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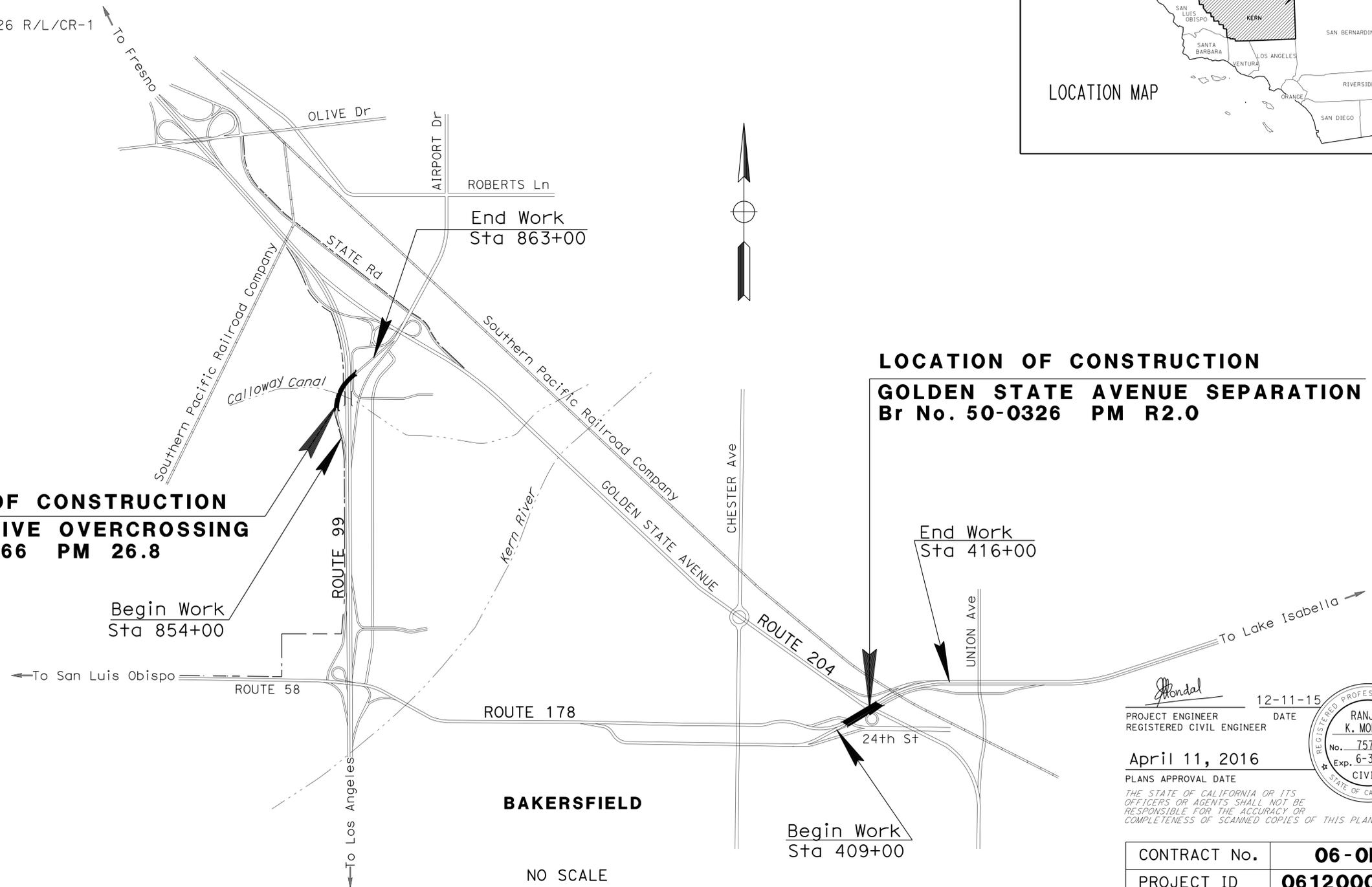
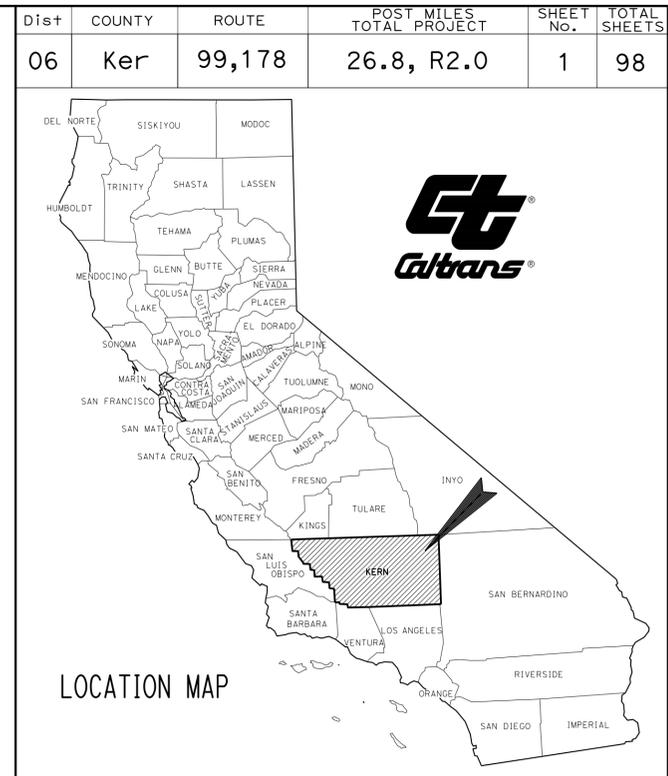
STRUCTURE PLANS

76-86	AIRPORT DRIVE OC Br No. 50-0266
87-98	GOLDEN STATE Ave Sep Br No. 50-0326 R/L/CR-1

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

STATE OF CALIFORNIA ACNHP-X029(125)E  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN KERN COUNTY**  
**IN BAKERSFIELD**  
**ON ROUTE 99 AT AIRPORT DRIVE OVERCROSSING AND**  
**ON ROUTE 178 AT GOLDEN STATE AVENUE SEPARATION**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



PROJECT MANAGER  
 JUDY AGUILAR  
 DESIGN ENGINEER  
 ALI R. ALOATAMI

PROJECT ENGINEER  
 REGISTERED CIVIL ENGINEER  
 DATE 12-11-15  
 April 11, 2016  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CONTRACT No.	<b>06-OK8104</b>
PROJECT ID	<b>0612000108</b>

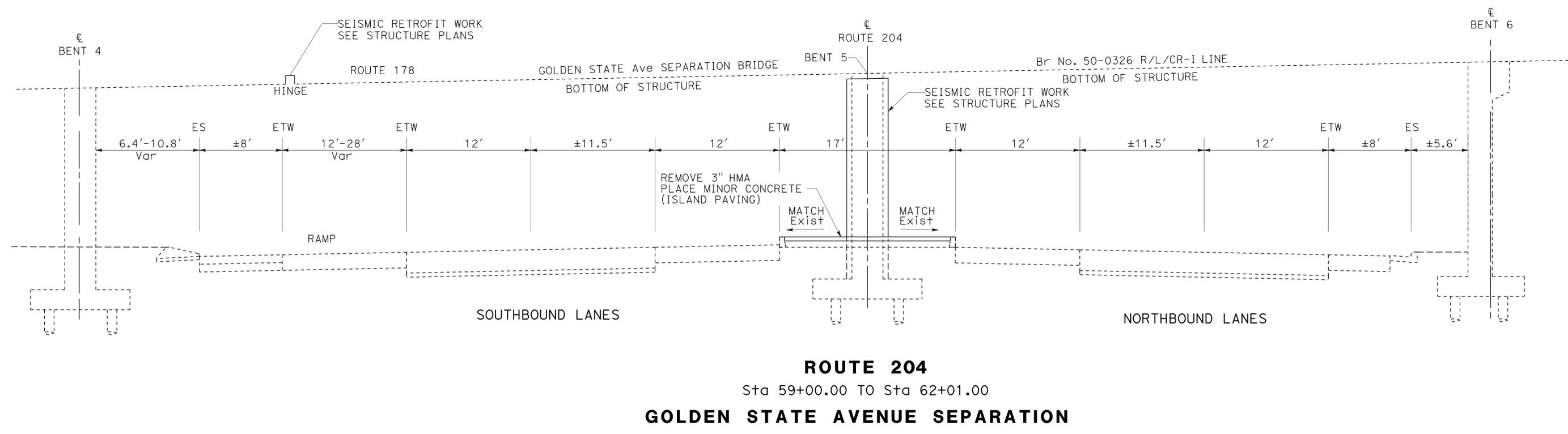
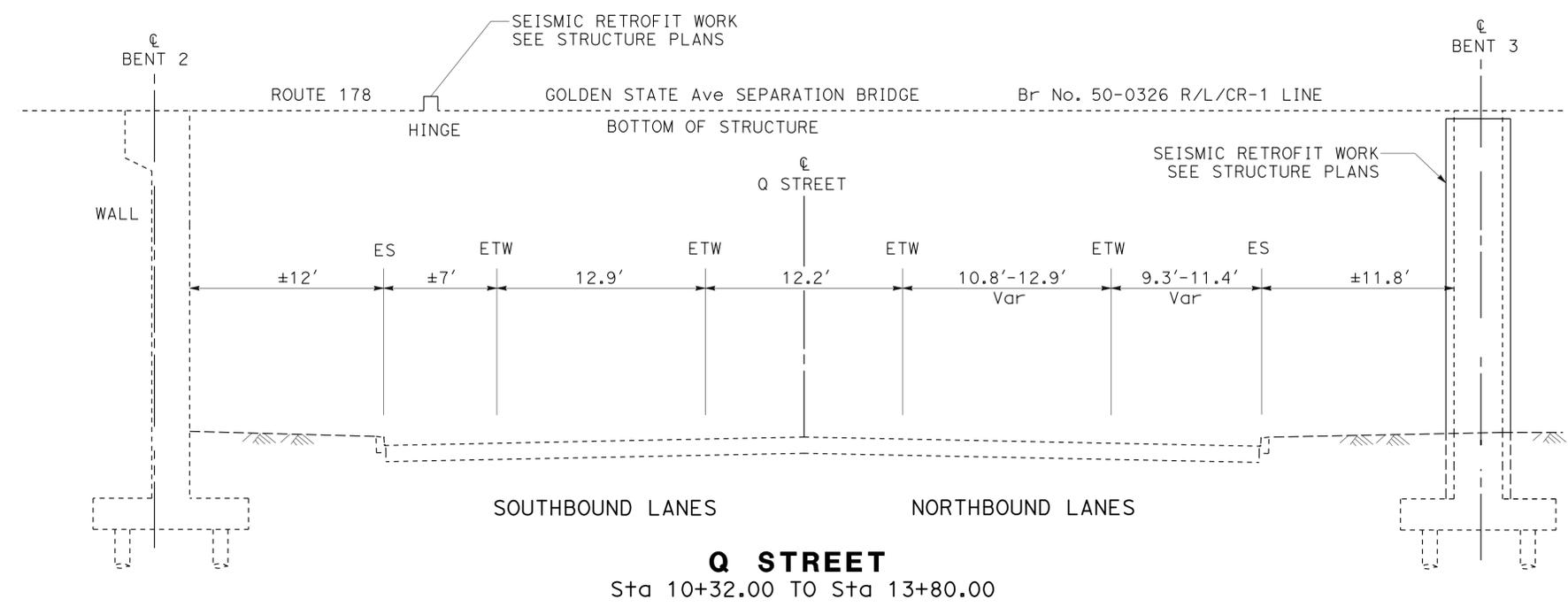
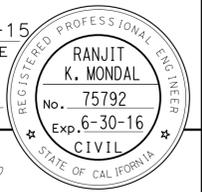
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

BAKERSFIELD

NO SCALE



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	3	98
			12-11-15	REGISTERED CIVIL ENGINEER DATE	
			4-11-16	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.					



**ROUTE 204**  
Sta 59+00.00 TO Sta 62+01.00  
**GOLDEN STATE AVENUE SEPARATION**

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

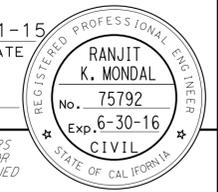
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	ALI ALOATAMI
CALCULATED/DESIGNED BY	CHECKED BY
GEO LEYVA	RANJIT MONDAL
REVISOR	DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	4	98

12-11-15	
REGISTERED CIVIL ENGINEER	DATE
4-11-16	
PLANS APPROVAL DATE	

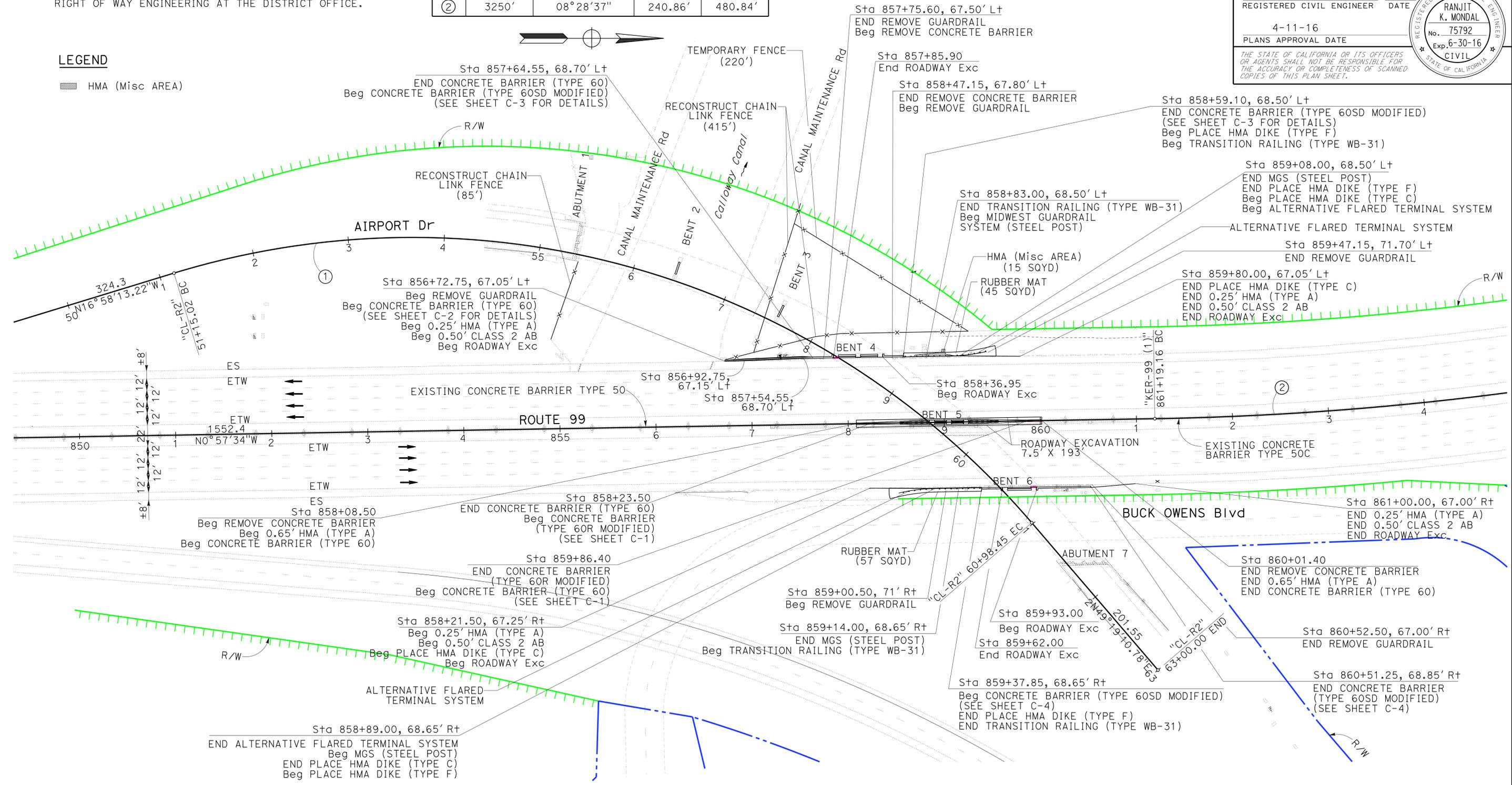
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



No.	R	Δ	T	L
①	850'	66°17'24"	555.06'	983.43'
②	3250'	08°28'37"	240.86'	480.84'

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

**LEGEND**  
HMA (Misc AREA)



**AIRPORT DRIVE OVERCROSSING**

SCALE: 1"=50'

**LAYOUT L-1**

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

FUNCTIONAL SUPERVISOR  
 ALT R ALQATAMI

CALCULATED/DESIGNED BY  
 CHECKED BY

RANJIT K MONDAL  
 YEN NGUYEN

REVISED BY  
 DATE REVISED

LAST REVISION DATE PLOTTED => 28-JUN-2016  
 12-21-15 TIME PLOTTED => 13:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	5	98

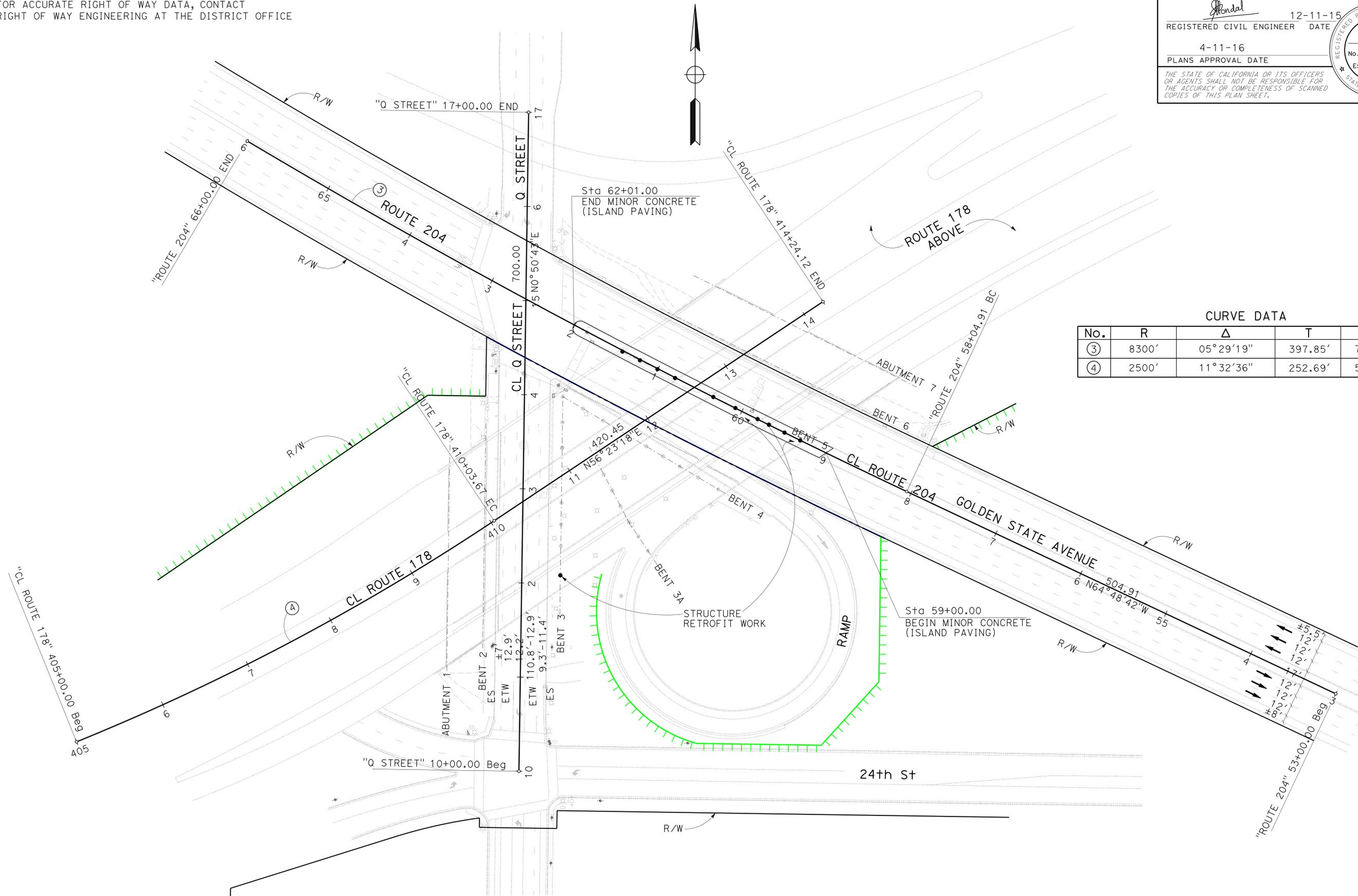
REGISTERED CIVIL ENGINEER  
 RANJIT K. MONDAL  
 No. 75792  
 Exp. 6-30-16  
 CIVIL

12-11-15  
 DATE  
 4-11-16  
 PLANS APPROVAL DATE

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

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	ALI R. ALQATAMI
CALCULATED/DESIGNED BY	CHECKED BY
RANJIT K. MONDAL	YEN NGUYEN
REVISOR	DATE

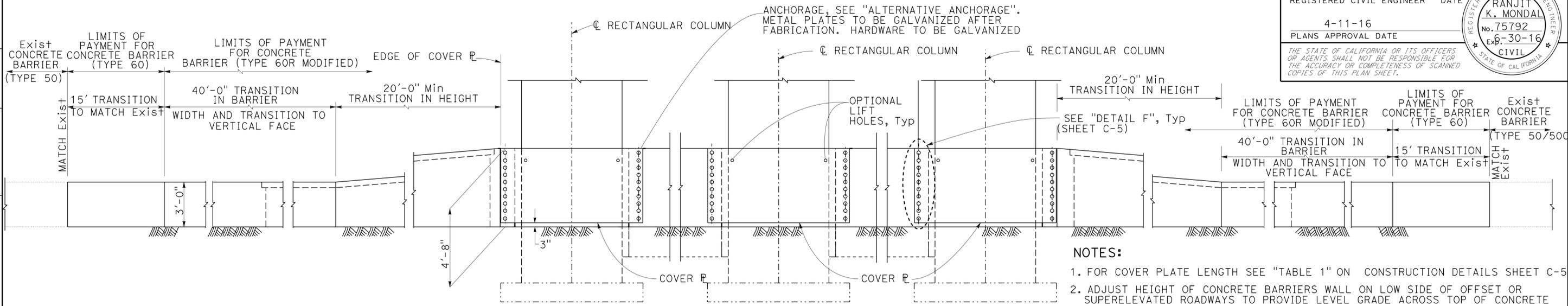


**GOLDEN STATE AVENUE SEPARATION**

SCALE: 1"=50' **LAYOUT L-2**

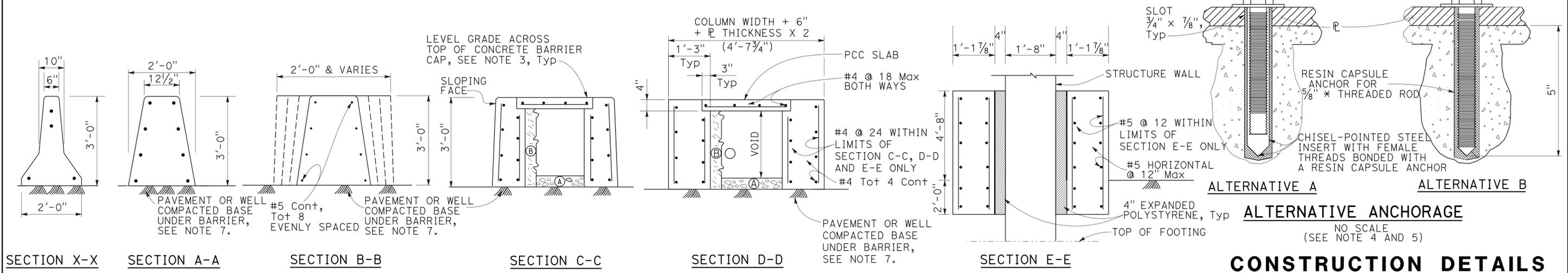
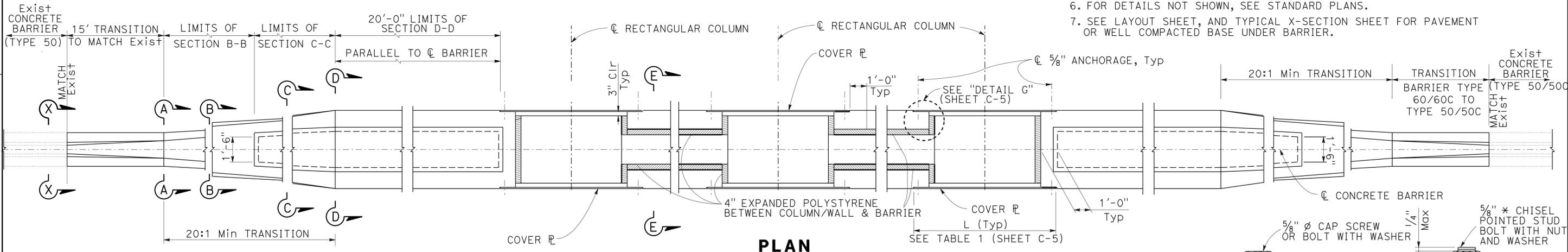
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	6	98
			12-11-15		
REGISTERED CIVIL ENGINEER			DATE		
4-11-16			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES:**  
 1. CONTRACTOR OPTIONS FOR FILL BETWEEN BARRIER WALLS  
 (A) PLACE 4" PCC AT BASE BETWEEN BARRIER WALLS  
 (B) PLACE GRANULAR MATERIAL FROM BASE TO BOTTOM OF 4" CAP



**NOTES:**

- FOR COVER PLATE LENGTH SEE "TABLE 1" ON CONSTRUCTION DETAILS SHEET C-5
- ADJUST HEIGHT OF CONCRETE BARRIER WALL ON LOW SIDE OF OFFSET OR SUPERELEVATED ROADWAYS TO PROVIDE LEVEL GRADE ACROSS TOP OF CONCRETE BARRIER CAP.
- RESIN CAPSULE ANCHORAGE IS SUBJECT TO APPROVAL OF THE ENGINEER. INSTALLATION PROCEDURES SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS.
- ALTERNATIVE B SIMILAR TO ALTERNATIVE A EXCEPT FOR ANCHORAGE DEVICES.
- THE CONTRACTOR SHALL VERIFY ALL CONTROLLED FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.
- FOR DETAILS NOT SHOWN, SEE STANDARD PLANS.
- SEE LAYOUT SHEET, AND TYPICAL X-SECTION SHEET FOR PAVEMENT OR WELL COMPACTED BASE UNDER BARRIER.



**CONSTRUCTION DETAILS**  
 (CONCRETE BARRIER (TYPE 60R MODIFIED))  
**C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Ranjit K. Mondal  
 Ali R. Alcotami  
 Geo Leyva

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

FUNCTIONAL SUPERVISOR  
 ALI R ALQATAMI

CALCULATED/DESIGNED BY  
 CHECKED BY

RANJIT K MONDAL  
 GEO LEYVA

REVISED BY  
 DATE REVISED

**NOTES:**

1. THE CONTRACTOR SHALL VERIFY ALL CONTROLLED FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.
2. SEE ROADWAY PLANS FOR ALIGNMENT OF BARRIER.
3. FOR DETAILS NOT SHOWN, SEE LAYOUT SHEET, TYPICAL X-SECTION SHEET, AND STANDARD PLANS A76A, A76B.

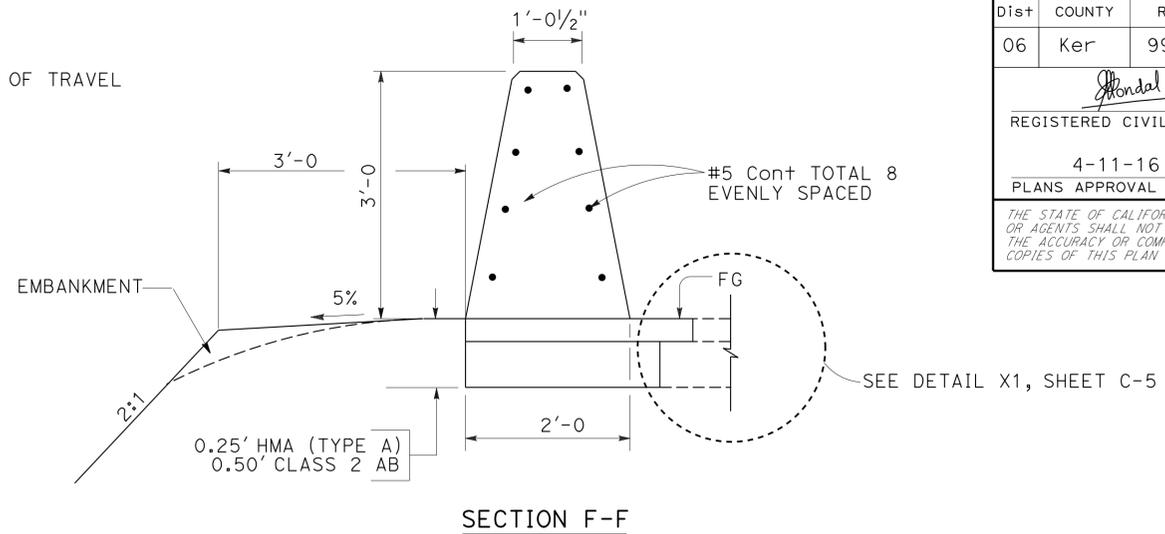
**LEGEND**

→ DIRECTION OF TRAVEL

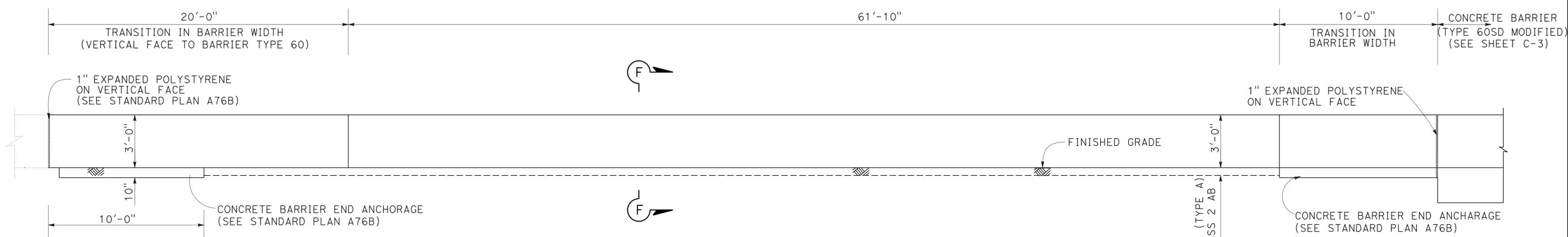
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	7	98

12-11-15  
 REGISTERED CIVIL ENGINEER DATE  
 4-11-16  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

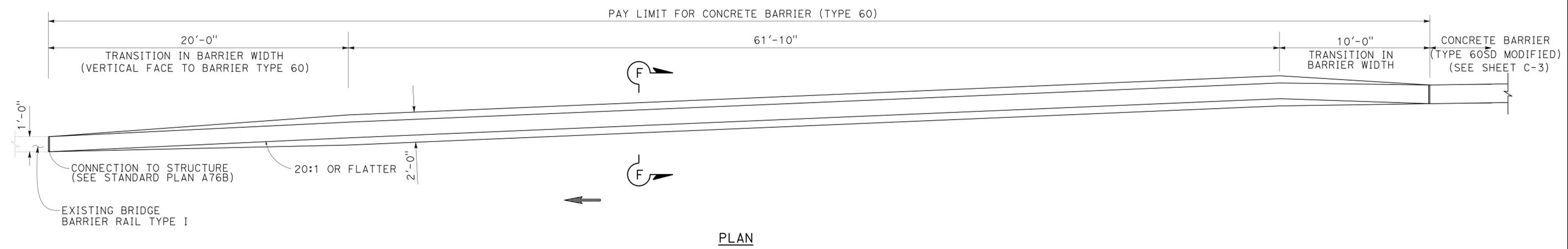
REGISTERED PROFESSIONAL ENGINEER  
**RANJIT K. MONDAL**  
 No. 75792  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA



**SECTION F-F**



**ELEVATION**



**PLAN**

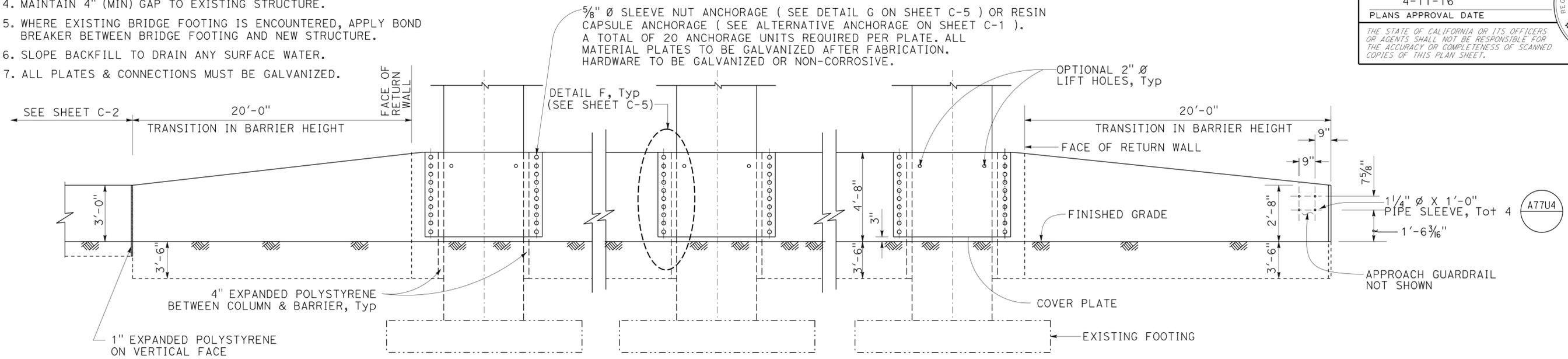
**CONCRETE BARRIER (TYPE 60) FOR RIGHT SIDE OF SB ROUTE 99**

**CONSTRUCTION DETAILS**  
 (CONCRETE BARRIER (TYPE 60))  
 NO SCALE  
**C-2**

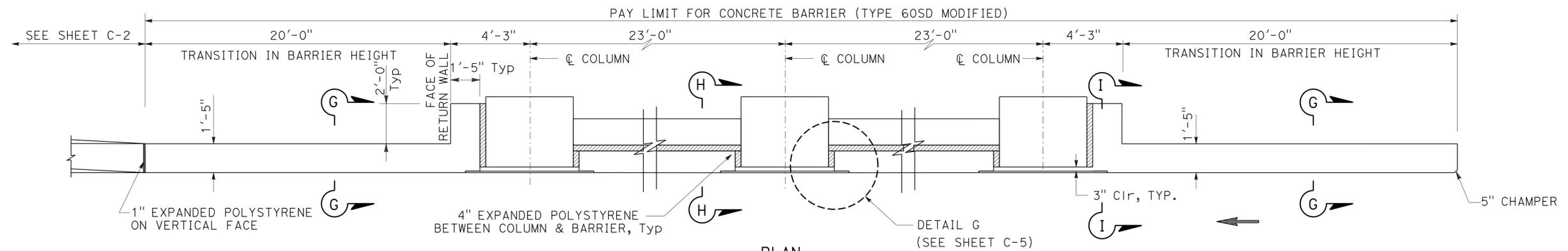
LAST REVISION DATE PLOTTED => 29-JUN-2016 04-06-16 TIME PLOTTED => 14:01

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	8	98
			12-11-15 REGISTERED CIVIL ENGINEER DATE 4-11-16 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

- NOTES:**
- SEE LAYOUT SHEET FOR EXACT ALIGNMENT OF BARRIER.
  - THE CONTRACTOR SHALL VERIFY ALL CONTROLLED FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.
  - SEE STANDARD PLANS AND SHEET C-5 FOR OTHER DETAILS.
  - MAINTAIN 4" (MIN) GAP TO EXISTING STRUCTURE.
  - WHERE EXISTING BRIDGE FOOTING IS ENCOUNTERED, APPLY BOND BREAKER BETWEEN BRIDGE FOOTING AND NEW STRUCTURE.
  - SLOPE BACKFILL TO DRAIN ANY SURFACE WATER.
  - ALL PLATES & CONNECTIONS MUST BE GALVANIZED.

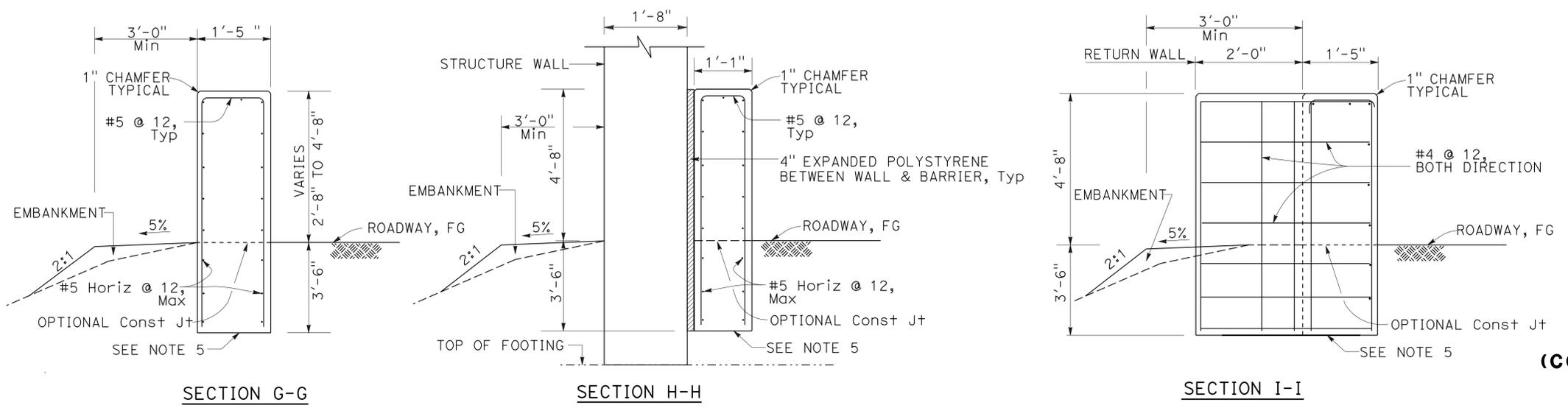


**ELEVATION**



**PLAN**

**CONCRETE BARRIER (TYPE 60SD MODIFIED) FOR RIGHT SIDE OF SB ROUTE 99**



**CONSTRUCTION DETAILS  
(CONCRETE BARRIER (TYPE 60SD MODIFIED))**

NO SCALE

**C-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Ranjit K. Mondal  
 Ali R. Alqatami  
 Geo Leyva

LAST REVISION DATE PLOTTED => 28-JUN-2016  
 02-22-16 TIME PLOTTED => 1:31:27

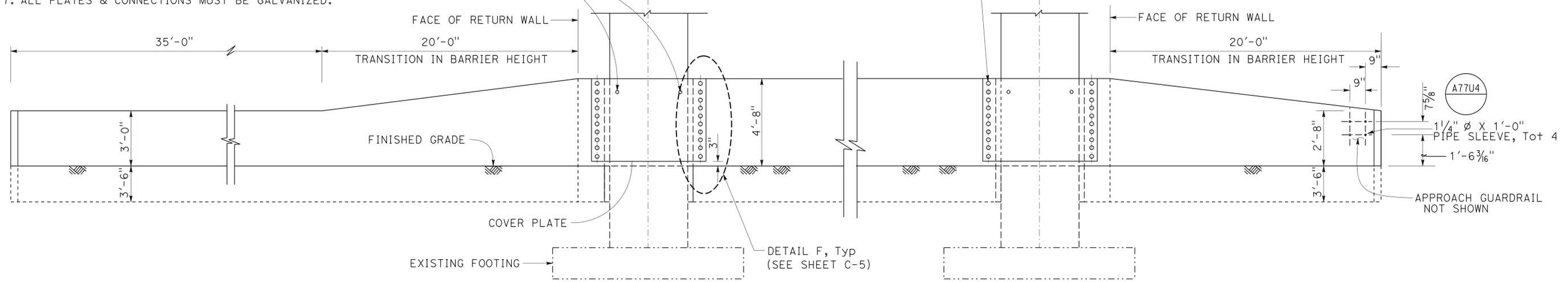
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	9	98
			12-11-15 REGISTERED CIVIL ENGINEER DATE 4-11-16 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

- NOTES:**
- SEE LAYOUT SHEET FOR EXACT ALIGNMENT OF BARRIER.
  - THE CONTRACTOR SHALL VERIFY ALL CONTROLLED FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.
  - SEE STANDARD PLANS AND SHEET C-5 FOR OTHER DETAILS.
  - MAINTAIN 4" (Min) GAP TO EXISTING STRUCTURE.
  - WHERE EXISTING BRIDGE FOOTING IS ENCOUNTERED, APPLY BOND BREAKER BETWEEN BRIDGE FOOTING AND NEW STRUCTURE.
  - SLOPE BACKFILL TO DRAIN ANY SURFACE WATER.
  - ALL PLATES & CONNECTIONS MUST BE GALVANIZED.

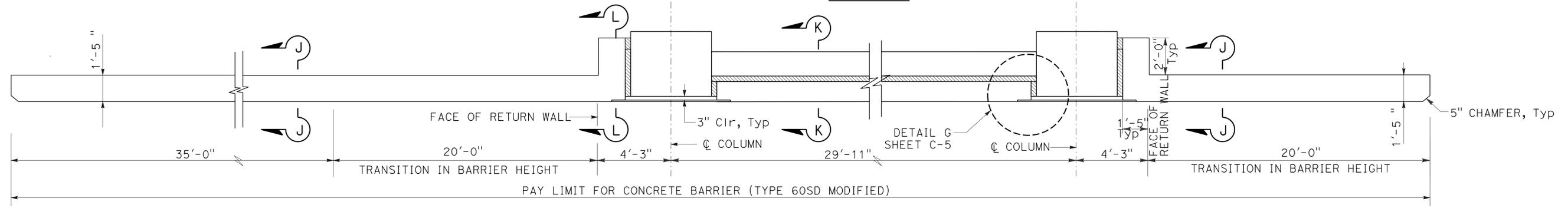
**LEGEND**



5/8" Ø SLEEVE NUT ANCHORAGE ( SEE DETAIL H ON SHEET C-5 ) OR RESIN CAPSULE ANCHORAGE ( SEE ALTERNATIVE ANCHORAGE ON SHEET C-1 ). A TOTAL OF 20 ANCHORAGE UNITS REQUIRED PER PLATE. ALL MATERIAL PLATES TO BE GALVANIZED AFTER FABRICATION. HARDWARE TO BE GALVANIZED OR NON-CORROSIVE.

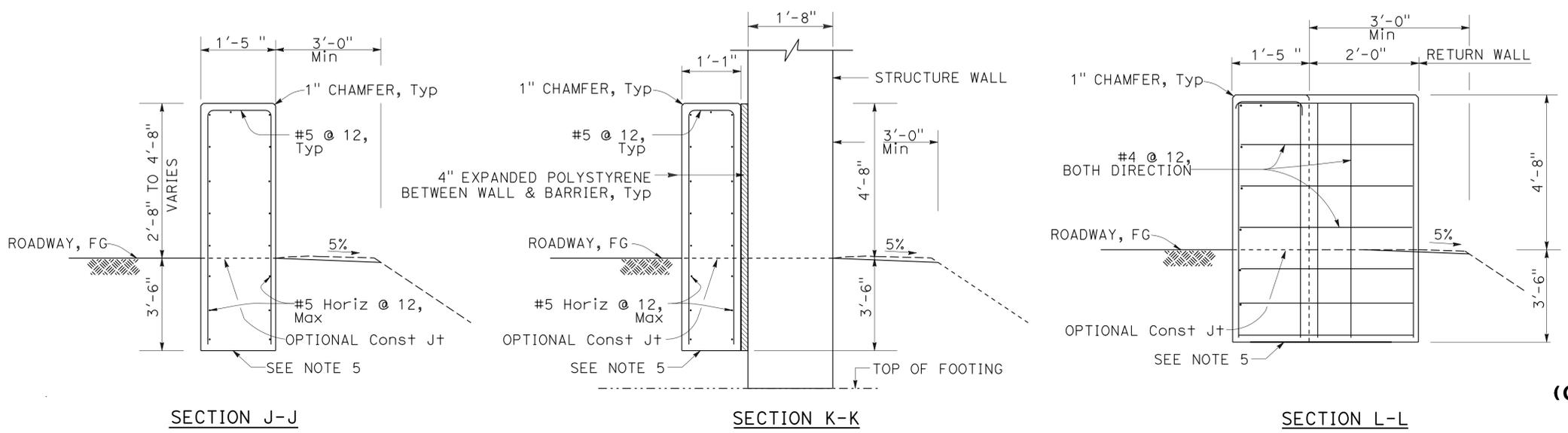


**ELEVATION**



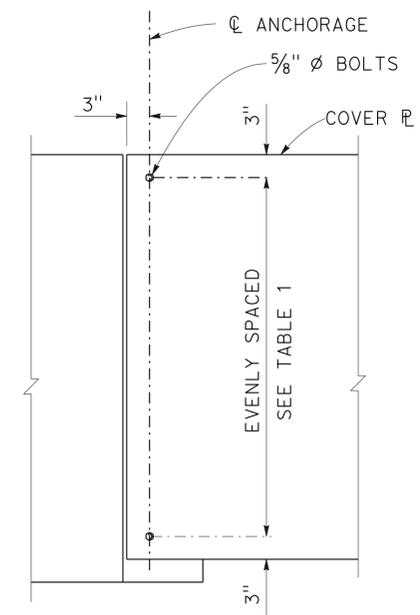
**PLAN**

**CONCRETE BARRIER (TYPE 60SD MODIFIED) FOR RIGHT SIDE OF NB ROUTE 99**



**CONSTRUCTION DETAILS**  
**(CONCRETE BARRIER (TYPE 60SD MODIFIED))**  
 NO SCALE  
**C-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: ALI R ALQATAMI  
 CALCULATED/DESIGNED BY: GEO LEYVA  
 CHECKED BY:  
 RANJIT K MONDAL  
 REVISED BY: GEO LEYVA  
 DATE REVISED:

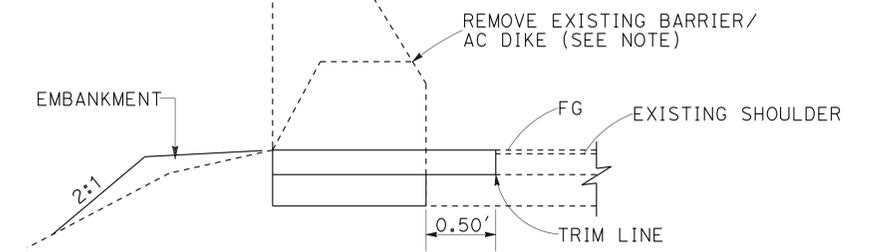


**DETAIL F**

**TABLE 1**

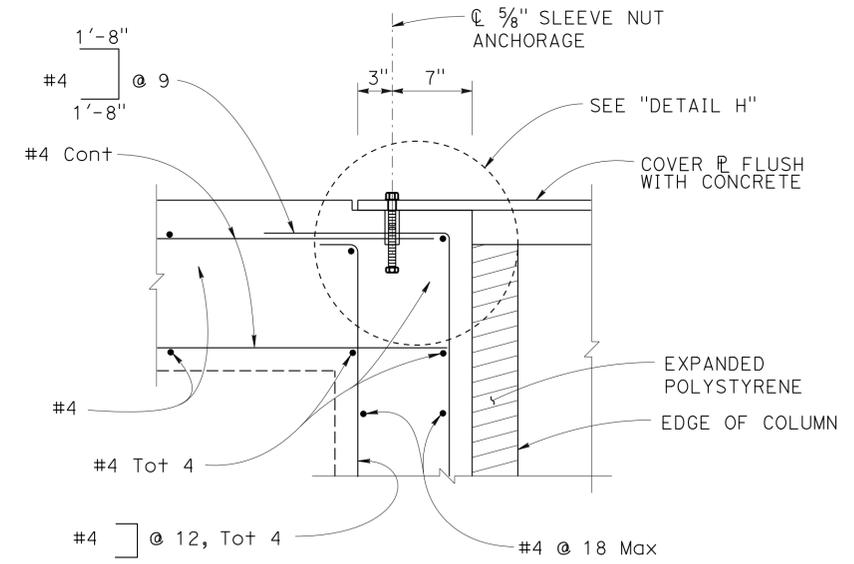
L (ft)	PLATE THICKNESS (inch)	TOTAL No. OF BOLTS
8'-6" Max	7/8	10
6'-6" Max	11/16	7
4'-6" Max	7/16	5

NOTE:  
Structural steel,  $f_y = 50,000$  psi  
Unless otherwise noted

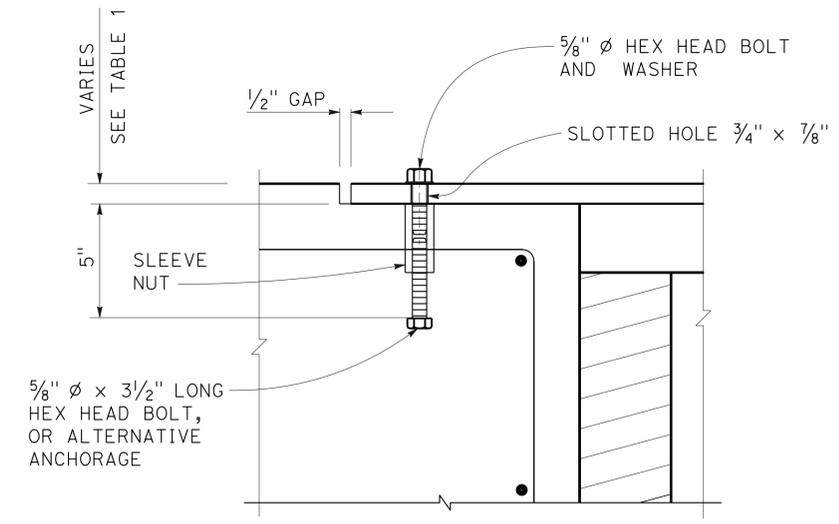


**TYPICAL DETAIL FOR REMOVAL OF EXISTING CONCRETE BARRIER/ AC DIKE**

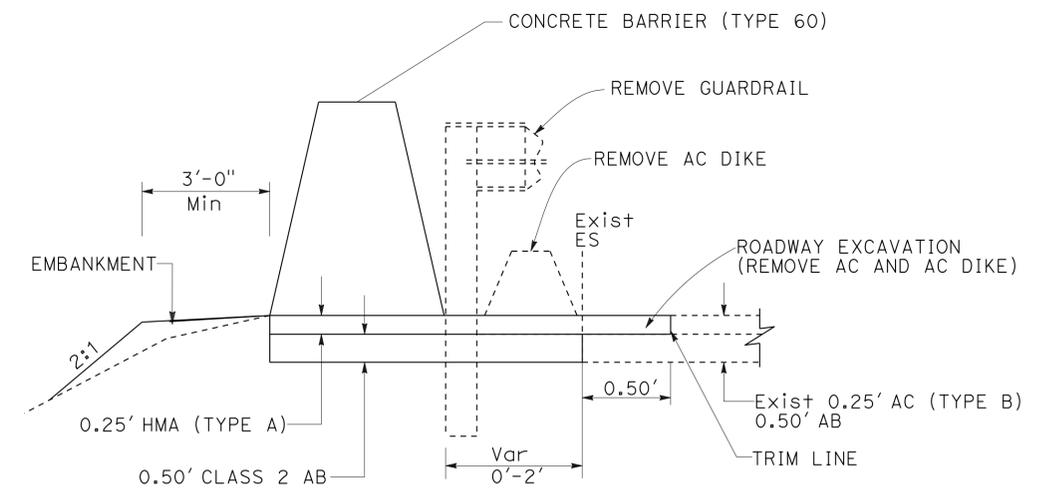
NOTE:  
FOR LOCATION AND LIMITS OF BARRIER/AC DIKE REMOVAL, SEE LAYOUT SHEETS AND QUANTITY SHEETS.



**DETAIL G**



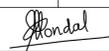
**DETAIL H**

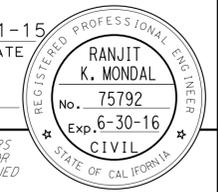


**DETAIL X1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Ranjits  
 DESIGN  
 FUNCTIONAL SUPERVISOR: ALI R ALQATAMI  
 CALCULATED/DESIGNED BY: GEO LEYVA  
 CHECKED BY:  
 REVISED BY: RANJIT K MONDAL  
 DATE REVISED:

LAST REVISION: DATE PLOTTED => 28-JUN-2016  
 02-22-16 TIME PLOTTED => 13:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	11	98
 REGISTERED CIVIL ENGINEER			DATE	12-11-15	
PLANS APPROVAL DATE			DATE	4-11-16	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

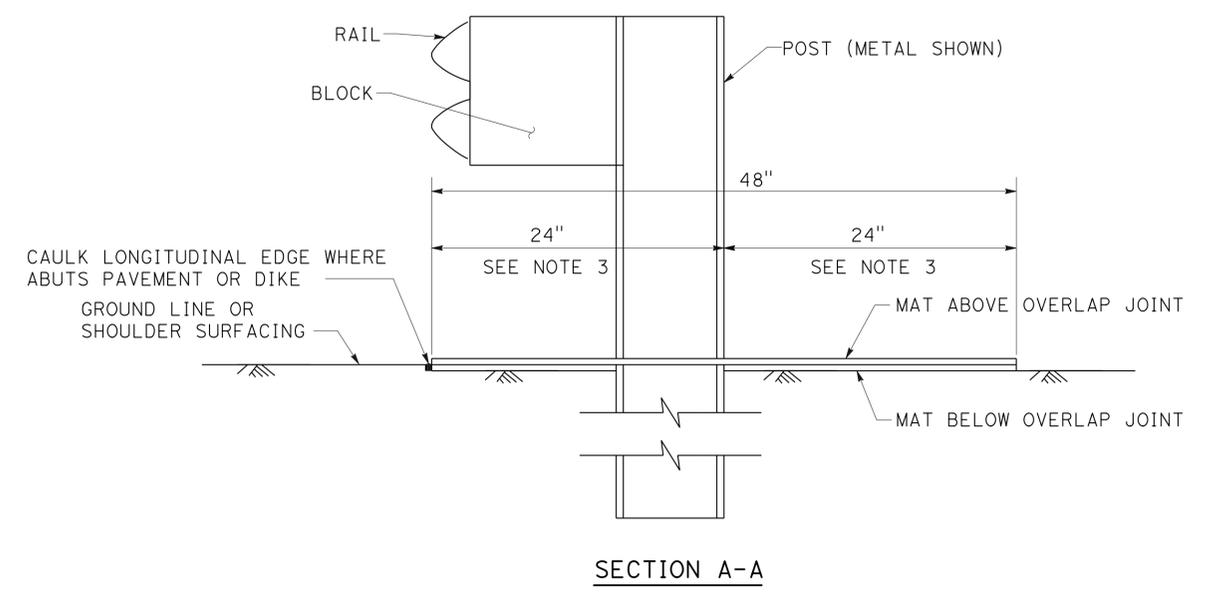
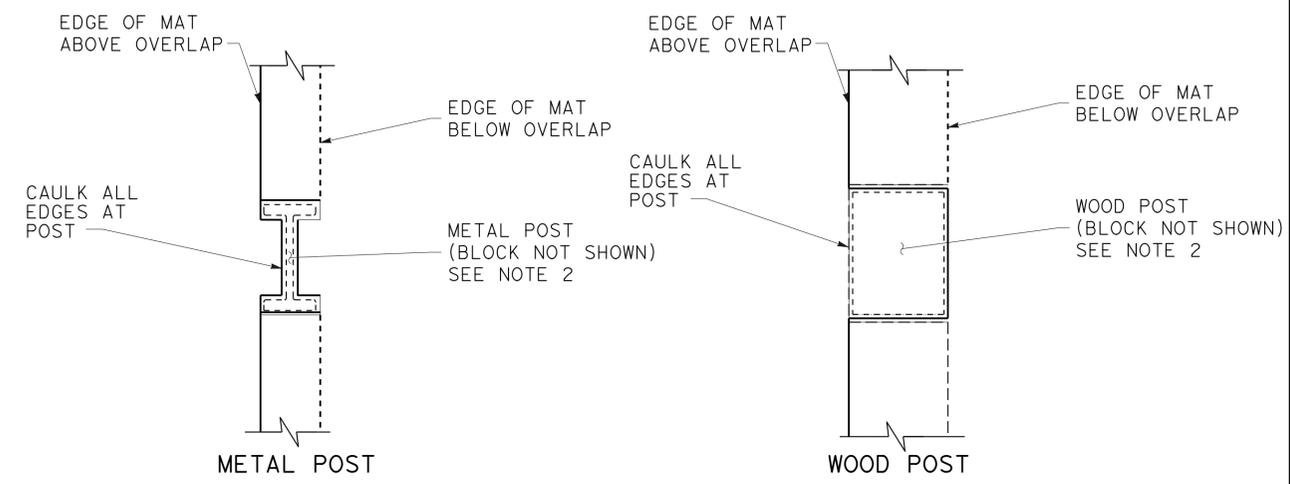
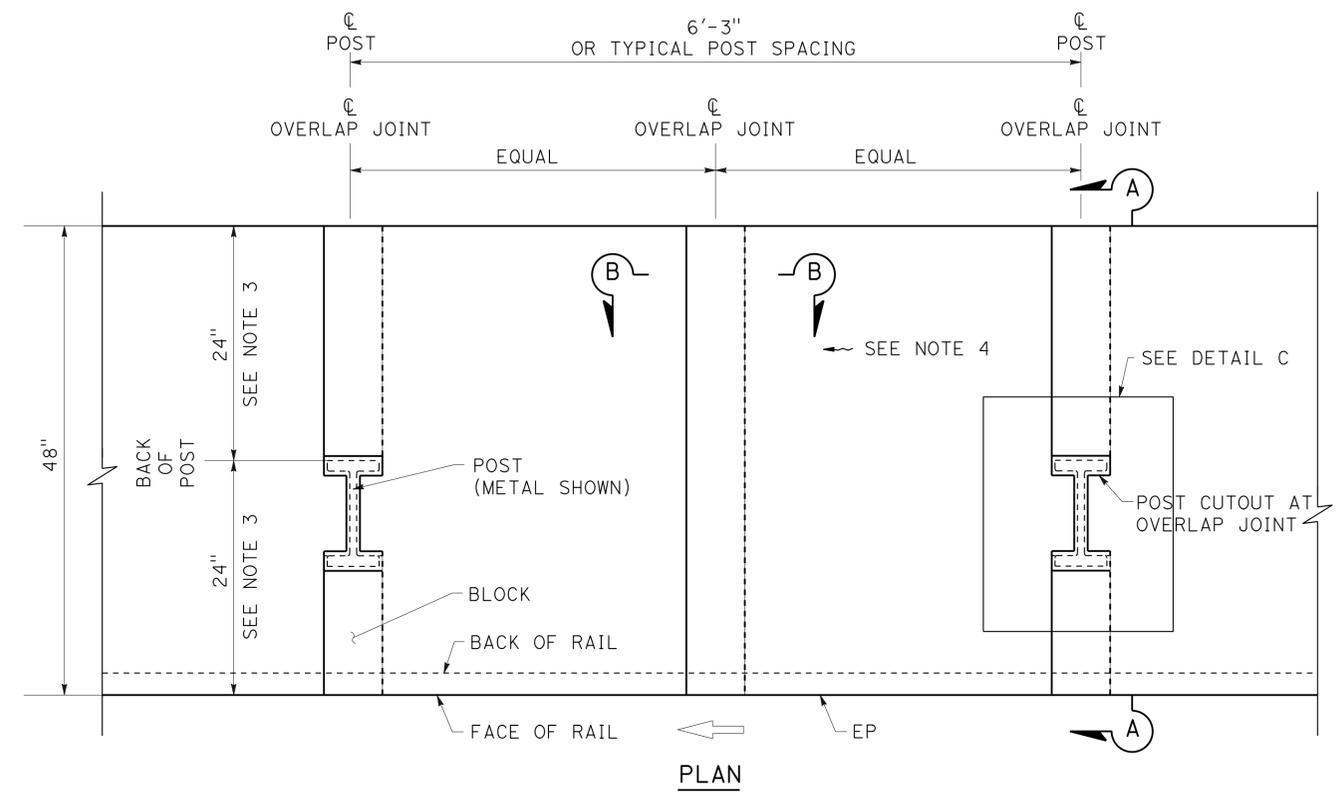


**NOTES:**

- RUBBER MAT MUST BE 48" WIDE INDIVIDUAL MATS OR 48" WIDE CONTINUOUS ROLL PRODUCT. INDIVIDUAL MATS ARE SHOWN.
- EDGES OF RUBBER MAT TO ABUT EDGES OF POST.
- WHERE EDGE OF PAVED SHOULDER IS MORE THAN 24" FROM BACK OF POST, EDGE OF RUBBER MAT MUST BE 24" FROM BACK OF POST. WHERE PAVED SHOULDER IS CONSTRUCTED 24" OR LESS FROM BACK OF POST, ABUT EDGE OF RUBBER MAT AGAINST EDGE OF PAVED SHOULDER. WHERE DIKE IS CONSTRUCTED UNDER RAILING, ABUT EDGE OF RUBBER MAT AGAINST BACK OF DIKE.
- LAP RUBBER MAT IN DIRECTION OF WATER FLOW.
- FOR CONTINUOUS ROLL PRODUCT LOCATE OVERLAP JOINT AT OR BETWEEN POSTS AS SHOWN.

**ABBREVIATION:**

RM RUBBER MAT



**RUBBER MAT UNDER MIDWEST GUARDRAIL SYSTEM AND TRANSITION RAILING**

**CONSTRUCTION DETAILS C-6**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN

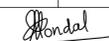
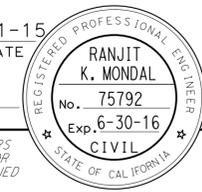
FUNCTIONAL SUPERVISOR: ALI ALOATAMI

CALCULATED/DESIGNED BY: GEO LEYVA

CHECKED BY: GEO LEYVA

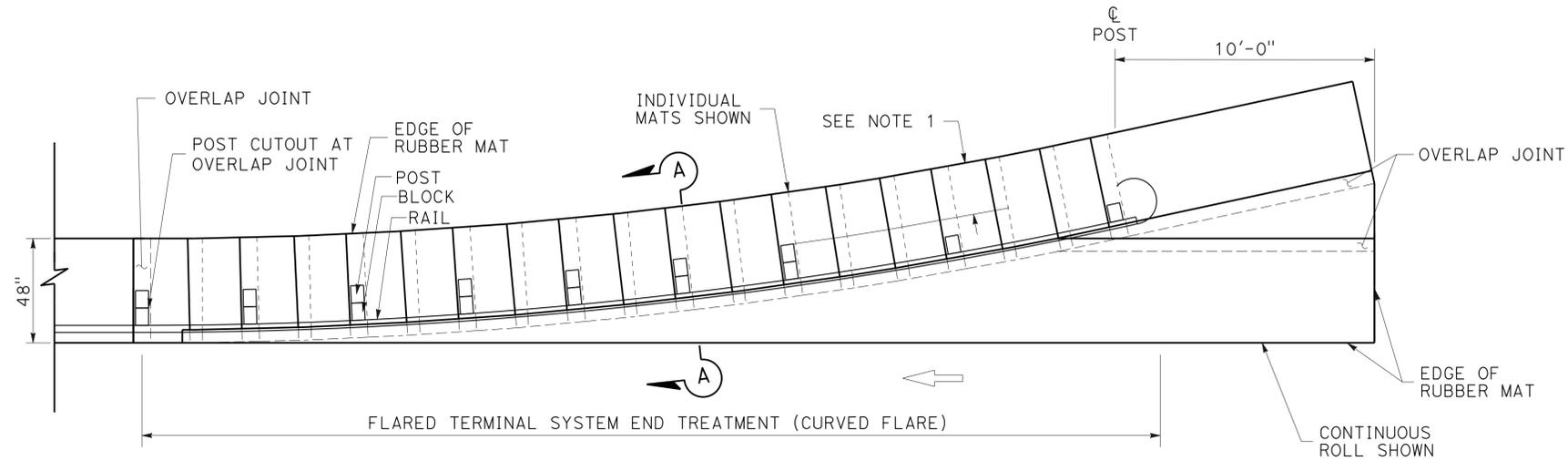
REVISOR: RANJIT K MONDAL

DATE: 12-11-15

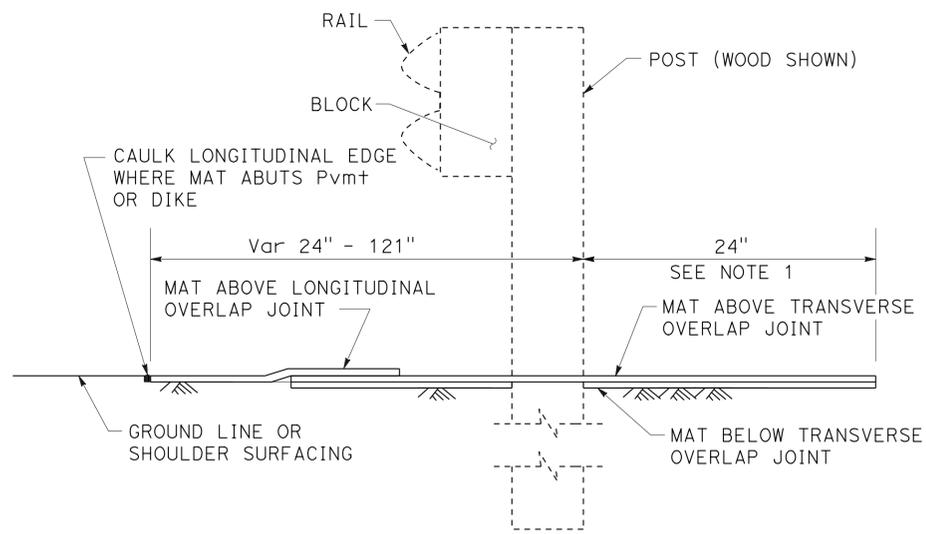
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	12	98
 REGISTERED CIVIL ENGINEER DATE 12-11-15					
4-11-16 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTE (THIS SHEET ONLY):**

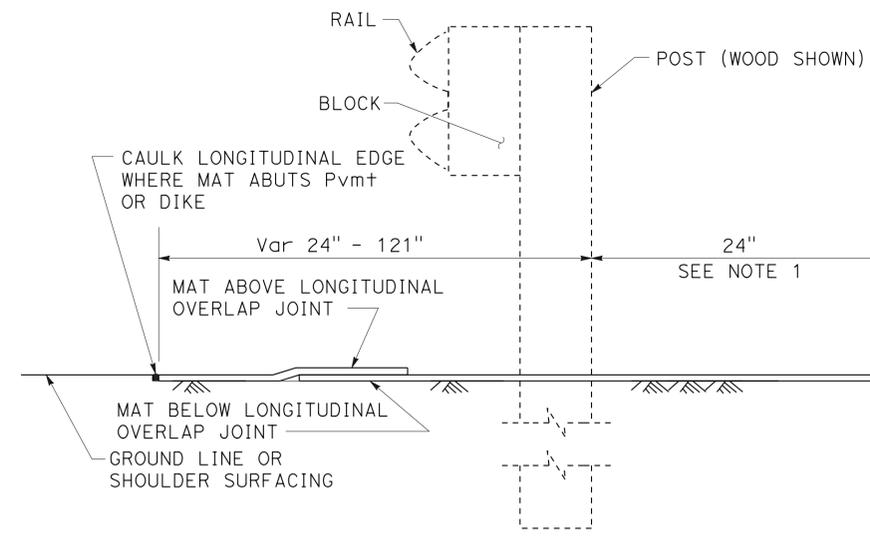
1. CONTINUE ALIGNMENT OF RUBBER MAT EDGE AT OFFSET FROM BACK OF POST.



**PLAN**



**SECTION A-A  
FOR INDIVIDUAL MATS**



**SECTION A-A  
FOR CONTINUOUS ROLL**

**RUBBER MAT  
UNDER ALTERNATIVE FLARED TERMINAL SYSTEM END TREATMENTS**

**CONSTRUCTION DETAILS**

NO SCALE

**C-7**



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

FUNCTIONAL SUPERVISOR  
 ALI ALOATAMI

CALCULATED/DESIGNED BY  
 CHECKED BY

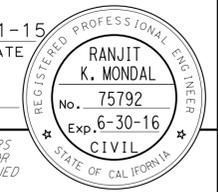
RANJIT K. MONDAL  
 GEO LEYYA

REVISED BY  
 DATE REVISED

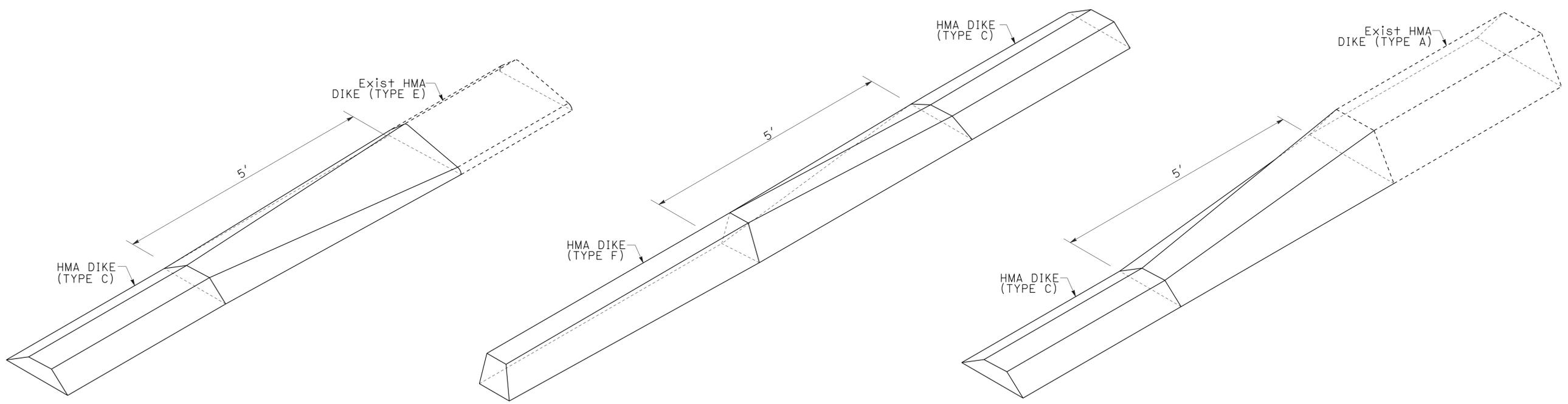
**NOTES (THIS SHEET ONLY):**

- FOR LOCATION AND TYPE OF DIKE, SEE LAYOUT SHEET, CONSTRUCTION DETAILS SHEETS AND SUMMARY OF QUANTITY SHEET.
- FOR OTHER DETAILS NOT SHOWN, SEE STANDARD PLANS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	13	98
			12-11-15		
			REGISTERED CIVIL ENGINEER	DATE	
			4-11-16	PLANS APPROVAL DATE	

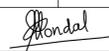
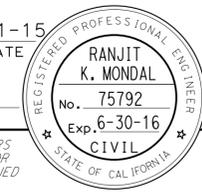


THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



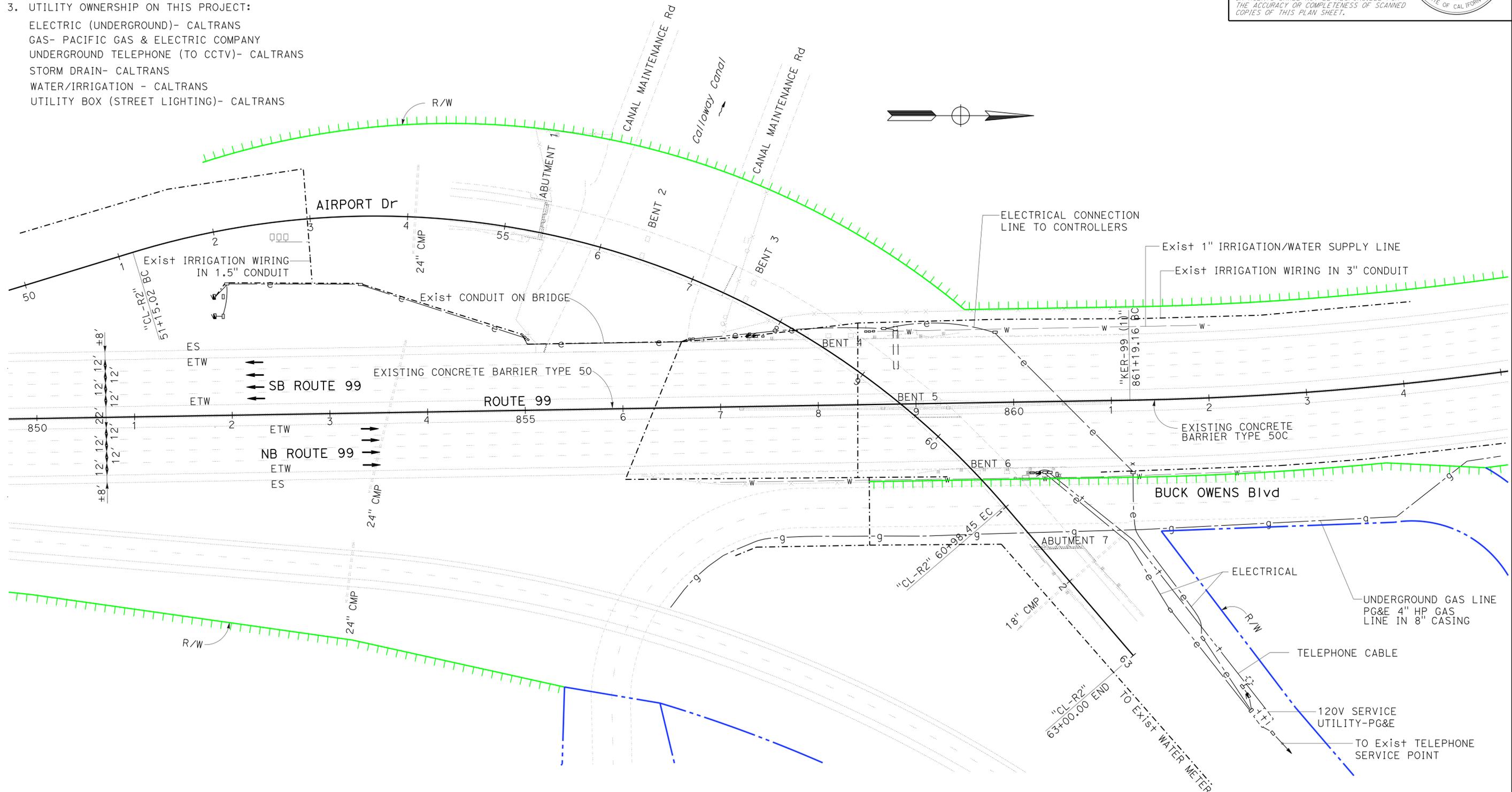
**HMA DIKE TRANSITION DETAILS**

**CONSTRUCTION DETAILS**  
 (HOT MIX ASPHALT DIKE TRANSITION)  
 NO SCALE  
**C-8**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	14	98
 REGISTERED CIVIL ENGINEER DATE 12-11-15					
4-11-16 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE
- LOCATIONS OF UTILITY FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE UTILITIES ARE SHOWN FROM PRIOR CONTRACTS AND AS BUILT PLANS AND FURNISHED ONLY TO PROVIDE INFORMATION.
- UTILITY OWNERSHIP ON THIS PROJECT:  
 ELECTRIC (UNDERGROUND)- CALTRANS  
 GAS- PACIFIC GAS & ELECTRIC COMPANY  
 UNDERGROUND TELEPHONE (TO CCTV)- CALTRANS  
 STORM DRAIN- CALTRANS  
 WATER/IRRIGATION - CALTRANS  
 UTILITY BOX (STREET LIGHTING)- CALTRANS



**AIRPORT DRIVE OVERCROSSING**

THIS PLAN TO BE USED FOR UTILITY INFORMATION ONLY

**UTILITY PLAN U-1**  
 SCALE: 1"=50'

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

FUNCTIONAL SUPERVISOR: ALI R. ALQATAMI  
 CALCULATED/DESIGNED BY: RANJIT K. MONDAL  
 CHECKED BY: YEN NGUYEN  
 REVISED BY: [Blank]  
 DATE REVISED: [Blank]

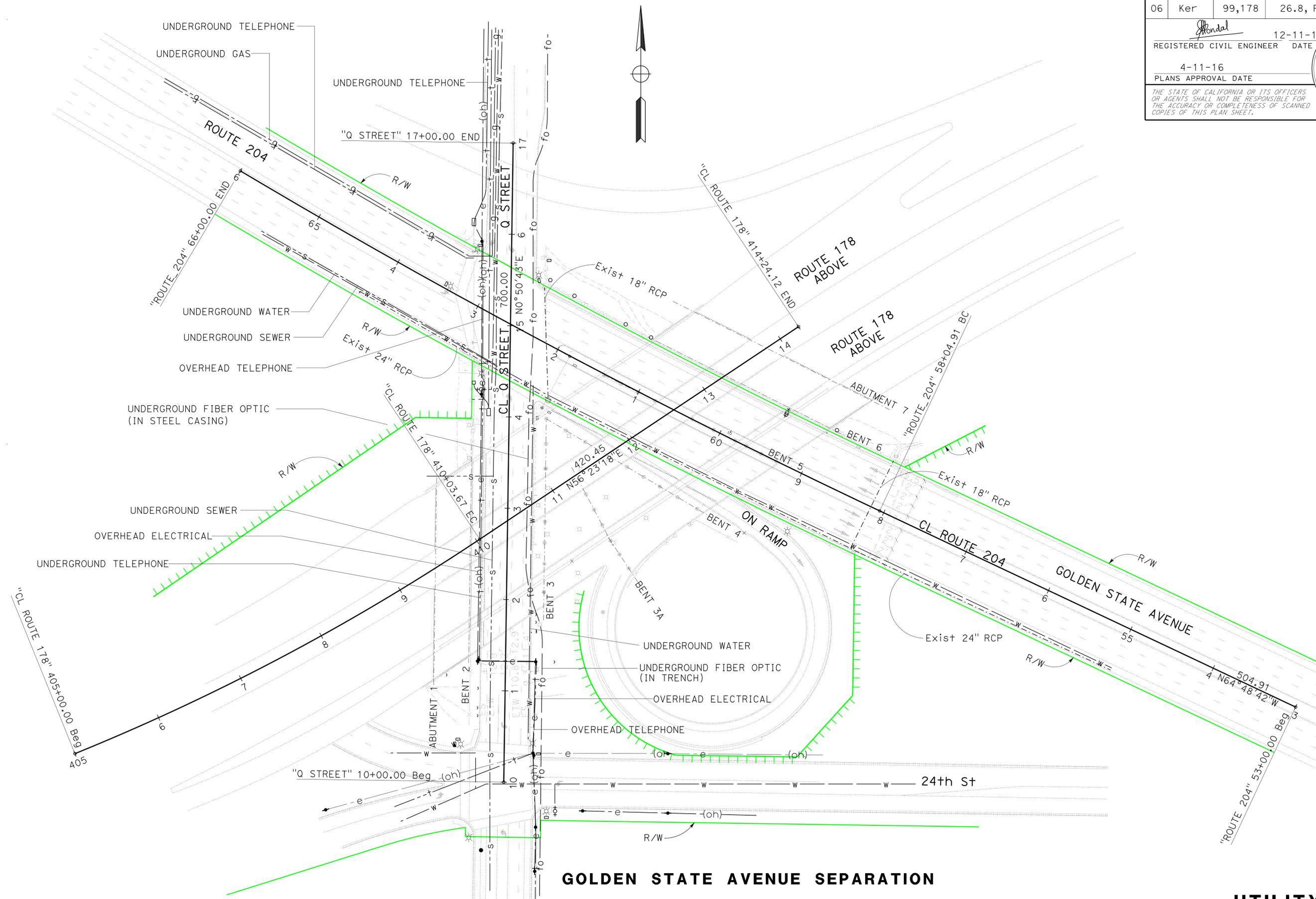
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	15	98

12-11-15  
 REGISTERED CIVIL ENGINEER DATE  
 4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**RANJIT K. MONDAL**  
 No. 75792  
 Exp. 6-30-16  
 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.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	ALI R ALQATAMI
CALCULATED-DESIGNED BY	CHECKED BY
RANJIT K MONDAL	YEN NGUYEN
REVISOR	DATE



**GOLDEN STATE AVENUE SEPARATION**

THIS PLAN TO BE USED FOR UTILITY INFORMATION ONLY

**UTILITY PLAN U-2**

SCALE: 1"=50'

LAST REVISION: DATE PLOTTED => 28-JUN-2016    TIME PLOTTED => 13:27

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMAD QATAMI  
 CALCULATED/DESIGNED BY: SARAH LESNIKOWSKI, MAZIN AL-ALI  
 CHECKED BY: MAZIN AL-ALI  
 REVISED BY: DATE REVISION

- NOTES:**
1. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
  2. FOR SIGN "C40" (TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES), ALL LETTERS MUST BE BLACK ON WHITE BACKGROUND.
  3. COVER ALL CONFLICTING SIGNS.
  4. FOR ADDITIONAL CONSTRUCTION AREA SIGNS REFER TO TRAFFIC HANDLING SHEETS.
  5. FOR SIGNS LOCATED IN THE MEDIAN USE BARRIER MOUNTED SIGN DETAIL.

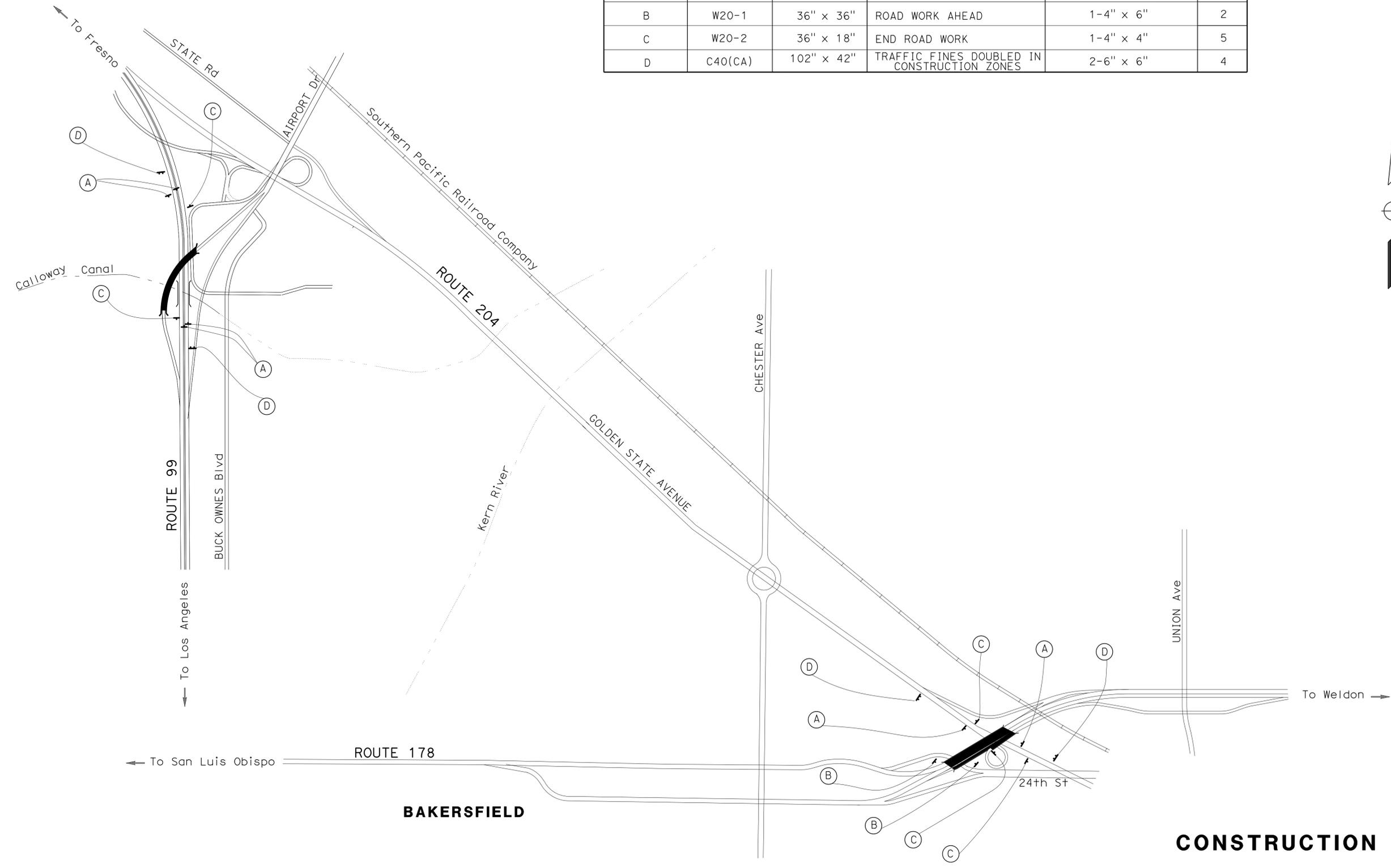
**STATIONARY MOUNTED  
 CONSTRUCTION AREA SIGNS**

SIGN No. (X)	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF POSTS AND SIZE	No. OF SIGNS
A	W20-1	48" x 48"	ROAD WORK AHEAD	1-4" x 6"	6
B	W20-1	36" x 36"	ROAD WORK AHEAD	1-4" x 6"	2
C	W20-2	36" x 18"	END ROAD WORK	1-4" x 4"	5
D	C40(CA)	102" x 42"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2-6" x 6"	4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	16	98
MAZIN AL-ALI			12-11-15	REGISTERED CIVIL ENGINEER DATE	
4-11-16			PLANS APPROVAL DATE		

REGISTERED PROFESSIONAL ENGINEER  
 MAZIN H. AL-ALI  
 No. 65523  
 Exp. 9/30/17  
 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.



**CONSTRUCTION AREA SIGNS**

NO SCALE

**CS-1**

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

LAST REVISION: DATE PLOTTED => 28-JUN-2016 04-06-16 TIME PLOTTED => 13:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	17	98

<i>R. Mondal</i>		12-11-15
REGISTERED CIVIL ENGINEER	DATE	
4-11-16	PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	
RANJIT K. MONDAL	
No. 75792	
Exp. 6-30-16	
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.

**LEGEND**

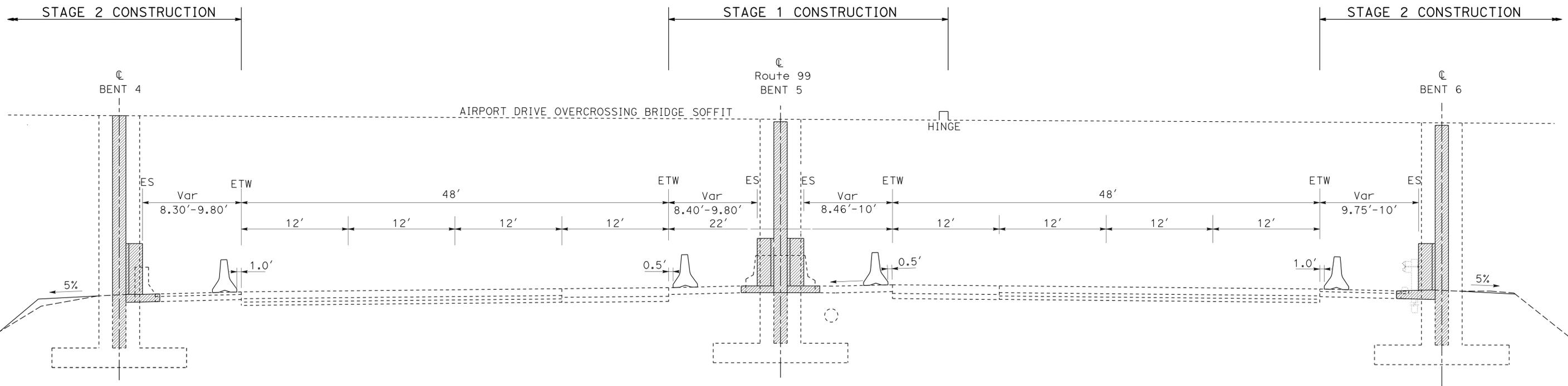


**STAGE 1 WORK:**

1. PLACE TEMPORARY K-RAIL 0.5' OUTSIDE THE ETW BOTH NORTHBOUND AND SOUTHBOUND AT THE MEDIAN.
2. REMOVE EXISTING CONCRETE BARRIER, CONSTRUCT SEISMIC RETROFIT ON BENT 5 AND THE HINGE LOCATED INSIDE THE DECK ON TOP OF NORTHBOUND LANE 1. SEISMIC RETROFIT WORK AT HINGE CLOSE TO BENT 5 WILL BE DONE UNDER TRAFFIC CONTROL.
3. CONSTRUCT CONCRETE BARRIER AND OTHER ROADWAY ITEMS IN THE MEDIAN.

**STAGE 2 WORK:**

1. PLACE TEMPORARY K-RAIL 0.5' OUTSIDE OF ETW ON LANE 4 FOR BOTH NORTHBOUND AND SOUTHBOUND ROUTE 99.
2. REMOVE EXISTING DIKE, GUARDRAIL, AND CONCRETE BARRIER. CONSTRUCT SEISMIC RETROFIT WORK AT BENT 2,3,4,6 AND AT HINGE LOCATED CLOSE TO BENT 3.
3. CONSTRUCT CONCRETE BARRIER, DIKE, MGS, AND OTHER ROADWAY ITEMS AT THE OUTSIDE SHOULDER FOR BOTH NORTHBOUND AND SOUTHBOUND ROUTE 99.
4. CONSTRUCT ALL ELECTRICAL WORKS.



SOUTHBOUND LANES

NORTHBOUND LANES

**ROUTE 99**

Sta 856+72.75 TO Sta 861+00

**STAGE CONSTRUCTION DETAILS**

(TYPICAL CROSS SECTIONS)

NO SCALE

**SCD-1**

APPROVED FOR STAGE CONSTRUCTION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: ALI ALOATAMI  
 CALCULATED/DESIGNED BY: GEO LEYVA  
 CHECKED BY: RANJIT MONDAL  
 REVISED BY: GEO LEYVA  
 DATE REVISED:





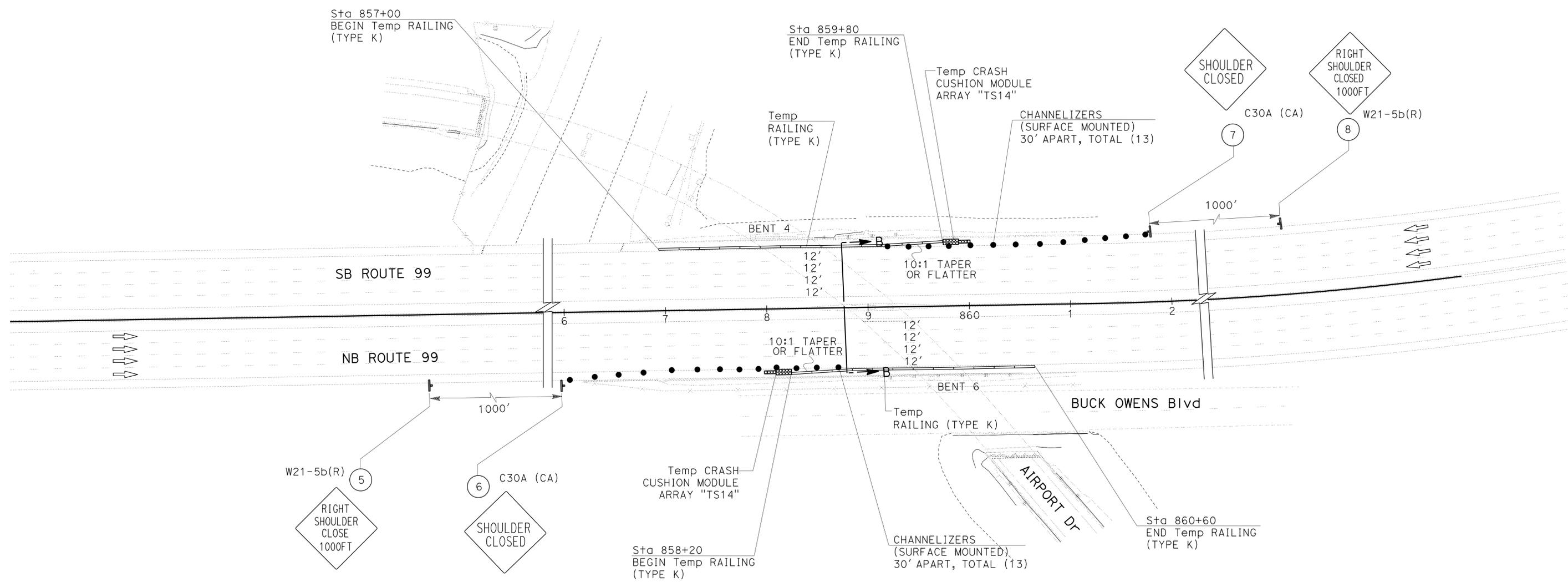
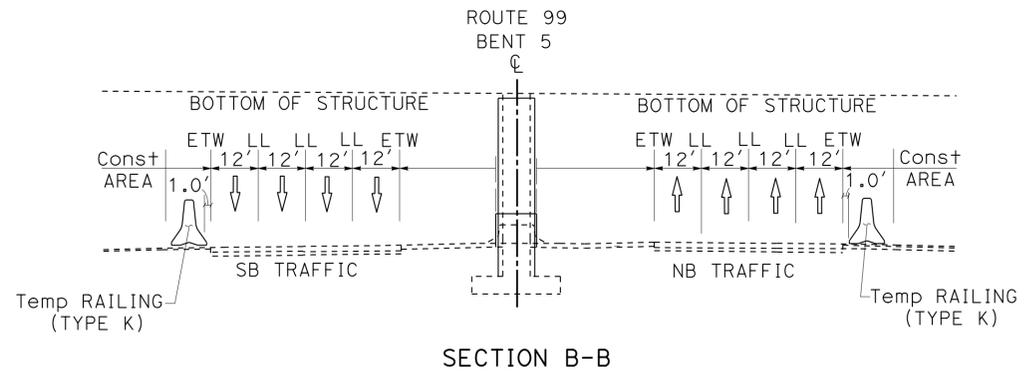
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI  
 CALCULATED/DESIGNED BY: HASEEB YOUSAF  
 CHECKED BY: MAZIN AL-ALI  
 REVISED BY: HASEEB YOUSAF  
 DATE REVISED: MAZIN AL-ALI

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	20	98

STA-ALI 12-11-15  
 REGISTERED CIVIL ENGINEER DATE  
 4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 MAZIN H. AL-ALI  
 No. 65523  
 Exp. 9/30/17  
 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.



**TRAFFIC HANDLING PLAN**  
 (AIRPORT DRIVE OC)  
 (STAGE 2)

APPROVED FOR TRAFFIC HANDLING WORK ONLY

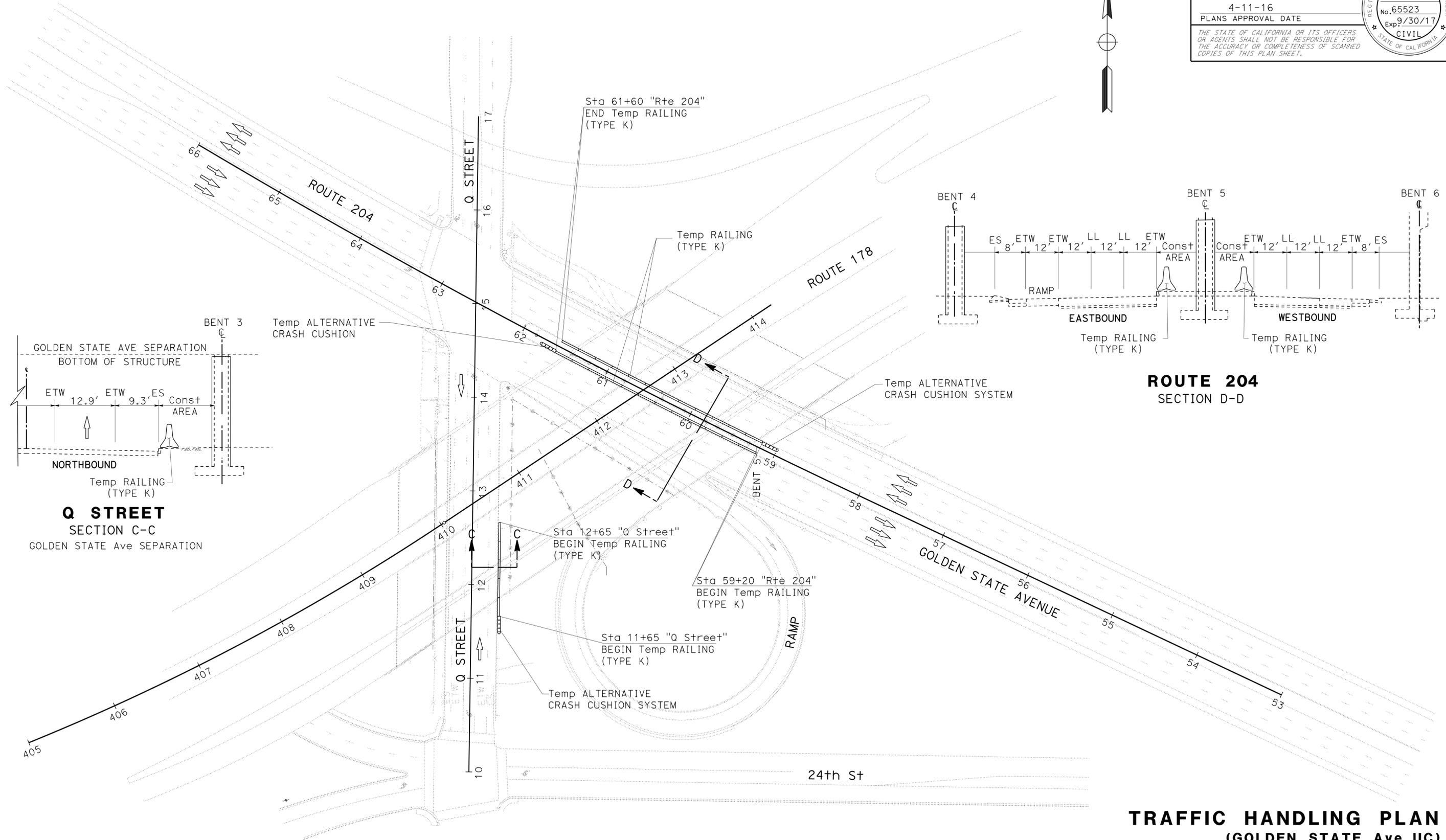
SCALE: 1"=50' TH-2

LAST REVISION: DATE PLOTTED => 28-JUN-2016 04-06-16 TIME PLOTTED => 13:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	21	98
<i>MAZ - ALI</i> 12-11-15 REGISTERED CIVIL ENGINEER DATE					
4-11-16			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>					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b>	MOHAMMED OATAM	HAASEB YOUSAF	HASEEB YOUSAF
TRAFFIC DESIGN		MAZIN AL-ALI	MAZIN AL-ALI
		CHECKED BY	DATE REVISOR



**ROUTE 204**  
SECTION D-D

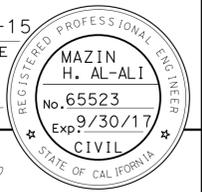
**TRAFFIC HANDLING PLAN**  
(GOLDEN STATE Ave UC)  
(STAGE 1)

SCALE: 1"=50' **TH-3**

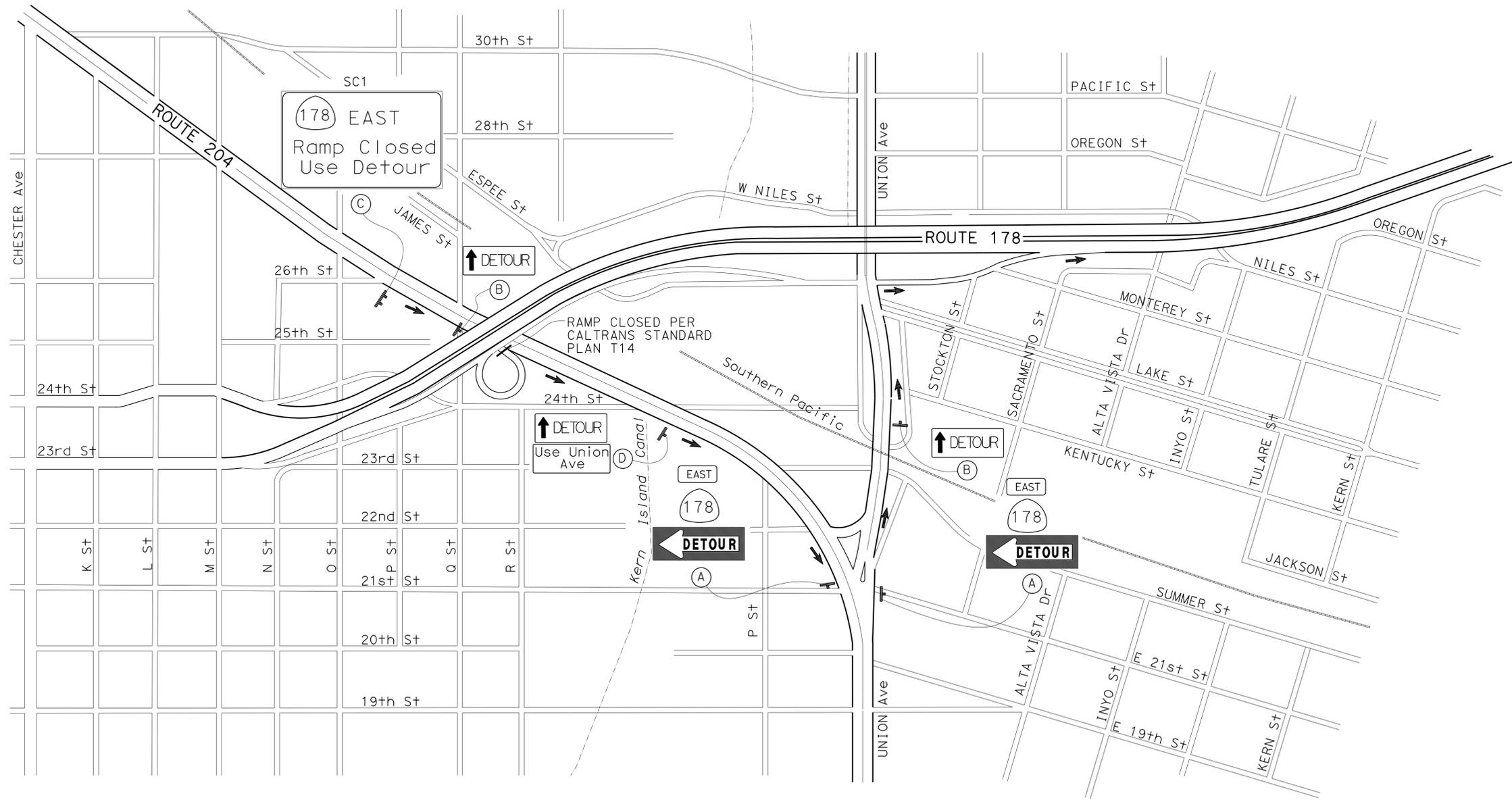
APPROVED FOR TRAFFIC HANDLING WORK ONLY

LAST REVISION DATE PLOTTED => 28-JUN-2016 04-06-16 TIME PLOTTED => 1:3:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	22	98
MAZIN - ALI			12-11-15	REGISTERED CIVIL ENGINEER DATE	
4-11-16			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



**NOTES:** 1. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.  
2. COVER ALL CONFLICTING SIGNS.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b>	MOHAMMED OATAMI	MAZIN AL-ALI	SARAH LESNIKOWSKI
<b>TRAFFIC DESIGN</b>	CHECKED BY	DATE	REVISION

**TRAFFIC HANDLING PLAN**  
**(EASTBOUND ROUTE 178 ON-RAMP CLOSURE)**

SCALE: 1"=50' **TH-4**

APPROVED FOR DETOUR WORK ONLY

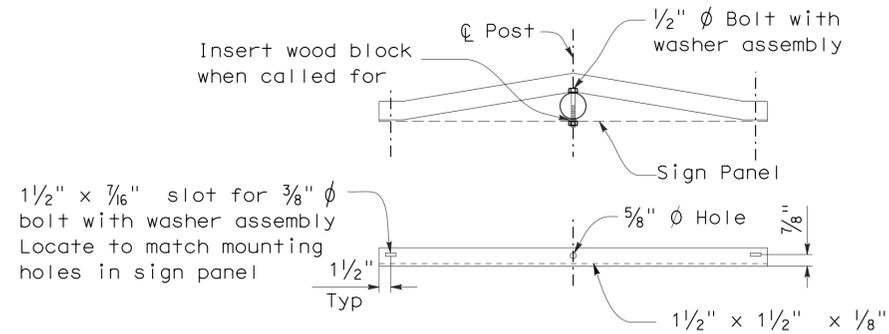
LAST REVISION DATE PLOTTED => 28-JUN-2016 04-06-16 TIME PLOTTED => 13:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	23	98
9(A) - ALI			12-11-15	REGISTERED CIVIL ENGINEER DATE	
MAZIN H. AL-ALI			4-11-16	PLANS APPROVAL DATE	
No. 65523			Exp. 9/30/17		
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.

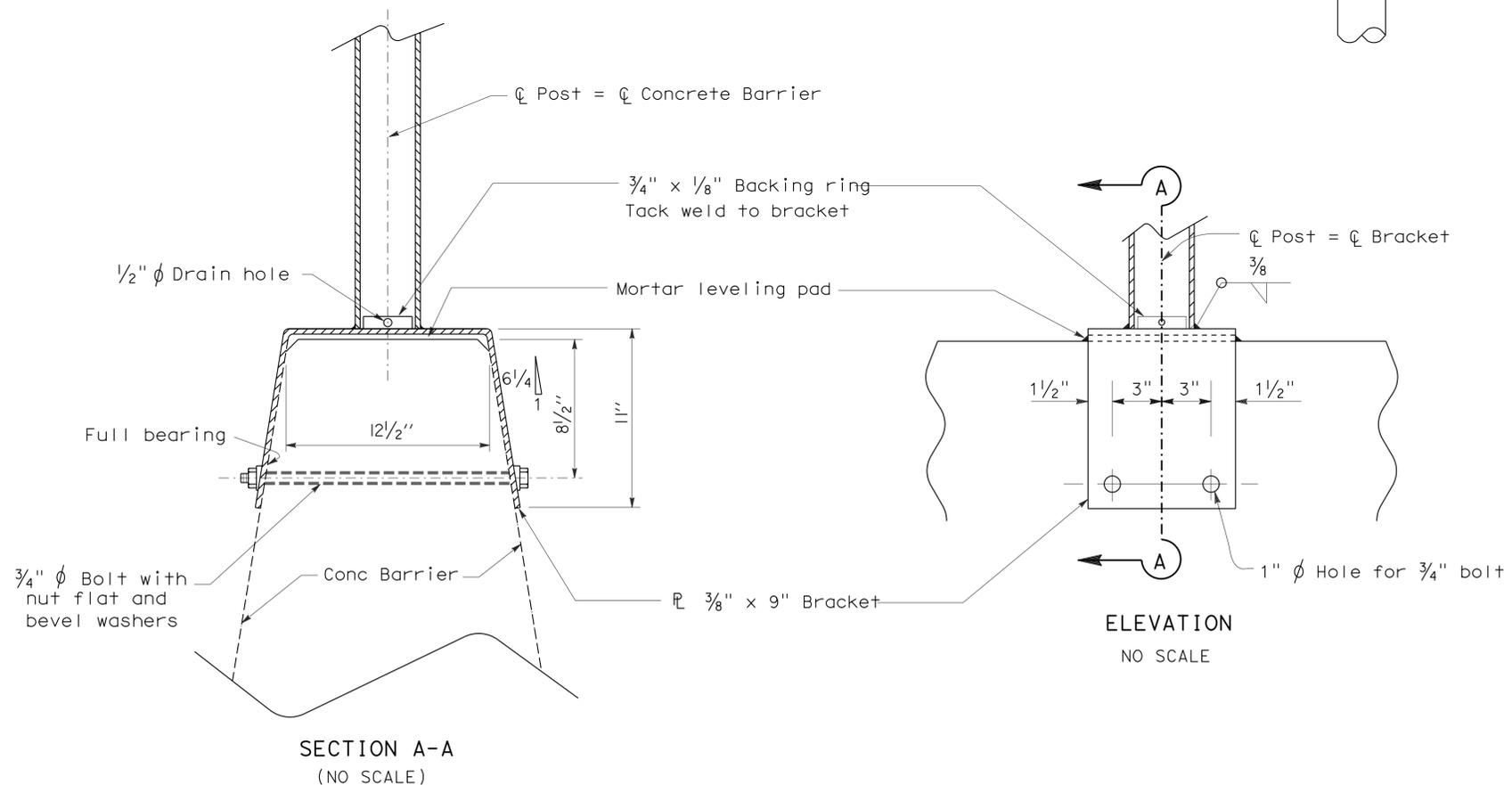
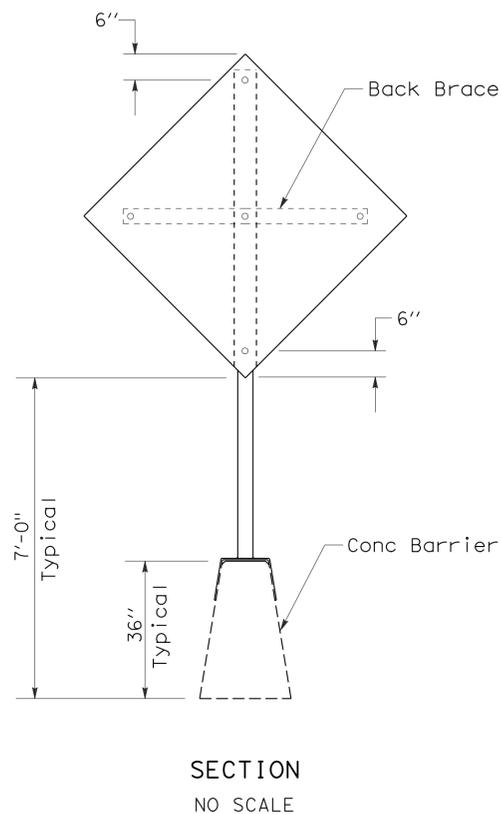
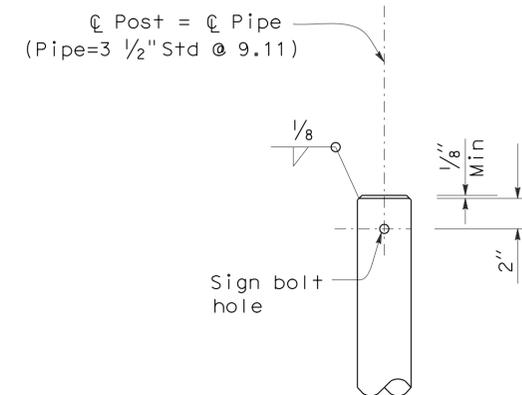
**NOTES:**

1. ALL BOLTS SHALL HAVE A WASHER UNDER THE NUT.. BOLTS THROUGH POST SHALL BE 1/2" DIAMETER BOLTS THROUGH SIGN PANEL AND BRACE SHALL BE 3/8" DIAMETER. REAM HOLES IN SIGN AS REQUIRED.
2. ALL STEEL TO BE GALVANIZED.
3. FOR LOCATION OF SIGNS, SEE PROJECT PLANS.
4. WHEN SIGNS ARE NO LONGER NEEDED, FILL MOUNTING HOLES WITH GROUT.



**BACK BRACE DETAILS**

SCALE: 2" = 1'



**SIGN DETAIL (BARRIER MOUNTED)**

**TRAFFIC HANDLING DETAIL**

NO SCALE

**THD-1**

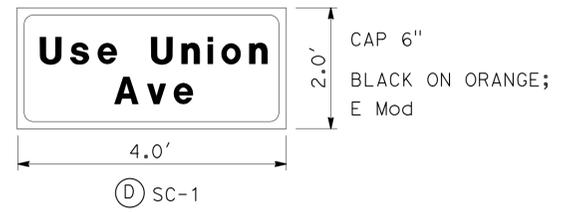
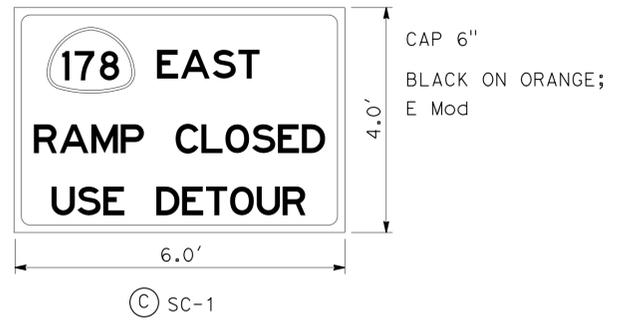
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b>	MOHAMMED OATAMI	HASEEB YOUSAF	
<b>TRAFFIC DESIGN</b>		MAZIN AL-ALI	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	24	98
MAZIN - ALI REGISTERED CIVIL ENGINEER DATE 12-11-15 4-11-16 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTE:** 1. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, REFER TO SHEET CS-1.

**CONSTRUCTION AREA SIGNS (PORTABLE)**

SHEET No.	SIGN No. (X)	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF SIGNS
TH-5	A	M3-2	24" x 12"	EAST	2
		G28-1(CA)	10.5" x 18"	STATE ROUTE SHIELD (178)	2
		M4-10(L+)	48" x 18"	DETOUR (L+)	2
	B	SC3(CA)	36" x 12"	DETOUR WITH ARROW	2
	C	SC-1	72" x 48"	STATE ROUTE SHIELD (178) EAST RAMP CLOSED USE DETOUR	1
	D	SC3(CA) SC-1	36" x 12" 48" x 24"	DETOUR WITH ARROW USE UNION Ave	1 1



**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SHEET No.	SIGN No. (X)	SIGN CODE	PANEL SIZE	No. OF POSTS AND SIZE	EA
TH-1	1	W21-5b(L)	48" x 48"	1-6" x 6"	1
	2	C30A (CA)	48" x 48"	1-6" x 6"	1
	3	C30A (CA)	48" x 48"	1-6" x 6"	1
	4	W21-5b(L)	48" x 48"	1-6" x 6"	1
TH-2	5	W21-5b(R)	48" x 48"	1-6" x 6"	1
	6	CA30A (CA)	48" x 48"	1-6" x 6"	1
	7	CA30A (CA)	48" x 48"	1-6" x 6"	1
	8	W21-5b(R)	48" x 48"	1-6" x 6"	1

**TEMPORARY RAILING (TYPE K)**

SHEET No.	LOCATION	STATION	LF
TH-1	SB 99	Sta 857+80 To 860+60	280
	NB 99	Sta 857+20 To 860+60	340
TH-2	SB 99	Sta 857+00 To 859+80	280
	NB 99	Sta 858+20 To 860+60	240
TH-3	WB 204	Sta 59+20 To 61+60	240
	EB 204	Sta 59+20 To 61+60	240
	Q STREET	Sta 11+65 To 12+65	100
TOTAL			1720

**TEMPORARY CRASH CUSHION MODULE**

SHEET No.	EA
TH-2	28

**TEMPORARY ALTERNATIVE CRASH CUSHION SYSTEM**

SHEET No.	EA
TH-3	3
TOTAL	3

**TEMPORARY TERMINAL SECTION (TYPE K)**

SHEET No.	EA
TH-1	2
TOTAL	2

**CHANNELIZER (SURFACE MOUNTED)**

SHEET No.	EA
TH-1	18
TH-2	26
TOTAL	44

**TRAFFIC HANDLING QUANTITIES AND SIGN DETAILS**

**THQ-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI  
 CALCULATED/DESIGNED BY: HASSEB YOUSAF  
 CHECKED BY: MAZIN AL-ALI  
 REVISED BY: DATE REVISOR

LAST REVISION: DATE PLOTTED => 28-JUN-2016  
 04-06-16 TIME PLOTTED => 13:27

### EARTHWORK

SHEET	STATION TO STATION	DESCRIPTION	ROADWAY EXCAVATION	EMBANKMENT (N)
			CY	CY
L-1	Sta 858+21.50 TO Sta 859+62.00	RIGHT OF NB ROUTE 99 AT BENT 6 UP TO FIRST COLUMN	31	31
L-1	Sta 859+93.00 TO Sta 861+00.00	RIGHT OF NB ROUTE 99 AT BENT 6 BEGIN ON THIRD COLUMN	33	33
L-1	Sta 856+72.75 TO Sta 857+85.90	RIGHT OF SB ROUTE 99 AT BENT 4 UP TO FIRST COLUMN	22	22
L-1	Sta 858+36.95 TO Sta 859+80.00	RIGHT OF SB ROUTE 99 AT BENT 4 BEGIN ON THIRD COLUMN	28	28
L-1	Sta 859+08.50 TO Sta 860+01.40	MEDIAN OF ROUTE 99 AT BENT 5	41	
L-2	Sta 59+00.00 TO Sta 62+01.00	REMOVE HMA AT MEDIAN OF ROUTE 204 AT GOLDEN STATE Ave Sep	63	
<b>TOTAL</b>			218	114

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

### REMOVE CONCRETE BARRIER

SHEET	STATION TO STATION	DESCRIPTION	LF
L-1	Sta 858+08.50 TO Sta 860+01.40	AT AIRPORT DRIVE OC, MEDIAN OF ROUTE 99	193
L-1	Sta 857+75.60 TO Sta 858+47.15	AT AIRPORT DRIVE OC BENT 4, RIGHT OF OUTSIDE SHOULDER FOR SB ROUTE 99	72
<b>TOTAL</b>			265

### GUARDRAILING

SHEET	STATION TO STATION	LOCATION	REMOVE GUARDRAIL	TREATED WOOD WASTE
			LF	LB
L-1	Sta 856+72.75 TO Sta 857+75.60	AT AIRPORT DRIVE OC BENT 4, RIGHT OF SB ROUTE 99	103	1,800
L-1	Sta 858+47.15 TO Sta 859+47.15	AT AIRPORT DRIVE OC BENT 4, RIGHT OF SB ROUTE 99	100	1,600
L-1	Sta 859+00.50 TO Sta 860+52.50	AT AIRPORT DRIVE OC BENT 6, RIGHT OF NB ROUTE 99	152	2,600
<b>TOTAL</b>			355	6,000

### CONCRETE BARRIER (TYPE 60SD MODIFIED)

SHEETS	STATION TO STATION	LOCATION	LF
L-1/C-3	Sta 857+64.55 TO Sta 858+59.10	RIGHT OF SB ROUTE 99 AT AIRPORT DRIVE OC BENT 4	95
L-1/C-4	Sta 859+37.85 TO Sta 860+51.25	RIGHT OF NB ROUTE 99 AT AIRPORT DRIVE OC BENT 6	113
<b>TOTAL</b>			208

### MIDWEST GUARDRAIL SYSTEM

SHEET	STATION TO STATION	TRANSITION RAILING (TYPE WB 31)	END CAP (TYPE TC) (N)	ALTERNATIVE FLARED TERMINAL SYSTEM	MIDWEST GUARDRAIL SYSTEM (STEEL POST)
		EA	EA	EA	LF
L-1	Sta 858+83.00 TO Sta 859+08.00, Rt OF SB Rte 99 AT AIRPORT Dr OC	1	1	1	25
L-1	Sta 858+89.00 TO Sta 859+14.00, Rt OF NB Rte 99 AT AIRPORT Dr OC	1	1	1	25
<b>TOTAL</b>		2		2	50

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	25	98
<i>R. Mondal</i>			12-11-15		
REGISTERED CIVIL ENGINEER			DATE		
4-11-16			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.					

### HOT MIX ASPHALT (TYPE A)

STATION TO STATION	LOCATION	TON
Sta 858+21.50 TO Sta 861+00.00	RIGHT OF NB ROUTE 99 AT AIRPORT DRIVE OC BENT 6	11.3
Sta 856+72.75 TO Sta 859+80.00	RIGHT OF SB ROUTE 99 AT AIRPORT DRIVE OC BENT 4	12.5
Sta 859+08.50 TO Sta 860+01.40	MEDIAN OF ROUTE 99 AT AIRPORT DRIVE OC BENT 5	72.0
PLACE HMA (Misc AREA) (SHEET Q-2)		3.0
PLACE HMA DIKE TABLE (SHEET Q-2)		2.6
<b>TOTAL</b>		101.4

### CONCRETE BARRIER (TYPE 60R MODIFIED)

SHEET	STATION TO STATION	LOCATION	LF
L-1/C-1	Sta 858+23.50 TO Sta 859+86.40	MEDIAN OF ROUTE 99 AT AIRPORT DRIVE OC BENT 5	163
<b>TOTAL</b>			163

### CONCRETE BARRIER (TYPE 60)

SHEETS	STATION TO STATION	LOCATION	LF
L-1/C-1	Sta 858+08.50 TO Sta 858+23.50	MEDIAN OF ROUTE 99 AT AIRPORT DRIVE OC BENT 5	15
L-1/C-1	Sta 859+86.40 TO Sta 860+01.40	MEDIAN OF ROUTE 99 AT AIRPORT DRIVE OC BENT 5	15
L-1/C-2	Sta 856+72.75 TO Sta 857+64.55	RIGHT OF SB ROUTE 99 AT AIRPORT DRIVE OC BENT 4	92
<b>TOTAL</b>			122

## SUMMARY OF QUANTITIES Q-1

**PLACE HOT MIX ASPHALT DIKE**

SHEET	STATION TO STATION	LOCATION	HMA DIKE (TYPE F)	HMA DIKE (TYPE C)	HMA (TYPE A)
			LF	LF	TON
L-1	Sta 858+59.10 TO Sta 859+08.00	AT AIRPORT DRIVE OC BENT 4, RIGHT OF SB ROUTE 99	49		0.7
L-1	Sta 859+08.00 TO Sta 859+80.00	AT AIRPORT DRIVE OC BENT 4, RIGHT OF SB ROUTE 99		72	0.6
L-1	Sta 858+21.50 TO Sta 858+89.00	AT AIRPORT DRIVE OC BENT 6, RIGHT OF NB ROUTE 99		68	0.6
L-1	Sta 858+89.00 TO Sta 859+37.85	AT AIRPORT DRIVE OC BENT 6, RIGHT OF NB ROUTE 99	49		0.7
<b>TOTAL</b>			<b>98</b>	<b>140</b>	<b>2.6*</b>

\* QUANTITY INCLUDED IN HOT MIX ASPHALT (TYPE A) TABLE

**TEMPORARY DRAINAGE INLET PROTECTION**

SHEET	STATION	DESCRIPTION	EA
L-1	857+21.5	AT AIRPORT DRIVE OC, LEFT OF NB ROUTE 99 AT MEDIAN	1
L-1	858+66.0	AT AIRPORT DRIVE OC, LEFT OF NB ROUTE 99 AT MEDIAN	1
L-1	859+33.0	AT AIRPORT DRIVE OC, LEFT OF NB ROUTE 99 AT MEDIAN	1
L-1	860+51.8	AT AIRPORT DRIVE OC, LEFT OF NB ROUTE 99 AT MEDIAN	1
L-2	58+56.0	AT GOLDEN STATE Ave Sep, RIGHT EP OF NB ROUTE 204	1
L-2	62+45.0	AT GOLDEN STATE Ave Sep, RIGHT EP OF NB ROUTE 204	1
L-2	10+90.0	AT GOLDEN STATE Ave Sep, RIGHT EP OF NB Q-STREET	1
<b>TOTAL</b>			<b>7</b>

**RECONSTRUCT CHAIN LINK FENCE**

SHEET	LOCATION	LF
L-1	SOUTH SIDE FENCE OF CALLOWAY CANAL	85
L-1	NORTH SIDE FENCE OF CALLOWAY CANAL AND RIGHT OF WAY FENCE AT RIGHT OF SB ROUTE 99	415
<b>TOTAL</b>		<b>500</b>

**MINOR CONCRETE (ISLAND PAVING)**

SHEET	STATION TO STATION	LOCATION	CY
L-2	Sta 59+00.00 TO Sta 62+01.00	MEDIAN OF ROUTE 204 AT GOLDEN STATE Ave Sep	47
<b>TOTAL</b>			<b>47</b>

**TEMPORARY CONSTRUCTION ENTRANCE**

LOCATION	LOCATION DESCRIPTION	EA
AIRPORT DRIVE OVERCROSSING	AT RIGHT OF SB ROUTE 99, ENTRANCE FROM SB ROUTE 99 TO CALLOWAY CANAL MAINTENANCE ROAD	1
GOLDEN STATE AVENUE SEPARATION	AT RIGHT OF NB Q STREET, ENTRANCE FROM NB Q STREET TO THE LANDSCAPE AREA	1
<b>TOTAL</b>		<b>2</b>

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	26	98

12-11-15  
REGISTERED CIVIL ENGINEER DATE

4-11-16  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**RANJIT K. MONDAL**  
 No. 75792  
 Exp. 6-30-16  
 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.

**PLACE HOT MIX ASPHALT (Misc AREA)**

LOCATION	AREA	HMA (TYPE A)
	SQYD	TON
OVERSIDE DRAIN AREA BEHIND GUARDRAIL, RIGHT OF SB ROUTE 99 AT AIRPORT DRIVE OC	15	3.0*

\* QUANTITY INCLUDED IN HOT MIX ASPHALT (TYPE A) TABLE

**CLASS 2 AGGREGATE BASE**

STATION TO STATION	LOCATION	CY
Sta 856+72.75 TO Sta 859+80.00	RIGHT OF SB ROUTE 99 AT AIRPORT DRIVE OC BENT 4	11
Sta 858+21.50 TO Sta 861+00.00	RIGHT OF NB ROUTE 99 AT AIRPORT DRIVE OC BENT 6	8
<b>TOTAL</b>		<b>19</b>

**RUBBER MAT**

STATION TO STATION	LOCATION	SQYD
Sta 858+59.10 TO Sta 859+55.00	RIGHT OF SB ROUTE 99, UNDER TRANSITION RAILING, MGS, AND ALTERNATIVE FLARED TERMINAL SYSTEM	45
Sta 858+41.50 TO Sta 859+37.85	RIGHT OF NB ROUTE 99, UNDER TRANSITION RAILING, MGS, AND ALTERNATIVE FLARED TERMINAL SYSTEM	57
<b>TOTAL</b>		<b>102</b>

**TEMPORARY FENCE (TYPE ESA)**

LOCATION	LOCATION DESCRIPTION	LF
AIRPORT DRIVE OVERCROSSING	WEST SIDE OF BENT 2 AND BENT 3	400
	SOUTH AND EAST SIDE OF BENT 2 AND BENT 3	400
GOLDEN STATE AVENUE SEPARATION	EAST SIDE OF Q STREET BEHIND CURB	400
	SOUTH SIDE OF ROUTE 204 BEHIND DIKE	300
<b>TOTAL</b>		<b>1,500</b>

NOTE: EXACT LOCATION TO BE DETERMINED BY THE ENGINEER

**TEMPORARY FENCE**

SHEET	DESCRIPTION	LF
L-1	AT RIGHT OF SB ROUTE 99 BY BENT 3	220

**SUMMARY OF QUANTITIES  
Q-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Alt R ALQATAMI  
 FUNCTIONAL SUPERVISOR  
 GEO LEYVA  
 RANJIT MONDAL  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 REVISED BY  
 DATE REVISED  
 Caltrans®

LAST REVISION DATE PLOTTED => 28-JUN-2016 12-11-15 TIME PLOTTED => 13:27

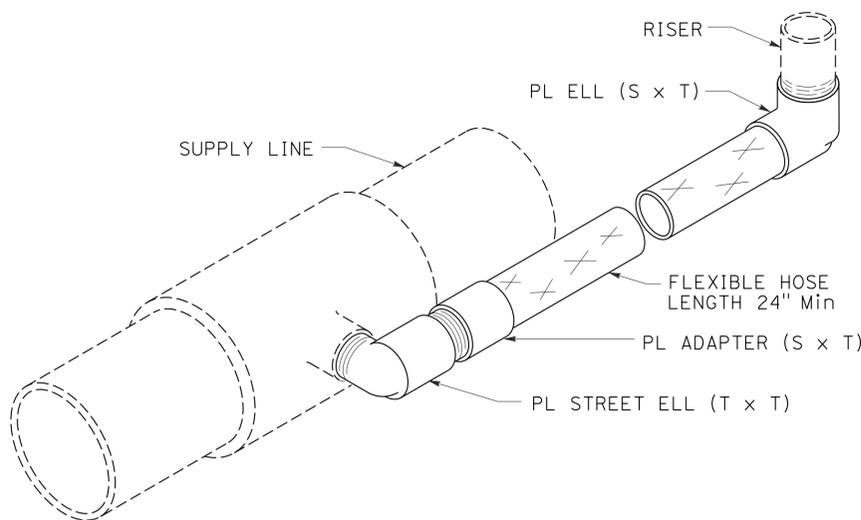
## IRRIGATION SPRINKLER SCHEDULE

SYMBOL	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (psi)	PRESSURE COMPENSATING	PLUS/MINUS 5% ②		RADIUS (ft)	WIDTH x LENGTH (ft)	MATERIAL	INLET CONNECTION (NPT INCH)	POSITIVE-LOCKING Adj ARC STOP IMPACT	DIFFUSER PIN	CONTROL FLAP IMPACT	Adj DISCHARGE	RISER			SWING JOINT ⑬		POP-UP HEIGHT (INCH)	SPRINKLER PROTECTOR (TYPE)	CHECK VALVE	DRAINPIPE LENGTH (INCH)	REMARKS								
					DISCHARGE	GALLONS PER MINUTE (GPM)									GALLONS PER HOUR (GPH)	TYPE	PLASTIC	GALVANIZED	DIAMETER (IPS INCH)						HEIGHT (INCH)	FLOW SHUTOFF DEVICE	TYPE	DIAMETER				
⑤ 5	RISER SPRINKLER ASSEMBLY (GEAR DRIVEN)	P F	50		3.0		41		PL						II	X	3/4	18	X	II	3/4	5"										

**X IN BOX DENOTES REQUIREMENT**

**APPLICABLE WHEN CIRCLED BELOW:**

<p>1 - SEE SPECIAL PROVISIONS.</p> <p>② - IF A PRESSURE COMPENSATING DEVICE IS SPECIFIED, THE DISCHARGE AND RADII SHOWN REFLECT ITS USE.</p> <p>3 - ARC STOP SHALL BE FITTED WITH A NUT AND BOLT.</p> <p>4 - VINYL-COATED CAST IRON HOUSING.</p> <p>5 - SWING JOINTS REQUIRED ADJACENT TO SHOULDERS, CURBS, SIDEWALKS, AND DIKES.</p> <p>6 - UNLESS OTHERWISE SHOWN ON PLANS.</p> <p>7 - INTEGRATED CHECK VALVE.</p> <p>8 - MATCHED PRECIPITATION RATE NOZZLES.</p>	<p>9 - SPRINKLER REQUIRES DRAIN CHECK VALVE AT LOW ELEVATIONS.</p> <p>10 - ONE PER SHRUB.</p> <p>11 - LENGTH AS NECESSARY BETWEEN SWING JOINT AND POP-UP INLET.</p> <p>12 - SEE TREE WELL SPRINKLER ASSEMBLY DETAIL.</p> <p>13 - LOCATE BUBBLER 2" FROM EDGE OF ROOTBALL.</p> <p>14 - TWO PER TREE. LOCATE ON OPPOSITE SIDES OF ROOTBALL.</p> <p>15 - PREINSTALLED INLINE EMITTERS, EXTERNAL BARBED EMITTERS, OR A COMBINATION OF BOTH MAY BE USED.</p> <p>⑬ - WITH STAINLESS STEEL RISER.</p>
---	--



**ISOMETRIC  
SWING JOINT ASSEMBLY TYPE II**

### LATERAL PIPE SIZING CHART

RISER SPRINKLER ASSEMBLY (GEAR DRIVEN)	PIPE SIZE (*)
GALLONS PER MINUTE	
≤ 6	3/4"
≤ 12	1"
≤ 21	1 1/4"
≤ 30	1 1/2"
≤ 48	2"

(\*) UNLESS DESIGNATED OTHERWISE ON PLANS

## IRRIGATION SPRINKLER SCHEDULE AND DETAILS ISS-1

**NOTES:**

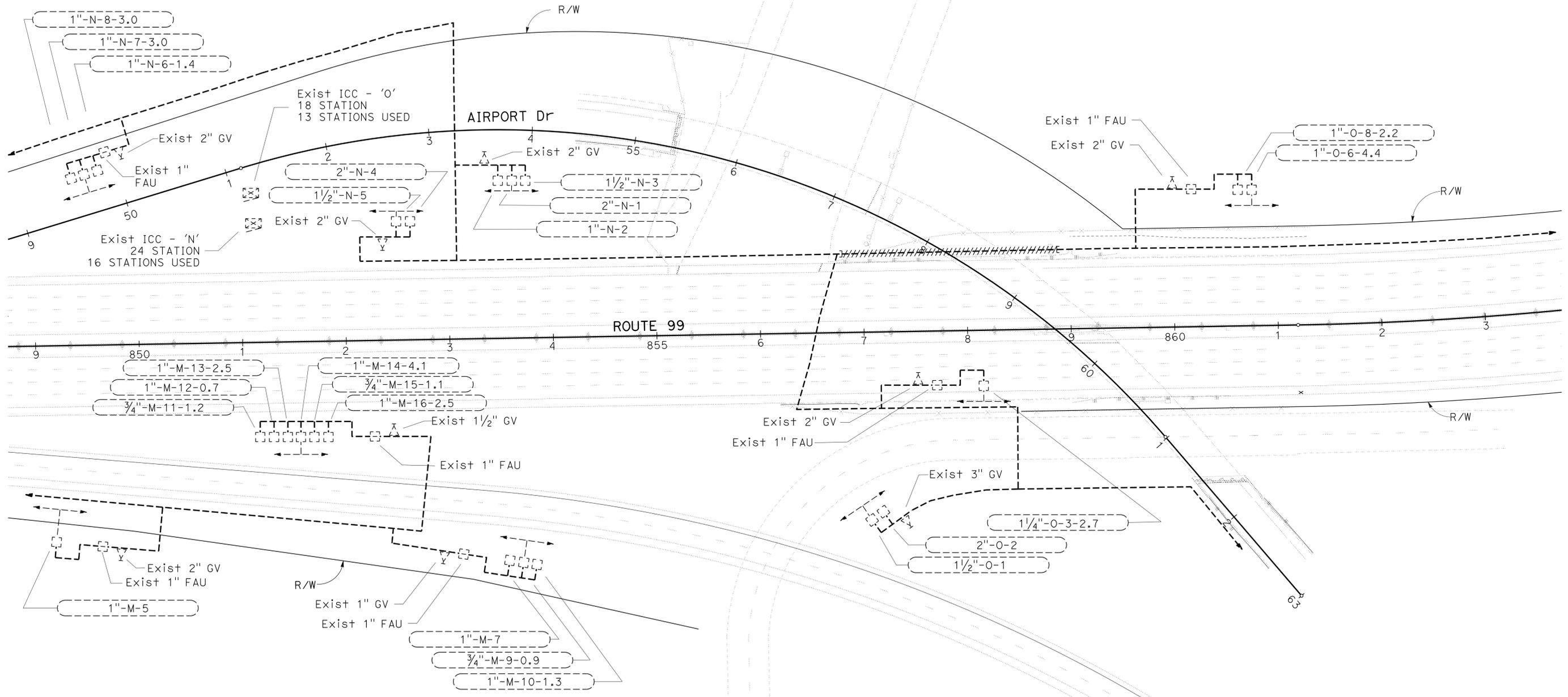
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. IRRIGATION POINT OF CONNECTION IS LOCATED AT THE NORTHBOUND ONRAMP OF ROUTE 99 AND GILMORE AVENUE OVERCROSSING.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	28	98

  
 LICENSED LANDSCAPE ARCHITECT  
 4-11-16  
 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.



**AIRPORT DRIVE OVERCROSSING**  
 APPROVED FOR IRRIGATION REMOVAL WORK ONLY

**IRRIGATION REMOVAL PLAN**  
**IR-1**

SCALE: 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 BRAD COLE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 CHARLES L GRUE  
 MICHAEL MILLS  
 REVISED BY  
 DATE REVISED  
 XXXXX  
 XXXXX

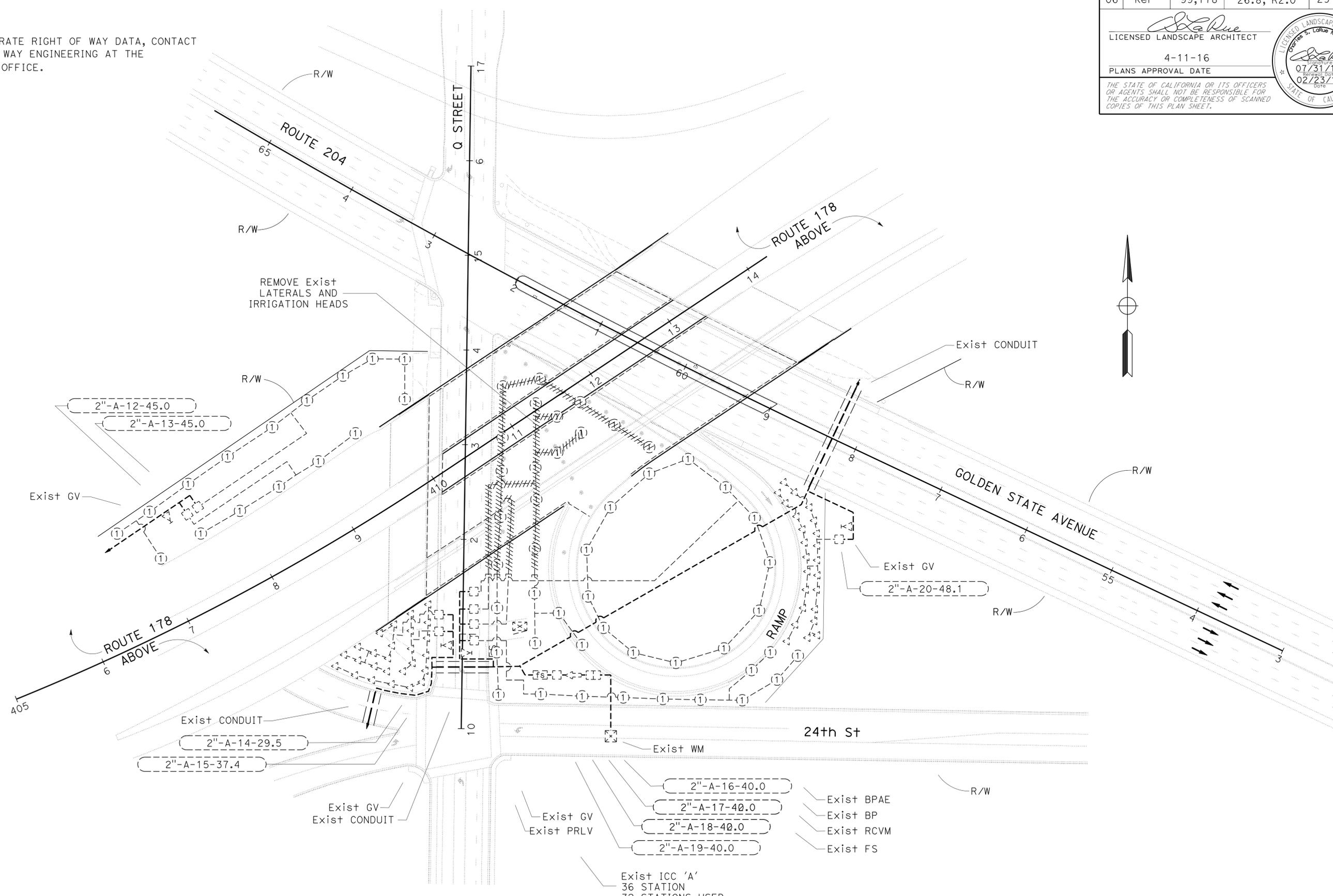
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	29	98

 LICENSED LANDSCAPE ARCHITECT		
4-11-16		
PLANS APPROVAL DATE		

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

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	LANDSCAPE ARCHITECTURE	SENIOR LANDSCAPE ARCHITECT	DESIGNED BY	REVISOR	DATE
BRAD COLE	CHARLES LGRUE	MICHAEL MILLS	XXXXX	XXXXX	XXXXX

**GOLDEN STATE AVENUE SEPARATION**  
 APPROVED FOR IRRIGATION REMOVAL WORK ONLY

**IRRIGATION REMOVAL PLAN**  
**IR-2**  
 SCALE: 1"=50'

LAST REVISION: DATE PLOTTED => 28-JUN-2016 04-06-16 TIME PLOTTED => 13:27

**NOTES:**

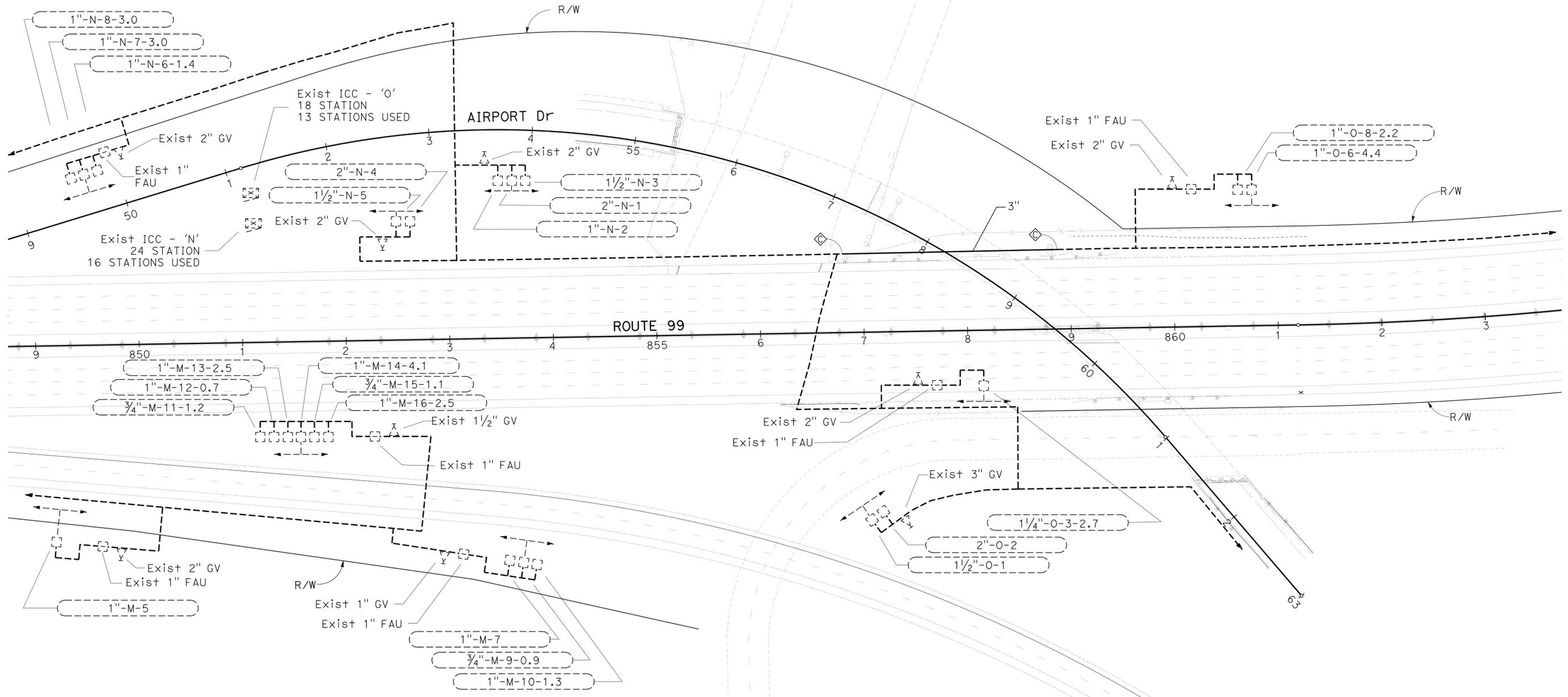
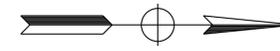
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. IRRIGATION POINT OF CONNECTION IS LOCATED AT THE NORTHBOUND ONRAMP OF SR-99 AND GILMORE AVENUE OVERCROSSING.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	30	98

  
 LICENSED LANDSCAPE ARCHITECT  
 4-11-16  
 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.



**AIRPORT DRIVE OVERCROSSING**

APPROVED FOR IRRIGATION WORK ONLY

**IRRIGATION PLAN IP-1**

SCALE: 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 BRAD COLE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 CHARLES L. RUE  
 MICHAEL MILLS  
 REVISED BY  
 DATE REVISED  
 XXXXX  
 XXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	31	98

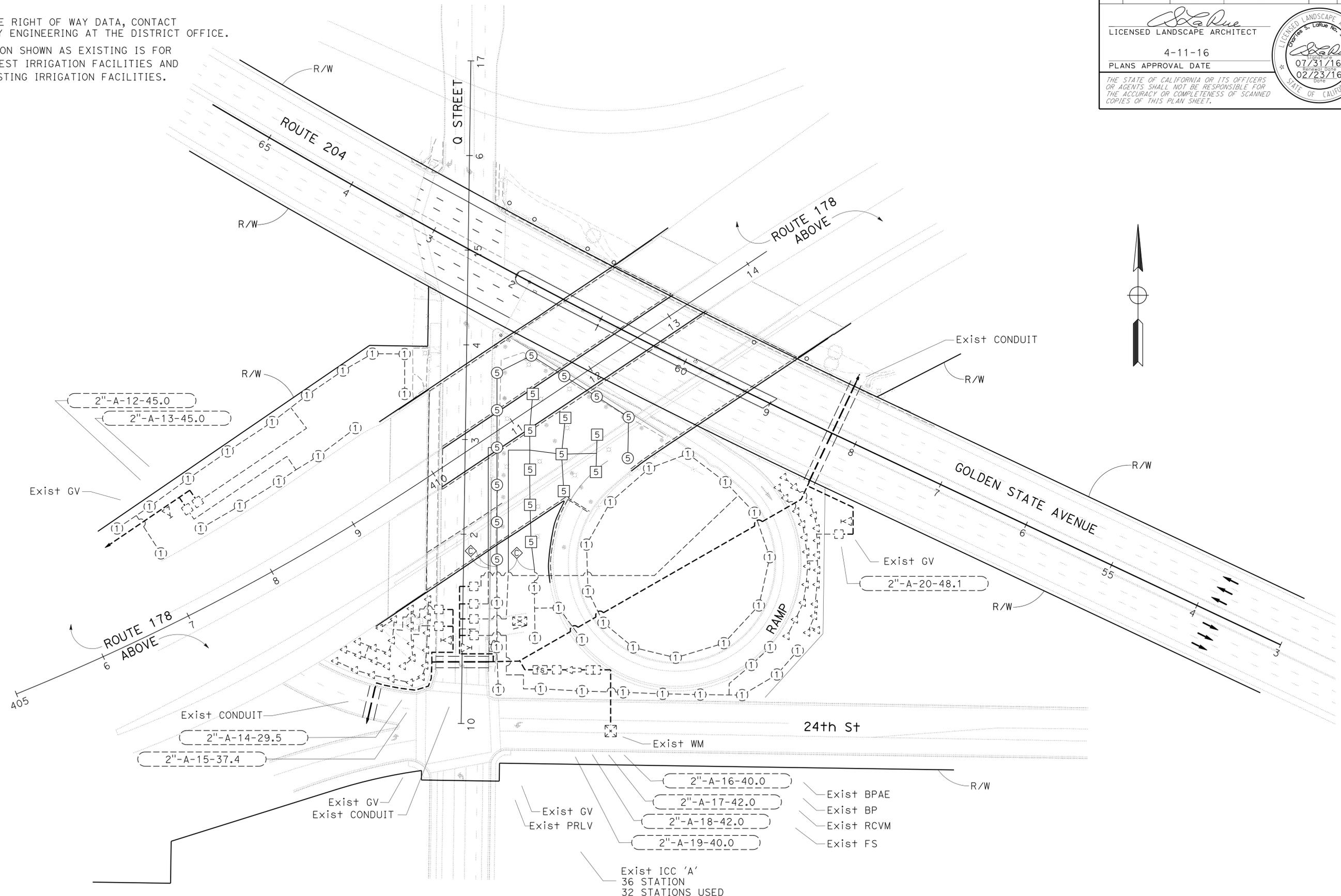
  

<i>Charles L. Grue</i> LICENSED LANDSCAPE ARCHITECT	
4-11-16	
PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	



**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- THE IRRIGATION SHOWN AS EXISTING IS FOR CHECK AND TEST IRRIGATION FACILITIES AND OPERATE EXISTING IRRIGATION FACILITIES.



**GOLDEN STATE AVENUE SEPARATION**  
APPROVED FOR IRRIGATION WORK ONLY

**IRRIGATION PLAN**  
**IP-2**  
SCALE: 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT: BRAD COLE  
 CALCULATED/DESIGNED BY: CHARLES LGRUE  
 CHECKED BY: MICHAEL MILLS  
 REVISED BY: XXXXX  
 DATE REVISED: XXXXX

USERNAME => s119704  
DGN FILE => 0612000108sp002.dgn



UNIT 1501  
PROJECT NUMBER & PHASE  
06120001081

LAST REVISION: 04-06-16  
 DATE PLOTTED => 28-JUN-2016  
 TIME PLOTTED => 1:32:27



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	33	98

  
 LICENSED LANDSCAPE ARCHITECT  
 4-11-16  
 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.

### PLANTING LEGEND

PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (INCH)		BASIN TYPE	SOIL AMENDMENT		IRON SULFATE		COMMERCIAL FERTILIZER		BASIN MULCH ①		STAKING	PLANTING LIMITS						REMARKS
							Dia	DEPTH		TYPE	RATE	RATE	PLANTING	PLT ESTB	TYPE	CY	MINIMUM DISTANCE (ft) FROM			ON CENTER (ft)					
																	ETW		Pvmt		FENCE WALL	PAVED DITCH	EARTH DITCH		
F	1		<u>CARPOBROTUS EDULIS</u>	HOTTENTOT-FIG (PIGFACE/ICE PLANT)	IN FLATS	6492	③	③	-	S	68 CY/AC	-	431 LBS/AC	431 LBS/AC	SB	0.02	-	-	3	3	-	-	-	2	
	2		<u>HEDERA ALGERIENSIS</u>	ALGERIAN IVY	IN FLATS	6037	③	③	-	S	68 CY/AC	-	431 LBS/AC	431 LBS/AC	SB	0.02	-	-	3	3	-	-	-	2	

**APPLICABLE WHEN CIRCLED:**

- ① - QUANTITIES SHOWN ARE "PER PLANT" UNLESS SHOWN AS SQFT OR SQYD APPLICATION RATES
- 2 - BASIN MULCH IS INCLUDED WITH MULCH QUANTITIES SHOWN ON PLANTING PLAN
- ③ - SUFFICIENT TO RECEIVE ROOT BALL AND AMENDMENTS IF REQUIRED
- 4 - SEE DETAIL
- 5 - SEE SPECIAL PROVISIONS

- 6 - SEE STANDARD SPECIFICATIONS
- 7 - AS SHOWN ON PLANS
- 8 - UNLESS OTHERWISE SHOWN ON PLANS
- 9 - FOLIAGE PROTECTOR REQUIRED
- 10 - ROOT PROTECTOR REQUIRED
- 11 - ROOT BARRIER REQUIRED
- 12 - DEPARTMENT-FURNISHED

**ABBREVIATIONS:**

- S - SPHAGNUM PEAT MOSS
- N - NITROLIZED FIR BARK
- V - VERMICULITE
- P - PERLITE
- TB - TREE BARK
- WC - WOOD CHIP
- SB - SHREDDED BARK
- TT - TREE TRIMMING

**NOTE:**

UNDERLINED PORTIONS OF BOTANICAL NAME INDICATE ABBREVIATIONS USED ON PLANTING PLANS.

### HIGHWAY PLANTING QUANTITIES

SHEET	PLANT (GROUP F)	SOIL AMENDMENT	COMMERCIAL FERTILIZER	CULTIVATION	WOOD MULCH	GRAVEL MULCH
			SLOW-RELEASE		BASIN	
	EA	CY	LB	SQYD	CY	SQFT
PP-1	12,529	67.30	431	4,790	251	3,589

## PLANT LEGEND AND QUANTITIES PL-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 CHARLES LGRUE  
 MICHAEL MILLS  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 BRAD COLE

LAST REVISION | DATE PLOTTED => 28-JUN-2016  
 02-23-16 | TIME PLOTTED => 1:3:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	34	98

 LICENSED LANDSCAPE ARCHITECT	
4-11-16	
PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	

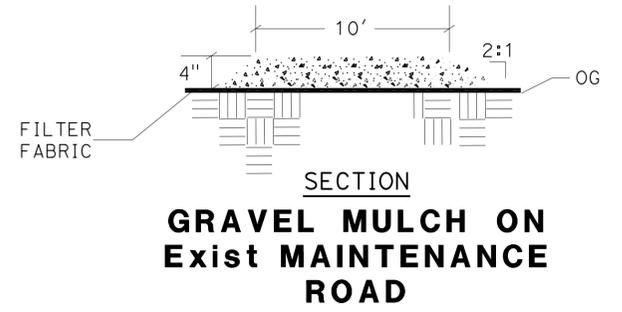
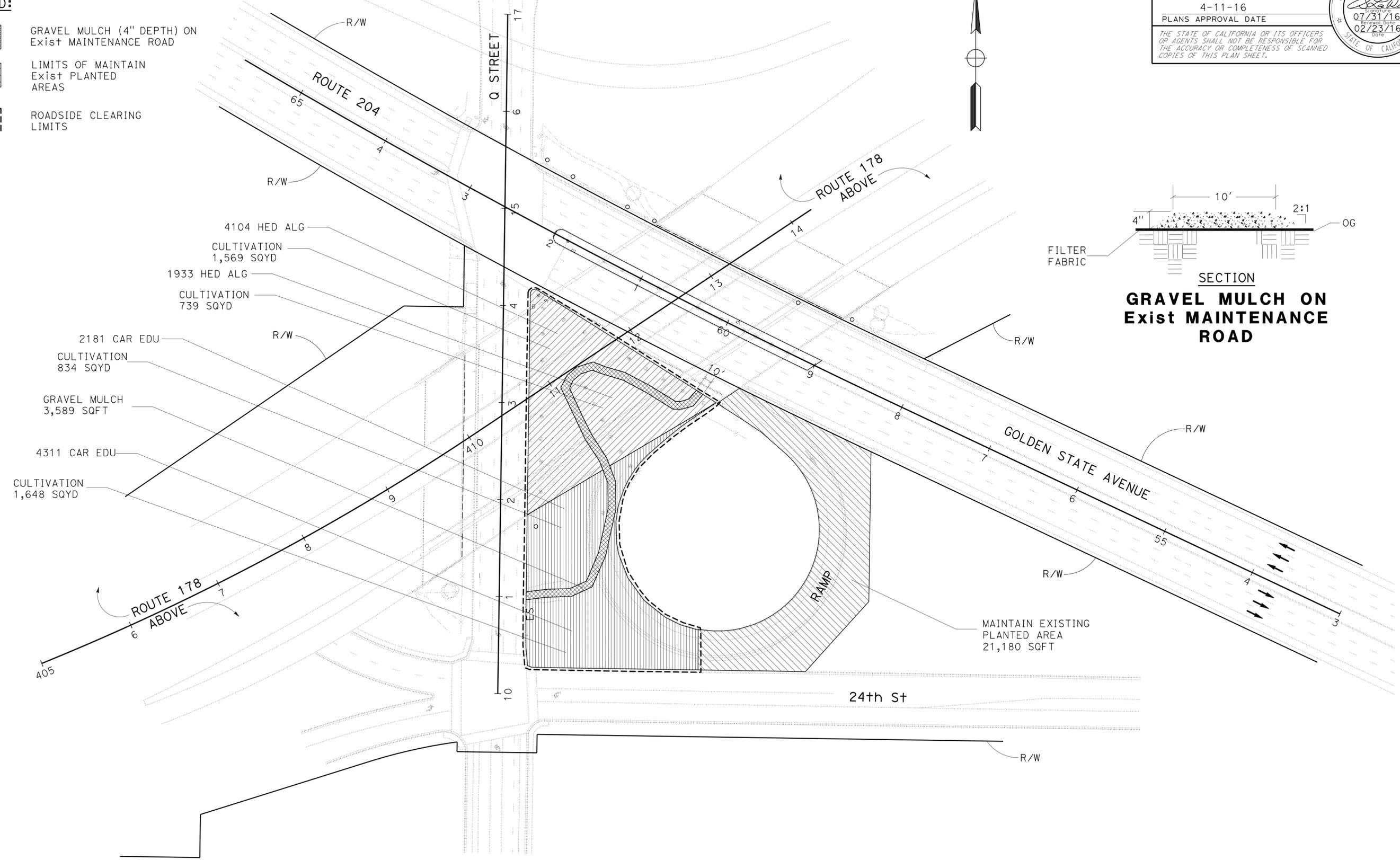


**NOTE:**

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

**LEGEND:**

-  GRAVEL MULCH (4" DEPTH) ON Exist MAINTENANCE ROAD
-  LIMITS OF MAINTAIN Exist PLANTED AREAS
-  ROADSIDE CLEARING LIMITS



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 BRAD COLE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 CHARLES LGRUE  
 MICHAEL MILLS  
 REVISED BY  
 DATE REVISED  
 XXXXX  
 XXXXX

**GOLDEN STATE AVENUE SEPARATION**

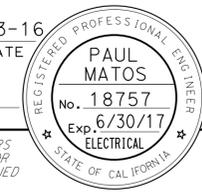
APPROVED FOR PLANTING WORK ONLY

**PLANTING PLAN  
PP-1**

SCALE: 1"=50'

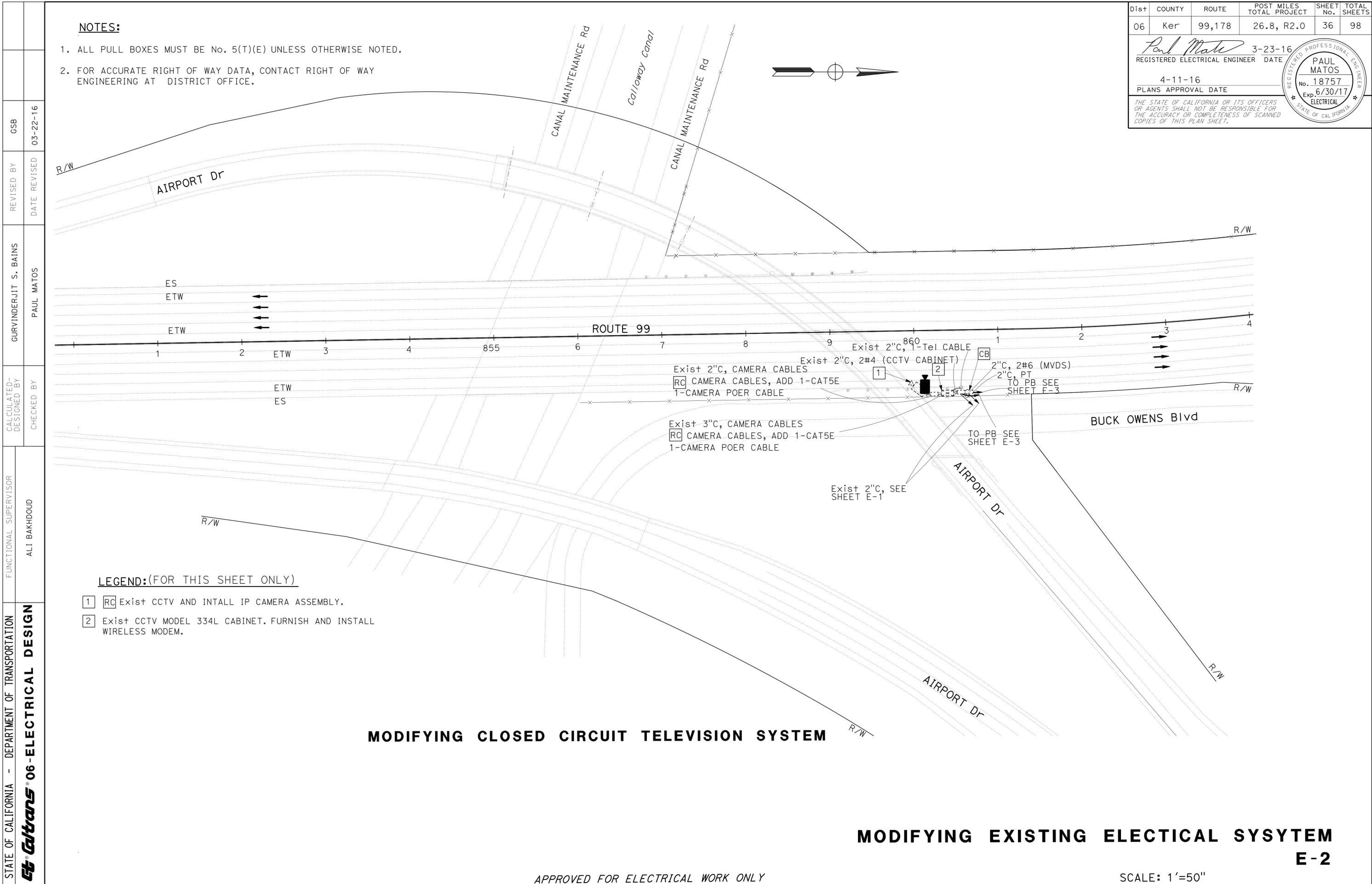
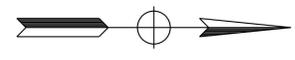




Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	36	98
			3-23-16	DATE	
REGISTERED ELECTRICAL ENGINEER			PLANS APPROVAL DATE		
4-11-16			4-11-16		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
					

**NOTES:**

- ALL PULL BOXES MUST BE No. 5(T)(E) UNLESS OTHERWISE NOTED.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT DISTRICT OFFICE.



**LEGEND:(FOR THIS SHEET ONLY)**

-  Exist CCTV AND INTALL IP CAMERA ASSEMBLY.
-  Exist CCTV MODEL 334L CABINET. FURNISH AND INSTALL WIRELESS MODEM.

**MODIFYING CLOSED CIRCUIT TELEVISION SYSTEM**

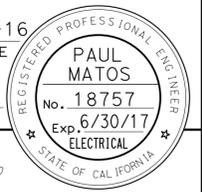
**MODIFYING EXISTING ELECTICAL SYSTEM  
E-2**

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1'=50"

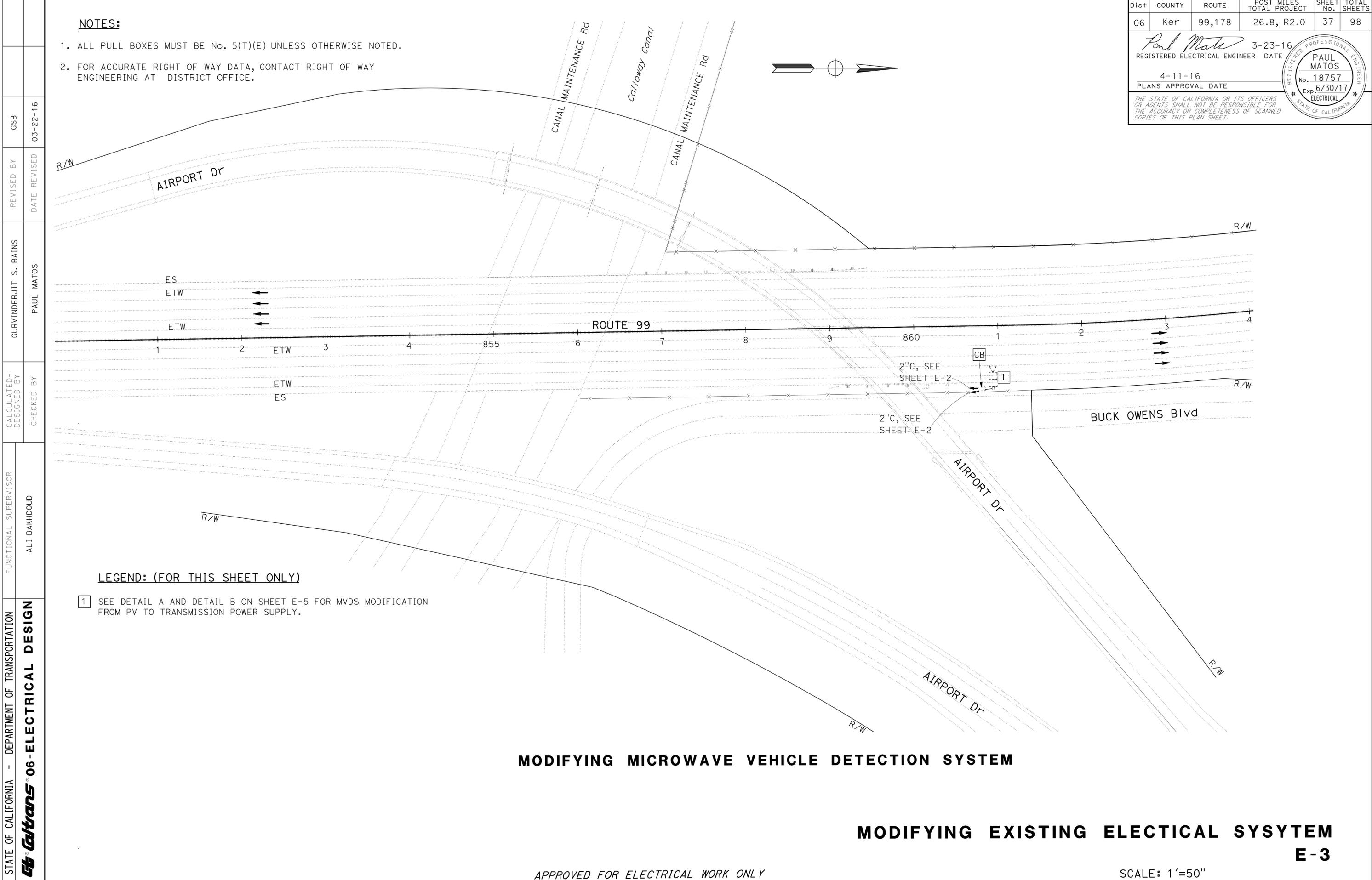
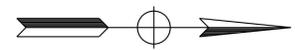
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHDOUD  
 CALCULATED/DESIGNED BY: GURVINDERJIT S. BAINS  
 CHECKED BY: PAUL MATOS  
 REVISED BY: GSB  
 DATE REVISED: 03-22-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	37	98
			3-23-16	DATE	
REGISTERED ELECTRICAL ENGINEER			PLANS APPROVAL DATE		
4-11-16			3-23-16		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



**NOTES:**

- ALL PULL BOXES MUST BE No. 5(T)(E) UNLESS OTHERWISE NOTED.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT DISTRICT OFFICE.



**LEGEND: (FOR THIS SHEET ONLY)**

- 1 SEE DETAIL A AND DETAIL B ON SHEET E-5 FOR MVDS MODIFICATION FROM PV TO TRANSMISSION POWER SUPPLY.

**MODIFYING MICROWAVE VEHICLE DETECTION SYSTEM**

**MODIFYING EXISTING ELECTRICAL SYSTEM  
E-3**

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1'=50"

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHDOUD  
 CHECKED BY: PAUL MATOS  
 GURVINDERJIT S. BAINS  
 REVISIONS: GSB 03-22-16  
 DATE REVISED: 03-22-16

LAST REVISION: DATE PLOTTED => 20-JUN-2016  
 03-22-16 TIME PLOTTED => 13:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	38	98

<i>Paul Matos</i>	3-23-16
REGISTERED ELECTRICAL ENGINEER	DATE
4-11-16	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
PAUL MATOS
No. 18757
Exp. 6/30/17
ELECTRICAL
STATE OF CALIFORNIA

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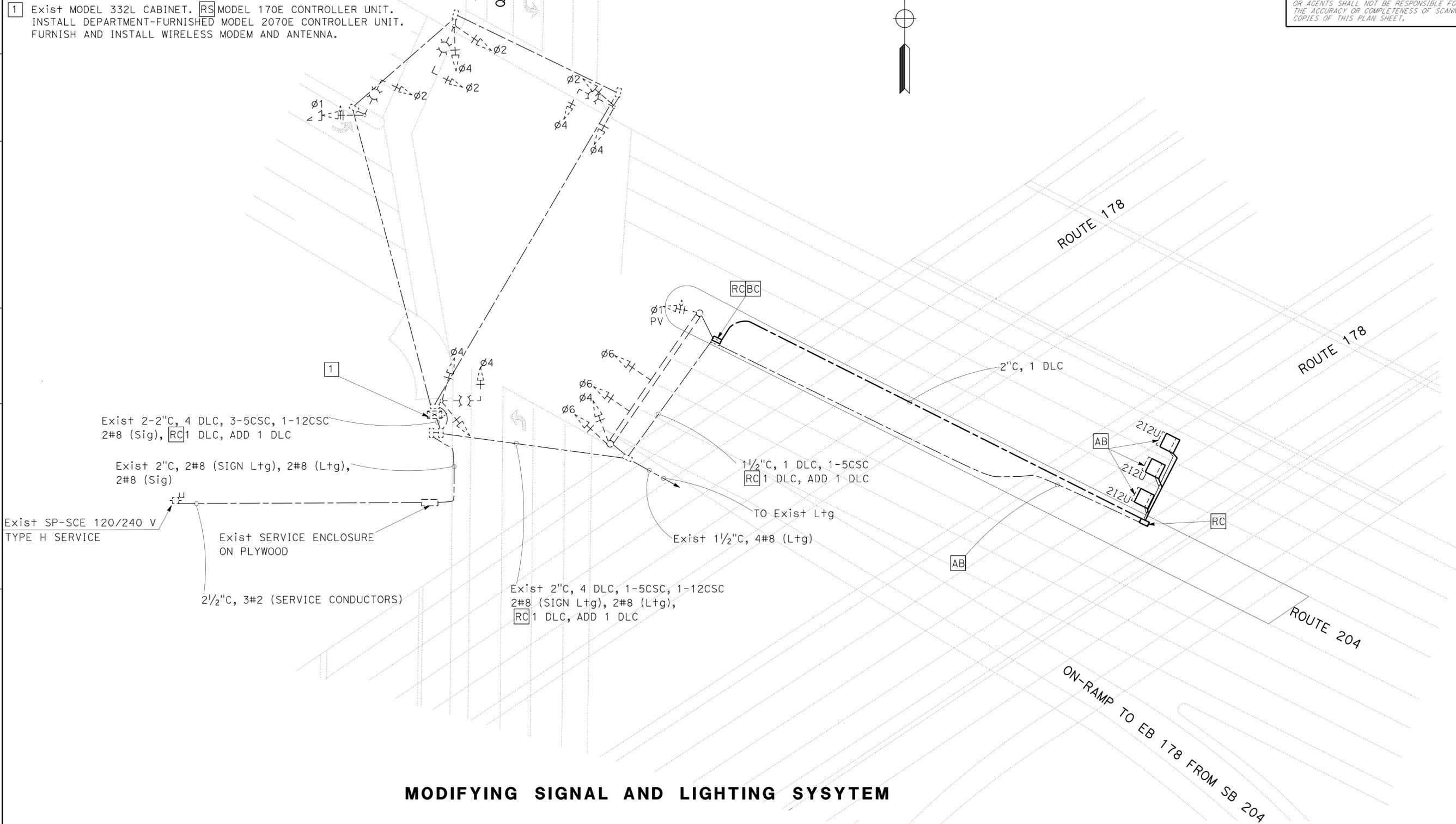
**NOTES:**

- ALL PULL BOXES MUST BE No. 5(T)(E) UNLESS OTHERWISE NOTED.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT DISTRICT OFFICE.

**LEGEND: (FOR THIS SHEET ONLY)**

- Exist MODEL 332L CABINET. **RS** MODEL 170E CONTROLLER UNIT. INSTALL DEPARTMENT-FURNISHED MODEL 2070E CONTROLLER UNIT. FURNISH AND INSTALL WIRELESS MODEM AND ANTENNA.

GSB	03-22-16
REVISOR	DATE
GURVINDERJIT S. BAINS	PAUL MATOS
CALCULATED/DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	
ALI BAKHOUD	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	<b>06-ELECTRICAL DESIGN</b>



**MODIFYING SIGNAL AND LIGHTING SYSTEM**

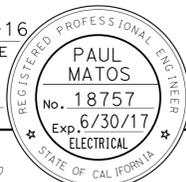
**MODIFYING EXISTING ELECTRICAL SYSTEM**

**E-4**

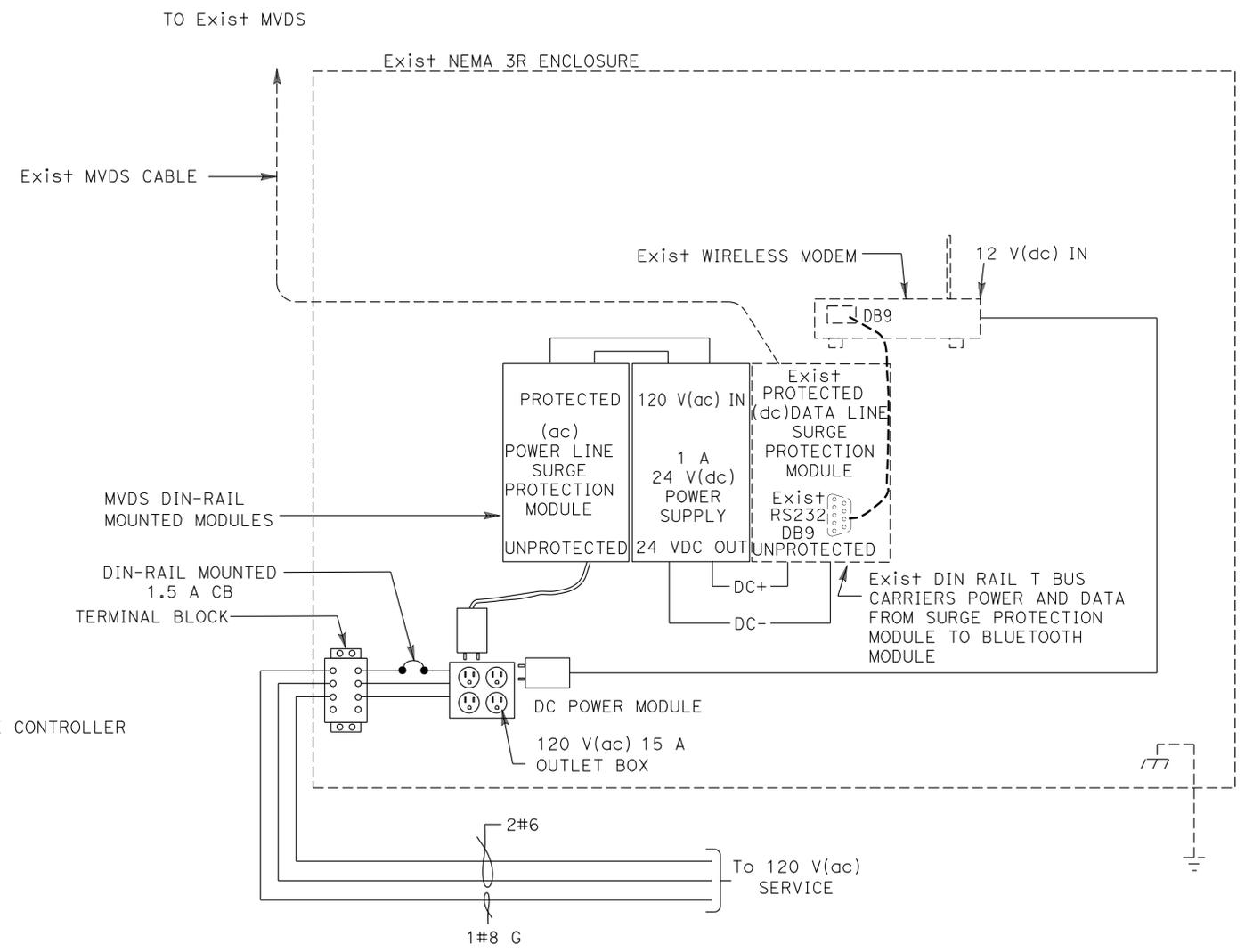
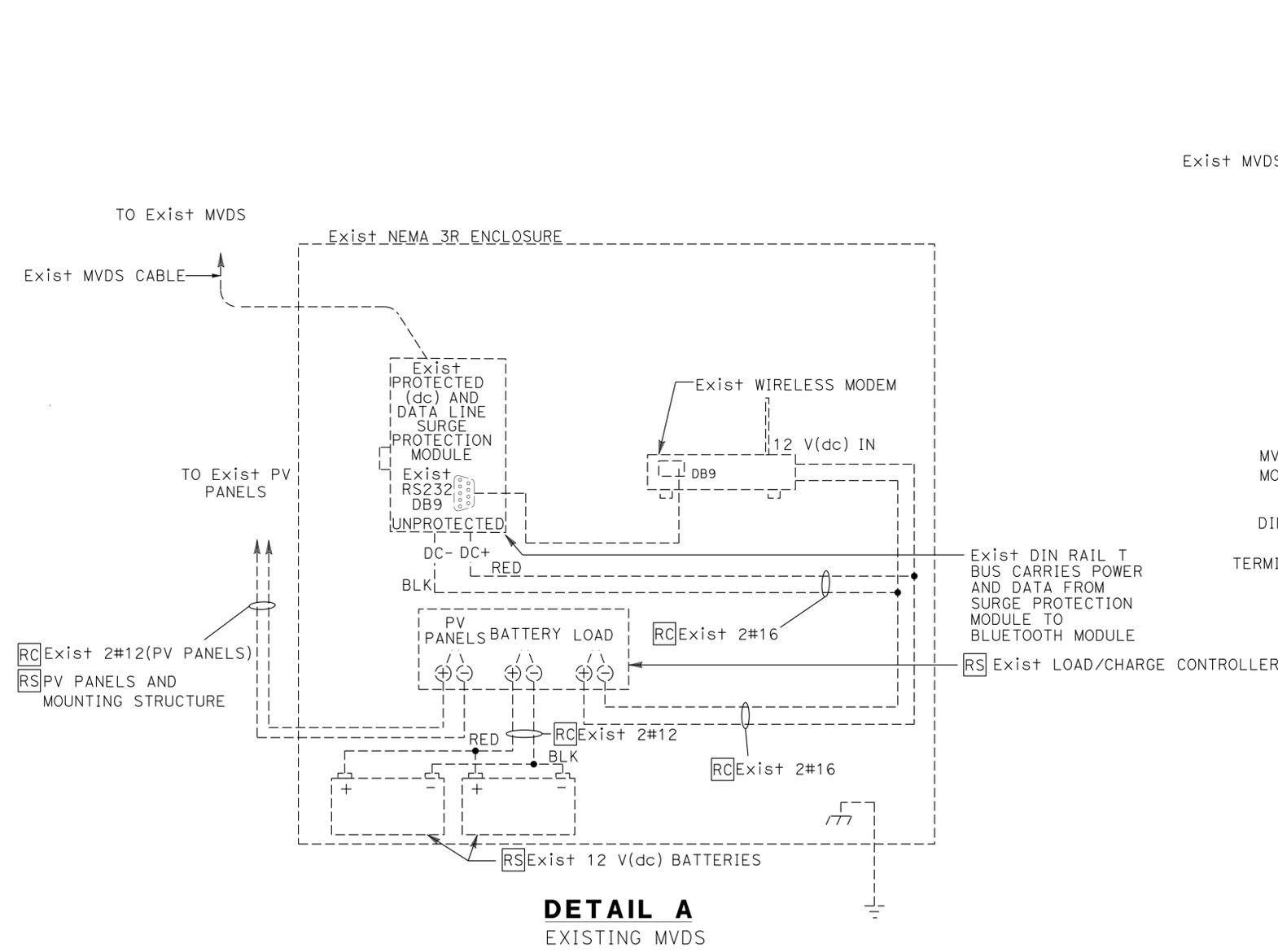
APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1'=20"

LAST REVISION: DATE PLOTTED => 20-JUN-2016 03-22-16 TIME PLOTTED => 13:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	39	98
 REGISTERED ELECTRICAL ENGINEER DATE 3-23-16					
PLANS APPROVAL DATE 4-11-16					
					
<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>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHDOUD  
 GURVINDERJIT S. BAINS  
 PAUL MATOS  
 GSB  
 03-22-16  
 REVISIONS: 03-22-16



**ELECTRICAL DETAILS**  
**E-5**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** 06-ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR  
 ALI BAKHDOUD

CALCULATED-DESIGNED BY  
 CHECKED BY

GURVINDERJIT S. BAINS  
 PAUL MATOS

REVISID BY  
 DATE REVISED

GSB  
 03-22-16

**NOTE:**  
 QUANTITIES SHOWN IN THE TABLES ARE NOT SEPARATE PAY ITEMS, FOR INFORMATION ONLY. FOR COMPLETE ELECTRICAL WORK, SEE ELECTRICAL PLAN SHEETS.

**MODIFYING EXISTING ELECTRICAL SYSTEM**

SHEET No.	No. 5(T)(E) PB	DETECTOR LOOP, TYPE A	WIRELESS MODEM	IP CAMERA ASSEMBLY	TRANSMISSION POWER EQUIPMENT	2"C, TYPE 3	3"C, TYPE 3	No. 8 CONDUCTOR (G) (Cu)	No. 6 CONDUCTOR (Al)	CAT5E	DLC	CAMERA POWER CABLE
E-1	6					400	225	1400	5800			
E-2			1	1		30		100	200	200		200
E-3					1							
E-4	2	3	1			200					350	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	40	98

*Paul Matos* 3-23-16  
 REGISTERED ELECTRICAL ENGINEER DATE  
 4-11-16  
 PLANS APPROVAL DATE

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**ELECTRICAL QUANTITIES  
 E-6**

LAST REVISION | DATE PLOTTED => 20-JUN-2016  
 03-22-16 TIME PLOTTED => 13:51

	<b>M</b>	
Maint	MAINTENANCE	
Max	MAXIMUM	
MB	METAL BEAM	
MBB	METAL BEAM BARRIER	
MBGR	METAL BEAM GUARD RAILING	
Med	MEDIAN	
MGS	MIDWEST GUARDRAIL SYSTEM	
MH	MANHOLE	
Min	MINIMUM	
Misc	MISCELLANEOUS	
Misc I & S	MISCELLANEOUS IRON AND STEEL	
Mkr	MARKER	
Mod	MODIFIED, MODIFY	
Mon	MONUMENT	
MP	METAL PLATE	
MPGR	METAL PLATE GUARD RAILING	
MR	MOVEMENT RATING	
MSE	MECHANICALLY STABILIZED EMBANKMENT	
Mt	MOUNTAIN, MOUNT	
M+I	MATERIAL	
MVP	MAINTENANCE VEHICLE PULLOUT	
	<b>N</b>	
N	NORTH	
NB	NORTHBOUND	
No.	NUMBER (MUST HAVE PERIOD)	
Nos.	NUMBERS (MUST HAVE PERIOD)	
NPS	NOMINAL PIPE SIZE	
NS	NEAR SIDE	
NSP	NEW STANDARD PLAN	
NTS	NOT TO SCALE	
	<b>O</b>	
Obir	OBLITERATE	
OC	OVERCROSSING	
OD	OUTSIDE DIAMETER	
OF	OUTSIDE FACE	
OG	ORIGINAL GROUND	
OGAC	OPEN GRADED ASPHALT CONCRETE	
OGFC	OPEN GRADED FRICTION COURSE	
OH	OVERHEAD	
OHWM	ORDINARY HIGH WATER MARK	
O-O	OUT TO OUT	
Opp	OPPOSITE	
OSD	OVERSIDE DRAIN	
	<b>P</b>	
p	PAGE	
PAP	PERFORATED ALUMINUM PIPE	
PB	PULL BOX	
PC	POINT OF CURVATURE, PRECAST	
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE	
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN	
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE	
PCVC	POINT OF COMPOUND VERTICAL CURVE	
PEC	PERMIT TO ENTER AND CONSTRUCT	
Ped	PEDESTRIAN	
Ped OC	PEDESTRIAN OVERCROSSING	
Ped UC	PEDESTRIAN UNDERCROSSING	
Perm M+I	PERMEABLE MATERIAL	

	<b>P continued</b>	
PG	PROFILE GRADE	
PI	POINT OF INTERSECTION	
PJP	PARTIAL JOINT PENETRATION	
Pkwy	PARKWAY	
PL, PL	PLATE	
P/L	PROPERTY LINE	
PM	POST MILE, TIME FROM NOON TO MIDNIGHT	
PN	PAVING NOTCH	
POC	POINT OF HORIZONTAL CURVE	
POT	POINT OF TANGENT	
POVC	POINT OF VERTICAL CURVE	
PP	PIPE PILE, PLASTIC PIPE, POWER POLE	
PPL	PREFORMED PERMEABLE LINER	
PPP	PERFORATED PLASTIC PIPE	
PRC	POINT OF REVERSE CURVE	
PRF	PAVEMENT REINFORCING FABRIC	
PRVC	POINT OF REVERSE VERTICAL CURVE	
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES	
PS, P/S	PRESTRESSED	
PSP	PERFORATED STEEL PIPE	
PT	POINT OF TANGENCY	
PVC	POLYVINYL CHLORIDE	
Pvmt	PAVEMENT	
	<b>Q</b>	
Qty	QUANTITY	
	<b>R</b>	
R	RADIUS	
R & D	REMOVE AND DISPOSE	
R & S	REMOVE AND SALVAGE	
R/C	RATE OF CHANGE	
RCA	REINFORCED CONCRETE ARCH	
RCB	REINFORCED CONCRETE BOX	
RCP	REINFORCED CONCRETE PIPE	
RCPA	REINFORCED CONCRETE PIPE ARCH	
Rd	ROAD	
Reinf	REINFORCED, REINFORCEMENT, REINFORCING	
Rel	RELOCATE	
Repl	REPLACEMENT	
Ret	RETAINING	
Rev	REVISED, REVISION	
Rdwy	ROADWAY	
RHMA	RUBBERIZED HOT MIX ASPHALT	
Riv	RIVER	
RM	ROAD-MIXED	
RP	RADIUS POINT, REFERENCE POINT	
RR	RAILROAD	
RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN	
R+	RIGHT	
Rte	ROUTE	
RW	REDWOOD, RETAINING WALL	
R/W	RIGHT OF WAY	
Rwy	RAILWAY	

	<b>S</b>	
S	SOUTH, SUPPLEMENT	
SAE	STRUCTURE APPROACH EMBANKMENT	
Salv	SALVAGE	
SAPP	STRUCTURAL ALUMINUM PLATE PIPE	
SB	SOUTHBOUND	
SC	SAND CUSHION	
SCSP	SLOTTED CORRUGATED STEEL PIPE	
SD	STORM DRAIN	
Sec	SECOND, SECTION	
Sep	SEPARATION	
SG	SUBGRADE	
Shld	SHOULDER	
Sht	SHEET	
Sim	SIMILAR	
SL	STATION LINE	
SM	SELECTED MATERIAL	
Spec	SPECIAL, SPECIFICATIONS	
SPP	SLOTTED PLASTIC PIPE	
SS	SLOPE STAKE	
SSBM	STRAP AND SADDLE BRACKET METHOD	
SSD	STRUCTURAL SECTION DRAIN	
SSPA	STRUCTURAL STEEL PLATE ARCH	
SSPP	STRUCTURAL STEEL PLATE PIPE	
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH	
SSRP	STEEL SPIRAL RIB PIPE	
St	STREET	
Sta	STATION	
STBB	SINGLE THRIE BEAM BARRIER	
Std	STANDARD	
Str	STRUCTURE	
Surf	SURFACING	
SW	SIDEWALK, SOUND WALL	
Swr	SEWER	
Sym	SYMMETRICAL	
S4S	SURFACE 4 SIDES	
	<b>T</b>	
T	SEMI-TANGENT	
Tan	TANGENT	
TBB	THRIE BEAM BARRIER	
Tbr	TIMBER	
TC	TOP OF CURB	
TCB	TRAFFIC CONTROL BOX	
TCE	TEMPORARY CONSTRUCTION EASEMENT	
TeI	TELEPHONE	
Temp	TEMPORARY	
TG	TOP OF GRADE	
Tot	TOTAL	
TP	TELEPHONE POLE	
TPB	TREATED PERMEABLE BASE	
TPM	TREATED PERMEABLE MATERIAL	
Trans	TRANSITION	

	<b>T continued</b>	
TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL	
Typ	TYPICAL	
	<b>U</b>	
UC	UNDERCROSSING	
UD	UNDERDRAIN	
UG	UNDERGROUND	
UON	UNLESS OTHERWISE NOTED	
UP	UNDERPASS	
	<b>V</b>	
V	VALVE, DESIGN SPEED	
Var	VARIABLE, VARIES	
VC	VERTICAL CURVE	
VCP	VITRIFIED CLAY PIPE	
Vert	VERTICAL	
Via	VIADUCT	
Vol	VOLUME	
	<b>W</b>	
W	WEST, WIDTH	
WB	WESTBOUND	
WH	WEEP HOLE	
WM	WIRE MESH	
WS	WATER SURFACE	
WSP	WELDED STEEL PIPE	
W+	WEIGHT	
WV	WATER VALVE	
WW	WINGWALL	
WWL	WINGWALL LAYOUT LINE	
	<b>X</b>	
X Sec	CROSS SECTION	
Xing	CROSSING	
	<b>Y</b>	
Yr	YEAR	
Yrs	YEARS	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	41	98

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 4-11-16

**UNIT OF MEASUREMENT SYMBOLS:**

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

**TABLE A**

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

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

**TABLE B**

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

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS  
(SHEET 2 OF 2)**

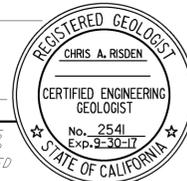
NO SCALE

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

2010 REVISED STANDARD PLAN RSP A10B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	42	98

  
 CERTIFIED ENGINEERING GEOLOGIST  
 October 30, 2015  
 PLANS APPROVAL DATE  
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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.

**ABBREVIATION:**

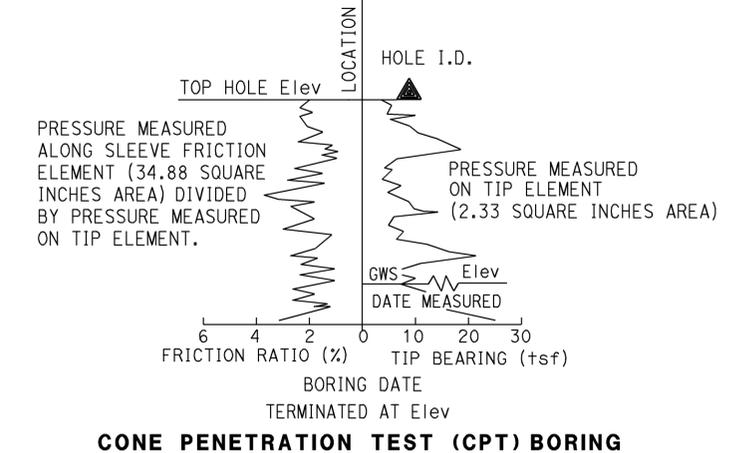
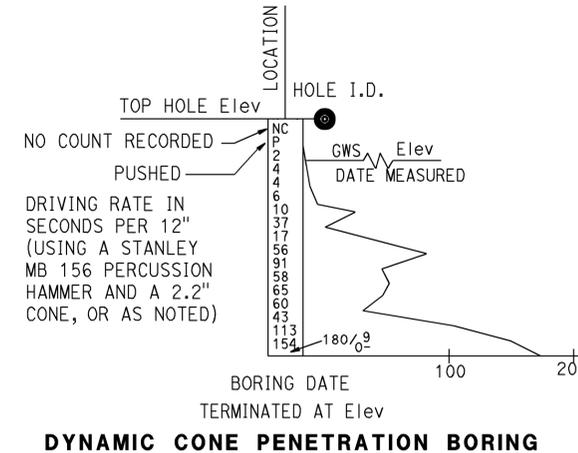
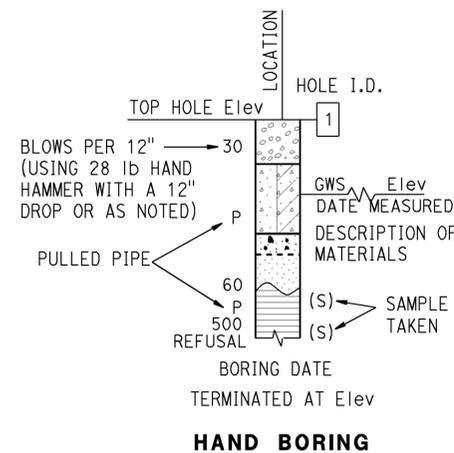
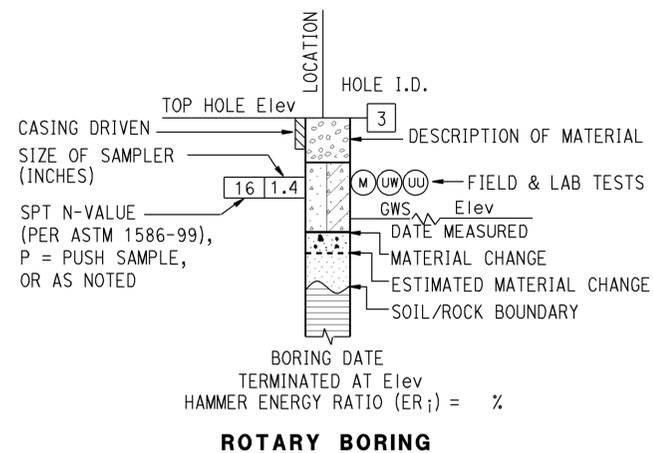
GWS = Ground Water Surface

TO ACCOMPANY PLANS DATED 4-11-16

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
	RC	ROTARY DRILLED DIAMOND CORE, CONTINUOUSLY SAMPLED
	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



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**LEGEND - SOIL (SHEET 1 OF 2)**  
 NO SCALE

RSP A10F DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN A10F DATED MAY 20, 2011 - PAGE 6 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A10F**

2010 REVISED STANDARD PLAN RSP A10F

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	43	98

*Chris A. Risdien*  
 CERTIFIED ENGINEERING GEOLOGIST  
 October 30, 2015  
 PLANS APPROVAL DATE

REGISTERED GEOLOGIST  
 CHRIS A. RISDIEN  
 No. 2541  
 Exp. 9-30-17  
 STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 4-11-16

GROUP SYMBOLS AND NAMES					
GRAPHIC/SYMBOL	GROUP NAMES	GRAPHIC/SYMBOL	GROUP NAMES	GRAPHIC/SYMBOL	GROUP NAMES
	GW WELL-GRADED GRAVEL WELL-GRADED GRAVEL WITH SAND		CL LEAN CLAY LEAN CLAY WITH SAND LEAN CLAY WITH GRAVEL SANDY LEAN CLAY SANDY LEAN CLAY WITH GRAVEL GRAVELLY LEAN CLAY GRAVELLY LEAN CLAY WITH SAND		GP POORLY-GRADED GRAVEL POORLY-GRADED GRAVEL WITH SAND
	GW-GM WELL-GRADED GRAVEL WITH SILT WELL-GRADED GRAVEL WITH SILT AND SAND		CL-ML SILTY CLAY SILTY CLAY WITH SAND SILTY CLAY WITH GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY WITH GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY WITH SAND		GP-GM POORLY-GRADED GRAVEL WITH SILT POORLY-GRADED GRAVEL WITH SILT AND SAND
	GW-GC WELL-GRADED GRAVEL WITH CLAY (OR SILTY CLAY) WELL-GRADED GRAVEL WITH CLAY AND SAND (OR SILTY CLAY AND SAND)		ML SILT SILT WITH SAND SILT WITH GRAVEL SANDY SILT SANDY SILT WITH GRAVEL GRAVELLY SILT GRAVELLY SILT WITH SAND		GP-GC POORLY-GRADED GRAVEL WITH CLAY (OR SILTY CLAY) POORLY-GRADED GRAVEL WITH CLAY AND SAND (OR SILTY CLAY AND SAND)
	GM SILTY GRAVEL SILTY GRAVEL WITH SAND		OL ORGANIC LEAN CLAY ORGANIC LEAN CLAY WITH SAND ORGANIC LEAN CLAY WITH GRAVEL SANDY ORGANIC LEAN CLAY SANDY ORGANIC LEAN CLAY WITH GRAVEL GRAVELLY ORGANIC LEAN CLAY GRAVELLY ORGANIC LEAN CLAY WITH SAND		GC CLAYEY GRAVEL CLAYEY GRAVEL WITH SAND
	GC-GM SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL WITH SAND		OL ORGANIC SILT ORGANIC SILT WITH SAND ORGANIC SILT WITH GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT WITH GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT WITH SAND		SW WELL-GRADED SAND WELL-GRADED SAND WITH GRAVEL
	SP POORLY-GRADED SAND POORLY-GRADED SAND WITH GRAVEL		CH FAT CLAY FAT CLAY WITH SAND FAT CLAY WITH GRAVEL SANDY FAT CLAY SANDY FAT CLAY WITH GRAVEL GRAVELLY FAT CLAY GRAVELLY FAT CLAY WITH SAND		SW-SM WELL-GRADED SAND WITH SILT WELL-GRADED SAND WITH SILT AND GRAVEL
	SW-SC WELL-GRADED SAND WITH CLAY (OR SILTY CLAY) WELL-GRADED SAND WITH CLAY AND GRAVEL (OR SILTY CLAY AND GRAVEL)		MH ELASTIC SILT ELASTIC SILT WITH SAND ELASTIC SILT WITH GRAVEL SANDY ELASTIC SILT SANDY ELASTIC SILT WITH GRAVEL GRAVELLY ELASTIC SILT GRAVELLY ELASTIC SILT WITH SAND		SP-SM POORLY-GRADED SAND WITH SILT POORLY-GRADED SAND WITH SILT AND GRAVEL
	SP-SC POORLY-GRADED SAND WITH CLAY (OR SILTY CLAY) POORLY-GRADED SAND WITH CLAY AND GRAVEL (OR SILTY CLAY AND GRAVEL)		OH ORGANIC FAT CLAY ORGANIC FAT CLAY WITH SAND ORGANIC FAT CLAY WITH GRAVEL SANDY ORGANIC FAT CLAY SANDY ORGANIC FAT CLAY WITH GRAVEL GRAVELLY ORGANIC FAT CLAY GRAVELLY ORGANIC FAT CLAY WITH SAND		SM SILTY SAND SILTY SAND WITH GRAVEL
	SC CLAYEY SAND CLAYEY SAND WITH GRAVEL		OH ORGANIC ELASTIC SILT ORGANIC ELASTIC SILT WITH SAND ORGANIC ELASTIC SILT WITH GRAVEL SANDY ORGANIC ELASTIC SILT SANDY ORGANIC ELASTIC SILT WITH GRAVEL GRAVELLY ORGANIC ELASTIC SILT GRAVELLY ORGANIC ELASTIC SILT WITH SAND		SC-SM SILTY, CLAYEY SAND SILTY, CLAYEY SAND WITH GRAVEL
	PT PEAT		OL/OH ORGANIC SOIL ORGANIC SOIL WITH SAND ORGANIC SOIL WITH GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL WITH GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL WITH SAND		COBBLES COBBLES AND BOULDERS BOULDERS

FIELD AND LABORATORY TESTING	
(C)	CONSOLIDATION (ASTM D2435)
(CL)	COLLAPSE POTENTIAL (ASTM D4546)
(CP)	COMPACTION CURVE (CTM 216)
(CR)	CORROSIVITY TESTING (CTM 643, CTM 422, CTM 417)
(CU)	CONSOLIDATED UNDRAINED TRIAXIAL (ASTM D4767)
(DS)	DIRECT SHEAR (ASTM D3080)
(EI)	EXPANSION INDEX (ASTM D4829)
(M)	MOISTURE CONTENT (ASTM D2216)
(OC)	ORGANIC CONTENT-% (ASTM D2974)
(P)	PERMEABILITY (CTM 220)
(PA)	PARTICLE SIZE ANALYSIS (ASTM D422)
(PI)	PLASTICITY INDEX (AASHTO T 90) LIQUID LIMIT (AASHTO T 89)
(PL)	POINT LOAD INDEX (ASTM D5731)
(PM)	PRESSURE METER
(R)	R-VALUE (CTM 301)
(SE)	SAND EQUIVALENT (CTM 217)
(SG)	SPECIFIC GRAVITY (AASHTO T 100)
(SL)	SHRINKAGE LIMIT (ASTM D4943)
(SW)	SWELL POTENTIAL (ASTM D4546)
(UC)	UNCONFINED COMPRESSION-SOIL (ASTM D2166) UNCONFINED COMPRESSION-ROCK (ASTM D7012 - METHOD C)
(UU)	UNCONSOLIDATED UNDRAINED TRIAXIAL (ASTM D2850)
(UW)	UNIT WEIGHT (ASTM D7263 - METHOD B)

APPARENT DENSITY OF COHESIONLESS SOILS	
DESCRIPTION	SPT N <sub>60</sub> (BLOWS / 12 INCHES)
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	
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"	

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**LEGEND - SOIL**  
**(SHEET 2 OF 2)**  
 NO SCALE

RSP A10G DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN A10G DATED MAY 20, 2011 - PAGE 7 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A10G**

2010 REVISED STANDARD PLAN RSP A10G

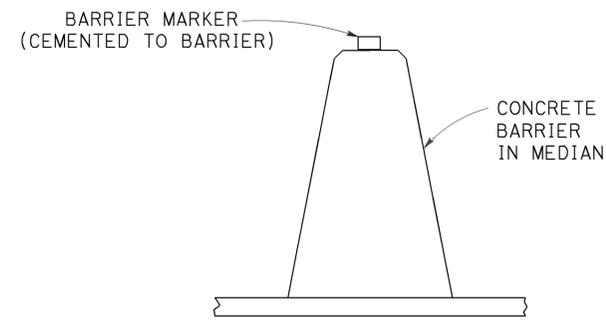
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	44	98

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

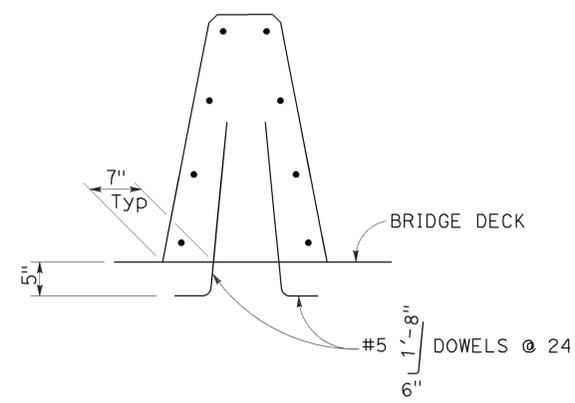
October 30, 2015  
PLANS APPROVAL DATE

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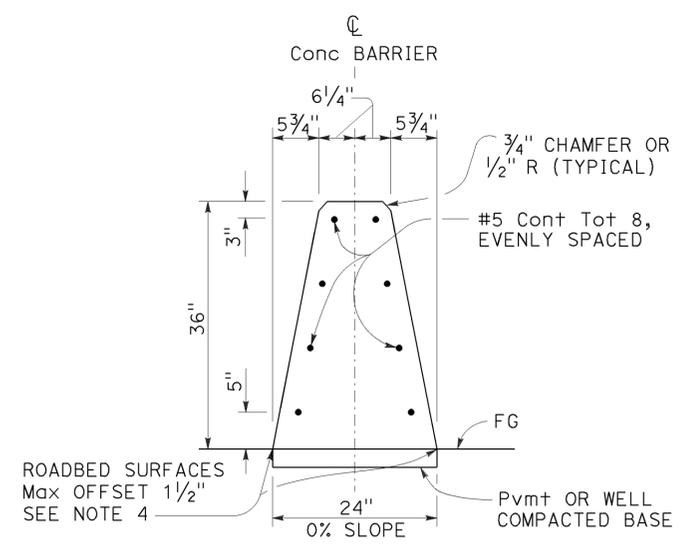
TO ACCOMPANY PLANS DATED 4-11-16



**CONCRETE BARRIER TYPE 60 DELINEATION**  
See Note 5



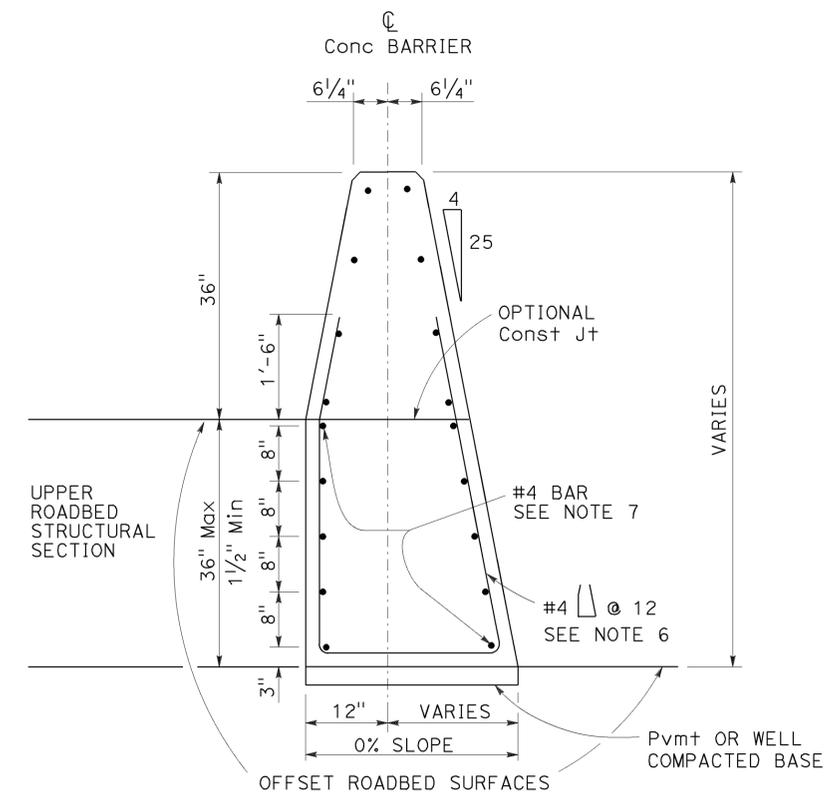
**CONCRETE BARRIER TYPE 60A**  
Details similar to Type 60 except as noted.



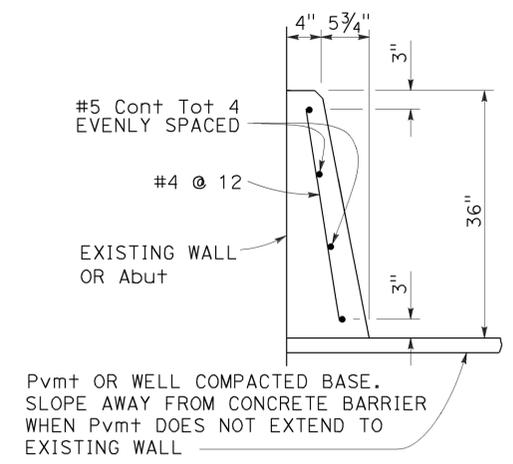
**CONCRETE BARRIER TYPE 60**

**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 Revised Standard Plan RSP 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 roadbed offset is greater than 1 1/2", see Concrete Barrier Type 60C.
- See Project Plans for barrier delineation locations.
- Reinforcing stirrup not required for roadbed offsets less than 1'-0".
- For roadbed surfaces offset greater than 1 1/2" and less than or equal to 3", no reinforcement required. For roadbed surfaces offset greater than 3" and less than or equal to 8", use two #4 Reinf at 3" above the lower roadbed surface. For roadbed surfaces offset greater than 8" and less than or equal to 12", use two #4 Reinf at 3" above the lower roadbed surface and two #4 Reinf at 8" above the lower roadbed surface. For roadbed surfaces offset greater than 12" and less than or equal to 36", use two #4 Reinf at 3" above the lower roadbed surface and two #4 Reinf at every 8" increment vertical spacing above the first two #4 Reinf.



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



**CONCRETE BARRIER TYPE 60D**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CONCRETE BARRIER TYPE 60**  
NO SCALE

RSP A76A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN A76A DATED MAY 20, 2011 - PAGE 34 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A76A**

2010 REVISED STANDARD PLAN RSP A76A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	45	98

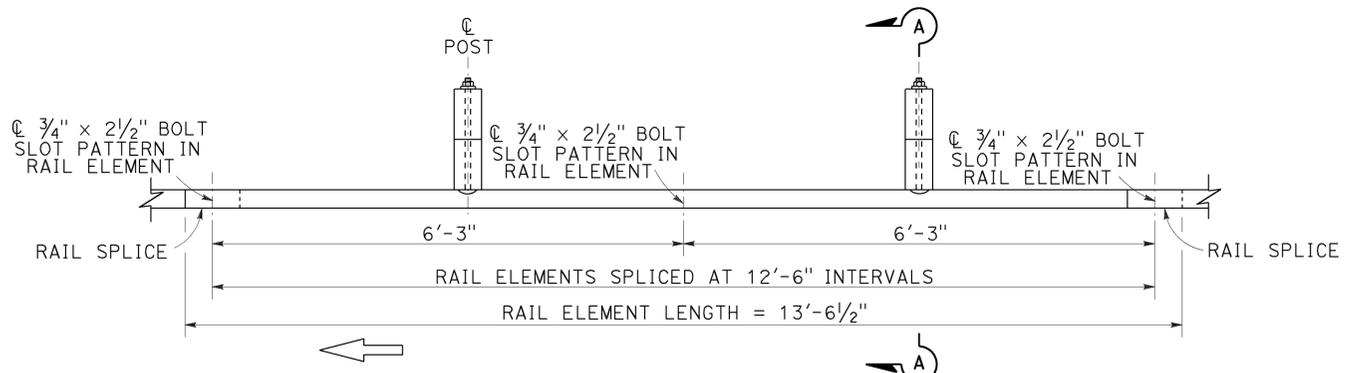
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

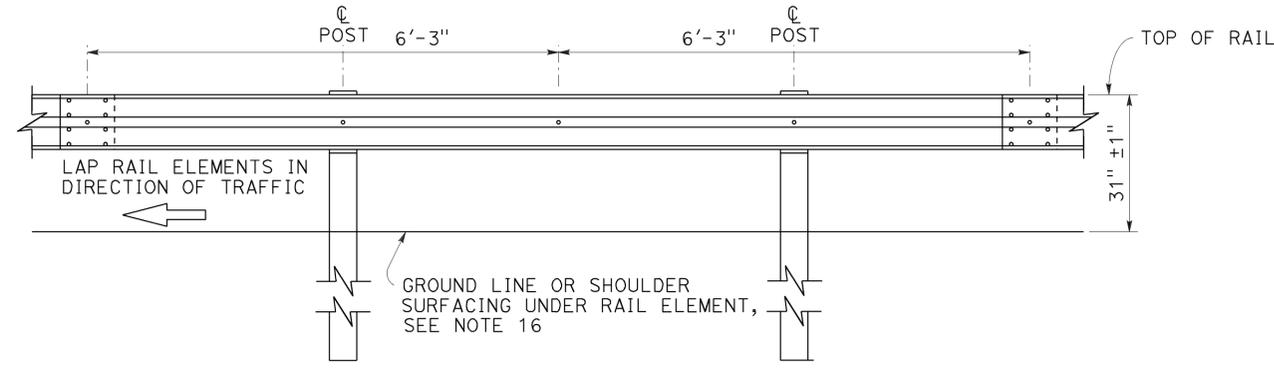
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REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 4-11-16

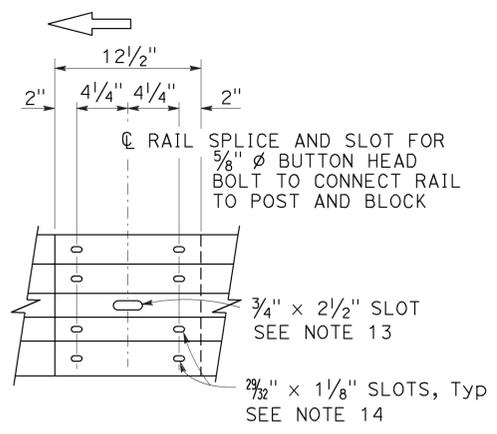


PLAN



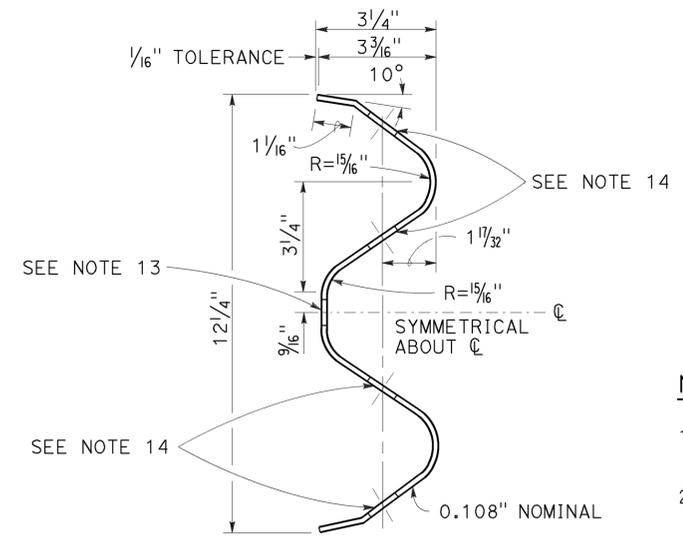
ELEVATION

**MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS**

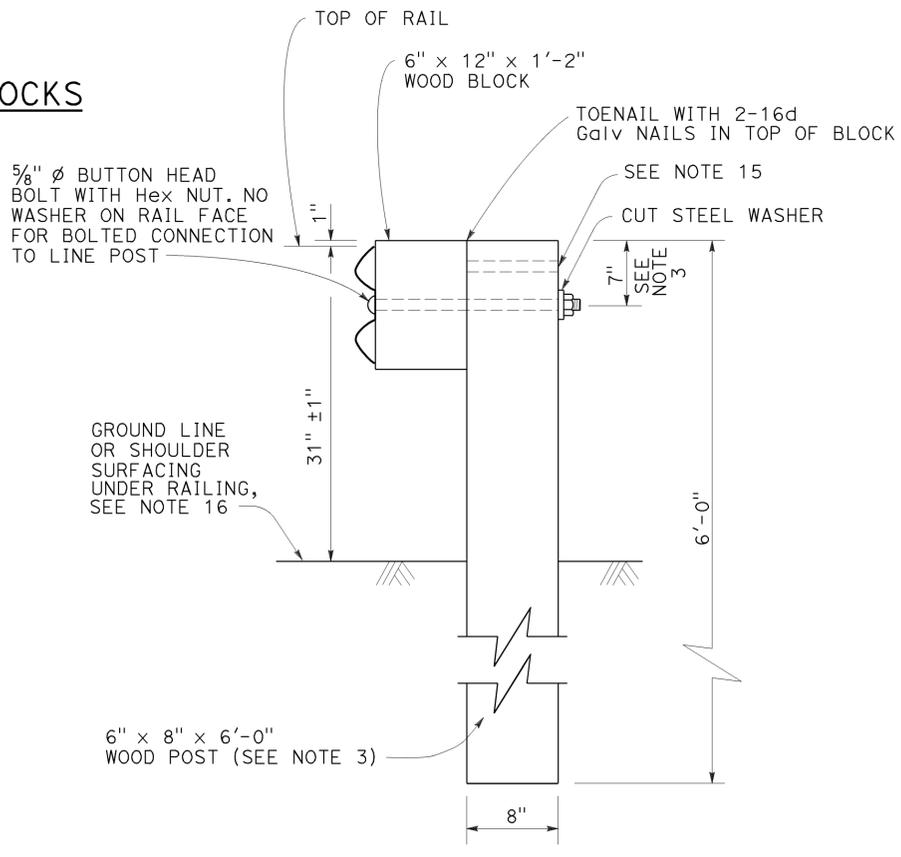


ELEVATION  
**RAIL ELEMENT SPLICE DETAIL**

- Connect the over lapped end of the rail elements with  $\frac{5}{8}$ "  $\phi$  x  $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the  $\frac{7}{32}$ " x  $1\frac{1}{8}$ " slots and bolted together with  $\frac{5}{8}$ "  $\phi$  recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



SECTION THRU  
RAIL ELEMENT



SECTION A-A  
TYPICAL WOOD LINE  
POST INSTALLATION

See Note 4

**NOTES:**

- For details of steel post installations, see Revised Standard Plan RSP A77L2.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MSG connection to bridge railing, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For MGS connection details to abutments and walls, see Revised Standard Plan RSP A77U3.
- For typical MGS delineation and dike positioning details, see Revised Standard Plan RSP A77N4.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Revised Standard Plan RSP A77N1.
- Install posts in soil.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP A77L1**

2010 REVISED STANDARD PLAN RSP A77L1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	46	98

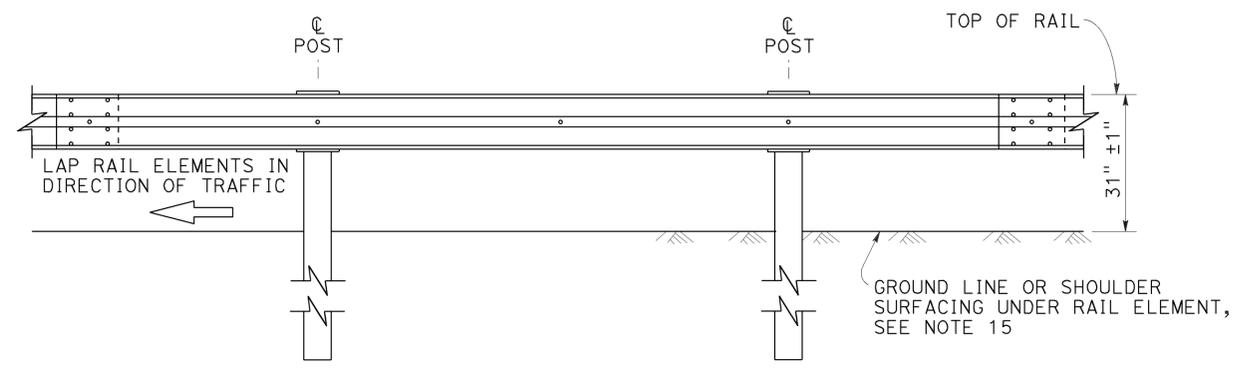
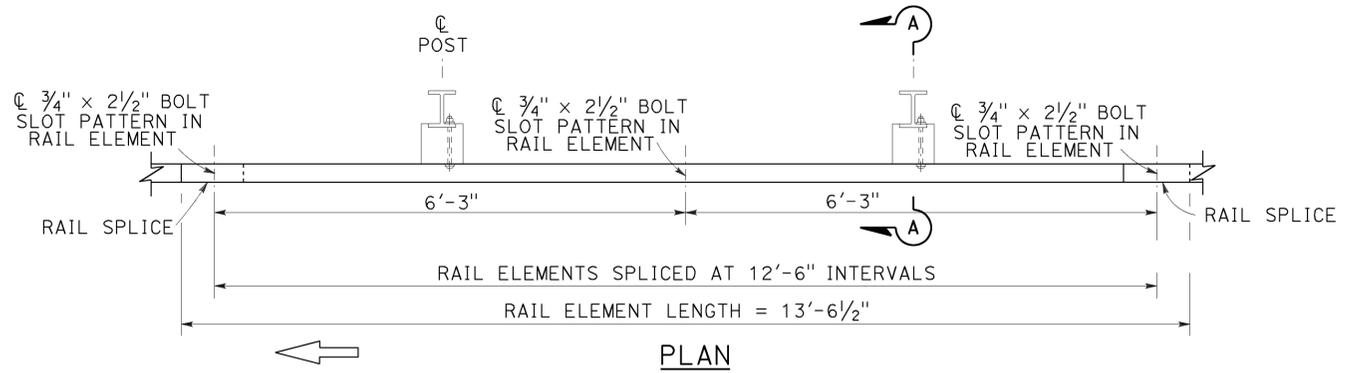
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

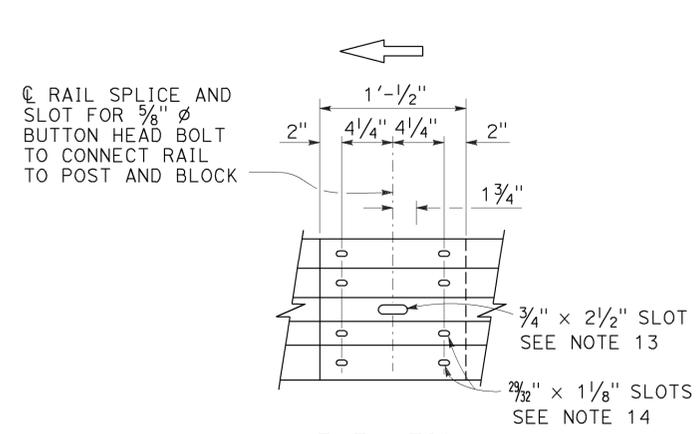
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REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

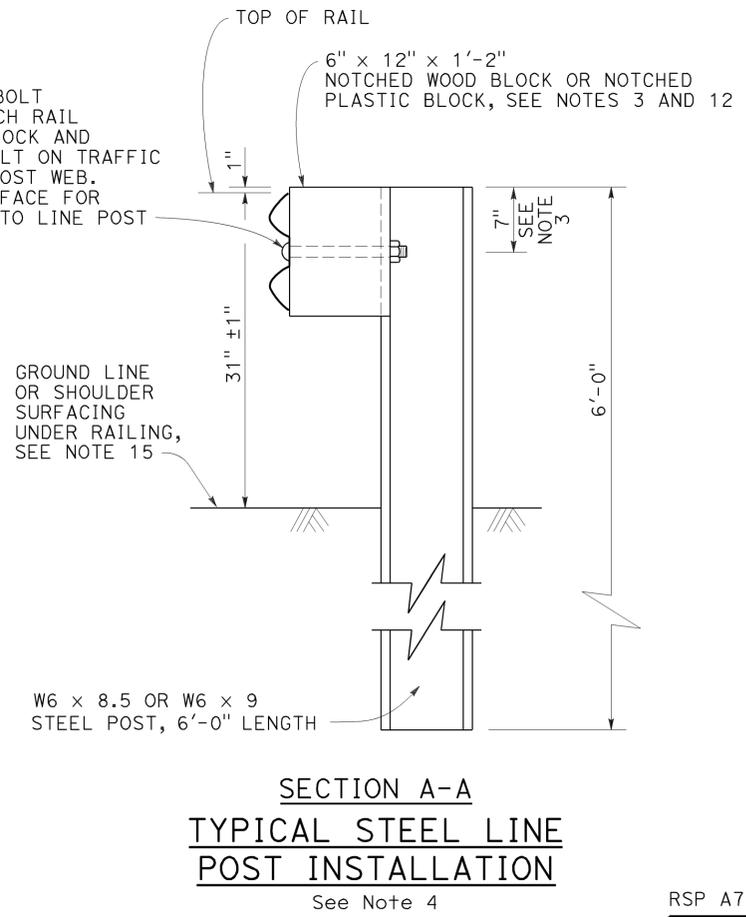
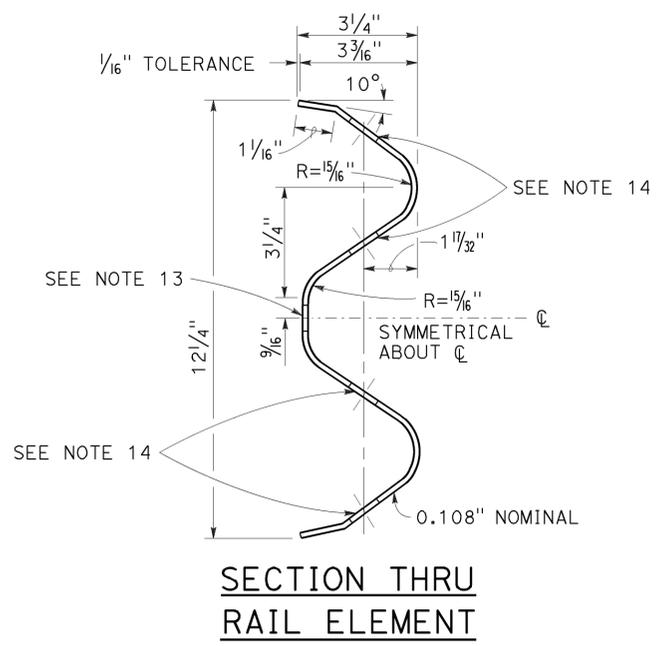
TO ACCOMPANY PLANS DATED 4-11-16



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



- Connect the over lapped end of the rail elements with 5/8" ø x 1 3/8" button head oval shoulder splice bolts inserted into the 2 3/32" x 1 1/8" slots and bolted together with 5/8" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



**NOTES:**

- For details of wood post installations, see Revised Standard Plan RSP A77L1.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
- Notched face of block faces steel post.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Install posts in soil.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

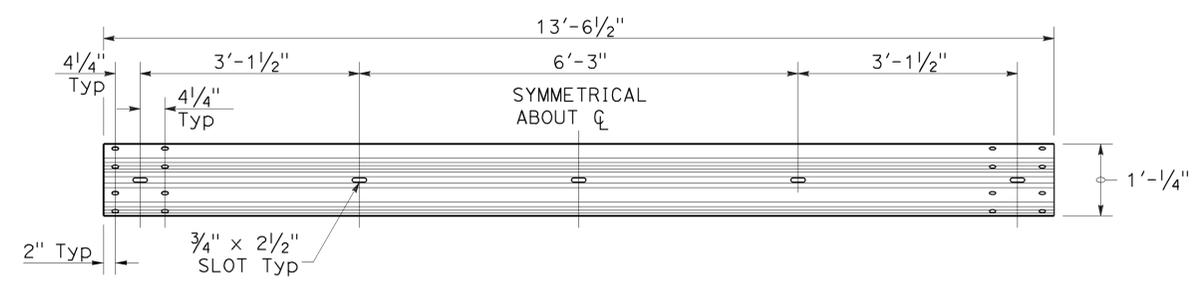
NO SCALE

RSP A77L2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77L2**

2010 REVISED STANDARD PLAN RSP A77L2

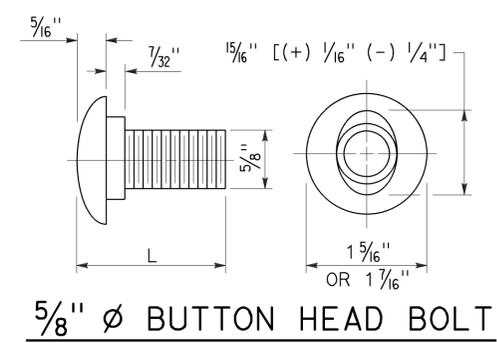
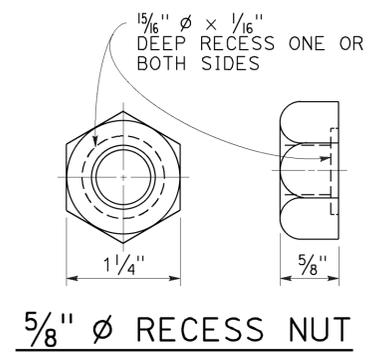
TO ACCOMPANY PLANS DATED 4-11-16



TYPICAL RAIL ELEMENT

NOTE:

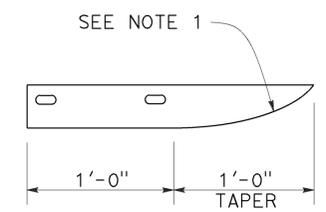
1. Slotted holes for splice bolts to overlap ends of rail element.



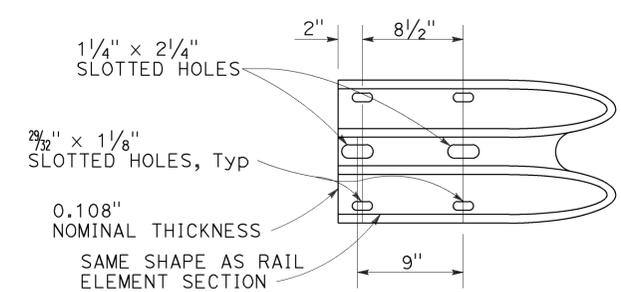
BUTTON HEAD BOLT

L	THREAD LENGTH
1 3/8"	FULL THREAD LENGTH
2"	FULL THREAD LENGTH
10"	4" Min THREAD LENGTH
18"	4" Min THREAD LENGTH
20"	4" Min THREAD LENGTH
22"	4" Min THREAD LENGTH
26"	4" Min THREAD LENGTH
36"	4" Min THREAD LENGTH
** 2 3/4"	2" Min THREAD LENGTH
** 19"	4" Min THREAD LENGTH

\*\* For nested rail applications.



PLAN



ELEVATION END CAP (TYPE A)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM  
STANDARD HARDWARE

NO SCALE

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

REVISED STANDARD PLAN RSP A77M1

2010 REVISED STANDARD PLAN RSP A77M1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	48	98

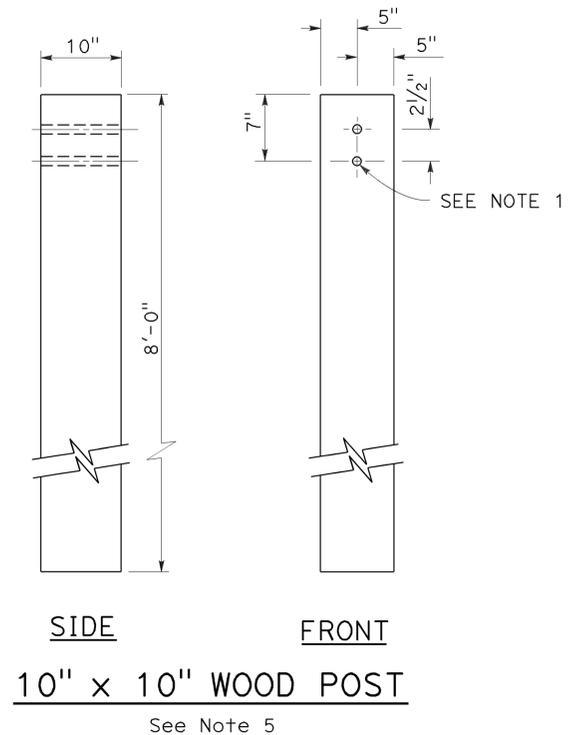
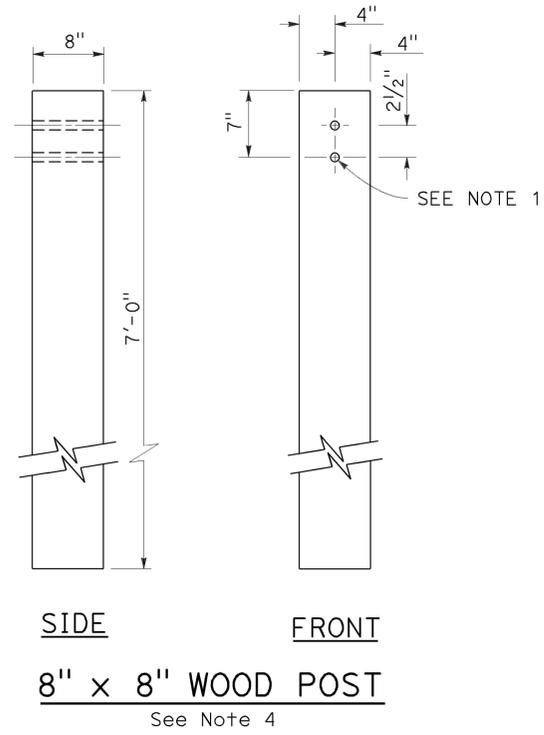
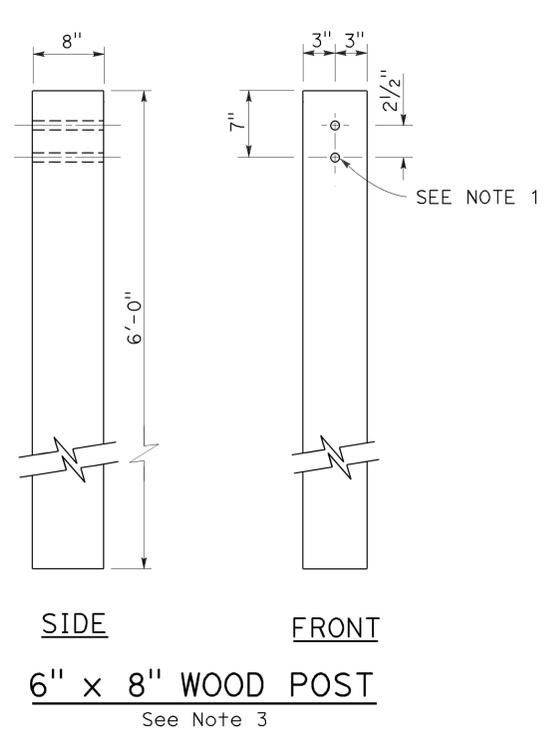
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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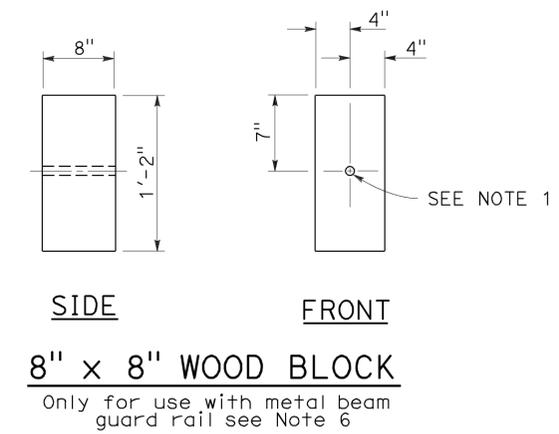
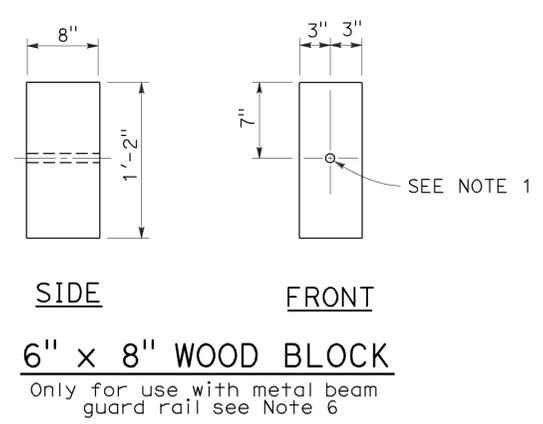
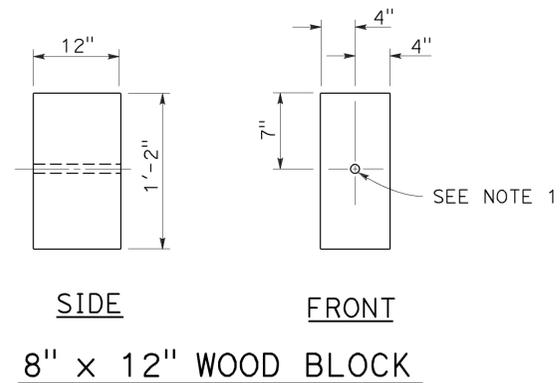
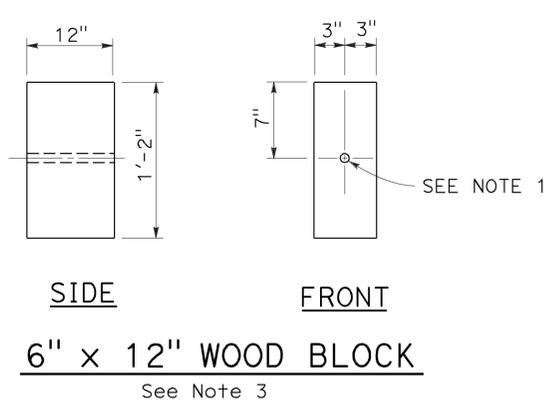
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 4-11-16



**NOTES:**

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



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP A77N1**

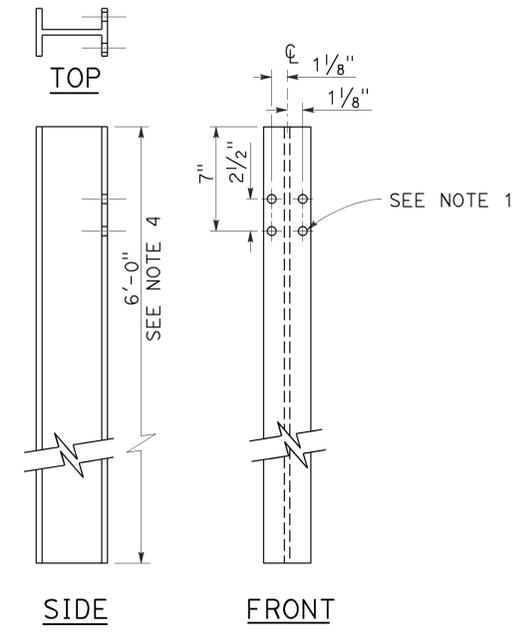
2010 REVISED STANDARD PLAN RSP A77N1

TO ACCOMPANY PLANS DATED 4-11-16

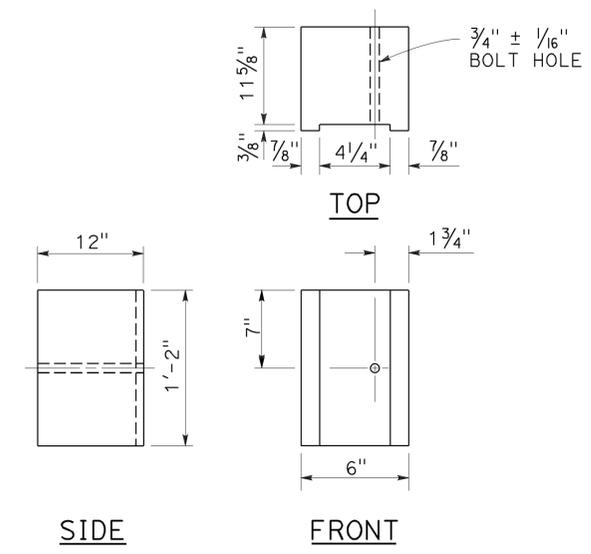
**NOTES:**

1. All holes in steel post shall be  $\frac{13}{16}$ " Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.

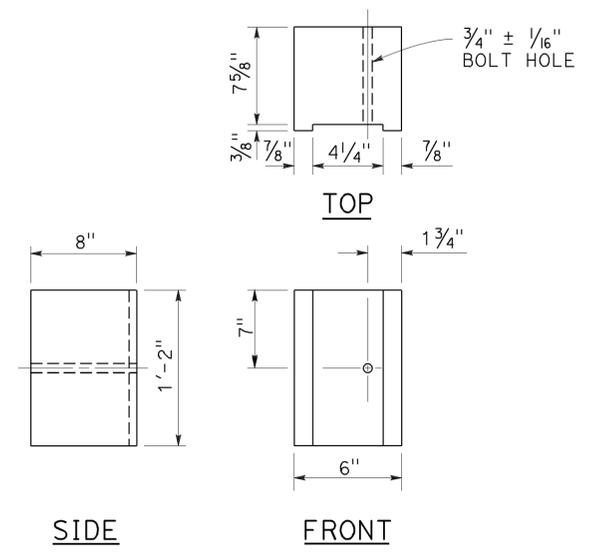
2010 REVISED STANDARD PLAN RSP A77N2



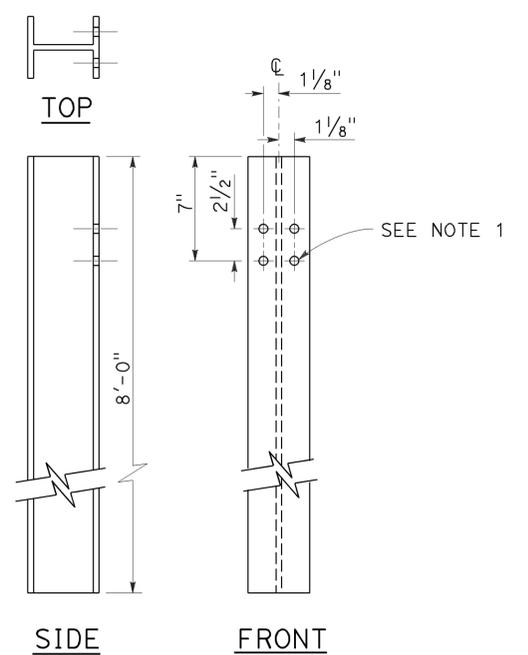
**W6 x 9 OR W6 x 8.5  
STEEL POST**  
See Note 4



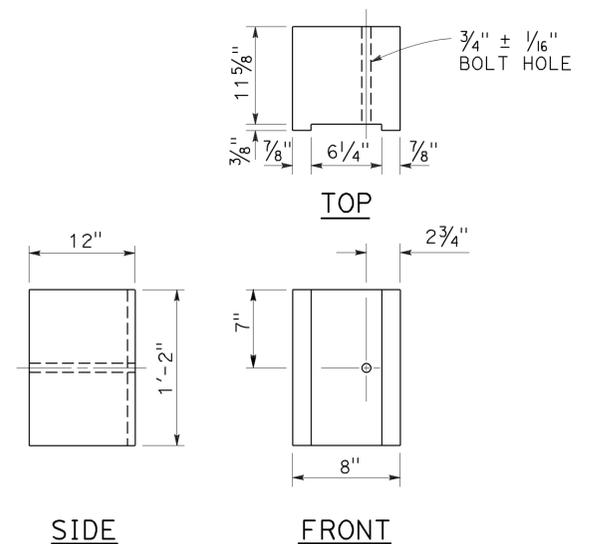
**6" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



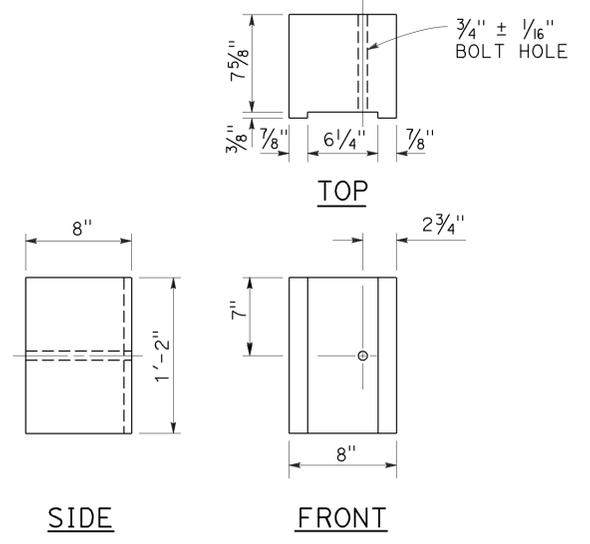
**6" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5



**W6 x 15  
STEEL POST**  
See Note 6



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



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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	50	98

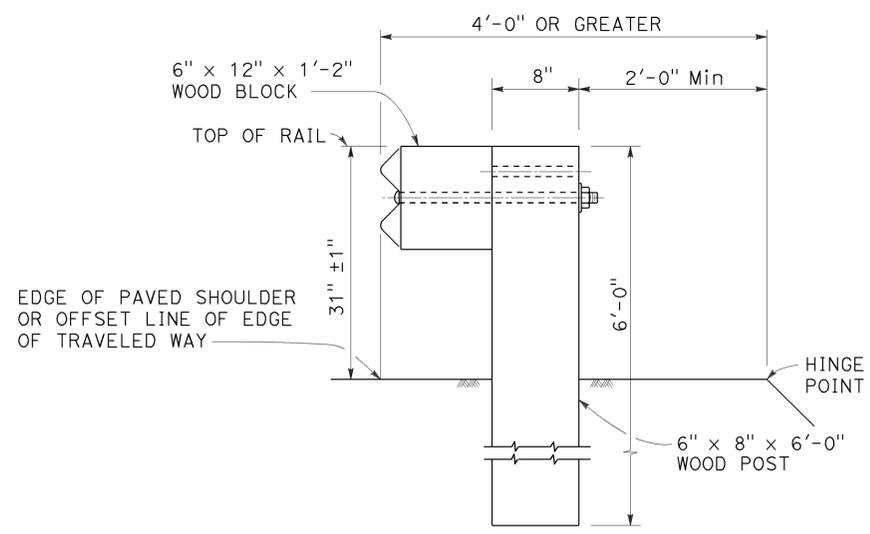
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

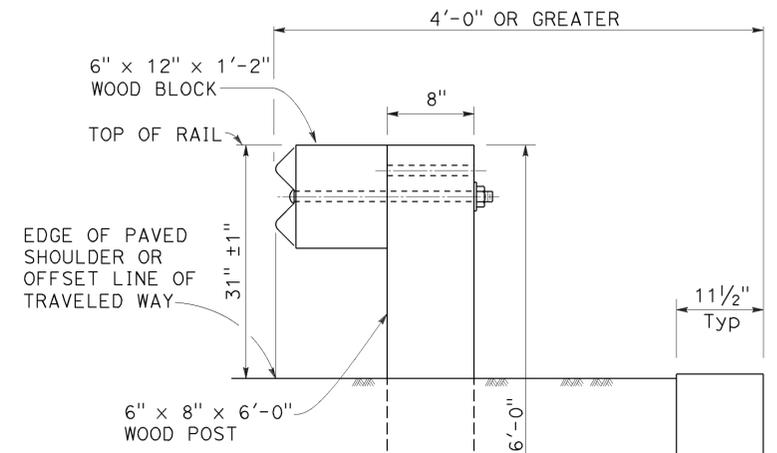
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REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

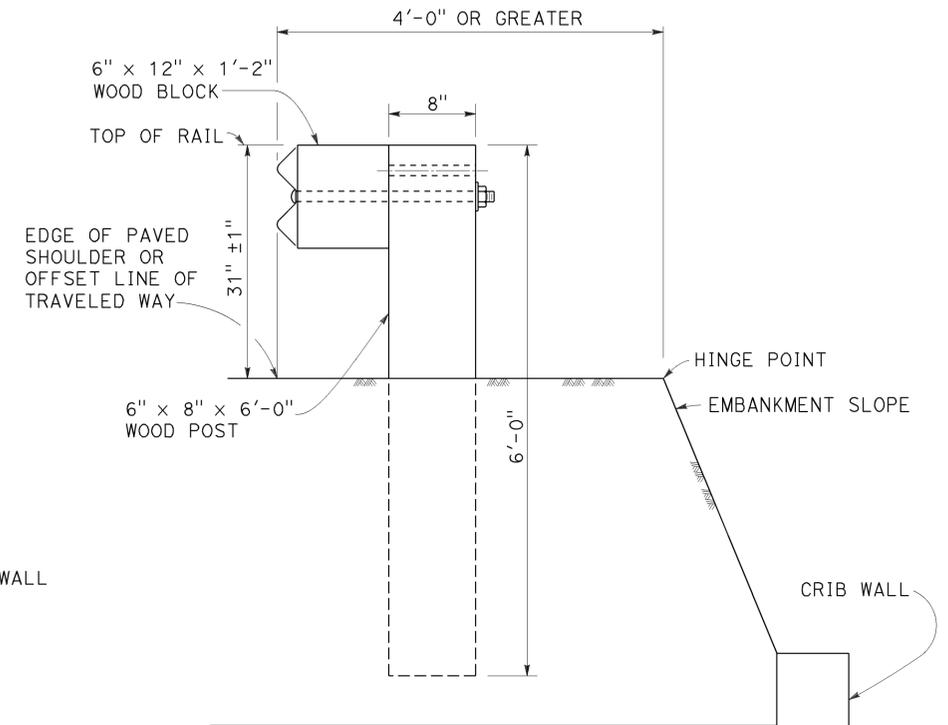
TO ACCOMPANY PLANS DATED 4-11-16



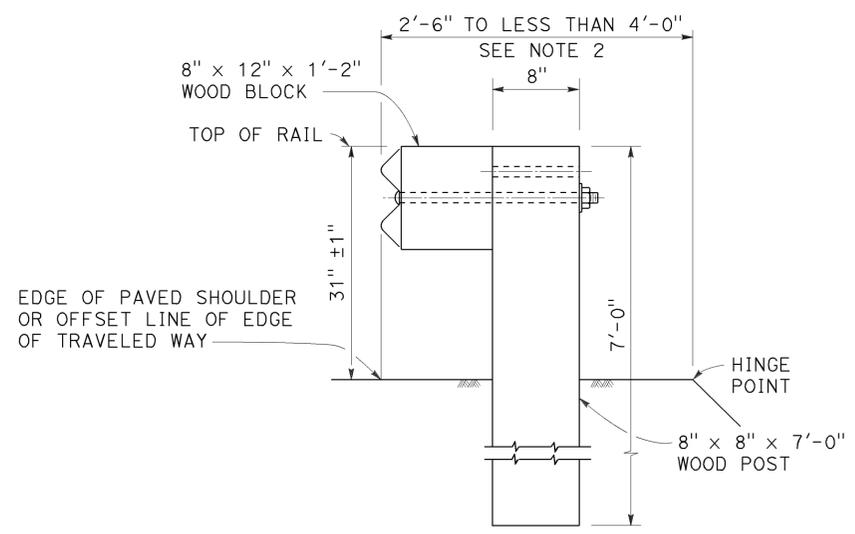
**DETAIL A**  
**TYPICAL ROADWAY**  
**INSTALLATION**  
See Note 1



**DETAIL C**  
**INSTALLATION AT EARTH RETAINING WALLS**



**DETAIL D**



**DETAIL B**  
**NARROW ROADWAY**  
**INSTALLATION**  
See Note 1

**POST EMBEDMENT**

**NOTES:**

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Revised Standard Plan RSP A77L1 and RSP A77L2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-6", see the Project Plans for special details.
3. For dike positioning with MGS installations, see Revised Standard Plan RSP A77N4.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM**  
**TYPICAL LINE POST**  
**EMBEDMENT AND**  
**HINGE POINT OFFSET DETAILS**

NO SCALE

RSP A77N3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N3  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N3**

2010 REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	51	98

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

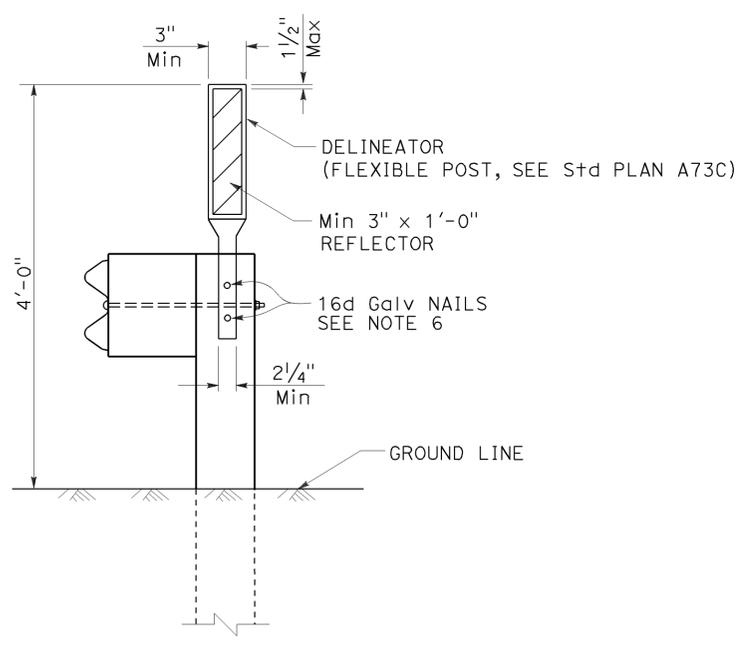
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REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

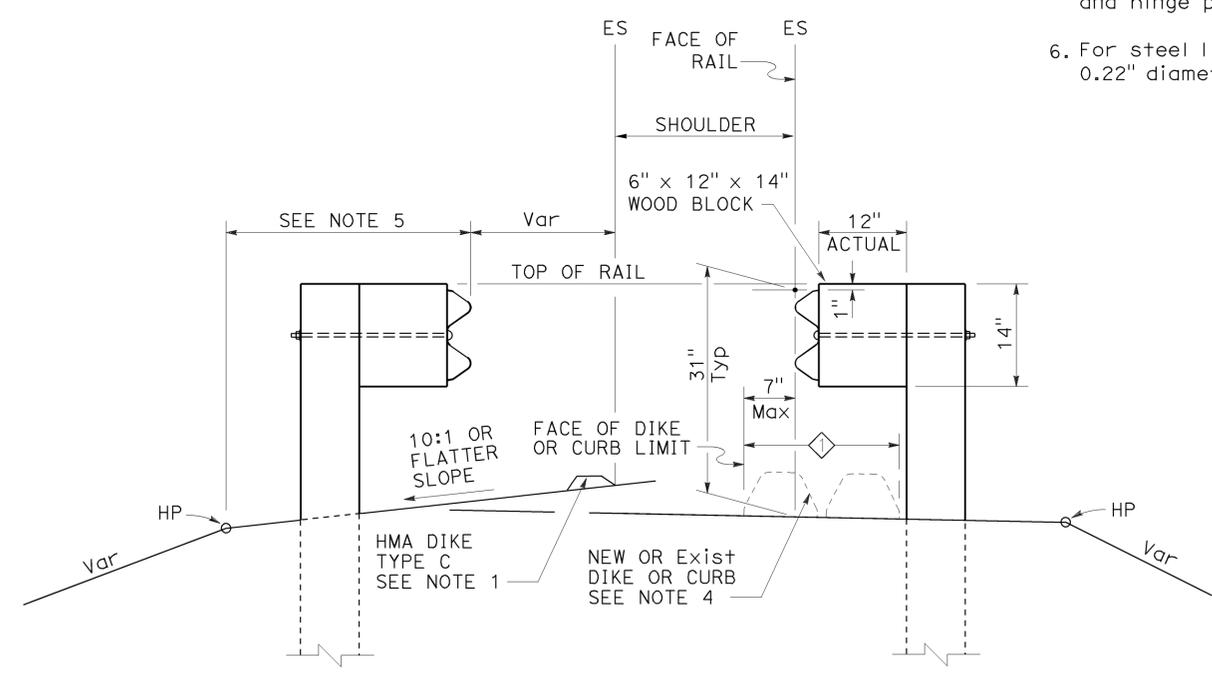
TO ACCOMPANY PLANS DATED 4-11-16

**NOTES:**

1. When necessary to place dike more than 7" in front of face of MGS, only Type C dike may be used. For dike details, see Revised Standard Plan RSP A87B.
2. For standard railing post embedment, see Revised Standard Plan RSP A77N3.
3. MGS delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under MGS, the maximum height of the dike or curb shall be 6". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and RSP A87B.
5. For details of typical distance between the face of rail and hinge point, see Revised Standard Plan RSP A77N3.
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.



**MGS DELINEATION**  
See Note 3



**DIKE POSITIONING**  
See Note 1

◇ PERMISSIBLE DIKE OR CURB  
PLACEMENT AREA

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL RAILING DELINEATION  
AND DIKE POSITIONING DETAILS**  
NO SCALE

RSP A77N4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77N4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	52	98

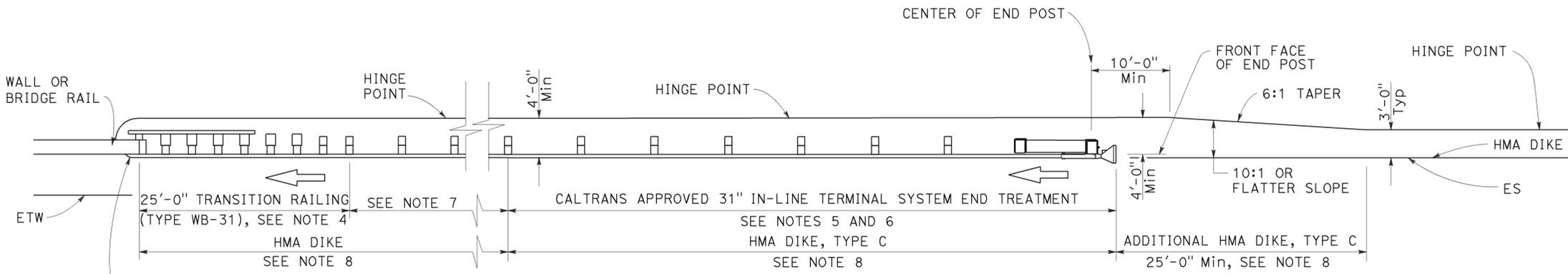
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

August 14, 2015  
PLANS APPROVAL DATE

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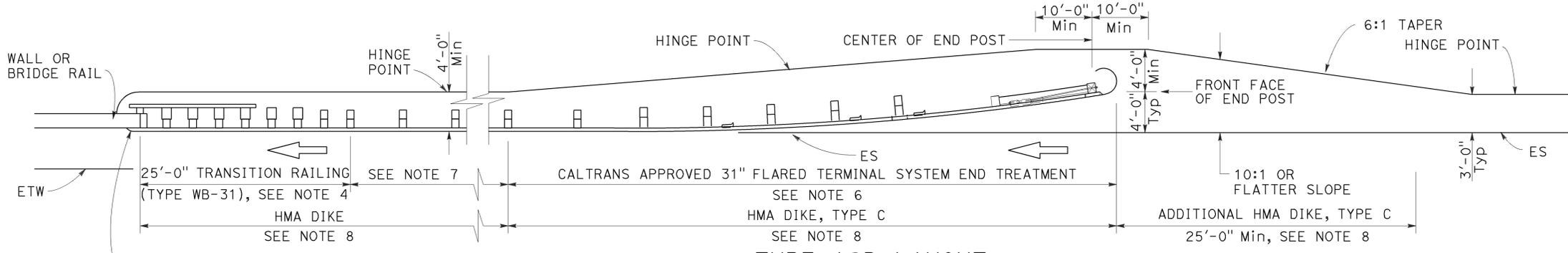


TO ACCOMPANY PLANS DATED 4-11-16



**TYPE 12A LAYOUT**

(MGS installation at structure approach with 31" in-line end treatment at traffic approach end of railing)  
See Note 9



**TYPE 12B LAYOUT**

(MGS installation at structure approach with 31" Flared end treatment at traffic approach end of railing)  
See Note 9

**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Types 12A and 12B Layouts, see Revised Standard Plan RSP A77U4.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system 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. A 12.5 degree angle of departure can be drawn on the Project Plans from the edge of traveled way through the outer most point of the fixed object to determine the additional length of railing needed.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77N4 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 A77Q3 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 A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
- For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
STRUCTURE APPROACH**

NO SCALE

RSP A77Q1 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77Q1**

2010 REVISED STANDARD PLAN RSP A77Q1

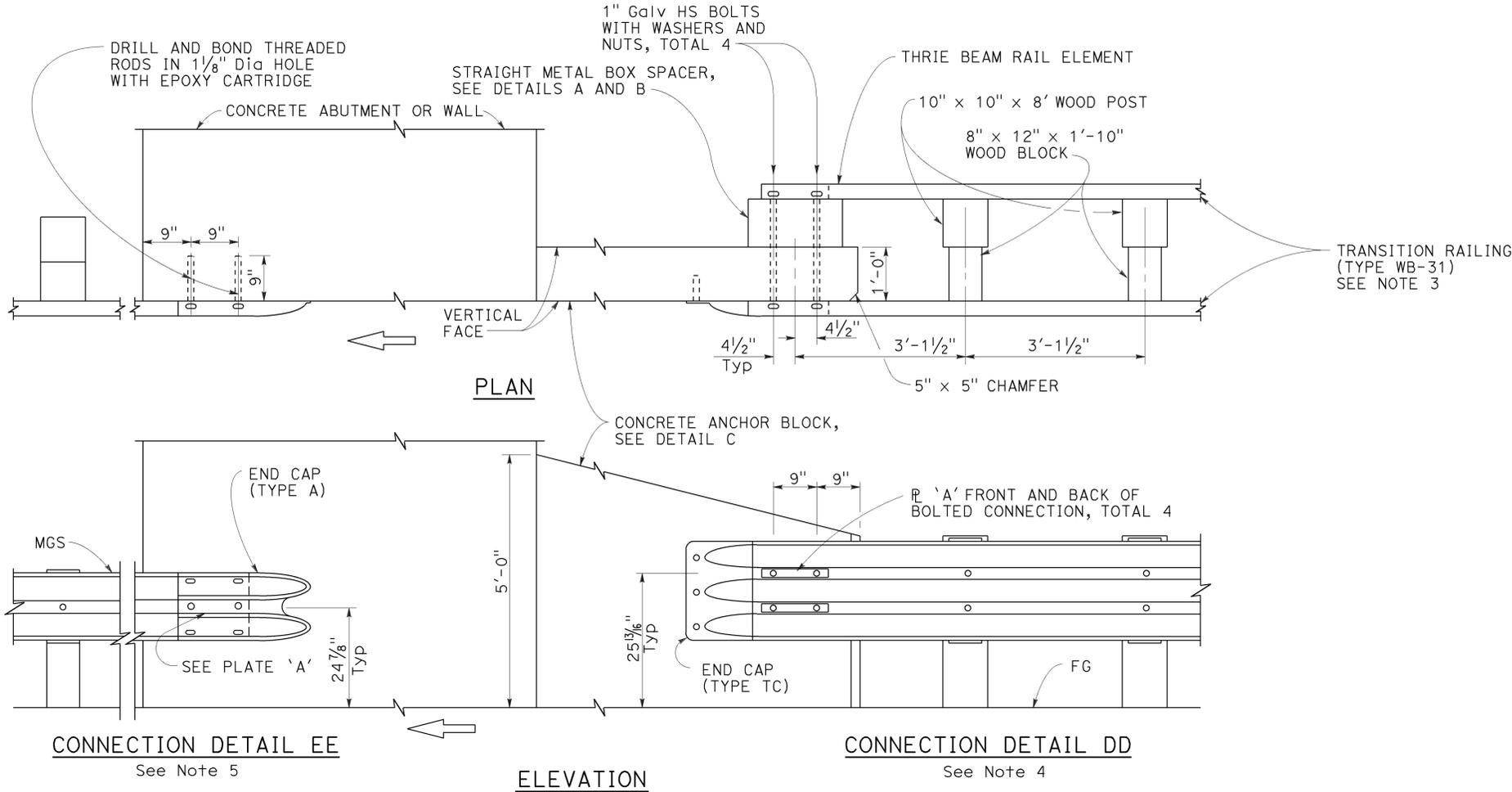
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	53	98

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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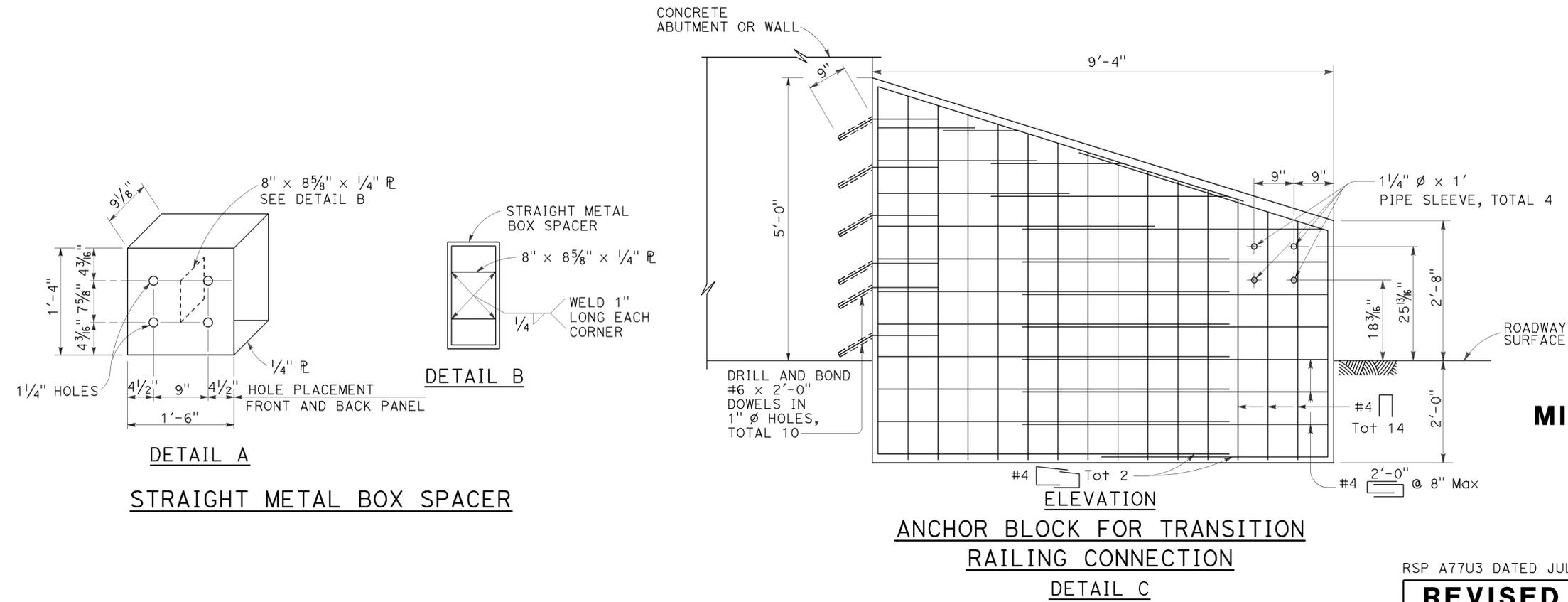
TO ACCOMPANY PLANS DATED 4-11-16



**NOTES:**

1. These connection details apply to abutments and walls.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete anchor block.
4. For typical use of Connection Details DD, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1 and Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2.
5. For typical use of Connection Detail EE, see Layout Type 12D on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.

**MIDWEST GUARDRAIL SYSTEM CONNECTION TO ABUTMENT OR WALL**



**MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO ABUTMENTS AND WALLS**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

RSP A77U3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U3**

2010 REVISED STANDARD PLAN RSP A77U3

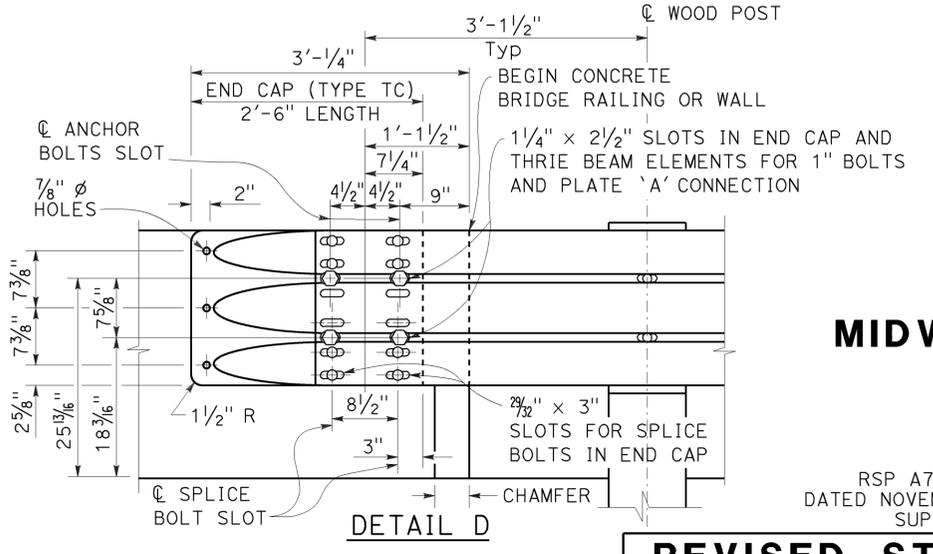
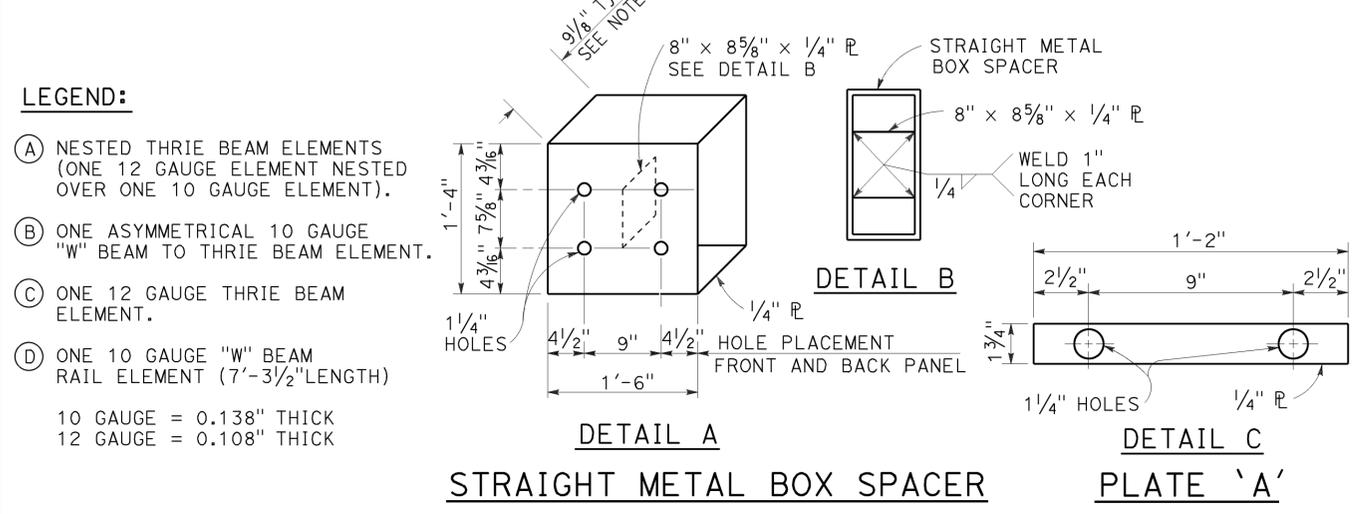
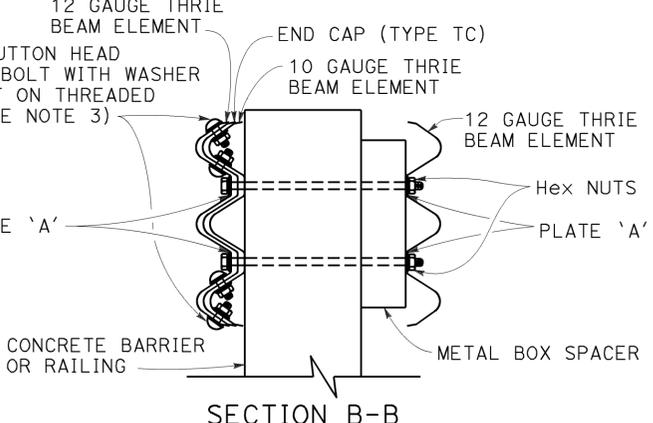
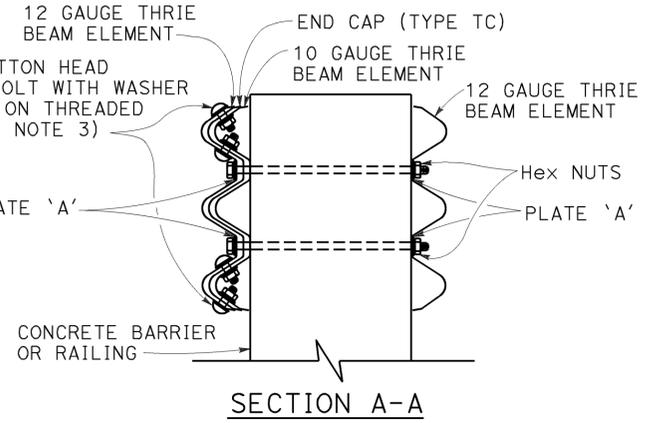
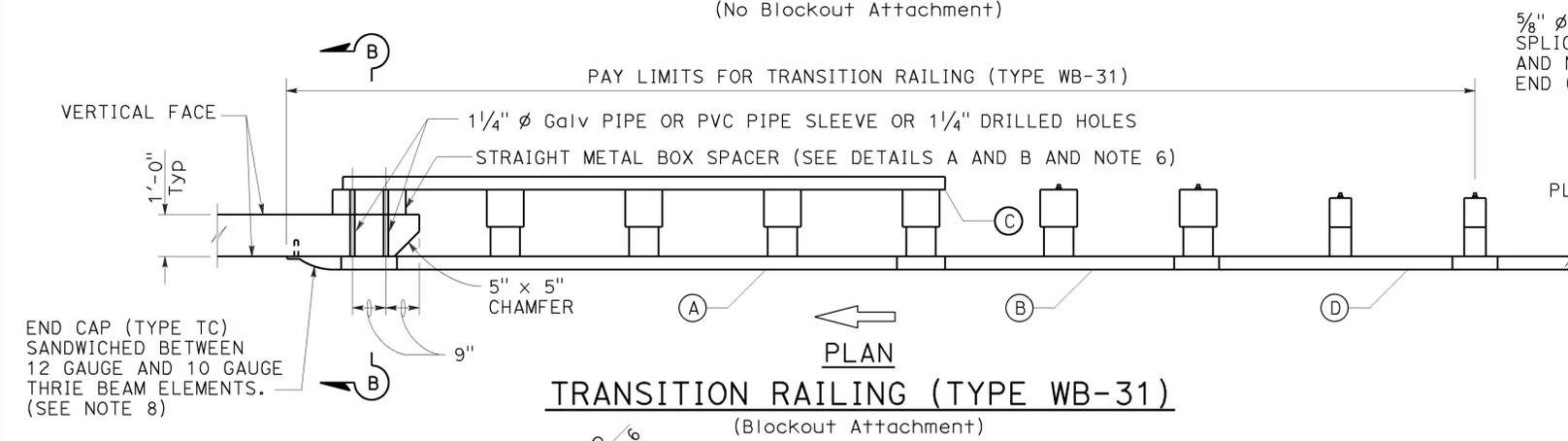
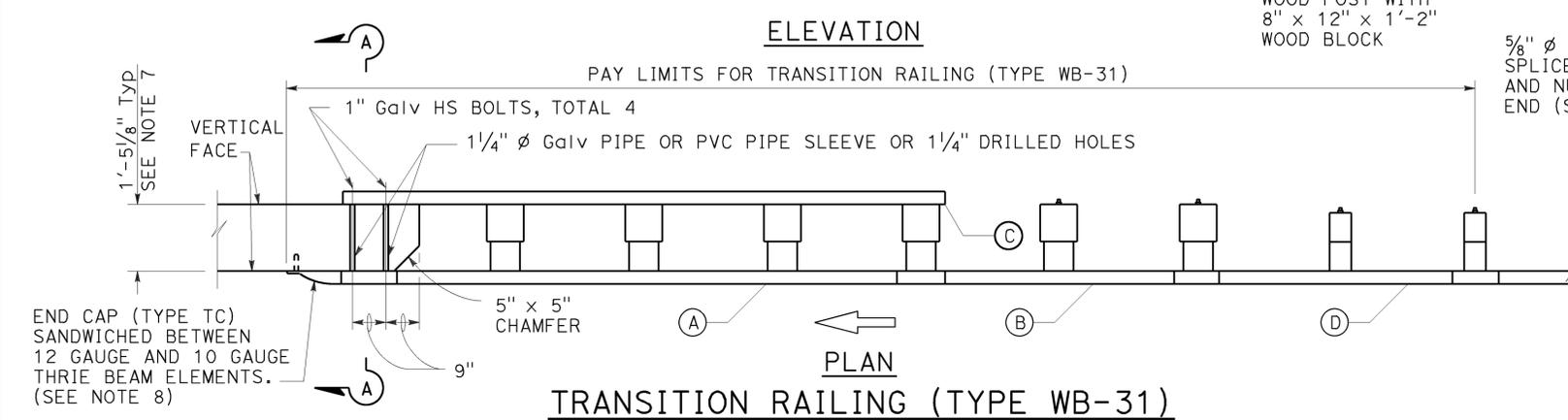
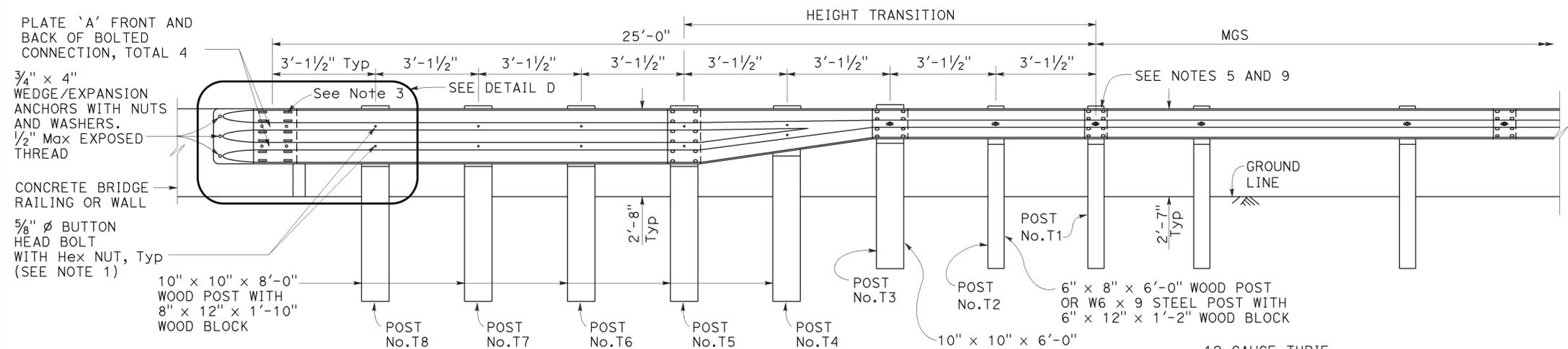
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	54	98

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

January 23, 2015  
PLANS APPROVAL DATE

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

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



**NOTES:** TO ACCOMPANY PLANS DATED 4-11-16

- Use 5/8" Ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
- The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
- Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" Ø. Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
- 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-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
- The depth of the metal box spacer varies from the 9/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
- Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 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 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
- Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

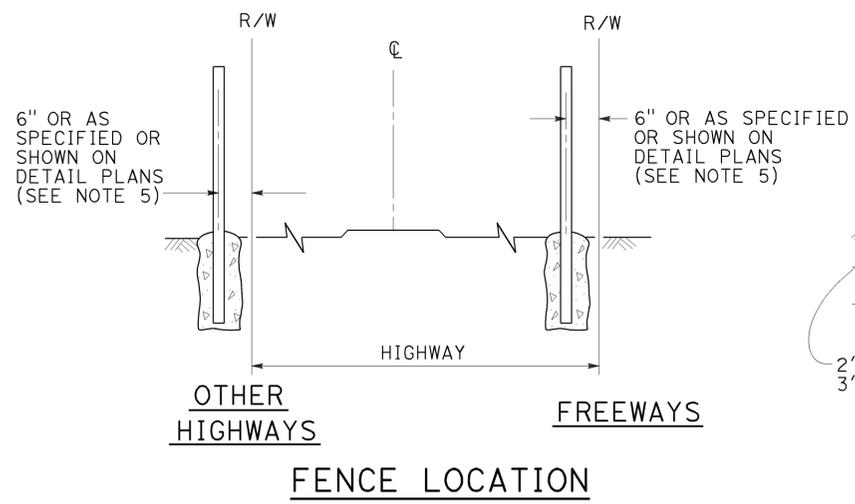
**MIDWEST GUARDRAIL SYSTEM  
TRANSITION RAILING  
(TYPE WB-31)**

NO SCALE

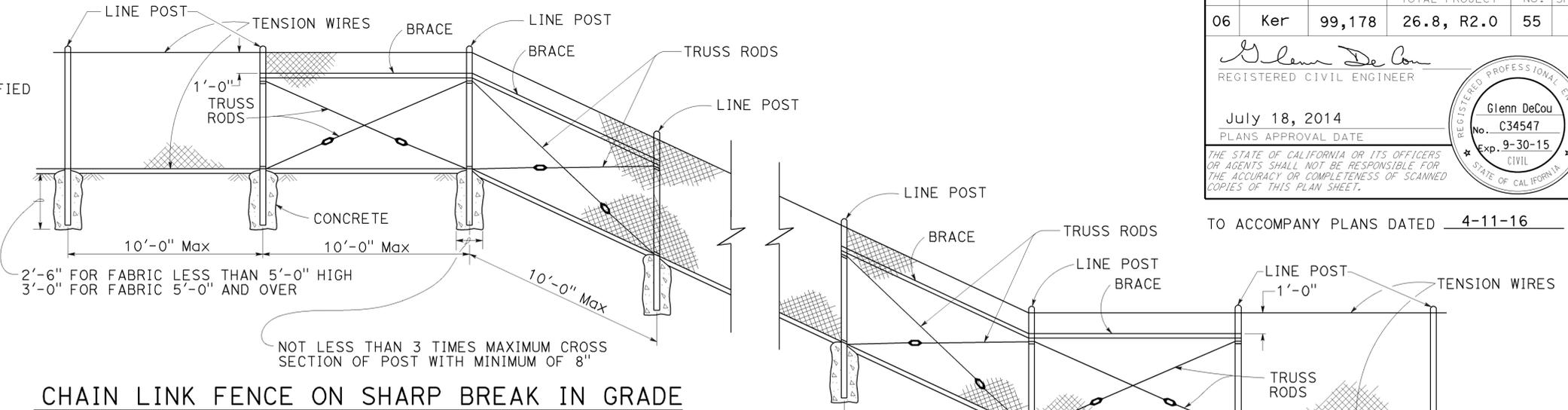
RSP A77U4 DATED JANUARY 23, 2015 SUPERSEDES RSP A77U4 DATED NOVEMBER 15, 2013 AND RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U4**

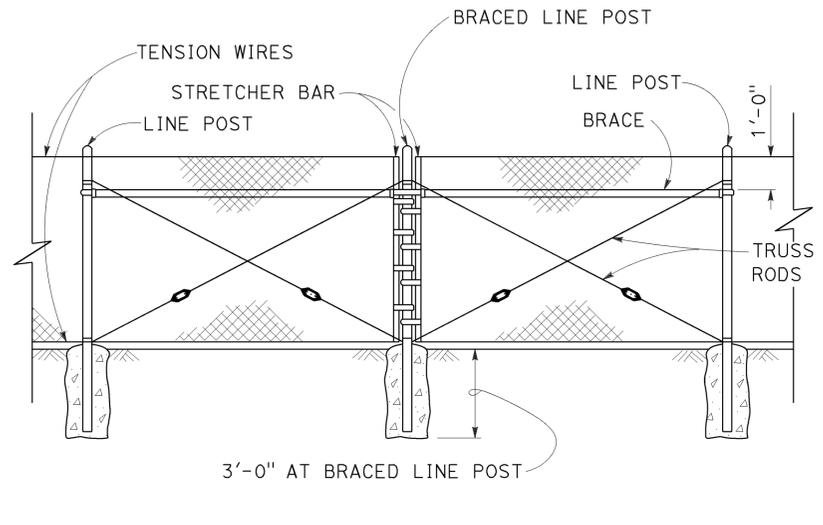
2010 REVISED STANDARD PLAN RSP A77U4



**FENCE LOCATION**

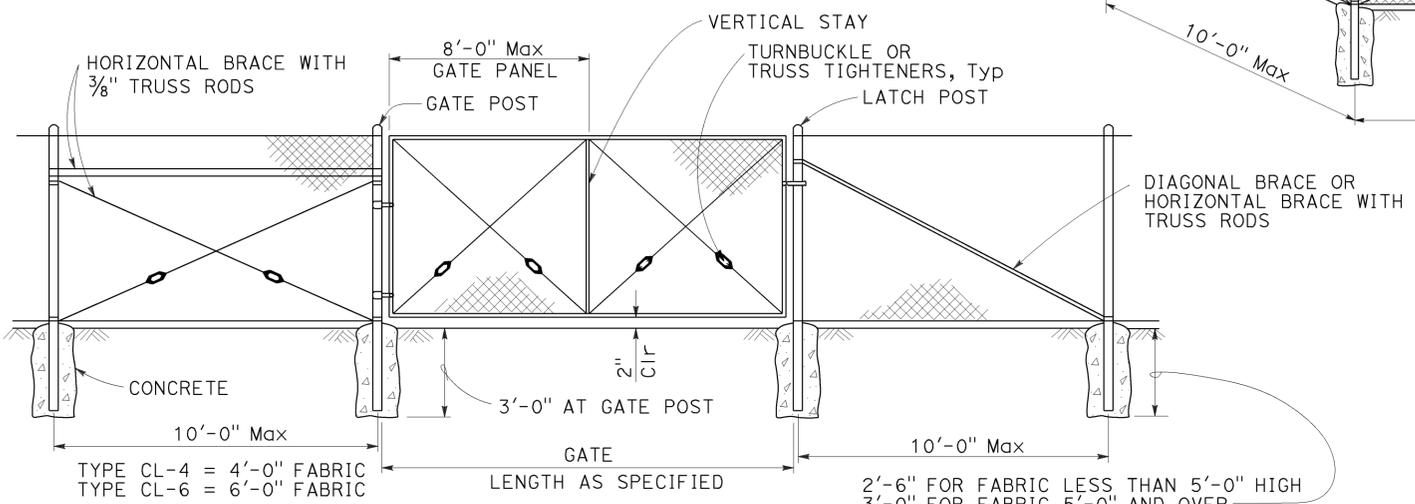


**CHAIN LINK FENCE ON SHARP BREAK IN GRADE**



**BRACED LINE POST INSTALLATION**

Braced line post at intervals not exceeding 1000'



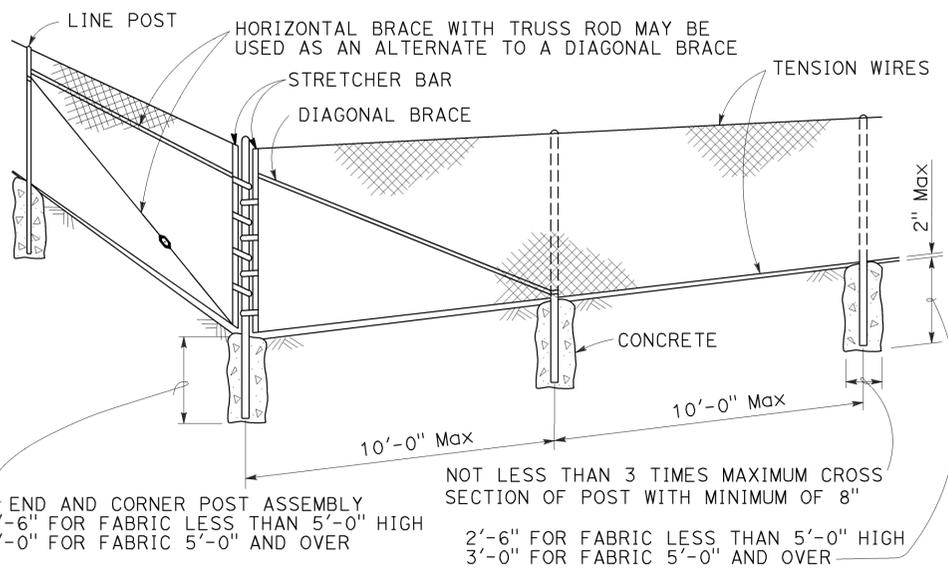
**CHAIN LINK GATE INSTALLATION**

GATE POST			
FENCE HEIGHT	GATE WIDTHS	ROUND OD PIPE	WEIGHT (lb/ft)
6'-0" AND LESS	UP THRU 6'-0"	2.875"	5.80
	OVER 6'-0" THRU 12'-0"	4.500"	10.80
	OVER 12'-0" THRU 18'-0"	5.563"	14.63
OVER 6'-0" TO 8'-0" Max	OVER 18'-0" TO 24'-0" Max	6.625"	18.99
	UP THRU 6'-0"	3.500"	7.58
	OVER 6'-0" THRU 12'-0"	5.563"	14.63
	OVER 12'-0" THRU 18'-0"	6.625"	18.99
	OVER 18'-0" TO 24'-0" Max	8.625"	28.58

Above post dimensions and weights are minimums. Larger sizes may be used upon approval.

**NOTES:**

- The table below shows minimum sized posts and braces complying with the specifications. Larger or heavier post and brace sizes may be used upon approval.
- 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 upon approval.
- Options exercised shall be uniform on any one project.
- 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.
- See Revised Standard Plan RSP A85B for Brace, Stretcher Bar, and Truss Tightener Details.



**CORNER POST**

FENCE HEIGHT	TYPICAL MEMBER DIMENSIONS (See Notes)									
	LINE POSTS				END, LATCH AND CORNER POSTS		BRACES			
	ROUND OD PIPE	WEIGHT (lb/ft)	ROLL FORMED		ROUND OD PIPE	WEIGHT (lb/ft)	ROUND OD PIPE	WEIGHT (lb/ft)	ROLL FORMED	
			SECTION	WEIGHT (lb/ft)					SECTION	WEIGHT (lb/ft)
6'-0" AND LESS	1.900"	2.72	1.875" x 1.625"	1.85	2.375"	3.65	1.66"	2.27	1.625" x 1.25"	1.35
OVER 6'-0" TO 8'-0" Max	2.375"	3.65	2.25" x 1.70"	2.78	2.875"	5.80	1.66"	2.27	1.625" x 1.25"	1.35

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CHAIN LINK FENCE**  
NO SCALE

RSP A85 DATED JULY 18, 2014 SUPERSEDES STANDARD PLAN A85  
DATED MAY 20, 2011 - PAGE 112 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A85**

2010 REVISED STANDARD PLAN RSP A85

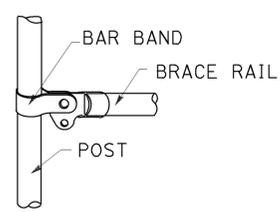
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	56	98

Glenn DeCou  
REGISTERED CIVIL ENGINEER

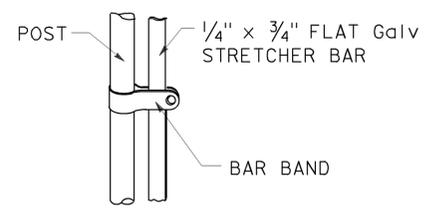
October 19, 2012  
PLANS APPROVAL DATE

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

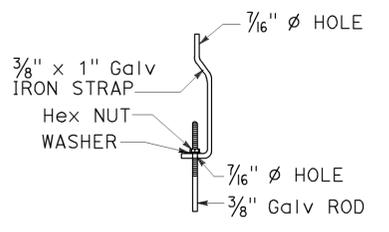
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**BRACE RAIL**



**STRETCHER BAR**

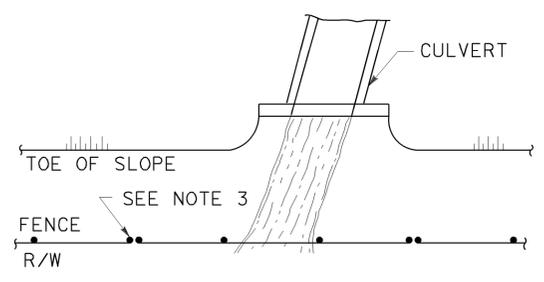


**TRUSS TIGHTENER**

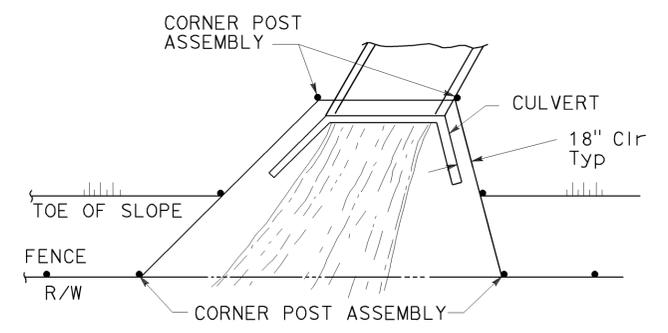
**NOTES:**

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

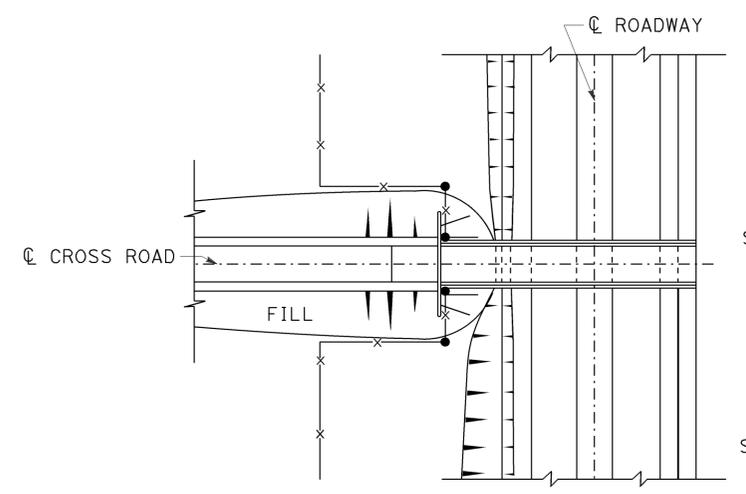
TO ACCOMPANY PLANS DATED 4-11-16



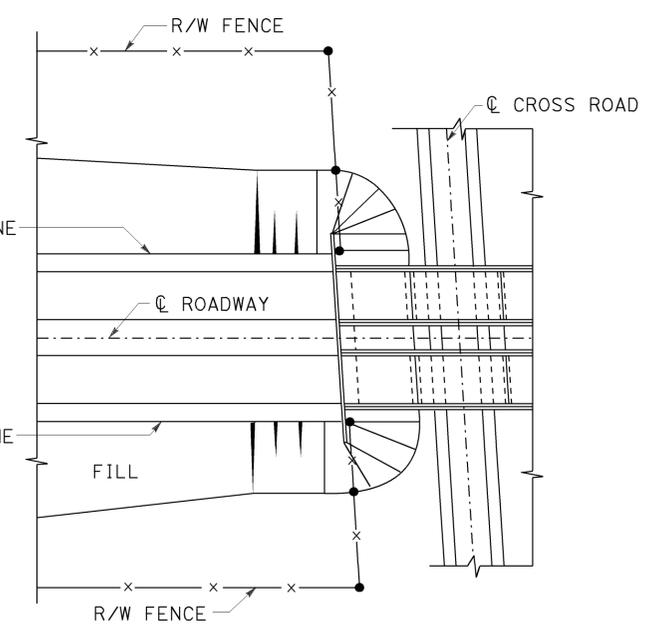
**PLAN**



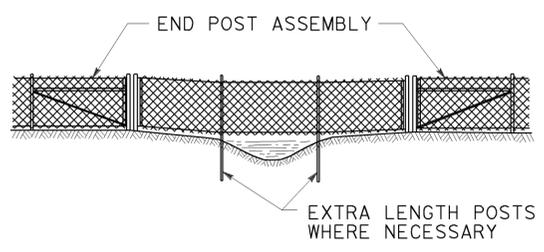
**PLAN**



**PLAN OF ROADWAY - OVERCROSSING**

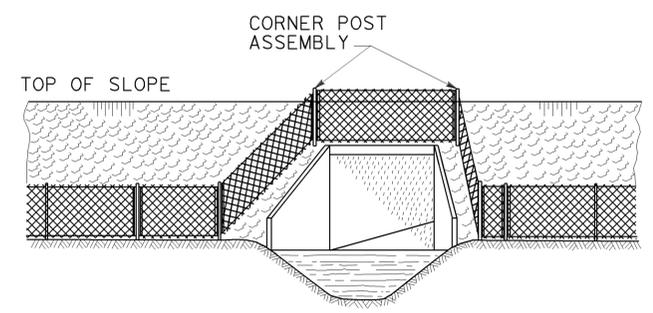


**PLAN OF ROADWAY - UNDERCROSSING**



**ELEVATION**

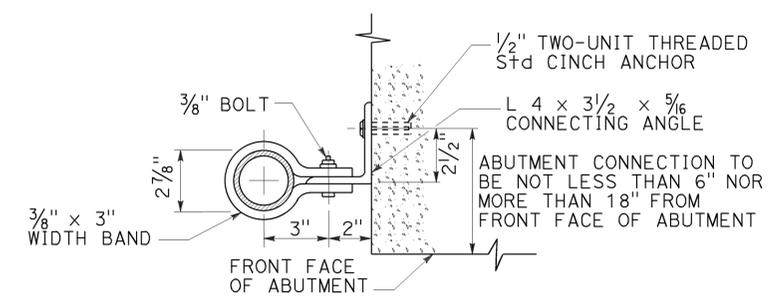
**INSTALLATION OVER STREAM**



**ELEVATION**

**INSTALLATION AROUND HEADWALL**

See Note 4



**ABUTMENT CONNECTION**

**TYPICAL INSTALLATION AT BRIDGES**

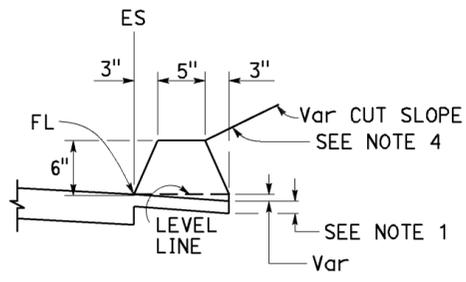
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CHAIN LINK FENCE DETAILS**  
NO SCALE

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

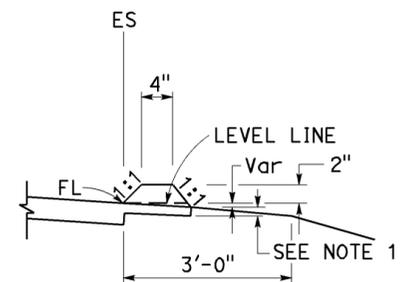
**REVISED STANDARD PLAN RSP A85B**

2010 REVISED STANDARD PLAN RSP A85B

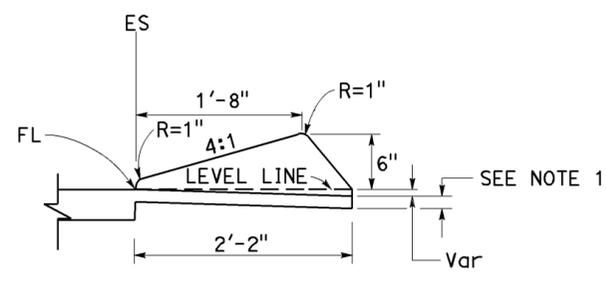
TO ACCOMPANY PLANS DATED 4-11-16



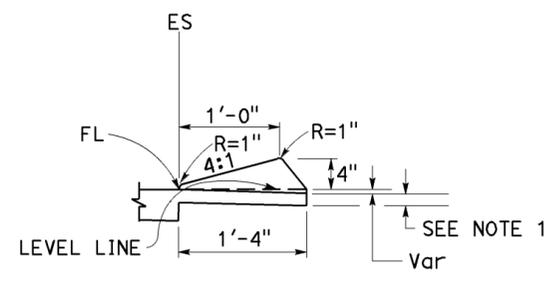
**TYPE A**  
See Notes 3 and 5



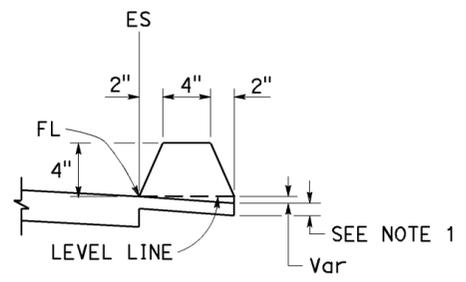
**TYPE C**



**TYPE D**

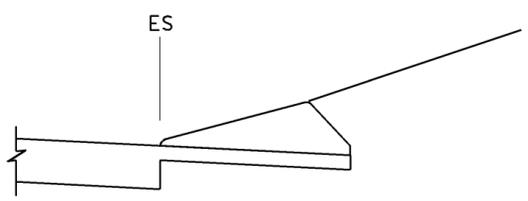


**TYPE E**

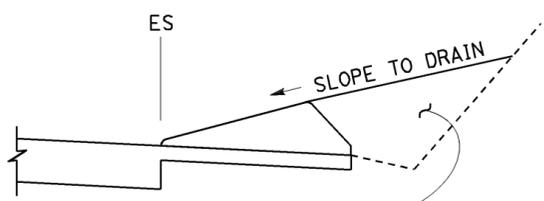


**TYPE F**  
See Note 5

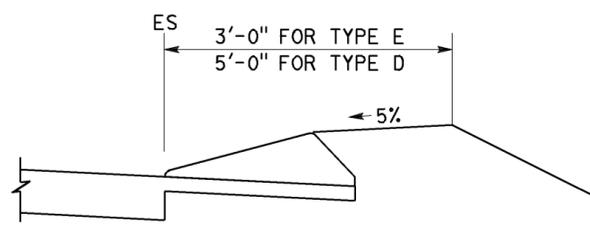
**DIKES**



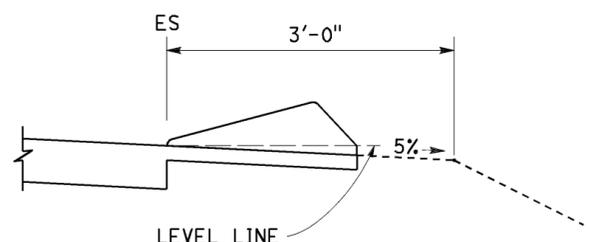
**CASE C-1**  
Cut Slope



**CASE C-2**  
Cut Slope



**CASE F**



**CASE R**  
See Note 2

**TYPE D AND E BACKFILL DETAILS**

**NOTES:**

- For HMA shoulders only, extend top layer of HMA placed on the shoulder under dike with no joint at the ES. For projects with OGFC shoulders, do not extend OGFC under dike. See project plans for modified dike detail.
- Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
- Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
- Fill and compact with excavated material to top of dike.
- Use Type A or F dike, where dike is required with guardrail installations. See Revised Standard Plan RSP A77N4 for dike positioning details. See Revised Standard Plan RSP A77N3 for hinge point offsets with guardrail.

**DIKE QUANTITIES**

TYPE	CUBIC YARDS PER LINEAR FOOT
A	0.0135
C	0.0038
D	0.0293
E	0.0130
F	0.0066

Quantities based on 5% cross slope.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**HOT MIX ASPHALT DIKES**

NO SCALE

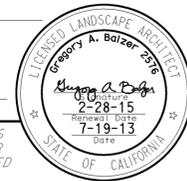
RSP A87B DATED JANUARY 15, 2016 SUPERSEDES RSP A87B DATED JULY 19, 2013 AND STANDARD PLAN A87B DATED MAY 20, 2011 - PAGE 120 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A87B**

2010 REVISED STANDARD PLAN RSP A87B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	58	98

*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 July 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



TO ACCOMPANY PLANS DATED 4-11-16

**A**

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

**B**

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

**C**

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

**D**

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

**E**

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

**F**

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

**G**

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

**H**

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

**I**

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

**L**

L LENGTH

**M**

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

**N**

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

**O**

O/C ON CENTER  
 OD OUTSIDE DIAMETER  
 OL OVERLAP

**P**

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

**Q**

Q QUARTER CIRCLE  
 QCV QUICK COUPLING VALVE

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

**R**

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

**S**

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

**T**

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

**U**

UG UNDERGROUND

**W**

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

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

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

**REVISED STANDARD PLAN RSP H1**

2010 REVISED STANDARD PLAN RSP H1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	59	98

*Gregory A. Balzer*  
LICENSED LANDSCAPE ARCHITECT

November 15, 2013  
PLANS APPROVAL DATE

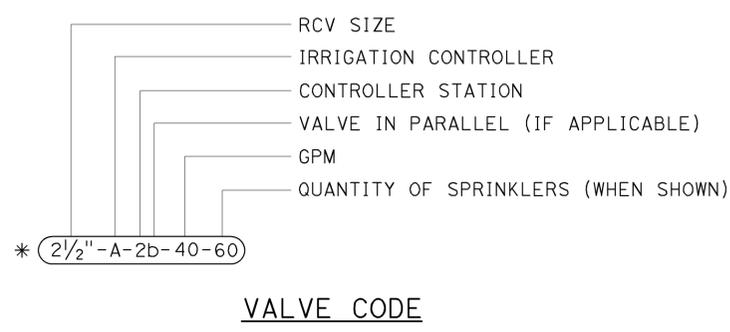
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TO ACCOMPANY PLANS DATED 4-11-16

2010 REVISED STANDARD PLAN RSP H2

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

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



VALVE CODE

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

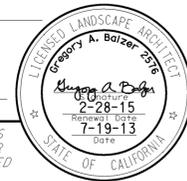
RSP H2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP H2 DATED JULY 19, 2013 AND STANDARD PLAN H2 DATED MAY 20, 2011 - PAGE 219 OF THE STANDARD PLANS BOOK DATED 2010.

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

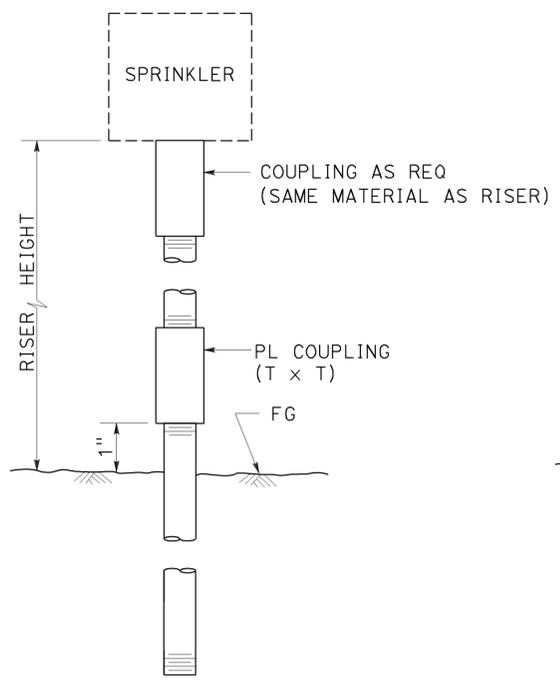
**REVISED STANDARD PLAN RSP H2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	60	98

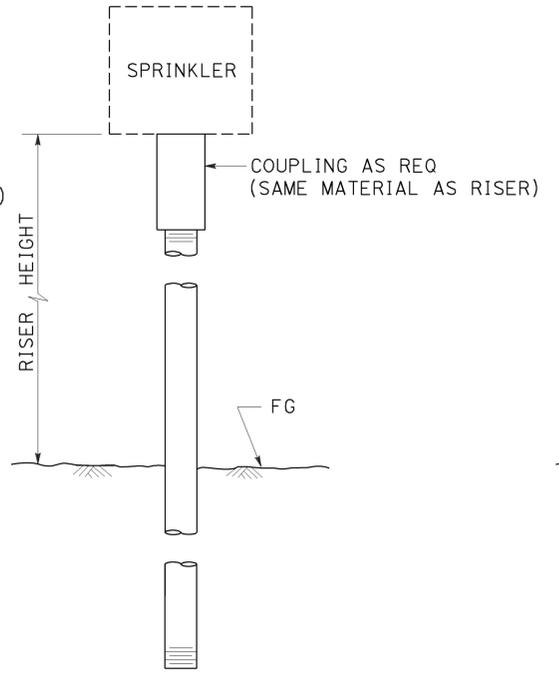
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 July 19, 2013  
 PLANS APPROVAL DATE  
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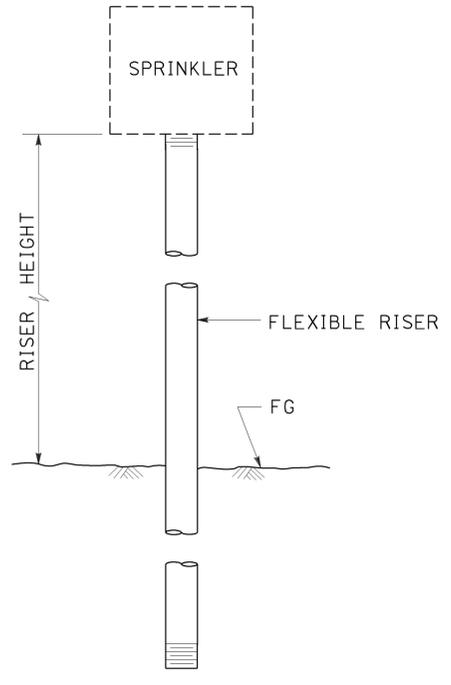
TO ACCOMPANY PLANS DATED 4-11-16



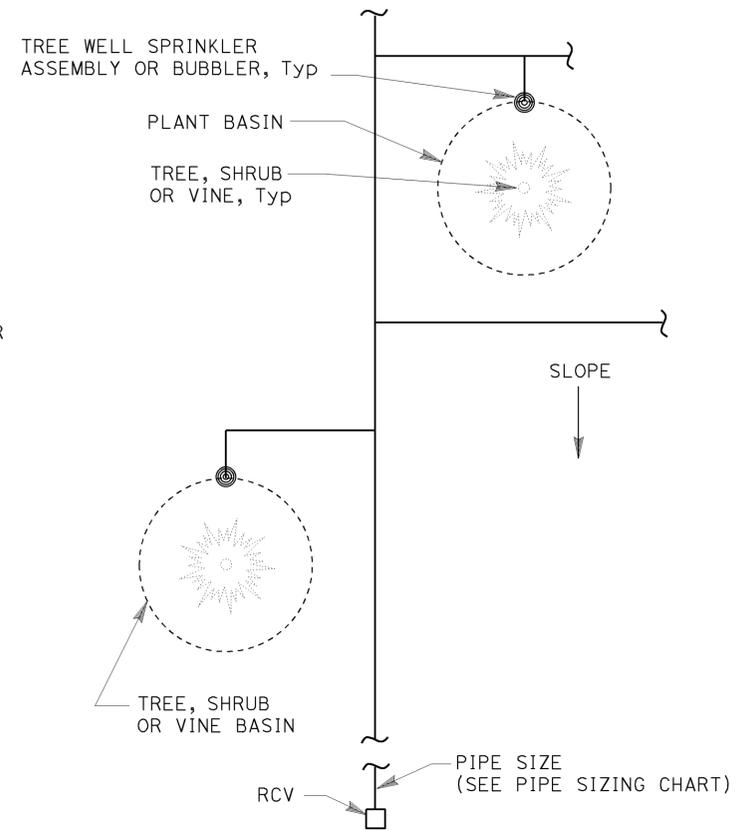
**ELEVATION**  
**RISER SPRINKLER ASSEMBLY TYPE I**



**ELEVATION**  
**RISER SPRINKLER ASSEMBLY TYPE II**



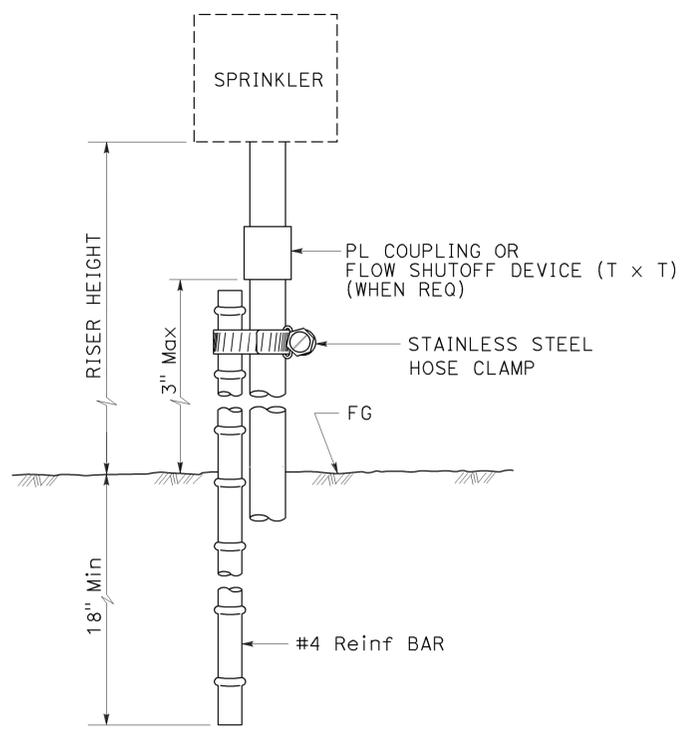
**ELEVATION**  
**RISER SPRINKLER ASSEMBLY TYPE III**



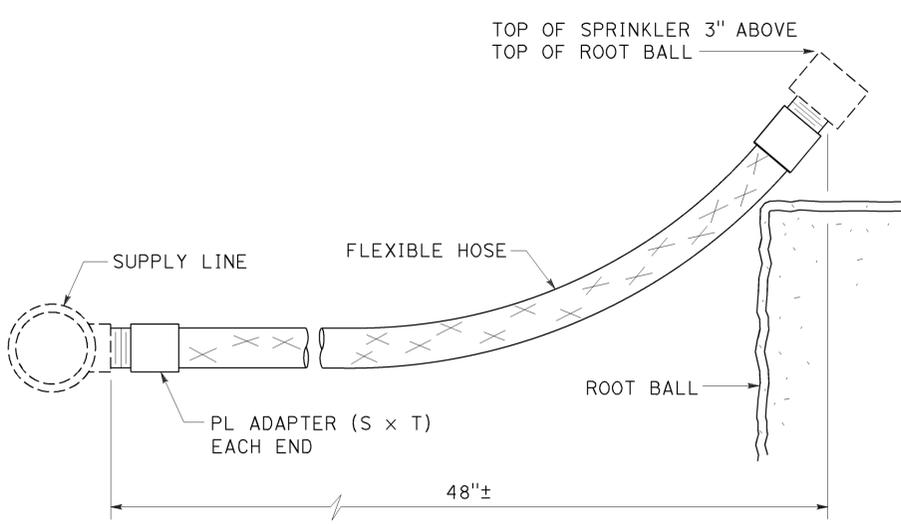
**PLAN**

**NOTES:**

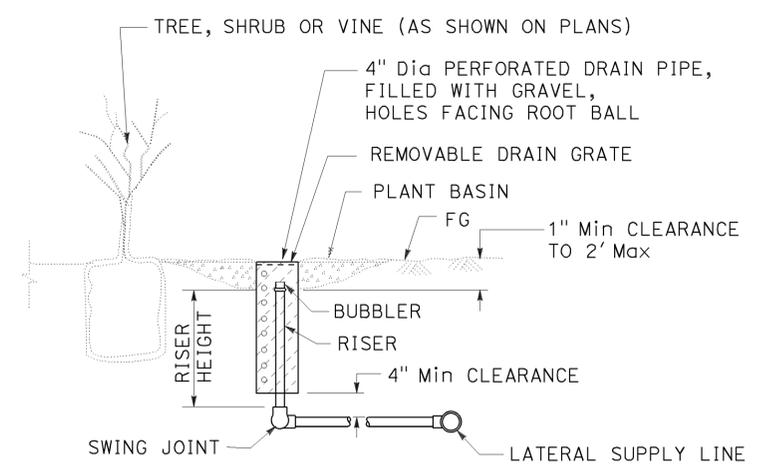
1. Install tree well sprinkler assembly on up-hill side of plant when on slope.
2. Install bubbler within basin.



**ELEVATION**  
**RISER SPRINKLER ASSEMBLY TYPE IV**



**ELEVATION**  
**RISER SPRINKLER ASSEMBLY TYPE V**



**SECTION**  
**TREE WELL SPRINKLER ASSEMBLY**

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

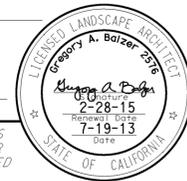
RSP H5 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H5 DATED MAY 20, 2011 - PAGE 222 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H5**

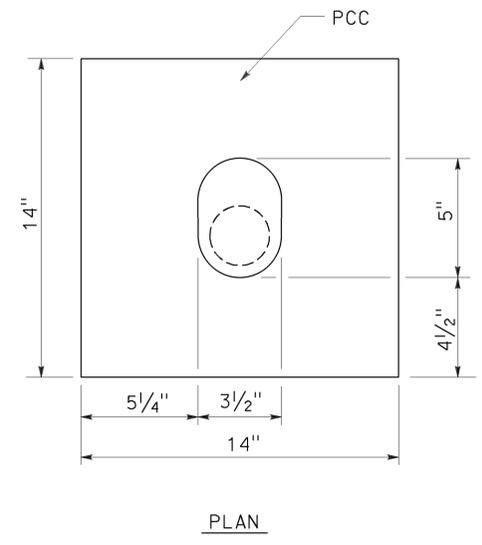
**2010 REVISED STANDARD PLAN RSP H5**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	61	98

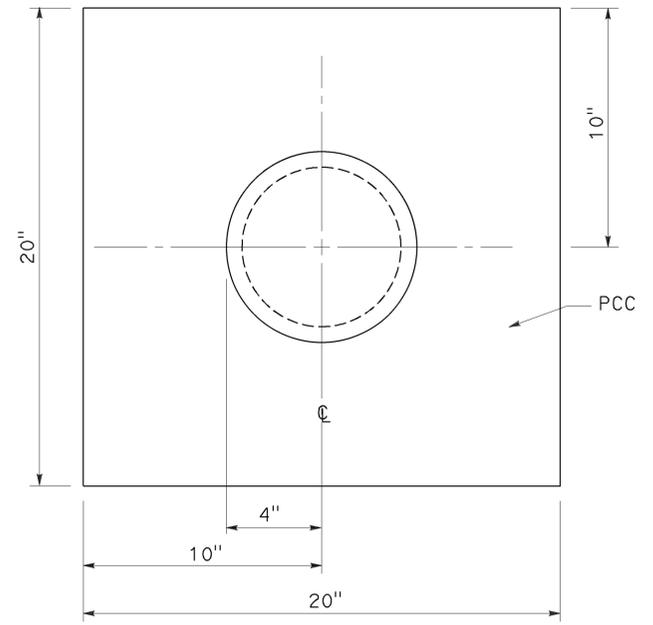
*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 July 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



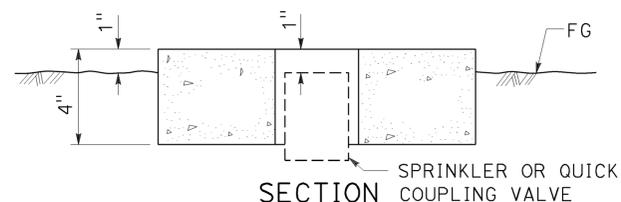
TO ACCOMPANY PLANS DATED 4-11-16



PLAN

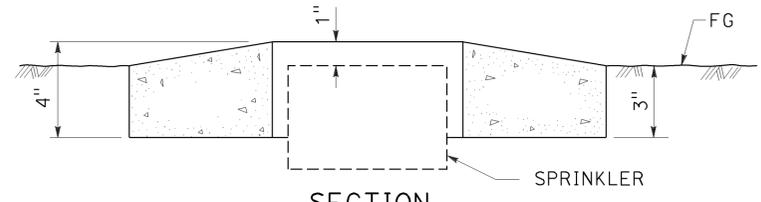


PLAN



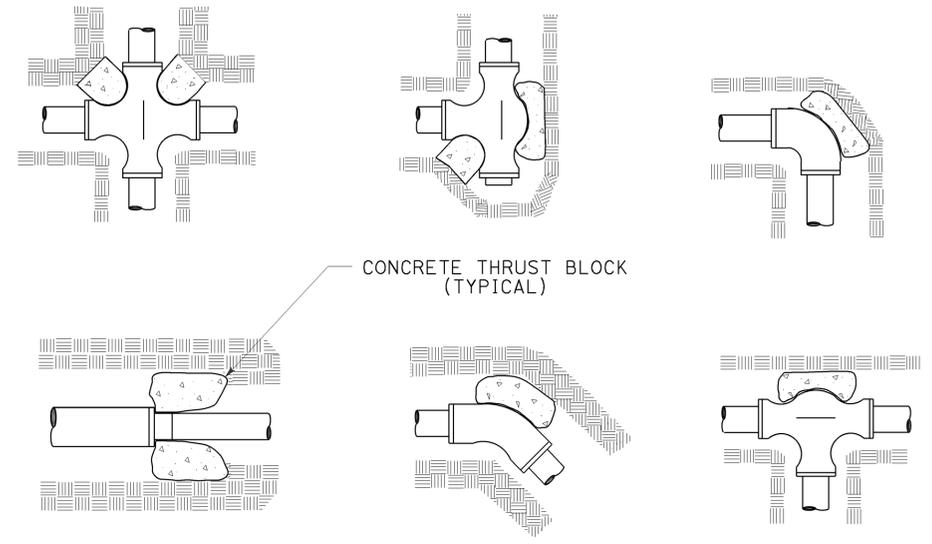
SECTION SPRINKLER OR QUICK COUPLING VALVE

SPRINKLER PROTECTOR TYPE I

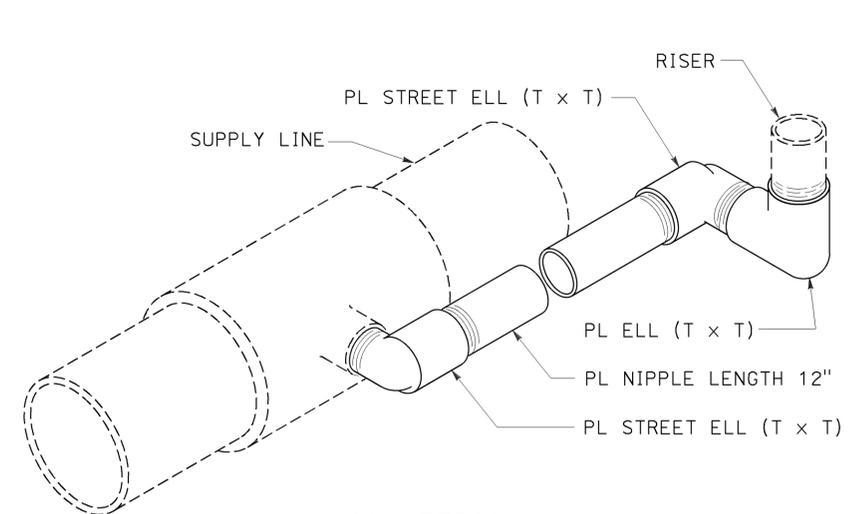


SECTION SPRINKLER

SPRINKLER PROTECTOR TYPE II

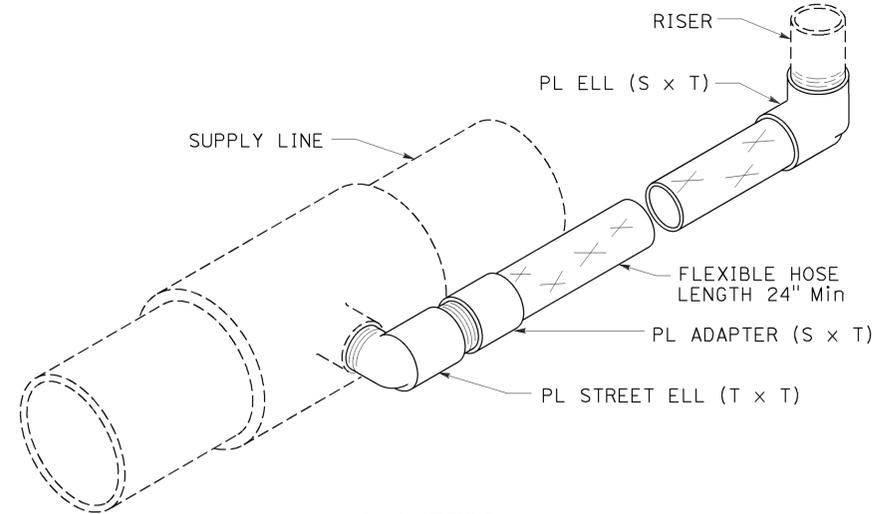


TYPICAL THRUST BLOCKS



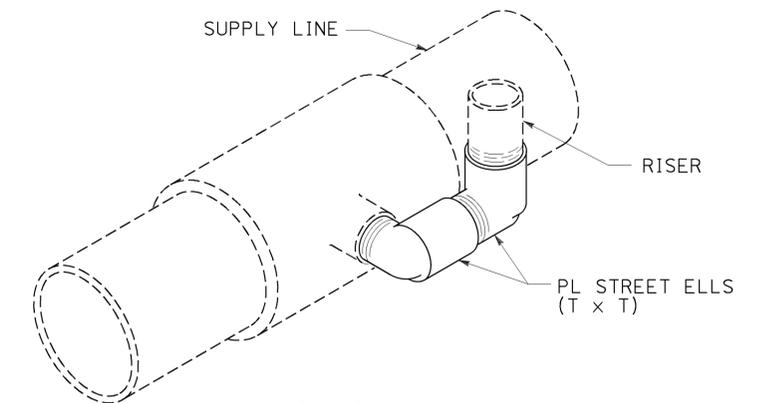
ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE I



ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE II



ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE III

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**LANDSCAPE DETAILS**

NO SCALE

RSP H6 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H6 DATED MAY 20, 2011 - PAGE 223 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H6**

2010 REVISED STANDARD PLAN RSP H6

TO ACCOMPANY PLANS DATED 4-11-16

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING							
SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

\* - For other offsets, use the following merging taper length formula for L:  
 For speed of 40 mph or less,  $L = WS^2/60$   
 For speed of 45 mph or more,  $L = WS$

Where: L = Taper length in feet  
 W = Width of offset in feet  
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

\*\* - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING				
SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
		ft	ft	ft
mph	ft	ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

\* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph  
 \*\* - Longitudinal buffer space or flagger station spacing  
 \*\*\* - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

\* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM TABLES  
 FOR LANE AND RAMP CLOSURES**

NO SCALE

RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013  
 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

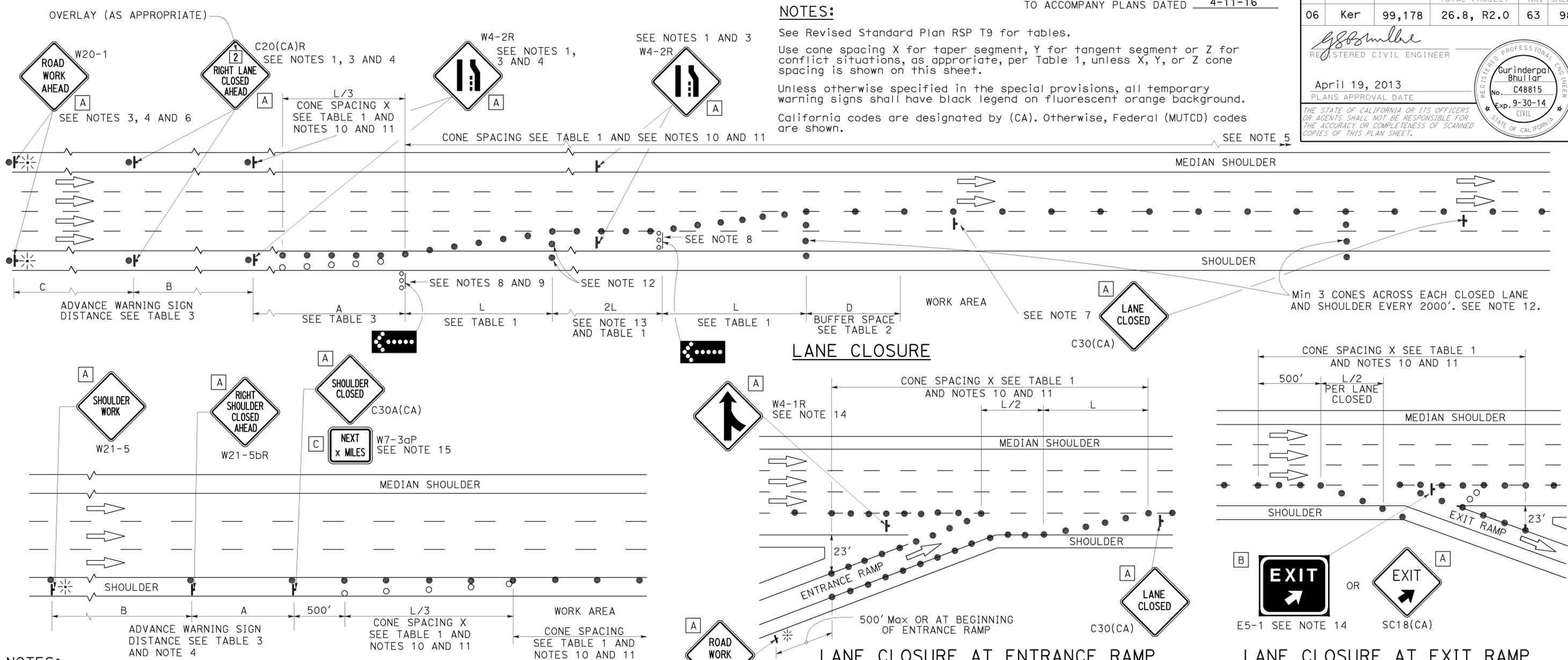
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	63	98

REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE  
 Gurinderpal Bhullar  
 No. C48815  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 4-11-16

**NOTES:**

See Revised Standard Plan RSP T9 for tables.  
 Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.  
 Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.  
 California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.



**NOTES:**

- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
- Duplicate sign installations are not required:
  - On opposite shoulder if at least one-half of the available lanes remain open to traffic.
  - In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
- Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

**SHOULDER CLOSURE**

- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a C20(CA) and W4-2L signs shall be used.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

**LANE CLOSURE AT ENTRANCE RAMP**

- Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
- A W7-3aP "NEXT \_\_\_\_\_ MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.

**LEGEND**

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

**SIGN PANEL SIZE (Min)**

- A 48" x 48"
- B 72" x 60"
- C 36" x 30"

**TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS**

NO SCALE  
 RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T10**

2010 REVISED STANDARD PLAN RSP T10

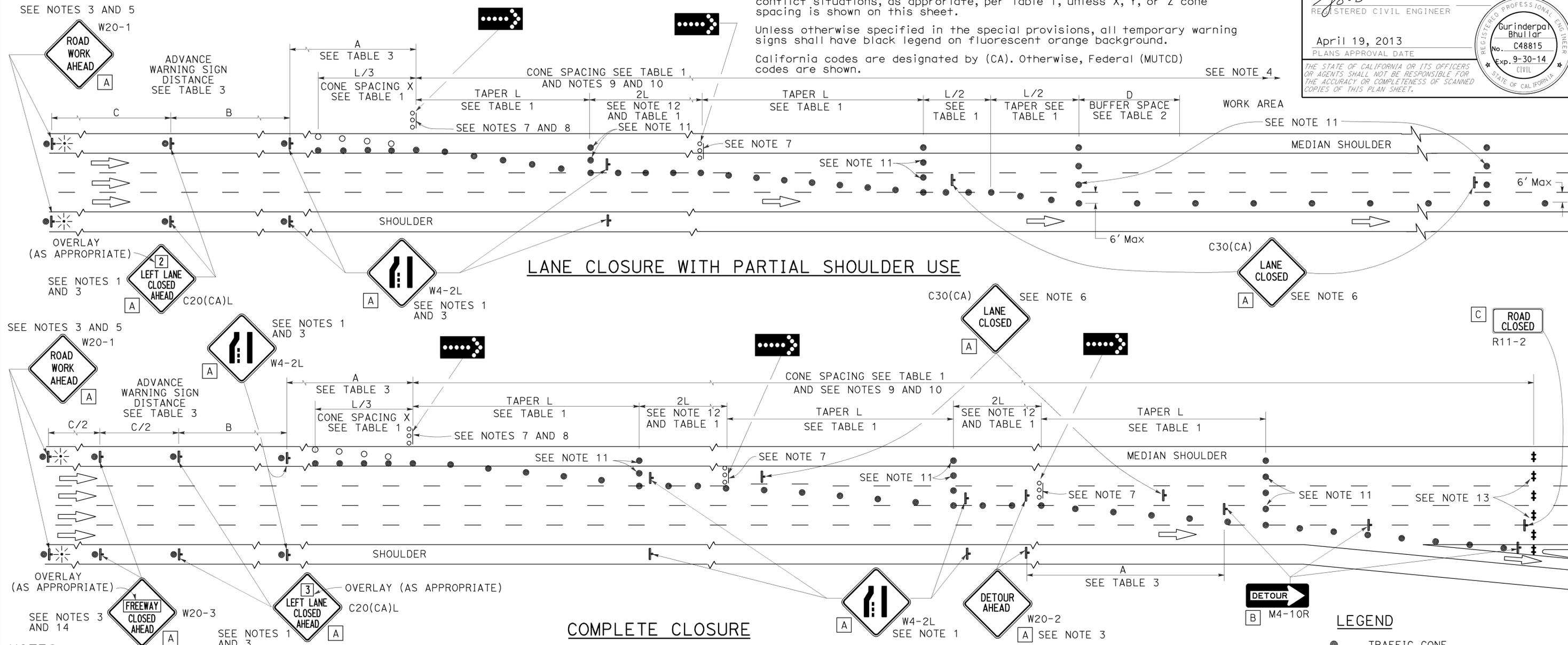
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	64	98

REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE

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

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

**NOTES:** See Revised Standard Plan RSP T9 for tables.  
 Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.  
 Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.  
 California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.



- NOTES:**
- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
  - At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
  - Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" X 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
  - A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
  - If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_ MILES", use a C20(CA) sign for the first advance warning sign.
  - Place a C30(CA) sign every 2000' throughout length of lane closure.

- One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure With Partial Shoulder Use" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.

- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

**SIGN PANEL SIZE (Min)**

A	48" x 48"
B	48" x 18"
C	48" x 30"

**LEGEND**

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## TRAFFIC CONTROL SYSTEM FOR LANE CLOSURES ON FREEWAYS AND EXPRESSWAYS

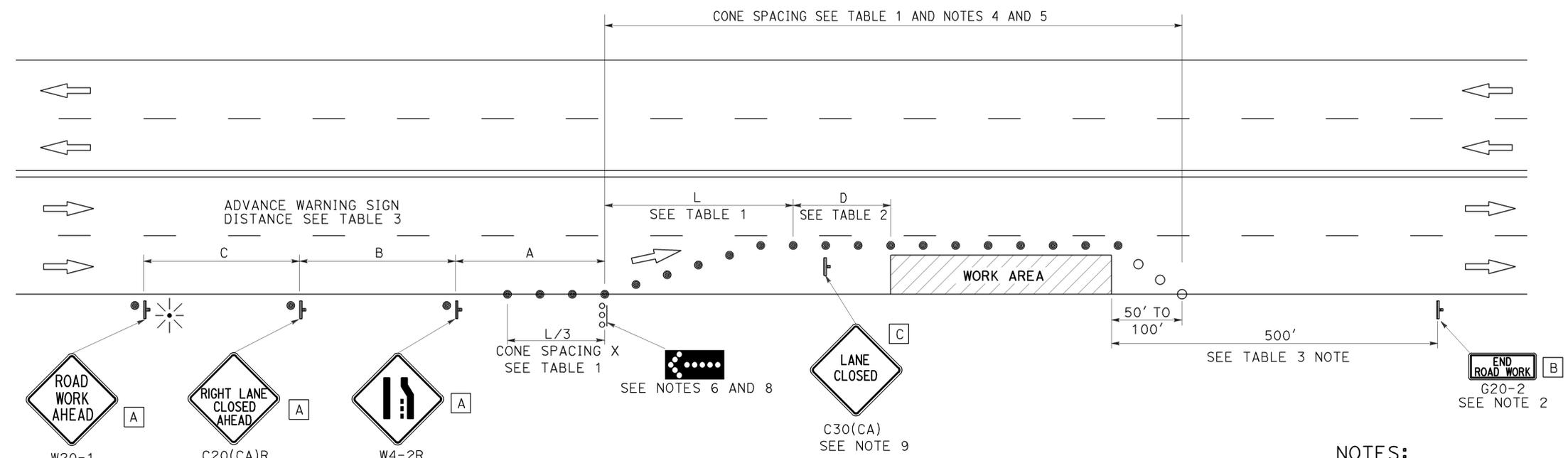
NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T10A**

2010 REVISED STANDARD PLAN RSP T10A

TO ACCOMPANY PLANS DATED 4-11-16



**TYPICAL LANE CLOSURE**

**NOTES:**

See Revised Standard Plan RSP T9 for tables.

Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

**NOTES:**

- Each advance warning sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a C20(CA) sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Flashing arrow sign shall be either Type I or Type II.
- For approach speeds over 50 mph, use the "Traffic Control System for Lane Closure On Freeways And Expressways" plan for lane closure details and requirements.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.

**LEGEND**

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- ⌋ TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ☀ PORTABLE FLASHING BEACON

**SIGN PANEL SIZE (Min)**

- A 48" x 48"
- B 36" x 18"
- C 30" x 30"

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM  
FOR LANE CLOSURE ON  
MULTILANE CONVENTIONAL  
HIGHWAYS**

NO SCALE

RSP T11 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T11  
DATED MAY 20, 2011 - PAGE 239 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T11**

2010 REVISED STANDARD PLAN RSP T11

# TYPICAL RAMP CLOSURES

## SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 30"
- C 36" x 36"
- D 48" x 36"

## LEGEND

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⚡ PORTABLE FLASHING BEACON

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	66	98

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

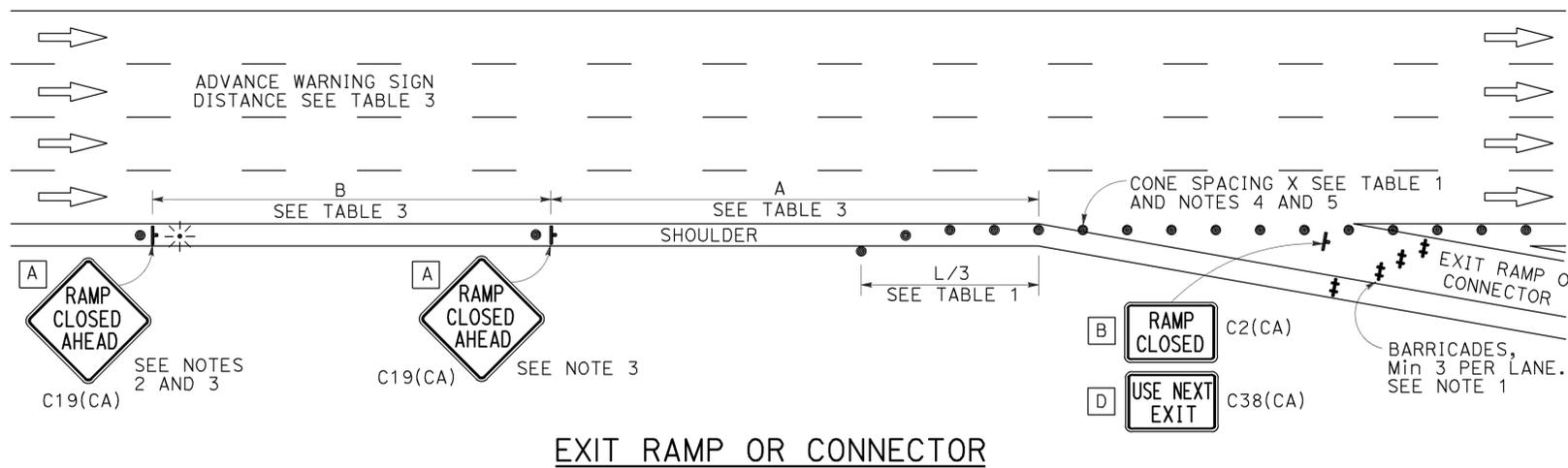
April 19, 2013  
 PLANS APPROVAL DATE

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

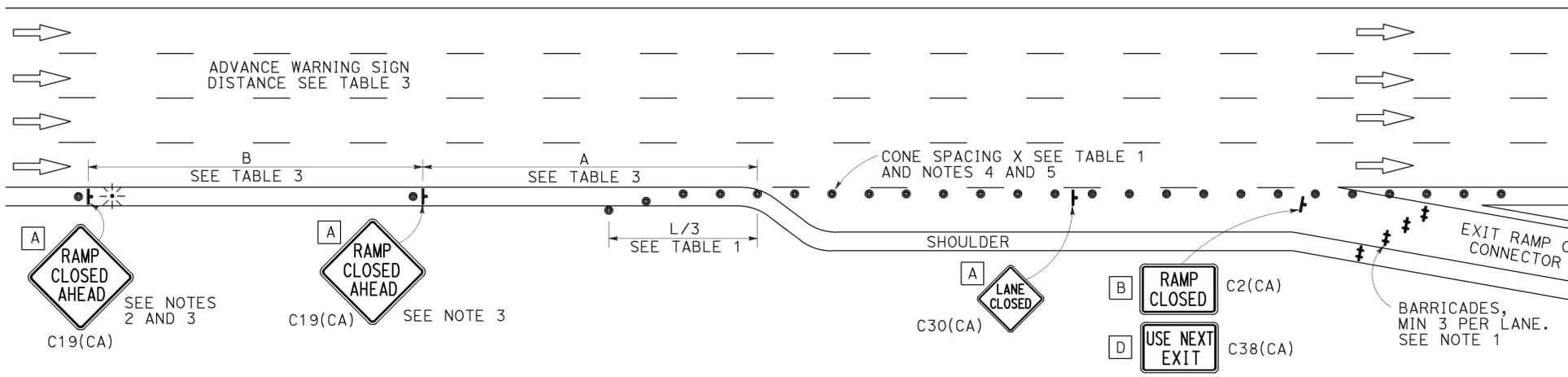
TO ACCOMPANY PLANS DATED 4-11-16

## NOTES:

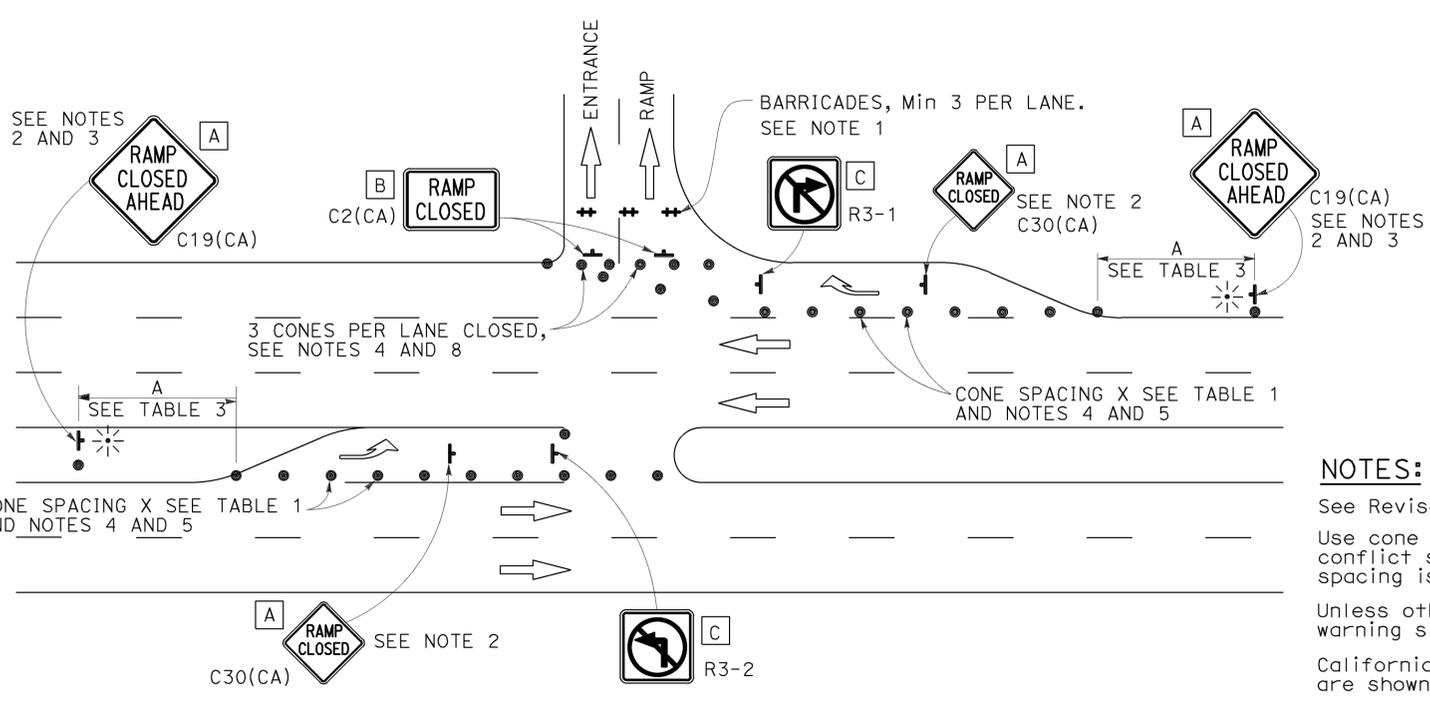
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
- Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
- All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
- At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
- The existing "EXIT" signs shall be covered during ramp closures.
- A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.



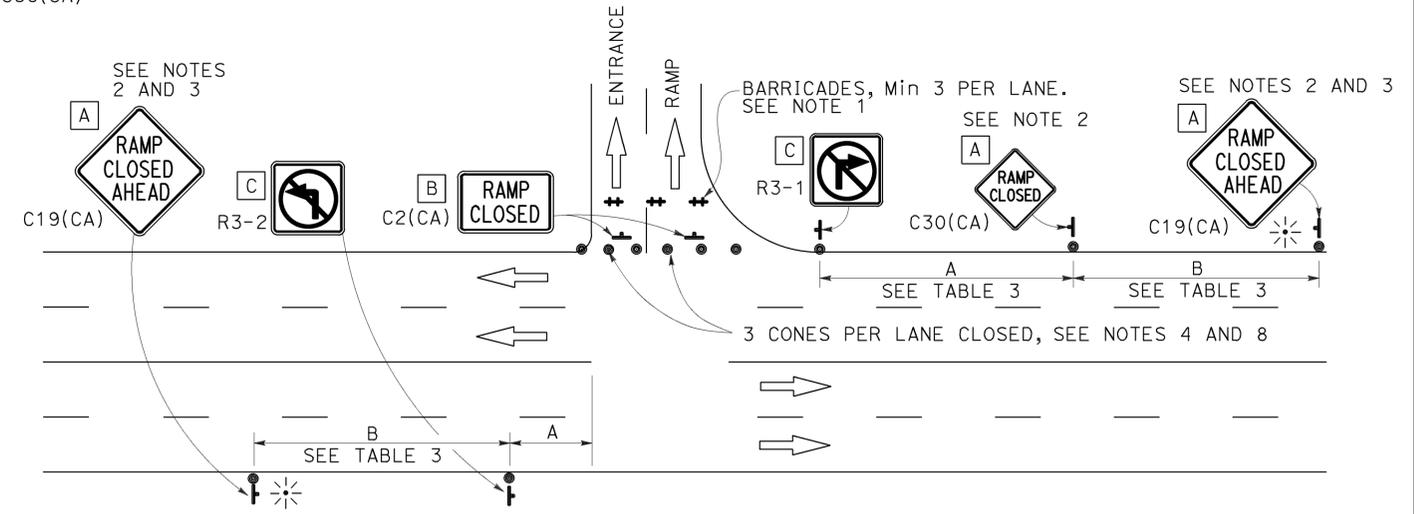
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

## NOTES:

- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR RAMP CLOSURE**  
 NO SCALE

RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14  
 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T14**

2010 REVISED STANDARD PLAN RSP T14

**LEGEND:**

<b>AB</b>	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
<b>BC</b>	INSTALL PULL BOX IN EXISTING CONDUIT RUN
<b>BP</b>	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
<b>CB</b>	INSTALL CONDUIT INTO EXISTING PULL BOX
<b>CC</b>	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
<b>CF</b>	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
<b>DH</b>	DETECTOR HANDHOLE
<b>FA</b>	FOUNDATION TO BE ABANDONED
<b>IS</b>	INSTALL SIGN ON SIGNAL MAST ARM
<b>NS</b>	NO SLIP BASE ON STANDARD
<b>PEC</b>	PHOTOELECTRIC CONTROL
<b>PEU</b>	PHOTOELECTRIC UNIT
<b>RC</b>	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
<b>RE</b>	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
<b>RL</b>	RELOCATE EQUIPMENT
<b>RR</b>	REMOVE AND REUSE EQUIPMENT
<b>RS</b>	REMOVE AND SALVAGE EQUIPMENT
<b>SC</b>	SPLICE NEW TO EXISTING CONDUCTORS
<b>SD</b>	SERVICE DISCONNECT
<b>TSP</b>	TELEPHONE SERVICE POINT

**ABBREVIATIONS**

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	67	98

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

October 30, 2015  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-16  
ELECTRICAL  
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 4-11-16

**SOFFIT AND WALL-MOUNTED LUMINAIRES**

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

**NOTE:**

Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL	DEFINITIONS
$\Omega$	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(ac)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
$\mu$	MICRO
P	PICO
Hz	HERTZ

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)**

NO SCALE

RSP ES-1A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1A DATED JULY 19, 2013 AND STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

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

**MISCELLANEOUS ELECTROLIERS**

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT LEGEND)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

**NOTES:**

- LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

**STANDARD ELECTROLIER**

NEW	EXISTING	STANDARD TYPE
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	68	98

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

October 30, 2015  
PLANS APPROVAL DATE

Theresa  
Aziz Gabriel  
No. E15129  
Exp. 6-30-16  
ELECTRICAL  
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 4-11-16

**CONDUIT**

**SIGNAL EQUIPMENT**

NEW	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 ATTACHED TO THE STRUCTURE OR SERVICE POLE

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)

**SIGNAL EQUIPMENT Cont**

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

**SERVICE EQUIPMENT**

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

NEW	EXISTING	
		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

**NOTES:**

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

**POLE-MOUNTED SERVICE DESIGNATION**

	TYPE H SERVICE, 28'-10"	TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE
--	-------------------------	--

**FLASHING BEACON**

NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

**ILLUMINATED OVERHEAD SIGN**

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

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

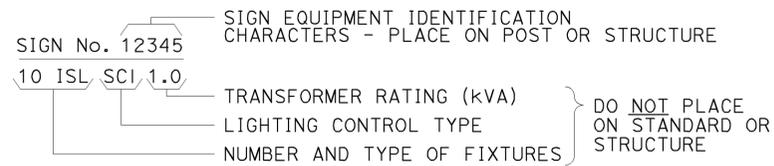
RSP ES-1B DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1B DATED JULY 19, 2013 AND STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

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

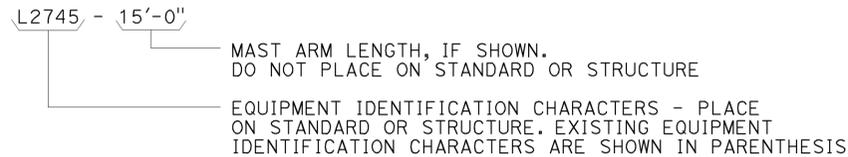
2010 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

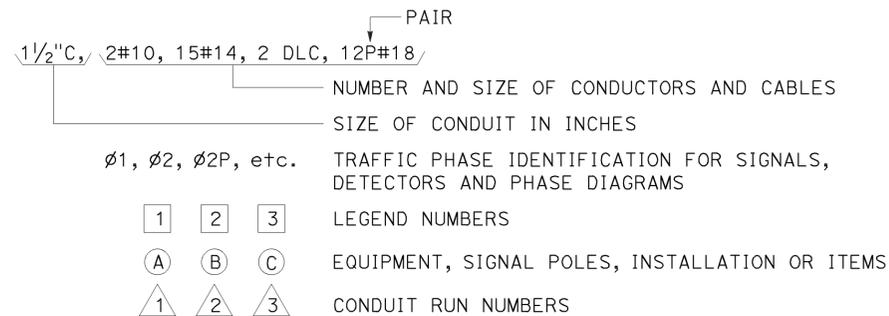
#### ILLUMINATED SIGN IDENTIFICATION:



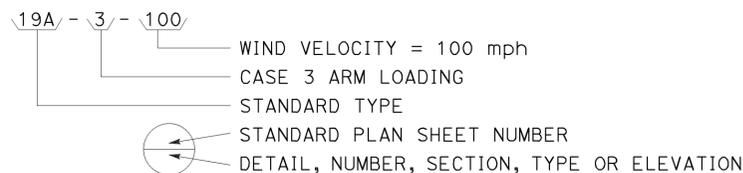
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION:



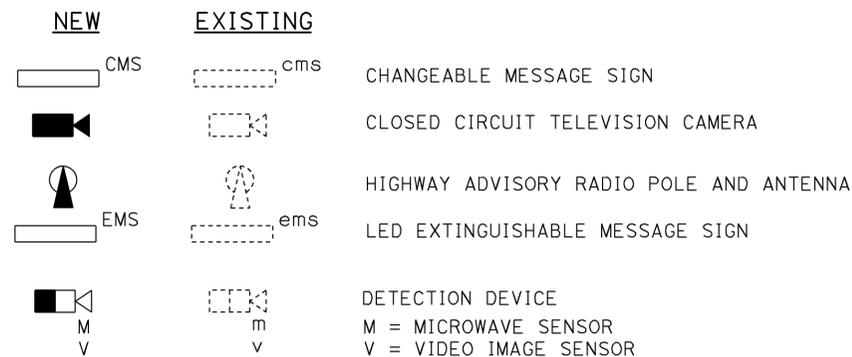
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



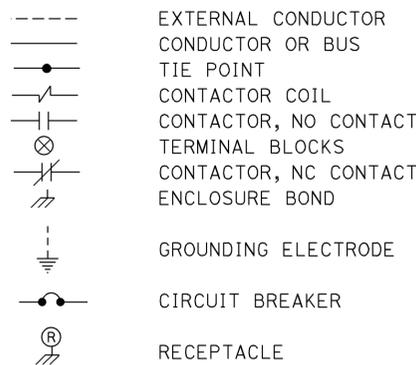
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



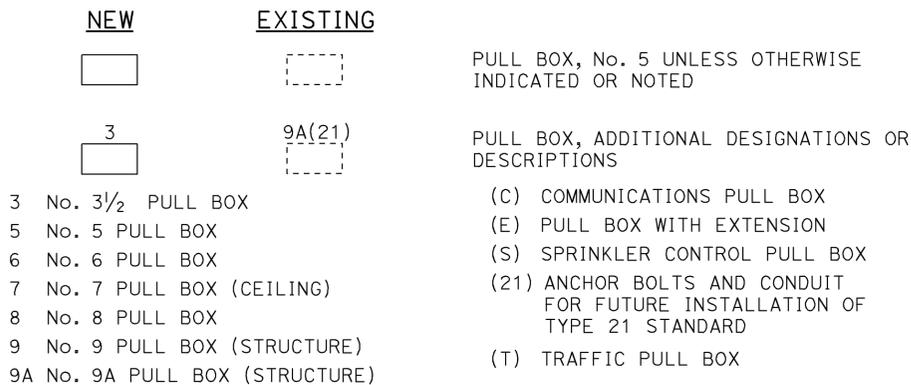
### MISCELLANEOUS EQUIPMENT



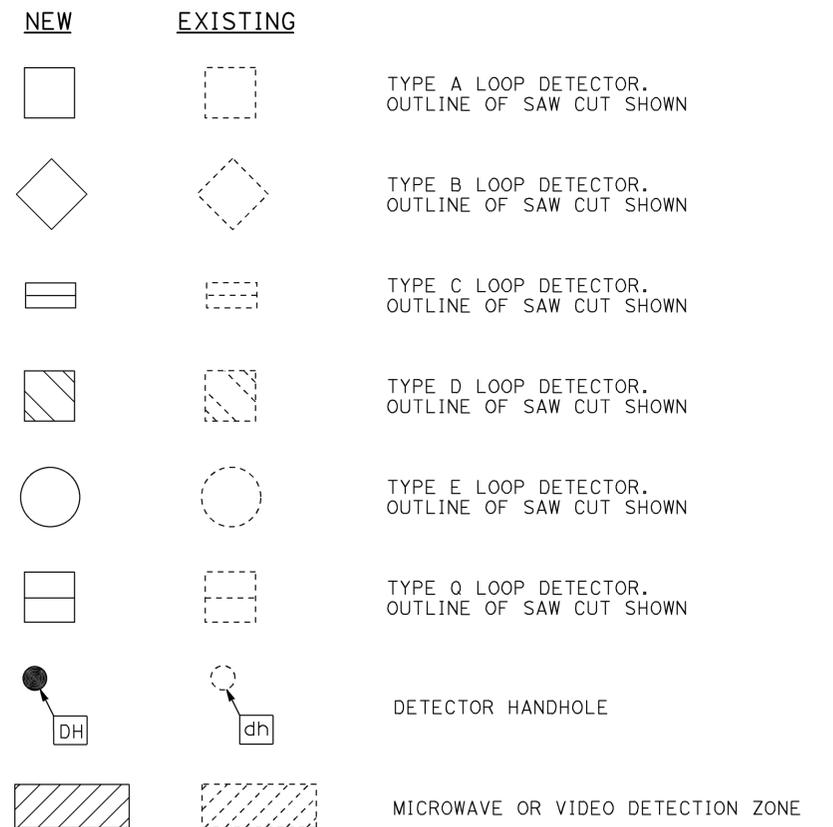
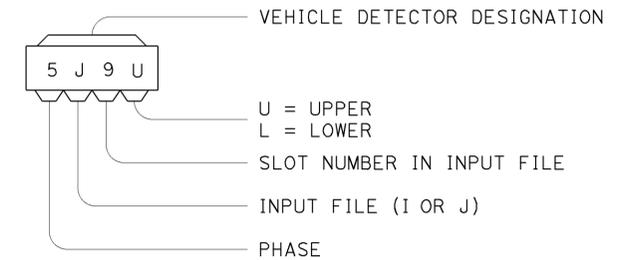
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED APRIL 15, 2016 SUPERSEDES RSP ES-1C DATED OCTOBER 30, 2015 AND RSP ES-1C DATED JULY 19, 2013 AND STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

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

2010 REVISED STANDARD PLAN RSP ES-1C

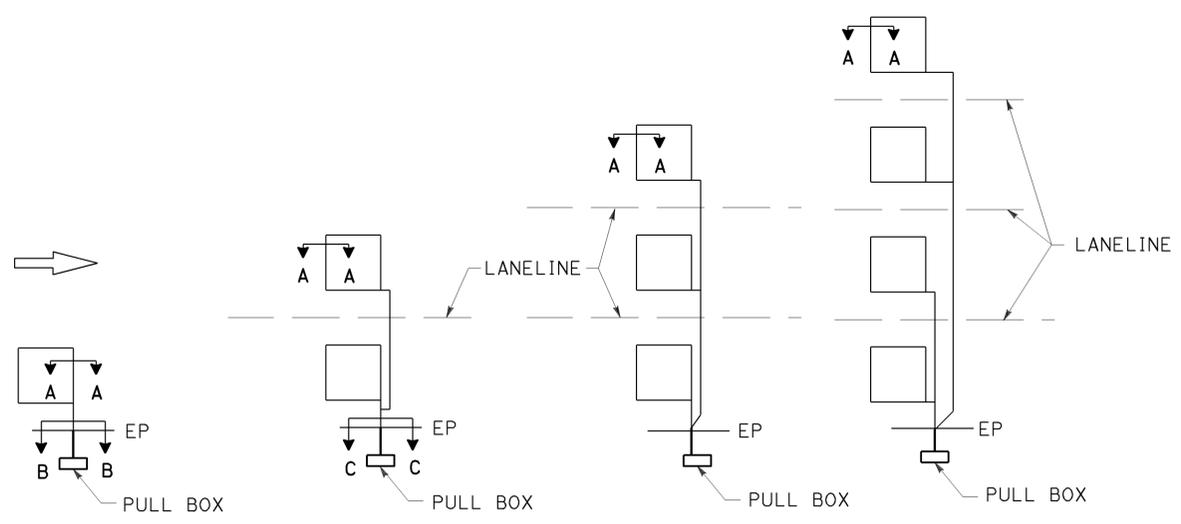
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	70	98

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E15129  
 Exp. 6-30-16  
 STATE OF CALIFORNIA

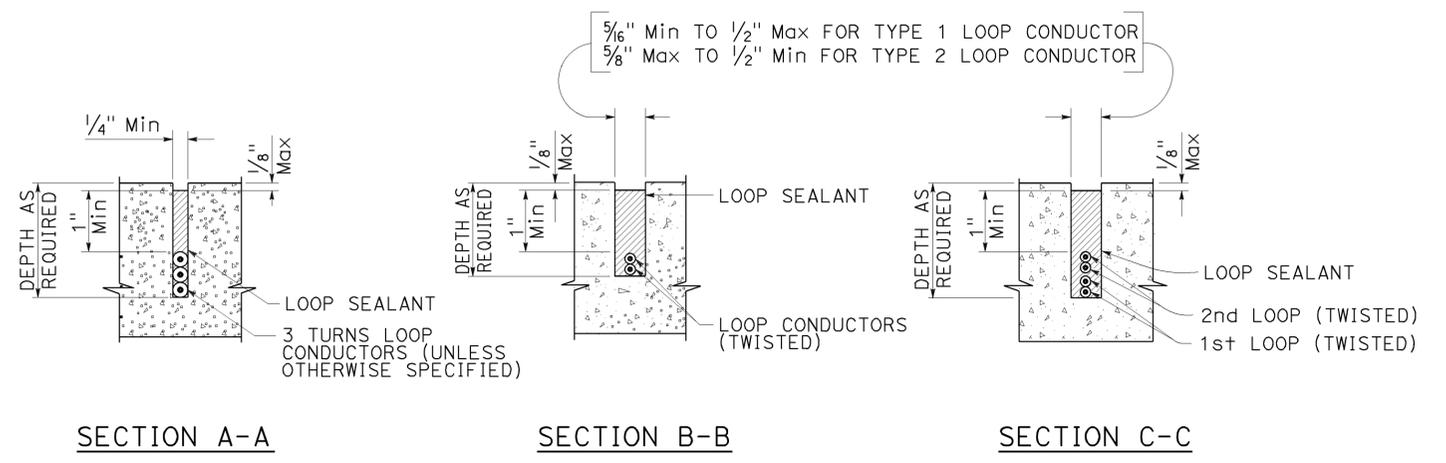
April 15, 2016  
 PLANS APPROVAL DATE

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

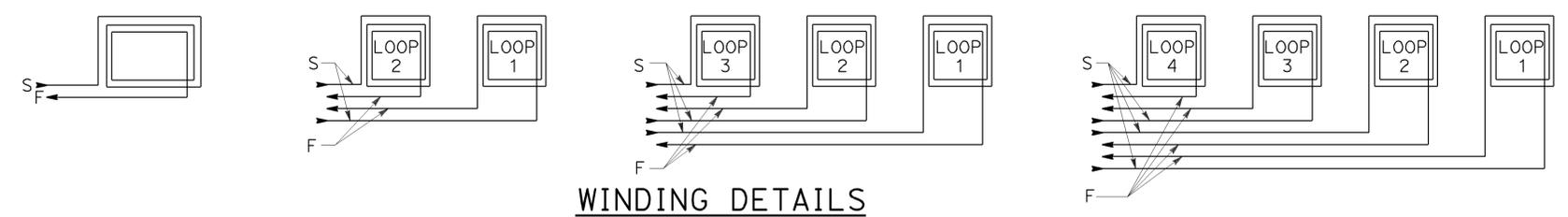
TO ACCOMPANY PLANS DATED 4-11-16



**SAW CUT DETAILS**  
Type A loop detector configurations illustrated

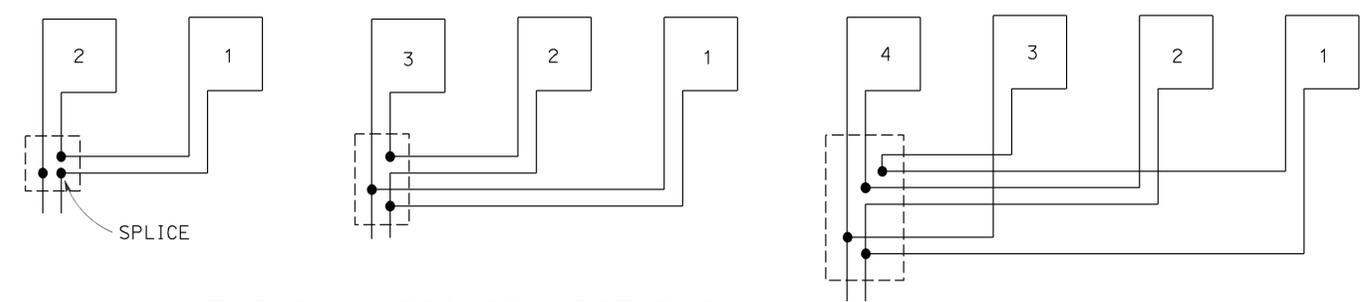


**SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR**



**WINDING DETAILS**

**ABBREVIATIONS:**  
 S - START  
 F - FINISH



**TYPICAL LOOP CONNECTIONS**  
Dashed lines represent the pull box

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

RSP ES-5A DATED APRIL 15, 2016 SUPERSEDES RSP ES-5A DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-5A DATED MAY 20, 2011 - PAGE 448 OF THE STANDARD PLANS BOOK DATED 2010.

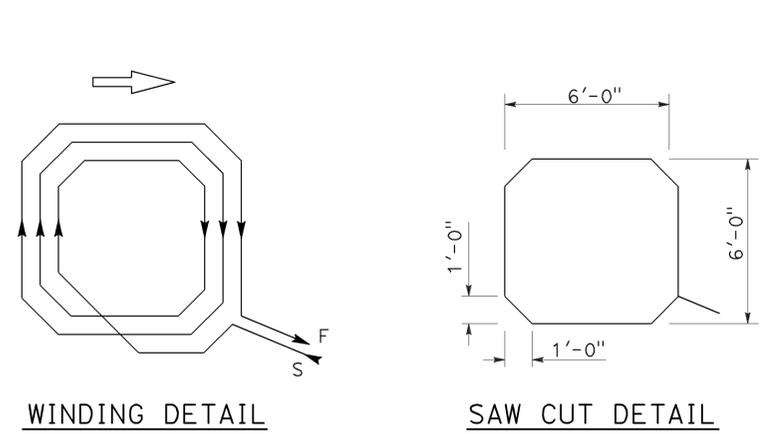
2010 REVISED STANDARD PLAN RSP ES-5A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	71	98

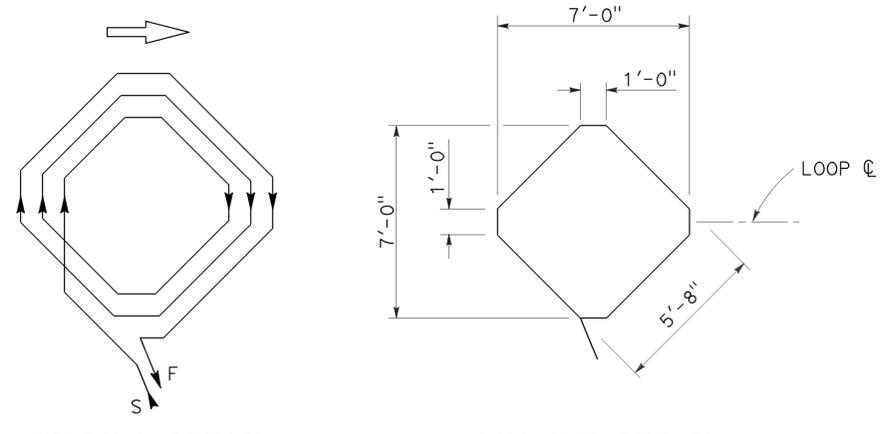
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 April 15, 2016  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-16  
 ELECTRICAL  
 STATE OF CALIFORNIA

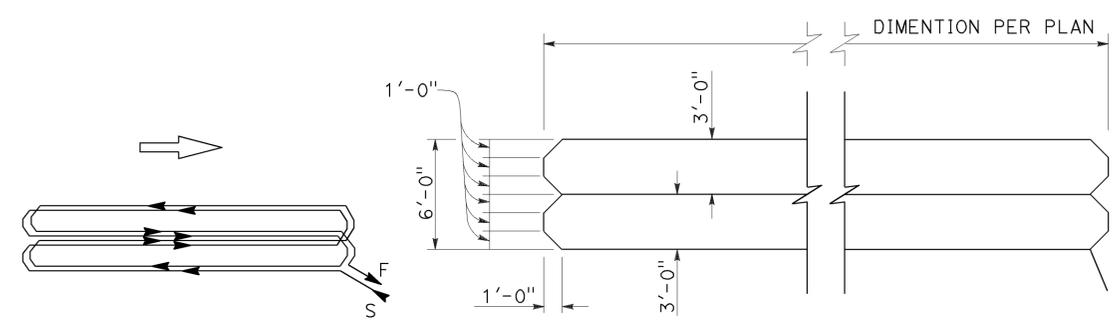
TO ACCOMPANY PLANS DATED 4-11-16



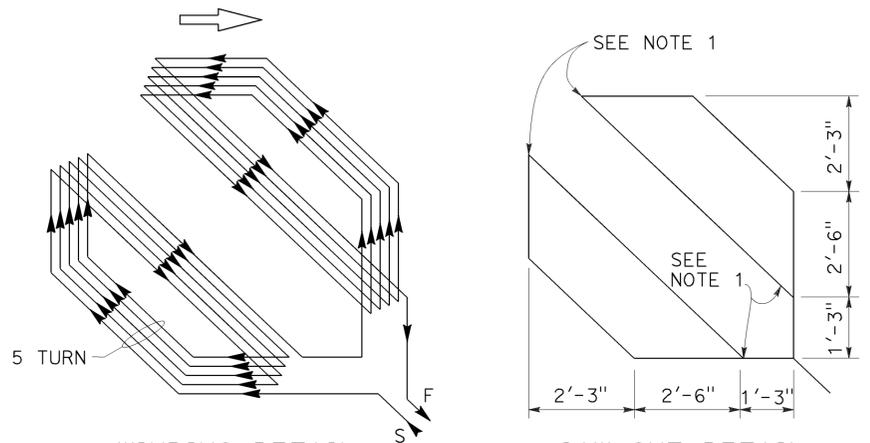
WINDING DETAIL  
SAW CUT DETAIL  
**TYPE A LOOP DETECTOR CONFIGURATION**



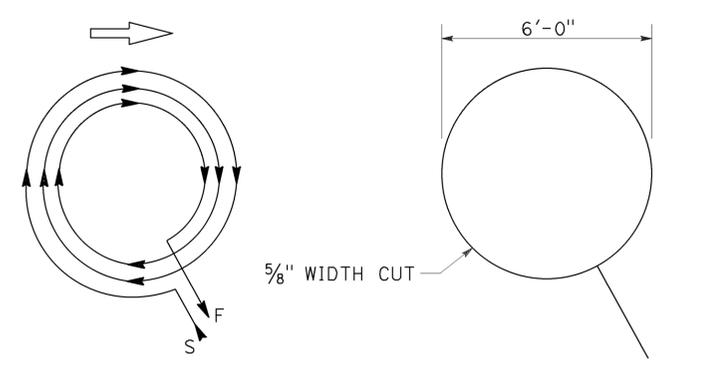
WINDING DETAIL  
SAW CUT DETAIL  
**TYPE B LOOP DETECTOR CONFIGURATION**



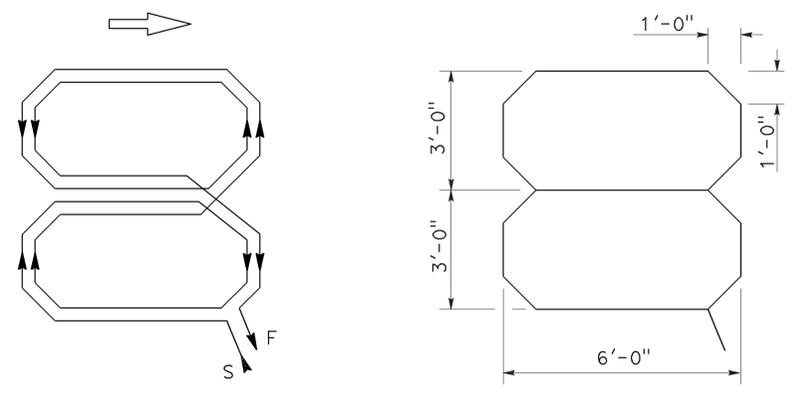
WINDING DETAIL  
SAW CUT DETAIL  
**TYPE C LOOP DETECTOR CONFIGURATION**



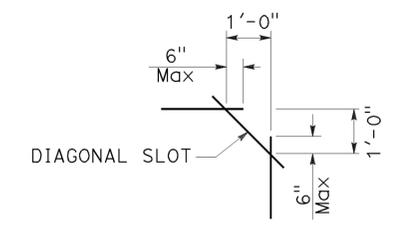
WINDING DETAIL  
SAW CUT DETAIL  
**TYPE D LOOP DETECTOR CONFIGURATION**



WINDING DETAIL  
SAW CUT DETAIL  
**TYPE E LOOP DETECTOR CONFIGURATION**



WINDING DETAIL  
SAW CUT DETAIL  
**TYPE Q LOOP DETECTOR CONFIGURATION**



**PLAN VIEW OF  
DIAGONAL SLOT  
AT CORNERS**

- NOTES:**
1. Round corners of acute angle saw cuts to prevent damage to conductors.
  2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.
  3. Use Type D loops for limit line detection and bicycle lanes.

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

RSP ES-5B DATED APRIL 15, 2016 SUPERSEDES RSP ES-5B DATED OCTOBER 30, 2015 AND RSP ES-5B DATED JULY 19, 2013 AND STANDARD PLAN ES-5B DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

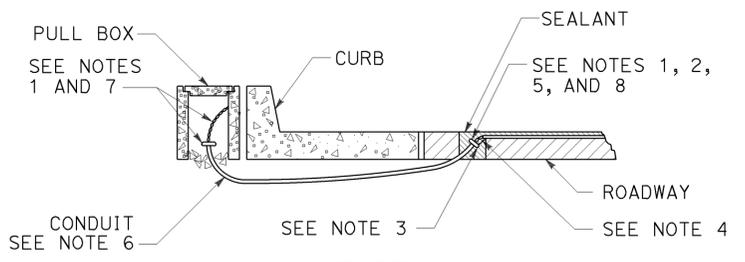
**2010 REVISED STANDARD PLAN RSP ES-5B**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	72	98

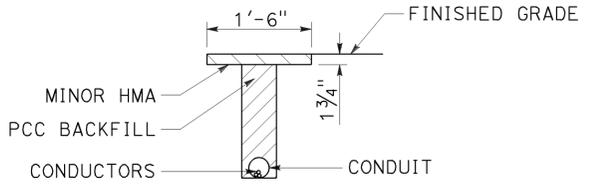
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 October 30, 2015  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Theresa  
 Aziz Gabriel  
 No. E15129  
 Exp. 6-30-16  
 ELECTRICAL  
 STATE OF CALIFORNIA

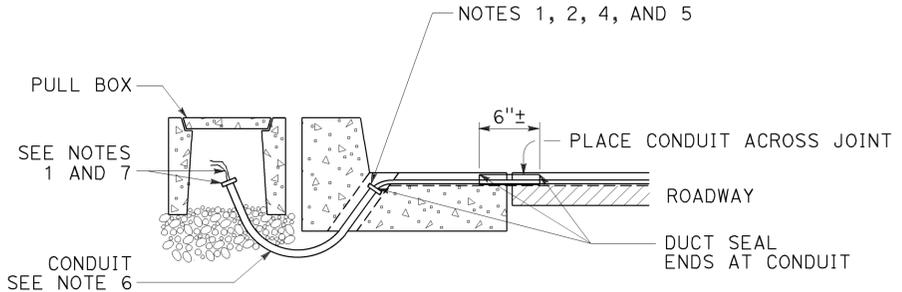
TO ACCOMPANY PLANS DATED 4-11-16



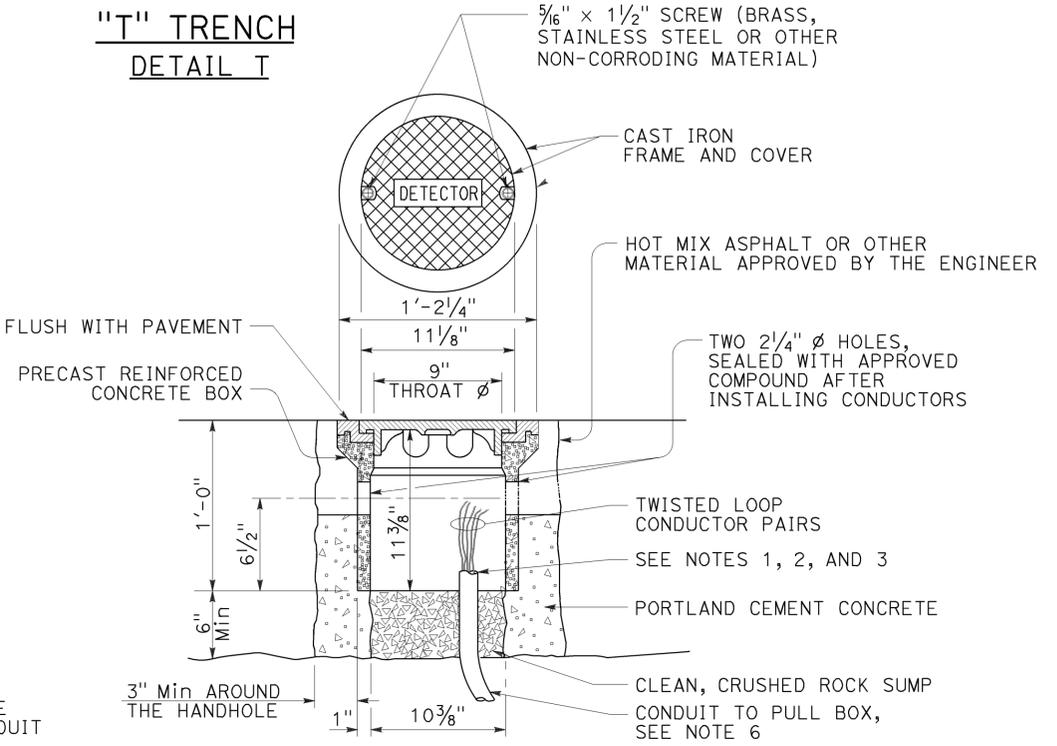
**TYPE A  
CURB TERMINATION DETAIL**



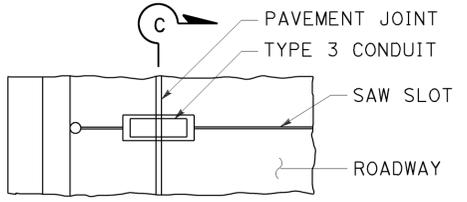
**"T" TRENCH  
DETAIL 1**



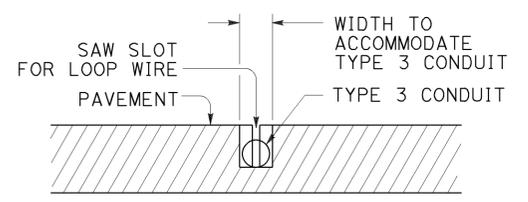
**CROSS SECTION**



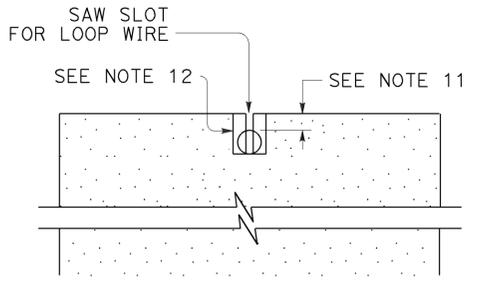
**DETECTOR HANDHOLE DETAIL**



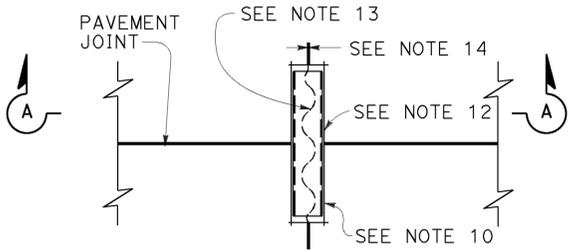
**PLAN VIEW**



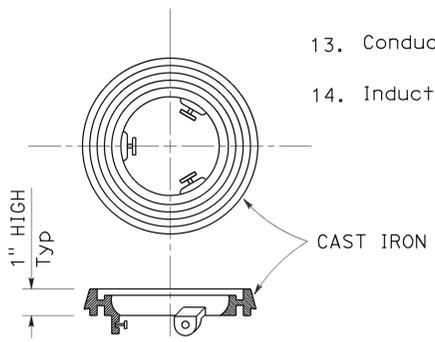
**SECTION C-C**



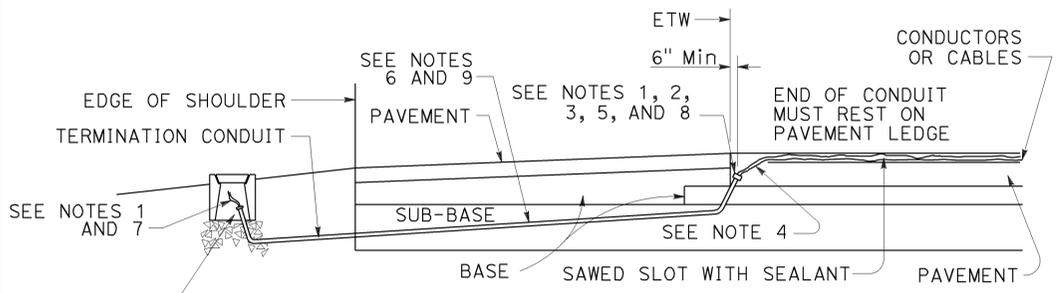
**SECTION A-A**



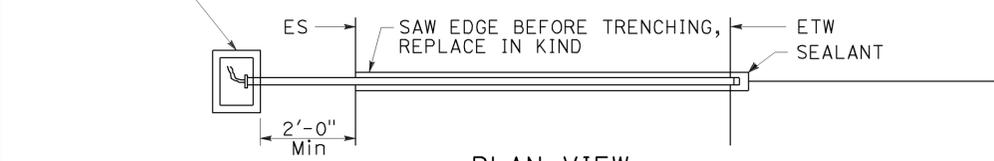
**PLAN VIEW  
TYPICAL LOOP LEAD-IN DETAIL  
AT PAVEMENT JOINT**



**LOCKING GRADE RING**



**CROSS SECTION**



**PLAN VIEW  
SHOULDER TERMINATION DETAILS**

**NOTES:**

- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- |                     |                        |
|---------------------|------------------------|
| <u>Conduit size</u> | <u>Loop conductors</u> |
| 1"C minimum         | 1 to 2 pairs           |
| 1 1/2"C minimum     | 3 to 4 pairs           |
| 2"C minimum         | 5 or more pairs        |
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(CURB AND SHOULDER TERMINATION,  
TRENCH, AND HANDHOLE DETAILS)**

NO SCALE

RSP ES-5D DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-5D DATED JULY 19, 2013 AND STANDARD PLAN ES-5D DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-5D**

2010 REVISED STANDARD PLAN RSP ES-5D

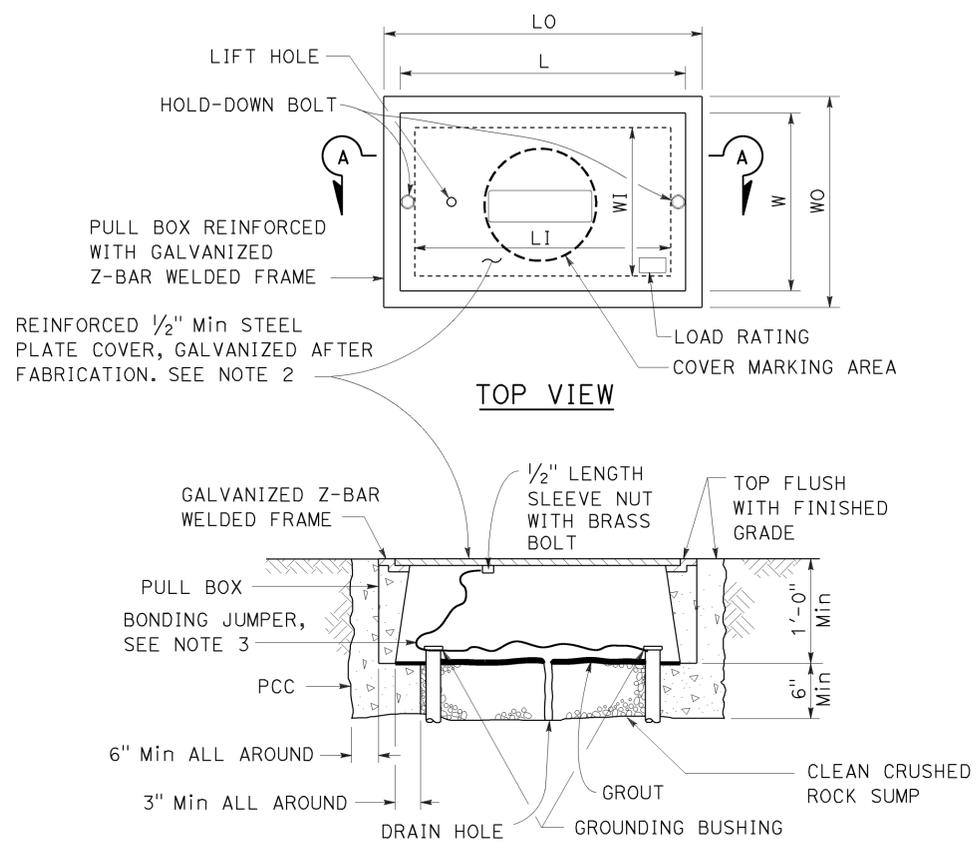
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	73	98

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 April 15, 2016  
 PLANS APPROVAL DATE

Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-16  
 ELECTRICAL  
 STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 4-11-16



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

**NOTES:**

- Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
- Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8".

PULL BOX	PULL BOX				COVER			
	MINIMUM * THICKNESS	MINIMUM DEPTH BOX AND EXTENSION	L0	LI	W0	WI	L **	W **
No. 3 1/2(T)	1 1/2"	1'-0"	1'-10" - 1'-11"	1'-5" - 1'-6 1/2"	1'-3" - 1'-4"	10" - 1'-0"	1'-8" - 1'-8 1/2"	1'-1" - 1'-2"
No. 5(T)	1 3/4"	1'-0"	2'-5" - 2'-6"	2'-0" - 2'-1"	1'-6" - 1'-7"	1'-1" - 1'-2"	2'-3" - 2'-3 1/2"	1'-4" - 1'-4 1/2"
No. 6(T)	2"	1'-0"	2'-11" - 3'-1"	2'-6" - 2'-7"	1'-10" - 2'-0"	1'-5" - 1'-6"	2'-9" - 2'-9 1/2"	1'-8" - 1'-8 1/2"

\* EXCLUDING CONDUIT WEB      \*\* TOP DIMENSION

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

RSP ES-8B DATED APRIL 15, 2016 SUPERSEDES RSP ES-8B  
 DATED OCTOBER 30, 2015 AND RSP ES-8B DATED JULY 19, 2013 AND RSP ES-8B  
 DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

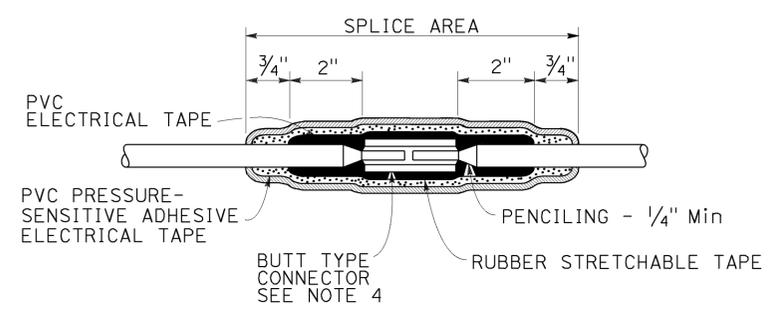
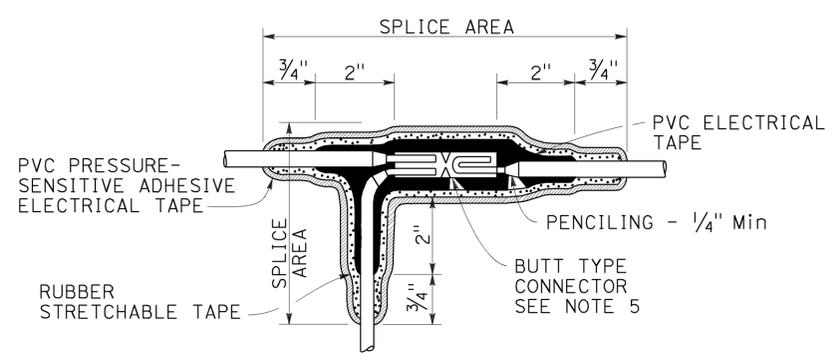
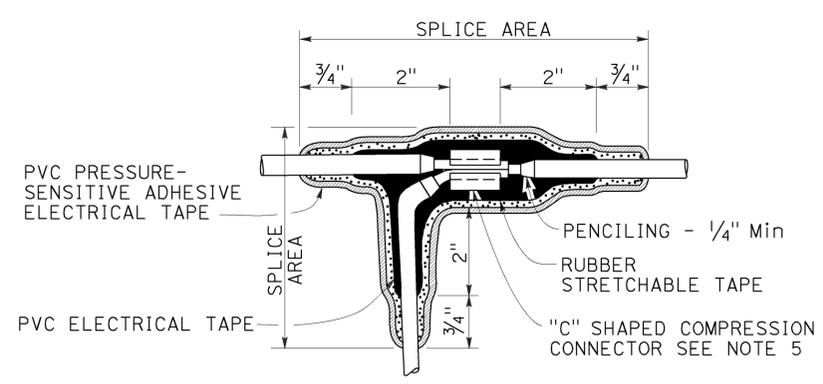
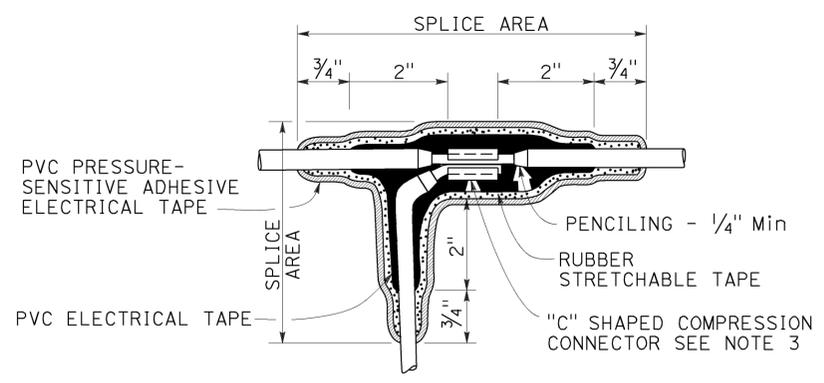
2010 REVISED STANDARD PLAN RSP ES-8B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	74	98

Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 April 15, 2016  
 PLANS APPROVAL DATE  
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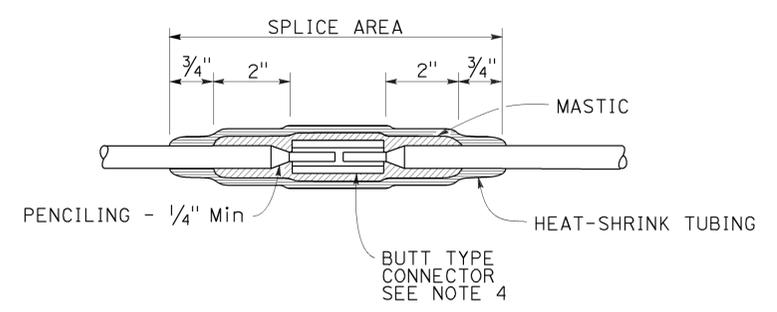
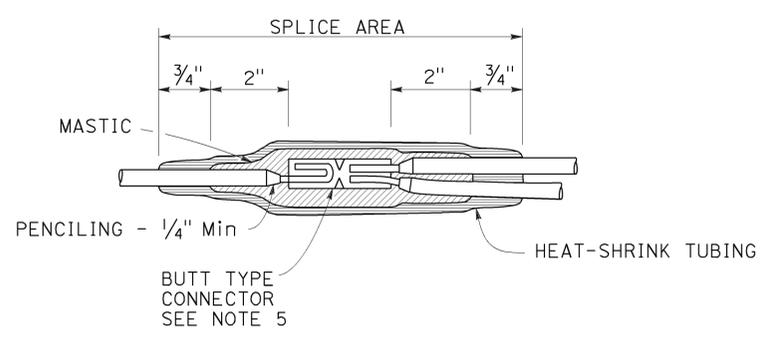
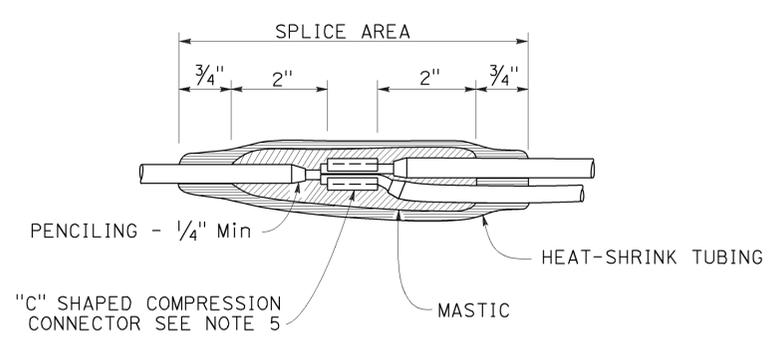
TO ACCOMPANY PLANS DATED 4-11-16



**NOTES:**

1. Dimensions are minimum.
2. Rubber tapes shall be rolled after application.
3. Between 1 free-end and 1 through conductor.
4. Between 2 free-end conductors.
5. Between 3 free-end conductors.

**TYPICAL SPLICE INSULATION METHOD B**



**TYPICAL SPLICE INSULATION HEAT-SHRINK TUBING**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SPLICE INSULATION METHODS DETAILS)**

NO SCALE  
 RSP ES-13A DATED APRIL 15, 2016 SUPERSEDES RSP ES-13A DATED OCTOBER 30, 2015 AND  
 STANDARD PLAN ES-13A DATED MAY 20, 2011 - PAGE 491 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-13A**

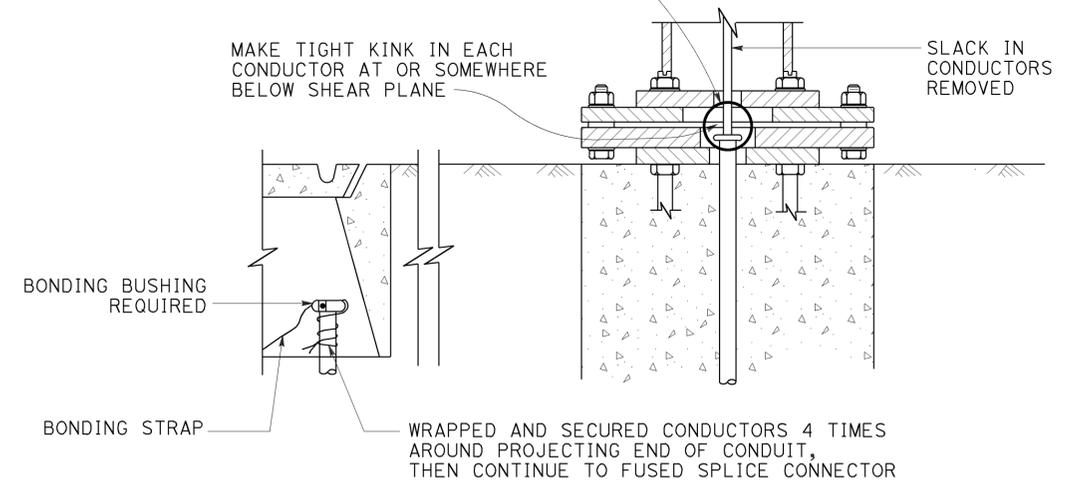
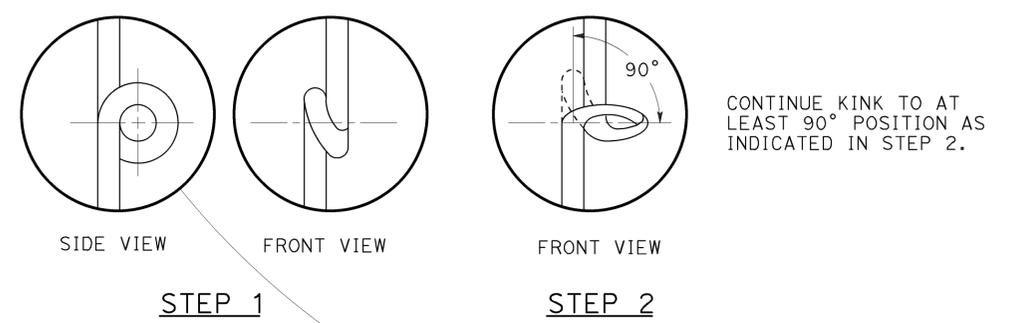
2010 REVISED STANDARD PLAN RSP ES-13A

TO ACCOMPANY PLANS DATED 4-11-16

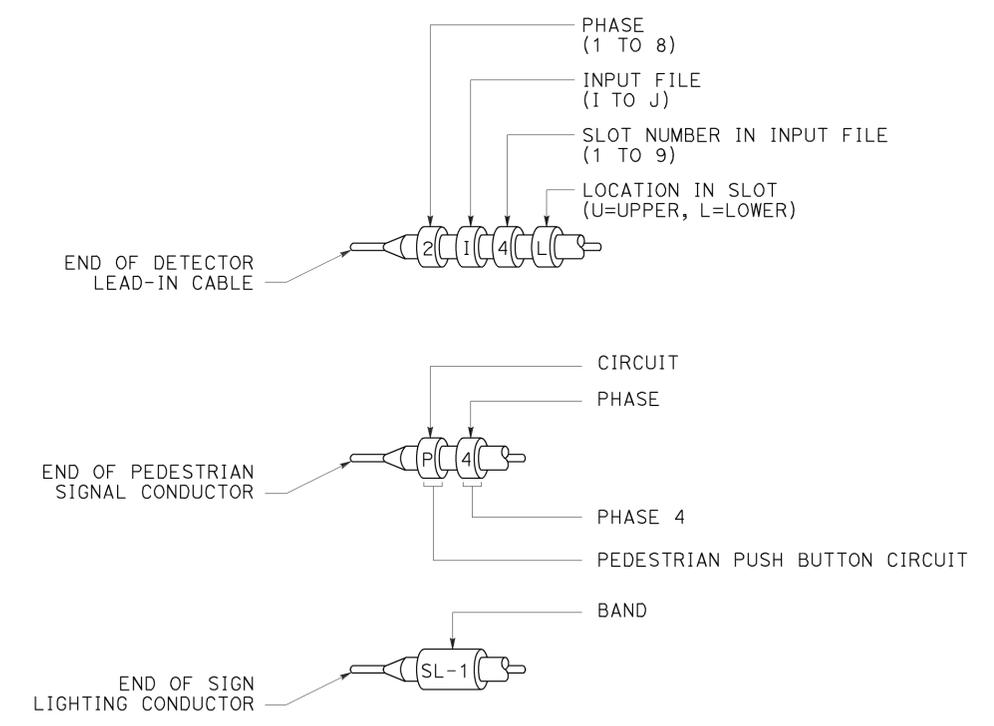
CIRCUIT VOLTAGE	FUSE VOLTAGE RATING	FUSE CURRENT RATING						
		HPS LAMP BALLAST		LOW PRESSURE SODIUM BALLAST	INDUCTION SIGN LIGHTING	SINGLE PHASE (TWO WIRE) TRANSFORMERS (PRIMARY SIDE)		
		70 W	100 W	180 W	85 W	1 KVA	2 KVA	3 KVA
120 V	250 V	5 A	5 A	5 A	5 A	10 A	20 A	30 A
240 V	250 V	5 A	5 A	5 A	5 A	6 A	10 A	20 A
480 V	500-600 V	5 A	5 A	3 A	1 A (SEE NOTE 2)	3 A	6 A	10 A

- NOTES:**
- Primary lines of multiple ballasts shall be provided with fused connectors. Fuse ratings shall be as noted above.
  - See Revised Standard Plan RSP ES-15D, Type SC3 control.

**FUSE RATINGS FOR FUSED CONNECTORS**



**KINKING DETAIL FOR SLIP BASE STANDARDS**  
DETAIL A



**TYPICAL BANDING DETAILS**  
DETAIL B

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(FUSE RATING, KINKING AND BANDING DETAIL)**

NO SCALE

RSP ES-13B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-13B DATED MAY 20, 2011 - PAGE 492 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-13B

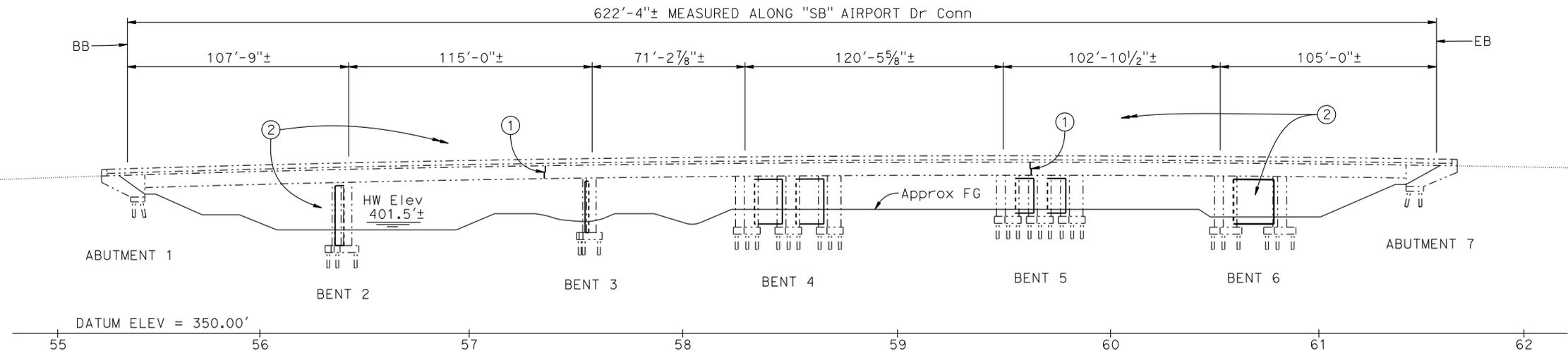
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	76	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

4-11-16  
 PLANS APPROVAL DATE

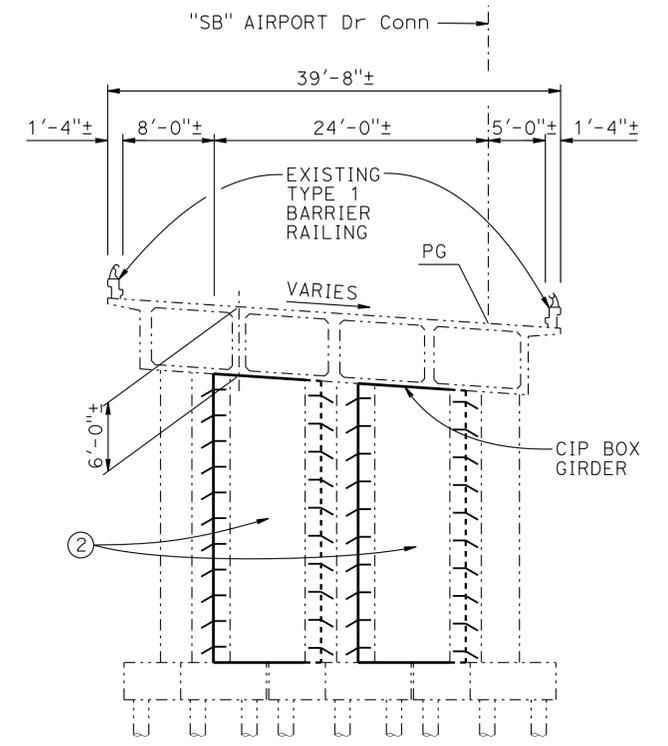
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REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

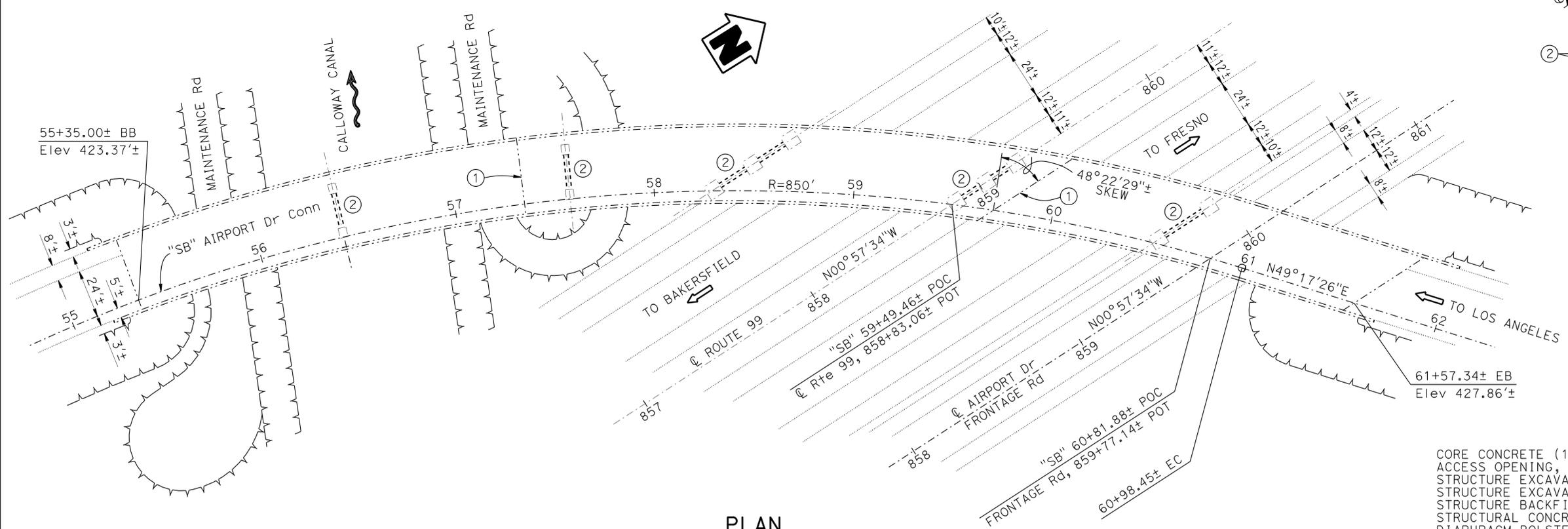


**ELEVATION**  
 1" = 30'-0"

- NOTES:**
- ① Install Hinge Pipe Seat Extenders.
  - ② Install Infill Walls between columns.



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



**PLAN**  
 1" = 30'-0"

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

**QUANTITIES**

CORE CONCRETE (10")	12	LF
ACCESS OPENING, SOFFIT	8	EA
STRUCTURE EXCAVATION (BRIDGE)	69	CY
STRUCTURE EXCAVATION (TYPE D)	9	CY
STRUCTURE BACKFILL (BRIDGE)	51	CY
STRUCTURAL CONCRETE, BRIDGE	172	CY
DIAPHRAGM BOLSTER	8	EA
DRILL AND BOND DOWEL	982	LF
BAR REINFORCING STEEL (BRIDGE)	18,860	LB
MISCELLANEOUS METAL (PIPE EXTENDER)	2,548	LB

DESIGN ENGINEER <b>GARY BLAKESLEY</b>	DESIGN	BY GLORIA REYES-GUTIERREZ	CHECKED MIKE CULLEN	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>6</b>	BRIDGE NO.	50-0266
	DETAILS	BY DAVID PATO / SUSAN NG	CHECKED MIKE CULLEN	LAYOUT	BY DAVID PATO			POST MILE	26.78
	QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON	SPECIFICATIONS	BY WANDA WARD			PLANS AND SPECS COMPARED WANDA WARD	

**SEISMIC RESTORATION**

**AIRPORT DRIVE OC RETROFIT**

**GENERAL PLAN**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	77	98

*Gloria Reyes-Gutierrez* 12-18-15  
REGISTERED CIVIL ENGINEER DATE

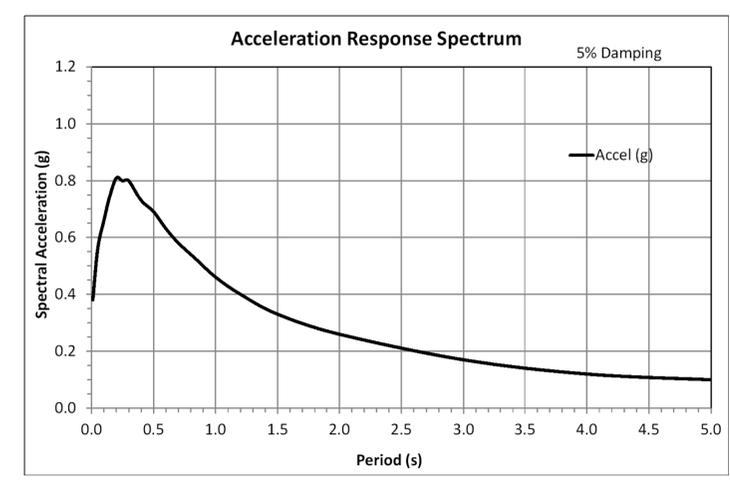
4-11-16  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
GLORIA REYES-GUTIERREZ  
No. C 57583  
Exp. 12-31-15  
CIVIL  
STATE OF CALIFORNIA

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**GENERAL NOTES**  
**LOAD AND RESISTANCE FACTOR DESIGN**

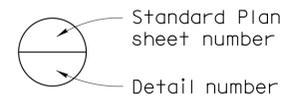
- DESIGN:**  
AASHTO LRFD Bridge Design Specifications, 6th edition and the California Amendments, preface dated January 2014.
- SEISMIC DESIGN:**  
Caltrans Seismic Design Criteria (SDC), Version 1.7 dated April 2013.
- DEAD LOAD:**  
Includes 35 psf for future wearing surface.
- SEISMIC LOADING:**  
See "Site Specific ARS Curve".
- CONCRETE:**  
 $f_y = 60$  ksi  
 $f'_c = 4.0$  ksi  
 $n = 8$
- STRUCTURAL STEEL:**  
XX Strong Pipe.  
 $f_y = 50$  ksi



**ARS CURVE**  
NO SCALE

**STANDARD PLANS 2010**

- A10A ABBREVIATIONS (SHEET 1 OF 2)
- RSP A10B ABBREVIATIONS (SHEET 2 OF 2)
- A10C LINES AND SYMBOLS (SHEET 1 OF 3)
- A10D LINES AND SYMBOLS (SHEET 2 OF 3)
- A10E LINES AND SYMBOLS (SHEET 3 OF 3)
- A10F LEGEND - SOIL (SHEET 1 OF 2)
- A10G LEGEND - SOIL (SHEET 2 OF 2)



**INDEX TO PLANS**

1. GENERAL PLAN
2. INDEX TO PLANS
3. FOUNDATION PLAN 1 OF 2
4. FOUNDATION PLAN 2 OF 2
5. INFILL WALL DETAILS
6. HINGE LAYOUT
7. HINGE DETAILS NO. 1
8. HINGE DETAILS NO. 2
9. PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT)
10. DECK AND SOFFIT OPENINGS
11. LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL

LIMITS OF PAYMENT FOR CONCRETE OF INFILL WALLS		
BENT LOCATION	LENGTH OF EACH INFILL WALL (FEET)	AVERAGE HEIGHT OF EACH INFILL WALL (FEET)
BENT 2	ONE @ 13.0±	30.0'±
BENT 3	ONE @ 13.0±	26.6'±
BENT 4	TWO @ 18.0'±	25.0'±
BENT 5	TWO @ 12.75'±	20.4'±
BENT 6	ONE @ 25.0'±	24.7'±

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

DESIGN	BY	GLORIA REYES-GUTIERREZ	CHECKED	MIKE CULLEN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO.	50-0266	SEISMIC RESTORATION AIRPORT DRIVE OC RETROFIT INDEX TO PLANS	
	DETAILS	BY	K. CHONKRIA	CHECKED			MIKE CULLEN	POST MILE		26.78
	QUANTITIES	BY	GRG	CHECKED			RACHEL WASHINGTON			
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)						UNIT: 3591	PROJECT NUMBER & PHASE: 0612000108-1	CONTRACT NO.: 06-0K8104	REVISION DATES	SHEET 2 OF 11

USERNAME => 81157655 DATE PLOTTED => 07-JUL-2016 TIME PLOTTED => 11:12

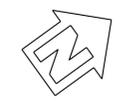
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	78	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

4-11-16  
 PLANS APPROVAL DATE

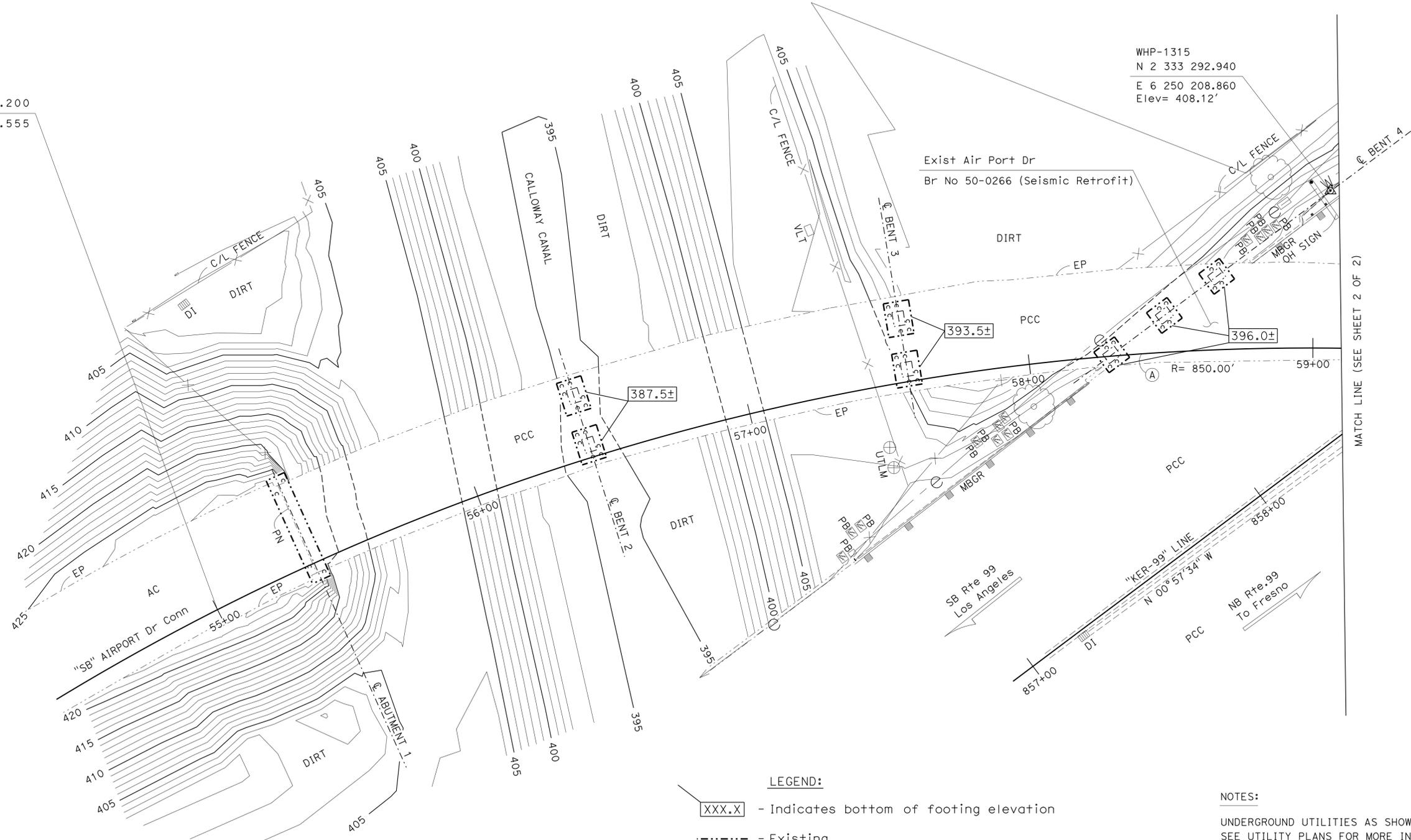
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

CURVE DATA				
No.	R	Δ	T	L
(A)	850.00'	66°17'24"	555.06'	983.43'



N 2 332 889.200  
 E 6 250 098.555

WHP-1315  
 N 2 333 292.940  
 E 6 250 208.860  
 Elev= 408.12'



**SURVEY CONTROL**

WHP-1315  
 FND PK WASHER IN DIKE  
 70.93' Lt, "KER-99" LINE  
 Sta 858+83.94  
 N 2 333 292.940  
 E 6 250 208.860  
 Elev= 408.12'

WHP-1316  
 FND 1" IP W/RCTP  
 135.61' Rt, "KER-99" LINE  
 Sta 859+43.12  
 N 2 333 355.570  
 E 6 250 414.380  
 Elev= 402.85'

**LEGEND:**

XXX.X - Indicates bottom of footing elevation

----- - Existing

**NOTES:**

UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE,  
 SEE UTILITY PLANS FOR MORE INFORMATION

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

**SEISMIC RESTORATION**

**AIRPORT DRIVE OC RETROFIT**

**FOUNDATION PLAN 1 OF 2**

<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN BY GLORIA REYES-GUTIERREZ	CHECKED MIKE CULLEN	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 6</b>	BRIDGE NO. 50-0266
SCALE 1"=20'	VERT.DATUM NGVD88	PHOTOGRAMMETRY AS OF: X	DETAILS BY DAVID PATO	CHECKED MIKE CULLEN	POST MILE 26.78			
ALIGNMENT TIES Dist. Traverse Sheet	DRAFTED BY V.PHAM 02/2015	CHECKED BY E.VIAJAR 02/2015	QUANTITIES BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON				

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	79	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

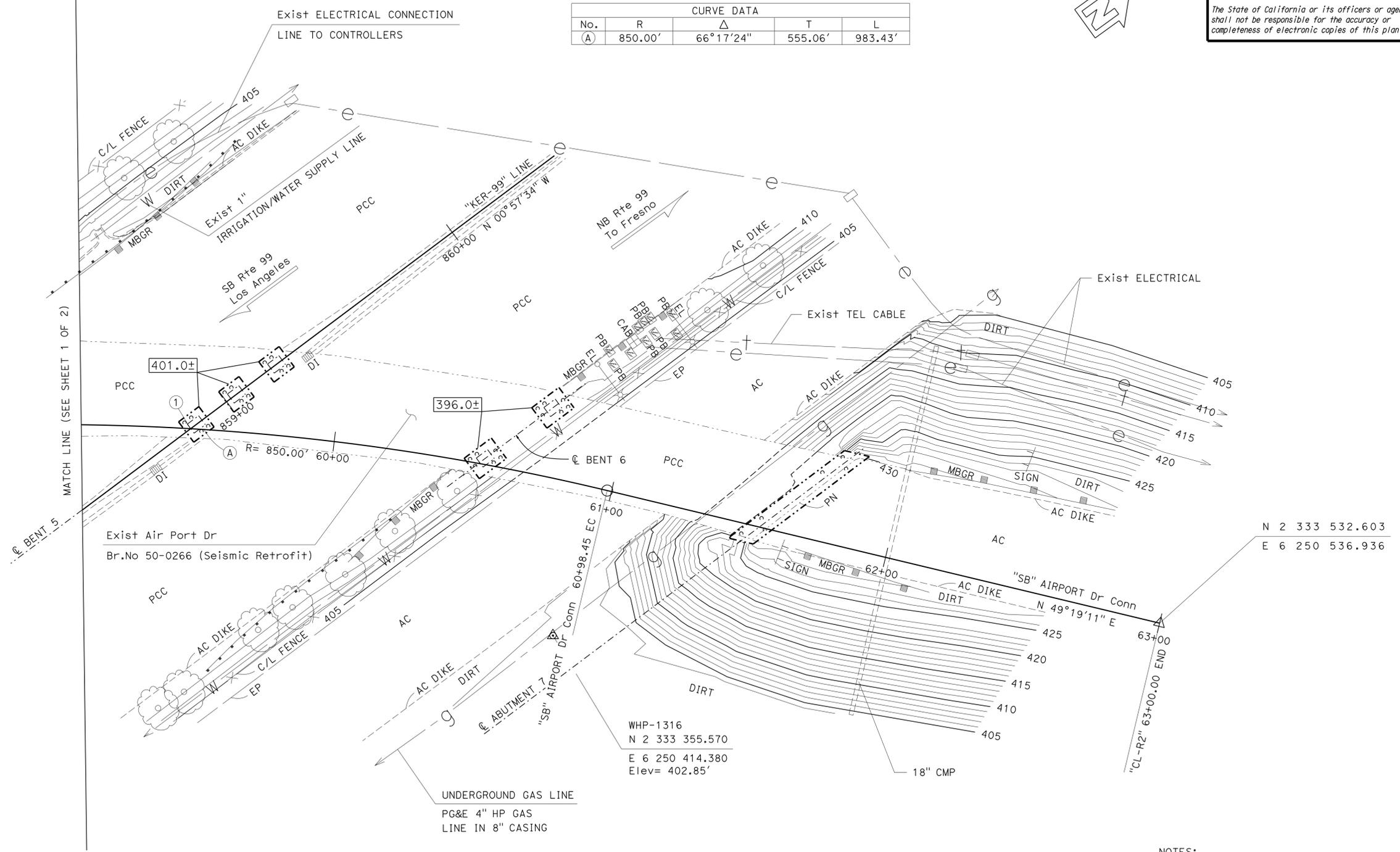
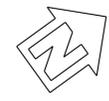
4-11-16  
 PLANS APPROVAL DATE

STATE OF CALIFORNIA  
 REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL

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① Sta 59+49.34, "SB" AIRPORT Dr Conn =  
 Sta 858+84.45, "KER-99" LINE

No.	R	Δ	T	L
(A)	850.00'	66°17'24"	555.06'	983.43'



SURVEY CONTROL  
 SEE FOUNDATION PLAN SHEET 1 OF 2

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

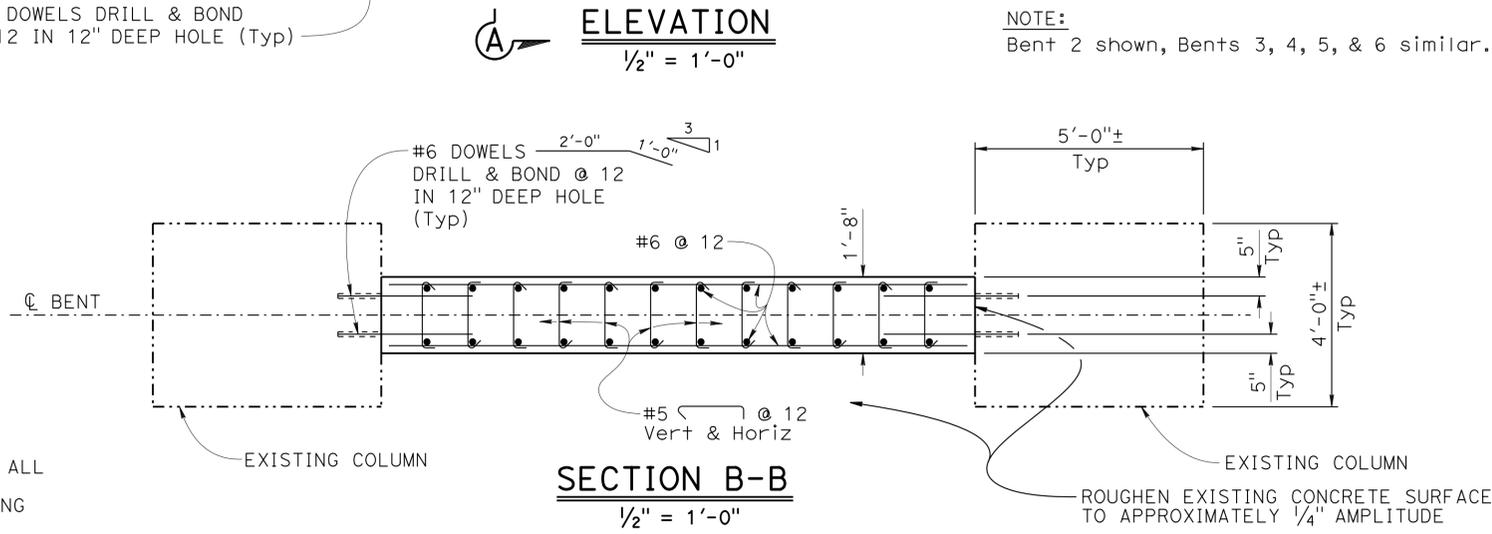
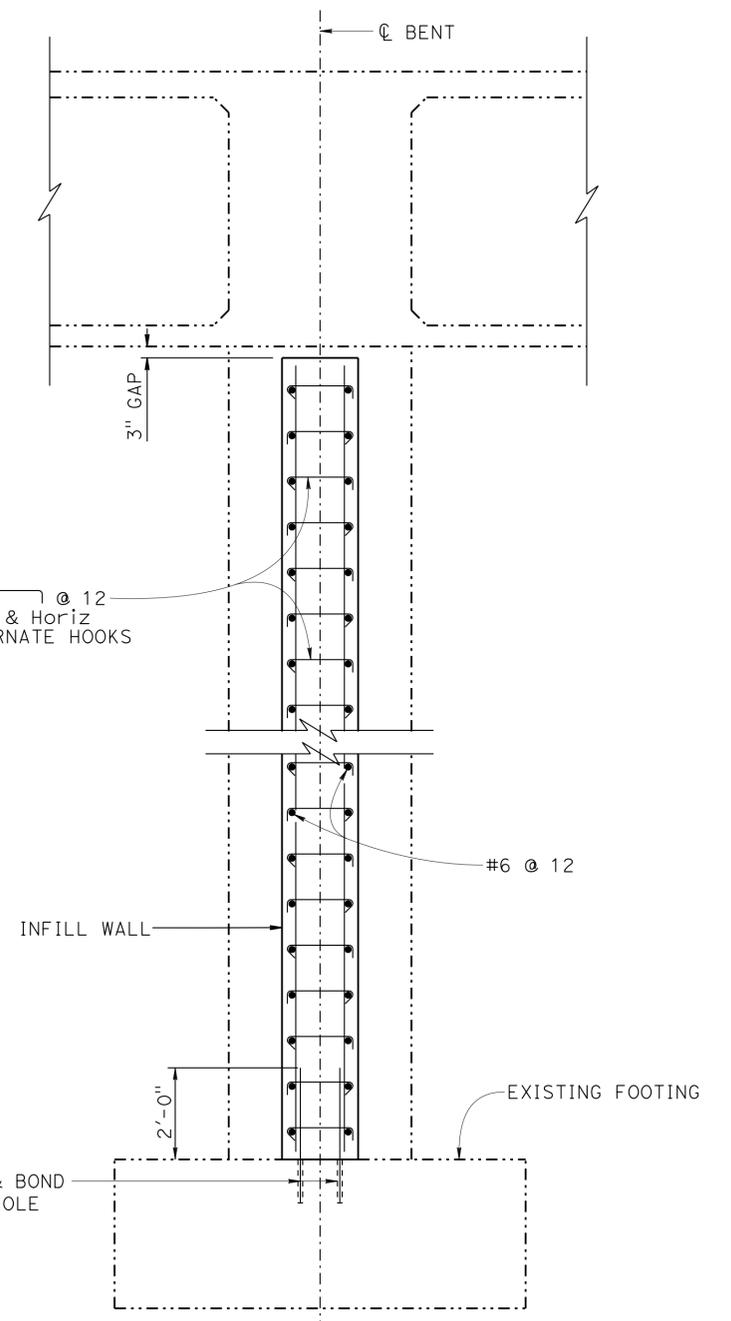
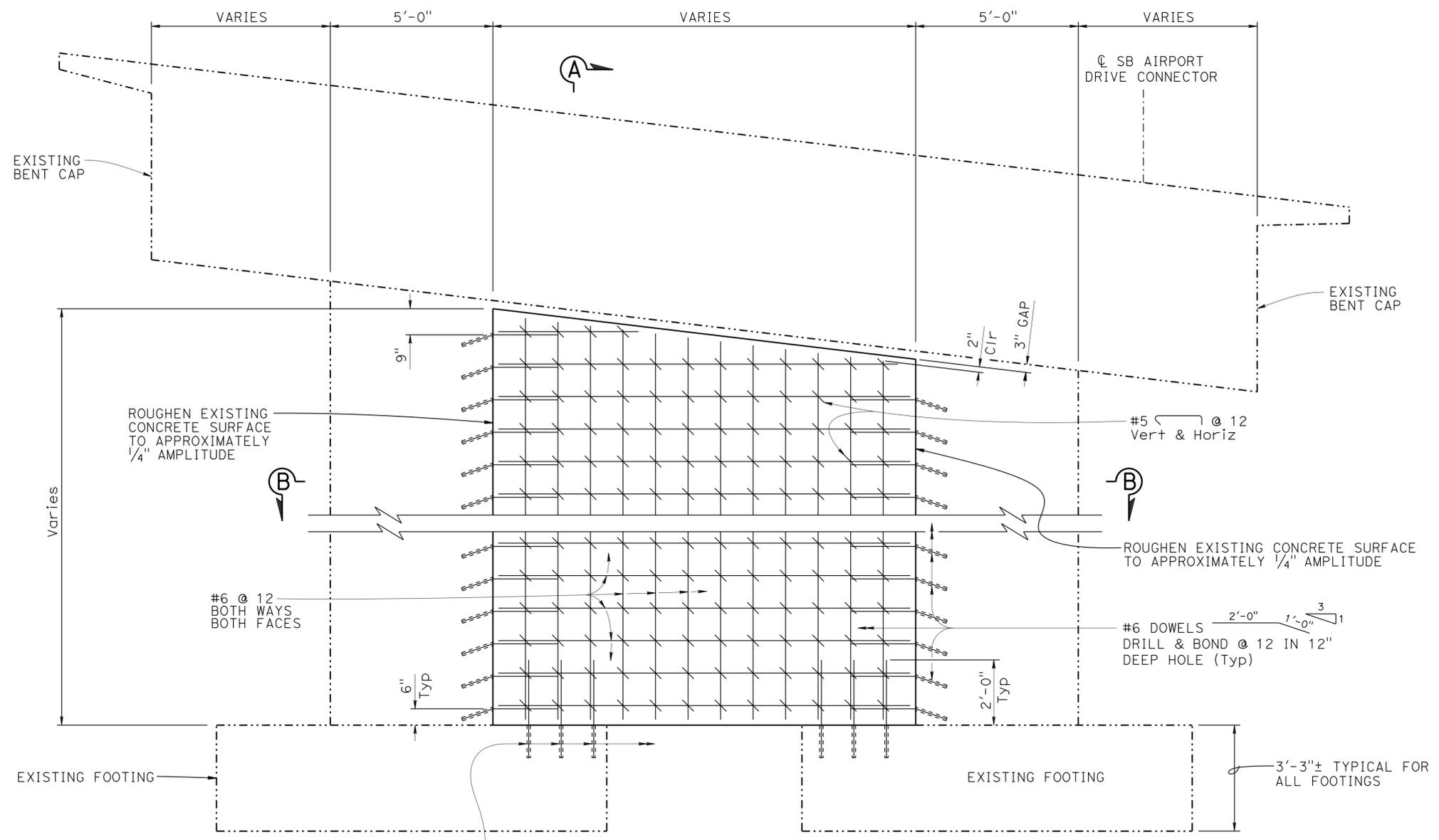
**LEGEND:**  
 XXX.X - Indicates bottom of footing elevation  
 - - - - - Existing

**NOTES:**  
 UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE, SEE UTILITY PLANS FOR MORE INFORMATION

<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN BY: GLORIA REYES-GUTIERREZ	CHECKED: MIKE CULLEN	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	DIVISION OF ENGINEERING SERVICES <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 6</b>	BRIDGE NO. 50-0266	<b>SEISMIC RESTORATION</b> <b>AIRPORT DRIVE OC RETROFIT</b> <b>FOUNDATION PLAN 2 OF 2</b>			
SCALE: 1"=20'	VERT. DATUM: NGVD88	PHOTOGRAMMETRY AS OF: X	DETAILS BY: DAVID PATO	CHECKED: MIKE CULLEN	POST MILE 26.78							
ALIGNMENT TIES: Dist. Traverse Sheet	DRAFTED BY: V.PHAM 02/2015	CHECKED BY: E.VIAJAR 02/2015	QUANTITIES BY: GLORIA REYES-GUTIERREZ	CHECKED: RACHEL WASHINGTON								
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3647	PROJECT NUMBER & PHASE: 0612000108-1	CONTRACT NO.: 06-0K8104	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 4 OF 11

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	80	98

12-18-15  
 REGISTERED CIVIL ENGINEER DATE  
 4-11-16  
 PLANS APPROVAL DATE  
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NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

NOTE:  
Bent 2 shown, Bents 3, 4, 5, & 6 similar.

## SEISMIC RESTORATION

# AIRPORT DRIVE OC RETROFIT

## INFILL WALL DETAILS

DESIGN	BY GLORIA REYES-GUTIERREZ	CHECKED MIKE CULLEN
DETAILS	BY DAVID PATO	CHECKED MIKE CULLEN
QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 6**

BRIDGE NO.	50-0266
POST MILE	26.78



REVISION DATES	SHEET	OF
5-18-15 10-09-15 12-17-15 11-24-15	5	11

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

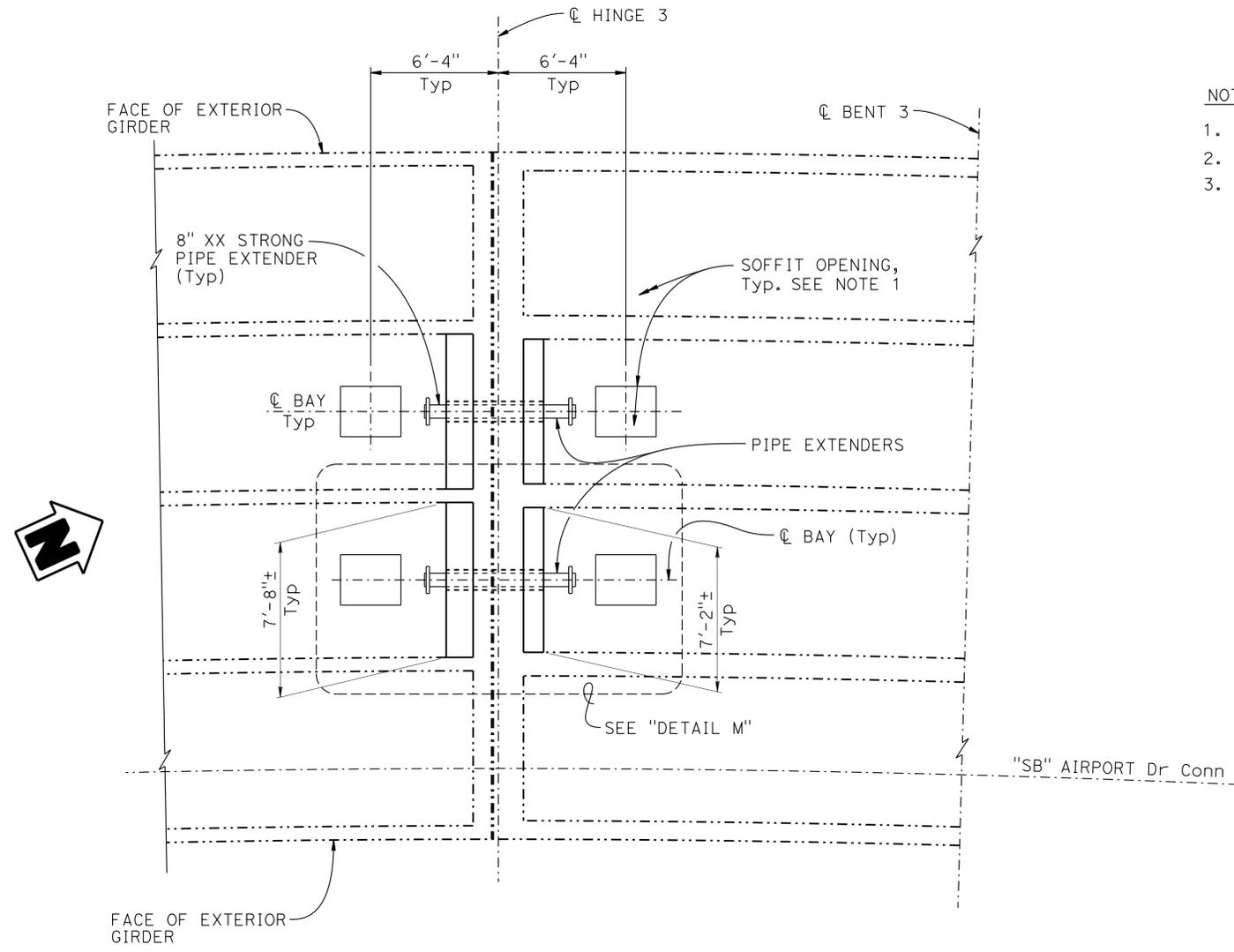
4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

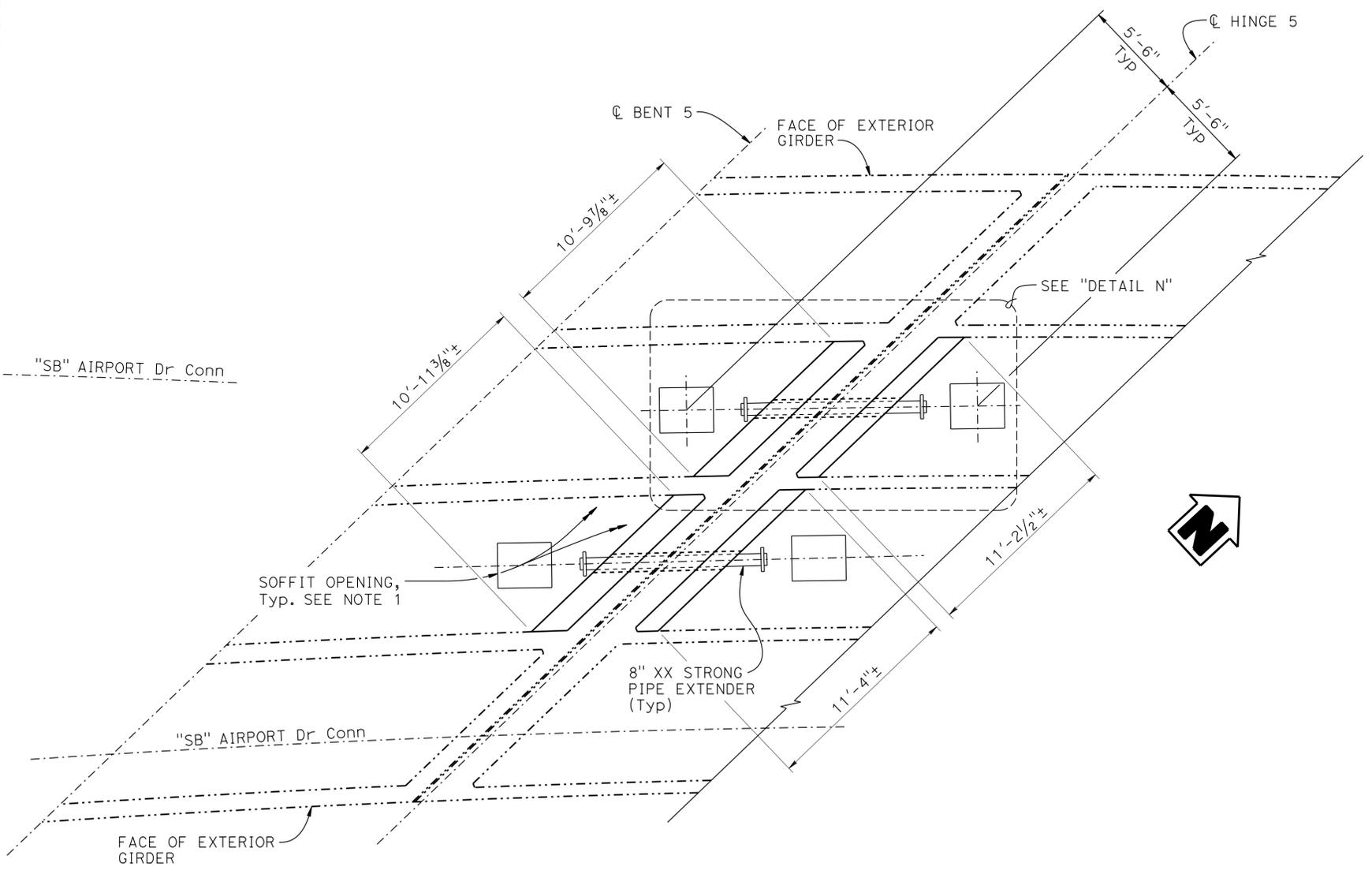
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

**NOTES:**

1. For Soffit Opening details, see "DECK AND SOFFIT OPENINGS" sheet.
2. For "DETAIL M", see "HINGE DETAILS NO. 1" sheet.
3. For "DETAIL N", see "HINGE DETAILS NO. 2" sheet.



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



**HINGE 5 - PART PLAN**  
 1/4" = 1'-0"

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

DESIGN	BY	GLORIA REYES-GUTIERREZ	CHECKED	MIKE CULLEN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO.	50-0266	
	DETAILS	BY	DAVID PATO	CHECKED			MIKE CULLEN	POST MILE	26.78
	QUANTITIES	BY	GLORIA REYES-GUTIERREZ	CHECKED			RACHEL WASHINGTON		

**SEISMIC RESTORATION**

**AIRPORT DRIVE OC RETROFIT**

**HINGE LAYOUT**

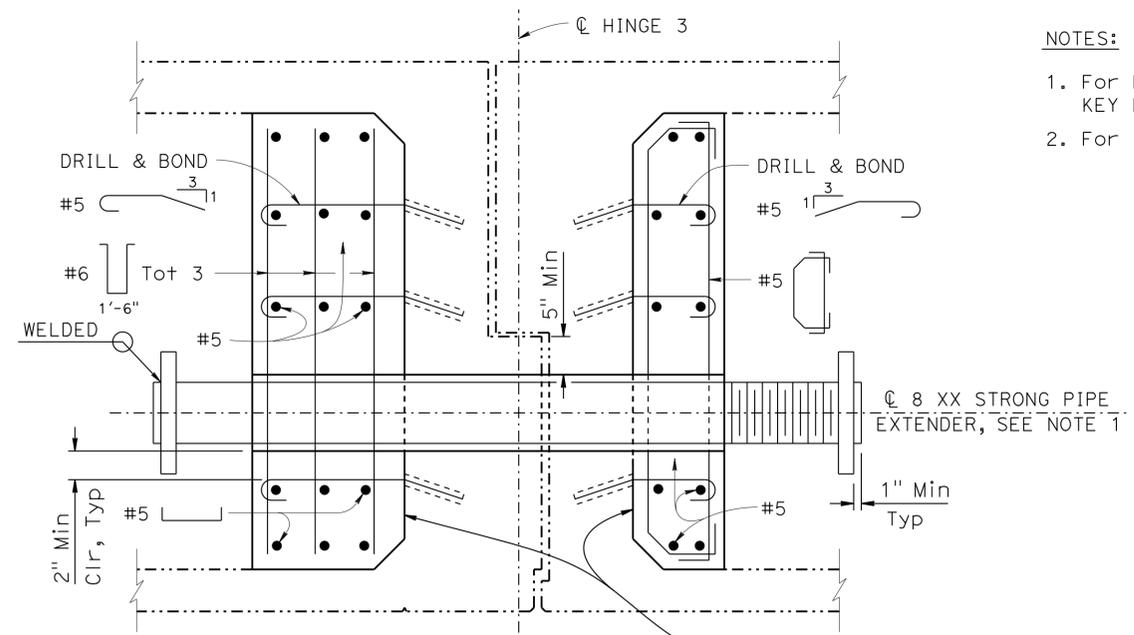
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	82	98

*Gloria Reyes-Gutierrez* 12-18-15  
REGISTERED CIVIL ENGINEER DATE

4-11-16  
PLANS APPROVAL DATE

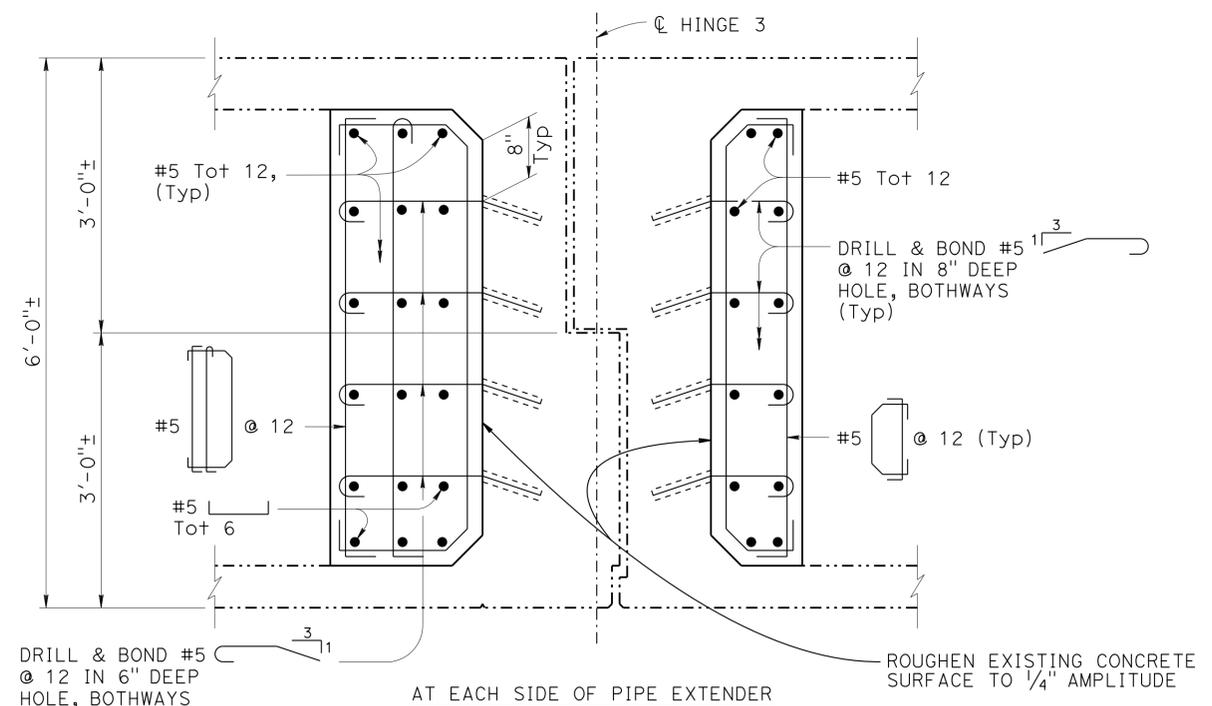
REGISTERED PROFESSIONAL ENGINEER  
GLORIA REYES-GUTIERREZ  
No. C 57583  
Exp. 12-31-15  
CIVIL  
STATE OF CALIFORNIA

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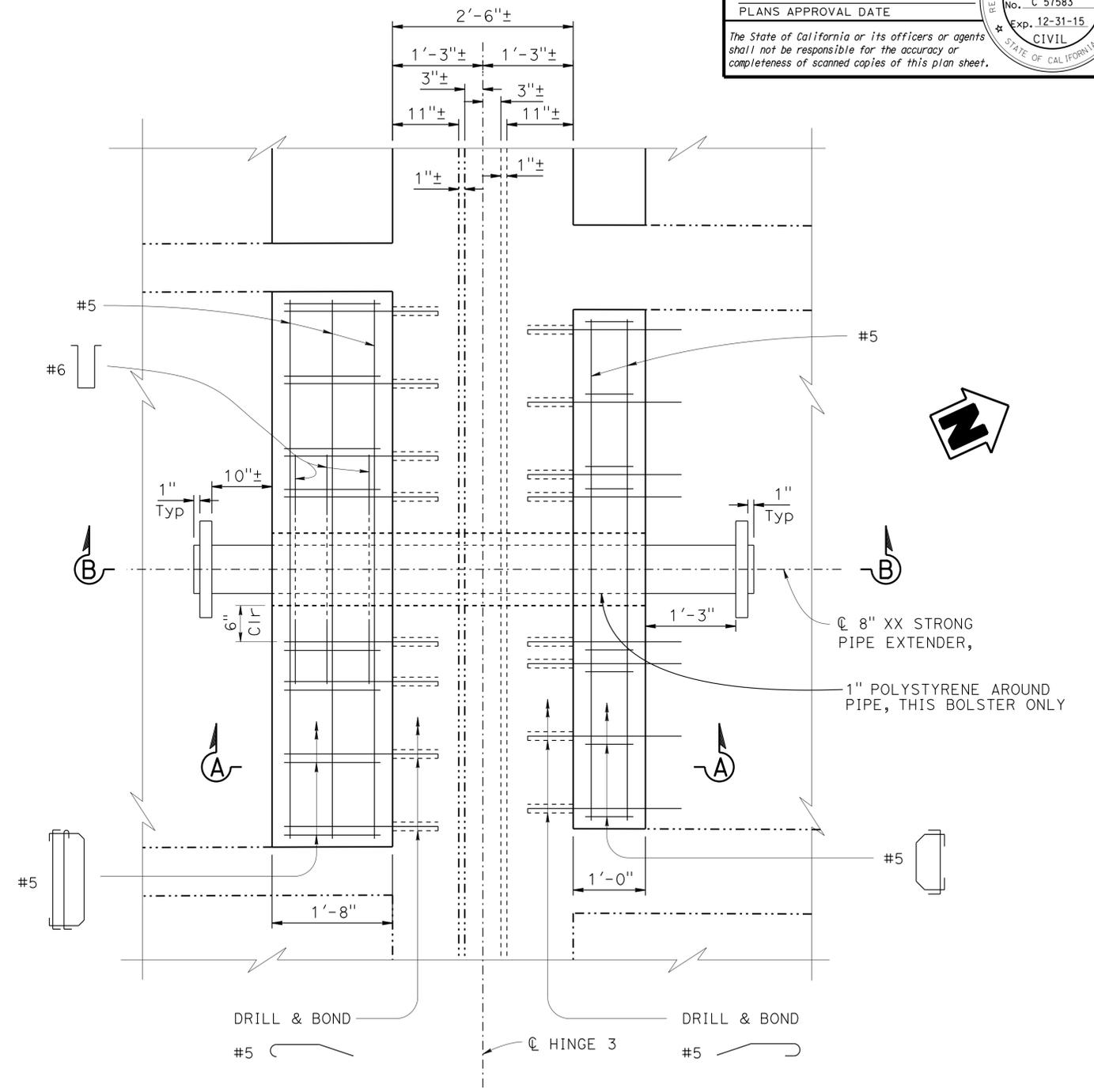
AT PIPE EXTENDER  
**SECTION B-B**  
**HINGE SECTION - HINGE 3**  
1" = 1'-0"

- NOTES:
1. For Pipe Extender details, see "PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT) sheet.
  2. For location of "DETAIL M", see "HINGE LAYOUT" sheet.



AT EACH SIDE OF PIPE EXTENDER  
**SECTION A-A**  
**HINGE SECTION - HINGE 3**  
1" = 1'-0"

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



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

DESIGN BY GLORIA REYES-GUTIERREZ CHECKED MIKE CULLEN DETAILS BY Jie Tang CHECKED MIKE CULLEN QUANTITIES BY GLORIA REYES-GUTIERREZ CHECKED RACHEL WASHINGTON			<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 6</b>		BRIDGE NO. 50-0266 POST MILE 26.78		<b>SEISMIC RESTORATION</b> <b>AIRPORT DRIVE OC RETROFIT</b> <b>HINGE DETAILS NO. 1</b>		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3591 PROJECT NUMBER & PHASE: 0612000108-1 CONTRACT NO.: 06-0K8104		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES: 5-18-15, 11-25-15, 12-17-15, 10/24/15 SHEET 7 OF 11		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	83	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

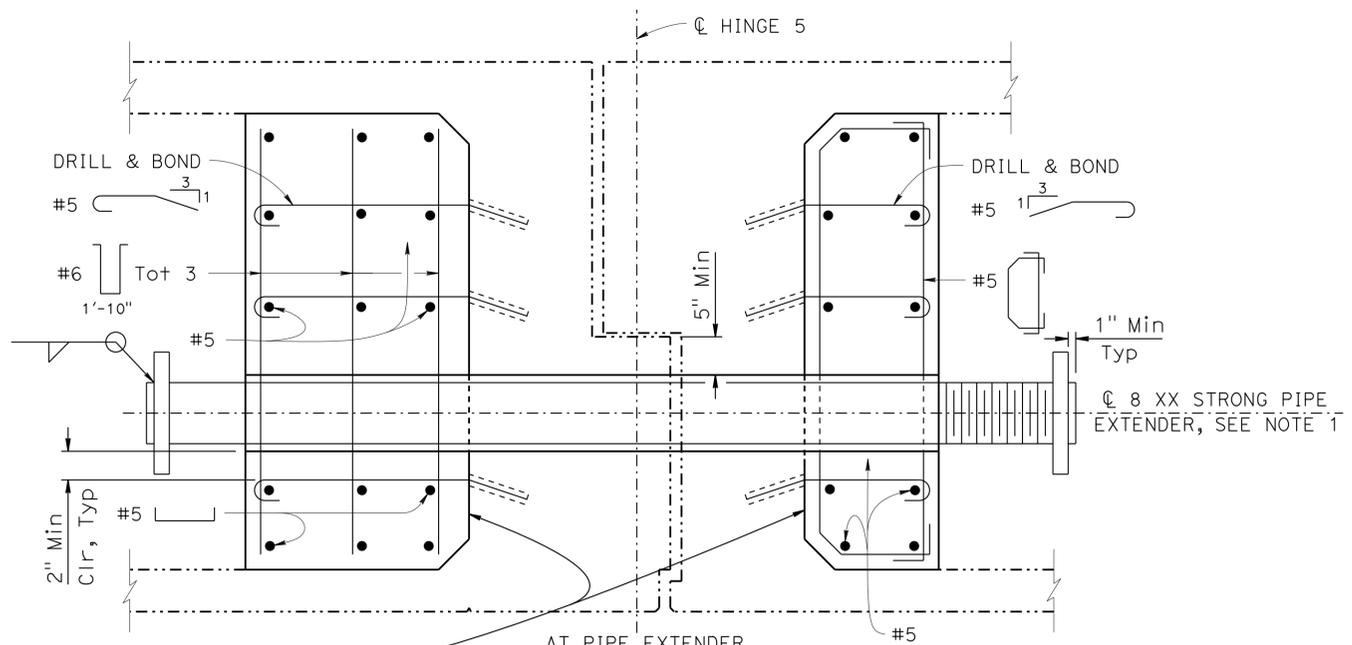
4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

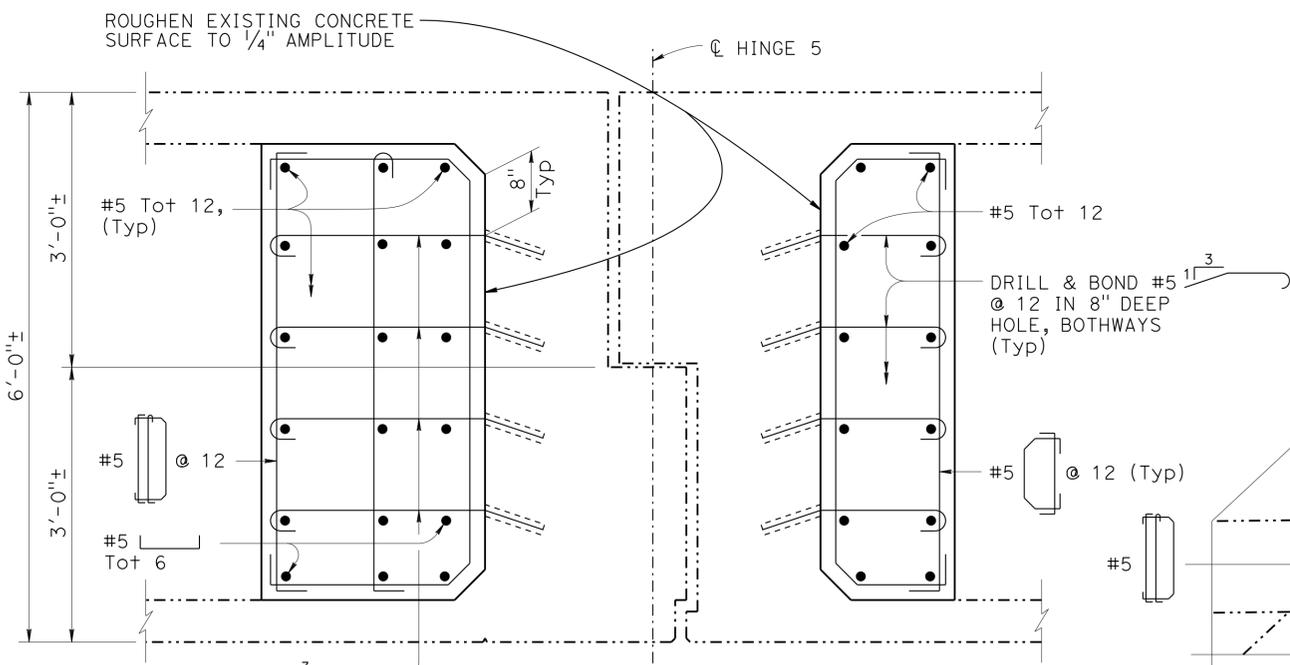
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NOTES:

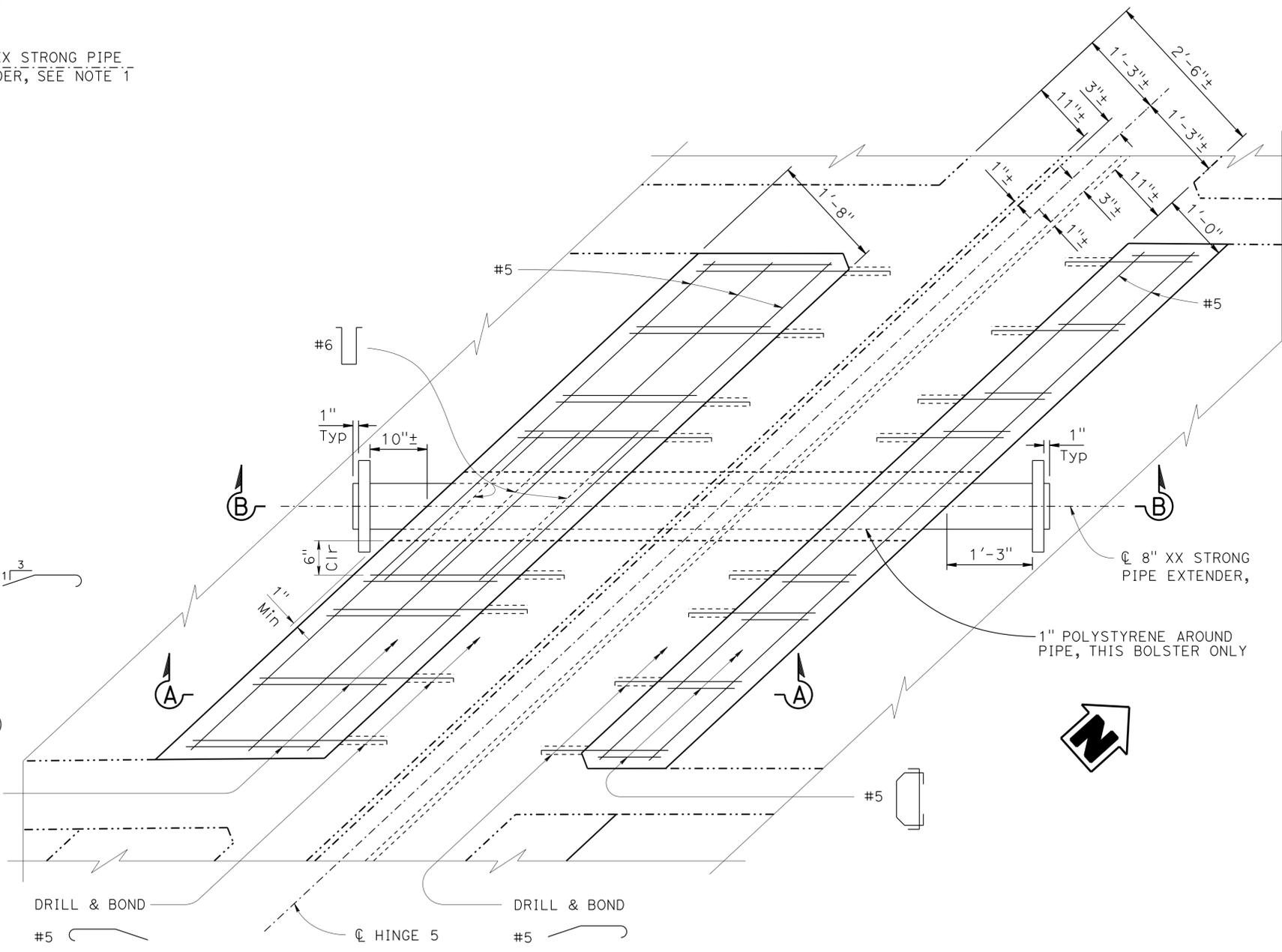
1. For Pipe Extender details, see "PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT) sheet.
2. For location of "DETAIL N", see "HINGE LAYOUT" sheet.



**SECTION B-B**  
**HINGE SECTION - HINGE 5**  
 1" = 1'-0"



**SECTION A-A**  
**HINGE SECTION - HINGE 5**  
 1" = 1'-0"



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

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

DESIGN	BY GLORIA REYES-GUTIERREZ	CHECKED MIKE CULLEN
DETAILS	BY Jie Tang	CHECKED MIKE CULLEN
QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 6**

BRIDGE NO.	50-0266
POST MILE	26.78

**SEISMIC RESTORATION**  
**AIRPORT DRIVE OC RETROFIT**  
**HINGE DETAILS NO. 2**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	84	98

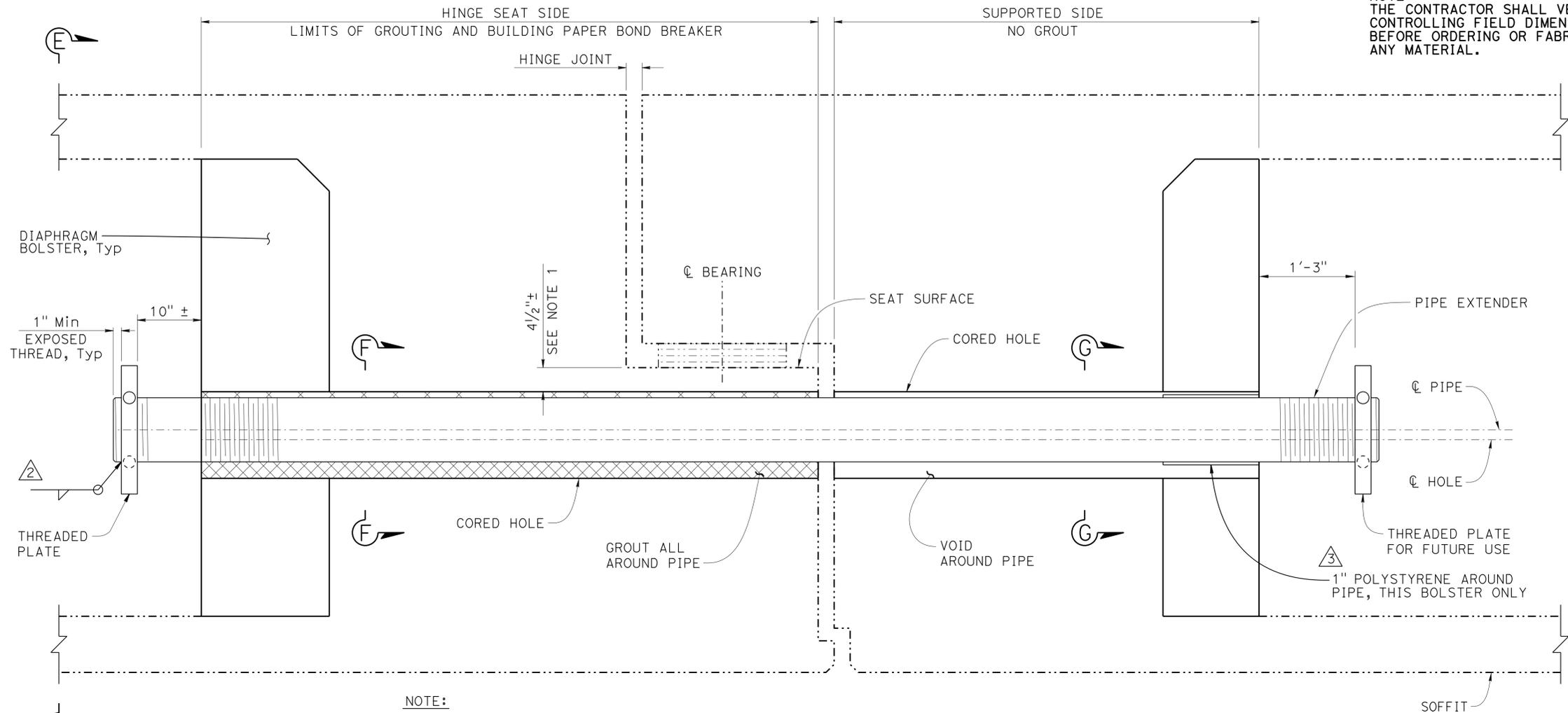
*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

4-11-16  
 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.

"The components of this Bridge Standard Drawing have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California. Refer to: <http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheet/index.html>. The selection and proper application of the component design and any modifications shown have been prepared under the responsible charge of the registered civil engineer for the project."

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

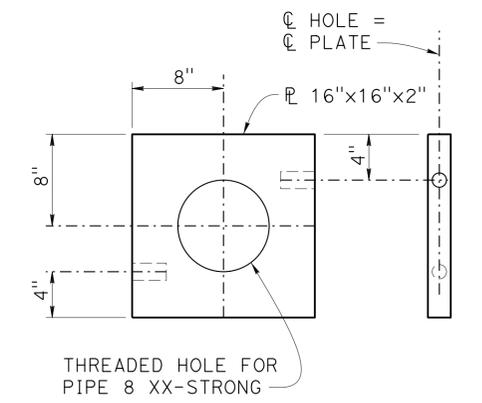


NOTE:  
 HINGE 3 shown.  
 Hinge 5 similar.

LEGEND:  
 ----- Indicates existing structure.

**PIPE EXTENDER ELEVATION**  
 NO SCALE

- NOTES:
- The Hole must be aligned to form a straight line the entire length of the Pipe Extender. The Hole must be cored with the Top of Hole 2" below the seat's top existing main reinforcement. During construction hole ends must be capped to prevent debris intrusion.
  - Pipe 8 xx-Strong Galv. pipe and 10"  $\phi$  cored Hole.
  - Set pipe parallel to top of hole. Maintain a 3/4" gap between pipe and top of hole.
  - Tightly wrap fixed side of pipe with 2 layers of 15 lbs building paper. Paper is to remain in place as a bond breaker.
  - Thread Pipe and Plate: 8 threads per inch per ASME B 1.20.1. Thread pipe 12" on both ends.
  - Apply Thread Locking System after grouting and Threaded Plate weld all around surface, Hinge Seat Side only.
  - Apply Threaded Plate on supported side, Thread Locking System.
  - Existing reinforcement not shown.

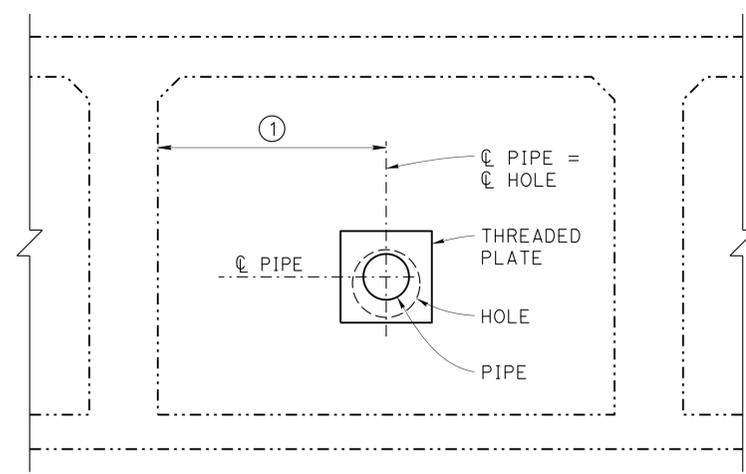


**FOR 8"  $\phi$  PIPE SEAT EXTENDER**

Threaded Plate for 8"  $\phi$  pipe.  
 The bearing surface for the Threaded Plate must be perpendicular to the hole.  
 2 Threaded Plates per Pipe Seat Extender.  
 The 3" deep holes in plate are to receive a 1"  $\phi$  rod for removal of the Threaded Plate (by others).

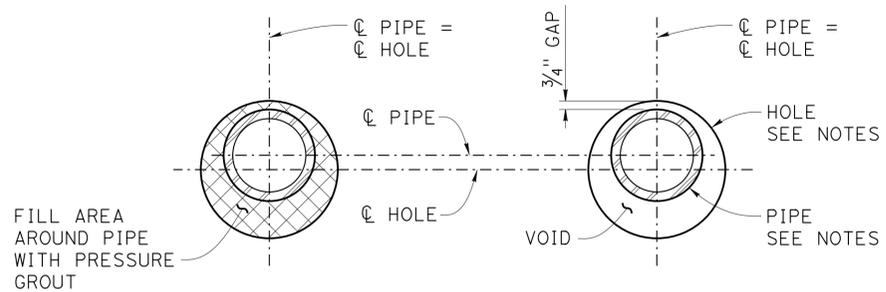
**THREADED PLATE DETAILS**

1/2" = 1'-0"



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

① For Location of pipe, see Hinge layout sheet



**HINGE SEAT SIDE**

**SECTION F-F**

NOT TO SCALE

**SUPPORTED SIDE**

**SECTION G-G**

NOT TO SCALE

REVISED STANDARD DRAWING

FILE NO. **xs7-081**

APPROVAL DATE July 2014

⚠	REVISED NOTE	⚠	ADDED NOTE AND DETAIL
⚠	ADDED WELDING SYMBOL AND DELETED NOTE		

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	50-0266
POST MILE	26.78

**SEISMIC RESTORATION**

**AIRPORT DRIVE OC RETROFIT**

**PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT)**

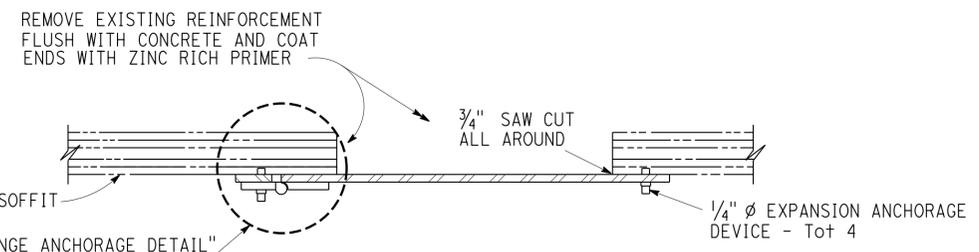
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06	Ker	99,178	26.8, R2.0	85	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

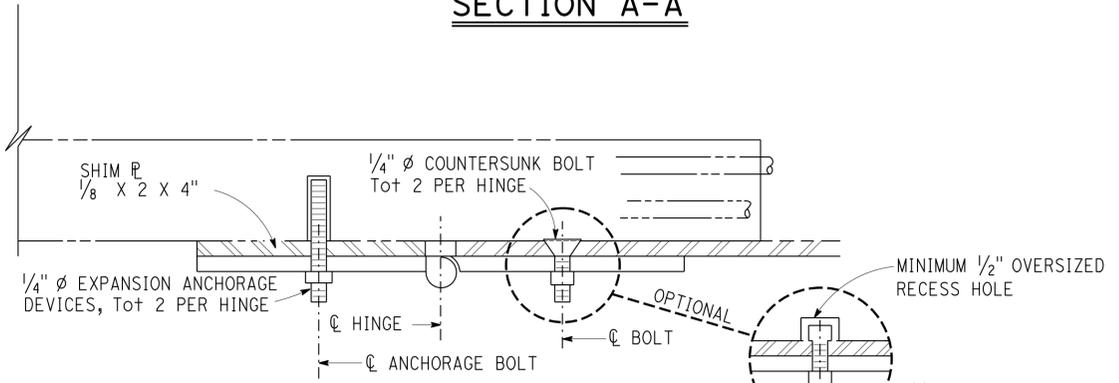
4-11-16  
 PLANS APPROVAL DATE

STATE OF CALIFORNIA  
 REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL

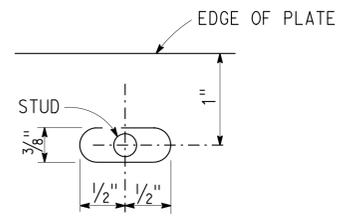
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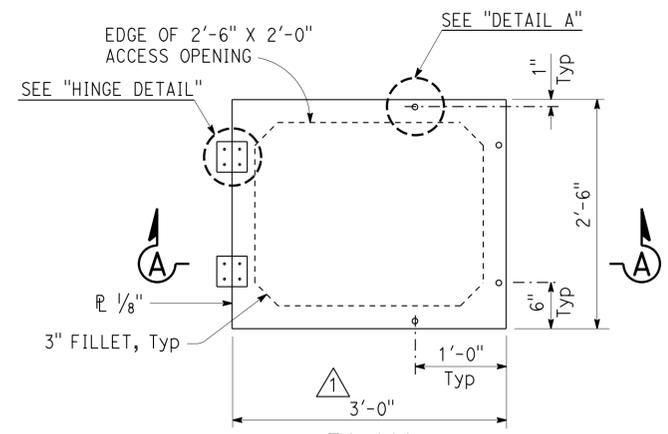
**SECTION A-A**



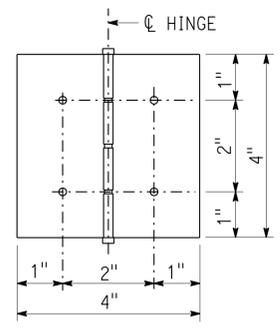
**HINGE ANCHORAGE DETAIL**



**DETAIL A**



**PLAN**



**HINGE DETAIL**

- NOTES:
1. Non-removable pin in hinge
  2. Hinge assembly to be galvanized, brass or stainless steel
  3. Use Thread Locking System for all hinge nuts
  4. Hinge assembly to be minimum 1/8" Thick

**SOFFIT ACCESS DOOR ASSEMBLY**

NOTE: SOFFIT ACCESS DOOR OPENING DIRECTION TO BE DETERMINED BY THE ENGINEER

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

NO SCALE

**SEISMIC RESTORATION**  
**AIRPORT DRIVE OC RETROFIT**  
**DECK AND SOFFIT OPENINGS**

REVISED STANDARD DRAWING  
 FILE NO. **xs7-110**  
 APPROVAL DATE July 2014

REVISED DIMENSION AND DETAIL

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 50-0266  
 POST MILE 26.78

USERNAME => s115755 DATE PLOTTED => 07-JUL-2016 TIME PLOTTED => 11:12

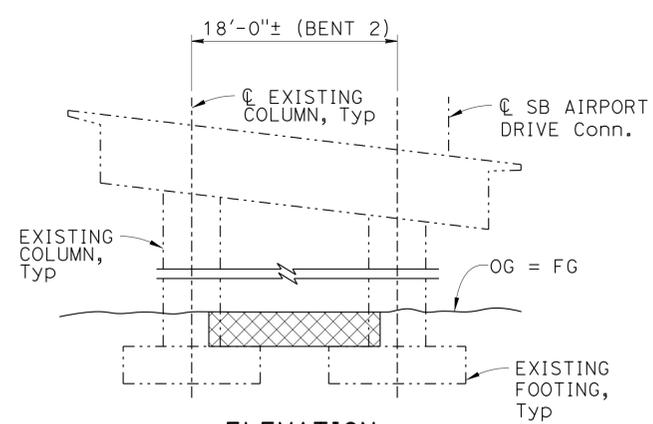
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	86	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

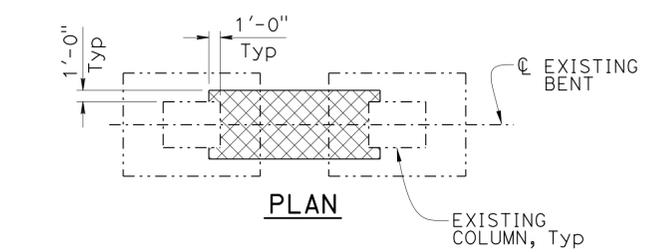
4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

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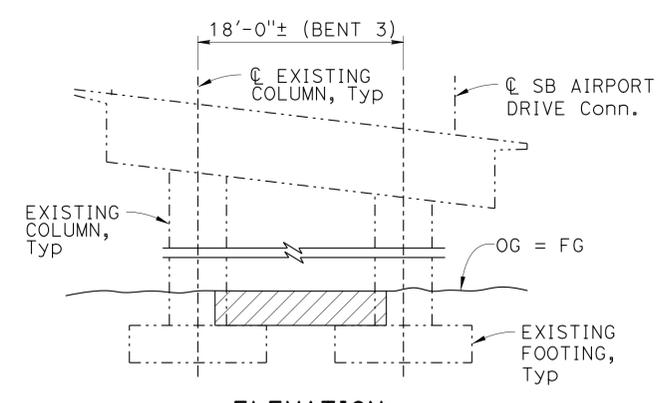


**ELEVATION**

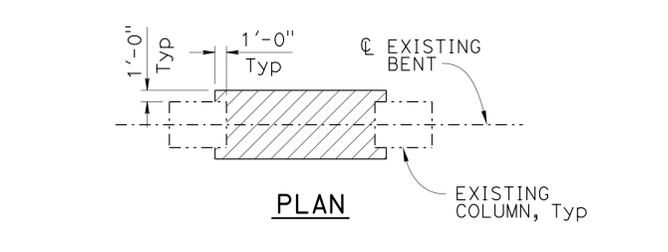


**PLAN**

**EXCAVATION @ BENT 2**  
 1/8" = 1'-0"

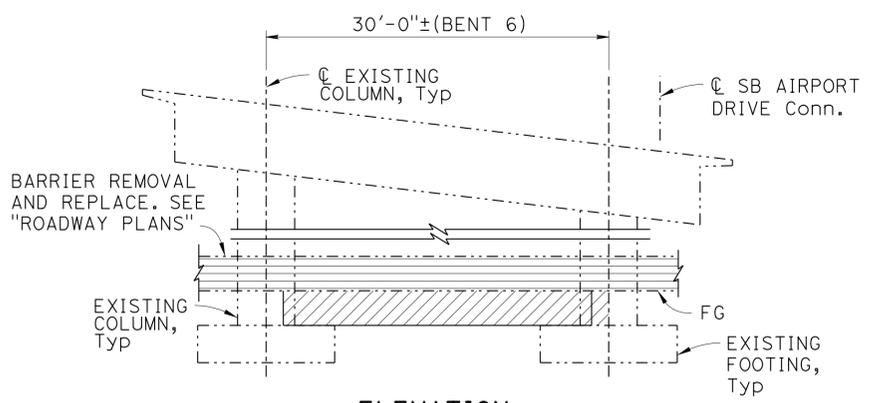


**ELEVATION**

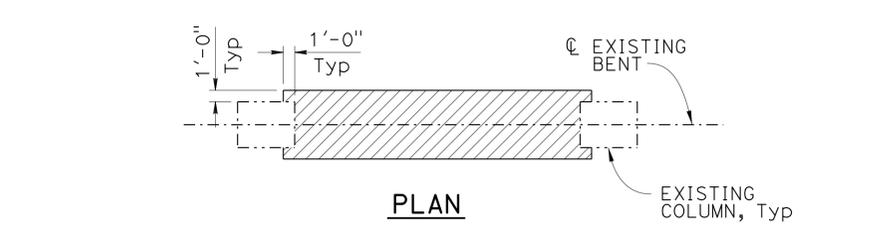


**PLAN**

**EXCAVATION @ BENT 3**  
 1/8" = 1'-0"



**ELEVATION**

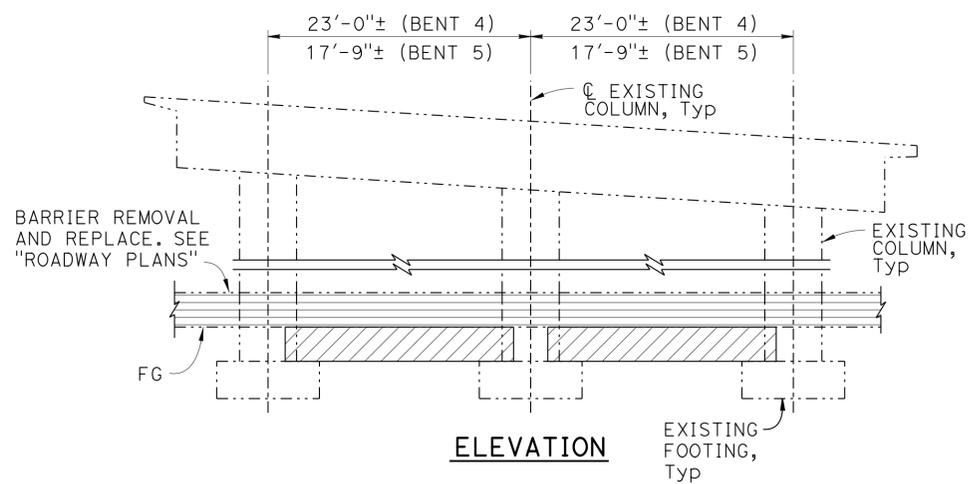


**PLAN**

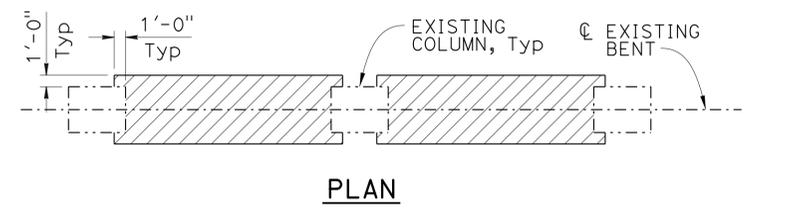
**EXCAVATION @ BENT 6**  
 1/8" = 1'-0"

NOTE:  
 For Removal and Replacement of Concrete Barrier Details, see "Roadway Plans".

- LEGEND:
- Indicates existing structure
  - Indicates new construction
  - ▨ Indicates structure excavation
  - ▩ Indicates structure backfill
  - ▧ Indicates Barrier removal and replace. See "Roadway Plans"
  - ▦ Indicates structure excavation (Type D)

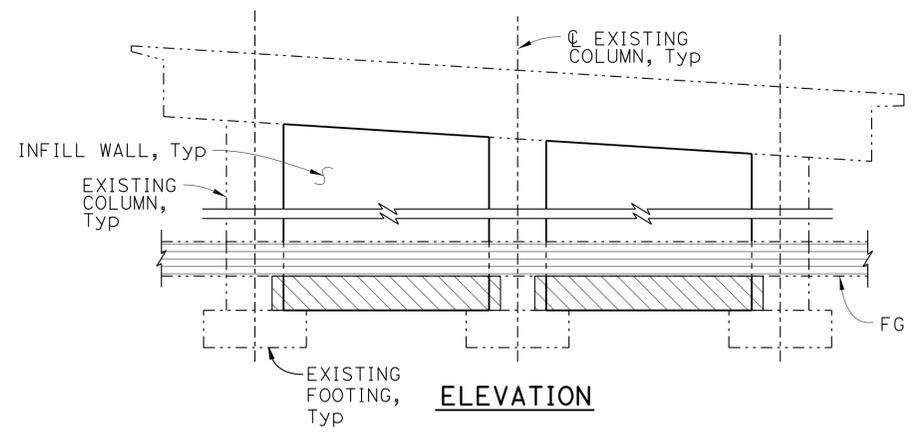


**ELEVATION**

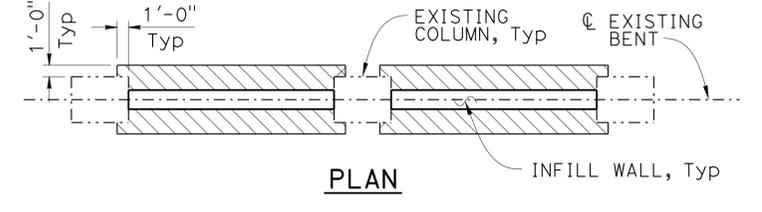


**PLAN**

**EXCAVATION @ BENT 4 & 5**  
 1/8" = 1'-0"

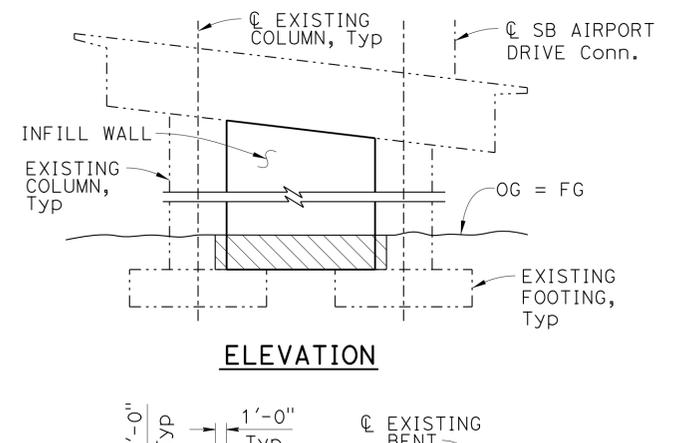


**ELEVATION**

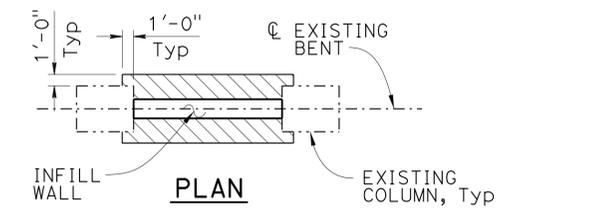


**PLAN**

**BACKFILL @ BENT 4 & 5**  
 1/8" = 1'-0"



**ELEVATION**



**PLAN**

**BACKFILL @ BENT 2, 3 & 6**  
 1/8" = 1'-0"

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

DESIGN	BY	GLORIA REYES-GUTIERREZ	CHECKED	MIKE CULLEN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO.	50-0266	
	DETAILS	BY	Jie Tang	CHECKED			MIKE CULLEN	POST MILE	26.78
	QUANTITIES	BY	GRG	CHECKED			RACHEL WASHINGTON	UNIT: 3591 PROJECT NUMBER & PHASE: 0612000108-1	CONTRACT NO.: 06-0K8104

**SEISMIC RESTORATION**

**AIRPORT DRIVE OC RETROFIT**

**LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL**

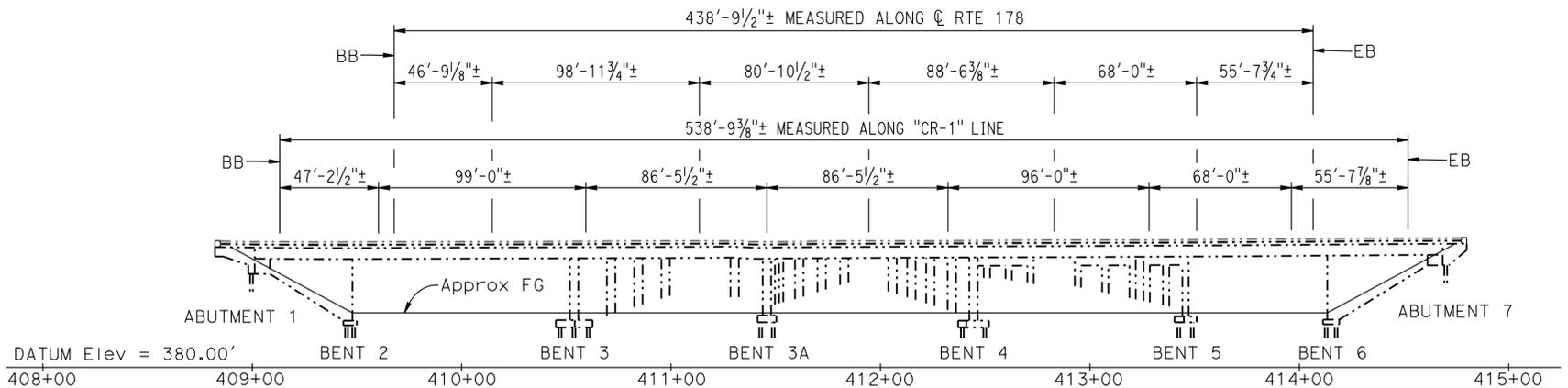
REVISION DATES	SHEET	OF
12-17-15	11	11

DISREGARD PRINTS BEARING EARLIER REVISION DATES

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	87	98

12-18-15  
 REGISTERED CIVIL ENGINEER DATE  
 4-11-16  
 PLANS APPROVAL DATE  
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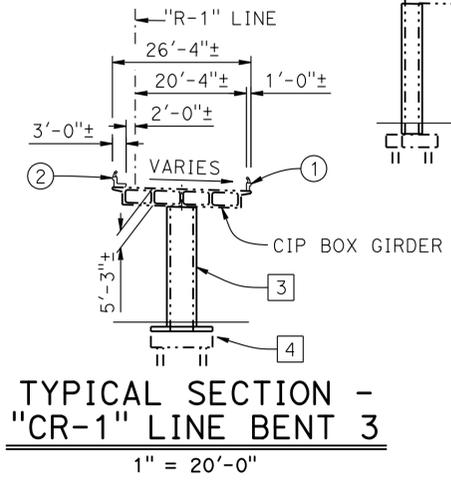
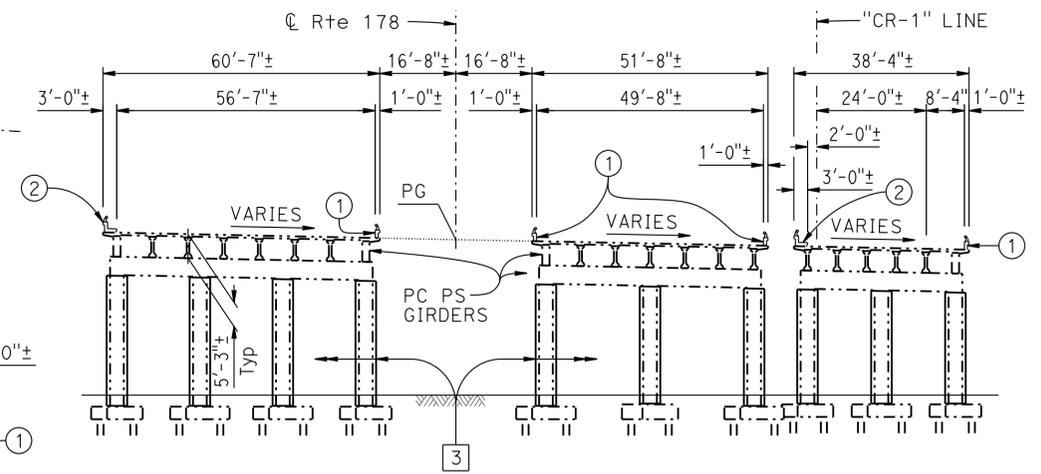
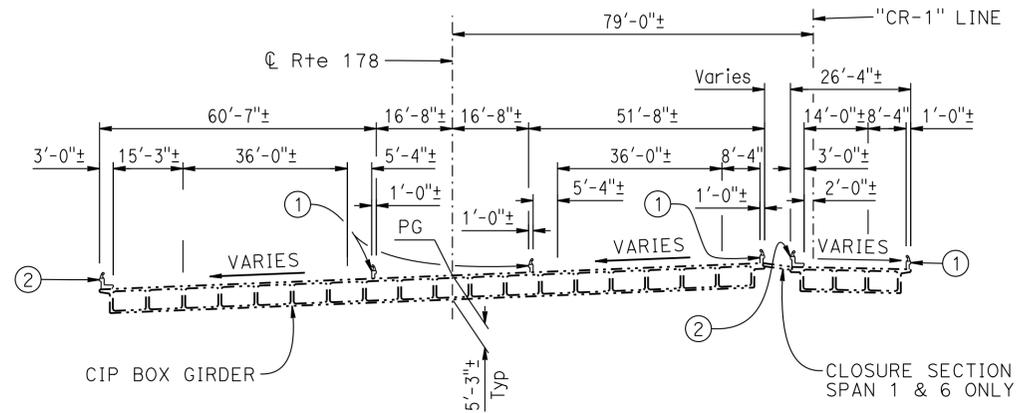
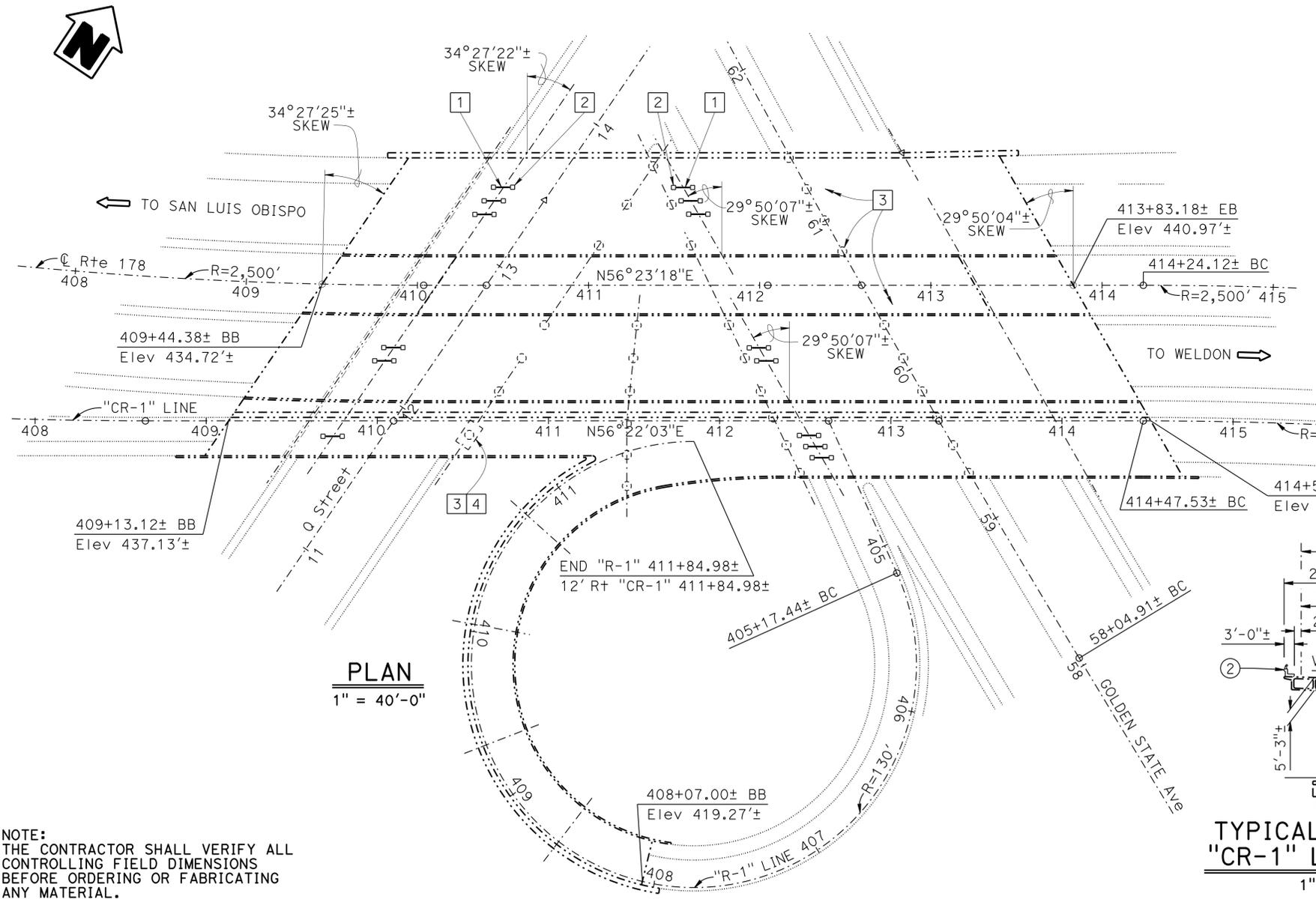
REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA



**ELEVATION**  
1" = 40'-0"

- LEGEND:**
- ① EXISTING TYPE 1 BARRIER RAILING
  - ② EXISTING TYPE 2 BARRIER RAILING

- NOTES:**
- 1 Install hinge pipe extenders.
  - 2 Access opening, soffit.
  - 3 Full height steel column casing Class F Bent 3 "CR-1" line, Class P/F Bent 5L/R/CR-1 line.
  - 4 Reinforced concrete footing overlay.



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

DESIGN	BY GLORIA REYES-GUTIERREZ	CHECKED MIKE CULLEN	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 6</b>	BRIDGE NO. 50-0326	
DETAILS	BY DAVID PATO	CHECKED MIKE CULLEN	LAYOUT	BY DAVID PATO			CHECKED MIKE CULLEN	R/L/CR-1
QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON	SPECIFICATIONS	BY WANDA WARD			CHECKED WANDA WARD	POST MILE 1.95

**SEISMIC RESTORATION**  
**GOLDEN STATE AVE SEPARATION**  
**GENERAL PLAN**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	88	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

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**INDEX TO PLANS**

- GENERAL PLAN
- INDEX TO PLANS
- FOUNDATION PLAN
- BENT 3/CR-1 LINE FOOTING DETAILS
- COLUMN CASING - STEEL
- HINGE LAYOUT NO. 1
- HINGE LAYOUT NO. 2
- HINGE DETAILS NO. 1
- HINGE DETAILS NO. 2
- PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT)
- DECK AND SOFFIT OPENINGS
- LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL

**GENERAL NOTES**  
**LOAD AND RESISTANCE FACTOR DESIGN**

**DESIGN:**  
 AASHTO LRFD Bridge Design Specifications, 6th edition and the California Amendments, preface dated January 2014.

**SEISMIC DESIGN:**  
 Caltrans Seismic Design Criteria (SDC), Version 1.7 dated April 2013

**DEAD LOAD:**  
 Includes 35 psf for future wearing surface.

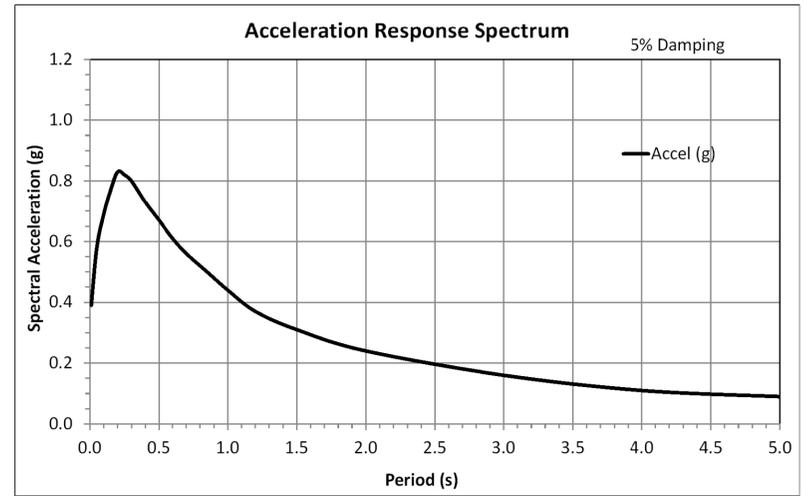
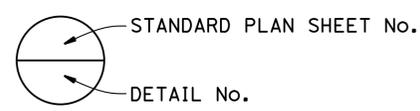
**SEISMIC LOADING:**  
 See "Site Specific ARS Curve"

**CONCRETE:**  
 fy = 60 ksi  
 f'c = 5.0 ksi  
 n = 8

**STRUCTURAL STEEL:**  
 XX-Strong Pipe  
 fy = 50 ksi  
 Column Casing  
 fy = 36 ksi minimum

**STANDARD PLANS 2010**

- A10A ABBREVIATIONS (SHEET 1 OF 2)
- RSP A10B ABBREVIATIONS (SHEET 2 OF 2)
- A10C LINES AND SYMBOLS (SHEET 1 OF 3)
- A10D LINES AND SYMBOLS (SHEET 2 OF 3)
- A10E LINES AND SYMBOLS (SHEET 3 OF 3)
- A10F LEGEND - SOIL (SHEET 1 OF 2)
- A10G LEGEND - SOIL (SHEET 2 OF 2)



**ARS CURVE**  
 NO SCALE

LIMITS OF PAYMENT FOR COLUMN STEEL SHELL CASING			
BENT LOCATION	AVERAGE COLUMN HEIGHT (FEET)	CONCRETE COLUMN DIAMETER (FEET)	EXISTING FOOTING DEPTH
3 CR-1	29.6±	4.0 ∅	3'-6"
5 L	26.3±	3.0 ∅	2'-9"
5 R	25.9±	3.0 ∅	EXTERIOR 2'-9" INTERIOR 3'-3"
5 CR-1	24.9±	3.0 ∅	2'-9"

QUANTITIES

CORE CONCRETE (7")	42	LF
ACCESS OPENING, SOFFIT	20	EA
STRUCTURE EXCAVATION (BRIDGE)	106	CY
STRUCTURE BACKFILL (BRIDGE)	107	CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	9	CY
DIAPHRAGM BOLSTER	14	EA
DRILL AND BOND DOWEL	267	LF
BAR REINFORCING STEEL (BRIDGE)	862	LB
ASPHALT MEMBRANE WATERPROOFING	266	SQFT
COLUMN CASING	29,815	LB
MISCELLANEOUS METAL (PIPE EXTENDER)	5,332	LB

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

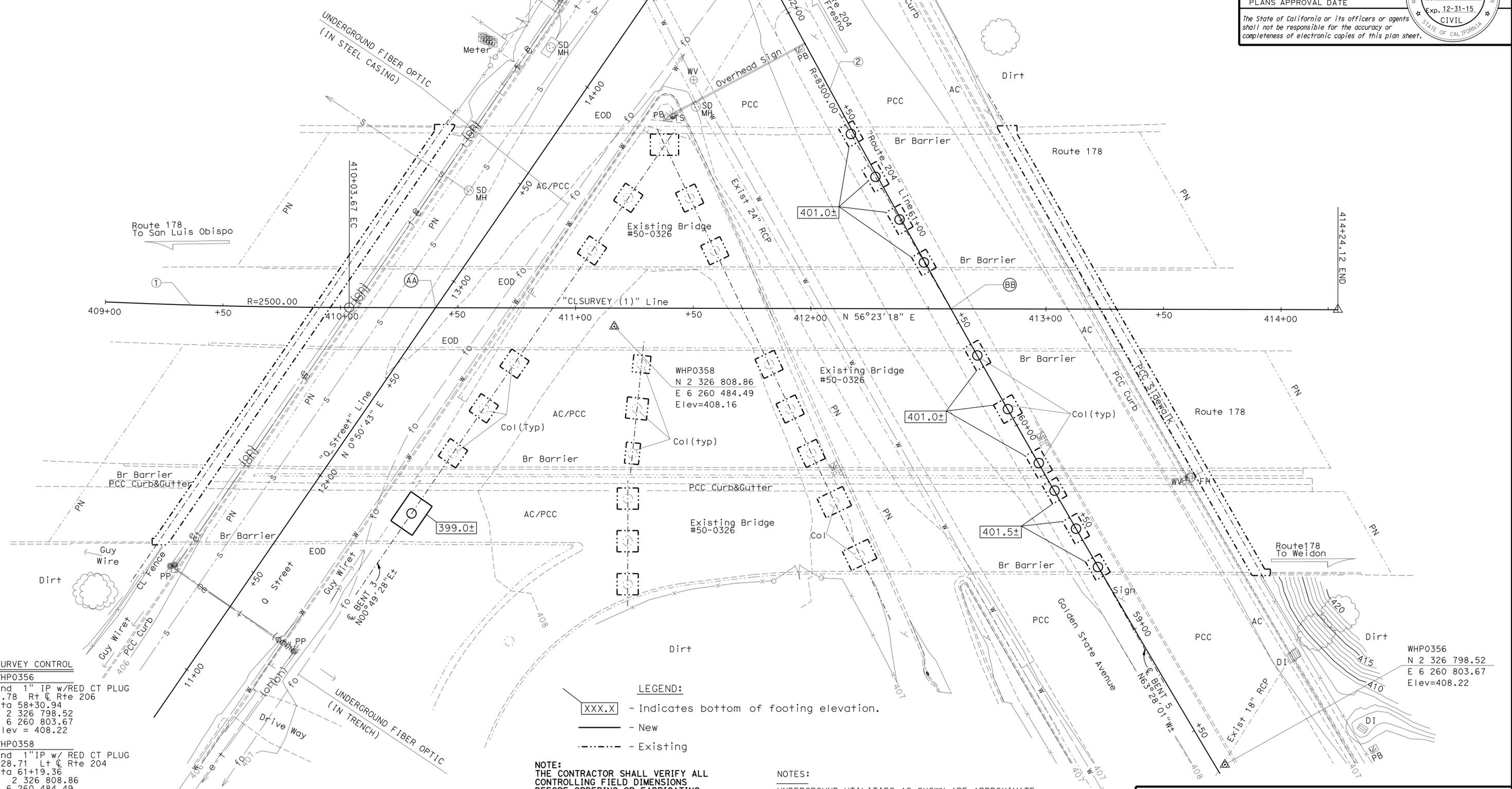
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY S. MITCHELL/GRG	CHECKED MIKE CULLEN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO.	50-0326 R/L/CR-1	POST MILE	1.95	SEISMIC RESTORATION GOLDEN STATE AVE SEPARATION INDEX TO PLANS		
	DETAILS	BY DAVID PATO	CHECKED MIKE CULLEN									
	QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON									
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						PROJECT NUMBER & PHASE: 0612000108-1		CONTRACT NO.: 06-0K8104		REVISION DATES	SHEET 2	OF 12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	89	98

REGISTERED CIVIL ENGINEER  
 DATE 12-18-15  
 4-11-16  
 PLANS APPROVAL DATE  
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CURVE DATA				
No.	R	$\Delta$	T	L
①	2500.00	11°32'36"	252.69	503.67
②	8300.00	05°29'19"	397.85	795.09

(AA) Sta 410+40.45 "CLSurvey(1)" Line=  
 STta 12+86.44 "Q\_Street" Line  
 (BB) Sta 412+59.60 "CLSurvey(1)" Line=  
 Sta 60+56.68 "ROUTE\_204" Line



**SURVEY CONTROL**  
 WHP0356  
 Fnd 1" IP w/RED CT PLUG  
 3.78 Rt @ Rte 206  
 Sta 58+30.94  
 N 2 326 798.52  
 E 6 260 803.67  
 Elev = 408.22  
 WHP0358  
 Fnd 1" IP w/ RED CT PLUG  
 128.71 Lt @ Rte 204  
 Sta 61+19.36  
 N 2 326 808.86  
 E 6 260 484.49  
 Elev = 408.16

**LEGEND:**  
 XXX.X - Indicates bottom of footing elevation.  
 ——— - New  
 - - - - - Existing

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

**NOTES:**  
 UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE, SEE UTILITY PLANS FOR MORE INFORMATION

PRELIMINARY INVESTIGATION SECTION			
SCALE	VERT.DATUM NAVD 88	PHOTOGRAMMETRY AS OF: X	
1"=20'	HORZ.DATUM NAD 83	SURVEYED BY District	CHECKED BY X
ALIGNMENT TIES Dist. Traverse Sheet	DRAFTED BY M. Sadaghiani 02-15	CHECKED BY E. Viagar 02-15	

DESIGN	BY S. MITCHELL/GRG	CHECKED MIKE CULLEN
DETAILS	BY DAVID PATO	CHECKED MIKE CULLEN
QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED MIKE CULLEN

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 6**

BRIDGE NO.	50-0326LR
POST MILE	R1.95

**SEISMIC RESTORATION**  
**GOLDEN STATE AVE SEPARATION**  
**FOUNDATION PLAN**

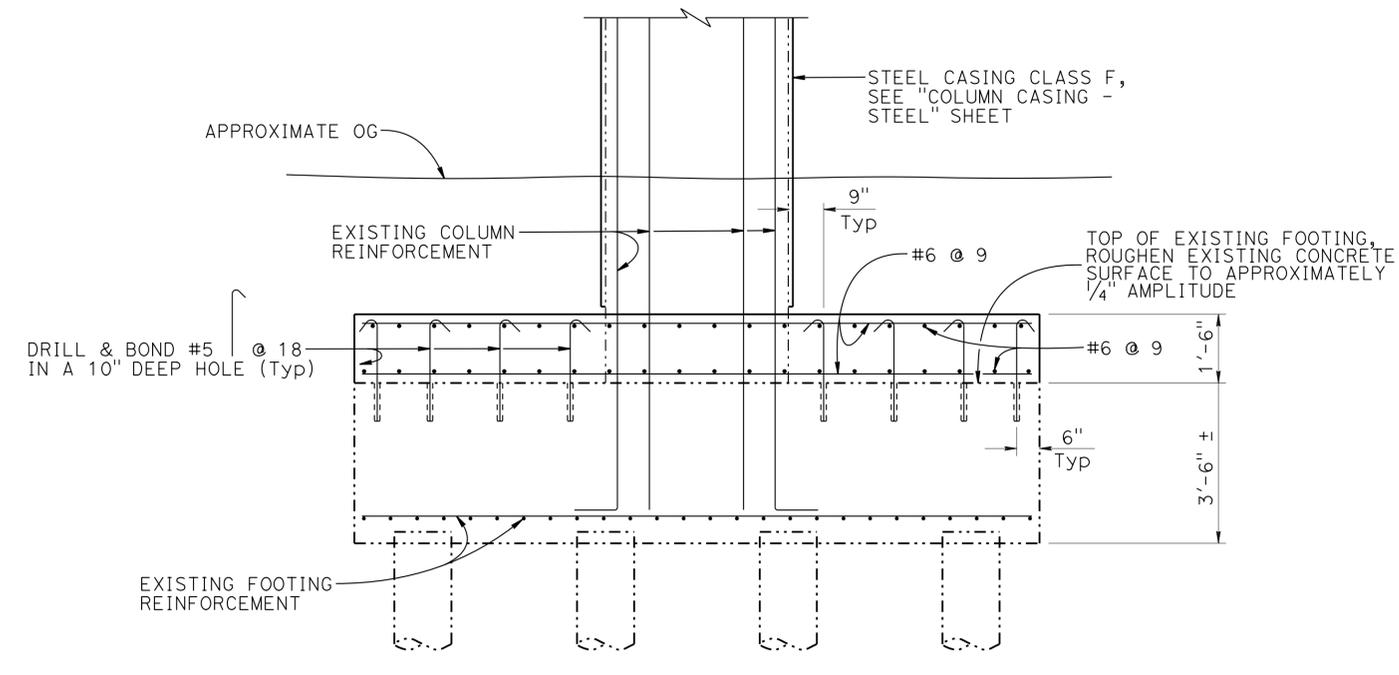
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

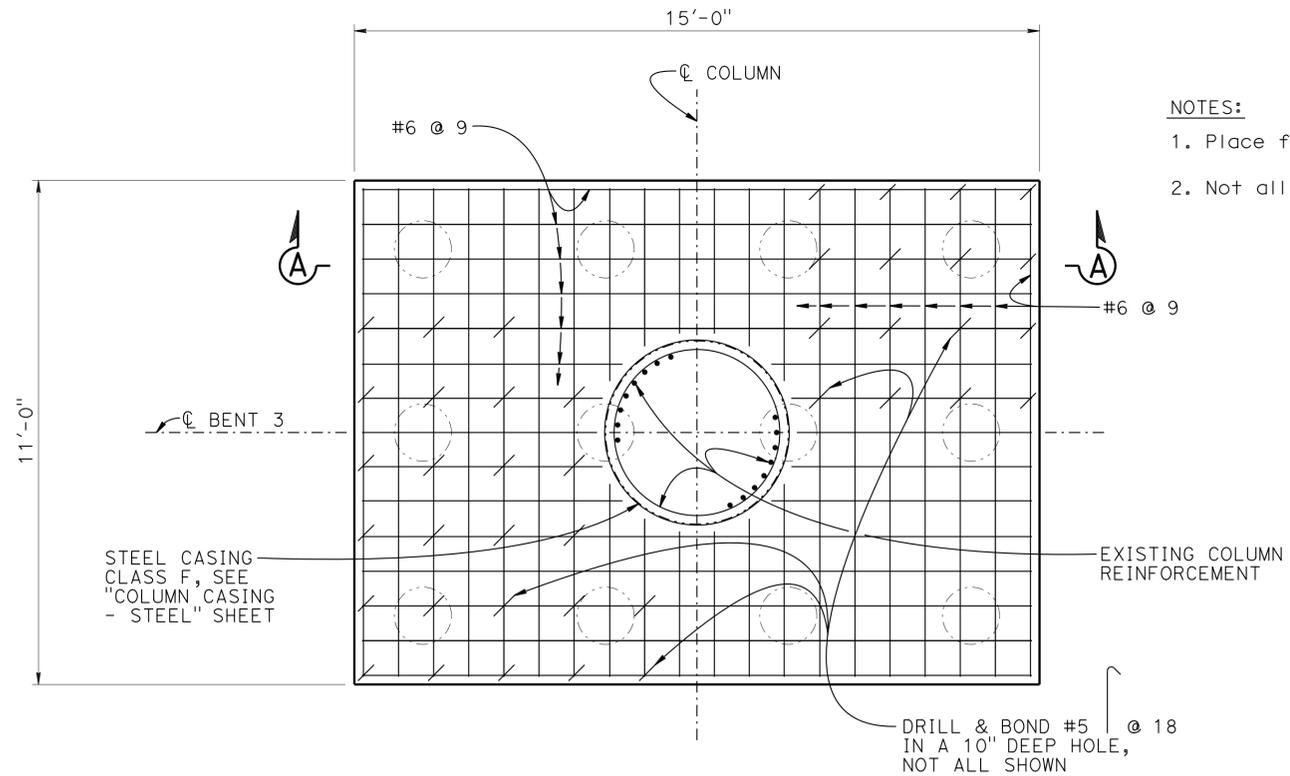
4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

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**SECTION A-A**  
 $\frac{1}{2}'' = 1'-0''$



**FOOTING PLAN**  
 $\frac{1}{2}'' = 1'-0''$

- NOTES:**
1. Place first drill & bond bar 6" from the edge of footing.
  2. Not all reinforcement shown.

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

DESIGN	BY	GLORIA REYES-GUTIERREZ	CHECKED	MIKE CULLEN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 6</b>	BRIDGE NO.	50-0326	
	DETAILS	BY	DAVID PATO	CHECKED			MIKE CULLEN	R/L/CR-1	
	QUANTITIES	BY	GLORIA REYES-GUTIERREZ	CHECKED			RACHEL WASHINGTON	POST MILE	1.95

**SEISMIC RESTORATION**

**GOLDEN STATE AVE SEPARATION**

**BENT 3/CR-1 LINE FOOTING DETAILS**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	91	98

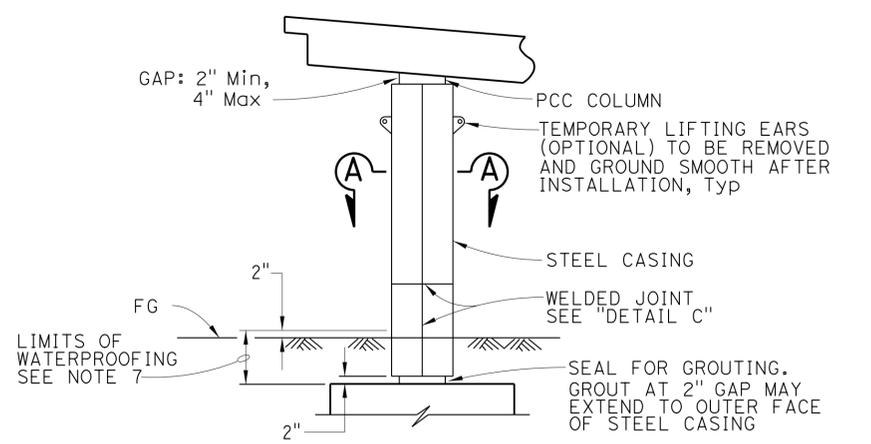
*Gloria Reyes-Gutierrez* 12-18-15  
REGISTERED CIVIL ENGINEER DATE

4-11-16  
PLANS APPROVAL DATE

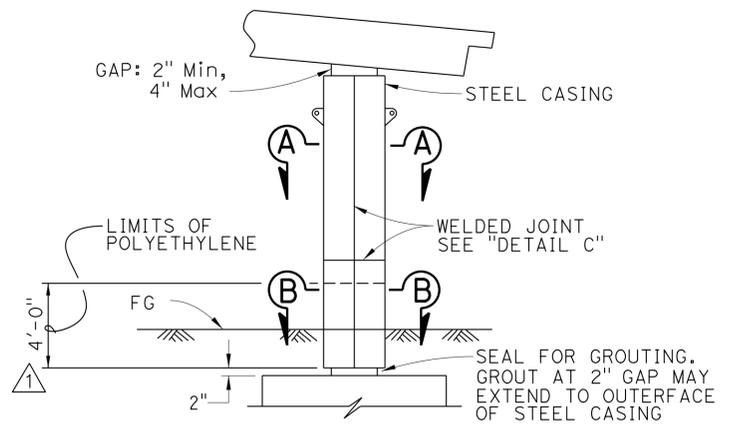
*Gloria Reyes-Gutierrez*  
REGISTERED PROFESSIONAL ENGINEER  
No. C 57583  
Exp. 12-31-15  
CIVIL  
STATE OF CALIFORNIA

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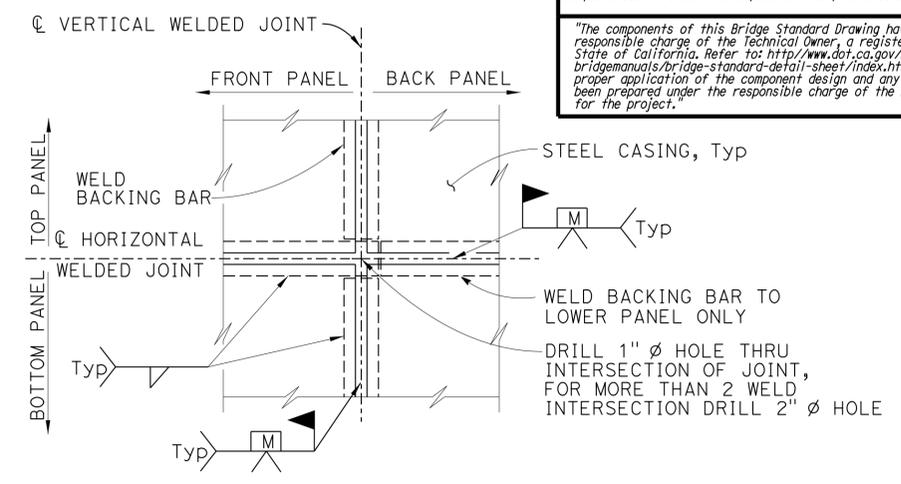
"The components of this Bridge Standard Drawing have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California. Refer to <http://www.dot.ca.gov/hqs/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheet/index.html>. The selection and proper application of the component design and any modifications shown have been prepared under the responsible charge of the registered civil engineer for the project."



**CLASS F COLUMN** Bent 3 CR-1 Line (Only)



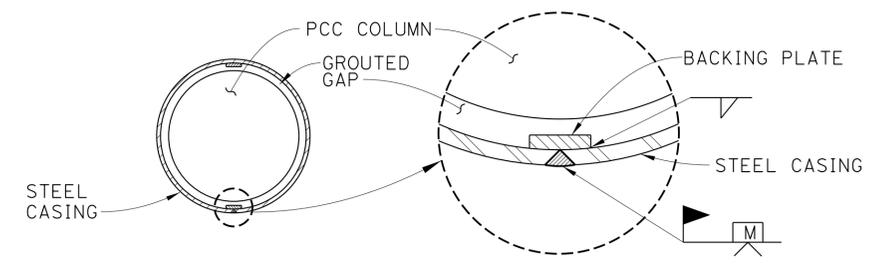
**CLASS P/F COLUMN** Bent 5L/R/CR-1 Line



**(TWO WELD INTERSECTION JOINT) DETAIL C**

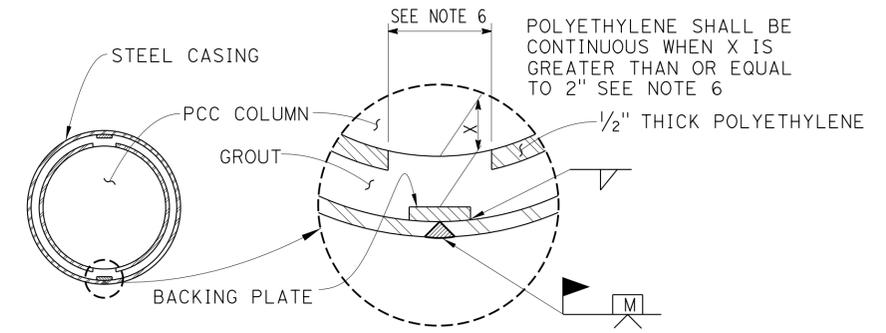
**NOTES:**

- For varying thickness, steel casing inside surface to remain flush. Minimum clearance from PCC column to casing shall be maintained.
- Appropriate injection nozzles to be provided on casing, but removed and ground flush following completion of grouting operation.
- All voids between steel casing and polyethylene (Class P/F), and steel casing and PCC column (Class F) to be filled with grout.
- Location and number of vertical and horizontal welds to be determined by the Contractor and subject to the approval of the Engineer. The location of casing welds are for illustration. No skip welds allowed.
- Circular steel casing to be 1/4" thick minimum for casings with a 4'-4" diameter or less. Backing plates to be the same thickness as casing up to maximum 3/8" thick.
- Contractor shall remove 12" polyethylene strip behind backing plate if backing plate is closer than 2" from face of column.
- Waterproof limits for steel casings. Typical for Class "F" and "P/F".
- For pipe extensions, opening shall be no more than 1/4" greater than the pipe extension diameter. For other openings, the opening diameter to be determined by the Engineer.



**SECTION A-A**

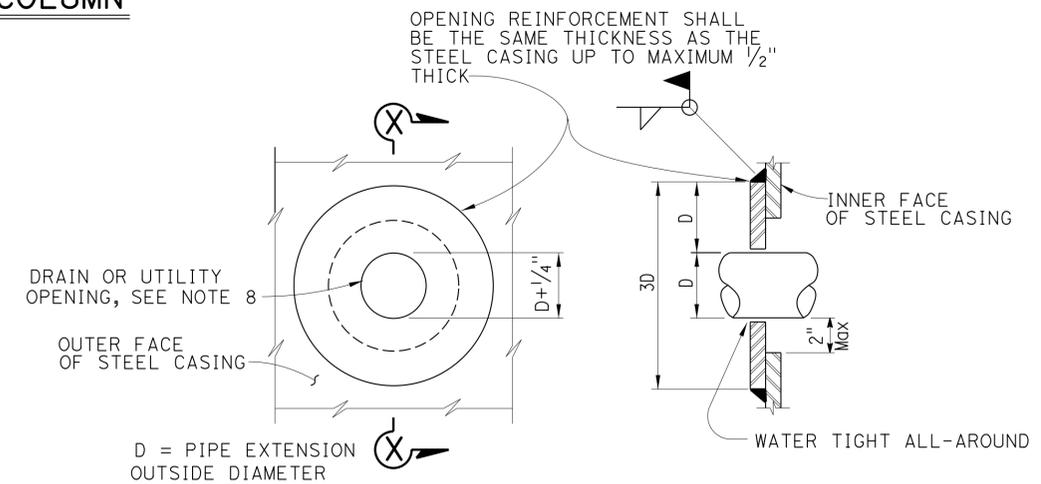
MINIMUM INSIDE DIAMETER OF STEEL CASING = 1 1/2" GREATER THAN NOMINAL COLUMN DIAMETER FOR CLASS F AND 2 1/2" FOR CLASS P/F



**SECTION B-B**

MINIMUM INSIDE DIAMETER OF STEEL CASING = 2 1/2" GREATER THAN NOMINAL COLUMN DIAMETER FOR CLASS P/F

**ROUND COLUMN**



**ELEVATION**

**SECTION X-X**

**CASING OPENING**

NOTE: OPENING REINFORCEMENT REQUIRED FOR DRAIN OR UTILITY OPENINGS LARGER THAN 4".

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

REVISED STANDARD DRAWING		ADDED DIMENSION
FILE NO. <b>xs7-010</b>	APPROVAL DATE <u>July 2014</u>	

ADDED DIMENSION

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	50-0326
R/L/CR-1	
POST MILE	1.95

NO SCALE		<b>SEISMIC RESTORATION</b>	
		<b>GOLDEN STATE AVE SEPARATION</b>	
		<b>COLUMN CASING - STEEL</b>	

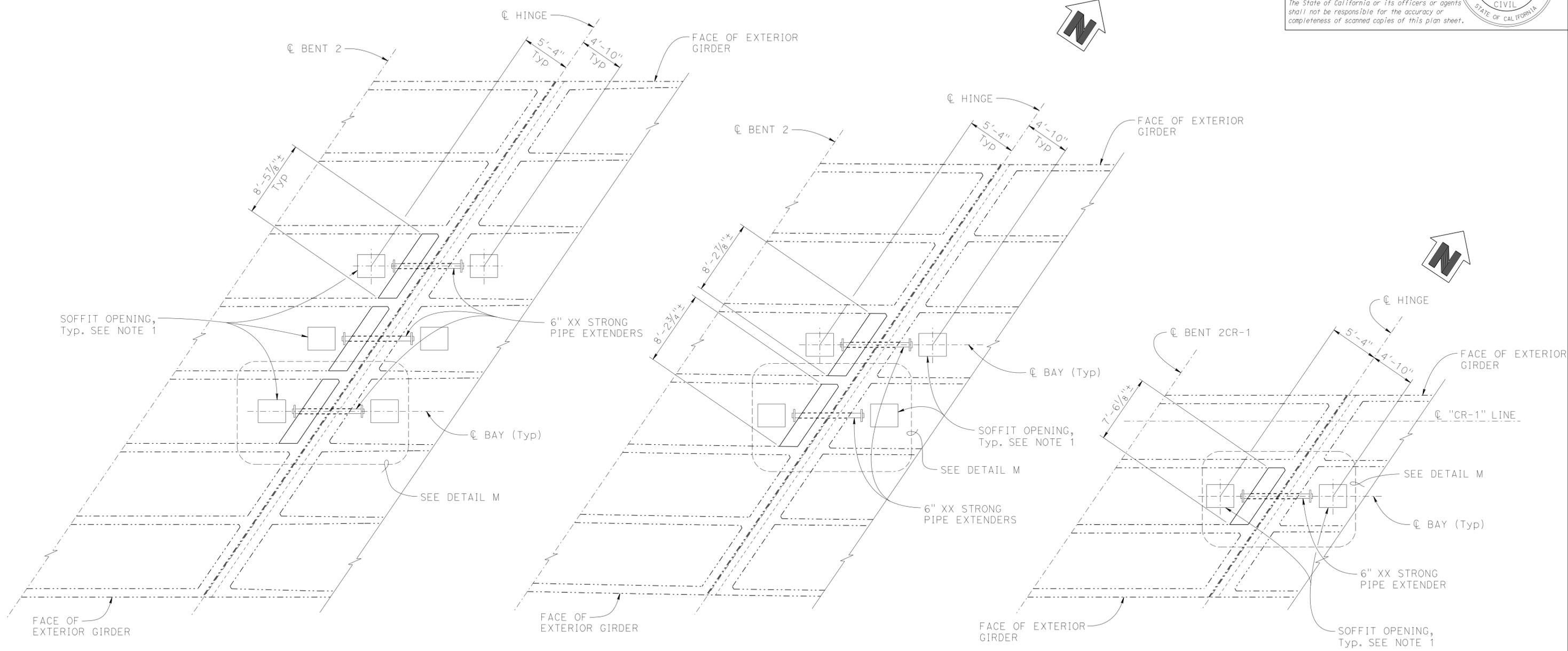
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	92	98

12-18-15  
 REGISTERED CIVIL ENGINEER DATE  
 4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

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- NOTES:
- For Soffit Opening details, see "DECK AND SOFFIT OPENINGS" sheet.
  - For "DETAIL M", see "HINGE DETAILS NO. 1" sheet.



**HINGE 2L - PART PLAN**  
 $\frac{3}{16}'' = 1'-0''$

**HINGE 2R - PART PLAN**  
 $\frac{3}{16}'' = 1'-0''$

**HINGE 2CR-1 - PART PLAN**  
 $\frac{3}{16}'' = 1'-0''$

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

DESIGN	BY S. MITCHELL/GRG	CHECKED MIKE CULLEN	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 6</b>	BRIDGE NO.	<b>SEISMIC RESTORATION</b> <b>GOLDEN STATE AVE SEPARATION</b> <b>HINGE LAYOUT NO. 1</b>
DETAILS	BY DAVID PATO	CHECKED MIKE CULLEN			50-0326	
QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON			R/L/CR-1	
					POST MILE	
					1.95	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 3591  
 PROJECT NUMBER & PHASE: 0612000108-1  
 CONTRACT NO.: 06-0K8104

REVISION DATES	SHEET	OF
7-09-15 12-17-15 10/25/15 11-23-15	6	12

FILE => 50-0326r1-m-hinge-layout01.dgn

USERNAME => 8115755 DATE PLOTTED => 03-JUN-2016 TIME PLOTTED => 15:38

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	93	98

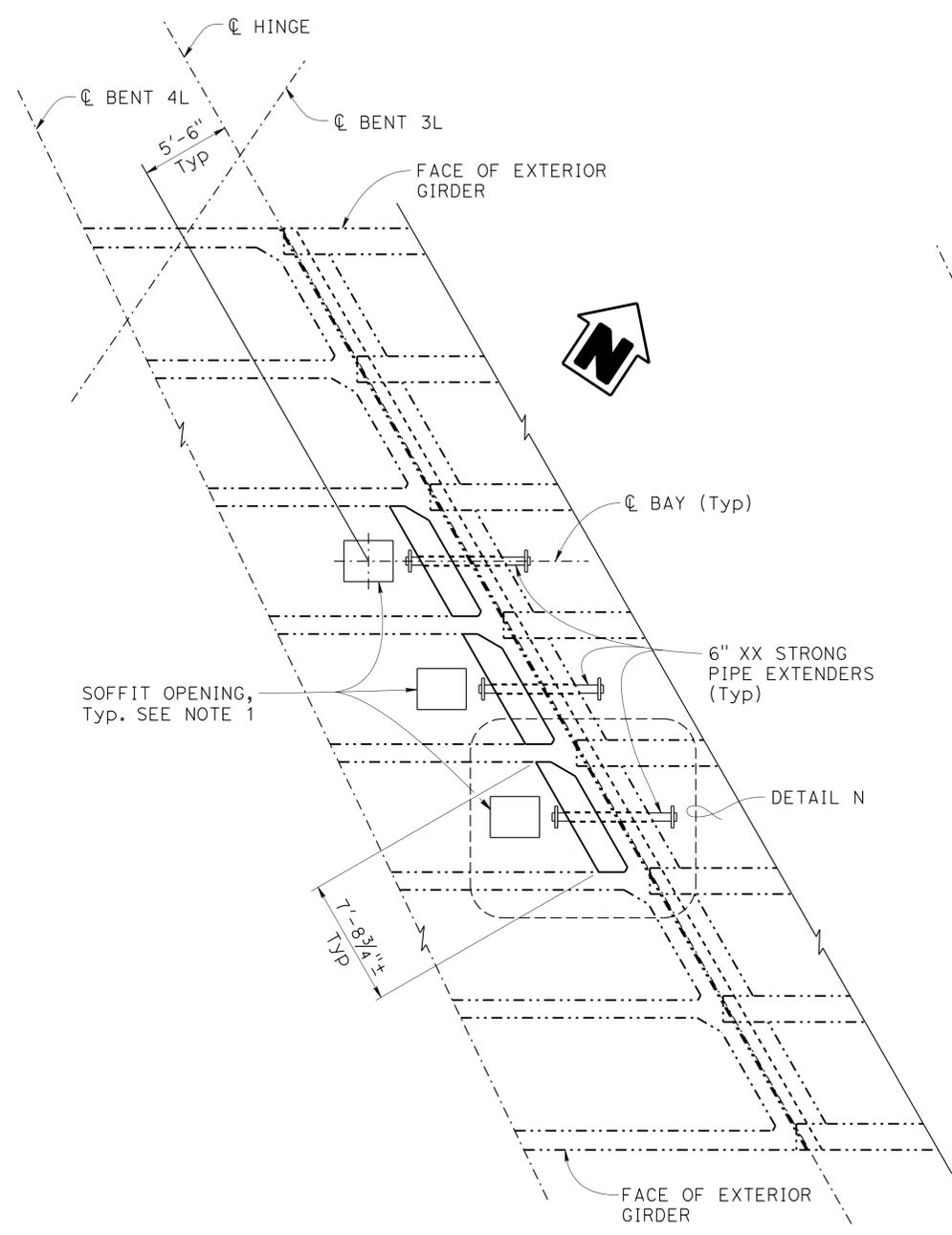
*Gloria Reyes-Gutierrez* 12-18-15  
REGISTERED CIVIL ENGINEER DATE

4-11-16  
PLANS APPROVAL DATE

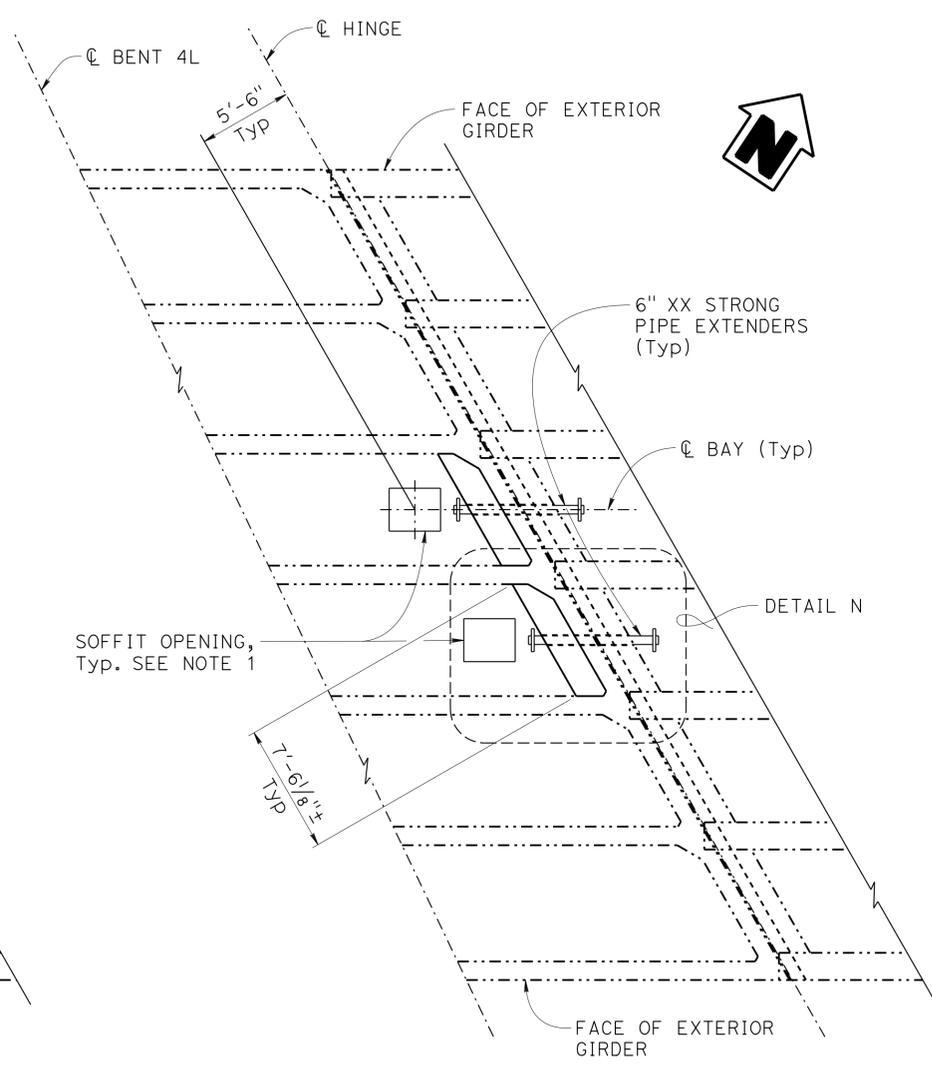
REGISTERED PROFESSIONAL ENGINEER  
GLORIA REYES-GUTIERREZ  
No. C 57583  
Exp. 12-31-15  
CIVIL  
STATE OF CALIFORNIA

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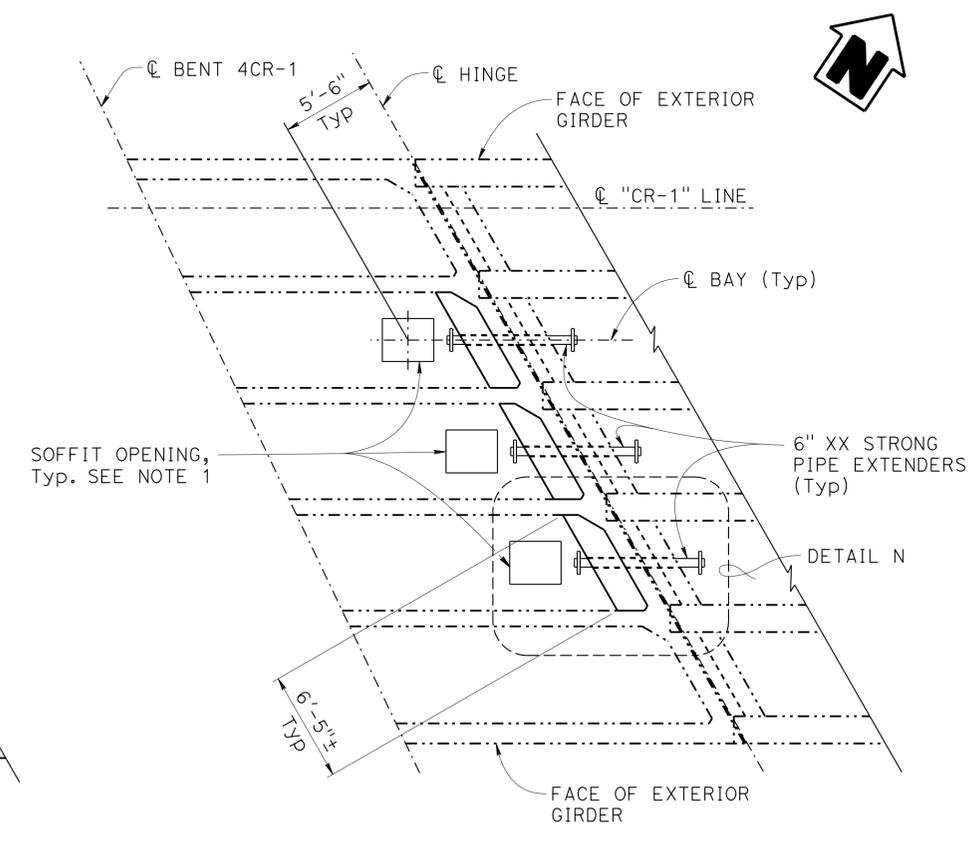
- NOTES:
1. For Soffit Opening details, see "DECK AND SOFFIT OPENINGS" sheet.
  2. For "DETAIL N", see "HINGE DETAILS NO. 2" sheet.



**HINGE 4L - PART PLAN**  
 $\frac{3}{16}'' = 1'-0''$



**HINGE 4R - PART PLAN**  
 $\frac{3}{16}'' = 1'-0''$



**HINGE 4CR-1 - PART PLAN**  
 $\frac{3}{16}'' = 1'-0''$

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

DESIGN	BY	S. MITCHELL/GRG	CHECKED	MIKE CULLEN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO.	50-0326	
	DETAILS	BY	DAVID PATO	CHECKED			MIKE CULLEN	R/L/CR-1	
	QUANTITIES	BY	GLORIA REYES-GUTIERREZ	CHECKED			RACHEL WASHINGTON	POST MILE	1.95

**SEISMIC RESTORATION**  
**GOLDEN STATE AVE SEPARATION**  
**HINGE LAYOUT NO. 2**

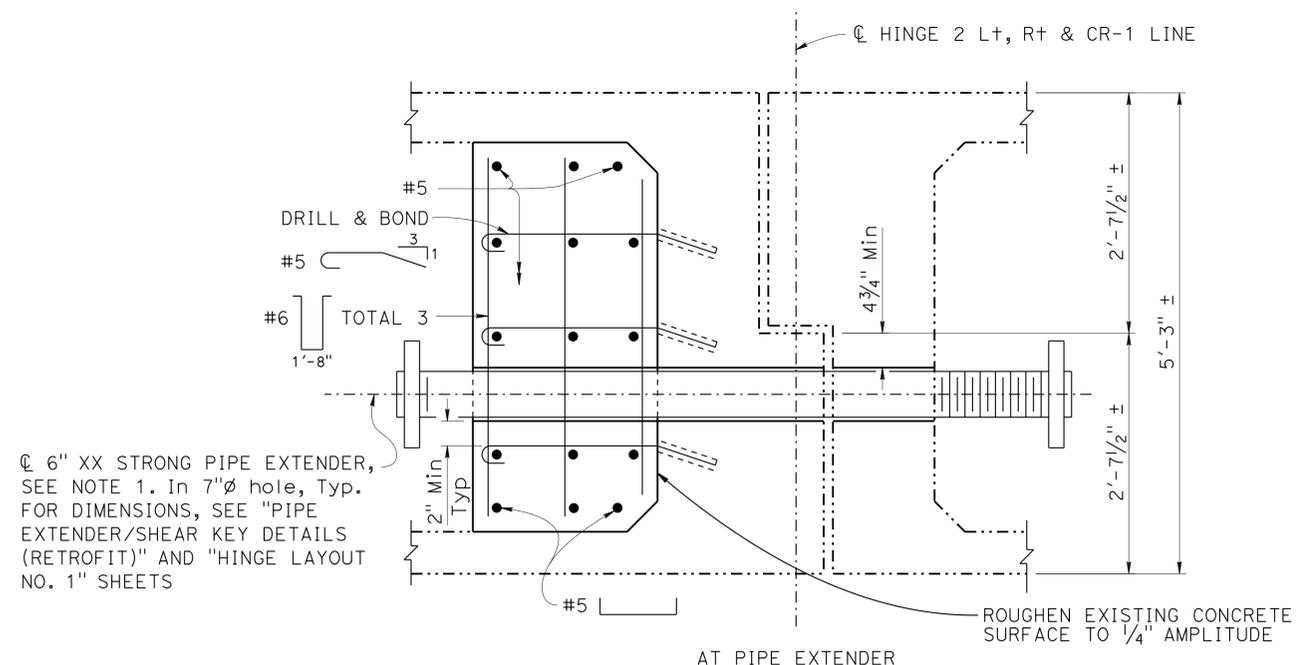
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	94	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

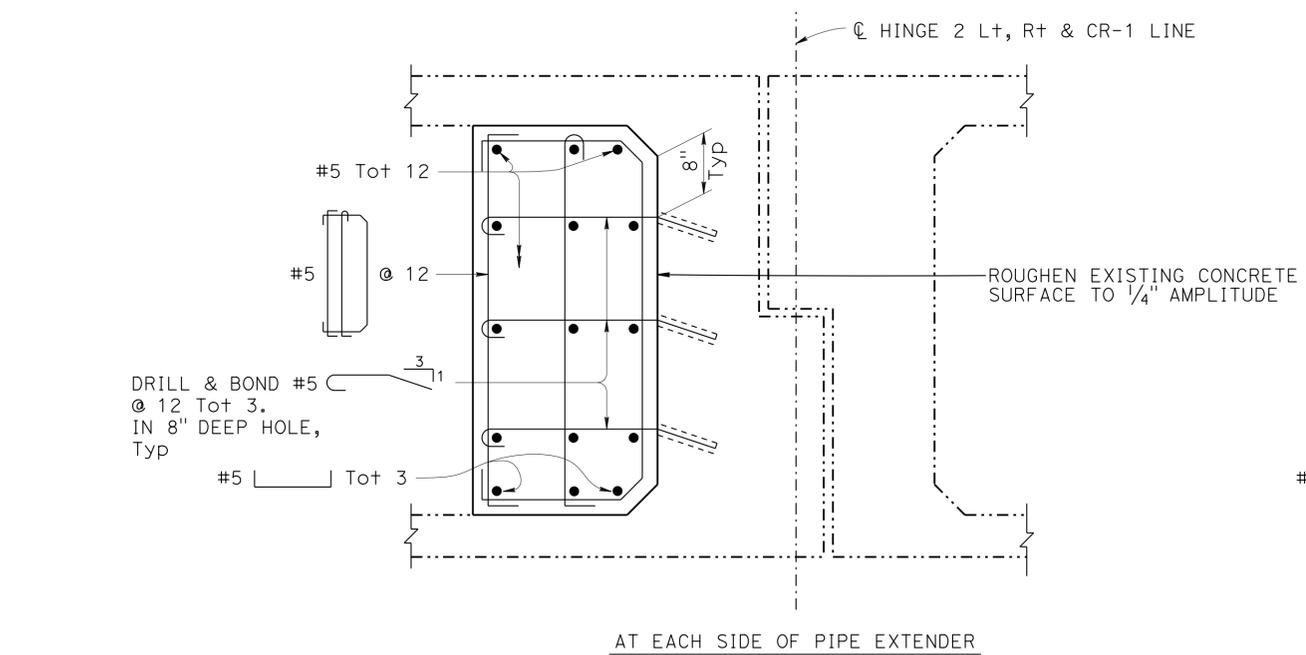
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SECTION B-B

HINGE SECTION - HINGE 2 Lt, Rt & CR-1 LINE

1" = 1'-0"



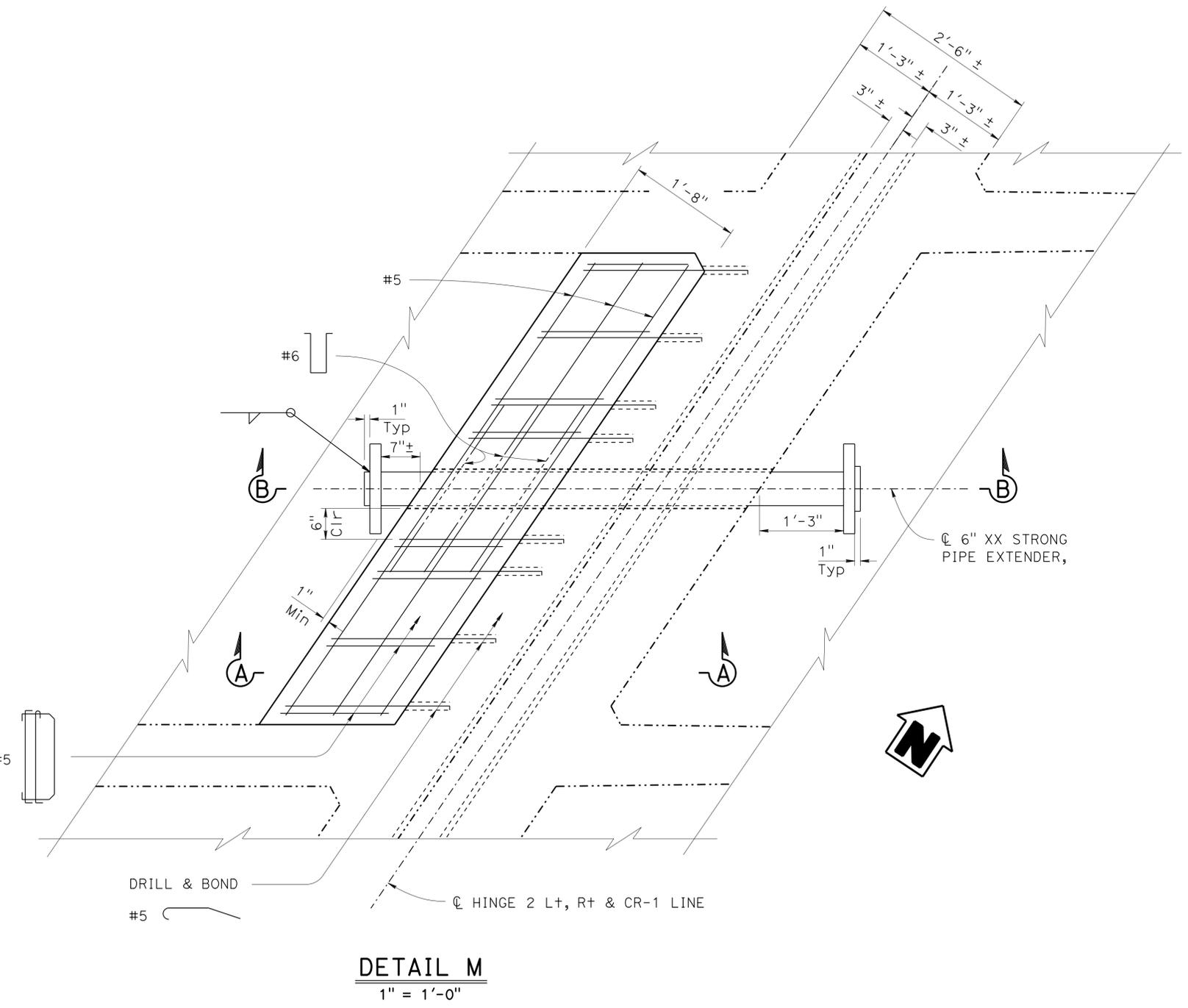
SECTION A-A

HINGE SECTION - HINGE 2 Lt, Rt & CR-1 LINE

1" = 1'-0"

NOTES:

1. For Pipe Extender details, see "PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT) sheet.
2. For location of "DETAIL M", see "HINGE LAYOUT NO. 1" sheet.



DETAIL M

1" = 1'-0"

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

DESIGN	BY S. MITCHELL/GRG	CHECKED MIKE CULLEN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO.	SEISMIC RESTORATION GOLDEN STATE AVE SEPARATION HINGE DETAILS NO. 1
DETAILS	BY Jie Tang	CHECKED MIKE CULLEN			50-0326	
QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON			R/L/CR-1	
					POST MILE	
					1.95	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 3591  
 PROJECT NUMBER & PHASE: 0612000108-1  
 CONTRACT NO.: 06-0K8104

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
5-18-15 10/12/15 11/24/15 12-17-15	8	12

FILE => 50-0326r1-n-hinge-det01.dgn

USERNAME => 81157655 DATE PLOTTED => 15:38 TIME PLOTTED => 03-JUN-2016

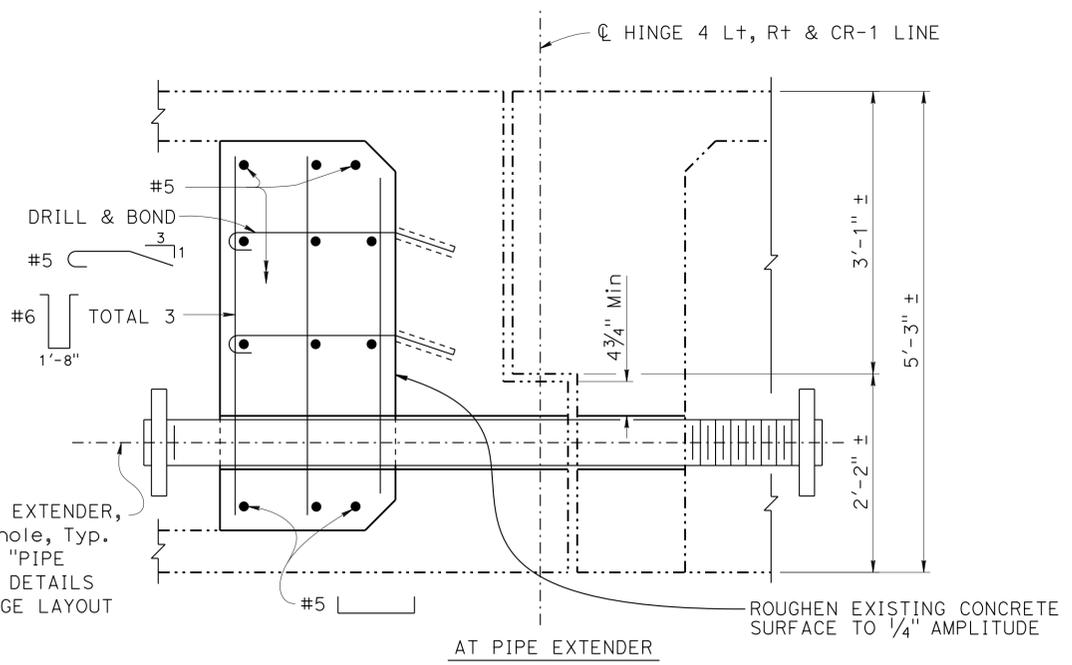
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	95	98

12-18-15  
 REGISTERED CIVIL ENGINEER DATE  
 4-11-16  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

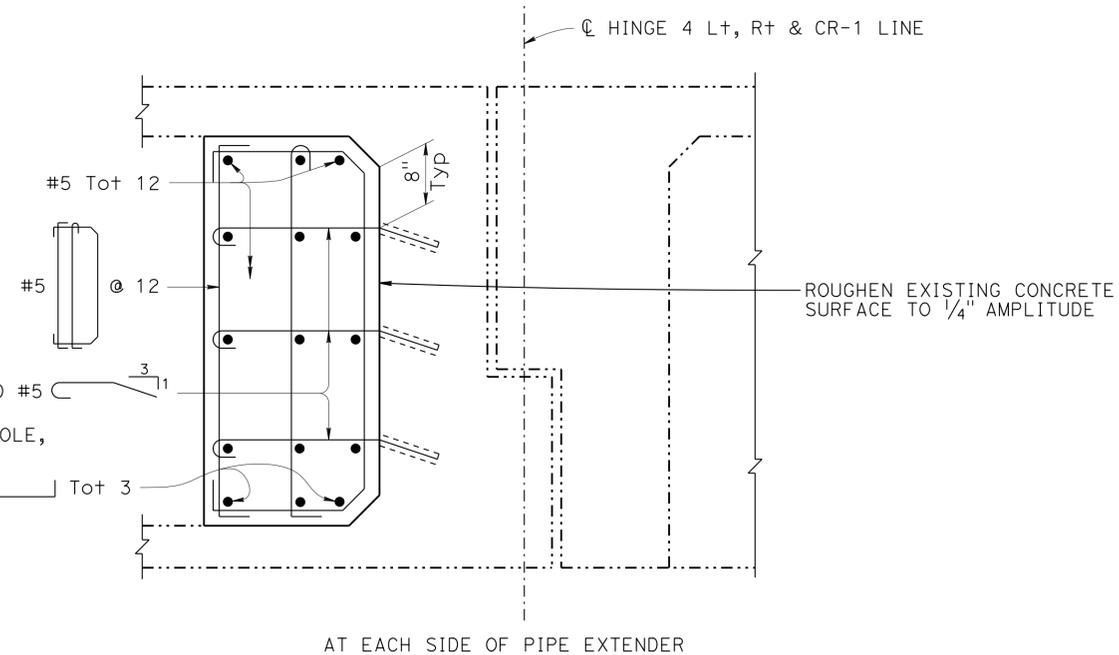
**NOTES:**

1. For Pipe Extender details, see "PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT)" sheet.
2. For location of "DETAIL N", see "HINGE LAYOUT NO. 2" sheet.



⌀ 6" XX STRONG PIPE EXTENDER,  
 SEE NOTE 1. In 7" ⌀ hole, Typ.  
 FOR DIMENSIONS, SEE "PIPE  
 EXTENDER/SHEAR KEY DETAILS  
 (RETROFIT)" AND "HINGE LAYOUT  
 NO. 1" SHEETS

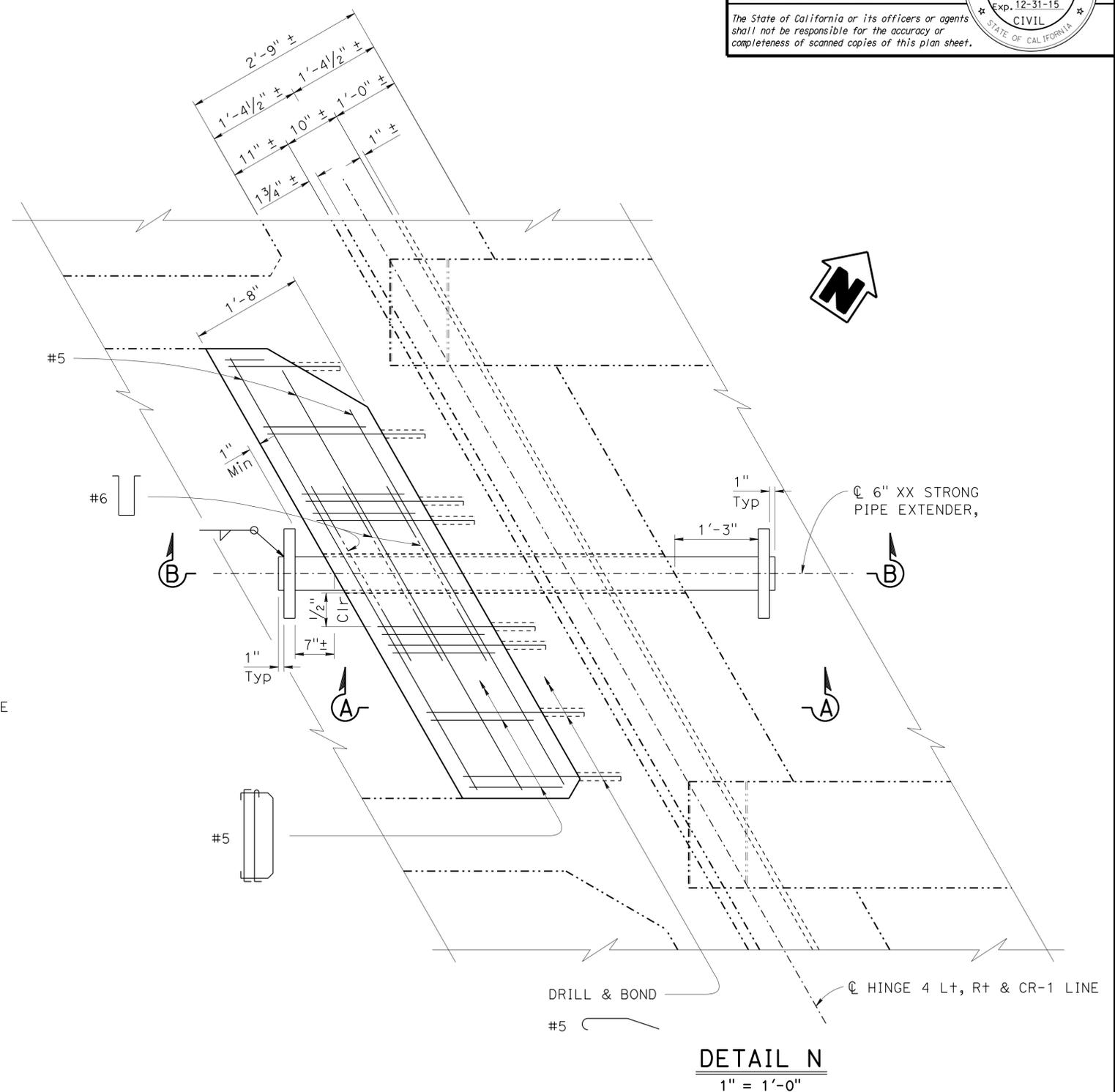
**SECTION B-B**  
**HINGE SECTION - HINGE 4 Lt, Rt & CR-1 LINE**  
 1" = 1'-0"



DRILL & BOND #5  
 @ 12 Tot 3.  
 IN 8" DEEP HOLE,  
 Typ

**SECTION A-A**  
**HINGE SECTION - HINGE 4 Lt, Rt & CR-1 LINE**  
 1" = 1'-0"

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



DRILL & BOND  
 #5

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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY S. MITCHELL/GRG	CHECKED MIKE CULLEN	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 6</b>	BRIDGE NO.	<b>SEISMIC RESTORATION</b> <b>GOLDEN STATE AVE SEPARATION</b> <b>HINGE DETAILS NO. 2</b>
	DETAILS	BY Jie Tang	CHECKED MIKE CULLEN			50-0326	
	QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON			R/L/CR-1	
				UNIT: 3591 PROJECT NUMBER & PHASE: 0612000108-1	POST MILE 1.95	CONTRACT NO.: 06-0K8104	DISREGARD PRINTS BEARING EARLIER REVISION DATES
			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3		REVISION DATES 10/19/15 11/24/15 12-17-15	SHEET 9 OF 12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	96	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

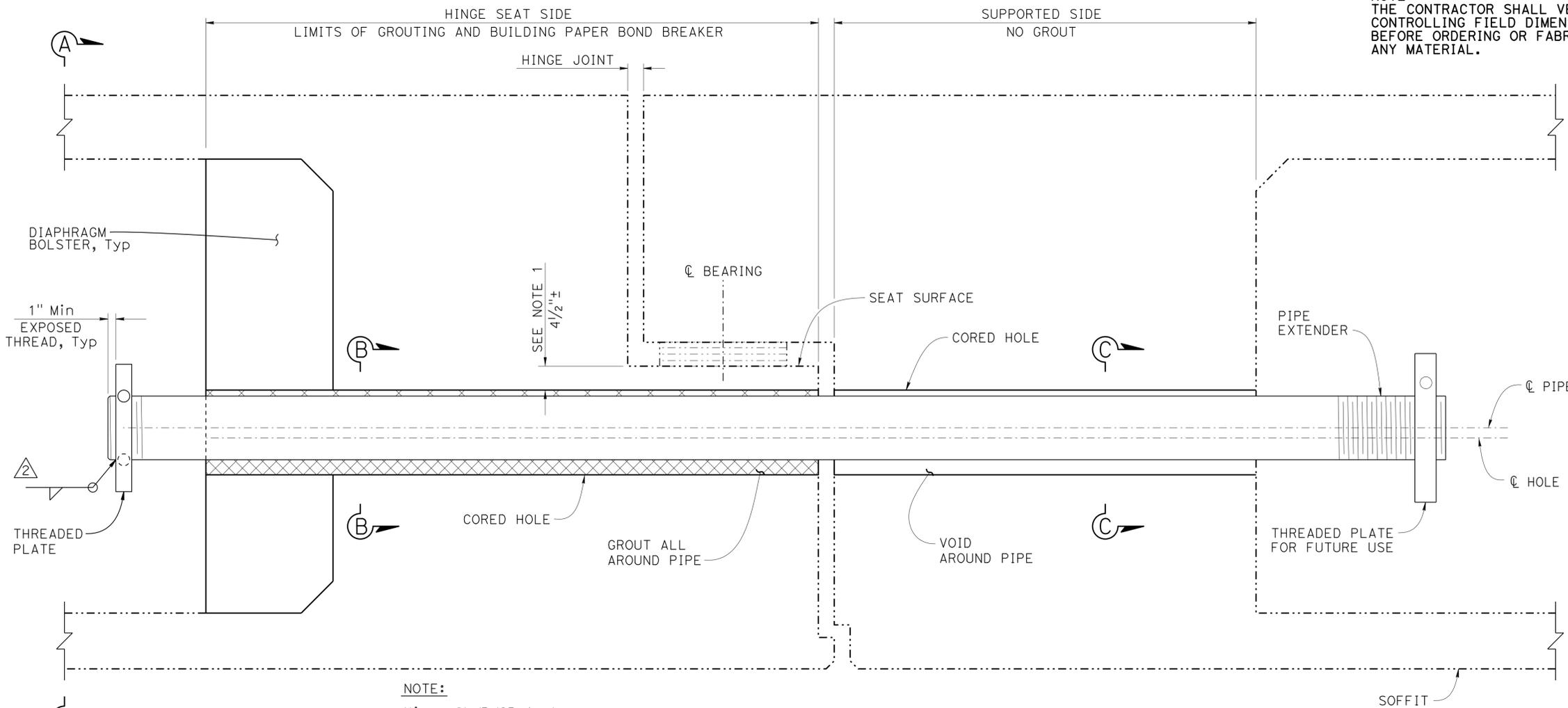
4-11-16  
 PLANS APPROVAL DATE

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"The components of this Bridge Standard Drawing have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California. Refer to: <http://www.dot.ca.gov/hqs/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheet/index.html>. The selection and proper application of the component design and any modifications shown have been prepared under the responsible charge of the registered civil engineer for the project."



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

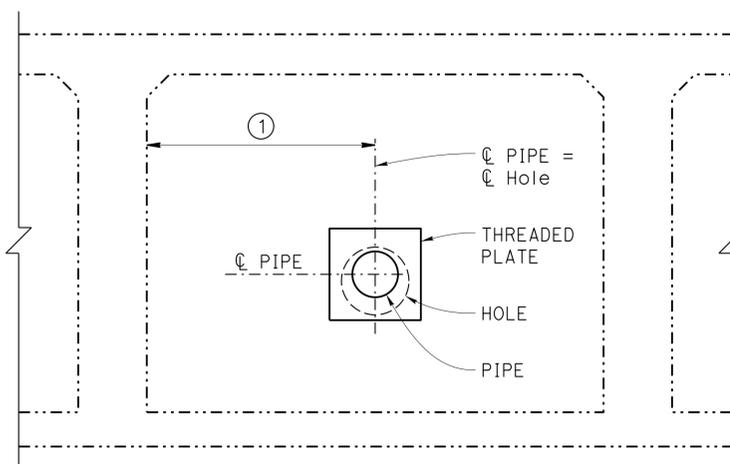


**NOTE:**  
 Hinge 2L/R/CR-1 shown.  
 Hinge 4L/R/CR-1 similar.

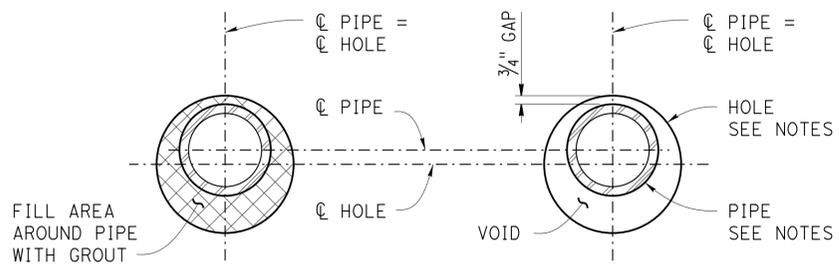
**LEGEND:**  
 ----- Indicates existing structure.

**PIPE EXTENDER ELEVATION**  
 NOT TO SCALE

- NOTES:**
- The Hole must be aligned to form a straight line the entire length of the Pipe Extender. The Hole must be cored with the Top of Hole 2" below the seat's top existing main reinforcement. During construction hole ends must be capped to prevent debris intrusion.
  - Pipe 6 xx-Strong Galv. pipe and 7"  $\phi$  Cored Hole.
  - Set pipe parallel to top of hole. Maintain a 3/4" gap between pipe and top of hole.
  - Tightly wrap fixed side of pipe with 2 layers of 15 lbs building paper. Paper is to remain in place as a bond breaker.
  - Thread Pipe and Plate: 8 threads per inch per ASME B 1.20.1. Thread pipe 12" on both ends.
  - Apply Thread Locking System after grouting and tighten Threaded Plate weld all around surface, Hinge Seat Side only.
  - Apply Threaded plate on supported side, Thread Locking System.
  - Existing reinforcement not shown.

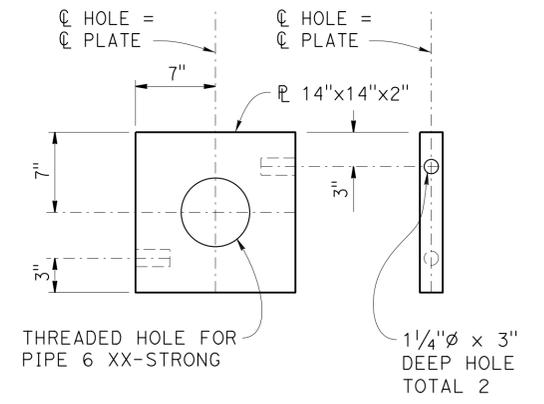


**SECTION A-A**  
 3/4" = 1'-0"  
 ① For Location of pipe, see Hinge layout sheet



**SECTION B-B**  
 NOT TO SCALE

**SECTION C-C**  
 NOT TO SCALE



**THREADED PLATE DETAILS**  
 1/2" = 1'-0"

**FOR 6"  $\phi$  PIPE SEAT EXTENDER**

Threaded Plate for 6"  $\phi$  pipe.

The bearing surface for the Threaded Plate must be perpendicular to the hole.

2 Threaded Plates per Pipe Seat Extender.

The 3" deep holes in plate are to receive a 1"  $\phi$  rod for removal of the Threaded Plate (by others).

**NOTE:**  
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**SEISMIC RESTORATION**

**GOLDEN STATE AVE SEPARATION**

**PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT)**

REVISED STANDARD DRAWING	REVISIONS	STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 50-0326 R/L/CR-1	<b>SEISMIC RESTORATION</b>	
FILE NO. <b>xs7-081</b>	APPROVAL DATE July 2014	DEPARTMENT OF TRANSPORTATION	POST MILE 1.95	PROJECT NUMBER & PHASE: 0612000108-1		<b>GOLDEN STATE AVE SEPARATION</b>
ADDED WELDING SYMBOL AND DELETED NOTE		CONTRACT NO.: 06-0K8104		PROJECT NUMBER & PHASE: 0612000108-1		<b>PIPE EXTENDER/SHEAR KEY DETAILS (RETROFIT)</b>

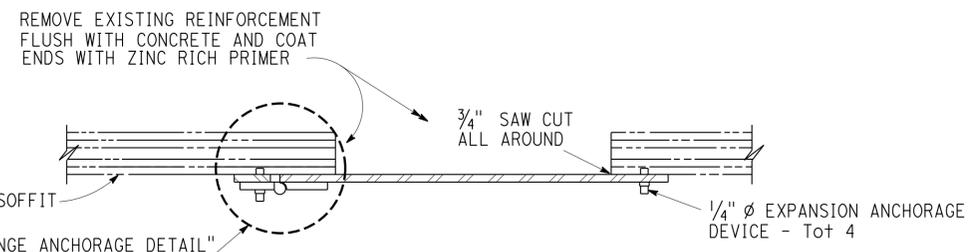
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	97	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

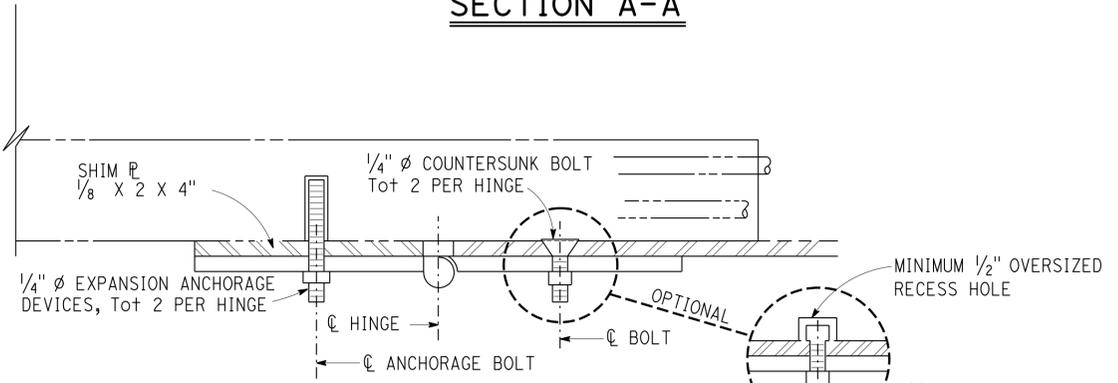
4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

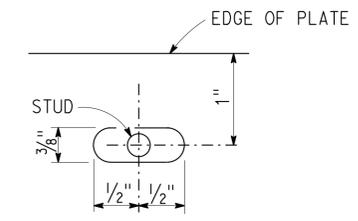
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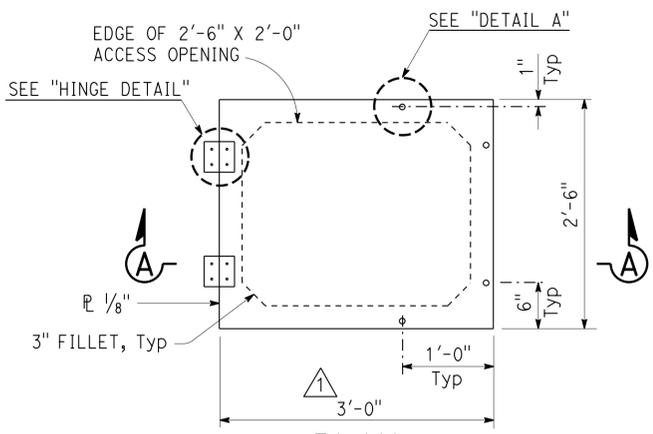
**SECTION A-A**



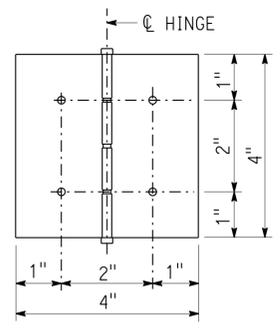
**HINGE ANCHORAGE DETAIL**



**DETAIL A**



**PLAN**



**HINGE DETAIL**

- NOTES:
1. Non-removable pin in hinge
  2. Hinge assembly to be galvanized, brass or stainless steel
  3. Use thread locking system for all hinge nuts
  4. Hinge assembly to be minimum 1/8" Thick

**SOFFIT ACCESS DOOR ASSEMBLY**

NOTE: SOFFIT ACCESS DOOR OPENING DIRECTION TO BE DETERMINED BY THE ENGINEER

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

REVISED STANDARD DRAWING		REVISED DIMENSION AND DETAIL
FILE NO. <b>xs7-110</b>	APPROVAL DATE <u>July 2014</u>	

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		
DIVISION OF ENGINEERING SERVICES		
BRIDGE NO. 50-0326 R/L/CR-1	POST MILE 1.95	

SEISMIC RESTORATION	
GOLDEN STATE AVE SEPARATION	
DECK AND SOFFIT OPENINGS	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99,178	26.8, R2.0	98	98

*Gloria Reyes-Gutierrez* 12-18-15  
 REGISTERED CIVIL ENGINEER DATE

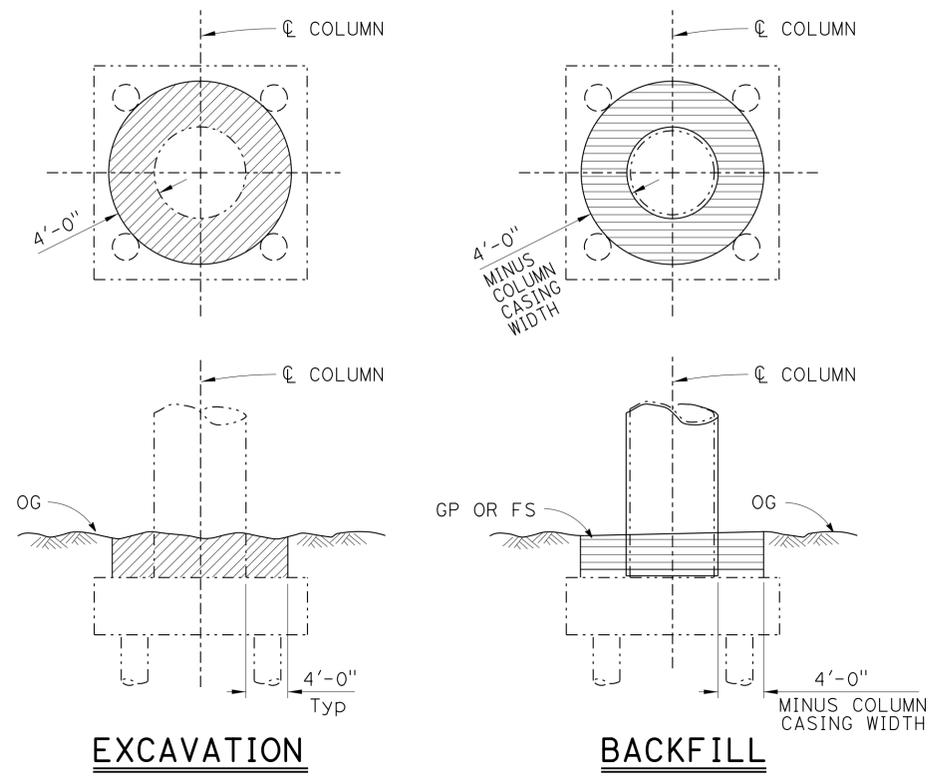
4-11-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 GLORIA REYES-GUTIERREZ  
 No. C 57583  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

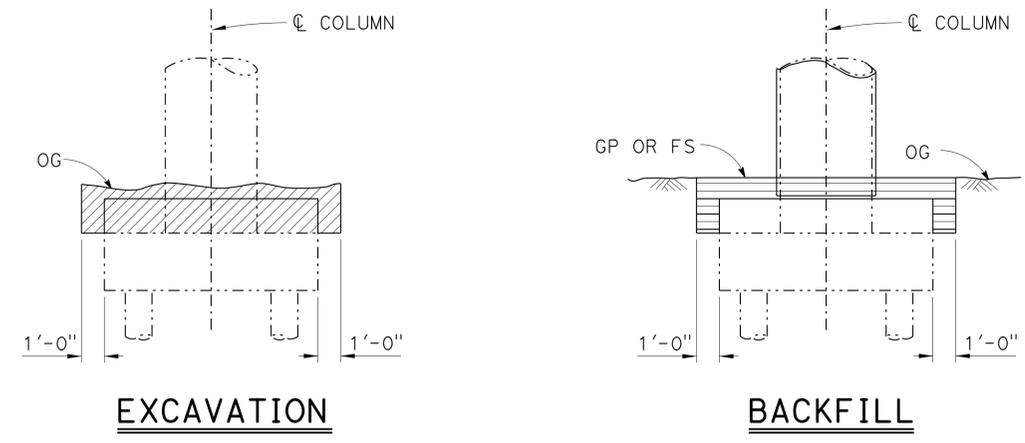
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.*

LEGEND:

- Indicates existing structure
- Indicates new construction
- ▨ Indicates structure excavation
- ▧ Indicates structure backfill



**COLUMN CASING ONLY**  
 $1/8" = 1'-0"$



**COLUMN CASING & FOOTING RETROFIT**  
 $1/4" = 1'-0"$

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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY GLORIA REYES-GUTIERREZ	CHECKED MIKE CULLEN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO.	50-0326				
	DETAILS	BY KAMAL CHONKRIA	CHECKED MIKE CULLEN			R/L/CR-1					
	QUANTITIES	BY GLORIA REYES-GUTIERREZ	CHECKED RACHEL WASHINGTON			POST MILE	1.95				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3591	PROJECT NUMBER & PHASE: 0612000108-1		CONTRACT NO.: 06-0K8104	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 12 OF 12

**SEISMIC RESTORATION**  
**GOLDEN STATE AVE SEPARATION**  
**LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL**

FILE => 50-0326r1-xz-ex-back.dgn  
 USERNAME => 8115765 DATE PLOTTED => 03-JUN-2016 TIME PLOTTED => 15:39