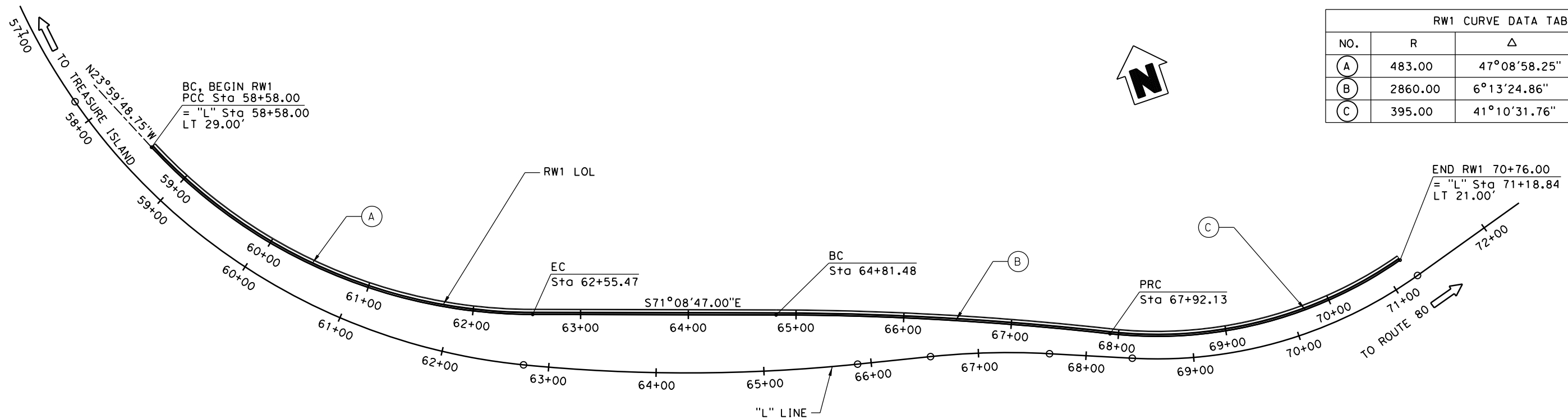


**DEVELOPED ELEVATION**

HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 25'



RW1 CURVE DATA TABLE				
NO.	R	Δ	T	L
(A)	483.00	47°08'58.25"	210.76'	397.47
(B)	2860.00	6°13'24.86"	155.48'	310.66
(C)	395.00	41°10'31.76"	148.37'	283.87

**NOTES:**

- FOR TYPICAL SECTIONS, SEE "GENERAL PLAN NO. 2" SHEET.
- FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.

**PLAN**

1" = 50'

**GENERAL PLAN NO. 1**

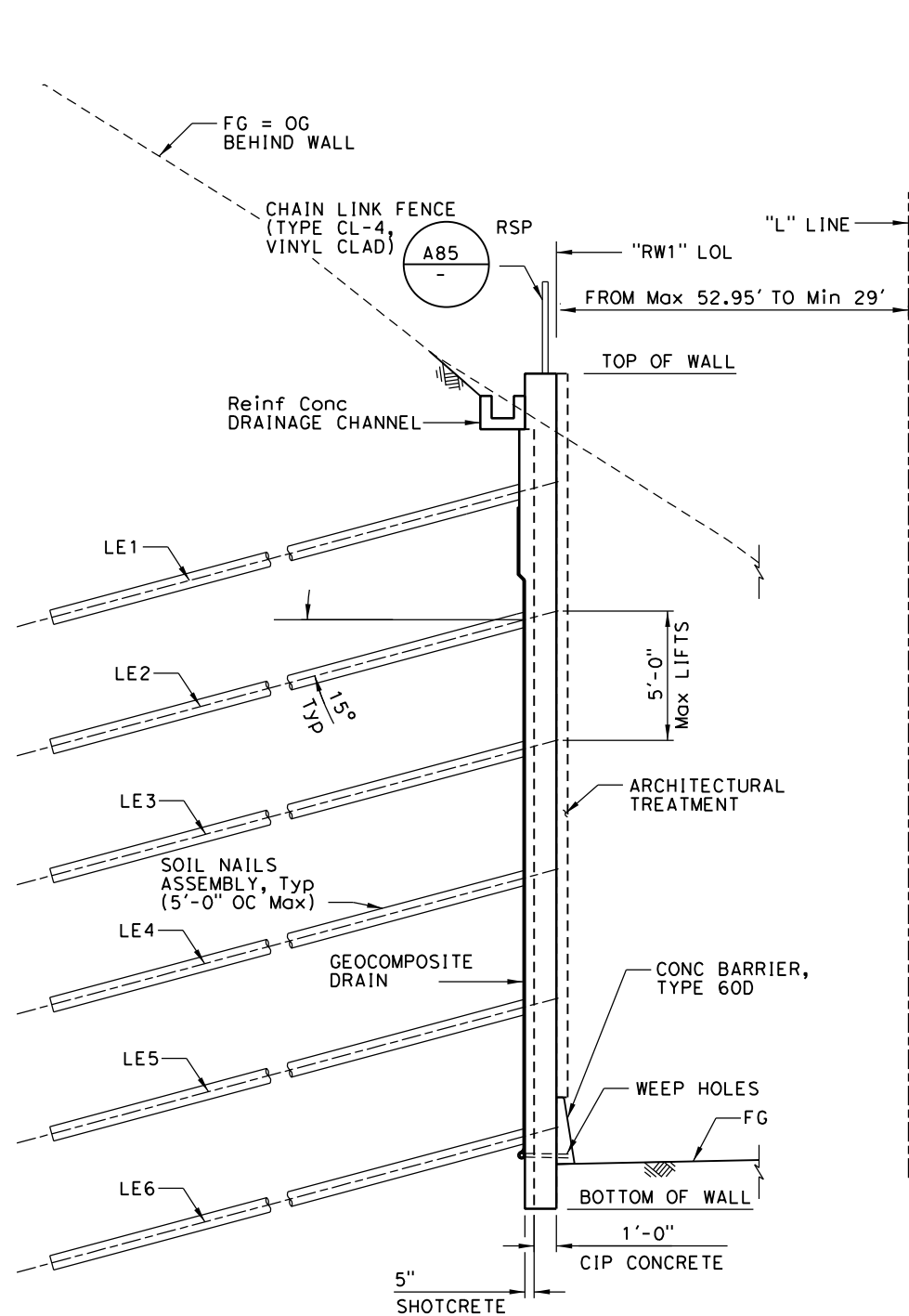
SCALE: 1" = 50'

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/ DESIGNED BY D. VANG CHECKED BY R. SENNETT SUPERVISOR DATE 11/15/2019		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE		7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => kaiwang
CADD FILENAME =>	CONTRACT NO.				SHEET NAME	SHEET NO.					TOTAL SHEETS
PROJECT DESCRIPTION	PLANS APPROVAL DATE				MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.						RW1-1

P:\521 YBI Retaining Walls\06 CAD\Structure RW1\RW1\_01\_GPI.dgn

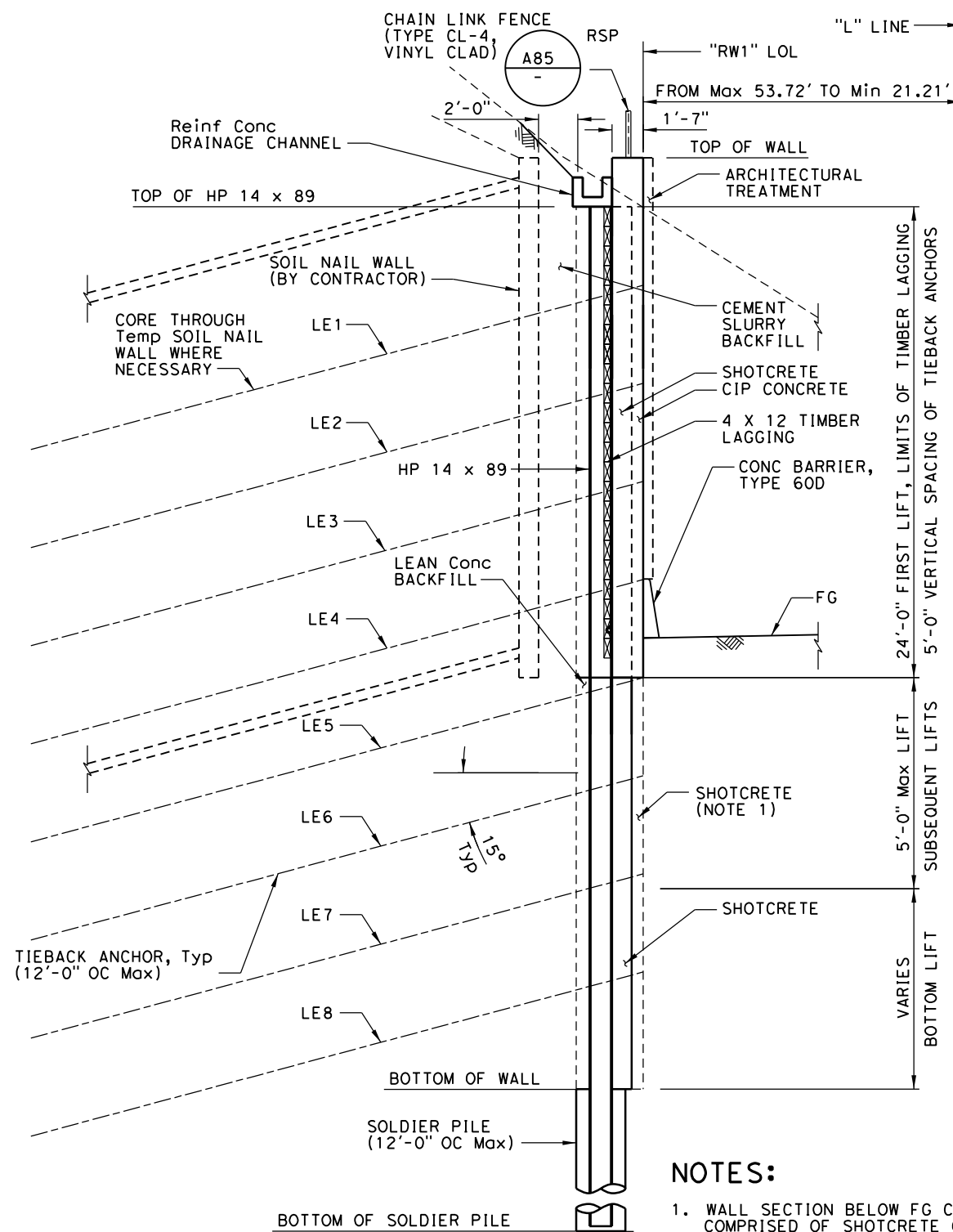
BORDER LAST REVISED 9/9/2015





TYPICAL SECTION - SOIL NAIL WALL  
(WALL TYPE A)

1/4" = 1'-0"

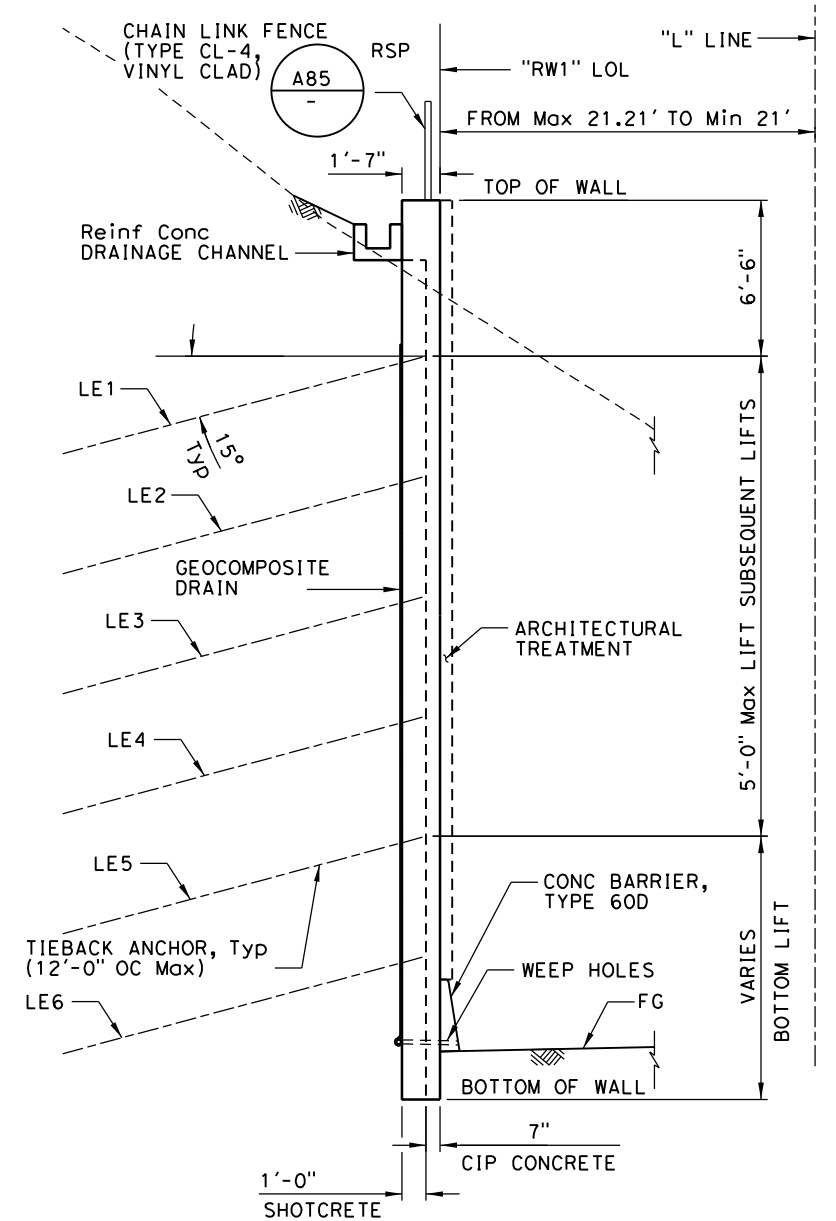


TYPICAL SECTION - SOLDIER PILE TIEBACK WALL  
(WALL TYPE B)

1/4" = 1'-0"

NOTES:

1. WALL SECTION BELOW FG CAN BE COMPRISED OF SHOTCRETE ONLY.



TYPICAL SECTION - TIEBACK WALL  
(WALL TYPE C)

1/4" = 1'-0"

GENERAL PLAN NO. 2  
SCALE: AS SHOWN

REVISIONS	<p>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1</p> <p>PROJECT DESCRIPTION</p>	<p>CALCULATED/ DESIGNED BY D. VANG</p> <p>CHECKED BY</p> <p>SUPERVISOR R. SENNETT</p> <p>DATE 11/15/2019</p>		<p>REGISTERED STRUCTURAL ENGINEER</p> <p>PLANS SUBMITTAL DATE</p> <p>PLANS APPROVAL DATE</p>	<p><b>MGE</b> ENGINEERING, INC.</p> <p>7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com</p>			<p>USERNAME =&gt; kaiwang CADD FILENAME =&gt; P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\02.GP2-TYP.dgn CONTRACT NO.</p> <table border="1"> <tr> <th>SHEET NAME</th> <th>SHEET NO.</th> <th>TOTAL SHEETS</th> </tr> <tr> <td>RW1-2</td> <td></td> <td></td> </tr> </table> <p>LAST REVISION 11/15/2019</p> <p>DATE PLOTTED =&gt; 11/15/2019 TIME PLOTTED =&gt; 2:22:35 PM</p>	SHEET NAME	SHEET NO.	TOTAL SHEETS	RW1-2		
SHEET NAME	SHEET NO.	TOTAL SHEETS												
RW1-2														

P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\02.GP2-TYP.dgn

BORDER LAST REVISED 9/9/2015

RELATIVE BORDER SCALE 0 1 2 3 IS IN INCHES

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

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION WITH CALTRANS AMENDMENTS, PREFACE, DATED MARCH 2014

ALLOWABLE STRESS: DESIGN METHOD PER FHWA SOIL NAIL WALLS REFERENCE MANUAL (FHWA-NHI-14-007 AND FHWA GE7007)

REINFORCED CONCRETE:  $f_y = 60,000$  psi  
 $f'_c = 4,000$  psi

SHOTCRETE:  $f_y = 60,000$  psi  
 $f'_c = 4,000$  psi

SOIL NAILS ASSEMBLY: ASTM DESIGNATION: A615  
 $f_y = 80,000$  psi

STRUCTURAL STEEL: ASTM DESIGNATION: A709  
 $f_y = 36,000$  psi

HEADED STUD: ASTM DESIGNATION: A307  
 $f_y = 36,000$  psi

DESIGN PARAMETERS: (SOIL NAIL WALL)  
 $\phi = 36^\circ$   
 $C = 250$  psf  
 $\gamma = 128$  pcf  
 $Q_d = 9.05$  k/ft

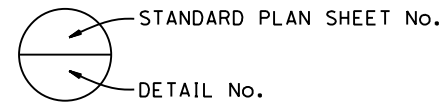
LIVE LOAD SURCHARGE: 250 psf (VERTICAL)

SEISMIC LOAD: (SOIL NAIL WALL)  
PSEUDO-STATIC SEISMIC  
COEFFICIENT = 0.34g Max &  
LESS FOR WALL HEIGHTS > 20'

**STANDARD PLANS**

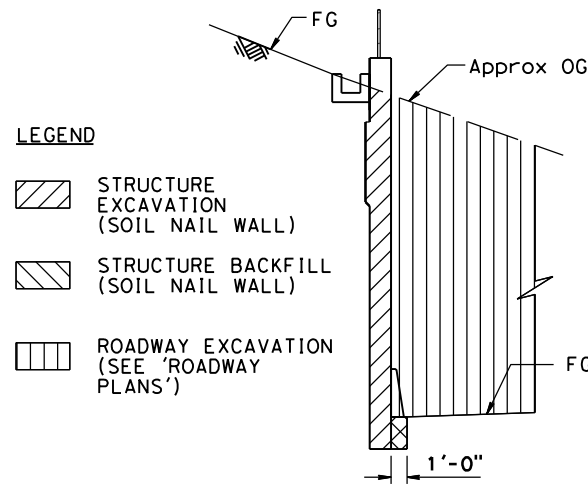
DATED 2018

- A3A ABBREVIATIONS (SHEET 1 OF 3)
- A3B ABBREVIATIONS (SHEET 2 OF 3)
- A3C ABBREVIATIONS (SHEET 3 OF 3)
- A10A LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
- A10B LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
- A10C LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
- A10D LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
- A10E LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
- RSP A85 CHAIN LINK FENCE
- B11-7 CHAIN LINK RAILING

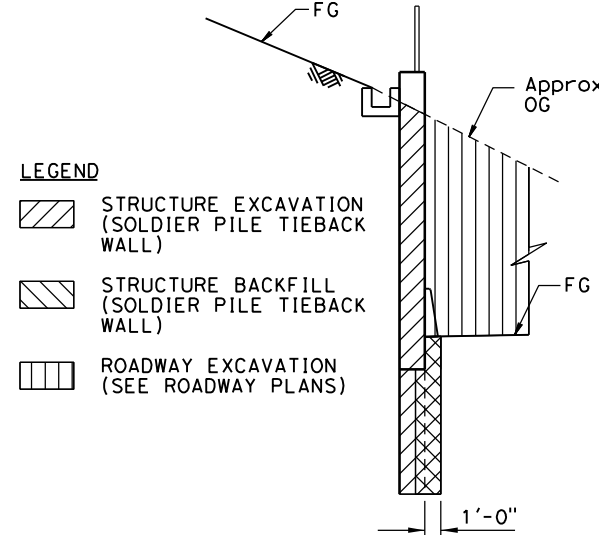


**INDEX TO PLANS**

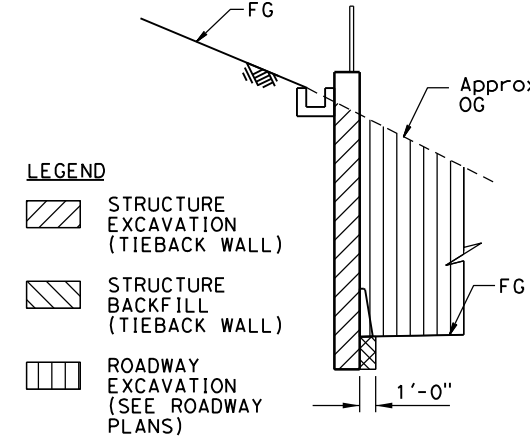
SHEET NO.	TITLE
RW1-1	GENERAL PLAN NO. 1
RW1-2	GENERAL PLAN NO. 2
RW1-3	GENERAL PLAN NO. 3
RW1-4	FOUNDATION PLAN
RW1-5	WALL TYPE A DETAILS NO. 1
RW1-6	WALL TYPE A DETAILS NO. 2
RW1-7	WALL TYPE A DETAILS NO. 3
RW1-8	WALL TYPE A DETAILS NO. 4
RW1-9	WALL TYPE A DETAILS NO. 5
RW1-10	WALL TYPE A DETAILS NO. 6
RW1-11	WALL TYPE B DETAILS NO. 1
RW1-12	WALL TYPE B DETAILS NO. 2
RW1-13	WALL TYPE B DETAILS NO. 3
RW1-14	WALL TYPE B DETAILS NO. 4
RW1-15	WALL TYPE B DETAILS NO. 5
RW1-16	WALL TYPE C DETAILS NO. 1
RW1-17	WALL TYPE C DETAILS NO. 2
RW1-18	WALL TYPE C DETAILS NO. 3
RW1-19	TIEBACK ANCHOR DETAILS
RW1-20	WALL DRAIN DETAILS
RW1-21	ARCHITECTURAL TREATMENT DETAILS
RW1-22	LOG OF TEST BORINGS 1 OF 9
RW1-23	LOG OF TEST BORINGS 2 OF 9
RW1-24	LOG OF TEST BORINGS 3 OF 9
RW1-25	LOG OF TEST BORINGS 4 OF 9
RW1-26	LOG OF TEST BORINGS 5 OF 9
RW1-27	LOG OF TEST BORINGS 6 OF 9
RW1-28	LOG OF TEST BORINGS 7 OF 9
RW1-29	LOG OF TEST BORINGS 8 OF 9
RW1-30	LOG OF TEST BORINGS 9 OF 9



**WALL TYPE A**  
**(SOIL NAIL WALL)**



**WALL TYPE B**  
**(SOLDIER PILE TIEBACK WALL)**



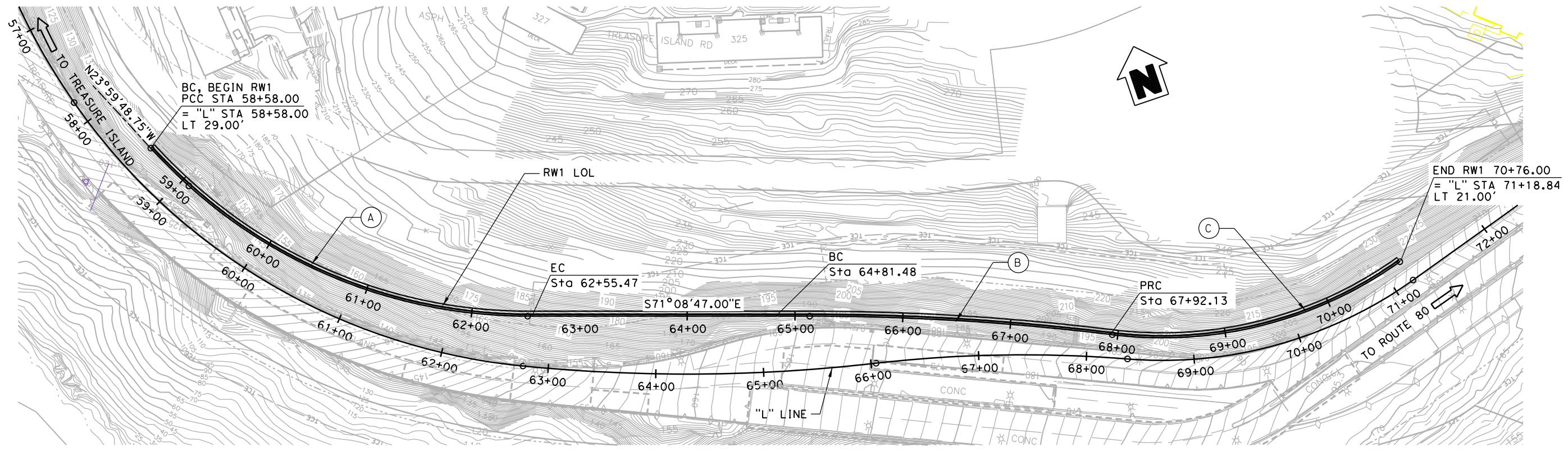
**WALL TYPE C**  
**(TIEBACK WALL)**

**EXCAVATION AND BACKFILL PAY LIMITS**

NO SCALE

**GENERAL PLAN NO. 3**  
**SCALE: AS SHOWN**

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE		7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => kaiwang	
			CHECKED BY R. SENNETT		PLANS APPROVAL DATE	CONTRACT NO.						
			SUPERVISOR R. SENNETT		DATE 11/15/2019	SHEET NAME RW1-3					SHEET NO.	TOTAL SHEETS
BORDER LAST REVISED 9/9/2015			RELATIVE BORDER SCALE IS IN INCHES						LAST REVISION 11/15/2019			DATE PLOTTED => 11/15/2019 TIME PLOTTED => 9:31:27 AM



**FOUNDATION PLAN**

1" = 50'

**SURVEY DATUM:**

VERTICAL DATUM NAVD 88  
HORIZONTAL DATUM NAD 83

**SOLDIER PILE DATA TABLE**

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	Min ESTIMATED BEDROCK SOCKET DEPTH (ft)
		COMPRESSION	TENSION			
63+50 TO 64+00	30" DIA CIDH	450	0	(a, c) 130, (d) TBD	130	15
64+00 TO 64+40	30" DIA CIDH	450	0	(a, c) 130, (d) TBD	130	15
64+40 TO 65+10	30" DIA CIDH	450	0	(a, c) 112, (d) TBD	112	8
65+10 TO 66+50	30" DIA CIDH	350	0	(a, c) 85, (d) TBD	85	8
66+50 TO 66+70	30" DIA CIDH	350	0	(a, c) 102, (d) TBD	102	8
66+70 TO 67+20	30" DIA CIDH	310	0	(a, c) 118, (d) TBD	118	8
66+20 TO 67+40	30" DIA CIDH	310	0	(a, c) 115, (d) TBD	115	8
67+40 TO 68+00	30" DIA CIDH	310	0	(a, c) 127, (d) TBD	127	8

**NOTES:**

- DESIGN TIP ELEVATIONS ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESSION, (c) SETTLEMENT, AND (d) LATERAL LOAD.
- SPECIFIED TIP ELEVATIONS SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR SETTLEMENT AND LATERAL LOAD WITHOUT ENGINEER'S APPROVAL.

**FOUNDATION PLAN**

SCALE: 1" = 50'

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/ DESIGNED BY D. VANG CHECKED BY R. SENNETT SUPERVISOR DATE 11/15/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	 	USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW1\RW1_04_FD.dgn CONTRACT NO.	
PROJECT DESCRIPTION	SHEET NAME <b>RW1-4</b>							SHEET NO. 	TOTAL SHEETS 
BORDER LAST REVISED 9/9/2015 RELATIVE BORDER SCALE IS IN INCHES 	LAST REVISION 11/15/2019							DATE PLOTTED => 11/15/2019 TIME PLOTTED => 2:13:17 PM	

P:\521 YBI Retaining Walls\06 CAD\Structure RW1\RW1\_04\_FD.dgn

WALL TYPE A PROFILE

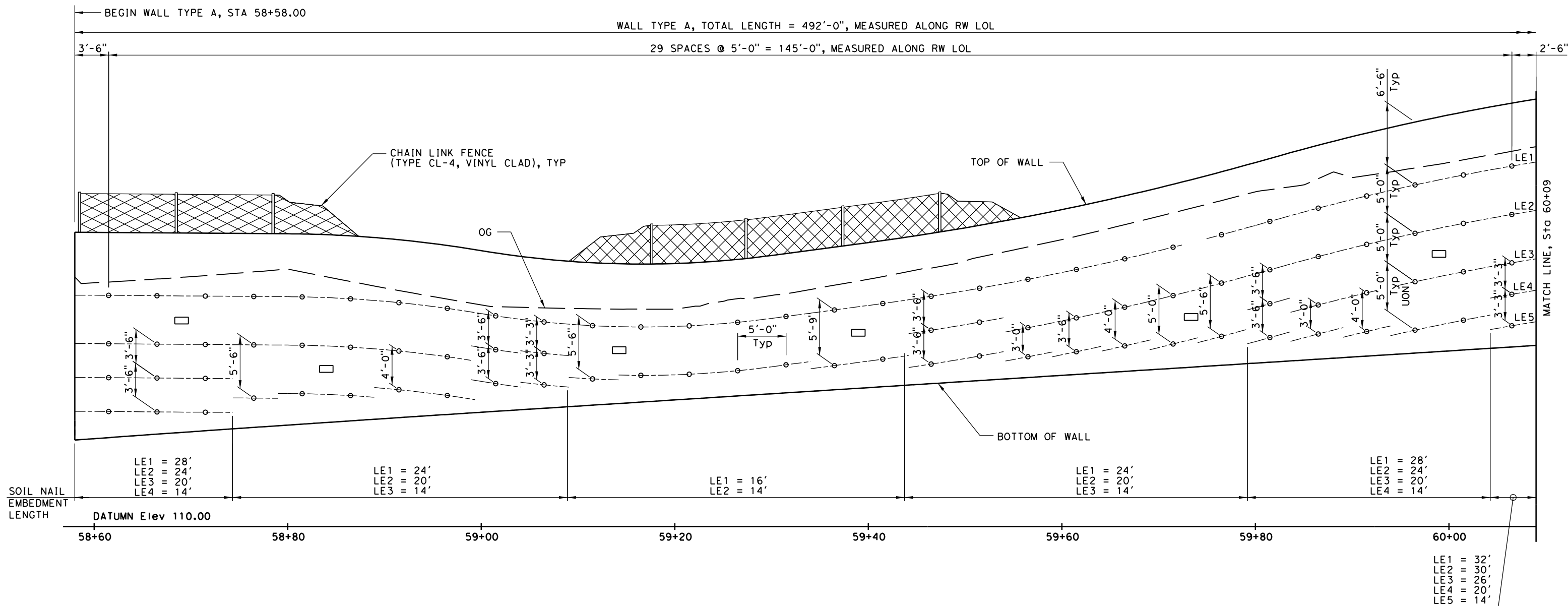
STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
58+58	140.40	118.93	59+40	139.33	124.34
58+60	140.38	119.07	59+60	142.73	125.61
58+80	140.24	120.47	59+80	147.60	126.87
59+00	138.50	121.80	60+00	152.51	128.13
59+20	137.17	123.07			

LEGEND

- INDICATES SOIL NAIL LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- INDICATES PROOF TEST SOIL NAIL LOCATION; LOCATION MAY BE ADJUSTED BY THE ENGINEER
- LE# INDICATES SOIL NAIL PROFILE LINE

NOTES:

1. VERTICAL SPACING BETWEEN SOIL NAIL ASSEMBLIES IS 3'-0" MIN TO 5'-0" MAX UON.
2. PLACE SOIL NAIL ASSEMBLY NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
3. ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
4. FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.



WALL TYPE A DEVELOPED ELEVATION

WALL TYPE A  
DETAILS NO. 1  
SCALE: 1"=5'-0"

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter		
			CHECKED BY		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				CADD FILENAME =>		
			SUPERVISOR R. SENNETT		7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	CONTRACT NO.						
PROJECT DESCRIPTION			DATE 9/5/2019							SHEET NAME	SHEET NO.	TOTAL SHEETS
BORDER LAST REVISED 9/9/2015										RW1-5		
										LAST REVISION	DATE PLOTTED => 9/5/2019	TIME PLOTTED => 5:09:02 PM

WALL TYPE A PROFILE

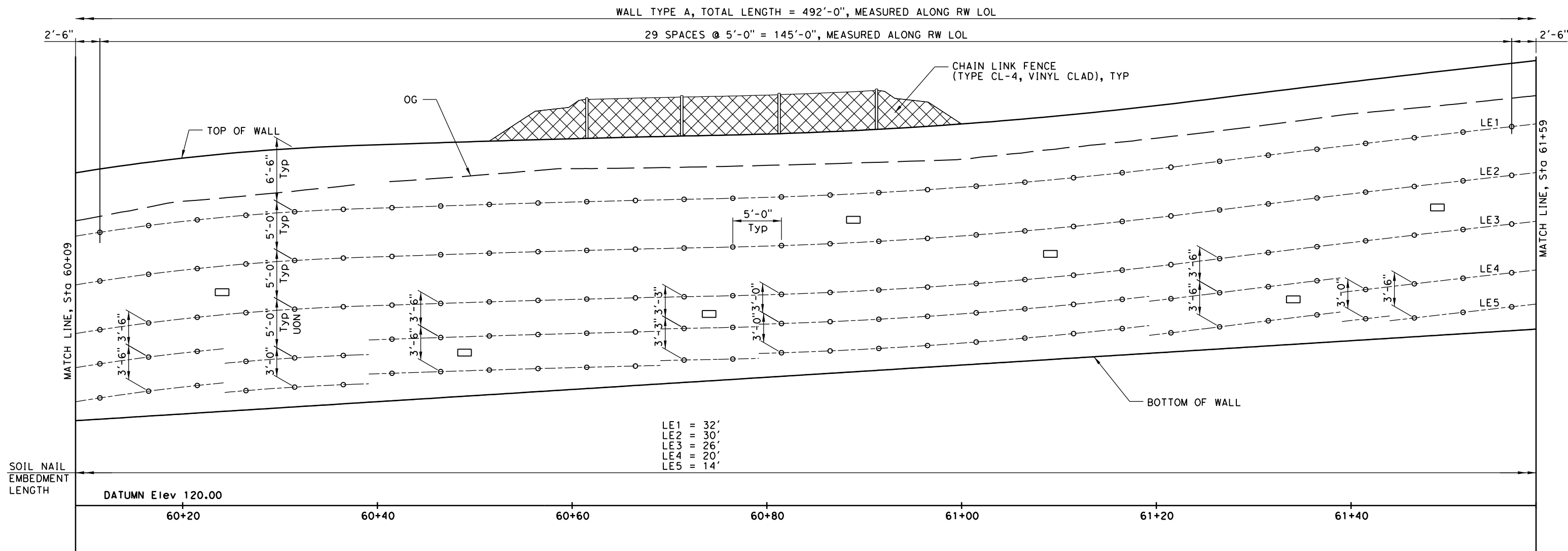
STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
60+20	155.65	129.39	61+00	159.16	134.41
60+40	157.02	130.65	61+20	161.05	135.66
60+60	157.65	131.91	61+40	163.49	136.91
60+80	158.13	133.16			

LEGEND

- INDICATES SOIL NAIL LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- INDICATES PROOF TEST SOIL NAIL LOCATION; LOCATION MAY BE ADJUSTED BY THE ENGINEER
- LE# INDICATES SOIL NAIL PROFILE LINE

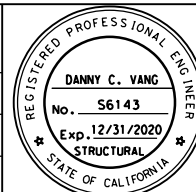




NOTES:

1. VERTICAL SPACING BETWEEN SOIL NAIL ASSEMBLIES IS 3'-0" MIN TO 5'-0" MAX UON.
2. PLACE SOIL NAIL ASSEMBLY NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
3. ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
4. FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.



WALL TYPE A DEVELOPED ELEVATION

WALL TYPE A  
DETAILS NO. 2  
SCALE: 1"=5'-0"

REVISED BY  DATE REVISED  PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/DESIGNED BY D. VANG CHECKED BY R. SENNETT SUPERVISOR DATE 9/5/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE  REGISTERED STRUCTURAL ENGINEER PLANS APPROVAL DATE		7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW1\RW1_05_20_DTL.dgn CONTRACT NO.  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SHEET NAME</th> <th>SHEET NO.</th> <th>TOTAL SHEETS</th> </tr> <tr> <td>RW1-6</td> <td></td> <td></td> </tr> </table>	SHEET NAME	SHEET NO.	TOTAL SHEETS	RW1-6		
SHEET NAME	SHEET NO.	TOTAL SHEETS												
RW1-6														
BORDER LAST REVISED 9/9/2015			RELATIVE BORDER SCALE IS IN INCHES 	DATE PLOTTED => 9/5/2019 TIME PLOTTED => 5:12:00 PM										

WALL TYPE A PROFILE

STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
61+60	165.78	138.16	62+40	175.80	143.14
61+80	167.90	139.41	62+60	178.76	144.08
62+00	170.04	140.66	62+80	181.24	144.83
62+20	172.67	142.02	63+00	183.24	145.30

LEGEND

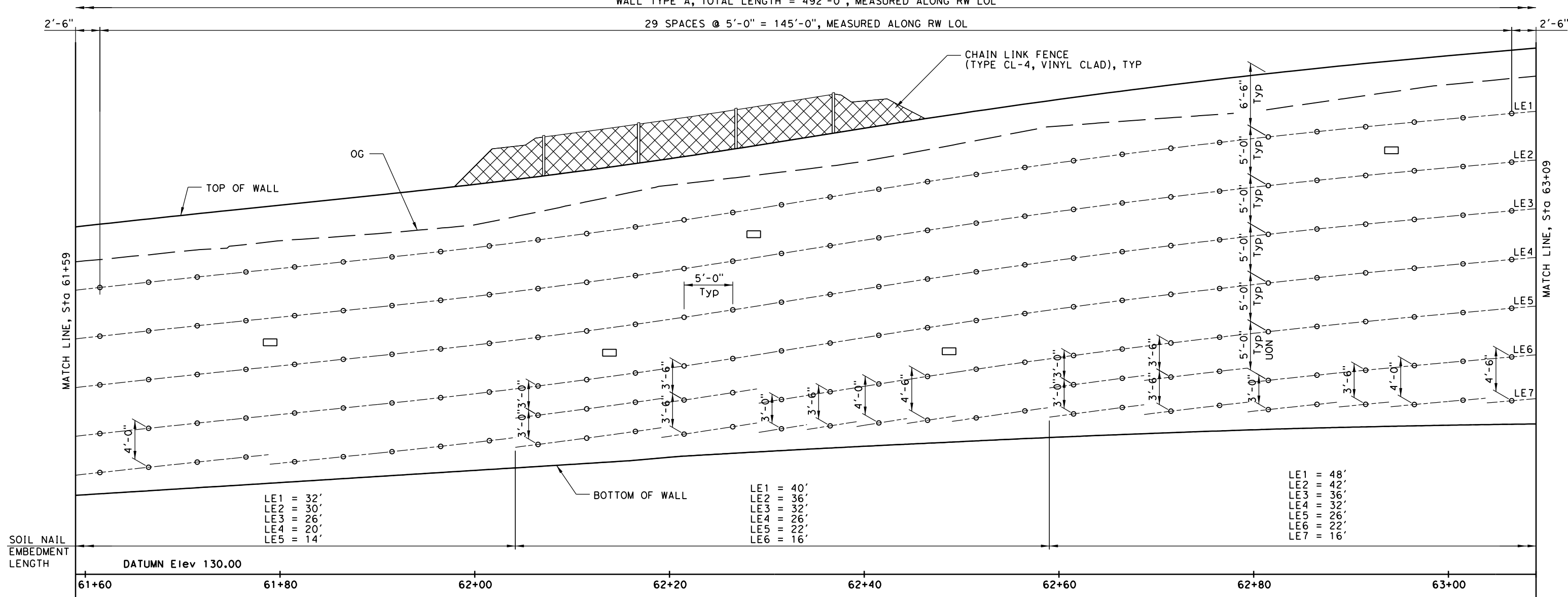
- INDICATES SOIL NAIL LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- INDICATES PROOF TEST SOIL NAIL LOCATION; LOCATION MAY BE ADJUSTED BY THE ENGINEER
- LE# INDICATES SOIL NAIL PROFILE LINE

NOTES:

1. VERTICAL SPACING BETWEEN SOIL NAIL ASSEMBLIES IS 3'-0" MIN TO 5'-0" MAX UON.
2. PLACE SOIL NAIL ASSEMBLY NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
3. ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
4. FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.

WALL TYPE A, TOTAL LENGTH = 492'-0", MEASURED ALONG RW LOL

29 SPACES @ 5'-0" = 145'-0", MEASURED ALONG RW LOL

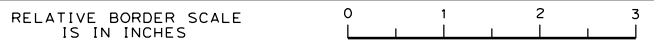


WALL TYPE A DEVELOPED ELEVATION

WALL TYPE A  
DETAILS NO. 3  
SCALE: 1"=5'-0"

REVISIONS	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1  PROJECT DESCRIPTION	CALCULATED/DESIGNED BY D. VANG CHECKED BY R. SENNETT SUPERVISOR DATE 9/5/2019	REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE  PLANS APPROVAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com		USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW1_05_20_DTL.dgn CONTRACT NO.  SHEET NAME: RW1-7 SHEET NO.: TOTAL SHEETS:  LAST REVISION: 9/5/2019 DATE PLOTTED => 9/5/2019 TIME PLOTTED => 5:15:11 PM
-----------	---	---	---	--	--	---

P:\521 YBI Retaining Walls\06 CAD\Structure RW1\_05\_20\_DTL.dgn



WALL TYPE A PROFILE

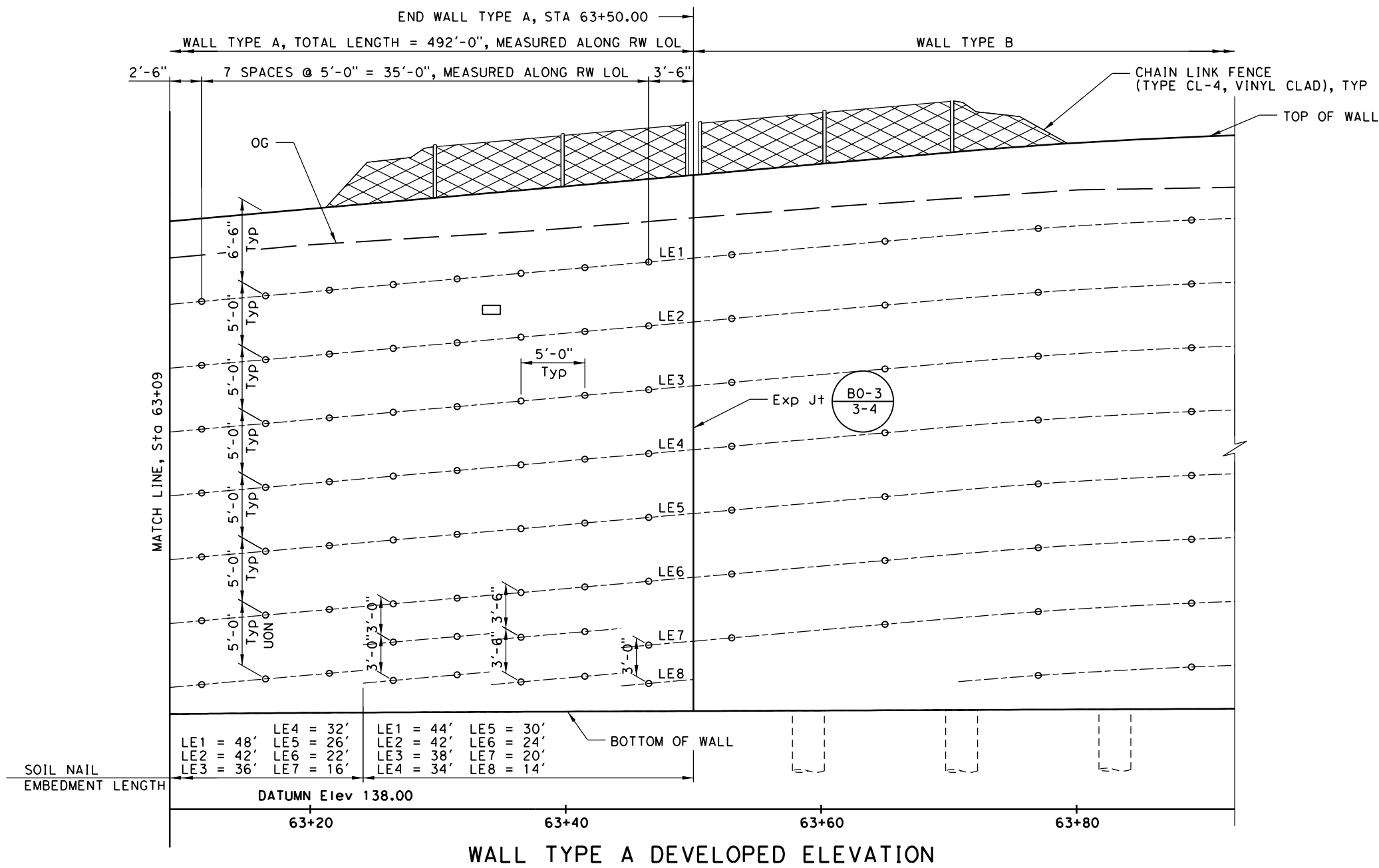
STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
63+20	185.01	145.55
63+40	186.77	145.64

LEGEND

- INDICATES SOIL NAIL LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- INDICATES PROOF TEST SOIL NAIL LOCATION; LOCATION MAY BE ADJUSTED BY THE ENGINEER
- LE# INDICATES SOIL NAIL PROFILE LINE

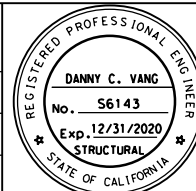



NOTES:

1. VERTICAL SPACING BETWEEN SOIL NAIL ASSEMBLIES IS 3'-0" MIN TO 5'-0" MAX UON.
2. PLACE SOIL NAIL ASSEMBLY NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
3. ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
4. FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.

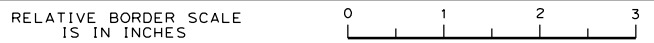


SOIL NAIL EMBEDMENT LENGTH	
LE1 = 48'	LE4 = 32'
LE2 = 42'	LE5 = 26'
LE3 = 36'	LE6 = 22'
LE4 = 44'	LE7 = 16'
LE5 = 42'	LE8 = 14'
LE6 = 38'	
LE7 = 34'	
LE8 = 30'	
LE9 = 24'	
LE10 = 20'	
LE11 = 16'	

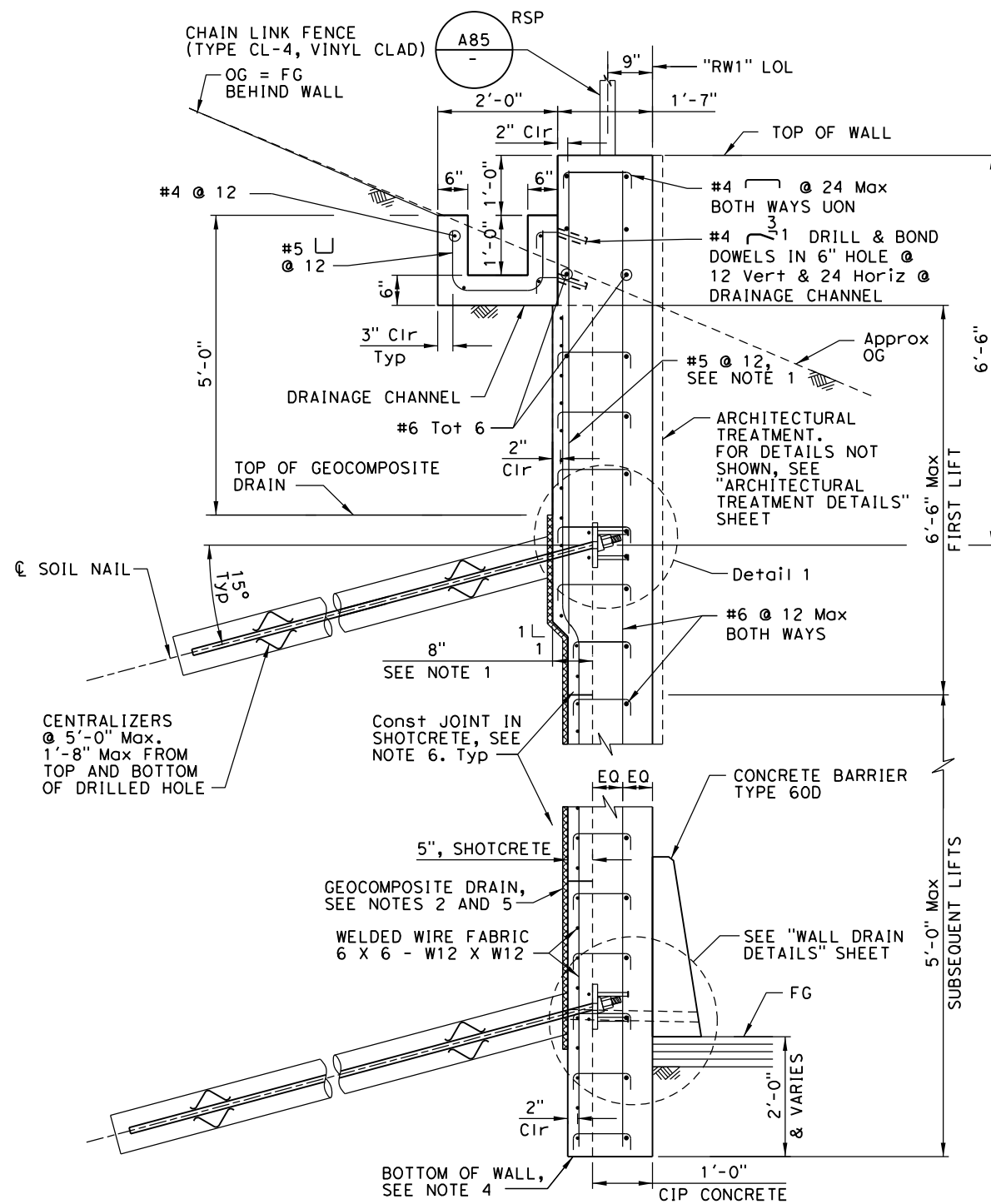
WALL TYPE A  
DETAILS NO. 4  
SCALE: 1"=5'-0"

REVISED BY DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG  CHECKED BY  SUPERVISOR R. SENNETT  DATE 9/5/2019		REGISTERED STRUCTURAL ENGINEER  PLANS SUBMITTAL DATE  PLANS APPROVAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\05_20_DTL.dgn CONTRACT NO.  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SHEET NAME</th> <th>SHEET NO.</th> <th>TOTAL SHEETS</th> </tr> <tr> <td>RW1-8</td> <td></td> <td></td> </tr> </table> LAST REVISION 9/5/2019 DATE PLOTTED => 9/5/2019 TIME PLOTTED => 5:16:54 PM	SHEET NAME	SHEET NO.	TOTAL SHEETS	RW1-8		
SHEET NAME	SHEET NO.	TOTAL SHEETS												
RW1-8														

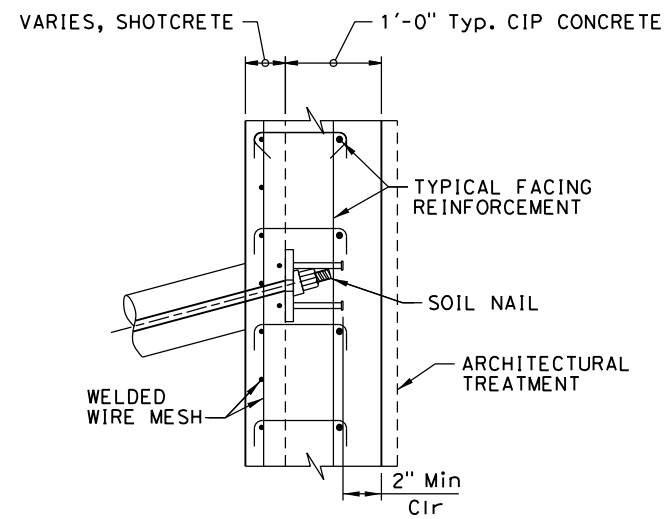
BORDER LAST REVISED 9/9/2015



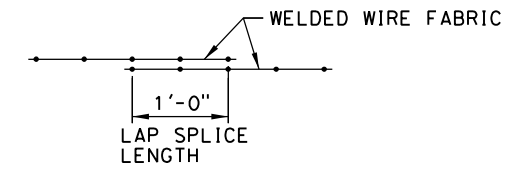




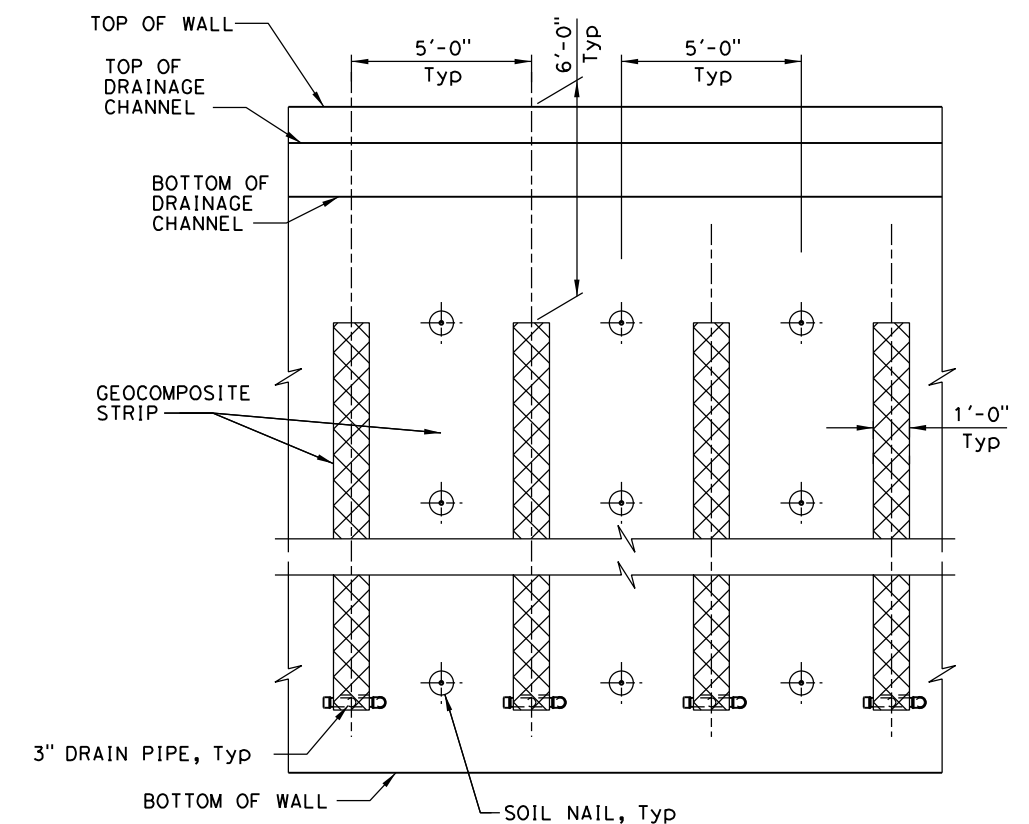
**WALL TYPE A TYPICAL SECTION**  
3/4" = 1'-0"



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



**LAP SPLICE**  
1" = 1'-0"

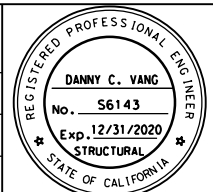




**TYPICAL SOIL NAIL AND DRAINAGE ELEVATION**  
3/8" = 1'-0"

**NOTES:**

- #5 REINFORCING BARS AND 8" SHOTCRETE THICKNESS TO EXTEND 2'-0" BELOW TOP ROW OF SOIL NAILS.
- THE 1'-0" GEOCOMPOSITE DRAINS MUST BE PLACED VERTICALLY AT MID BAY BETWEEN SOIL NAILS, AND MUST BE CONTINUOUS WITH MINIMUM 1'-0" LAPPING AT SPLICES.
- FOR THE CIP CONCRETE THE REBAR COVER MUST BE A MINIMUM OF 3".
- BOTTOM OF WALL TO BE PLACED AGAINST UNDISTURBED MATERIAL.
- ADJUST GEOCOMPOSITE DRAIN TO CLEAR TEST SOIL NAILS.
- THE VERTICAL AND HORIZONTAL CONSTRUCTION JOINT IN THE SHOTCRETE LAYER MUST BE LOCATED A MINIMUM OF 1'-6" FROM ADJACENT SOIL NAIL ROWS AND COLUMNS.

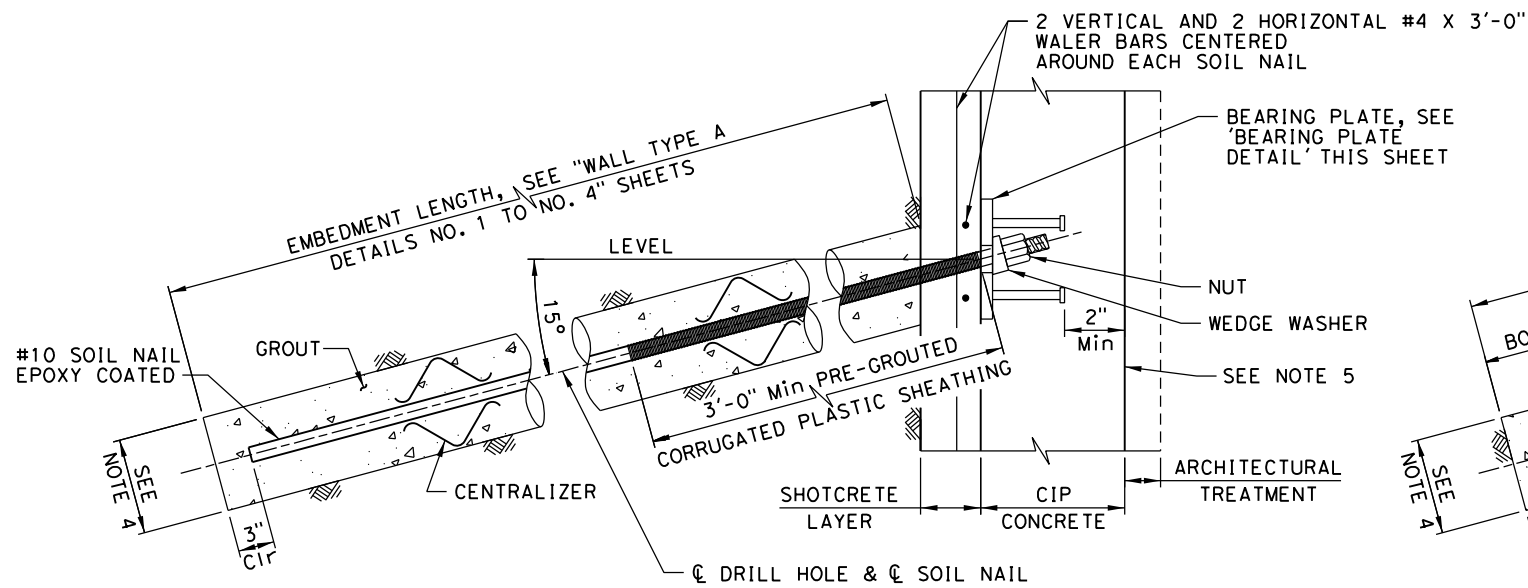
**WALL TYPE A  
DETAILS NO. 5  
SCALE: AS SHOWN**

REVISIONS REVISION NO.   DATE   DESCRIPTION _____   _____   _____ _____   _____   _____ _____   _____   _____	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1 PROJECT DESCRIPTION	CALCULATED/DESIGNED BY D. VANG CHECKED BY _____ SUPERVISOR R. SENNETT DATE 9/5/2019	 REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE _____ PLANS APPROVAL DATE _____	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	 	USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW1\RW1_05_20_DTL.dgn CONTRACT NO. SHEET NAME   SHEET NO.   TOTAL SHEETS RW1-9     LAST REVISION   DATE PLOTTED => 9/5/2019 9/5/2019   TIME PLOTTED => 5:20:01 PM
---	---	--	--	--	---	---

P:\521 YBI Retaining Walls\06 CAD\Structure RW1\RW1\_05\_20\_DTL.dgn

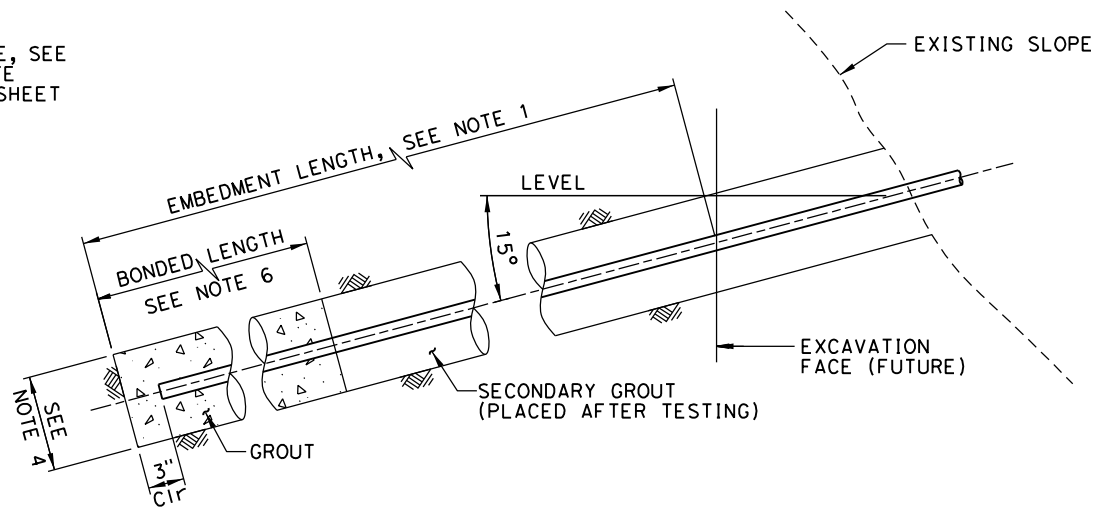
BORDER LAST REVISED 9/9/2015

RELATIVE BORDER SCALE IS IN INCHES  
 0 1 2 3



**SOIL NAIL ASSEMBLY DETAIL**

1 1/2" = 1'-0"

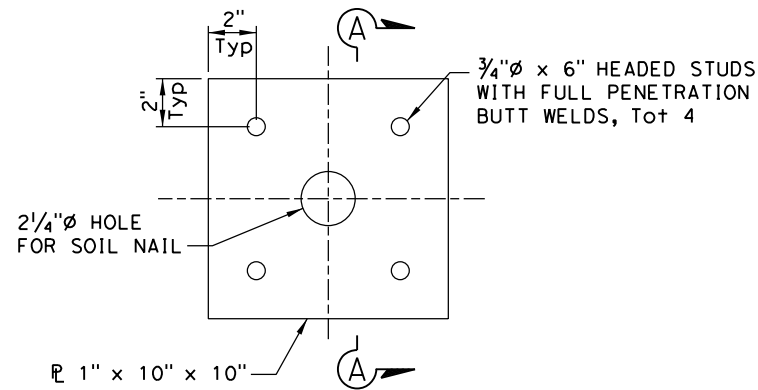


**VERIFICATION TEST SOIL NAIL ASSEMBLY DETAIL**

1 1/2" = 1'-0"

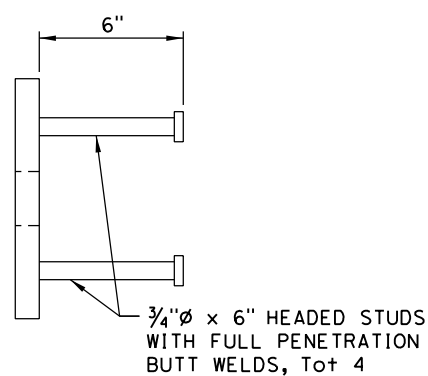
**NOTES:**

1. EMBEDMENT LENGTH OF PROOF TEST NAILS AND VERIFICATION TEST NAILS MUST BE EQUAL TO 2/3 OF THE EMBEDMENT LENGTH OF ADJACENT SOIL NAIL ASSEMBLY BUT NOT LESS THAN 12 FT.
2. TOTAL LENGTH OF THE PROOF TEST SOIL NAIL ASSEMBLY EQUALS TO THE EMBEDMENT LENGTH PLUS THE LENGTH REQUIRED FOR JACKING EQUIPMENT.
3. FOR LOCATION OF PROOF TEST SOIL NAIL ASSEMBLIES, SEE "WALL TYPE A DETAILS NO. 1" TO "WALL TYPE A DETAILS NO. 4" SHEETS. ADDITIONAL PROOF TEST SOIL NAILS MUST BE INSTALLED AND TESTED PER SPECIAL PROVISIONS.
4. THE DIAMETER OF DRILLED HOLE WILL BE DETERMINED BY CONTRACTOR.
5. NOT ALL REINFORCEMENT SHOWN, SEE "WALL TYPE A DETAILS NO. 5" SHEET.
6. FOR BONDED LENGTH OF VERIFICATION TEST AND PROOF TEST SOIL NAIL ASSEMBLIES, SEE STANDARD SPECIFICATIONS.



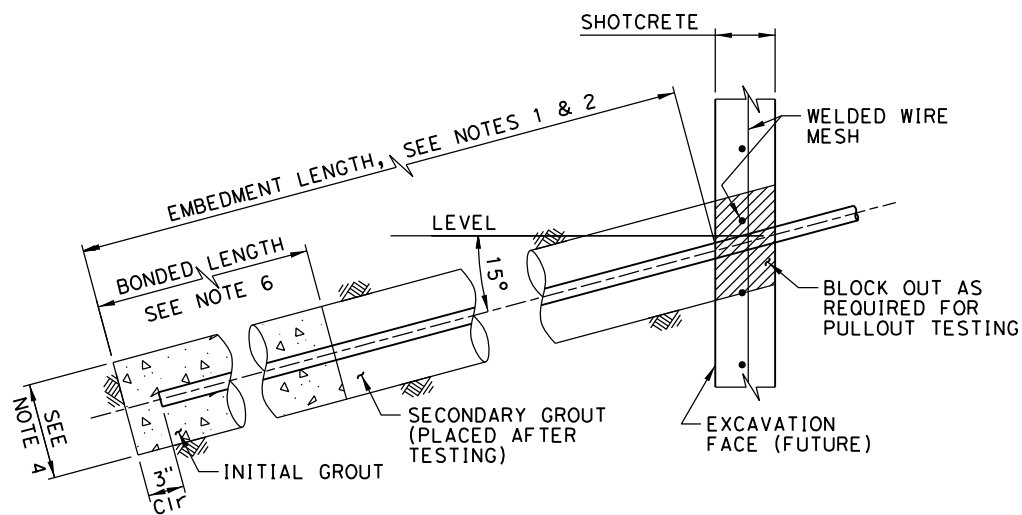
**BEARING PLATE DETAIL**

3" = 1'-0"



**SECTION A-A**

3" = 1'-0"



**PROOF TEST SOIL NAIL ASSEMBLY DETAIL**

1 1/2" = 1'-0"

**WALL TYPE A DETAILS NO. 6**  
SCALE: AS SHOWN

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1_05_20_DTL.dgn		
			CHECKED BY R. SENNETT		SUPERVISOR R. SENNETT	REGISTERED STRUCTURAL ENGINEER				PLANS APPROVAL DATE	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	CONTRACT NO.
			PROJECT DESCRIPTION		DATE 9/5/2019	REGISTERED STRUCTURAL ENGINEER				MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	SHEET NAME RW1-10	SHEET NO.

BORDER LAST REVISED 9/9/2015



WALL TYPE B PROFILE

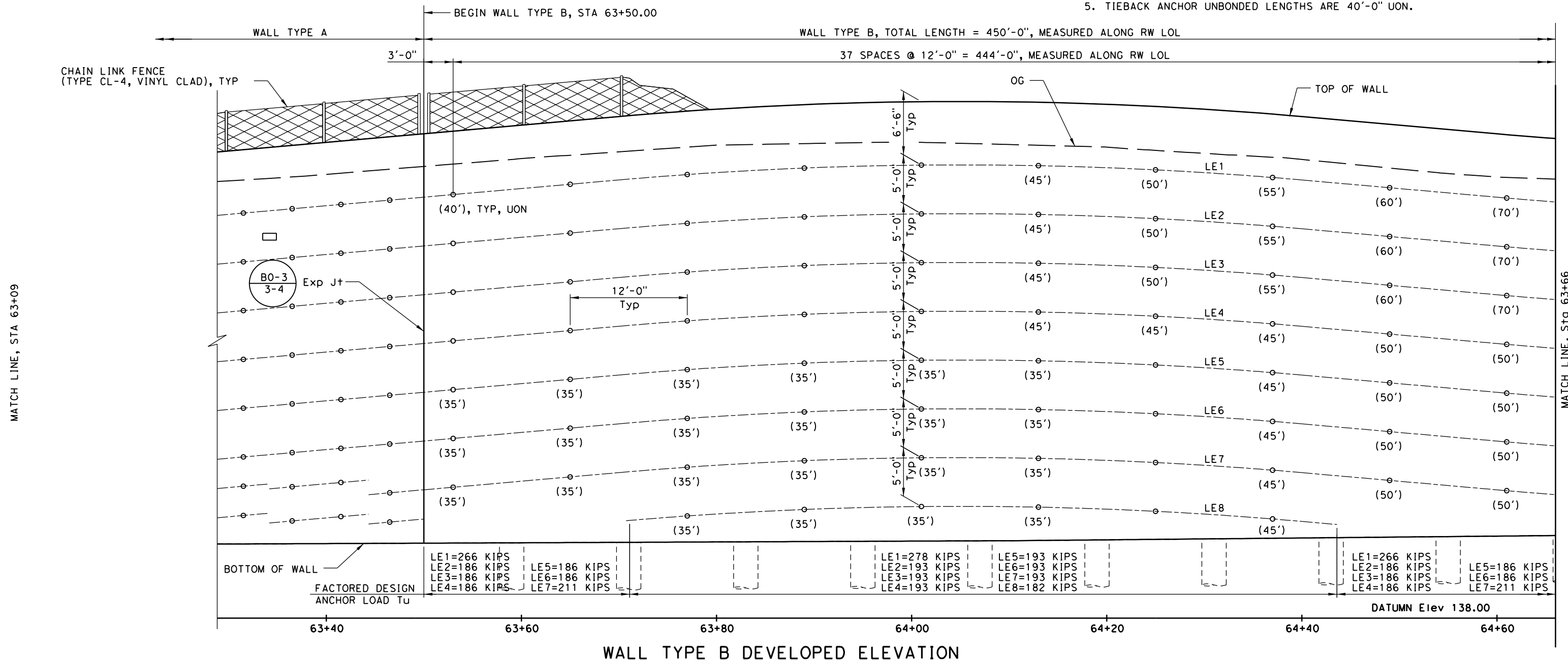
STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
63+60	188.53	145.72	64+20	190.67	146.02
63+80	190.17	145.81	64+40	189.41	146.21
64+00	190.92	145.89	64+60	187.65	146.40

LEGEND

- INDICATES TIEBACK ANCHOR LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- LE# INDICATES TIEBACK PROFILE LINE
- (40') INDICATES TIEBACK ANCHOR UNBONDED LENGTH

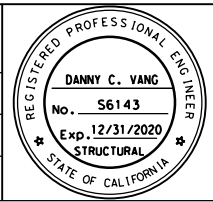




NOTES:

- VERTICAL SPACING BETWEEN TIEBACK ANCHORS IS 5'-0".
- PLACE TIEBACK ANCHORS NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
- ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
- FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.
- TIEBACK ANCHOR UNBONDED LENGTHS ARE 40'-0" UON.



WALL TYPE B DEVELOPED ELEVATION

WALL TYPE B  
DETAILS NO. 1  
SCALE: 1"=5'-0"

REVISIONS: REVISED BY: _____ DATE REVISED: _____	PROJECT DESCRIPTION: YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/DESIGNED BY: D. VANG CHECKED BY: R. SENNETT SUPERVISOR DATE: 11/12/2019	 REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE: _____ PLANS APPROVAL DATE: _____	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	 	USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1_05_20_DTL.dgn CONTRACT NO.: _____ <table border="1"> <tr> <th>SHEET NAME</th> <th>SHEET NO.</th> <th>TOTAL SHEETS</th> </tr> <tr> <td>RW1-11</td> <td></td> <td></td> </tr> </table>	SHEET NAME	SHEET NO.	TOTAL SHEETS	RW1-11		
SHEET NAME	SHEET NO.	TOTAL SHEETS										
RW1-11												
BORDER LAST REVISED 9/9/2015		RELATIVE BORDER SCALE IS IN INCHES 		LAST REVISION: _____ DATE PLOTTED => 11/12/2019 11/12/2019 TIME PLOTTED => 2:15:41 PM								

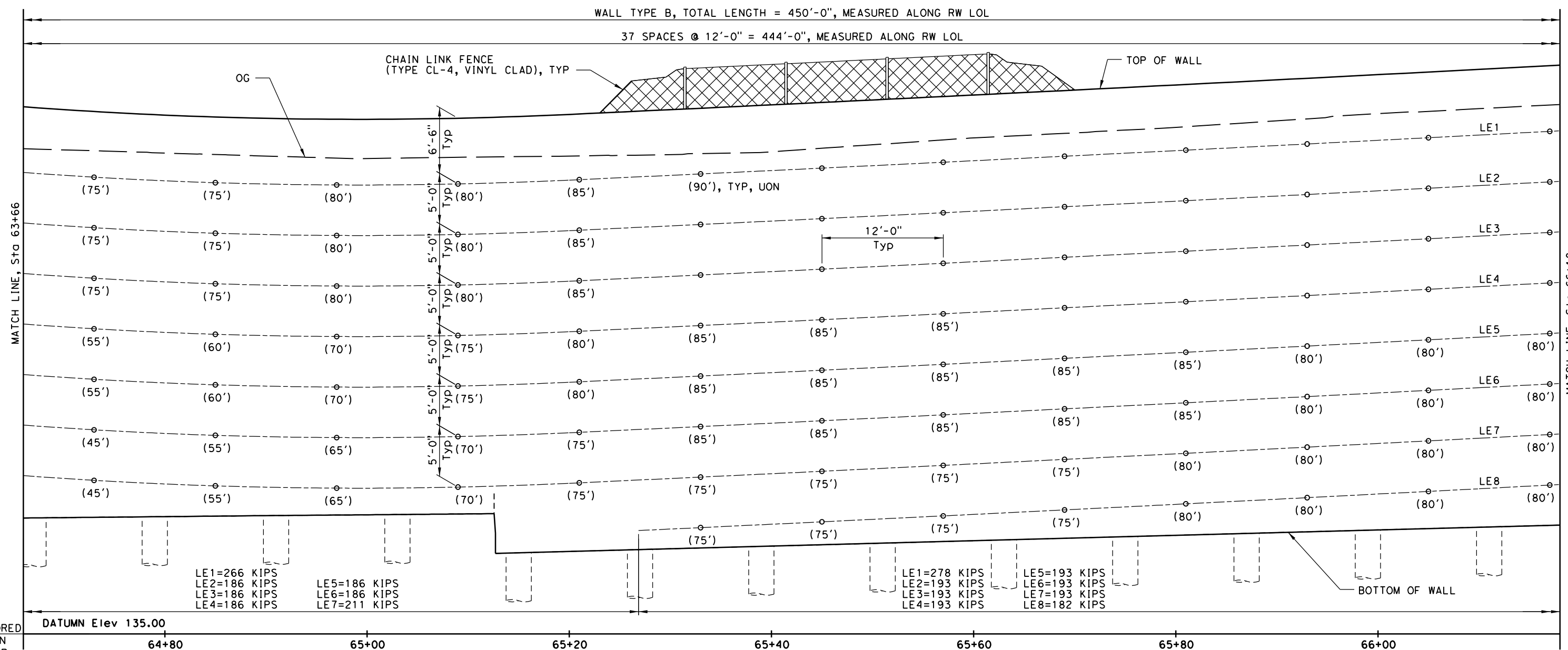
WALL TYPE B PROFILE					
STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
64+80	186.33	146.60	65+60	188.32	144.22
65+00	185.92	146.78	65+80	189.31	144.75
65+20	186.40	143.15	66+00	190.34	145.28
65+40	187.35	143.68			

### LEGEND

- INDICATES TIEBACK ANCHOR LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- LE# INDICATES TIEBACK PROFILE LINE
- (90') INDICATES TIEBACK ANCHOR UNBONDED LENGTH

### NOTES:

1. VERTICAL SPACING BETWEEN TIEBACK ANCHORS IS 5'-0".
2. PLACE TIEBACK ANCHORS NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
3. ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
4. FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.
5. TIEBACK ANCHOR UNBONDED LENGTHS ARE 90'-0" UON.



### WALL TYPE B DEVELOPED ELEVATION

### WALL TYPE B DETAILS NO. 2

SCALE: 1"=5'-0"

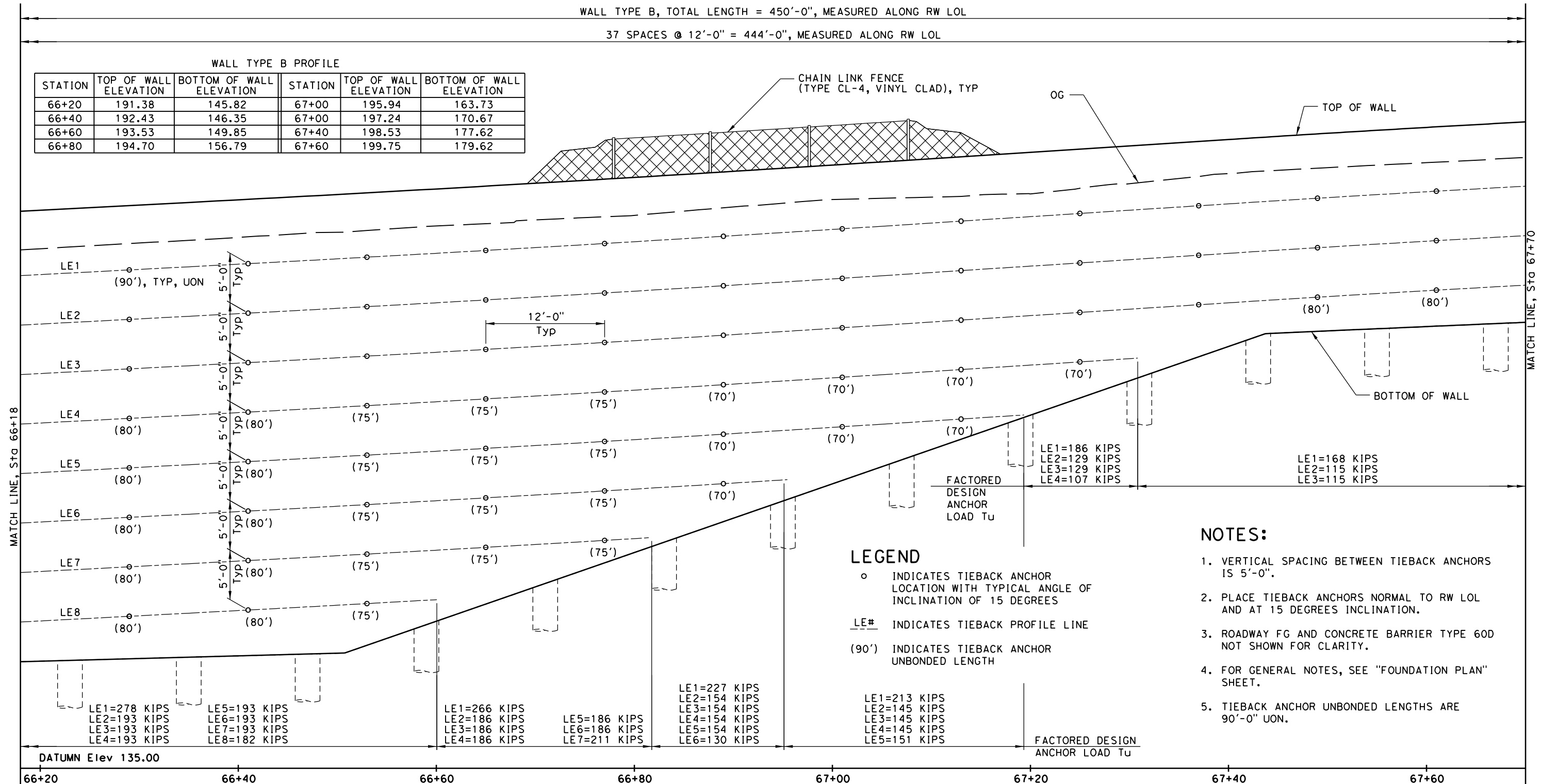
REVISOR	DATE	PROJECT DESCRIPTION	DESIGNED BY	CALCULATED/DESIGNED BY	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	 	USERNAME => kaiwang
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	D. VANG	DANNY C. VANG	REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE			CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1_05_20_DTL.dgn
			R. SENNETT	No. 56143					CONTRACT NO.
			DATE 11/12/2019	Exp. 12/31/2020					SHEET NAME SHEET NO. TOTAL SHEETS
BORDER LAST REVISED 9/9/2015									SHEET NAME: RW1-12 SHEET NO.: TOTAL SHEETS:
RELATIVE BORDER SCALE IS IN INCHES									LAST REVISION: 11/12/2019 DATE PLOTTED => 11/12/2019 TIME PLOTTED => 2:20:03 PM

WALL TYPE B, TOTAL LENGTH = 450'-0", MEASURED ALONG RW LOL

37 SPACES @ 12'-0" = 444'-0", MEASURED ALONG RW LOL

WALL TYPE B PROFILE

STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
66+20	191.38	145.82	67+00	195.94	163.73
66+40	192.43	146.35	67+40	197.24	170.67
66+60	193.53	149.85	67+60	198.53	177.62
66+80	194.70	156.79	67+60	199.75	179.62



**LEGEND**

- INDICATES TIEBACK ANCHOR LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- LE# INDICATES TIEBACK PROFILE LINE
- (90') INDICATES TIEBACK ANCHOR UNBONDED LENGTH

- NOTES:**
- VERTICAL SPACING BETWEEN TIEBACK ANCHORS IS 5'-0".
  - PLACE TIEBACK ANCHORS NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
  - ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
  - FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.
  - TIEBACK ANCHOR UNBONDED LENGTHS ARE 90'-0" UON.

WALL TYPE B DEVELOPED ELEVATION

WALL TYPE B  
DETAILS NO. 3  
SCALE: 1"=5'-0"

REVISIONS REVISED BY DATE REVISED	PROJECT DESCRIPTION <b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1</b>	CALCULATED/ DESIGNED BY D. VANG CHECKED BY SUPERVISOR R. SENNETT DATE 11/12/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\RW1_05_20_DTL.dgn CONTRACT NO. SHEET NAME <b>RW1-13</b> SHEET NO. TOTAL SHEETS
---	---	---	--	---	--	--	--	--

BORDER LAST REVISED 9/9/2015

RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3

LAST REVISION DATE PLOTTED => 11/12/2019  
11/12/2019 TIME PLOTTED => 2:21:24 PM

WALL TYPE B PROFILE

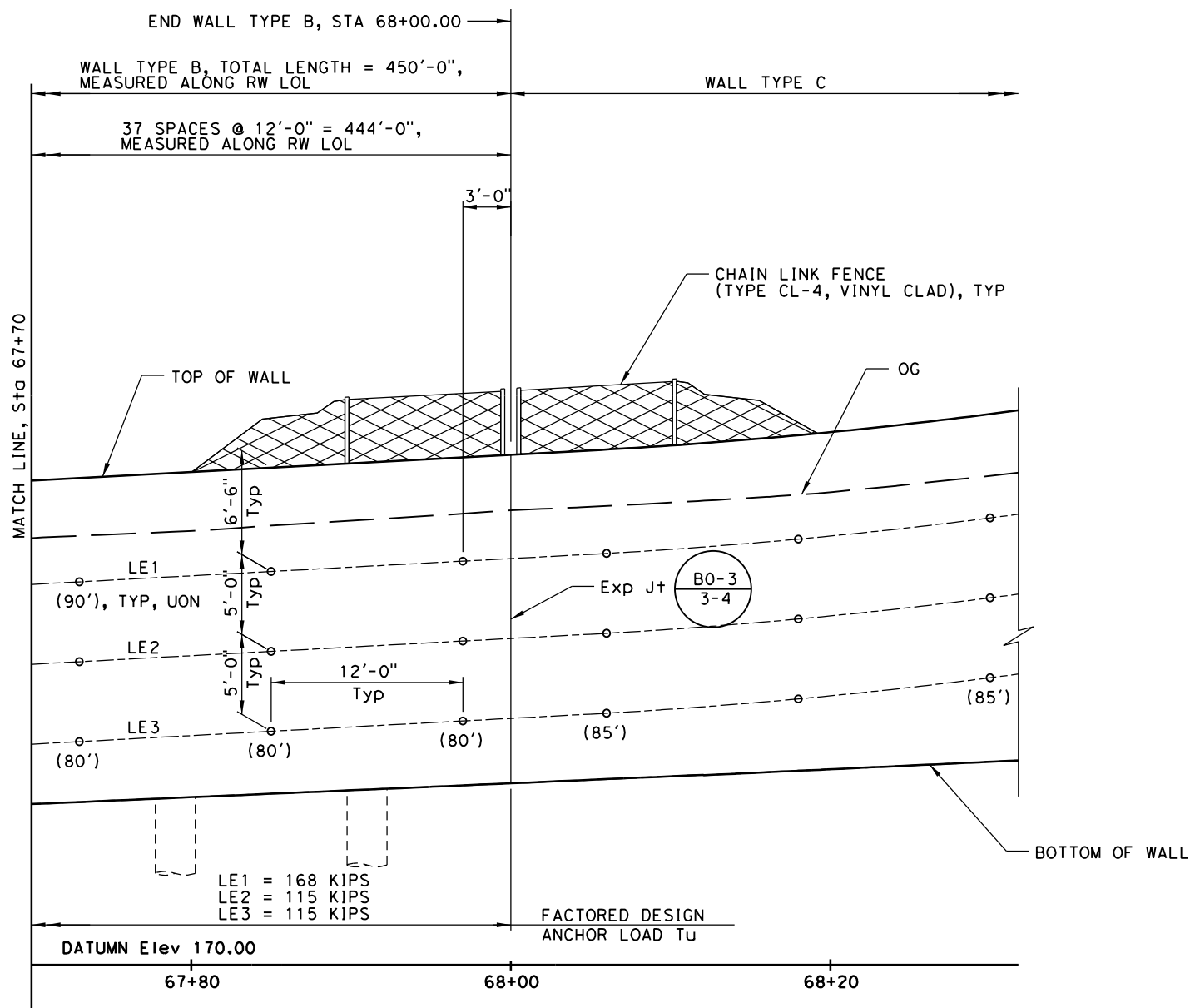
STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
67+80	200.85	180.49
68+00	201.92	181.36

**LEGEND**

- INDICATES TIEBACK ANCHOR LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- LE# INDICATES TIEBACK PROFILE LINE
- (90') INDICATES TIEBACK ANCHOR UNBONDED LENGTH

**NOTES:**

1. VERTICAL SPACING BETWEEN TIEBACK ANCHORS IS 5'-0".
2. PLACE TIEBACK ANCHORS NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
3. ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
4. FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.
5. TIEBACK ANCHOR UNBONDED LENGTHS ARE 90'-0" UON.

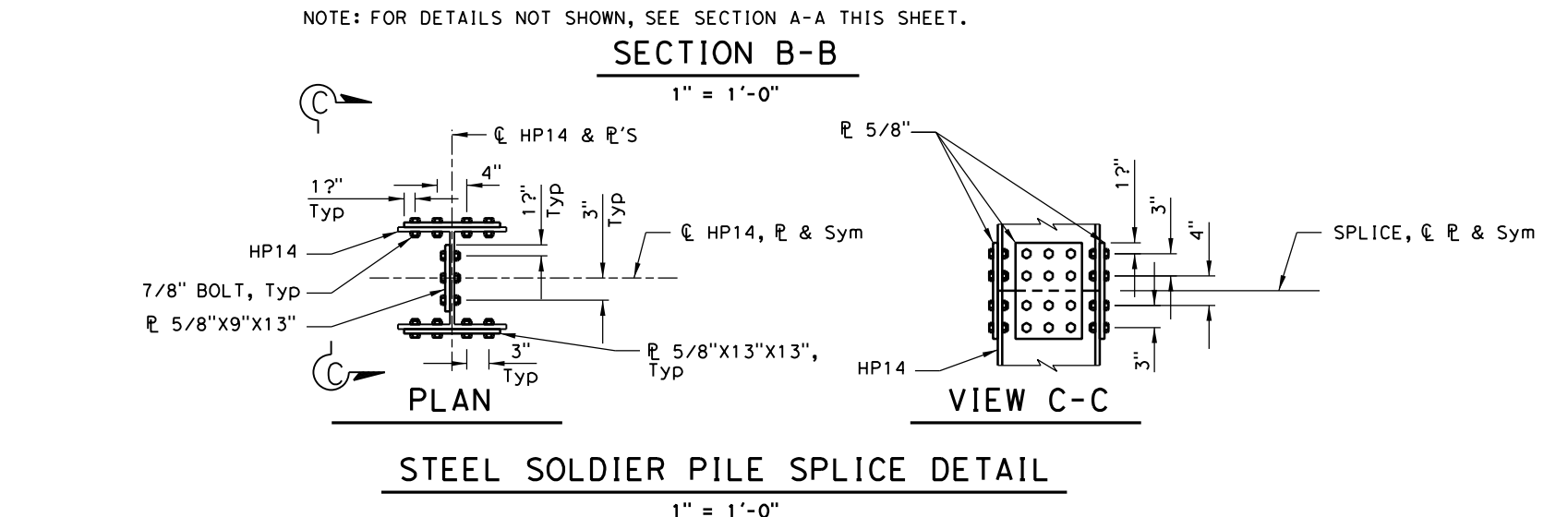
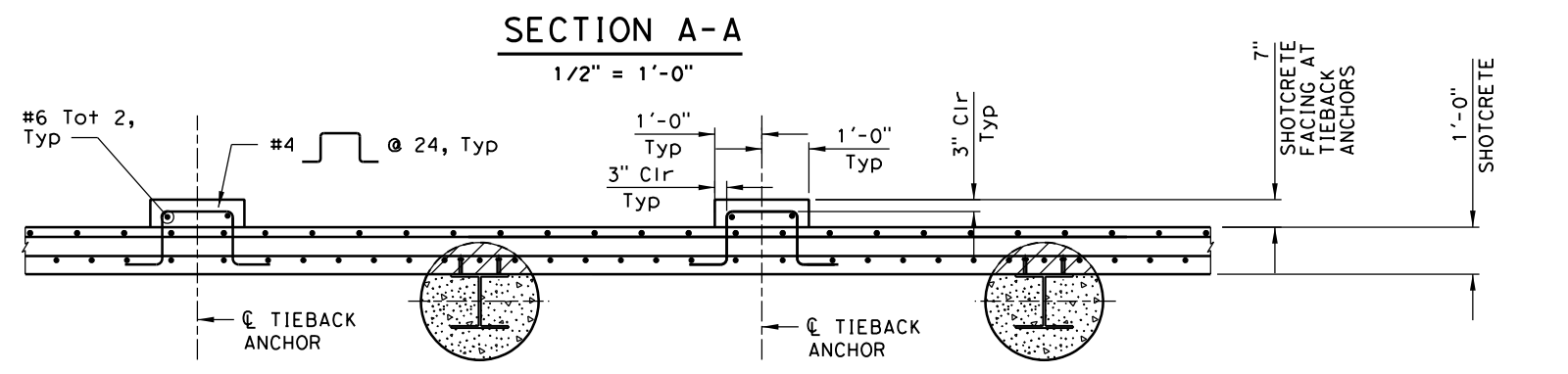
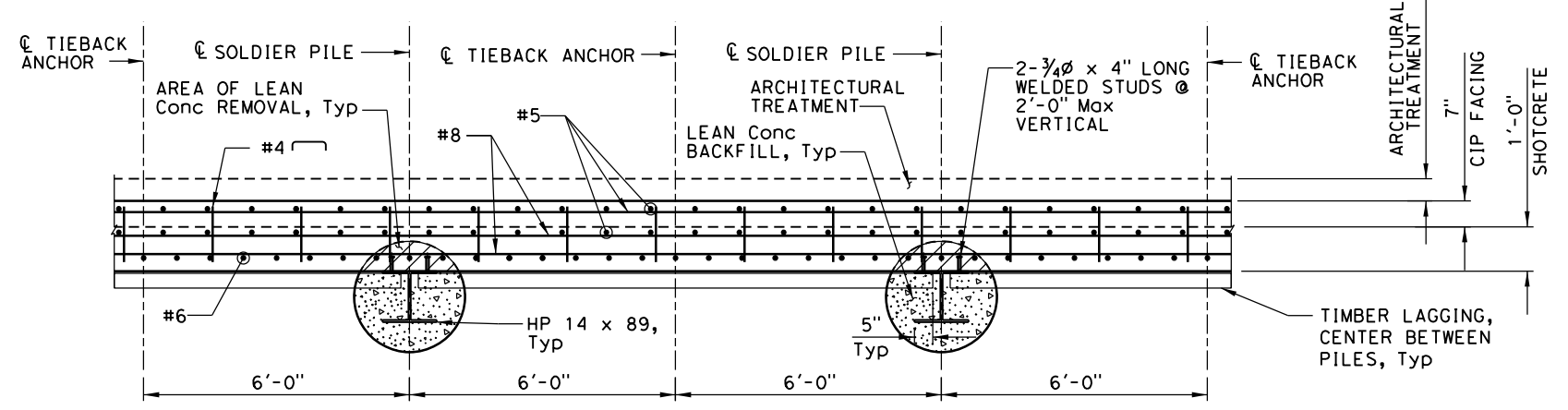
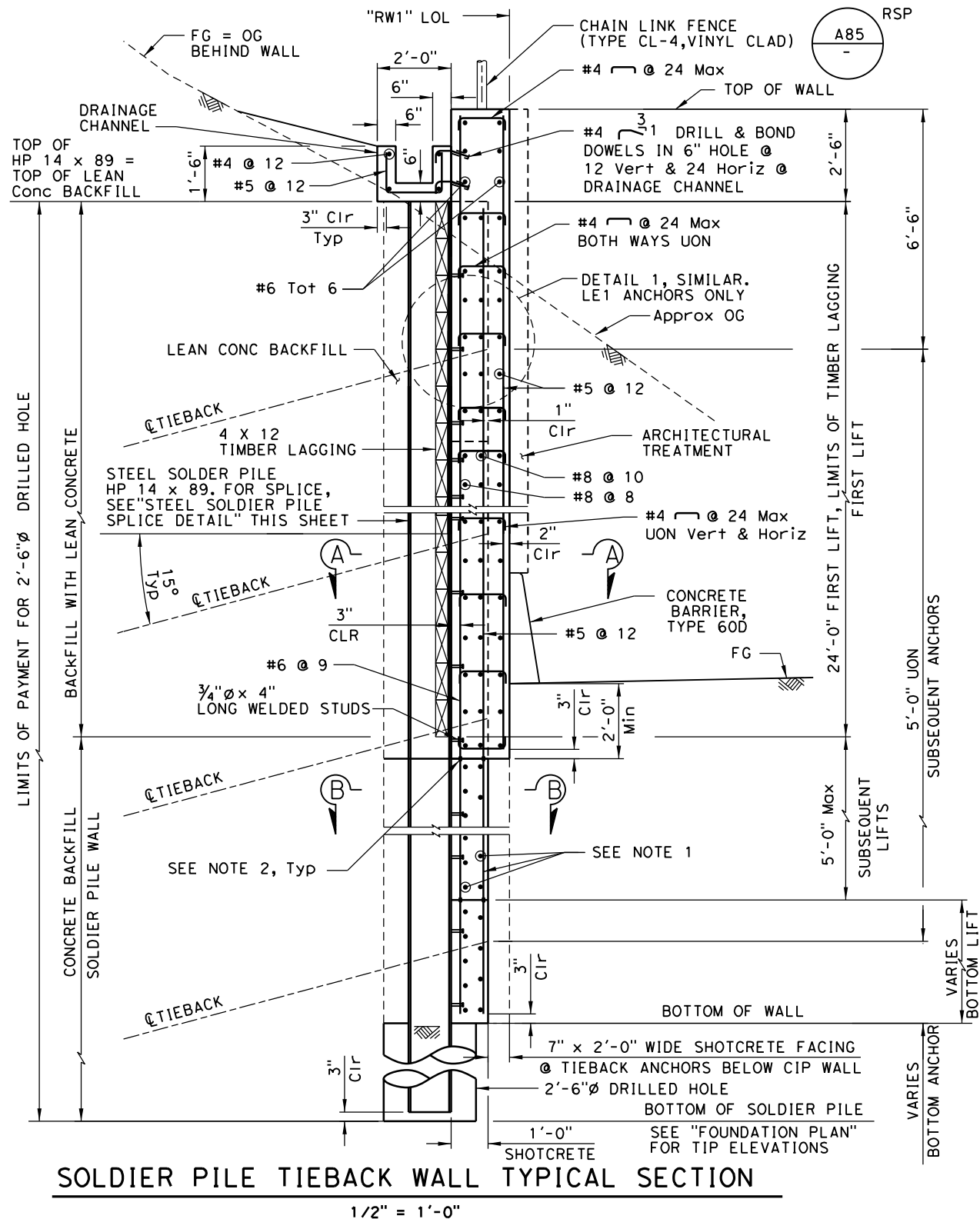


**WALL TYPE B DEVELOPED ELEVATION**

**WALL TYPE B  
DETAILS NO. 4**  
SCALE: 1"=5'-0"

P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\RW1\_05\_20\_DTL.dgn

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<p><b>MGE ENGINEERING, INC.</b></p> <p>7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com</p>			USERNAME => kaiwang	
			CHECKED BY R. SENNETT		PLANS APPROVAL DATE	MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.				CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\RW1_05_20_DTL.dgn	CONTRACT NO.
			DATE 11/12/2019							SHEET NAME	SHEET NO.
BORDER LAST REVISED 9/9/2015				RELATIVE BORDER SCALE IS IN INCHES					LAST REVISION	DATE PLOTTED => 11/12/2019	
										11/12/2019	TIME PLOTTED => 2:22:55 PM



- NOTES:**
1. ADJUST HORIZONTAL AND VERTICAL REINFORCING SPACING TO AVOID CONFLICT WITH TIEBACK GROUND ANCHOR ASSEMBLY IN CIP CONCRETE FACING.
  2. EXTEND REINFORCEMENT INTO SUBSEQUENT LIFTS FOR SPLICING. SPLICE REINFORCEMENT BY LAPPING OR MECHANICAL COUPLERS.
  3. FOR DETAIL 1, SEE "WALL TYPE C DETAILS NO. 3" SHEET.
  4. TEMPORARY SOIL NAIL WALL & CEMENT SLURRY BACKFILL BEHIND TIEBACK WALL NOT SHOWN FOR CLARITY.

**WALL TYPE B  
DETAILS NO. 5**  
SCALE: AS SHOWN

REVISIONS	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG CHECKED BY DANNY C. VANG No. 56143 Exp. 12/31/2020 STRUCTURAL STATE OF CALIFORNIA	REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE  PLANS APPROVAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com		USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1_05_20_DTL.dgn CONTRACT NO.  SHEET NAME SHEET NO. TOTAL SHEETS RW1-15  LAST REVISION DATE PLOTTED => 11/15/2019 11/15/2019 TIME PLOTTED => 2:15:31 PM
BORDER LAST REVISED 9/9/2015		RELATIVE BORDER SCALE IS IN INCHES				

WALL TYPE C PROFILE

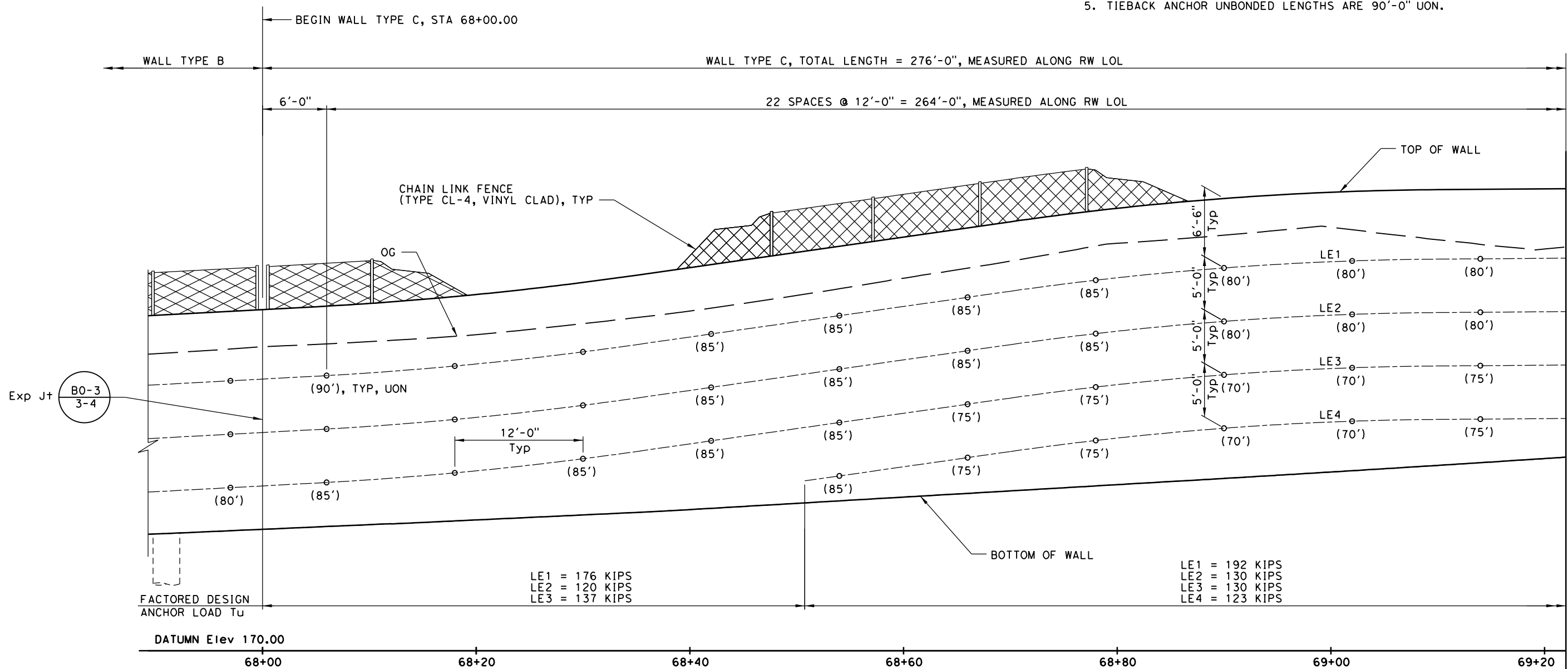
STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
68+00	201.92	181.36	68+80	211.40	185.54
68+20	203.33	182.24	69+00	212.90	186.73
68+40	205.86	183.21	69+20	213.22	187.98
68+60	208.71	184.37			

LEGEND

- INDICATES TIEBACK ANCHOR LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- LE# INDICATES TIEBACK PROFILE LINE
- (90') INDICATES TIEBACK ANCHOR UNBONDED LENGTH

NOTES:

- VERTICAL SPACING BETWEEN TIEBACK ANCHORS IS 5'-0".
- PLACE TIEBACK ANCHORS NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
- ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
- FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.
- TIEBACK ANCHOR UNBONDED LENGTHS ARE 90'-0" UON.



WALL TYPE C DEVELOPED ELEVATION

WALL TYPE C  
DETAILS NO. 1  
SCALE: 1"=5'-0"

REVISOR	DATE	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	 	USERNAME => kaiwang
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	D. VANG	REGISTERED STRUCTURAL ENGINEER				CONTRACT NO.
			CHECKED BY					SHEET NAME
			R. SENNETT					SHEET NO.
			DATE					TOTAL SHEETS
			11/12/2019					16
BORDER LAST REVISED 9/9/2015			RELATIVE BORDER SCALE IS IN INCHES					LAST REVISION
								DATE PLOTTED => 11/12/2019
								TIME PLOTTED => 2:30:15 PM



WALL TYPE C PROFILE

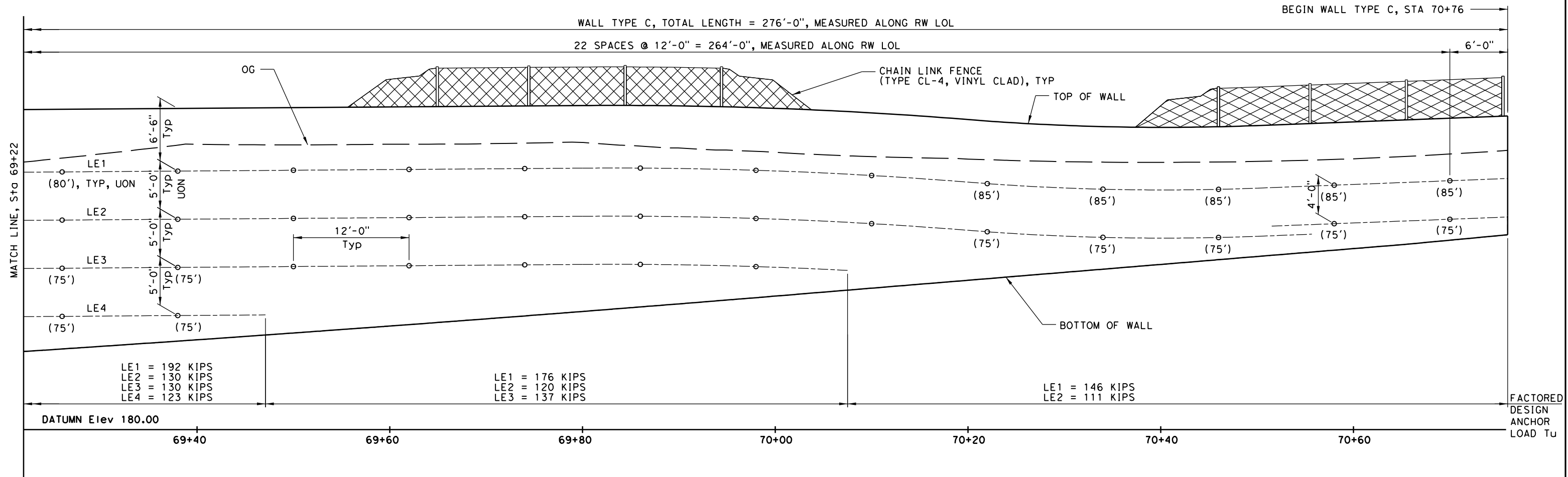
STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	STATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION
69+40	213.36	189.33	70+20	212.20	195.51
69+60	213.51	190.76	70+40	211.39	197.15
69+80	213.65	192.27	70+60	211.96	198.80
70+00	213.36	193.87	70+76	212.58	200.23

LEGEND

- INDICATES TIEBACK ANCHOR LOCATION WITH TYPICAL ANGLE OF INCLINATION OF 15 DEGREES
- LE# INDICATES TIEBACK PROFILE LINE
- (80') INDICATES TIEBACK ANCHOR UNBONDED LENGTH

NOTES:

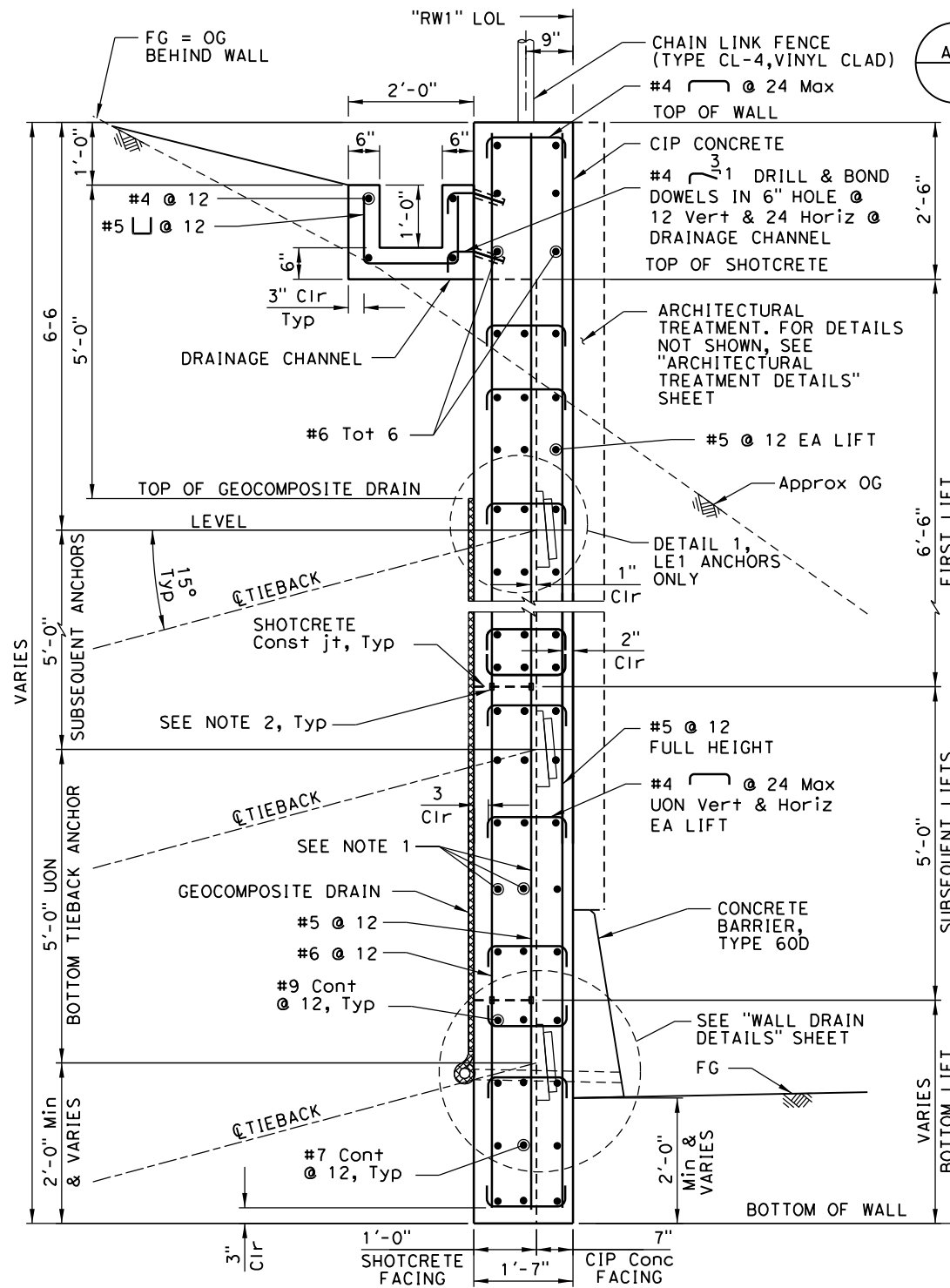
1. VERTICAL SPACING BETWEEN TIEBACK ANCHORS IS 4'-0" MIN TO 5'-0" MAX UON.
2. PLACE TIEBACK ANCHORS NORMAL TO RW LOL AND AT 15 DEGREES INCLINATION.
3. ROADWAY FG AND CONCRETE BARRIER TYPE 60D NOT SHOWN FOR CLARITY.
4. FOR GENERAL NOTES, SEE "FOUNDATION PLAN" SHEET.
5. TIEBACK ANCHOR UNBONDED LENGTHS ARE 80'-0" UON.



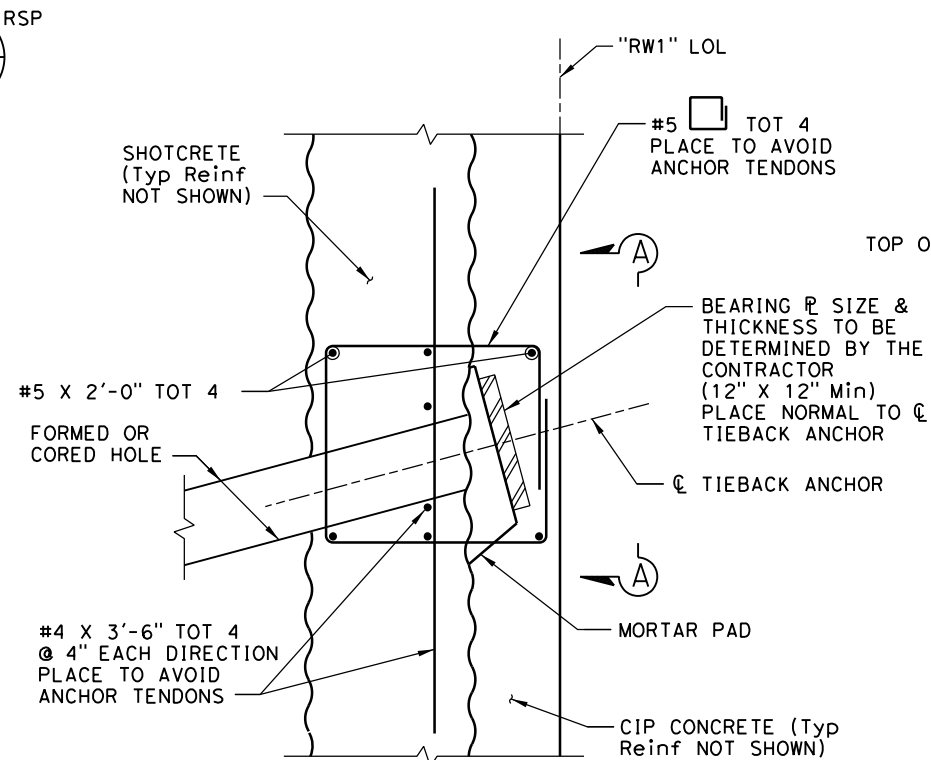
WALL TYPE C DEVELOPED ELEVATION

WALL TYPE C  
 DETAILS NO. 2  
 SCALE: 1"=5'-0"

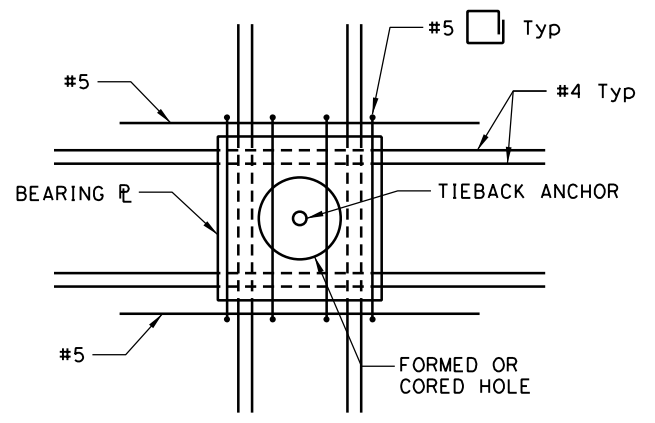
REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/DESIGNED BY D. VANG CHECKED BY R. SENNETT SUPERVISOR DATE 11/12/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE	MGE ENGINEERING, INC. 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\RW1_05_20_DTL.dgn CONTRACT NO.	
PROJECT DESCRIPTION	PLANS APPROVAL DATE								SHEET NAME RW1-17	SHEET NO. TOTAL SHEETS
BORDER LAST REVISED 9/9/2015	RELATIVE BORDER SCALE IS IN INCHES								LAST REVISION 11/12/2019	DATE PLOTTED => 11/12/2019 TIME PLOTTED => 2:32:08 PM



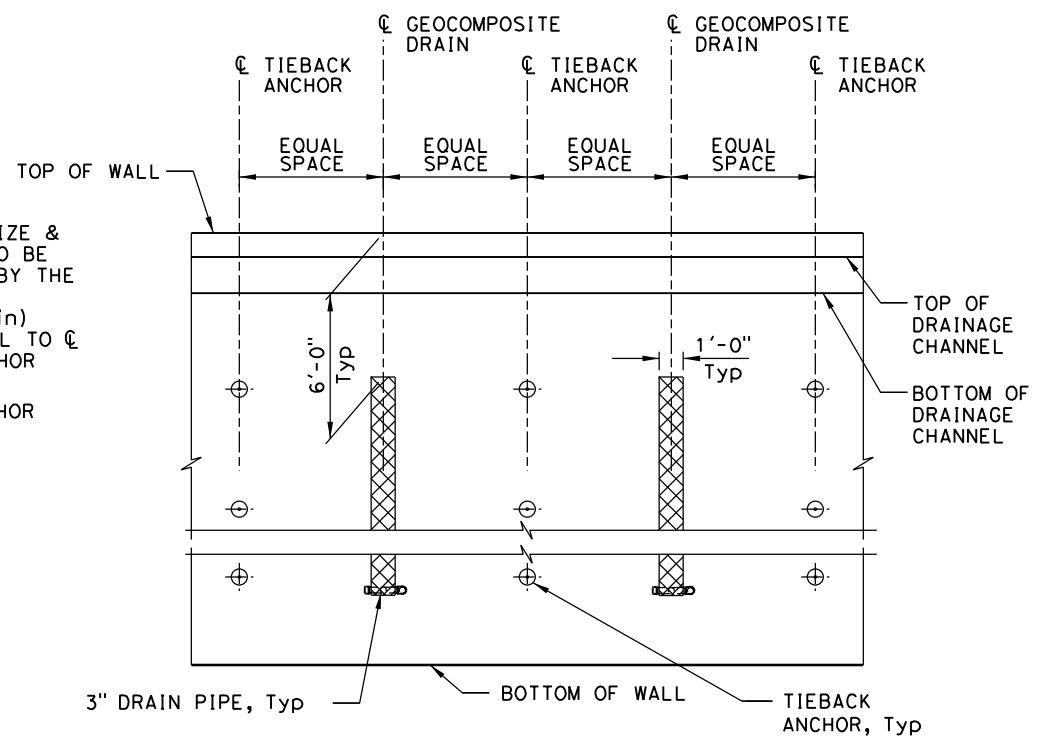
**TIEBACK WALL TYPICAL SECTION**  
3/4" = 1'-0"



**DETAIL 1**  
NO SCALE



**SECTION A-A**  
NO SCALE



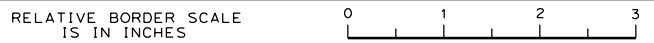
**TYPICAL TIEBACK AND DRAINAGE ELEVATION**  
1/4" = 1'-0"

- NOTES:**
- ADJUST HORIZONTAL AND VERTICAL REINFORCING SPACING TO AVOID CONFLICT WITH TIEBACK ANCHOR ASSEMBLY IN SHOTCRETE FACING.
  - EXTEND REINFORCEMENT INTO SUBSEQUENT LIFTS FOR SPLICING. SPLICE REINFORCEMENT BY LAPPING OR MECHANICAL COUPLERS.

**WALL TYPE C  
DETAILS NO. 3**  
SCALE: AS SHOWN

REVISIONS	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CALCULATED/ DESIGNED BY D. VANG CHECKED BY SUPERVISOR R. SENNETT DATE 9/6/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW1\RW1_05_20_DTL.dgn CONTRACT NO. SHEET NAME SHEET NO. TOTAL SHEETS <b>RW1-18</b> LAST REVISION DATE PLOTTED => 9/6/2019 TIME PLOTTED => 10:13:14 AM
-----------	--	---	--	---	--	--	--	--

BORDER LAST REVISED 9/9/2015



**PRESTRESSING STEEL:**

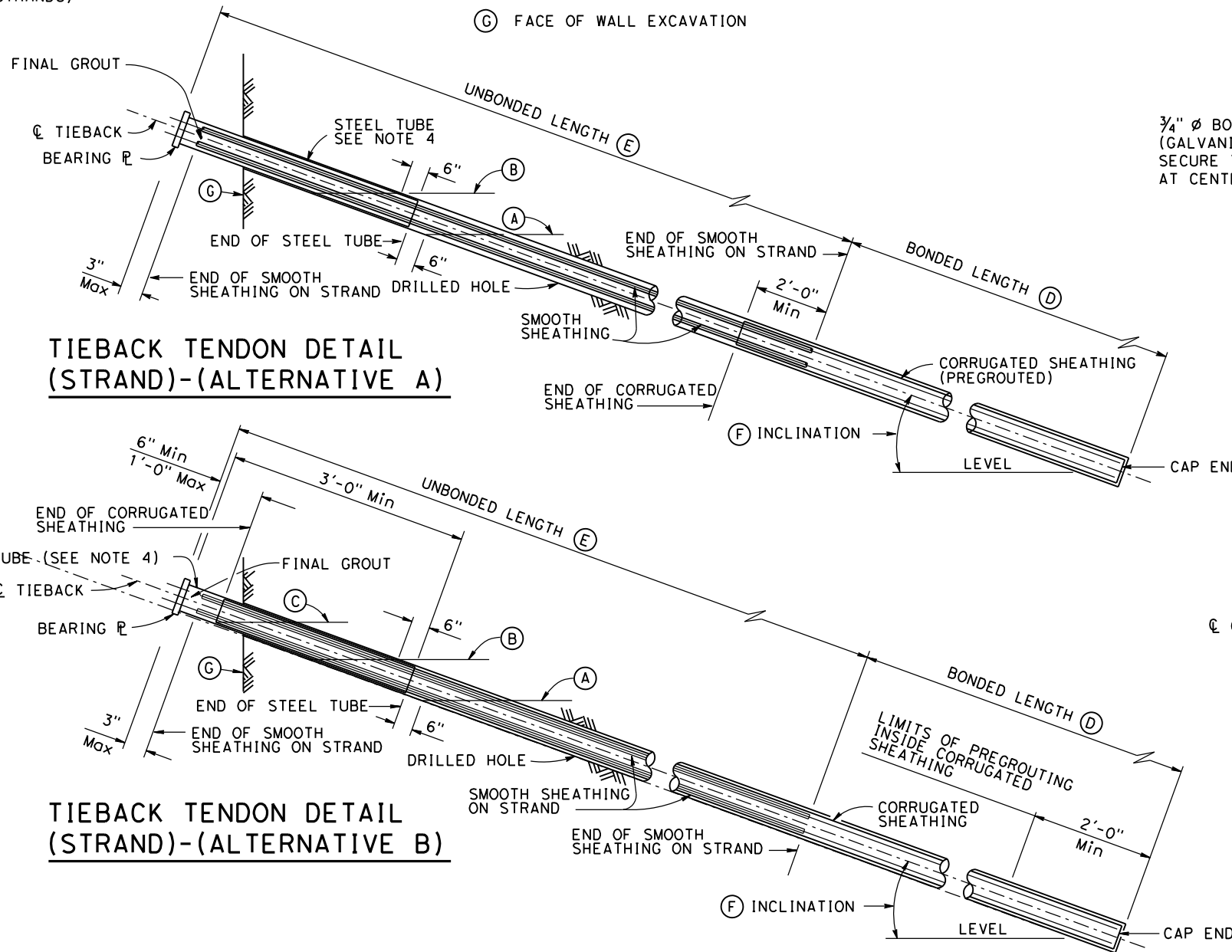
STRAND TENDONS-ASTM DESIGNATION: A416  
(270 KSI LOW RELAXATION STEEL)  
FTL = FACTORED TEST LOAD PER ANCHOR (Kips)  
fpu = MINIMUM TENSILE STRENGTH OF PRESTRESSING STEEL  
As = MINIMUM CROSS SECTIONAL AREA OF PRESTRESSING STEEL IN GROUND ANCHOR (SQUARE INCH)  
 $As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.75 \text{ fpu}}$  (STRANDS)

**LEGEND**

- (A) LEVEL OF INITIAL GROUTING FOR DRILLED HOLE 6" IN DIAMETER OR SMALLER
- (B) LEVEL OF SECONDARY GROUTING
- (C) LEVEL OF INITIAL GROUTING INSIDE CORRUGATED SHEATHING
- (D) BONDED LENGTH SHALL BE DETERMINED BY THE CONTRACTOR
- (E) FOR UNBONDED LENGTH, SEE PROJECT PLANS
- (F) FOR INCLINATION, SEE PROJECT PLANS
- (G) FACE OF WALL EXCAVATION

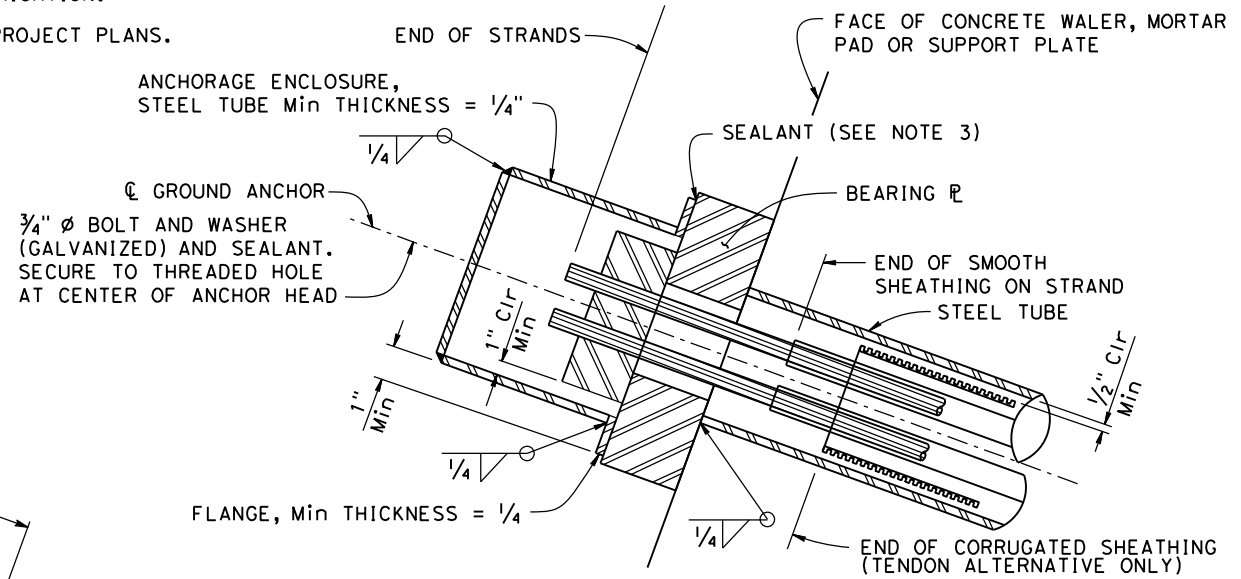
**NOTES:**

1. ANCHORAGE ENCLOSURE SHALL ONLY BE USED WHEN ANCHOR HEAD ASSEMBLY IS NOT ENCLOSED IN CONCRETE.
2. ANCHORAGE ENCLOSURE SHALL HAVE PROVISIONS TO ALLOW INJECTING GROUT AT LOW END AND VENTING AT HIGH END. GALVANIZE AFTER FABRICATION.
3. SILICONE SEALANT TO COVER FULL WIDTH OF FLANGE.
4. STEEL TUBE (MIN THICKNESS = 1/4") WELDED TO BEARING PLATE. GALVANIZE ASSEMBLY AFTER FABRICATION
5. STEEL TUBE WELDED TO BEARING PLATE. INSIDE DIAMETER OF STEEL TUBE (MIN THICKNESS = 1/4") TO BE 1" GREATER THAN OUTSIDE DIAMETER OF SMOOTH SHEATHING.
6. GALVANIZE ASSEMBLY AFTER FABRICATION.
7. FOR OTHER WALL DETAILS, SEE PROJECT PLANS.

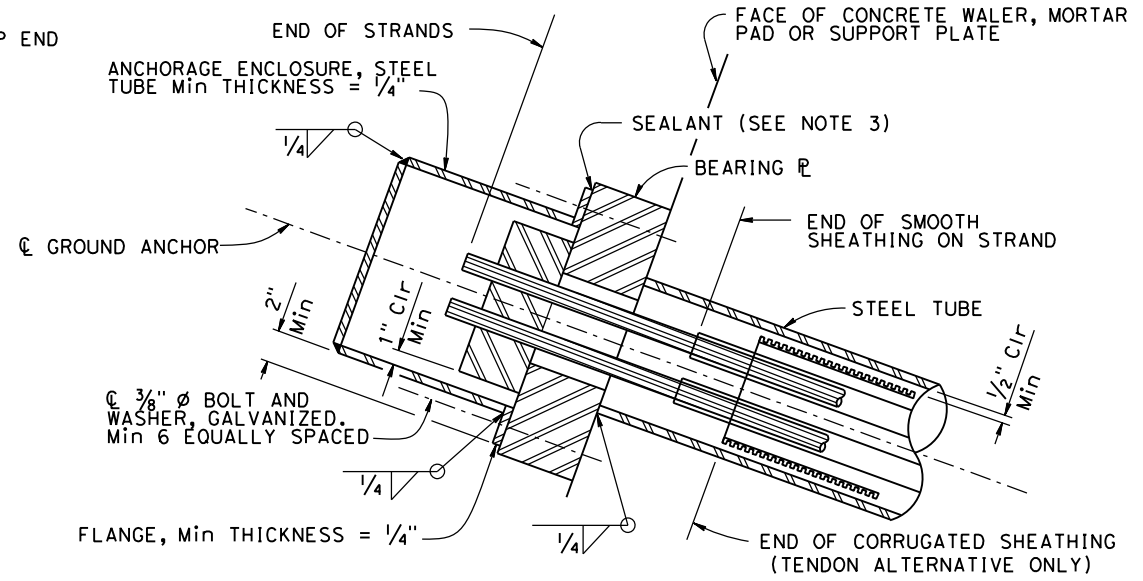


**TIEBACK TENDON DETAIL (STRAND)-(ALTERNATIVE A)**

**TIEBACK TENDON DETAIL (STRAND)-(ALTERNATIVE B)**



**ALTERNATIVE X**



**ALTERNATIVE Y**

**ANCHORAGE ENCLOSURE DETAILS**

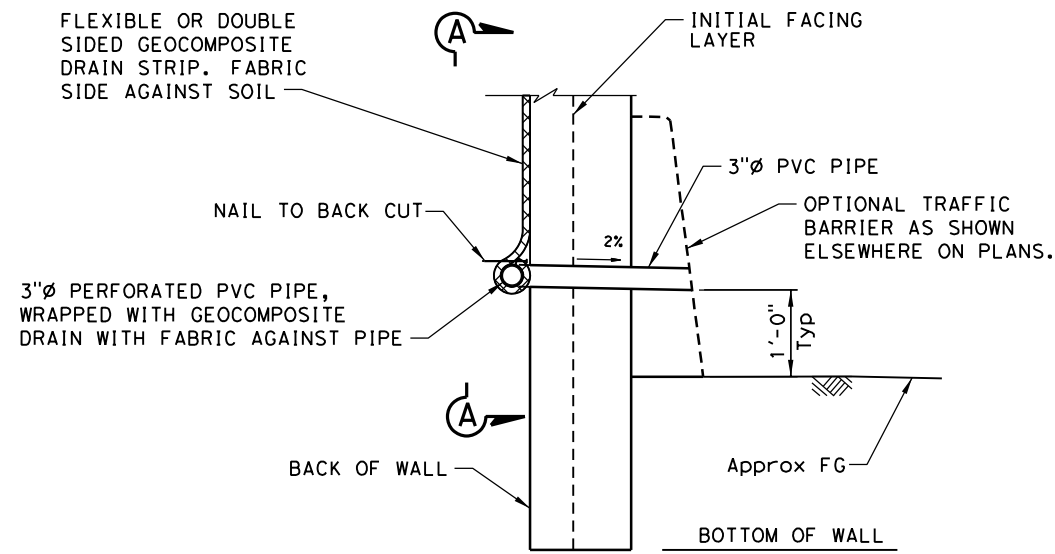
**TIEBACK ANCHOR DETAILS**  
SCALE: AS SHOWN

P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\RW1\_05\_20\_DTL.dgn

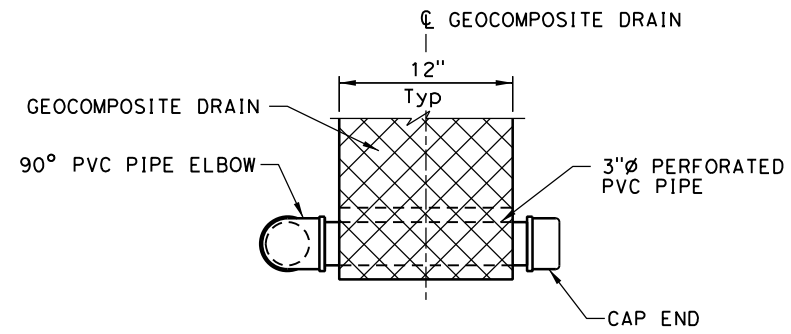
REVISOR	DATE	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	CHECKED BY		PLANS APPROVAL DATE	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com				CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\RW1_05_20_DTL.dgn
			SUPERVISOR R. SENNETT							CONTRACT NO.
			DATE 9/6/2019							SHEET NAME
										SHEET NO.
										TOTAL SHEETS
										RW1-19
										LAST REVISION
										DATE PLOTTED => 9/6/2019
										TIME PLOTTED => 10:14:32 AM

BORDER LAST REVISED 9/9/2015





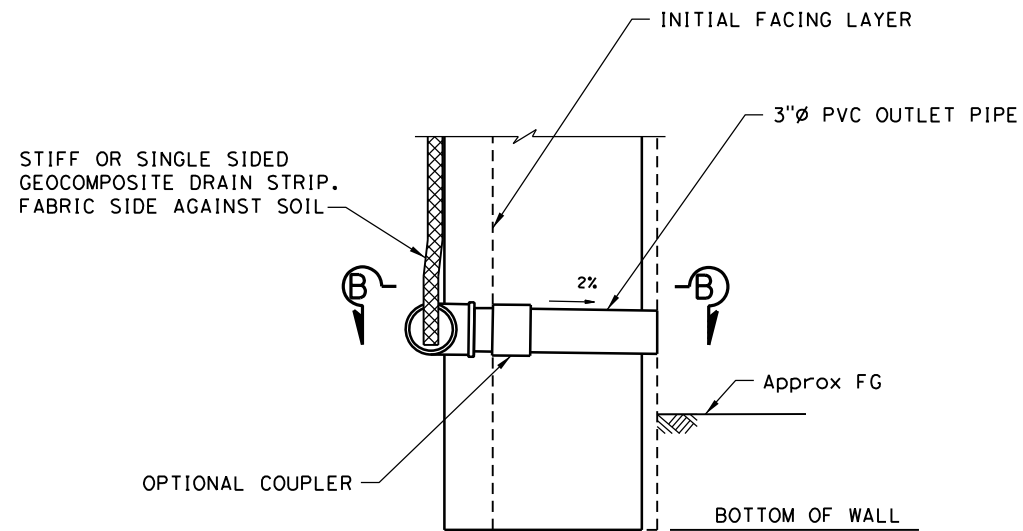
**WALL DRAIN DETAIL AT WEEPHOLE**  
**OPTION A**  
No scale



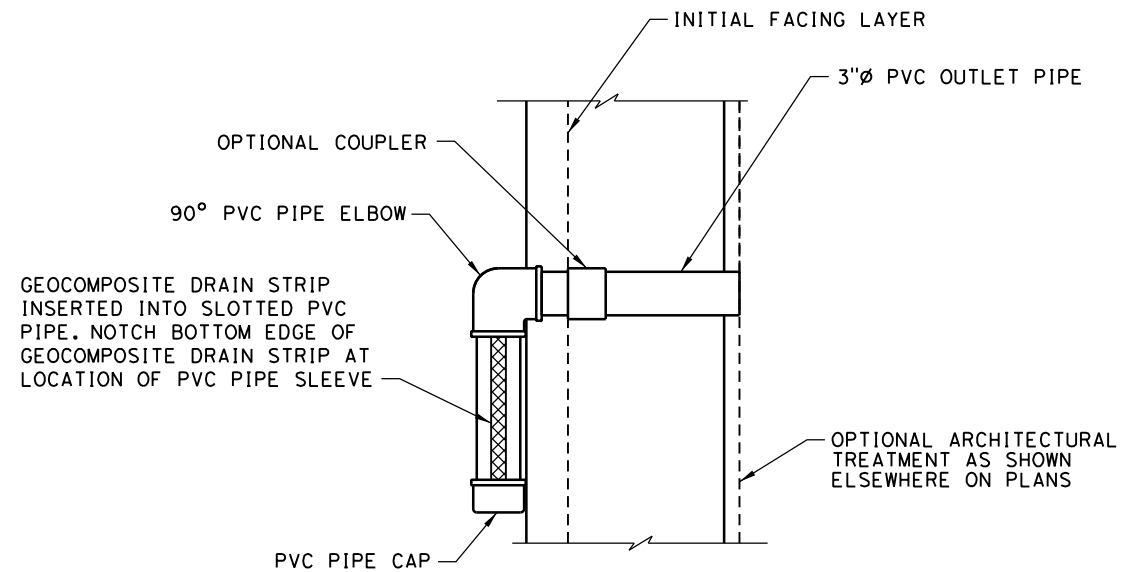
**VIEW A-A**  
No scale

**NOTES:**

- ELEVATION OF DRAINS AND WEEPHOLES AS SHOWN ELSEWHERE ON PLANS.



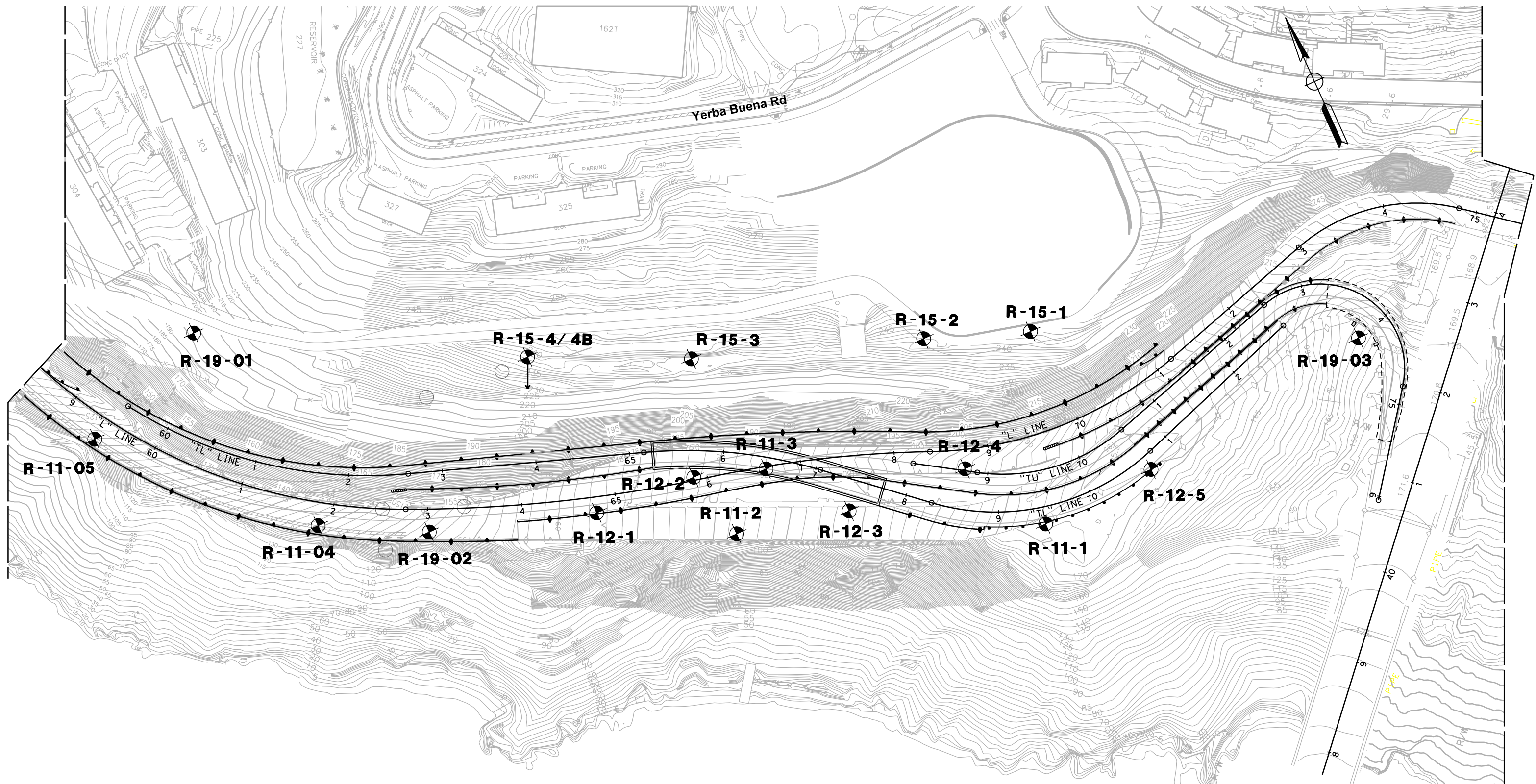
**WALL DRAIN DETAIL AT WEEPHOLE**  
**OPTION B**  
No scale



**SECTION B-B**  
No Scale

**WALL DRAIN DETAILS**  
SCALE: AS SHOWN

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b>  7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter
			CHECKED BY R. SENNETT		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1\RW1_05_20_DTL.dgn
			SUPERVISOR R. SENNETT		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				CONTRACT NO.
			DATE 9/6/2019		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				SHEET NAME RW1-20
BORDER LAST REVISED 9/9/2015			RELATIVE BORDER SCALE IS IN INCHES						LAST REVISION 9/6/2019	DATE PLOTTED => 9/6/2019 TIME PLOTTED => 10:15:30 AM



R-XX-01 BORING - SEE LOG OF TEST BORING SHEETS

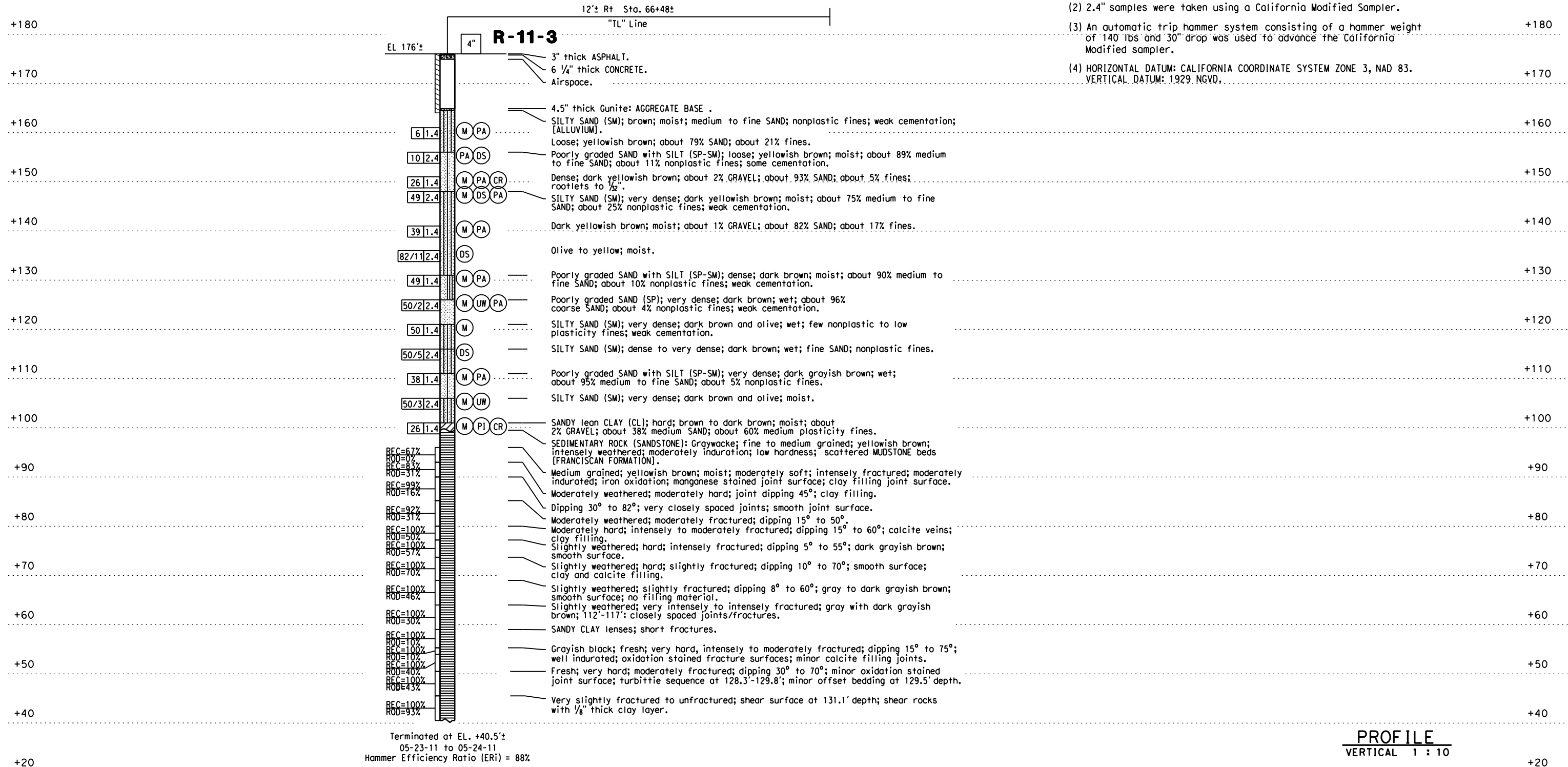
**LOG OF TEST BORINGS**  
**1 OF 9**  
 SCALE: 1" = 50'

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	DESIGNED BY: J. CASTLE			07/27/19	REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => kaiwang
			DRAWN BY: B. AMBRIZ CHECKED BY: M. KAPUSKAR APPROVED BY: M. KAPUSKAR								PROJECT DESCRIPTION
BORDER LAST REVISED 1/20/2019			PLANS APPROVAL DATE	EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			SHEET NAME: RW1-22 SHEET NO.: TOTAL SHEETS:		LAST REVISION: 1-20-19 DATE PLOTTED => 11/15/2019 TIME PLOTTED => 10:49:31 AM		



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



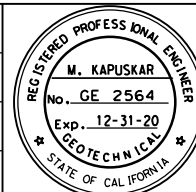
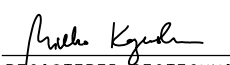



**PROFILE**  
VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW1-22

## LOG OF TEST BORINGS

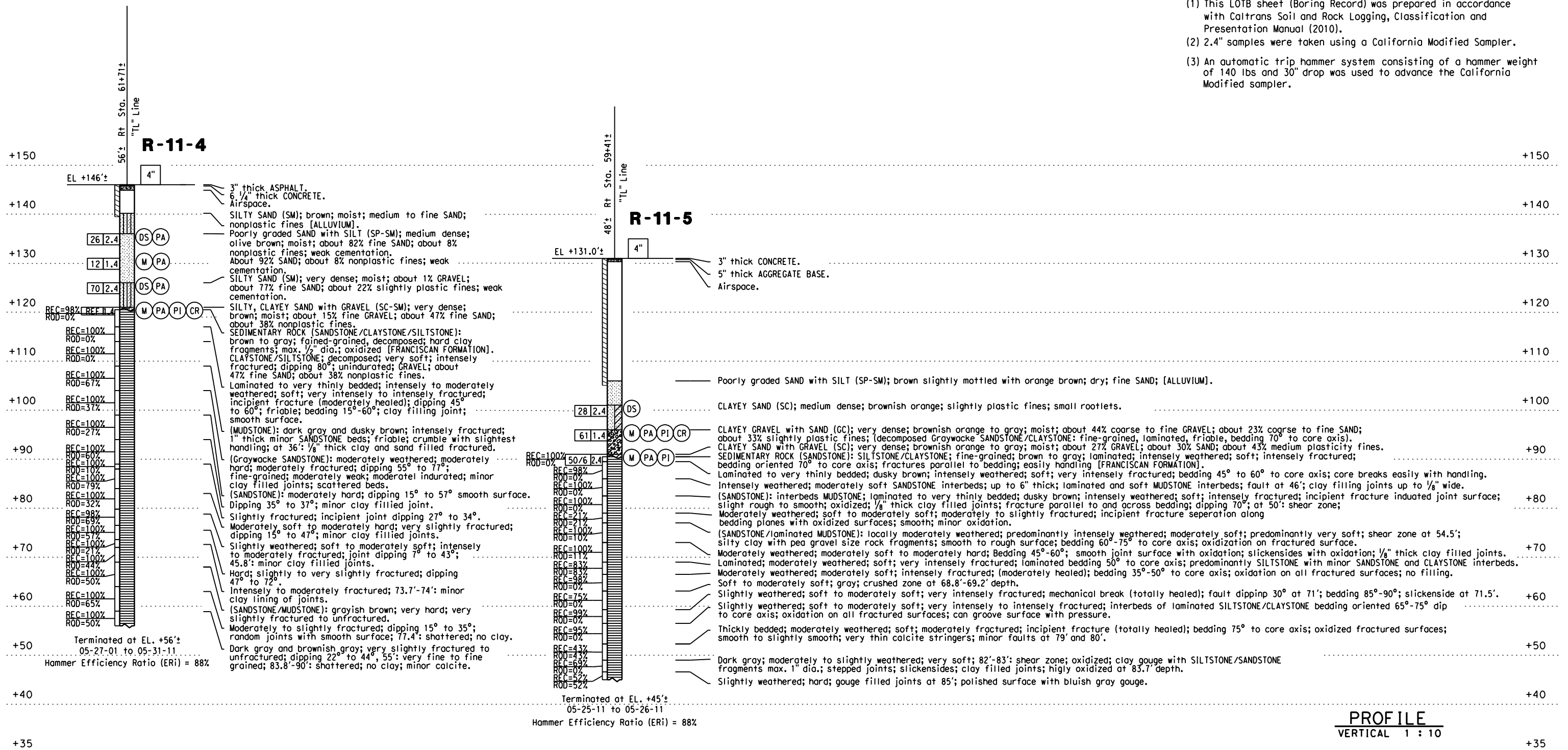
### 2 of 9

G. BUTLER, J. CASTLE, M. HOSHIYAMA  
FIELD INVESTIGATION BY:

REVISED BY  DATE REVISED  	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1</b>	DESIGNED BY: J. CASTLE  DRAWN BY: K. THANT  CHECKED BY: A. KORKOS  APPROVED BY: M. KAPUSKAR		 07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eearthmech.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\NRW1 CONTRACT NO.  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">SHEET NAME</th> <th style="width: 33%;">SHEET NO.</th> <th style="width: 33%;">TOTAL SHEETS</th> </tr> <tr> <td style="text-align: center;">RW1-23</td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> </table>	SHEET NAME	SHEET NO.	TOTAL SHEETS	RW1-23		
SHEET NAME	SHEET NO.	TOTAL SHEETS												
RW1-23														
BORDER LAST REVISED 1/20/2019		RELATIVE BORDER SCALE IS IN INCHES 		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">LAST REVISION</th> <th style="width: 33%;">DATE PLOTTED =&gt;</th> <th style="width: 33%;">TIME PLOTTED =&gt;</th> </tr> <tr> <td style="text-align: center;">1-20-19</td> <td style="text-align: center;">11/15/2019</td> <td style="text-align: center;">3:36:11 PM</td> </tr> </table>		LAST REVISION	DATE PLOTTED =>	TIME PLOTTED =>	1-20-19	11/15/2019	3:36:11 PM	
LAST REVISION	DATE PLOTTED =>	TIME PLOTTED =>												
1-20-19	11/15/2019	3:36:11 PM												

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.



PROFILE  
VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW1-22

**LOG OF TEST BORINGS**  
**3 of 9**

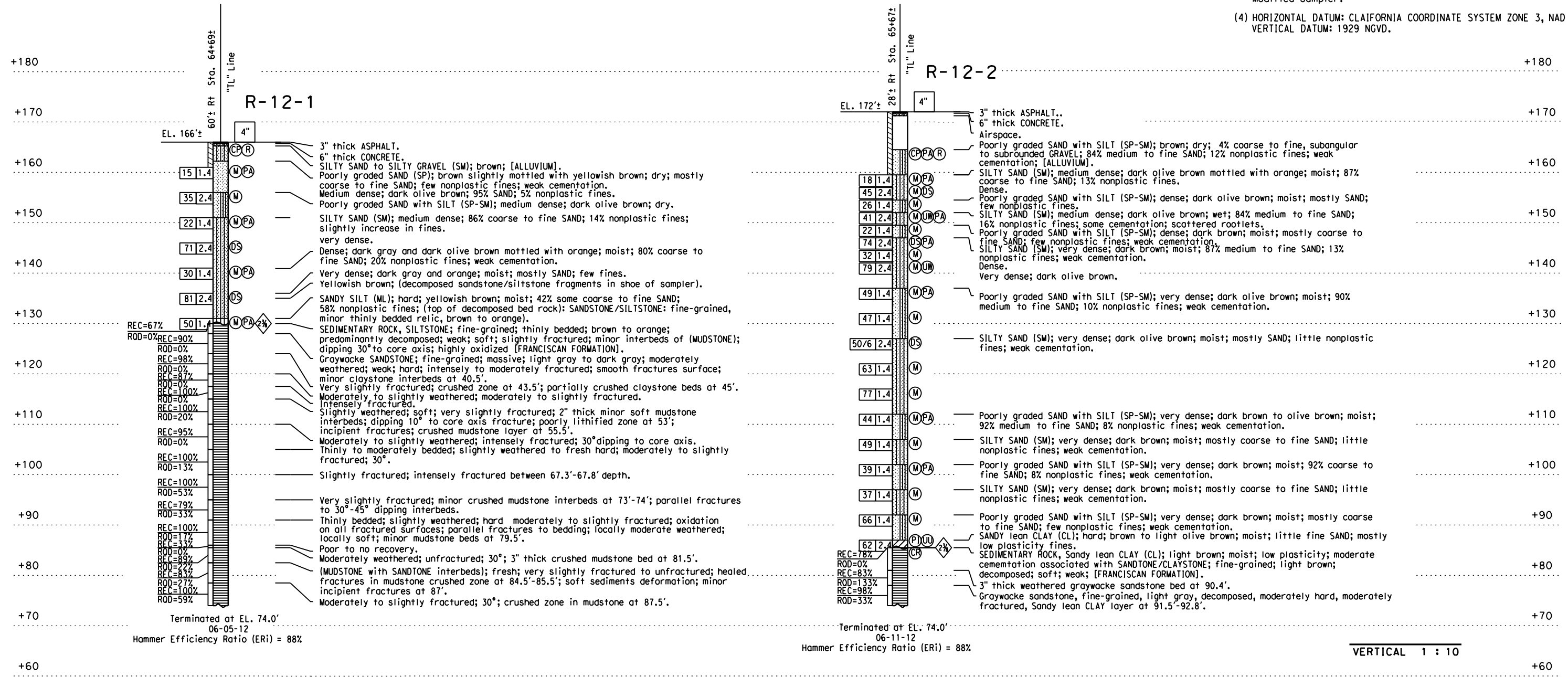
G. BUTLER, J. CASTLE  
FIELD INVESTIGATION BY:

REVISED BY: _____ DATE REVISED: _____		DESIGNED BY: <b>J. CASTLE</b>			07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.earthmech.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1		
PROJECT DESCRIPTION <b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES RETAINING WALL NO. 1</b>		CHECKED BY: <b>A. KORKOS</b>							CONTRACT NO. _____		
BORDER LAST REVISED 1/20/2019		APPROVED BY: <b>M. KAPUSKAR</b>		PLANS APPROVAL DATE _____			SHEET NAME: <b>RW1-24</b>   SHEET NO. _____   TOTAL SHEETS _____				
				RELATIVE BORDER SCALE IS IN INCHES: 0 1 2 3			LAST REVISION: 1-20-19   DATE PLOTTED => 11/15/2019   TIME PLOTTED => 3:36:37 PM				

EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



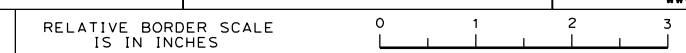
VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW1-22

**LOG OF TEST BORINGS**  
**4 of 9**

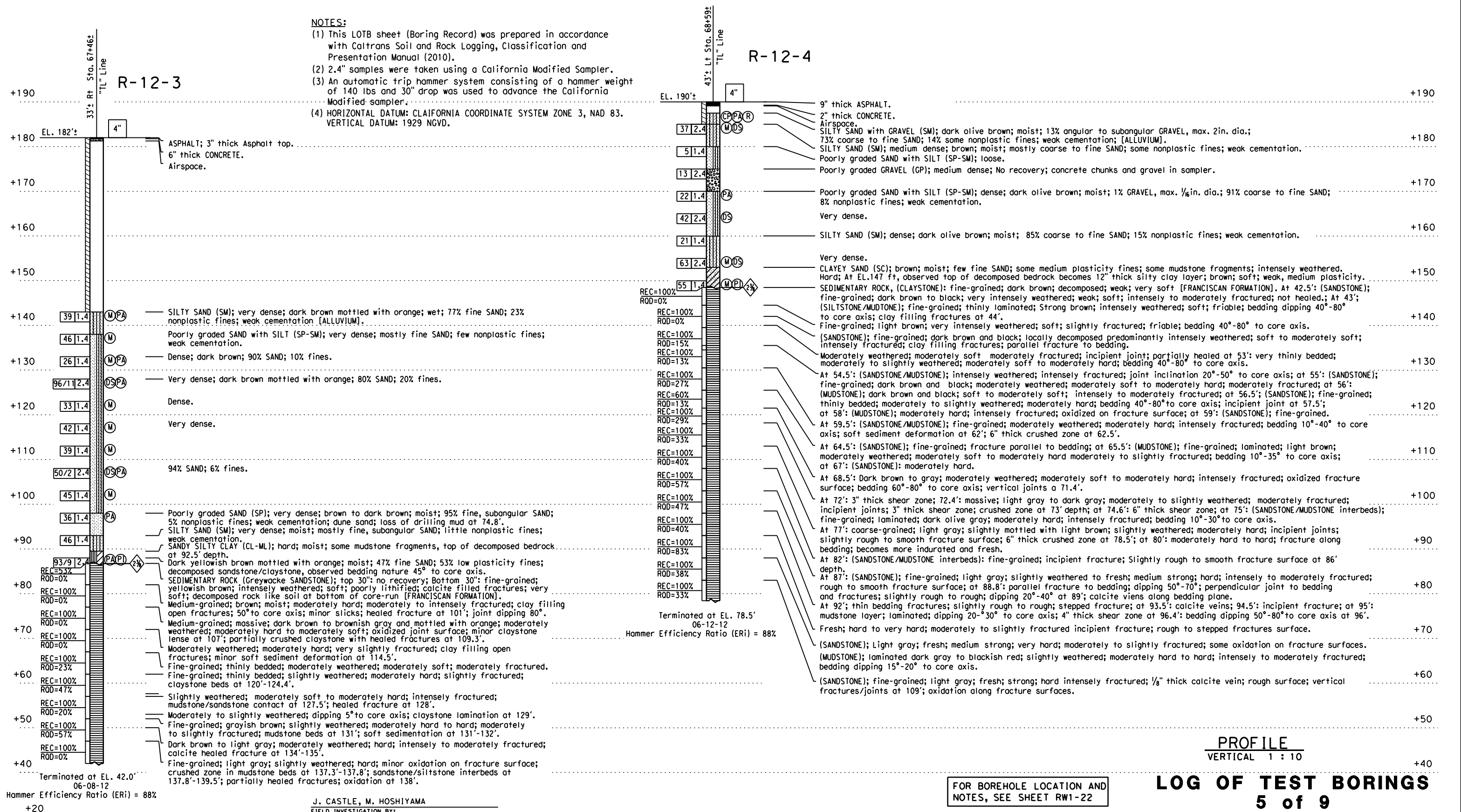
REVISED BY DATE REVISED		DESIGNED BY: J. CASTLE		M. KAPUSKAR REG. PROFESSIONAL ENGINEER No. GE 2564 Exp. 12-31-20 GEO. TECHNICAL STATE OF CALIFORNIA		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE		3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eartthmech.com		USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1	
YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1		DRAWN BY: K. THANT		CHECKED BY: A. KORKOS		APPROVED BY: M. KAPUSKAR		PLANS APPROVAL DATE		SHEET NAME RW1-25	
PROJECT DESCRIPTION		EM SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SHEET NO.		TOTAL SHEETS		LAST REVISION 1-20-19		DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:37:01 PM	

BORDER LAST REVISED 1/20/2019





- NOTES:**
- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
  - (2) 2.4" samples were taken using a California Modified Sampler.
  - (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
  - (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



PROFILE  
 VERTICAL 1 : 10

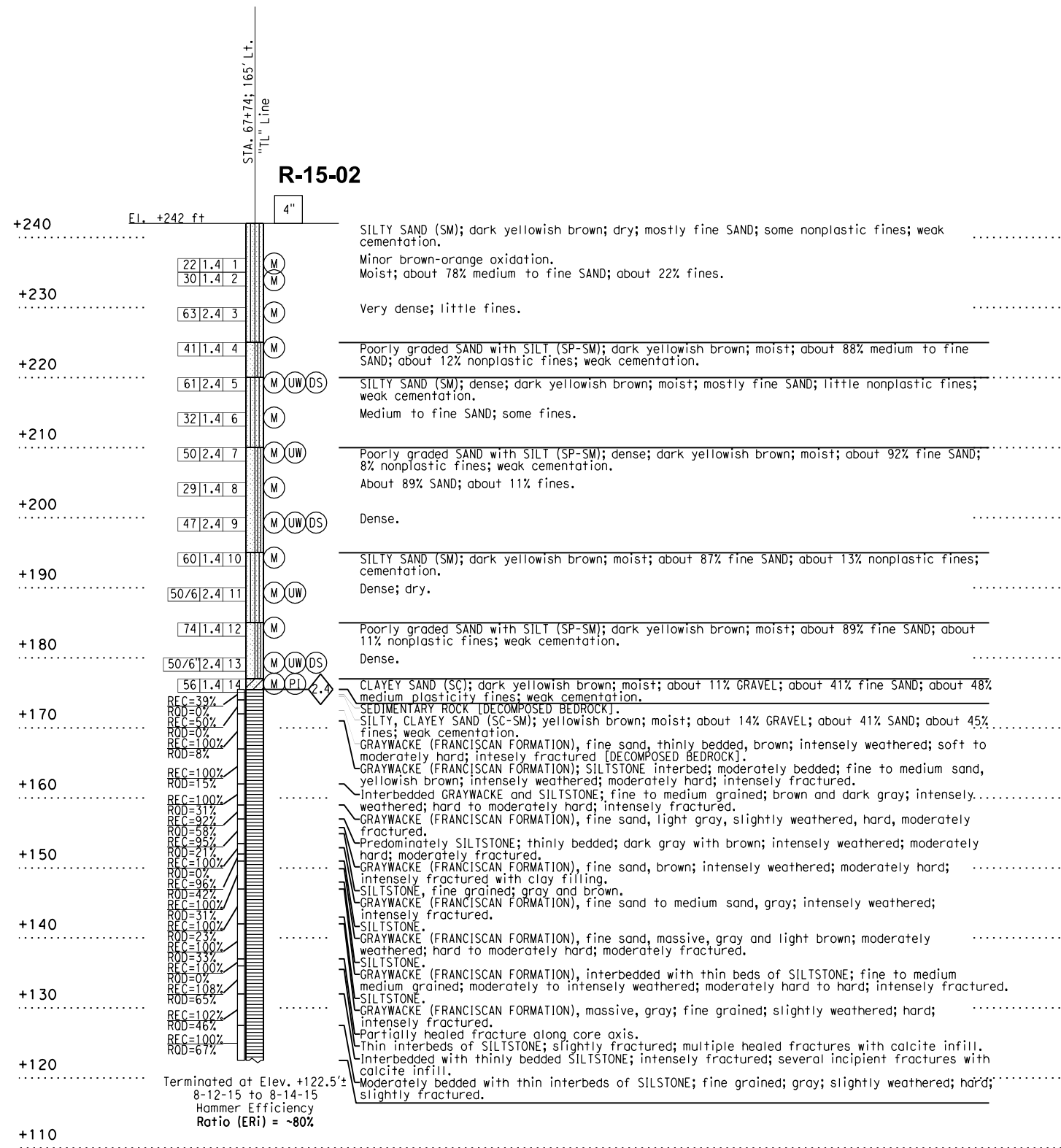
**LOG OF TEST BORINGS**  
 5 of 9

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW1-22

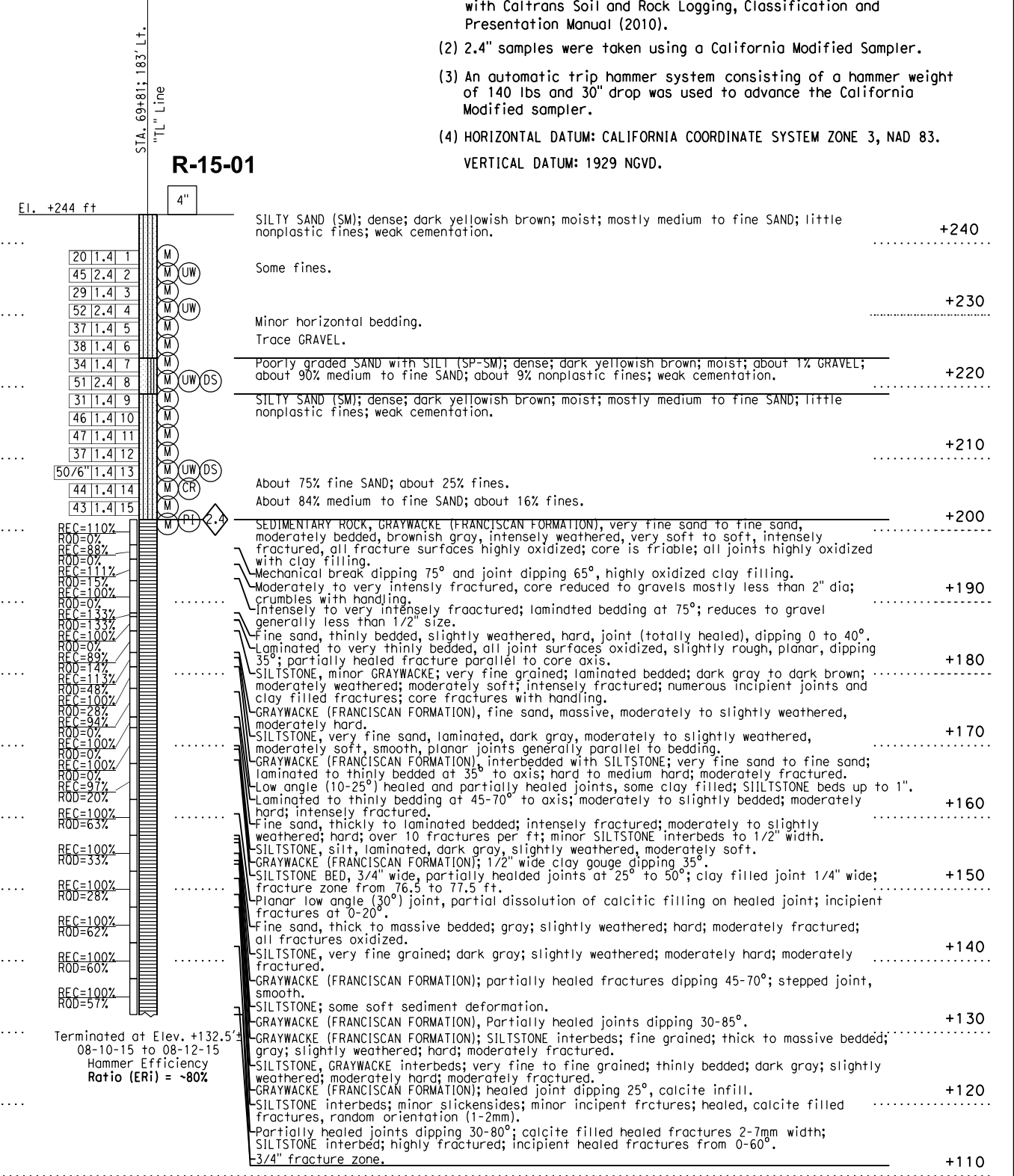
REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE			07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => kaiwang
			DRAWN BY: K. THANT							CONTRACT NO.
			CHECKED BY: A. KORKOS							SHEET NAME
		APPROVED BY: M. KAPUSKAR	PLANS APPROVAL DATE	RW1-26		LAST REVISION	DATE PLOTTED => 11/15/2019			
BORDER LAST REVISED 1/20/2019		RELATIVE BORDER SCALE IS IN INCHES		0 1 2 3			TIME PLOTTED => 3:37:26 PM			

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



**PROFILE**  
VERTICAL 1"=10'

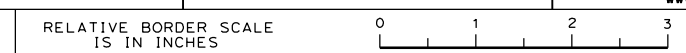


FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW1-22

**LOG OF TEST BORINGS**  
6 of 9

REVISED BY DATE REVISED PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1	DESIGNED BY: <b>J. CASTLE</b> DRAWN BY: <b>B. AMBRIZ</b> CHECKED BY: <b>C.T. YANG</b> APPROVED BY: <b>M. KAPUSKAR</b>		 07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorhthmech.com		USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW1-22.dwg CONTRACT NO. SHEET NAME: RW1-27 SHEET NO.: 6 TOTAL SHEETS: 9 LAST REVISION: 1-20-19 DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:37:52 PM
--	--	--	--	---	--	---

BORDER LAST REVISED 1/20/2019



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



J. CASTLE, T. MAR  
FIELD INVESTIGATION BY:

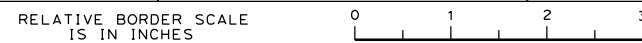
Terminated at Elev. +97.0'  
8-15-15 to 8-18-15  
Hammer Efficiency Ratio (ERi) = ~80%

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW1-22

PROFILE  
VERTICAL 1"=10'

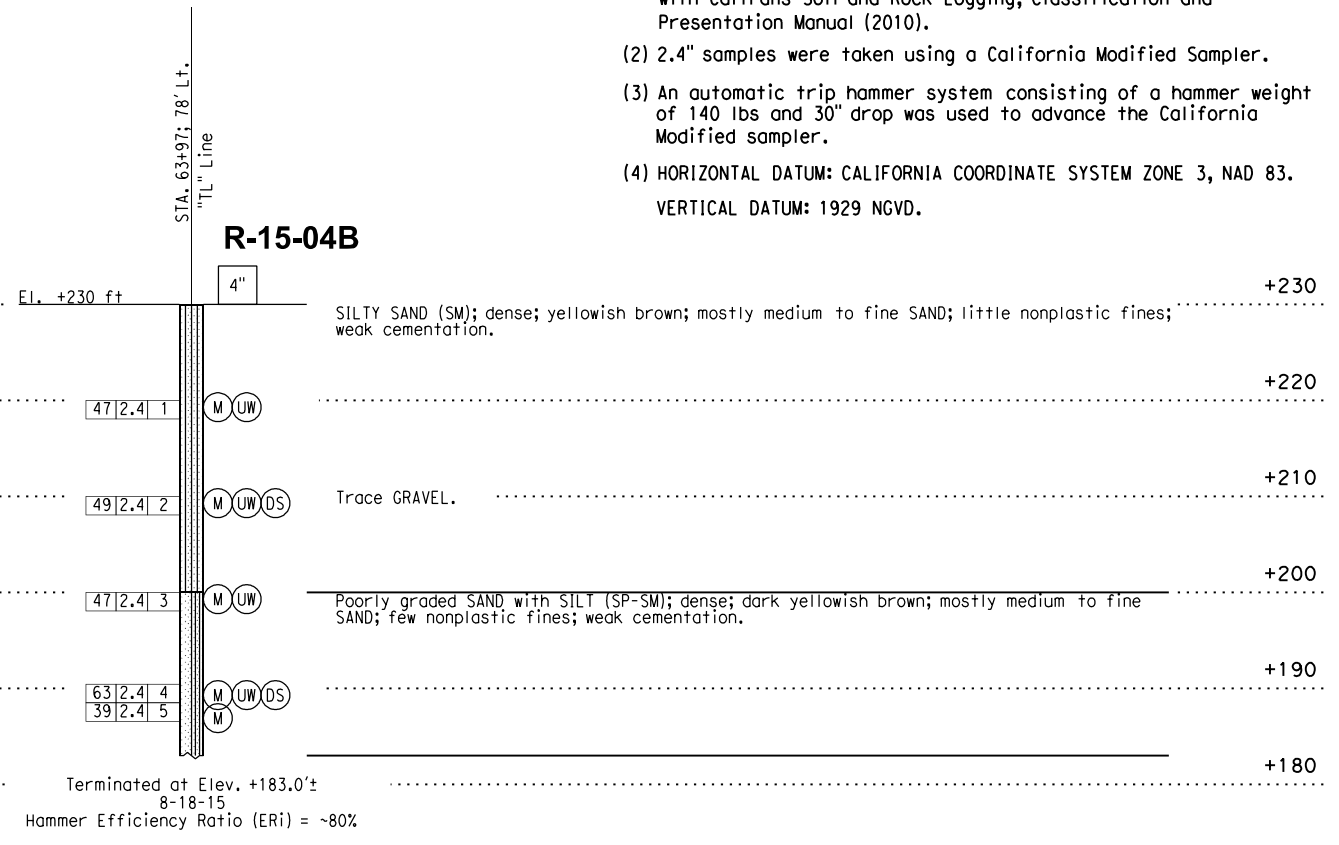
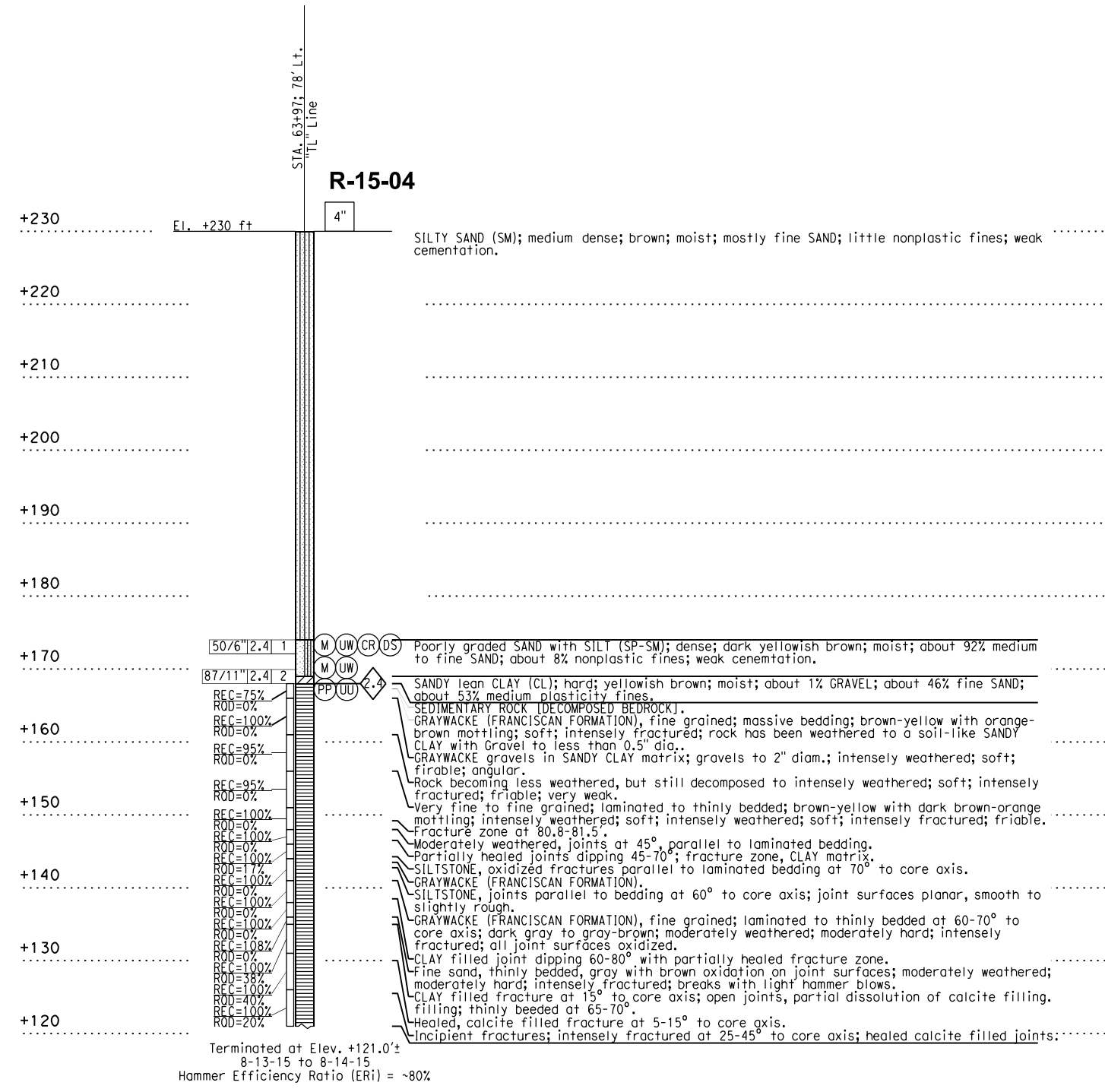
**LOG OF TEST BORINGS**  
7 of 9

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eearthmech.com			USERNAME => kaiwang		
			DRAWN BY: B. AMBRIZ						CONTRACT NO.		
			CHECKED BY: C.T. YANG						SHEET NAME	SHEET NO.	TOTAL SHEETS
			APPROVED BY: M. KAPUSKAR						RW1-28		
BORDER LAST REVISED 1/20/2019			PLANS APPROVAL DATE	EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			LAST REVISION: 1-20-19 DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:38:16 PM				



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



**PROFILE**  
VERTICAL 1"=10'

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW1-22

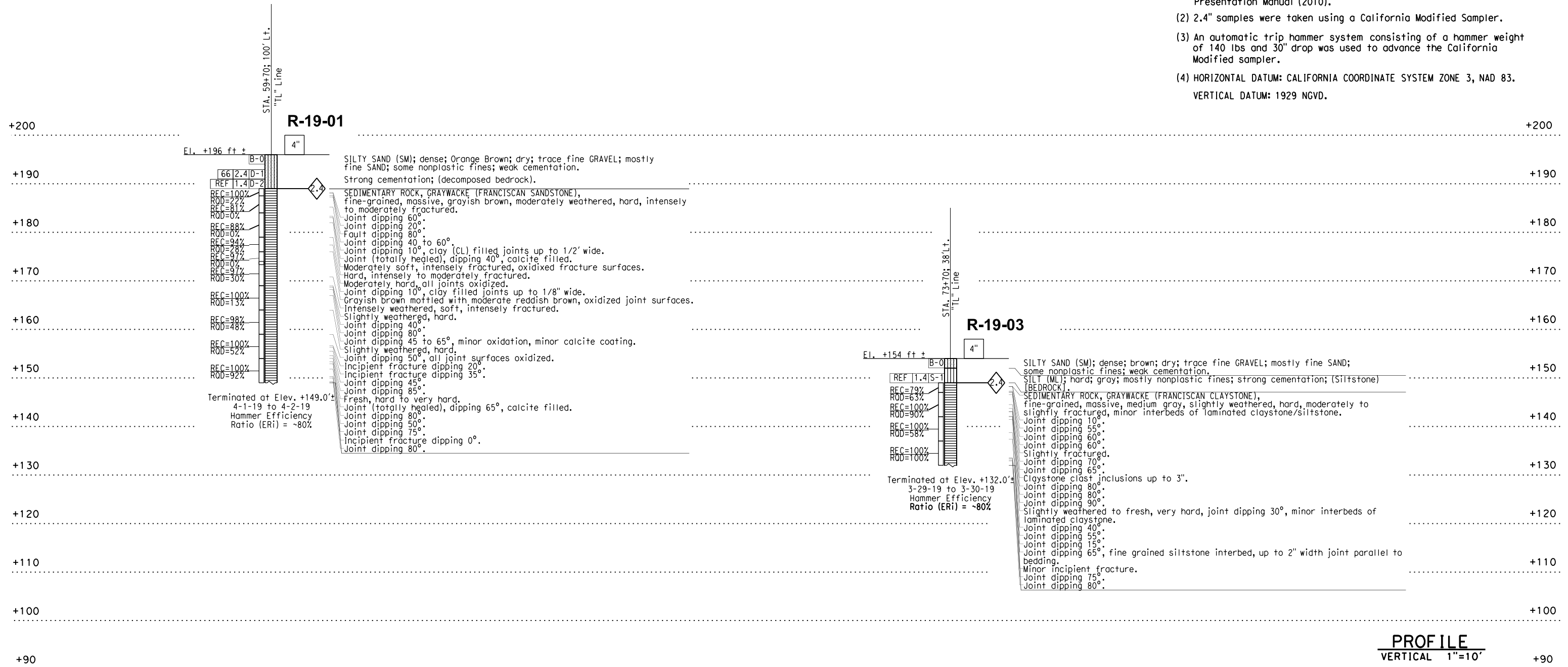
**LOG OF TEST BORINGS**  
8 of 9

J. CASTLE, T. MAR  
FIELD INVESTIGATION BY:

REVISOR	DATE	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 1</b> PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE			07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => kaiwang						
			DRAWN BY: B. AMBRIZ												CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\NRW1	
			CHECKED BY: C.T. YANG													CONTRACT NO.
			APPROVED BY: M. KAPUSKAR													SHEET NAME
BORDER LAST REVISED 1/20/2019			PLANS APPROVAL DATE	I SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		1-20-19		SHEET NO.		TOTAL SHEETS						
										DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:38:40 PM						

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



**PROFILE**  
 VERTICAL 1"=10'

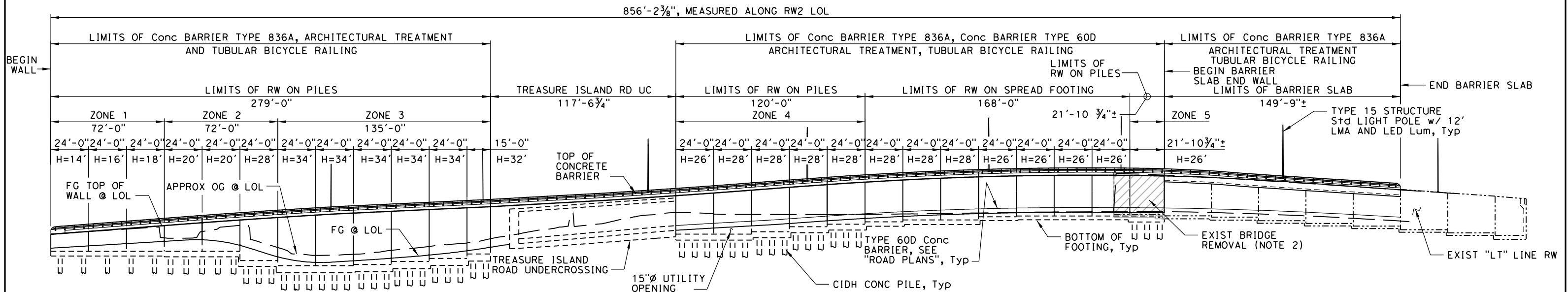
FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW1-22

**LOG OF TEST BORINGS**  
 9 of 9

REVISED BY: _____ DATE REVISED: _____		DESIGNED BY: <b>J. CASTLE</b>			REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE 07/27/19	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.earthmech.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\NRW1		
PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES RETAINING WALL NO. 1		CHECKED BY: <b>C.T. YANG</b>							CONTRACT NO. _____		
APPROVED BY: <b>M. KAPUSKAR</b>		PLANS APPROVAL DATE _____		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			SHEET NAME: RW1-30 SHEET NO.: _____ TOTAL SHEETS: _____		LAST REVISION: 1-20-19 DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:39:03 PM		

\$FREQUENT





DATUM Elev 100.00

64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00

**CIDH CONCRETE PILE TABLE**

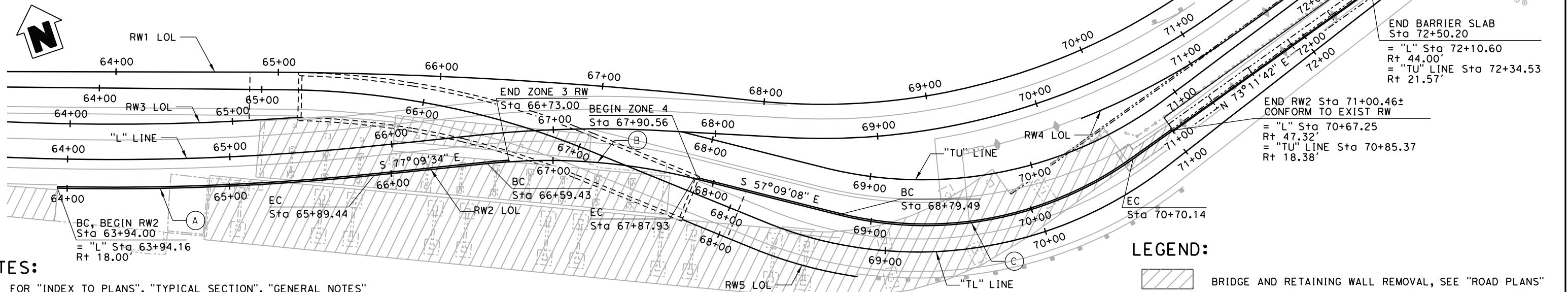
ZONE	SIZE	PERMANENT STEEL CASING		STEEL SHEAR PIN	
		SIZE	LENGTH	SIZE	LENGTH
1	30" $\phi$	N/A	N/A	N/A	N/A
2	36" $\phi$	N/A	N/A	N/A	N/A
3	36" $\phi$	36" $\phi$ X 1.25"	ENTIRE LENGTH	8 XX STRONG	7'-0"
4	36" $\phi$	36" $\phi$ X 1.25"	35'-0"	N/A	N/A
5	36" $\phi$	N/A	N/A	N/A	N/A

**DEVELOPED ELEVATION (ALONG RW2 LOL)**

1" = 30'

**RW CURVE DATA TABLE**

NO.	R	$\Delta$	T	L
(A)	1562.00'	7°10'08.20"	97.85'	195.44'
(B)	368.00'	20°00'26"	64.91'	128.50'
(C)	220.00'	49°39'10"	101.78'	190.65'



- NOTES:**
- FOR "INDEX TO PLANS", "TYPICAL SECTION", "GENERAL NOTES" AND "STANDARD PLANS", SEE "GENERAL PLAN No. 2" AND "GENERAL PLAN No. 3" SHEETS.
  - NOT ALL EXISTING STRUCTURE REMOVAL LIMITS SHOWN. SEE "ROAD PLANS" FOR LIMITS OF EXISTING BRIDGE AND RETAINING WALL REMOVAL.

**PLAN**

1" = 30'

**LEGEND:**

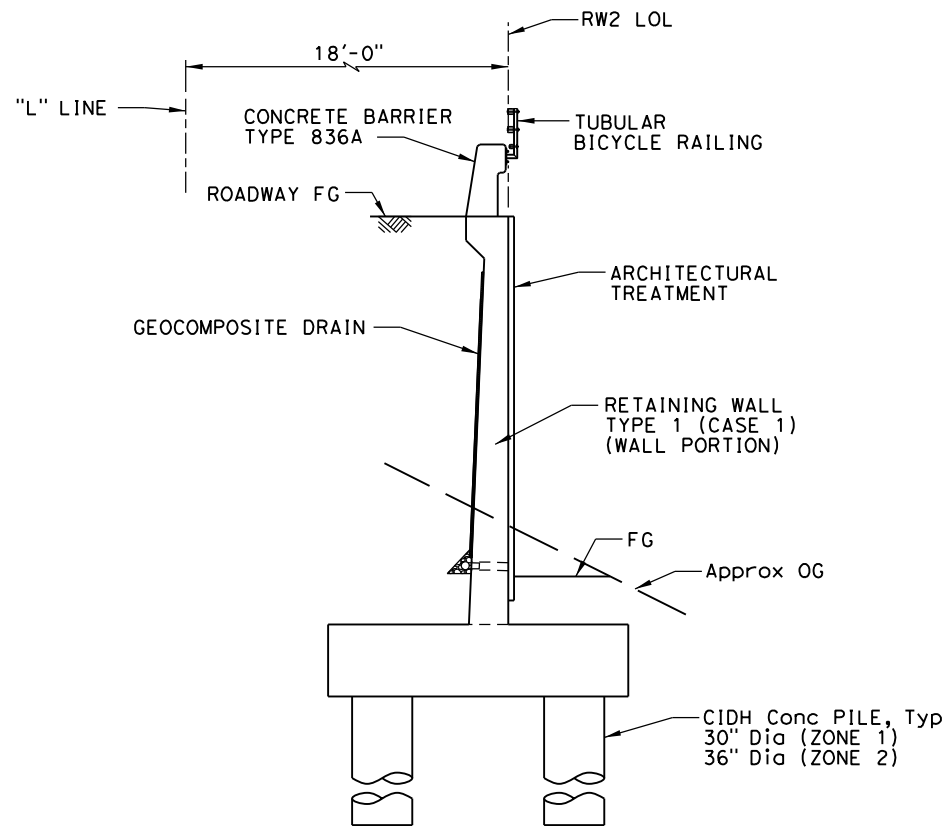
- BRIDGE AND RETAINING WALL REMOVAL, SEE "ROAD PLANS"
- EXISTING STRUCTURE

**GENERAL PLAN No. 1**  
SCALE: 1" = 30'

REVISED BY DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2	CALCULATED/ DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 11/14/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	<p><b>MGE ENGINEERING, INC.</b></p> <p>7415 GREENHAVEN DRIVE, SUITE 100          SACRAMENTO, CA 95831          (916) 421-1000 (PHONE)          (916) 421-1002 (FAX)          www.mgeeng.com</p>			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW2\RW2_01_GPI.dgn CONTRACT NO. SHEET NAME SHEET NO. TOTAL SHEETS RW2-1 LAST REVISION DATE PLOTTED => 11/14/2019 TIME PLOTTED => 2:51:45 PM
----------------------------	--	---	--	---	---	--	--	--

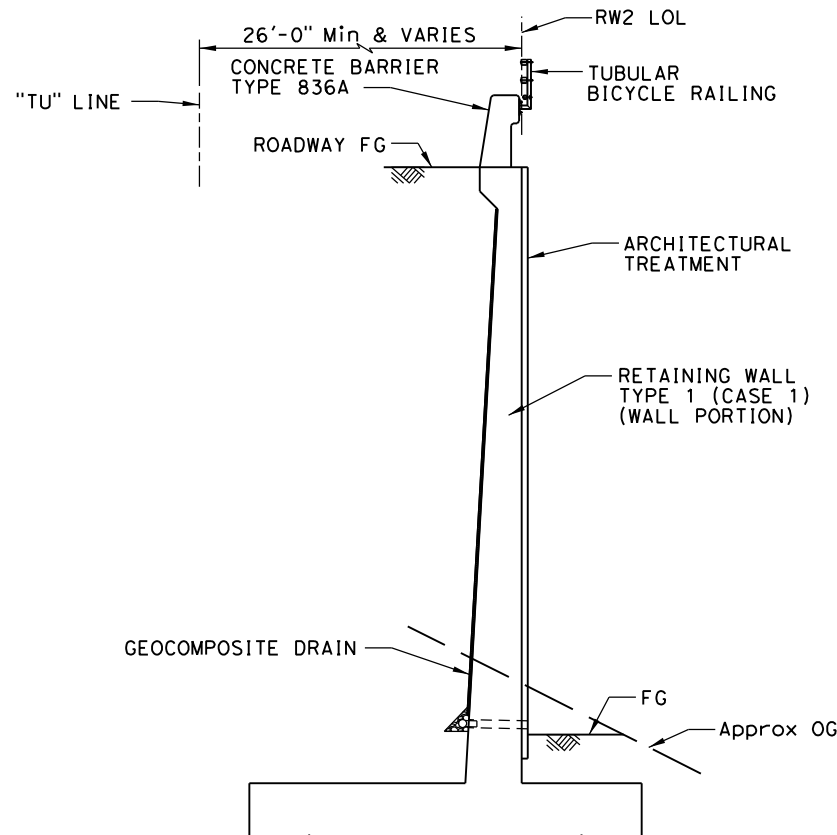
BORDER LAST REVISED 9/9/2015





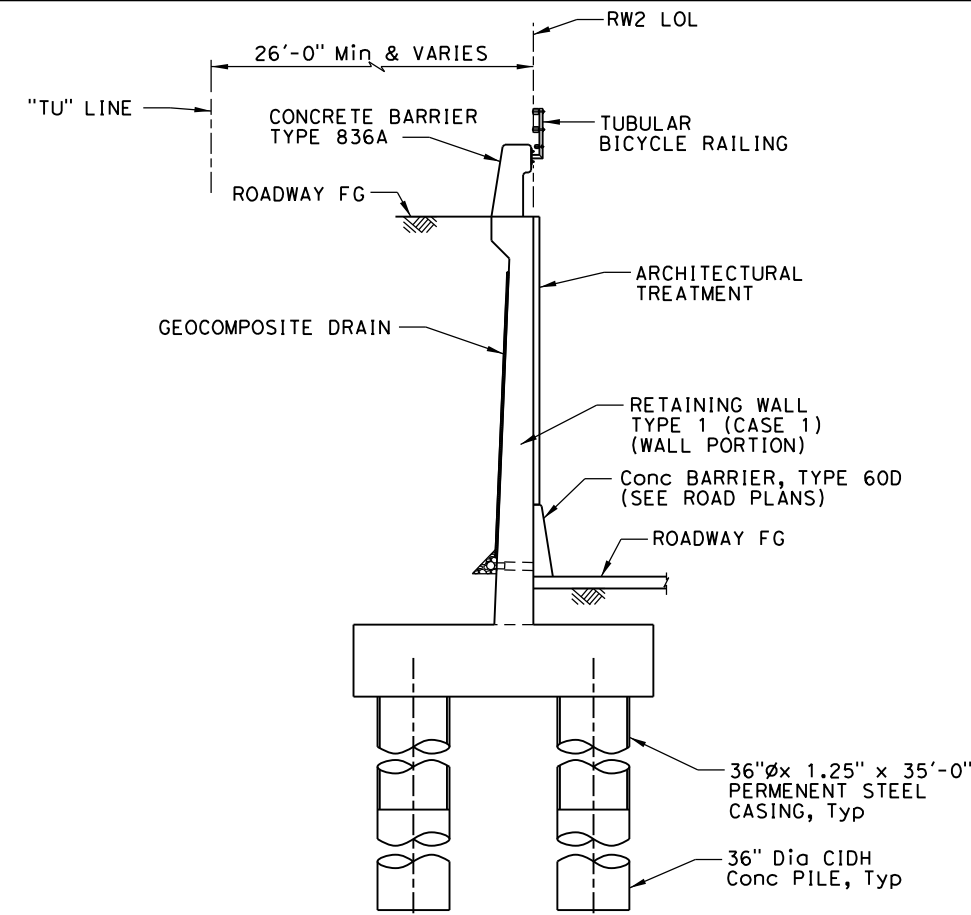
TYPICAL SECTION (ZONE 1 AND ZONE 2)

NTS



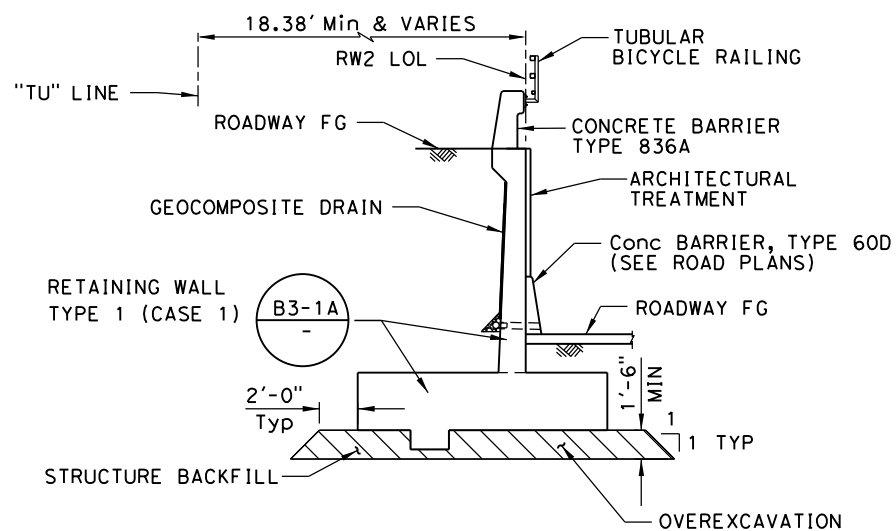
TYPICAL SECTION (ZONE 3)

NTS



TYPICAL SECTION (ZONE 4)

NTS



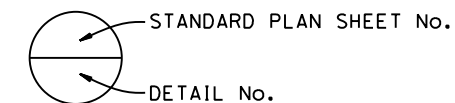
TYPICAL SECTION (WALL ON SPREAD FOOTING)

NTS

STANDARD PLANS

DATED 2018

- A3A ABBREVIATIONS (SHEET 1 OF 3)
- A3B ABBREVIATIONS (SHEET 2 OF 3)
- A3C ABBREVIATIONS (SHEET 3 OF 3)
- A10A LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
- A10B LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
- A10C LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
- A10D LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
- A10E LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
- A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL
- B0-3 BRIDGE DETAILS
- B3-1A RETAINING WALL TYPE 1 (CASE 1)
- B3-5 RETAINING WALL DETAILS NO. 1
- B3-6 RETAINING WALL DETAILS NO. 2
- RSP B11-79 CONCRETE BARRIER TYPE 836 DETAILS NO. 1
- RSP B11-80 CONCRETE BARRIER TYPE 836 DETAILS NO. 2



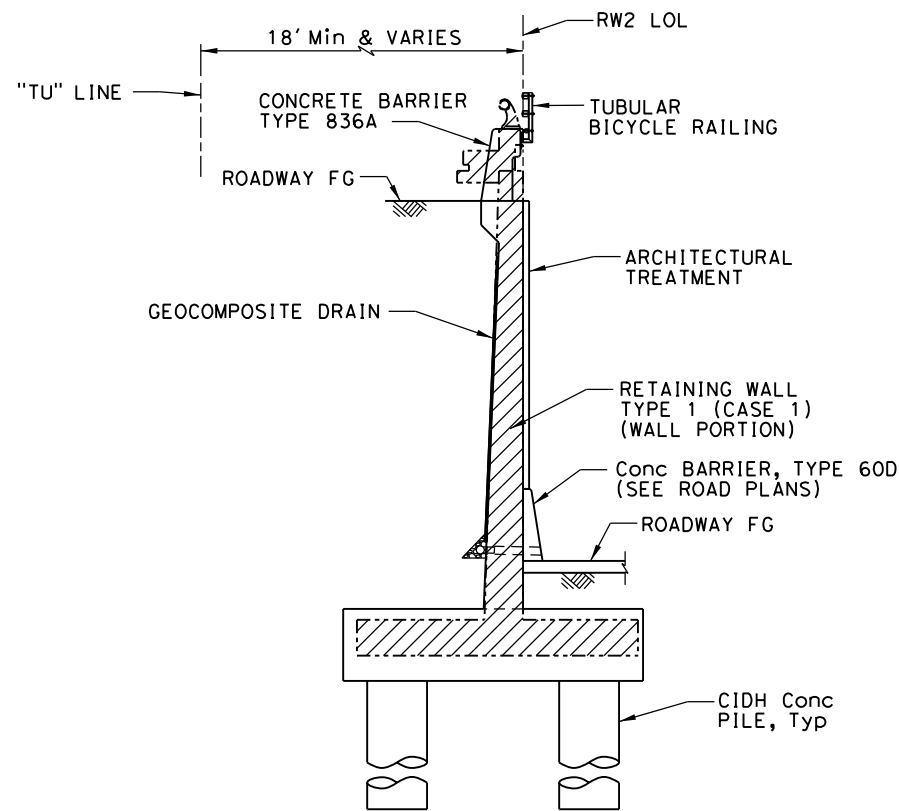
GENERAL PLAN No. 2  
SCALE: AS SHOWN

REVISOR	DATE	DESCRIPTION	CALCULATED/DESIGNED BY Y. DENG	CHECKED BY R. SENNETT	DATE 11/14/2019	REGISTERED PROFESSIONAL ENGINEER R. E. SENNETT IV No. 3976 Exp. 12/31/2020 STRUCTURAL STATE OF CALIFORNIA	REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE	PLANS APPROVAL DATE	MGE ENGINEERING, INC. 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY	SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO	USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2\RW2_02_GP2.dgn CONTRACT NO.
PROJECT DESCRIPTION		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2										
SHEET NAME		RW2-2		SHEET NO.		TOTAL SHEETS						
LAST REVISION		DATE PLOTTED => 11/14/2019		TIME PLOTTED => 6:32:30 PM								

P:\521 YBI Retaining Walls\06 CAD\Structure\RW2\RW2\_02\_GP2.dgn

BORDER LAST REVISED 9/9/2015





TYPICAL SECTION (ZONE 5)

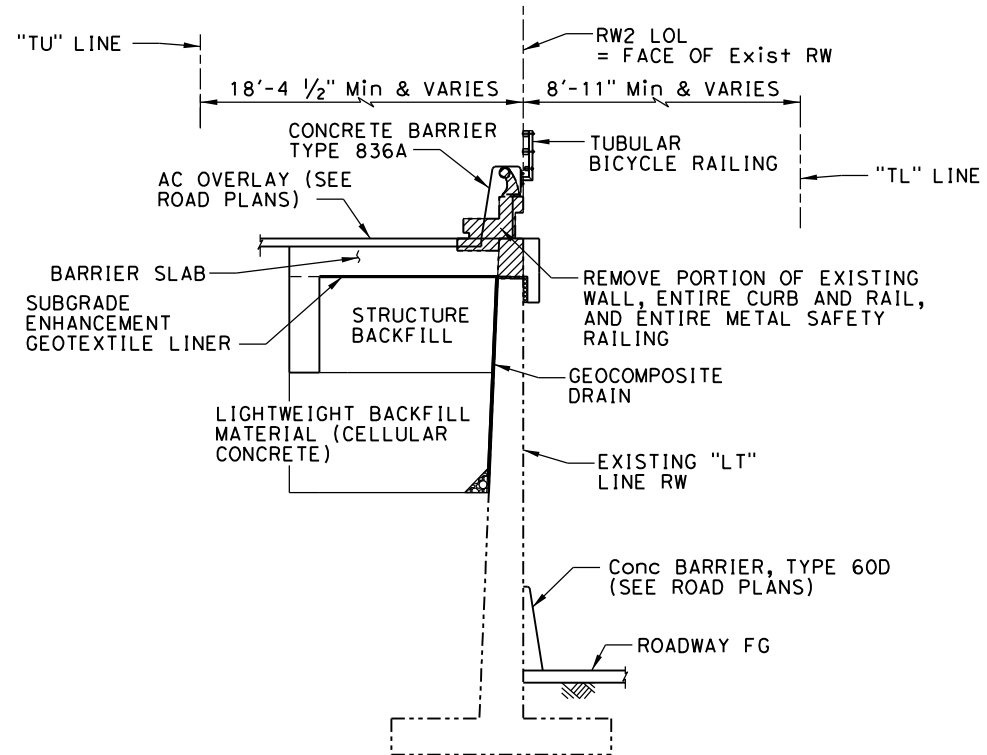
NTS

LEGEND:

- BRIDGE AND RETAINING WALL REMOVAL, SEE "ROAD PLANS"
- EXISTING STRUCTURE

BARRIER SLAB CONSTRUCTION NOTES:

1. CONSTRUCT SHORING AS NECESSARY.
2. PROTECT EXISTING SHORING SYSTEM BEHIND THE EXSITING "LT" RETAINING WALL.
3. EXISTING SHORING SYSTEM IS MADE UP OF 18WF105 STEEL PILING AND 2" x 12" OR 3" x 14" TIMBER LAGGING PER AS-BUILT PLANS. REFER TO AS-BUILT PLANS FOR MORE INFORMATION.
4. THE EXISTING SHORING SYSTEM MAY BE REMOVED TO NO LOWER THAN 6 INCHES BELOW THE PROPOSED BARRIER SLAB STRUCTURE LIMIT UPON CONFLICT WITH THE BARRIER SLAB CONSTRUCTION.
5. THE CONTRACTOR SHALL EVALUATE THE INTEGRITY OF THE UNREMOVED PORTION OF THE EXISTING SHORING SYSTEM AND RESTORE THE SYSTEM TO ITS WORKING CONDITION.



TYPICAL SECTION (AT BARRIER SLAB)

NTS

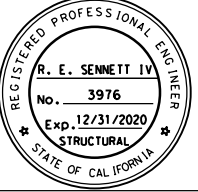



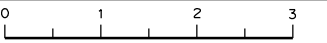
INDEX TO PLANS

SHEET NO.	TITLE
RW2-1	GENERAL PLAN No. 1
RW2-2	GENERAL PLAN No. 2
RW2-3	GENERAL PLAN No. 3
RW2-4	FOUNDATION PLAN No. 1
RW2-5	FOUNDATION PLAN No. 2
RW2-6	FOUNDATION PLAN No. 3
RW2-7	RETAINING WALL LAYOUT No. 1
RW2-8	RETAINING WALL LAYOUT No. 2
RW2-9	RETAINING WALL LAYOUT No. 3
RW2-10	RETAINING WALL DETAILS No. 1
RW2-11	RETAINING WALL DETAILS No. 2
RW2-12	RETAINING WALL DETAILS No. 3
RW2-13	RETAINING WALL DETAILS No. 4
RW2-14	RETAINING WALL DETAILS No. 5
RW2-15	RETAINING WALL DETAILS No. 6
RW2-16	RETAINING WALL DETAILS No. 7
RW2-17	RETAINING WALL DETAILS No. 8
RW2-18	LOG OF TEST BORING No. 1 OF 7
RW2-19	LOG OF TEST BORING No. 2 OF 7
RW2-20	LOG OF TEST BORING No. 3 OF 7
RW2-21	LOG OF TEST BORING No. 4 OF 7
RW2-22	LOG OF TEST BORING No. 5 OF 7
RW2-23	LOG OF TEST BORING No. 6 OF 7
RW2-24	LOG OF TEST BORING No. 7 OF 7

GENERAL NOTES  
LOAD AND RESISTANCE FACTOR DESIGN

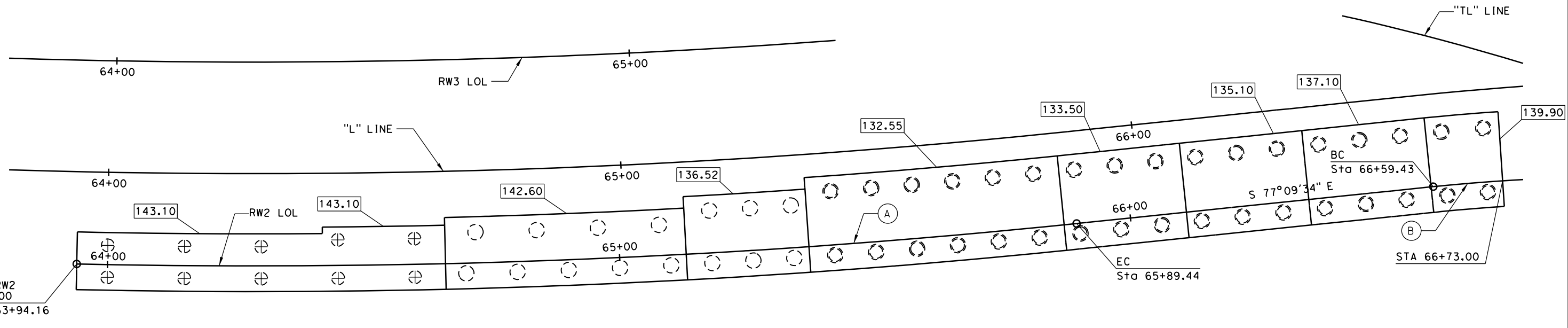
- DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATION 6TH EDITION AND CALTRANS AMENDMENTS, PREFACE, DATED MARCH, 2014 (EXISTING RETAINING WALL AT BARRIER SLAB IS EVALUATED PER SERVICE LOAD DESIGN METHOD CRITERIA)
- SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 1.7, APRIL 2013 (NOT APPLICABLE TO THE EXISTING RETAINING WALL AT BARRIER SLAB)
- DEAD LOAD: INCLUDES WEIGHT OF 75 PSF FOR STEM ARCHITECTURAL TREATMENT UP TO 6 INCHES
- LIVE LOAD: 72 pcf SURHCARGE
- SEISMIC LOAD: PEAK GROUND ACCELERATION (PGA) = 0.57g
- REINFORCED CONCRETE: f'c = 4,000 psi  
f'c = 5,000 psi (ZONE 3 AND 4 CIDH Conc PILES)  
fy = 60,000 psi  
fc = 1,400 psi (EXISTING RETAINING WALL)  
fs = 20,000 psi (EXISTING RETAINING WALL)
- CELLULAR CONCRETE: CLASS II  
MAXIMUM CAST DENSITY = 30 pcf  
MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS = 60 psi
- PERMANENT STEEL CASING: ASTM A252, GRADE 3(MOD), Fy = 50,000 psi
- STEEL SHEAR PIN: ASTM A500, GRADE B, Fy = 42,000 psi

GENERAL PLAN No. 3  
SCALE: AS SHOWN

REVISED BY  DATE REVISED  	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY Y. DENG CHECKED BY SUPERVISOR R. SENNETT DATE 11/15/2019		REGISTERED STRUCTURAL ENGINEER  PLANS SUBMITTAL DATE  PLANS APPROVAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-03_GP3.dgn CONTRACT NO.  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SHEET NAME</th> <th>SHEET NO.</th> <th>TOTAL SHEETS</th> </tr> <tr> <td style="text-align: center;">RW2-3</td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> </table>	SHEET NAME	SHEET NO.	TOTAL SHEETS	RW2-3		
SHEET NAME	SHEET NO.	TOTAL SHEETS												
RW2-3														
BORDER LAST REVISED 9/9/2015		RELATIVE BORDER SCALE IS IN INCHES 		LAST REVISION 11/15/2019 DATE PLOTTED => 11/15/2019 TIME PLOTTED => 11:18:06 AM										

P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-03\_GP3.dgn





### FOUNDATION PLAN

1" = 10'

### PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	AVERAGE BEDROCK CONTACT ELEVATION (ft)	AVERAGE SOCKET LENGTH (ft)
		COMPRESSION	TENSION				
H=14' (63+94 TO 64+18)	30" Dia CIDH	300	N/A	(a) 127 (c) 136 (d) 128	127	143	16
H=16' (64+18 TO 64+42)	30" Dia CIDH	380	N/A	(a) 125 (c) 130 (d) 127	125	137	12
H=18' 64+42 TO 64+66	30" Dia CIDH	480	N/A	(a) 119 (c) 127 (d) 124	119	134	15
H=20' 64+66 TO 64+90	36" Dia CIDH	430	N/A	(a) 118 (c) 125 (d) 126	118	132	14
H=20' 64+90 TO 65+14	36" Dia CIDH	460	N/A	(a) 109 (c) 117 (d) 114	109	124	15
H=28' 65+14 TO 65+38	36" Dia CIDH	620	10	(a) 93 (b) 125 (c) 108 (d) 106	93	102	9
H=34' 65+38 TO 65+86	36" Dia CIDH WITH PERMANENT STEEL CASING	900	70	(a) 71 (b) 118 (c) 96 (d) 93	71	80	9
H=34' 65+86 TO 66+10	36" Dia CIDH WITH PERMANENT STEEL CASING	950	90	(a) 57 (b) 117 (c) 97 (d) 93	57	66	9
H=34' 66+10 TO 66+34	36" Dia CIDH WITH PERMANENT STEEL CASING	930	80	(a) 65 (b) 119 (c) 98 (d) 95	65	74	9
H=34' 66+34 TO 66+58	36" Dia CIDH WITH PERMANENT STEEL CASING	890	60	(a) 71 (b) 123 (c) 100 (d) 97	71	80	9
H=32' 66+58 TO 66+73	36" Dia CIDH WITH PERMANENT STEEL CASING	760	30	(a) 75 (b) 129 (c) 103 (d) 99	75	84	9

NO.	R	Δ	T	L
(A)	1562.00'	7°10'08.20"	97.85'	195.44'
(B)	368	20°00'26"	64.91'	128.50'

- NOTES:
- DESIGN TIP ELEVATIONS ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESSION, (b) TENSION, (c) SETTLEMENT, AND (d) LATERAL LOAD.
  - SPECIFIED TIP ELEVATIONS SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR SETTLEMENT AND LATERAL LOAD WITHOUT ENGINEER'S APPROVAL.

### LEGEND:

- xxx.xx INDICATES BOTTOM OF FOOTING ELEVATION
- ⊕ INDICATES 30" DIAMETER CIDH Conc PILE
- INDICATES 36" DIAMETER CIDH Conc PILE
- ⊙ INDICATES 36" DIAMETER CIDH Conc PILE WITH PERMANENT STEEL CASING

### SURVEY DATUM:

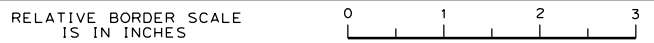
VERTICAL DATUM      NAVD 88  
HORIZONTAL DATUM    NAD 83

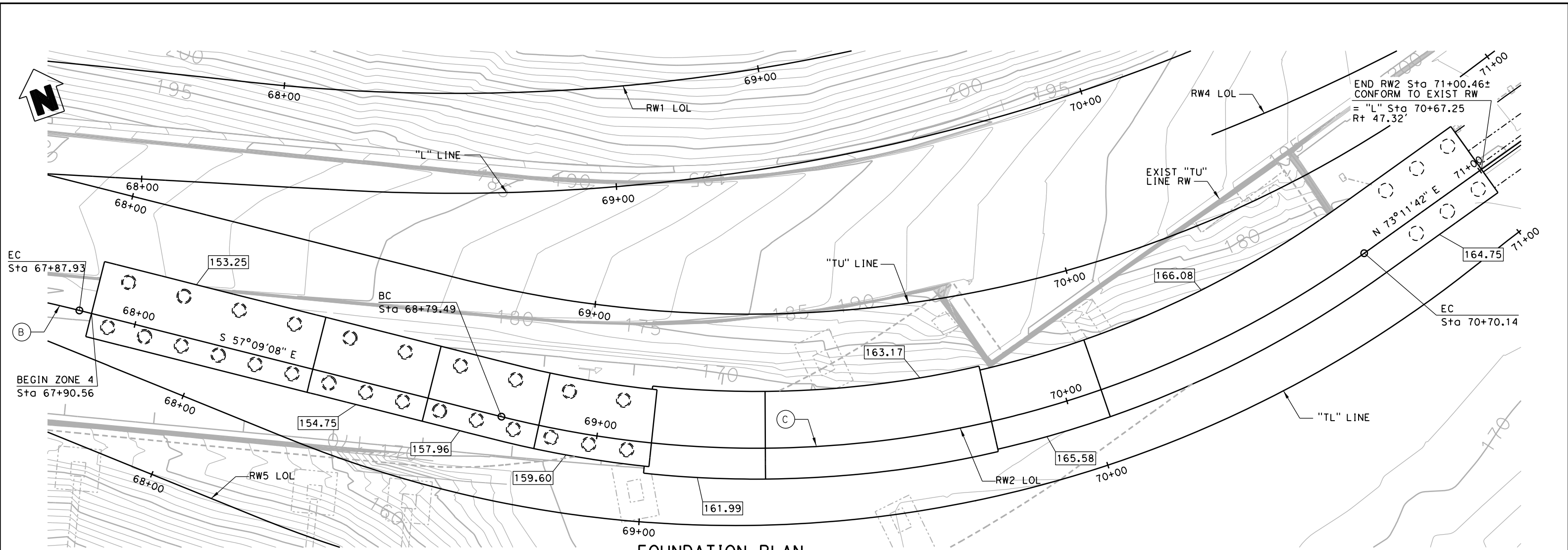
### FOUNDATION PLAN No. 1

SCALE: 1" = 10'

P:\521 YBI Retaining Walls\06 CAD\Structure RW2\RW2\_04\_FDN1.dgn

REVISED BY	DATE REVISED	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2</b>	CALCULATED/ DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter				
			PROJECT DESCRIPTION		CHECKED BY	PLANS APPROVAL DATE				MGE ENGINEERING, INC. 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	SHEET NAME	SHEET NO.	TOTAL SHEETS	CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2
					SUPERVISOR R. SENNETT						RW2-4			CONTRACT NO.
					DATE 11/14/2019						LAST REVISION	DATE PLOTTED => 11/14/2019		TIME PLOTTED => 3:43:51 PM





**FOUNDATION PLAN**

1" = 10'

NO.	R	Δ	T	L
(B)	368.00'	20°00'26"	64.91'	128.50'
(C)	220.00'	49°39'10"	101.78'	190.65'

**PILE DATA TABLE**

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	AVERAGE BEDROCK CONTACT ELEVATION (ft)	AVERAGE SOCKET LENGTH (ft)
		COMPRESSION	TENSION				
H=26' (67+90 TO 68+14)	36" Dia CIDH WITH 35' CASING	550	N/A	(a) 95 (b) 144 (c) 124 (d) 118	95	104	9
H=28' (68+14 TO 68+38)	36" Dia CIDH WITH 35' CASING	630	30	(a) 97 (b) 137 (c) 123 (d) 118	97	106	9
H=30' (68+38 TO 68+62)	36" Dia CIDH WITH 35' CASING	730	80	(a) 101 (b) 137 (c) 123 (d) 118	101	110	9
H=28' (68+62 TO 68+86)	36" Dia CIDH WITH 35' CASING	590	10	(a) 111 (b) 144 (c) 128 (d) 128	111	120	9
H=28' (68+86 TO 69+10)	36" Dia CIDH WITH 35' CASING	580	10	(a) 115 (b) 147 (c) 130 (d) 130	115	124	9
H=26' (70+78 TO 71+00)	36" Dia CIDH	510	N/A	(a) 129 (b) 156 (c) 136 (d) 133	129	122	N/A

- NOTES:**
- DESIGN TIP ELEVATIONS ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESSION, (b) TENSION, (c) SETTLEMENT, AND (d) LATERAL LOAD.
  - SPECIFIED TIP ELEVATIONS SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR SETTLEMENT AND LATERAL LOAD WITHOUT ENGINEER'S APPROVAL.

**LEGEND:**

- xxx.xx INDICATES BOTTOM OF FOOTING ELEVATION
- INDICATES 36" DIAMETER CIDH Conc PILE
- ⊙ INDICATES 36" DIAMETER CIDH Conc PILE WITH PERMANENT STEEL CASING

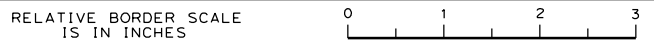
**SURVEY DATUM:**

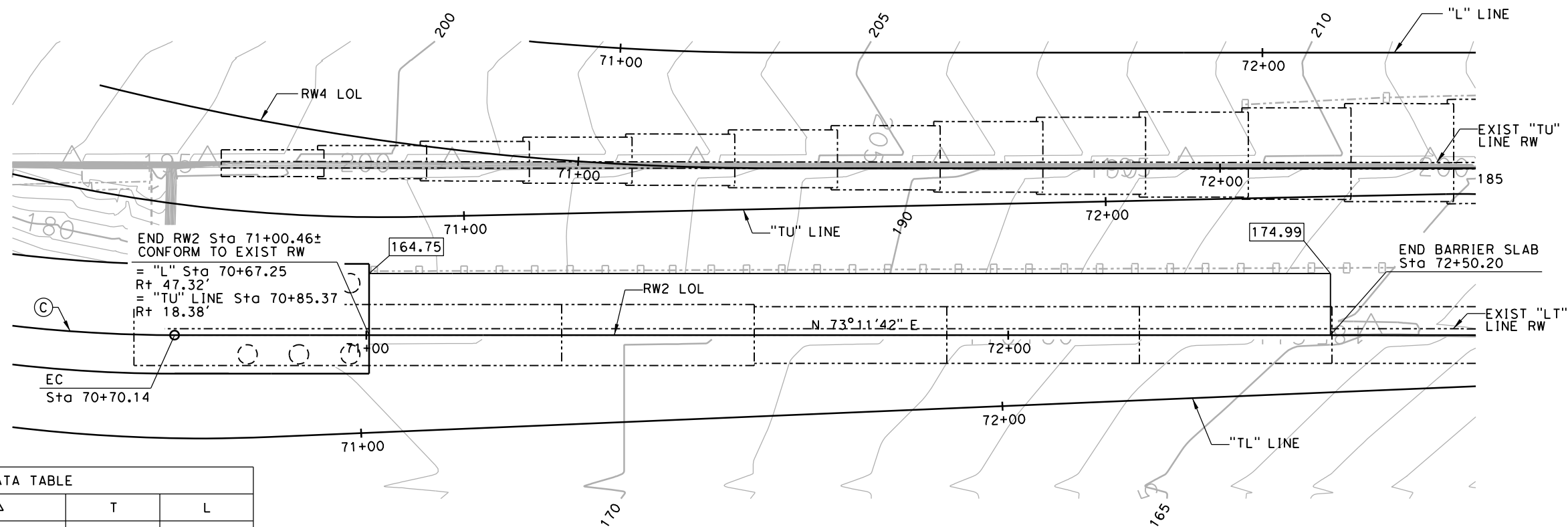
VERTICAL DATUM      NAVD 88  
HORIZONTAL DATUM      NAD 83

**FOUNDATION PLAN No. 2**  
SCALE: 1" = 10'

REVISED BY	DATE REVISED	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b> RETAINING WALL NO. 2	CALCULATED/DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR DATE 11/12/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2\RW2_05_FDN2.dgn CONTRACT NO. SHEET NAME    SHEET NO.    TOTAL SHEETS RW2-5 LAST REVISION    DATE PLOTTED => 11/12/2019 11/12/2019    TIME PLOTTED => 4:01:14 PM
------------	--------------	---	---	--	---	--	--	--	---

BORDER LAST REVISED 9/9/2015





RW CURVE DATA TABLE				
NO.	R	Δ	T	L
Ⓒ	220.00'	49°39'10"	101.78'	190.65'

**FOUNDATION PLAN**  
1" = 10'

**LEGEND:**

- xxx.xx INDICATES BOTTOM OF FOOTING ELEVATION
- INDICATES 36" DIAMETER CIDH Conc PILE

**SURVEY DATUM:**

VERTICAL DATUM      NAVD 88  
HORIZONTAL DATUM    NAD 83

**FOUNDATION PLAN**  
**No. 3**  
SCALE: 1" = 10'

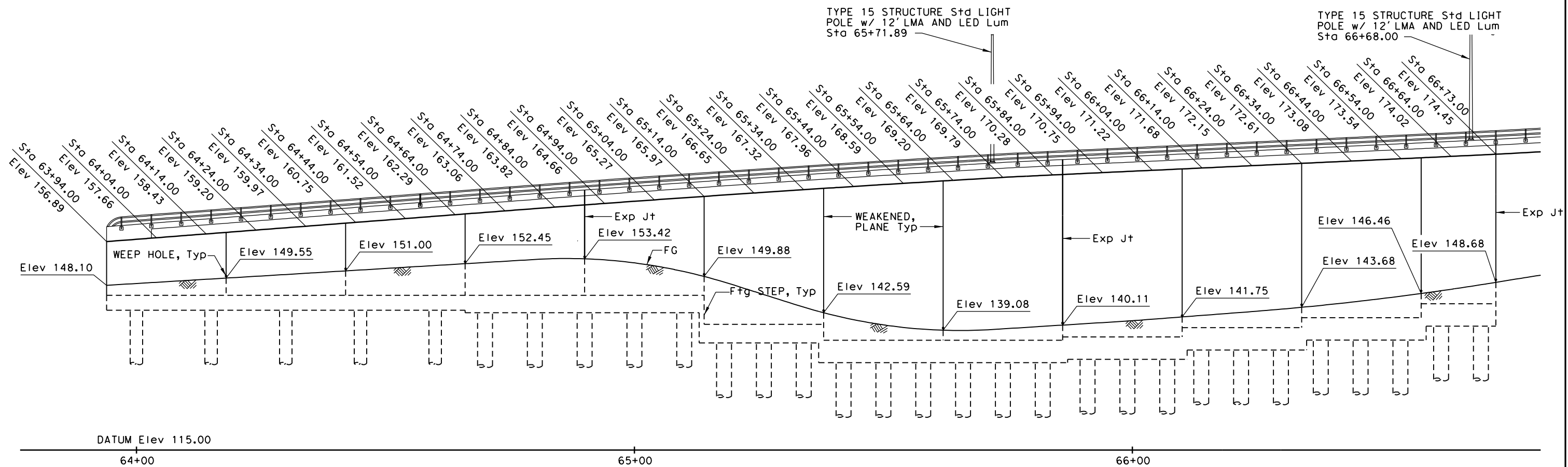
P:\521 YBI Retaining Walls\06 CAD\Structure RW2\RW2\_06\_FDN3.dgn

<small>REVISED BY</small>	<small>DATE REVISED</small>	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2</b>	<small>CALCULATED/ DESIGNED BY</small> Y. DENG		<small>CHECKED BY</small>	<small>REGISTERED STRUCTURAL ENGINEER</small>	<small>PLANS SUBMITTAL DATE</small>	<p align="center">7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com</p>			<small>USERNAME =&gt;</small> Peter	<small>CADD FILENAME =&gt;</small>	<small>CONTRACT NO.</small>
<small>PROJECT DESCRIPTION</small>			<small>SUPERVISOR</small> R. SENNETT		<small>PLANS APPROVAL DATE</small>	<small>MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	<small>LAST REVISION</small>				<small>DATE PLOTTED =&gt;</small> 10/28/2019		
			<small>DATE</small> 10/28/2019				<small>TIME PLOTTED =&gt;</small> 5:54:06 PM						

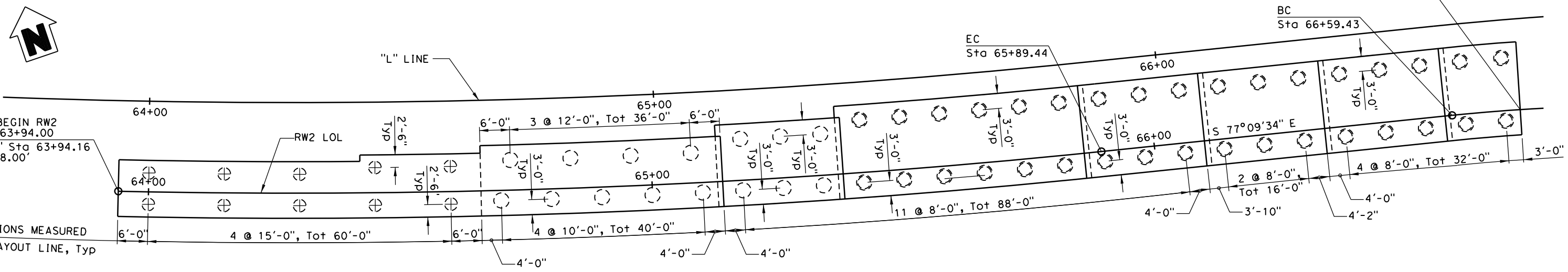
BORDER LAST REVISED 9/9/2015



SHEET NAME	SHEET NO.	TOTAL SHEETS
RW2-6		



DEVELOPED ELEVATION B0-3 B3-1A B3-5  
1" = 10'



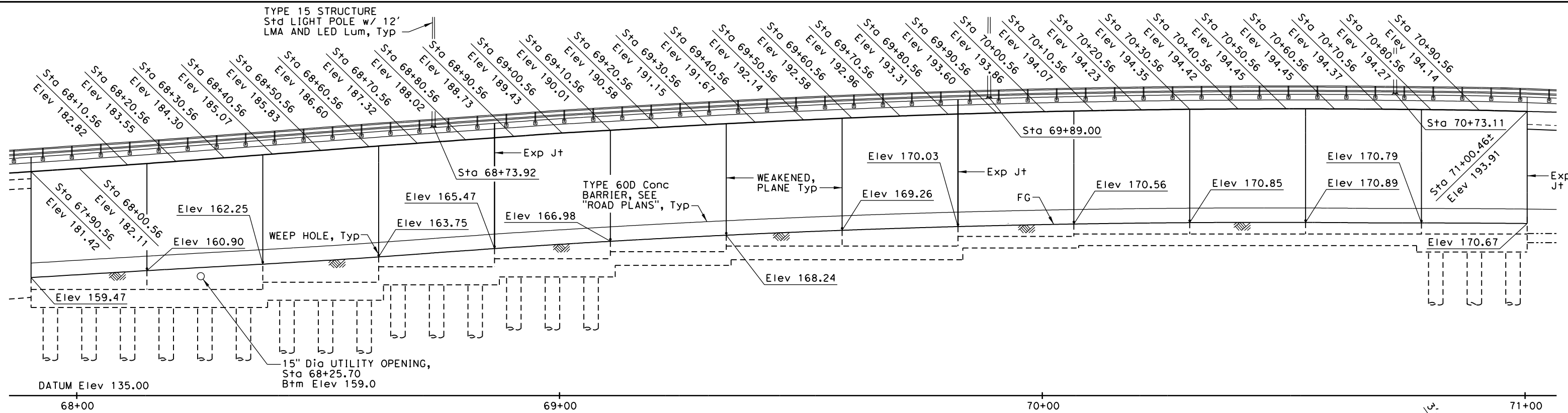
- LEGEND:**
- INDICATES 30" DIAMETER CIDH Conc PILE
  - INDICATES 36" DIAMETER CIDH Conc PILE
  - INDICATES 36" DIAMETER CIDH Conc PILE WITH PERMANENT STEEL CASING

**NOTE:**  
1. NOT ALL FEATURES SHOWN FOR LAYOUT CLARITY PURPOSES.

**RETAINING WALL LAYOUT No. 1**  
SCALE: 1" = 10'

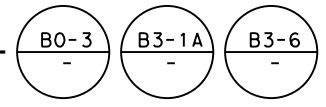
REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2	CALCULATED/ DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter				
			PROJECT DESCRIPTION		DATE 11/9/2019	PLANS APPROVAL DATE				7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	SHEET NAME	SHEET NO.	TOTAL SHEETS	CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2\RW2-07_LAYOUT1.dgn
											RW2-7			CONTRACT NO.
BORDER LAST REVISED 9/9/2015										LAST REVISION 11/9/2019	DATE PLOTTED => 11/9/2019 TIME PLOTTED => 1:36:07 PM			

P:\521 YBI Retaining Walls\06 CAD\Structure\RW2\RW2-07\_LAYOUT1.dgn

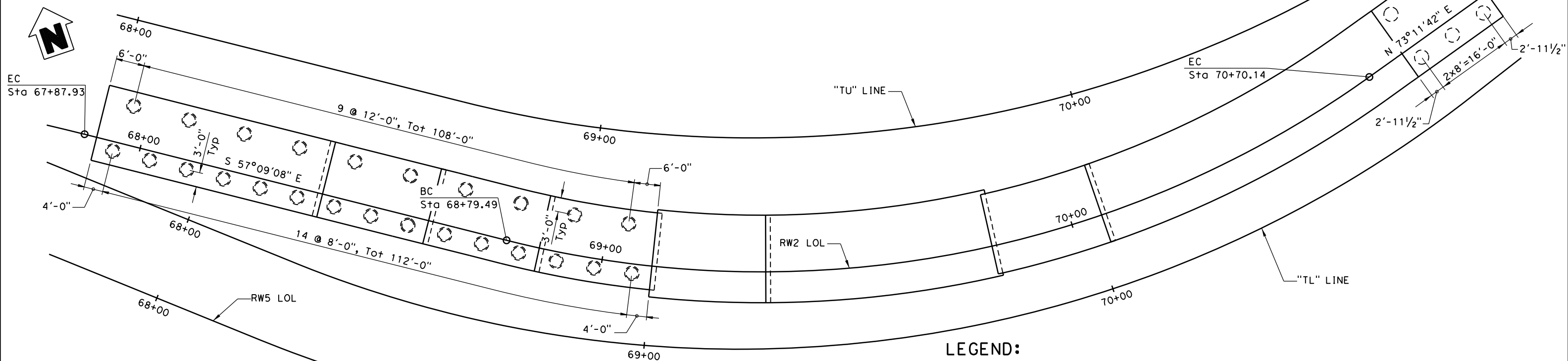


DEVELOPED ELEVATION

1" = 10'

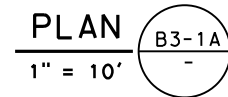


END RW2 Sta 71+00.46±  
CONFORM TO Exist RW  
= "L" Sta 70+67.25  
Rt 47.32'



LEGEND:

- INDICATES 36" DIAMETER CIDH Conc PILE
- ⊙ INDICATES 36" DIAMETER CIDH Conc PILE WITH PERMANENT STEEL CASING

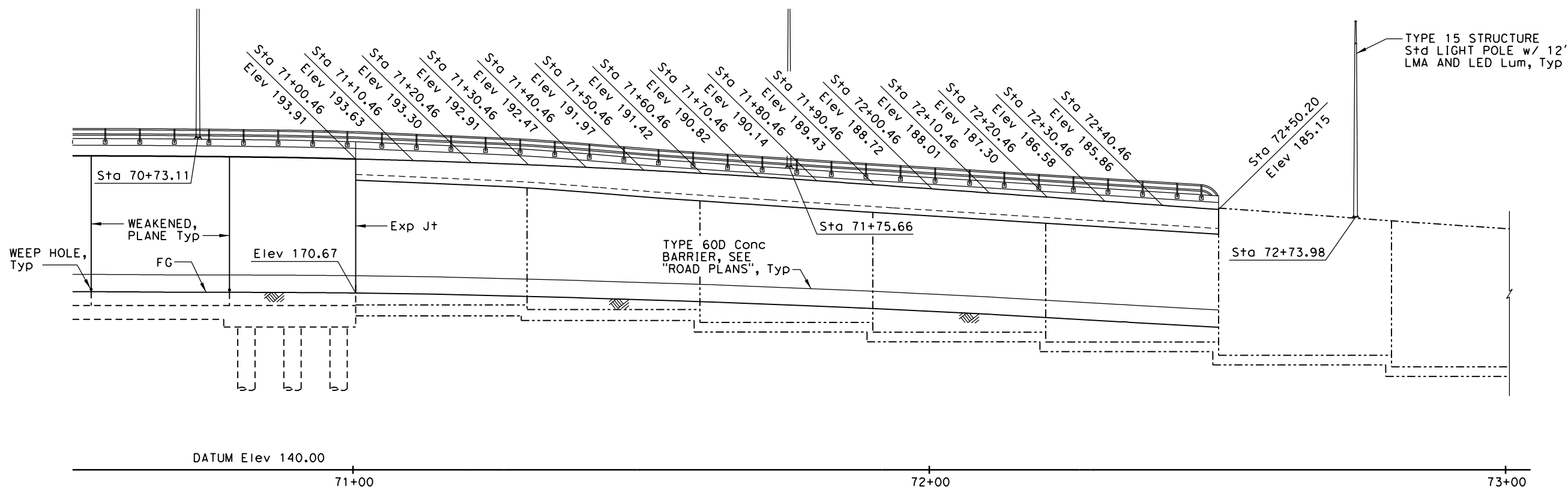


1" = 10'

NOTE:  
1. NOT ALL FEATURES SHOWN FOR LAYOUT CLARITY PURPOSES.

RETAINING WALL LAYOUT No. 2  
SCALE: 1" = 10'

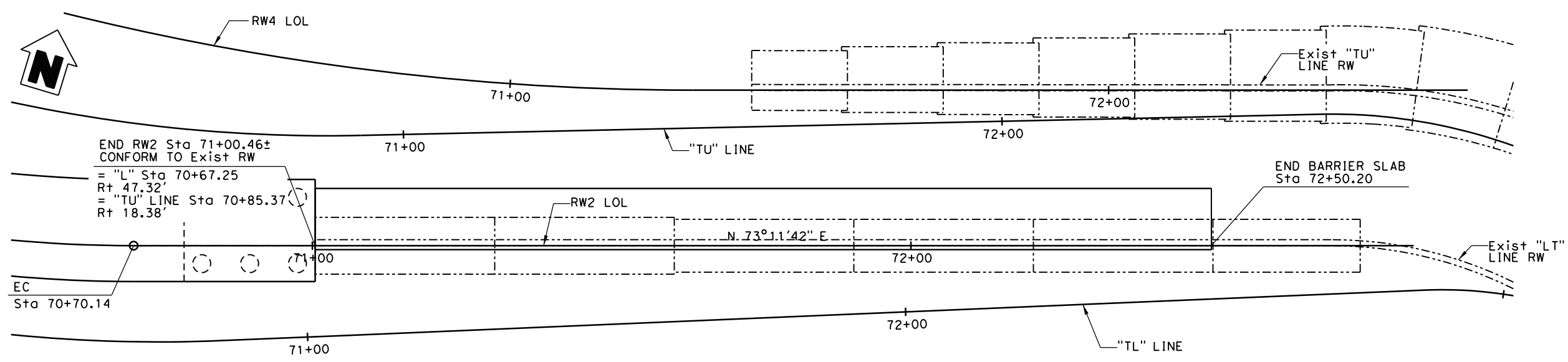
REVISOR	DATE	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2	CHECKED BY		PLANS APPROVAL DATE	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com				CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2\RW2-08_LAYOUT2.dgn
			SUPERVISOR R. SENNETT		<p>MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</p>					CONTRACT NO.
			DATE 11/9/2019							
BORDER LAST REVISED 9/9/2015										RELATIVE BORDER SCALE IS IN INCHES
										0 1 2 3
										SHEET NO.
										TOTAL SHEETS
										RW2-8
										LAST REVISION
										DATE PLOTTED => 11/9/2019
										TIME PLOTTED => 1:41:49 PM



EXISTING TOP OF WALL	
STATION	ELEVATION
71+00.46	194.47±
71+10.46	194.04±
71+20.46	193.60±
71+30.46	193.02±
71+40.46	192.41±
71+50.46	191.80±
71+60.46	191.15±
71+70.46	190.50±
71+80.46	189.84±
71+90.46	189.19±
72+00.46	188.53±
72+10.46	187.86±
72+20.46	187.20±
72+30.46	186.48±
72+40.46	185.77±
72+50.20	185.09±

DATUM Elev 140.00  
71+00 72+00 73+00

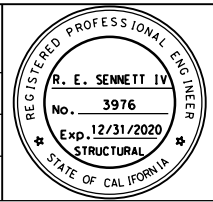




DEVELOPED ELEVATION B0-3 B3-1A  
1" = 10'



**NOTE:**  
1. NOT ALL FEATURES SHOWN FOR LAYOUT CLARITY PURPOSES.

PLAN B3-1A  
1" = 10'

**RETAINING WALL LAYOUT No. 3**  
SCALE: 1" = 10'

REVISED BY  DATE REVISED  	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 10/28/2019		REGISTERED STRUCTURAL ENGINEER  PLANS SUBMITTAL DATE  PLANS APPROVAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2\RW2_09_LAYOUT3.dgn CONTRACT NO.  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SHEET NAME</th> <th>SHEET NO.</th> <th>TOTAL SHEETS</th> </tr> <tr> <td>RW2-9</td> <td></td> <td></td> </tr> </table>	SHEET NAME	SHEET NO.	TOTAL SHEETS	RW2-9		
SHEET NAME	SHEET NO.	TOTAL SHEETS												
RW2-9														
BORDER LAST REVISED 9/9/2015		RELATIVE BORDER SCALE IS IN INCHES 		MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		LAST REVISION 10/28/2019 DATE PLOTTED => 10/28/2019 TIME PLOTTED => 5:59:56 PM								

CONC BARRIER TYPE 836A, SEE NOTE 3

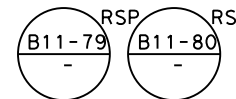


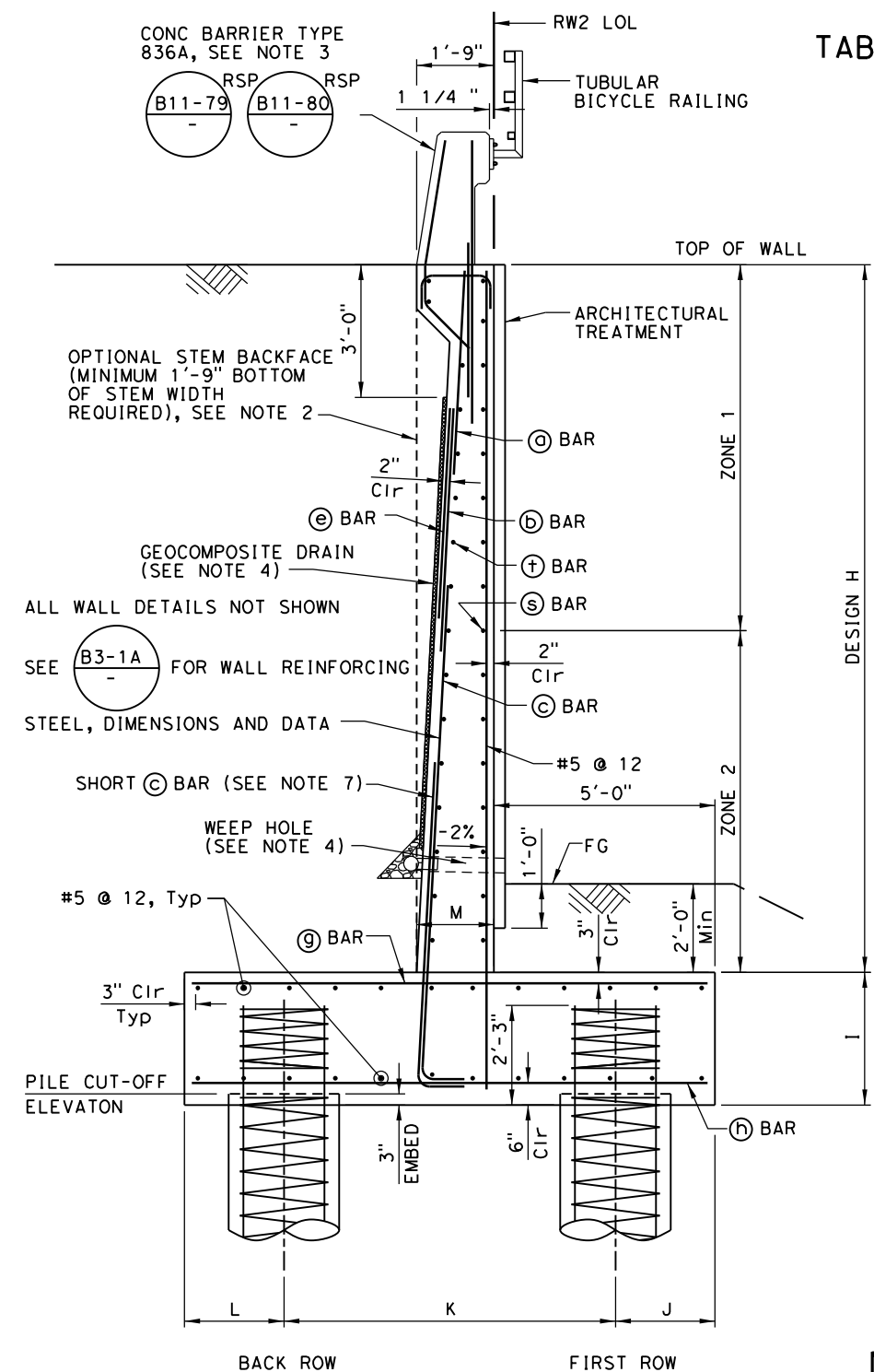
TABLE OF PILE CAP REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H	14'	16'	18'	20'	28'
I	3'-0"	3'-0"	3'-0"	3'-6"	3'-9"
J	2'-6"	2'-6"	2'-6"	3'-0"	3'-0"
K	6'-3"	6'-3"	7'-6"	8'-0"	10'-3"
L	2'-6"	2'-6"	2'-6"	3'-0"	3'-0"
M*	1'-9"	1'-9"	1'-9"	1'-10"	2'-9"
Ⓒ BAR	#6 @ 12	#6 @ 12	#6 @ 12	#6 @ 12	#8 @ 12
Ⓓ BAR	#7 @ 12	#8 @ 12	#9 @ 12	#10 @ 12	#11 @ 12

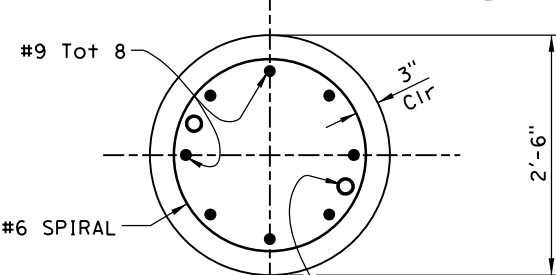
\* BOTTOM OF STEM WIDTH PER "DESIGN H" AND "BATTER" ACCORDING TO B3-1A

SPIRAL TERMINATIONS TO HAVE AN EXTRA TURN WITH 1/2" THE PITCH IN ADDITION TO A 90° HOOK EXTENDED THROUGH PILE CORE, AS SHOWN

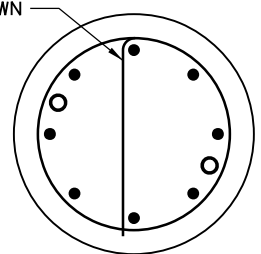
HOOKS FOR SPIRAL TERMINATION DETAILS SHALL LINE UP SO AS NOT TO INTERFACE WITH CONSTRUCTION OPERATIONS.



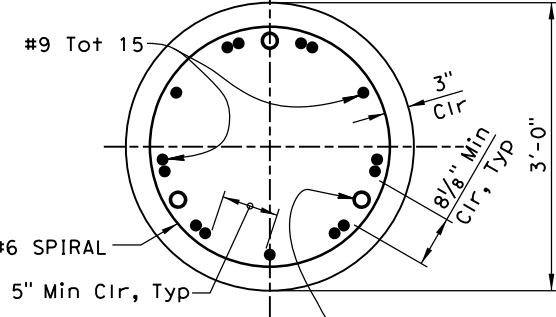
TYPICAL SECTION (ZONE 1 & 2)



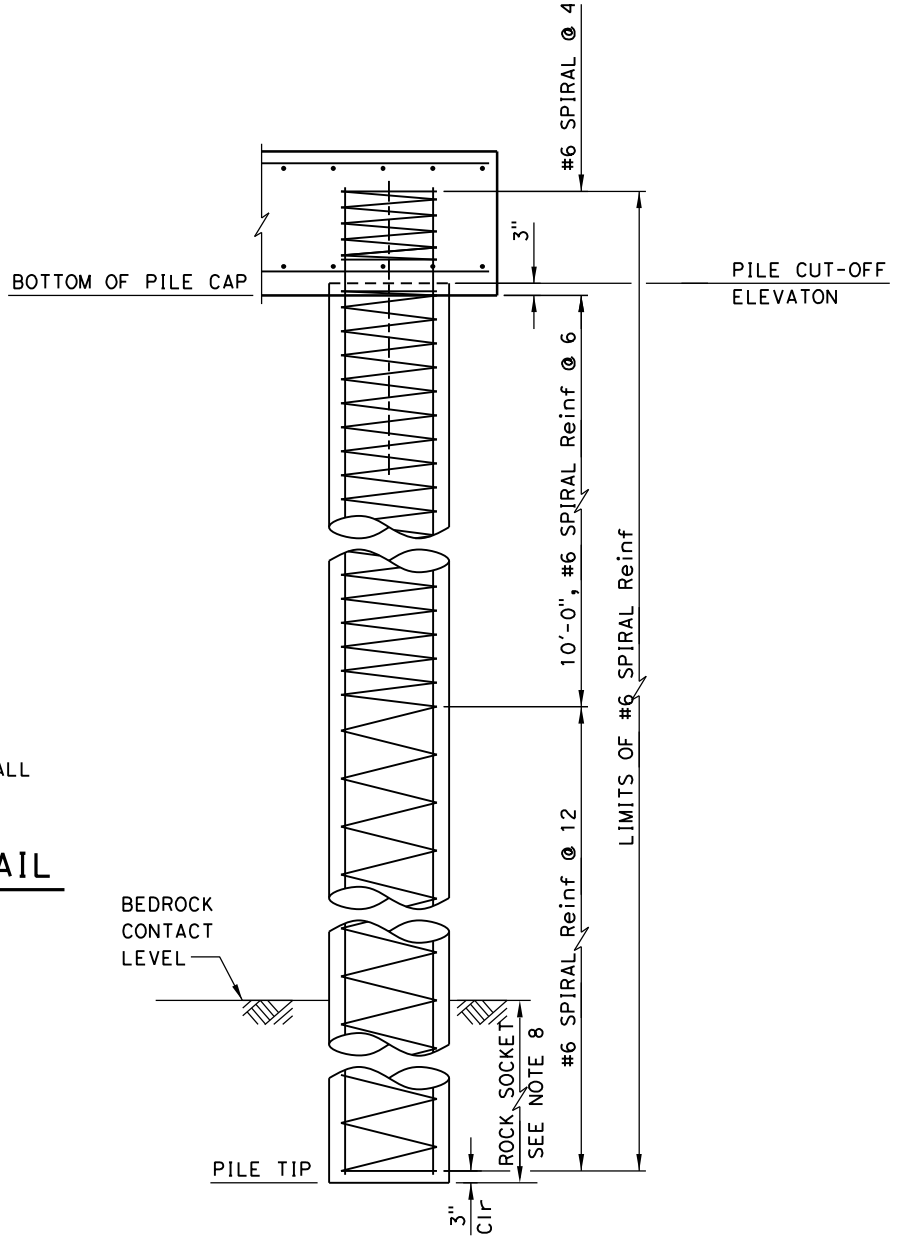
PILE SECTION (ZONE 1)



SPIRAL TERMINATION DETAIL



PILE SECTION (ZONE 2)



CIDH CONCRETE PILING

NOTES:

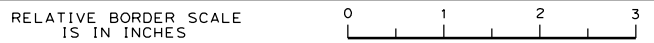
1. TYPICAL SECTION FOR RETAINING WALL WITH CIDH CONCRETE PILE AT ZONE 1 AND ZONE 2 SHOWN. SEE STANDARD PLANS B3-1A FOR TYPICAL SECTION AND DETAILS OF RETAINING WALL TYPE 1 (CASE 1) ON SPREAD FOOTING.
2. OPTIONAL STEM BACKFACE ALSO APPLIES TO RETAINING WALL TYPE 1 (CASE 1) WITH MINIMUM BOTTOM OF STEM DIMENSION OF 1'-9".
3. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
4. SEE "RETAINING WALL DETAILS No. 5" SHEET FOR "WEAP HOLE AND GEOSYNTHETIC DRAIN" DETAILS.
5. INSPECTION TUBE NOT REQUIRED FOR PILES CONSTRUCTED IN DRY OR DEWATERED HOLES.
6. PROVIDE TEMPORARY CASING AS NECESSARY TO CONSTRUCT PILES.
7. ALL Ⓒ BARS ARE WITH STANDARD HOOKS.
8. SEE "PILE DATA TABLE" OF THE "FOUNDATION PLAN No. 1" SHEET.

RETAINING WALL DETAILS No. 1

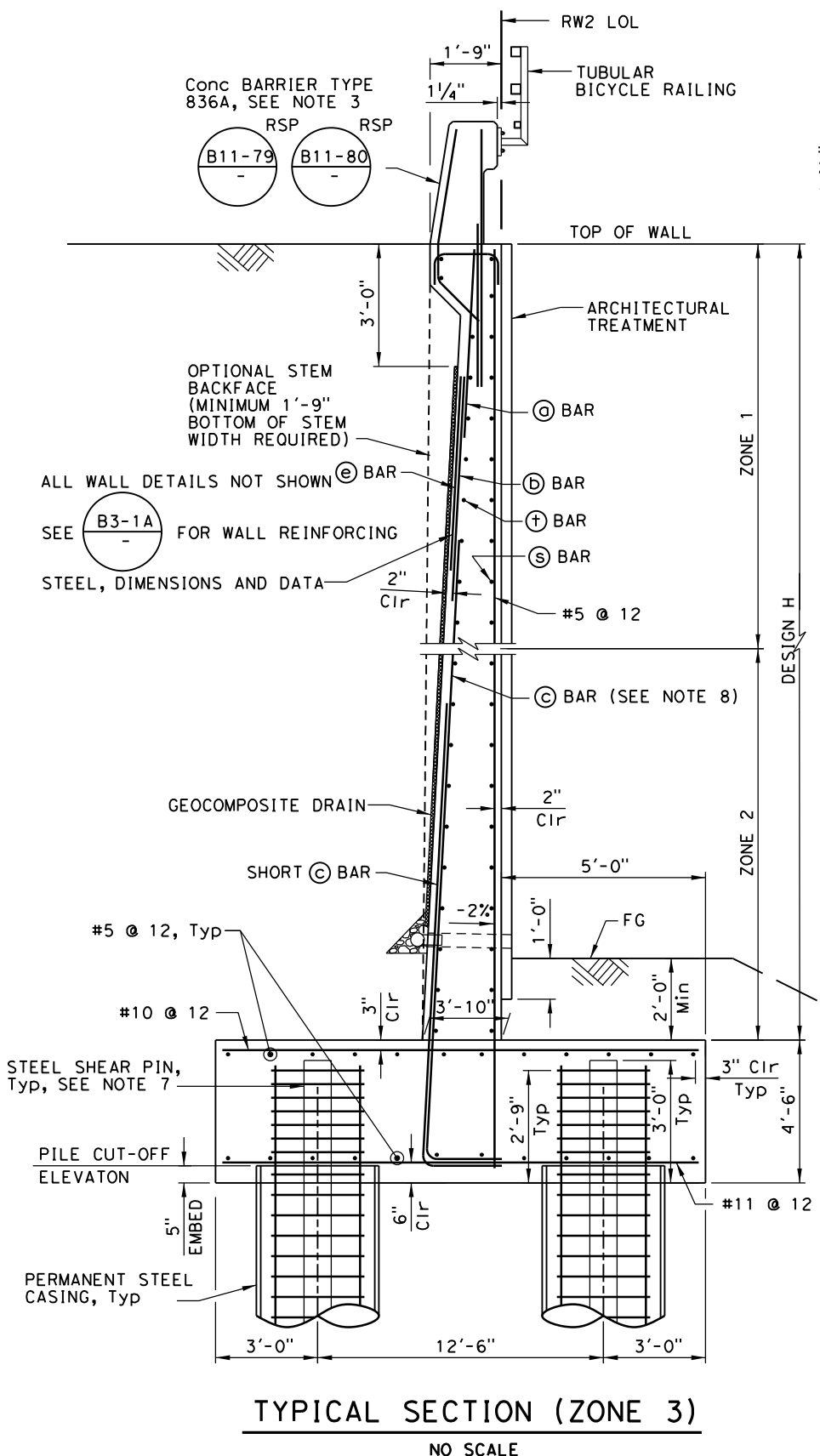
SCALE: AS SHOWN

REVISIONS REVISED BY DATE REVISED	PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2	CALCULATED/DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR DATE 11/12/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-10-DETAILS NO. 1.dgn CONTRACT NO. SHEET NAME SHEET NO. TOTAL SHEETS RW2-10 LAST REVISION DATE PLOTTED => 11/12/2019 TIME PLOTTED => 6:50:31 PM
---	---	---	--	---	--	--	--	--

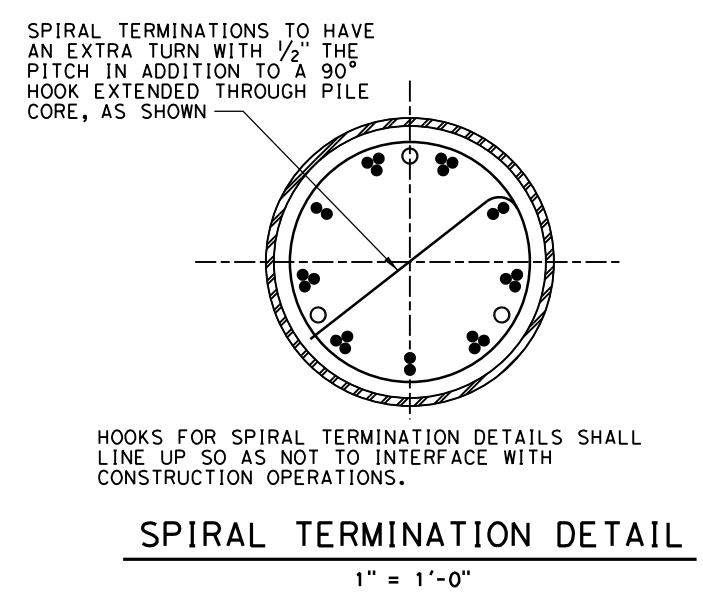
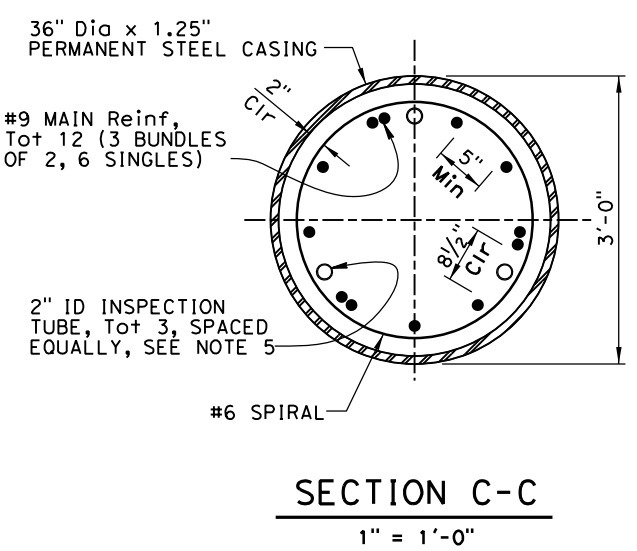
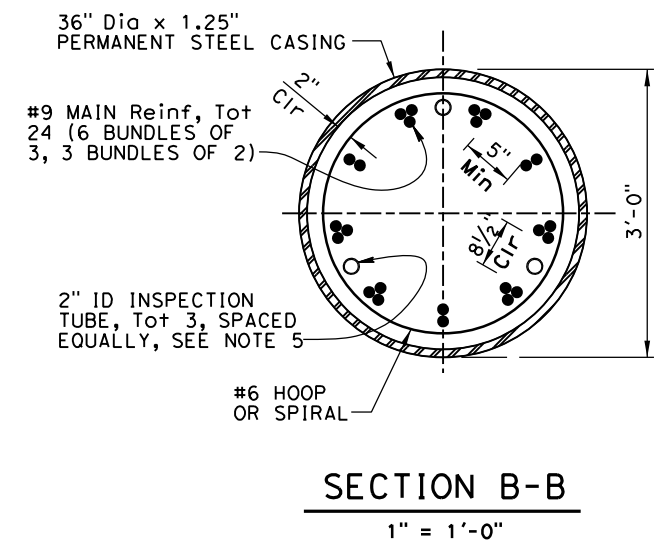
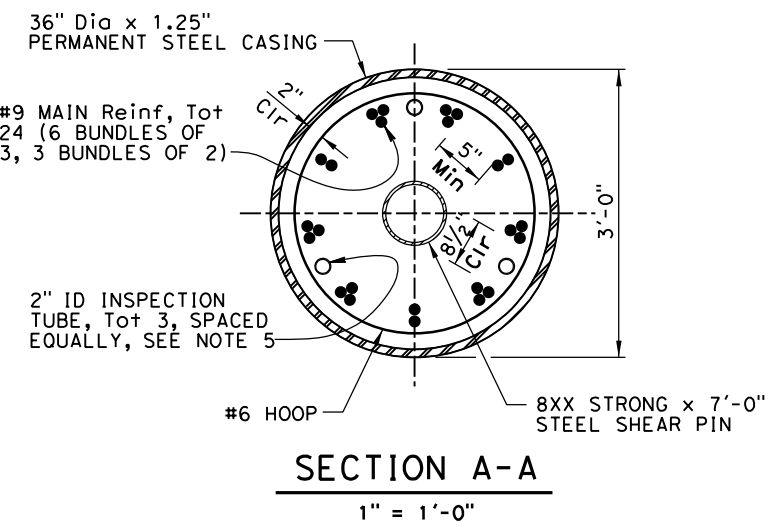
BORDER LAST REVISED 9/9/2015



P:\521 YBI Retaining Walls\06 CAD\Structure RW2\RW2-11-DETAILS NO. 2.dgn

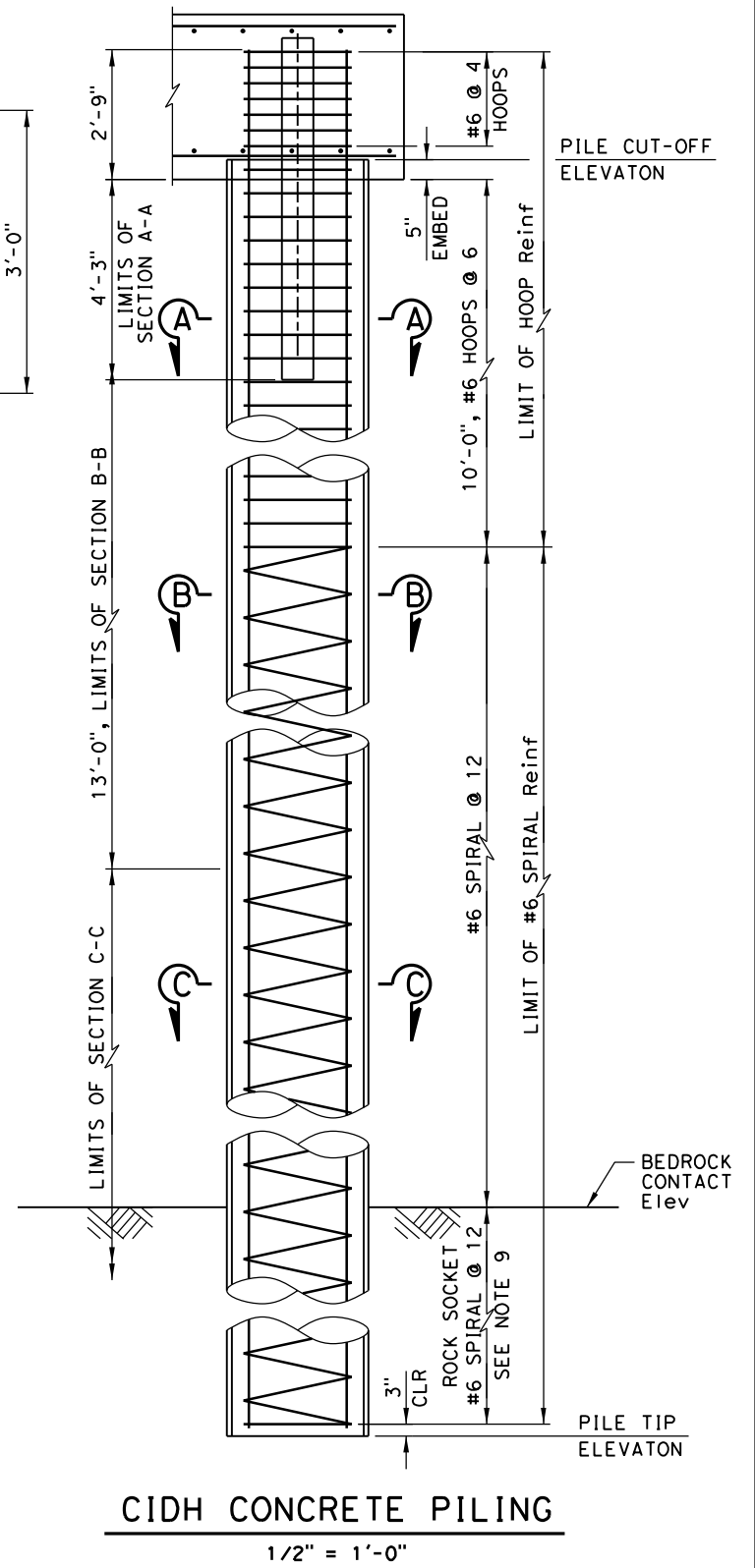


**TYPICAL SECTION (ZONE 3)**  
NO SCALE



**NOTES:**

1. TYPICAL SECTION FOR RETAINING WALL WITH CIDH CONCRETE PILE AT ZONE 3 SHOWN. SEE STANDARD PLANS B3-1A FOR TYPICAL SECTION AND DETAILS OF RETAINING WALL TYPE 1 (CASE 1) ON SPREAD FOOTINGS.
2. OPTIONAL STEM BACKFACE ALSO APPLIES TO RETAINING WALL TYPE 1 (CASE 1) WITH MINIMUM BOTTOM OF STEM DIMENSION OF 1'-9".
3. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
4. SEE "RETAINING WALL DETAILS NO. 5" SHEET FOR "WEEP HOLE AND GEOCOMPOSITE DRAIN" DETAILS
5. INSPECTION TUBE NOT REQUIRED FOR PILES CONSTRUCTED IN DRY OR DEWATERED HOLES.
6. PROVIDE TEMPORARY CASING AS NECESSARY TO CONSTRUCT PILES.
7. FOR DETAILS OF "STEEL SHEAR PIN", SEE "RETAINING WALL DETAILS NO. 8" SHEET.
8. ALL C BARS WITH STANDARD HOOK.
9. SEE "PILE DATA TABLE" ON THE "FOUNDATION PLAN NO. 1" SHEET.



**RETAINING WALL  
DETAILS No. 2**  
SCALE: AS SHOWN

REVISOR	DATE	PROJECT DESCRIPTION	DESIGNED BY	CHECKED BY	SUPERVISOR	DATE	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	PLANS APPROVAL DATE	MGE ENGINEERING, INC.	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY	SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO	USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW2\RW2-11-DETAILS NO. 2.dgn CONTRACT NO.
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2	Y. DENG	R. SENNETT	R. SENNETT	11/15/2019	R. E. SENNETT IV No. 3976 Exp. 12/31/2020 STRUCTURAL STATE OF CALIFORNIA							SHEET NAME RW2-11
BORDER LAST REVISED 9/9/2015														
RELATIVE BORDER SCALE IS IN INCHES														
LAST REVISION 11/15/2019														
DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:35:53 PM														



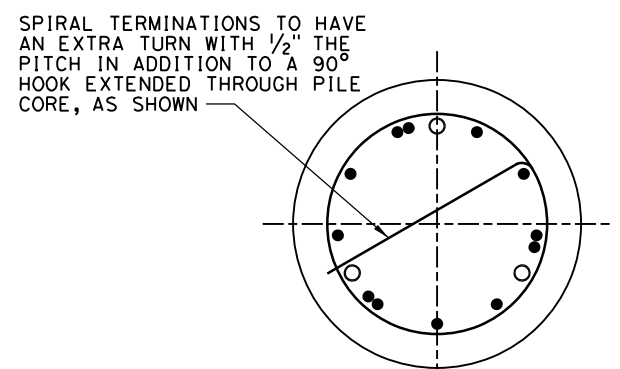
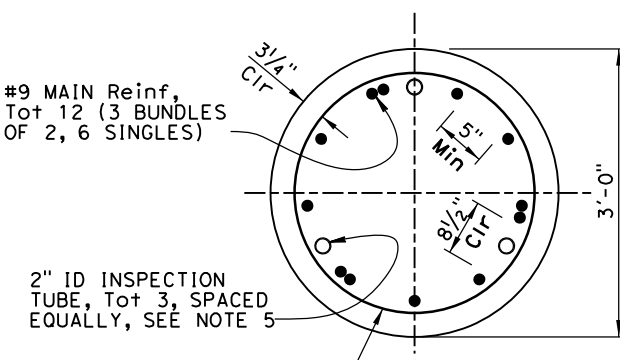
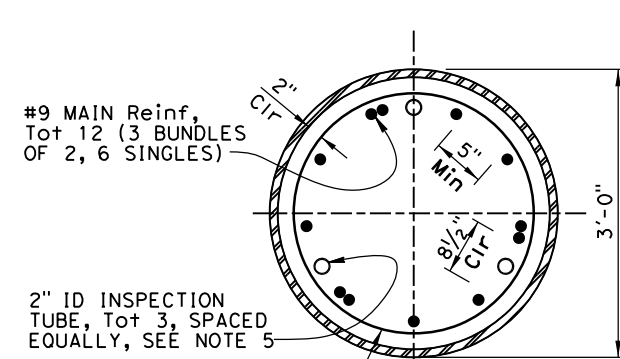
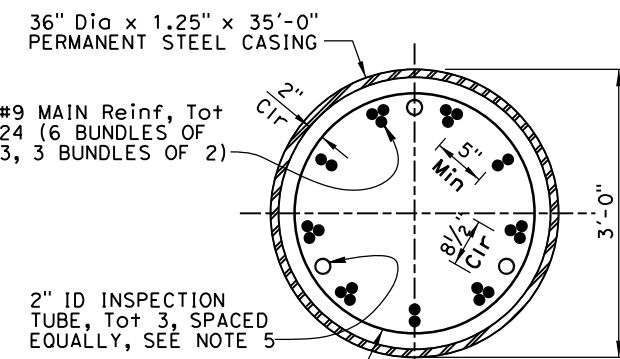
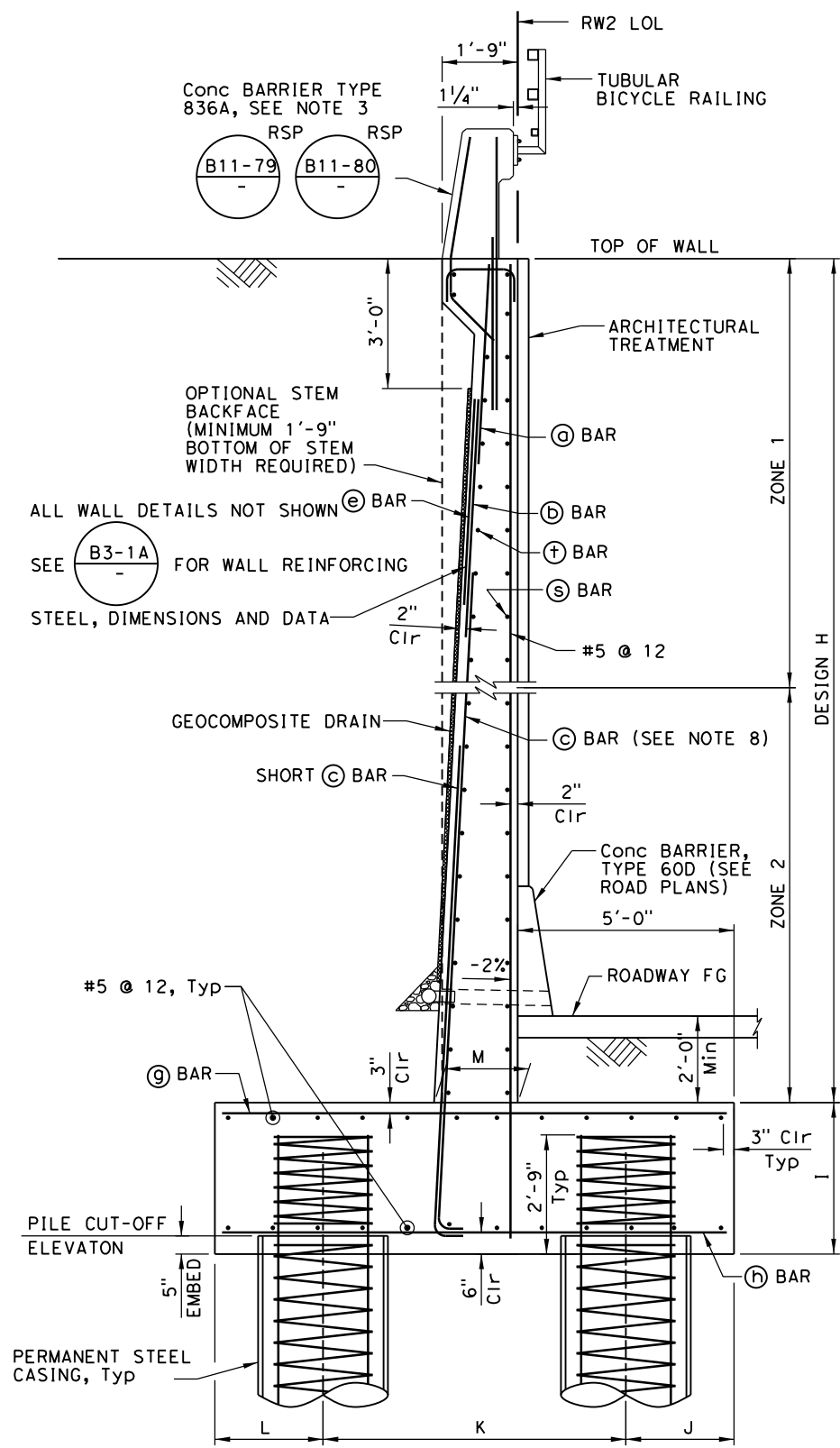
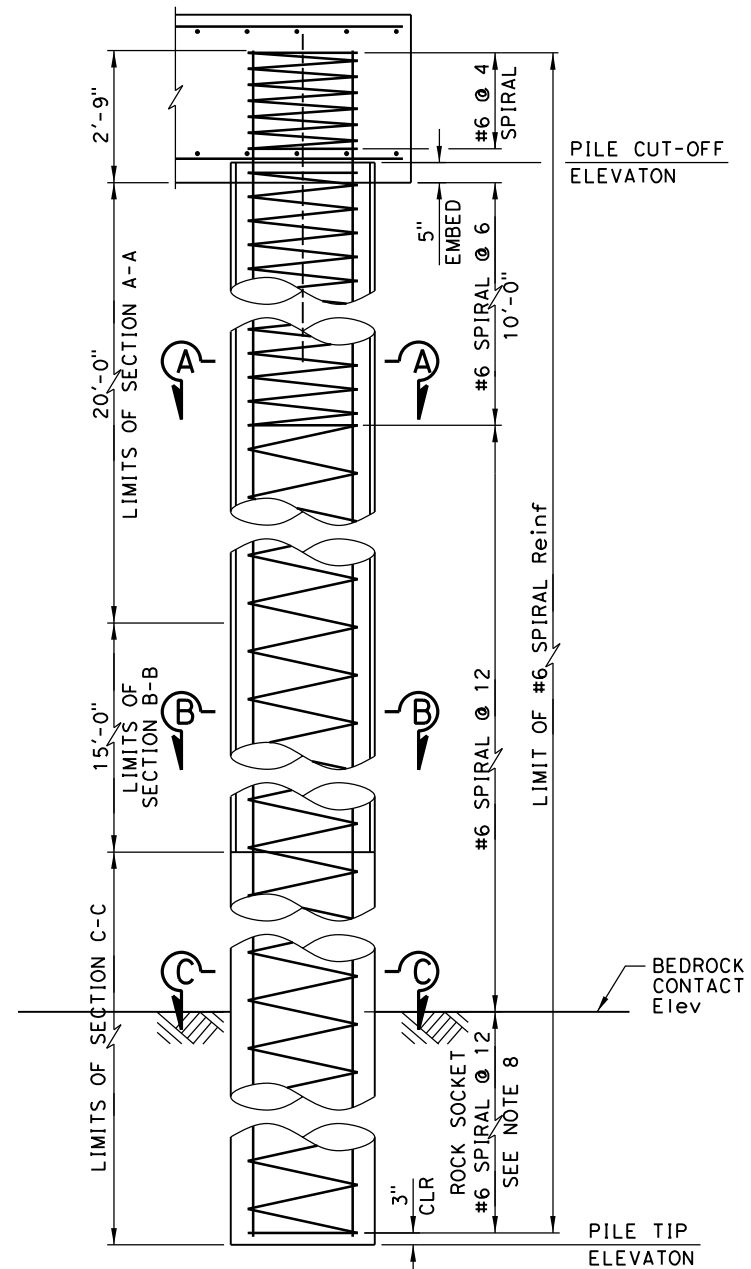


TABLE OF PILE CAP REINFORCING STEEL, DIMENSIONS & DATA

DESIGN H	26'	28'
I	3'-9"	3'-9"
J	3'-0"	3'-0"
K	10'-3"	10'-3"
L	3'-0"	3'-0"
M*	2'-4 1/4"	2'-9"
G BAR	#8 @ 12	#8 @ 12
H BAR	#11 @ 12	#11 @ 12

\* DEVELOPED BOTTOM OF STEM WIDTH PER "DESIGN H" AND "BATTER" ACCORDING TO B3-1A

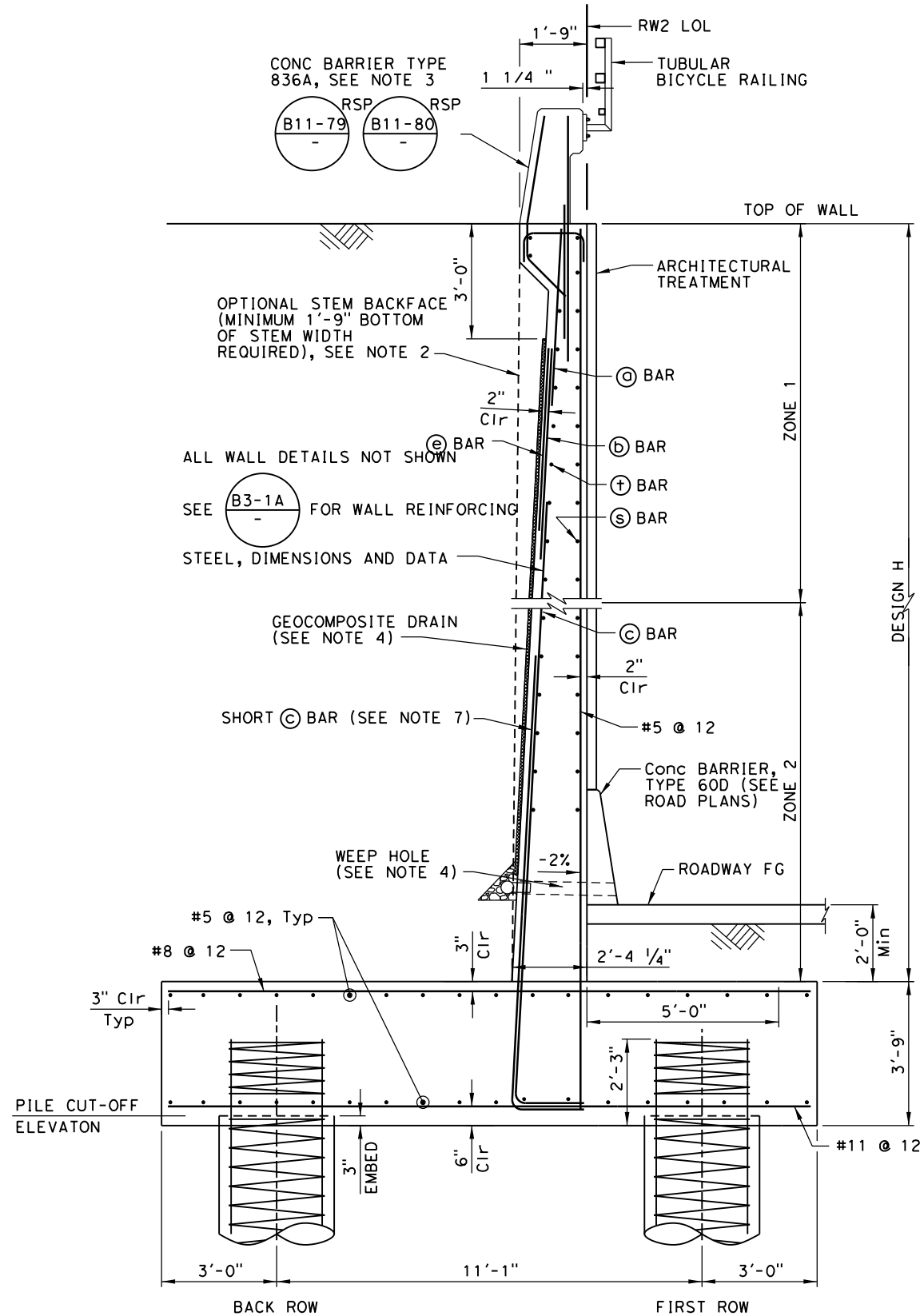


NOTES:

1. TYPICAL SECTION FOR RETAINING WALL WITH CIDH CONCRETE PILE SHOWN. SEE STANDARD PLANS B3-1A FOR TYPICAL SECTION AND DETAILS OF RETAINING WALL TYPE 1 (CASE 1) ON SPREAD FOOTINGS.
2. OPTIONAL STEM BACKFACE ALSO APPLIES TO RETAINING WALL TYPE 1 (CASE 1) WITH MINIMUM BOTTOM OF STEM DIMENSION OF 1'-9".
3. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
4. SEE "RETAINING WALL DETAILS No. 5" SHEET FOR "WEEP HOLE AND GEOCOMPOSITE DRAIN" DETAILS
5. INSPECTION TUBE NOT REQUIRED FOR PILES CONSTRUCTED IN DRY OR DEWATERED HOLES.
6. PROVIDE TEMPORARY CASING AS NECESSARY TO CONSTRUCT PILES.
7. ALL G BARS WITH STANDARD HOOK.
8. SEE "PILE DATA TABLE" ON THE "FOUNDATION PLAN No. 2" SHEET.

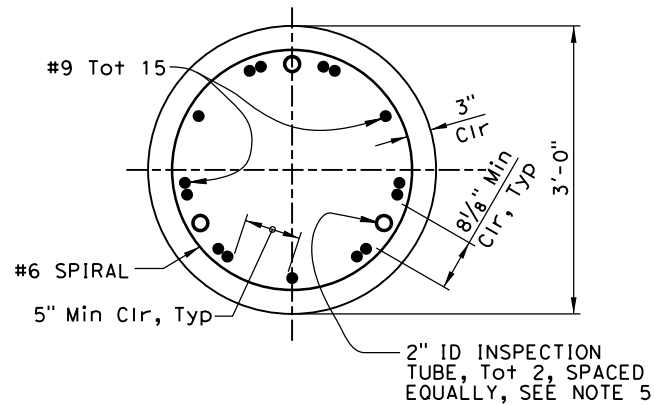
RETAINING WALL DETAILS No. 3  
SCALE: AS SHOWN

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2	CALCULATED/DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter
REVISOR	DATE	PROJECT DESCRIPTION	CHECKED BY		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com
BORDER LAST REVISED 9/9/2015			DATE 11/15/2019							CONTRACT NO.
										SHEET NAME SHEET NO. TOTAL SHEETS
										RW2-12
										LAST REVISION DATE PLOTTED => 11/15/2019 11/15/2019 TIME PLOTTED => 10:55:02 AM



**TYPICAL SECTION (ZONE 5)**

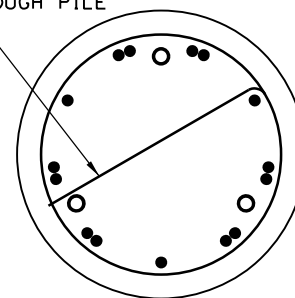
1/2" = 1'-0"



**PILE SECTION**

1" = 1'-0"

SPIRAL TERMINATIONS TO HAVE AN EXTRA TURN WITH 1/2" THE PITCH IN ADDITION TO A 90° HOOK EXTENDED THROUGH PILE CORE, AS SHOWN



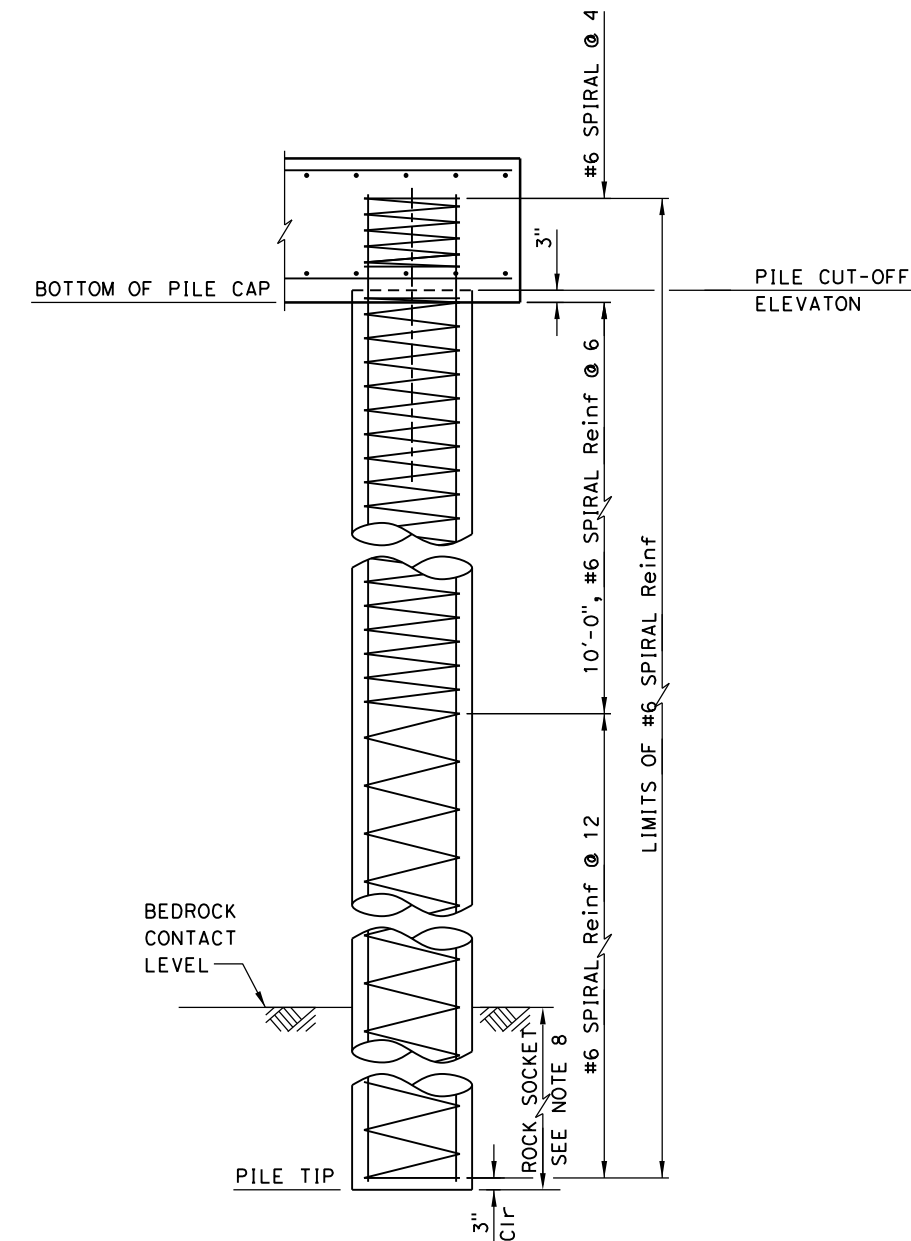
HOOKS FOR SPIRAL TERMINATION DETAILS SHALL LINE UP SO AS NOT TO INTERFERE WITH CONSTRUCTION OPERATIONS.

**SPIRAL TERMINATION DETAIL**

1" = 1'-0"

**NOTES:**

1. TYPICAL SECTION FOR RETAINING WALL WITH CIDH CONCRETE PILE SHOWN. SEE STANDARD PLANS B3-1A FOR TYPICAL SECTION AND DETAILS OF RETAINING WALL TYPE 1 (CASE 1) ON SPREAD FOOTING.
2. OPTIONAL STEM BACKFACE ALSO APPLIES TO RETAINING WALL TYPE 1 (CASE 1) WITH MINIMUM BOTTOM OF STEM DIMENSION OF 1'-9".
3. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
4. SEE "RETAINING WALL DETAILS No. 5" SHEET FOR "WEEP HOLE AND GEOCOMPOSITE DRAIN" DETAILS
5. INSPECTION TUBE NOT REQUIRED FOR PILES CONSTRUCTED IN DRY OR DEWATERED HOLES.
6. PROVIDE TEMPORARY CASING AS NECESSARY TO CONSTRUCT PILES.
7. ALL © BARS ARE WITH STANDARD HOOKS.
8. SEE "PILE DATA TABLE" OF THE "FOUNDATION PLAN No. 2" SHEET.



**CIDH CONCRETE PILING**

1/2" = 1'-0"

**RETAINING WALL DETAILS No. 4**

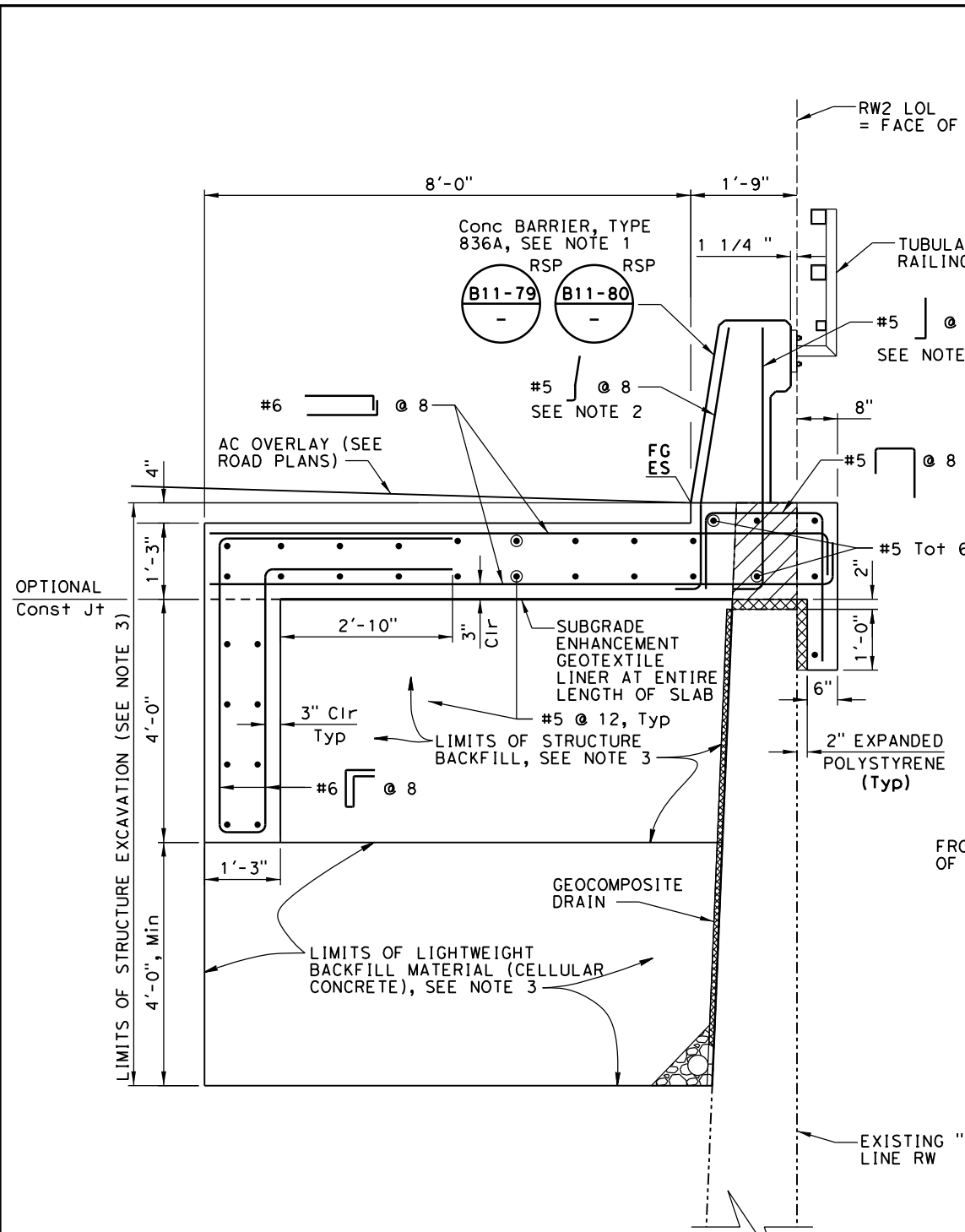
SCALE: AS SHOWN

REVISIONS	PROJECT DESCRIPTION	DESIGNER	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	MGE ENGINEERING, INC.	SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY	SAN FRANCISCO COUNTY SEAL	USERNAME => Peter
REVISIONS	PROJECT DESCRIPTION	Y. DENG	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-RW2-13-DETAILS NO. 4.dgn
REVISIONS	PROJECT DESCRIPTION	R. SENNETT	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				CONTRACT NO.
REVISIONS	PROJECT DESCRIPTION	R. SENNETT	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				SHEET NAME SHEET NO. TOTAL SHEETS
REVISIONS	PROJECT DESCRIPTION	R. SENNETT	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				RW2-13
REVISIONS	PROJECT DESCRIPTION	R. SENNETT	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				LAST REVISION DATE PLOTTED => 11/13/2019
REVISIONS	PROJECT DESCRIPTION	R. SENNETT	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				11/13/2019 TIME PLOTTED => 10:30:17 AM

P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-RW2-13-DETAILS NO. 4.dgn

BORDER LAST REVISED 9/9/2015



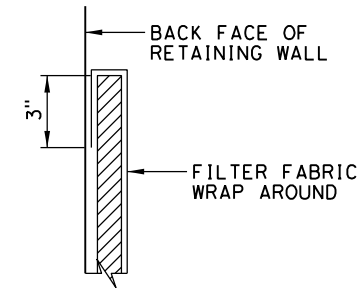


**BARRIER SLAB SECTION**

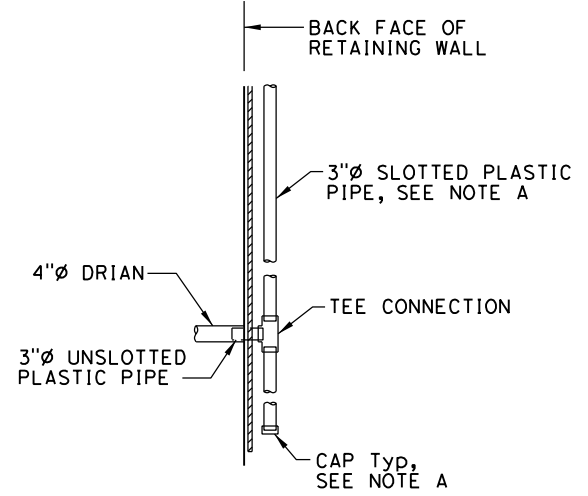
3/4" = 1'-0"

- RETAINING WALL REMOVAL (PORTION)

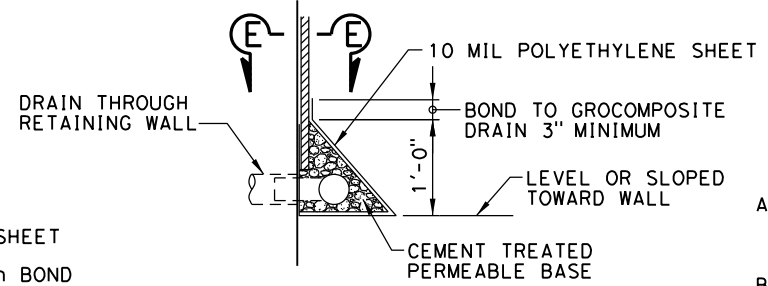
- NOTE:**
1. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
  2. BARRIER REINFORCING STEEL.
  3. FROM STATION 71+60.46 TO END BARRIER SLAB.



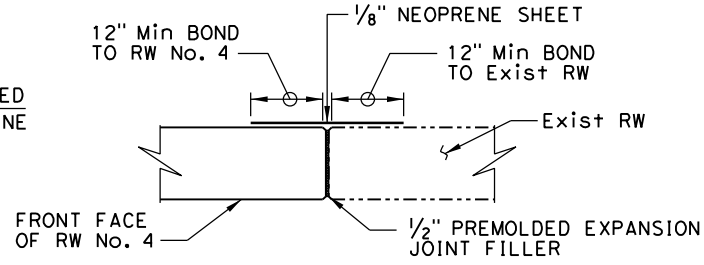
**DETAIL 1**



**SECTION E-E**



**DETAIL 2**

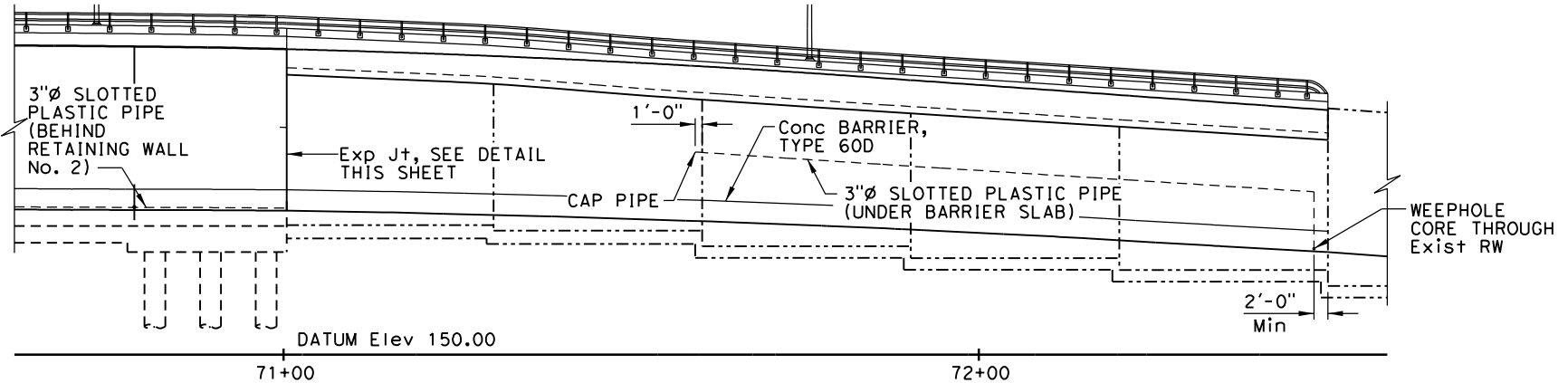


**EXPANSION JOINT DETAILS AT EXISTING WALL**

3/4" = 1'-0"

**WEEP HOLE AND GEOCOMPOSITE DRAIN**

NO SCALE



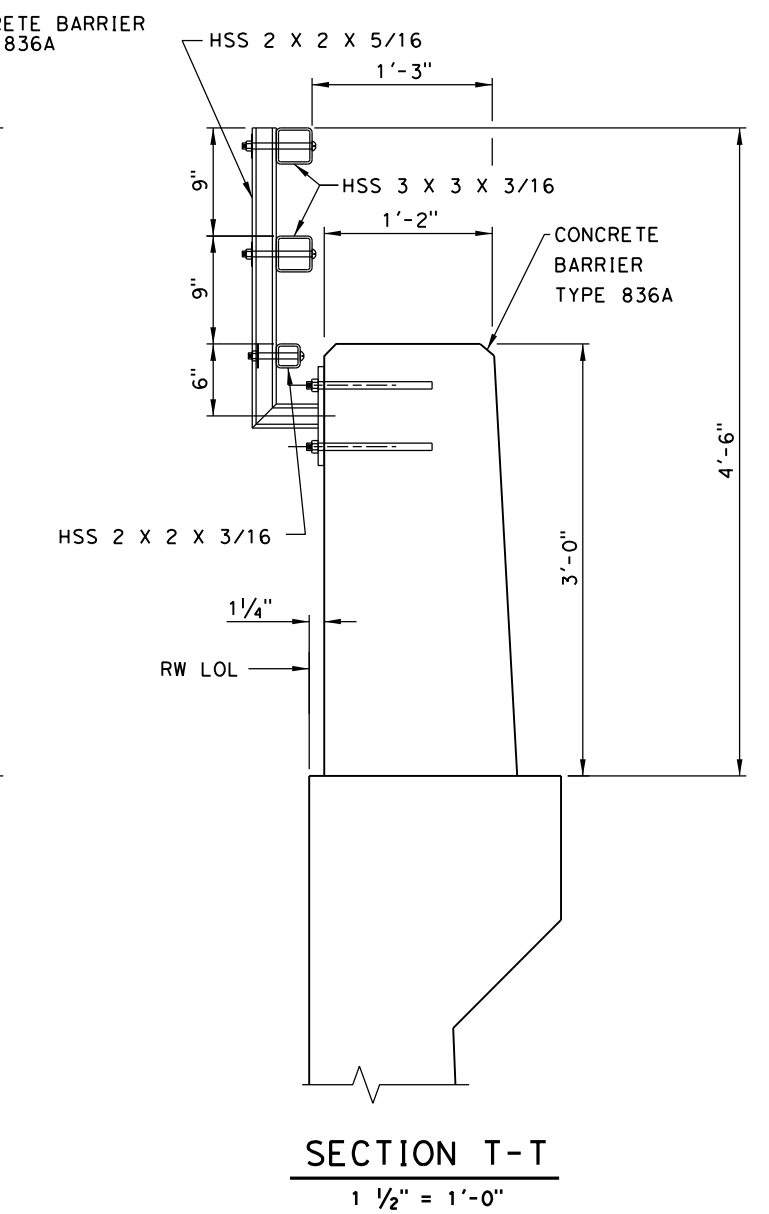
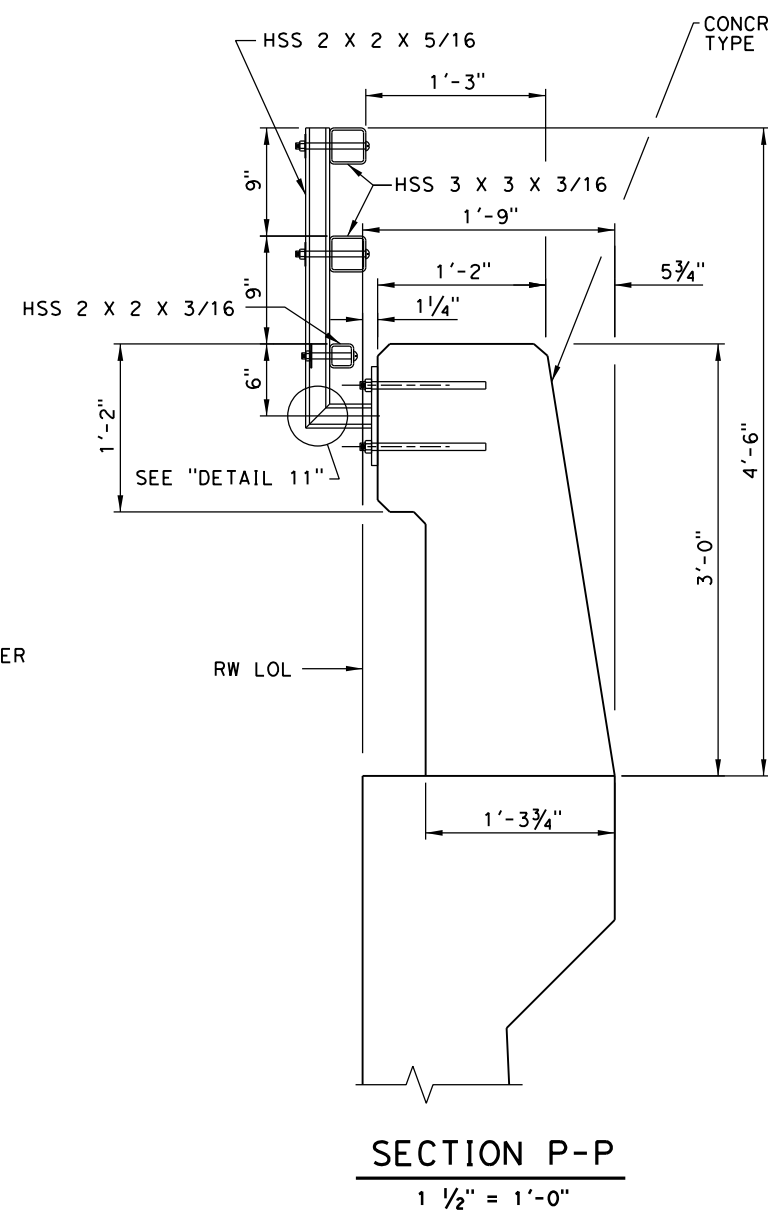
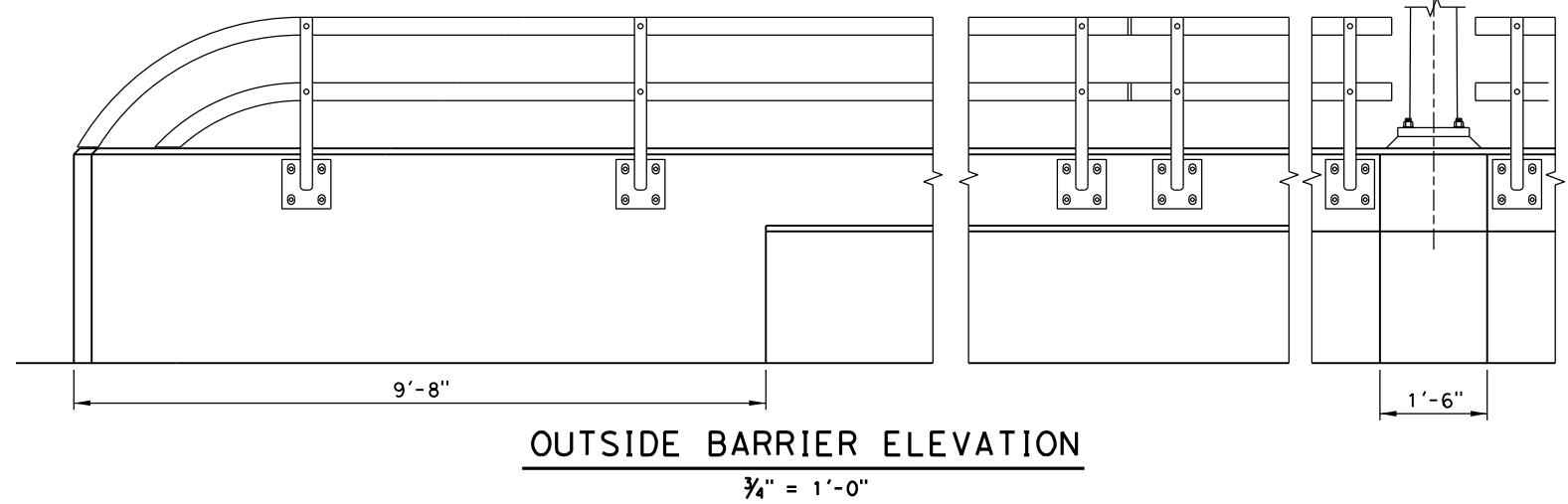
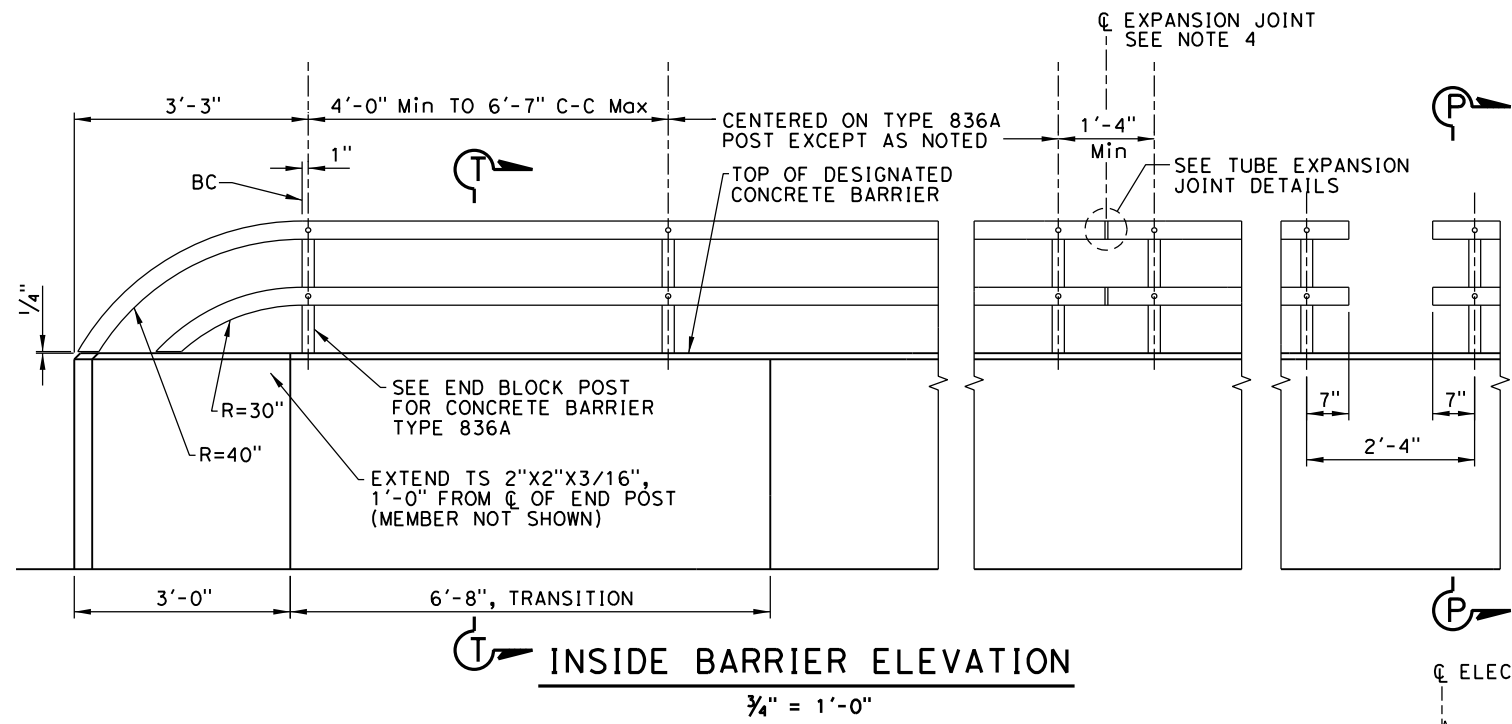
**GEOCOMPOSITE DRAIN AND DETAIL**

NO SCALE

**RETAINING WALL DETAILS No. 5**

SCALE: AS SHOWN

REVISOR	DATE	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2	CHECKED BY		PLANS APPROVAL DATE	CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2\RW2-14_DETAILS_NO.5.dgn				
			SUPERVISOR R. SENNETT				7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			CONTRACT NO.
			DATE 11/15/2019							SHEET NAME
BORDER LAST REVISED 9/9/2015										RW2-14
										SHEET NO.
										TOTAL SHEETS
										LAST REVISION
										DATE PLOTTED => 11/15/2019
										TIME PLOTTED => 11:25:39 AM



**TUBULAR BICYCLE RAILING**

**NOTES:**

1. POST SHALL BE NORMAL TO RAILING.
2. RAIL TUBES SHALL BE SHOP BENT OR FABRICATED TO FIT HORIZONTAL CURVE WHEN RADIUS IS LESS THAN 950'.
3. TUBE SPLICES SHALL BE LOCATED IN THE TUBES SPANNING WALL JOINTS. INCREASE JOINT WIDTH IN TUBES TO MATCH EXPANSION JOINT WIDTH AND INCREASE SLEEVE LENGTH CORRESPONDINGLY.
4. TOP RAIL TUBE SHALL BE CONTINUOUS OVER NOT LESS THAN TWO POSTS.
5. SEE "RETAINING WALL DETAILS No. 7" SHEET FOR DETAILS NOT SHOWN.

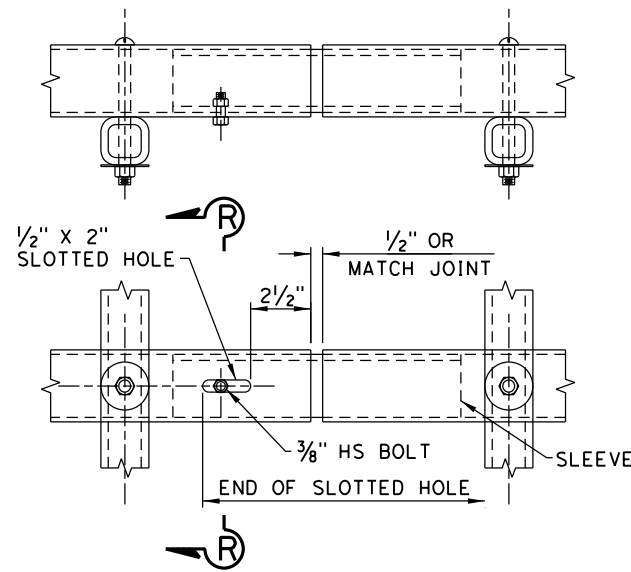
**RETAINING WALL DETAILS No. 6**  
 SCALE: AS SHOWN

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2 PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-15_DETAILS.dgn CONTRACT NO.		
			CHECKED BY		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				SHEET NAME <b>RW2-15</b>	SHEET NO.	TOTAL SHEETS
			SUPERVISOR R. SENNETT		DATE 11/15/2019	MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.				LAST REVISION 11/15/2019	DATE PLOTTED => 11/15/2019 TIME PLOTTED => 11:02:05 AM	

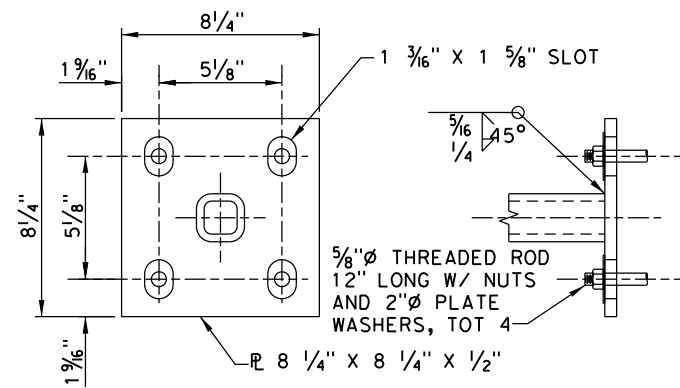
P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-15\_DETAILS.dgn

BORDER LAST REVISED 9/9/2015

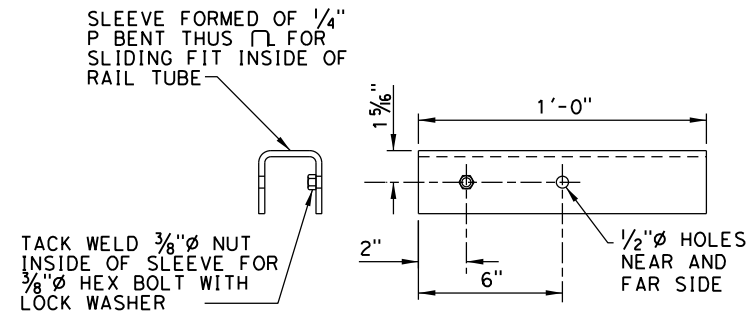




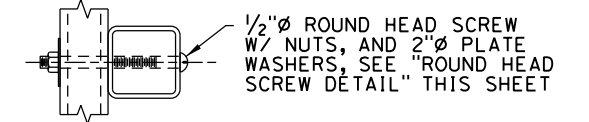
**TUBE EXPANSION JOINT DETAIL**  
3" = 1'-0"



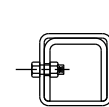
**BASE PLATE DETAIL**  
3" = 1'-0"



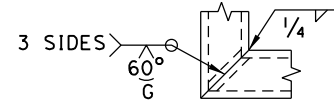
**SLEEVE DETAIL**  
3" = 1'-0"



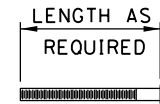
**TUBE CONNECTION DETAIL**  
3" = 1'-0"



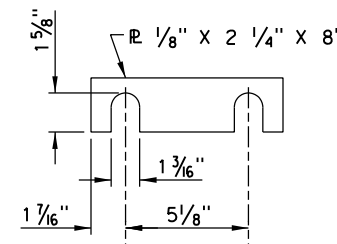
**SECTION R-R**  
3" = 1'-0"



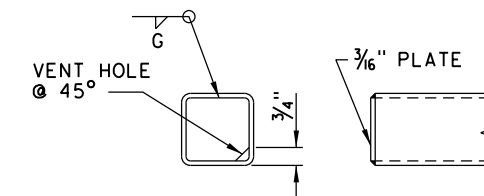
**DETAIL 11**  
3" = 1'-0"



**ROUND HEAD SCREW DETAIL**  
3" = 1'-0"



**SHIM DETAIL**  
3" = 1'-0"

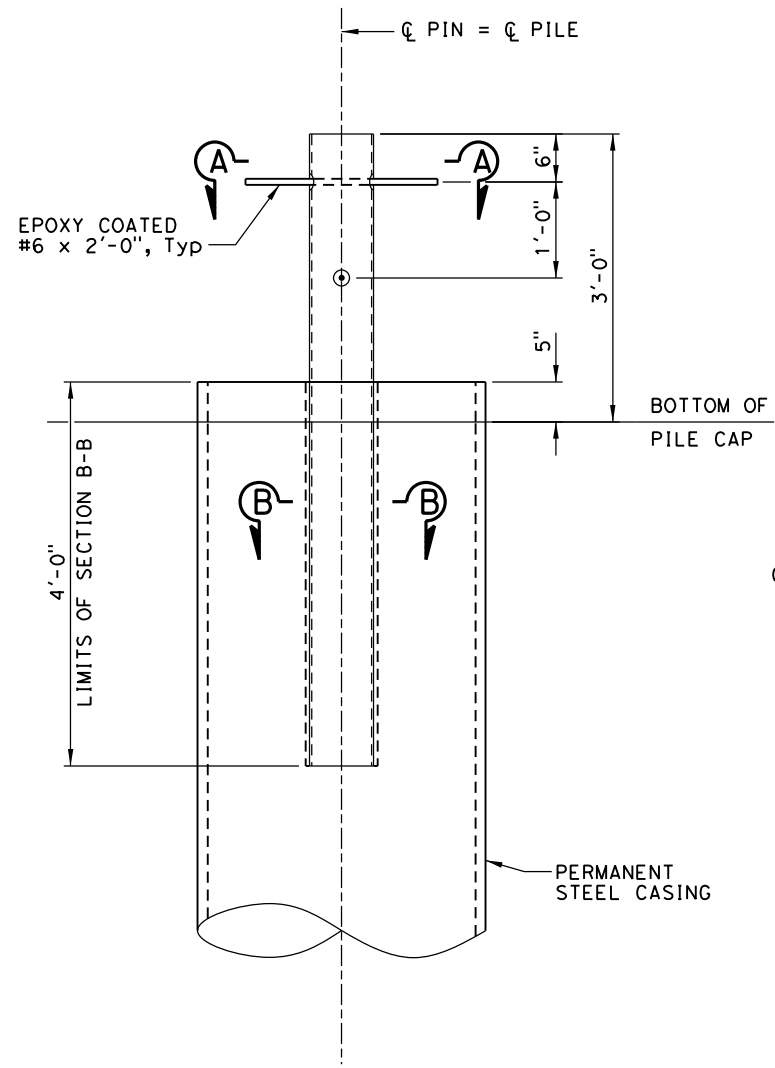


**RAIL CAP DETAIL**  
3" = 1'-0"

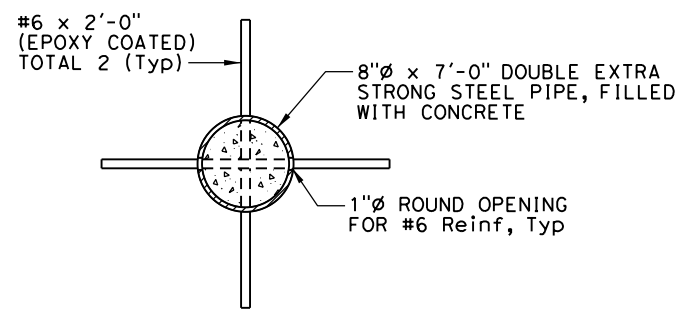
**RETAINING WALL  
DETAILS No. 7**  
SCALE: AS SHOWN

REVISOR	DATE	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2</b>	CALCULATED/ DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 10/28/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter
									CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-16-DETAILS NO 7.dgn
									CONTRACT NO.
PROJECT DESCRIPTION		DATE		PLANS APPROVAL DATE		MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SHEET NAME	
BORDER LAST REVISED 9/9/2015		10/28/2019						RW2-16	
RELATIVE BORDER SCALE IS IN INCHES		0 1 2 3						LAST REVISION	
								DATE PLOTTED => 10/28/2019	
								TIME PLOTTED => 3:01:42 PM	

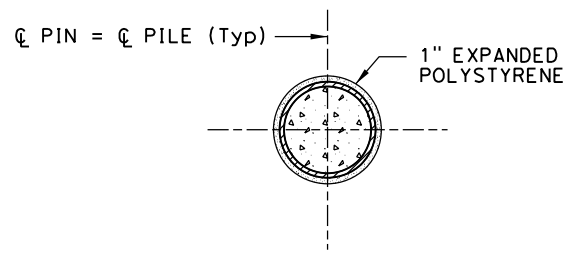
P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-16-DETAILS NO 7.dgn



**SHEAR PIN DETAIL**  
1" = 1'-0"



**SECTION A-A**  
1 1/2" = 1'-0"

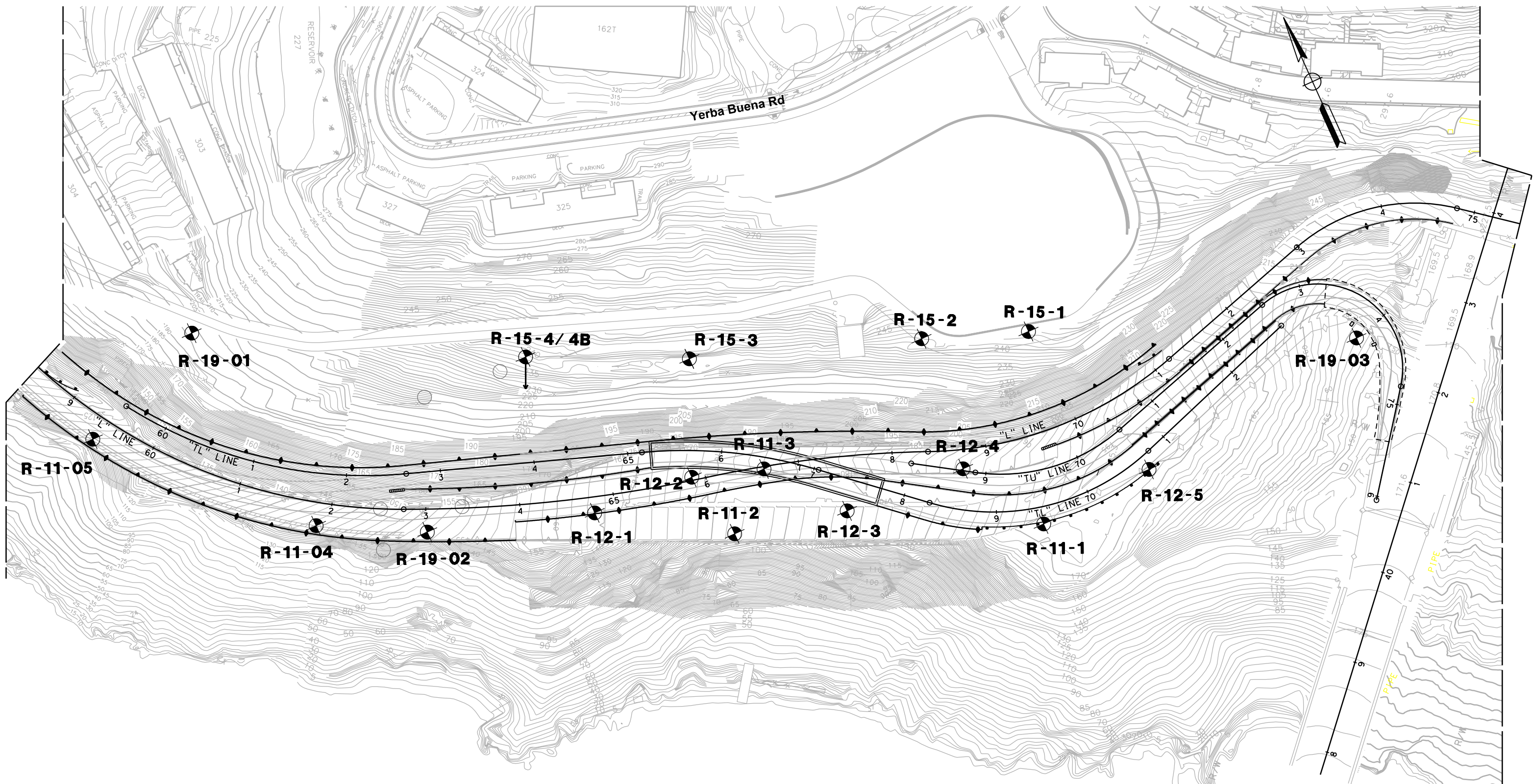


**SECTION B-B**  
1 1/2" = 1'-0"

**RETAINING WALL  
DETAILS No. 8**  
SCALE: AS SHOWN

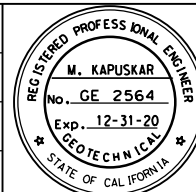
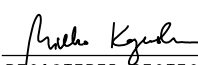


REVISOR	DATE	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 2</b>		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter
				REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				CONTRACT NO.
				PROJECT DESCRIPTION 11/15/2019	<i>MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</i>				SHEET NAME <b>RW2-17</b>
BORDER LAST REVISED 9/9/2015		RELATIVE BORDER SCALE IS IN INCHES					LAST REVISION 11/15/2019		
							DATE PLOTTED => 11/15/2019 TIME PLOTTED => 10:59:43 AM		

P:\521 YBI Retaining Walls\06 CAD\Structure RW2\RW2-17\_DETAILS NO. 8.dgn



R-XX-01 BORING - SEE LOG OF TEST BORING SHEETS

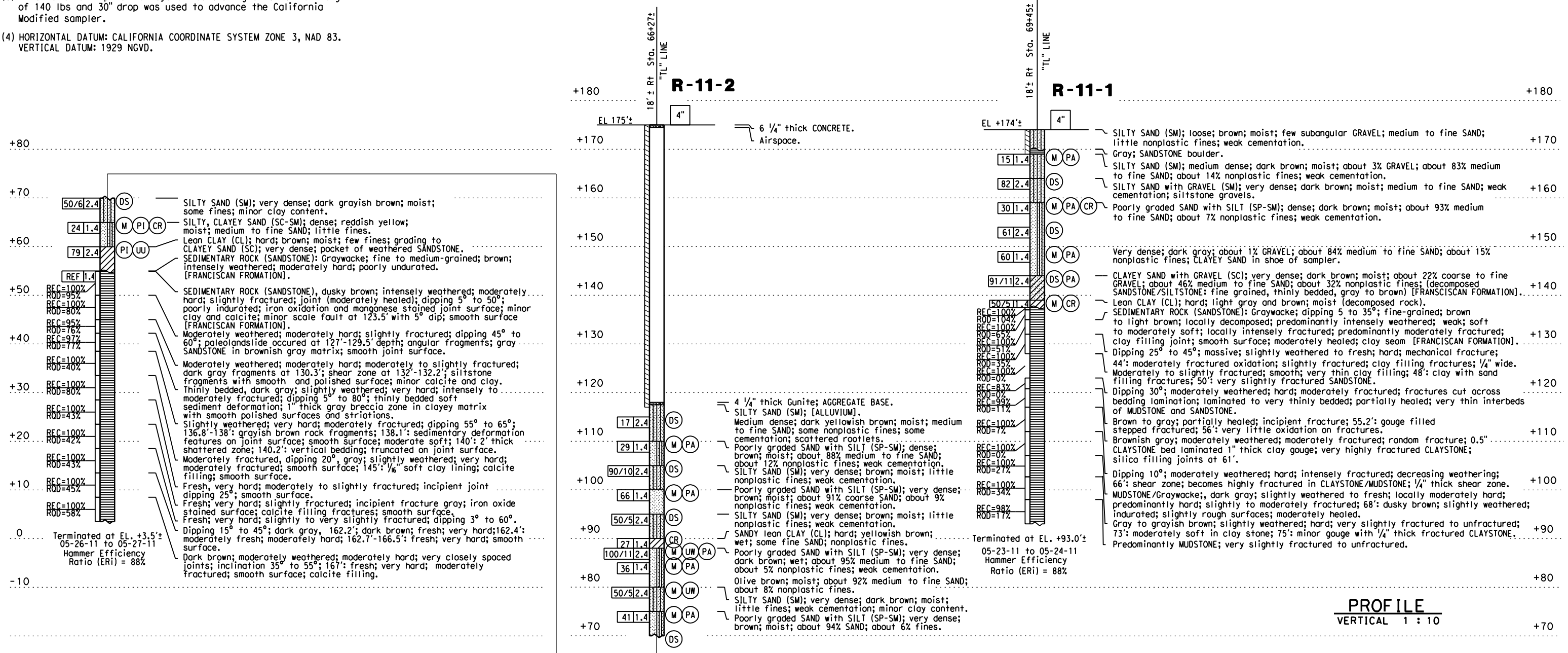
**LOG OF TEST BORINGS  
No. 1 OF 7**  
SCALE: 1" = 50'

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 2  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE			07/27/19	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => Peter	CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2
			DRAWN BY: B. AMBRIZ		REGISTERED GEOTECHNICAL ENGINEER	PLANS SUBMITTAL DATE				CONTRACT NO.	
			CHECKED BY: M. KAPUSKAR		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	PLANS APPROVAL DATE				SHEET NAME <b>RW2-18</b>	
BORDER LAST REVISED 1/20/2019			APPROVED BY: M. KAPUSKAR							LAST REVISION 1-20-19	DATE PLOTTED => 11/14/2019 TIME PLOTTED => 12:40:12 PM



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



**PROFILE**  
VERTICAL 1 : 10

G. BUTLER, J. CASTLE, M. HOSHIYAMA  
FIELD INVESTIGATION BY:

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW2-18

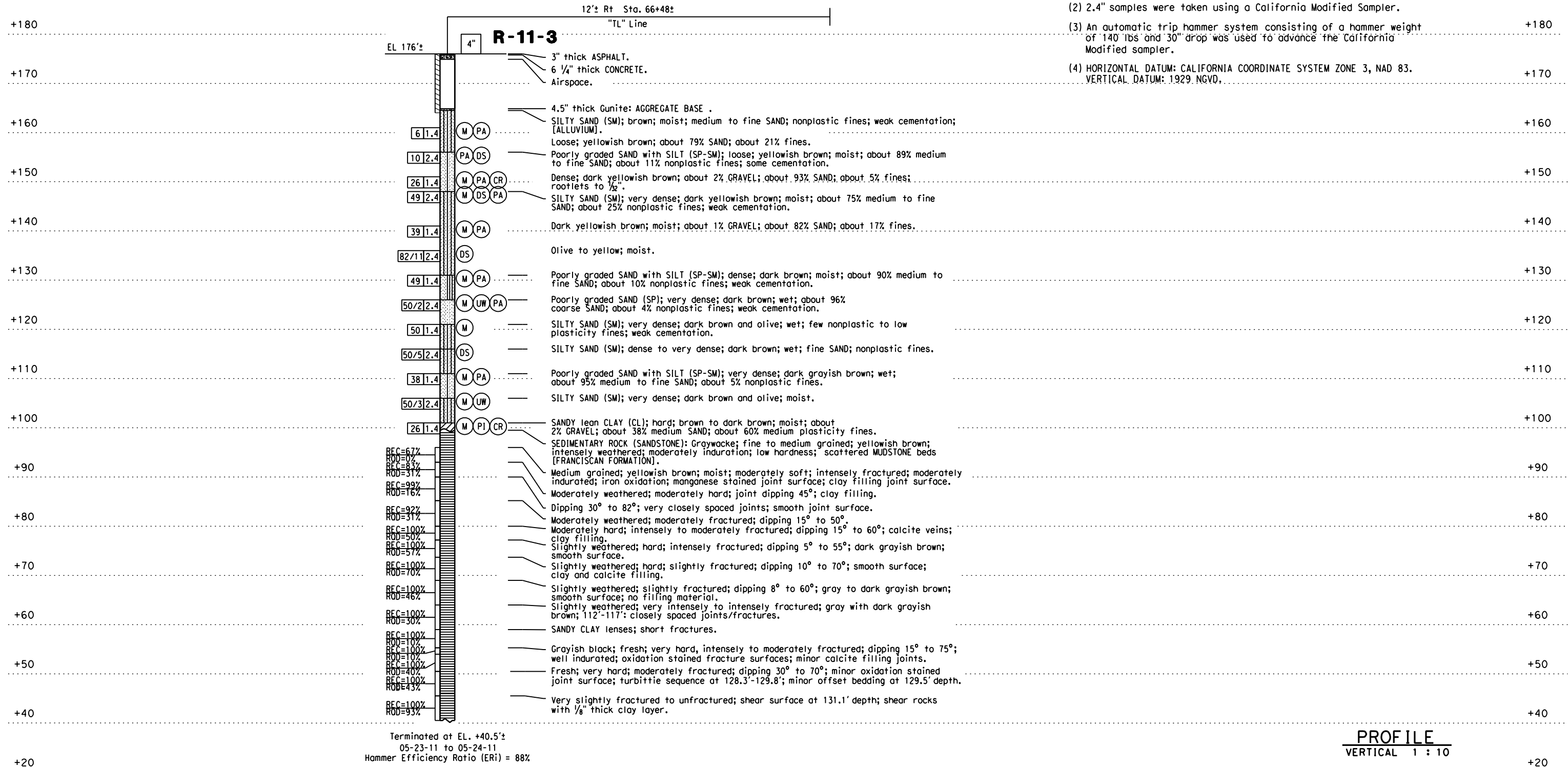
**LOG OF TEST BORINGS**  
**No. 2 OF 7**

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 2	DESIGNED BY: J. CASTLE		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eearthmech.com			USERNAME => Peter
			CHECKED BY: A. KORKOS						CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\
PROJECT DESCRIPTION			APPROVED BY: M. KAPUSKAR	EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	PLANS APPROVAL DATE				CONTRACT NO.
BORDER LAST REVISED 1/20/2019			RELATIVE BORDER SCALE IS IN INCHES						SHEET NAME RW2-19
									SHEET NO. 1-20-19
									TOTAL SHEETS 11/15/2019 TIME PLOTTED => 3:53:43 PM



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



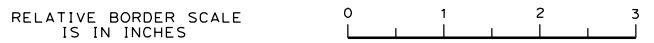
**PROFILE**  
VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW2-18

## LOG OF TEST BORINGS No. 3 OF 7

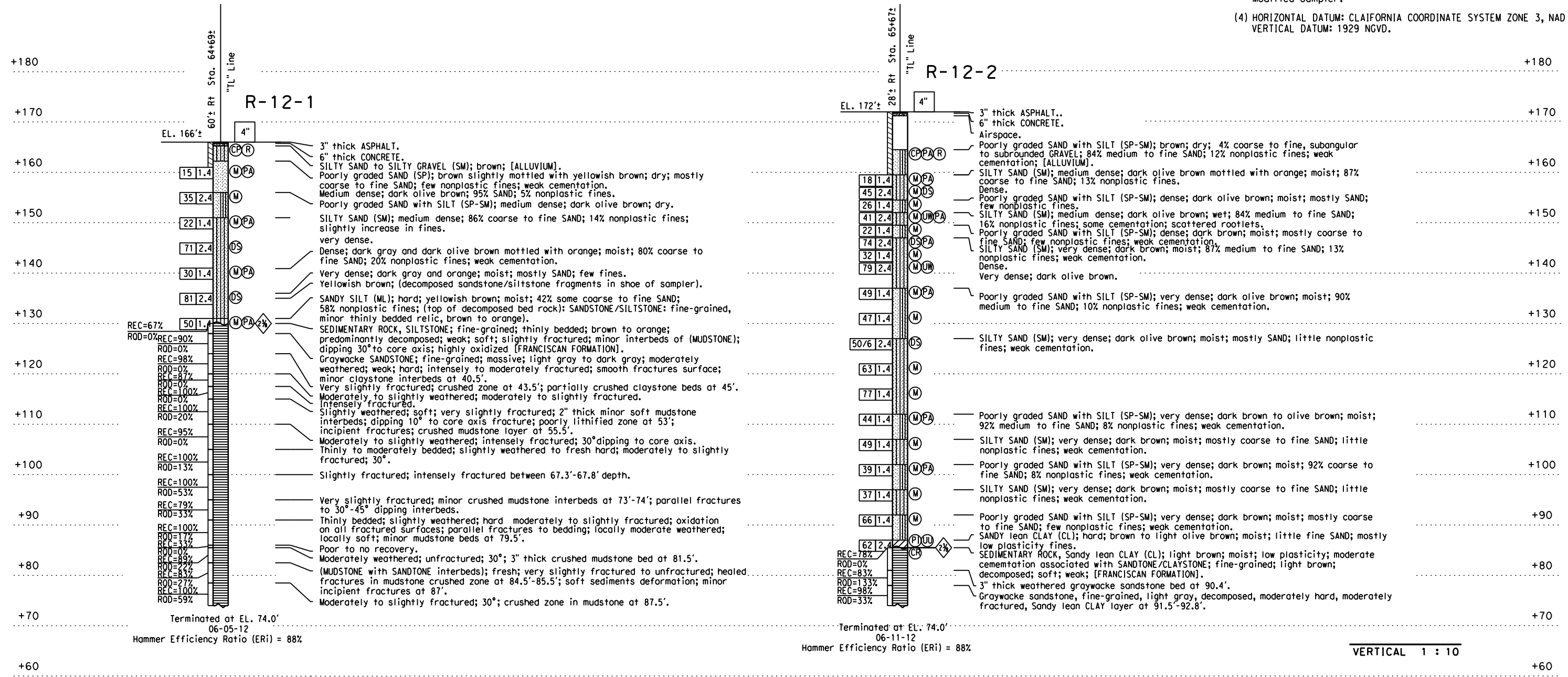
G. BUTLER, J. CASTLE, M. HOSHIYAMA  
FIELD INVESTIGATION BY:

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 2	DESIGNED BY: J. CASTLE			07/27/19			USERNAME => Peter		
			DRAWN BY: K. THANT		REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eearthmech.com			CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure		
			CHECKED BY: A. KORKOS		PLANS APPROVAL DATE	EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			CONTRACT NO.		
		PROJECT DESCRIPTION	APPROVED BY: M. KAPUSKAR						SHEET NAME	SHEET NO.	TOTAL SHEETS
									RW2-20		
BORDER LAST REVISED 1/20/2019									LAST REVISION	DATE PLOTTED => 11/15/2019	
									1-20-19	TIME PLOTTED => 3:52:53 PM	



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW2-18

**LOG OF TEST BORINGS  
 No. 4 OF 7**

G. BUTLER, J. CASTLE  
 FIELD INVESTIGATION BY:

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 2 PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.earthtech.com			USERNAME => Peter
			DRAWN BY: K. THANT						CONTRACT NO.
			CHECKED BY: A. KORKOS						SHEET NAME
			APPROVED BY: M. KAPUSKAR	PLANS APPROVAL DATE					SHEET NAME <b>RW2-21</b>
BORDER LAST REVISED 1/20/2019				RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3				LAST REVISION 1-20-19
									DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:54:40 PM

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



PROFILE  
VERTICAL 1 : 10

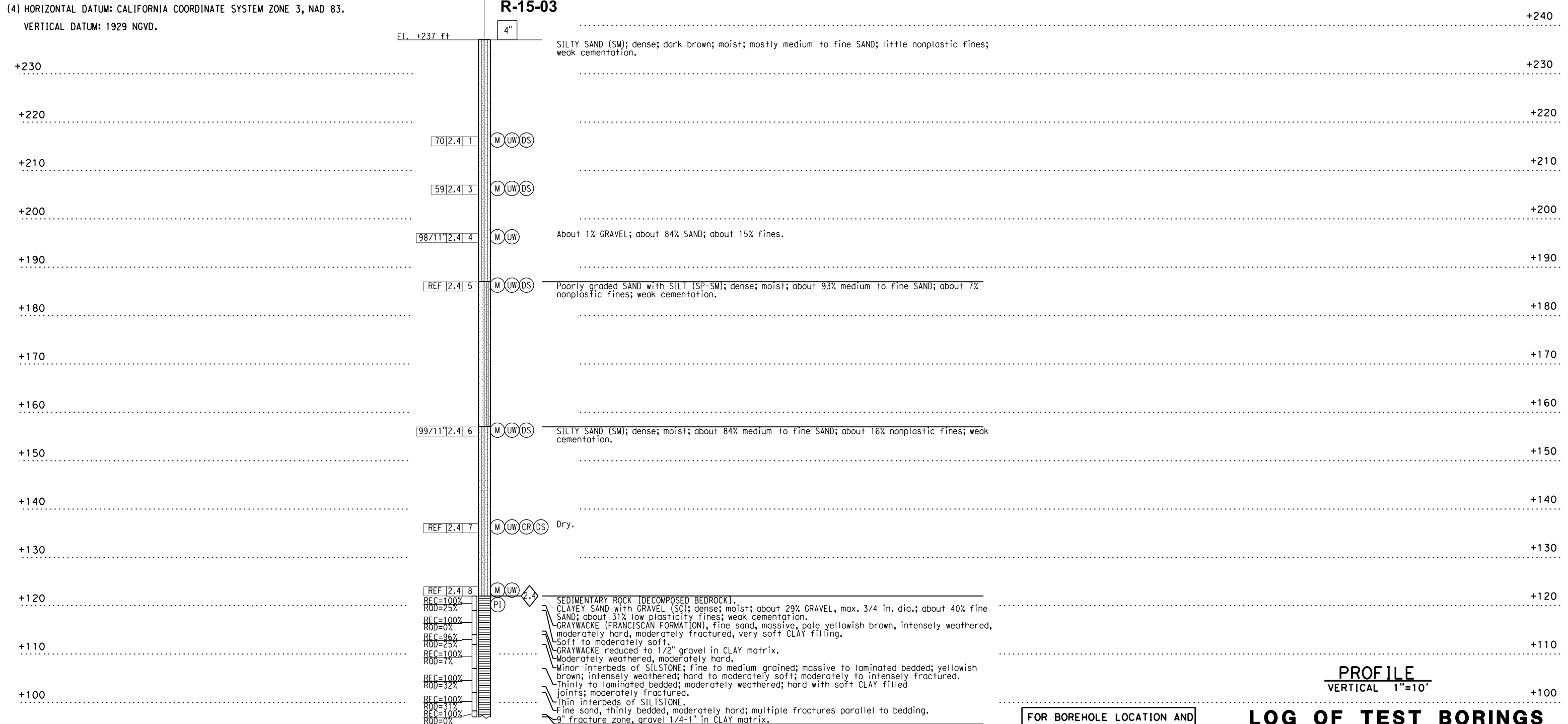
**LOG OF TEST BORINGS  
No. 5 OF 7**

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW2-18

REVISED BY: _____ DATE REVISED: _____ YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 2		DESIGNED BY: J. CASTLE DRAWN BY: K. THANT CHECKED BY: A. KORKOS APPROVED BY: M. KAPUSKAR				REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE 07/27/19 PLANS APPROVAL DATE: _____		3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorhthmech.com						USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-22.dwg CONTRACT NO. _____	
PROJECT DESCRIPTION RETAINING WALL No. 2		APPROVED BY: M. KAPUSKAR		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SHEET NAME: RW2-22 SHEET NO.: _____ TOTAL SHEETS: _____		LAST REVISION: _____ DATE PLOTTED => 11/15/2019 1-20-19 TIME PLOTTED => 3:55:42 PM		BORDER LAST REVISED 1/20/2019		RELATIVE BORDER SCALE IS IN INCHES: 0 1 2 3		USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW2-22.dwg CONTRACT NO. _____	

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



J. CASTLE, T. MAR  
FIELD INVESTIGATION BY:

Terminated at Elev. +97.0±  
8-15-15 to 8-18-15  
Hammer Efficiency Ratio (ERI) = ~80%

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW2-18

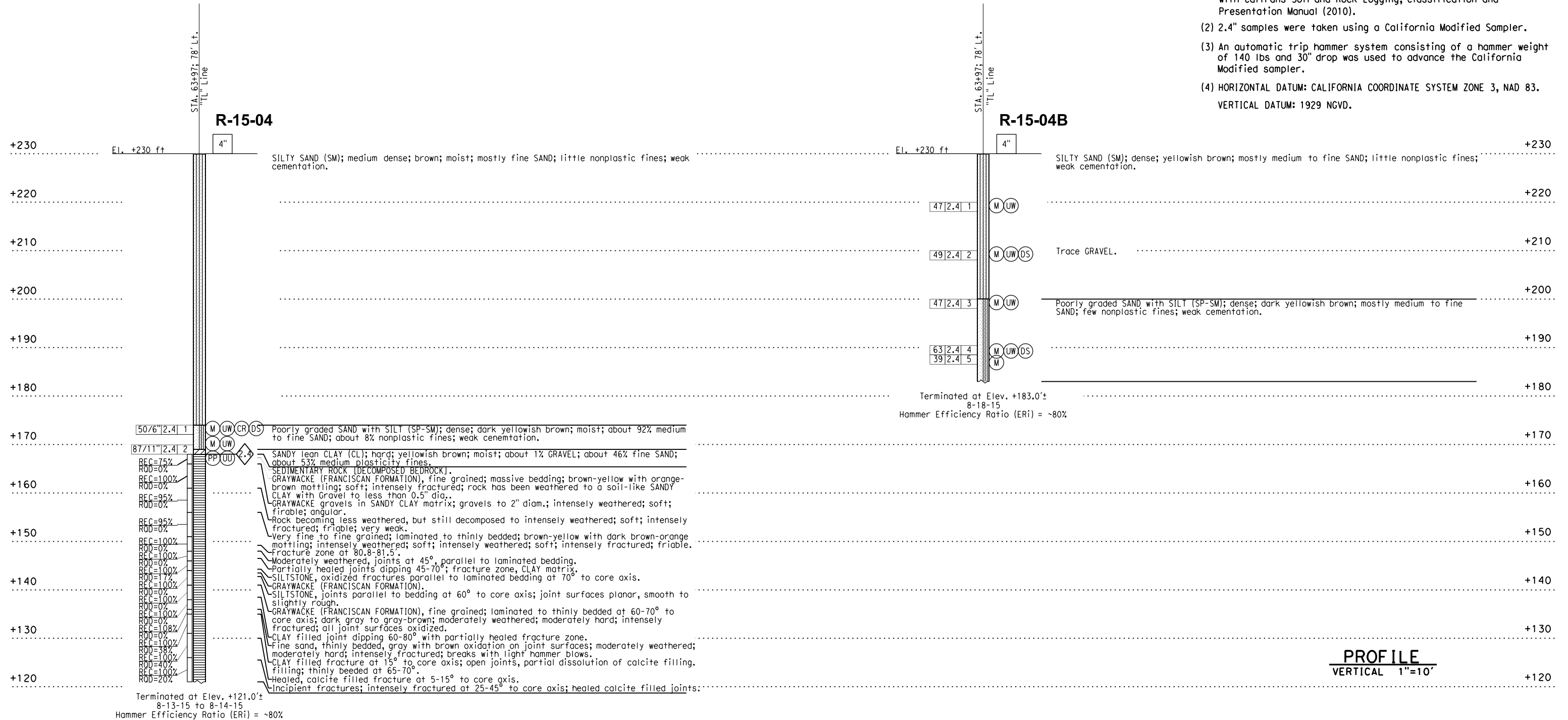
**PROFILE**  
VERTICAL 1"=10'

**LOG OF TEST BORINGS**  
No. 6 OF 7

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 2  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.earthmech.com			USERNAME => Peter					
			DRAWN BY: B. AMBRIZ										CADD FILENAME =>	
			CHECKED BY: C.T. YANG											P:\521 YBI Retaining Walls\06 CAD\Structure\NRW2
			APPROVED BY: M. KAPUSKAR											CONTRACT NO.
BORDER LAST REVISED 1/20/2019			PLANS APPROVAL DATE	EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SHEET NAME: RW2-23 SHEET NO.: TOTAL SHEETS:		LAST REVISION: 1-20-19 DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:56:43 PM						

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.

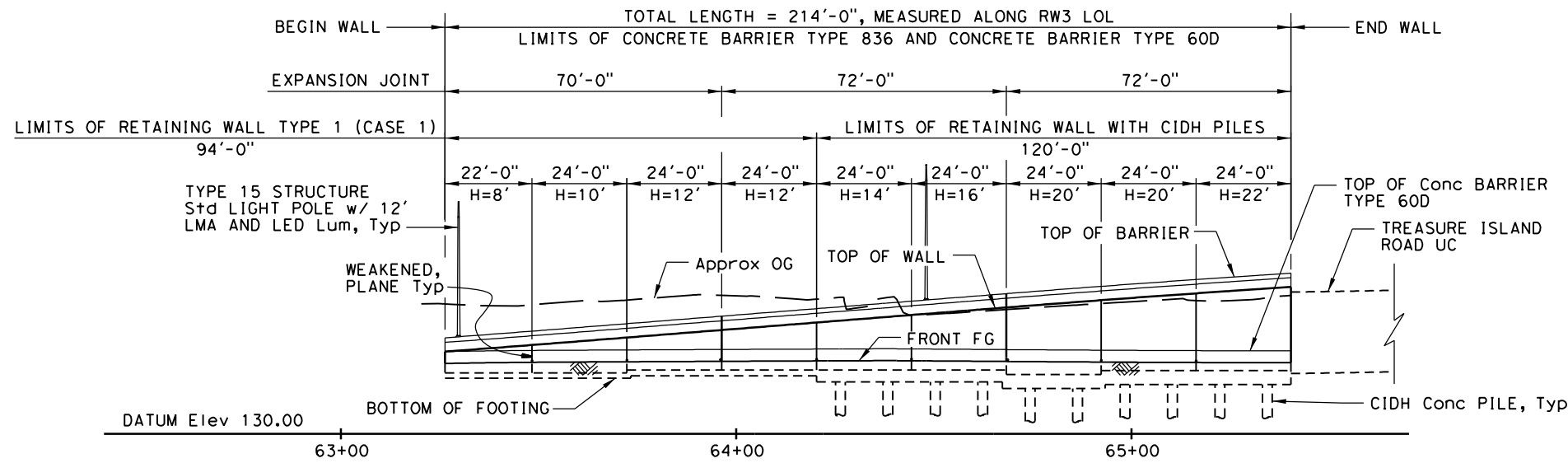


FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW2-18

**LOG OF TEST BORINGS**  
**No. 7 OF 7**

J. CASTLE, T. MAR  
FIELD INVESTIGATION BY:

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 2  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => Peter				
			DRAWN BY: B. AMBRIZ										CADD FILENAME =>
			CHECKED BY: C.T. YANG										P:\521 YBI Retaining Walls\06 CAD\Structure\RW2
			APPROVED BY: M. KAPUSKAR										CONTRACT NO.
			PLANS APPROVAL DATE	EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.									
BORDER LAST REVISED 1/20/2019			RELATIVE BORDER SCALE IS IN INCHES										
							SHEET NAME: RW2-24 SHEET NO.: TOTAL SHEETS:						
							LAST REVISION: 1-20-19 DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:58:41 PM						

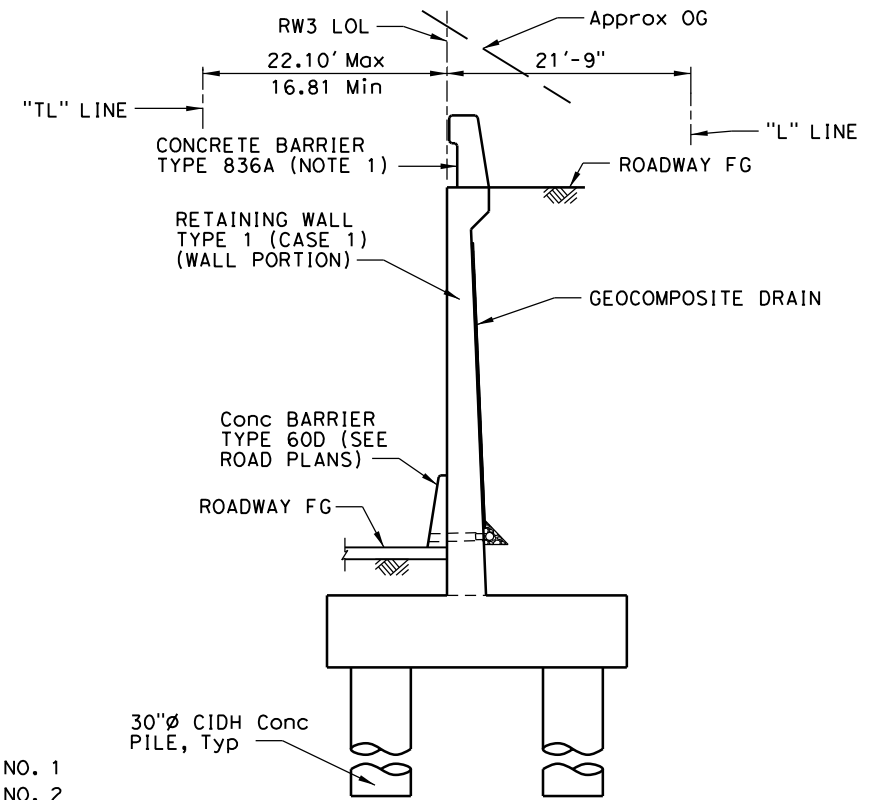


MIRRORED DEVELOPED ELEVATION

1" = 20'

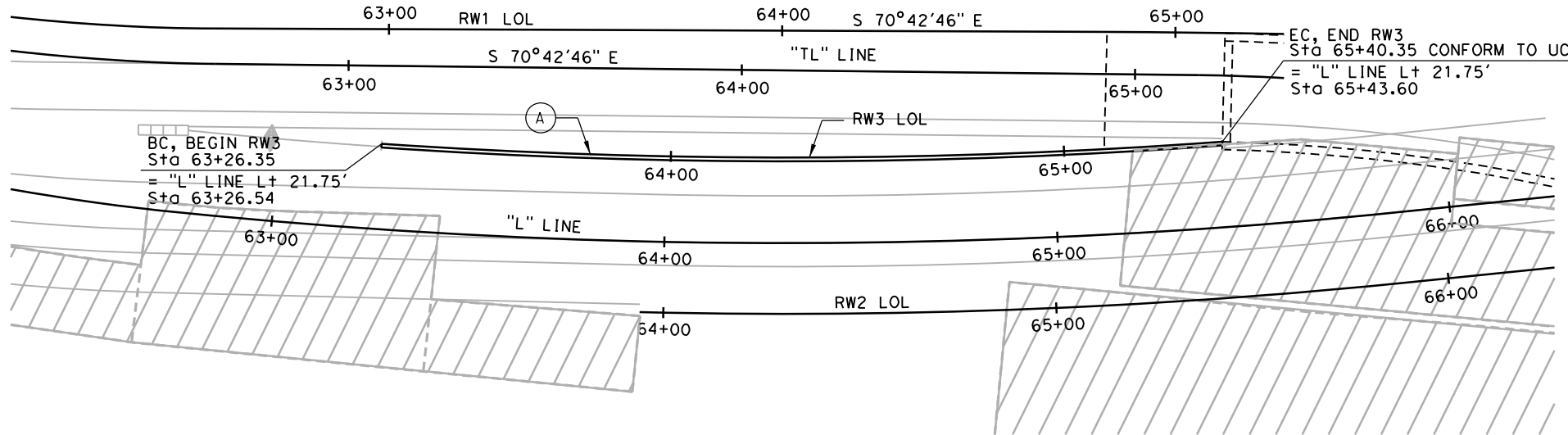
INDEX TO PLANS

SHEET NO.	TITLE
RW3-1	GENERAL PLAN NO. 1
RW3-2	FOUNDATION PLAN
RW3-3	RETAINING WALL LAYOUT
RW3-4	RETAINING WALL DETAILS NO. 1
RW3-5	RETAINING WALL DETAILS NO. 2
RW3-6	LOG OF TEST BORING No. 1 OF 6
RW3-7	LOG OF TEST BORING No. 2 OF 6
RW3-8	LOG OF TEST BORING No. 3 OF 6
RW3-9	LOG OF TEST BORING No. 4 OF 6
RW3-10	LOG OF TEST BORING No. 5 OF 6
RW3-11	LOG OF TEST BORING No. 6 OF 6



TYPICAL SECTION - WALL ON PILES

NTS



PLAN

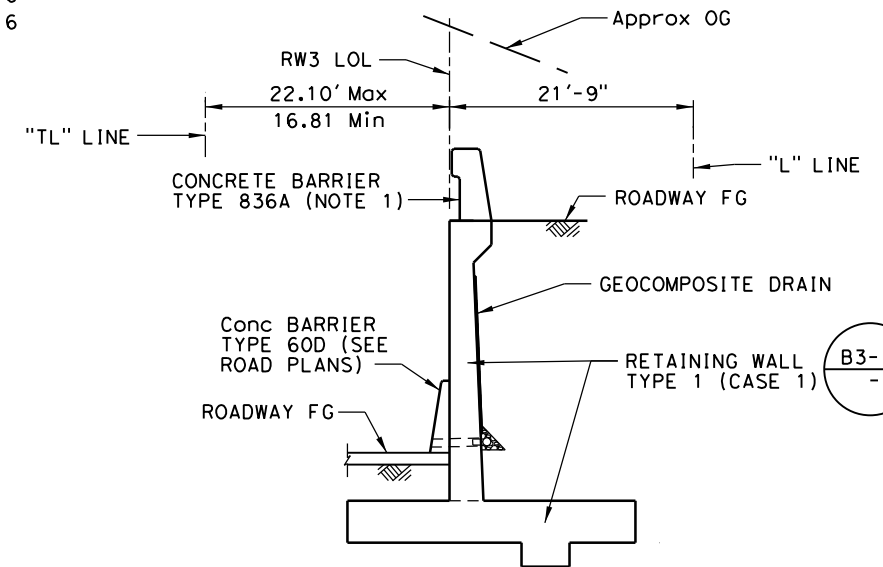
1" = 20'

LEGEND:

BRIDGE REMOVAL, SEE "ROAD PLANS"

NOTE:

1. SEE "FOUNDATION PLAN" SHEET FOR "GENERAL NOTES" AND "STANDARD PLANS".



TYPICAL SECTION - WALL ON SPREAD FOOTING

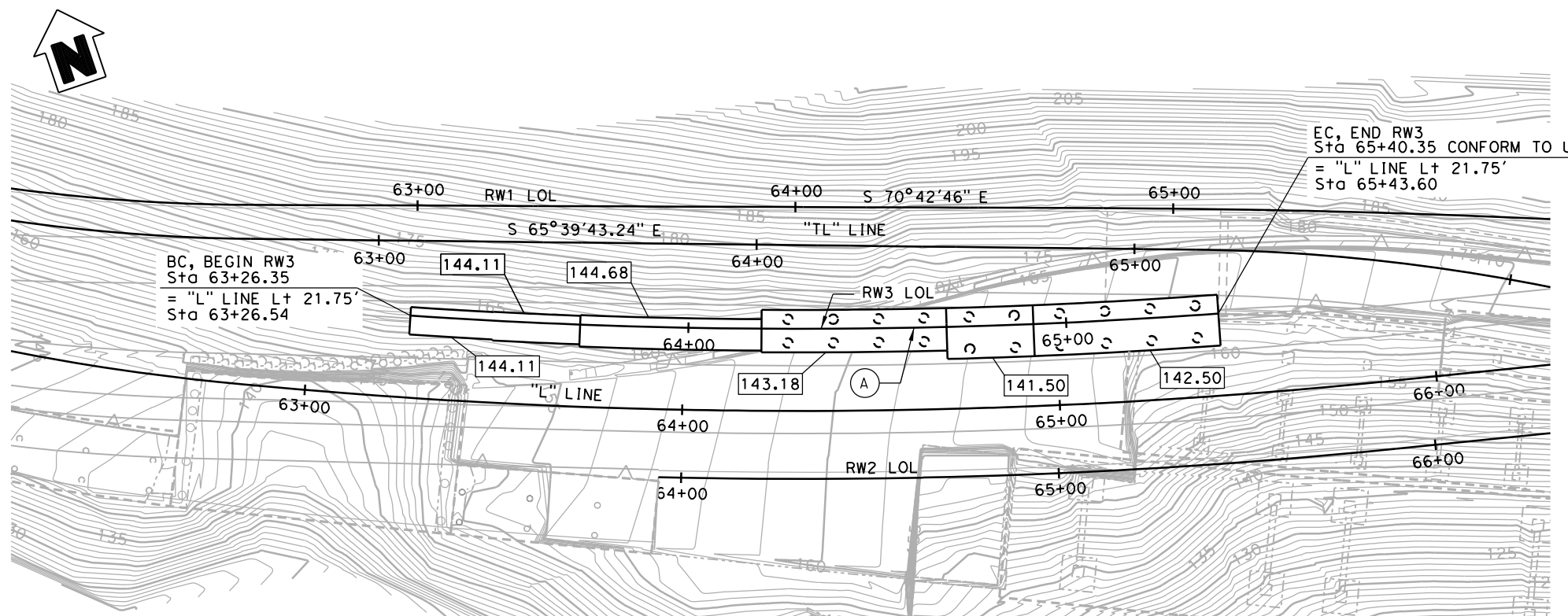
NTS

NO.	R	Δ	T	L
(A)	1522.25'	8°03'17.00"	107.18'	214.00'

GENERAL PLAN No. 1  
SCALE: AS SHOWN

REVISIONS: NO.   DATE REVISION   DESCRIPTION	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 3	CALCULATED/DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 11/15/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW3\RW3_01_GP1.dgn CONTRACT NO. SHEET NAME   SHEET NO.   TOTAL SHEETS RW3-1     LAST REVISION   DATE PLOTTED => 11/15/2019 11/15/2019   TIME PLOTTED => 11:51:48 AM
---	--	---	--	---	--	--	--	---





**FOUNDATION PLAN**  
1" = 20'

RW3 CURVE DATA TABLE				
No.	R	Δ	T	L
(A)	1522.25'	8°03'17.00"	107.18'	214.00'

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

- DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATION 6TH EDITION AND CALTRANS AMENDMENTS, PREFACE, DATED MARCH, 2014
- SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 1.7, APRIL 2013
- DEAD LOAD: INCLUDES WEIGHT OF 75 PSF FOR STEM ARCHITECTURAL TREATMENT UP TO 6 INCHES
- LIVE LOAD: 72 pcf SURCHARGE
- SEISMIC LOAD: PEAK GROUND ACCELERATION (PGA) = 0.57g
- REINFORCED CONCRETE: f'c = 4,000 psi  
fy = 60,000 psi

**PILE DATA TABLE**

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	AVERAGE BEDROCK CONTACT ELEVATION (ft)	AVERAGE SOCKET LENGTH (ft)
		COMPRESSION	TENSION				
H=14'	30" Dia CIDH	280	N/A	(a) 128 (c) 135 (d) 132	128	142	14
H=16'	30" Dia CIDH	330	N/A	(a) 127 (c) 129 (d) 126	127	136	9
H=18'	30" Dia CIDH	400	N/A	(a) 116 (c) 118 (d) 132	116	125	9
H=20'	30" Dia CIDH	490	N/A	(a) 104 (c) 116 (d) 129	104	113	9
H=22'	30" Dia CIDH	560	N/A	(a) 89 (c) 116 (d) 129	89	98	9

- NOTES:
- DESIGN TIP ELEVATION ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESSION, (b) TENSION, (c) SETTLEMENT, AND (d) LATERAL LOAD.
  - SPECIFIED TIP ELEVATIONS SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR SETTLEMENT AND LATERAL LOAD WITHOUT ENGINEER'S APPROVAL.

**SURVEY DATUM:**

VERTICAL DATUM      NAVD 88  
HORIZONTAL DATUM    NAD 83

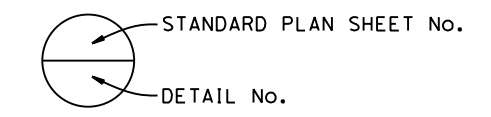
**LEGEND:**

- XXX.XX      INDICATES BOTTOM OF FOOTING ELEVATION
- INDICATES 30" DIAMETER CIDH CONCRETE PILE

**STANDARD PLANS**

DATED 2018

- A3A ABBREVIATIONS (SHEET 1 OF 3)
- A3B ABBREVIATIONS (SHEET 2 OF 3)
- A3C ABBREVIATIONS (SHEET 3 OF 3)
- A10A LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
- A10B LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
- A10C LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
- A10D LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
- A10E LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
- A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL
- A76B CONCRETE BARRIER TYPE 60M
- B0-3 BRIDGE DETAILS
- B3-1A RETAINING WALL TYPE 1 (CASE 1)
- B3-5 RETAINING WALL DETAILS No. 1
- RSP B11-79 CONCRETE BARRIER TYPE 836 DETAILS No. 1
- RSP B11-80 CONCRETE BARRIER TYPE 836 DETAILS No. 2



**FOUNDATION PLAN**  
SCALE: 1" = 20'

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 3	CALCULATED/ DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 11/13/2019		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE		7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter	
					PROJECT DESCRIPTION	PLANS APPROVAL DATE					MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	CONTRACT NO.

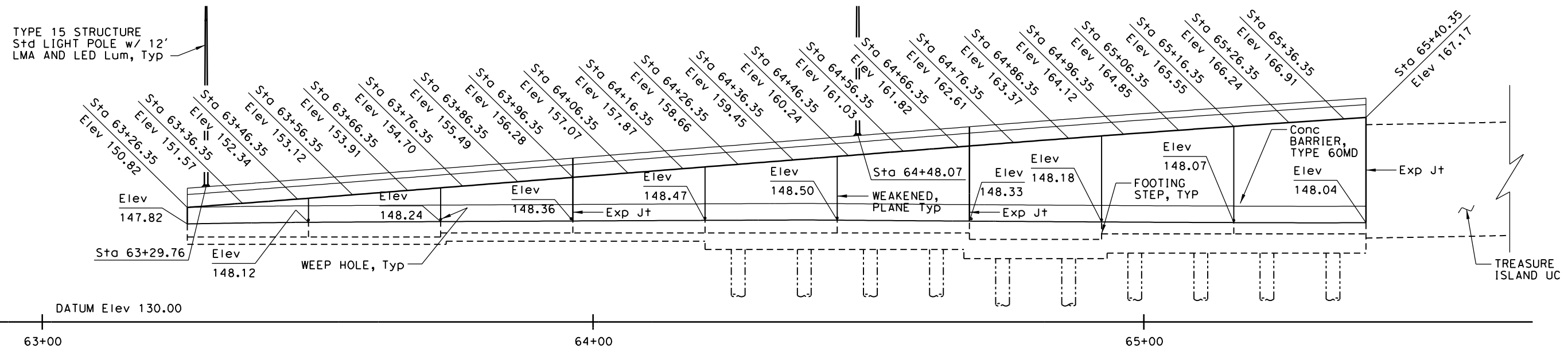
BORDER LAST REVISED 9/9/2015

RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3

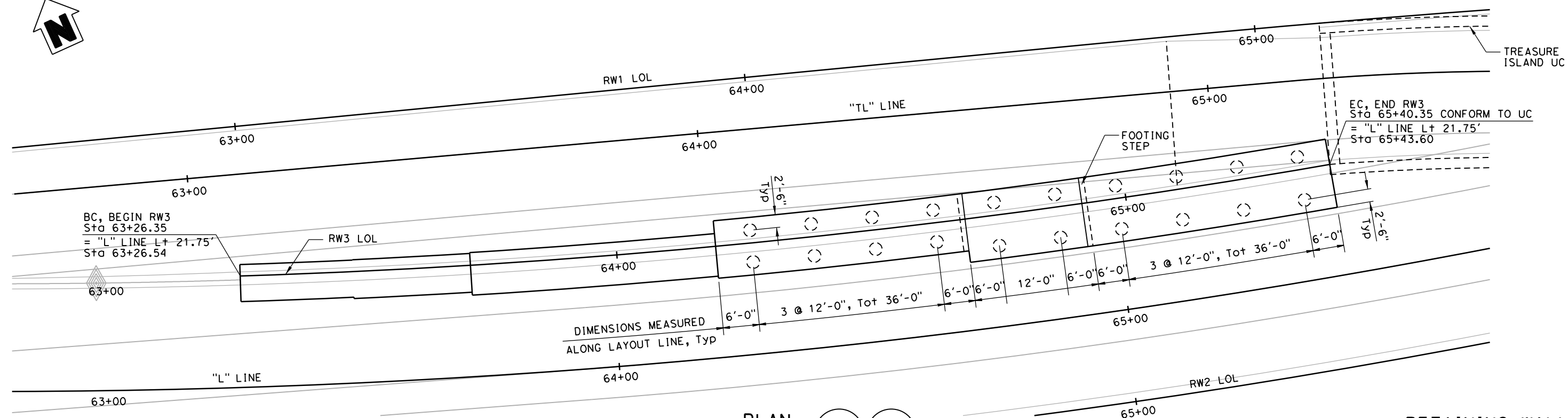
11/13/2019

TIME PLOTTED => 12:01:49 PM



MIRRORED DEVELOPED ELEVATION B0-3 B3-1A B3-5  
 1" = 10'

**NOTE:**  
 NOT ALL FEATURES SHOWN FOR LAYOUT AND CLARITY PURPOSES.



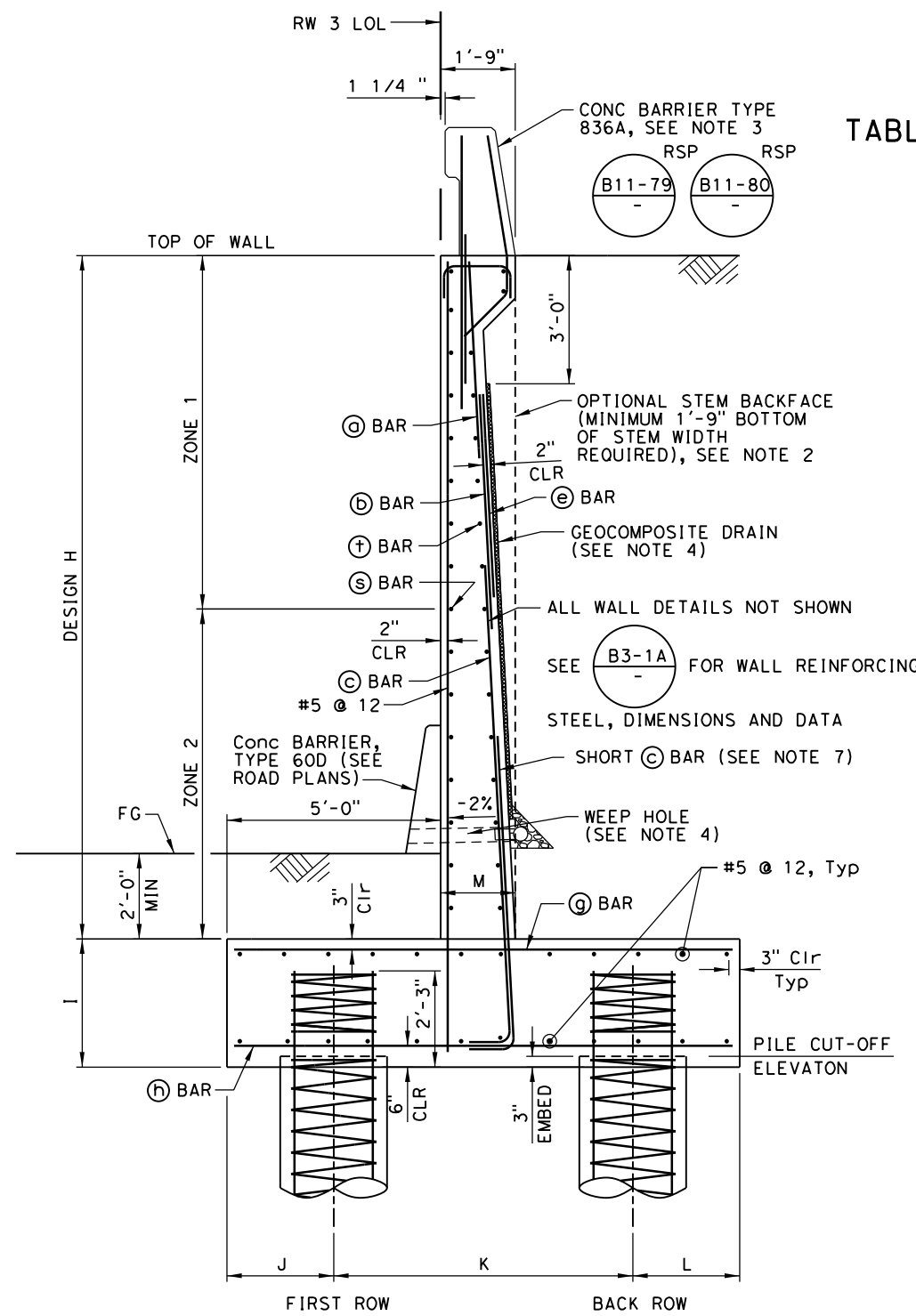
PLAN B3-1A B3-5  
 1" = 10'

**NOTE:**  
 1. NOT ALL FEATURES SHOWN FOR LAYOUT CLARITY PURPOSES.

**RETAINING WALL LAYOUT**  
 SCALE: 1" = 10'-0"

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 3	CALCULATED/ DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter		
			CHECKED BY		PLANS APPROVAL DATE	MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.				7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	CONTRACT NO.	
			PROJECT DESCRIPTION		DATE 11/11/2019							
BORDER LAST REVISED 9/9/2015						RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3			SHEET NAME <b>RW3-3</b>	SHEET NO. 	TOTAL SHEETS 
										LAST REVISION 11/11/2019	DATE PLOTTED => 11/11/2019	TIME PLOTTED => 3:35:12 PM



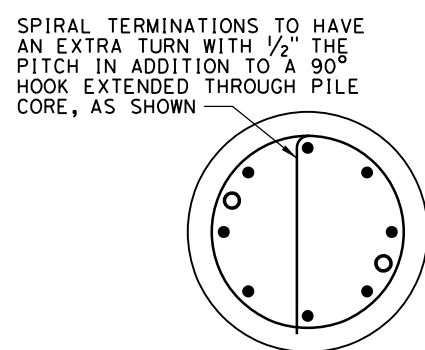
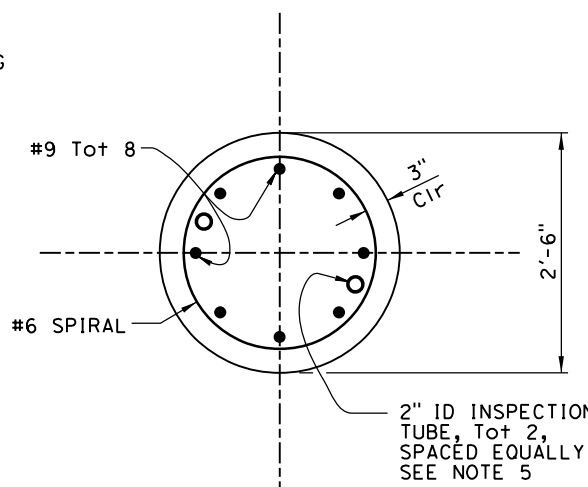


**TYPICAL SECTION**  
1/2" = 1'-0"

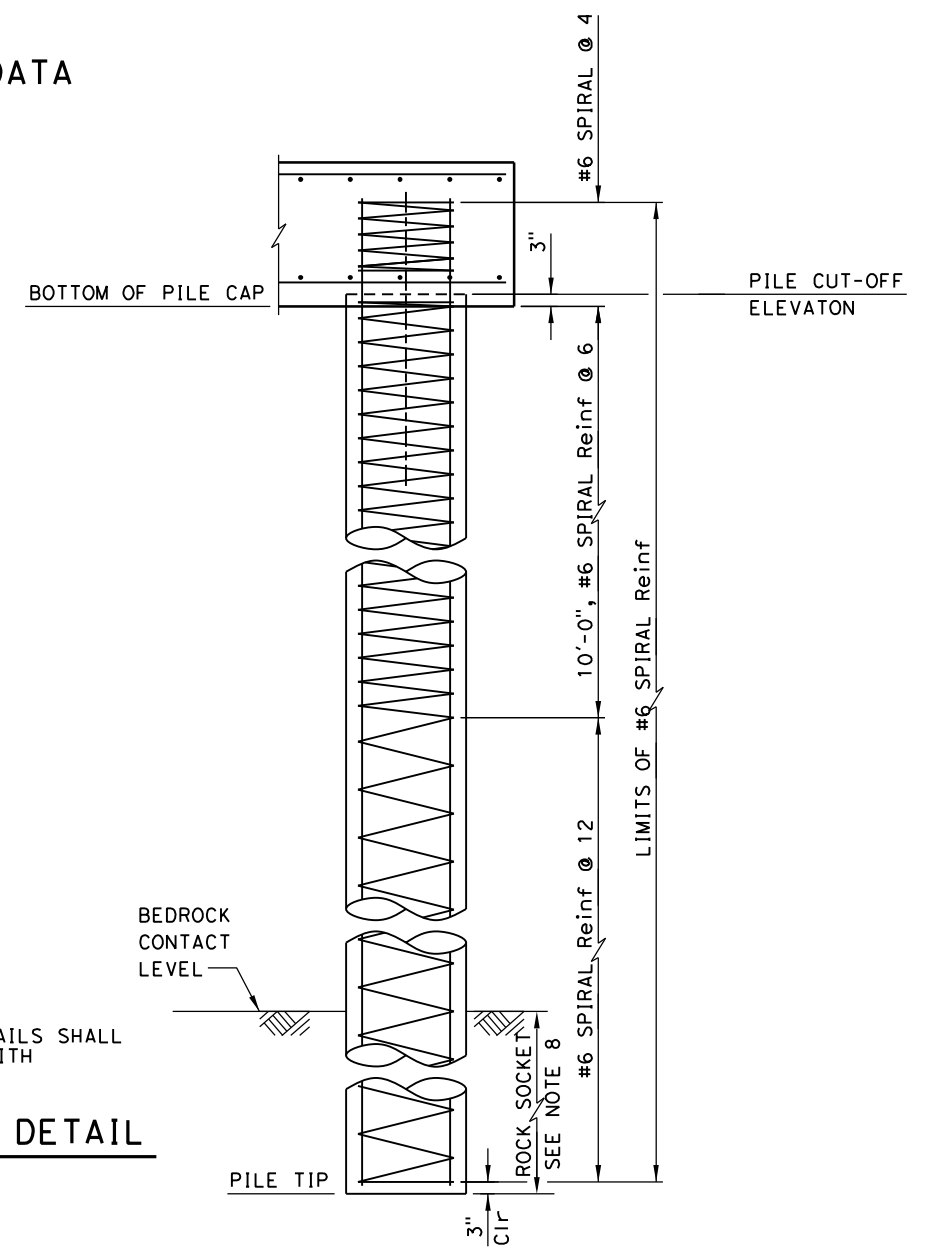
**TABLE OF PILE CAP REINFORCING STEEL, DIMENSION AND DATA**

DESIGN H	14'	16'	20'	22'
I	2'-9"	3'-0"	3'-6"	3'-6"
J	2'-6"	2'-6"	2'-6"	2'-6"
K	6'-3"	6'-3"	8'-6"	8'-6"
L	2'-6"	2'-6"	2'-6"	2'-6"
M*	1'-9"	1'-9"	1'-10"	1'-11"
(g) BAR	#6 @ 12	#6 @ 12	#6 @ 12	#6 @ 12
(h) BAR	#7 @ 12	#8 @ 12	#9 @ 12	#10 @ 12

\* BOTTOM OF STEM WIDTH PER "DESIGN H" AND "BATTER" ACCORDING TO B3-1A



HOOKS FOR SPIRAL TERMINATION DETAILS SHALL LINE UP SO AS NOT TO INTERFERE WITH CONSTRUCTION OPERATIONS.



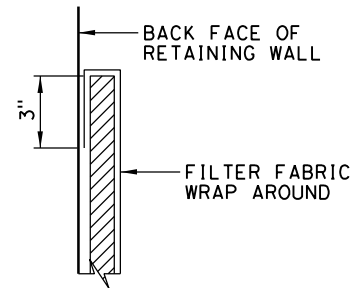
**NOTES:**

1. TYPICAL SECTION FOR RETAINING WALL WITH CIDH CONCRETE PILE SHOWN. SEE STANDARD PLANS B3-1A FOR TYPICAL SECTION AND DETAILS OF RETAINING WALL TYPE 1 (CASE 1) ON SPREAD FOOTING.
2. OPTIONAL STEM BACKFACE ALSO APPLIES TO RETAINING WALL TYPE 1 (CASE 1) WITH MINIMUM BOTTOM OF STEM DIMENSION OF 1'-9".
3. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
4. SEE "RETAINING WALL DETAILS No. 2" SHEET FOR "WEEP HOLE AND GEOCOMPOSITE DRAIN" DETAILS
5. INSPECTION TUBE NOT REQUIRED FOR PILES CONSTRUCTED IN DRY OR DEWATERED HOLES.
6. PROVIDE TEMPORARY CASING AS NECESSARY TO CONSTRUCT PILES.
7. ALL (c) BARS ARE WITH STANDARD HOOKS.
8. SEE "PILE DATA TABLE" OF THE "FOUNDATION PLAN" SHEET.

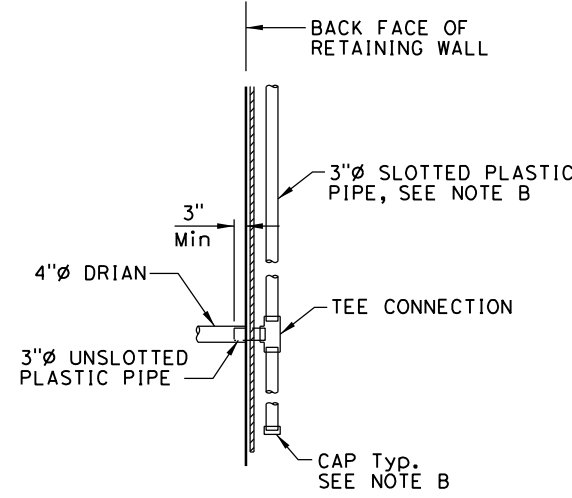
P:\521 YBI Retaining Walls\06 CAD\Structure\RW3\RW3\_04\_DETAILS\_NO.1.dgn

REVISED BY DATE REVISED YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 3 PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 11/13/2019	REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com		USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW3\RW3_04_DETAILS_NO.1.dgn CONTRACT NO. SHEET NAME SHEET NO. TOTAL SHEETS RW3-4 LAST REVISION DATE PLOTTED => 11/13/2019 TIME PLOTTED => 12:11:11 PM
---	---	---	--	--	--



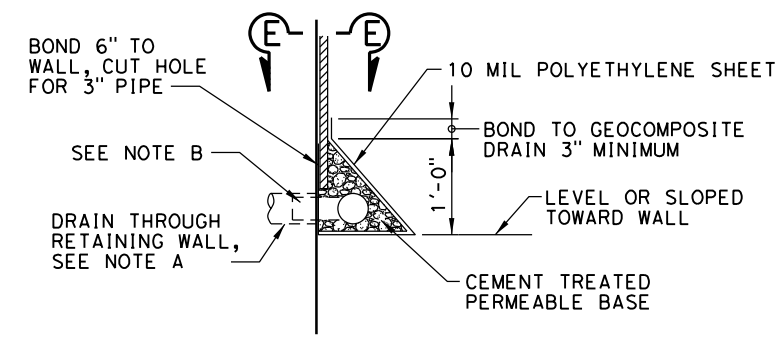


**DETAIL 1**



**SECTION E-E**

- A. 4"  $\Phi$  DRAINS AT INTERMEDIATE SAG POINTS AND AT 25' MAX CENTER TO CENTER 19'. EXPOSED WALL DRAINS SHALL BE LOCATED 3"  $\pm$  ABOVE FINISHED GRADE.
- B. GEOCOMPOSITE DRAIN, CEMENT TREATED PERMEABLE BASE, AND 3"  $\Phi$  SLOTTED PLASTIC PIPE CONTINUOUS BEHIND RETAINING WALL. CAP ENDS OF PIPE. PROVIDE "TEE" CONNECTION AT EACH 4"  $\Phi$  DRAIN.



**DETAIL 2**

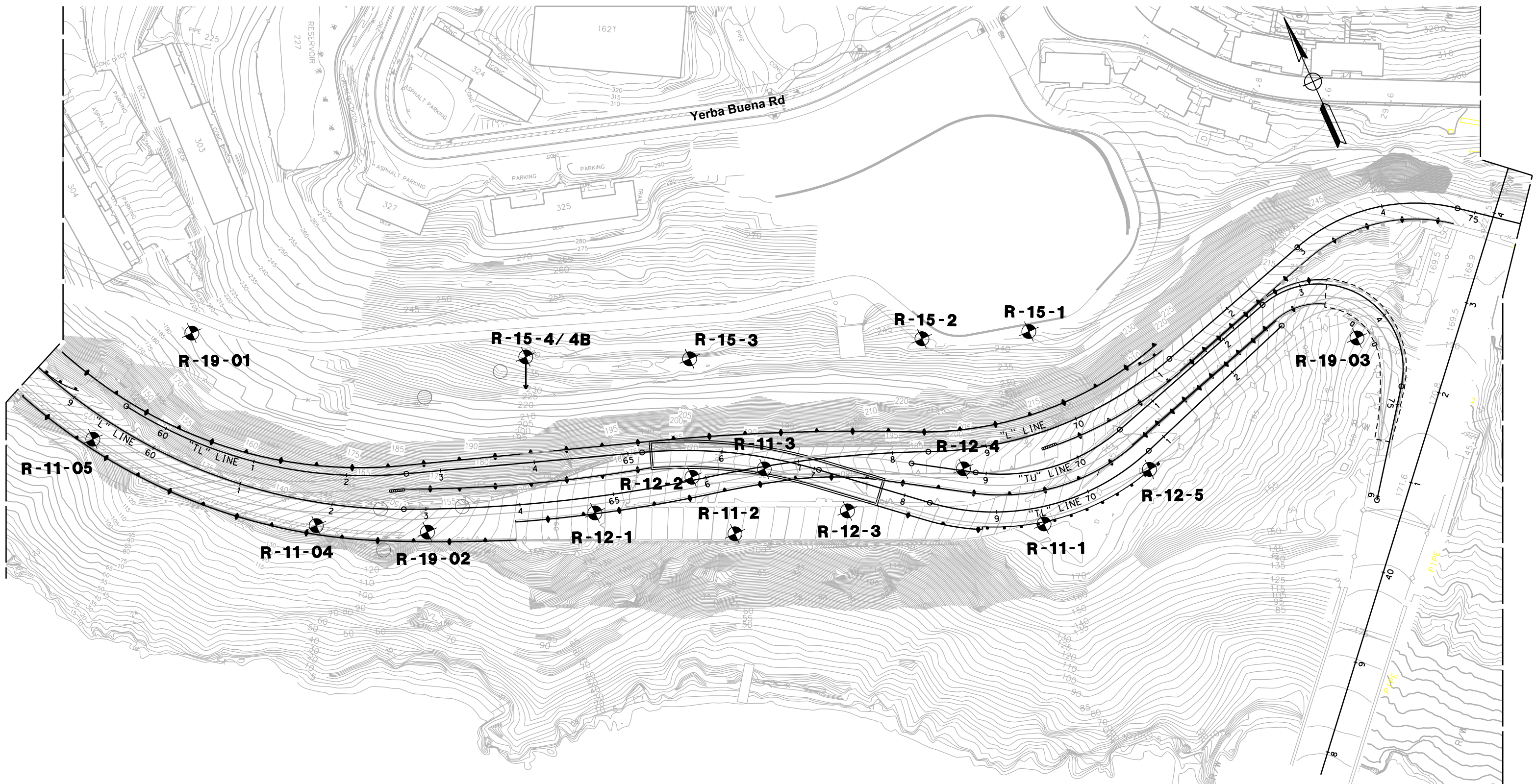
**WEEP HOLE AND GEOCOMPOSITE DRAIN**

NO SCALE

**RETAINING WALL  
DETAILS No. 2**  
SCALE: AS SHOWN

P:\521 YBI Retaining Walls\06 CAD\Structure\RW3\RW3\_05\_DETAILS\_NO 2.dgn

REVISIONS	REVISOR	DATE	DESCRIPTION	CALCULATED/DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter		
			PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 3	CHECKED BY R. SENNETT		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				CONTRACT NO.	SHEET NAME	SHEET NO.
BORDER LAST REVISED 9/9/2015			RELATIVE BORDER SCALE IS IN INCHES									LAST REVISION	DATE PLOTTED => 11/11/2019
												11/11/2019	TIME PLOTTED => 3:53:19 PM

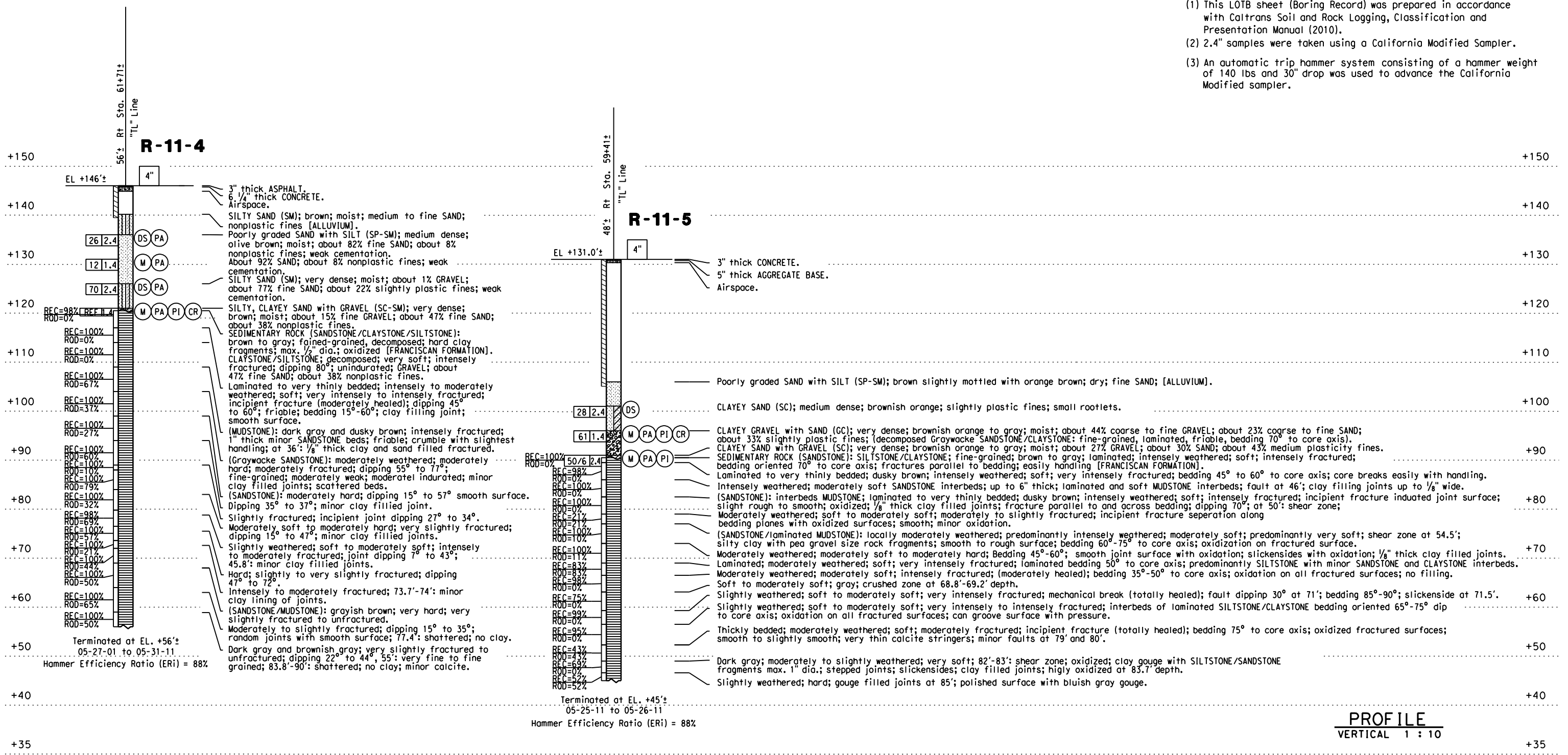


**LOG OF TEST BORINGS  
No. 1 OF 6**  
SCALE: 1" = 50'

REVISED BY	DATE REVISED	DESIGNED BY: J. CASTLE DRAWN BY: B. AMBRIZ CHECKED BY: M. KAPUSKAR APPROVED BY: M. KAPUSKAR		 07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => Peter	CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW3
PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 3								CONTRACT NO.	
BORDER LAST REVISED 1/20/2019		RELATIVE BORDER SCALE IS IN INCHES 		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SHEET NAME: RW3-6 SHEET NO.: TOTAL SHEETS:		LAST REVISION: 1-20-19 DATE PLOTTED => 11/14/2019 TIME PLOTTED => 1:48:25 PM	

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.



PROFILE  
 VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW3-6

**LOG OF TEST BORINGS  
 No. 2 OF 6**

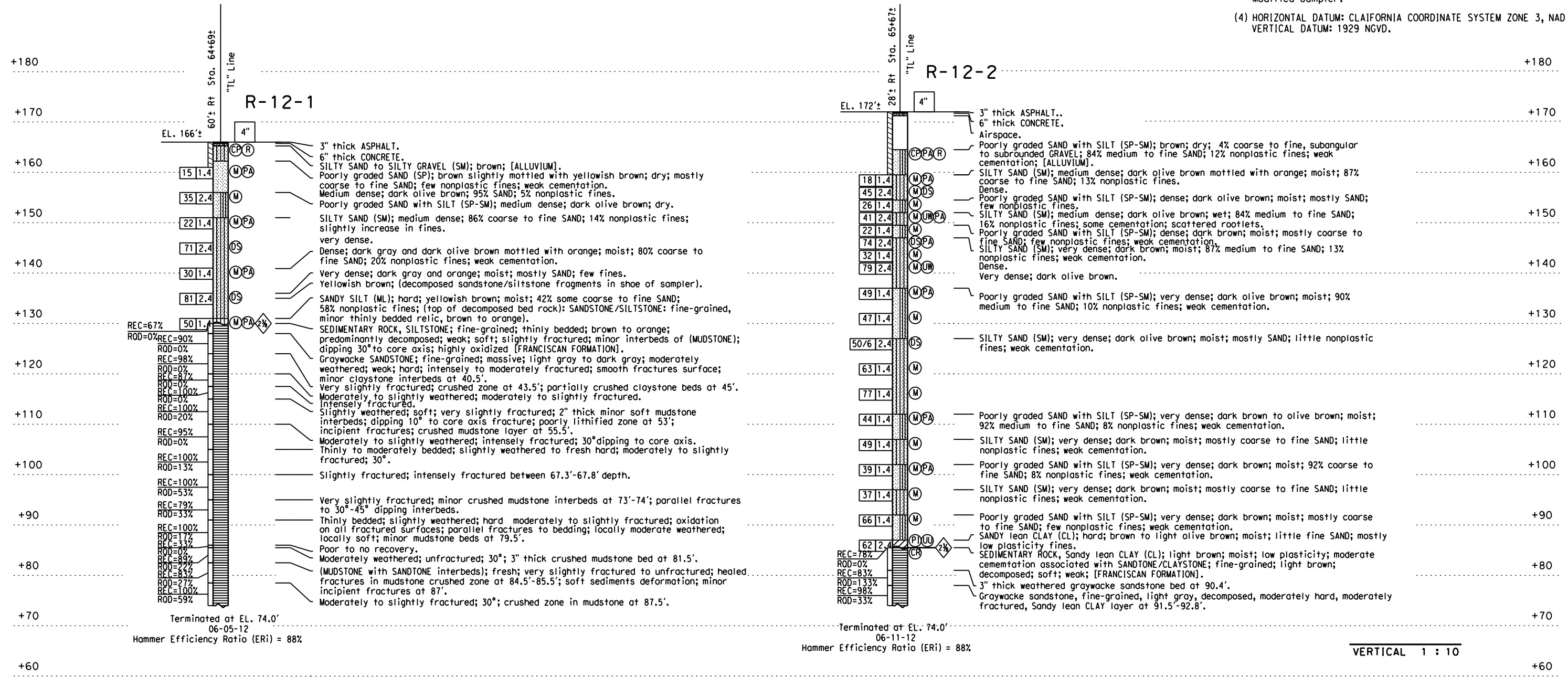
G. BUTLER, J. CASTLE FIELD INVESTIGATION BY:		DESIGNED BY: J. CASTLE		DRAWN BY: K. THANT		CHECKED BY: A. KORKOS		APPROVED BY: M. KAPUSKAR		M. KAPUSKAR REG. PROFESSIONAL ENGINEER No. GE 2564 Exp. 12-31-20 STATE OF CALIFORNIA		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE		3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.earthmech.com		SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY		SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO		USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW3-7.dwg CONTRACT NO.	
REVISED BY DATE REVISED		PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES RETAINING WALL No. 3		PLANS APPROVAL DATE		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SHEET NAME RW3-7		SHEET NO.		TOTAL SHEETS		LAST REVISION 1-20-19		DATE PLOTTED => 11/15/2019 TIME PLOTTED => 4:01:46 PM					

BORDER LAST REVISED 1/20/2019



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



VERTICAL 1 : 10

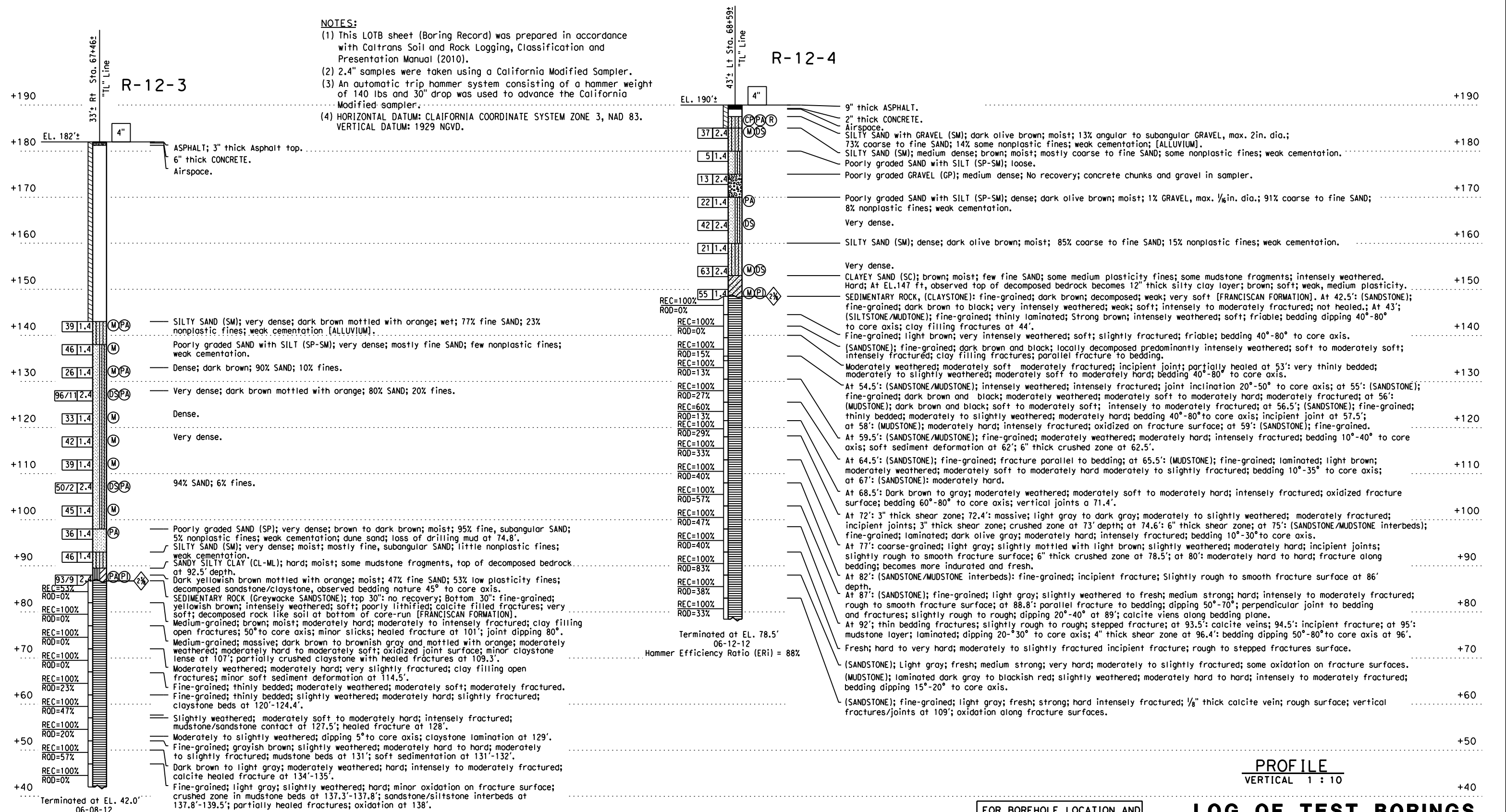
FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW3-6

**LOG OF TEST BORINGS  
 No. 3 OF 6**

DESIGNED BY: <b>J. CASTLE</b>		07/27/19		3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.earthmech.com		USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW3-8.dwg CONTRACT NO.	
DRAWN BY: <b>K. THANT</b>		REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE		SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY		SHEET NAME <b>RW3-8</b>	
CHECKED BY: <b>A. KORKOS</b>		PLANS APPROVAL DATE		SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO		SHEET NO.	
APPROVED BY: <b>M. KAPUSKAR</b>		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		TOTAL SHEETS		DATE PLOTTED => 11/15/2019 TIME PLOTTED => 4:02:49 PM	
PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES RETAINING WALL No. 3		M. KAPUSKAR No. GE 2564 Exp. 12-31-20 STATE OF CALIFORNIA		1-20-19		1-20-19	

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



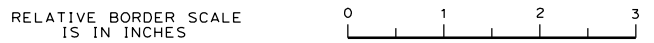
PROFILE  
VERTICAL 1 : 10

**LOG OF TEST BORINGS  
No. 4 OF 6**

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW3-6

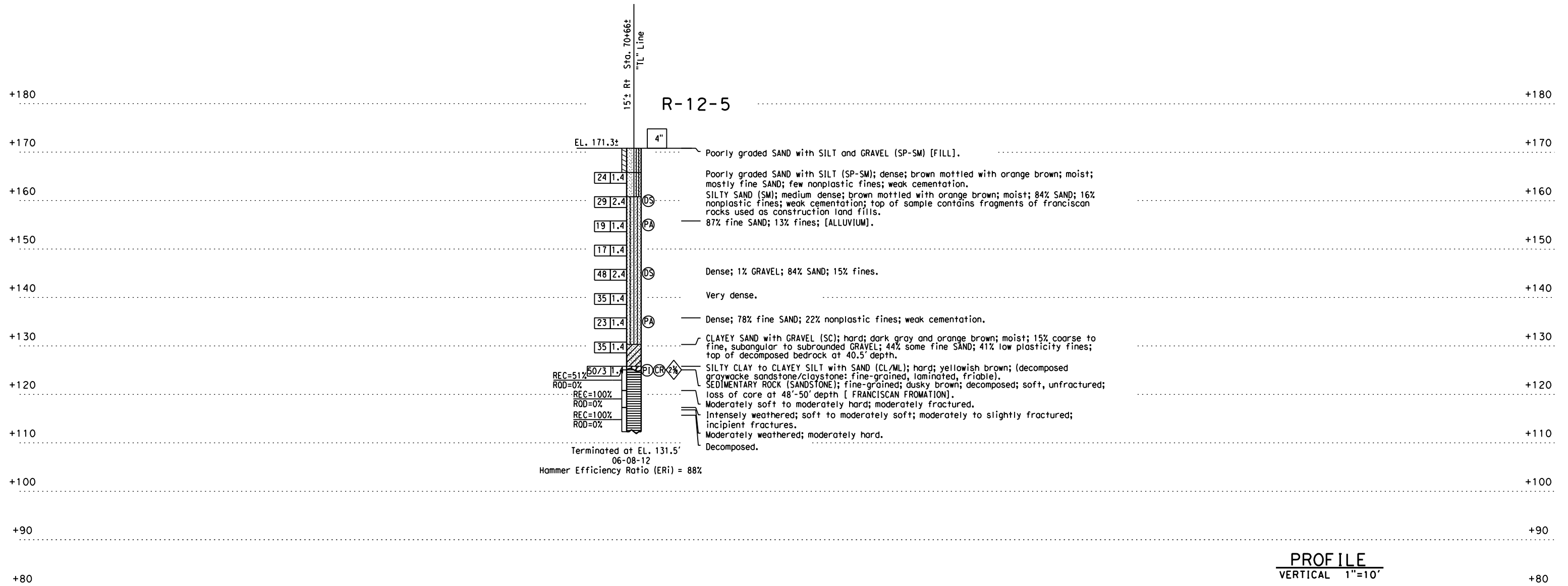
J. CASTLE, M. HOSHIYAMA  
FIELD INVESTIGATION BY:

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 3  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => Peter
			DRAWN BY: K. THANT						CONTRACT NO.
			CHECKED BY: A. KORKOS						SHEET NAME
		APPROVED BY: M. KAPUSKAR	PLANS APPROVAL DATE	RW3-9		LAST REVISION: 1-20-19 DATE PLOTTED => 11/15/2019 TIME PLOTTED => 4:03:47 PM			



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



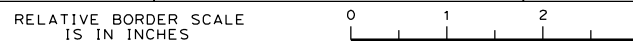
**PROFILE**  
VERTICAL 1"=10'

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW3-6

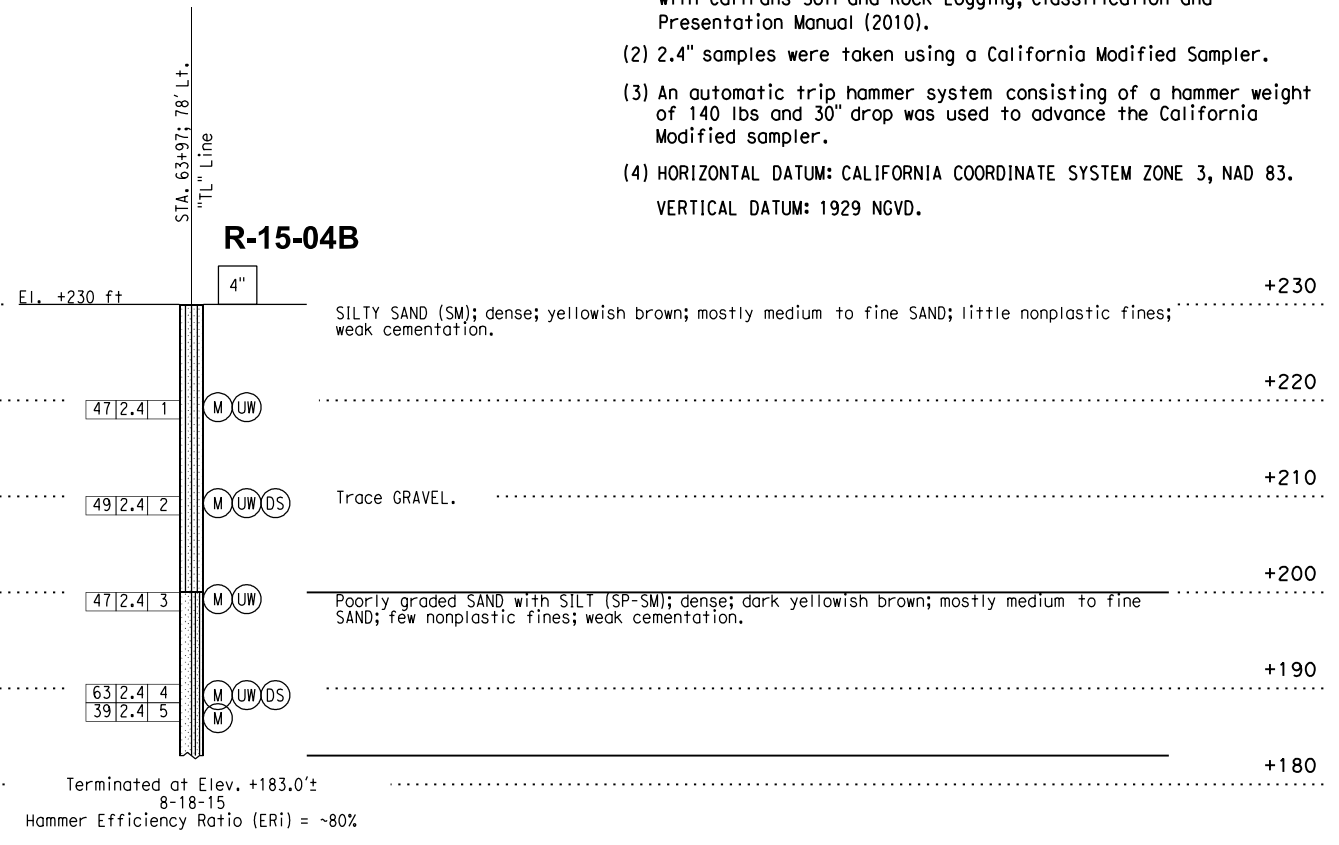
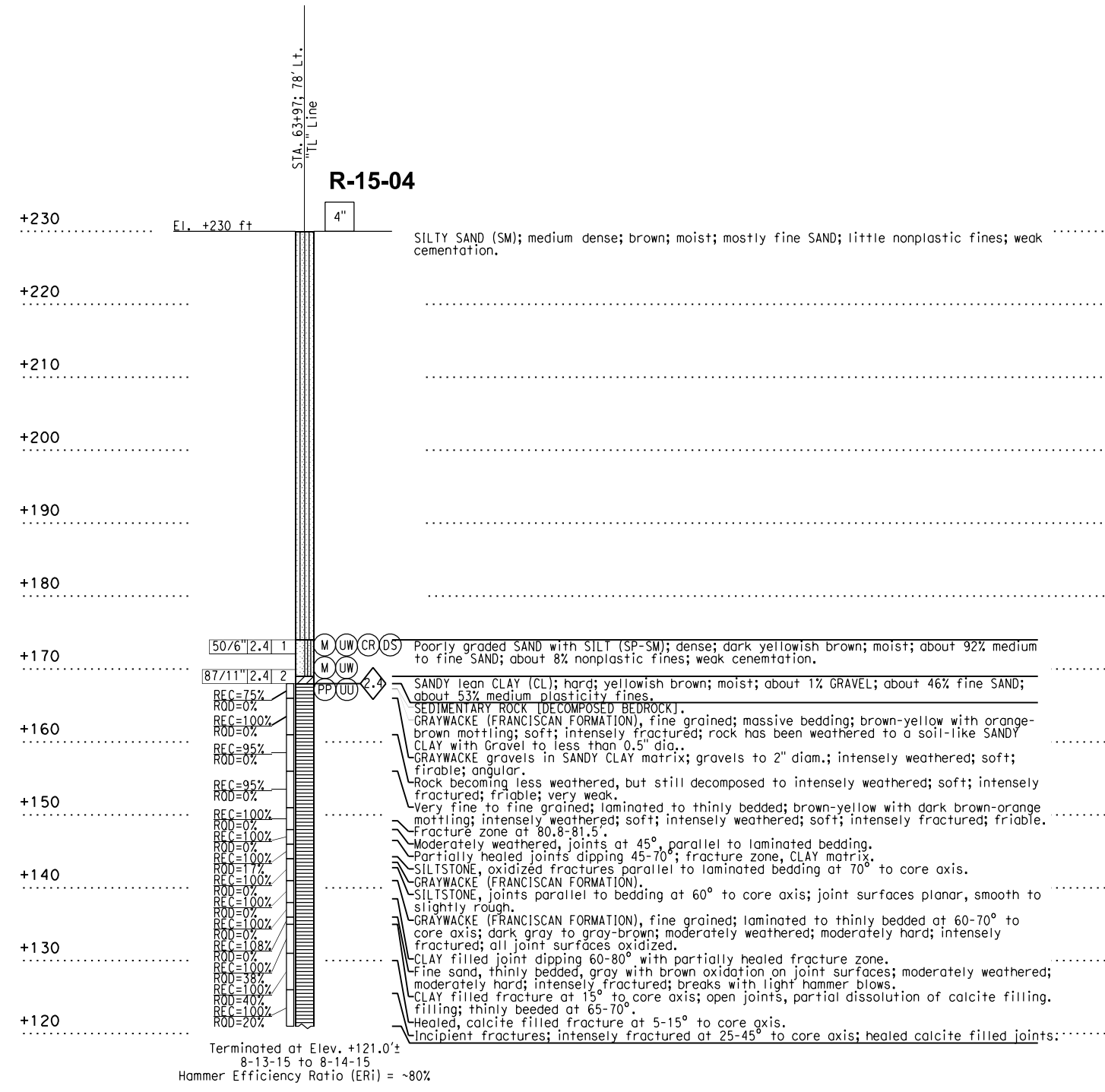
**LOG OF TEST BORINGS**  
**No. 5 OF 6**

J. CASTLE, M. HOSHIYAMA  
FIELD INVESTIGATION BY:

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 3  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE			07/27/19	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eartmech.com			USERNAME => Peter		
			DRAWN BY: K. THANT			REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE					CADD FILENAME =>	
			CHECKED BY: A. KORKOS			PLANS APPROVAL DATE					P:\521 YBI Retaining Walls\06 CAD\Structure\NRW3	
			APPROVED BY: M. KAPUSKAR			EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					CONTRACT NO.	
										SHEET NAME	SHEET NO.	TOTAL SHEETS
										RW3-10		
BORDER LAST REVISED 1/20/2019										LAST REVISION	DATE PLOTTED => 11/15/2019	
										1-20-19	TIME PLOTTED => 4:04:36 PM	



- NOTES:**
- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
  - (2) 2.4" samples were taken using a California Modified Sampler.
  - (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
  - (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



**PROFILE**  
VERTICAL 1"=10'

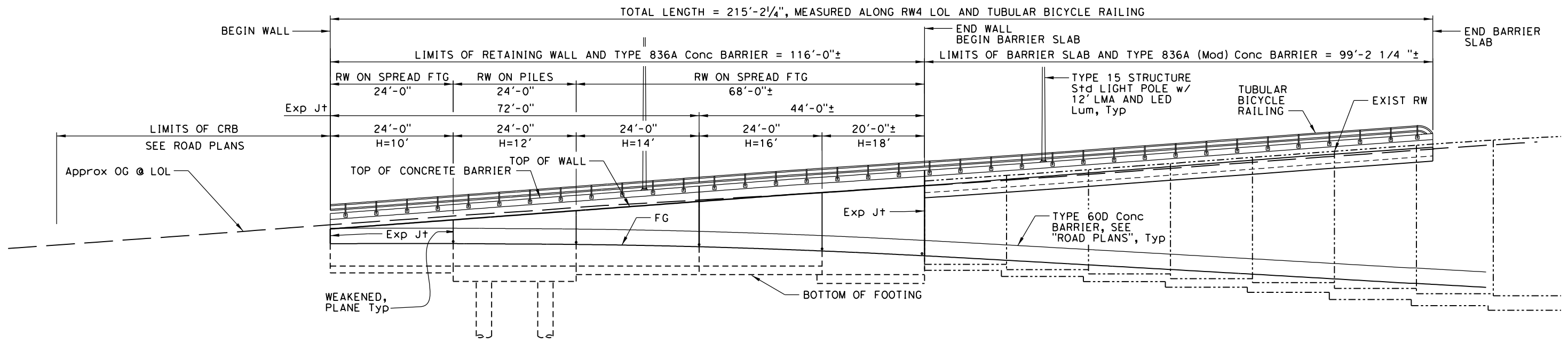
FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW3-6

**LOG OF TEST BORINGS**  
**No. 6 OF 6**

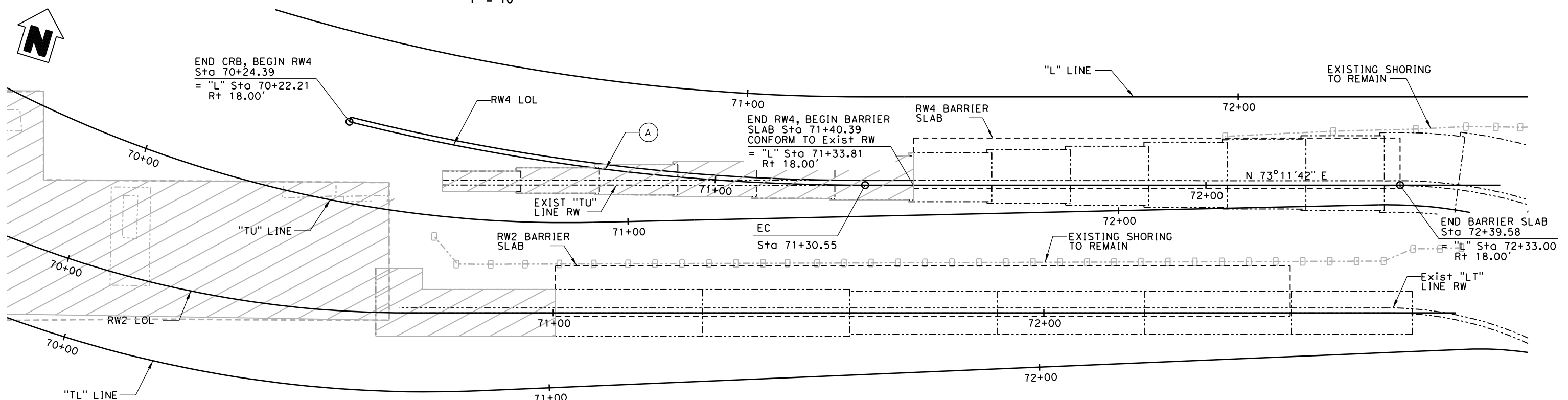
J. CASTLE, T. MAR  
FIELD INVESTIGATION BY:

REVISED BY	DATE REVISED	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 3</b>	DESIGNED BY: J. CASTLE			07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorhthmech.com			USERNAME => Peter						
			DRAWN BY: B. AMBRIZ												CADD FILENAME =>	
			CHECKED BY: C.T. YANG													P:\521 YBI Retaining Walls\06 CAD\Structure\NRW3
			APPROVED BY: M. KAPUSKAR													CONTRACT NO.
PROJECT DESCRIPTION			PLANS APPROVAL DATE		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.				SHEET NAME	SHEET NO.	TOTAL SHEETS					
BORDER LAST REVISED 1/20/2019			RELATIVE BORDER SCALE IS IN INCHES		0 1 2 3				RW3-11							
									LAST REVISION	DATE PLOTTED => 11/15/2019						
									1-20-19	TIME PLOTTED => 4:05:22 PM						





**DEVELOPED ELEVATION**  
1" = 10'



**PLAN**  
1" = 10'

**LEGEND:**

- BRIDGE AND RETAINING WALL REMOVAL, SEE "ROAD PLANS"
- EXISTING STRUCTURE

**NOTES:**

1. FOR "TYPICAL SECTION", "GENERAL NOTES" AND "STANDARD PLANS", SEE "GENERAL PLAN No. 2" SHEETS.
2. NOT ALL EXISTING STRUCTURE REMOVAL LIMITS SHOWN. SEE "ROAD PLANS" FOR LIMITS OF EXISTING BRIDGE AND RETAINING WALL REMOVAL.

**GENERAL PLAN No. 1**  
SCALE: 1" = 10'

RW CURVE DATA TABLE				
NO.	R	Δ	T	L
(A)	434.00'	14°00'53.98"	53.35'	106.16'

REVISED BY	DATE REVISED	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 4</b>	CALCULATED/ DESIGNED BY Y. DENG
			CHECKED BY R. SENNETT
			SUPERVISOR R. SENNETT
			DATE 11/12/2019
PROJECT DESCRIPTION			

REGISTERED STRUCTURAL ENGINEER

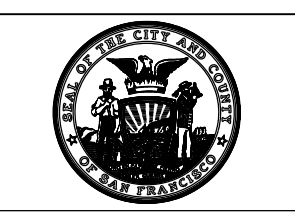
PLANS SUBMITTAL DATE

PLANS APPROVAL DATE

*MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.*

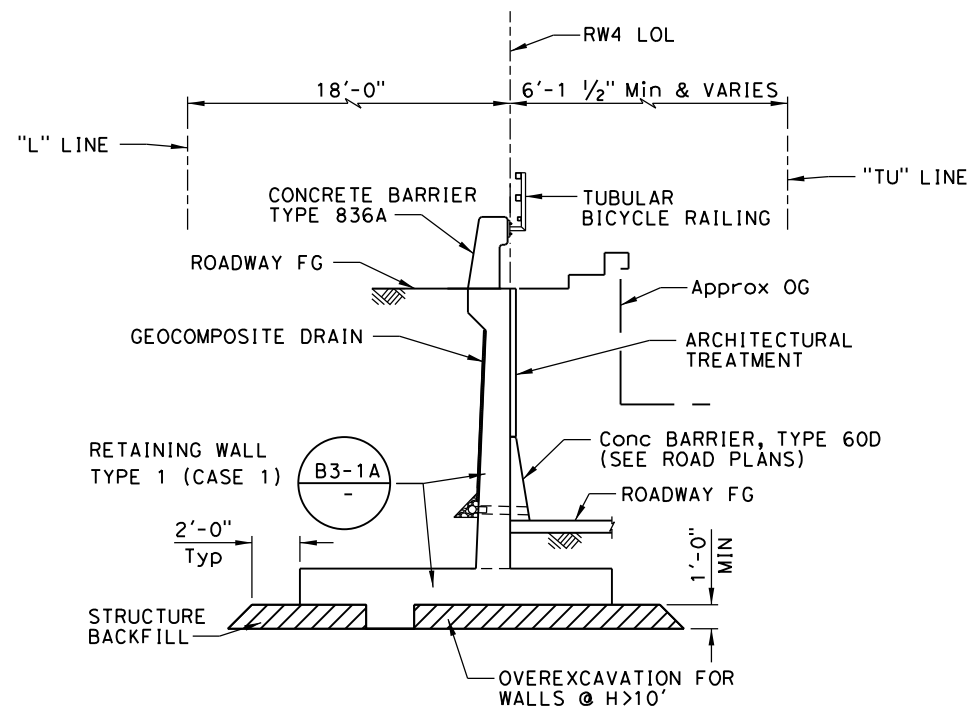
**MGE ENGINEERING, INC.**

7415 GREENHAVEN DRIVE, SUITE 100  
SACRAMENTO, CA 95831  
(916) 421-1000 (PHONE)  
(916) 421-1002 (FAX)  
www.mgeeng.com



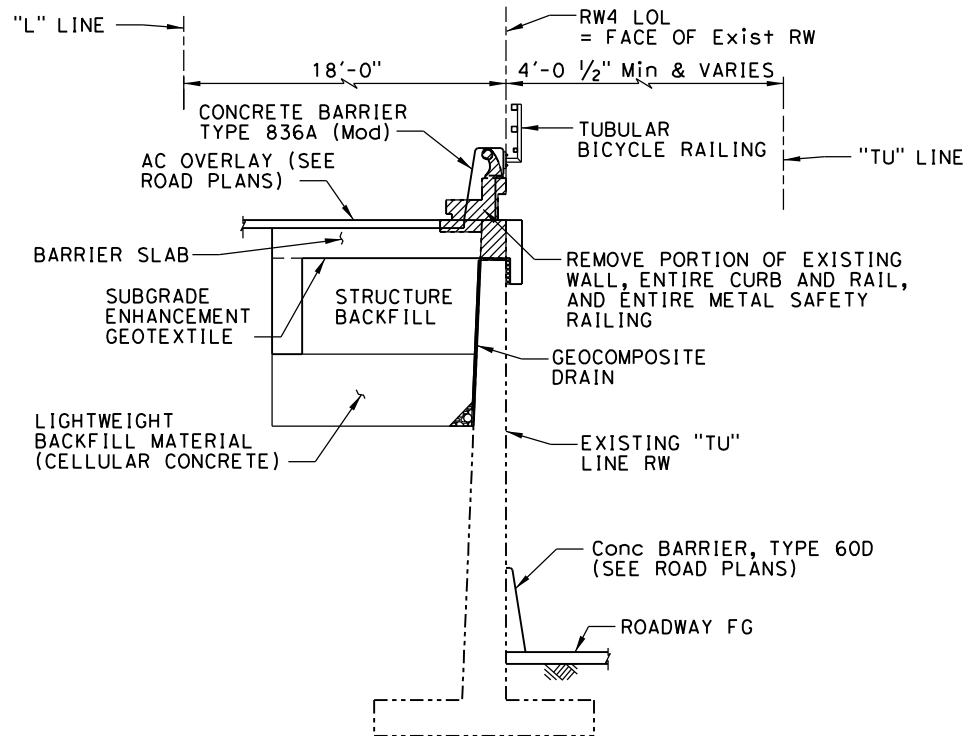
USERNAME => Peter		
CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW4\RW4.dgn		
CONTRACT NO.		
SHEET NAME	SHEET NO.	TOTAL SHEETS
RW4-1		
LAST REVISION	DATE PLOTTED => 11/12/2019	
11/12/2019	TIME PLOTTED => 2:47:43 PM	

P:\521 YBI Retaining Walls\06 CAD\Structure RW4\RW4.dgn



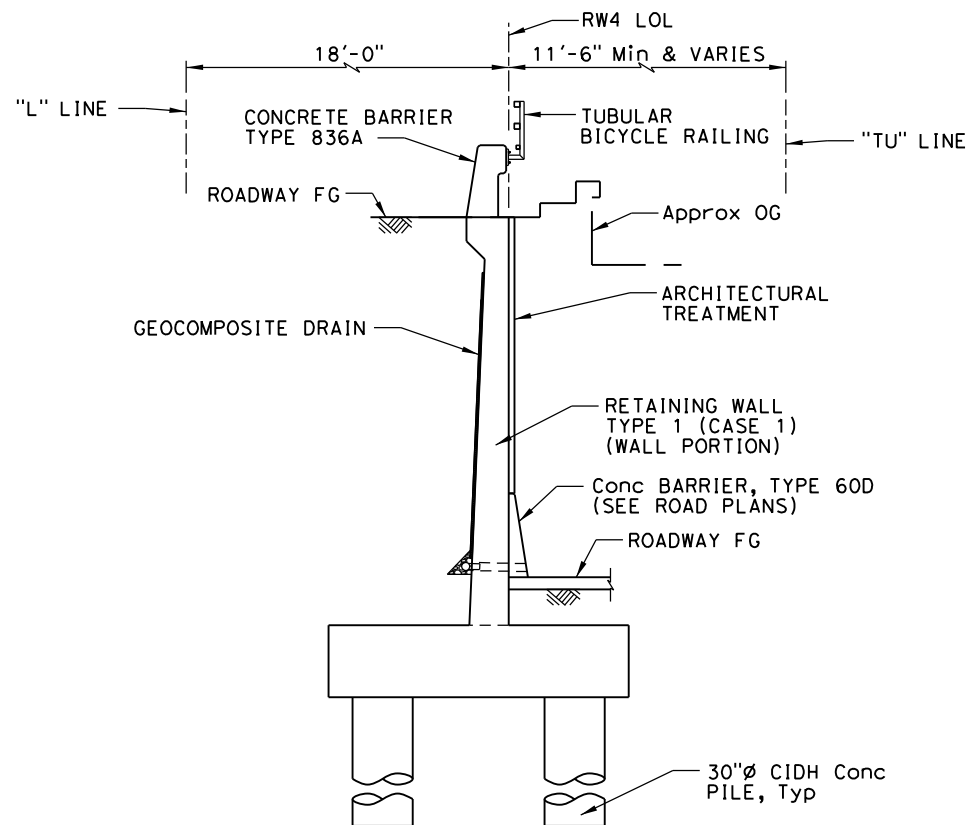
TYPICAL SECTION (AT SPREAD FOOTING)

NTS



TYPICAL SECTION (AT BARRIER SLAB)

NTS



TYPICAL SECTION (AT WALL ON PILES)

NTS

INDEX TO PLANS

SHEET NO.	TITLE
RW4-1	GENERAL PLAN No.1
RW4-2	GENERAL PLAN No.2
RW4-3	FOUNDATION PLAN
RW4-4	RETAINING WALL LAYOUT
RW4-5	RETAINING WALL DETAILS NO. 1
RW4-6	RETAINING WALL DETAILS NO. 2
RW4-7	RETAINING WALL DETAILS NO. 3
RW4-8	RETAINING WALL DETAILS NO. 4
RW4-9	LOG OF TEST BORING No. 1 OF 3
RW4-10	LOG OF TEST BORING No. 2 OF 3
RW4-11	LOG OF TEST BORING No. 3 OF 3

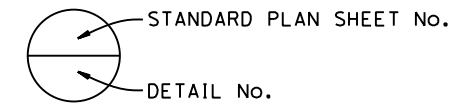
CONSTRUCTION SEQUENCE NOTES

1. CONSTRUCT SHORING AS NECESSARY.
2. COMPLETE THE CONSTRUCTION OF THE RW No. 2 BARRIER SLAB PRIOR TO BACKFILLING RW No. 4 BARRIER SLAB.

STANDARD PLANS

DATED 2018

A3A	ABBREVIATIONS (SHEET 1 OF 3)
A3B	ABBREVIATIONS (SHEET 2 OF 3)
A3C	ABBREVIATIONS (SHEET 3 OF 3)
A10A	LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
A10B	LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
A10C	LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
A10D	LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
A10E	LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL
B0-3	BRIDGE DETAILS
B3-1A	RETAINING WALL TYPE 1 (CASE 1)
B3-5	RETAINING WALL DETAILS NO. 1
RSP B11-79	CONCRETE BARRIER TYPE 836 DETAILS NO. 1
RSP B11-80	CONCRETE BARRIER TYPE 836 DETAILS NO. 2



GENERAL NOTES  
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:	AASHTO LRFD BRIDGE DESIGN SPECIFICATION 6TH EDITION AND CALTRANS AMENDMENTS, PREFACE, DATED MARCH, 2014 (EXISTING RETAINING WALL AT BARRIER SLAB IS EVALUATED PER SERVICE LOAD DESIGN CRITERIA)
SEISMIC DESIGN:	CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 1.7, APRIL 2013 (NOT APPLICABLE TO THE EXISTING RETAINING WALL AT BARRIER SLAB)
DEAD LOAD:	INCLUDES WEIGHT OF 75 PSF FOR STEM ARCHITECTURAL TREATMENT UP TO 6 INCHES
LIVE LOAD:	72 pcf SURCHARGE
SEISMIC LOAD:	PEAK GROUND ACCELERATION (PGA) = 0.57g
REINFORCED CONCRETE:	f'c = 4,000 psi fy = 60,000 psi fc = 1,400 psi (EXISTING RETAINING WALL) fs = 20,000 psi (EXISTING RETAINING WALL)
CELLULAR CONCRETE:	CLASS II MAXIMUM CAST DENSITY = 30 pcf MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS = 60 psi

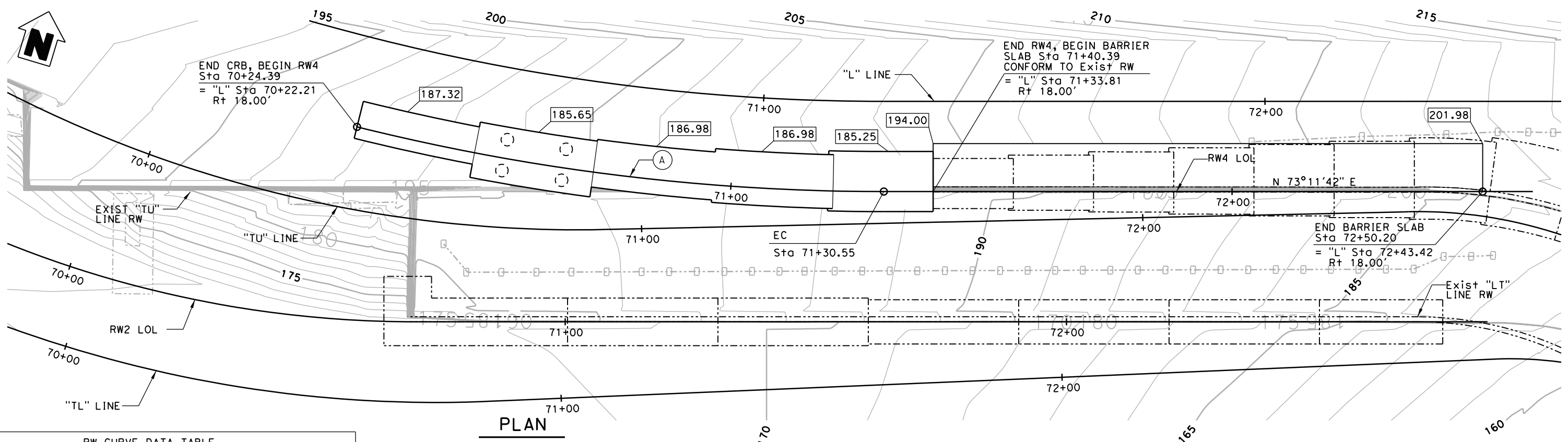
GENERAL PLAN No. 2  
AS SHOWN

REVISIONS	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY					USERNAME => Peter
	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 4	CHECKED BY					REGISTERED STRUCTURAL ENGINEER
		SUPERVISOR					CONTRACT NO.
		DATE					SHEET NAME
		11/15/2019					RW4-2
							SHEET NO.
							TOTAL SHEETS
							LAST REVISION
							DATE PLOTTED => 11/15/2019
							TIME PLOTTED => 4:12:24 PM

P:\521 YBI Retaining Walls\06 CAD\Structure RW4\RW4\_02\_GP2.dgn

BORDER LAST REVISED 9/9/2015





**PLAN**  
1" = 10'

RW CURVE DATA TABLE				
NO.	R	Δ	T	L
(A)	434.00'	14°00'53.98"	53.35'	106.16'

**LEGEND:**  
 XXX.XX INDICATES BOTTOM OF FOOTING ELEVATION  
 ○ INDICATES 30" DIAMETER CIDH Conc PILE

**SURVEY DATUM:**  
 VERTICAL DATUM NAVD 88  
 HORIZONTAL DATUM NAD 83

**PILE DATA TABLE**

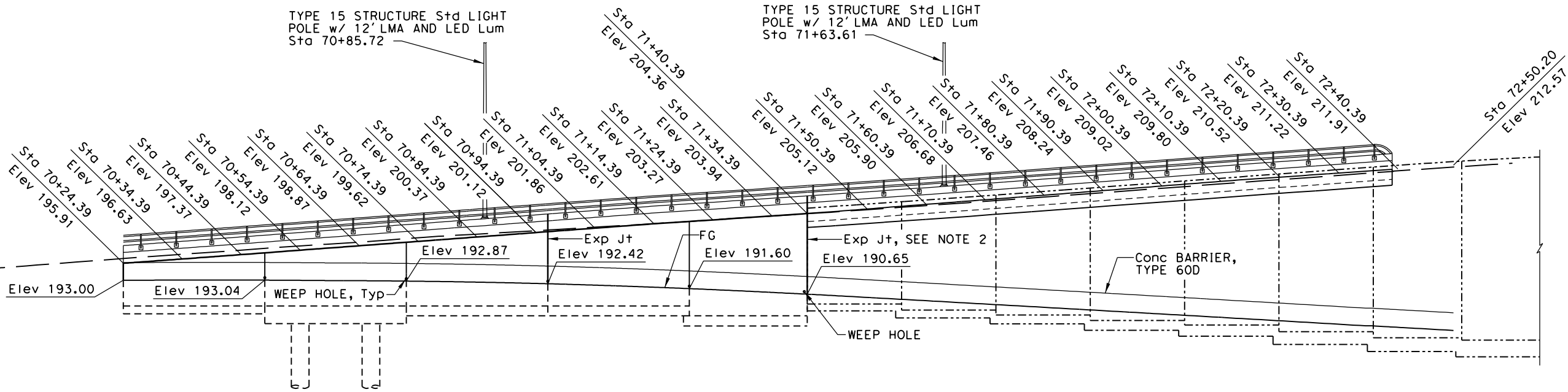
LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)
		COMPRESSION	TENSION		
H=12'	30" Dia CIDH	250	N/A	(a) 163 (b) 168 (d) 163	163

- NOTES:**
- DESIGN TIP ELEVATIONS ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESSION, (b) TENSION, (c) SETTLEMENT, AND (d) LATERAL LOAD.
  - SPECIFIED TIP ELEVATIONS SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR SETTLEMENT AND LATERAL LOAD WITHOUT ENGINEER'S APPROVAL.

**FOUNDATION PLAN**  
SCALE: 1" = 10'

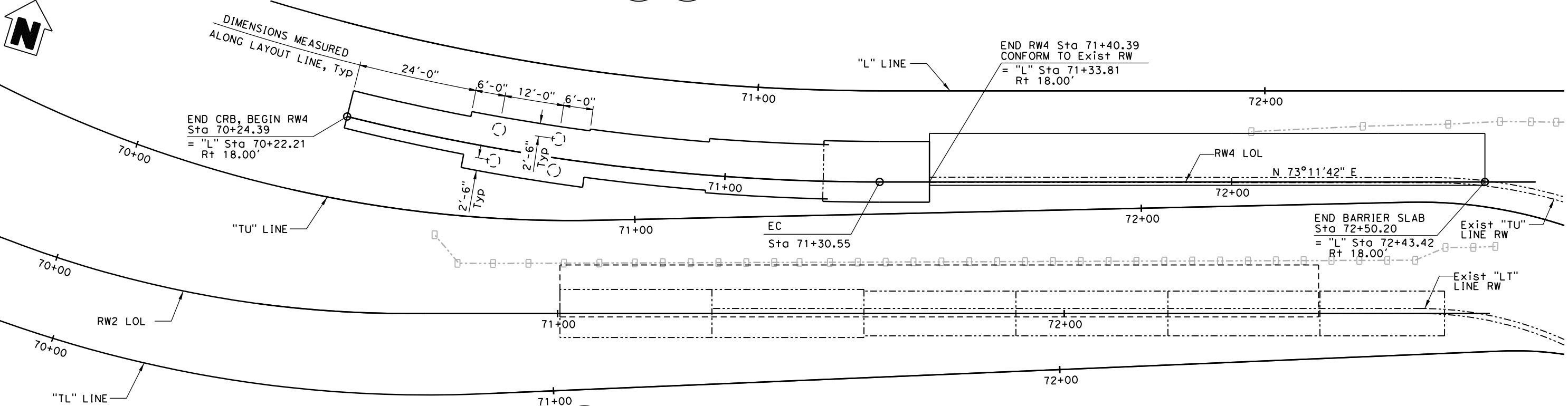
REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 4	CALCULATED/ DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter
REVISOR	DATE		CHECKED BY R. SENNETT		PLANS SUBMITTAL DATE				CADD FILENAME =>
REVISOR	DATE		SUPERVISOR R. SENNETT		PLANS APPROVAL DATE				P:\521 YBI Retaining Walls\06 CAD\Structure RW4\RW4_03_FT.dgn
PROJECT DESCRIPTION RETAINING WALL NO. 4			DATE 11/12/2019	MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY		CONTRACT NO.	SHEET NAME <b>RW4-3</b>
BORDER LAST REVISED 9/9/2015			RELATIVE BORDER SCALE IS IN INCHES				LAST REVISION 11/12/2019		DATE PLOTTED => 11/12/2019 TIME PLOTTED => 2:55:27 PM

EXISTING TOP OF WALL	
STATION	ELEVATION
71+40.39	204.31±
71+50.39	205.00±
71+60.39	205.70±
71+70.39	206.41±
71+80.39	207.16±
71+90.39	207.89±
72+00.39	208.64±
72+10.39	209.38±
72+20.39	210.10±
72+30.39	210.83±
72+40.39	211.60±
72+50.20	212.23±



DATUM Elev 170.00

**DEVELOPED ELEVATION**  
1" = 10'  
B0-3 B3-1A



END CRB, BEGIN RW4  
Sta 70+24.39  
= "L" Sta 70+22.21  
Rt 18.00'

END RW4 Sta 71+40.39  
CONFORM TO Exist RW  
= "L" Sta 71+33.81  
Rt 18.00'

END BARRIER SLAB  
Sta 72+50.20  
= "L" Sta 72+43.42  
Rt 18.00'

NO.	R	Δ	T	L
(A)	434.00'	14°00'53.98"	53.35'	106.16'

**LEGEND:**  
○ INDICATES 30" DIAMETER CIDH Conc PILE

- NOTES:**
- NOT ALL FEATURES SHOWN FOR LAYOUT CLARITY PURPOSES.
  - SEE "EXPANSION JOINT DETAILS AT EXISTING WALL" IN "RETAINING WALL DETAILS No. 2" SHEET.

**RETAINING WALL LAYOUT**  
SCALE: 1" = 10'

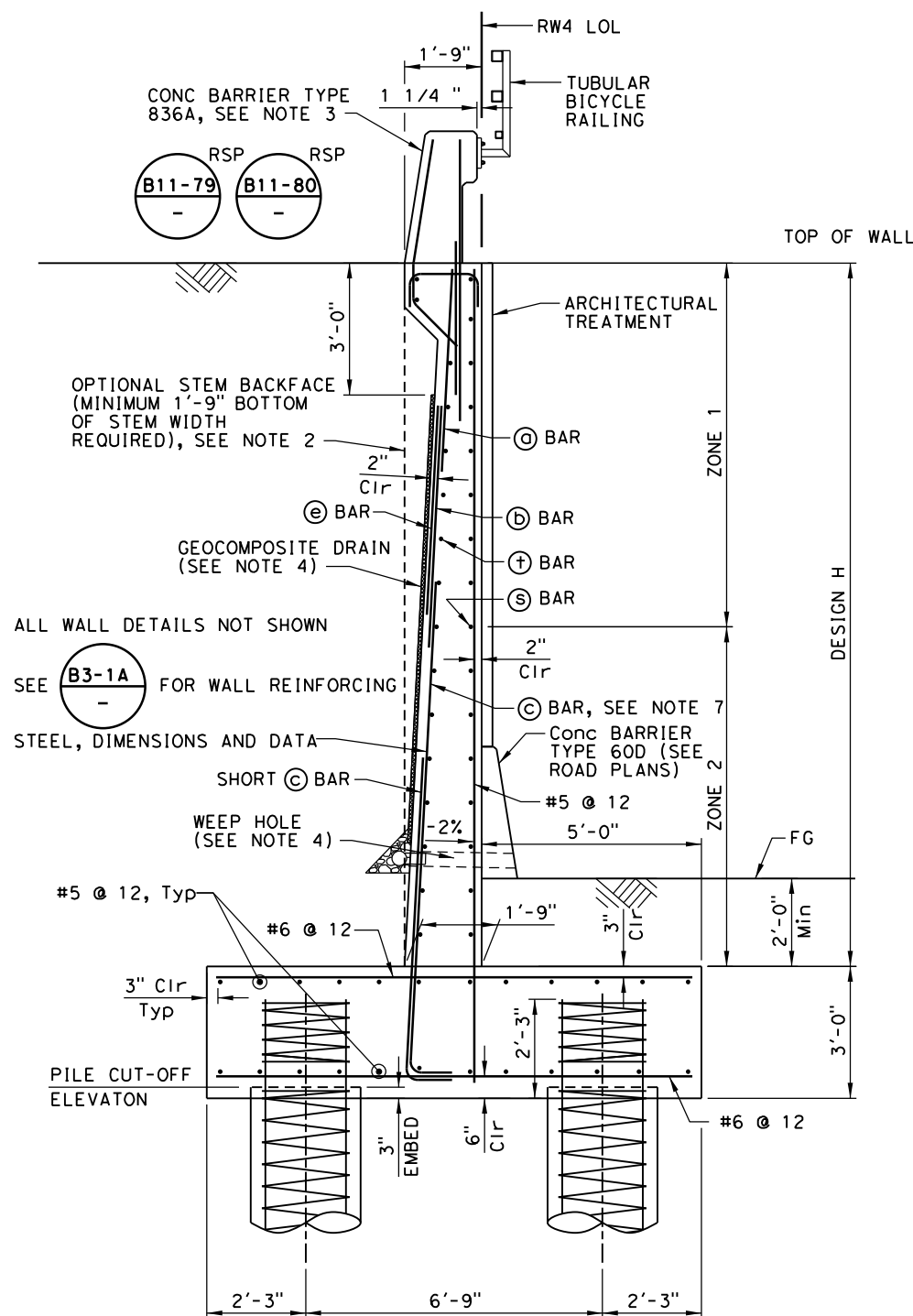
REVISIONS: NO.   DATE   DESCRIPTION _____   _____   _____ _____   _____   _____ _____   _____   _____	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 4 PROJECT DESCRIPTION	CALCULATED/DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 11/12/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE _____ PLANS APPROVAL DATE _____	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW4\RW4_04_LAYOUT.dgn CONTRACT NO. SHEET NAME   SHEET NO.   TOTAL SHEETS RW4-4     LAST REVISION   DATE PLOTTED => 11/12/2019 11/12/2019   TIME PLOTTED => 3:02:33 PM
---	---	---	--	---	--	--	--	---

P:\521 YBI Retaining Walls\06 CAD\Structure RW4\RW4\_04\_LAYOUT.dgn

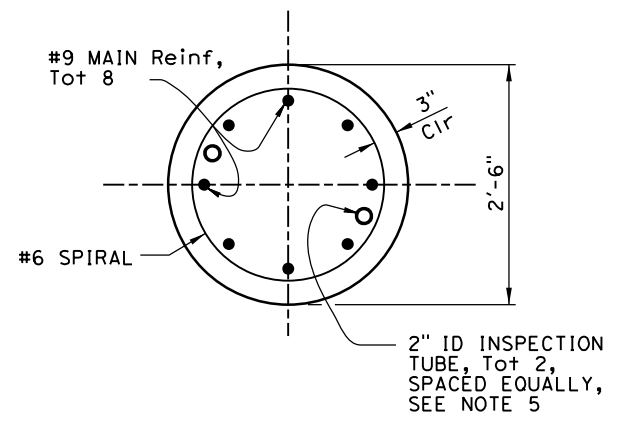
BORDER LAST REVISED 9/9/2015

RELATIVE BORDER SCALE IS IN INCHES



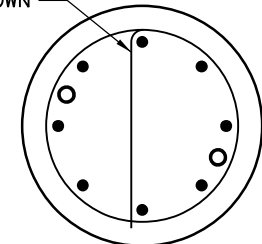


**TYPICAL SECTION**  
1/2" = 1'-0"



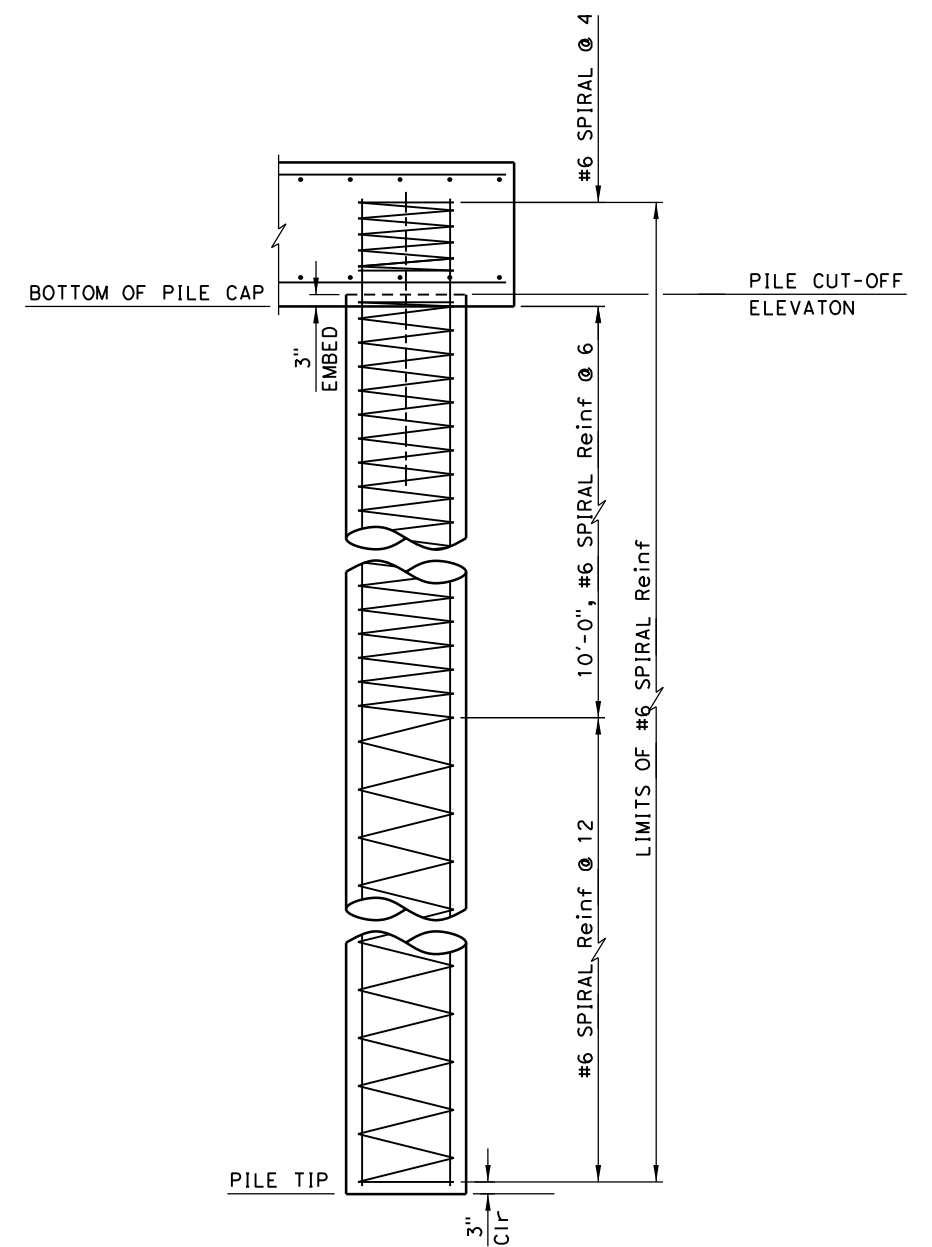
**PILE SECTION**  
1" = 1'-0"

SPIRAL TERMINATIONS TO HAVE AN EXTRA TURN WITH 1/2" THE PITCH IN ADDITION TO A 90° HOOK EXTENDED THROUGH PILE CORE, AS SHOWN



HOOKS FOR SPIRAL TERMINATION DETAILS SHALL LINE UP SO AS NOT TO INTERFERE WITH CONSTRUCTION OPERATIONS.

**SPIRAL TERMINATION DETAIL**  
1" = 1'-0"



**CIDH CONCRETE PILING**  
1/2" = 1'-0"

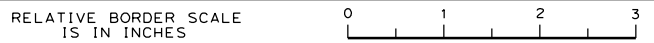
**NOTES:**

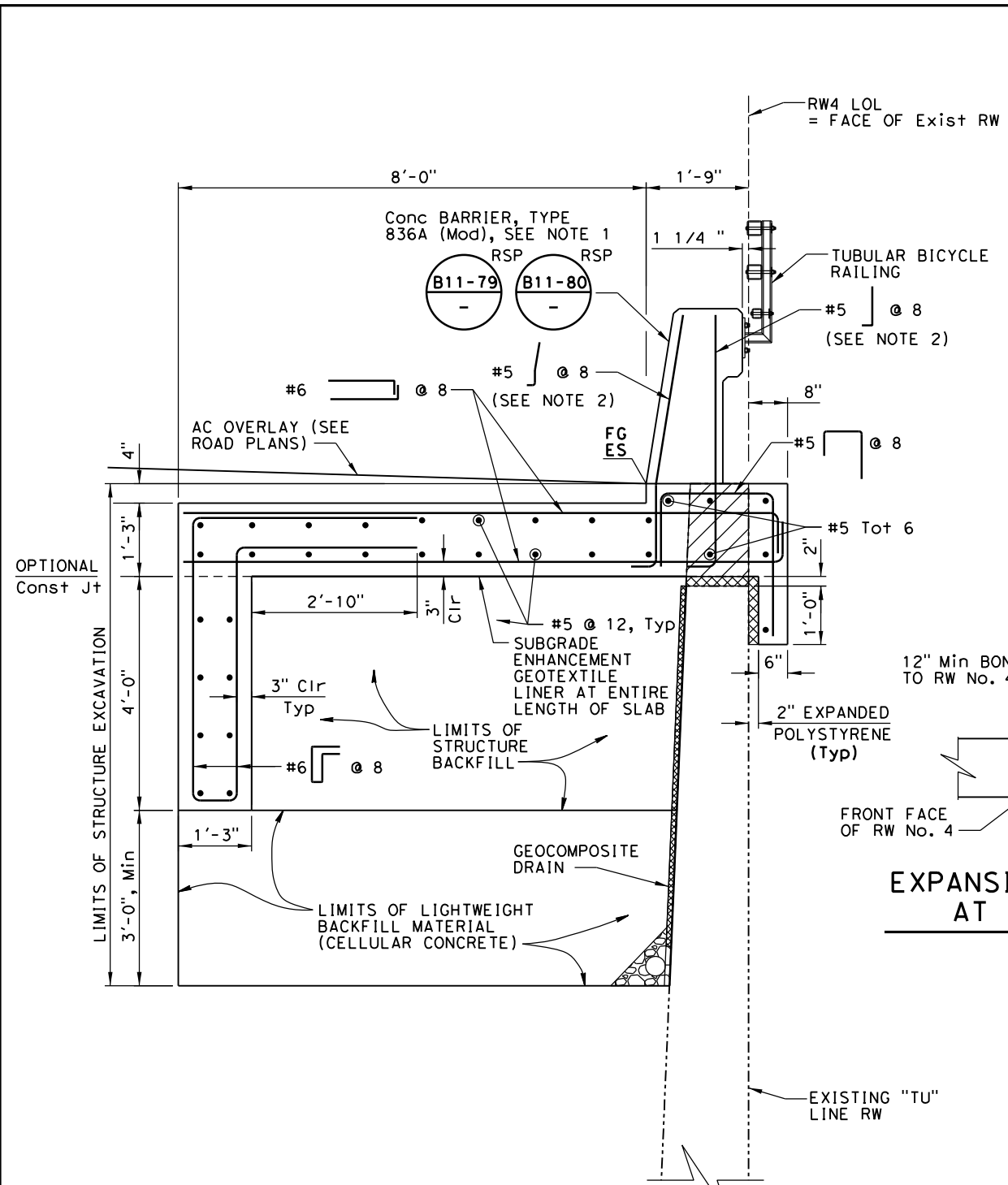
1. TYPICAL SECTION FOR RETAINING WALL WITH CIDH CONCRETE PILE SHOWN. SEE STANDARD PLANS B3-1A FOR TYPICAL SECTION AND DETAILS OF RETAINING WALL TYPE 1 (CASE 1) ON SPREAD FOOTING.
2. OPTIONAL STEM BACKFACE ALSO APPLIES TO RETAINING WALL TYPE 1 (CASE 1) WITH MINIMUM BOTTOM OF STEM DIMENSION OF 1'-9".
3. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
4. SEE "RETAINING WALL DETAIL No. 2" SHEET FOR "WEEP HOLE AND GEOCOMPOSITE DRAIN" DETAILS.
5. INSPECTION TUBES NOT REQUIRED FOR PILES CONSTRUCTED IN DRY OR DEWATERED HOLES.
6. PROVIDE TEMPORARY CASING AS NECESSARY TO CONSTRUCT PILES.
7. PROVIDE ALL © BARS WITH STANDARD HOOKS.

REVISIONS: REVISED BY: _____ DATE REVISED: _____	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 4</b>	CALCULATED/ DESIGNED BY Y. DENG CHECKED BY SUPERVISOR R. SENNETT DATE 11/13/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW4\RW4_05_DETAILS_1.dgn CONTRACT NO.
PROJECT DESCRIPTION		REGISTERED STRUCTURAL ENGINEER		MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SHEET NAME: RW4-5 SHEET NO.: TOTAL SHEETS:		LAST REVISION: 11/13/2019 DATE PLOTTED => 11/13/2019 TIME PLOTTED => 2:19:57 PM

P:\521 YBI Retaining Walls\06 CAD\Structure\RW4\RW4\_05\_DETAILS\_1.dgn

BORDER LAST REVISED 9/9/2015



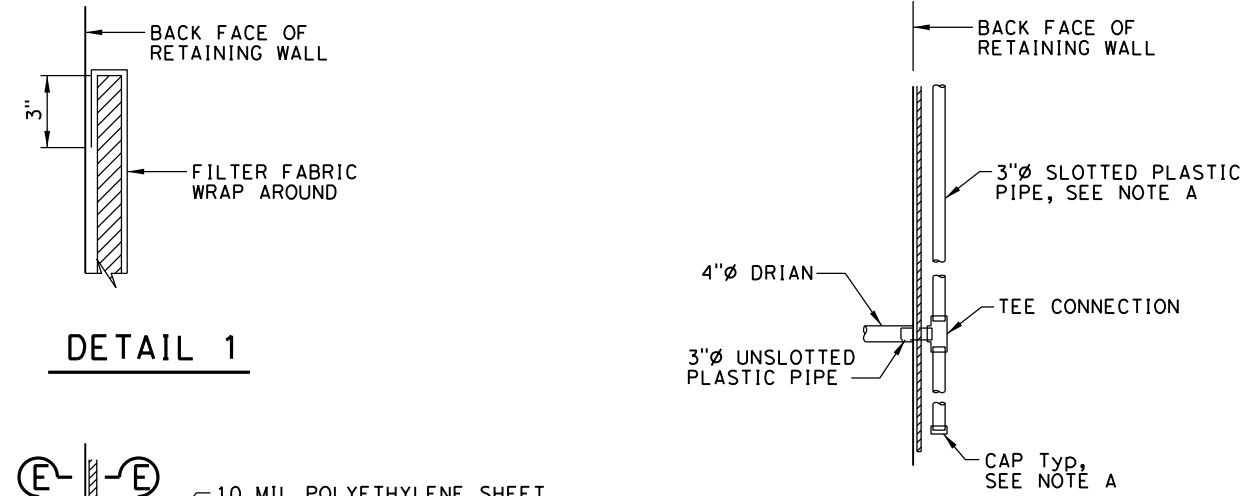


**BARRIER SLAB SECTION**

3/4" = 1'-0"

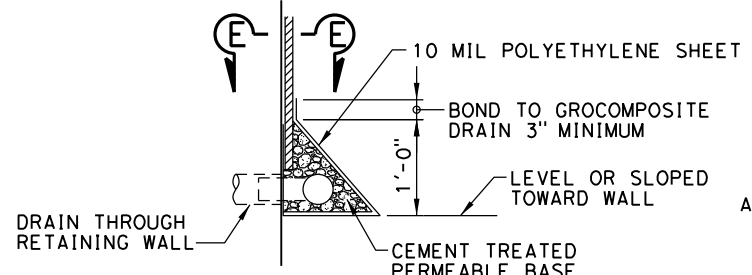
- RETAINING WALL REMOVAL (PORTION)

- NOTES:**
1. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
  2. BARRIER REINFORCING STEEL



**DETAIL 1**

**SECTION E-E**

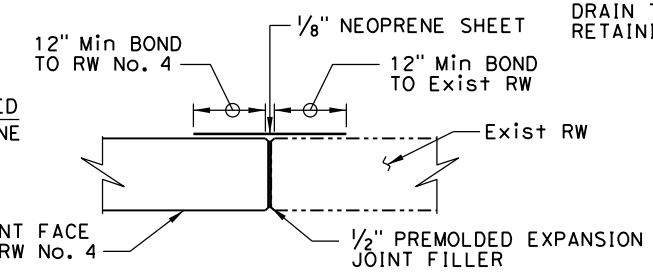


**DETAIL 2**

- A.** 4"  $\phi$  DRAINS AT INTERMEDIATE SAG POINTS AND AT 25' MAX CENTER TO CENTER. EXPOSED WALL DRAINS SHALL BE LOCATED 3"  $\pm$  ABOVE FINISHED GRADE.
- B.** GEOCOMPOSITE DRAIN, CEMENT TREATED PERMEABLE BASE, AND 3"  $\phi$  SLOTTED PLASTIC PIPE CONTINUOUS BEHIND RETAINING WALL. CAP ENDS OF PIPE. PROVIDE "TEE" CONNECTION AT EACH 4"  $\phi$  DRAIN.

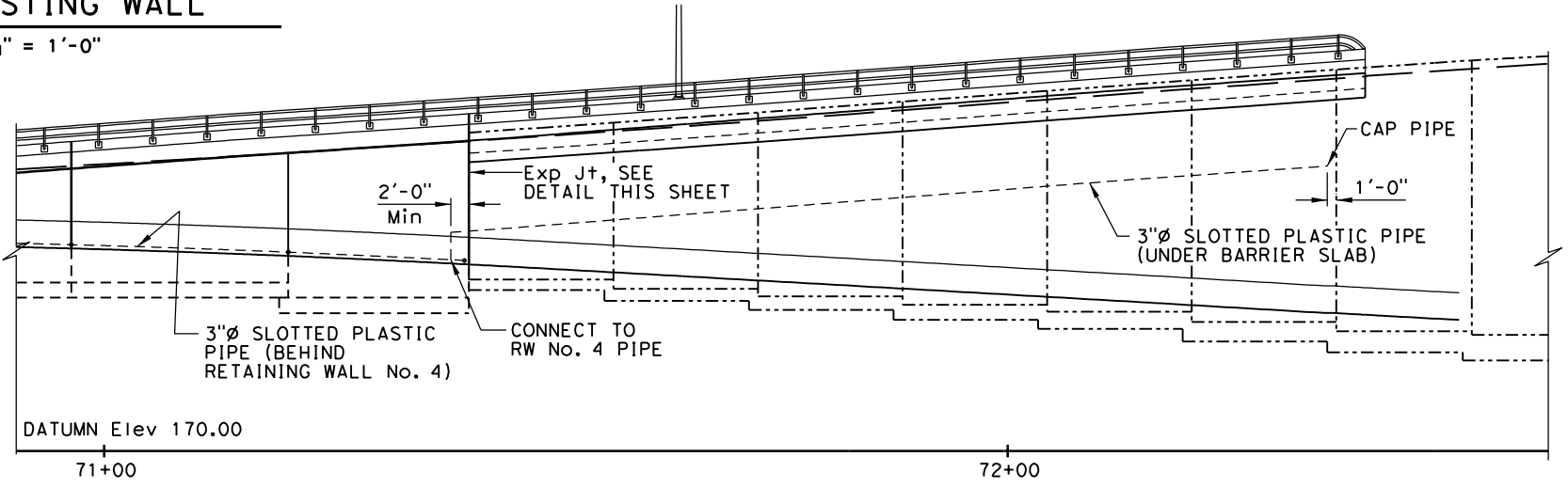
**WEEP HOLE AND GEOCOMPOSITE DRAIN**

NO SCALE



**EXPANSION JOINT DETAILS AT EXISTING WALL**

3/4" = 1'-0"



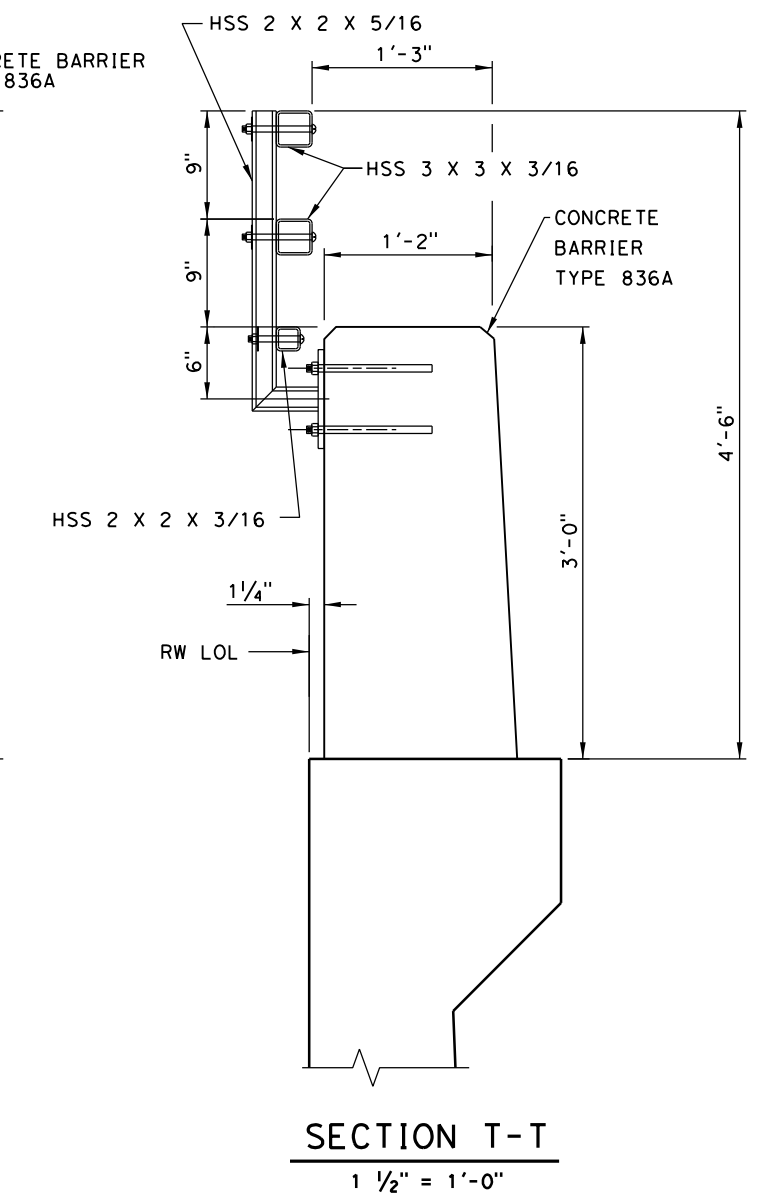
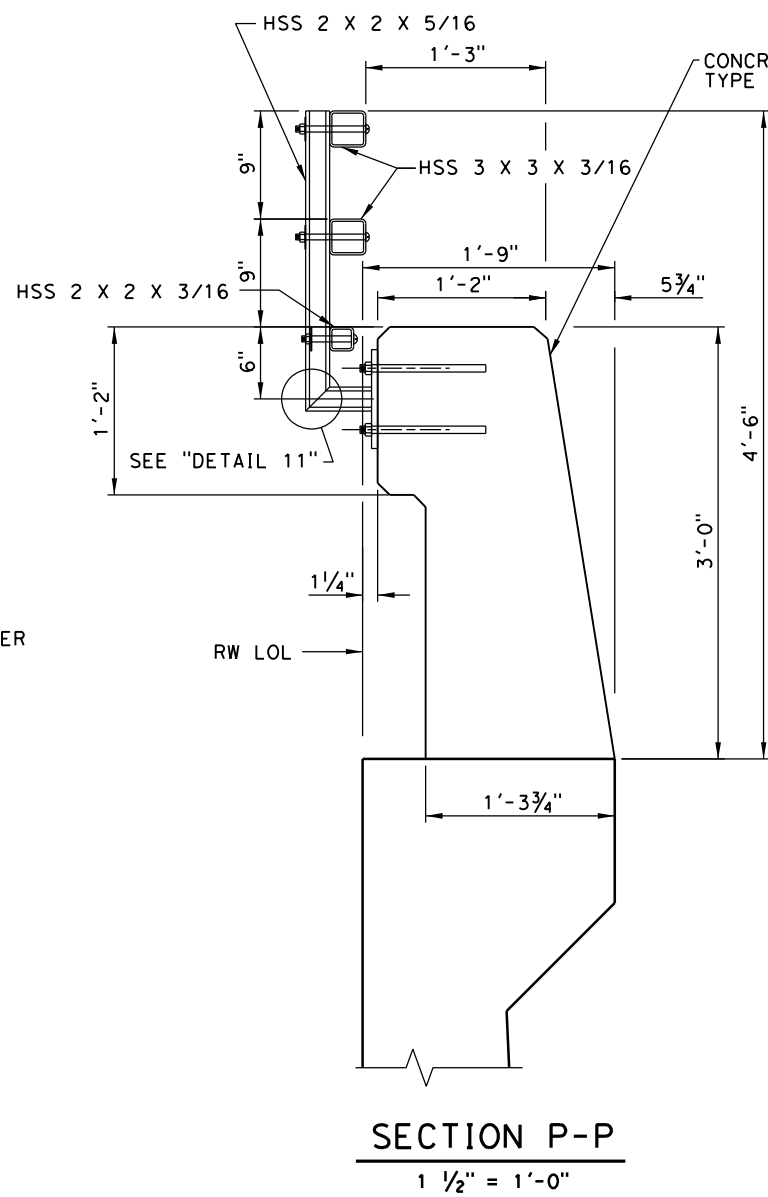
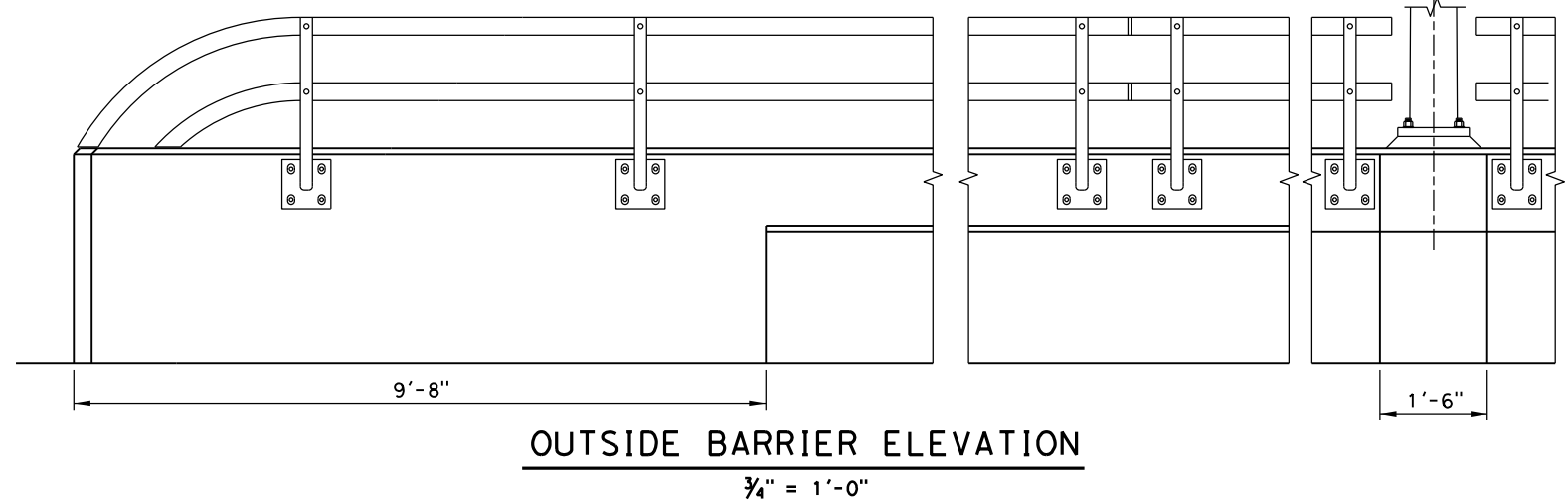
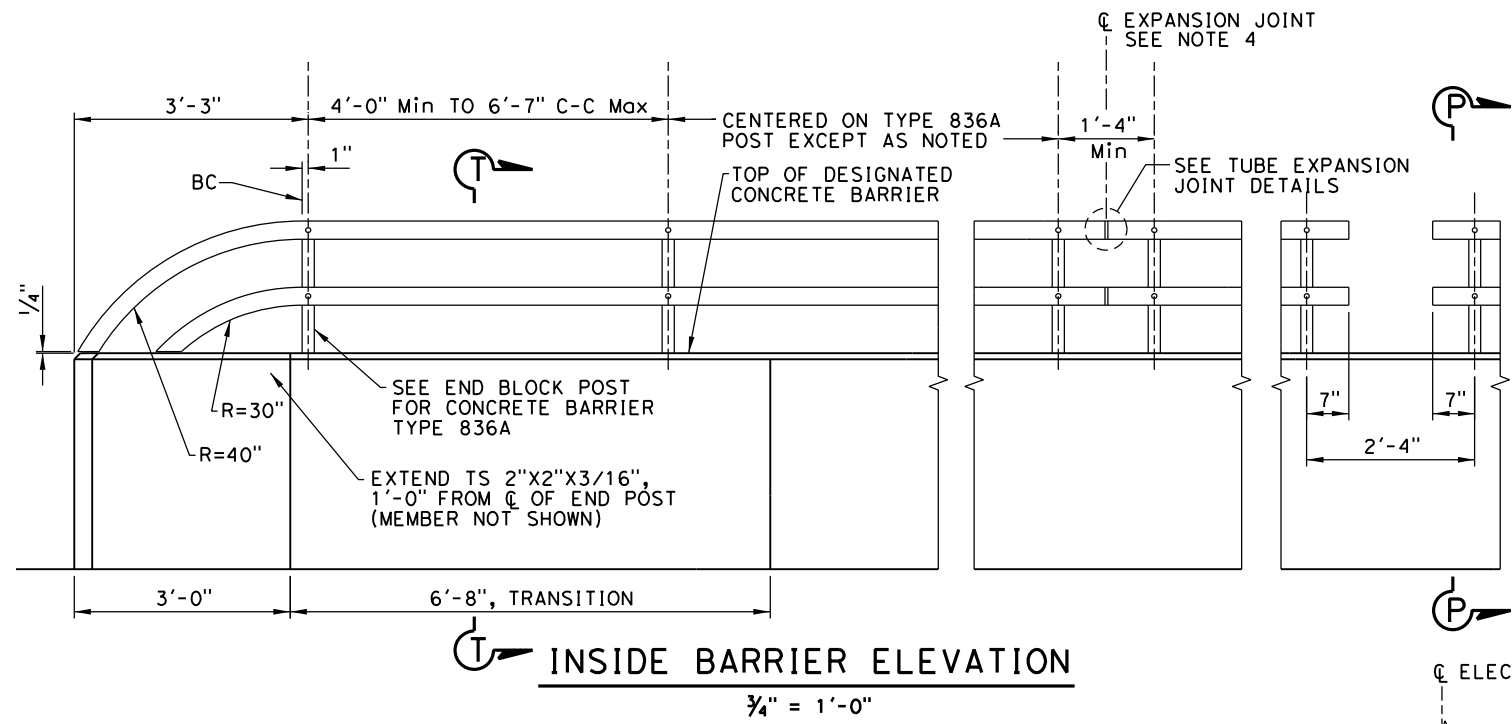
**GEOCOMPOSITE DRAIN AND DETAIL**

1" = 10'-0"

**RETAINING WALL DETAILS No. 2**

SCALE: AS SHOWN

REVISOR	DATE	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 4	CHECKED BY		PLANS APPROVAL DATE	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com				CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW4\RW4_06_DETAILS 2.dgn
			SUPERVISOR R. SENNETT							CONTRACT NO.
			DATE 11/15/2019							
BORDER LAST REVISED 9/9/2015										LAST REVISION
										DATE PLOTTED => 11/15/2019
										TIME PLOTTED => 4:26:39 PM

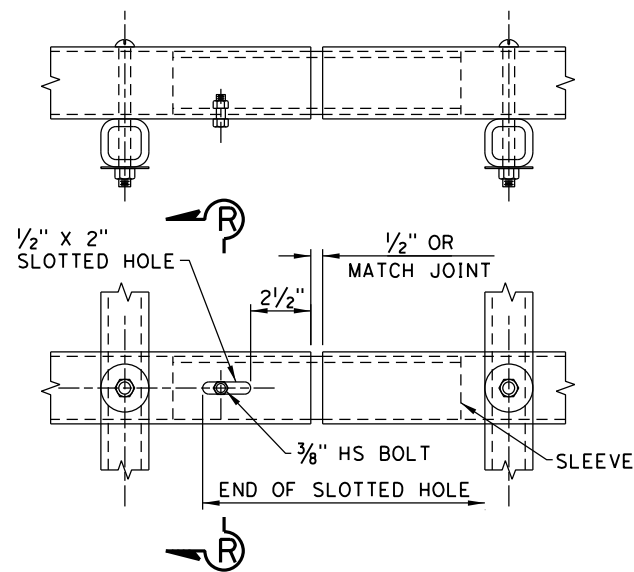


**TUBULAR BICYCLE RAILING**

- NOTES:**
1. POST SHALL BE NORMAL TO RAILING.
  2. RAIL TUBES SHALL BE SHOP BENT OR FABRICATED TO FIT HORIZONTAL CURVE WHEN RADIUS IS LESS THAN 950'.
  3. TUBE SPLICES SHALL BE LOCATED IN THE TUBES SPANNING WALL JOINTS. INCREASE JOINT WIDTH IN TUBES TO MATCH EXPANSION JOINT WIDTH AND INCREASE SLEEVE LENGTH CORRESPONDINGLY.
  4. TOP RAIL TUBE SHALL BE CONTINUOUS OVER NOT LESS THAN TWO POSTS.
  5. SEE "RETAINING WALL DETAILS 4" SHEET FOR DETAILS NOT SHOWN.

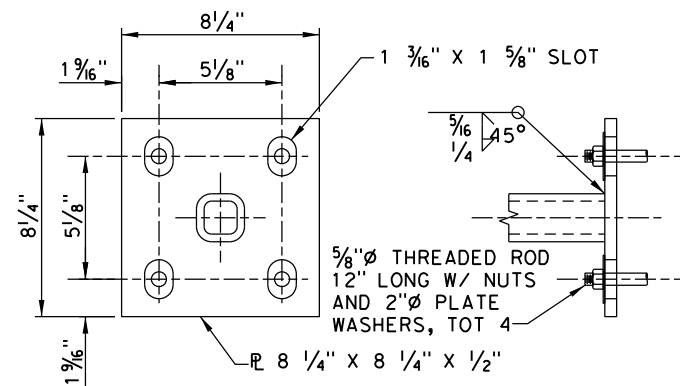
**RETAINING WALL DETAILS No. 3**  
 SCALE: AS SHOWN

REVISOR	DATE	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY	REGISTERED PROFESSIONAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 4	Y. DENG	REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW4\RW4-07_DETAILS_3.dgn
			CHECKED BY	R. E. SENNETT IV No. 3976 Exp. 12/31/2020 STRUCTURAL STATE OF CALIFORNIA					CONTRACT NO.
			SUPERVISOR						SHEET NAME
			R. SENNETT						RW4-7
			DATE						SHEET NO.
			11/15/2019						TOTAL SHEETS
BORDER LAST REVISED 9/9/2015									
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3									
LAST REVISION DATE PLOTTED => 11/15/2019 TIME PLOTTED => 4:29:26 PM									



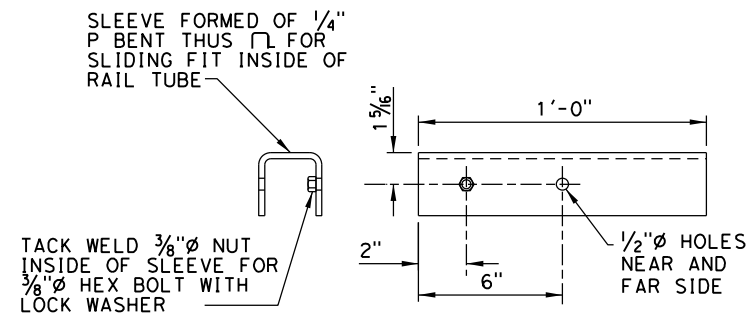
**TUBE EXPANSION JOINT DETAIL**

3" = 1'-0"



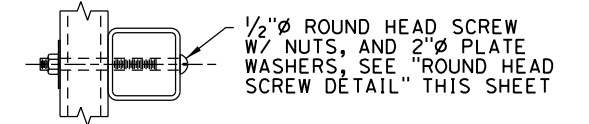
**BASE PLATE DETAIL**

3" = 1'-0"



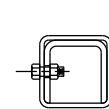
**SLEEVE DETAIL**

3" = 1'-0"



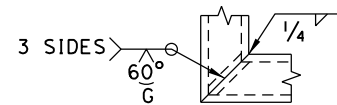
**TUBE CONNECTION DETAIL**

3" = 1'-0"



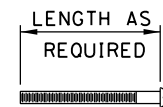
**SECTION R-R**

3" = 1'-0"



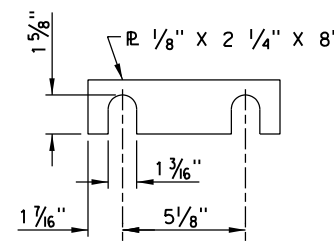
**DETAIL 11**

3" = 1'-0"



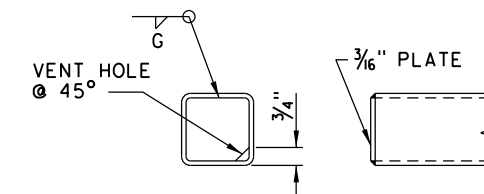
**ROUND HEAD SCREW DETAIL**

3" = 1'-0"



**SHIM DETAIL**

3" = 1'-0"



**RAIL CAP DETAIL**

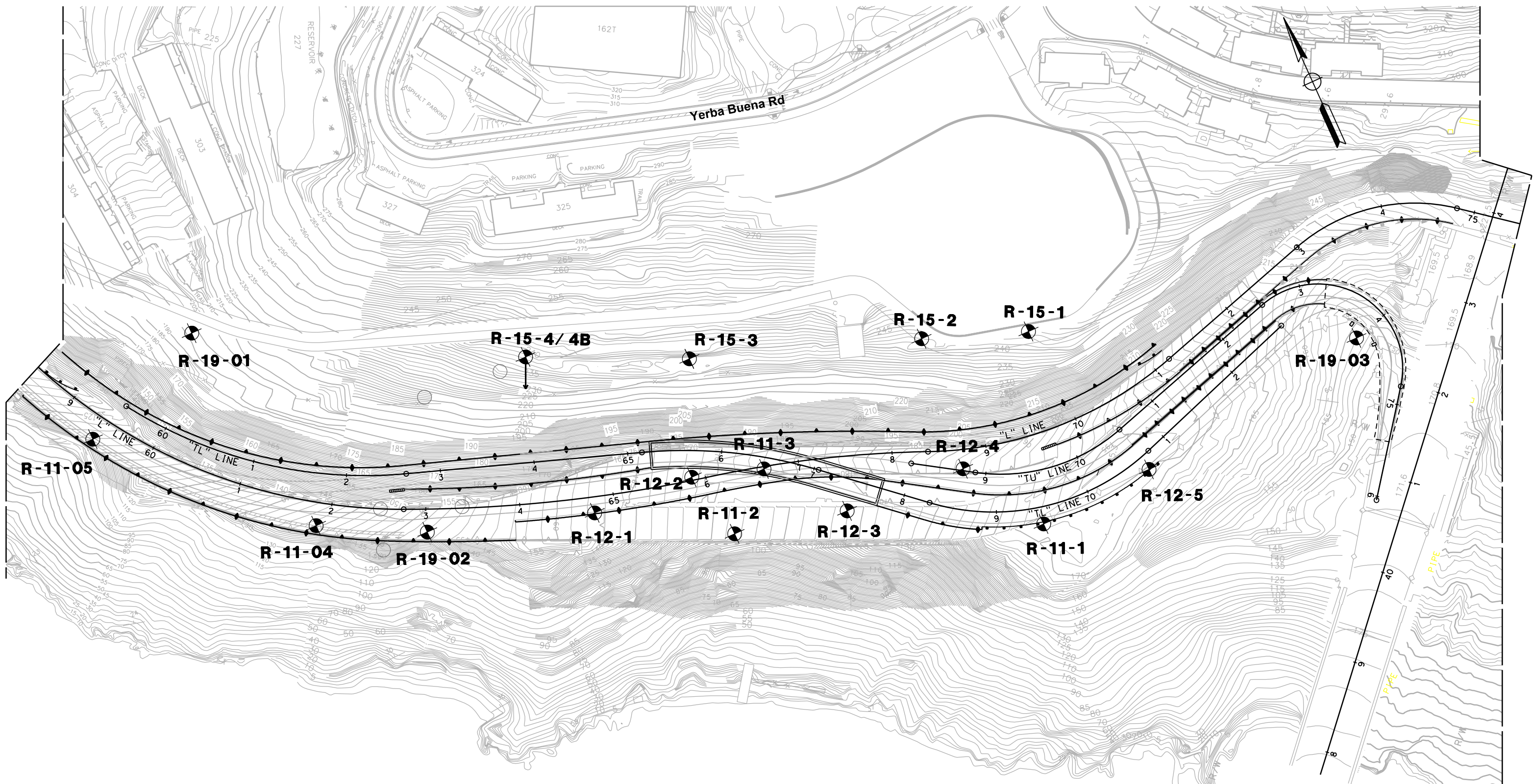
3" = 1'-0"

**RETAINING WALL  
DETAILS No. 4**  
SCALE: AS SHOWN

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 4  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b>  7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter	
			CHECKED BY R. SENNETT		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW4\RW4-08_DETAILS 4.dgn	CONTRACT NO.
			SUPERVISOR R. SENNETT		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				SHEET NAME RW4-8	SHEET NO.
BORDER LAST REVISED 9/9/2015			DATE 11/12/2019		MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			LAST REVISION 11/12/2019	DATE PLOTTED => 11/12/2019 TIME PLOTTED => 3:20:11 PM	

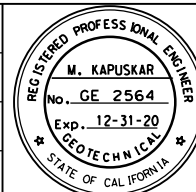
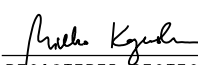


P:\521 YBI Retaining Walls\06 CAD\Structure\RW4\RW4-08\_DETAILS 4.dgn



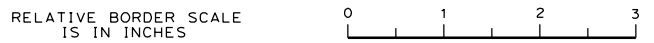


R-XX-01 BORING - SEE LOG OF TEST BORING SHEETS

**LOG OF TEST BORINGS  
No. 1 OF 3**  
SCALE: 1" = 50'

REVISED BY	DATE REVISED	DESIGNED BY: J. CASTLE DRAWN BY: B. AMBRIZ CHECKED BY: M. KAPUSKAR APPROVED BY: M. KAPUSKAR		 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE 07/27/19	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => Peter	CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW4	CONTRACT NO.
PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 4								PLANS APPROVAL DATE	SHEET NAME RW4-9	SHEET NO. 

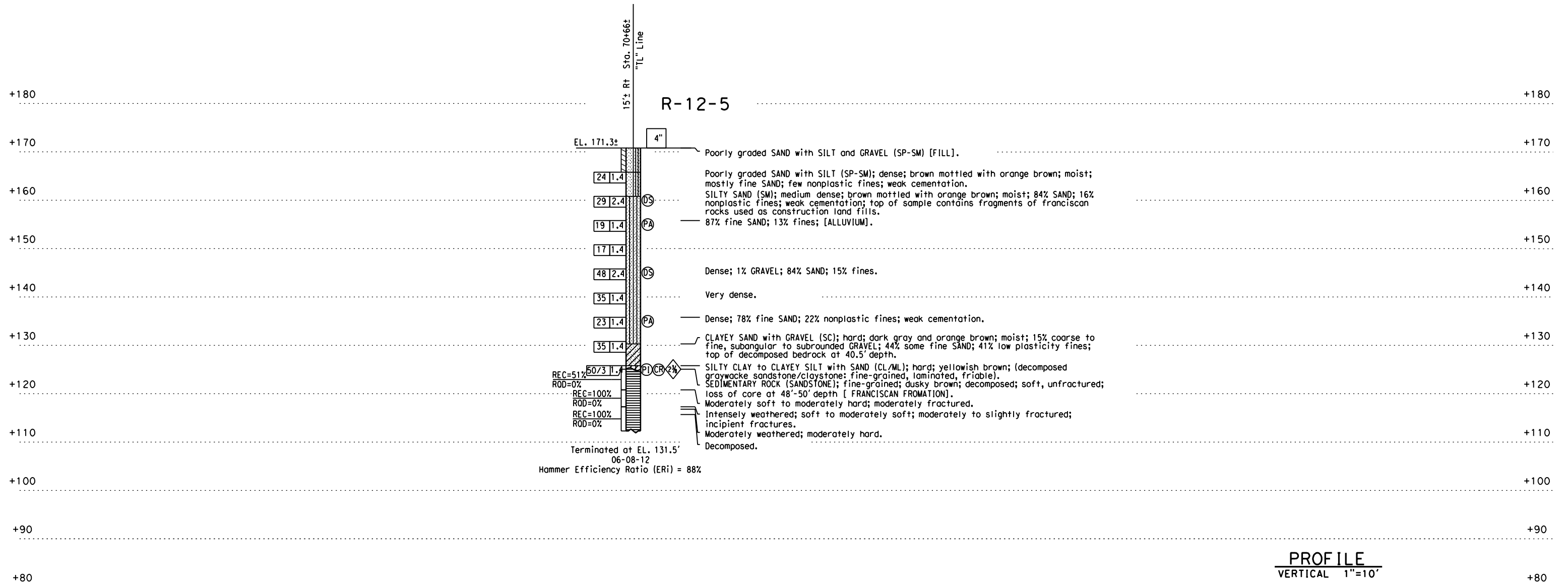
BORDER LAST REVISED 1/20/2019



REQUEST

**NOTES:**

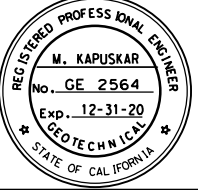



- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW4-9

**LOG OF TEST BORINGS**  
**No. 2 OF 3**

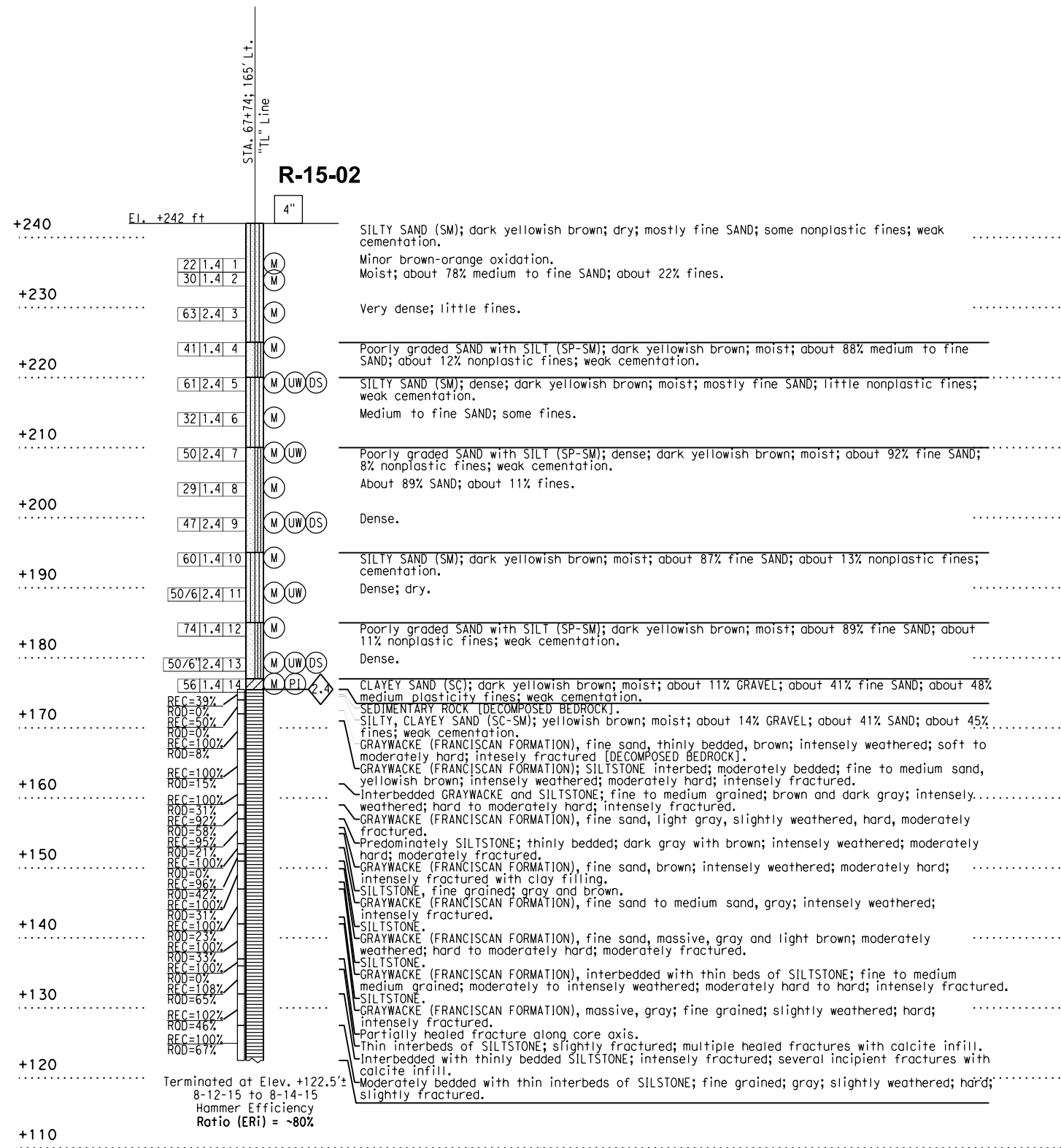
J. CASTLE, M. HOSHIYAMA  
FIELD INVESTIGATION BY:

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 4  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE		 07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eartmech.com			USERNAME => Peter
			DRAWN BY: K. THANT						CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\NRW4
			CHECKED BY: A. KORKOS						CONTRACT NO.
			APPROVED BY: M. KAPUSKAR						PLANS APPROVAL DATE
BORDER LAST REVISED 1/20/2019			RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3					SHEET NAME RW4-10
									DATE PLOTTED => 11/15/2019 TIME PLOTTED => 4:31:05 PM

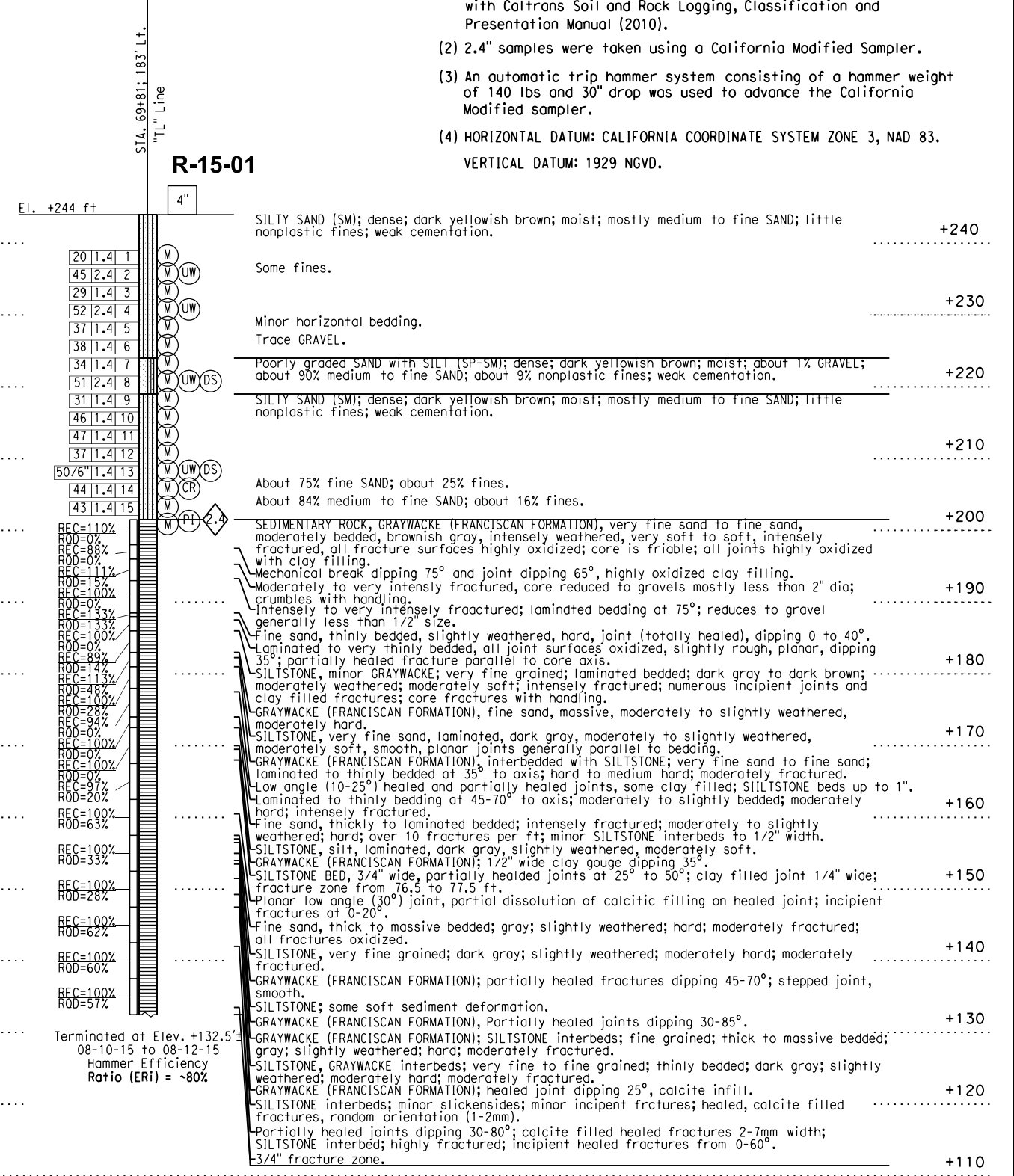
3812019

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



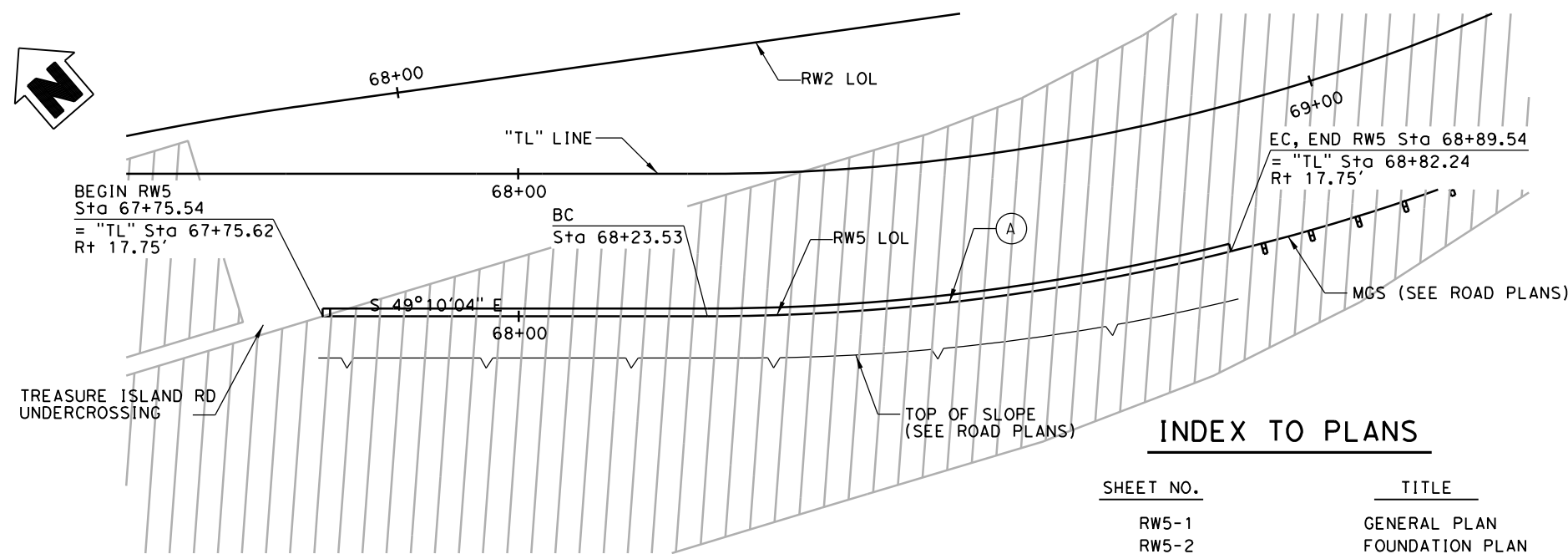
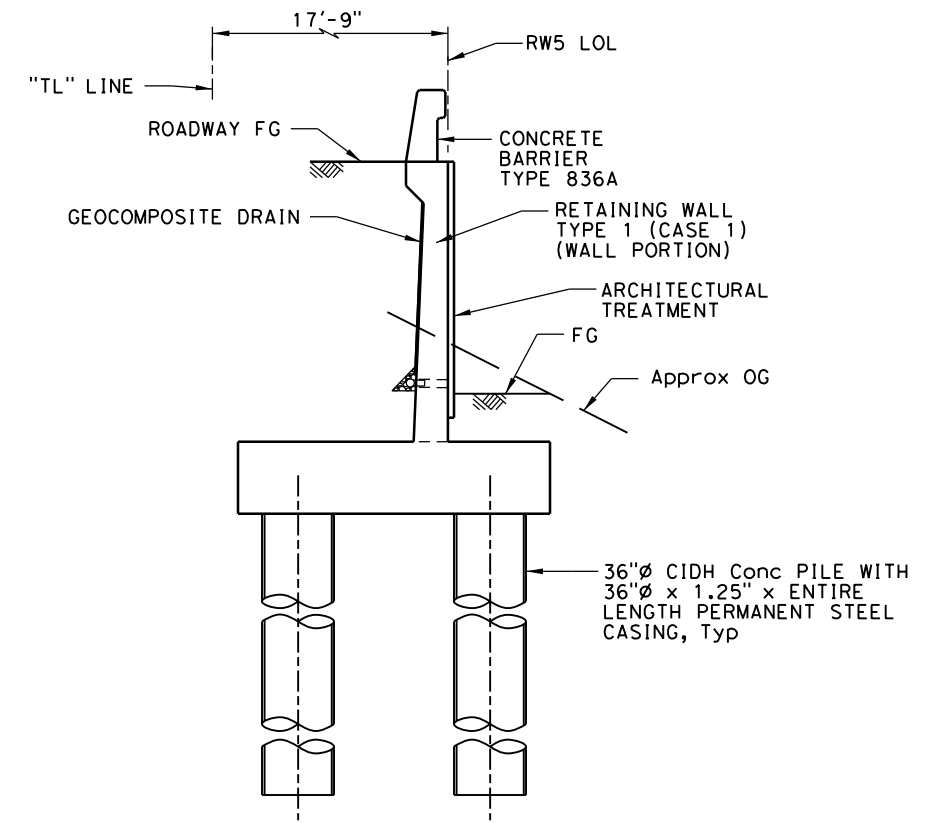
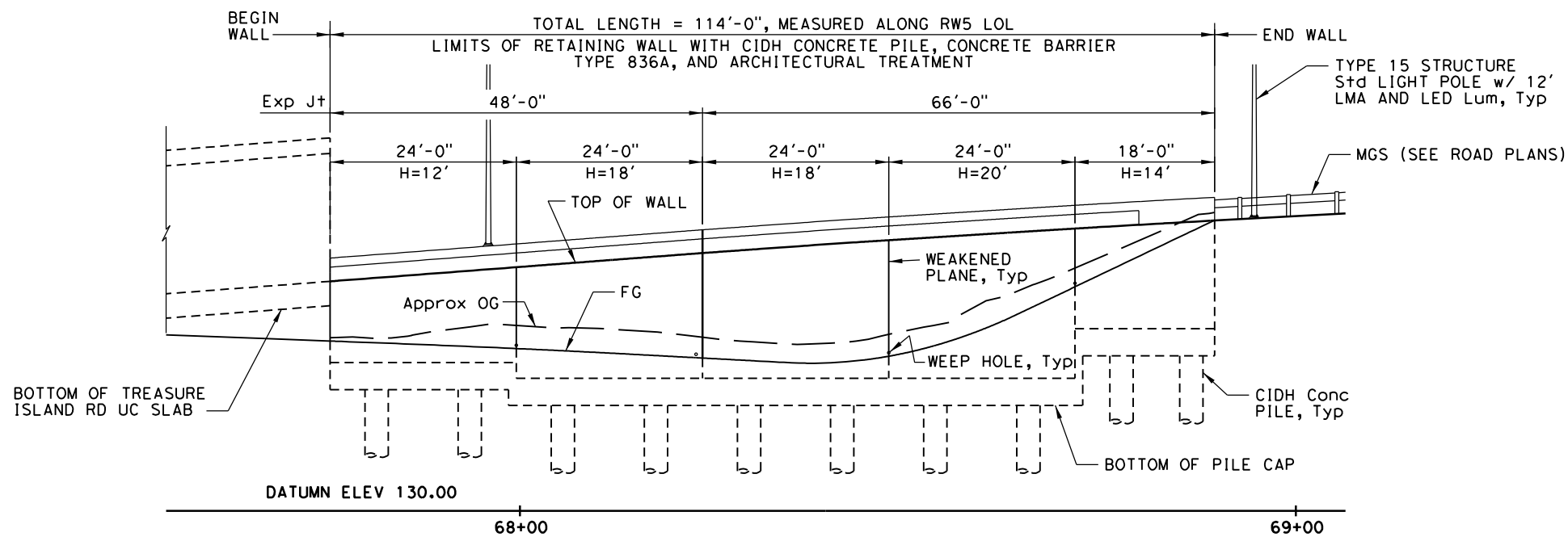
**PROFILE**  
VERTICAL 1"=10'



FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW4-9

**LOG OF TEST BORINGS**  
**No. 3 OF 3**

REVISED BY: _____ DATE REVISED: _____		DESIGNED BY: <b>J. CASTLE</b>			REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE <b>07/27/19</b>	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorhthmech.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW4-
PROJECT DESCRIPTION <b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 4</b>		CHECKED BY: <b>C.T. YANG</b>							CONTRACT NO.
APPROVED BY: <b>M. KAPUSKAR</b>		PLANS APPROVAL DATE		SHEET NAME: <b>RW4-11</b>		SHEET NO.: _____		TOTAL SHEETS: _____	
BORDER LAST REVISED 1/20/2019		RELATIVE BORDER SCALE IS IN INCHES				LAST REVISION: 1-20-19		DATE PLOTTED => 11/15/2019 TIME PLOTTED => 4:31:50 PM	



STANDARD PLANS  
DATED 2018

- A3A ABBREVIATIONS (SHEET 1 OF 3)
- A3B ABBREVIATIONS (SHEET 2 OF 3)
- A3C ABBREVIATIONS (SHEET 3 OF 3)
- A10A LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
- A10B LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
- A10C LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
- A10D LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
- A10E LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
- A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL
- B0-3 BRIDGE DETAILS
- B3-1A RETAINING WALL TYPE 1 (CASE 1)
- B3-5 RETAINING WALL DETAILS NO. 1
- RSP B11-79 CONCRETE BARRIER TYPE 836 DETAILS No. 1
- RSP B11-80 CONCRETE BARRIER TYPE 836 DETAILS No. 2

NO.	R	Δ	T	L
(A)	267.75'	14°04'34.24"	33.17'	66.13'

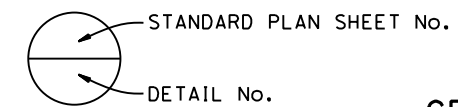
LEGEND:

BRIDGE REMOVAL, SEE "ROAD PLANS"

SHEET NO.	TITLE
RW5-1	GENERAL PLAN
RW5-2	FOUNDATION PLAN
RW5-3	RETAINING WALL LAYOUT
RW5-4	RETAINING WALL DETAILS No. 1
RW5-5	RETAINING WALL DETAILS No. 2
RW5-6	LOG OF TEST BORING No. 1 OF 2
RW5-7	LOG OF TEST BORING No. 2 OF 2

NOTE:

1. FOR "GENERAL NOTES", SEE "RETAINING WALL LAYOUT" SHEET.



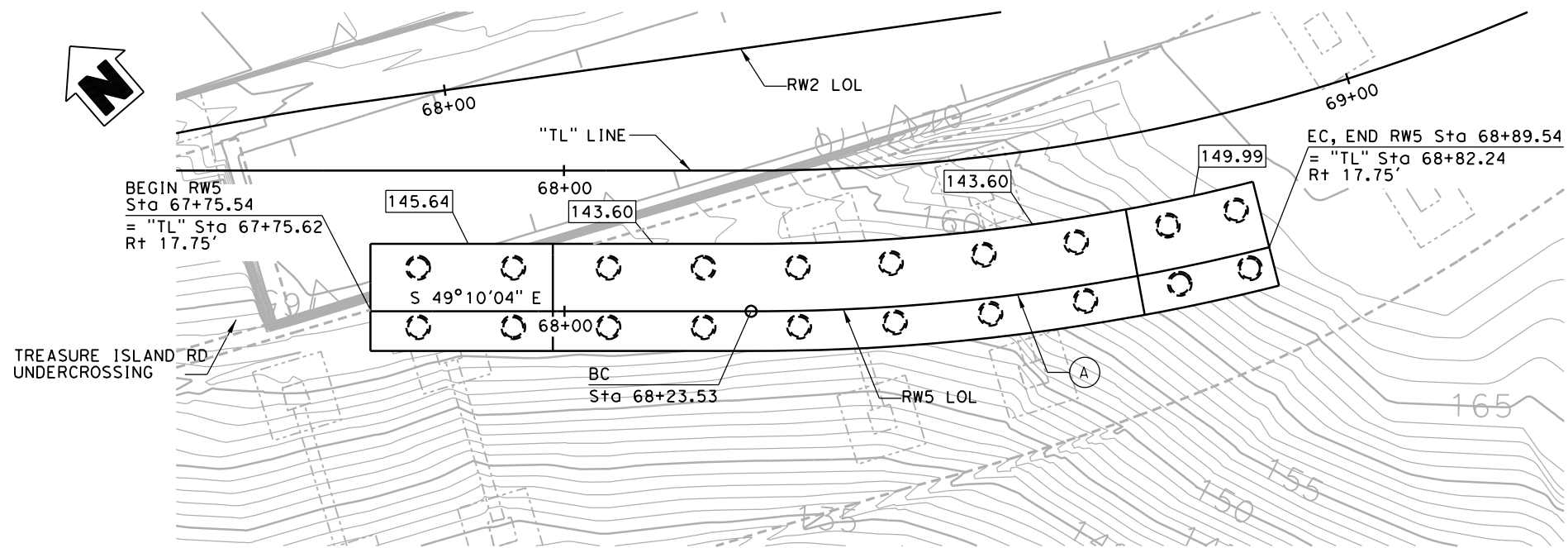
GENERAL PLAN  
SCALE: 1" = 10'

REVISIONS NO.   DATE   DESCRIPTION _____ _____ _____	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 5 PROJECT DESCRIPTION	CALCULATED/DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 11/15/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE _____ PLANS APPROVAL DATE _____	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW5\RW5-01.dgn CONTRACT NO. SHEET NAME   SHEET NO.   TOTAL SHEETS RW5-1     LAST REVISION   DATE PLOTTED => 11/15/2019 11/15/2019   TIME PLOTTED => 4:35:27 PM
--	---	---	--	---	--	--	--	--

BORDER LAST REVISED 9/9/2015

RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3



**LEGEND:**

- XXX.XX INDICATES BOTTOM OF FOOTING ELEVATION
- INDICATES 36" DIAMETER CIDH CONCRETE PILE WITH PERMANENT STEEL CASING

**SURVEY DATUM:**

VERTICAL DATUM      NAVD 88  
 HORIZONTAL DATUM      NAD 83

RW CURVE DATA TABLE				
NO.	R	Δ	T	L
(A)	267.75'	14°04'34.24"	33.17'	66.13'

**FOUNDATION PLAN**  
 1" = 10'

**PILE DATA TABLE**

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	AVERAGE BEDROCK CONTACT ELEVATION (ft)	AVERAGE SOCKET LENGTH (ft)
		COMPRESSION	TENSION				
H=12' (67+75 TO 67+99)	36" Dia CIDH WITH ENTIRE LENGTH CASING	290	N/A	(a) 74 (b) 123 (d) 116	74	83	9
H=18' (67+99 TO 68+23)	36" Dia CIDH WITH ENTIRE LENGTH CASING	450	N/A	(a) 80 (b) 117 (d) 114	80	89	9
H=18' 68+23 TO 68+47	36" Dia CIDH WITH ENTIRE LENGTH CASING	450	N/A	(a) 91 (b) 117 (d) 114	91	100	9
H=20' 68+47 TO 68+71	36" Dia CIDH WITH ENTIRE LENGTH CASING	520	N/A	(a) 99 (b) 115 (d) 114	99	108	9
H=14' 68+71 TO 68+89	36" Dia CIDH WITH ENTIRE LENGTH CASING	290	N/A	(a) 106 (b) 126 (d) 120	106	115	9

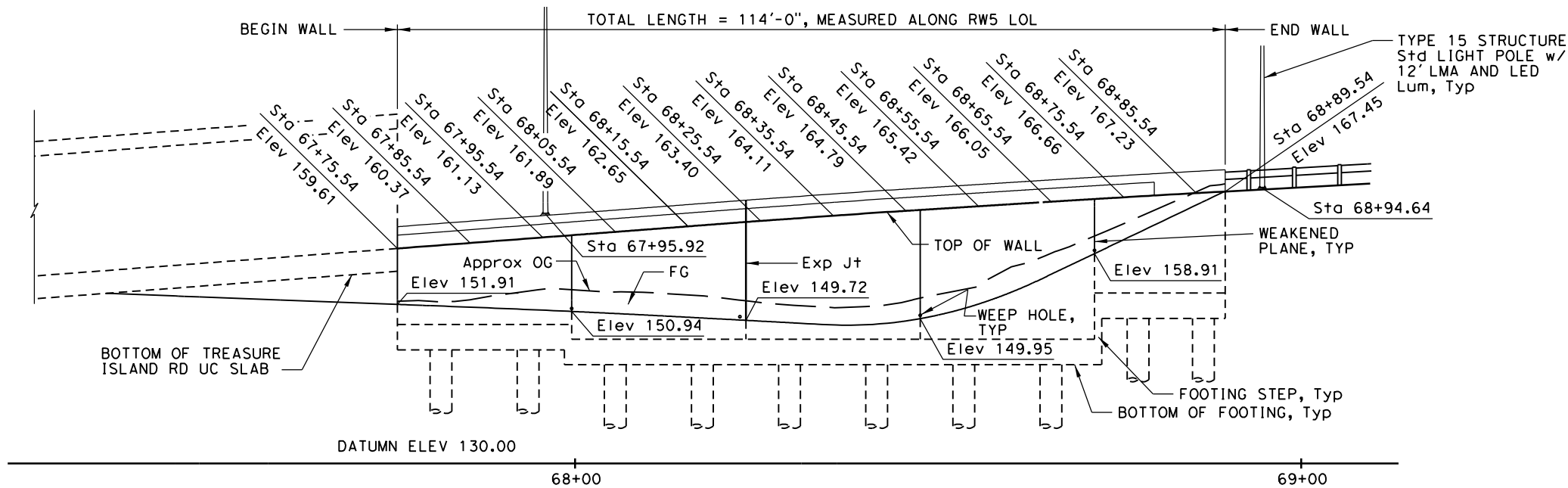
**NOTES:**

1. DESIGN TIP ELEVATION ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESSION, (b) TENSION, (c) SETTLEMENT, AND (d) LATERAL LOAD.
2. SPECIFIED TIP ELEVATIONS SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR SETTLEMENT AND LATERAL LOAD WITHOUT ENGINEER'S APPROVAL.

**FOUNDATION PLAN**  
 SCALE: 1" = 10'

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 5	CALCULATED/DESIGNED BY Y. DENG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE				USERNAME => Peter
			CHECKED BY		PLANS APPROVAL DATE	CADD FILENAME =>				
			SUPERVISOR R. SENNETT		MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	P:\521 YBI Retaining Walls\06 CAD\Structure RW5\RW5_02_FND.dgn				
		PROJECT DESCRIPTION	DATE 11/15/2019			7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			CONTRACT NO.	
									SHEET NAME	
									SHEET NO.	
									TOTAL SHEETS	
									RW5-2	
									LAST REVISION	
									DATE PLOTTED => 11/15/2019	
									TIME PLOTTED => 4:41:23 PM	

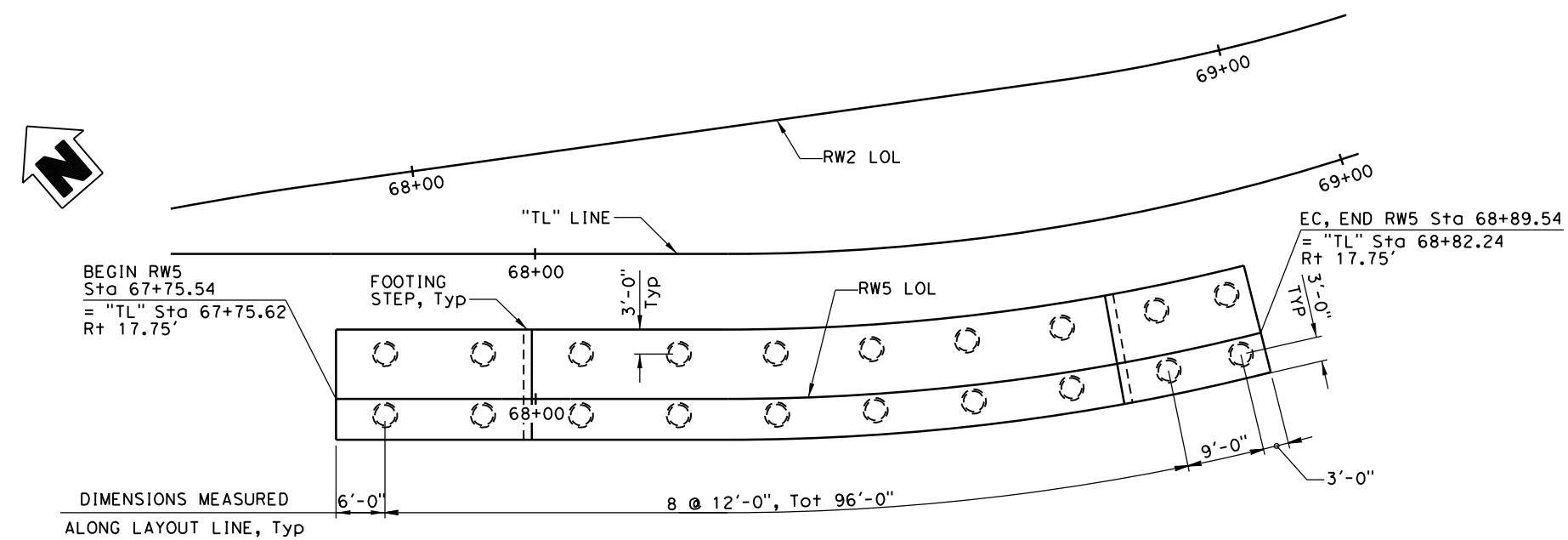
P:\521 YBI Retaining Walls\06 CAD\Structure RW5\RW5\_02\_FND.dgn



**ELEVATION** B0-3 B3-5  
 1" = 10'

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

- DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATION 6TH EDITION AND CALTRANS AMENDMENTS, PREFACE, DATED MARCH, 2014
- SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 1.7, APRIL 2013
- DEAD LOAD: INCLUDES WEIGHT OF 75 psf FOR STEM ARCHITECTURAL TREATMENT UP TO 6 INCHES
- LIVE LOAD: 72 pcf SURCHARGE
- SEISMIC LOAD: PEAK GROUND ACCELERATION (PGA) = 0.57g
- REINFORCED CONCRETE:  $f'_c = 4,000$  psi  
 $f'_c = 5,000$  psi (CIDH Conc PILE)  
 $f_y = 60,000$  psi
- PERMANENT STEEL CASING: ASTM A252, GRADE 3(MOD),  $F_y = 50,000$  psi
- STEEL SHEAR PIN: ASTM A500, GRADE B,  $F_y = 42,000$  psi



**PLAN** B3-5  
 1" = 10'

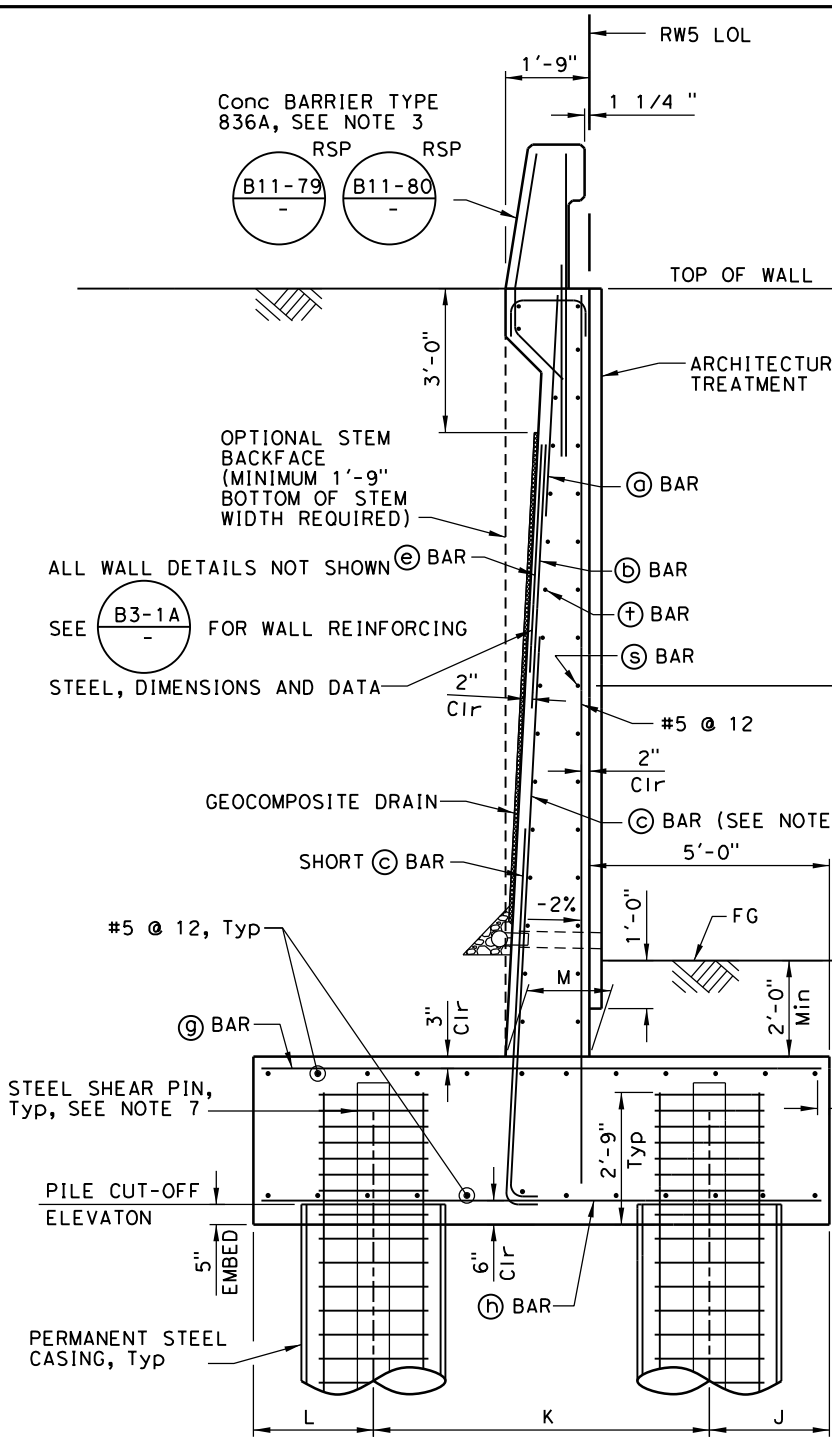
**LEGEND:**

INDICATES 36" DIAMETER CIDH CONCRETE PILE WITH PERMANENT STEEL CASING

**NOTE:**  
 1. NOT ALL FEATURES SHOWN FOR LAYOUT AND CLARITY PURPOSE.

**RETAINING WALL LAYOUT**  
 SCALE: AS SHOWN

<small>REVISD BY</small>	<small>DATE REVISED</small>	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 5	<small>CALCULATED/DESIGNED BY</small> Y. DENG		<small>REGISTERED STRUCTURAL ENGINEER</small>	<small>PLANS SUBMITTAL DATE</small>				<small>USERNAME =&gt;</small> Peter	<small>CADD FILENAME =&gt;</small> P:\521 YBI Retaining Walls\06 CAD\Structure\RW5\RW5-03_LAYOUT_SHEET.dgn
			<small>CHECKED BY</small>		<small>PLANS APPROVAL DATE</small>	<small>7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com</small>				<small>CONTRACT NO.</small>	
			<small>SUPERVISOR</small> R. SENNETT		<small>MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	<small>SHEET NAME</small>				<small>SHEET NO.</small>	<small>TOTAL SHEETS</small>
<small>BORDER LAST REVISED 9/9/2015</small>		<small>PROJECT DESCRIPTION</small>	<small>DATE</small> 11/15/2019	<small>STATE OF CALIFORNIA</small>	<small>RELATIVE BORDER SCALE IS IN INCHES</small>					<small>LAST REVISION</small>	<small>DATE PLOTTED =&gt;</small> 11/15/2019
										<small>TIME PLOTTED =&gt;</small> 4:43:19 PM	

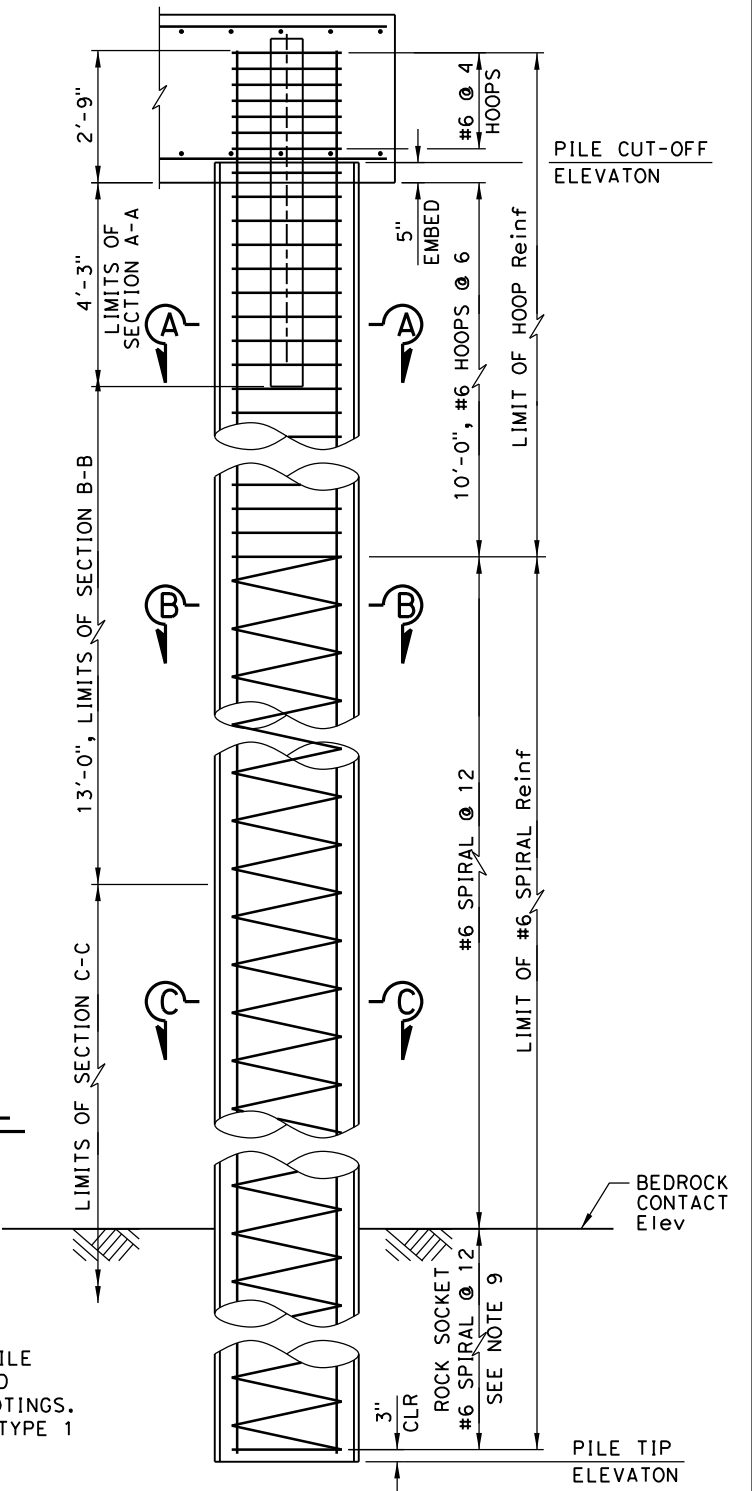
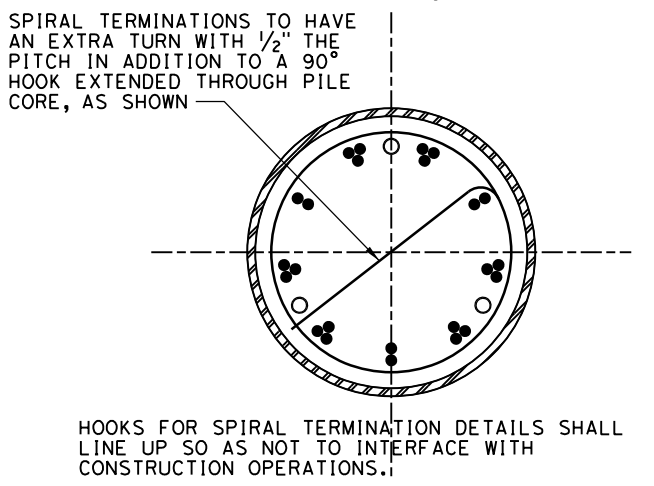
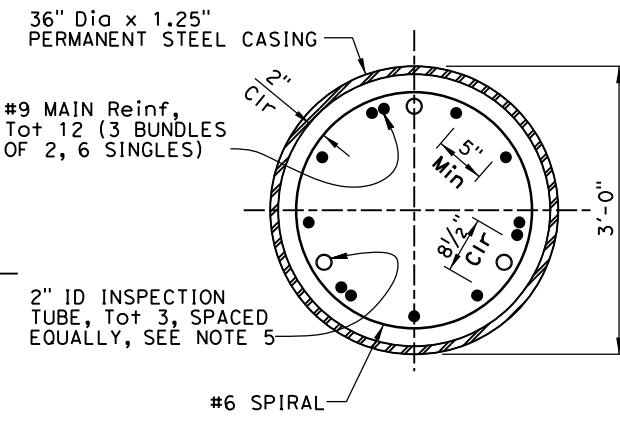
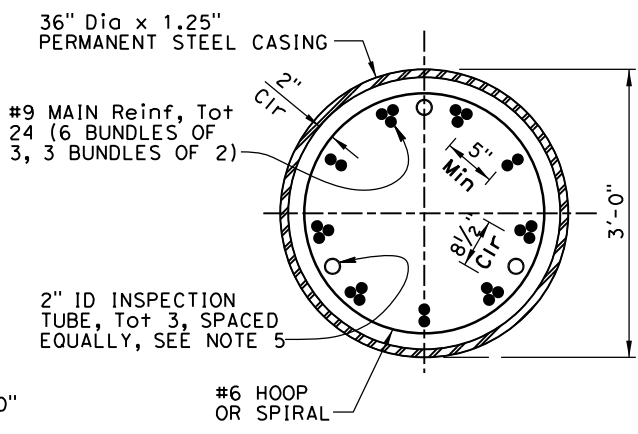
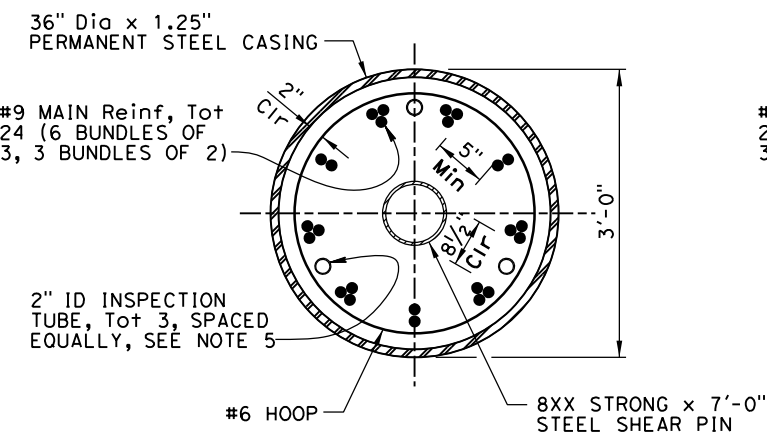


**TYPICAL SECTION**  
1/2" = 1'-0"

**TABLE OF PILE CAP REINFORCING STEEL, DIMENSIONS & DATA**

DESIGN H	12'	14'	18'	20'
I	3'-6"	3'-6"	3'-6"	3'-6"
J	3'-0"	3'-0"	3'-0"	3'-0"
K	7'-6"	7'-6"	7'-6"	7'-6"
L	3'-0"	3'-0"	3'-0"	3'-0"
M*	1'-9"	1'-9"	1'-9"	1'-10"
Ⓒ BAR	#6 @ 12	#6 @ 12	#6 @ 12	#6 @ 12
Ⓓ BAR	#6 @ 12	#7 @ 12	#9 @ 12	#9 @ 12

\* DEVELOPED BOTTOM OF STEM WIDTH PER "DESIGN H" AND "BATTER" ACCORDING TO B3-1A



**NOTES:**

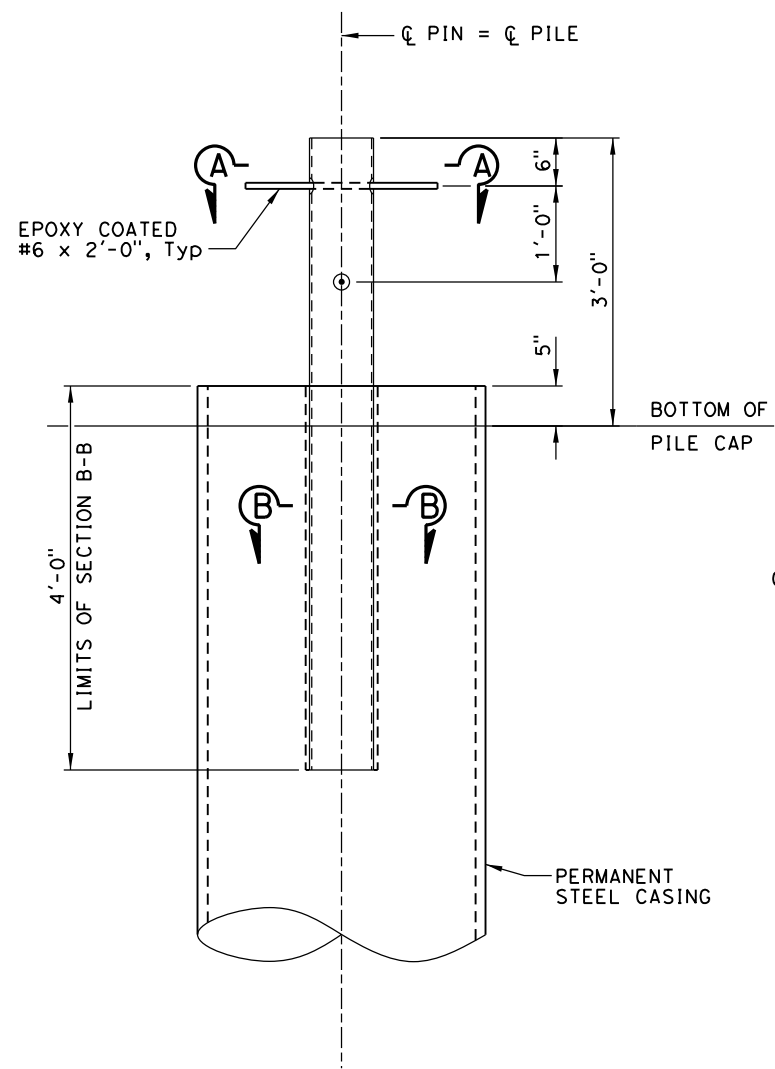
1. TYPICAL SECTION FOR RETAINING WALL WITH CIDH CONCRETE PILE SHOWN. SEE STANDARD PLANS B3-1A FOR TYPICAL SECTION AND DETAILS OF RETAINING WALL TYPE 1 (CASE 1) ON SPREAD FOOTINGS.
2. OPTIONAL STEM BACKFACE ALSO APPLIES TO RETAINING WALL TYPE 1 (CASE 1) WITH MINIMUM BOTTOM OF STEM DIMENSION OF 1'-9".
3. CONCRETE BARRIER REINFORCING STEEL TO BE EPOXY COATED.
4. SEE "RETAINING WALL DETAILS No. 2" SHEET FOR "WEEP HOLE AND GEOCOMPOSITE DRAIN" DETAILS
5. INSPECTION TUBE NOT REQUIRED FOR PILES CONSTRUCTED IN DRY OR DEWATERED HOLES.
6. PROVIDE TEMPORARY CASING AS NECESSARY TO CONSTRUCT PILES.
7. FOR DETAILS OF "STEEL SHEAR PIN", SEE "RETAINING WALL DETAILS No. 2" SHEET.
8. ALL Ⓒ BARS WITH STANDARD HOOK.
9. SEE "PILE DATA TABLE" ON THE "FOUNDATION PLAN" SHEET.

REVISIONS	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 5 PROJECT DESCRIPTION	CALCULATED/DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR DATE 11/15/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE		7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW5\RW5_04 DETAILS NO. 1.dgn CONTRACT NO. SHEET NAME SHEET NO. TOTAL SHEETS RW5-4 LAST REVISION DATE PLOTTED => 11/15/2019 11/15/2019 TIME PLOTTED => 3:38:50 PM
-----------	---	---	--	---	--	--	--	--	--

BORDER LAST REVISED 9/9/2015

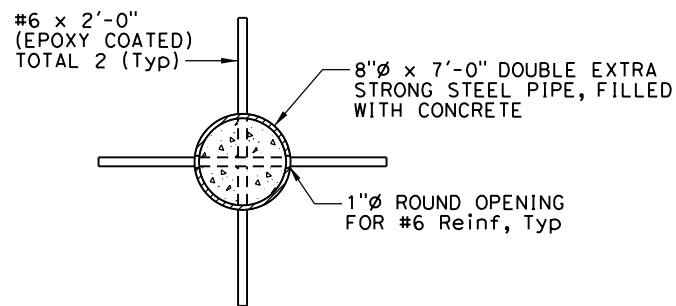
RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3



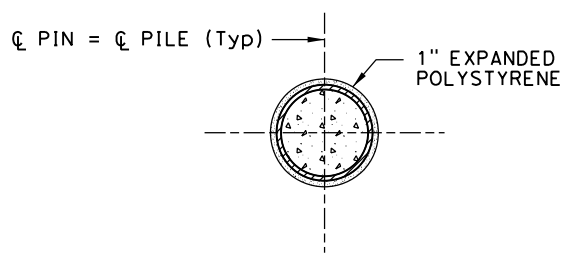
**SHEAR PIN DETAIL**

1" = 1'-0"



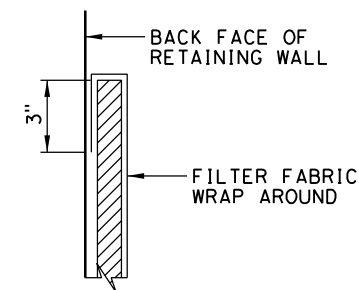
**SECTION A-A**

1 1/2" = 1'-0"

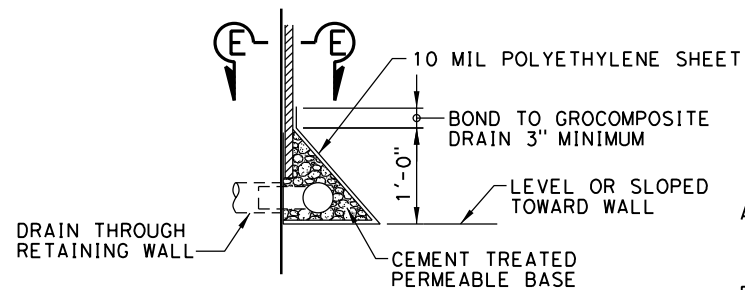


**SECTION B-B**

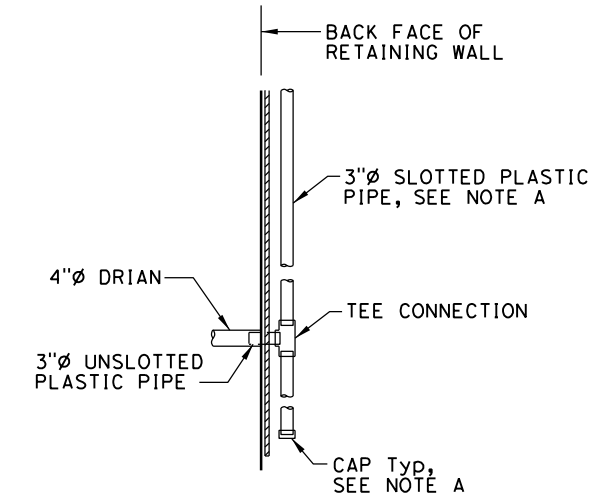
1 1/2" = 1'-0"



**DETAIL 1**



**DETAIL 2**



**SECTION E-E**

- A. 4"  $\phi$  DRAINS AT INTERMEDIATE SAG POINTS AND AT 25' MAX CENTER TO CENTER. EXPOSED WALL DRAINS SHALL BE LOCATED 3"  $\pm$  ABOVE FINISHED GRADE.
- B. GEOCOMPOSITE DRAIN, CEMENT TREATED PERMEABLE BASE, AND 3"  $\phi$  SLOTTED PLASTIC PIPE CONTINUOUS BEHIND RETAINING WALL. CAP ENDS OF PIPE. PROVIDE "TEE" CONNECTION AT EACH 4"  $\phi$  DRAIN.

**WEEP HOLE AND GEOCOMPOSITE DRAIN**

NO SCALE

**RETAINING WALL  
DETAILS No. 2**

SCALE: AS SHOWN

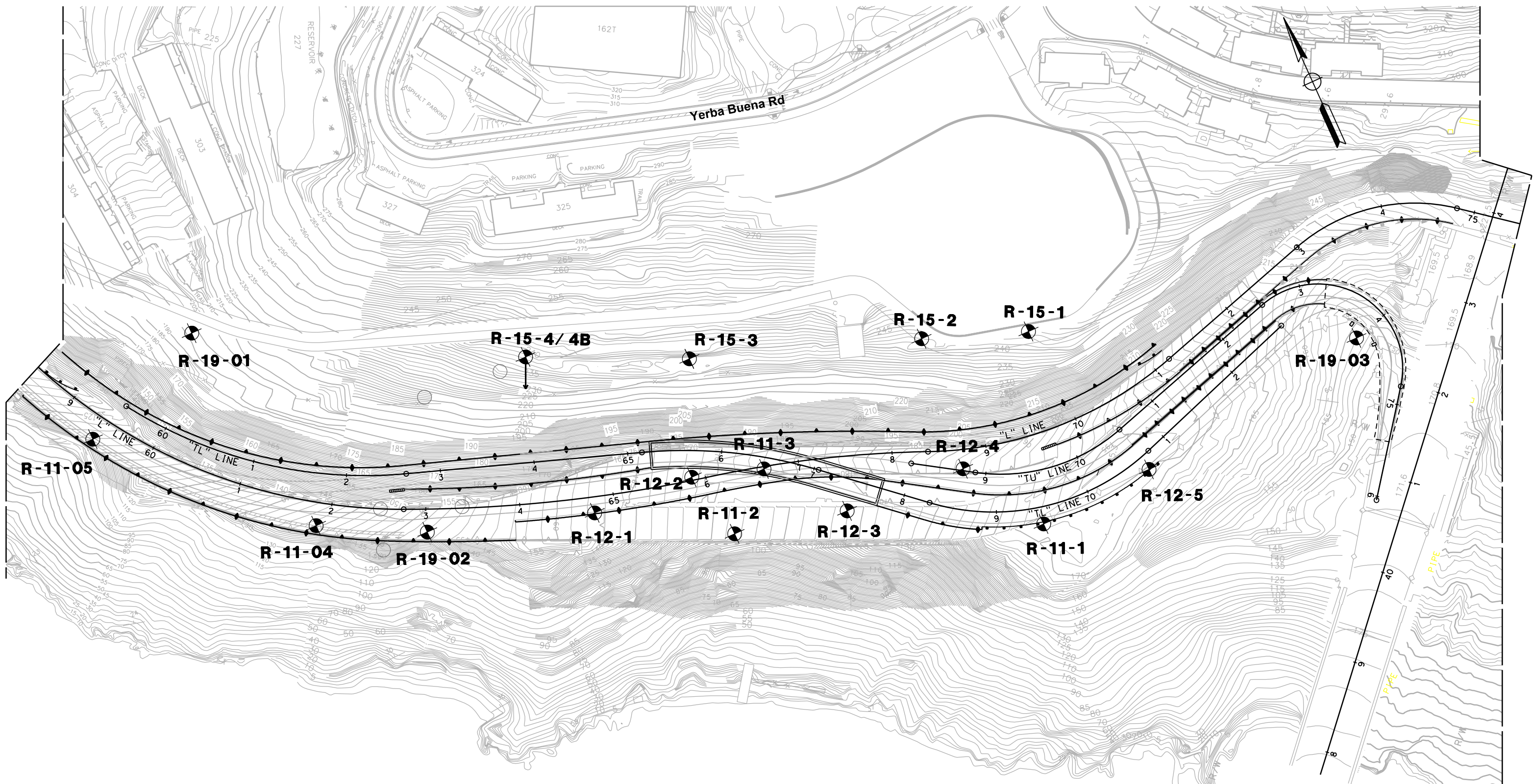
P:\521 YBI Retaining Walls\06 CAD\Structure RW5\RW5\_05\_DETAILS NO. 2.dgn

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL NO. 5	CALCULATED/ DESIGNED BY Y. DENG CHECKED BY R. SENNETT SUPERVISOR R. SENNETT DATE 11/15/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter
									CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure RW5\RW5_05_DETAILS NO. 2.dgn
PROJECT DESCRIPTION									CONTRACT NO.
									SHEET NAME
									RW5-5
									SHEET NO.
									TOTAL SHEETS
									LAST REVISION
									DATE PLOTTED => 11/15/2019
									TIME PLOTTED => 4:45:50 PM

BORDER LAST REVISED 9/9/2015

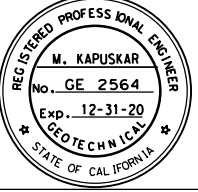





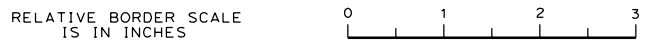




R-XX-01 BORING - SEE LOG OF TEST BORING SHEETS

**LOG OF TEST BORINGS**  
**No. 1 OF 2**  
 SCALE: 1" = 50'

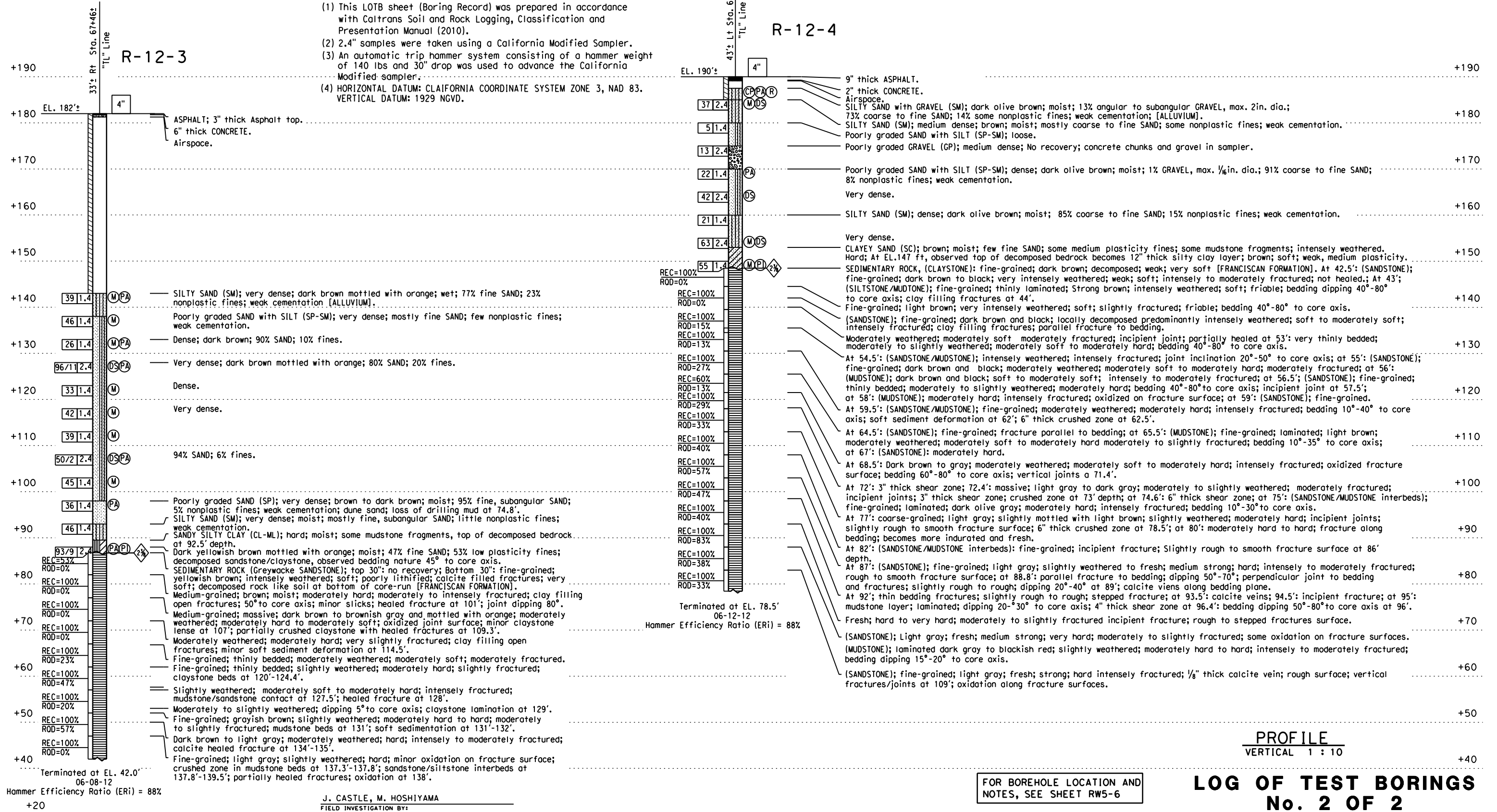
REVISED BY	DATE REVISED	DESIGNED BY: <b>J. CASTLE</b> DRAWN BY: <b>B. AMBRIZ</b> CHECKED BY: <b>M. KAPUSKAR</b> APPROVED BY: <b>M. KAPUSKAR</b>		 07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => Peter
YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 5								CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\RW5
PROJECT DESCRIPTION								CONTRACT NO.
								SHEET NAME    SHEET NO.    TOTAL SHEETS <b>RW5-6</b>
BORDER LAST REVISED 1/20/2019				PLANS APPROVAL DATE	EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			LAST REVISION    DATE PLOTTED => 11/15/2019 1-20-19            TIME PLOTTED => 2:42:53 PM



\$FREQUENT

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



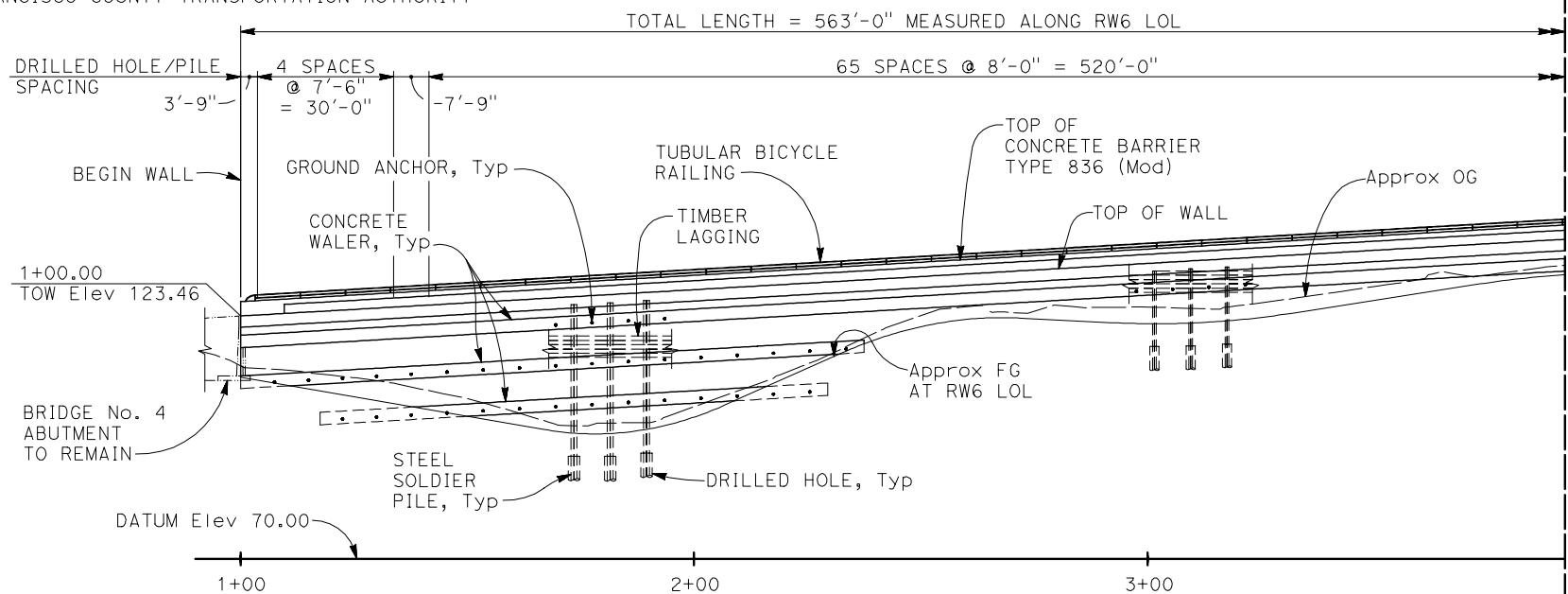
PROFILE  
 VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET RW5-6

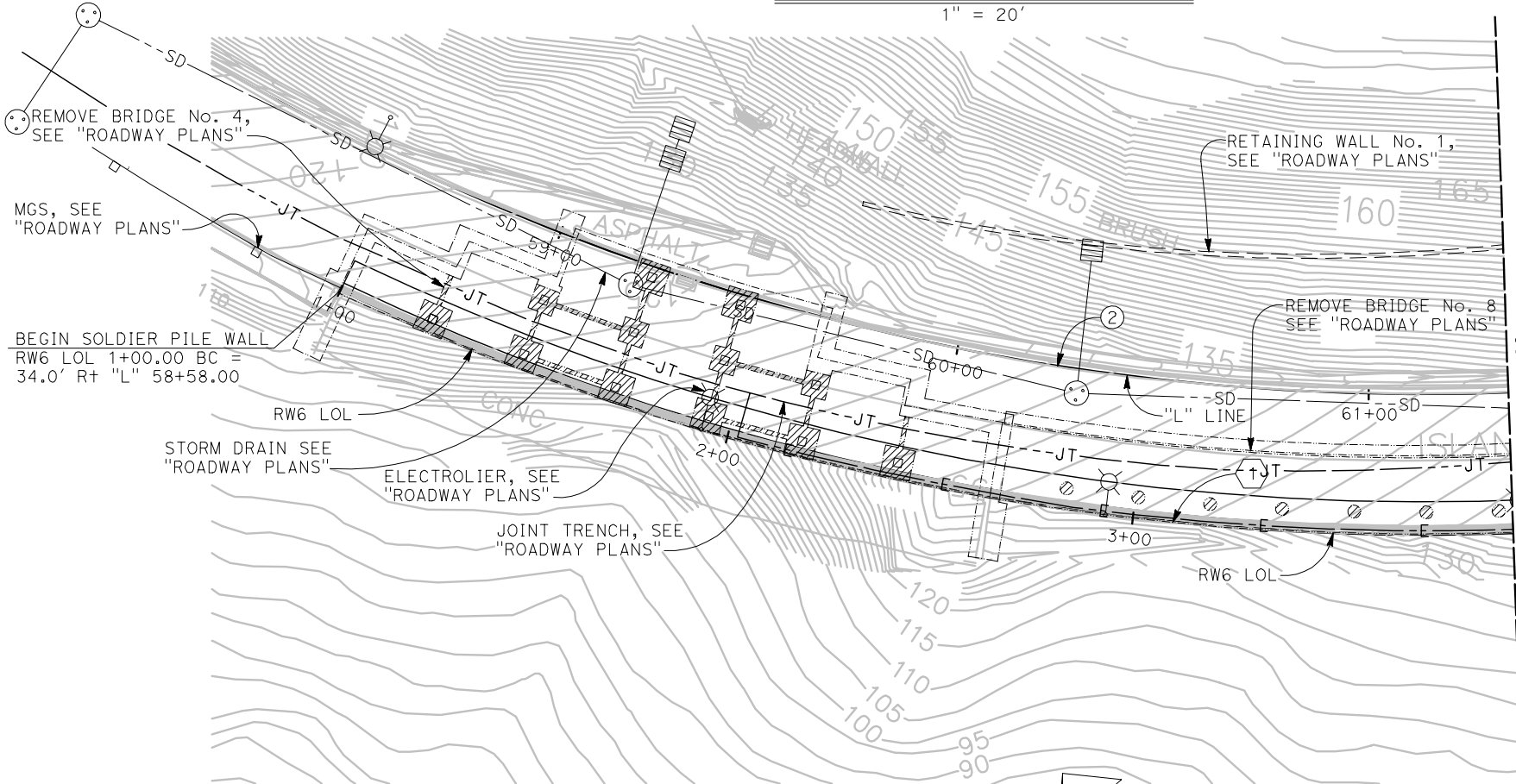
**LOG OF TEST BORINGS**  
**No. 2 OF 2**

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT RETAINING WALL No. 5  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE		07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorhthmech.com			USERNAME => Peter		
			DRAWN BY: K. THANT						CONTRACT NO.		
			CHECKED BY: A. KORKOS						SHEET NAME	SHEET NO.	TOTAL SHEETS
			APPROVED BY: M. KAPUSKAR						RW5-7		
BORDER LAST REVISED 1/20/2019			PLANS APPROVAL DATE	RELATIVE BORDER SCALE IS IN INCHES			LAST REVISION DATE PLOTTED => 11/15/2019 TIME PLOTTED => 4:47:09 PM				

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT  
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY



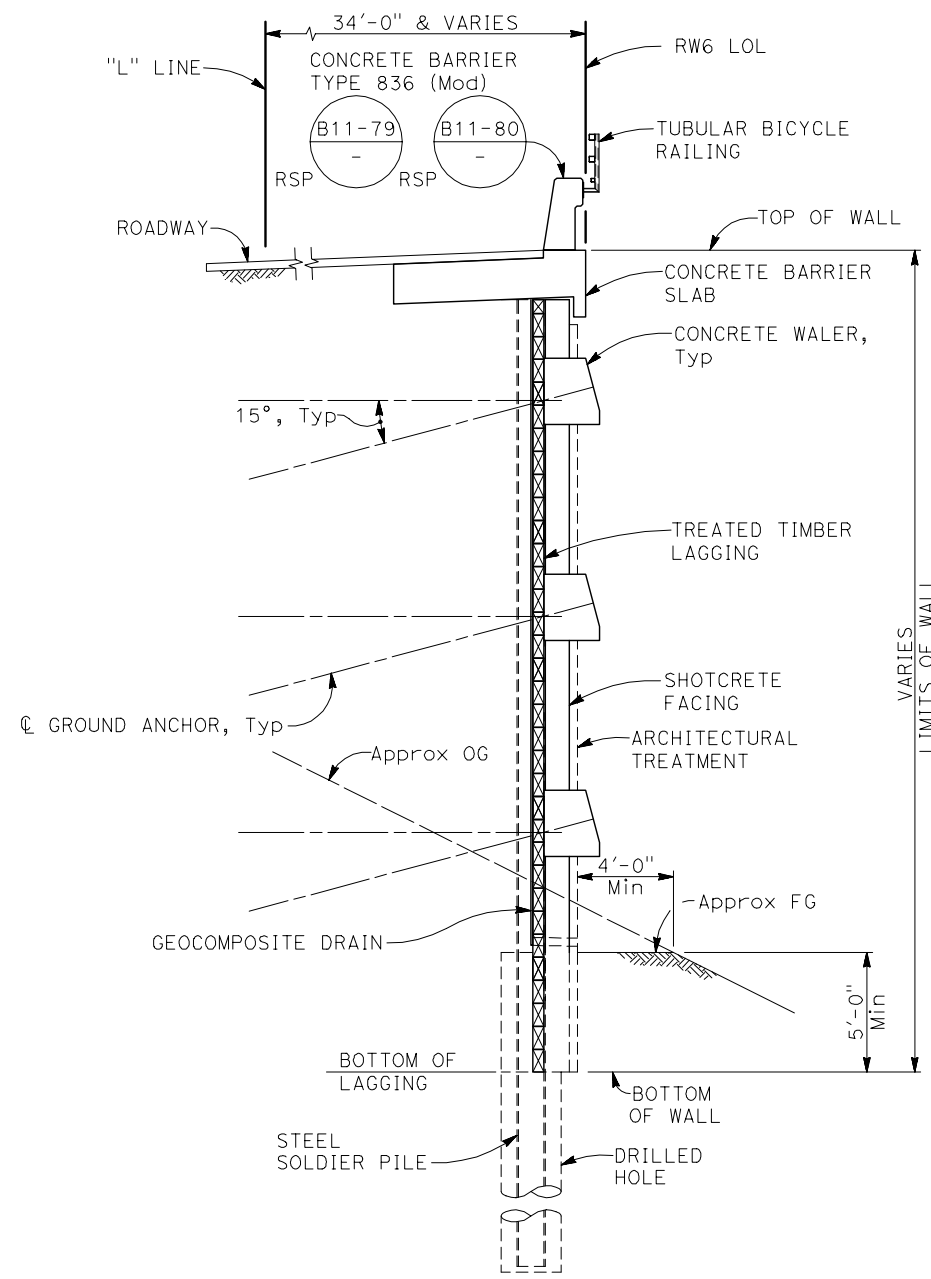
**DEVELOPED ELEVATION**  
1" = 20'



**PLAN**  
1" = 20'



NOTE:  
For "INDEX TO PLANS" and "GENERAL NOTES", see  
"INDEX TO PLANS" sheet.



**TYPICAL SECTION**  
1/4" = 1'-0"

CURVE DATA				
CURVE	R	Δ	T	L
①	610.0'	40°00'58"	222.12'	426.03'
②	576.0'	49°32'43"	265.81'	498.08'

PLAN CHECK SET/NOT FOR CONSTRUCTION(11/12/19)

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

REVISED BY	DATE REVISED	PROJECT DESCRIPTION

BORDER LAST REVISED 6/20/2012

DESIGNED BY  
A. RICHARDSON  
DRAWN BY  
S. HICKEY  
CHECKED BY

APPROVED BY

REGISTERED CIVIL ENGINEER

PLANS SUBMITTAL DATE

PLANS APPROVAL DATE

WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

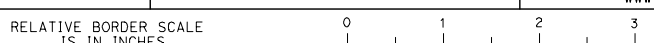
1111 Broadway, Suite 1510  
Oakland, California 94607  
510-625-9900  
(510) 625-9902 (FAX)  
www.biggs-cardosa.com

**RETAINING WALL NO. 6**  
**GENERAL PLAN 1 OF 2**

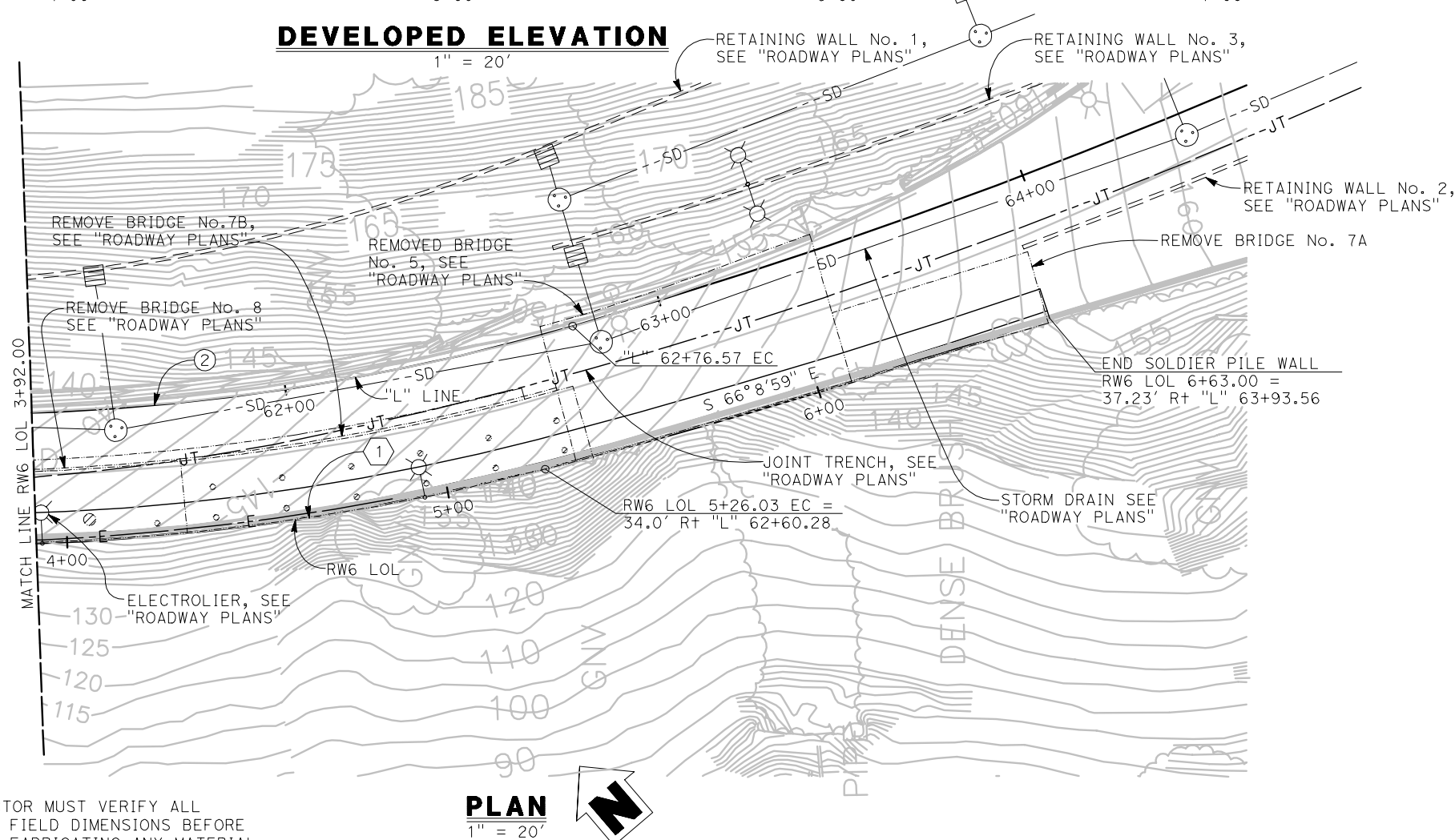
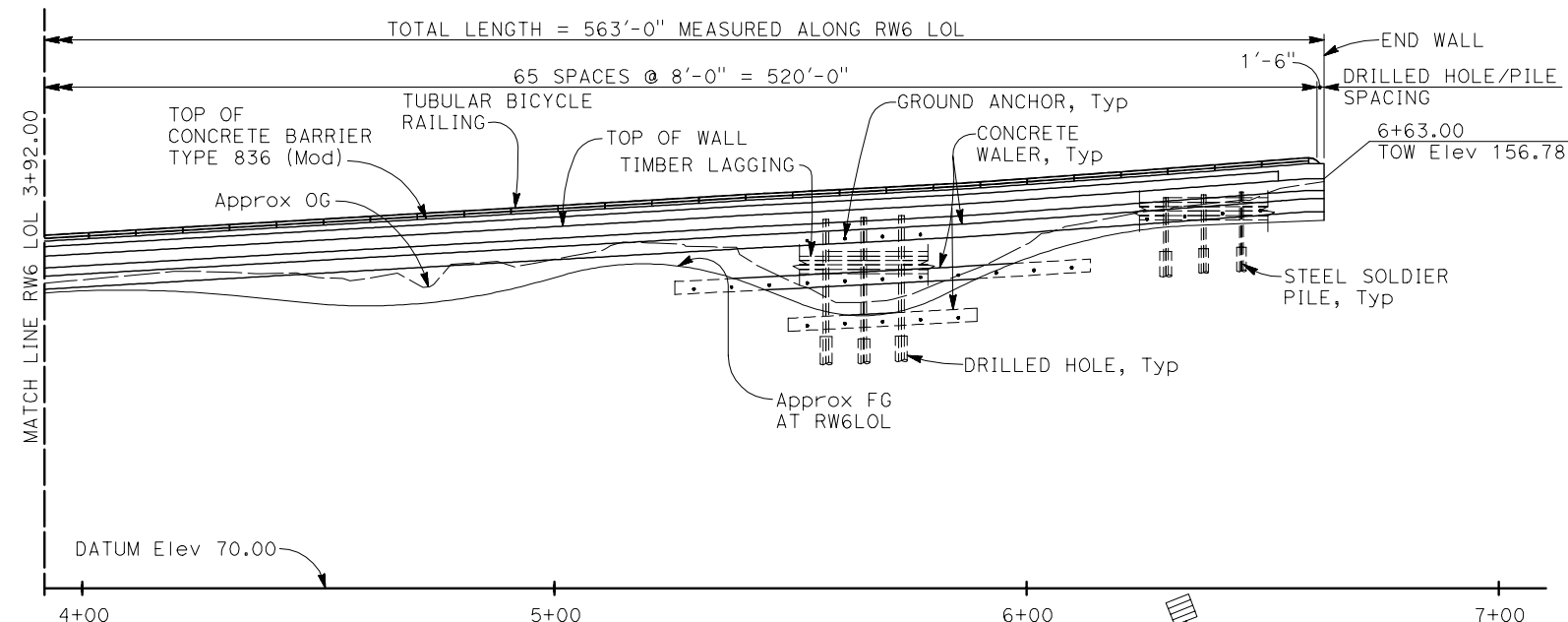
BRIDGE NO.      CONTRACT NO.

USERNAME => AR  
FILE => 2011109RW6\_1.dwg  
DATE PLOTTED => 15-Nov-2019  
TIME PLOTTED => 12:15

SHEET	OF
1	13
LAST REVISION	



FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT  
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY



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

PLAN CHECK SET/NOT FOR CONSTRUCTION(11/12/19)

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT
DISREGARD PRINTS BEARING EARLIER REVISION DATES		PROJECT DESCRIPTION

DESIGNED BY  
A. RICHARDSON  
DRAWN BY  
S. HICKEY  
CHECKED BY  
  
APPROVED BY



REGISTERED CIVIL ENGINEER  
PLANS SUBMITTAL DATE  
  
PLANS APPROVAL DATE  
  
WMH CORPORATION SHALL NOT BE  
RESPONSIBLE FOR THE ACCURACY  
OR COMPLETENESS OF SCANNED  
COPIES OF THIS PLAN SHEET.



1111 Broadway, Suite 1510  
Oakland, California 94607  
510-625-9900  
(510) 625-9902 (FAX)  
www.biggsardosa.com



**RETAINING WALL NO. 6**  
**GENERAL PLAN 2 OF 2**

BRIDGE NO.	CONTRACT NO.
USERNAME => JJD FILE => 2011109RW6_2.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:15	SHEET 2 OF 13 LAST REVISION



# GENERAL NOTES LOAD & RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, 6th Edition with Caltrans Amendments and Caltrans "Trenching and Shoring Manual (August 2011) Geotechnical Report by Earth Mechanics, Inc. dated JULY 26, 2019

REINFORCED CONCRETE: ASTM Designation:  
f'y = 60,000 psi  
f'c = 4,000 psi

STRUCTURAL STEEL: Steel Piles ASTM Designation: A572/A, A572M Grade 50 Min or A992/A992M  
Steel Plates ASTM Designation: ASTM A572/A572M Grade 50  
Welded Studs ASTM Designation: A108, AASHTO AWS D1.5  
Threaded Rods ASTM Designation: ASTM A449  
Welding AWS D1.5M/D1.5

TIMBER LAGGING: Treated Douglas Fir Grade No. 1 or better, timber to be full sawn

SOIL PARAMETERS: Active Earth Pressure = 36 pcf (Equivalent Fluid Pressure)  
Passive Arching Capacity = 2.5  
Seismic Earth Pressure = 12 pcf  
Soil Unit Weight = 120 pcf

DESIGN: AASHTO LRFD Bridge Design Specifications, 6th Edition with California Amendments.

PRESTRESSING STEEL: Bars - ASTM Designation: A722 Type II (150 ksi)  
Strand Tendons-ASTM Designation: A416 (270 Ksi Low Relaxation steel)

FDL = Factored Design Load on Ground Anchor (Kips)  
FTL = Factored Test Load per anchor (Kips) = 1.0 FDL  
LL = Lock-off Load (Kips) = 0.55 FDL  
fpu = Minimum tensile strength of prestressing steel  
As = Minimum cross sectional area of prestressing steel in ground anchor (square inch)

$$As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.75 \text{ fpu}} \text{ (Strands)}$$

$$As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.80 \text{ fpu}} \text{ (Bars)}$$

For FDL, see "GROUND ANCHOR DATA TABLE" on "RETAINING WALL LAYOUT No. 4" sheet

## INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN 1 OF 2
2	GENERAL PLAN 2 OF 2
3	INDEX TO PLANS
4	RETAINING WALL LAYOUT No. 1
5	RETAINING WALL LAYOUT No. 2
6	RETAINING WALL LAYOUT No. 3
7	RETAINING WALL LAYOUT No. 4
8	RETAINING WALL DETAILS No. 1
9	RETAINING WALL DETAILS No. 2
10	RETAINING WALL DETAILS No. 3
11	RETAINING WALL DETAILS No. 4
12	RETAINING WALL DETAILS No. 5
13	RETAINING WALL DETAILS No. 6

## 2018 STANDARD PLANS

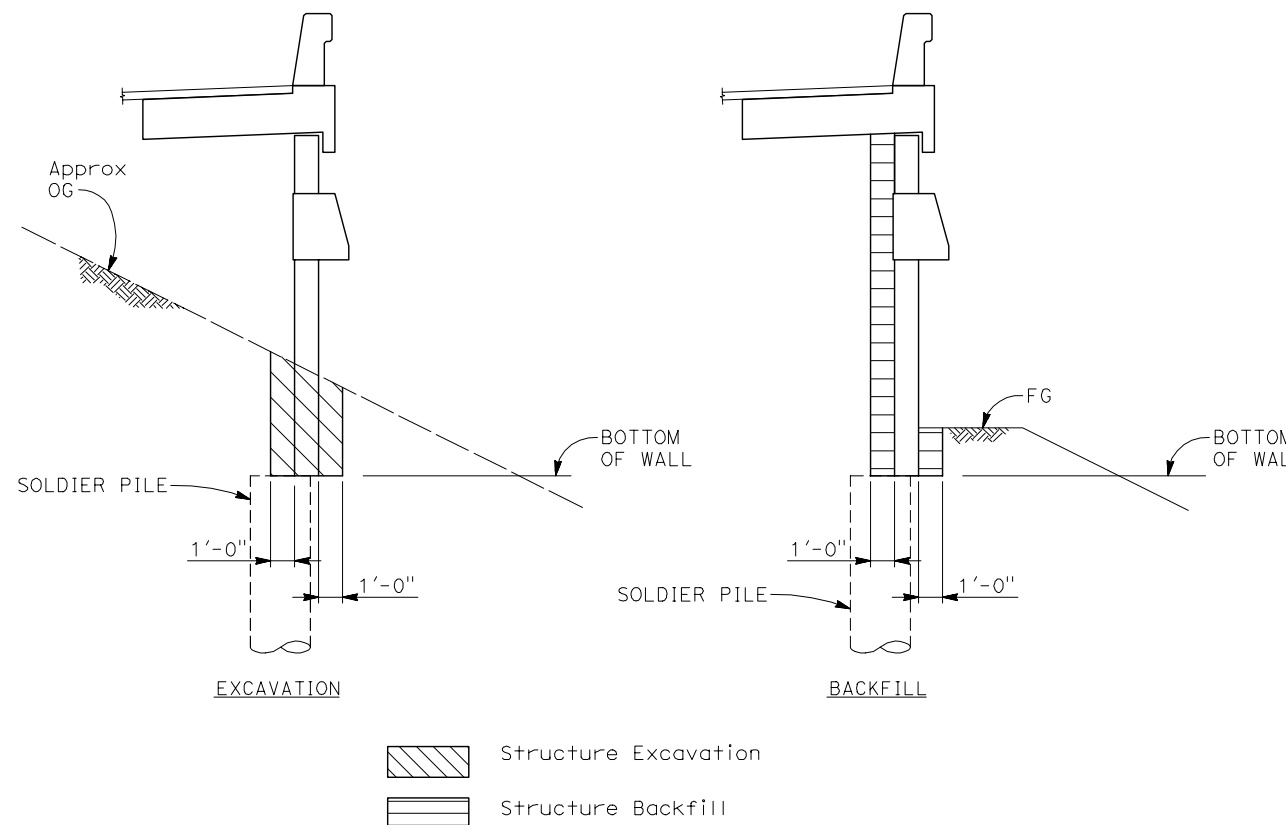
A3A	ABBREVIATIONS (SHEET 1 OF 3)
A3B	ABBREVIATIONS (SHEET 2 OF 3)
A3C	ABBREVIATIONS (SHEET 3 OF 3)
A10A	LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
A10B	LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
A10C	LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
A10D	LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
A10E	LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
A10F	LEGEND - SOILS (SHEET 1 OF 2)
A10G	LEGEND - SOILS (SHEET 2 OF 2)
A10H	LEGEND - ROCK
RSP B11-79	CONCRETE BARRIER TYPE 836 DETAIL No. 1
RSP B11-80	CONCRETE BARRIER TYPE 836 DETAIL No. 2

ABBREVIATIONS

BOW	BOTTOM OF WALL
TOW	TOP OF WALL

LEGEND:

- Indicates Bridge Removal
- Indicates Existing Structure
- Indicates Standard Plan Sheet No.
- Indicates Detail No.
- Indicates Section Letter
- Indicates Sheet Number Shown On





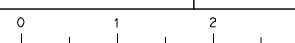


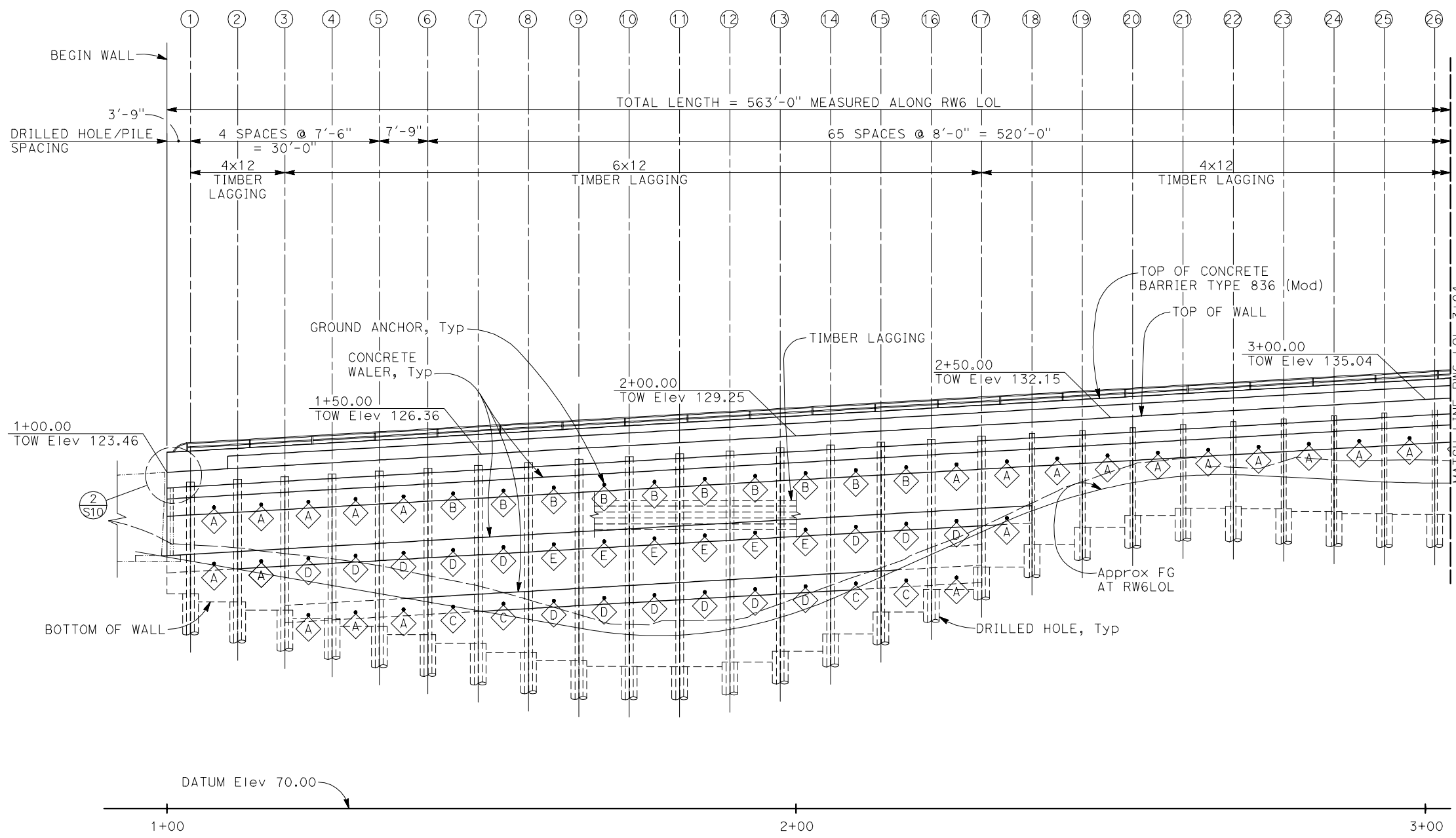
## LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION AND BACKFILL

NO SCALE

PLAN CHECK SET/NOT FOR CONSTRUCTION(11/12/19)

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

REVISED BY  DATE REVISED  DISREGARD PRINTS BEARING EARLIER REVISION DATES	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b>	DESIGNED BY A. RICHARDSON DRAWN BY S. HICKEY CHECKED BY  APPROVED BY		REGISTERED CIVIL ENGINEER  PLANS SUBMITTAL DATE  PLANS APPROVAL DATE	 1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com			<b>RETAINING WALL NO. 6 INDEX TO PLANS</b>							
								BRIDGE NO. _____ CONTRACT NO. _____							
								USERNAME => AR FILE => 2011109RW6_3.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:15							
								<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">SHEET</td> <td style="width: 50%;">OF</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">13</td> </tr> <tr> <td colspan="2" style="text-align: right;">LAST REVISION</td> </tr> </table>		SHEET	OF	3	13	LAST REVISION	
SHEET	OF														
3	13														
LAST REVISION															
				RELATIVE BORDER SCALE IS IN INCHES 											



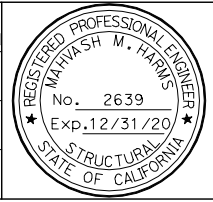
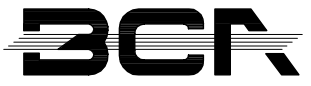


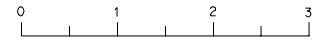
- NOTES:
1. Top of wall elevations shown are for information purposes only. See "Roadway Plans" for roadway layout and notify Engineer for any inconsistencies.
  2. Bottom of wall shown on "DEVELOPED ELEVATION - PILE LAYOUT" is for bidding. Contractor may locate steps in the bottom of the wall and bottom of lagging for constructability as long as the minimum wall depth below finished grade is maintained.
  3. For "PILE DATA TABLE" and "GROUND ANCHOR DATA TABLE", see "RETAINING WALL LAYOUT No. 4" sheet.

- LEGEND:
- ① Indicates Pile No., see "PILE DATA TABLE"
  - Indicates Ground Anchor Location
  - ◊ A Indicates Ground Anchor Type, see "GROUND ANCHOR DATA TABLE"

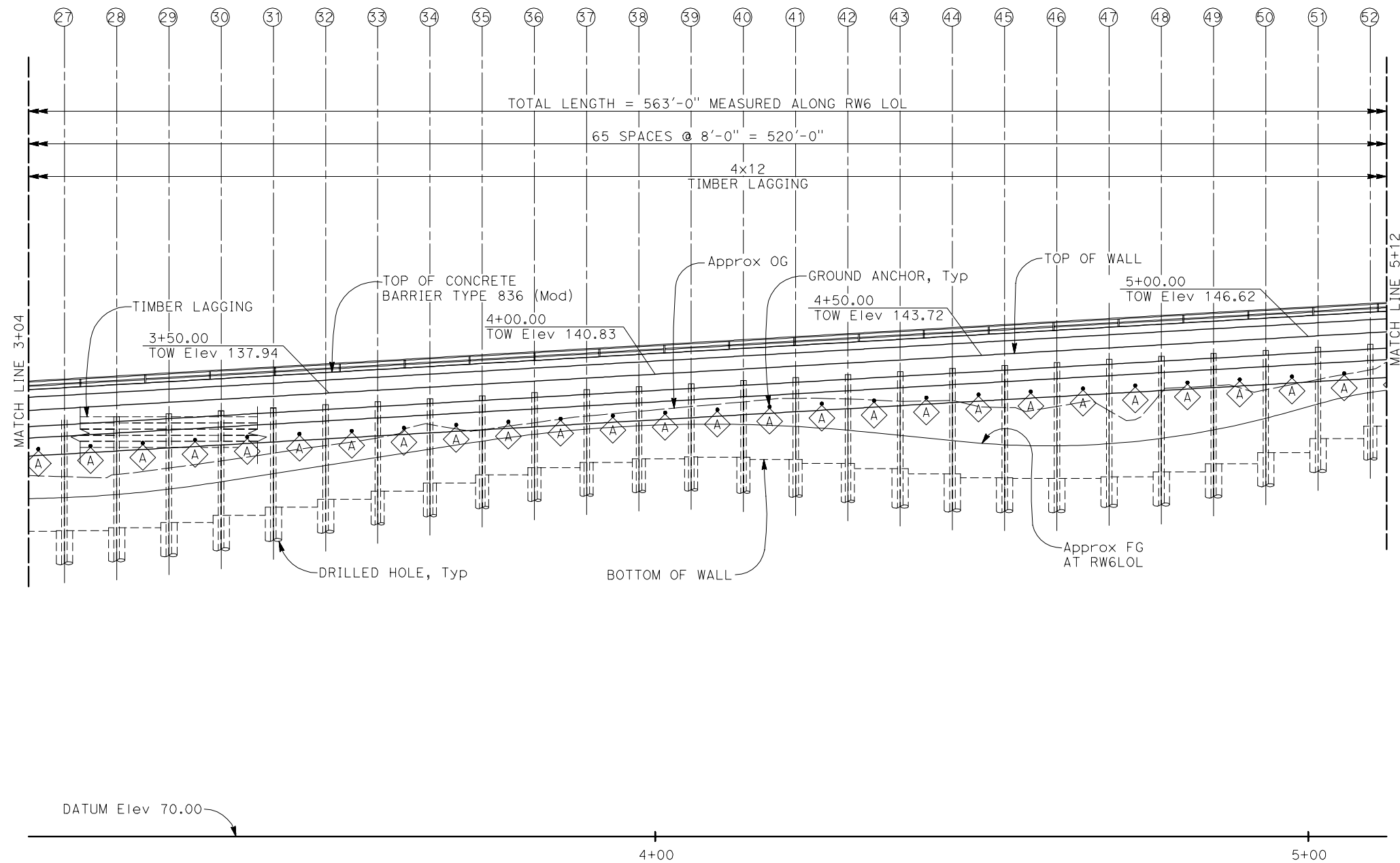
**DEVELOPED ELEVATION - PILE LAYOUT**  
1" = 10'

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

PLAN CHECK SET/NOT FOR CONSTRUCTION (9/4/19)

REVISOR	DATE	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b>	DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE	 1111 BROADWAY, Suite 1540 OAKLAND, CA 94607 (510) 625-9900 (PHONE) (510) 625-9902 (FAX) www.biggs-cardosa.com			<b>RETAINING WALL NO. 6</b>	
			CHECKED BY S. HICKEY		PLANS APPROVAL DATE	USERNAME => AR FILE => 2011109RW6_4.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:15				SHEET 4 OF 13	
DISREGARD PRINTS BEARING EARLIER REVISION DATES			APPROVED BY		WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	CONTRACT NO.				LAST REVISION	
BORDER LAST REVISED 6/20/2012		PROJECT DESCRIPTION		RELATIVE BORDER SCALE IS IN INCHES							

NOTE:  
For Notes and Legend, see "RETAINING WALL LAYOUT No. 1" sheet.



**DEVELOPED ELEVATION - PILE LAYOUT**

1" = 10'

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

PLAN CHECK SET/NOT FOR CONSTRUCTION (9/4/19)

REVISED BY	DATE REVISED

**YERBA BUENA ISLAND  
WEST-SIDE BRIDGE STRUCTURES  
PROJECT**

DESIGNED BY  
A. RICHARDSON  
DRAWN BY  
S. HICKEY  
CHECKED BY  
  
APPROVED BY



REGISTERED CIVIL ENGINEER  
  
PLANS APPROVAL DATE

PLANS SUBMITTAL DATE  
  
*WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.*

**BCR**  
1111 BROADWAY, Suite 1540  
OAKLAND, CA 94607  
(510) 625-9900 (PHONE)  
(510) 625-9902 (FAX)  
www.bigscardosa.com



**RETAINING WALL NO. 6  
RETAINING WALL LAYOUT No. 2**

BRIDGE NO.      CONTRACT NO.

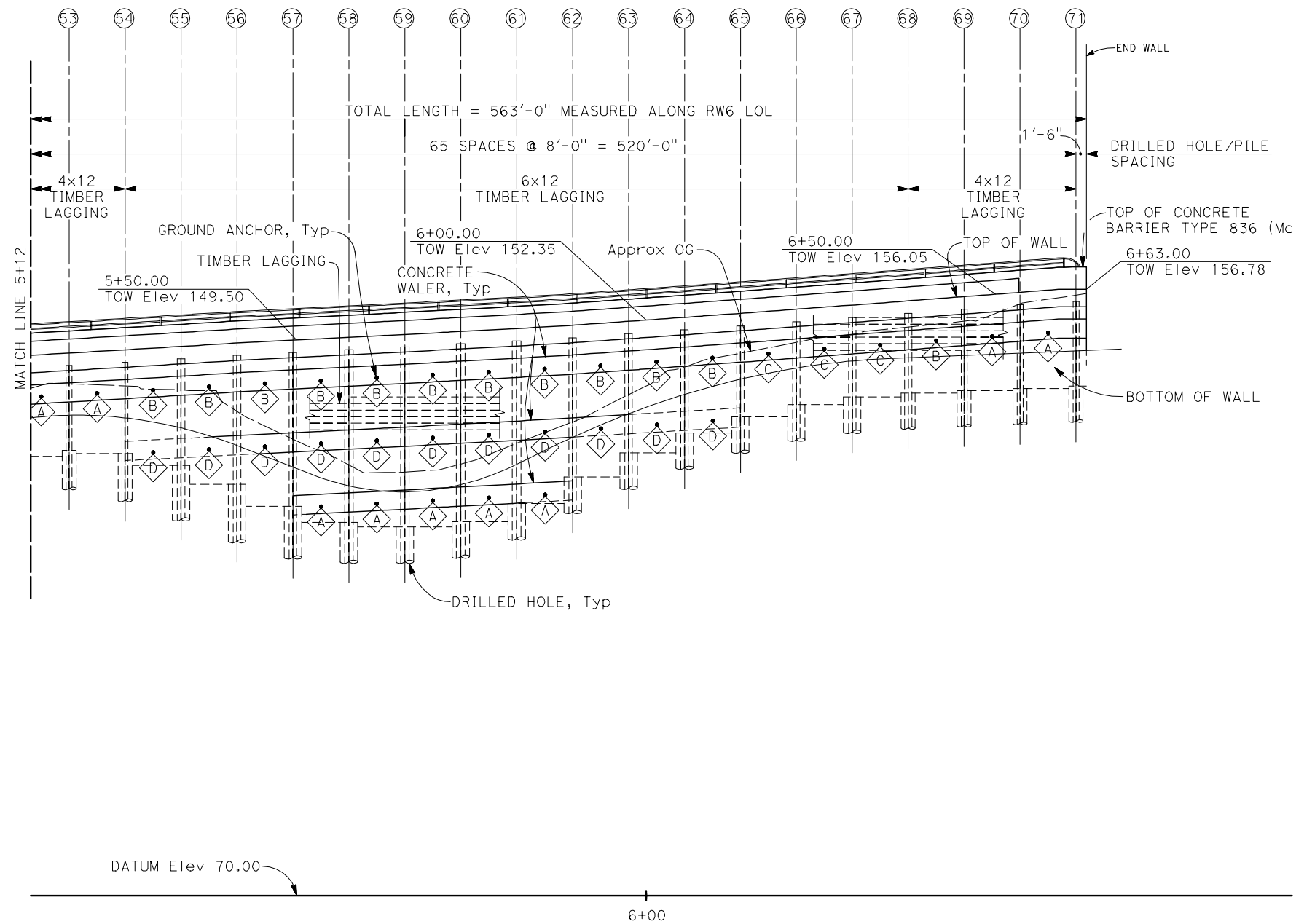
USERNAME => AR  
FILE => 2011109RW6\_5.dwg  
DATE PLOTTED => 15-Nov-2019  
TIME PLOTTED => 12:16

SHEET	OF
5	13
LAST REVISION	

BORDER LAST REVISED 6/20/2012



NOTE:  
For Notes and Legend, see "RETAINING WALL LAYOUT No. 1" sheet.



**DEVELOPED ELEVATION - PILE LAYOUT**

1" = 10'

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

PLAN CHECK SET/NOT FOR CONSTRUCTION (9/4/19)

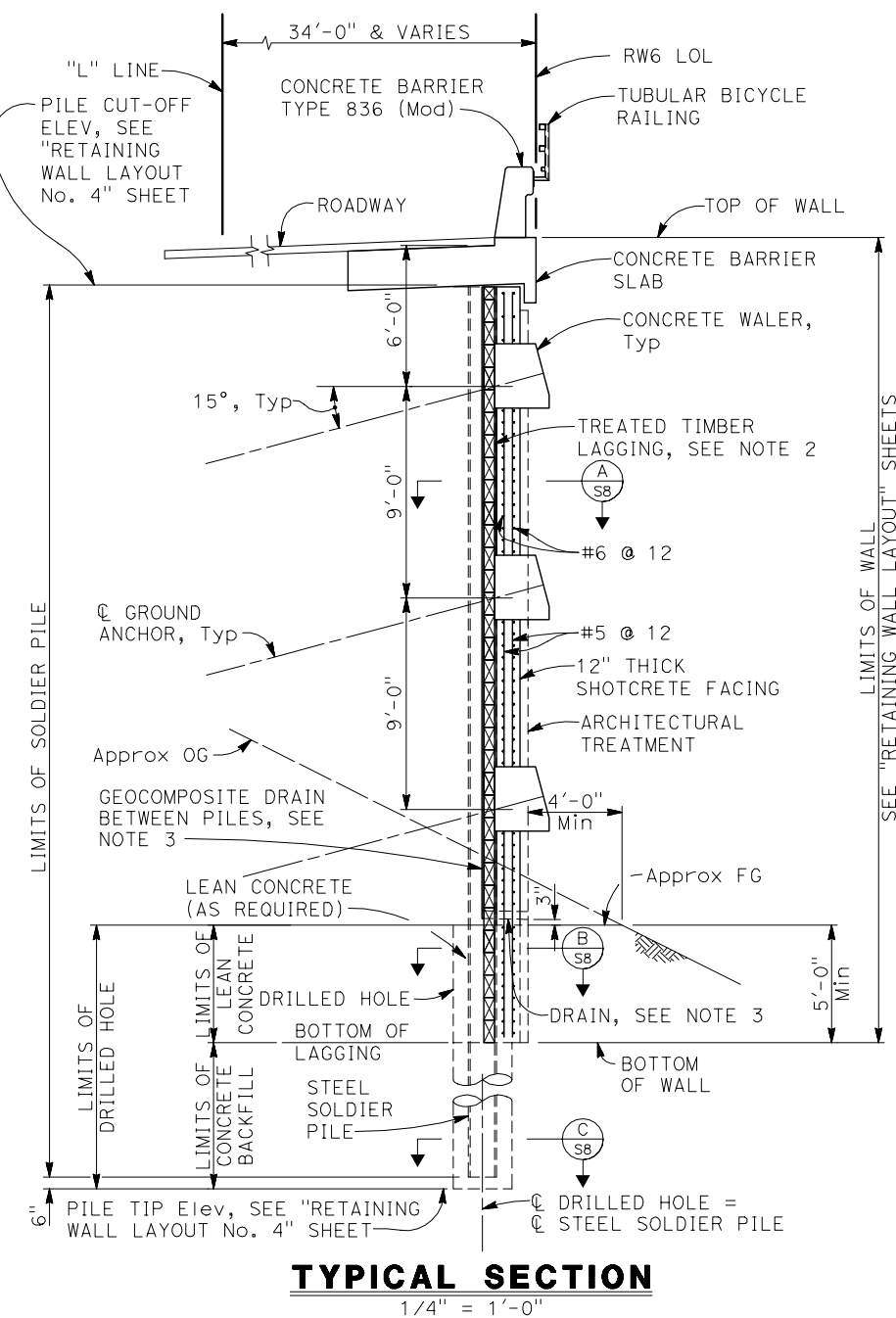
<table border="1"> <tr> <th>REVISED BY</th> <th>DATE REVISED</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	REVISED BY	DATE REVISED							<p><b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b></p>	<p>DESIGNED BY A. RICHARDSON</p> <p>DRAWN BY S. HICKEY</p> <p>CHECKED BY  </p> <p>APPROVED BY  </p>		<p>REGISTERED CIVIL ENGINEER</p> <p>PLANS SUBMITTAL DATE</p> <p>PLANS APPROVAL DATE</p>	<p>1111 BROADWAY, Suite 1540 OAKLAND, CA 94607 (510) 625-9900 (PHONE) (510) 625-9902 (FAX) www.bigscardasa.com</p>			<p><b>RETAINING WALL NO. 6</b> <b>RETAINING WALL LAYOUT No. 3</b></p> <p>BRIDGE NO.      CONTRACT NO.</p> <p>USERNAME =&gt; AR FILE =&gt; 2011109RW6_6.dwg DATE PLOTTED =&gt; 15-Nov-2019 TIME PLOTTED =&gt; 12:16</p> <table border="1"> <tr> <td>SHEET</td> <td>OF</td> </tr> <tr> <td>6</td> <td>13</td> </tr> <tr> <td colspan="2">LAST REVISION</td> </tr> </table>	SHEET	OF	6	13	LAST REVISION	
REVISED BY	DATE REVISED																					
SHEET	OF																					
6	13																					
LAST REVISION																						
<p>BORDER LAST REVISED 6/20/2012</p>		<p>RELATIVE BORDER SCALE IS IN INCHES</p>		<p>(2011109RW6_6) 2011109</p>																		

W:\2011\2011109\Retaining\_Walls\2011109RW6\_6.dwg

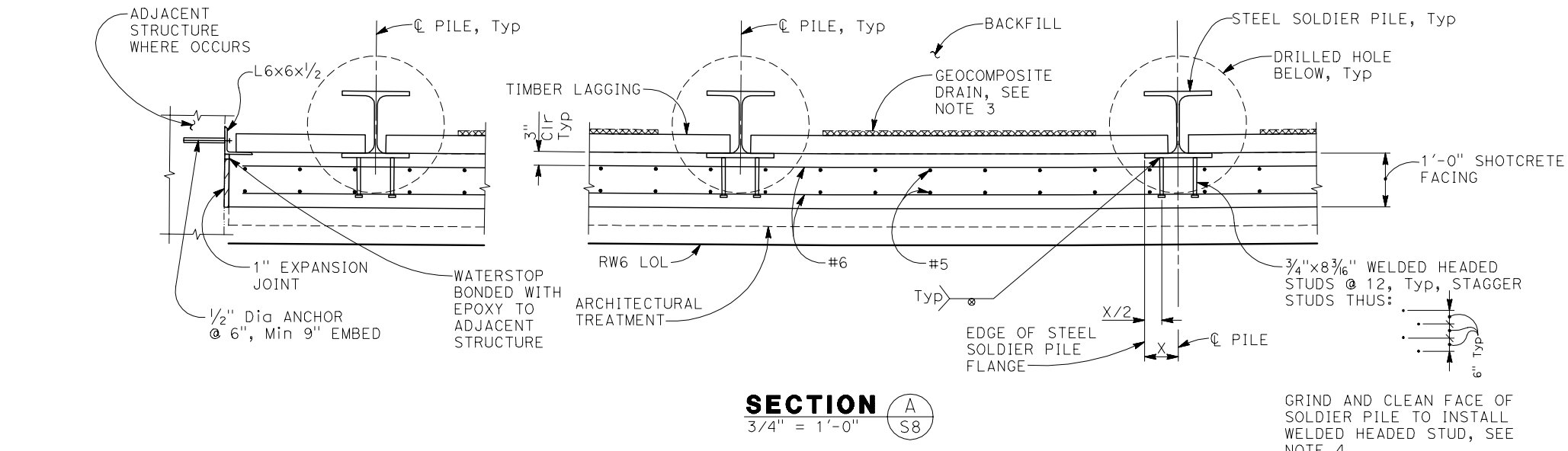




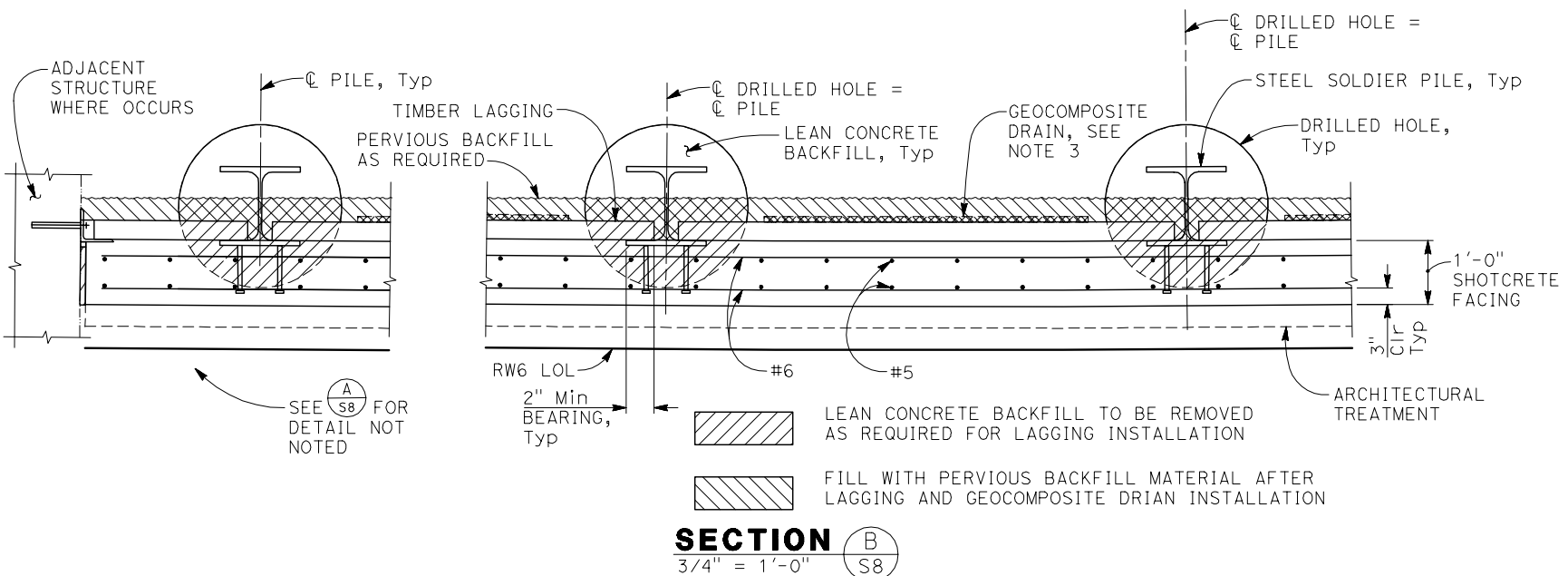
- NOTES:
1. For "PILE DATA TABLE"; SEE "RETAINING WALL LAYOUT No. 4" sheet.
  2. For lagging size, see "RETAINING WALL LAYOUT No. 1" to "RETAINING WALL LAYOUT No. 3" sheets.
  3. For Geocomposite Drain and drain details see "RETAINING WALL DETAILS No. 3" sheet.
  4. Stud layout shown is for typical studs on soldier piles. For additional studs at water, see (1/59).



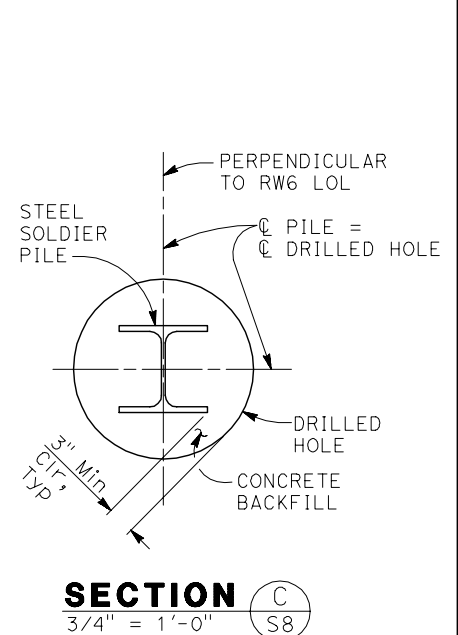
**TYPICAL SECTION**  
1/4" = 1'-0"



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



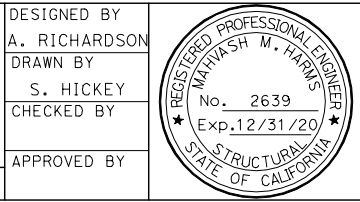
**SECTION B**  
3/4" = 1'-0"



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

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

REVISED BY	DATE REVISED	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b>	DESIGNED BY A. RICHARDSON
			DRAWN BY S. HICKEY
			CHECKED BY
DISREGARD PRINTS BEARING EARLIER REVISION DATES		PROJECT DESCRIPTION	APPROVED BY
BORDER LAST REVISED 6/20/2012			

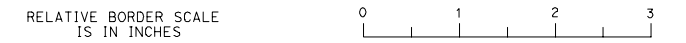


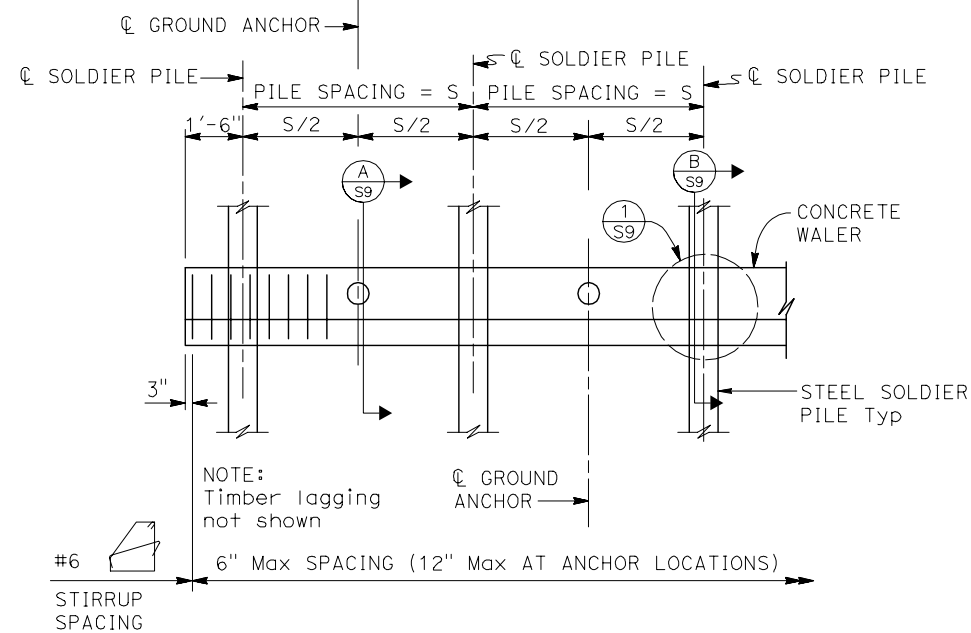
REGISTERED CIVIL ENGINEER  
PLANS SUBMITTAL DATE  
PLANS APPROVAL DATE  
WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**BCR**  
1111 Broadway, Suite 1510  
Oakland, California 94607  
510-625-9900  
(510) 625-9902 (FAX)  
www.biggsardosa.com

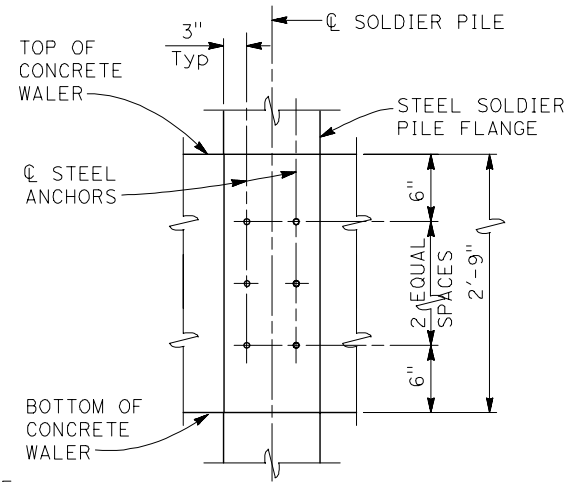


<b>RETAINING WALL NO. 6</b>	
<b>RETAINING WALL DETAILS No. 1</b>	
BRIDGE NO.	CONTRACT NO.
USERNAME => AR	SHEET OF
FILE => 2011109RW6_8.dwg	8 13
DATE PLOTTED => 15-Nov-2019	LAST REVISION
TIME PLOTTED => 12:16	





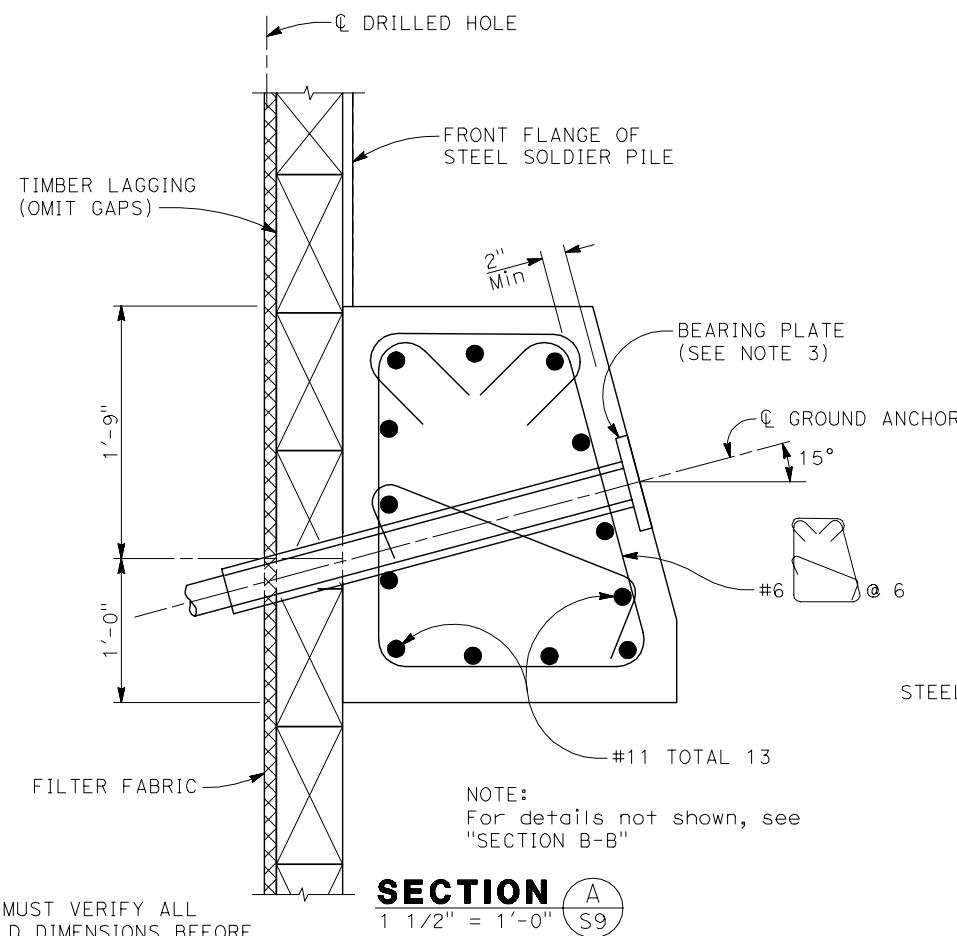
**WALER PART ELEVATION**  
NO SCALE



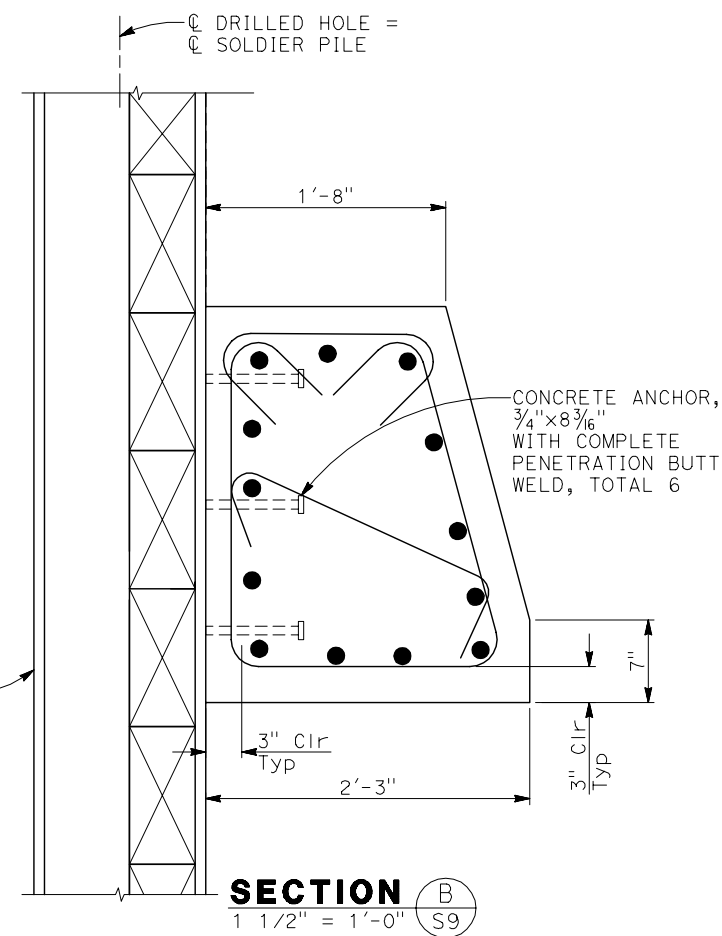
NOTE:  
Stud layout shown is for additional studs at waler. For typical studs on soldier piles, see (A/S8).

**DETAIL 1**  
NO SCALE (S9)

- NOTES:
1. For concrete waler location, see "TYPICAL SECTION" shown on "TIEBACK WALL DETAILS No. 1" sheet.
  2. Concrete walers may be poured to face of lagging.
  3. Bearing plates may be recesses or on face of concrete waler.



**SECTION A**  
1 1/2" = 1'-0" (S9)

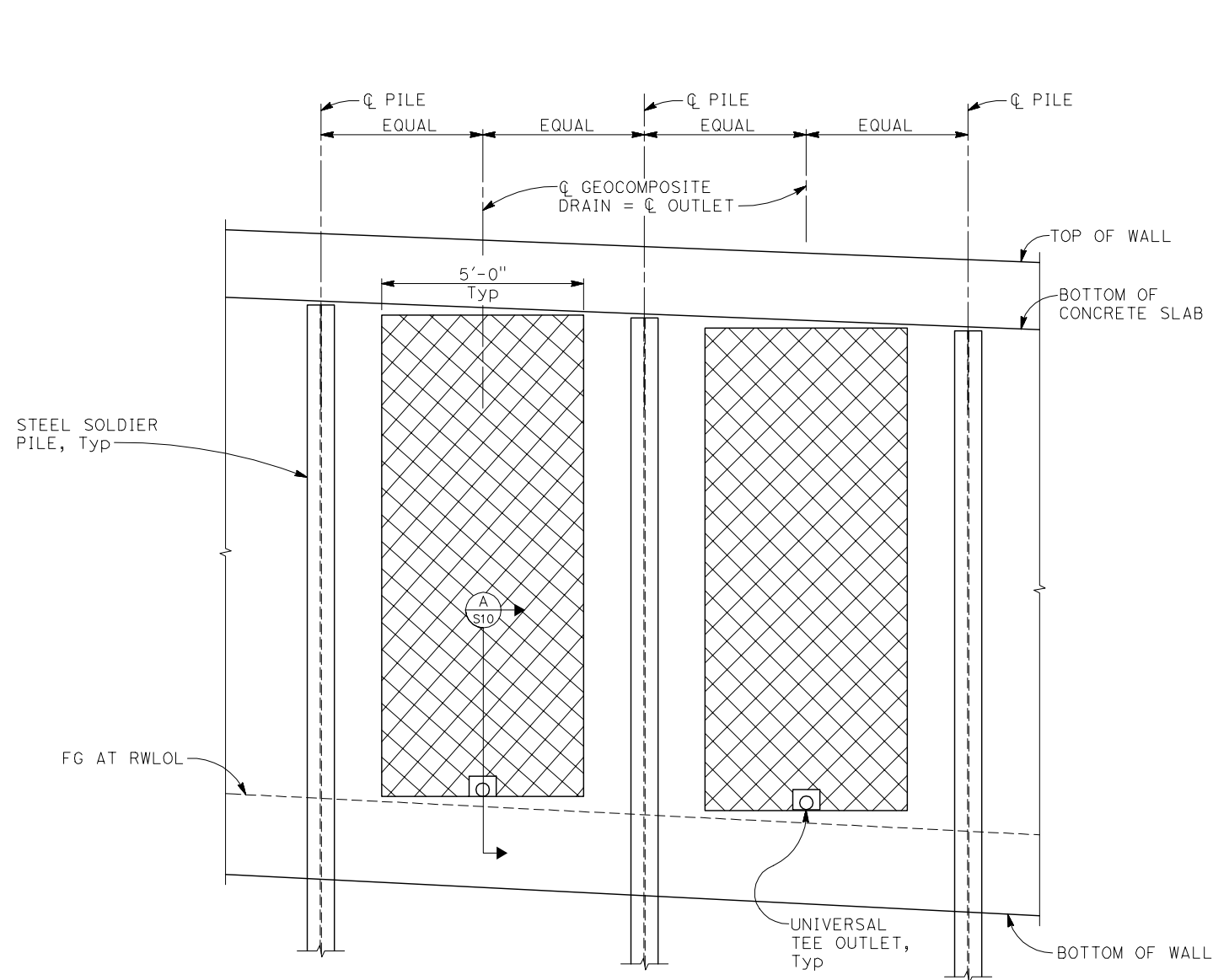


**SECTION B**  
1 1/2" = 1'-0" (S9)

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

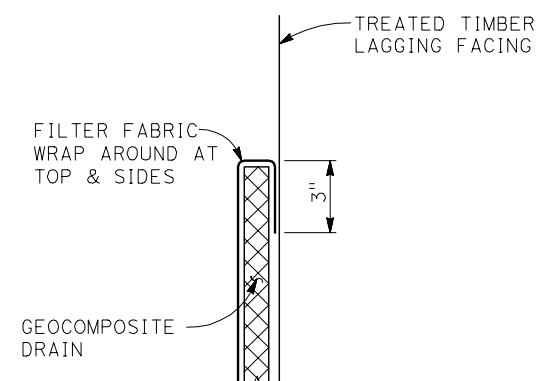
PLAN CHECK SET/NOT FOR CONSTRUCTION (9/4/19)

DESIGNED BY A. RICHARDSON DRAWN BY S. HICKEY CHECKED BY APPROVED BY		REGISTERED CIVIL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE		1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com			<b>RETAINING WALL NO. 6</b> <b>RETAINING WALL DETAILS No. 2</b> BRIDGE NO. _____ CONTRACT NO. _____ USERNAME => AR FILE => 2011109RW6_9.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:16
REVISED BY DATE REVISED DISREGARD PRINTS BEARING EARLIER REVISION DATES	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT PROJECT DESCRIPTION	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3	WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		SHEET 9 OF 13 LAST REVISION	(2011109RW6_9) 2011109	

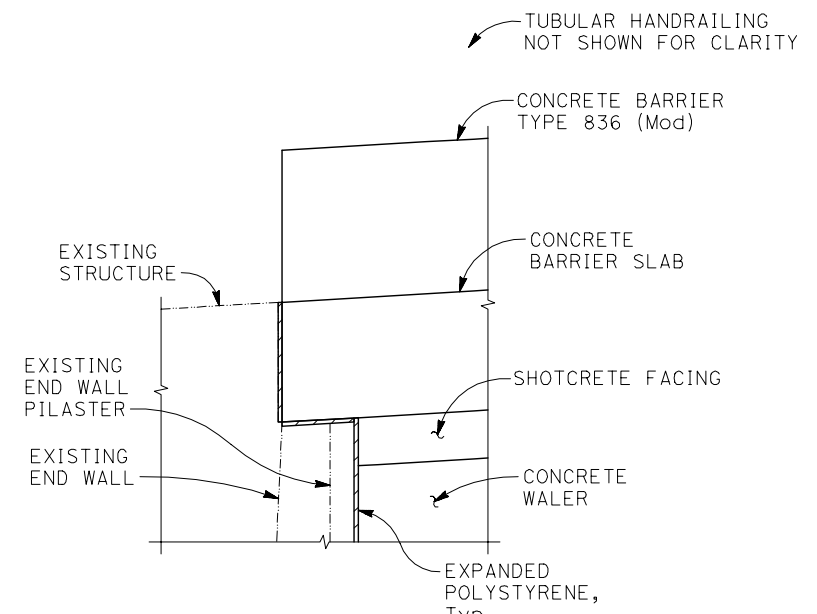


**MIRRORED PART ELEVATION - WALL DRAIN**

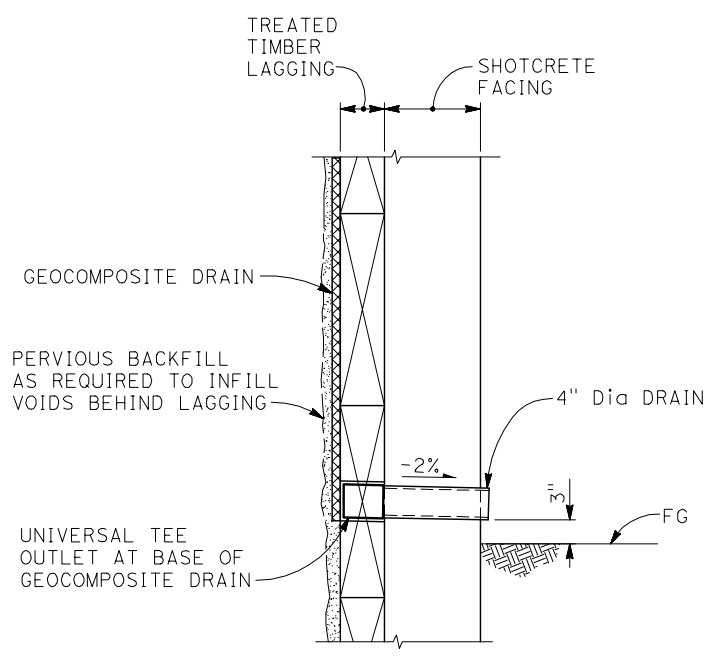
1/2" = 1'-0"



**DETAIL 1**  
3" = 1'-0" S10



**DETAIL 2**  
1/2" = 1'-0" S10



**SECTION A**  
NO SCALE S10

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

PLAN CHECK SET/NOT FOR CONSTRUCTION (9/4/19)

DESIGNED BY A. RICHARDSON DRAWN BY S. HICKEY CHECKED BY  APPROVED BY		REGISTERED CIVIL ENGINEER  PLANS SUBMITTAL DATE  PLANS APPROVAL DATE		1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com			<b>RETAINING WALL NO. 6</b> <b>RETAINING WALL DETAILS No. 3</b> BRIDGE NO. _____ CONTRACT NO. _____ USERNAME => AR FILE => 2011109RW6_10.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:16
REVISED BY   DISREGARD PRINTS BEARING EARLIER REVISION DATES BORDER LAST REVISED 6/20/2012	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT  PROJECT DESCRIPTION	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3	SHEET 10 OF 13 LAST REVISION				

**DESIGN DATA**

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments.

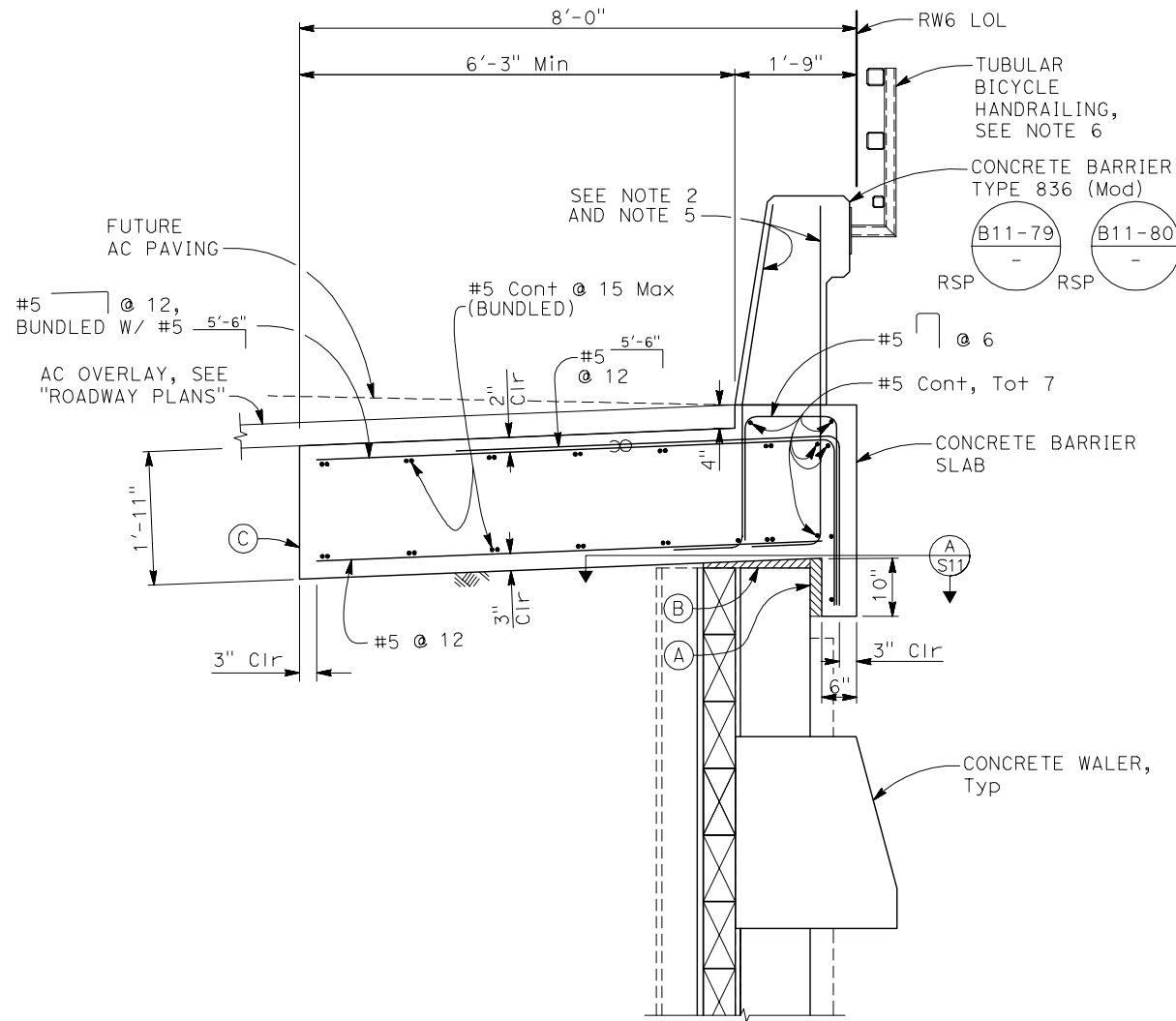
F<sub>t</sub> : 54 kips on barrier

EQE: k<sub>h</sub> = 0.2  
k<sub>v</sub> = 0.0

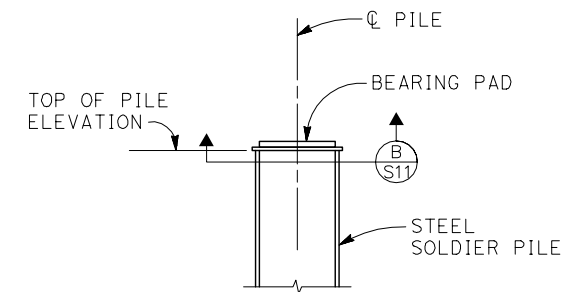
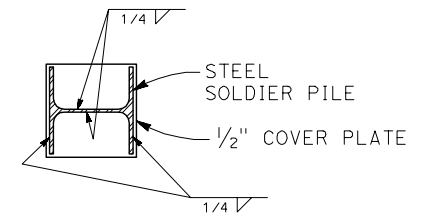
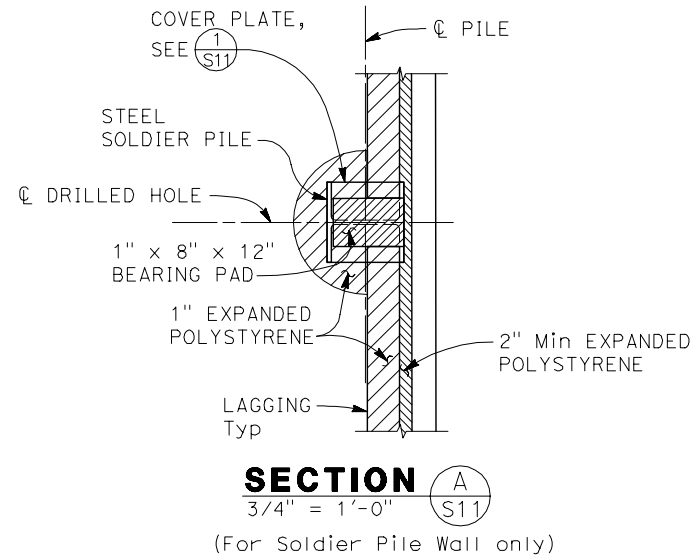
REINFORCED CONCRETE: f'<sub>c</sub> = 3600 psi  
f<sub>y</sub> = 60 ksi  
n = 8

**NOTES:**

1. Clearance to reinforcing steel in concrete barrier to be 1".
2. Not all barrier reinforcement shown.
3. No expansion joints in concrete barrier or barrier slab within wall limits.
4. Minimum slab length: 40 ft
5. Concrete barrier reinforcement must be epoxy-coated prefabricated.
6. For Tubular Bicycle Handrailing, see "RETAINING WALL DETAILS No. 6" sheet.



**CONCRETE BARRIER SLAB**  
3/4" = 1'-0"



**NOTES:**

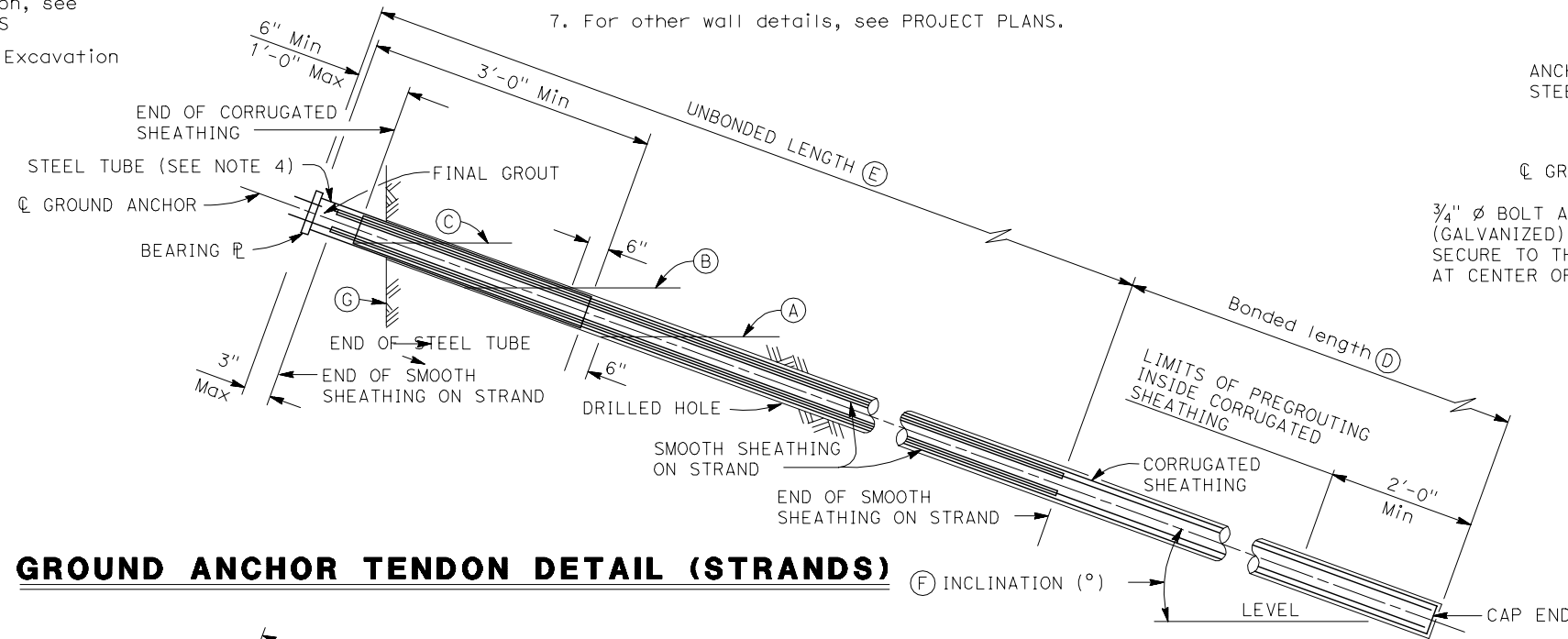
- (A) 2" Min Expanded polystyrene
- (B) 1" Expanded Polystyrene on MSE and concrete stem walls, See "SECTION A S11" for Soldier Pile Walls
- (C) Contact joint
- ∞ Indicates bundled bars

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

PLAN CHECK SET/NOT FOR CONSTRUCTION(11/15/19)

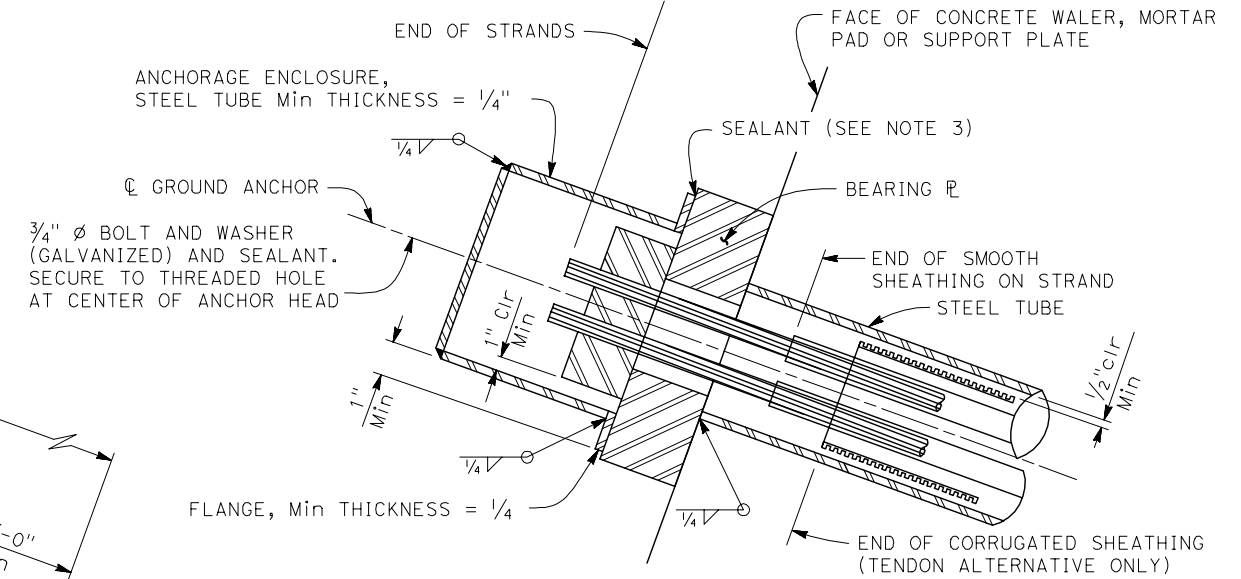
REVISOR	DATE	DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER PLANS SUBMITTAL DATE				<b>RETAINING WALL NO. 6</b> <b>RETAINING WALL DETAILS No. 4</b>				
		DRAWN BY S. HICKEY							PLANS APPROVAL DATE	1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com	BRIDGE NO.	CONTRACT NO.
DISREGARD PRINTS BEARING EARLIER REVISION DATES	PROJECT DESCRIPTION	CHECKED BY							WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	USERNAME => AR FILE => 2011109RW6_11.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:16	SHEET	OF
BORDER LAST REVISED 6/20/2012		APPROVED BY	RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3			11	13				

- NOTES:
- (A) Level of initial grouting for drilled hole 6" in diameter or smaller
  - (B) Level of secondary grouting
  - (C) Level of initial grouting inside corrugated sheathing
  - (D) Bonded length shall be determined by the contractor
  - (E) For unbonded length, see PROJECT PLANS
  - (F) For inclination, see PROJECT PLANS
  - (G) Face of Wall Excavation

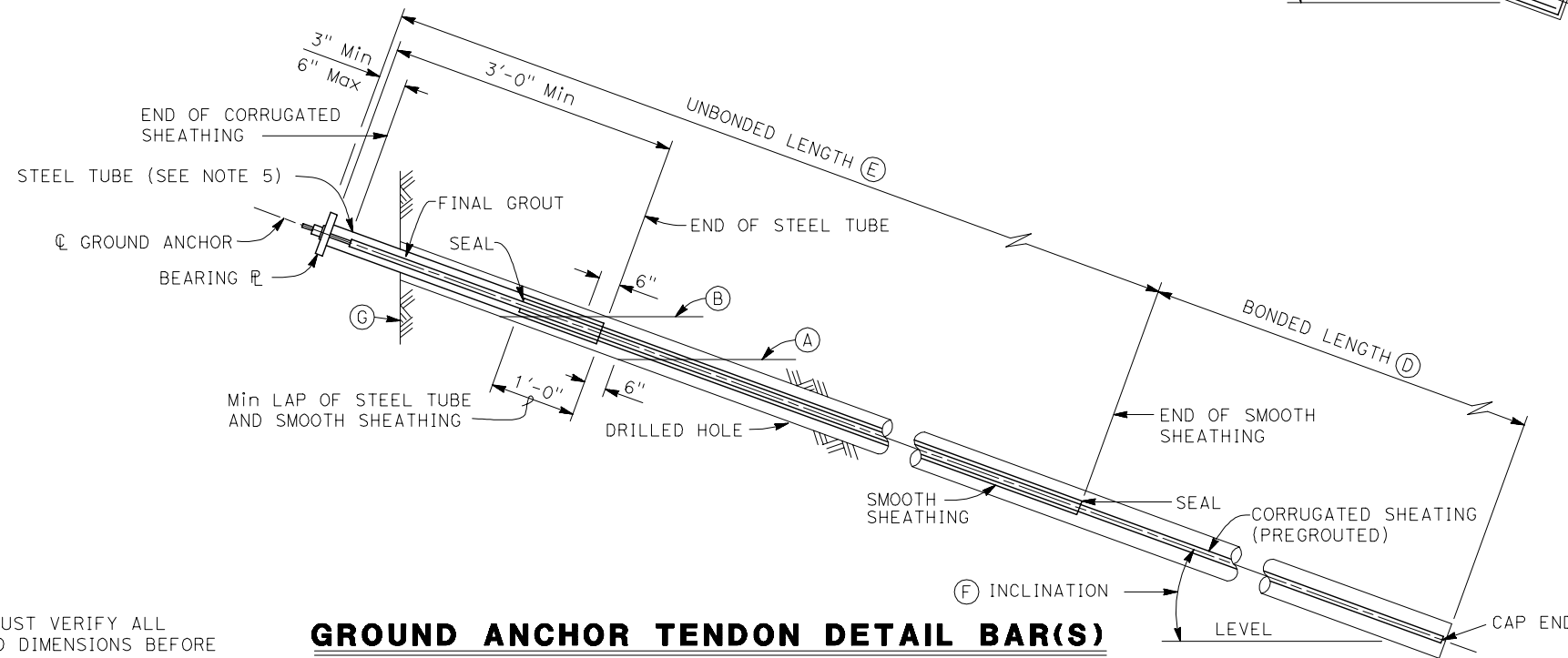


**GROUND ANCHOR TENDON DETAIL (STRANDS)**

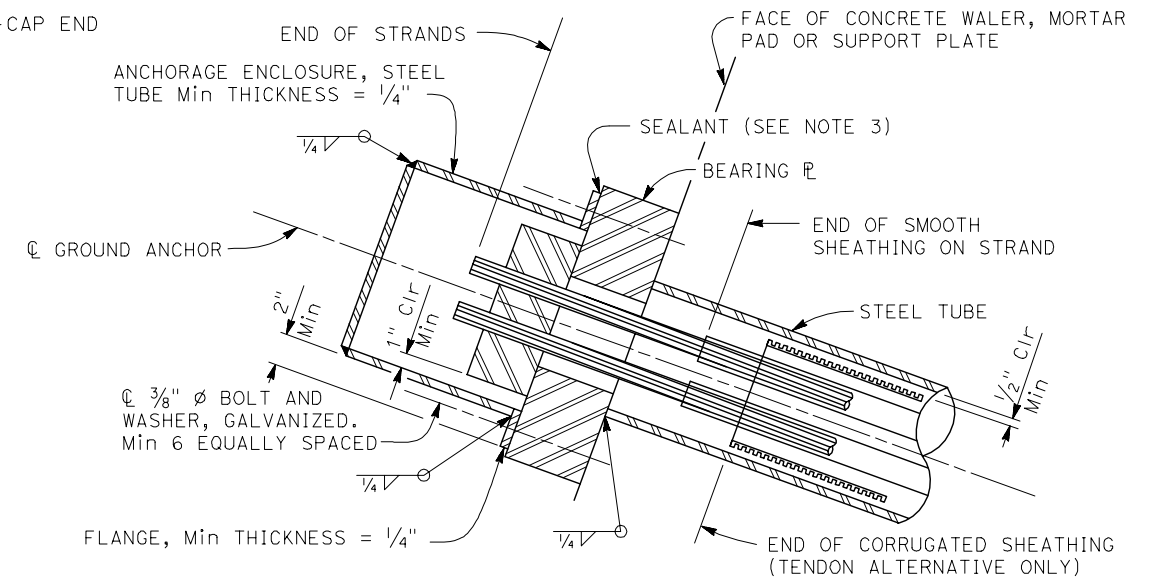
- NOTES:
1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
  2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
  3. Silicone sealant to cover full width of flange.
  4. Steel tube (Min thickness = 1/4") welded to bearing plate. Galvanize assembly after fabrication.
  5. Steel tube welded to bearing plate. Inside diameter of steel tube (Min thickness = 1/4") to be 1" greater than outside diameter of smooth sheathing.
  6. Galvanize assembly after fabrication.
  7. For other wall details, see PROJECT PLANS.



**ALTERNATIVE X**



**GROUND ANCHOR TENDON DETAIL BAR(S)**



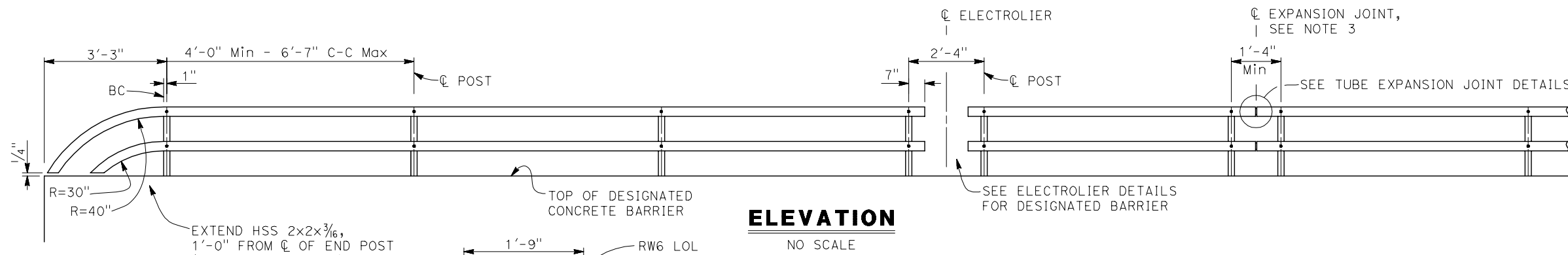
**ALTERNATIVE Y**

**ANCHORAGE ENCLOSURE DETAILS**

PLAN CHECK SET/NOT FOR CONSTRUCTION (7/8/19)

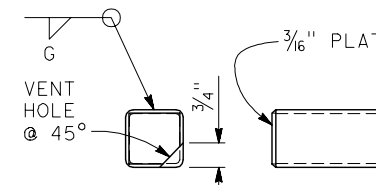
NOTE:  
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

REVISOR	DATE	DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE				<b>RETAINING WALL NO. 6</b> <b>RETAINING WALL DETAILS No. 5</b>		
		DRAWN BY S. HICKEY		PLANS APPROVAL DATE	1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com					BRIDGE NO.	CONTRACT NO.
		CHECKED BY		WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	USERNAME => AR FILE => 2011109RW6_12.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:17					SHEET	OF
DISREGARD PRINTS BEARING EARLIER REVISION DATES	PROJECT DESCRIPTION	APPROVED BY		RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3			12	13		
BORDER LAST REVISED 6/20/2012								(2011109RW6_12) 2011109			



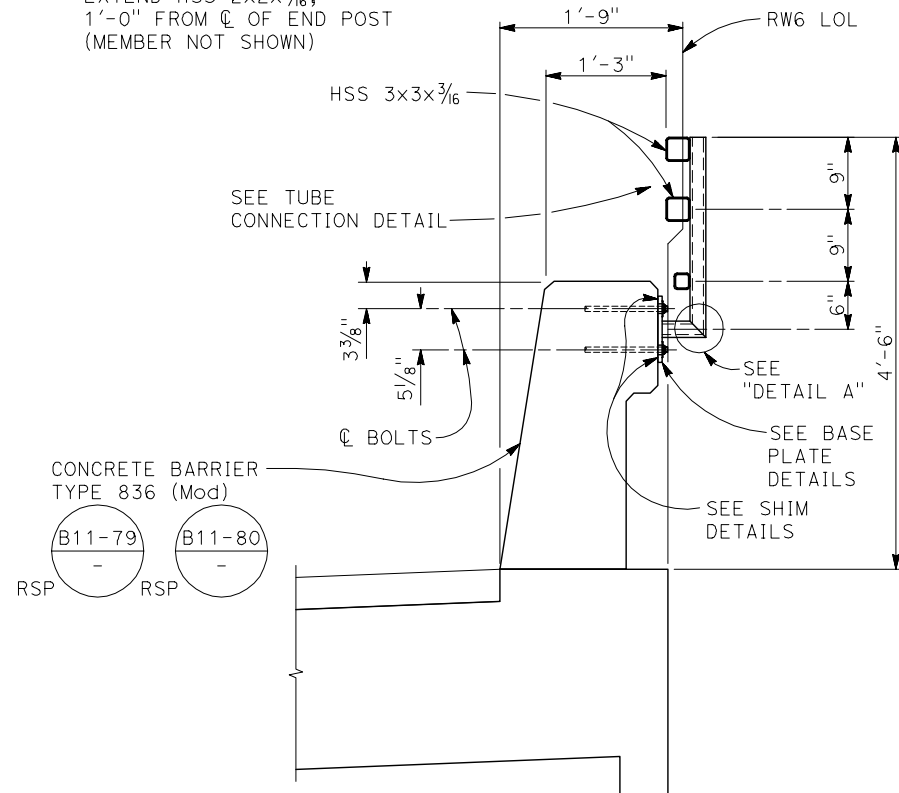
**ELEVATION**

NO SCALE



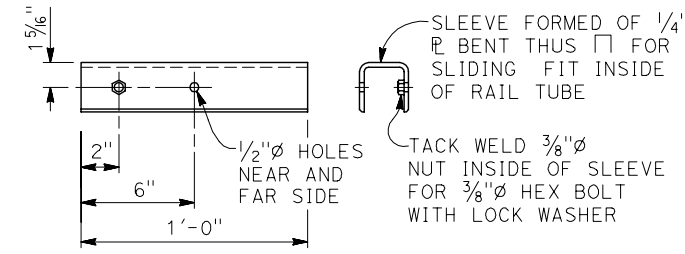
**RAIL CAP DETAIL**

NO SCALE



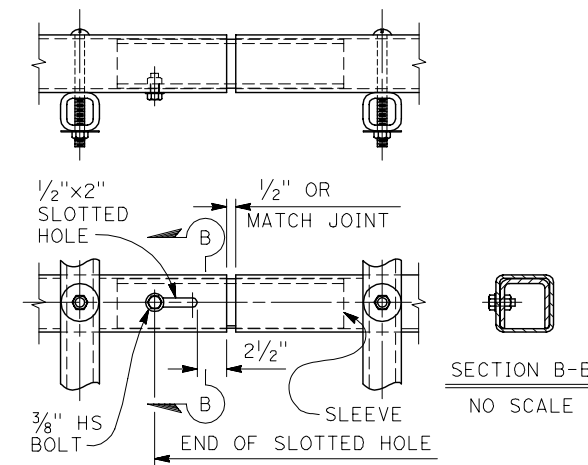
**TYPICAL SECTION**

1" = 1'-0"



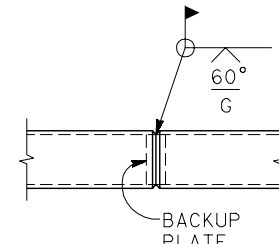
**SLEEVE DETAIL**

NO SCALE



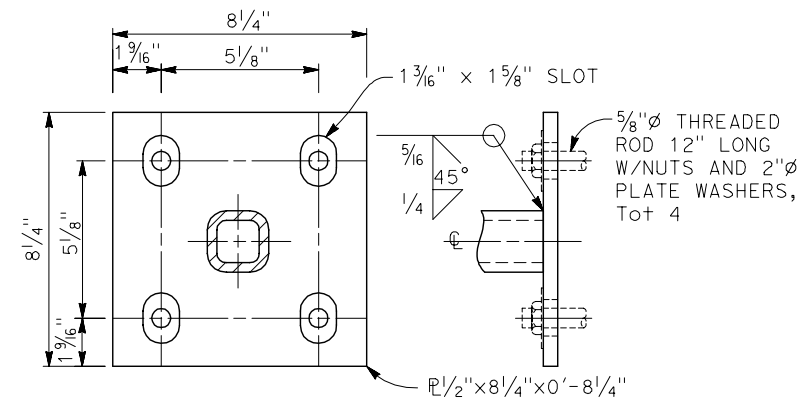
**TUBE EXPANSION JOINT DETAILS**

NO SCALE



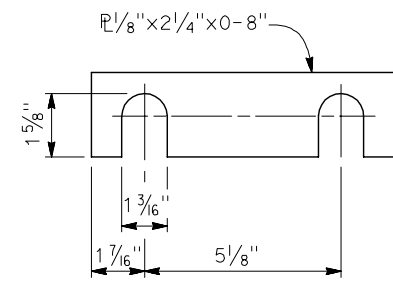
**WELDED SPLICE DETAIL**

NO SCALE



**BASE PLATE DETAIL**

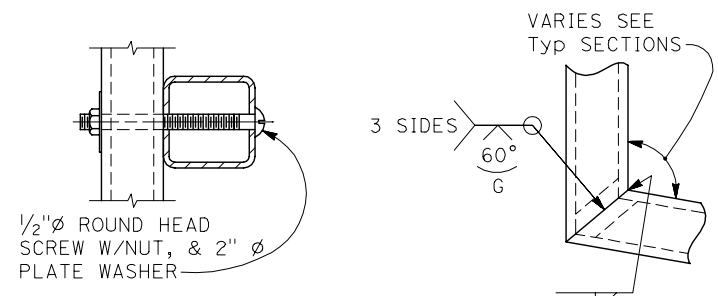
NO SCALE



**SHIM DETAILS**

NO SCALE

- NOTES:
1. Post shall be normal to railing.
  2. Rail tubes must be shop bent or fabricated to fit horizontal curve when radius is less than 950'.
  3. Tube expansion joints must be located in the tubes spanning deck or wall joints. Increase joint width in tubes to match expansion joint widths and increase sleeve length correspondingly.
  4. Top rail tube must be continuous over not less than two posts except a short post spacing is permitted near deck or wall joints, electroliers, or other rail discontinuities as noted.



**TUBE CONNECTION DETAIL**

NO SCALE

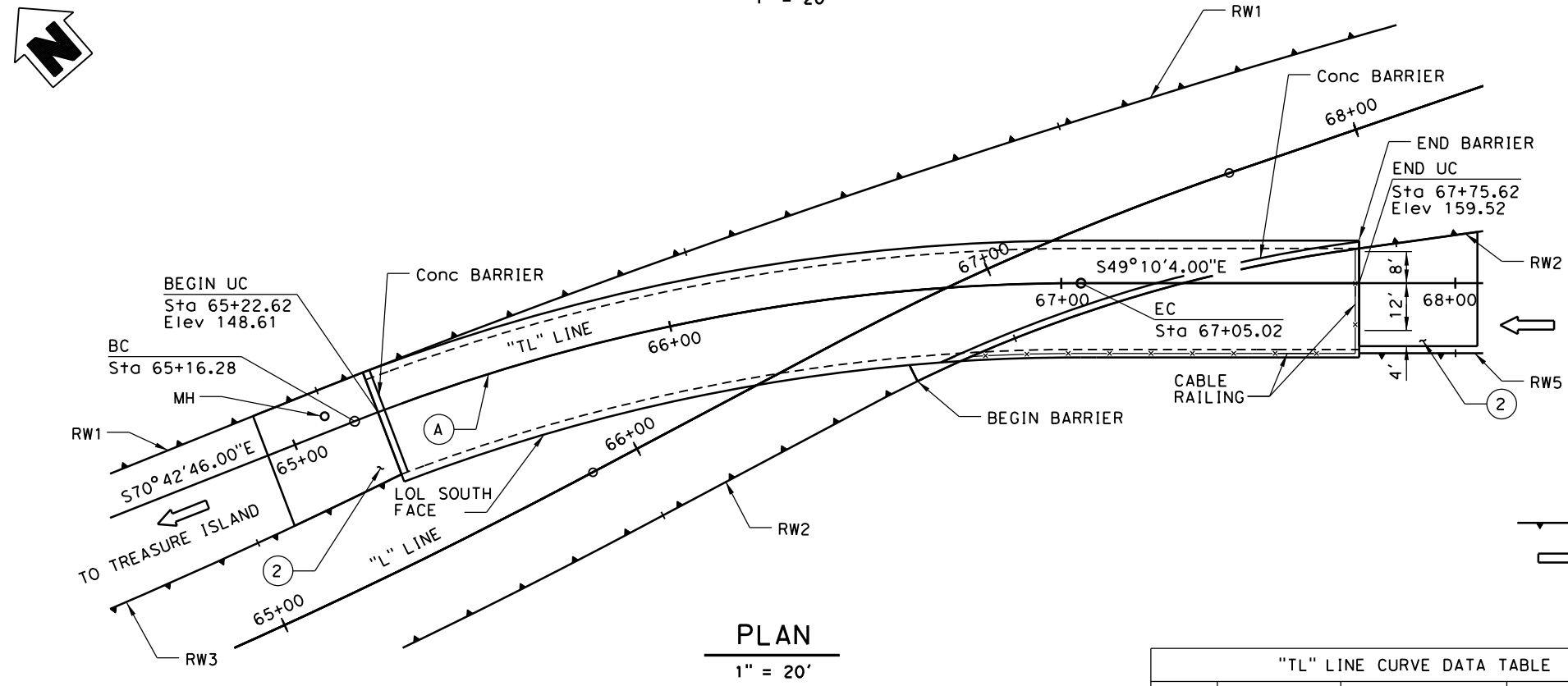
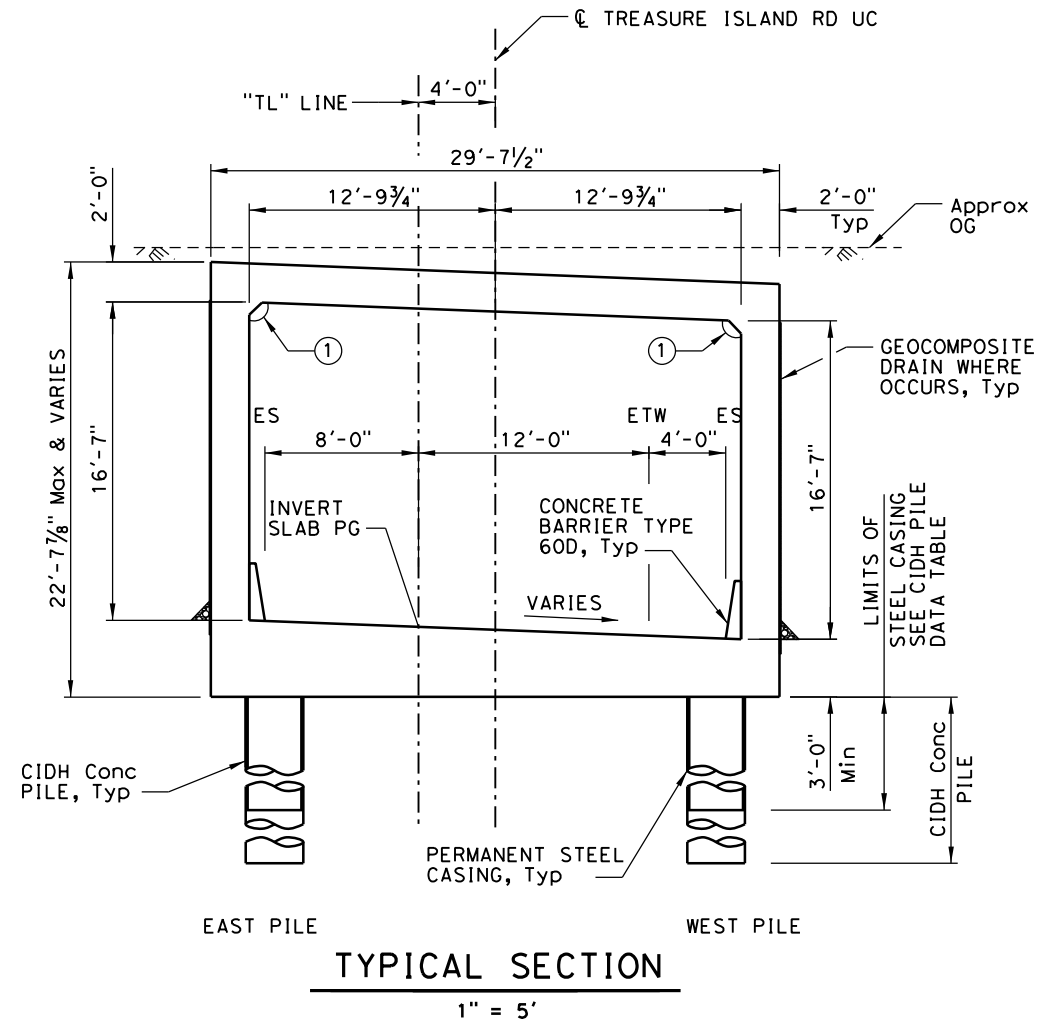
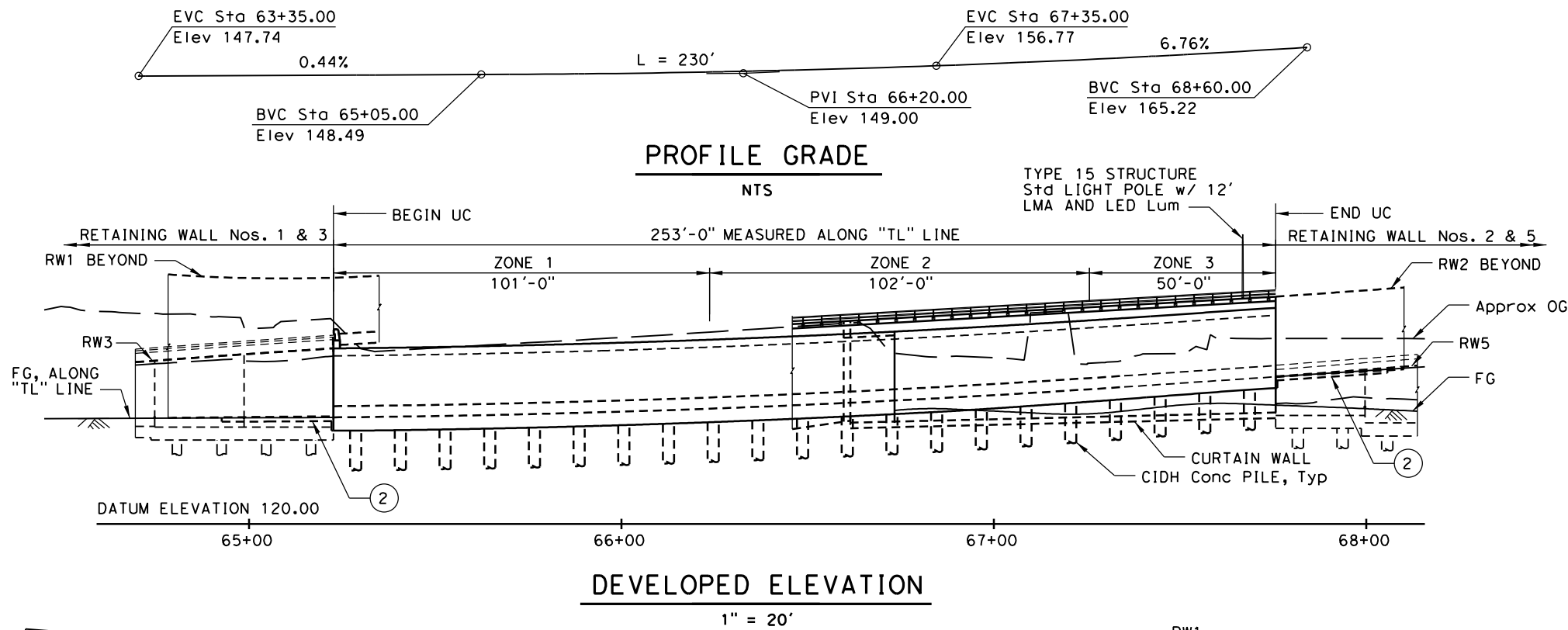
**DETAIL A**

NO SCALE

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

PLAN CHECK SET/NOT FOR CONSTRUCTION(11/14/19)

REVISED BY	DATE REVISED	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b>	DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE				<b>RETAINING WALL NO. 6 RETAINING WALL DETAILS No. 6</b>	
			DRAWN BY A. ROSALES								
			CHECKED BY								
DISREGARD PRINTS BEARING EARLIER REVISION DATES		PROJECT DESCRIPTION	APPROVED BY		PLANS APPROVAL DATE	WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com			BRIDGE NO. _____ CONTRACT NO. _____	
BORDER LAST REVISED 6/20/2012					RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3				USERNAME => AR FILE => 2011109RW6_13.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:17	



"TL" LINE CURVE DATA TABLE

NO.	R	Δ	T	L
(A)	502.00'	21°32'42.00"	95.51'	188.77'

**LEGEND**

→ INDICATES RETAINING WALL

⇨ INDICATES DIRECTION OF TRAFFIC

**NOTES:**

① LIGHTING (SEE ROAD PLANS)

② STRUCTURE APPROACH SLAB, TYPE N (30)

**GENERAL PLAN**  
SCALE: AS SHOWN

REVISIONS NO.   DATE   DESCRIPTION _____ _____ _____	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C. PROJECT DESCRIPTION	CALCULATED/DESIGNED BY D. VANG CHECKED BY R. SENNETT SUPERVISOR DATE 11/15/2019		REGISTERED STRUCTURAL ENGINEER PLANS SUBMITTAL DATE _____ PLANS APPROVAL DATE _____	 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com	 	USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn CONTRACT NO. SHEET NAME   SHEET NO.   TOTAL SHEETS UC-1     LAST REVISION   DATE PLOTTED => 11/15/2019 11/15/2019   TIME PLOTTED => 2:26:24 PM
--	--	---	--	---	--	------	---

BORDER LAST REVISED 9/9/2015

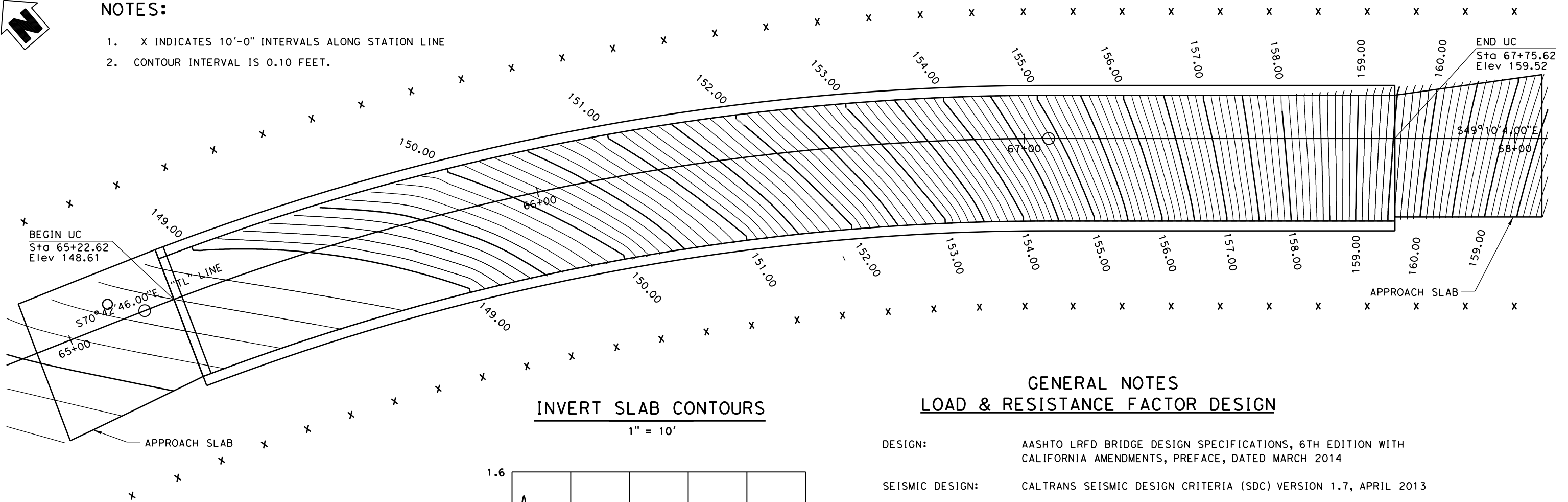






**NOTES:**

- 1. X INDICATES 10'-0" INTERVALS ALONG STATION LINE
- 2. CONTOUR INTERVAL IS 0.10 FEET.



**INVERT SLAB CONTOURS**

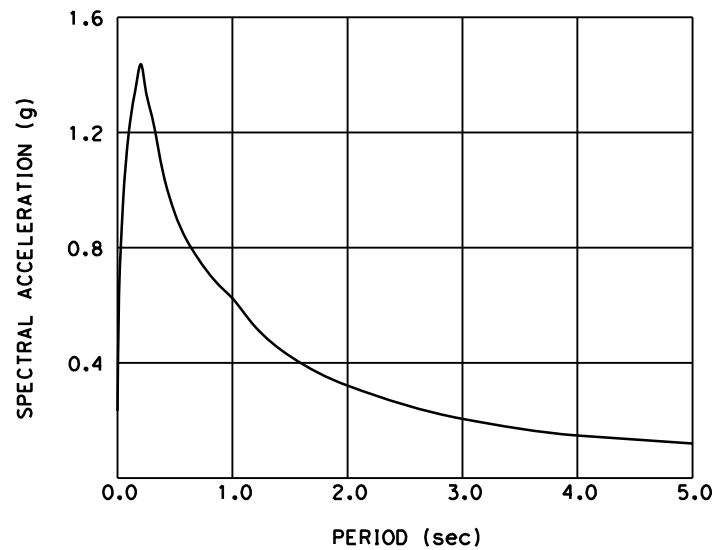
1" = 10'

**GENERAL NOTES  
LOAD & RESISTANCE FACTOR DESIGN**

- DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION WITH CALIFORNIA AMENDMENTS, PREFACE, DATED MARCH 2014
- SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 1.7, APRIL 2013
- LIVE LOADING: HL93 AND PERMIT DESIGN VEHICLE
- EARTH PRESSURE: STATIC EARTH PRESSURE, FOR LEVEL BACKFILL = 36 pcf  
SOIL UNIT WEIGHT = 125 pcf
- SEISMIC INCREMENTAL EARTH PRESSURE: 15.4 pcf
- SEISMIC LOADING: PROBABILISTIC ARS (5%) DAMPING  
LATITUDE = 37.8091°, LONGITUDE = -122.3689°  
V<sub>50</sub> = 620 m/s  
PEAK GROUND ACCELERATION (PGA) = 0.584g
- TRAFFIC SURCHARGE: 72 psf
- REINFORCED CONCRETE: f'<sub>c</sub> = 4,000 psi  
f<sub>y</sub> = 60,000 psi
- PERMANENT STEEL CASING: ASTM A252, GRADE 3(MOD), f<sub>y</sub> = 50,000 psi

**INDEX TO PLANS**

SHEET NO.	TITLE
UC-1	GENERAL PLAN
UC-2	INVERT SLAB CONTOURS AND GENERAL NOTES
UC-3	FOUNDATION PLAN
UC-4	UNDERCROSSING LAYOUT
UC-5	DEVELOPED ELEVATIONS
UC-6	TYPICAL SECTION AND DETAILS
UC-7	UNDERCROSSING DETAILS NO. 1
UC-8	UNDERCROSSING DETAILS NO. 2
UC-9	ROOF AND INVERT SLAB REINFORCEMENT
UC-10	PILE DETAILS
UC-11	STRUCTURE APPROACH TYPE N(30)
UC-12	LOG OF TEST BORINGS 1 OF 5
UC-13	LOG OF TEST BORINGS 2 OF 5
UC-14	LOG OF TEST BORINGS 3 OF 5
UC-15	LOG OF TEST BORINGS 4 OF 5
UC-16	LOG OF TEST BORINGS 5 OF 5

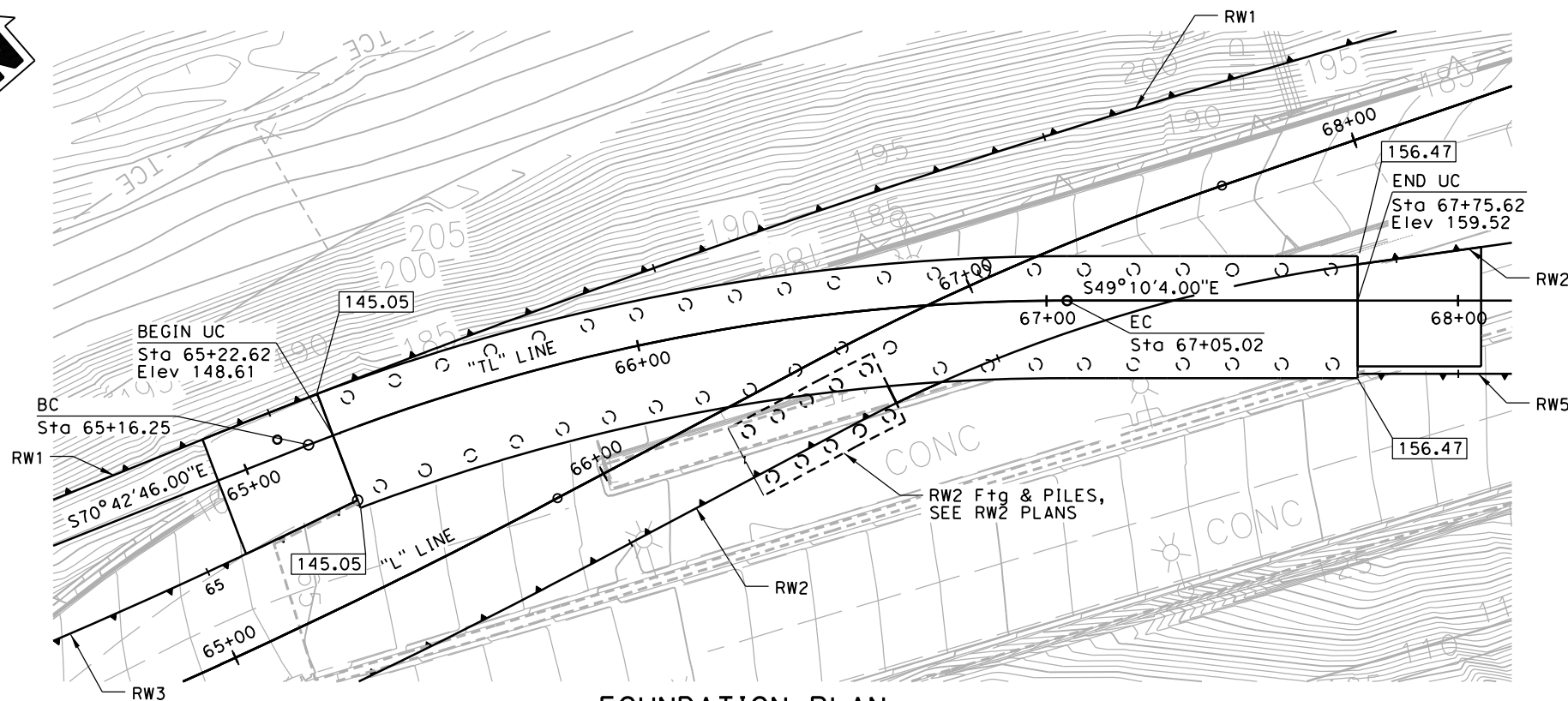


**ARS DESIGN CURVE**

NTS

**INVERT SLAB  
CONTOURS AND  
GENERAL NOTES**  
SCALE: 1" = 20'

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn		
CHECKED BY R. SENNETT	SUPERVISOR R. SENNETT		DATE 11/15/2019		PLANS APPROVAL DATE	CONTRACT NO.						
PROJECT DESCRIPTION										SHEET NAME UC-2	SHEET NO.	TOTAL SHEETS
BORDER LAST REVISED 9/9/2015						RELATIVE BORDER SCALE IS IN INCHES				LAST REVISION 11/15/2019	DATE PLOTTED => 11/15/2019 TIME PLOTTED => 2:25:50 PM	



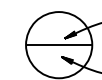
**FOUNDATION PLAN**

1" = 20'

**STANDARD PLANS**

DATED 2018

- A3A ABBREVIATIONS (SHEET 1 OF 3)
- A3B ABBREVIATIONS (SHEET 2 OF 3)
- A3C ABBREVIATIONS (SHEET 3 OF 3)
- A10A LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
- A10B LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
- A10C LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
- A10D LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
- A10E LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
- A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
- A62E EXCAVATION AND BACKFILL CAST-IN-PLACE REINFORCED CONCRETE BOX AND ARCH CULVERTS
- B0-3 BRIDGE DETAILS
- B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
- B9-1 STRUCTURE APPROACH TYPE N (30)
- B9-5 STRUCTURE APPROACH SLAB DETAILS
- B9-6 STRUCTURE APPROACH DRAINAGE DETAILS
- B11-47 CABLE RAILING
- RSP B11-79 CONCRETE BARRIER TYPE 836 DETAILS NO. 1
- RSP B11-80 CONCRETE BARRIER TYPE 836 DETAILS NO. 2



STANDARD PLAN SHEET NO.

DETAIL NO.

**PILE DATA TABLE**

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	ESTIMATED PILE LENGTH (ft)	Min ESTIMATED BEDROCK SOCKET DEPTH (ft)	LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	ESTIMATED PILE LENGTH (ft)	Min ESTIMATED BEDROCK SOCKET DEPTH (ft)
		COMPRESSION	TENSION						COMPRESSION	TENSION			
65+25 TO 65+59 EAST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 91, (b) TBD (c) TBD, (d) TBD	55	13	65+25 TO 65+59 WEST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 89, (b) TBD (c) TBD, (d) TBD	67	9
65+59 TO 66+07 EAST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 88, (b) TBD (c) TBD, (d) TBD	73	9	65+59 TO 66+07 WEST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 73, (b) TBD (c) TBD, (d) TBD	83	9
66+07 TO 66+43 EAST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 87, (b) TBD (c) TBD, (d) TBD	65	9	66+07 TO 66+43 WEST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 79, (b) TBD (c) TBD, (d) TBD	78	9
66+43 TO 66+91 EAST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 89, (b) TBD (c) TBD, (d) TBD	61	12	66+43 TO 66+91 WEST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 86, (b) TBD (c) TBD, (d) TBD	73	9
66+91 TO 67+27 EAST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 92, (b) TBD (c) TBD, (d) TBD	57	12	66+91 TO 67+27 WEST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 88, (b) TBD (c) TBD, (d) TBD	73	9
67+27 TO 67+75 EAST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 93, (b) TBD (c) TBD, (d) TBD	64	9	67+27 TO 67+75 WEST PILES	36" DIA CIDH WITH STEEL CASING	1120	500	(a) 85, (b) TBD (c) TBD, (d) TBD	79	9

NOTES:

- DESIGN TIP ELEVATION ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESION, (b) TENSION, (c) SETTLEMENT, AND (d) LATERAL LOAD.
- SPECIFIED TIP ELEVATIONS SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR SETTLEMENT AND LATERAL LOAD WITHOUT ENGINEER'S APPROVAL.

**LEGEND**

- INDICATES RETAINING WALL
- INDICATES BOTTOM OF INVERT SLAB ELEVATION
- INDICATES 36" CIDH CONCRETE PILE WITH PERMANENT STEEL CASING, SEE "PILE DETAILS" SHEET.

NOTES:

- FOR RW NO.'S 1, 2, 3, & 5 LAYOUT AND ELEVATIONS, SEE RW SHEETS.
- FOR CURVE DATA, SEE "GENERAL PLAN" SHEET.
- BOTTOM OF INVERT SLAB TO FOLLOW THE PG.

**SURVEY DATUM:**

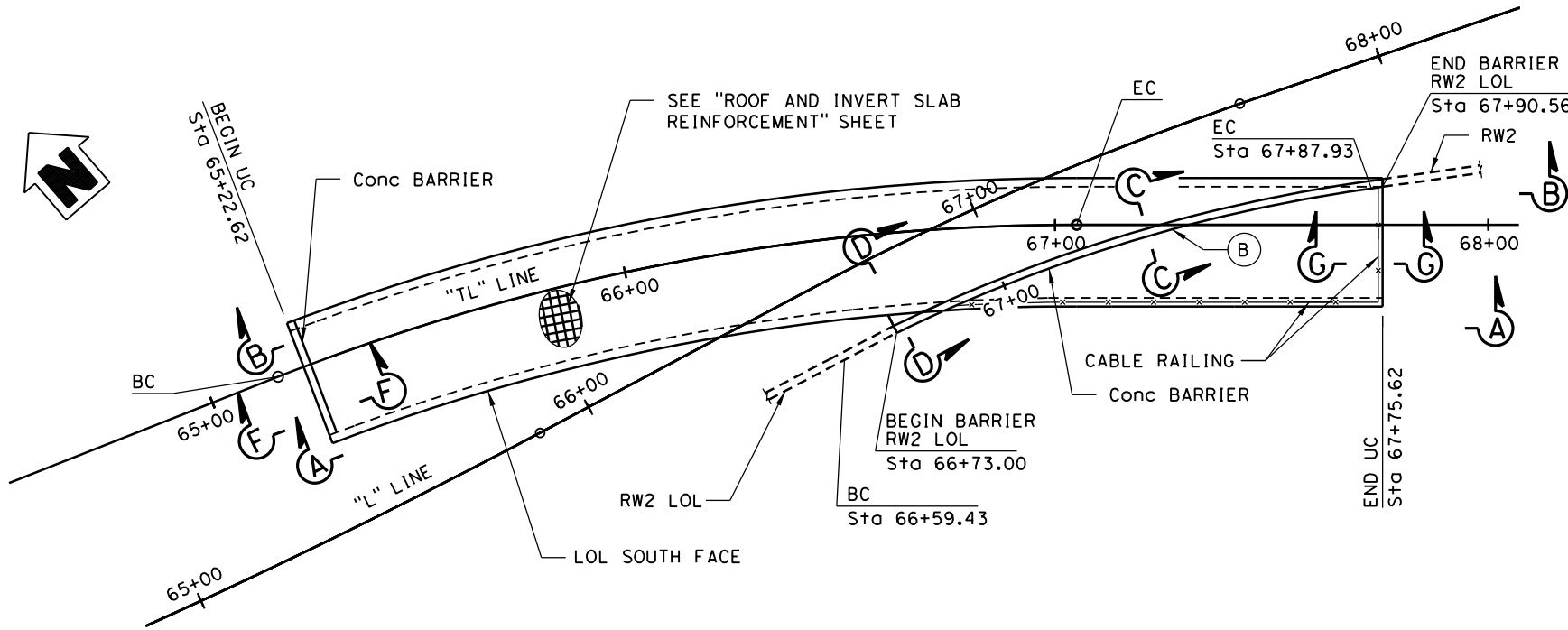
VERTICAL DATUM NAVD 88  
HORIZONTAL DATUM NAD 83

**FOUNDATION PLAN**  
SCALE: 1" = 20'

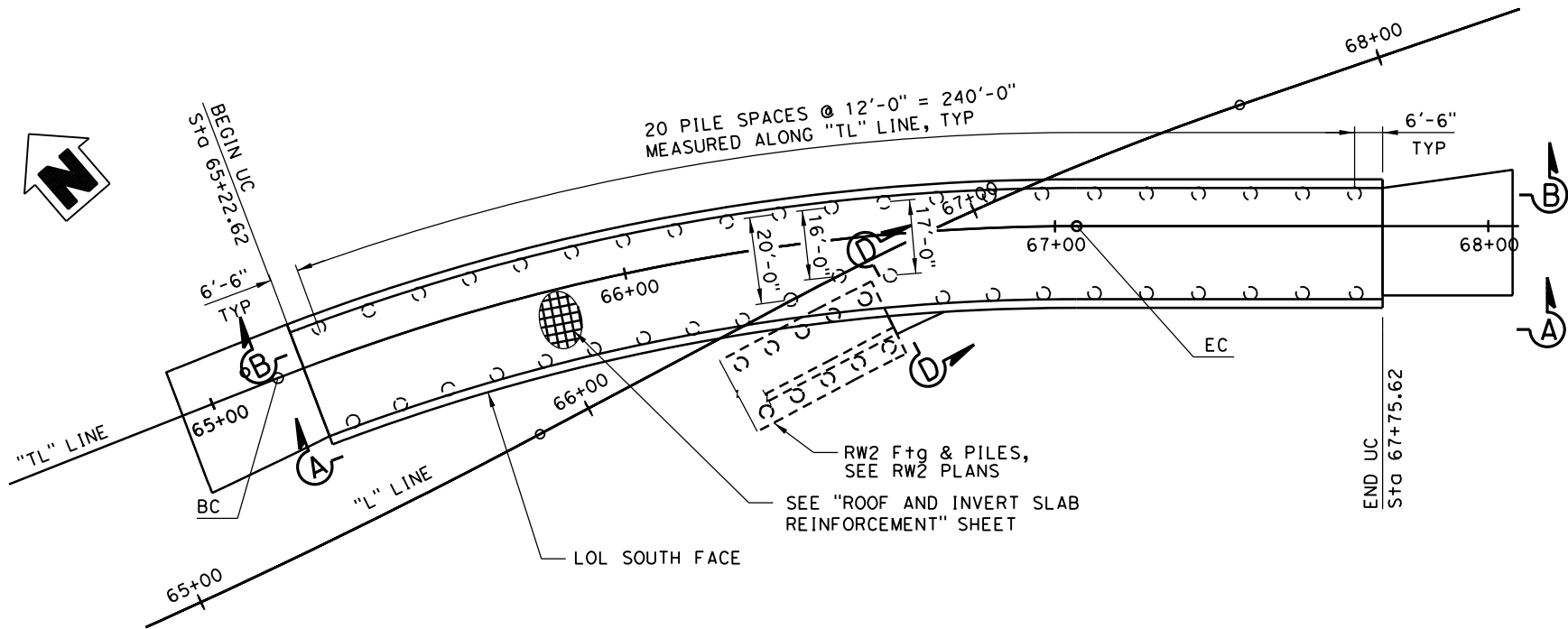
REVISD BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C. PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE		7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn CONTRACT NO.		
			CHECKED BY		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE					SHEET NAME UC-3	SHEET NO.	TOTAL SHEETS
			SUPERVISOR R. SENNETT		DATE 11/15/2019	MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					LAST REVISION 11/15/2019	DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:24:03 PM	

BORDER LAST REVISED 9/9/2015





PLAN - ROOF SLAB



PLAN - INVERT SLAB

RW2 CURVE DATA TABLE				
NO.	R	Δ	T	L
(B)	368.00'	20°00'26"	64.91'	128.50'

NOTES:

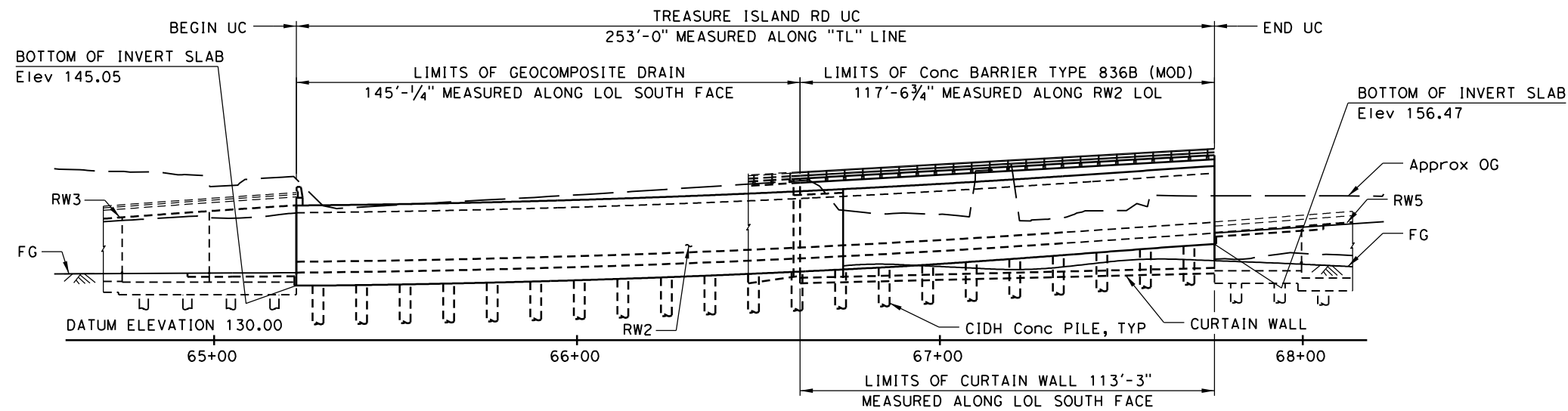
- FOR ELEVATIONS A-A & B-B, SEE "DEVELOPED ELEVATIONS" SHEET.
- FOR TYPICAL SECTION, AND SECTIONS C-C & D-D, SEE "TYPICAL SECTION AND DETAILS" SHEET.
- FOR SECTIONS E-E, F-F & G-G, SEE "UNDERCROSSING DETAILS NO. 1" SHEET.

LEGEND

○ INDICATES 36" Conc CIDH PILE WITH PERMANENT STEEL CASING, SEE "PILE DETAILS" SHEET.

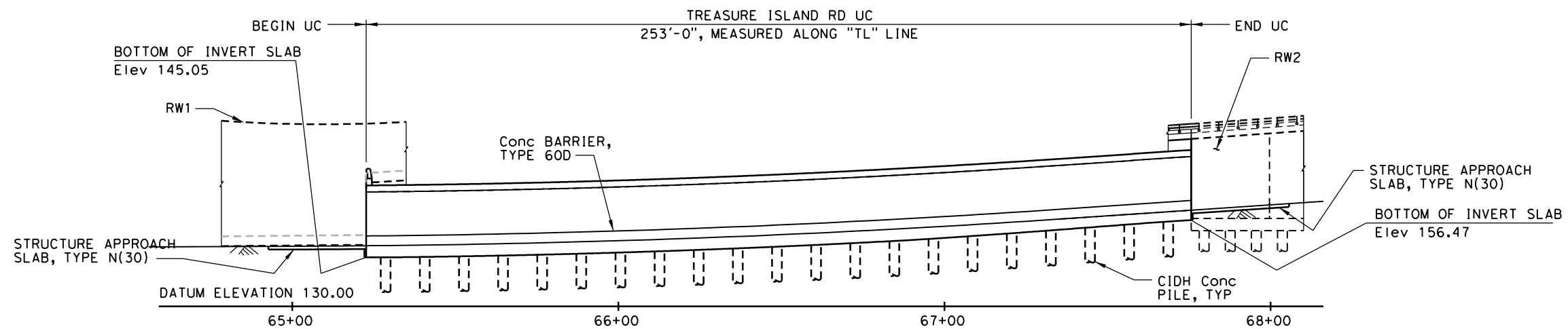
UNDERCROSSING LAYOUT  
SCALE: 1" = 20'

REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C. PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn CONTRACT NO.
CHECKED BY R. SENNETT	SUPERVISOR R. SENNETT		PLANS APPROVAL DATE		MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	SHEET NAME UC-4				SHEET NO.
BORDER LAST REVISED 9/9/2015		DATE 11/15/2019		RELATIVE BORDER SCALE IS IN INCHES				LAST REVISION DATE PLOTTED => 11/15/2019 TIME PLOTTED => 1:13:02 PM		



DEVELOPED ELEVATION A-A

1" = 20'



DEVELOPED ELEVATION B-B

1" = 20'

NOTE:

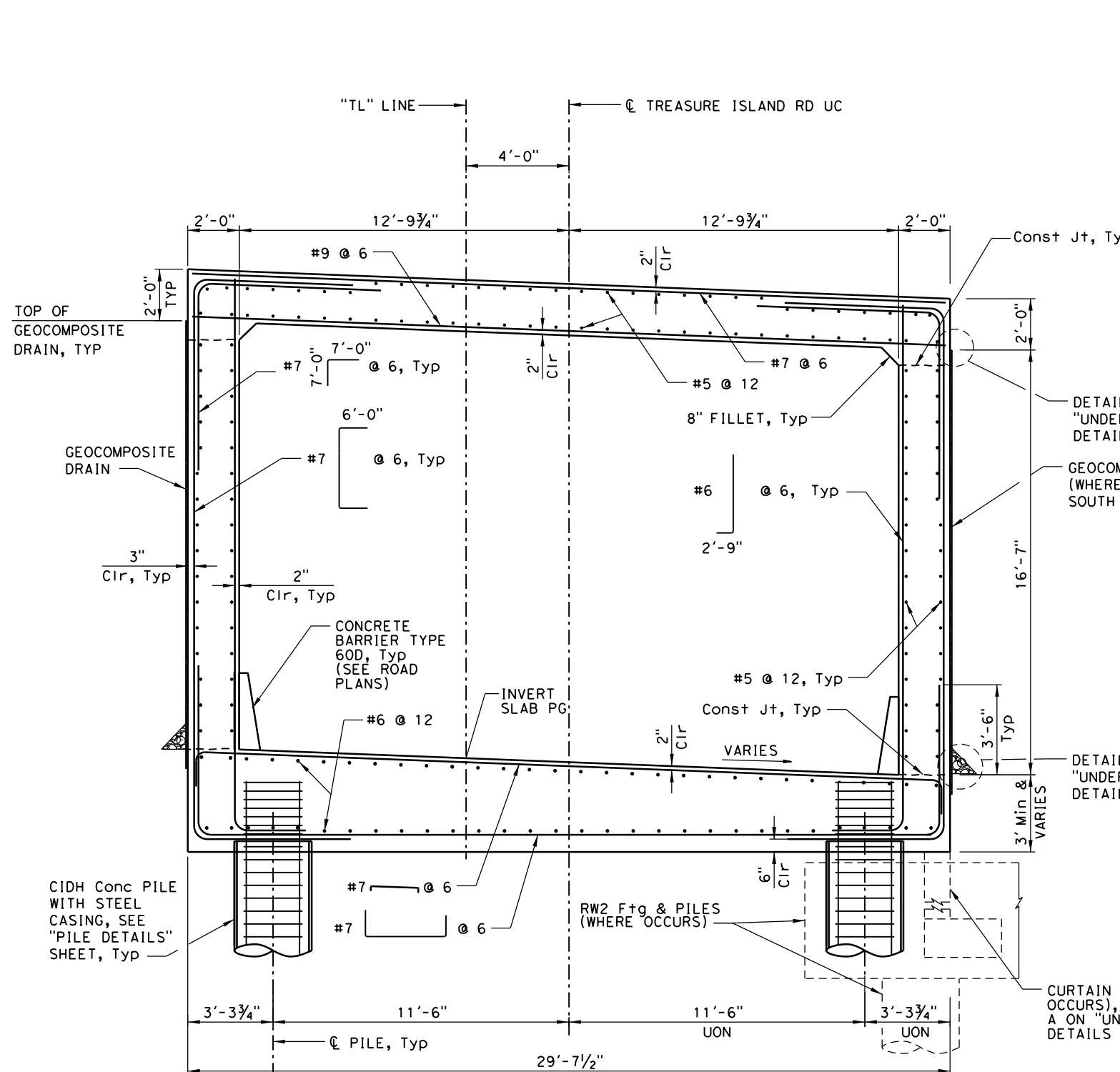
FOR RW NO.'S 1, 2, 3, AND 5, SEE EACH RESPECTIVE RW PLAN SHEETS.

DEVELOPED ELEVATIONS  
SCALE: AS SHOWN

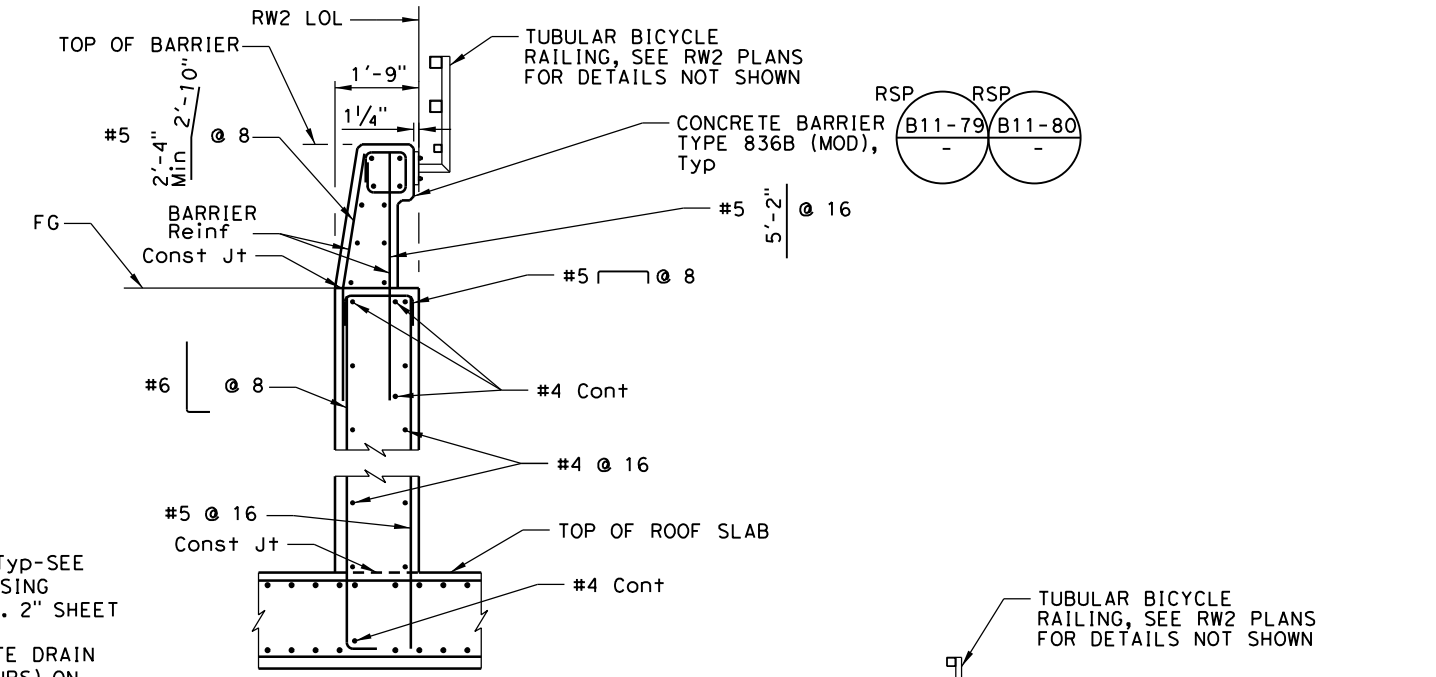
REVISOR	DATE	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b>  7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter
			CHECKED BY R. SENNETT		PLANS APPROVAL DATE	CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn				
			SUPERVISOR R. SENNETT		MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	CONTRACT NO.				
BORDER LAST REVISED 9/9/2015			DATE 11/15/2019							SHEET NAME UC-5
										SHEET NO.
										TOTAL SHEETS
										LAST REVISION 11/15/2019
										DATE PLOTTED => 11/15/2019 TIME PLOTTED => 2:23:58 PM



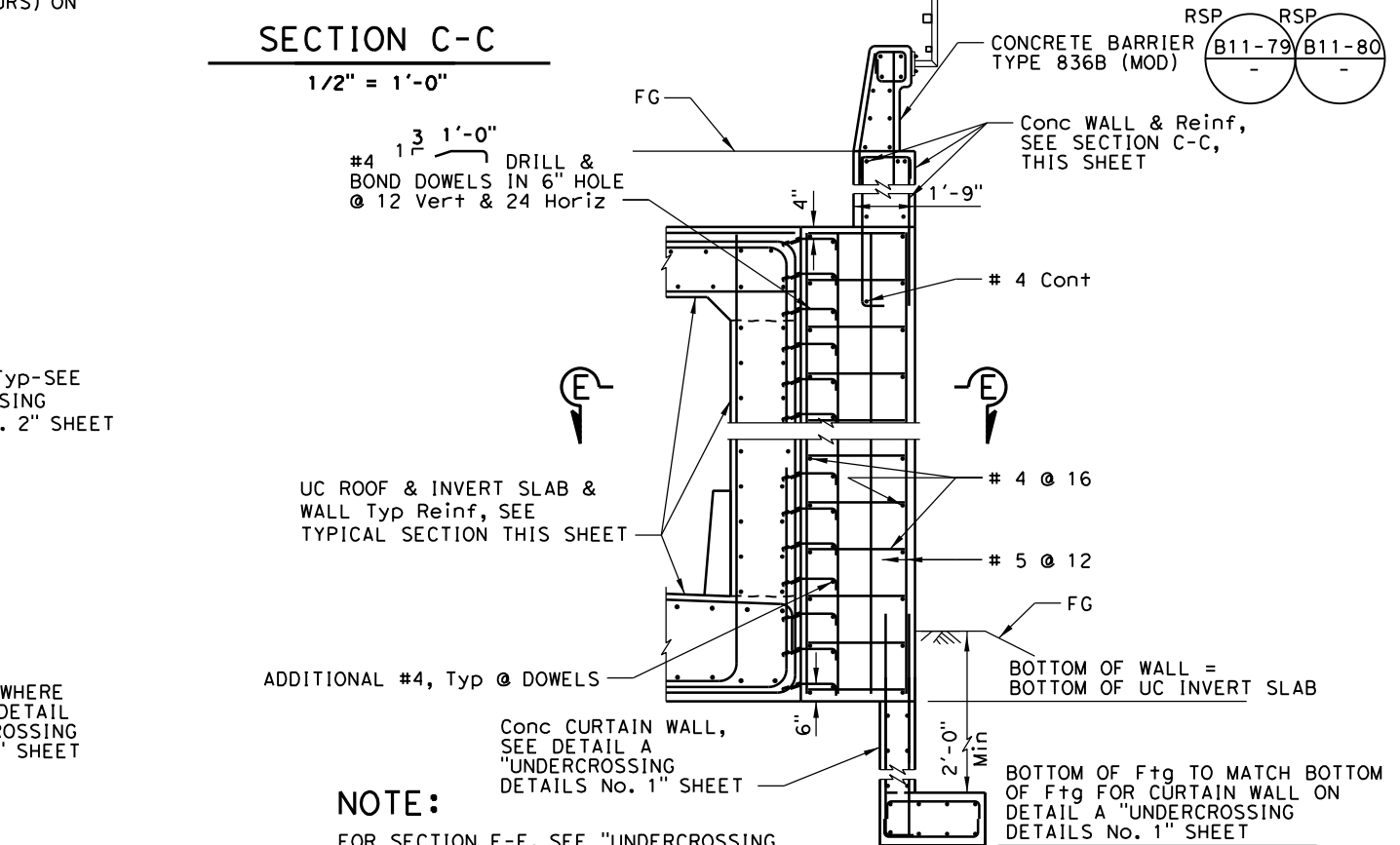
P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn



**TYPICAL SECTION**  
3/8" = 1'-0"



**SECTION C-C**  
1/2" = 1'-0"



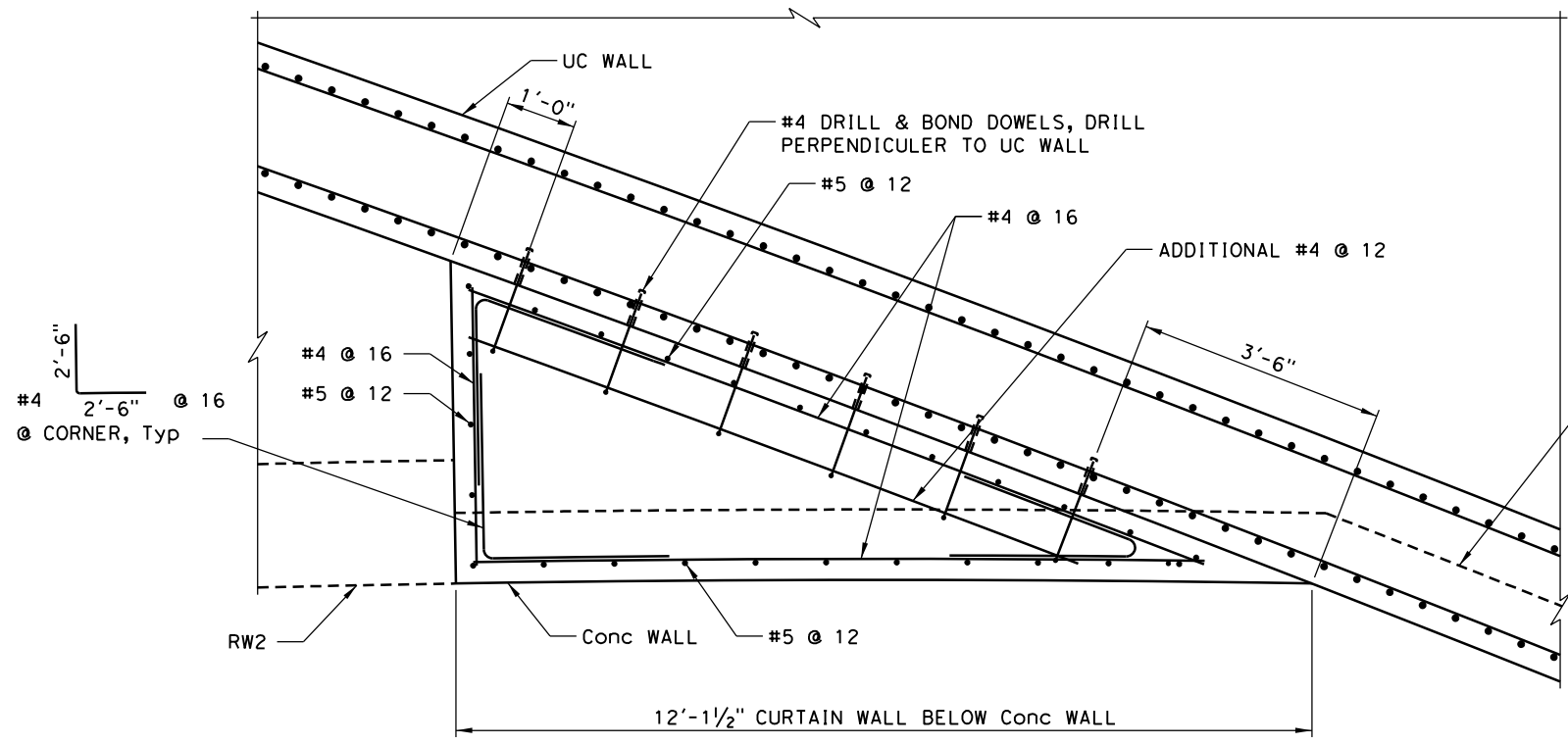
**SECTION D-D**  
3/8" = 1'-0"

**TYPICAL SECTION AND DETAILS**  
SCALE: AS SHOWN

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.  PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	<b>MGE ENGINEERING, INC.</b> 7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => Peter CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn CONTRACT NO.
			CHECKED BY R. SENNETT		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE				SHEET NAME UC-6

BORDER LAST REVISED 9/9/2015



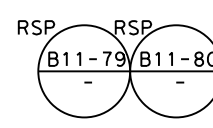


SECTION E-E

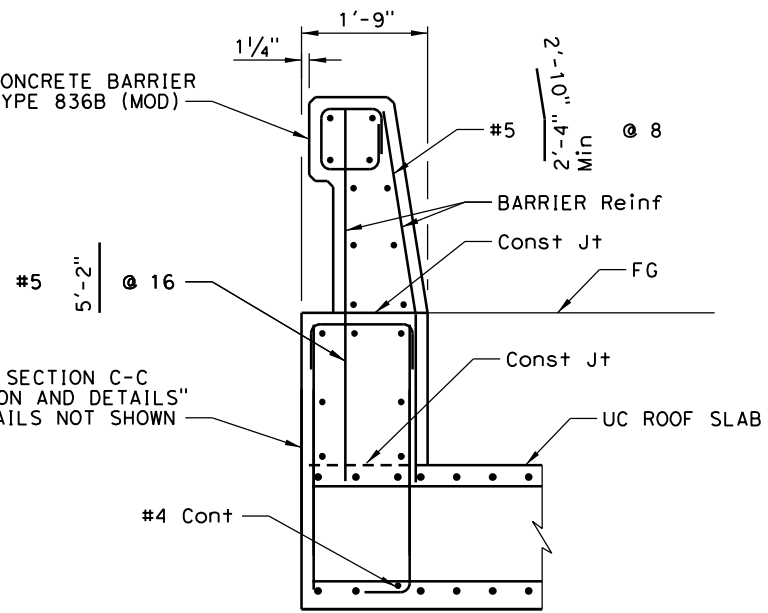
3/4" = 1'-0"

UC INVERT SLAB & WALL (Reinf NOT SHOWN FOR CLARITY)

CURTAIN WALL BELOW UC WALL

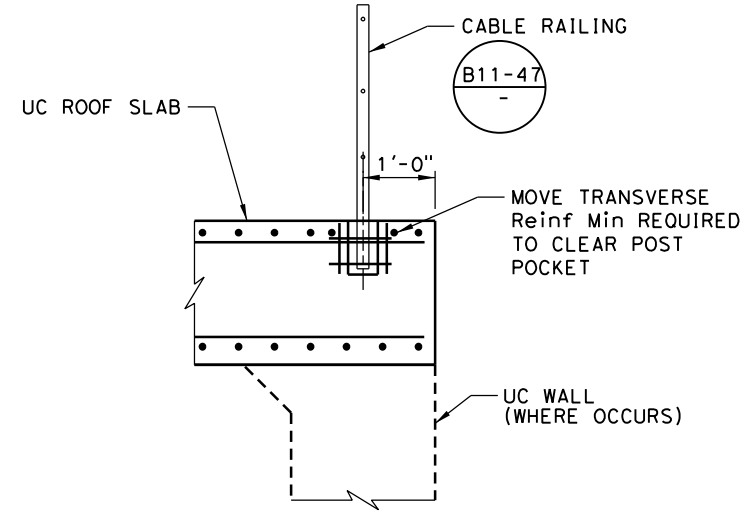


CONCRETE BARRIER TYPE 836B (MOD)



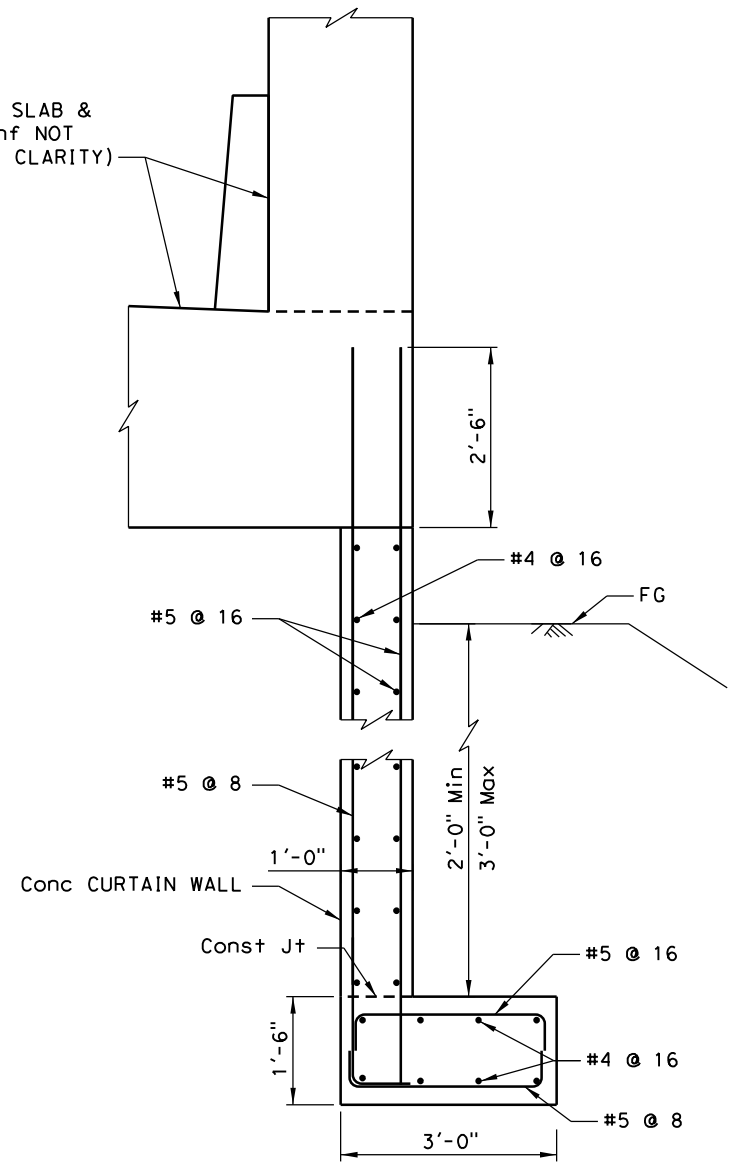
SECTION F-F

3/4" = 1'-0"



SECTION G-G

3/4" = 1'-0"

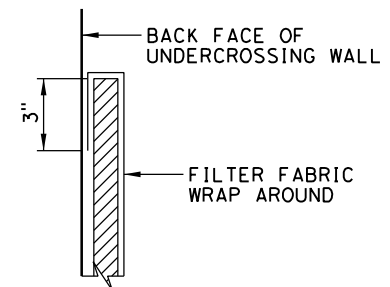


DETAIL A

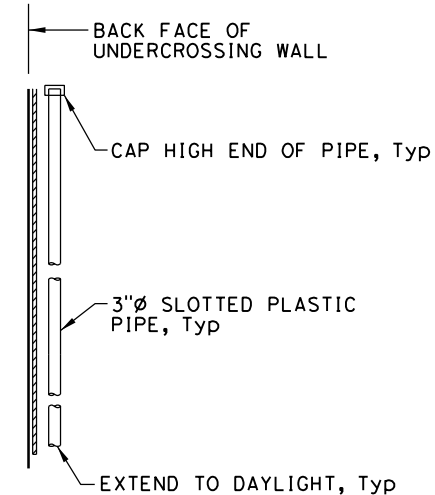
3/4" = 1'-0"

UNDERCROSSING  
DETAILS NO. 1  
SCALE: AS SHOWN

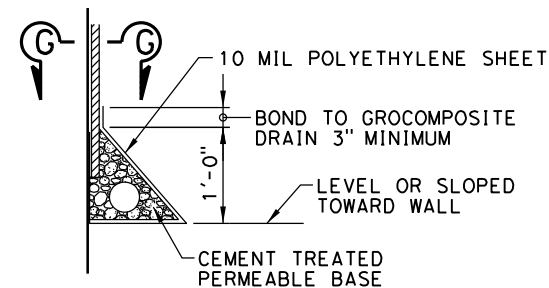
REVISIONS	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY	REGISTERED STRUCTURAL ENGINEER	MGE ENGINEERING, INC.	SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY	SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO	USERNAME => Peter
	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.	D. VANG	PLANS SUBMITTAL DATE	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel1.dgn
		CHECKED BY	PLANS APPROVAL DATE				CONTRACT NO.
		R. SENNETT					
		DATE					
		11/15/2019					
BORDER LAST REVISED 9/9/2015		RELATIVE BORDER SCALE IS IN INCHES		0 1 2 3		SHEET NAME SHEET NO. TOTAL SHEETS	
						UC-7	
						LAST REVISION DATE PLOTTED => 11/15/2019 TIME PLOTTED => 2:28:00 PM	



**DETAIL 1**



**SECTION G-G**



**DETAIL 2**

GEOCOMPOSITE DRAIN, CEMENT TREATED PERMEABLE BASE, AND 3"  $\phi$  SLOTTED PLASTIC PIPE CONTINUOUS BEHIND UNDERCROSSING WALL.

**GEOCOMPOSITE DRAIN DETAILS**

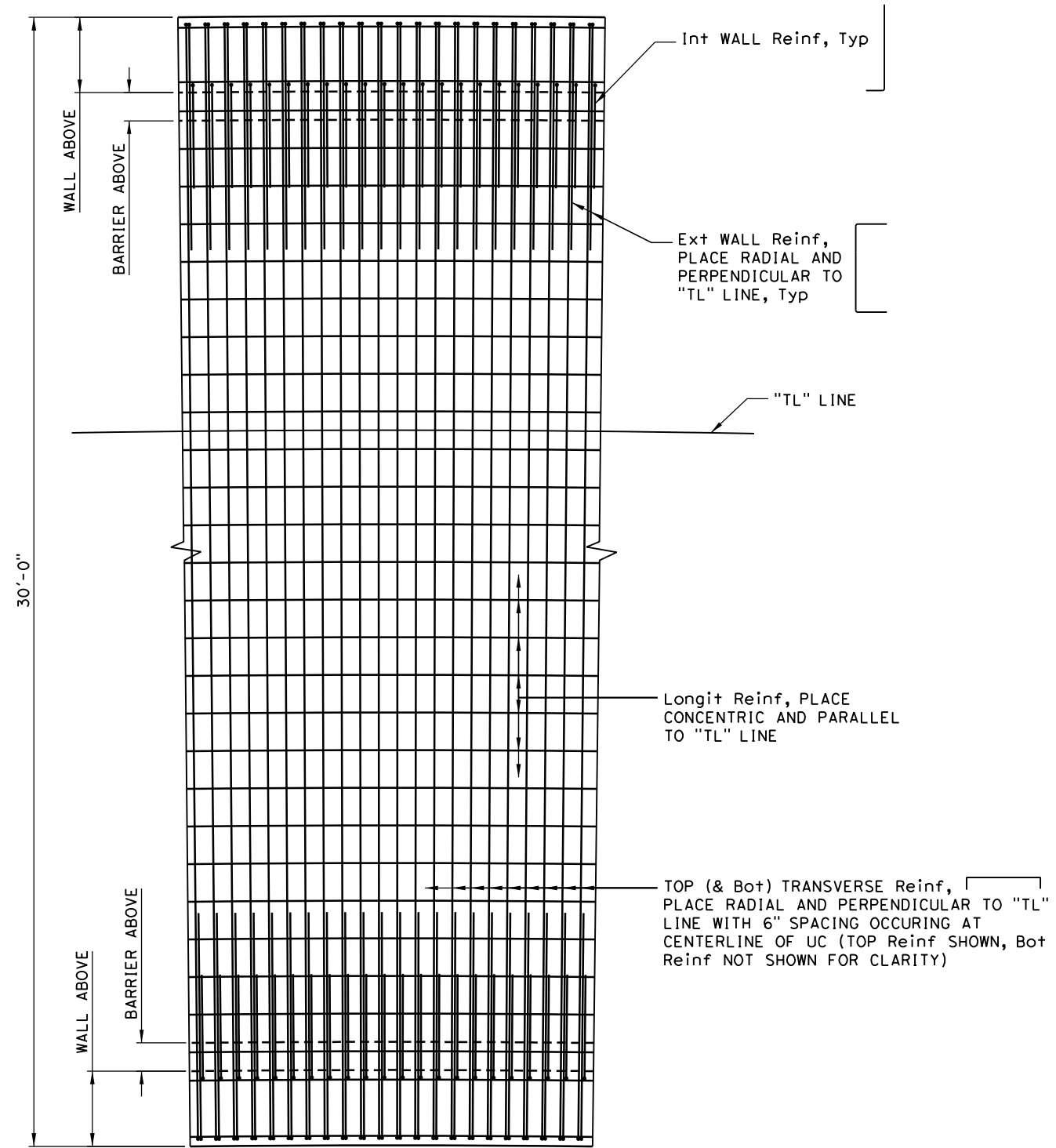
NO SCALE

**UNDERCROSSING  
DETAILS NO. 2**  
SCALE: AS SHOWN

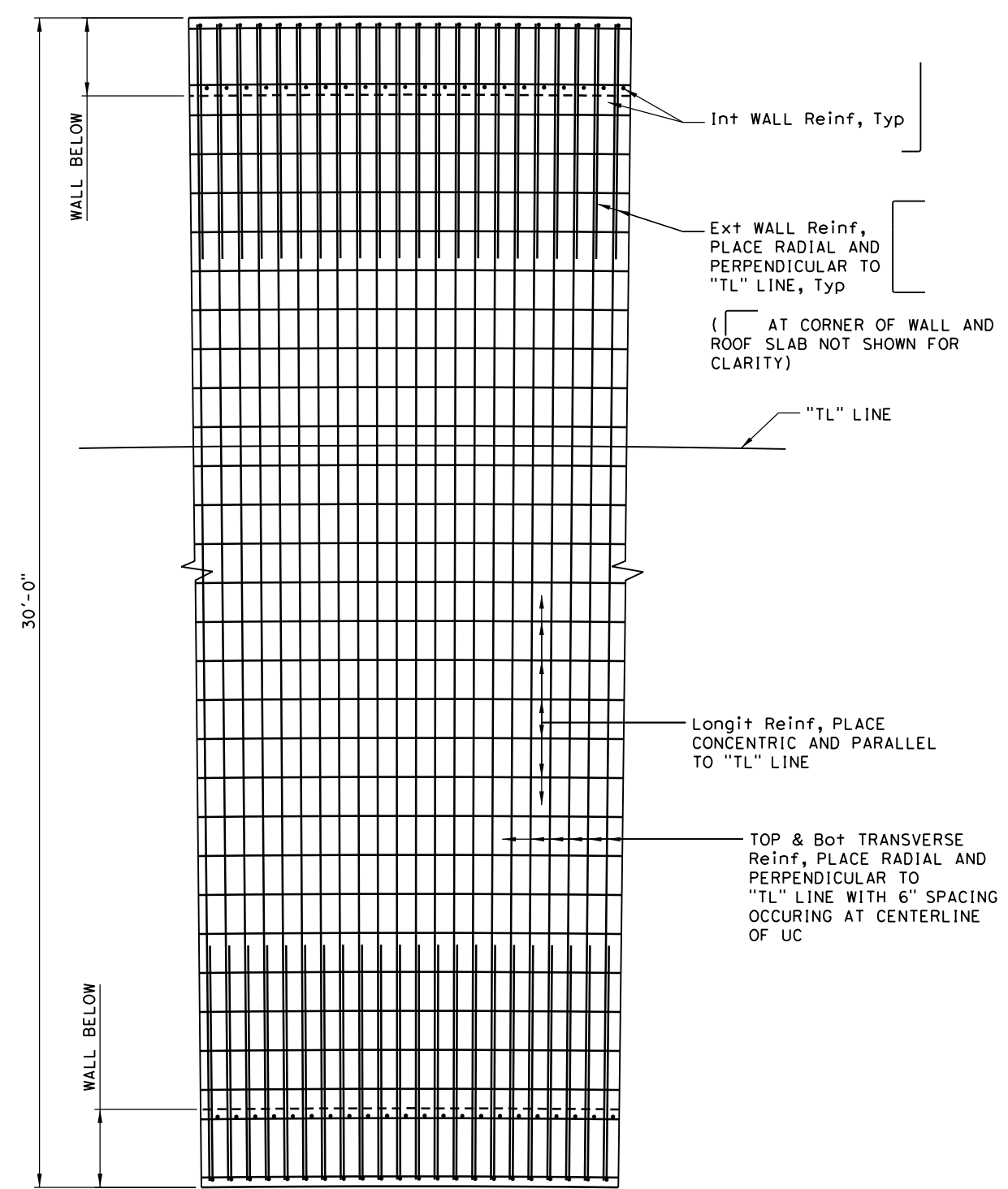
REVISOR	DATE	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.</b>  PROJECT DESCRIPTION		CALCULATED/ DESIGNED BY D. VANG	<b>MGE ENGINEERING, INC.</b>  7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => kaiwang				
				CHECKED BY R. SENNETT				REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE	CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn	CONTRACT NO.	
				SUPERVISOR R. SENNETT				PLANS APPROVAL DATE	<i>MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</i>	SHEET NAME <b>UC-8</b>	SHEET NO.	TOTAL SHEETS
				DATE 11/15/2019				RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3	LAST REVISION 11/15/2019	DATE PLOTTED => 11/15/2019 TIME PLOTTED => 9:19:37 AM	

P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn

P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn



**INVERT SLAB - PARTIAL PLAN**  
1/2" = 1'-0"

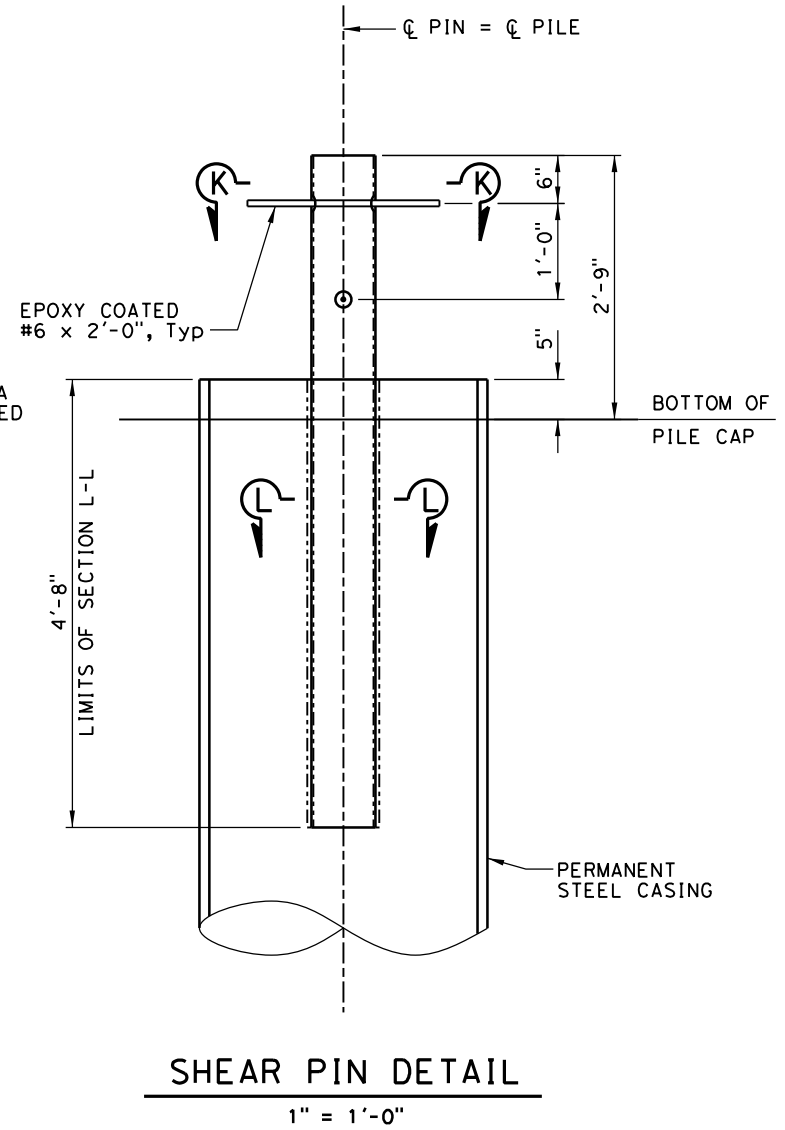
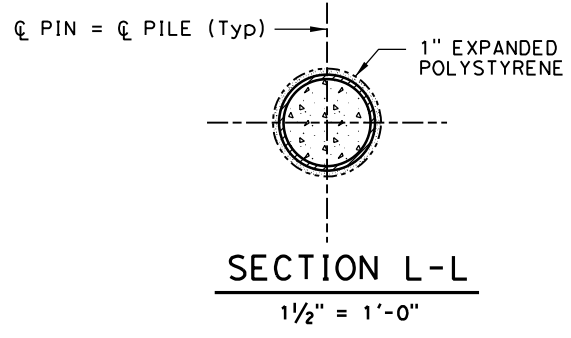
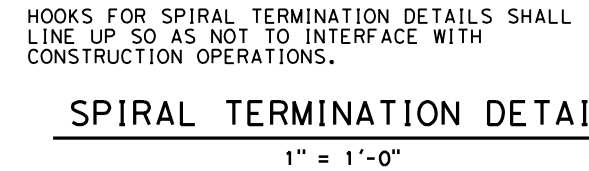
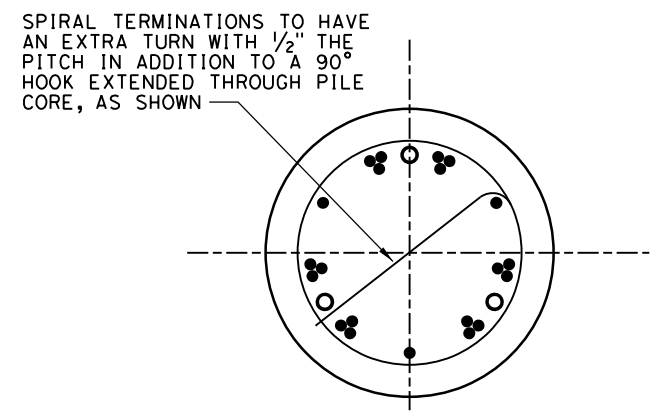
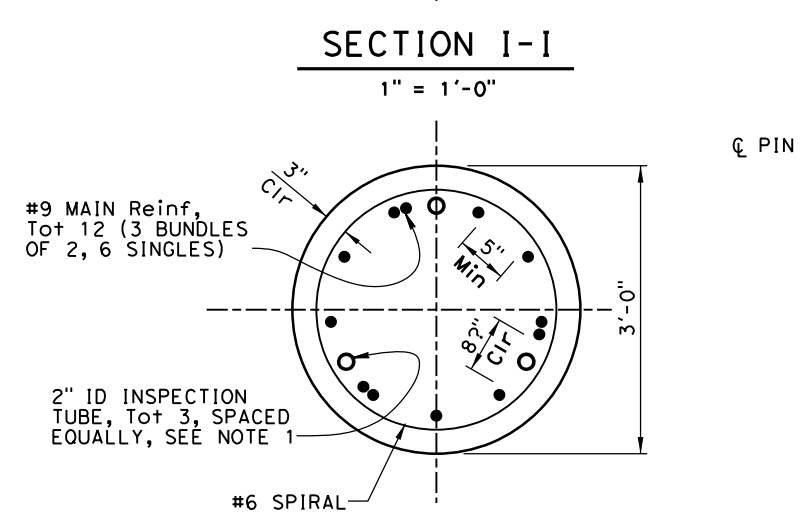
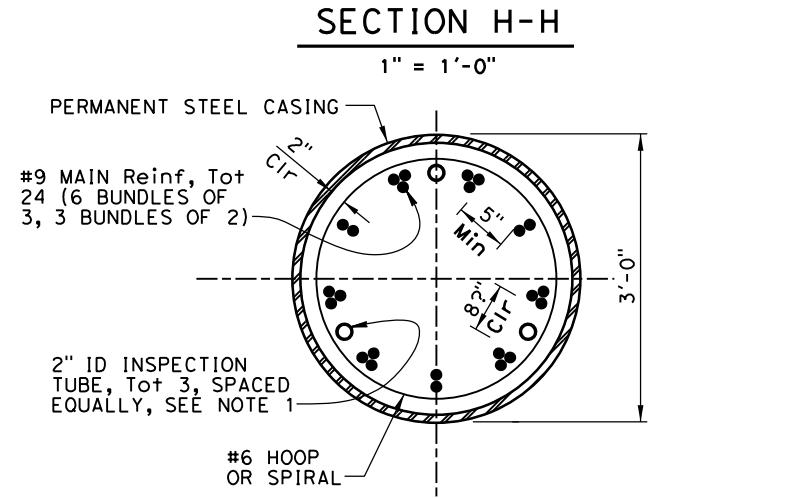
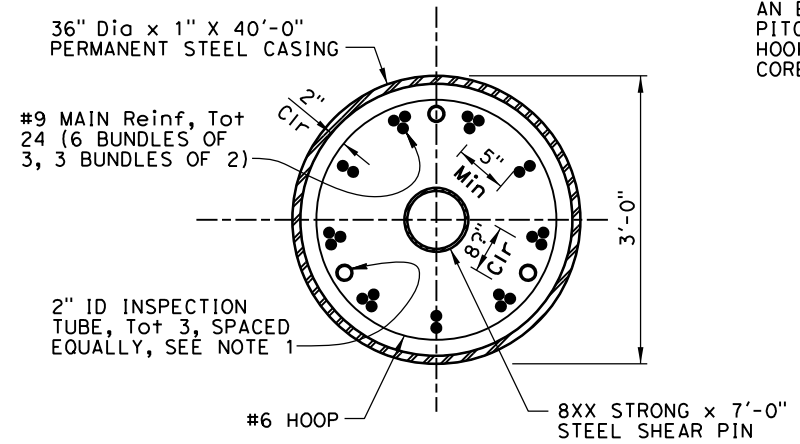
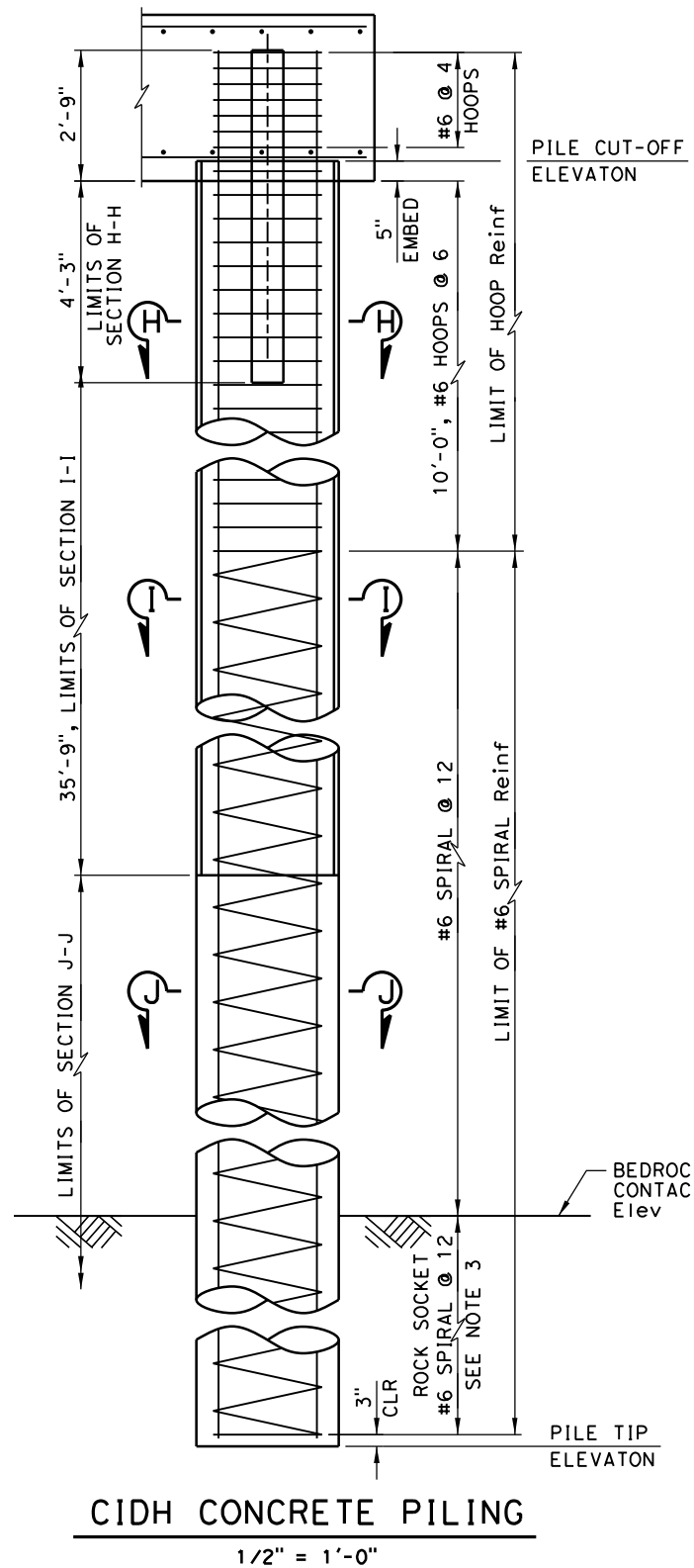


**ROOF SLAB - PARTIAL PLAN**  
1/2" = 1'-0"

**ROOF AND INVERT  
SLAB REINFORCEMENT**  
SCALE: AS SHOWN

REVISOR	DATE	<p>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.</p> <p>PROJECT DESCRIPTION</p>	<p>CALCULATED/ DESIGNED BY D. VANG</p>		<p>REGISTERED STRUCTURAL ENGINEER</p>	<p>PLANS SUBMITTAL DATE</p>	<p><b>MGE ENGINEERING, INC.</b></p> <p>7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com</p>			<p>USERNAME =&gt; kaiwang</p>
			<p>CHECKED BY</p>		<p>PLANS APPROVAL DATE</p>	<p>7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com</p>				<p>CADD FILENAME =&gt; P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn</p>
			<p>SUPERVISOR R. SENNETT</p>		<p>MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</p>	<p>SHEET NAME</p>				<p>CONTRACT NO.</p>
			<p>DATE 11/15/2019</p>		<p>RELATIVE BORDER SCALE IS IN INCHES</p>	<p>SHEET NO.</p>				<p>TOTAL SHEETS</p>
<p>BORDER LAST REVISED 9/9/2015</p>										<p>UC-9</p>
<p>LAST REVISION</p>										<p>DATE PLOTTED =&gt; 11/15/2019</p>
<p>TIME PLOTTED =&gt; 9:18:59 AM</p>										

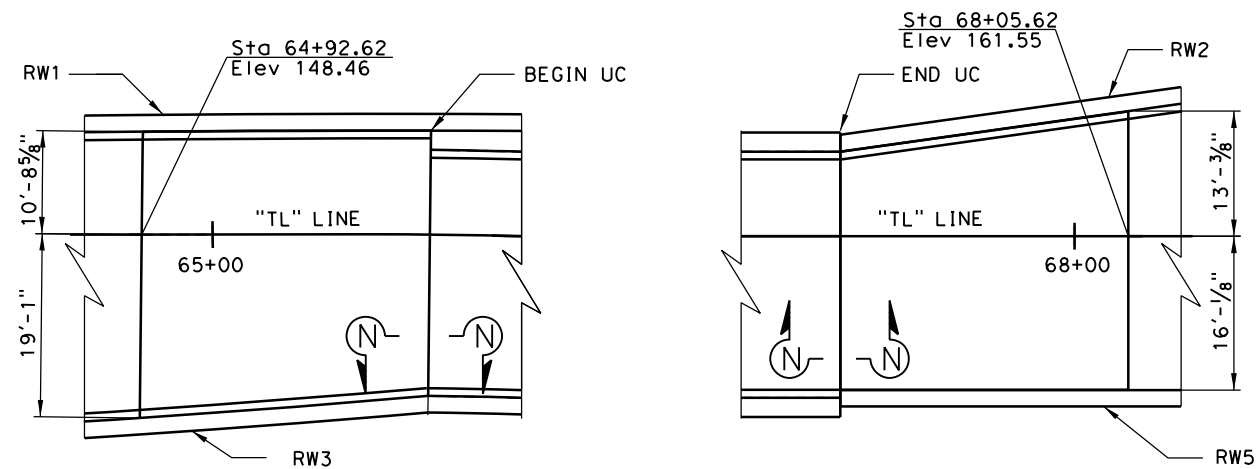




- NOTES:**
- INSPECTION TUBE NOT REQUIRED FOR PILES CONSTRUCTED IN DRY OR DEWATERED HOLES.
  - PROVIDE TEMPORARY CASING AS NECESSARY TO CONSTRUCT PILES.
  - SEE "PILE DATA TABLE" ON THE "FOUNDATION PLAN" SHEET.
  - FOR PILE TIP ELEVATIONS, SEE "FOUNDATION PLAN" SHEET.

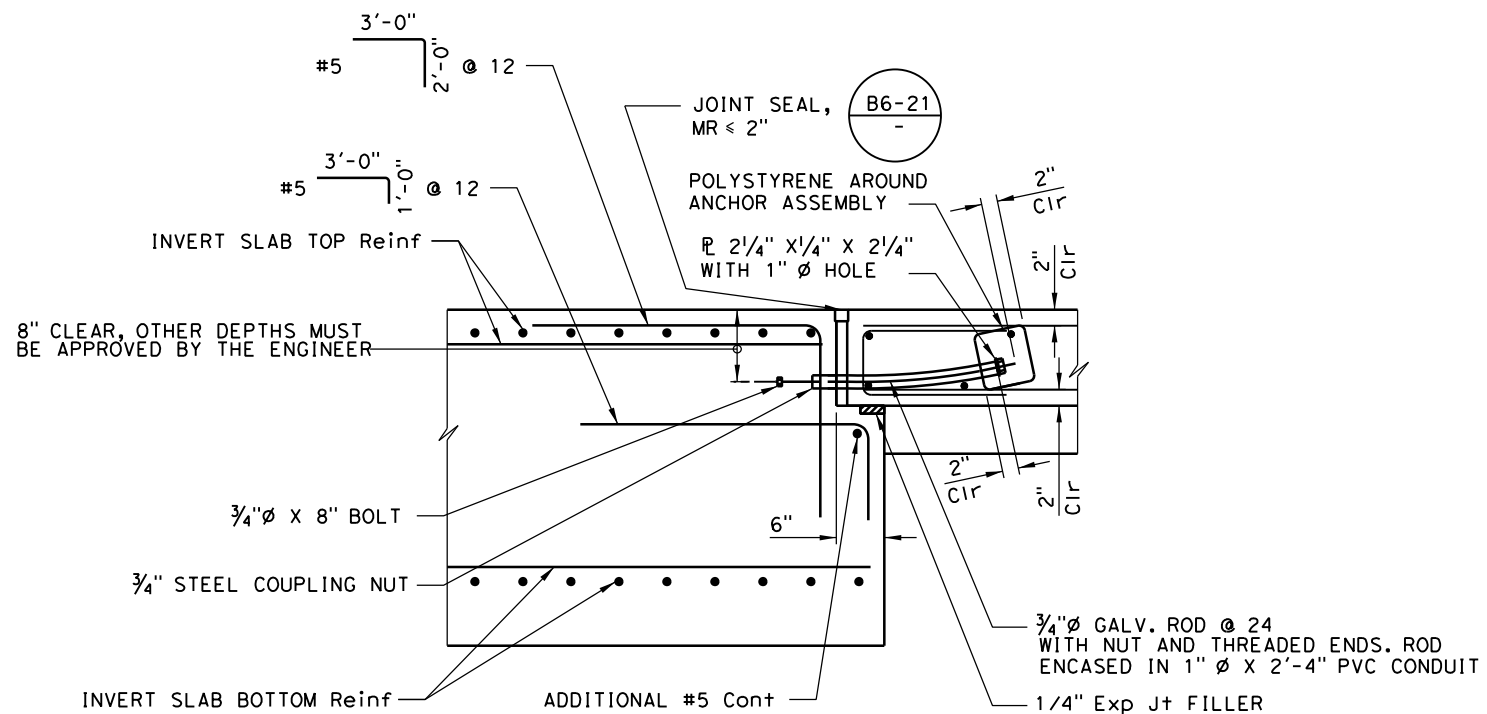
**PILE DETAILS**  
SCALE: AS SHOWN

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C. PROJECT DESCRIPTION	CALCULATED/ DESIGNED BY D. VANG		REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE		7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel.dgn
			CHECKED BY R. SENNETT		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE					CONTRACT NO.
			SUPERVISOR R. SENNETT		REGISTERED STRUCTURAL ENGINEER	PLANS APPROVAL DATE					SHEET NAME UC-10
BORDER LAST REVISED 9/9/2015			DATE 11/15/2019		MGE ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	RELATIVE BORDER SCALE IS IN INCHES				LAST REVISION 11/15/2019	DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:27:45 PM



**PLAN**




1" = 10'



**SECTION N-N**

NO SCALE

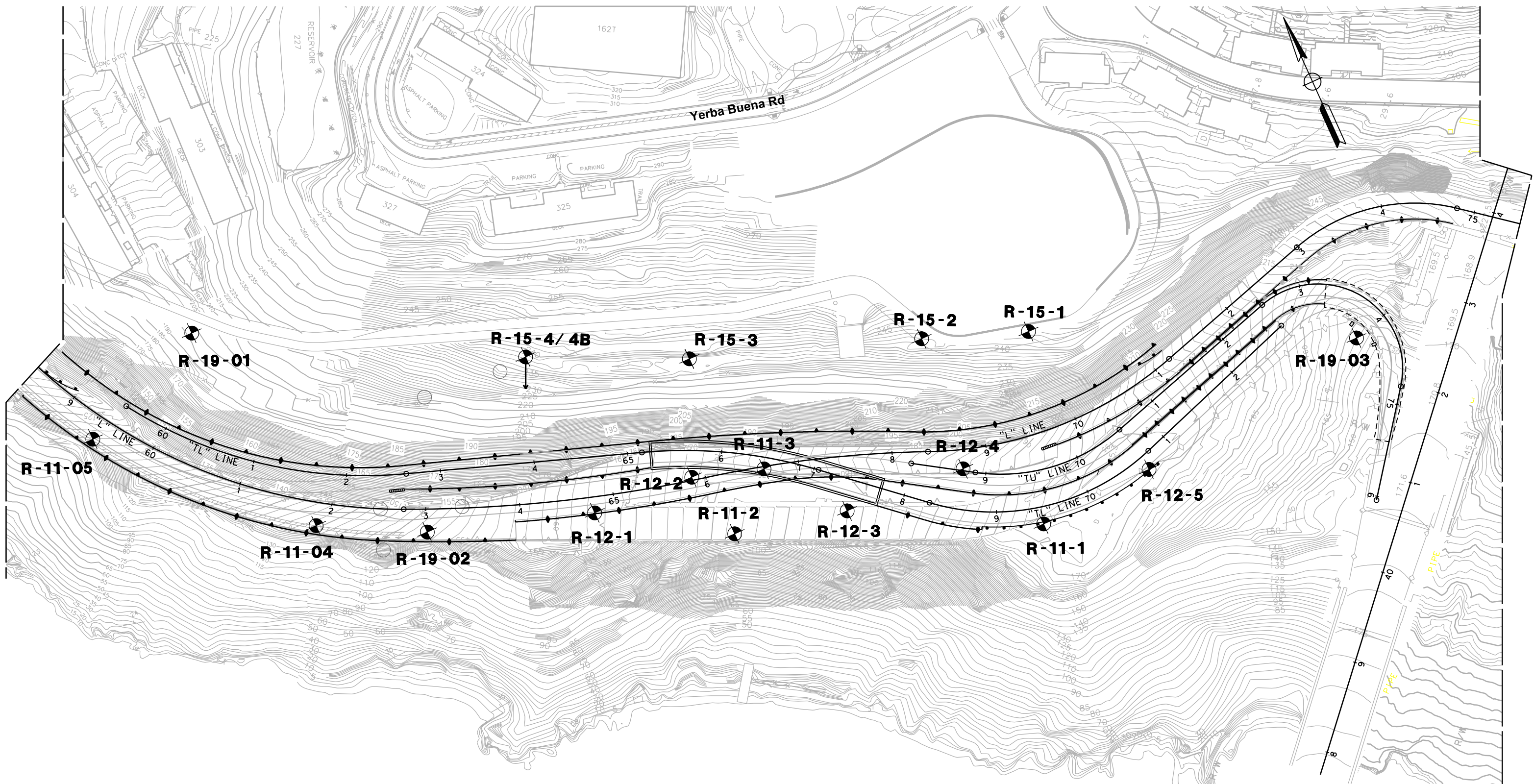
**NOTE:**

REFER TO STANDARD PLANS ,  AND  FOR DETAILS NOT SHOWN.

**STRUCTURE APPROACH  
TYPE N(30)**  
SCALE: AS SHOWN

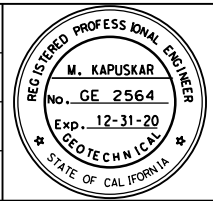


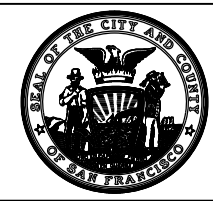
P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn

REVISIONS	PROJECT DESCRIPTION	CALCULATED/DESIGNED BY	REGISTERED PROFESSIONAL ENGINEER	MGE ENGINEERING, INC.	SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY	SEAL OF THE CITY AND COUNTY OF SAN FRANCISCO	USERNAME => Peter
	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.	D. VANG	DANNY C. VANG No. 56143 Exp. 12/31/2020 STRUCTURAL STATE OF CALIFORNIA	7415 GREENHAVEN DRIVE, SUITE 100 SACRAMENTO, CA 95831 (916) 421-1000 (PHONE) (916) 421-1002 (FAX) www.mgeeng.com			CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tunnel\Tunnel - ALL Sheets.dgn
		CHECKED BY	REGISTERED STRUCTURAL ENGINEER	PLANS SUBMITTAL DATE			CONTRACT NO.
		SUPERVISOR		PLANS APPROVAL DATE			SHEET NAME
		R. SENNETT					SHEET NO.
		DATE					TOTAL SHEETS
		11/15/2019					UC-11
BORDER LAST REVISED 9/9/2015		RELATIVE BORDER SCALE IS IN INCHES		0 1 2 3		LAST REVISION	
						DATE PLOTTED => 11/15/2019	
						TIME PLOTTED => 2:30:14 PM	

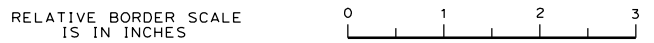


R-XX-01 BORING - SEE LOG OF TEST BORING SHEETS

**LOG OF TEST BORINGS**  
**1 OF 5**  
 SCALE: 1" = 50'

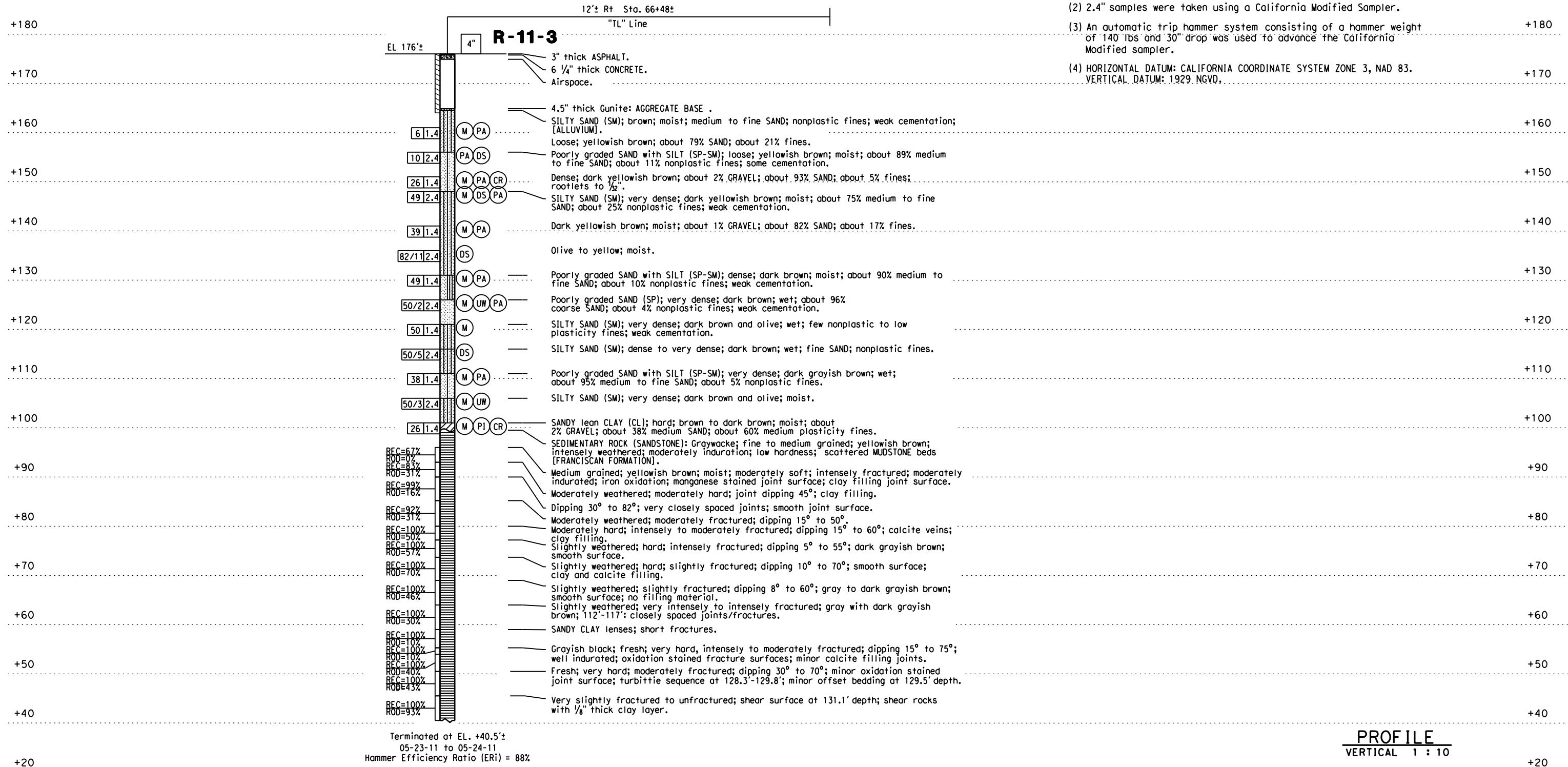
REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C. PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE			07/27/19	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eorthmech.com			USERNAME => kaiwang		
			DRAWN BY: B. AMBRIZ		REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE					CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Turn		
			CHECKED BY: M. KAPUSKAR		PLANS APPROVAL DATE	EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.				CONTRACT NO.		
		APPROVED BY: M. KAPUSKAR								SHEET NAME	SHEET NO.	TOTAL SHEETS
										UC-12		
										LAST REVISION	DATE PLOTTED => 11/15/2019	
										1-20-19	TIME PLOTTED => 10:36:02 AM	

BORDER LAST REVISED 1/20/2019



**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.

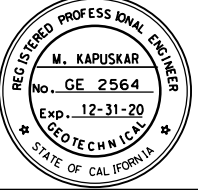



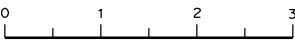


PROFILE  
VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET UC-12

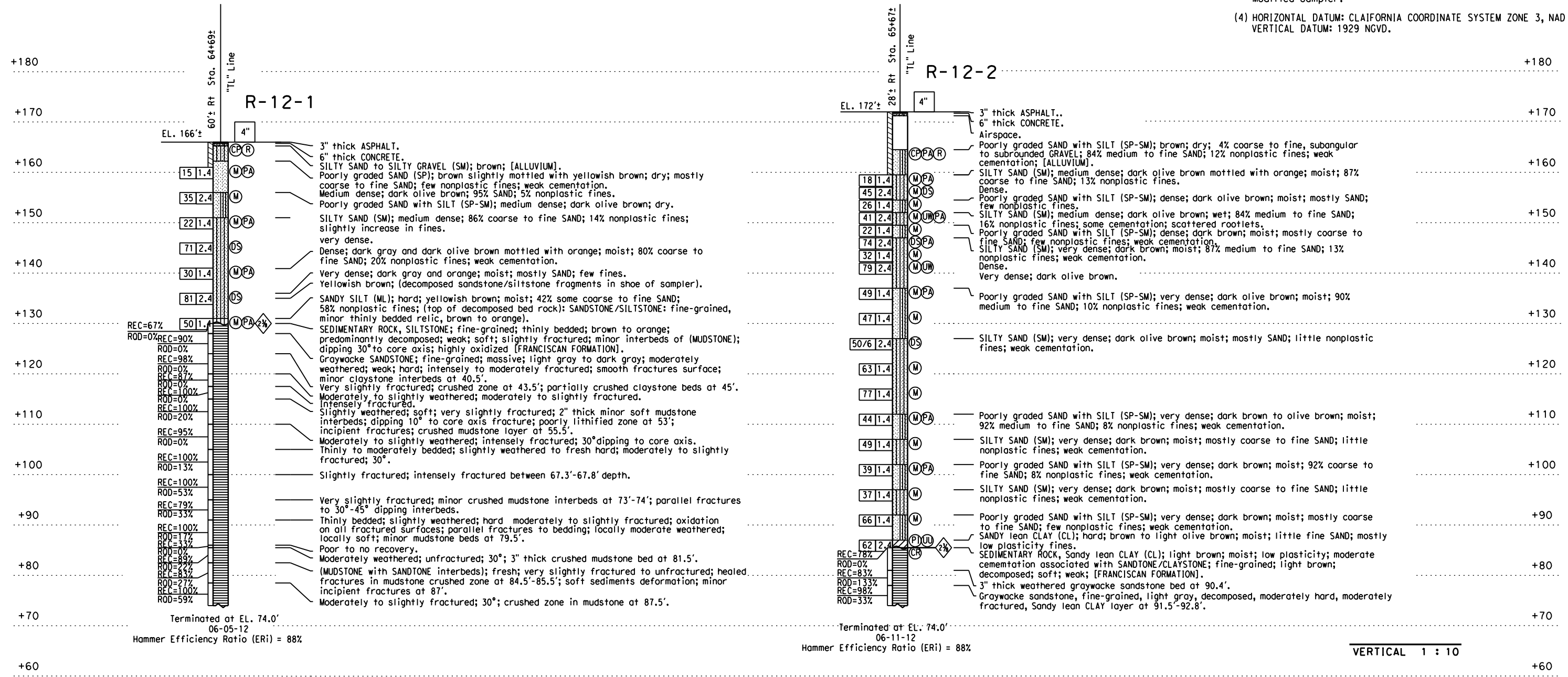
**LOG OF TEST BORINGS**  
2 of 5

G. BUTLER, J. CASTLE, M. HOSHIYAMA  
FIELD INVESTIGATION BY:

REVISED BY  DATE REVISED  	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.</b>	DESIGNED BY: J. CASTLE  DRAWN BY: K. THANT  CHECKED BY: A. KORKOS  APPROVED BY: M. KAPUSKAR		 07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eearthmech.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Turn CONTRACT NO.  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">SHEET NAME</td> <td style="width: 33%;">SHEET NO.</td> <td style="width: 33%;">TOTAL SHEETS</td> </tr> <tr> <td style="text-align: center;">UC-13</td> <td></td> <td></td> </tr> </table>	SHEET NAME	SHEET NO.	TOTAL SHEETS	UC-13		
SHEET NAME	SHEET NO.	TOTAL SHEETS												
UC-13														
BORDER LAST REVISED 1/20/2019		RELATIVE BORDER SCALE IS IN INCHES 		EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		LAST REVISION 1-20-19		DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:33:51 PM						

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



VERTICAL 1 : 10

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET UC-12

**LOG OF TEST BORINGS**  
**3 of 5**

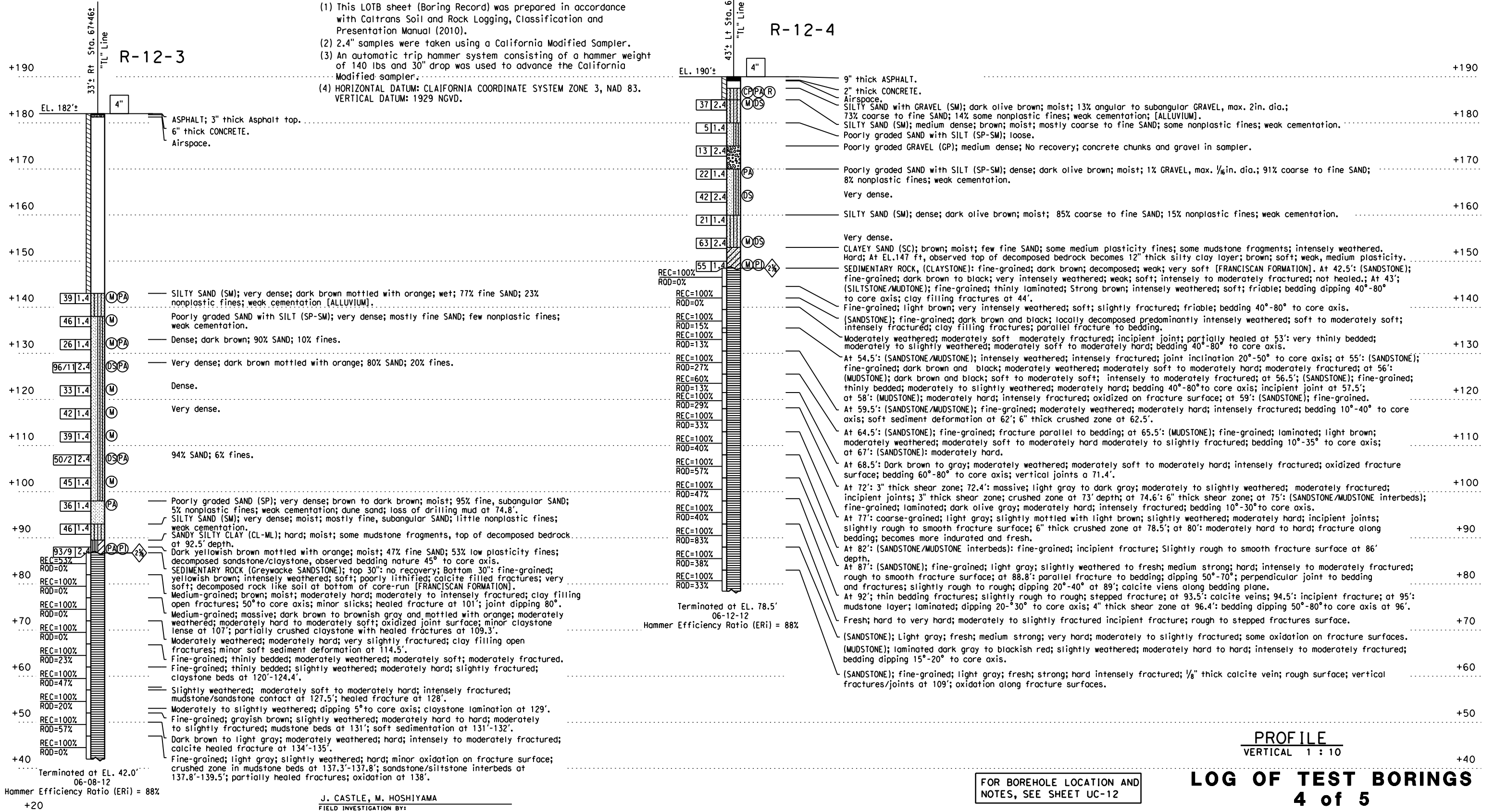
G. BUTLER, J. CASTLE  
FIELD INVESTIGATION BY:

REVISED BY DATE REVISED PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.	DESIGNED BY: J. CASTLE DRAWN BY: K. THANT CHECKED BY: A. KORKOS APPROVED BY: M. KAPUSKAR			07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.earthtech.com			USERNAME => kaiwang CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Tun CONTRACT NO. SHEET NAME UC-14 SHEET NO. TOTAL SHEETS LAST REVISION DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:33:09 PM
--	---	--	--	--	--	--	--	---

BORDER LAST REVISED 1/20/2019



- NOTES:**
- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
  - (2) 2.4" samples were taken using a California Modified Sampler.
  - (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
  - (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83. VERTICAL DATUM: 1929 NGVD.



PROFILE  
 VERTICAL 1 : 10

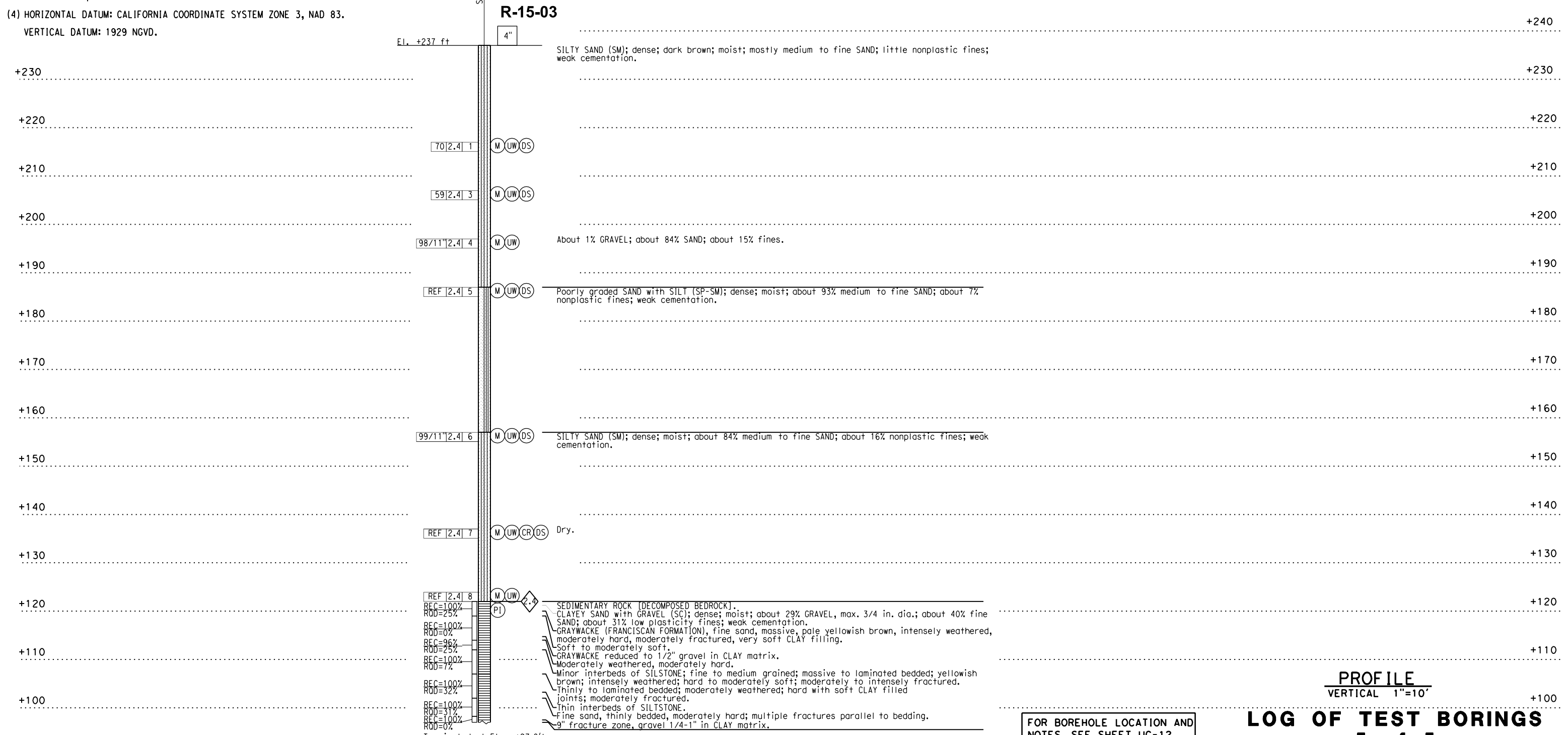
**LOG OF TEST BORINGS**  
**4 of 5**

FOR BOREHOLE LOCATION AND NOTES, SEE SHEET UC-12

REVISED BY	DATE REVISED	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.  PROJECT DESCRIPTION	DESIGNED BY: J. CASTLE		 07/27/19 REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE	3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eartthmech.com		USERNAME => kaiwang
			CHECKED BY: A. KORKOS					CONTRACT NO.
			APPROVED BY: M. KAPUSKAR					PLANS APPROVAL DATE
BORDER LAST REVISED 1/20/2019			RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3		SHEET NAME UC-15 SHEET NO. TOTAL SHEETS			DATE PLOTTED => 11/15/2019 TIME PLOTTED => 3:32:43 PM

**NOTES:**

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (2) 2.4" samples were taken using a California Modified Sampler.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs and 30" drop was used to advance the California Modified sampler.
- (4) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM ZONE 3, NAD 83.  
VERTICAL DATUM: 1929 NGVD.



J. CASTLE, T. MAR  
FIELD INVESTIGATION BY:

Terminated at Elev. +97.0±  
8-15-15 to 8-18-15  
Hammer Efficiency Ratio (ERi) = ~80%

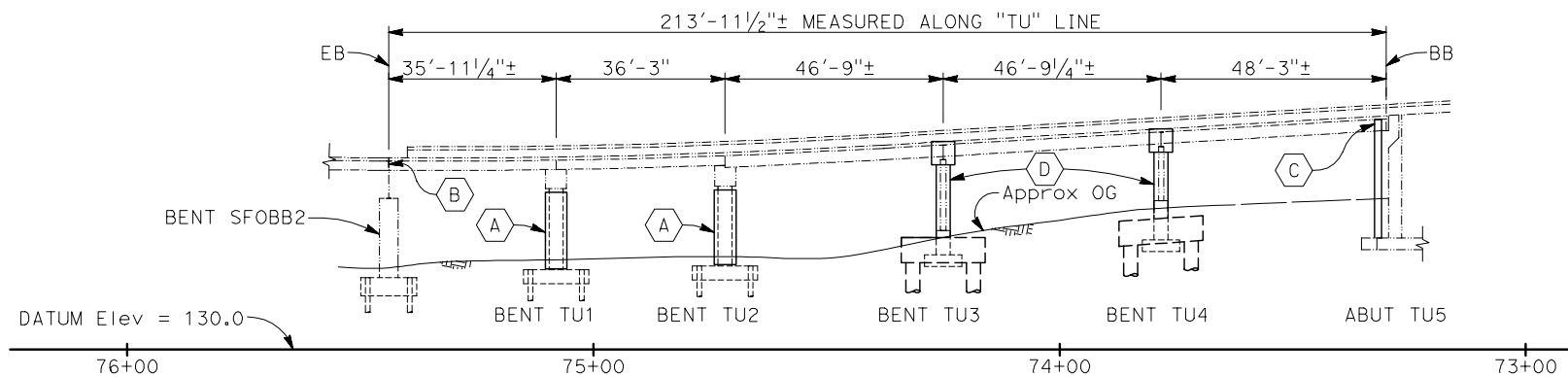
FOR BOREHOLE LOCATION AND NOTES, SEE SHEET UC-12

PROFILE  
VERTICAL 1"=10'

**LOG OF TEST BORINGS**  
5 of 5

REVISED BY		DATE REVISED		DESIGNED BY: J. CASTLE			07/27/19						USERNAME => kaiwang		
PROJECT DESCRIPTION		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT TREASURE ISLAND ROAD U.C.		DRAWN BY: B. AMBRIZ			REGISTERED GEOTECHNICAL ENGINEER PLANS SUBMITTAL DATE		3541 INVESTMENT BLVD, STE #4 HAYWARD, CA 94545 (510) 562-8833 (PHONE) (510) 562-8858 (FAX) www.eearthmech.com		CADD FILENAME => P:\521 YBI Retaining Walls\06 CAD\Structure\Turn		CONTRACT NO.		
BORDER LAST REVISED 1/20/2019				CHECKED BY: C.T. YANG		PLANS APPROVAL DATE				SHEET NAME		SHEET NO.		TOTAL SHEETS	
				APPROVED BY: M. KAPUSKAR		<i>EMI SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</i>				UC-16					
										LAST REVISION		DATE PLOTTED => 11/15/2019		TIME PLOTTED => 3:40:51 PM	

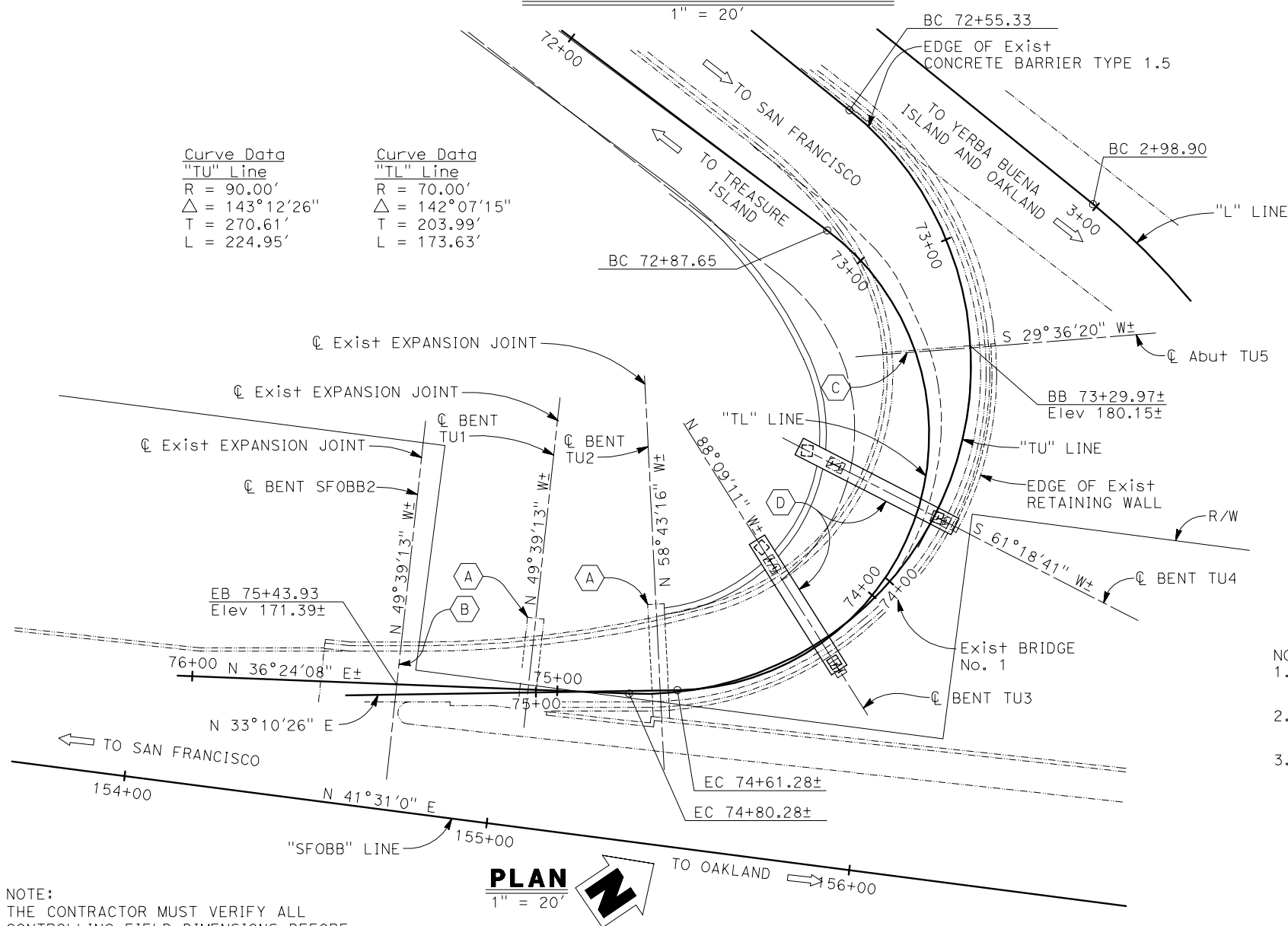
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT  
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY



**DEVELOPED ELEVATION**

1" = 20'

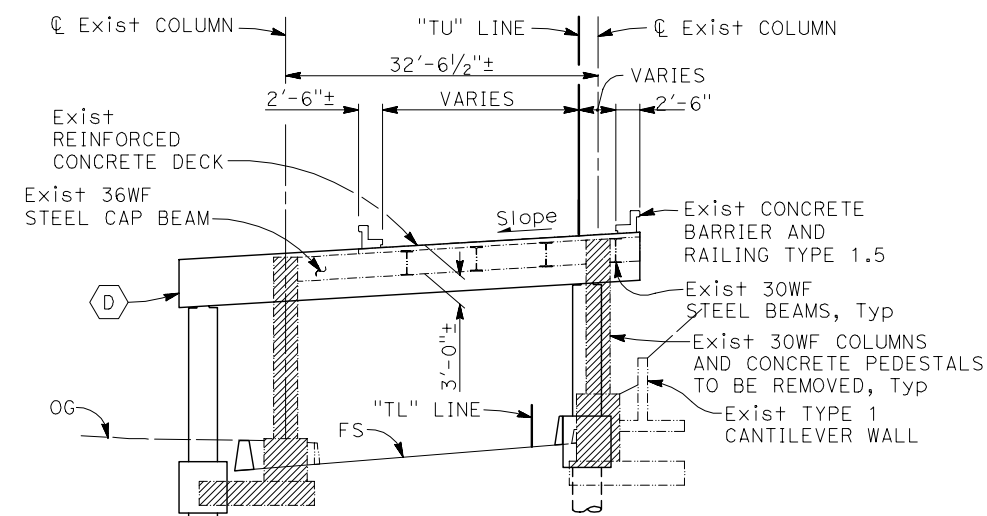
Curve Data "TU" Line	Curve Data "TL" Line
R = 90.00'	R = 70.00'
Δ = 143°12'26"	Δ = 142°07'15"
T = 270.61'	T = 203.99'
L = 224.95'	L = 173.63'



**PLAN**

1" = 20'

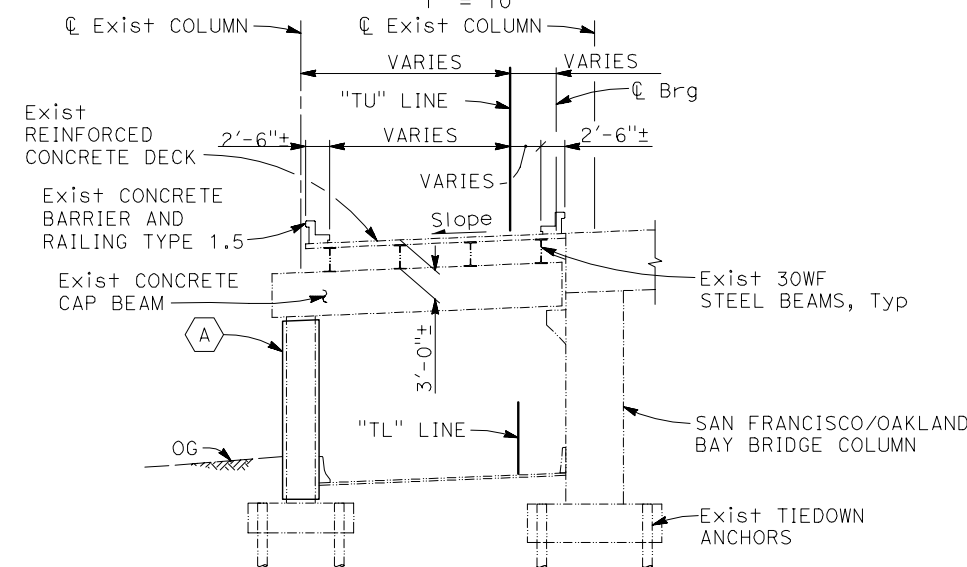
NOTE:  
THE CONTRACTOR MUST VERIFY ALL  
CONTROLLING FIELD DIMENSIONS BEFORE  
ORDERING OR FABRICATING ANY MATERIAL



(BENT TU4 SHOWN, BENT TU3 SIMILAR. SEE NOTE 3)

**TYPICAL SECTION (STEEL BENTS)**

1" = 10'



(BENT TU2 SHOWN, BENT TU1 SIMILAR. SEE NOTE 3)

**TYPICAL SECTION (REINFORCED CONCRETE BENTS)**

1" = 10'

NOTES:

- For "INDEX TO BRIDGE PLANS" and General Notes, see "GENERAL NOTES" sheet.
- No work is being done to the SFOBB structure. SFOBB column is shown for reference only.
- "TYPICAL SECTION" shown is looking downstation.

RETROFIT LEGEND:

- (A) Fiber reinforced polymer column casing
- (B) Seat extension
- (C) Abutment shear key and seat extension
- (D) New concrete columns, footings and bent cap

LEGEND:

- Indicates Existing Structure
- ▨ Indicates Bridge Removal (Portion)
- ⇒ Indicates Traffic Direction

PLAN CHECK SET/NOT FOR CONSTRUCTION(11/15/19)

<table border="1"> <tr> <th>REVISED BY</th> <th>DATE REVISED</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	REVISED BY	DATE REVISED							<p><b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b></p>	<p>DESIGNED BY A. RICHARDSON</p> <p>DRAWN BY S. HICKEY</p> <p>CHECKED BY</p> <p>APPROVED BY</p>		<p>REGISTERED CIVIL ENGINEER</p> <p>PLANS SUBMITTAL DATE</p> <p>PLANS APPROVAL DATE</p>	<p>1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com</p>			<p><b>BRIDGE No. 1 GENERAL PLAN</b></p> <p>BRIDGE NO. 34U0003 CONTRACT NO.</p> <p>USERNAME =&gt; JJD FILE =&gt; 2011109BR1_S1.dwg DATE PLOTTED =&gt; 15-Nov-2019 TIME PLOTTED =&gt; 12:54</p> <table border="1"> <tr> <td>SHEET</td> <td>OF</td> </tr> <tr> <td>1</td> <td>11</td> </tr> <tr> <td colspan="2">LAST REVISION</td> </tr> <tr> <td>06-22-12</td> <td></td> </tr> </table>	SHEET	OF	1	11	LAST REVISION		06-22-12	
REVISED BY	DATE REVISED																							
SHEET	OF																							
1	11																							
LAST REVISION																								
06-22-12																								
<p>BORDER LAST REVISED 6/20/2012</p>		<p>RELATIVE BORDER SCALE IS IN INCHES</p>		<p>W:\2011\109\BR1.dwg_1\2011109BR1_S1.dwg</p>		<p>(20111091S1) 2011109</p>																		



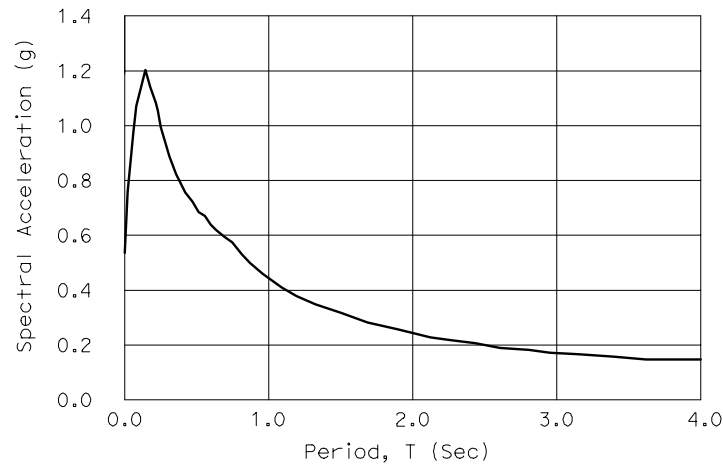
**GENERAL NOTES**  
**LOAD & RESISTANCE FACTOR DESIGN**

DESIGN: AASHTO LRFD Bridge Design Specifications, 6th Edition and Caltrans Amendments, preface dated January, 2014

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC) Version 1.7 dated November, 2014

DEAD LOAD: Includes 25 psf for future wearing surface.

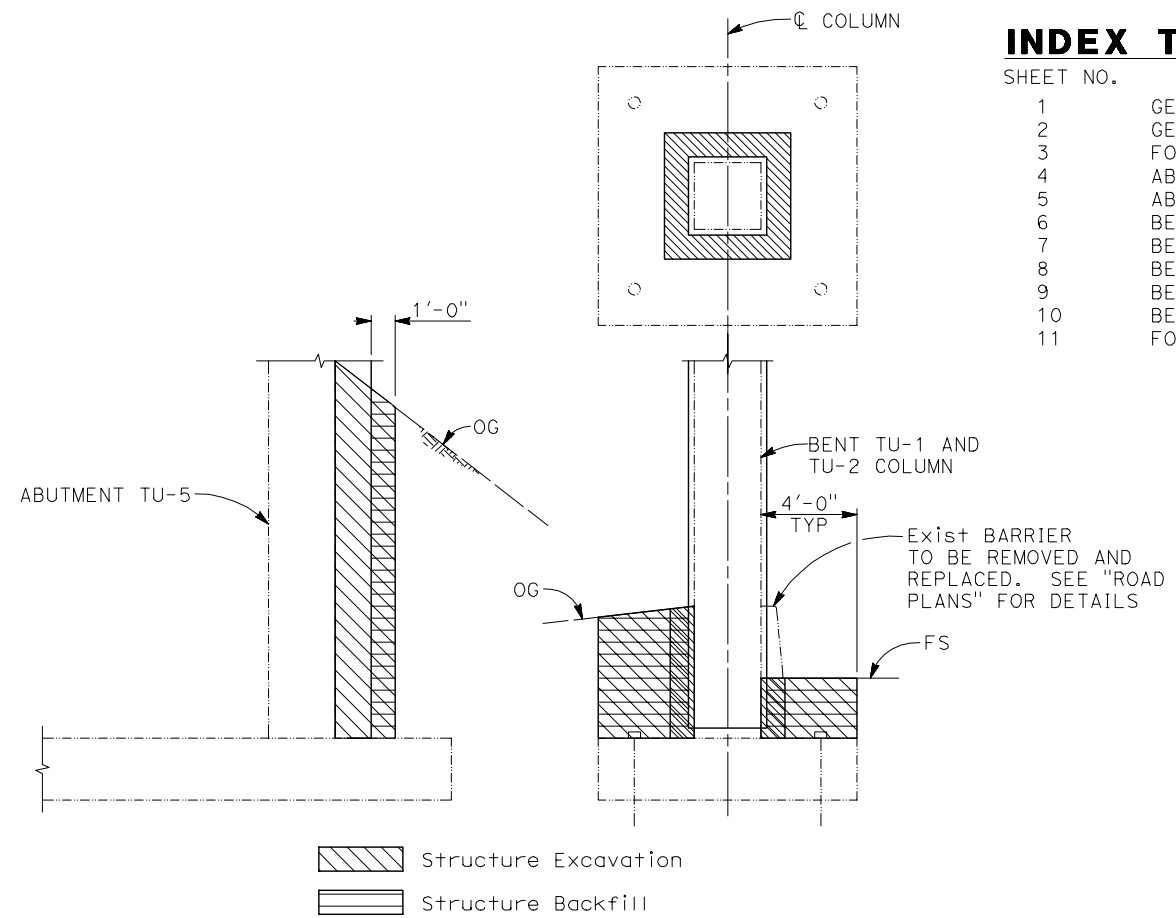
SEISMIC LOAD:



**ARS DESIGN CURVE**  
NO SCALE

**INDEX TO BRIDGE PLANS**

SHEET NO.	TITLE
1	GENERAL PLAN
2	GENERAL NOTES
3	FOUNDATION PLAN
4	ABUTMENT TU-5 LAYOUT
5	ABUTMENT DETAILS
6	BENT SFOBB2 SEAT EXTENSION
7	BENT TU1 & TU2 COLUMN CASING
8	BENT TU3 LAYOUT
9	BENT TU4 LAYOUT
10	BENT DETAILS
11	FOOTING AND PILE DETAILS

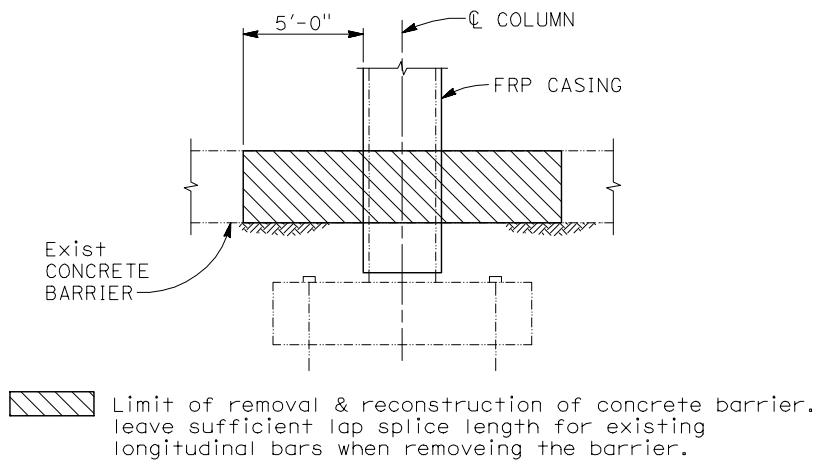


**LIMITS OF PAYMENT EXCAVATION AND BACKFILL**  
NO SCALE

CONCRETE:  $f_y = 60 \text{ ksi}$   
 $f'_c = 4.0 \text{ ksi}$

EXISTING CONCRETE: (assumed for evaluation of existing structure)  
 Previous Retrofit  $f_y = 60000 \text{ psi}$   $f'_c = 4000 \text{ psi}$       Original Structure  $f_y = 21600 \text{ psi}$   $f'_c = 3000 \text{ psi}$

EXISTING STRUCTURAL STEEL: ASTM A36  $f_y = 36 \text{ ksi}$   
(assumed for evaluation of existing structure)



**LIMITS OF PAYMENT FOR CONCRETE BARRIER**  
NO SCALE

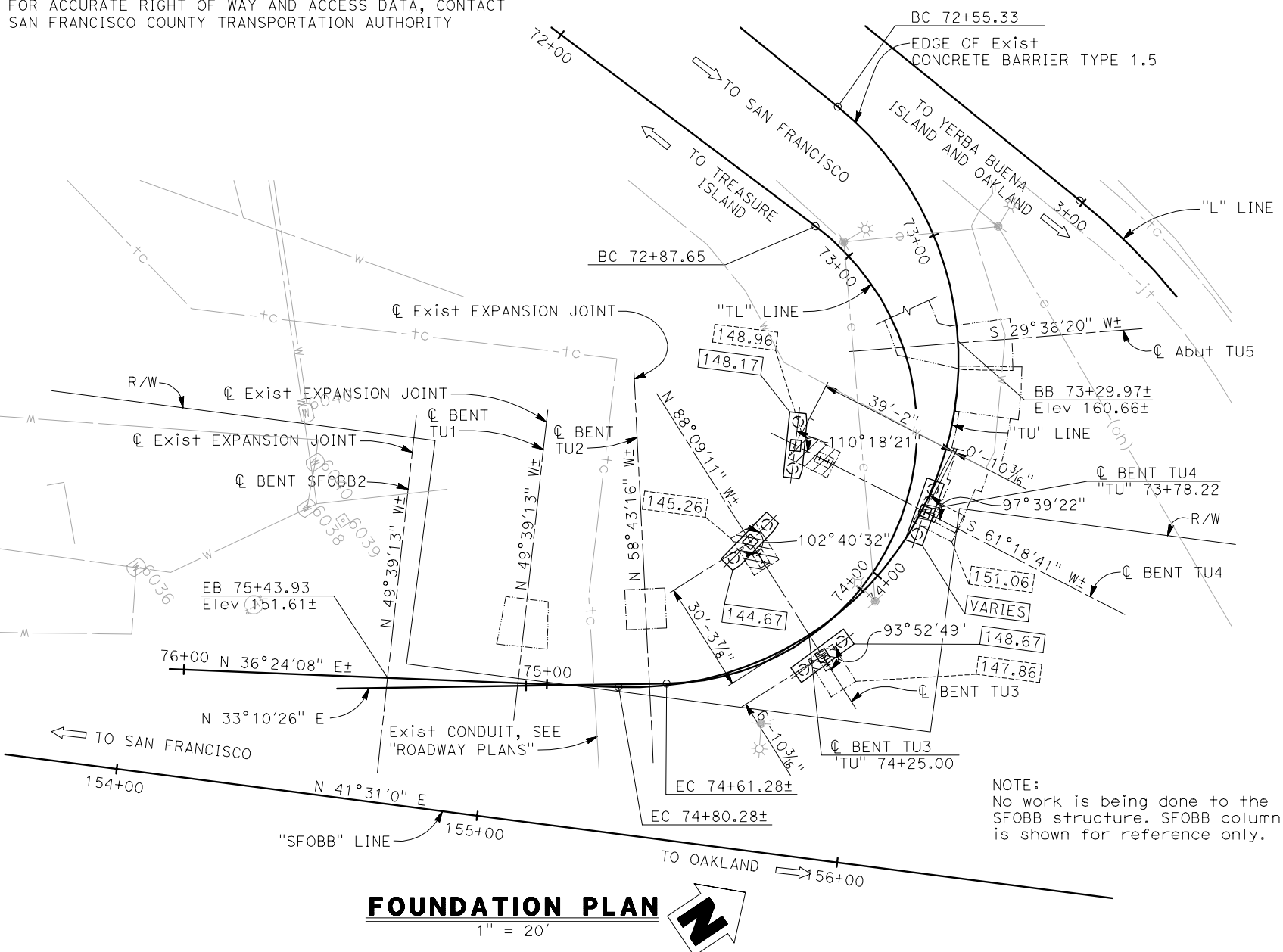
PLAN CHECK SET/NOT FOR CONSTRUCTION (11/15/19)

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

DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE				<b>BRIDGE No. 1</b> <b>GENERAL NOTES</b>
DRAWN BY S. HICKEY		PLANS APPROVAL DATE	1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com				
CHECKED BY	APPROVED BY	WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		USERNAME => JJD FILE => 2011109BR1_S2.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:54		SHEET OF 2 11	LAST REVISION 06-22-12
YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT		RELATIVE BORDER SCALE IS IN INCHES				(20111091S2) 2011109	

W:\2011\2011109\BR1.dwg\_1\2011109BR1\_S2.dwg

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT  
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY



- NOTES:
- No work is being done to the SFOBB structure.
  - Verify utility locations with "ROADWAY PLANS".
  - For Bent TU4 bottom of footing elevation, see "BENT TU4 LAYOUT" sheet.
  - There is a vertical datum difference between the project datum (NAVD 88) and the existing footing elevations shown on the as-built drawings dated 1964. The following conversion was used in design:  
Project Elev = As-built Elev -2.94'

- LEGEND:
- Indicates Bottom of Footing Elevation
  - Indicates Bottom of Existing Footing Elevation, see Note 4
  - ▨ Indicates Bridge Removal (Portion)
  - Indicates Pile

Project Datum:  
Vertical Datum NAVD 88  
Vertical Datum NAD 83

Location/Type	Pile Type	Nominal Resistance (kips)		Design Tip Elev (ft)	Specified Tip Elev (ft)
		Compression	Tension		
BENT TU3 WEST COLUMN	36" Dia CIDH	450	200	129 (a); 131 (b) 137 (c); 127 (d)	127
BENT TU3 EAST COLUMN	36" Dia CIDH	500	210	132 (a); 135 (b) 137 (c); 131 (d)	131
BENT TU4 WEST COLUMN	36" Dia CIDH	440	210	132 (a); 134 (b) 140 (c); 130 (d)	130
BENT TU4 EAST COLUMN	36" Dia CIDH	650	210	132 (a); 138 (b) 140 (c); 132 (d)	132


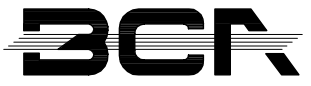


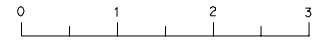
- NOTES:
- Design tip elevations for Bents are controlled by:  
(a) Compression, (b) Tension, (c) Settlement, (d) Lateral load.
  - The specified tip elevation shall not be raised.

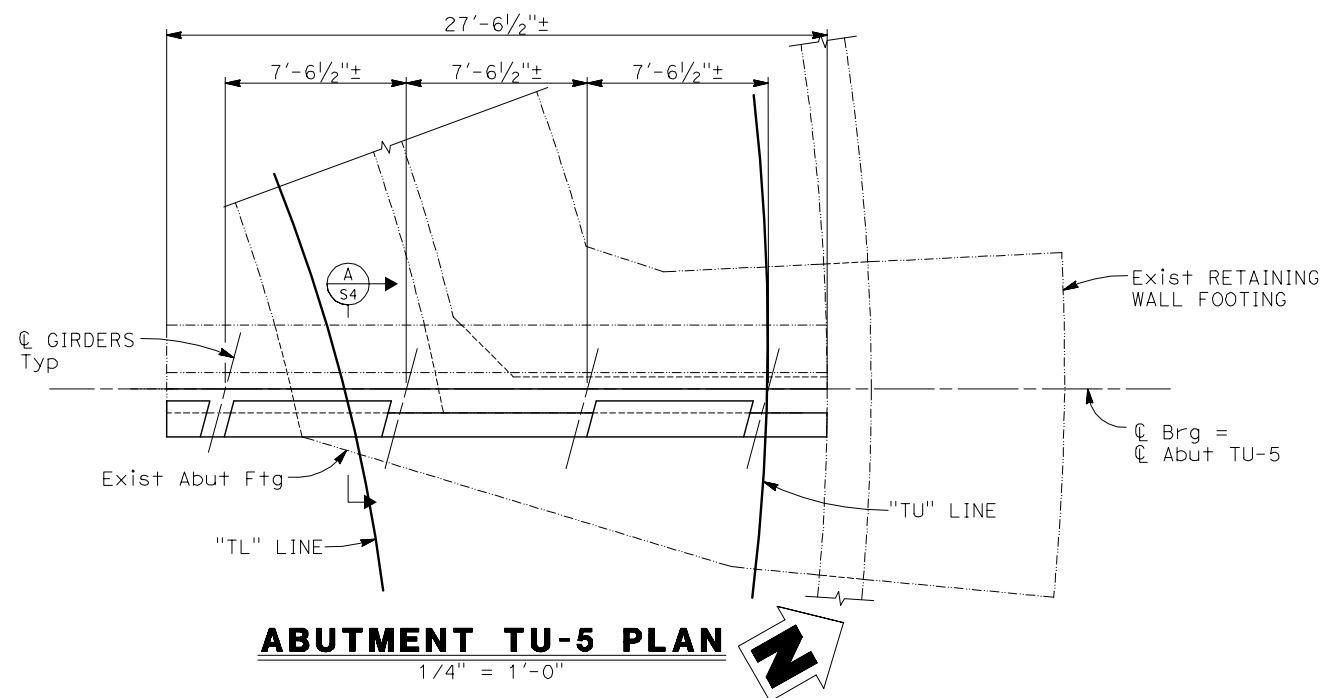
NOTE:  
No work is being done to the SFOBB structure. SFOBB column is shown for reference only.

**FOUNDATION PLAN**  
1" = 20'

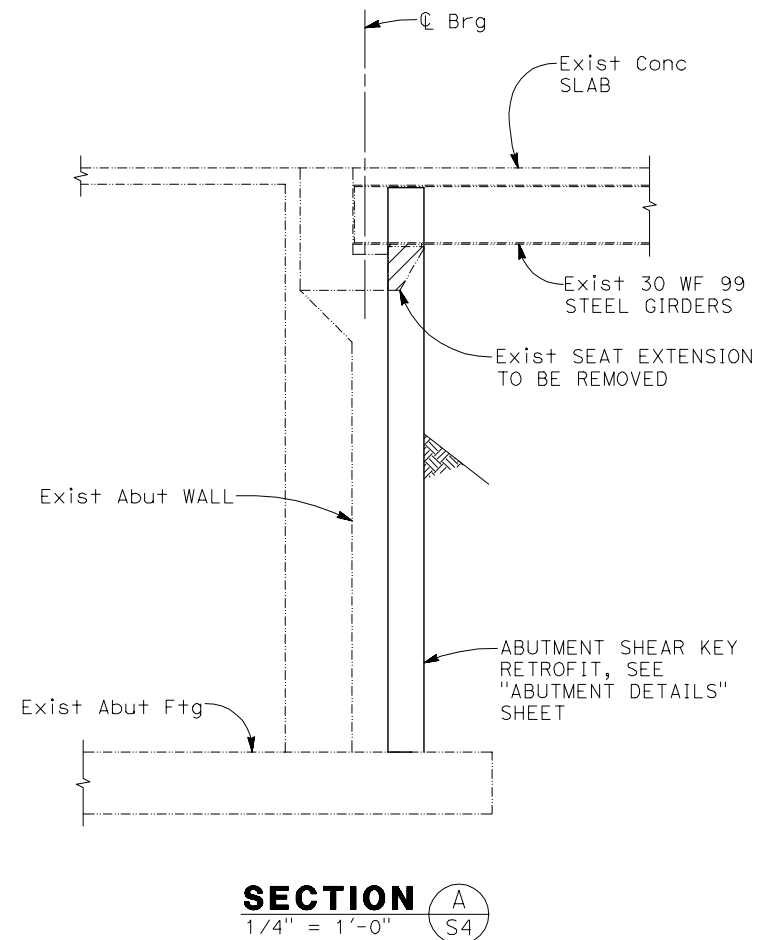
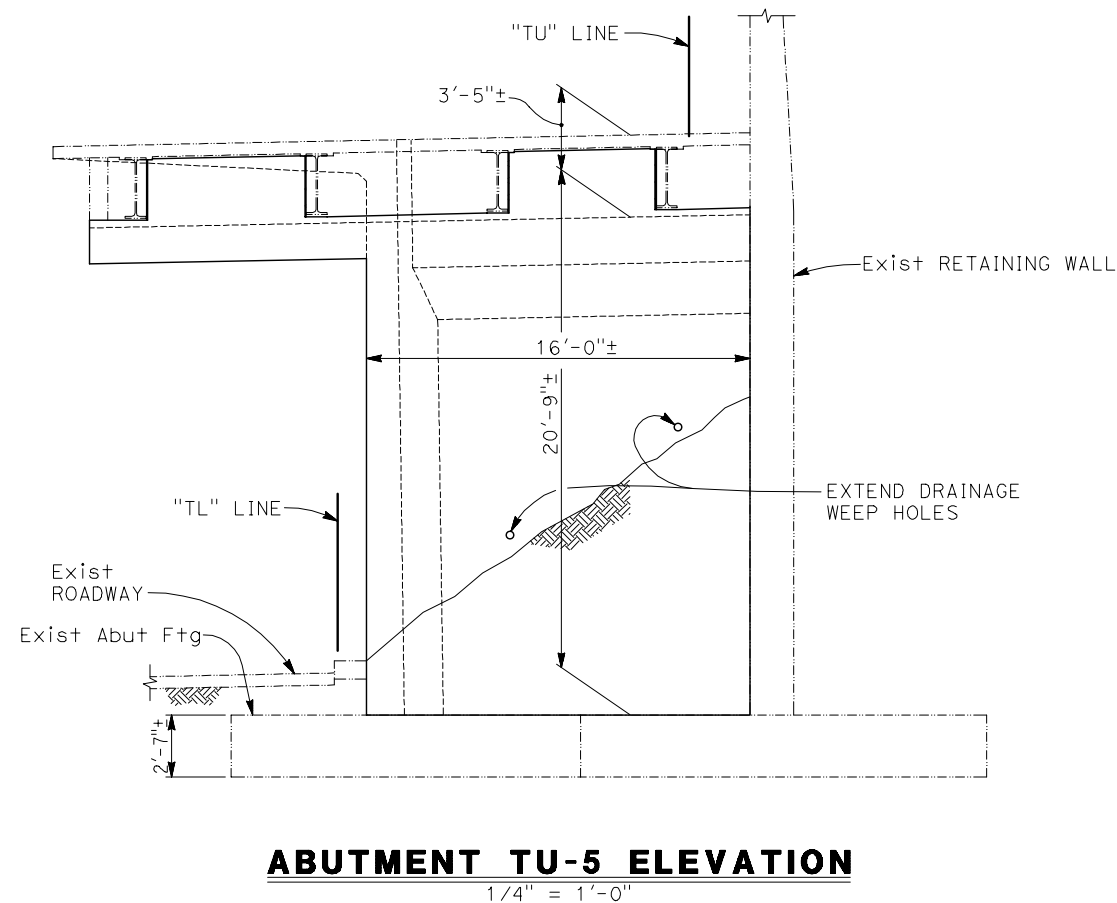
NOTE:  
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

PLAN CHECK SET/NOT FOR CONSTRUCTION(11/15/19)

DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE				<b>BRIDGE No. 1</b> <b>FOUNDATION PLAN</b>
DRAWN BY S. HICKEY		PLANS APPROVAL DATE	1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com				
APPROVED BY							USERNAME => JJD FILE => 2011109BR1_S3.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:55
PROJECT DESCRIPTION YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT		RELATIVE BORDER SCALE IS IN INCHES 		SHEET OF 3 11 LAST REVISION 06-22-12			



- LEGEND:
- Indicates Existing Structure
  - ▨ Indicates Existing Structure to be removed
  - ▩ Indicates Expanded Polystyrene

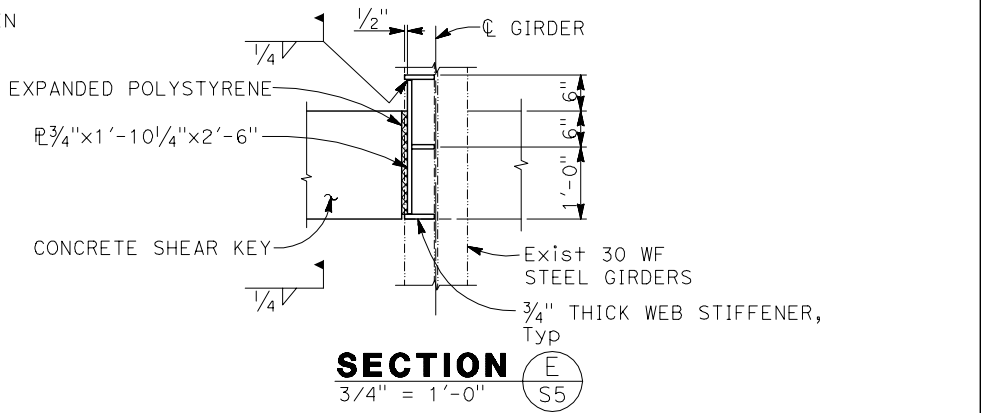
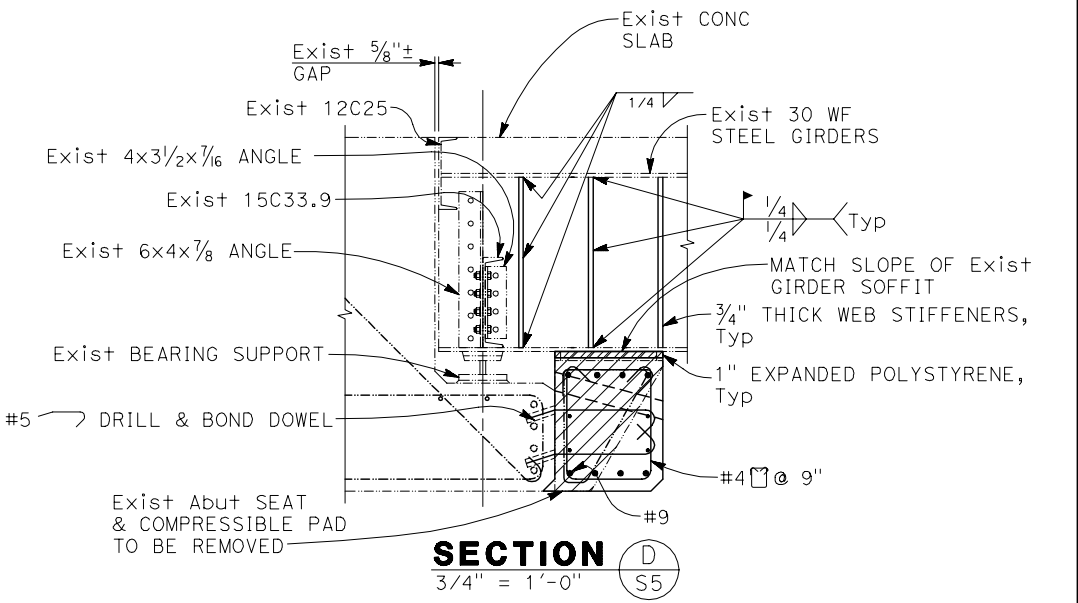
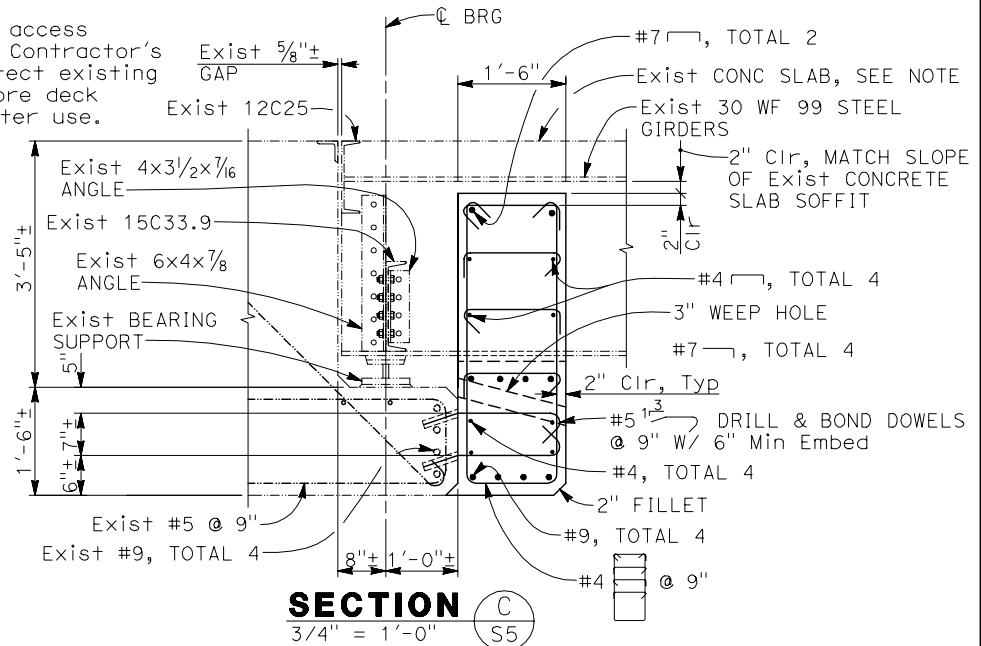
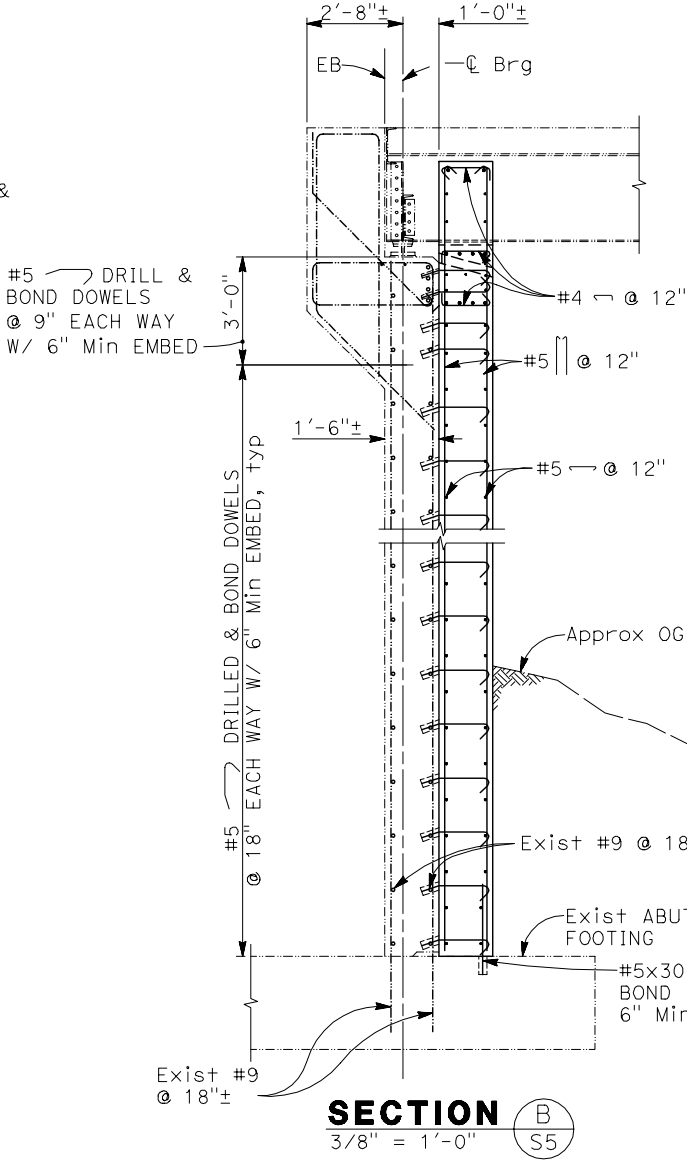
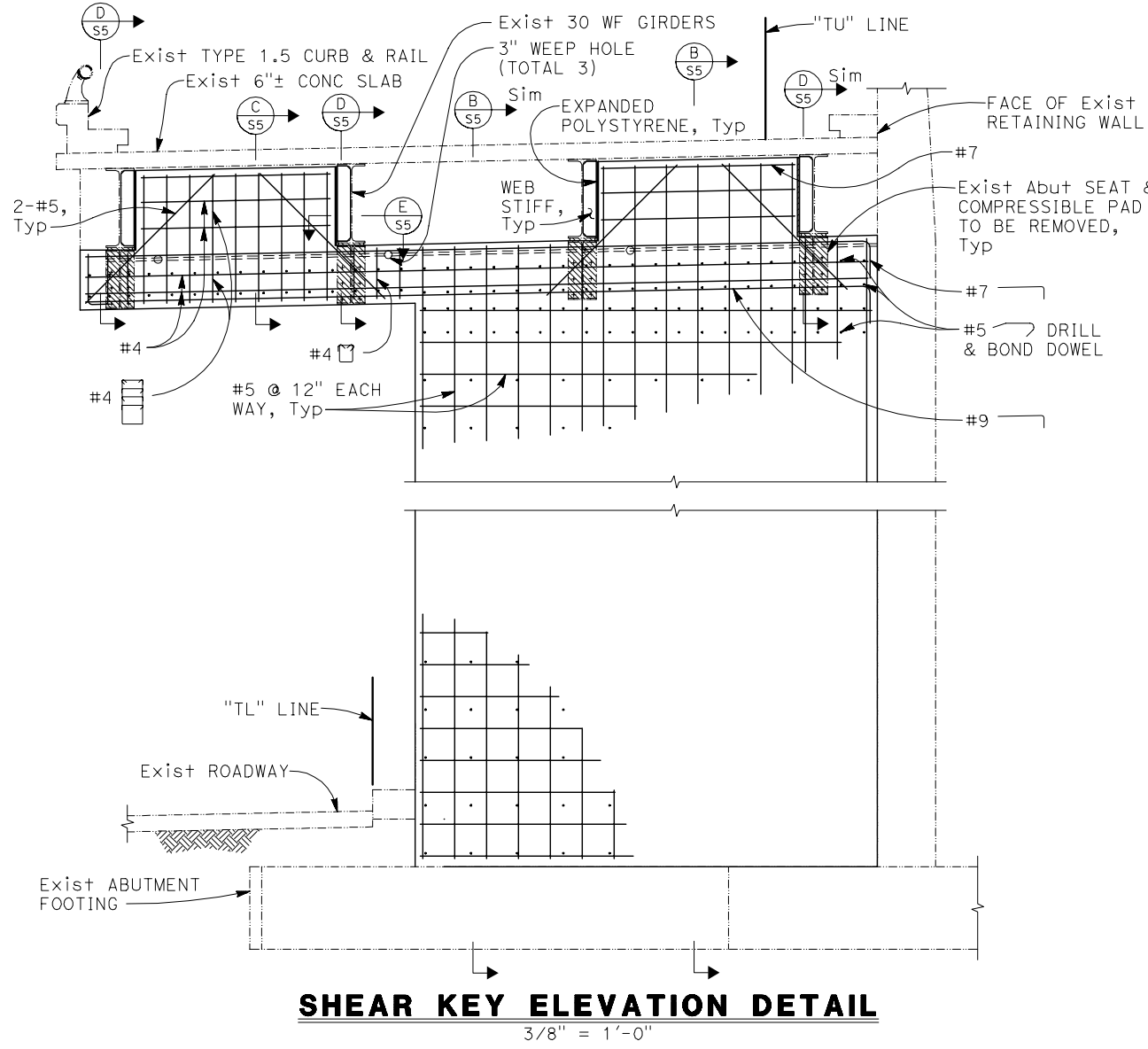


NOTE:  
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

PLAN CHECK SET/NOT FOR CONSTRUCTION (11/15/19)

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="font-size: small;">REVISED BY</th> <th style="font-size: small;">DATE REVISED</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	REVISED BY	DATE REVISED							<p><b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b></p>	<p>DESIGNED BY A. RICHARDSON DRAWN BY S. HICKEY CHECKED BY  APPROVED BY</p>		<p>REGISTERED CIVIL ENGINEER</p> <p>PLANS SUBMITTAL DATE</p> <p>PLANS APPROVAL DATE</p>	<p><b>BCR</b></p> <p>1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com</p>			<p><b>BRIDGE No. 1 ABUTMENT TU5 LAYOUT</b></p>
REVISED BY	DATE REVISED															
DISREGARD PRINTS BEARING EARLIER REVISION DATES		PROJECT DESCRIPTION		RELATIVE BORDER SCALE IS IN INCHES		0 1 2 3		BRIDGE NO. 34U0003	CONTRACT NO.							
BORDER LAST REVISED 6/20/2012								USERNAME => JJD FILE => 2011109BR1_S4.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:55	SHEET 4 OF 11 LAST REVISION 06-22-12							

NOTE:  
6" diameter access openings at Contractor's option. Protect existing reinf, restore deck concrete after use.



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

PLAN CHECK SET/NOT FOR CONSTRUCTION (11/15/19)

REVISED BY	DATE REVISED	PROJECT DESCRIPTION
		YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT

DESIGNED BY  
A. RICHARDSON

DRAWN BY  
S. HICKEY

CHECKED BY

APPROVED BY

REGISTERED CIVIL ENGINEER

PLANS SUBMITTAL DATE

PLANS APPROVAL DATE

WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

1111 Broadway, Suite 1510  
Oakland, California 94607  
510-625-9900  
(510) 625-9902 (FAX)  
www.biggsardosa.com



**BRIDGE No. 1**

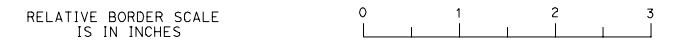
**ABUTMENT DETAILS**

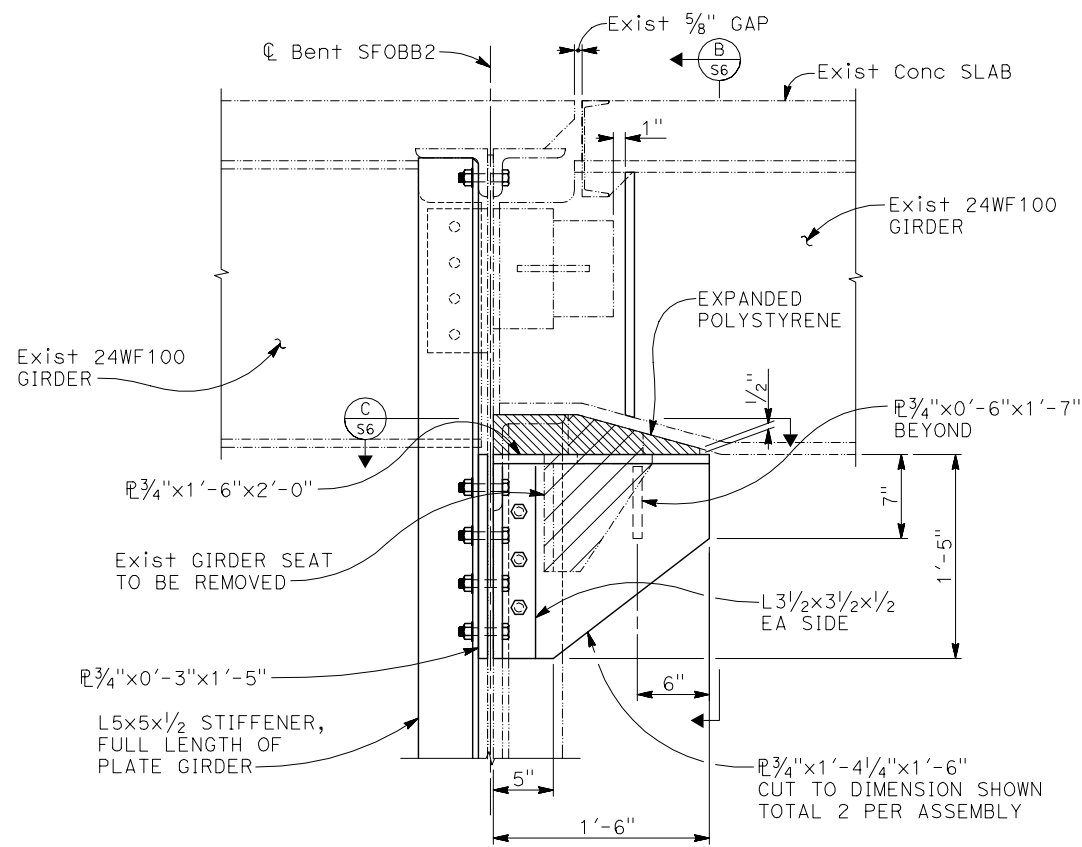
BRIDGE NO. 34U0003 CONTRACT NO.

USERNAME => JJD  
FILE => 2011109BR1\_S5.dwg  
DATE PLOTTED => 15-Nov-2019  
TIME PLOTTED => 12:55

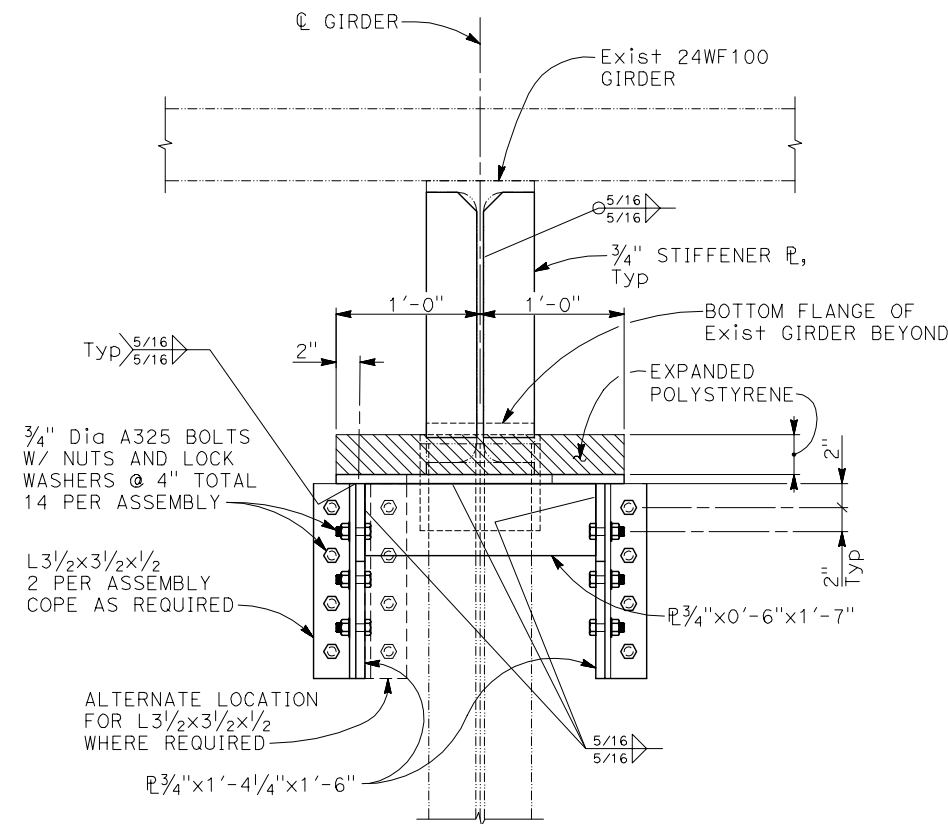
SHEET	OF
5	11
LAST REVISION	
06-22-12	

BORDER LAST REVISED 6/20/2012

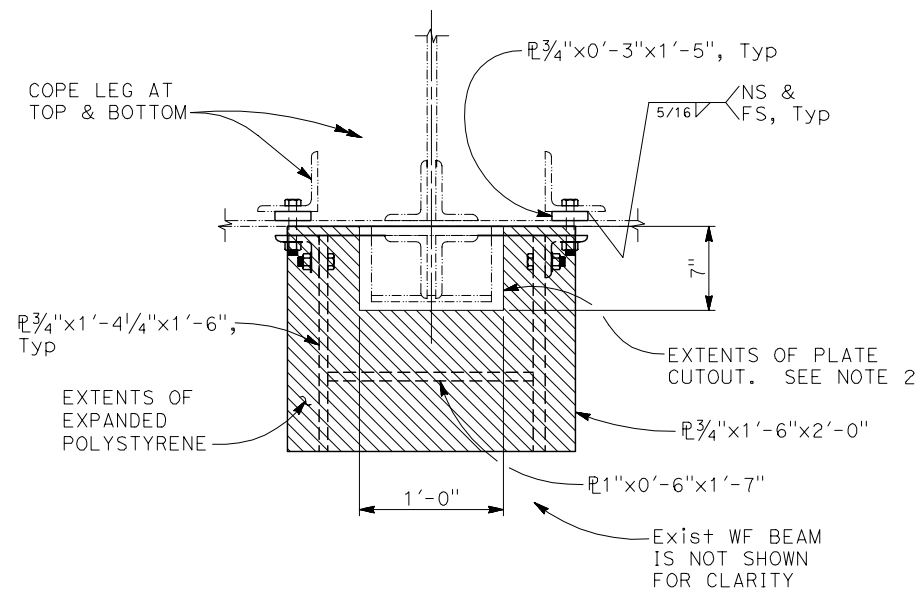




**SECTION A**  
1 1/2" = 1'-0" S6



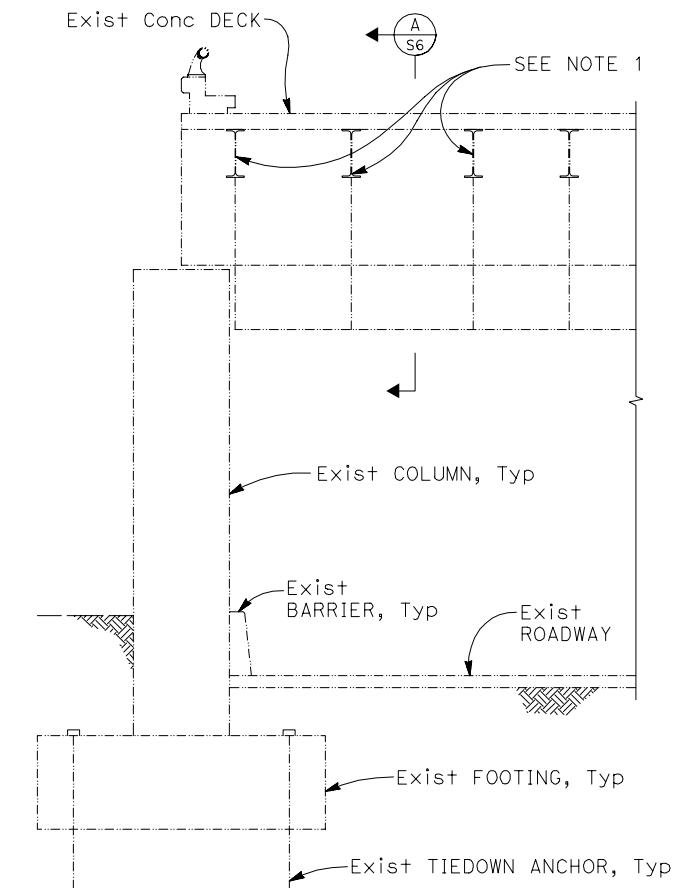
**SECTION B**  
1 1/2" = 1'-0" S6



**SECTION C**  
1 1/2" = 1'-0" S6

- NOTES:
- Existing Structure 1 steel girders on opposite side frame into existing SFOBB2 steel bent. The seat extension only applies to these three girders.
  - Adjust dimensions to clear existing seat.





- LEGEND:
- Indicates Existing Structure
  - ▨ Indicates Existing Structure to be removed
  - ▩ Indicates Expanded Polystyrene

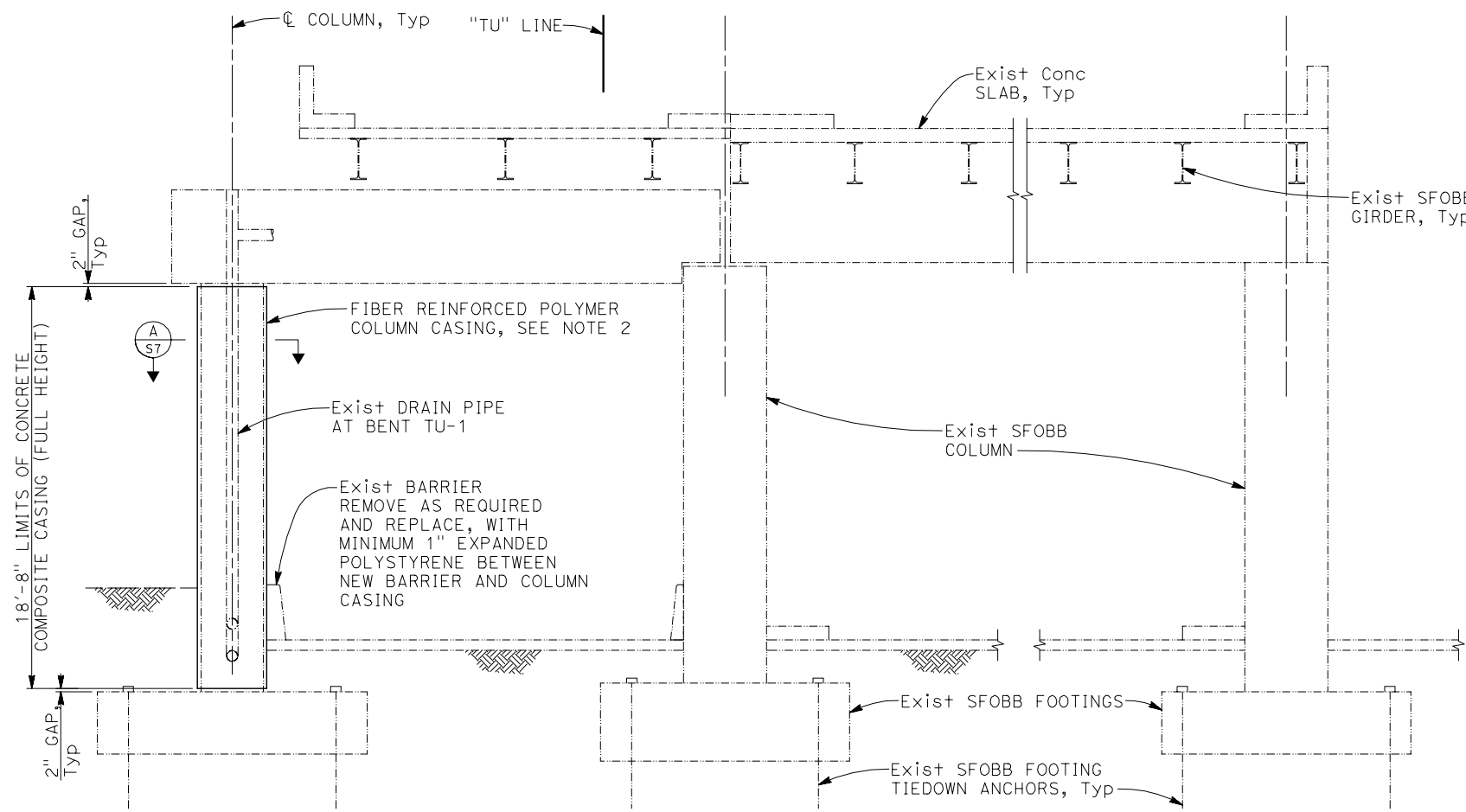


**SFOBB2 BENT ELEVATION**  
1/4" = 1'-0"

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

PLAN CHECK SET/NOT FOR CONSTRUCTION(11/15/19)

REVISED BY	DATE REVISED	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b>	DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE	 1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com			<b>BRIDGE No. 1</b>				
DISREGARD PRINTS BEARING EARLIER REVISION DATES			PROJECT DESCRIPTION		APPROVED BY	PLANS APPROVAL DATE				WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	BRIDGE NO. 34U0003	CONTRACT NO.	SHEET OF	6 11
BORDER LAST REVISED 6/20/2012			RELATIVE BORDER SCALE IS IN INCHES		0 1 2 3						USERNAME => JJD FILE => 2011109BR1_S6.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:55		LAST REVISION	06-22-12

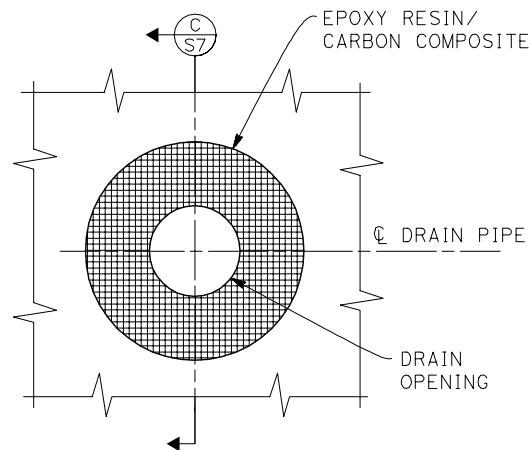


**BENT TU-1 & TU-2 ELEVATION**

1/4" = 1'-0"

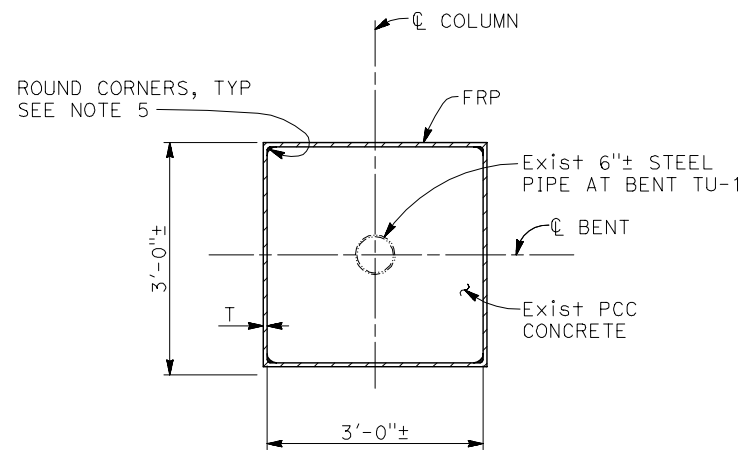
FRP COLUMN CASING DATA TABLE	
BENT	REQUIRED SHEAR STRENGTH*
TU-1 & TU-2	120 kips

\*Additional strength provided by FRP column casing



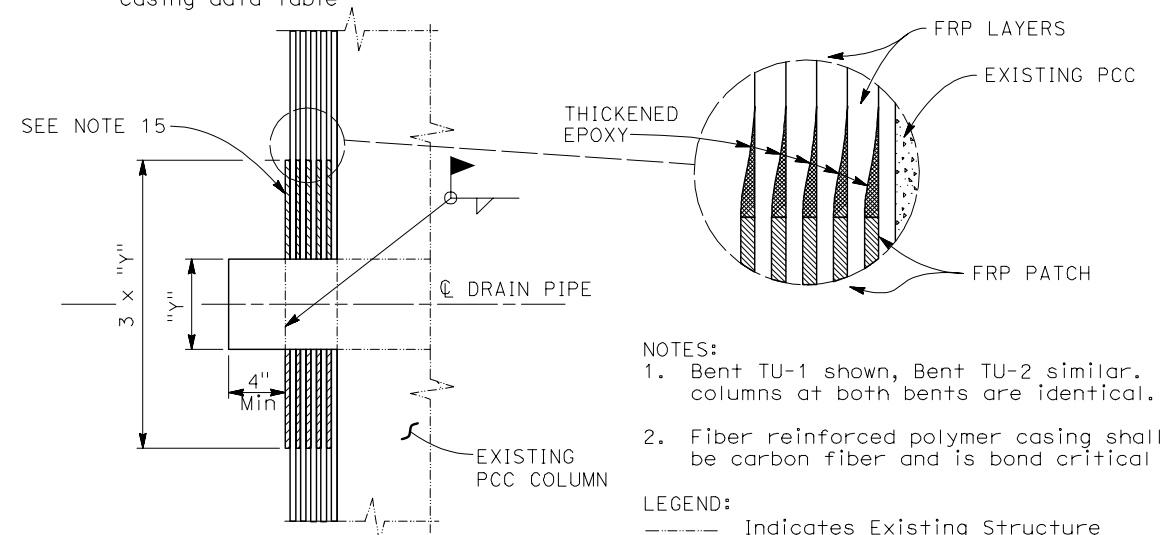
**CARBON OPENING**

NO SCALE



**SECTION A**

3/4" = 1'-0"



**SECTION C**

NO SCALE

- NOTES:
- Bent TU-1 shown, Bent TU-2 similar. The columns at both bents are identical.
  - Fiber reinforced polymer casing shall be carbon fiber and is bond critical

LEGEND:  
 - - - - - Indicates Existing Structure  
 T Denotes Minimum Number of Layers

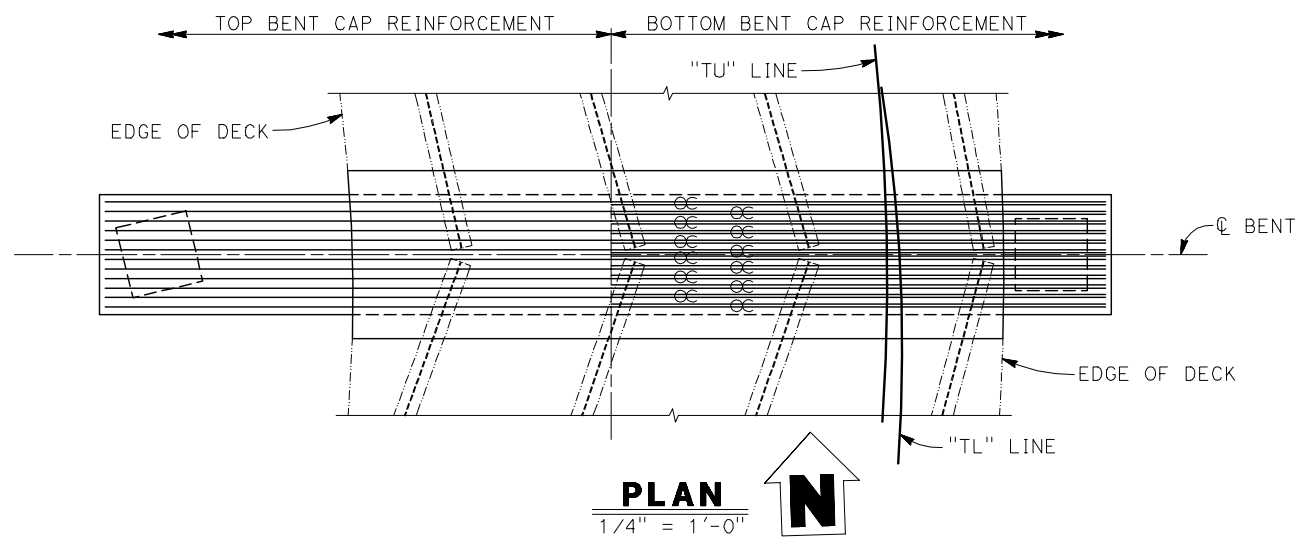
- CARBON FIBER NOTES:
- For all subsequent notes, surfaces shall be defined as the surface to receive the composite. Fabric refers to the unidirectional or bi-directional fiber. Fiber Reinforced Polymer (FRP) composite is Carbon fiber and Epoxy resin
  - All surfaces shall be prepared for bonding by means of abrasive blasting or grinding
  - All surfaces shall be cleaned by hand or by oil-free compressed air. All surfaces shall be free of moisture, oils, loose material, debris, or dust
  - All cutting of fabrics, mixing of epoxy, and wetting out of fabric and handling, shall be done in a manner to ensure that the composite materials are free of moisture, oils, debris or dust
  - Remove any sharp corners/edges to a 1/2" radius minimum
  - A primer coat of epoxy shall be applied to the surface and allowed to cure for a minimum of one hour
  - Surfaces shall be free of voids, protrusions, and sharp edges. Any voids or uneven surfaces shall be filled with a thickened epoxy
  - E-Glass or Carbon composite system used shall be selected from a list of Caltrans Prequalified composite systems
  - Fabric shall be completely saturated prior to application to the surface. No dry fiber placement is allowed, unless fabric used has removable backing or procedure has been approved by prequalification
  - The composite casing shall adhere firmly to the existing column surface
  - Detail/feather all fabric edges, including termination points, edges and seams with a thickened epoxy. Detailing/feathering shall extend a minimum of 6"
  - Each composite section shall be wrapped using continuous fabric not less than 2'-0" in height. All wraps of continuous weave shall be terminated a minimum of 12" past the starting point of the initial wrap. Subsequent wraps shall be started (butted) at the ending point of the last wrap
  - The casing thickness shall taper evenly over the full length of the transition zone
  - Existing column surfaces shall be straight or slightly convexed outward at all areas, otherwise, the surface shall be filled with thickened epoxy
  - Drainage opening reinforcement shall be the same fiber and resin material used for the column casing. Alternate continuous layer with local bi-axial weave patch at drainage opening
  - Required number of layers shall be determined by the Contractor based on provided casing data table

PLAN CHECK SET/NOT FOR CONSTRUCTION (11/15/19)

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

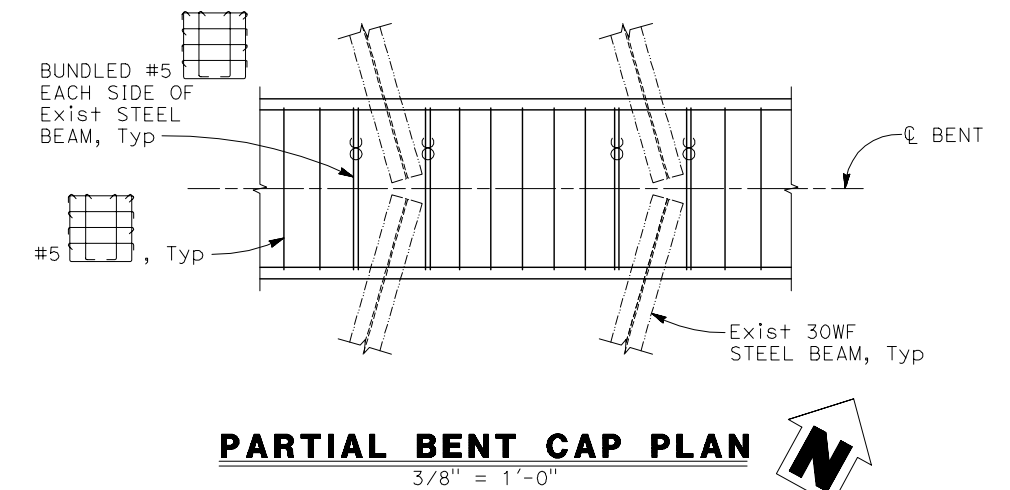
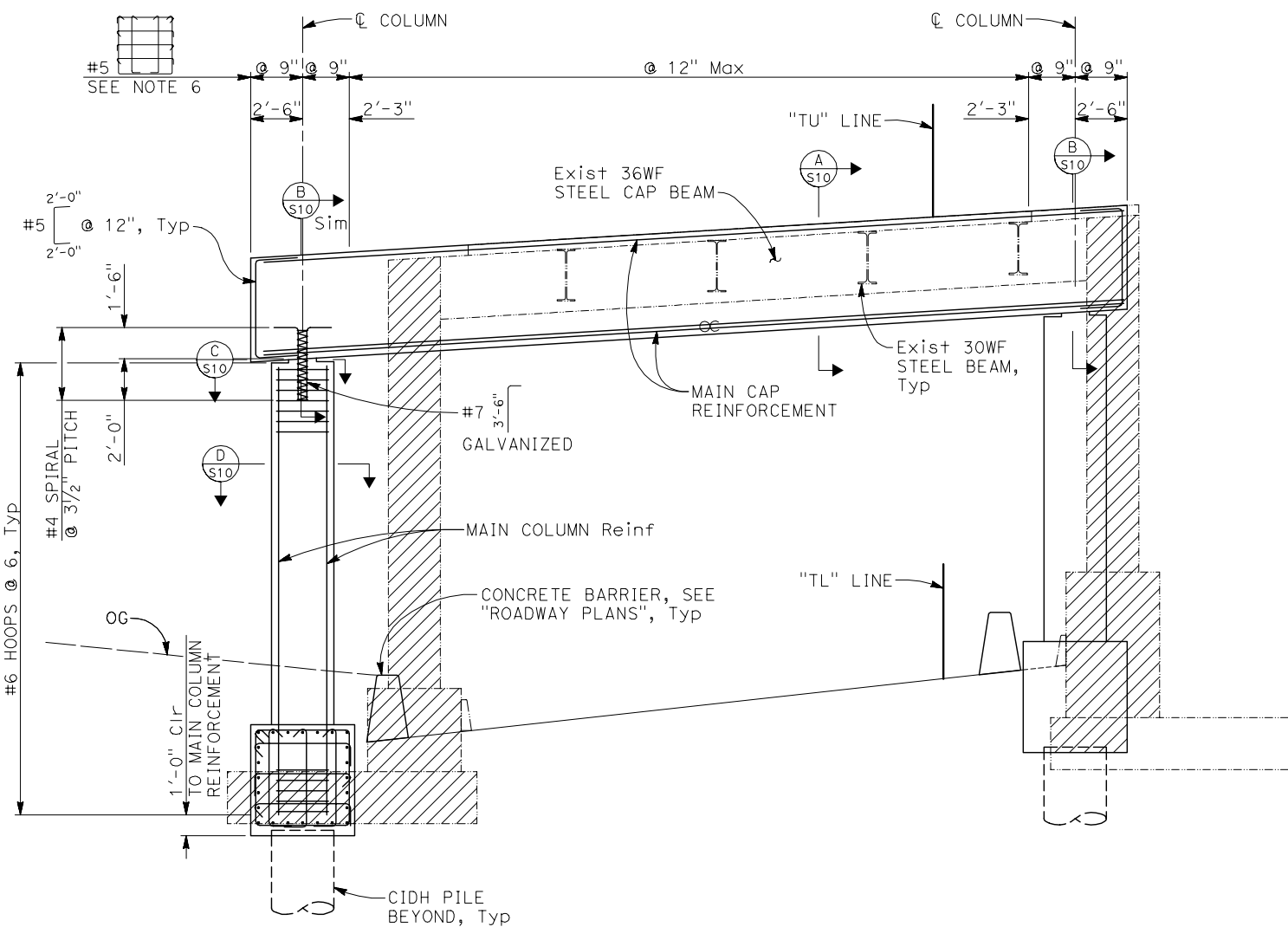
DESIGNED BY A. RICHARDSON DRAWN BY S. HICKEY CHECKED BY APPROVED BY		REGISTERED CIVIL ENGINEER PLANS SUBMITTAL DATE PLANS APPROVAL DATE		1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com			<p><b>BRIDGE No. 1</b></p> <p><b>BENT TU1 &amp; TU2 COLUMN CASING</b></p> <p>BRIDGE NO. 34U0003 CONTRACT NO.</p> <p>USERNAME =&gt; JJD          FILE =&gt; 2011109BR1_S7.dwg          DATE PLOTTED =&gt; 15-Nov-2019          TIME PLOTTED =&gt; 12:55</p>
YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT		WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		0 1 2 3 RELATIVE BORDER SCALE IS IN INCHES		SHEET 7 OF 11 LAST REVISION 06-22-12	

W:\2011\2011109BR1.dwg\_1\2011109BR1\_S7.dwg



- NOTES:
1. No splices allowed in main column reinforcement.
  2. Barriers not shown for clarity.
  3. Bent stirrup must be placed perpendicular to CL Bent and spaced along CL Bent.
  4. Bent cap must utilize ultimate butt splices.
  5. Column ties must utilize ultimate butt splices.
  6. For stirrup spacing at existing steel beams, see "PARTIAL BENT CAP PLAN".
  7. Column and grade beam not shown skewed with Bent for clarity.

- LEGEND:
- Indicates existing structure
  - ▨ Indicates Bridge Removal (Portion)
  - ⊕ Indicates Bundled Bars



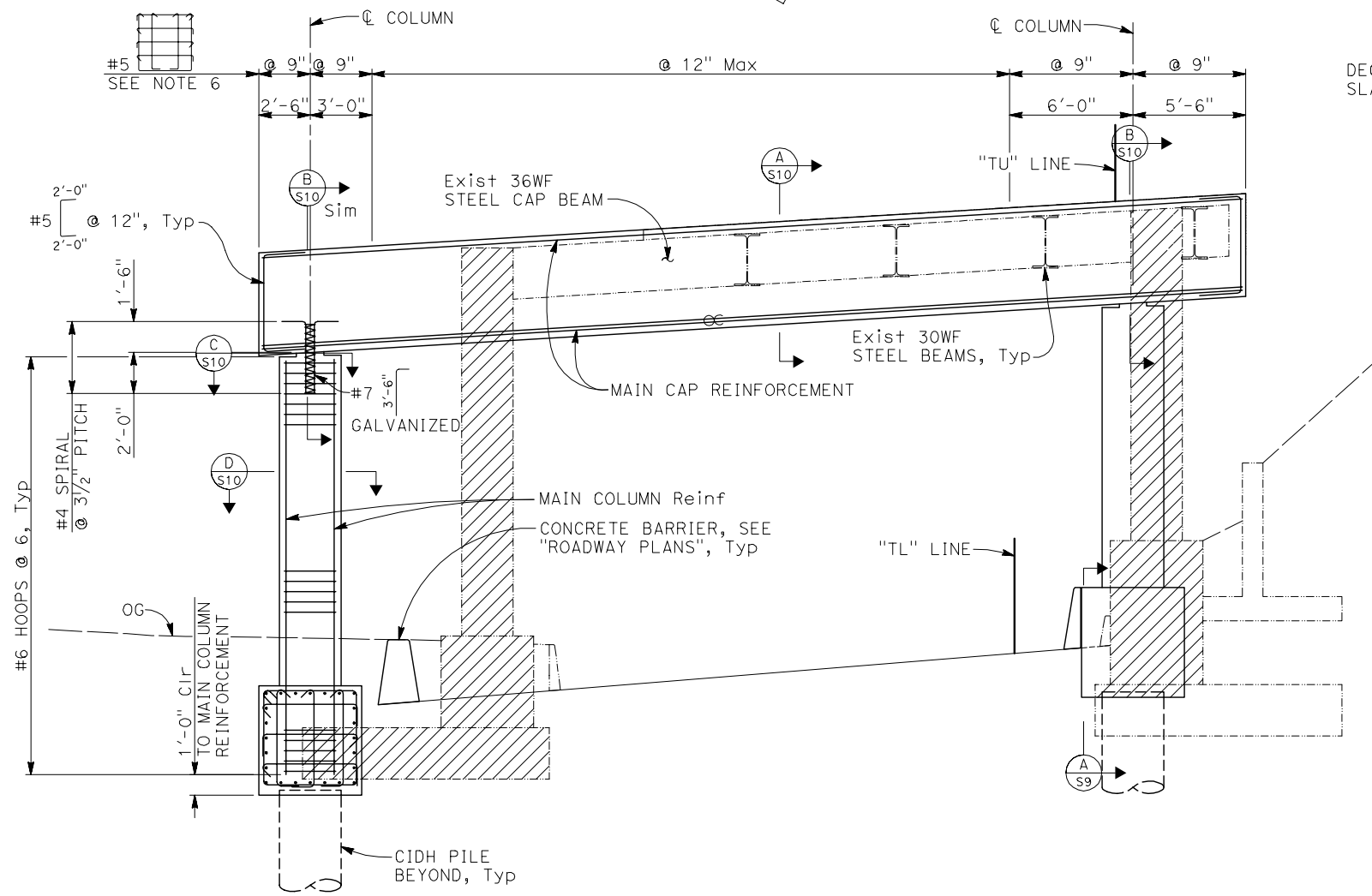
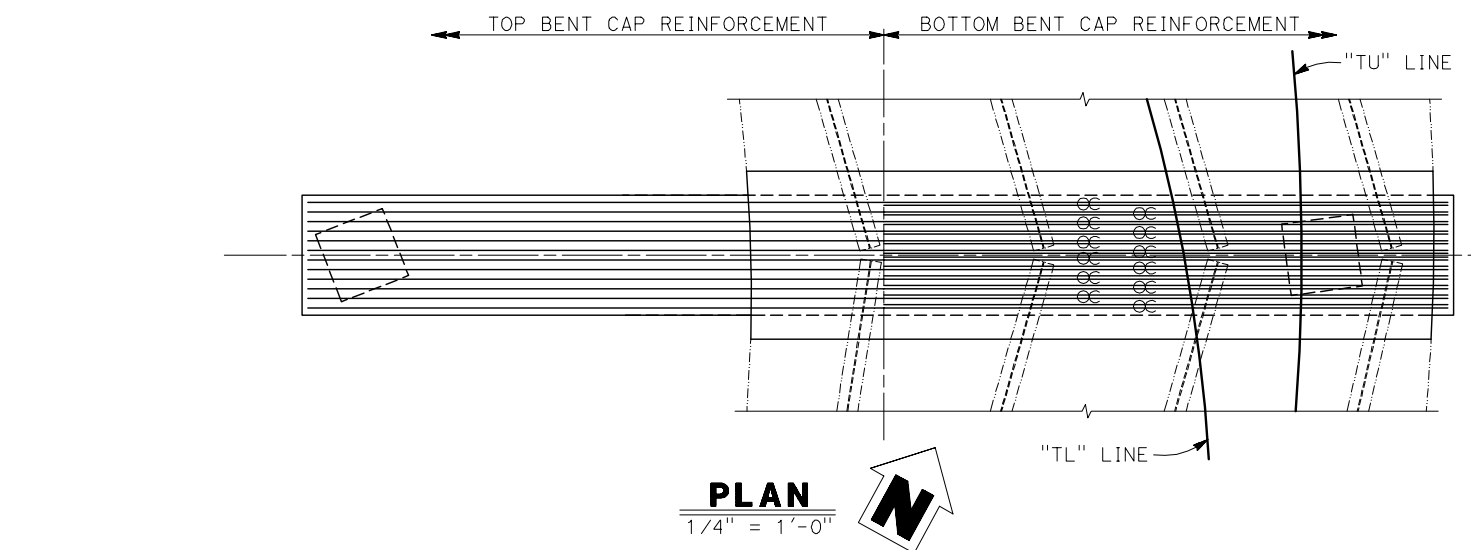
NOTE:  
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

(LOOKING DOWNSTATION)  
**BENT TU3 ELEVATION**  
1/4" = 1'-0"

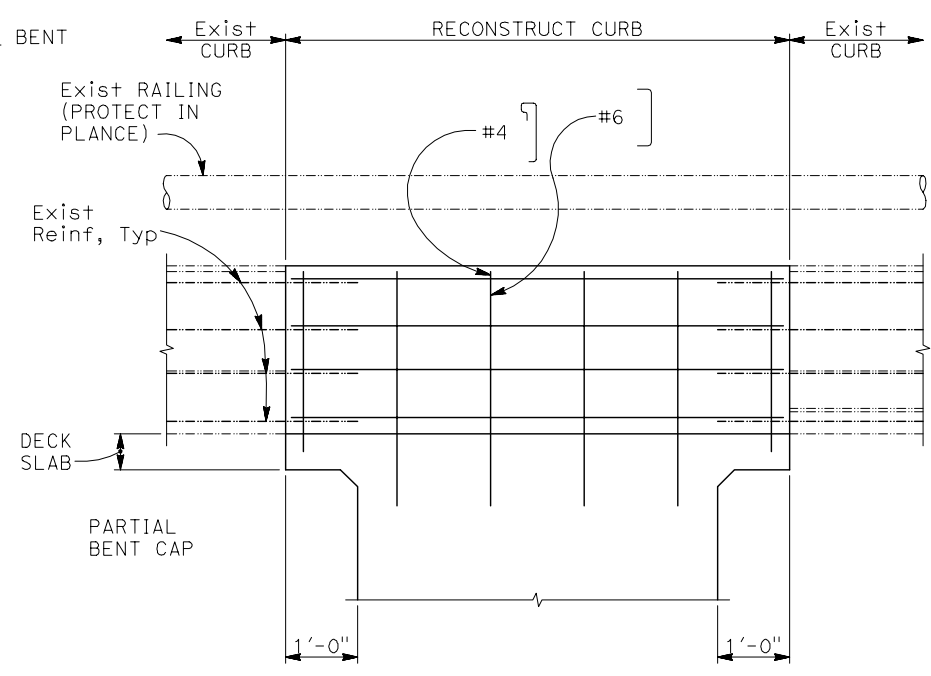
PLAN CHECK SET/NOT FOR CONSTRUCTION (11/15/19)

REVISED BY	DATE REVISED	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b>	DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE				<b>BRIDGE No. 1 BENT TU3 LAYOUT</b>			
			DRAWN BY S. HICKEY								1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com	BRIDGE NO. 34U0003	CONTRACT NO.
DISREGARD PRINTS BEARING EARLIER REVISION DATES			PROJECT DESCRIPTION		APPROVED BY	PLANS APPROVAL DATE					<i>WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</i>	USERNAME => JJD FILE => 2011109BR1_S8.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:55	SHEET OF 8 11 LAST REVISION 06-22-12
BORDER LAST REVISED 6/20/2012				RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3					(20111091S8) 2011109			

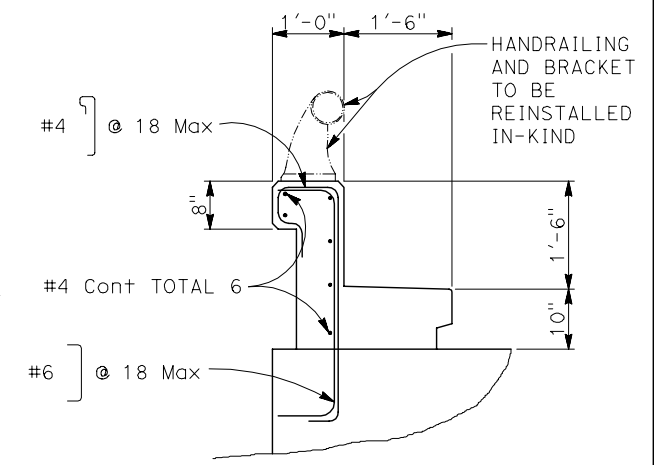
NOTE:  
For "NOTES" and "LEGEND", see "BENT TU3 LAYOUT" sheet.



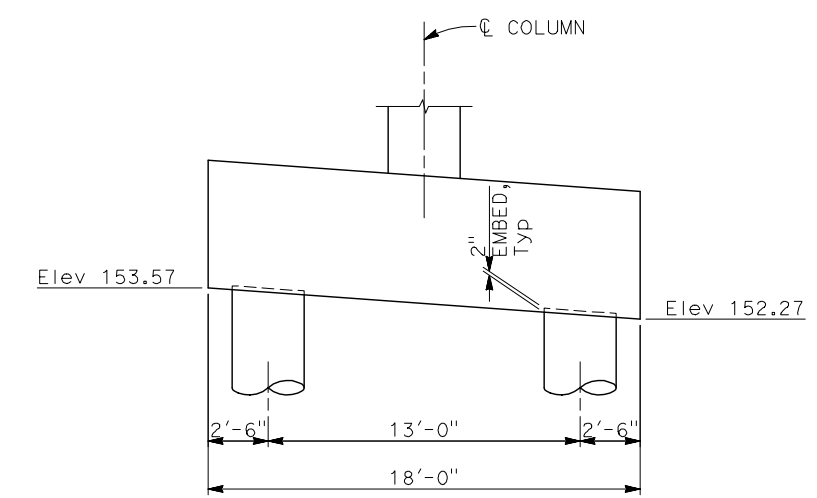
(LOOKING DOWNSTATION)  
**BENT TU4 ELEVATION**  
1/4" = 1'-0"



**CURB RECONSTRUCTION ELEVATION**  
3/4" = 1'-0"



**TYPICAL CURB**  
3/4" = 1'-0"



**SECTION A-S9**  
1/4" = 1'-0"

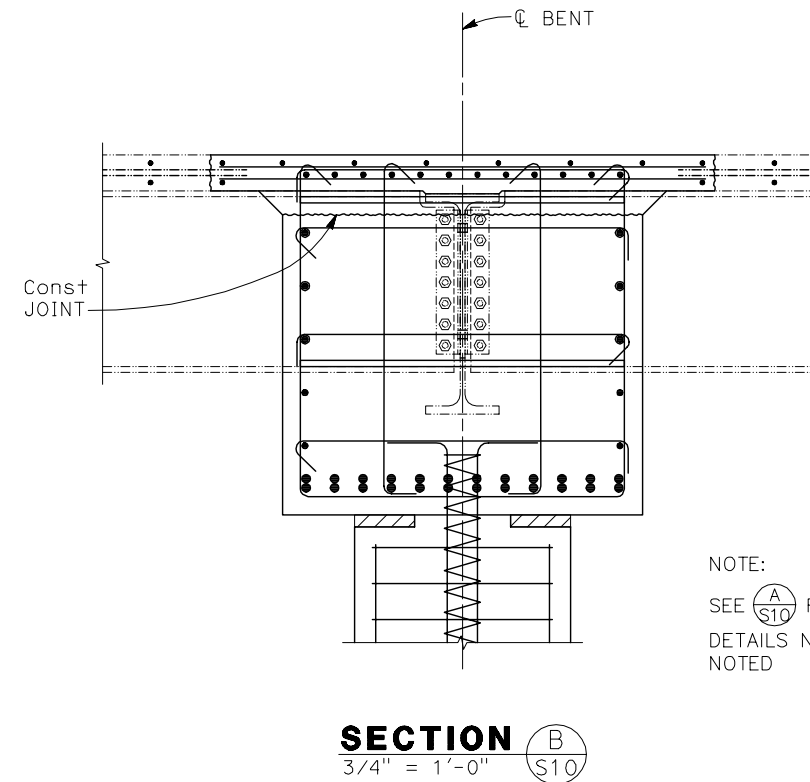
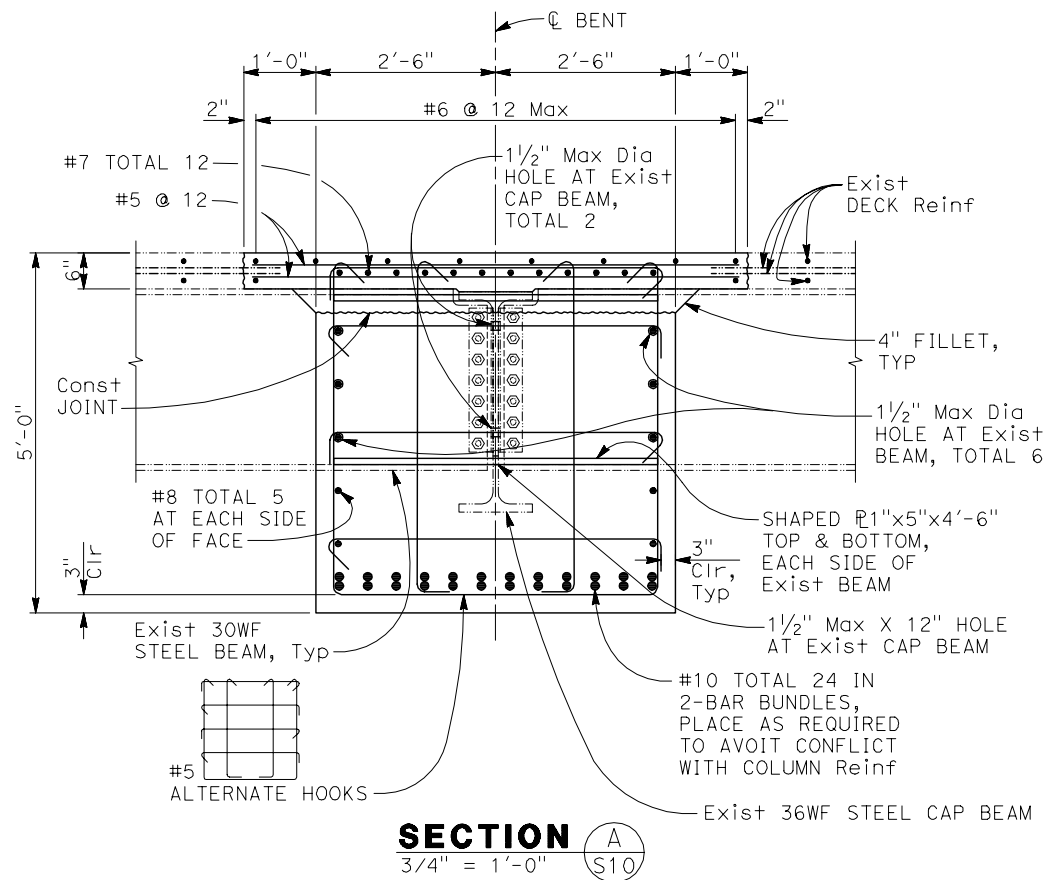
NOTE:  
REINFORCEMENT NOT SHOWN FOR CLARITY.

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

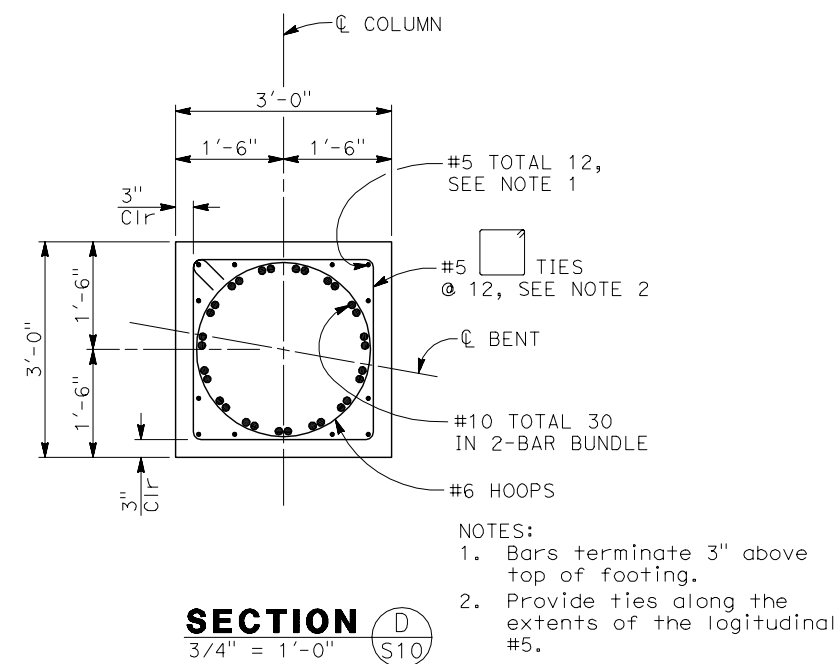
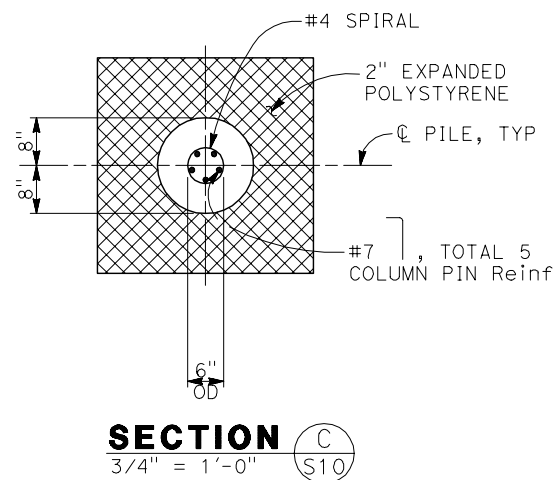
PLAN CHECK SET/NOT FOR CONSTRUCTION (11/15/19)

DESIGNED BY A. RICHARDSON DRAWN BY S. HICKEY CHECKED BY  APPROVED BY		REGISTERED CIVIL ENGINEER  PLANS SUBMITTAL DATE  PLANS APPROVAL DATE		1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com			<b>BRIDGE No. 1</b> <b>BENT TU4 LAYOUT</b> BRIDGE NO. 34U0003 CONTRACT NO. USERNAME => AR FILE => 2011109BR1_S9.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:56
REVISED BY   DISREGARD PRINTS BEARING EARLIER REVISION DATES BORDER LAST REVISED 6/20/2012	YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT  PROJECT DESCRIPTION	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3			SHEET OF 9 11 LAST REVISION 06-22-12	(20111091S9) 2011109	





NOTE:  
SEE SECTION A FOR  
DETAILS NOT  
NOTED



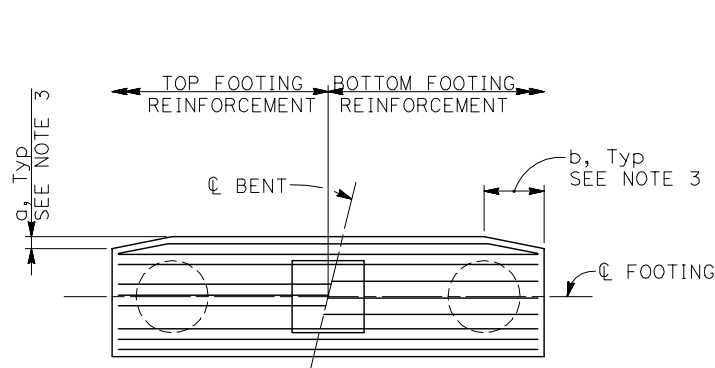
NOTES:  
1. Bars terminate 3" above top of footing.  
2. Provide ties along the extents of the longitudinal #5.

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

PLAN CHECK SET/NOT FOR CONSTRUCTION (11/15/19)

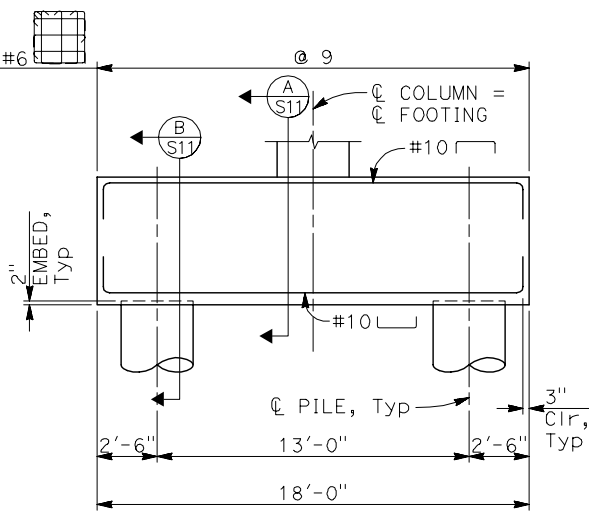
REVISOR	DATE	<b>YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT</b>	DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE				<b>BRIDGE No. 1 BENT DETAILS</b>			
			DRAWN BY S. HICKEY								1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900 (510) 625-9902 (FAX) www.biggsardosa.com	BRIDGE NO. 34U0003	CONTRACT NO.
			CHECKED BY								WMH CORPORATION SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.	USERNAME => JJD FILE => 2011109BR1_S10.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:56	SHEET 10 OF 11 LAST REVISION 06-22-12
DISREGARD PRINTS BEARING EARLIER REVISION DATES		PROJECT DESCRIPTION	APPROVED BY	PLANS APPROVAL DATE	RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3							

- NOTES:
- No splice permitted in footing top & bottom mat.
  - Ultimate butt-splices must be used at CIDH hoops.
  - a = 6", b = 2'-6" at Bent TU3 west footing and Bent TU4 west footing  
a = 0", b = 0" at Bent TU3 east footing and Bent TU4 east footing
  - For Specified Tip Elevation, see Pile Data Table on "FOUNDATION PLAN" sheet.

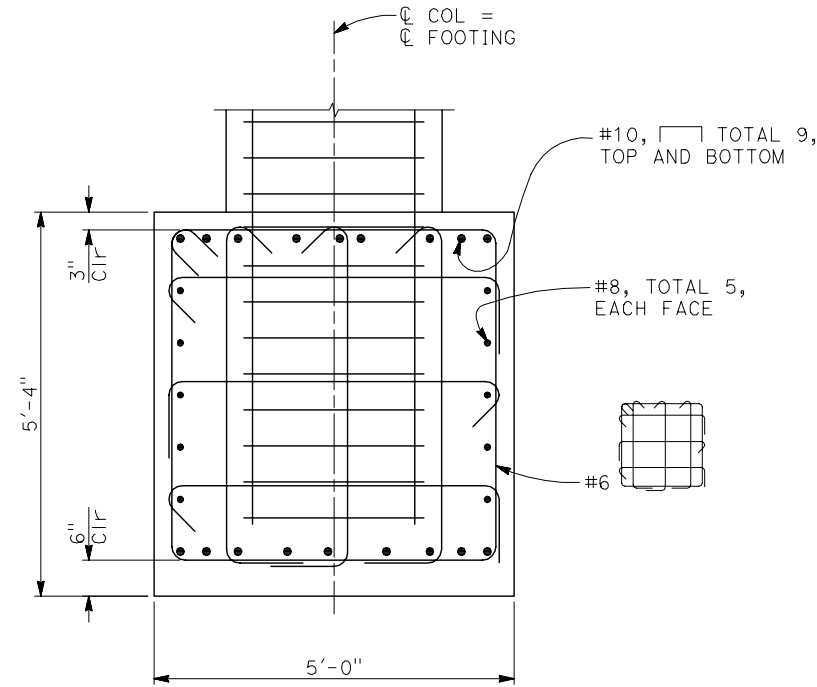


NOTE:  
BENT TU4 WEST FOOTING SHOWN.  
OTHER LOCATIONS ARE SIMILAR.

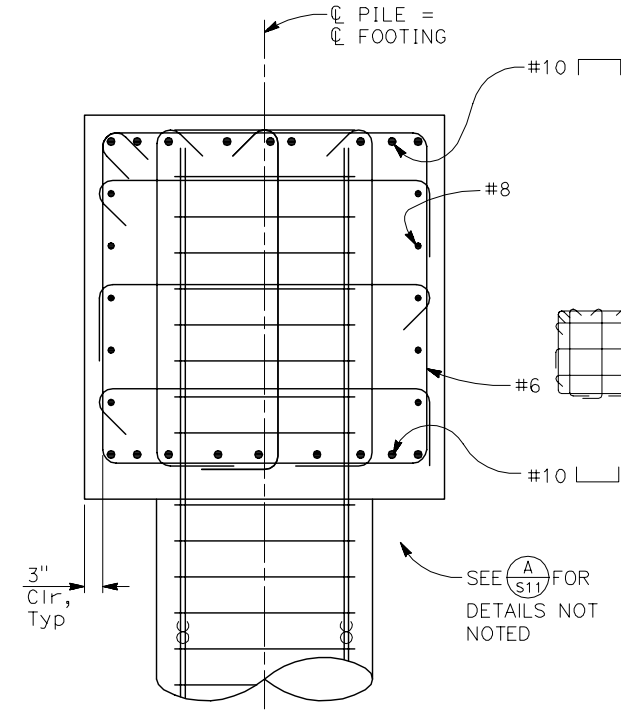
**PLAN**  
1/4" = 1'-0"



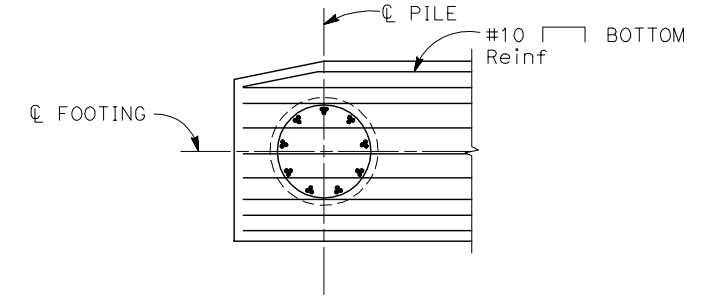
**FOOTING ELEVATION**  
1/4" = 1'-0"



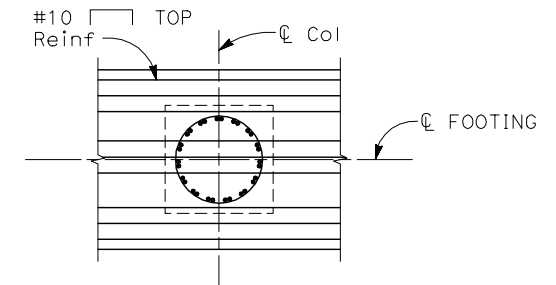
**SECTION A**  
3/4" = 1'-0" S11



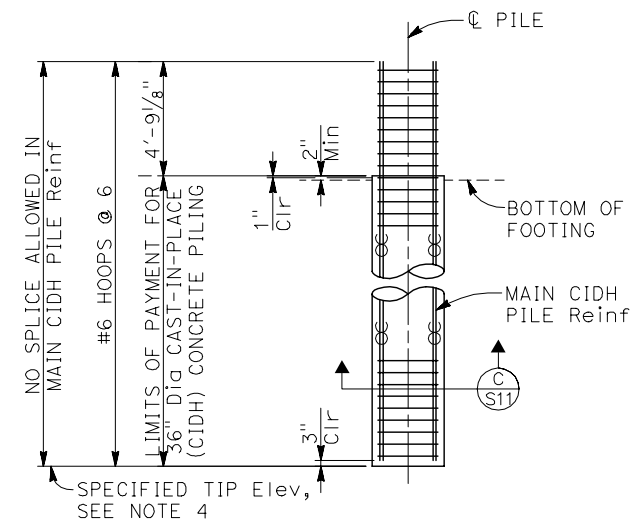
**SECTION B**  
3/4" = 1'-0" S11



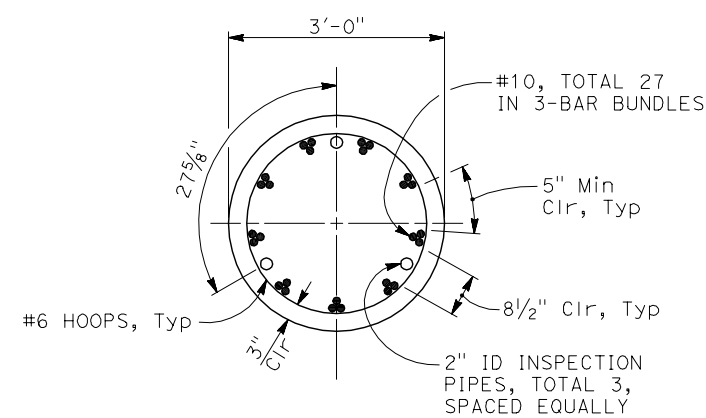
**PARTIAL FOOTING PLAN**  
3/8" = 1'-0"



**PARTIAL FOOTING PLAN**  
3/8" = 1'-0"



**36" CIDH PILE ELEVATION**  
1/4" = 1'-0"



**SECTION C**  
3/4" = 1'-0" S11

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

PLAN CHECK SET/NOT FOR CONSTRUCTION (11/15/19)

DESIGNED BY A. RICHARDSON		REGISTERED CIVIL ENGINEER	PLANS SUBMITTAL DATE				<b>BRIDGE No. 1</b> <b>FOOTING AND PILE DETAILS</b>
DRAWN BY S. HICKEY		CHECKED BY	PLANS APPROVAL DATE				
APPROVED BY							USERNAME => JJD FILE => 2011109BR1_S11.dwg DATE PLOTTED => 15-Nov-2019 TIME PLOTTED => 12:56
YERBA BUENA ISLAND WEST-SIDE BRIDGE STRUCTURES PROJECT		PROJECT DESCRIPTION		RELATIVE BORDER SCALE IS IN INCHES		SHEET 11 OF 11 LAST REVISION 06-22-12	