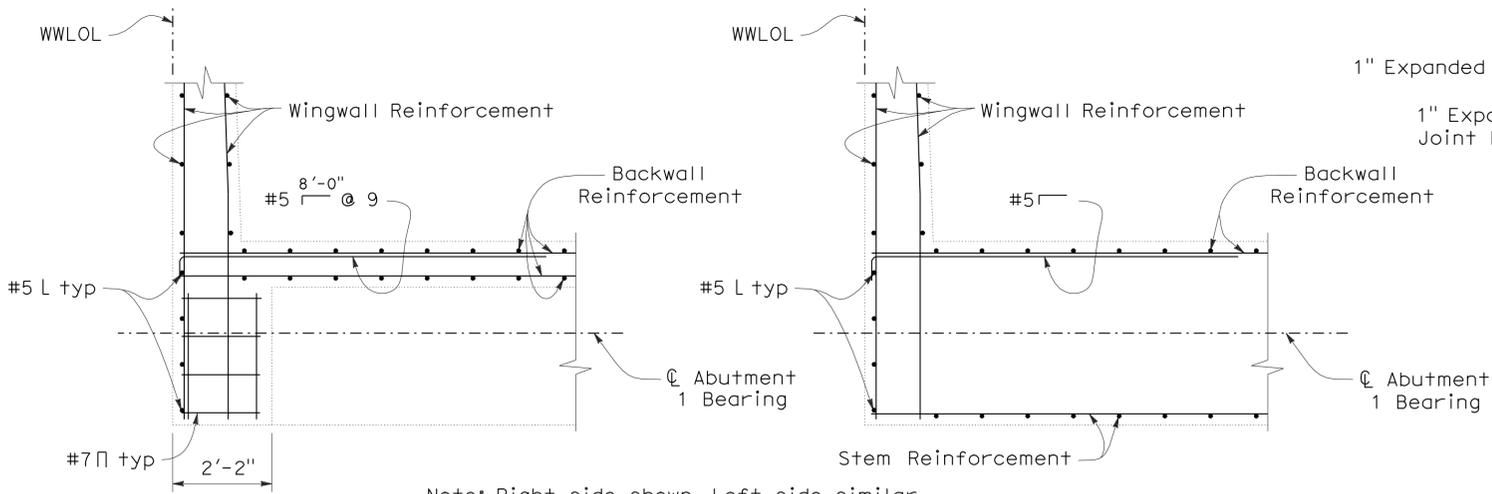
Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**OPTIONAL ABUTMENT 1 CONSTRUCTION DETAILS**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	280	306

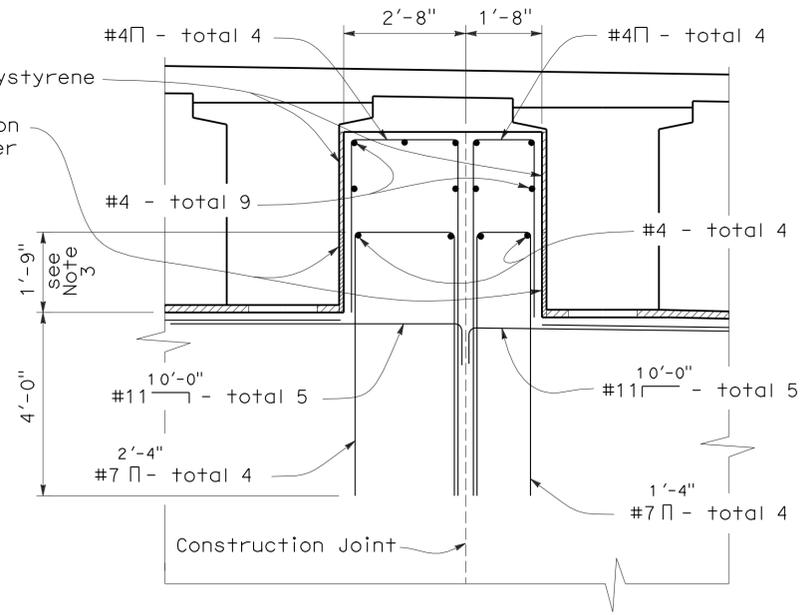

  
 Andrew N. Sanford  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 7-18-11  
 PLANS APPROVAL DATE

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**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



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

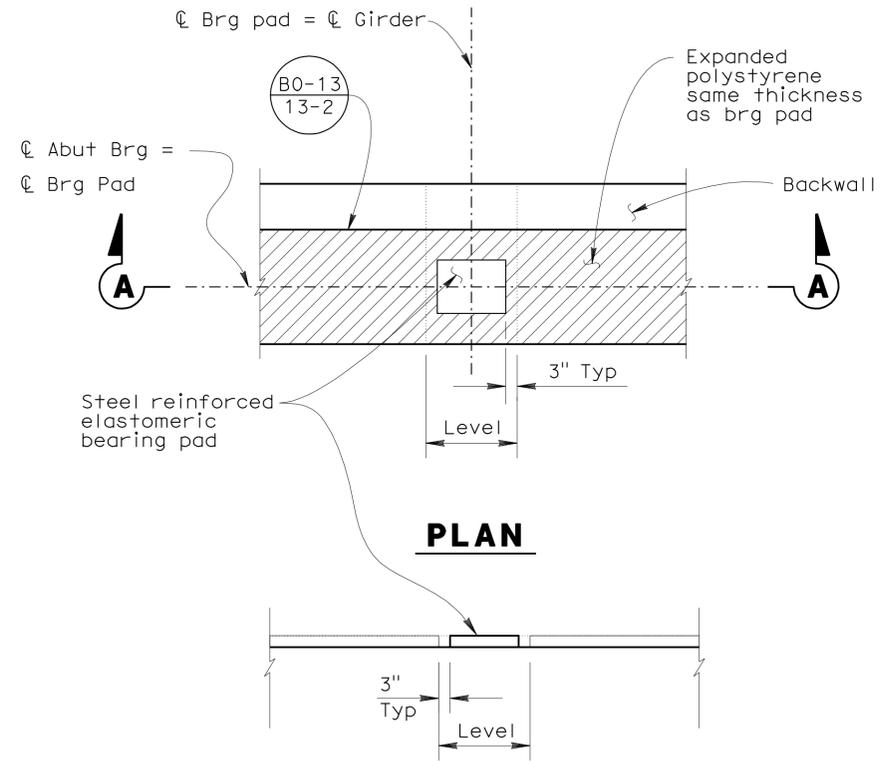
**SECTION E-E**  
1/2" = 1'-0"



Notes:

1. Abutment 3 shown, Abutment 1 similar. Typical Abutment Reinforcement not shown.
2. Construction joint optional at Abutment 1.
3. Dimension is for reinforcement and expansion joint filler.

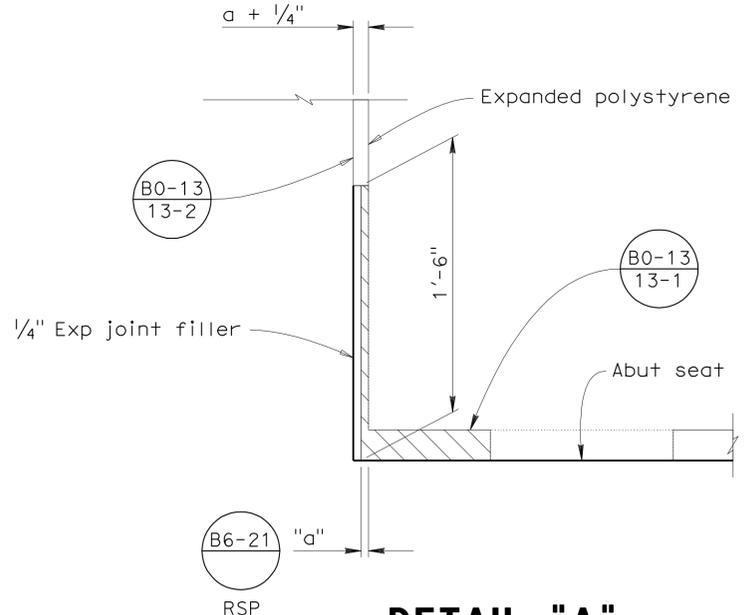
**SECTION F-F**  
1/2" = 1'-0"



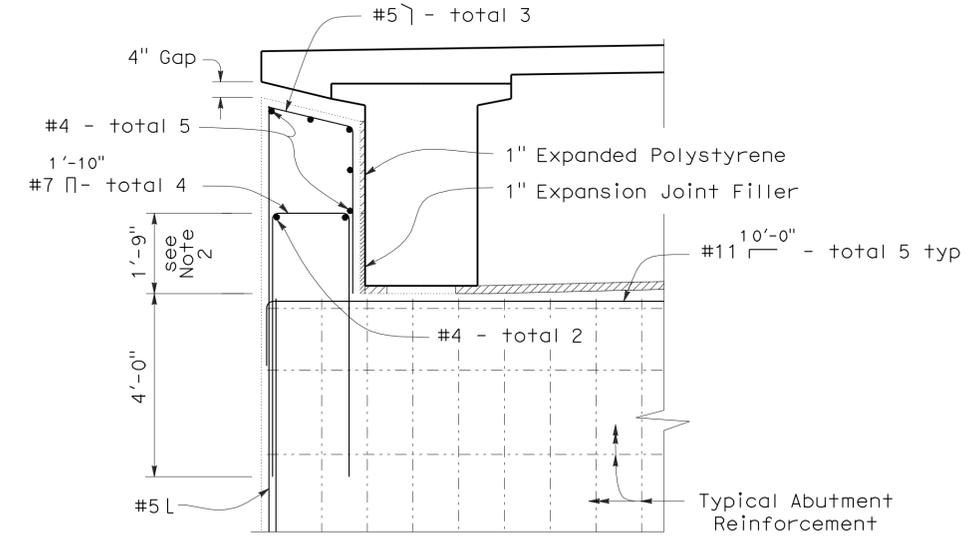
**PLAN**

**SECTION A-A**

**BEARING SEAT DETAILS**  
No Scale



**DETAIL "A"**  
No Scale



Notes:

1. Abutment 1 shown, Abutment 3 similar. Right side shown, left side similar.
2. Dimension is for reinforcement and expansion joint filler.

**EXTERIOR SHEAR KEY**  
1/2" = 1'-0"

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

  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**ABUTMENT DETAILS NO. 1**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 2777  
PROJECT NUMBER & PHASE: 11000002001

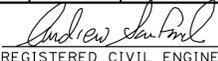
CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

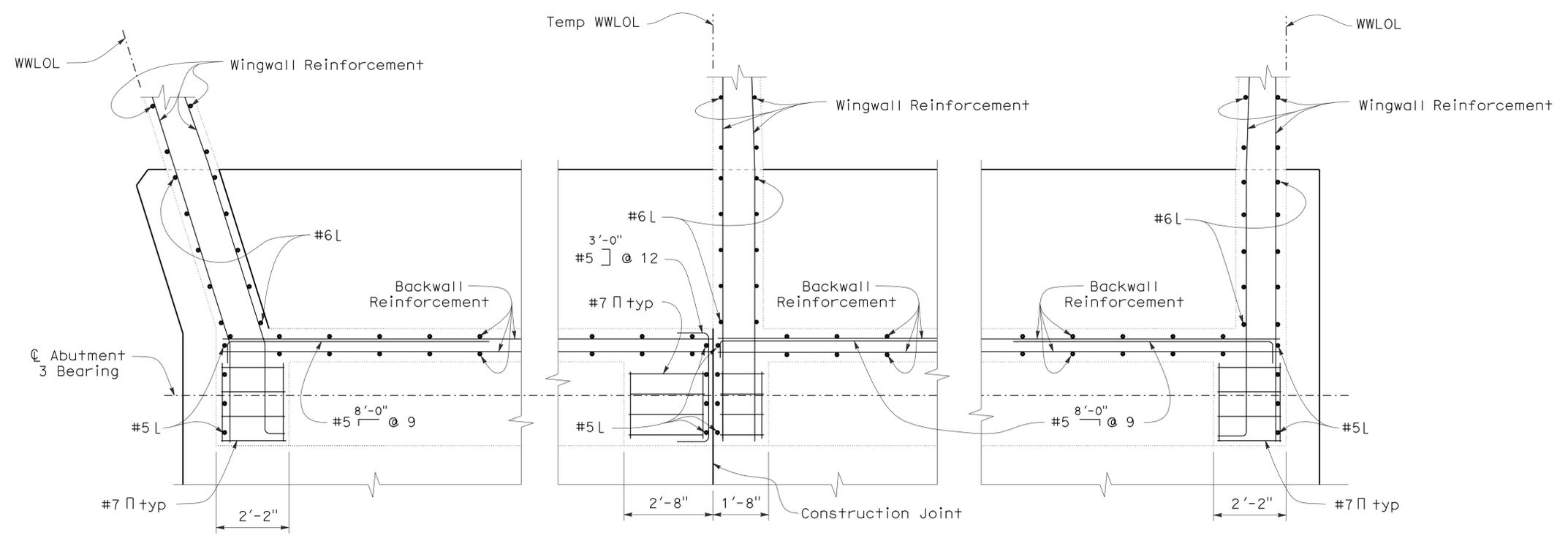
REVISION DATES	SHEET	OF
11-18-10 11-24-10 10-15-10	11	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:49

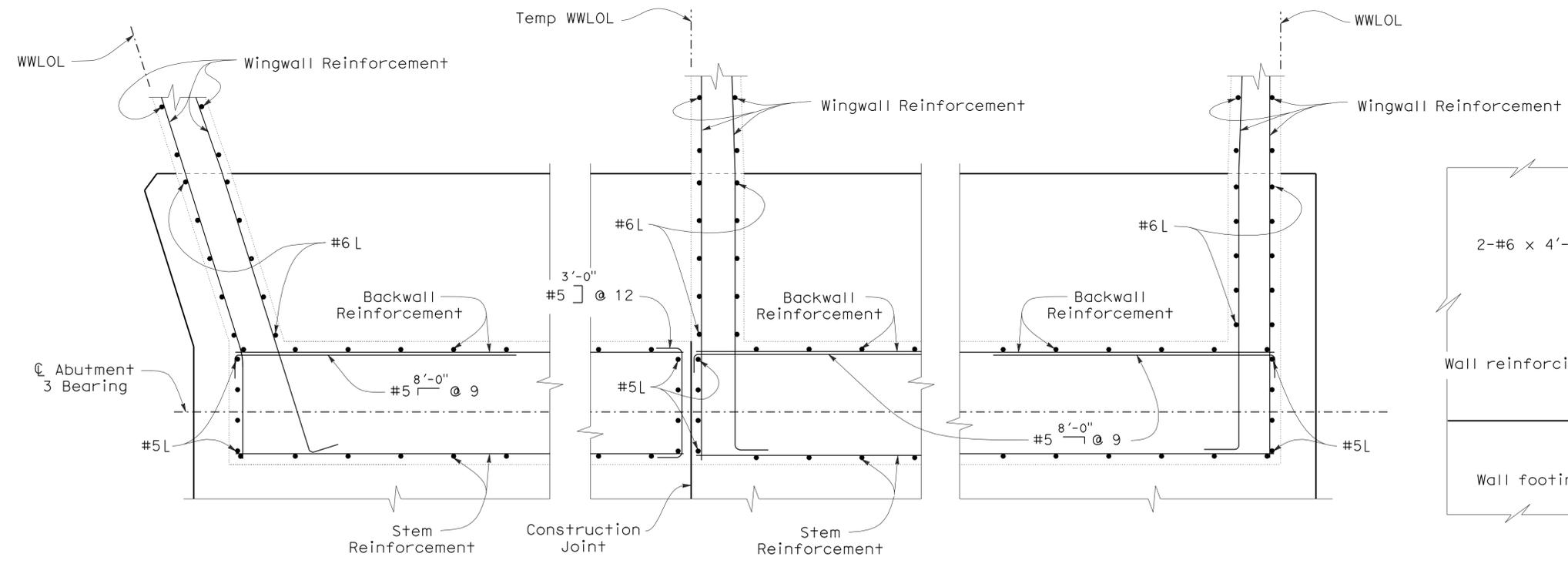
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	281	306

  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

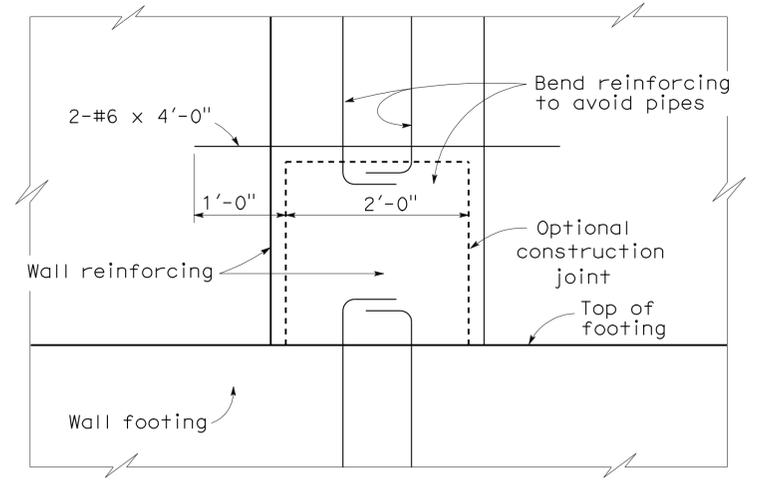
CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



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



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



**DETAIL 1**  
1" = 1'-0"

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

- Notes:
1. Abutment 3 shown, abutment 1 similar.
  2. Construction joint optional at abutment 1.
  3. For location of Detail 1, see "Abutment Details No. 3" sheet.

  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**ABUTMENT DETAILS NO. 2**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 CONTRACT NO.: 11-259804

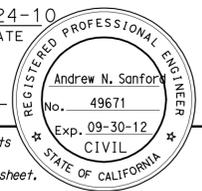
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
1-18-10	12	37

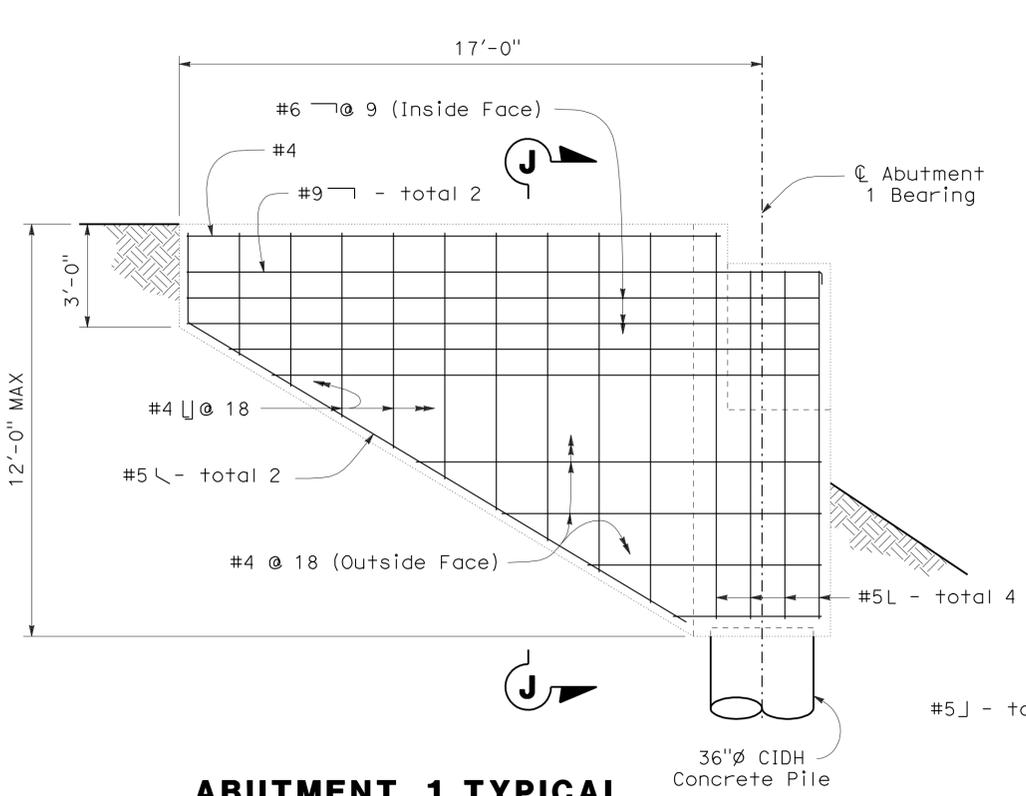
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	282	306

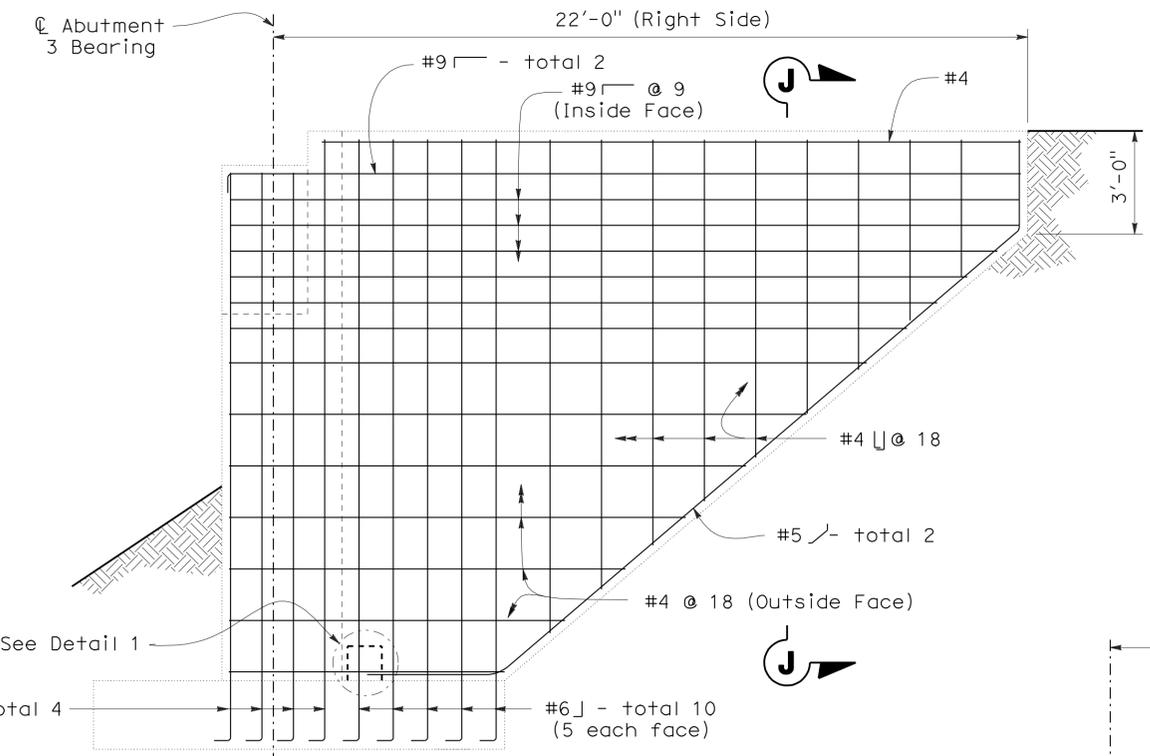
Andrew N. Sanford  
 REGISTERED CIVIL ENGINEER  
 DATE 11-24-10  
 7-18-11  
 PLANS APPROVAL DATE  
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**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131

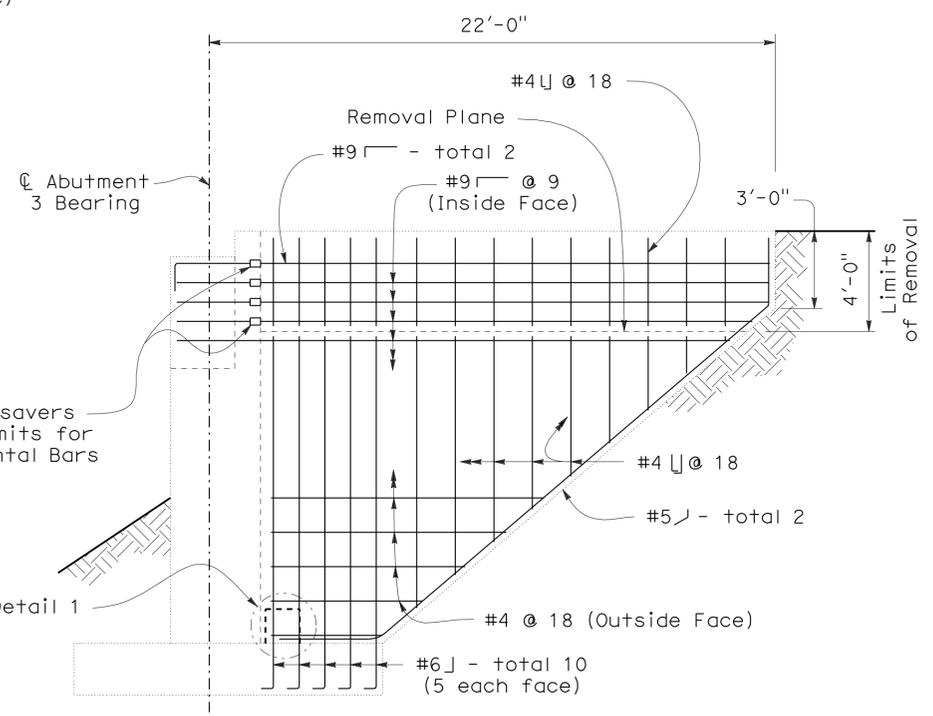


**ABUTMENT 1 TYPICAL WINGWALL ELEVATION**  
3/8" = 1'-0"



Note: Length of Abutment 3 wingwall (left side) as shown on "Abutment 3 Layout" sheet.

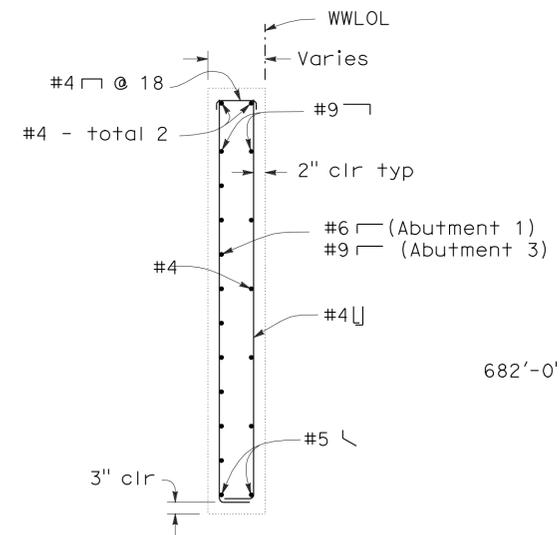
**ABUTMENT 3 TYPICAL WINGWALL ELEVATION**  
3/8" = 1'-0"



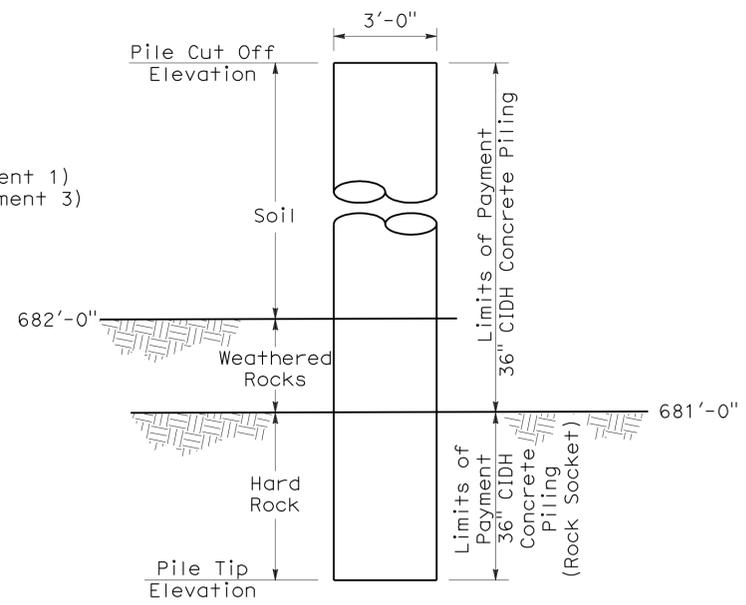
Threaded form savers above Removal Limits for #9 and #4 Horizontal Bars

Note: Prior to completing backfill at Abutment 3 during Stage 2, the Contractor must remove the top 4 feet of the temporary wingwall and patch concrete surfaces per "Patch Detail" (this sheet) to prevent exposed reinforcement.

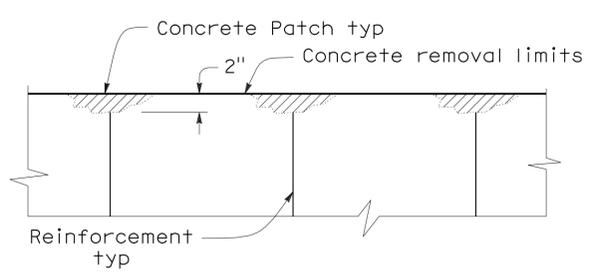
**TEMPORARY WINGWALL ELEVATION**  
1/4" = 1'-0"



**SECTION J-J**  
1/2" = 1'-0"



**PILE LIMITS OF PAYMENT**  
No Scale



- Notes:**
1. Remove concrete to limits required.
  2. Remove reinforcement to 2" below concrete removal limits and patch.

**PATCH DETAIL**  
No Scale

Note: For Detail 1, see "Abutment Details No. 2" sheet.

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

Design Oversight: Norbert Gee  
 SIGN OFF DATE: 12-1-10

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**ABUTMENT DETAILS NO. 3**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

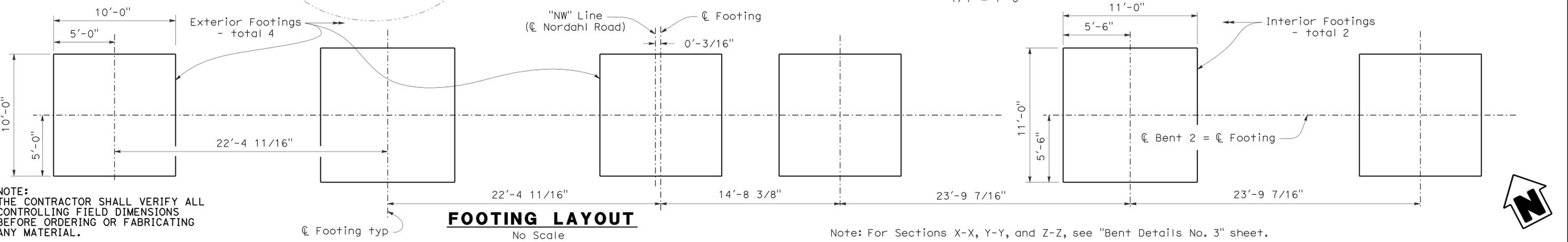
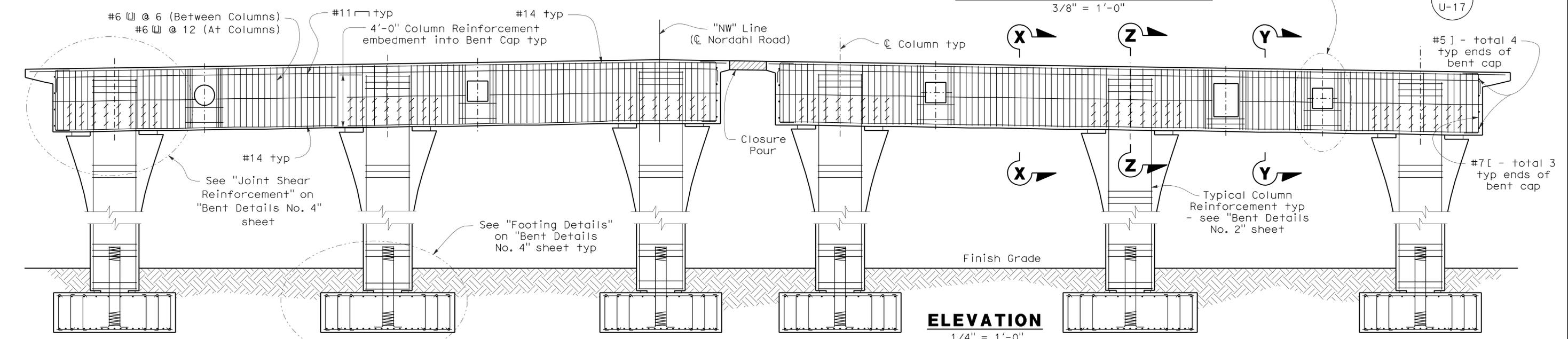
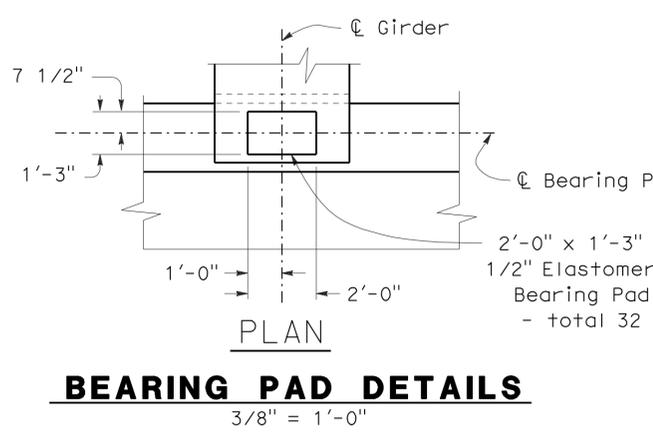
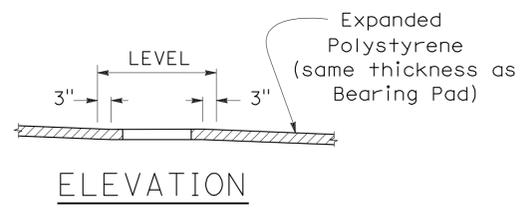
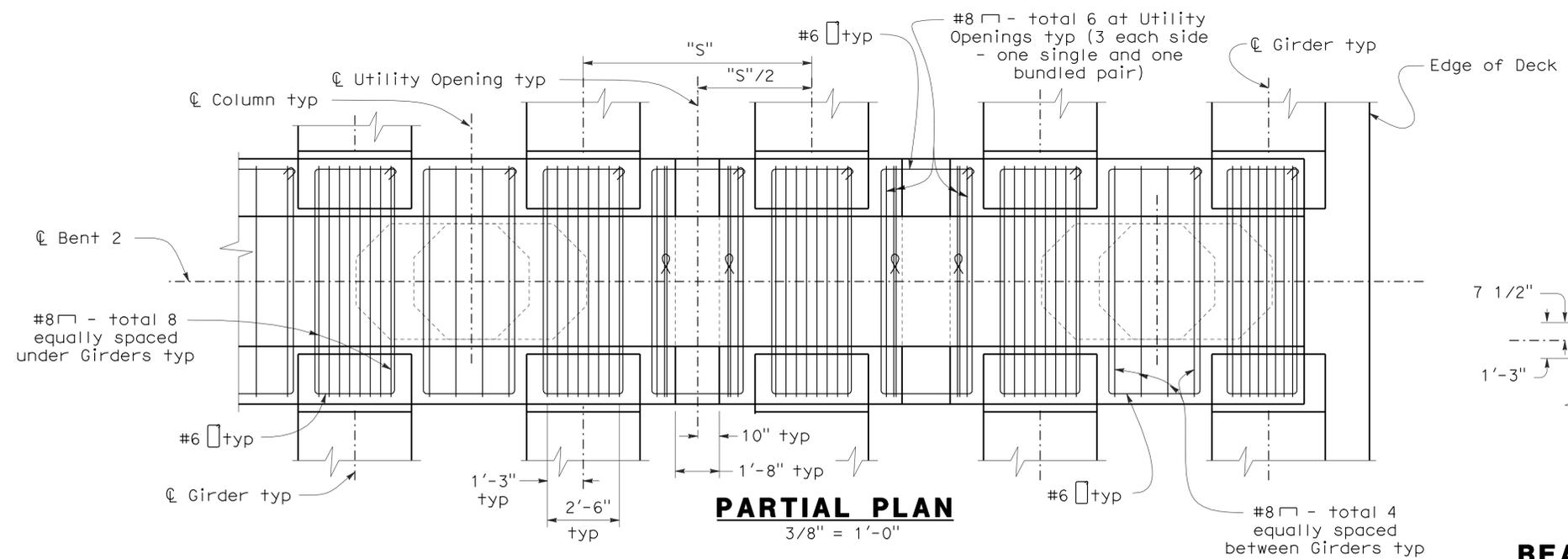
REVISION DATES	SHEET	OF
1-18-10 8-04-10 10-15-10	13	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	283	306

Andrew N. Sanford  
 REGISTERED CIVIL ENGINEER  
 DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



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

Note: For Sections X-X, Y-Y, and Z-Z, see "Bent Details No. 3" sheet.

DESIGN OVERSIGHT Norbert Gee  
 SIGN OFF DATE 12-1-10

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**BENT DETAILS NO. 1**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 2777  
PROJECT NUMBER & PHASE: 11000002001

CONTRACT NO.: 11-259804

REVISION DATES	SHEET	OF
1-18-10	14	37

DISREGARD PRINTS BEARING EARLIER REVISION DATES

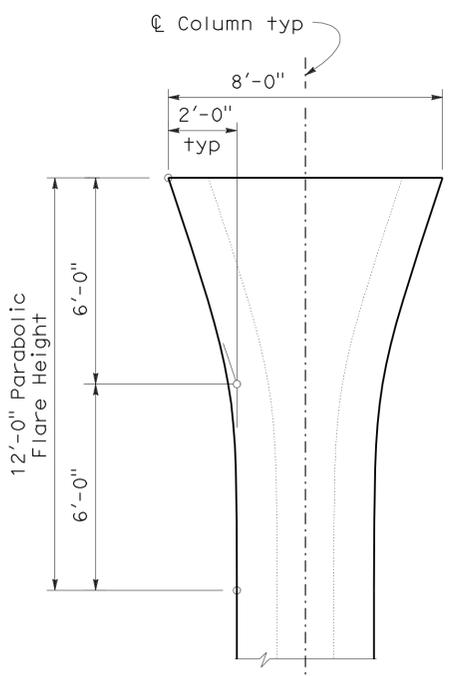
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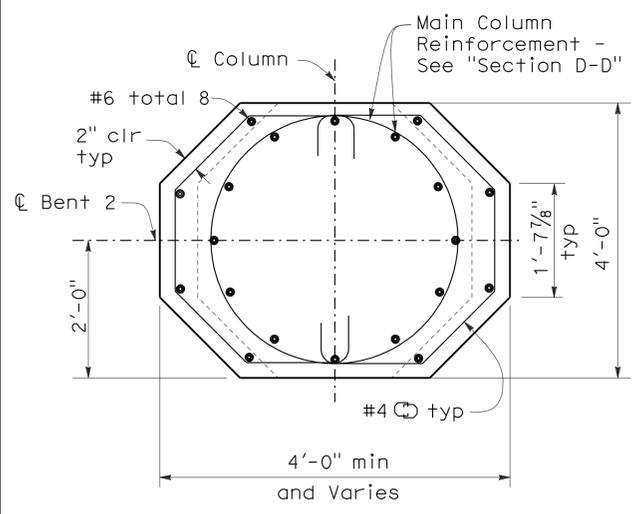
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	284	306

Andrew Sanford  
 REGISTERED CIVIL ENGINEER  
 11-24-10  
 DATE  
 7-18-11  
 PLANS APPROVAL DATE  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

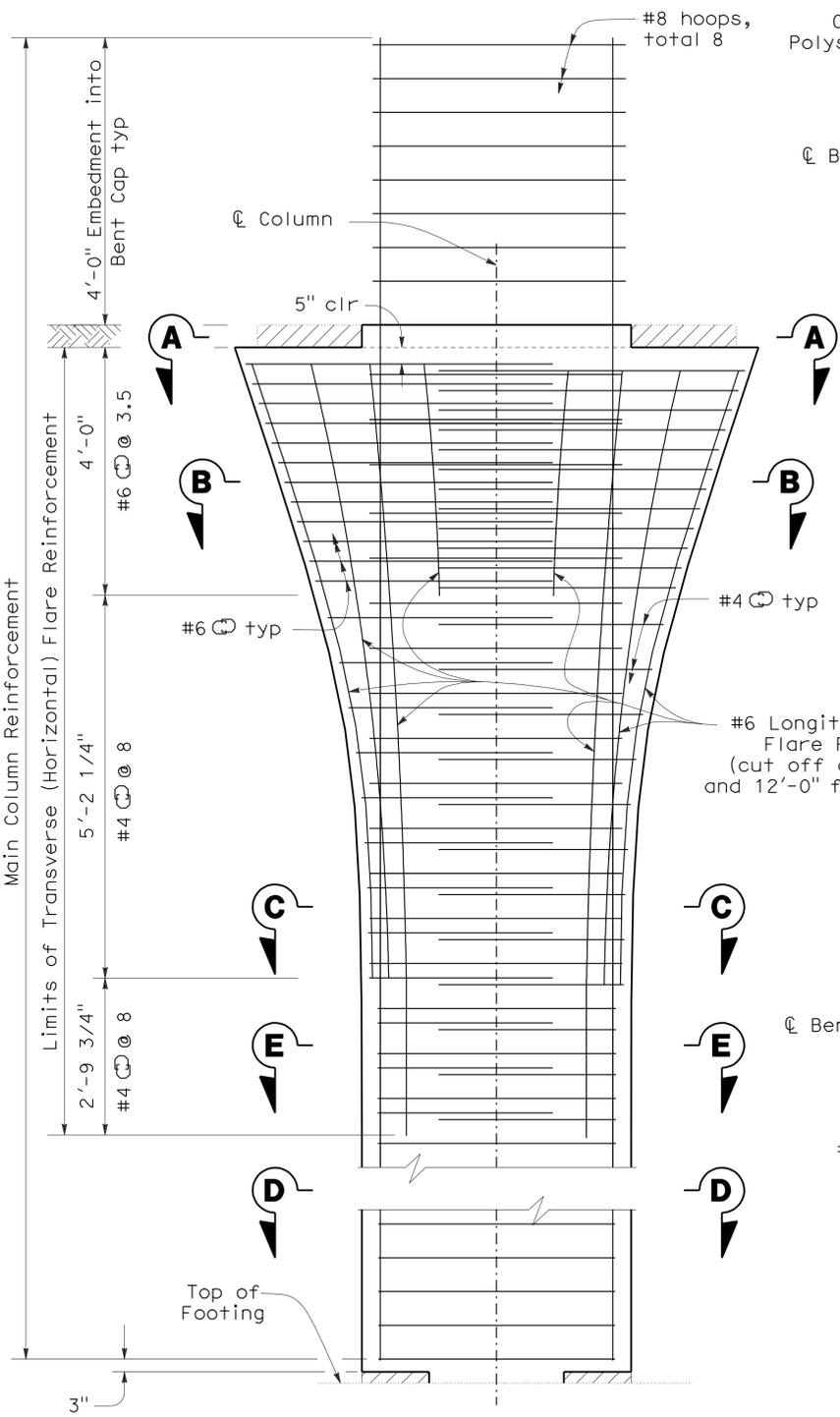
**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



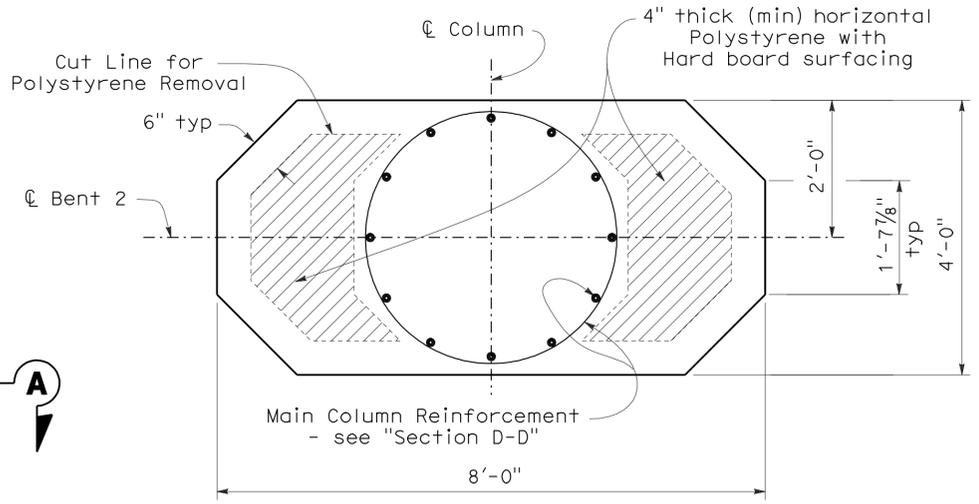
**COLUMN FLARE GEOMETRY**  
3/8" = 1'-0"



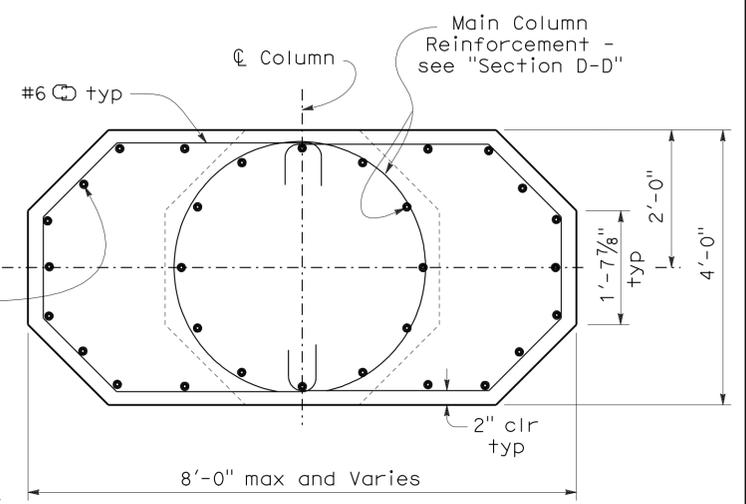
**SECTION E-E**  
3/4" = 1'-0"



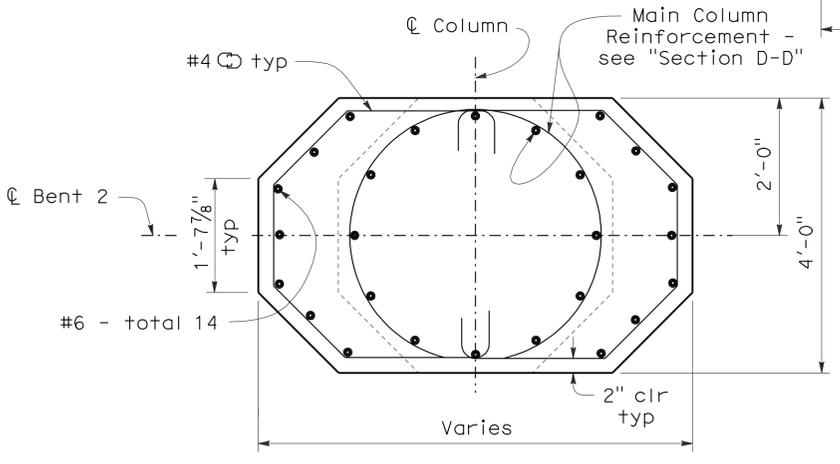
**TYPICAL COLUMN ELEVATION**  
3/4" = 1'-0"



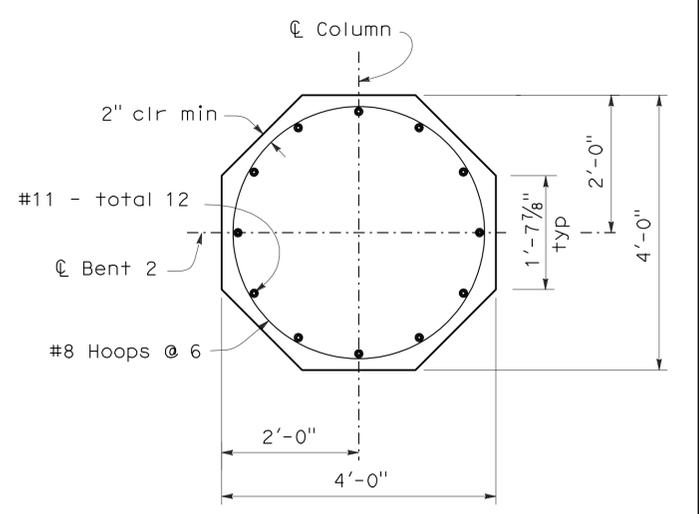
**SECTION A-A**  
3/4" = 1'-0"



**SECTION B-B**  
3/4" = 1'-0"



**SECTION C-C**  
3/4" = 1'-0"



**SECTION D-D**  
3/4" = 1'-0"

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

Note: No splices allowed in main column reinforcement. Ultimate butt splices required for #8 hoops.

Norbert Gee  
 DESIGN OVERSIGHT  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**BENT DETAILS NO. 2**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 2777  
PROJECT NUMBER & PHASE: 11000002001

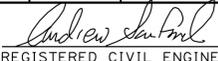
CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

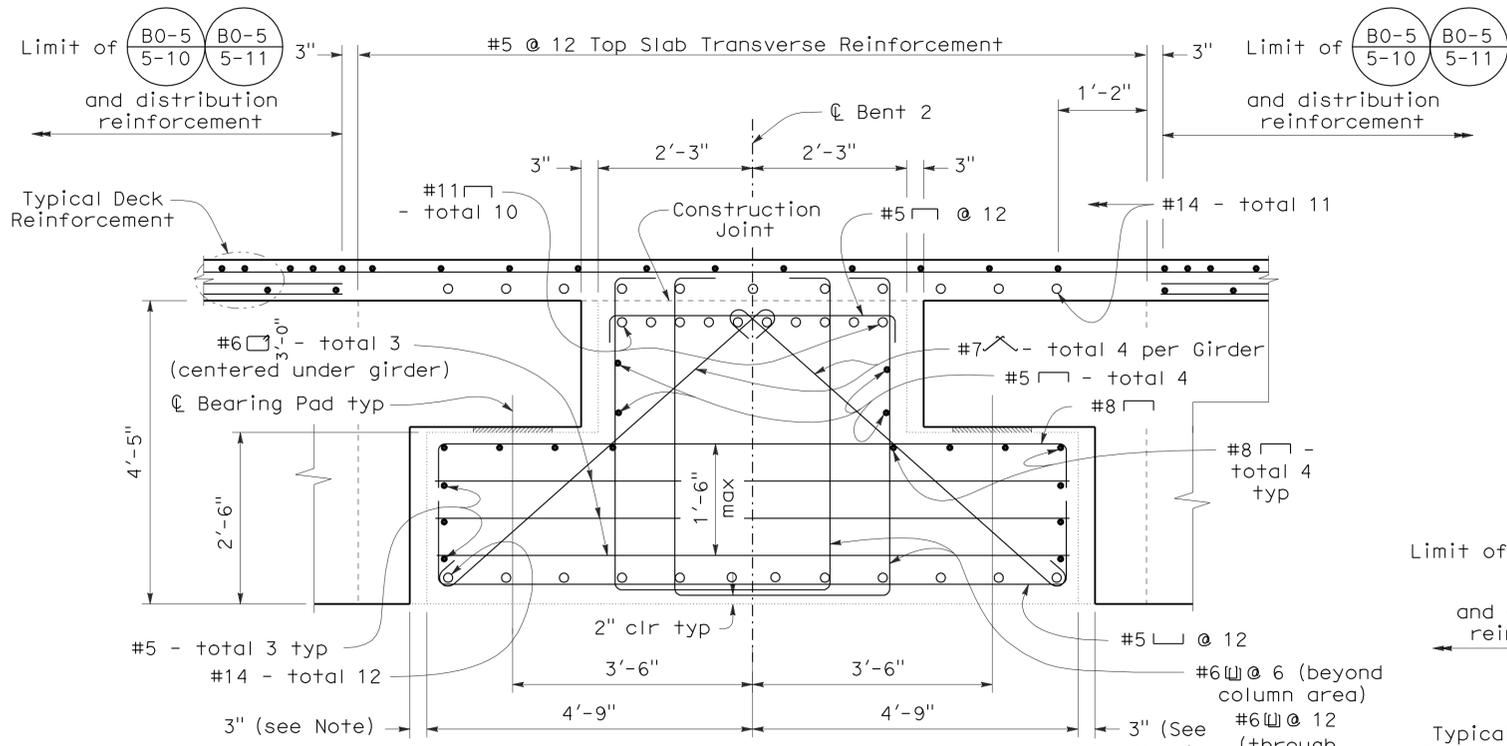
REVISION DATES	SHEET	OF
1-18-10	15	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:49

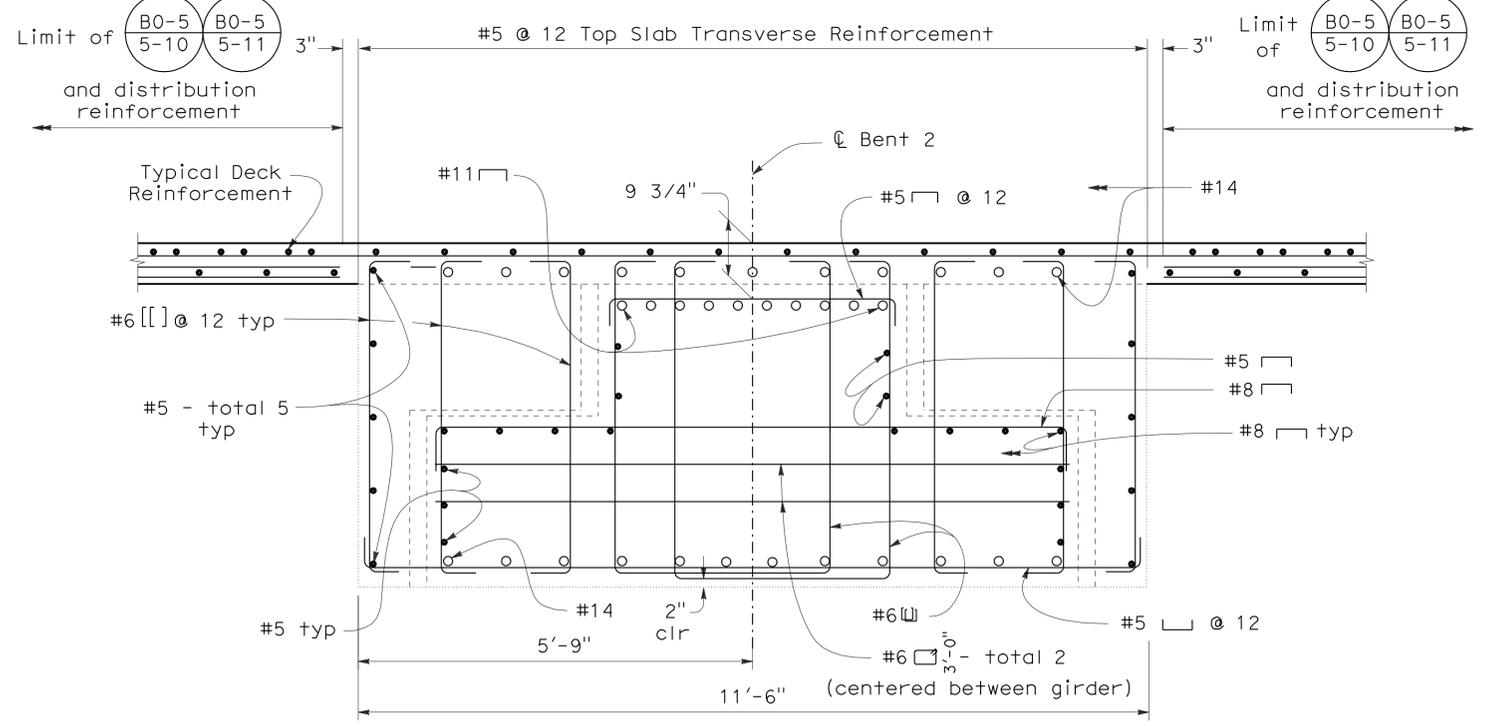
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	285	306

  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



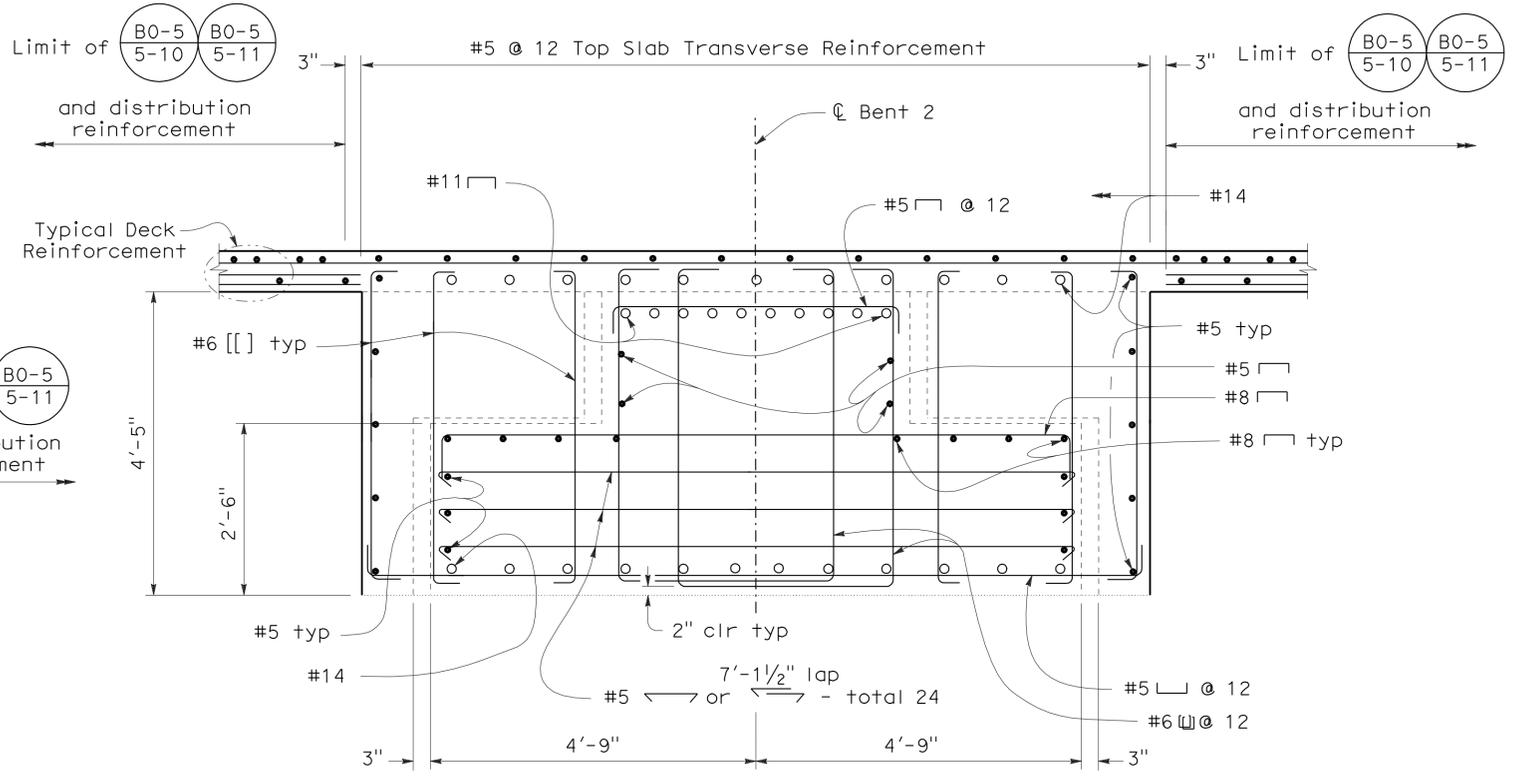
**SECTION X-X AT GIRDERS**  
 3/4" = 1'-0"



**SECTION Y-Y BETWEEN GIRDERS**  
 3/4" = 1'-0"

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

Note: See "Bent Details No.1" for locations of Sections X-X, Y-Y, and Z-Z.



**SECTION Z-Z AT COLUMNS**  
 3/4" = 1'-0"

  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION**  
 Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE)**  
**BENT DETAILS NO. 3**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

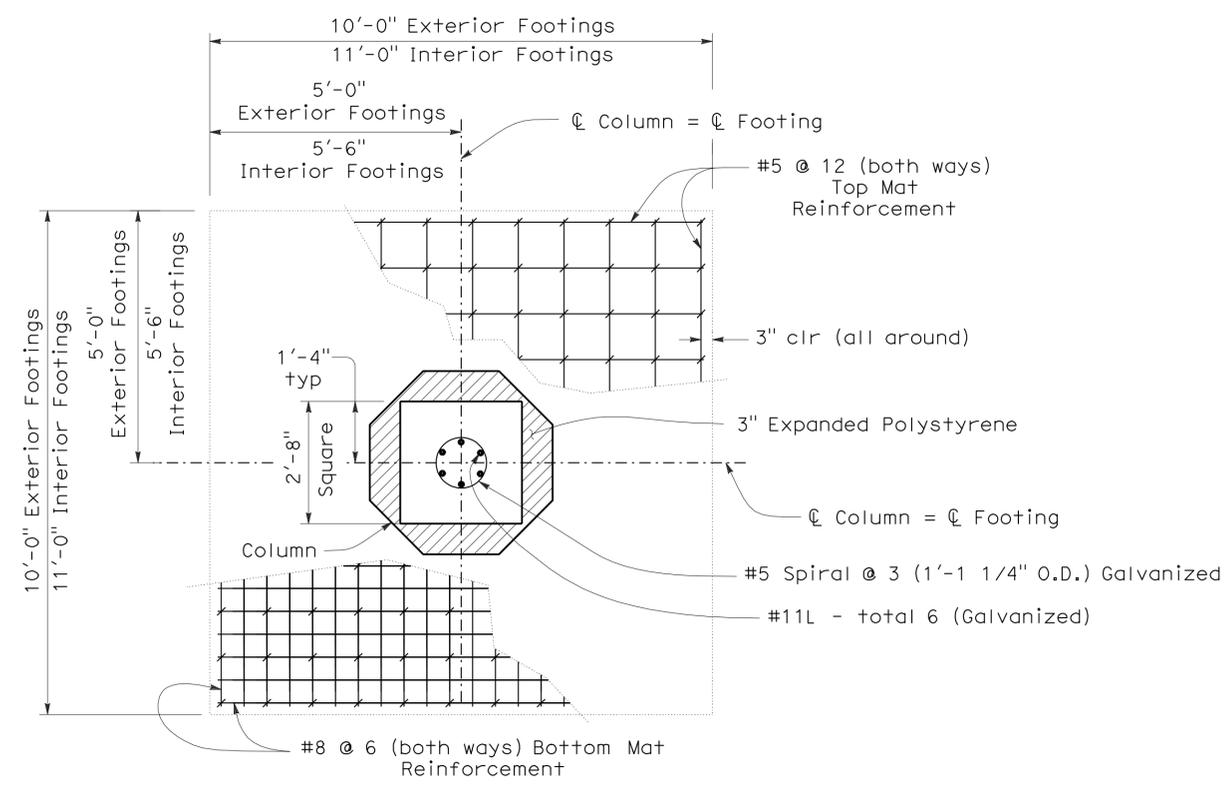
REVISION DATES	SHEET	OF
1-18-10	16	37

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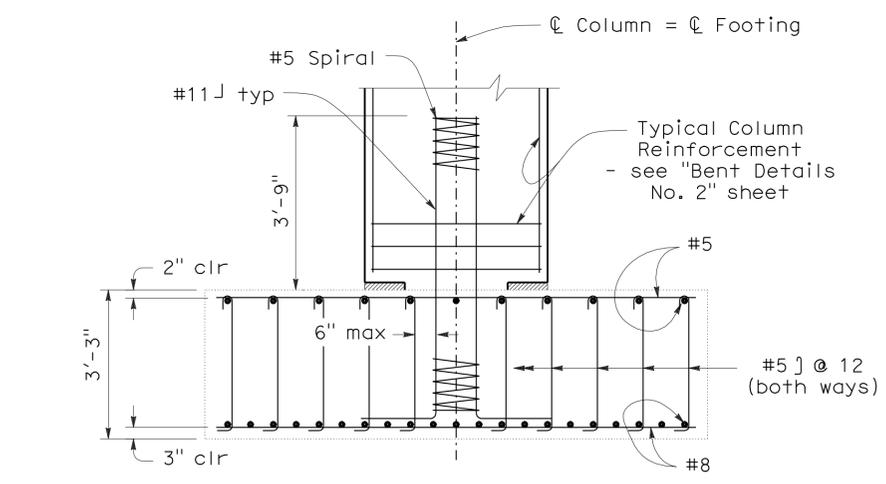
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	286	306

Andrew Sanford  
 REGISTERED CIVIL ENGINEER  
 DATE 11-24-10  
 7-18-11  
 PLANS APPROVAL DATE  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
 SIMON WONG ENGINEERING, INC.  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



**PLAN**



**ELEVATION**

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

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

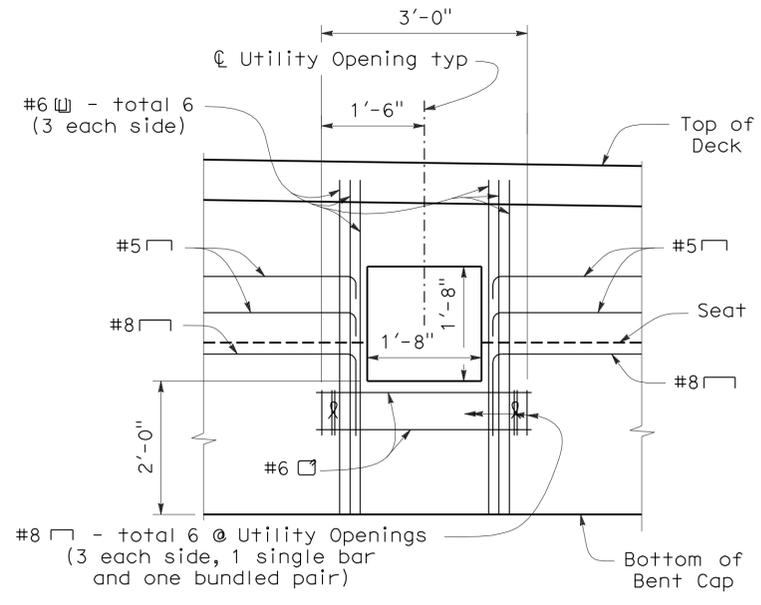
DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION  
 Andrew Sanford  
 PROJECT ENGINEER

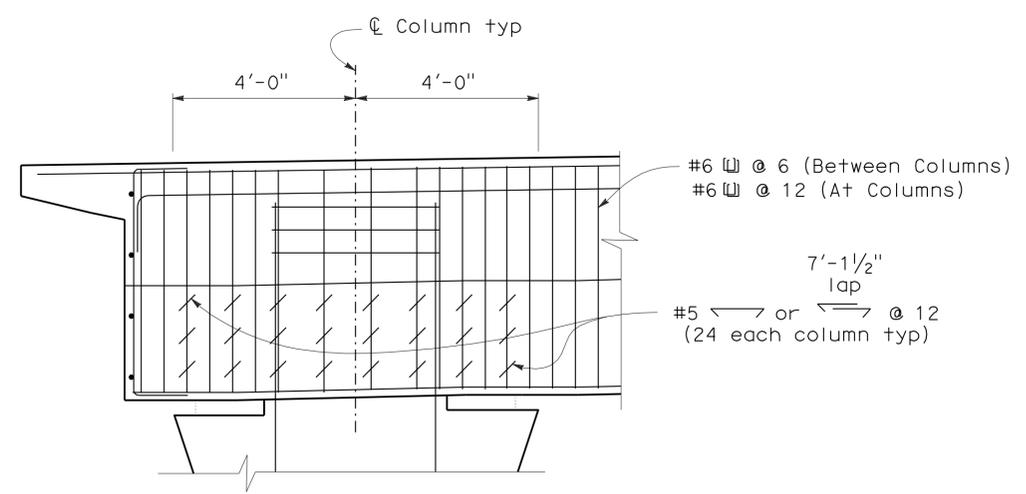
BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE)**  
**BENT DETAILS NO. 4**

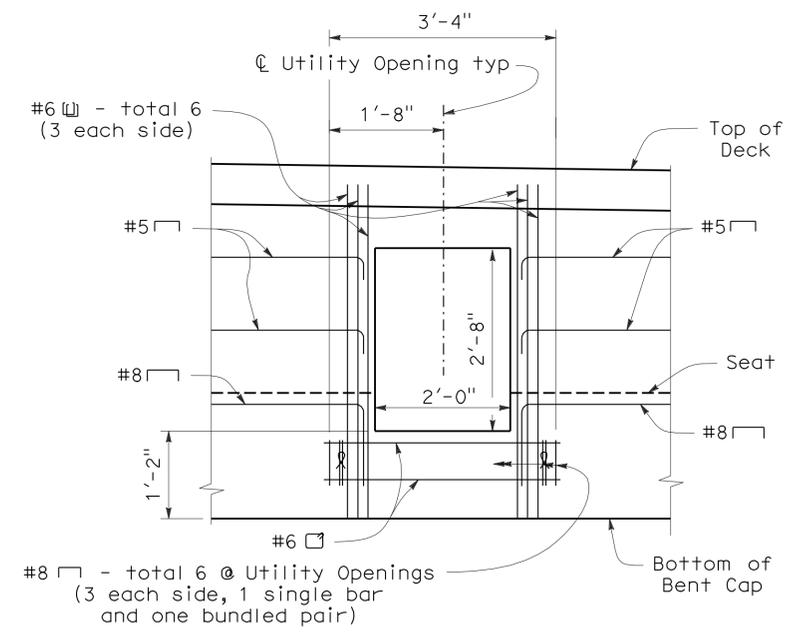


Note: Utility Openings shall be centered  
 between Girders typ. Circular  
 openings shown on "Elevation"  
 on "Bent Details No. 1" sheet  
 should be 1'-8"Ø.

**TYPICAL ELEVATION BENT CAP UTILITY OPENING**  
3/4" = 1'-0"



**JOINT SHEAR REINFORCEMENT**  
1/2" = 1'-0"



**ELEVATION BENT CAP UTILITY OPENING (ELECTRICAL CONDUITS ONLY)**  
3/4" = 1'-0"

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING  
 EARLIER REVISION DATES

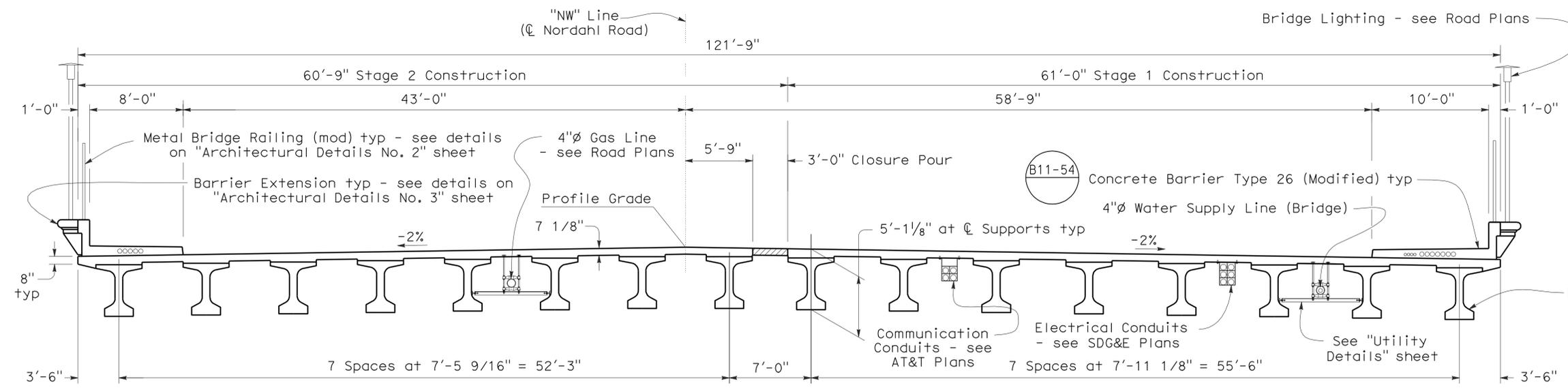
REVISION DATES	SHEET	OF
1-18-10	17	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	287	306

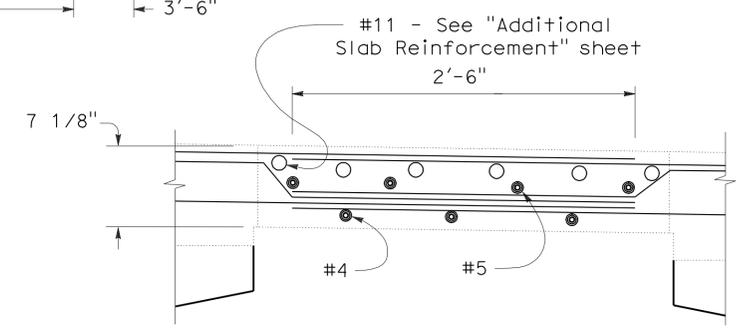
*Andrew Sanford*  
 REGISTERED CIVIL ENGINEER  
 DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131

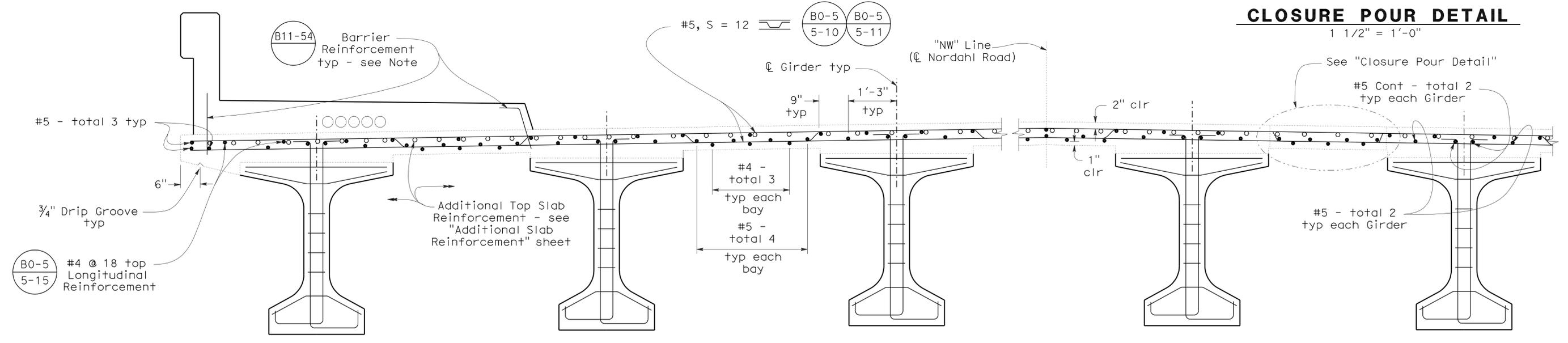


Note: Closure Pour shall not be placed sooner than 21 days after the deck has been placed.

**TYPICAL SECTION**  
3/16" = 1'-0"



**CLOSURE POUR DETAIL**  
1 1/2" = 1'-0"



Note: Barrier Reinforcement for east side concrete barrier shall not be installed during Stage 2 and 3. Barrier Reinforcement to be drilled and bonded into place during Stage 6. See detail on "Girder Layout" sheet.

**PART TYPICAL SECTION** B0-5  
3/4" = 1'-0"

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

*Norbert Gee*  
 DESIGN OVERSIGHT  
 Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION  
 Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE)**  
**TYPICAL SECTION**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

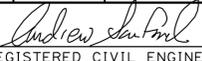
UNIT: PROJECT NUMBER & PHASE: 2777 11000002001

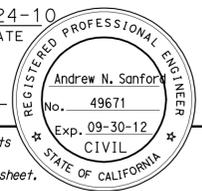
CONTRACT NO.: 11-259804

REVISION DATES	SHEET	OF
1-18-10 8-04-10 10-15-10	18	37

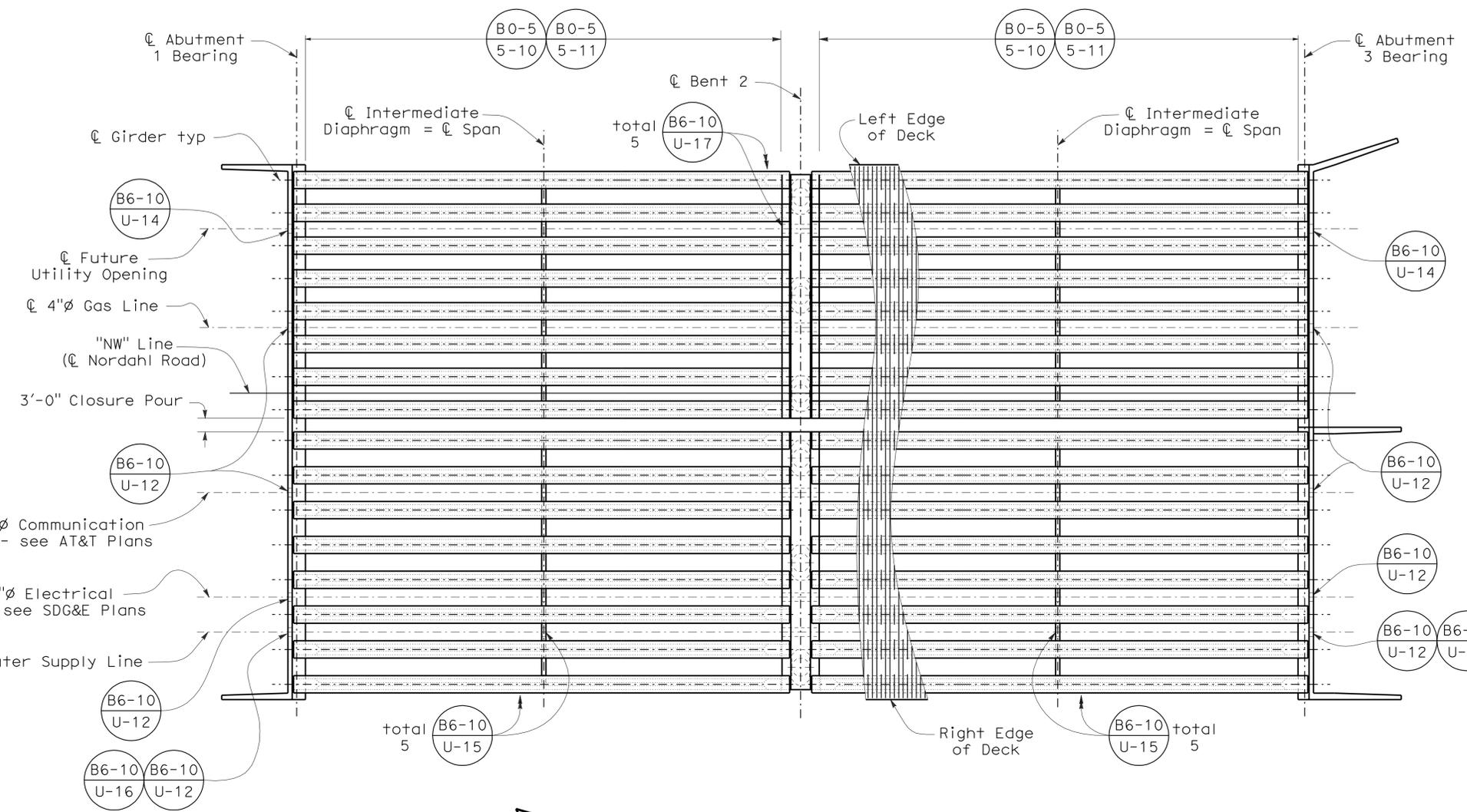
USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	288	306

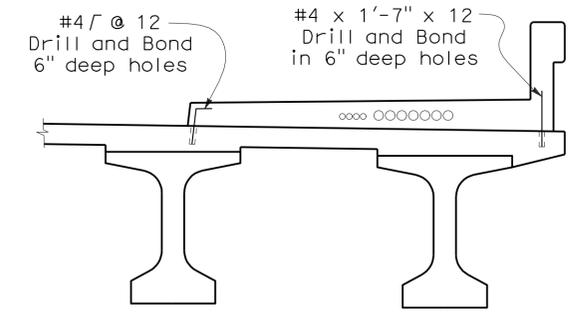
  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 7-18-11  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



**GIRDER LAYOUT**  
1/16" = 1'-0"



Note: For reinforcement not shown, see B11-54.

**EASTSIDE BARRIER  
DRILL AND BOND DETAIL**  
No Scale

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

  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE  
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION**

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)  
GIRDER LAYOUT**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: PROJECT NUMBER & PHASE: 2777 11000002001

CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
1-18-10 6-04-10 10-15-10	19	37

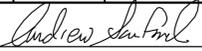
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USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:50

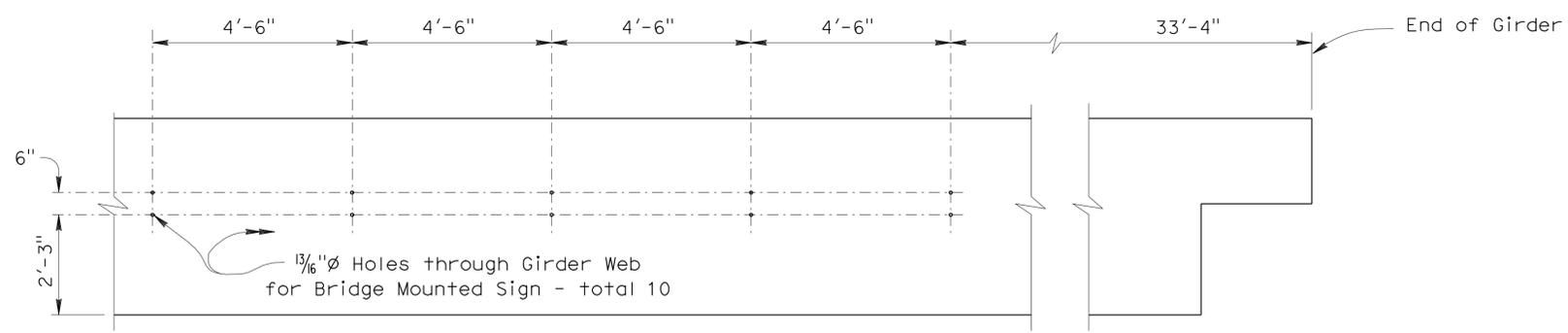




DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	291	306

  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



Note: This detail for one Girder only.

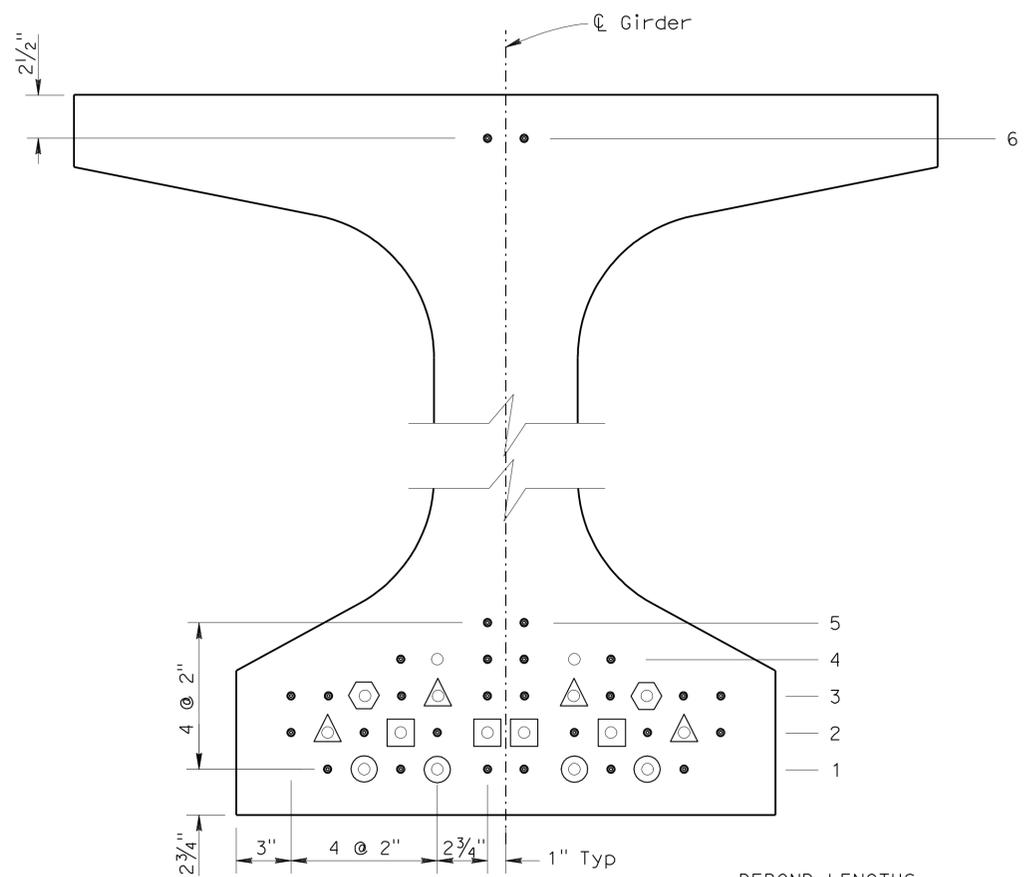
**BRIDGE MOUNTED SIGN HOLE LOCATIONS**

No Scale

**PRESTRESSING NOTES**

- The Jacking Force (P) is the jacking force required at the point of control along the span. The jacking force does not include any fabrication specific losses.
- The maximum tensile stress in the prestressing steel upon release shall not exceed 75% of the specified minimum ultimate tensile strength of the prestressing steel.
- The maximum temporary tensile stress (jacking stress) in the prestressing steel shall not exceed 80% of the specified minimum ultimate tensile strength of the prestressing steel.
- Concrete strength:  
 $f'_{ci}$  is at time of initial stressing  
 $f'_c$  is at 28 days
- Deflection components are informational and will be use to set screed line elevations.
- Screed line elevations for deck concrete will be determined by the Engineer.
- Prestressing strand shall be 270 ksi low relaxation.

All Girders			
Row No.	Total No. of Strands	No. of Debonded Strands	Debonded Length
6	2	0	-
5	2	0	N/A
4	6	0	N/A
3	12	4	20', 15'
2	12	6	20', 25'
1	10	4	37'



**DEBOND LENGTHS**

**LEGEND:**

- Denotes continuously bonded strand location
- Denotes allowable debonded strand location

- Hexagon = 15'
- Triangle = 20'
- Square = 25'
- Circle = 37'

**STRAND TEMPLATE AND DEBONDING PATTERN**

No Scale

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

  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE)**  
**GIRDER DETAILS NO. 3**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001

CONTRACT NO.: 11-259804

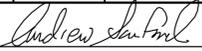
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
1-18-10 8-04-10 10-12-10 11-24-10	22	37

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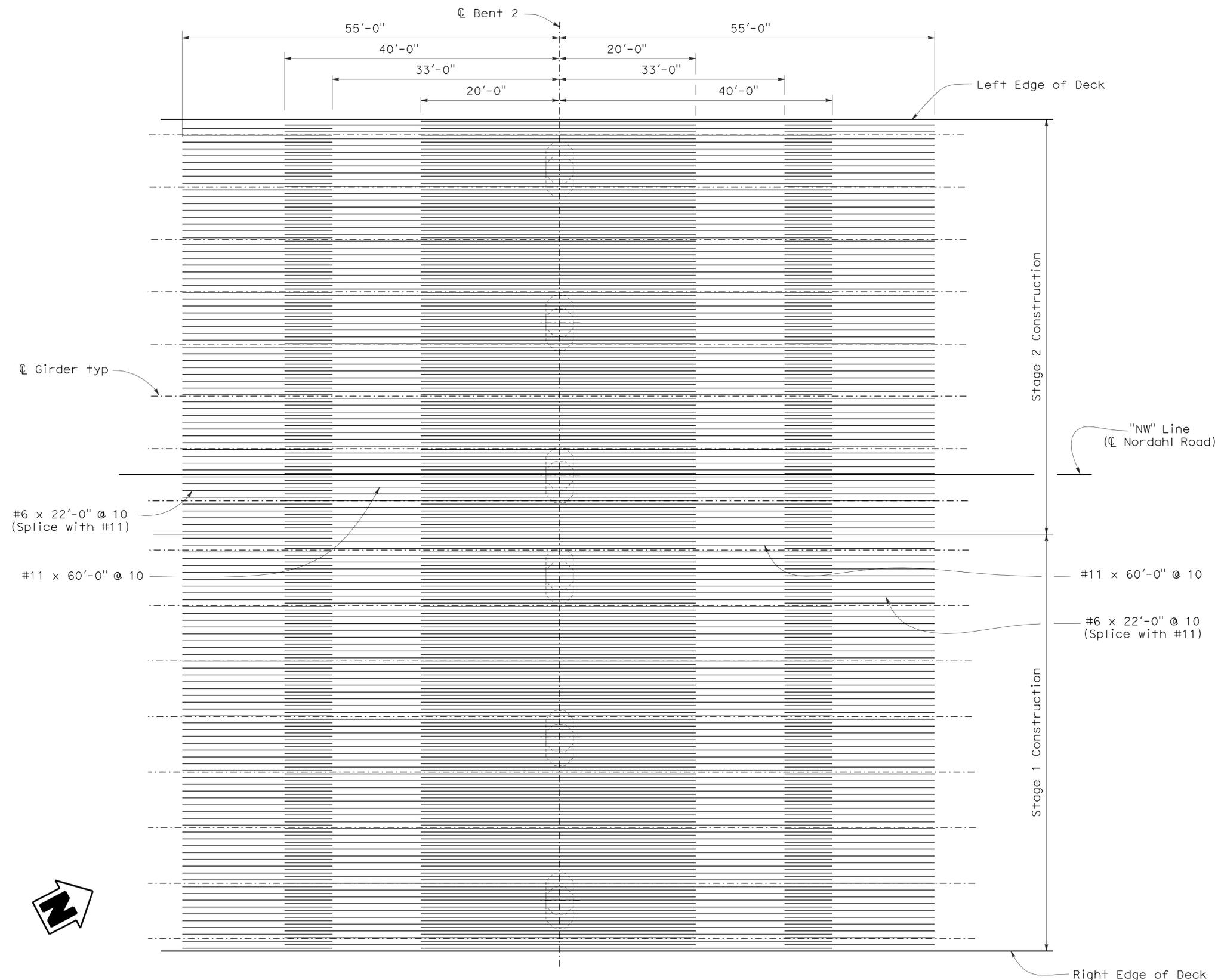
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	292	306

  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131

- Notes:
- For Stage 1 a total of 121 #11 bars are required. For Stage 2 a total of 120 #11 bars are required.
  - Splicing of #11 bars is prohibited.
  - All reinforcement shall be #11 unless otherwise noted.



**ADDITIONAL TOP SLAB REINFORCEMENT**  
 No Scale

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



  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION  
 Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE)**  
**ADDITIONAL SLAB REINFORCEMENT**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 FILE => 57-1220-o-asr.dgn

CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

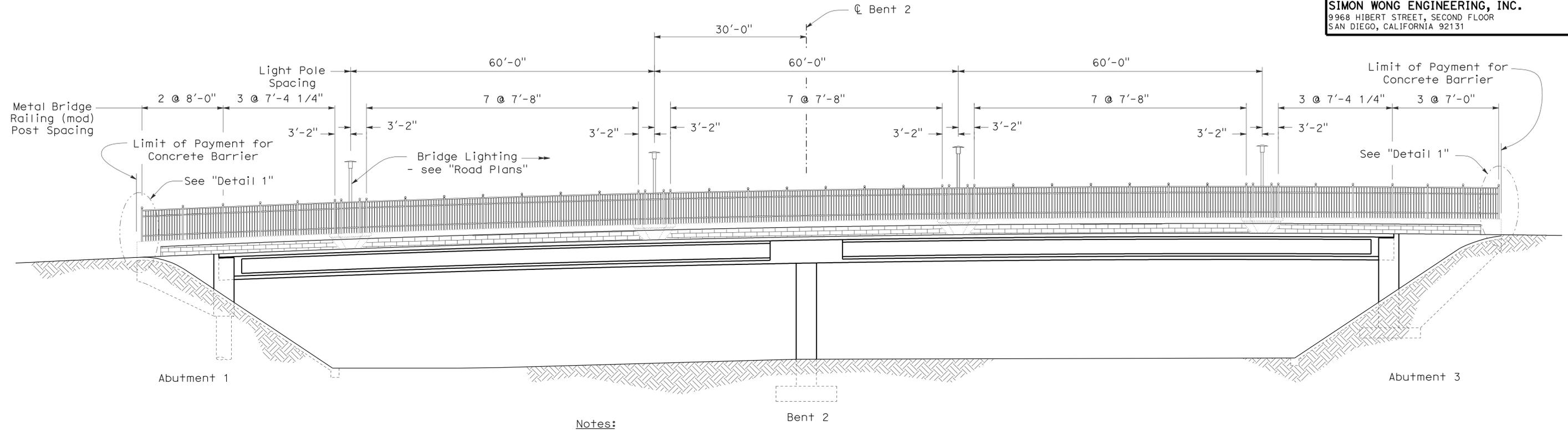
REVISION DATES	SHEET	OF
1-18-10 8-04-10 10-15-10	23	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	293	306

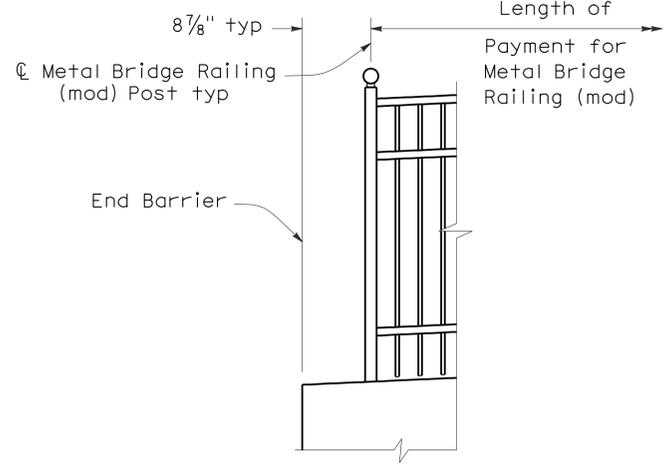
*Andrew Sanford*  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 7-18-11  
 PLANS APPROVAL DATE  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



- Notes:**
1. Details similar for both Edges of Deck.
  2. Posts and Pickets shall be vertical.
  3. Horizontal railing shall conform to horizontal and vertical alignment.

**RAILING ELEVATION**  
 1" = 10'-0"



**DETAIL 1**  
 1/2" = 1'-0"

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

*Norbert Gee*  
 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**ARCHITECTURAL DETAILS NO. 1**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001

CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

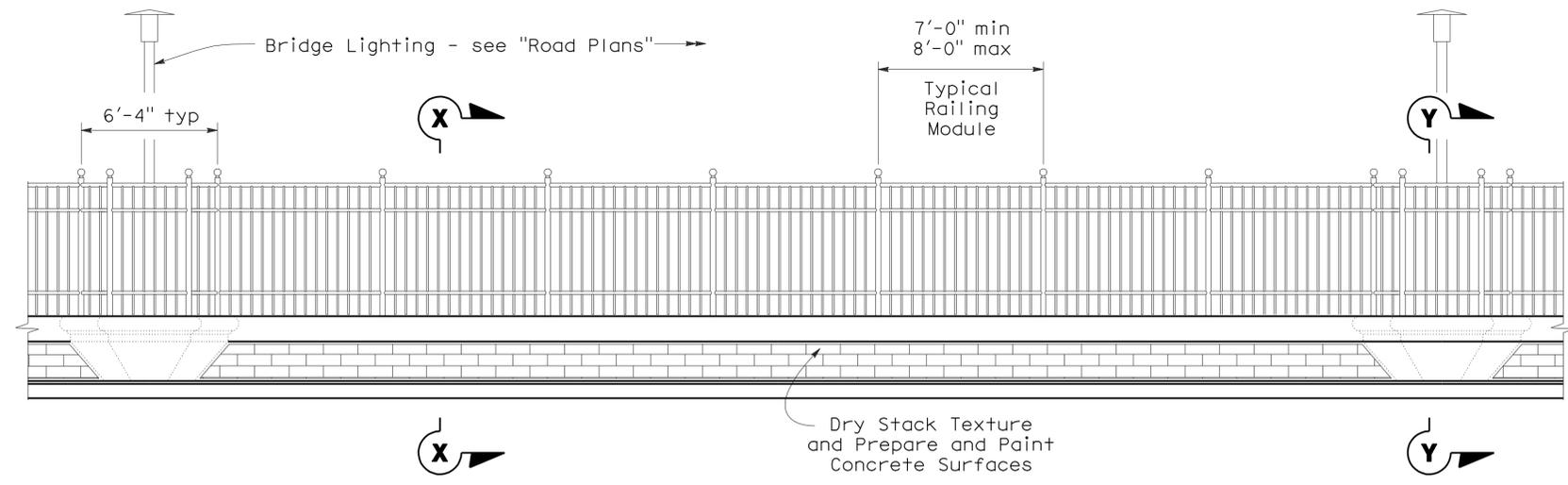
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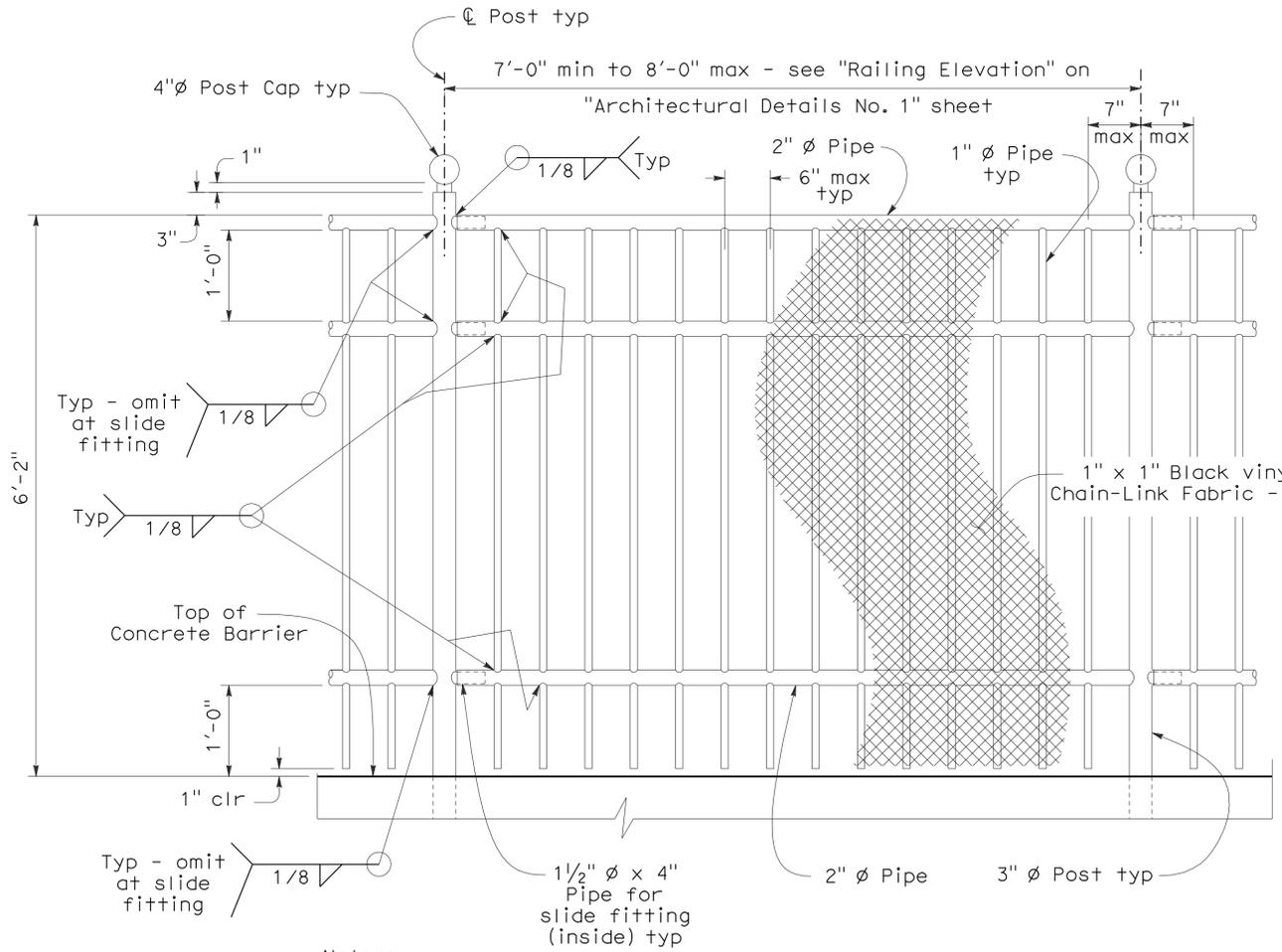
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	294	306

Andrew N. Sanford  
 REGISTERED CIVIL ENGINEER  
 DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



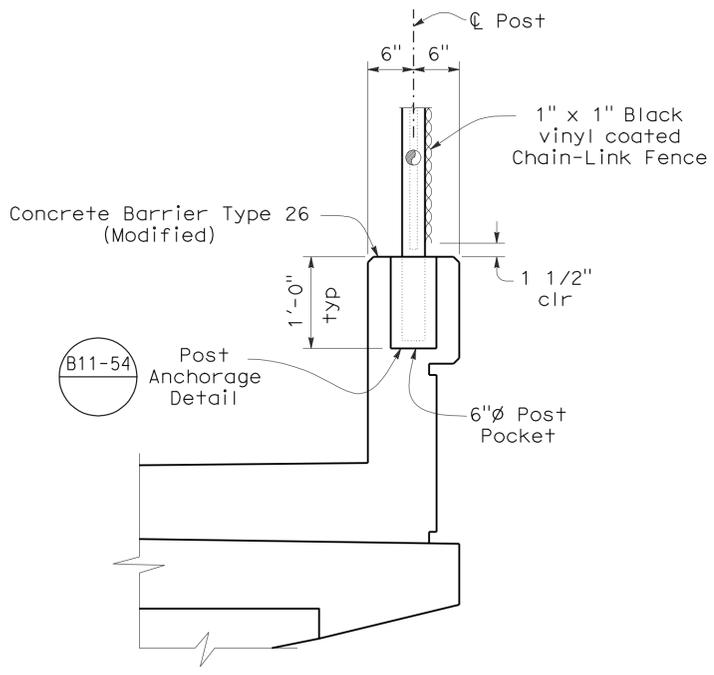
**PART ELEVATION**  
1/4" = 1'-0"



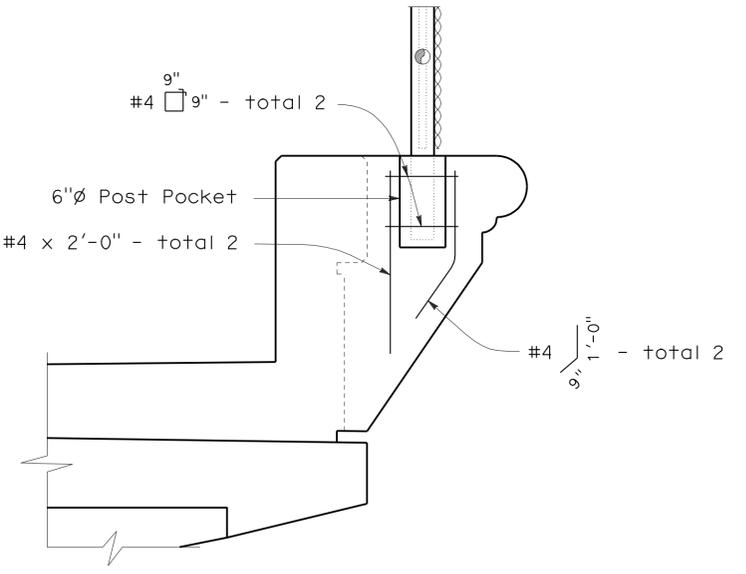
- Notes:**
1. Secure fabric to posts with 1/4" Hex head self-tapping screws with 3/4" x 3/16" x 0'-1 3/4" plate washers at 12" max.
  2. 7'-8" module shown, 8'-8" module similar.

**TYPICAL METAL BRIDGE RAILING MODULE**  
1" = 1'-0"

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



**SECTION X-X**  
1" = 1'-0"



- Notes:**
1. For Details not shown, see Section X-X and B11-54.
  2. Barrier reinforcement not shown for clarity.
  3. Light Pole not shown.

**SECTION Y-Y**  
1" = 1'-0"

DESIGN OVERSIGHT Norbert Gee  
 SIGN OFF DATE 12-1-10

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

**PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION**  
 Andrew Sanford  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE) ARCHITECTURAL DETAILS NO. 2**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: PROJECT NUMBER & PHASE: 2777 11000002001

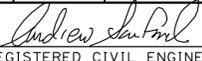
CONTRACT NO.: 11-259804

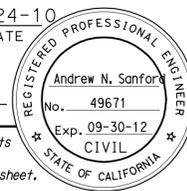
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
1-18-10 8-04-10 10-12-10 11-24-10	25	37

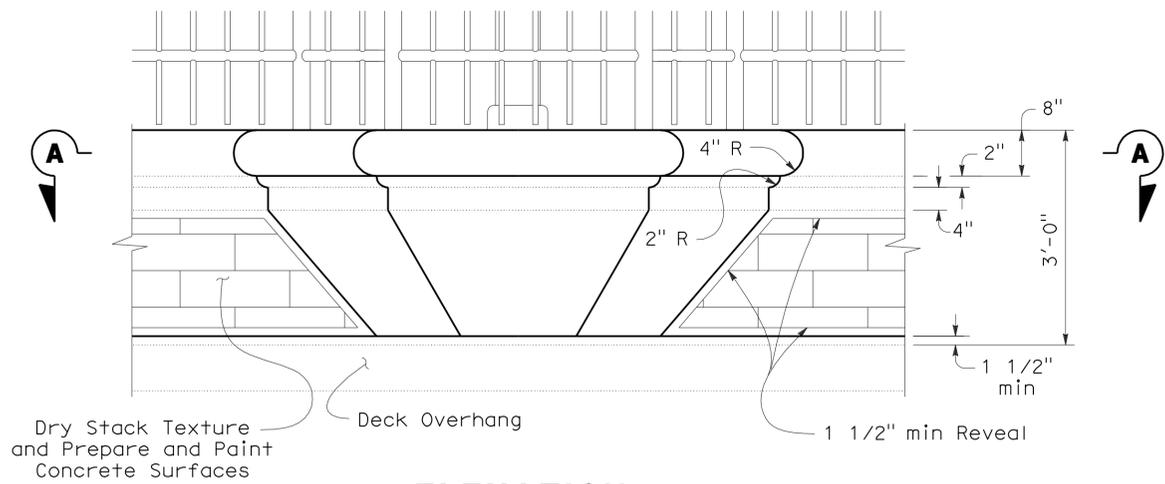
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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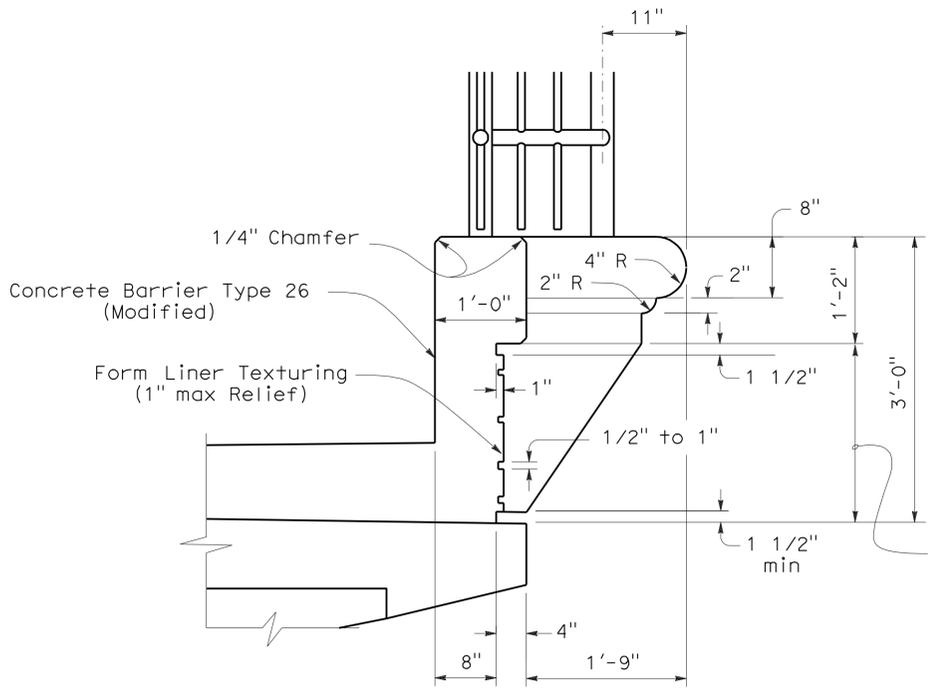
 11-24-10  
 REGISTERED CIVIL ENGINEER DATE  
 7-18-11  
 PLANS APPROVAL DATE  
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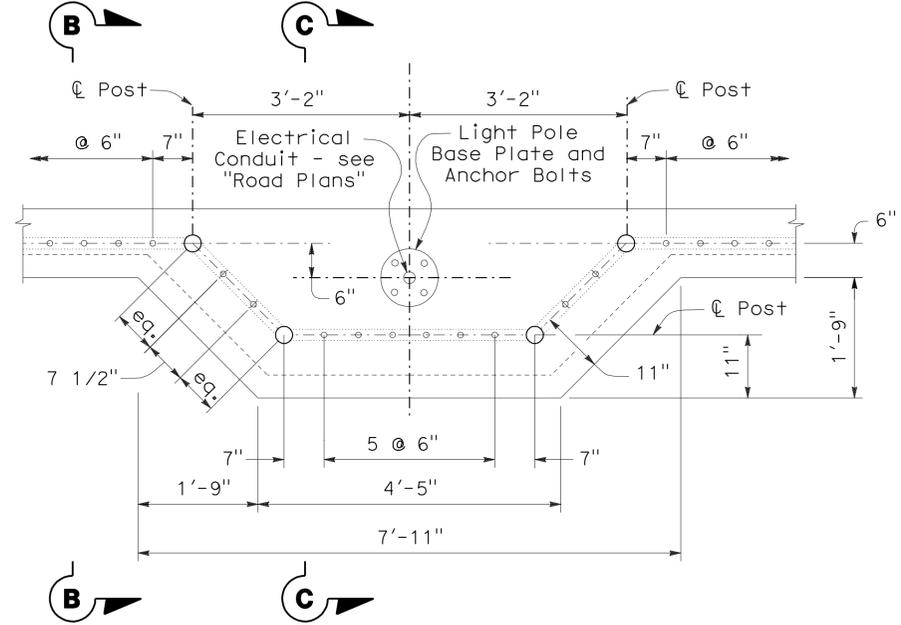
**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



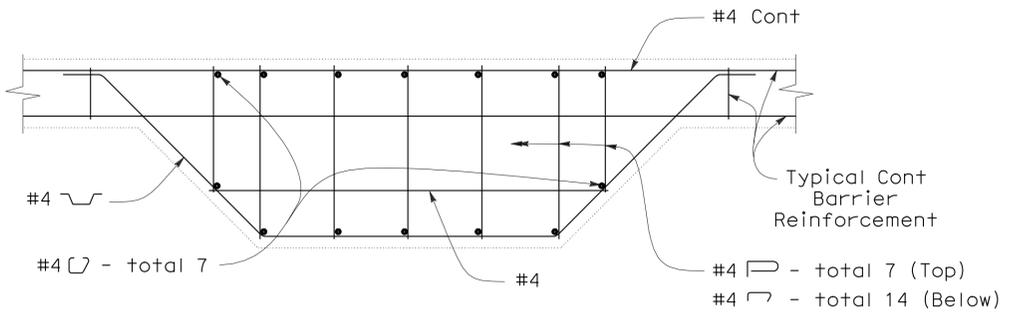
**ELEVATION**  
3/4" = 1'-0"



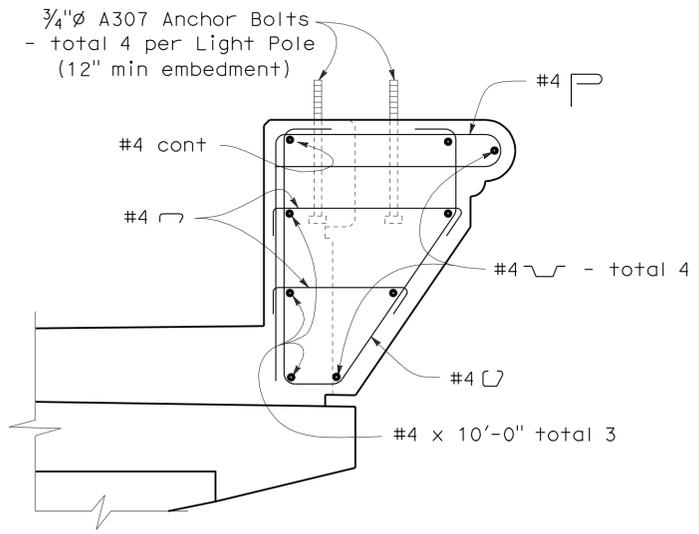
**SECTION B-B**  
1" = 1'-0"



**PLAN**  
3/4" = 1'-0"



**SECTION A-A**  
3/4" = 1'-0"



**SECTION C-C**  
1" = 1'-0"

Note: Typical Barrier reinforcement not shown. for details, see 

NOTE:  
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 DESIGN OVERSIGHT Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**ARCHITECTURAL DETAILS NO. 3**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 2777  
 PROJECT NUMBER & PHASE: 11000002001  
 CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-18-10	26	37

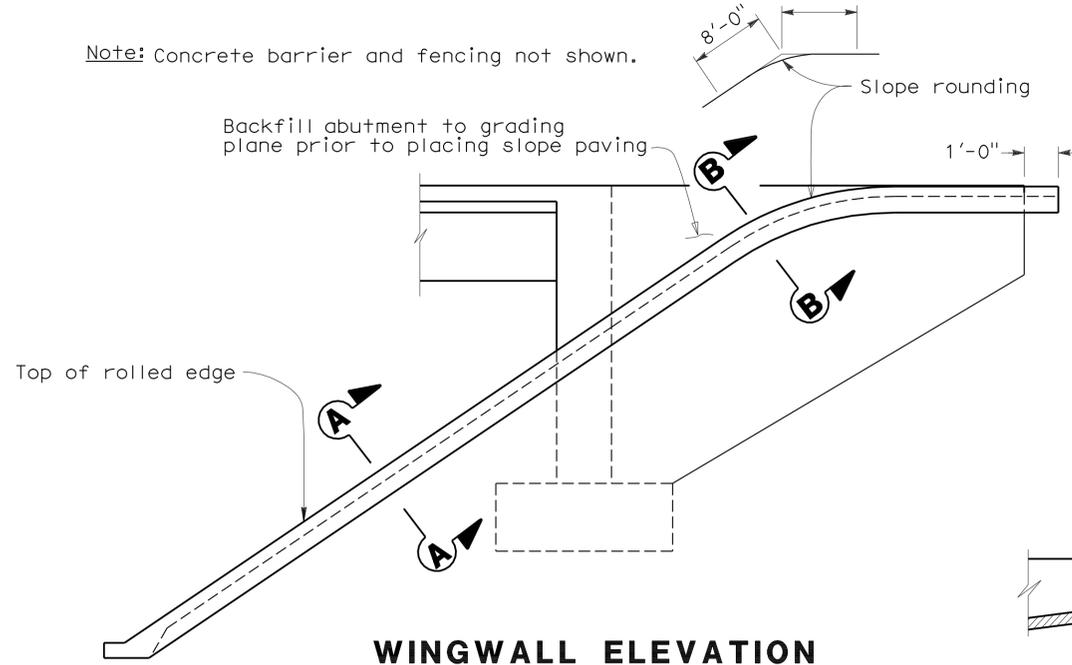
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	296	306

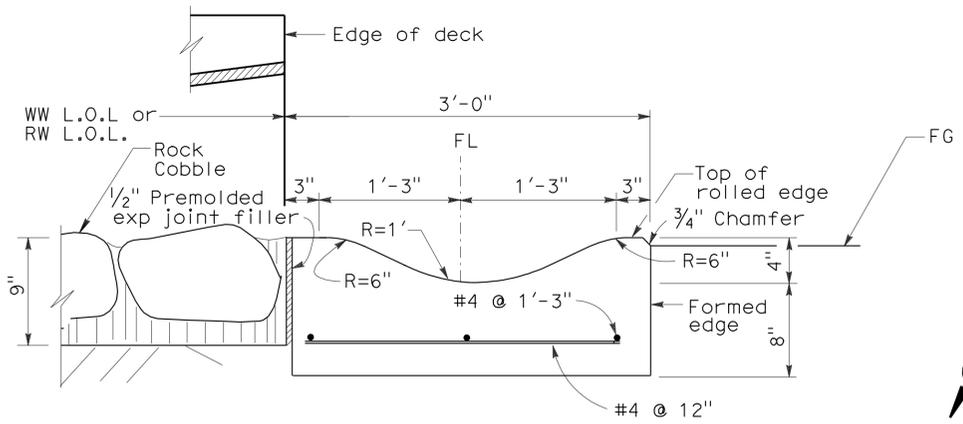
Andrew Sanford  
 REGISTERED CIVIL ENGINEER  
 DATE 1-7-11  
 7-18-11  
 PLANS APPROVAL DATE  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
 SIMON WONG ENGINEERING, INC.  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131

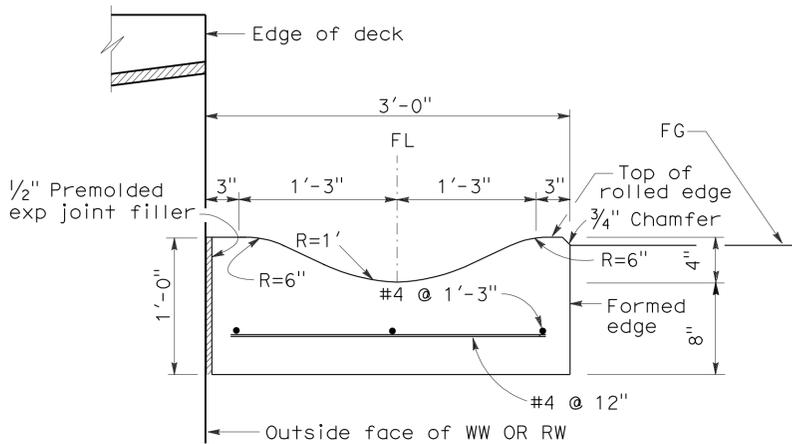
Note: Concrete barrier and fencing not shown.



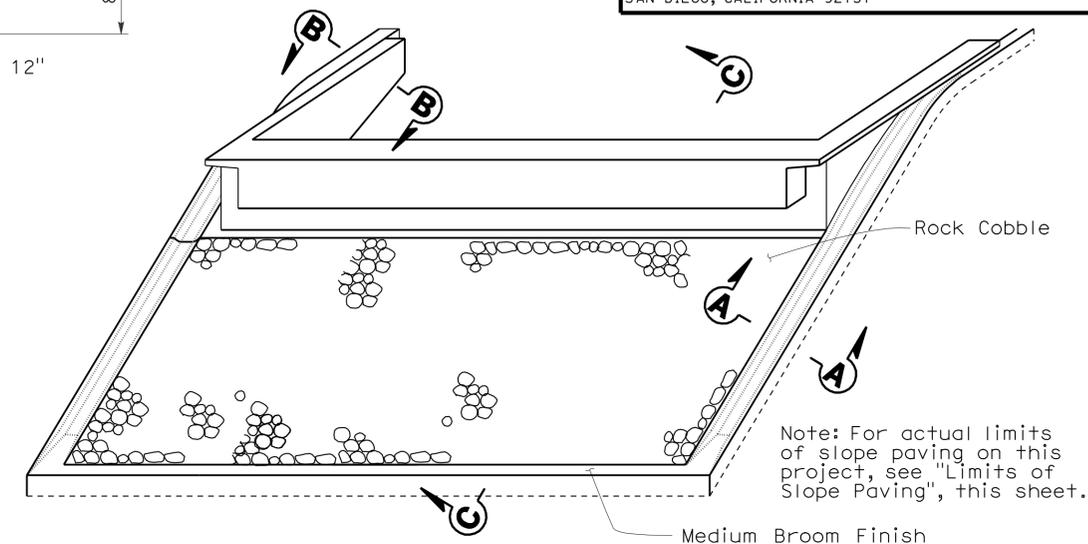
**WINGWALL ELEVATION**



**SECTION A-A**

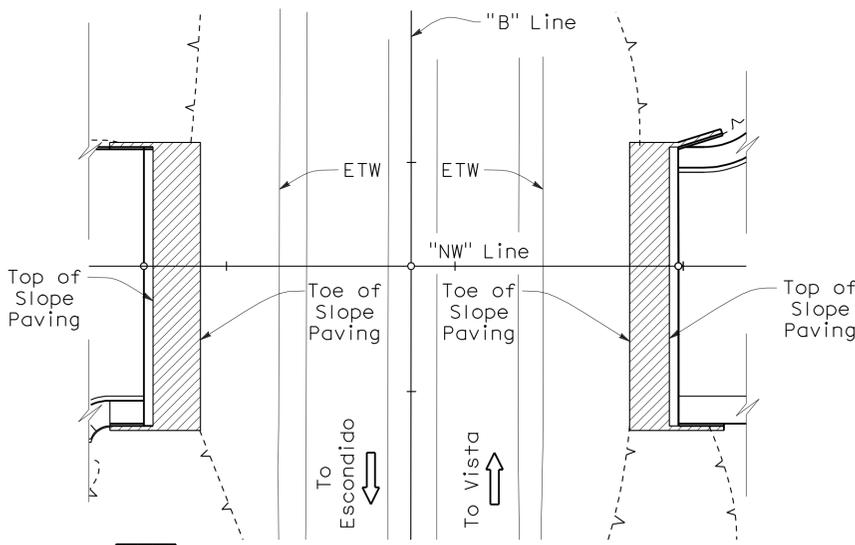


**SECTION B-B**

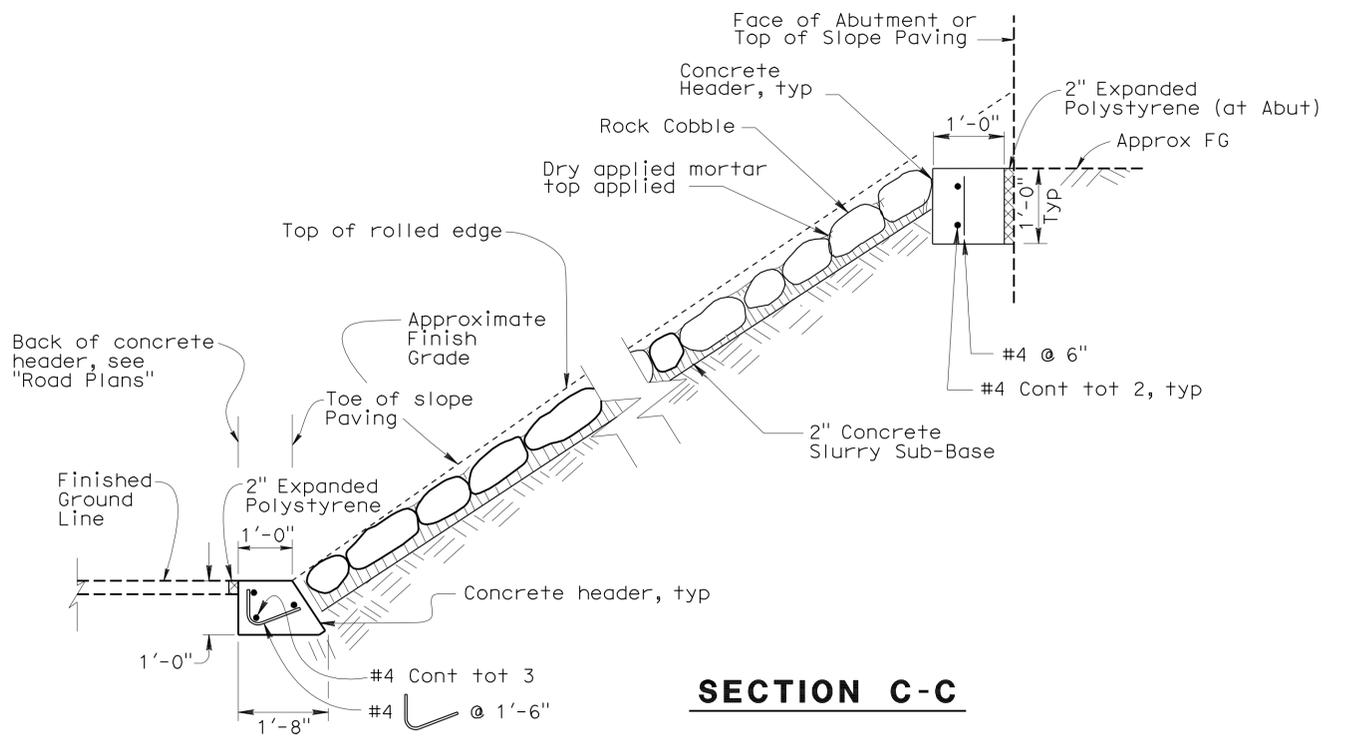


**PICTORIAL VIEW OF TYPICAL INSTALLATION**

Note: For actual limits of slope paving on this project, see "Limits of Slope Paving", this sheet.



**LIMITS OF SLOPE PAVING (ROCK COBBLE)**



**SECTION C-C**

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

Norbert Gee  
 DESIGN OVERSIGHT  
 1-10-11  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
 STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**SLOPE PAVING**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: PROJECT NUMBER & PHASE: 2777 11000002001

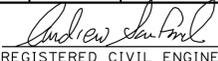
CONTRACT NO.: 11-259804

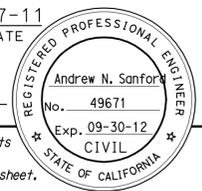
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
1-18-10	27	37

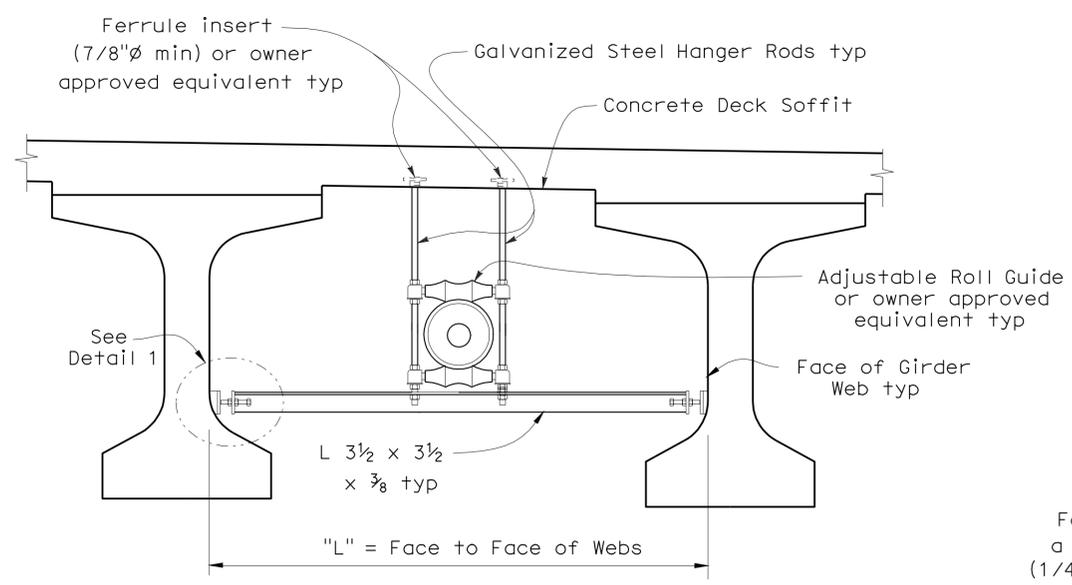
USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	297	306

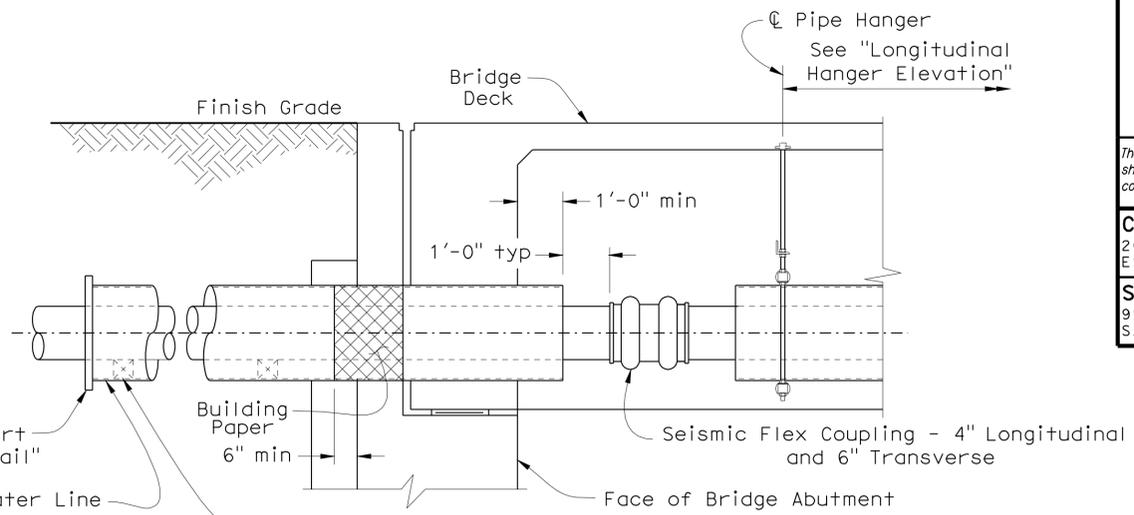
  
 REGISTERED CIVIL ENGINEER 1-7-11 DATE  
 7-18-11 PLANS APPROVAL DATE  
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**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



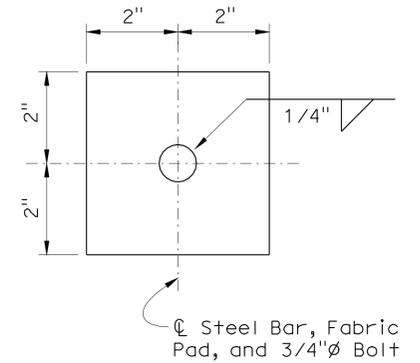
**UTILITY HANGER DETAIL**  
 3/4" = 1'-0"



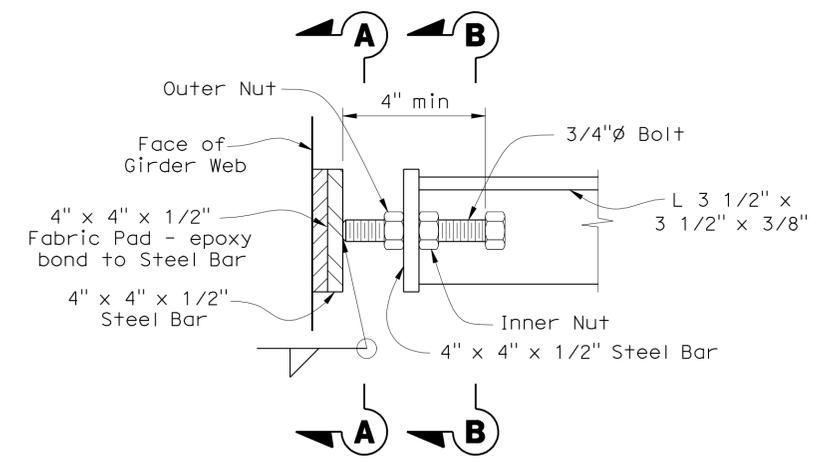
For the 4"Ø Water Line a 18"Ø Steel Pipe Casing (1/4" wall thickness) may be cast-in-place after tightly wrapping with 2 layers of 15 lb. building paper or sealed per Standard Plan B7-10 to prevent corrosion

- Notes:
1. Extend Pipe 5'-0" beyond the edge of shoulder or as shown on the Road Plans. Terminate in a Pull Box as shown on Caltrans Standard Plan B14-3, Detail B.
  2. For additional notes, see Standard Plan B7-10.

**PIPE INSTALLATION AT ABUTMENT**  
 1/2" = 1'-0"

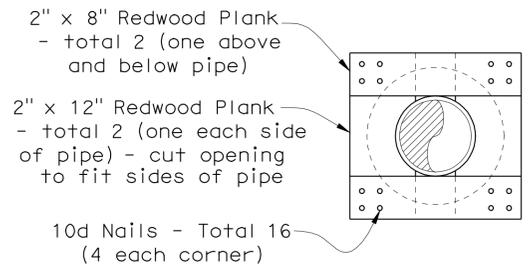


**SECTION A-A**  
 6" = 1'-0"

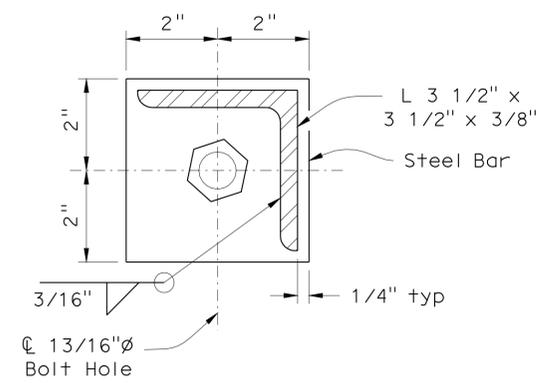


- Note: Installation shall be as follows:
- Step 1: Turn outer nut to align vertical hanger rods.
  - Step 2: After providing a tight fit between fabric pad and "Bulb Tee" Girder web, turn outer nut one full turn away from concrete (typical for both ends of horizontal bracing).
  - Step 3: Turn inner nut 1/3 turn against steel bar after snug tightening.

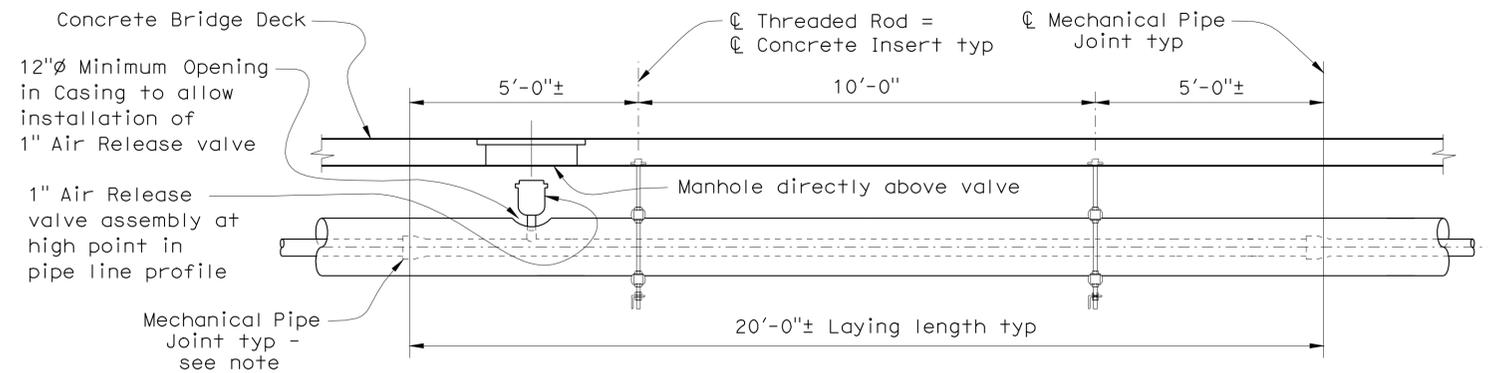
**DETAIL 1**  
 4" = 1'-0"



**DIRT STOP DETAIL**  
 3/4" = 1'-0"



**SECTION B-B**  
 6" = 1'-0"



Note: Mechanical Pipe Joints shall be laid out such that there will not be interference with the intermediate and end diaphragms.

**LONGITUDINAL HANGER ELEVATION**  
 1/2" = 1'-0"

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

  
 DESIGN OVERSIGHT Norbert Gee  
 1-10-11 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**UTILITY DETAILS NO. 1**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: PROJECT NUMBER & PHASE: 2777 11000002001

CONTRACT NO.: 11-259804

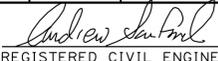
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
8-04-10 10-15-10 11-24-10 1-7-11	28	37

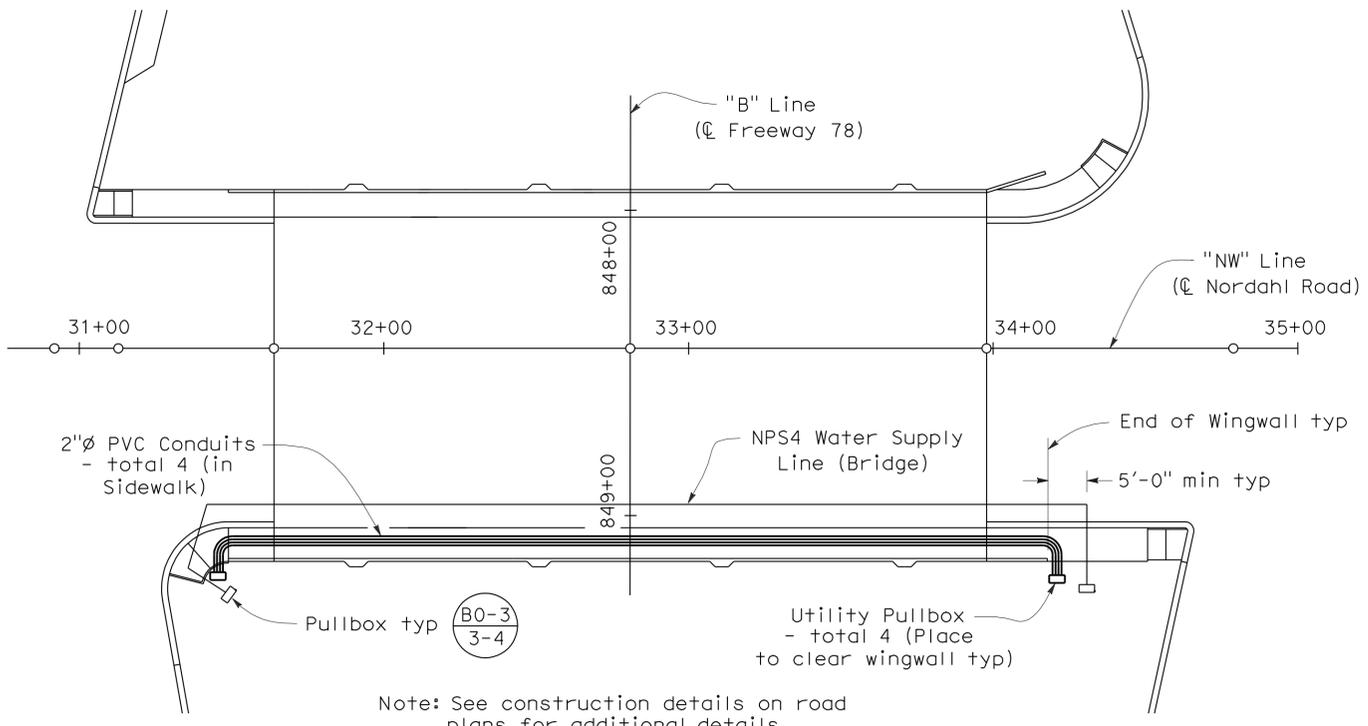
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USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:50

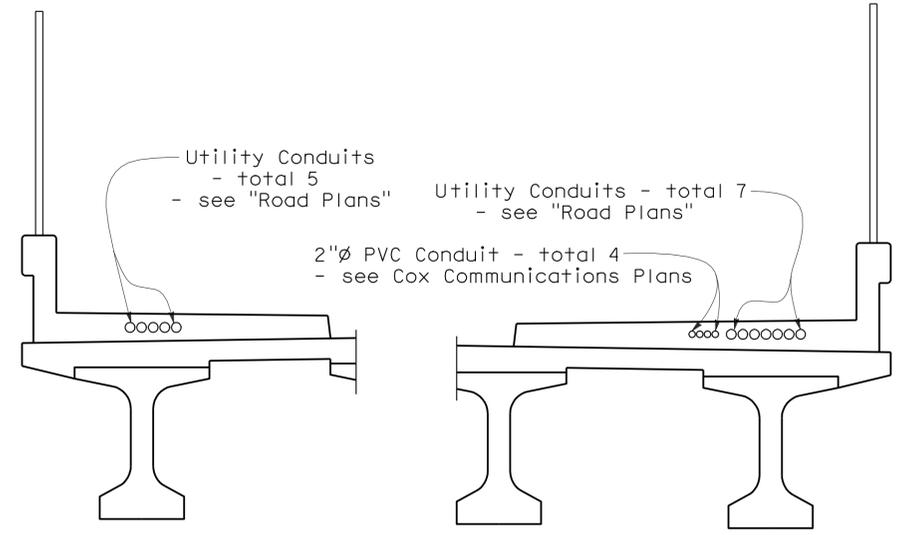
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	298	306

  
 REGISTERED CIVIL ENGINEER DATE 1-7-11  
 PLANS APPROVAL DATE 7-18-11  
 Andrew N. Sanford  
 No. 49671  
 Exp. 09-30-12  
 CIVIL  
 STATE OF CALIFORNIA

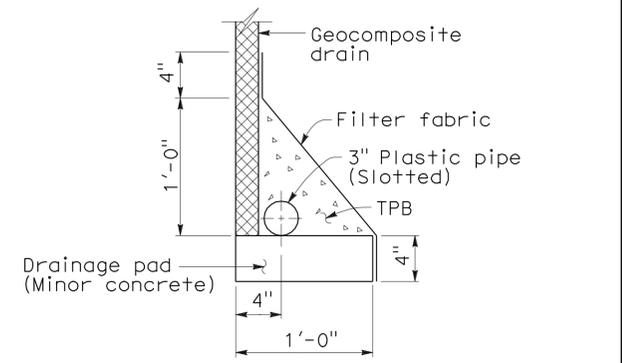
**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**SIMON WONG ENGINEERING, INC.**  
 9968 HIBERT STREET, SECOND FLOOR  
 SAN DIEGO, CALIFORNIA 92131



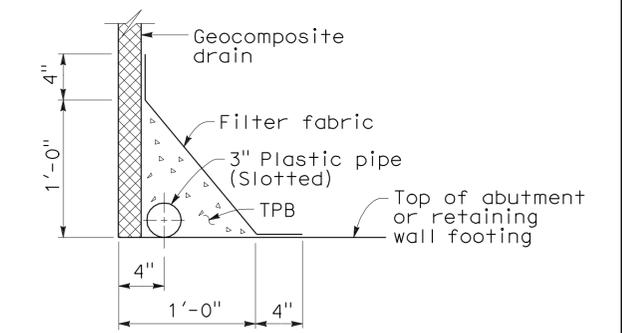
**SIDEWALK UTILITY PLAN**  
 No Scale



**SIDEWALK CONDUIT ELEVATION**  
 3/8" = 1'-0"

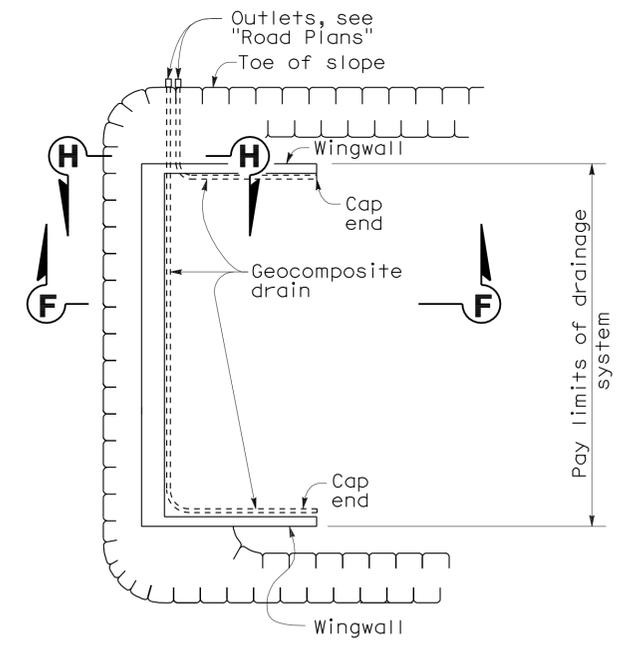


**WITHOUT FOOTING**



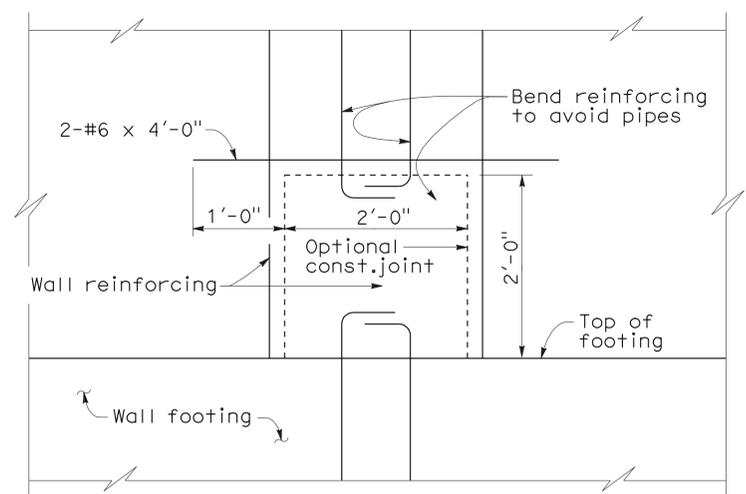
**WITH FOOTING**

**DRAINAGE DETAILS**  
 1/2" = 1'-0"

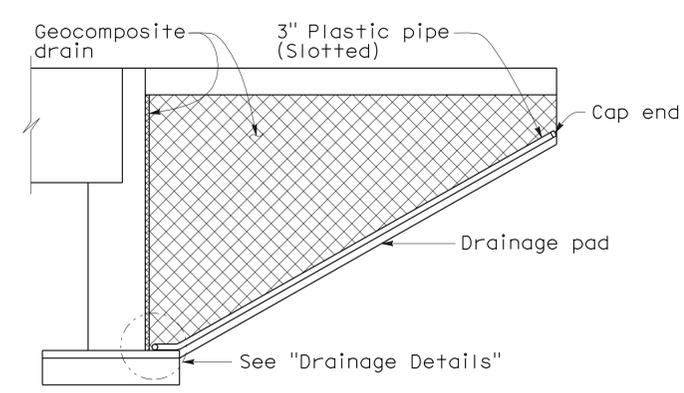


Note: Outlet Abutment drainage to west side only.

**TYPICAL PLAN**  
 1" = 10'



**SECTION H-H**  
 1" = 1'-0"



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

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

  
 DESIGN OVERSIGHT Norbert Gee  
 1-10-11  
 SIGN OFF DATE

DESIGN	BY L. Muco	CHECKED C. Cushing
DETAILS	BY T. Brittain	CHECKED A. Sanford
QUANTITIES	BY E. Schroth-Nichols	CHECKED C. Cushing

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Andrew Sanford  
 PROJECT ENGINEER  
 BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**MISCELLANEOUS DETAILS**

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: PROJECT NUMBER & PHASE: 2777 11000002001

CONTRACT NO.: 11-259804

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
1-18-10 8-04-10 10-12-10 1-7-11	29	37

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:50

**BENCHMARK:**

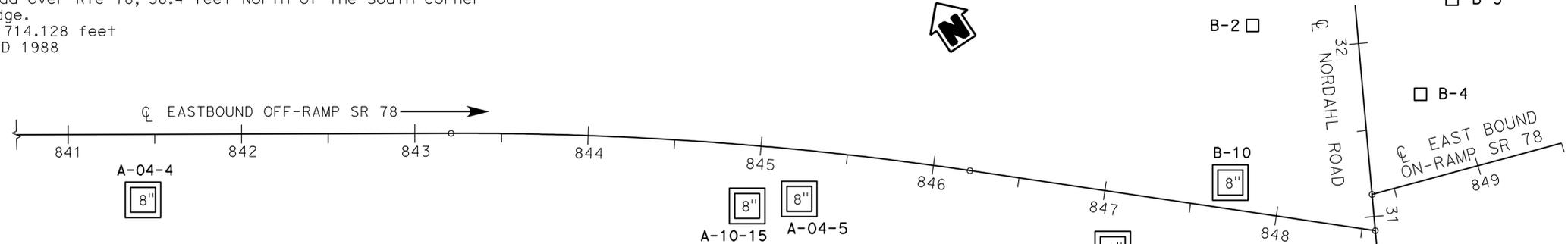
Monument is 2.24 inch CADT Brass Disk stamped "78-15.5 1988", located in sidewalk on the Southeast side of the bridge on Nordahl Road over Rte 78, 36.4 feet North of the South corner of the bridge.  
 Elevation: 714.128 feet  
 Datum: NAVD 1988

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	299	306

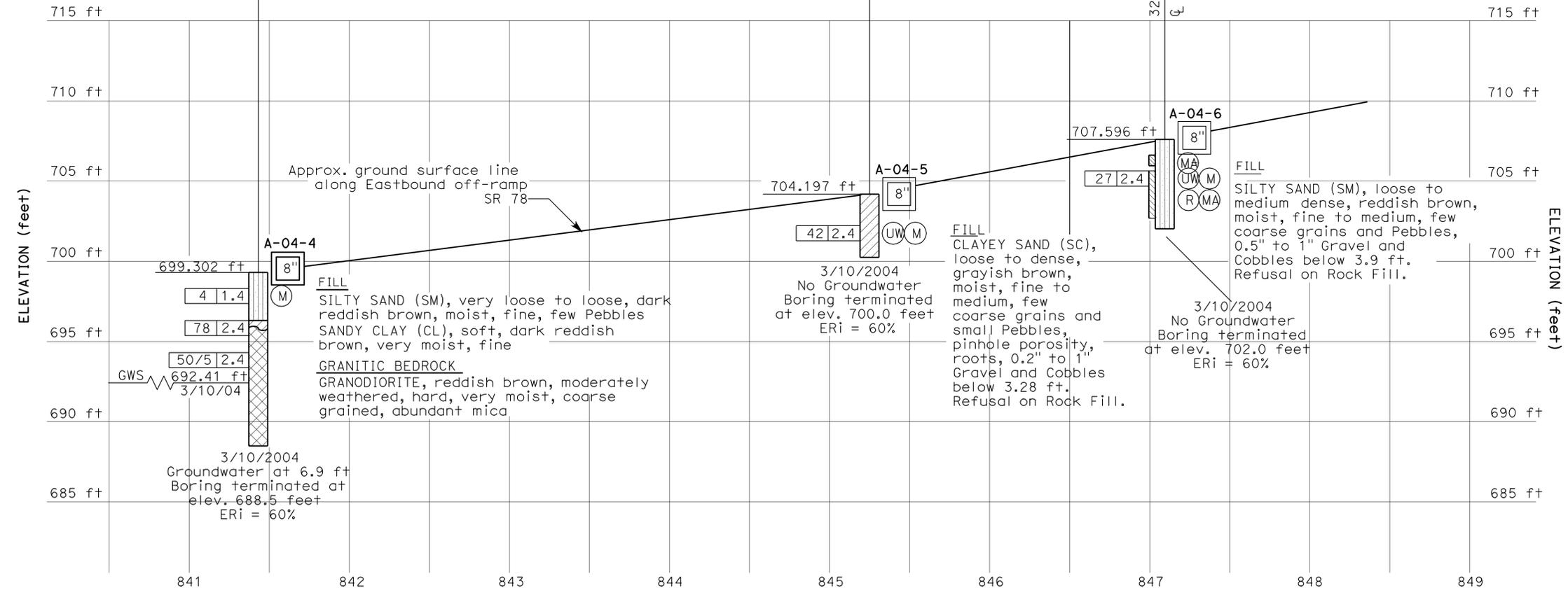
*J. Montgomery Schultz*  
 REGISTERED CIVIL ENGINEER DATE 11-24-10  
 PLANS APPROVAL DATE 7-18-11  
 No. 61144  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
**PETRA GEOTECHNICAL, INC.**  
 3185-A AIRWAY AVENUE  
 COSTA MESA, CA 92626

- NOTES:
- 1) TEST BORINGS B-1 THROUGH B-13 WERE DRILLED UTILIZING A CME-55 DRILL RIG EQUIPPED WITH HOLLOW-STEM AUGER.
  - 2) TEST BORINGS B-14 AND B-15 WERE DRILLED UTILIZING A LIMITED ACCESS, MINI MOLE DRILL RIG EQUIPPED WITH CONTINUOUS FLIGHT AUGER.
  - 3) THE APPROXIMATE BORING COORDINATES AND ELEVATIONS ARE BASED ON THE TOPOGRAPHIC MAP PROVIDED BY DOKKEN ENGINEERING.
  - 4) 2.4-INCH SAMPLES WERE TAKEN USING A MODIFIED CALIFORNIA SPLIT-SPOON SAMPLER WITH AN INSIDE DIAMETER OF 2.4 INCHES AND OUTSIDE DIAMETER OF 3-INCHES.
  - 5) A 140 LB. CME AUTOMATIC HAMMER FALLING 30 INCHES WAS USED TO DRIVE THE SAMPLER.
  - 6) VISUAL CLASSIFICATION OF EARTH MATERIALS WAS BASED ON FIELD INSPECTION AND WAS CONFIRMED OR REVISED WITH LABORATORY TEST RESULTS.
  - 7) THE BORING LOGS AND RELATED INFORMATION REPRESENT THE OPINION OF THE GEOLOGIST/ENGINEER AS TO THE CHARACTER OF THE MATERIAL AT THE LOCATIONS SHOWN. SOIL AND GROUNDWATER CONDITIONS BETWEEN ADJACENT TEST BORINGS AND AT OTHER LOCATIONS MAY DIFFER FROM THOSE SHOWN. GROUNDWATER CONDITIONS MAY CHANGE WITH TIME.
  - 8) THIS LOTB WAS PREPARED IN ACCORDANCE WITH THE CALTRANS SOIL AND ROCK LOGGING, CLASSIFICATION AND PRESENTATION MANUAL (2010).
  - 9) □B-1, AS-BUILT CALTRANS BORING LOCATIONS. SEE AS-BUILT LOTB.



**PLAN**  
 1" : 40'



**PROFILE**  
 HOR. 1" : 40'  
 VER. 1" : 4'

 DESIGN OVERSIGHT Norbert Gee 12-1-10 SIGN OFF DATE	DRAWN BY N. Varadi	Jon Cain FIELD INVESTIGATION BY: DATE: 07/01/2010	PREPARED FOR THE <b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 57-1220	<b>NORDAHL ROAD OC (REPLACE)</b> <b>LOG OF TEST BORINGS 1 OF 8</b>
	CHECKED BY M. Schultz	Monty Schultz PROJECT ENGINEER		POST MILES 15.5	
GS CIVIL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 2777 PROJECT NUMBER & PHASE: 11000002001	CONTRACT NO.: 11-259804
				DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 1-18-10 8-04-10 10-15-10
				SHEET 30 OF 37	USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:50

**BENCHMARK:**

Monument is 2.24 inch CADT Brass Disk stamped "78-15.5 1988", located in sidewalk on the Southeast side of the bridge on Nordahl Road over Rte 78, 36.4 feet North of the South corner of the bridge.  
 Elevation: 714.128 feet  
 Datum: NAVD 1988

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	300	306

11-24-10  
DATE

REGISTERED CIVIL ENGINEER

7-18-11  
PLANS APPROVAL DATE

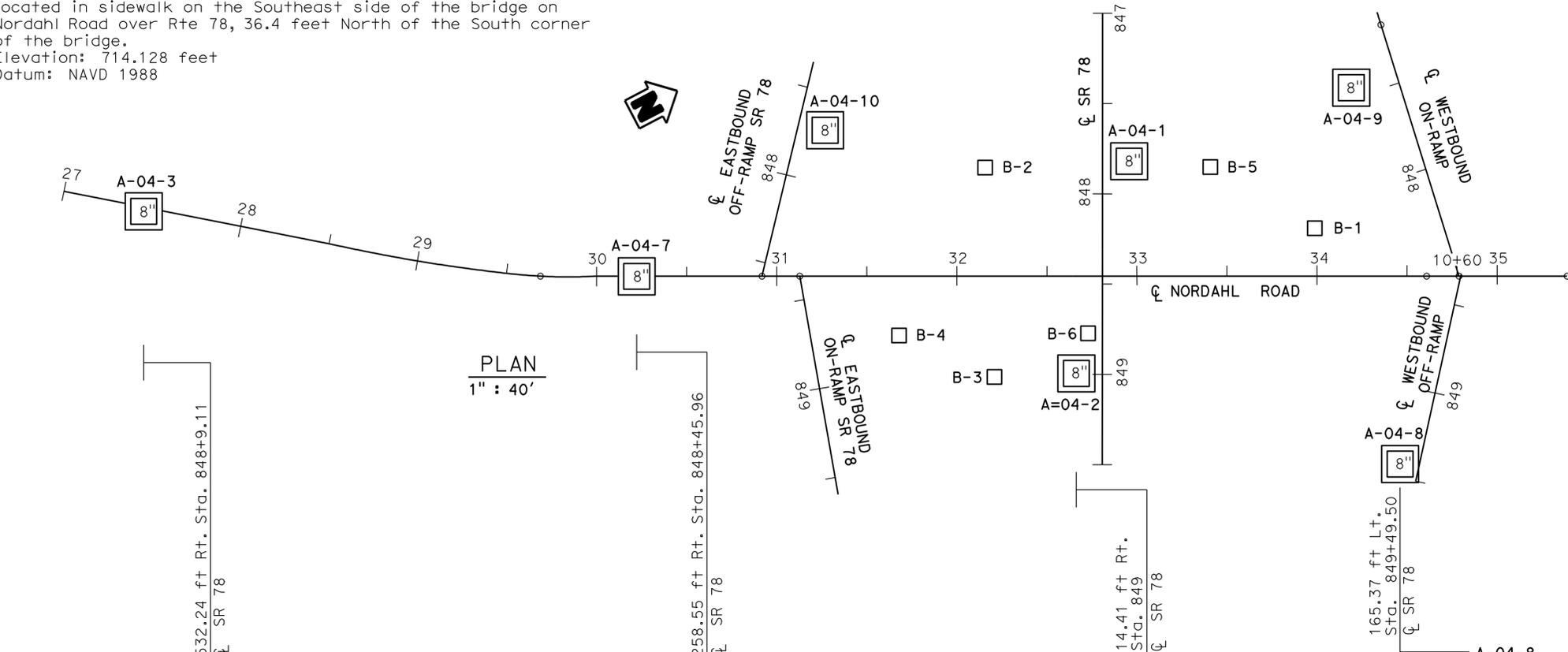
No. 61144  
Exp. 12-31-10  
CIVIL

J. Montgomery Schultz  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF CALIFORNIA

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

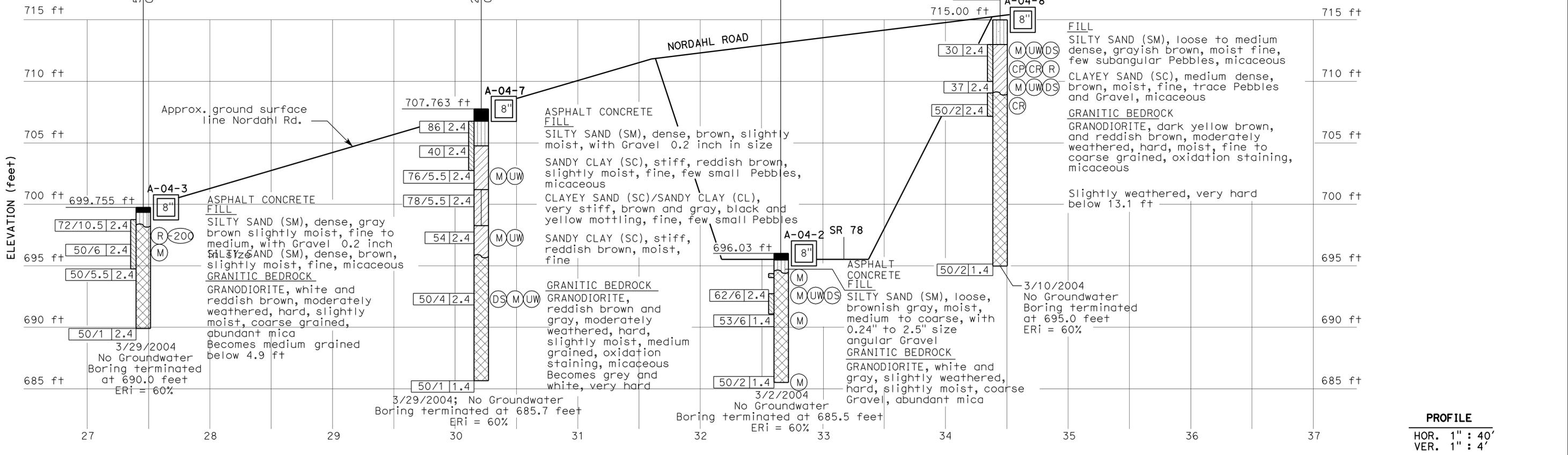
**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025

**PETRA GEOTECHNICAL, INC.**  
 3185-A AIRWAY AVENUE  
 COSTA MESA, CA 92626



**NOTES:**

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- 9) B-1, AS-BUILT CALTRANS BORING LOCATIONS. SEE AS-BUILT LOT B.



**PROFILE**  
 HOR. 1" : 40'  
 VER. 1" : 4'

DESIGN OVERSIGHT  
 Norbert Gee  
 12-1-10  
 SIGN OFF DATE

DRAWN BY  
 N. Varadi  
 CHECKED BY  
 M. Schultz

Jon Cain  
 FIELD INVESTIGATION BY:  
 DATE: 07/01/2010

**PREPARED FOR THE  
 STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION**

Monty Schultz  
 PROJECT ENGINEER  
 BRIDGE NO.  
 57-1220  
 POST MILES  
 15.5

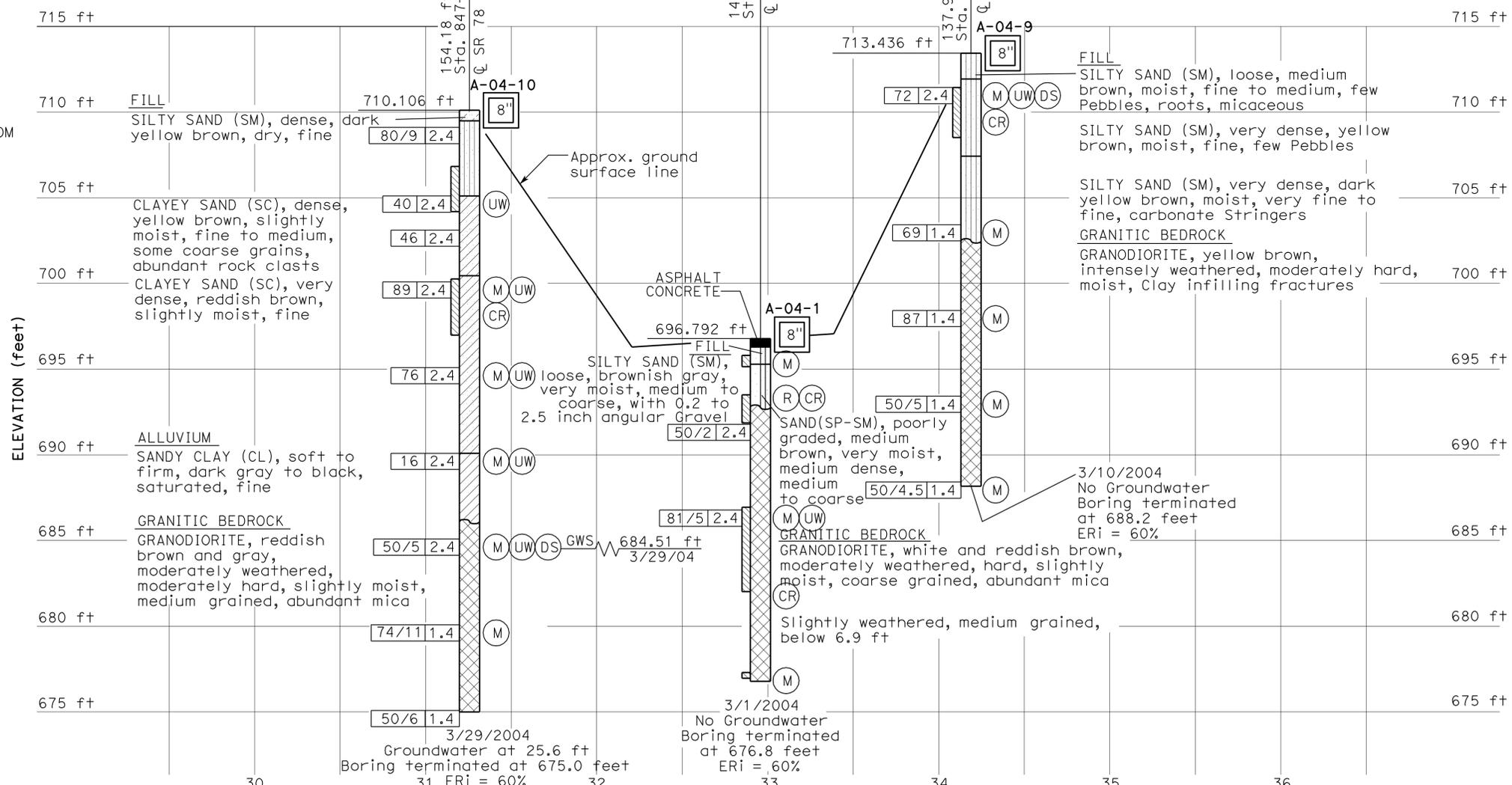
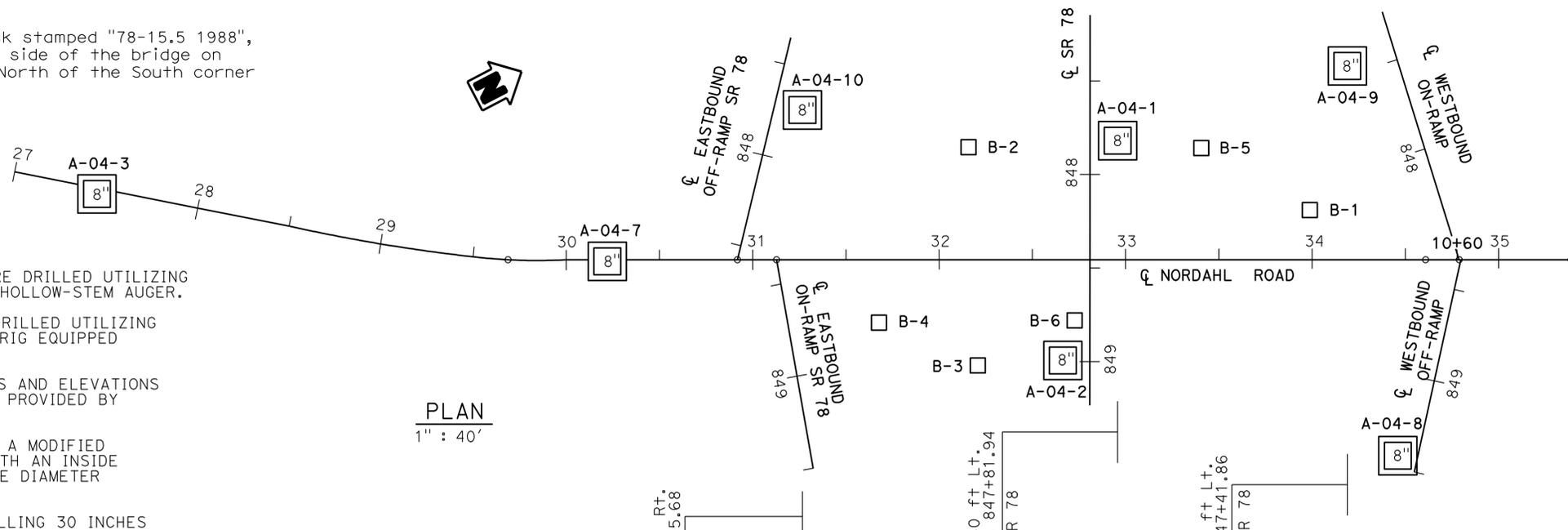
**NORDAHL ROAD OC (REPLACE)  
 LOG OF TEST BORINGS 2 OF 8**

**BENCHMARK:**

Monument is 2.24 inch CADT Brass Disk stamped "78-15.5 1988", located in sidewalk on the Southeast side of the bridge on Nordahl Road over Rte 78, 36.4 feet North of the South corner of the bridge.  
 Elevation: 714.128 feet  
 Datum: NAVD 1988

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- 9)  B-1, AS-BUILT CALTRANS BORING LOCATIONS. SEE AS-BUILT LOT B.



**PROFILE**  
 HOR. 1" : 40'  
 VER. 1" : 4'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	301	306

REGISTERED CIVIL ENGINEER: J. Montgomery Schultz  
 DATE: 11-24-10  
 PLANS APPROVAL DATE: 7-18-11  
 No. 61144  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025

**PETRA GEOTECHNICAL, INC.**  
 3185-A AIRWAY AVENUE  
 COSTA MESA, CA 92626

DESIGN OVERSIGHT: Norbert Gee  
 SIGN OFF DATE: 12-1-10

DRAWN BY: N. Varadi  
 CHECKED BY: M. Schultz

Jon Cain  
 FIELD INVESTIGATION BY:  
 DATE: 07/01/2010

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Monty Schultz  
 PROJECT ENGINEER

BRIDGE NO.: 57-1220  
 POST MILES: 15.5

**NORDAHL ROAD OC (REPLACE)**  
**LOG OF TEST BORINGS 3 OF 8**

**BENCHMARK:**

Monument is 2.24 inch CADT Brass Disk stamped "78-15.5 1988", located in sidewalk on the Southeast side of the bridge on Nordahl Road over Rte 78, 36.4 feet North of the South corner of the bridge.  
 Elevation: 714.128 feet  
 Datum: NAVD 1988

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	302	306

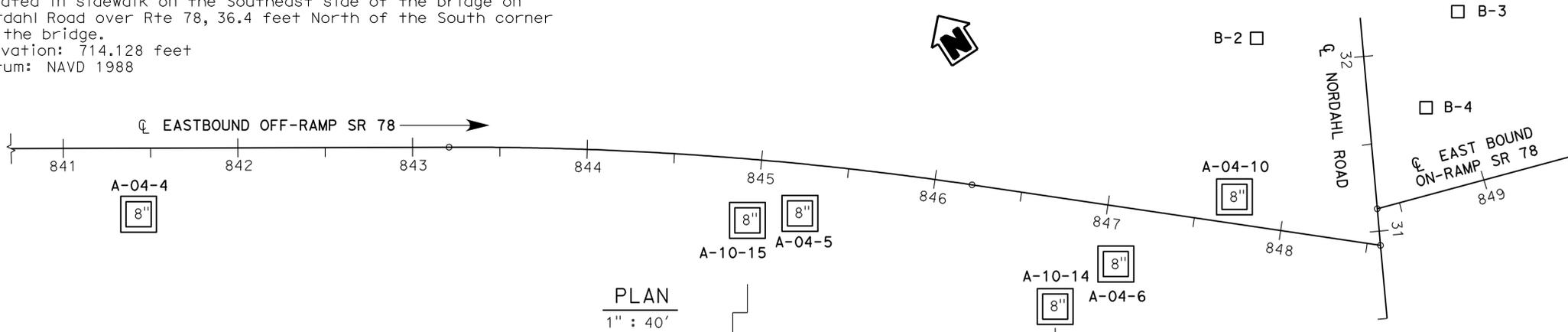
REGISTERED CIVIL ENGINEER DATE 11-24-10  
 J. Montgomery Schultz  
 No. 61144  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA

7-18-11  
 PLANS APPROVAL DATE

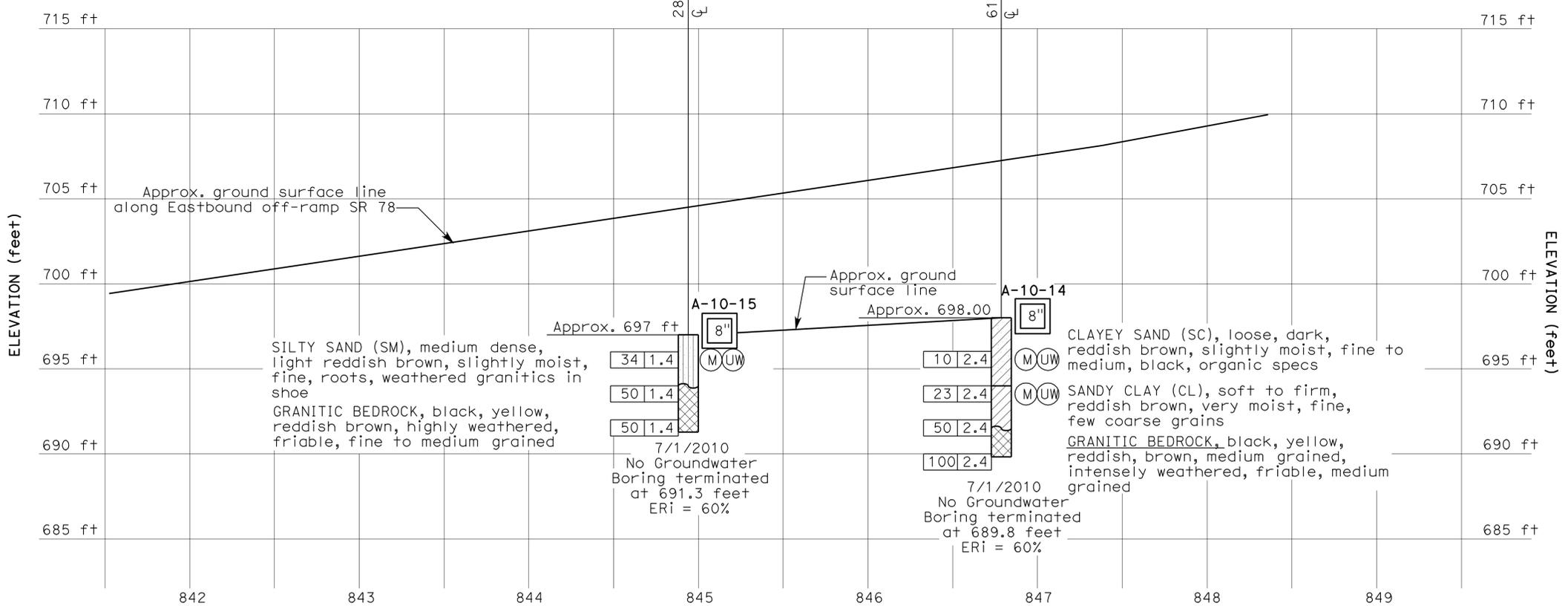
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025

**PETRA GEOTECHNICAL, INC.**  
 3185-A AIRWAY AVENUE  
 COSTA MESA, CA 92626



**PLAN**  
1" : 40'



**PROFILE**  
 HOR. 1" : 40'  
 VER. 1" : 4'

**NOTES:**

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- B-1, AS-BUILT CALTRANS BORING LOCATIONS, SEE AS-BUILT LOT-B

DESIGN OVERSIGHT: Norbert Gee  
 SIGN OFF DATE: 12-1-10

DRAWN BY: N. Varadi  
 CHECKED BY: M. Schultz

Jon Cain  
 FIELD INVESTIGATION BY:  
 DATE: 07/01/2010

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Monty Schultz  
 PROJECT ENGINEER

BRIDGE NO. 57-1220  
 POST MILES 15.5

**NORDAHL ROAD OC (REPLACE)**  
**LOG OF TEST BORINGS 4 OF 8**

USERNAME => s124496 DATE PLOTTED => 21-JUL-2011 TIME PLOTTED => 07:51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	78	15.3/15.7	303	306

11-24-10  
 REGISTERED CIVIL ENGINEER DATE  
 J. Montgomery Schultz  
 No. 61144  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA

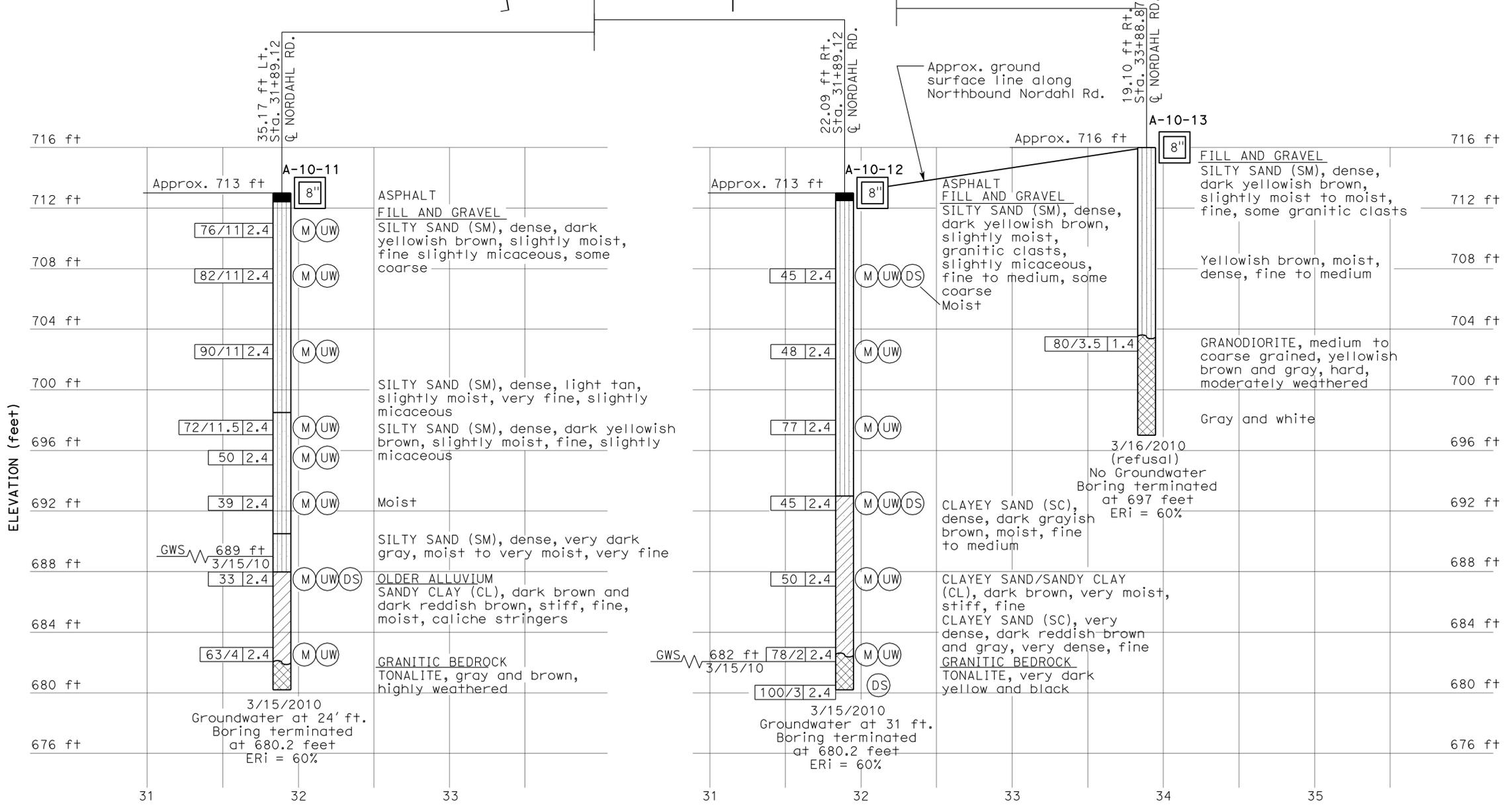
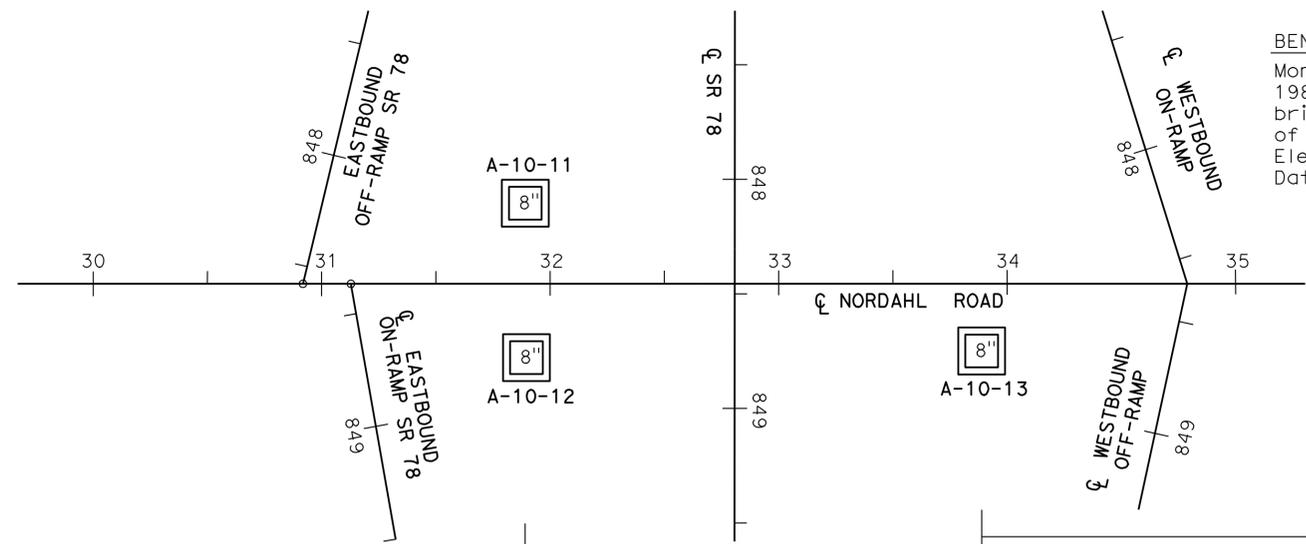
**CITY OF ESCONDIDO**  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025

**PETRA GEOTECHNICAL, INC.**  
 3185-A AIRWAY AVENUE  
 COSTA MESA, CA 92626

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 Monument is 2.24 inch CADT Brass Disk stamped "78-15.5 1988", located in sidewalk on the Southeast side of the bridge on Nordahl Road over Rte 78, 36.4 feet North of the South corner of the bridge.  
 Elevation: 714.128 feet  
 Datum: NAVD 1988



PLAN  
 1" = 40'



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**PROFILE**  
 HOR. 1" = 40'  
 VER. 1" = 4'

 DESIGN OVERSIGHT Norbert Gee 12-1-10 SIGN OFF DATE	DRAWN BY N. Varadi	Jon Cain FIELD INVESTIGATION BY: DATE: 07/01/2010	PREPARED FOR THE <b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 57-1220	<b>NORDAHL ROAD OC (REPLACE)</b> <b>LOG OF TEST BORINGS 5 OF 8</b>
	CHECKED BY M. Schultz	Monty Schultz PROJECT ENGINEER		POST MILES 15.5	

*J. Montgomery Schultz* 11-24-10  
 REGISTERED CIVIL ENGINEER DATE

7-18-11  
 PLANS APPROVAL DATE

No. 61144  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA

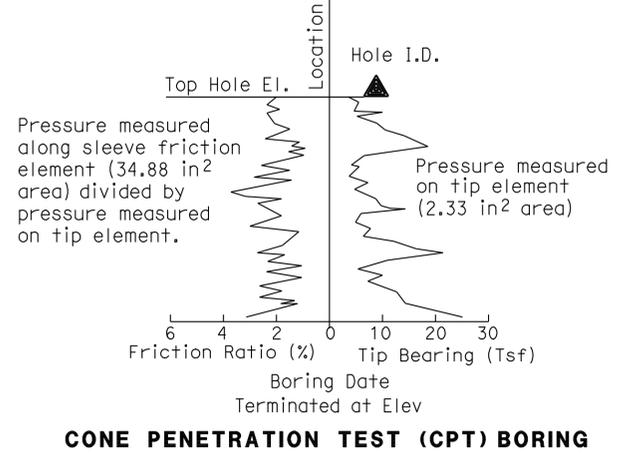
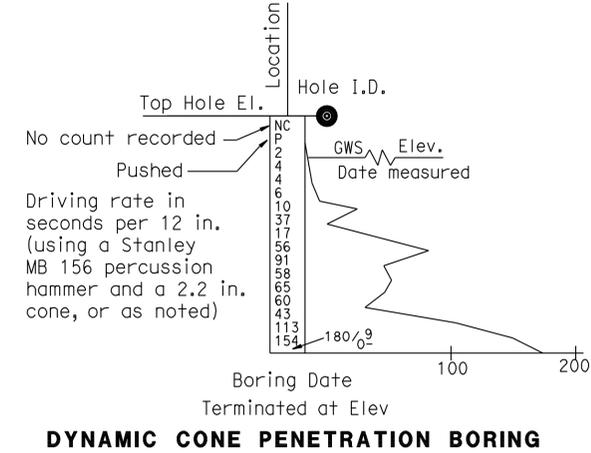
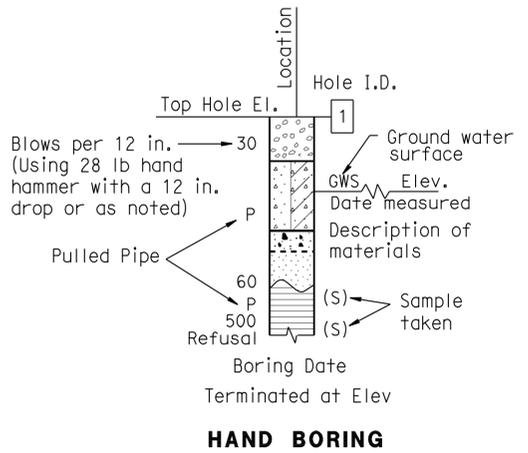
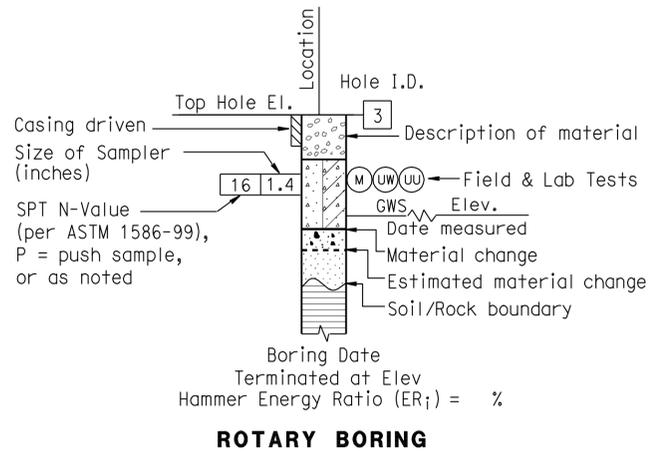
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring (hollow or solid stem bucket)
	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	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)
	O	Other (note on LOTB)

Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	GW	Well-graded GRAVEL		CL	Lean CLAY
		Well-graded GRAVEL with SAND			Lean CLAY with SAND
	GP	Poorly-graded GRAVEL		CL	Lean CLAY with GRAVEL
		Poorly-graded GRAVEL with SAND			SANDY lean CLAY
	GW-GM	Well-graded GRAVEL with SILT		CL-ML	SILTY CLAY
		Well-graded GRAVEL with SILT and SAND			SILTY CLAY with SAND
	GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY)		CL-ML	SANDY SILTY CLAY
		Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)			SANDY SILTY CLAY with GRAVEL
	GP-GM	Poorly-graded GRAVEL with SILT		ML	SILT
		Poorly-graded GRAVEL with SILT and SAND			SILT with SAND
	GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)		ML	SILT with GRAVEL
		Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)			SANDY SILT
	GM	SILTY GRAVEL		OL	ORGANIC lean CLAY
		SILTY GRAVEL with SAND			ORGANIC lean CLAY with SAND
	GC	CLAYEY GRAVEL		OL	ORGANIC lean CLAY with GRAVEL
		CLAYEY GRAVEL with SAND			SANDY ORGANIC lean CLAY
	GC-GM	SILTY, CLAYEY GRAVEL		OL	SANDY ORGANIC lean CLAY with GRAVEL
		SILTY, CLAYEY GRAVEL with SAND			GRAVELLY ORGANIC lean CLAY
	SW	Well-graded SAND		OL	GRAVELLY SILTY CLAY with SAND
		Well-graded SAND with GRAVEL			GRAVELLY SILTY CLAY with SAND
	SP	Poorly-graded SAND		CH	Fat CLAY
		Poorly-graded SAND with GRAVEL			Fat CLAY with SAND
	SW-SM	Well-graded SAND with SILT		CH	Fat CLAY with GRAVEL
		Well-graded SAND with SILT and GRAVEL			SANDY fat CLAY
	SW-SC	Well-graded SAND with CLAY (or SILTY CLAY)		CH	SANDY fat CLAY with GRAVEL
		Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)			GRAVELLY fat CLAY
	SP-SM	Poorly-graded SAND with SILT		CH	GRAVELLY fat CLAY with SAND
		Poorly-graded SAND with SILT and GRAVEL			GRAVELLY fat CLAY with SAND
	SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY)		MH	Elastic SILT
		Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)			Elastic SILT with SAND
	SM	SILTY SAND		MH	Elastic SILT with GRAVEL
		SILTY SAND with GRAVEL			SANDY elastic SILT
	SC	CLAYEY SAND		MH	GRAVELLY elastic SILT
		CLAYEY SAND with GRAVEL			GRAVELLY elastic SILT with SAND
	SC-SM	SILTY, CLAYEY SAND		OH	ORGANIC fat CLAY
		SILTY, CLAYEY SAND with GRAVEL			ORGANIC fat CLAY with SAND
	PT	PEAT		OH	ORGANIC fat CLAY with GRAVEL
		PEAT			SANDY ORGANIC fat CLAY
		COBBLES		OH	GRAVELLY ORGANIC fat CLAY
		COBBLES and BOULDERS			GRAVELLY ORGANIC fat CLAY with SAND
		BOULDERS		OH	ORGANIC elastic SILT
		BOULDERS			ORGANIC elastic SILT with SAND
		BOULDERS		OH	ORGANIC elastic SILT with GRAVEL
		BOULDERS			SANDY ORGANIC elastic SILT
		BOULDERS		OH	GRAVELLY ORGANIC elastic SILT
		BOULDERS			GRAVELLY ORGANIC elastic SILT with SAND
		BOULDERS		OL/OH	ORGANIC SOIL
		BOULDERS			ORGANIC SOIL with SAND
		BOULDERS		OL/OH	ORGANIC SOIL with GRAVEL
		BOULDERS			SANDY ORGANIC SOIL
		BOULDERS		OL/OH	SANDY ORGANIC SOIL with GRAVEL
		BOULDERS			GRAVELLY ORGANIC SOIL
		BOULDERS		OL/OH	GRAVELLY ORGANIC SOIL with SAND
		BOULDERS			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
(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)
(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)

11-24-10  
 REGISTERED CIVIL ENGINEER DATE  
 7-18-11  
 PLANS APPROVAL DATE  
 J. Montgomery Schultz  
 No. 61144  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA

CITY OF ESCONDIDO  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025  
 PETRA GEOTECHNICAL, INC.  
 3185-A AIRWAY AVENUE  
 COSTA MESA, CA 92626

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N <sub>60</sub> (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE	
Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

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

PARTICLE SIZE		
Description	Size (in.)	
Boulder	Greater than 12	
Cobble	3 - 12	
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay	Less than 1/300	

 DESIGN OVERSIGHT Norbert Gee 12-1-10 SIGN OFF DATE	DRAWN BY N. Varadi	Jon Cain FIELD INVESTIGATION BY: DATE: 07/01/2010	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 57-1220	NORDAHL ROAD OC (REPLACE) LOG OF TEST BORINGS 7 OF 8			
	CHECKED BY M. Schultz	Monty Schultz PROJECT ENGINEER		POST MILES 15.5				
65 LOTB SOIL LEGEND SHEET 2 (ENGLISH) (REV. 07/16/10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 2777 PROJECT NUMBER & PHASE: 11000002001	CONTRACT NO.: 11-259804	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 4-19-10 8-04-10 10-15-10	SHEET 36 OF 37

**PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)**

$$REC = \frac{\sum \text{Length of the recovered core pieces (in.)}}{\text{Total length of core run (in.)}} \times 100\%$$

$$RQD = \frac{\sum \text{Length of intact core pieces} \geq 4 \text{ in.}}{\text{Total length of core run (in.)}} \times 100\%$$

RQD\* Indicates soundness criteria not met.

**BEDDING SPACING**

Description	Thickness / Spacing
Massive	Greater than 10 ft
Very Thickly Bedded	3 ft - 10 ft
Thickly Bedded	1 ft - 3 ft
Moderately Bedded	4 in. - 1 ft
Thinly Bedded	1 in. - 4 in.
Very Thinly Bedded	1/4 in. - 1 in.
Laminated	Less than 1/4 in.

**LEGEND OF ROCK MATERIALS**

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

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**ROCK HARDNESS**

Description	Criteria
Extremely Hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows.
Very Hard	Cannot be scratched with a pocketknife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocketknife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows.
Moderately Soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily by a pocketknife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

**WEATHERING DESCRIPTORS FOR INTACT ROCK**

Description	Diagnostic Features				General Characteristics	
	Chemical Weathering-Discoloration and/or Oxidation		Mechanical Weathering-Grain Boundary Conditions (Disaggregation) Primarily for Granitics and Some Coarse-Grained Sediments	Texture and Leaching		
	Body of Rock	Fracture Surfaces		Texture		Leaching
Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change	No leaching	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved	Minor leaching of some soluble minerals.	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semiarid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened.
Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes."

**FRACTURE DENSITY**

Description	Observed Fracture Density
Unfractured	No fractures.
Very Slightly Fractured	Core lengths greater than 3 ft.
Slightly Fractured	Core lengths mostly from 1 to 3 ft.
Moderately Fractured	Core lengths mostly from 4 in. to 1 ft.
Intensely Fractured	Core lengths mostly from 1 to 4 in.
Very Intensely Fractured	Mostly chips and fragments.

 DESIGN OVERSIGHT Norbert Gee 12-1-10 SIGN OFF DATE	DRAWN BY	N. Varadi	Jon Cain
	CHECKED BY	M. Schultz	FIELD INVESTIGATION BY: DATE: 07/01/2010

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**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

Monty Schultz  
 PROJECT ENGINEER

BRIDGE NO.	57-1220
POST MILES	15.5

**NORDAHL ROAD OC (REPLACE)**  
**LOG OF TEST BORINGS 8 OF 8**