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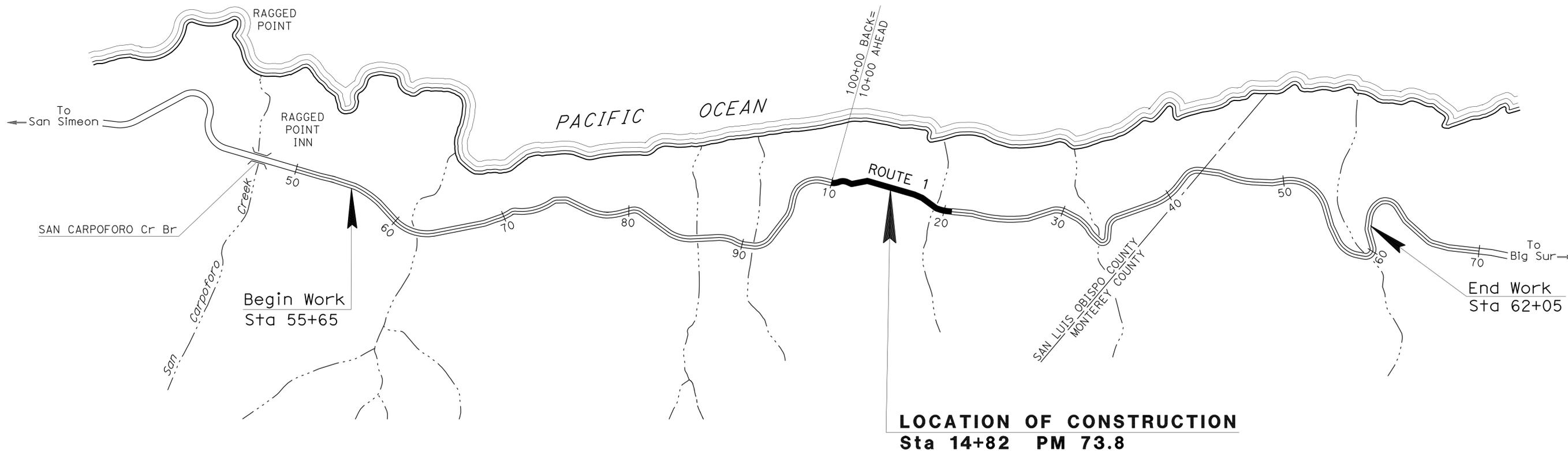
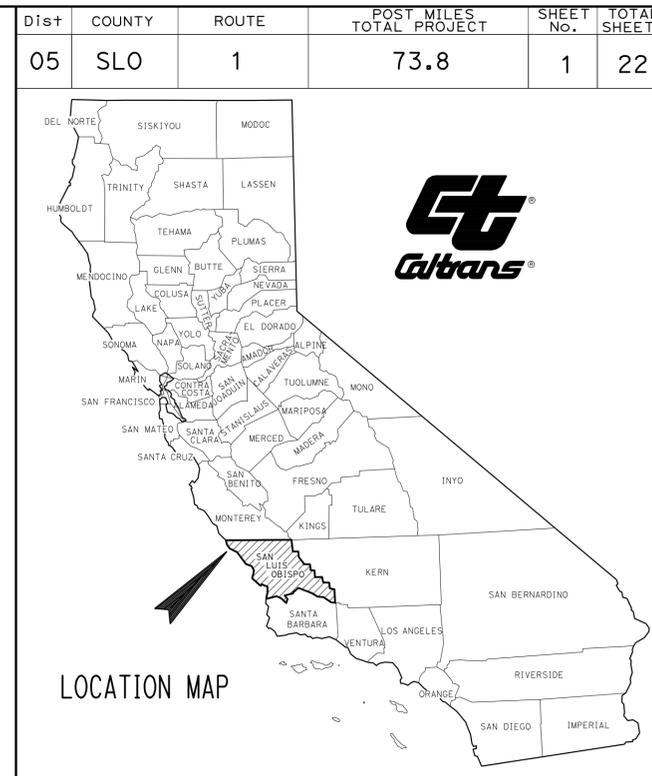
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY

IN SAN LUIS OBISPO COUNTY  
NEAR RAGGED POINT  
2.4 MILES NORTH OF SAN CARPOFORO CREEK BRIDGE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PROJECT MANAGER  
KEN DOSTALEK

DESIGN ENGINEER  
WENDY O'HALLORAN

*Brian Fuller* 3-23-09  
PROJECT ENGINEER DATE  
REGISTERED CIVIL ENGINEER

April 27, 2009  
PLANS APPROVAL DATE

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	2	22

*Brian Fuller* 3-23-09  
 REGISTERED CIVIL ENGINEER DATE  
 4-27-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**BRIAN FULLER**  
 No. 73000  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA

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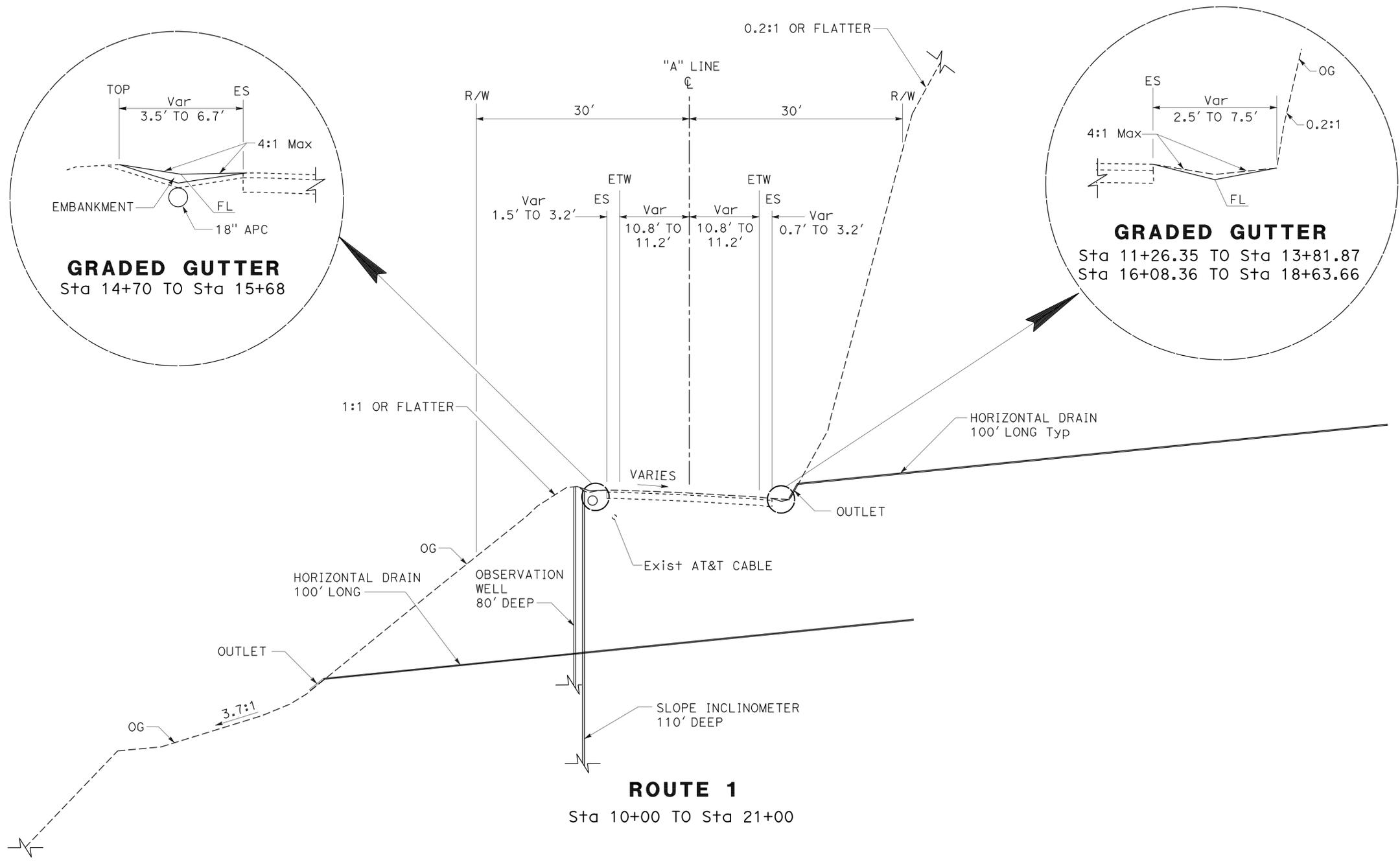
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR  
 WENDY O'HALLORAN

CALCULATED-DESIGNED BY  
 CHECKED BY

BRIAN FULLER  
 JO ANNE ENGELMANN

REVISED BY  
 DATE REVISED



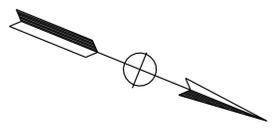
**TYPICAL CROSS SECTIONS**  
 NO SCALE  
**X-1**

**NOTES:**

- FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
- LOCATIONS OF UTILITY FACILITIES ARE APPROXIMATE.
- FROM STATION 13+00 TO 21+00, THE UG AT&T LINE ON THE WEST SIDE OF THE HIGHWAY IS NO LONGER IN USE.

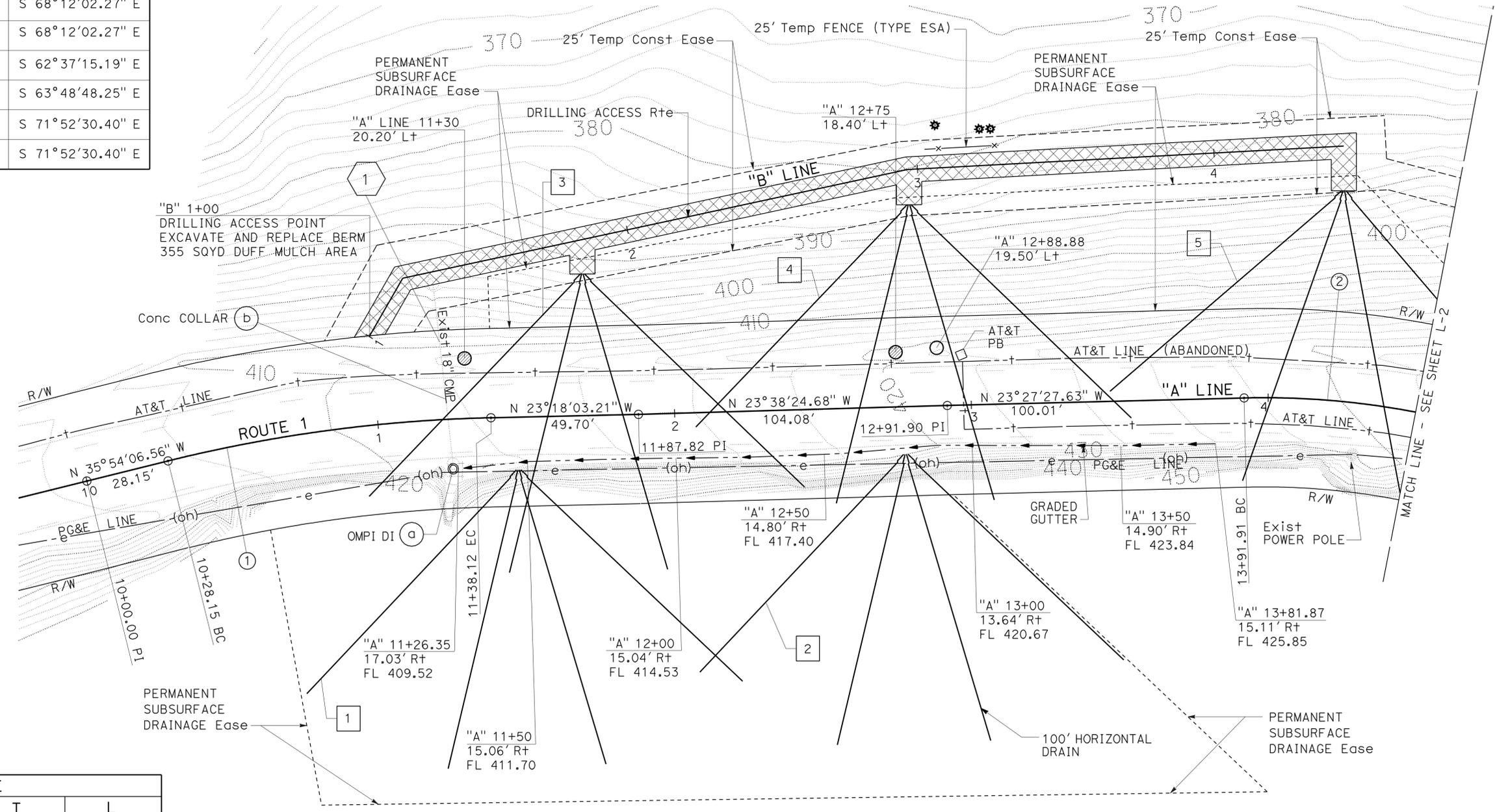
**LEGEND**

- SLOPE INCLINOMETER
- OBSERVATION WELL
- GRADED GUTTER
- \* LOCATION OF ENVIRONMENTALLY SENSITIVE PLANT
- No. HORIZONTAL DRAIN SYSTEM No.
- PERMANENT SUBSURFACE DRAINAGE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- ⬡ DRAINAGE SYSTEM No.
- DRAINAGE UNIT No.
- ⊠ DUFF MULCH



**HORIZONTAL DRAIN TABLE**

SYSTEM No.	STATION	OFFSET	BEARING
1	11+46.26	17.73 Rt	S 68°38'24.68" E
2	12+76.85	16.03 Rt	S 68°38'24.68" E
3	11+69.31	47.60 Lt	S 68°12'02.27" E
4	12+80.42	67.82 Lt	S 68°12'02.27" E
5	14+19.40	70.56 Lt	S 62°37'15.19" E
6	16+38.18	18.94 Rt	S 63°48'48.25" E
7	18+73.26	22.76 Rt	S 71°52'30.40" E
8	20+35.18	15.24 Rt	S 71°52'30.40" E



**CURVE TABLE**

No.	R	Δ	T	L
①	500.00'	12°36'04.79"	55.21'	109.97'
②	270.00'	25°30'04.12"	61.10'	120.17'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 FUNCTIONAL SUPERVISOR: WENDY O'HALLORAN  
 CALCULATED/DESIGNED BY: BRIAN FULLER  
 CHECKED BY: JO ANNE ENGELMANN  
 REVISED BY: BRIAN FULLER  
 DATE REVISED:

LAST REVISION: DATE PLOTTED => 14-JUL-2009  
 03-23-09 TIME PLOTTED => 13:02

**LAYOUT**  
SCALE: 1" = 20' L-1

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

FUNCTIONAL SUPERVISOR  
 WENDY O'HALLORAN

CALCULATED-DESIGNED BY  
 CHECKED BY

BRIAN FULLER  
 JO ANNE ENGELMANN

REVISED BY  
 DATE REVISED

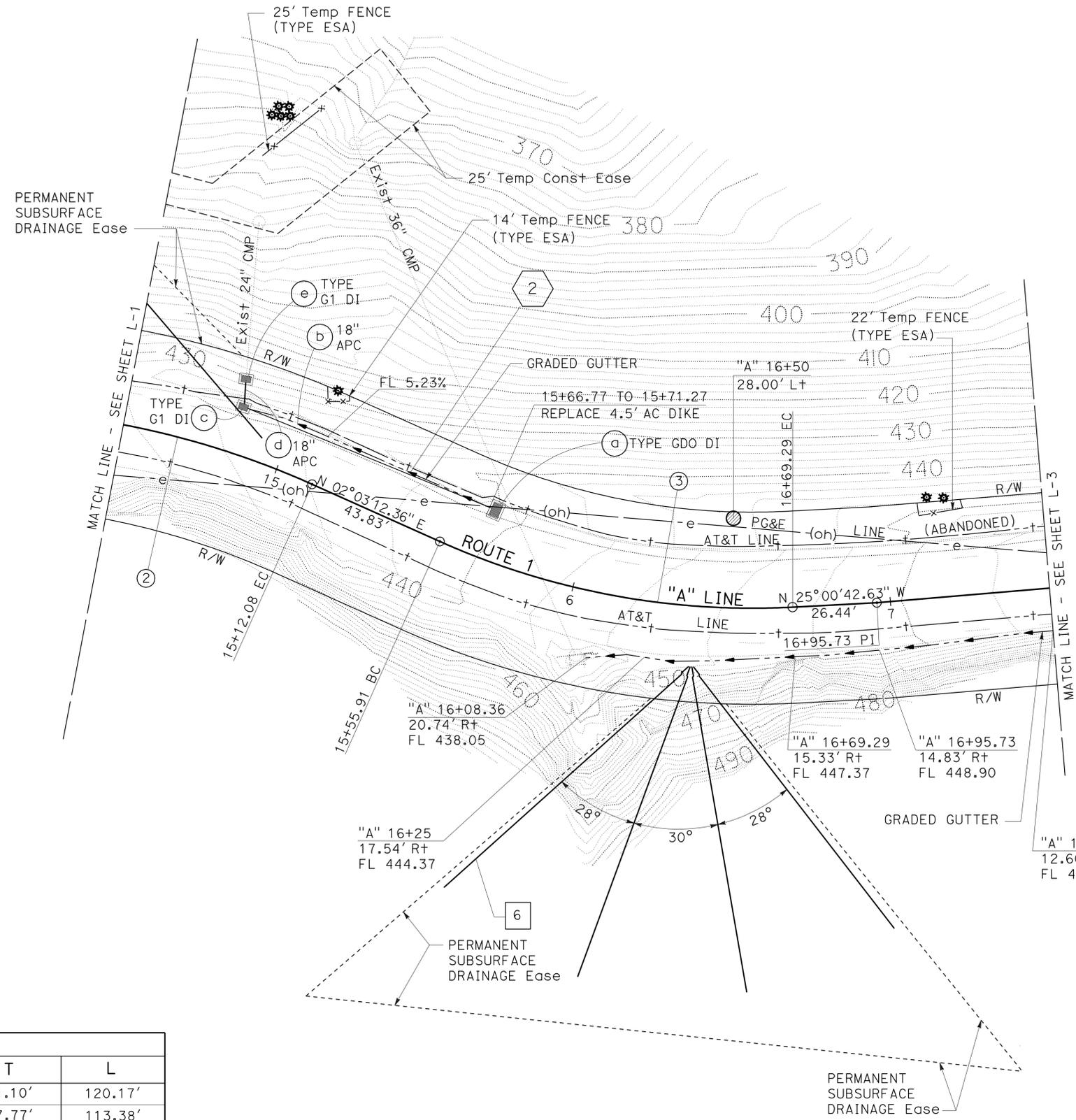
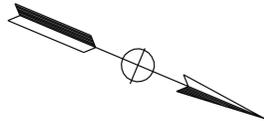
**NOTE:**  
 FOR COMPLETE RIGHT OF WAY DATA,  
 SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	4	22

3-23-09  
 REGISTERED CIVIL ENGINEER DATE  
 4-27-09  
 PLANS APPROVAL DATE

BRIAN FULLER  
 No. 73000  
 Exp. 12-31-10  
 CIVIL

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CURVE TABLE				
No.	R	Δ	T	L
②	270.00'	25°30'04.12"	61.10'	120.17'
③	240.00'	27°04'02.65"	57.77'	113.38'

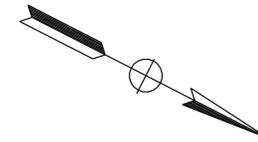
**LAYOUT**  
 SCALE: 1" = 20' **L-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	5	22

3-23-09  
 REGISTERED CIVIL ENGINEER DATE  
 4-27-09  
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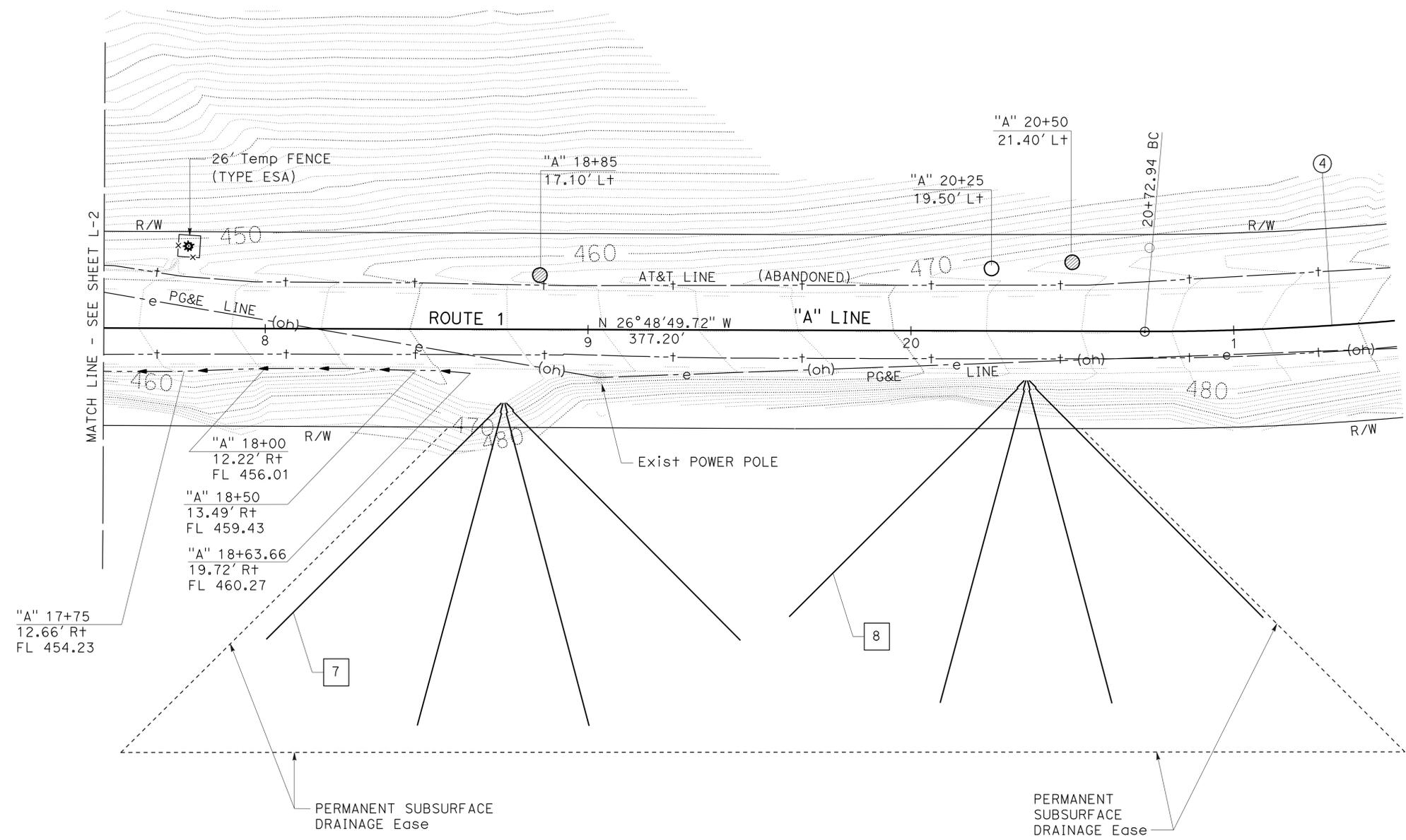
Brien Fuller  
 No. 73000  
 Exp. 12-31-10  
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 WENDY O'HALLORAN  
 FUNCTIONAL SUPERVISOR  
 CHECKED BY  
 BRIAN FULLER  
 REVISIONS BY  
 JO ANNE ENGELMANN  
 DATE REVISIONS



CURVE TABLE				
No.	R	Δ	T	L
④	900.00'	14°07'50.17"	111.55'	221.96'

**LAYOUT**  
 SCALE: 1" = 20' L-3

LAST REVISION DATE PLOTTED => 14-JUL-2009  
 03-23-09 TIME PLOTTED => 13:02

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	6	22

<i>Brian Fuller</i>	3-23-09
REGISTERED CIVIL ENGINEER	DATE
4-27-09	
PLANS APPROVAL DATE	

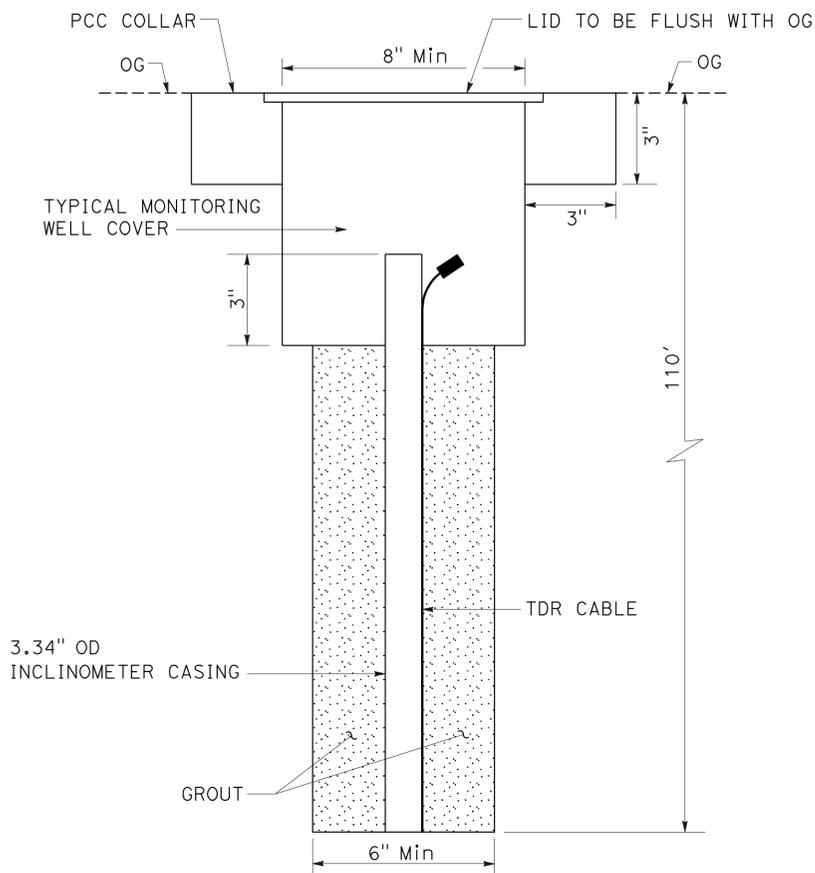
  

REGISTERED PROFESSIONAL ENGINEER
<b>BRIAN FULLER</b>
No. 73000
Exp. 12-31-10
CIVIL
STATE OF CALIFORNIA

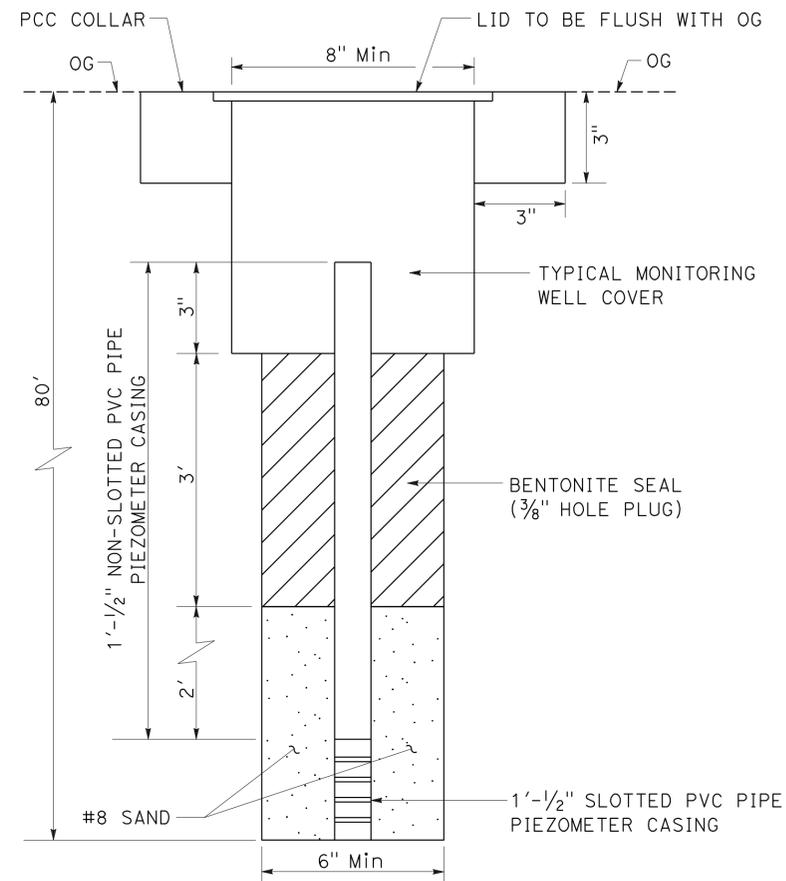
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**ABBREVIATION**

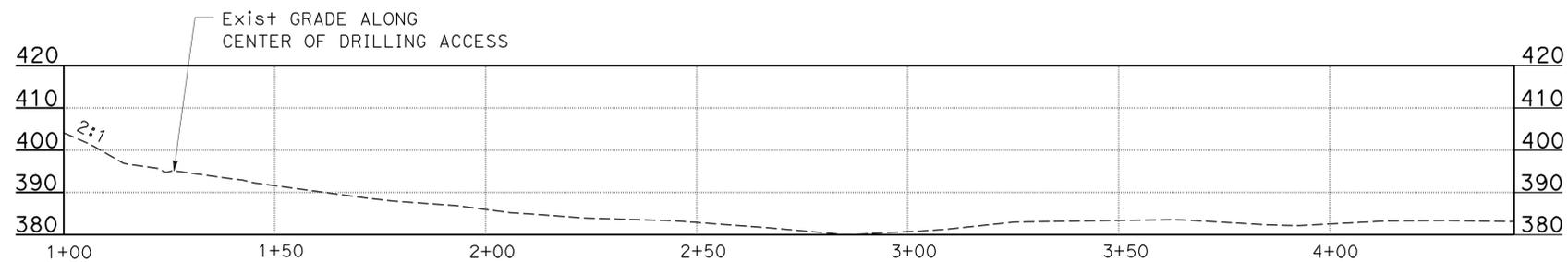
TDR - TIME DOMAIN REFLECTOMETRY



**SLOPE INCLINOMETER DETAIL**  
NO SCALE



**OBSERVATION WELL DETAIL**  
NO SCALE



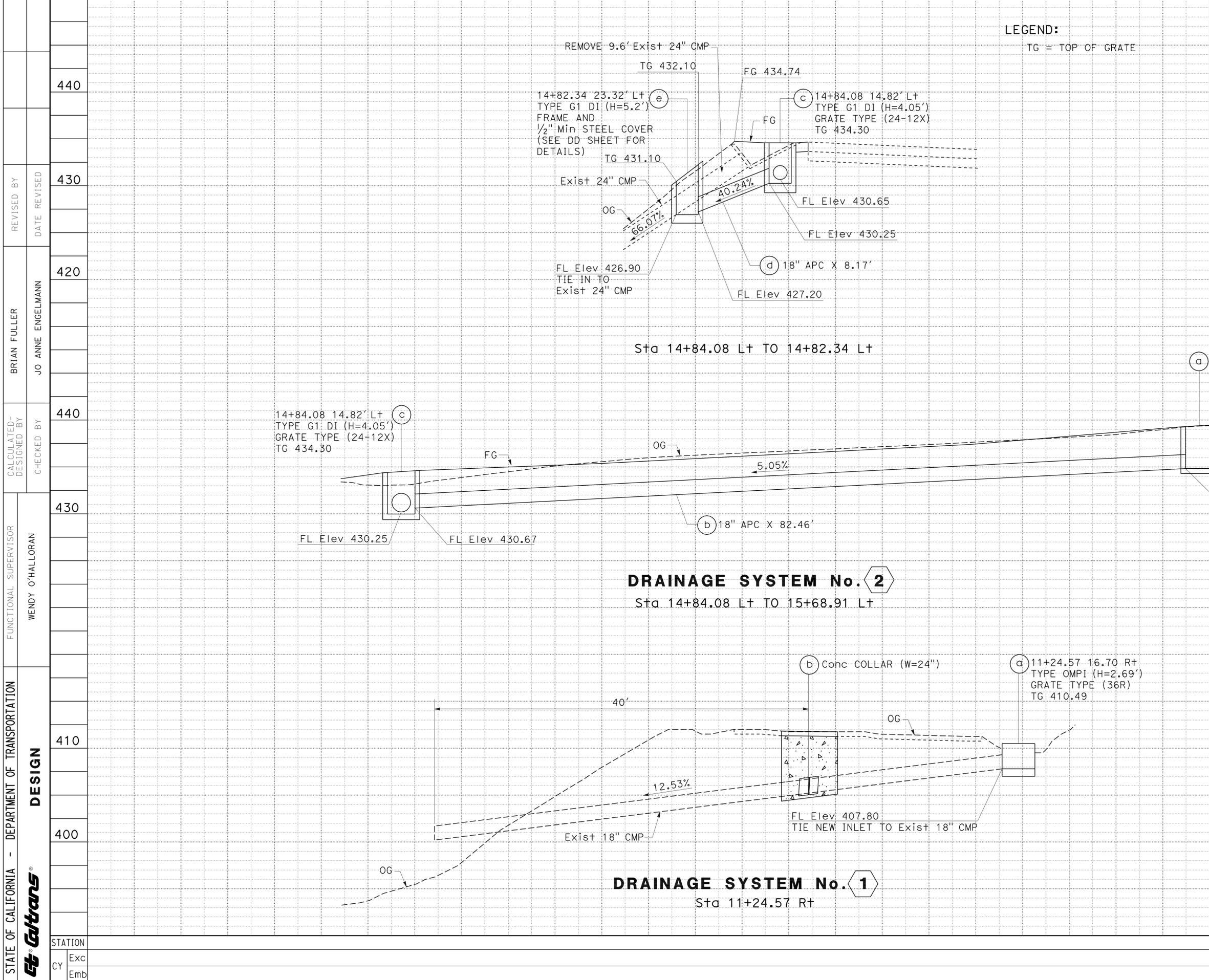
**Exist PROFILE ALONG DRILLING ACCESS Rte**

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

**CONSTRUCTION DETAILS**  
SCALE AS SHOWN  
**C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
<b>Caltrans</b>	
FUNCTIONAL SUPERVISOR	WENDY O'HALLORAN
CALCULATED-DESIGNED BY	CHECKED BY
BRIAN FULLER	JO ANNE ENGELMANN
REVISED BY	DATE REVISED





**LEGEND:**  
 TG = TOP OF GRATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	7	22
			3-23-09	DATE	
REGISTERED CIVIL ENGINEER			DATE		
440	4-27-09		PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SUPERVISOR	REVISOR
		WENDY O'HALLORAN	BRIAN FULLER
Exc	Emb	CHECKED BY	DATE REVISED
		JO ANNE ENGELMANN	440
CY	STATION	CALCULATED-DESIGNED BY	DATE
		BRIAN FULLER	440
TOTAL		440	

**DRAINAGE PROFILES**  
 SCALE: Horiz 1"=5'  
 Vert 1"=5' **DP-1**

LAST REVISION DATE PLOTTED => 14-JUL-2009 03-23-09 TIME PLOTTED => 13:03

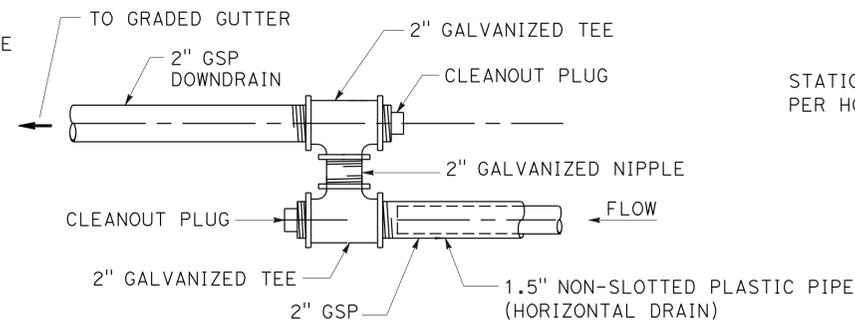
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	8	22

3-23-09  
 REGISTERED CIVIL ENGINEER DATE  
 4-27-09  
 PLANS APPROVAL DATE  
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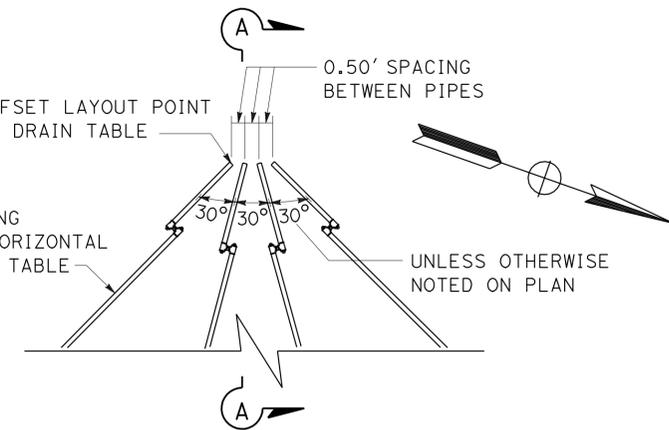
REGISTERED PROFESSIONAL ENGINEER  
**BRIAN FULLER**  
 No. 73000  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA

**NOTES:**

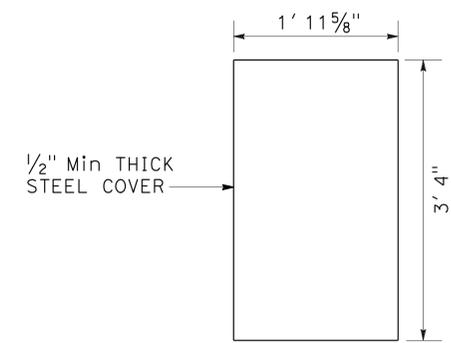
- CONNECTOR UNIT AND DOWNDRAIN SHALL BE CONSTRUCTED AT FINISHED GRADE.
- AREA ADJACENT TO CONNECTOR AND DOWNDRAIN TO BE PROTECTED DURING PAINTING.



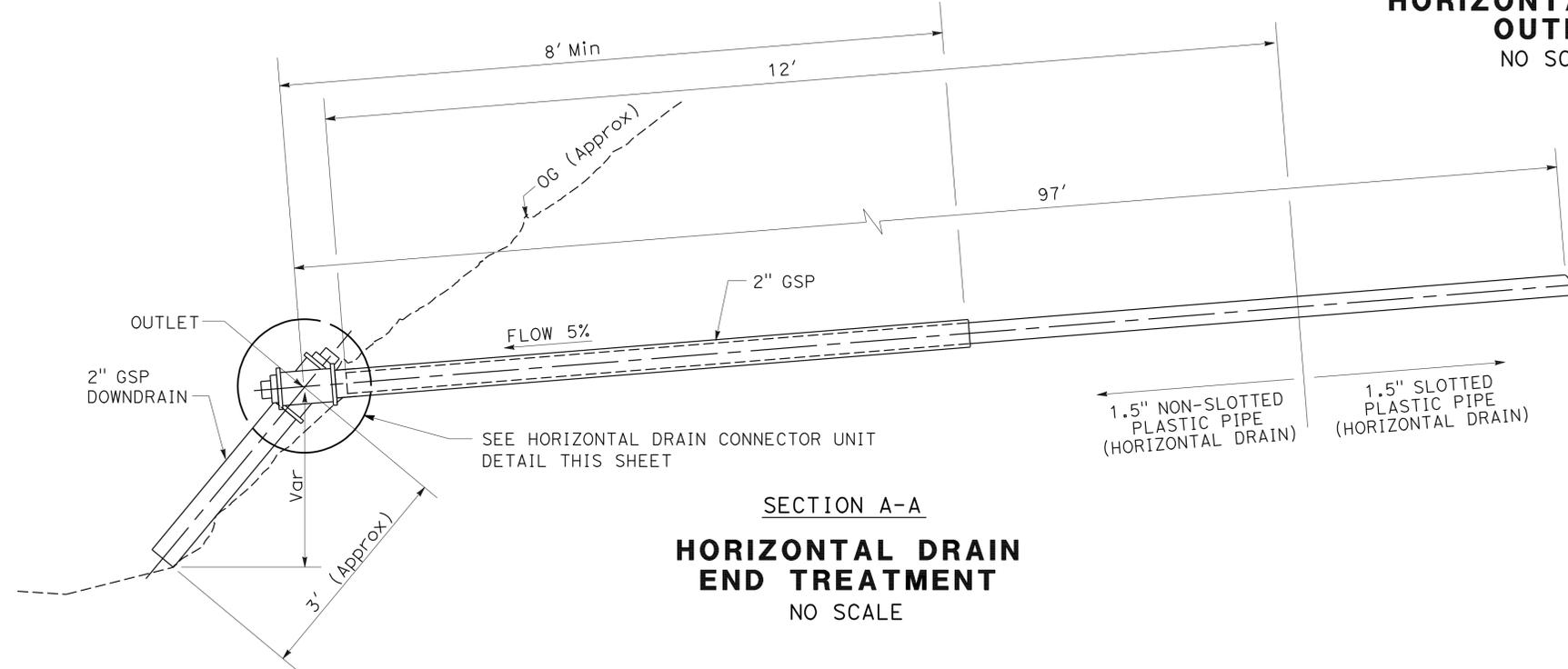
**HORIZONTAL DRAIN CONNECTOR UNIT**  
NO SCALE



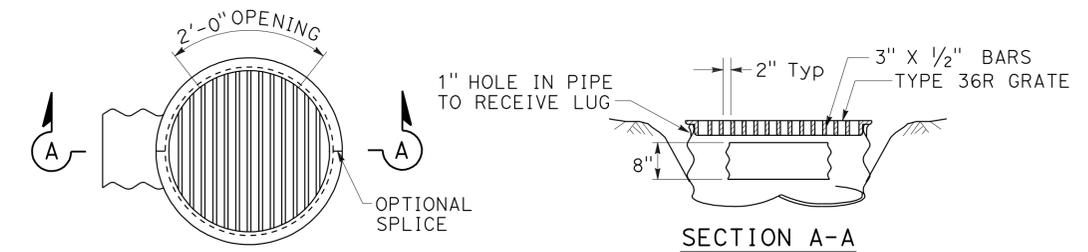
**HORIZONTAL DRAIN OUTLET**  
NO SCALE



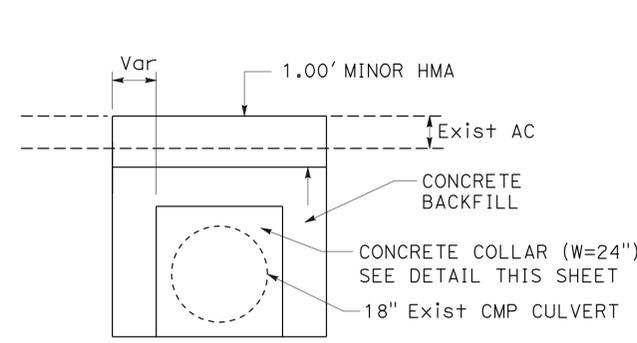
**DRAINAGE INLET COVER**  
**DRAINAGE SYSTEM No. 2 e**  
NO SCALE



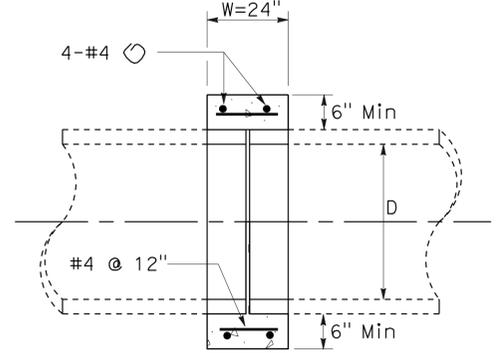
**HORIZONTAL DRAIN END TREATMENT**  
NO SCALE



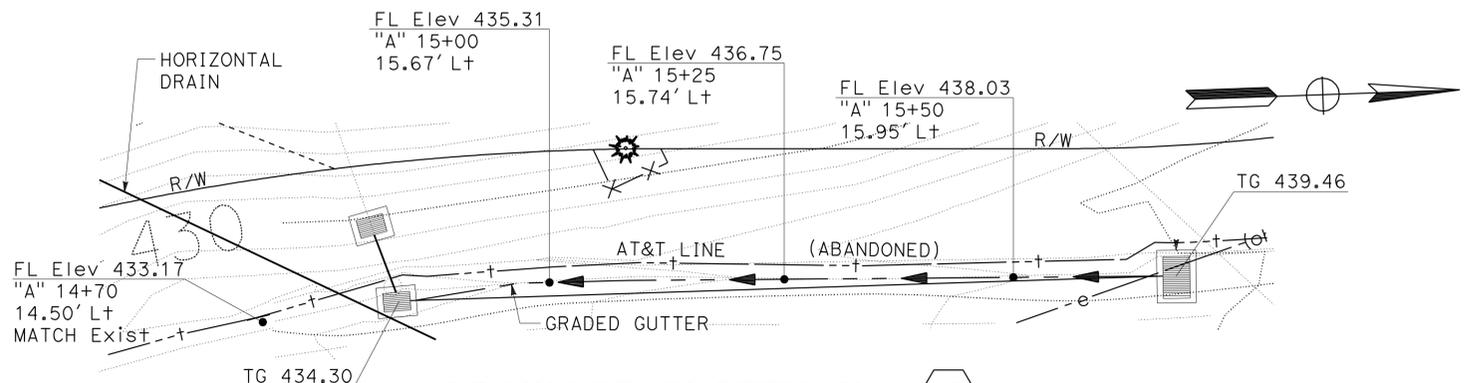
**TYPE OMPI WITH 36R GRATE**  
STEEL PIPE INLET WITH GRATE  
**DRAINAGE SYSTEM No. 1 a**  
NO SCALE



**TRENCH REPAIR**  
NO SCALE



**CONCRETE COLLAR (JOINT REPAIR)**  
NO SCALE



**DRAINAGE SYSTEM No. 2**  
SCALE: 1"=10'

**DRAINAGE SYSTEM No. 1 b**

**DRAINAGE DETAILS**  
SCALE AS SHOWN **DD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 WENDY O'HALLORAN  
 FUNCTIONAL SUPERVISOR  
 CHECKED BY  
 JO ANNE ENGELMANN  
 REVISOR  
 BRIAN FULLER  
 DATE REVISOR  
 DATE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR  
 WENDY O'HALLORAN  
 CALCULATED-DESIGNED BY  
 BRIAN FULLER  
 CHECKED BY  
 JO ANNE ENGELMANN  
 REVISED BY  
 DATE REVISD

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	9	22

3-23-09  
 REGISTERED CIVIL ENGINEER DATE  
 4-27-09  
 PLANS APPROVAL DATE

BRIAN FULLER  
 No. 73000  
 Exp. 12-31-10  
 CIVIL  
 REGISTERED PROFESSIONAL ENGINEER  
 STATE OF CALIFORNIA

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### ALLOWABLE PIPE MATERIAL

DESIGNATION	RCP	PLASTIC SMOOTH INTERIOR
18" APC	18"	18"
JOINT TYPE	POSITIVE	DOWNDRAIN OR POSITIVE
THICKNESS	2"	0.050"
COATING	NONE	NONE

### DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT No.	CONCRETE BACKFILL		36" CORRUGATED STEEL PIPE INLET (0.109" THICK)	MINOR CONCRETE (MINOR STRUCTURE)	MINOR HOT MIX ASPHALT	Misc IRON AND STEEL	18" AI+ PIPE CULVERT	REMOVE PIPE	(N) INLET TYPE OMPI	(N) FRAME AND 1/2" Min STEEL COVER	(N) FRAME & GRATE (36R)	(N) FRAME & GRATE (24-12X)	(N) (H) HEIGHT OF INLET	DESCRIPTION	STATION	DRAINAGE PLAN SHEET No.
			CY	LF														
DP-1	1	a		2.7	0.4			236			1		1		2.69	TYPE OMPI DI	"A" 11+24.57, 16.70' R+	D-1
DP-1	1	b	5.0		0.3	2.5										JOINT REPAIR WITH Conc COLLAR	"A" 11+24	D-1
DP-1	2	a			2.2			473						1	4.63	TYPE GDO DI	"A" 15+68.91, 17.91' L+	D-1
		b							82.5							18" PIPE	"A" 14+82 TO 15+68	
		c			1.2			239						1	4.05	TYPE G1 DI	"A" 14+84.08, 14.82' L+	
		d							8.2							18" PIPE	"A" 14+82	
DP-1	2	e			1.4			208		9.6		1			5.20	TYPE G1 DI	"A" 14+82.19, 23.32' L+	D-1
TOTAL			5.0	2.7	5.5	2.5	1156	90.7	9.6							TOTAL		

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

### HORIZONTAL DRAIN QUANTITIES

SYSTEM No.	PLAN SHEET No.	STATION	DRILL HOLE (HORIZONTAL DRAIN)	FURNISH AND INSTALL DRAIN PIPE (HORIZONTAL DRAIN)	TEE (N)	NIPPLE (N)
			LF	LF	EA	EA
1	L-1	11+46.26	400	400	8	4
2	L-1	12+76.85	400	400	8	4
3	L-1	11+69.31	400	400	8	4
4	L-1	12+80.42	400	400	8	4
5	L-1	14+19.40	400	400	8	4
6	L-2	16+38.18	400	400	8	4
7	L-3	18+73.26	400	400	8	4
8	L-3	20+35.18	400	400	8	4
TOTAL			3200	3200	64	32

## DRAINAGE QUANTITIES DQ-1

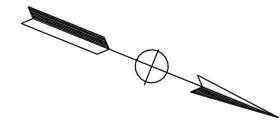
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	10	22

*Brian Fuller* 3-23-09  
 REGISTERED CIVIL ENGINEER DATE

4-27-09  
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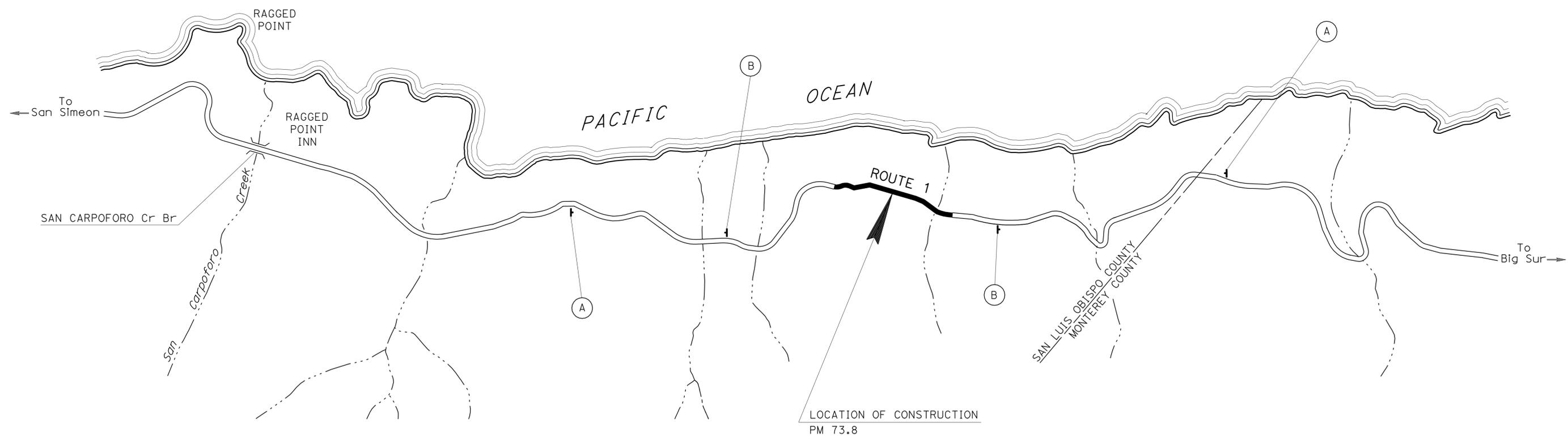
REGISTERED PROFESSIONAL ENGINEER  
**BRIAN FULLER**  
 No. 73000  
 Exp. 12-31-10  
 CIVIL  
 STATE OF CALIFORNIA



### STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZE	No. OF SIGNS
(A)	W20-1	48" X 48"	ROAD WORK AHEAD	1 - 4" X 4"	2
(B)	G20-2	36" X 18"	END ROAD WORK	1 - 4" X 4"	2

NOTE: EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: WENDY O'HALLORAN  
 CALCULATED-DESIGNED BY: CHECKED BY:  
 BRIAN FULLER  
 JO ANNE ENGELMANN  
 REVISED BY: DATE REVISED:  
 BORDER LAST REVISED 4/11/2008

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

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



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	11	22

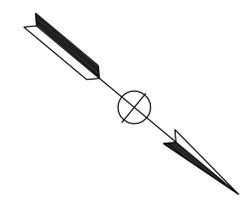
  

<i>Brian Fuller</i>	3-23-09
REGISTERED CIVIL ENGINEER	DATE
4-27-09	
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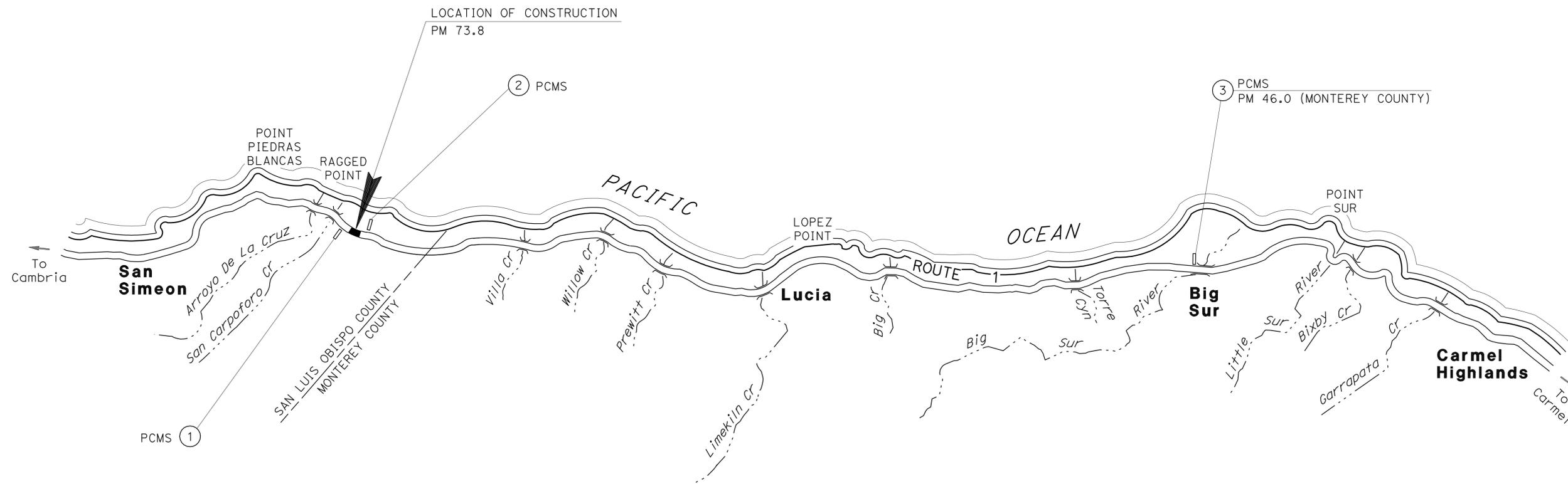
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**ABBREVIATION**

PCMS - PORTABLE CHANGEABLE MESSAGE SIGN



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b>
<b>DESIGN</b>
FUNCTIONAL SUPERVISOR
WENDY O'HALLORAN
CALCULATED-DESIGNED BY
CHECKED BY
BRIAN FULLER
JO ANNE ENGELMANN
REVISED BY
DATE REVISED

**TRAFFIC HANDLING PLAN**

NO SCALE

**TH-1**

THIS PLAN ACCURATE FOR TRAFFIC HANDLING WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	1	73.8	12	22

*Brian Fuller* 3-23-09  
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4-27-09  
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 CIVIL  
 STATE OF CALIFORNIA

### ROADWAY QUANTITIES

PLAN SHEET No.	STATION	ROADWAY EXCAVATION	OBSERVATION WELL	SLOPE INCLINOMETER	(N) EMBANKMENT	DESCRIPTION
		CY	EA	EA	CY	
L-1	"A" 11+00	3				GRADING FOR DRILLING ACCESS
L-1	"A" 11+26 TO 13+82	2.5				GRADED GUTTER
L-1	"A" 11+30, 20.20' Lt		1			OBSERVATION WELL
L-1	"A" 12+75, 18.40' Lt		1			OBSERVATION WELL
L-1	"A" 12+88.88, 19.50' Lt			1		SLOPE INCLINOMETER
L-2	"A" 16+08 TO 18+64	0.7				GRADED GUTTER
L-2	"A" 16+50, 28.00' Lt		1			OBSERVATION WELL
L-2	"A" 18+85, 17.10' Lt		1			OBSERVATION WELL
L-2	"A" 20+25, 19.50' Lt			1		SLOPE INCLINOMETER
L-2	"A" 20+50, 21.40' Lt		1			OBSERVATION WELL
D-1	"A" 14+70 TO 15+68				3.9	FILL FOR SWALE OVER NEW PIPE
<b>TOTAL</b>		6.2	5	2		

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

### WATER POLLUTION CONTROL QUANTITIES

STATION	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY CHECK DAM	TEMPORARY FENCE (TYPE ESA)	DESCRIPTION
	EA	LF	LF	
"A" 14+82 TO 15+68 Lt		85		IN Exist ROADSIDE DITCH
"A" 14+84.08, 14.82 Lt	1			NEW G1
"A" 15+68.91, 17.91 Lt	1			NEW GDO
			112	PROTECT ENVIRONMENTALLY SENSITIVE PLANTS
<b>TOTAL</b>	2	85	112	

### PERMANENT EROSION CONTROL

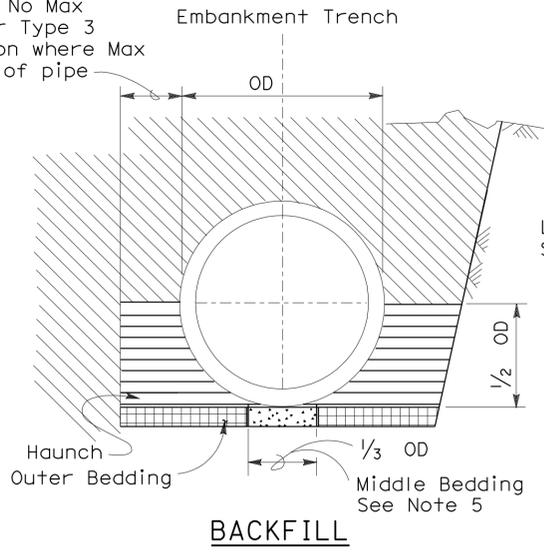
STATION	DUFF MULCH	FIBER ROLL	EROSION CONTROL (COMPOST BLANKET)	(N) SEED	DESCRIPTION
	SQYD	LF	CY	LB	
"A" 10+95 TO 14+24	355				DUFF MULCH FOR DRILLING ACCESS
"A" 11+11, 31' Lt TO 14+34, 59' Lt		320			BELOW HORIZONTAL DRAIN INSTALLATION WEST SIDE OF HIGHWAY
"A" 11+46, 17' Rt		40			BELOW HORIZONTAL DRAIN INSTALLATION AND NEW DI
"A" 12+77, 17' Rt		35			BELOW HORIZONTAL DRAIN INSTALLATION
"A" 16+38, 17' Rt		35			BELOW HORIZONTAL DRAIN INSTALLATION
"A" 18+74, 20' Rt		35			BELOW HORIZONTAL DRAIN INSTALLATION
"A" 20+36, 17' Rt		35			BELOW HORIZONTAL DRAIN INSTALLATION
			5	0.9	STABILIZE DISTURBED SOIL
<b>TOTAL</b>	355	500	5		

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

## SUMMARY OF QUANTITIES Q-1

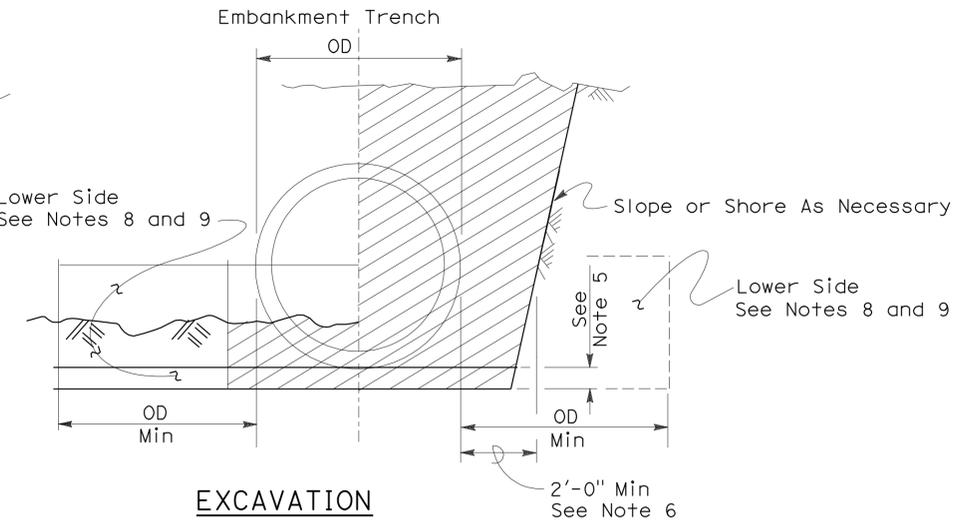
To accompany plans dated 4-27-09

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.

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

**INSTALLATION TYPE 1**

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

**INSTALLATION TYPE 2**

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

**INSTALLATION TYPE 3**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**EXCAVATION AND BACKFILL  
CONCRETE PIPE CULVERTS**

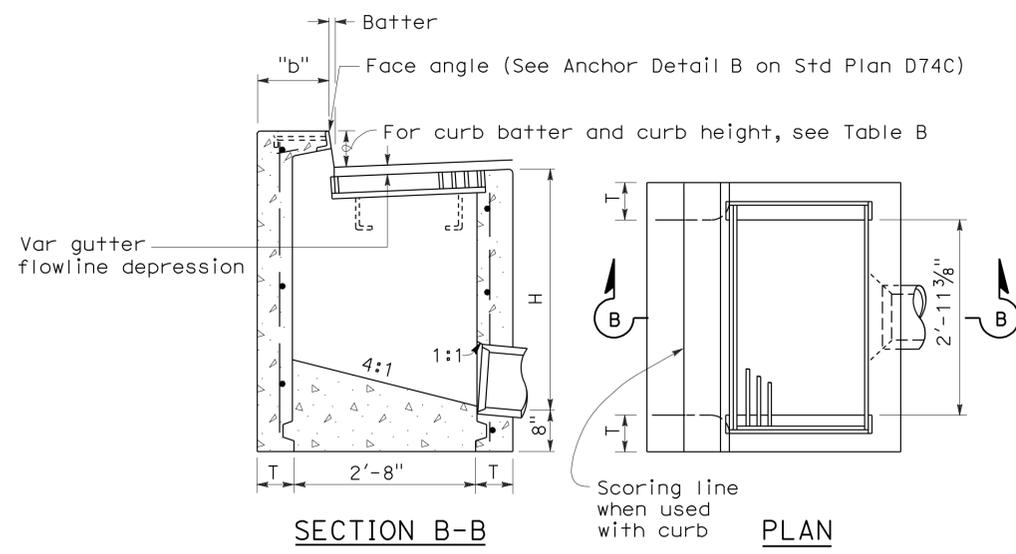
NO SCALE

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

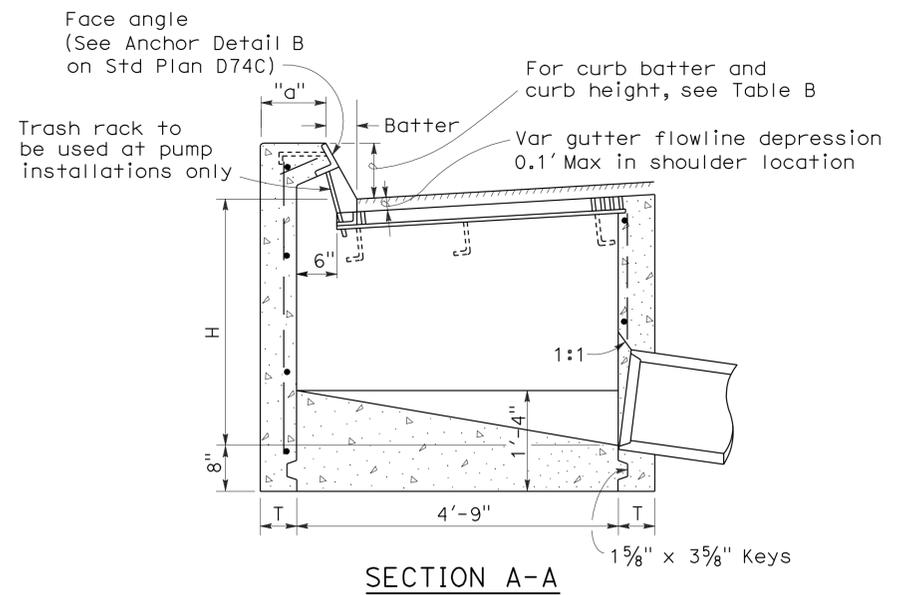
2006 REVISED STANDARD PLAN RSP A62DA

To accompany plans dated 4-27-09

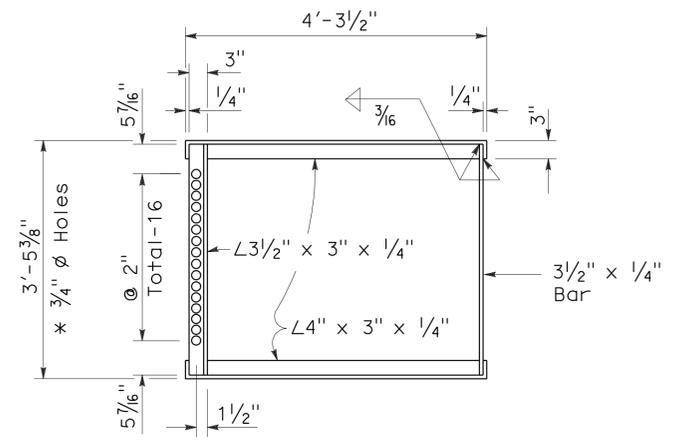
2006 REVISED STANDARD PLAN RSP D74B



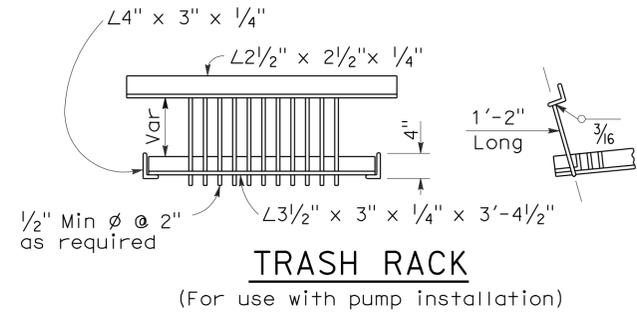
TYPE GO



SECTION A-A



GRATE FRAME FOR TYPE GDO INLET



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

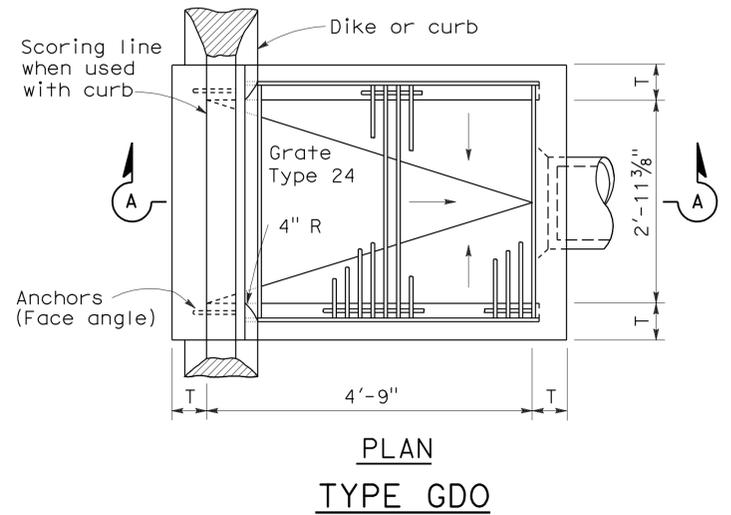
Table based on 8" floor slab, no deduction for pipe openings, and curb type giving highest quantity of concrete. No deductions or adjustments are to be made to these quantities because of pipe openings, different floor alternatives or different curb type.

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"

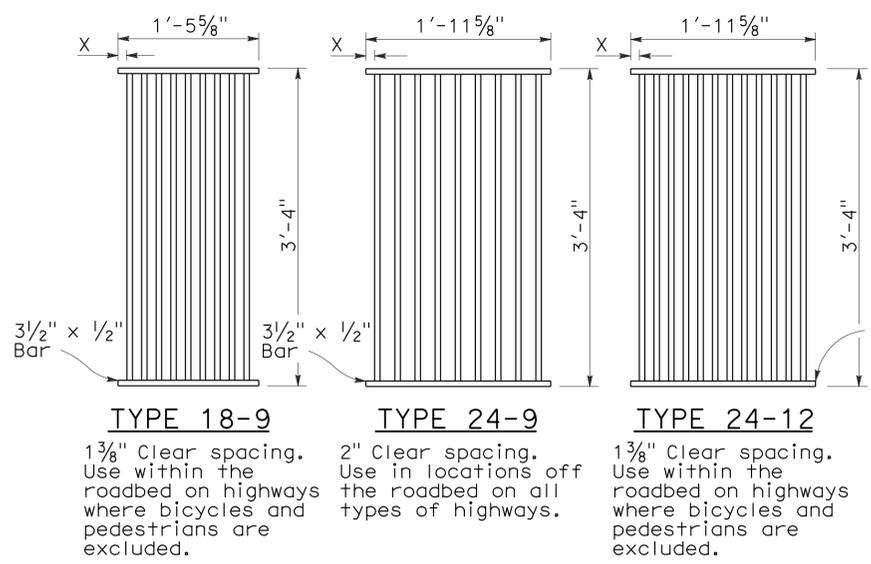
NOTES:

- "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.

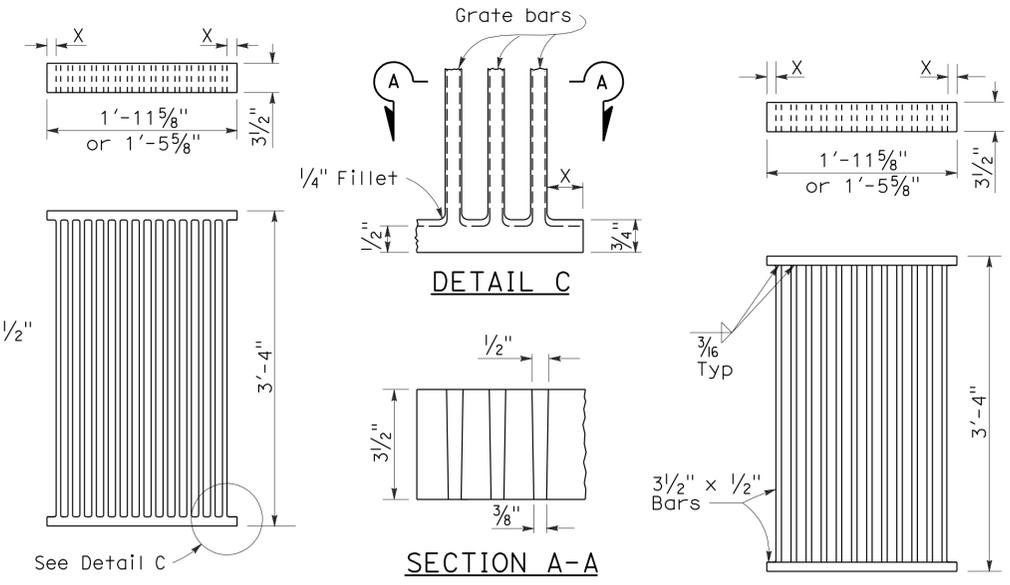


PLAN  
TYPE GDO

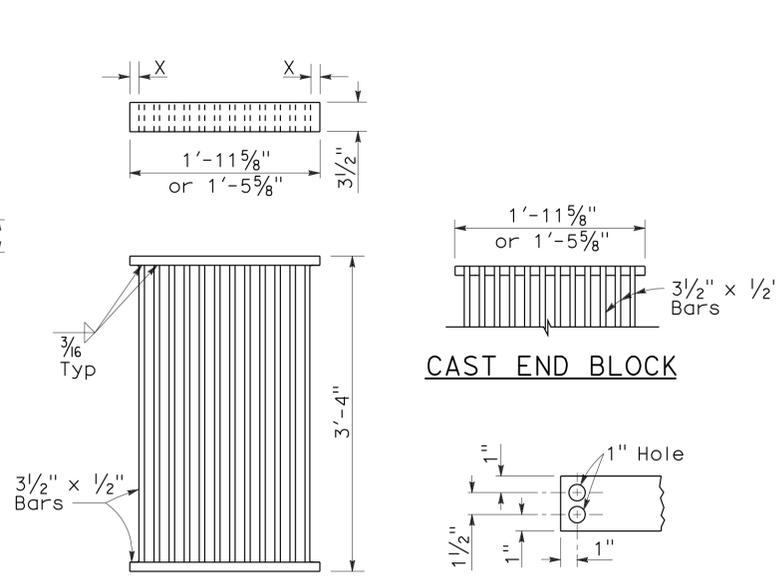
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**DRAINAGE INLETS**  
NO SCALE



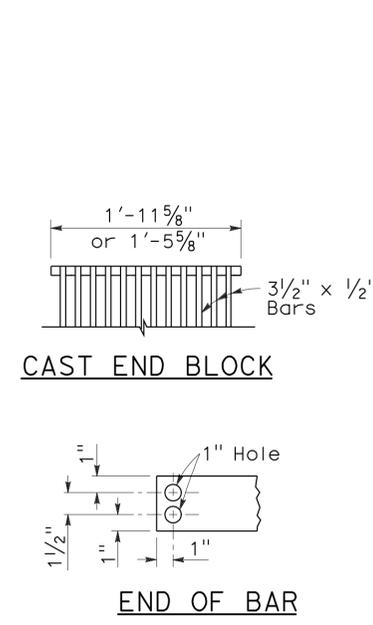
**RECTANGULAR GRATE DETAILS**  
(See table below)



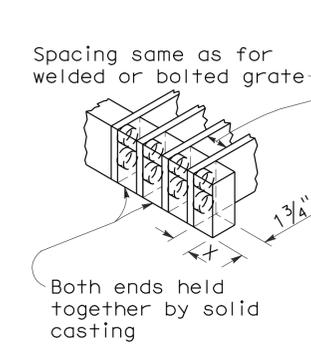
**ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE**



**ALTERNATIVE WELDED GRATE**



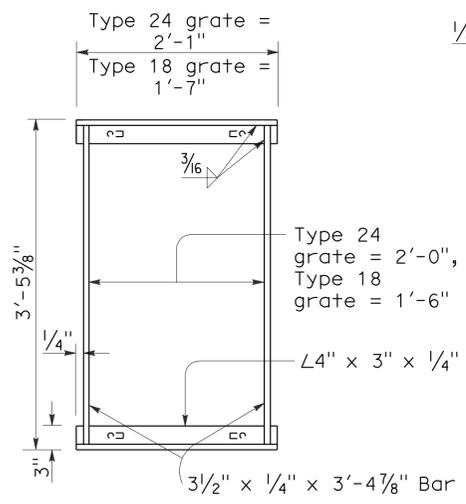
**CAST END BLOCK**



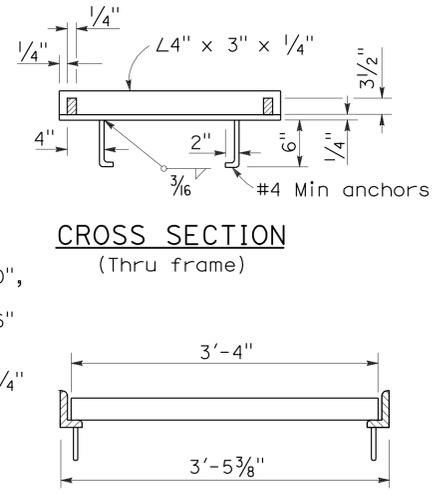
**END OF BAR**



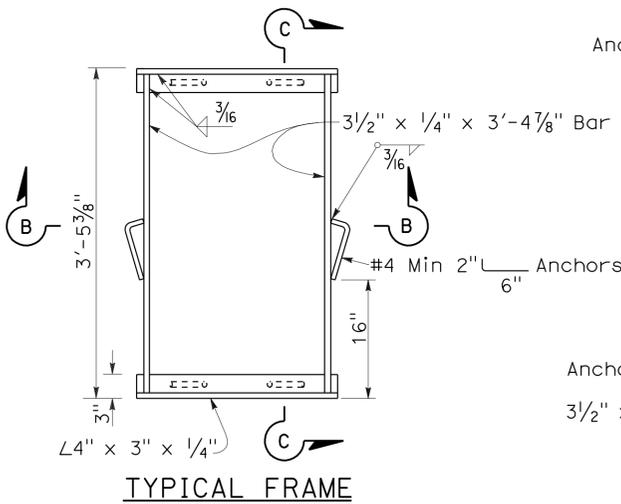
**ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE**



**TYPICAL FRAME**

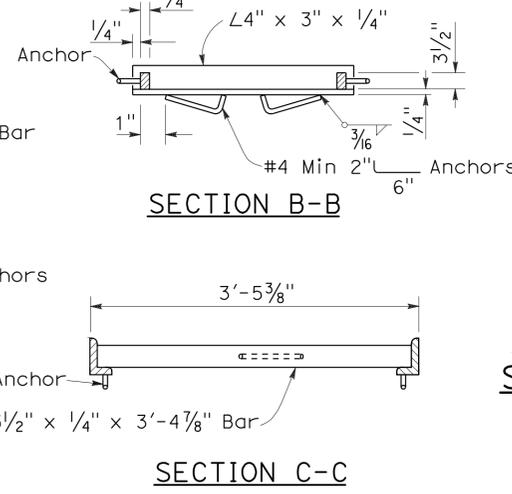


**LONGITUDINAL SECTION**  
(Thru frame and grate)



**TYPICAL FRAME**

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



**SECTION B-B**

**SECTION C-C**

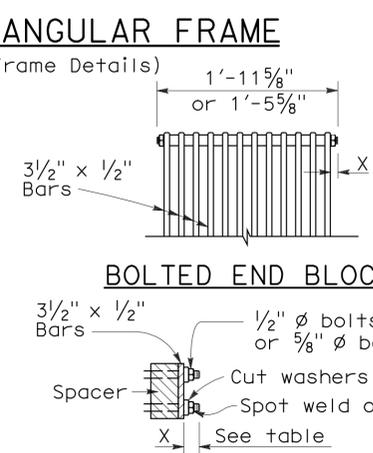
**RECTANGULAR FRAME DETAILS**  
(For all rectangular grates)

**GRATE BAR SPACING TABLE**

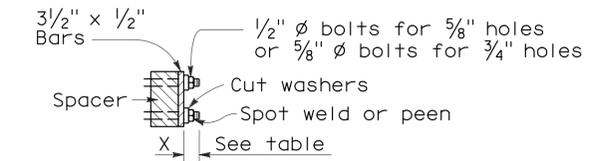
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

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

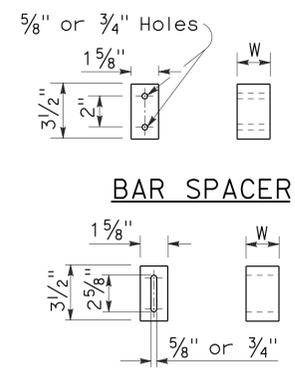


**BOLTED END BLOCK**



**BOLTING DETAIL**

**ALTERNATIVE BOLTED GRATE**

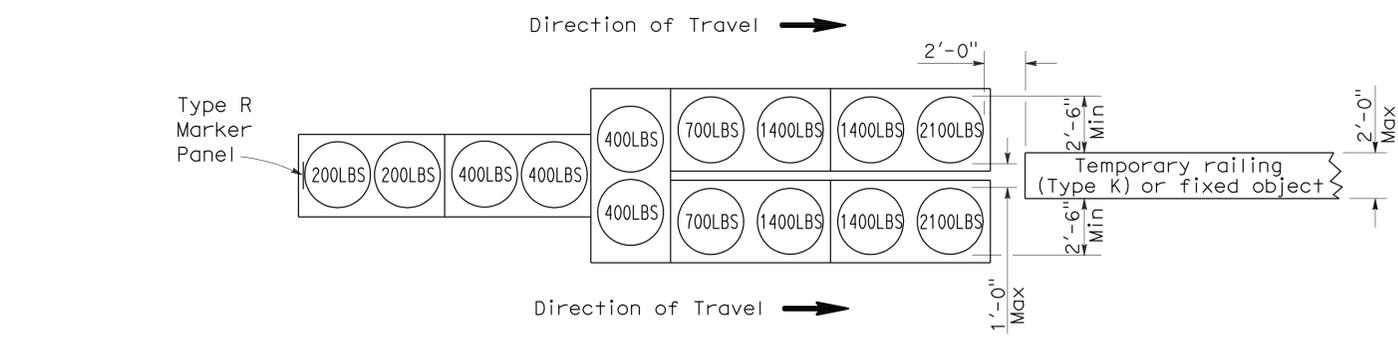


**BAR SPACER**

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

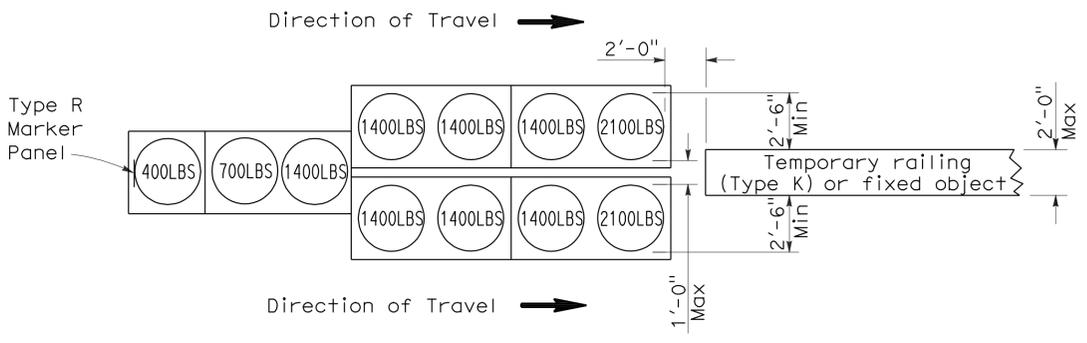
**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**  
(See General Notes, No 8)

To accompany plans dated 4-27-09



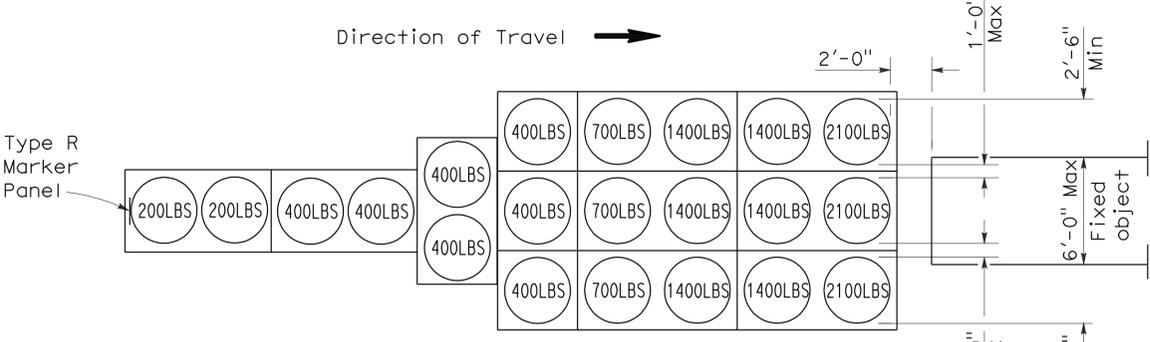
**ARRAY 'TU14'**

Approach speed 45 mph or more



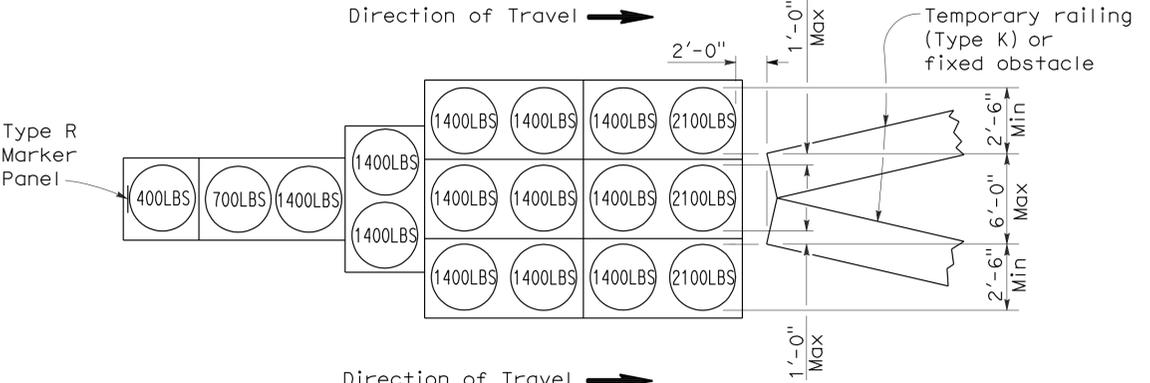
**ARRAY 'TU11'**

Approach speed less than 45 mph



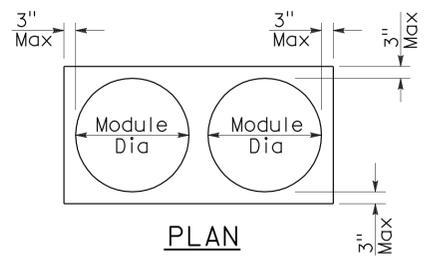
**ARRAY 'TU21'**

Approach speed 45 mph or more

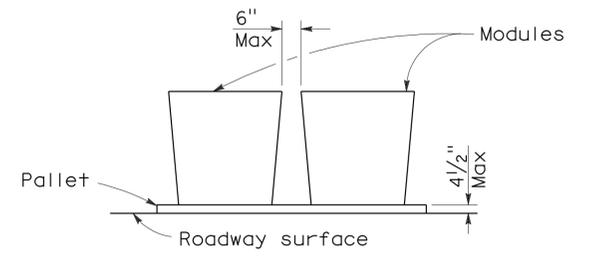


**ARRAY 'TU17'**

Approach speed less than 45 mph



**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
05	SLO	1	73.8	17	22

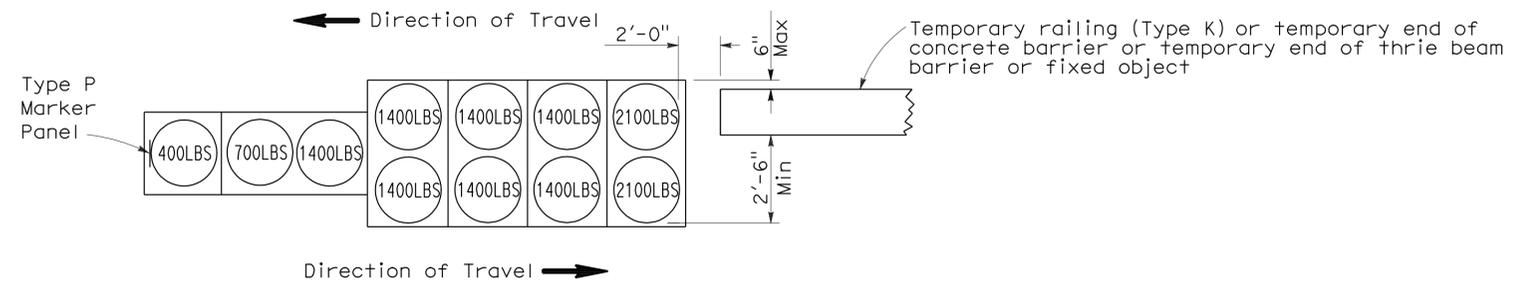
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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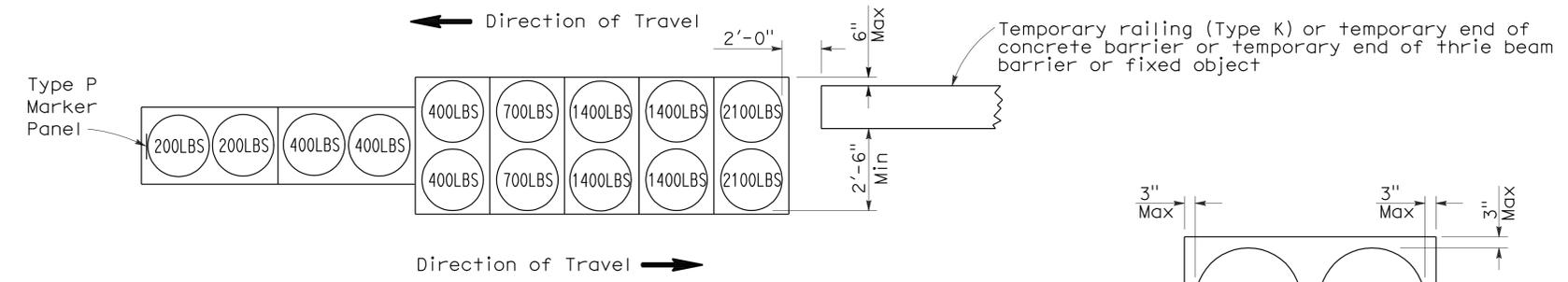
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 4-27-09



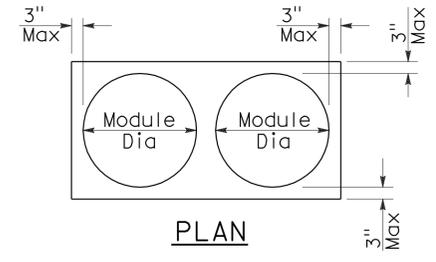
**ARRAY 'TB11'**

Approach speed less than 45 mph

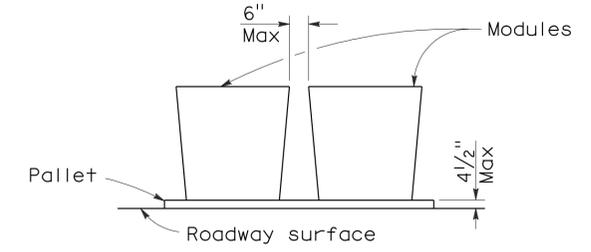


**ARRAY 'TB14'**

Approach speed 45 mph or more



PLAN



ELEVATION

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1B**

212

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	1	73.8	18	22

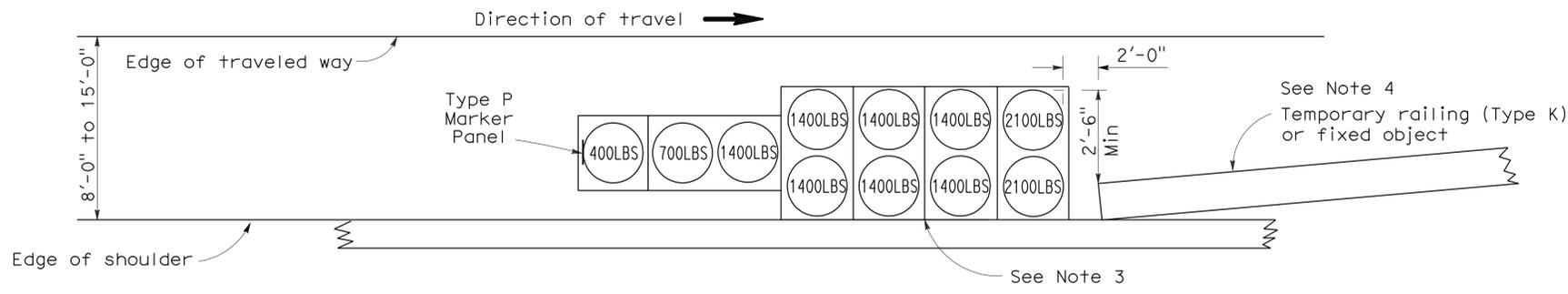
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

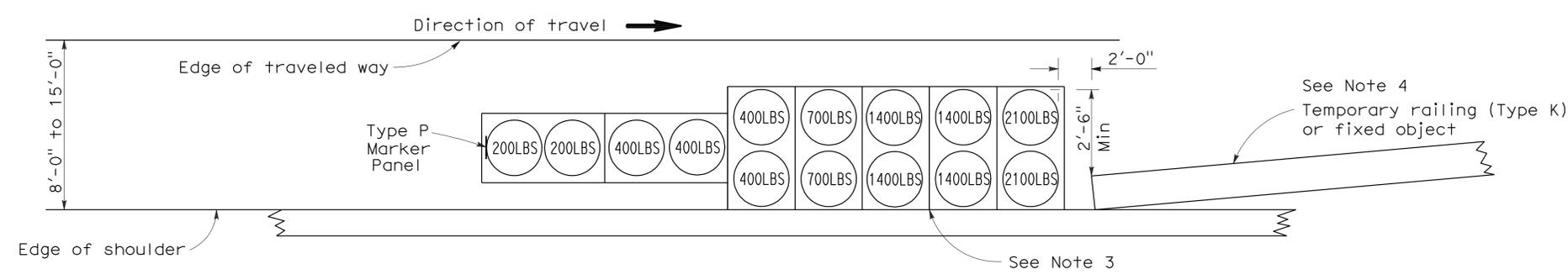
*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

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To accompany plans dated 4-27-09



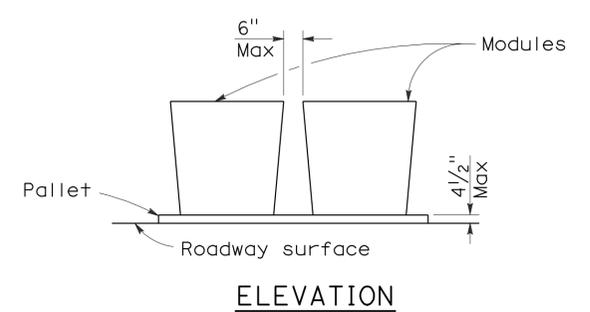
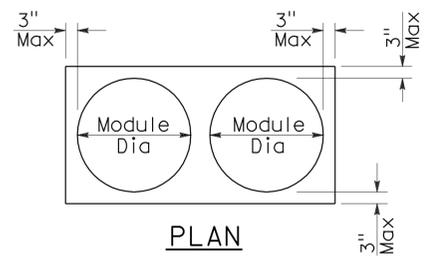
**ARRAY 'TS11'**  
Approach speed less than 45 mph  
See Note 9



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

**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.



**CRASH CUSHION PALLET DETAIL**  
See Note 11

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

213

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	1	73.8	19	22

Robert B. Schott  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS APPROVAL DATE  
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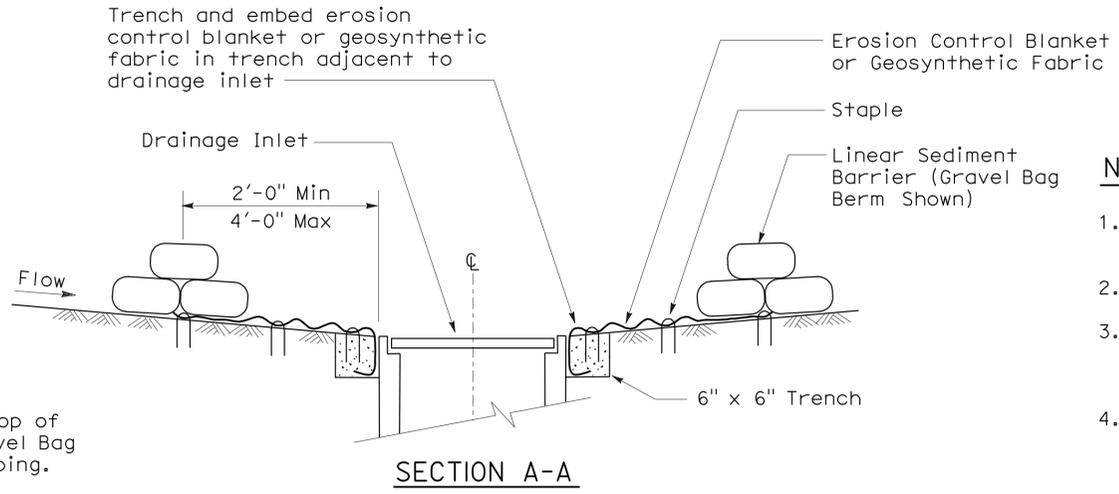
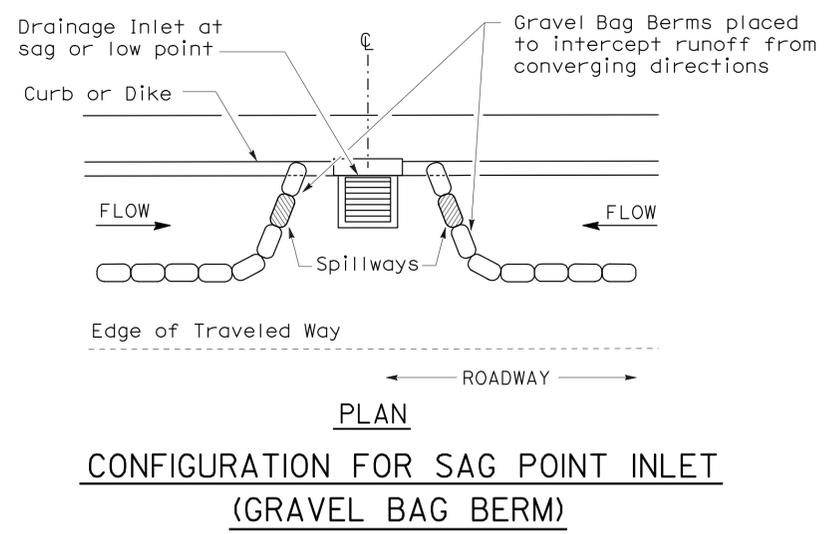


To accompany plans dated 4-27-09

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

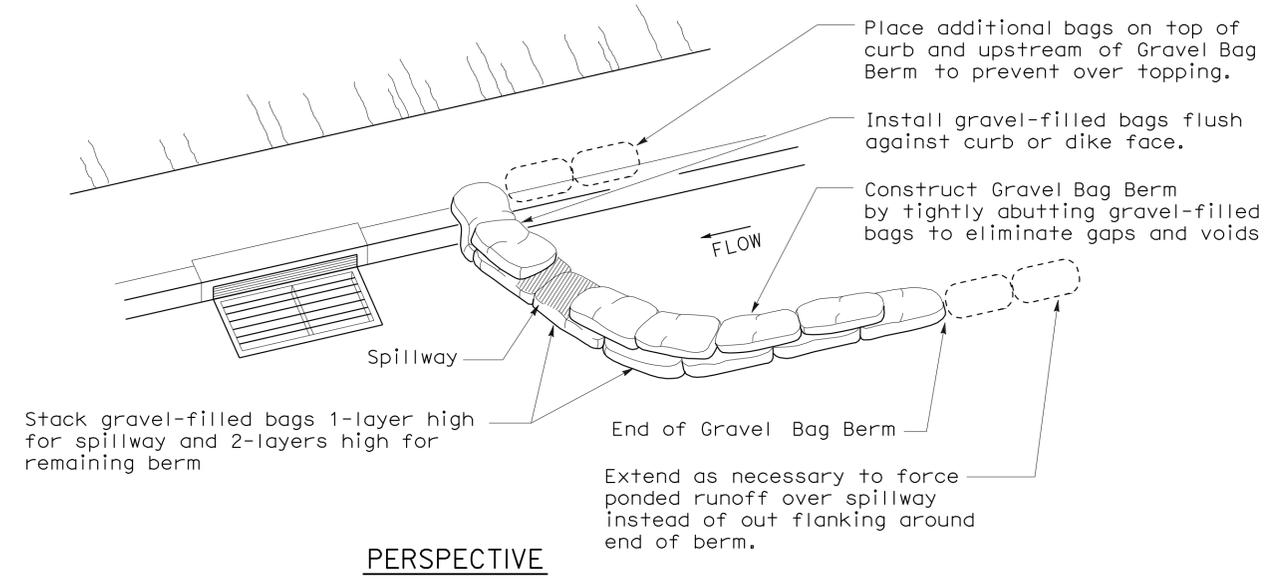
SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

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

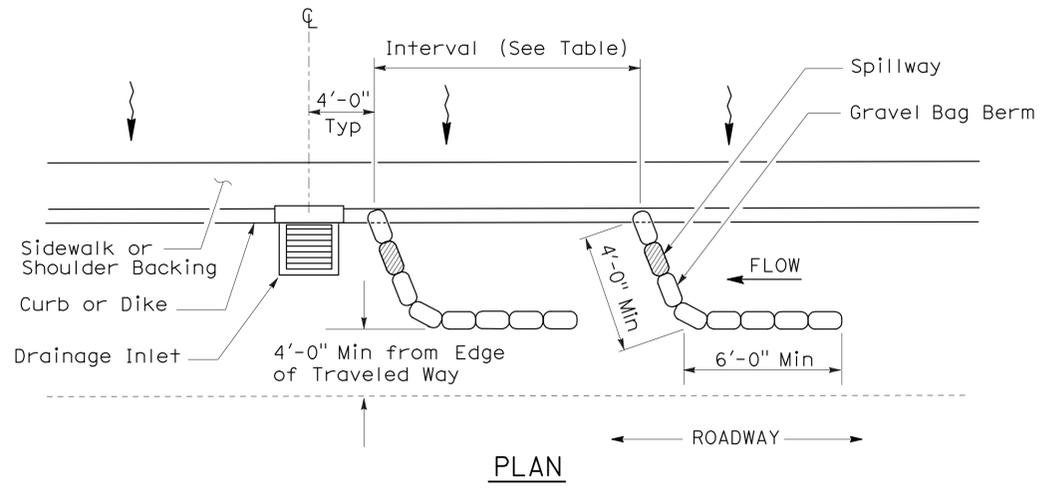
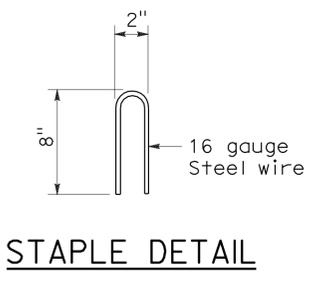
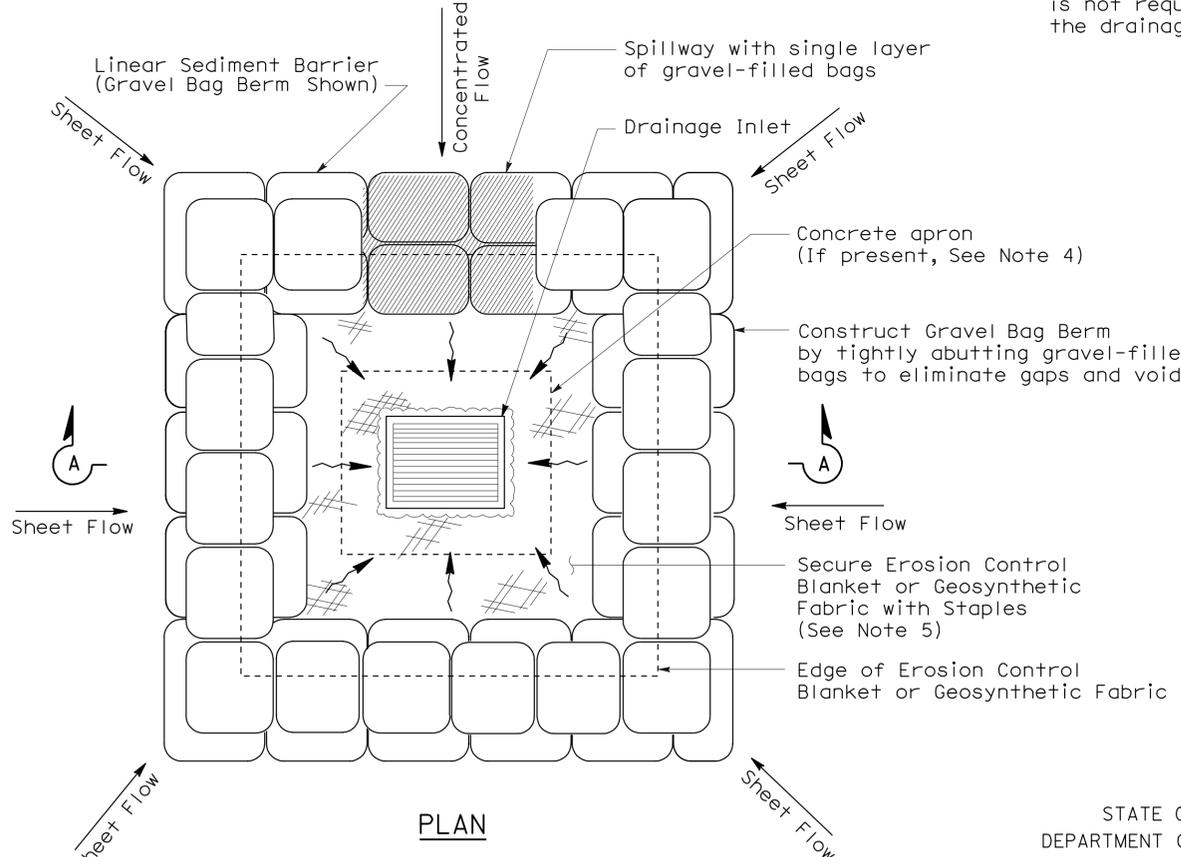


#### NOTES:

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



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

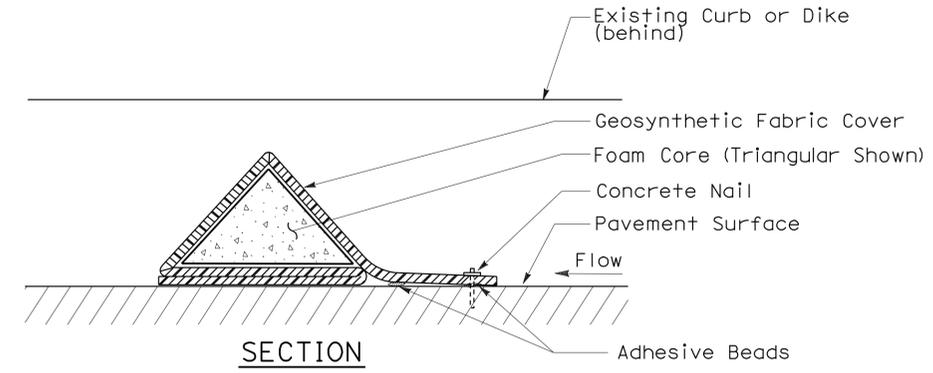
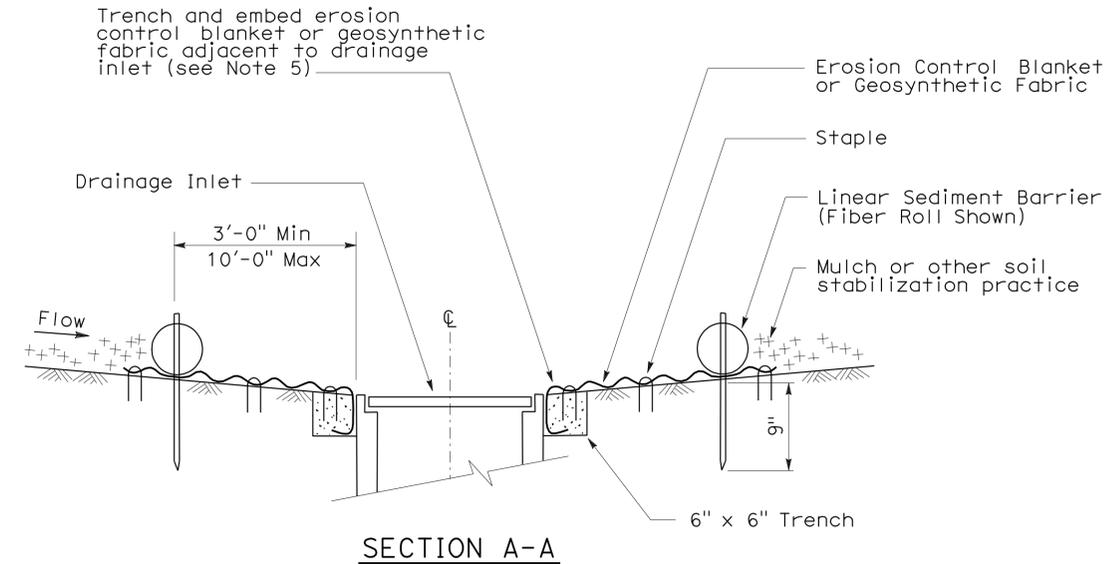
### TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)

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

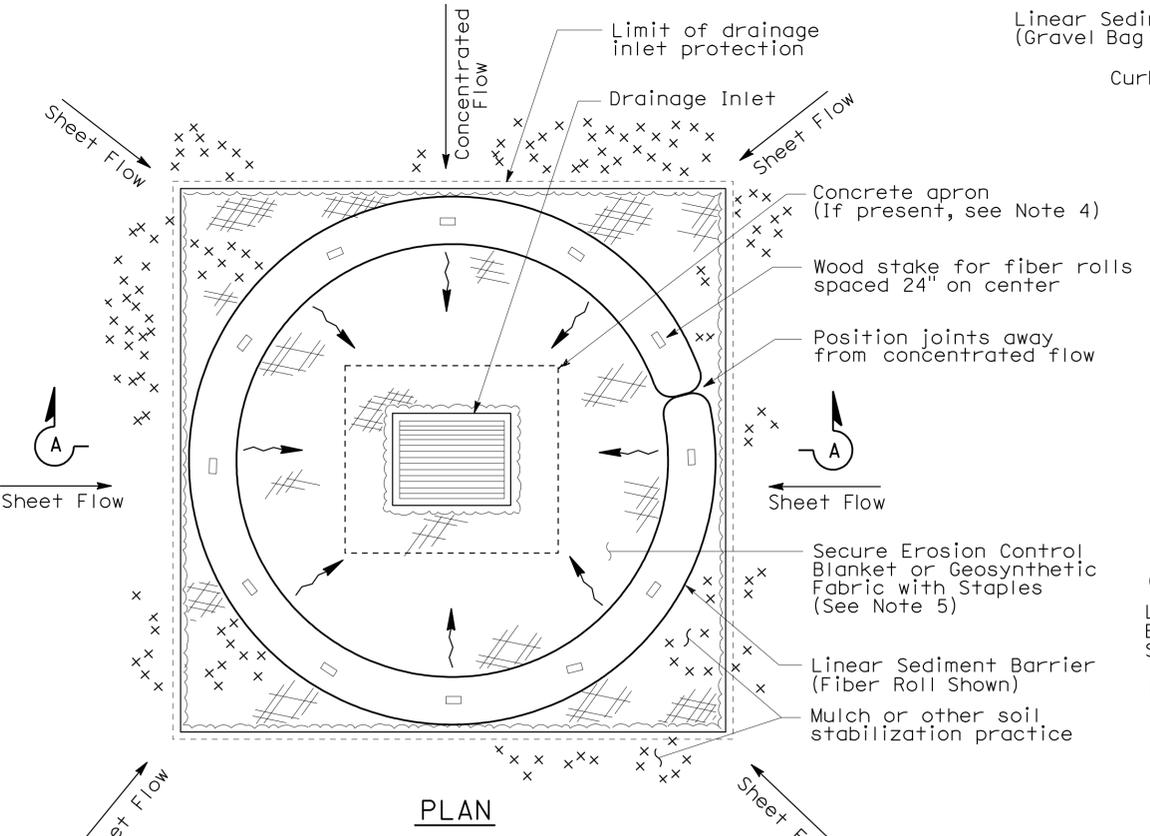
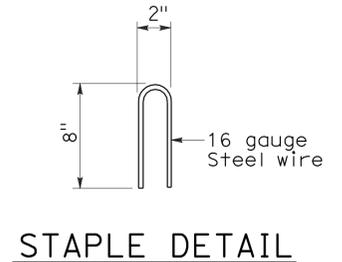
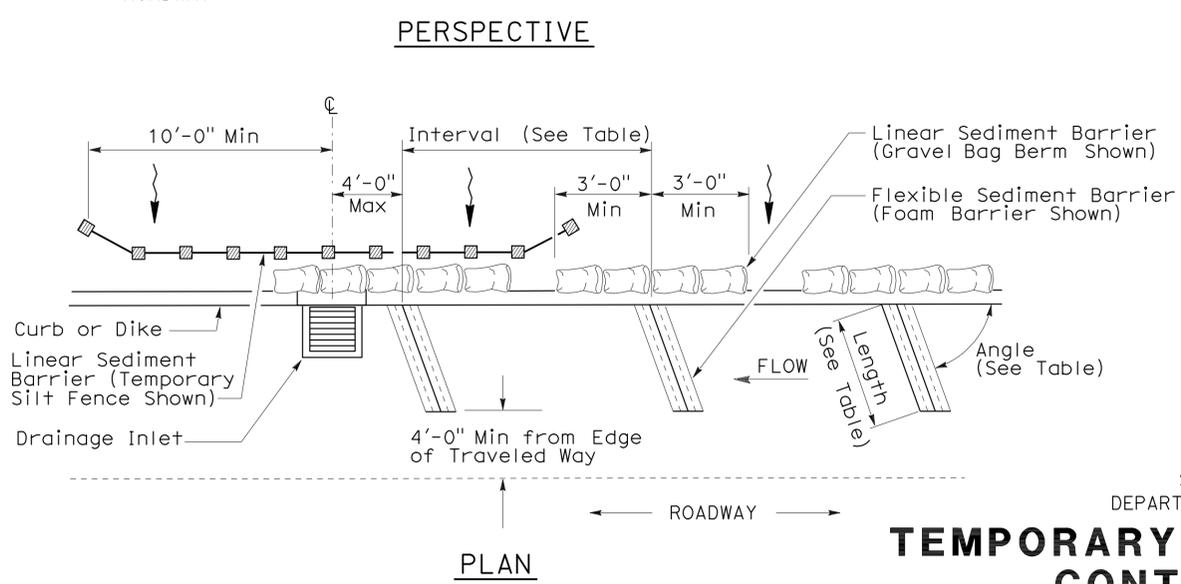
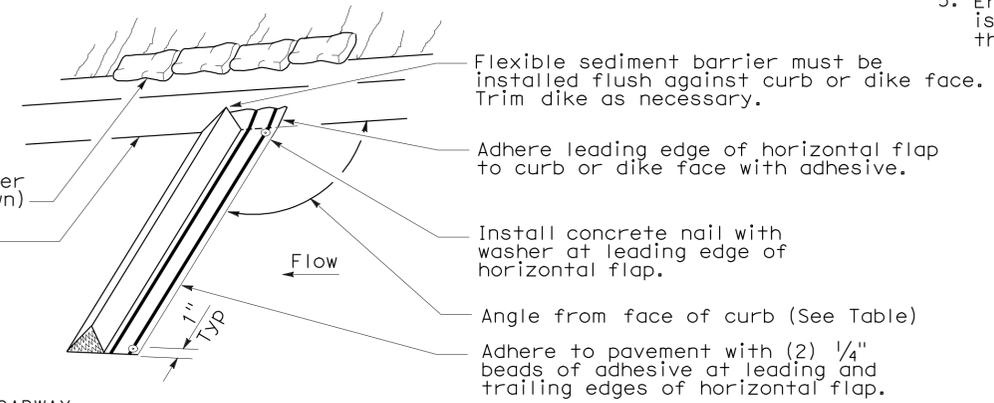
NO SCALE  
 NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS  
 THE STANDARD PLANS BOOK DATED MAY 2006.

**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'



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



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

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

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

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

2006 NEW STANDARD PLAN NSP T63

To accompany plans dated 4-27-09

**NOTES:**

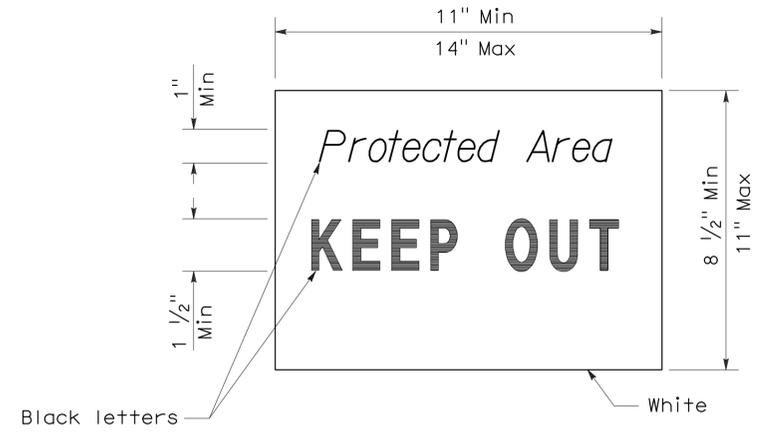
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	1	73.8	21	22

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
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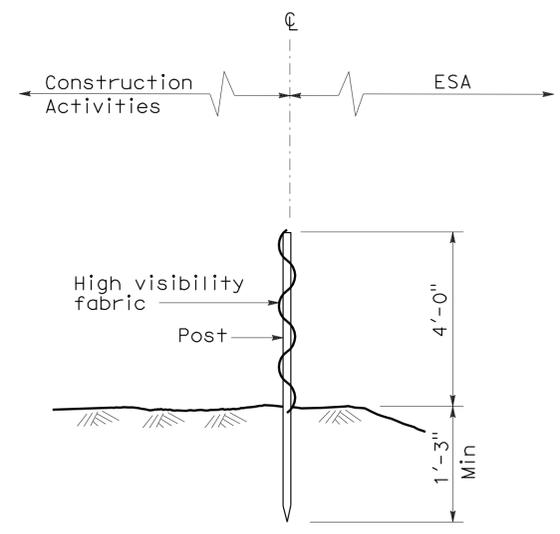
To accompany plans dated 4-27-09



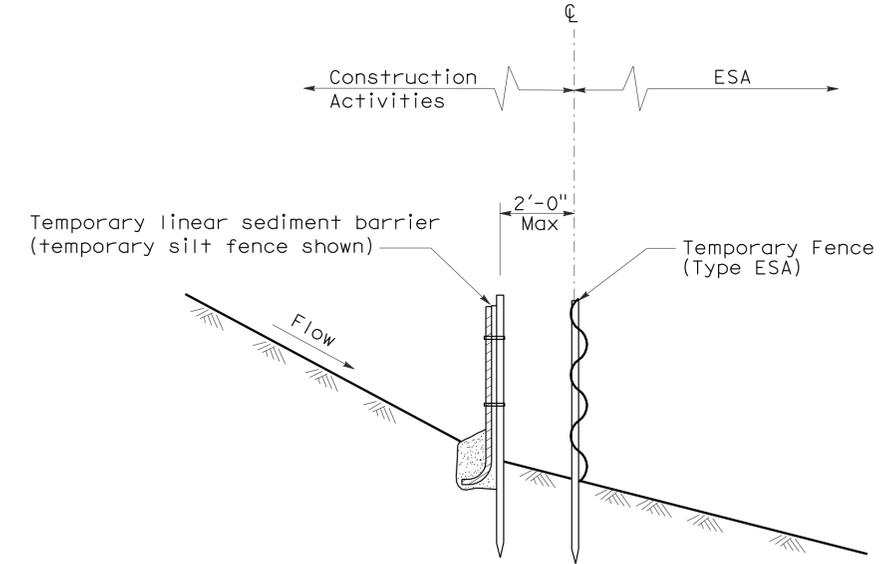
SIGN DETAIL

**NOTE:**

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

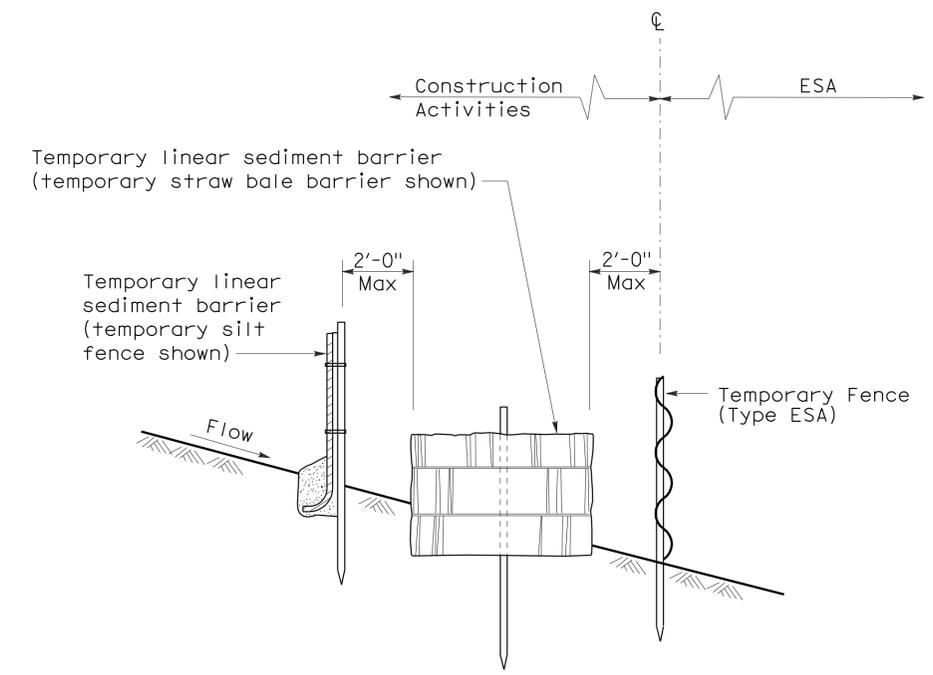


SECTION TEMPORARY FENCE (TYPE ESA)



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

(See Note 1 )



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

(See Note 1 )

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**[TEMPORARY FENCE (TYPE ESA)]**  
 NO SCALE

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

2006 NEW STANDARD PLAN NSP T65

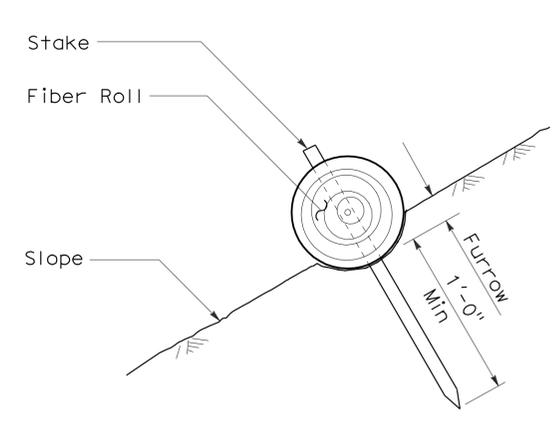
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	1	73.8	22	22

*Gregory A. Balzer*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
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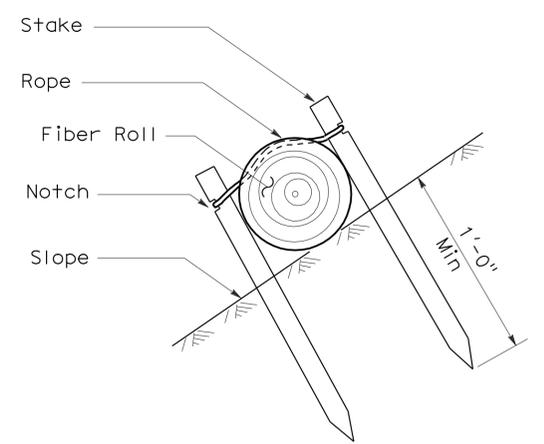
To accompany plans dated 4-27-09

**NOTES:**

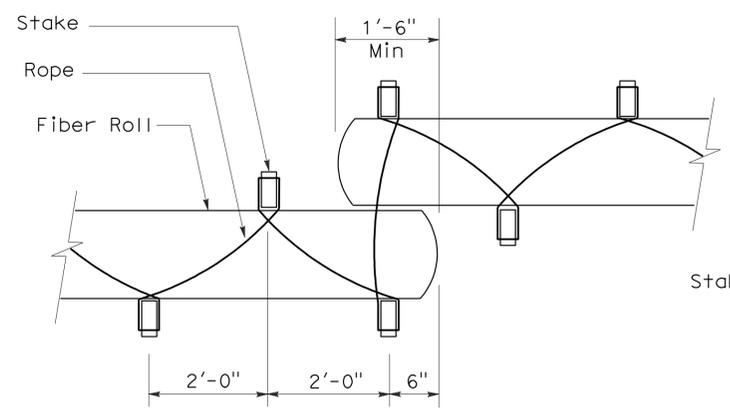
1. Fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



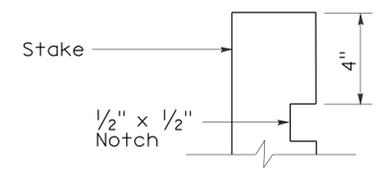
**SECTION**  
**FIBER ROLL**  
**(TYPE 1)**



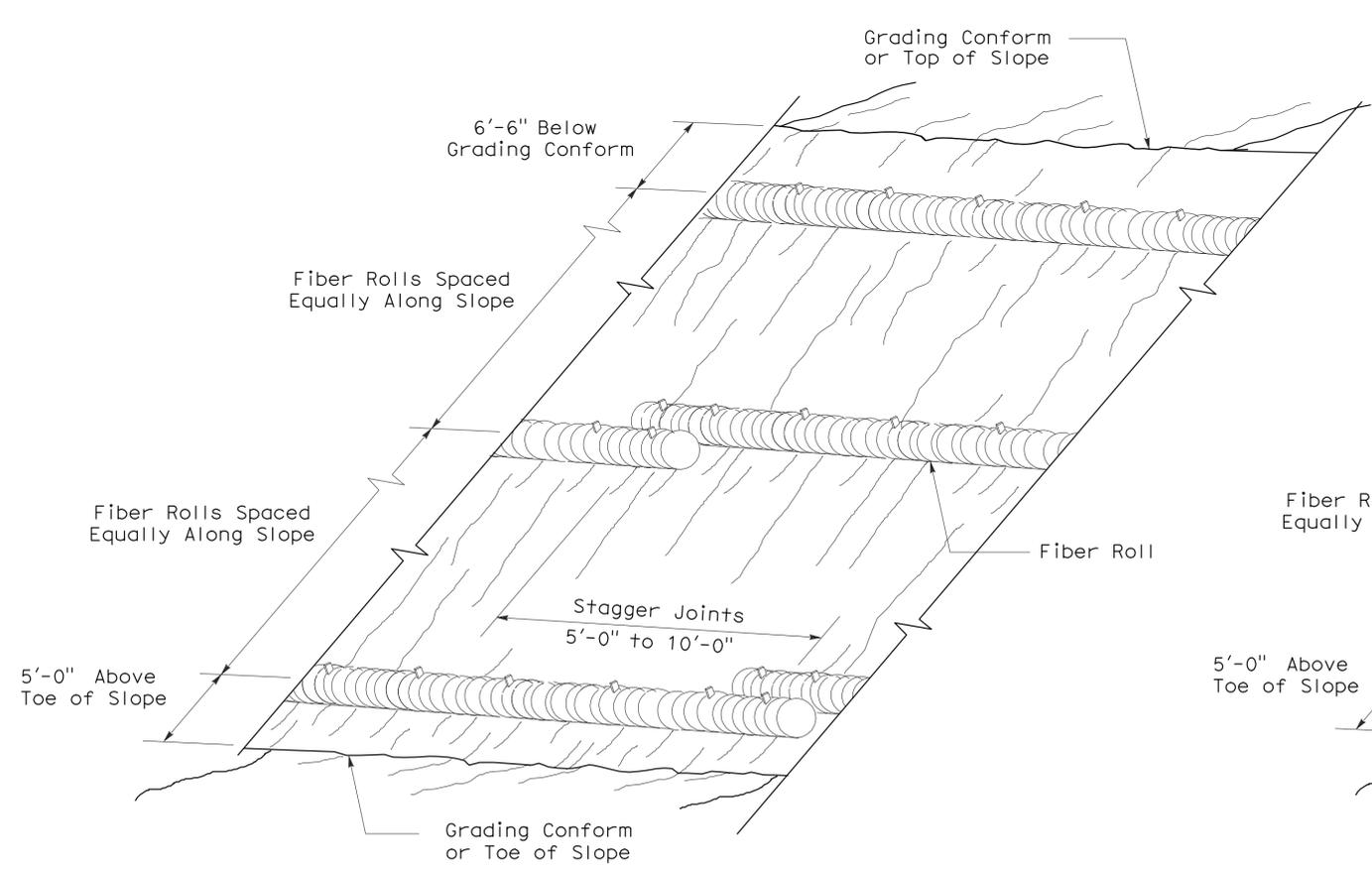
**SECTION**



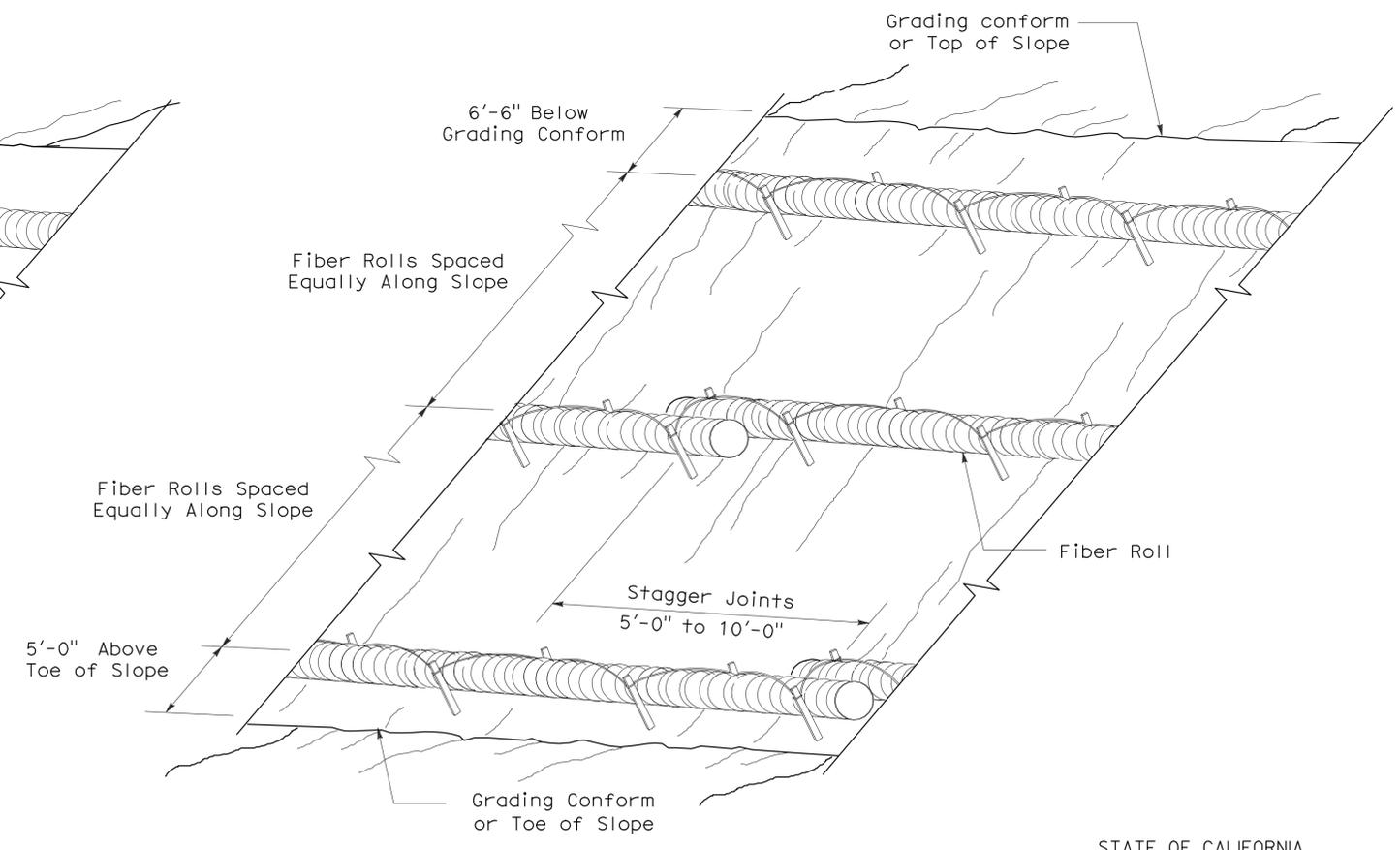
**PLAN**



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



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



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

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

NO SCALE

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

2006 REVISED NEW STANDARD PLAN RNSP H51