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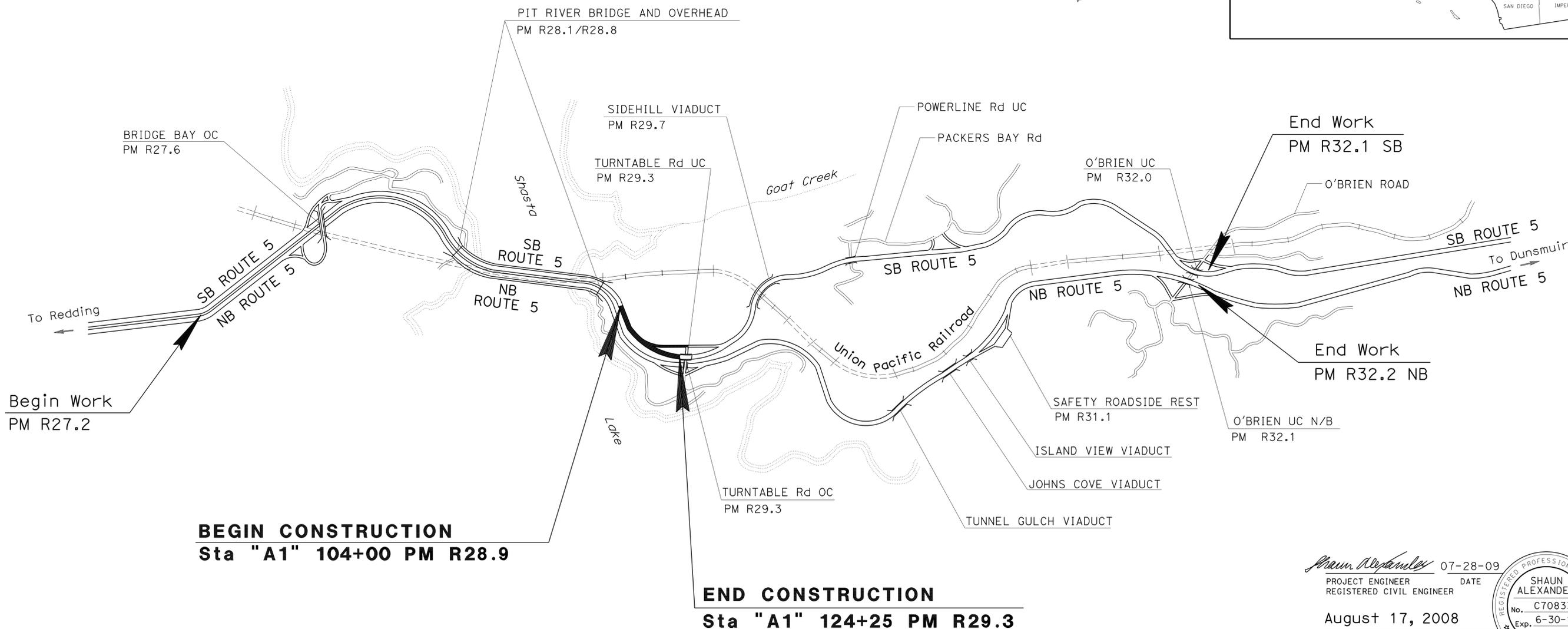
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA ACHSIM-005-8(339)E  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SHASTA COUNTY**  
**NEAR SHASTA LAKE FROM 0.4 MILE SOUTH TO**  
**TURNTABLE BAY OVERCROSSING**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	1	67

LOCATION MAP



PROJECT MANAGER  
CHRIS HARVEY  
 DESIGN ENGINEER  
AL TRUJILLO

*Shaun Alexander* 07-28-09  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER  
 August 17, 2008  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 SHAUN ALEXANDER  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	2	67
<i>Shaun Alexander</i> 07-28-09 REGISTERED CIVIL ENGINEER DATE			No. C70833 Exp. 6-30-11 CIVIL		
8-17-09 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>					

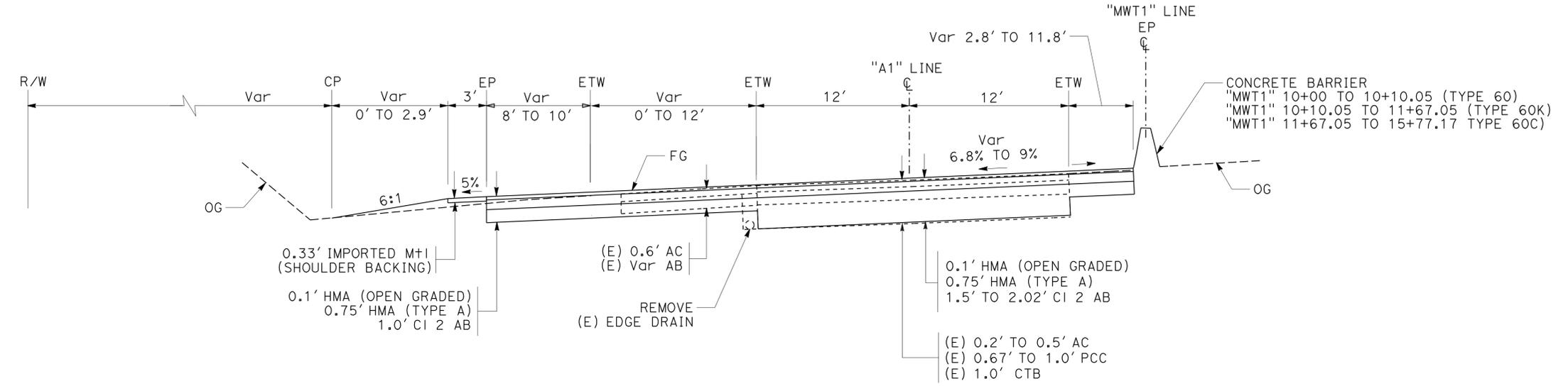
NOTES:

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- SUPERELEVATIONS AS SHOWN OR AS DETERMINED BY THE ENGINEER.

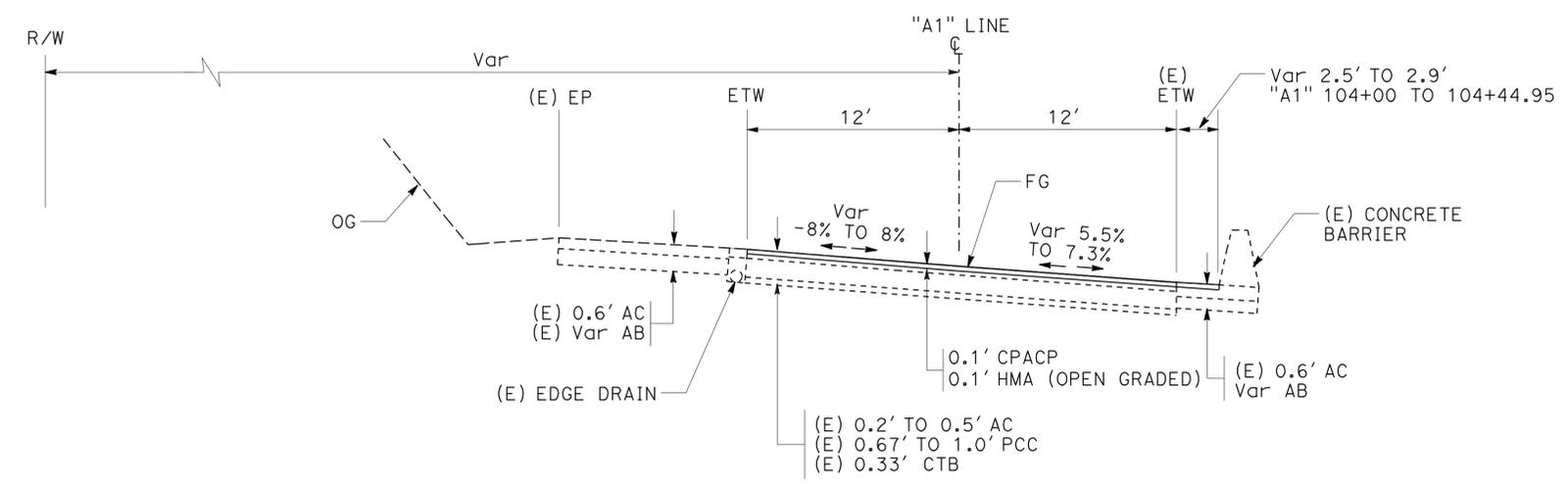
ABBREVIATIONS

- CPACP COLD PLANE AC PAVEMENT  
 ACEP ASPHALT CONCRETE EDGE OF PAVEMENT  
 ACFL ASPHALT CONCRETE FLOW LINE  
 ESL EDGE OF SHOULDER LEFT  
 EPR EDGE OF PAVEMENT RIGHT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 AL TRUJILLO  
 AL TRUJILLO  
 JEFF COON  
 SHAUN ALEXANDER  
 SHAUN ALEXANDER  
 SHAUN ALEXANDER  
 SHAUN ALEXANDER



**SOUTHBOUND ROUTE 5**  
 "A1" 104+44.95 TO 110+44.95



**SOUTHBOUND ROUTE 5**  
 "A1" 104+00 TO 104+44.95  
 "A1" 124+00 TO 124+25

**TYPICAL CROSS SECTIONS**  
 NO SCALE  
**X-1**

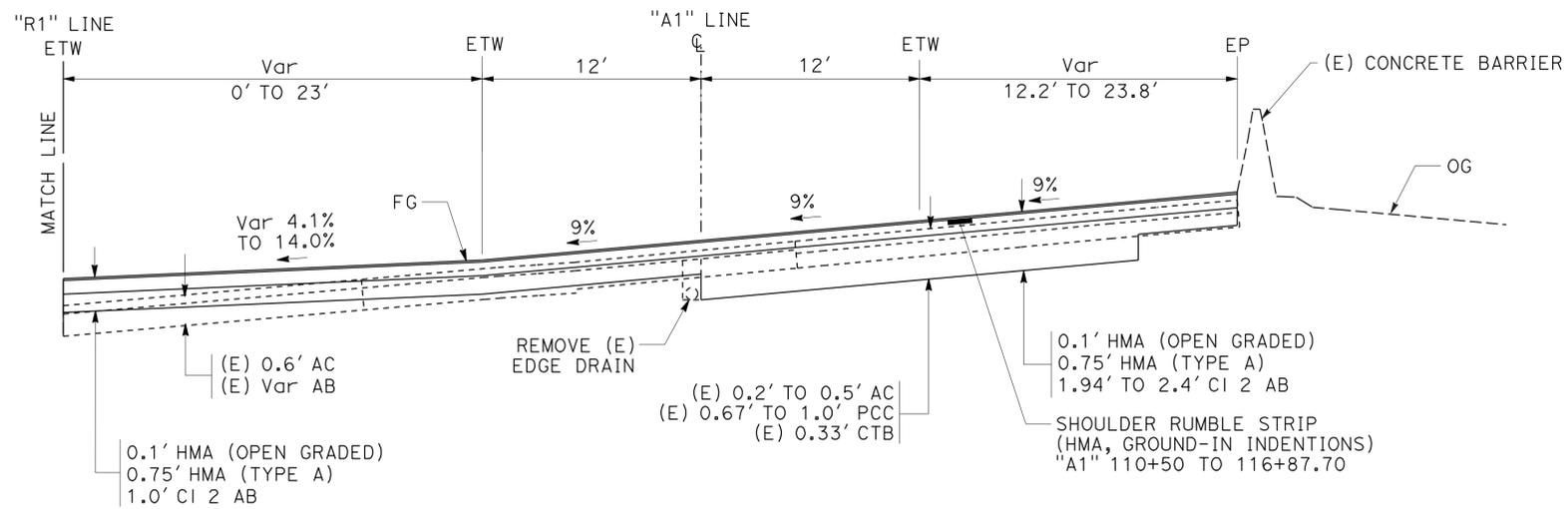
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02	Sha	5	R28.9/R29.3	3	67

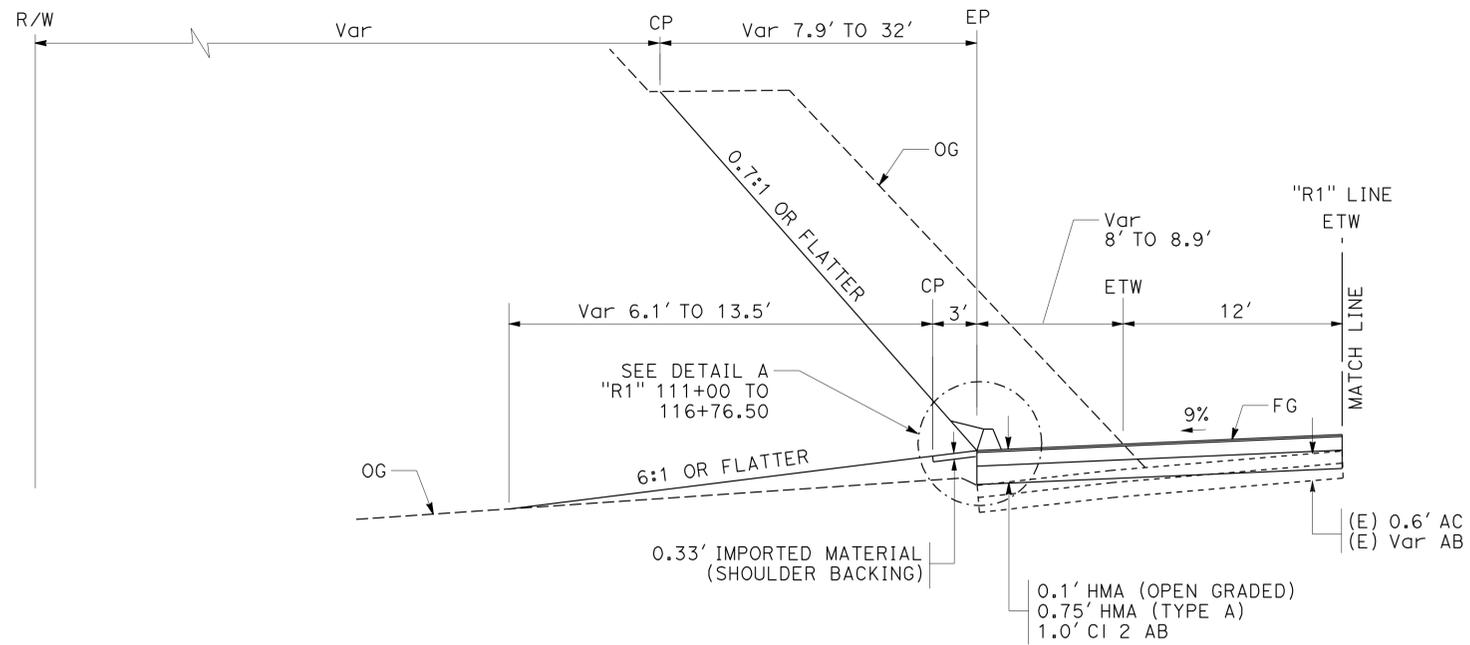
<i>Shaun Alexander</i>	07-28-09
REGISTERED CIVIL ENGINEER DATE	
8-17-09	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER  
**SHAUN ALEXANDER**  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

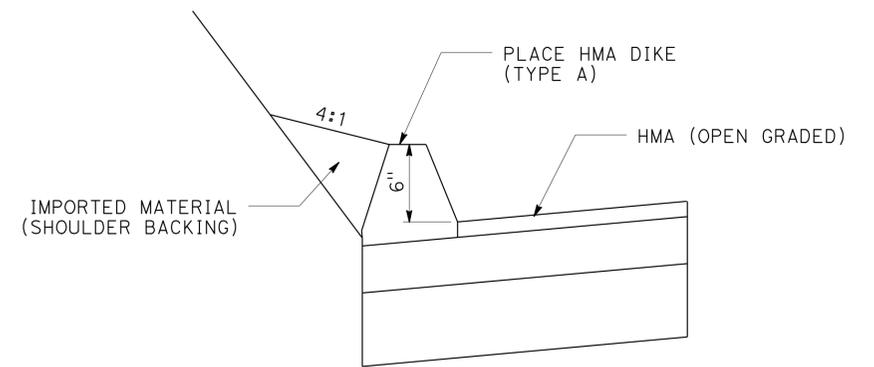
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**SOUTHBOUND ROUTE 5**  
"A1" 110+44.95 TO 116+87.70



**SOUTHBOUND TURNTABLE BAY ON-RAMP**  
"R1" 110+44.95 TO 116+76.50



**DETAIL A**

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGN
AL TRUJILLO	AL TRUJILLO	
JEFF COON	JEFF COON	
SHAUN ALEXANDER	SHAUN ALEXANDER	
REVISOR	REVISOR	
DATE	DATE	

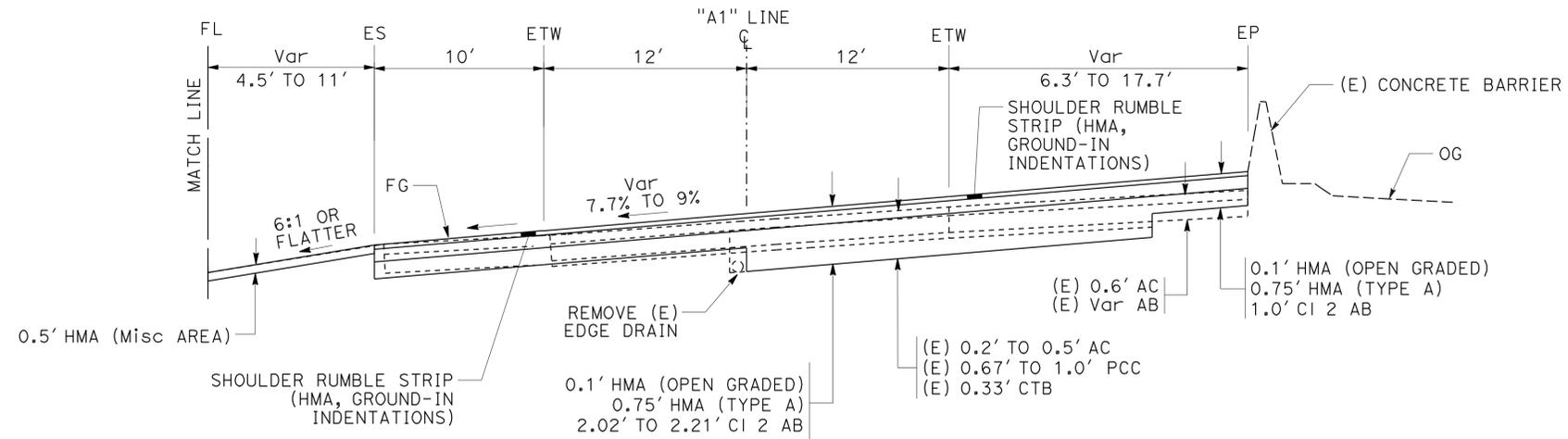
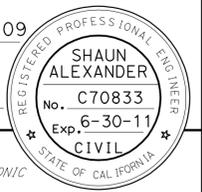
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	4	67

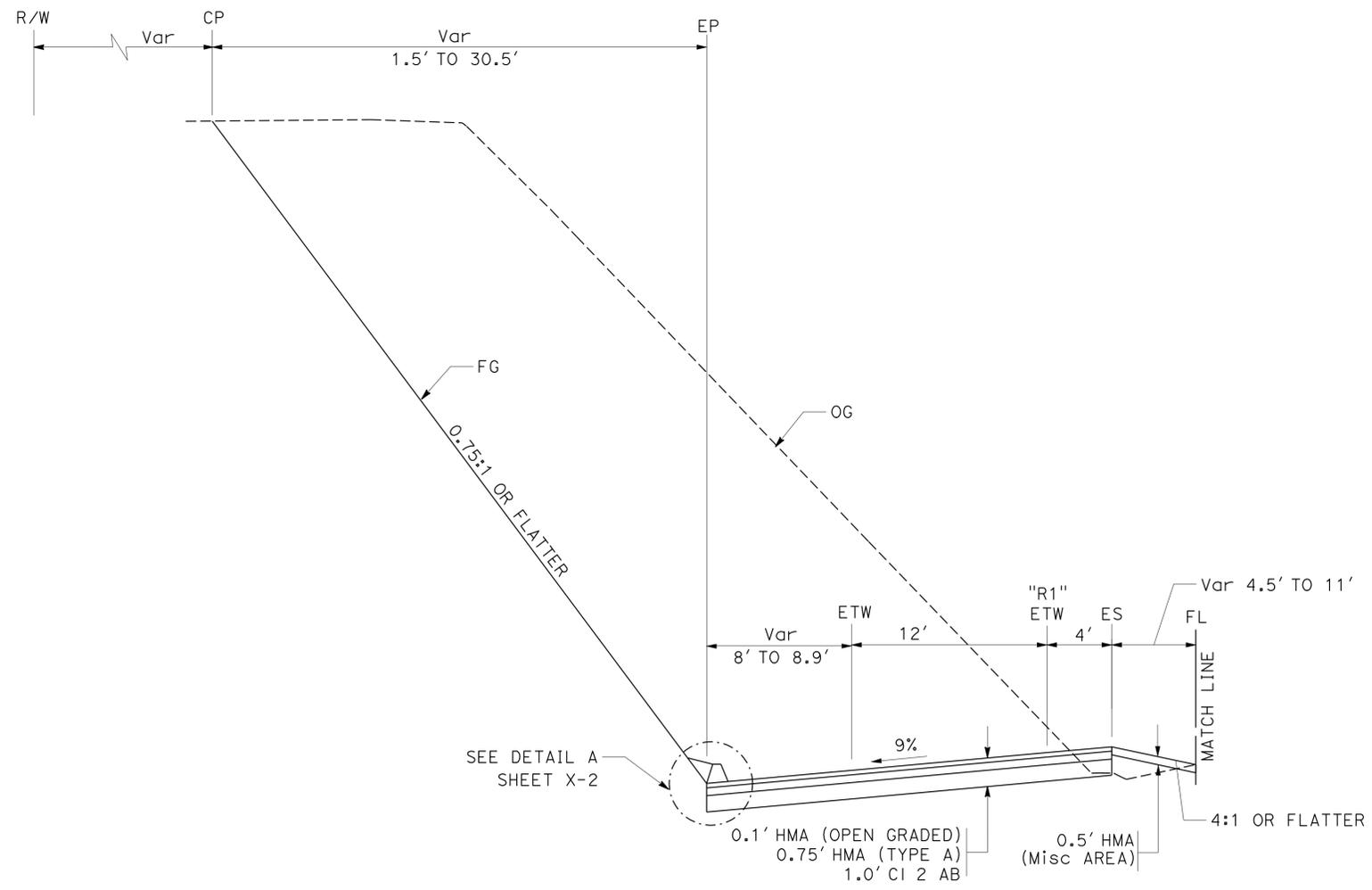
<i>Shaun Alexander</i>	07-28-09
REGISTERED CIVIL ENGINEER DATE	
8-17-09	
PLANS APPROVAL DATE	

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**SOUTHBOUND ROUTE 5**  
"A1" 116+87.70 TO 119+13.97



**SOUTHBOUND TURNTABLE BAY ON-RAMP**  
"R1" 116+76.50 TO 118+94.44

**TYPICAL CROSS SECTIONS**  
NO SCALE

X-3

REVISION	DATE PLOTTED => 19-AUG-2009
07-28-09	TIME PLOTTED => 12:15

DESIGNED BY	JEFF COON
CHECKED BY	SHAUN ALEXANDER
FUNCTIONAL SUPERVISOR	AL TRUJILLO
DESIGNED BY	SHAUN ALEXANDER
CHECKED BY	SHAUN ALEXANDER
DATE	07-28-09
REVISION	

DESIGNED BY	JEFF COON
CHECKED BY	SHAUN ALEXANDER
FUNCTIONAL SUPERVISOR	AL TRUJILLO
DESIGNED BY	SHAUN ALEXANDER
CHECKED BY	SHAUN ALEXANDER
DATE	07-28-09
REVISION	

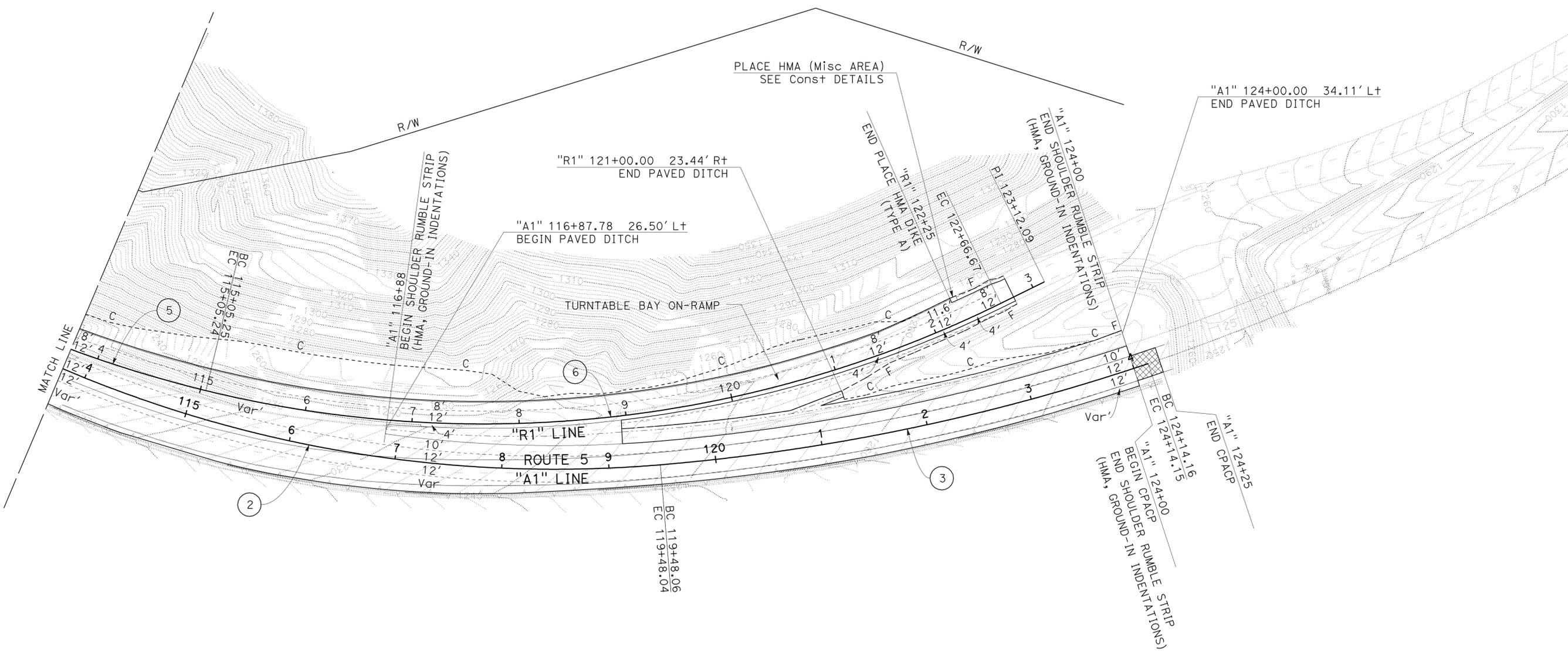








NOTE:  
 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



"A1" CURVE DATA

No.	R	Δ	T	L
②	1175.00'	50° 36' 40"	555.56'	1037.92'
③	1941.63'	13° 45' 13"	234.17'	466.08'

"R1" CURVE DATA

No.	R	Δ	T	L
⑤	1149.38'	8° 10' 40"	82.17'	164.05'
⑥	1096.00'	39° 48' 18"	396.80'	761.42'

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
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 AL TRUJILLO  
 FUNCTIONAL SUPERVISOR  
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 SHAUN ALEXANDER  
 REVISIONS BY  
 JEFF COON  
 DATE REVISIONS  
 DATE REVISIONS

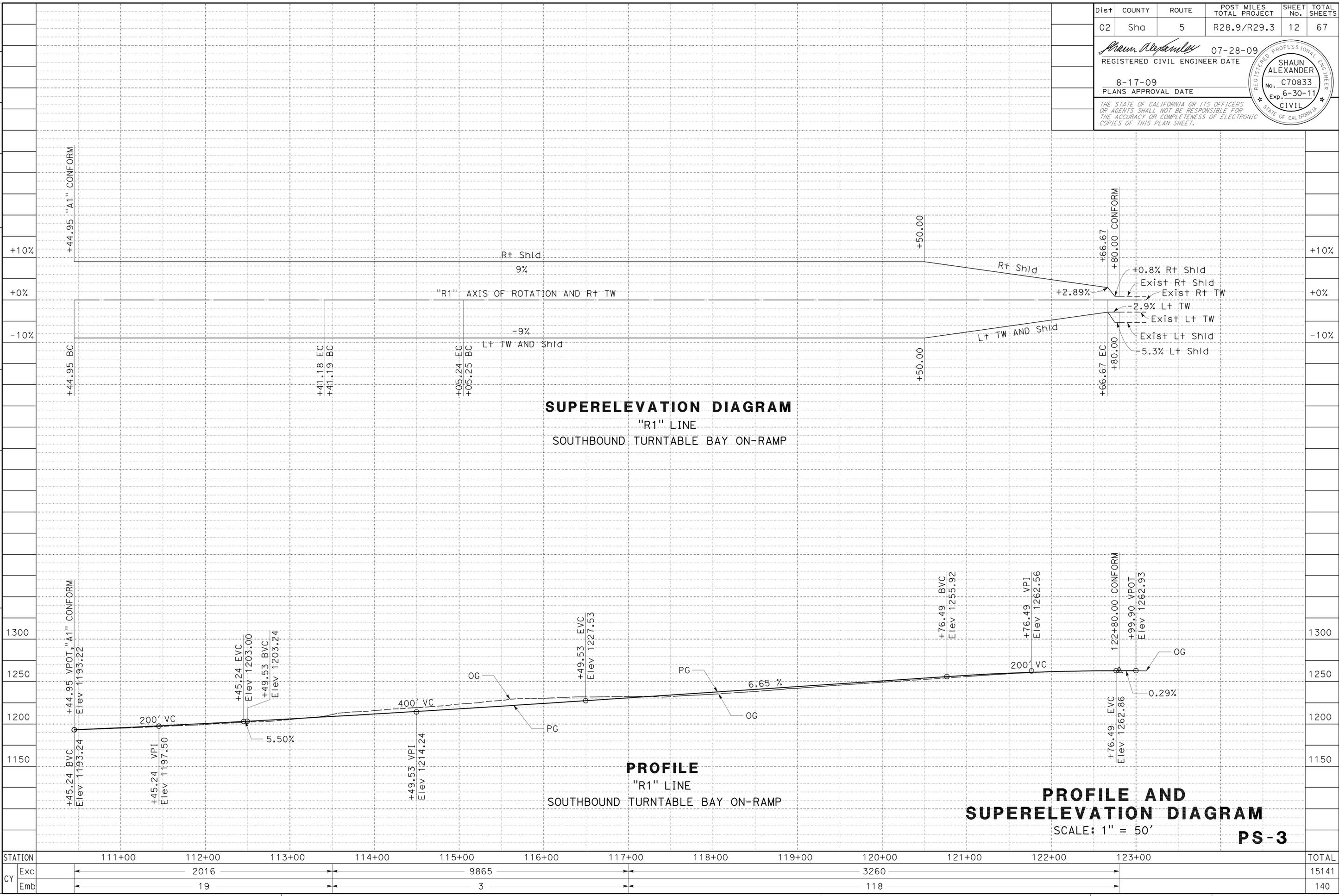




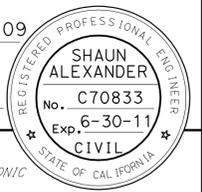


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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGN
AL TRUJILLO		
CALCULATED-DESIGNED BY	CHECKED BY	
JEFF COON	SHAUN ALEXANDER	
REVISED BY	DATE REVISED	



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	12	67
Shaun Alexander			07-28-09	REGISTERED CIVIL ENGINEER DATE	
8-17-09			PLANS APPROVAL DATE		
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** DESIGN

FUNCTIONAL SUPERVISOR	AL TRUJILLO
CALCULATED-DESIGNED BY	CHECKED BY
JEFF COON	SHAUN ALEXANDER
REVISED BY	DATE REVISED

**LEGEND:**

- FLOW DIRECTION
- HMA (Misc AREA)
- Temp FILL MATERIAL

**ABBREVIATIONS:**

- ACEP ASPHALT CONCRETE EDGE OF PAVEMENT
- ACFL ASPHALT CONCRETE FLOW LINE
- ESL EDGE OF SHOULDER LEFT
- EPR EDGE OF PAVEMENT RIGHT
- EPL EDGE OF PAVEMENT LEFT
- ETWL EDGE OF TRAVELED WAY LEFT
- BACK IMPORTED MATERIAL (SHOULDER BACKING)
- HMA HOT MIX ASPHALT (TYPE A)

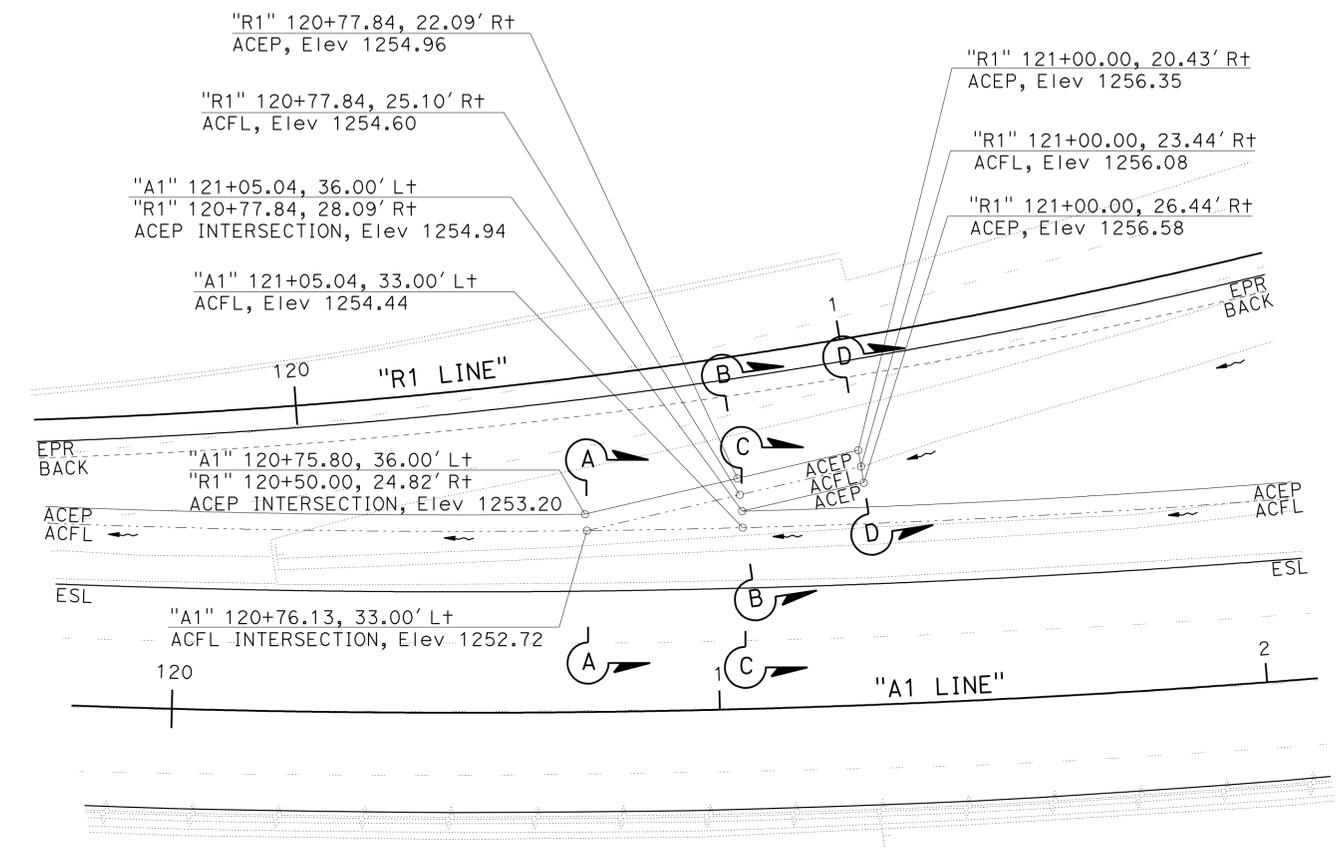
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	13	67

Shaun Alexander 07-28-09  
 REGISTERED CIVIL ENGINEER DATE

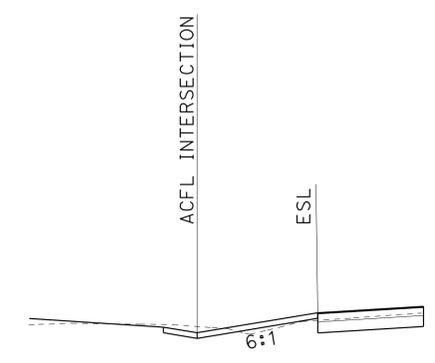
8-17-09  
 PLANS APPROVAL DATE

SHAUN ALEXANDER  
 No. C70833  
 Exp. 6-30-11  
 CIVIL

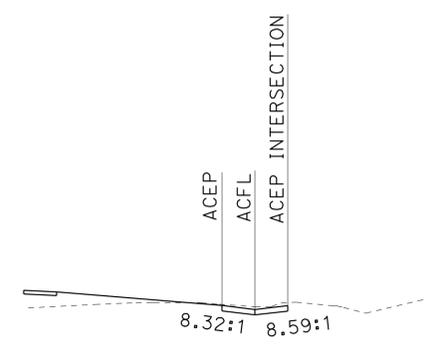
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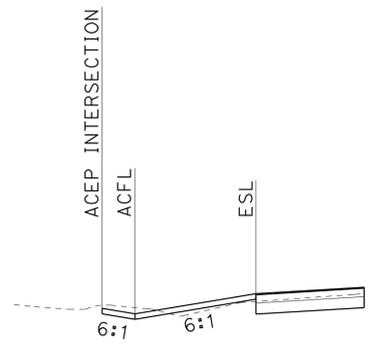
**DITCH CONNECTION DETAIL**



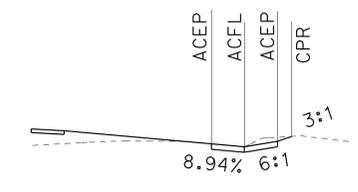
SECTION A-A  
 "A1" 120+76.13



SECTION B-B  
 "R1" 120+77.84



SECTION C-C  
 "A1" 121+05.04



SECTION D-D  
 "R1" 121+00.00

**CONSTRUCTION DETAILS**  
 NO SCALE  
**C-1**





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	16	67

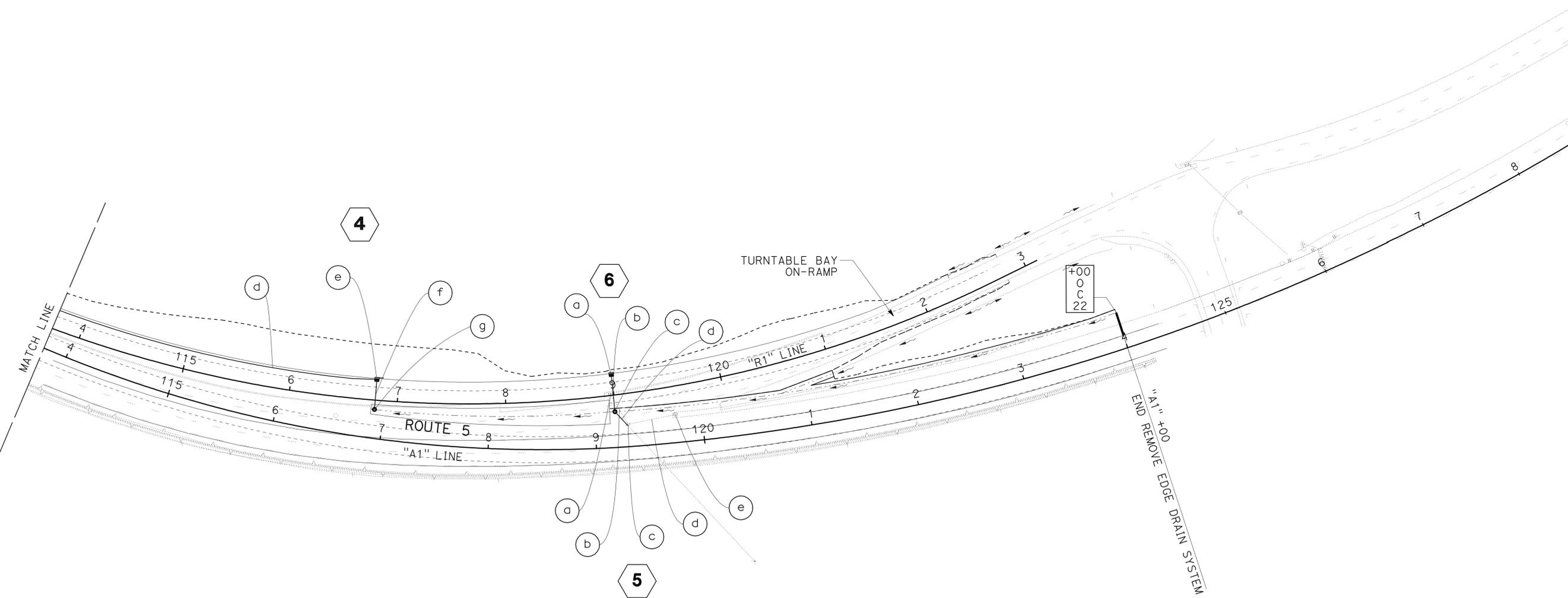
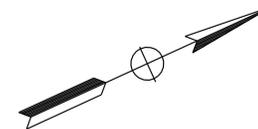
  

<i>Shaun Alexander</i>	07-28-09
REGISTERED CIVIL ENGINEER DATE	
8-17-09	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
SHAUN ALEXANDER
No. C70833
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
<b>Caltrans</b>	AL TRUJILLO	CHECKED BY	JEFF COON	
<b>DESIGN</b>			SHAUN ALEXANDER	

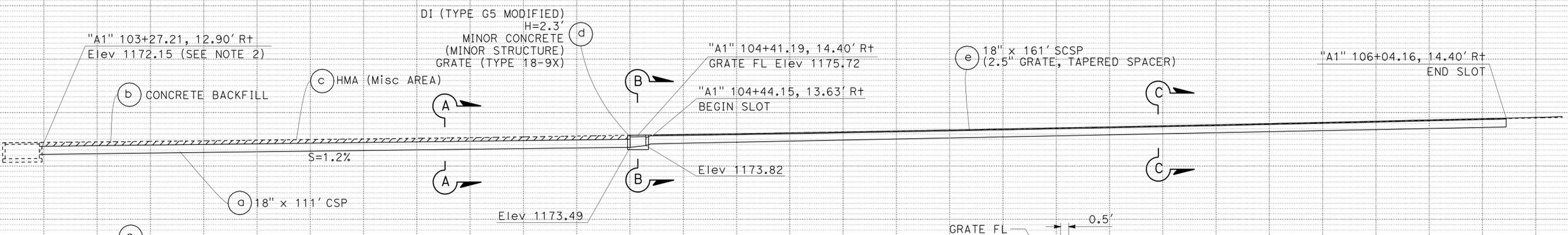
THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

**DRAINAGE PLAN**  
SCALE: 1" = 50' **D-2**

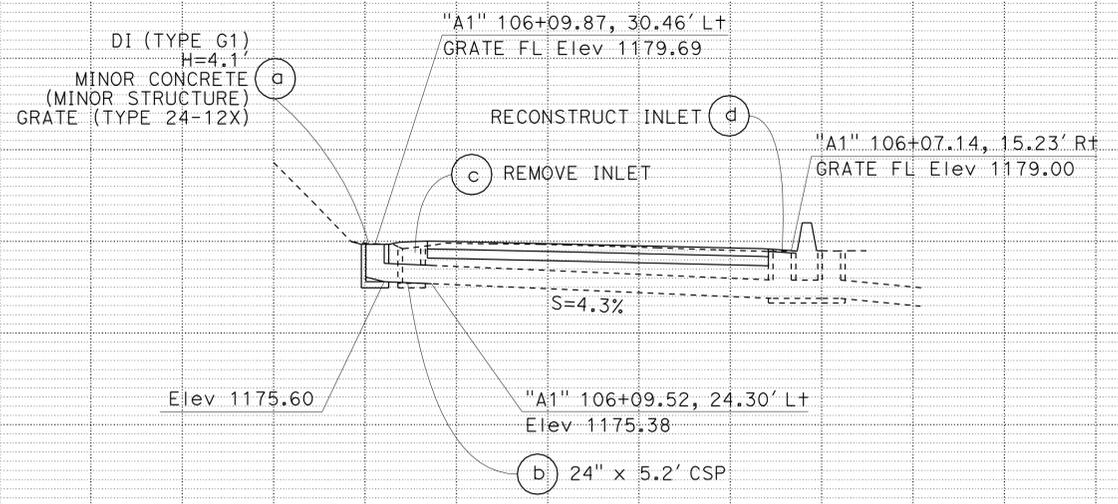
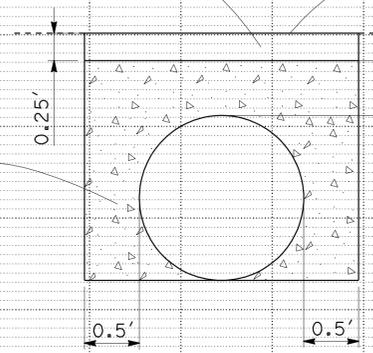
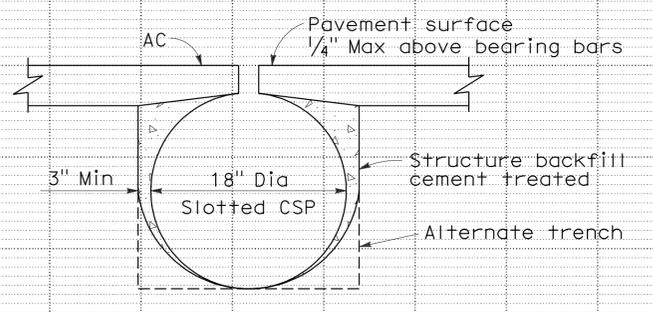
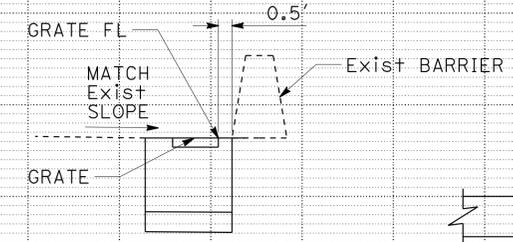
LAST REVISION DATE PLOTTED => 19-AUG-2009 07-28-09 TIME PLOTTED => 12:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	17	67
<i>Shaun Alexander</i> REGISTERED CIVIL ENGINEER DATE			07-28-09		
PLANS APPROVAL DATE			8-17-09		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.					
REGISTERED PROFESSIONAL ENGINEER SHAUN ALEXANDER No. C70833 Exp. 6-30-11 CIVIL STATE OF CALIFORNIA					

- NOTES:
- FOR OFFSET LOCATION OF SCSP, SEE Std PLAN D98A.
  - FOR CONNECTION TO AN EXISTING DRAIN INLET, FIELD VERIFY EXISTING OUTLET INVERT.
  - FOR CONNECTION TO AN EXISTING PIPE, FIELD VERIFY EXISTING PIPE SIZE, TYPE, AND SLOPE. DEGREE OF ELBOW TO BE DETERMINED IN FIELD.



**DRAINAGE SYSTEM No. 1**  
 "A1" 103+27.21 TO 106+04.16



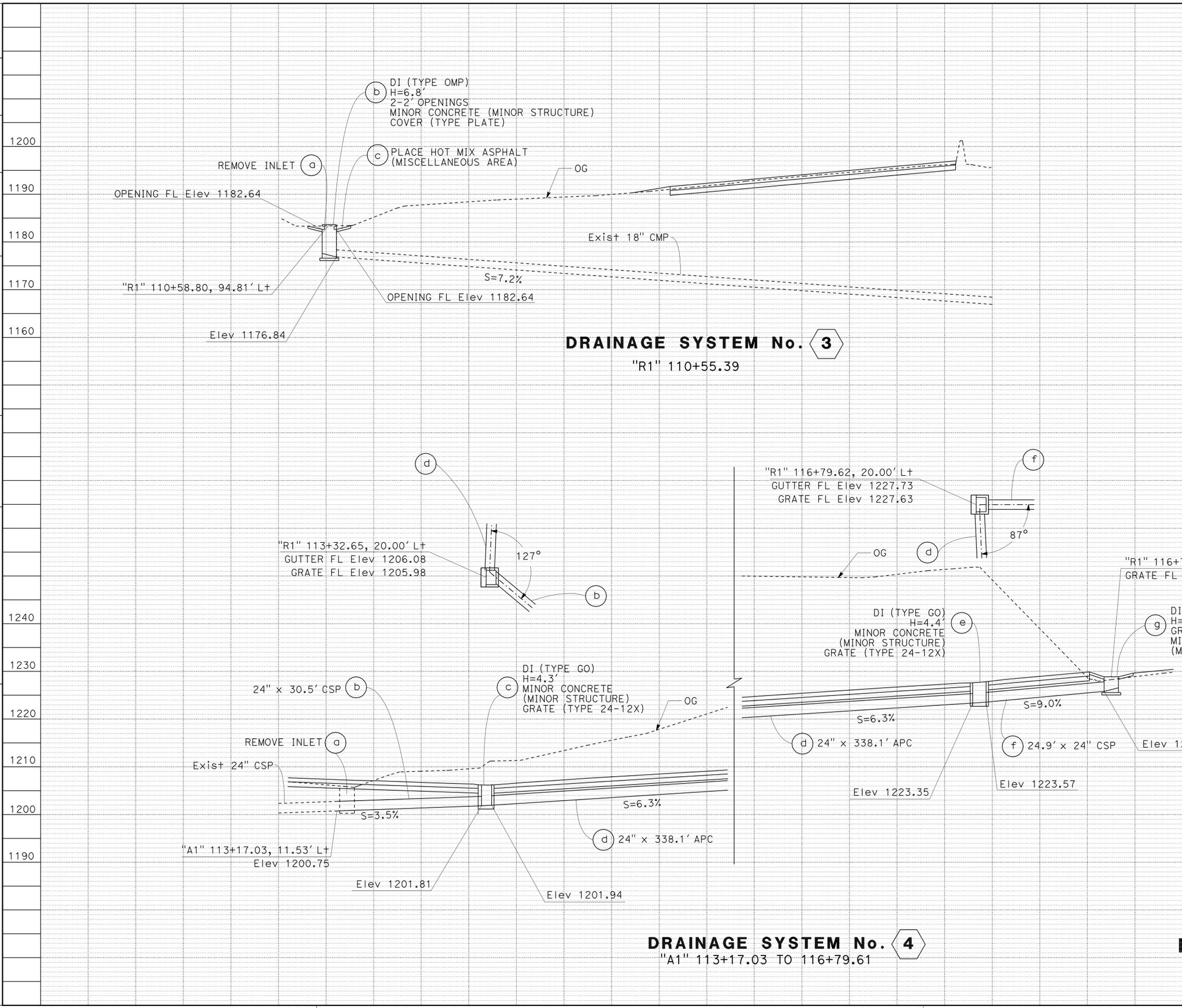
**DRAINAGE SYSTEM No. 2**  
 "A1" 106+08.12

**DRAINAGE PROFILES**  
 SCALE: 1" = 10'  
**DP-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 AL TRUJILLO  
 FUNCTIONAL SUPERVISOR  
 CHECKED BY  
 SHAUN ALEXANDER  
 DATE REVISOR  
 JEFF COON  
 DATE REVISOR  
 07-28-09

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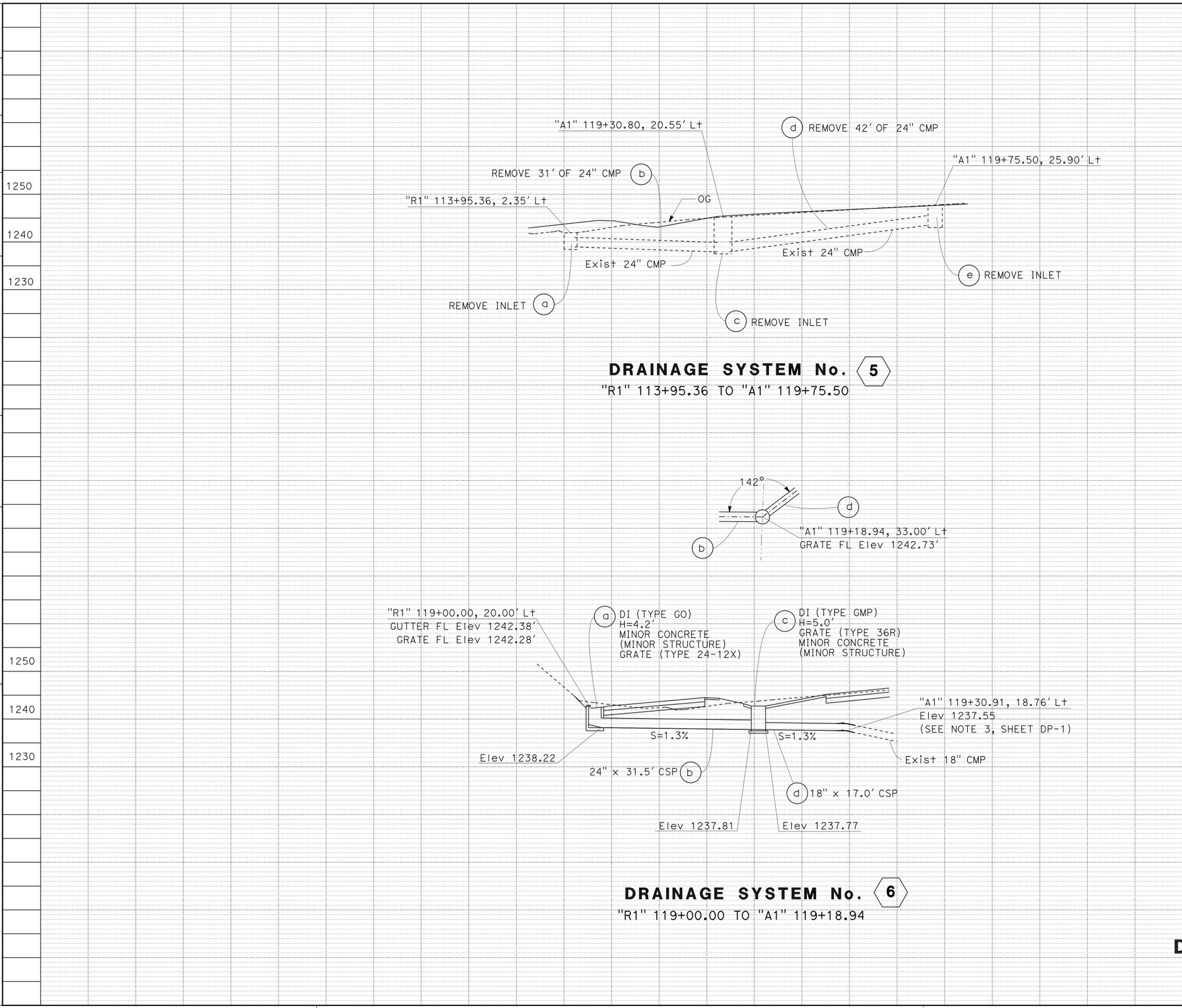
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SUPERVISOR	AL TRUJILLO
		CALCULATED-DESIGNED BY	JEFF COON
Et Caltrans	REVISIONS	CHECKED BY	SHAUN ALEXANDER
		REVISOR	JEFF COON



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	18	67
Shaun Alexander			07-28-09	REGISTERED CIVIL ENGINEER DATE	
8-17-09			PLANS APPROVAL DATE		
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REGISTERED PROFESSIONAL ENGINEER SHAUN ALEXANDER No. C70833 Exp. 6-30-11 CIVIL STATE OF CALIFORNIA					

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SUPERVISOR	AL TRUJILLO	CALCULATED-DESIGNED BY	JEFF COON	REVISOR	JEFF COON
		CHECKED BY	SHAUN ALEXANDER	DATE	1250	DATE	1250



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	19	67
Shaun Alexander		07-28-09		REGISTERED CIVIL ENGINEER DATE	
8-17-09		PLANS APPROVAL DATE			
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**DRAINAGE PROFILES**  
SCALE: 1" = 10'  
**DP-3**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	20	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**SHAUN ALEXANDER**  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

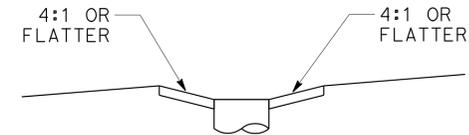
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**ABBREVIATIONS:**

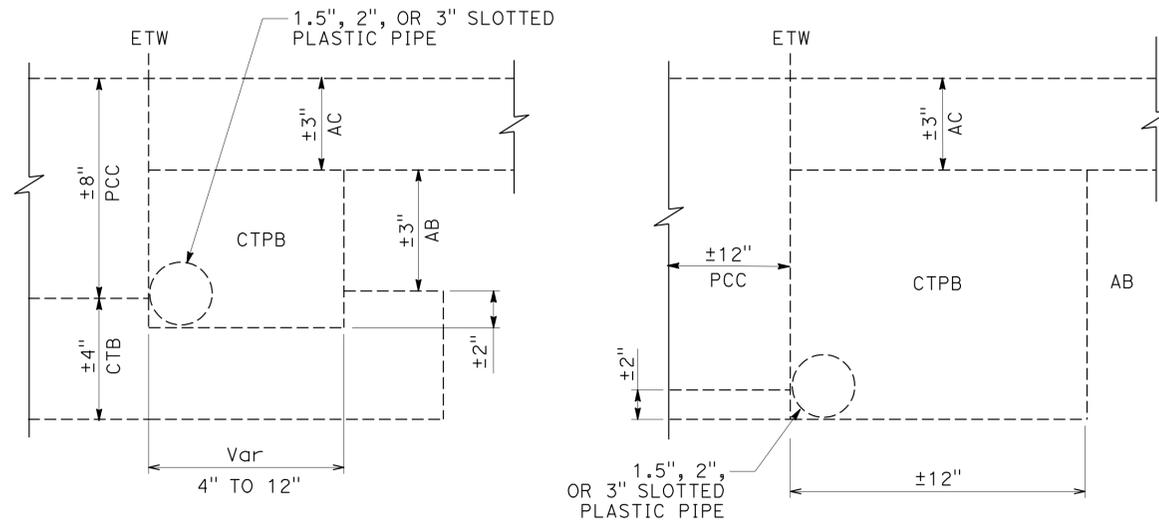
EPL EDGE OF PAVEMENT LEFT  
 BACK IMPORTED MATERIAL (SHOULDER BACKING)  
 RSP ROCK SLOPE PROTECTION (BACKING No. 2, METHOD B)

**NOTE:**

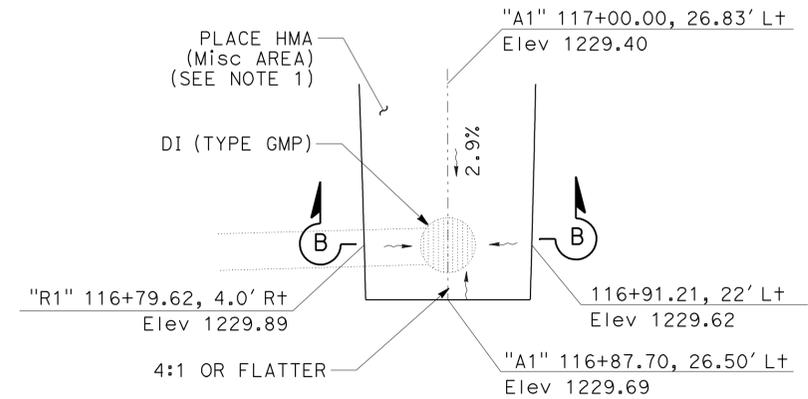
1. QUANTITY OF PLACE HMA (Misc AREA) FOR PAVED DITCH IS IN SUMMARY OF QUANTITIES, SHEET Q-1.



**SECTION B-B**



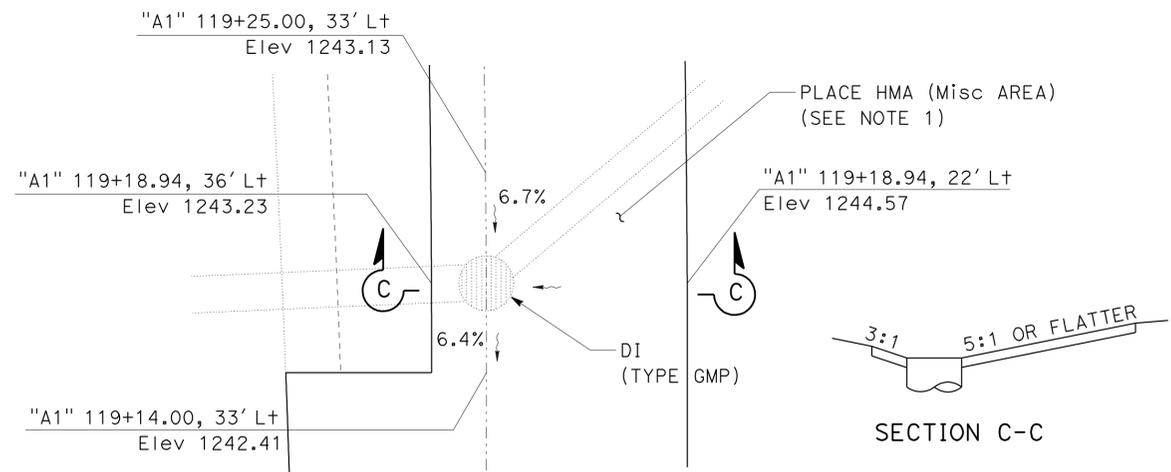
**EXISTING EDGE DRAIN DETAILS**



**PAVED DITCH DETAIL FOR DRAINAGE SYSTEM**

4 g

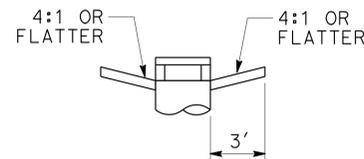
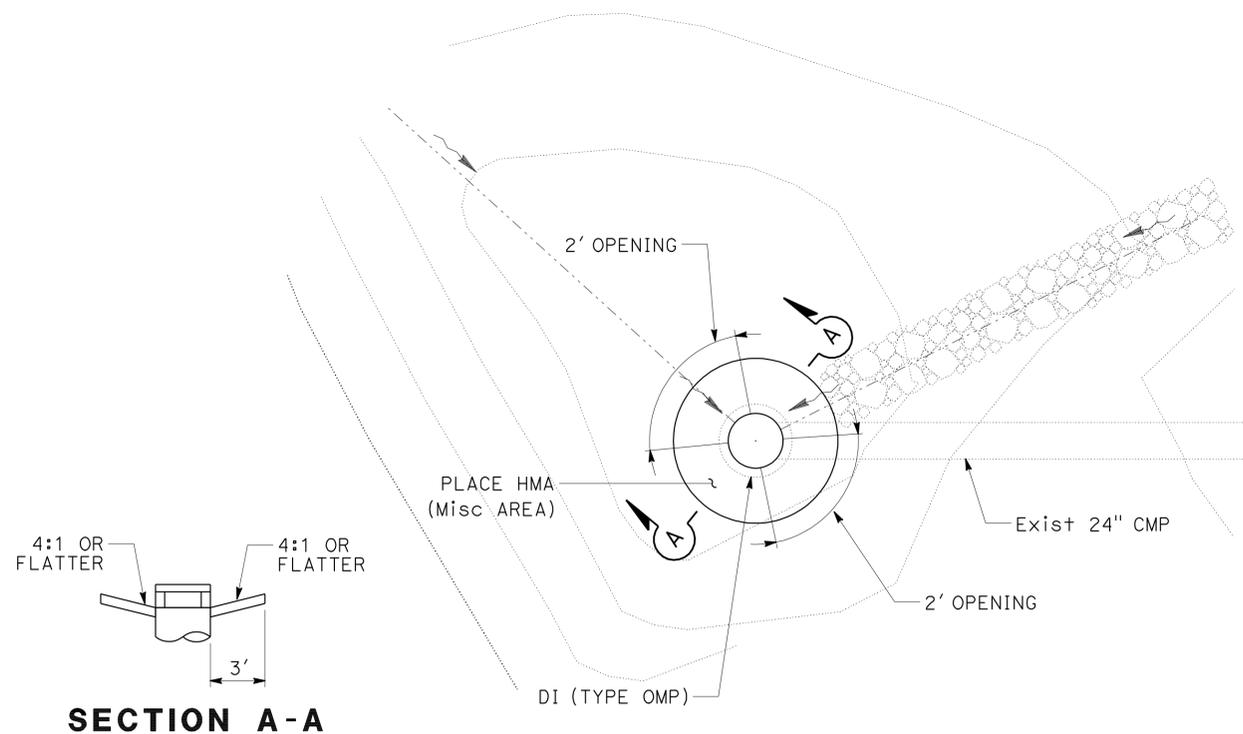
"A1" 116+91.21



**PAVED DITCH DETAIL FOR DRAINAGE SYSTEM**

6 C

"A1" 119+18.94



**SECTION A-A**

**AC APRON AND DRAINAGE INLET DETAIL**

3 C

"R1" 110+58.80

**DRAINAGE DETAILS**

NO SCALE

**DD-1**

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

FUNCTIONAL SUPERVISOR  
 AL TRUJILLO

CALCULATED-DESIGNED BY  
 CHECKED BY

JEFF COON  
 SHAUN ALEXANDER

REVISED BY  
 DATE REVISED

x  
x  
x  
x  
x





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	23	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE

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**NOTES:**

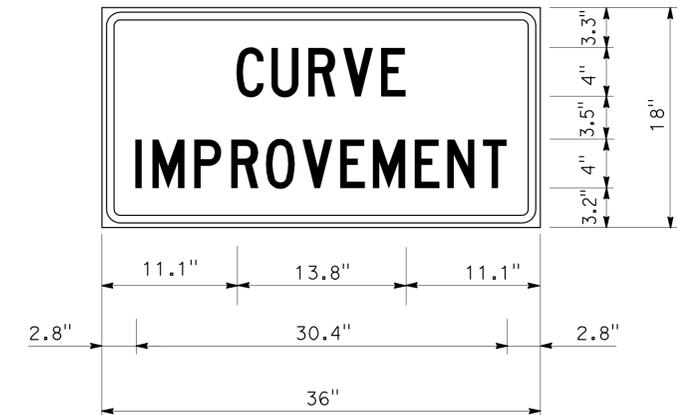
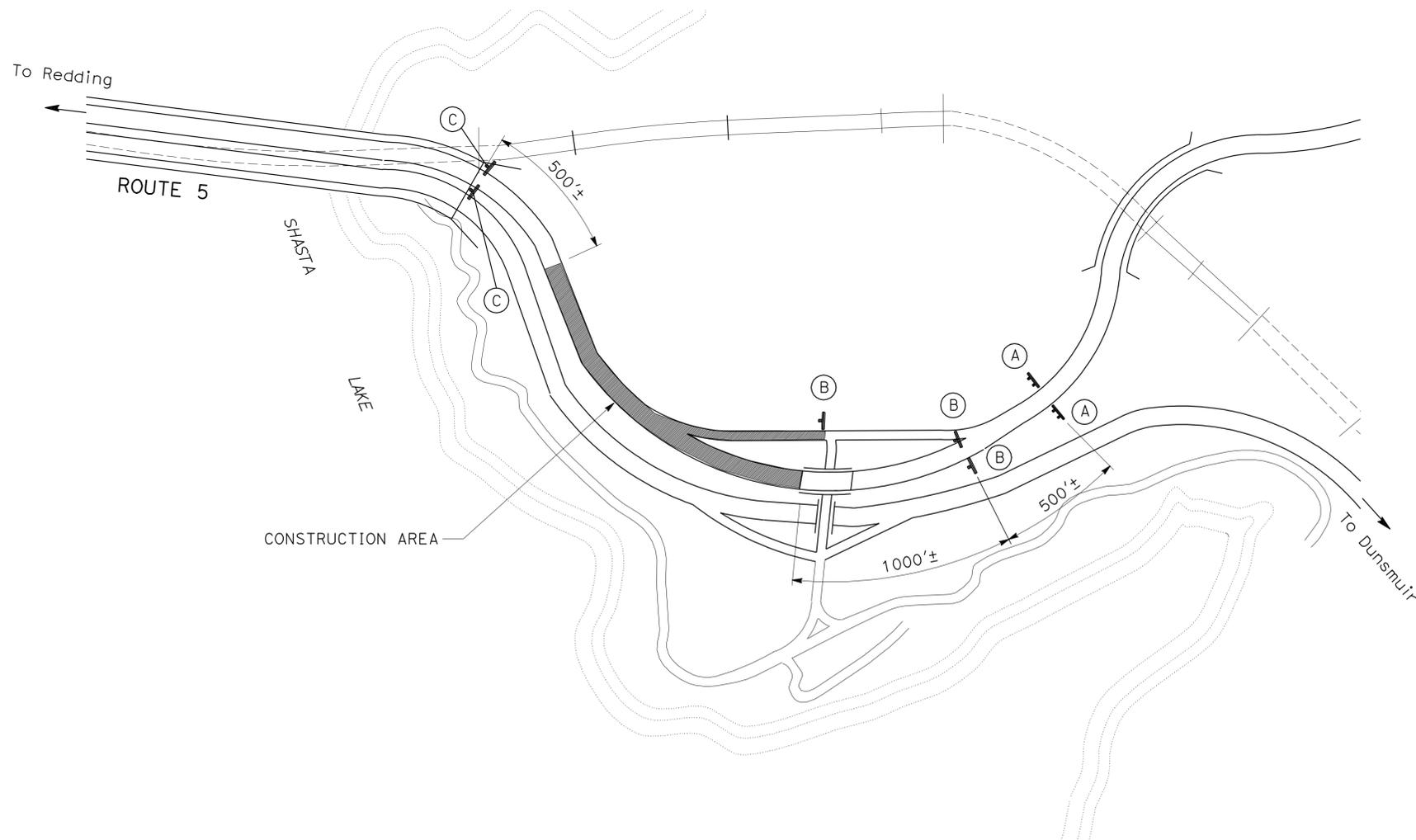
1. EXACT LOCATION OF ALL SIGNS TO BE DETERMINED BY THE ENGINEER.
2. ALL SIGNS SHALL BE BLACK ON ORANGE EXCEPT C40 (CA), WHICH IS BLACK ON WHITE.
3. CALIFORNIA CALIFORNIA CODES ARE DESIGNATED BY (CA), OTHERWISE FEDERAL CODES ARE SHOWN.

**LEGEND**

- ↑ ONE POST STATIONARY MOUNTED SIGN
- ↑↑ TWO POST STATIONARY MOUNTED SIGN

**CONSTRUCTION AREA SIGNS**

TYPE	CODE	PANEL SIZE	SIGN MESSAGE	No. OF SIGNS	NUMBER AND SIZE POSTS
(A)	C40 (CA)	108" x 42"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2	2 - 4" x 6"
(B)	W20-1	48" x 48"	ROAD WORK AHEAD	3	1 - 4" x 6"
	C23B (CA)	36" x 18"	CURVE IMPROVEMENT		
(C)	G20-2	36" x 18"	END ROAD WORK	2	1 - 4" x 4"



1.5" RADIUS, 0.6" BORDER, 0.4" INDENT, BLACK ON ORANGE;  
 [CURVE] C;  
 [IMPROVEMENT] C;

**C23B SIGN DETAIL**

**CONSTRUCTION AREA SIGNS**  
 NO SCALE  
**CS-1**

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY



USERNAME => trrichf  
 DGN FILE => 21e1101a001.dgn

CU 03 242

EA 1E1101

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LAST REVISION | DATE PLOTTED => 19-AUG-2009  
 07-28-09 | TIME PLOTTED => 12:18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
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 AL TRUJILLO  
 FUNCTIONAL SUPERVISOR  
 CHECKED BY  
 SHAUN ALEXANDER  
 JEFF COON  
 REVISOR  
 DATE REVISED

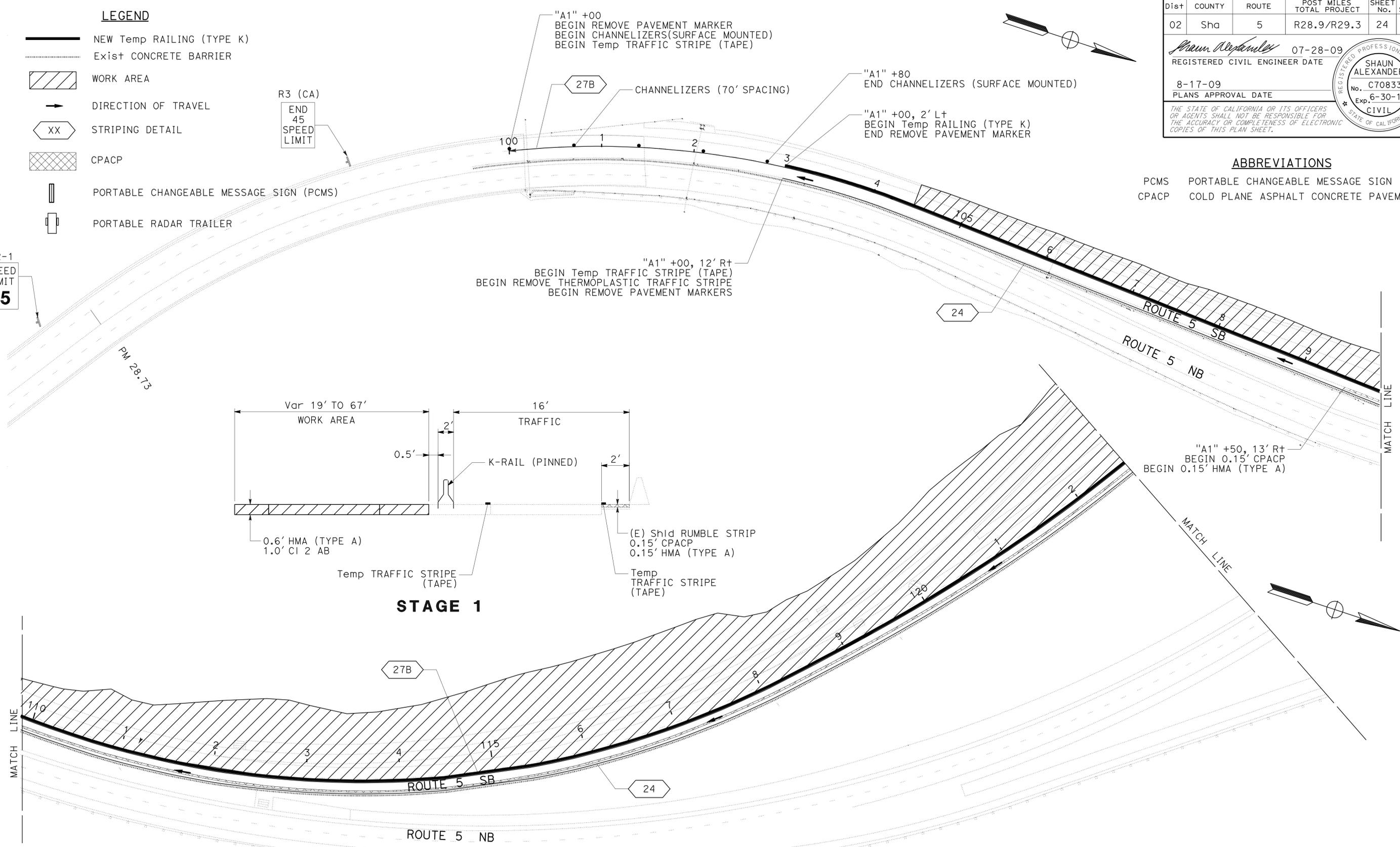
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: AL TRUJILLO  
 CHECKED BY: JEFF COON  
 DESIGNED BY: SHAUN ALEXANDER  
 REVISIONS: 07-28-09  
 DATE PLOTTED: 07-28-09  
 TIME PLOTTED: 12:18

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	24	67

07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE  
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- LEGEND**
- NEW Temp RAILING (TYPE K)
  - Exist CONCRETE BARRIER
  - WORK AREA
  - DIRECTION OF TRAVEL
  - STRIPING DETAIL
  - CPACP
  - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
  - PORTABLE RADAR TRAILER

- ABBREVIATIONS**
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
  - CPACP COLD PLANE ASPHALT CONCRETE PAVEMENT



**STAGE 1  
 STAGE CONSTRUCTION AND  
 TRAFFIC HANDLING PLAN**

SCALE: 1" = 50'

**SC-1**

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	27	67

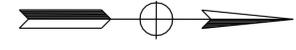
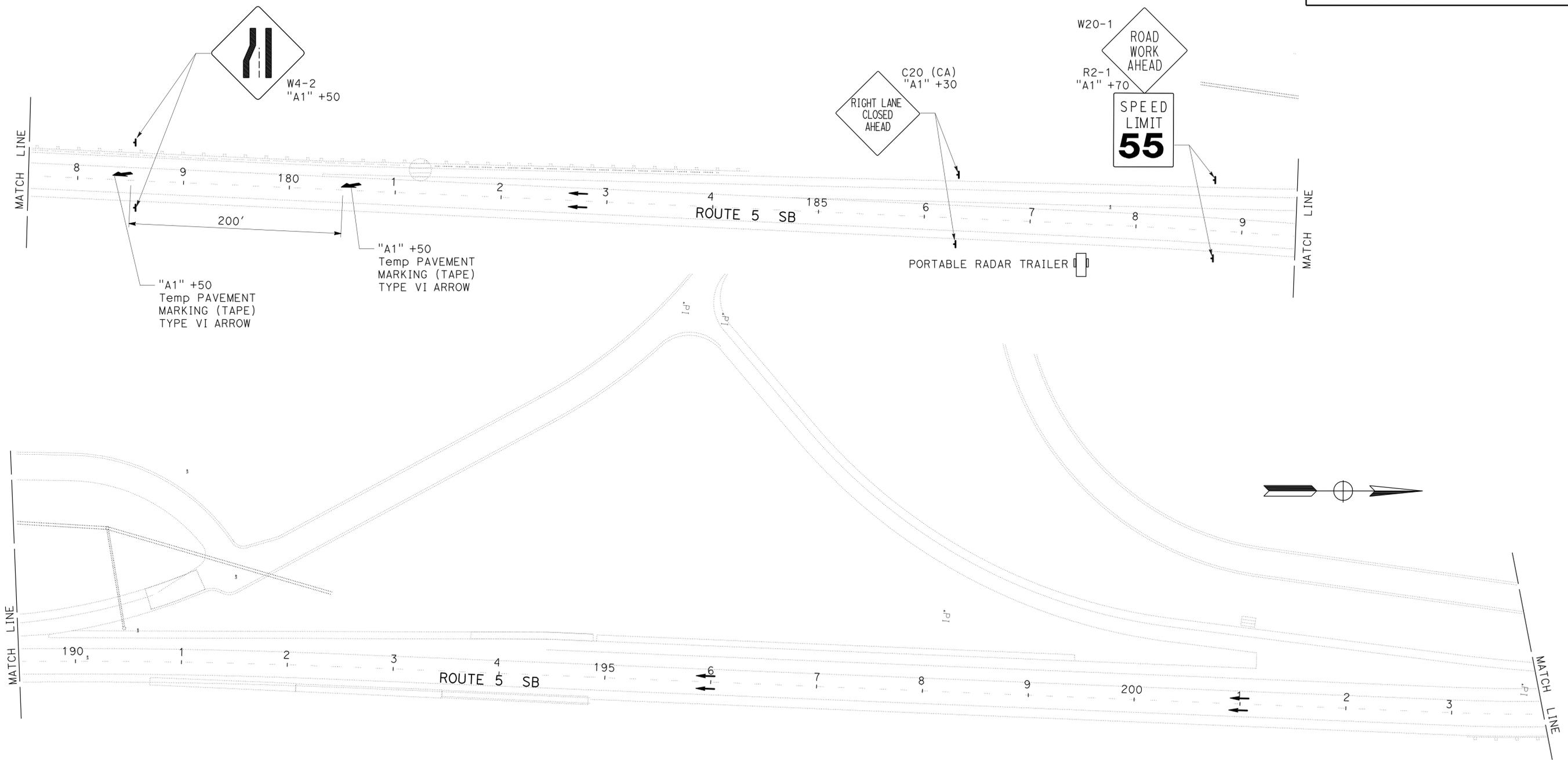
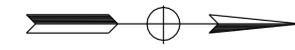
  

<i>Shaun Alexander</i>	07-28-09
REGISTERED CIVIL ENGINEER DATE	
8-17-09	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
SHAUN ALEXANDER
No. C70833
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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**STAGE 1  
STAGE CONSTRUCTION  
AND TRAFFIC HANDLING  
PLAN**

SCALE: 1" = 20'

**SC-4**

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	AL TRUJILLO
<b>Caltrans</b>	DESIGN	
CALCULATED-DESIGNED BY	CHECKED BY	
JEFF COON	SHAUN ALEXANDER	
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USERNAME => trichf  
DGN FILE => 21e110ma004.dgn

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EA 1E1101

LAST REVISION DATE PLOTTED => 19-AUG-2009  
07-28-09 TIME PLOTTED => 12:18



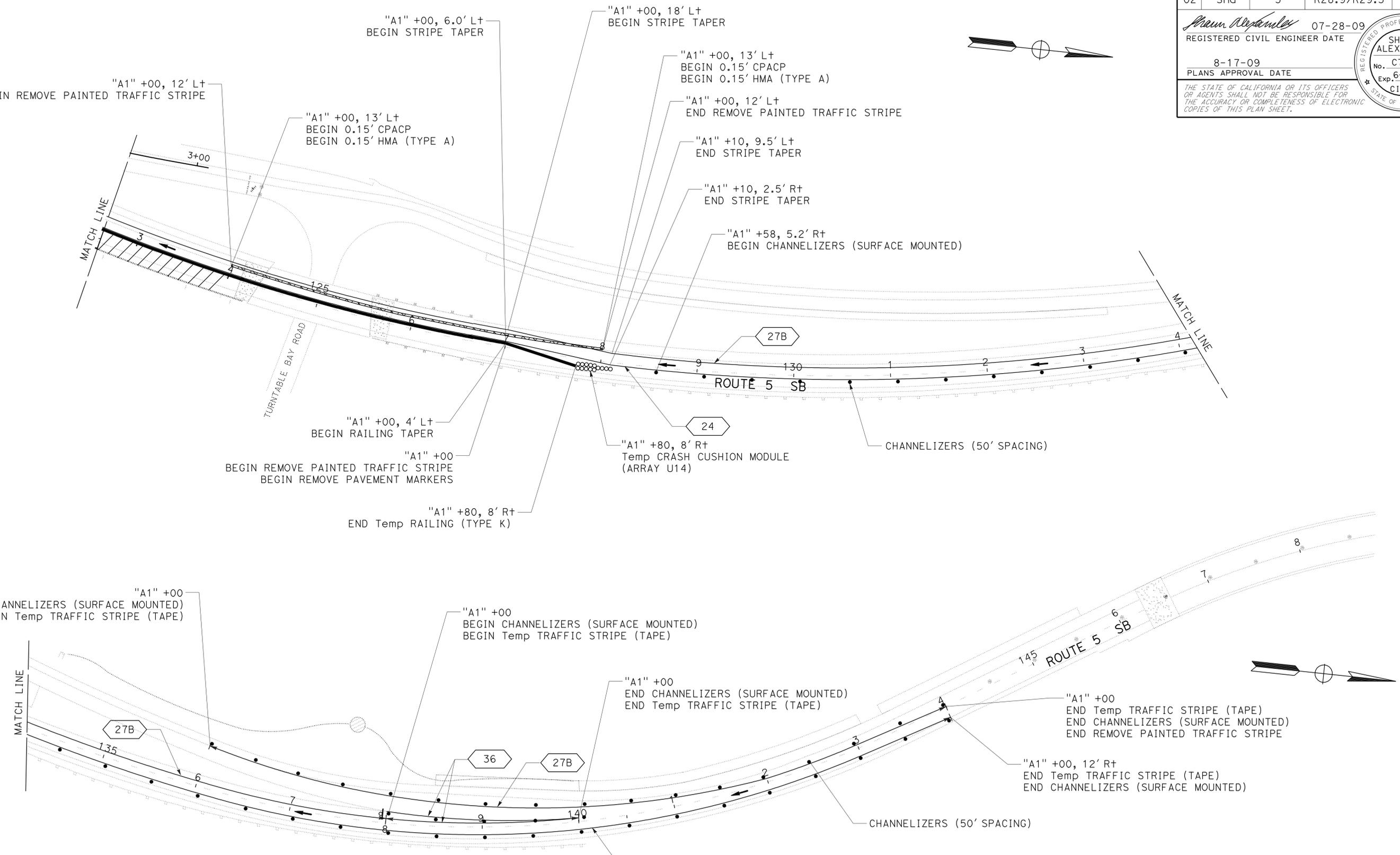
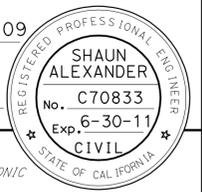


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	30	67

<i>Shaun Alexander</i>	07-28-09
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8-17-09	
PLANS APPROVAL DATE	

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**STAGE 2  
STAGE CONSTRUCTION  
AND TRAFFIC HANDLING  
PLAN**

SCALE: 1" = 50'      **SC-7**

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY



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DGN FILE => 21e110ma007.dgn

CU 03 242      EA 1E1101

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	AL TRUJILLO
CALCULATED-DESIGNED BY	CHECKED BY
JEFF COON	SHAUN ALEXANDER
REVISOR BY	DATE REVISED

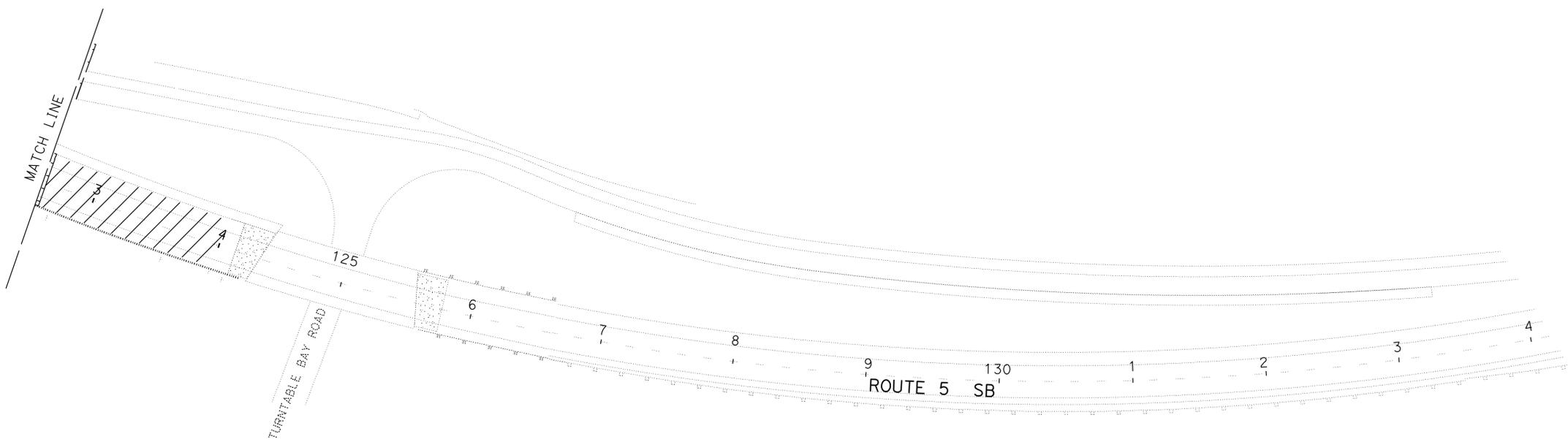


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	32	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**SHAUN  
ALEXANDER**  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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DESIGN				SHAUN ALEXANDER		

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**STAGE 3  
STAGE CONSTRUCTION AND  
TRAFFIC HANDLING PLAN**

SCALE: 1" = 50'

**SC-9**

LAST REVISION | DATE PLOTTED => 19-AUG-2009  
 07-28-09 | TIME PLOTTED => 12:19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	33	67

07-28-09  
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 8-17-09  
 PLANS APPROVAL DATE

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NOTES:

- FOR DETAILS NOT SHOWN, SEE STANDARD PLANS.
- WASHER ASSEMBLY CONSISTS OF 2 FLAT WASHERS, NUT, FIBER WASHER AND JAM NUT. BOLT TO BE CUT FLUSH WITH NUT.
- ALL STEEL SHALL BE GALVANIZED.
- SEE SIGN QUANTITIES FOR SIGN LOCATIONS AND SIGN PANEL SIZES.
- BOLT END NOT TO EXCEED 0.4" PAST NUT.

**REMOVE EXISTING SHOULDER RUMBLE STRIP**

LOCATION	STAGE	COLD PLANE ASPHALT CONCRETE PAVEMENT	TACK COAT	HOT MIX ASPHALT (TYPE A)
		SQYD	TON	TON
"A1" 109+50 TO 128+00	1	412	.08	42
"A1" 124+00 TO 128+00	2	89	.02	9
TOTAL		*501	*.1	*51

\* QUANTITY INCLUDED IN THE SUMMARY OF QUANTITIES

**TEMPORARY PAVEMENT MARKING (TAPE)**

LOCATION	STAGE	DESCRIPTION/MESSAGE	SQFT
"A1" 176+50	1	TYPE VI ARROW	42
"A1" 178+50	1	TYPE VI ARROW	42
"A1" 180+50	1	TYPE VI ARROW	42
TOTAL			126

**PORTABLE RADAR TRAILER**

	EA
TOTAL	2

**TEMPORARY CRASH CUSHION MODULE**

STATION LIMITS	STAGE	EA	COMMENTS
"A1" 127+80	1	14	ARRAY "U14"
"A1" 127+80	2	14	ARRAY "U14"
TOTAL		28	

**REMOVE PAVEMENT MARKER**

LOCATION	STAGE
	1
	EA
"A1" 100+00 TO 103+00	7
"A1" 103+00 TO 128+00	53
"A1" 166+52 TO 176+50	21
"A1" 127+00 TO 144+00	36
TOTAL	117

**TEMPORARY RAILING (TYPE K)**

LOCATION	STAGE	
	1	2
	LF	LF
"A1" 103+00 TO 127+80	2480	
"A1" 103+00 TO 127+80		2480
STAGE TOTAL	2480	2480
TOTAL	4960	

**CHANNELIZER (SURFACE MOUNTED)**

LOCATION	STAGE	
	1	2
	EA	EA
"A1" 100+00 TO 102+80	5	
"A1" 127+50 TO 140+00	26	
"A1" 136+00 TO 176+50	97	
"A1" 138+00 TO 138+50	2	
"A1" 100+00 TO 102+80		5
"A1" 128+58 TO 144+00		32
"A1" 136+00 TO 144+00		17
"A1" 138+00 TO 140+00		5
TOTAL	189	

**REMOVE THERMOPLASTIC TRAFFIC STRIPE**

LOCATION	STAGE
	1
	LF
"A1" 103+00 TO 128+00	2500
TOTAL	2500

**REMOVE PAINTED TRAFFIC STRIPE**

LOCATION	STAGE	
	1	2
	LF	LF
"A1" 166+52 TO 176+50	998	
"A1" 100+00 TO 104+44.95		445
"A1" 124+00 TO 128+00		400
"A1" 127+00 TO 144+00		1700
STAGE TOTAL	998	2545
TOTAL	3543	

**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

CODE	PANEL SIZE	SIGN MESSAGE	No. AND SIZE OF POSTS	No. OF SIGNS	LOCATION
R2-1	36" x 48"	SPEED LIMIT 65	1 - 4" x 4"	1	PM R28.72
R3 (CA)	36" x 45"	END 45 SPEED LIMIT	1 - 4" x 4"	1	PM R28.79
G84-3 (CA)	48" x 60"	EXIT 692 W/ARROW	1 - 4" x 6"	1	"A1" 138+00
W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	2	"A1" 165+69
R2-1	36" x 48"	SPEED LIMIT 45			
W4-2	36" x 36"	THRU TRAFFIC MERGE LEFT	1 - 4" x 4"	2	"A1" 178+50
C20 (CA)	36" x 36"	RIGHT LANE CLOSED AHEAD	1 - 4" x 4"	2	"A1" 186+30
W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	2	"A1" 188+70
R2-1	36" x 48"	SPEED LIMIT 55			
W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	2	"A1" 227+38
R2-4 (CA)	36" x 48"	55 ZONE AHEAD			

EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

**TEMPORARY TRAFFIC STRIPE (TAPE)**

LOCATION	STAGE					
	1			2		
	24	27B	36	24	27B	36
"A1" 100+00 TO 138+00						
"A1" 103+00 TO 128+00	2500	3800				
"A1" 100+00 TO 144+00				4400		
"A1" 100+00 TO 138+00					3800	
"A1" 136+00 TO 144+00					800	
"A1" 138+00 TO 140+00			400			400
"A1" 136+00 TO 176+50		4050				
STAGE TOTAL	10,750			9400		
TOTAL	20,150					

**STAGE CONSTRUCTION AND TRAFFIC HANDLING QUANTITIES**

SCQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 AL TRUJILLO  
 FUNCTIONAL SUPERVISOR  
 JEFF COON  
 SHAUN ALEXANDER  
 REVISOR  
 DATE REVISOR



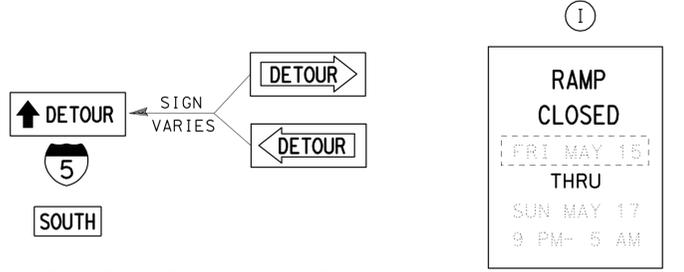
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	34	67

Shaun Alexander 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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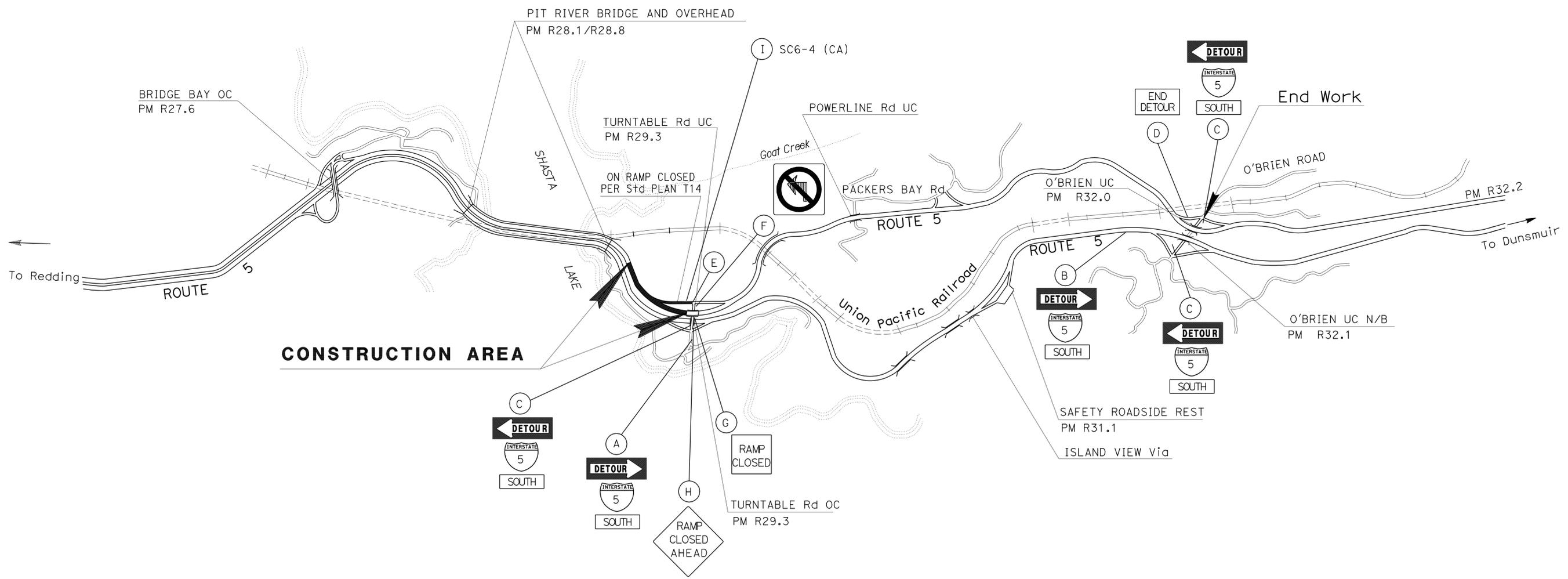
### CONSTRUCTION AREA SIGNS

TYPE	CODE	PANEL SIZE	SIGN MESSAGE	No. OF SIGNS	NUMBER AND SIZE POSTS
A	M4-10R	24" x 12"	DETOUR (ARROW) R+	1	1 - 4" x 6"
	G27-2	24" x 24"	I-5		
	M3-3	24" x 12"	SOUTH		
B	M4-10R	24" x 12"	DETOUR (ARROW) R+	1	1 - 4" x 6"
	G27-2	24" x 24"	I-5		
	M3-3	24" x 12"	SOUTH		
C	M4-10L	48" x 18"	DETOUR (ARROW) L+	3	1 - 4" x 6"
	G27-2	24" x 24"	I-5		
	M3-3	24" x 12"	SOUTH		
D	M4-8a	24" x 18"	END DETOUR	1	1 - 4" x 4"
E	R11-2	48" x 30"	RAMP CLOSED	1	1 - 4" x 6"
F	R3-2	30" x 30"	(NO LEFT TURN ARROW)	1	1 - 4" x 4"
G	C30 (CA)	30" x 30"	RAMP CLOSED	1	1 - 4" x 4"
H	C19 (CA)	36" x 36"	RAMP CLOSED AHEAD	1	1 - 4" x 4"
I	SC6-4 (CA)	48" x 60"	RAMP CLOSED/DATE-TIME	1	1 - 4" x 6"



PLACE 7-DAYS PRIOR TO RAMP CLOSURE

EXACT LOCATION TO BE DETERMINED BY THE ENGINEER



**DETOUR PLAN**  
NO SCALE  
**DE-1**

THIS PLAN ACCURATE FOR DETOUR WORK ONLY



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CU 03 242

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 FUNCTIONAL SUPERVISOR  
 JEFF COON  
 SHAUN ALEXANDER  
 REVISOR  
 DATE REVISOR  
 DATE REVISOR  
 DATE REVISOR

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	35	67

<i>Shaun Alexander</i>	07-28-09
REGISTERED CIVIL ENGINEER DATE	
8-17-09	
PLANS APPROVAL DATE	

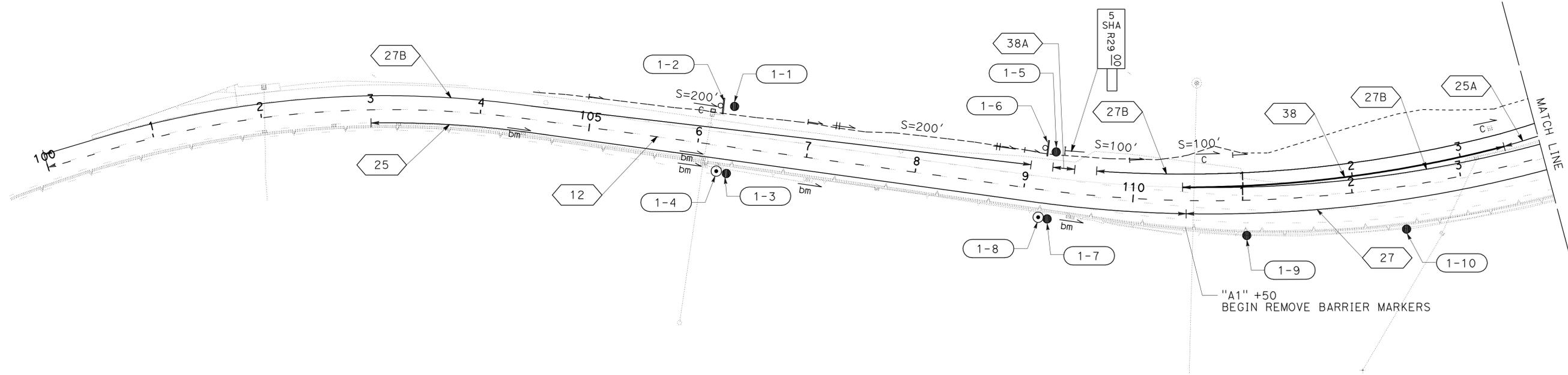
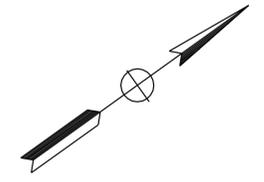
  

REGISTERED PROFESSIONAL ENGINEER
SHAUN ALEXANDER
No. C70833
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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**LEGEND**

- |     |  |   |                                 |
|-----|--|---|---------------------------------|
| 1-1 | ROADSIDE SIGN                          | d | ROADSIDE SIGN (ONE POST)        |
| 1-1 | PAVEMENT DELINEATION STRIPE DETAIL No. | ↖ | SINGLE STRIPE MARKER            |
| ↖   | DELINEATOR (TYPE F)                    | ↔ | STRIPE CHANGE LOCATION          |
|     | MILEPOST MARKER                        | ● | DELINEATOR (TYPE G)             |
| ↖   | REMOVE MARKER                          | ● | REMOVE ROADSIDE SIGN            |
| c   | CULVERT MARKER                         | ⊙ | ROADSIDE SIGN (BARRIER MOUNTED) |
| bm  | CULVERT MARKER (BARRIER MOUNTED)       |   |                                 |



FUNCTIONAL SUPERVISOR	AL TRUJILLO
CALCULATED-DESIGNED BY	CHECKED BY
JEFF COON	SHAUN ALEXANDER
REVISOR	DATE

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RELATIVE BORDER SCALE IS IN INCHES



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**PAVEMENT DELINEATION AND SIGN PLAN**

SCALE: 1" = 50'

**PD-1**

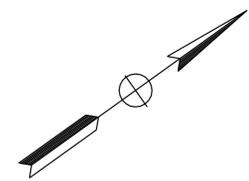
LAST REVISION DATE PLOTTED => 19-AUG-2009  
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	36	67

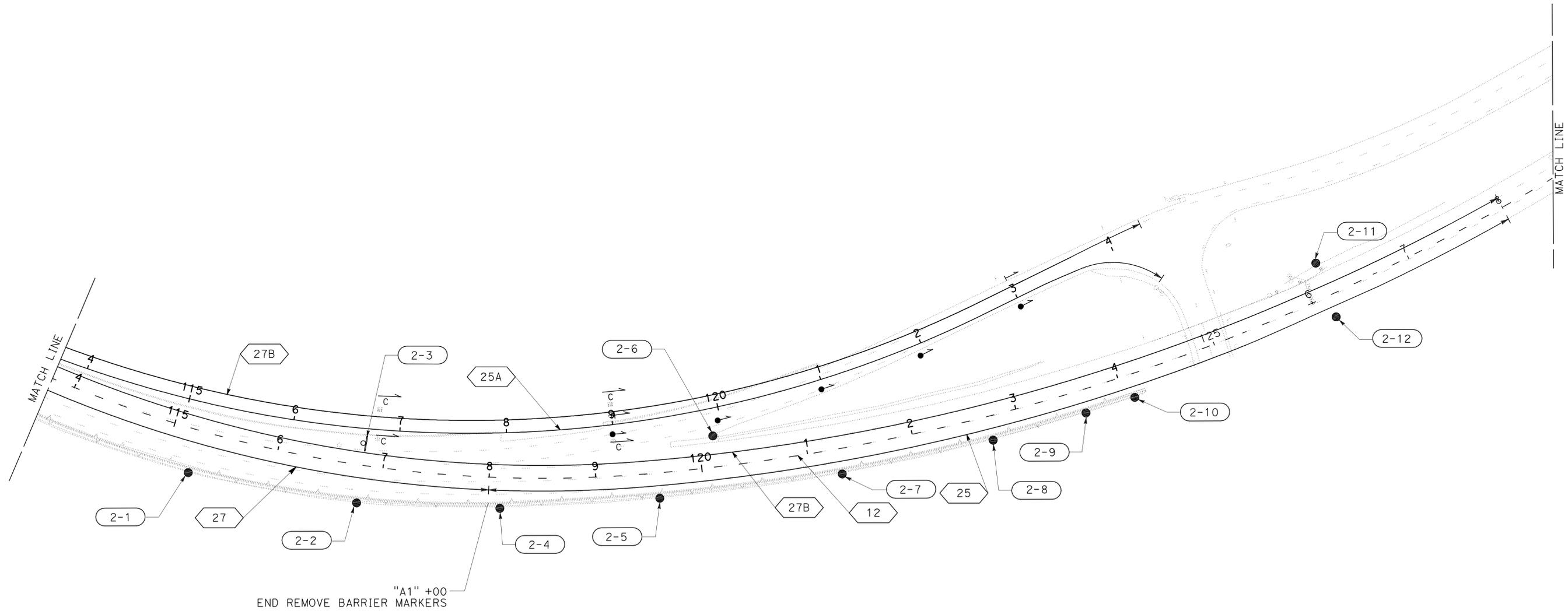
*Shaun Alexander* 07-28-09  
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 8-17-09  
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**SHAUN ALEXANDER**  
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	DATE REVISOR
<b>Caltrans</b>	CHECKED BY	SHAUN ALEXANDER	DATE



**PAVEMENT DELINEATION AND SIGN PLAN**  
 SCALE: 1" = 50'  
**PD-2**

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION AND SIGN WORK ONLY



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

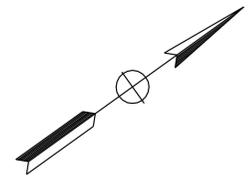
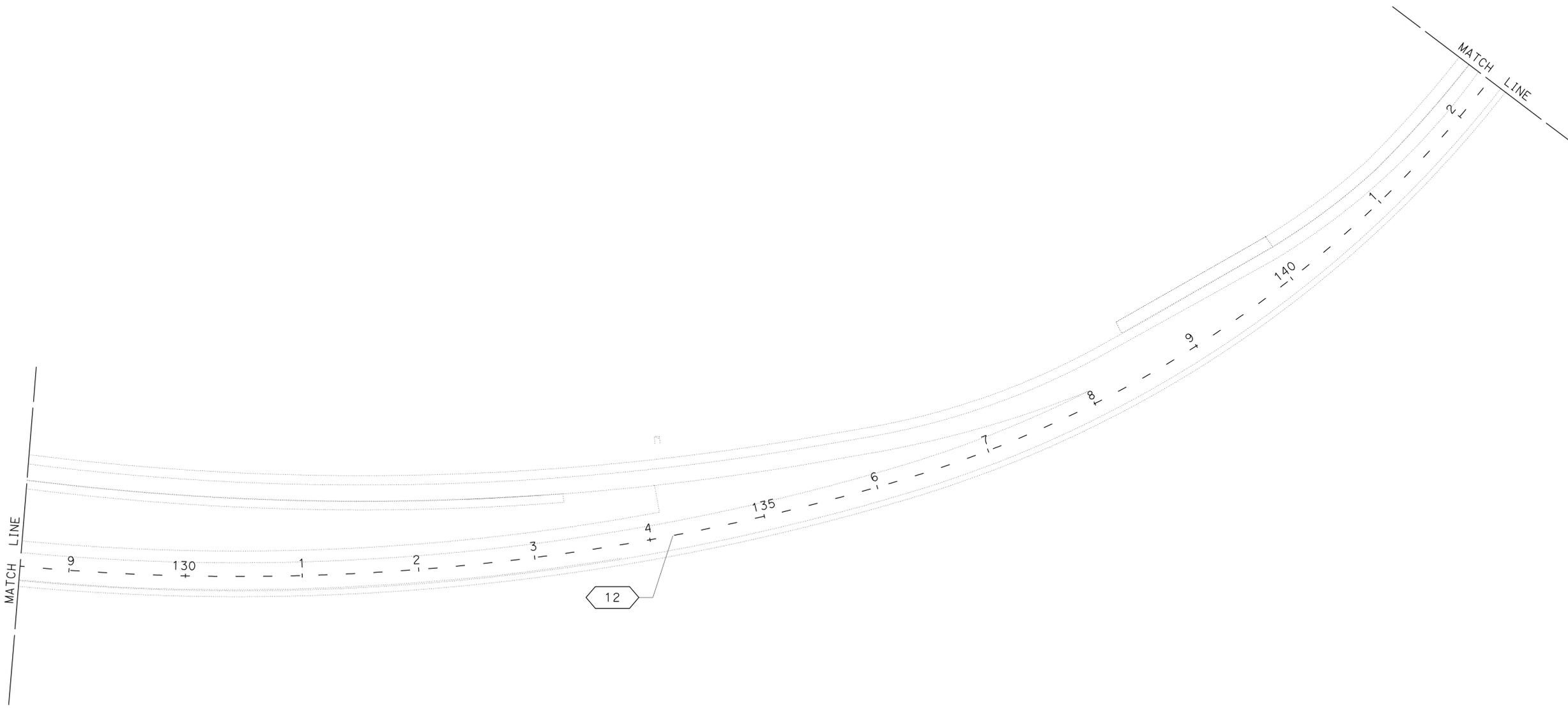
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FUNCTIONAL SUPERVISOR  
 AL TRUJILLO

CALCULATED-DESIGNED BY  
 CHECKED BY

JEFF COON  
 SHAUN ALEXANDER

REVISED BY  
 DATE REVISED



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	37	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
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REGISTERED PROFESSIONAL ENGINEER  
**SHAUN ALEXANDER**  
 No. C70833  
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# PAVEMENT DELINEATION AND SIGN PLAN

SCALE: 1" = 50'

**PD-3**

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION AND SIGN WORK ONLY



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EA 1E1101

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**Caltrans** DESIGN

FUNCTIONAL SUPERVISOR: AL TRUJILLO

CALCULATED-DESIGNED BY: CHECKED BY:

JEFF COON  
SHAUN ALEXANDER

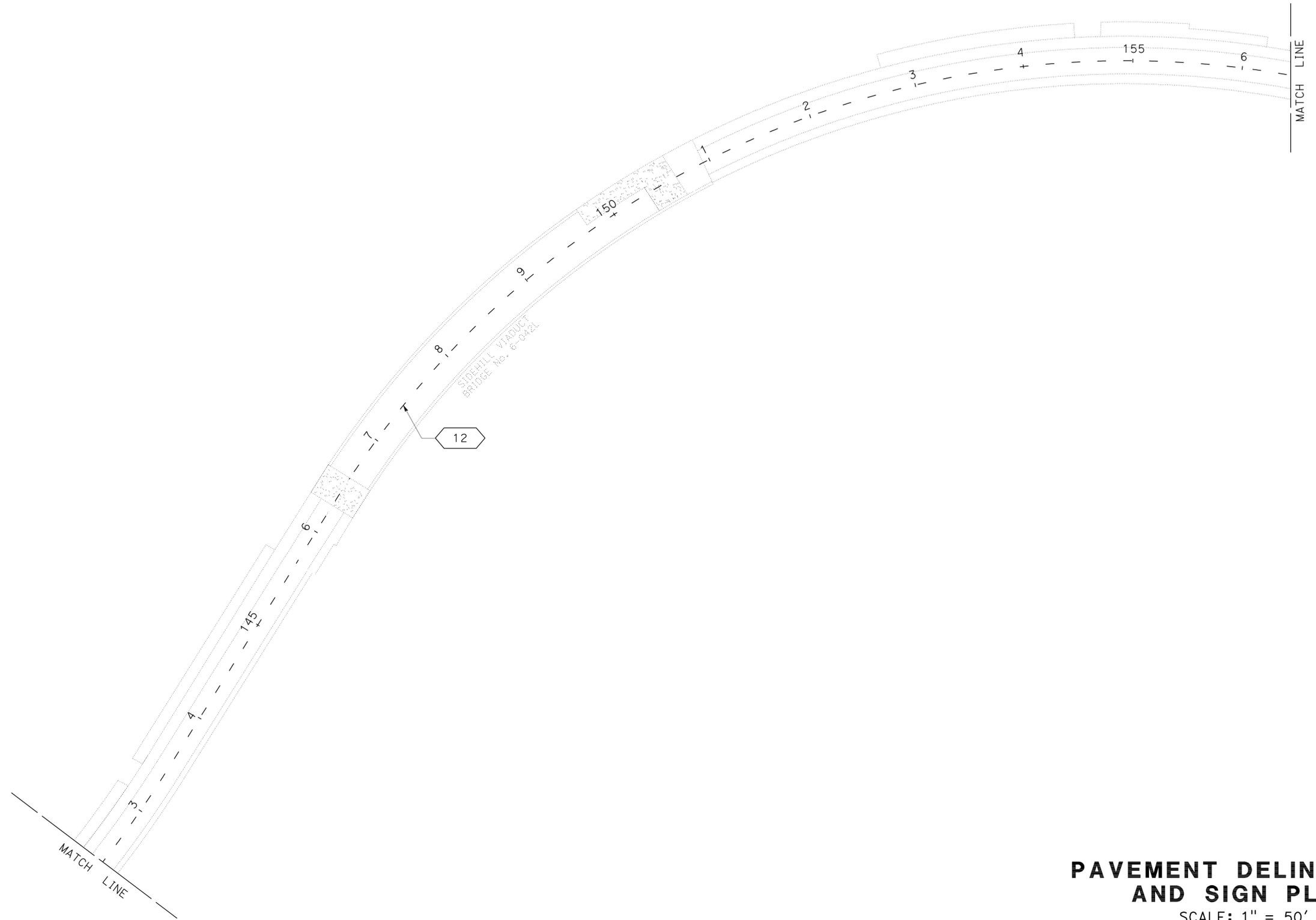
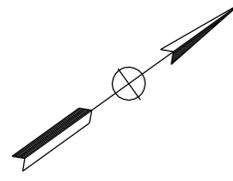
REVISED BY: DATE REVISED:

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	38	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 SHAUN ALEXANDER  
 No. C70833  
 Exp. 6-30-11  
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**PAVEMENT DELINEATION AND SIGN PLAN**

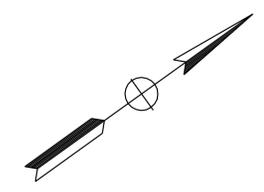
SCALE: 1" = 50'

**PD-4**

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

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**Caltrans** DESIGN

FUNCTIONAL SUPERVISOR	AL TRUJILLO	CALCULATED-DESIGNED BY	JEFF COON	REVISED BY	
		CHECKED BY	SHAUN ALEXANDER	DATE REVISED	

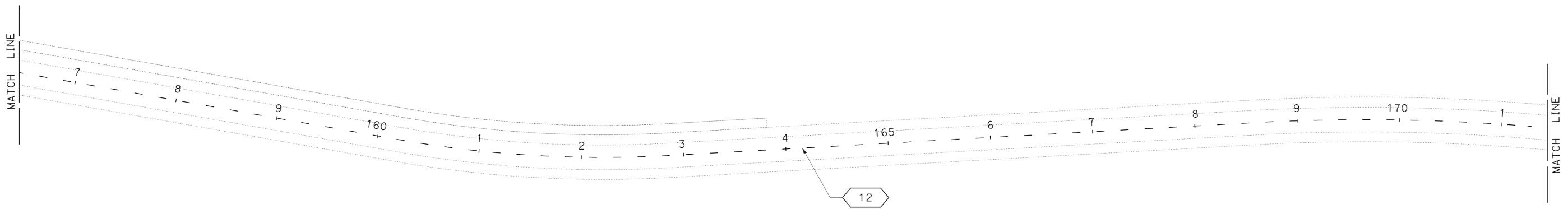


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	39	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 SHAUN ALEXANDER  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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



**PAVEMENT DELINEATION  
 AND SIGN PLAN**  
 SCALE: 1" = 50' **PD-5**

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

P:\proj2\02\1E110\plans\pse\21e110na006.dgn

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**Caltrans** DESIGN

FUNCTIONAL SUPERVISOR: AL TRUJILLO

CALCULATED-DESIGNED BY: JEFF COON

CHECKED BY: SHAUN ALEXANDER

REVISOR: JEFF COON

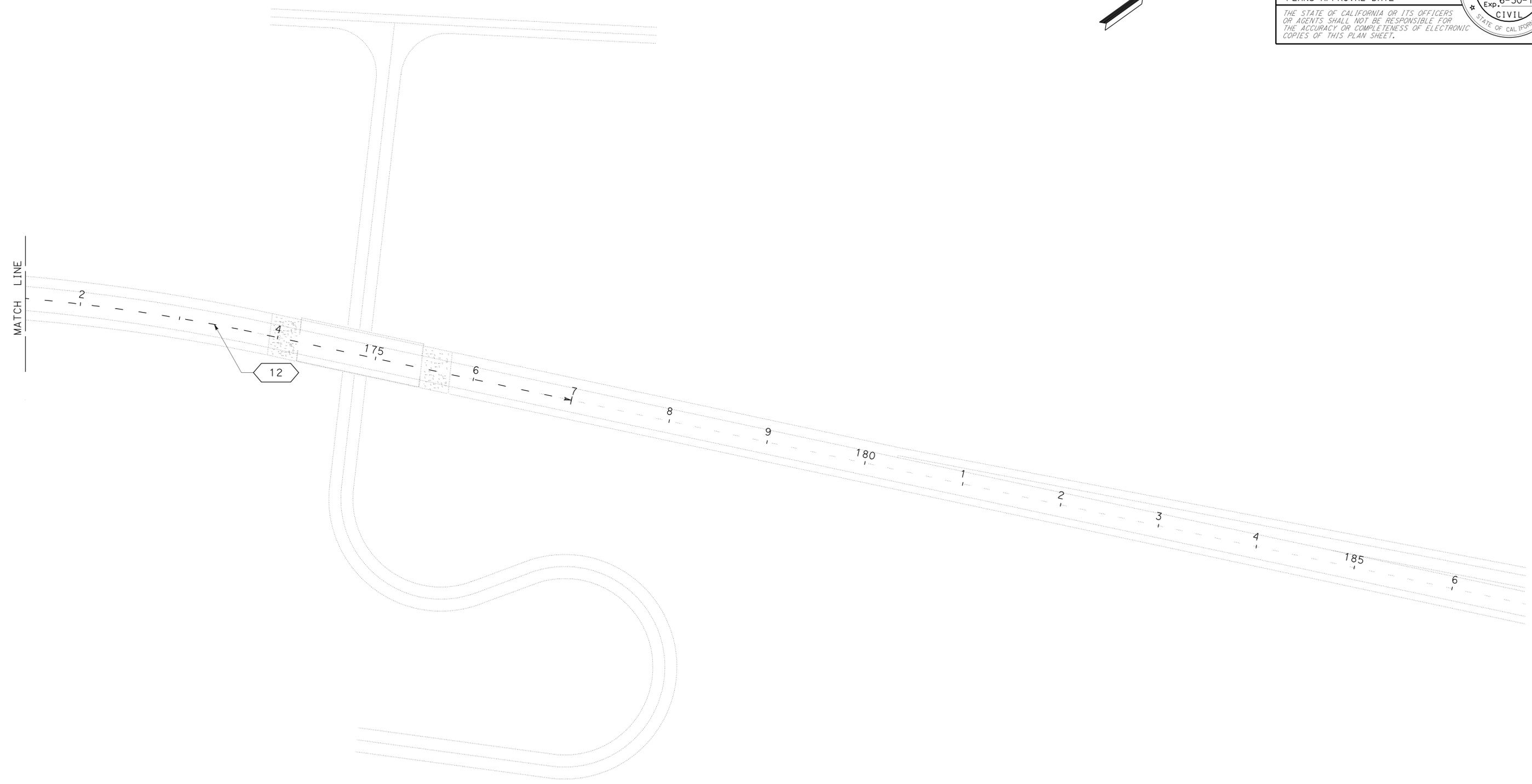
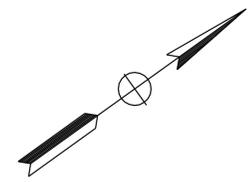
DATE: 07-28-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	40	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**SHAUN ALEXANDER**  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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**PAVEMENT DELINEATION AND SIGN PLAN**

SCALE: 1" = 50'

**PD-6**

THIS PLAN ACCURATE FOR PAVEMENT DELINEATION AND SIGN WORK ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	42	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE

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

**NOTES:**

- (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
- CONCRETE BARRIER MARKER SHALL BE APPLIED TO TOP OF CONCRETE BARRIER (TYPE 60). MARKER SPACING SHALL BE 48".

**CONCRETE BARRIER MARKERS (N)**

STATION	EA
"MWT1" 11+77 TO 15+77	10

**REMOVE BARRIER MARKERS**

STATION	EA
"A1" 110+50 TO 118+00	17

**PAVEMENT DELINEATION QUANTITIES**

STATION	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)							PAVEMENT MARKER (RETROREFLECTIVE-RECESSED)	
	DETAIL No.							TYPE G (EA)	TYPE H (EA)
	12 (LF)	25 (LF)	25A (LF)	27 (LF)	27B (LF)	38 (LF)	38A (LF)		
"A1" 100+00 TO 177+00 C	7700							161	
"A1" 103+00 TO 110+50 R+		750							16
"A1" 109+20 TO 109+40 L+							20		
"R1" 113+41 TO 124+30 R+			1105						48
"A1" 118+00 TO 128+00 R+		1000							22
"A1" 100+00 TO 109+00 L+					900				
"A1" 109+60 TO "R1" 124+34 L+					1477				
"A1" 110+45 TO 128+00 L+					1742				
"A1" 110+45 TO 113+41 R+						297		14	
"A1" 110+50 TO 118+00 R+				758					17
SUBTOTAL	7700	1750	1105	758	4119	297	20	175	103
TOTAL	15,749							278	

**MARKERS AND DELINEATORS**

SHEET No.	MILEPOST MARKER	REMOVE MARKER	DELINEATOR (CLASS 2)		(N) POST MILE
			TYPE F	TYPE G	
	EA	EA	EA	EA	
PD-1	1	2	5		R29.0
PD-2		1	1	5	
SUB TOTAL			6	5	
TOTAL	1	3	11		

**CULVERT MARKERS**

LOCATION	MARKER (CULVERT)	CULVERT MARKER (BARRIER MOUNTED)	PM	COMMENTS
	EA	EA		
"A1" 104+41		1	28.91	SB
"A1" 106+08	1	2	28.94	NB/SB
"A1" 107+00		1	28.95	NB
"A1" 109+50		1	29.00	NB
"A1" 110+58	1		29.02	SB
"A1" 113+32	1		29.08	SB
"R1" 116+80	2		29.14	SB
"R1" 119+00	1		29.19	SB
"A1" 119+19	1		29.19	SB
TOTAL	7	5		

**PAVEMENT DELINEATION QUANTITIES PDQ-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 AL TRUJILLO  
 JEFF COON  
 SHAUN ALEXANDER  
 REVISIONS: 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	43	67

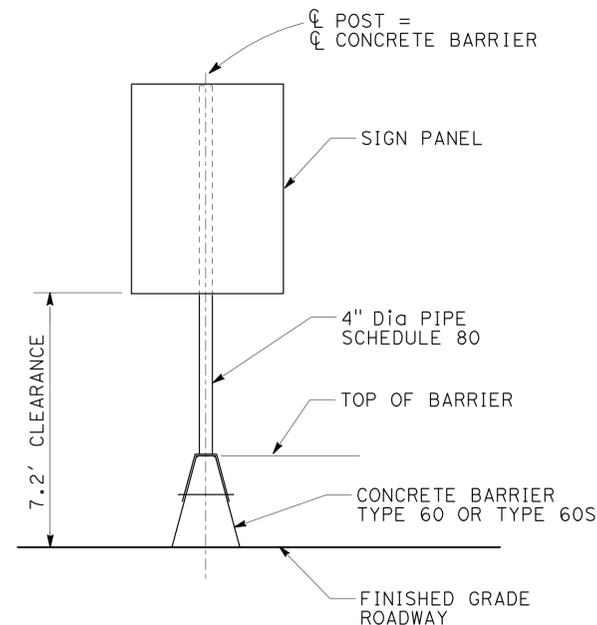
<i>Shaun Alexander</i>	07-28-09
REGISTERED CIVIL ENGINEER DATE	
8-17-09	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER  
**SHAUN ALEXANDER**  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

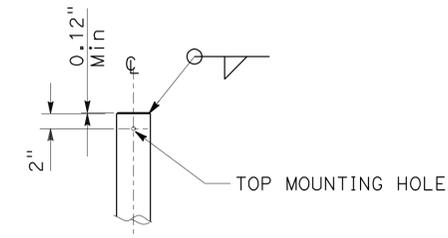
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

**NOTES:**

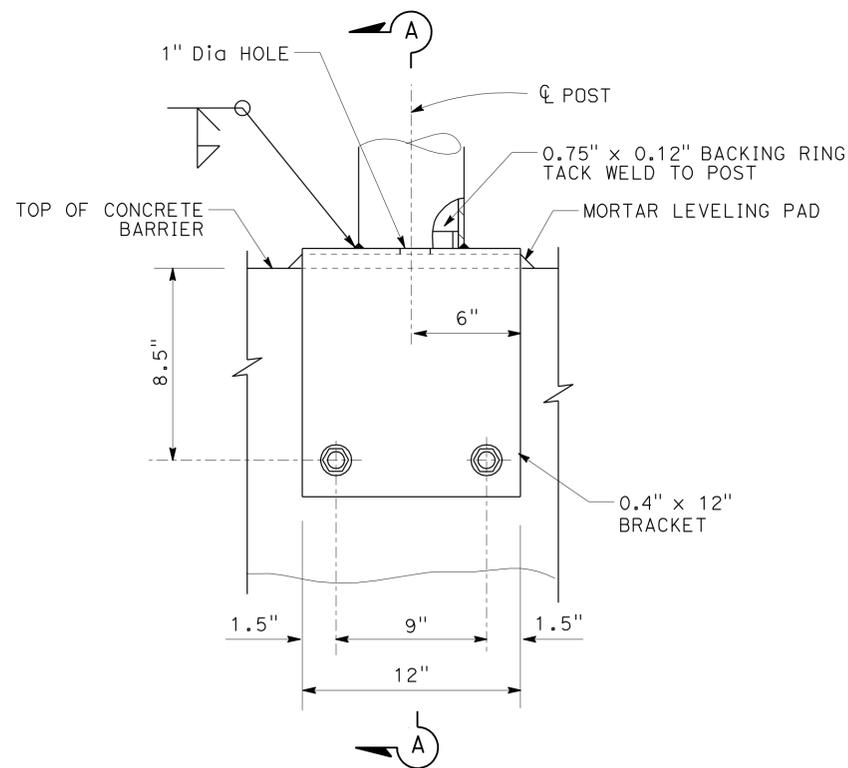
- FOR DETAILS NOT SHOWN, SEE STANDARD PLANS.
- WASHER ASSEMBLY CONSISTS OF 2 FLAT WASHERS, NUT, FIBER WASHER AND JAM NUT. BOLT TO BE CUT FLUSH WITH NUT.
- ALL STEEL SHALL BE GALVANIZED.
- SEE SIGN QUANTITIES FOR SIGN LOCATIONS AND SIGN PANEL SIZES.
- BOLT END NOT TO EXCEED 0.4" PAST NUT.



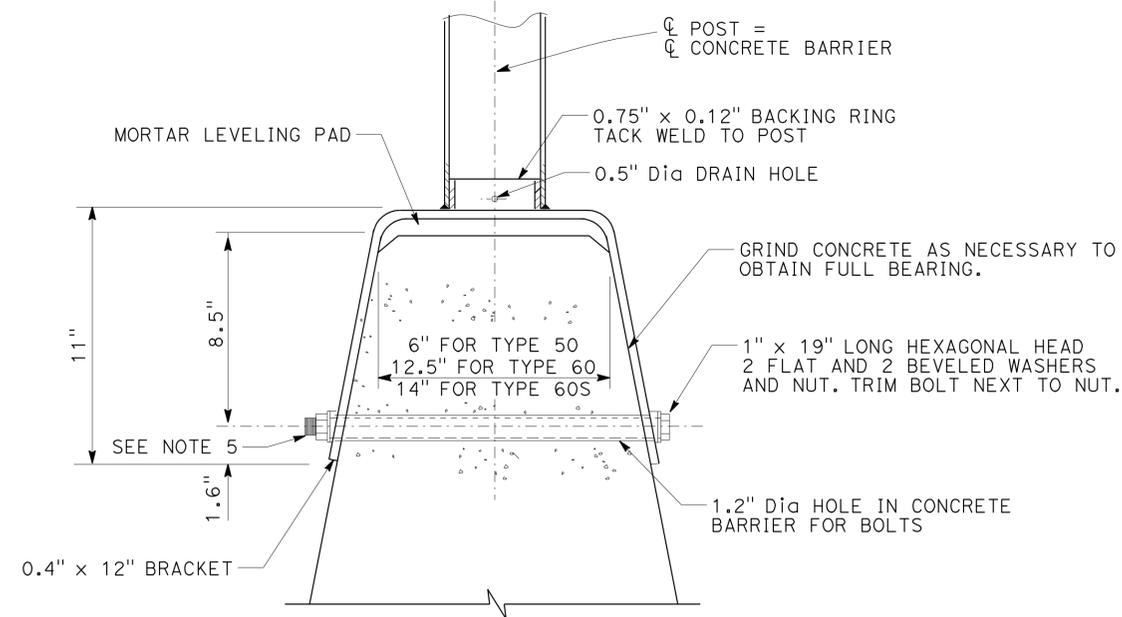
ELEVATION  
**METAL  
(BARRIER MOUNTED SIGN)**



**TOP OF POST DETAIL**



ELEVATION  
**MOUNTING BRACKET  
DETAILS**



**SECTION A-A**

**SIGN DETAILS**  
NO SCALE

**SD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
AL TRUJILLO	FUNCTIONAL SUPERVISOR
JEFF COON	REVISOR
SHAUN ALEXANDER	DATE REVISOR

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	44	67

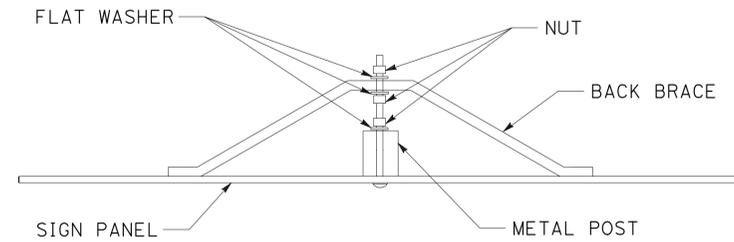
*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**SHAUN ALEXANDER**  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

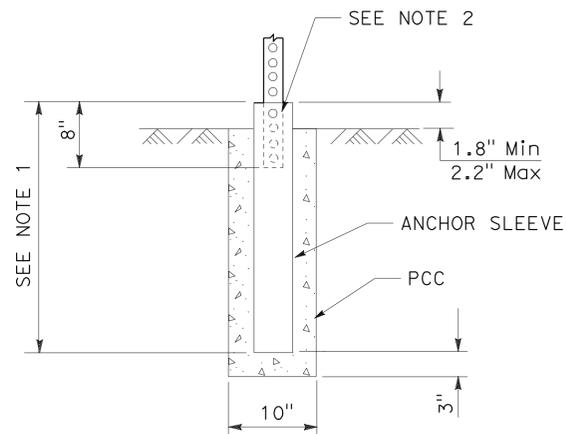
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

**NOTES:**

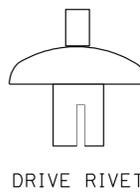
- USE A 2 1/4" Sq TUBE x 30" LONG, 3/16" THICK ANCHOR FOR 2" POSTS.  
USE A 3" Sq TUBE x 3' LONG, 3/16" THICK ANCHOR FOR 2-1/2" POSTS.
- USE A 5/16" CORNER BOLT OR TWO DRIVE RIVETS TO FASTEN ASSEMBLED SIGN AND POST INTO ANCHOR. INSTALL CORNER BOLT OR DRIVE RIVETS INTO THE SIDES FACING TRAFFIC.
- REMOVE EXISTING AC OR PCC, DRIVE ANCHOR SLEEVE INTO SOIL AND RECAP WITH LIKE MATERIAL, MATCHING EXISTING THICKNESS.
- 2" POSTS ARE TO BE 1/8" THICK, PERFORATIONS OF 7/16" IN DIAMETER ARE 1" ON CENTER ON ALL SIDES, LENGTHS ARE 10' AND 12'.
- 2-1/2" POSTS ARE TO BE 1/8" THICK, PERFORATIONS OF 7/16" IN DIAMETER ARE 1" ON CENTER ON ALL SIDES, 2-1/2" POSTS ARE 12' AND 14' IN LENGTH.
- FOR DETAILS NOT SHOWN, REFER TO THE STANDARD PLANS.
- 2-1/2" POSTS SHALL BE USED IN SIDEWALK AND HIGH PEDESTRIAN USE PLACEMENTS.
- ALL ANCHOR SLEEVES SHALL BE EMBEDDED IN PCC, EXCEPT FOR INSTALLATIONS IN PAVEMENTS OR SIDEWALKS.



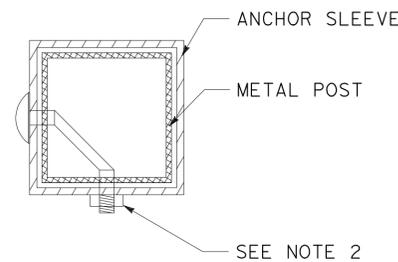
BACK BRACE MOUNTING DETAIL



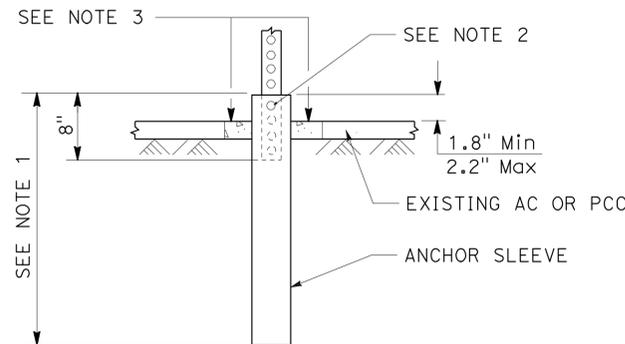
INSTALLATION IN SOIL (PCC)  
(SEE NOTE 8)



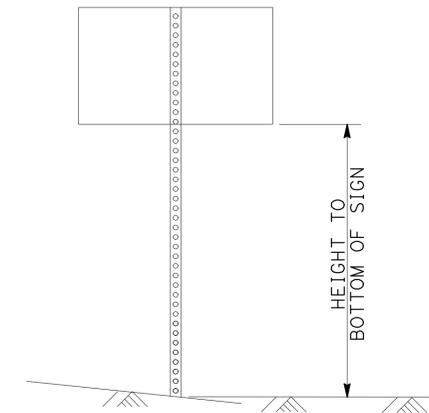
DRIVE RIVET



FASTENER DETAILS



INSTALLATION IN EXISTING AC OR PCC  
**METAL SIGN POST INSTALLATION DETAILS**



SINGLE POST INSTALLATION  
(POST SIZE, SEE CHART BELOW)

Max SQFT SIGN AREA

POST SIZE (in)	5	6	7
2	11	10	9
2.5	16	16	16

HEIGHT TO BOTTOM OF SIGN (ft)  
SINGLE POST GROUND SIGNS  
70 MPH WIND SPEED

**METAL SIGN POST DETAIL**

**SIGN DETAILS**  
NO SCALE

**SD-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 AL TRUJILLO  
 FUNCTIONAL SUPERVISOR  
 CHECKED BY  
 SHAUN ALEXANDER  
 JEFF COON  
 REVISIONS BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	45	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE  
 8-17-09  
 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.

**MATERIAL SUMMARY CONTRACTOR FURNISHED SIGNS**

No.	SIGN CODE	SIGN SIZE (L x D)	SINGLE FACED	BACKGROUND		LEGEND		ROADSIDE SINGLE-SHEET	DESCRIPTION (REMARKS)
				SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	ALUMINUM	
								UNFRAMED	
								0.080"	
1-2	W8-5	36" x 36"	X	YELLOW	III	BLACK	II	X	SLIPPERY WHEN WET
1-4	W8-5	36" x 36"	X	YELLOW	III	BLACK	II	X	SLIPPERY WHEN WET
1-6	W1-2L	36" x 36"	X	YELLOW	III	BLACK	II	X	CURVE
1-8	W1-2L	36" x 36"	X	YELLOW	III	BLACK	II	X	CURVE
2-3	W4-1R	36" x 36"	X	YELLOW	III	BLACK	II	X	MERGE

XX - SPEED TO BE DETERMINED BY ENGINEER.

**ROADSIDE SIGNS**

SHEET No.	SIGN No.	SIGN CODE	PANEL SIZE	(N)	(N)	ROADSIDE SIGN		REMOVE ROADSIDE SIGN	FURNISH SINGLE SHEET ALUMINUM SIGN (0.080" UNFRAMED)	REMARKS
				POST LENGTH	POST EMBED	ONE POST	METAL (BARRIER MOUNTED SIGN)			
				LF	LF	2" METAL EA	LB			
PD-1	1-1	W8-5	36" x 36"					1		SLIPPERY WHEN WET
	1-2	W8-5	36" x 36"	11	0.5	1		1	9	SLIPPERY WHEN WET
	1-3	W8-5	36" x 36"					1		SLIPPERY WHEN WET
	1-4	W8-5	36" x 36"				173		9	SLIPPERY WHEN WET
	1-5	W1-2L	36" x 36"					1		CURVE (L+)
	1-6	W1-2L	36" x 36"	12	0.5	1		1	9	CURVE (L+)
	1-7	W1-2L	36" x 36"					1		CURVE (L+)
	1-8	W1-2L	36" x 36"				173		9	CURVE (L+)
	1-9	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	1-10	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
PD-2	2-1	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	2-2	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	2-3	W4-1R	36" x 36"	12	0.5	1		1	9	MERGE (R+)
	2-4	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	2-5	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	2-6	W4-1R	36" x 36"					1		MERGE (R+)
	2-7	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	2-8	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	2-9	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	2-10	W1-8R	24" x 30"					1		CHEVRON ALIGNMENT
	2-11	W1-2a R	48" x 48"					1		50 MPH CURVE (R+)
	2-12	W1-2a R	48" x 48"					1		50 MPH CURVE (R+)
TOTAL						3	346	17	45	

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

**SIGN QUANTITIES**  
**SQ-1**

P:\proj2\02\1E110\plans\pse\21e110cc001.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 AL TRUJILLO  
 FUNCTIONAL SUPERVISOR  
 JEFF COON  
 SHAUN ALEXANDER  
 REVISIONS BY DATE  
 REVISIONS BY DATE

### ROADWAY QUANTITIES

LOCATION	RELOCATE PORTABLE CONCRETE BARRIER (TYPE 60K)	COLD PLANE ASPHALT CONCRETE PAVEMENT	REMOVE CONCRETE BARRIER	ROADWAY EXCAVATION	CLASS 2 AGGREGATE BASE	IMPORTED MATERIAL (SHOULDER BACKING)	HOT MIX ASPHALT (TYPE A)	HOT MIX ASPHALT (OPEN GRADED)	SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)	PLACE HOT MIX ASPHALT DIKE (TYPE A)	PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	TACK COAT	CONCRETE BARRIER (TYPE 60)	CONCRETE BARRIER (TYPE 60C)	REMARKS
	LF	SQYD	LF	CY	CY	TON	TON	TON	STA	LF	SQYD	TON	LF	LF	
"MWT1" 10+10.06 TO 11+67.05	157														
"MWT1" 10+00.01 TO 13+33.86			334												
"MWT1" 14+90.86 TO 15+77.17			86												
"MWT1" 10+00.01 TO 10+10.06													10		
"MWT1" 11+67.05 TO 15+77.17														411	INCLUDES TRANSITION
"A1" 104+00 TO 104+44.95		120					8					0.05			
"A1" 124+00 TO 124+25		67					5					0.05			
"A1" 104+44.95 TO 124+00				6896	5078		5093	679				2.1			
"R1" 110+44.95 TO 116+76.50				11145	484		735	98				0.3			
"R1" 116+76.54 TO 122+80				3996	555		843	113				0.2			
"A1" 104+44.95 TO 110+44.95 Lt						63									
"R1" 110+44.95 TO 122+80 Lt						32									
"R1" 118+94.94 TO 122+80 Rt						41									
"A1" 116+88 TO 124+00 Lt									7.05						
"A1" 110+50 TO 124+00 Rt									13.60						
"R1" 111+00 TO 122+25 Lt							38			1105					
"A1" 116+87.78 TO 124+00 Lt							316				935				PAVED DITCH
"R1" 116+76.54 TO 118+94.44 Rt							63				188				PAVED DITCH
"R1" 120+50 TO 121+00 Rt							9				25				PAVED DITCH
"R1" 122+25 TO 122+31.11 Lt							1				3				HMA APRON
FROM DRAINAGE QUANTITIES							8				38				
FROM STAGE CONSTRUCTION QUANTITIES		501					51					0.1			
<b>TOTAL</b>	157	688	420	22037	6117	136	7157	903	20.65	1105	1189	2.8	10	411	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	46	67

*Shaun Alexander* 07-28-09  
 REGISTERED CIVIL ENGINEER DATE

**SHAUN ALEXANDER**  
 No. C70833  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

8-17-09  
PLANS APPROVAL DATE

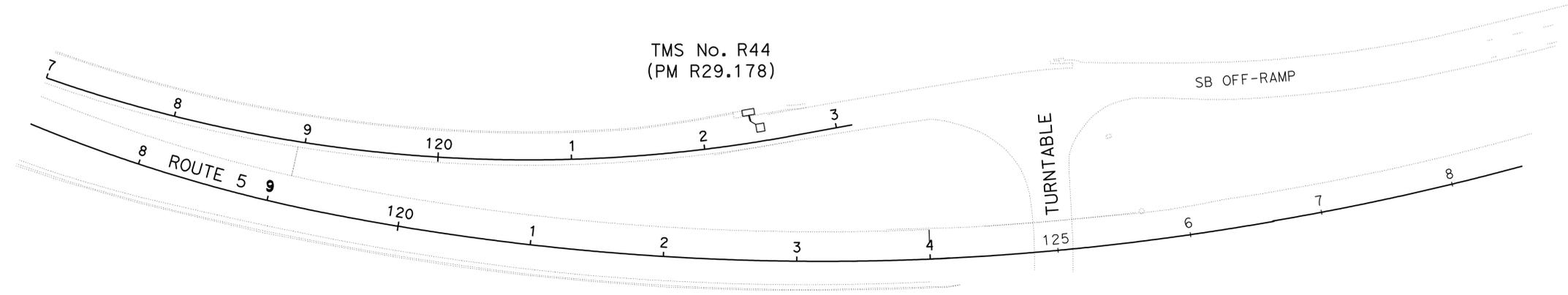
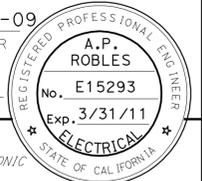
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

### TEMPORARY WATER POLLUTION CONTROL

TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY FIBER ROLL	TEMPORARY CHECK DAM
EA	LF	LF
5	500	600

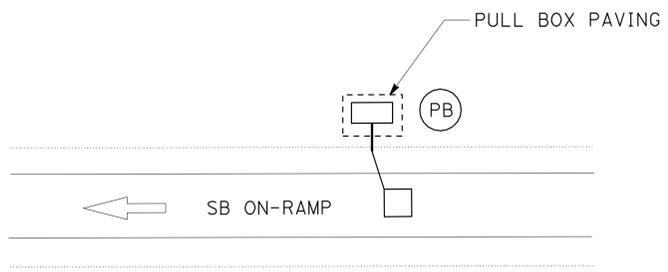
## SUMMARY OF QUANTITIES Q-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	47	67
ART			07-07-09		
REGISTERED ELECTRICAL ENGINEER					
8-17-09					
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>					

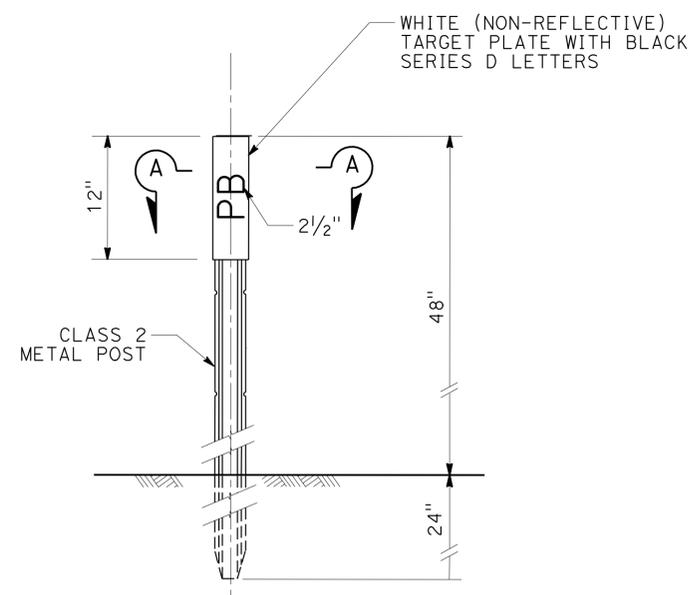


TMS No. R44  
(PM R29.178)

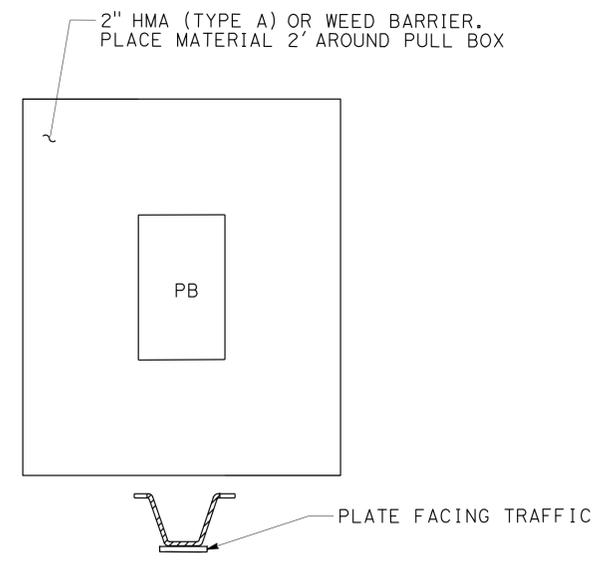
PLAN



DETAIL  
NO SCALE



SEE S+d PLAN A73B  
OBJECT MARKER (TYPE PB) AND PULL BOX PAVING  
NO SCALE



SECTION A-A  
NO SCALE

**TRAFFIC MONITORING STATION**

SCALE: 1" = 50'

**E-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 ARTURO ROBLES  
 KAREN CARMO  
 ROB STINGER  
 FUNCTIONAL SUPERVISOR  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 REVISED BY  
 DATE REVISED

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trrichf  
DGN FILE => 21e110u001.dgn

CU 02 365

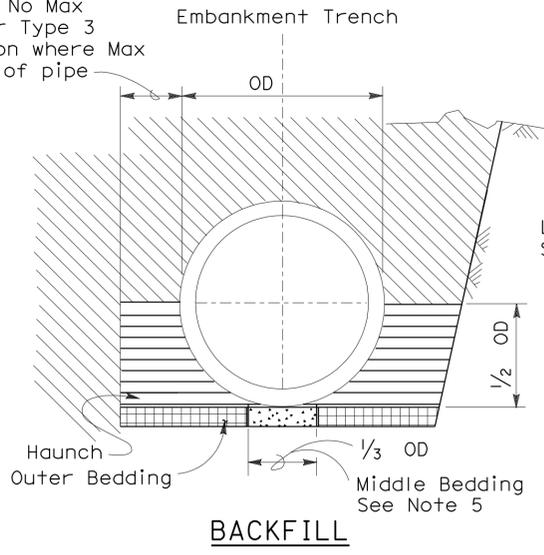
EA 1E1101

BORDER LAST REVISED 3/1/2007

LAST REVISION | DATE PLOTTED => 19-AUG-2009  
 07-07-09 | TIME PLOTTED => 13:42

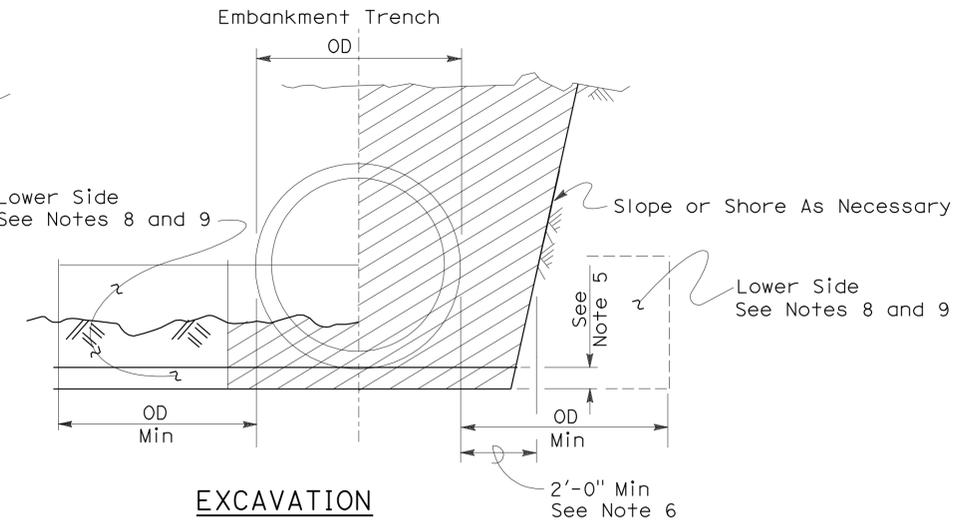
To accompany plans dated 8-17-09

2'-0" Min; No Max except for Type 3 Installation where Max Equals OD of pipe



**BACKFILL**

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



**EXCAVATION**

- Excavation Structure (Culvert)

**TYPE 1 INSTALLATION:**

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

**TYPE 2 INSTALLATION:**

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

**TYPE 3 INSTALLATION:**

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

**INSTALLATION TYPE 1**

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

**INSTALLATION TYPE 2**

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

**INSTALLATION TYPE 3**

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

**NOTES:**

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**EXCAVATION AND BACKFILL  
 CONCRETE PIPE CULVERTS**

NO SCALE

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

2006 REVISED STANDARD PLAN RSP A62DA

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	49	67

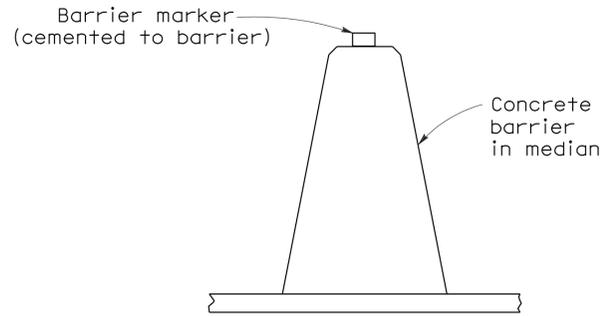
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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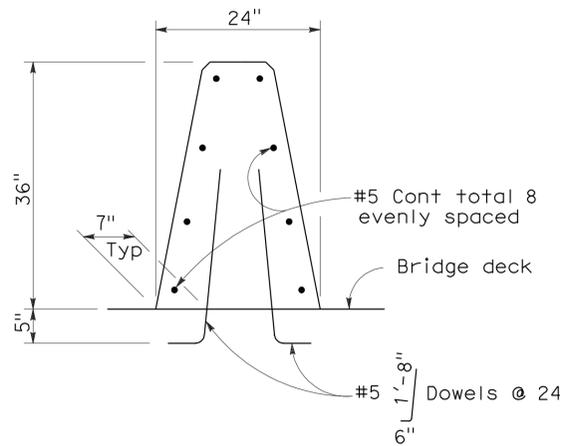
To accompany plans dated 8-17-09

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



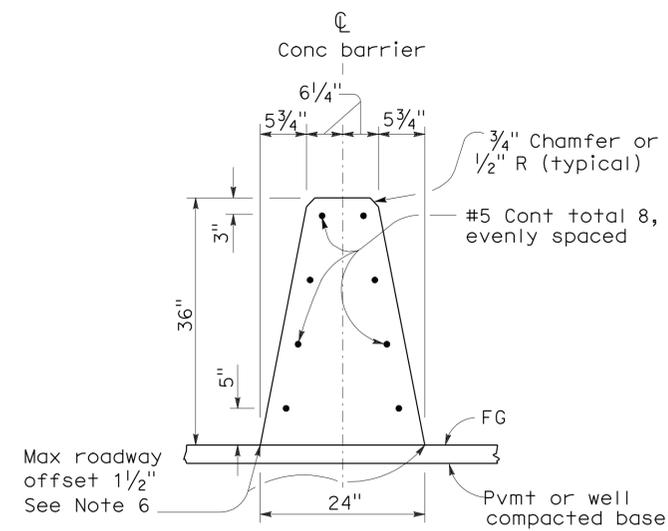
**CONCRETE BARRIER TYPE 60 DELINEATION**

See Notes 7 and 8



**CONCRETE BARRIER TYPE 60A**

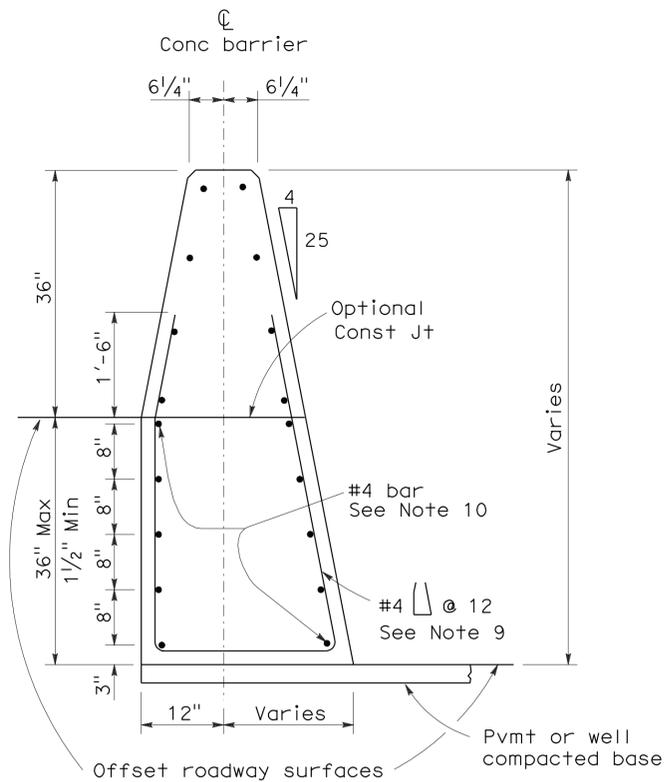
Details similar to Type 60 except as noted.



**CONCRETE BARRIER TYPE 60**

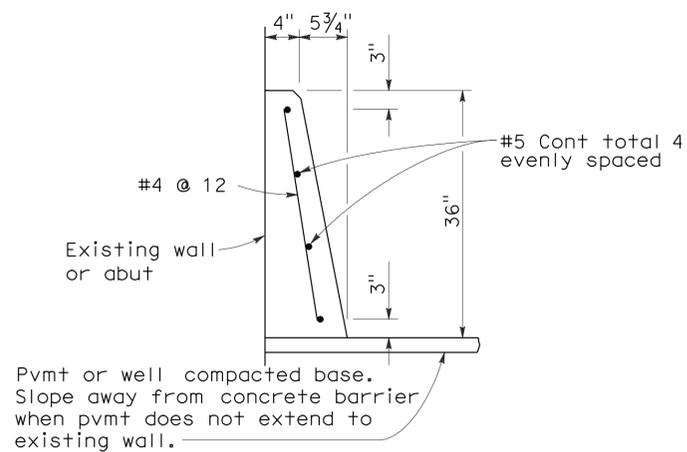
**NOTES:**

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



**CONCRETE BARRIER TYPE 60C**

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



**CONCRETE BARRIER TYPE 60D**

**CONCRETE BARRIER TYPE 60**

NO SCALE

2006 REVISED STANDARD PLAN RSP A76A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	50	67

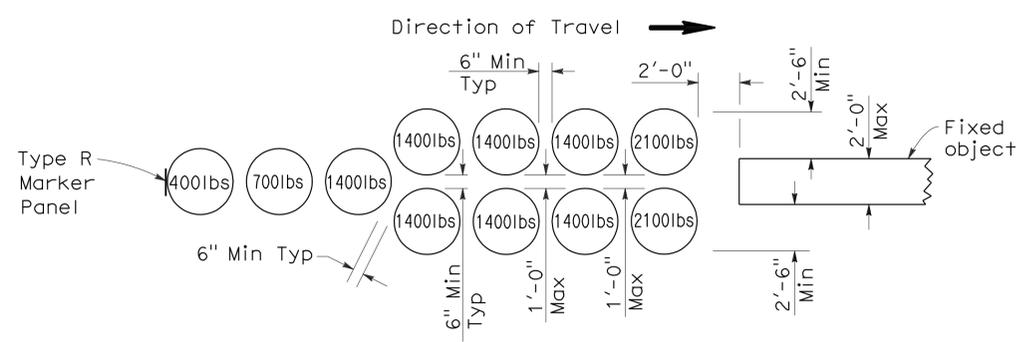
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

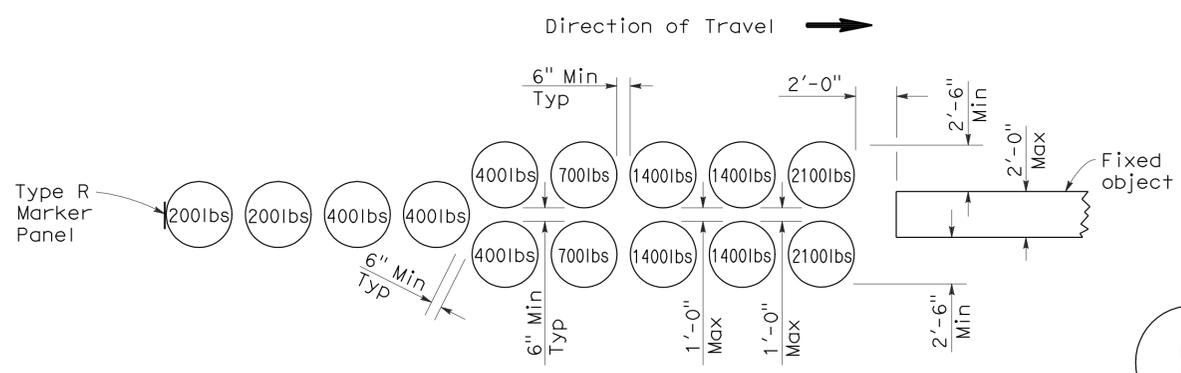
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REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

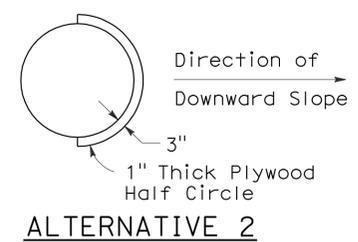
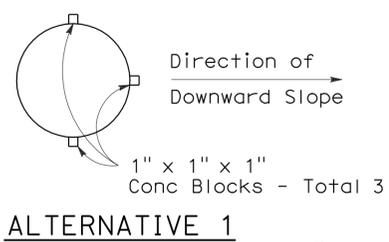
To accompany plans dated 8-17-09



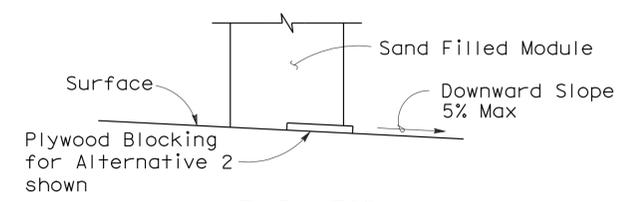
Direction of Travel →  
**ARRAY 'U11'**  
Approach speed less than 45 mph



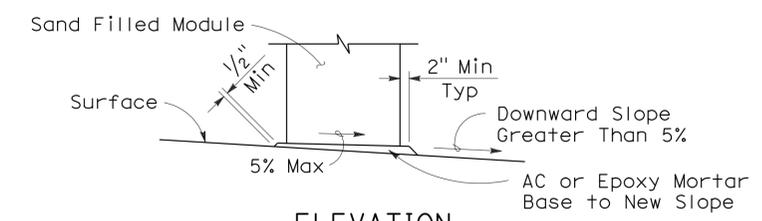
Direction of Travel →  
**ARRAY 'U14'**  
Approach speed 45 mph or more



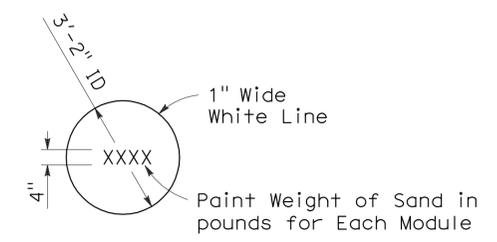
**PLAN**



**ELEVATION**  
**BRIDGE DECK MODULE BLOCKING DETAILS**  
(See Note 6)



**ELEVATION**  
**SLOPED SEAT DETAIL**  
(See Note 4)



**PAINTING DETAIL**  
(See Note 5)

**NOTES:**

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

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

NO SCALE

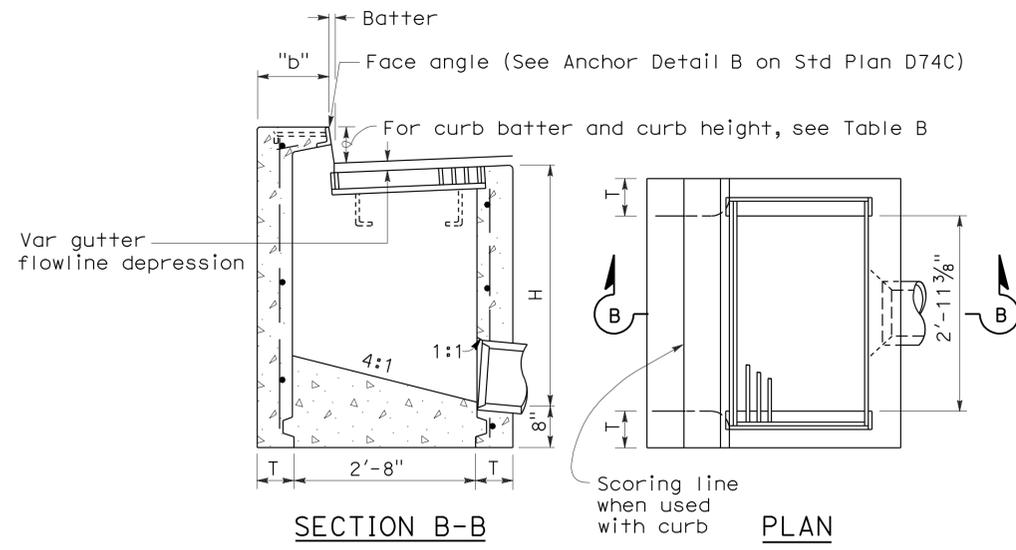
RSP A81A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A81A  
DATED MAY 1, 2006 - PAGE 99 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A81A**

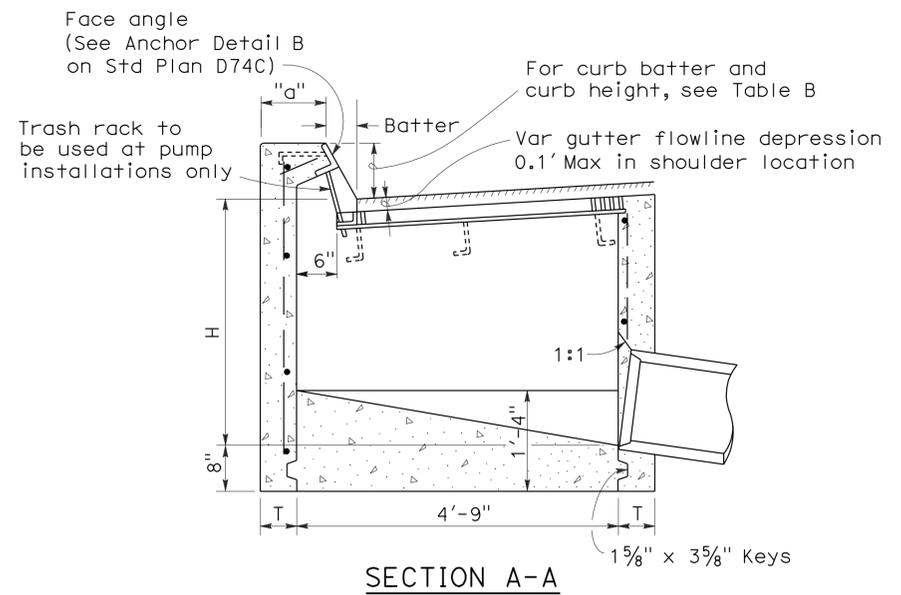
**2006 REVISED STANDARD PLAN RSP A81A**

To accompany plans dated 8-17-09

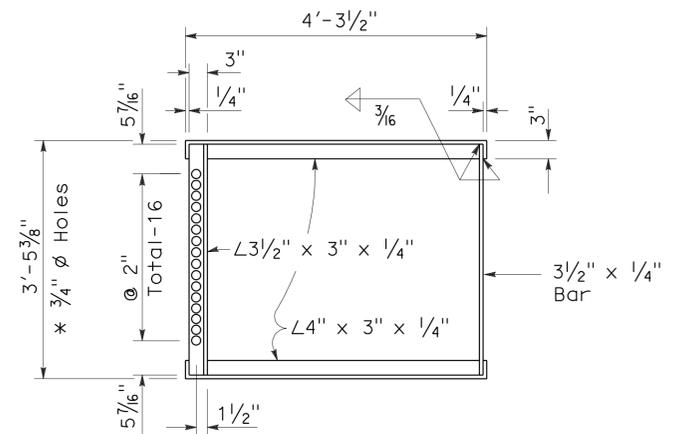
2006 REVISED STANDARD PLAN RSP D74B



TYPE GO

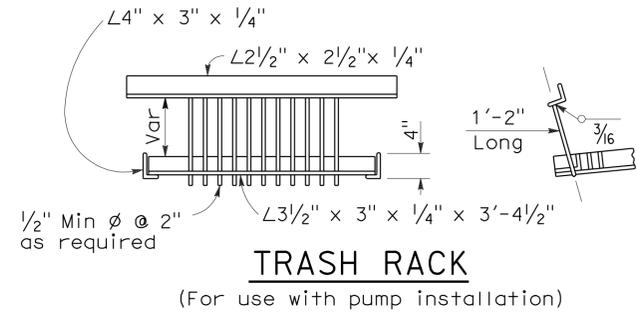


SECTION A-A



GRATE FRAME FOR TYPE GDO INLET

\* 3/4"  $\phi$  Holes required only with trash rack

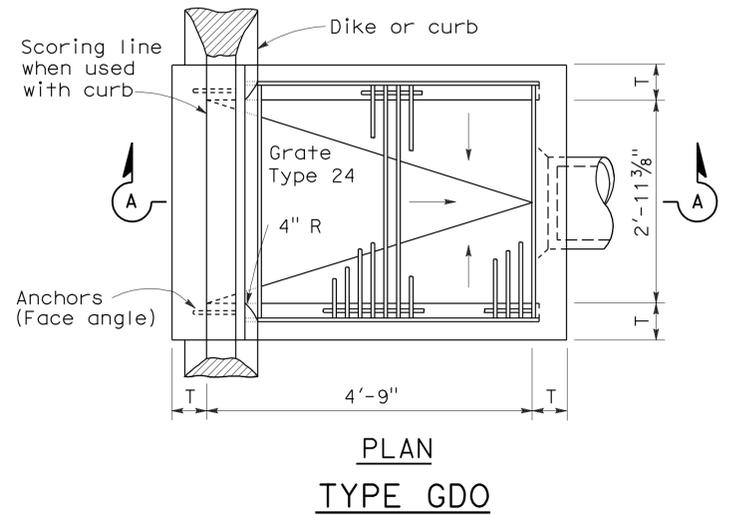


TRASH RACK  
(For use with pump installation)

TABLE A  
CONCRETE QUANTITIES

TYPE	H=3'-0" TO 8'-0" (T=6")		H=8'-1" TO 20'-0" (T=8")	
	H=3'-0" (CY)	ADDITIONAL PCC PER FOOT (CY)	H=8'-1" (CY)	ADDITIONAL PCC PER FOOT (CY)
GO	1.24	0.245	3.39	0.346
GDO	1.62	0.322	4.36	0.446

Table based on 8" floor slab, no deduction for pipe openings, and curb type giving highest quantity of concrete. No deductions or adjustments are to be made to these quantities because of pipe openings, different floor alternatives or different curb type.



PLAN  
TYPE GDO

TABLE B

CURB TYPE	NORMAL CURB HEIGHT	CURB BATTER	"a" DIMENSION	"b" DIMENSION
A1-6	6"	1 1/2"	T+7 1/2"	T+6 1/2"
A1-8	8"	2"	T+7"	T+6"
B1-6	6"	4"	T+5"	T+4"
Type A Dike	6"	3"	T+6"	T+5"

NOTES:

- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- For "T" wall thickness, see Table A below.
- Wall reinforcing not required when "H" is 8'-0" or less and the unsupported width or length is 7'-0" or less. Walls exceeding these limits shall be reinforced with #4 @ 18"± centers placed 1/2" clear to inside of box unless otherwise shown.
- Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced bottom.
- Steps - None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below top of inlet. The distance between steps shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps in the wall without an opening. Step inserts may be substituted for the bar steps. Step Inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
- When shown on the project plans, place a 3/4" plain round protection bar horizontally across the length of the opening and bend back 4" into the inlet wall on each side.
- Pipe(s) can be placed in any wall.
- Curb section shall match adjacent curb.
- Basin floors shall have wood trowel finish and shall slope toward the outlet pipe as shown.
- Galvanizing - See Standard Specifications or Special Provisions.
- See Standard Plan D77A and D77B for grate and frame details and weights of miscellaneous iron and Steel.
- See Standard Plan D78A for gutter depression details.
- Full penetration butt welds may be substituted for the fillet welds on all anchors.
- Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
- Cast-in-place or precast alternative is optional with contractor. See Standard Specifications.
- Cast-in-place inlets to be formed around all pipes/stubs intersecting the inlet and concrete poured in one continuous operation. Precast inlets shall have mortared pipe connections conforming to details for Type GCP inlets on Standard Plan D75B. See Standard Specifications for mortar composition.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**DRAINAGE INLETS**  
NO SCALE

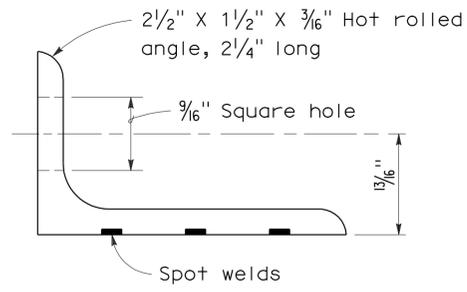
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	52	67

Raymond Don Tsztoo  
 REGISTERED CIVIL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE

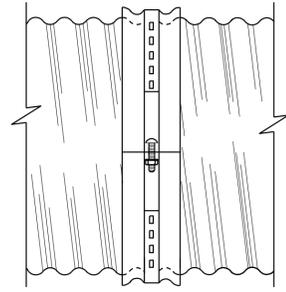
REGISTERED PROFESSIONAL ENGINEER  
 Raymond Don Tsztoo  
 No. C37332  
 Exp. 6-30-08  
 CIVIL  
 STATE OF CALIFORNIA

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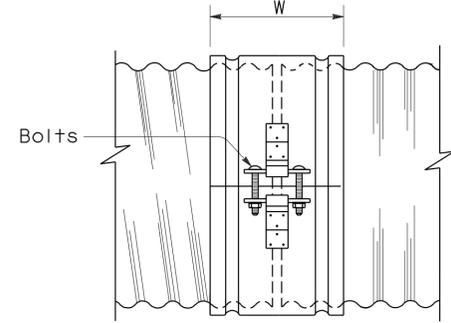
To accompany plans dated 8-17-09



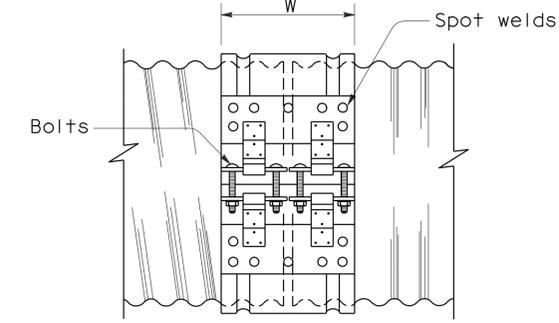
ANGLE



SIDE VIEW ANGLE



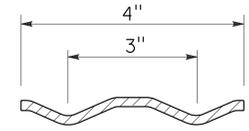
SIDE VIEW SINGLE BAR AND STRAP



SIDE VIEW DOUBLE BAR AND STRAP

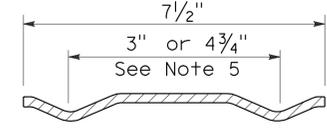
NOTES:

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



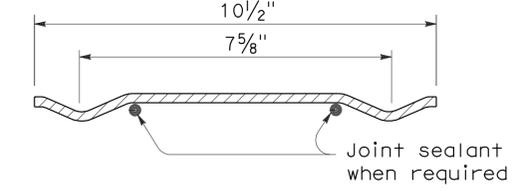
SECTION

H-4 HUGGER BAND



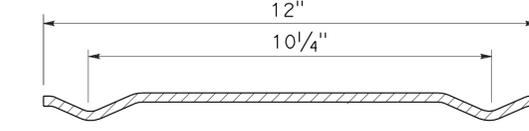
SECTION

H-7 HUGGER BAND



SECTION

H-10 HUGGER BAND



SECTION

H-12 HUGGER BAND

HUGGER COUPLING BANDS

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

NO SCALE

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

**REVISED STANDARD PLAN RSP D97D**

2006 REVISED STANDARD PLAN RSP D97D

ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAR AND STRAP (CSP ONLY)				ANGLE							
				CSP		CAP		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
				CSP	CAP	CSP	CAP					CSP	CAP	CSP	CAP	CSP	CAP	CSP	
TWO PIECE INTEGRAL FLANGE	1 1/2" x 1/4"	6"-10"	7"	0.052"-0.079"	0.048"-0.060"	0.052"	0.060"							2-3/8"	2-3/8"				
		12"-18"	7"	0.052"-0.079"		0.064"									2-1/2"				
		2 2/3" x 1/2"	12"-24"	7"	0.052"-0.079"	0.060"-0.105"	0.064"	0.060"							2-1/2"	2-1/2"			
UNIVERSAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"						2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"
		42"-60"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"						2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		THROUGH 72"	12"	0.052"-0.168"	0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	16 1/4"	0.168"		0.079"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								
ANNULAR	2 2/3" x 1/2"	THROUGH 36"	7"	0.064"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	2-1/2"	2-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-72"	12"	0.064"-0.168"	0.075"-0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
	3" x 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		4-3/8"			
		42"-108"	14"		0.060"-0.135"		0.060"					2" x 2" x 3/16"		3-1/2"		3-3/8"			
HELICAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-72"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
	3" x 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		4-3/8"			
		42"-108"	14"		0.060"-0.135"		0.060"					2" x 2" x 3/16"		3-1/2"		3-3/8"			
HUGGER	2 2/3" x 1/2"	12"-54"	4"	0.052"-0.109"		0.052"						2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"	
		60"-66"	4"	0.109"		0.064"						2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"	
		36"-48"	4"	0.138"		0.064"						2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"	
		THROUGH 72"	10 1/2"	0.052"-0.168"		0.052"		0.079"	1/2"	7/8"	32 ksi								
	3" x 1"	48"-90"	10 1/2"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi								
		96"-120"	10 1/2"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi								
	5" x 1"	48"-66"	7 1/2"	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi	2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"	
		72"-90"	7 1/2"	0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi	2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"	
		48"-90"	7 1/2"	0.064"-0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi								
		48"-120"	12" SEE	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi								
		48"-84"	12" NOTE	0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi								
		90"-120"	12" 11	0.138"		0.064"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								

SPIRAL RIB PROFILE

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

\* See Note 14.

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

- NOTES:** To accompany plans dated 8-17-09
- All ferrous metal coupling band connection hardware shall be galvanized or electro-plated in accordance with the Standard Specifications.
  - For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
  - Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
  - Use 1 1/4" gage line dimension on attached angle leg for rivets and spot welds.
  - Band thickness shall not be less than:
    - 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
    - 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
  - Dimensions, thicknesses and strengths shown are minimum.
  - For pipe arches use same width band as for round pipe of equal periphery.
  - Fillet welds of equivalent strength may be substituted for spot welds or rivets.
  - Spot welds shall develop minimum required strength of strap.
  - Pipe with rerolled ends having at least two 2 2/3" x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2 2/3" x 1/2" corrugations.
  - In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
  - Two piece bands are required for pipes greater than 42" diameter.
  - The 2 1/4" x 2" x 0.109" thick galvanized die-formed angle connector may be used in lieu of the 2" x 2" x 3/16" angle connector for standard joints only on pipes through 72" diameter.

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

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

**REVISED STANDARD PLAN RSP D97E**

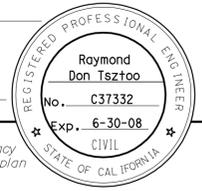
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	53	67

Raymond Don Tsztou  
REGISTERED CIVIL ENGINEER

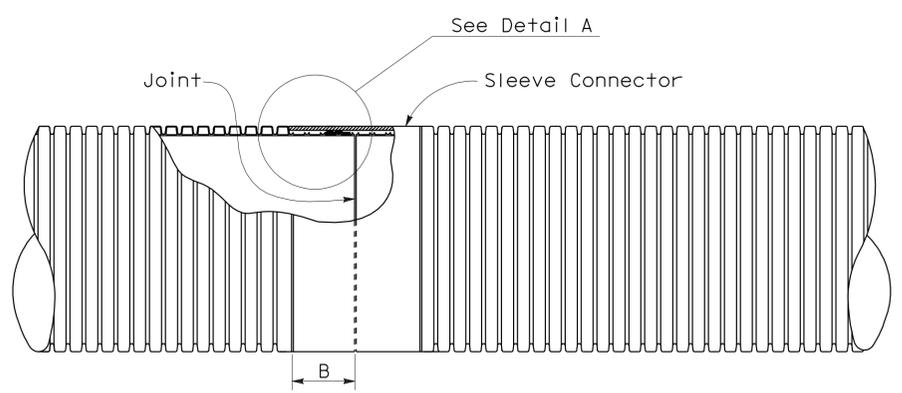
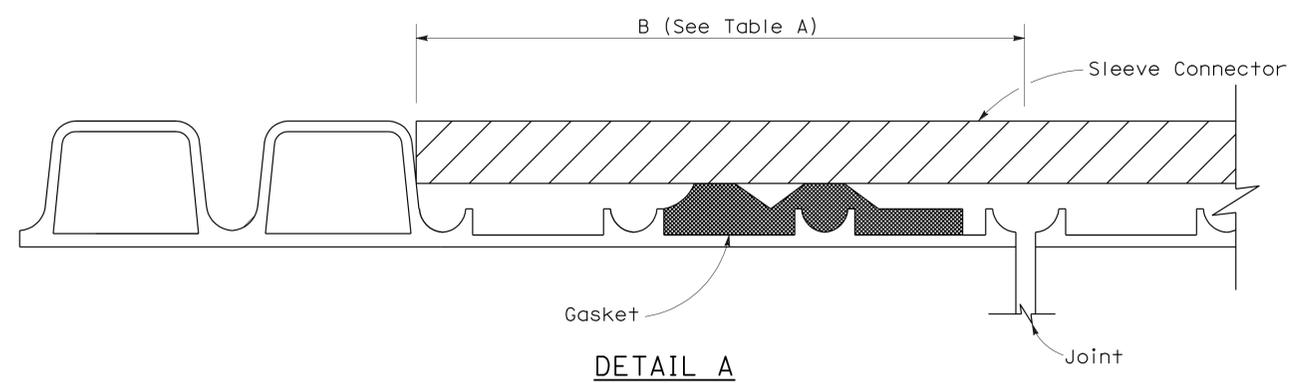
June 6, 2008  
PLANS APPROVAL DATE

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2006 REVISED STANDARD PLAN RSP D97E



To accompany plans dated 8-17-09



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

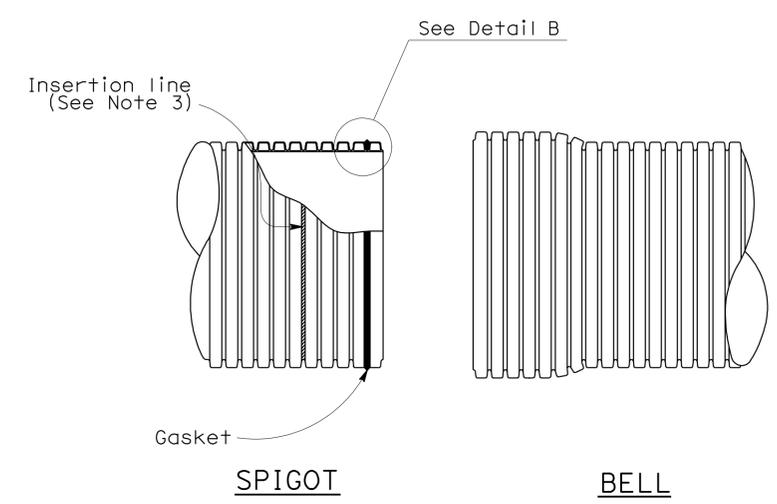
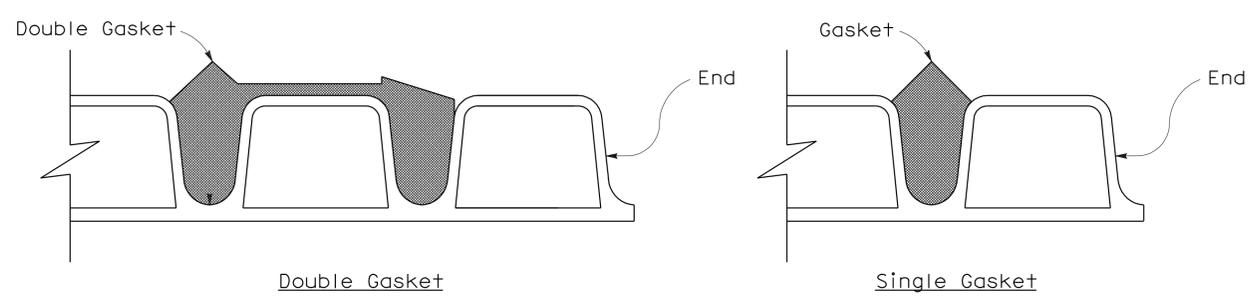
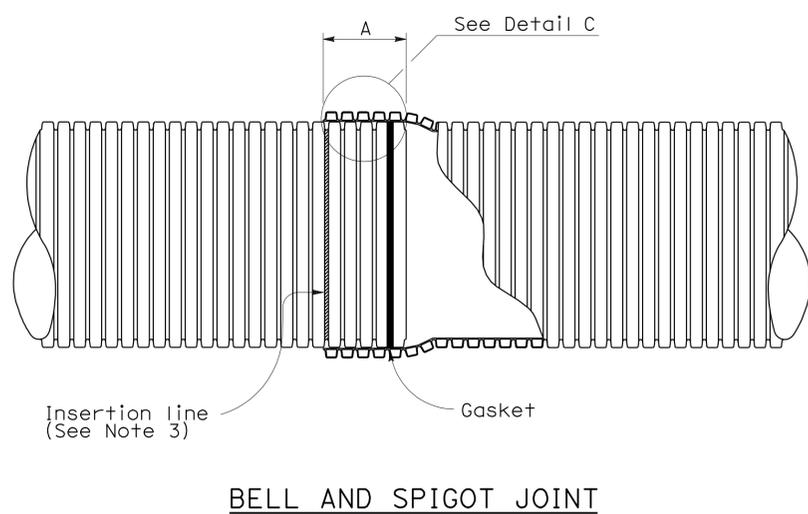
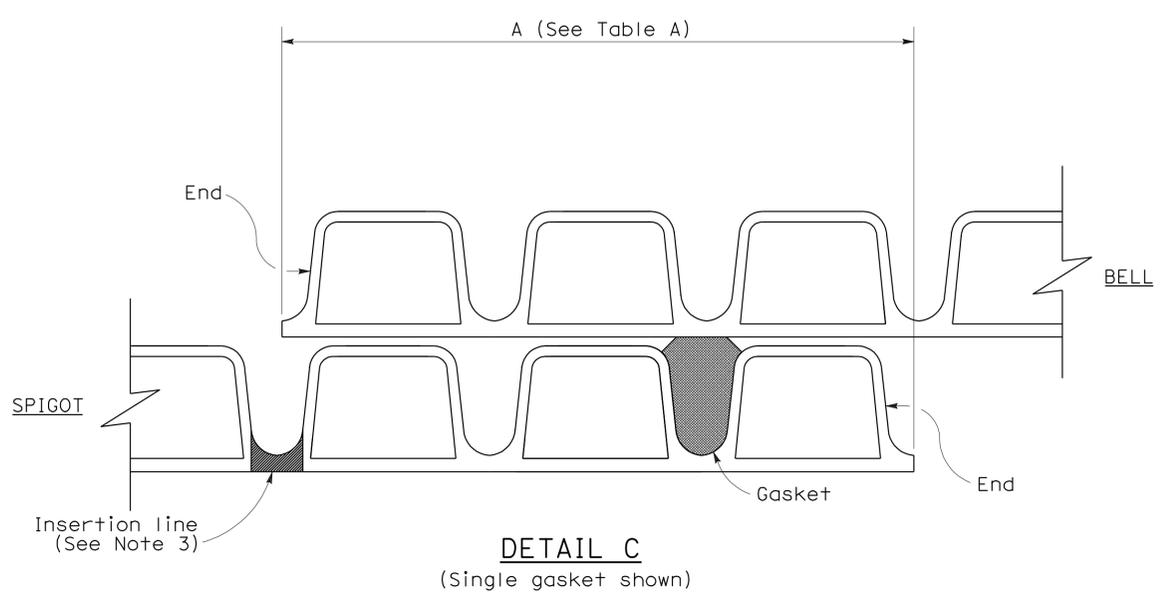


TABLE A

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



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CORRUGATED POLYVINYL CHLORIDE PIPE  
WITH SMOOTH INTERIOR  
STANDARD AND POSITIVE JOINTS**

NO SCALE  
NSP D97I DATED MARCH 7, 2008 SUPPLEMENTS THE STANDARD  
PLANS BOOK DATED MAY 2006.

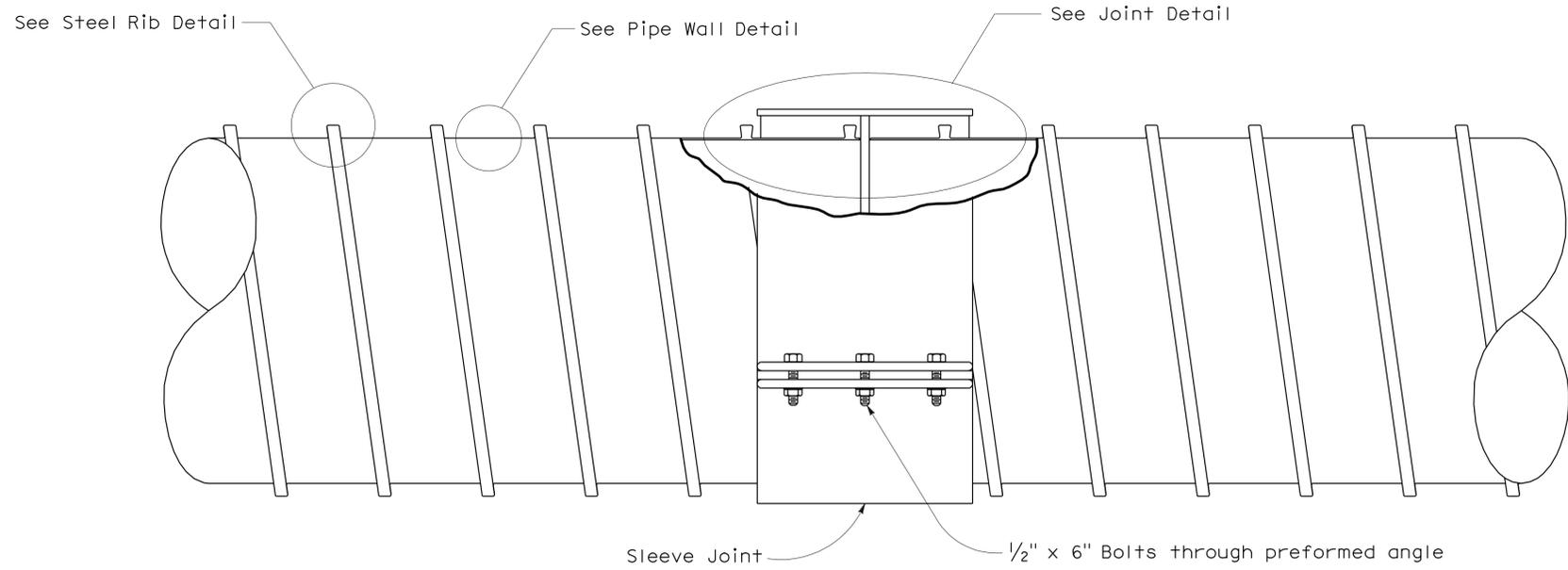
2006 NEW STANDARD PLAN NSP D97I

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	55	67

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

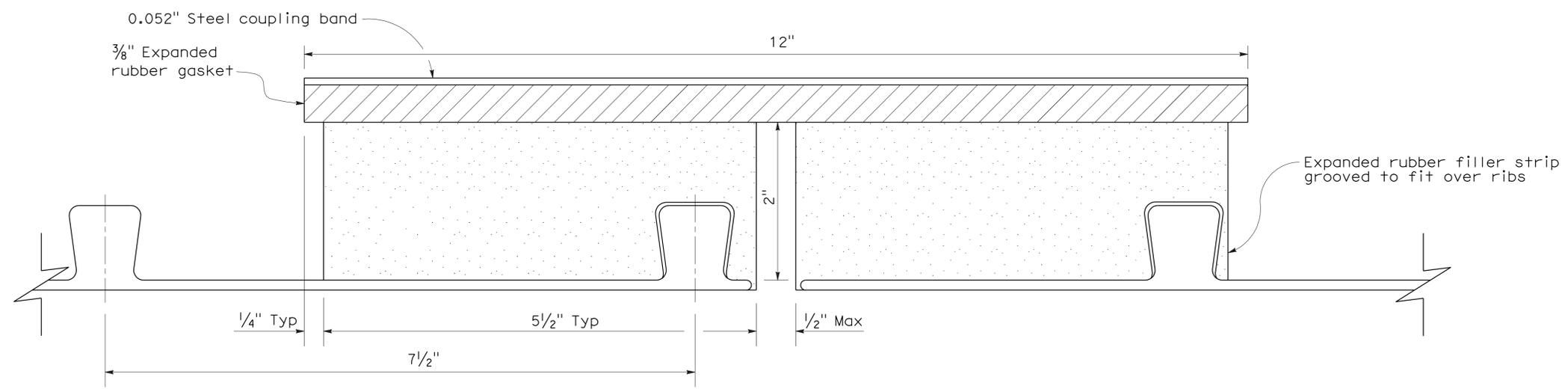
To accompany plans dated 8-17-09



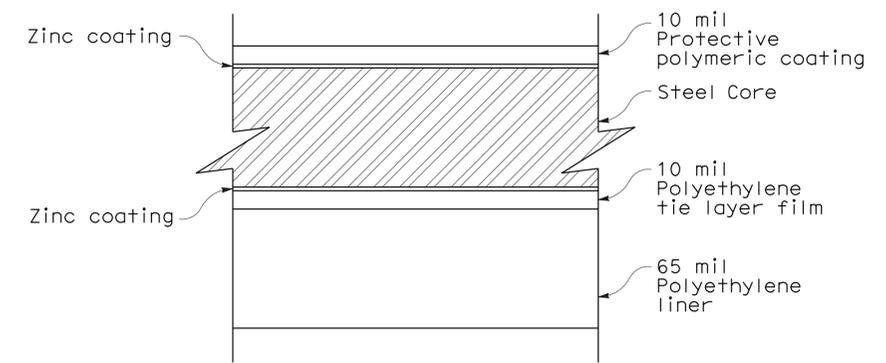
**COMPOSITE STEEL SPIRAL RIB PIPE**

**NOTES:**

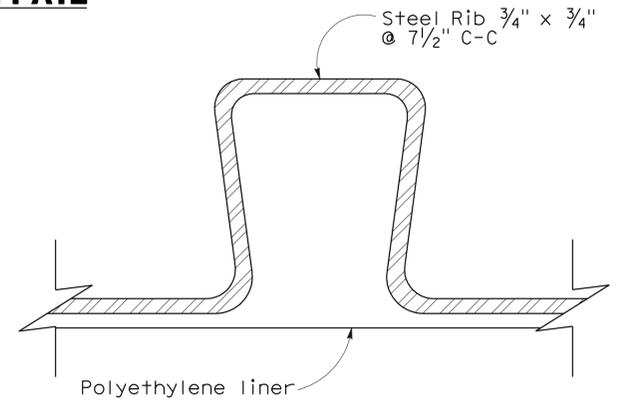
1. Pipe to conform to ASTM A 978.
2. See Standard Plan A62F for backfill details.
3. Protective polymer film to conform to ASTM A 742 and AASHTO M 246.
4. See Standard Plan D97C for Universal Coupling details.
5. Strap joint connection shall consist of 2 separate bolted preformed connectors joined to form one strap when pipe inside diameter is greater than or equal to 60".



**JOINT DETAIL**



**PIPE WALL DETAIL**



**STEEL RIB DETAIL**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**COMPOSITE STEEL SPIRAL RIB PIPE  
 WITH SMOOTH INTERIOR  
 STANDARD JOINT**

NO SCALE  
 NSP D97J DATED JUNE 6, 2008 SUPPLEMENTS THE  
 STANDARD PLANS BOOK DATED MAY 2006.

**NEW STANDARD PLAN NSP D97J**

2006 NEW STANDARD PLAN NSP D97J

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	56	67

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

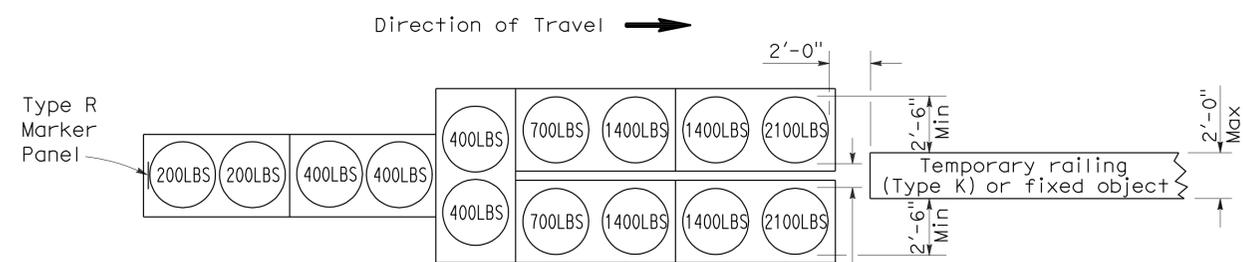
June 6, 2008  
PLANS APPROVAL DATE

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

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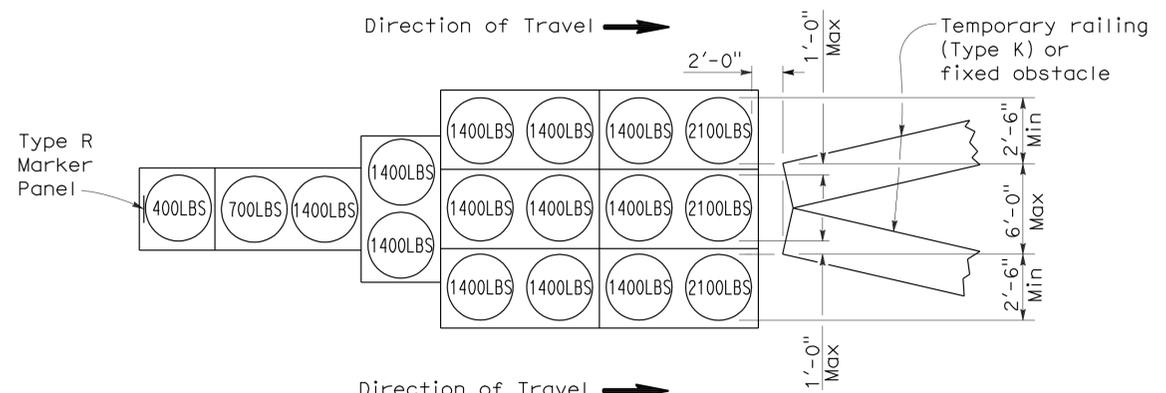
To accompany plans dated 8-17-09

2006 REVISED STANDARD PLAN RSP T1A



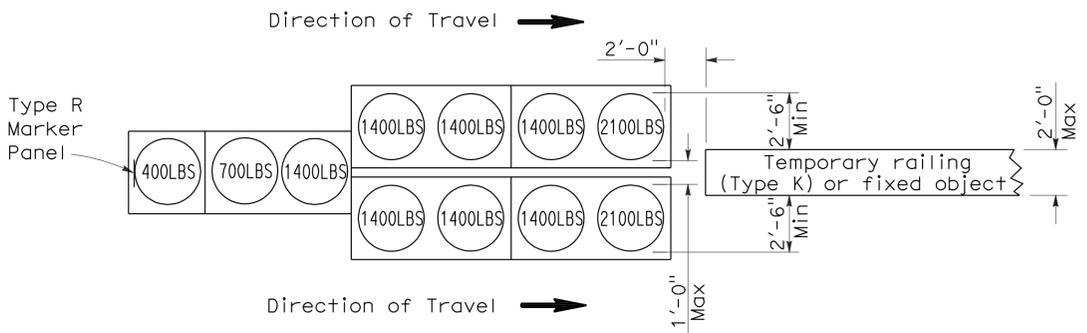
**ARRAY 'TU14'**

Approach speed 45 mph or more



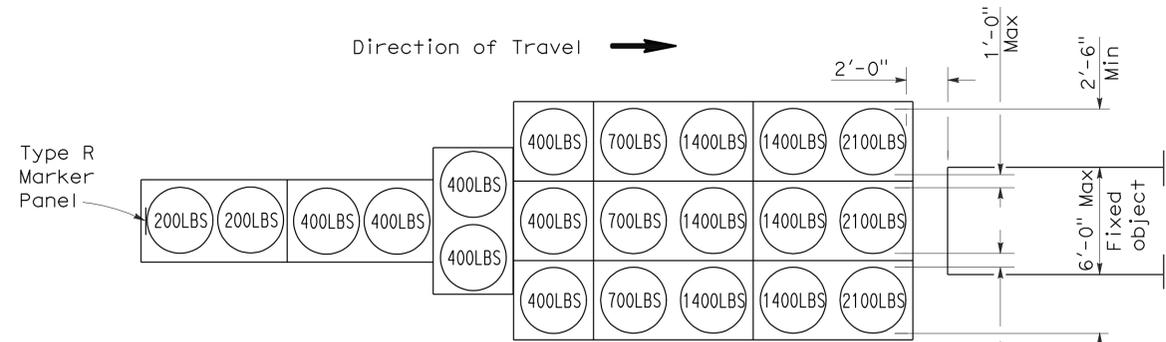
**ARRAY 'TU17'**

Approach speed less than 45 mph



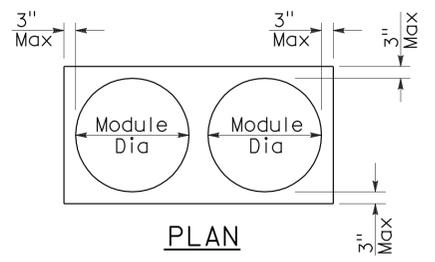
**ARRAY 'TU11'**

Approach speed less than 45 mph

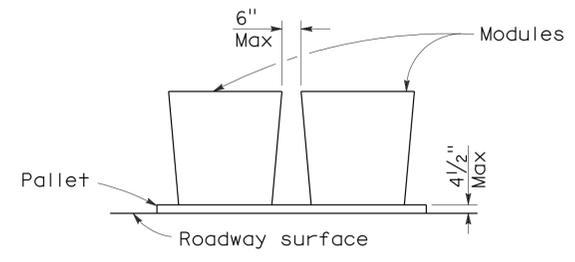


**ARRAY 'TU21'**

Approach speed 45 mph or more



**PLAN**



**ELEVATION**

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1A**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	57	67

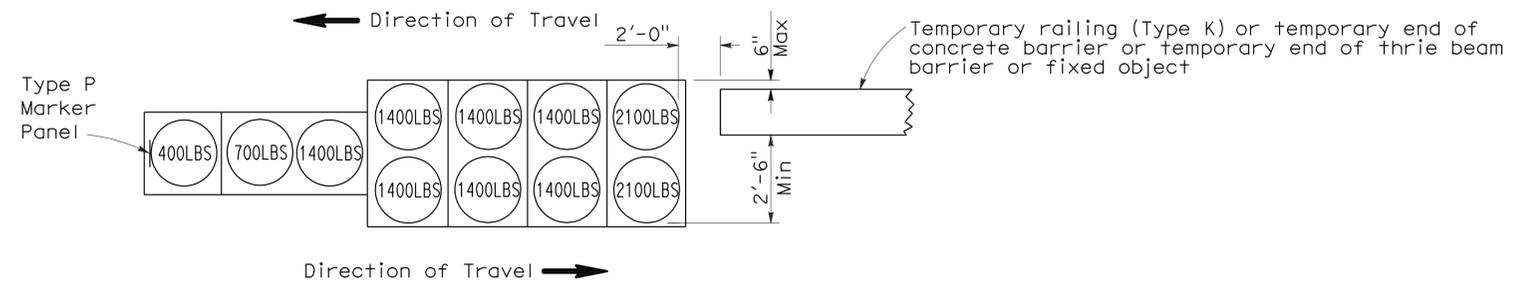
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

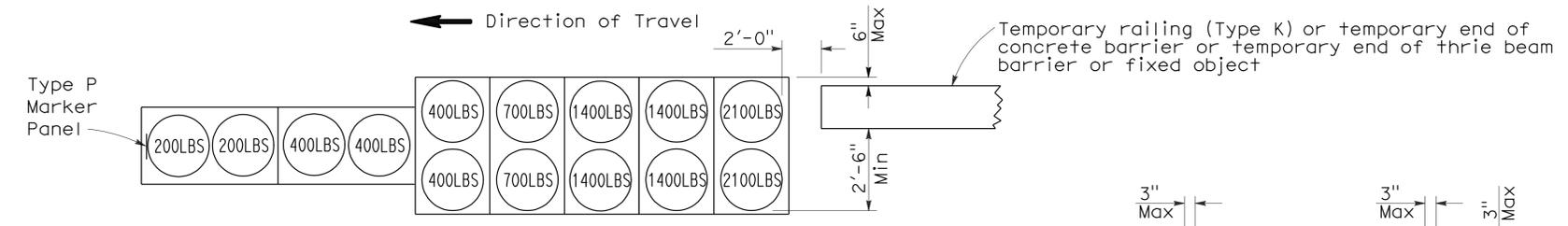
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To accompany plans dated 8-17-09



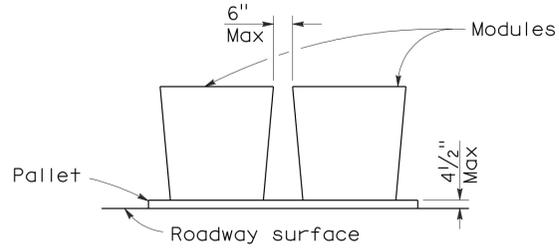
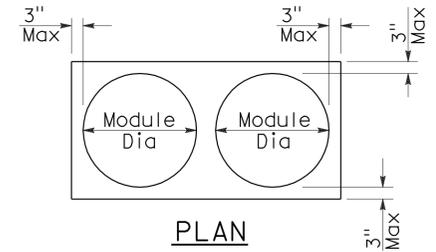
**ARRAY 'TB11'**

Approach speed less than 45 mph



**ARRAY 'TB14'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

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

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

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	58	67

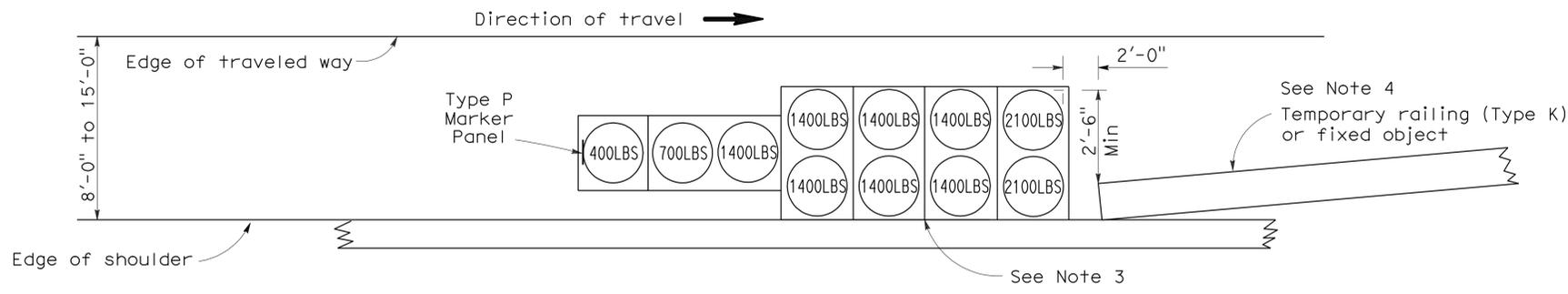
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

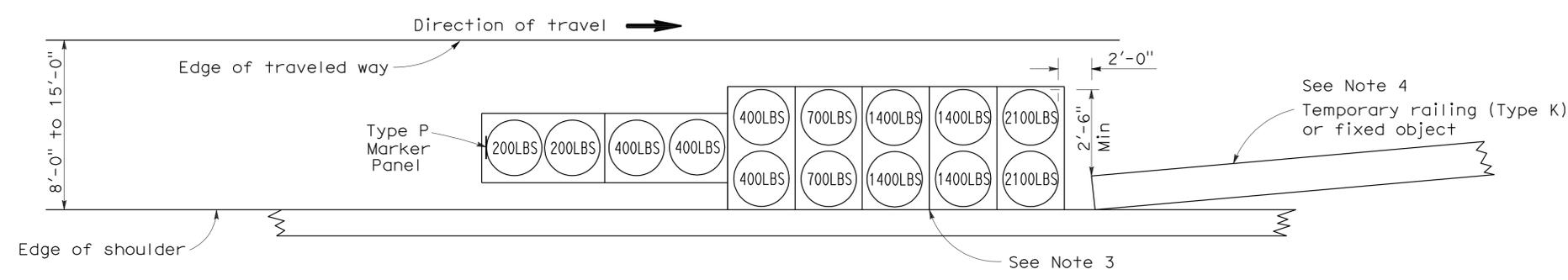
*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

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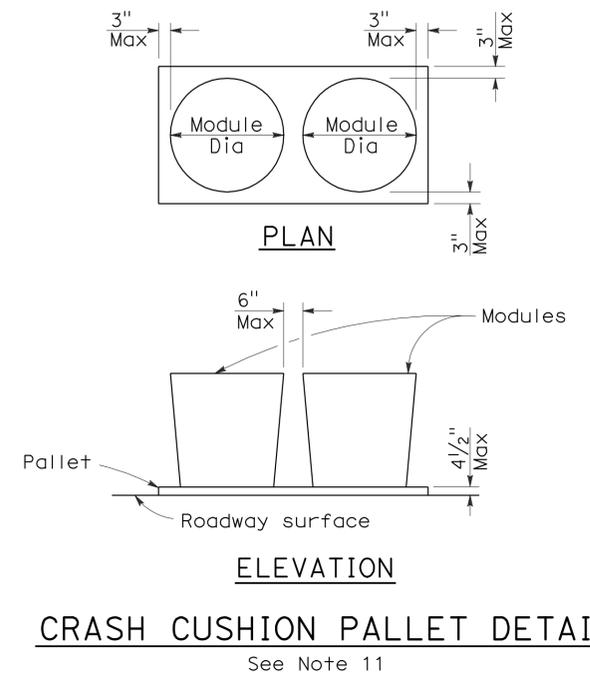
To accompany plans dated 8-17-09



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

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

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

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

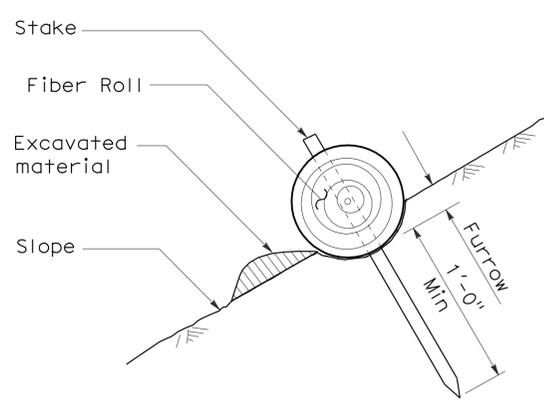
**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

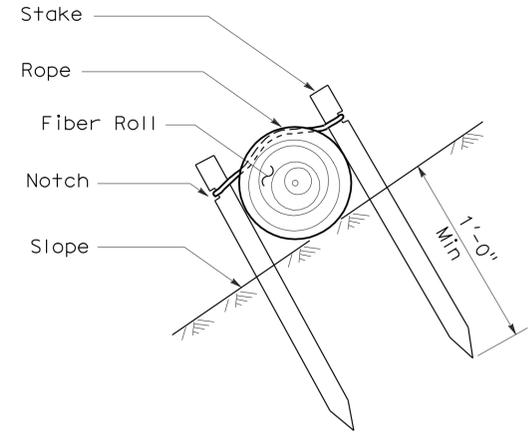
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	59	67

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
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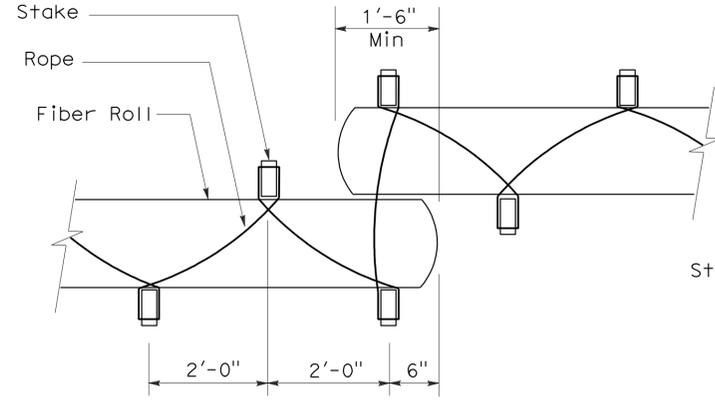
To accompany plans dated 8-17-09



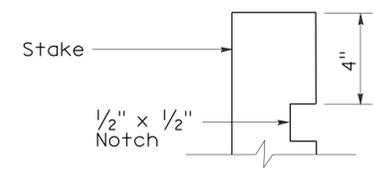
**SECTION**  
**TEMPORARY FIBER ROLL**  
**(TYPE 1)**



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

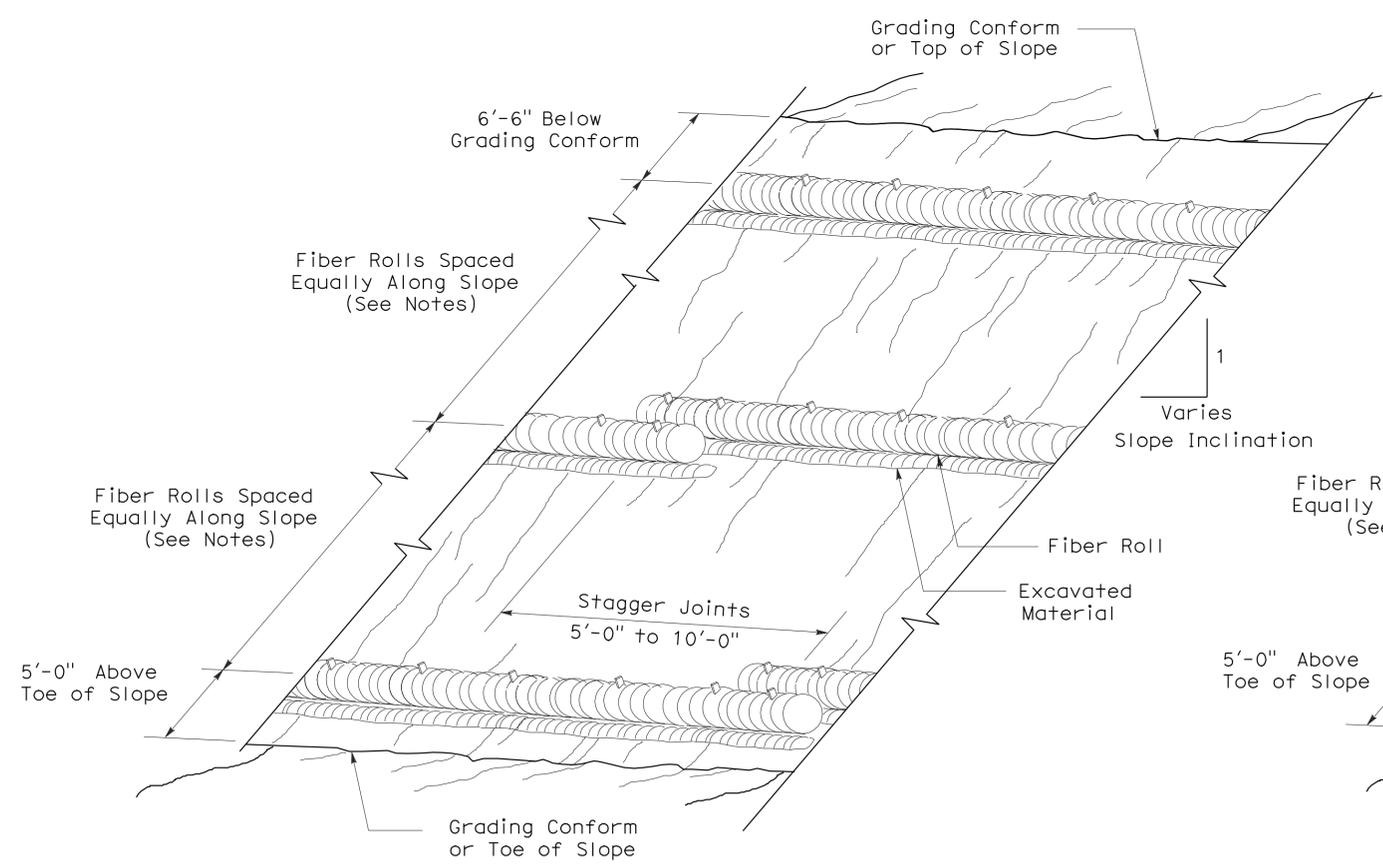


**PLAN**  
**TEMPORARY FIBER ROLL**  
**(TYPE 2)**

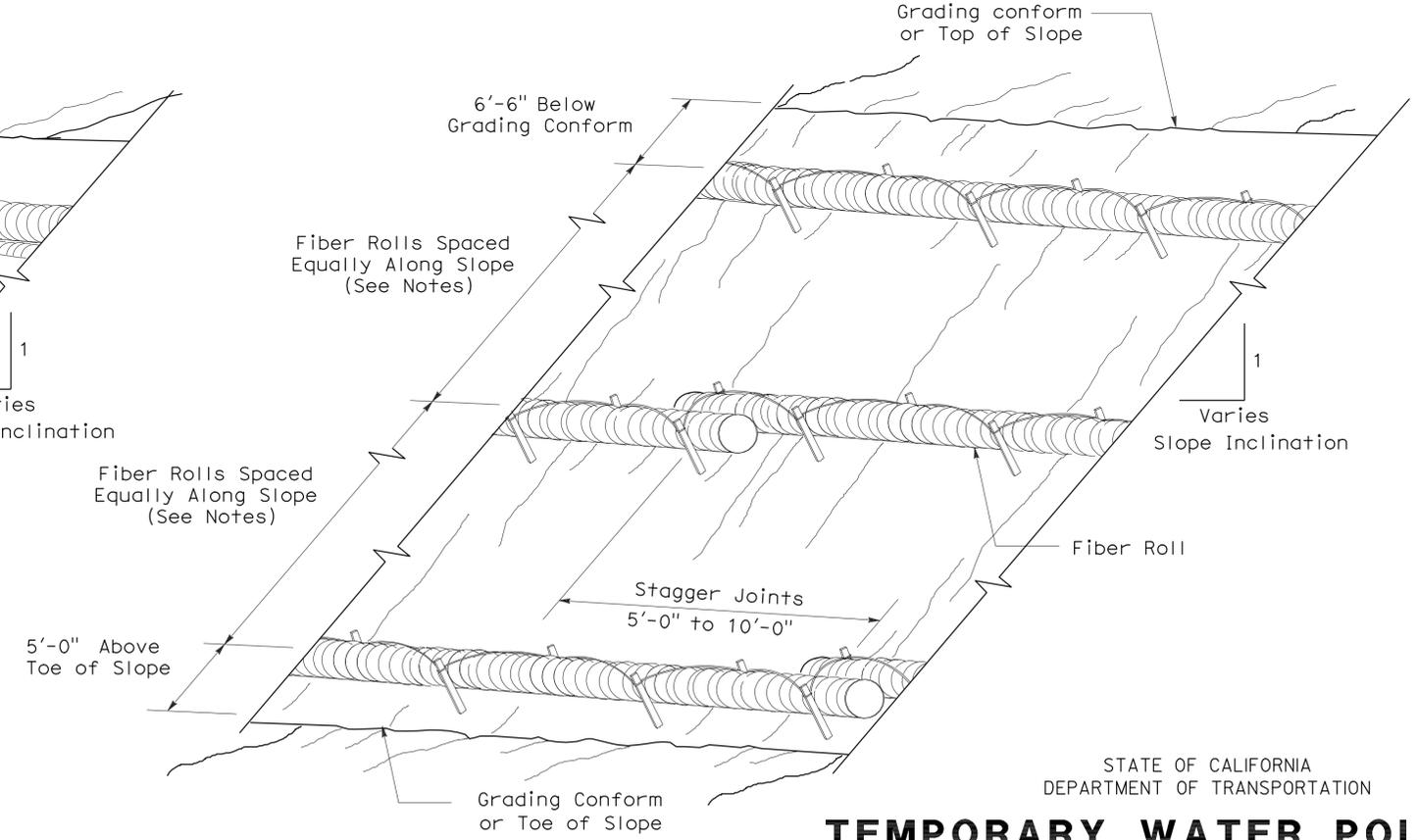


**ELEVATION**  
**STAKE NOTCH DETAIL**

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



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



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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY FIBER ROLL)**

NO SCALE

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

**REVISED STANDARD PLAN RSP T56**

2006 REVISED STANDARD PLAN RSP T56

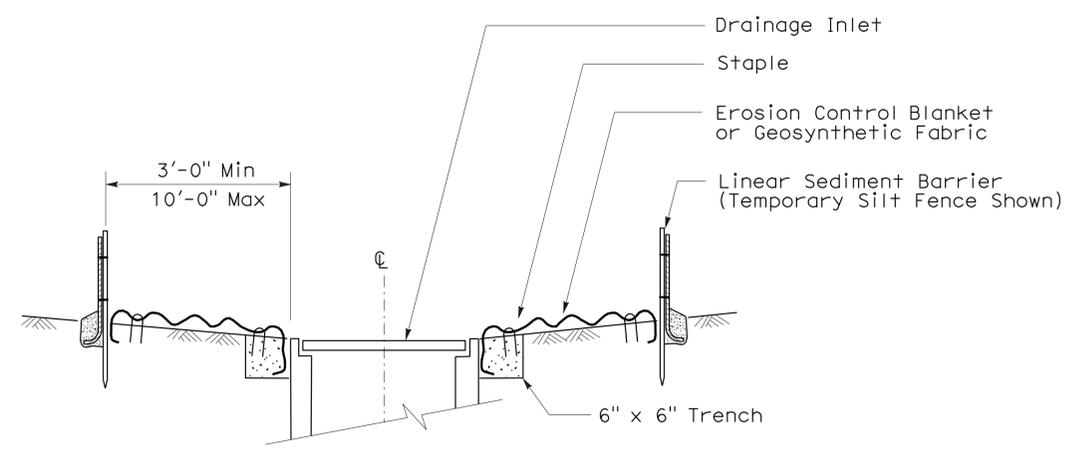
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	60	67

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

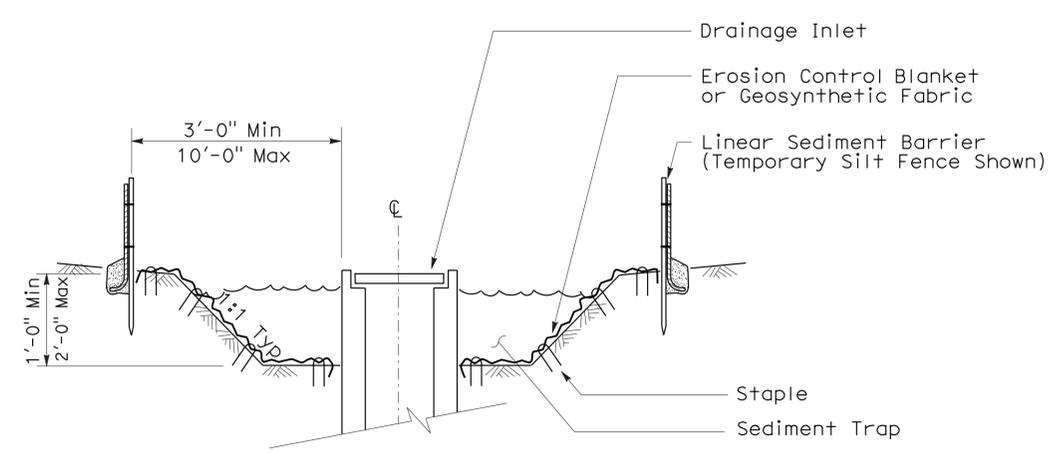


To accompany plans dated 8-17-09

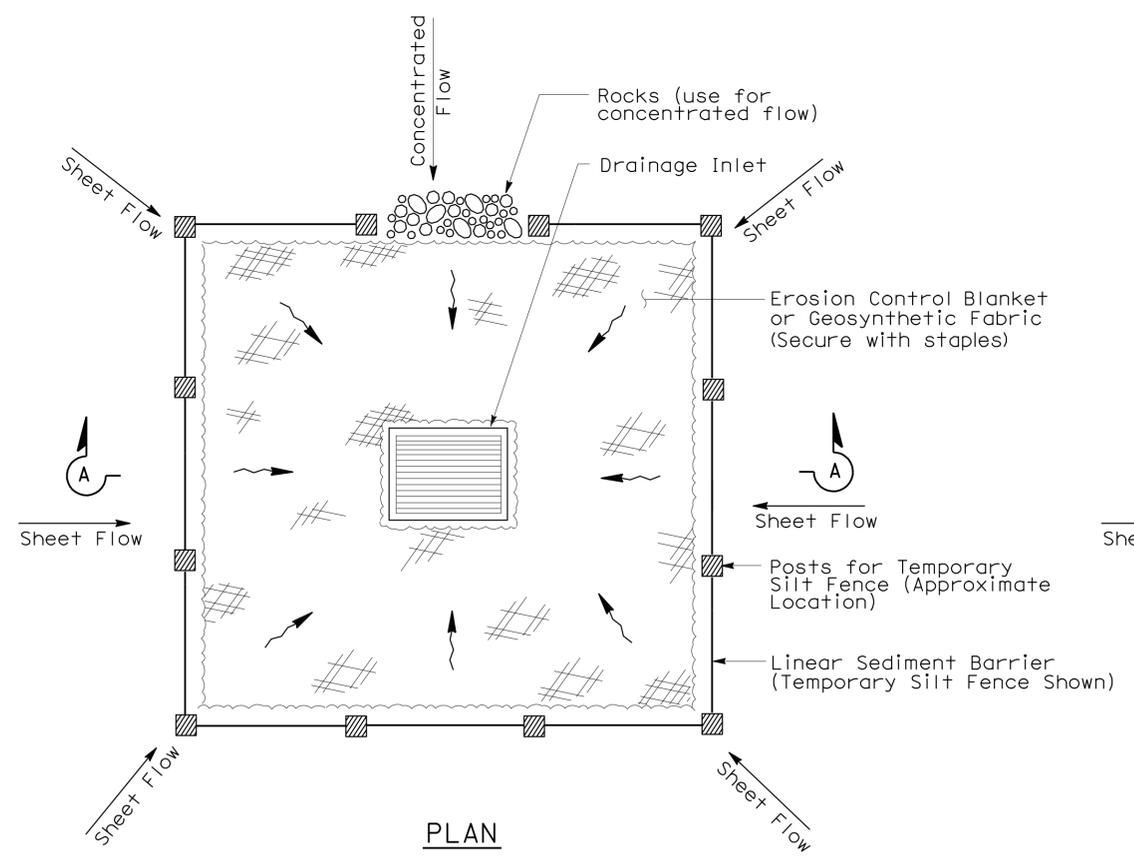
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
  - Dimensions may vary to fit field conditions.



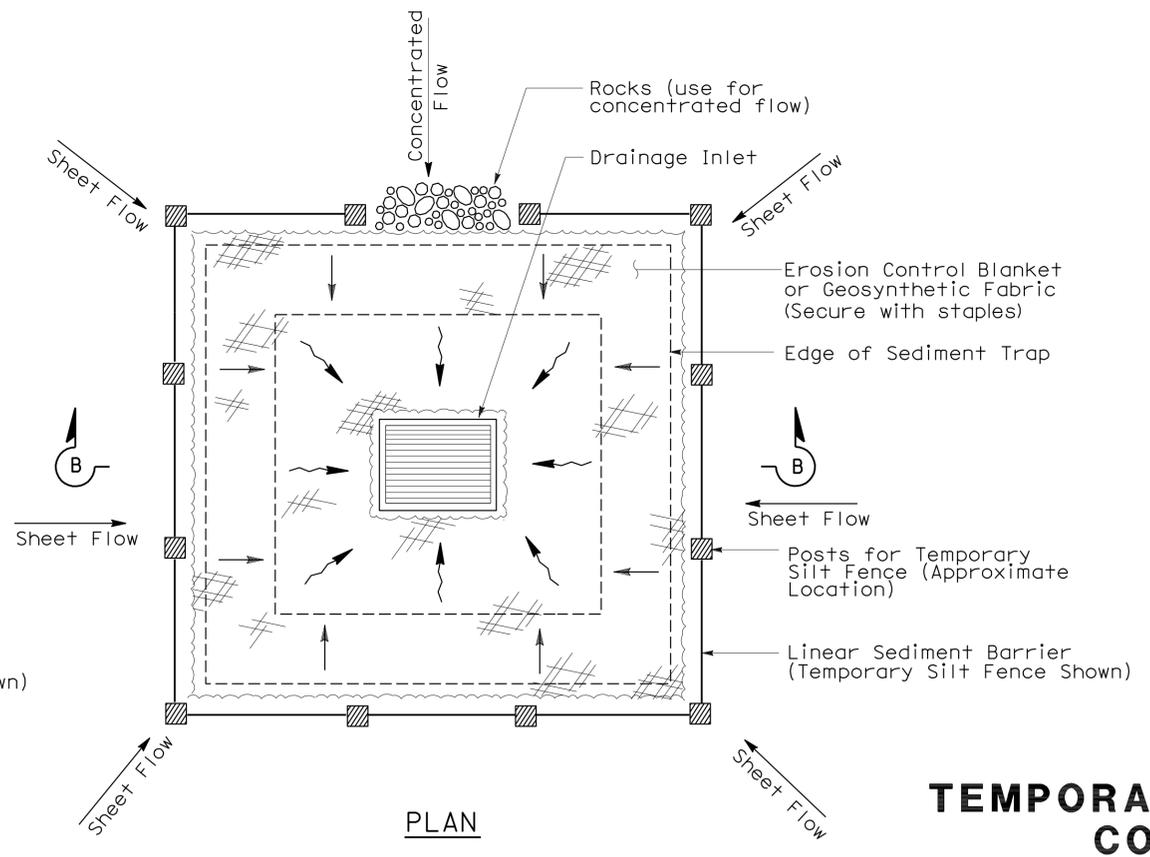
SECTION A-A



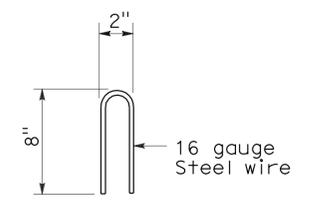
SECTION B-B



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



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



STAPLE DETAIL

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

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

2006 NEW STANDARD PLAN NSP T61

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	61	67

Robert B. Schott  
LICENSED LANDSCAPE ARCHITECT

August 15, 2008  
PLANS APPROVAL DATE

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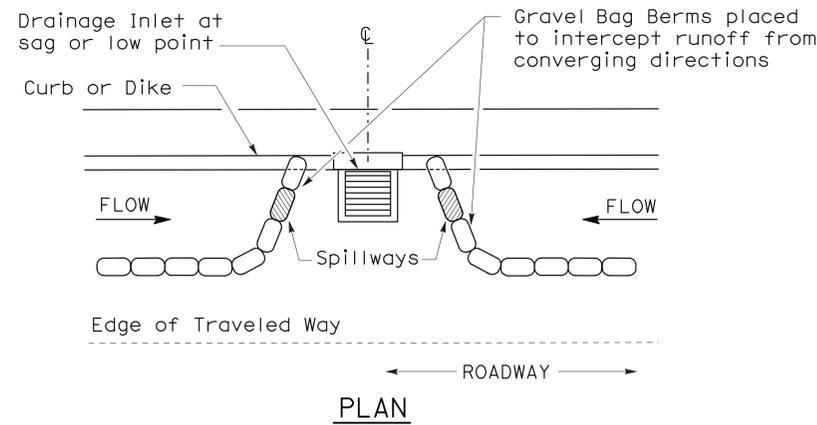
To accompany plans dated 8-17-09

2006 NEW STANDARD PLAN NSP T62

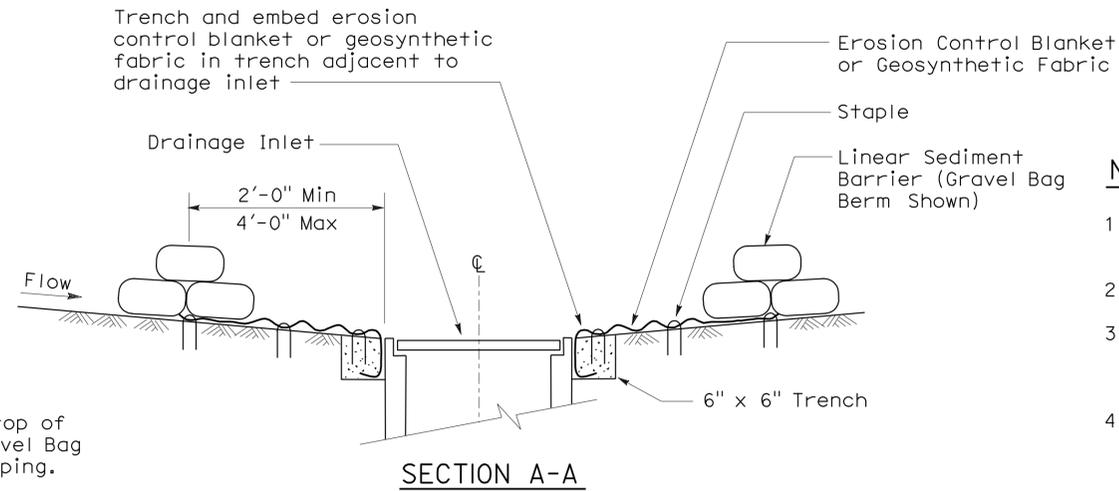
**GRAVEL BAG BERM (TYPE 3A) SPACING TABLE**

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

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



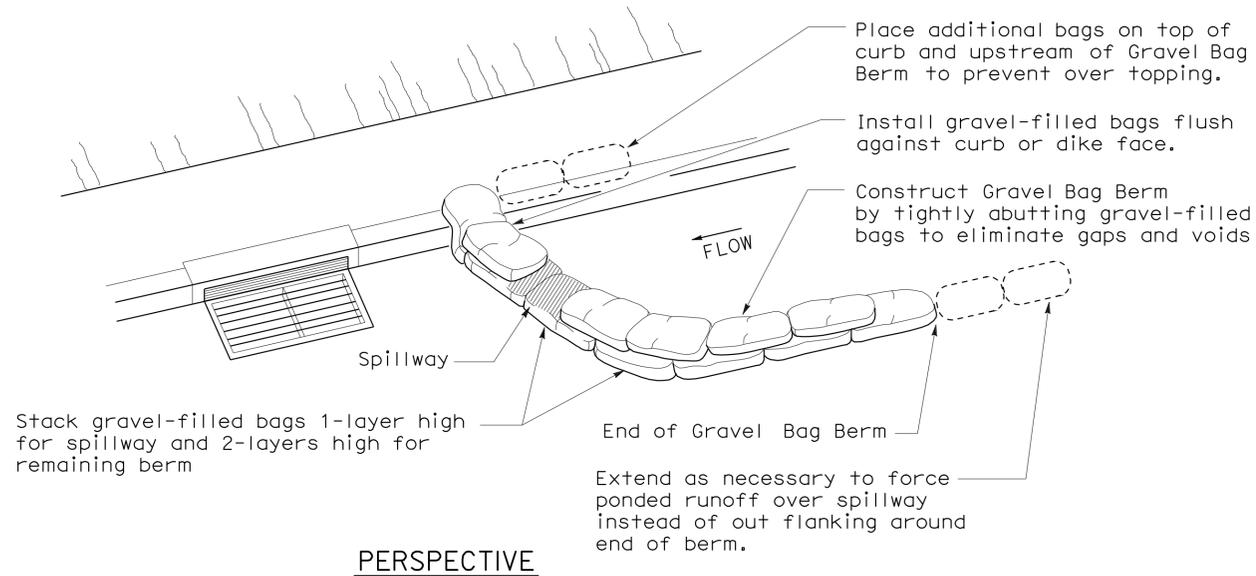
**PLAN**  
**CONFIGURATION FOR SAG POINT INLET**  
**(GRAVEL BAG BERM)**



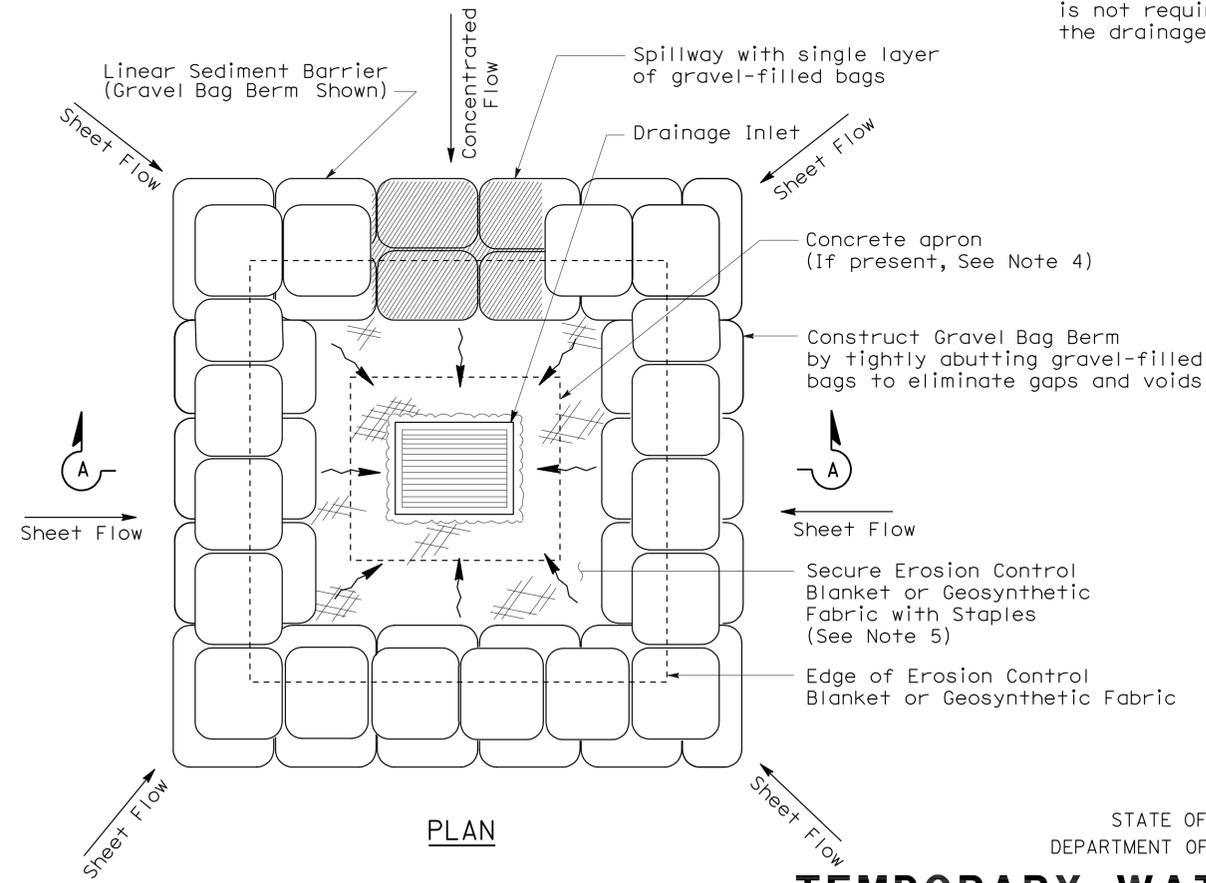
**SECTION A-A**

**NOTES:**

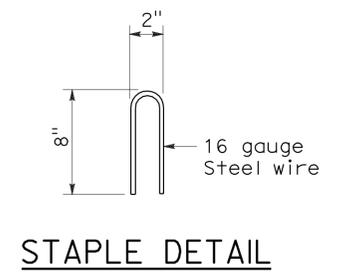
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



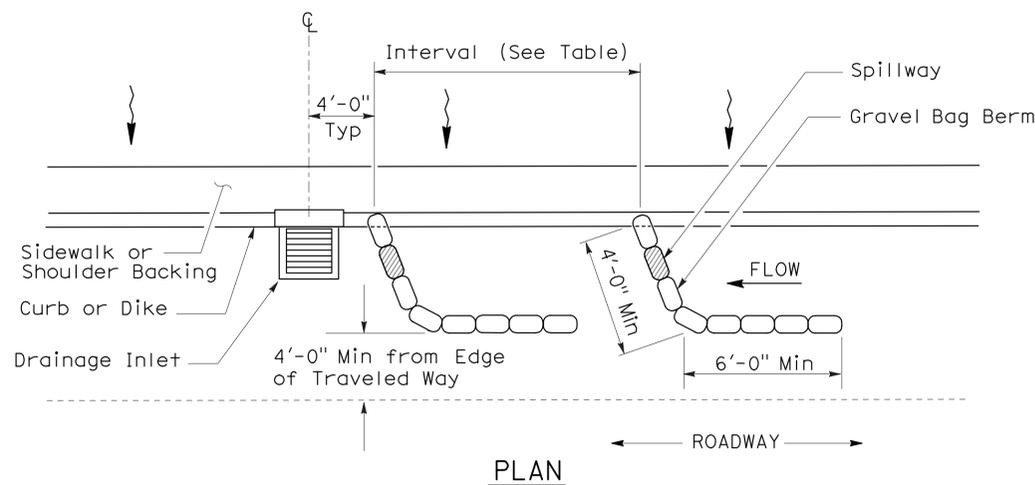
**PERSPECTIVE**



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



**STAPLE DETAIL**



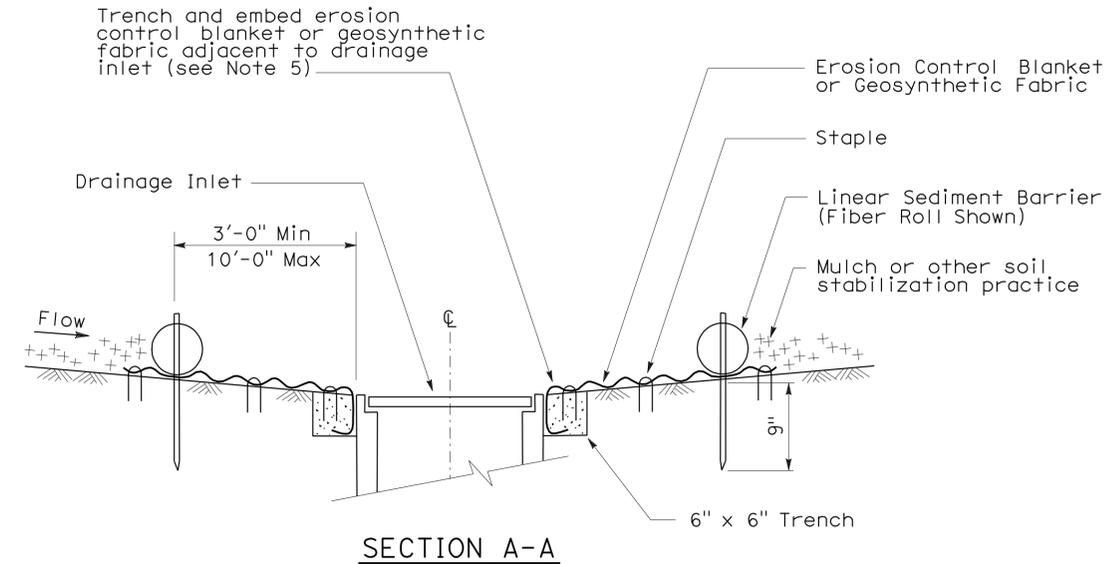
**PLAN**  
**TEMPORARY DRAINAGE**  
**INLET PROTECTION (TYPE 3A)**  
**(GRAVEL BAG BERM)**

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

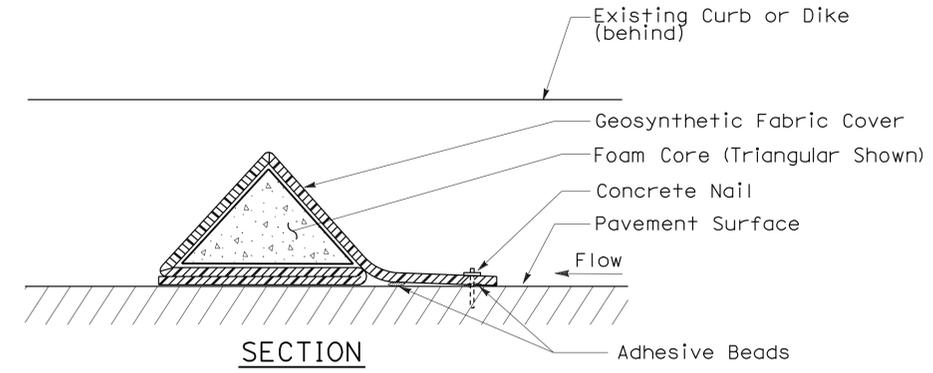
NO SCALE  
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

**FLEXIBLE SEDIMENT BARRIER SPACING TABLE**

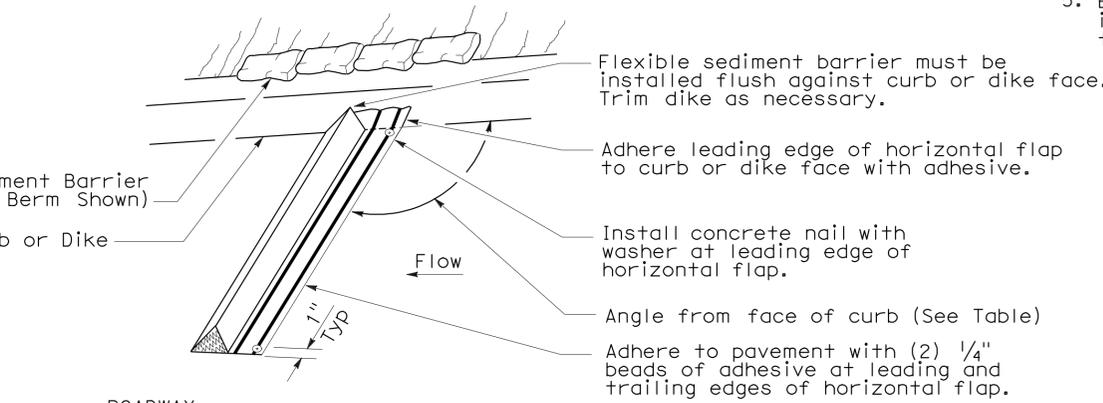
SLOPE OF ROADWAY (PERCENT)	0 to 0.9	1 to 1.9	2 to 2.9	3 to 4	5+
INTERVAL BETWEEN BARRIERS	50'	35'	30'	25'	20'
ANGLE FROM FACE OF CURB	70°	70°	70°	45°	45°
SUGGESTED BARRIER LENGTH	6'	6'	6'	6'	6'



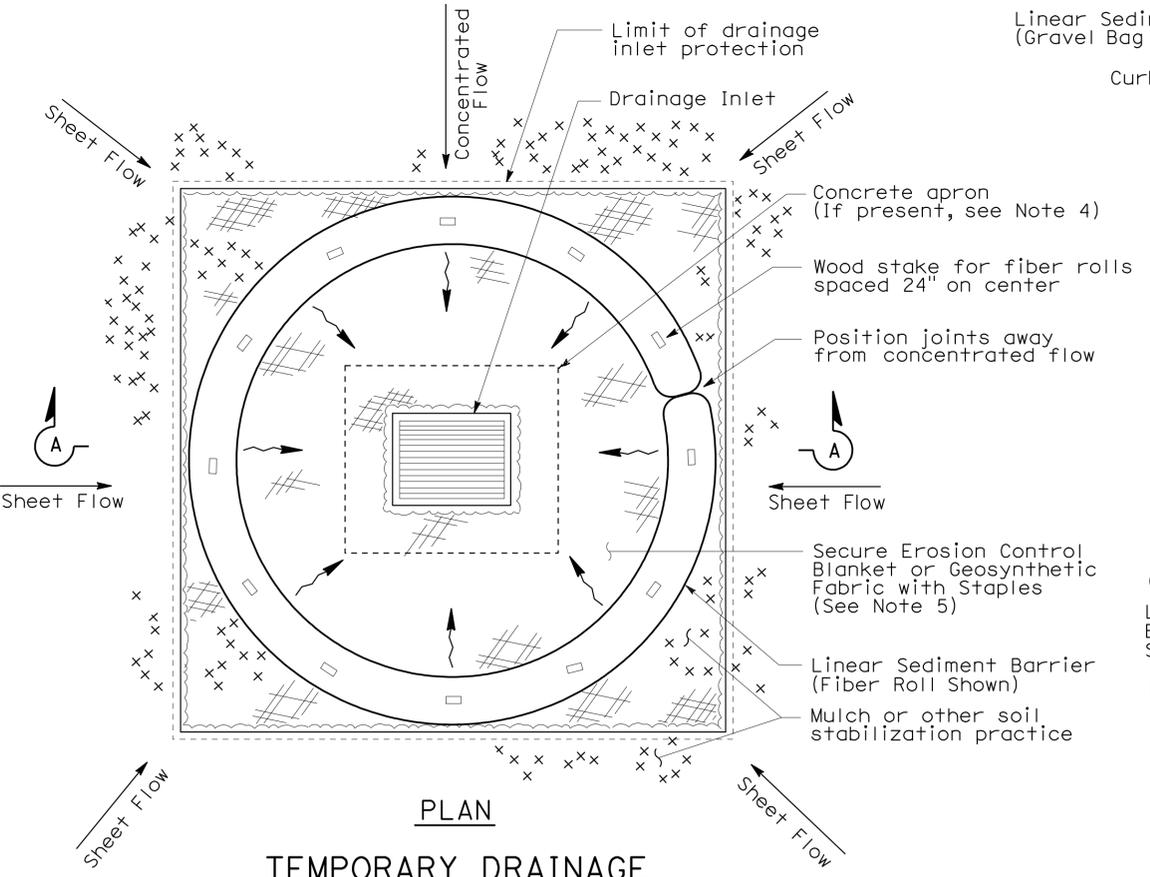
**SECTION A-A**



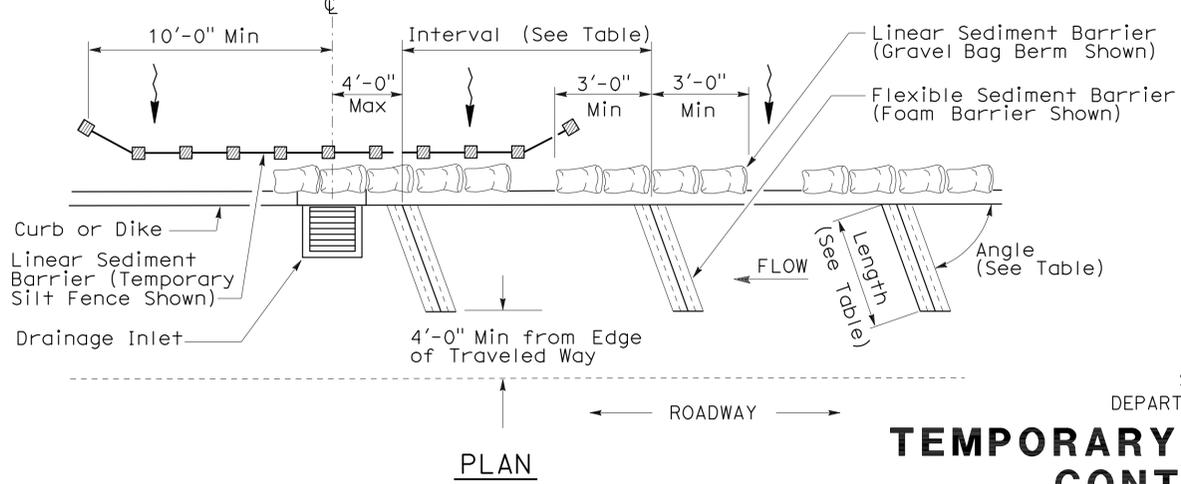
**SECTION FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)**



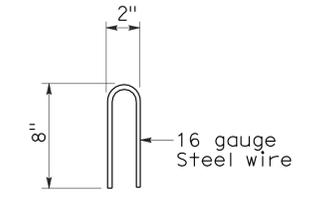
**PERSPECTIVE**



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



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



**STAPLE DETAIL**

**NOTES:**

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

To accompany plans dated 8-17-09

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

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

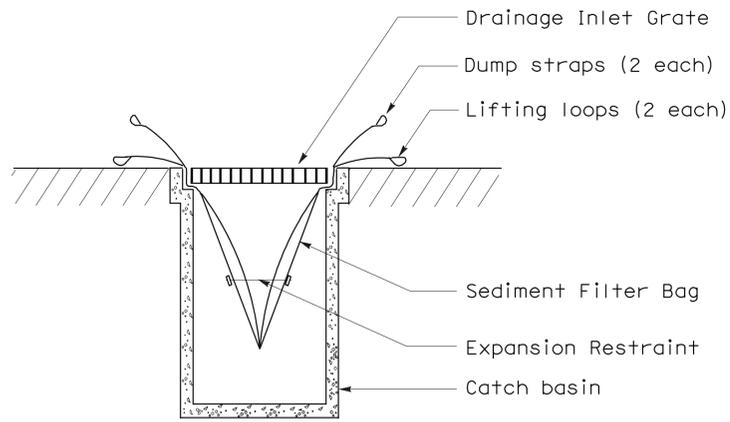
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	63	67

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT

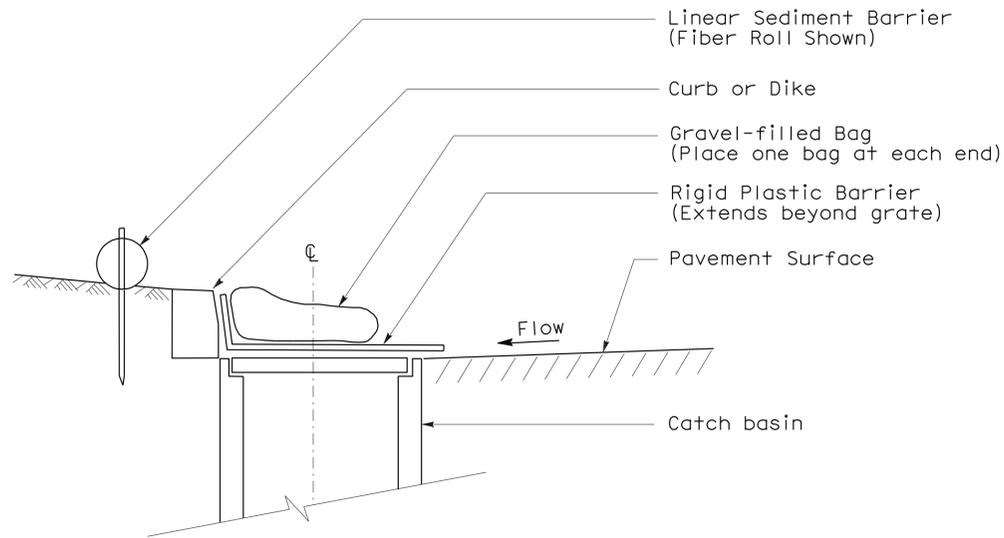
August 15, 2008  
 PLANS APPROVAL DATE

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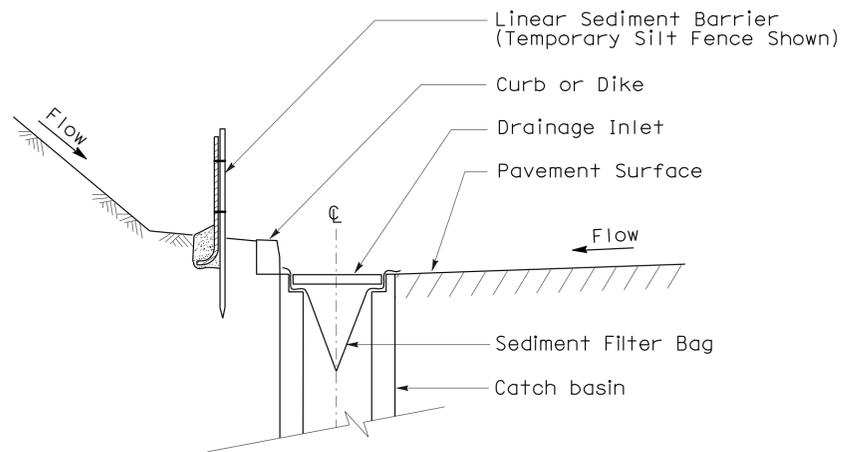
To accompany plans dated 8-17-09



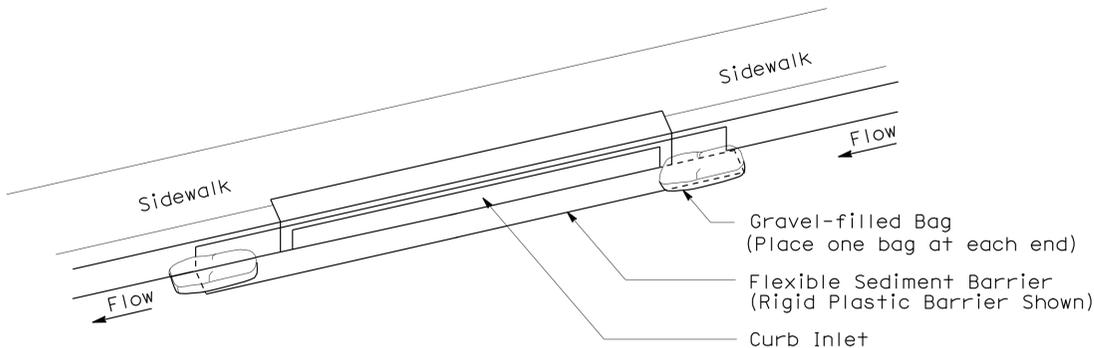
SECTION B-B  
SEDIMENT FILTER BAG DETAIL



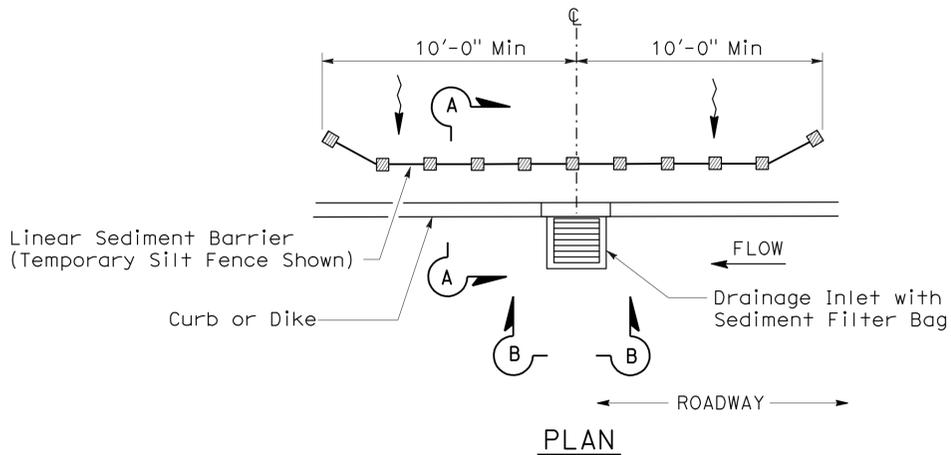
SECTION  
TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 6A)  
(CATCH BASIN WITH GRATE)



SECTION A-A



PERSPECTIVE



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

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

**NOTES:**

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION  
 CONTROL DETAILS  
 (TEMPORARY DRAINAGE  
 INLET PROTECTION)**

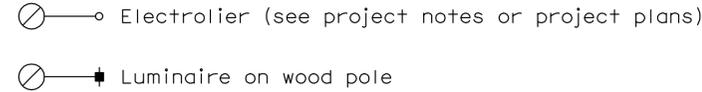
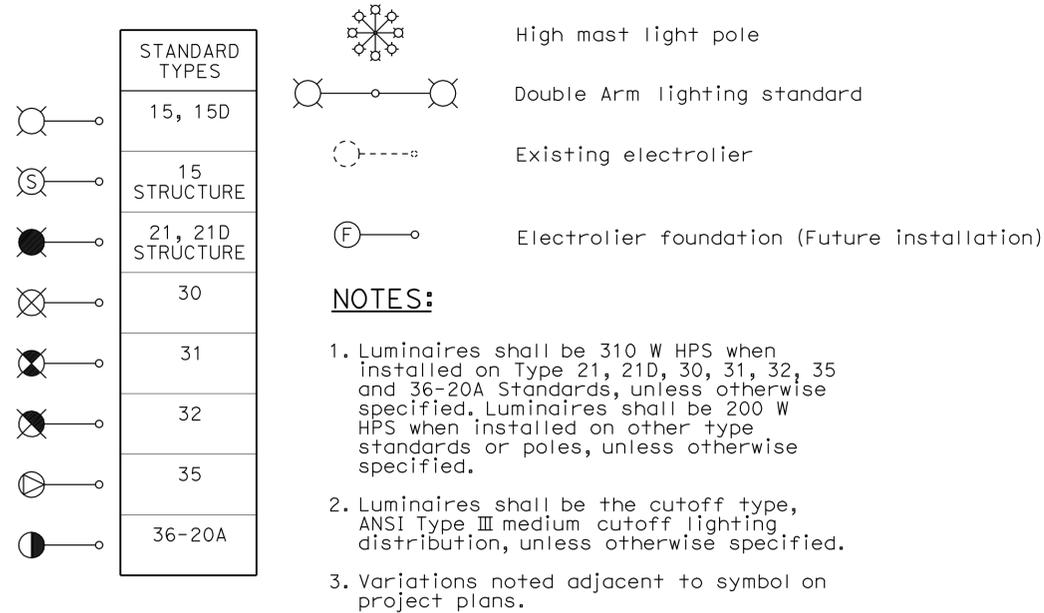
NO SCALE

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

**NEW STANDARD PLAN NSP T64**

2006 NEW STANDARD PLAN NSP T64

# ELECTROLIERS



## STANDARD NOTES:

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

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	64	67

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

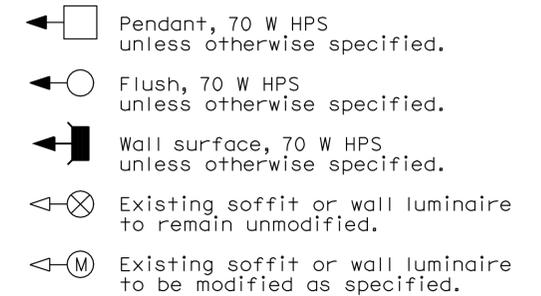
October 5, 2007  
PLANS APPROVAL DATE

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

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

To accompany plans dated 8-17-09

## SOFFIT AND WALL MOUNTED LUMINAIRES



### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	65	67

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

To accompany plans dated 8-17-09

### CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">RSP ES-9A C</span>
		Conduit riser in/on structure or service pole

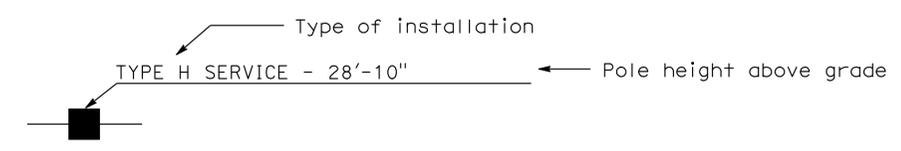
### SIGNAL EQUIPMENT

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

### SERVICE EQUIPMENT

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

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

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

### SIGNAL EQUIPMENT Cont

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

### NOTES:

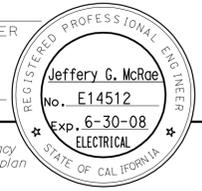
- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.
- Signal indication shall be LED.

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

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

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

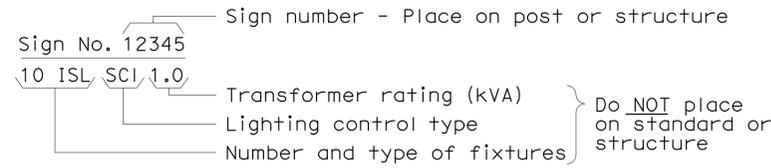
2006 REVISED STANDARD PLAN RSP ES-1B



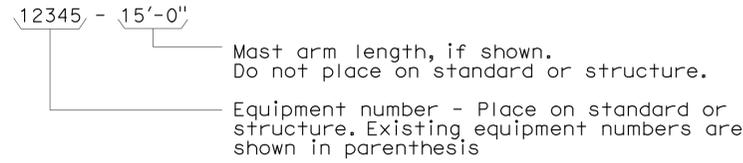
To accompany plans dated 8-17-09

### EQUIPMENT IDENTIFICATION

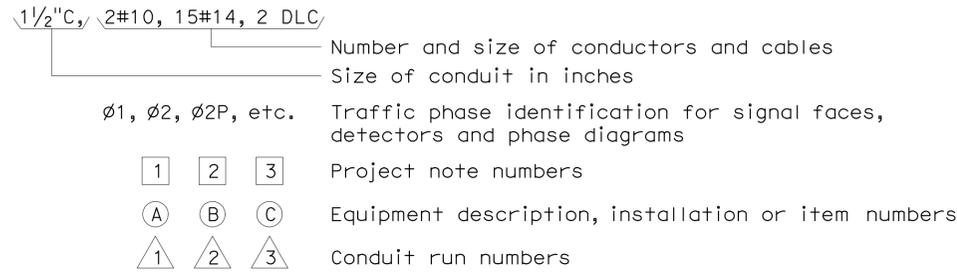
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



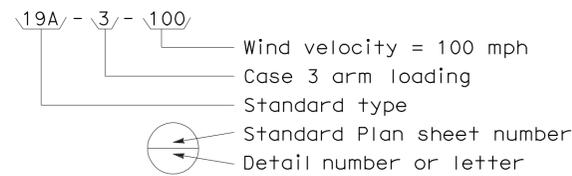
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



#### CONDUIT AND CONDUCTOR IDENTIFICATION:



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



### MISCELLANEOUS EQUIPMENT

PROPOSED	EXISTING	
CMS	cms	Changeable message sign
		Closed circuit television camera
EMS	ems	Highway advisory radio pole and antenna
		Extinguishable message sign
M V	m v	Detection device M = Microwave sensor V = Video image sensor

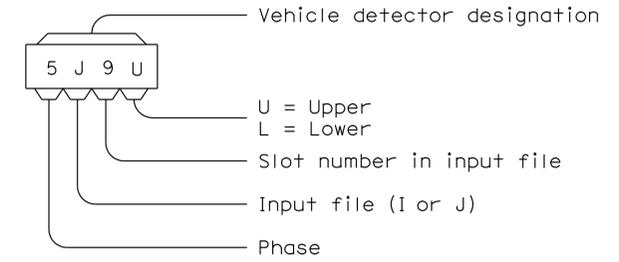
### WIRING DIAGRAM LEGEND

P Pole	---- External conductor
CB Circuit breaker	— Conductor or bus
A Ampere	• Tie point
V Volt	— Contactor coil
M Metered	— Contactor, Contact NO
UM Unmetered	⊗ Terminal blocks
NB Neutral bus	— Contactor, Contact NC
GB Ground bus	— Enclosure bond
G Equipment grounding conductor	⊥ Grounding electrode
N Grounded conductor (Neutral)	— Circuit breaker
	Ⓜ Receptacle

### PULL BOXES

PROPOSED	EXISTING	
		Pull box-No. 5 unless otherwise indicated or noted.
		Pull box-Additional designations or descriptions
3 = No. 3 1/2 pull box		(C) = Communications pull box
5 = No. 5 pull box		(E) = Pull box with extension
6 = No. 6 pull box		(S) = Sprinkler control pull box
7 = No. 7 (Ceiling pull box)		(21) = Anchor bolts and conduit for future installation of Type 21 Standard
8 = No. 8 (Pendant soffit pull box)		(T) = Traffic pull box
9 = No. 9 pull box		
9A = No. 9A pull box		

### VEHICLE DETECTORS



PROPOSED	EXISTING	
		Type A detector loop. Outline of sawcut shown.
		Type B detector loop. Outline of sawcut shown.
		Type C detector loop. Outline of sawcut shown.
		Type D detector loop. Outline of sawcut shown.
		Type E detector loop. Outline of sawcut shown.
		Type Q detector loop. Outline of sawcut shown.
		Magnetic detector
		Detector handhole
		Microwave or video detection zone

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Sha	5	R28.9/R29.3	67	67

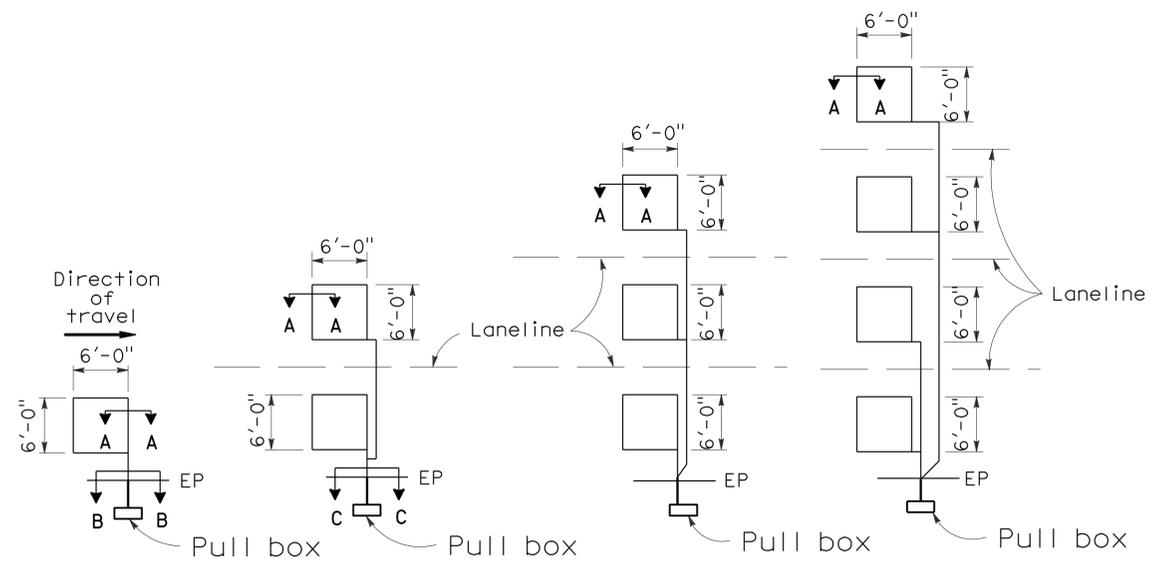
REGISTERED ELECTRICAL ENGINEER  
 Jeffery G. McRae  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

October 5, 2007  
 PLANS APPROVAL DATE

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# LOOP INSTALLATION PROCEDURE

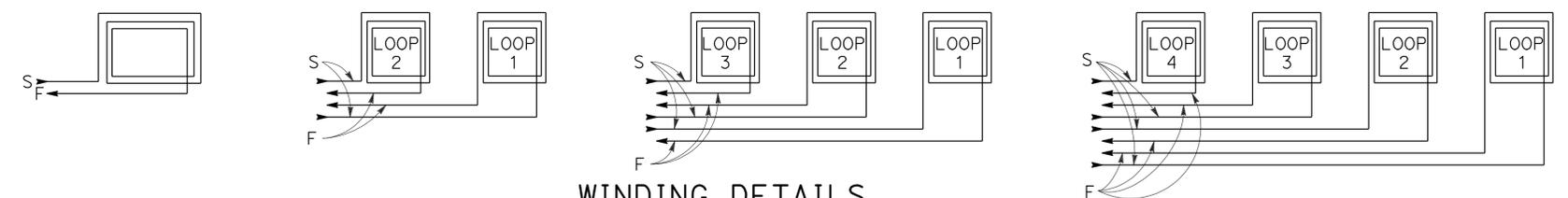
- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no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



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

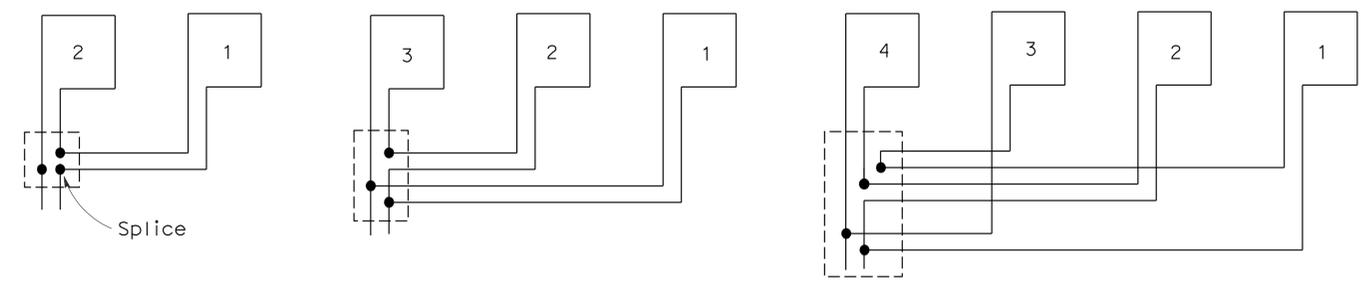
## SAWCUT DETAILS

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



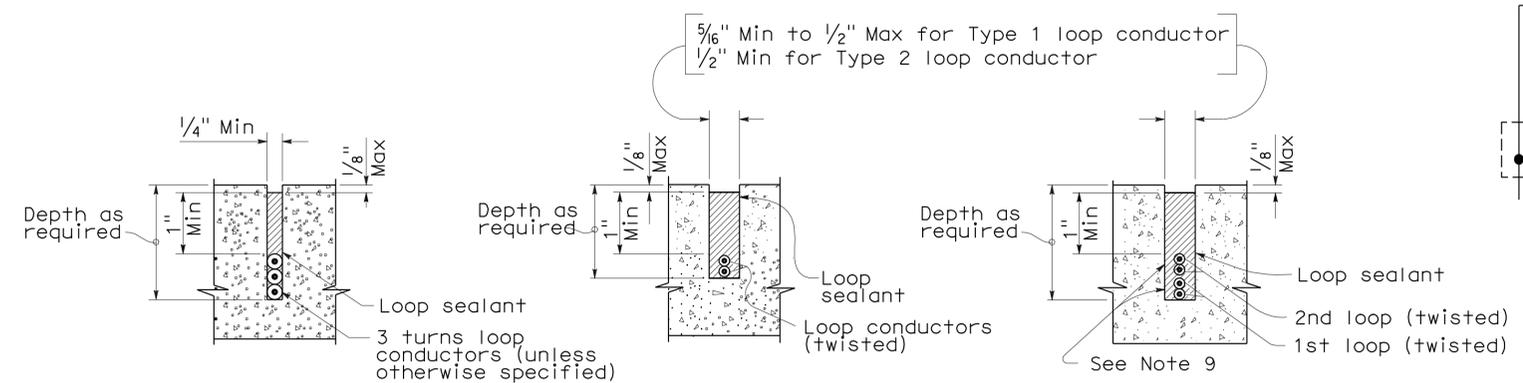
## WINDING DETAILS

See Notes 6 and 7



## TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



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

## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

NO SCALE

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

2006 REVISED STANDARD PLAN RSP ES-5A