

INDEX OF PLANS

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24-55	WEST CUESTA SOLDIER PILE WALL Br No. 49E0017
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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 NH-Q101(206)E
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SAN LUIS OBISPO COUNTY
NEAR SAN LUIS OBISPO
FROM 1.8 MILES NORTH OF HAWK HILL LANE TO
0.7 MILE SOUTH OF CUESTA SPRINGS ROAD

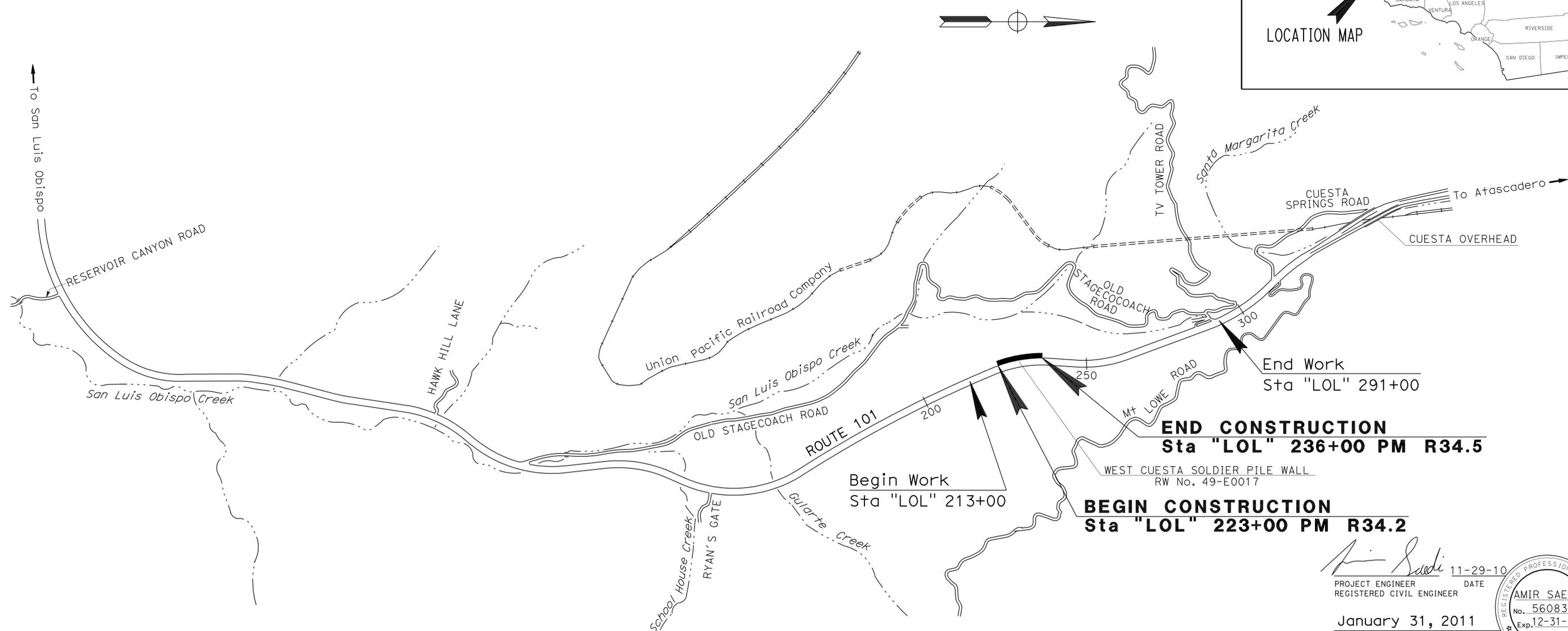
TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	1	55

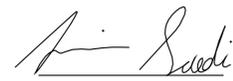




LOCATION MAP



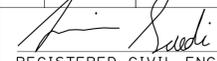
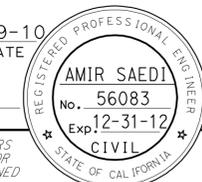
PROJECT MANAGER
K. A. DOSTALEK
 DESIGN ENGINEER
J. R. PERANO


 PROJECT ENGINEER DATE 11-29-10
 REGISTERED CIVIL ENGINEER
AMIR SAEDI
 No. 56083
 Exp. 12-31-12
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
 January 31, 2011

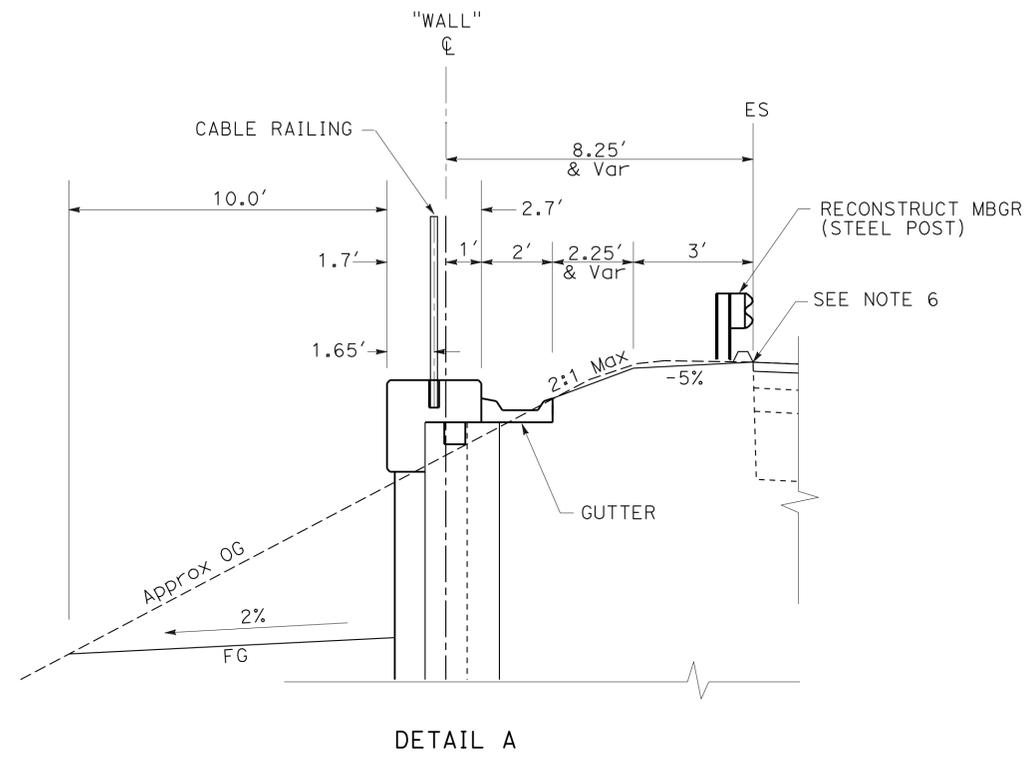
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONTRACT No.	05-0N8904
PROJECT ID	0500000236

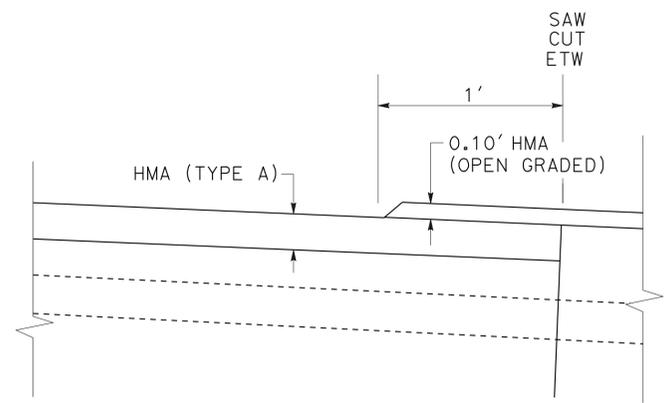
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	2	55
 REGISTERED CIVIL ENGINEER DATE 11-29-10					
1-31-11			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTES:

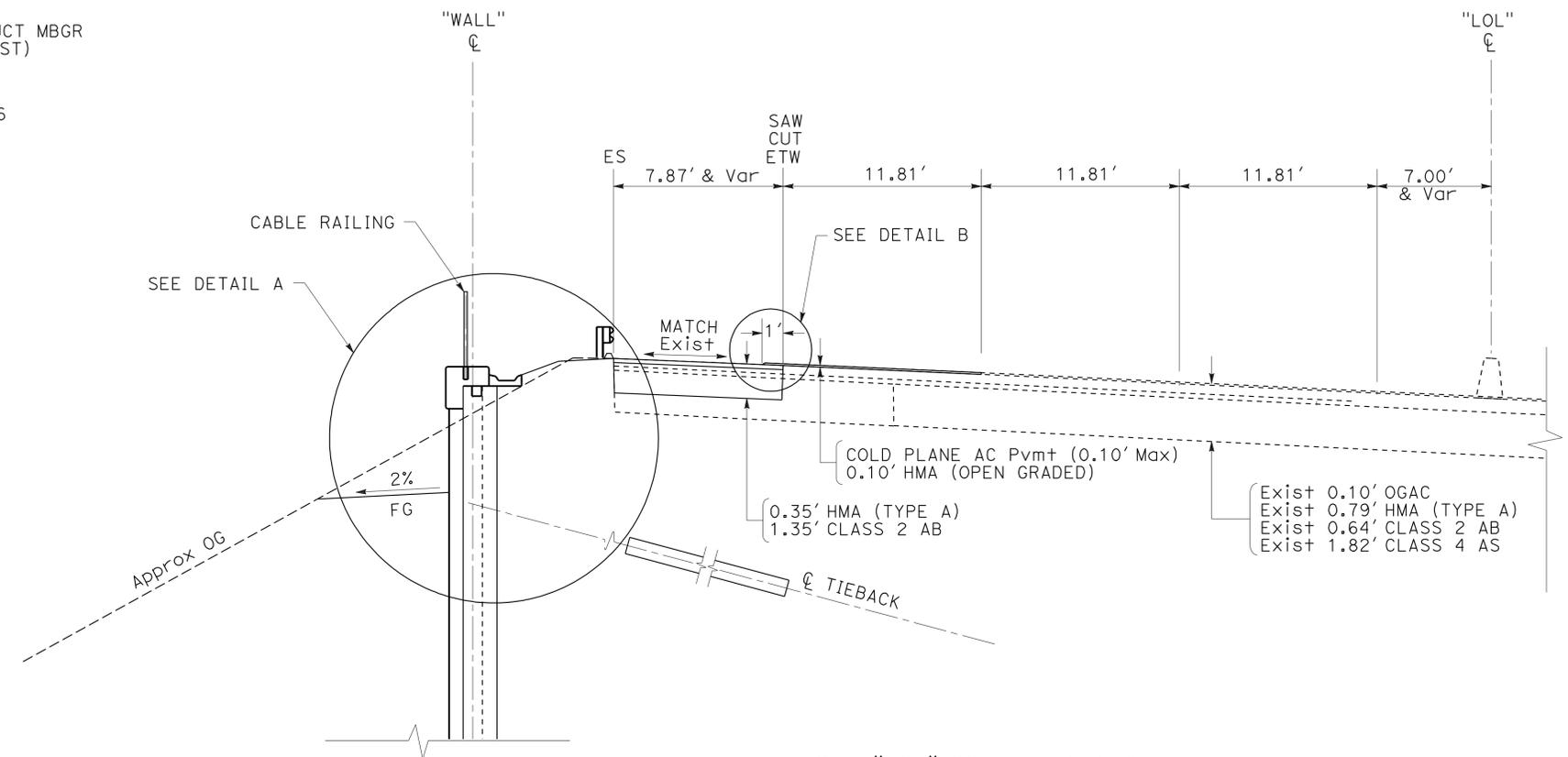
1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. FOR GUTTER DETAILS SEE STRUCTURES PLANS.
4. FOR WALL TYPICAL CROSS SECTION Sta "LOL" 224+91.84 TO 233+57.25 SEE STRUCTURES PLANS.
5. SAW CUT FOR SHOULDER REPLACEMENT AT THE OUTSIDE EDGE OF OGAC.
6. FOR EXACT LOCATION OF DIKE, SEE LAYOUT PLANS, AND SUMMARY OF QUANTITIES SHEETS.



DETAIL A



DETAIL B



Sta "LOL" 223+00 TO 236+00
ROUTE 101

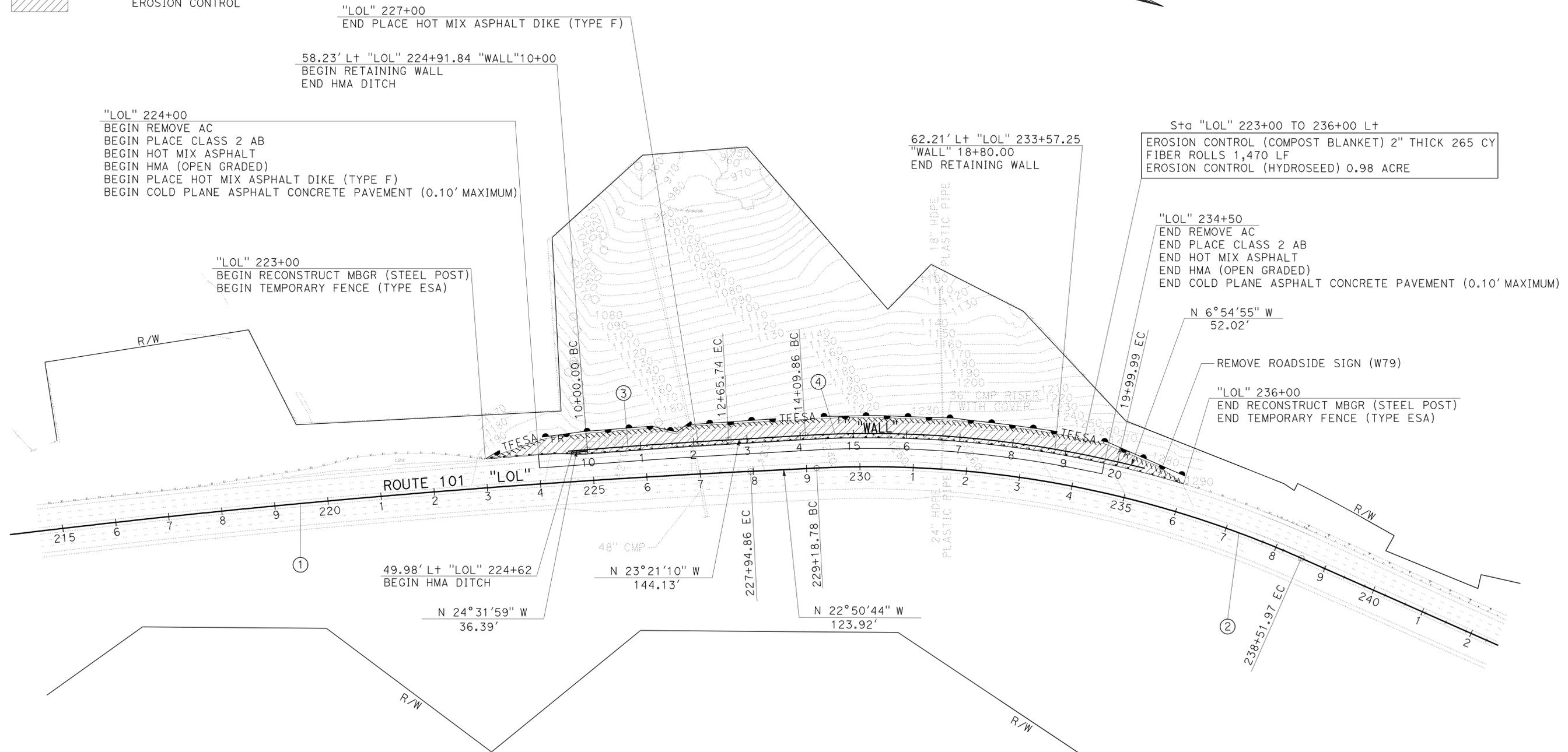
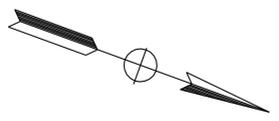
TYPICAL CROSS SECTIONS
NO SCALE **X-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: J. R. PERANO
 CALCULATED/DESIGNED BY: M. ALJASGARIAN
 CHECKED BY: AMIR SAEDI
 REVISED BY: M. ALJASGARIAN
 DATE REVISED: AMIR SAEDI

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

LEGEND:

- TFESA TEMPORARY FENCE (TYPE ESA)
- FR FIBER ROLLS
- EROSION CONTROL



CURVE DATA

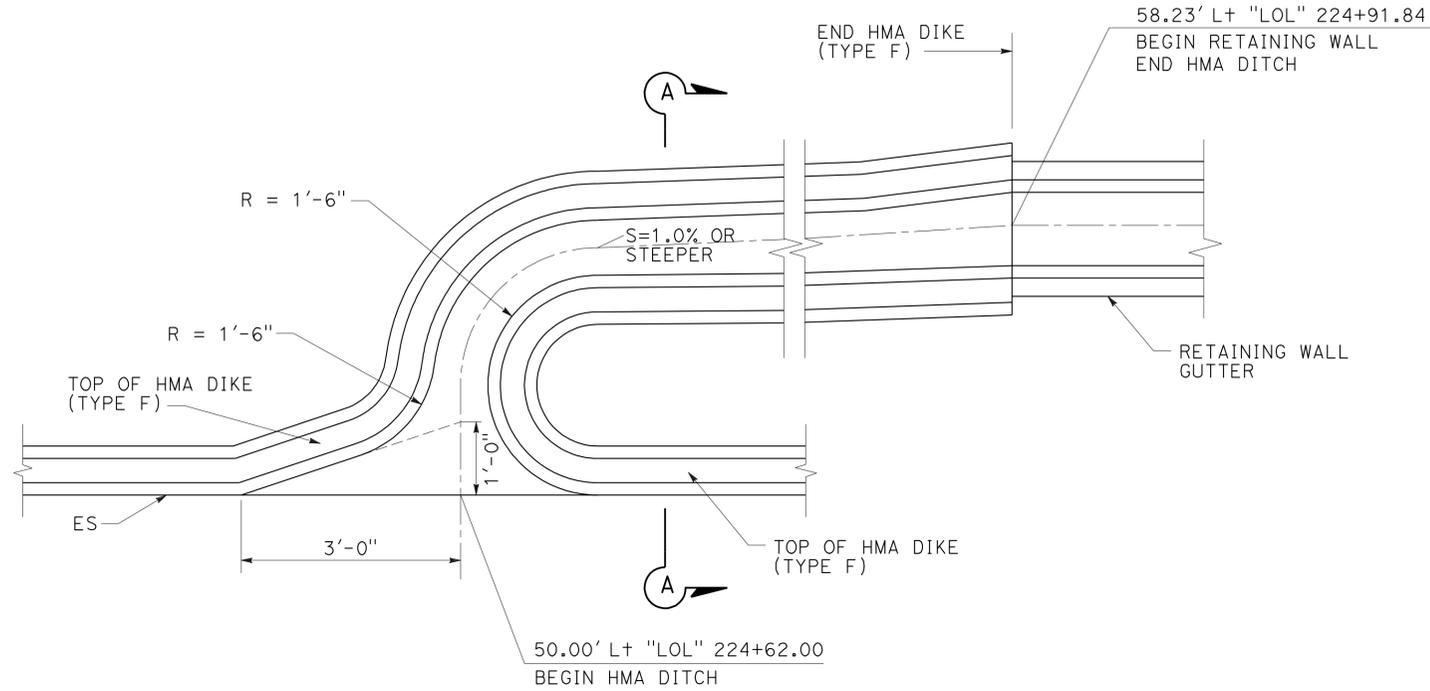
No.	R	Δ	T	L
①	19685.00'	9° 35' 24"	1651.29'	3294.86'
②	2001.31'	26° 42' 58"	475.23'	933.18'
③	12900.00'	1° 10' 49"	132.87'	265.74'
④	2057.00'	16° 26' 15"	297.11'	590.13'

LAYOUT
 SCALE: 1" = 100'
L-1

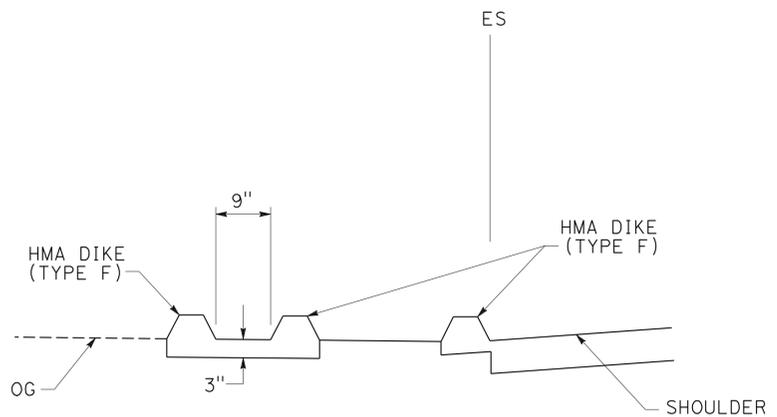
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 J. R. PERANO
 FUNCTIONAL SUPERVISOR
 CHECKED BY
 AMIR SAEDI
 M. ALIASGARIAN
 REVISOR
 DATE REVISOR

LAST REVISION DATE PLOTTED => 02-FEB-2011
 11-29-10 TIME PLOTTED => 14:12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	4	55
			11-29-10	DATE	
			1-31-11	PLANS APPROVAL DATE	
REGISTERED CIVIL ENGINEER AMIR SAEDI No. 56083 Exp. 12-31-12 CIVIL STATE OF CALIFORNIA					
<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>					



**PLAN
HMA DITCH**



SECTION A-A

**CONSTRUCTION DETAILS
NO SCALE
C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	J. R. PERANO
CALCULATED/DESIGNED BY	CHECKED BY
M. ALIASGARIAN	AMIR SAEDI
REVISED BY	DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	5	55

11-29-10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 AMIR SAEDI
 No. 56083
 Exp. 12-31-12
 CIVIL
 STATE OF CALIFORNIA

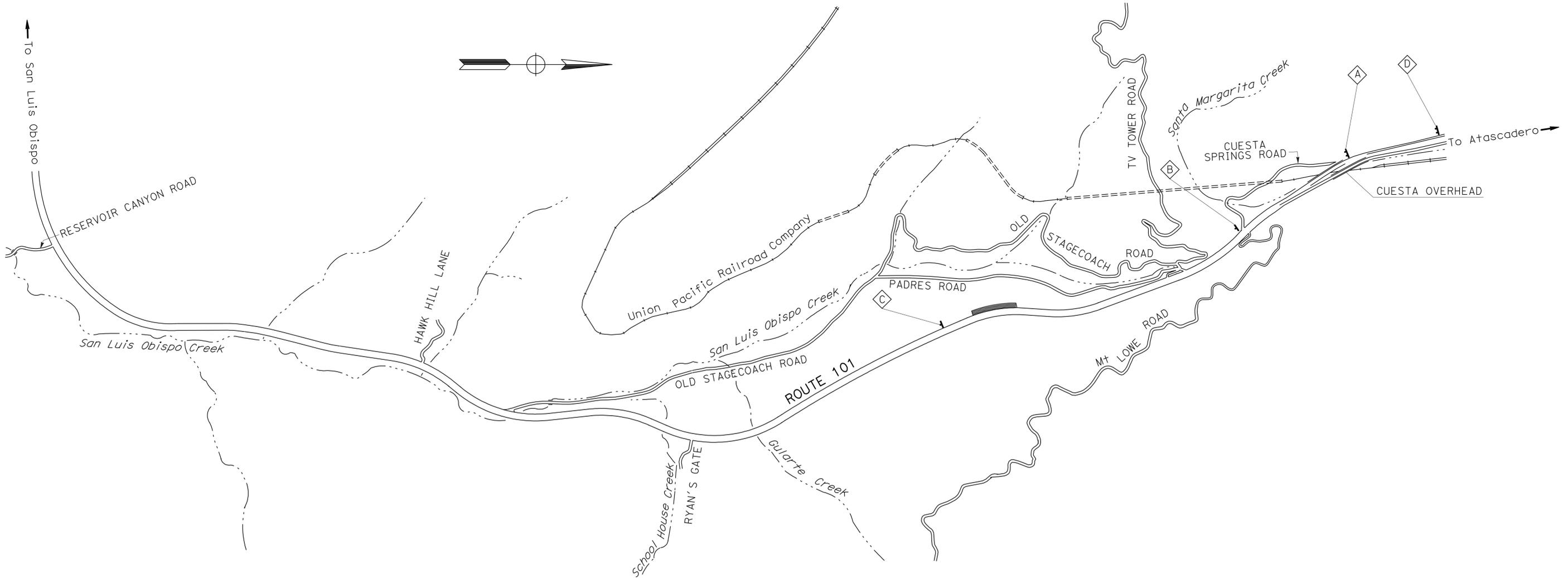
THE STATE OF CALIFORNIA OR ITS OFFICERS
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 COPIES OF THIS PLAN SHEET.

NOTES:

1. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. SEE TRAFFIC HANDLING PLANS FOR ADDITIONAL CONSTRUCTION AREA SIGN.

CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POSTS AND SIZE	No. OF SIGNS
⬡	W20-1	ROAD WORK AHEAD	60" X 60"	2 - 4" X 6"	1
⬢	W20-1	ROAD WORK AHEAD	36" X 36"	1 - 4" X 6"	1
⬢	G20-2	END ROAD WORK	30" X 24"	1 - 4" X 4"	1
⬢	C40A(CA)	TRAFFIC FINE DOUBLED IN WORK ZONE	60" X 60"	2 - 4" X 6"	1



CONSTRUCTION AREA SIGNS
NO SCALE
CS-1

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

NOTE:

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

STAGE CONSTRUCTION:

STAGE 1

- 1 - RESTRIPE TRAFFIC STRIPE AND PLACE CHANNELIZERS BETWEEN No. 2 AND 3 LANES.
- 2 - PLACE Temp RAILING (TYPE K).
- 3 - REMOVE MBGR & PLACE Temp ANCHOR ASSEMBLIES (TYPE SFT).
- 4 - CONSTRUCT RETAINING WALL & BACKFILL.
- 5 - SAW CUT AND REMOVE SHOULDER.
- 6 - PLACE CLASS 2 AB, HMA, AND HMA DIKE (TYPE F).
- 7 - RECONSTRUCT MBGR & STRIPE TO CONFORM.

STAGE 2

- 1 - MOVE Temp RAILING (TYPE K) AND Temp STRIPE.
- 2 - COLD PLANE & PLACE HMA (OPEN GRADED).
- 3 - APPLY PERMANENT TRAFFIC STRIPE.

TRAFFIC:

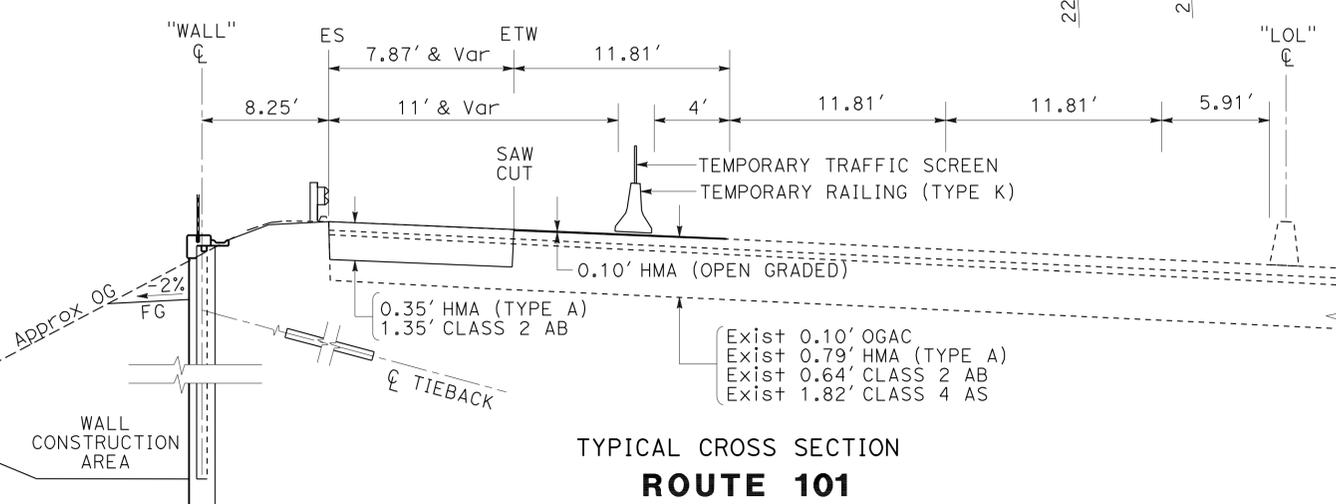
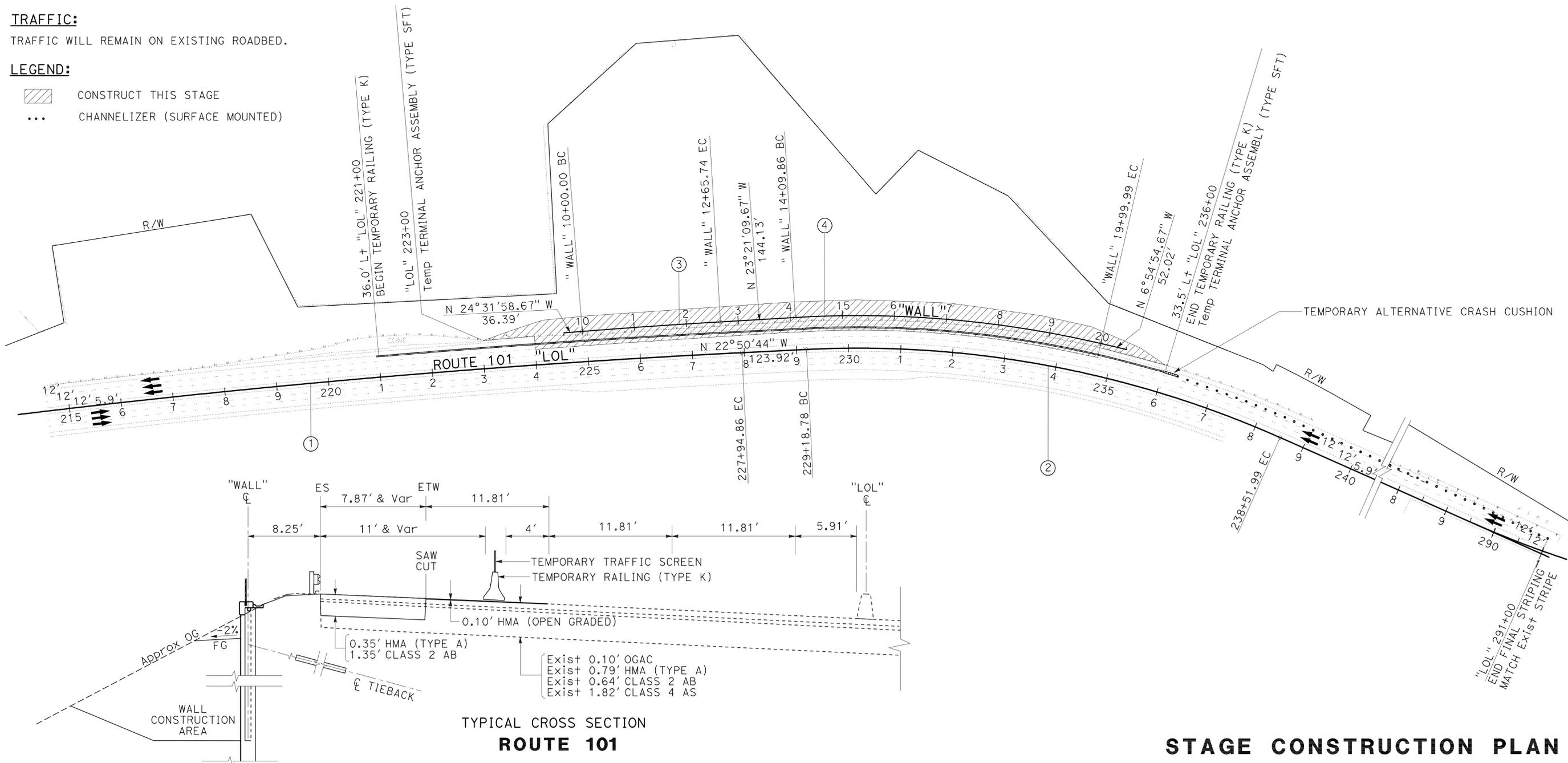
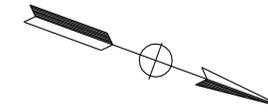
TRAFFIC WILL REMAIN ON EXISTING ROADBED.

LEGEND:

- CONSTRUCT THIS STAGE
- CHANNELIZER (SURFACE MOUNTED)

CURVE DATA

No.	R	Δ	T	L
①	19685.00'	9°35'24"	1651.29'	3294.86'
②	2001.31'	26°42'58"	475.23'	933.18'
③	12900.00'	1°10'49"	132.87'	265.74'
④	2057.00'	16°26'15"	297.11'	590.13'



STAGE CONSTRUCTION PLAN

SCALE: 1" = 100'

SC-1

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 J. R. PERANO

CALCULATED/DESIGNED BY
 CHECKED BY

M. ALIASGARIAN
 AMIR SAEDI

REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	7	55

REGISTERED CIVIL ENGINEER	DATE
AMIR SAEDI	11-29-10
PLANS APPROVAL DATE	
	1-31-11

REGISTERED PROFESSIONAL ENGINEER	No.	Exp.
AMIR SAEDI	56083	12-31-12
CIVIL		

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

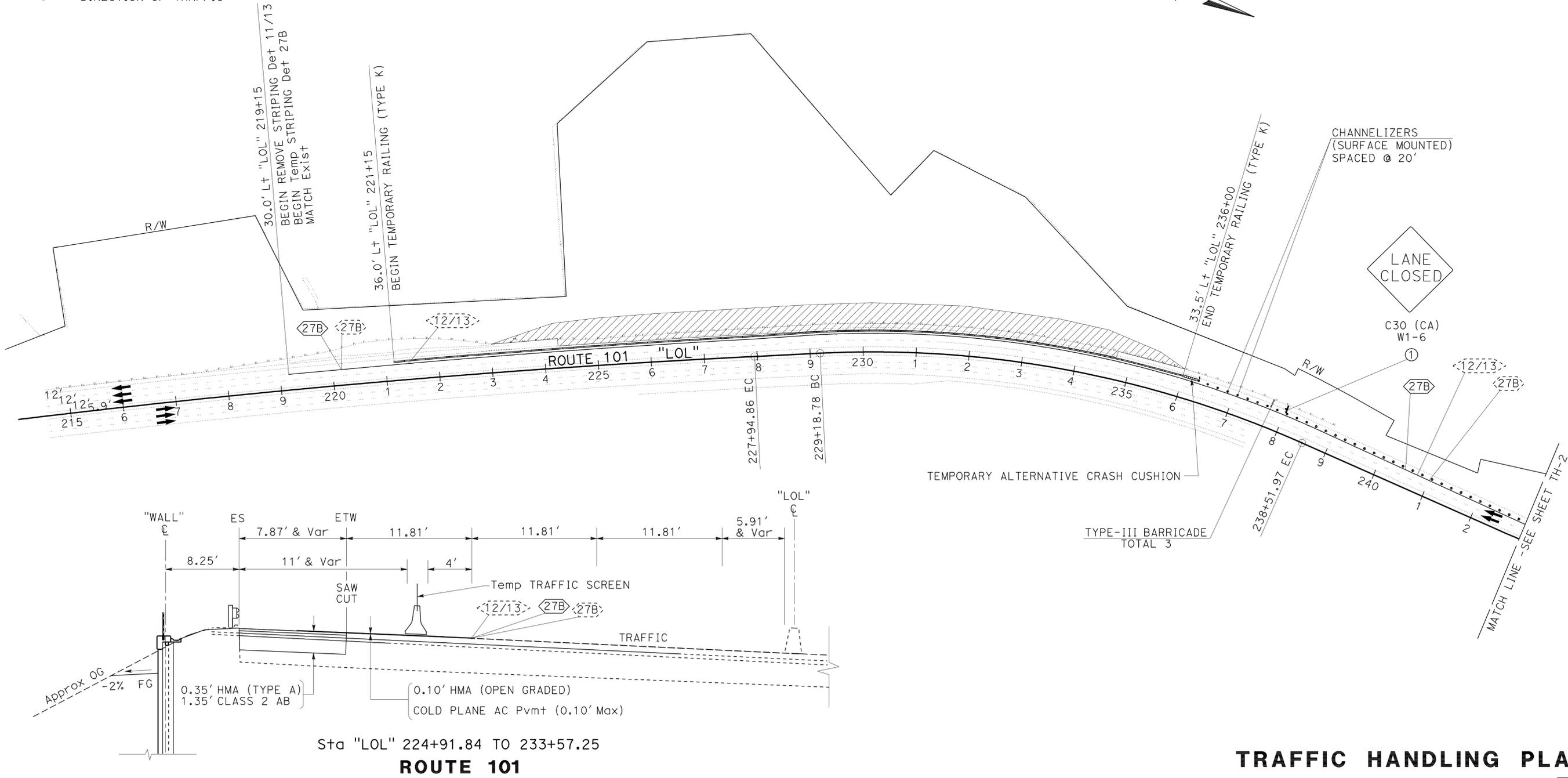
LEGEND:

- CHANNELIZER (SURFACE MOUNTED)
- (No.) CONSTRUCTION AREA SIGN No.
- ▲ CONSTRUCTION SIGN TO REMAIN IN PLACE
- ◊ TEMPORARY TRAFFIC STRIPE (PAINT)
- - - REMOVE THERMOPLASTIC OR PAINTED TRAFFIC STRIPE
- ▬ TEMPORARY RAILING (TYPE K)
- ▬▬▬ TEMPORARY ALTERNATIVE CRASH CUSHION SYSTEM
- ♪ OBJECT MARKER TYPE P (OM-3 (L&R))
- ▨ CONSTRUCT THIS STAGE
- ↑ DIRECTION OF TRAFFIC

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE, EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
3. THE STATION AND OFFSET DIMENSION MAY BE ADJUSTED TO CONFORM TO ACTUAL SITE CONDITION IF NECESSARY.
4. TEMPORARY RAILING (TYPE K) TAPER SHALL BE 20:1 OR FLATTER.
5. TRAFFIC WILL REMAIN ON EXISTING ROADBED, EXCEPT AS SHOWN ON PLANS OR PERMITTED IN LANE REQUIREMENT CHARTS.
6. FOR ADDITIONAL CONSTRUCTION AREA SIGNS SEE SHEET CS-1.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 J. R. PERANO
 M. ALTASGARIAN
 AMIR SAEDI



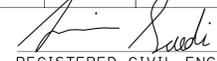
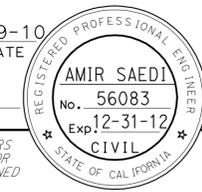
Sta "LOL" 224+91.84 TO 233+57.25
ROUTE 101

TRAFFIC HANDLING PLAN
TH-1

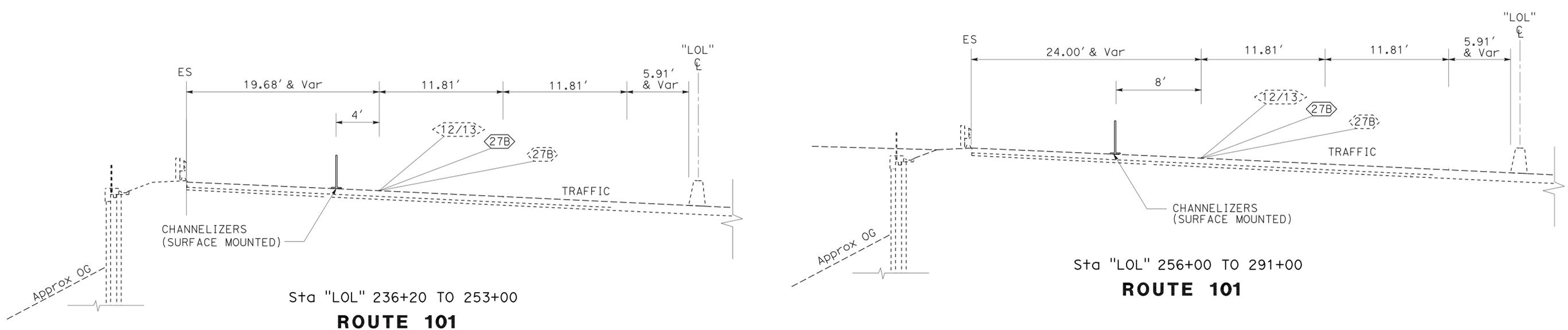
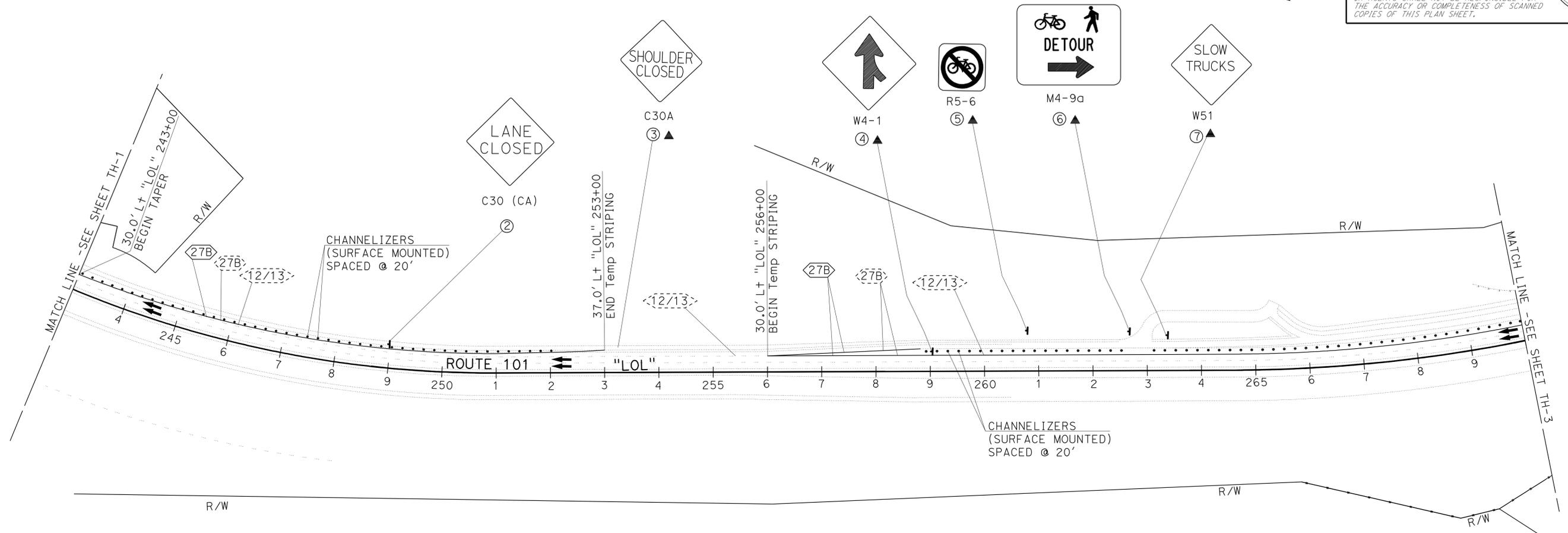
THIS PLAN ACCURATE FOR TRAFFIC HANDLING WORK ONLY.

SCALE: 1" = 100'

LAST REVISION | DATE PLOTTED => 02-FEB-2011
 11-29-10 TIME PLOTTED => 14:13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	8	55
 REGISTERED CIVIL ENGINEER			11-29-10 DATE		
1-31-11 PLANS APPROVAL DATE					
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NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



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 J. R. PERANO
 FUNCTIONAL SUPERVISOR
 CHECKED BY
 M. ALJASGARIAN
 AMIR SAEDI
 REVISOR BY
 DATE REVISOR

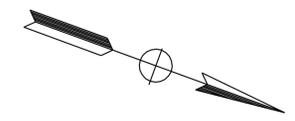
TRAFFIC HANDLING PLAN
TH-2

THIS PLAN ACCURATE FOR TRAFFIC HANDLING WORK ONLY.

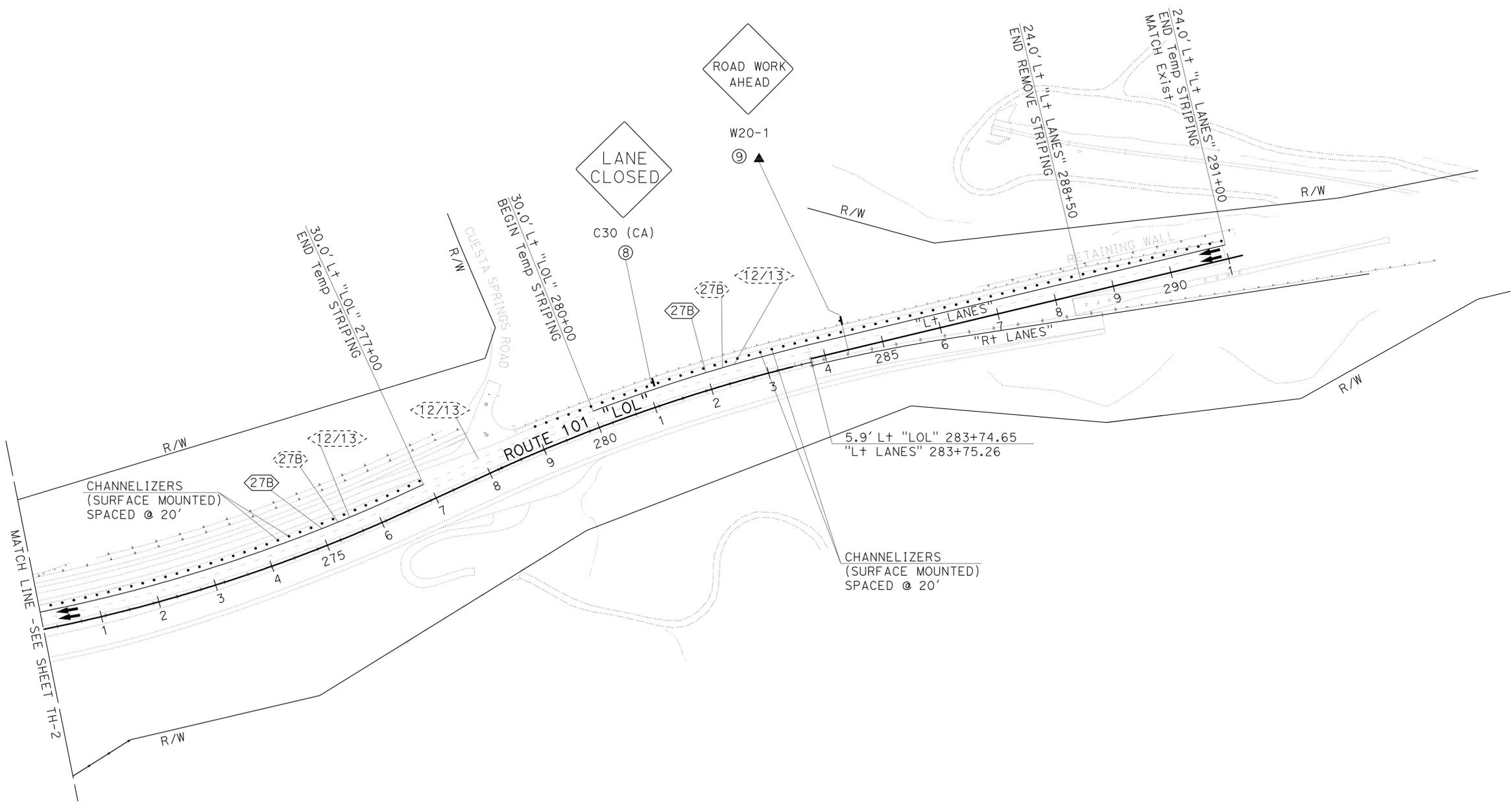
LAST REVISION | DATE PLOTTED => 02-FEB-2011
 11-29-10 TIME PLOTTED => 14:13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	9	55
			11-29-10	DATE	
			1-31-11	PLANS APPROVAL DATE	
REGISTERED CIVIL ENGINEER AMIR SAEDI No. 56083 Exp. 12-31-12 CIVIL					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
Caltrans	
FUNCTIONAL SUPERVISOR	J. R. PERANO
CALCULATED/DESIGNED BY	CHECKED BY
M. ALJASGARIAN	AMIR SAEDI
REVISED BY	DATE
	REVISED

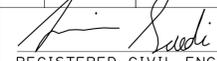
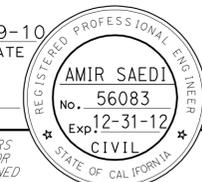


THIS PLAN ACCURATE FOR TRAFFIC HANDLING WORK ONLY.

TRAFFIC HANDLING PLAN
TH-3

SCALE: 1" = 100'

LAST REVISION | DATE PLOTTED => 02-FEB-2011
 11-29-10 TIME PLOTTED => 14:13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	10	55
 REGISTERED CIVIL ENGINEER DATE 11-29-10					
1-31-11 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

TRAFFIC HANDLING

SHEET No.	DETAIL No.	STATION LIMIT	REMOVE PAVEMENT MARKER (N)		REMOVE THERMOPLASTIC TRAFFIC STRIPE	Temp TRAFFIC STRIPE (PAINT)	REMOVE PAINTED TRAFFIC STRIPE	OBJECT MARKER (N)	CHANNELIZER (SURFACE MOUNTED)	TYPE III BARRICADE
			TYPE A	TYPE G	WHITE 4"	WHITE 4"	WHITE 4"	TYPE P		
			EA	EA	LF	LF	LF	EA		
TH-1	27B	"LOL" 219+15 TO 243+00								
	12/13	"LOL" 219+15 TO 243+00	200	50	597	2,385	2,385	1	33	3
TH-2	27B	"LOL" 243+00 TO 270+00								
	12/13	"LOL" 243+00 TO 270+00	228	57	675	2,683	2,683		106	
TH-3	27B	"LOL" 270+00 TO 291+00								
	12/13	"LOL" 270+00 TO 291+00	176	44	525	1,800	1,800		95	
TOTAL					1,797	6,868	6,868		234	3

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

CONSTRUCTION AREA SIGNS

SHEET No.	SIGN No. 	SIGN CODE	PANEL SIZE	No. OF POSTS AND SIZE	SIGN MESSAGE
TH-1	1	C30 (CA)	1 - 30" X 30"	BARRICADE MOUNTED	LANE CLOSED
		W1-6	1 - 48" X 24"		LEFT DIRECTIONAL ARROW
TH-2	2	C30 (CA)	1 - 48" X 24"	BARRICADE MOUNTED	LANE CLOSED
	3	C30 A	1 - 30" X 30"	1 - 4" X 6"	SHOULDER CLOSED
	4	W4-1	1 - 48" X 48"	1 - 4" X 6"	MERGE
	5	R5-6	1 - 30" X 30"	1 - 4" X 6"	NO BICYCLES
	6	M4-9A	1 - 48" X 48"	1 - 4" X 6"	BICYCLE AND PEDESTRIAN DETOUR RIGHT
	7	W51	1 - 48" X 48"	1 - 4" X 6"	SLOW TRUCKS
TH-3	8	C30 (CA)	1 - 30" X 30"	BARRICADE MOUNTED	LANE CLOSED
	9	W20-1	1 - 48" X 48"	1 - 4" X 6"	ROAD WORK AHEAD

TEMPORARY CONSTRUCTION

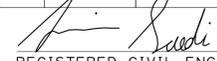
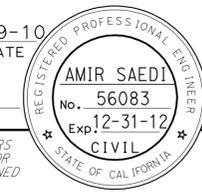
SHEET No.	STATION LIMIT	TEMPORARY RAILING (TYPE K)	TEMPORARY TRAFFIC SCREEN	TEMPORARY ALTERNATIVE CRASH CUSHION	Temp ANCHOR ASSEMBLY (TYPE SFT)
		LF	LF	EA	EA
TH-1	"LOL" 221+15 TO 236+00	1,500	1,500	1	2
TOTAL		1,500	1,500	1	2

REMOVE ROADSIDE SIGN

SHEET No.	STATION	REMOVE ROADSIDE SIGN
		EA
L-1	235+50	1
TOTAL		1

TRAFFIC HANDLING QUANTITIES THQ-1

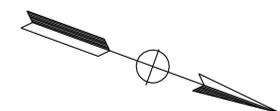
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	11	55

 REGISTERED CIVIL ENGINEER DATE 11-29-10		
1-31-11 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		

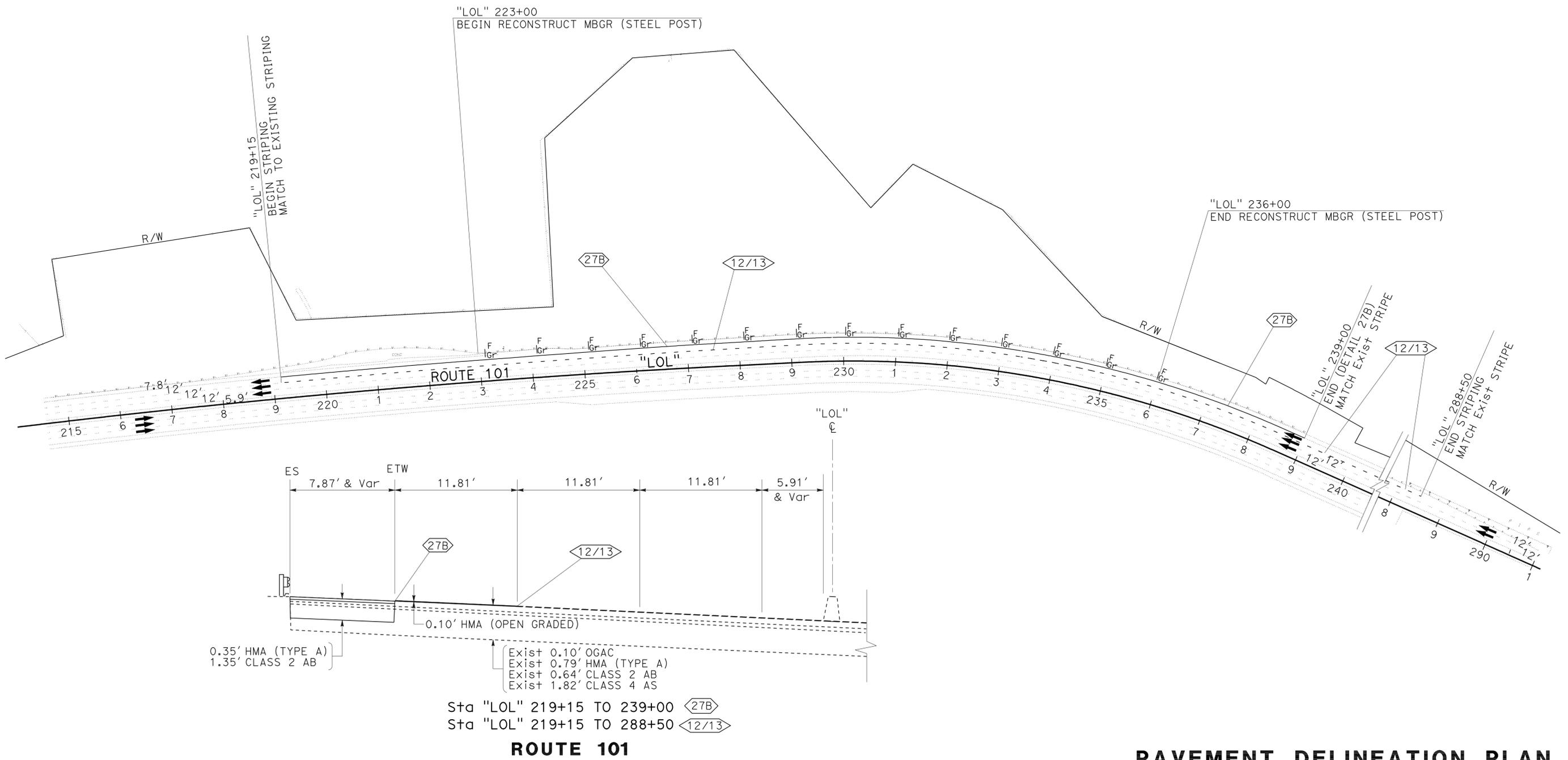
NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

LEGEND:

-  THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) DETAIL NUMBER
-  GUARD RAILING DELINEATOR
-  DIRECTION OF TRAFFIC



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 J. R. PERANO
 FUNCTIONAL SUPERVISOR
 J. R. PERANO
 CHECKED BY
 M. ALIASGARIAN
 AMIR SAEDI
 REVISOR BY
 DATE REVISOR
 DATE REVISOR



PAVEMENT DELINEATION PLAN
 SCALE: 1" = 100'
PD-1

THIS PLAN ACCURATE FOR PAVEMENT DELINATION WORK ONLY.

LAST REVISION | DATE PLOTTED => 02-FEB-2011
 11-29-10 | TIME PLOTTED => 14:13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	12	55

11-29-10
 REGISTERED CIVIL ENGINEER DATE

1-31-11
 PLANS APPROVAL DATE

AMIR SAEDI
 No. 56083
 Exp. 12-31-12
 CIVIL

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WATER POLLUTION CONTROL

STATION LIMITS	Temp SOIL BINDER	Temp Const ENTRANCE	Temp CHECK DAM	Temp DRAINAGE INLET PROTECTION
	SQYD	EA	LF	EA
VARIOUS	600	2	320	1
TOTAL	600	2	320	1

ACTUAL PLACEMENT OF TEMPORARY CONSTRUCTION BMPs TO BE DETERMINED BY THE ENGINEER.

EROSION CONTROL

STATION LIMITS	EROSION CONTROL (COMPOST BLANKET)	EROSION CONTROL (HYDROSEED)	FIBER ROLLS
	CY	ACRE	LF
"LOL" 223+00 TO 236+00	265	0.98	1,470
TOTAL	265	0.98	1,470

PAVEMENT DELINEATION

SHEET No.	STATION	DETAIL No.	PAVEMENT MARKER (NON-REFLECTIVE)	PAVEMENT MARKER (RETROREFLECTIVE)	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)	GUARD RAILING DELINEATOR
			TYPE A	TYPE G	4" WHITE	TYPE F-1
			EA	EA	LF	EA
PD-1	"LOL" 219+15 TO 288+50	12/13	578	145	6,935	14
	"LOL" 219+15 TO 239+00	27B			1,985	
TOTAL			578	145	8,920	14

TEMPORARY FENCE (TYPE ESA)

PLAN SHEET No.	STATION LIMITS	Temp FENCE (TYPE ESA)
		LF
L-1	"LOL" 223+00 TO 236+00	1,345
TOTAL		1,345

RECONSTRUCT MBGR

PLAN SHEET No.	STATION LIMITS	RECONSTRUCT MBGR
		LF
L-1	"LOL" 223+00 TO 236+00	1,325
TOTAL		1,325

PAVEMENT STRUCTURE

LOCATION	HOT MIX ASPHALT (TYPE A)	PLACE HMA DIKE (TYPE F)	CLASS 2 AB	TACK COAT	ROADWAY EXCAVATION	HMA (OPEN GRADED)	COLD PLANE AC PAVEMENT
	TON	LF	CY	TON	CY	TON	SQYD
"LOL" 224+00 TO 234+50	212	300	426	0.4	1,397	100	1,420
TOTAL	212	300	426	0.4	1,397	100	1,420

SUMMARY OF QUANTITIES
Q-1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	13	55

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

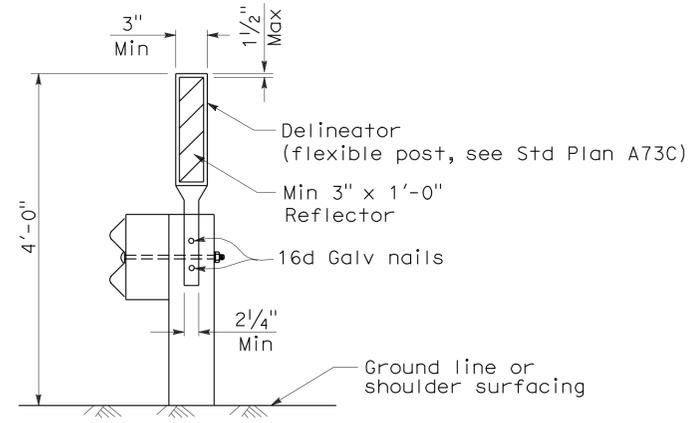
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

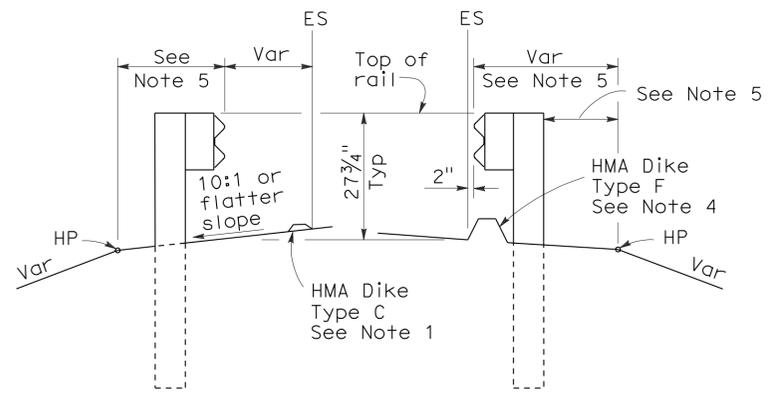
To accompany plans dated 1-31-11

NOTES:

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and Standard Plan A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



GUARD RAILING DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77C4

2006 REVISED STANDARD PLAN RSP A77C4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	14	55

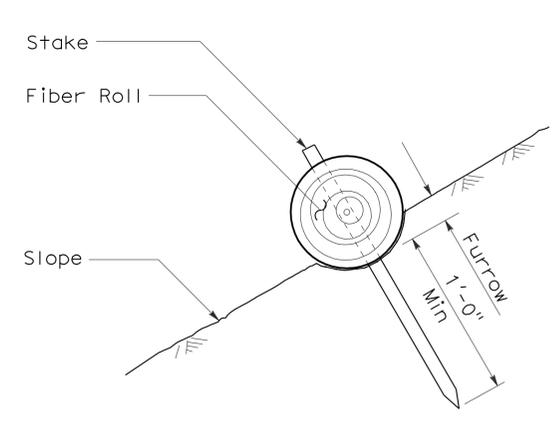
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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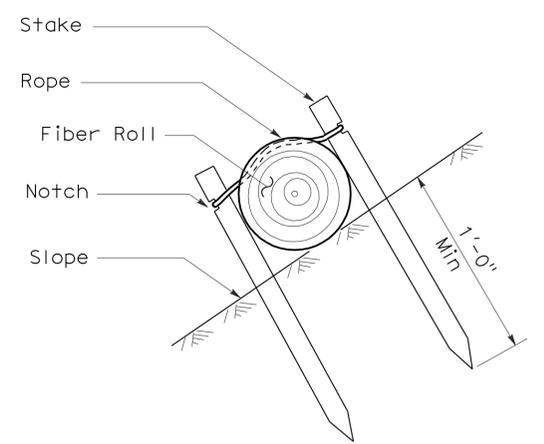
To accompany plans dated 1-31-11

NOTES:

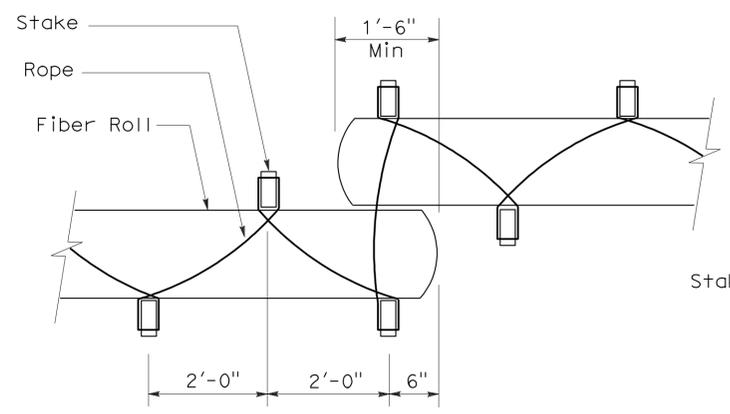
1. Fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



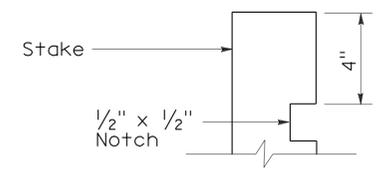
SECTION
FIBER ROLL
(TYPE 1)



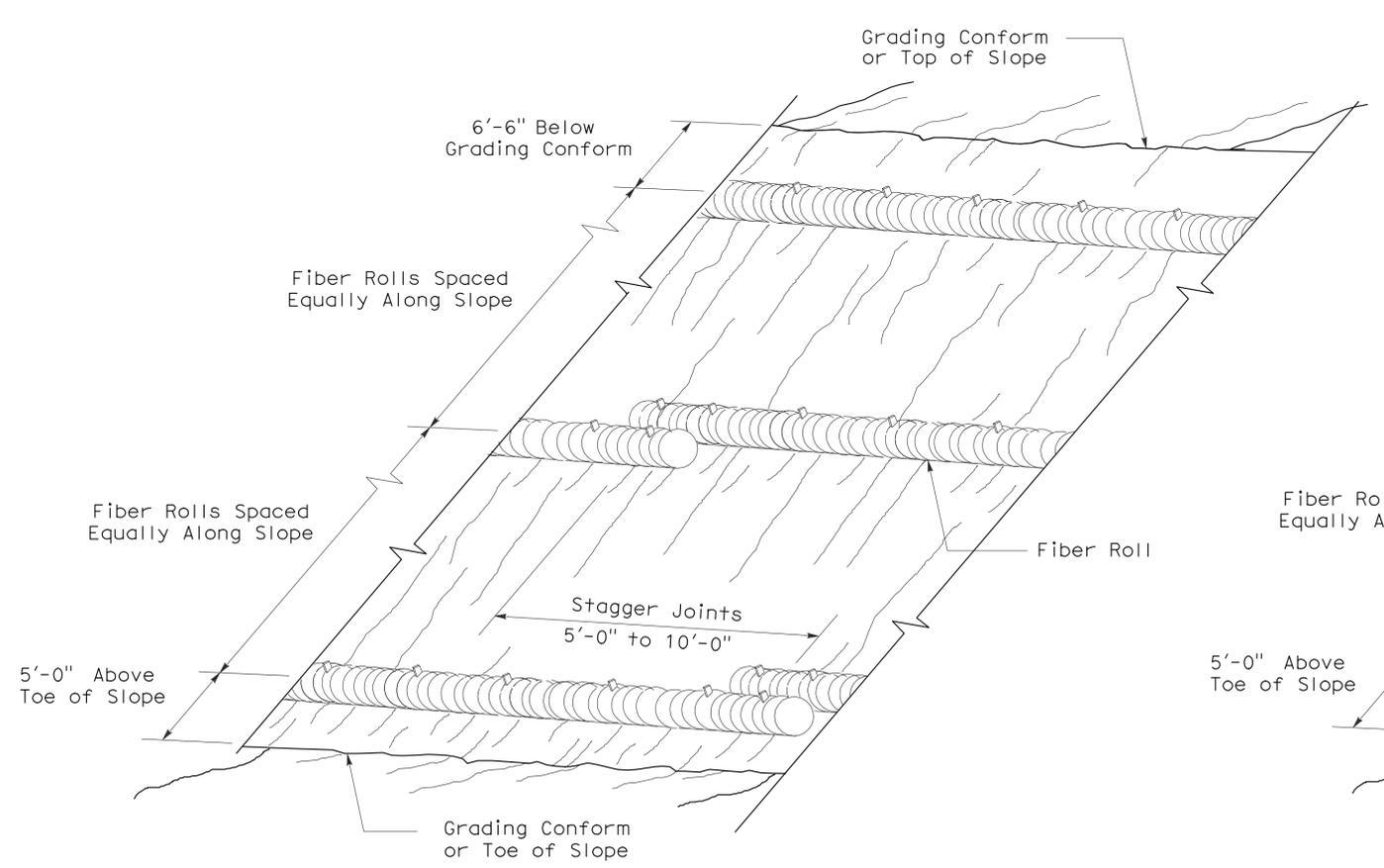
SECTION



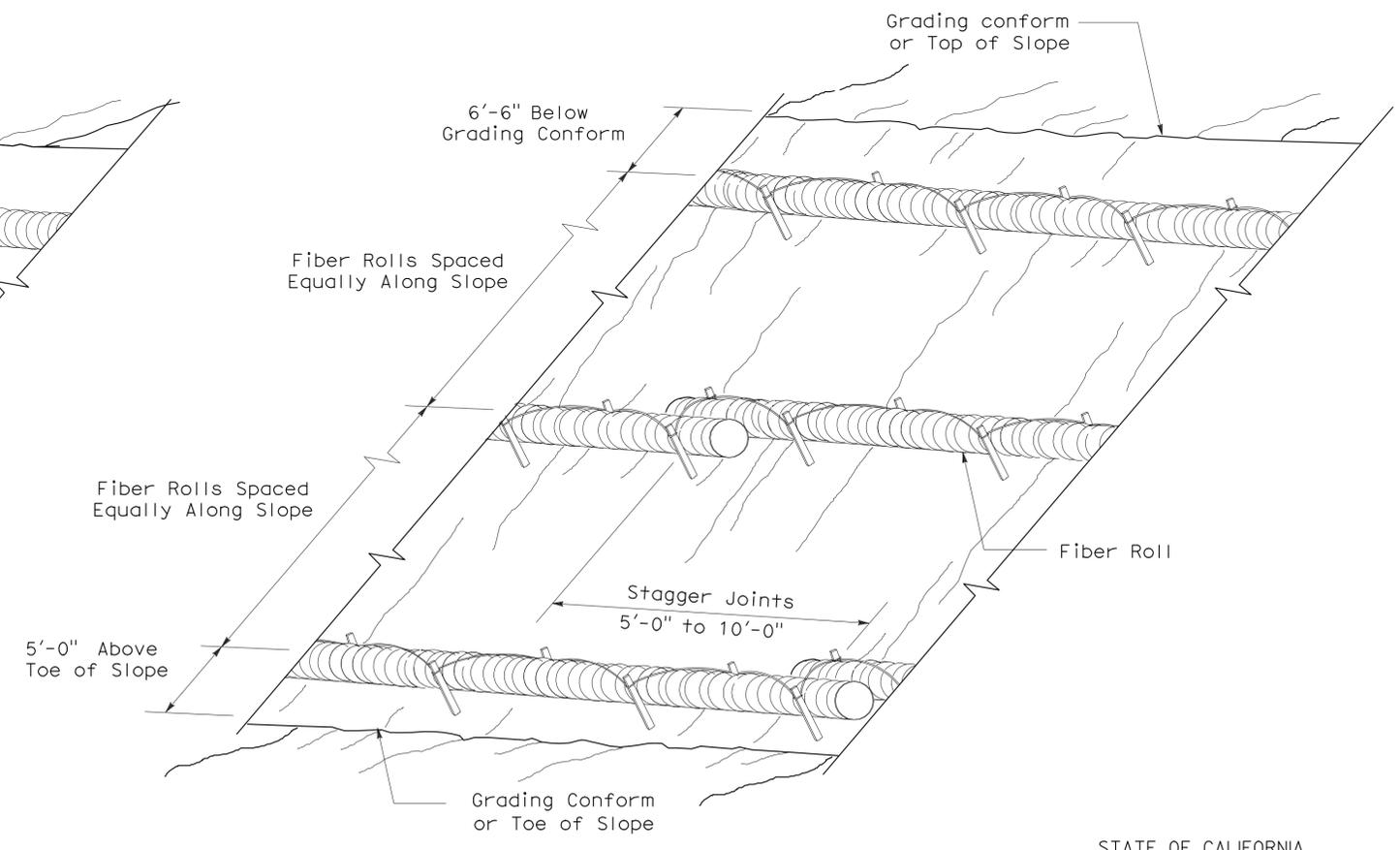
PLAN



ELEVATION
STAKE NOTCH DETAIL



PERSPECTIVE
FIBER ROLL (TYPE 1)



PERSPECTIVE
FIBER ROLL (TYPE 2)

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

NO SCALE
RNSP H51 DATED APRIL 3, 2009 SUPERSEDES NSP H51 DATED DECEMBER 1, 2006
THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED NEW STANDARD PLAN RNSP H51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	15	55

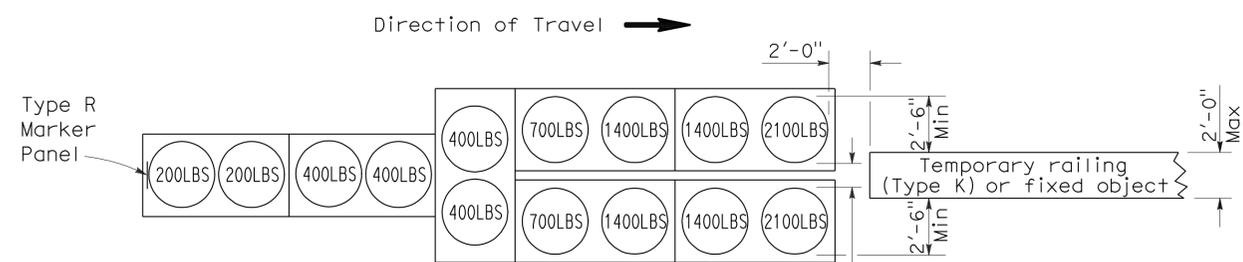
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

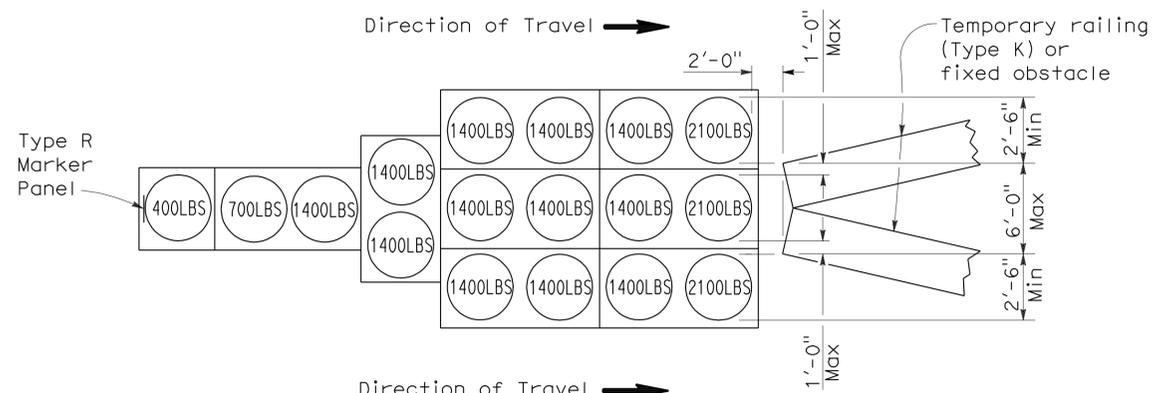
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 1-31-11



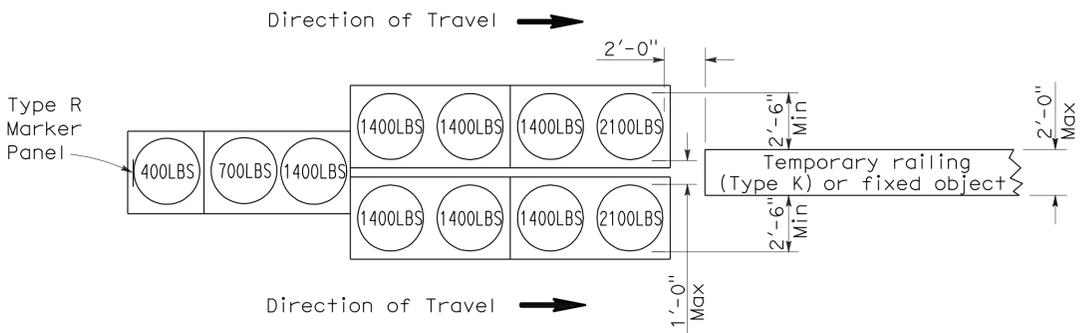
ARRAY 'TU14'

Approach speed 45 mph or more



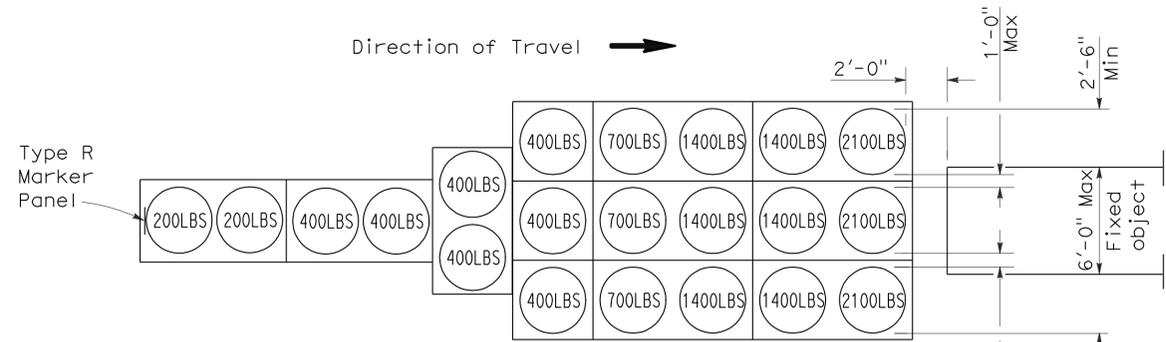
ARRAY 'TU17'

Approach speed less than 45 mph



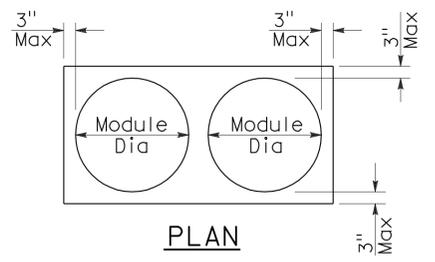
ARRAY 'TU11'

Approach speed less than 45 mph

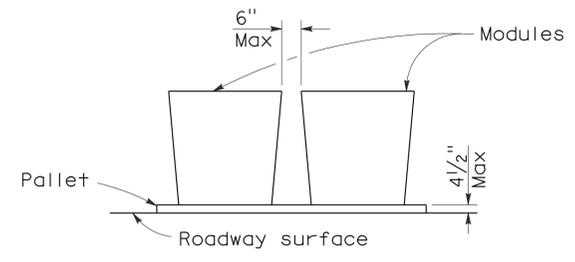


ARRAY 'TU21'

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

2006 REVISED STANDARD PLAN RSP T1A

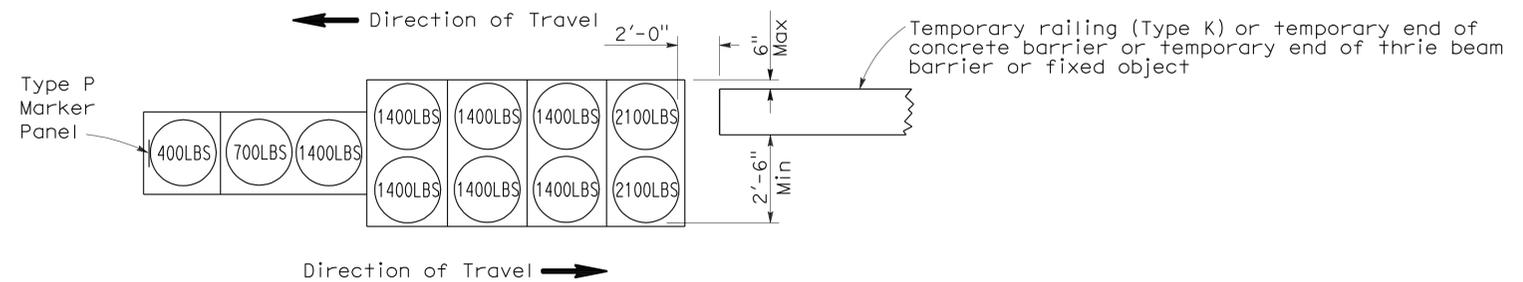
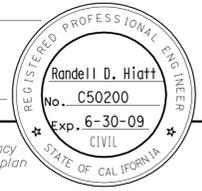
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	16	55

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

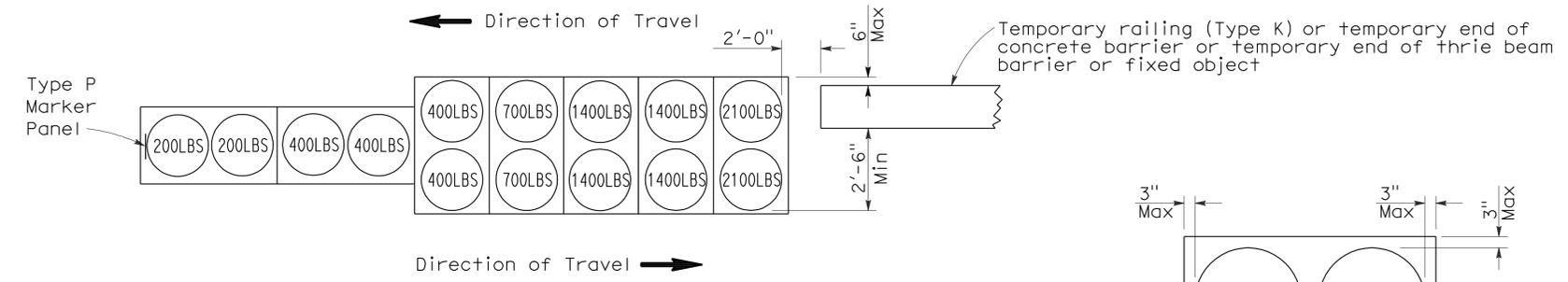
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To accompany plans dated 1-31-11



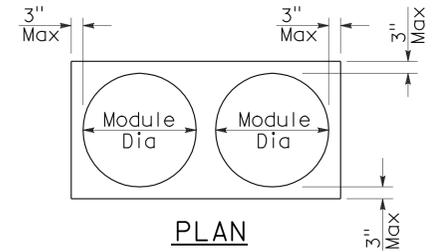
ARRAY 'TB11'

Approach speed less than 45 mph

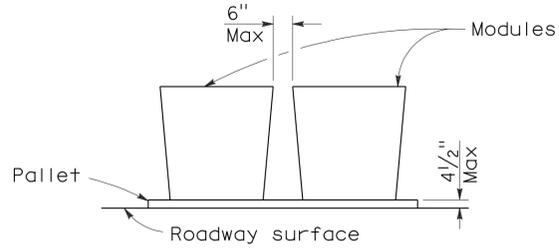


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

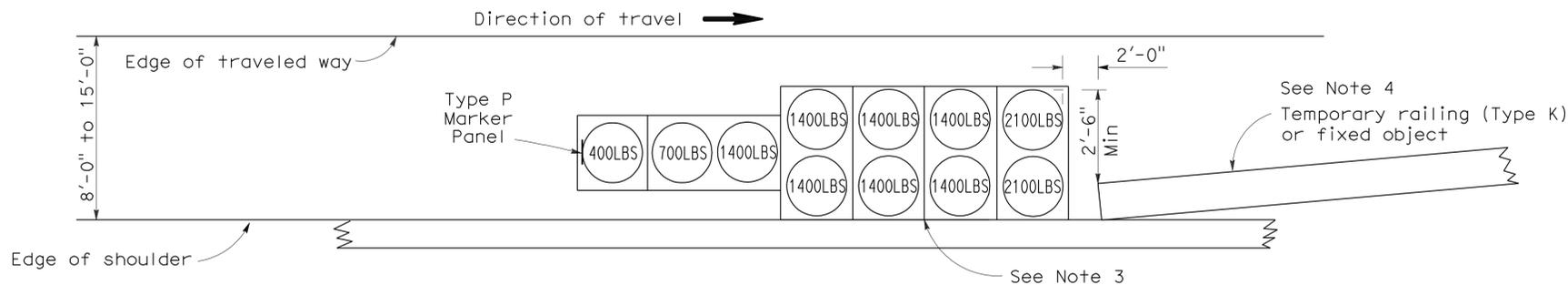
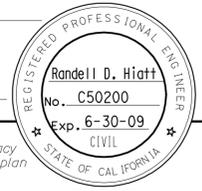
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	17	55

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

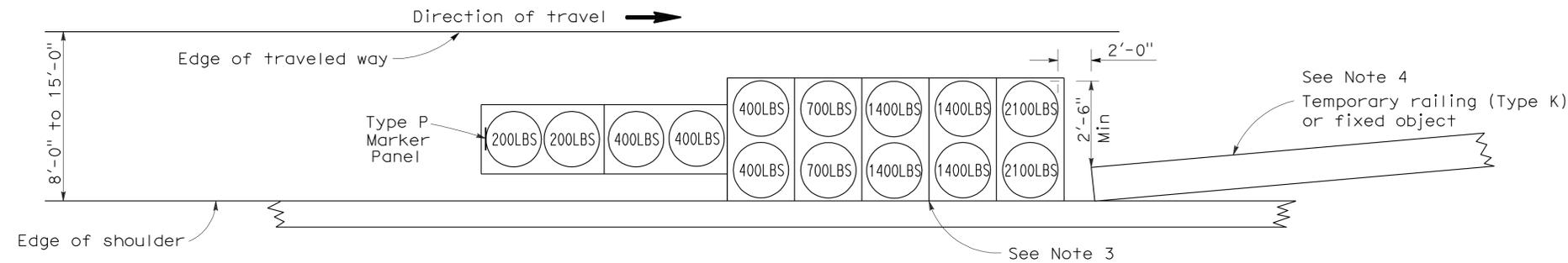
June 6, 2008
PLANS APPROVAL DATE

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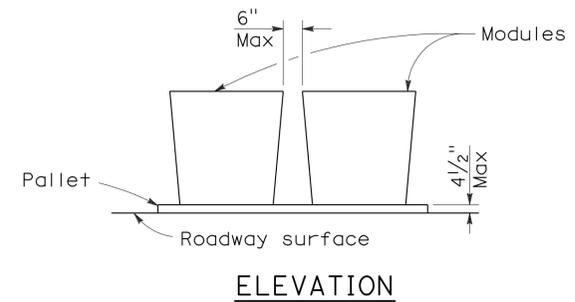
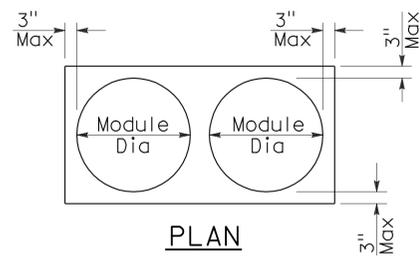
To accompany plans dated 1-31-11



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



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



CRASH CUSHION PALLET DETAIL
See Note 11

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**

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

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

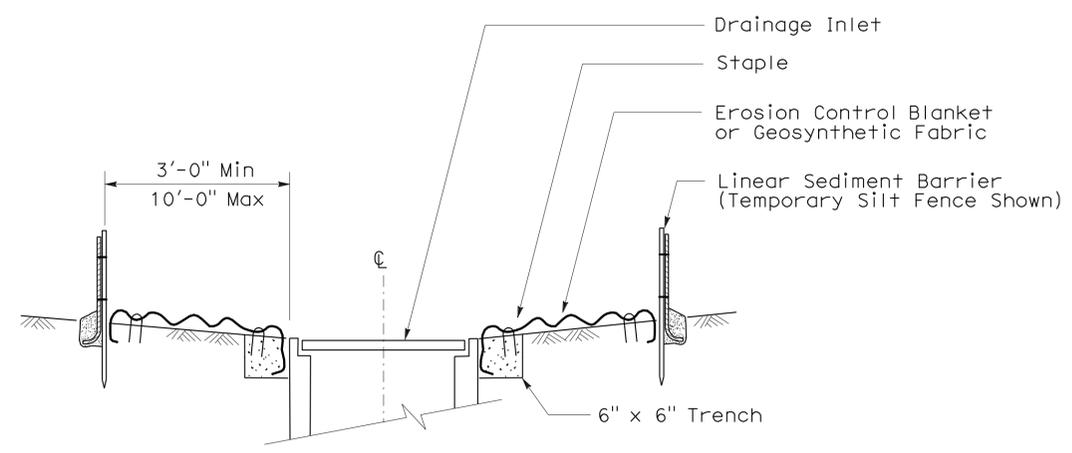
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	19	55

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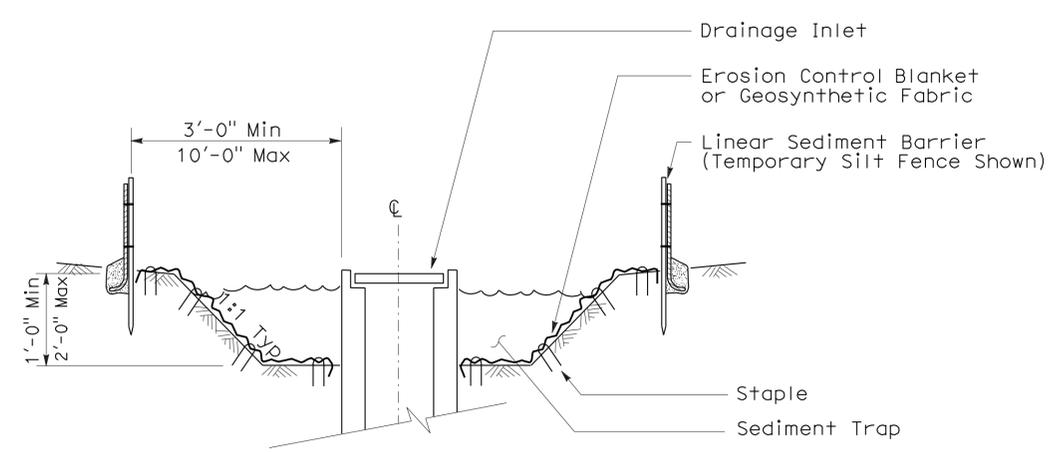


To accompany plans dated 1-31-11

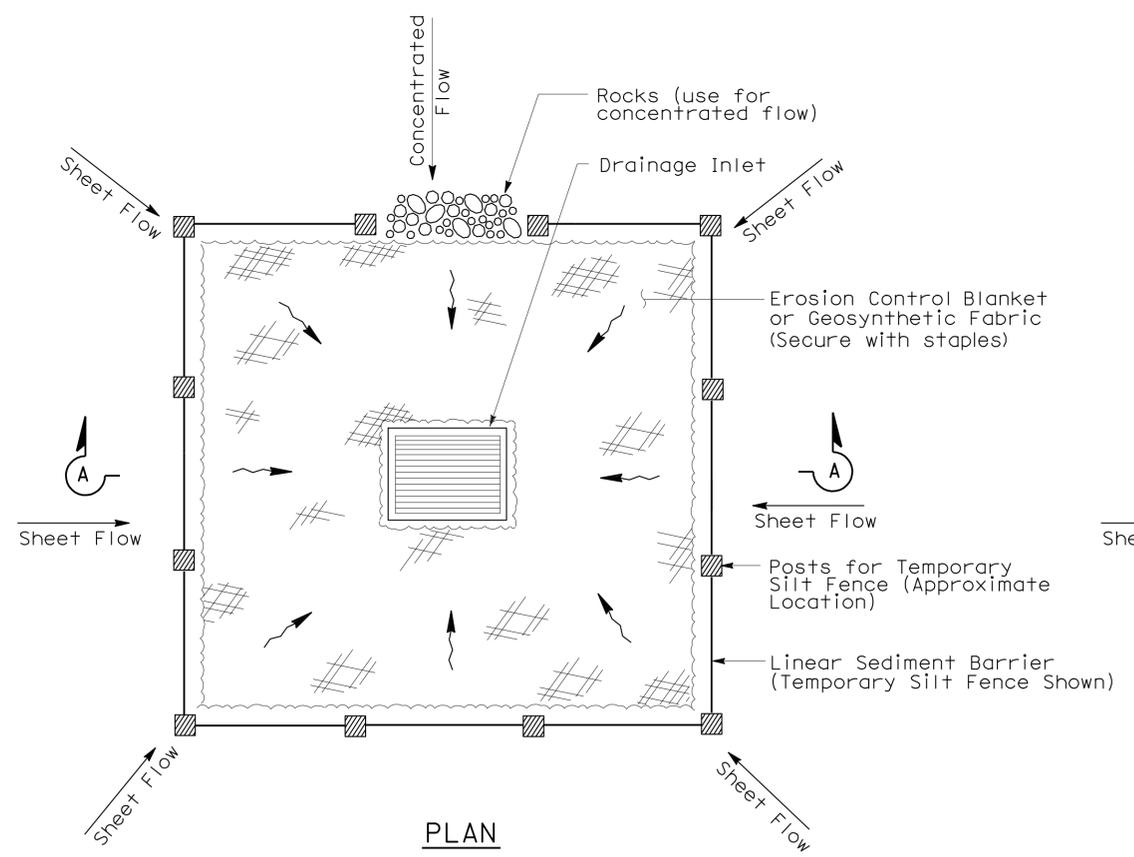
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
 - Dimensions may vary to fit field conditions.



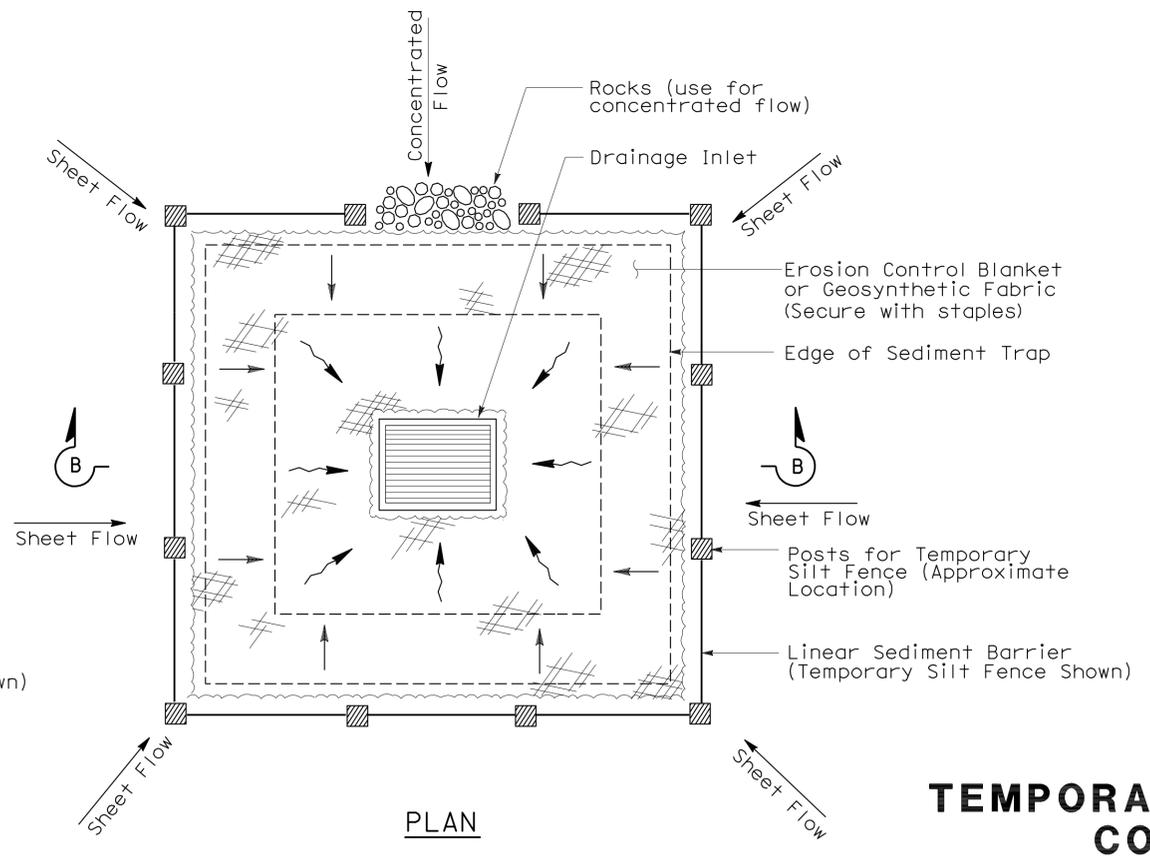
SECTION A-A



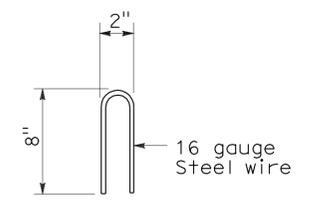
SECTION B-B



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
05	SLO	101	R34.2/R34.5	20	55

Robert B. Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

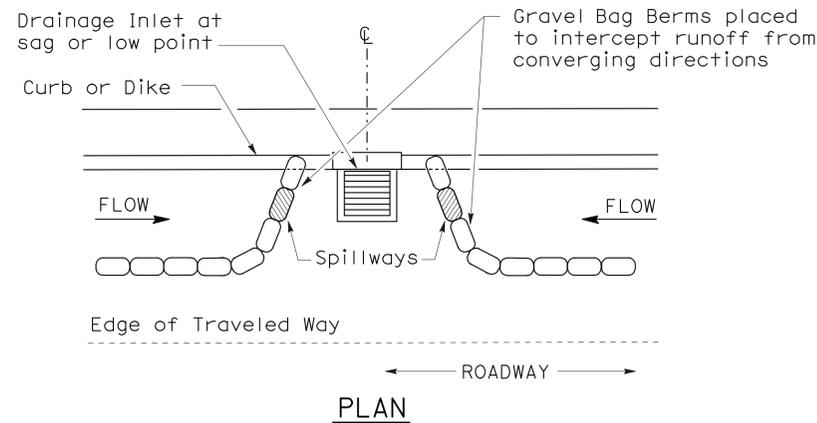
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STATE OF CALIFORNIA
LICENSED LANDSCAPE ARCHITECT
Robert B. Schott
Signature: 11-04-08
Renewal Date: 08-11-08
Date

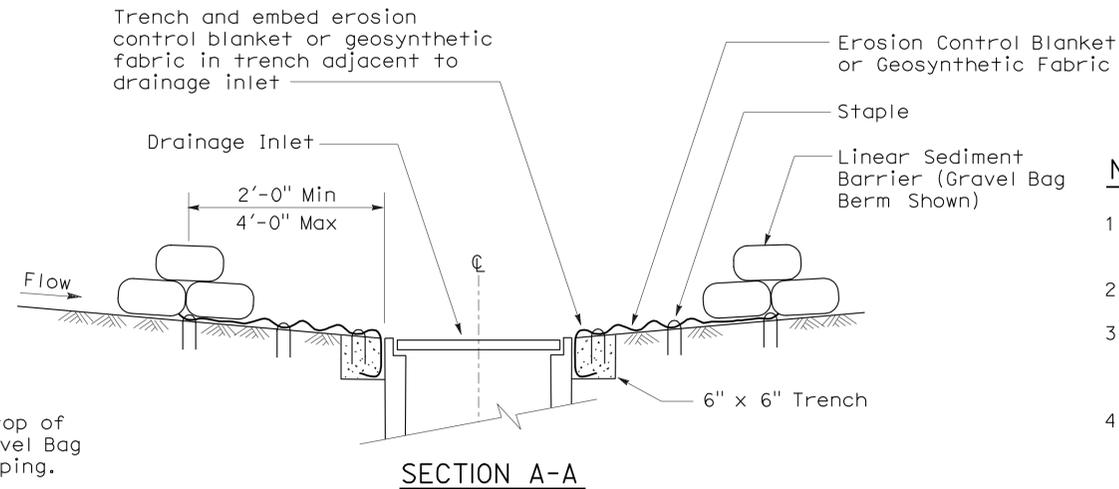
GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

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)

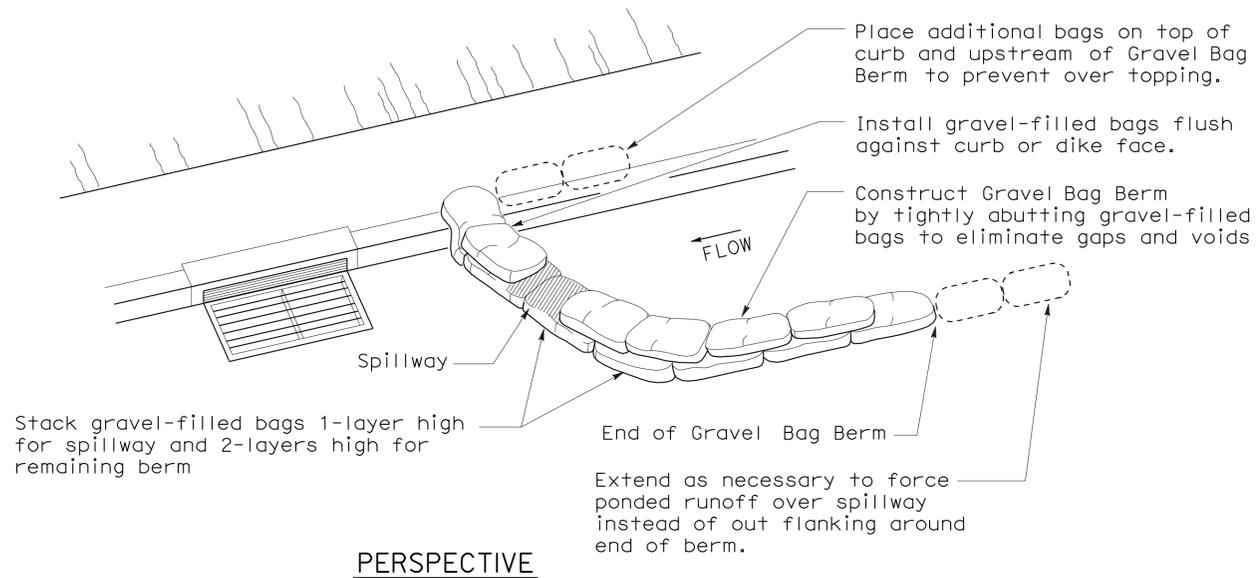


SECTION A-A

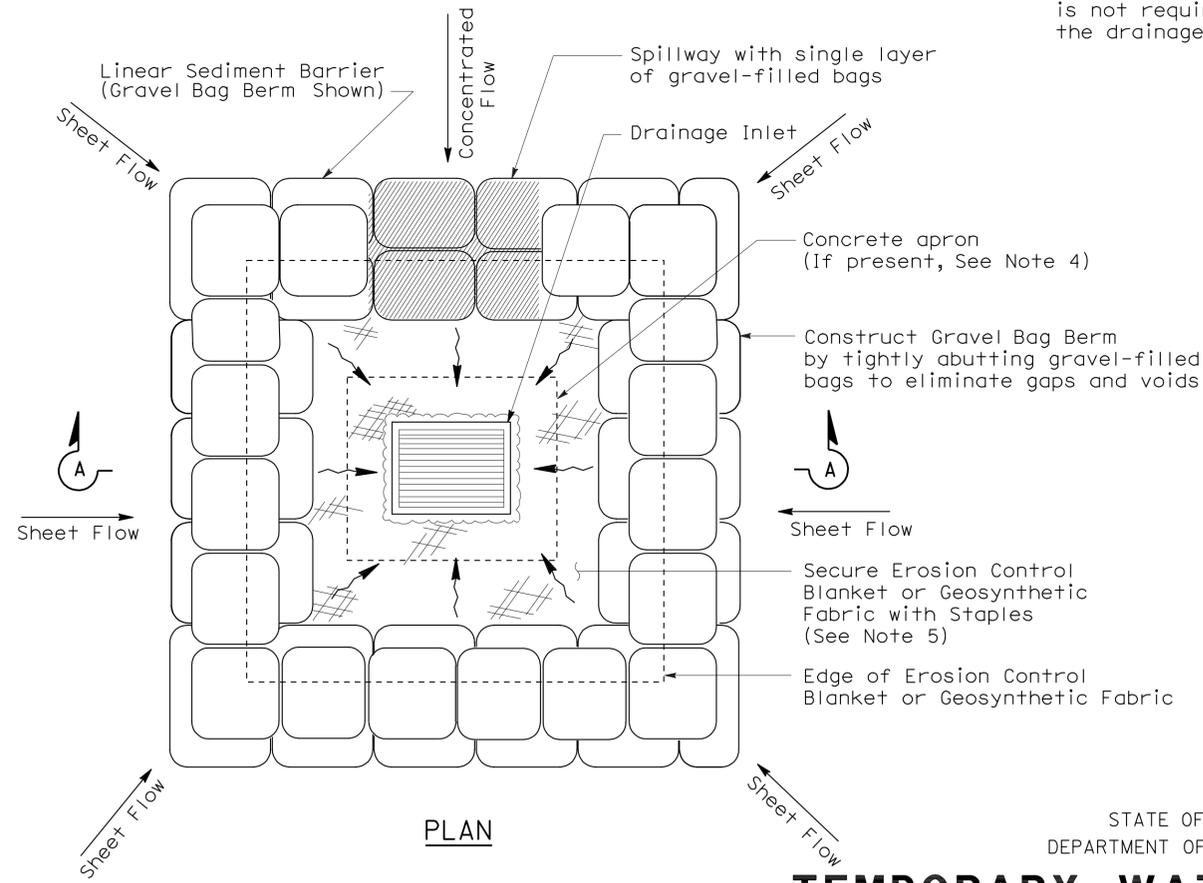
NOTES:

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.

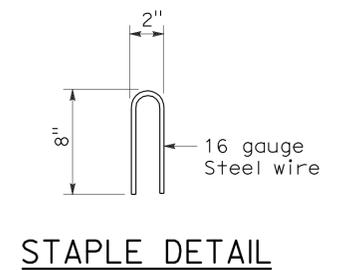
To accompany plans dated 1-31-11



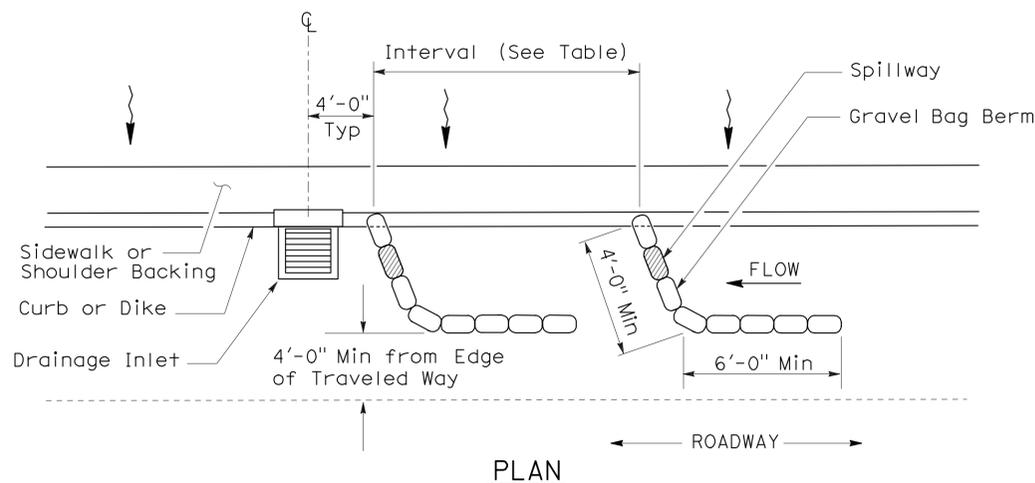
PERSPECTIVE



PLAN
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 3B)



STAPLE DETAIL



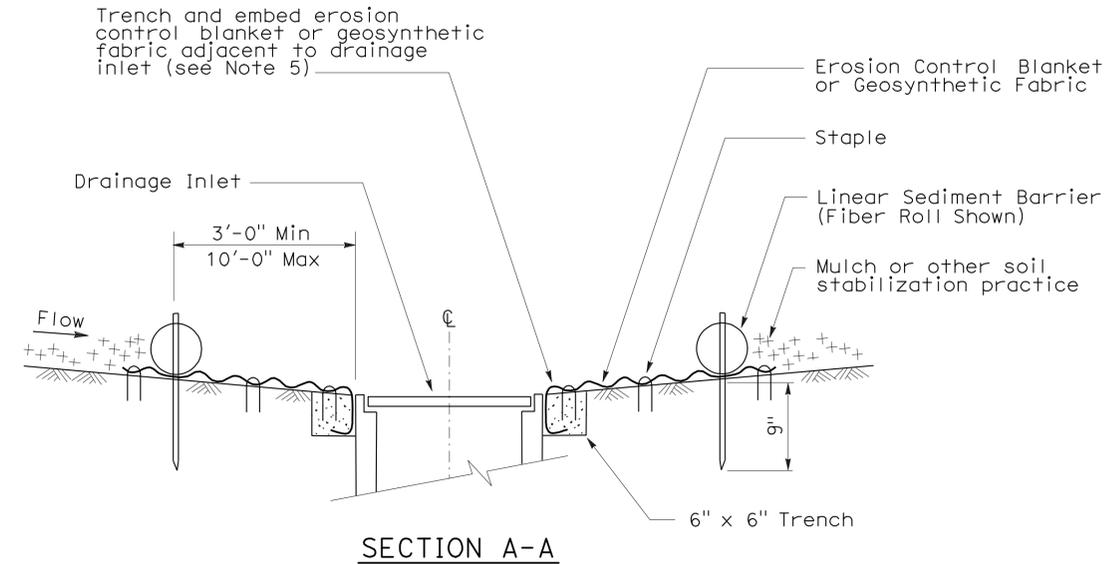
PLAN
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 3A)
(GRAVEL BAG BERM)

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

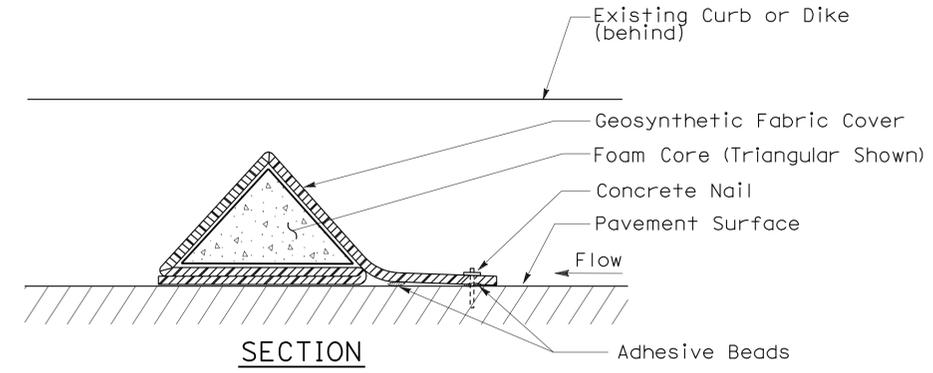
NO SCALE
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

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'



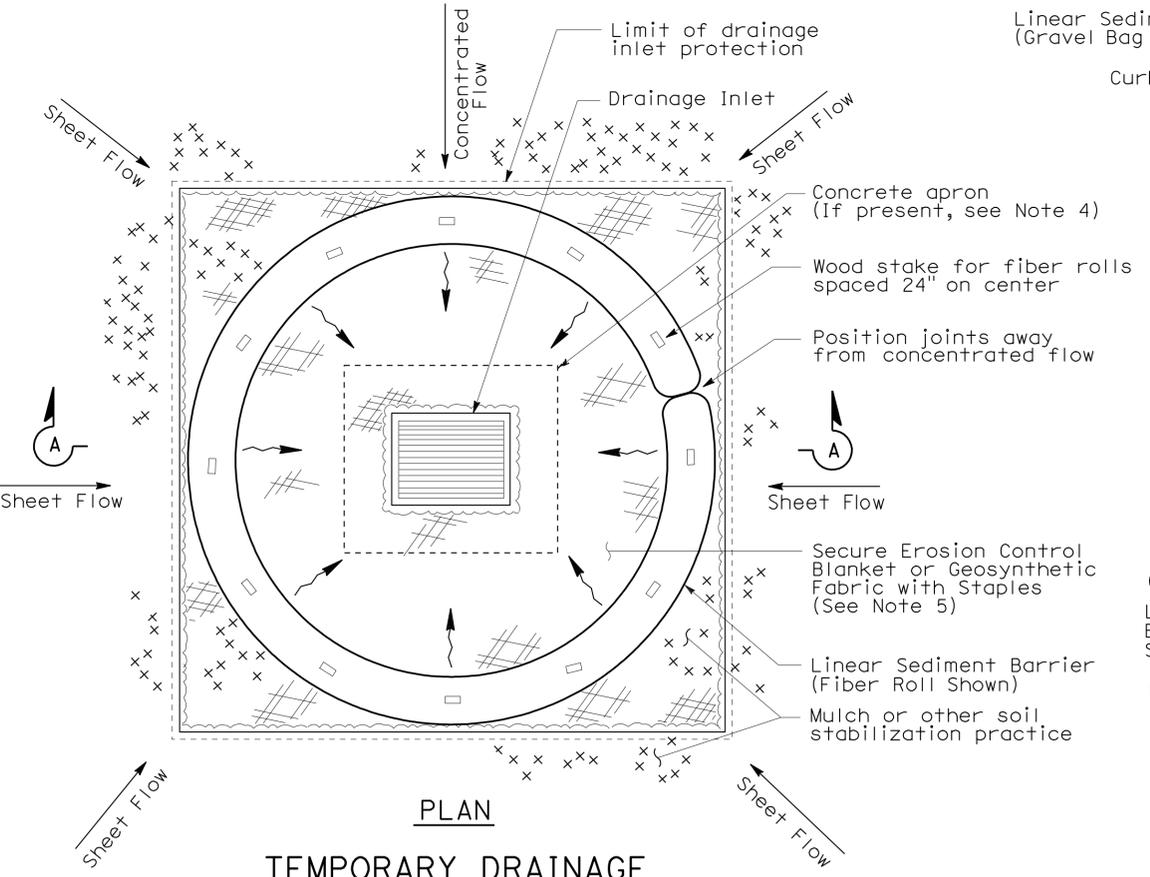
SECTION A-A



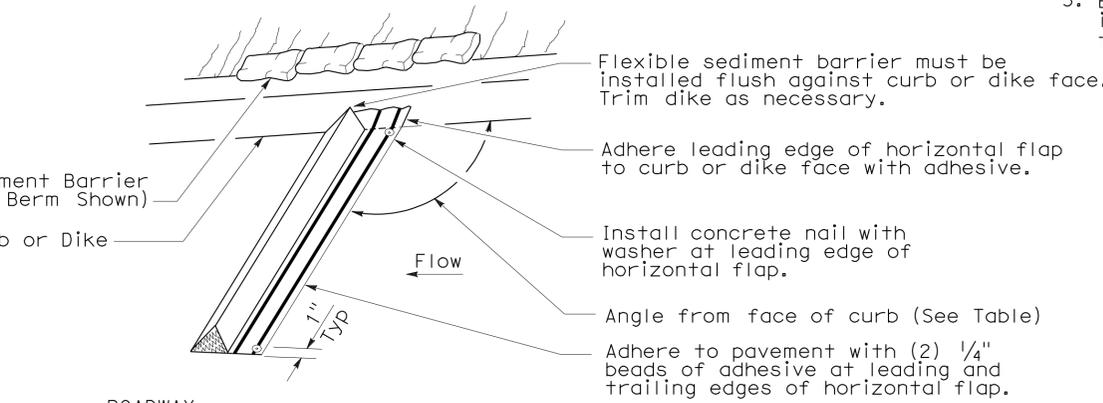
SECTION FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)

NOTES:

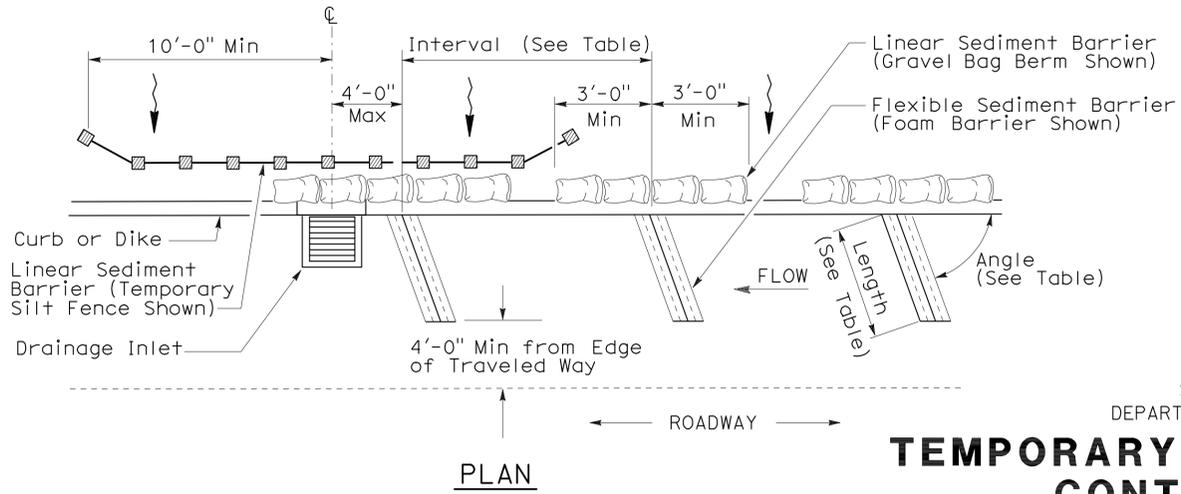
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



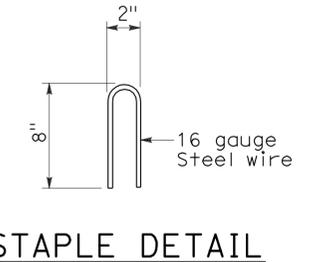
PLAN TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)



PERSPECTIVE



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



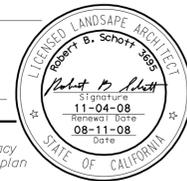
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

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

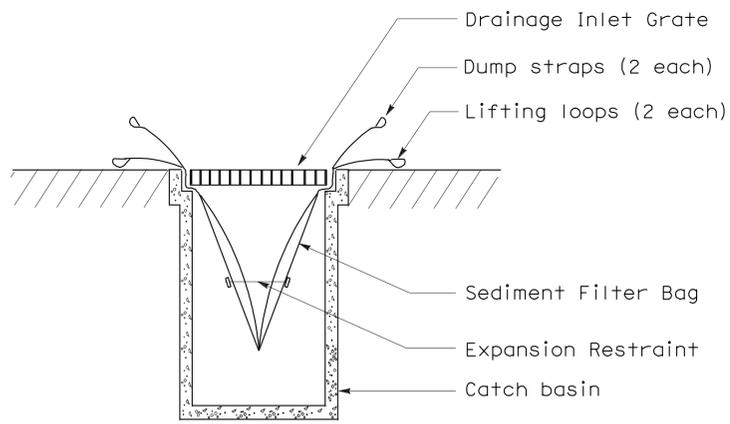
2006 NEW STANDARD PLAN NSP T63

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	22	55

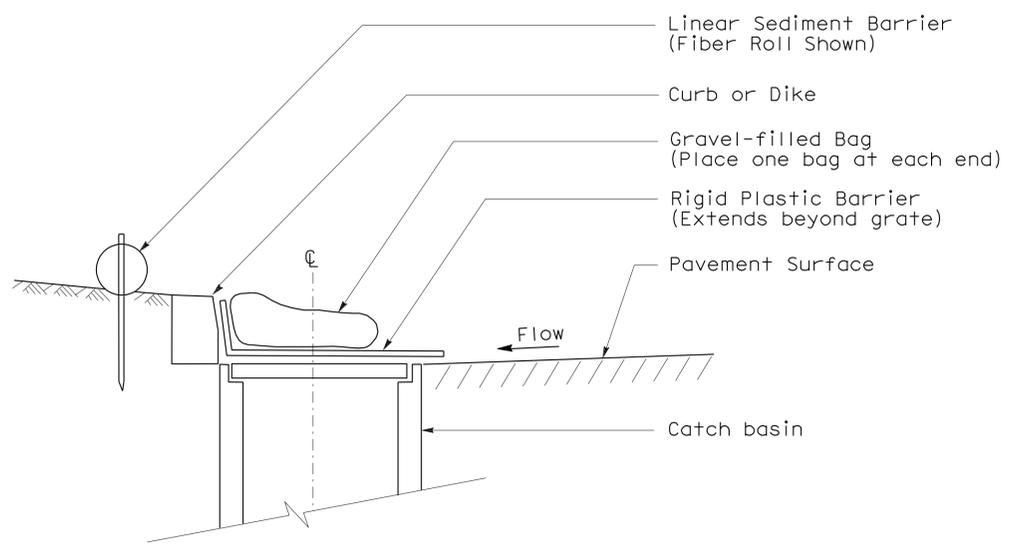
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



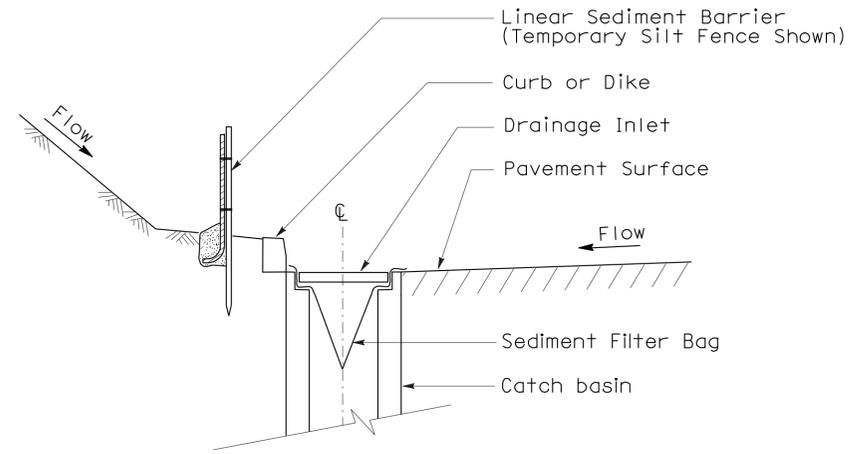
To accompany plans dated 1-31-11



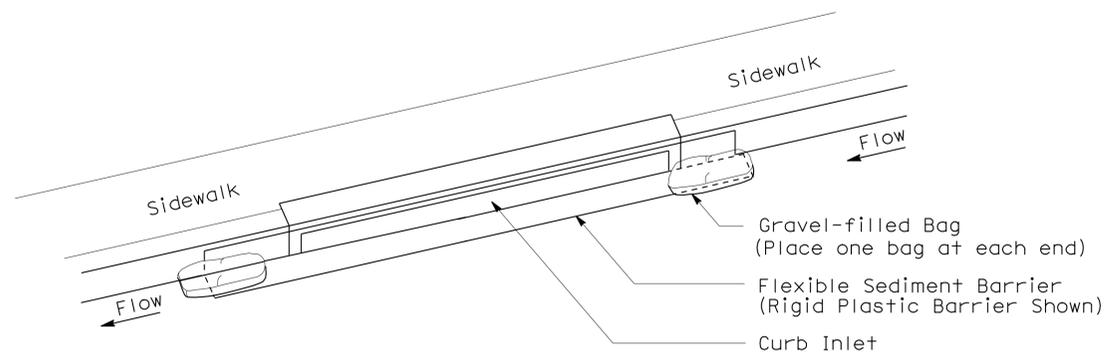
SECTION B-B
SEDIMENT FILTER BAG DETAIL



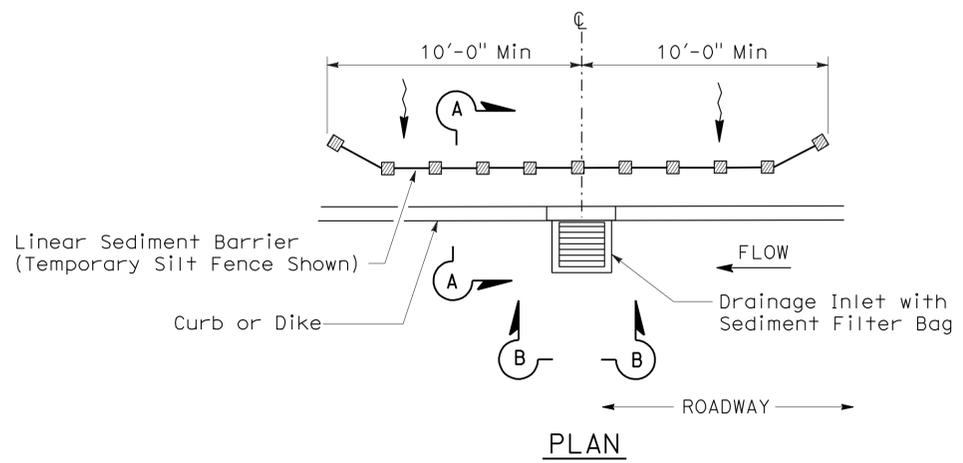
SECTION
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



SECTION A-A



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



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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

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

NEW STANDARD PLAN NSP T64

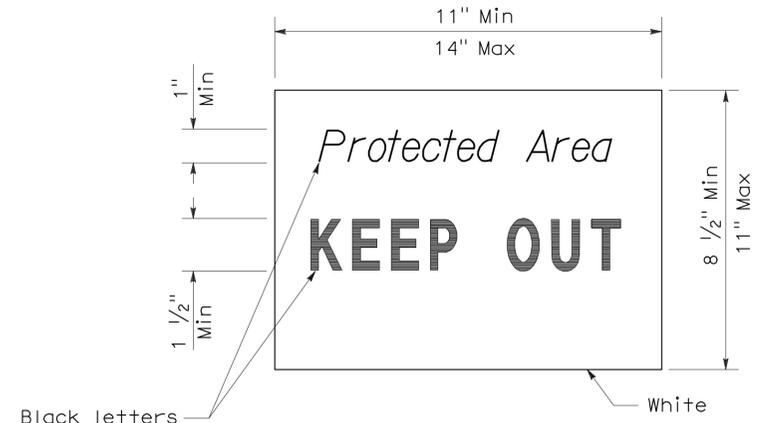
2006 NEW STANDARD PLAN NSP T64

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	23	55

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



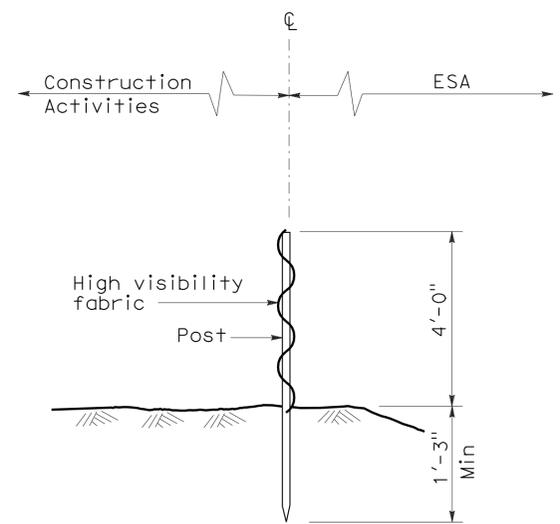
To accompany plans dated 1-31-11



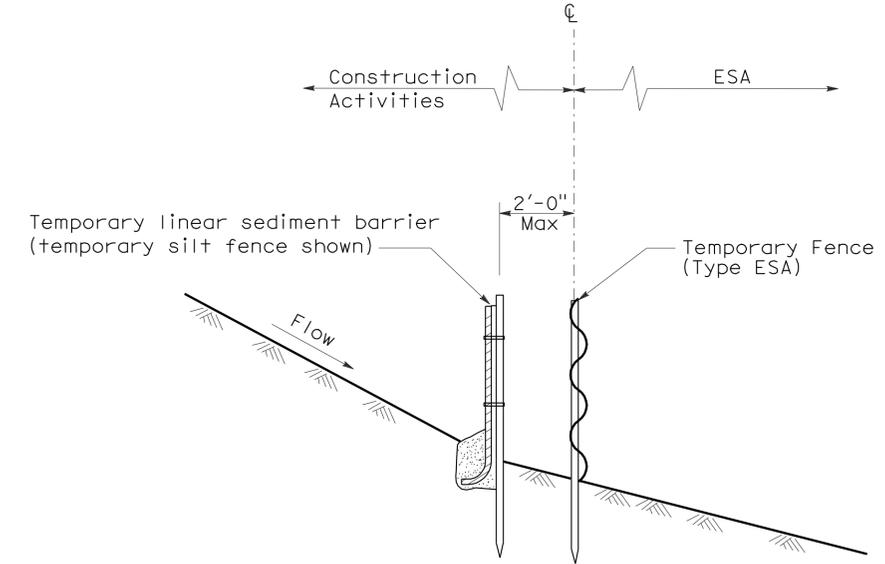
SIGN DETAIL

NOTE:

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

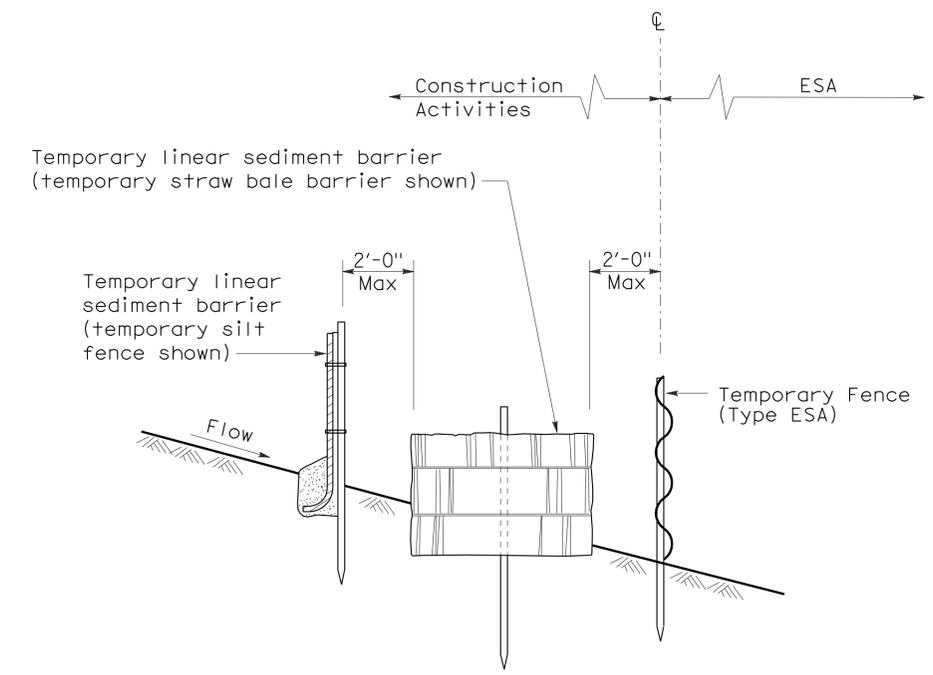


SECTION
TEMPORARY FENCE (TYPE ESA)



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)]

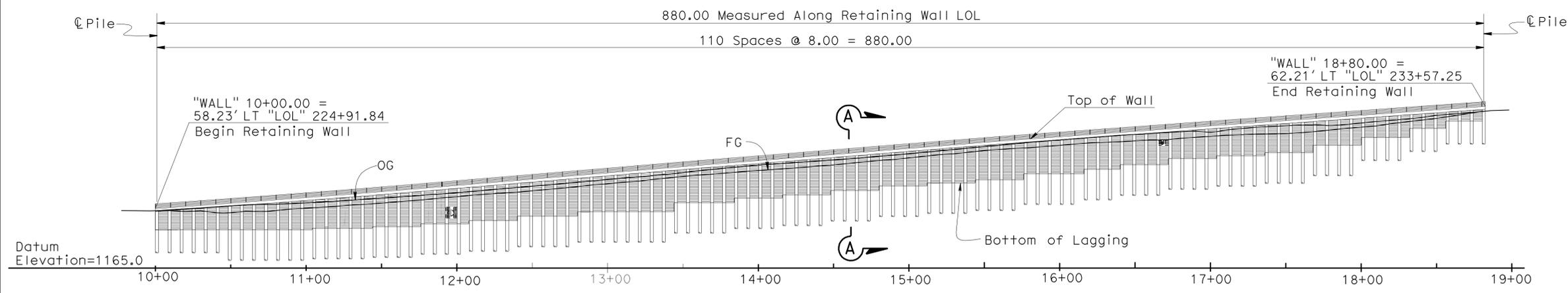
NO SCALE

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	101	R34.2/R34.5	24	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE
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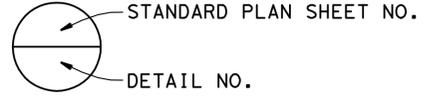
MIRRORED ELEVATION
1" = 40'

INDEX TO PLANS

- | | |
|---------------------------------|----------------------------------|
| 1. GENERAL PLAN | 17. LOG OF TEST BORINGS 2 of 17 |
| 2. FOUNDATION PLAN NO. 1 | 18. LOG OF TEST BORINGS 3 of 17 |
| 3. FOUNDATION PLAN NO. 2 | 19. LOG OF TEST BORINGS 4 of 17 |
| 4. STRUCTURE PLAN NO. 1 | 20. LOG OF TEST BORINGS 5 of 17 |
| 5. STRUCTURE PLAN NO. 2 | 21. LOG OF TEST BORINGS 6 of 17 |
| 6. STRUCTURE PLAN NO. 3 | 22. LOG OF TEST BORINGS 7 of 17 |
| 7. STRUCTURE PLAN NO. 4 | 23. LOG OF TEST BORINGS 8 of 17 |
| 8. DETAILS NO. 1 | 24. LOG OF TEST BORINGS 9 of 17 |
| 9. DETAILS NO. 2 | 25. LOG OF TEST BORINGS 10 of 17 |
| 10. DETAILS NO. 3 | 26. LOG OF TEST BORINGS 11 of 17 |
| 11. DETAILS NO. 4 | 27. LOG OF TEST BORINGS 12 of 17 |
| 12. DETAILS NO. 5 | 28. LOG OF TEST BORINGS 13 of 17 |
| 13. TYPICAL SECTION | 29. LOG OF TEST BORINGS 14 of 17 |
| 14. TABLE NO. 1 | 30. LOG OF TEST BORINGS 15 of 17 |
| 15. TABLE NO. 2 | 31. LOG OF TEST BORINGS 16 of 17 |
| 16. LOG OF TEST BORINGS 1 of 17 | 32. LOG OF TEST BORINGS 17 of 17 |

STANDARD PLANS DATED MAY 2006

- A10A-A10B ACRONYMS AND ABBREVIATIONS
- A10C-A10D SYMBOLS
- A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL
- B3-9 RETAINING WALL DETAILS NO. 2
- B11-47 CABLE RAILING



QUANTITIES

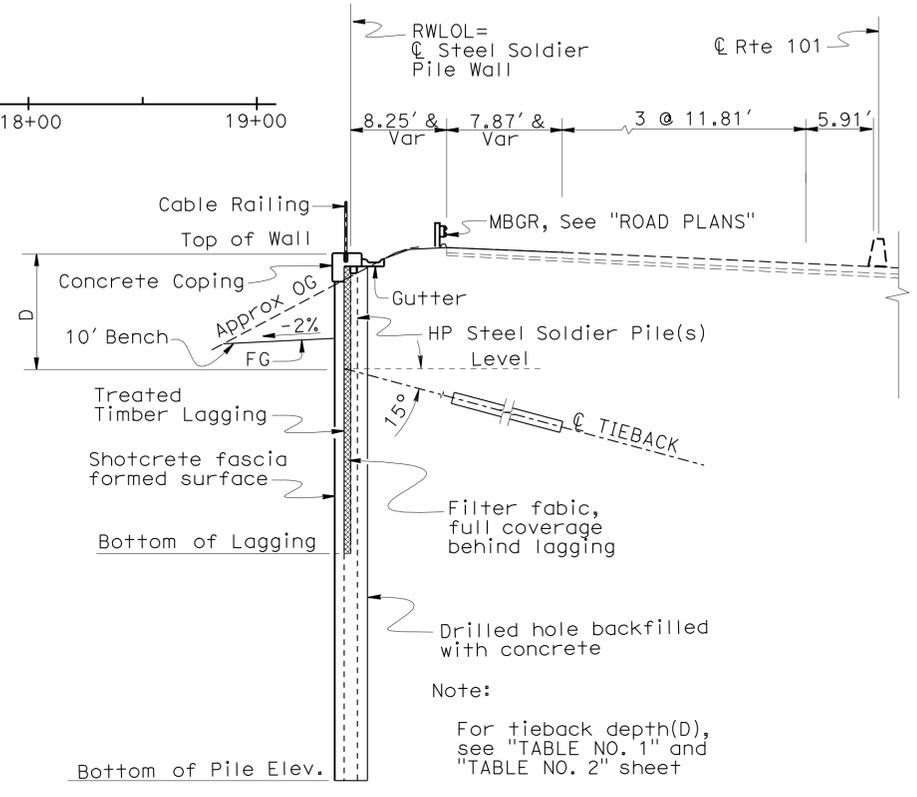
DISTRICT / EA = 05 ON8901
 - WEST CUESTA SOLDIER PILE WALL BRIDGE NO 49E0017

QUANTITIES

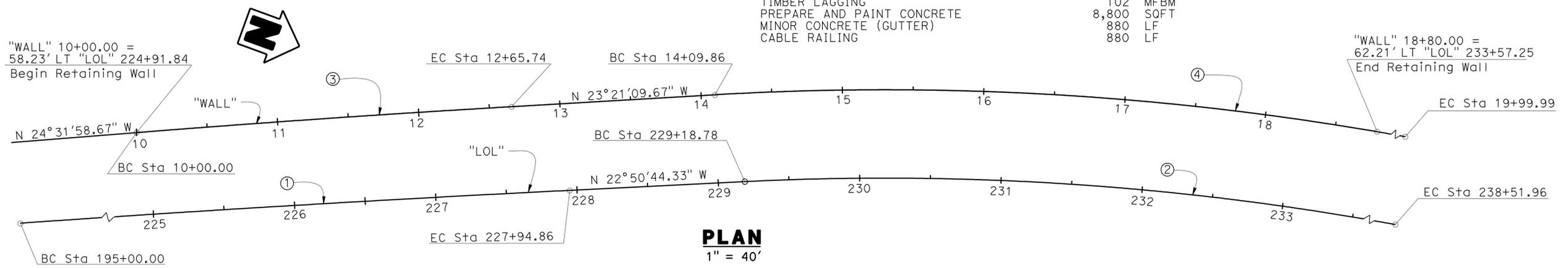
STRUCTURE EXCAVATION (SOLDIER PILE WALL)	1,265	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	565	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	655	CY
LEAN CONCRETE BACKFILL	804	CY
STEEL SOLDIER PILE (HP 8 X 36)	620	LF
STEEL SOLDIER PILE (HP 10 X 42)	710	LF
STEEL SOLDIER PILE (HP 12 X 53)	7,113	LF
STEEL SOLDIER PILE (HP 14 X 73)	57	LF
36" DRILLED HOLE	650	LF
42" DRILLED HOLE	3,555	LF
TIEBACK ANCHOR	108	EA
STRUCTURAL CONCRETE, RETAINING WALL	160	CY
BAR REINFORCING STEEL (RETAINING WALL)	43,600	LB
SHOTCRETE	230	CY
TIMBER LAGGING	102	MFBM
PREPARE AND PAINT CONCRETE	8,800	SQFT
MINOR CONCRETE (GUTTER)	880	LF
CABLE RAILING	880	LF

CURVE DATA

No.	R	Δ	T	L
①	19685.00'	9°35'24"	1651.29'	3294.86'
②	2001.31'	26°42'58"	475.23'	933.18'
③	12900.00'	1°10'49"	132.87'	265.74'
④	2057.00'	16°26'15"	297.11'	590.13'



SECTION A-A
1/8" = 1'



PLAN
1" = 40'

All Dimensions in Feet unless otherwise shown

MICHAEL POPE DESIGN ENGINEER	DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	WEST CUESTA SOLDIER PILE WALL GENERAL PLAN
	DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY	LAYOUT	BY JINLI GUO			CHECKED DAVID P MURRAY	
	QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON	SPECIFICATIONS	BY X	PLANS AND SPECS COMPARED X		R34.2/R34.5	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3
 CU 05 EA ON8901
 DISREGARD PRINTS BEARING EARLIER REVISION DATES
 REVISION DATES: 11-28-09, 1-18-10, 1-28-10, 1-28-10, 10-25-10, 3-18-10, 3-28-10, 05-20-10, 05-25-10
 SHEET 1 OF 32

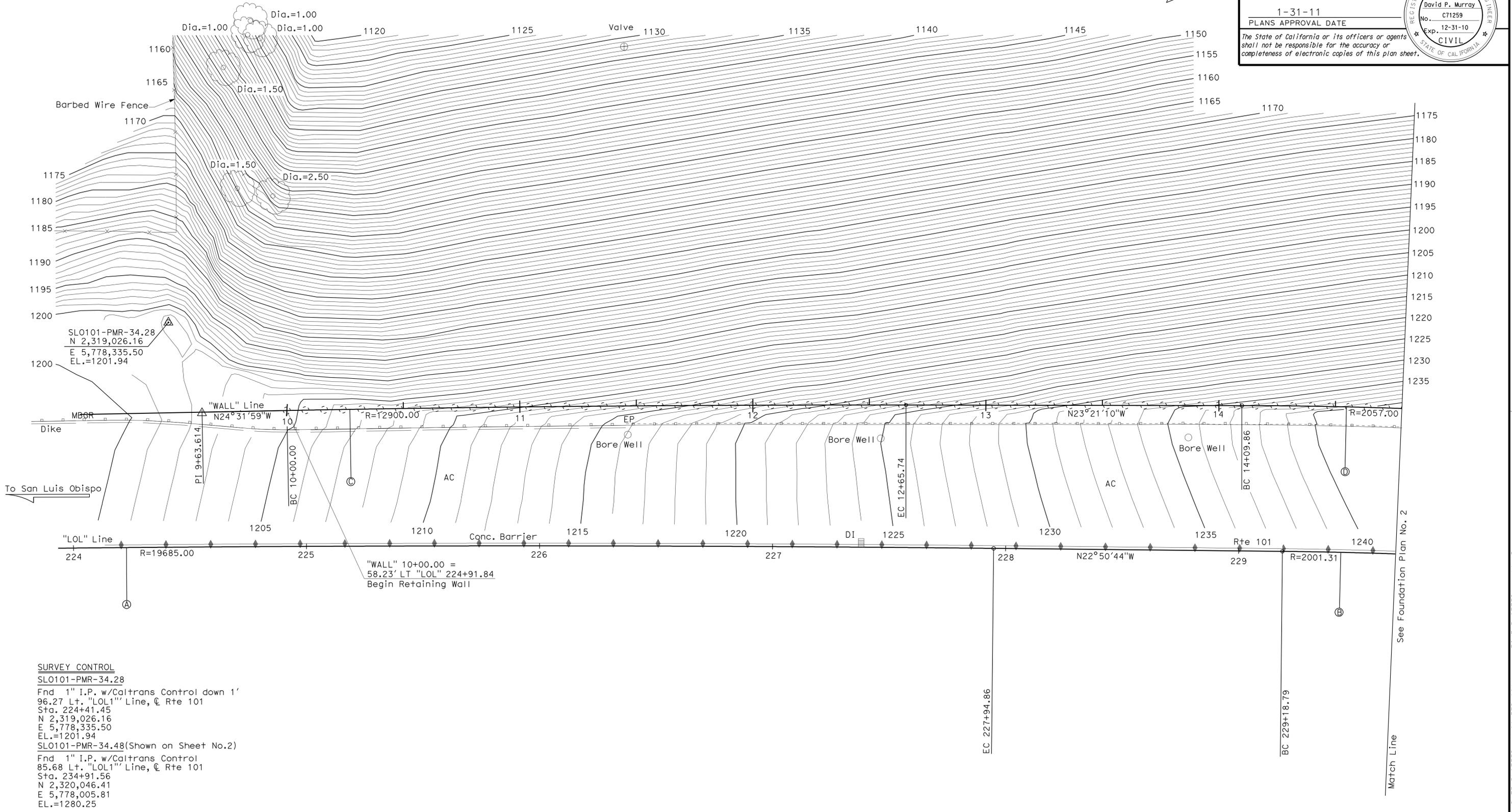
CURVE DATA

No.	R	Δ	T	L
(A)	19685.00	9°35'24"	1651.29	3294.86
(B)	2001.31	26°42'58"	475.23	933.18
(C)	12900.00	1°10'49"	132.87	265.74
(D)	2057.00	16°26'15"	297.11	590.13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	25	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
 David P. Murray
 No. C71259
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA



SURVEY CONTROL
 SLO101-PMR-34.28
 Fnd 1" I.P. w/Caltrans Control down 1'
 96.27 Lt. "LOL1" Line, @ Rte 101
 Sta. 224+41.45
 N 2,319,026.16
 E 5,778,335.50
 EL.=1201.94
 SLO101-PMR-34.48(Shown on Sheet No.2)
 Fnd 1" I.P. w/Caltrans Control
 85.68 Lt. "LOL1" Line, @ Rte 101
 Sta. 234+91.56
 N 2,320,046.41
 E 5,778,005.81
 EL.=1280.25

PRELIMINARY INVESTIGATION SECTION

SCALE	VERT. DATUM	NAVD 88	PHOTOGRAMMETRY	AS OF: X
1"=20'	HORZ. DATUM	NAD 83 (92)	SURVEYED	BY District
ALIGNMENT TIES	Dist. Traverse Sheet	CHECKED	BY Sharon Zheng	10/2009
		CHECKED	BY T.Zolnikova	10/2009

DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON
DETAILS	BY JINLI GUO	CHECKED DAVID MURRAY
QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO.	49E0017
POST MILE	R34.2/R34.5

WEST CUESTA SOLDIER PILE WALL
 FOUNDATION PLAN NO. 1

STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



CU 05
 EA 0N8901

DISREGARD PRINTS BEARING EARLIER REVISION DATES

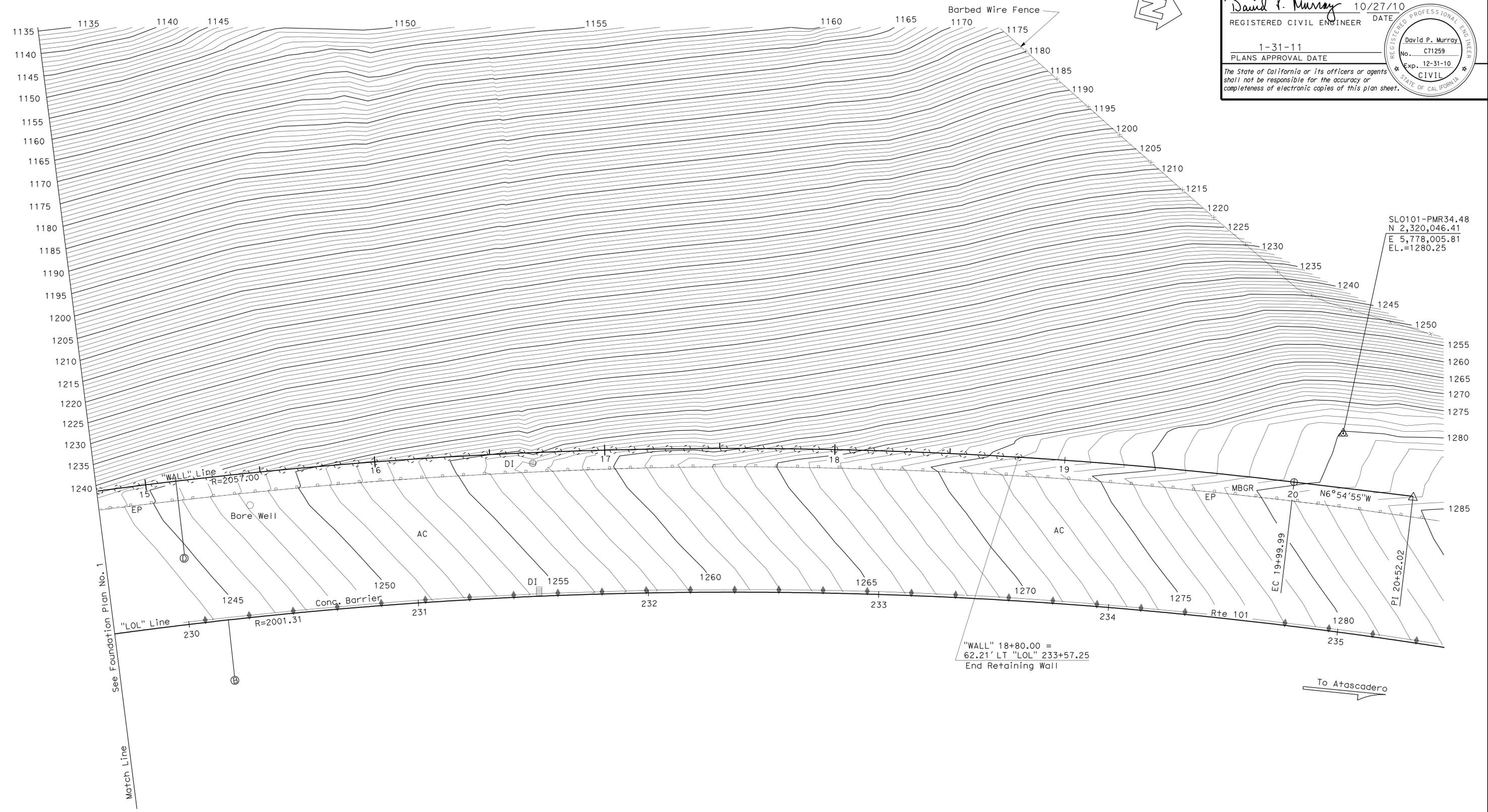
11/4/09	03/27/10	05/20/10
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REVISION DATES

SHEET	2	OF	32
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	26	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE
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SLO101-PMR34.48
 N 2,320,046.41
 E 5,778,005.81
 EL.=1280.25

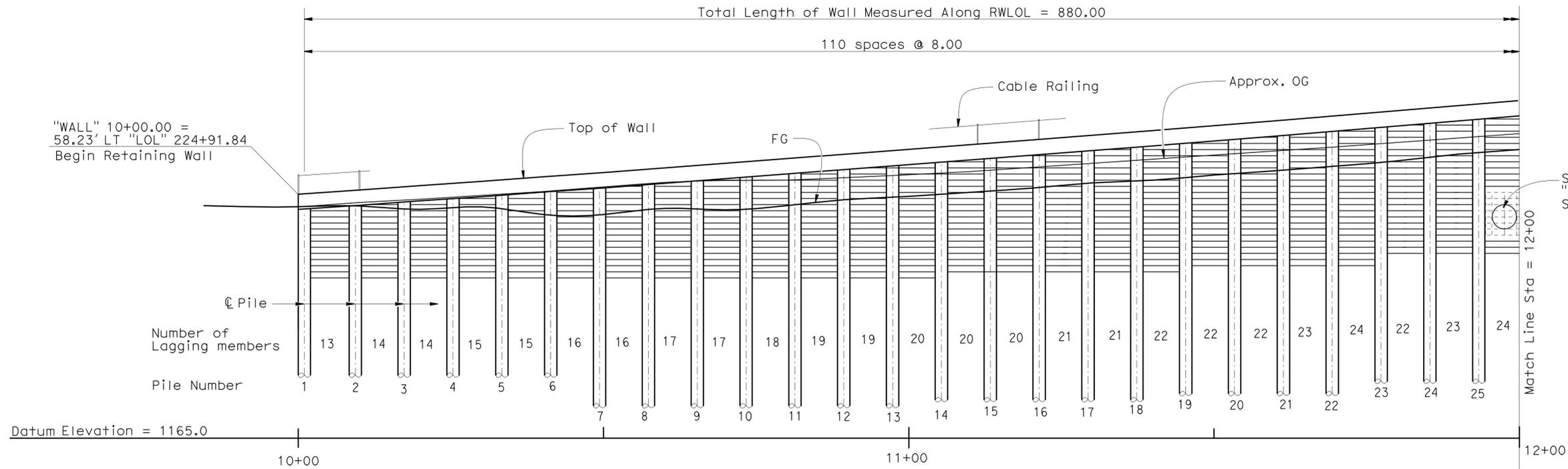
"WALL" 18+80.00 =
 62.21' LT "LOL" 233+57.25
 End Retaining Wall

To Atascadero

PRELIMINARY INVESTIGATION SECTION				DESIGN	BY DAVID P MURRAY	CHECKED RUPERT WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	49E0017	WEST CUESTA SOLDIER PILE WALL FOUNDATION PLAN NO. 2		
SCALE	VERT. DATUM	NAVD 88	PHOTOGRAMMETRY AS OF: X	DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY			POST MILE	R34.2/R34.5			
1"=20'	HORZ. DATUM	NAD 83 (92)	SURVEYED	BY District	CHECKED	BY Chris Fasset 10/09			REVISION DATES				
ALIGNMENT TIES Dist. Traverse Sheet				DRAFTED	BY Sharon Zheng 10/2009	CHECKED	BY T.ZoInikova 10/2009	QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERT WILSON	SHEET	3	
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 05	EA 0N8901	DISREGARD PRINTS BEARING EARLIER REVISION DATES		OF	32

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	27	55

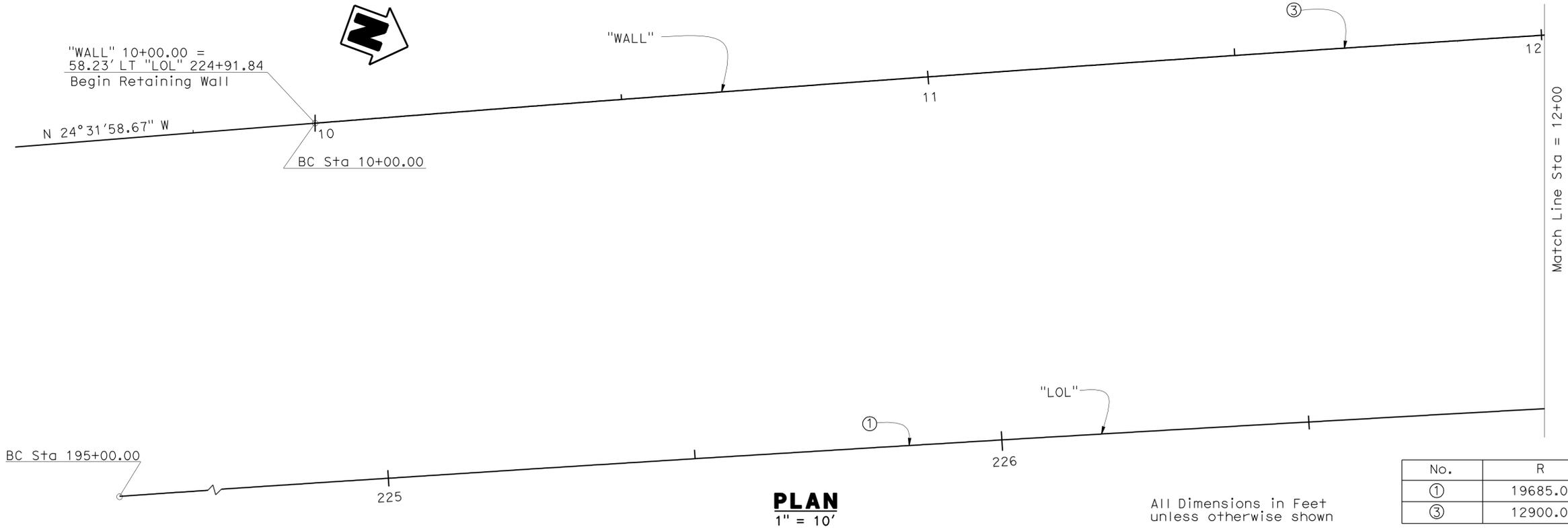
David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE
 No. C71259
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA
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See "Detail X"
"Details No. 5" sheet
Sta 11+90±

MIRRORED ELEVATION
1" = 10'

NOTE:
Lagging members for Design Heights up to and including 18' are 4" X 12".
Lagging members for Design Heights greater than 18' are 6" X 12". HDPE shims to match lagging width.



CURVE DATA

No.	R	Δ	T	L
①	19685.00'	9°35'24"	1651.29'	3294.86'
③	12900.00'	1°10'49"	132.87'	265.74'

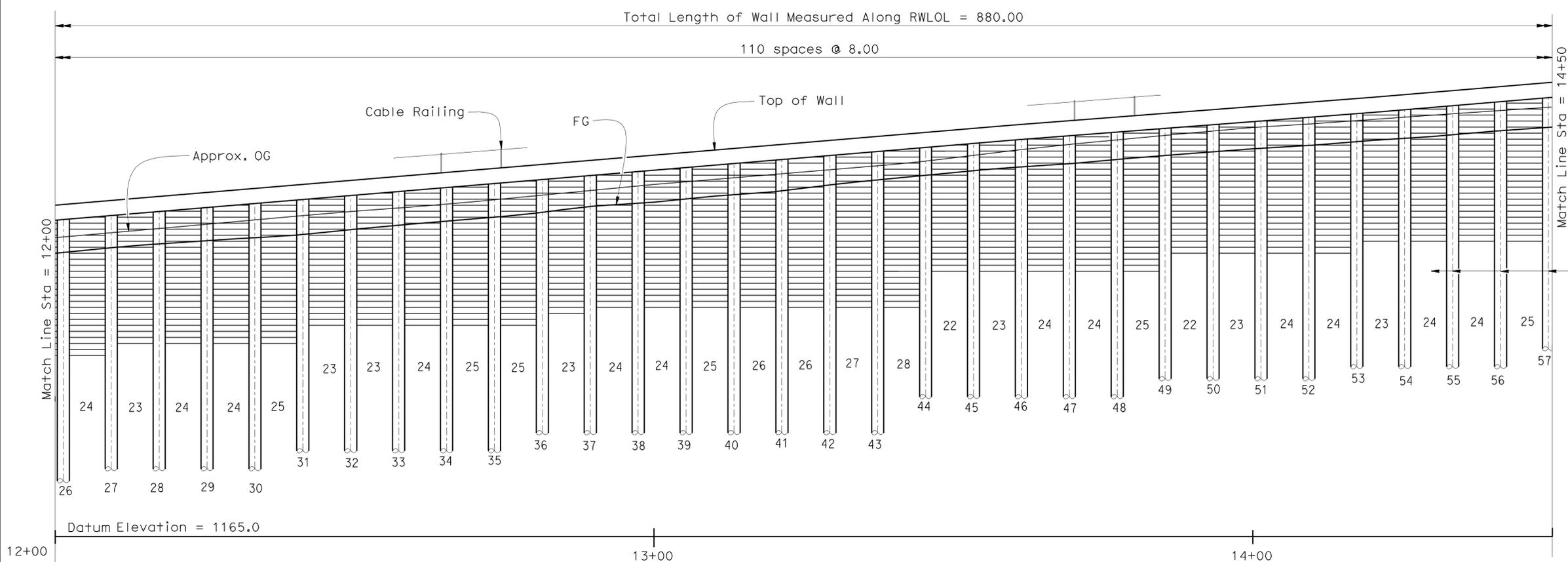
DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18
DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY		
QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON		

BRIDGE NO.	49E0017	WEST CUESTA SOLDIER PILE WALL STRUCTURE PLAN NO. 1
POST MILE	R34.2/R34.5	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	28	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE
 No. C71259
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

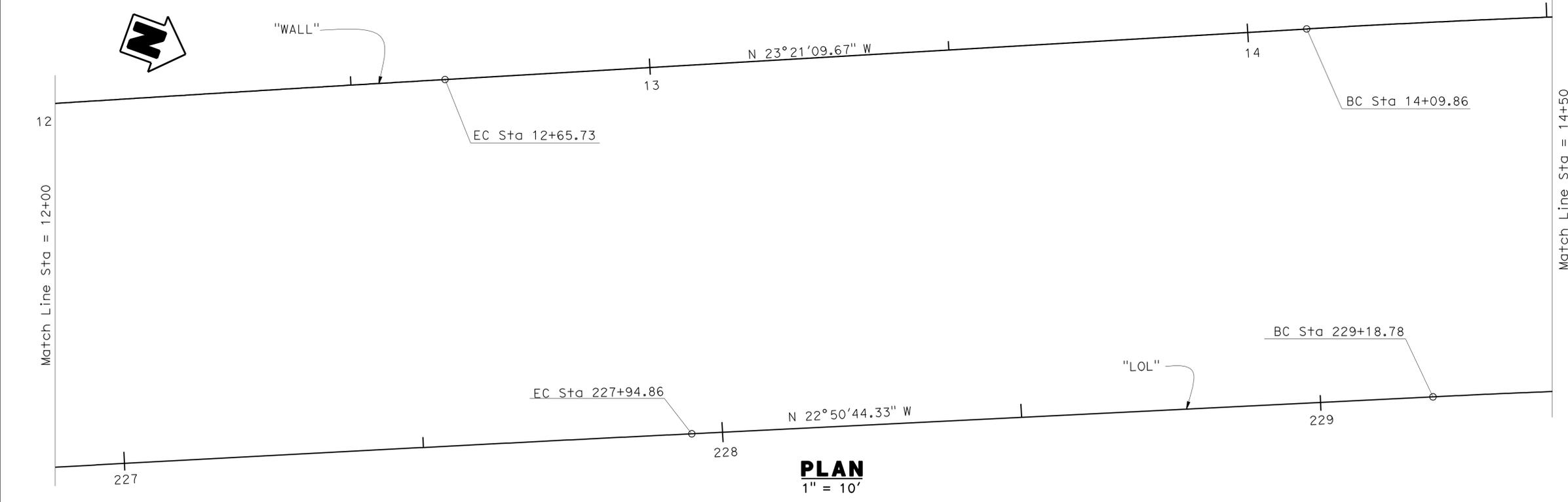
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



@ Pile
 Number of Lagging members
 Pile Number

NOTE:
 Lagging members for Design Heights up to and including 18' are 4" X 12". Lagging members for Design Heights greater than 18' are 6" X 12". HDPE shims to match lagging width.

MIRRORED ELEVATION
 1" = 10'



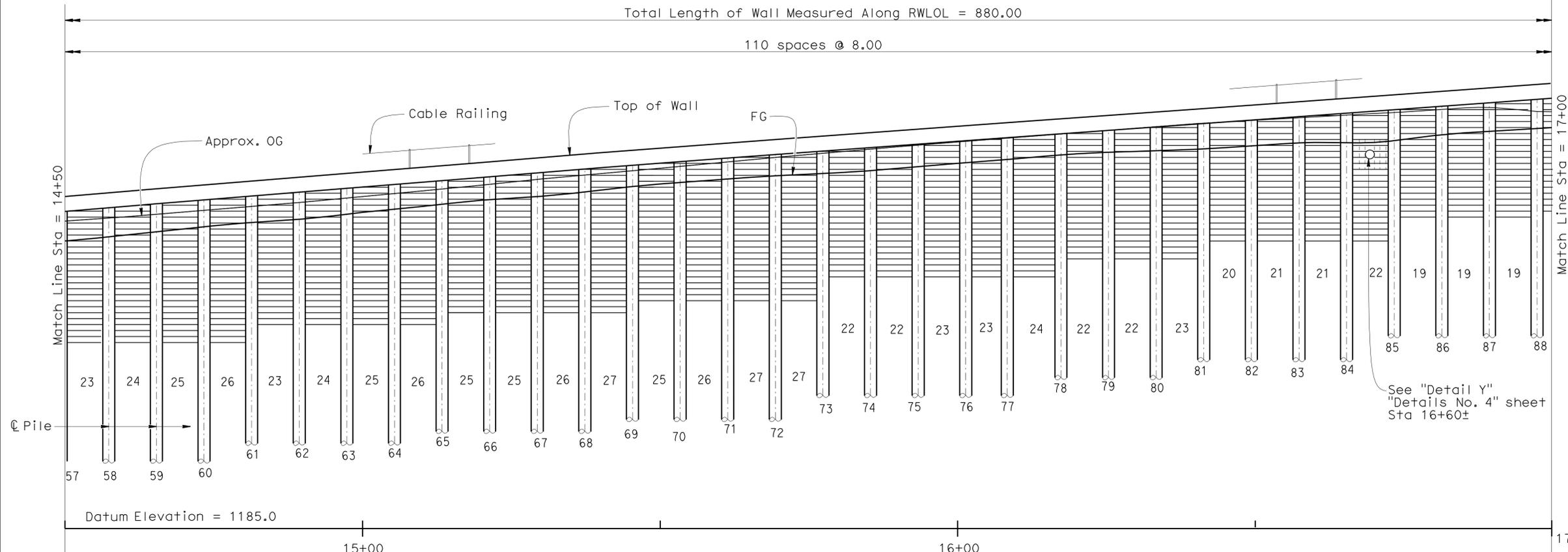
All Dimensions in Feet unless otherwise shown

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY DAVID P MURRAY	CHECKED RUPERT WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	WEST CUESTA SOLDIER PILE WALL STRUCTURE PLAN NO. 2
	DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY			49E0017	
	QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERT WILSON			R34.2/R34.5	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					CU 05 EA ON8901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
0 1 2 3					REVISION DATES		SHEET 5 OF 32

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	29	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE
 No. C71259
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

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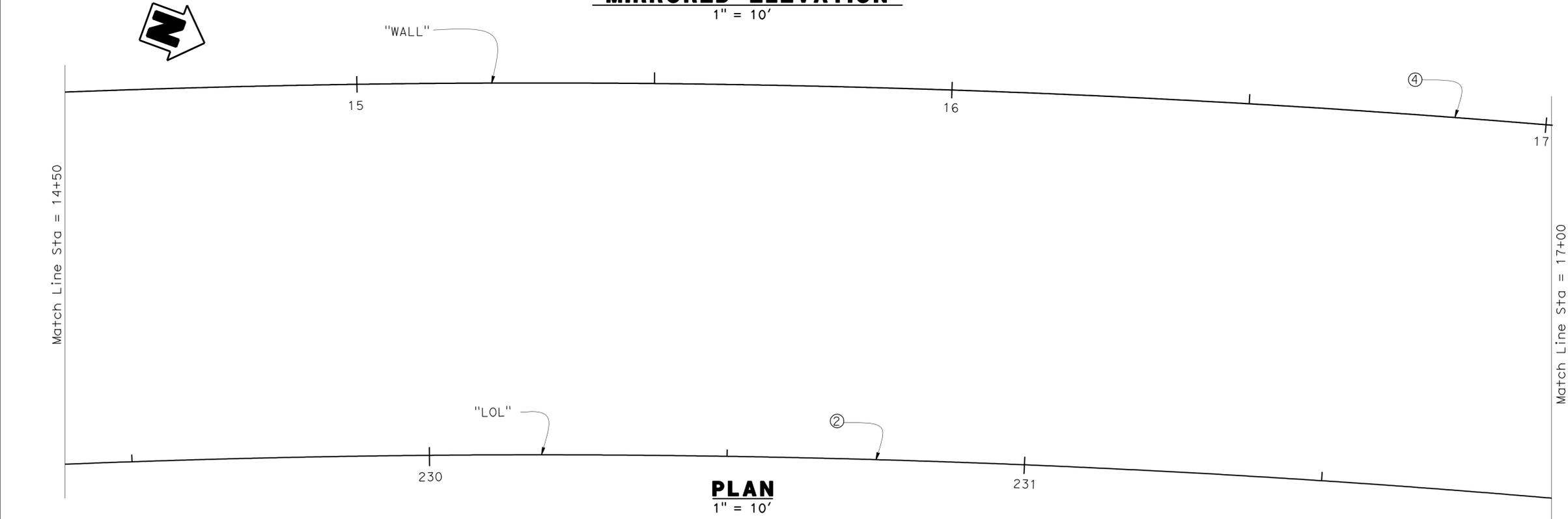
Number of Lagging members
 Pile Number

NOTE:
 Lagging members for Design Heights up to and including 18' are 4" X 12". Lagging members for Design Heights greater than 18' are 6" X 12". HDPE shims to match lagging width.

MIRRORED ELEVATION
1" = 10'

CURVE DATA

No.	R	Δ	T	L
②	2001.31'	26°42'58"	475.23'	933.18'
④	2057.00'	16°26'15"	297.11'	590.13'



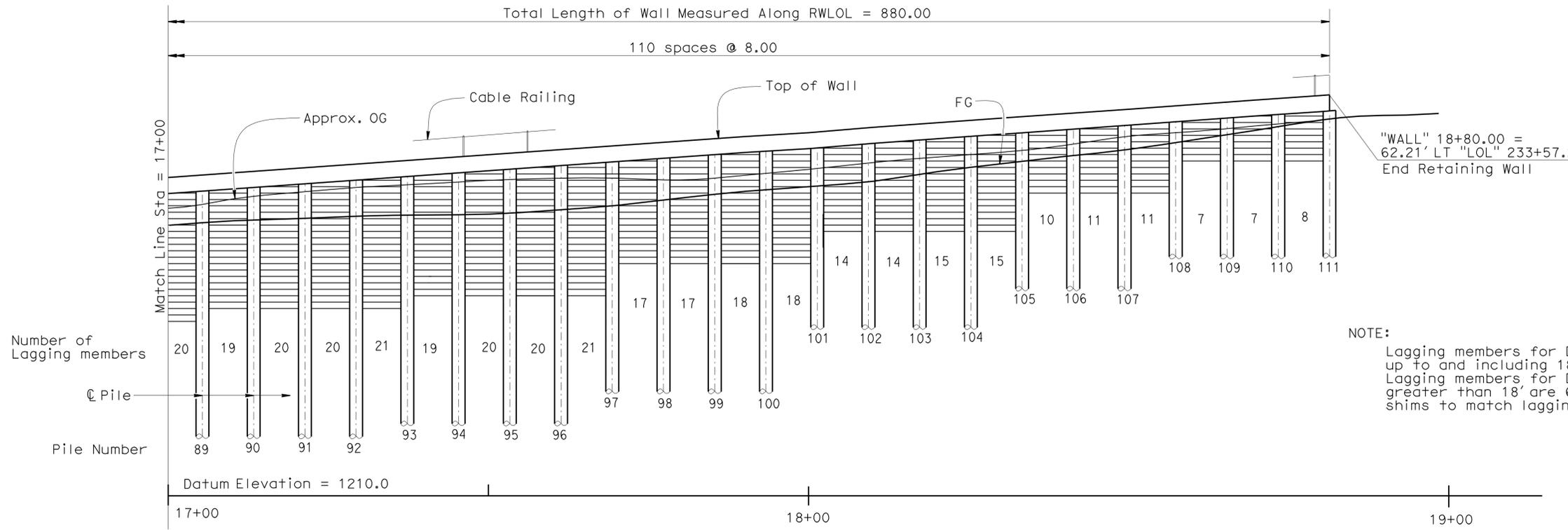
All Dimensions in Feet unless otherwise shown

DESIGN BY DAVID P MURRAY CHECKED RUPERD WILSON DETAILS BY JINLI GUO CHECKED DAVID P MURRAY QUANTITIES BY DAVID P MURRAY CHECKED RUPERD WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 49E0017 POST MILE R34.2/R34.5	WEST CUESTA SOLDIER PILE WALL STRUCTURE PLAN NO. 3	
	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	CU 05 EA 0N8901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 2-26-2010 3-15-10 3-28-10 05-20-10 05-25-10 01-30-10 10-21-10	SHEET 6 OF 32
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	FILE => 49-rwall-c-sp03.dgn	USERNAME => hrmikes1 DATE PLOTTED => 02-FEB-2011 TIME PLOTTED => 14:15		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	30	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE
 No. C71259
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

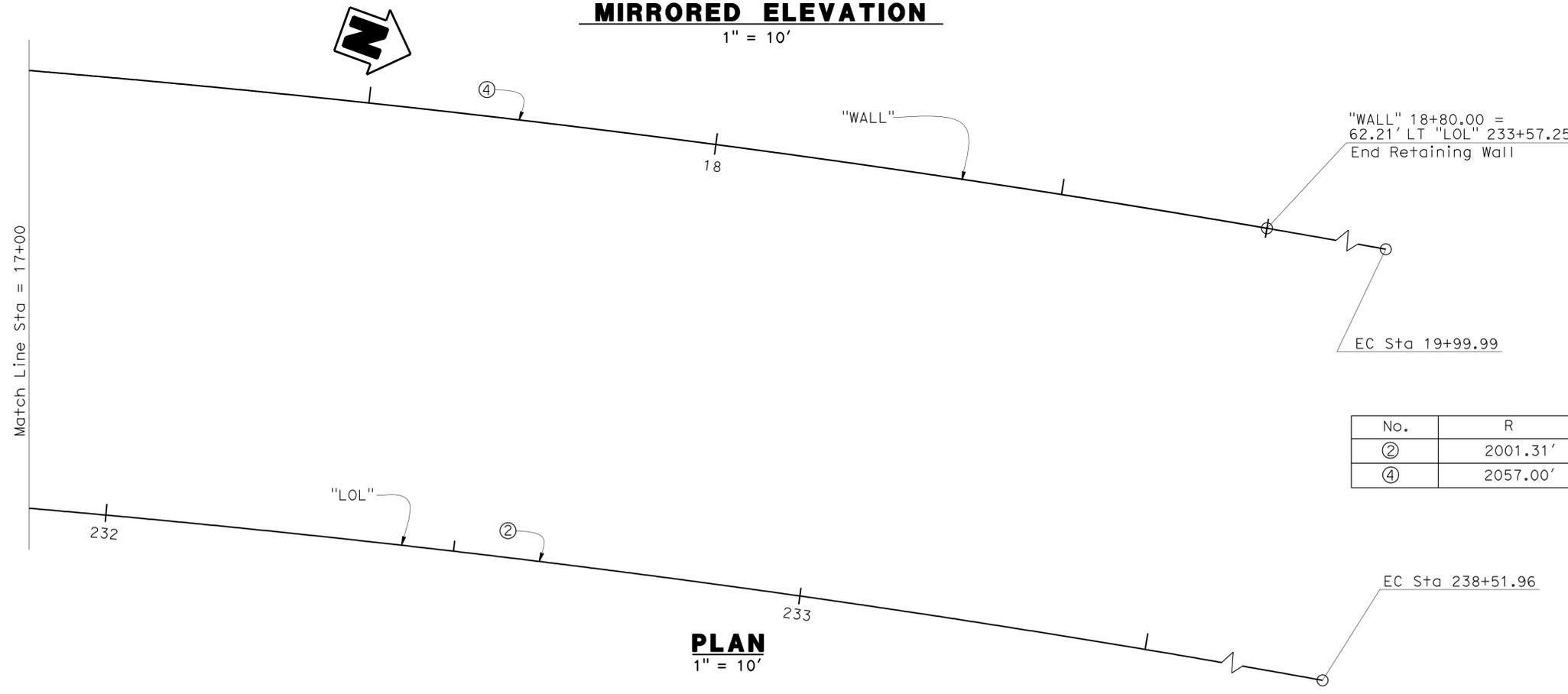
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



NOTE:
 Lagging members for Design Heights up to and including 18' are 4" X 12".
 Lagging members for Design Heights greater than 18' are 6" X 12". HDPE shims to match lagging width.

"WALL" 18+80.00 = 62.21' LT "LOL" 233+57.25
 End Retaining Wall

MIRRORED ELEVATION
 1" = 10'



"WALL" 18+80.00 = 62.21' LT "LOL" 233+57.25
 End Retaining Wall

CURVE DATA

No.	R	Δ	T	L
②	2001.31'	26°42'58"	475.23'	933.18'
④	2057.00'	16°26'15"	297.11'	590.13'

All Dimensions in Feet unless otherwise shown

DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON
DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY
QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

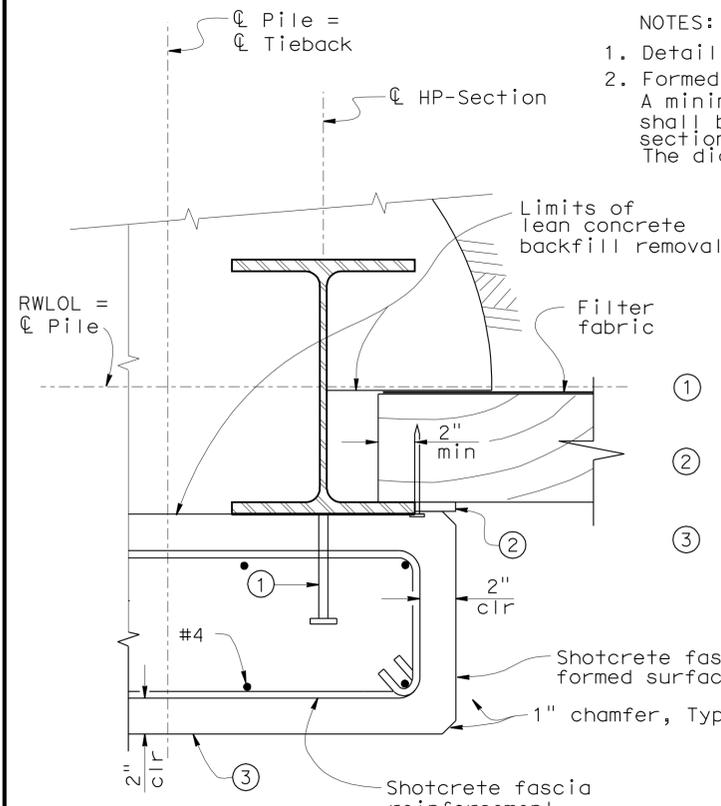
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 18

BRIDGE NO.	49E0017
POST MILE	R34.2/R34.5

WEST CUESTA SOLDIER PILE WALL
 STRUCTURE PLAN NO. 4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	31	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
 1-31-11
 PLANS APPROVAL DATE
 No. C71259
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA
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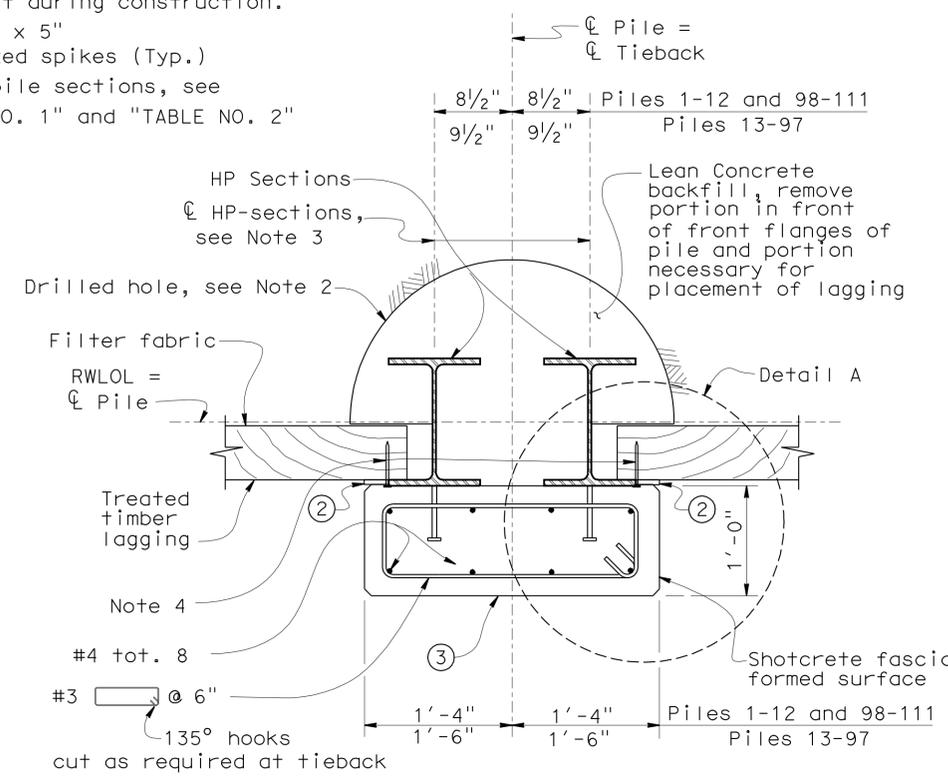


DETAIL A
NO SCALE

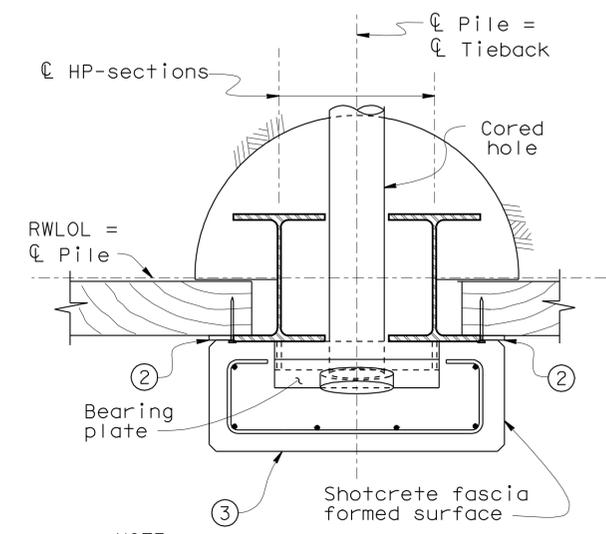
- NOTES:
- Detail symmetrical about CL Pile = CL Tieback
 - Formed surface above top of drilled hole. A minimum length of 1.75 ft at top of pile shall be formed. All piles with HP 12 X 53 sections have a diameter of 3.5'. The diameter of all other piles is 3.0'.

- NOTES:
- Anchor stud, $\frac{1}{2}$ " Ø x 6" @ 12" vertical spacing. All studs are to be welded to HP-section with full penetration weld.
 - $\frac{1}{2}$ " premolded expansion joint filler, typ. This expansion joint filler is between lagging and shotcrete for entire shotcrete height.
 - All visible concrete surfaces, excluding concrete gutter, shall be prepared and painted.

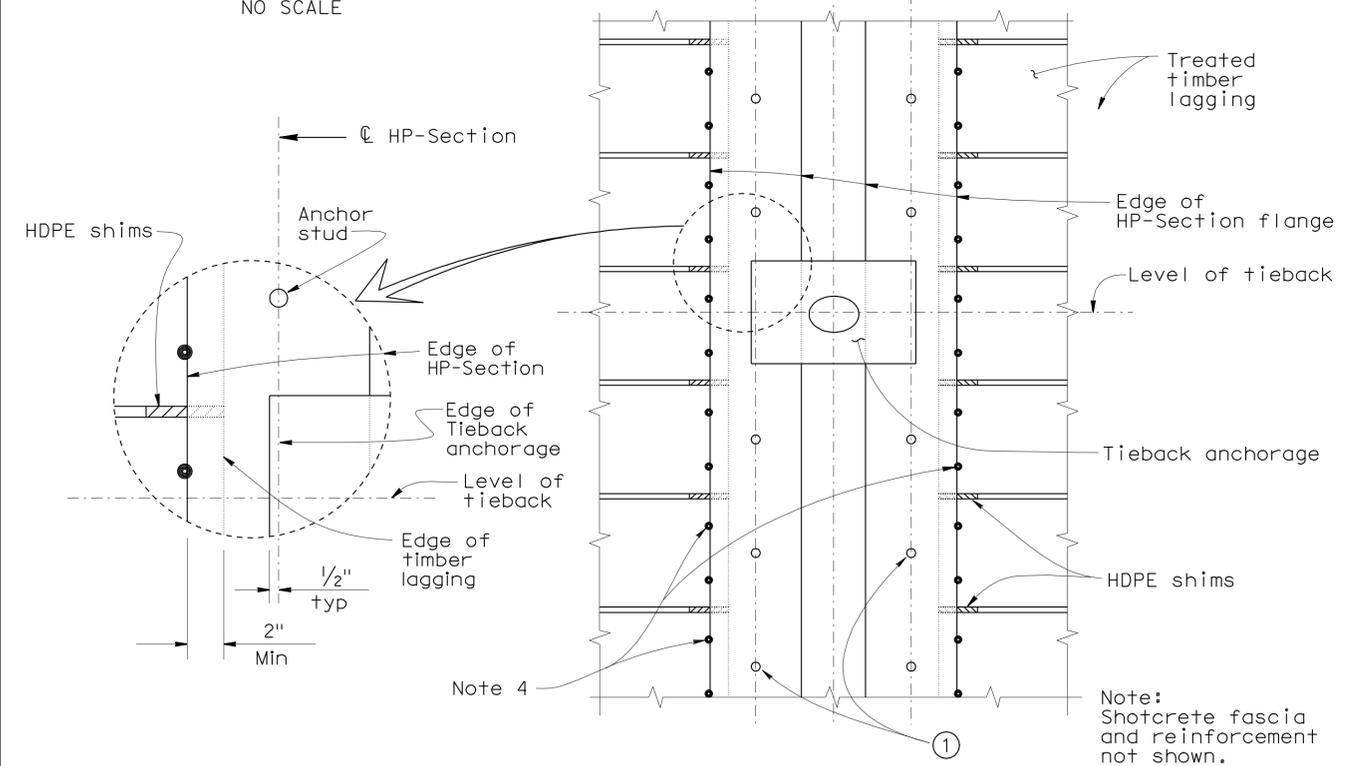
- Provide sufficient number of stay plates between HP-sections to maintain relative alignment during construction.
- $\frac{1}{4}$ " dia. x 5" galvanized spikes (Typ.)
- For HP pile sections, see "TABLE NO. 1" and "TABLE NO. 2"



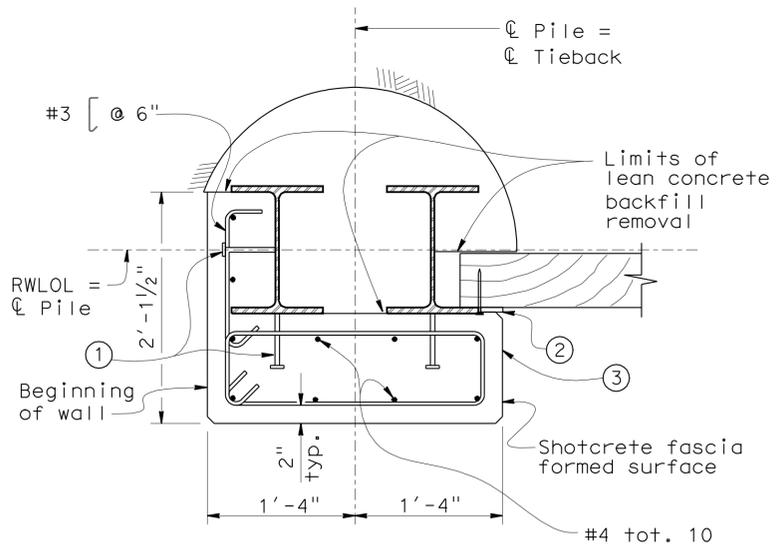
PILE SECTION BETWEEN TIEBACKS
NO SCALE



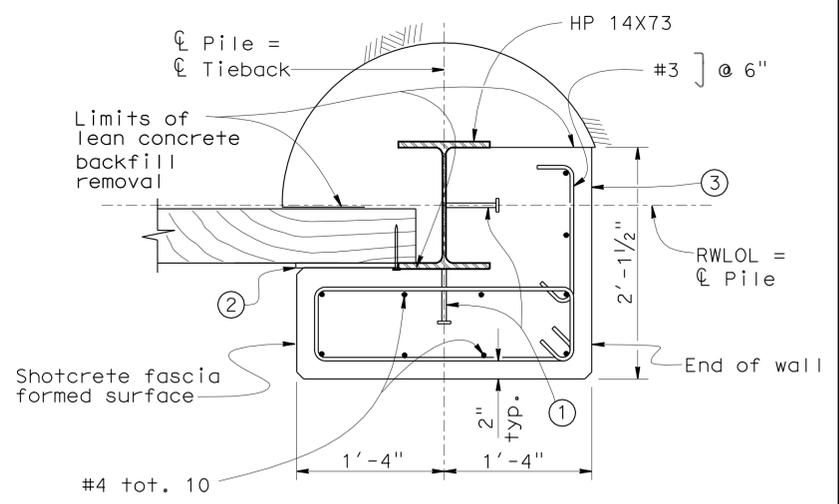
PILE SECTION AT TIEBACK
NO SCALE



PART ELEVATION OF SOLDIER PILE
NO SCALE



PILE SECTION AT BEGINNING OF WALL
NO SCALE



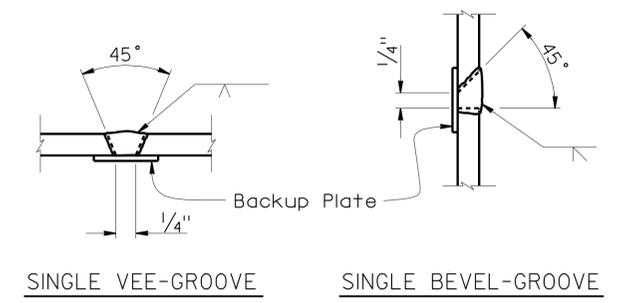
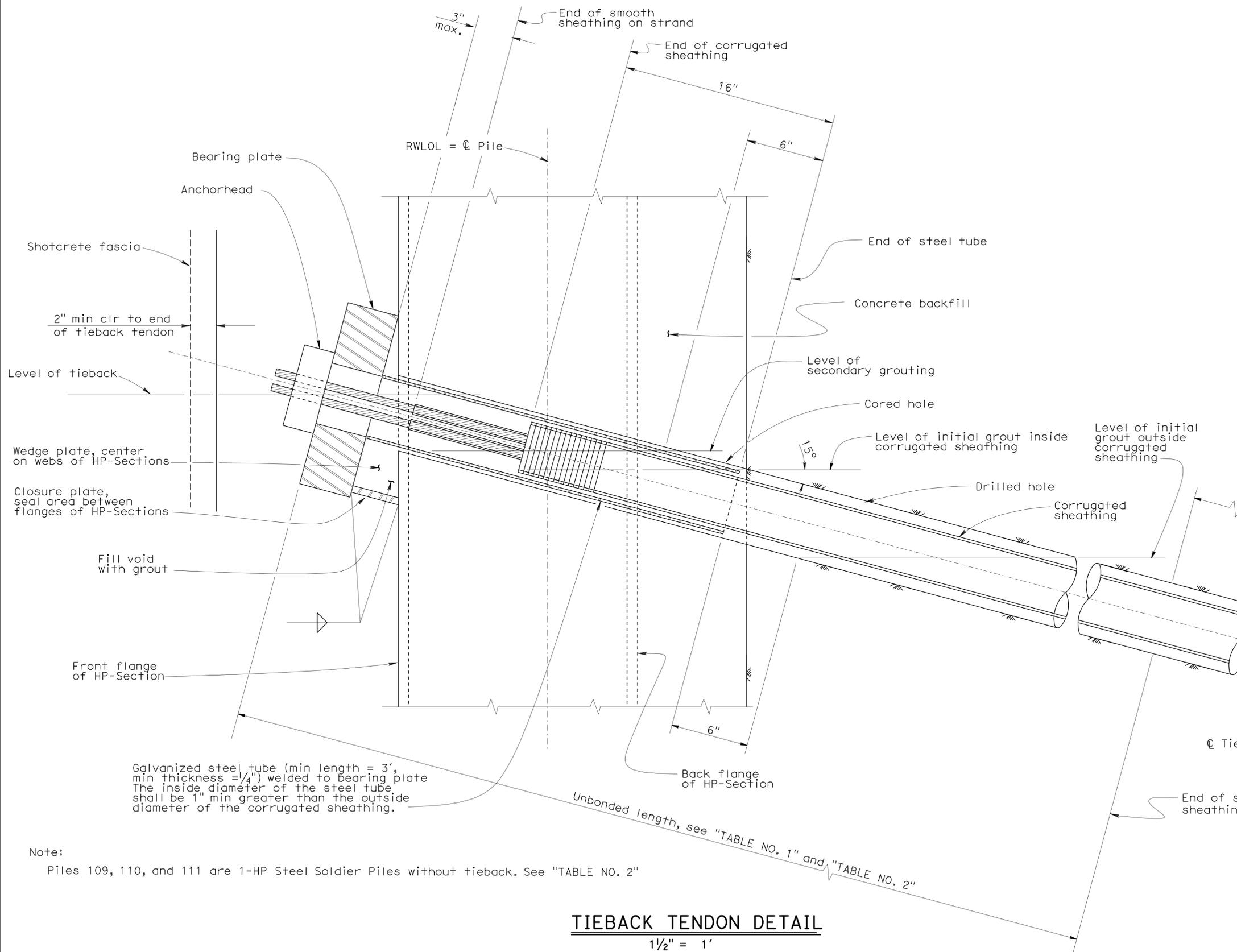
PILE SECTION AT END OF WALL
NO SCALE

Note:
For details not shown see "Pile Section at Tieback" detail.

Note:
For details not shown see "Pile Section at Tieback" detail.

DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 49E0017	WEST CUESTA SOLDIER PILE WALL DETAILS NO. 1	
	DETAILS BY JINLI GUO	CHECKED DAVID P MURRAY			POST MILE R34.2/R34.5		
	QUANTITIES BY DAVID P MURRAY	CHECKED RUPERD WILSON					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 05 EA 0N8901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	
			0 1 2 3	FILE => 49-rwal1-f-dt01.dgn	10-21-10	1-26-09 2-10-10 2-26-10 3-04-10 3-26-10 5-26-10 7-30-10	SHEET 8 OF 32

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	32	55
David P. Murray			10/27/10	DATE	
REGISTERED CIVIL ENGINEER					
1-31-11			PLANS APPROVAL DATE		
David P. Murray			REGISTERED PROFESSIONAL ENGINEER		
No. C71259			No. C71259		
Exp. 12-31-10			Exp. 12-31-10		
CIVIL			CIVIL		
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PILE WELDING DETAIL-BUTT JOINTS

- Notes:
1. Single Vee-Groove Permitted for all positions.
 2. Single Bevel-Groove permitted for horizontal joints only

Galvanized steel tube (min length = 3', min thickness = 1/4") welded to bearing plate. The inside diameter of the steel tube shall be 1" min greater than the outside diameter of the corrugated sheathing.

Note:
Piles 109, 110, and 111 are 1-HP Steel Soldier Piles without tieback. See "TABLE NO. 2"

TIEBACK TENDON DETAIL
1/2" = 1'

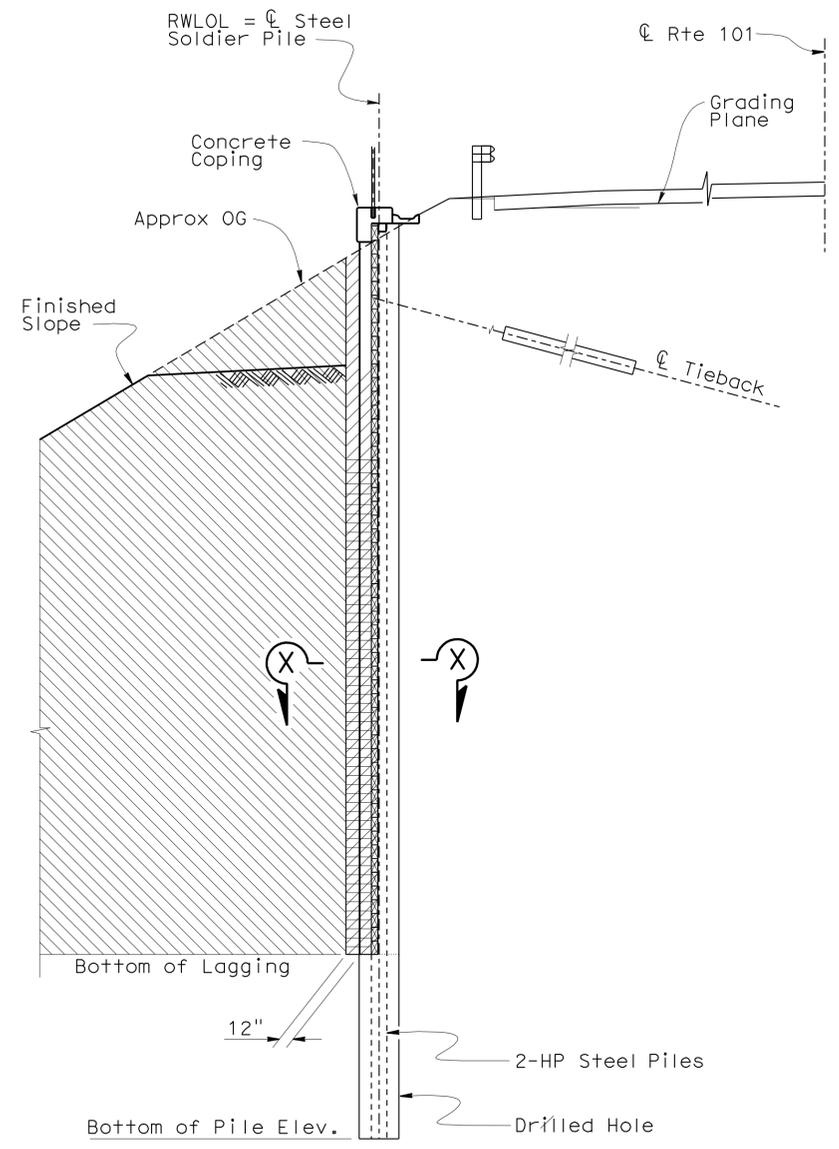
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	WEST CUESTA SOLDIER PILE WALL	
	DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY			49E0017		
	QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON			POST MILE R34.2/R34.5		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						CU 05 EA ON8901	REVISION DATES	SHEET 9 OF 32

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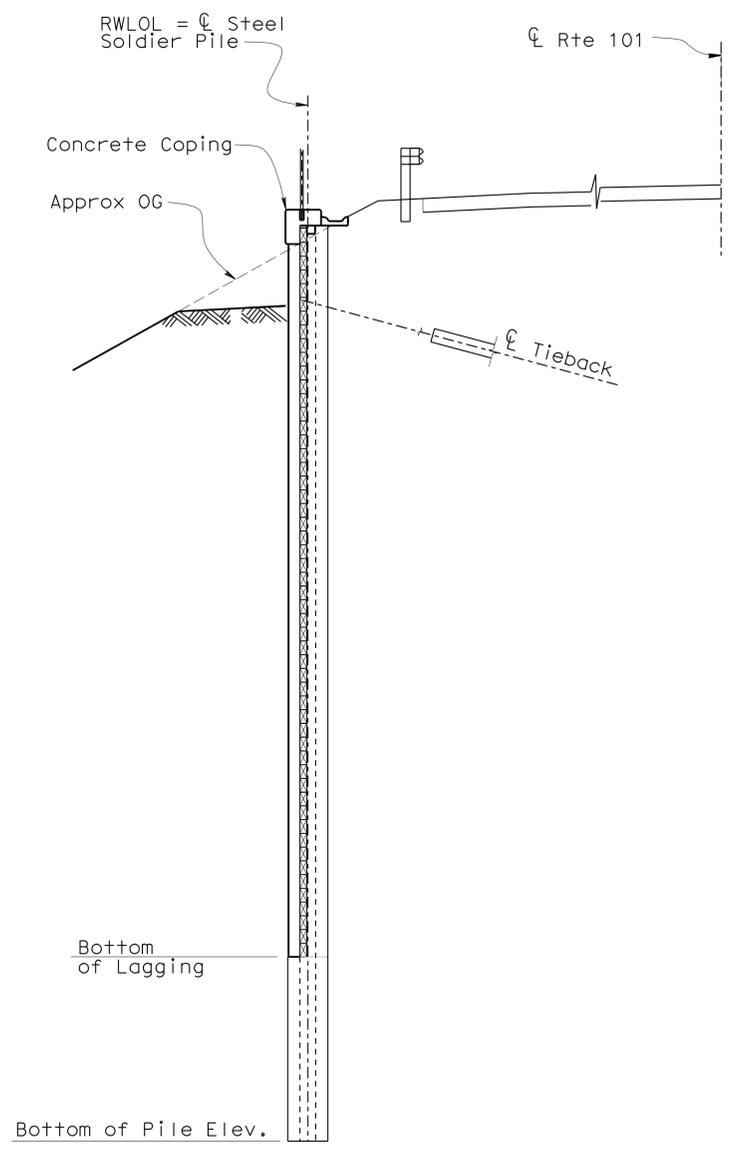
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	33	55

David P. Murray 10/27/10
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 1-31-11
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 No. C71259
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- Notes:
1. Earthwork shall conform to the slope or grade limits shown prior to start of construction for the tieback.
 2. Structure Backfill shall be placed to at least 3' above the tieback prior to construction of the tieback.



LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL
No Scale

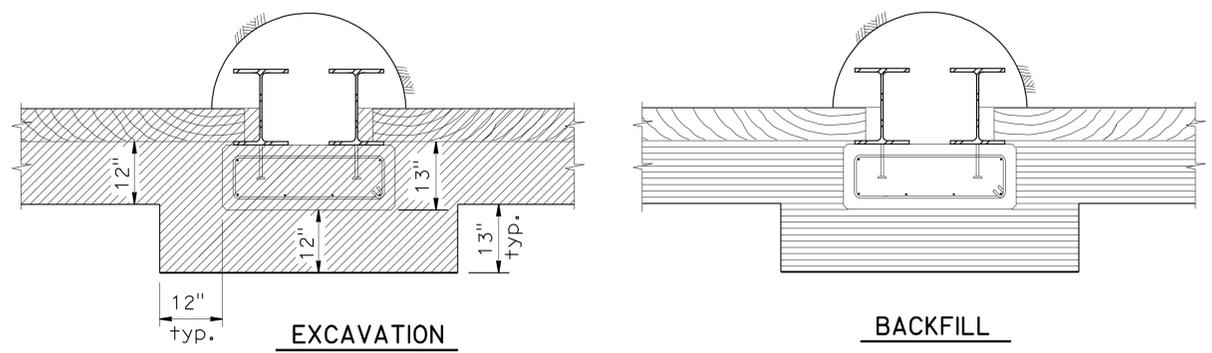


CONSTRUCTION DIAGRAM
No Scale

- LEGEND**
- Structure Backfill (Soldier Pile Wall)
 - Structure Excavation (Soldier Pile Wall)
 - Roadway Excavation and Backfill (See "ROAD PLANS")

General Notes:

- DESIGN:**
Bridge Design Specifications
(2000 AASHTO w/Revisions by Caltrans)
- SOIL PARAMETERS:**
(For determination of design lateral earth pressures)
- $\phi = 28$ $\gamma = 120 \text{ lb/ft}^3$ $K_a = 0.36$ $K_p = 2.80$ Lagged Section
 $\phi = 30$ $\gamma = 120 \text{ lb/ft}^3$ $K_a = 0.33$ $K_p = 3.04$ $c = 200 \text{ psf}$ Below Lagging
- REINFORCED CONCRETE:**
 $f_y = 60,000 \text{ psi}$ (Yield strength of reinforcement)
 $f'_c = 3500 \text{ psi}$ (Concrete compressive strength at 28 days)
- STRUCTURAL STEEL:**
 Steel Piles - ASTM Designation: A707/A709M, Grade 50 [345] or A572/A572M, Grade 50 [345]
 Plates - ASTM Designation: A709/A709M, Grade 36 [250] or A36/A36M
 Welded Pipe - ASTM Designation: A53
- TIMBER:**
 Treated Douglas Fir, Grade No. 1 or better
 Lagging members shall be fully sawn
- TIEBACKS:**
 Strand tendon - ASTM Designation: A416
 T = Design force per tieback (Kips), see "Table" sheets
 f_{pu} = Minimum tensile strength of prestressing steel, Kips per square inch
 $A_s (\text{min})$ = Minimum cross sectional area of prestressing steel in tieback tendon, square millimeters
 $A_s (\text{min}) = 1.5 T / 0.75 f_{pu}$



SECTION X-X
NO SCALE

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	WEST CUESTA SOLDIER PILE WALL		
	DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY			49E0017			
	QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON			POST MILE R34.2/R34.5		DETAILS NO. 3	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						CU 05 EA 0N8901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 10 OF 32

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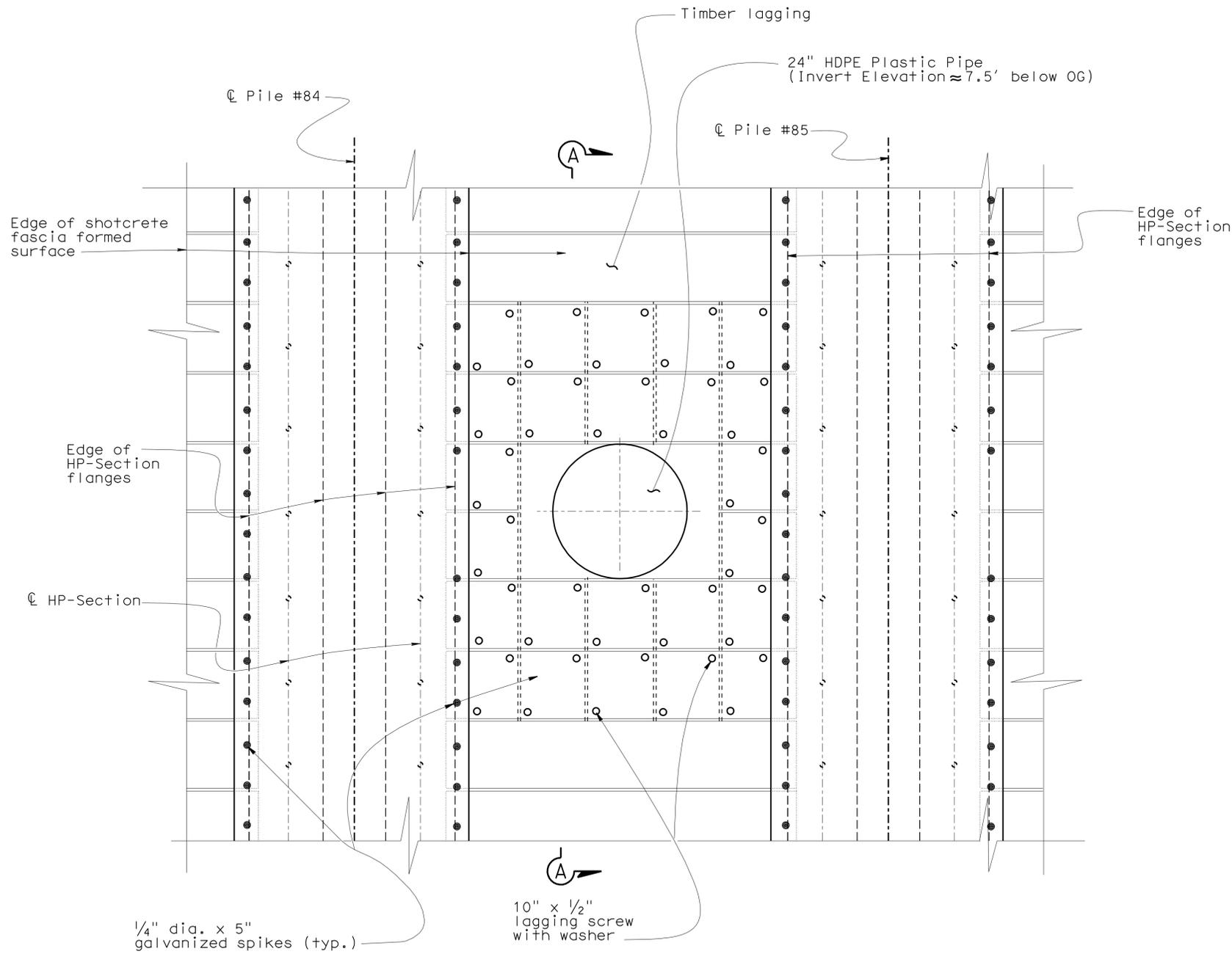
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	34	55

David P. Murray 10/27/10
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1-31-11
 PLANS APPROVAL DATE

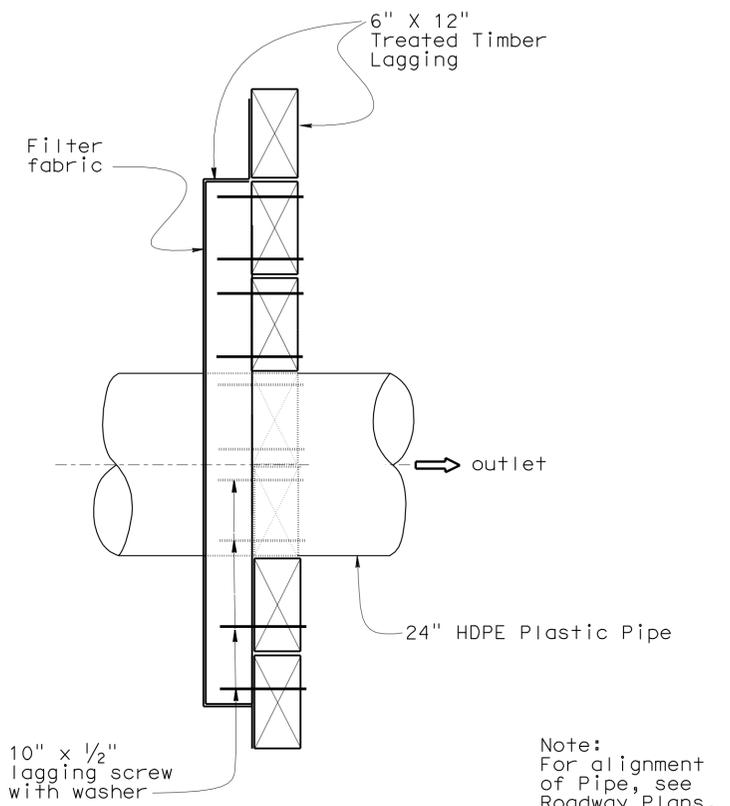
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DETAIL Y
1" = 1'

- NOTES:
- For location of "Detail Y" see "Structure Plan No. 3" sheet.
 - Maximum spacing between piles 84 and 85 is 10 feet. Spacing of adjacent pile to be adjusted so that overall wall length does not change.



SECTION A-A
1" = 1'

Note:
For alignment of Pipe, see Roadway Plans.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY DAVID P MURRAY	CHECKED RUPERT WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	WEST CUESTA SOLDIER PILE WALL DETAILS NO. 4
	DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY			49E0017	
	QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERT WILSON			POST MILE R34.2/R34.5	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 05 EA 0N8901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 11 OF 32

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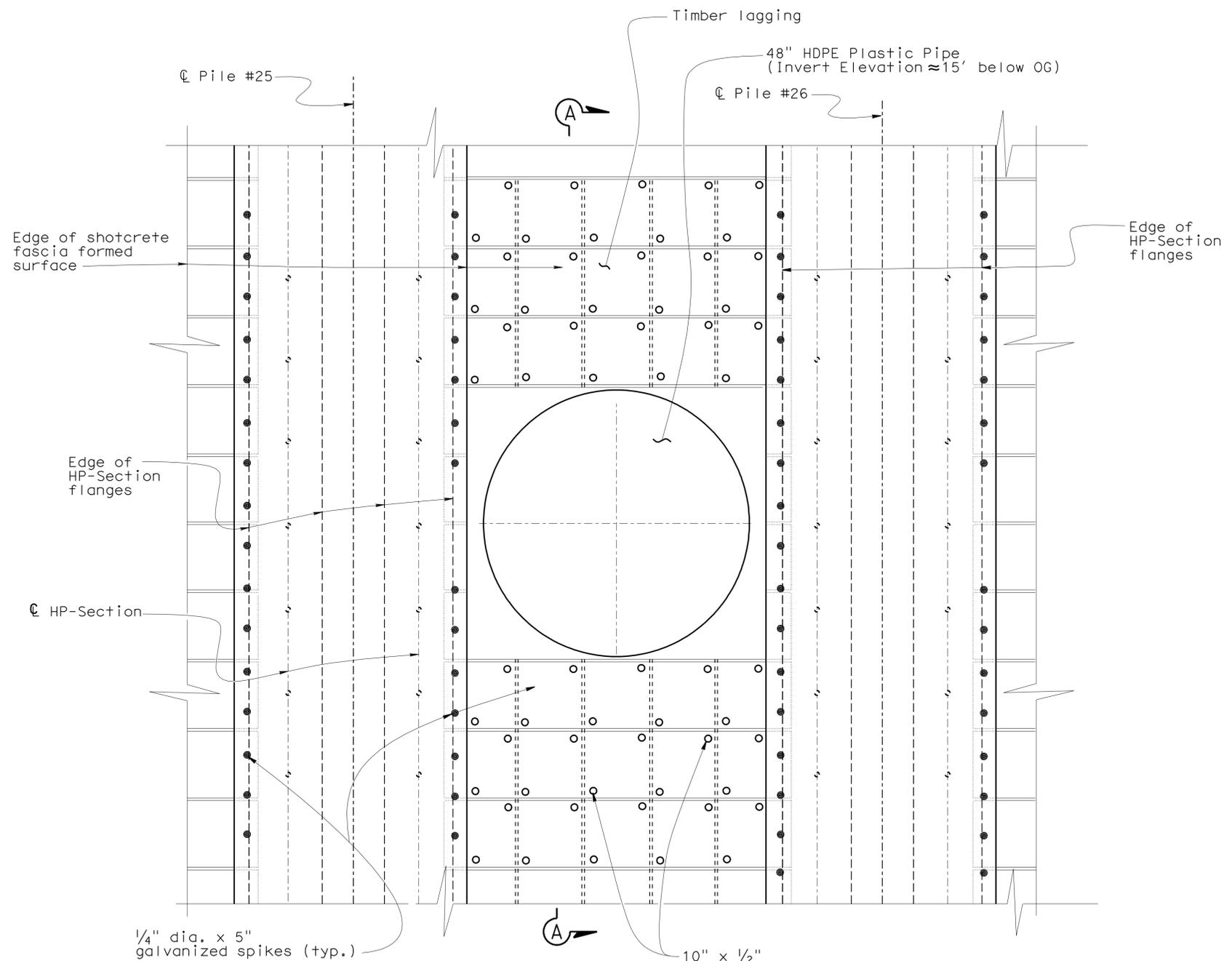
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	35	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE

1-31-11
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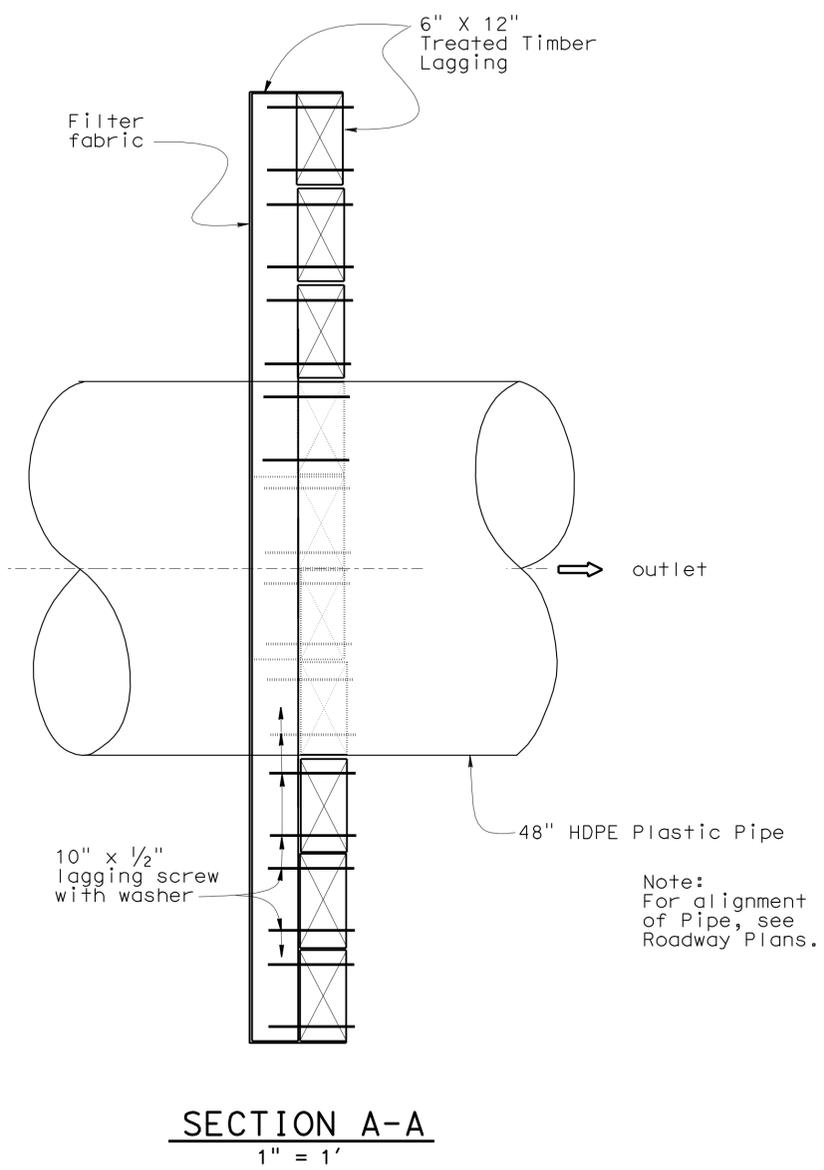
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REGISTERED PROFESSIONAL ENGINEER
 David P. Murray
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DETAIL X
1" = 1'

- NOTES:
1. For location of "Detail Y" see "Structure Plan No. 3" sheet.
 2. Maximum spacing between piles 84 and 85 is 10 feet. Spacing of adjacent pile to be adjusted so that overall wall length does not change.



DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON
DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY
QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

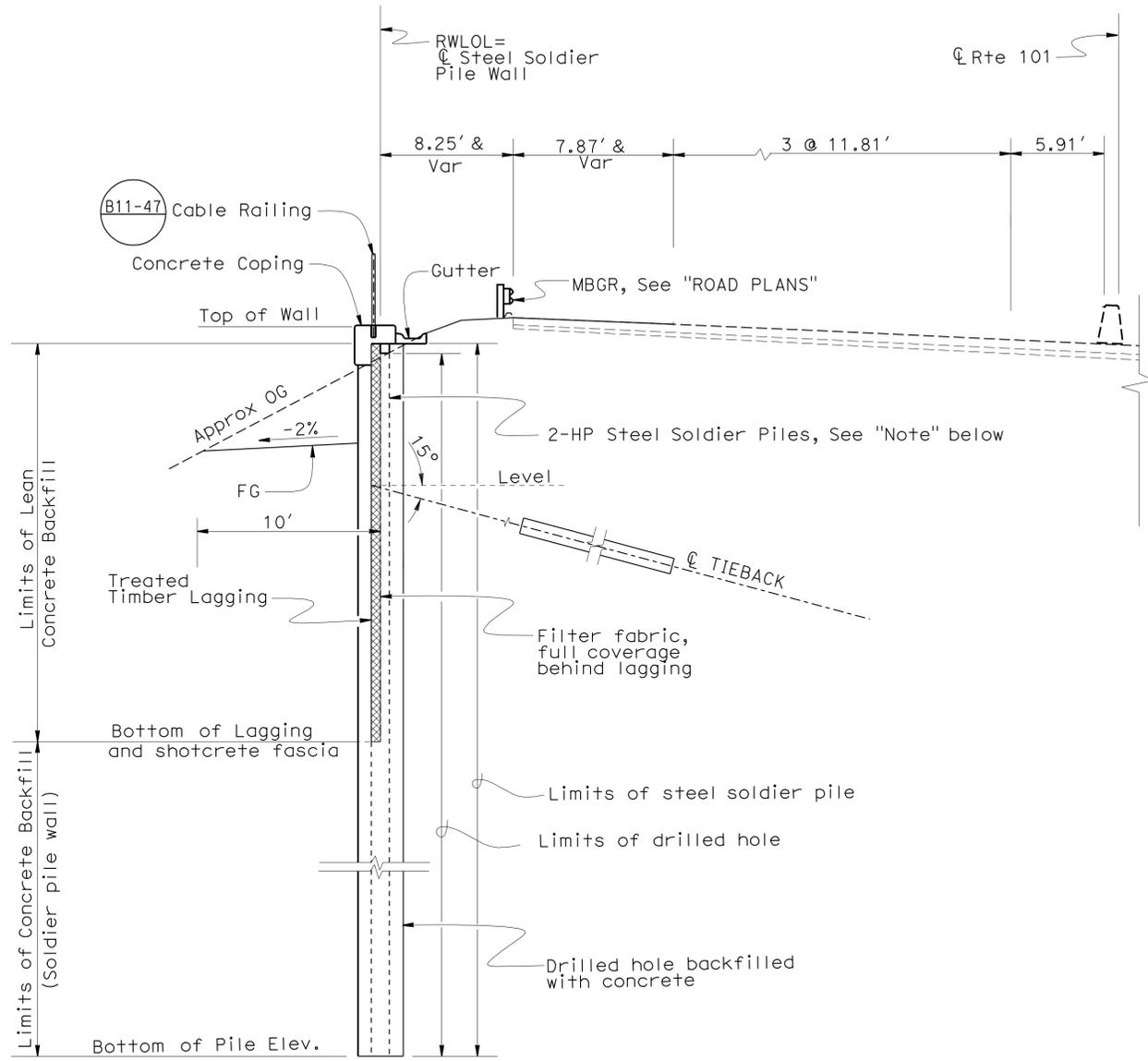
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 18

BRIDGE NO.	49E0017
POST MILE	R34.2/R34.5

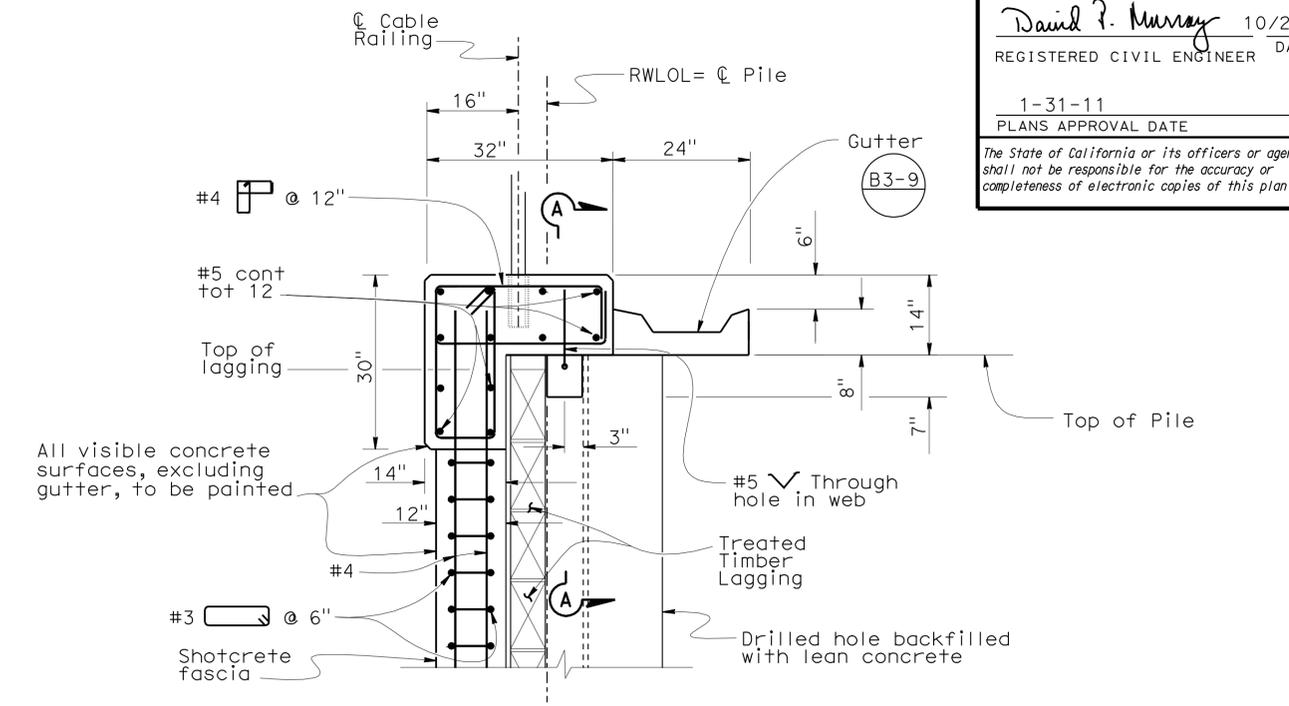
WEST CUESTA SOLDIER PILE WALL
 DETAILS NO. 5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	36	55

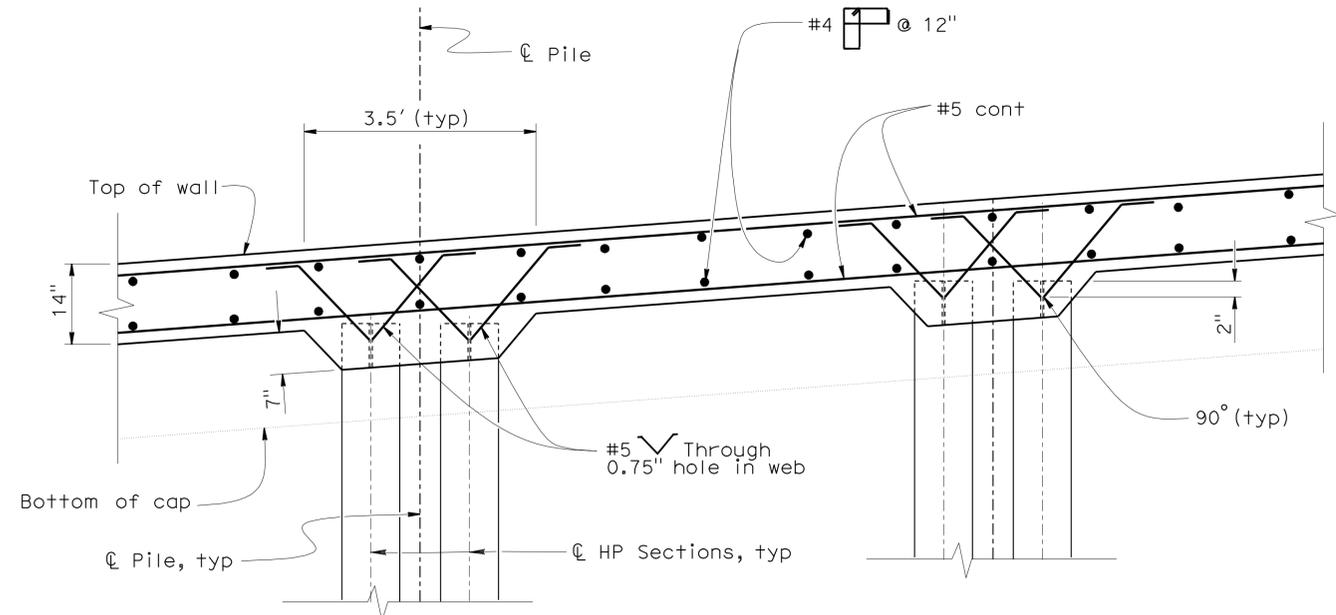
David P. Murray 10/27/10
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 1-31-11
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TYPICAL SECTION
1/4" = 1'



CONCRETE COPING DETAIL AT PILE
3/4" = 1'



SECTION A - A
3/4" = 1'

Note:
Piles 109, 110, and 111 are 1-HP Steel Soldier Piles without tieback. See "TABLE NO. 2"

DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON
DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY
QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 18

BRIDGE NO.	49E0017	WEST CUESTA SOLDIER PILE WALL
POST MILE	R34.2/R34.5	
TYPICAL SECTION		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	37	55

David P. Murray 10/27/10
 REGISTERED CIVIL ENGINEER DATE
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Pile Number	RW LOL Sta	Top of	Bottom of Lagging	Pile Section	Bottom of Pile Elev	Tiebacks			Lagging Size
		Wall Elevation				T	Depth (D)	Unbonded Length	
		(ft)	(ft)		(ft)	(lbs)	(ft)	(ft)	(ft)
1	10+00	1204.37	1190.25	2-HP8x36	1179.25	34,158	4.0	95	4" X 12"
2	10+08	1204.93	1190.25		1179.25	34,158		95	
3	10+16	1205.49	1190.25		1178.25	42,470		95	
4	10+24	1206.05	1190.25		1178.25	42,470		95	
5	10+32	1206.62	1190.25		1178.25	42,470		95	
6	10+40	1207.19	1190.25	2-HP10x42	1176.25	72,825	5.0	105	
7	10+48	1207.77	1190.25		1176.25	72,825		120	
8	10+56	1208.34	1190.25		1176.25	72,825		120	
9	10+64	1208.94	1190.25		1176.25	72,825		120	
10	10+72	1209.55	1190.25		1175.25	90,460	6.0	130	6" X 12"
11	10+80	1210.17	1190.25		1175.25	90,460		130	
12	10+88	1210.78	1190.25		1175.25	90,460		140	
13	10+96	1211.4	1190.25	2-HP12x53	1174.25	105,920		150	
14	11+04	1212.01	1190.25		1174.25	105,920		160	
15	11+12	1212.61	1191.25		1175.25	105,920		170	
16	11+20	1213.22	1191.25		1175.25	105,920		180	
17	11+28	1213.83	1191.25		1175.25	105,920		195	
18	11+36	1214.45	1191.25		1173.25	131,196	8.0	195	
19	11+44	1215.07	1191.25		1173.25	131,196		200	
20	11+52	1215.71	1192.25		1174.25	131,196		210	
21	11+60	1216.34	1192.25		1174.25	131,196		220	
22	11+68	1217	1192.25		1174.25	131,196		220	
23	11+76	1217.66	1192.25		1174.25	131,196		220	
24	11+84	1218.32	1194.25		1176.25	131,196		220	
25	11+92	1218.99	1194.25		1176.25	131,196		210	
26	12+00	1219.66	1194.25		1176.25	131,196		210	
27	12+08	1220.32	1194.25		1176.25	131,196		210	
28	12+16	1220.99	1196.25		1178.25	131,196		200	
29	12+24	1221.65	1196.25		1176.25	149,291		200	
30	12+32	1222.31	1196.25		1176.25	149,291		200	
31	12+40	1222.97	1196.25		1176.25	149,291		200	
32	12+48	1223.65	1199.25		1179.25	149,291		190	
33	12+56	1224.33	1199.25		1179.25	149,291		185	
34	12+64	1225.01	1199.25		1179.25	149,291		185	
35	12+72	1225.68	1199.25		1179.25	149,291		180	
36	12+80	1226.35	1199.25		1179.25	149,291		180	
37	12+88	1227	1202.25		1182.25	149,291		180	
38	12+96	1227.66	1202.25		1182.25	149,291		170	
39	13+04	1228.32	1202.25		1182.25	149,291		170	
40	13+12	1228.99	1202.25		1182.25	149,291		170	
41	13+20	1229.65	1205.25		1185.25	149,291		160	
42	13+28	1230.32	1205.25		1185.25	149,291		145	
43	13+36	1230.99	1205.25		1185.25	149,291		130	
44	13+44	1231.66	1205.25		1185.25	149,291		130	
45	13+52	1232.33	1208.25		1188.25	149,291		125	
46	13+60	1233	1208.25		1188.25	149,291		125	
47	13+68	1233.62	1208.25		1188.25	149,291		125	
48	13+76	1234.24	1208.25		1188.25	149,291		125	
49	13+84	1234.85	1208.25		1188.25	149,291		120	
50	13+92	1235.46	1211.25		1191.25	149,291		120	
51	14+00	1236.07	1211.25		1191.25	149,291		120	
52	14+08	1236.67	1211.25		1191.25	149,291		110	
53	14+16	1237.3	1211.25		1191.25	149,291		110	
54	14+24	1237.95	1213.25		1193.25	149,291		105	
55	14+32	1238.61	1213.25		1193.25	149,291		105	
56	14+40	1239.28	1213.25		1193.25	149,291		105	

- NOTES:
1. Depth (D) measured from top of wall.
 2. All drilled hole diameters are 3' except for piles with 2-HP 12X53. The diameter of these piles is 3.5'.
 3. Design Height is defined as the top of wall minus the bottom of lagging.

DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	WEST CUESTA SOLDIER PILE WALL TABLE NO. 1	
DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY			49E0017		
QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON			POST MILE R34.2/R34.5		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 05 EA 0N8901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 3-08-10 3-15-10 3-16-10 3-28-10 07-29-10 05-20-10	SHEET 14 OF 32

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	38	55

David P. Murray 10/27/10
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Pile Number	RW LOL Sta	Top of	Bottom of Lagging	Pile Section	Bottom of Pile Elev	Tiebacks			Lagging Size
		Wall Elevation	(ft)			(ft)	T	Depth (D)	
		(ft)	(ft)		(ft)	(lbs)	(ft)	(ft)	(ft)
57	14+48	1239.95	1213.25	2-HP12x53	1193.25	149,291	8.0	105	6" X 12"
58	14+56	1240.61	1216.25		1196.25	149,291			
59	14+64	1241.28	1216.25		1196.25	149,291			
60	14+72	1241.93	1216.25		1196.25	149,291			
61	14+80	1242.59	1216.25		1196.25	149,291			
62	14+88	1243.24	1219.25		1199.25	149,291			
63	14+96	1243.88	1219.25		1199.25	149,291			
64	15+04	1244.53	1219.25		1199.25	149,291			
65	15+12	1245.16	1219.25		1199.25	149,291			
66	15+20	1245.8	1221.25		1201.25	149,291			
67	15+28	1246.46	1221.25		1201.25	149,291			
68	15+36	1247.11	1221.25		1201.25	149,291			
69	15+44	1247.74	1221.25		1201.25	149,291			
70	15+52	1248.35	1223.25		1203.25	149,291			
71	15+60	1248.96	1223.25		1203.25	149,291			
72	15+68	1249.54	1223.25		1203.25	149,291		100	
73	15+76	1250.13	1223.25		1203.25	149,291			
74	15+84	1250.72	1227.25		1209.25	131,196			
75	15+92	1251.3	1227.25		1209.25	131,196			
76	16+00	1251.88	1227.25		1209.25	131,196			
77	16+08	1252.45	1227.25		1209.25	131,196			
78	16+16	1253.02	1230.25		1212.25	131,196		95	
79	16+24	1253.59	1230.25		1212.25	131,196			
80	16+32	1254.16	1230.25		1212.25	131,196			
81	16+40	1254.73	1230.25		1212.25	131,196			
82	16+48	1255.31	1233.25		1215.25	131,196		90	
83	16+56	1255.88	1233.25		1215.25	131,196			
84	16+64	1256.46	1233.25		1215.25	131,196			
85	16+72	1257.04	1233.25		1215.25	131,196			
86	16+80	1257.62	1237.25		1221.25	105,920	6.0		
87	16+88	1258.2	1237.25		1221.25	105,920		85	
88	16+96	1258.79	1237.25		1221.25	105,920		85	
89	17+04	1259.37	1237.25		1221.25	105,920		85	
90	17+12	1259.95	1239.25		1223.25	105,920		80	
91	17+20	1260.53	1239.25		1223.25	105,920			
92	17+28	1261.09	1239.25		1223.25	105,920			
93	17+36	1261.65	1239.25		1223.25	105,920			
94	17+44	1262.21	1241.25		1225.25	105,920			
95	17+52	1262.78	1241.25		1225.25	105,920			
96	17+60	1263.34	1241.25		1225.25	105,920			
97	17+68	1263.91	1241.25		1225.25	105,920			
98	17+76	1264.48	1246.25	2-HP10x42	1231.25	90,460			
99	17+84	1265.04	1246.25		1231.25	90,460			
100	17+92	1265.61	1246.25		1231.25	90,460			
101	18+00	1266.17	1246.25		1231.25	90,460			
102	18+08	1266.74	1251.25	2-HP8x36	1239.25	42,470	4.0		4" X 12"
103	18+16	1267.32	1251.25		1239.25	42,470			
104	18+24	1267.89	1251.25		1239.25	42,470			
105	18+32	1268.46	1251.25		1239.25	42,470			
106	18+40	1269.03	1257.25		1246.25	34,158			
107	18+48	1269.6	1257.25		1246.25	34,158			
108	18+56	1270.17	1257.25		1246.25	34,158			
109	18+64	1270.74	1262.25	1-HP14x73	1251.25				
110	18+72	1271.31	1262.25		1251.25				
111	18+80	1271.88	1262.25		1251.25				

- NOTES:
- Depth (D) measured from top of wall.
 - All drilled hole diameters are 3' except for piles with 2-HP 12X53. The diameter of these piles is 3.5'.
 - Design Height is defined as the top of wall, minus the bottom of lagging.

DESIGN	BY DAVID P MURRAY	CHECKED RUPERD WILSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	WEST CUESTA SOLDIER PILE WALL TABLE NO. 2
DETAILS	BY JINLI GUO	CHECKED DAVID P MURRAY			49E0017	
QUANTITIES	BY DAVID P MURRAY	CHECKED RUPERD WILSON			POST MILE R34.2/R34.5	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 CU 05 EA 0N8901 DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	3-08-10	3-15-10	3-16-10	3-28-10	05-20-10	05-26-10	07-29-10
SHEET	15	OF	32				

FILE => 49-rwall-y-+b102.dgn

BENCH MARK

SLO 101 PM 34.48
 Fnd 1" ip w/caltrans control pp
 85.64' Lt "RTE101" Line C Rte 101
 Sta 234+91.77
 N 2.320,046.409
 E 5.778,005.809
 Elev = 1280.247 (NAVD88)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	39	55

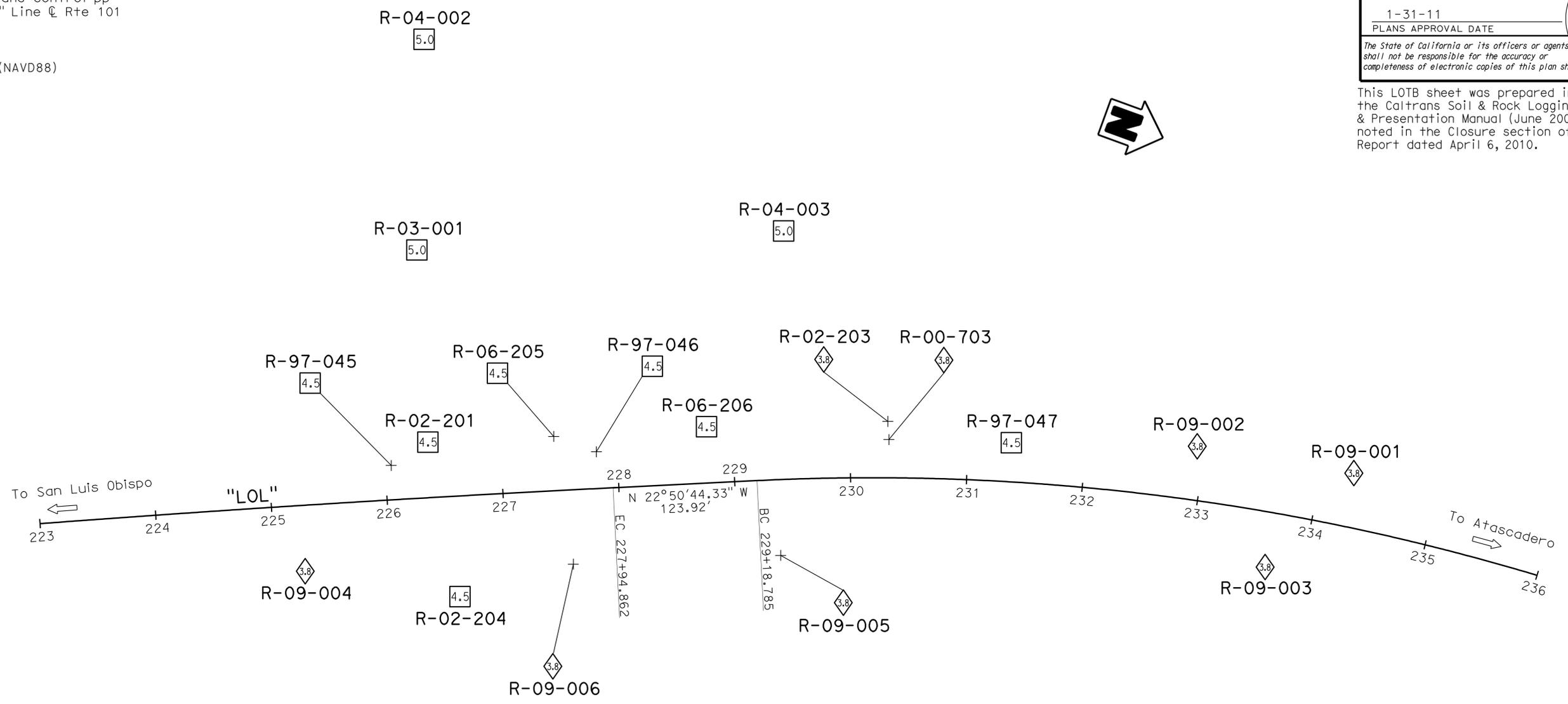
Dan Appelbaum 7-16-10
 REGISTERED CIVIL ENGINEER

1-31-11
 PLANS APPROVAL DATE

Don Appelbaum
 No. C50001
 Exp. 6-30-11
 CIVIL
 STATE OF CALIFORNIA

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PLAN
 1"=50'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 49E0017	WEST CUESTA SOLDIER PILE WALL LOG OF TEST BORINGS 1 OF 17
FUNCTIONAL SUPERVISOR NAME: R. Bibbens	DRAWN BY: CHECKED BY: S. Heredia	FIELD INVESTIGATION BY: W. Hoon, C. McIlroy, J. Turney, S. Conner, M. Juradius, D. Appelbaum				POST MILES R34.2/R34.5	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 05 EA 0N8901		07-06-10 07-16-10	

USERNAME => hrmikes DATE PLOTTED => 02-FEB-2011 TIME PLOTTED => 14:16

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	40	55

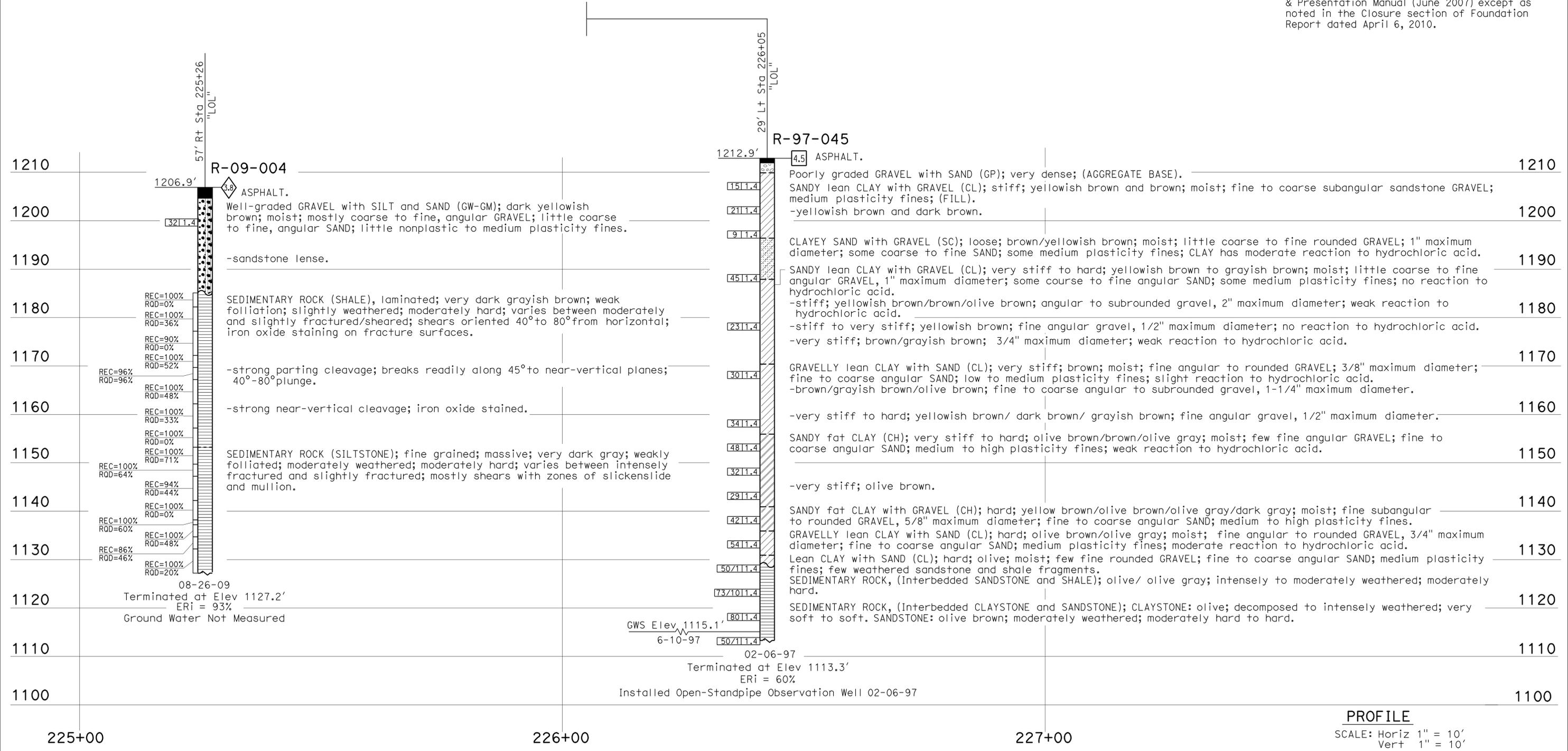
Dan Appelbaum
 REGISTERED CIVIL ENGINEER
 No. C50001
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1-31-11
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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 17"

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PROFILE
 SCALE: Horiz 1" = 10'
 Vert 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH		BRIDGE NO. 49E0017 POST MILES R34.2/R34.5		WEST CUESTA SOLDIER PILE WALL	
FUNCTIONAL SUPERVISOR NAME: R. Bibbens		DRAWN BY: I.G-Remmen, 3/10 CHECKED BY: S. Heredia		FIELD INVESTIGATION BY: M. Jurasius, S. Conner, C. McIlroy		CU 05 EA 0N8901		DISREGARD PRINTS BEARING EARLIER REVISION DATES		LOG OF TEST BORINGS 2 OF 17	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS										SHEET 17 OF 32	

USERNAME => hrmikes DATE PLOTTED => 02-FEB-2011 TIME PLOTTED => 14:17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	41	55

Dan Appelbaum 7-16-10
REGISTERED CIVIL ENGINEER

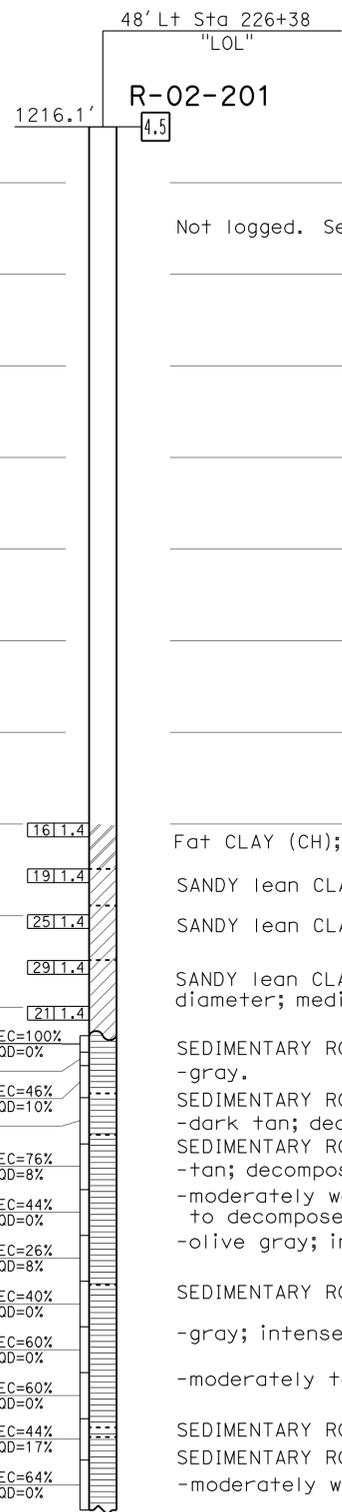
1-31-11
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Don Appelbaum
No. C50001
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STATE OF CALIFORNIA

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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 17"

1210			1210
1200		Not logged. See LOTB for R-97-045.	1200
1190			1190
1180			1180
1170			1170
1160			1160
1150			1150
1140			1140
1130		Fat CLAY (CH); very stiff; tan; moist; few coarse angular SAND; high plasticity; (FILL).	1130
1120		SANDY lean CLAY with GRAVEL (CL); very stiff; tan mottled with gray and orange; moist; angular SAND; angular GRAVEL, 2" maximum diameter; (FILL).	1120
1110		SANDY lean CLAY (CL); very stiff; tan; moist; medium subrounded to rounded SAND; few fine subrounded GRAVEL, 3/4" maximum diameter; (ALLUVIUM).	1110
1100		SANDY lean CLAY with GRAVEL (CL); very stiff; tan mottled with gray; moist; medium to coarse subrounded to rounded SAND; shale GRAVEL; 2" maximum diameter; medium plasticity; PP=4.5 tsf; (ALLUVIUM).	1100
1090		SEDIMENTARY ROCK (SANDSTONE); tan; slightly weathered; hard; moderately fractured; horizontal bedding; some lean CLAY filling. -gray.	1090
1080		SEDIMENTARY ROCK (SHALE), tan; intensely weathered to decomposed; soft; intensely fractured; decomposed into lean CLAY. -dark tan; decomposed; very soft; very intensely fractured; decomposed into SANDY lean CLAY with GRAVEL; PP=3.0 tsf.	1080
1070		SEDIMENTARY ROCK (SANDSTONE), olive gray; intensely weathered to decomposed; very soft to hard; very intensely fractured. -tan; decomposed; soft with hard lenses; decomposed into CLAYEY fine SAND. -moderately weathered; moderately hard; moderately fractured; interbedded 4" thick lenses of shale; gray with orange staining; moderately weathered to decomposed; moderately hard to soft; laminated. -olive gray; intensely weathered; interbedded shale; tan with orange staining; moderately weathered; moderately hard; silicious beds approximately 4" thick.	1070
1060		SEDIMENTARY ROCK (SHALE), tan; very intensely weathered to decomposed; soft to moderately hard; very intensely fractured; decomposed to lean CLAY. -gray; intensely weathered to decomposed. -moderately to intensely weathered; very soft to moderately hard; intensely to very intensely fractured.	1060



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Vert 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		WEST CUESTA SOLDIER PILE WALL	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen, 3/10		DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 49E0017		LOG OF TEST BORINGS 3 OF 17	
NAME: R. Bibbens		CHECKED BY: S. Heredia		FIELD INVESTIGATION BY: M. Finegan		POST MILES R34.2/R34.5			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU EA 05 0N8901		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
				0 1 2 3		07-06-10 07-16-10		SHEET 18 OF 32	

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	42	55

Dan Appelbaum 7-16-10
 REGISTERED CIVIL ENGINEER
 No. C50001
 Exp. 6-30-11
 CIVIL
 STATE OF CALIFORNIA

1-31-11
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FOR PLAN VIEW, SEE
 "LOG OF TEST BORINGS 1 OF 17"



PROFILE
 SCALE: Horiz 1" = 10'
 Vert 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		WEST CUESTA SOLDIER PILE WALL	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen, 4/10		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		49E0017		LOG OF TEST BORINGS 4 OF 17	
NAME: R. Bibbens		CHECKED BY: S. Heredia		FIELD INVESTIGATION BY: M. Finegan		DESIGN BRANCH		POST MILES R34.2/R34.5			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 05 EA 0N8901		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 19 OF 32	

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	44	55

Dan Appelbaum 7-16-10
REGISTERED CIVIL ENGINEER

1-31-11
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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 17"

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PROFILE
SCALE: Horiz 1" = 10'
Ver+ 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		WEST CUESTA SOLDIER PILE WALL	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen, 4/10		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		49E0017		LOG OF TEST BORINGS 6 OF 17	
NAME: R. Bibbens		CHECKED BY: S. Heredia		FIELD INVESTIGATION BY: W. Hoon		DESIGN BRANCH		POST MILES			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 05 EA 0N8901		R34.2/R34.5		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
				0 1 2 3				07-06-10 07-16-10		SHEET 21 OF 32	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	47	55

Dan Groll 7-16-10
REGISTERED CIVIL ENGINEER

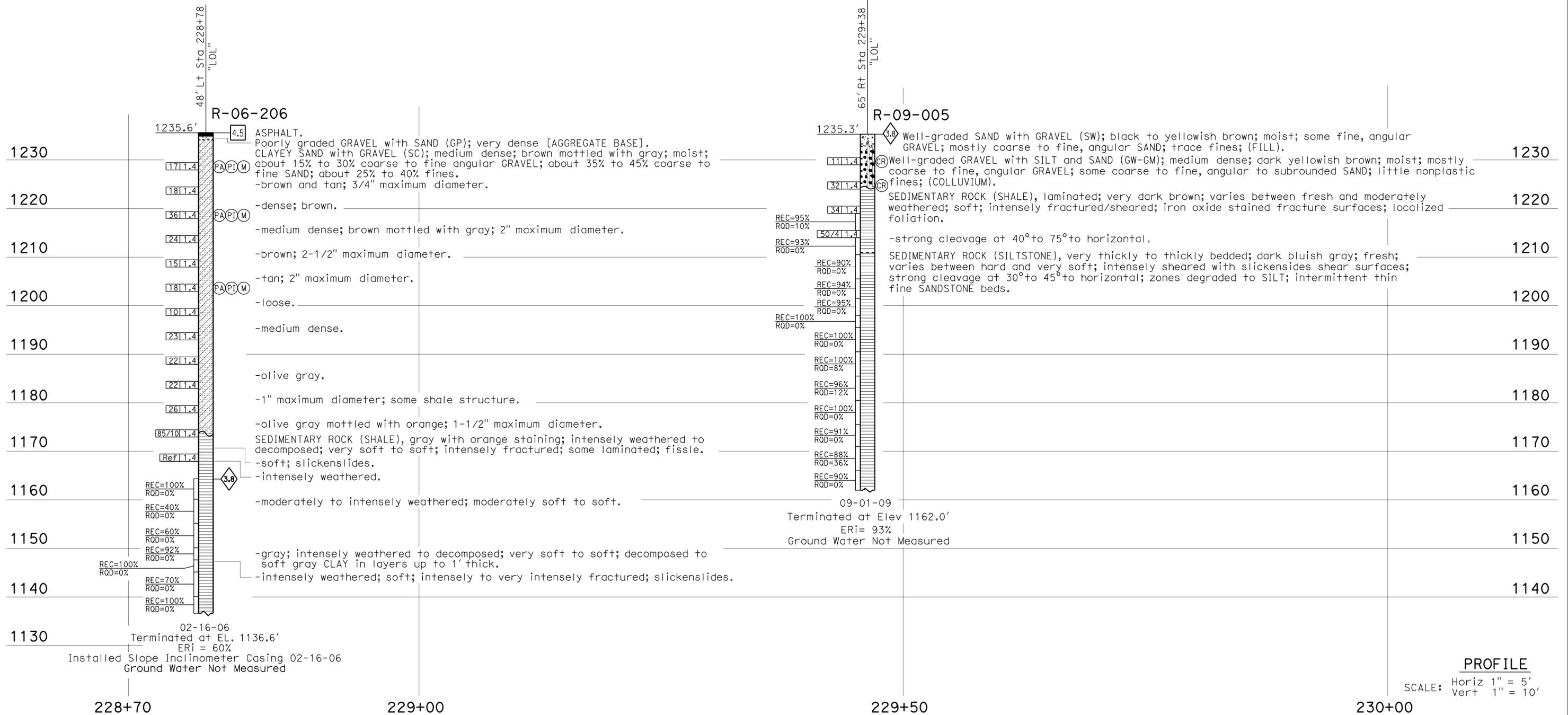
1-31-11
PLANS APPROVAL DATE

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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 17"

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PROFILE
SCALE: Horiz 1" = 5'
Vert 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		WEST CUESTA SOLDIER PILE WALL	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen, 4/10		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		49E0017		LOG OF TEST BORINGS 9 OF 17	
NAME: R. Bibbens		CHECKED BY: S. Heredia		FIELD INVESTIGATION BY:		DESIGN BRANCH		POST MILES		REVISION DATES	
				M. Finegan, M. Jurasius		CU EA		R34.2/R34.5		06-09-10 07-16-10	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		05 0N8901		DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 24 OF 32	

TIME PLOTTED => 14:18
USERNAME => fhmikes DATE PLOTTED => 02-FEB-2011

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SLO	101	R34.2/R34.5	49	55

Dan Appelbaum 7-16-10
REGISTERED CIVIL ENGINEER

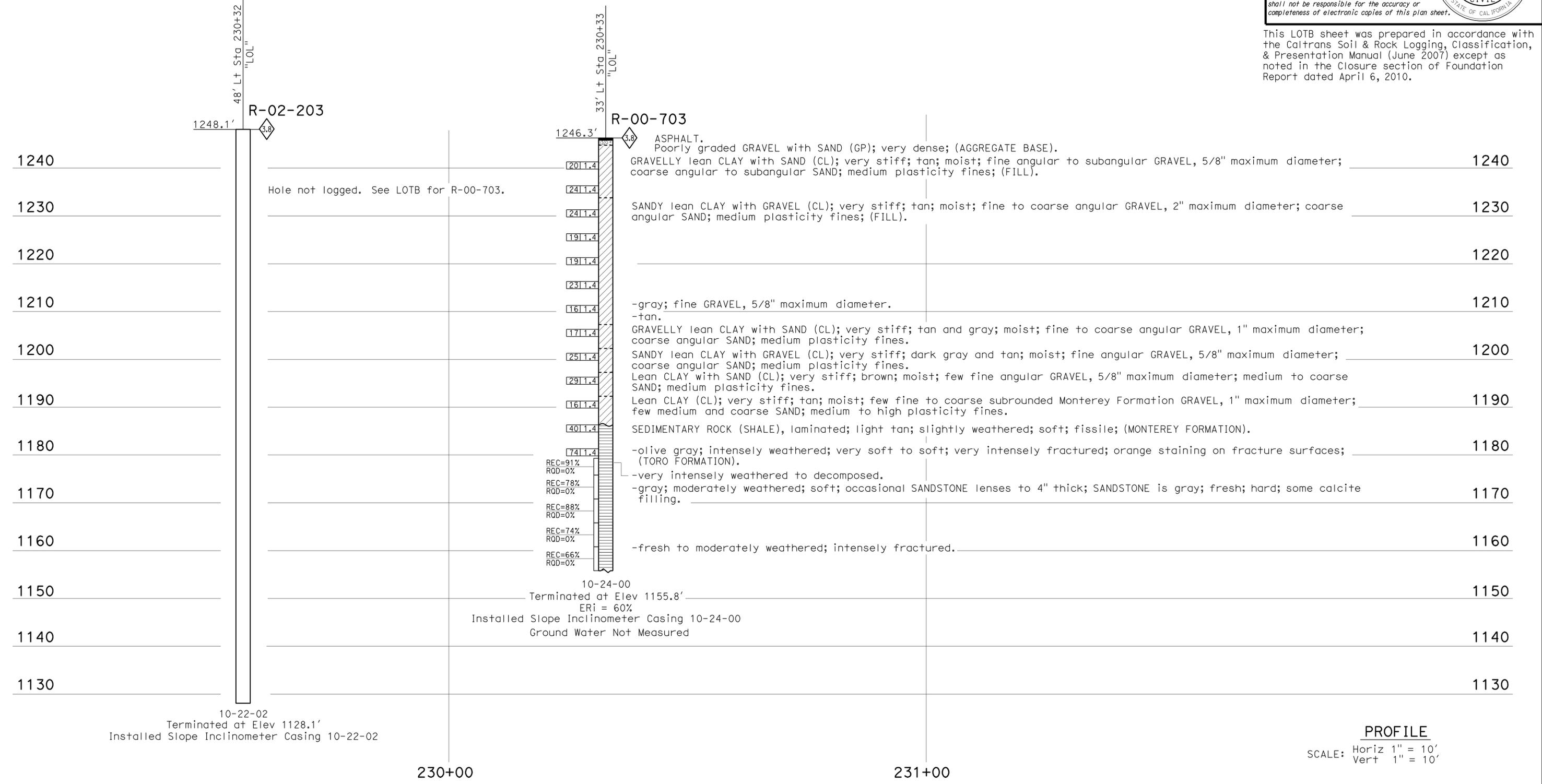
1-31-11
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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 17"

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PROFILE
SCALE: Horiz 1" = 10'
Vert 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		WEST CUESTA SOLDIER PILE WALL	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen, 4/10		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		49E0017		LOG OF TEST BORINGS 11 OF 17	
NAME: R. Bibbens		CHECKED BY: S. Heredia		FIELD INVESTIGATION BY: M. Finegan		DESIGN BRANCH		POST MILES			
								R34.2/R34.5			
05 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		CU 05 EA 0N8901		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
								07-06-10 07-16-10		SHEET 26 OF 32	

FILE => 49-rwl11-z-1fb11.dgn
USERNAME => hrmikes DATE PLOTTED => 02-FEB-2011 TIME PLOTTED => 14:18

Dan Appelbaum 7-16-10
 REGISTERED CIVIL ENGINEER
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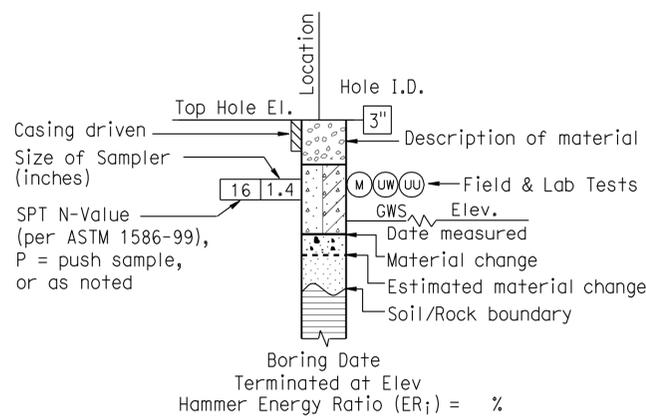
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

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

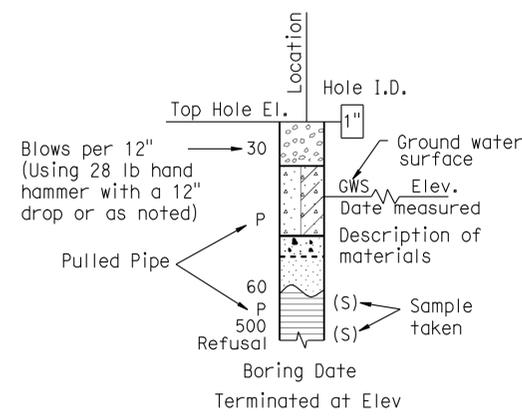
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

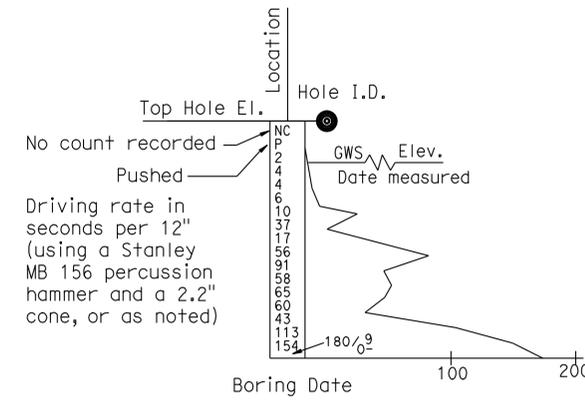
PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the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



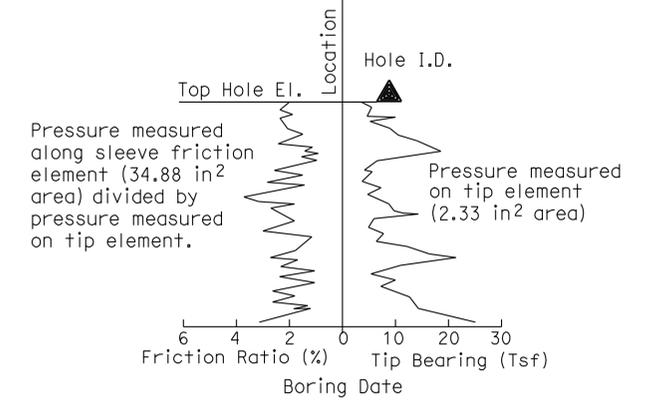
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 49E0017	WEST CUESTA SOLDIER PILE WALL LOG OF TEST BORINGS 15 OF 17
	PREPARED BY: I.G-Remmen			POST MILE R34.2/R34.5	
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 05 EA 0N8901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 30 OF 32

FILE => 49-rwl11-z-1fb15.dgn

USERNAME => fhmikes DATE PLOTTED => 02-FEB-2011 TIME PLOTTED => 14:19

Don Appelbaum 7-16-10
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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	GW Well-graded GRAVEL		CL Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
	GP Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
	GW-GM Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND		CL-ML SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
	GW-GC Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
	GP-GM Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND		ML SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
	GP-GC Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
	GM SILTY GRAVEL SILTY GRAVEL with SAND		OL ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
	GC CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
	GC-GM SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND		OL ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
	SW Well-graded SAND Well-graded SAND with GRAVEL		
	SP Poorly graded SAND Poorly graded SAND with GRAVEL		CH Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
	SW-SM Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
	SW-SC Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		MH Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
	SP-SM Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
	SP-SC Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		OH ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
	SM SILTY SAND SILTY SAND with GRAVEL		
	SC CLAYEY SAND CLAYEY SAND with GRAVEL		OH ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	SC-SM SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
	PT PEAT		OL/OH ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

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

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

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

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

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

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Dan Appelbaum 7-16-10
 REGISTERED CIVIL ENGINEER
 1-31-11
 PLANS APPROVAL DATE
 No. C50001
 Exp. 6-30-11
 CIVIL
 STATE OF CALIFORNIA
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PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)

$$REC = \frac{\sum \text{Length of the recovered core pieces (inches)}}{\text{Total length of core run (inches)}} \times 100\%$$

$$RQD = \frac{\sum \text{Length of intact core pieces} \geq 4''}{\text{Total length of core run (inches)}} \times 100\%$$

RELATIVE STRENGTH OF INTACT ROCK

Term	Uniaxial Compressive Strength (PSI)
Extremely Strong	> 30,000
Very Strong	14,500 - 30,000
Strong	7,000 - 14,500
Medium Strong	3,500 - 7,000
Weak	700 - 3,500
Very Weak	150 - 700
Extremely Weak	< 150

BEDDING SPACING

Description	Thickness / Spacing
Massive	Greater than 10 ft
Very thickly bedded	3 to 10 ft
Thickly bedded	1 to 3 ft
Moderately bedded	3-5/8" to 1 ft
Thinly bedded	1-1/4" to 3-5/8"
Very thinly bedded	3/8" to 1-1/4"
Laminated	Less than 3/8"

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

ROCK HARDNESS

Description	Criteria
Extremely Hard	Specimen cannot be scratched with a pocket knife or sharp pick; can only be chipped with repeated heavy hammer blows.
Very Hard	Specimen cannot be scratched with a pocket knife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Specimen can be scratched with a pocket knife or sharp pick with difficulty (heavy pressure). Heavy hammer blows required to break specimen.
Moderately Hard	Specimen can be scratched with pocket knife or sharp pick with light or moderate pressure. Core breaks with moderate hammer blows.
Moderately Soft	Specimen can be grooved 1/6" deep with a pocket knife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Specimen can be grooved or gouged easily by a pocket knife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Specimen can be readily indented, grooved or gouged with fingernail, or carved with a pocket knife. Breaks with light manual pressure.

WEATHERING DESCRIPTORS FOR INTACT ROCK

Description	Diagnostic features					General Characteristics
	Chemical Weathering-Discoloration and/or oxidation		Mechanical Weathering-Grain boundary conditions (disaggregation) primarily for granitics and some coarse-grained sediments	Texture and Solutioning		
	Body of Rock	Fracture Surfaces		Texture	Solutioning	
Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change.	No solutioning.	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved.	Minor leaching of some soluble minerals may be noted.	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved.	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semiarid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened.
Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes."

Combination descriptors (such as "slightly weathered to fresh") are permissible where equal distribution of both weathering characteristics is present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, combination descriptors should not be used where significant, identifiable zones can be delineated. Only two adjacent descriptors may be combined. "Very intensely weathered" is the combination descriptor for "intensely weathered to decomposed."

FRACTURE DENSITY

Description	Observed Fracture Density
Unfractured	No fractures.
Very slightly fractured	Lengths greater than 3 feet.
Slightly fractured	Lengths from 1 to 3 feet with few lengths less than 1 foot or greater than 3 feet.
Moderately fractured	Lengths mostly in 4" to 1 foot range with most lengths about 8"
Intensely fractured	Lengths average from 1 to 4" with scattered fragmented intervals with lengths less than 4"
Very intensely fractured	Mostly chips and fragments with a few scattered short core lengths.

Combination descriptors (such as "Very intensely to intensely fractured") are used where equal distribution of both fracture density characteristics is present over a significant interval or exposure, or where characteristics are "in between" the descriptor definitions. Only two adjacent descriptors may be combined.