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STRUCTURE PLANS

19-25 ARROYO SECO TANGENT PILE WALL Br No. 33E0080

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN ALAMEDA COUNTY
IN LIVERMORE
ABOUT 0.4 MILE WEST OF ROUTE 580
AND FIRST STREET OVERCROSSING

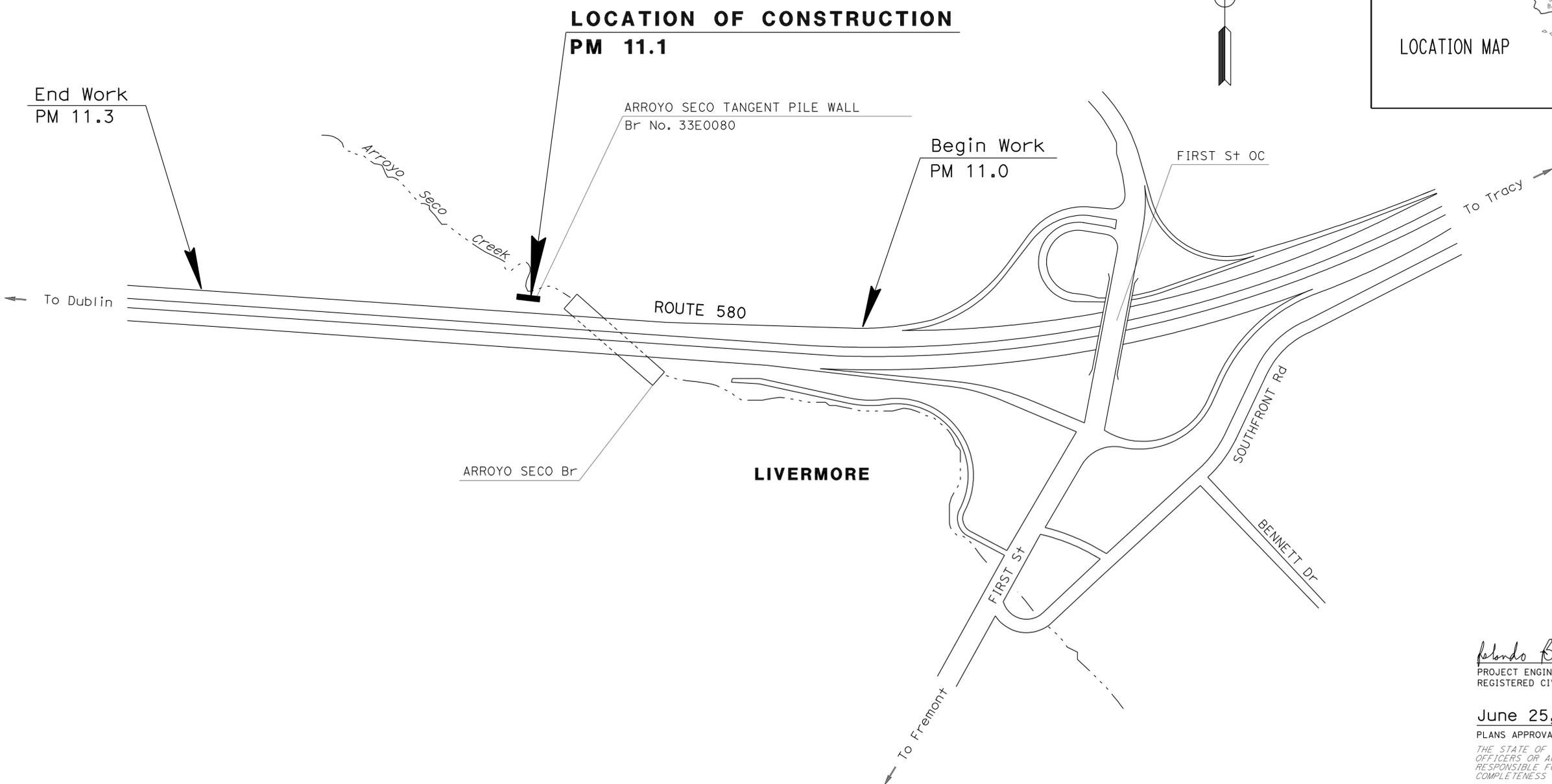
TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	1	25



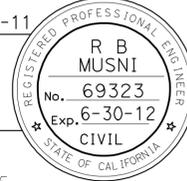


LOCATION MAP



PROJECT MANAGER
JAY HAGHPARAST
 DESIGN ENGINEER
EMAD ARAIM

R B Musni 3-21-11
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
June 25, 2012
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



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

NO SCALE

CONTRACT No.	04-4S3704
PROJECT ID	0400001230

DATE PLOTTED => 27-JUN-2012 TIME PLOTTED => 06:18

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	2	25

<i>Rolando B Musni</i>	3-21-11
REGISTERED CIVIL ENGINEER	DATE
6-25-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
R B MUSNI
No. 69323
Exp. 6-30-12
CIVIL

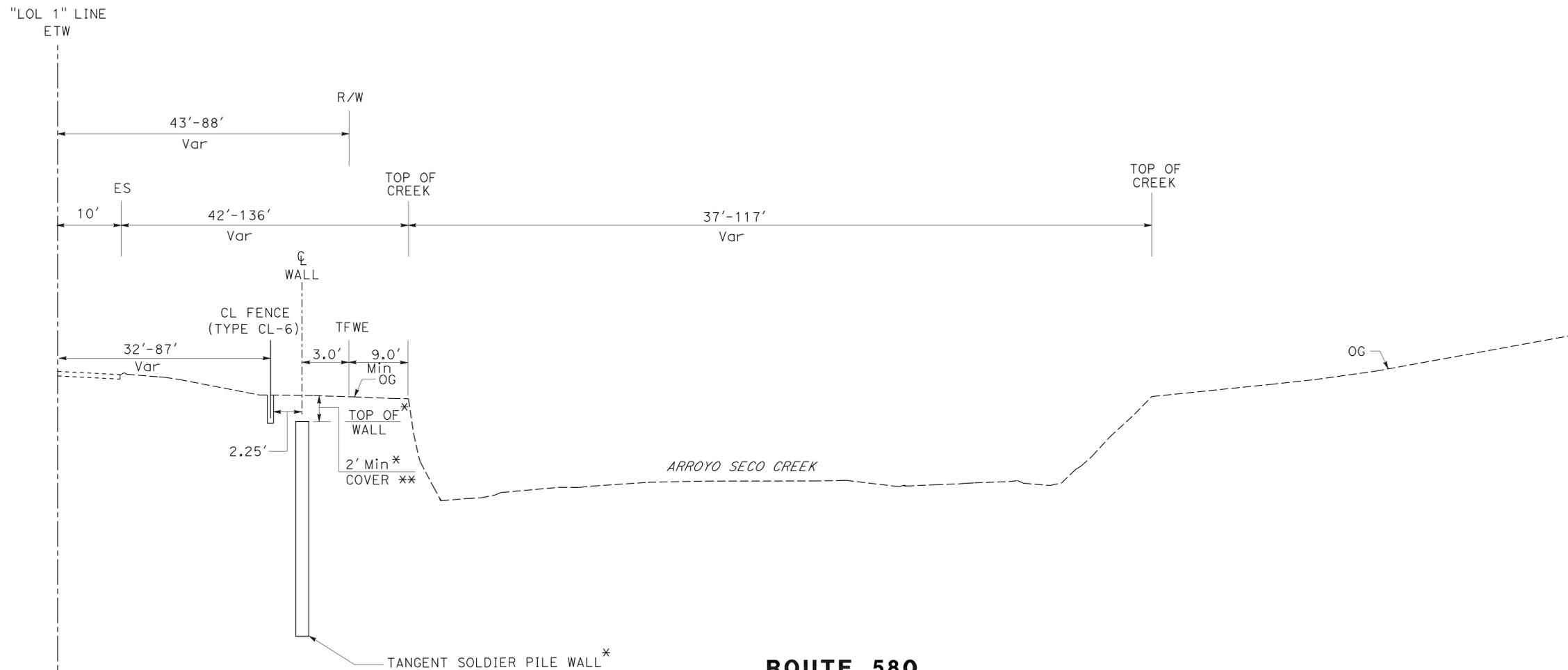
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

DIMENSIONS OF THE PAVEMENT STRUCTURAL SECTION ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.

ABBREVIATION:

TFWE - TEMPORARY FENCE (WILDLIFE EXCLUSION)



ROUTE 580

"LOL 1" LINE WESTBOUND
STA 2+01 TO STA 4+09

* (SEE STRUCTURE PLANS)
** TOP OF 2' MATERIAL IS HAZARDOUS DUE TO AERIALLY DEPOSITED LEAD

TYPICAL CROSS SECTIONS
NO SCALE
X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
06 - DESIGN
FUNCTIONAL SUPERVISOR
EMAD ARAIM
CALCULATED/DESIGNED BY
CHECKED BY
GEORGE PANOS
ROLANDO MUSNI
REVISOR BY
DATE REVISED



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	5	25

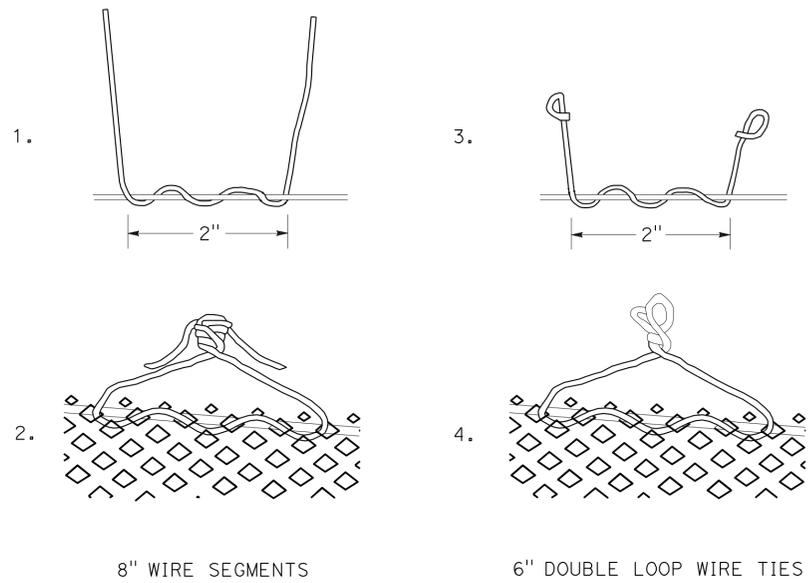
Rolando B. Musni
 REGISTERED CIVIL ENGINEER DATE 5-24-11
 6-25-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 R B MUSNI
 No. 69323
 Exp. 6-30-12
 CIVIL
 STATE OF CALIFORNIA

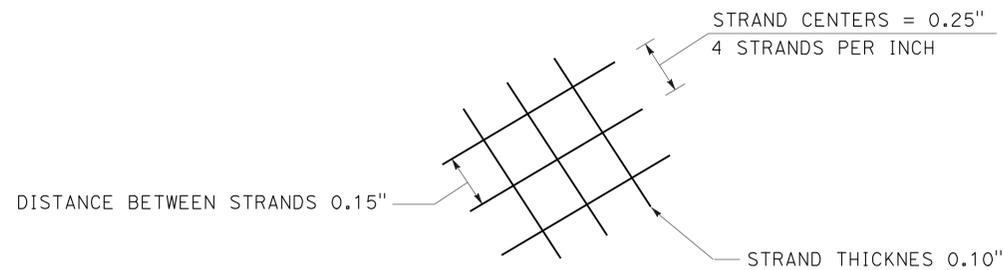
THE STATE OF CALIFORNIA OR ITS OFFICERS
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NOTES:

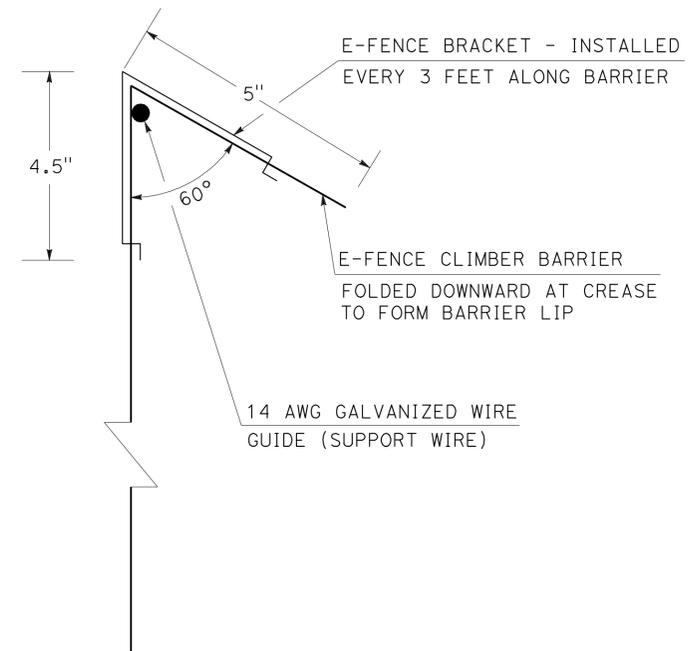
- 8" WIRE SEGMENTS
LOOP AROUND 14 AWG GALVANIZED GUIDE-WIRE THREE TIMES.
- PUT ENDS THROUGH NETTING.
ENDS MUST BE 2" APART.
TWIST ENDS AT LEAST 4 TIMES.
- 6" DOUBLE LOOP WIRE TIES
LOOP AROUND 14 AWG GALVANIZED GUIDE-WIRE THREE TIMES.
- PUT LOOPS THROUGH NETTING WITH NEEDLE NOSE PLIERS.
ENDS MUST BE 2" APART, THEN TWIST ENDS AT LEAST 4 TIMES.
- 16 AWG GALVANIZED - USE EITHER 8" WIRE SEGMENTS OR DOUBLE-LOOP-WIRE-TIES.



DETAIL A
INSTALLING WIRE TIES



NOMINAL BARRIER DIMENSIONS



DETAIL B
E-FENCE BARRIER LIP

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	EMAD ARATIM	GEORGE PANOS	
06 - DESIGN		ROLANDO MUSNI	
	CALCULATED-DESIGNED BY	CHECKED BY	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	6	25

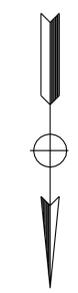
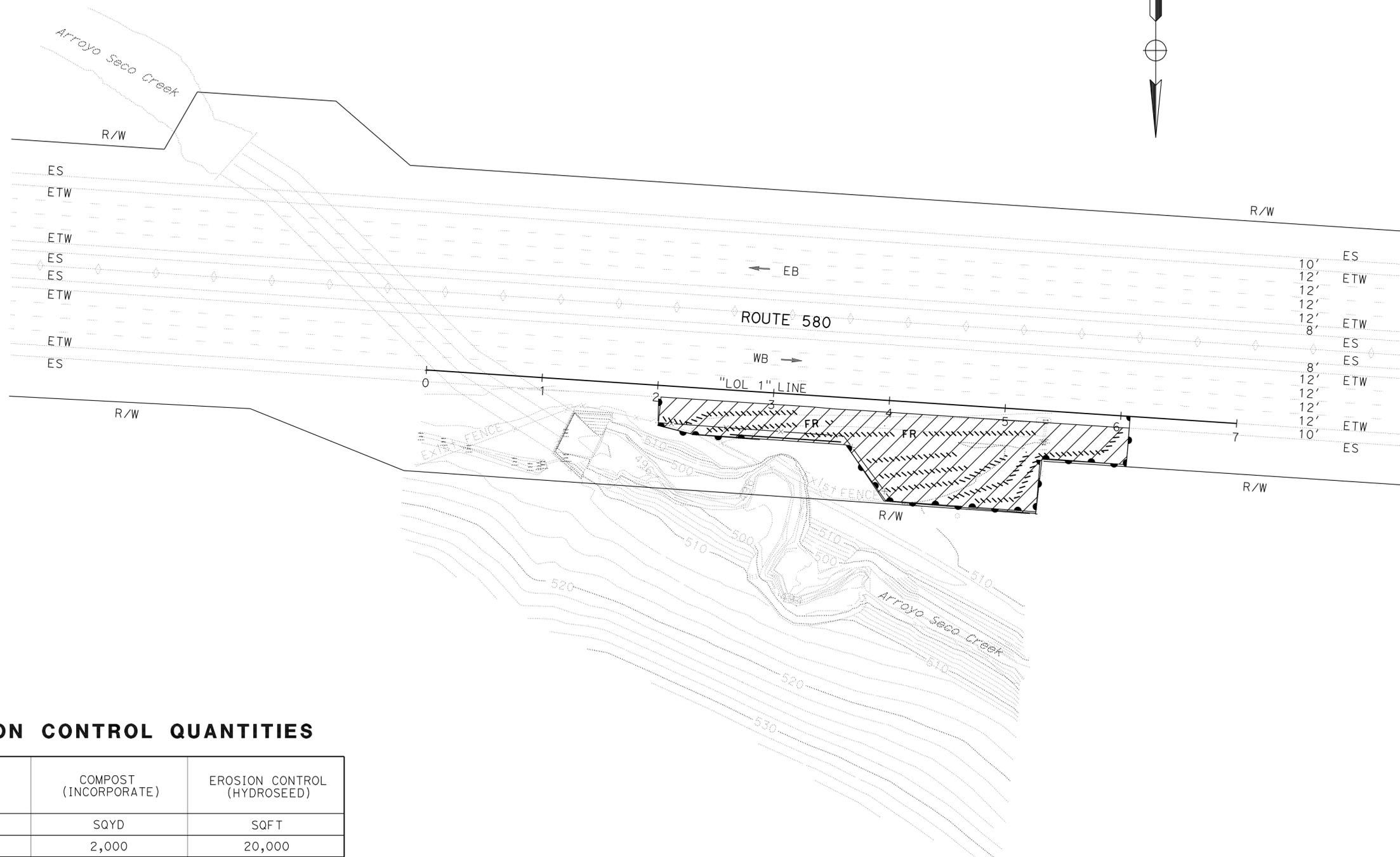
6-25-12
 PLANS APPROVAL DATE

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

- LEGEND:**
- //// FR //// FIBER ROLLS
 - ▨ EROSION CONTROL (HYDROSEED) 20,000 SQFT
COMPOST (INCORPORATE) 2,000 SQYD
 - TFWE - TEMPORARY FENCE (WILDLIFE EXCLUSION)



EROSION CONTROL QUANTITIES

FIBER ROLLS	COMPOST (INCORPORATE)	EROSION CONTROL (HYDROSEED)
LF	SQYD	SQFT
1,000	2,000	20,000

EROSION CONTROL PLAN
 SCALE: 1"=50' **EC-1**

THIS PLAN ACCURATE FOR EROSION CONTROL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 WATER QUALITY
 SENIOR LANDSCAPE ARCHITECT
 CALIE TSUI
 REVISOR BY
 DAVID YAM
 CHECKED BY
 DAVID YAM
 DESIGNED BY
 DAVID YAM

**STATIONARY MOUNTED
CONSTRUCTION AREA SIGNS**

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF POSTS	POST SIZE	No. OF SIGNS
(A)	W20-1	48" x 48"	ROAD WORK AHEAD	1	4" x 6"	1
(B)	G20-2	48" x 24"	END ROAD WORK	1	4" x 4"	1

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	7	25

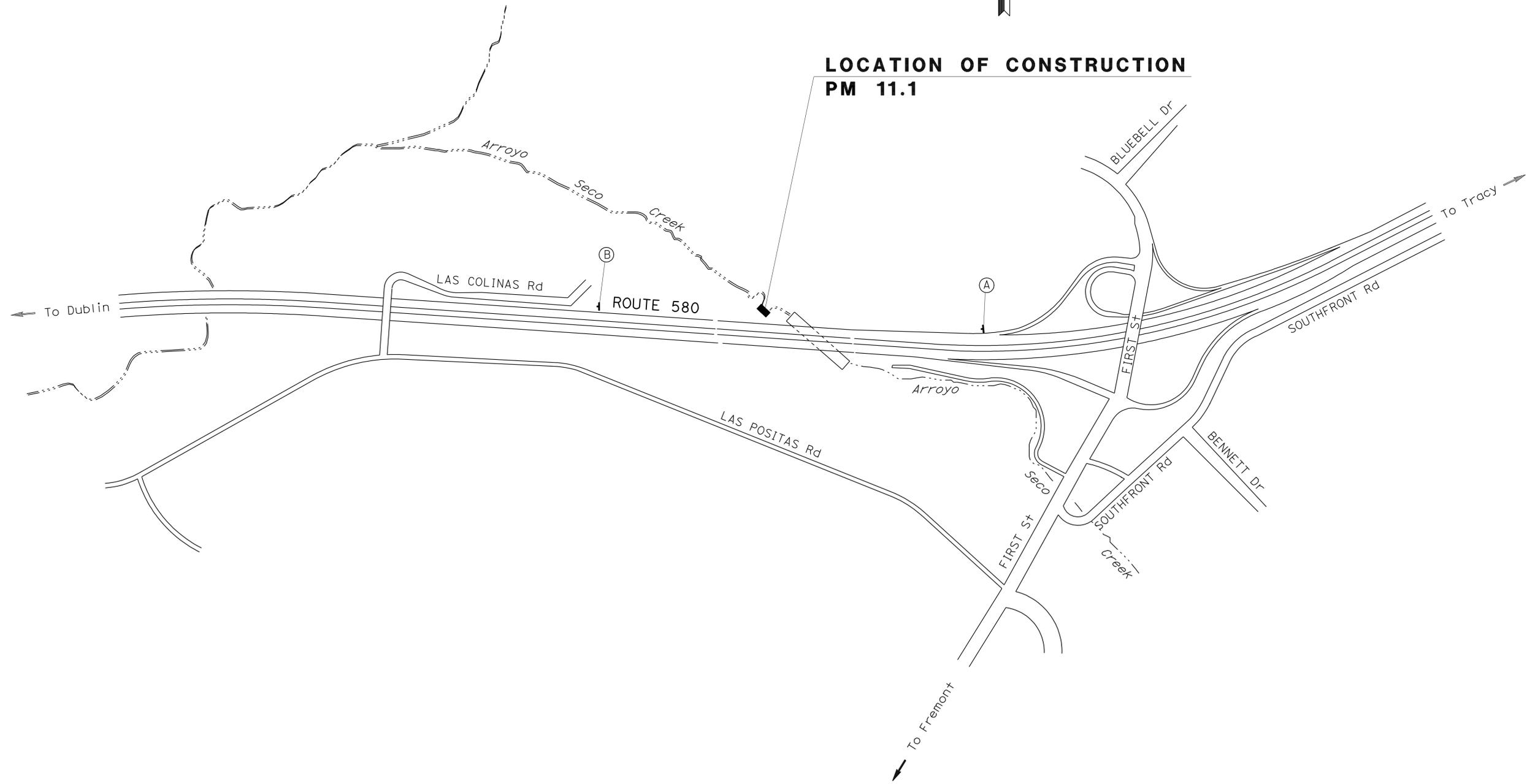
Hassan M. Taaha 8-25-10
REGISTERED CIVIL ENGINEER DATE

6-25-12
PLANS APPROVAL DATE

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**LOCATION OF CONSTRUCTION
PM 11.1**



CONSTRUCTION AREA SIGNS

NO SCALE **CS-1**

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI
CALCULATED/DESIGNED BY: [blank]
CHECKED BY: [blank]
SOPHAT YIN
HASSAN TAHA
REVISED BY: [blank]
DATE REVISED: [blank]

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	8	25

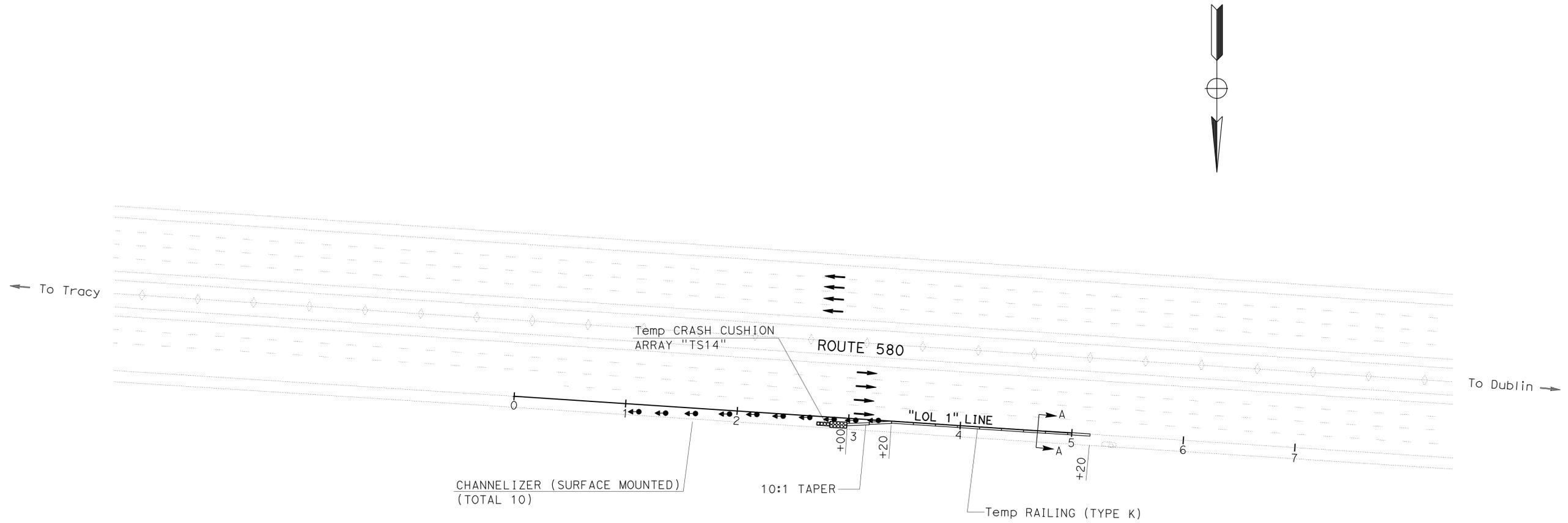
Hassan Cohe 3-16-11
REGISTERED CIVIL ENGINEER DATE

6-25-12
PLANS APPROVAL DATE

HASSAN M. TAHA
No. 60130
Exp. 06/30/12
CIVIL

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans 06-TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR **MOHAMMED QATAMI**
DESIGNED BY HASSAN TAHA
CHECKED BY MUNIR ASSAF
REVISOR BY HASSAN TAHA
DATE REVISOR DATE



CHANNELIZER (SURFACE MOUNTED)

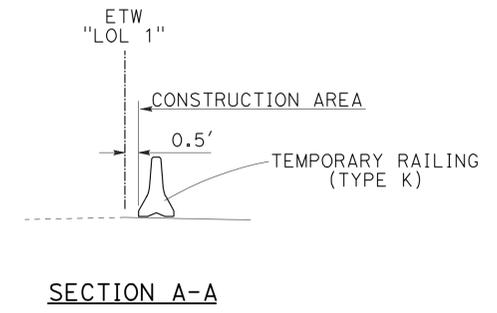
SHEET No.	EA
TH-1	10
TOTAL	10

TEMPORARY CRASH CUSHION MODULE

SHEET No.	EA
TH-1	14
TOTAL	14

TEMPORARY RAILING (TYPE K)

SHEET No.	LOCATION	TEMPORARY RAILING (TYPE K)
TH-1	S+a 3+00 TO S+a 5+20	LF 220
TOTAL		220



TRAFFIC HANDLING PLAN AND QUANTITIES
SCALE: 1" = 50' **TH-1**

THIS PLAN ACCURATE FOR TRAFFIC HANDLING WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	9	25

Rolando B. Musni
 REGISTERED CIVIL ENGINEER DATE 3-21-11

6-25-12
 PLANS APPROVAL DATE

R B MUSNI
 No. 69323
 Exp. 6-30-12
 CIVIL

REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA

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ROADWAY QUANTITIES

L-1	CHAIN LINK FENCE (TYPE CL-6)	REMOVE FENCE
STATION	LF	LF
Sta 2+01.69 TO Sta 4+09	223	
Sta 2+01.69 TO Sta 4+09		218
TOTAL	223	218

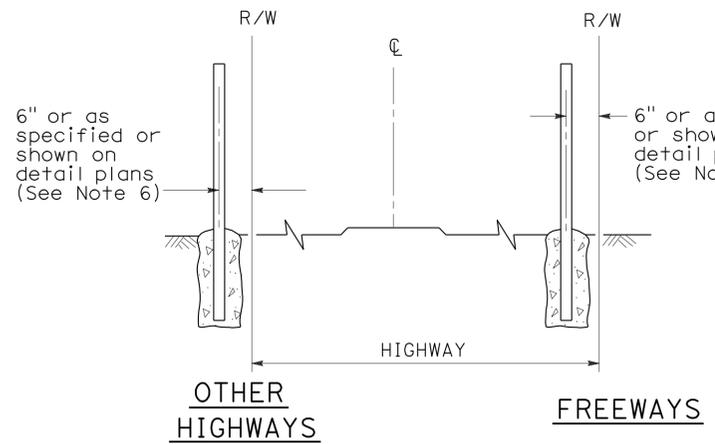
TEMPORARY WATER POLLUTION CONTROL

L-1	TEMPORARY FENCE (WILDLIFE EXCLUSION)	TEMPORARY FIBER ROLL
STATION	LF	LF
Sta 1+90 TO Sta 5+10	470	500
TOTAL	470	500

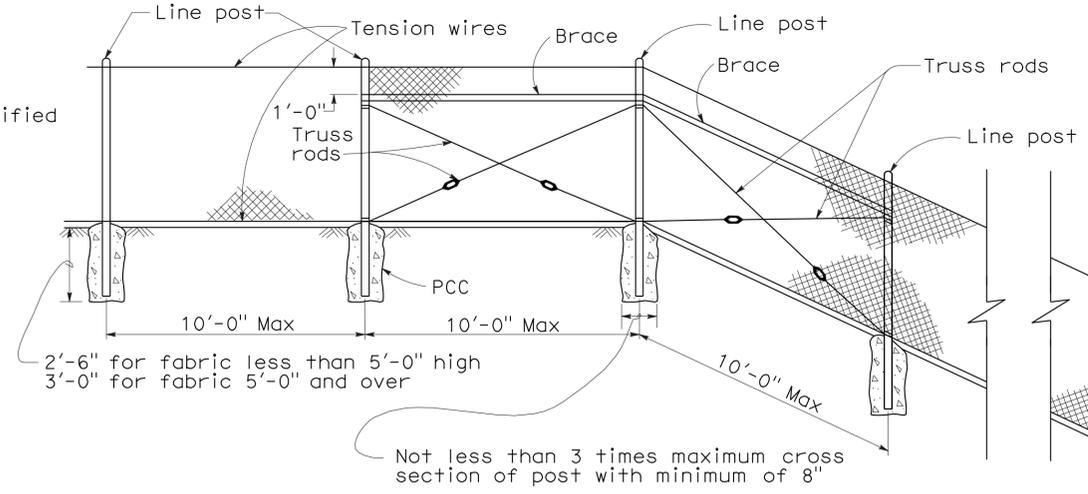
SUMMARY OF QUANTITIES

Q-1

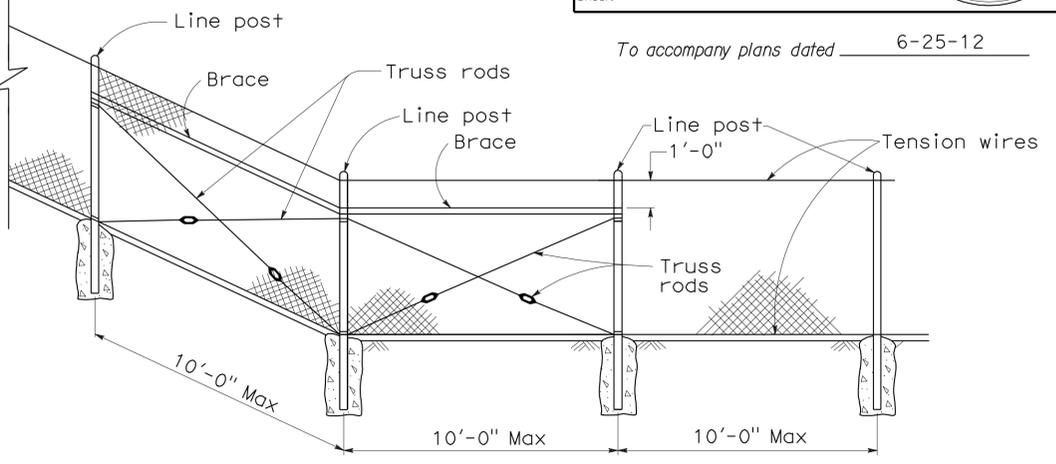




FENCE LOCATION

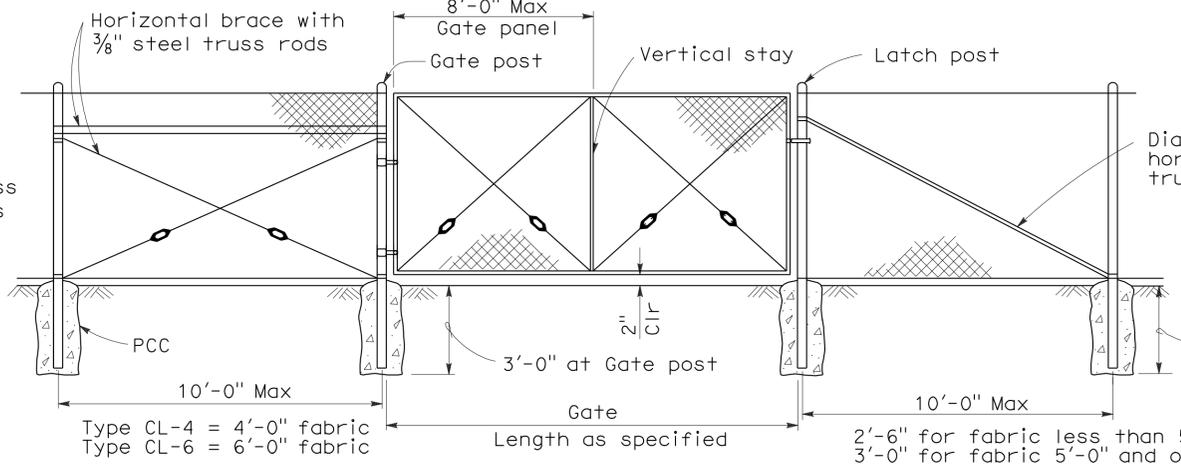
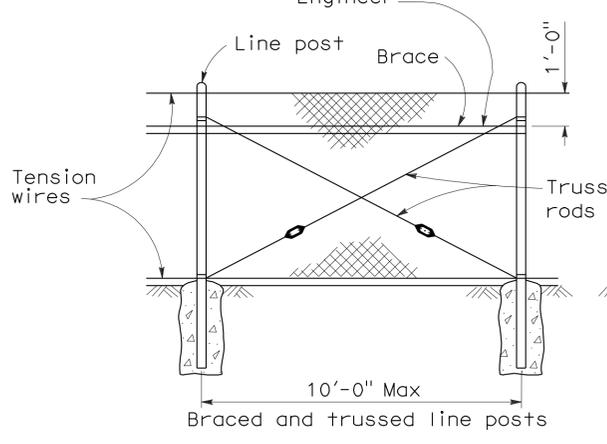


CHAIN LINK FENCE ON SHARP BREAK IN GRADE



To accompany plans dated 6-25-12

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



CHAIN LINK GATE INSTALLATION

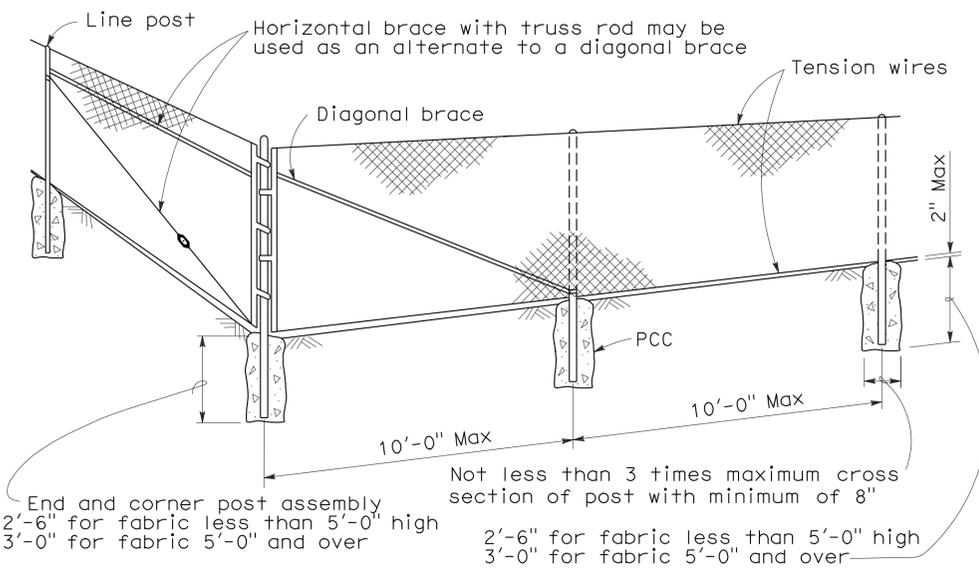
GATE POST			
FENCE HEIGHT	GATE WIDTHS	NOMINAL ID	WEIGHT PER FOOT
6'-0" and Less	Up thru 6'-0"	2 1/2"	4.95 LB
	Over 6'-0" thru 12'-0"	4"	10.79 LB
	Over 12'-0" thru 18'-0"	5"	14.62 LB
	Over 18'-0" to 24'-0" Max	6"	18.97 LB
Over 6'-0"	Up thru 6'-0"	3"	7.58 LB
	Over 6'-0" thru 12'-0"	5"	14.62 LB
	Over 12'-0"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

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

NOTES:

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

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



CORNER POST

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CHAIN LINK FENCE
 NO SCALE

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

REVISED STANDARD PLAN RSP A85

2006 REVISED STANDARD PLAN RSP A85

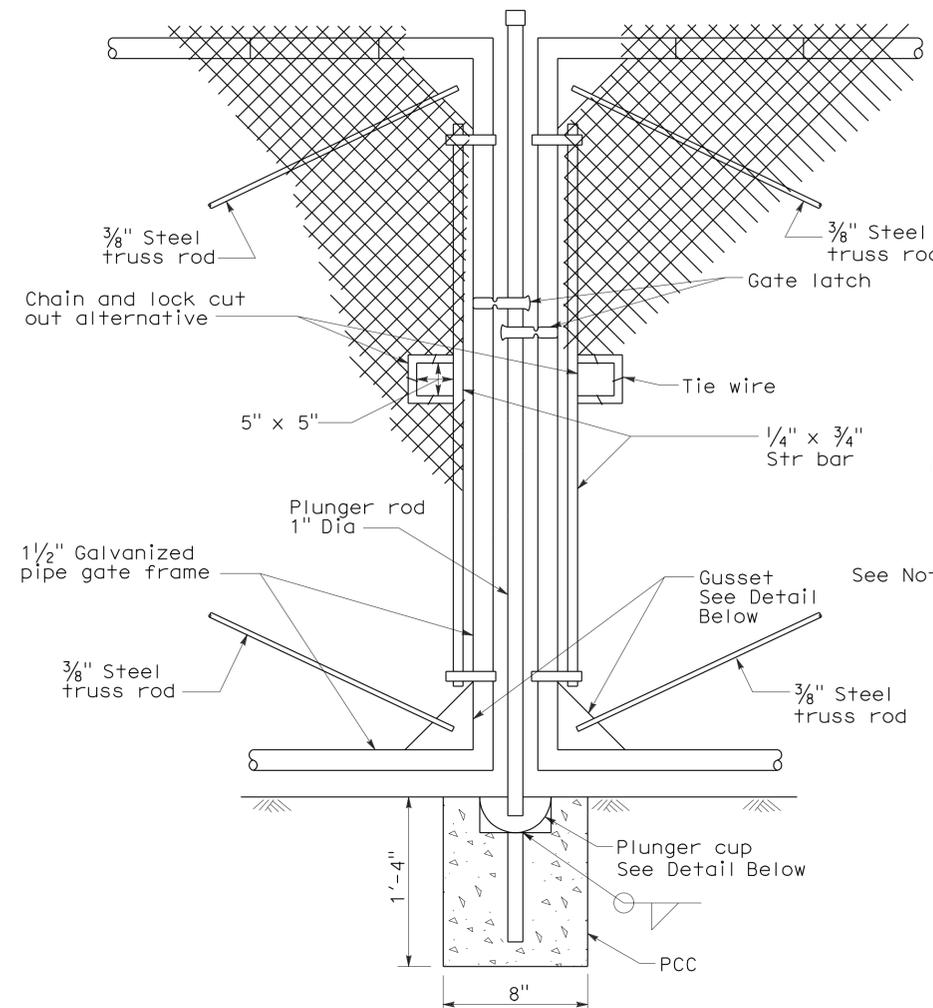
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	11.1	11	25

Glenn DeCou
 REGISTERED CIVIL ENGINEER
 June 5, 2009
 PLANS APPROVAL DATE
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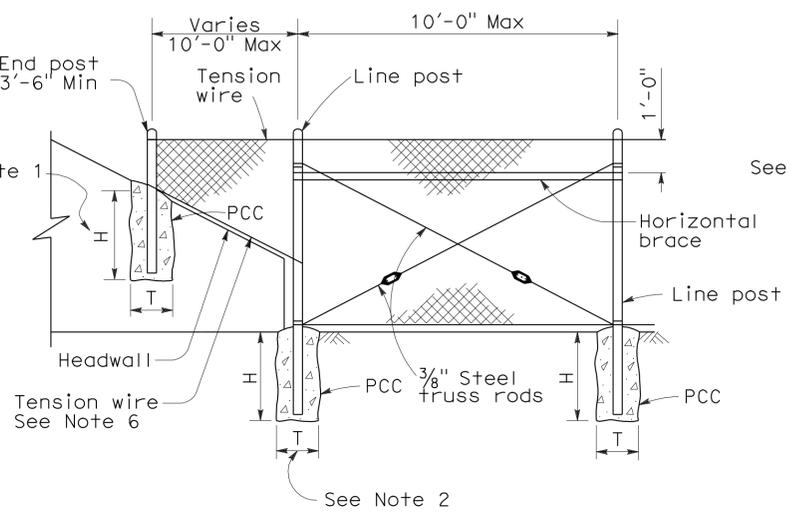
REGISTERED PROFESSIONAL ENGINEER
 Glenn DeCou
 No. C34547
 Exp. 9-30-09
 CIVIL
 STATE OF CALIFORNIA

To accompany plans dated 6-25-12

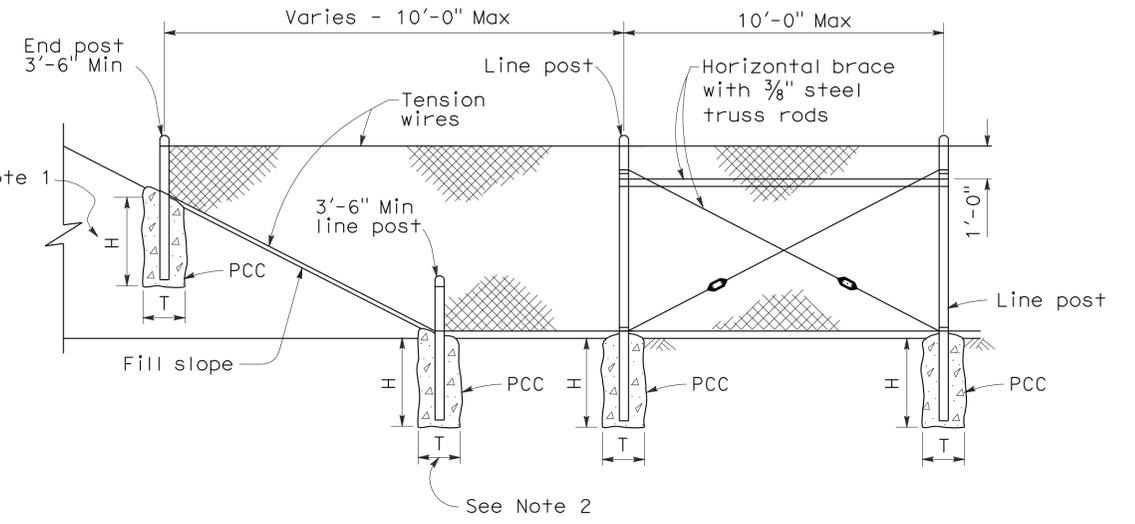
- NOTES:**
- H is 2'-6" for fabric less than 5'-0" high.
H is 3'-0" for fabric 5'-0" and over.
 - T is not less than 3 times maximum cross section of post with minimum of 8".
 - Arms with barbed wire to be used where shown on plans.
 - See Revised Standard Plan RSP A85 for Chain Link Fencing dimensions.
 - Reinforcing must comply with ASTM A 706.
 - See Detail A on New Standard Plan NSP A86B for connection at headwall.



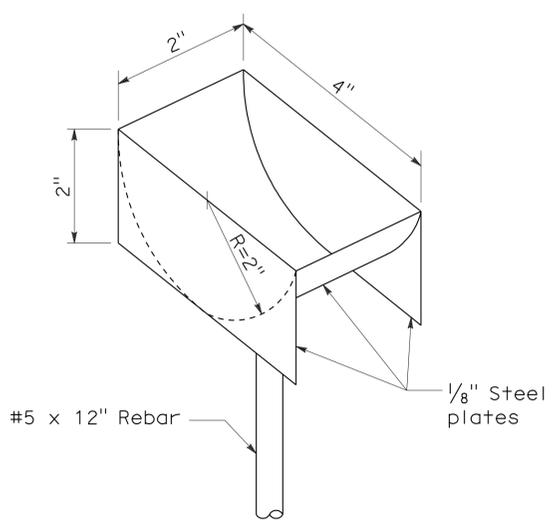
TYPICAL DOUBLE GATE REMOVABLE CENTER POST



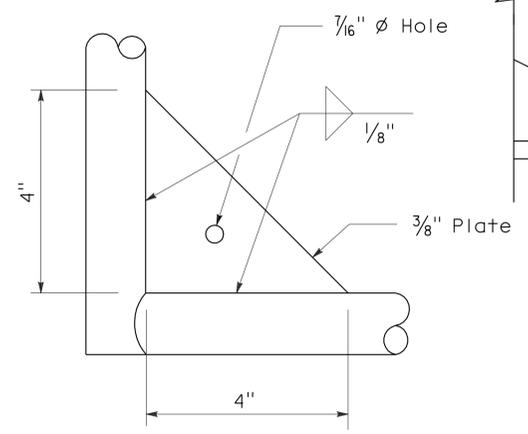
METHOD OF TYING FENCE TO HEADWALL



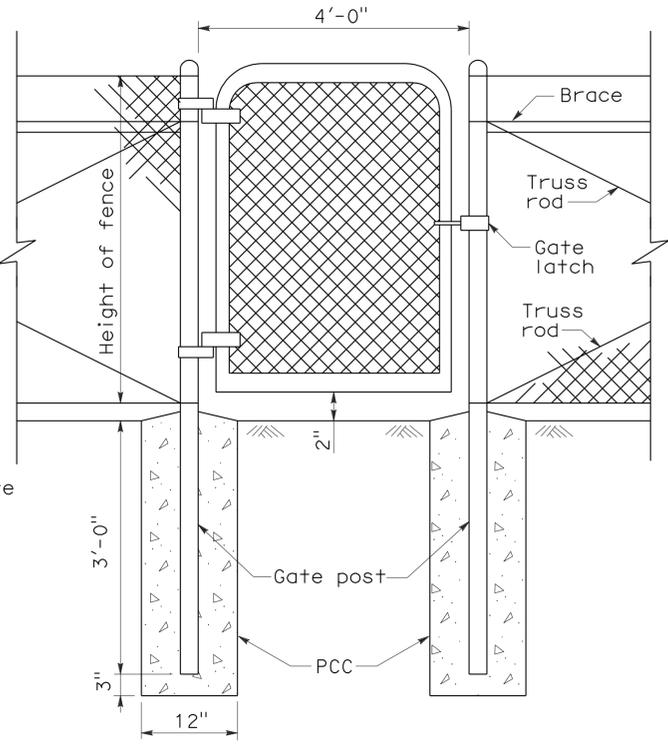
METHOD OF ERECTING FENCE FOR FILL SLOPE



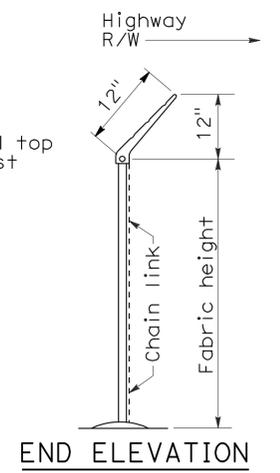
PLUNGER CUP DETAIL



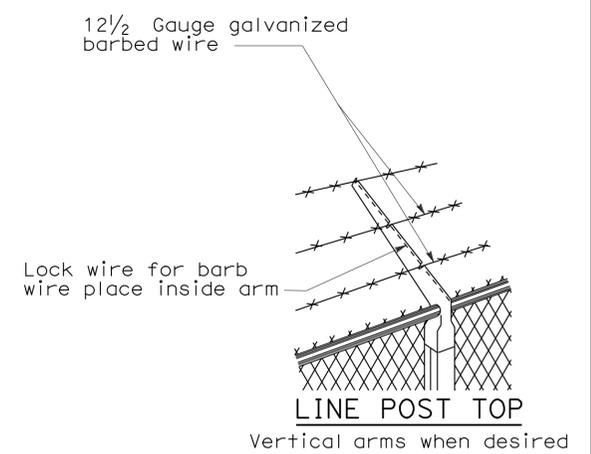
GUSSET DETAIL



WALK GATE



BARBED WIRE POST TOP
See Note 3



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

NSP A85A DATED JUNE 5, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A85A

2006 NEW STANDARD PLAN NSP A85A

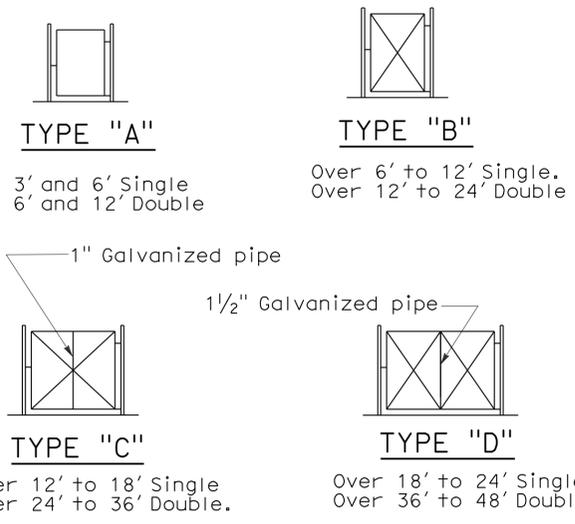
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	11.1	12	25

Glenn DeCou
 REGISTERED CIVIL ENGINEER
 No. C34547
 Exp. 9-30-09
 STATE OF CALIFORNIA

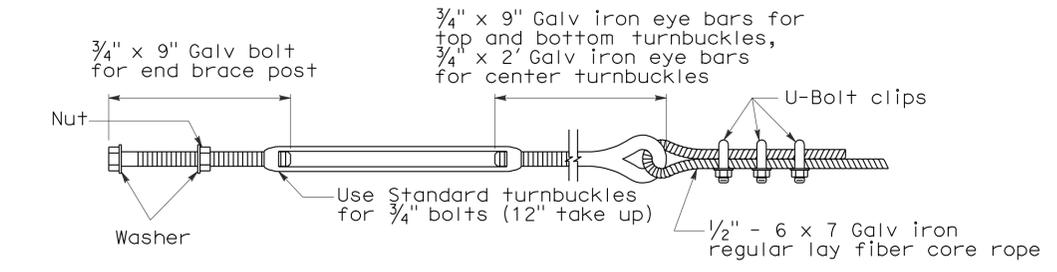
June 5, 2009
 PLANS APPROVAL DATE

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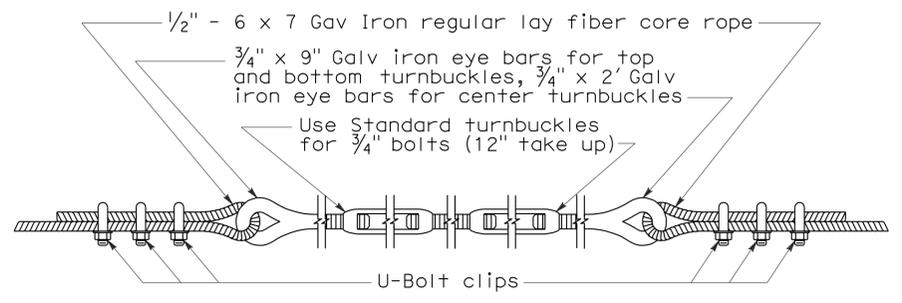
To accompany plans dated 6-25-12



TYPICAL FRAMEWORK SHOWING NUMBER OF BAYS IN GATE



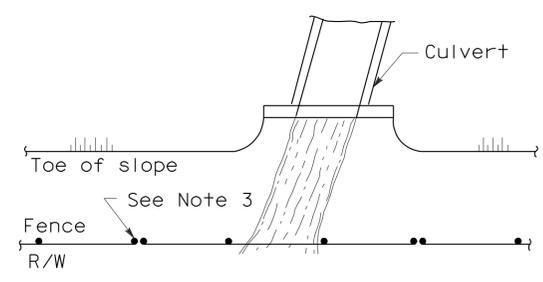
TURNBUCKLE A



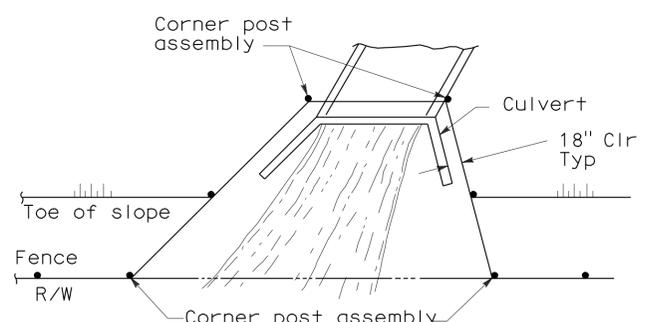
TURNBUCKLE B

NOTES:

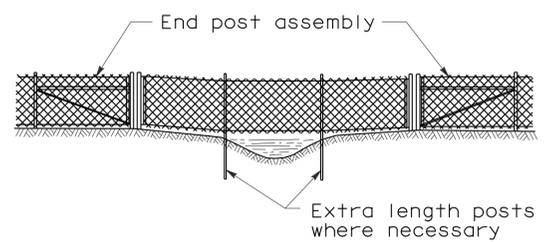
1. All material for abutment connection to be galvanized.
2. The chain link fabric shall be replaced by barbed wire strands at 12" maximum centers between the double posts.
3. When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device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



PLAN

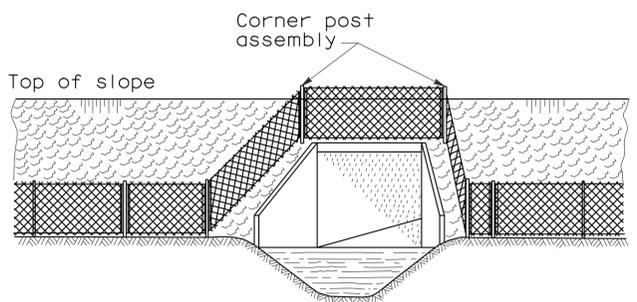


PLAN



ELEVATION

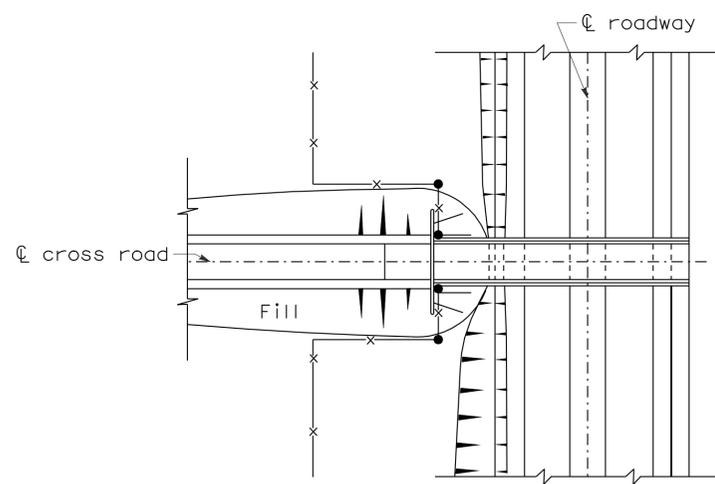
INSTALLATION OVER STREAM



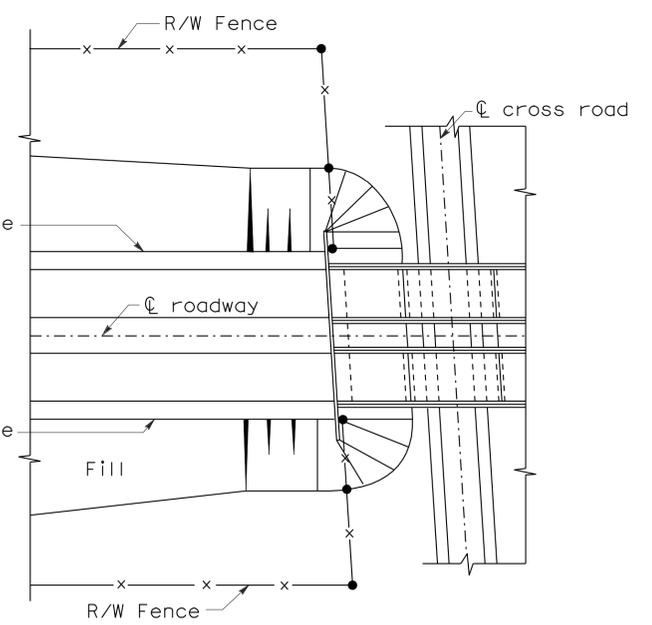
ELEVATION

INSTALLATION AROUND HEADWALL

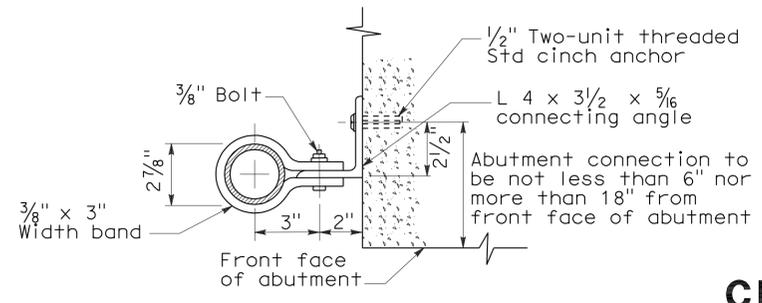
See Note 4



PLAN OF ROADWAY - UNDERPASS



PLAN OF ROADWAY - OVERPASS



ABUTMENT CONNECTION

TYPICAL INSTALLATION AT BRIDGES

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

NSP A85B DATED JUNE 5, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A85B

2006 NEW STANDARD PLAN NSP A85B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	11.1	13	25

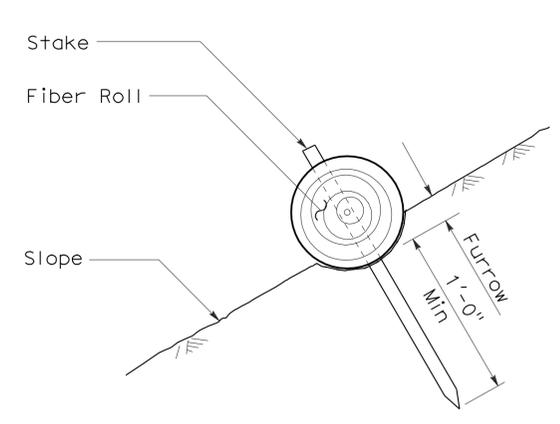
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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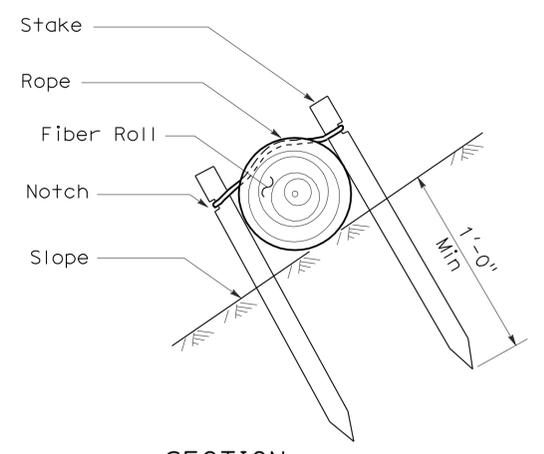
To accompany plans dated 6-25-12

NOTES:

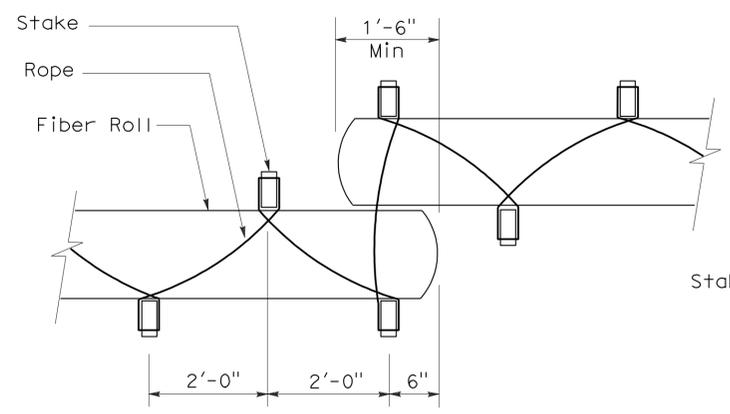
1. Fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



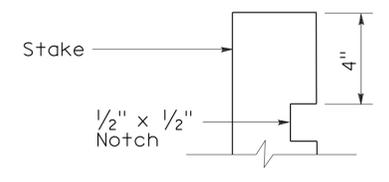
SECTION
FIBER ROLL
(TYPE 1)



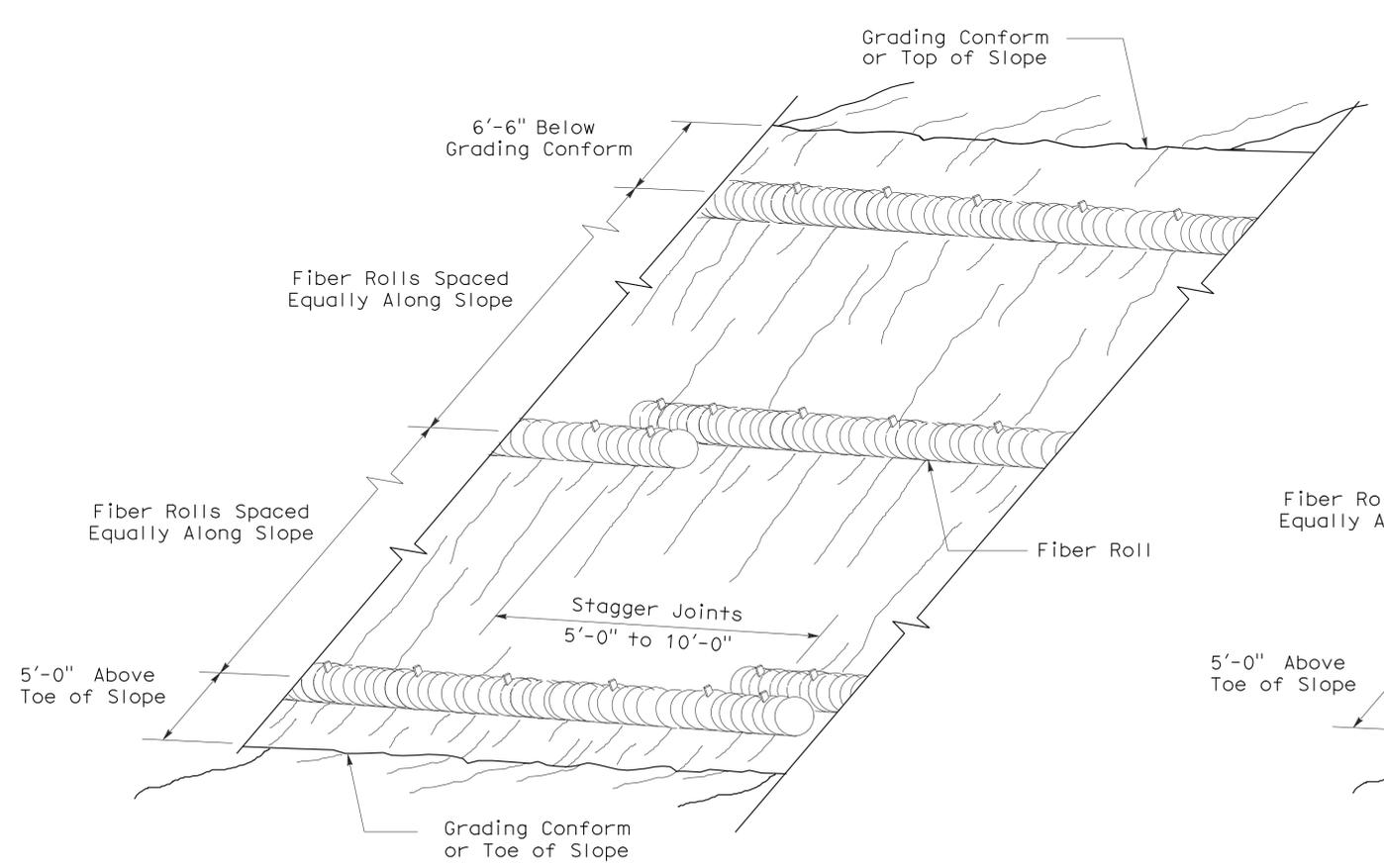
SECTION



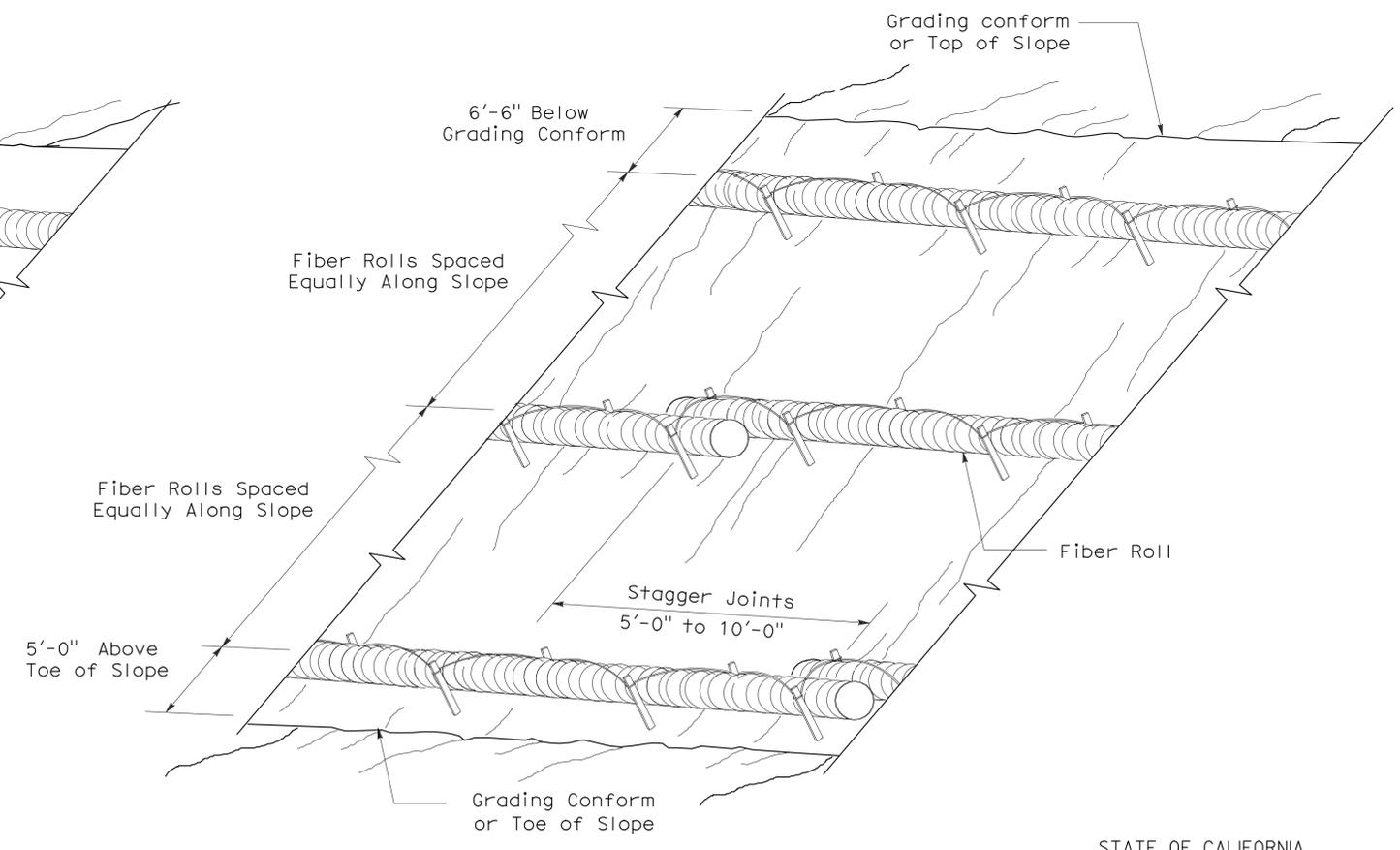
PLAN
FIBER ROLL
(TYPE 2)



ELEVATION
STAKE NOTCH DETAIL



PERSPECTIVE
FIBER ROLL (TYPE 1)



PERSPECTIVE
FIBER ROLL (TYPE 2)

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

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

2006 REVISED NEW STANDARD PLAN RNSP H51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	11.1	14	25

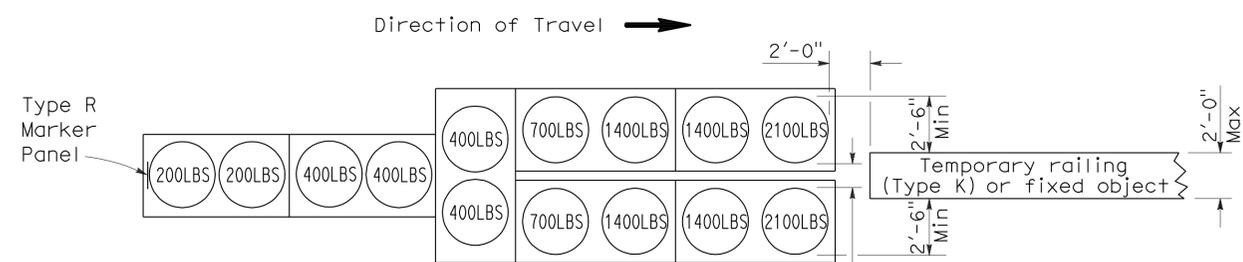
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

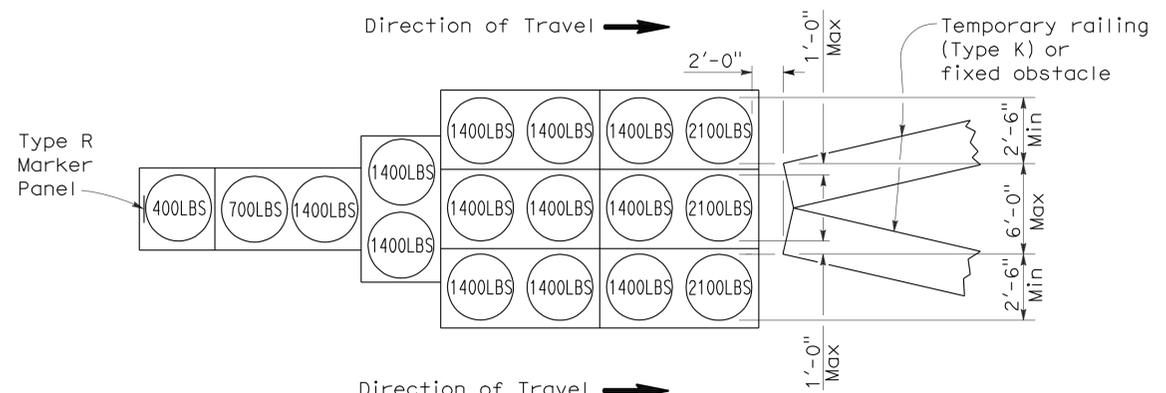
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 6-25-12



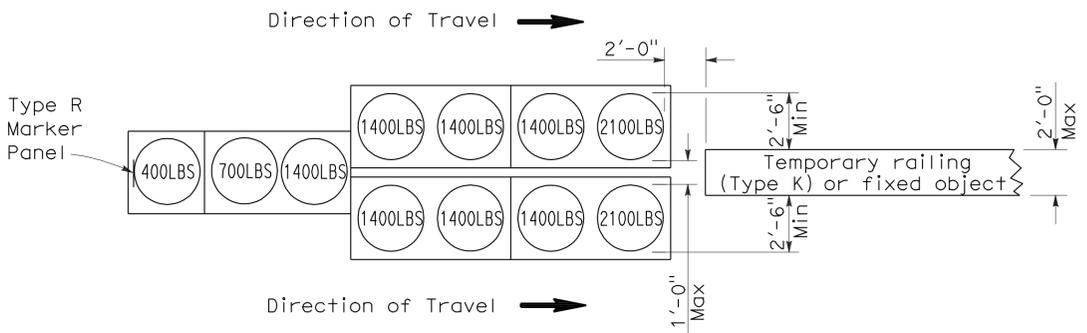
ARRAY 'TU14'

Approach speed 45 mph or more



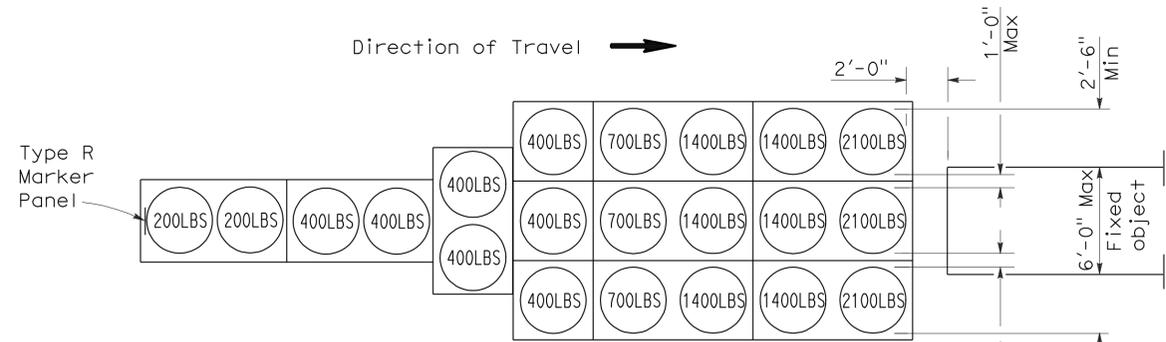
ARRAY 'TU17'

Approach speed less than 45 mph



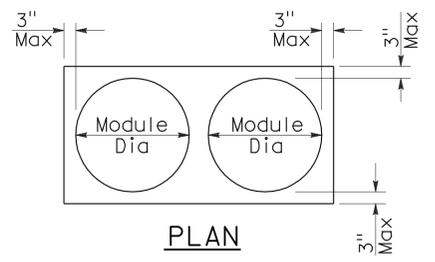
ARRAY 'TU11'

Approach speed less than 45 mph

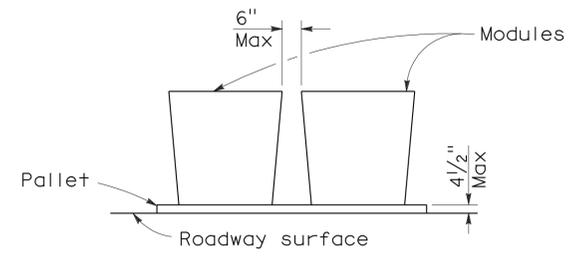


ARRAY 'TU21'

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

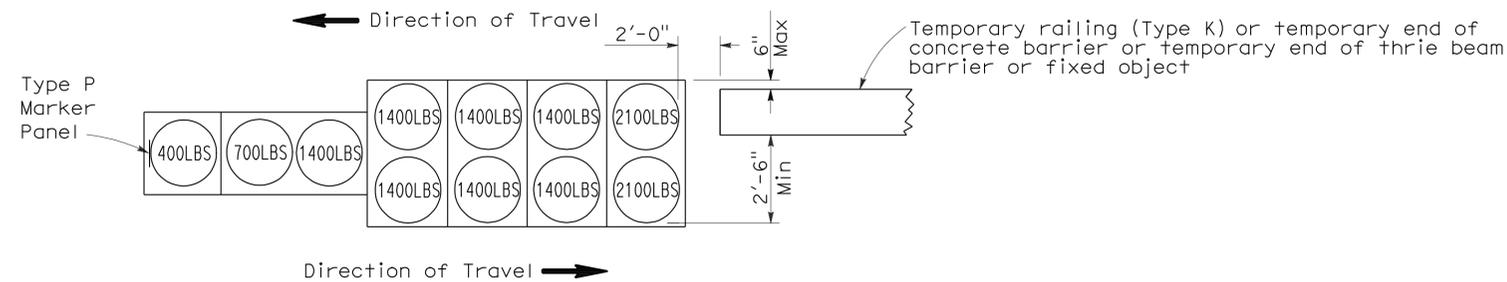
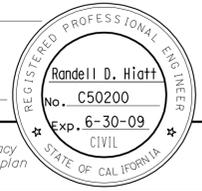
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	11.1	15	25

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

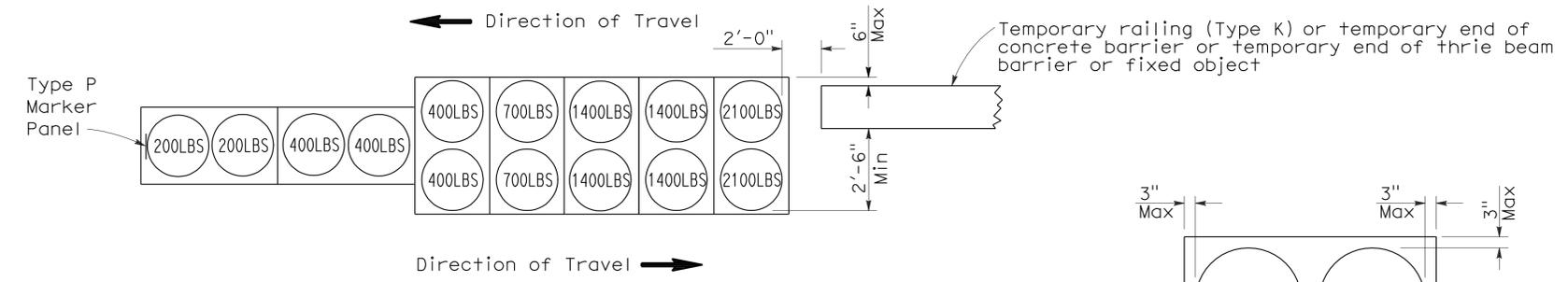
June 6, 2008
PLANS APPROVAL DATE

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

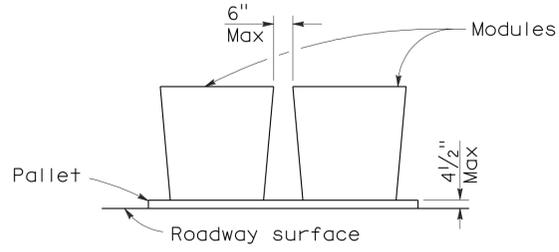
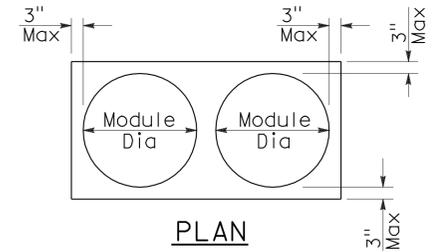
To accompany plans dated 6-25-12



ARRAY 'TB11'
Approach speed less than 45 mph



ARRAY 'TB14'
Approach speed 45 mph or more



CRASH CUSHION PALLET DETAIL
See Note 7

NOTES:

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

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

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	11.1	16	25

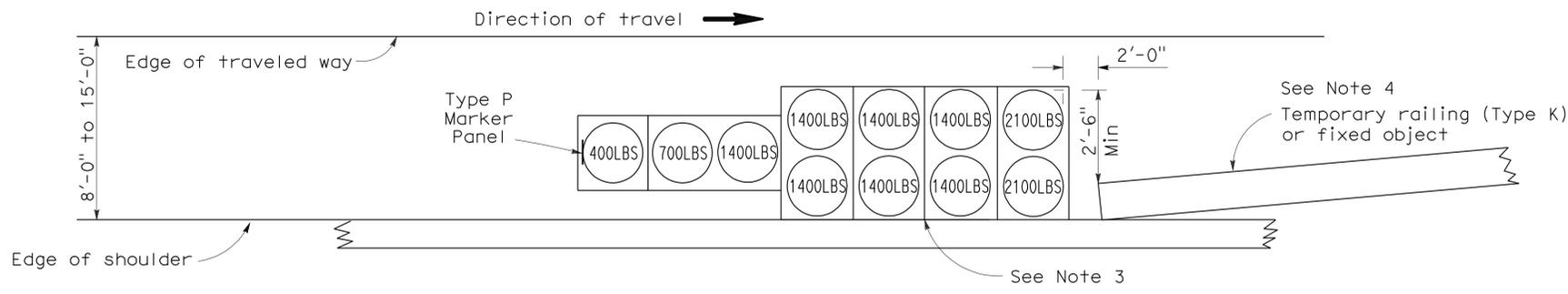
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

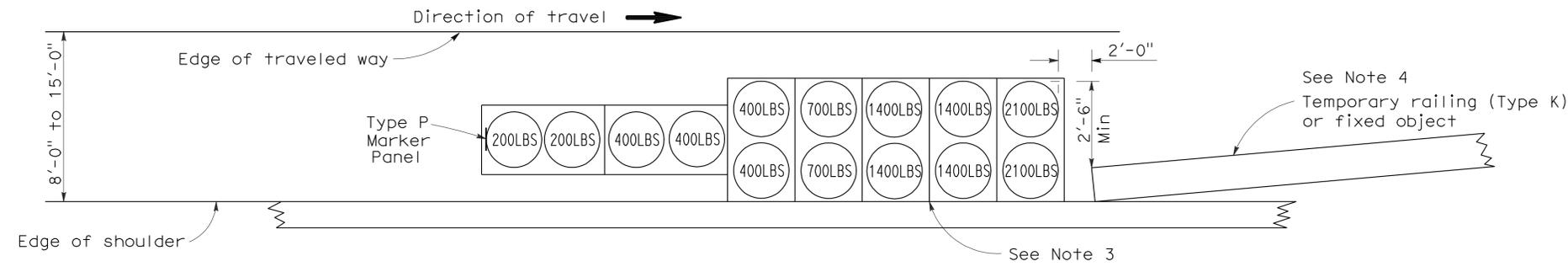
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

To accompany plans dated 6-25-12



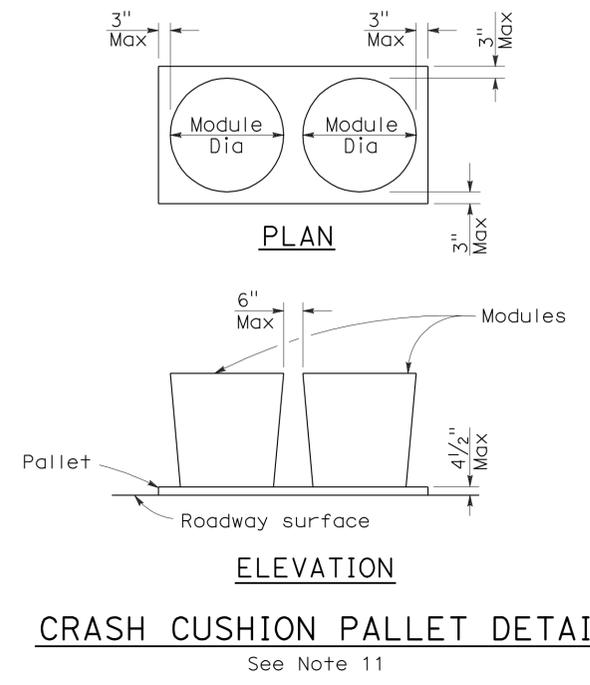
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



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

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. 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.
4. 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.
5. Temporary crash cushion arrays shall not encroach on the traveled way.
6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
7. Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
8. Refer to Standard Plan A73B for marker details.
9. 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.
10. Approach speeds indicated conform to NCHRP 350 Report criteria.
11. 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

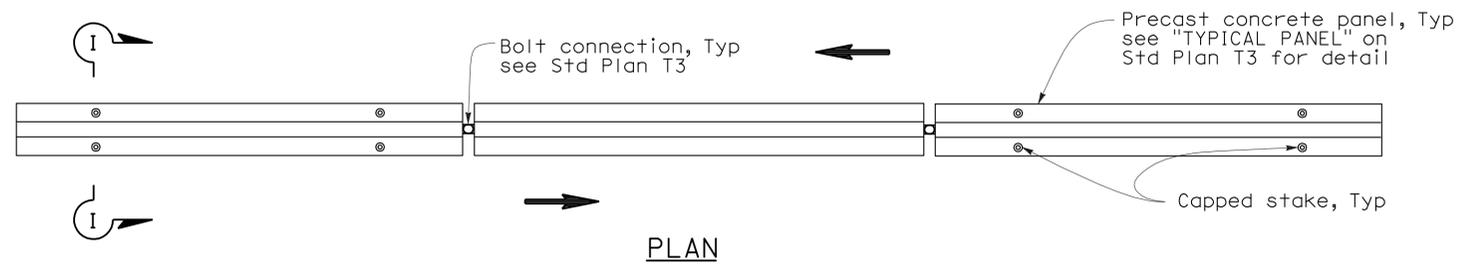
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	17	25

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

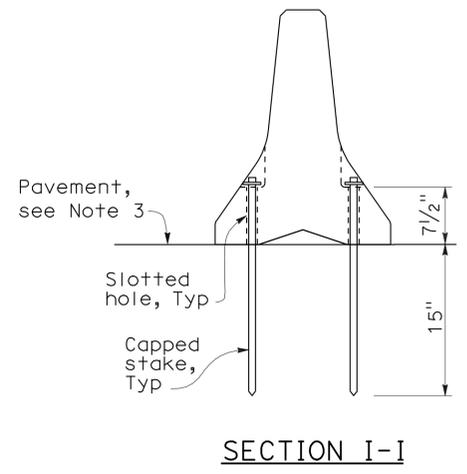
May 20, 2011
PLANS APPROVAL DATE

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 6-25-12

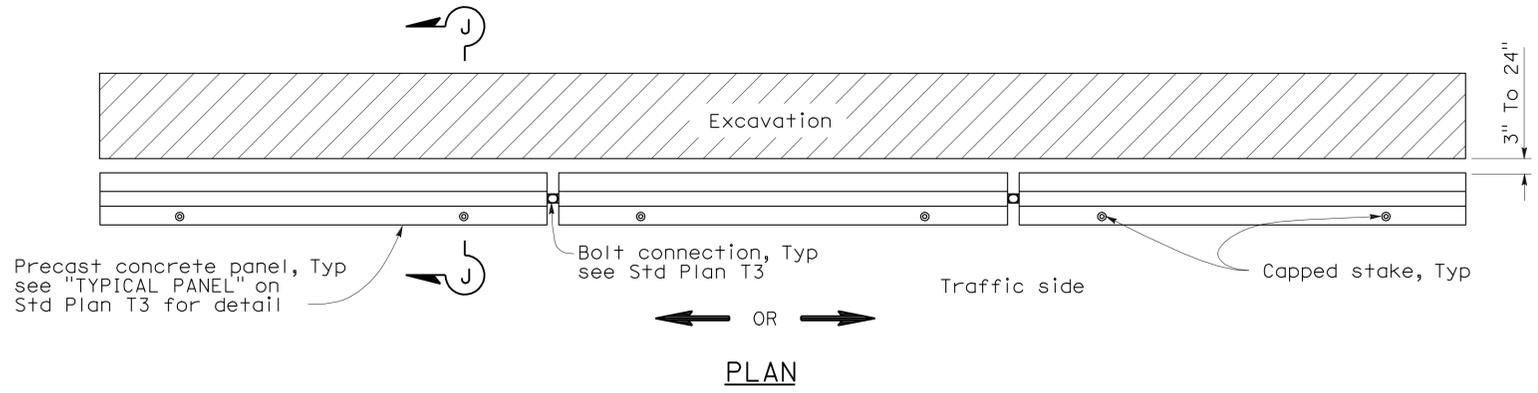


RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC
See Note 1

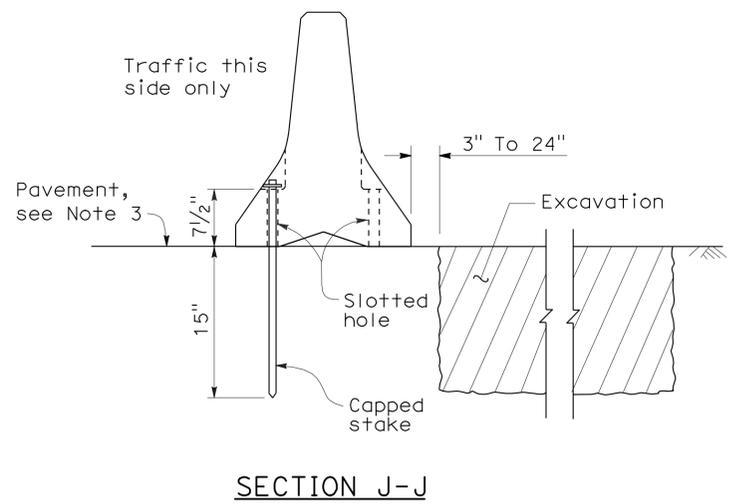


NOTES:

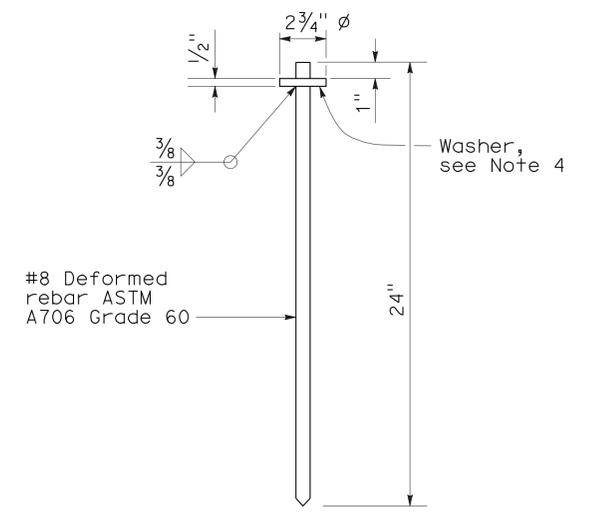
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by \Rightarrow .



RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION
See Note 2



SECTION J-J



CAPPED STAKE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TEMPORARY RAILING
(TYPE K)**
NO SCALE

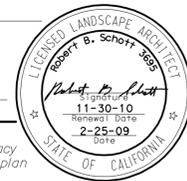
NSP T3A DATED MAY 20, 2011 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T3A

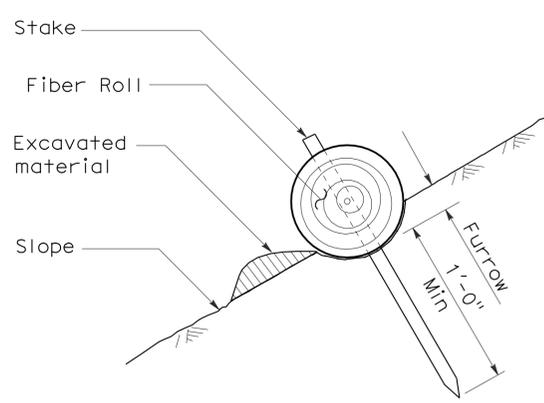
2006 NEW STANDARD PLAN NSP T3A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	11.1	18	25

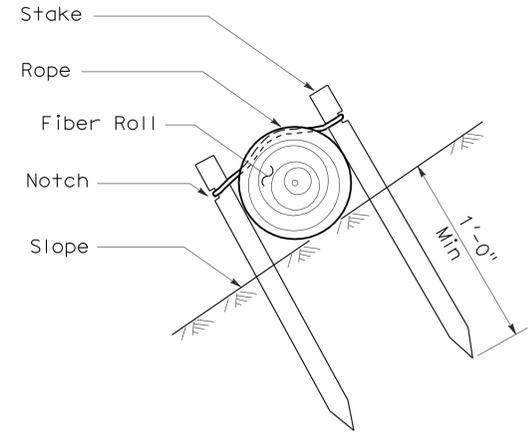
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



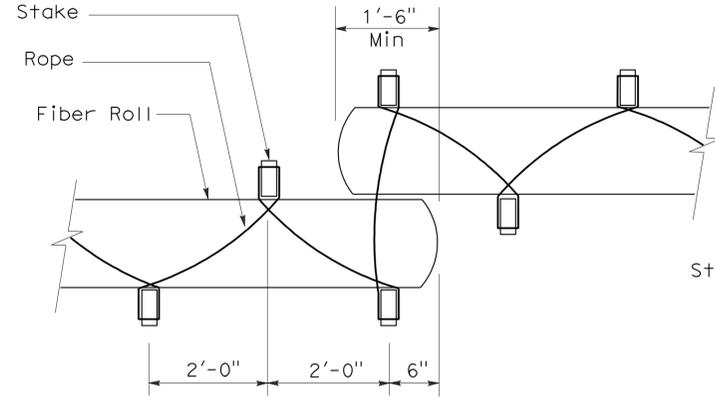
To accompany plans dated 6-25-12



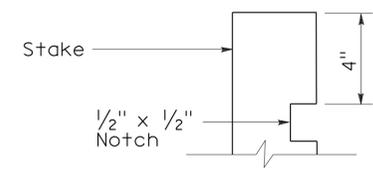
SECTION
TEMPORARY FIBER ROLL (TYPE 1)



SECTION
TEMPORARY FIBER ROLL (TYPE 2)

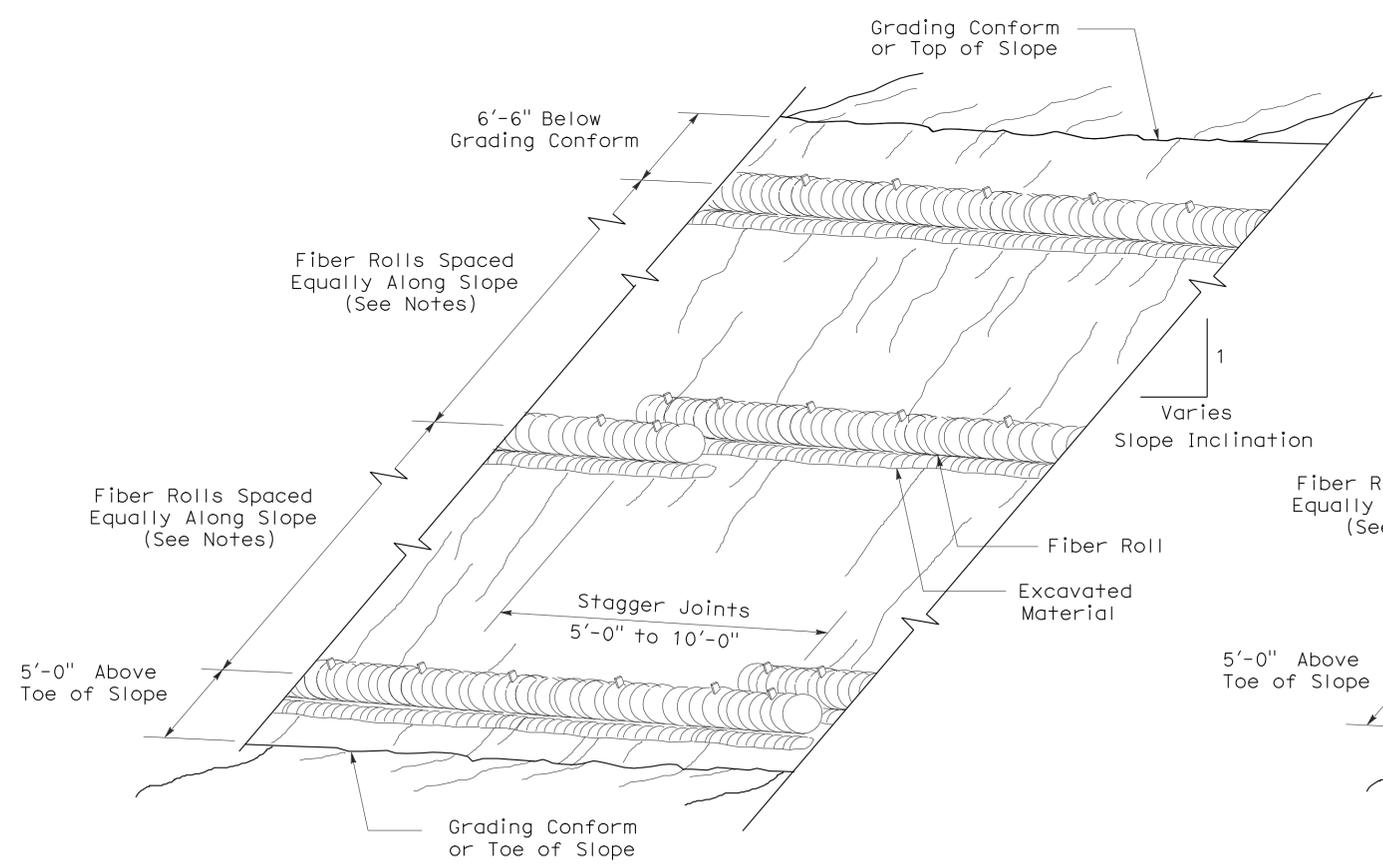


PLAN

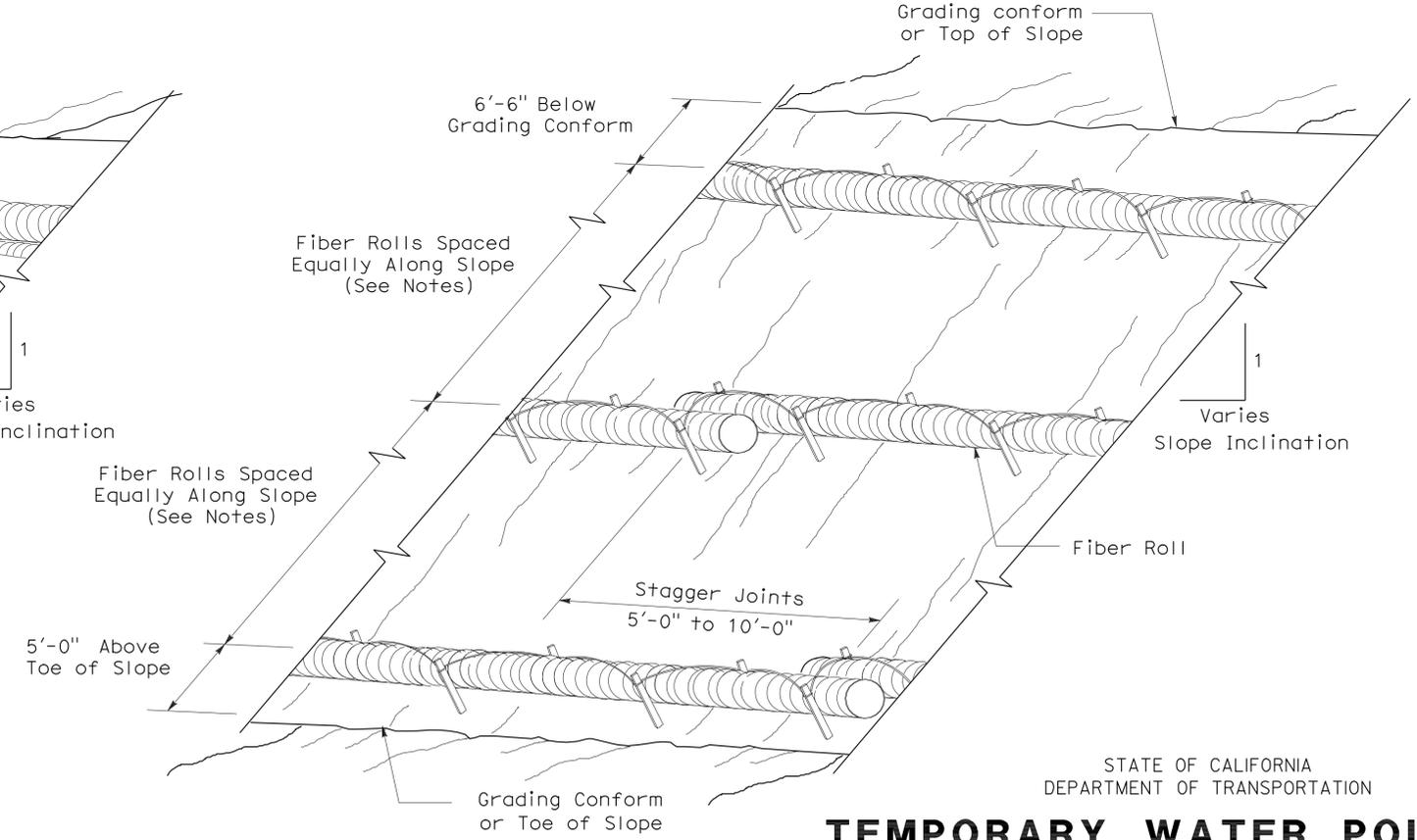


ELEVATION
STAKE NOTCH DETAIL

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



PERSPECTIVE
TEMPORARY FIBER ROLL (TYPE 1)



PERSPECTIVE
TEMPORARY FIBER ROLL (TYPE 2)

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY FIBER ROLL)

NO SCALE

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

REVISED STANDARD PLAN RSP T56

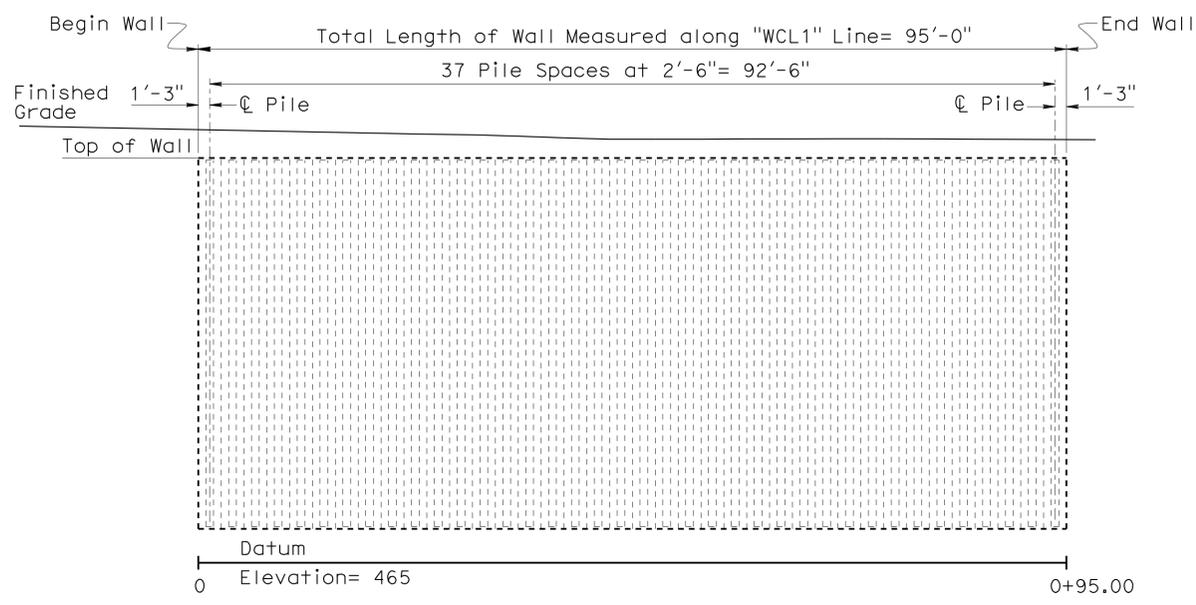
2006 REVISED STANDARD PLAN RSP T56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	19	25

REGISTERED CIVIL ENGINEER DATE 3-22-11
 ISAIAS D. YALAN No. 68269 Exp. 9-30-2011 CIVIL
 PLANS APPROVAL DATE 6-25-12
 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.

Sta 0+0.00 Elev 509.20 Sta 0+95.00 Elev 509.20

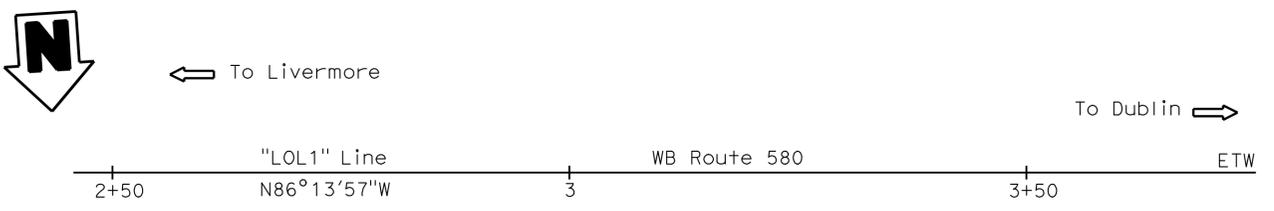
TOP OF WALL PROFILE



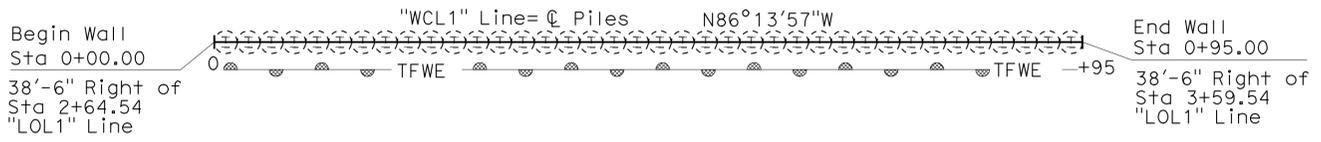
ELEVATION
1" = 10'

QUANTITIES

STRUCTURE BACKFILL	18	CY
STRUCTURAL CONCRETE (BACKFILL)	280	CY
STEEL SOLDIER PILE (W14X132)	1,520	LF
30" DRILLED HOLE	1,635	LF
CLEAN AND PAINT STEEL SOLDIER PILING	LUMP	SUM
BAR REINFORCING STEEL	6,579	LB

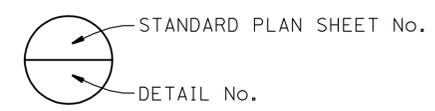


PLAN
1" = 10'



STANDARD PLANS DATED MAY 2006

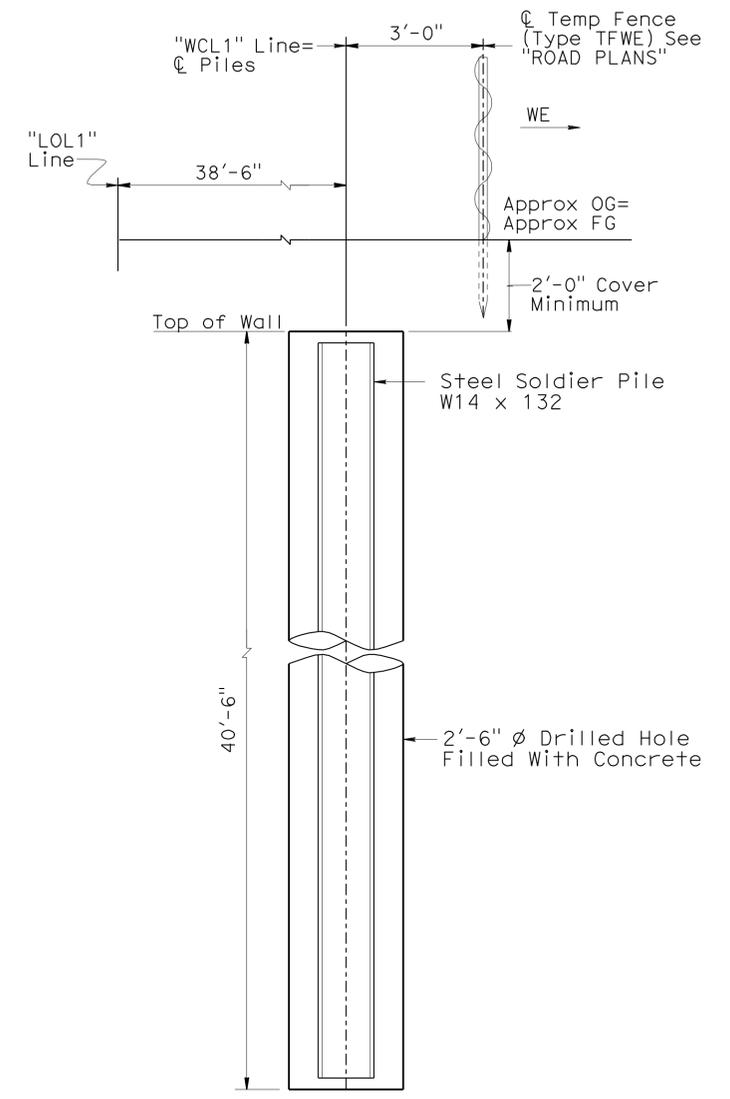
- A10A ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
- A10B ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
- A10C SYMBOLS (SHEET 1 OF 2)
- A10D SYMBOLS (SHEET 2 OF 2)



INDEX TO PLANS

SHEET No.	TITLE
1	GENERAL PLAN
2	STRUCTURE PLAN
3	FOUNDATION PLAN
4	TYPICAL SECTION
5	LOG OF TEST BORINGS 1 OF 3
6	LOG OF TEST BORINGS 2 OF 3
7	LOG OF TEST BORINGS 3 OF 3

NOTE:
For "GENERAL NOTES" see "TYPICAL SECTION" sheet



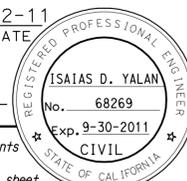
TYPICAL SECTION
1/2" = 1'-0"

NOTE:
BAR REINFORCING STEEL NOT SHOWN.

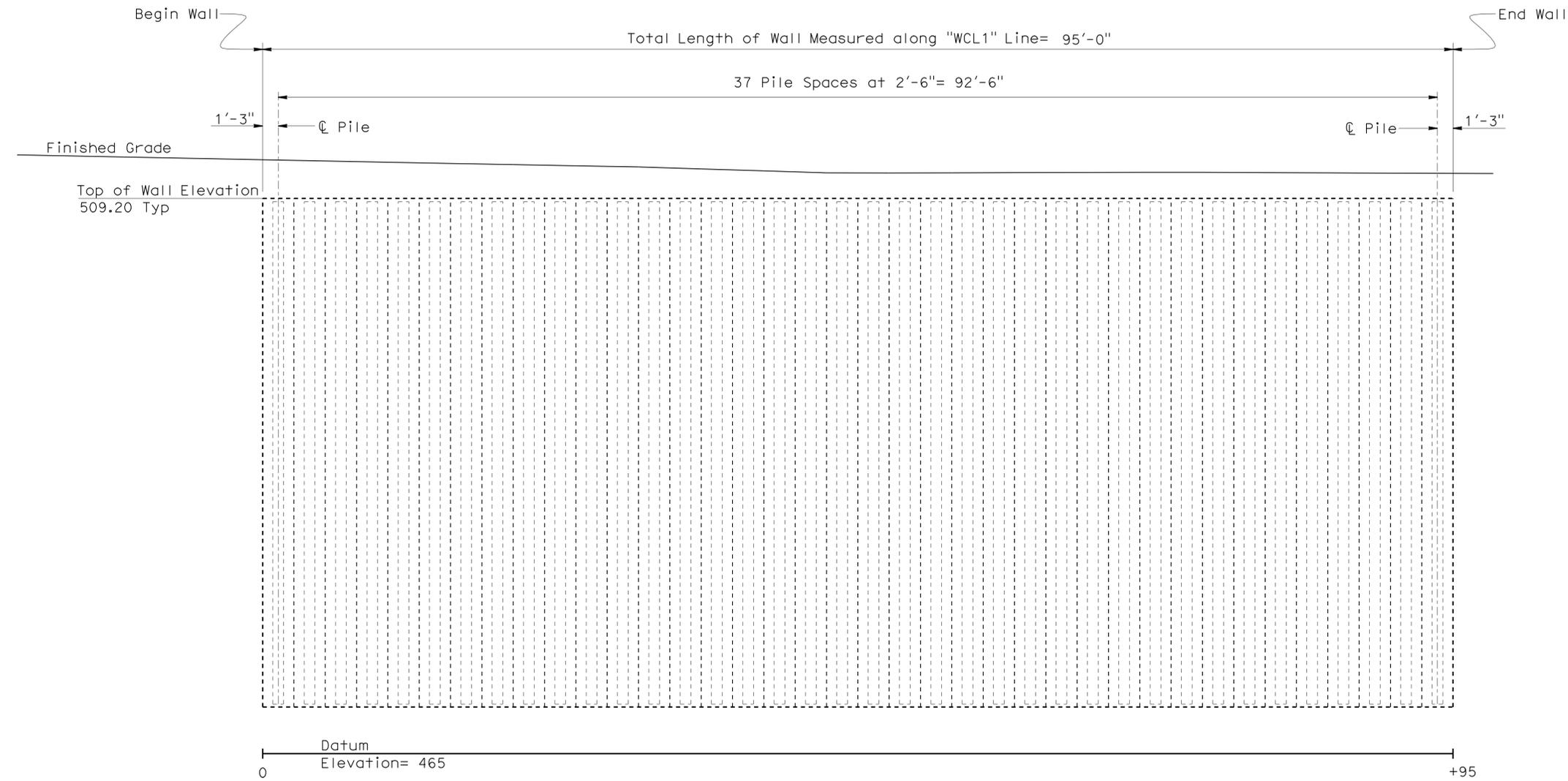
Gordon Danke DESIGN ENGINEER	DESIGN BY Isaias Yalan	CHECKED Nhi Luong	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO. 33E0080	ARROYO SECO TANGENT PILE WALL GENERAL PLAN	
	DETAILS BY Tim Fairall	CHECKED Nhi Luong	LAYOUT BY Tim Fairall	CHECKED Isaias Yalan			POST MILE 11.1		
	QUANTITIES BY Isaias Yalan	CHECKED Nhi Luong	SPECIFICATIONS BY Jim Corrado	PLANS AND SPECS COMPARED BY Jim Corrado					
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					0 1 2 3	UNIT: 3594 PROJECT NUMBER & PHASE: 04 00000 1230 1 CONTRACT NO.: 04-453701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 1 OF 7

STRUCURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10) FILE => 33e0080-a-gp.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	20	25



 REGISTERED CIVIL ENGINEER DATE 3-22-11
 PLANS APPROVAL DATE 6-25-12
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.



ELEVATION
 $\frac{3}{16}'' = 1'$

- NOTES:
- For details not shown see "TYPICAL SECTION" sheet
 - Drilling for a soldier pile shall not be performed until the concrete in the adjacent pile or piles is set

DESIGN	BY Isaias Yalan	CHECKED Nhi Luong
DETAILS	BY Tim Fairall	CHECKED Nhi Luong
QUANTITIES	BY Isaias Yalan	CHECKED Nhi Luong

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 9

BRIDGE NO.	33E0080
POST MILE	11.1

ARROYO SECO TANGENT PILE WALL
STRUCTURE PLAN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	21	25

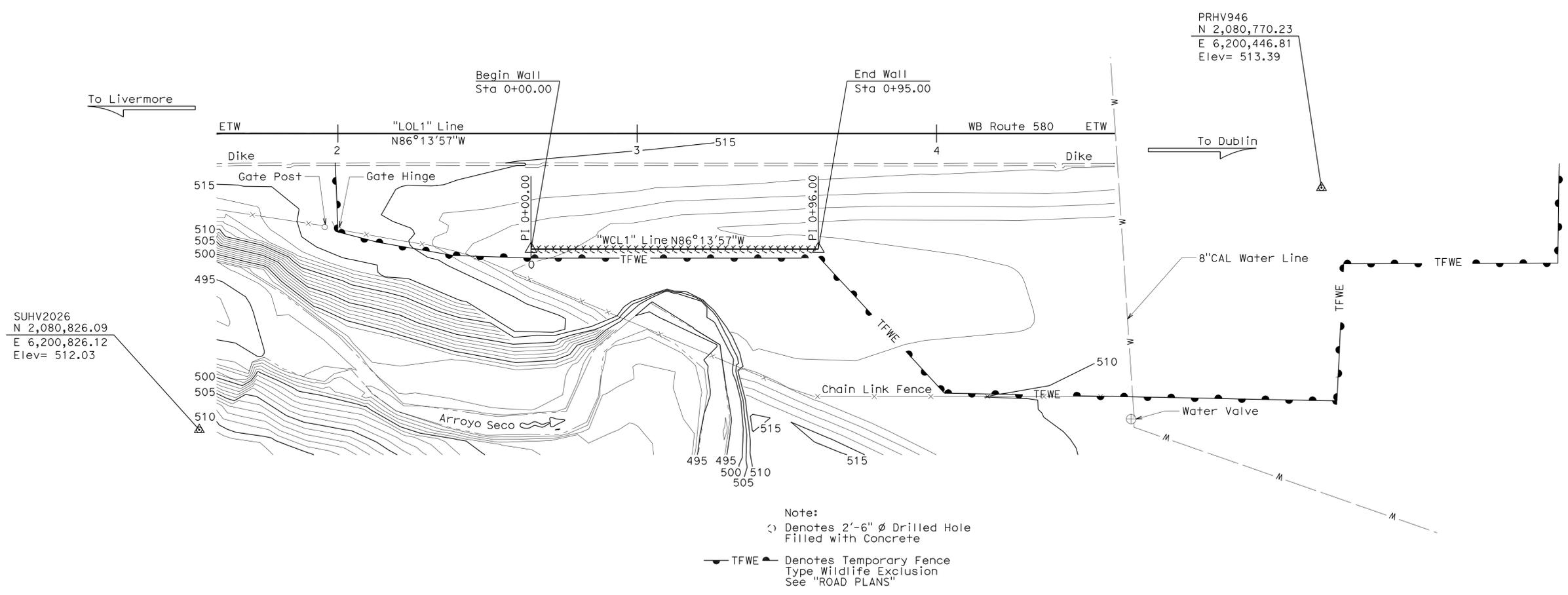



 3-22-11
 REGISTERED CIVIL ENGINEER DATE

6-25-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ISAIAS D. YALAN
 No. 68269
 Exp. 9-30-2011
 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.



SURVEY CONTROL

PRHV946
 Fnd 1" IP w/ PP&T
 18.05 Ft Rt "LOL1" Line, Rte 580
 Sta 5+28.57
 N 2,080,770.23
 E 6,200,446.81
 Elev= 513.39

SUHV2026
 Fnd Nail & Whiskers
 98.71 Ft Rt "LOL1" Line, Rte 580
 Sta 1+53.75
 N 2,080,826.09
 E 6,200,826.12
 Elev= 512.03

Note:

○ Denotes 2'-6" Ø Drilled Hole Filled with Concrete

—●— TFW E Denotes Temporary Fence Type Wildlife Exclusion See "ROAD PLANS"

PRELIMINARY INVESTIGATION SECTION				DESIGN	BY Isaias Yalan	CHECKED Nhi Luong	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO.	33E0080	ARROYO SECO TANGENT PILE WALL FOUNDATION PLAN	
SCALE	VERT. DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	DETAILS	BY Tim Fairall	CHECKED Nhi Luong	POST MILE			11.1			
1"=20'	HORZ. DATUM NAD83 (1998.5)	SURVEYED BY District 05/2009	CHECKED BY D.Ivy 03/2010	QUANTITIES	BY Isaias Yalan	CHECKED Nhi Luong						
ALIGNMENT TIES Dist. Traverse Sheet				DRAFTED BY J.Martinez 03/2010	CHECKED BY J.Pallares 03/2010		UNIT: 04	PROJECT NUMBER & PHASE: 04 0000 1230 1	CONTRACT NO.: 04-3S3701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 3 OF 7

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

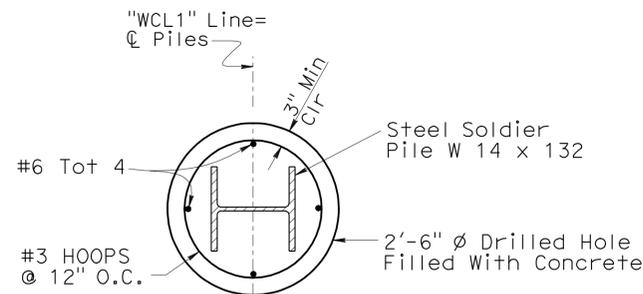


FILE => 33e0080-e-fp101.dgn

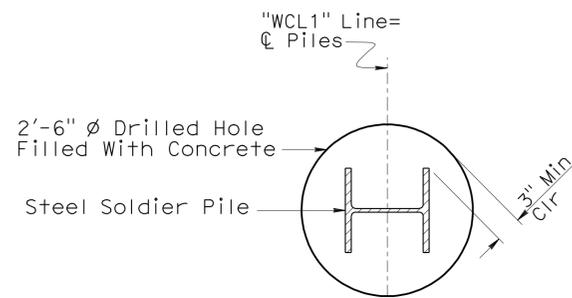
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	11.1	22	25

REGISTERED CIVIL ENGINEER	DATE 3-22-11
PLANS APPROVAL DATE 6-25-12	

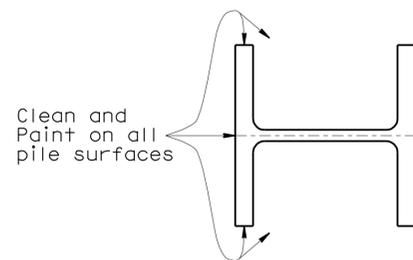
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



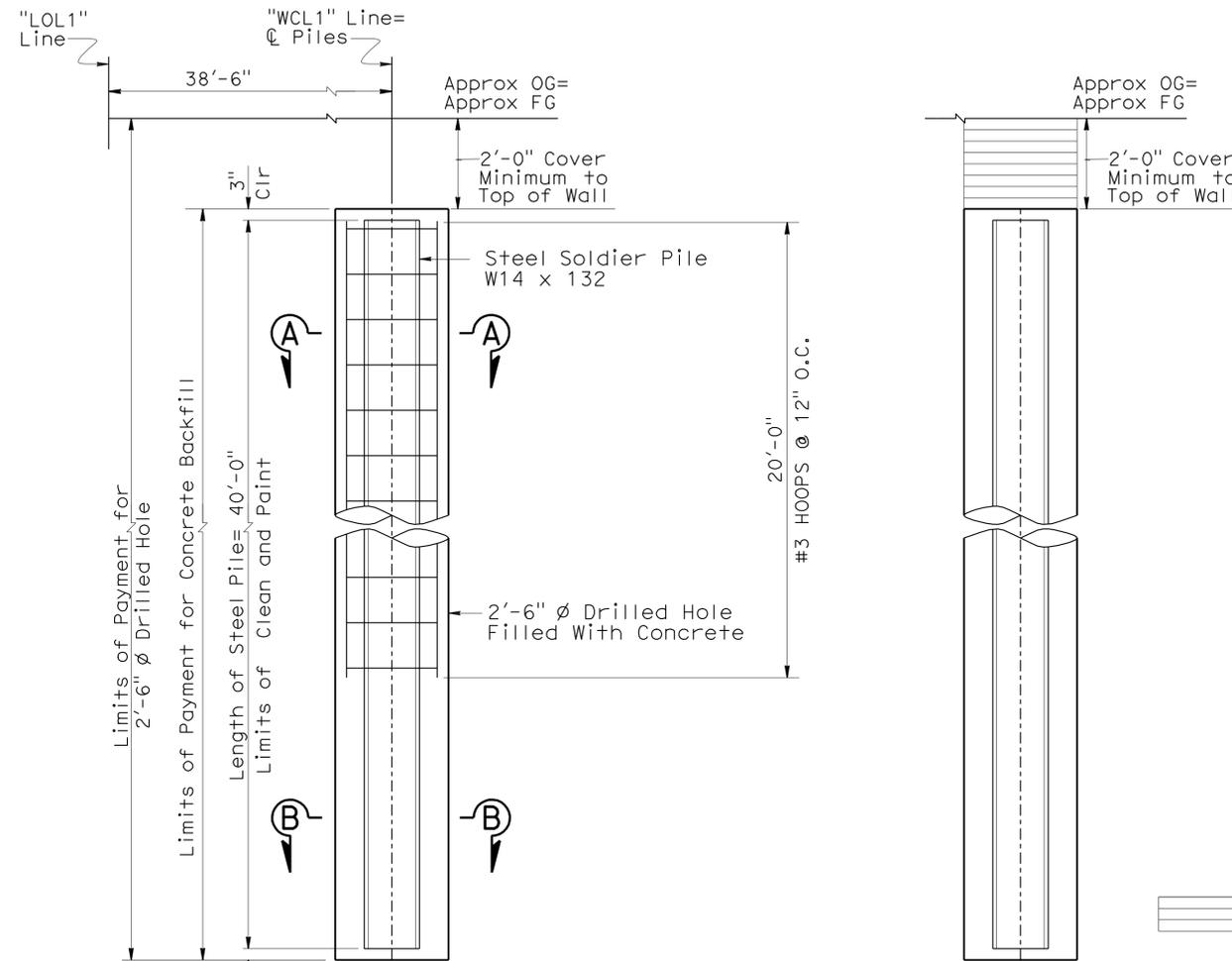
SECTION A-A
3/4" = 1'



SECTION B-B
3/4" = 1'



LIMITS OF CLEAN & PAINT STEEL SOLDIER PILE
1 1/2" = 1'



TYPICAL SECTION
1/2" = 1'

LIMITS OF BACKFILL
1/2" = 1'

GENERAL NOTES
LOAD FACTOR DESIGN

DESIGN:
Bridge Design Specifications - April 2000 (LFD)
(1996 Sixteenth Edition AASHTO w/Interims and Revisions by Caltrans)

SOIL PARAMETERS:

Active Pressure: Passive Pressure:

a) Between 0 (OG) and 21.5 feet depth (base of the wall)
 $\phi = 32^\circ$
 $\gamma = 120$ pcf
 $\beta = 0.0$

b) Below the base of the wall:
 $S_u = 2000$ psf
 $\gamma = 120$ pcf

$f'_c = 4$ ksi (Concrete compressive strength at 28 days)

STRUCTURAL STEEL:
Steel Piles - ASTM Designation: A709/A709M, Grade 50 (345) or A572/A572M,

Structure Backfill

DESIGN	BY Isaias Yalan	CHECKED Nhi Luong
DETAILS	BY Tim Fairall	CHECKED Nhi Luong
QUANTITIES	BY Isaias Yalan	CHECKED Nhi Luong

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 9

BRIDGE NO.	33E0080
POST MILE	11.1

ARROYO SECO TANGENT PILE WALL
TYPICAL SECTION

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	580	11.1	23	25

M. Momenzadeh 8-31-10
 GEOTECHNICAL PROFESSIONAL

6-25-12
 PLANS APPROVAL DATE

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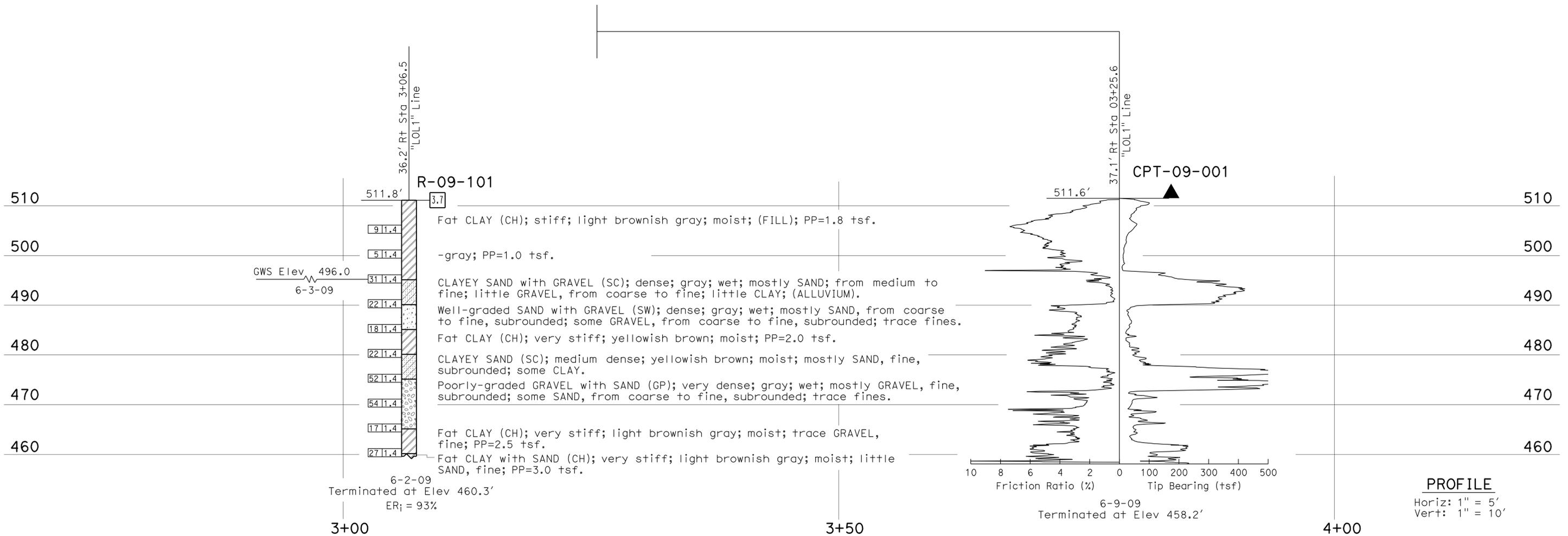
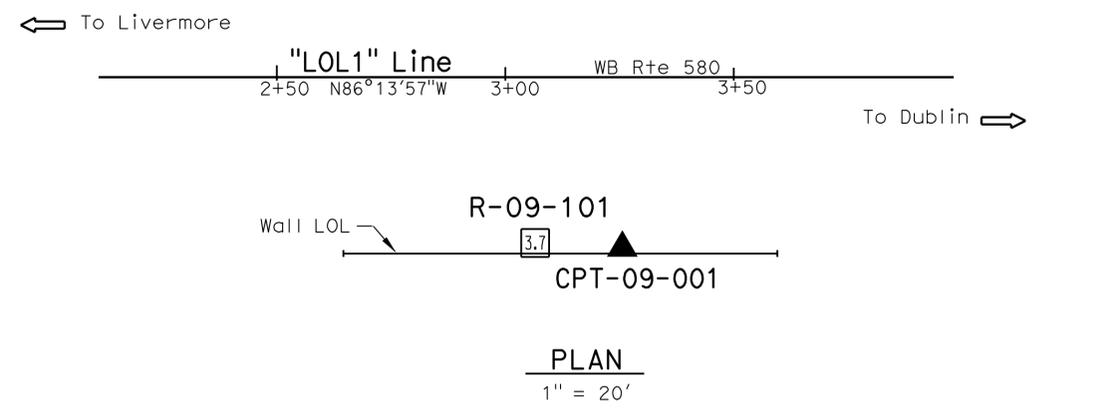
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2010).

BENCH MARK

PRHV946
 Fnd 1" IP w/ PP&T
 18.05 Ft Rt "LOL1" Line, Rte 580
 Sta 5+28.57
 N 2,080,770.23
 E 6,200,446.81
 Elev= 513.39

SUHV2026
 Fnd Nail & Whiskers
 98.71 Ft Rt "LOL1" Line, Rte 580
 Sta 1+53.75
 N 2,080,826.09
 E 6,200,826.12
 Elev= 512.03

VERT DATUM: NGVD88



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO. 33E0080		ARROYO SECO CREEK TANGENT PILE WALL	
FUNCTIONAL SUPERVISOR		DRAWN BY: C. Christian, I.G-Remmen 8/10		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		POST MILES 11.1		LOG OF TEST BORINGS 1 OF 3	
NAME: T. Pokrywka		CHECKED BY: J. Moore		D. Nesbitt		DESIGN BRANCH 9				REVISION DATES	
06S GEOLOGIST LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 04 EA 4S3701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		08-23-10		SHEET 5 OF 7	

USERNAME => s121614 DATE PLOTTED => 27-JUN-2012 TIME PLOTTED => 06:13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	580	11.1	24	25

M. Momenzadeh, 8-31-10
 GEOTECHNICAL PROFESSIONAL

6-25-12
 PLANS APPROVAL DATE

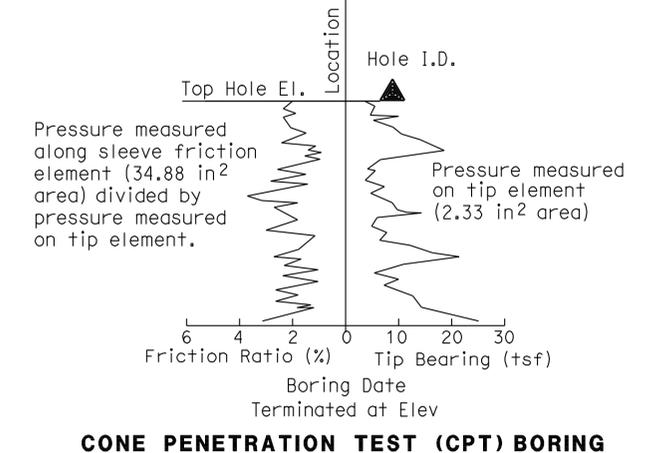
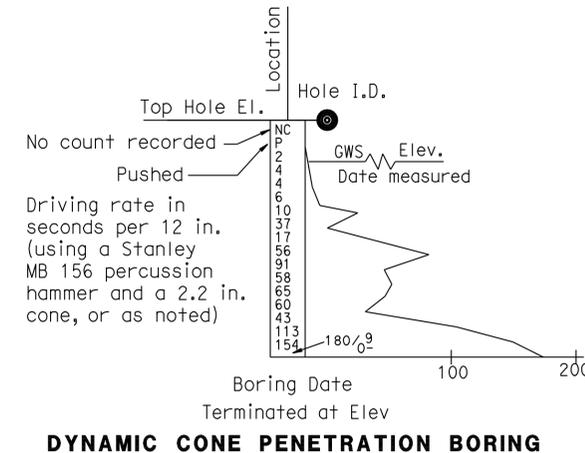
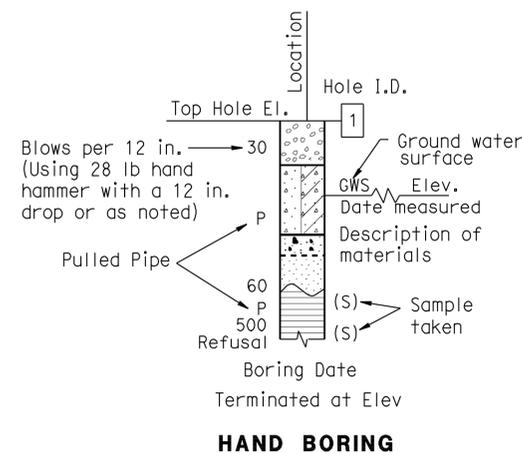
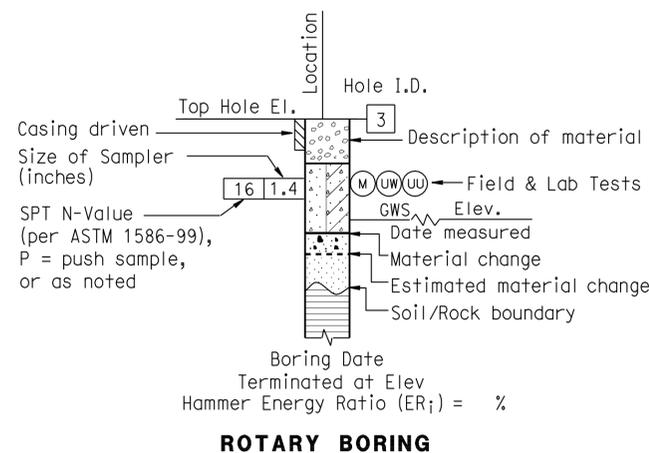
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring (hollow or solid stem bucket)
	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778)
	O	Other (note on LOTB)

Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9	BRIDGE NO. 33E0080 POST MILE 11.1	ARROYO SECO CREEK TANGENT PILE WALL LOG OF TEST BORINGS 2 OF 3
PREPARED BY: I.G-Remmen, 8/10		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 04 EA 4S3701	REVISION DATES
GS LOTB SOIL LEGEND				DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 6 OF 7

FILE => 33e0080-z-1otb02.dgn

M. Momenzadeh 8-31-10
 GEOTECHNICAL PROFESSIONAL

6-25-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Mahmood Momenzadeh
 No. 2685
 Exp. 12-31-11
 GEOTECHNICAL
 STATE OF CALIFORNIA

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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		Lean CLAY
	Well-graded GRAVEL with SAND		Lean CLAY with SAND
	Poorly-graded GRAVEL		Lean CLAY with GRAVEL
	Poorly-graded GRAVEL with SAND		SANDY lean CLAY
	Well-graded GRAVEL with SILT		SANDY lean CLAY with GRAVEL
	Well-graded GRAVEL with SILT and SAND		GRAVELLY lean CLAY
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		GRAVELLY lean CLAY with SAND
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SILTY CLAY
	Poorly-graded GRAVEL with SILT		SILTY CLAY with SAND
	Poorly-graded GRAVEL with SILT and SAND		SILTY CLAY with GRAVEL
	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)		SANDY SILTY CLAY
	Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SANDY SILTY CLAY with GRAVEL
	SILTY GRAVEL		GRAVELLY SILTY CLAY
	SILTY GRAVEL with SAND		GRAVELLY SILTY CLAY with SAND
	CLAYEY GRAVEL		SILT
	CLAYEY GRAVEL with SAND		SILT with SAND
	SILTY, CLAYEY GRAVEL		SILT with GRAVEL
	SILTY, CLAYEY GRAVEL with SAND		SANDY SILT
	Well-graded SAND		SANDY SILT with GRAVEL
	Well-graded SAND with GRAVEL		GRAVELLY SILT
	Poorly-graded SAND		GRAVELLY SILT with SAND
	Poorly-graded SAND with GRAVEL		Fat CLAY
	Well-graded SAND with SILT		Fat CLAY with SAND
	Well-graded SAND with SILT and GRAVEL		Fat CLAY with GRAVEL
	Well-graded SAND with CLAY (or SILTY CLAY)		SANDY fat CLAY
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		SANDY fat CLAY with GRAVEL
	Poorly-graded SAND with SILT		GRAVELLY fat CLAY
	Poorly-graded SAND with SILT and GRAVEL		GRAVELLY fat CLAY with SAND
	Poorly-graded SAND with CLAY (or SILTY CLAY)		Elastic SILT
	Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		Elastic SILT with SAND
	SILTY SAND		Elastic SILT with GRAVEL
	SILTY SAND with GRAVEL		SANDY elastic SILT
	CLAYEY SAND		SANDY elastic SILT with GRAVEL
	CLAYEY SAND with GRAVEL		GRAVELLY elastic SILT
	SILTY, CLAYEY SAND		GRAVELLY elastic SILT with SAND
	SILTY, CLAYEY SAND with GRAVEL		ORGANIC fat CLAY
	PEAT		ORGANIC fat CLAY with SAND
	COBBLES		ORGANIC fat CLAY with GRAVEL
	COBBLES and BOULDERS		SANDY ORGANIC fat CLAY
	BOULDERS		SANDY ORGANIC fat CLAY with GRAVEL
			GRAVELLY ORGANIC fat CLAY
			GRAVELLY ORGANIC fat CLAY with SAND
			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
			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
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(UC)	Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE	
Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

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

PARTICLE SIZE		
Description	Size (in.)	
Boulder	Greater than 12	
Cobble	3 - 12	
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay	Less than 1/300	