

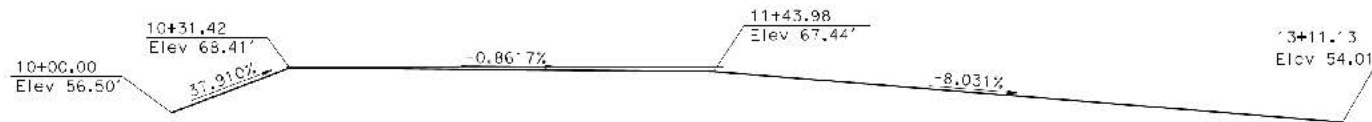
Sample Plan Set

Ground Anchor Wall

Links

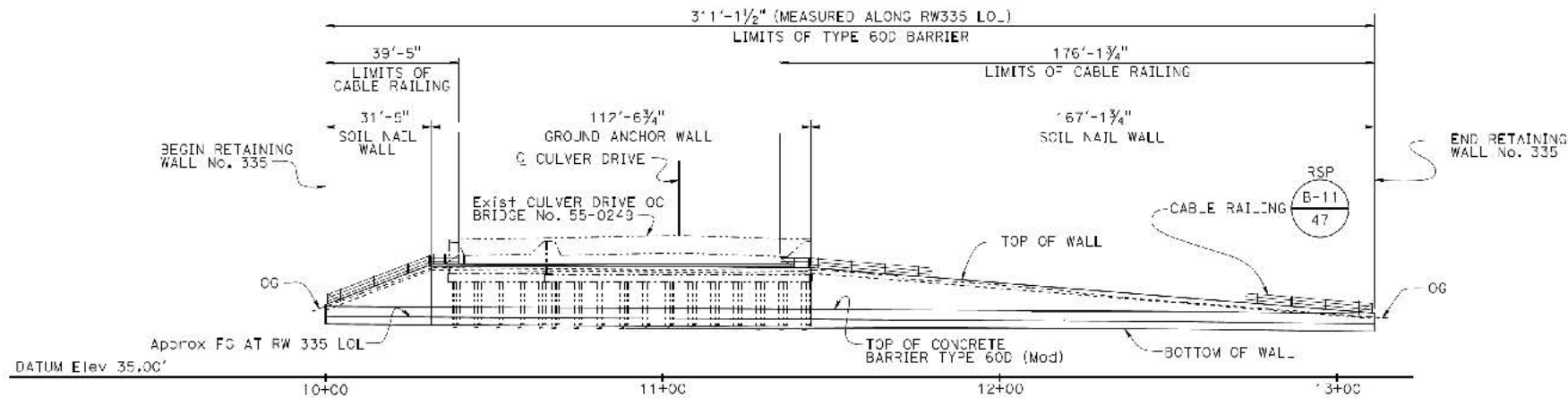
Caltrans Standard Plans: <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>

Caltrans Bridge Standard Details: <https://dot.ca.gov/programs/engineering-services/manuals/bridge-standard-details>



PROFILE GRADE - TOP OF WALL

NO SCALE



DEVELOPED ELEVATION

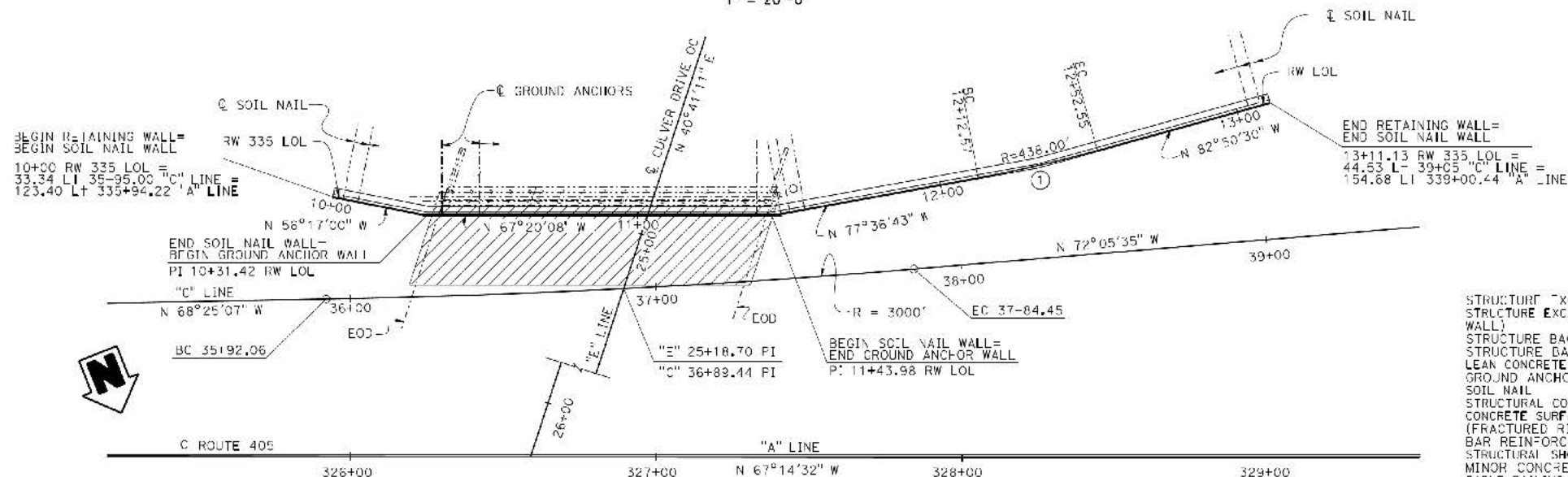
1" = 20'-0"

NOTES:

1. For temporary railing (Type K), see "ROADWAY PLANS".
2. For Structural Details, see "STRUCTURAL DETAILS No. 1" through "STRUCTURAL DETAILS No. 8" sheets.
3. For Geocomposite Drain and Filter Fabric, see "DRAINAGE DETAILS No. 1, No. 2, and No. 3" sheets.
4. For "TYPICAL SECTION" see "GENERAL PLAN No. 2" sheet.
5. Concrete Surface Texture, (Fractured Rib Triangular Pattern) not shown for clarity.

LEGEND:

- Indicates limits of existing Culver Drive OC Slope Paving to be removed. See "ROADWAY PLANS".
- Indicates existing structure



PLAN

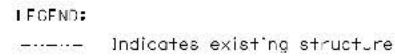
1" = 20'-0"

CURVE DATA
 R = 438.00'
 Δ = 5°13'47" (LT)
 T = 20.00'
 L = 39.98'

QUANTITIES

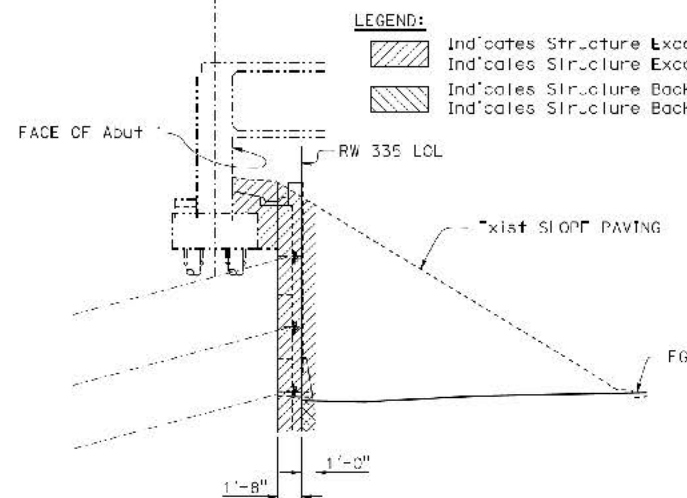
STRUCTURE EXCAVATION (SOIL NAIL WALL)	176	CY
STRUCTURE EXCAVATION (GROUND ANCHOR WALL)	240	CY
STRUCTURE BACKFILL (GROUND ANCHOR WALL)	12	CY
STRUCTURE BACKFILL (SOIL NAIL WALL)	20	CY
LEAN CONCRETE BACKFILL	30	CY
GROUND ANCHOR (SUB-HORIZONTAL)	27	EA
SOIL NAIL	1,960	LF
STRUCTURAL CONCRETE, FASCIA	178	CY
CONCRETE SURFACE TEXTURE (FRACTURED RIB TRIANGULAR PATTERN)	2,486	SOFT
BAR REINFORCING STEEL (FASCIA)	30,912	LB
STRUCTURAL SHOTCRETE	95	CY
MINOR CONCRETE (CUTTER) (LF)	314	LF
CABLE RAILING	217	LF
CONCRETE BARRIER (TYPE 60D MODIFIED)	312	LF

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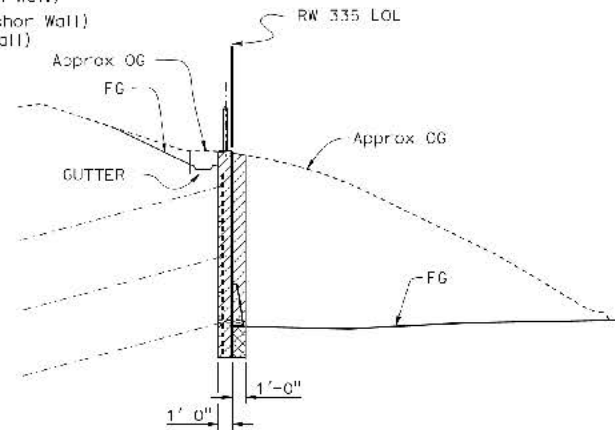

$$\frac{1}{4}'' = 1'-0''$$

NCTES:

1. For Slope Paving Removal, see "ROADWAY PLANS".
2. Bottom of walls shall be placed against undisturbed material.
3. For Geocomposite Drain, see "DRAINAGE DETAILS No. 1", "DRAINAGE DETAILS No. 2" and "DRAINAGE DETAILS No. 3" sheets.
4. For Soil Nail locations and elevations, see "TABLE No. 1" on "STRUCTURAL DETAILS No. 1" sheet; "TABLE No. 3" or "STRUCTURAL DETAILS No. 2" sheet.
5. Concrete Surface Texture, (Fractured Rib Triangular Pattern) not shown for clarity.
6. For Ground Anchor locations and elevations, see "STRUCTURAL DETAILS No. 3" and "STRUCTURAL DETAILS No. 2" sheets.



TYPICAL SECTION - GROUND ANCHOR WALL



TYPICAL SECTION - SOIL NAIL WALL

LIMITS FOR STRUCTURE EXCAVATION AND BACKFILL

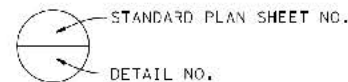
NO SCALE

INDEX TO PLANS

SHEET No.	TITLE
1	GENERAL PLAN No.1
2	GENERAL PLAN No.2
3	INDEX TO PLANS
4	FOUNDATION PLAN
5	STRUCTURAL DETAILS No.1
6	STRUCTURAL DETAILS No.2
7	STRUCTURAL DETAILS No.3
8	STRUCTURAL DETAILS No.4
9	STRUCTURAL DETAILS No.5
10	STRUCTURAL DETAILS No.6
11	STRUCTURAL DETAILS No.7
12	STRUCTURAL DETAILS No.8
13	SUB HORIZONTAL GROUND ANCHOR DETAILS
14	DRAINAGE DETAILS No.1
15	DRAINAGE DETAILS No.2
16	DRAINAGE DETAILS No.3
17	ARCHITECTURAL DETAILS No. 1
18	ARCHITECTURAL DETAILS No. 2
19	LOG OF TEST BORINGS

STANDARD PLANS DATED 2010

A10A	ACRONYMS AND ABBREVIATIONS (A-L)
RSP A10B	ACRONYMS AND ABBREVIATIONS (M-Z)
A76A	CONCRETE BARRIER TYPE 60
A781	THREE BEAM BARRIER CONNECTION TO CONCRETE BARRIER
B0-3	BRIDGE DETAILS
B3-6	RETAINING WALL DETAILS No. 2
RSP B11-47	CABLE RAILING



GENERAL NOTES - SOIL NAIL WALL

DESIGN:
Federal Highway Administration Publication Geotechnical Engineering Circular No. 7
Soil Nail Walls, Publication No. FHWA-IF-03-017

LIVE LOADING:
No Live Loading

REINFORCED CONCRETE:
 $f_y = 60$ ksi (Yield Strength of Reinforcement)
 $f'_c = 3.6$ ksi (Compressive Strength at 28 days)
 $n = 8$

STRUCTURAL SHOTCRETE:
 $f'_c = 3.6$ ksi
 $f_y = 65$ ksi (plain welded wire reinforcement)
 $f_y = 60$ ksi (bar reinforcement)

STRUCTURAL STEEL (BEARING PLATES):
 $f_y = 50$ ksi

STUDS:
 $f_y = 55$ ksi

SOIL NAILS:
 $f_y = 75$ ksi

SOIL PARAMETERS:
 $\gamma = 120$ pcf
 $\phi = 32^\circ$
 $c = 0$

GROUT:
 $f'_c = 3000$ psi at 28 Days

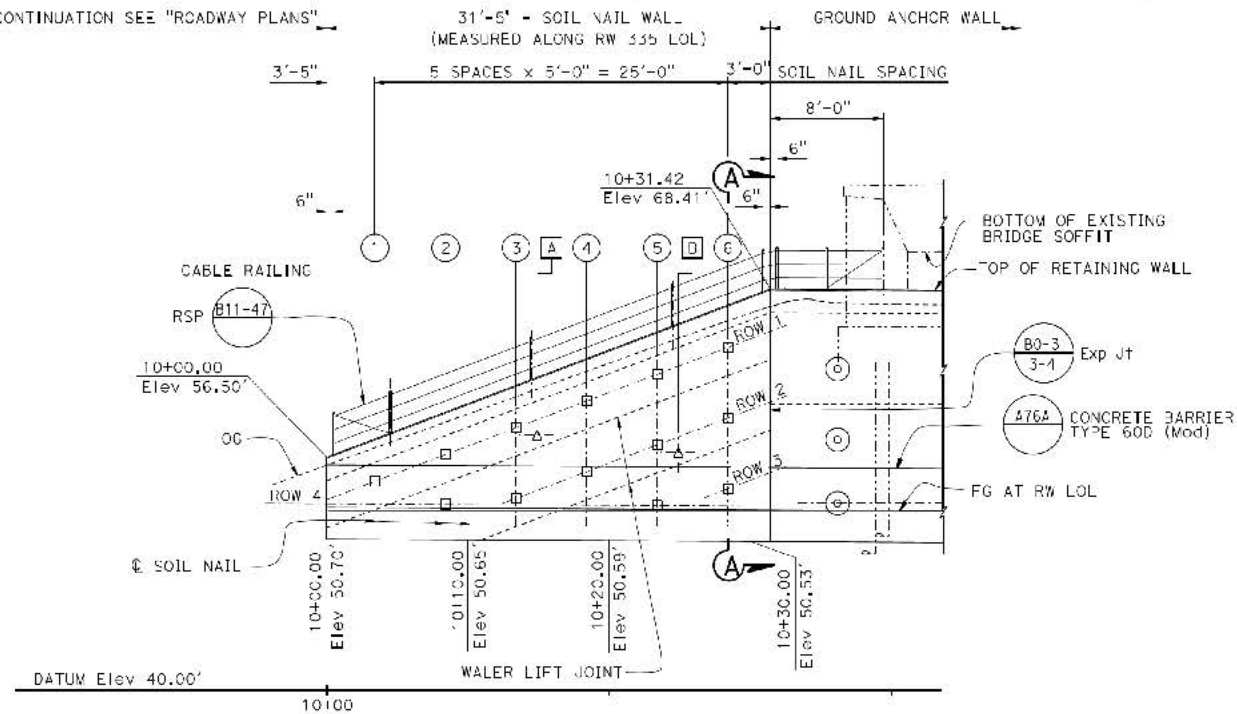
SEISMIC LOADING:
Soil Profile: Soil Shearwave velocity $V_{s0} = 886$ ft/sec
(Average shear velocity in top 100 ft of soil)
Moment Magnitude: $M_{Max} = 7.0 \pm 0.25$
Peak Ground Acceleration: $0.63g$
 $k_h = 0.2$

NOTES: 1. For GENERAL NOTES (Ground Anchors):
See "SUB HORIZONTAL GROUND ANCHOR DETAILS" sheet.
2. For Lean Concrete Backfill, see "STRUCTURAL DETAILS No. 4" sheet.

NOTE:
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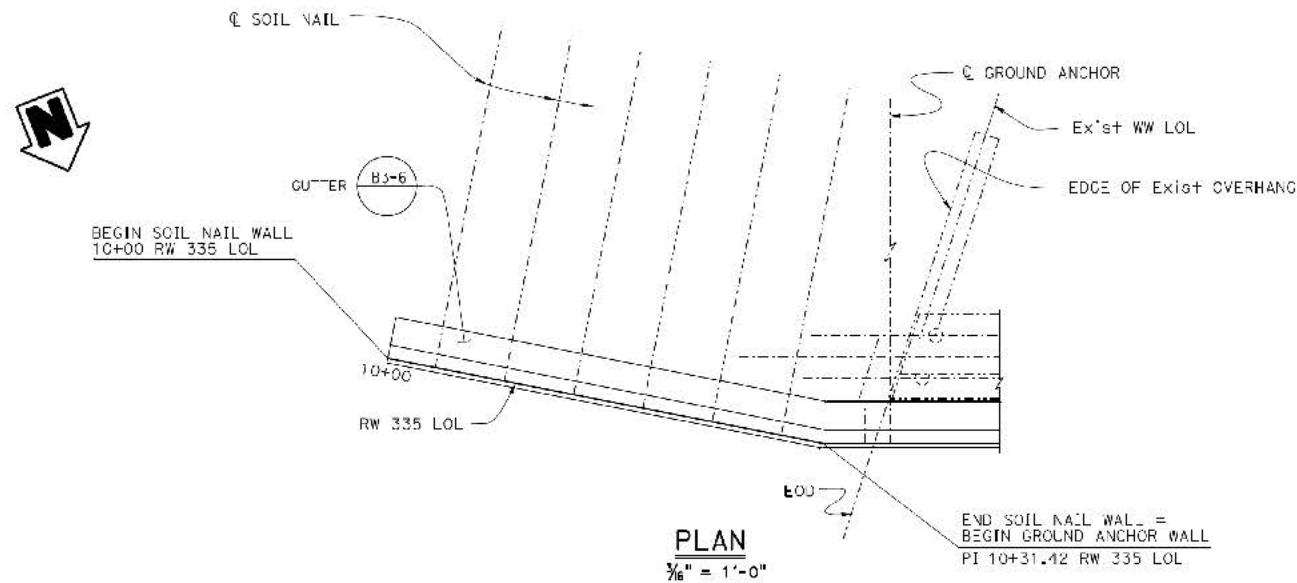
SOIL NAIL WALL DESIGN TABLE							
Wa Zone	RW 335 LOL	Minimum Nail Embedment Length (ft)	Maximum Nail Spacing Vertical (ft)	Maximum Nail Spacing Horizontal (ft)	Pullout Resistance Q_d (lb/ft)	Minimum Threaded Bar Size	Minimum Allowable Facing Resistance (Static/Seismic)
1	10-00.00 to 10-31.42	20	5	5	2,500	#8	(28/38) kips
2	11-43.98 to 13-1.13	20	5	5	2,500	#8	(28/38) kips

FOR CONTINUATION SEE "ROADWAY PLANS"



DEVELOPED ELEVATION

$\frac{3}{16}'' = 1'-0''$



PLAN

$\frac{3}{16}'' = 1'-0''$

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TABLE No. 1

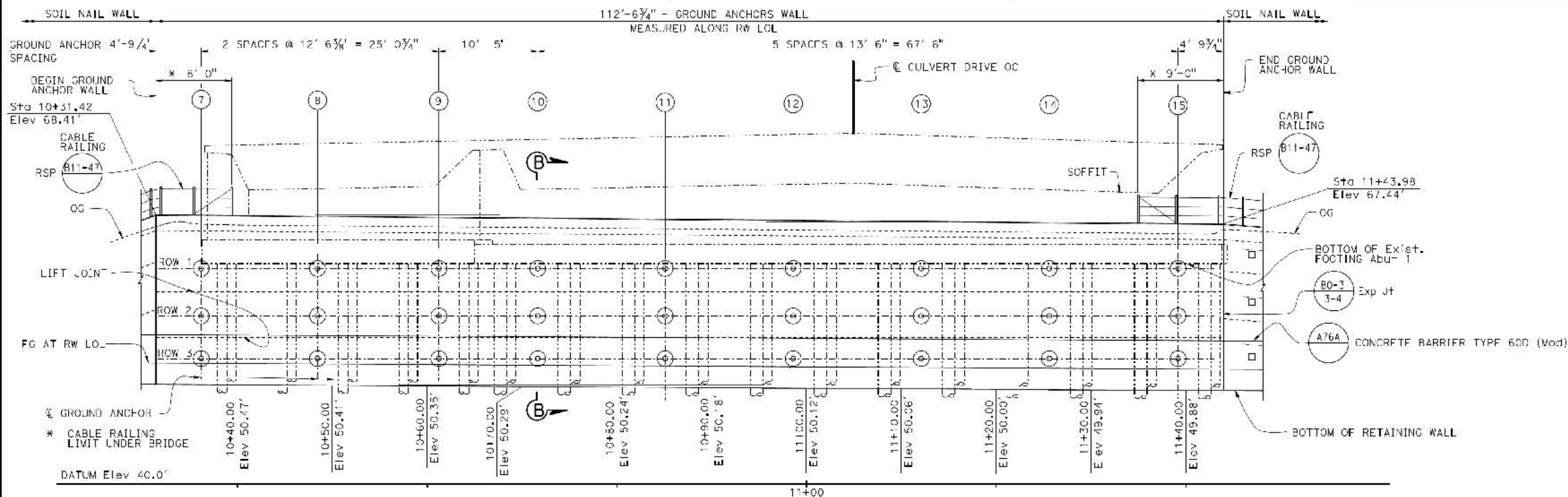
LOCATION	ELEVATION (Soil Nail)					
	1	2	3	4	5	6
Row 1	54.794	56.689	58.584	60.479	62.374	64.269
Row 2			53.584	55.479	57.374	59.269
Row 3						54.269
Row 4		53.155			53.067	
ELEVATION (Proof Test Soil Nail)						
LOCATION	A	B				
Sta	10+14.92	10+24.92				
ELEVATION	56.048	56.838				

NOTES:

1. For Soil Nail elevations, see "TABLE No. 1"
2. Soil Nails to be installed normal to "RW 335 LOL" Line.
3. For "SECTION A-A", see "STRUCTURAL DETAILS No. 2" sheet.
4. Concrete Surface Texture, (Fractured Rib Triangular Pattern) not shown for clarity.
5. For Drainage Details, see "DRAINAGE DETAILS No. 1" AND "DRAINAGE DETAILS No. 2" sheets.

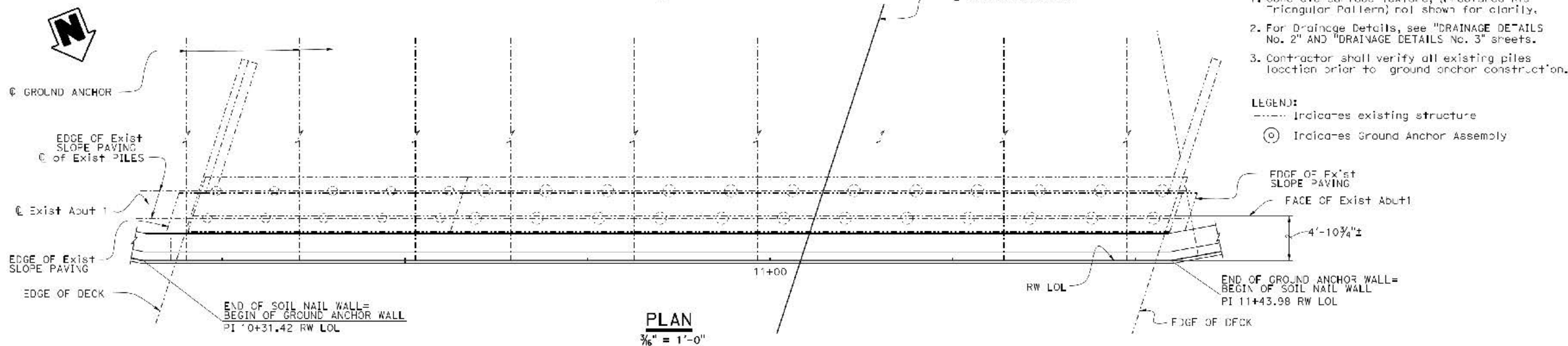
LEGEND:

- ⊙ - Ground Anchor Assembly
- - Soil Nail
- △ - Proof Test Soil Nail
- Indicates existing structure

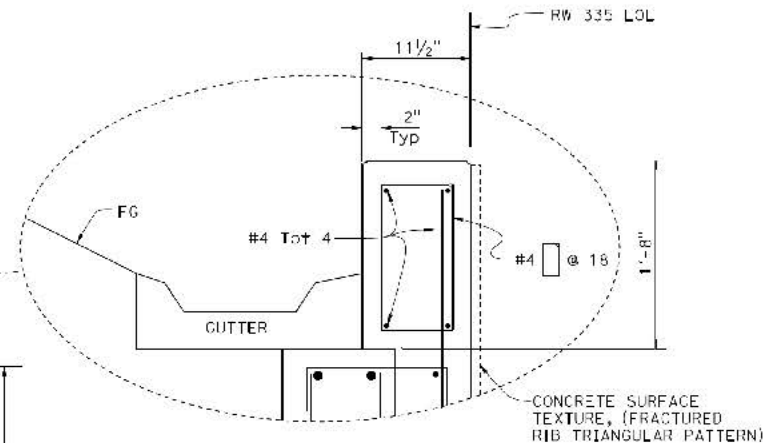
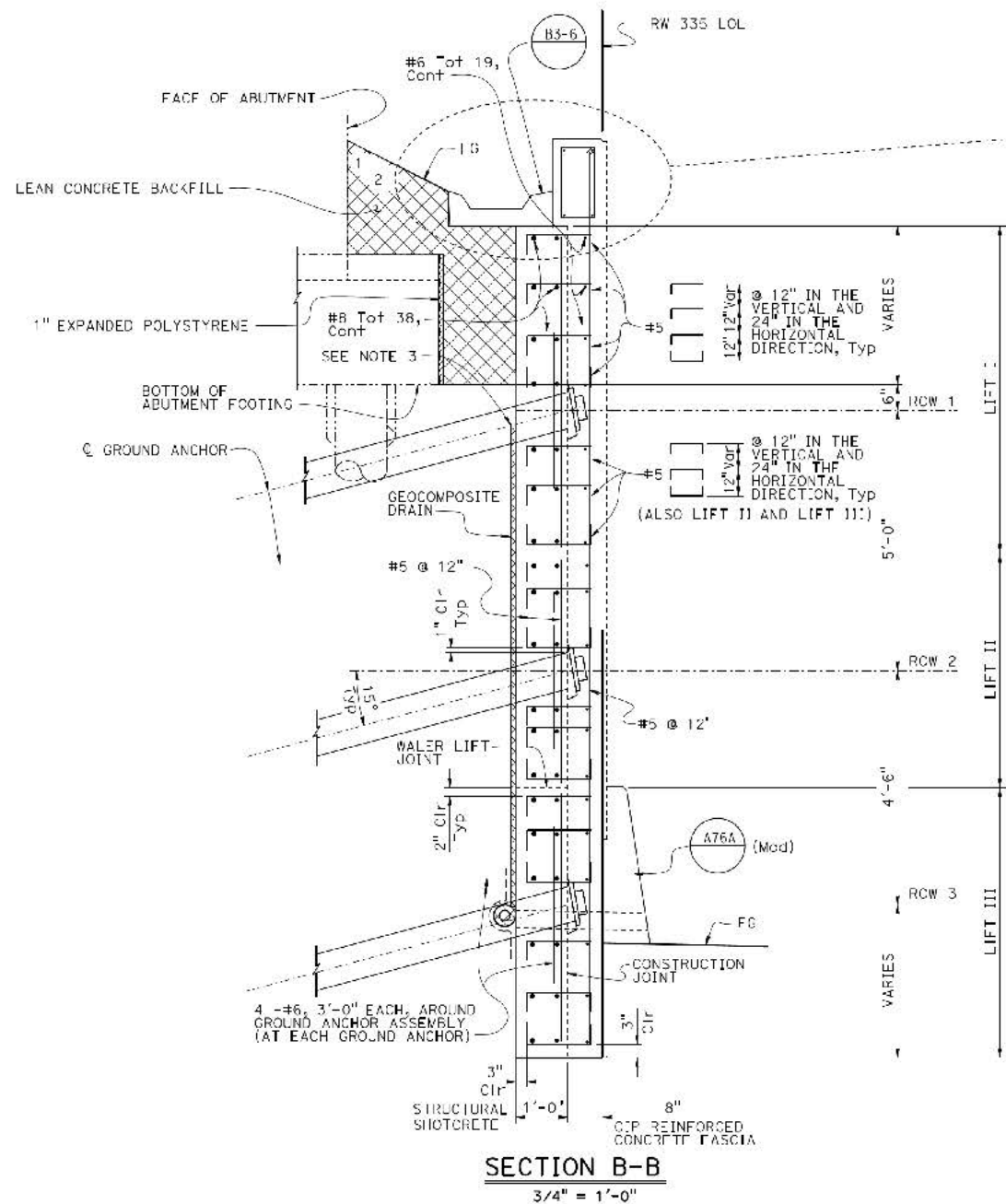


ELEVATION

3/8" = 1'-0"



NOTE:
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NOTES:

1. For Ground Anchors layout and distribution, see "STRUCTURAL DETAILS No. 3" sheet.
2. Bottom of Wall should be placed against undisturbed material.
3. Begin Geocomposite Drain at center line of top Soil Nail or top Ground Anchor row.
4. Remove unstable soil without damaging the footing. Do not expose bottom of the footing.

LEGEND:



Indicates Lean Concrete Backfill

TABLE No. 2

LOCATION	ELEVATION (Ground Anchor)								
	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Row 1					62.736				
Row 2					57.736				
Row 3					53.236				

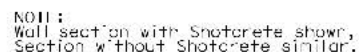
NOTE:
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TABLE No. 3																							
LOCATION	ELEVATION (Soil Nail)																						
	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜	㉝	㉞
Row 1	64.193	64.456	64.055	63.653	63.251	62.850	62.448	62.046	61.645	61.243	60.841	60.440	60.038	59.636	59.235	58.833	58.431	58.030	57.628	57.223	56.825	56.423	56.021
Row 2	59.193	59.456	59.055	58.653	58.251	57.850	57.448	57.046	56.645	56.243	55.841	55.440	55.038	54.636	54.235	53.833	53.431	53.030	52.628	52.226			
Row 3	53.422	54.456	54.055	53.653	53.251	52.850	52.448	52.149	52.120	52.091	52.061	52.032	52.003	51.973							51.822	51.739	51.679

ELEVATION (Proof Test Soil Nail)								
LOCATION	C	D	E	F	G	H	I	J
Sta	11+61.48	11+81.48	12+01.50	12+21.48	12+41.48	12+61.48	12+81.48	13+01.48
ELEVATION	62.028	55.421	58.814	52.208	55.601	53.994	52.388	50.781

TABLE No. 3 (Cont)											
LOCATION	ELEVATION (Soil Nail)										
	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬
Row 1	55.620	55.218	54.816	54.415	54.013	53.612	53.210	52.808	52.407	52.090	51.760
Row 2											
Row 3	51.619	51.559	51.500	51.440							

NOTE:
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$$3'' = 1' - 0''$$


NOTE:
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1. The test nail embedment length, L_{E1} , must be equal to 2/3 of the embedment length, L_e , of the adjacent production soil nail assemblies, but not less than 13'-0"
2. The total length of the test nail assembly equals the embedment length plus the length required for jacking equipment.
3. For location of proof test nails, see "STRUCTURE PLAN" sheets.
4. Contractor to determine drilled hole diameter.
5. Finished grout surface to be normal to the bar.



GENERAL NOTES

DESIGN:

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

PRESTRESSING STEEL:

Bars - 150 ksi

Strand Tendons - 270 Ksi Low Relaxation steel

FDL = Factored Design Load (Kips)

FTL = Factored Test Load per anchor (Kips)

LL = Lock Off Load (Kips)

fpu = Minimum tensile strength of prestressing steel

As = Minimum cross sectional area of prestressing steel in ground anchor (square inch)

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

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

REINFORCED CONCRETE (FASCIA):

f'c = 3,6 ksi
fy = 60 ksi

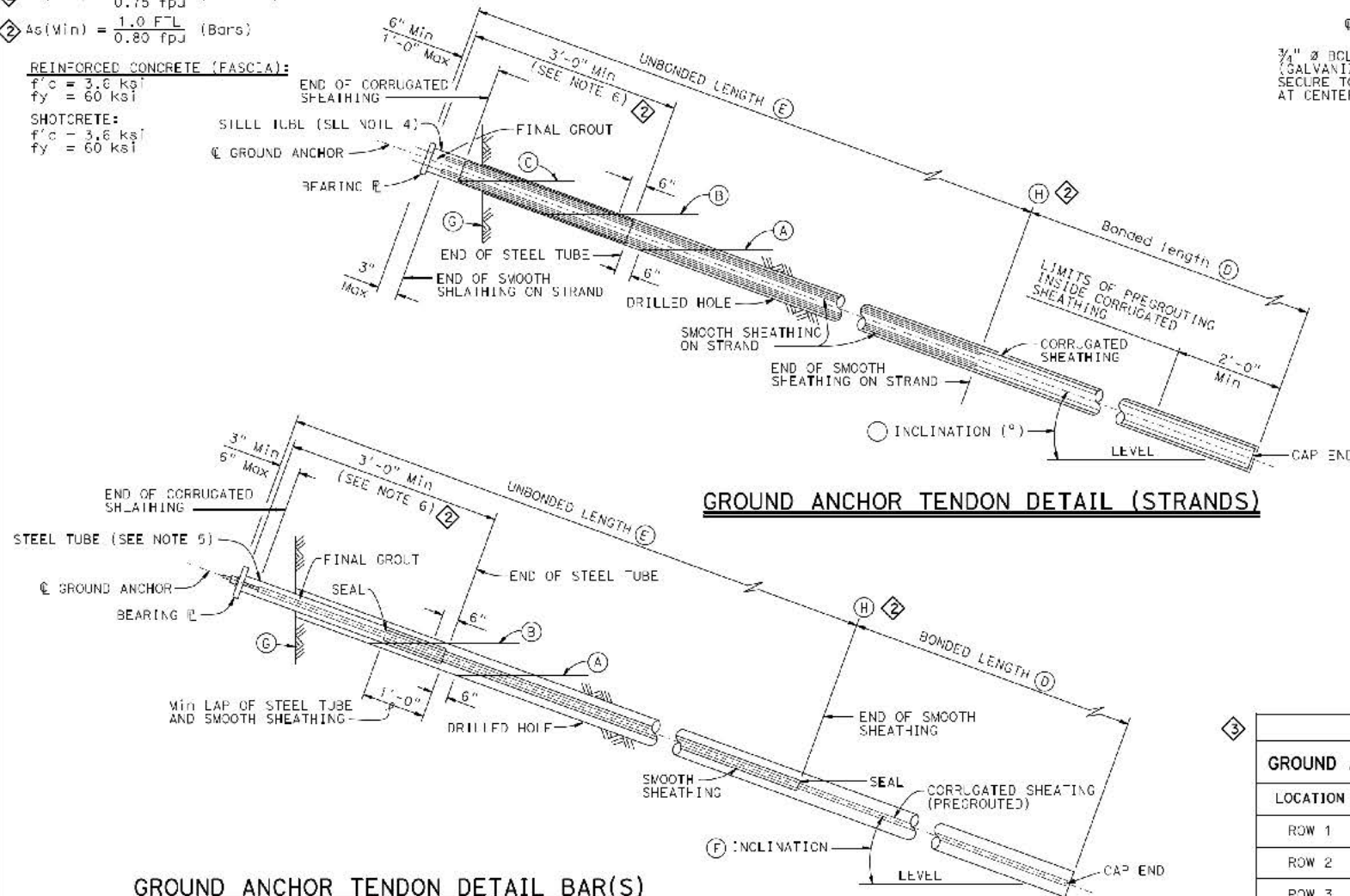
SHOTCRETE:
f'c = 3,6 ksi
fy = 60 ksi

NOTES:

1. Level of initial grouting for drilled hole 6" in diameter or smaller. See Note (H)
2. Level of secondary grouting
3. Level of initial grouting inside corrugated sheathing
4. Bonded length shall be determined by the contractor
5. Unbonded Length = 25 ft.
6. For inclination, see "SECTION D-D" on "STRUCTURAL DETAILS No. 4" sheet.
7. Face of Wall Excavation
8. Location of grout break outside corrugated sheathing.

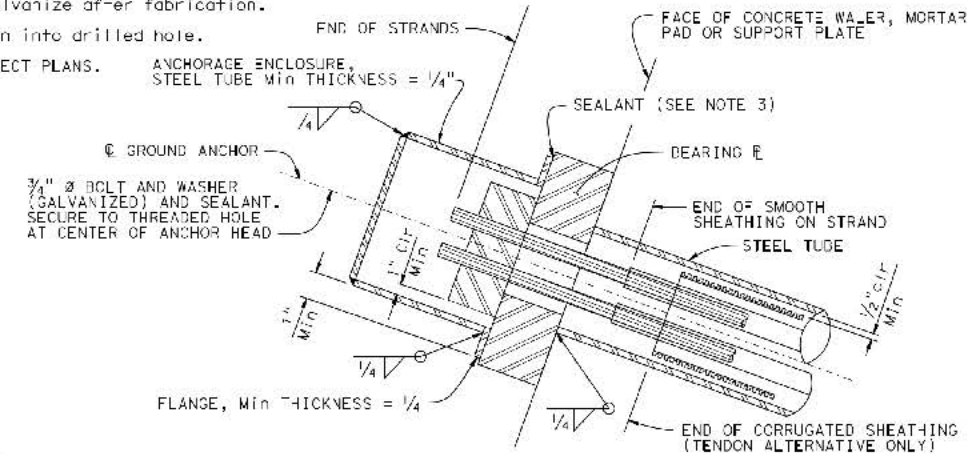
NOTES:

1. Anchorage end cap shall only be used when anchor head assembly is not enclosed in concrete.
2. Anchorage end cap 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. Inside diameter of steel tube to be 1" greater than outside diameter of corrugated sheathing. Galvanize after fabrication.
5. Steel tube (Min thickness = 1/4") welded to bearing plate. Inside diameter of steel tube to be 1" greater than outside diameter of smooth sheathing. Galvanize after fabrication.
6. The steel tube must extend 6" Min into drilled hole.
7. For other wall details, see PROJECT PLANS.

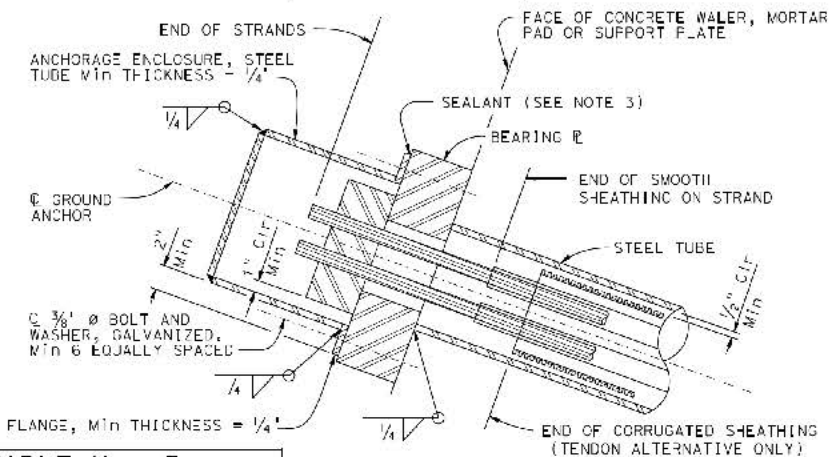


GROUND ANCHOR TENDON DETAIL BAR(S)

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ALTERNATIVE X

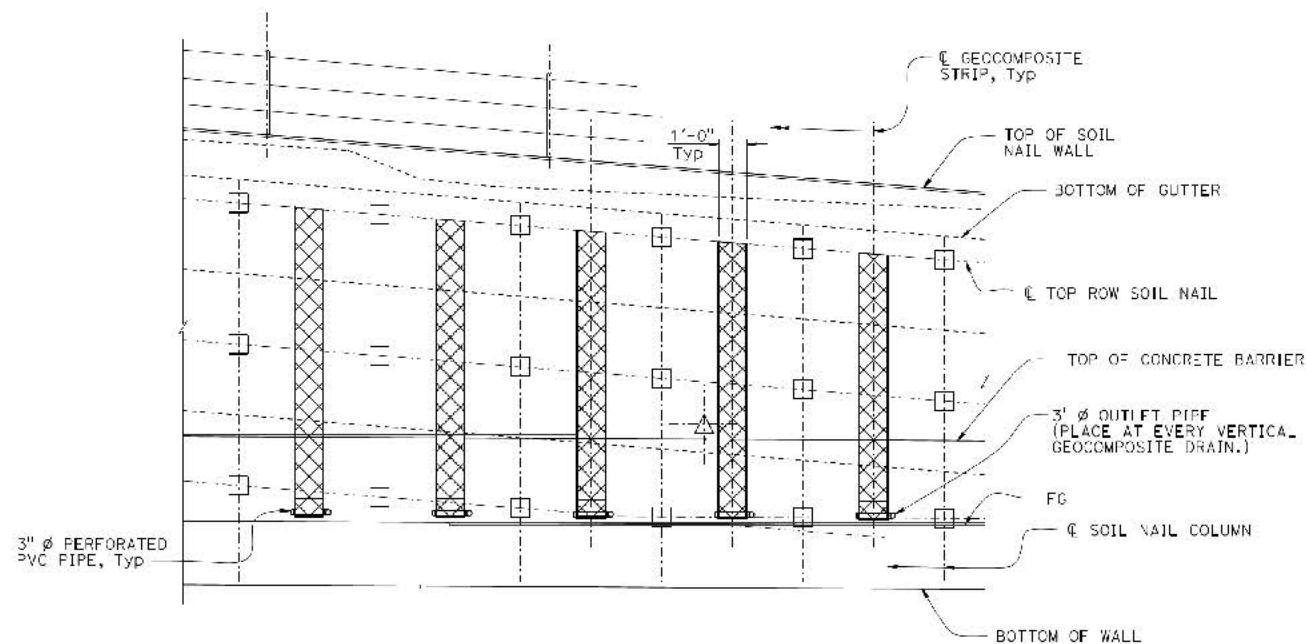


ALTERNATIVE Y

ANCHORAGE ENCLOSURE DETAILS

TABLE No. 5			
GROUND ANCHOR TEST LOAD (kip)			
LOCATION	FDL	FTL	LL
ROW 1	98.0	98.0	66.0
ROW 2	65.0	65.0	44.0
ROW 3	42.0	42.0	28.0

NO SCALE



PARTIAL ELEVATION

3/8" = 1'-0"

NOTES:

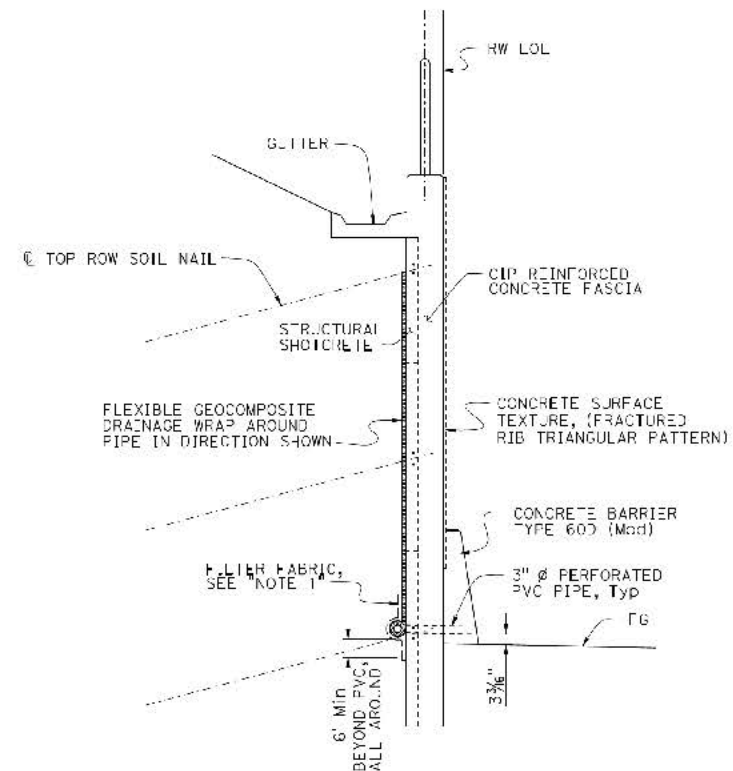
1. Provide filter fabric where necessary to prevent soil from entering drain.
2. Center Geocomposite Drains between Soil Nail columns.
3. Geocomposite Drains must have filter fabric on soil side and wrapped around top and side edges, see "DRAINAGE DETAILS No. 2" sheet.
4. Begin Geocomposite Drain at center line of top Soil Nail or top Ground Anchor row.

LEGEND:

- - Indicates Soil Nail location.
See "STRUCTURAL DETAILS No. 1" through "STRUCTURAL DETAILS No. 8" sheets for the layout of these elements and the location of the geocomposite strip placement.
- △ - Indicates Proof Test Soil Nails

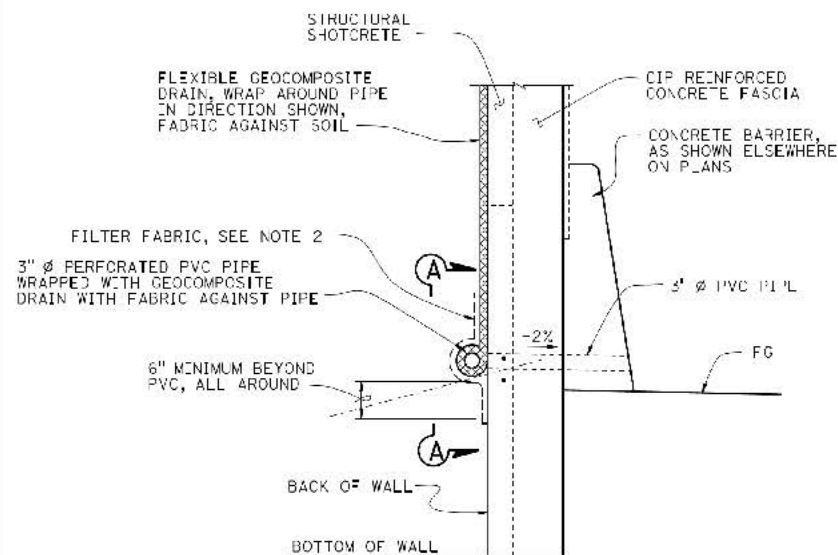
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SOIL NAIL SECTION

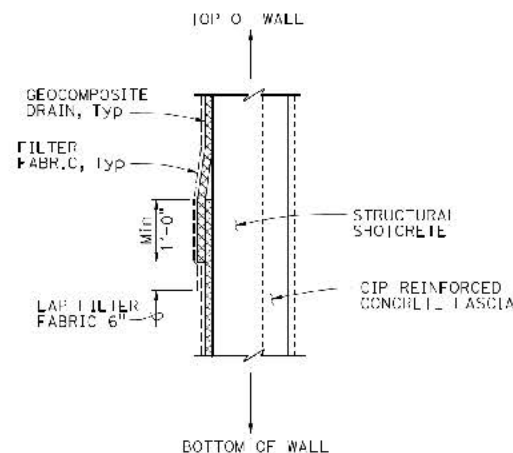
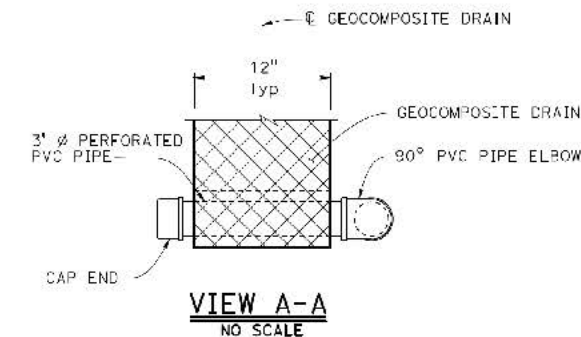
1/2" = 1'-0"



WALL DRAIN DETAIL AT WEEPHOLE

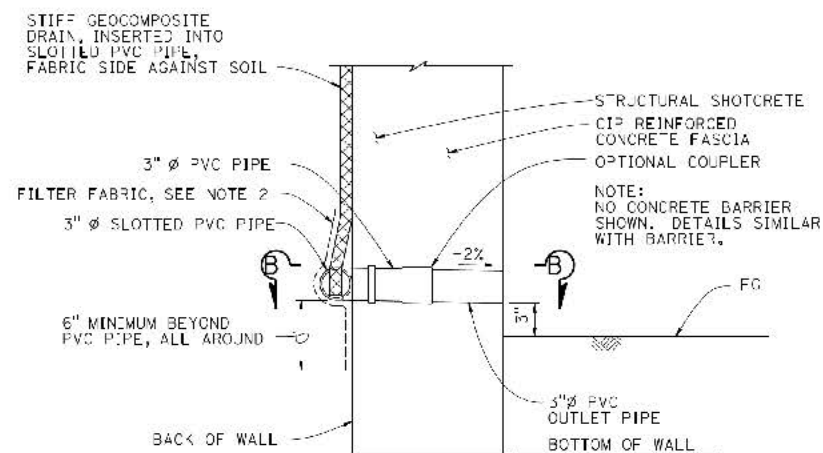
OPTION A

NO SCALE



DRAIN SPLICE

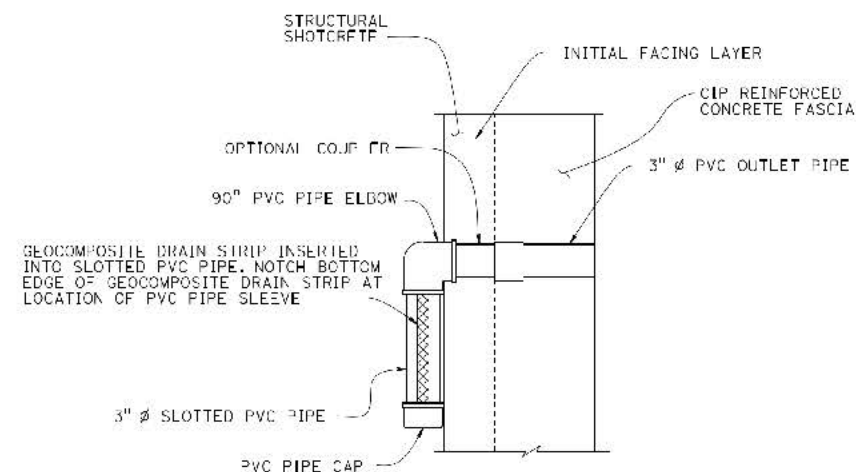
NO SCALE



WALL DRAIN DETAIL AT WEEPHOLE

OPTION B

NO SCALE



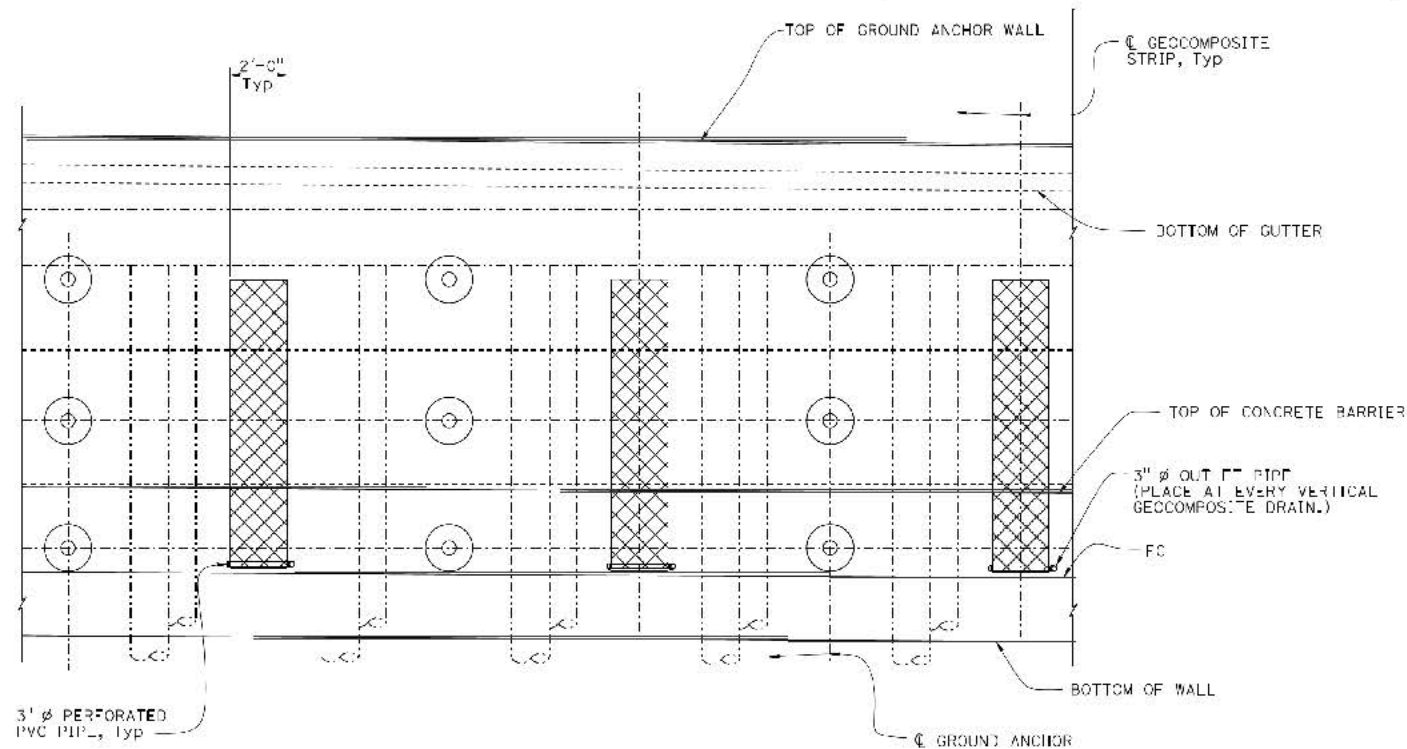
SECTION B-B

NO SCALE

NOTES:

1. Center Geocomposite Drains between soil nail columns.
2. Provide filter fabric where necessary to prevent soil from entering drain.
3. Alternative drain outlet details may be submitted for Engineer's approval.
4. Splice length for Geocomposite drain shall be 12\"/>

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PARTIAL ELEVATION
3/8" = 1'-0"

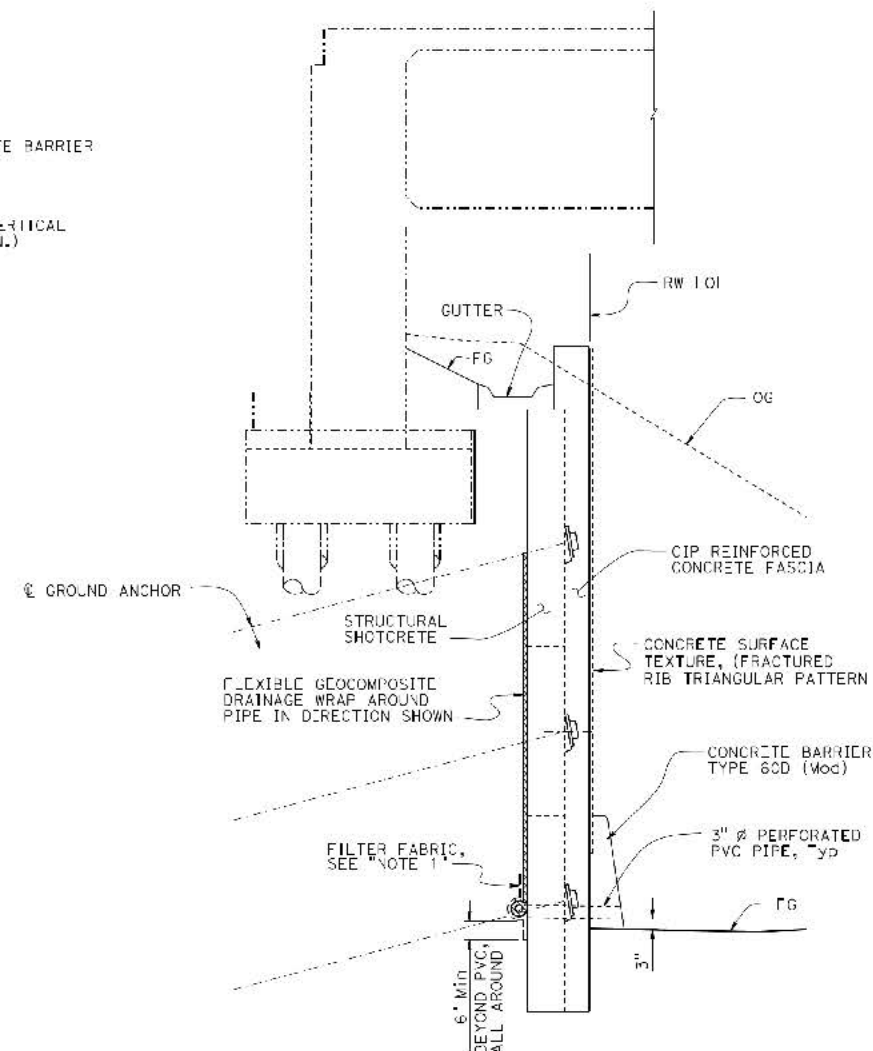
NOTES:

1. Provide filter fabric where necessary to prevent soil from entering drain.
2. Center Geocomposite Drains between Ground Anchors columns.
3. Geocomposite Drains must have filter fabric on soil side and wrapped around top and side edges, see "DRAINAGE DETAILS No. 2" sheet.
4. Begin Geocomposite Drain at center line of top Ground Anchor row.

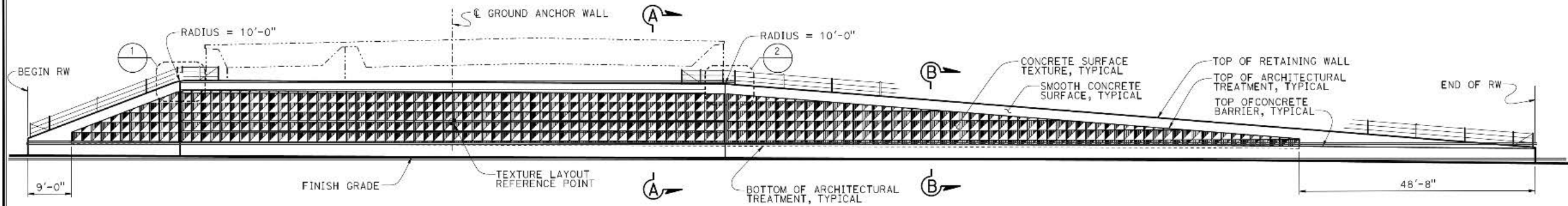
LEGEND:

- - Indicates Ground Anchor location. See "STRUCTURAL DETAILS No. 1" through "STRUCTURAL DETAILS No. 6" sheets for the layout of these elements and the location of the geocomposite strip placement.

NOTE:
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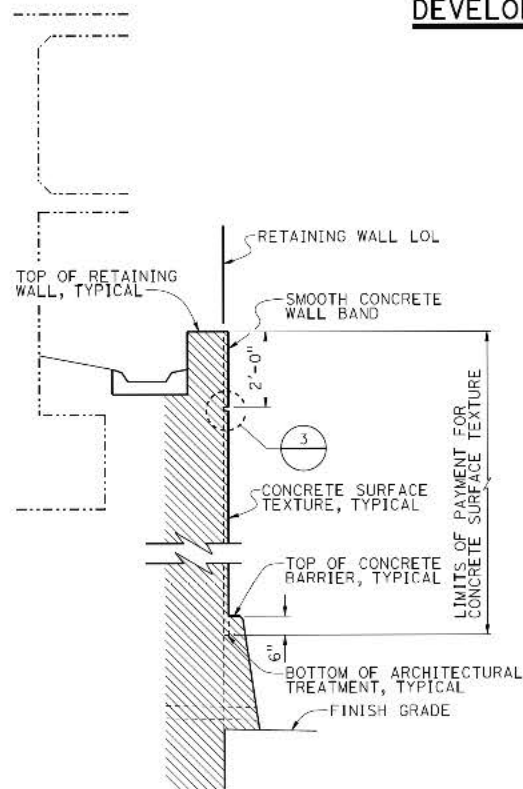


GROUND ANCHOR SECTION
1/2" = 1'-0"



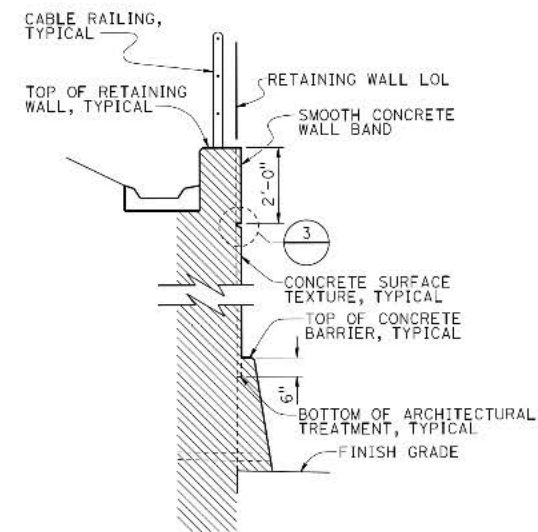
DEVELOPED ELEVATION

$\frac{3}{16}" = 1'-0"$



SECTION A-A

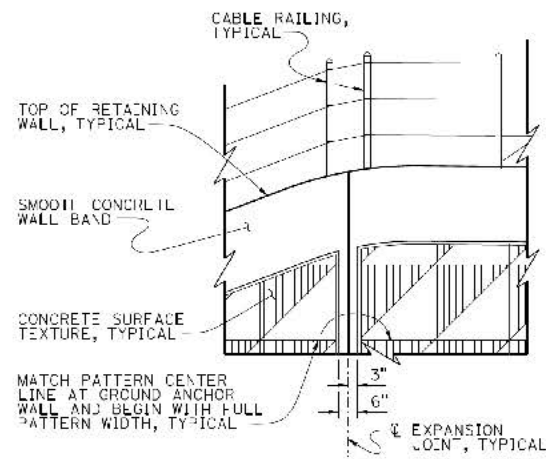
$\frac{1}{2}" = 1'-0"$



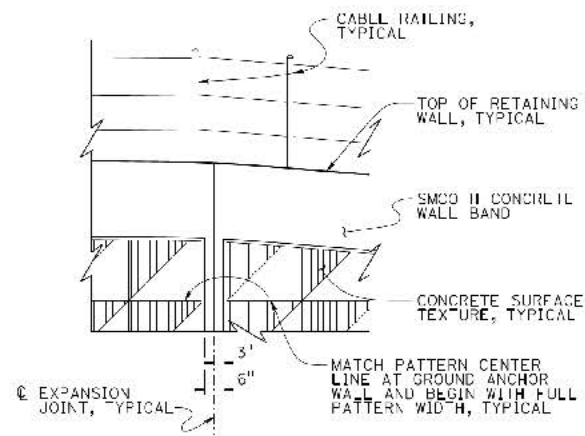
SECTION B-B

$\frac{1}{2}" = 1'-0"$

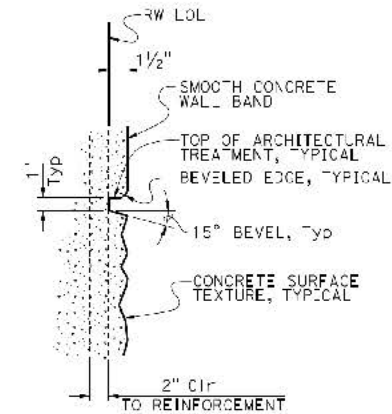
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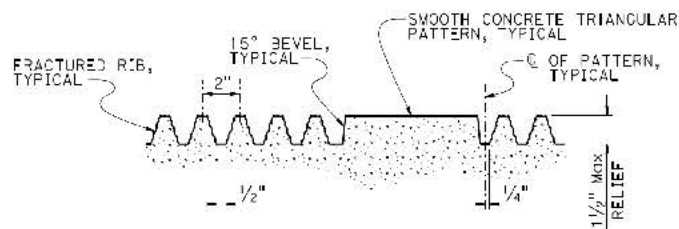
① DETAIL
1/2" = 1'-0"



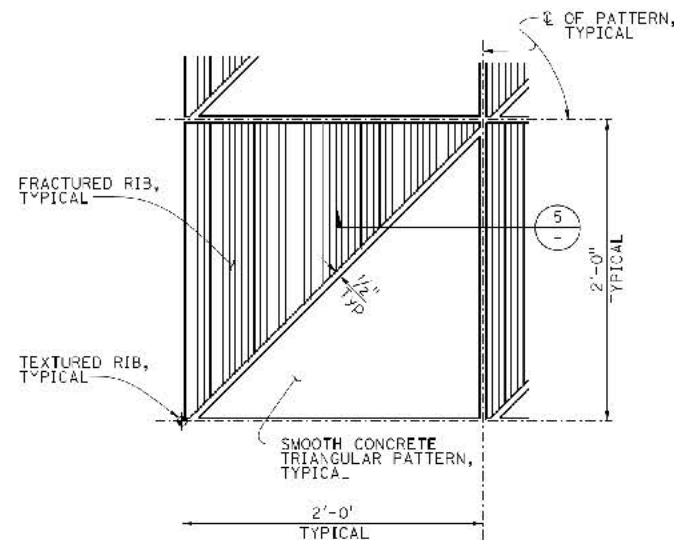
② DETAIL
1/2" = 1'-0"



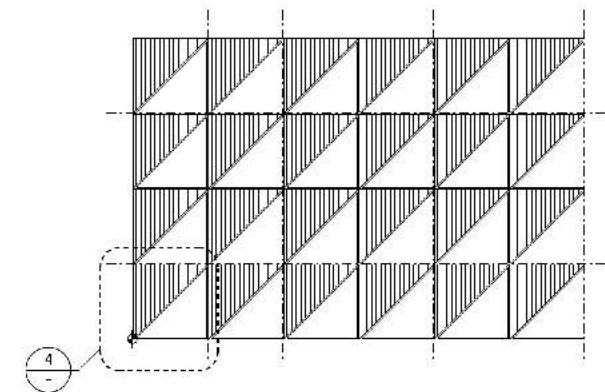
③ DETAIL
1/2" = 1'-0"



⑤ DETAIL
1/2" = 1'-0"



④ DETAIL
1/2" = 1'-0"



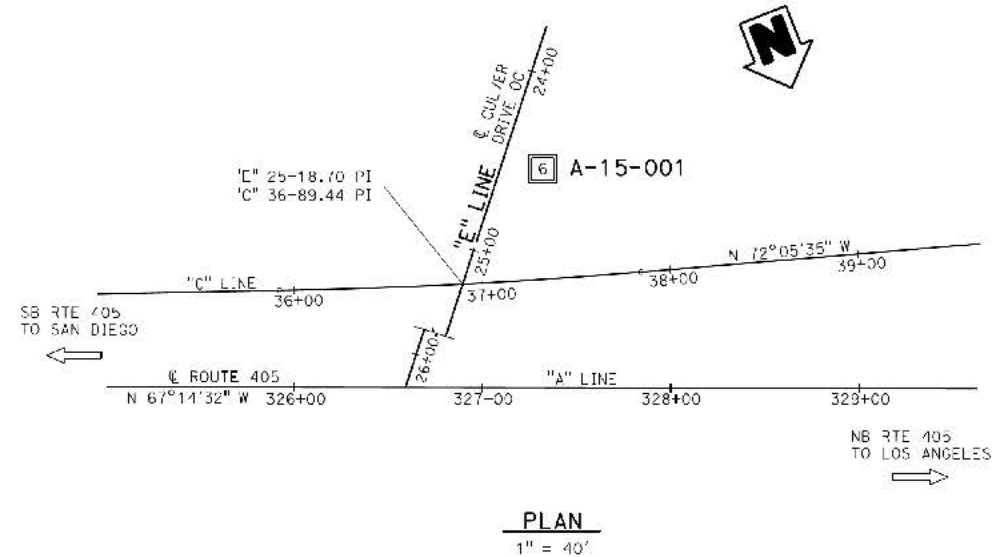
FRACTURED RIB TRIANGULAR PATTERN - ELEVATION VIEW

CONCRETE SURFACE TEXTURE
NO SCALE

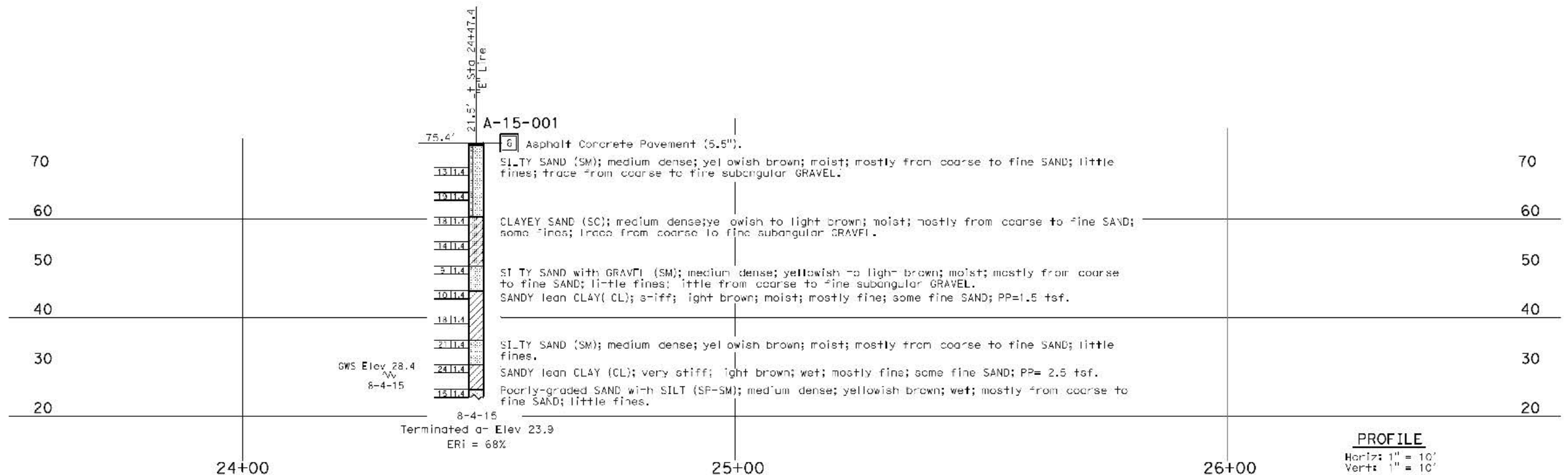
NOTE:
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BENCH MARK

BM 355-14-91 Elev 61.76
Southeasterly corner of the intersection of
Culver Drive and the Northbound 405 freeway
off-ramp, 35' Southeasterly of the C of Culver
Drive and 40' Northeasterly of the C of the
Northbound off-ramp.
NAVD88



This LOTB sheet was prepared in accordance with
the Caltrans Soil & Rock Logging, Classification,
& Presentation Manual (2010 Edition).
See 2010 Standard Plans A10F and A10G for Soil
Legend, and A10H for Rock Legend.



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typical Caltrans' practice, they do not
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documents.

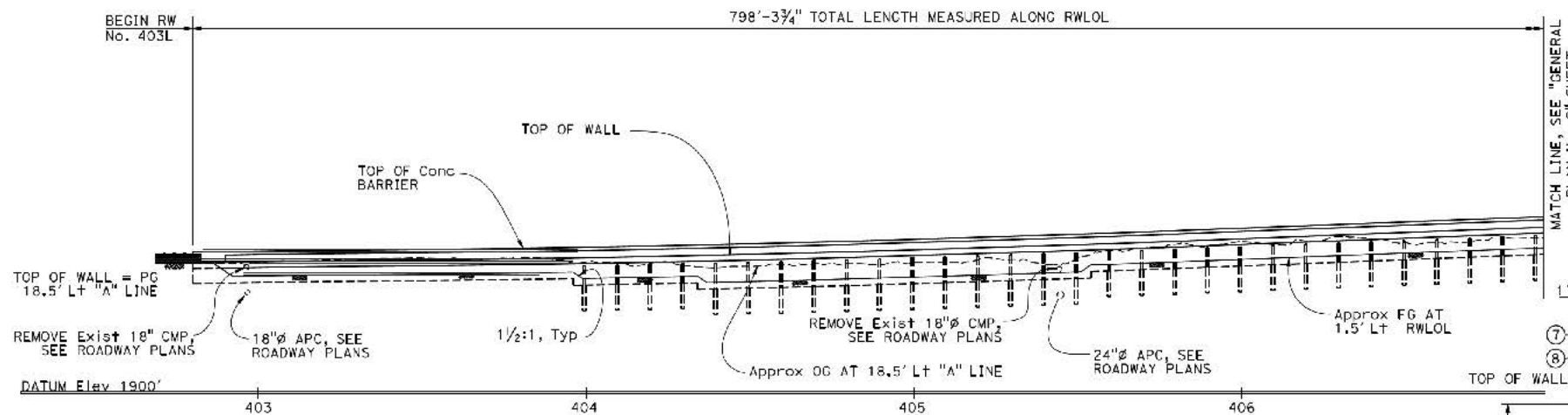
Sample Plan Set

Earth Anchor Wall

Links

Caltrans Standard Plans: <https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>

Caltrans Bridge Standard Details: <https://dot.ca.gov/programs/engineering-services/manuals/bridge-standard-details>



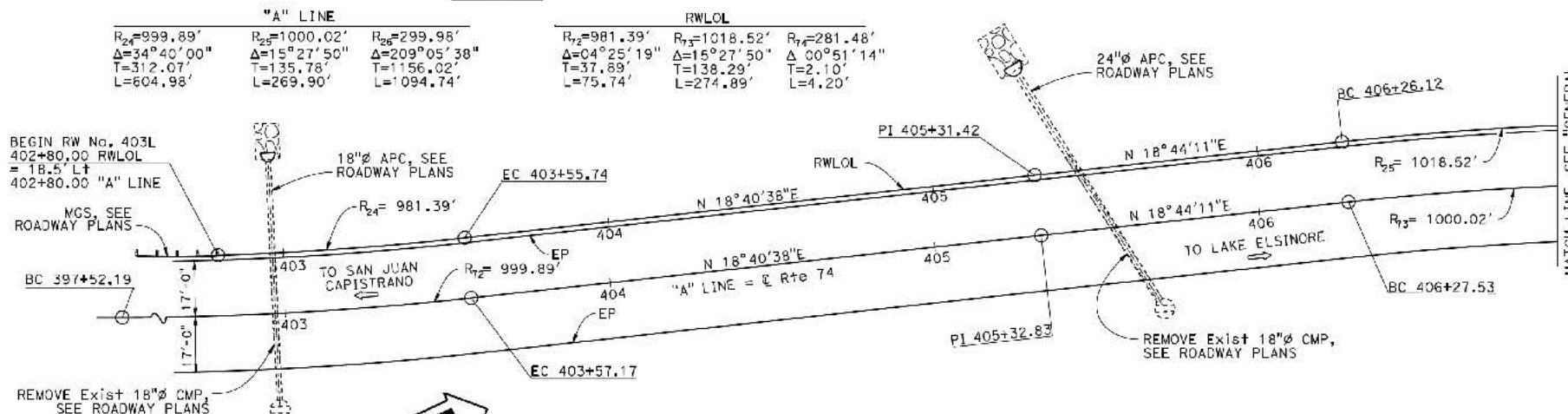
QUANTITIES

STRUCTURE EXCAVATION (EARTH ANCHOR WALL)	431	CY
STRUCTURE BACKFILL (EARTH ANCHOR WALL)	210	CY
EARTH ANCHOR (SUBHORIZONTAL)	83	EA
MICROPILE (NPS 5 XX-STRONG STEEL PIPE)	47	EA
BAR REINFORCING STEEL (EARTH ANCHOR WALL)	56,183	LB
STRUCTURAL SHOTCRETE	319	CY
PREPARE AND STAIN CONCRETE	6,786	SQFT
PREPARE AND STAIN SHOTCRETE	5,434	SQFT
CONCRETE BARRIER (TYPE 842A MODIFIED)	799	LF

DEVELOPED MIRRORED ELEVATION

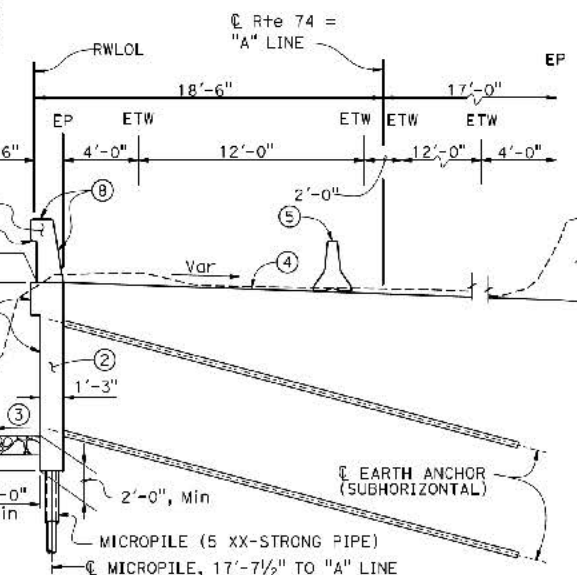
1" = 20'

CURVE DATA



PLAN
1" = 20'

NOTE:
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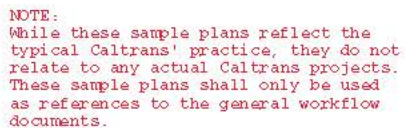
H = Design Height

TYPICAL SECTION (WITH MICROPILE)

¼" = 1'-0"

NOTES:

- ① Prepare and stain shotcrete on exposed wall surface including 1' below the berm FG
 - ② Reinforced Shotcrete Wall
 - ③ Berm finish grade (-2% slope)
 - ④ Finish grade, see ROADWAY PLANS
 - ⑤ Temporary railing, Type K, see ROADWAY PLANS
 - ⑥ Fill Slope Protection, see ROADWAY PLANS
 - ⑦ Concrete Barrier (Type 842A Mod)
 - ⑧ Prepare and stain concrete on exposed barrier surface
1. Existing MBGR not shown for clarity, see ROADWAY PLANS for removal.
 2. For "GENERAL NOTES", "INDEX TO PLANS", "STANDARD PLANS" list and "PILE DATA TABLE", see "INDEX TO PLANS" sheet.
 3. For "TYPICAL SECTION (WITHOUT MICROPILE)", see "GENERAL PLAN No. 2" sheet.



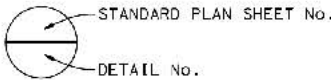
INDEX TO PLANS

SHEET No. TITLE

- 1 GENERAL PLAN No. 1
2 GENERAL PLAN No. 2
3 INDEX TO PLANS
4 FOUNDATION PLAN No. 1
5 FOUNDATION PLAN No. 2
6 STRUCTURE PLAN No. 1
7 STRUCTURE PLAN No. 2
8 STRUCTURE PLAN No. 3
9 STRUCTURE PLAN No. 4
10 WALL DETAILS
11 EARTH ANCHOR DETAILS
12 DRAINAGE DETAILS
13 LOG OF TEST BORINGS

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)
A10F LEGEND - SOIL (SHEET 1 OF 2)
A10G LEGEND - SOIL (SHEET 2 OF 2)
A10H LEGEND - ROCK
RSP B11-B1 CONCRETE BARRIER TYPE 842 DETAIL No. 1
RSP B11-B2 CONCRETE BARRIER TYPE 842 DETAIL No. 2



PILE DATA TABLE

RW Design Height (H) (ft)	Pile Type	Nominal Resistance (kips)		Design Tip Distance Below Bottom of Wall (ft)	Specified Tip Distance Below Bottom of Wall (ft)
		Compression	Tension		
8	8" Dia Micropiles	60.0	0	14.0 (a) 7.0 (c)	14.0
10		70.0	0	16.0 (a) 7.0 (c)	16.0

NOTES:

1. Design tip elevations are controlled by (a) Compression and (c) Settlement.
2. Micropile is not designed for lateral load.

PILE VERIFICATION TEST TABLE

RW Design Height (H) (ft)	SERVICE LOAD (SL) (kips)	FACTORED TEST LOAD (FTL) (kips)
8	26.0	60.0
10	30.0	70.0

TRENCH FOOTING DATA TABLE

RW Design Height (H) (ft)	Service Permissible Net Contact Stress (Settlement) (ksf)	Strength/construction Factored Gross Nominal Bearing Resistance $\phi = 0.55$ (ksf)	Extreme Event Factored Gross Nominal Bearing Resistance $\phi = 1.0$ (ksf)
4	1.2	4.7	1.7
6			

NOTE:
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GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:

AASHTO LRFD Bridge Design Specifications, 6th Edition with California Amendments, preface dated Jan 2014

LIVE LOADING SURCHARGE:

2 ft equivalent height of soil for vehicular loading

REINFORCED SHOTCRETE:

$f_y = 60$ ksi
 $f'_c = 3.6$ ksi @ 28 days
 $n = 8$

EARTH ANCHORS:

Factored Design Load (FDL) is the controlling load of Strength I, Extreme I, and EXTREME II. See "PROOF TEST TABLE ON PRODUCTION ANCHORS" on "EARTH ANCHOR DETAILS" sheet.

ANCHOR STEEL:

High Strength Bars, Grade 150, Epoxy coated

ANCHOR PLATES:

Grade 36 or Grade 50

MICROPILES:

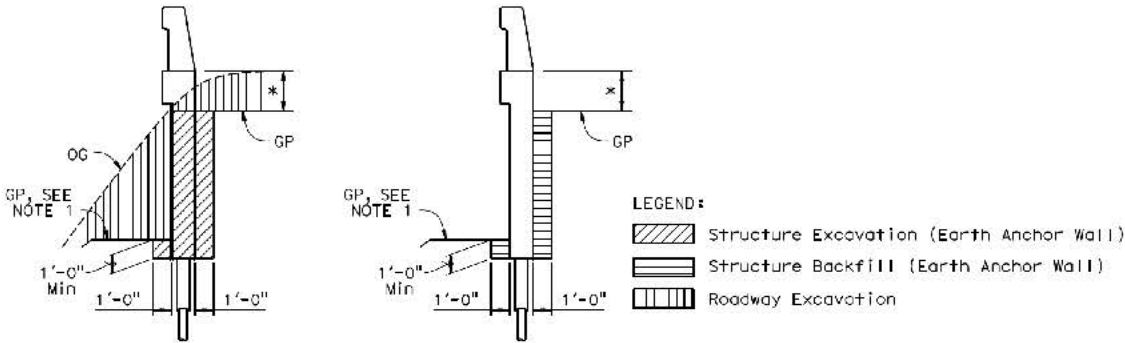
Pipe 5XX-Strong, $f_y = 35$ ksi
Grout Strength, $f'_c = 4$ ksi

SEISMIC LOADING:

Seismic acceleration coefficients, $k_h = 0.2$, $k_v = 0.0$
Shear wave velocity, $V_{sso} = 1360$ ft/sec
Moment Magnitude, $M_{max} = 6.9$
Peak ground acceleration = 0.6g

COLLISION LOADING:

Transverse Design Force, $F_t = 54$ kips
Longitudinal Design Force, $F_L = 18$ kips
Vertical (Down) Design Force, $F_v = 18$ kips



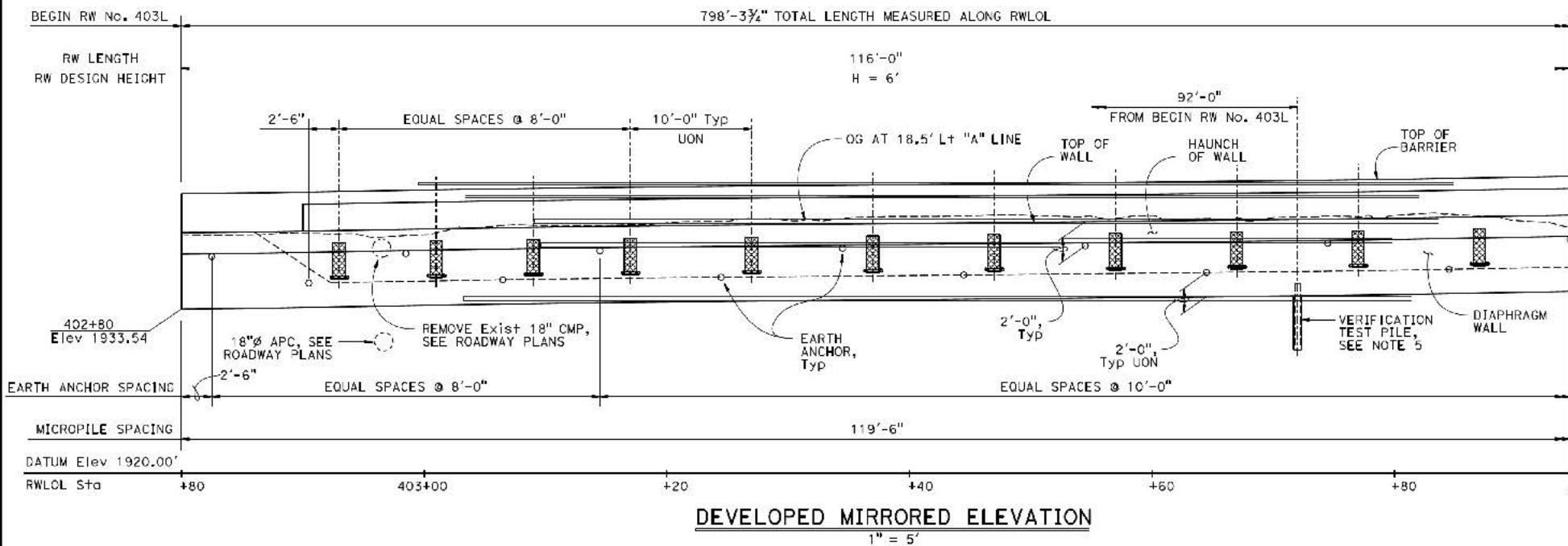
NOTE:

1. Grading plane is at the bottom of Fill Slope Protection or roadway structural section, see ROADWAY PLANS.

STRUCTURE EXCAVATION AND BACKFILL

NO SCALE

* For dimension, see ROADWAY PLANS

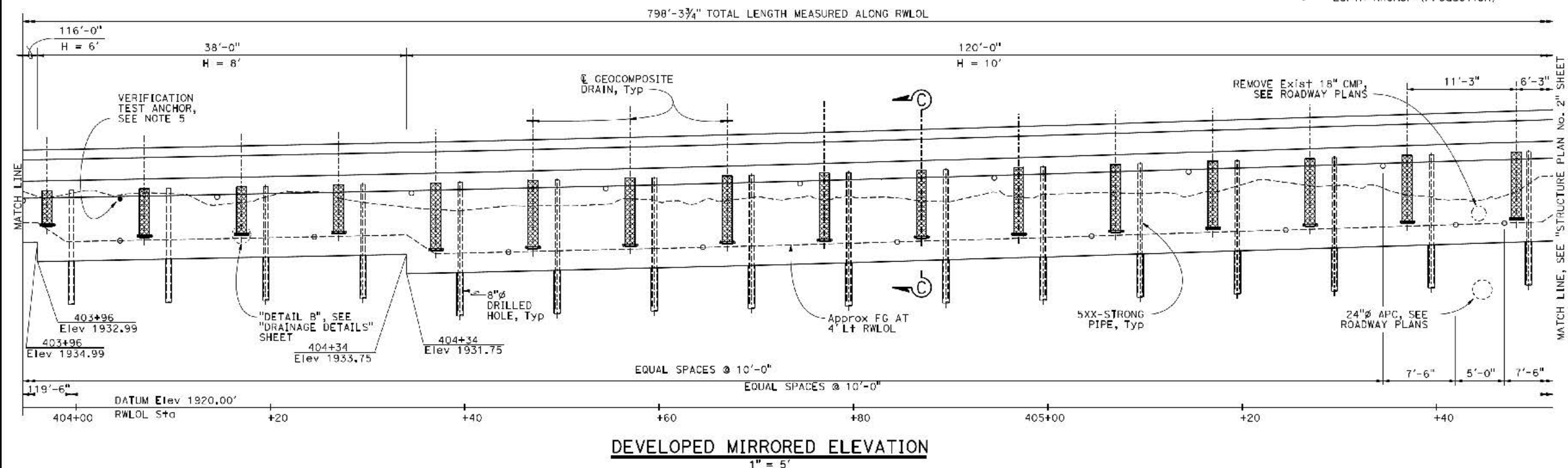


NOTES:

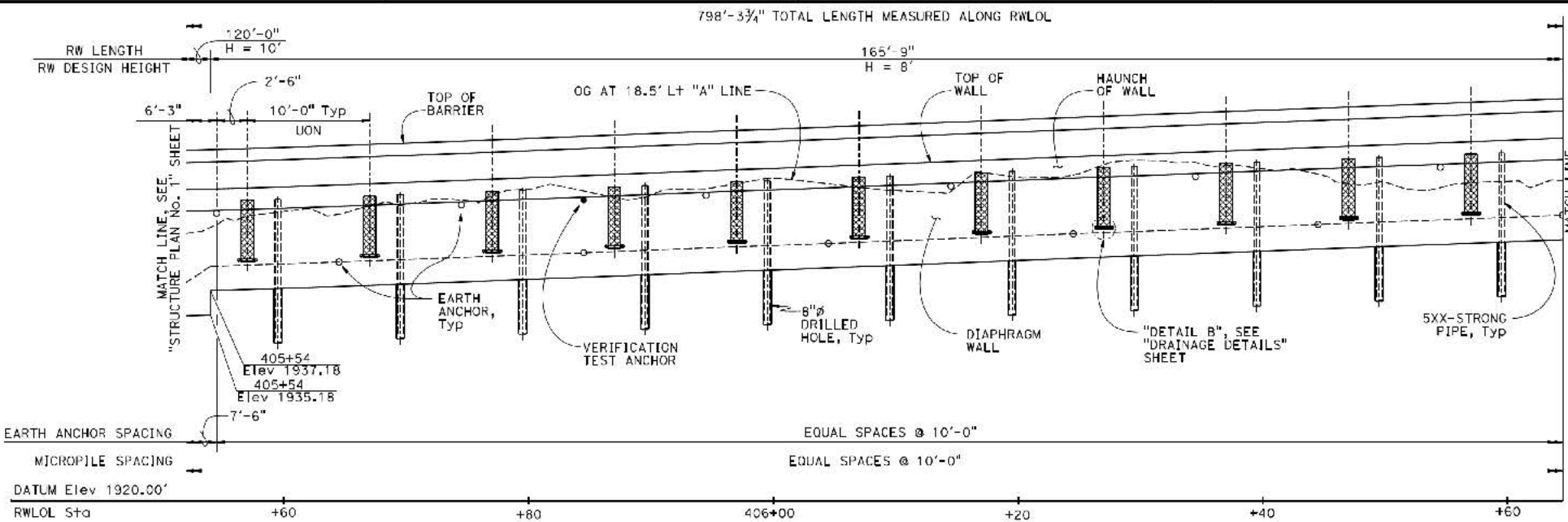
1. Earth anchors centered between micropiles, except as shown.
2. Earth anchor next to wall ends shall always be placed on the top row.
3. See "DRAINAGE DETAILS" sheet for "SECTION C-C".
4. See "EARTH ANCHOR DETAILS" sheet for test anchor assembly.
5. Alternative location for verification tests of micropile and earth anchor must be approved by the Engineer.
6. For top of wall elevations, see "STRUCTURE PLAN No. 4" sheet.

LEGEND:

- Geocomposite Drain
- Verification Test Anchor (Sacrificial)
- Earth Anchor (Production)



NOTE:
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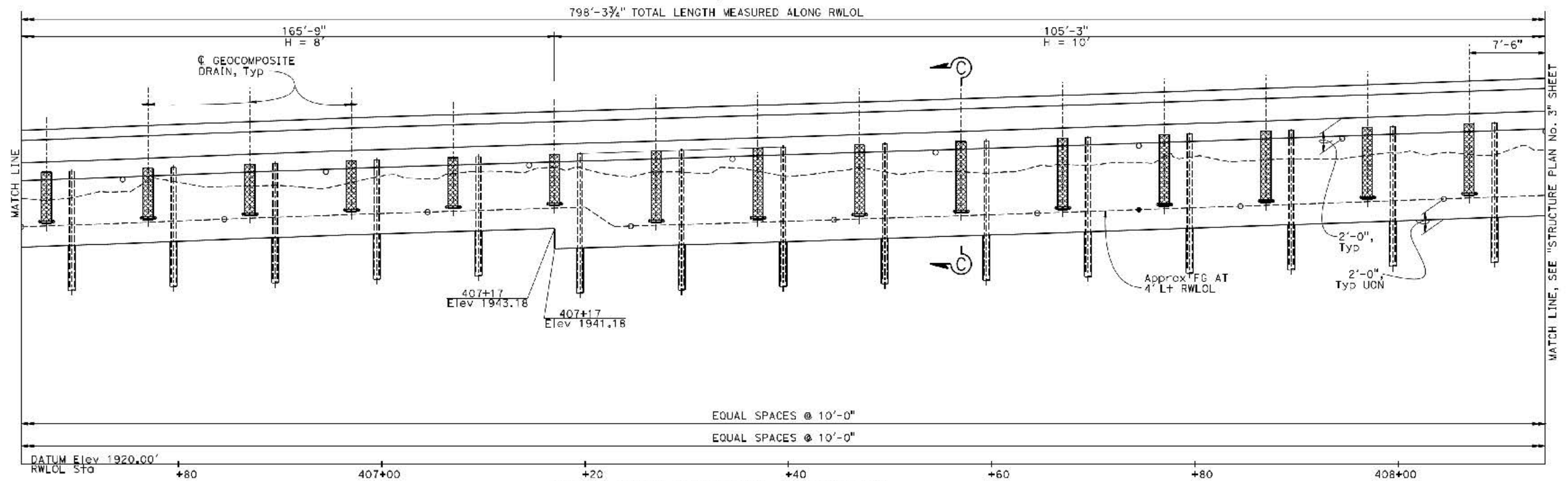


NOTE:

1. See "STRUCTURE PLAN No. 1" sheet for NOTES and LEGEND.
2. For top of wall elevations, see "STRUCTURE PLAN No. 4" sheet.

DEVELOPED MIRRORED ELEVATION

1" = 5'

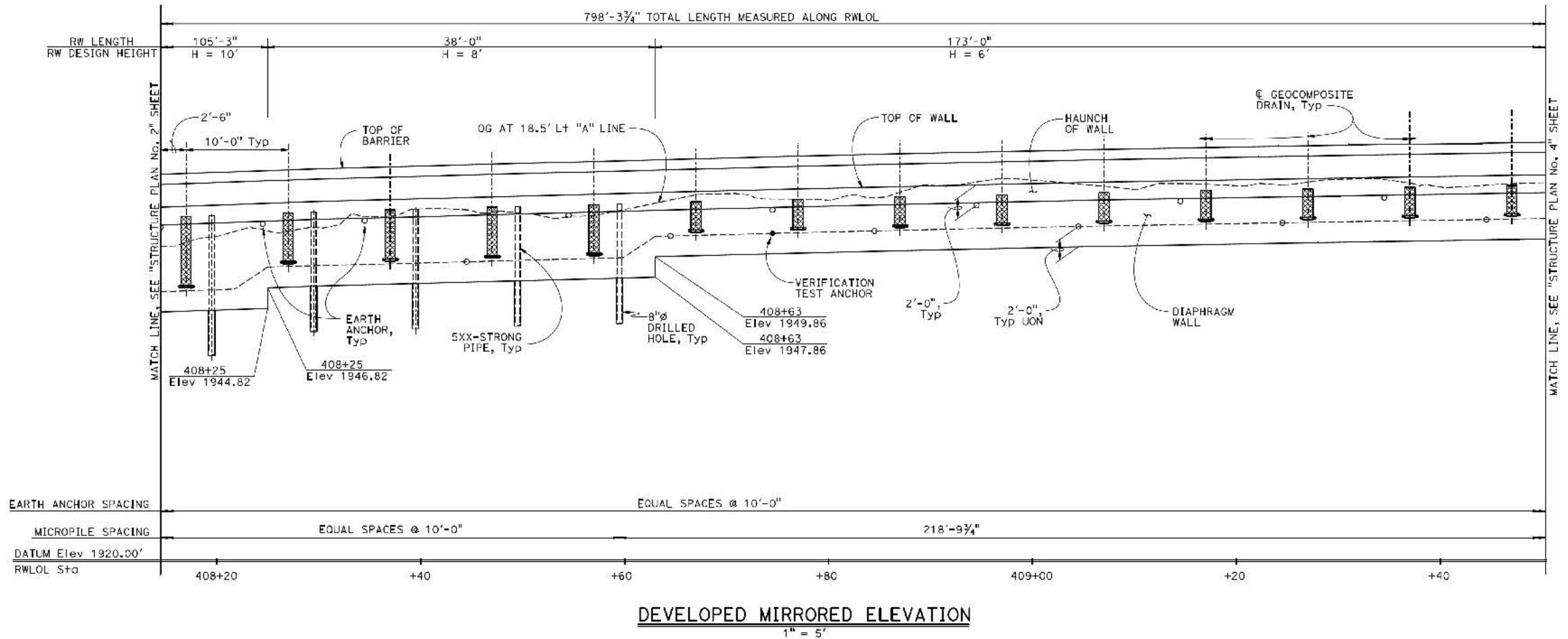


NOTE:

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NOTE:

1. See "STRUCTURE PLAN No. 1" sheet for NOTES and LEGEND.
2. For top of wall elevations, see "STRUCTURE PLAN No. 4" sheet.



NOTE:
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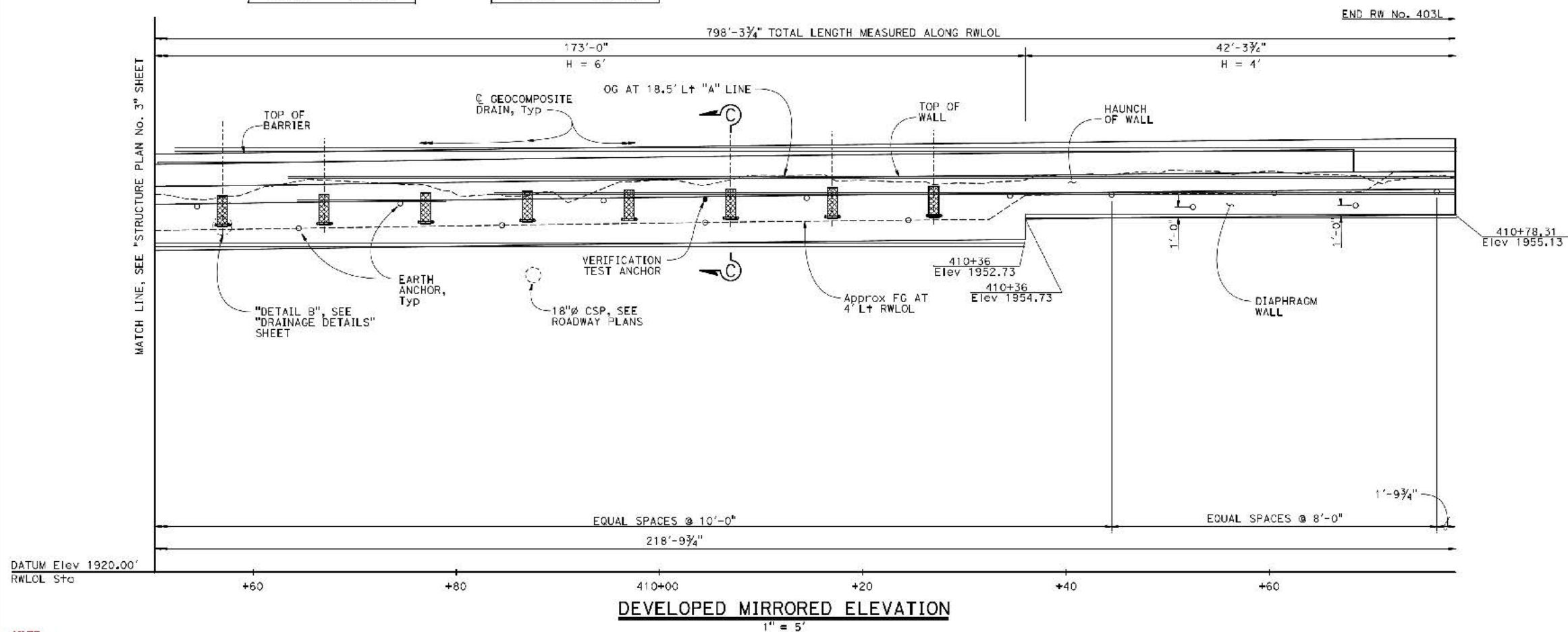
RWLOL STATION	TOP OF WALL ELEVATION (ft)
402+80	1939.66
403+00	1939.88
403+20	1940.15
403+40	1940.42
403+60	1940.69
403+80	1940.97
404+00	1941.30
404+20	1941.67
404+40	1942.10
404+60	1942.57
404+80	1943.08
405+00	1943.65
405+20	1944.27
405+40	1944.93

RWLOL STATION	TOP OF WALL ELEVATION (ft)
405+60	1945.64
405+80	1946.39
406+00	1947.14
406+20	1947.89
406+40	1948.64
406+60	1949.39
406+80	1950.14
407+00	1950.88
407+20	1951.50
407+40	1952.13
407+60	1952.75
407+80	1953.44
408+00	1954.15
408+20	1954.87

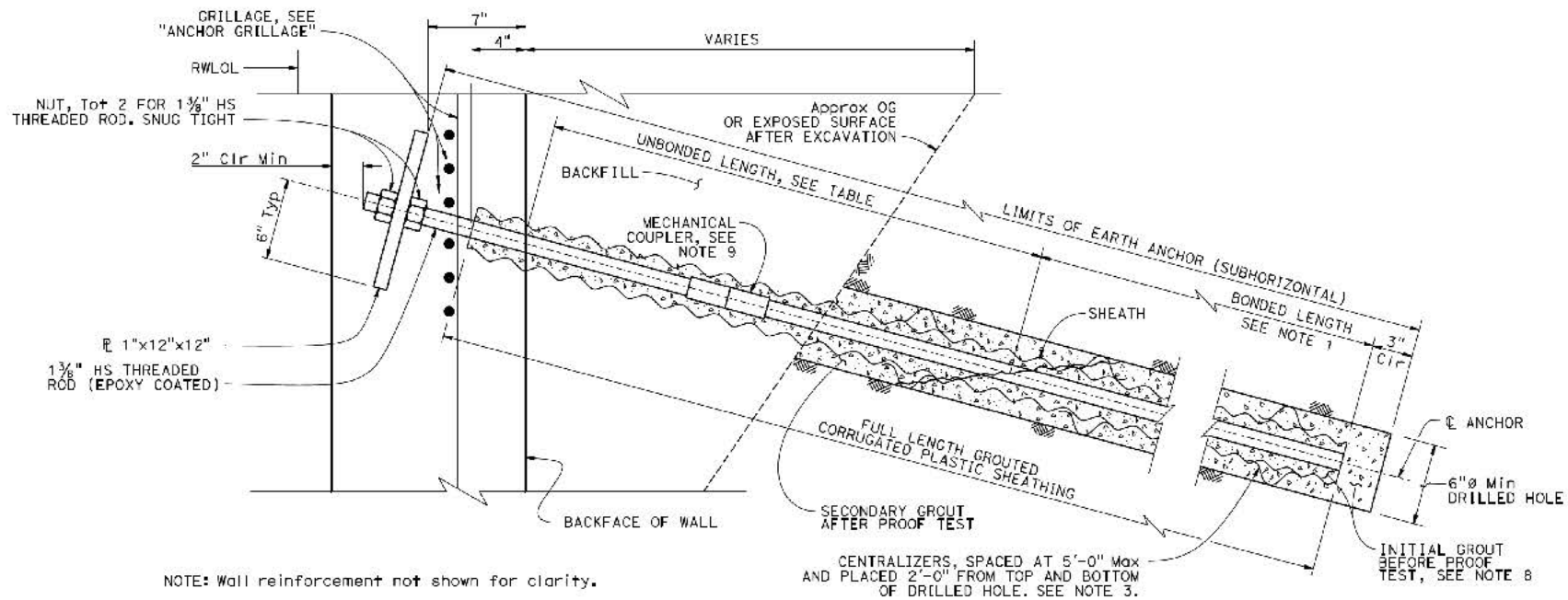
RWLOL STATION	TOP OF WALL ELEVATION (ft)
408+40	1955.46
408+60	1955.97
408+80	1956.49
409+00	1956.93
409+20	1957.39
409+40	1957.68
409+60	1958.03
409+80	1958.26
410+00	1958.48
410+20	1958.70
410+40	1958.89
410+60	1959.08
410+78.31	1959.49

NOTE:

1. See "STRUCTURE PLAN No. 1" sheet for NOTES and LEGEND.



NOTE:
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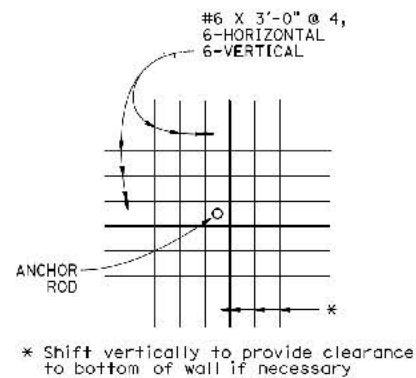


ANCHOR ASSEMBLY

NO SCALE

NOTES:

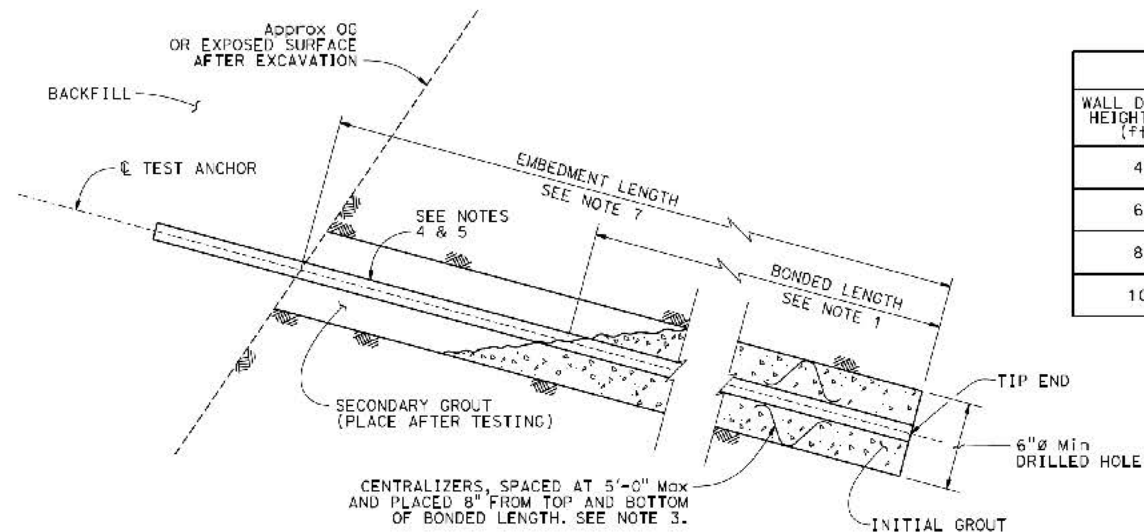
1. Bonded length shall be determined by Contractor based on test results and shall not be less than 10 ft.
2. Keep enough casing for drilled hole at locations where caving is anticipated to maintain uninterrupted anchor installation.
3. The centralizer shall be made from a plastic material to be attached to the anchor in a way that it will not impede the free flow of grout.
4. Total length of Verification Test Anchor Assembly equals embedment length plus the length required for jacking equipment.
5. Verification Test Anchors shall have the same size and strength bar as Production Anchors.
6. All verification and proof tests shall be done against OG or exposed surface after excavation.
7. Minimum embedment length for Verification Test Anchor is bonded length plus a minimum 3 ft of unbonded length to the testing surface.
8. Initial grouting must be completed for all production anchors or no less than 17 consecutive production anchors in a wall before the Engineer selects 25% of the anchors for proof test.
9. Mechanical coupler and sheath splicing to be approved by the Engineer.



ANCHOR GRILLAGE

NO SCALE

NOTE: Grillage centered on anchor rod.



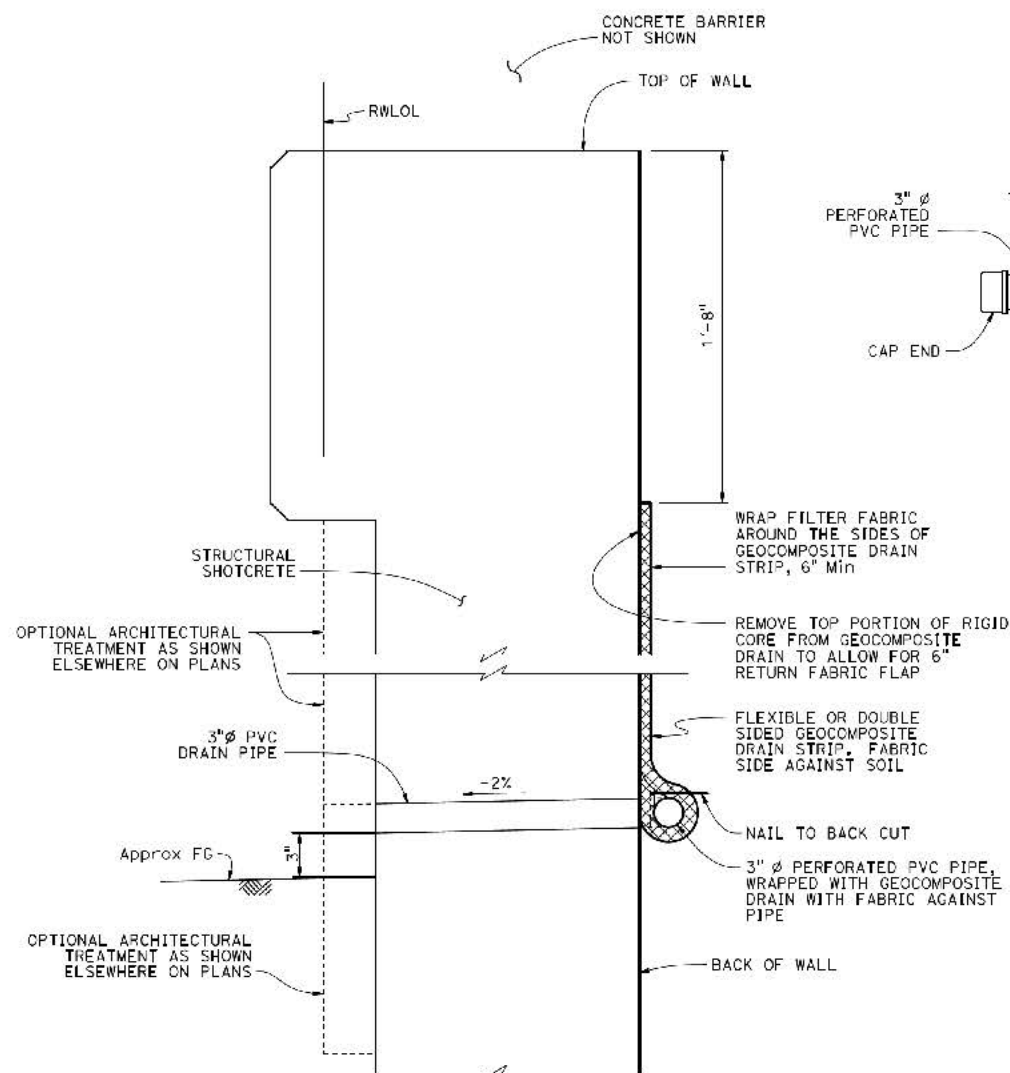
VERIFICATION TEST ANCHOR ASSEMBLY

NO SCALE

PROOF TEST TABLE ON PRODUCTION ANCHORS				
WALL DESIGN HEIGHT (H) (ft)	FACTORED DESIGN LOAD (FDL) (kips)	FACTORED TEST LOAD (FTL)* (kips)	LOCK OFF LOAD (LL) (kips)	UNBONDED LENGTH (ft)
4	60	60	0	25 (top and bottom rows)
6	60	60	0	30 (top row) 20 (bottom row)
8	60	60	0	30 (top row) 20 (bottom row)
10	60	60	0	30 (top row) 20 (bottom row)

* Same FTL in this table applies to Verification Test Anchor

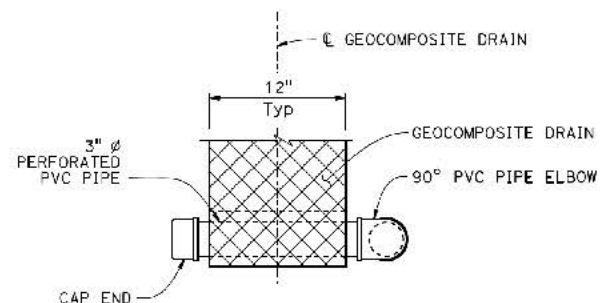
NOTE:
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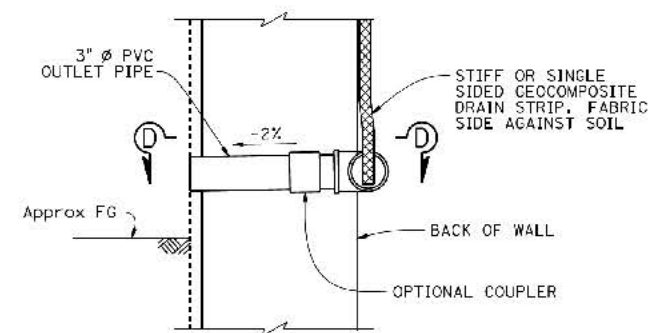
SECTION C-C
NO SCALE

NOTES:

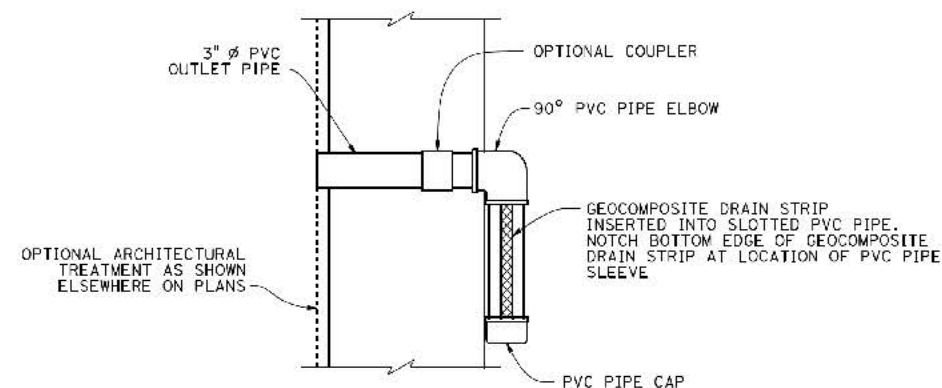
1. For location of "SECTION C-C", see "STRUCTURE PLAN" sheet(s).
2. For location of "DETAIL B", see "STRUCTURE PLAN" sheet(s).



DETAIL B
NO SCALE



**WALL DRAIN DETAIL AT WEEPHOLE
ALTERNATIVE**
NO SCALE

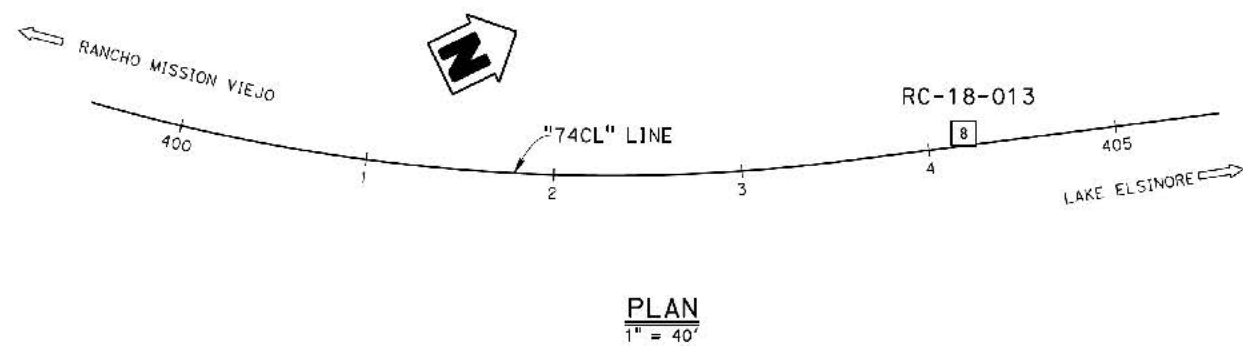


SECTION D-D
NO SCALE

NOTE:
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BENCH MARK

3002 Elev 1152.39'
FD 1" IF W/TAG "CALTRANS" BUR 0.8', W OF ENTRANCE
TO THE UPPER SAN JUAN CAMPGROUND, PM 2.1

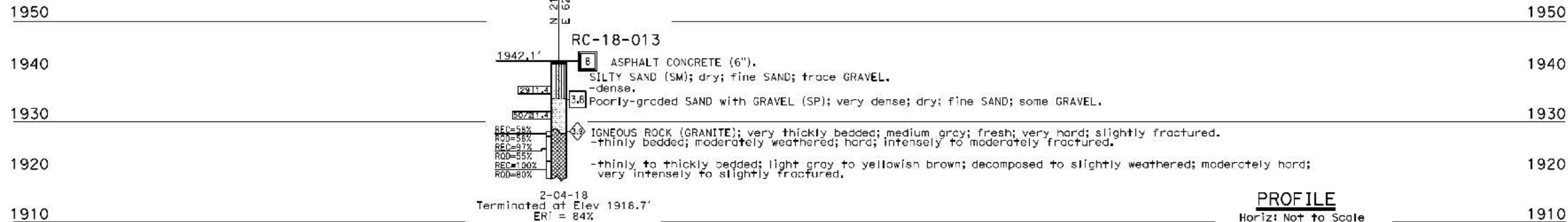


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BOREHOLE LOCATION TABLE

HOLE ID	"74CL" LINE		
	Station	Offset	Rt/Lt
RC-18-013	404+19.5	6.6'	Lt

NOTE:
Groundwater was not encountered during field investigation.



PROFILE
Horiz: Not to Scale
Vert: 1" = 10'

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