

# PLAN AND PROFILE OF PLUMMER SPRING ROAD/MIDDLE STREET

BRIDGE NO. N-11-007 = W-20-001

IN THE CITY/TOWN OF  
NEWBURYPORT/WEST NEWBURY  
ESSEX COUNTY

**NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET**

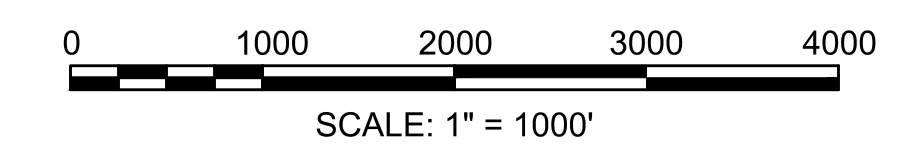
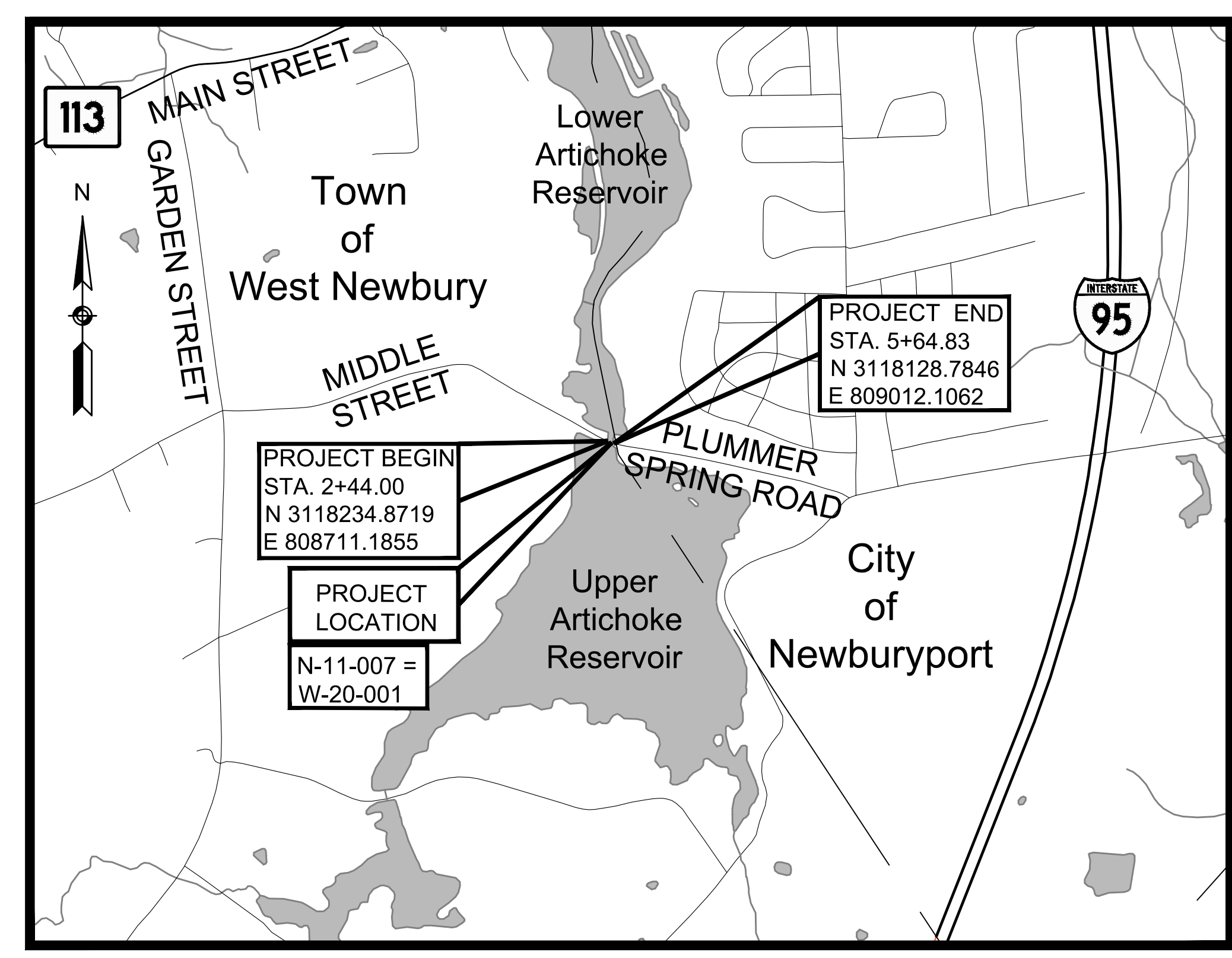
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	42
PROJECT FILE NO. -			

TITLE SHEET & INDEX

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2023, THE SUPPLEMENTAL SPECIFICATIONS DATED MARCH 31, 2023, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	TYPICAL SECTIONS
4	CONSTRUCTION PLAN & PROFILE
5-8	WALL PLAN & PROFILE
9	SURVEY TIE PLAN
10	CURB TIE PLAN
11-14	CONSTRUCTION DETAILS
15-18	BORING LOGS
19-38	BRIDGE PLANS
39-42	CROSS SECTIONS

INDEX



LENGTH OF PROJECT = 320.83 FEET = 0.0608 MILES

DESIGN DESIGNATION (MIDDLE STREET/PLUMMER SPRING ROAD)

DESIGN SPEED	30 MPH
ADT (2019)	920
ADT (2039)	1120
K	13.0%
D	53% WB
T (PEAK HOUR)	1.6%
T (AVERAGE DAY)	2.9%
DHV	125
DDHV	65
FUNCTIONAL CLASSIFICATION	LOCAL ROAD/URBAN LOCAL ROAD



DATE	DESCRIPTION	REV #

**CONSULTANT:**  
**BSC GROUP**  
 803 SUMMER STREET  
 BOSTON, MASSACHUSETTS 02127  
 (617) 896-4300  
 www.bsccgroup.com

**CLIENT:**

**CITY OF NEWBURYPORT  
MASSACHUSETTS**

**TOWN OF WEST NEWBURY  
MASSACHUSETTS**

GENERAL SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Includes symbols for utilities like wells, manholes, poles, and structures like catch basins and curbing.

TRAFFIC SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Includes symbols for traffic signals, detectors, cameras, and road markings.

PAVEMENT MARKINGS SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Includes symbols for various pavement markings like white/yellow lines, arrows, and stop lines.

- Numbered list of 15 conditions and instructions regarding utility castings, existing subsurface utilities, and contractor responsibilities.

ABBREVIATIONS

Table with columns: GENERAL, DESCRIPTION. Lists abbreviations for traffic and general engineering terms like AADT, ABAN, ADJ, etc.

NEWBURYPORT/WEST NEWBURY PLUMMER SPRING ROAD/MIDDLE STREET

Small table with columns: STATE, FED. AID PROJ. NO., SHEET NO., TOTAL SHEETS. Shows project file number and sheet counts.

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

Table with columns: GENERAL, DESCRIPTION. Continuation of abbreviations for terms like POINT OF TANGENCY, POINT OF VERTICAL CURVATURE, etc.

TRAFFIC SIGNAL ABBREVIATIONS

Table with columns: ABBREVIATION, DESCRIPTION. Lists abbreviations for traffic signals like CAB, CCVE, DW, FDW, etc.



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TYPICAL SECTIONS

ROADWAY

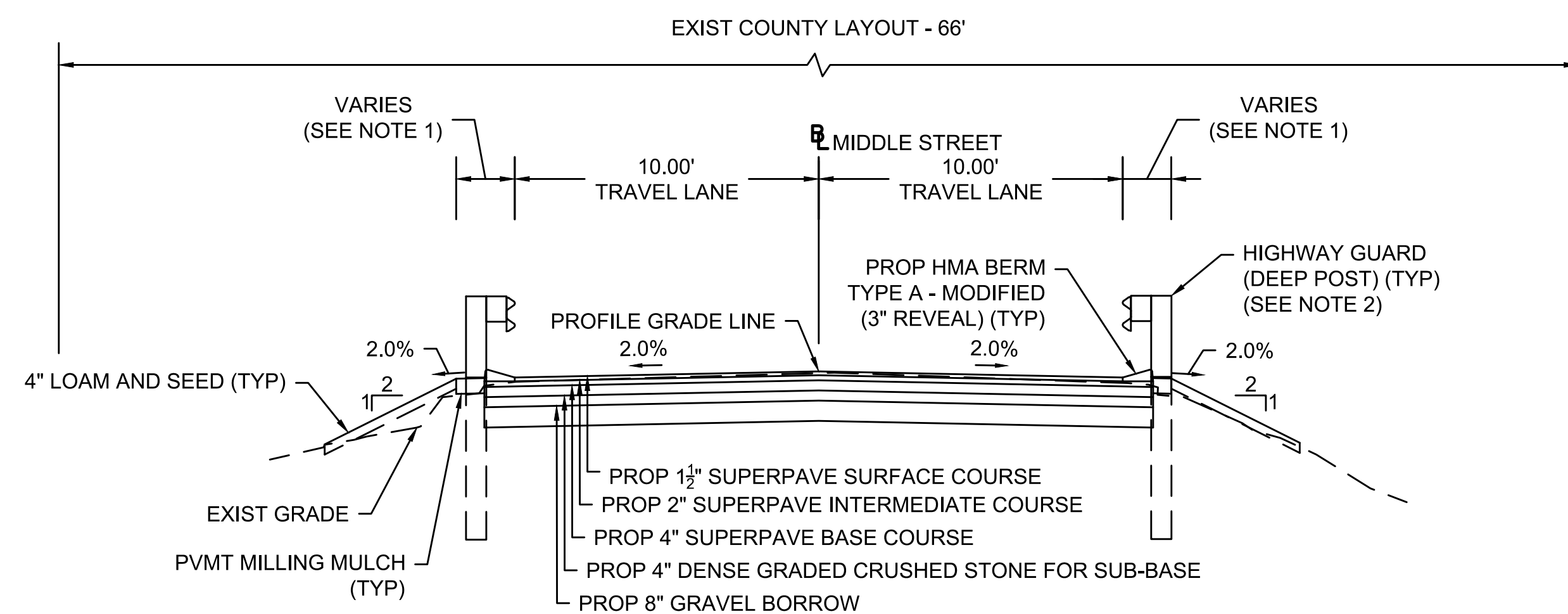
- PAVEMENT NOTES**
- SURFACE : 1 1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
  - INTERMEDIATE : 2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
  - BASE : 4" SUPERPAVE BASE COURSE - 25.0 (SBC-25.0) OVER
  - SUBBASE\* : 4" DENSE GRADED CRUSHED STONE FOR SUB-BASE PLACED OVER 8" GRAVEL BORROW (M1.02.0 TYPE b)
  - \* NEW SUBBASE TO BE PLACED ONLY WHERE EXISTING SUBBASE MATERIAL FAILS TO MEET REQUIREMENTS AND AS DIRECTED BY THE ENGINEER

HOT MIX ASPHALT SIDEWALK

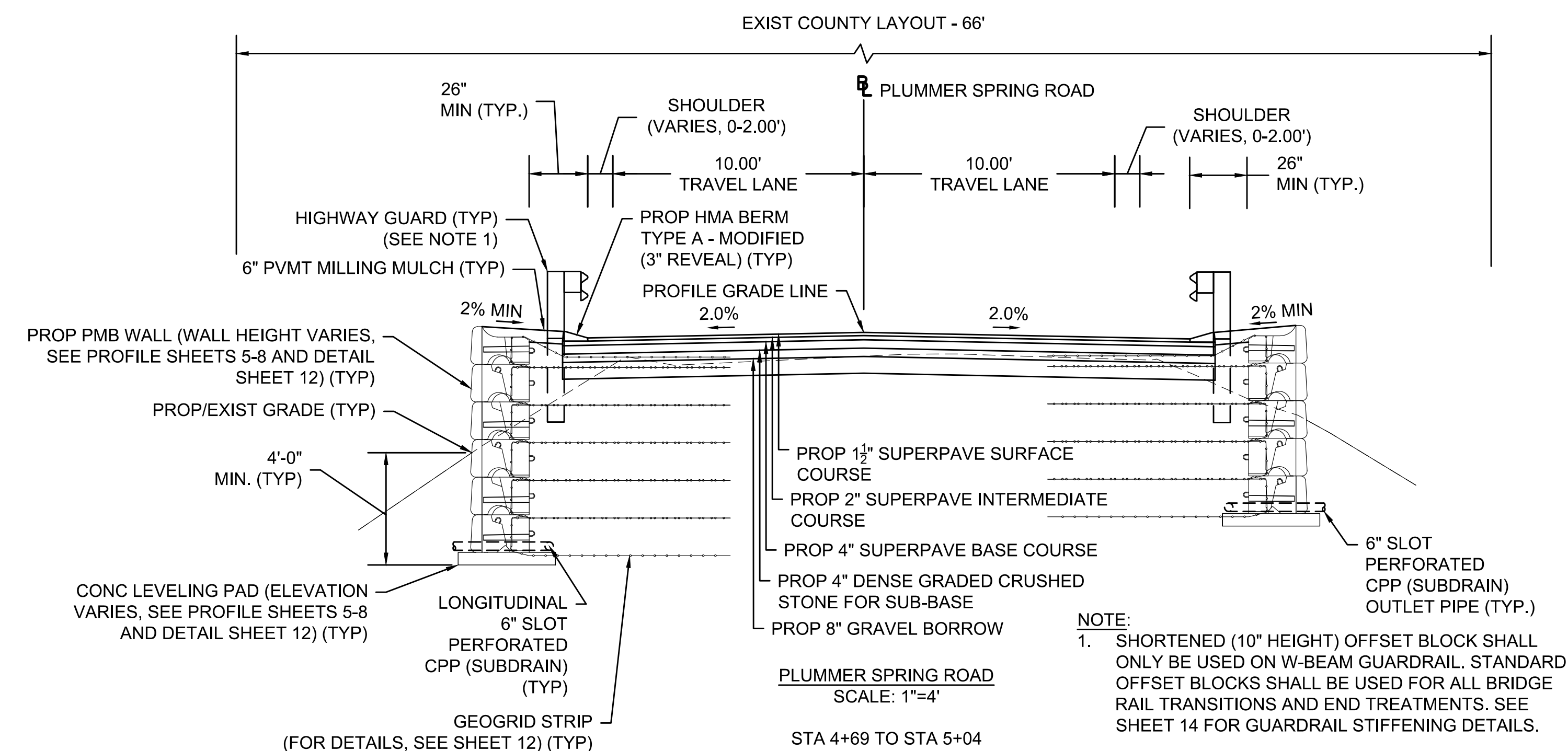
- SURFACE : 1 1/4" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
- INTERMEDIATE : 1 3/4" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
- SUBBASE : 8" GRAVEL BORROW (M1.02.0 TYPE b)

CEMENT CONCRETE SIDEWALK

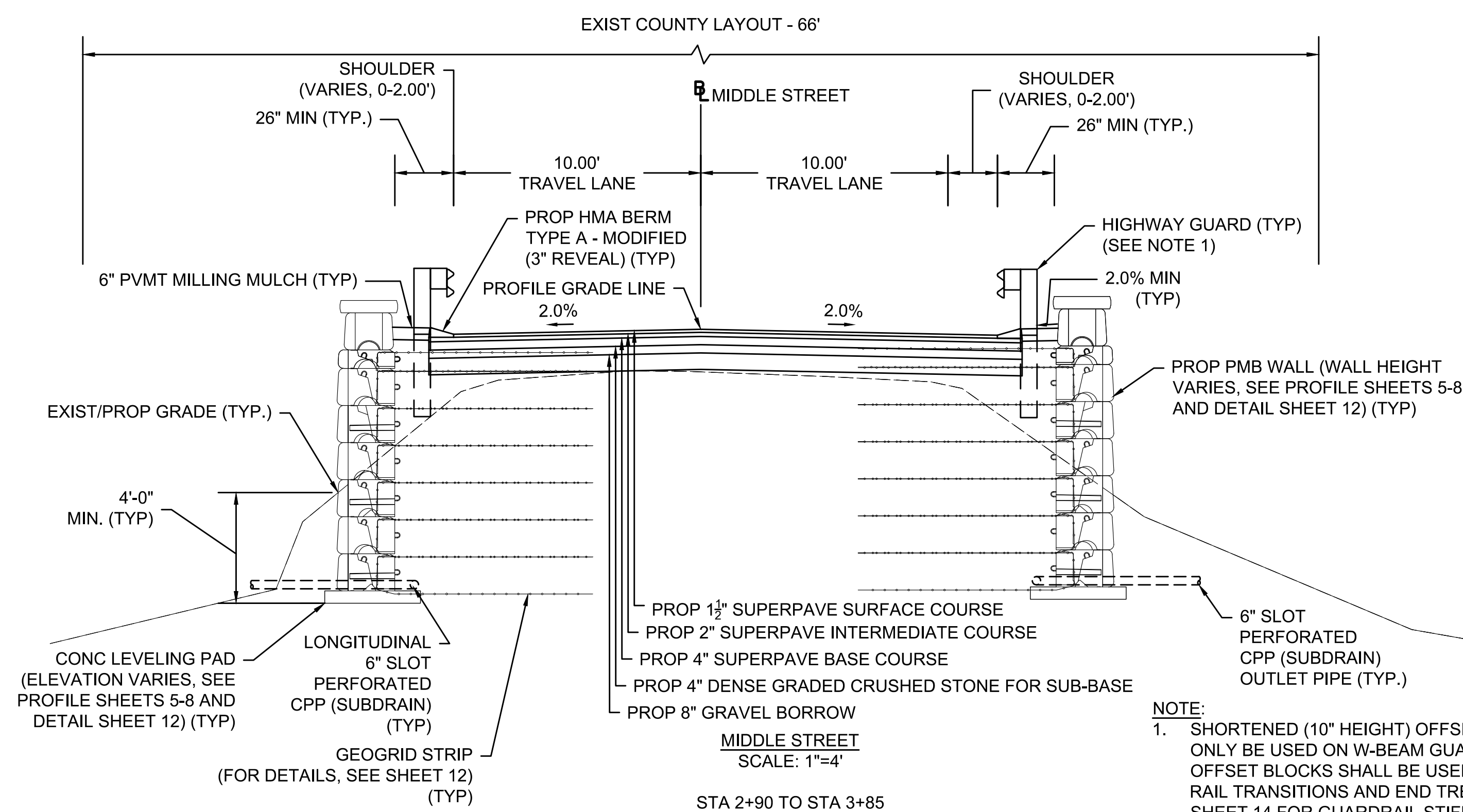
- SURFACE : 4" CEMENT CONCRETE (AIR ENTRAINED 4,000 PSI, 3/4", 610) (M4.02.00) OVER
- SUBBASE : 8" GRAVEL BORROW (M1.02.0 TYPE b)



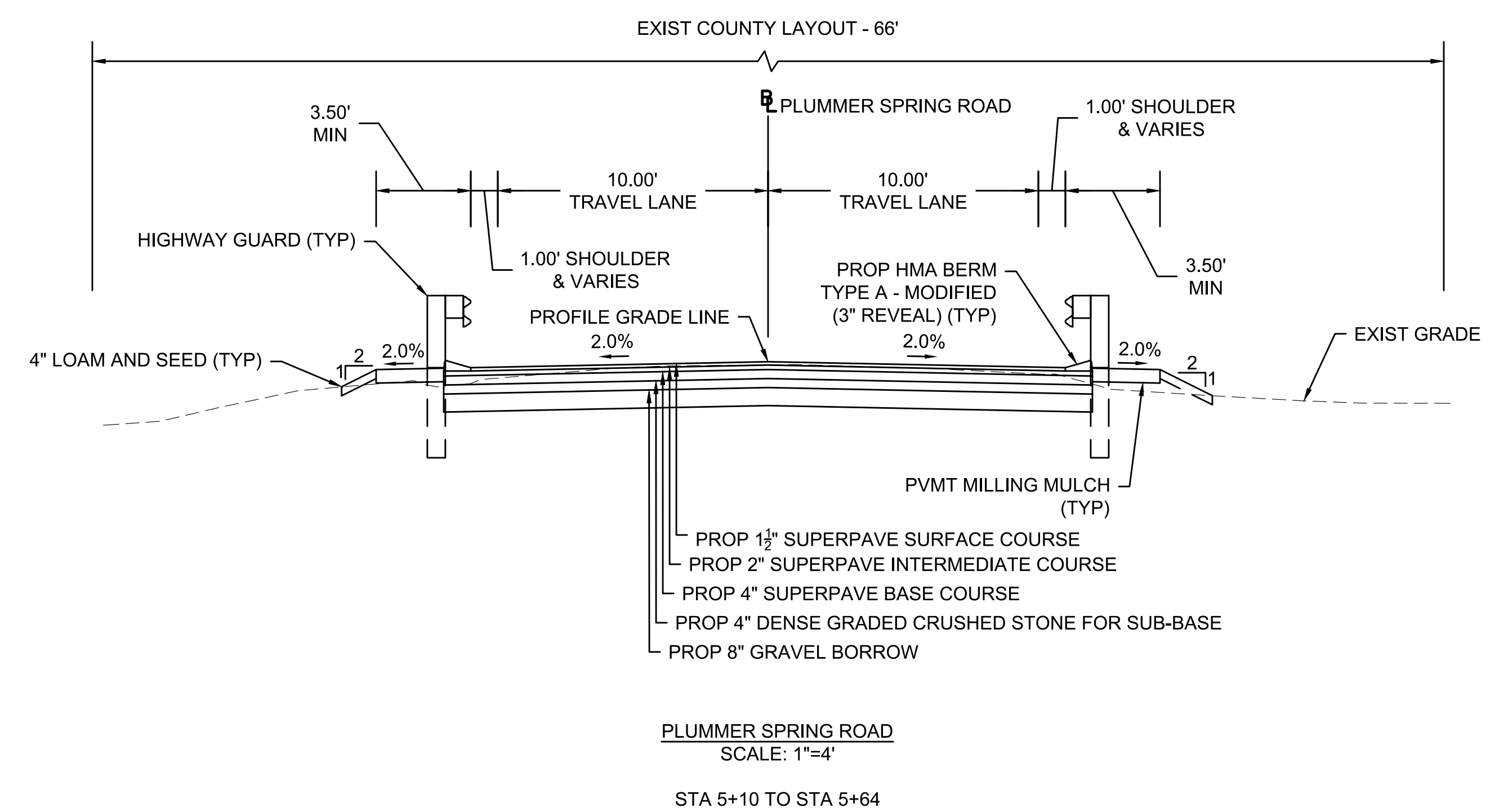
- NOTES:
- PROVIDE MAXIMUM POSSIBLE LEVEL AREA BEHIND GUARDRAIL AS CONDITIONS ALLOW
  - DEEP POST HIGHWAY GUARD TO BE USED WHERE A MINIMUM SHOULDER WIDTH OF 3.5' CANNOT BE ACHIEVED



- NOTE:
- SHORTENED (10" HEIGHT) OFFSET BLOCK SHALL ONLY BE USED ON W-BEAM GUARDRAIL. STANDARD OFFSET BLOCKS SHALL BE USED FOR ALL BRIDGE RAIL TRANSITIONS AND END TREATMENTS. SEE SHEET 14 FOR GUARDRAIL STIFFENING DETAILS.



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**HIGHWAY GUARD DETAILS**  
 STA 2+44.00 TO STA 2+80.00, RT (W-BEAM, DEEP POST)  
 STA 2+80.00 TO STA 3+59.11, RT (W-BEAM)  
 STA 3+59.11 TO STA 3+89.10, RT (BRIDGE RAIL TRANSITION)  
 STA 2+44.00 TO STA 2+80.00, LT (W-BEAM, DEEP POST)  
 STA 2+80.00 TO STA 3+61.18, LT (W-BEAM)  
 STA 3+61.18 TO STA 3+89.10, LT (BRIDGE RAIL TRANSITION)  
 STA 4+65.13 TO STA 4+95.23, RT (BRIDGE RAIL TRANSITION)  
 STA 4+95.23 TO STA 5+55.46, RT (W-BEAM)  
 STA 5+55.46 TO STA 5+64.84, RT (TRAILING ANCHORAGE)  
 STA 4+65.13 TO STA 4+96.81, LT (BRIDGE RAIL TRANSITION)  
 STA 4+96.81 TO STA 5+64.83, LT (W-BEAM)

**TRAFFIC SIGNAL CONDUIT**  
 NONE

**WATER SUPPLY ALTERATIONS**  
 NONE

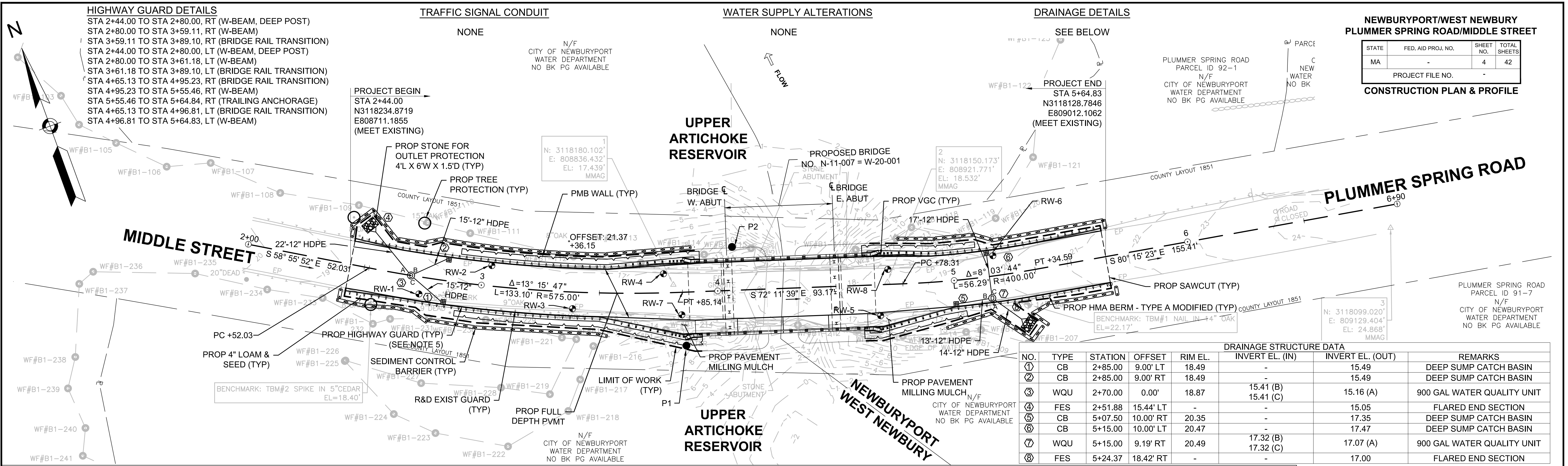
**DRAINAGE DETAILS**  
 SEE BELOW

**NEWBURYPORT/WEST NEWBURY  
 PLUMMER SPRING ROAD/MIDDLE STREET**

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MA	-	4	42

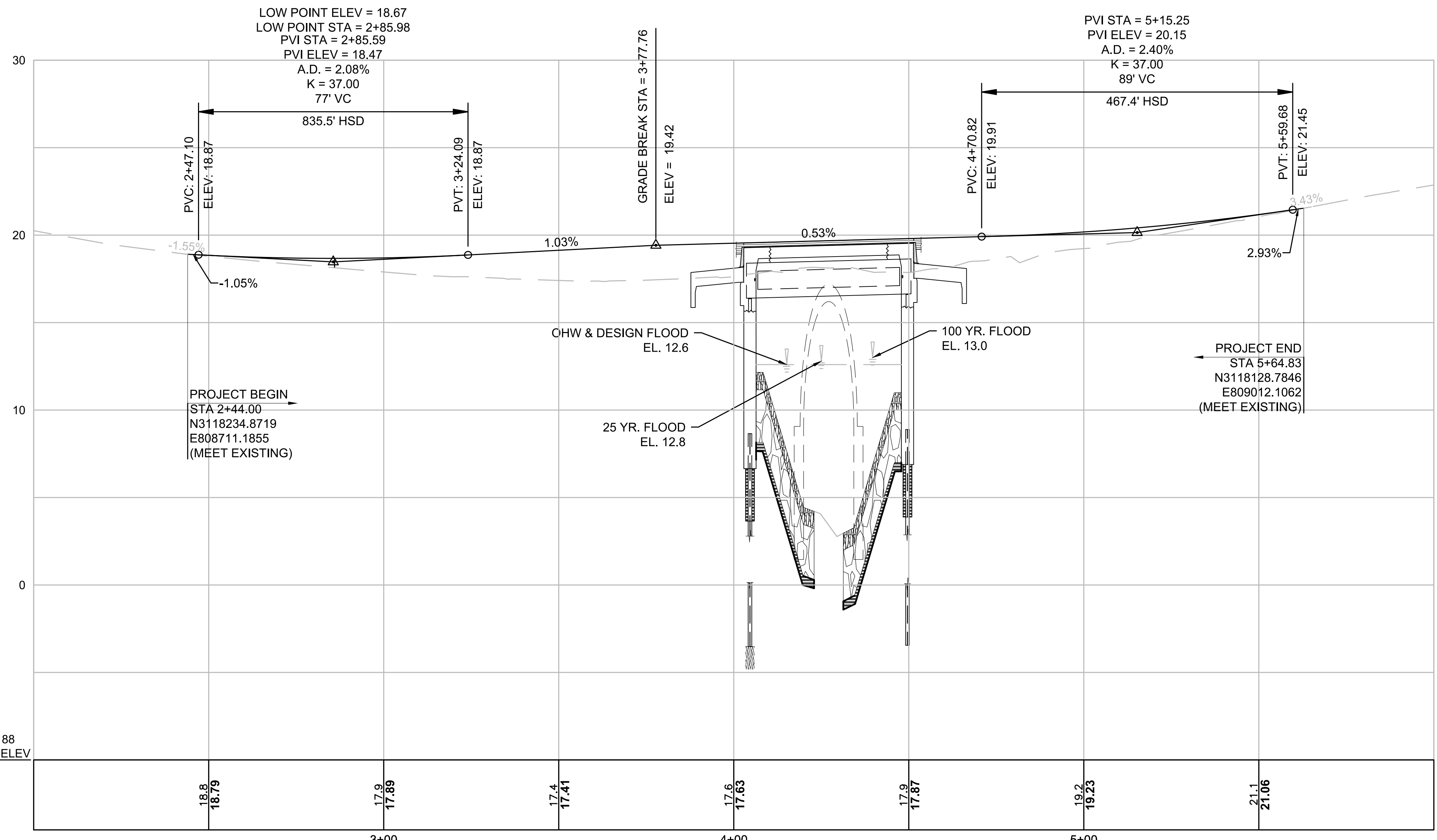
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**CONSTRUCTION PLAN & PROFILE**



**DRAINAGE STRUCTURE DATA**

NO.	TYPE	STATION	OFFSET	RIM EL.	INVERT EL. (IN)	INVERT EL. (OUT)	REMARKS
1	CB	2+85.00	9.00' LT	18.49	-	15.49	DEEP SUMP CATCH BASIN
2	CB	2+85.00	9.00' RT	18.49	-	15.49	DEEP SUMP CATCH BASIN
3	WQU	2+70.00	0.00'	18.87	15.41 (B) 15.41 (C)	15.16 (A)	900 GAL WATER QUALITY UNIT
4	FES	2+51.88	15.44' LT	-	-	15.05	FLARED END SECTION
5	CB	5+07.50	10.00' RT	20.35	-	17.35	DEEP SUMP CATCH BASIN
6	CB	5+15.00	10.00' LT	20.47	-	17.47	DEEP SUMP CATCH BASIN
7	WQU	5+15.00	9.19' RT	20.49	17.32 (B) 17.32 (C)	17.07 (A)	900 GAL WATER QUALITY UNIT
8	FES	5+24.37	18.42' RT	-	-	17.00	FLARED END SECTION

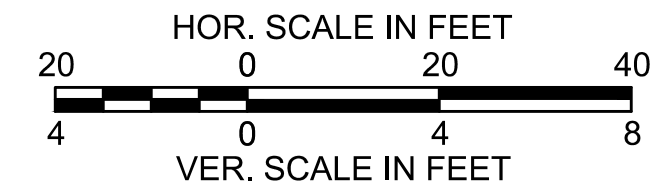


- NOTES:**
- ONLY THE TREES STATED IN THE ENVIRONMENTAL PERMITS AND AS DIRECTED BY THE ENGINEER SHALL BE REMOVED. ALL OTHER TREES ARE TO REMAIN AND BE PROPERLY PROTECTED DURING CONSTRUCTION.
  - THE LOCATION OF THE PREFABRICATED CONCRETE MODULAR BLOCK (PMB) WALL IS APPROXIMATE AND SHALL BE DETERMINED BY THE CONTRACTOR'S/WALL MANUFACTURER'S ENGINEER.
  - SEE GEOTECHNICAL REPORT AND SHEETS 15-18 FOR BORING LOGS PERTAINING TO THE PMB WALL, RW-1 THROUGH RW-8, P1 & P2. FOR ALL OTHER BORING LOGS SEE BRIDGE SHEETS
  - CONTRACTOR TO REFER TO THE GEOTECHNICAL REPORT REGARDING THE POSSIBLE LOCATION OF UNSUITABLE MATERIAL BENEATH THE PMB WALLS AND RECOMMENDATIONS. THE CONTRACTOR IS ALSO REFERRED TO SPECIAL PROVISION 996.4 - PREFABRICATED CONCRETE MODULAR BLOCK WALL (WITH GEOGRID REINFORCEMENT).
  - ALL HIGHWAY GUARDRAIL BEYOND THE THREE BEAM TRANSITION SHALL MAINTAIN A MAXIMUM 3'-1 1/2" POST SPACING TO THE PROJECT LIMITS, REFER TO SECTION 400 OF THE MASSDOT CONSTRUCTION STANDARDS FOR POST DETAILS & SEE SHEET 14 OF 42

BENCHMARK TBM#2  
 2+55.69, 15.36' RT  
 ELEV = 18.40

NAVD 88  
 BASE ELEV  
 -10.00

BENCHMARK TBM#1  
 STA 5+29.20, 14.07' RT  
 ELEV = 22.17





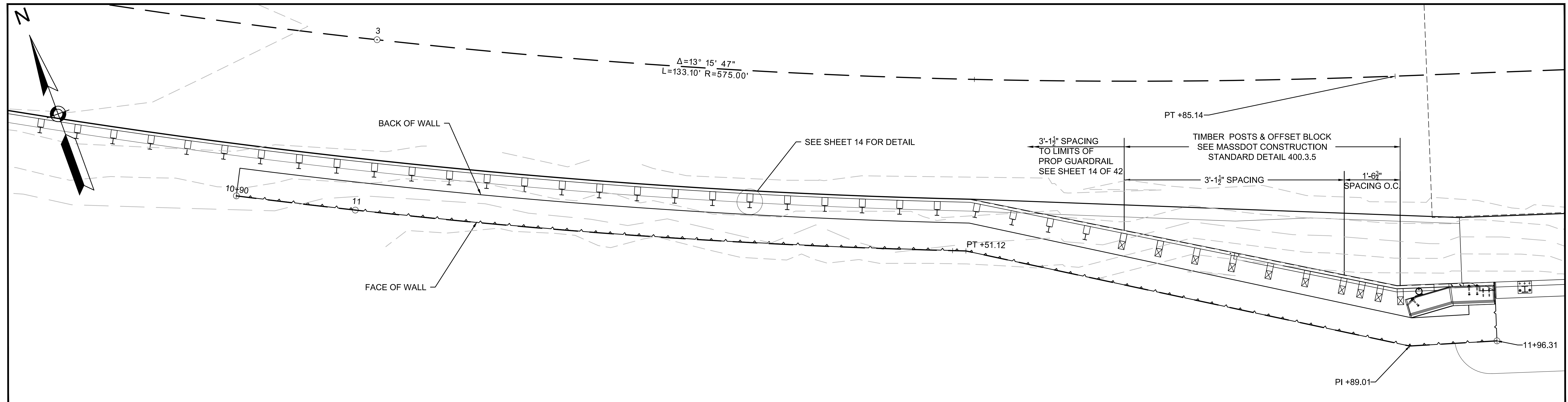
NOTES:

1. PMB WALL LAYOUT DEPICTED IS TO PROVIDE AN EQUAL BASIS FOR BIDDING. CONTRACTOR WILL PROVIDE THEIR PROPOSED WALL LAYOUT, WITH SURVEY POINTS AND GEOMETRY, FOR REVIEW AND APPROVAL OF THE ENGINEER/TOWN/CITY, BEFORE FABRICATION OF THE PMB WALL UNITS.
2. THE ENVIRONMENTAL PERMITS CONTAINED IN THE CONTRACT DOCUMENTS DEPICT A PREFABRICATED MODULAR BLOCK WALL (PMB) WALL SYSTEM AND LAYOUT. IF THE CONTRACTOR VARIES SIGNIFICANTLY FROM THE SYSTEM AND LAYOUT CONTAINED IN THE PERMITS, MODIFICATION OF THE PERMITS MAY BE REQUIRED. ANY MODIFICATION OF THE PERMITS ARE AT THE CONTRACTOR'S EXPENSE AND THE CONTRACT COMPLETION DATE WILL NOT BE ALTERED.
3. TOP AND BOTTOM OF WALL LOCATIONS ARE APPROXIMATE.
4. LEVELING PAD AS SHOWN IS APPROXIMATE. SEE NOTE 5.
5. ALL COMPONENTS OF THE PREFABRICATED CONCRETE MODULAR BLOCK (PMB) WALL SHOWN ARE APPROXIMATE AND ARE TO BE DESIGNED BY THE PMB WALL MANUFACTURER'S ENGINEER.

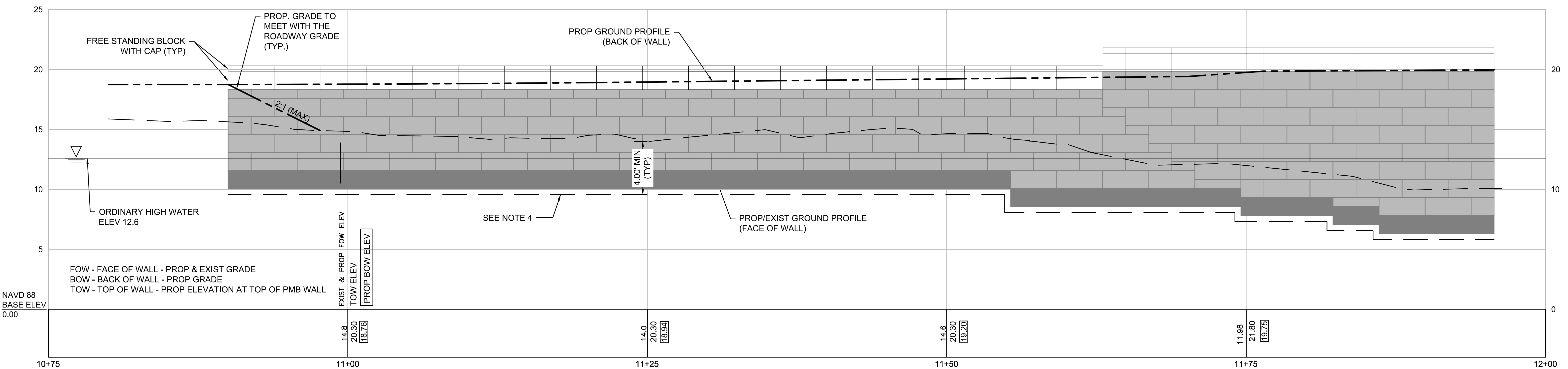
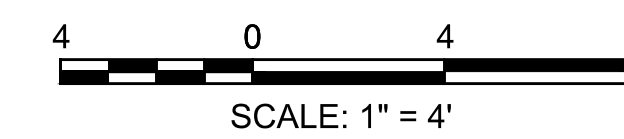
NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET

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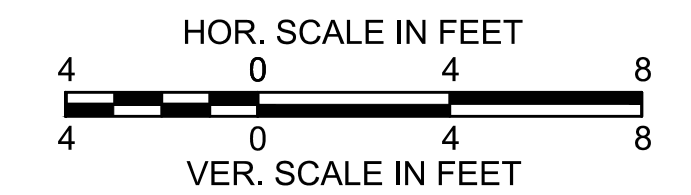
WALL PLAN & PROFILE



SOUTHWEST MODULAR BLOCK WALL - PLAN VIEW  
SCALE: 1" = 4'



SOUTHWEST MODULAR BLOCK WALL - ELEVATION VIEW  
SCALE: 1" = 4' HORIZ.  
SCALE: 1" = 4' VERT.



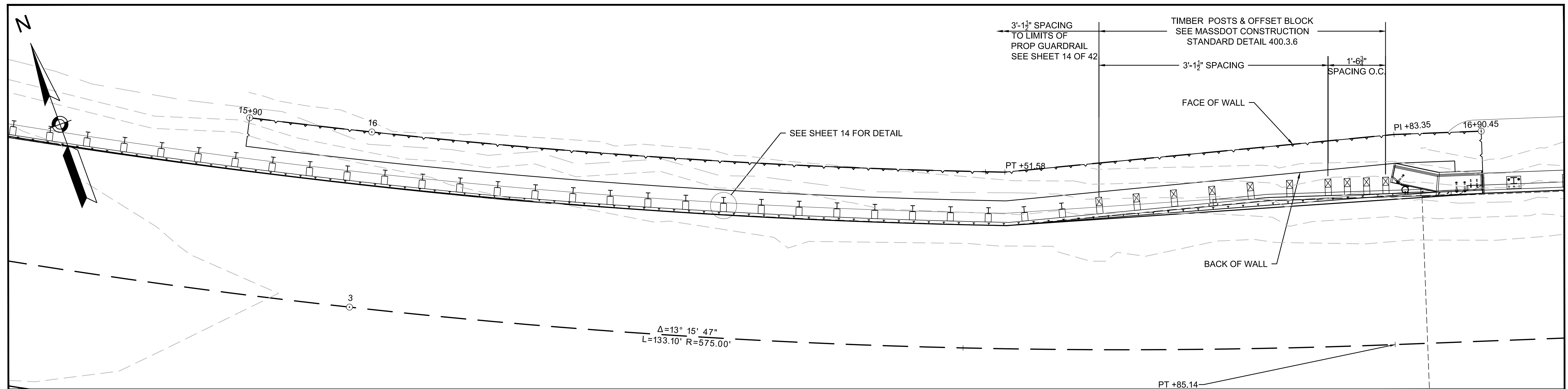
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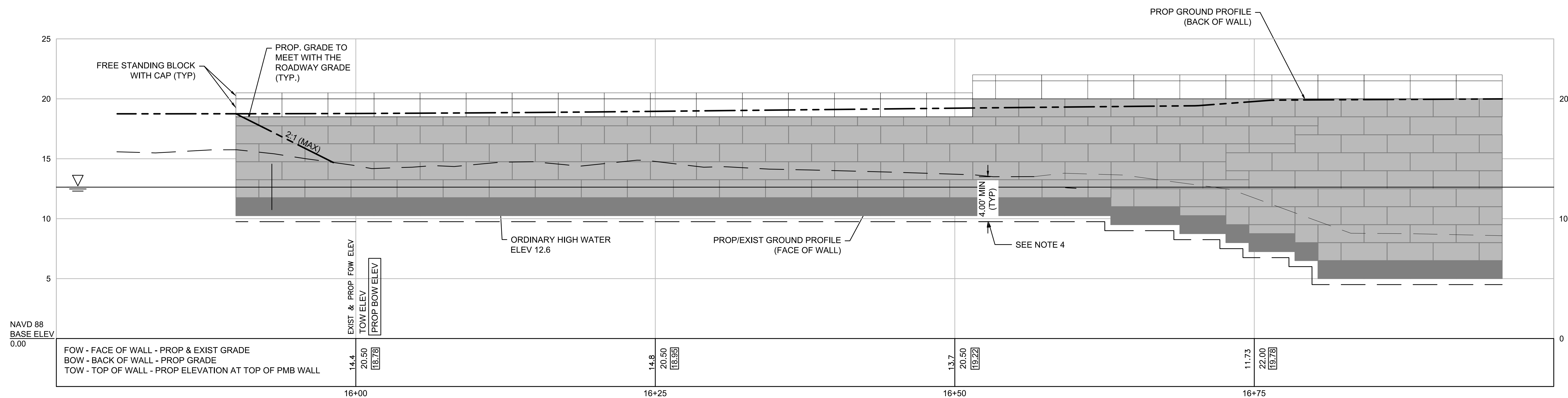
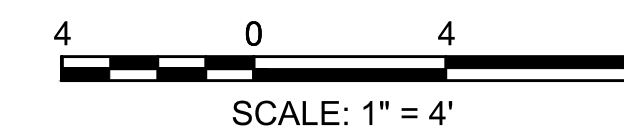
NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET

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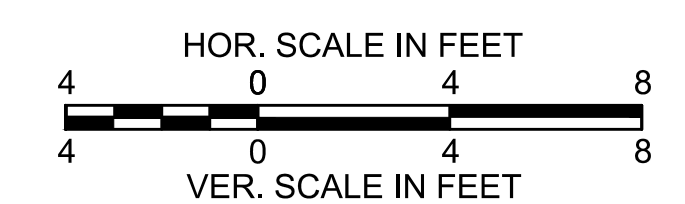
WALL PLAN & PROFILE



NORTHWEST MODULAR BLOCK WALL - PLAN VIEW  
SCALE: 1" = 4'



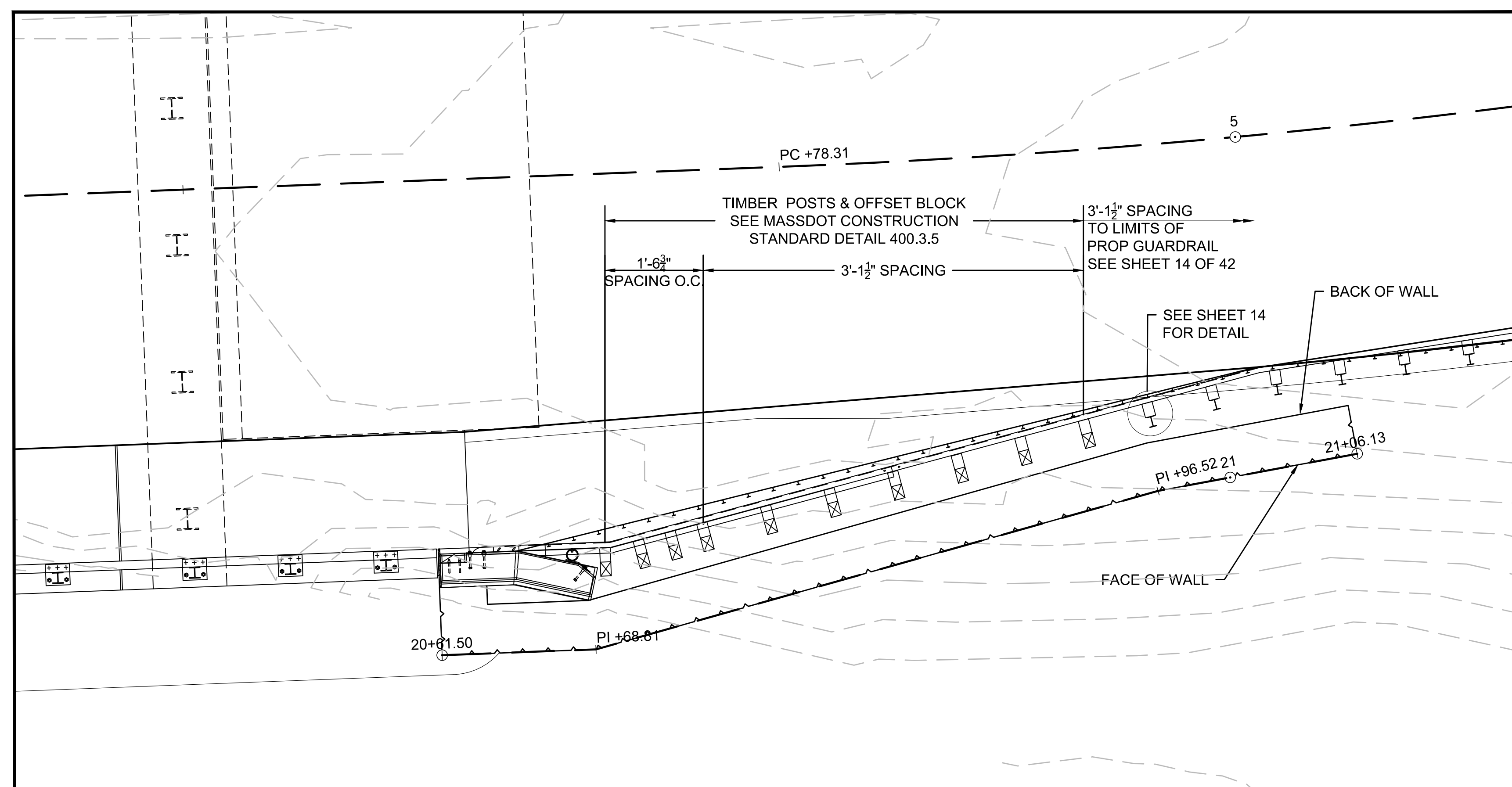
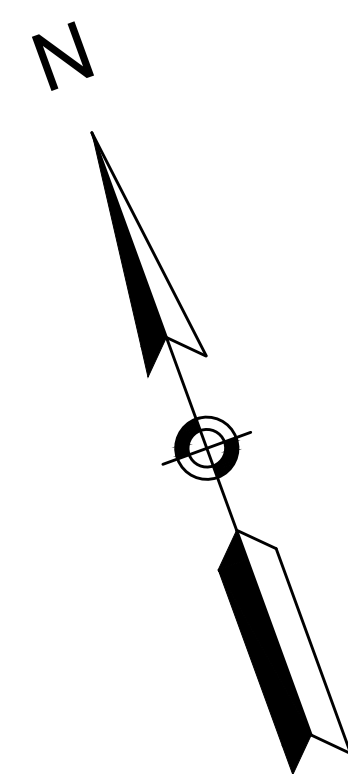
NORTHWEST MODULAR BLOCK WALL - ELEVATION VIEW  
SCALE: 1" = 4' HORIZ.  
SCALE: 1" = 4' VERT.



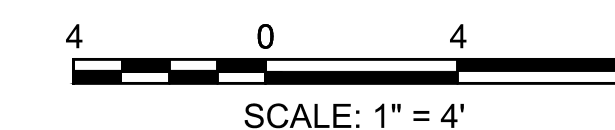


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WALL PROFILES

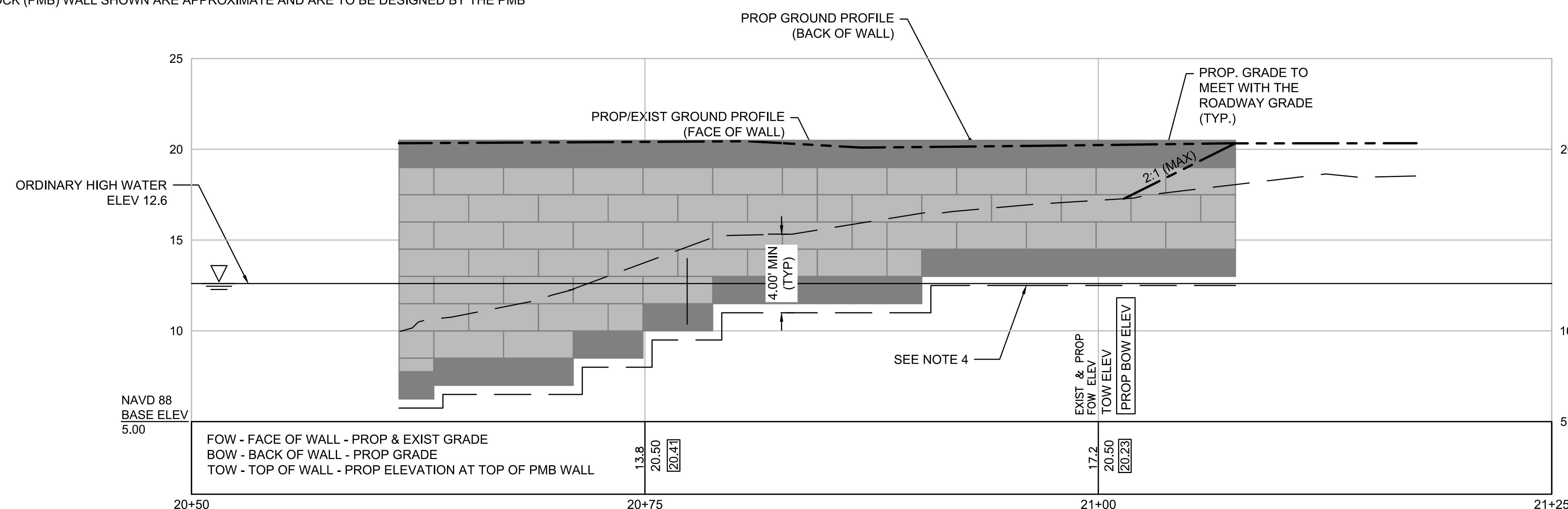


SOUTHEAST MODULAR BLOCK WALL - PLAN VIEW  
SCALE: 1" = 4'



NOTES:

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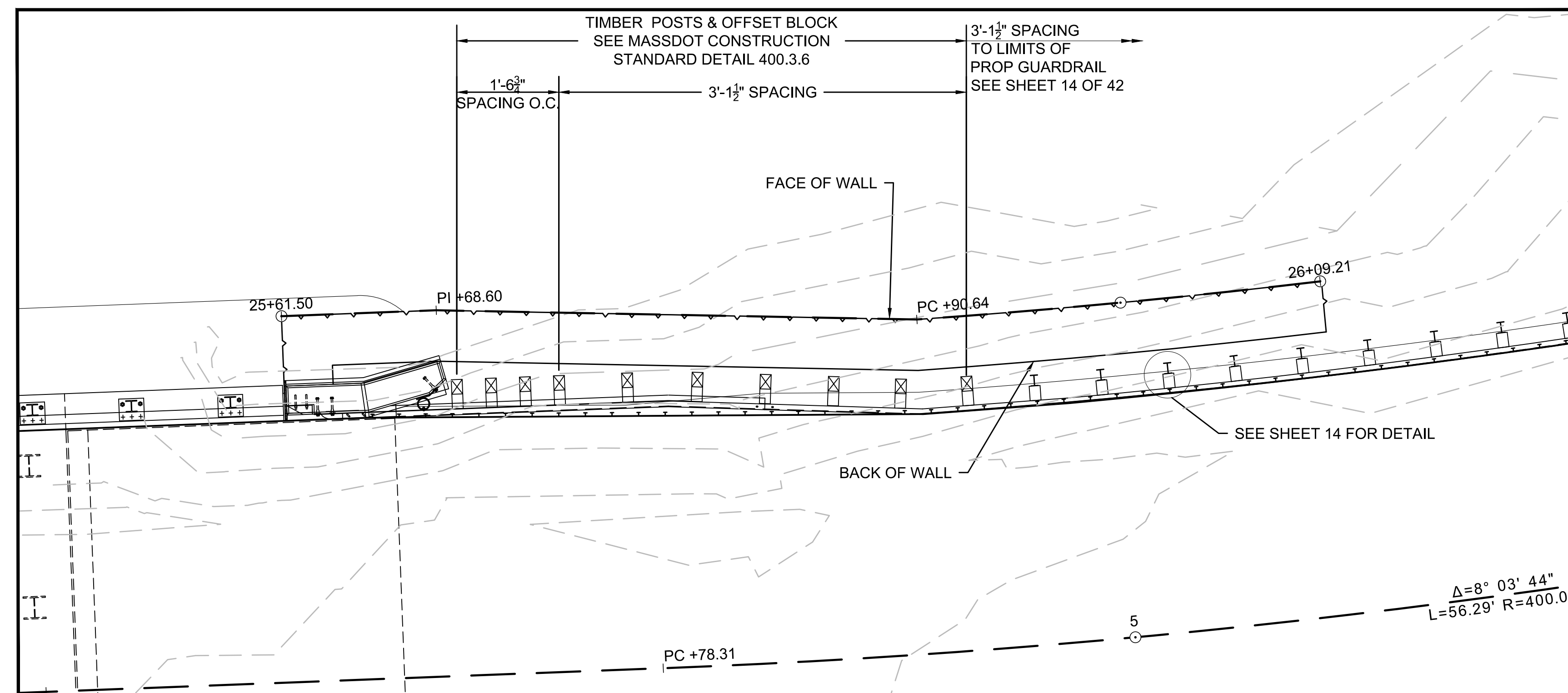
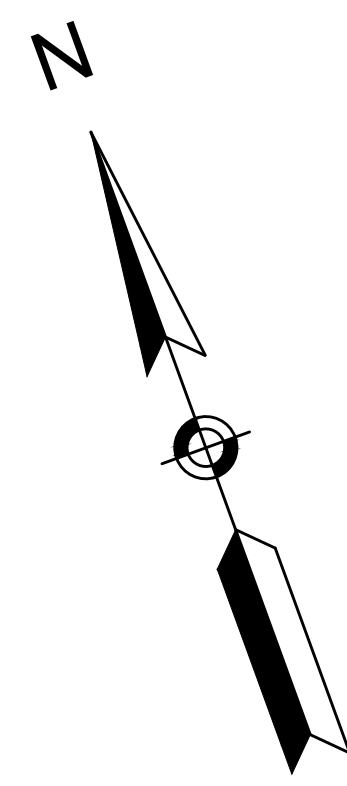
SOUTHEAST MODULAR BLOCK WALL - ELEVATION VIEW  
SCALE: 1" = 4' HORIZ.  
SCALE: 1" = 4' VERT.



NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET

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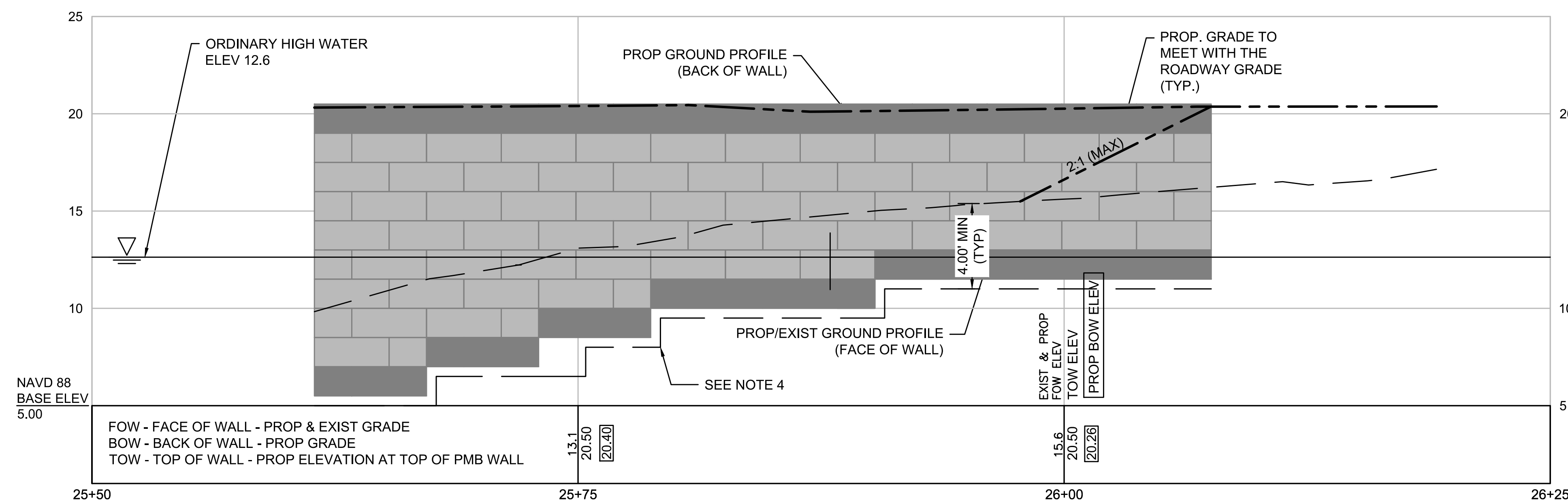
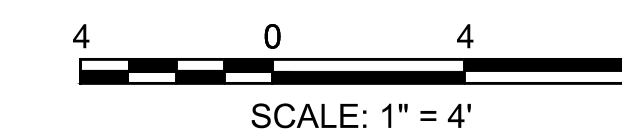
WALL PROFILES



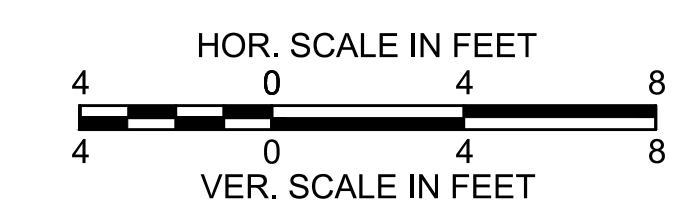
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NORTHEAST MODULAR BLOCK WALL - PLAN VIEW  
SCALE: 1" = 4'



NORTHEAST MODULAR BLOCK WALL - ELEVATION VIEW  
SCALE: 1" = 4' HORIZ.  
SCALE: 1" = 4' VERT.



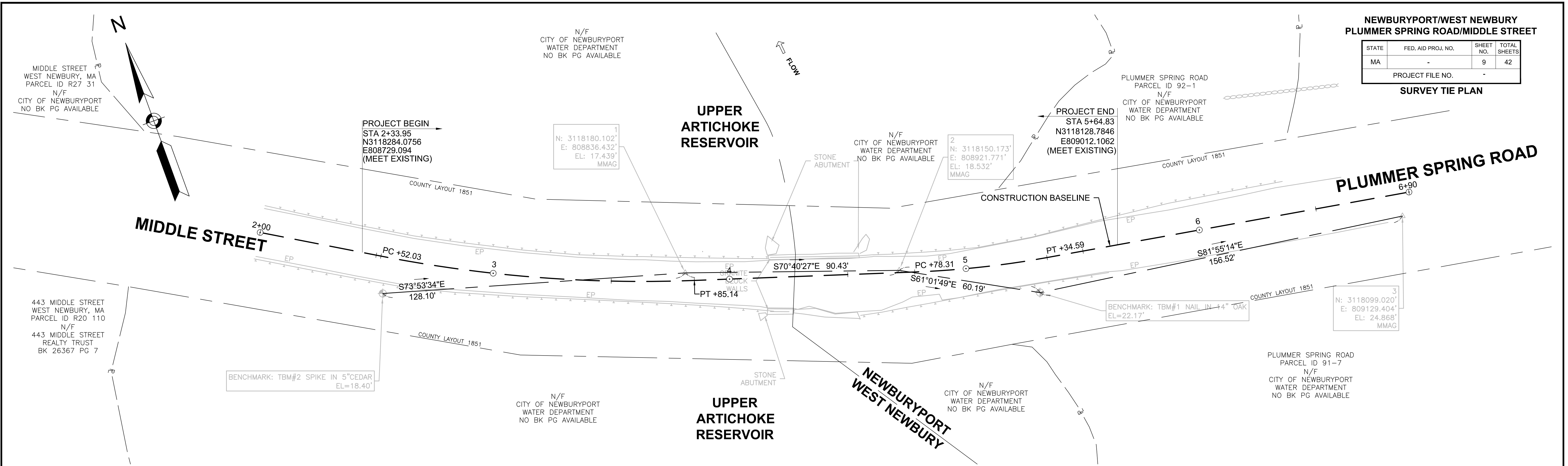


**NEWBURYPORT/WEST NEWBURY  
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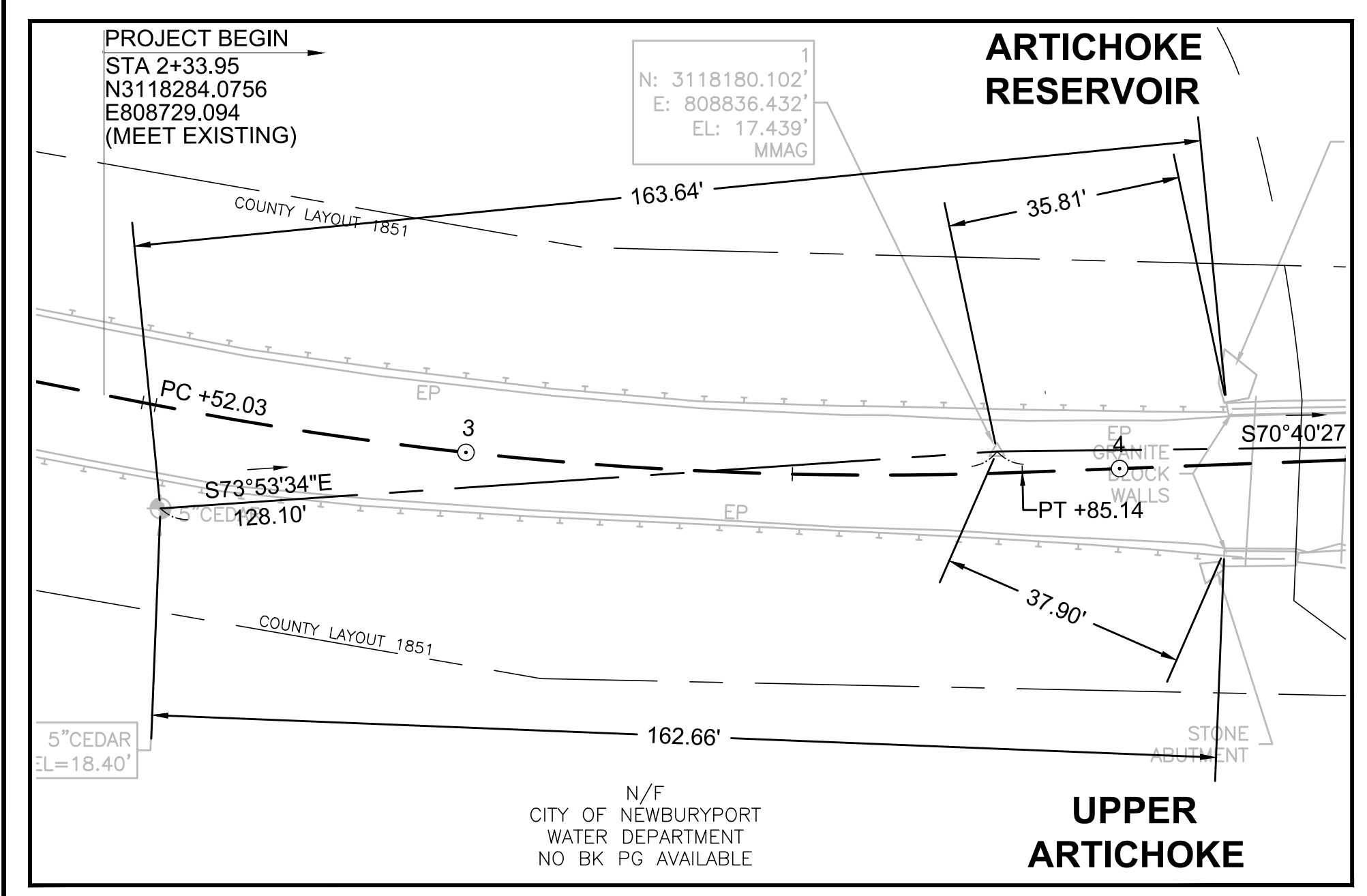
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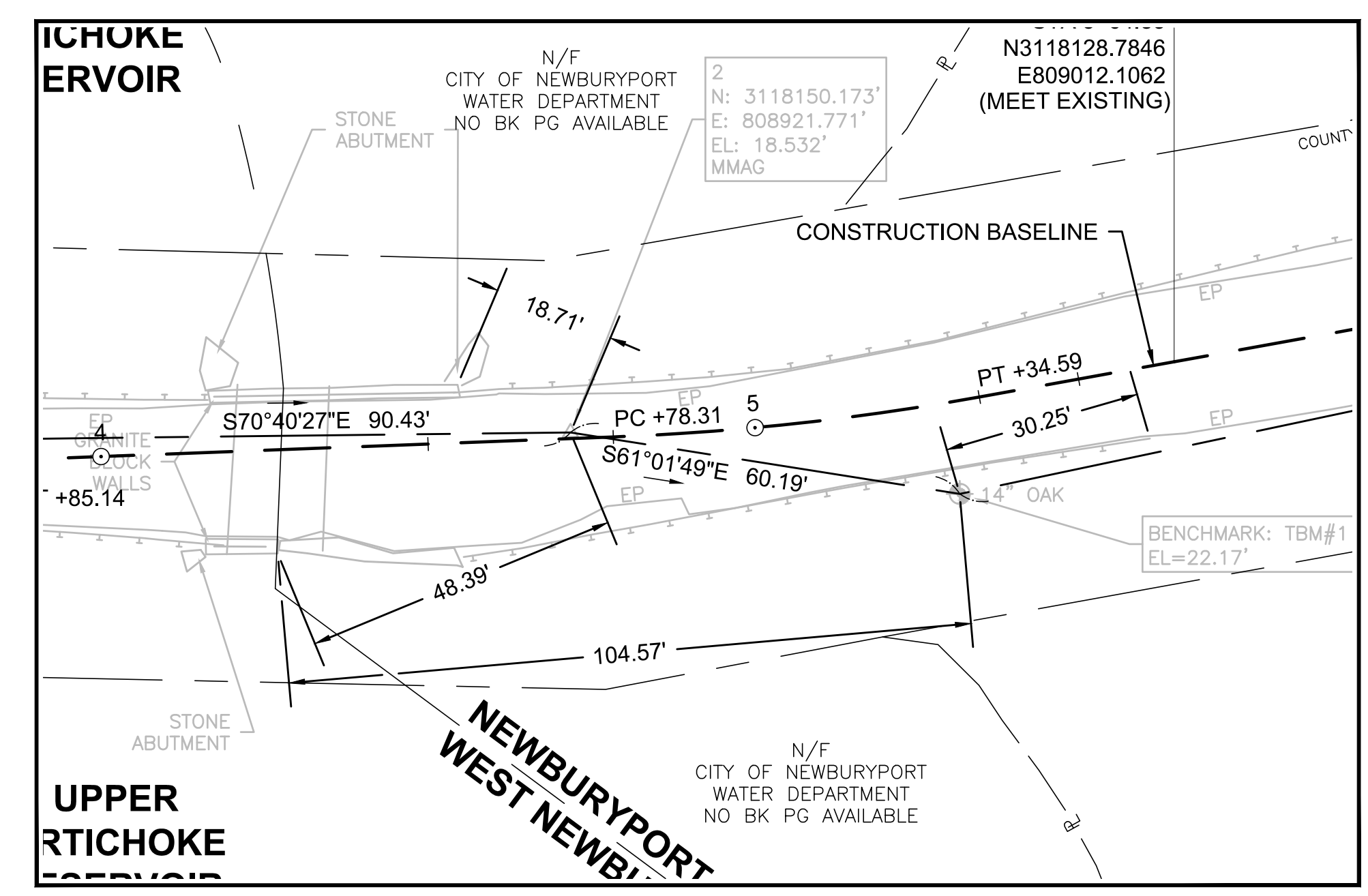
**SURVEY TIE PLAN**



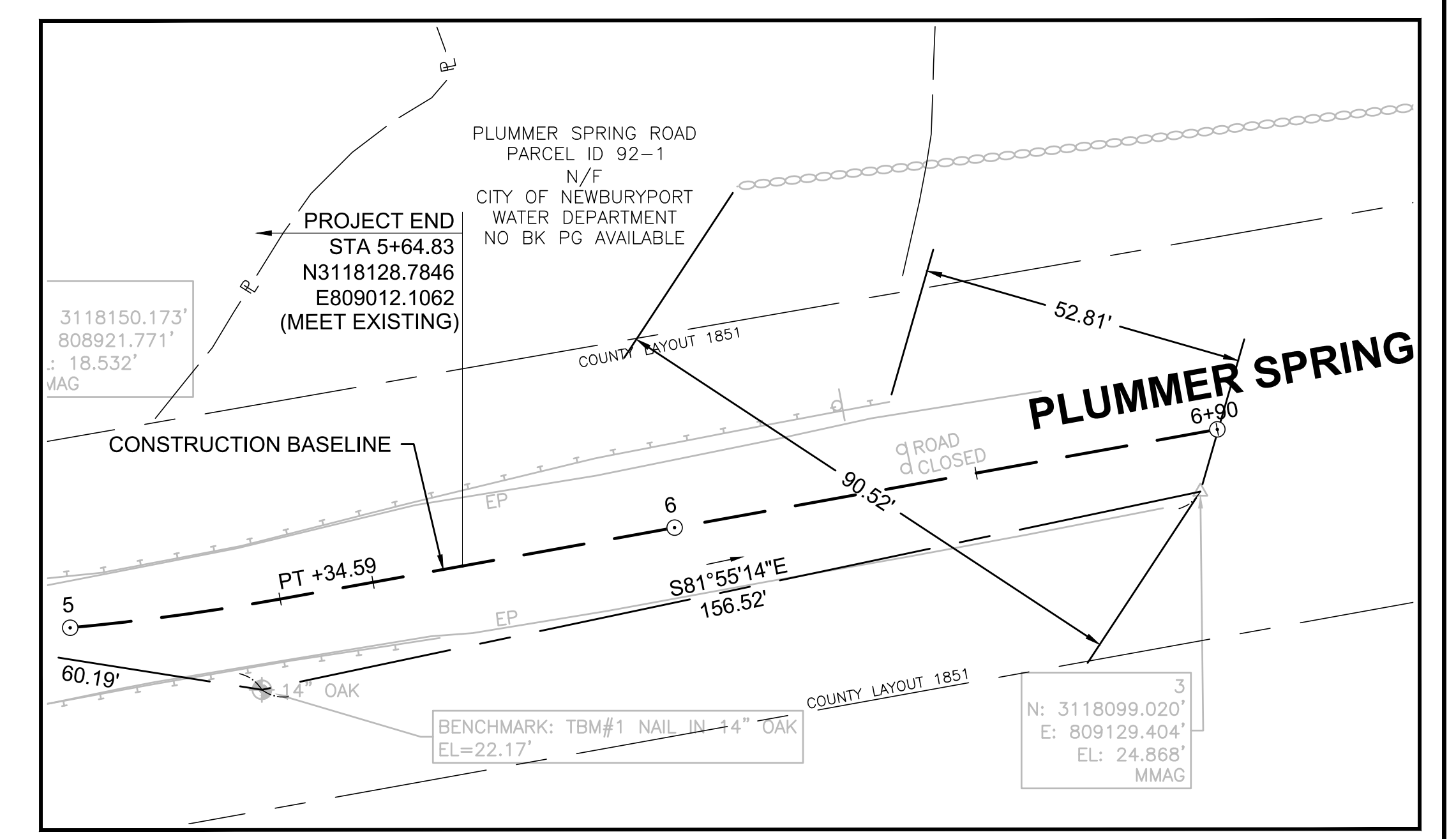
HORIZONTAL CONTROL POINTS				
LABEL	DESCRIPTION	NORTHING	EASTING	ELEVATION
TBM #2	SPIKE IN 5" CEDAR	3118215.6421	808713.3564	18.400
1	MAG NAIL IN ROADWAY	3118180.1020	808836.4320	17.439
2	MAG NAIL IN ROADWAY	3118150.1730	808921.7710	18.532
TBM #1	NAIL IN 14" OAK	3118121.0189	808974.4327	22.170
3	MAG NAIL IN ROADWAY	3118099.0200	809129.4040	24.868



TRAVERSE POINT 1



TRAVERSE POINT 2

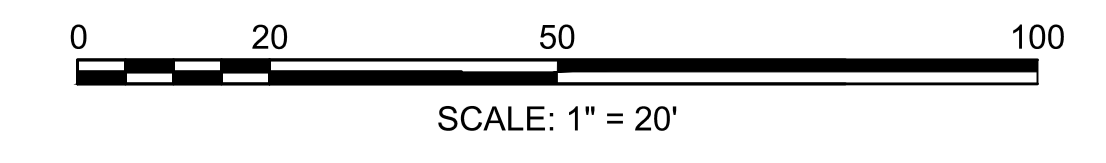


TRAVERSE POINT 3

**MIDDLE STREET/  
PLUMMER SPRING ROAD  
BENCHMARKS**

BENCHMARK TBM#1  
NAIL IN 14" OAK  
STA 5+29.20, 14.07' RT  
ELEV = 22.17

BENCHMARK TBM#2  
SPIKE IN 5" CEDAR  
STA 2+55.69, 15.36' RT  
ELEV = 18.40

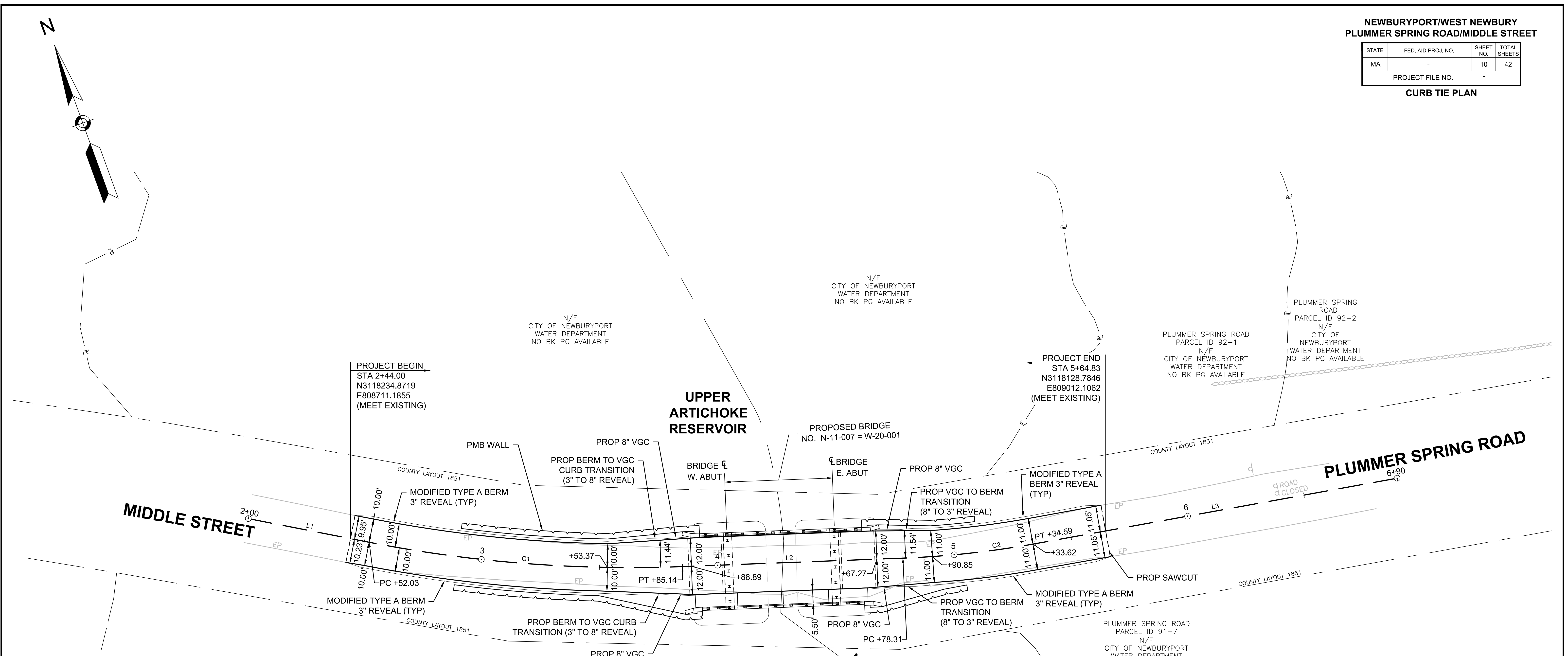


Drawing created by: [unreadable] / [unreadable] / [unreadable]  
 Plotted on: [unreadable] / [unreadable] / [unreadable]

NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET

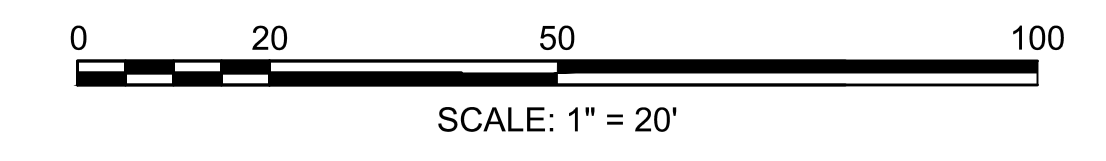
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	42
PROJECT FILE NO. -			

CURB TIE PLAN



CURBING TABLE				
WEST OF BRIDGE				
RIGHT	STATION	TO	STATION	OFFSET
0"-3" REVEAL	3+44.00		3+50.50	10.23'/10.00'
3" REVEAL	3+50.50		3+71.62	10.00'/10.74'
TRANSITION CURB	3+71.62		3+77.77	10.74'/11.10'
8" REVEAL	3+77.77		3+89.10	11.10'/12.00'
LEFT	STATION	TO	STATION	OFFSET
0"-3" REVEAL	3+44.00		3+50.50	9.95'/10.00'
3" REVEAL	3+50.50		3+70.61	10.00'/11.18'
TRANSITION CURB	3+70.61		3+77.01	11.18'/11.49'
8" REVEAL	3+77.01		3+89.10	11.49'/12.00'
EAST OF BRIDGE				
RIGHT	STATION	TO	STATION	OFFSET
8" REVEAL	4+65.13		4+76.80	12.00'/11.40'
TRANSITION CURB	4+76.80		4+82.93	11.40'/11.15'
3" REVEAL	4+82.93		5+58.33	11.15'/11.04'
3"-0" REVEAL	5+58.33		5+64.84	11.04'/11.06'
LEFT	STATION	TO	STATION	OFFSET
8" REVEAL	4+65.13		4+77.07	12.00'/11.62'
TRANSITION CURB	4+77.07		4+83.48	11.62'/11.39'
3" REVEAL	4+83.48		5+58.33	11.39'/11.04'
3"-0" REVEAL	5+58.33		5+64.83	11.04'/11.05'

LINE/CURVE TABLE				
LINE/CURVE NO.	LENGTH	DIRECTION/DELTA	RADIUS	TANGENT
C1	133.10	13°15'47"	575.00	66.85
C2	56.29	8°03'44"	400.00	28.19
L1	52.03	S58°55'52"E		
L2	93.17	S72°11'39"E		
L3	155.41	S80°15'23"E		



Drawing created in AutoCAD 2010 using the AutoCAD 2010 LISP program. The drawing was created on 11/11/2010 at 10:00 AM. The drawing was saved on 11/11/2010 at 10:00 AM.

289500\_HDC(T).DWG

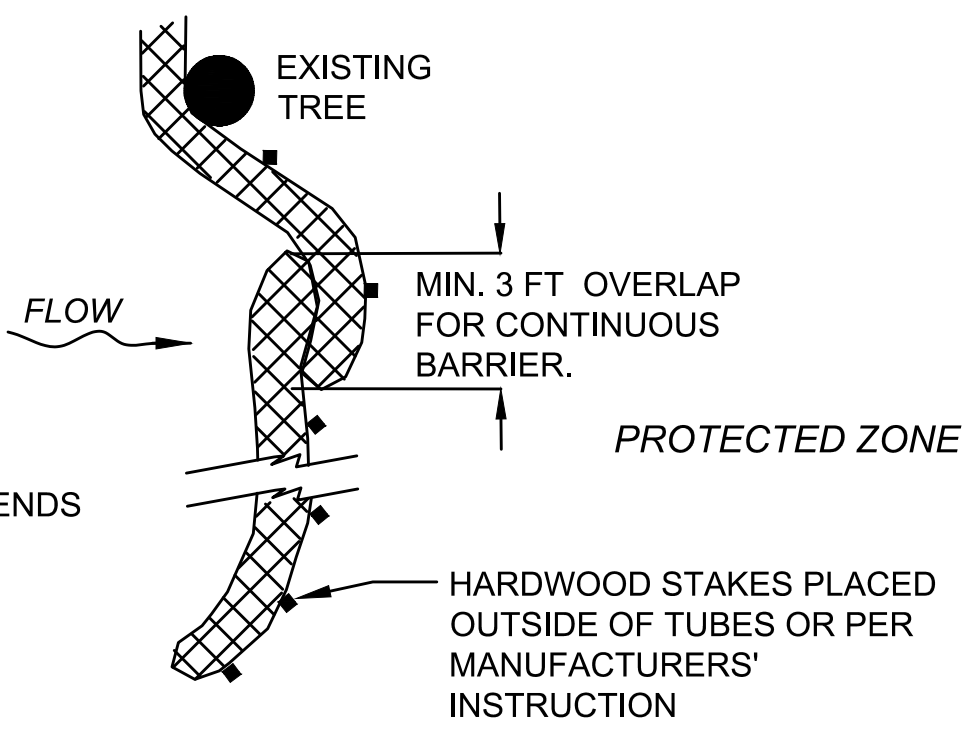


STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	42
PROJECT FILE NO. -			

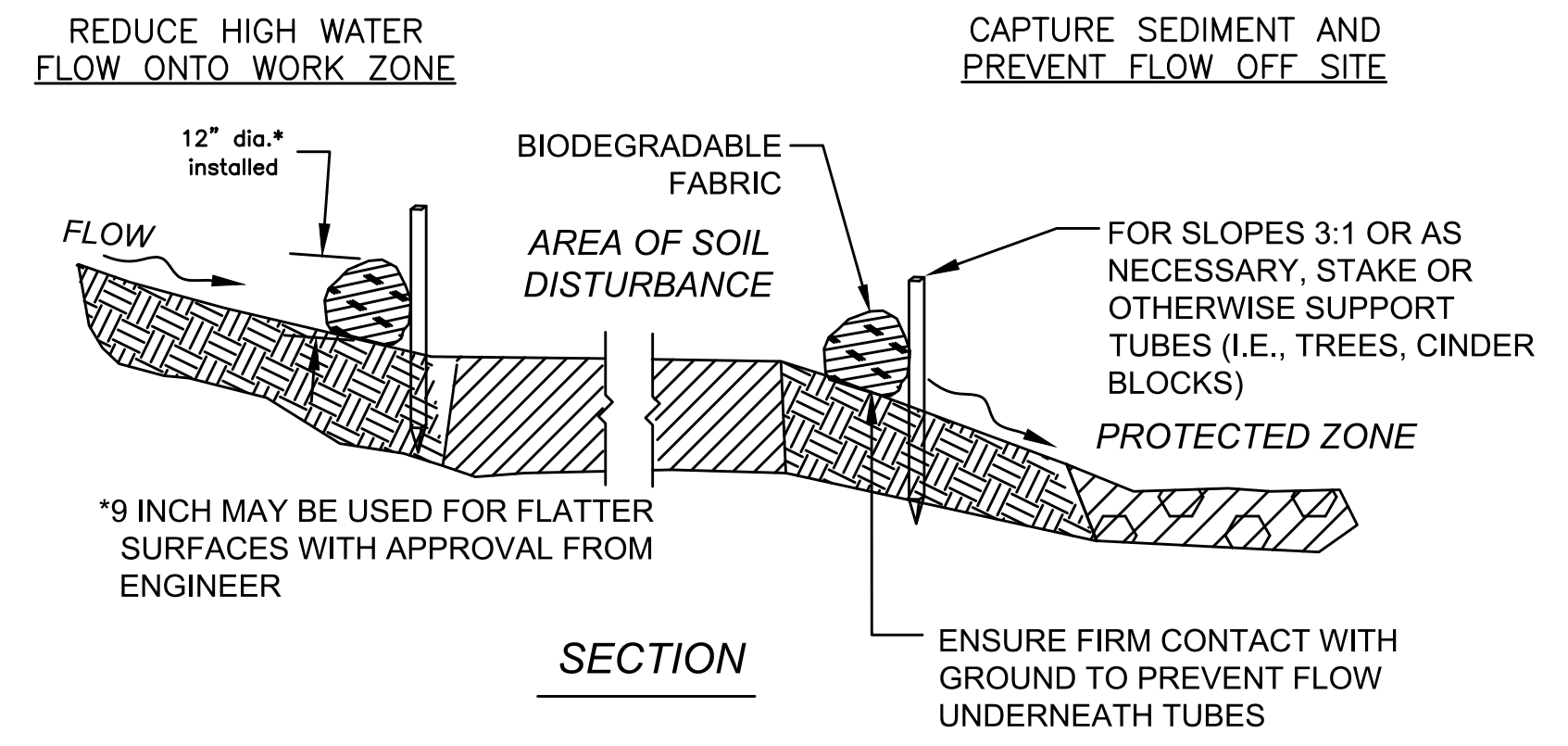
**CONSTRUCTION DETAILS**

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

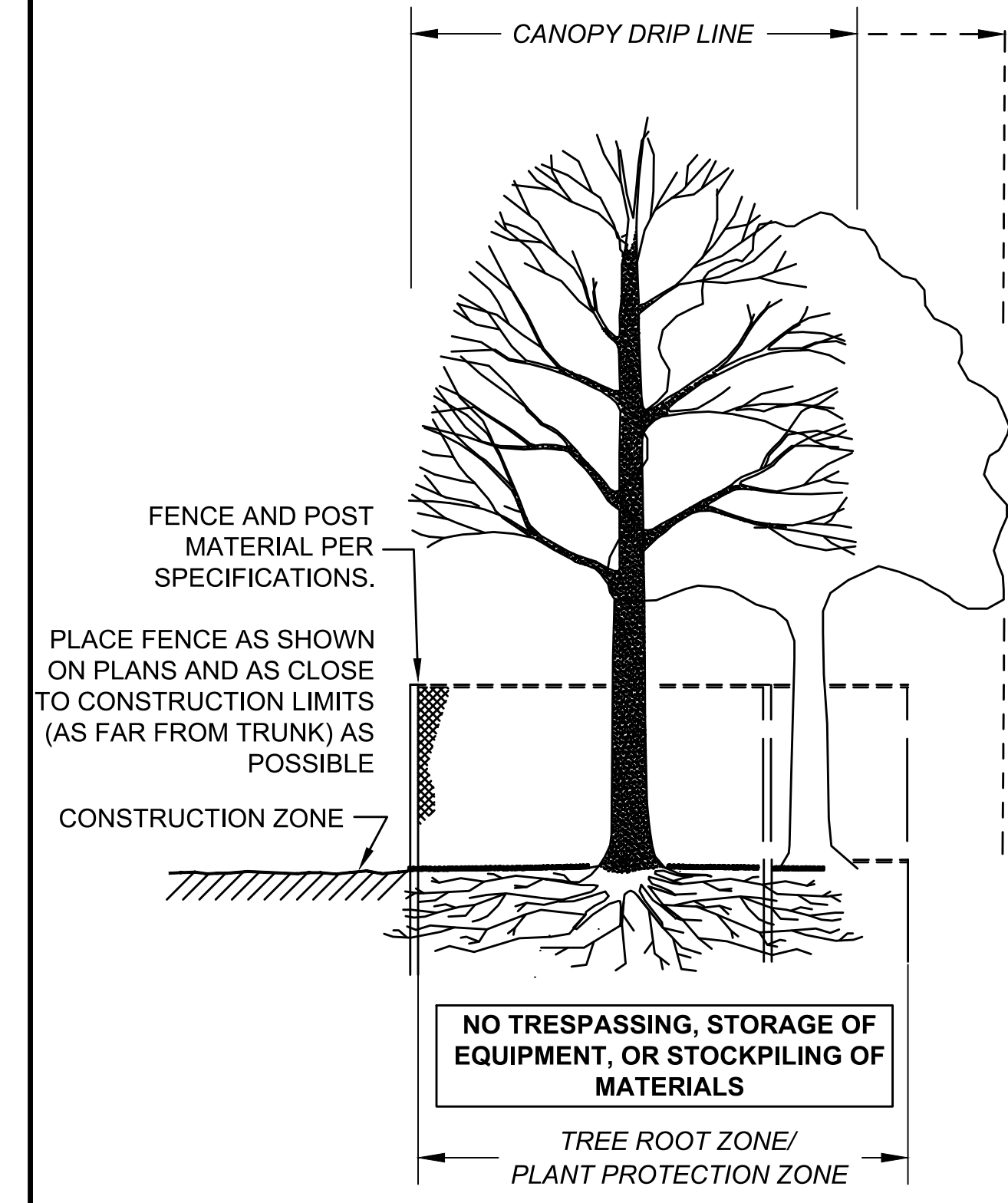


**PLAN VIEW**

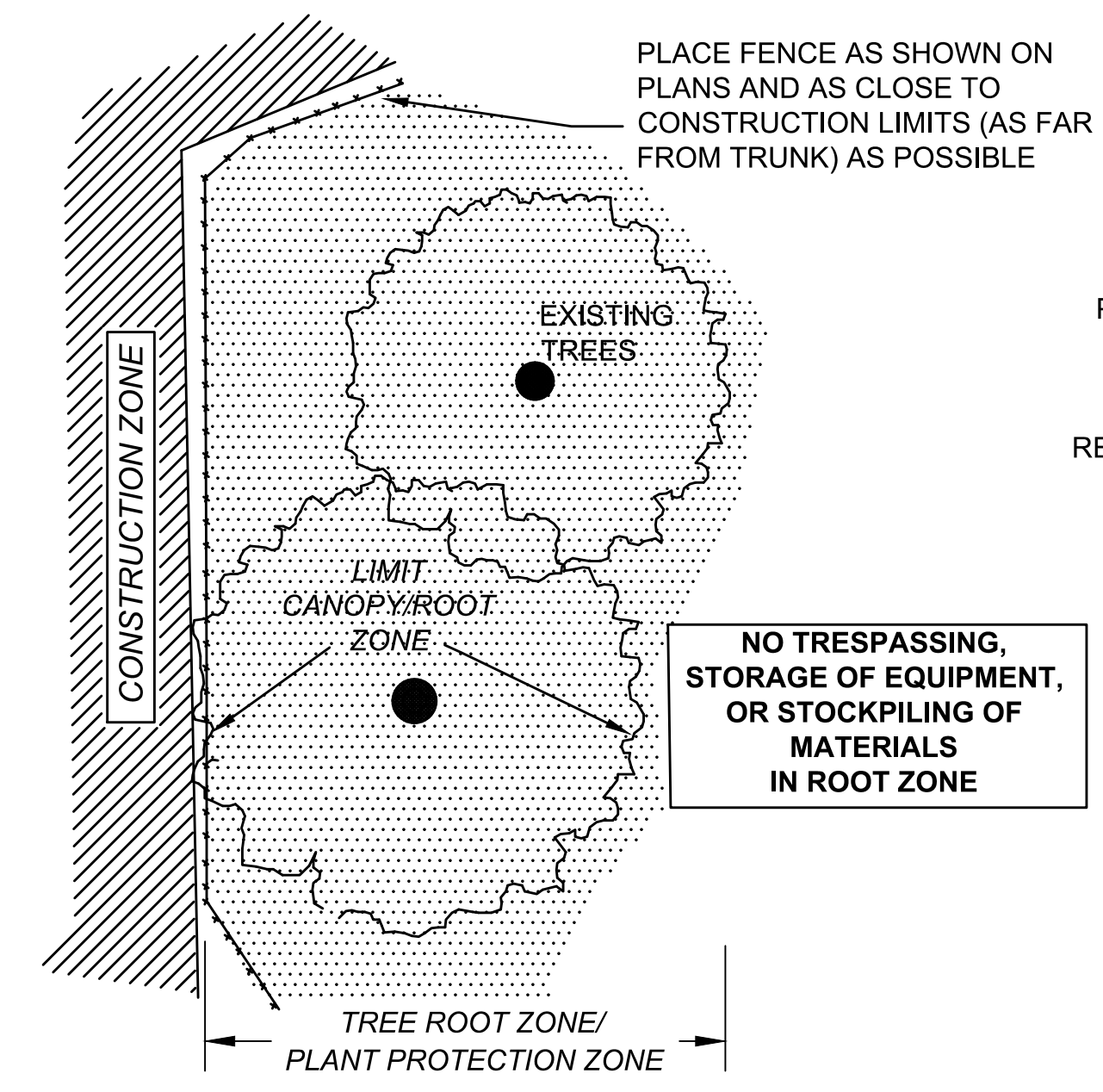


**SECTION**

**SEDIMENT BARRIER - COMPOST FILTER TUBE**  
NOT TO SCALE

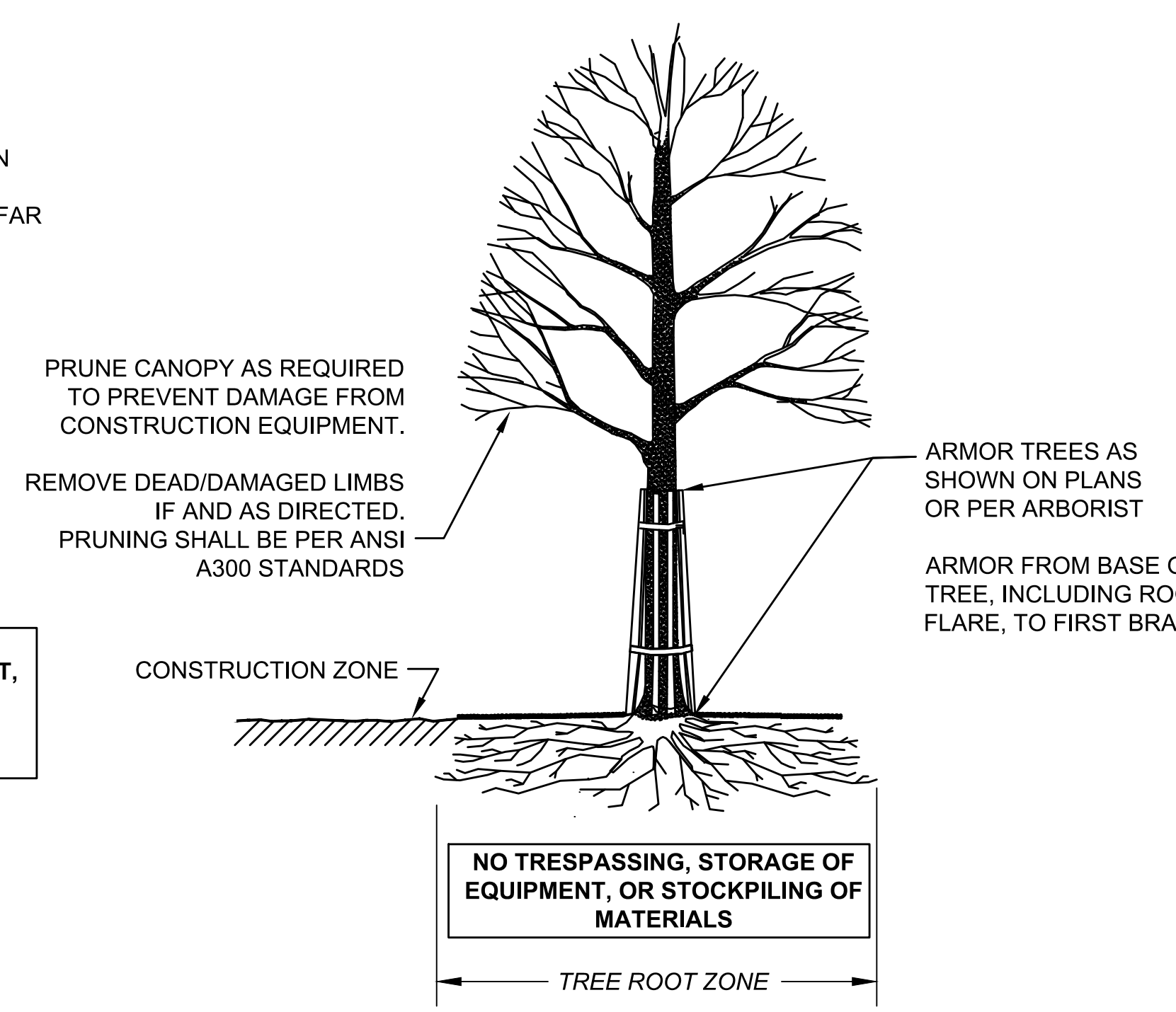


**SECTION - FENCE PROTECTION OF ROOT ZONE**



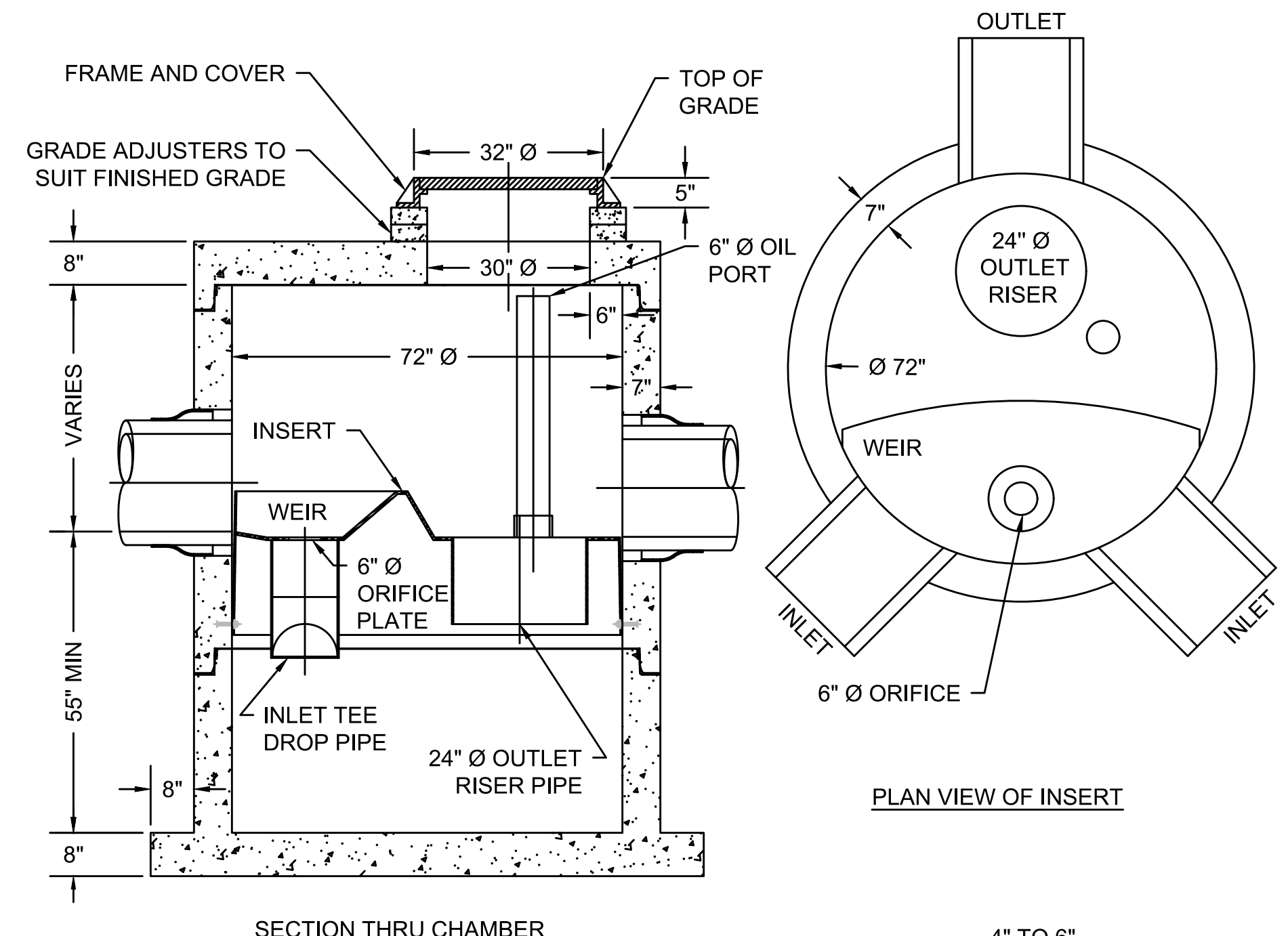
**PLAN VIEW - FENCE PROTECTION OF ROOT ZONE**

**TREE PROTECTION - ROOT ZONE**  
NOT TO SCALE

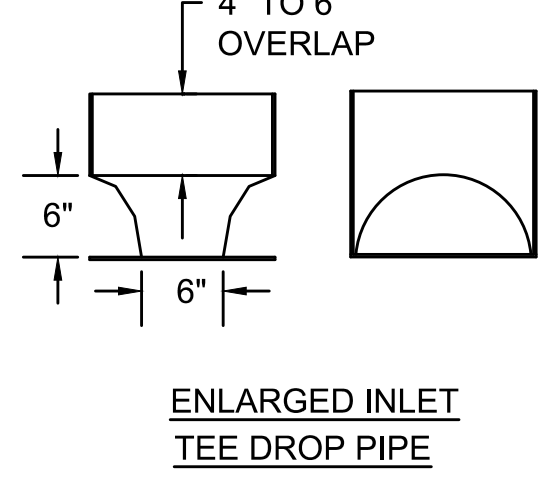


**SECTION - TRUNK ARMORING & PRUNING**

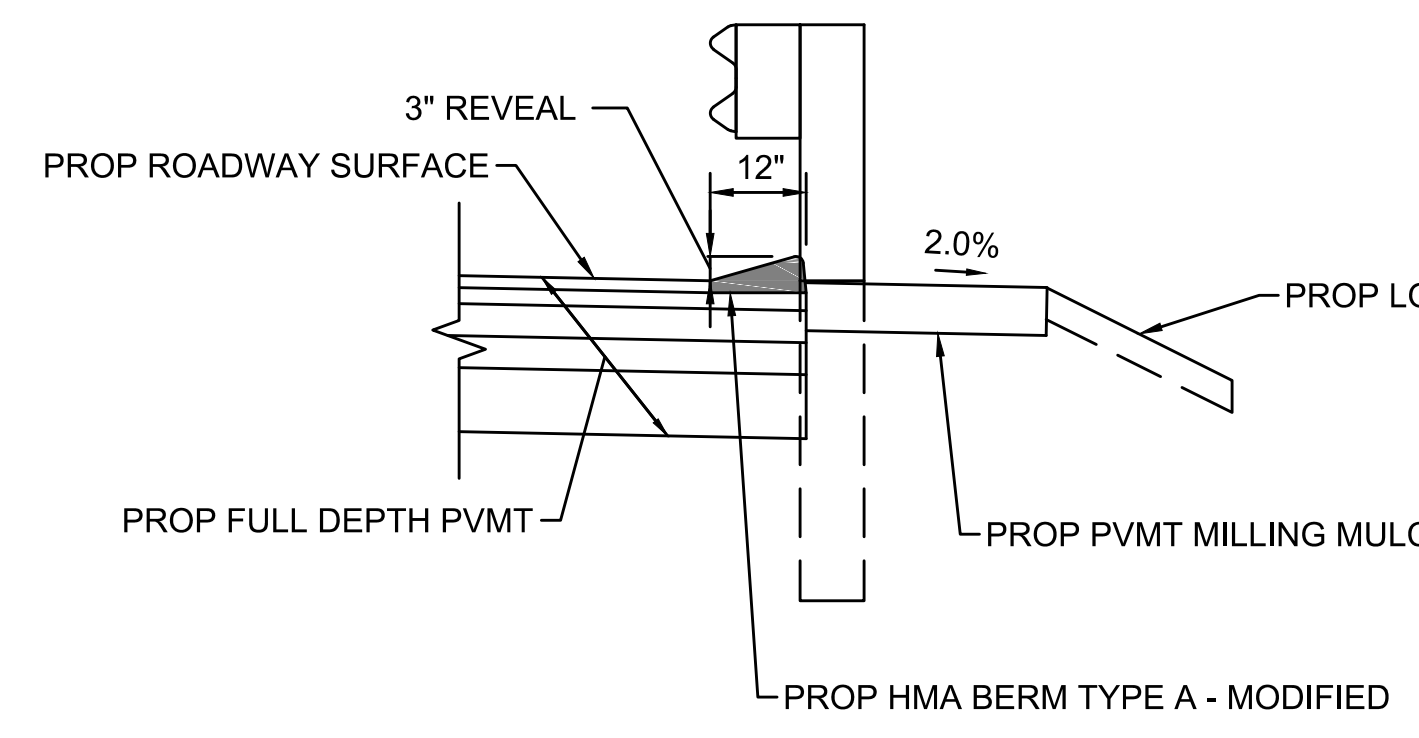
**TREE PROTECTION - TRUNK**



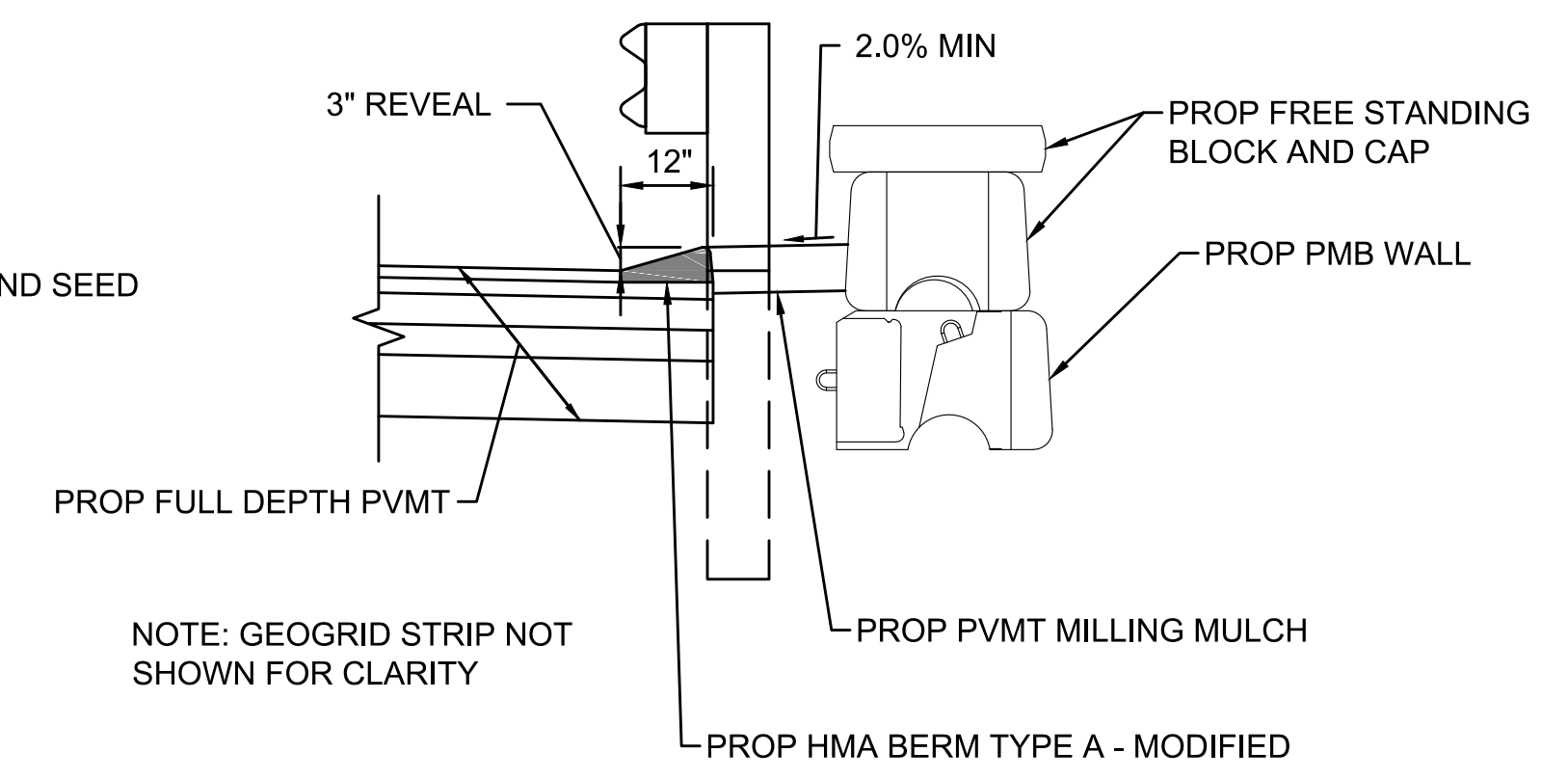
- NOTE :
1. THE USE OF FLEXIBLE CONNECTIONS IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
  2. THE COVER SHOULD BE POSITIONED OVER THE 24" Ø OUTLET RISER PIPE AND THE 6" Ø OIL PORT.



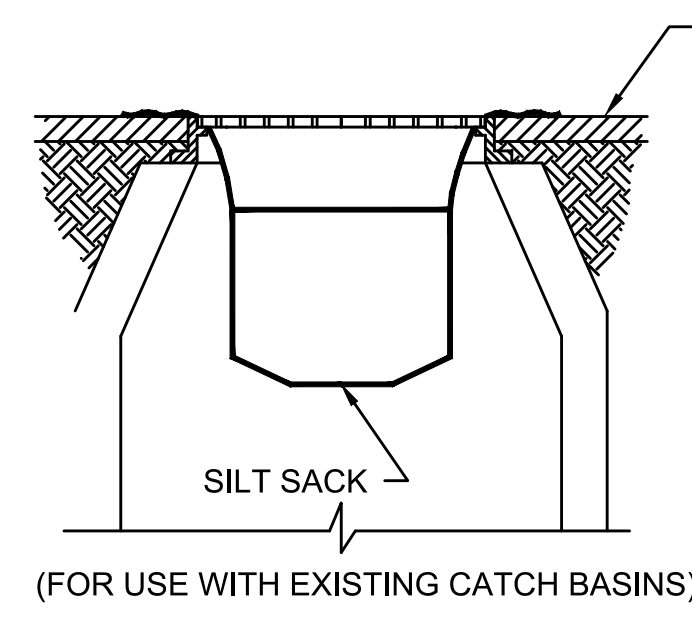
**WATER QUALITY TREATMENT UNIT - 900 US GALLON CAPACITY**  
NOT TO SCALE



**HOT MIX ASPHALT BERM INSTALLATION**  
NOT TO SCALE



NOTES:  
SILT SACKS SHALL BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS SHALL BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED, AND REPLACED IF NECESSARY.



**SILT SACK INLET PROTECTION**

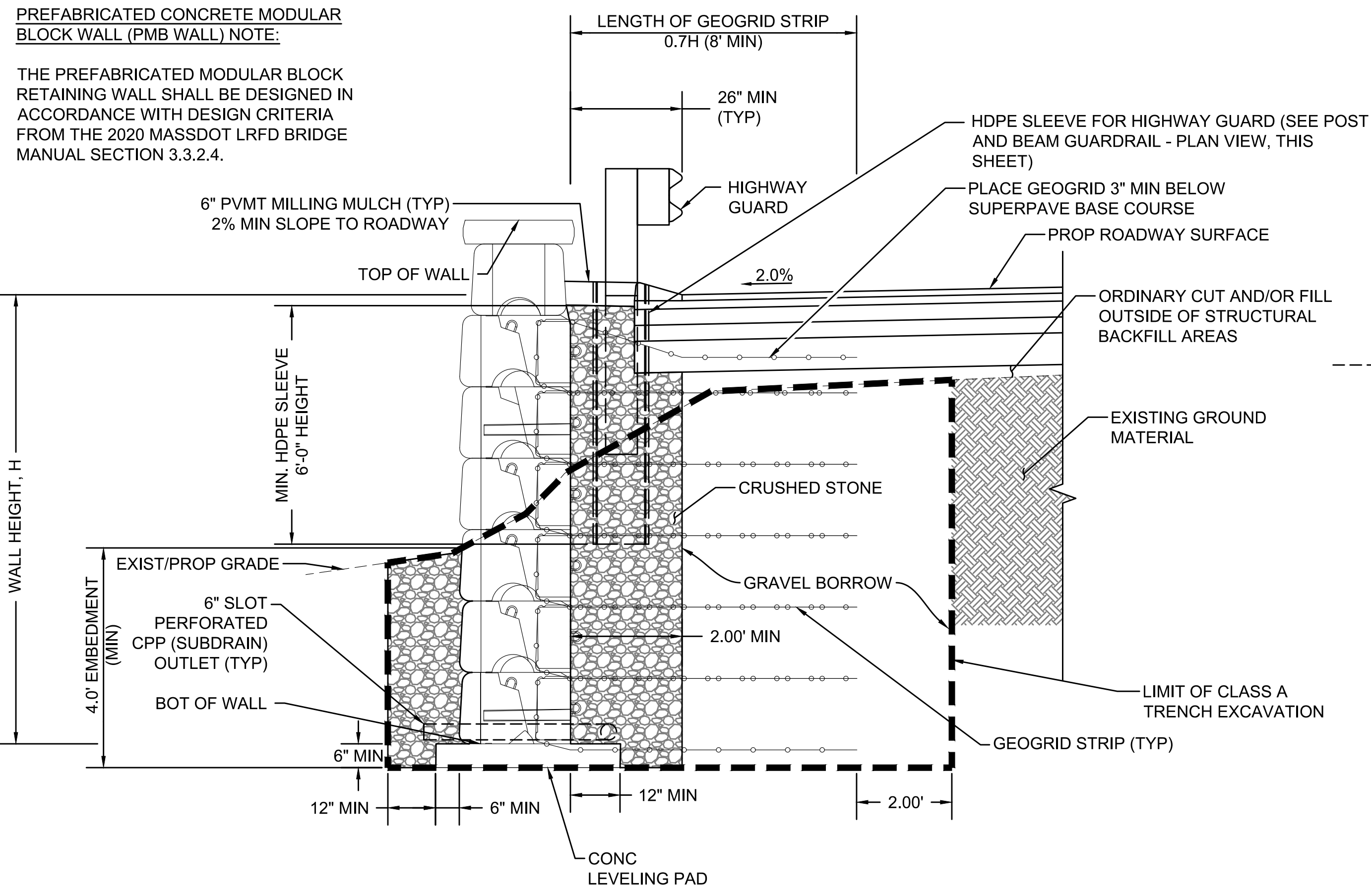
NOT TO SCALE

Drawing created by AutoCAD 2015, P:\Projects\2015\Newburyport\Newburyport\Drawings\DWG\2015\Newburyport\2015\011.dwg  
Printed on: Wednesday, June 24, 2015 12:15:00 PM

2839500\_H01(DWT).DWG

**PREFABRICATED CONCRETE MODULAR BLOCK WALL (PMB WALL) NOTE:**

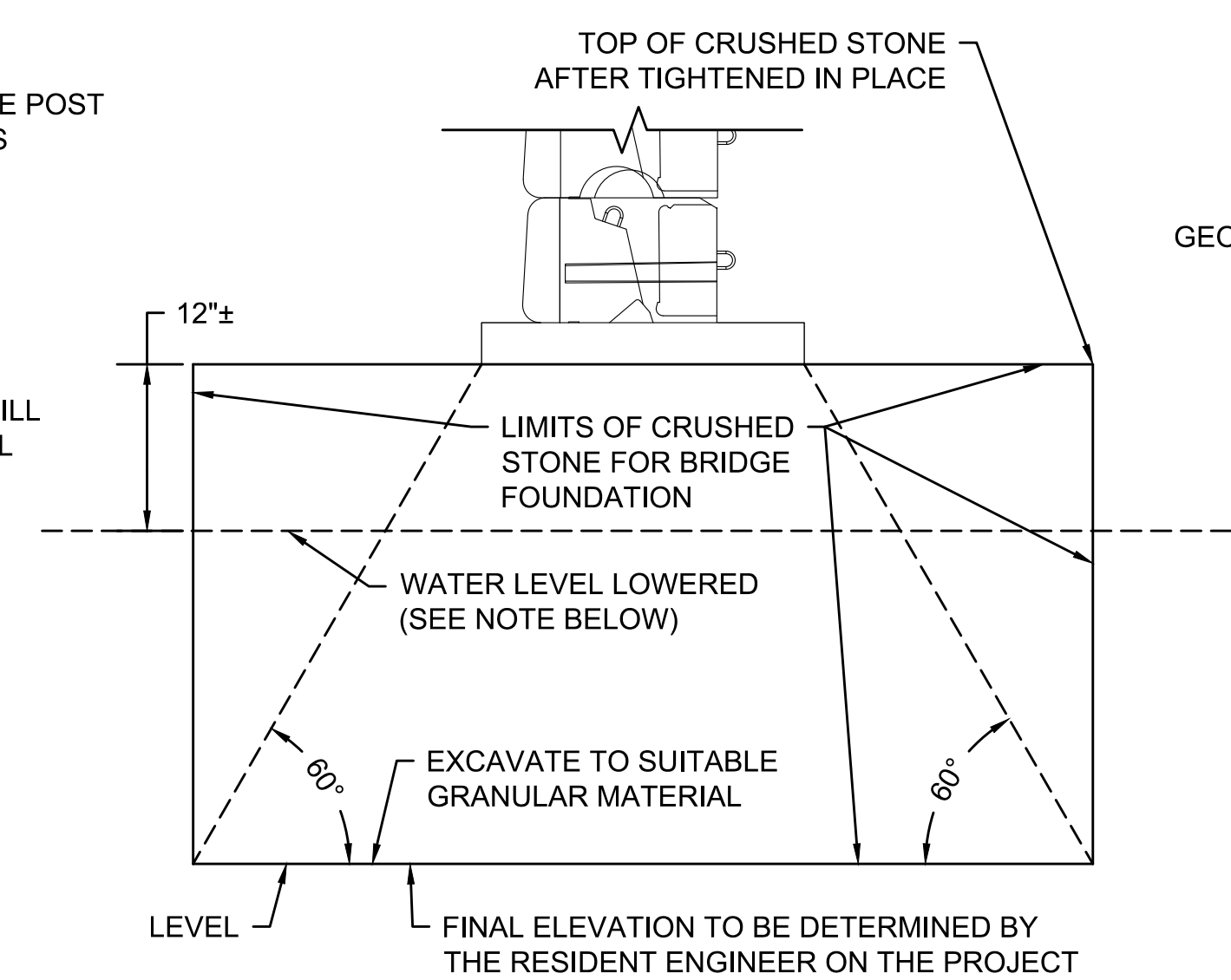
THE PREFABRICATED MODULAR BLOCK RETAINING WALL SHALL BE DESIGNED IN ACCORDANCE WITH DESIGN CRITERIA FROM THE 2020 MASSDOT LRFD BRIDGE MANUAL SECTION 3.3.2.4.



**3 MODULAR BLOCK RETAINING WALL**  
13 NOT TO SCALE

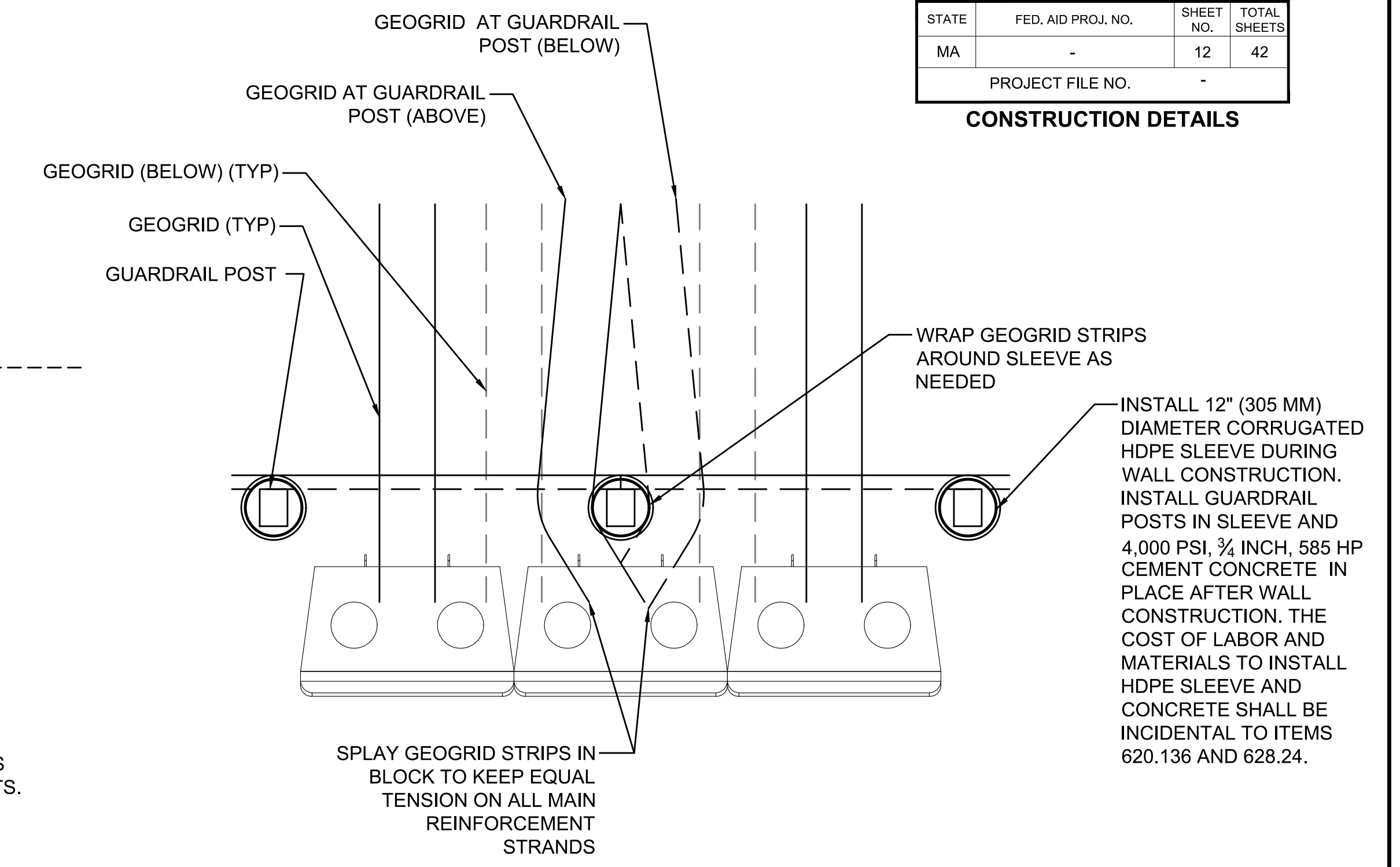
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	42
PROJECT FILE NO. -			

**CONSTRUCTION DETAILS**

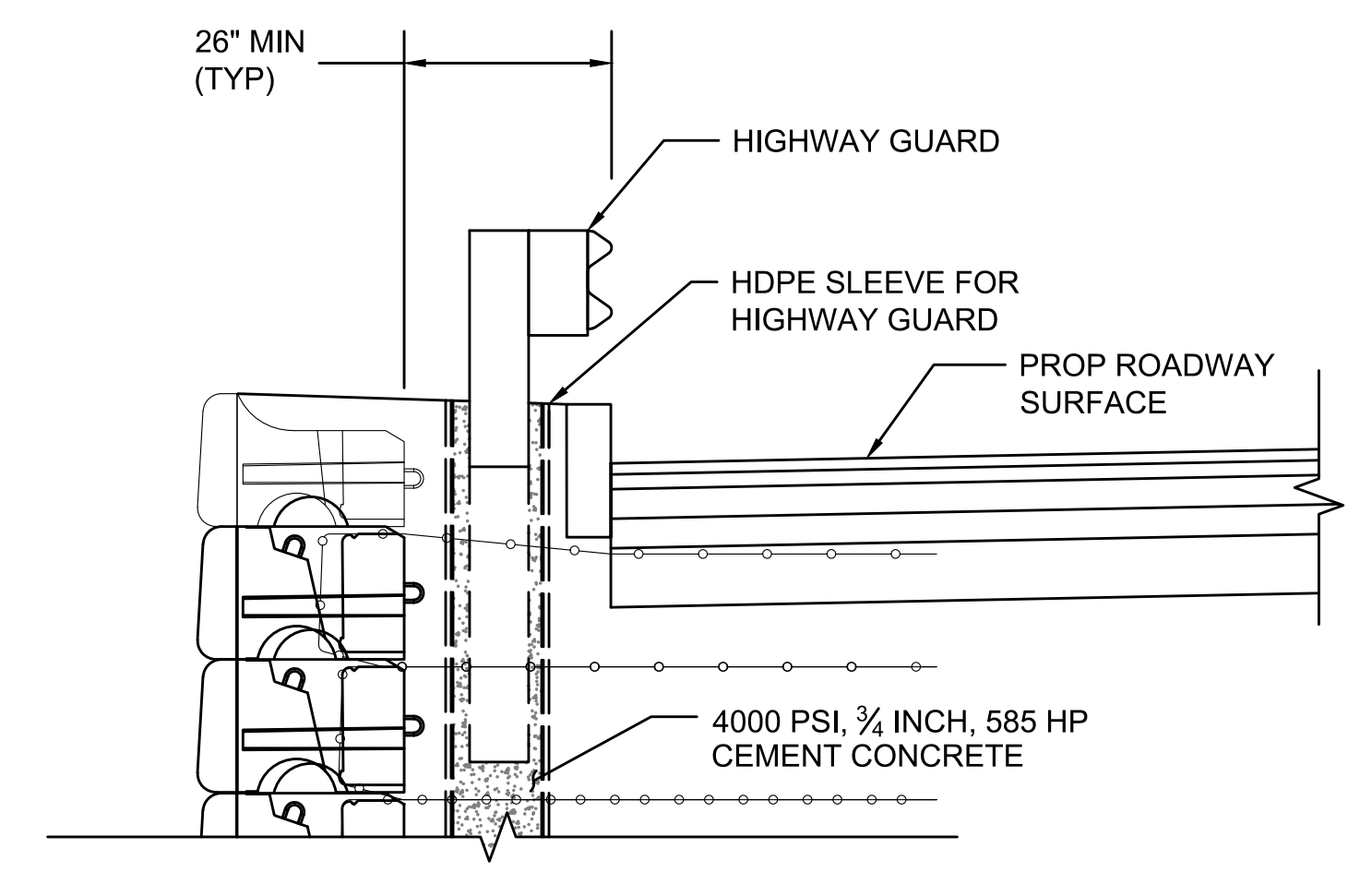


- NOTES:**
1. THIS DETAIL DEPICTS ONE OPTION FOR ACCOMMODATING UNSUITABLE MATERIAL. CONTRACTOR TO REFER TO THE GEOTECHNICAL REPORT AND TO THE SPECIAL PROVISIONS FOR ITEM 996.4 FOR ADDITIONAL OPTIONS & REQUIREMENTS.
  2. LOWER WATER LEVEL AS MUCH AS POSSIBLE WITHOUT DISTURBING THE GRANULAR SOIL (SIDES & BOTTOM) & TIGHTENING CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS)

**LIMITS OF CRUSHED STONE FOR PMB WALL FOUNDATION**  
NOT TO SCALE



**POST AND BEAM GUARDRAIL - PLAN VIEW**  
NOT TO SCALE

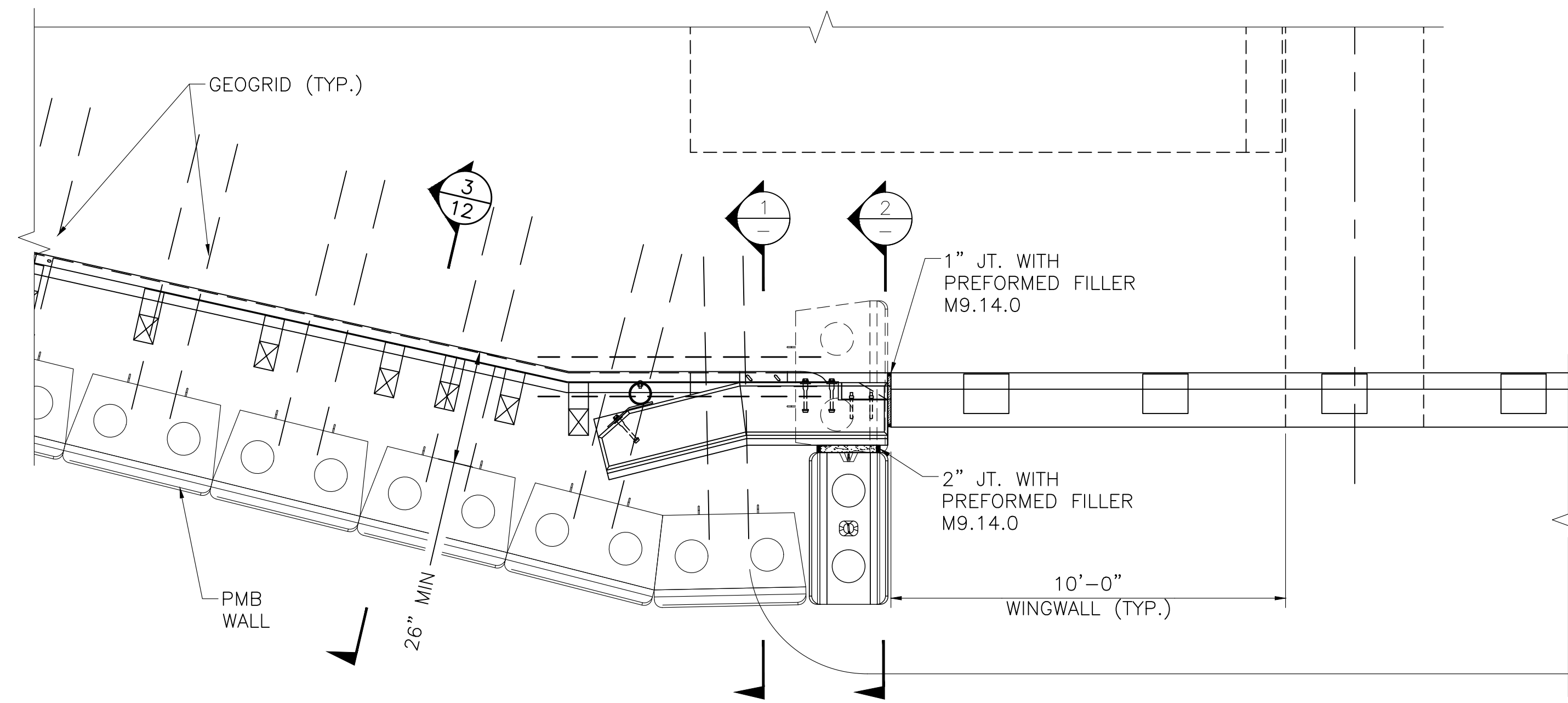


**POST AND BEAM GUARDRAIL - SECTION VIEW**  
NOT TO SCALE

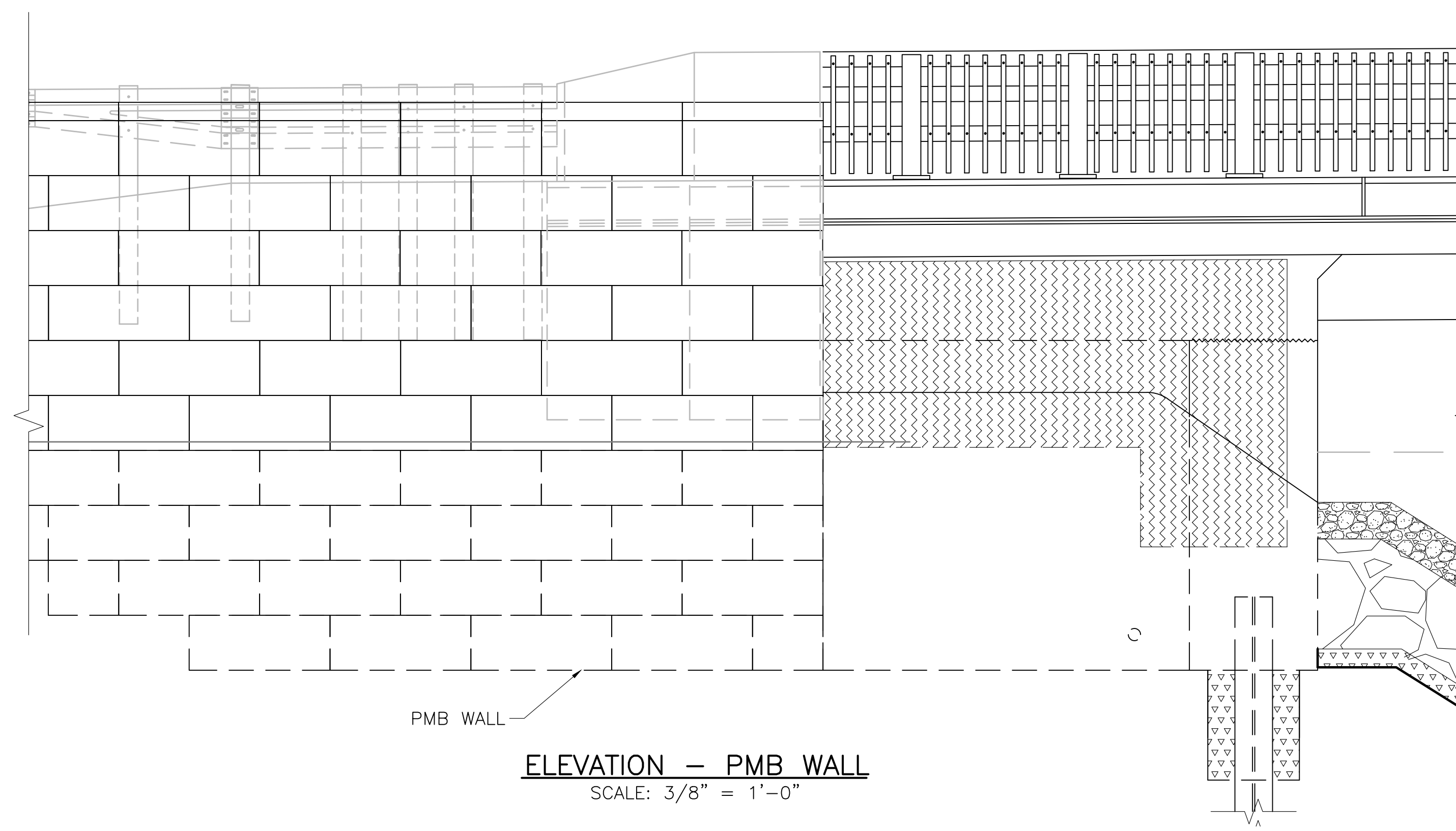


STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	42
PROJECT FILE NO.		-	

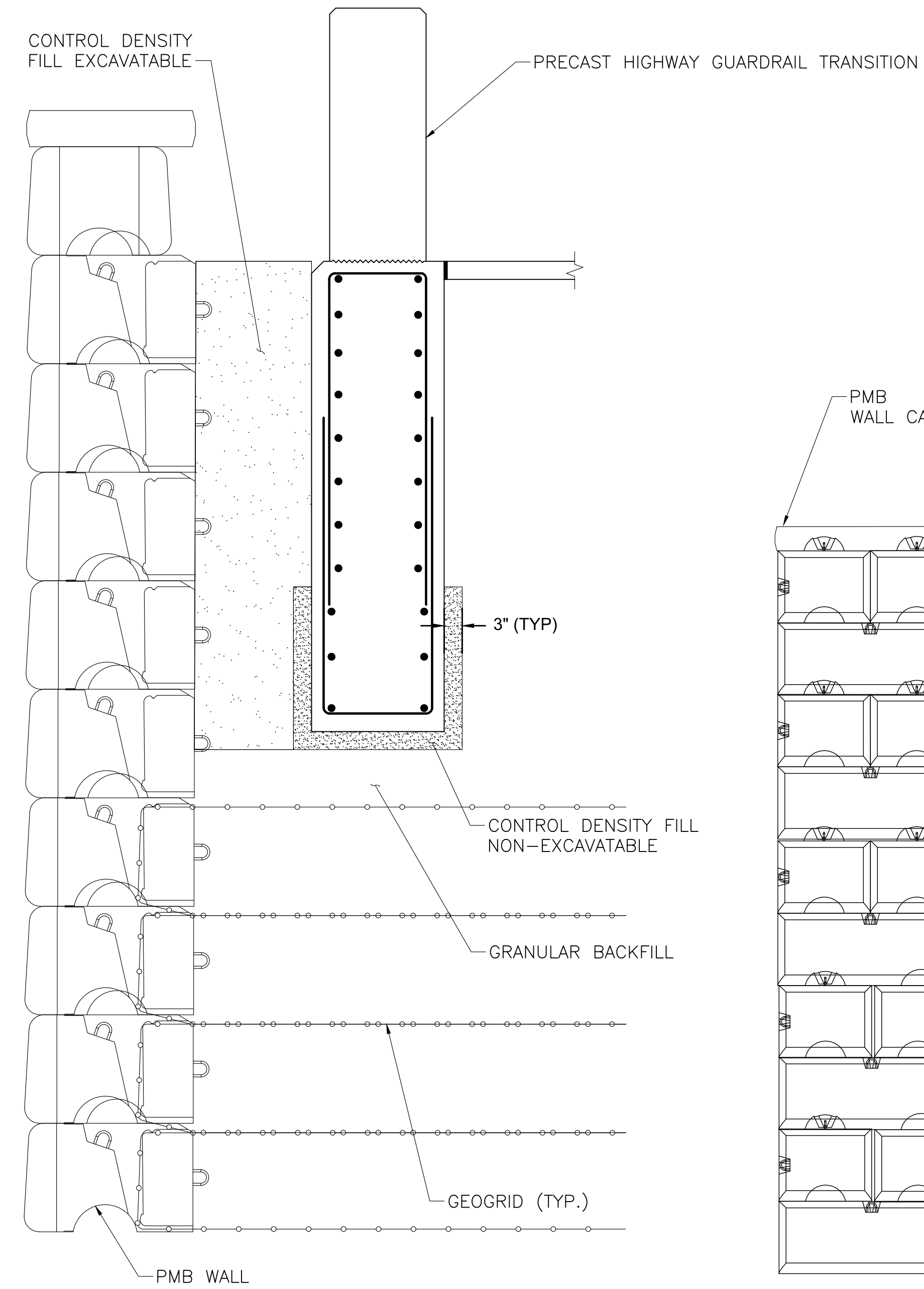
PMB WALL DETAILS AT BRIDGE



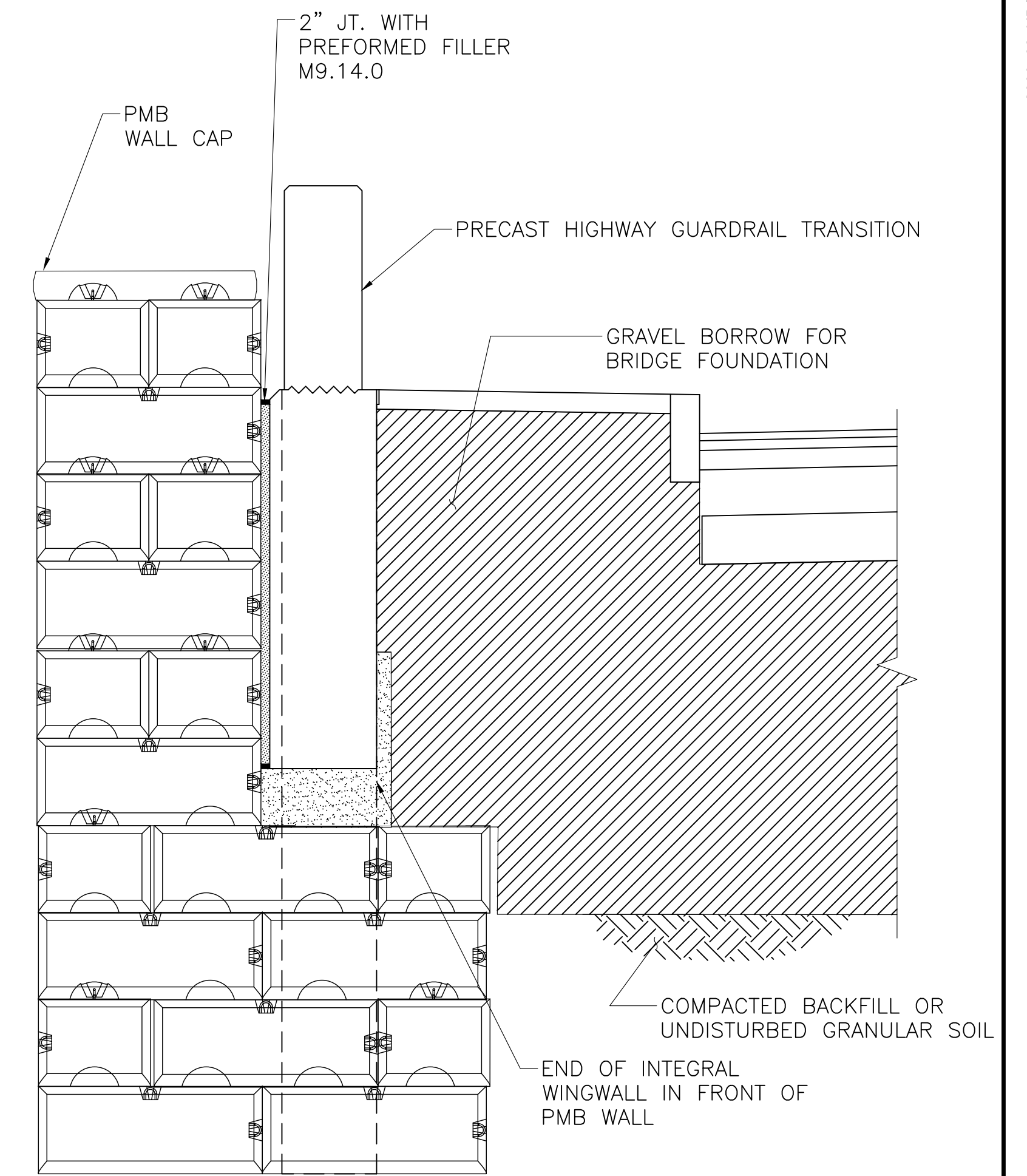
PLAN - PMB WALL  
SCALE: 3/8" = 1'-0"



ELEVATION - PMB WALL  
SCALE: 3/8" = 1'-0"



SECTION 1 - PMB WALL  
SCALE: 3/4" = 1'-0"



SECTION 2 - PMB WALL CORNER  
SCALE: 1/2" = 1'-0"

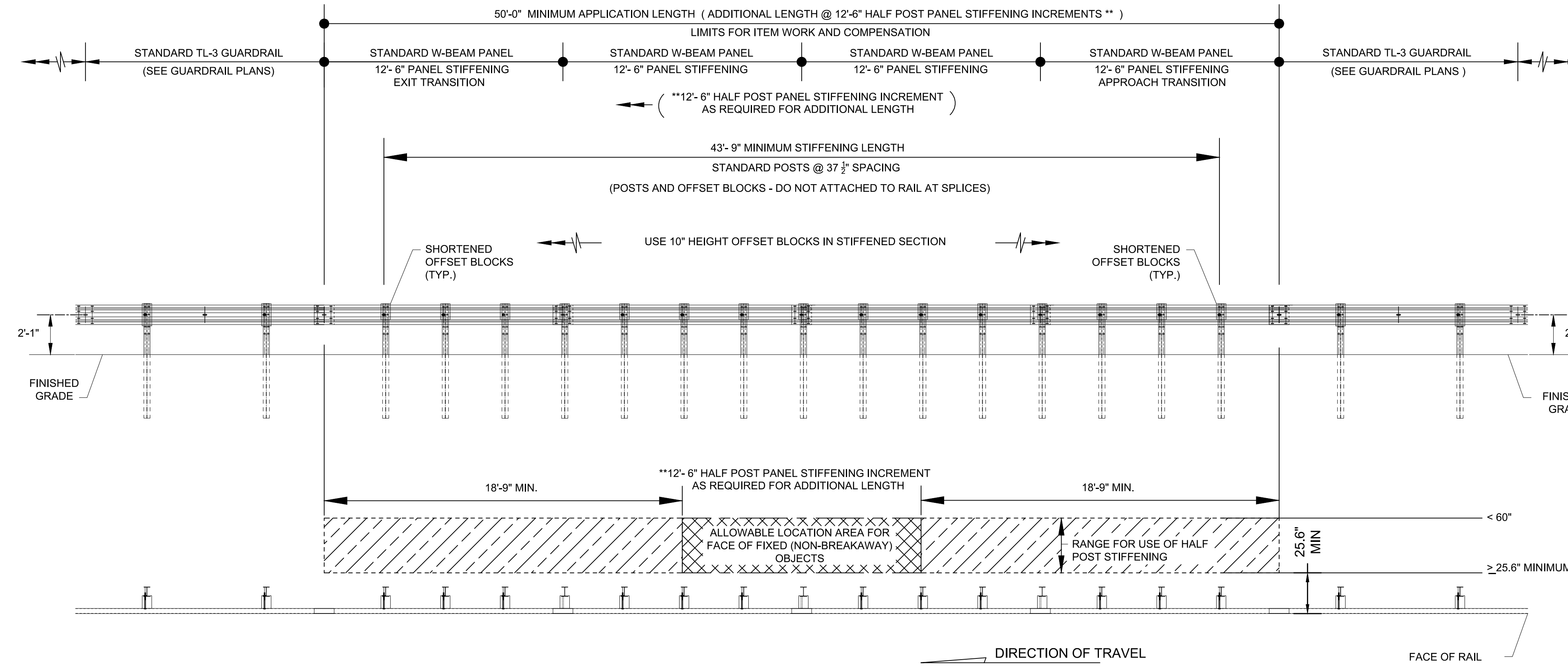
PREFABRICATED CONCRETE MODULAR BLOCK WALL (PMB WALL) NOTES:

1. THE DEPICTED PMB WALL AND JOINT DETAILS SHOWN ARE SIMPLISTIC AND ARE TO PROVIDE AN EQUAL BASIS FOR BIDDING. THE CONTRACTOR IS REQUIRED TO FOLLOW THE SPECIFICATIONS FOR ITEM 996. - PREFABRICATED CONCRETE MODULAR BLOCK WALL (WITH GEOGRID REINFORCEMENT)
2. ADDITIONAL GEOGRID REINFORCEMENT/ANCHORAGE MAY BE REQUIRED TO PROVIDE SUFFICIENT WALL STABILITY ADJACENT TO THE PRECAST HIGHWAY GUARDRAIL TRANSITION
3. THE PREFABRICATED MODULAR BLOCK RETAINING WALL SHALL BE DESIGNED IN ACCORDANCE WITH DESIGN CRITERIA FROM THE 2020 MASSDOT LRFD BRIDGE MANUAL SECTION 3.3.2.4.

**NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	42
PROJECT FILE NO.		-	

**GUARDRAIL, TL-3 STIFFENING WITH  
HALF POST SPACING**

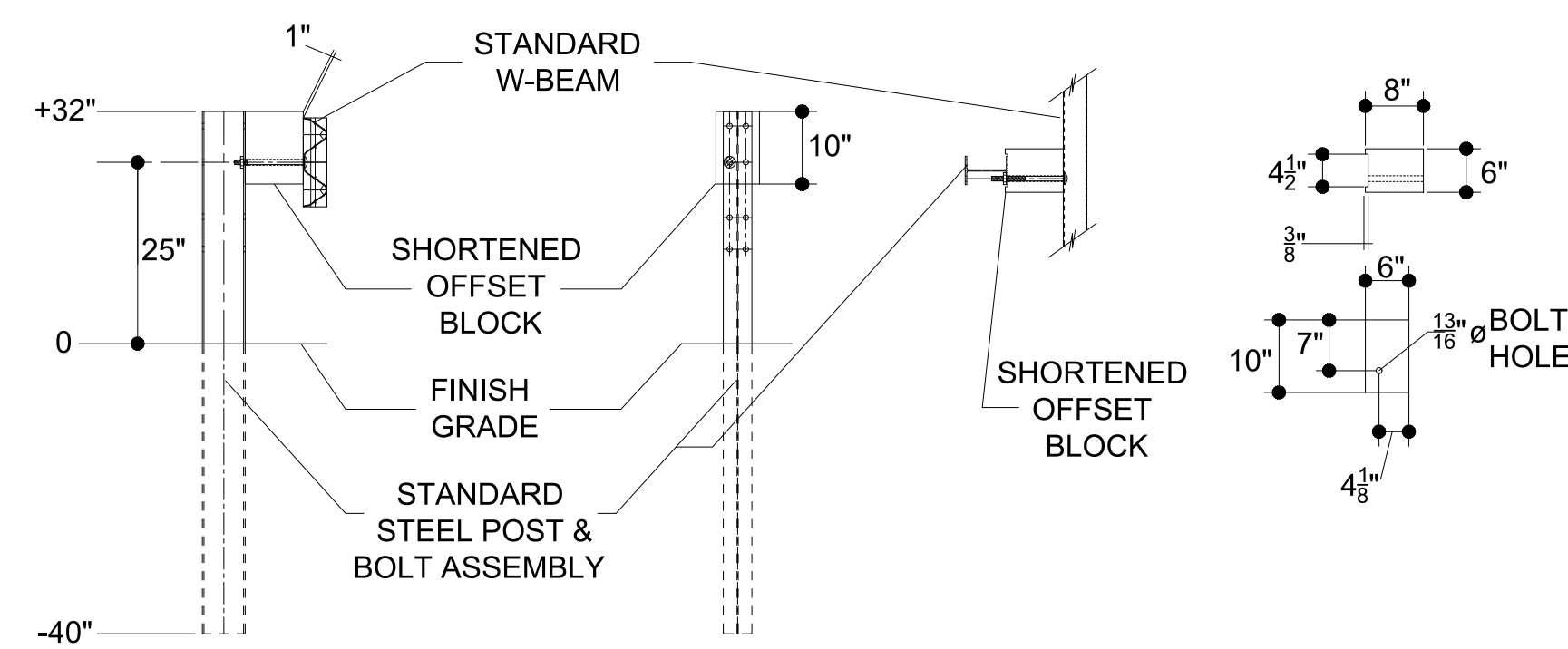


**GUARDRAIL, TL-3 STIFFENING WITH HALF POST SPACING**

SCALE: 1" = 4'

**NOTES:**

- SEE CONSTRUCTION STANDARDS SECTION 400 FOR APPLICABLE COMPONENT PROVISIONS AND DETAILS:
- STANDARD W-BEAM PANEL DETAILS: DWG NO. 400.1.3
- STANDARD POST DETAILS: DWG NO. 400.1.4
- SHORTENED OFFSET BLOCK DETAILS: SEE DETAIL THIS SHEET



**SHORTENED (10" HEIGHT)  
OFFSET BLOCK DETAILS**

NOT TO SCALE



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	42
PROJECT FILE NO.			-

BORING LOGS RW-1 & RW-2



**GEOSCIENCES TESTING AND RESEARCH, INC.**

55 Middlesex Street, Suite 225, North Chelmsford, MA.  
Phone: (978) 251-9395 www.gtrinc.net

Project Name: Plummer Spring Rd  
Location: West Newbury- Newburyport, MA

Boring No. RW-1  
Page: 1 of 1  
GTR Job #: 19.107  
GTR Rep: J. Roth  
Reviewer: C. George

Drilling Co.:	Car-Dee Corporation	
Driller:	Joe Desimone	Helper(s): Frank Landers
Start Date:	7/8/2022	End Date: 7/8/2022
Ground Surface Elev (ft):	~ 18.5 ft	
Boring Location:	808734.0596 E, 3118213.1986 N	
Note:	Mobile Drill B-61 AutoHammer	

Depth	Case BPF	Sample Data					Stratum	Additional Data	Notes
		No.	Pen/ Rcvy	Depth (El.)	Blows per 6in	Field Test			
0						ASPHALT			
		SS-1	24/10	1-3	4 5	Loose, brown, f-c SAND, little Gravel, trace Silt,	10"		
					3 6				
5		SS-2	24/6	5-7	8 7	M. dense, brown, f-m SAND, little Gravel, trace Silt	GRANULAR FILL		
					3 1				
10		SS-3	24/15	10-12	7 10	M. dense, brown, f-m SAND, trace Silt,			
					14 13				
		SS-4	24/17	12-14	12 14	M. dense, brown, f-m SAND, trace Silt,			
					14 11				
15		SS-5	24/15	14-16	9 14	M. dense, brown, GRAVEL, little Sand, trace Silt	SAND		
					11 7				
		SS-6	24/14	16-18	6 7	M. dense, brown, f-c SAND, trace Silt,			
					7 8				
		SS-7	24/7	18-20	5 9	M. dense, brown, f-c SAND, trace Silt,			
					10 19				
20		SS-8	24/12	20-22	10 11	M. dense, brown, f-c SAND, trace Silt,			
					14 17				
						Bottom of boring at 22 feet below grade with no refusal encountered.	22'		

NOTES:

**Order of Sample Description (Modified Burmister)**

- Moisture Content: Dry, Moist, Wet
- Soil Relative Density or Consistency
- Color
- Major Component: Should be capitalized
- Minor Component: "and" - 35% to 50% minor grain size  
"some" - 20% to 35% minor grain size  
"little" - 10% to 20% minor grain size  
"trace" - < 10% of minor grain size

**PENETRATION RESISTANCE (N) GUIDE**

Cohesionless Soils (Sands)		Cohesive Soils (Clays)	
Relative Density / Blows per Foot		Consistency / Blows per Foot	
Very Loose >>> 0-4	Loose >>> 4-10	Very Soft >>> Below 2	Soft >>> 2-4
Medium Dense >>> 10-30	Dense >>> 30-50	Medium Stiff >>> 4-8	Stiff >>> 8-15
Very Dense >>> Over 50		Very Stiff >>> 15-30	Hard >>> Over 30

**BORING LOG RW-1**

SCALE: 1/4" = 1'-0"

NOTES:

- LOCATION OF BORINGS FROM JULY 2022 ARE SHOWN ON THE PLANS AS THUS: RW-#●. LOCATIONS OF PROBES FROM JULY 2022 ARE SHOWN ON THE PLANS AS THUS: P#●.
- BORINGS ARE TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
- WATER LEVELS SHOWN ON THE BORINGS LOGS WERE OBSERVED AT THE TIME OF TAKING BORINGS AND DO NOT NECESSARILY

SHOW THE TRUE GROUND WATER LEVEL.

- FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1 1/8" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
- ALL BORINGS WERE MADE IN FEBRUARY, 2019 & JULY, 2022.
- FEBRUARY 2019 & JULY 2022 BORINGS WERE MADE BY CAR-DEE TEST BORING & CONSTRUCTION, LOCATED AT 37 LINDEN ST., MEDFORD, MA 02155.



**GEOSCIENCES TESTING AND RESEARCH, INC.**

55 Middlesex Street, Suite 225, North Chelmsford, MA.  
Phone: (978) 251-9395 www.gtrinc.net

Project Name: Plummer Spring Rd  
Location: West Newbury- Newburyport, MA

Boring No. Rw-2  
Page: 1 of 1  
GTR Job #: 19.107  
GTR Rep: J. Roth  
Reviewer: C. George

Drilling Co.:	Car-Dee Corporation	
Driller:	Joe Desimone	Helper(s): Frank Landers
Start Date:	7/8/2022	End Date: 7/8/2022
Ground Surface Elev (ft):	~ 18 ft	
Boring Location:	808767.0992 E, 3118213.9304 N	
Note:	Mobile Drill B-61 AutoHammer	

Depth	Case BPF	Sample Data					Stratum	Additional Data	Notes
		No.	Pen/ Rcvy	Depth (El.)	Blows per 6in	Field Test			
0						Asphalt			
		SS-1	24/10	1-3	8 7	M. dense, brown, f-c SAND and Gravel, trace Silt, moist	10"		
					7 8				
5		SS-2	24/17	5-7	3 5	M. dense, brown, f-c SAND, some Gravel, trace Silt, wet	GRANULAR FILL		
					6 4				
10		SS-3	24/0	10-12	1 1	no recovery			
					WH WH				
		SS-4	24/20	12-14	3 6	V.stiff gray CLAY and SILT	12'		
					10 22				
15		SS-5	24/24	14-16	7 8	V.stiff gray CLAY and SILT			
					11 12				
		SS-6	24/18	16-18	11 12	V.stiff gray CLAY and SILT	CLAY		
					12 10				
		SS-7	24/24	18-20	4 4	Stiff gray CLAY and SILT			
					7 7				
20		SS-8	24/21	20-22	9 7	Stiff gray CLAY and SILT			
					7 7				
						Bottom of boring at 22 feet below grade with no refusal encountered.	22'		

NOTES:

**Order of Sample Description (Modified Burmister)**

- Moisture Content: Dry, Moist, Wet
- Soil Relative Density or Consistency
- Color
- Major Component: Should be capitalized
- Minor Component: "and" - 35% to 50% minor grain size  
"some" - 20% to 35% minor grain size  
"little" - 10% to 20% minor grain size  
"trace" - < 10% of minor grain size

**PENETRATION RESISTANCE (N) GUIDE**

Cohesionless Soils (Sands)		Cohesive Soils (Clays)	
Relative Density / Blows per Foot		Consistency / Blows per Foot	
Very Loose >>> 0-4	Loose >>> 4-10	Very Soft >>> Below 2	Soft >>> 2-4
Medium Dense >>> 10-30	Dense >>> 30-50	Medium Stiff >>> 4-8	Stiff >>> 8-15
Very Dense >>> Over 50		Very Stiff >>> 15-30	Hard >>> Over 30

**BORING LOG RW-2**

SCALE: 1/4" = 1'-0"

- ALL PROBES FROM JULY 2022 WHERE MADE BY GEOSCIENCES TESTING AND RESEARCH INC. LOCATED AT 55 MIDDLESEX ST. NORTH CHELMSFORD, MA 01863
- THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
- BORING LOG FOR BORING BB-2B IS NOT AVAILABLE. BORING BB-2B ENCOUNTERED OBSTRUCTION AT 10 FEET BELOW GROUND SURFACE AND RELOCATED TO BB-2C.



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	42
PROJECT FILE NO. -			

BORING LOGS RW-3 & RW-4



GEOSCIENCES TESTING AND RESEARCH, INC.

55 Middlesex Street, Suite 225, North Chelmsford, MA.  
Phone: (978) 251-9395 www.gtrinc.net

Project Name: Plummer Spring Rd  
Location: West Newbury- Newburyport, MA

Boring No. Rw-3  
Page: 1 of 1  
GTR Job #: 19.107  
GTR Rep: J. Roth  
Reviewer: C. George

Drilling Co. Car-Dee Corporation

Driller:	Helper(s):	Equipment	Casing	Sampler	Core	Groundwater	Depth (ft)
Joe Desimone	Frank Landers	Type	HW	SS	-	Date	Time
7/8/2022	7/8/2022						
Ground Surface Elev (ft):	~ 17.5 ft	Size I.D.	4"	1.75"	-	8-Jul	EOD
Boring Location:	808792.8998 E, 3118185.1840 N	Hammer Wt.	140 lb	140 lb	-	-	-
Note:	Mobile Drill B-61 AutoHammer	Hammer Fall	30"	30"	-	-	-

Depth	Case BPF	Sample Data					Stratum	Additional Data	Notes
		No.	Pen/Rcvy	Depth (El.)	Blows per 6in	Field Test			
0						Asphalt	ASPHALT		
5		SS-1	24/9	.5-2.5	12-8	M. dense, brown, f-m SAND, little Gravel, trace Silt	5"		
5		SS-2	24/15	5-7	6-8	M. dense, brown, f-c SAND, trace Gravel, trace Silt			
10					3-1		GRANULAR FILL		
10		SS-3	24/6	10-12	3-2	loose, brown, f-c SAND, little Gravel, trace Silt		BOT. OF PMB WALL EL. 10.0±	
10					2-1				
10		SS-4	24/5	12-14	3-2	loose, brown, f-c GRAVEL, and Sand, trace organics, trace Silt			
10					2-1				
15		SS-5	24/14	14-16	4-7	V. stiff gray CLAY and SILT	14'		
15					16-16				
15		SS-6	24/18	16-18	15-17	V. stiff gray CLAY and SILT			
15					20-18				
15		SS-7	24/22	18-20	5-6	Stiff gray CLAY and SILT			
15					6-12				
20		SS-8	24/19	20-22	8-6	M. dense, brown, f-m SAND, trace Silt, wet	20'		
20					5-5		SAND		
20						Bottom of boring at 22 feet below grade with no refusal encountered.	22'		

NOTES:

Order of Sample Description (Modified Burmister)

- Moisture Content: Dry, Moist, Wet
- Soil Relative Density or Consistency
- Color
- Major Component: Should be capitalized
- Minor Component: "and" - 35% to 50% minor grain size  
"some" - 20% to 35% minor grain size  
"little" - 10% to 20% minor grain size  
"trace" - < 10% of minor grain size

PENETRATION RESISTANCE (N) GUIDE

Cohesionless Soils (Sands)		Cohesive Soils (Clays)	
Relative Density / Blows per Foot		Consistency / Blows per Foot	
Very Loose >> 0 - 4		Very Soft >> Below 2	
Loose >> 4 - 10		Soft >> 2 - 4	
Medium Dense >> 10 - 30		Medium Stiff >> 4 - 8	
Dense >> 30 - 50		Stiff >> 8 - 15	
Very Dense >> Over 50		Very Stiff >> 15 - 30	
		Hard >> Over 30	

BORING LOG RW-3

SCALE: 1/4" = 1'-0"



GEOSCIENCES TESTING AND RESEARCH, INC.

55 Middlesex Street, Suite 225, North Chelmsford, MA.  
Phone: (978) 251-9395 www.gtrinc.net

Project Name: Plummer Spring Rd  
Location: West Newbury- Newburyport, MA

Boring No. Rw-4  
Page: 1 of 1  
GTR Job #: 19.107  
GTR Rep: J. Roth  
Reviewer: C. George

Drilling Co. Car-Dee Corporation

Driller:	Helper(s):	Equipment	Casing	Sampler	Core	Groundwater	Depth (ft)
Joe Desimone	Frank Landers	Type	HW	SS	-	Date	Time
7/8/2022	7/8/2022						
Ground Surface Elev (ft):	~ 18 ft	Size I.D.	4"	1.75"	-	8-Jul	EOD
Boring Location:	808834.0589 E, 3118185.8987 N	Hammer Wt.	140 lb	140 lb	-	-	-
Note:	Mobile Drill B-61 AutoHammer	Hammer Fall	30"	30"	-	-	-

Depth	Case BPF	Sample Data					Stratum	Additional Data	Notes
		No.	Pen/Rcvy	Depth (El.)	Blows per 6in	Field Test			
0						Asphalt	ASPHALT		
5		SS-1	24/7	.5-2.5	6-3	M. stiff, brown, SILTY CLAY, little Gravel, moist	5"		
5		SS-2	24/9	5-7	3-2	V. loose, brown, f. SAND and Silt, little small to medium Gravel, moist			
5					1-1		GRANULAR FILL		
10		SS-3	24/19	10-12	1-2	V. loose, brown, f. SAND, trace small Gravel, trace Silt, wet		BOT. OF PMB WALL EL. 5.0±	
10					1-1				
10		SS-4	24/15	12-14	1-3	M. dense, gray, f. SAND, trace silt, wet	12'		
10					11-12				
15		SS-5	24/16	14-16	9-5	M. dense, gray, f-c SAND, some gravel, trace Silt, wet			
15					8-5		SAND		
15		SS-6	24/11	16-18	6-7	M. dense, gray, f. SAND, little silt, wet			
15					9-10				
15		SS-7	24/14	18-20	3-4	Stiff, gray, CLAYEY SILT, wet			
15					8-10				
20		SS-8	24/21	20-22	7-7	Stiff, gray, CLAY, wet	18'		
20					5-6				
20						Bottom of boring at 22 feet below grade with no refusal encountered.	22'		

NOTES:

Order of Sample Description (Modified Burmister)

- Moisture Content: Dry, Moist, Wet
- Soil Relative Density or Consistency
- Color
- Major Component: Should be capitalized
- Minor Component: "and" - 35% to 50% minor grain size  
"some" - 20% to 35% minor grain size  
"little" - 10% to 20% minor grain size  
"trace" - < 10% of minor grain size

PENETRATION RESISTANCE (N) GUIDE

Cohesionless Soils (Sands)		Cohesive Soils (Clays)	
Relative Density / Blows per Foot		Consistency / Blows per Foot	
Very Loose >> 0 - 4		Very Soft >> Below 2	
Loose >> 4 - 10		Soft >> 2 - 4	
Medium Dense >> 10 - 30		Medium Stiff >> 4 - 8	
Dense >> 30 - 50		Stiff >> 8 - 15	
Very Dense >> Over 50		Very Stiff >> 15 - 30	
		Hard >> Over 30	

BORING LOG RW-4

SCALE: 1/4" = 1'-0"



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	42
PROJECT FILE NO.			-

BORING LOGS RW-5 & RW-6



**GEOSCIENCES TESTING AND RESEARCH, INC.**

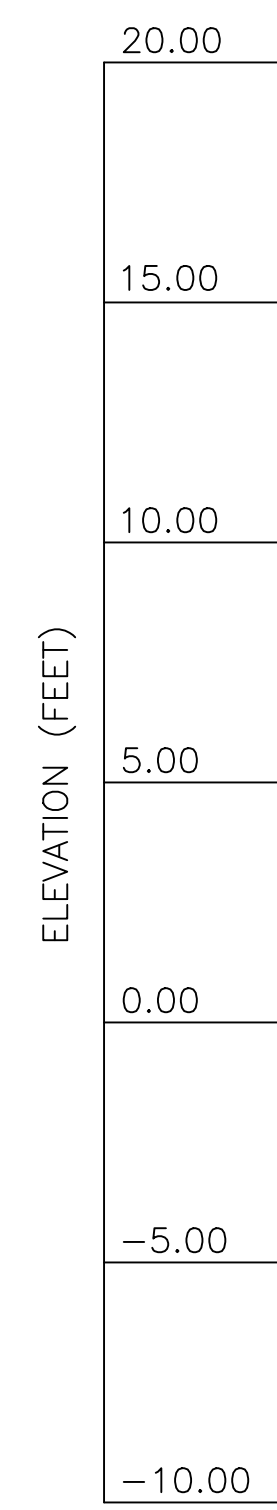
55 Middlesex Street, Suite 225, North Chelmsford, MA.  
Phone: (978) 251-9395 www.gtrinc.net

Project Name: Plummer Spring Rd  
Location: West Newbury- Newburyport, MA

Boring No. Rw-5  
Page: 1 of 1  
GTR Job #: 19.107  
GTR Rep: J. Roth  
Reviewer: C. George

Drilling Co. Car-Dee Corporation

Driller: <u>Joe Desimone</u>	Helper(s): <u>Frank Landers</u>	Equipment	Casing	Sampler	Core	Groundwater	Depth (ft)
Start Date: <u>7/7/2022</u>	End Date: <u>7/7/2022</u>	Type	HW	SS	-	Date	Time
Ground Surface Elev (ft): <u>~ 18 ft</u>		Size I.D.	4"	1.75"	-	7-Jul	EOD
Boring Location: <u>808914.2393 E, 3118137.8732 N</u>		Hammer Wt.	140 lb	140 lb	-		
Note: <u>Mobile Drill B-61 AutoHammer</u>		Hammer Fall	30"	30"	-		



Depth	Case BPF	Sample Data					Stratum	Additional Data	Notes
		No.	Pen/Rcvy	Depth (El.)	Blows per 6in	Field Test			
0									
		SS-1	24/15	.5-2.5	5-4			OBSERVED WATER 7/8/2022 EL. 13.5±	
					3-1				
5									
		SS-2	24/14	5-7	5-3				
					2-1				
10									
		SS-3	24/12	11-13	1-1			BOT. OF PMB WALL EL. 6.0±	
					3-1				
		SS-4	24/2	13-15	3-8				
					17-20				
15		SS-5	24/6	15-17	11-19				
					7-12				
		SS-6	24/9	17-19	10-7				
					9-5				
20		SS-7	24/8	19-21	1-3				
					3-2				
		SS-8	24/22	21-23	5-8				
					8-8				
25									

NOTES:

SS-4: Pushing stone in Tip  
Organics 17-21'

Order of Sample Description (Modified Burmister)

- Moisture Content: Dry, Moist, Wet
- Soil Relative Density or Consistency
- Color
- Major Component: Should be capitalized
- Minor Component: "and" - 35% to 50% minor grain size  
"some" - 20% to 35% minor grain size  
"little" - 10% to 20% minor grain size  
"trace" - < 10% of minor grain size

PENETRATION RESISTANCE (N) GUIDE

Cohesionless Soils (Sands)		Cohesive Soils (Clays)	
Relative Density / Blows per Foot	Consistency / Blows per Foot	Relative Density / Blows per Foot	Consistency / Blows per Foot
Very Loose >> 0-4	Very Soft >> Below 2	Very Loose >> 0-4	Very Soft >> Below 2
Loose >> 4-10	Soft >> 2-4	Loose >> 4-10	Soft >> 2-4
Medium Dense >> 10-30	Medium Stiff >> 4-8	Medium Dense >> 10-30	Medium Stiff >> 4-8
Dense >> 30-50	Stiff >> 8-15	Dense >> 30-50	Stiff >> 8-15
Very Dense >> Over 50	Very Stiff >> 15-30	Very Dense >> Over 50	Very Stiff >> 15-30
	Hard >> Over 30		Hard >> Over 30

**BORING LOG RW-5**

SCALE: 1/4" = 1'-0"



**GEOSCIENCES TESTING AND RESEARCH, INC.**

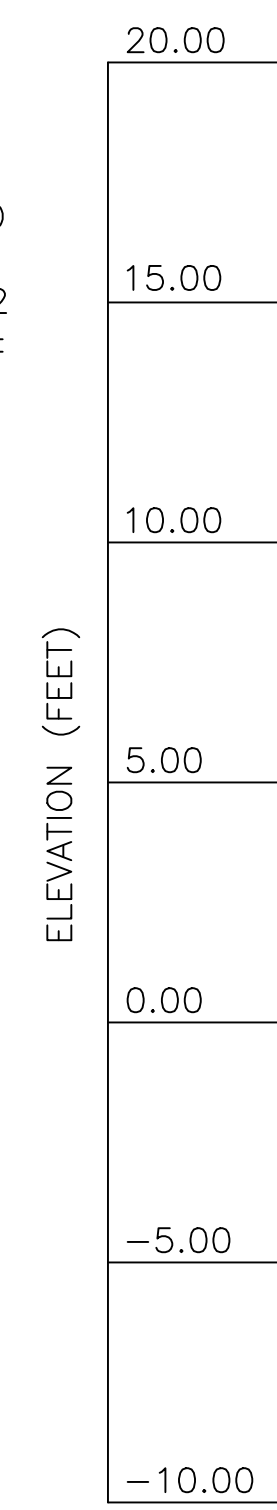
55 Middlesex Street, Suite 225, North Chelmsford, MA.  
Phone: (978) 251-9395 www.gtrinc.net

Project Name: Plummer Spring Rd  
Location: West Newbury- Newburyport, MA

Boring No. RW-6  
Page: 1 of 1  
GTR Job #: 19.107  
GTR Rep: J. Roth  
Reviewer: C. George

Drilling Co. Car-Dee Corporation

Driller: <u>Joe Desimone</u>	Helper(s): <u>Frank Landers</u>	Equipment	Casing	Sampler	Core	Groundwater	Depth (ft)
Start Date: <u>7/7/2022</u>	End Date: <u>7/7/2022</u>	Type	HW	SS	-	Date	Time
Ground Surface Elev (ft): <u>~ 17.5 ft</u>		Size I.D.	4"	1.75"	-	7-Jul	EOD
Boring Location: <u>808967.4360 E, 3118145.4665 N</u>		Hammer Wt.	140 lb	140 lb	-		
Note: <u>Mobile Drill B-61 AutoHammer</u>		Hammer Fall	30"	30"	-		



Depth	Case BPF	Sample Data					Stratum	Additional Data	Notes
		No.	Pen/Rcvy	Depth (El.)	Blows per 6in	Field Test			
0									
		SS-1	24/15	.5-2.5	8-11				
					11-9				
5									
		SS-2	24/8	5-7	7-6			BOT. OF PMB WALL EL. 11.0±	
					4-7				
10									
		SS-3	24/14	10-12	4-4				
					7-5				
15		SS-4	24/14	14-16	14-21				
					22-17				
		SS-5	24/15	16-18	36-26				
					18-19				
		SS-6	24/12	18-20	14-18				
					17-14				
20									
25									

NOTES:

Order of Sample Description (Modified Burmister)

- Moisture Content: Dry, Moist, Wet
- Soil Relative Density or Consistency
- Color
- Major Component: Should be capitalized
- Minor Component: "and" - 35% to 50% minor grain size  
"some" - 20% to 35% minor grain size  
"little" - 10% to 20% minor grain size  
"trace" - < 10% of minor grain size

PENETRATION RESISTANCE (N) GUIDE

Cohesionless Soils (Sands)		Cohesive Soils (Clays)	
Relative Density / Blows per Foot	Consistency / Blows per Foot	Relative Density / Blows per Foot	Consistency / Blows per Foot
Very Loose >> 0-4	Very Soft >> Below 2	Very Loose >> 0-4	Very Soft >> Below 2
Loose >> 4-10	Soft >> 2-4	Loose >> 4-10	Soft >> 2-4
Medium Dense >> 10-30	Medium Stiff >> 4-8	Medium Dense >> 10-30	Medium Stiff >> 4-8
Dense >> 30-50	Stiff >> 8-15	Dense >> 30-50	Stiff >> 8-15
Very Dense >> Over 50	Very Stiff >> 15-30	Very Dense >> Over 50	Very Stiff >> 15-30
	Hard >> Over 30		Hard >> Over 30

**BORING LOG RW-6**

SCALE: 1/4" = 1'-0"



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	42
PROJECT FILE NO.			-

BORING LOGS RW-7 & RW-8



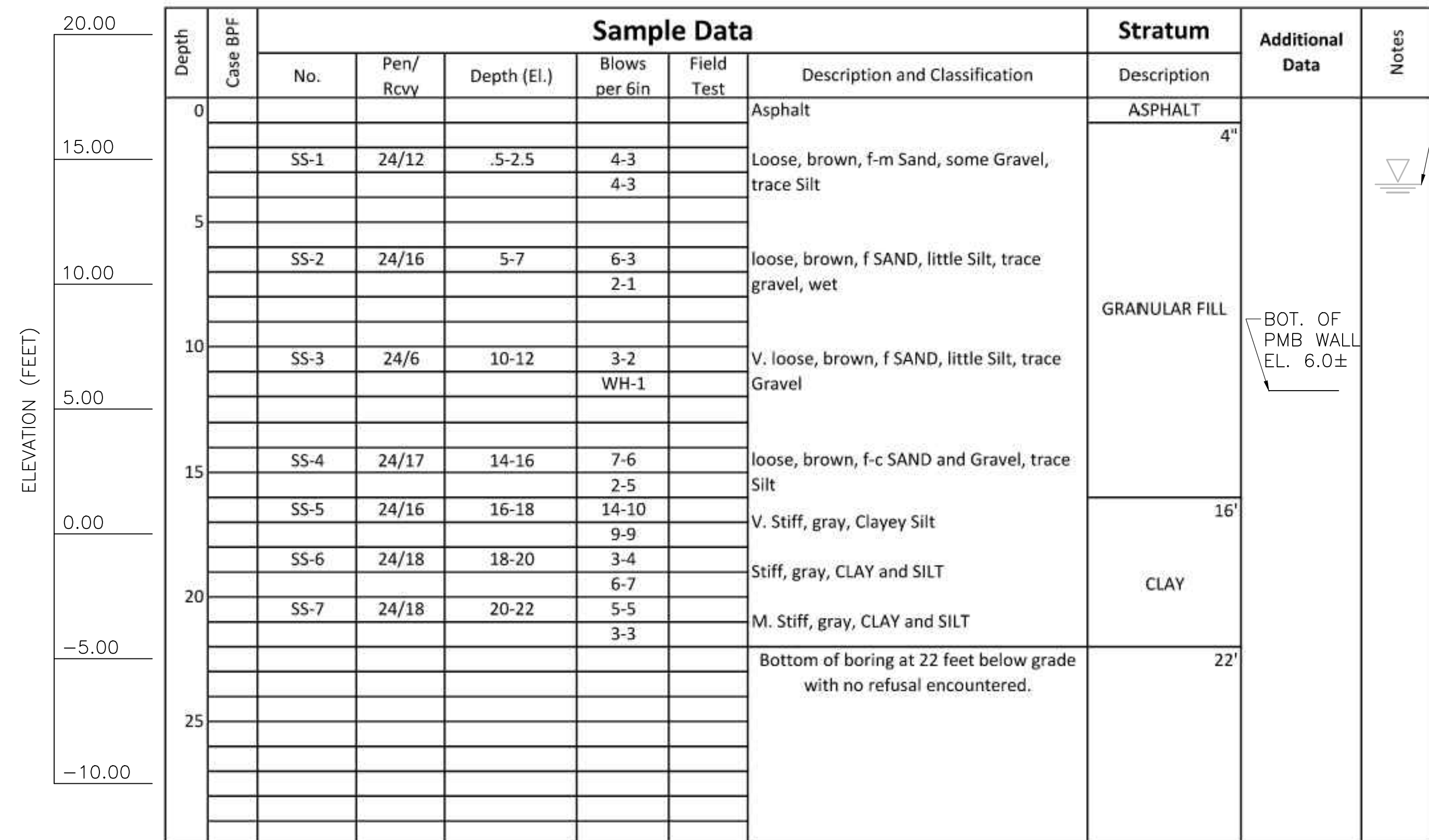
**GEOSCIENCES TESTING AND RESEARCH, INC.**

55 Middlesex Street, Suite 225, North Chelmsford, MA.  
Phone: (978) 251-9395 www.gtrinc.net

Project Name: Plummer Spring Rd  
Location: West Newbury- Newburyport, MA

Boring No. RW-7  
Page: 1 of 1  
GTR Job #: 19.107  
GTR Rep: J. Roth  
Reviewer: C. George

Drilling Co.:	Car-Dee Corporation		Equipment	Casing	Sampler	Core	Groundwater	Depth (ft)	
Driller:	Joe Desimone	Helper(s): Frank Landers	Type	HW	SS	-	Date	Time	Water
Start Date:	7/7/2022	End Date: 7/7/2022	Size I.D.	4"	1.75"	-	7-Jul	EOD	6'
Ground Surface Elev (ft):	~ 17.5 ft		Hammer Wt.	140 lb	140 lb	-	-	-	-
Boring Location:	808835.4063 E, 3118166.9332 N		Hammer Fall	30"	30"	-	-	-	-
Note:	Mobile Drill B-61 AutoHammer		-	-	-	-	-	-	-



NOTES:

Order of Sample Description (Modified Burmister)	PENETRATION RESISTANCE (N) GUIDE	
	Cohesionless Soils (Sands)	Cohesive Soils (Clays)
1. Moisture Content: Dry, Moist, Wet	Relative Density / Blows per Foot	Consistency / Blows per Foot
2. Soil Relative Density or Consistency	Very Loose >> 0-4	Very Soft >> Below 2
3. Color	Loose >> 4-10	Soft >> 2-4
4. Major Component: Should be capitalized	Medium Dense >> 10-30	Medium Stiff >> 4-8
5. Minor Component: "and" - 35% to 50% minor grain size	Dense >> 30-50	Stiff >> 8-15
"some" - 20% to 35% minor grain size	Very Dense >> Over 50	Very Stiff >> 15-30
"little" - 10% to 20% minor grain size		Hard >> Over 30
"trace" - < 10% of minor grain size		

BORING LOG RW-7  
SCALE: 1/4" = 1'-0"



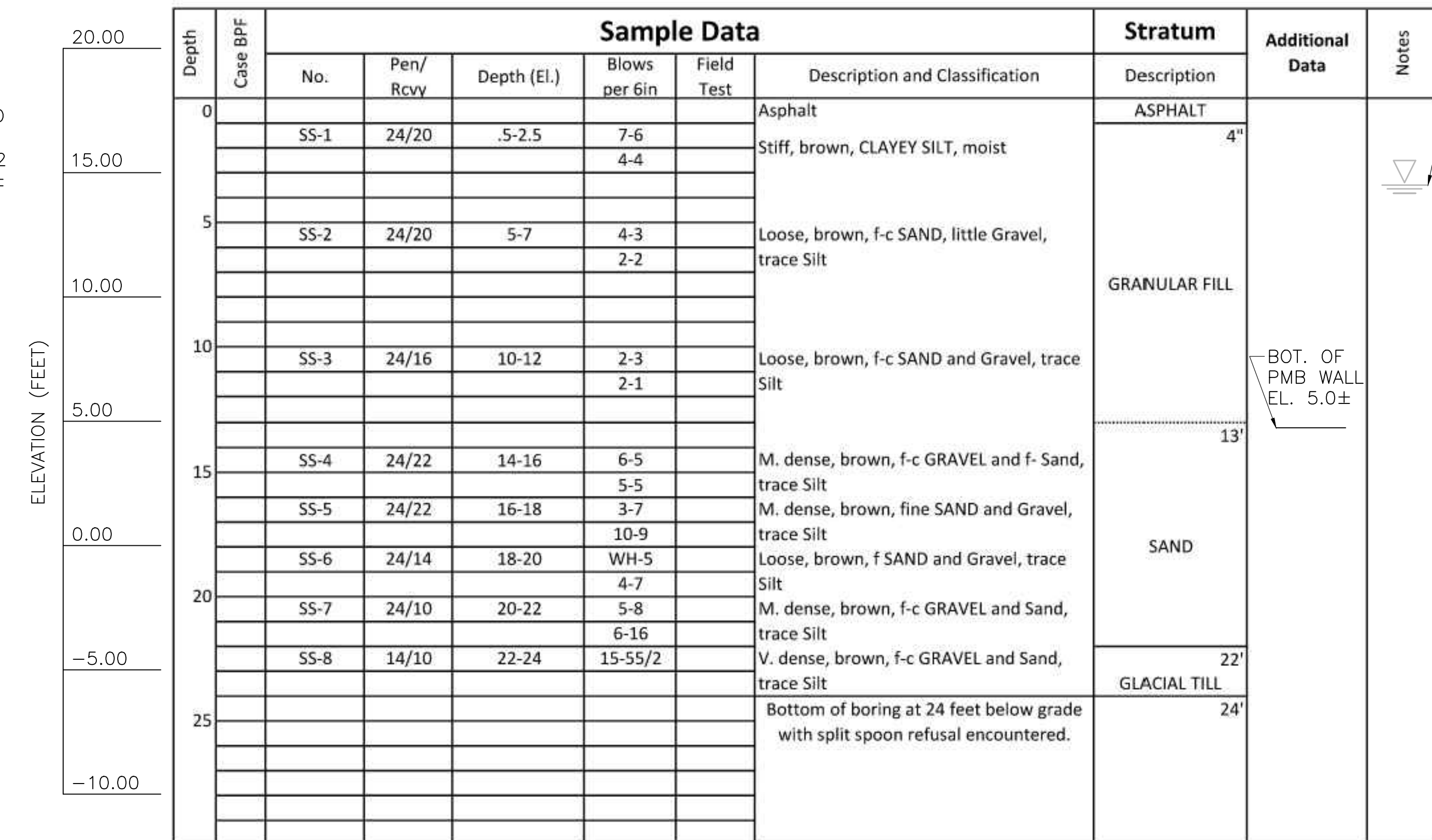
**GEOSCIENCES TESTING AND RESEARCH, INC.**

55 Middlesex Street, Suite 225, North Chelmsford, MA.  
Phone: (978) 251-9395 www.gtrinc.net

Project Name: Plummer Spring Rd  
Location: West Newbury- Newburyport, MA

Boring No. RW-8  
Page: 1 of 1  
GTR Job #: 19.107  
GTR Rep: J. Roth  
Reviewer: C. George

Drilling Co.:	Car-Dee Corporation		Equipment	Casing	Sampler	Core	Groundwater	Depth (ft)	
Driller:	Joe Desimone	Helper(s): Frank Landers	Type	HW	SS	-	Date	Time	Water
Start Date:	7/7/2022	End Date: 7/7/2022	Size I.D.	4"	1.75"	-	7-Jul	EOD	5.5'
Ground Surface Elev (ft):	~ 18 ft		Hammer Wt.	140 lb	140 lb	-	-	-	-
Boring Location:	808923.7848 E, 3118155.1964 N		Hammer Fall	30"	30"	-	-	-	-
Note:	Mobile Drill B-61 AutoHammer		-	-	-	-	-	-	-



NOTES:

Order of Sample Description (Modified Burmister)	PENETRATION RESISTANCE (N) GUIDE	
	Cohesionless Soils (Sands)	Clay Soils (Clays)
1. Moisture Content: Dry, Moist, Wet	Relative Density / Blows per Foot	Consistency / Blows per Foot
2. Soil Relative Density or Consistency	Very Loose >> 0-4	Very Soft >> Below 2
3. Color	Loose >> 4-10	Soft >> 2-4
4. Major Component: Should be capitalized	Medium Dense >> 10-30	Medium Stiff >> 4-8
5. Minor Component: "and" - 35% to 50% minor grain size	Dense >> 30-50	Stiff >> 8-15
"some" - 20% to 35% minor grain size	Very Dense >> Over 50	Very Stiff >> 15-30
"little" - 10% to 20% minor grain size		Hard >> Over 30
"trace" - < 10% of minor grain size		

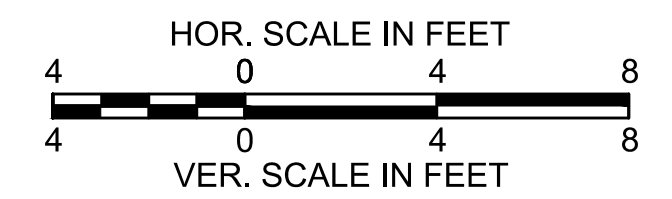
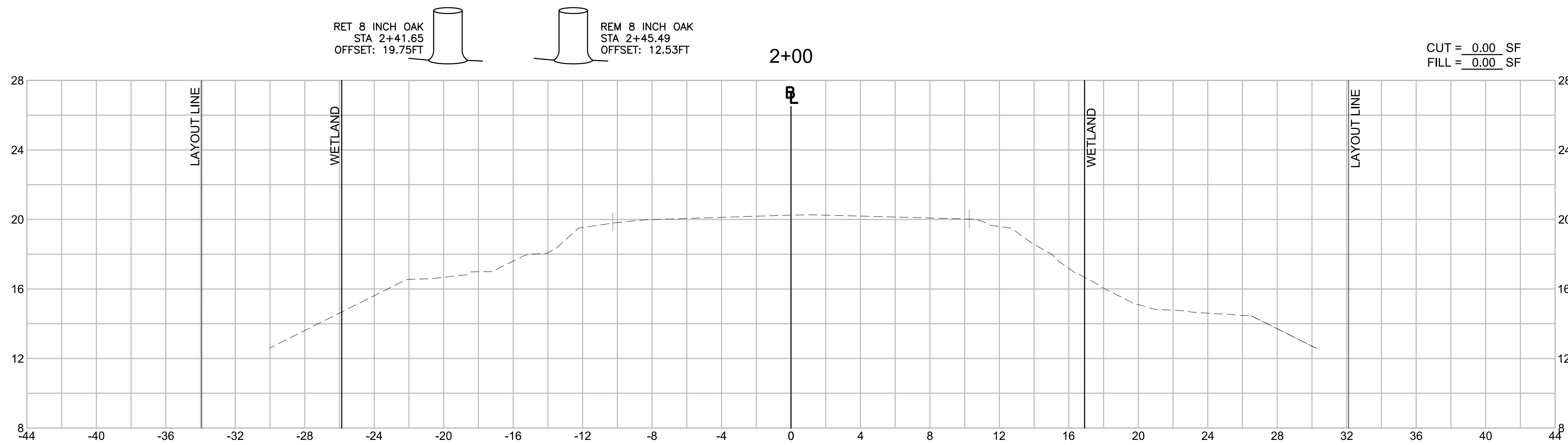
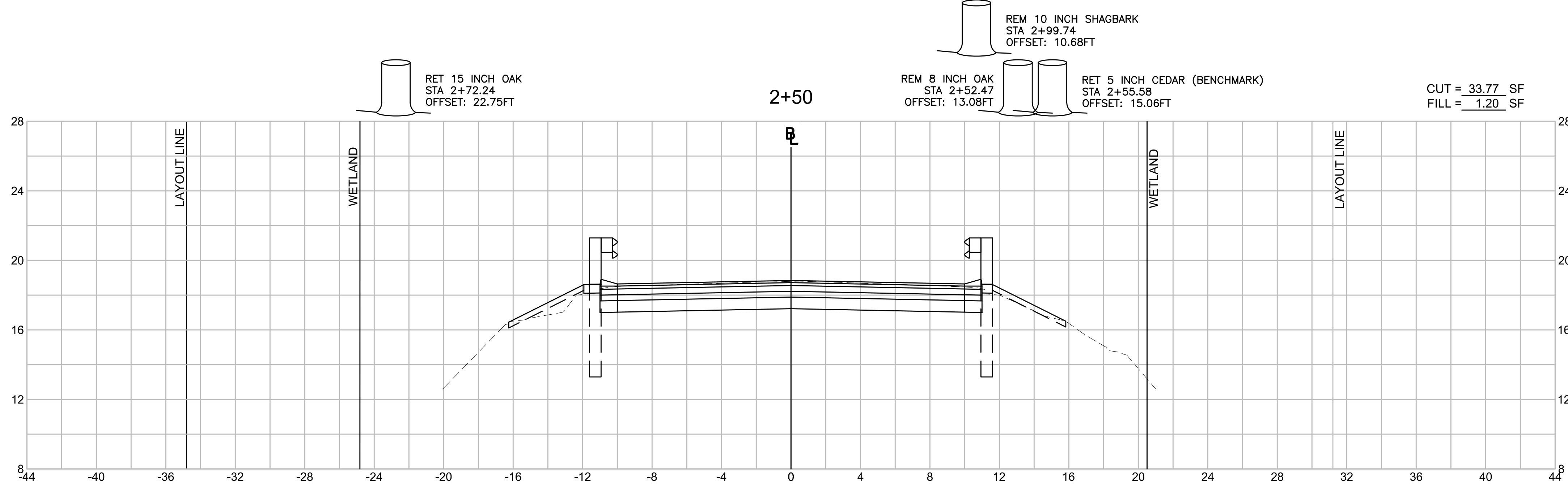
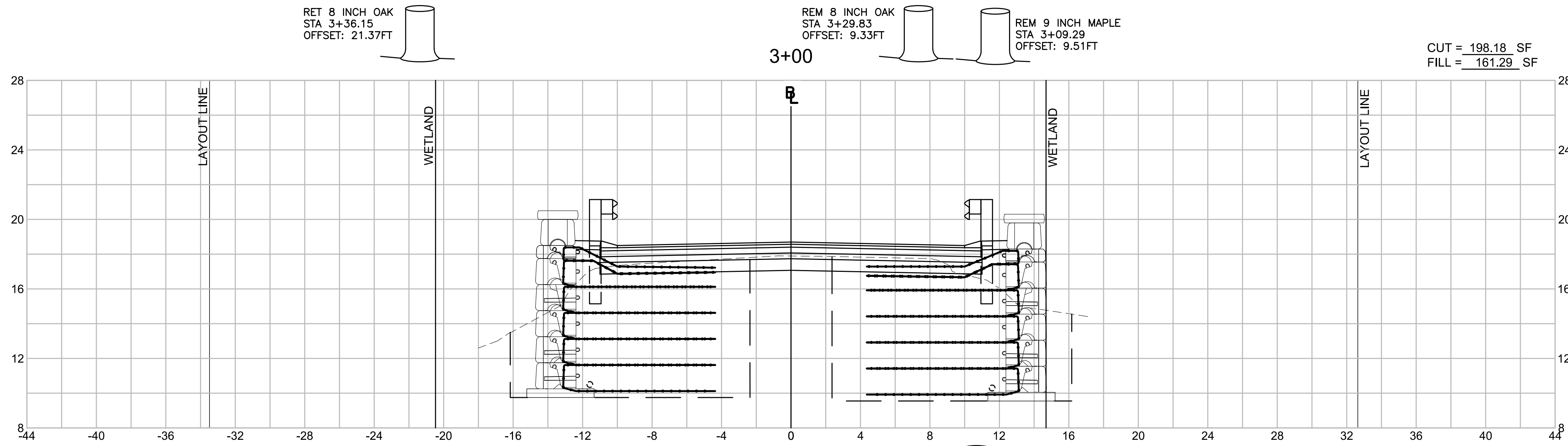
BORING LOG RW-8  
SCALE: 1/4" = 1'-0"



NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	42
PROJECT FILE NO.		-	

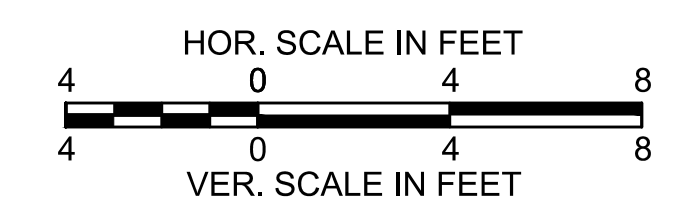
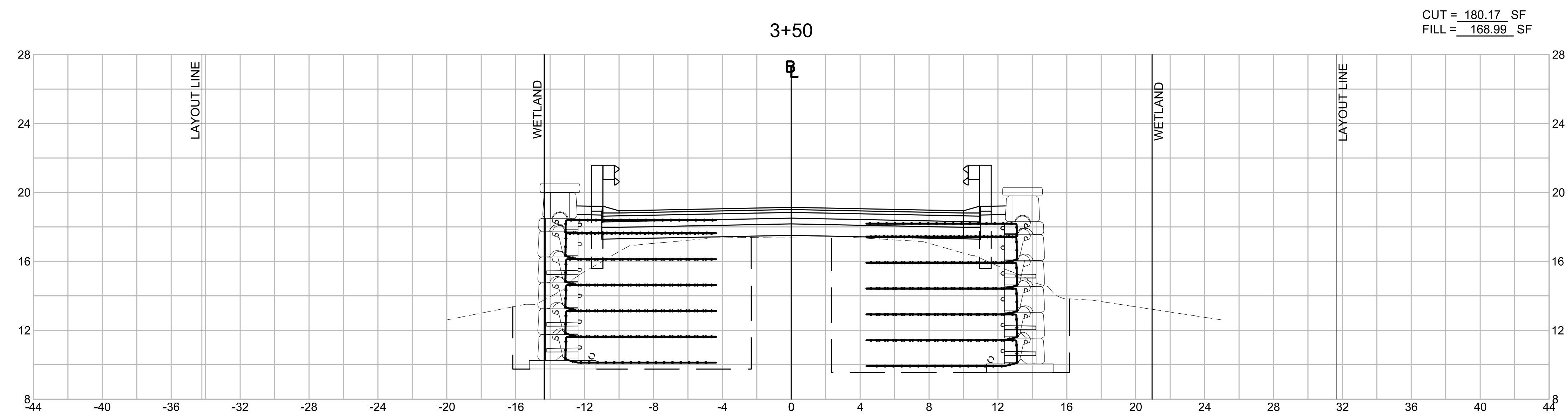
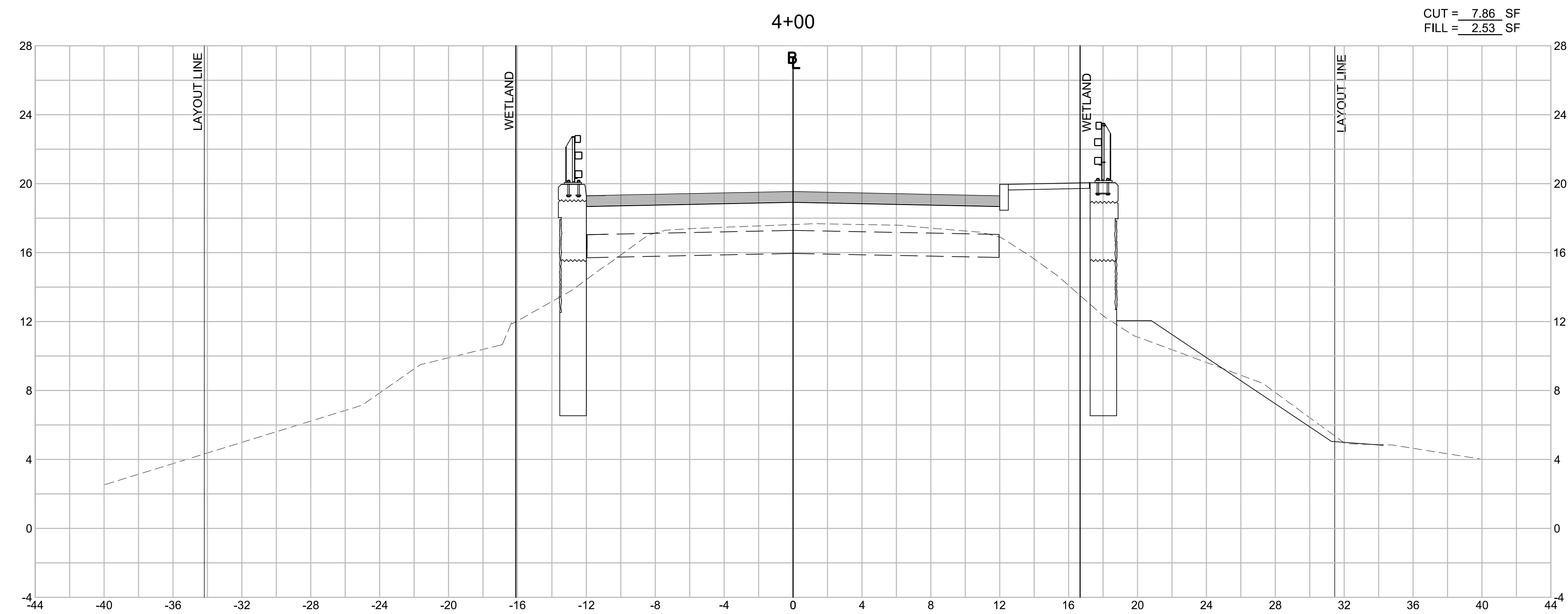
CROSS SECTIONS



NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	42
PROJECT FILE NO.		-	

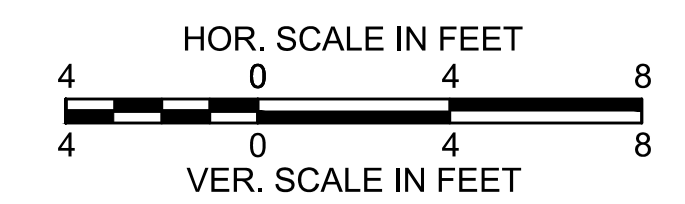
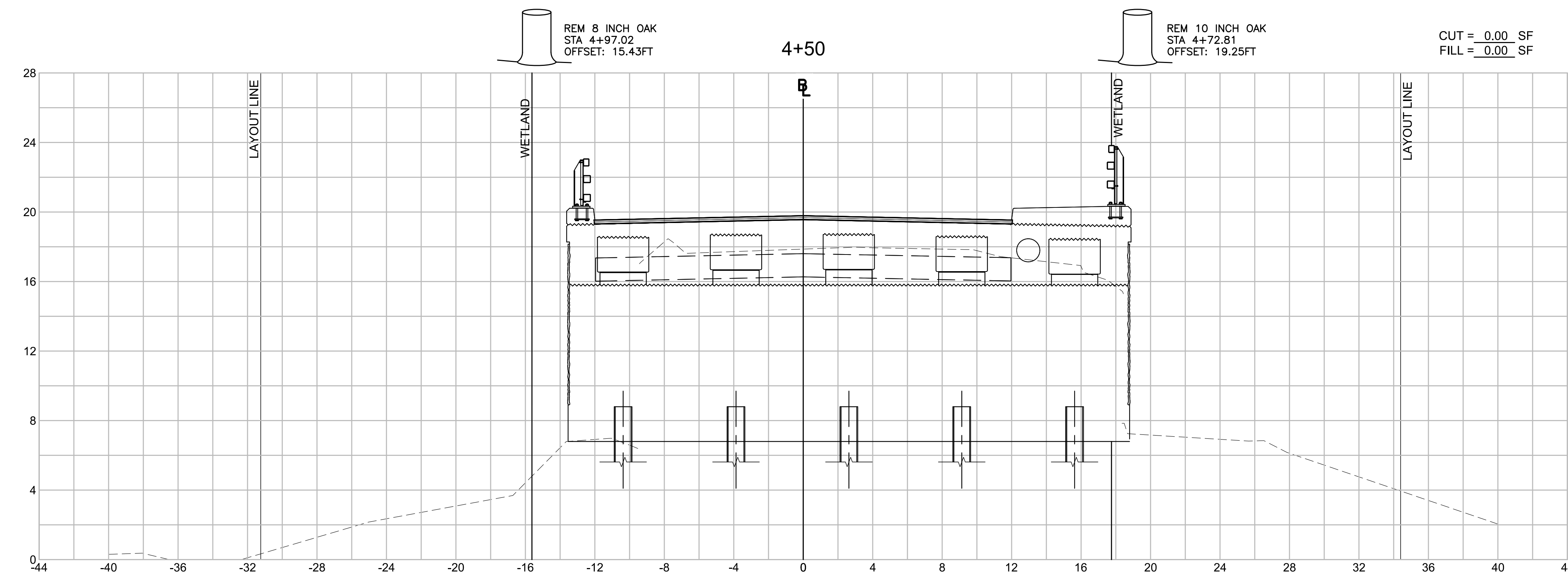
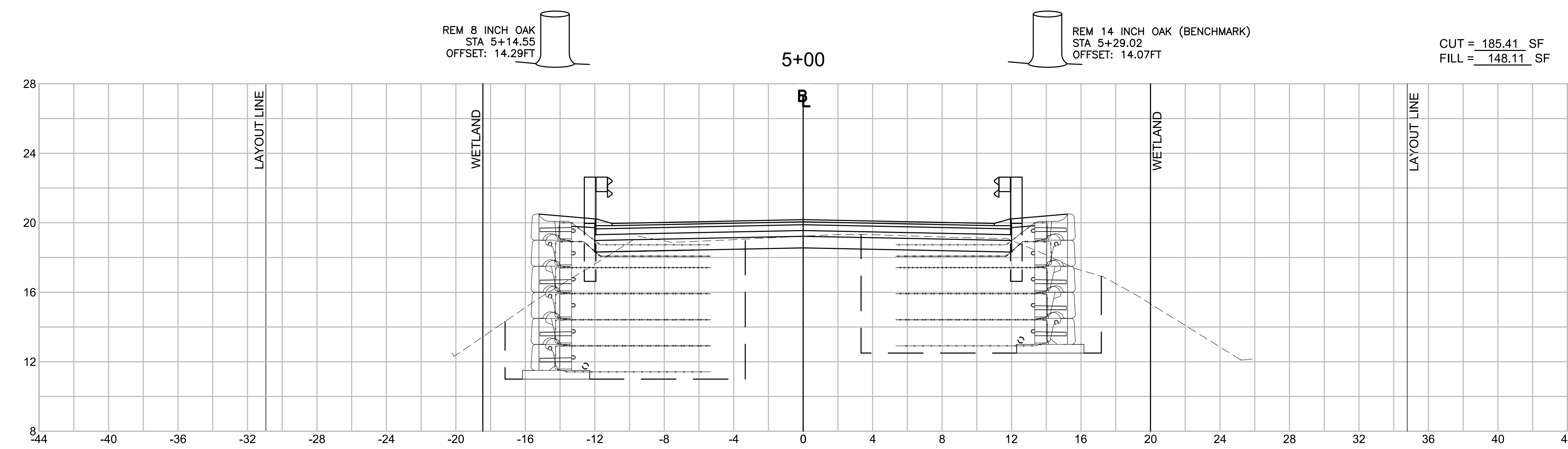
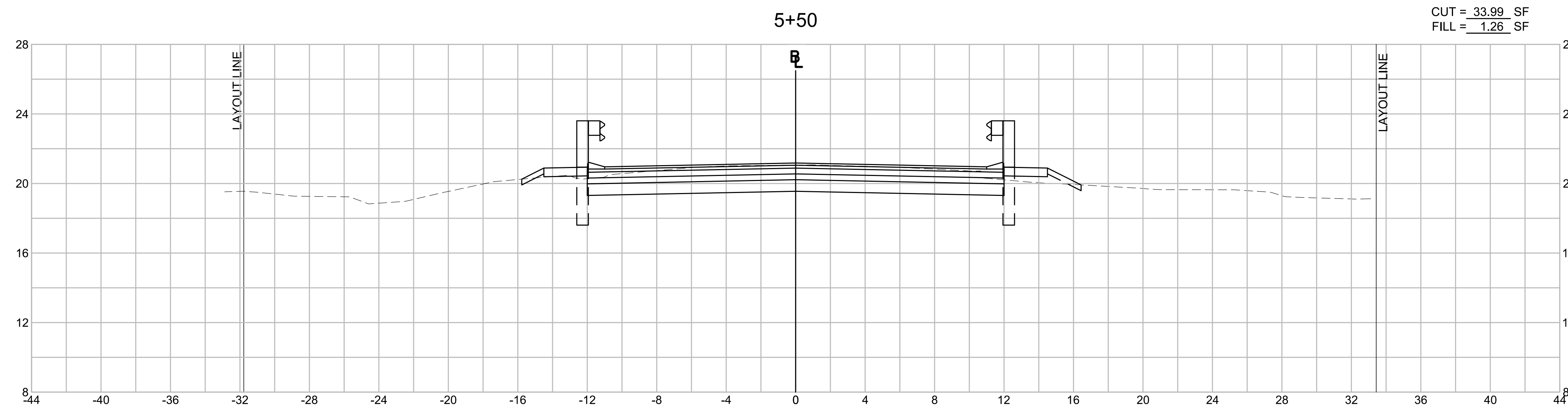
CROSS SECTIONS



NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	42
PROJECT FILE NO. -			

CROSS SECTIONS





**NEWBURYPORT/WEST NEWBURY  
PLUMMER SPRING ROAD/MIDDLE STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	42
PROJECT FILE NO.		-	

**CROSS SECTIONS**

