

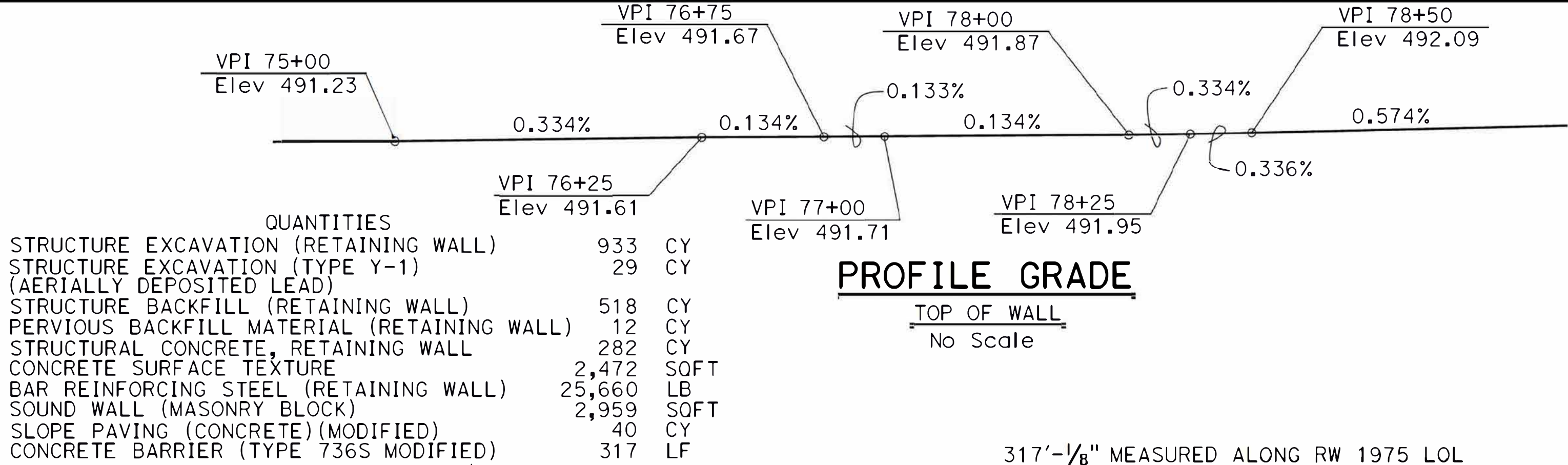
Sample Plan Set

Conventional and Modified Retaining Walls

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>

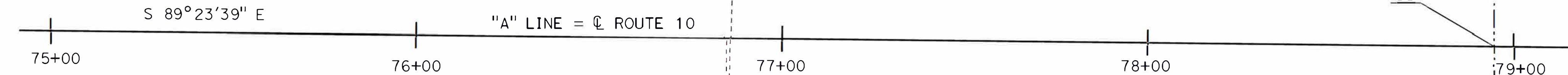


INDEX TO PLANS

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3	STRUCTURE PLAN NO. 2
4	FOUNDATION PLAN
5	RETAINING WALL TYPE 1 SWB DETAILS
6	RETAINING WALL TYPE 1 SWB DETAILS NO. 1
7	MASONRY BLOCK SOUND WALL WITH BARRIER ON RETAINING WALL DETAILS NO. 2
8	MASONRY BLOCK SOUND WALL WITH BARRIER ON RETAINING WALL DETAILS NO. 2
9	ARCHITECTURAL DETAILS
10	SLOPE PAVING
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STANDARD PLANS

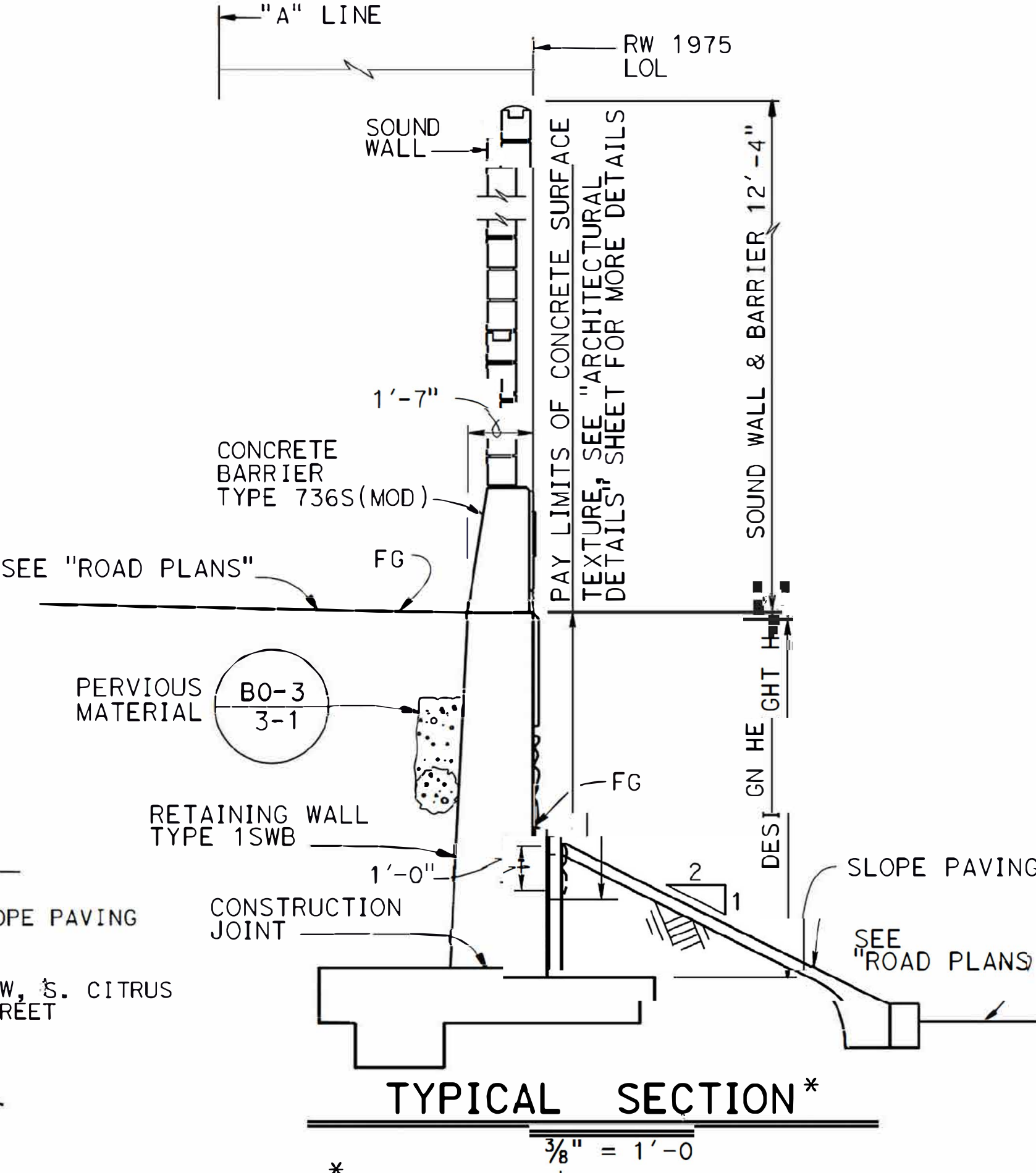
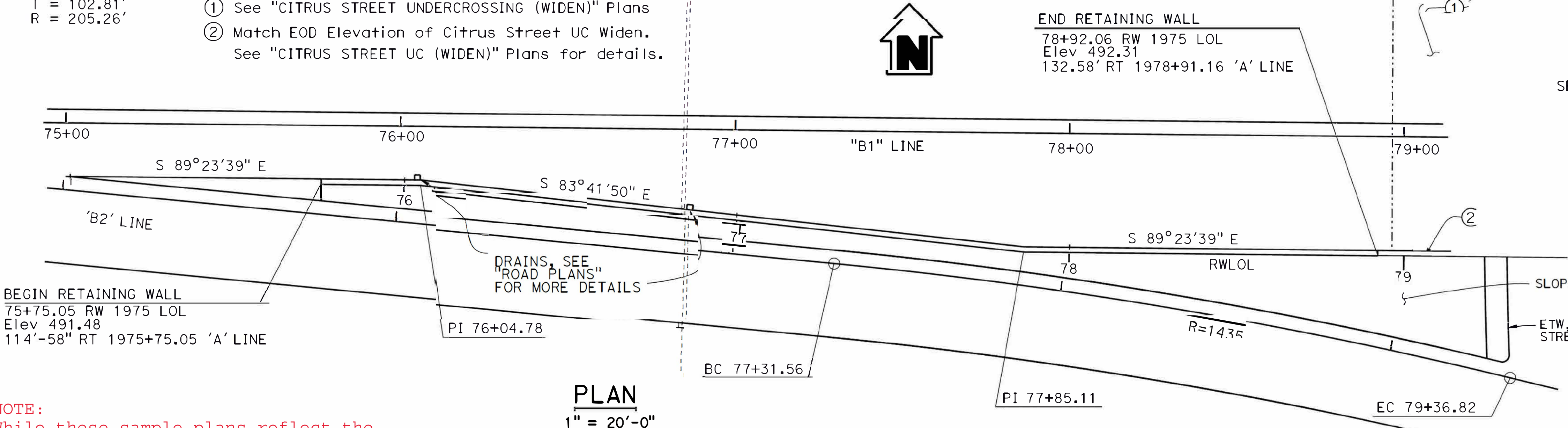
2010	A10A	ABBREVIATIONS (SHEET 1 OF 2)
	A10B	ABBREVIATIONS (SHEET 2 OF 2)
	A10C	LINES AND SYMBOLS (SHEET 1 OF 3)
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RSP	B15-6	SOUND WALL MASONRY BLOCK ON TYPE 736S/SV BARRIER DETAILS (1)
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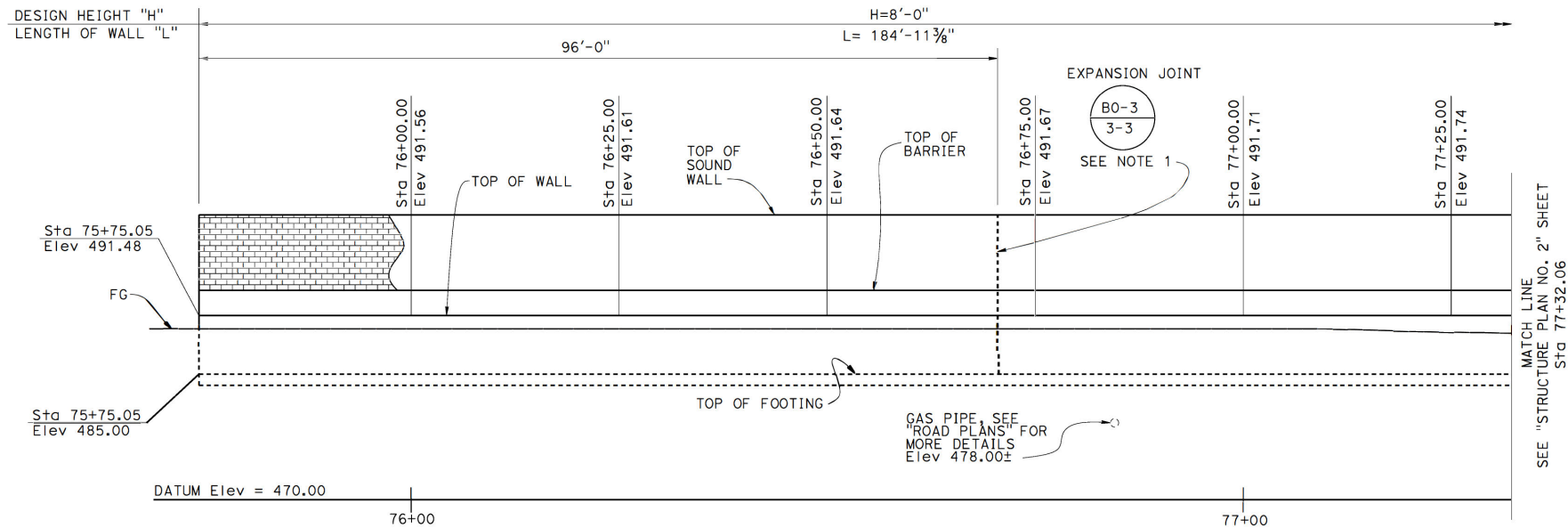
CURVE DATA "B2" LINE

R = 1435'
Δ = 8°11'44"
T = 102.81'
R = 205.26'

- NOTES:**
- See "CITRUS STREET UNDERCROSSING (WIDEN)" Plans
 - Match EOD Elevation of Citrus Street UC Widen.
See "CITRUS STREET UC (WIDEN)" Plans for details.



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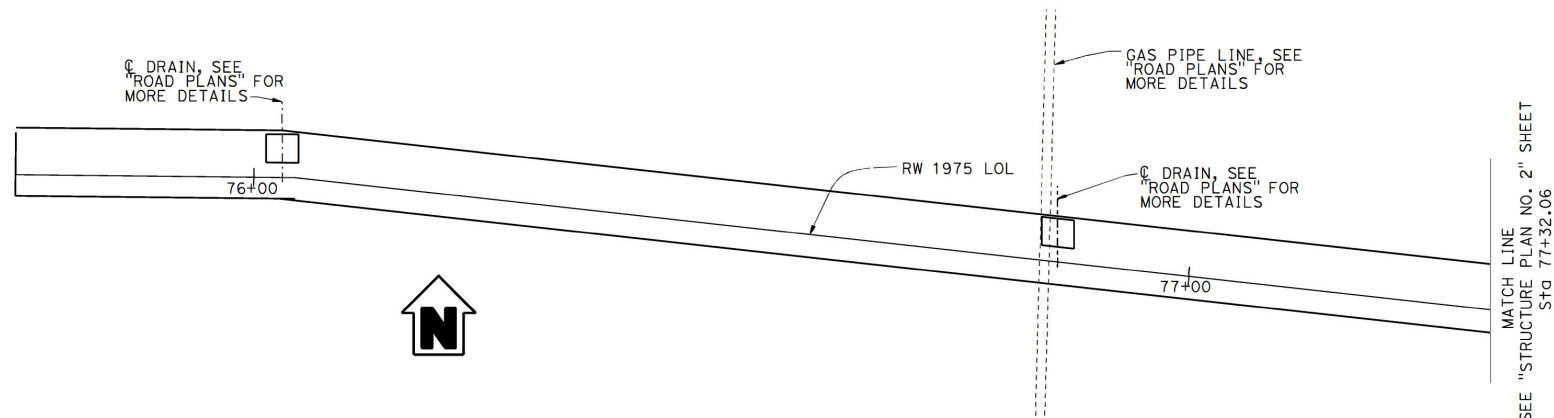
ELEVATION

1/8" = 1'-0"

NOTE:

1. Weakened Planes and Drains not shown. See STANDARD PLAN "BRIDGE DETAILS" for more details.

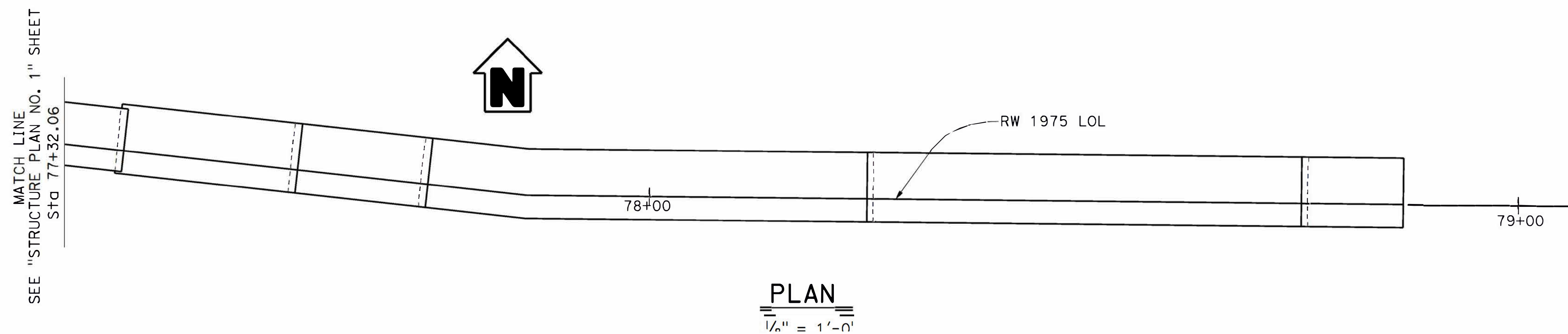
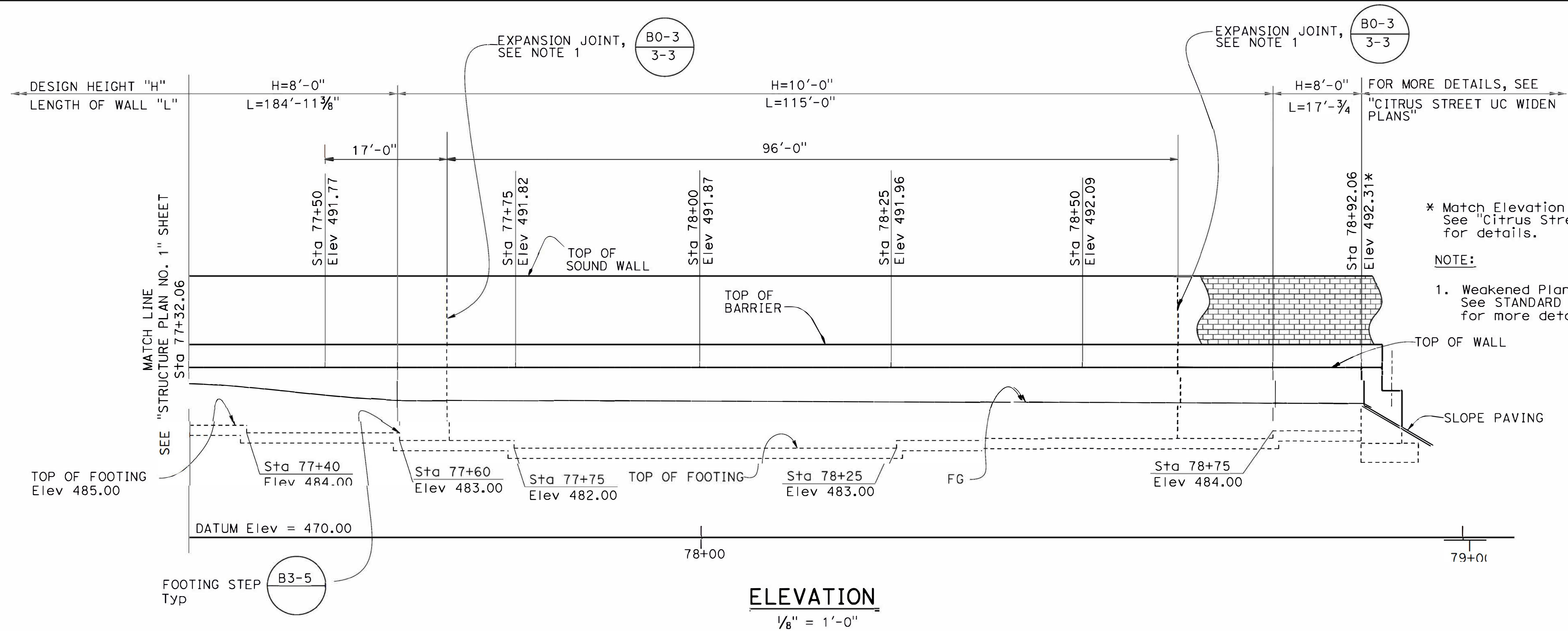
B0-3



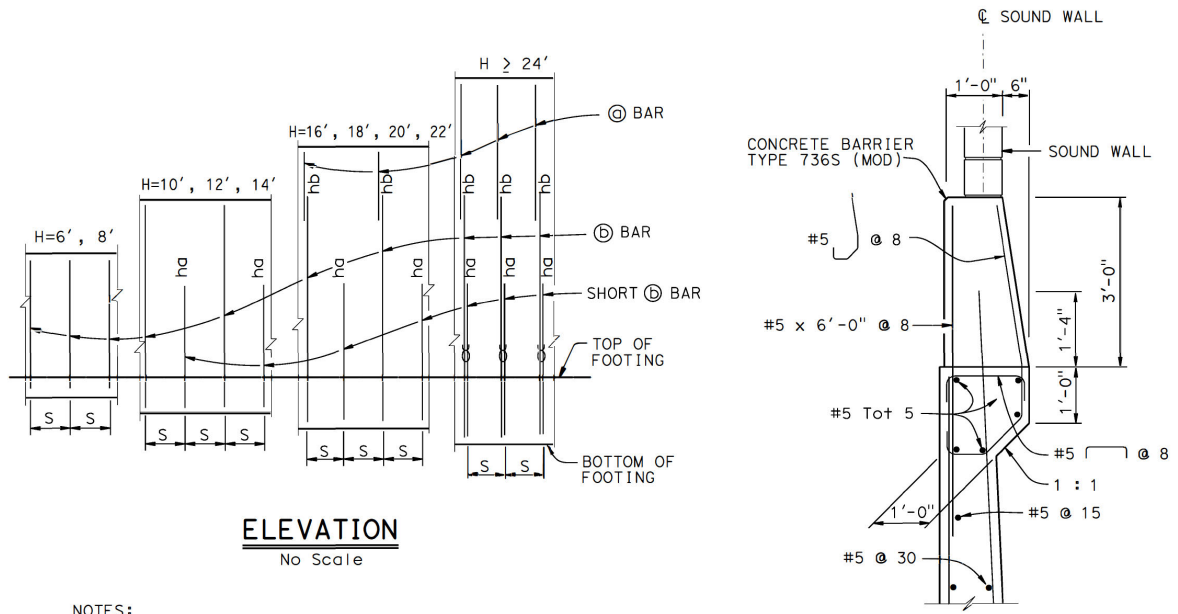
PLAN

1/8" = 1'-0"

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ELEVATION
No Scale

DETAIL A
 $\frac{3}{4} = 1'-0"$

DESIGN DATA

Design: AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments

WS: 33 psf on Sound Wall and Barrier

LS: Varied surcharge on level ground surface

CT: 54 kip maximum traffic impact loading evenly distributed over 10 feet at top of the barrier and 1:1 distribution down and outward

EQE: Mononobe-Okabe Method
 $K_h = 0.3$
 $K_v = 0.0$

Soil: $\phi = 34^\circ$
 $\gamma = 120 \text{ pcf}$

Reinforced Concrete: $f'_c = 3600 \text{ psi}$
 $f_y = 60,000 \text{ psi}$

Load Combinations and Limit States

Service I $Q=1.00DC+1.00EV+1.00EH+1.00LS+0.30WS$

Service II $Q=1.00DC+1.00EV+1.00EH+1.00WS$

Strength I $Q=aDC+\beta EV+1.50EH+1.75LS$

Strength III $Q=aDC+\beta EV+1.50EH+1.40WS$

Strength V $Q=aDC+\beta EV+1.50EH+1.35LS+0.40WS$

Extreme I $Q=1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE$

Extreme II $Q=1.00DC+1.00EV+1.00EH+1.00CT$

Where: Q: Force Effects

a: 1.25 or 0.90, Which ever Controls Design

β : 1.35 or 1.00, which ever Controls Design

DC: Dead Load of Structure Components

EV: Vertical Earth Fill Pressure

LS: Live Load Surcharge

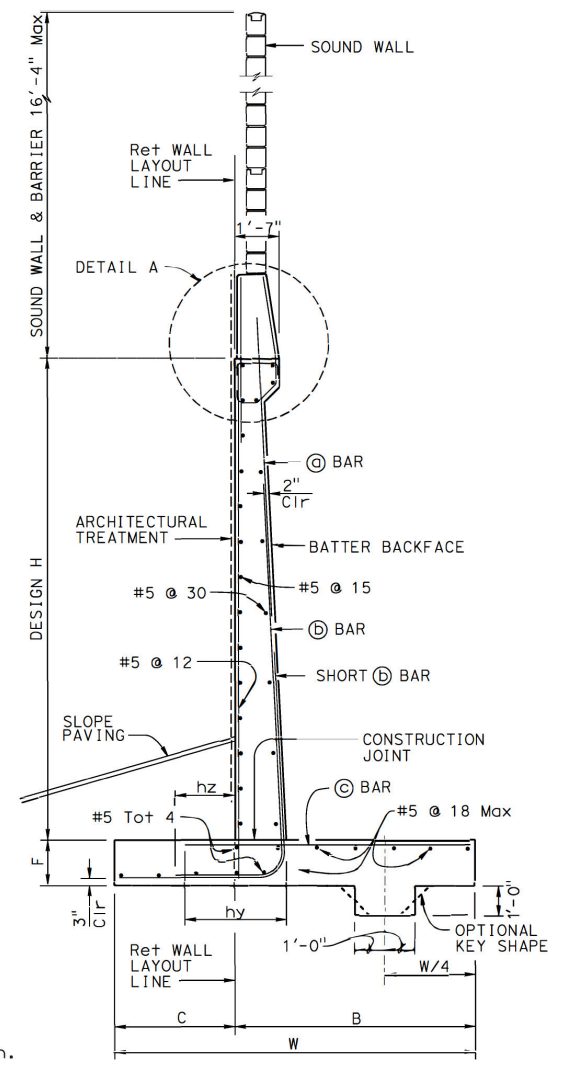
EQE: Seismic Earth Pressure

EQD: Soil and Structure Components Inertia. Soil Inertia Ignored for stem design

WS: Wind Load on Sound Wall and Barrier

CT: Vehicular Collision Force

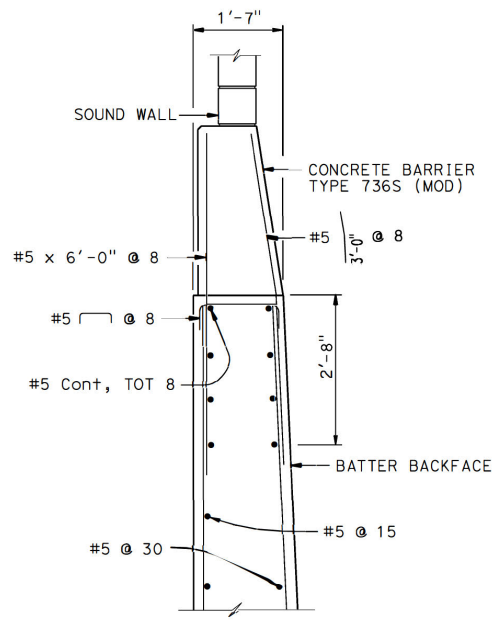
- NOTES:
1. For sound wall and retaining wall Architectural finish or texture see details elsewhere in Project Plans.
 2. For details not shown and drainage notes see **B3-5**.
 3. Footing cover, 1'-6" minimum.
 4. For sound wall and barrier reinforcement details, see "SOUND WALL - MASONRY BLOCK WITH BARRIER ON RETAINING WALL" sheet.
 5. For H = 6' through 14', extend ③ bars into Barrier for stem with haunch.
 6. For H ≥ 16', extend ③ bars into Barrier for stem with haunch.



SPREAD FOOTING SECTION
No Scale

VERTICAL LAYOUT LINE

A* OFFSET = $\frac{1}{2}"$ PER 10' OF WALL STEM HEIGHT



OPTIONAL DETAIL A
 $\frac{3}{4} = 1'-0"$

For Details not shown, see "DETAIL A"

WALL OFFSET
No Scale

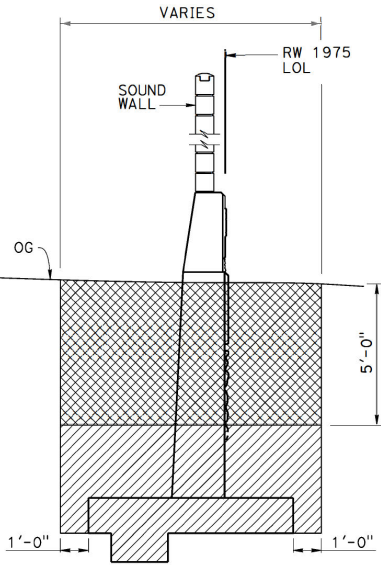
Values for offsetting forms to be determined by the Engineer

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TABLE OF REINFORCING STEEL DIMENSIONS AND DATA														
DESIGN H	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'
W	6'-9"	7'-3"	8'-0"	8'-9"	10'-0"	11'-6"	12'-9"	14'-0"	15'-9"	18'-0"	19'-9"	21'-9"	23'-3"	25'-3"
C	2'-3"	2'-5"	2'-8"	2'-11"	3'-4"	3'-10"	4'-3"	4'-8"	5'-3"	6'-0"	6'-7"	7'-3"	7'-9"	8'-5"
B	4'-6"	4'-10"	5'-4"	5'-10"	6'-8"	7'-8"	8'-6"	9'-4"	10'-6"	12'-0"	13'-2"	14'-6"	15'-6"	16'-10"
F SPREAD FOOTING	1'-3"	1'-3"	1'-3"	1'-3"	1'-6"	1'-9"	1'-9"	2'-3"	2'-6"	2'-6"	2'-9"	3'-0"	3'-6"	3'-9"
STEM WITH HAUNCH, BATTER	0	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	5/8:12	3/4:12	7/8:12	1:12	1:12
STEM WITHOUT HAUNCH, BATTER	0	0	0	0	0	0	0	0	1/4:12	1/4:12	1/2:12	3/4:12	3/4:12	3/4:12
Ⓐ BARS						#7 @ 15	#7 @ 12	#7 @ 12	#8 @ 12	#6 @ 6	#6 @ 6	#6 @ 6	#8 @ 9	#9 @ 9
Ⓑ BARS	#8 @ 12	#8 @ 12	#7 @ 6	#7 @ 6	#7 @ 6	#9 @ 7.5	#9 @ 6	#10 @ 6	#10 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#10 @ 9	#11 @ 9
ha			5'-0"	6'-0"	7'-0"	7'-0"	6'-0"	7'-0"	7'-6"	7'-6"	8'-6"	9'-3"	15'-0"	11'-3"
hb						11'-6"	12'-0"	13'-3"	16'-0"	15'-6"	17'-6"	18'-9"	21'-0"	20'-9"
hy	2'-0"	2'-4"	1'-8"	2'-0"	2'-4"	2'-10"	2'-10"	3'-7"	3'-7"	4'-6"	5'-6"	2'-10"	4'-6"	5'-6"
hz			0	0	3'-1"	3'-7"	4'-0"	4'-5"	5'-0"	3'-0"	3'-0"	3'-6"	5'-6"	3'-0"
Ⓒ BARS	#6 @ 12	#7 @ 12	#5 @ 6	#6 @ 6	#7 @ 6	#8 @ 7.5	#8 @ 6	#9 @ 6	#9 @ 6	#10 @ 6	#11 @ 6	#8 @ 6	#10 @ 9	#11 @ 9
SER I: B'(ft), q ₀ (ksf)	5.9, 1.2	6.0, 1.4	6.5, 1.6	7.0, 1.8	8.1, 1.9	9.7, 2.0	11.0, 2.1	12.1, 2.3	13.8, 2.4	16.6, 2.4	18.5, 2.6	20.7, 2.7	22.1, 2.9	24.3, 3.0
STR Ia: B'(ft), q ₀ (ksf)	6.3, 1.9	6.3, 2.3	6.7, 2.5	7.0, 2.9	8.1, 3.1	9.5, 3.2	10.8, 3.4	11.8, 3.7	13.4, 4.0	16.2, 4.0	18.0, 4.2	20.2, 4.4	21.5, 5.0	23.7, 5.0
STR, Ib: B'(ft), q ₀ (ksf)	4.3, 1.6	4.1, 2.0	4.3, 2.4	4.5, 2.8	5.5, 2.9	6.9, 2.9	8.2, 3.0	9.0, 3.4	10.4, 3.5	13.2, 3.4	14.8, 3.5	16.9, 3.6	18.0, 3.9	20.1, 4.1
STR, IIa: B'(ft), q ₀ (ksf)	4.3, 2.1	4.8, 2.4	5.5, 2.5	6.2, 2.8	7.4, 2.9	9.1, 3.0	10.4, 3.2	11.5, 3.7	13.3, 3.7	16.1, 3.8	18.0, 4.0	20.3, 4.2	21.6, 4.6	23.8, 4.9
STR, IIb: B'(ft), q ₀ (ksf)	3.2, 2.1	3.6, 2.3	4.2, 2.4	4.7, 2.6	5.9, 2.7	7.4, 2.7	8.6, 2.8	9.5, 3.1	11.2, 3.0	14.0, 3.2	15.8, 3.3	17.9, 3.4	19.1, 3.7	21.2, 3.9
STR, Va: B'(ft), q ₀ (ksf)	5.9, 2.0	5.9, 2.3	6.4, 2.6	6.8, 2.9	7.9, 3.1	9.4, 3.2	10.6, 3.4	11.7, 3.9	13.4, 3.9	16.1, 4.0	18.0, 4.2	20.2, 4.5	21.5, 4.9	23.7, 5.1
STR, Vb: B'(ft), q ₀ (ksf)	3.8, 1.7	3.8, 2.1	4.2, 2.5	4.4, 2.8	5.5, 2.9	7.0, 2.9	8.2, 3.0	9.0, 3.3	10.5, 3.4	13.3, 3.3	15.0, 3.5	17.1, 3.6	18.2, 3.9	20.3, 4.0
Ext I: B'(ft), q ₀ (ksf)	2.5, 2.8	2.0, 4.3	1.7, 6.4	1.2, 10.9	1.3, 13.3	1.7, 12.4	1.9, 13.2	1.9, 17.6	2.5, 15.0	4.5, 10.2	5.3, 10.0	6.6, 9.6	6.8, 10.8	8.1, 10.5
Ext II: B'(ft), q ₀ (ksf)	1.4, 4.9	2.5, 3.5	3.8, 2.8	4.9, 2.7	6.6, 2.5	8.6, 2.5	10.1, 2.5	11.5, 2.6	13.5, 2.8	16.4, 2.8	18.4, 2.9	20.7, 3.1	22.1, 3.3	24.4, 3.5

LEGEND:
SER: service limit state
STR: strength limit state
EXT: extreme event limit state
B' : effective footing width (ft)
q₀ : net bearing stress (ksf)

q₀ : gross uniform bearing stress (ksf)
Ø : 2 bar bundle

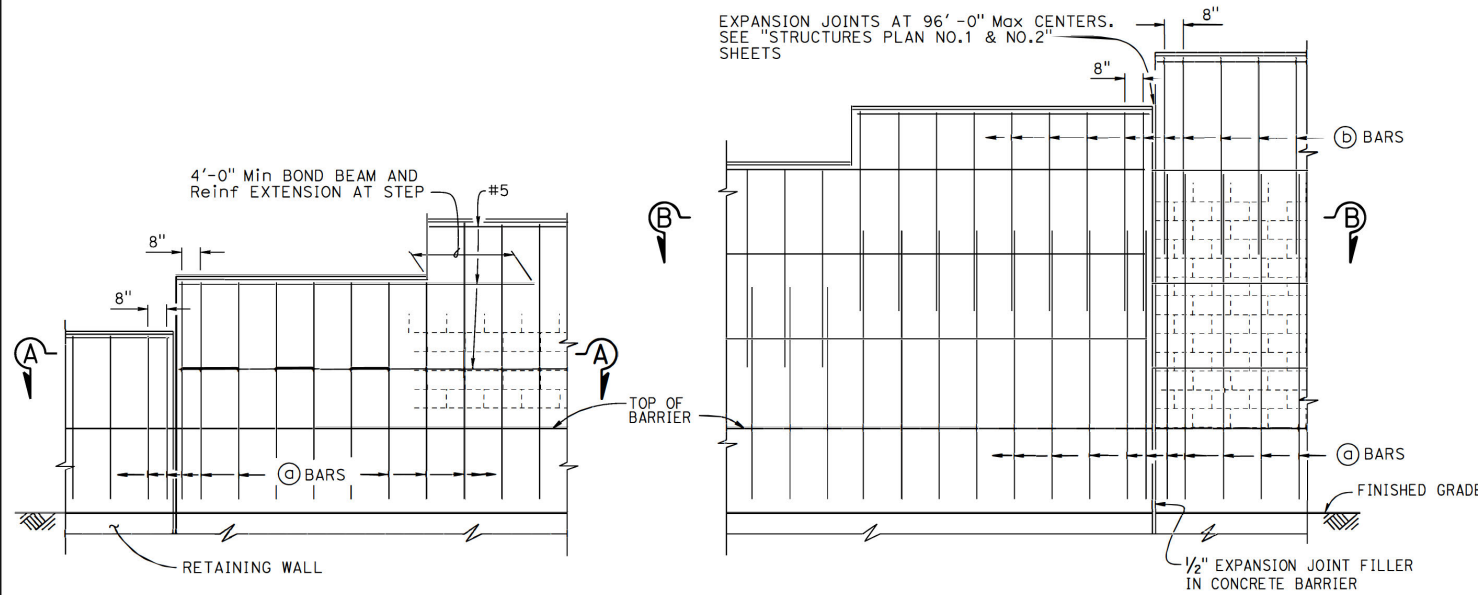


LEGEND:
STRUCTURAL EXCAVATION (RETAINING WALL)
STRUCTURAL EXCAVATION (TYPE Y-1)
(AERIALY DEPOSITED LEAD)

1 LIMITS OF PAYMENT FOR EXCAVATION
3/8" = 1'-0"

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EXPANSION JOINTS AT 96'-0" Max CENTERS.
SEE "STRUCTURES PLAN NO.1 & NO.2"
SHEETS

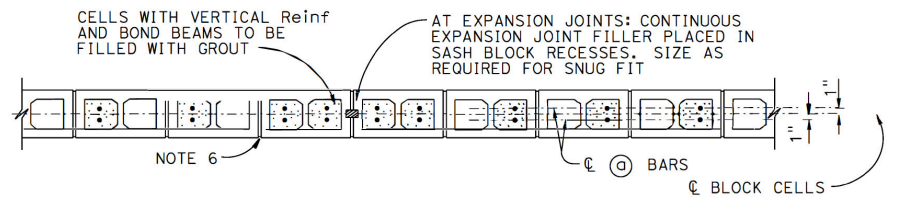


H=6'-4" THRU H=10'-4"

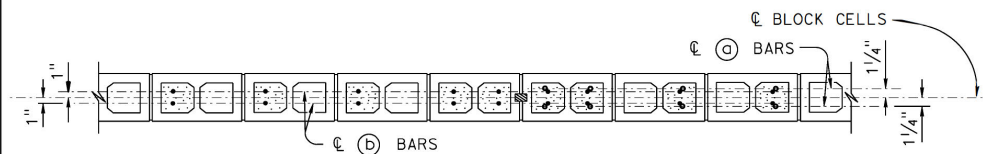
H=12'-4" THRU H=16'-4"

PART ELEVATION

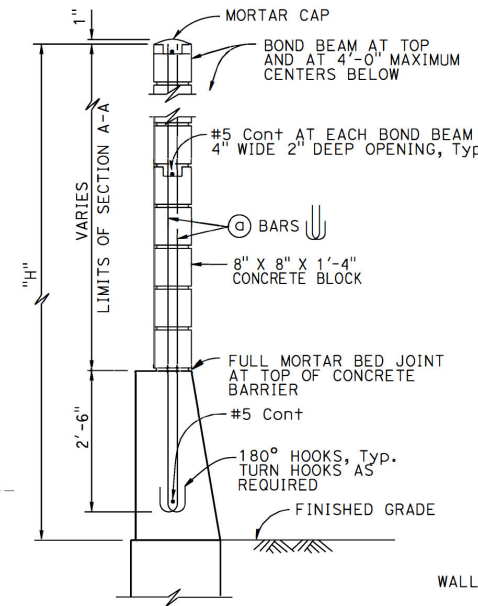
SOUND WALL REINFORCEMENT TABLE						
MAXIMUM "H"	Ⓐ BARS @ 1'-4" Max	Ⓑ BARS @ 1'-4" Max	"Y"	f'm (psi)	COMPRESSIVE STRENGTH OF CMU (psi)	MAXIMUM "H"
6'-4"	#4	—	—	1500	1900	6'-4"
8'-4"	#4	—	—	1500	1900	8'-4"
10'-4"	#4	—	—	1500	1900	10'-4"
12'-4"	#5	#4	5'-0"	1500	1900	12'-4"
14'-4"	#6	#4	7'-0"	1500	1900	14'-4"
16'-4"	#6	#4	9'-0"	2500	3700	16'-4"



SECTION A-A



SECTION B-B



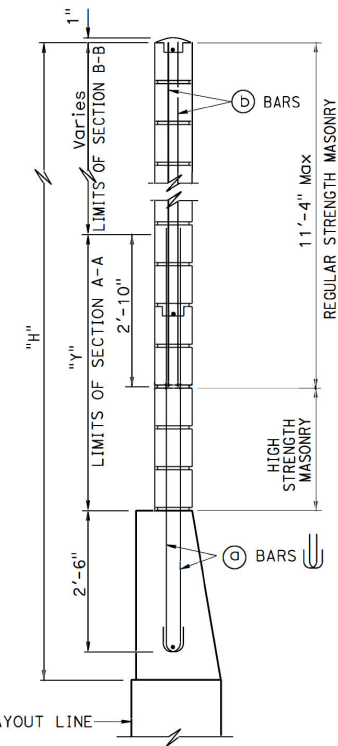
H=6'-4" THRU H=10'-4"

H=12'-4" THRU H=16'-4"

For details not shown, see H=12'-4" thru H=16'-4"

For details not shown, see H=6'-4" thru H=10'-4"

TYPICAL SECTION



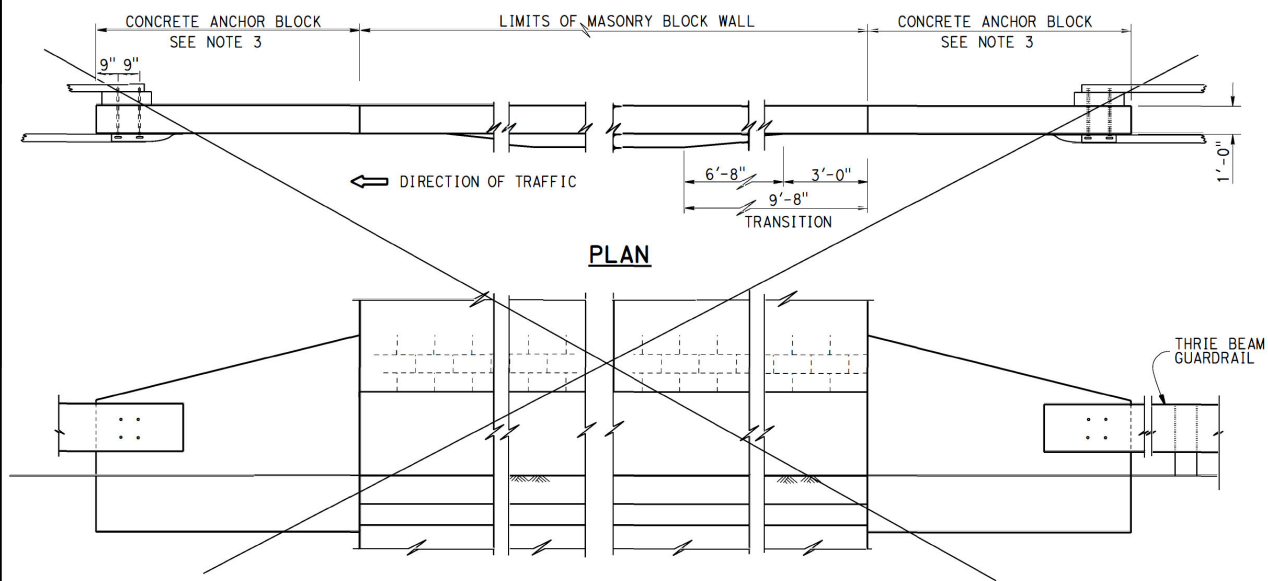
NOTES:

1. For details not shown, see "SOUND WALL - MASONRY BLOCK WITH BARRIER ON RETAINING WALL - DETAILS NO. 2" sheet
2. Slope ground at traffic side of barrier to drain. Maximum slope $\pm 10\%$
3. See STANDARD PLANS B15-9 for other details
4. For type of block and joint finish, see other sheets
5. When blocks are laid in stacked bond, ladder type, galvanized joint reinforcement shall be provided. A minimum of 2-9 gauge wire continuous at 4'-0" maximum to be used. Locate reinforcement in joints that are at the approximate midpoint between bond beams
6. Horizontal joints shall be tooled concave or may be weathered. Vertical joints shall be tooled concave or may be raked
7. For intermediate wall heights that are between the "H's" given, use the tabular information for the next higher "H"
8. Masonry strengths are listed in "SOUND WALL REINFORCEMENT TABLE"
9. Concrete to be used for the barrier shall contain not less than 590 pounds of cementitious material per cubic yard

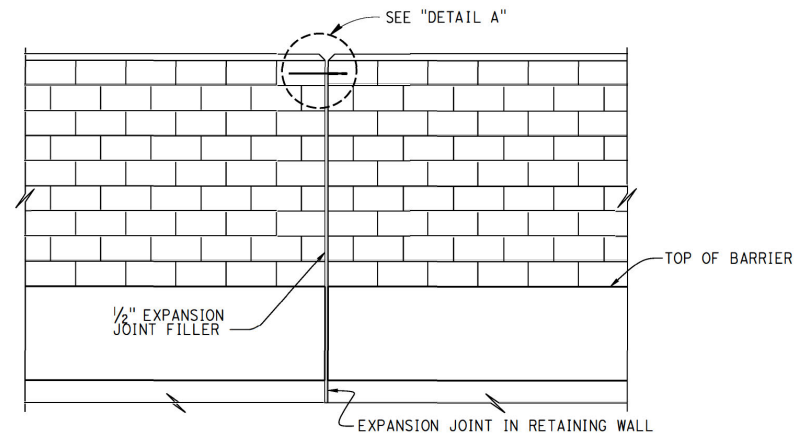
NO SCALE

RETAINING WALL 1975

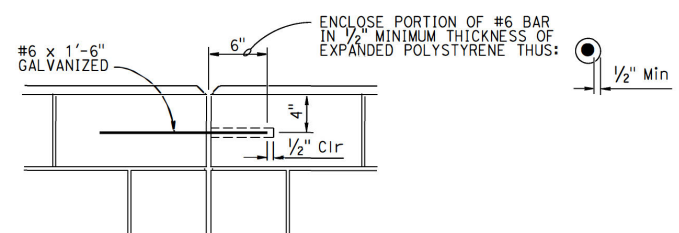
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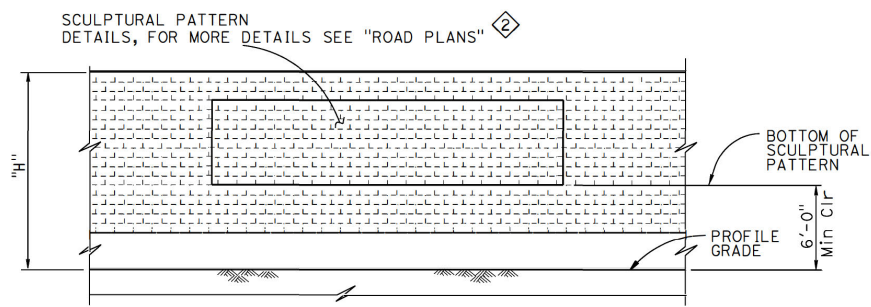
ELEVATION
METAL BEAM GUARDRAIL ANCHORAGE
 For details not shown, see STANDARD PLAN B11-56



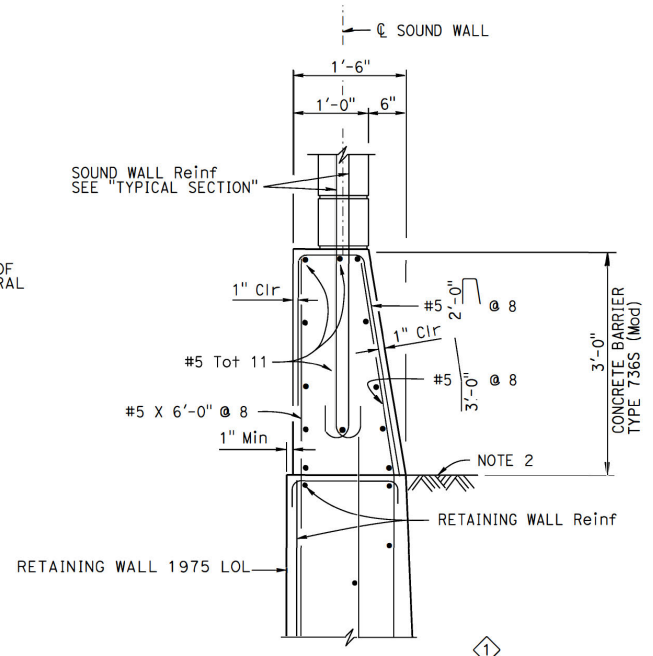
ALIGNMENT KEY DETAIL



DETAIL A



CLEARANCE DETAIL



BARRIER SECTION

DESIGN NOTES

<u>DESIGN</u>			
Uniform Building Code, 1997 Edition and the Bridge Design Specifications			
<u>DESIGN WIND LOAD</u>		<u>DESIGN SEISMIC LOAD</u>	
33 psf		0.57 Dead load	
<u>CONCRETE MASONRY</u>			
<u>REINFORCED CONCRETE</u>			
f'c = 3600 psi		f'm = 1500 psi	
fy = 60 ksi		fb = 495 psi	
		fs = 24,000 psi	
		n = 25.8	
		f'm = 2000 psi	
		fb = 660 psi	
		fs = 24,000 psi	
		n = 19.3	
		f'm = 2500 psi	
		fb = 830 psi	
		fs = 24,000 psi	
		n = 15.5	

- NOTES: 2
- For details not shown, see STANDARD PLAN B15-6
 - Slope ground at traffic side of barrier to drain. Maximum slope ±10%. See STANDARD PLAN B11-56, Note 3
 - For concrete anchor block and connection details, see "ANCHOR BLOCK FOR TRANSITION RAILING CONNECTION, DETAIL C" on STANDARD PLAN A77J3

NO SCALE

RETAINING WALL 1975

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NOTES:

1. Leaf Vain & Edge 1/4" V Grooves, Typ
2. Leaf Surface light Sandblast, Texture, Typ
3. Orange Surface Heavy Sandblast Texture, Typ
4. 1/2" wide Groove between Ribs and Orange, Typ
5. Fractured Rib Texture, Typ

SEE DETAIL B
BEGIN RW 1975

SEE DETAIL A

ARCHITECTURAL TREATMENT ON
736 SW MODIFIED CONCRETE
BARRIER

SLOPE PAVING

SLOPE PAVING

ELEVATION ARCHITECTURAL TREATMENT

No Scale

PERMITTED LOCATION OF
WEAKENED PLANES
AND EXPANSION JOINT

FRACTURED RIB DETAIL

No Scale

SANDBLAST DETAIL

No Scale

DETAIL A

No Scale

ORANGE MOTIF

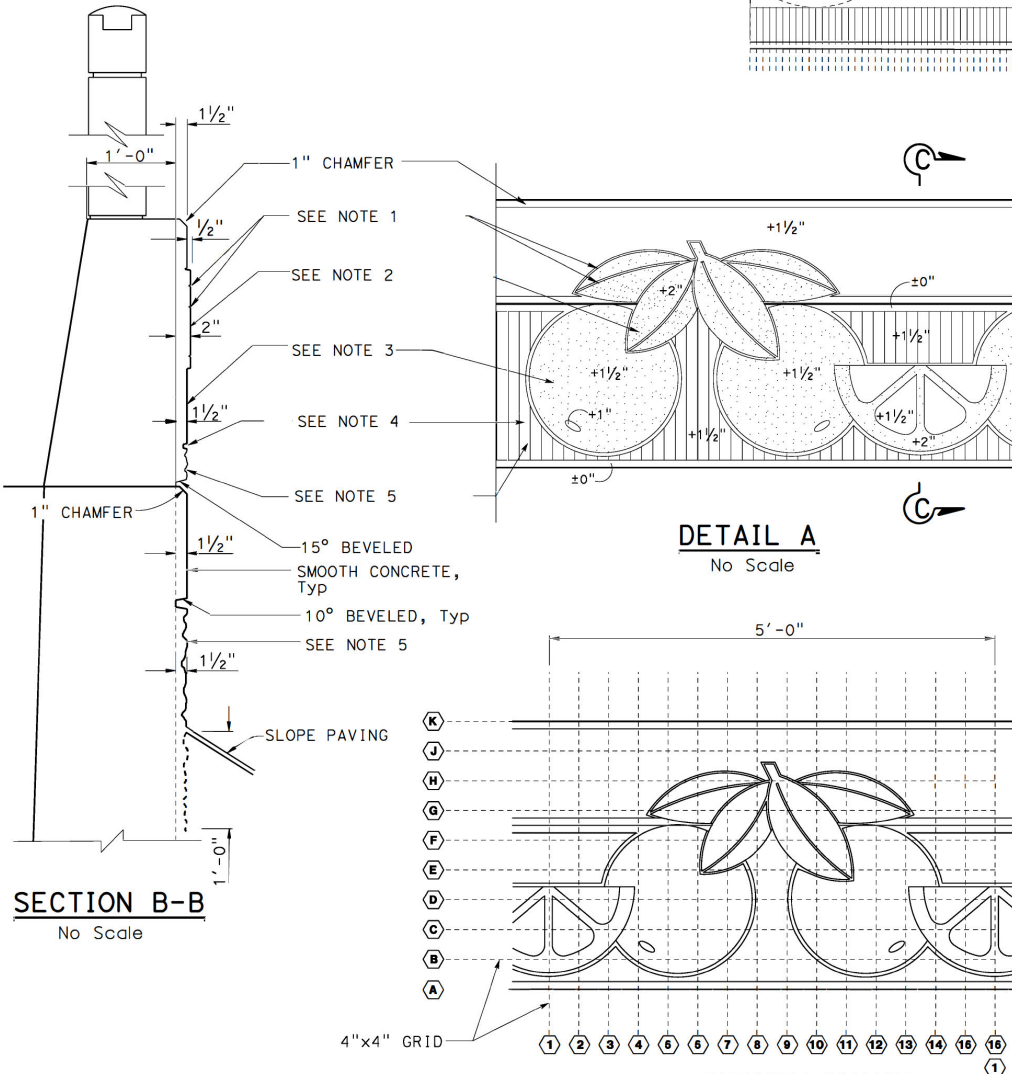
No Scale

SECTION C-C

No Scale

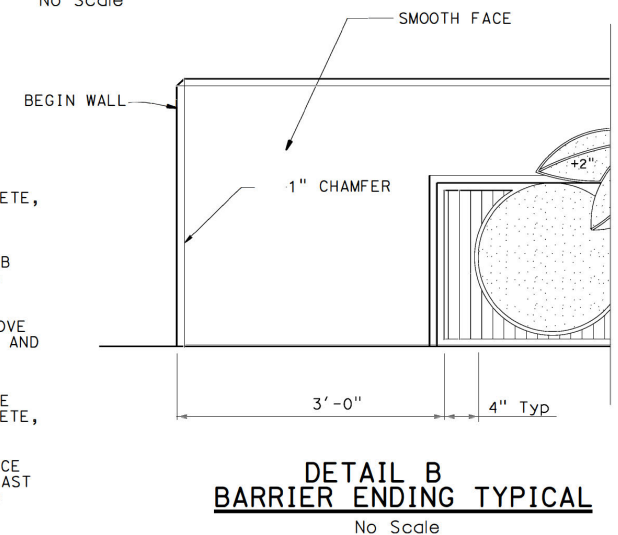
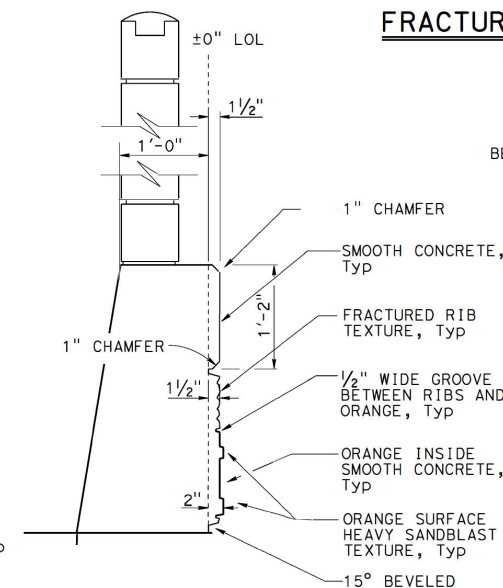
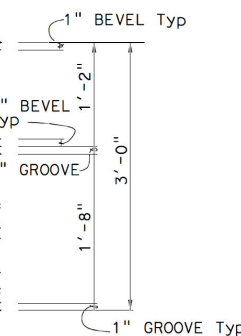
DETAIL B BARRIER ENDING TYPICAL

No Scale

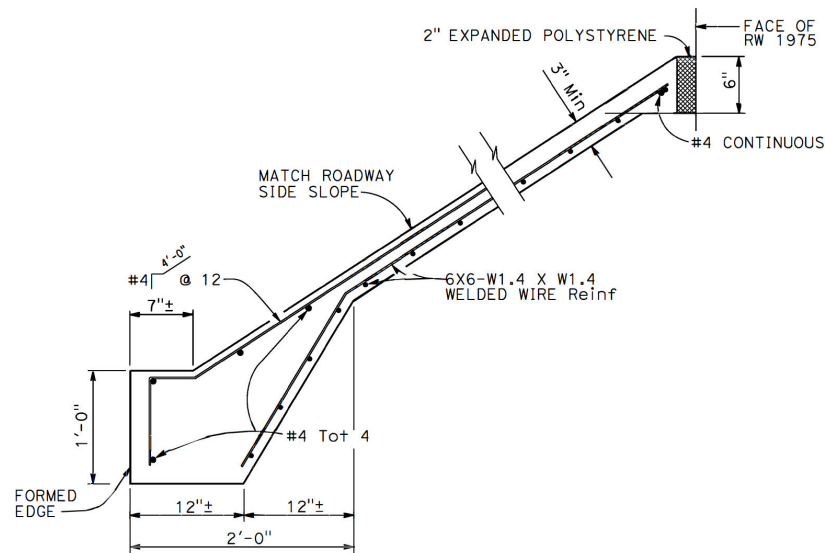


SECTION B-B

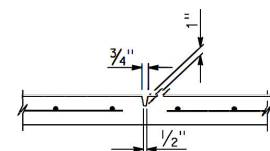
No Scale



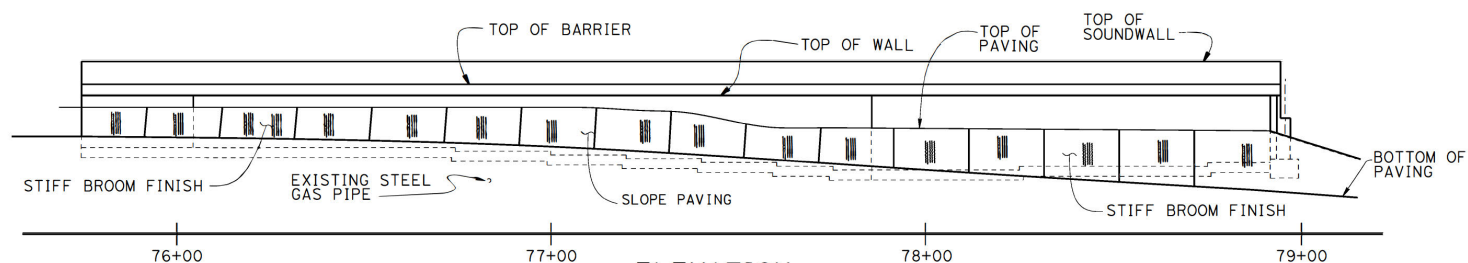
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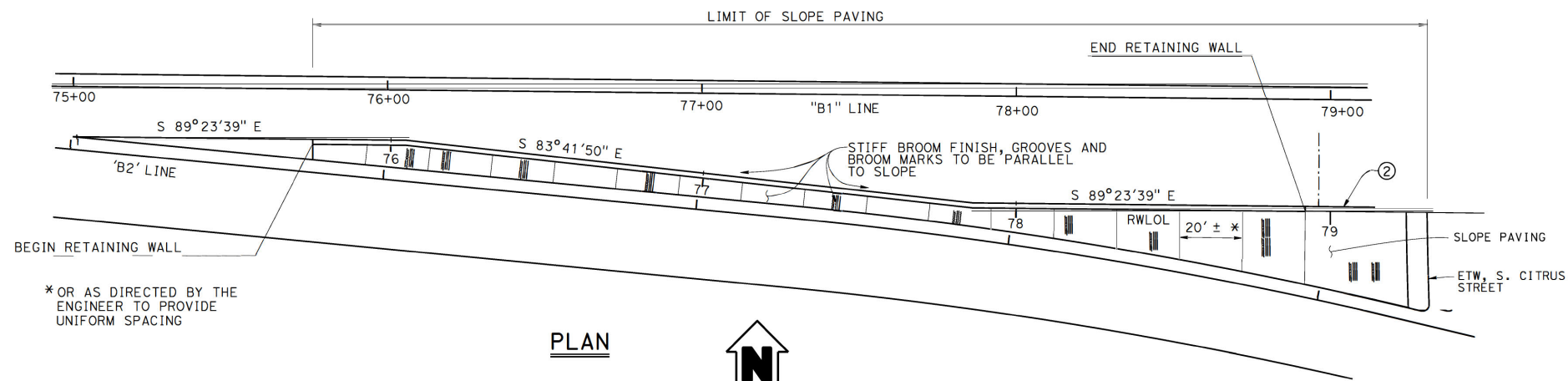
TYPICAL SECTION - CONCRETE PAVING



PREFORMED GROOVE



ELEVATION



PLAN



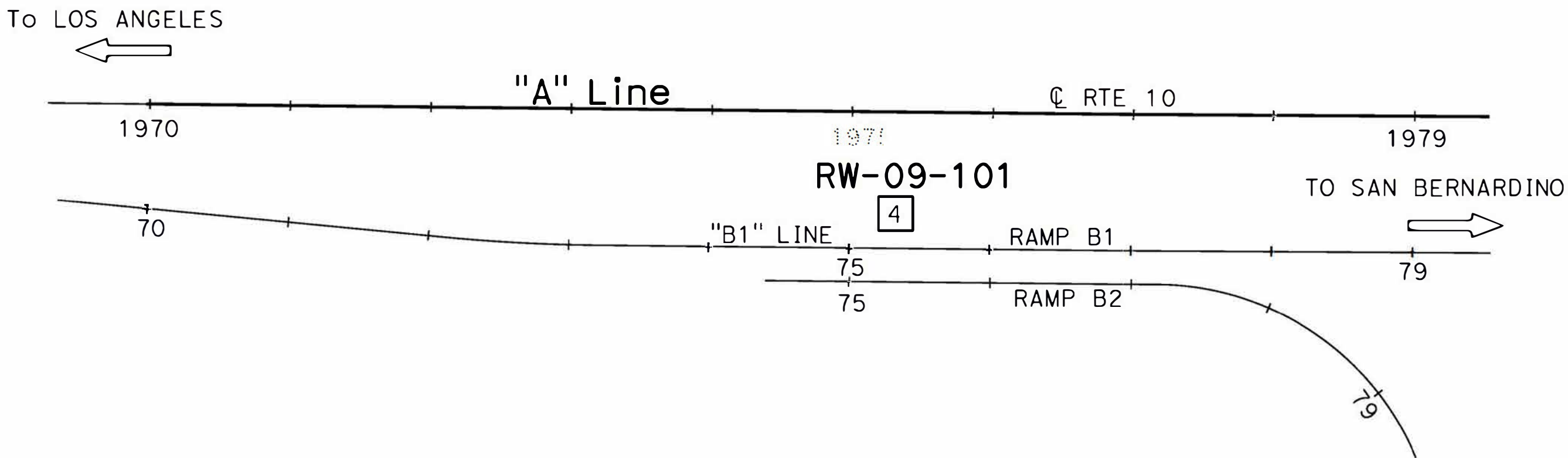
* OR AS DIRECTED BY THE ENGINEER TO PROVIDE UNIFORM SPACING

NO SCALE

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BENCH MARK

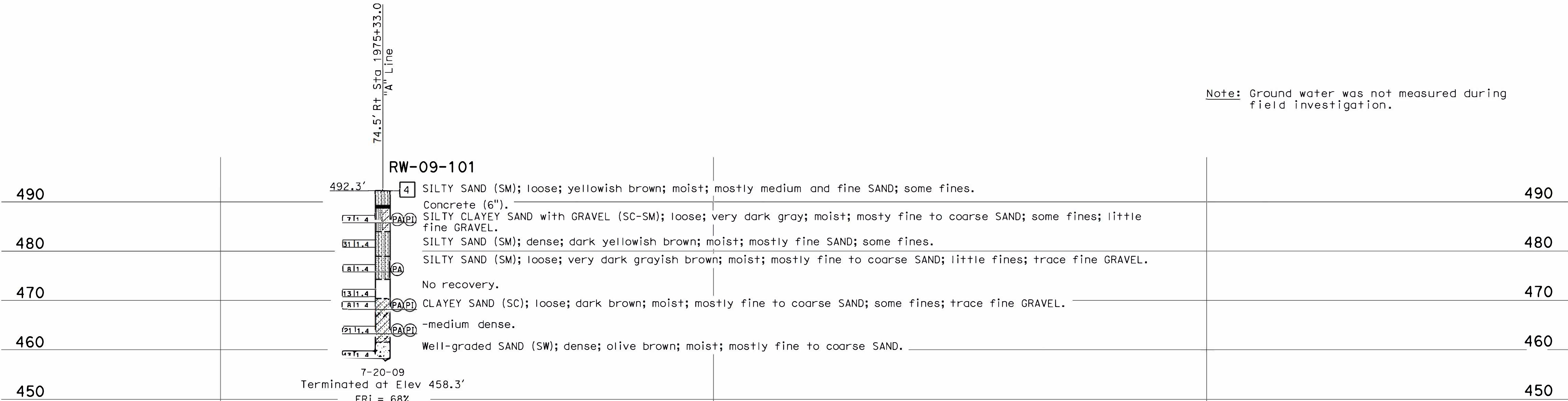
SUHV 32608 Elev 492.05'
Fd Pk N in Citrus E/B Off-Ramp Gore,
"A" Line Sta 1972+91.2 Rt 65.97'
NAVD 88



PLAN
1" = 80'

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.

Note: Ground water was not measured during field investigation.



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

NOTE:
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