

Date:9/6/2018

Username: PDonovan

Division: BRIDGE

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SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD
Bridge Design Specifications 7th Edition 2014,
with Interim Revisions through 2016

DESIGN LOADING

CLARK BRIDGE:
Live Load: HL-93 Modified

MARSH BRIDGE
Live Load: HL-93

TRAFFIC DATA

TREMONT ROAD:
Current (2014) AADT 3,190
Future (2034) AADT 3,830
DHV - % of AADT 14%
Design Hour Volume 536
Heavy Trucks (% of AADT) 11%
Heavy Trucks (% of DHV) 8%
Directional Distribution (% of DHV) 60%
18 kip Equivalent P 2.0 146
18 kip Equivalent P 2.5 139
Design Speed (mph) 35
Functional Class Minor Collector

BASS HARBOR ROAD:
Current (2014) AADT 3,610
Future (2034) AADT 4,410
DHV - % of AADT 10%
Design Hour Volume 360
Heavy Trucks (% of AADT) 8%
Heavy Trucks (% of DHV) 8%
Directional Distribution (% of DHV) 60%
18 kip Equivalent P 2.0 146
18 kip Equivalent P 2.5 139
Design Speed (mph) 35
Functional Class Major Collector

MATERIALS

Concrete:
Curbs, Sidewalk, Transition Barriers Class "LP"
Precast Substructure Class "P"
Precast (Other) Class "A"
Subfooting Class "Fill"
All Other Class "A"

Stainless Reinforcing Steel: ASTM A994M Grade 75
Reinforcing Steel: ASTM A615 Grade 60 (unless otherwise noted)

Structural Steel:
All Material (except as noted) ASTM A709, Grade 50 (galvanized)
High Strength Bolts ASTM A325, Type 3

BASIC DESIGN STRESSES

Concrete:
Substructure f'c = 4,000 psi
Precast Slab f'c = 6,000 psi
..... f'ci = 4,000 psi
Overlay f'c = 4,000 psi
Subfooting f'c = 3,000 psi

Stainless Reinforcing Steel: fy = 75,000 psi
Reinforcing Steel fy = 60,000 psi

Structural Steel:
ASTM A 709, Grade 50 F y = 50,000 psi
ASTM A 325 F μ = 120,000 psi

HYDROLOGIC DATA

CLARK BRIDGE:
Mean Lower Low Water (MLLW) -6.00 ft
Mean Low Water (MLW) -5.60 ft
Mean High Water (MHW) 5.00 ft
Mean Higher High Water (MHHW) 5.40 ft

MARSH BRIDGE:
Mean Lower Low Water (MLLW) 2.60 ft
Mean Low Water (MLW) 2.60 ft
Mean High Water (MHW) 4.40 ft
Mean Higher High Water (MHHW) 4.60 ft

UTILITIES

Emera Maine
Consolidated Communications
Spectrum

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



SOUTHWEST HARBOR/TREMONT
HANCOCK COUNTY

CLARK BRIDGE
TREMONT ROAD
OVER
MARSHALL BROOK

FEDERAL AID PROJECT NO. SR-1930(510)
PROJECT LENGTH 0.08 mi.
BRIDGE REPLACEMENT
BRIDGE NO. 3663

MARSH BRIDGE
BASS HARBOR ROAD
OVER
MARSH BROOK

FEDERAL AID PROJECT NO. STP-2170(200)
PROJECT LENGTH 0.11 mi.
SUPERSTRUCTURE REPLACEMENT
BRIDGE NO. 2511

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MAINTENANCE OF TRAFFIC

CLARK BRIDGE:
Temporary one-lane bridge with temporary signals to maintain alternating one-way traffic.

MARSH BRIDGE:
The bridge will be closed during construction. Traffic will be detoured on Route 102A. The detour length is approximately 8.3 miles.

CLARK BRIDGE PROJECT LOCATION:	Bridge is located 0.17 miles northwest of Flat Iron Road. Latitude 44°15'10" Longitude 68°20'57"
PROGRAM AREA:	Bridge Program
OUTLINE OF WORK:	Bridge Construction: Bridge replacement, minor causeway widening and related approach work.

MARSH BRIDGE PROJECT LOCATION:	Bridge is located 0.35 miles northeast of Flat Iron Road. Latitude 44°15'12" Longitude 68°20'27"
PROGRAM AREA:	Bridge Program
OUTLINE OF WORK:	Bridge Construction: Superstructure replacement, minor causeway widening and related approach work.

WIN 19305.00
WIN 19305.10
WIN 21702.00
SR-1930(510)
STP-2170(200)

SOUTHWEST HARBOR/TREMONT
CLARK BRIDGE
& MARSH BRIDGE

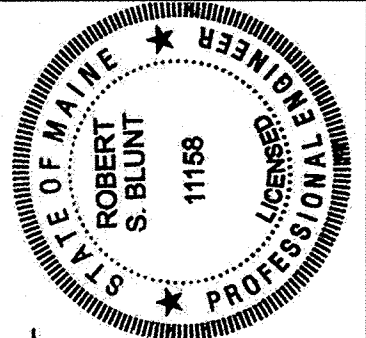
TITLE SHEET

SHEET NUMBER

1

OF 69

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	DATE 9/17/18
APPROVED 	COMMISSIONER: Robert S. Blunt
	CHIEF ENGINEER:



PROJECT INFORMATION	BRIDGE	SIGNATURE 11/58	P.E. NUMBER July 18, 2018	DATE
PROGRAM	LEANNE TIMBERLAKE	ROBERT BLUNT	VIB	
PROJECT MANAGER				
DESIGNER				
CONSULTANT				
PROJECT RESIDENT				
CONTRACTOR				
PROJECT COMPLETION DATE				

ESTIMATED QUANTITIES						
ITEM NO.	DESCRIPTION	WIN 19305.00 QUANTITY	WIN 19305.10 QUANTITY	WIN 21702.00 QUANTITY	TOTAL QUANTITY	UNIT
201.23	Removing Single Tree Top Only	1			1	EA
201.24	Removing Stump	1			1	EA
202.10	Removing Existing Superstructure Property of Contractor (53 CY)			1	1	LS
202.12	Removing Existing Structural Concrete			16	16	CY
202.19	Removing Existing Bridge	1			1	LS
202.202	Removing Pavement Surface	390	55	1,100	1,545	SY
203.20	Common Excavation	1,000	215	1,150	2,365	CY
203.2318	Disposal of Special Waste	510		375	885	TON
203.25	Granular Borrow	540	60	190	790	CY
203.35	Crushed Stone 3/4-inch	49	15		64	CY
206.082	Structural Earth Excavation - Major Structures, Plan Quantity	560		230	790	CY
206.092	Structural Rock Excavation - Major Structures	11			11	CY
304.10	Aggregate Subbase Course - Gravel	790	240	1,150	2,180	CY
304.15	Aggregate Base Course - Type B		280		280	CY
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	150	18	230	398	TON
403.209	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals)	30	85	2	117	TON
403.211	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Shimming)	10			10	TON
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	260		230	490	TON
409.15	Bituminous Tack Coat, Applied	90		100	190	GAL
411.10	Untreated Aggregate Surface Course, Truck Measure			7	7	CY
461.131	Temporary Pavement	100			100	TON
502.21	Structural Concrete, Abutments and Retaining Walls			55	55	CY
502.219	Structural Concrete, Abutments and Retaining Walls (160 CY)	1			1	LS
502.25	Structural Concrete Superstructure Slab (30 CY)	0.43		0.57	1	LS
502.49	Structural Concrete Curbs and Sidewalks (16 CY)	0.62		0.38	1	LS
502.565	Concrete Fill	100			100	CY
503.26	Stainless Steel Reinforcement, Fabricated and Delivered	14,075		6,590	20,665	LB
503.27	Stainless Steel Reinforcement, Placing	14,075		6,590	20,665	LB
507.0821	Steel Bridge Railing, 3 Bar (137 LF)	0.28		0.72	1	LS
507.0831	Steel Bridge Railing, 4 Bar (39 LF)	1			1	LS
508.13	Sheet Waterproofing Membrane (75 SY)			1	1	LS
508.14	High Performance Waterproofing Membrane (Clark Bridge) (175 SY)	0.49		0.51	1	LS
510.10	Special Detour, 19.5 foot Roadway Width Vehicular and Pedestrian Traffic Not Separated	1			1	LS
511.07	Cofferdam (Abutment 1 - Clark Bridge)	1			1	LS
511.07	Cofferdam (Abutment 2 - Clark Bridge)	1			1	LS
511.07	Cofferdam (Abutment 1 - Marsh Bridge)			1	1	LS
511.07	Cofferdam (Abutment 2 - Marsh Bridge)			1	1	LS
512.081	French Drains			1	1	LS
514.06	Curing Box for Concrete Cylinders	1		1	2	EA
515.21	Protective Coating for Concrete Surfaces (240 SY)	0.67		0.33	1	LS
526.301	Temporary Concrete Barrier, Type I (620 LF)	0.91		0.09	1	LS
527.34	Work Zone Crash Cushions	4			4	UN
535.60	Prestressed Structural Concrete Slab (70 CY)	0.47		0.53	1	LS
601.21	Gabions, Galvanized			34	34	CY
603.15	12 inch Culvert Pipe Option I		50		50	LF
603.159	12 inch Culvert Pipe Option III	53			53	LF
603.16	15 inch Culvert Pipe Option I		50		50	LF
603.17	18 inch Culvert Pipe Option I			50	50	LF
604.072	Catch Basin Type A1-C	2			2	EA
604.09	Catch Basin Type B1		1		1	EA
604.242	Catch Basin Type F3		2		2	EA
604.262	Catch Basin Type B5-C	1			1	EA
605.09	6 inch Underdrain Type B	270			270	LF
605.12	15 inch Underdrain Type C		215		215	LF
606.1301	31"W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, Single Faced)	325		575	900	LF
606.1306	31"W-Beam Guardrail - Mid-Way Splice Tangent Terminal (31" Height)	4		4	8	EA
606.1721	Bridge Transition - Type I	4		4	8	EA
606.1728	W-Beam to 3-Bar Bridge Rail Transition	2		4	6	EA
606.1729	W-Beam to 4-Bar Bridge Rail Transition	2			2	EA
606.353	Reflectorized Flexible Guardrail Marker	8		8	16	EA
608.26	Curb Ramp Detectable Warning Field		70		70	SF
609.11	Vertical Curb Type I	290	205	140	635	LF
609.238	Terminal Curb Type I - 8 foot	1	4		5	EA
609.31	Curb Type 3	87			87	LF
609.38	Reset Curb Type I	53			53	LF
610.08	Plain Riprap	150	110	600	860	CY
610.09	Hand Laid Riprap		20		20	CY
610.16	Heavy Riprap	180	50		230	CY
615.07	Loom	78	30	19	127	CY
618.13	Seeding Method Number 1	4	3		7	UN
618.14	Seeding Method Number 2	6		3	9	UN
619.12	Mulch	9	3	3	15	UN
619.14	Erosion Control Mix	55			55	CY
620.58	Erosion Control Geotextile	370	380	900	1,650	SY
626.22	Non-metallic Conduit	25			25	LF
627.18	12 inch Solid White Pavement Marking Line	40			40	LF
627.733	4" White or Yellow Painted Pavement Marking Line	1,460	85	2,250	3,795	LF
627.75	White or Yellow Pavement & Curb Marking		280		280	SF
627.77	Removing Existing Pavement Marking	210			210	SF
627.78	Temporary Pavement Marking Line, White or Yellow	2,800		2,250	5,050	LF
629.05	Hand Labor, Straight Time	40		40	80	HR
631.12	All Purpose Excavator (Including Operator)	10		10	20	HR
631.171	Truck-Small (Including Operator)	20		20	40	HR
631.18	Chain Saw Rental (Including Operator)	10		10	20	HR
631.20	Stump Chipper Rental (Including Operator)	10		10	20	HR
639.19	Field Office, Type B	0.5		0.5	1	EA
643.62	Rectangular Rapid Flashing Beacon Including Foundations		2		2	EA
643.72	Temporary Traffic Signal	1			1	LS

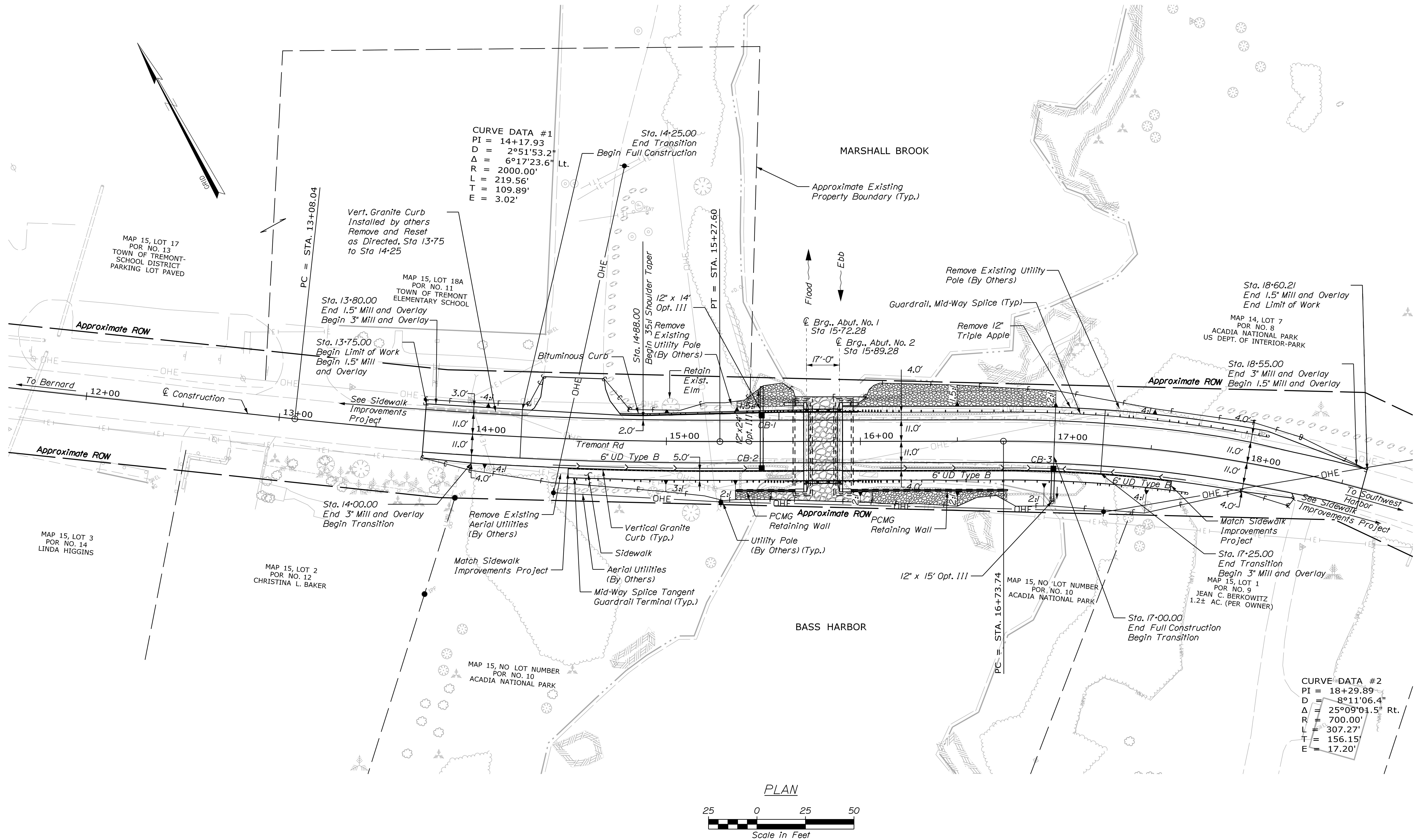
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Date: 9/6/2018

Username: PDonovan

Division: BRIDGE

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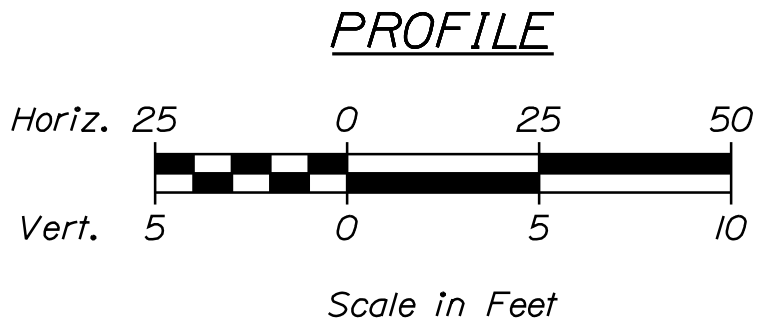
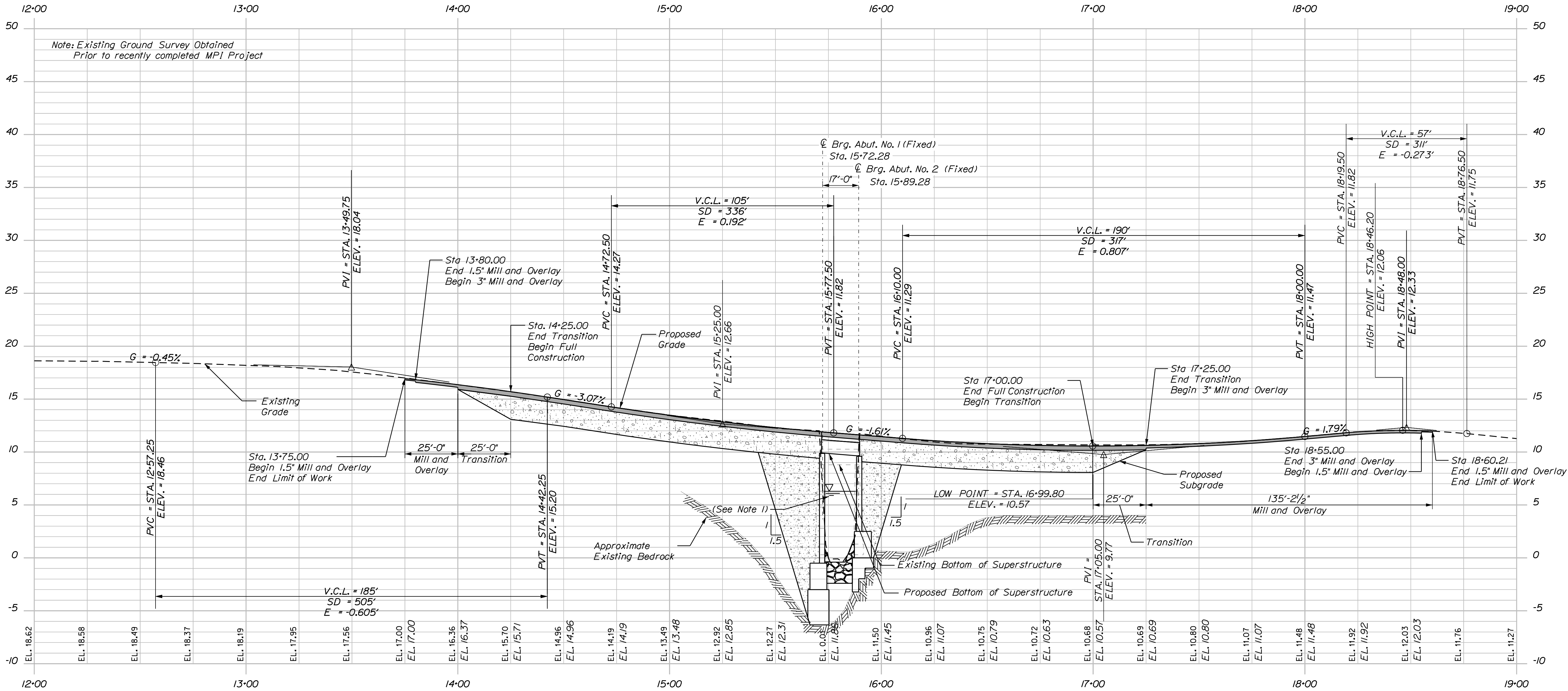


PLAN LEGEND

- Proposed Heavy Riprap
- Proposed Plain Riprap

VERTICAL DATUM NAVD88

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SR-1930(510)		BRIDGE NO. 3663 WIN 19305.00 BRIDGE PLANS	
CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT		Hancock County		GENERAL PLAN	
SHEET NUMBER		4		OF 69	
PROJ. MANAGER L. TIMBERLAKE		DESIGN-DETAILED LCF		CHECKED-REVIEWED GME	
BY JMS		RSB/TSB		7/10/2018	
DATE 7/10/2018		SIGNATURE 11168		P.E. NUMBER July 18, 2018	
DESIGN-DETAILED		REVISIONS 1		REVISIONS 2	
DESIGN-DETAILED		REVISIONS 3		REVISIONS 4	
DESIGN-DETAILED		REVISIONS 5		FIELD CHANGES	



NOTE:

1. MHHW El. = 5.4 FT
MLLW El. = -6.0 FT
50 - YR Storm Surge El. = 9.7 FT (Oceanside)
100 - YR Storm Surge El. = 10.0 FT (Oceanside)

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SR-1930(510)		BRIDGE NO. 3663 WIN 19305.00	
CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT HANCOCK COUNTY		PROFESSIONAL ENGINEER ROBERT S. BLUNT 11168 July 18, 2018		BRIDGE PLANS	
SHEET NUMBER		5		OF 69	

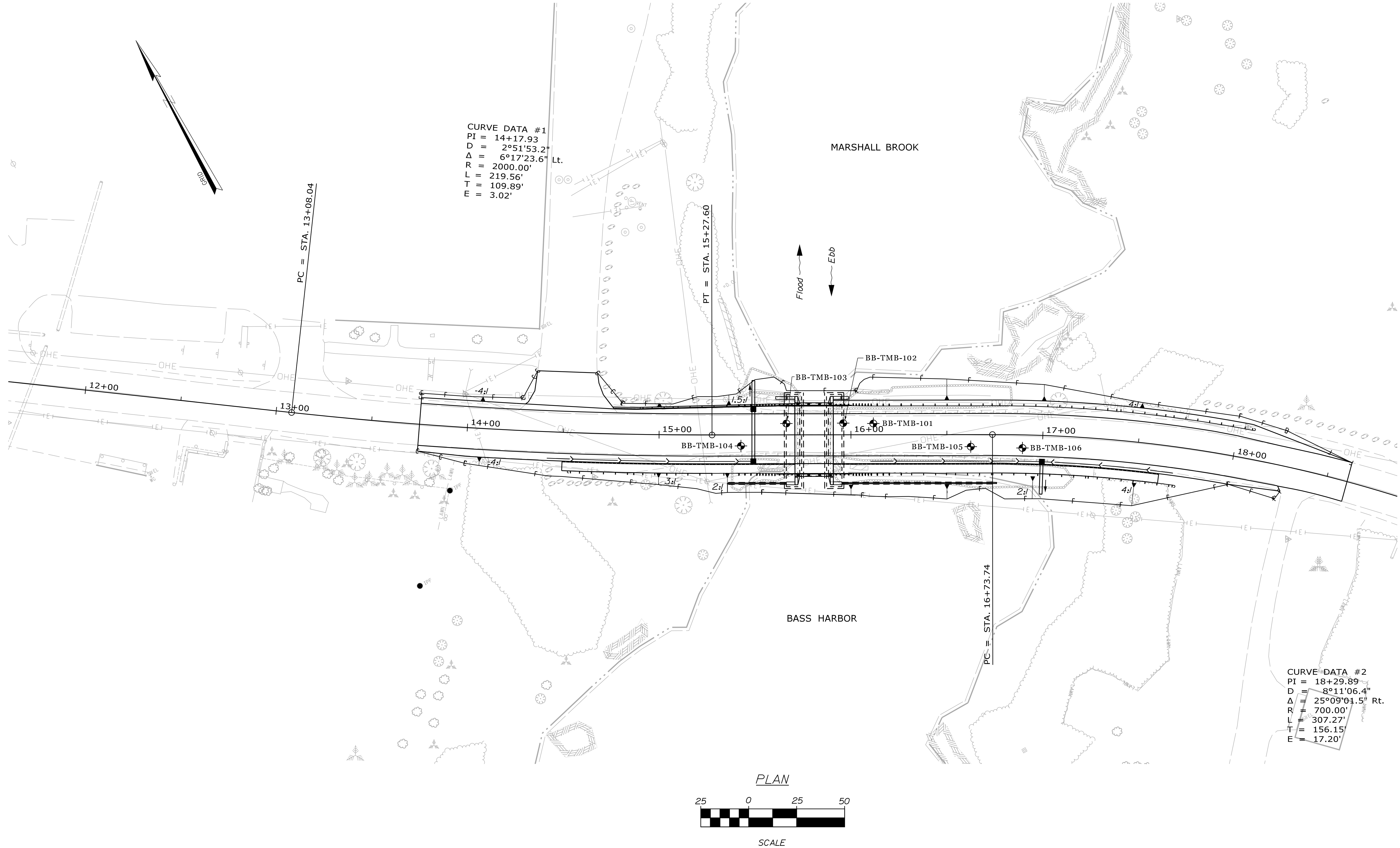
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Username: PDonovan

Division: BRIDGE

Date: 9/6/2018

VERTICAL DATUM NAVD88



1. MaineDOT provided coordinates of test boring locations in NAD83 (96) ME 2000 West Zone Coordinate System and ground surface elevations in NAVD88. 2. $PLTq_p$ = Peak compressive strength estimated from Point Load Index Test.

2. $UC1q_0$ = Peak compressive strength from Uniaxial Compressive Strength Test.

1. CLD provided coordinates of test boring locations in NAD83 (96) ME 2000 West Zone Coordinate System and ground surface elevations in NAVD83.

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Clark Bridge Replacement Location: Tremont, Maine		Boring No.: BB-TMB-105 PIN: 19305.00																																																																														
Maine Test Borings		Elevation (ft.): 10.5		Auger ID/OD: 4.5" SSA/6.5" HSA																																																																														
Operator: M. Porter		Datum: NAVD88		Sampler: 2" Spill Spoon																																																																														
Logged By: M. Henrick		Rig Type: Mobile B-53 Truck		Hammer WL/Fall: 140/30 Spill Spoon																																																																														
Date Start/Finish: 5/16/12		Drilling Method: Auger boring		Core Barrel: N/A																																																																														
Boring Location: 16+62.5, 6.3 ft RL		Casing ID/OD: N/A		Water Level +/-: Dry																																																																														
Hammer Efficiency Factor: 0.6		Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒																																																																																
Definitions: R = Rock Core Sample, SSA = Solid Stem Auger, HSA = Hollow Stem Auger, U = Thin Wall Tube Sample, MU = Unsuccessful Thin Wall Tube Sample attempt, V = In situ Vane Shear Test, PP = Pocket Penetrometer, W = Unsuccessful In situ Vane Shear Test attempt, S_u = In situ Field Vane Shear Strength (psi), T_u = Pocket Torvane Shear Strength (psi), q_u = Uncorrelated Compressive Strength (ksi), LL = Liquid Limit, PL = Plastic Limit, N = Uncorrected - Raw field SPT N-value, HEF = Hammer Efficiency Factor - Annual Calibration Value, P = Plasticity Index, Wt = Weight of 140lb. hammer, WtRC = Weight of rods or casing, SPT = SPT Uncorrected corrected for hammer efficiency, N₆₀ = Hammer Efficiency Factor/60%uncorrected, WtRC = Weight of rods and casing, SPT = SPT Uncorrected corrected for hammer efficiency, N₆₀ = Hammer Efficiency Factor/60%uncorrected, C = Consolidation Test																																																																																		
<table><thead><tr><th colspan="10">Sample Information</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th></tr><tr><th>Depth (ft.)</th><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (16 in. S₆₀)</th><th>Shear Strength (psi) or PQD (ksi)</th><th>Uncorrected</th><th>N₆₀</th><th>Casing</th><th>Blows</th></tr></thead><tbody><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>10</td><td>24/8</td><td>1.0 - 3.0</td><td>19/21/5/13</td><td>36</td><td>36</td><td></td><td></td><td></td><td></td><td>9.5</td><td>0-0.4 ft.: Asphalt wearing course 0.4-0.7 ft.: Asphalt base course</td><td>G*238388 A-1-a WC=4.7z</td></tr><tr><td></td><td>20</td><td>24/6</td><td>3.0 - 5.0</td><td>16/10/6/8</td><td>16</td><td>16</td><td></td><td></td><td></td><td></td><td>5.5</td><td>Top 1" Weathered asphalt base course Bottom 7" Light brown and gray, damp, dense GRAVEL, some fine to coarse sand, trace silt (Subgrade Fill). Light brown and gray, fine to coarse sandy GRAVEL, trace silt (Subgrade Fill). Spoon tip plugged with gravel.</td><td></td></tr><tr><td></td><td>30</td><td>8/4</td><td>5.0 - 5.7</td><td>5/(50-2")</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>3.9</td><td>Brown, wet, coarse GRAVEL, some fine sand, little silt (Rock Fill) Auger refusal at Elev. 3.9 ft. Bottom of Exploration at 6.6 feet below ground surface.</td><td></td></tr></tbody></table>						Sample Information										Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (16 in. S ₆₀)	Shear Strength (psi) or PQD (ksi)	Uncorrected	N ₆₀	Casing	Blows	0														10	24/8	1.0 - 3.0	19/21/5/13	36	36					9.5	0-0.4 ft.: Asphalt wearing course 0.4-0.7 ft.: Asphalt base course	G*238388 A-1-a WC=4.7z		20	24/6	3.0 - 5.0	16/10/6/8	16	16					5.5	Top 1" Weathered asphalt base course Bottom 7" Light brown and gray, damp, dense GRAVEL, some fine to coarse sand, trace silt (Subgrade Fill). Light brown and gray, fine to coarse sandy GRAVEL, trace silt (Subgrade Fill). Spoon tip plugged with gravel.			30	8/4	5.0 - 5.7	5/(50-2")	-						3.9	Brown, wet, coarse GRAVEL, some fine sand, little silt (Rock Fill) Auger refusal at Elev. 3.9 ft. Bottom of Exploration at 6.6 feet below ground surface.	
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Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.																																																																																		
Page 1 of 1 Boring No.: BB-TMB-105																																																																																		

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Clark Bridge Replacement Location: Tremont, Maine		Boring No.: BB-TMB-106 PIN: 19305.00																																																																														
Maine Test Borings		Elevation (ft.): 10.5		Auger ID/OD: 4.5" SSA/6.5" HSA																																																																														
Operator: M. Porter		Datum: NAVD88		Sampler: 2" Spill Spoon																																																																														
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Boring Location: 16+89.5, 6.8 ft RL		Casing ID/OD: N/A		Water Level +/-: Dry																																																																														
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Page 1 of 1 Boring No.: BB-TMB-106																																																																																		

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Clark Bridge Replacement Location: Tremont, Maine		Boring No.: BB-TMB-104 PIN: 19305.00																																																																																												
Maine Test Borings		Elevation (ft.): 12.3		Auger ID/OD: 4.5" SSA/6.5" HSA																																																																																												
Operator: M. Porter		Datum: NAVD88		Sampler: 2" Spill Spoon																																																																																												
Logged By: M. Henrick		Rig Type: Mobile B-53 Truck		Hammer WL/Fall: 140/30 Spill Spoon																																																																																												
Date Start/Finish: 5/16/12		Drilling Method: Auger boring		Core Barrel: N/A																																																																																												
Boring Location: 15+42.7, 5.7 ft RL		Casing ID/OD: N/A		Water Level +/-: Dry																																																																																												
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Page 1 of 1 Boring No.: BB-TMB-104																																																																																																

CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT HANCOCK COUNTY	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SR-1930(510)		BRIDGE NO. 3663 WIN 19305.00 BRIDGE PLANS	
	SHEET NUMBER		BORING LOGS (2 OF 2)			
	9		OF 69			

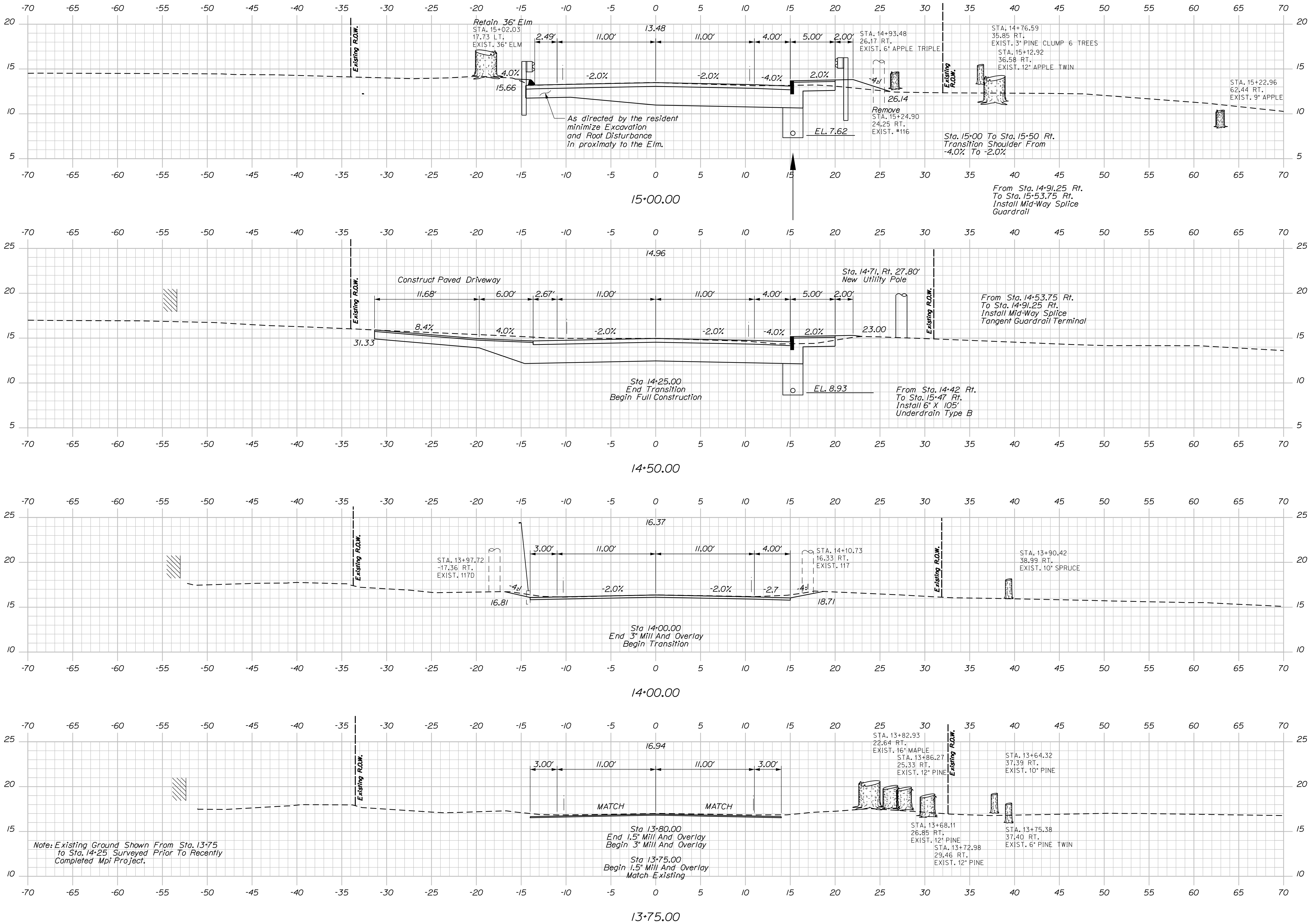
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CHECKED-REVIEWED	GOLDER		7/10/2018			
DESIGN-DETAILED						
DESIGN-DETAILED						
REVISIONS 1						
REVISIONS 2						
REVISIONS 3						
REVISIONS 4						
FIELD CHANGES						

Date:9/6/2018

Username: PDonovan

Division: BRIDGE

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SR-1930(510)

BRIDGE NO. 3663
WIN
19305.00

BRIDGE PLANS

SALE OF MAINE
ROBERT
S. BLUNT
11168
PROFESSIONAL
ENGINEER

DATE
7/10/2018

BY
JMS
RSB/TJB

PROJ. MANAGER
L. TIMBERLAKE

DESIGN-DETAILED
ECF

CHECKED-REVIEWED
AG

DESIGN-DETAILED
AG

DESIGN-DETAILED
AG

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

CLARK BRIDGE
TREMONT ROAD OVER MARSHALL BROOK
TREMONT
HANCOCK COUNTY

CROSS SECTIONS

SHEET NUMBER

10

OF 69

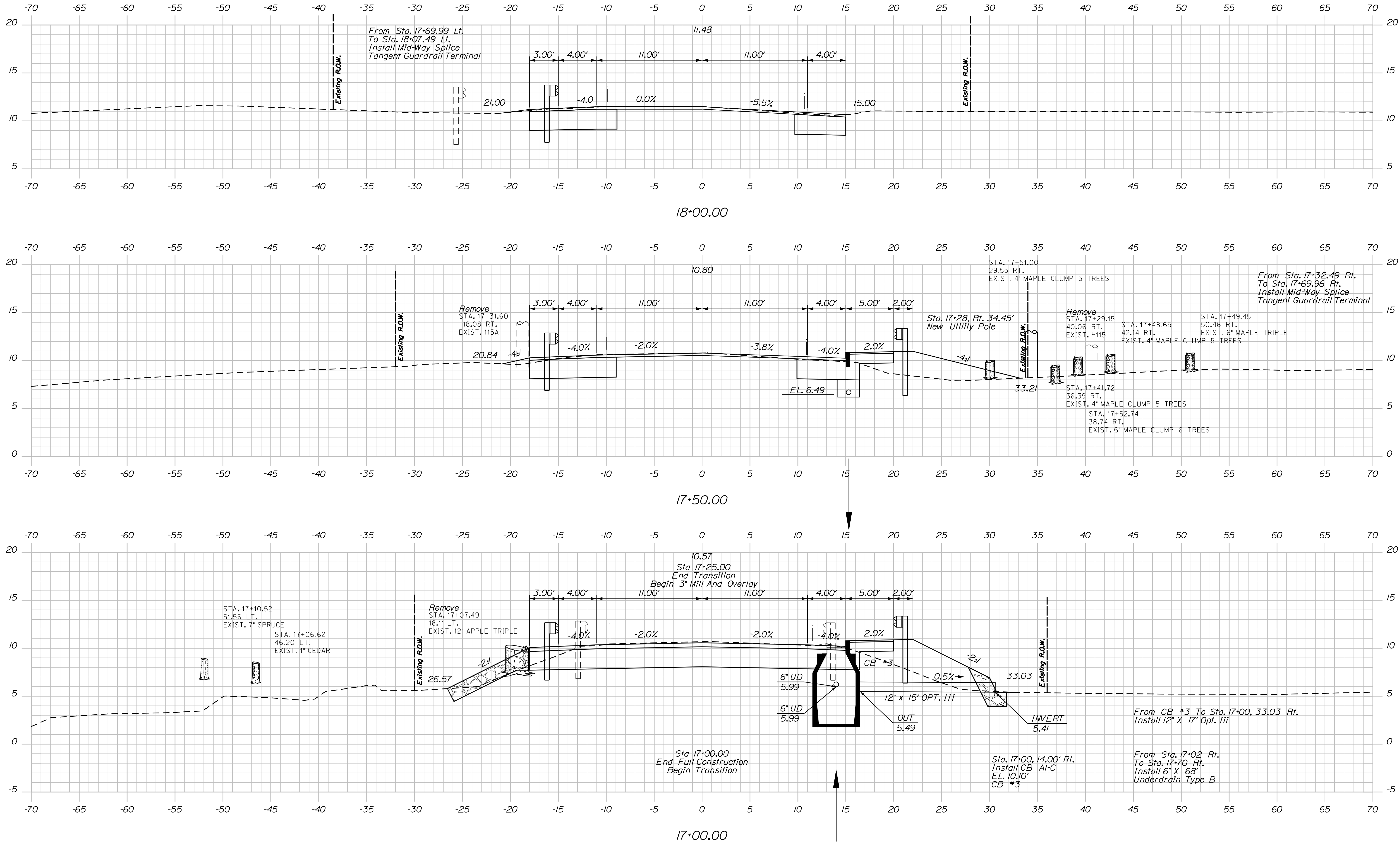
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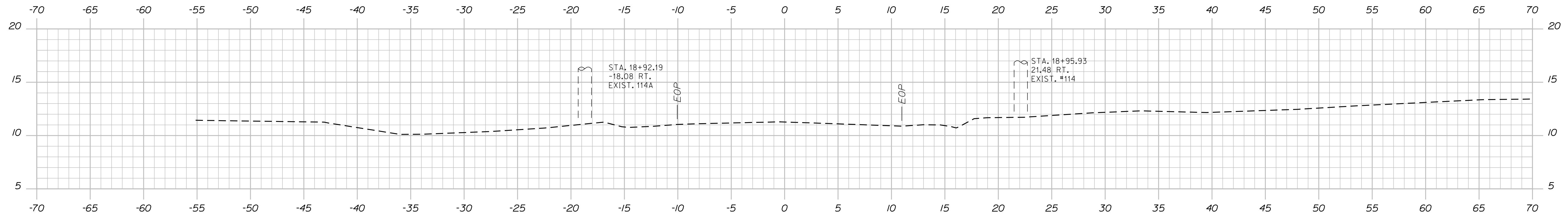
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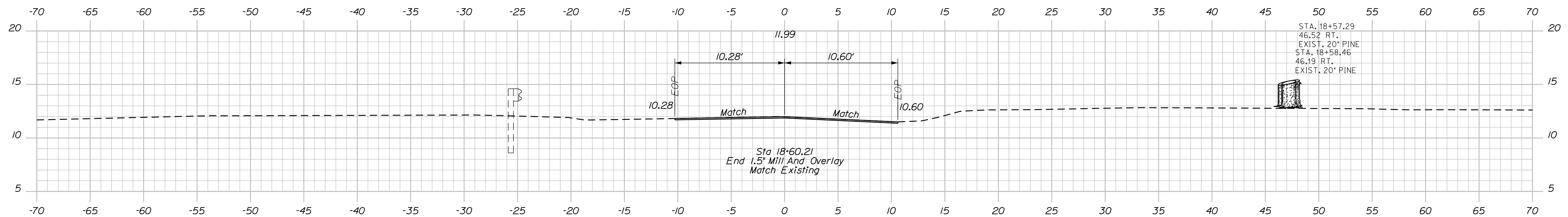
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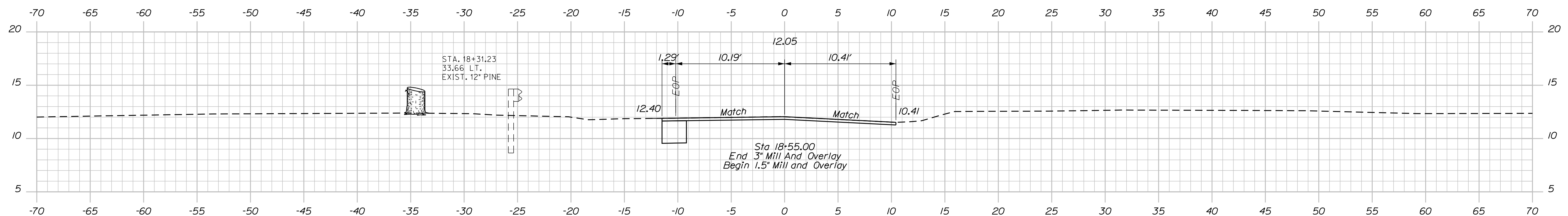
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CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT HANCOCK COUNTY		CROSS SECTIONS		SHEET NUMBER 12 OF 69					
PROJ. MANAGER L. TIMBERLAKE		DESIGN-DETAILED ECF		CHECKED-REVIEWED AG		DESIGN-DETAILED DESIGN-DETAILED		REVISIONS 1 2 3 4 FIELD CHANGES	
DATE 7/10/2018		BY JMS		RSB/TSB		SIGNATURE 1168		P.E. NUMBER 1168	
DATE 7/10/2018		BY JMS		RSB/TSB		SIGNATURE 1168		P.E. NUMBER 1168	
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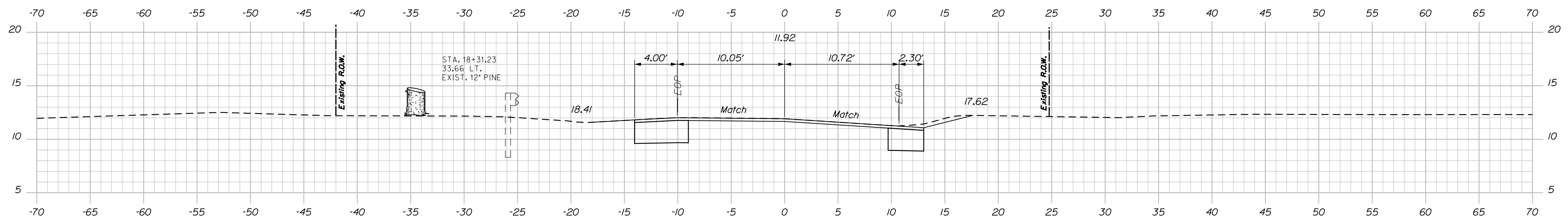
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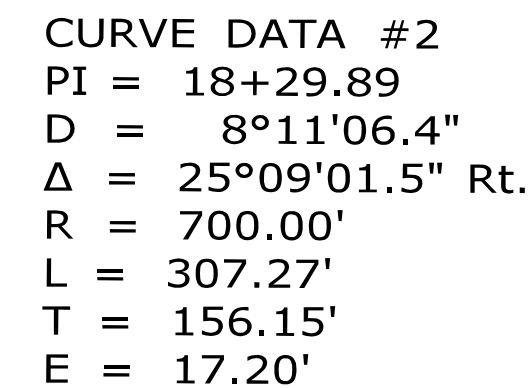
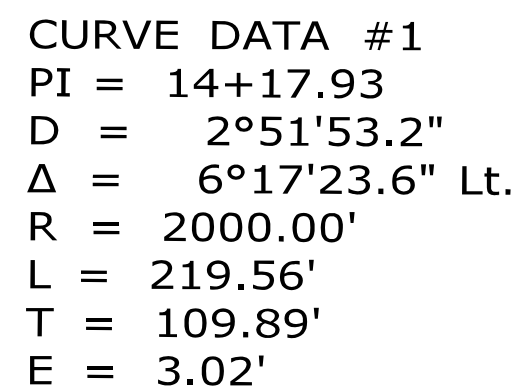
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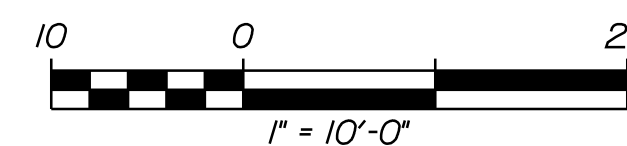
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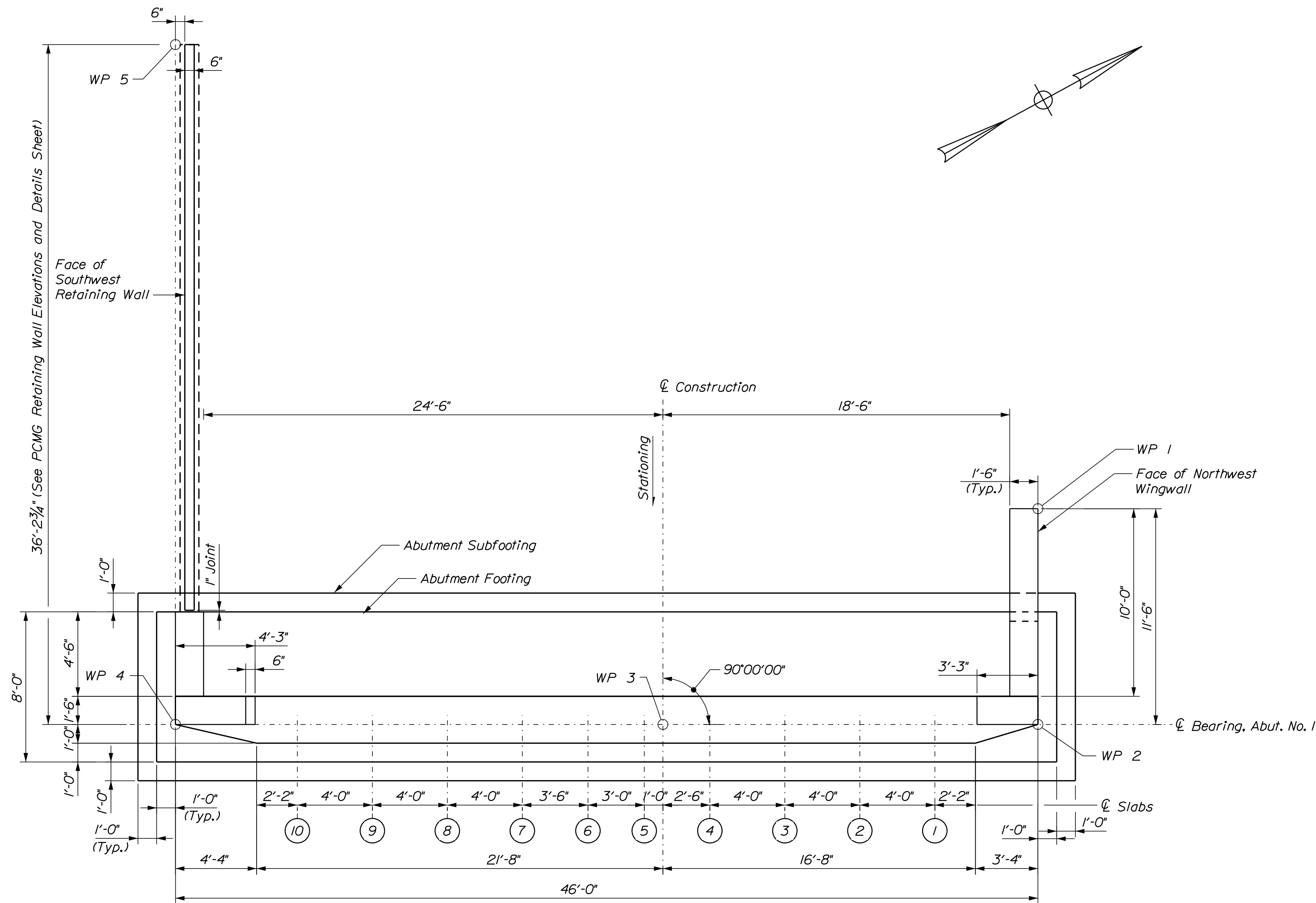


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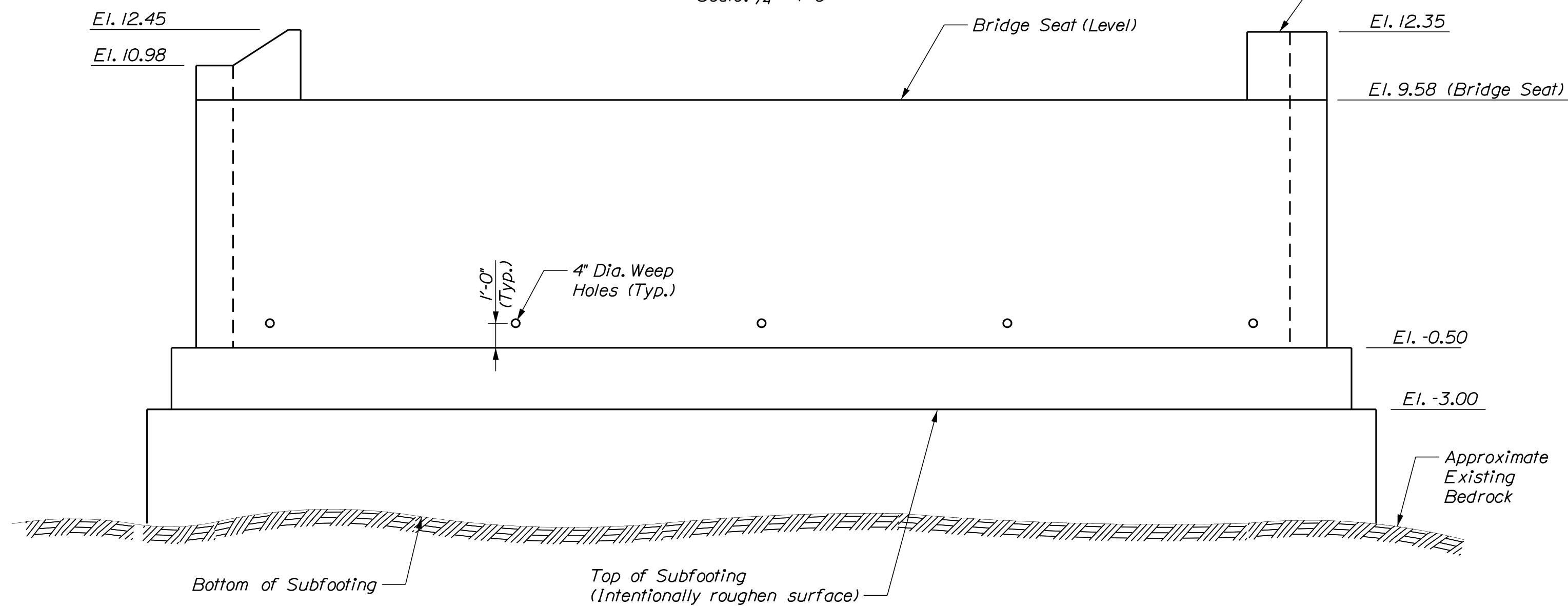
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Division: BRIDGE

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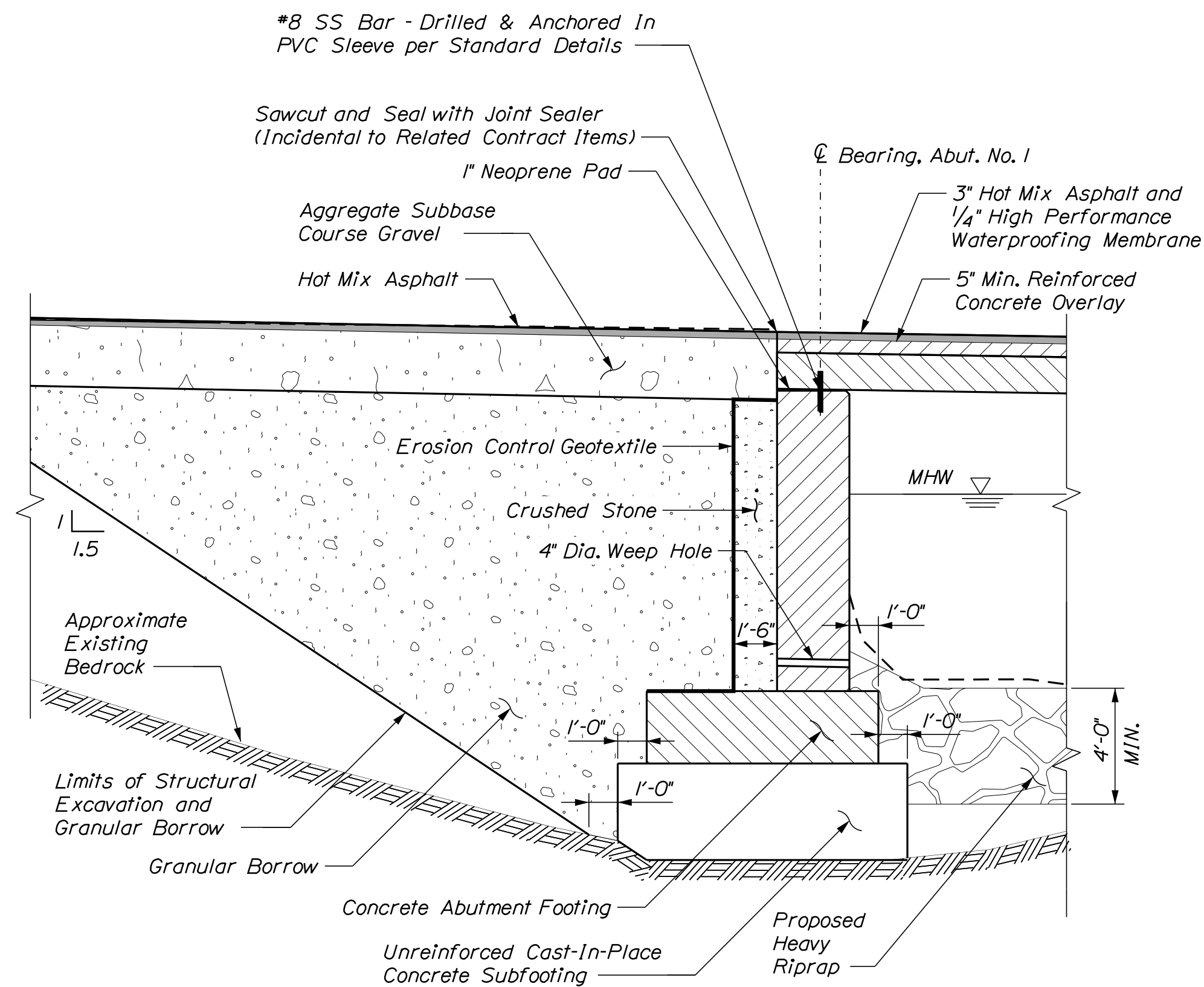
PLAN
Scale: 1/4" = 1'-0"



ELEVATION
Scale: 1/4" = 1'-0"

ABUTMENT NOTES

1. The maximum applied bearing pressure is 10.0 ksf.
2. Reinforcing steel shall have a minimum concrete cover of 3 inches in all substructure elements unless otherwise noted.
3. Cover joints where waterstops are not required in accordance with Standard Detail 502 (01).
4. Place 4 inch diameter drains in abutment stems and wingwalls at 10 feet maximum spacing. The exact location will be determined by the Resident.
5. To ensure an accurate match with the superstructure, the curtain walls shall be placed after erection of the precast units.
6. The unreinforced concrete subfooting shall be placed on bedrock cleaned of all loose rock and soil. The bedrock subgrade shall be confirmed to be no steeper than 4H:1V. Where the bedrock surface slope exceeds 4H:1V the bedrock surface shall require benching to provide a more level bearing surface. If the subfooting thickness is increased, the top of the subfooting elevation shall be as shown on the plans.
7. The top of the cast-in-place unreinforced subfooting shall be intentionally roughened to an amplitude of 1/4 inch.
8. Unreinforced concrete subfooting shall be Item 502.565, Concrete Fill.
9. All reinforcing steel shall be stainless steel.
10. On all exposed faces of concrete the clear cover spacers and permanent form ties shall be stainless steel or non corrosive.



ABUTMENT NO. 1 SECTION
Scale: 1/4" = 1'-0"

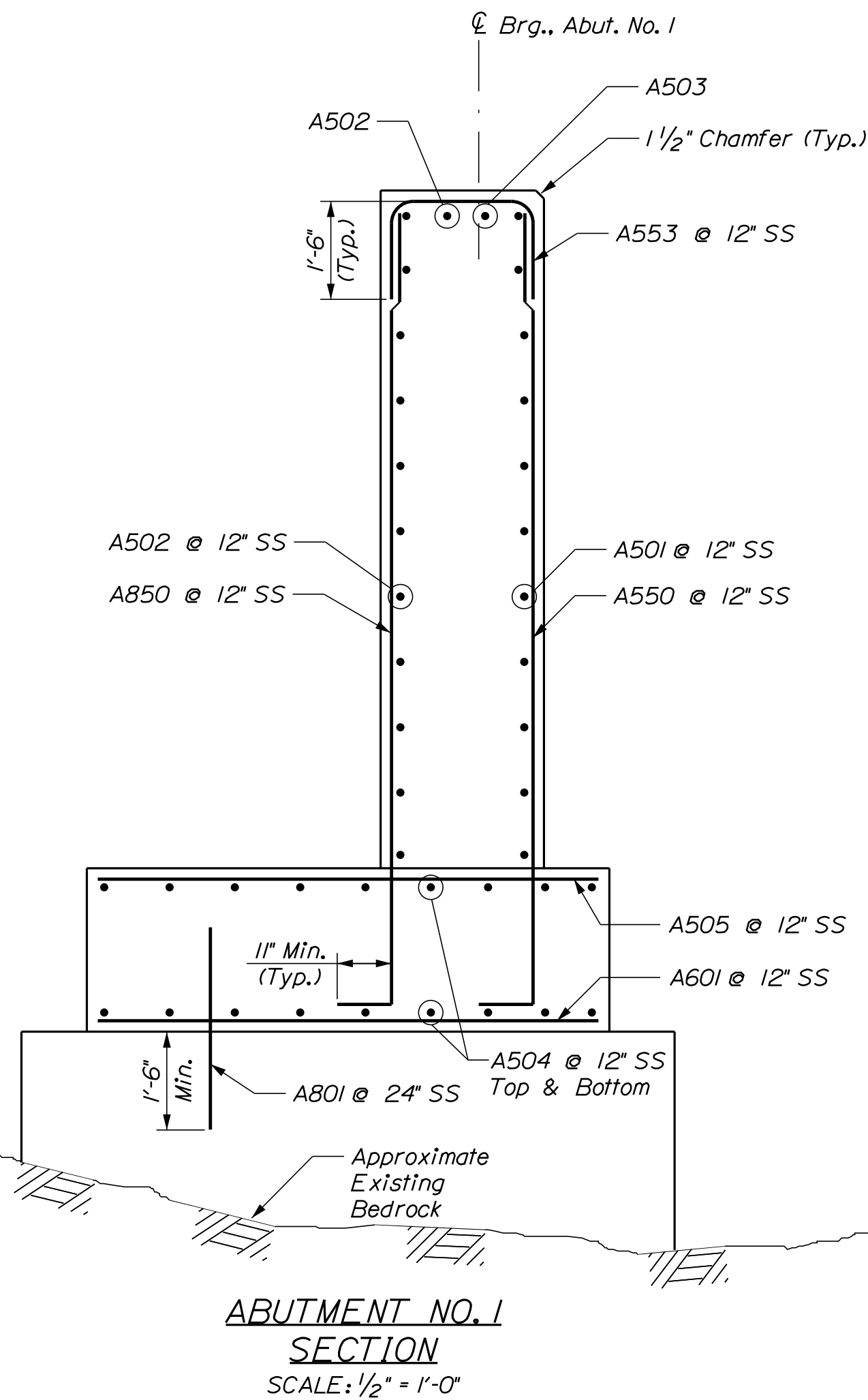
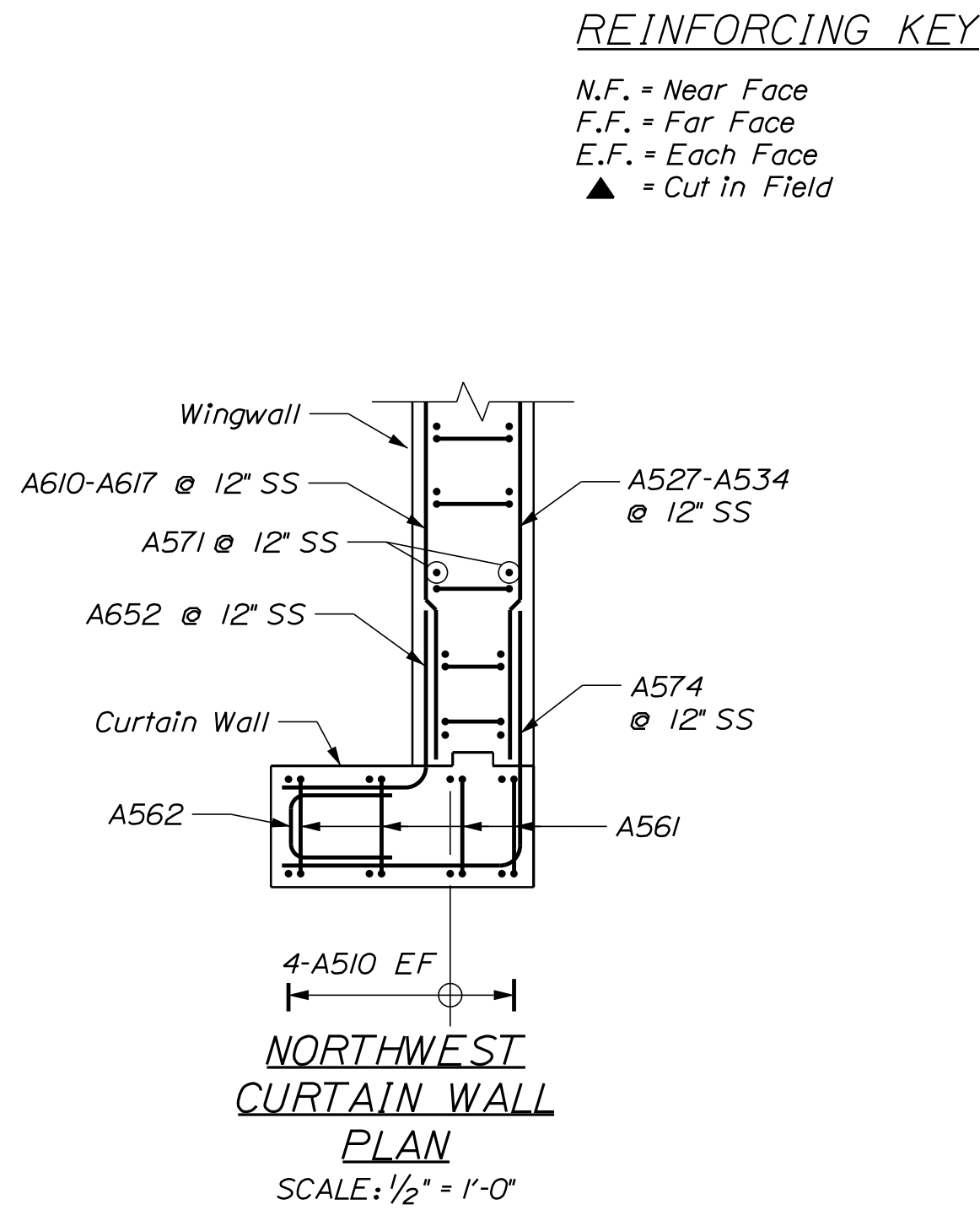
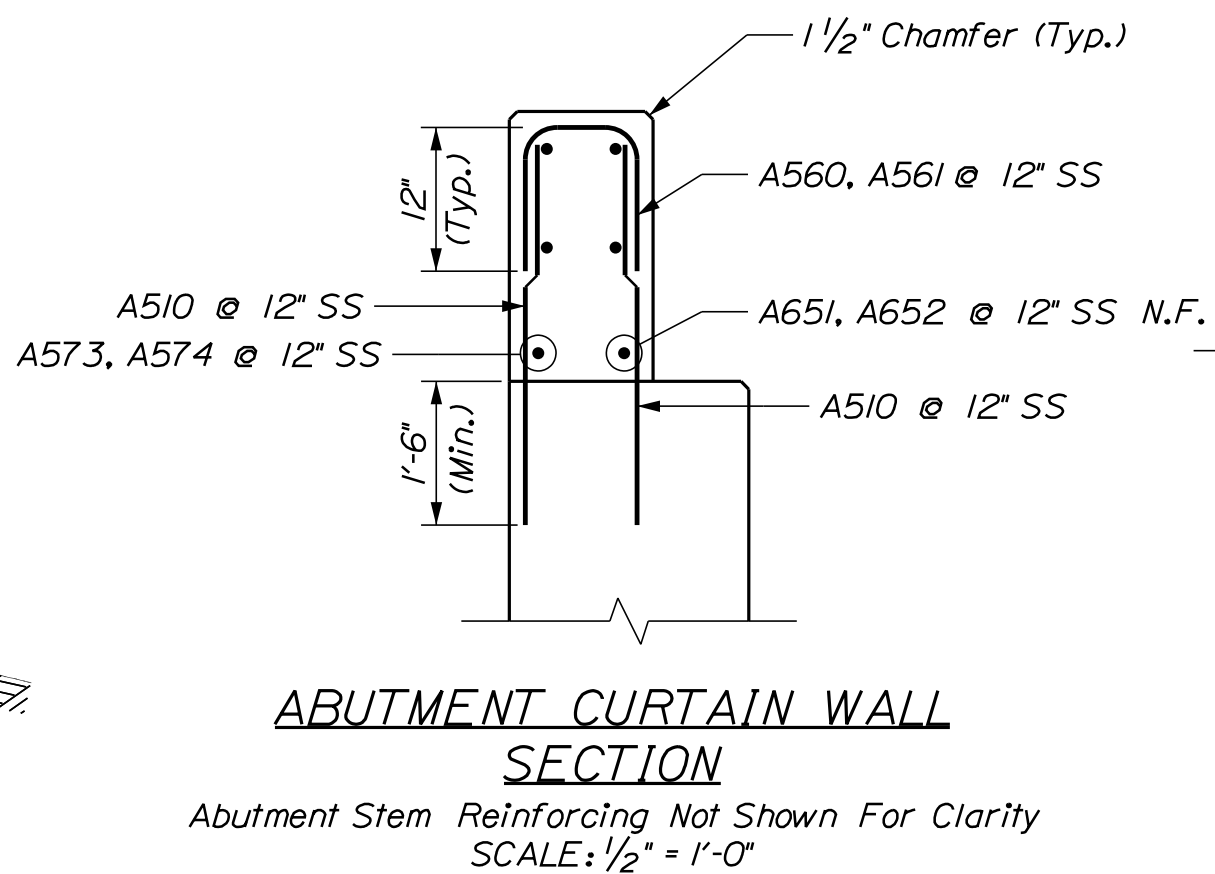
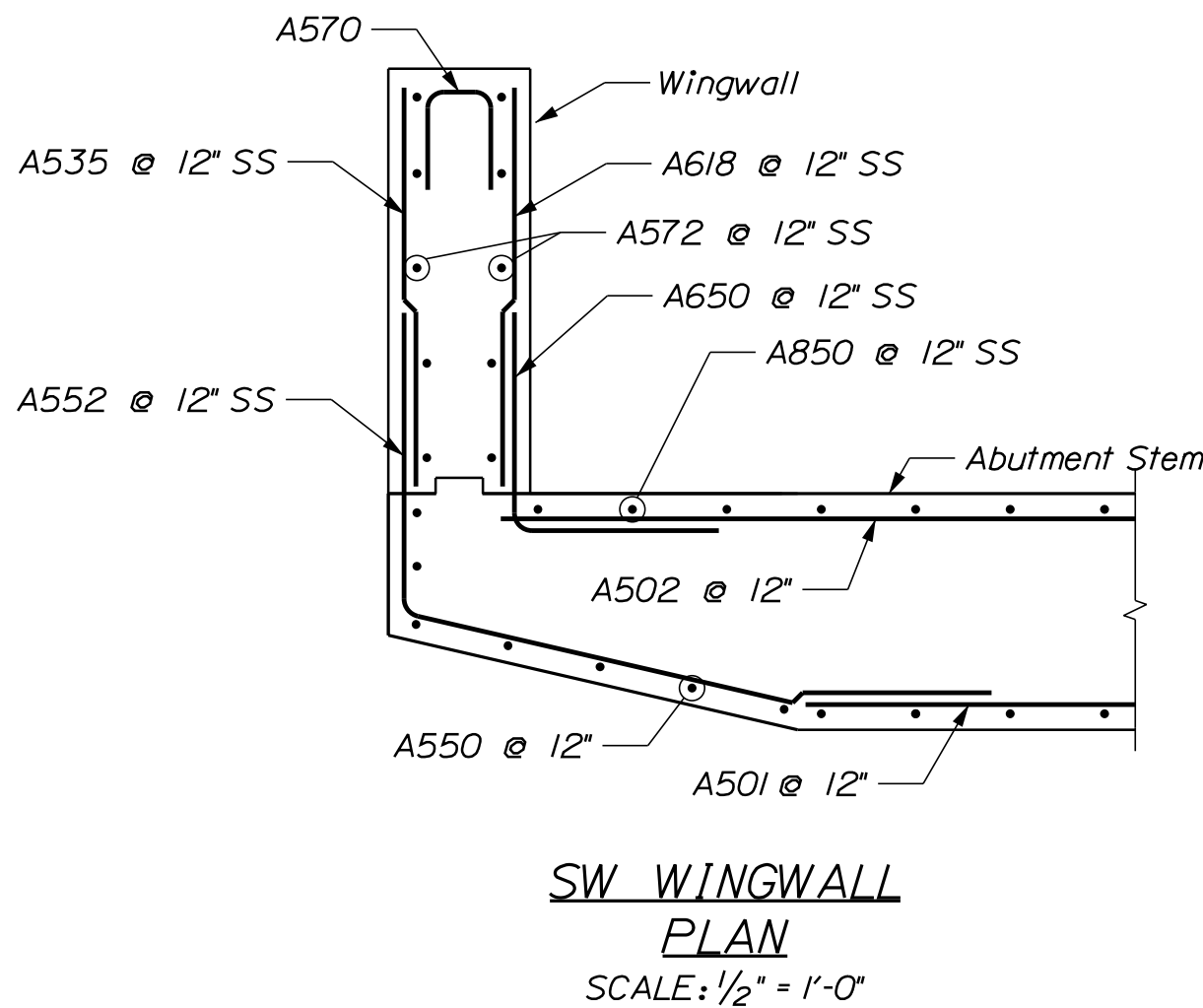
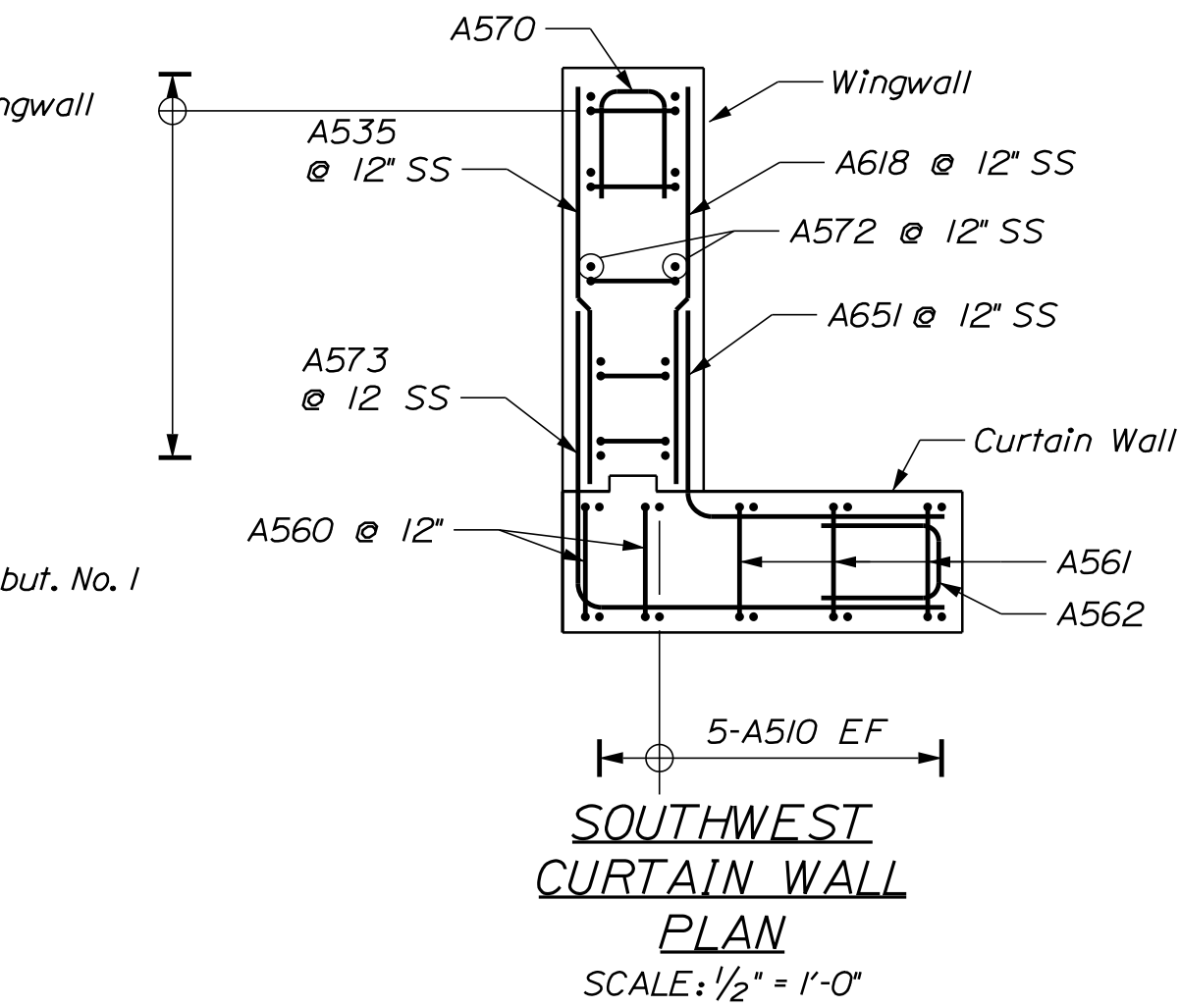
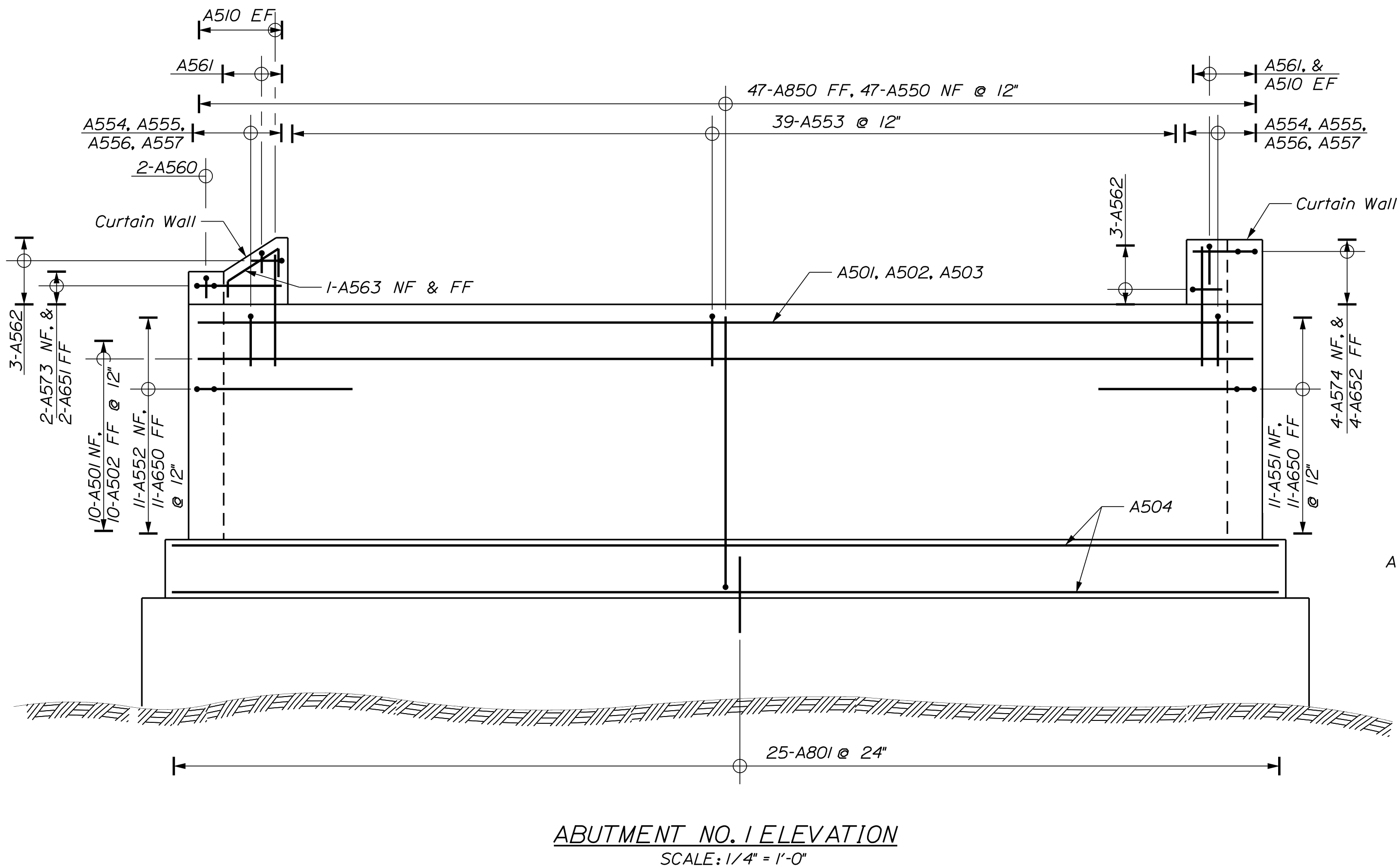
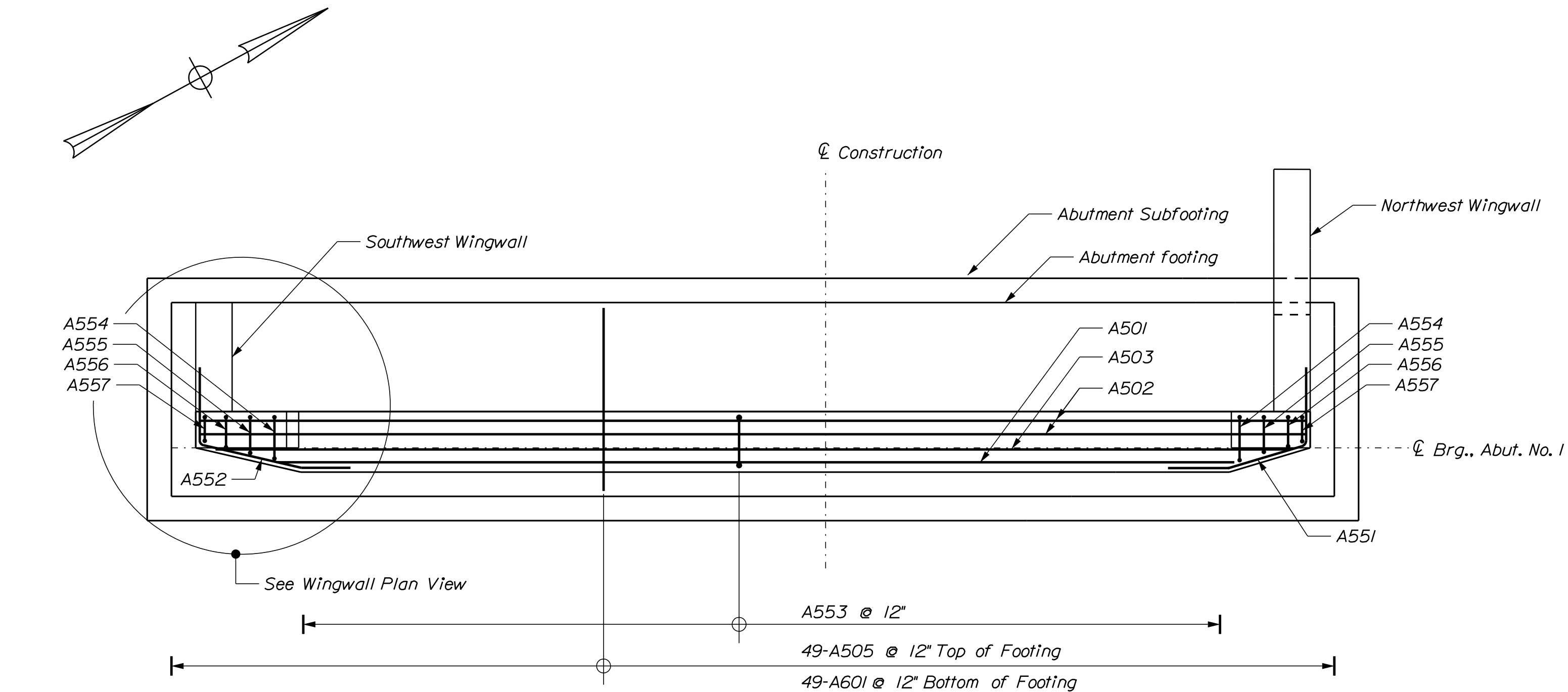


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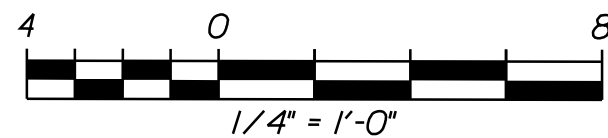
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Division: BRIDGE

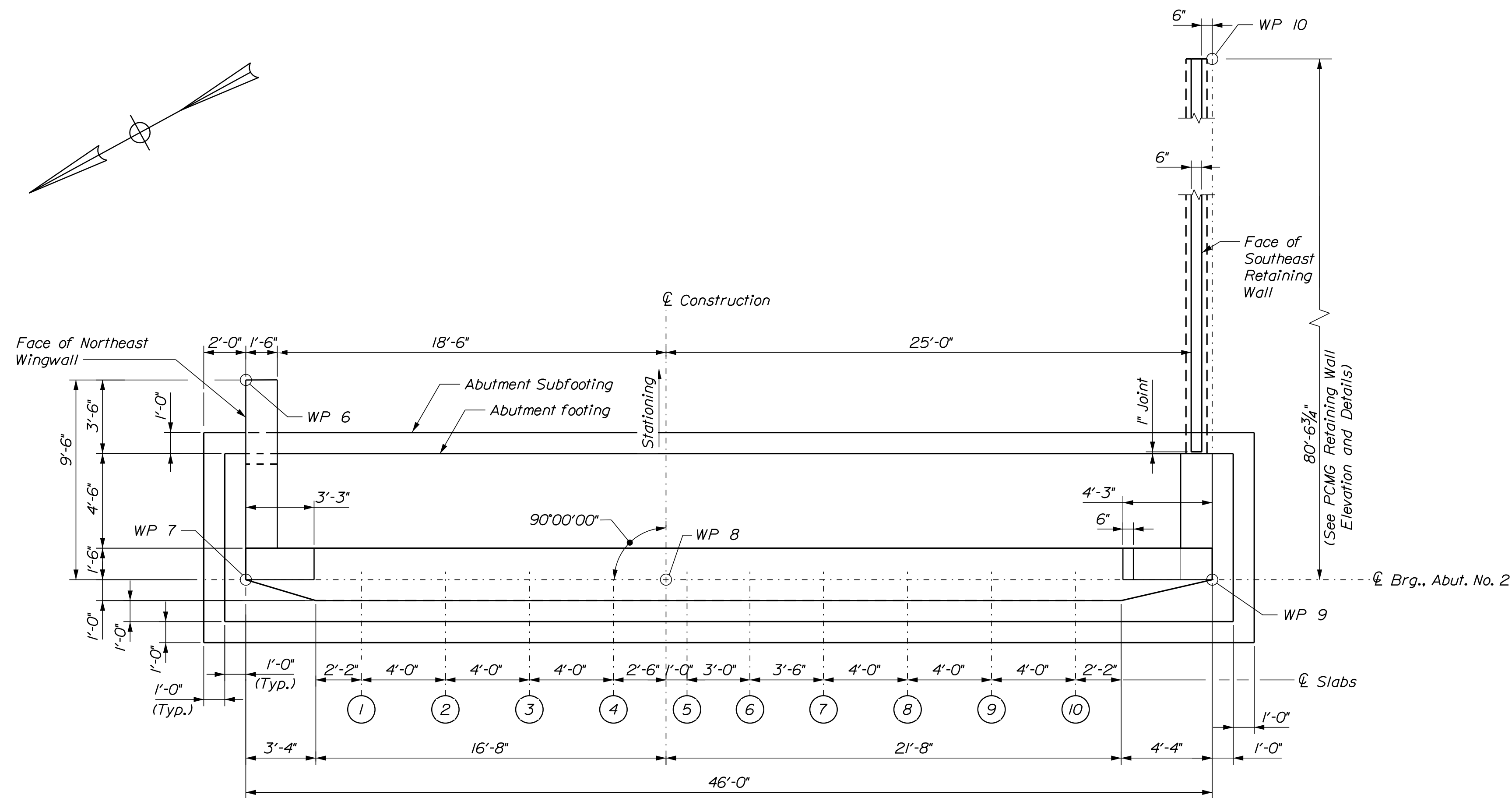
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REINFORCING KEY
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
▲ = Cut in Field

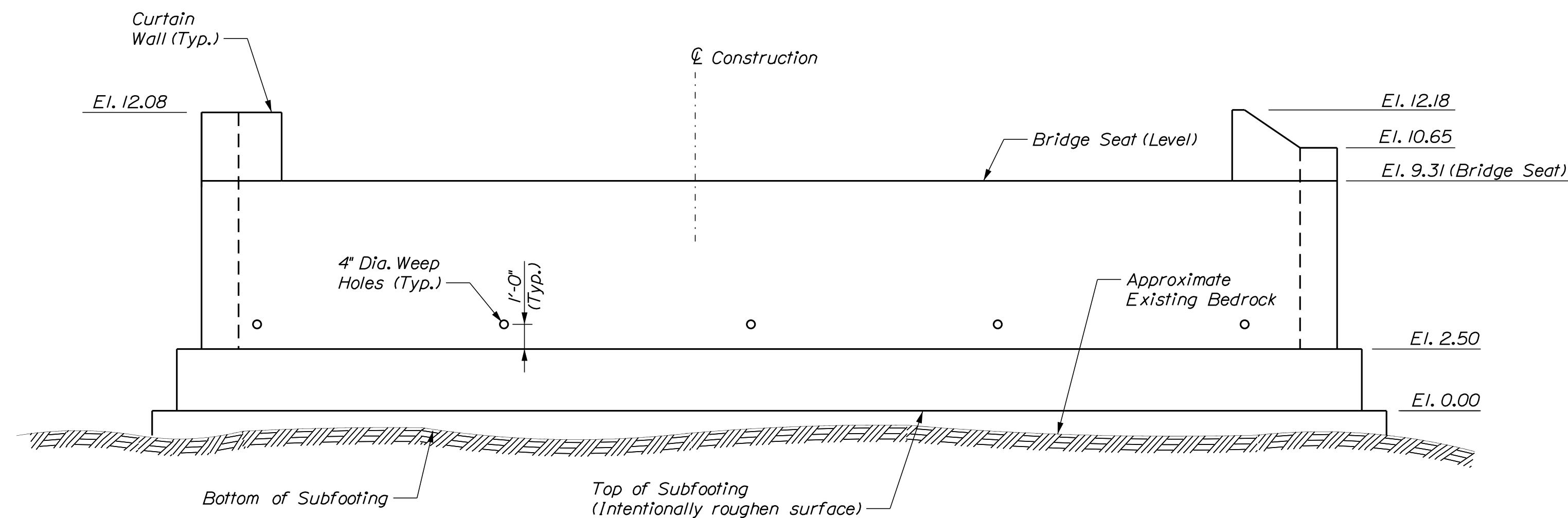


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SR-1930(510)		BRIDGE NO. 3663		WIN 19305.00		BRIDGE PLANS	
CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT HANCOCK COUNTY		ABUTMENT NO. 1 REINFORCING		SHEET NUMBER 17 OF 69		DATE 7/10/2018		SIGNATURE 1168 P.E. NUMBER July 18, 2018 DATE	
PROJ. MANAGER L. TIMBERLAKE		DESIGN-DETAILED 12/01/2018		CHECKED-REVIEWED 06/01/2018		DESIGN-DETAILED 06/01/2018		REVISIONS 1 2 3 4 FIELD CHANGES	

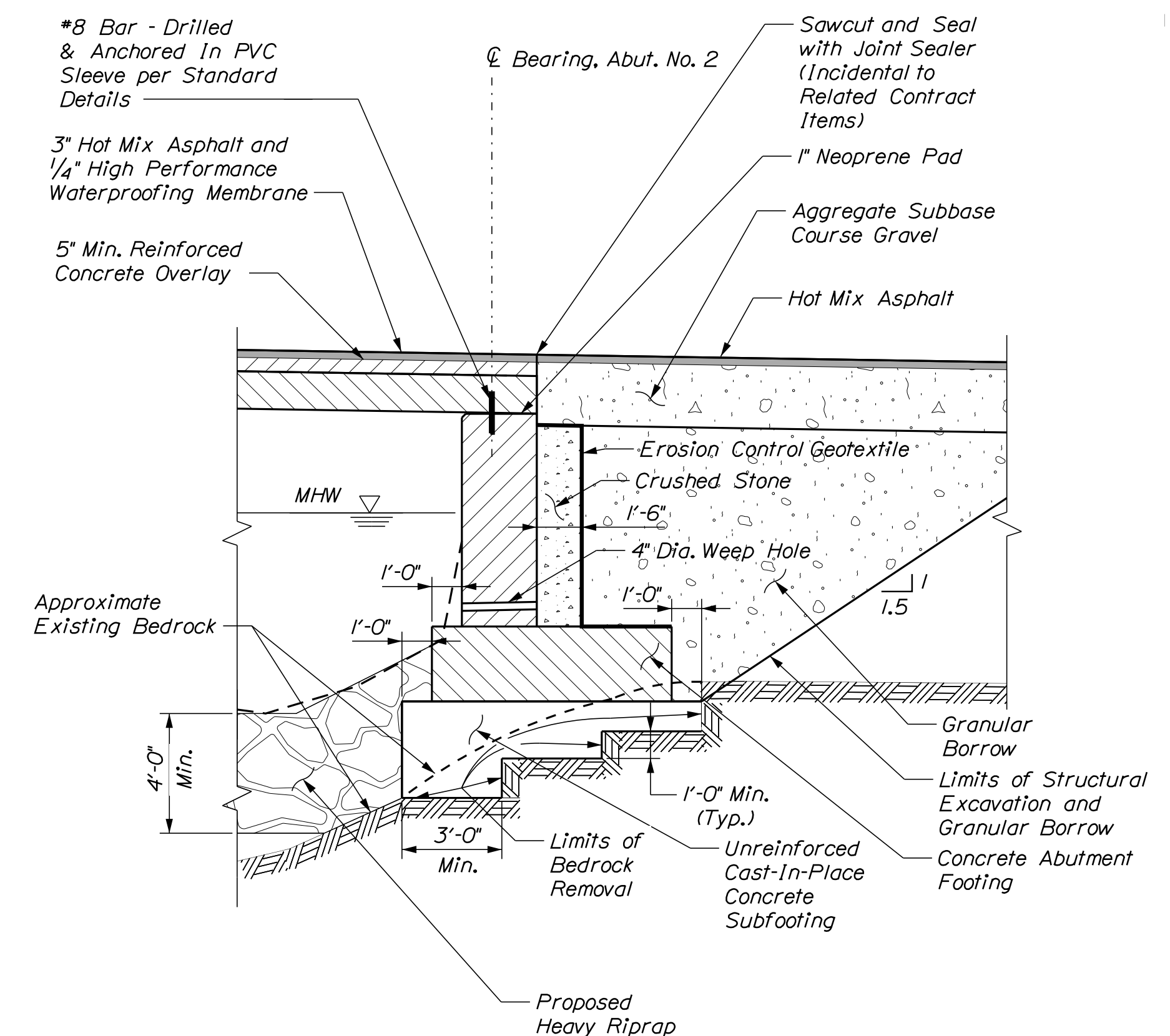


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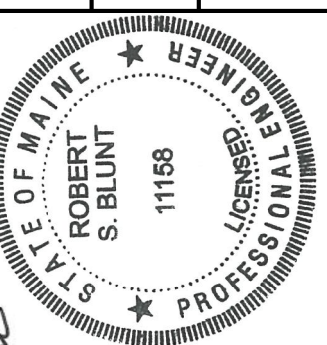
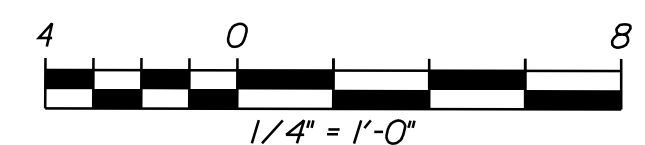
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ELEVATION
Scale: $\frac{1}{4}" = 1'-0"$



ABUTMENT NO. 2 SECTION
SCALE: 1/4" = 1'-0"



SIGNATURE	11158
P.E. NUMBER	July 18, 2018
DATE	

DESIGN-DETAILED	TJC/BP	DPD	7/10/2018
CHECKED-REVIEWED	ONE/CTA	RSB/TSB	7/10/2018
DESIGN-DETAILED2			
DESIGN-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

CLARK BRIDGE
TREMONT ROAD OVER MARSHALL BROOK
TREMONT HANCOCK COUNTY

**ABUTMENT NO.2
MASONRY**

SHEET NUMBER

18

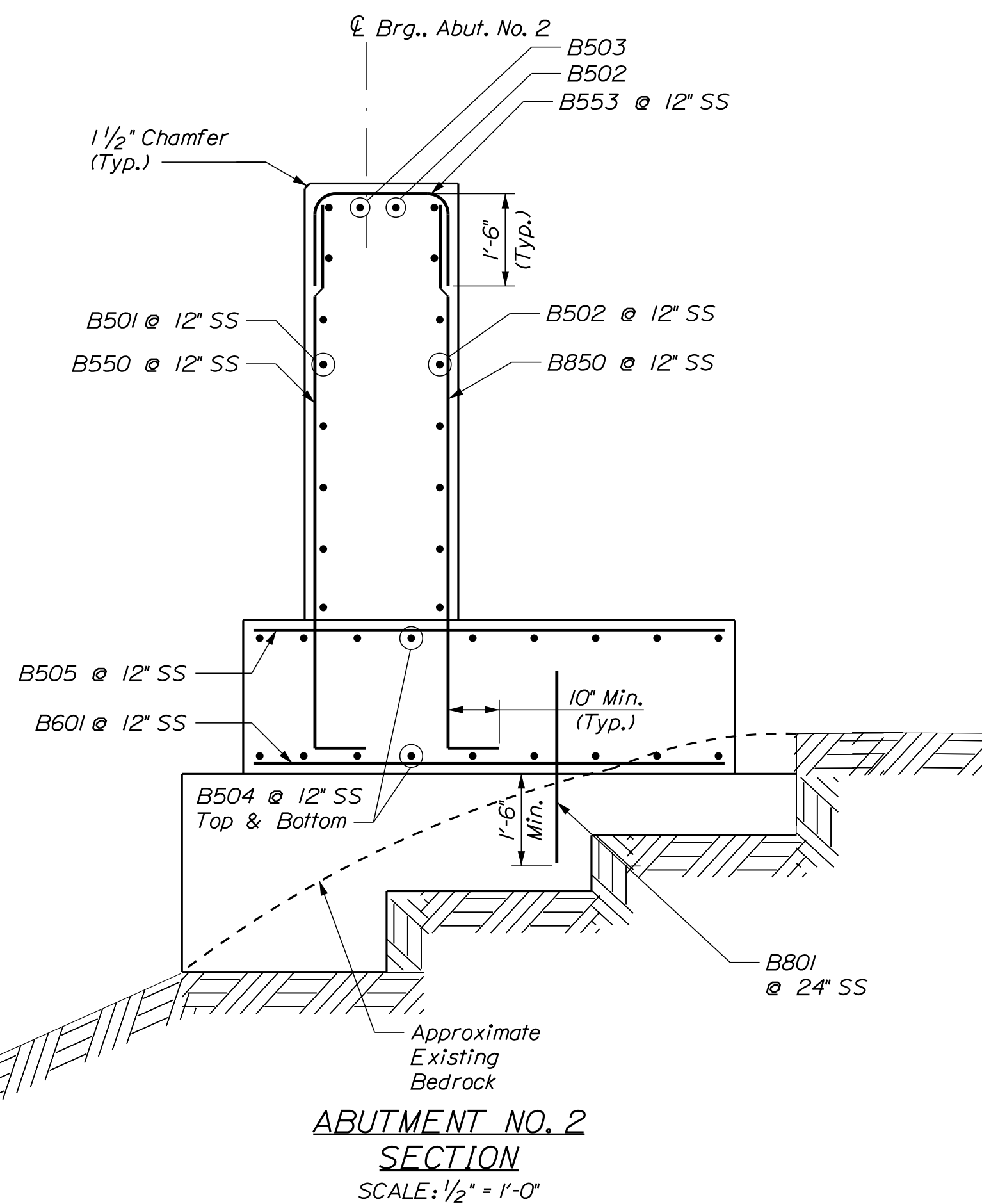
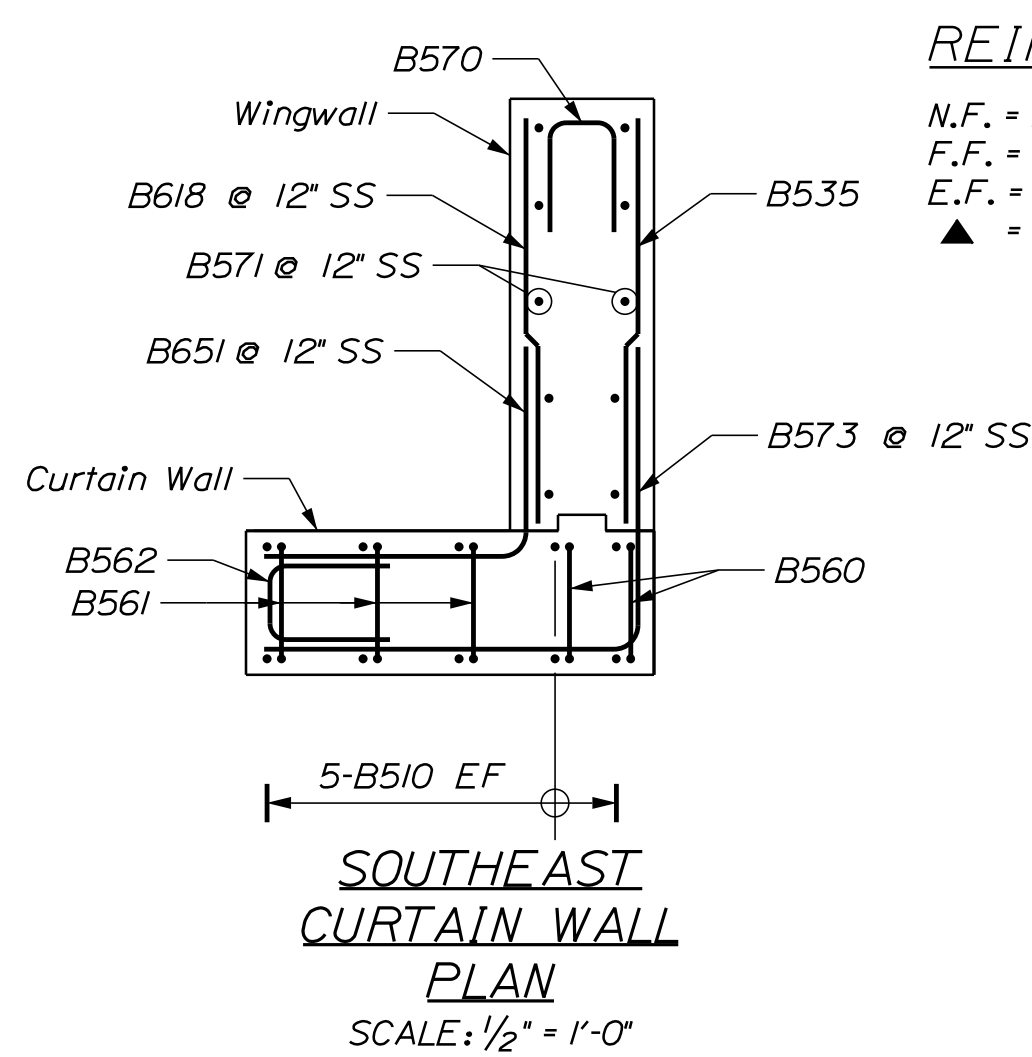
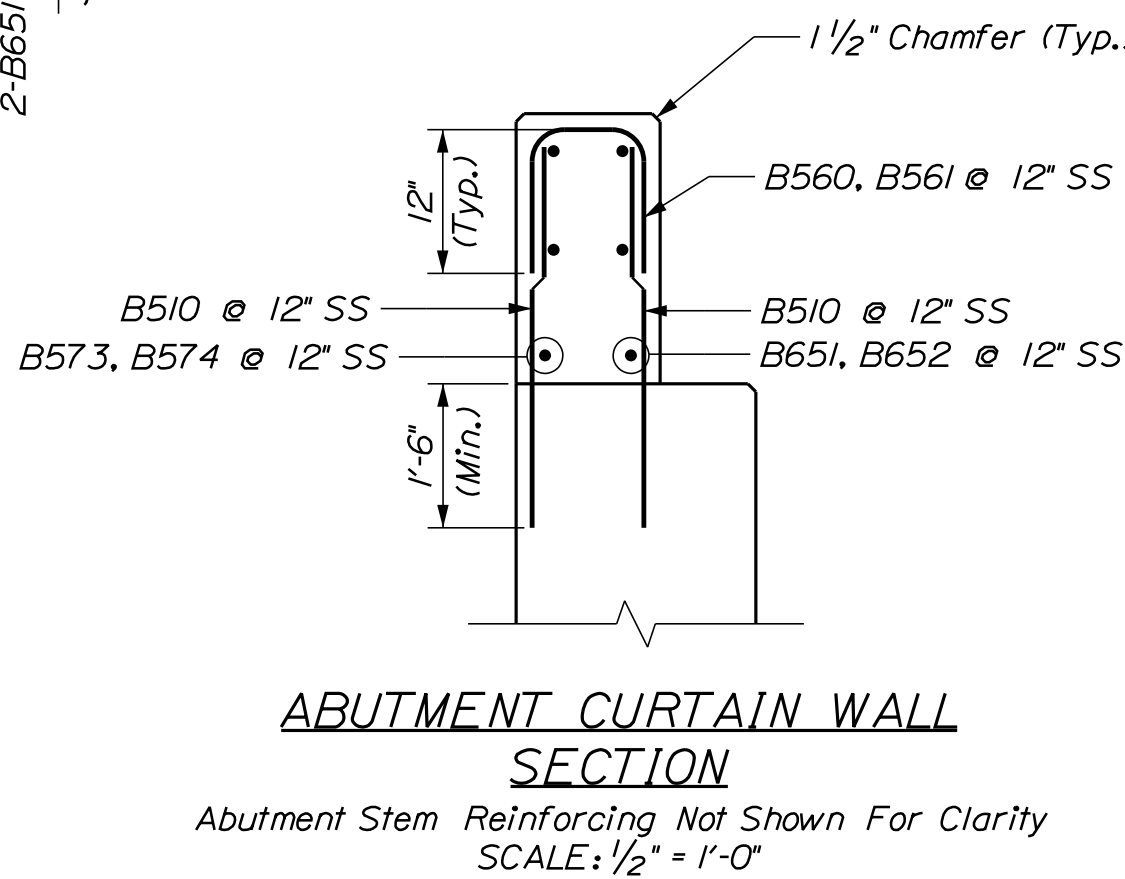
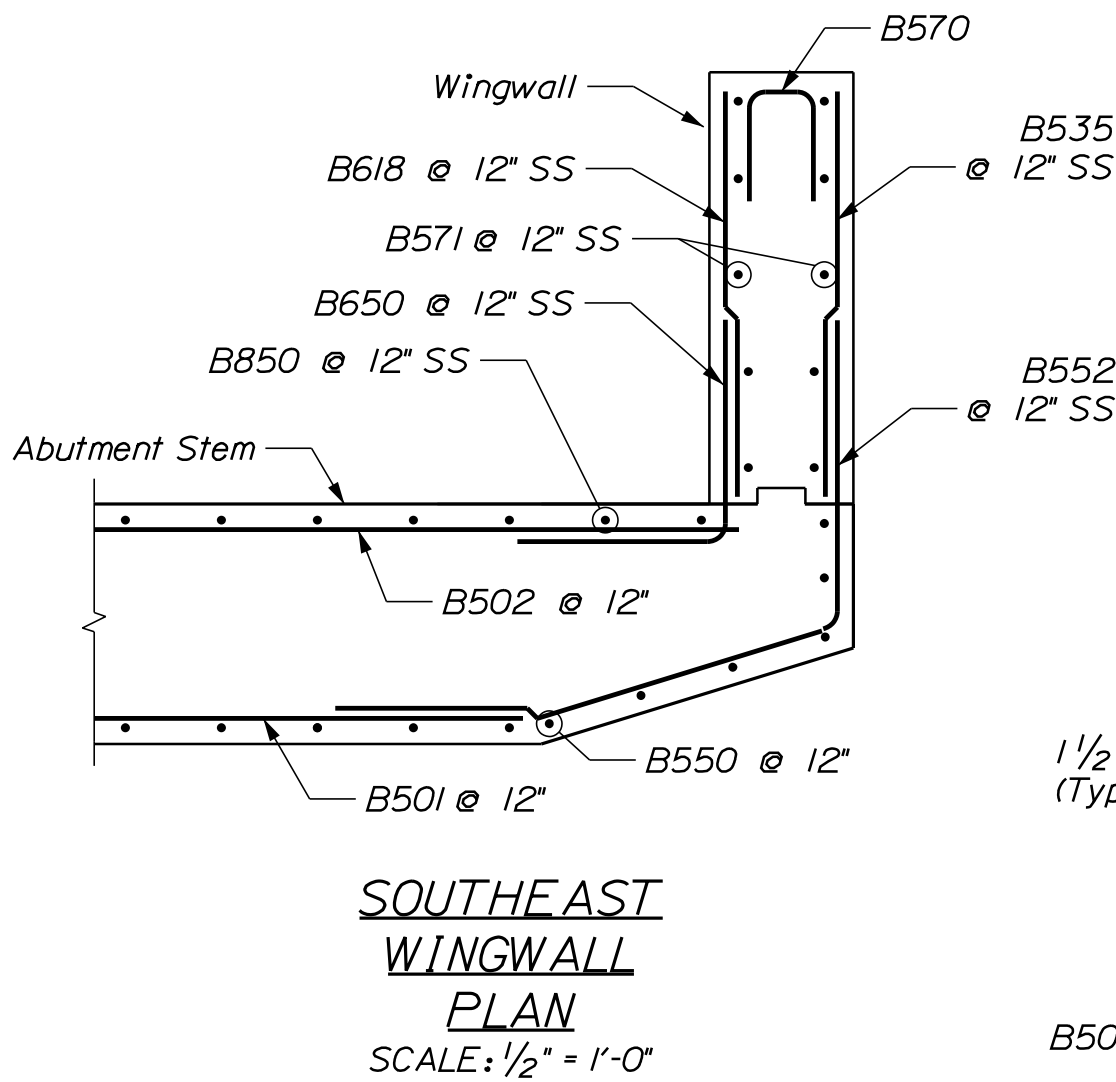
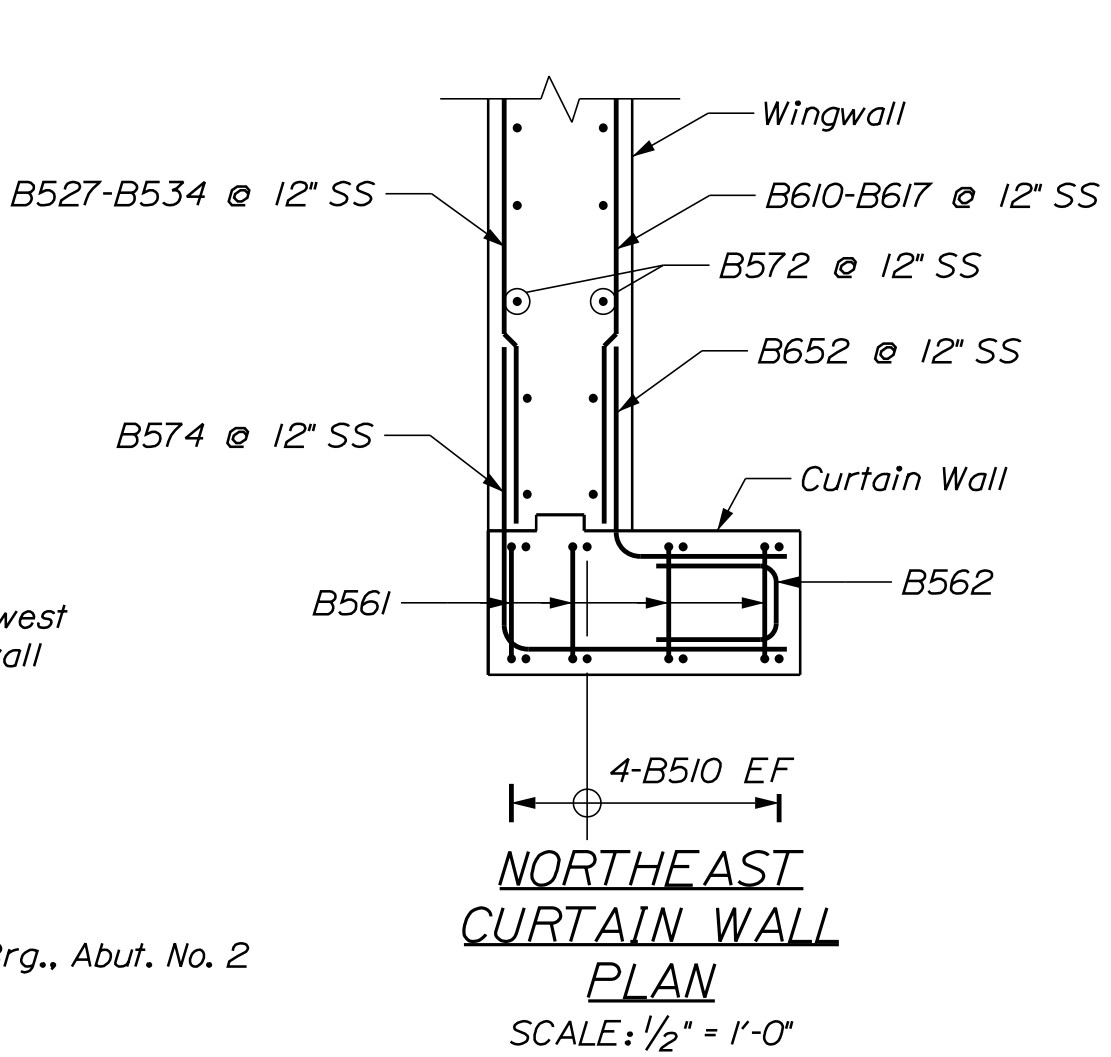
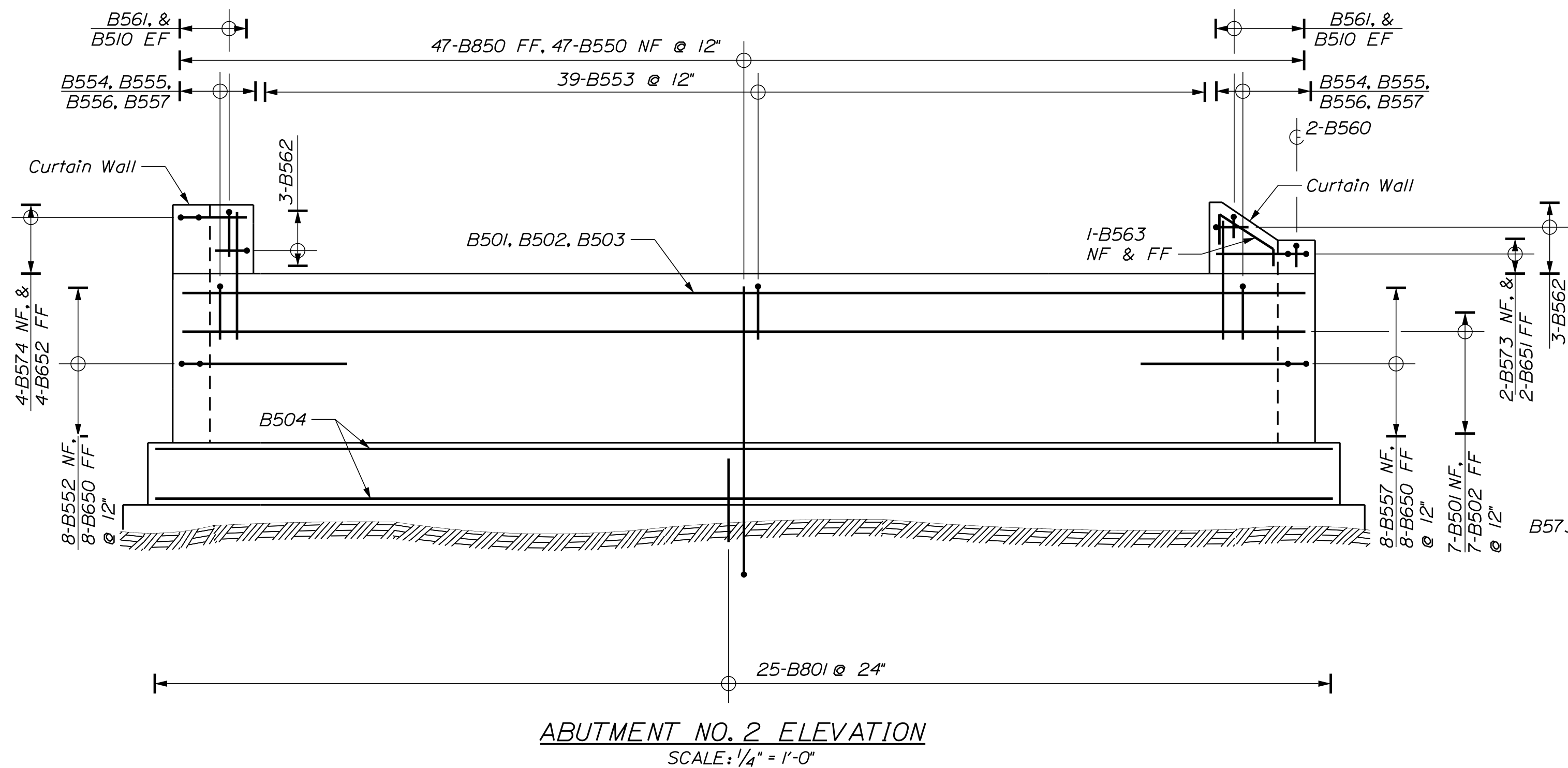
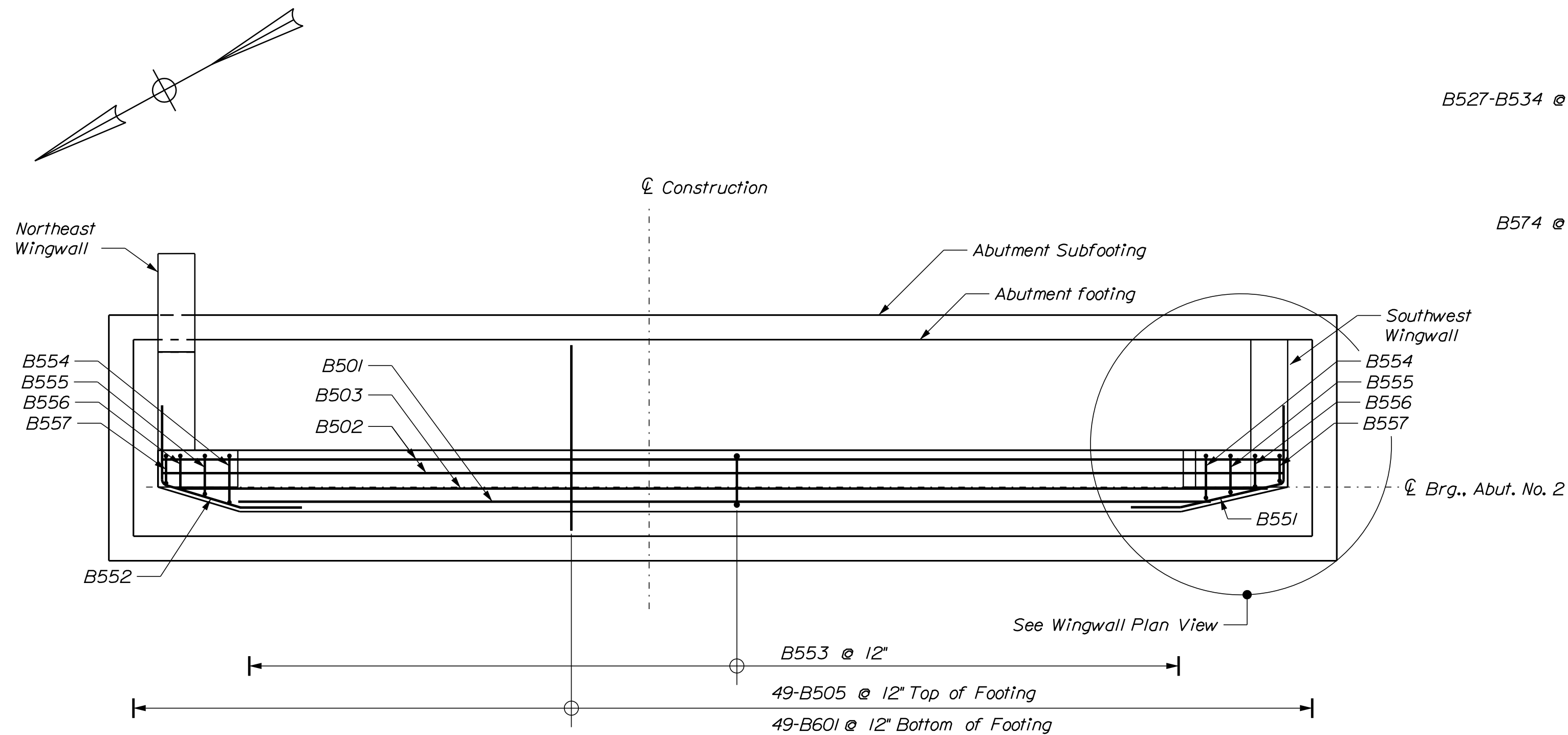
F 69

Date:9/6/2018

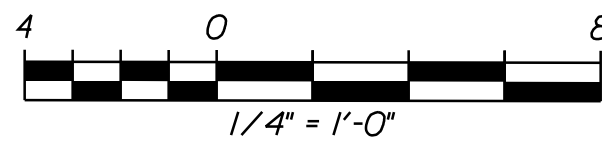
Username: PDonovan

Division: BRIDGE

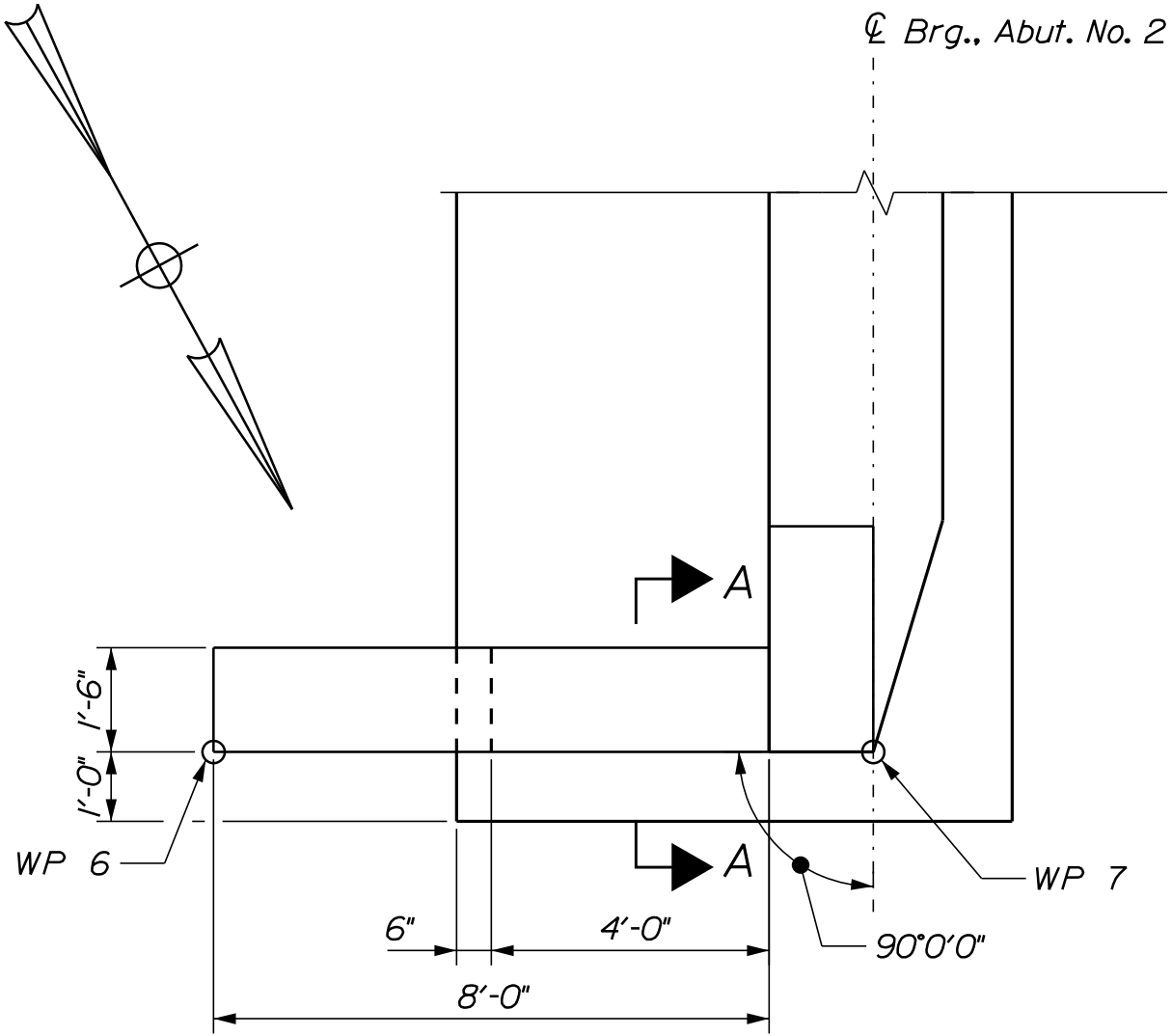
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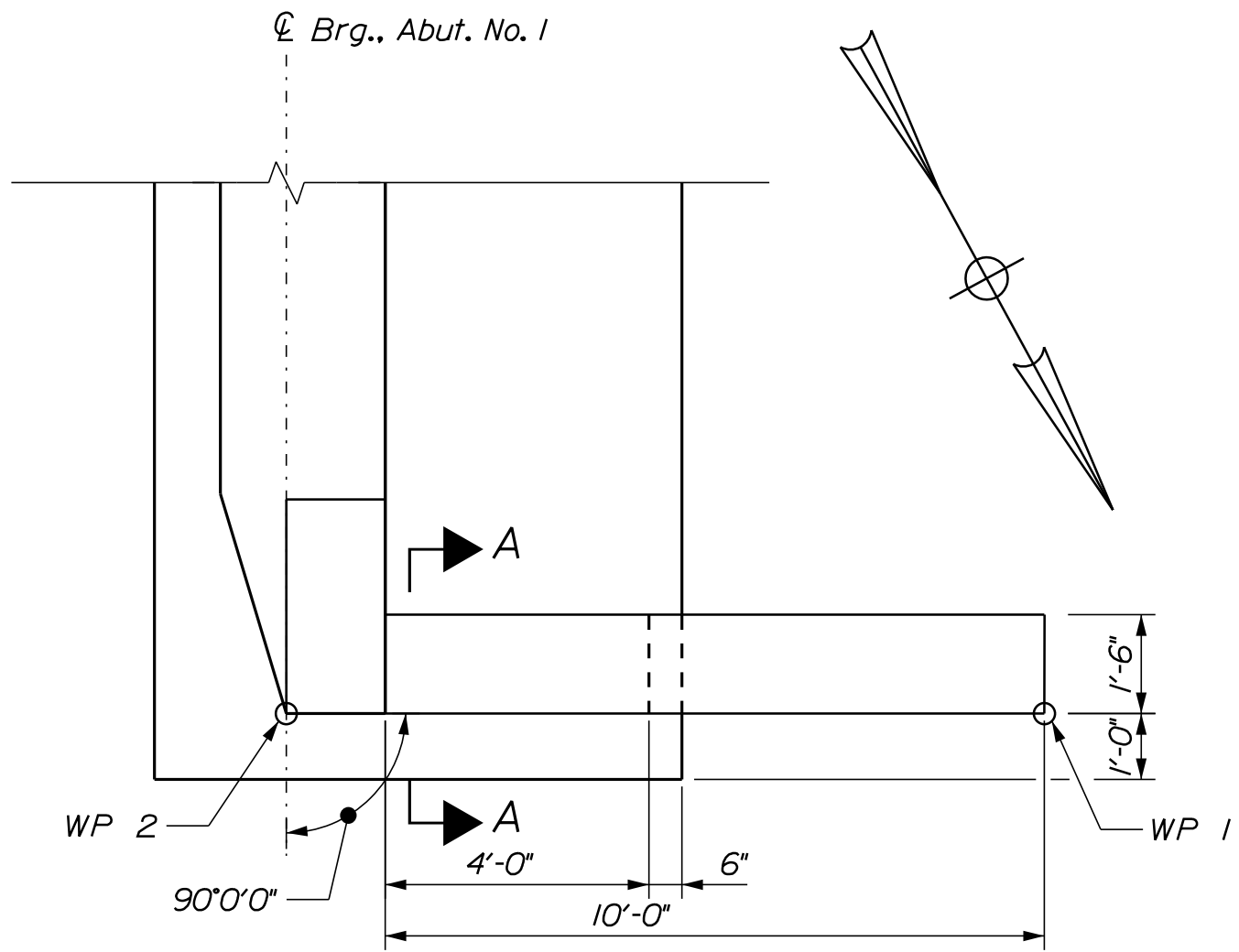
REINFORCING KEY
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
▲ = Cut in Field



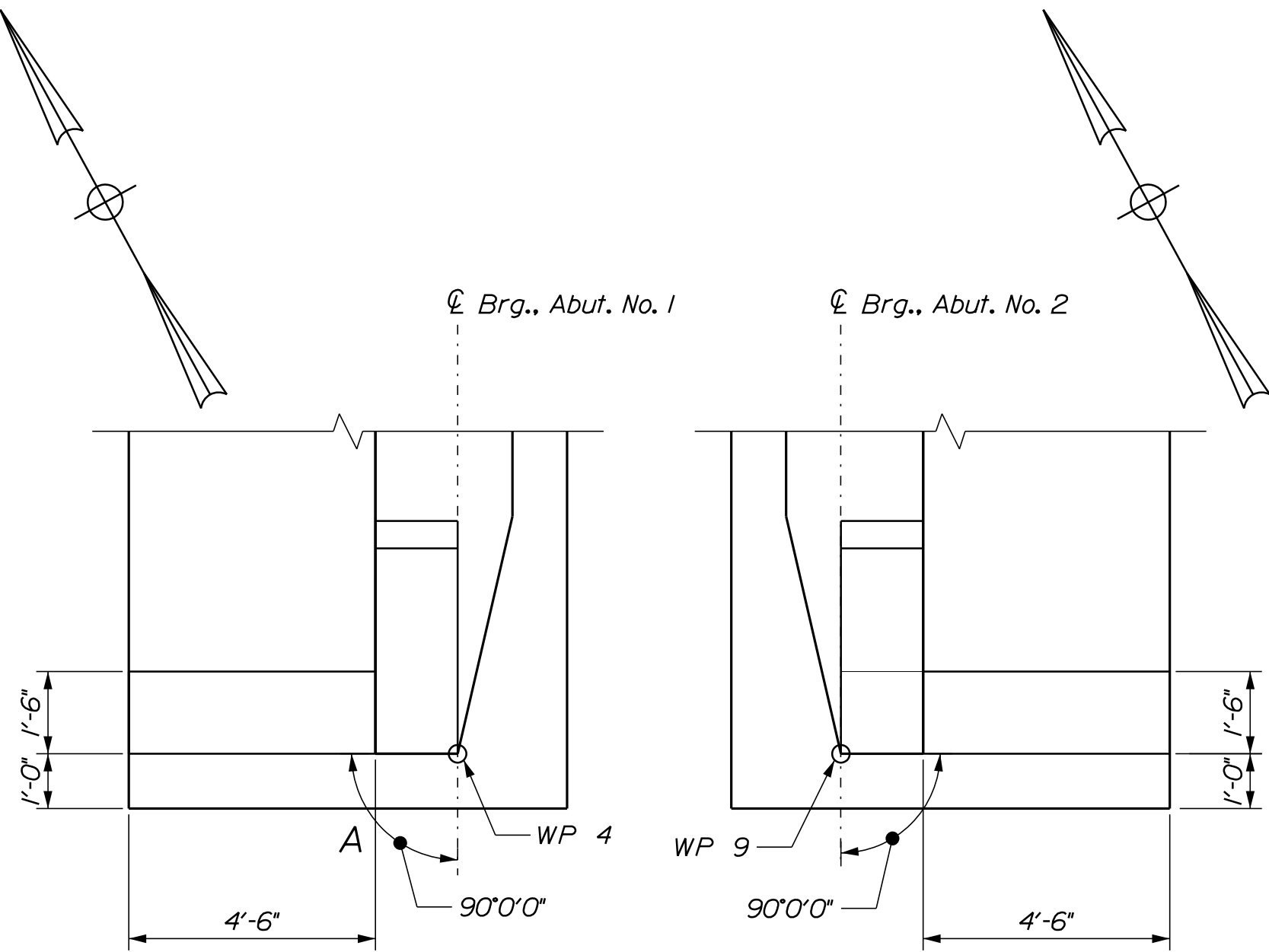
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SR-1930(510)		BRIDGE NO. 3663 WIN 19305.00	
CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT HANCOCK COUNTY		ABUTMENT NO. 2 REINFORCING		SHEET NUMBER 19 OF 69	
PROJ. MANAGER	L. TIMBERLAKE	CHECKED	REVIEWED	DESIGNED	DATE
DATE	7/10/2018	DATE	7/10/2018	DATE	7/10/2018
BY	DPD	BY	RSB/TJB	BY	RSB/TJB
DESIGN-DETAILED	LIC/DPD	DESIGN-DETAILED	LM/CTA	DESIGN-DETAILED	LM/CTA
DESIGN-DETAILED	LM/CTA	DESIGN-DETAILED	LM/CTA	DESIGN-DETAILED	LM/CTA
REVISIONS 1		REVISIONS 1		REVISIONS 1	
REVISIONS 2		REVISIONS 2		REVISIONS 2	
REVISIONS 3		REVISIONS 3		REVISIONS 3	
REVISIONS 4		REVISIONS 4		REVISIONS 4	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	



ABUTMENT NO. 2
NORTHEAST WINGWALL
PLAN
SCALE: $\frac{3}{8}$ " = 1'-0"

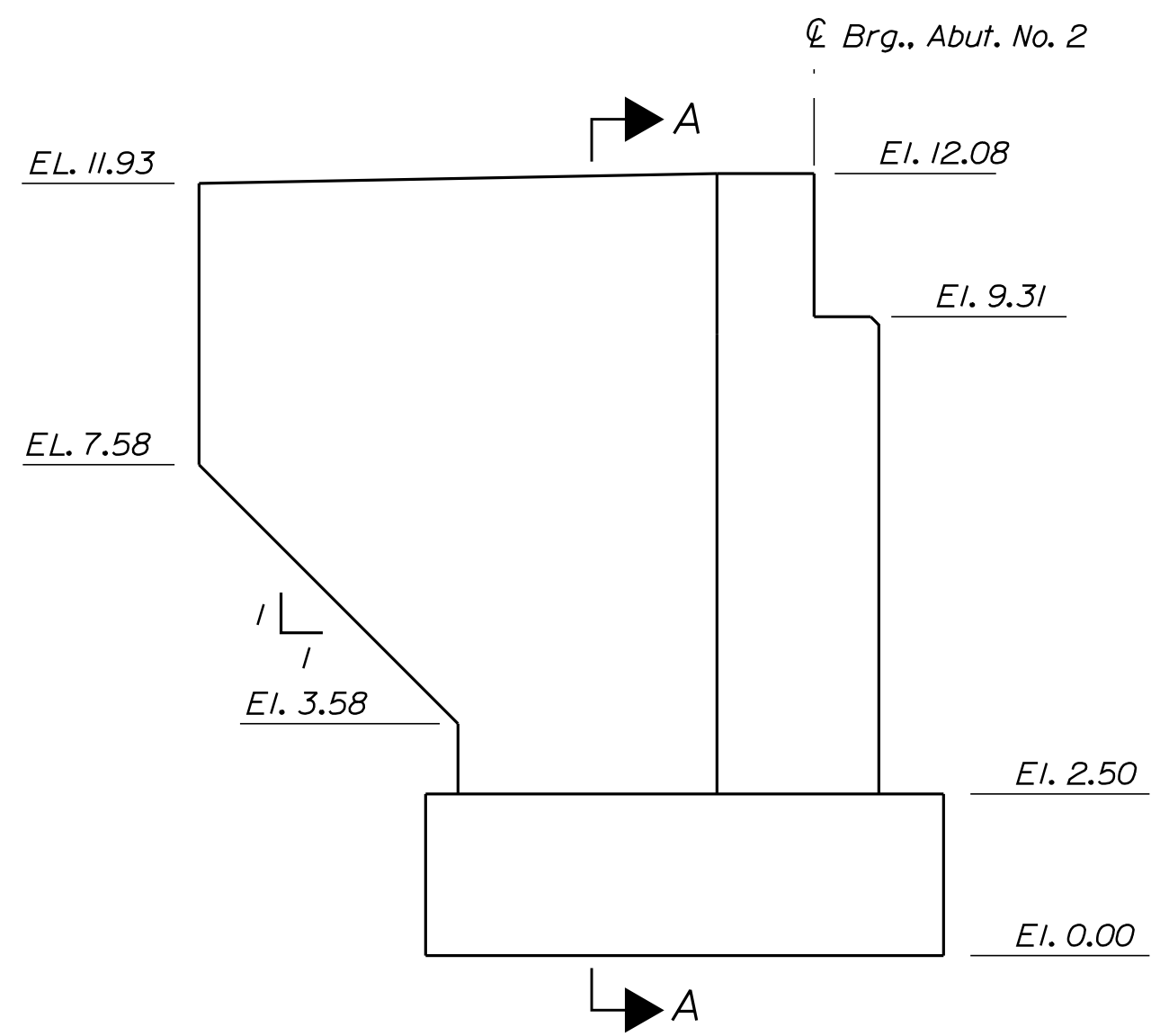


ABUTMENT NO. 1
NORTHWEST WINGWALL
PLAN
SCALE: $\frac{3}{8}$ " = 1'-0"

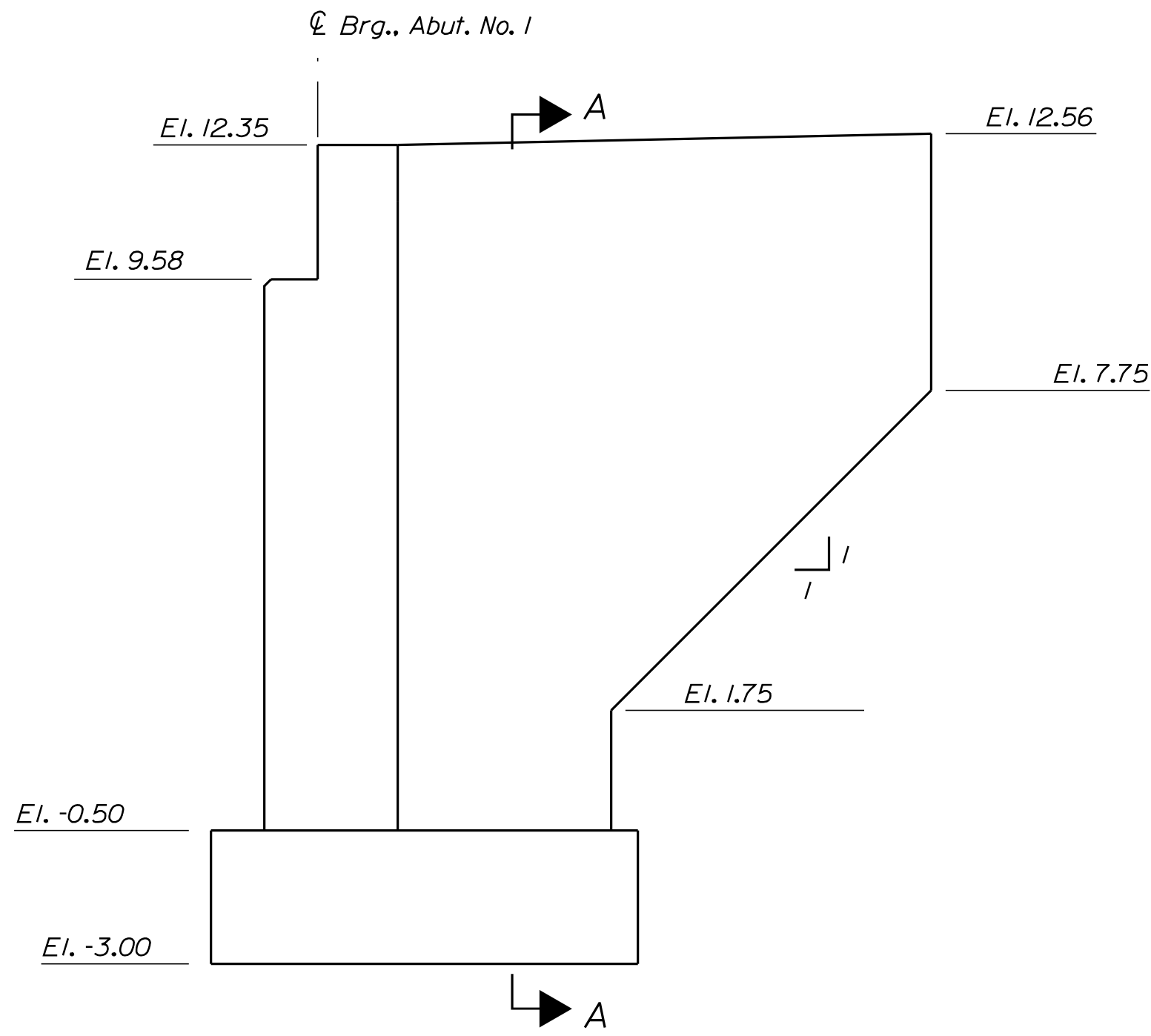


ABUTMENT NO. 1
NORTHWEST WINGWALL
PLAN
SCALE: $\frac{3}{8}$ " = 1'-0"

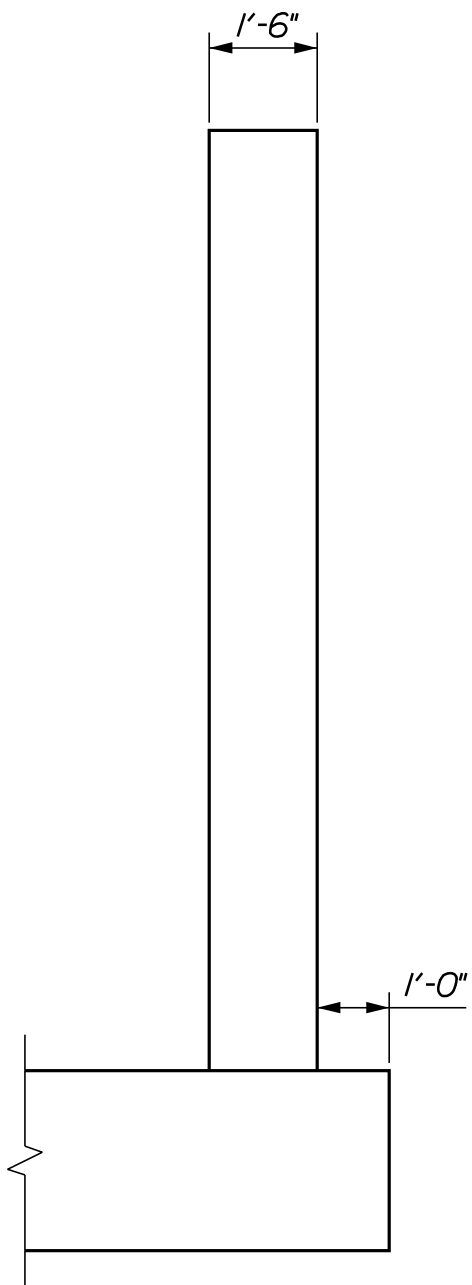
ABUTMENT NO. 2
NORTHEAST WINGWALL
PLAN
SCALE: $\frac{3}{8}$ " = 1'-0"



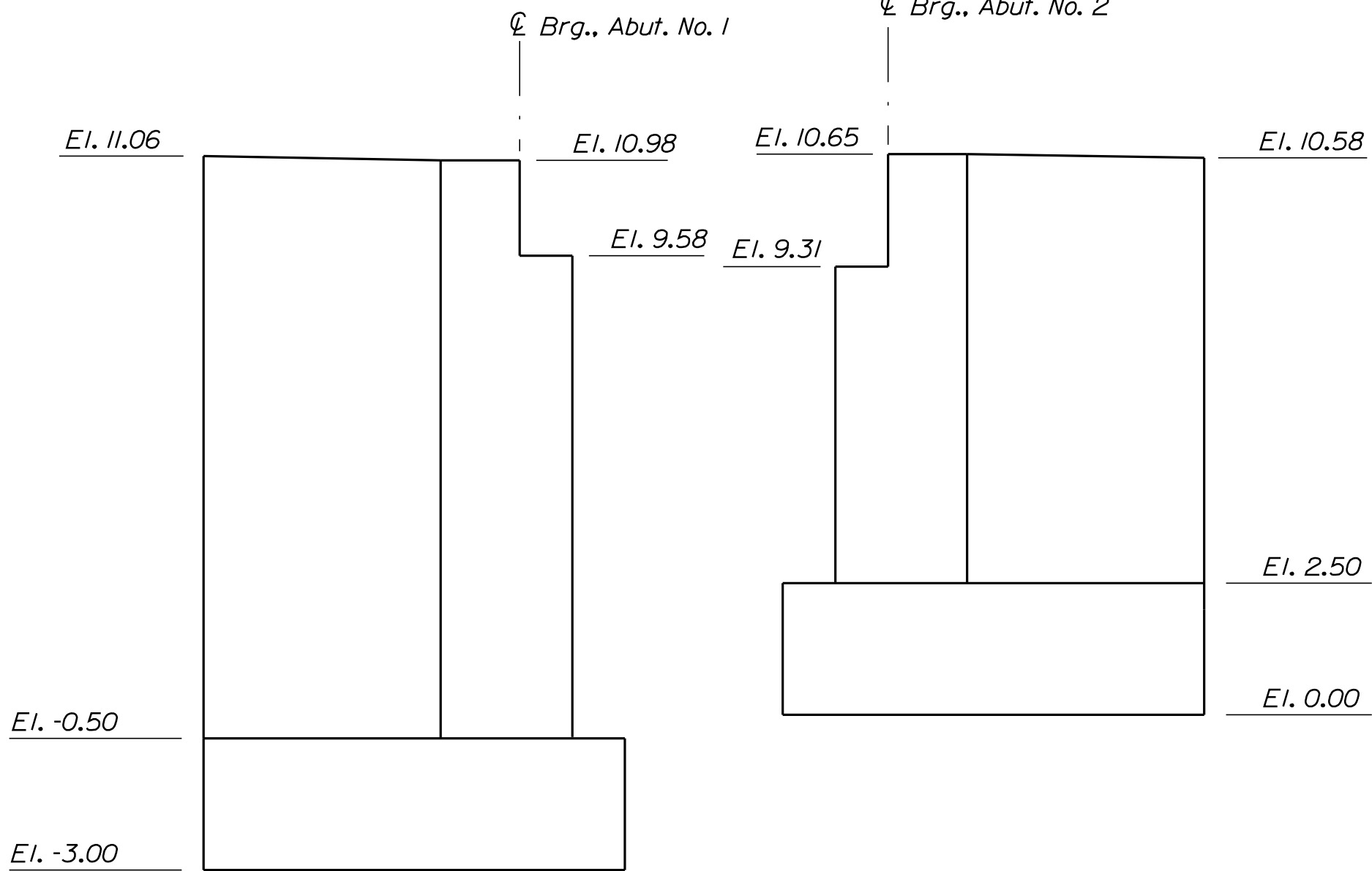
ABUTMENT NO. 2
NORTHEAST WINGWALL
ELEVATION
SCALE: $\frac{3}{8}$ " = 1'-0"



ABUTMENT NO. 1
NORTHWEST WINGWALL
ELEVATION
SCALE: $\frac{3}{8}$ " = 1'-0"



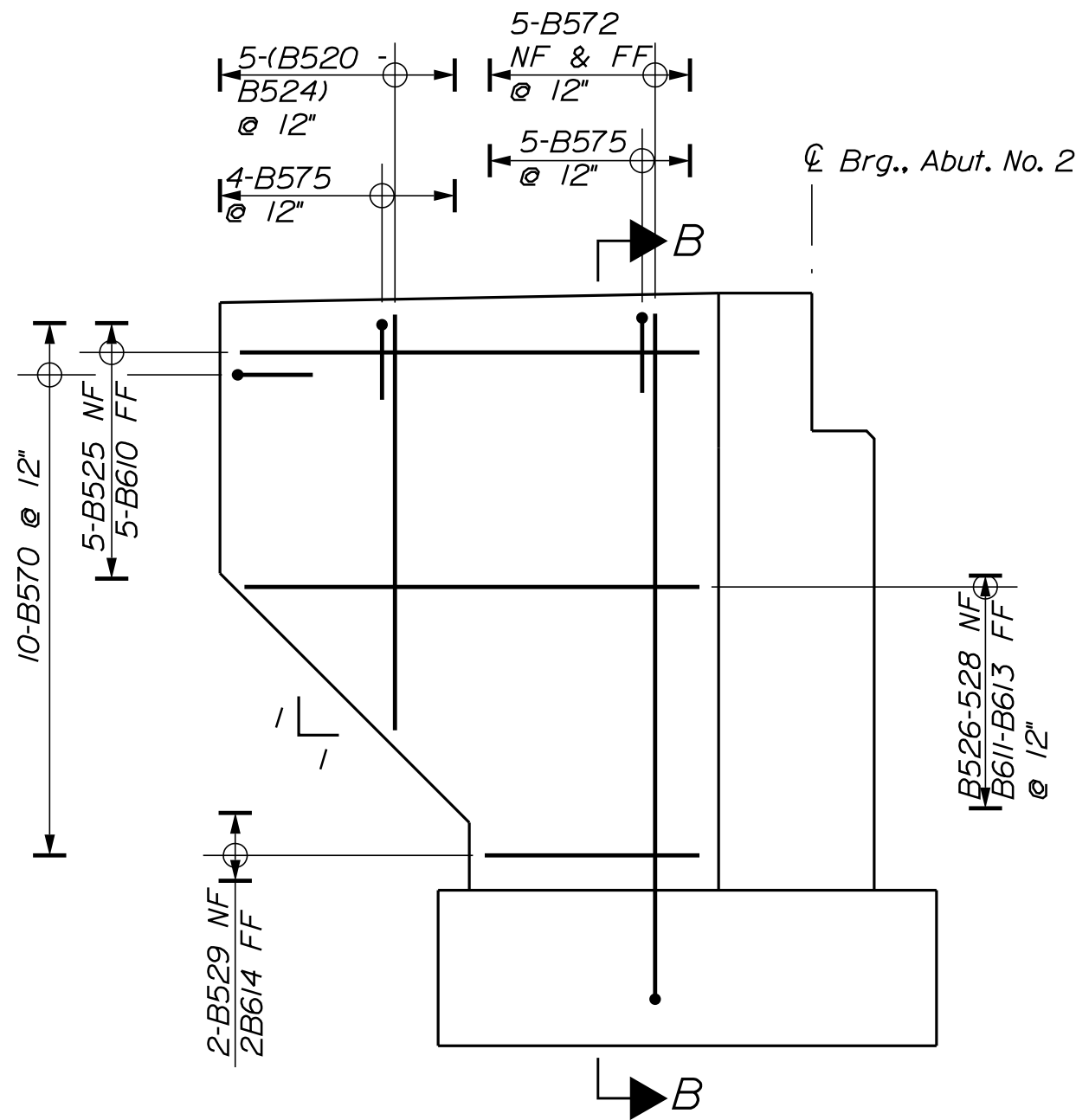
SECTION A-A
SCALE: $\frac{3}{8}$ " = 1'-0"



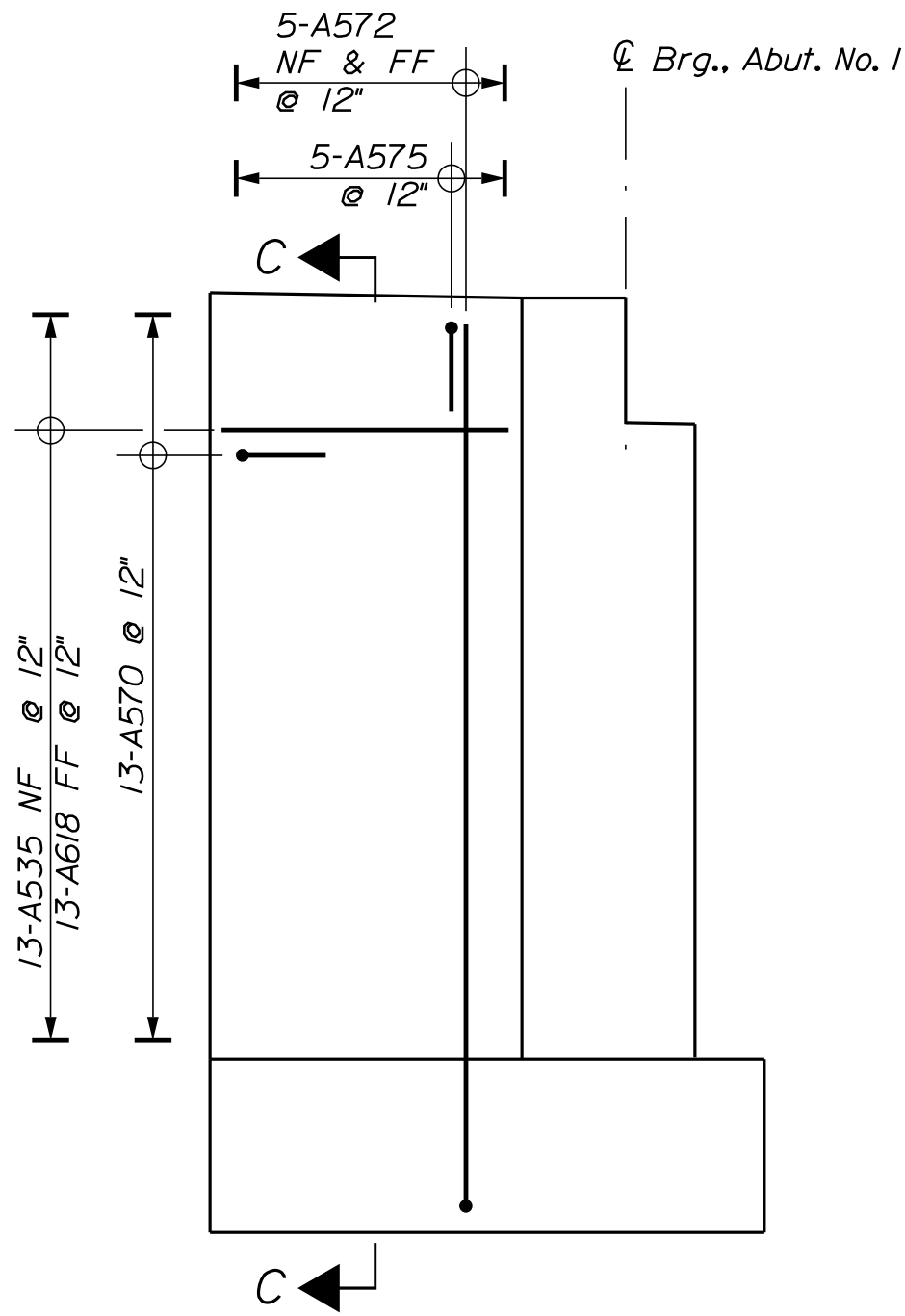
ABUTMENT NO. 1
SW WINGWALL
ELEVATION
SCALE: $\frac{3}{8}$ " = 1'-0"

ABUTMENT NO. 2
SE WINGWALL
ELEVATION
SCALE: $\frac{3}{8}$ " = 1'-0"

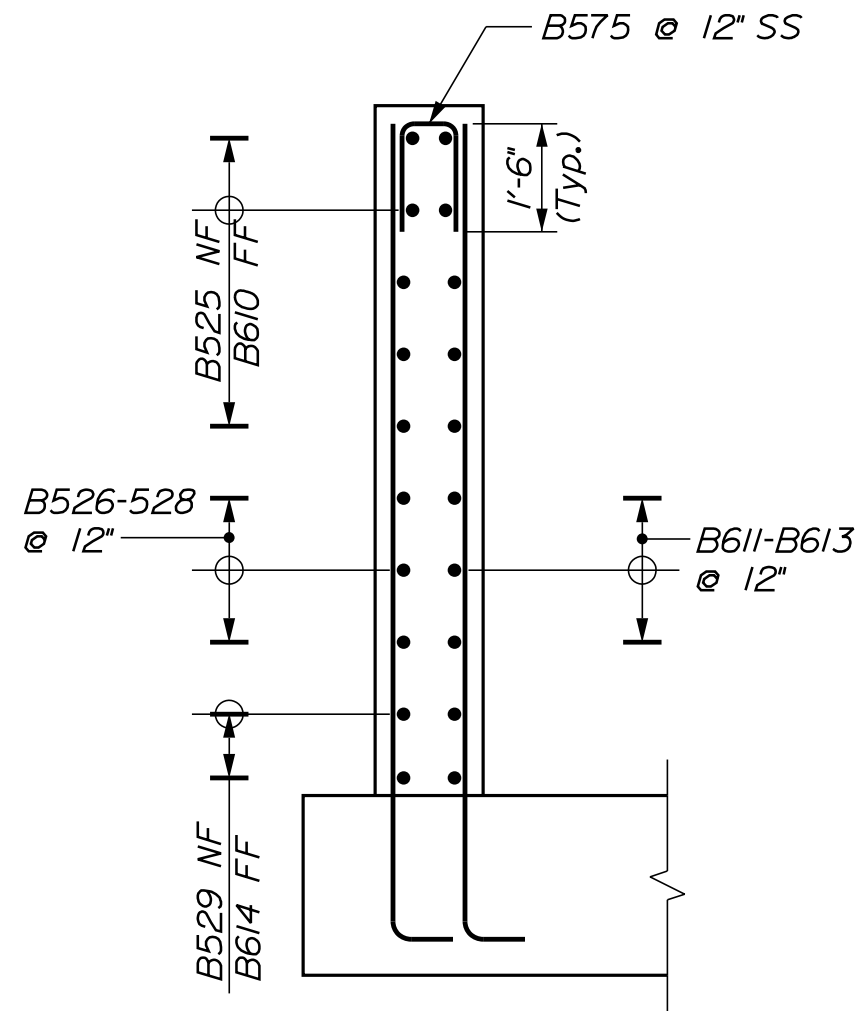
CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT HANCOCK COUNTY	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SR-1930(510)	BRIDGE NO. 3663	WIN 19305.00	BRIDGE PLANS
	PROJ. MANAGER L. TIMBERLAKE DESIGN-DETAILED TUC/BGP CHECKED-REVIEWED GME/CTA DESIGNS-DETAILED GME/CTA REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES DATE 7/10/2018 BY DPD RSB/TSB SIGNATURE 11168 P.E. NUMBER July 18, 2018 DATE				
SHEET NUMBER 20 OF 69					



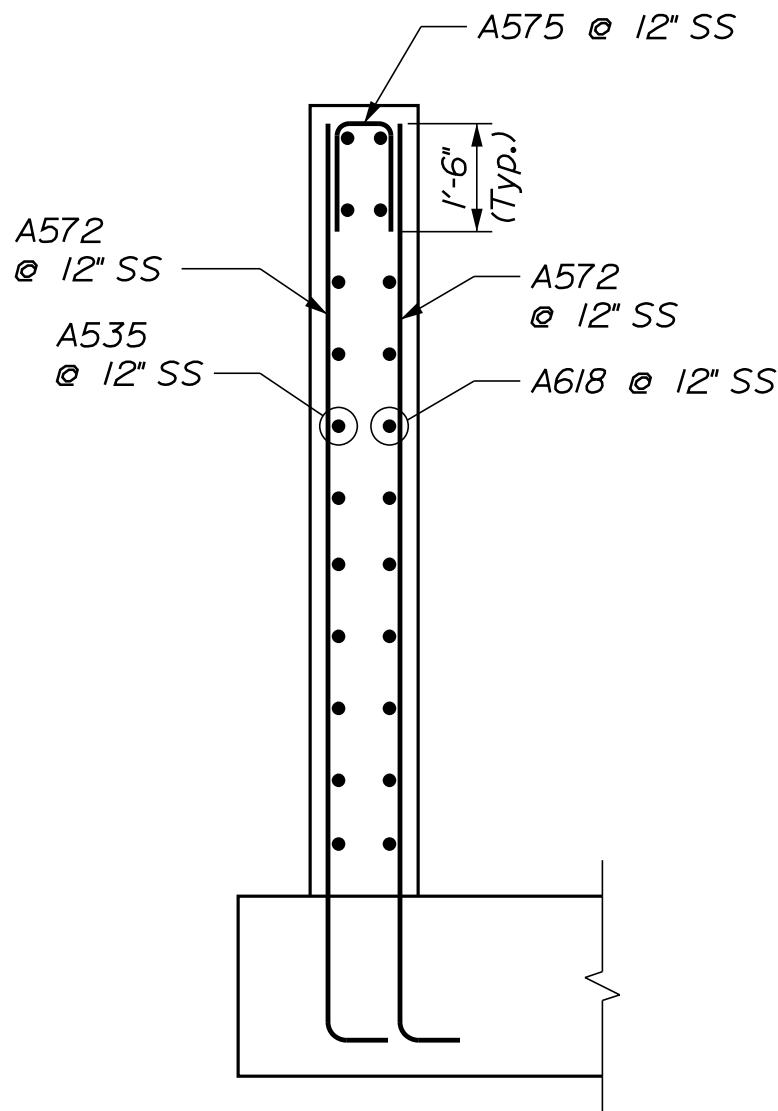
ABUTMENT NO. 2
NE WINGWALL
ELEVATION
SCALE: 3/8" = 1'-0"



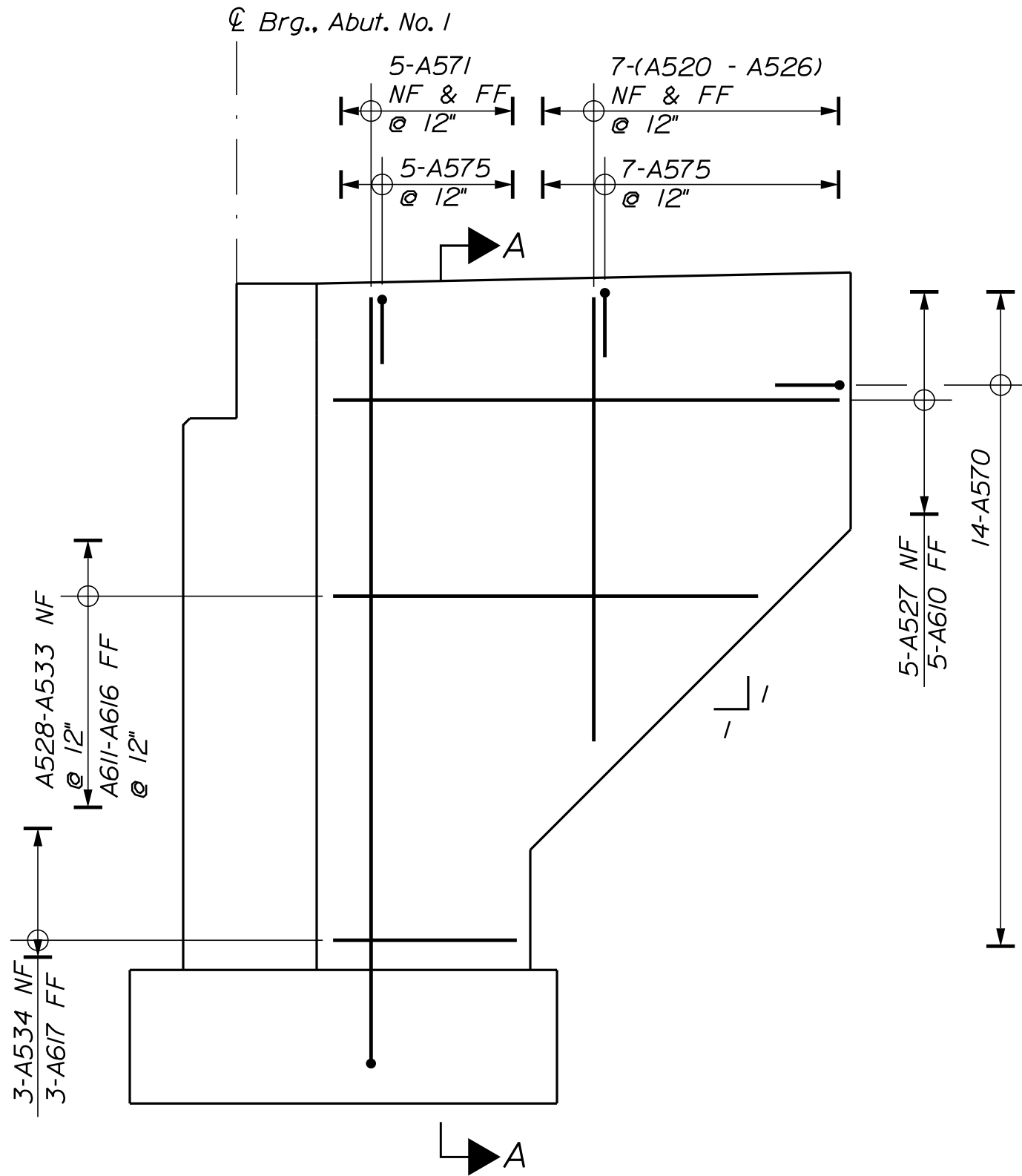
ABUTMENT NO. 1
SW WINGWALL
ELEVATION
SCALE: 3/8" = 1'-0"



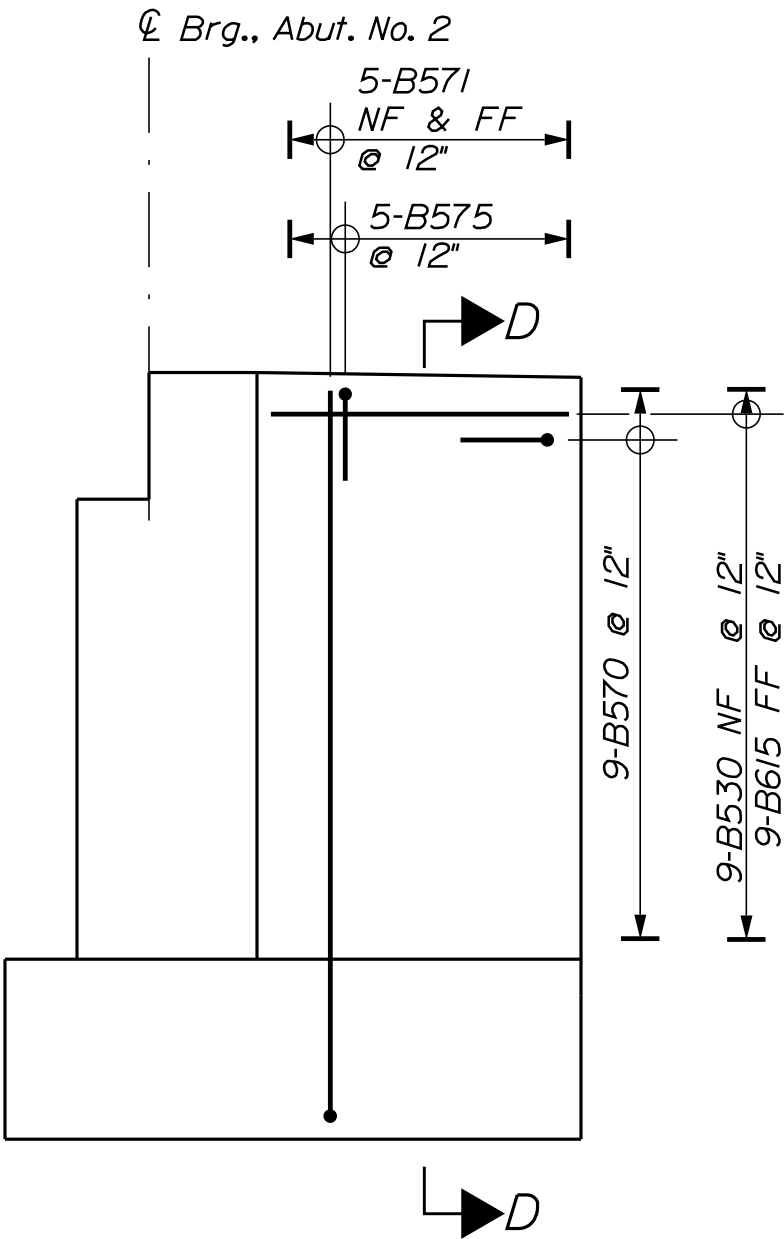
SECTION B-B
(Footing Reinforcing Not Shown for Clarity)
SCALE: 3/8" = 1'-0"



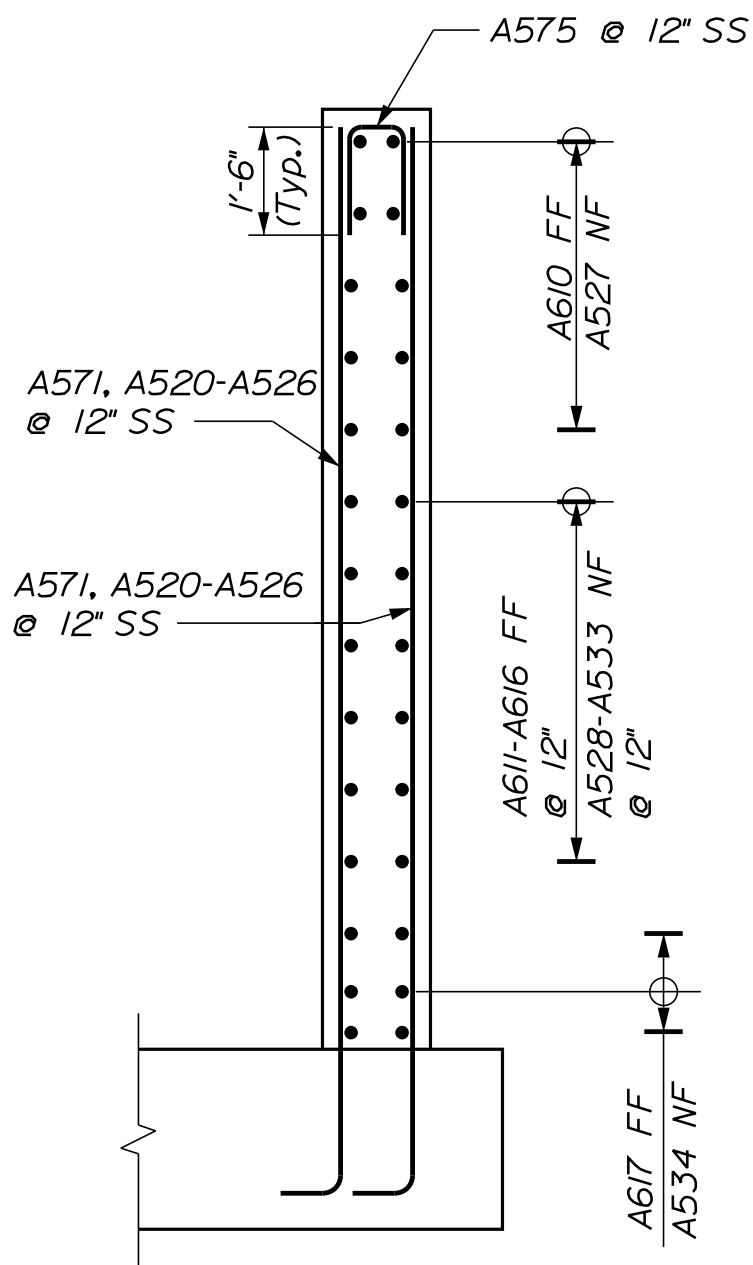
SECTION C-C
(Footing Reinforcing Not Shown for Clarity)
SCALE: 3/8" = 1'-0"



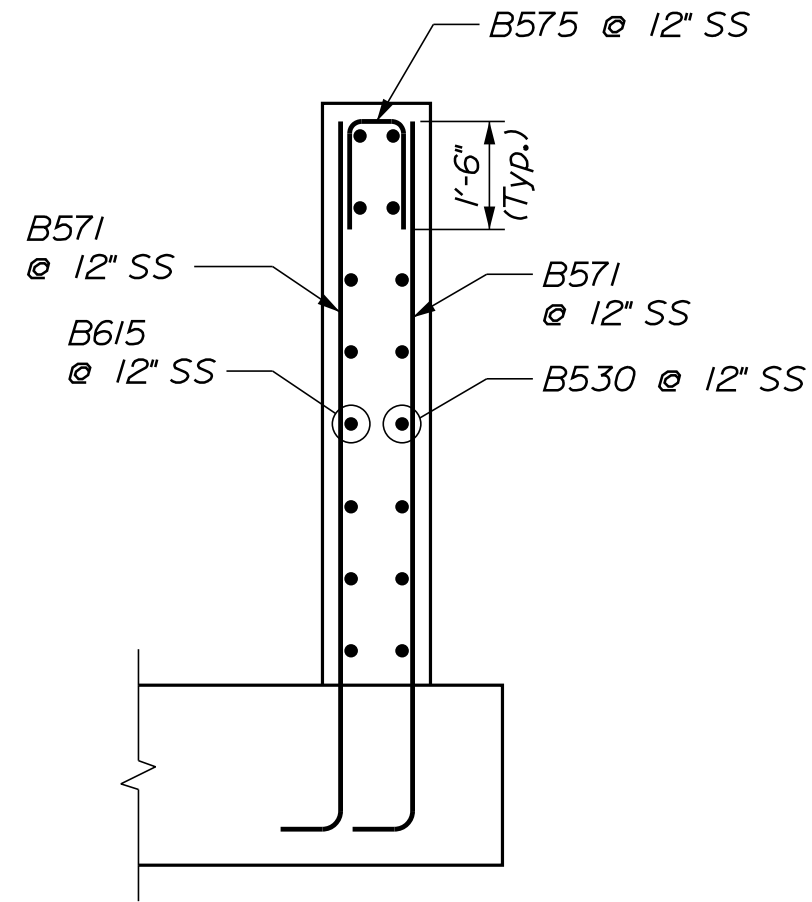
ABUTMENT NO. 1
NW WINGWALL
ELEVATION
SCALE: 3/8" = 1'-0"



ABUTMENT NO. 2
SE WINGWALL
ELEVATION
SCALE: 3/8" = 1'-0"



SECTION A-A
(Footing Reinforcing Not Shown for Clarity)
SCALE: 3/8" = 1'-0"



SECTION D-D
(Footing Reinforcing Not Shown for Clarity)
SCALE: 3/8" = 1'-0"

SHEET NUMBER

21

OF 69

CLARK BRIDGE
TREMONT ROAD OVER MARSHALL BROOK
TREMONT
HANCOCK COUNTY
WINGWALL
REINFORCING



PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	TJC/ROP	DPD	7/10/2018
CHECKED-REVIEWED	GME/CTA	RSB/TSB	7/10/2018
DESIGN-DETAILED02			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

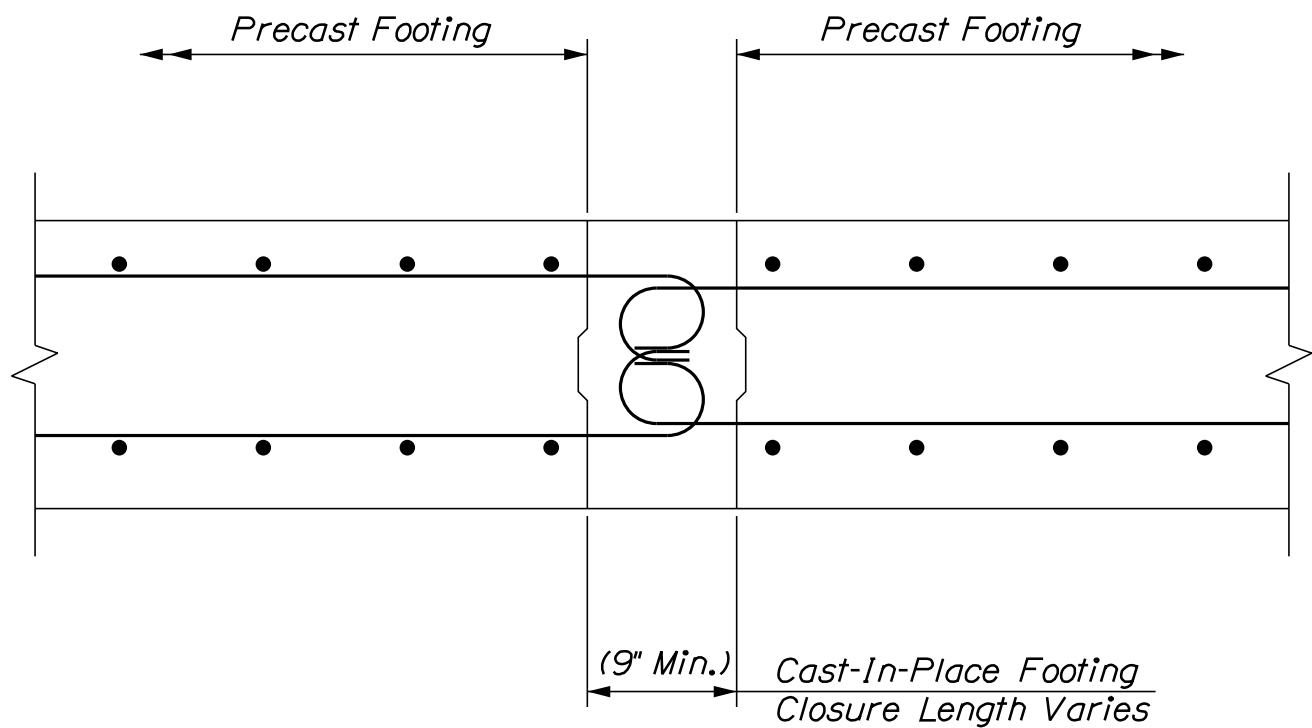
SIGNATURE
11168
P.E. NUMBER
July 18, 2018
DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
SR-1930(510)
BRIDGE NO. 3663
WIN
19305.00
BRIDGE PLANS

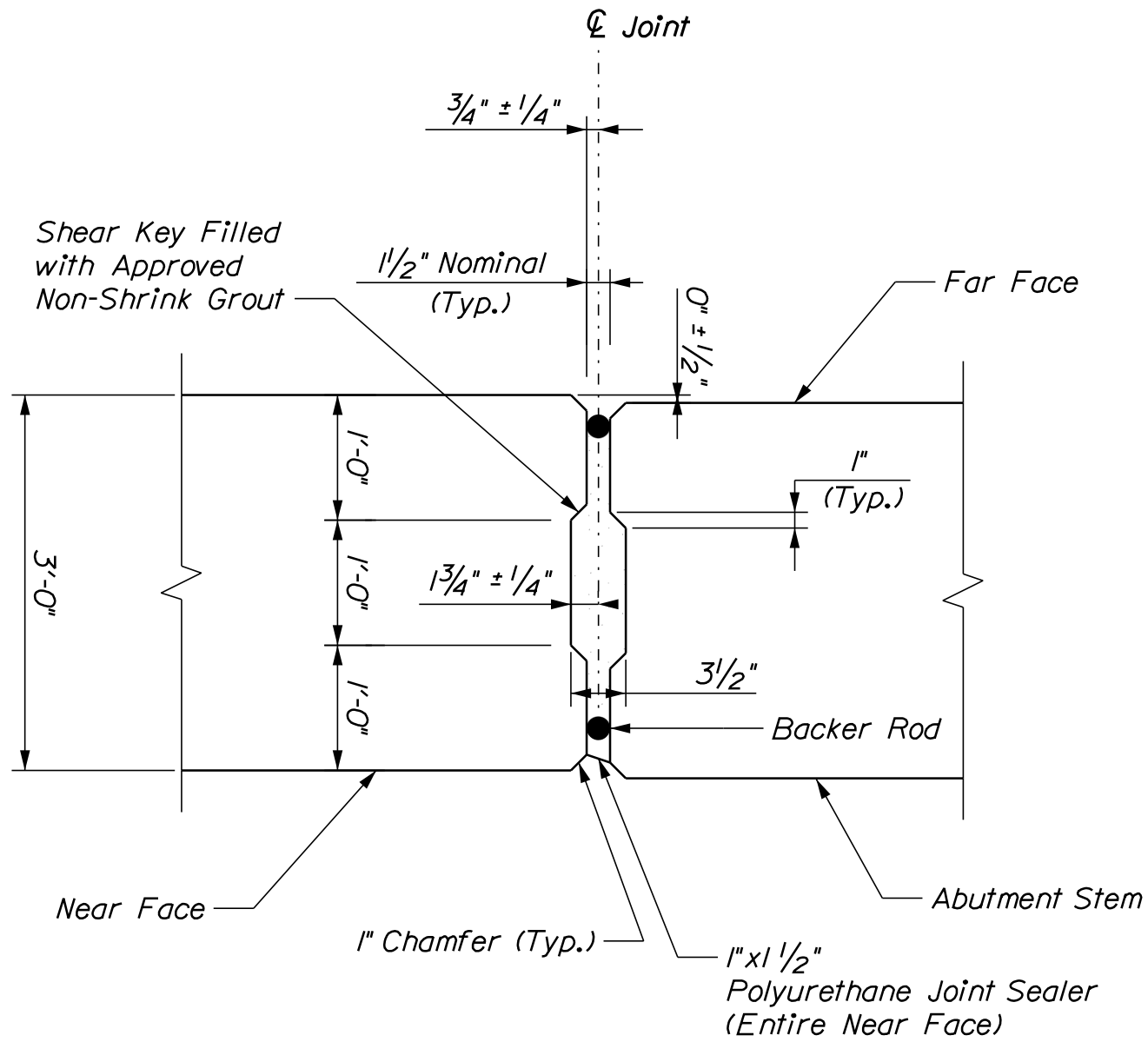
Date:9/6/2018

Username: PDonovan

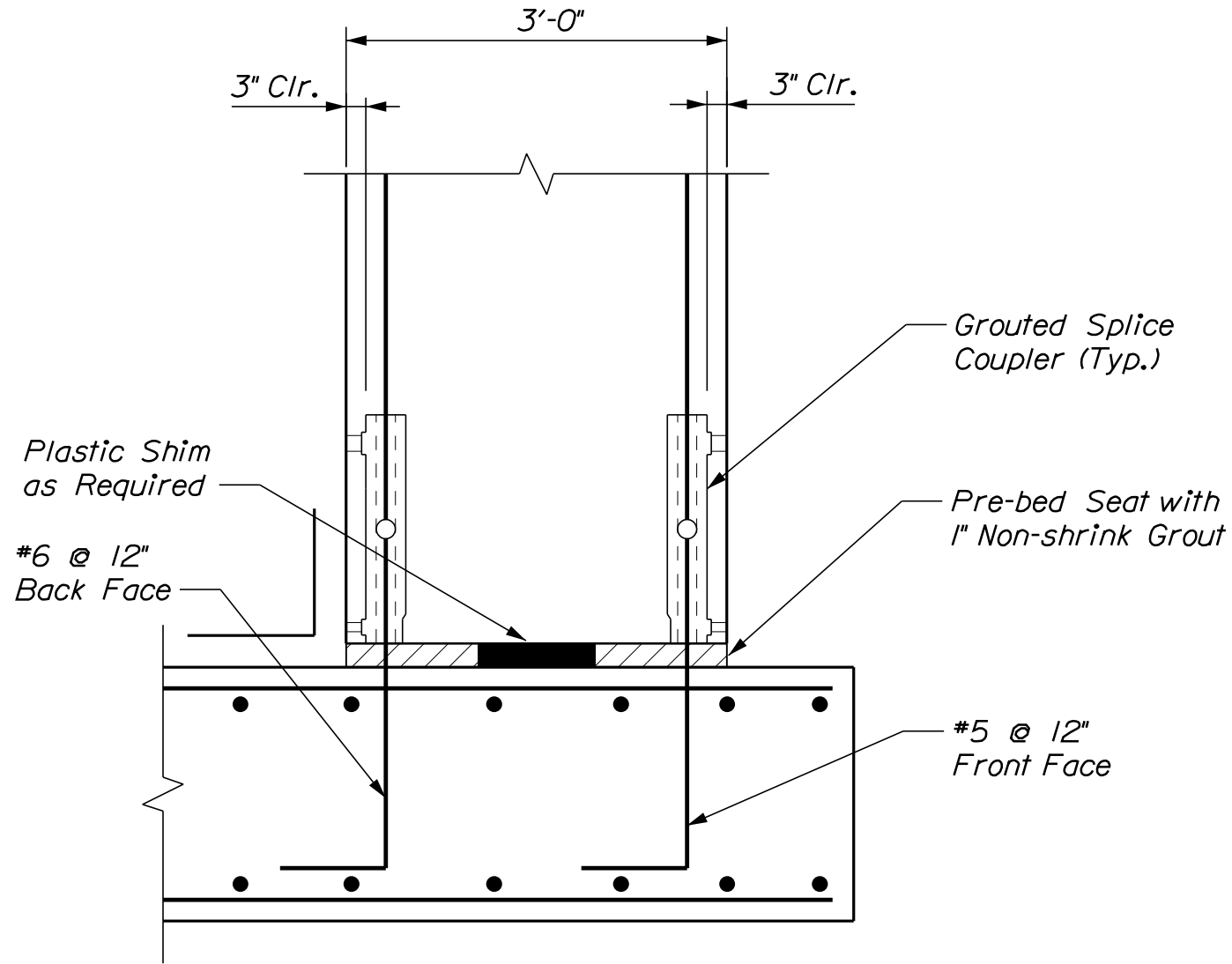
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PRECAST FOOTING
CLOSURE POUR DETAIL
SCALE: 3/4" = 1'-0"



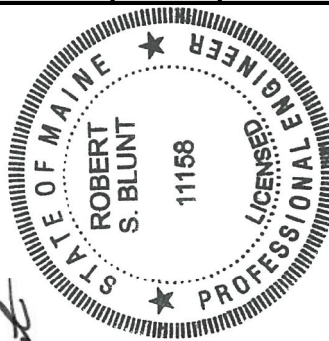
ABUTMENT
STEM VERTICAL JOINT
SCALE 3/4" = 1'-0"



ABUTMENT STEM
TO FOOTING
CONNECTION DETAIL
SCALE 3/4" = 1'-0"

PRECAST NOTES

- At the Contractor's option, the abutments and wingwalls may be constructed of precast concrete elements. These plans include details and general layout information for precast abutment stems, wingwalls, and footings. The Contractor shall determine the final location of all joints and shall submit them for approval as part of the fabrication drawing submittal. All costs for the precast concrete and reinforcing steel shall be included in the appropriate concrete and reinforcing steel items. See Special Provision 502 for additional information.
- The key in concrete construction joints shall be monolithic and continuous for the full length of the joint.
- All costs for Grouting Materials used in precast members shall be incidental to related contract items.
- Mechanical Grouted Splices shall be used to provide moment connections between members as shown in the plans. Grouted splices shall develop a minimum of 125% of the specified yield strength of the reinforcing bar being spliced.
- Vertical joints between abutment stems, wingwalls, and footings shall be staggered a minimum of six inches. All joint details shall be shown on the Fabrication Drawings.
- At each joint, apply one layer of Sheet Waterproofing Membrane in accordance with Section 508 of the Standard Specifications. Sheet Waterproofing Membrane shall extend 12 inches beyond both sides of the joint.
- Length of precast footing sections shall be based on shipping weight and size requirements. The precast sections shall be adequate to support, as a minimum, the dead load of the Abutment and Wingwall Stems. The cast-in-place footing closure pour shall be completed to support the total weight of the structure and live load.
- No vertical joints shall be allowed within 6' from the edge of any superstructure anchor rod.
- Pre-bed precast footings with non-shrink grout that is thicker than the shim stack. The non-shrink grout shall be an appropriate product from the MaineDOT Qualified Products list and shall be approved by the Resident.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SR-1930(510)		BRIDGE NO. 3663 WIN 19305.00		BRIDGE PLANS	
		SIGNATURE 11166		P.E. NUMBER July 16, 2018		DATE	
PROJ. MANAGER	L. TIMBERLAKE	BY	DATE	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGN-DETAILED	REVISIONS 1
		DPD	7/10/2018				REVISIONS 2
		RSB/TSB	7/10/2018				REVISIONS 3
							REVISIONS 4
							FIELD CHANGES

CLARK BRIDGE
TREMONT ROAD OVER MARSHALL BROOK
TREMONT
HANCOCK COUNTY

PRECAST DETAILS

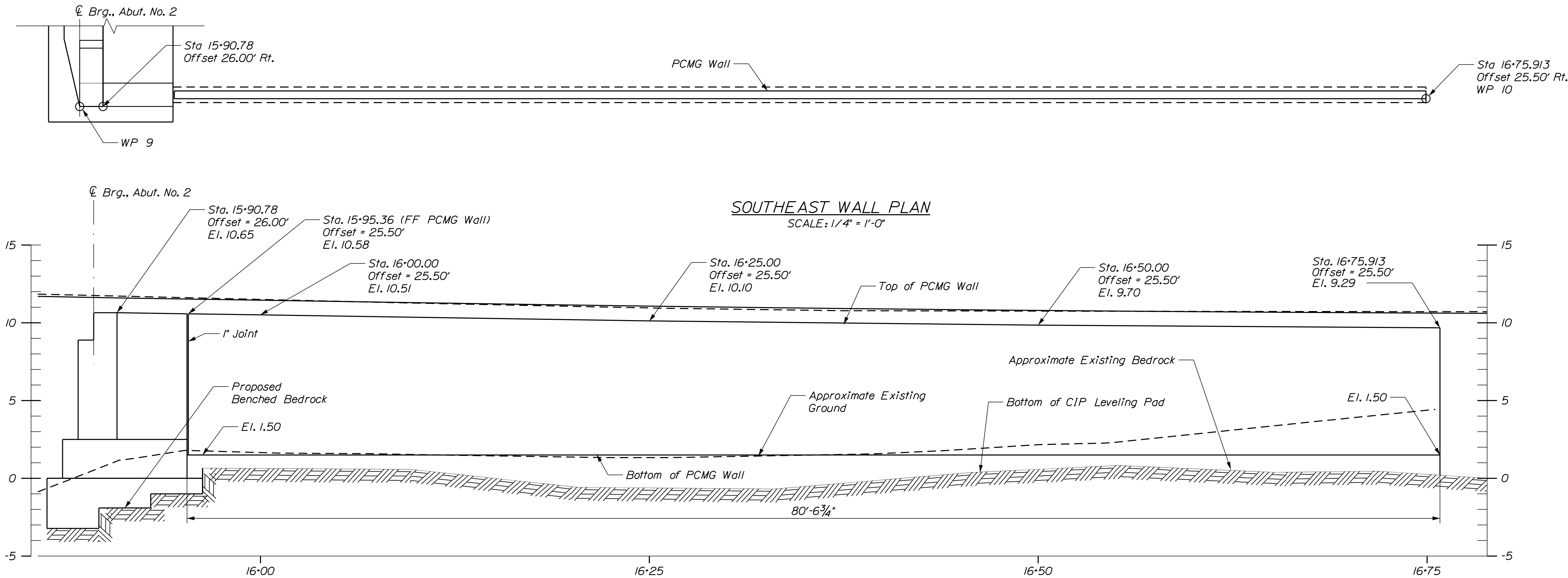
SHEET NUMBER
22
OF 69

Date: 9/6/2018

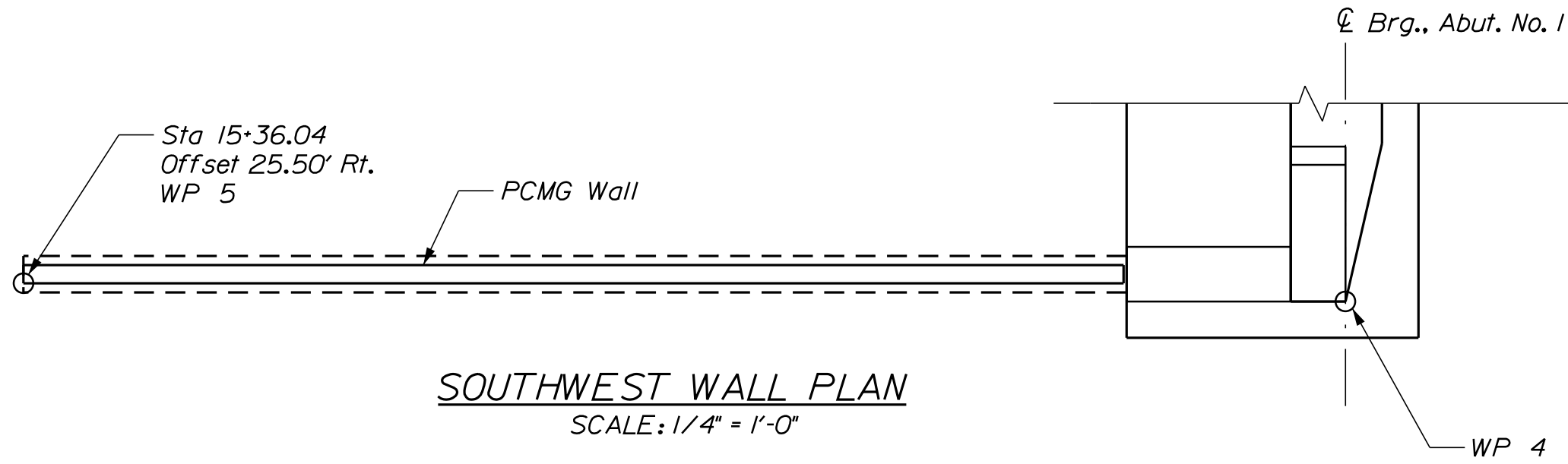
Username: PDonovan

Division: BRIDGE

Filename: ... \023_PCMG Ret_Wall_02.dgn

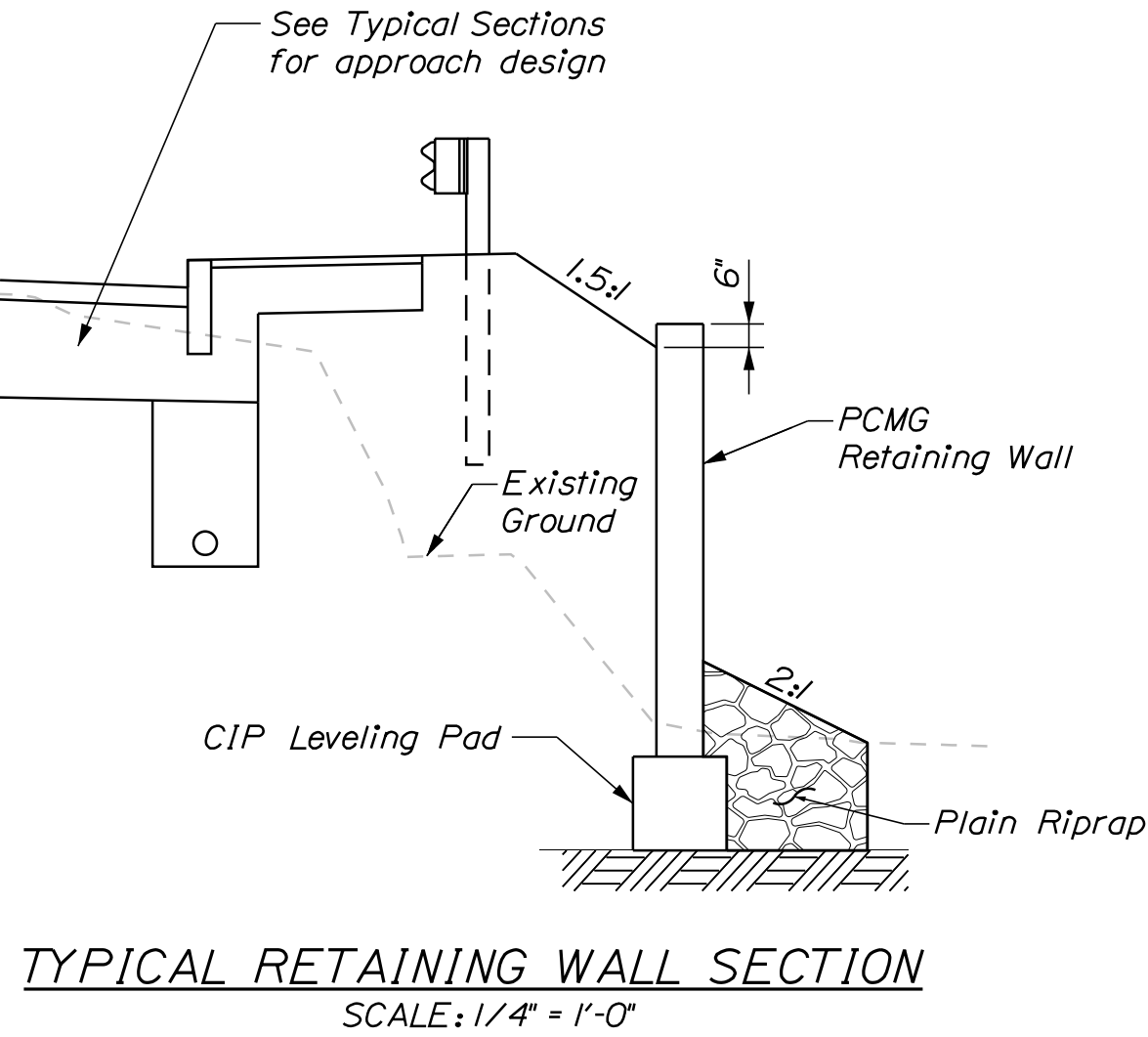


SOUTHEAST WALL ELEVATION
SCALE: 1/4" = 1'-0"



SOUTHWEST WALL PLAN
SCALE: 1/4" = 1'-0"

SOUTHWEST WALL ELEVATION
SCALE: 1/4" = 1'-0"



TYPICAL RETAINING WALL SECTION
SCALE: 1/4" = 1'-0"

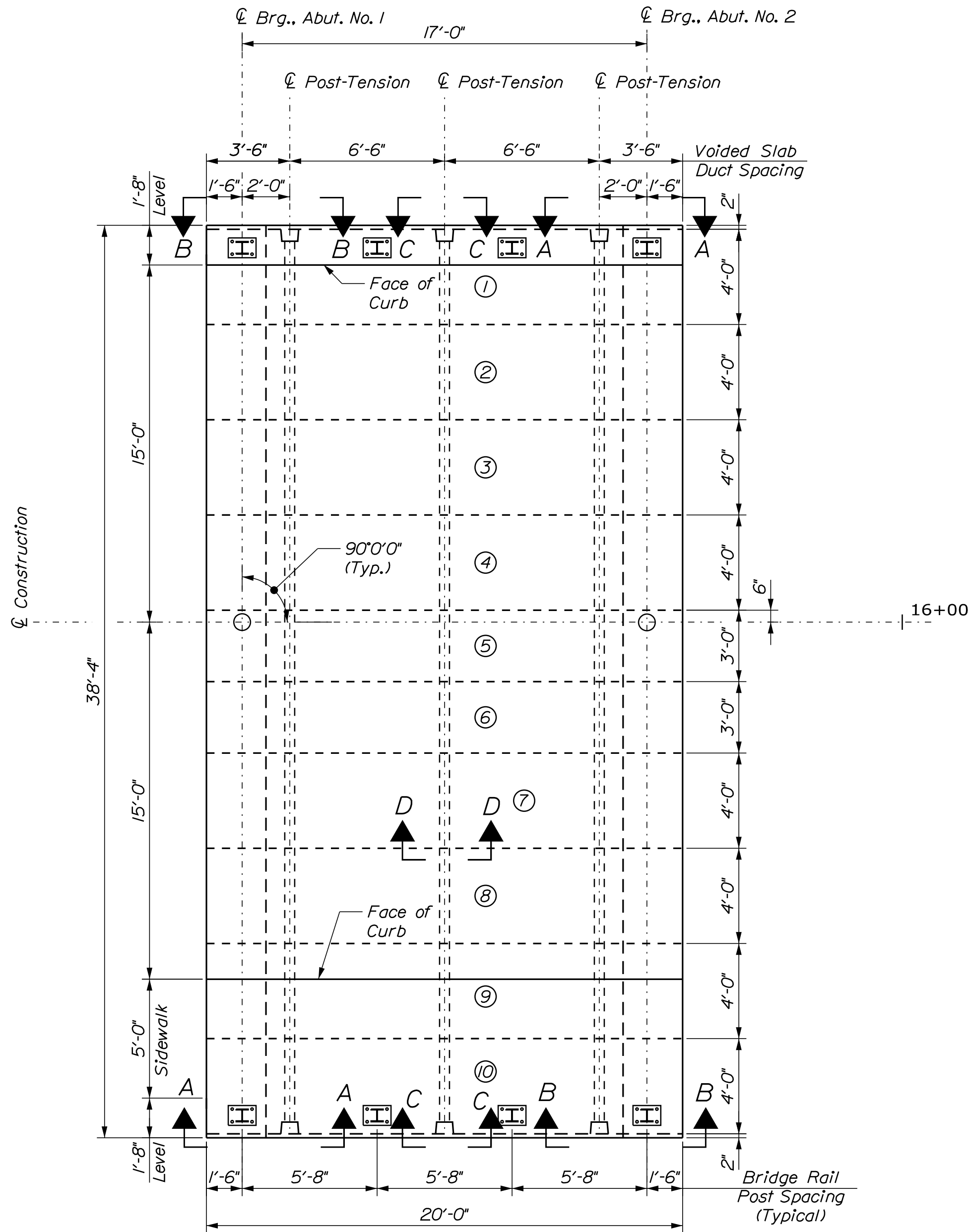
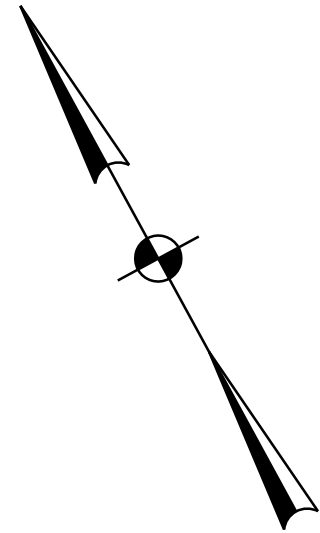
**PREFABRICATED CONCRETE
MODULAR GRAVITY WALL NOTES**

1. The Contractor shall provide a Prefabricated Concrete Modular Gravity (PCMG) Wall in accordance with Section 674. The PCMG Wall shall be designed and stamped by a Registered Professional Engineer and the design shall be submitted to the Resident for review. Plan details are shown for estimating purposes only.
2. The precast units shall be one of the following, or equal:

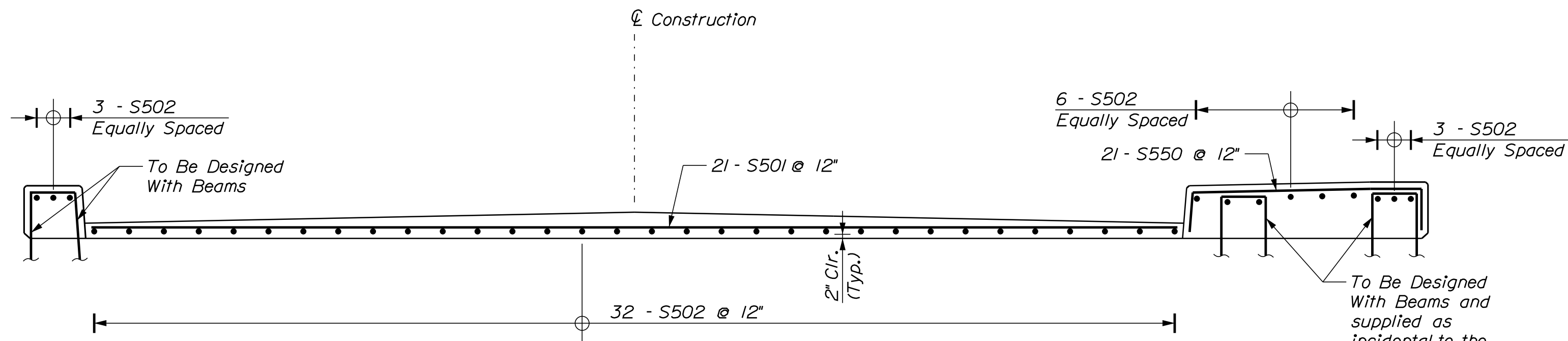
"T-Wall" as manufactured by a licensed manufacturer of Neel Company

"DoubleWal" as manufactured by a licensed manufacturer of DoubleWal Corp., Plainville, Connecticut.
3. The factored bearing pressure for PCMG Walls shall not exceed the factored bearing resistance of 12 ksf for the strength limit state. The factored bearing pressure for the service limit state shall not exceed the factored bearing resistance of 20 ksf.
4. All reinforcing in the PCMG wall shall be stainless steel in accordance with Standard Specification Section 503.
5. Costs for any Cofferdams required for the PCMG Wall installation shall be included in Pay Item No. 674.10, Prefabricated Concrete Modular Gravity Wall.
6. The PCMG Wall shall be backfilled as required in the project's Geotechnical Report Recommendations, dated March 2016.
7. The PCMG Wall shall have an exposed aggregate finish.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SR-1930(510)		BRIDGE NO. 3663 WIN 19305.00 BRIDGE PLANS	
CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT HANCOCK COUNTY		PCMG RETAINING WALL ELEVATIONS AND DETAILS		SHEET NUMBER 23 OF 69	
PROJ. MANAGER L. TIMBERLAKE		DESIGN-DETAILED JUL/2018	CHECKED-REVIEWED RSC/TSB	SIGNATURE ROBERT S. BLUNT 11168	DATE JULY 18, 2018
DESIGN-DETAILED JUL/2018		DESIGN-DETAILED JUL/2018	DESIGN-DETAILED JUL/2018	REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4	FIELD CHANGES



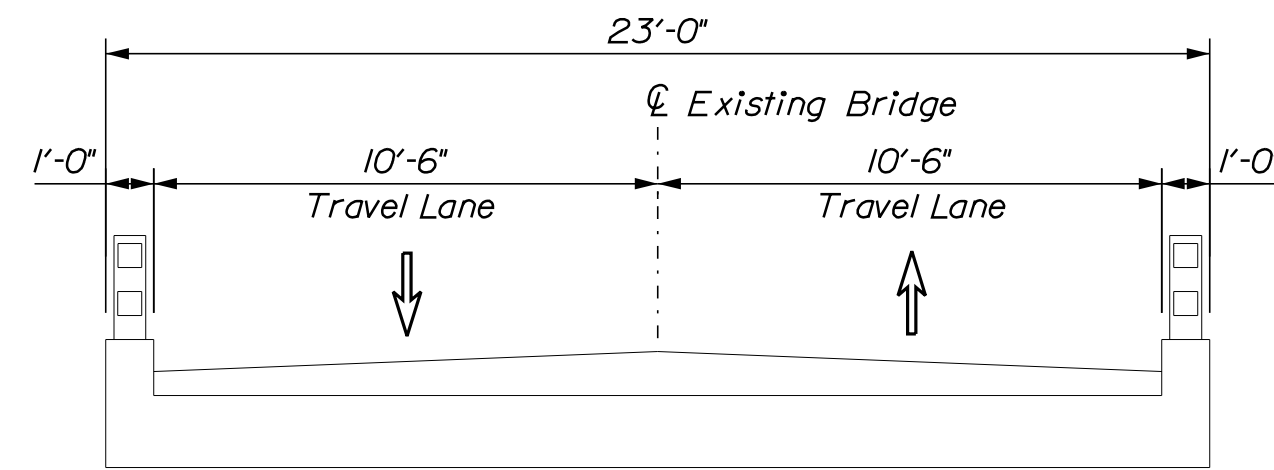
FRAMING PLAN
Scale: 1/4" = 1'-0"



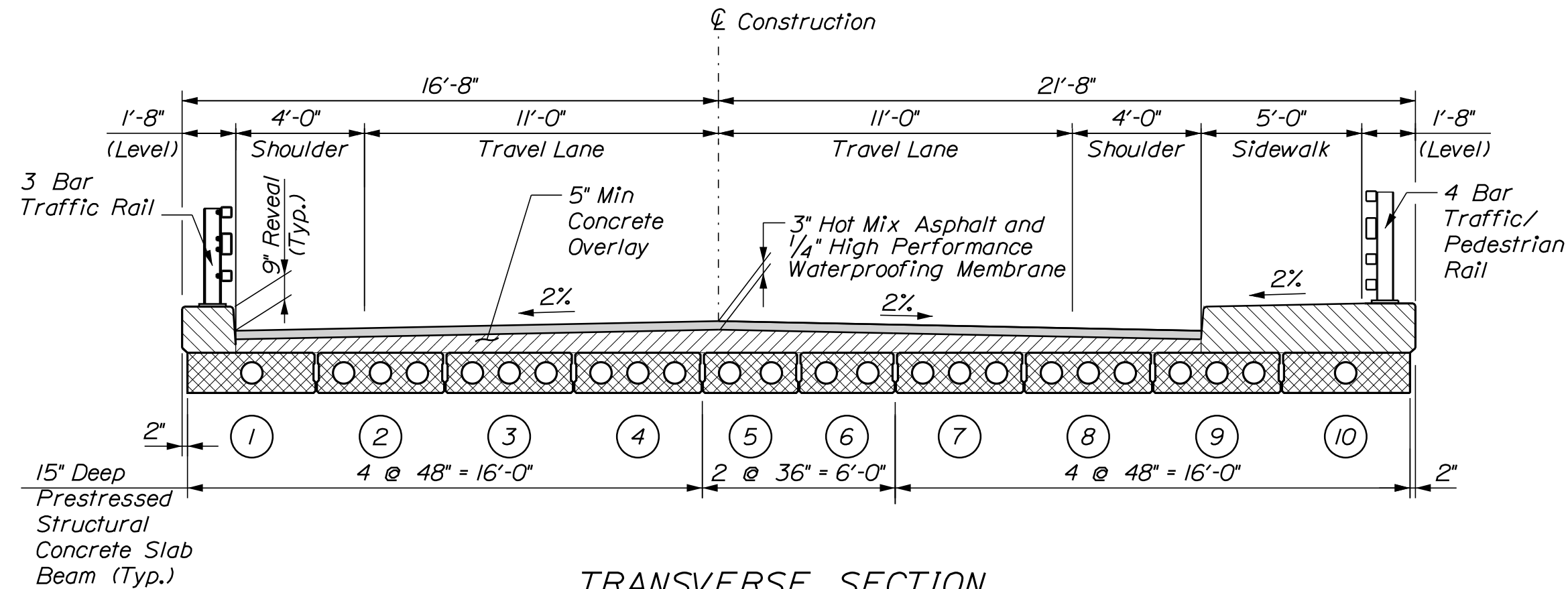
CONCRETE OVERLAY REINFORCING TYPICAL SECTION
(Looking Upstation)
Scale: 3/8" = 1'-0"

PRECAST CONCRETE SUPERSTRUCTURE NOTES

1. The general size and layout of the precast concrete superstructure is shown in the plans. The Contractor shall be responsible for the final design and detailing of the precast concrete voided slabs and all details shall be provided in the fabrication calculations and drawings. See Special Provision 535 for additional requirements.
2. The top surface of the upper flange of the prestressed beams shall be raked to a surface roughness of +/- 1/4 inch.
3. The drilling of holes in the prestressed beams and the use of poweractuated tools on the beams will not be permitted.
4. Neoprene pads shall be either polychloroprene or natural polyisoprene of 50±5 Shore A durometer hardness, and shall conform to the requirements of Division 2, Section 18.2 of AASHTO Standard Specifications for Highway Bridges. Neoprene pads will not be paid for directly, but will be considered incidental to related Contract items.
5. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
6. Post-tensioning shall be covered by a seamless polypropylene sheath, with corrosion inhibiting grease between the strands and sheath, for the full length of the strand except at the anchorage location.
7. The Contractor shall calibrate the jacking equipment as necessary to provide an anchorage of 38 to 41 kips after setting losses in each 0.6" diameter post-tensioning strand.
8. Screed rails shall be installed to the elevation shown on the profile, adjusted for wearing course thickness and cross slope.



EXISTING BRIDGE SECTION
Scale: 1/4" = 1'-0"



TRANSVERSE SECTION
(Looking Upstation)
(Reinforcing Not Shown)
Scale: 1/4" = 1'-0"

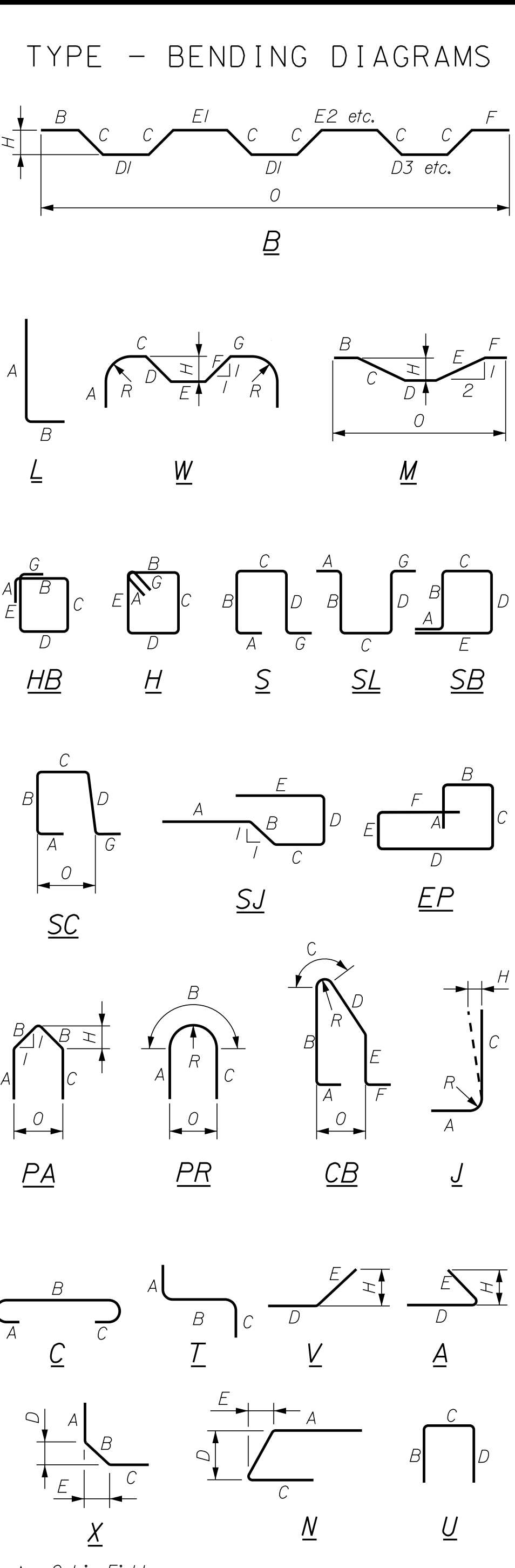
NOTE:

1. See Superstructure Details (1 of 2) Sheet for Section A-A through Section D-D.



PROJ. MANAGER	L. TIMBERLAKE	BY	DPD	DATE	7/10/2018	SIGNATURE	11168	P.E. NUMBER	July 18, 2018	DATE
DESIGN-DETAILED	CHK/CRP	RSB/TSB	7/10/2018							
CHECKED-REVIEWED	ONE/CIA									
DESIGNS-DETAILED										
REVISIONS 1										
REVISIONS 2										
REVISIONS 3										
REVISIONS 4										
FIELD CHANGES										

STRAIGHT BARS								BENT BARS																	
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION			
A501	11	37'-10"	Abutment 1					A550	47	12'-11"	L	12'-0"	0'-11"									Abutment 1			
A502	12	45'-6"						A551	11	7'-8"	X	2'-9"	3'-5"	1'-6"	1'-0"	3'-4"									
A503	1	42'-11"						A552	11	8'-8"	X	2'-9"	4'-5"	1'-6"	1'-0"	4'-4"									
A504	18	47'-6"						A553	39	4'-11"	U		1'-6"	1'-11"	1'-6"										
A505	49	7'-6"						A554	2	4'-8"	U		1'-6"	1'-8"	1'-6"										
A510	18	4'-1"						A555	2	4'-6"	U		1'-6"	1'-6"	1'-6"										
A520	2	9'-8"						A556	2	4'-3"	U		1'-6"	1'-3"	1'-6"										
A521	2	8'-8"						A557	2	4'-0"	U		1'-6"	1'-0"	1'-6"										
A522	2	7'-8"						A560	2	2'-7"	U		0'-10"	0'-11"	0'-10"										
A523	2	6'-8"						A561	7	2'-11"	U		1'-0"	0'-11"	1'-0"										
A524	2	5'-8"						A562	6	3'-11"	U		1'-6"	0'-11"	1'-6"										
A525	2	4'-8"						A563	2	5'-0"	N	0'-10"	2'-8"	1'-6"											
A526	2	4'-1"						A570	27	3'-11"	U		1'-6"	0'-11"	1'-6"										
A527	5	9'-6"						A571	10	15'-8"	L	14'-10"	0'-10"												
A528	1	9'-0"						A572	10	14'-3"	L	13'-5"	0'-10"												
A529	1	8'-0"						A573	2	6'-1"	L	2'-9"	3'-4"												
A530	1	7'-0"						A574	4	5'-1"	L	2'-9"	2'-4"												
A531	1	6'-0"						A575	17	4'-3"	U		1'-8"	0'-11"	1'-8"										
A532	1	5'-0"						A650	22	3'-3"	L	1'-9"	1'-6"												
A533	1	4'-0"						A651	2	4'-6"	L	1'-9"	2'-9"												
A534	3	3'-6"						A652	4	5'-0"	L	1'-9"	3'-3"												
A535	13	4'-0"						A850	47	12'-11"	L	12'-0"	0'-11"												
A601	49	7'-6"							B550	47	9'-7"	L	8'-9"	0'-10"										Abutment 2	
A610	5	9'-6"							B551	8	8'-8"	X	2'-9"	4'-5"	1'-6"	1'-0"	4'-4"								
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A612	1	8'-0"							B553	39	4'-11"	U		1'-6"	1'-11"	1'-6"									
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A615	1	5'-0"							B555	2	4'-6"	U		1'-6"	1'-6"	1'-6"									
A616	1	4'-0"							B556	2	4'-3"	U		1'-6"	1'-3"	1'-6"									
A617	3	3'-6"						B557	2	4'-0"	U		1'-6"	1'-0"	1'-6"										
A618	13	4'-0"						B560	2	2'-7"	U		0'-10"	0'-11"	0'-10"										
A801	25	3'-0"						B561	7	2'-11"	U		1'-0"	0'-11"	1'-0"										
								B562	6	3'-11"	U		1'-6"	0'-11"	1'-6"										
B501	8	37'-10"	Abutment 2						B563	2	5'-0"	N	0'-10"	2'-8"	1'-6"	1'-6"	2'-3"								
B502	9	45'-6"							B570	19	3'-11"	U		1'-6"	0'-11"	1'-6"									
B503	1	42'-11"							B571	10	10'-10"	L	10'-0"	0'-10"											
B504	18	47'-6"							B572	10	12'-3"	L	11'-5"	0'-10"											
B505	49	7'-6"							B573	2	6'-1"	L	2'-9"	3'-4"											
B510	18	4'-1"						B574	4	5'-1"	L	2'-9"	2'-4"												
B520	2	3'-8"						B575	15	4'-3"	U		1'-8"	0'-11"	1'-8"										
B521	2	4'-9"						B650	16	3'-3"	L	1'-9"	1'-6"												
B522	2	5'-9"						B651	2	4'-6"	L	1'-9"	2'-9"												
B523	2	6'-9"						B652	4	5'-0"	L	1'-9"	3'-3"												
B524	2	7'-9"						B850	47	9'-7"	L	8'-9"	0'-10"												
B525	5	7'-6"							S550	21	8'-1"	S		0'-11"	6'-2"	1'-0"							Superstructure		
B526	1	6'-6"																							
B527	1	5'-6"																							
B528	1	4'-6"																							
B529	2	3'-6"																							
B530	9	4'-0"																							
B601	49	7'-6"																							
B610	5	7'-6"																							
B611	1	6'-6"																							
B612	1	5'-6"																							
B613	1	4'-6"																							
B614	2	3'-6"																							
B615	9	4'-0"																							
B801	25	3'-0"																							
S501	21	29'-6"		Superstructure																					
S502	44	19'-6"																							
																			</						

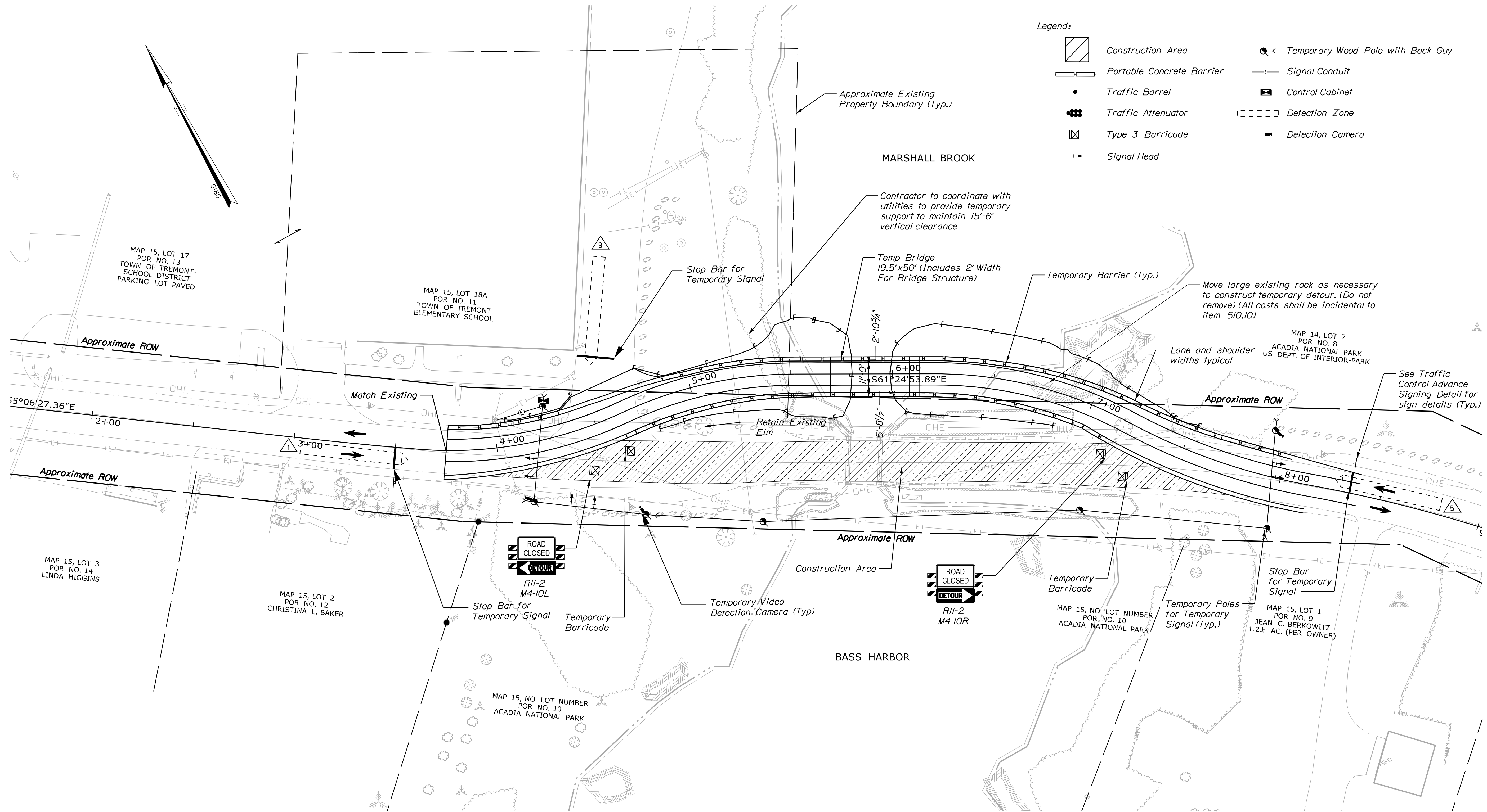
[illegible]

Date:9/6/2018

Username: PDonovan

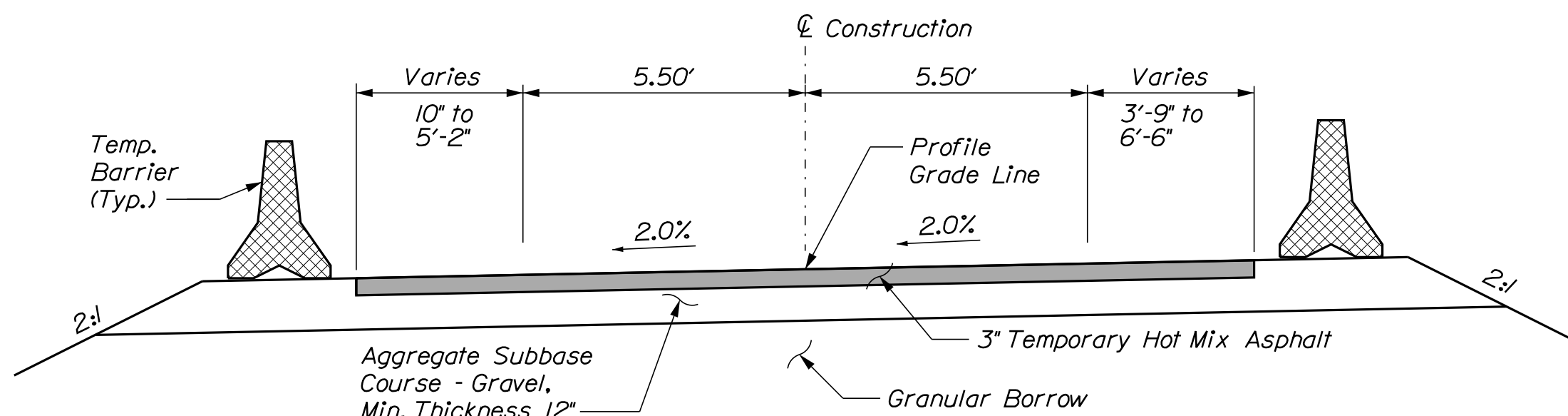
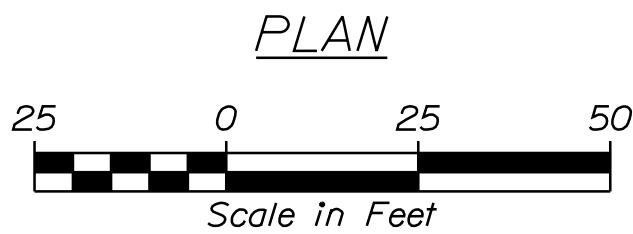
Division: BRIDGE

Filename: ... \plan\set\026_DetourPlan_01.dgn



NOTES

1. All temporary detour and traffic control shown are for illustrative purposes only. The Contractor is responsible for final layout and design. The limits of disturbance shall not be substantially different from the limits shown.
2. See Standard Specification 510 and Special Provision 104 for additional information and requirements.



TEMPORARY DETOUR APPROACH SECTION
Scale: 3/8" = 1'-0"

VERTICAL DATUM NAVD88

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SR-1930(510)		BRIDGE NO. 3663 WIN 19305.00	
CLARK BRIDGE TREMONT ROAD OVER MARSHALL BROOK TREMONT HANCOCK COUNTY		ROADWAY DETOUR PLAN		SHEET NUMBER 26 OF 69	
PROJ. MANAGER L. TIMBERLAKE DESIGN-DETAILED LUC/BOB CHECKED-REVIEWED GME/CJA DESIGN-DETAILED DESIGN-DETAILED REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES		DATE 7/10/2018 BY RSB/TSB DATE 7/10/2018		SIGNATURE 11/68 P.E. NUMBER July 18, 2018 DATE	
PROF. ENGINEER ROBERT S. BLUNT 11168		PROF. ENGINEER ROBERT S. BLUNT 11168		BRIDGE PLANS	

A2,B1,
B2,C1,C2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT
EMITTING DIODES (LED'S) WITH 5" LOUVERED
BACKPLATES WITH YELLOW RETROREFLECTIVE
TAPE ALONG ALL BORDERS

CONSTRUCTION NOTES:

1. THE TEMPORARY SIGNAL SHALL BE INSTALLED AND TESTED PRIOR TO THE START OF THE BRIDGE CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 11-FOOT ALTERNATING TWO-WAY TRAVEL LANE DURING ALL STAGES OF CONSTRUCTION.
3. THE TEMPORARY CONTROLLER SHALL BE SET WITH A CONDITIONAL CALL: WHEN PHASE 3 IS CALLED, PHASE 1 SHALL ALSO BE CALLED.
4. TEMPORARY SIGNAL SHALL DWELL ON PHASE 1 TO ALLOW GREATEST ACCESS TO THE ADJACENT SCHOOL.
5. IF THE CONTRACTOR ELECTS TO USE PORTABLE TRAFFIC SIGNAL TRAILERS, THE CONTRACTOR SHALL SUBMIT THE LAYOUT TO THE ENGINEER FOR REVIEW AND APPROVAL. THE USE OF PORTABLE TRAFFIC SIGNAL TRAILERS SHALL BE AT THE CONTRACT UNIT PRICE FOR ITEM 643.72, TEMPORARY TRAFFIC SIGNAL: TREMONT ROAD.
6. THE TEMPORARY TRAFFIC SIGNAL SYSTEM SHALL REMAIN IN PLACE AND OPERATIONAL THROUGHOUT THE CLARK BRIDGE RECONSTRUCTION. ALL TEMPORARY TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED ONCE TWO LANE, TWO-WAY TRAFFIC IS REESTABLISHED ON CLARK BRIDGE.

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS	QUANTITY
FURNISH AND INSTALL NON-METALLIC CONDUIT (ITEM 626.22)	25 LF
FURNISH AND INSTALL TEMPORARY VIDEO DETECTION SYSTEM (3 CAMERAS) (ITEM 643.83)	1

EQUIPMENT AND WORK ITEMS ITEM 643.72	QUANTITY
FURNISH AND INSTALL TEMPORARY TRAFFIC SIGNAL CONTROLLER	1
FURNISH AND INSTALL TEMPORARY POST MOUNTED CONTROLLER CABINET	1
FURNISH AND INSTALL TEMPORARY CONFLICT MONITOR	1
FURNISH AND INSTALL ONE-WAY, 3-SECTION 12-INCH TEMPORARY SIGNAL HEADS WITH LED LENSES AND LOUVERED BACKPLATES	5
FURNISH AND INSTALL ONE-WAY, 4-SECTION 12-INCH TEMPORARY SIGNAL HEADS WITH LED LENSES AND LOUVERED BACKPLATES	1
FURNISH AND INSTALL SPAN AND TETHER WIRE	590 LF
FURNISH AND INSTALL 50 FT CLASS IV WOOD POLE WITH SCREW ANCHOR BACK TIES	7

THE LISTED QUANTITIES ARE APPROXIMATE AND
ARE FURNISHED FOR INFORMATION ONLY.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3*
MINIMUM INITIAL	5	5	5
PASSAGE TIME	4	4	3
MAXIMUM 1	25	25	10
MAXIMUM 2	25	25	10
YELLOW	4	4	4
ALL RED	16	16	3
PEDESTRIAN WALK	-	-	-
PEDESTRIAN CLEARANCE	-	-	-
RECALL	SOFT	OFF	OFF
DETECTOR OPERATION	PR	PR	PR
PREEMPT	N/A	N/A	N/A
FLASH	R	R	R
DUAL ENTRY	OFF	OFF	OFF

NOTES:

PR = PRESENCE R = RED
Y = YELLOW D = DARK

* PHASE 3 DETECTOR SHALL ALWAYS
CALL PHASE 3 AND PHASE 1

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1	1	TREMONT RD	EASTBOUND	LEFT-THRU	1	VIDEO	2	1/1	1
CAMERA V2	5	TREMONT RD	WESTBOUND	THRU-RIGHT	2	VIDEO	4	2/1	1
CAMERA V3	9	DRIVEWAY	SOUTHBOUND	LEFT-RIGHT	3	VIDEO	6	3/1	1

CONSTRUCTION VOLUMES DHV



A circular professional engineer seal for the State of Maine. The outer ring contains the text "STATE OF MAINE" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the name "ROBERT S. BLUNT" and the license number "11158". A handwritten signature is visible to the left of the seal.

<i>Robert A. Blum</i>	SIGNATURE	P.E. NUMBER	DATE
	11158	July 18, 2018	

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN DET-DAILED	TUC/BGP	DPD	7/10/2018
CHG CKED-REVIEWED	GME/CTA	RSB/TSB	7/10/2018
DESIGN DET-DAILED2			
DESIGNS DET-DAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

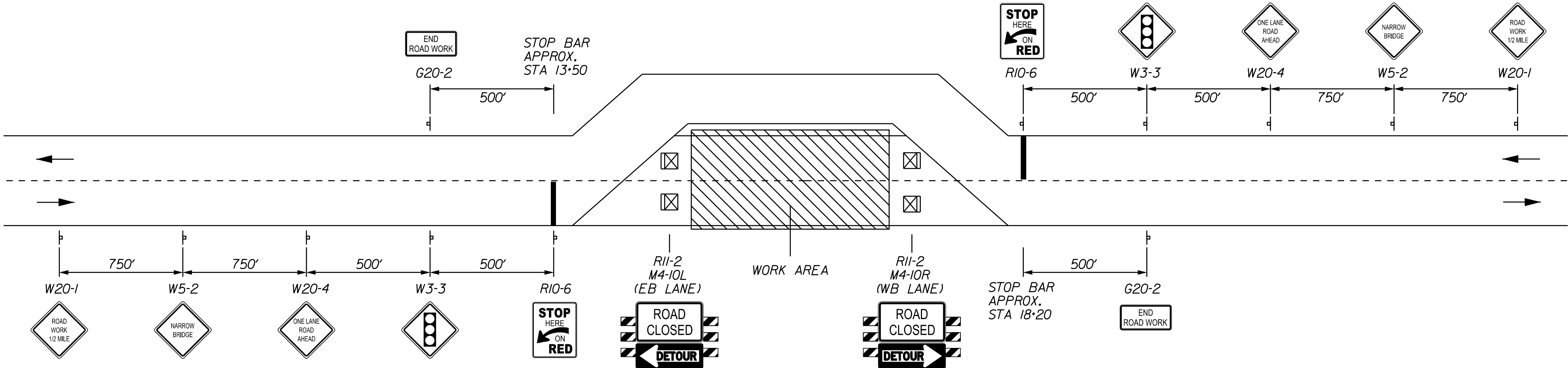
CLARK BRIDGE
TREMONT ROAD OVER MARSHALL BROOK
TREMONT HANCOCK COUNTY
**TEMPORARY TRAFFIC SIGNAL
PLANS**

SHEET NUMBER

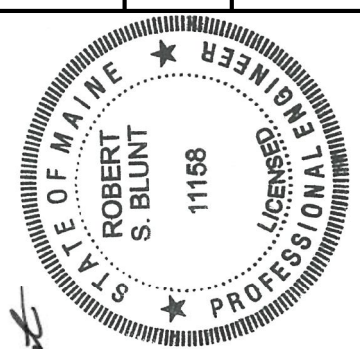
27

OF 69

1. *The maintenance of traffic plan for this project is to restrict the traffic using Clark Bridge to one lane of two-way alternating traffic on a temporary bridge located to the north side of Clark Bridge controlled by a temporary traffic signal system for the duration of construction. The temporary traffic signal system and equipment remains in one location for the duration of the bridge construction.*
2. *All traffic control equipment and devices shall conform to the 2014 edition of the Maine Department of Transportation (MaineDOT) Standard Specifications and applicable traffic control standards and practices.*
3. *All traffic control equipment and layouts shall conform to the 2009 edition of the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), chapter 6. All traffic control signs, sign support structures, signal equipment, channelizing devices, portable changeable message signs (PCMS), and other traffic control equipment along the roadside shall meet or exceed NCHRP 350 test level 2 (TL-2) requirements regardless of where implemented on the project.*
4. *All traffic control signs shall have super high intensity retroreflective sheeting (ASTM, Type VII or better) and shall be maintained in like-new condition. Placement of signs shall be adjusted to avoid obstructing existing signs and to ensure proper sight lines to the construction signs as determined by the Resident.*
5. *Any signs, equipment, or devices found to be damaged or unserviceable shall be replaced at the Contractor's expense.*
6. *At the completion of the work, the temporary signal equipment shall be removed.*



TRAFFIC CONTROL ADVANCED SIGNING DETAIL



PROJ. MANAGER	L. TIERBERKE	BY	DATE	SIGNATURE 1158 P.E. NUMBER JULY 18, 2018 DATE
DESIGN DETAIL	T.C/BQP	DPD	7/10/2018	
CHECKED REVIEW	GME/CTA	RSB/TSB	7/10/2018	
DESIGN DETAIL	DESIGN DETAIL			
DESIGN DETAIL	DESIGN DETAIL			
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

CLARK BRIDGE
TREMONT ROAD OVER MARSHALL BROOK
TREMONT HANCOCK COUNTY

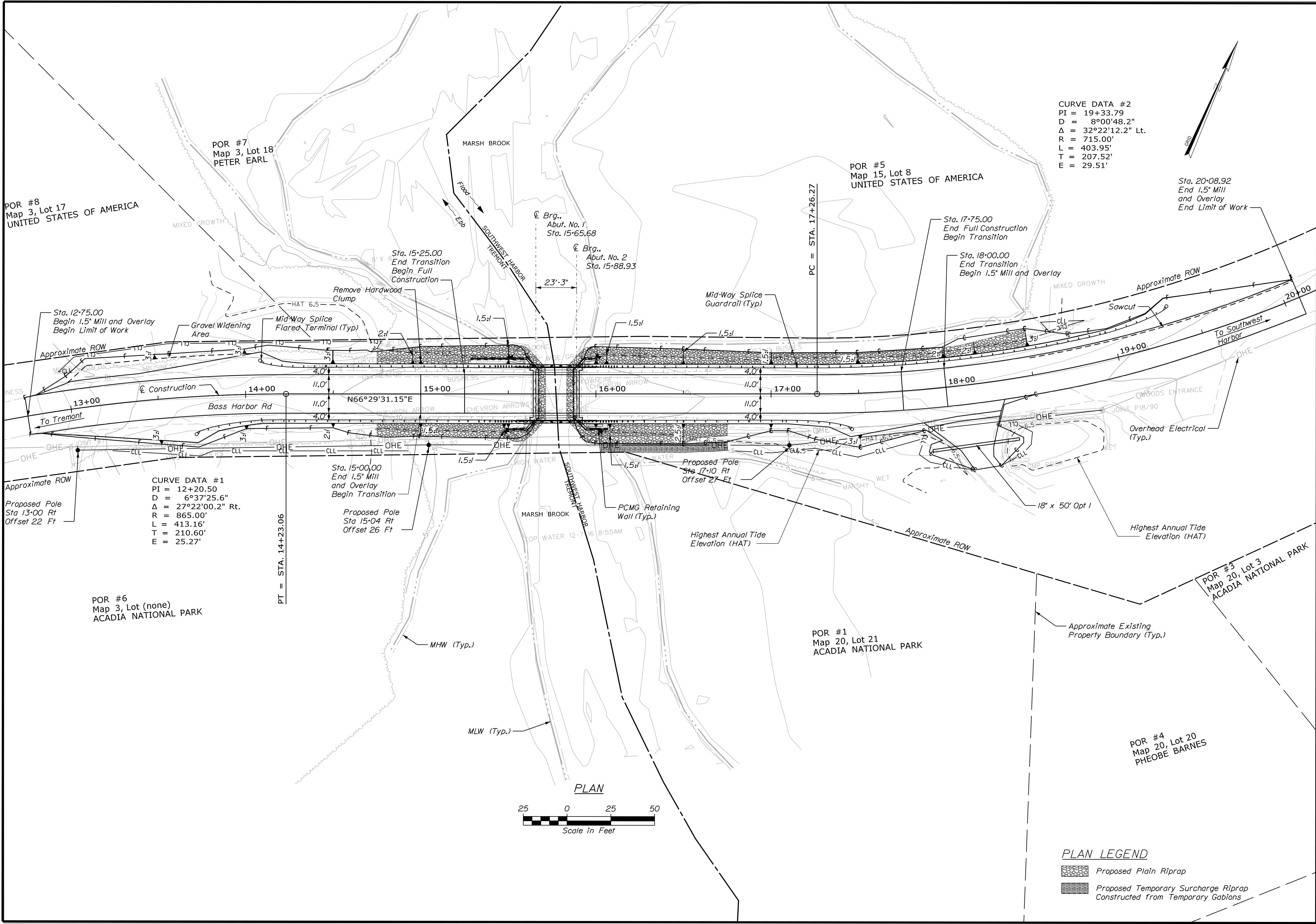
**MAINTENANCE OF TRAFFIC
NOTES & SIGN SUMMARY**

Date: 9/6/2018

Username: PDonovan

Division: BRIDGE

Filename: ... \MSTA\029_GeneralPlan1.dgn



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170(200)

BRIDGE NO. 2511

WIN 21702.00

BRIDGE PLANS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
ROBERT S. BLUNT
11158
PROFESSIONAL ENGINEER

SIGNATURE

P.E. NUMBER

DATE

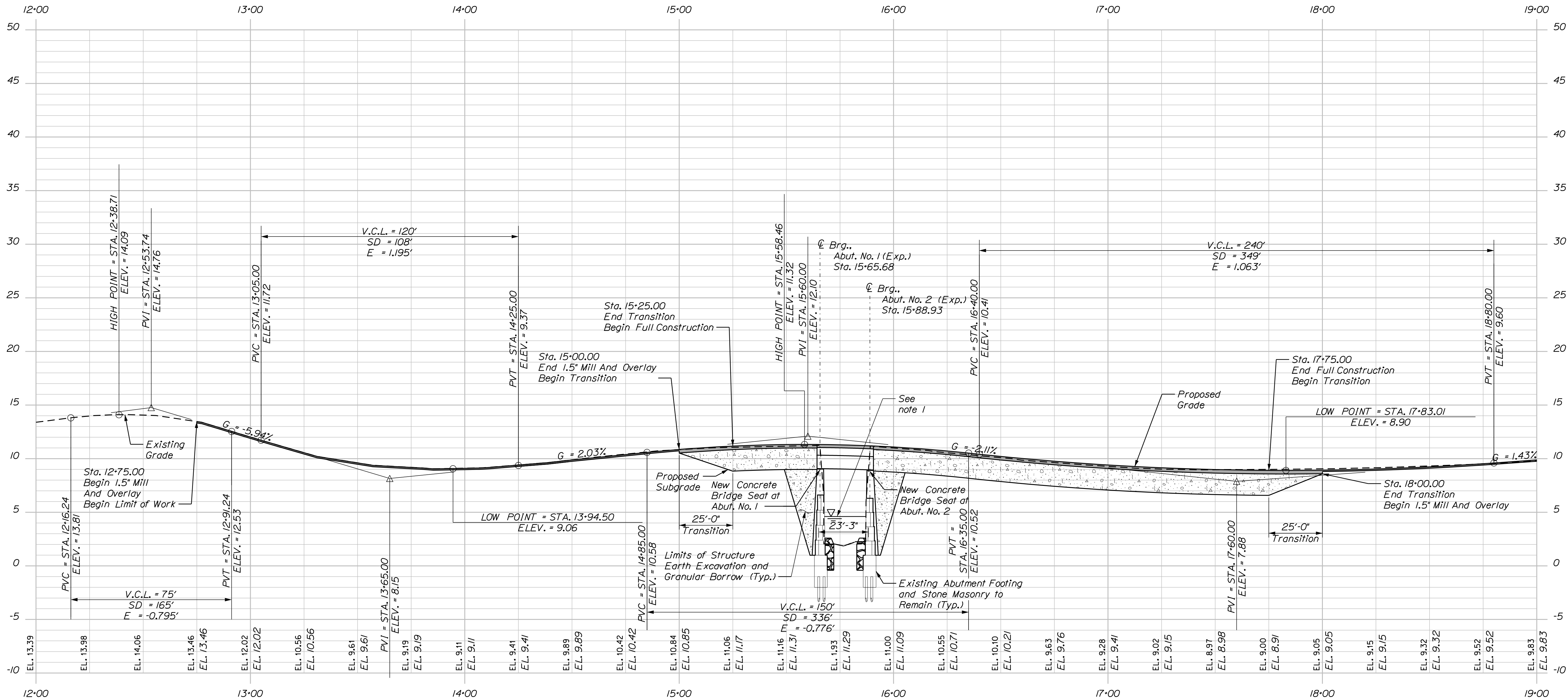
PROJECT: MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR
HANCOCK COUNTY

GENERAL PLAN

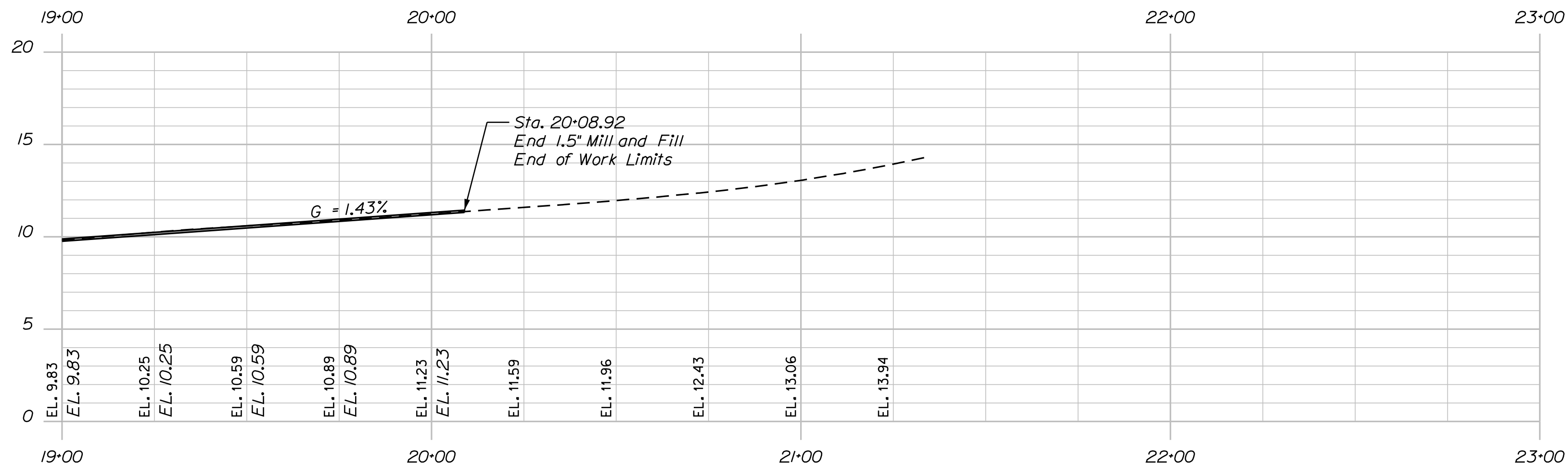
SHEET NUMBER

29

OF 69



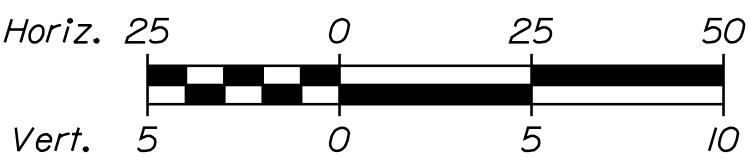
PROFILE



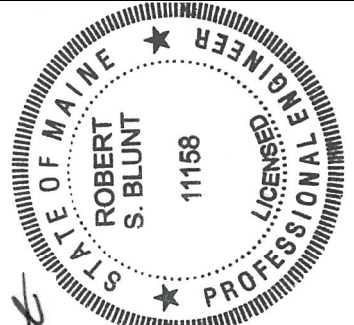
PROFILE

NOTE:

1. MHHW EL. = 4.6 FT
MLLW EL. = 2.6 FT
100 - YR Storm Surge EL. = 6.1

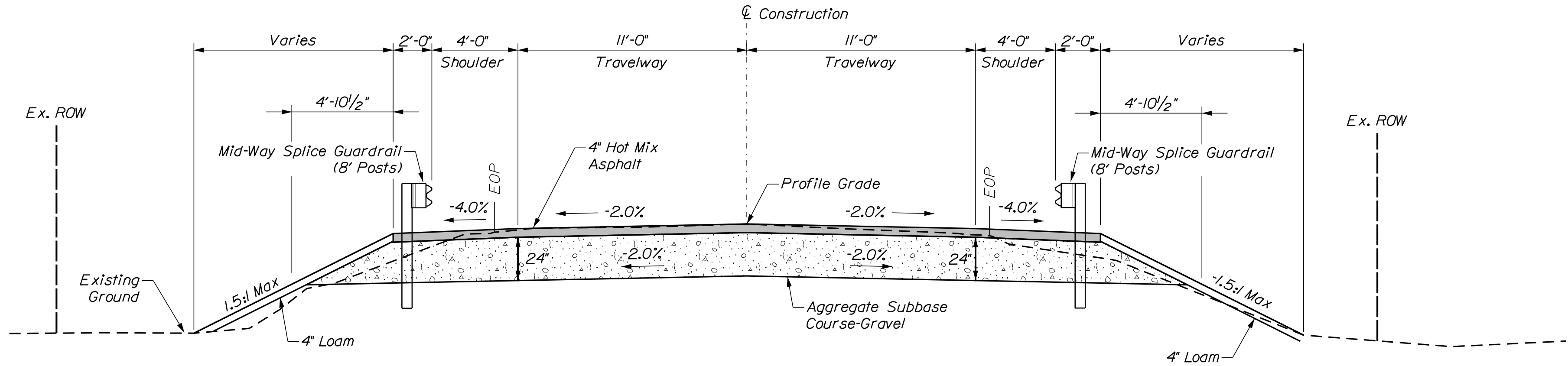


Scale in Feet



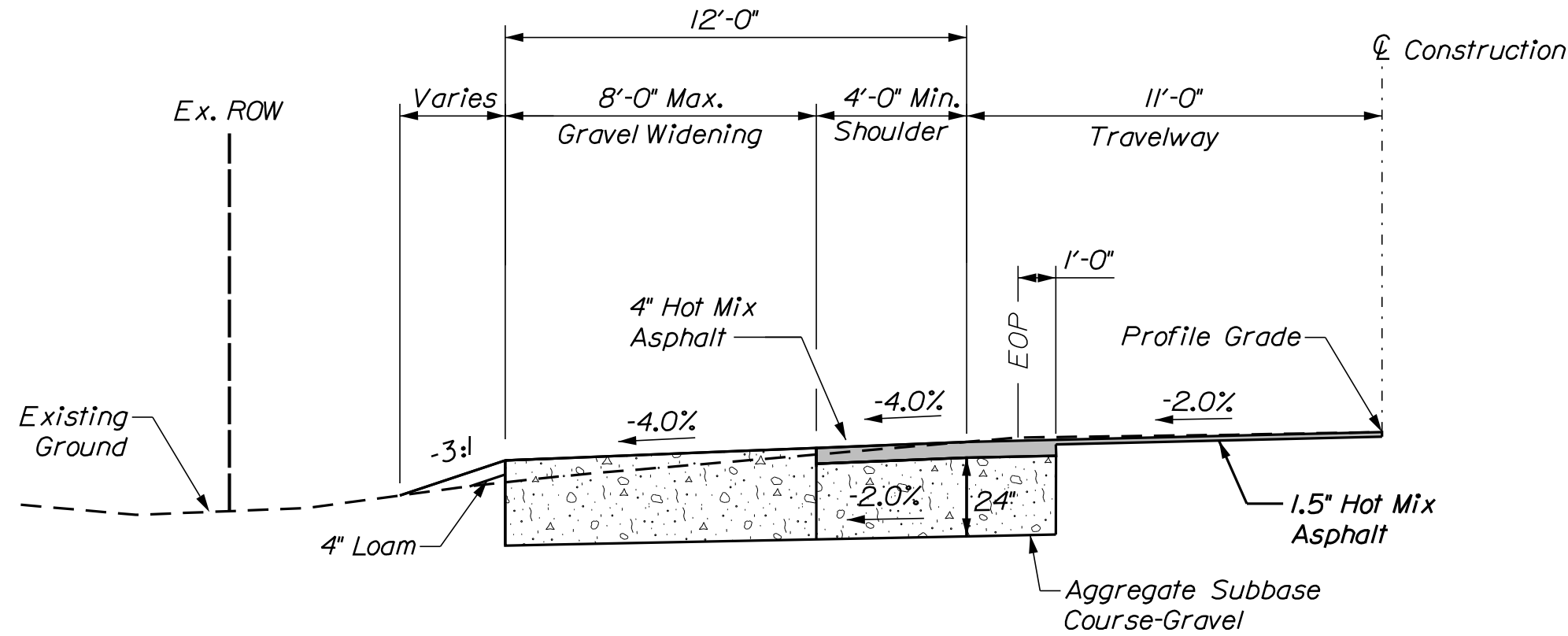
Signature: Robert S. Blunt
P.E. NUMBER: 11158
DATE: July 18, 2018

PROJ. MANAGER	DATE	BY	DATE
L. TIMBERLAKE	3/22/2018	JMS/PPD	3/22/2018
CHECKED-REVIEWED	AC	RSB/TSB	
DESIGN2-DETAILED			
DESIGN3-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			



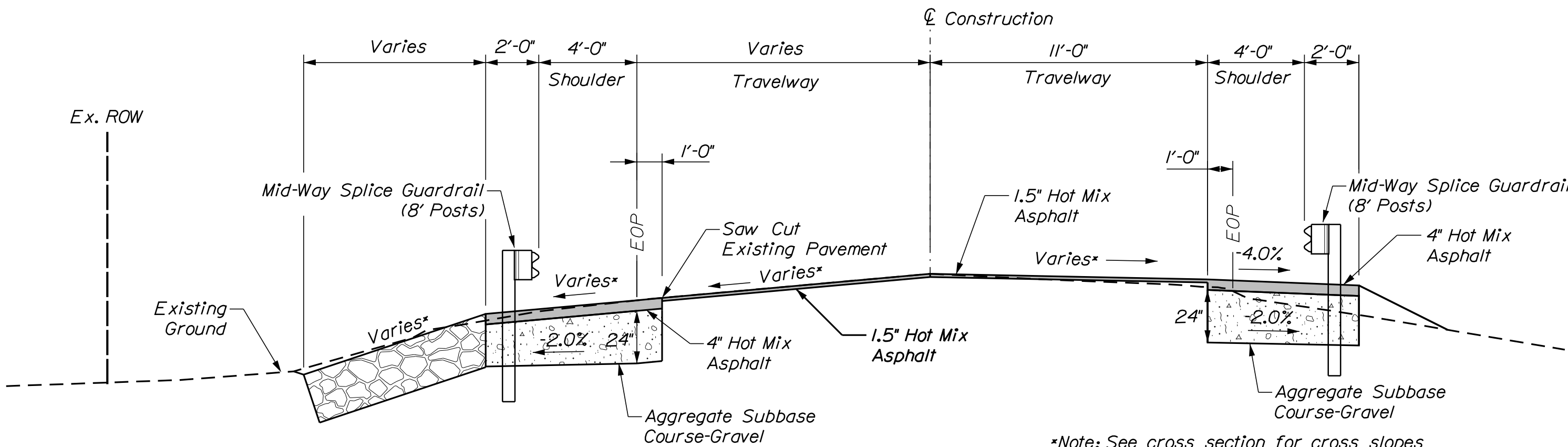
TYPICAL ROADWAY SECTION - FULL CONSTRUCTION

Sta. 15+25 to 15+66
Sta. 15+89 to 16+25



TYPICAL GRAVEL WIDENING/SHOULDER RECONSTRUCTION SECTION

Sta. 13+12 to 13+40 LT

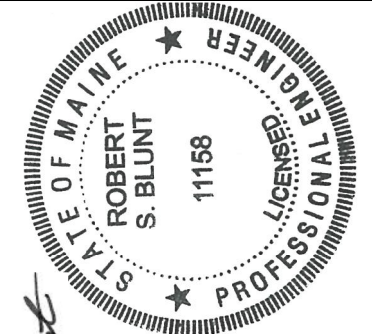


TYPICAL ROADWAY SECTION - MILL AND OVERLAY

Sta. 12+75 to 15+00
Sta. 18+00 to 20+09

TYPICAL SECTION NOTES

1. The pavement and subbase depths as shown on the plans are intended to be nominal.
2. When superelevation exceeds the slope of the low side shoulder, the low side shoulder shall have the same slope as the travelway.
3. Crowns for all courses of subbase and pavement shall be straight.
4. The algebraic difference between the shoulder and travelway cross slopes "rollover" shall not exceed 8%.
5. All necessary pavement cutting shall be saw cut and done in such a manner as to leave a clean vertical face. Payment shall be considered incidental to contract items.
6. Bituminous tack coat is required between all lifts of pavement and on all existing paved or milled surfaces prior to placing proposed pavement or as directed by the Resident.
7. The stationing shown under each typical is approximate.
8. EOP = Existing Edge of Pavement.
9. Proposed Plain Riprap shall be placed in accordance with Section 7.4 of the Project's Geotechnical Report Recommendations.



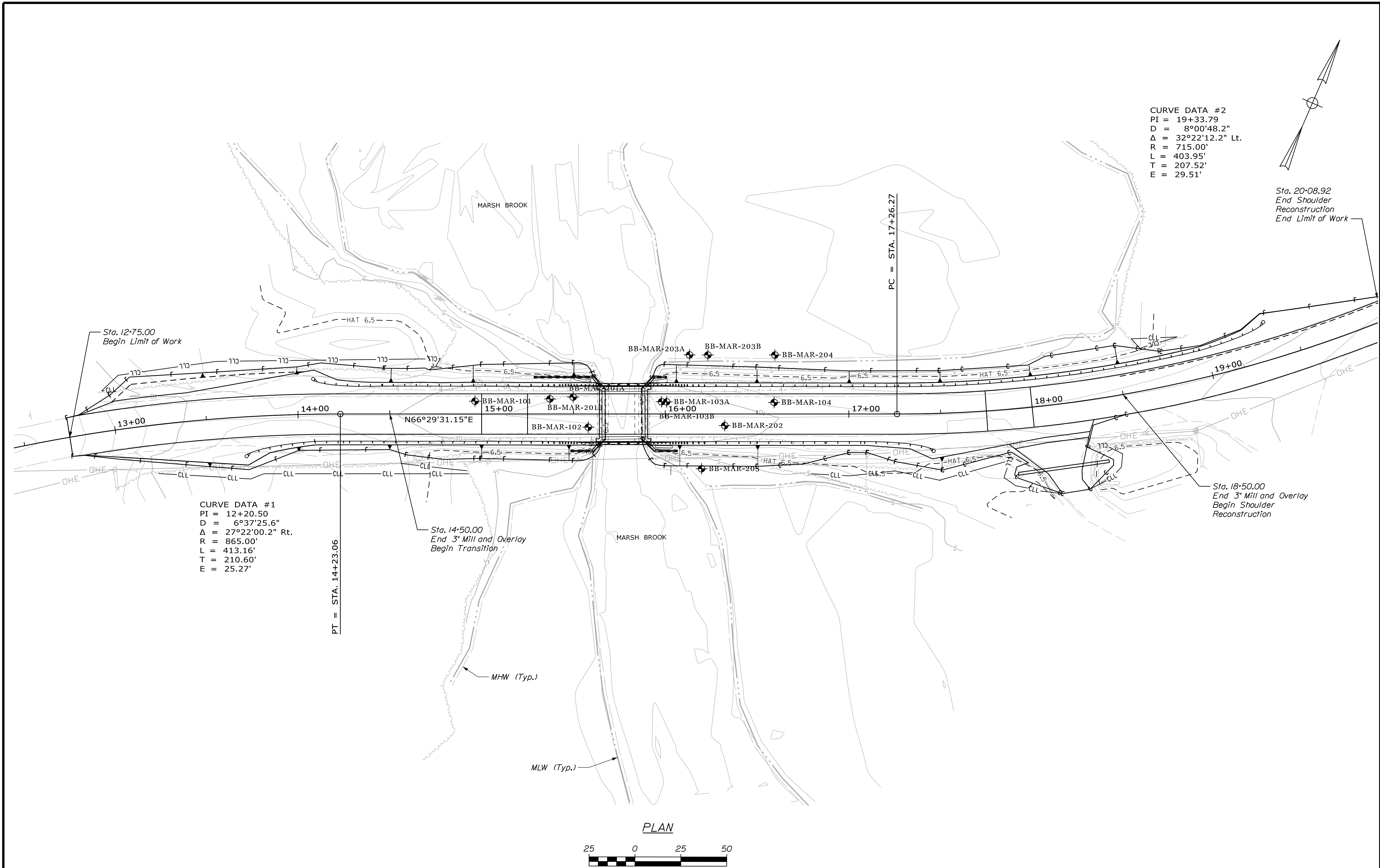
PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGN2-DETAILED	DESIGN3-DETAILED	REVISIONS	REVISIONS	REVISIONS	REVISIONS	FIELD CHANGES
L. TIMBERLAKE	ECF	AG	JMS/DPD	RSB/TSP	1	2	3	4	
DATE	3/22/2018	3/22/2018							
BY	JMS/DPD	RSB/TSP							
SIGNATURE									
P.E. NUMBER	11158								
DATE	July 18, 2018								

File: \\MSTA\032_BoringPlan1.dgn

Division: BRIDGE

Username: PDonovan

Date: 9/6/2018



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2170(200)
BRIDGE NO. 2511
WIN
21702.00
BRIDGE PLANS

PROF. SEAL
STATE OF MAINE
ROBERT S. BLUNT
11158
LICENSED PROFESSIONAL ENGINEER

PROJ. MANAGER
L. TIMBERLAKE
TJC/BGP
CHECKED/REVIEWED
GMC/CTA
DESIGN/2-Detailed/02
DESIGN/3-Detailed/03
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

DATE
3/22/2018
3/22/2018
BY
DPD
RSB/TJB
DATE
3/22/2018
3/22/2018
SIGNATURE
11158
P.E. NUMBER
July 18, 2018
DATE

MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR
HANCOCK COUNTY

BORING LOCATION PLAN

SHEET NUMBER
32
OF 69

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.	Page 1 of 1
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.	Boring No.: BB-MAR-101

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Maine Department of Transportation

Soil/Rock Exploration Log
US_CUSTOMARY_UNITS

Project: Marsh Bridge

Location: Termont / Southwest Harbour, ME

Boring No.: BB-MAR-103 B

WIN: 21702.00

Driller: NEBC

Operator: Mike Porter

Logged By: TRM

Date Start/Finish: 5/8/17 (9:10AM) / 5/9/17 (11:10PM)

Boring Location: East Approach

Elevation (ft.): 10.88

Datum: NAVD 88

Rig Type: Mobile B53

Drilling Method: SSA / D-W

Casing ID/OD: 4"

Auger ID/OD: 4"

Sampler: Standard Split Spoon

Hammer WL/Fall: 140 lbs. / 30"

Core Barrel: NQ

Water Level *: 5.3' bgs at 9:20 5/9/17

Hammer Efficiency Factor: 0.6

Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒

Definitions

R = Rock Core Sample
S = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample Attempt
W = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
V = Field Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Field Vane Shear Test Attempt

R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = Weight of 140lb. Hammer
WOR/C = Weight of Rods or Casing
WOP = Weight of One Person

S_u = Peak/Remotest Field Vane Undrained Shear Strength (psf)
S_{u1 (a)} = Lab Vane Undrained Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N_{uncorrected} = Raw Field SPT N-value
Hammer Efficiency Factor = Rig Specific Annual Calibration Value
N_{go} = SPT N-uncorrected Corrected for Hammer Efficiency
N_{go} = Hammer Efficiency Factor/60%N-uncorrected

T_v = Pocket Torvane Shear Strength (psf)
WC = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (ft.)

Sample No.

Pen./Rec.(in.)

Sample Depth (ft.)

Blows / 6 in. (N)

Blow Strength per ROD (2)

N-uncorrected

N_{go}

Casing Blows

Elevation (ft.)

Graphic Log

Visual Description and Remarks

Laboratory Testing Results/ AASHTO and Unified Class.

0

58.4

10.38

Asphalt.

5

15

Wash ahead to bottom of boring BB-MAR-103A -----0.50

10

5D

24/18

8.00 - 10.00

5/3/1/3

4

4

9

2.88

Drill grinding, brown wash.

15

6D

24/14.4

10.00 - 12.00

1/1/2/1

3

3

8

2.12

5D (8.00"-10.00"): Alternating layers of gray, moist, soft, organic silty CLAY; brown, moist, very loose, silty SAND; moist, soft, ORGANIC SILT.

20

7D

24/20.4

12.00 - 14.00

WOH/3/3/2

6

6

12

6D (10.00"-12.00"): Upper 0.8": Gray, wet, soft, organic silty CLAY, little fine sand, trace gravel, strong odor.

25

8D

24/4.8

14.00 - 16.00

4/4/6/6

10

10

21

6D (10.00"-12.00"): Upper 0.9": Dark brown, moist, medium stiff, PLAY.

30

9D

24/18

16.00 - 18.00

4/2/3/2

5

5

23

Lower 0.8": Gray, moist, medium stiff, clayey SAND, trace silt, trace organics, higher plasticity than above.

35

10D

24/24

18.00 - 20.00

WOH

8D (14.00"-16.00"): Gray, moist, stiff, sandy CLAY, some gravel, trace silt, trace organics, low plasticity.

40

11D

24/12

20.00 - 22.00

1/WOH

10D (12.00"-14.00"): Gray, moist, medium stiff, silty CLAY, strong odor, low plasticity.

45

12D

24/24

22.00 - 24.00

WOH

10D (12.00"-14.00"): Gray, moist, medium stiff, silty CLAY, trace fine sand, medium plasticity, large piece of gravel.

50

13D

24/24

25.00 - 27.00

WOH

10D (16.00"-18.00"): Gray, moist, medium stiff, silty CLAY, trace fine sand, medium plasticity, large piece of gravel.

55

14D

24/24

27.00 - 29.00

WOH

10D (16.00"-18.00"): Gray, moist, medium stiff, silty CLAY, trace fine sand, medium plasticity, large piece of gravel.

60

15D

24/2.4

30.00 - 32.00

WOR/14/11/8

25

25

22

21.12

PP: 0

65

16D

60/55.8

32.00 - 32.33

RQD = 87.5%

21.52

PP: 0

70

17D

60/60

37.40 - 42.40

RQD = 55%

10D (20.00"-22.00"): Gray, moist, very soft, silty CLAY, low plasticity.

75

18D

60/60

42.40 - 47.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

80

19D

60/60

47.40 - 52.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

85

20D

60/60

52.40 - 57.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

90

21D

60/60

57.40 - 62.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

95

22D

60/60

62.40 - 67.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

100

23D

60/60

67.40 - 72.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

105

24D

60/60

72.40 - 77.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

110

25D

60/60

77.40 - 82.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

115

26D

60/60

82.40 - 87.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

120

27D

60/60

87.40 - 92.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

125

28D

60/60

92.40 - 97.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

130

29D

60/60

97.40 - 102.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

135

30D

60/60

102.40 - 107.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

140

31D

60/60

107.40 - 112.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

145

32D

60/60

112.40 - 117.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

150

33D

60/60

117.40 - 122.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

155

34D

60/60

122.40 - 127.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

160

35D

60/60

127.40 - 132.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

165

36D

60/60

132.40 - 137.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

170

37D

60/60

137.40 - 142.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

175

38D

60/60

142.40 - 147.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

180

39D

60/60

147.40 - 152.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

185

40D

60/60

152.40 - 157.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

190

41D

60/60

157.40 - 162.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

195

42D

60/60

162.40 - 167.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

200

43D

60/60

167.40 - 172.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

205

44D

60/60

172.40 - 177.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

210

45D

60/60

177.40 - 182.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

215

46D

60/60

182.40 - 187.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

220

47D

60/60

187.40 - 192.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

225

48D

60/60

192.40 - 197.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

230

49D

60/60

197.40 - 202.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

235

50D

60/60

202.40 - 207.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

240

51D

60/60

207.40 - 212.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

245

52D

60/60

212.40 - 217.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

250

53D

60/60

217.40 - 222.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

255

54D

60/60

222.40 - 227.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

260

55D

60/60

227.40 - 232.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

265

56D

60/60

232.40 - 237.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

270

57D

60/60

237.40 - 242.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

275

58D

60/60

242.40 - 247.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

280

59D

60/60

247.40 - 252.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

285

60D

60/60

252.40 - 257.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

290

61D

60/60

257.40 - 262.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

295

62D

60/60

262.40 - 267.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

300

63D

60/60

267.40 - 272.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

305

64D

60/60

272.40 - 277.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

310

65D

60/60

277.40 - 282.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

315

66D

60/60

282.40 - 287.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

320

67D

60/60

287.40 - 292.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

325

68D

60/60

292.40 - 297.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

330

69D

60/60

297.40 - 302.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

335

70D

60/60

302.40 - 307.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

340

71D

60/60

307.40 - 312.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

345

72D

60/60

312.40 - 317.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

350

73D

60/60

317.40 - 322.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

355

74D

60/60

322.40 - 327.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

360

75D

60/60

327.40 - 332.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

365

76D

60/60

332.40 - 337.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

370

77D

60/60

337.40 - 342.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

375

78D

60/60

342.40 - 347.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

380

79D

60/60

347.40 - 352.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

385

80D

60/60

352.40 - 357.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

390

81D

60/60

357.40 - 362.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

395

82D

60/60

362.40 - 367.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

400

83D

60/60

367.40 - 372.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

405

84D

60/60

372.40 - 377.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

410

85D

60/60

377.40 - 382.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

415

86D

60/60

382.40 - 387.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

420

87D

60/60

387.40 - 392.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

425

88D

60/60

392.40 - 397.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

430

89D

60/60

397.40 - 402.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

435

90D

60/60

402.40 - 407.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

440

91D

60/60

407.40 - 412.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

445

92D

60/60

412.40 - 417.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

450

93D

60/60

417.40 - 422.40

RQD = 55%

10D (22.00"-24.00"): Gray with dark staining, wet, very soft, silty CLAY, too wet to roll, low to medium plasticity.

455

94D

60/60

422.40 -

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Marsh Bridge Supplemental Borings

Location: Tremont / Southwest Harbor, ME

Boring No.: BB-MAR-201A

WIN: 21702.00

Driller: NEBC

Operator: Mike Porter

Logged By: LLM

Date Start/Finish: 7:55 / 10:55 (9/28/17)

Boring Location: See Remarks

Elevation (ft.): 10 (See remarks)

Datum: NAVD 88

Rig Type: Mobile B53

Drilling Method: SSA / D-W

Casing ID/OD: 4"

Hammer Type: Automatic Hydraulic Rope & Cathead

Auger ID/OD: 4"

Sampler: Standard Split Spoon / 3" Split Spoon

Hammer Wt./Fall: 140 lbs. / 30"

Core Barrel: N/A

Water Level *: 1.8' at 10:45

Hammer Efficiency Factor: .885

Definitions: R = Rock Core Sample, S_u = Peak/Remotoid Field Vane Undrained Shear Strength (psf), S_u(eq.) = Lab Vane Undrained Shear Strength (psf), WC = Water Content, percent, MD = Unsuccessful Split Spoon Sample Attempt, HSA = Hollow Stem Auger, q_p = Unconfined Compressive Strength (ksi), N = Thin Wall Tube Sample, RC = Roller Cone, N-uncorrected = Raw Field SPT N-value, Hammer Efficiency Factor = Rig Specific Annual Calibration Value, PL = Plastic Limit, MU = Unsuccessful Thin Wall Tube Sample Attempt, WOH = Weight of 140lb. Hammer, P = Plasticity Index, V = Field Vane Shear Test, PP = Pocket Penetrometer, WOR/C = Weight of Rods or Casing, N-g = SPT Uncorrected Corrected for Hammer Efficiency, G = Grain Size Analysis, MV = Unsuccessful Field Vane Shear Test Attempt, WOP = Weight of One Person, N-g = Hammer Efficiency Factor/60/N-uncorrected, C = Consolidation Test

Sample Information

Visual Description and Remarks

Laboratory Testing Results/ AASHTO and Unified Class.

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows 1/6 in. Shear Strength per ROD (2)	Uncorrected	N-g	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0								9.55		0.45' Asphalt	
								9.00		0.55' Reclaimed asphalt	
5	ID	24/15.6	4.00 - 8.00	16/11/5/8	16	24	46			ID (4.00' - 6.00'): Top 0.2' is light gray powder, augured through a rock. The rest was brown, damp, medium dense, fine to coarse SAND, little gravel, little silt (FILL).	
	20	24/7.2	6.00 - 8.00	4/2/4/3	6	9	19			20 (6.00' - 8.00'): Top 0.45' is brown, wet, medium stiff, sandy SILT, little gravel, little clay. Bottom 0.15' is wood chunks (FILL).	
	30	24/3.6	8.00 - 10.00	9/9/4/3	13	12	55			30 (8.00' - 10.00'): Chunks of wood.	
10	40	24/16.8	10.00 - 12.00	9/5/5/9	10	15	19			3" Spoon (10.00' - 12.00'): 4DA (Top 0.9'): Dark brown, damp, stiff, ORGANIC SILT and pieces of wood, trace gravel.	
	50	MV1	12.00 - 14.00	3/2/2/3 Would Not Push	4	6	34			40B (Bottom 0.5'): Gray, damp, stiff, fine sandy SILT, some clay.	
	60	MV2	14.00 - 16.00	3/5/6/8 Would Not Push	11	16	OPEN			50 (12.00' - 14.00'): Top 0.5' is bits of wood. Bottom 11' is gray, damp, soft, clayey SILT, some fine sand, trace gravel. More sandy at the top of the sample and more clayey towards the bottom.	
15	70	15.6/ 15.6	16.00 - 17.30	4/68/150/0.3' > 1045 psf	Note 1					MV1 (12'): Failed 55 x 110 mm vane.	
										70A (Top 0.9'): Gray, wet, silty CLAY, trace gravel, some wood bits.	
										PP: 0.75, 0.75, 1.0, 1.25 TSF; T = 0.25 TSF.	
										VI (16.3'): 25.4 x 50.8 mm vane maxed out at 26.6 in-lbs.	
20										70B (Bottom 0.4'): Gray, wet, silty, fine to coarse SAND, little gravel.	
										Top of Rock at 17.3'.	
										Bottom of Exploration at 18.00 feet below ground surface.	

Remarks:
1. Blow counts for spoons driven through a disturbed field vane test location cannot be used to determine N-value.
2. Boring collapsed back to 6.5' after casing removed.
3. No water in boring after it collapsed to 6.5'.
4. Boring is located in the western bridge approach. Refer to Figure 2 for approximate location.
5. Boring elevation estimated from basemap provided by VHB on April 27, 2017.
6. Hammer efficiency factor provided in GZA SPT Energy Report for NEB Truck 83 Drilling, NH plate number 4368, dated July 25, 2017.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

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Boring No.: BB-MAR-201A

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Marsh Bridge Supplemental Borings

Location: Tremont / Southwest Harbor, ME

Boring No.: BB-MAR-201B

WIN: 21702.00

Driller: NEBC

Operator: Mike Porter

Logged By: LLM

Date Start/Finish: 11:10 / 14:20 (9/28/17)

Boring Location: See Remarks

Elevation (ft.): 10 (See Remarks)

Datum: NAVD 88

Rig Type: Mobile B53

Drilling Method: SSA / D-W

Casing ID/OD: 4"

Hammer Type: Automatic Hydraulic Rope & Cathead

Auger ID/OD: 4"

Sampler: Standard Split Spoon / 3" Split Spoon

Hammer Wt./Fall: 140 lbs. / 30"

Core Barrel: N/A

Water Level *: 2.7' at 13:50

Hammer Efficiency Factor: .885

Definitions: R = Rock Core Sample, S_u = Peak/Remotoid Field Vane Undrained Shear Strength (psf), S_u(eq.) = Lab Vane Undrained Shear Strength (psf), WC = Water Content, percent, MD = Unsuccessful Split Spoon Sample Attempt, HSA = Hollow Stem Auger, q_p = Unconfined Compressive Strength (ksi), N = Thin Wall Tube Sample, RC = Roller Cone, N-uncorrected = Raw Field SPT N-value, Hammer Efficiency Factor = Rig Specific Annual Calibration Value, PL = Plastic Limit, MU = Unsuccessful Thin Wall Tube Sample Attempt, WOH = Weight of 140lb. Hammer, P = Plasticity Index, V = Field Vane Shear Test, PP = Pocket Penetrometer, WOR/C = Weight of Rods or Casing, N-g = SPT Uncorrected Corrected for Hammer Efficiency, G = Grain Size Analysis, MV = Unsuccessful Field Vane Shear Test Attempt, WOP = Weight of One Person, N-g = Hammer Efficiency Factor/60/N-uncorrected, C = Consolidation Test

Sample Information

Visual Description and Remarks

Laboratory Testing Results/ AASHTO and Unified Class.

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows 1/6 in. Shear Strength per ROD (2)	Uncorrected	N-g	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0								9.00		Asphalt	
5	ID	24/6	6.00 - 8.00	3/11/12/11	23	34				ID (6.00' - 8.00'): Tan-brown, damp, very stiff, SILT, some gravel, some sand, little clay.	
	20	24/7.2	8.00 - 10.00	3/8/8/7	16	24	52			20 (8.00' - 10.00'): Top 0.3' is pink granite and wood chips. Bottom 0.3' is dark brown to gray SILT, some sand, trace gravel.	
	30	24/14.4	10.00 - 12.00	2/5/6/9	11	16	20			3" Spoon (10.00' - 12.00'): Gray, wet, silty CLAY, little sand in top 0.6', trace organics throughout sample.	
10	40	24/12	12.00 - 14.00	WOR/17/7/11	8	12	27			PP: 1.75, 0.75, 1.5 TSF; T = 0.26 TSF.	
										40 (12.00' - 14.00'): Top 0.4' is gray, wet, clayey SAND, little gravel (4DA).	
										Bottom 0.6' is gray, wet, silty CLAY, little sand, trace gravel (4DB).	
15										Drill grinding and rocks coming up in wash at about 14' b.g.s., rollercoasted to 15'.	
										Split spoon refusal, top of rock at 15' b.g.s.	
										Bottom of Exploration at 15.00 feet below ground surface.	

Remarks:
1. Boring is located in the western bridge approach. Refer to Figure 2 for approximate location.
2. Boring elevation estimated from basemap provided by VHB on April 27, 2017.
3. Hammer efficiency factor provided in GZA SPT Energy Report for NEB Truck 83 Drilling, NH plate number 4368, dated July 25, 2017.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

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Boring No.: BB-MAR-201B

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Marsh Bridge Supplemental Borings

Location: Tremont / Southwest Harbor, ME

Boring No.: BB-MAR-202

WIN: 21702.00

Driller: NEBC

Operator: Mike Porter

Logged By: LLM

Date Start/Finish: 8:15 / 14:20 (9/29/17)

Boring Location: See Remarks

Elevation (ft.): 10 (See Remarks)

Datum: NAVD 88

Rig Type: Mobile B53

Drilling Method: SSA / D-W

Casing ID/OD: 4"

Hammer Type: Automatic Hydraulic Rope & Cathead

Auger ID/OD: 4"

Sampler: Standard Split Spoon / 3" Split Spoon

Hammer Wt./Fall: 140 lbs. / 30"

Core Barrel: N/A

Water Level *: 5.4' at 14:10

Hammer Efficiency Factor: .885

Definitions: R = Rock Core Sample, S_u = Peak/Remotoid Field Vane Undrained Shear Strength (psf), S_u(eq.) = Lab Vane Undrained Shear Strength (psf), WC = Water Content, percent, MD = Unsuccessful Split Spoon Sample Attempt, HSA = Hollow Stem Auger, q_p = Unconfined Compressive Strength (ksi), N = Thin Wall Tube Sample, RC = Roller Cone, N-uncorrected = Raw Field SPT N-value, Hammer Efficiency Factor = Rig Specific Annual Calibration Value, PL = Plastic Limit, MU = Unsuccessful Thin Wall Tube Sample Attempt, WOH = Weight of 140lb. Hammer, P = Plasticity Index, V = Field Vane Shear Test, PP = Pocket Penetrometer, WOR/C = Weight of Rods or Casing, N-g = SPT Uncorrected Corrected for Hammer Efficiency, G = Grain Size Analysis, MV = Unsuccessful Field Vane Shear Test Attempt, WOP = Weight of One Person, N-g = Hammer Efficiency Factor/60/N-uncorrected, C = Consolidation Test

Sample Information

Visual Description and Remarks

Laboratory Testing Results/ AASHTO and Unified Class.

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows 1/6 in. Shear Strength per ROD (2)	Uncorrected	N-g	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0								9.40		Asphalt	
5	ID	24/12	5.00 - 7.00	6/14/22/13	36	53	15			ID (5.00' - 7.00'): Top 0.55' is brown, bottom 0.45' is gray, damp, dense, fine to coarse SAND, little gravel, little silt, piece of asphalt from 0.55' - 0.75' (FILL).	
	20	24/10.8	7.00 - 9.00	7/4/3/4	7	10	37			20 (7.00' - 9.00'): Top 0.7' is brown-gray, damp, medium stiff, sandy SILT, little gravel. Sand and gravel content decreases with depth (2DA) (FILL).	
	30	MV1	9.00 - 11.00	2/2/3/2 Would Not Push	5	7	NR			Bottom 0.2' Dark brown, damp, medium stiff, ORGANIC SILT, little sand, some bits of wood (2DB).	
	40	V1	11.00 - 13.00	WOH/15/1/3 > 1045 psf	Note 1					30.3' Spoon (9.00' - 11.00'): Top 0.3' is brown/gray, wet, loose, silty GRAVEL (3DA).	
	40	MV2	11.00 - 13.00	WOH/15/1/3 > 1045 psf	Note 1					Bottom 1.3' dark brown, damp, medium stiff, ORGANIC SILT (3DB).	
	50	MV3	13.00 - 15.00	WOH/2/1/3 Would Not Push	3	4	31			MV1 (9'): Failed 25.4 x 50.8 mm vane.	
15	60	MV4	24/20.4	WOH/3/2/3 Would Not Push	5	7	OPEN			40 (11.00' - 13.00'): Dark brown, wet, very soft, ORGANIC SILT, some gravel, organic odor. Bottom 0.1' is gray, fine sandy SILT.	
										MV2 (12'): Failed 55 x 110 mm vane maxed out at 26.6 in-lbs.	
										MV3 (13.2'): Failed 55 x 110 mm vane would not push past 15'.	
										50 (13.00' - 15.00'): Top 0.2' is dark brown, wet, soft, ORGANIC SILT, little gravel. Bottom 0.9' is gray to dark gray, wet, soft, silty CLAY, little fine sand.	
20	80	MV6	24/24	WOH						MV4 (15'): Failed 55 x 110 mm vane due to gravel obstruction.	
										Drill grinding.	
	90	24/8.4	21.00 - 23.00	WOR	Note 1					60 (15.00' - 17.00'): Gray, wet, medium stiff, silty CLAY, little gravel in top 0.3'.	
	V3	V4		804 / 134 psf						PP: 1.5, 1.75 TSF; T = 0.4 TSF.	
	100	24/24	23.00 - 25.00	WOR/WOR/12"	Note 1					MV4 (15'): Failed 55 x 110 mm vane due to gravel obstruction.	
	V5			447 / 89 psf						80 (16.00' - 21.00'): Gray, wet, very soft, silty CLAY, some fine to medium sand at bottom of sample, trace gravel.	
	V6			447 / 89 psf						PP: 0 TSF; T = 0.13 TSF.	
25										MV6 (19'): Failed 55 x 110 mm vane due to gravel obstruction.	
										90 (21.00' - 23.00'): Gray, wet, very soft, silty CLAY, little sand, trace gravel. Sand content decreases with depth.	
										V3 (22'): 18 ft-lbs/3 ft-lbs on 55 x 110 mm vane.	
										V4 (23'): 12 ft-lbs/2 ft-lbs on 55 x 110 mm vane.	
										100 (23.00' - 25.00'): Gray, wet, very soft, silty CLAY, trace gravel, black streaks in bottom 0.2'.	
										V5 (24'): 10 ft-lbs/2 ft-lbs on 55 x 110 mm vane.	
										V6 (25'): 10 ft-lbs/2 ft-lbs on 55 x 110 mm vane.	
										10 (28.00' - 30.00'): Gray, wet, very soft, silty CLAY, trace shell fragments.	
30	V7			670 / 112 psf						V7 (29'): 15 ft-lbs/2.5 ft-lbs on 55 x 110 mm vane.	
	V8	MU1	2/0	30.00 - 30.17						V8 (30'): 15.5 ft-lbs/3 ft-lbs on 55 x 110 mm vane.	
										MU: Failed Shelby Tube due to equipment malfunction.	
35	U1	24/6	35.00 - 37.00	Shelby Tube						U1 (35.00' - 37.00'): Gray, wet, silty CLAY.	
										Drill grinding.	
										Top of Rock at 42.2' b.g.s.	
										Bottom of Exploration at 43.30 feet below ground surface.	

Remarks:
1. Blow counts for spoons driven through a disturbed field vane test location cannot be used to determine N-value.
2. NR = Not Recorded.
3. Boring is located in the eastern bridge approach. Refer to Figure 2 for approximate location.
4. Boring elevation estimated from basemap provided by VHB on April 27, 2017.
5. Hammer efficiency factor provided in GZA SPT Energy Report for NEB Truck 83 Drilling, NH plate number 4368, dated July 25, 2017.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: BB-MAR-202

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2170(200)

WIN 21702.00

BRIDGE NO. 2511

BRIDGE

MARSH BRIDGE

BASS HARBOR ROAD OVER MARSH BROOK

TREMONT/SOUTHWEST HARBOR

HANCOCK COUNTY

BORING LOGS (3 OF 5)

PROJ. MANAGER

DESIGN-DETAILED

CHECKED/REVIEWED

DESIGN2-DETAILED2

DESIGN3-DETAILED3

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

BY

COLDER

COLDER

COLDER

COLDER

DATE

3/27/2018

SIGNATURE

P.E. NUMBER

DATE

SHEET NUMBER

35

OF 69

Maine Department of Transportation				Project: Marsh Bridge Supplemental Borings		Boring No.: BB-MAR-204	
Soil/Rock Exploration Log US CUSTOMARY UNITS				Location: Tremont / Southwest Harbor, ME		WIN: 21702.00	
Driller: NEBC		Elevation (ft.): 4 (See Remarks)		Auger ID/OD: 4"			
Operator: Mike Porter		Datum: NAVD 88		Sampler: Standard Split Spoon			
Logged By: LLM		Rig Type: M-1		Hammer Wt./Fall: 140 lbs./ 30"			
Date Start/Finish: 14/45/ 17/05 (9/26/17)		Drilling Method: SSA / D+W		Core Barrel: N/A			
Boring Location: See Remarks		Casing ID/OD: 4"		Water Level *1: 1.2' at 17:12 (9/26/17)			
Hammer Efficiency Factor: 0.6		Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathode ☒					
Definitions: R = Rock Core Sample SSA = Solid Stem Auger S _u = Peak/Retained Field Vane Undrained Shear Strength (psf) S _u = Split Spoon Sample S _u = Solid Stem Auger S _u = Solid Stem Auger S _u = Solid Stem Auger S _u = Solid Stem Auger S _u = Solid Stem Auger U = Unsuccessful Split Spoon Sample Attempt HSA = Holzer Stem Auger HSA = Holzer Stem Auger HSA = Holzer Stem Auger HSA = Holzer Stem Auger HSA = Holzer Stem Auger U = Thin Wall Test Sample RC = Roller Cone RC = Roller Cone RC = Roller Cone RC = Roller Cone RC = Roller Cone W = Unsuccessful Thin Wall Test Sample Attempt WOI = Weight of 140lb. Hammer WOI = Weight of 140lb. Hammer WOI = Weight of 140lb. Hammer WOI = Weight of 140lb. Hammer WOI = Weight of 140lb. Hammer V = Field Vane Shear Test, PP = Pocket Penetrometer WOP/C = Weight of Rods or Casing WOP/C = Weight of Rods or Casing WOP/C = Weight of Rods or Casing WOP/C = Weight of Rods or Casing WOP/C = Weight of Rods or Casing W = Unsuccessful Field Vane Shear Test Attempt WOP = Weight at One Person WOP = Weight at One Person WOP = Weight at One Person WOP = Weight at One Person WOP = Weight at One Person							
Sample Information		Visual Description and Remarks		Laboratory Testing Results/AASHTO and Unified Class.			
Depth (ft.)	Sample No.	Pen. Rec. (in.)	Sample Depth (ft.)	Blows (x/6 in.) Shear Strength or RQD (%)	N-uncorrected	N ₆₀	Casing Blows
	U1	24/16.8	2.00 - 4.00	Shelby Tube			OPEN
	10	24/4.8	4.00 - 6.00	WOH	Note 1		
	V1			313 / 45 psf			
	V2	24/12	6.00 - 8.00	313 / 89 psf	Note 1		
	V3			313 / 0 psf			
	V4	24/12	8.00 - 10.00	257/33/4	Note 1		
	40			313 / 45 psf			
	41			WOH			
	42	24/24	10.00 - 12.00	1/11/11/1	Note 1		
	43			1002 / 255 psf			
	50	24/24	12.00 - 14.00	WOH	Note 1		
	51			766 / 157 psf			
	60	24/24	14.00 - 16.00	WOH	Note 1		
	V7			904 / 236 psf			
Remarks: 1. Blow counts for spoons driven through a disturbed field vane test location cannot be used to determine N-value. 2. Water Levels: Water at 3.4' b.g.s. in casing at 17:05; water at 1.2' b.g.s. at 17:12 after casing pulled. Boring is located at the toe of the embankment slope on the north eastern side of the bridge. Refer to Figure 2 for approximate location. 4. Boring elevation estimated from benchmark provided by VHB on April 27, 2017.							
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.							
Boring No.: BB-MAR-204							

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Marsh Bridge Supplemental Borings

Location: Tremont / Southwest Harbor, ME

Boring No.: BB-MAR-205

WIN: 21702.00

Driller: NEBC

Operator: Mike Porter

Logged By: LLM

Date Start/Finish: 9/34 / 16:30 (9/27/17)

Boring Location:

Hammer Efficiency Factor: 0.6

Elevation (ft.): 4

Datum: NAVD 88

Rig Type: M-1

Drilling Method: SSA / D-W

Casing ID/OD: 4"

Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒

Auger ID/OD: 4"

Sampler: Standard Split Spoon/
3" Split Spoon

Hammer Wt./Fall: 140 lbs./ 30"

Core Barrel: N/A

Water Level: 1.3' b.g.s. at 16:20 (9/27/17)

Definitions:
S - Split Spoon Sample
MS - Unsuccessful Split Spoon Sample Attempt
D - Thin Wall Tube Sample
MU - Unsuccessful Thin Wall Tube Sample Attempt
V - Field Vane Shear Test, PP - Pocket Penetrometer
MV - Unsuccessful Field Vane Shear Test Attempt

R - Rock Core Sample
SSA - Solid Stem Auger
HSA - Hollow Stem Auger
RC - Roller Cone
WOM - Weight of 140s, Hammer
WOR/C - Weight of Rods or Casing
WOP - Weight of One Person

S_u - Peak/Remolded Field Vane Undrained Shear Strength (psf)
S_u(avg) - Lab Vane Undrained Shear Strength (psf)
q_u - Unconfined Compressive Strength (ksf)
N - uncorrected - Raw Field SPT N-value
N₆₀ - Hammer Efficiency Factor - Rig Specific Annual Calibration Value
N₆₀ - SPT N-uncorrected Corrected for Hammer Efficiency
N₆₀ - Hammer Efficiency Factor/60/N-uncorrected

T_v - Pocket Torvane Shear Strength (psf)
WC - Water Content, percent
LL - Liquid Limit
PL - Plastic Limit
PI - Plasticity Index
G - Grain Size Analysis
C - Consolidation Test

Sample Information										Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	
Depth (ft.)	Sample No.	Pen./Rec.(in.)	Sample Depth (ft.)	Blow 1/6 in. Strength (lb/ft²)	WOM (lb)	Uncorrected	N ₆₀	Casing Blows						
5	1D	24/12	2.00 - 4.00		WOH/1/1/1	2	2		5A	1.00		1D (2.00' - 4.00'): Top 0.3' gray-brown, wet, fine to coarse SAND, little gravel, little silt (DDA) (7B).		
	2D	24/15.6	4.00 - 6.00		WOP/(1/1/1.5')	Note 1			HP					Bottom 0.7' is gray-brown, damp, ORGANIC SILT, with roots and organic odor (DB).
	V1				692 / 112 psf				4					Bottom 1' is gray-brown to dark brown-black to red-brown, damp, very soft, ORGANIC SILT (2DB).
	V2	24/12	6.00 - 8.00		491 / 89 psf	Note 1			4					V1 (5'): 15.5 ft-lbs / 2.5 ft-lbs with 55 x 110 vane.
10	V3				357 / 67 psf				5	-4.50		V2 (6'): 11 ft-lbs / 2 ft-lbs with 55 x 110 vane. V3 (6.00' - 8.00'): Top 0.6' is brown-black to red-brown to light brown, wet, very soft, ORGANIC SILT, trace gravel, roots throughout (3DA).		
	V4	24/24	8.00 - 10.00		805 / 295 psf	4/4/5/12	9	9	20					Bottom 0.4' is gray, wet, damp, loose, silty, fine to medium SAND, trace gravel, trace organics (2DB).
	5D				1/4/4/3		8	8	51					V3 (7'): 8 ft-lbs / 1.5 ft-lbs with 55 x 110 vane.
	MV2	24/12	10.00 - 12.00		Would Not Push				24					MV1 (7.5'): 55 x 110 vane only pushed 0.5'.
15	6D				9/2/2/1		4	4	17	-8.50		V4 (8'): 20.5 in-lbs / 7.5 in-lbs with 24.5 x 50.8 mm vane. V4 (8.00' - 10.00'): Top 0.55' is tan-brown, damp, stiff, ORGANIC SILT, trace gravel, roots throughout, organic odor (4DA).		
	MV3	24/16.8	12.00 - 14.00		Would Not Push									Bottom 1.45' is gray with darker streaks throughout, damp, stiff, silty CLAY, little fine sand. Sander at top and becoming clayier towards bottom of sample (4DB).
	7D	24/7.2	14.00 - 16.00		10/13/20/15		33	33	11					5D (10.00' - 12.00'): Gray, wet, silty CLAY, little fine sand. Bottom 0.1' is sand.
	8D	24/21.6	16.00 - 18.00		2/2/3/3	Note 1			25					PP: 0, 0.75 TSF; T v: 0.05 TSF
20	V5				> 1045 psf				21	-22.00		MV2 (10'): Failed 25.4 x 50.8 mm vane. 6D (12.00' - 14.00'): Gray, wet, silty CLAY, little fine sand. PP: 0, 0.25 TSF; T v: 0.05 TSF MV3 (12'): Failed 25.4 x 50.8 mm vane. 7D 3" Spoon (14.00' - 16.00'): Gray, wet, silty CLAY, little fine sand, trace gravel. MV3 (14'): Failed 25.4 x 50.8 mm vane. 8D (16.00' - 18.00'): Gray, wet, silty CLAY, trace gravel, trace sand. PP: 0.25, 0.75, 0.5 TSF; T v: 0.3 TSF V5 (17'): 10.5 in-lbs / 1.5 ft-lbs with 55 x 110 vane. V5 (17.5'): 25.4 x 50.8 mm vane at 26.6 in-lbs. 9D (18.00' - 20.00'): Gray, wet, very soft, silty CLAY. PP: 0; T v: 0.5 V6 (19'): 19 in-lbs / 3 in-lbs with 25.4 x 50.8 mm vane. 10D (20.00' - 22.00'): Gray with darker gray streaks, wet, silty CLAY, trace sand, trace shell fragments. PP: 0; T v: 0.02 TSF V7 (21'): 17.5 in-lbs / 3 in-lbs with 25.4 x 50.8 mm vane.		
	9D	24/24	18.00 - 20.00		WOR/WOR/1'	Note 1			22					MU (22.00' - 24.00'): Failed Shelby Tube.
	V6				746 / 118 psf				20					1D (22.00' - 24.00'): Gray with black streaks, wet, silty CLAY. Material that fell out of Shelby tube.
	10D	24/24	20.00 - 22.00		WOR/1/1/1/1	Note 1			57					U1 (24.00' - 26.00'): Gray, wet, silty CLAY, one small piece of gravel on top.
25	MU				Failed Shelby				28	-28.20		1D (26.00' - 28.40'): Gray with some dark gray streaks, wet, silty, CLAY, trace gravel. PP: 0; T v: 0.5 (on dial) Spoon sunk to 28.4'. V8 (27'): 8 ft-lbs / 1.5 ft-lbs with 55 x 110 mm vane. V9 (28'): 9 ft-lbs / 1 ft-lbs with 55 x 110 mm vane. 13D (28.00' - 30.00'): Gray, wet, soft, silty CLAY, trace gravel, trace sand. MV4 (28.5'): Failed 55 x 110 mm vane, only pushed 0.5'.		
	U1	24/24	24.00 - 26.00		Shelby Tube				OPEN					U1 (24.00' - 26.00'): Gray, wet, silty CLAY, one small piece of gravel on top.
	12D	28.8/24	26.00 - 28.40		WOR	Note 1								12D (26.00' - 28.40'): Gray with some dark gray streaks, wet, silty, CLAY, trace gravel.
	V9				357 / 67 psf									PP: 0; T v: 0.5 (on dial)
30	13D				402 / 67 psf					-32.20		V8 (27'): 8 ft-lbs / 1.5 ft-lbs with 55 x 110 mm vane. V9 (28'): 9 ft-lbs / 1 ft-lbs with 55 x 110 mm vane. 13D (28.00' - 30.00'): Gray, wet, soft, silty CLAY, trace gravel, trace sand. MV4 (28.5'): Failed 55 x 110 mm vane, only pushed 0.5'.		
	MV4	24/8.4	28.00 - 30.00		(WOH/1/4/16)	4	4							Drill grinding at 32.2', milky gray wash.
														Drill grinding at 35'.
														Rig shaking and grinding at 37': Gray-brown wash with sand.
35										-34.10		Top of Rock at 38.1' b.g.s., drill shaking.		
														Bottom of Exploration at 38.30 feet below ground surface.
40										-34.30				
45														
50														

Remarks:
1. Blow counts for spoons driven through a disturbed field vane test location cannot be used to determine N-value.
2. Water Levels: Water at 0.9' b.g.s. in casing at 15:54, water at 1.3' b.g.s. after casing pulled at 16:20.
3. Boring is located at the toe of the embankment slope on the south eastern side of the bridge, near the abutment. Refer to Figure 2 for approximate location.
4. Boring elevation estimated from basemap provided by VHB on April 27, 2017.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: BB-MAR-205

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2170(200)

WIN 21702.00

BRIDGE NO. 2511

BRIDGE PLANS

PROJ. MANAGER L. TIMBERLAKE

BY GOLDER

DATE 3/22/2018

CHECKED-REVIEWED GOLDER

DESIGN-DETAILED GOLDER

DESIGN-REVIEWED GOLDER

DESIGN-DETAILED2 GOLDER

DESIGN-DETAILED3 GOLDER

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

MARSH BRIDGE

BASS HARBOR ROAD OVER MARSH BROOK

TREMONT/SOUTHWEST HARBOR

HANCOCK COUNTY

BORING LOGS (5 OF 5)

SHEET NUMBER

37

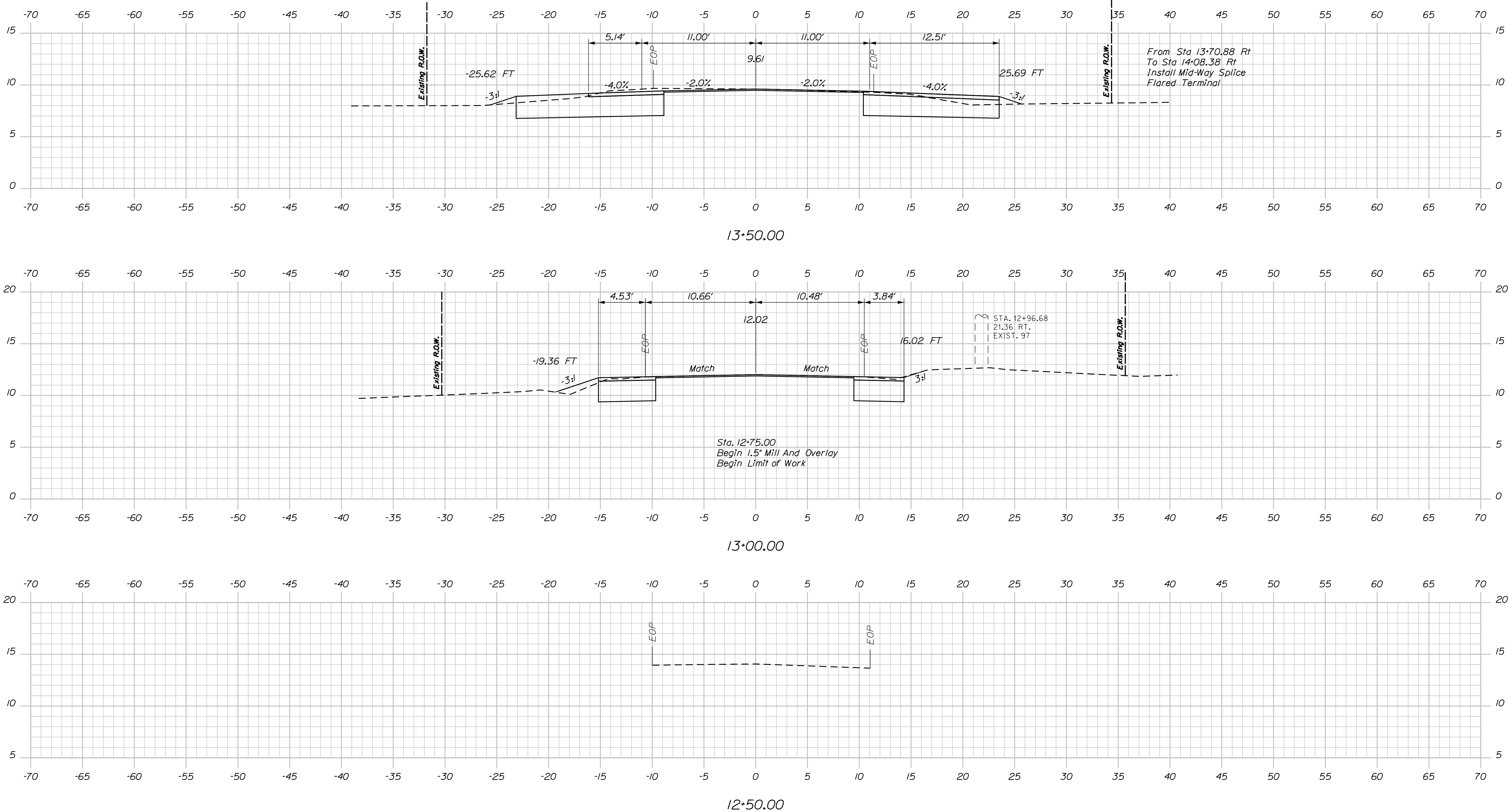
OF 69

Date:9/6/2018

Username: PDonovan

Division: BRIDGE

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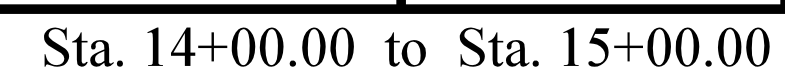


Signature: Robert S. Blunt
P.E. NUMBER: 11158
DATE: July 18, 2018

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	ECF	JMS/DPD	3/22/2018
CHECKED-REVIEWED	AG	RSB/TSP	3/22/2018
DESIGN-DETAILED	AG		
DESIGN-DETAILED	AG		
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR HANCOCK COUNTY
CROSS SECTIONS

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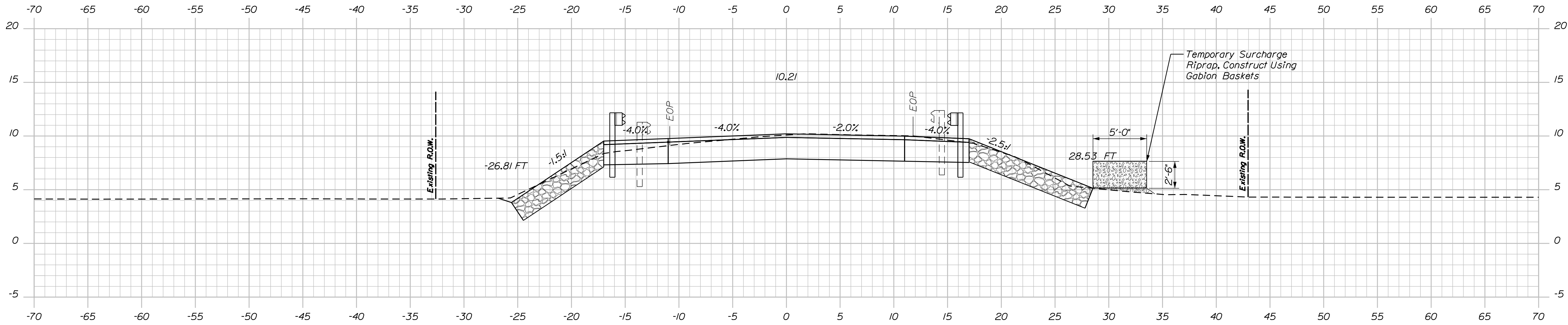
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Date: 9/6/2018

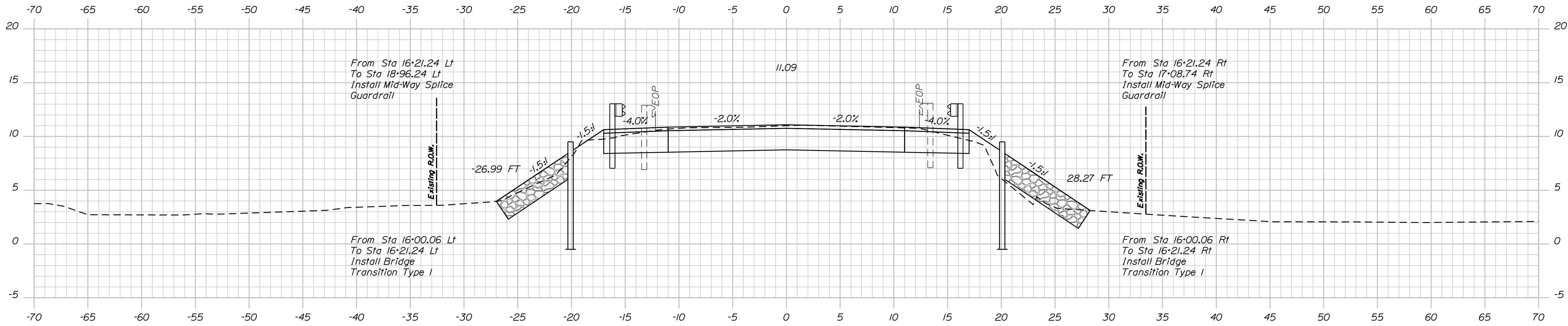
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Division: BRIDGE

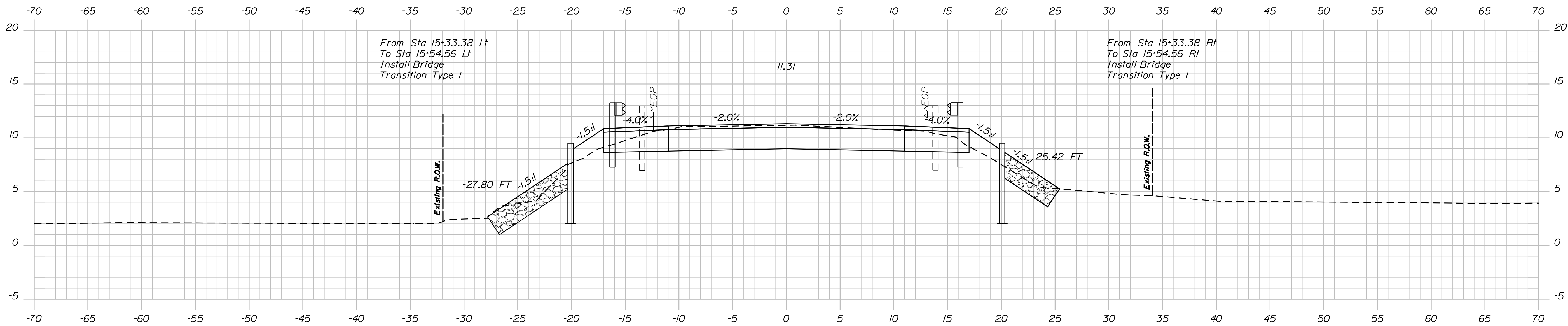
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16+50.00



16+00.00



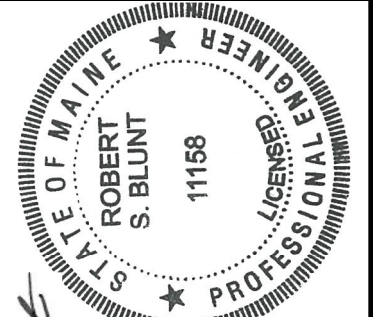
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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170(200)

BRIDGE NO. 2511WIN21702.00

BRIDGE PLANS



Robert S. Blunt
SIGNATURE
11158
P.E. NUMBER
July 18, 2018
DATE

PROJ. MANAGER	DATE	BY	DATE
L. TIMBERLAKE	3/22/2018	JMS/DPD	3/22/2018
DESIGN-DETAILED	ECF	RSB/TSB	
CHECKED-REVIEWED	AG		
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR HANCOCK COUNTY

CROSS SECTIONS

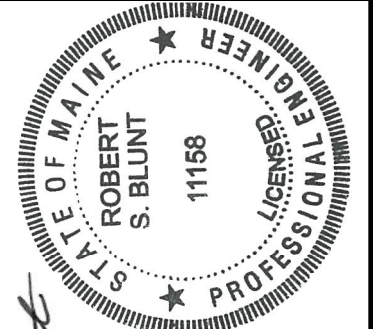
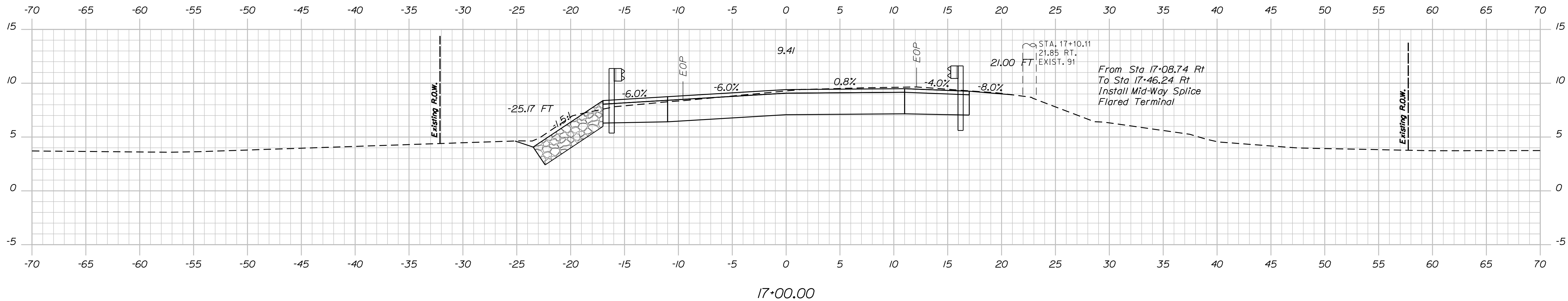
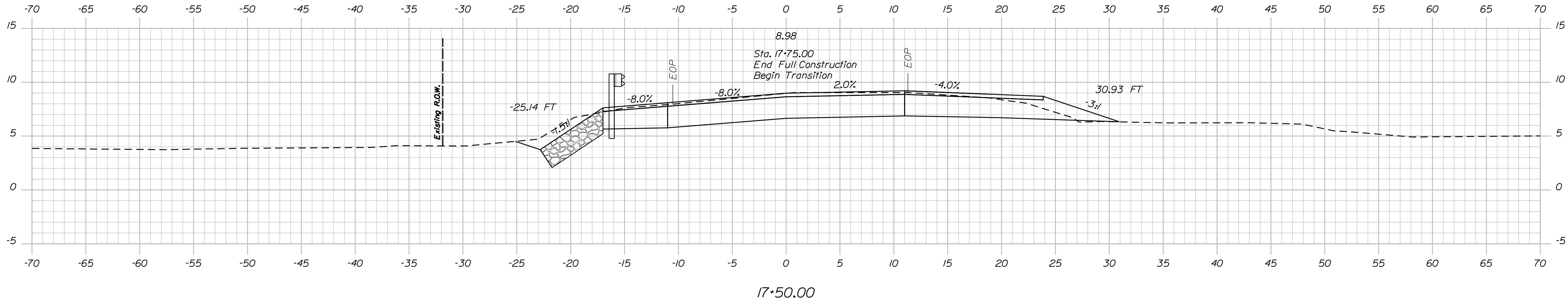
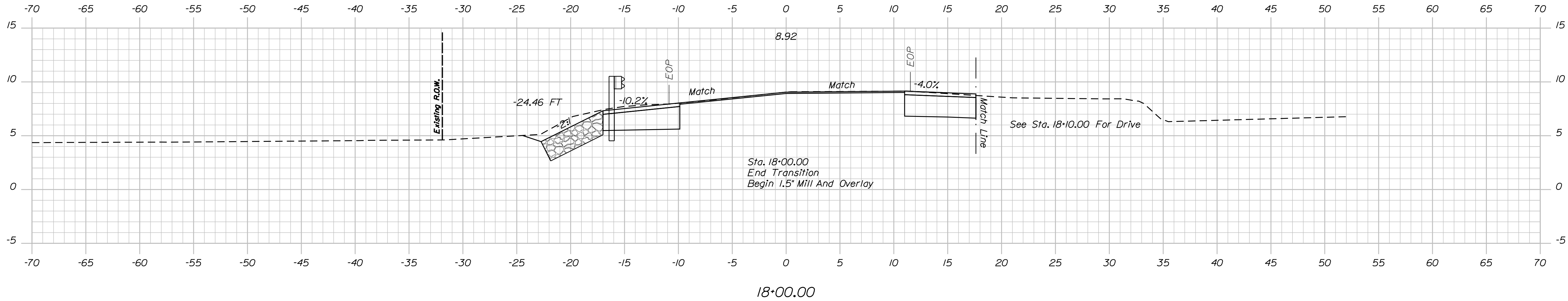
SHEET NUMBER
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OF 69

Date:9/6/2018

Username: PDonovan

Division: BRIDGE

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Signature: Robert S. Blunt
P.E. NUMBER: 11158
DATE: July 18, 2018

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	ECF	JMS/DDP	3/2/2018
CHECKED-REVIEWED	AG	RSB/TSB	3/2/2018
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

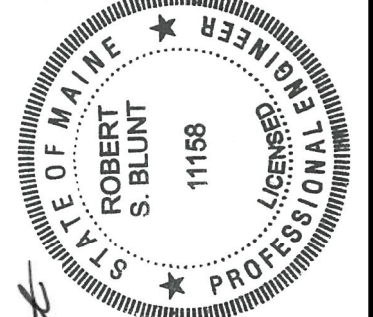
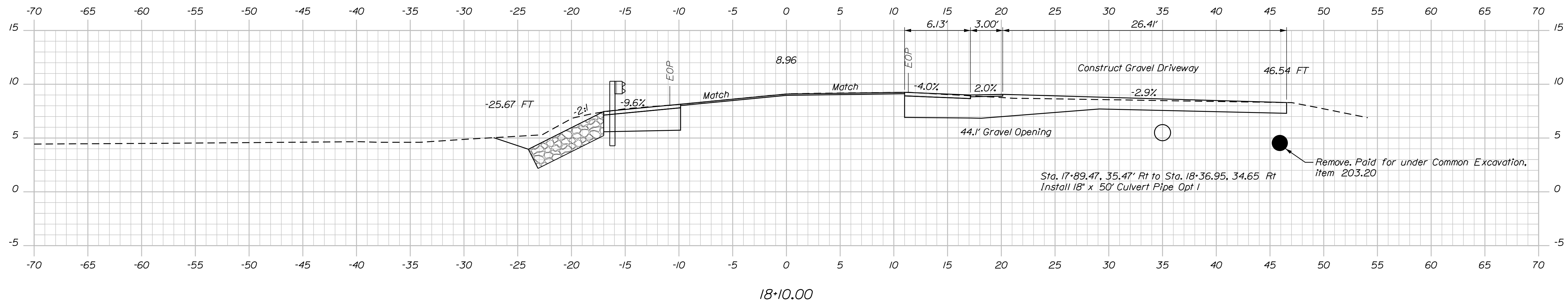
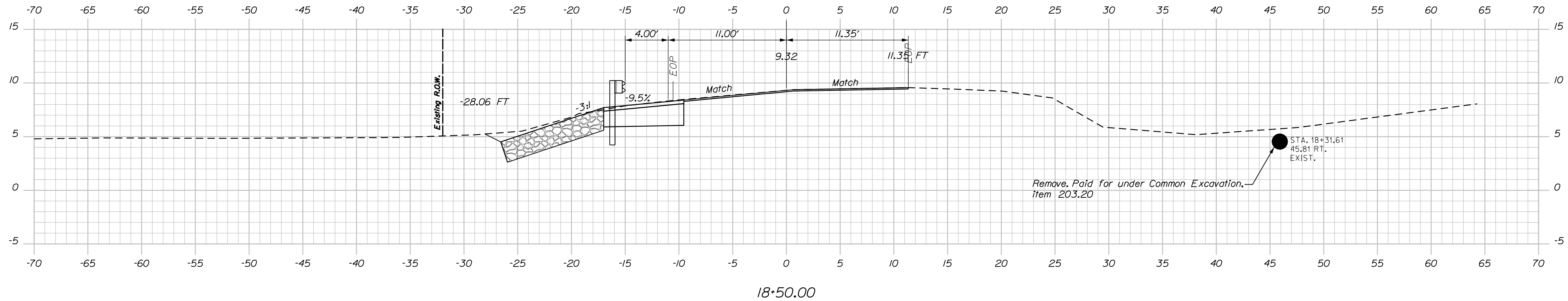
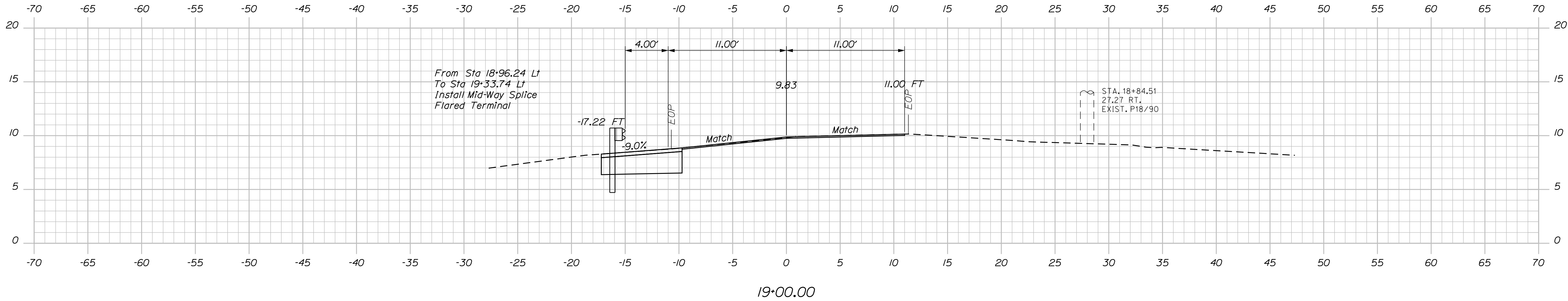
MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR HANCOCK COUNTY
CROSS SECTIONS

Date:9/6/2018

Username: PDonovan

Division: BRIDGE

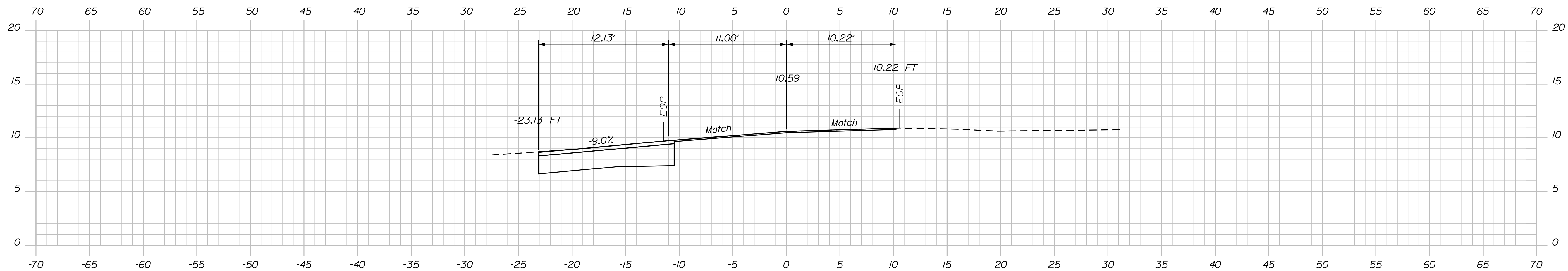
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SIGNATURE
1158
P.E. NUMBER
July 18, 2018
DATE

PROJ. MANAGER	DATE	BY	DATE
L. TIMBERLAKE	JMS/DPD	3/22/2018	
CHECKED-REVIEWED	ECF	RSB/TSP	
DESIGN2-DETAILED	AG		
DESIGN3-DETAILED			
DESIGN3-DETAILED			
DESIGN3-DETAILED			
DESIGN3-DETAILED			
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MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR HANCOCK COUNTY
CROSS SECTIONS



19+50.00

Sta. 19+50.00 to Sta. 20+00.00

BRIDGE NO. 2511	WIN 21702.00	BRIDGE PLANS
STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2170(200)		

Robert S. Blunt

SIGNATURE	11/58	P.E. NUMBER	July 18, 2018	DATE
-----------	-------	-------------	---------------	------

PROJ. MANAGER	L. TIME/RAKE	BY	DATE
DESIGN-DETAILED	ECF	JMS/DPD	3/2/2018
CHECKED-REVIEWED	AC	RSB/TSB	3/2/2018
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MARSH BRIDGE

BASS HARBOR ROAD OVER MARSH BROOK

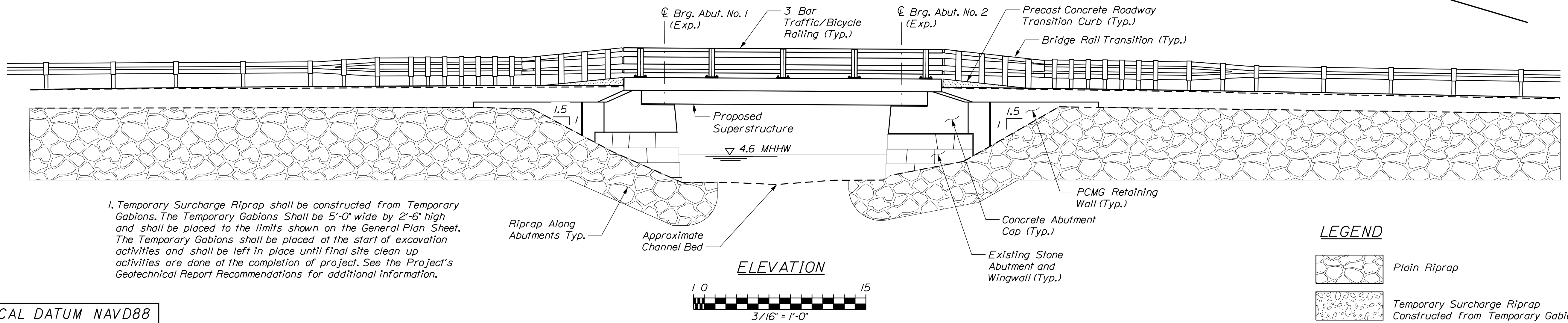
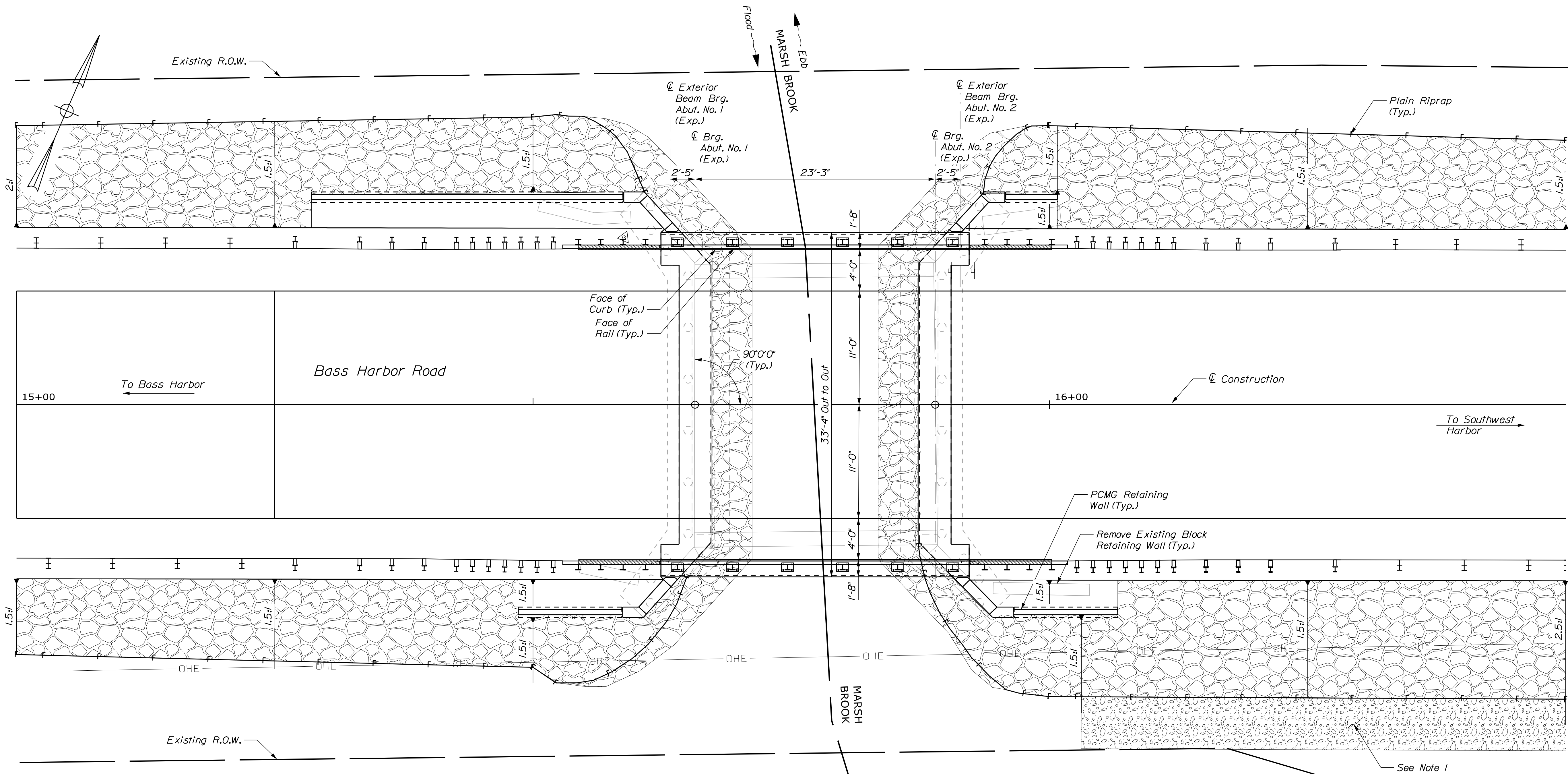
TREMONT/SOUTHWEST HARBOR HANCOCK COUNTY

CROSS SECTIONS

SHEET NUMBER

43

OF 69

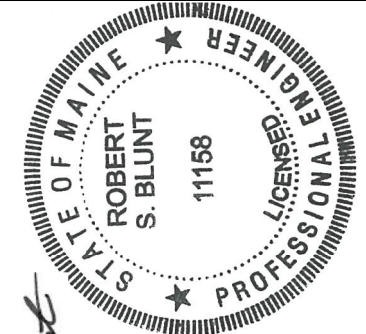


1. Temporary Surcharge Riprap shall be constructed from Temporary Gabions. The Temporary Gabions Shall be 5'-0" wide by 2'-6" high and shall be placed to the limits shown on the General Plan Sheet. The Temporary Gabions shall be placed at the start of excavation activities and shall be left in place until final site clean up activities are done at the completion of project. See the Project's Geotechnical Report Recommendations for additional information.

LEGEND

- Plain Riprap
- Temporary Surcharge Riprap Constructed from Temporary Gabions

VERTICAL DATUM NAVD88



Signature: Robert S. Blunt
P.E. NUMBER: 11158
DATE: July 18, 2018

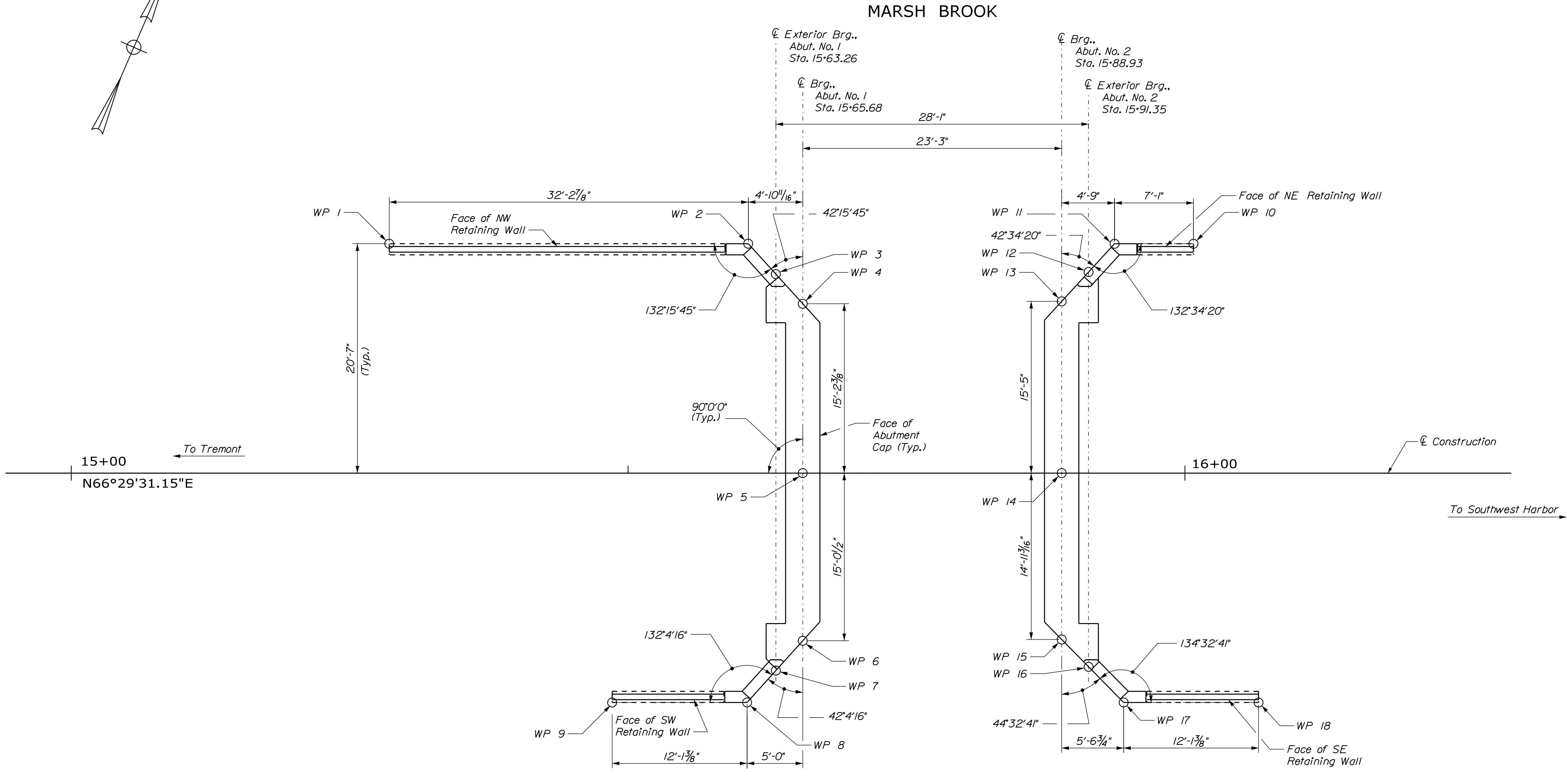
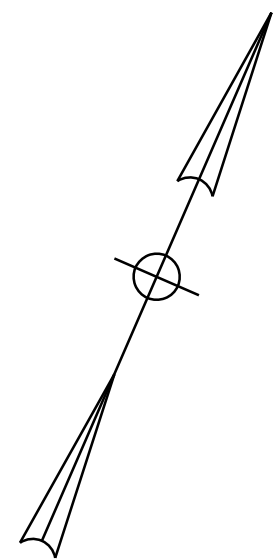
PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	TJC/BGP	DPD	3/22/2018
CHECKED-REVIEWED	QME/CTA	RSB/TSB	3/22/2018
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR
HANCOCK COUNTY
BRIDGE PLAN
AND ELEVATION

SHEET NUMBER

44

OF 69



SURVEY LAYOUT PLAN
Scale: 3/16" = 1'-0"

WORK POINT COORDINATE TABLE		
WP	Northing	Easting
1	153461.605	2174497.131
2	153474.465	2174526.695
3	153472.954	2174530.053
4	153471.480	2174533.329
5	153457.542	2174539.392
6	153443.748	2174545.392
7	153440.329	2174544.244
8	153436.672	2174543.015
9	153431.840	2174531.908
10	153490.410	2174563.352
11	153487.585	2174556.857
12	153484.327	2174555.731
13	153480.951	2174554.564
14	153466.816	2174560.712
15	153453.124	2174566.668
16	153451.837	2174569.863
17	153450.160	2174574.025
18	153454.992	2174585.134

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2170(200)

BRIDGE NO. 2511
WIN
21702.00
BRIDGE PLANS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
ROBERT S. BLUNT
11158
REGISTERED PROFESSIONAL ENGINEER

Signature

11158

P.E. NUMBER

July 18, 2018

SIGNATURE

11158

P.E. NUMBER

July 18, 2018

DATE

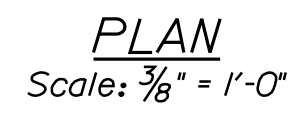
PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	J.C./BGP	DPD	3/22/2018
CHECKED-REVIEWED	G.M./C.T.A.	RSB/TSB	3/22/2018
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR
HANCOCK COUNTY

SURVEY LAYOUT PLAN

SHEET NUMBER

45



SECTION A-A
Not to Scale

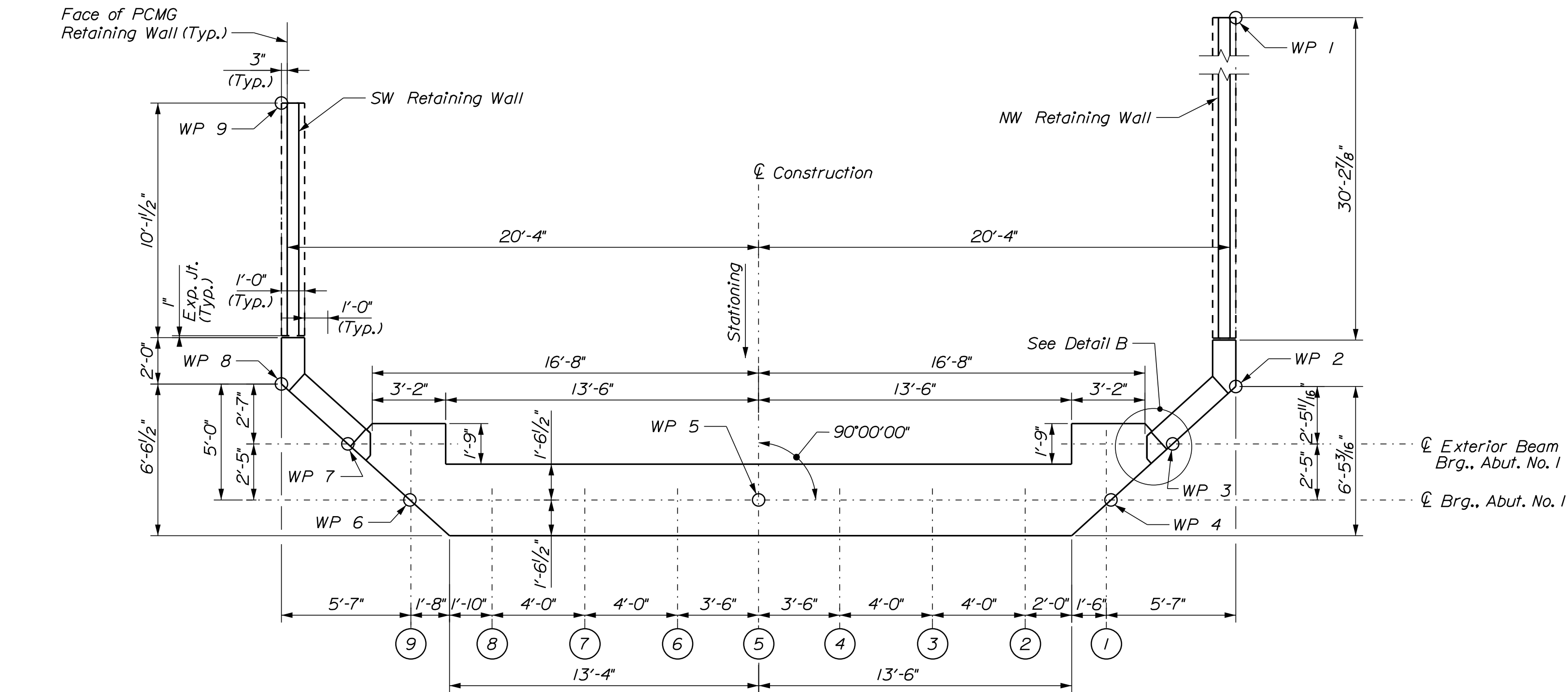
46	SHEET NUMBER	MARSH BRIDGE					STATE OF MAINE				
		BASS HARBOR ROAD OVER MARSH BROOK					DEPARTMENT OF TRANSPORTATION				
OF 69		TREMONT/SOUTHWEST HARBOR HANCOCK COUNTY					STP-2170(200)				
		ABUTMENT NO. 1					BRIDGE NO. 2511				
		REMOVAL					WIN				
							21702.00				
		BRIDGE PLANS									

Date: 9/6/2018

Username: PDonovan

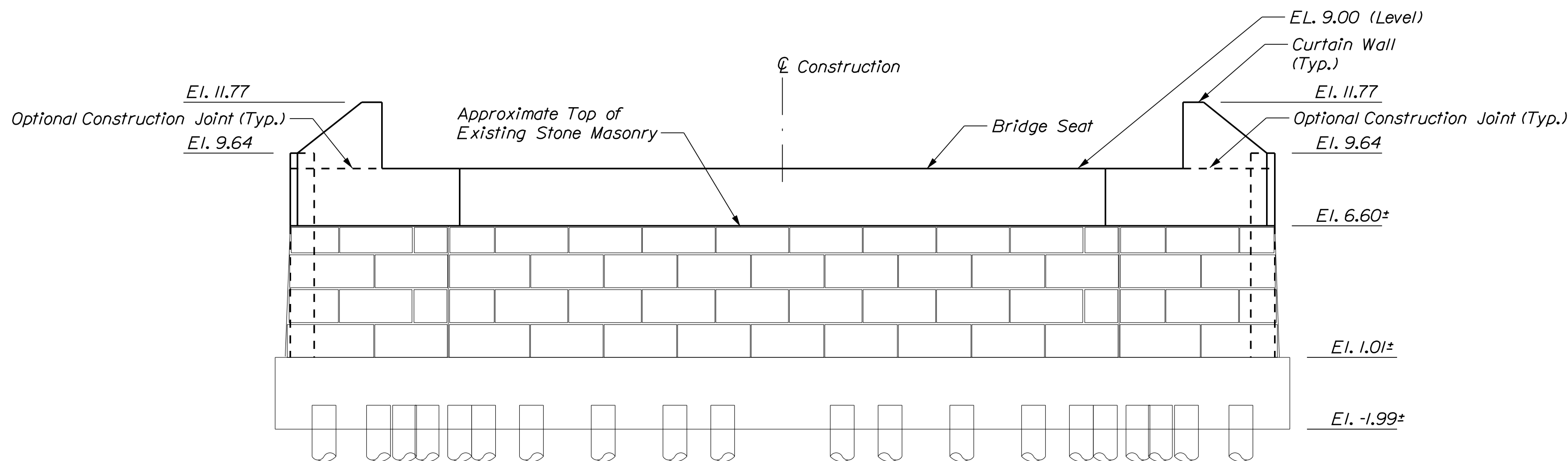
Division: BRIDGE

Filename: ...\\MSTA\\047_Abut_01_Masonry.dgn



PLAN
(Existing Abutment Not Shown for Clarity)
Scale: 1/4" = 1'-0"

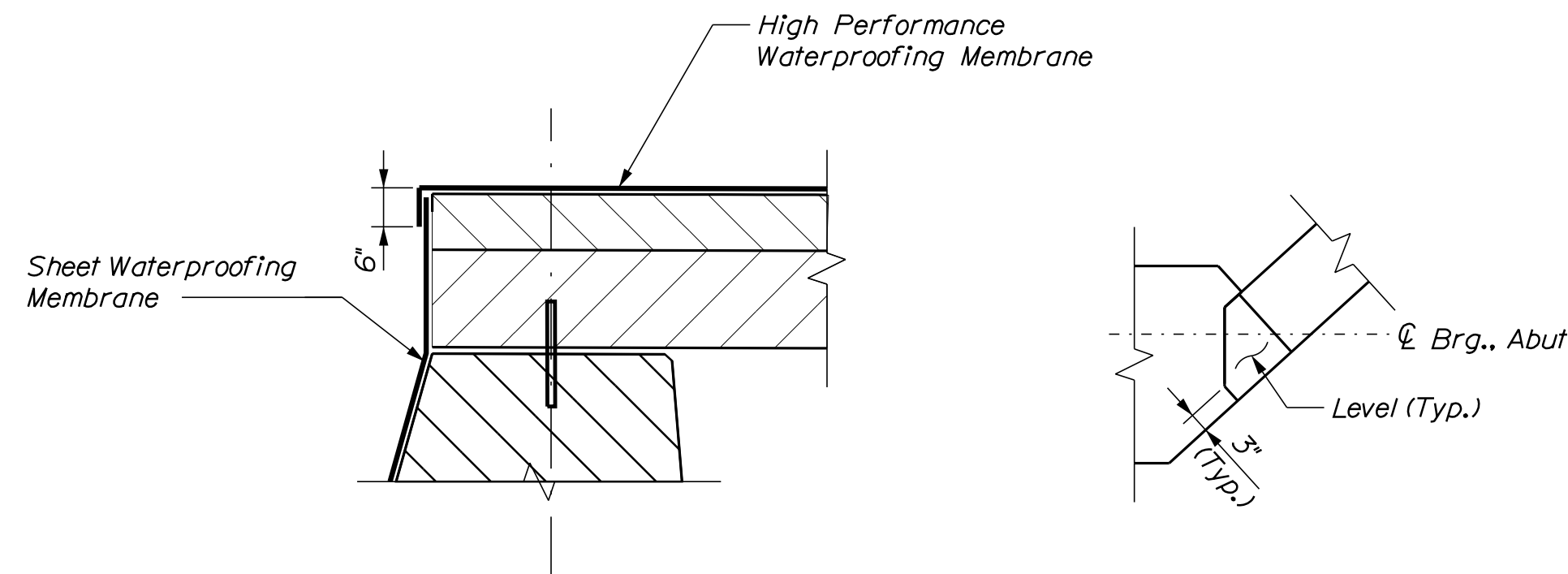
⊙ = Voided Slab Number



ELEVATION
Scale: 1/4" = 1'-0"

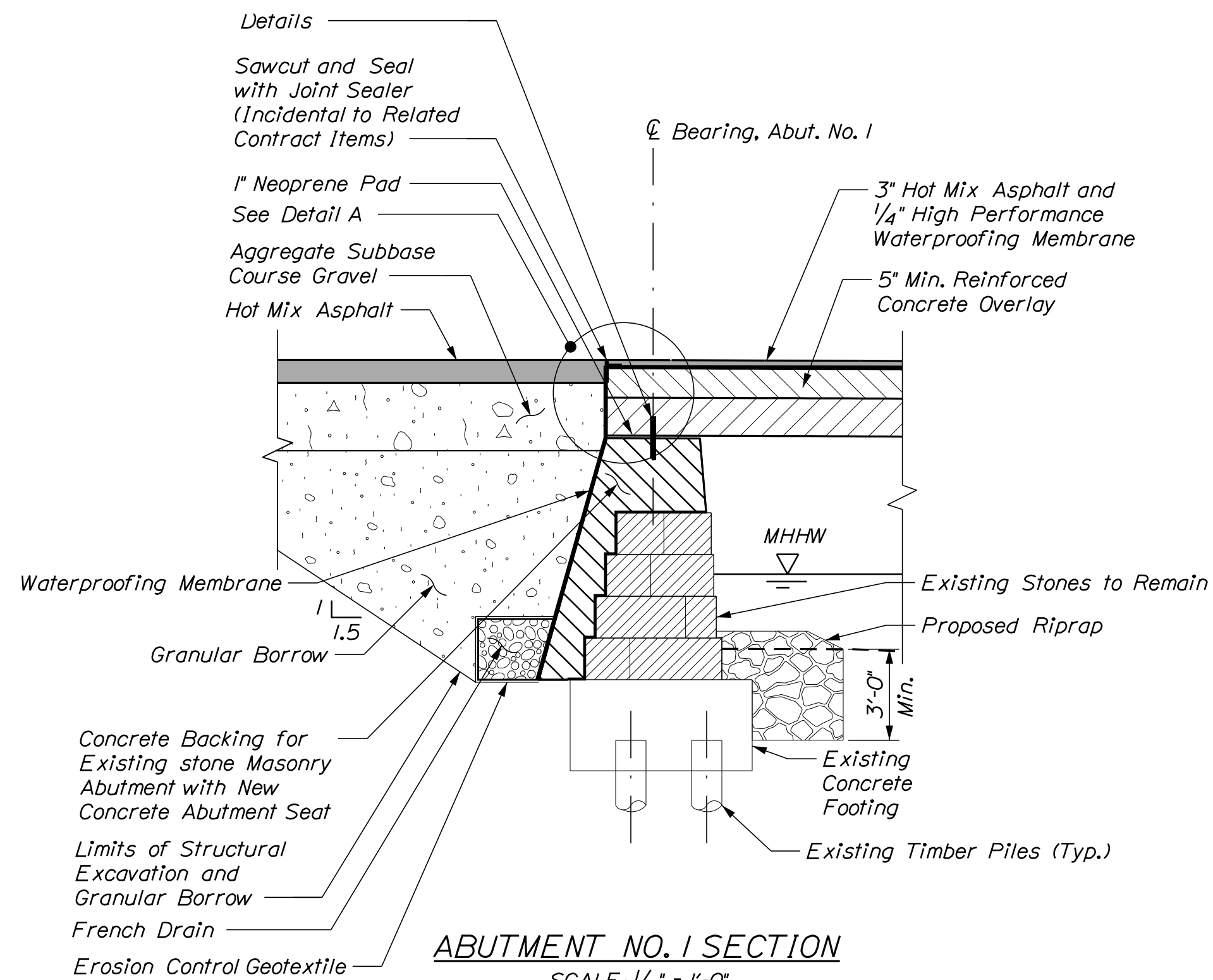
ABUTMENT NOTES

1. Reinforcing steel shall have a minimum concrete cover of 3 inches in all substructure elements unless otherwise noted.
2. Cover joints where waterstops are not required in accordance with Standard Detail 502 (01).
3. To ensure an accurate match with the superstructure, the curtain walls shall be placed after erection of the precast units.
4. All reinforcing steel shall be stainless steel.
5. On all exposed faces of concrete the clear cover spacers and permanent form ties shall be stainless steel or other non-corrosive material approved by the Resident.
6. The Granular Borrow placed behind the abutments shall be placed in 6 to 8 inch loose lifts and compacted to a minimum of 95 percent of the maximum dry density as determined by AASHTO T-180, Mechanical tampers or approved alternative, should be used to compact the backfill adjacent abutments walls.

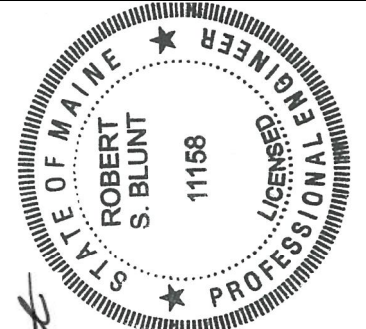
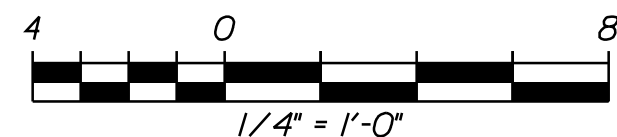


DETAIL A
SCALE: 1/2" = 1'-0"

DETAIL B
(Other locations similar)
SCALE: 1/2" = 1'-0"



ABUTMENT NO. 1 SECTION
SCALE: 1/4" = 1'-0"



Signature: Robert S. Blunt
P.E. NUMBER: 11158
DATE: July 18, 2018

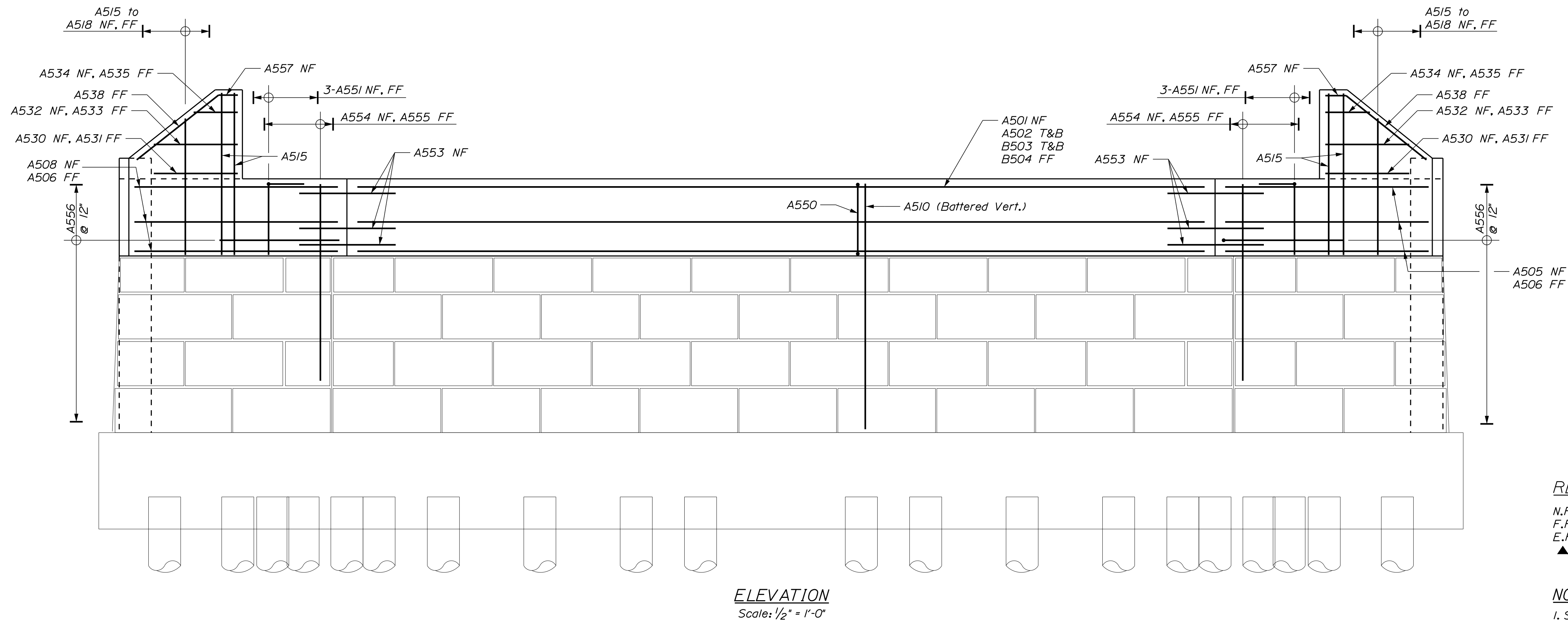
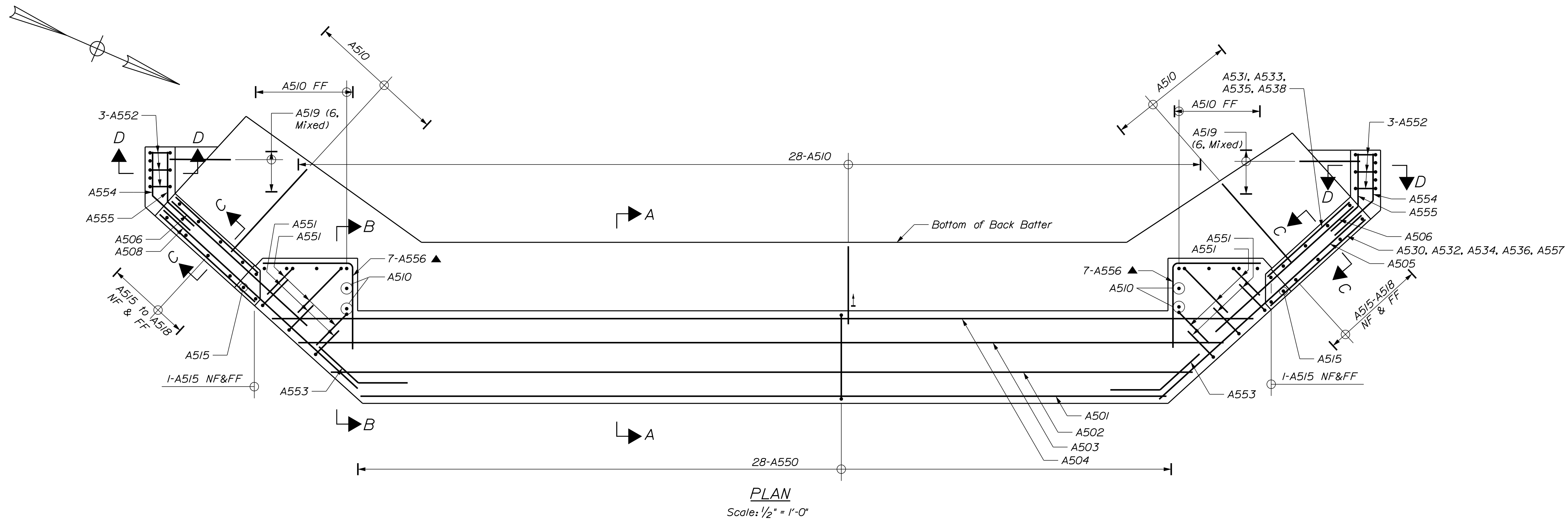
PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	J.C./BGP	DPD	3/22/2018
CHECKED-REVIEWED	GME/GTA	RSB/TSB	3/22/2018
DESIGN-DETAILED	DESIGN-DETAILED		
REVISIONS	1		
REVISIONS	2		
REVISIONS	3		
REVISIONS	4		
FIELD CHANGES			

MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR
HANCOCK COUNTY
ABUTMENT NO. 1
MASONRY

SHEET NUMBER

47

OF 69

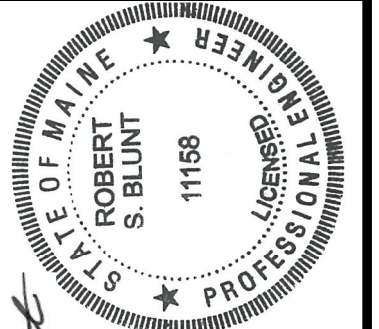


REINFORCING KEY

N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
▲ = Cut in Field

NOTE:

1. See Abutment Reinforcing and Details Sheet for Sections A-A, B-B, C-C, and D-D.

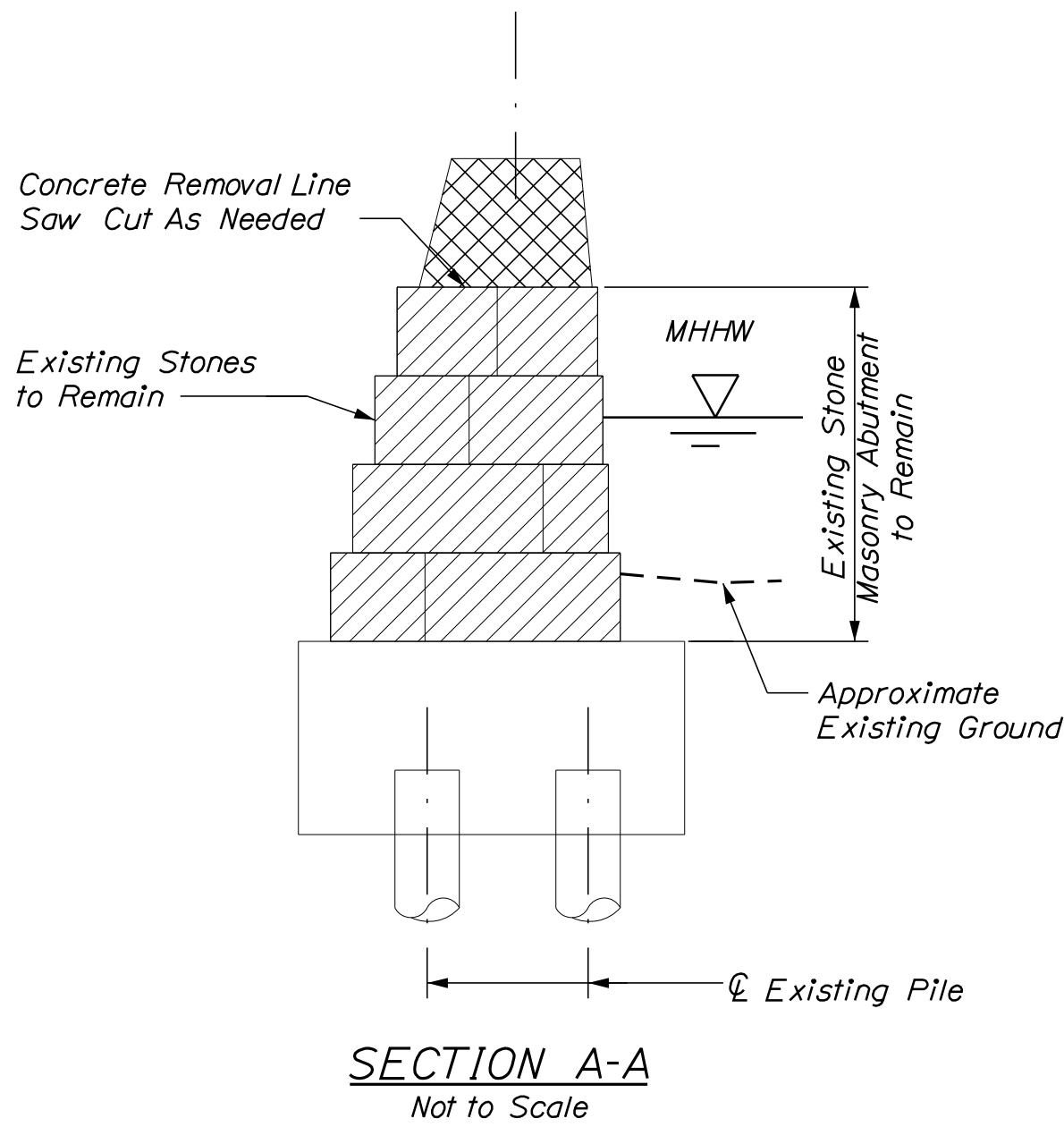
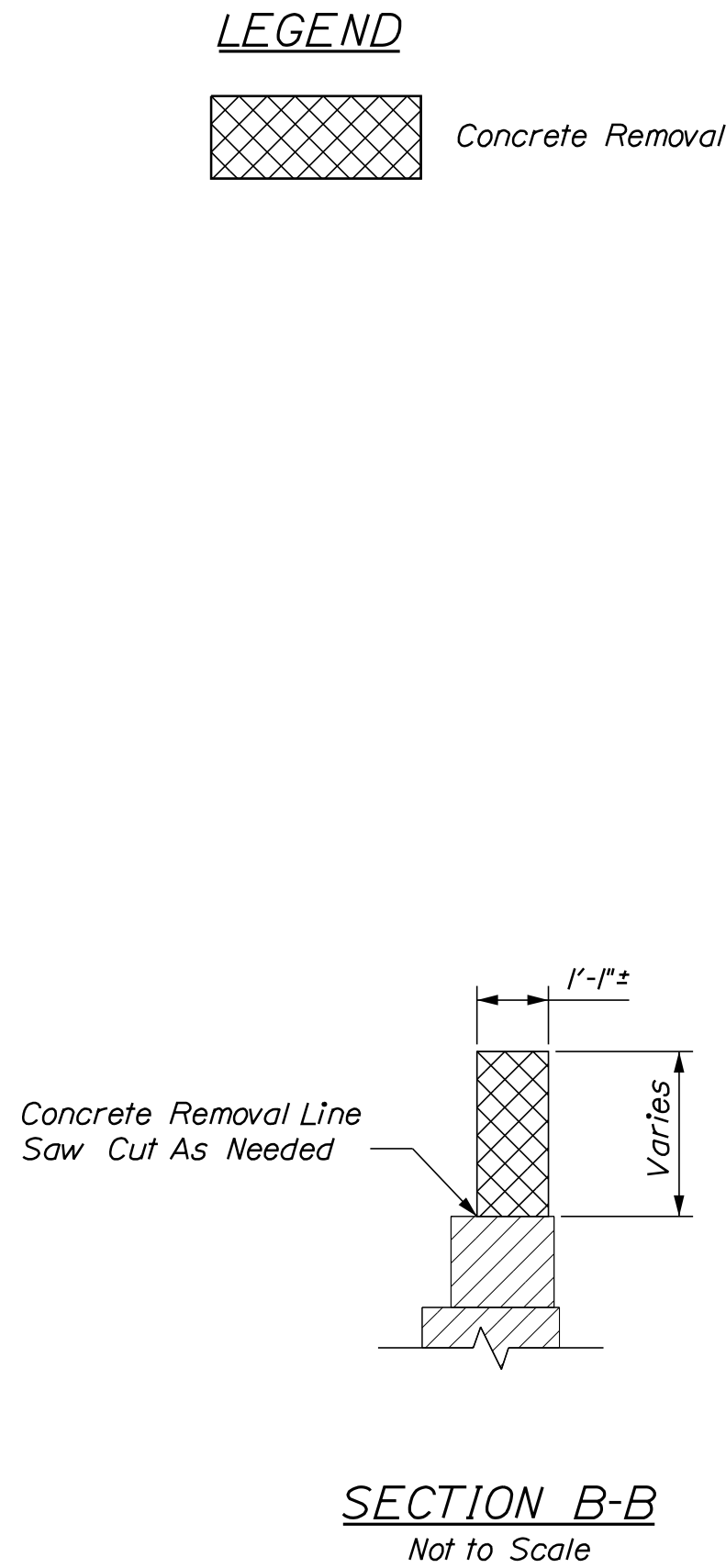
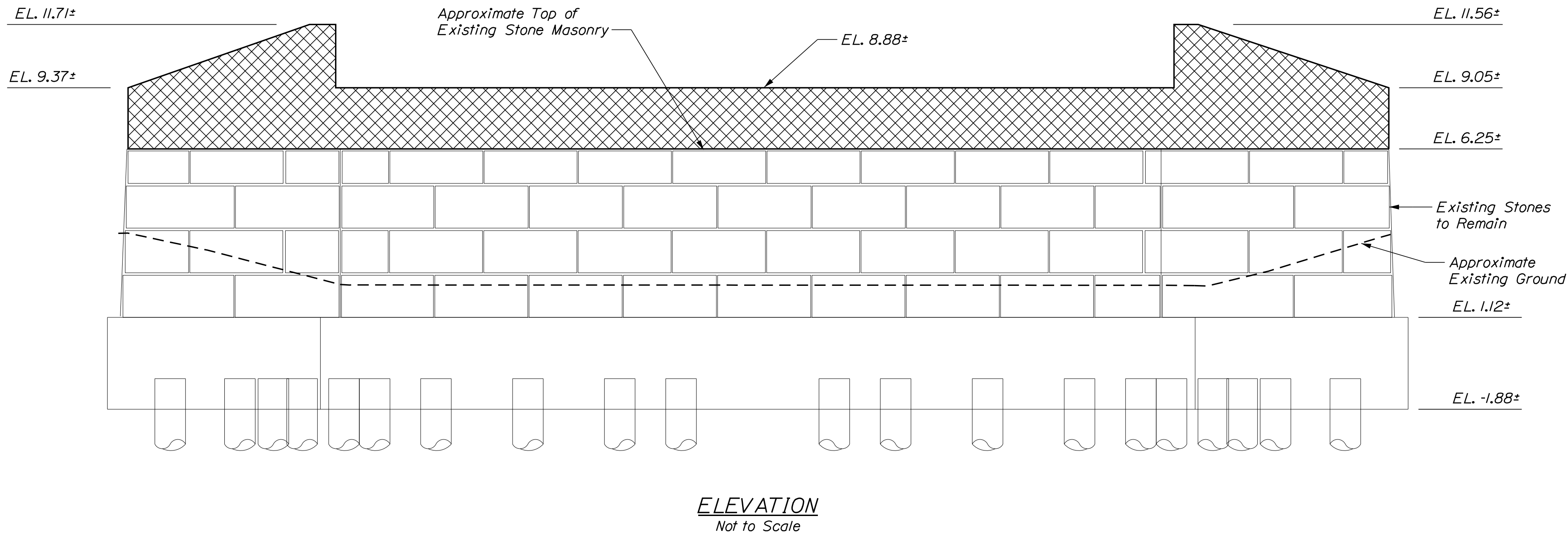
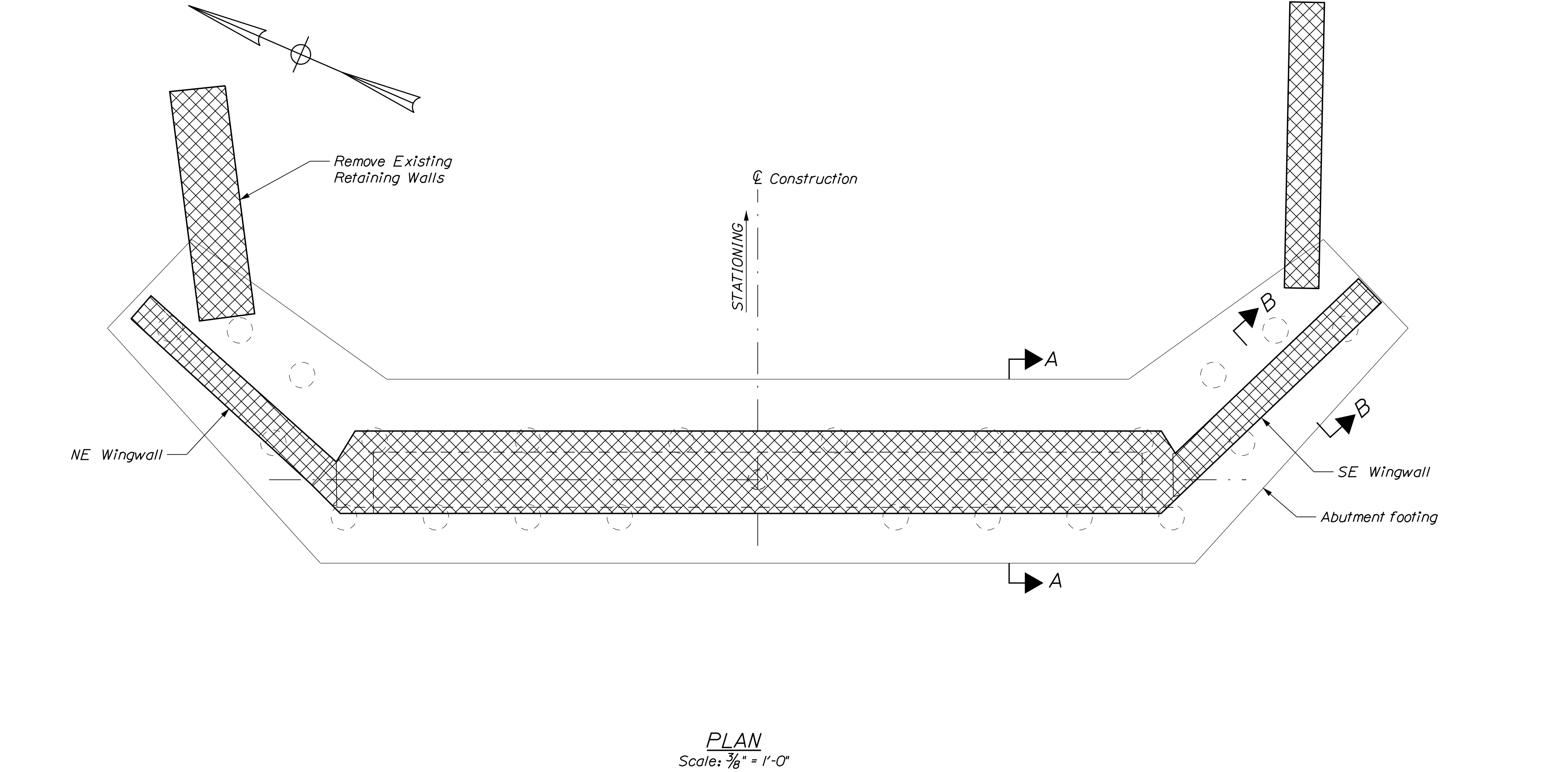
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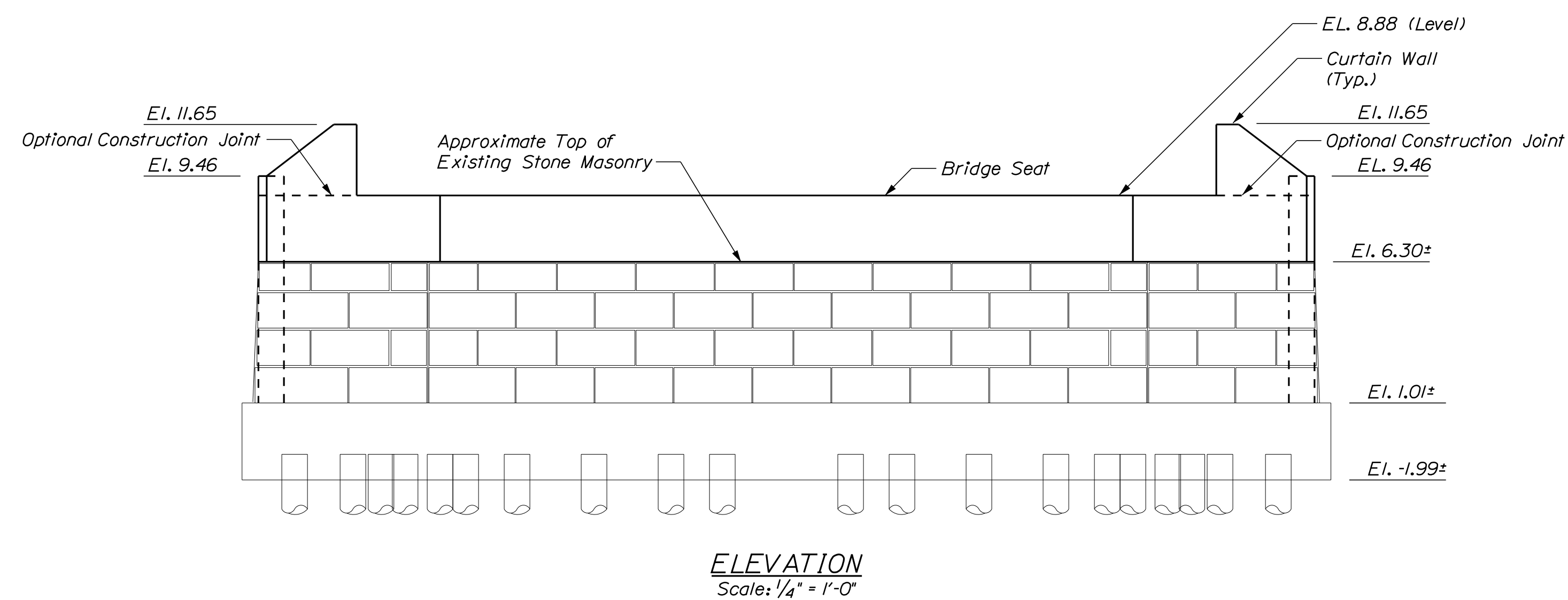
MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR HANCOCK COUNTY

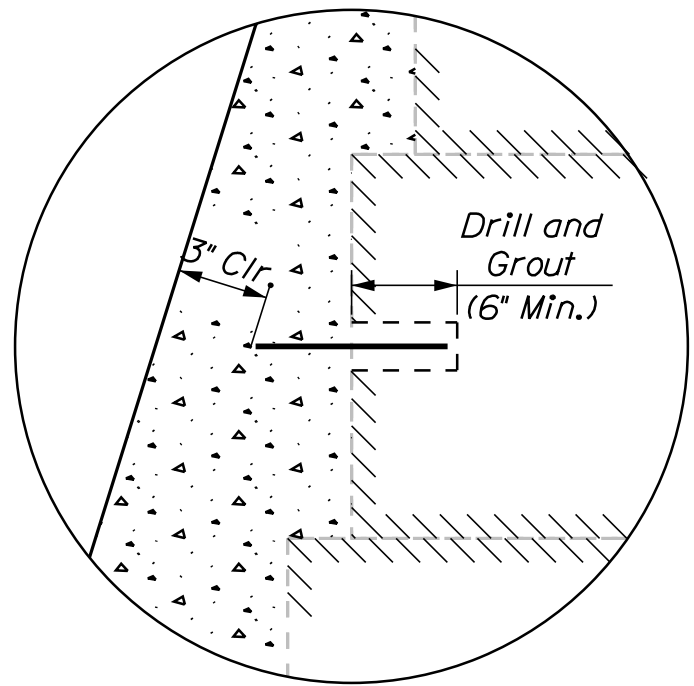
SHEET NUMBER

48

OF 69

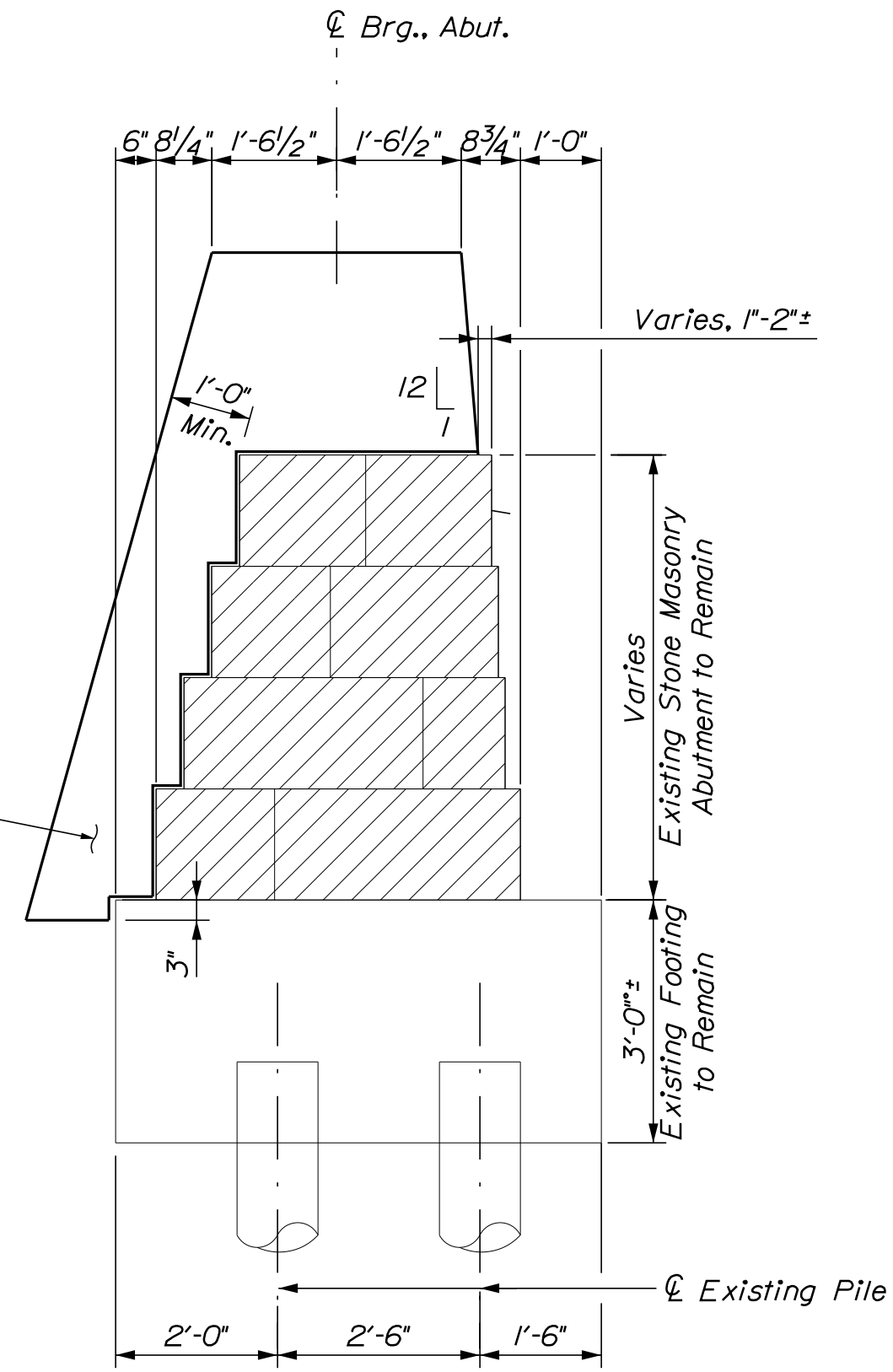




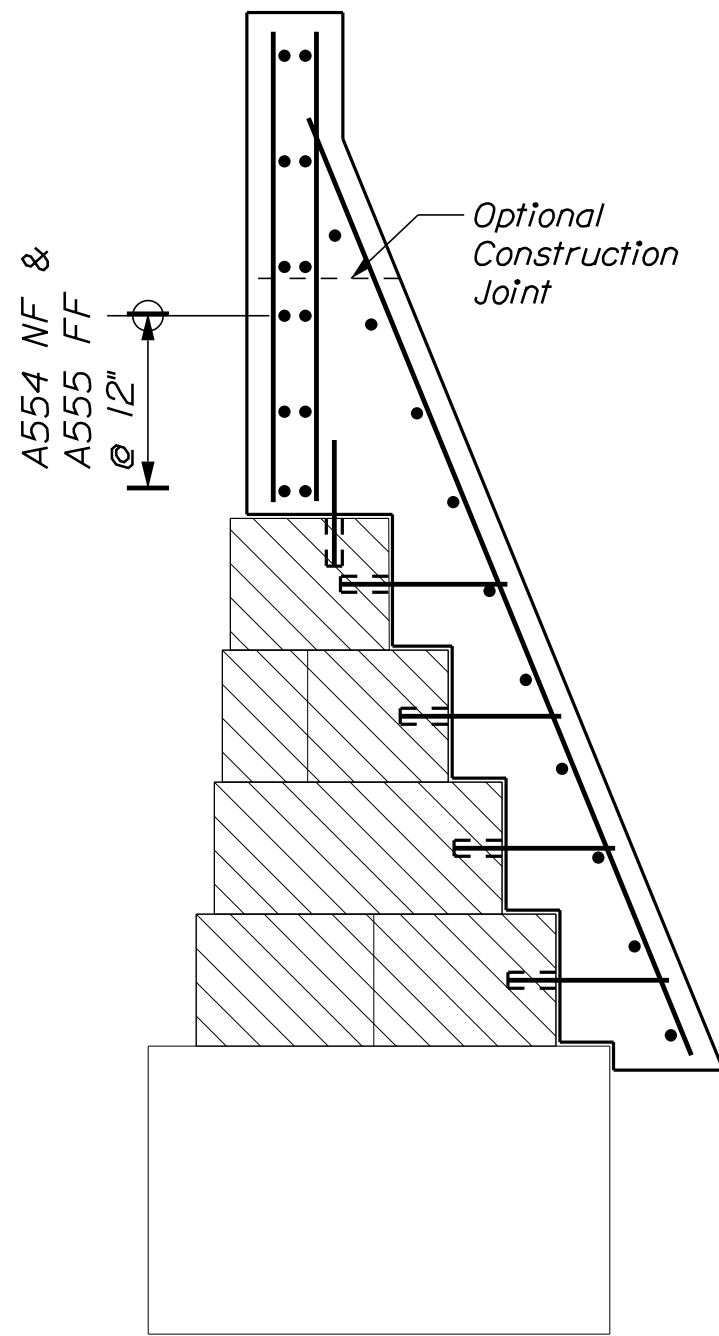


DETAIL A
N.T.S.

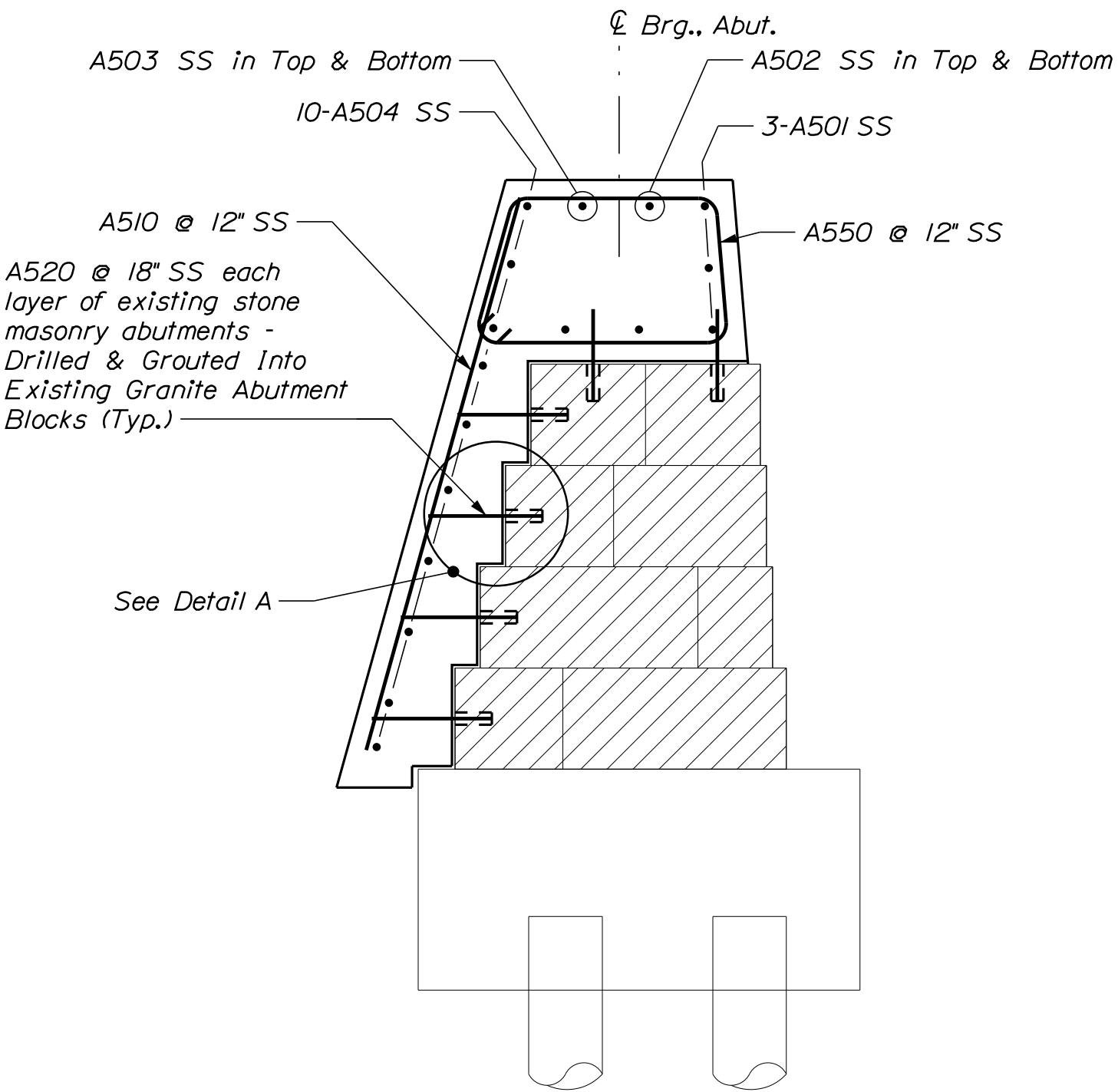
Concrete Backing
for Existing Stone
Masonry Abutment



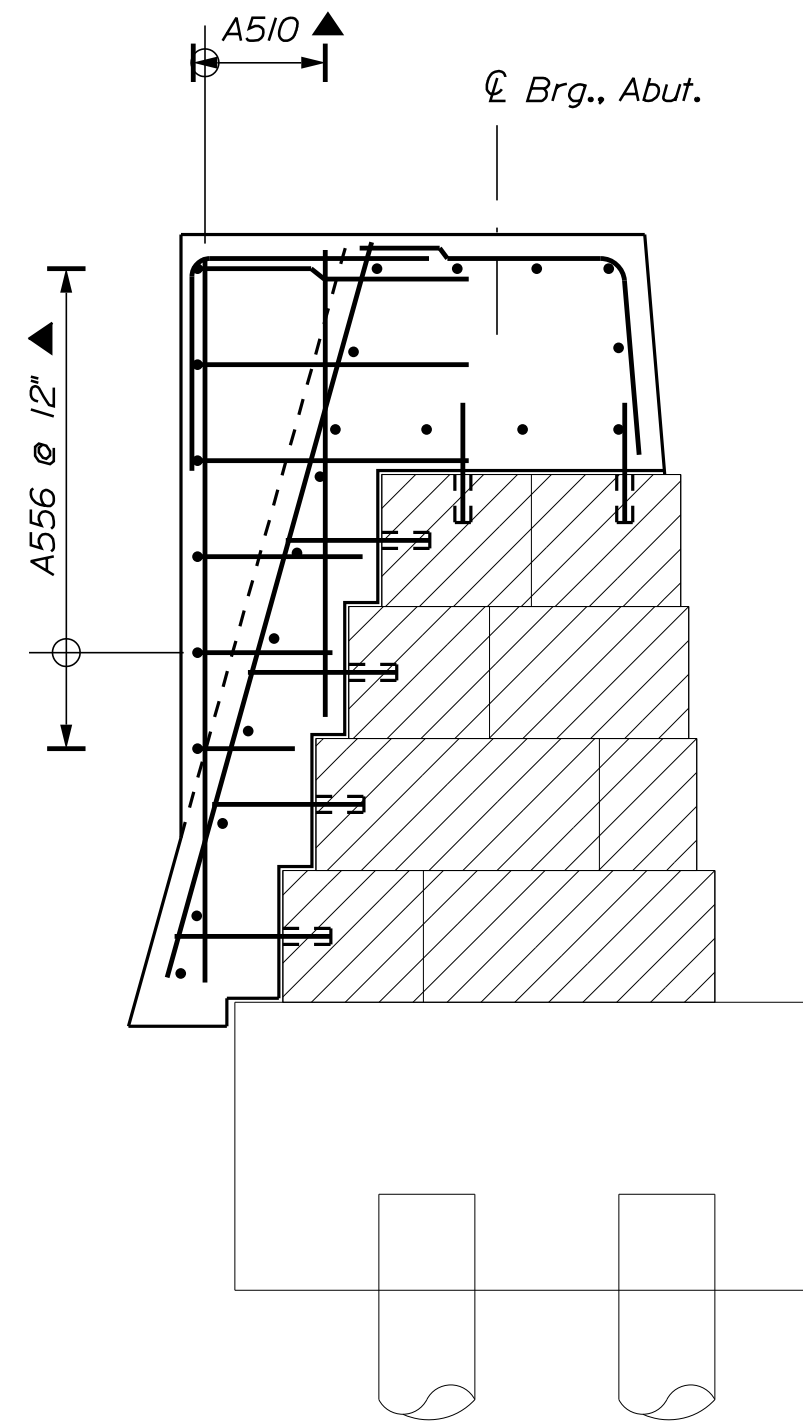
PROPOSED ABUTMENT SECTION
(Abutment 1 Shown, Abutment 2 Similar)
Scale: 1/2" = 1'-0"



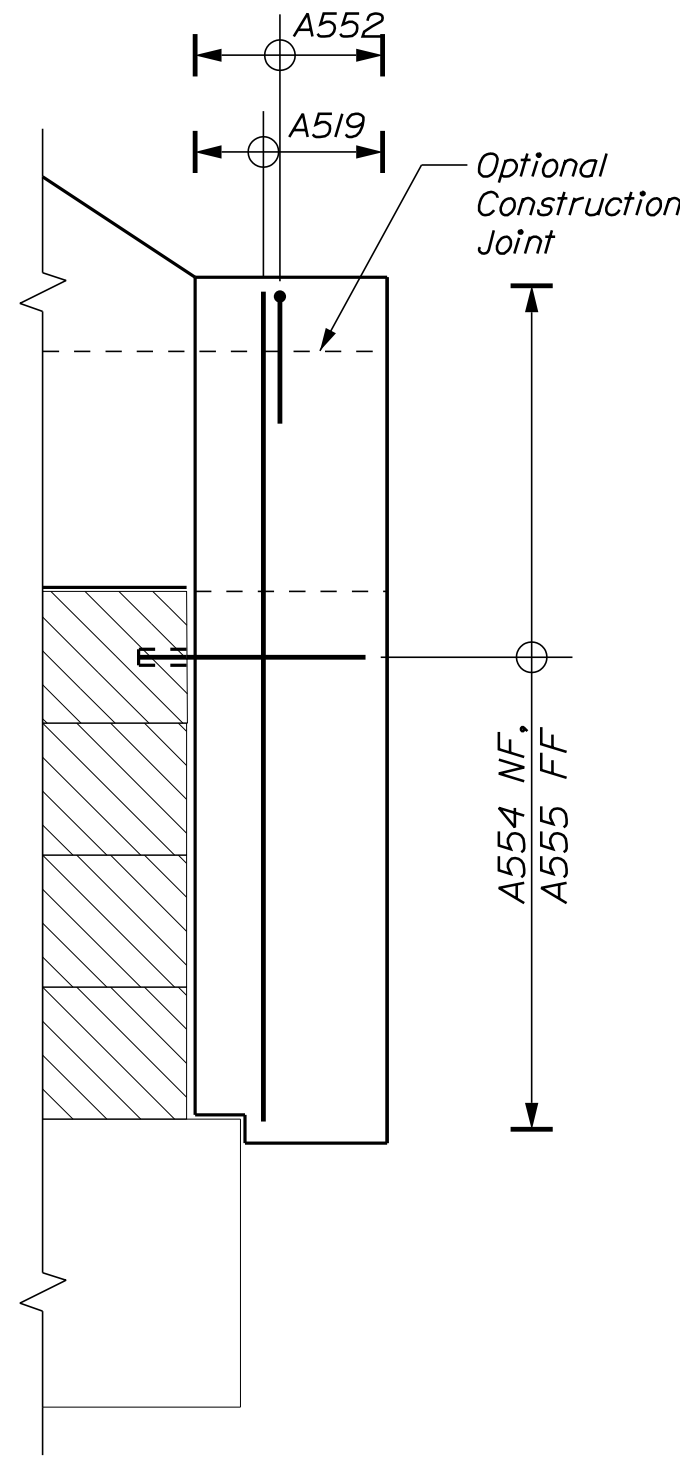
SECTION C-C
(Abutment 1 Shown, Abutment 2 Similar)
Scale: 1/2" = 1'-0"



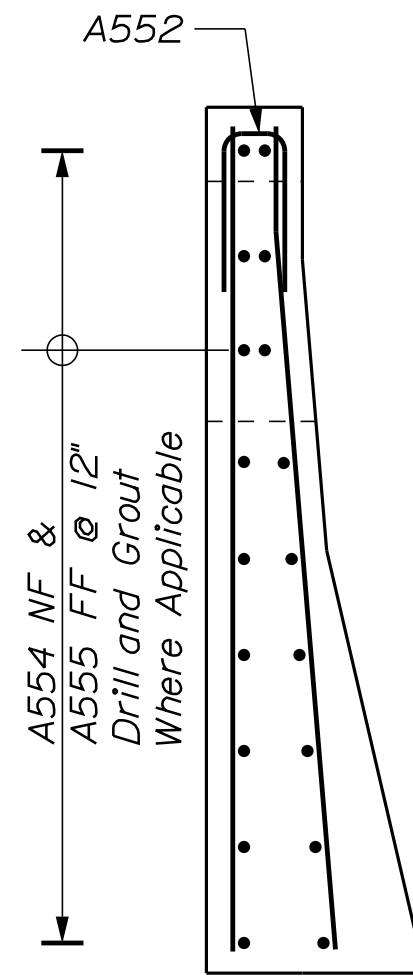
SECTION A-A
(Abutment 1 Shown, Abutment 2 Similar)
Scale: 1/2" = 1'-0"



SECTION B-B
(Abutment 1 Shown, Abutment 2 Similar)
Scale: 1/2" = 1'-0"



WINGWALL EXTENSION
ELEVATION
(Abutment 1 Shown, Abutment 2 Similar)
Scale: 1/2" = 1'-0"



SECTION D-D
(Abutment 1 Shown, Abutment 2 Similar)
Scale: 1/2" = 1'-0"

ABUTMENT ANCHOR DOWEL NOTES:

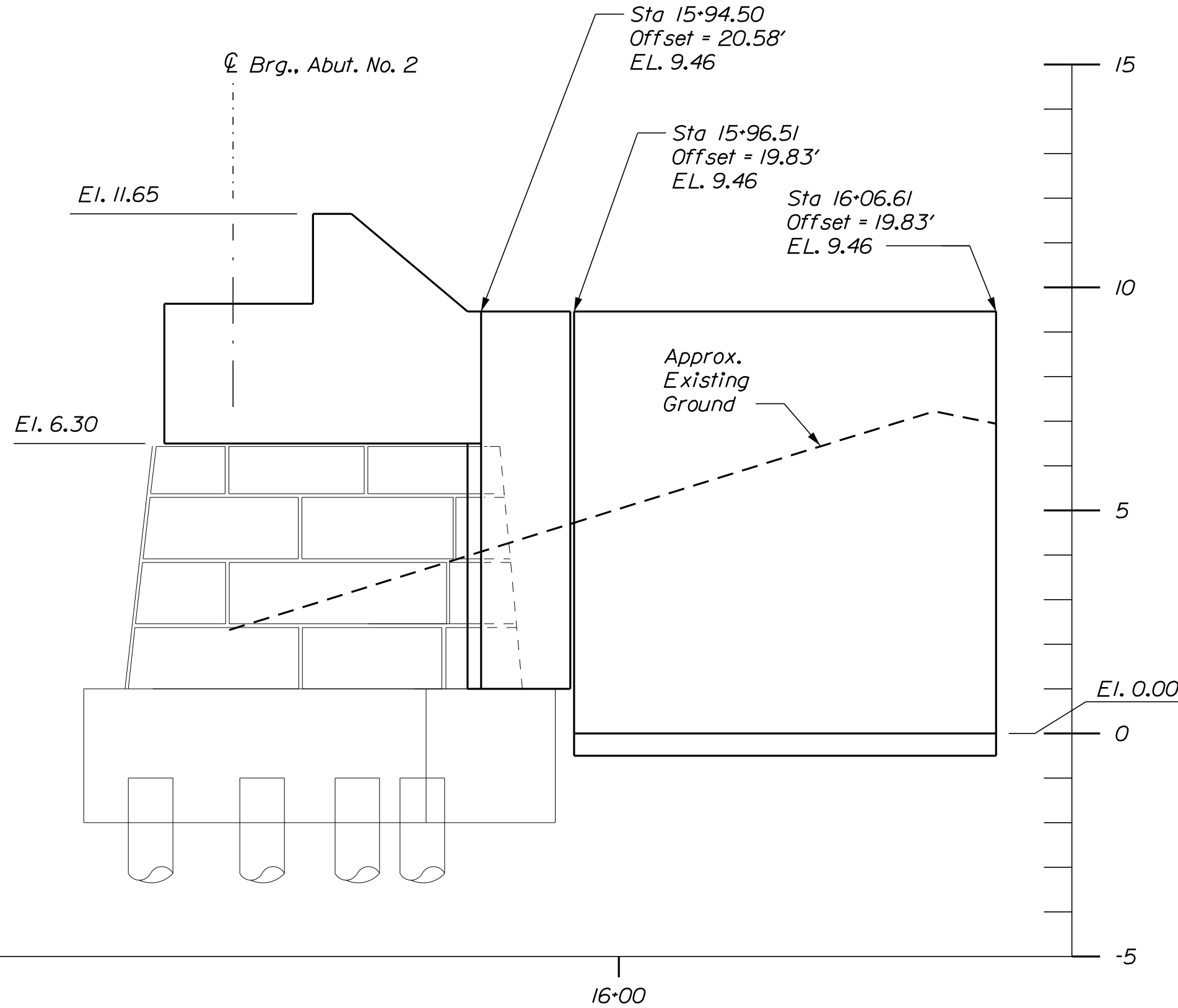
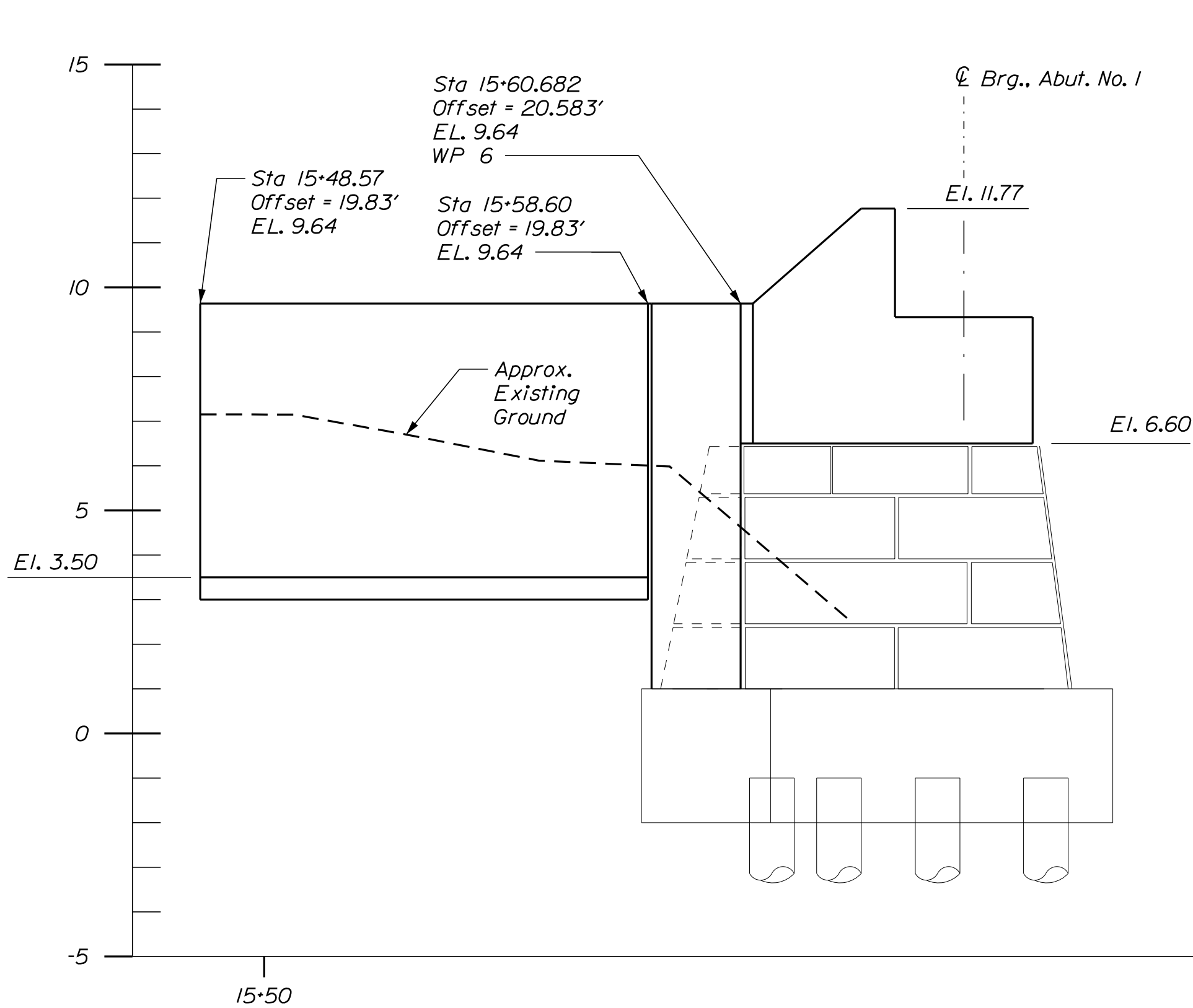
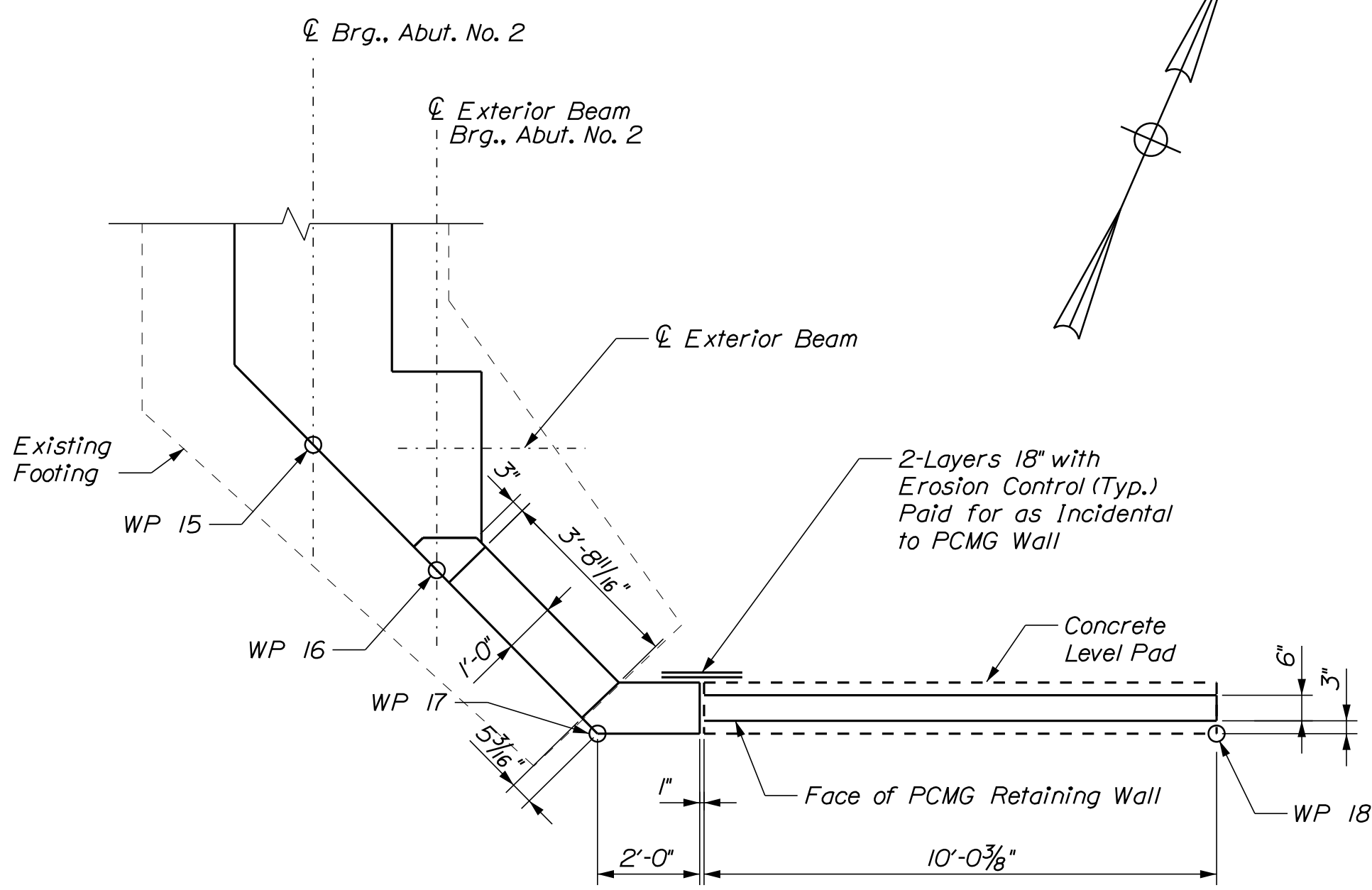
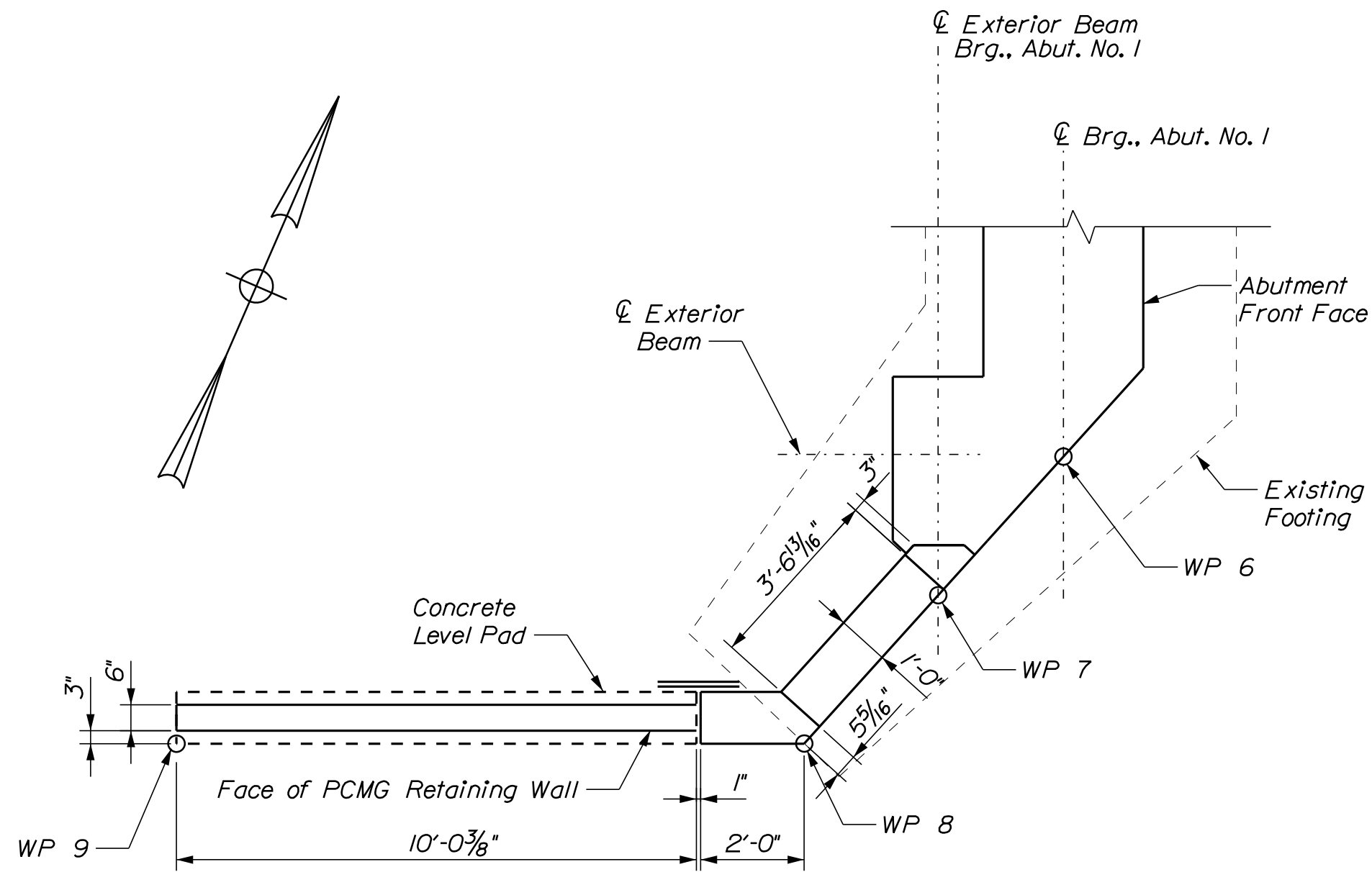
1. A minimum of one anchor dowel shall be drilled and grouted into each existing granite block. Drilling and grouting shall be incidental to related contract items.
2. Grout type and placement shall adhere to manufacturer's specifications and recommendations and shall be approved by the Resident Engineer.
3. Anchor dowels shall be #5 bar drilled and grouted into existing abutment with high strength, non-shrink grout. Hole depth and diameter shall be per approved grout-manufacturer's specifications and recommendations. High Strength, non-shrink grout shall be chosen from the MaineDOT Qualified Products List.

Date:9/6/2018

Username: PDonovan

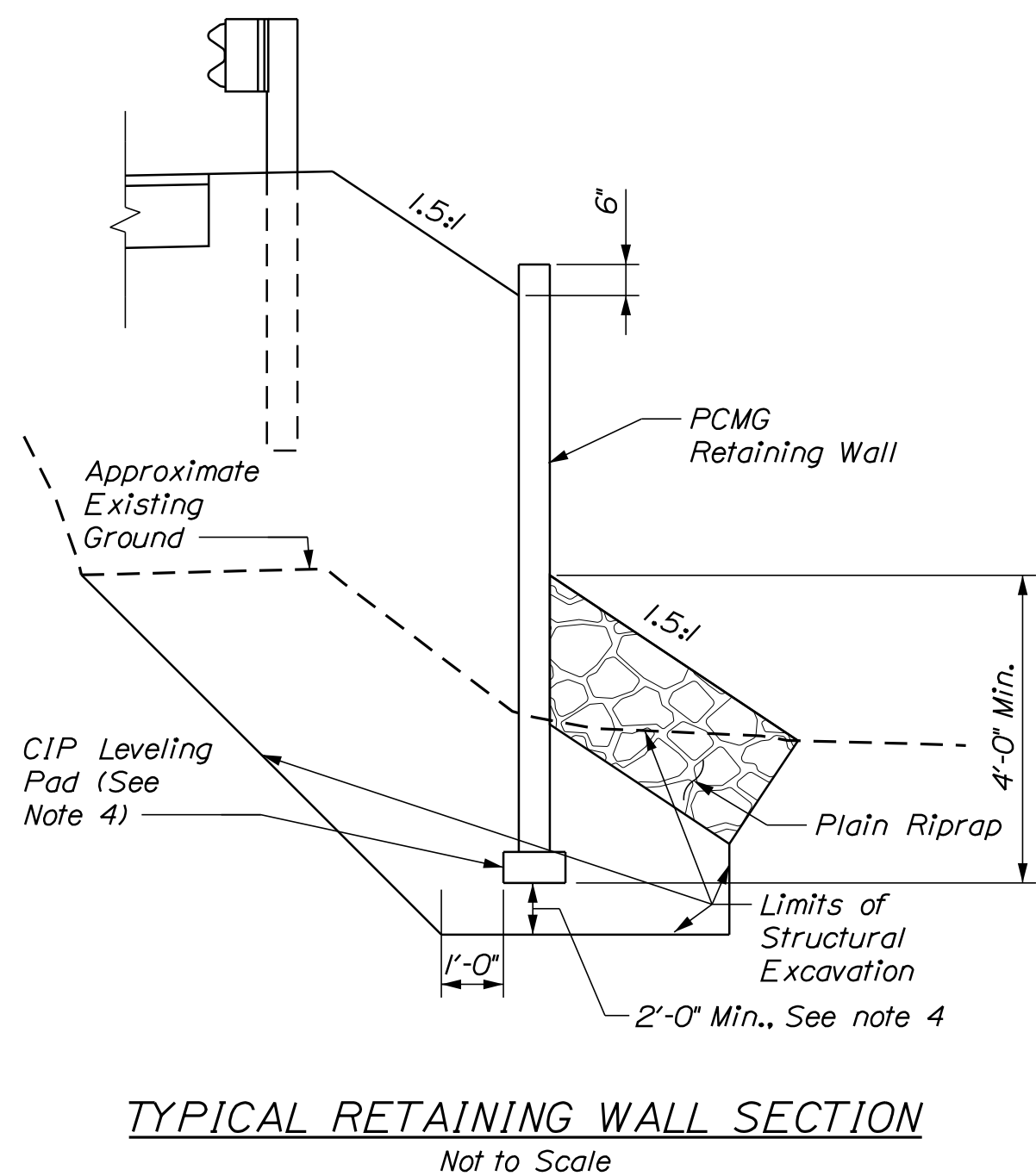
Division: BRIDGE

Filename: ...053_Wingwall_Details_01.dgn



PREFABRICATED CONCRETE MODULAR GRAVITY WALL NOTES

- The Contractor shall provide a Prefabricated Concrete Modular Gravity (PCMG) Wall in accordance with Section 674. The PCMG Wall shall be designed and stamped by a Registered Professional Engineer and the design shall be submitted to the Resident for review. Plan details are shown for estimating purposes only.
- The precast units shall be one of the following, or equal:
 - "T-Wall" as manufactured by a licensed manufacturer of Neel Company
 - "DoubleWal" as manufactured by a licensed manufacturer of DoubleWal Corp., Plainville, Connecticut.
- The factored bearing pressure for PCMG Walls shall not exceed the factored bearing resistance noted in the Geotechnical Report Recommendations. Settlement shall be limited to 1".
- Existing ground shall be excavated a minimum of 2'-0" or to existing clay layer (whichever is deeper) below proposed CIP Leveling Pad, as approved by the Resident. Payment for excavation and backfill within the limits to 2'-0" below proposed CIP leveling pad shall be included in Item 674.10. Excavation and backfill beyond 2'-0" below proposed CIP leveling pad shall be paid for as item 206.082 and item 203.25. Backfill material shall be suitable for underwater backfill.
- All reinforcing in the PCMG wall shall be stainless steel in accordance with Standard Specification Section 503.
- Costs for any Cofferdams required for the PCMG Wall installation shall be included in Pay Item No. 674.10, Prefabricated Concrete Modular Gravity Wall.
- The PCMG Wall shall be backfilled as required in the project's Geotechnical Report Recommendations, dated December 2017.
- The PCMG wall shall have an exposed aggregate finish.



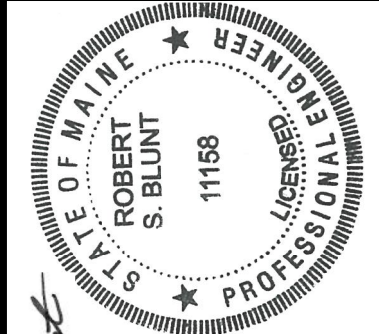
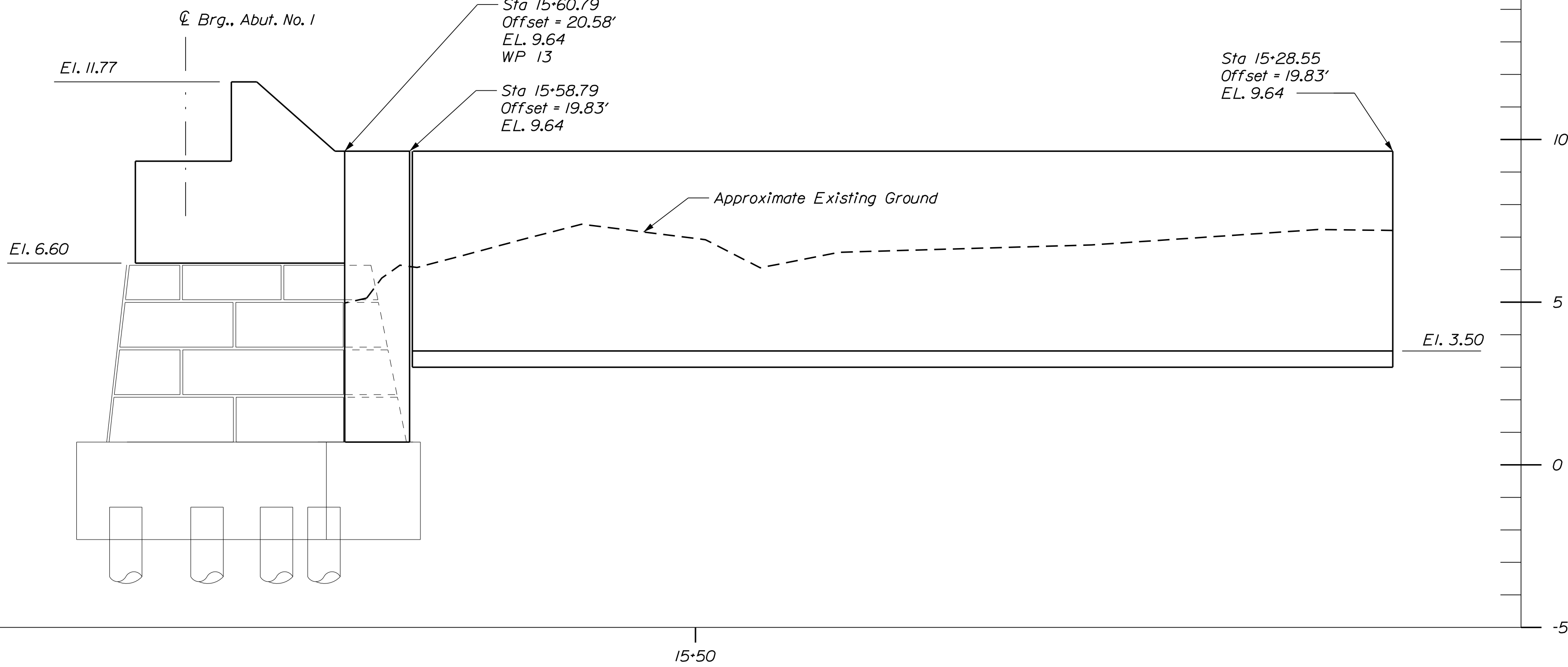
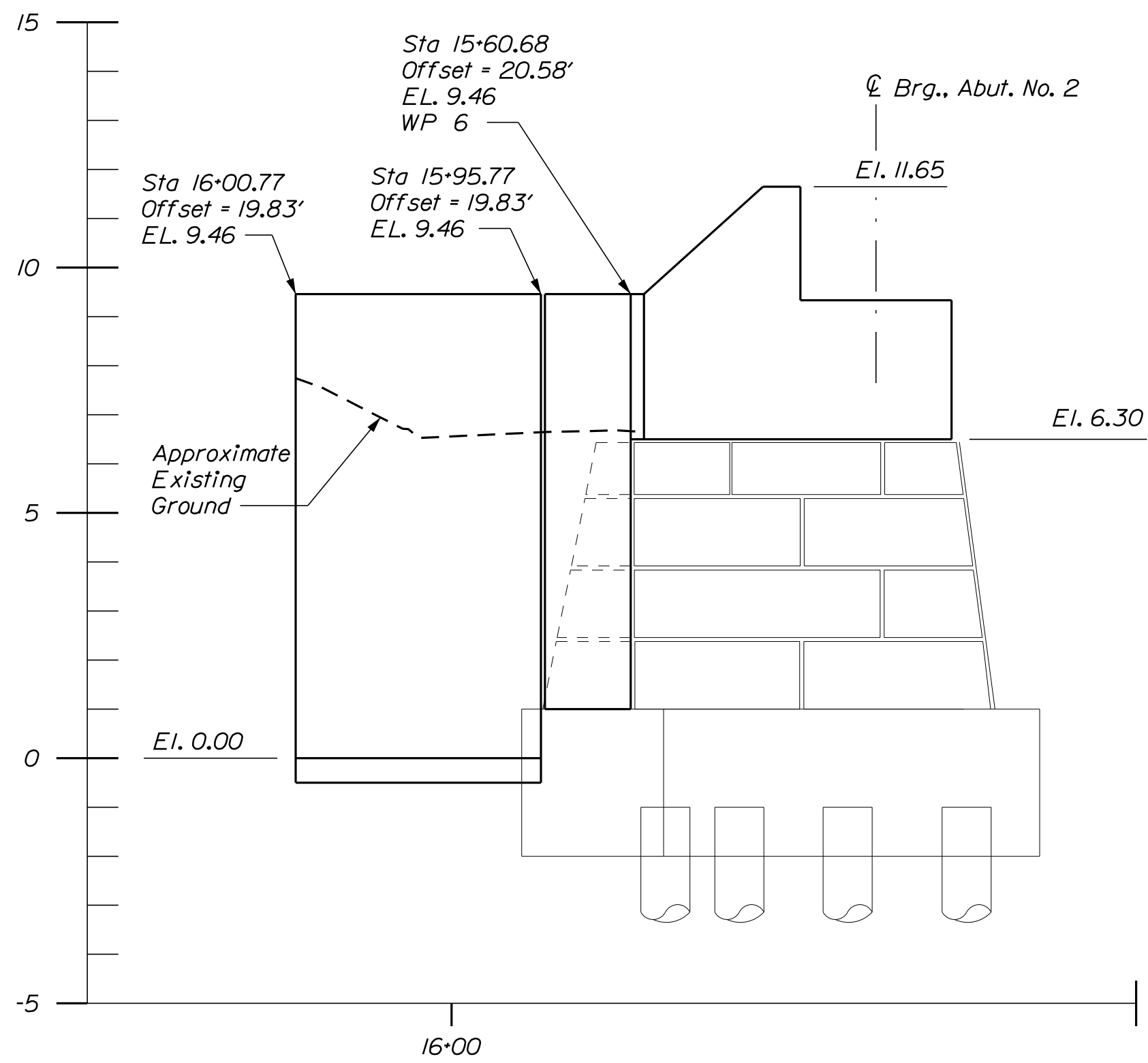
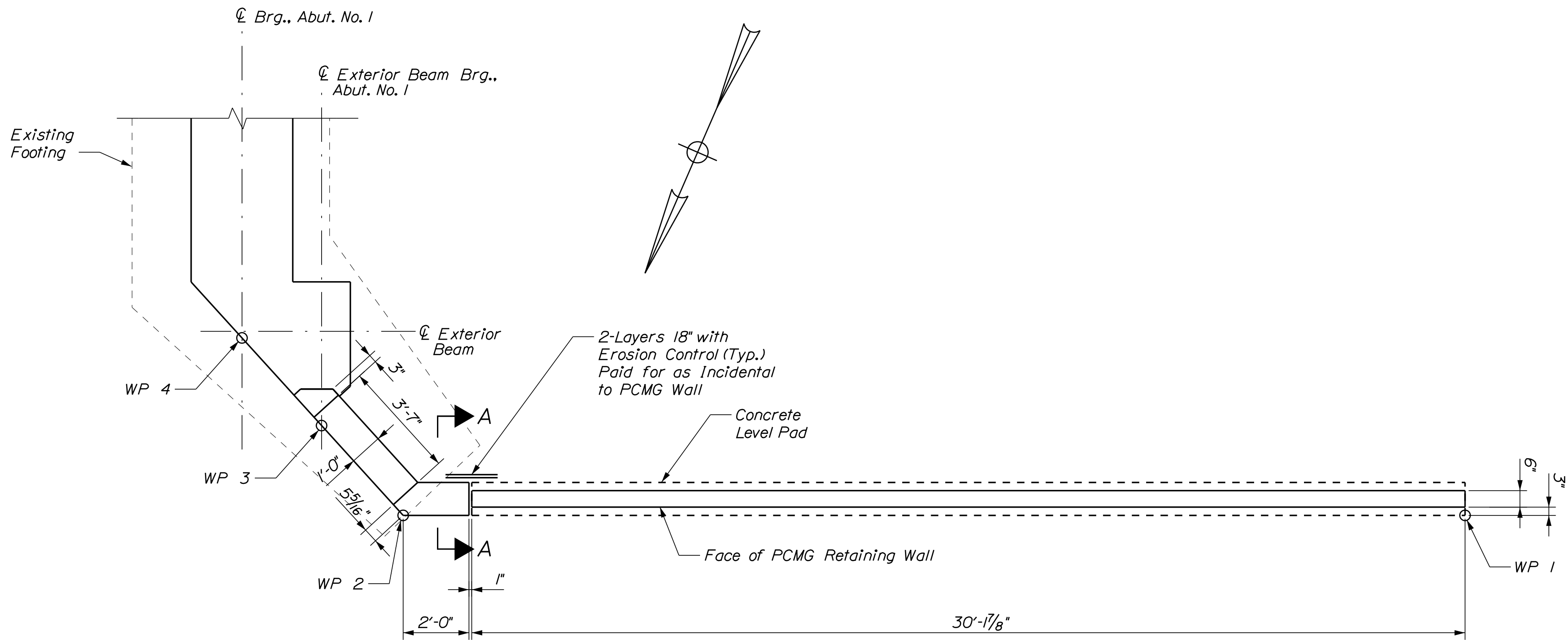
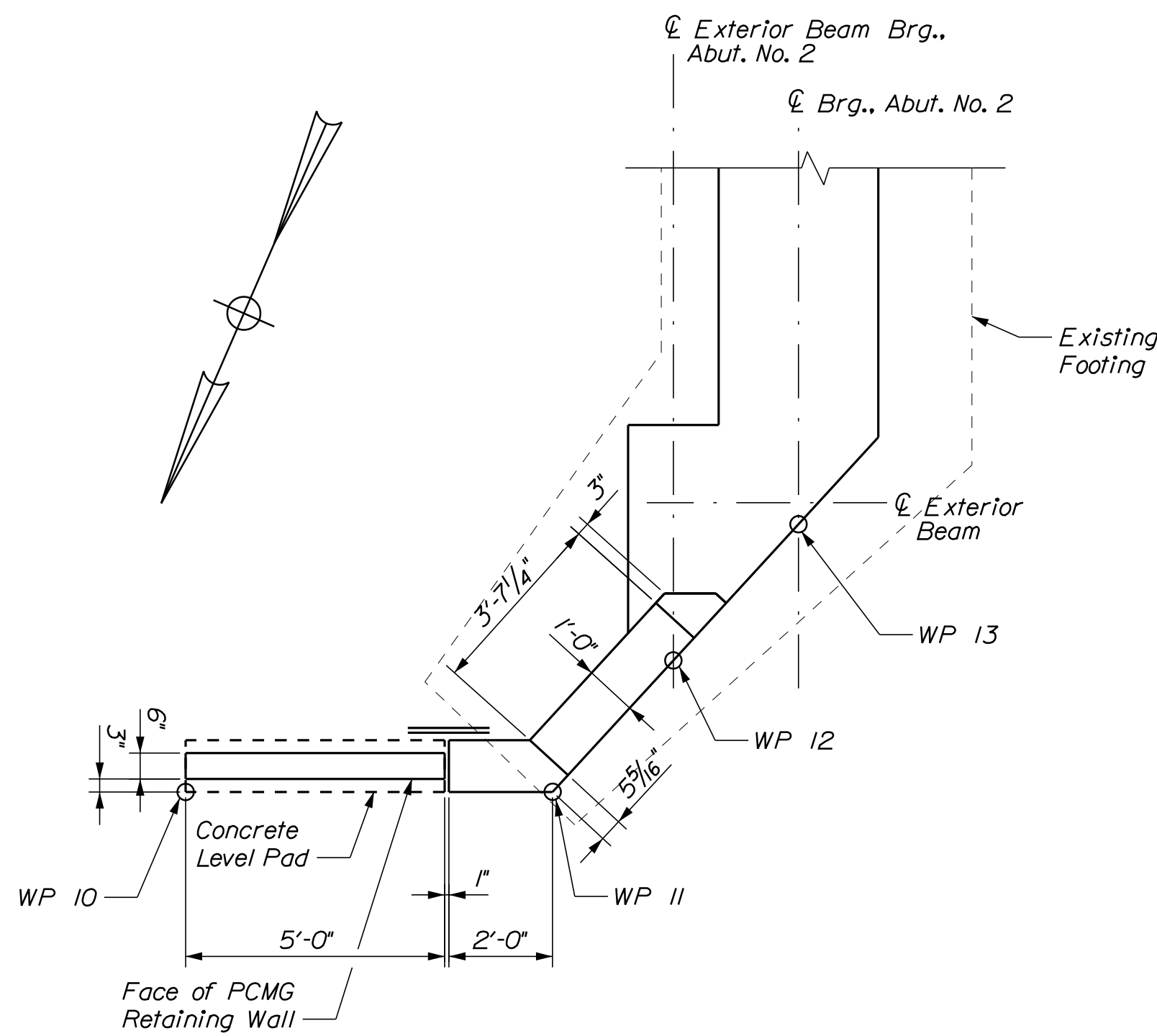
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	STP-2170(200)	BRIDGE NO. 2511	WIN 21702.00	BRIDGE PLANS
PROF. SEAL ROBERT S. BLUNT 1158 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE				
MARSH BRIDGE BASS HARBOR ROAD OVER MARSH BROOK TREMONT/SOUTHWEST HARBOR HANCOCK COUNTY		PCMG RETAINING WALL ELEVATION & DETAILS (1 OF 2)		
SHEET NUMBER		53		
		OF 69		

Date: 9/6/2018

Username: PDonovan

Division: BRIDGE

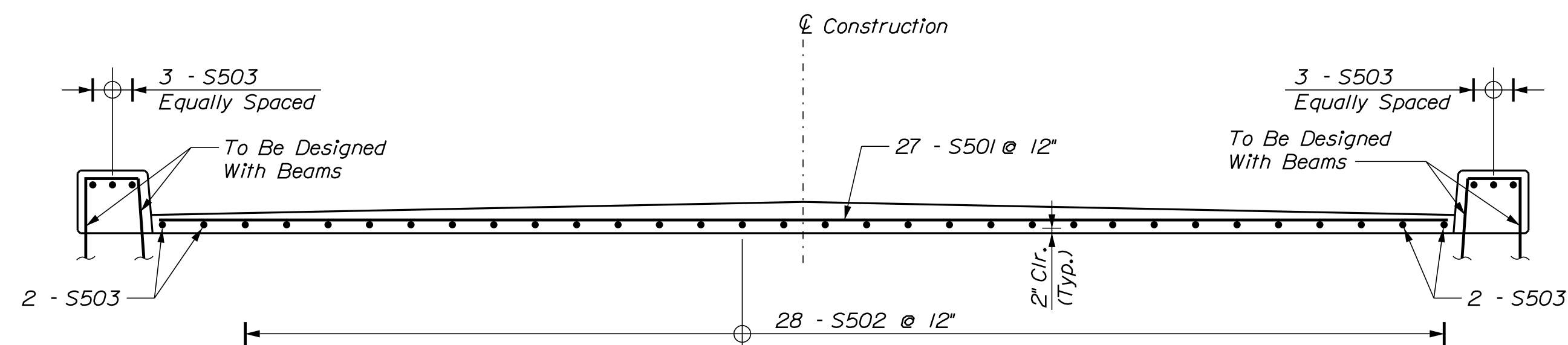
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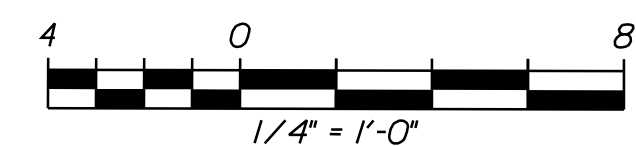
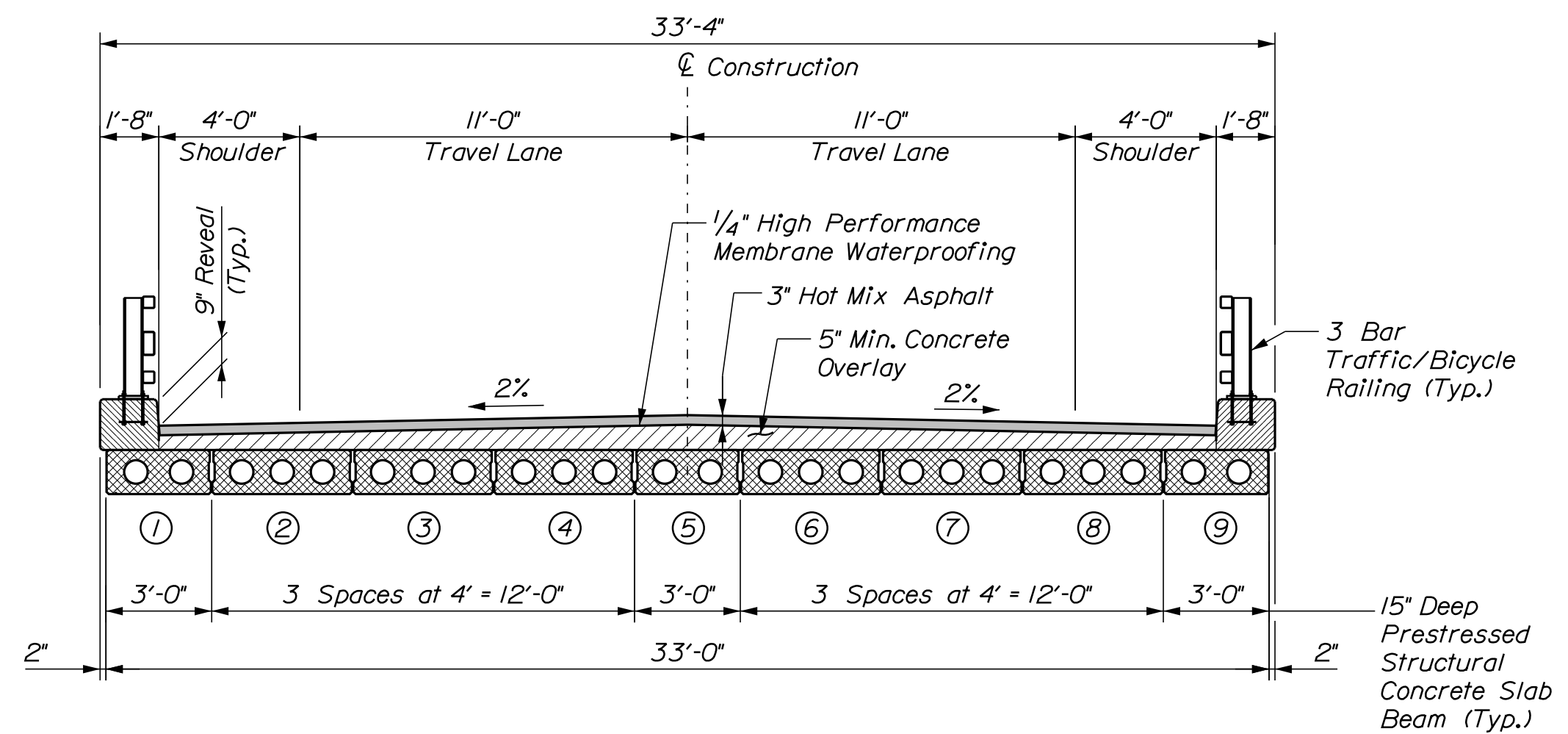
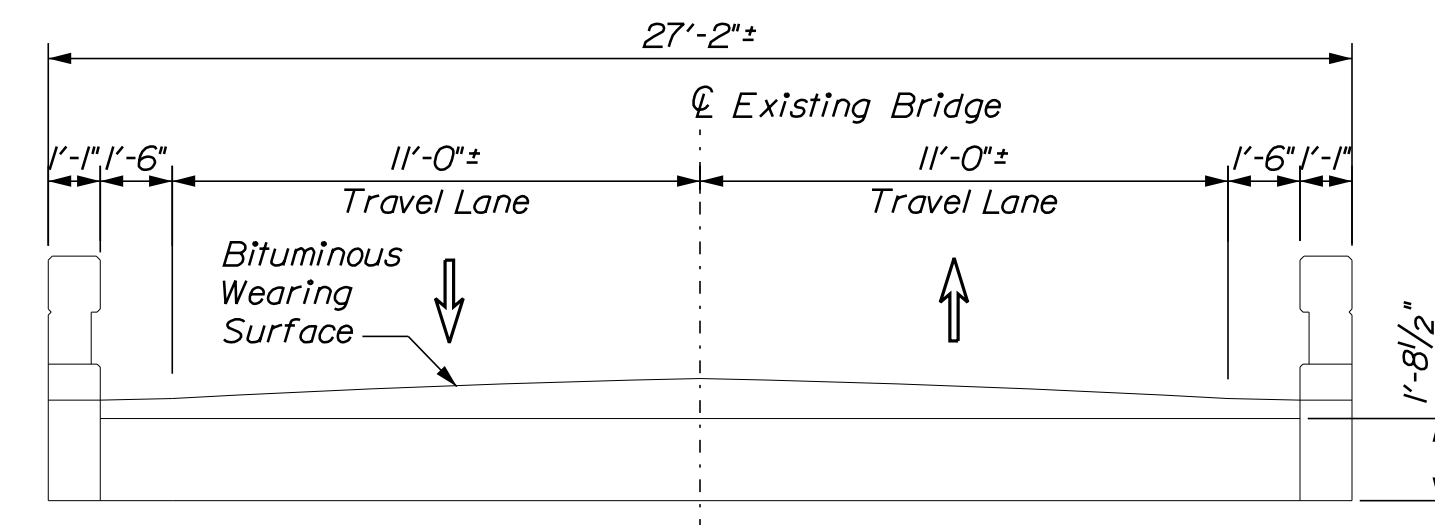
Signature: Robert S. Blunt
P.E. NUMBER: 11158
DATE: July 18, 2018

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	DPD	DPD	3/22/2018
CHECKED-REVIEWED	GMZ/GTA	RSB/TSB	3/22/2018
DESIGN-DETAILED	DESIGN-DETAILED		
REVISIONS	1		
REVISIONS	2		
REVISIONS	3		
REVISIONS	4		
FIELD CHANGES			

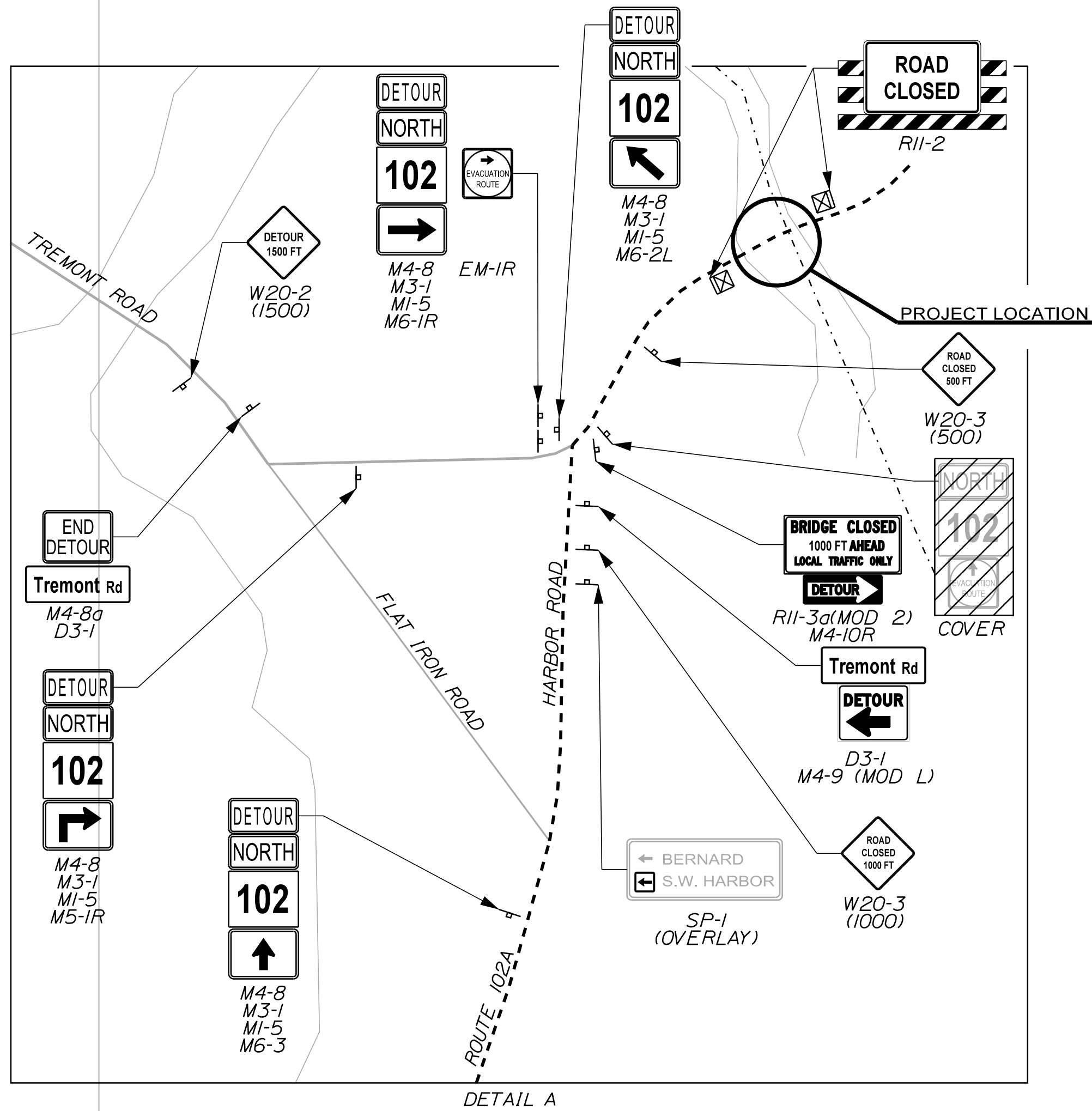
MARSH BRIDGE
BASS HARBOR ROAD OVER MARSH BROOK
TREMONT/SOUTHWEST HARBOR
HANCOCK COUNTY
PCMG RETAINING WALL
ELEVATION & DETAILS (2 OF 2)



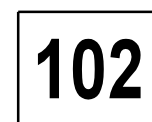
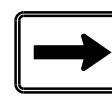
CONCRETE OVERLAY REINFORCING TYPICAL SECTION
(Looking Upstation)
Scale: 3/8" = 1'-0"



DF 69



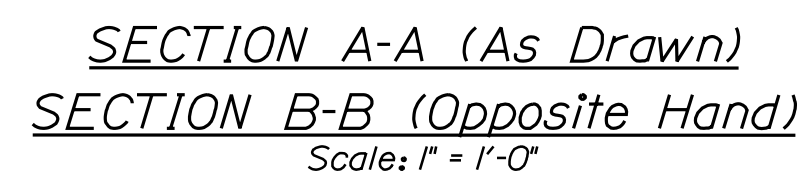
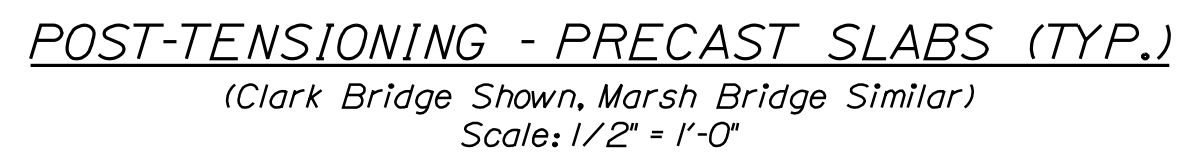
1. *The traffic control plan for the Marsh Bridge replacement is to close the Marsh Bridge to all traffic for the duration of construction. A temporary detour is proposed along Tremont Road (Route 102), Harbor Drive (Route 102A), Seawall Road (Route 102A), and Bass Harbor Road (Route 102) to bypass the bridge. See the Marsh Bridge Roadway Detour Plan for details.*
2. *All traffic control equipment and layouts shall conform to the 2009 edition of the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), chapter 6. All traffic control signs, sign support structures, channelizing devices, flashing arrow panels (FAP), portable changeable message signs (PCMS), and other traffic control equipment along the roadside shall meet or exceed NCHRP 350 test level 3 (TL-3) requirements regardless of where implemented on the project.*
3. *All traffic control signs shall be maintained in like-new condition. Placement of signs shall be adjusted to avoid obstructing existing signs and to ensure proper sight lines to the construction signs as determined by the Resident. Where existing sign conflict with construction signs, the contractor shall temporarily remove or cover the conflicting existing sign(s) during construction. The existing sign(s) shall be uncovered or re-installed following construction.*
4. *Any signs, equipment, or devices found to be damaged or unserviceable shall be replaced at the Contractor's expense, except for any temporary concrete barrier supplied by the Authority.*
5. *Contractor shall provide advanced notice of all road closures with PCMS at least seven working days prior to the proposed closure. PCMS for the bridge closure shall be placed within 500 feet of the bridge to be closed.*
6. *At the completion of the work, the temporary detours shall be removed.*

DETOUR SIGN SUMMARY					
Sign		Text Dimensions (Inches)		Size	Quantity and Color
		Letter Height	Vertical Spacing		
M1-5		SHSB		30x24	10 - Black on White
M3-1				24x12	10 - Black on White
M4-8				24x12	9 - Black on Orange
M4-8 (MOD)				54x12	4 - Black on Orange
M4-8a				24x18	2 - Black on Orange
M4-9(MOD AL)				30x30	1 - Black on Orange
M4-9(MOD L)				30x24	2 - Black on Orange
M4-9(MOD R)				30x24	2 - Black on Orange
M4-9(MOD S)				30x24	4 - Black on Orange
M4-10L				48x18	1 - Black on Orange
M4-10R				48x18	1 - Black on Orange
M5-1R				21x15	1 - Black on White
M6-1R				21x15	1 - Black on White
M6-2L				21x15	2 - Black on White
M6-3				21x15	5 - Black on White
W20-2(1500)				36x36	2 - Black on Orange
W20-3(500)				36x36	2 - Black on Orange

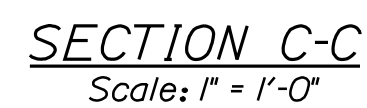
SHSB - Text Dimensions Shall Conform to "Standard Highway Signs Book" - 2012 Edition.

[illegible]

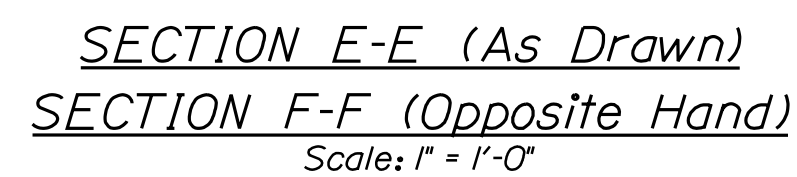
SHSB - Text Dimensions Shall Conform to "Standard Highway Signs Book" - 2012 Edition.



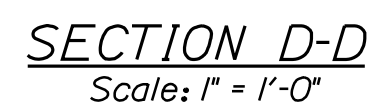
CLARK BRIDGE
(Post-Tensioning Detail - End Voided Slab 1 & 10)



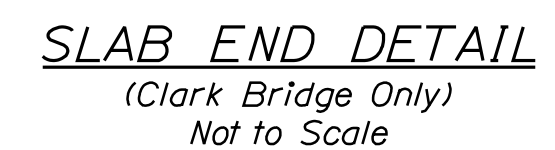
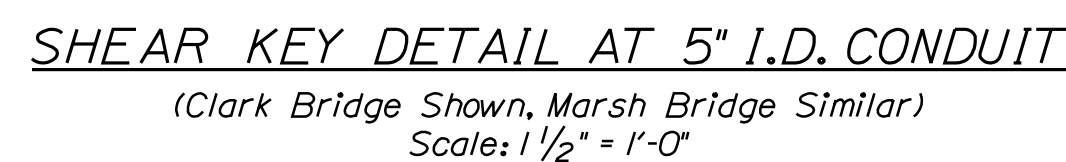
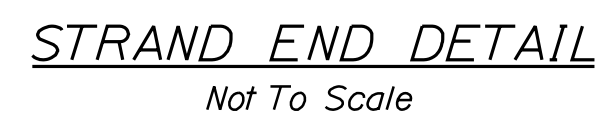
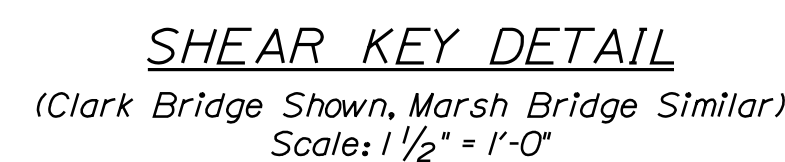
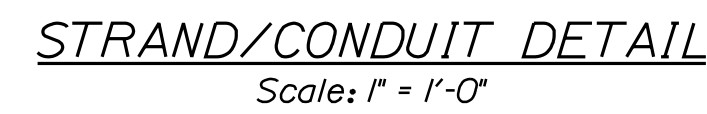
CLARK BRIDGE
(Post-Tensioning Detail at Voided Slab 1 & 10)
MARSH BRIDGE
(Post-Tensioning Detail at Voided Slab 1 & 9)

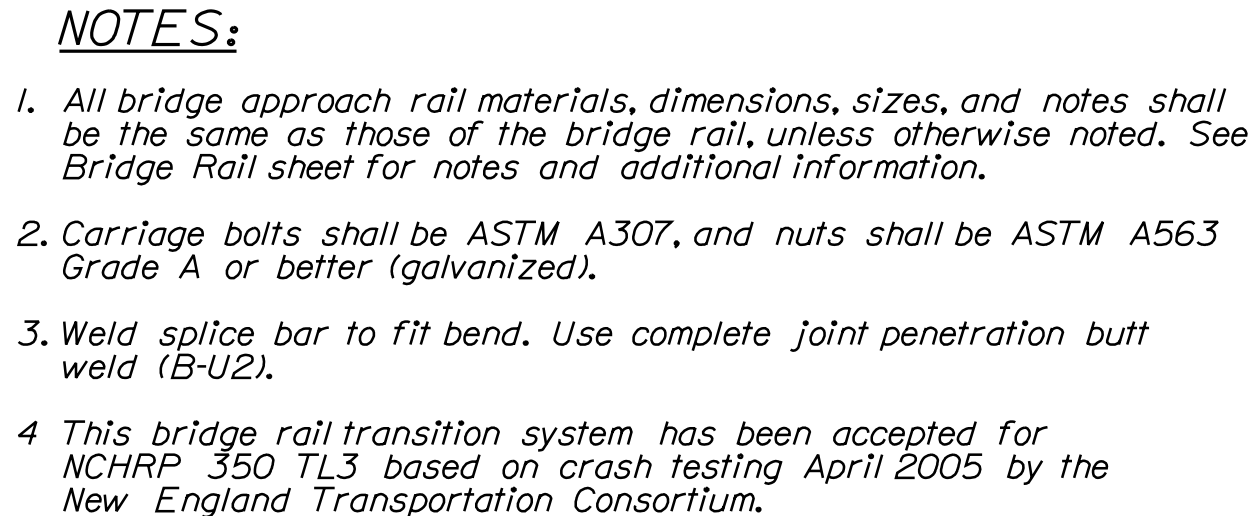


MARSH BRIDGE
(Post-Tensioning Detail - End Voided Slab 1 & 9)



CLARK BRIDGE
(Post-Tensioning Detail at Voided Slab 2 Thru 9)
MARSH BRIDGE
(Post-Tensioning Detail at Voided Slab 2 Thru 8)



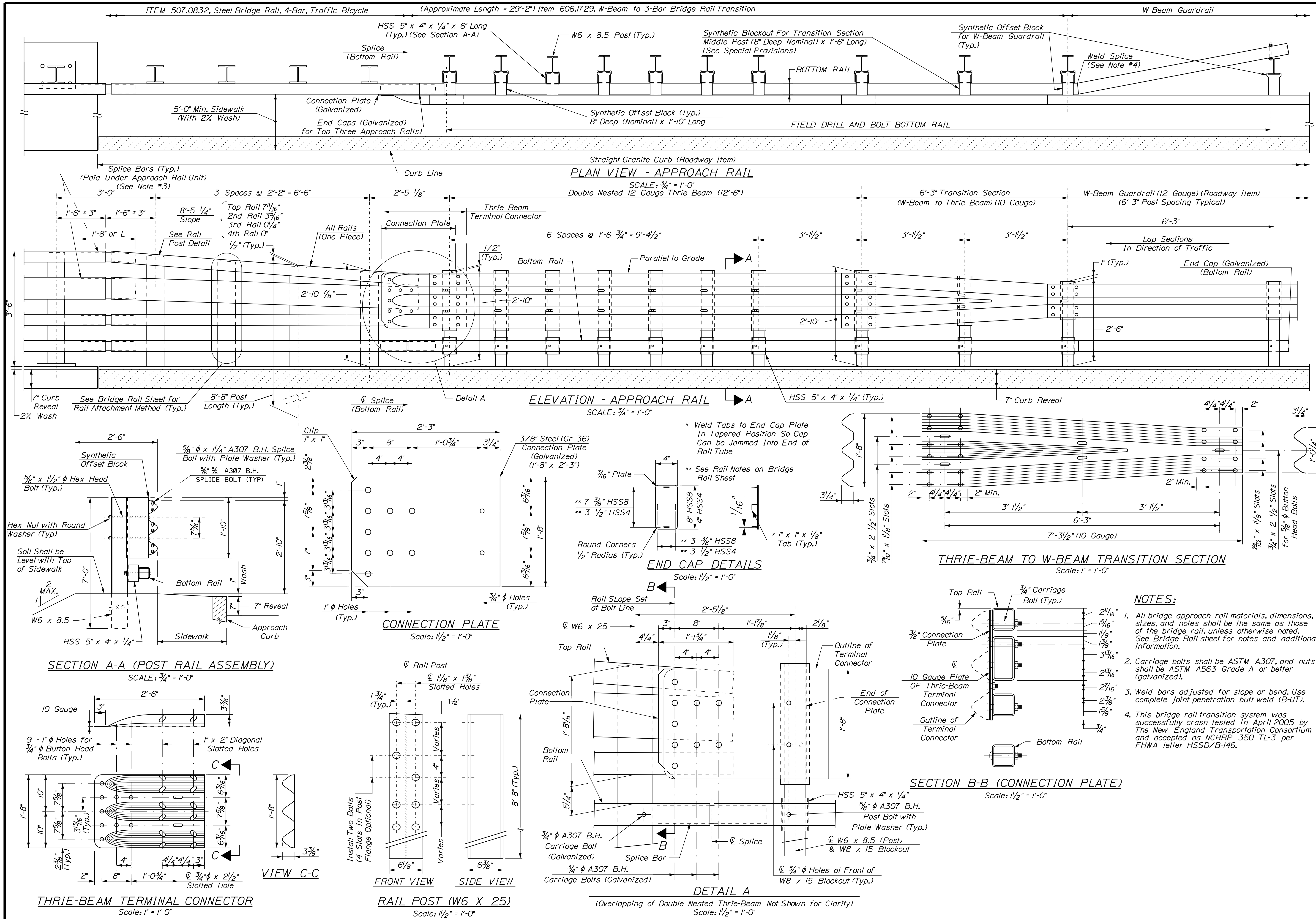


Date: 9/6/2018

Username: PDonovan

Division: BRIDGE

Filename: ... \planset\062_Trans_Rail_02.dgn



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
SR-1930(510) / STP-2170(200)

BRIDGE PLANS
WIN 19305.00
WIN 21702.00
BRIDGE NO. 3663/2511

DATE: 7/10/2018
BY: RSB/TSB
CHECKED: RSB/TSB
DESIGNED: RSB/TSB
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

DATE: 7/10/2018
BY: RSB/TSB
CHECKED: RSB/TSB
DESIGNED: RSB/TSB
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

DATE: 7/10/2018
BY: RSB/TSB
CHECKED: RSB/TSB
DESIGNED: RSB/TSB
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

DATE: 7/10/2018
BY: RSB/TSB
CHECKED: RSB/TSB
DESIGNED: RSB/TSB
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

SOUTHWEST HARBOR/TREMONT
CLARK BRIDGE
& MARSH BRIDGE
BRIDGE RAIL TRANSITION
(4-Bar)

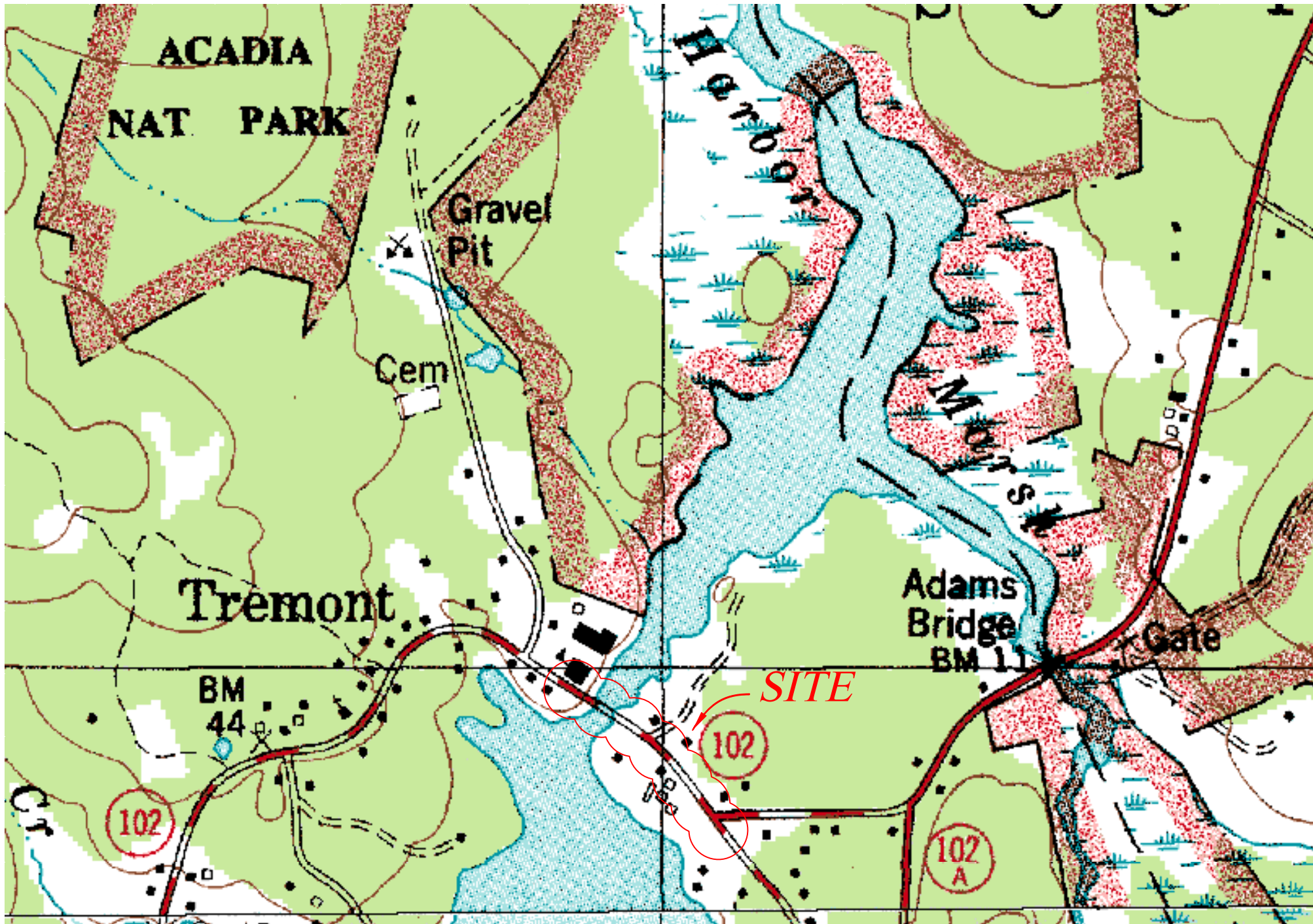
SHEET NUMBER
62
OF 69

SAFE ROUTES TO SCHOOLS
DESIGN PLANS

FOR
SIDEWALK IMPROVEMENTS

TREMONT, MAINE

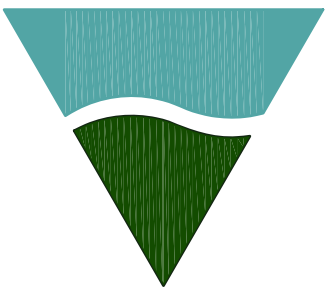
WIN 19305.10



PORTION OF SOUTHWEST HARBOR USGS QUADRANGLE

INDEX:

63	TITLE PAGE
64-65	PLANS
66-68	CROSS SECTIONS
69	DETAILS

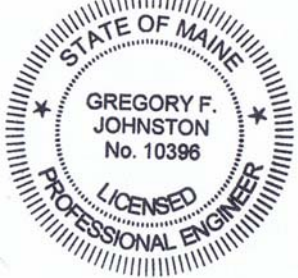
 **G.F. Johnston & Associates**
Consulting Civil Engineers
P.O. Box 197
Southwest Harbor, Maine 04679
207-244-1200

DATE:
JULY 18th, 2018

REVISION:
BID SET

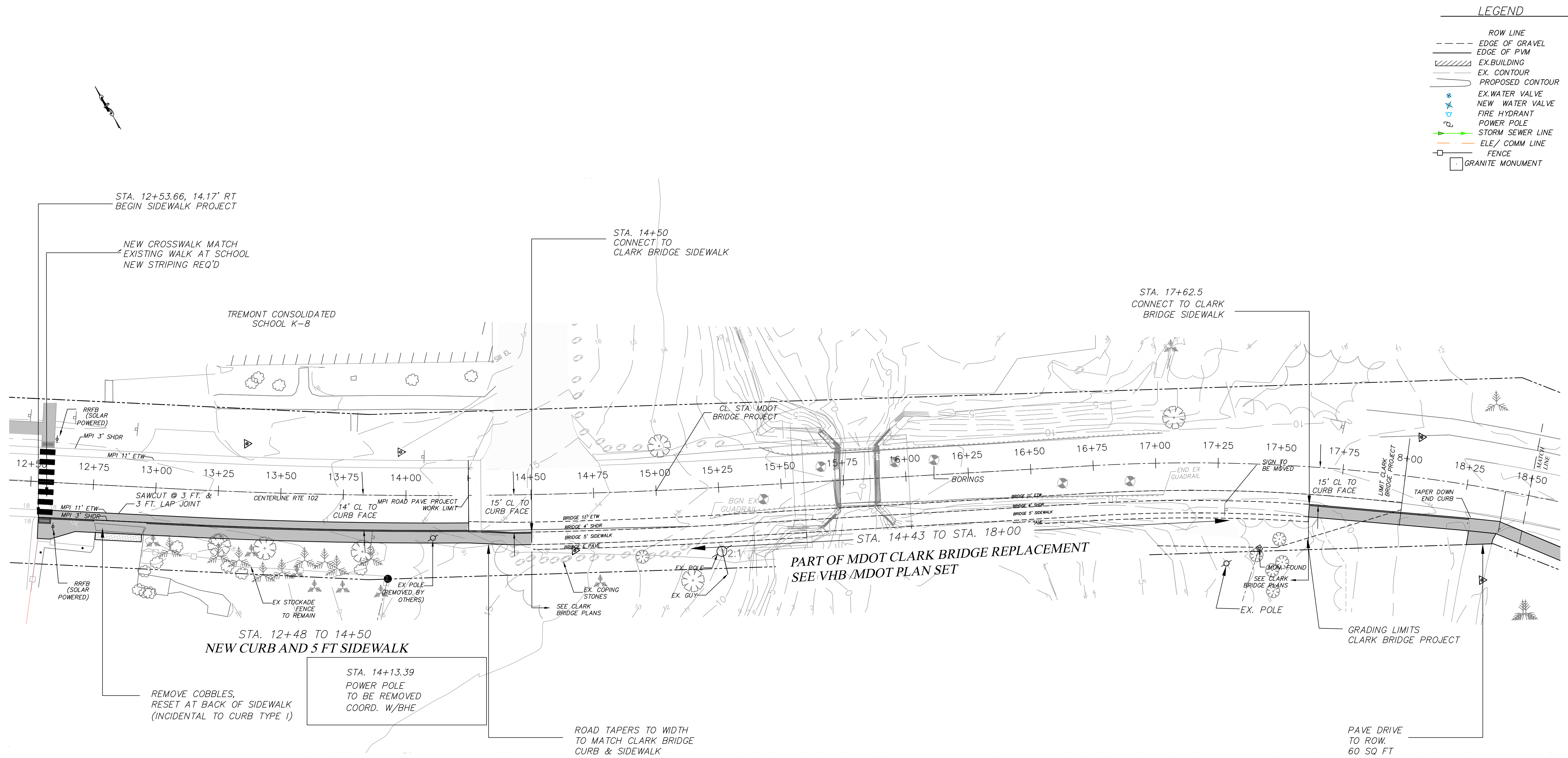
CLIENT:
TOWN OF TREMONT
CHRISTOPHER SAUNDERS
TOWN MANAGER
PO BOX 65
BERNARD, ME 04612

ENGINEER:



LEGEND

---	PROPERTY LINE
---	EASEMENT LINE
---	SETBACK LINE
---	EDGE OF PVM
---	EDGE OF GRAVEL
///	EX. BUILDING
---	EX. CONTOUR
---	PROPOSED CONTOUR
---	WATERMAIN
---	EX. WATERMAIN
---	EX. WATER VALVE
---	NEW WATER VALVE
---	FIRE HYDRANT
---	POWER POLE
---	SANITARY SEWER LINE
---	EX. SANITARY SEWER LINE
---	SANITARY MANHOLE
---	STORM SEWER LINE
---	STORM MANHOLE
---	ELE/ COMM LINE
---	SILT FENCE
---	GRANITE MONUMENT



- LEGEND
- ROW LINE
 - EDGE OF GRAVEL
 - EDGE OF PVM
 - EX. BUILDING
 - EX. CONTOUR
 - PROPOSED CONTOUR
 - EX. WATER VALVE
 - NEW WATER VALVE
 - FIRE HYDRANT
 - POWER POLE
 - STORM SEWER LINE
 - ELE/ COMM LINE
 - FENCE
 - GRANITE MONUMENT

ITEM 608.26 CURB RAMP DETECTABLE WARNING FIELD
STA. 12+65.16, 14.50' RT

ITEM 643.62 RECTANGULAR RAPID FLASHING BEACON
STA. 12+59.8, 17.4' LT & STA. 12+59.8, 17.7' RT
THE RRFB ITEM INCLUDES 18" FOUNDATIONS (ITEM 626.31).

ITEM 609.238 TERMINAL CURB TYPE I - 8'
STA. 12+58.66, 14.15' RT to 12+66.66, 14.13' RT
STA. 12+67.92, 14.13' RT to 12+75.92, 14.10' RT
STA. 12+97.18, 14.04' RT to 13+05.18, 14.01' RT
STA. 18+19.50, 13.73' RT to 18+27.64, 13.18' RT

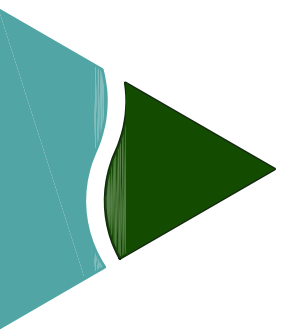
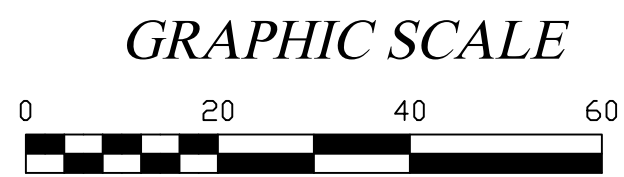
ITEM 609.11 VERTICAL CURB TYPE I
STA. 12+66.66, 14.13' RT to 12+67.92, 14.13' RT
STA. 13+05.18, 14.01' RT to 14+50.00, 15.00' RT
STA. 17+62.50, 15.00' RT to 18+19.50, 13.73' RT

ITEM 627.711 W/Y PAVEMENT MARKING LINE
STA. 17+62.5 TO 18+50' RT

ITEM 627.75 W/Y PAVEMENT & CURB MARKING
STA. 12+50

ITEM 645.103 DEMOUNT SIGN
STA. 13+86.57, 16.8' RT

ITEM 645.116 REINSTALL REG., WARN., CONF., & RTE SIGN
STA. 17+27.96, 18.5' RT



STATION 12+50 - 18+50

DATE:
JULY 18th, 2018

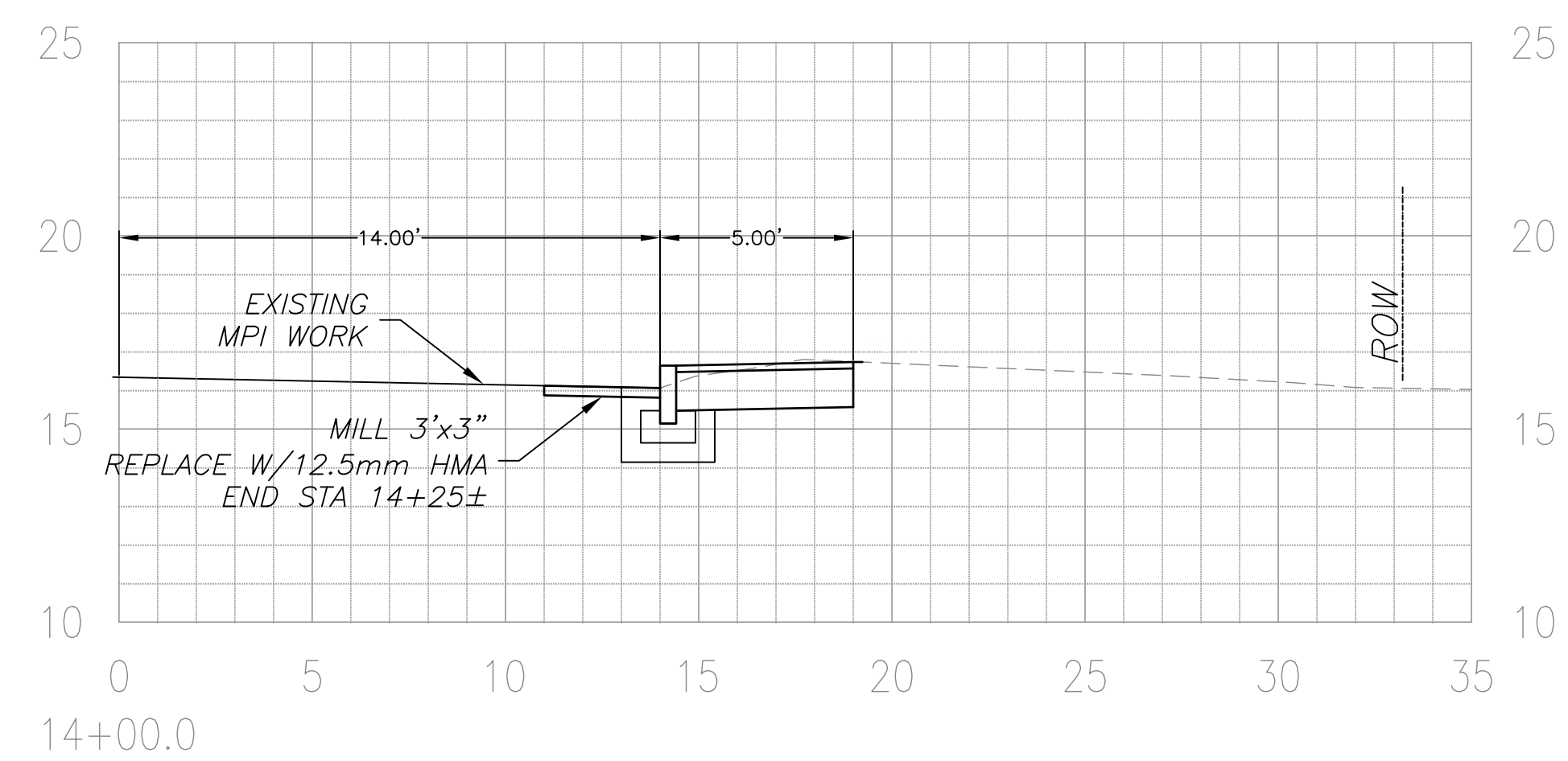
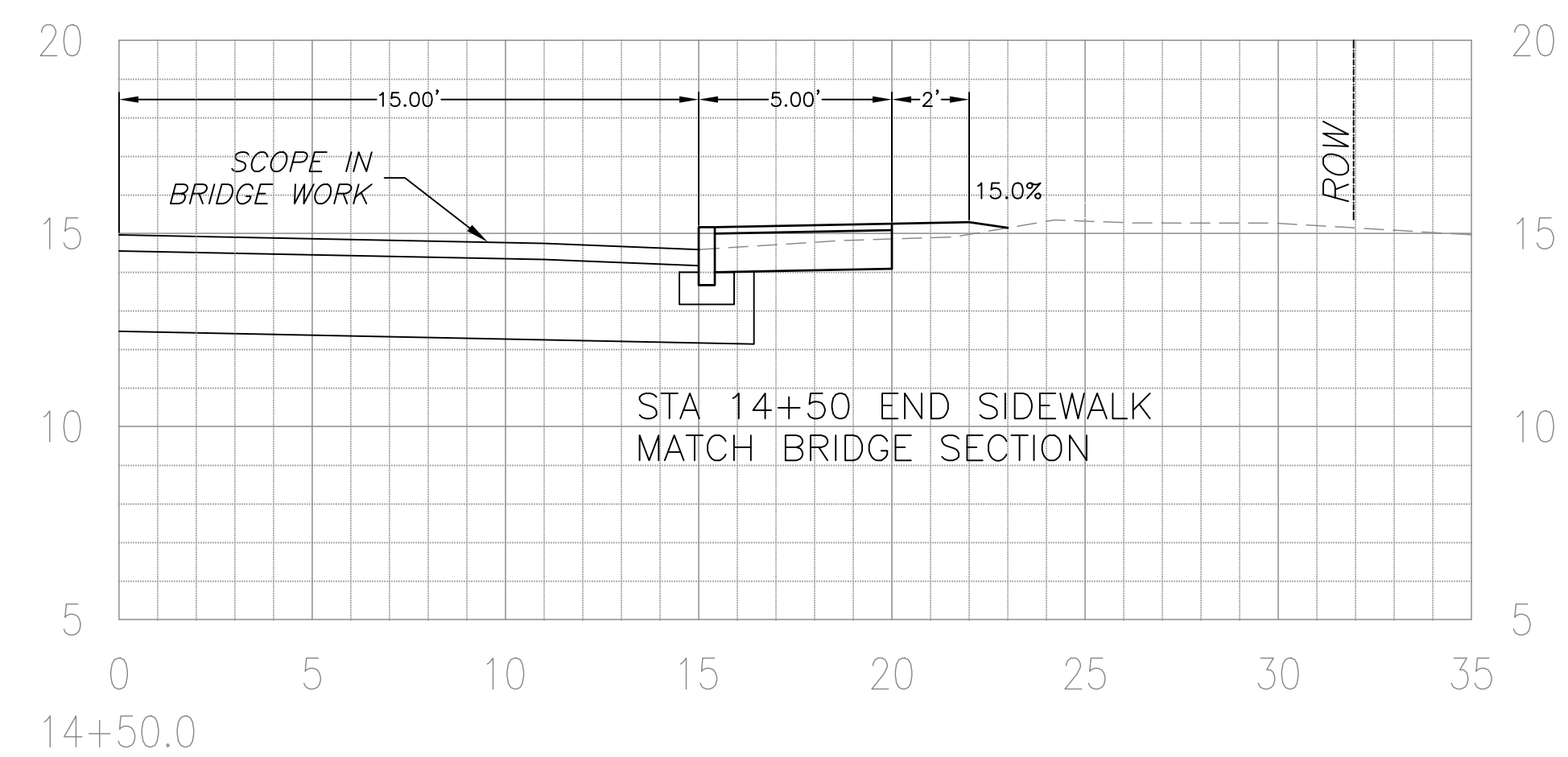
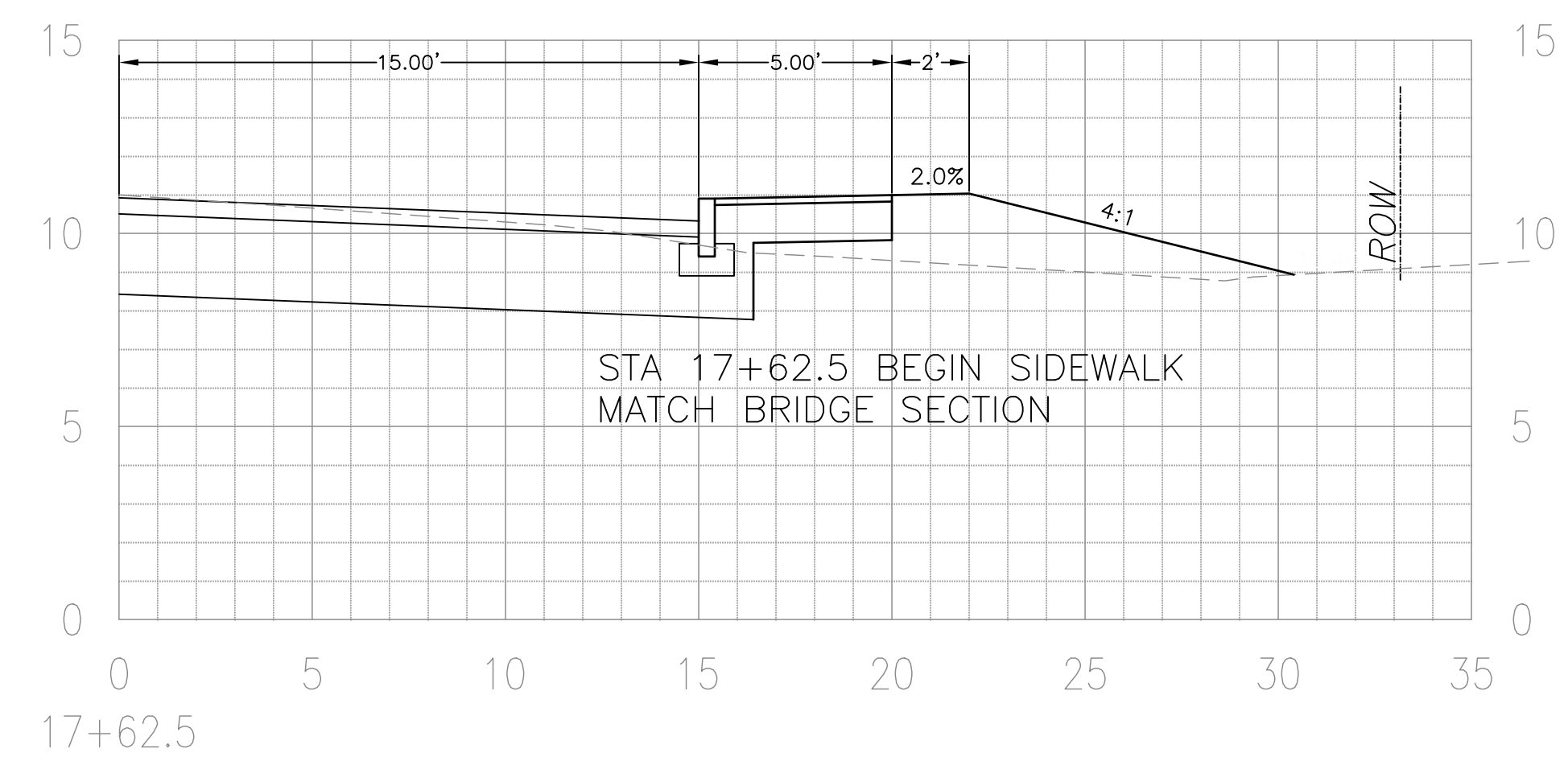
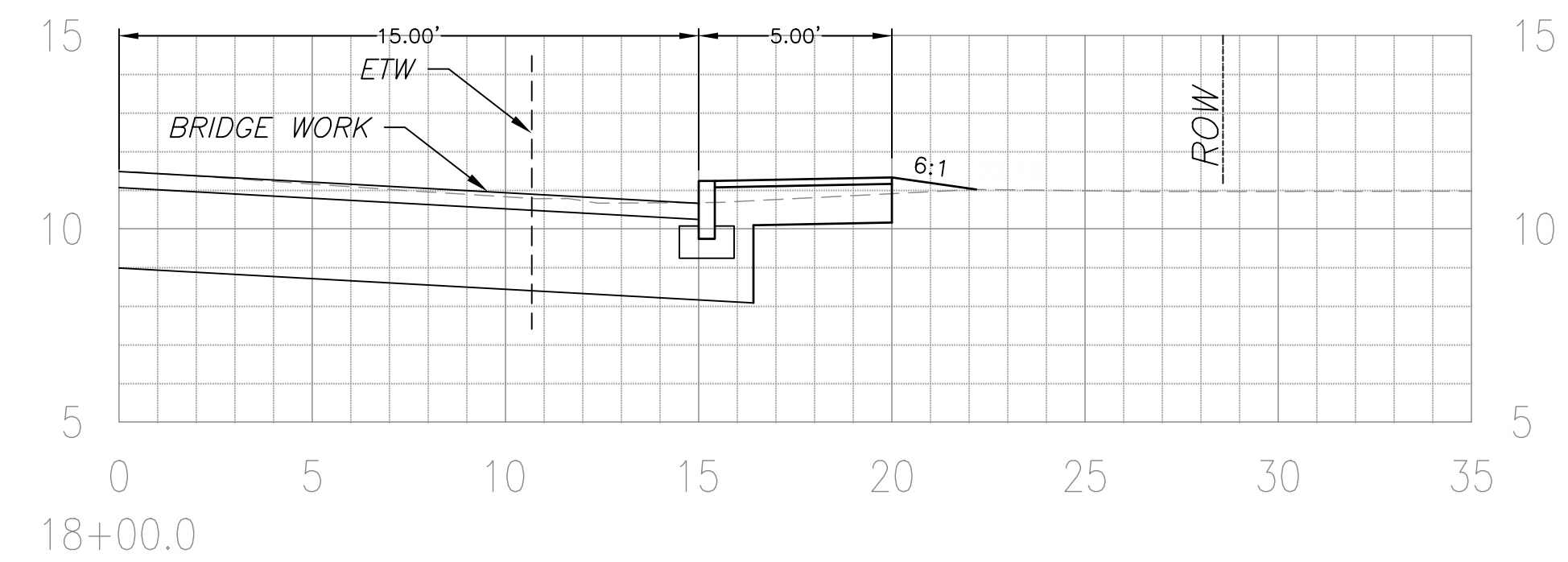
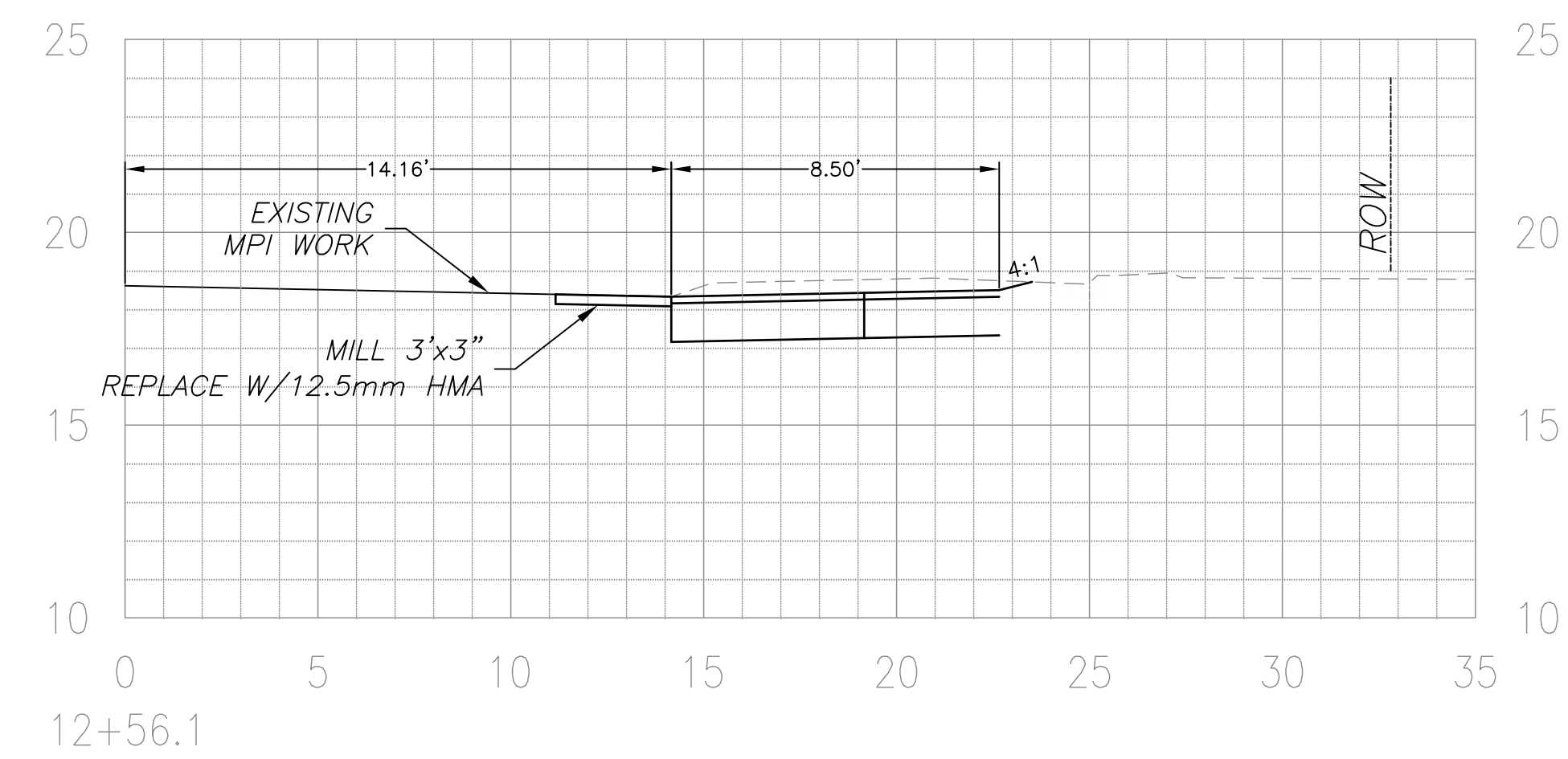
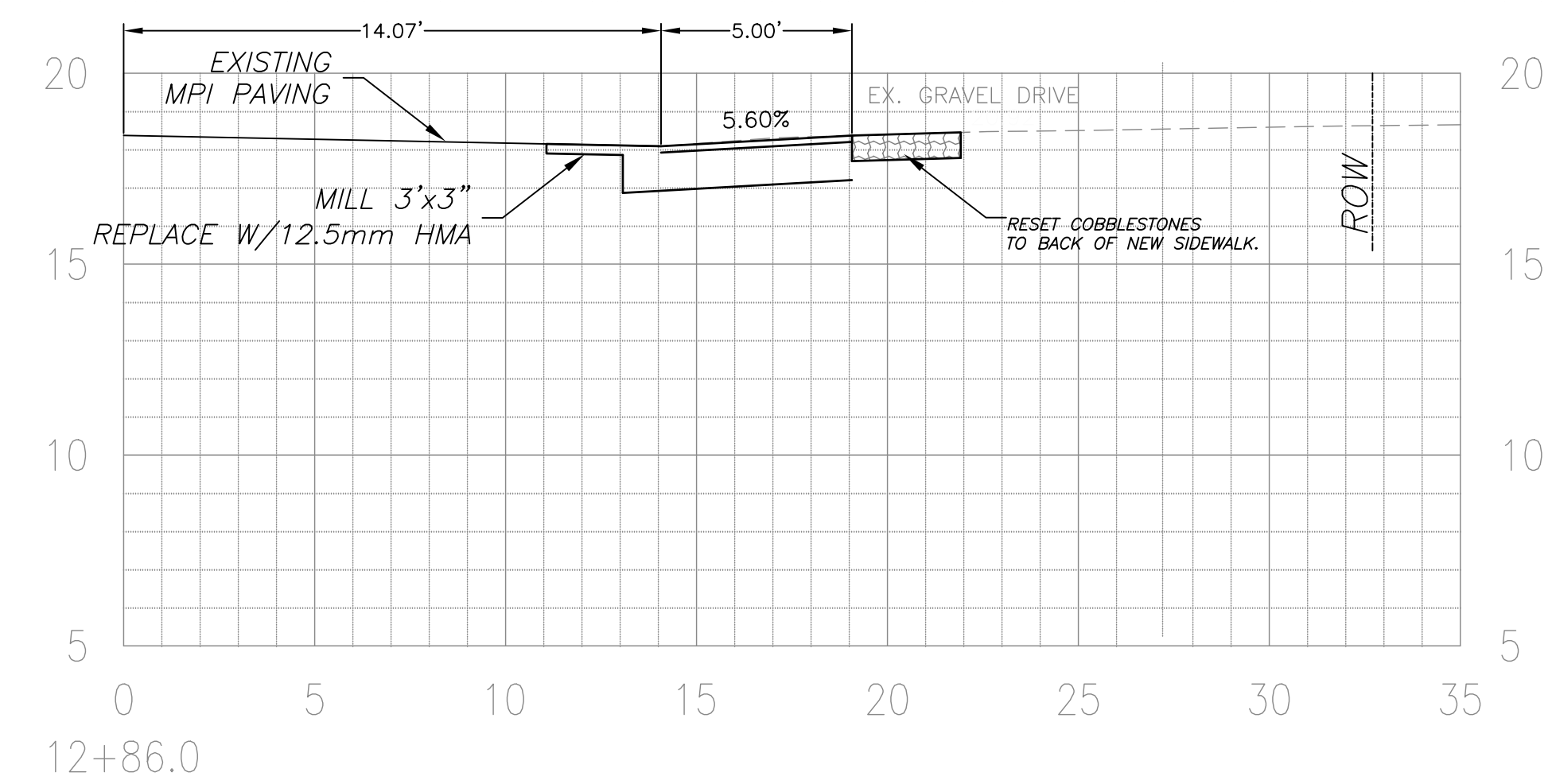
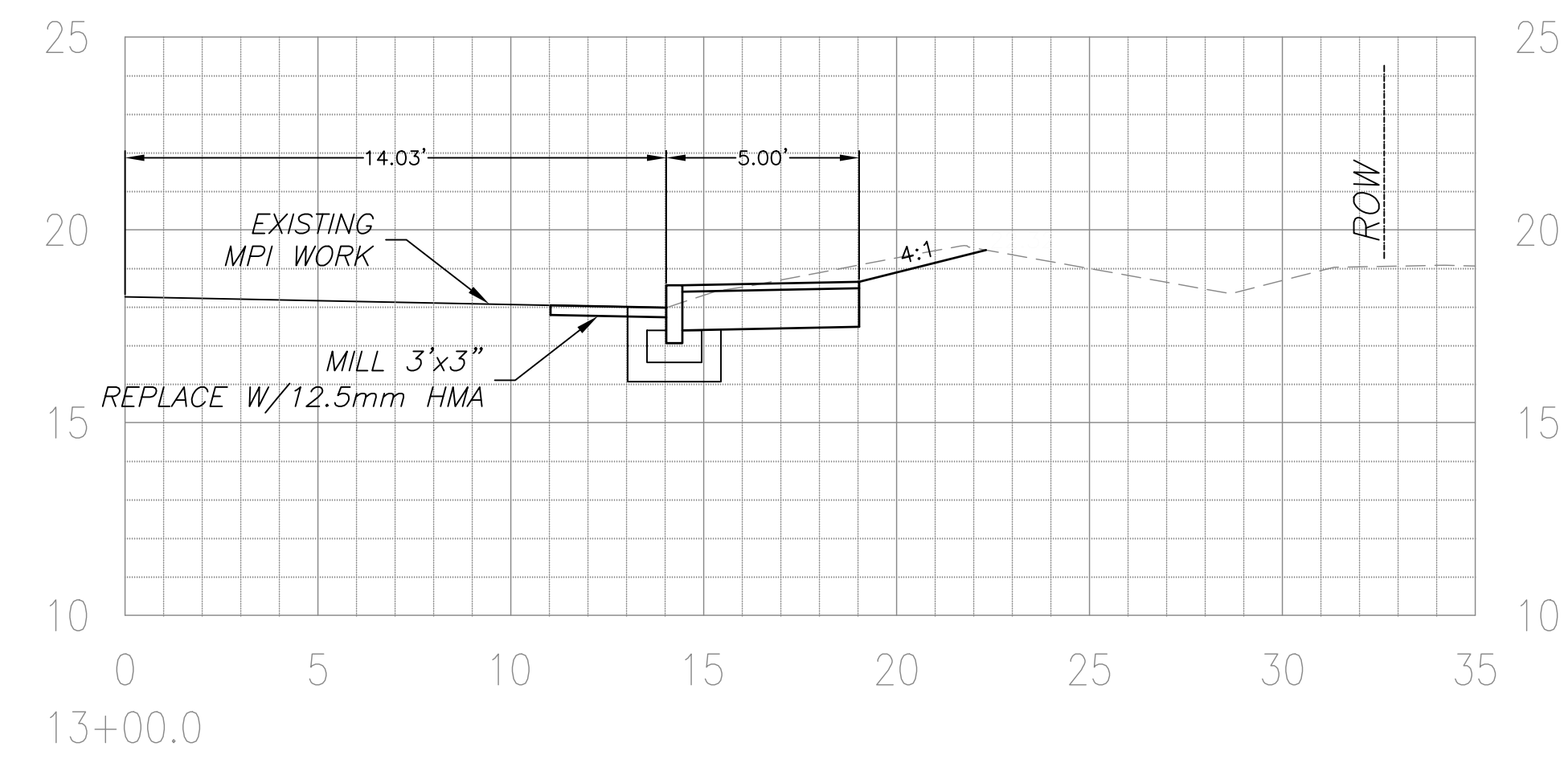
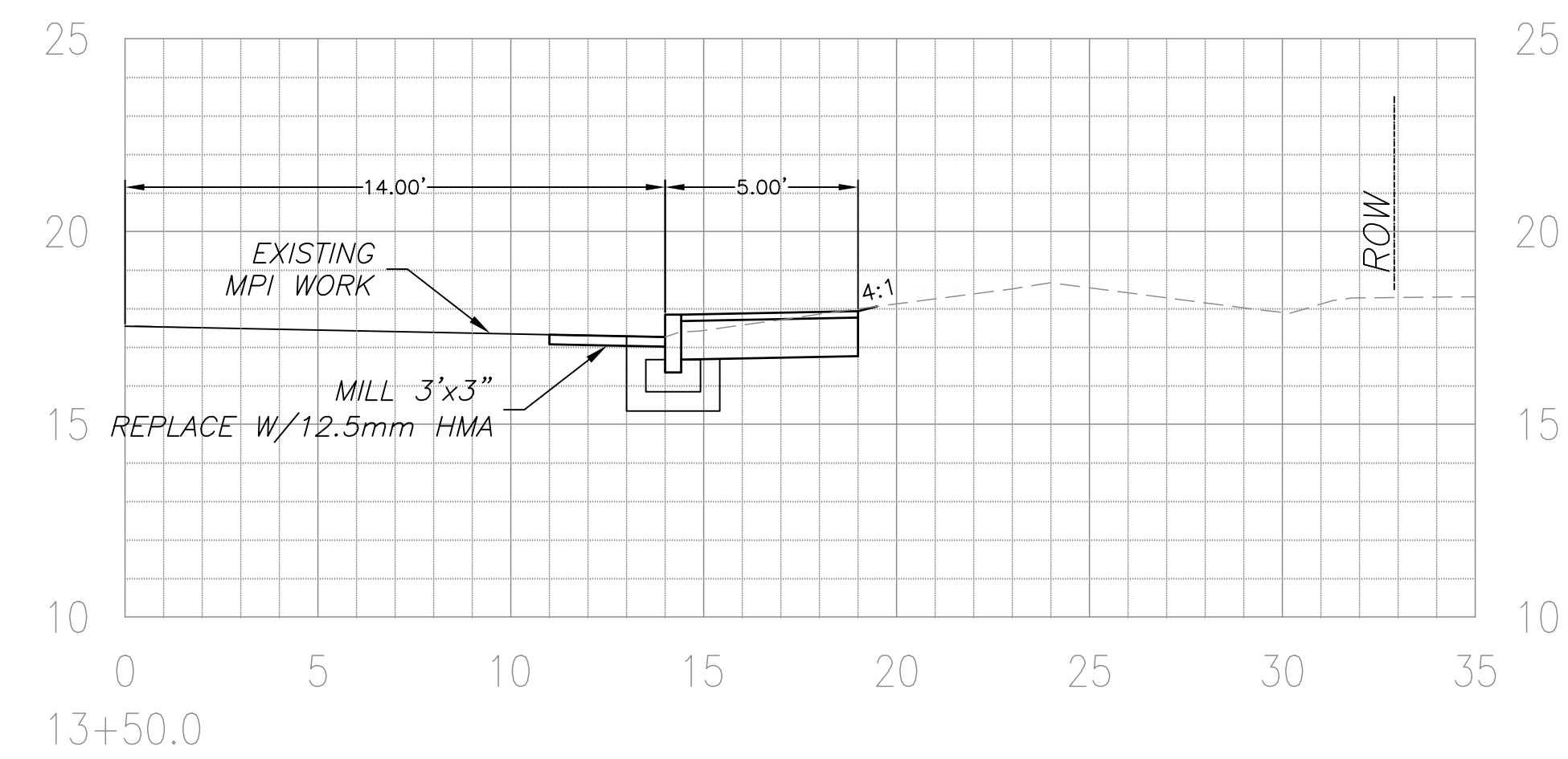
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PROJECT ID #
C-0163

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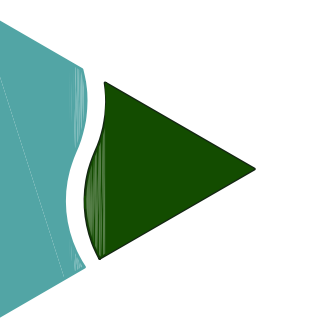
CHECKED BY:
GFJ

SHEET NO:
64



CROSS SECTIONS
STA. 12+56.1 TO 18+00

G.F. Johnston & Associates
Consulting Civil Engineers
P.O. Box 197
Southwest Harbor, Maine 04679
207-244-1200



STATION 12+50 - 18+00

DATE:
JULY 18th, 2018

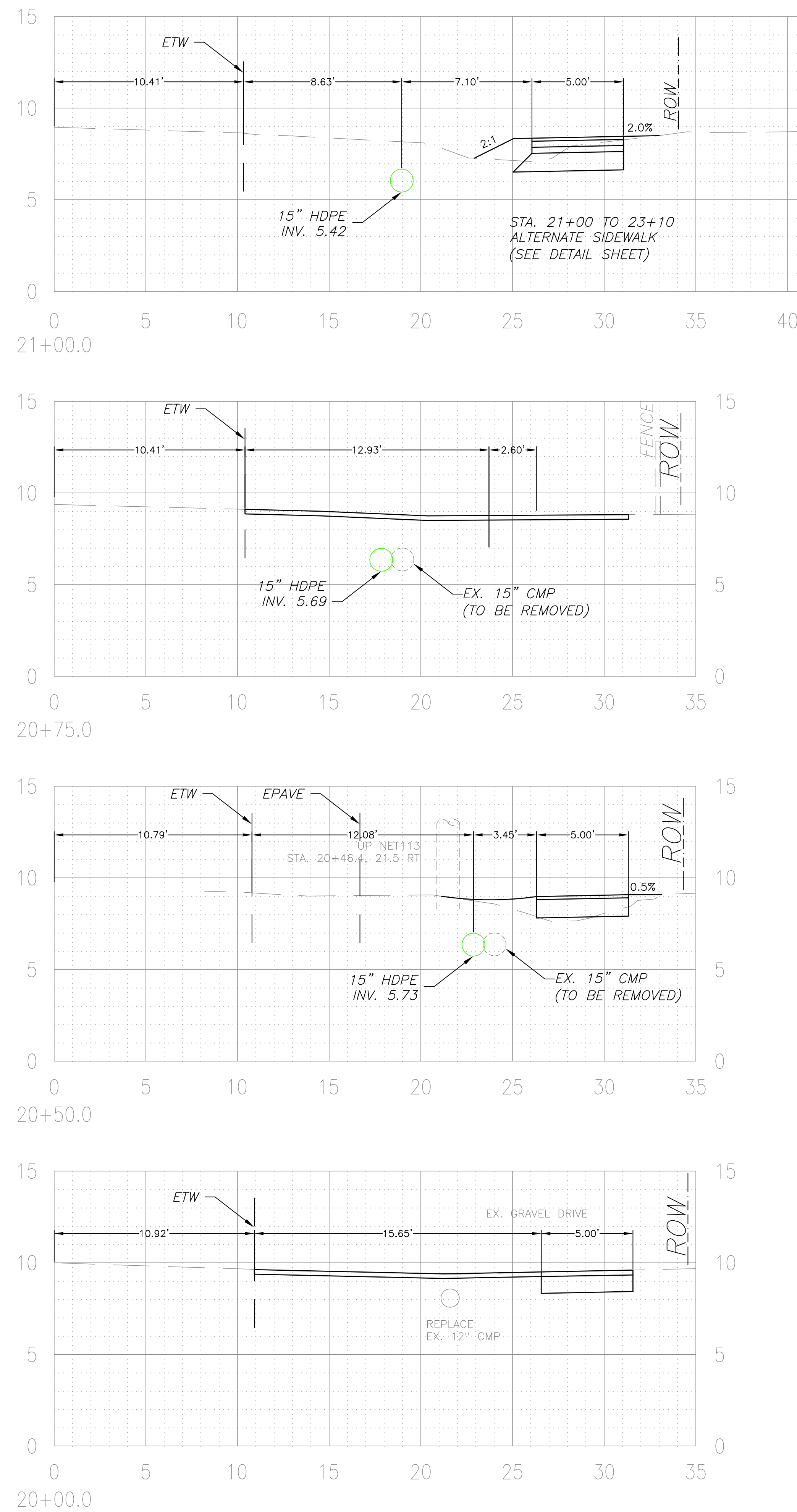
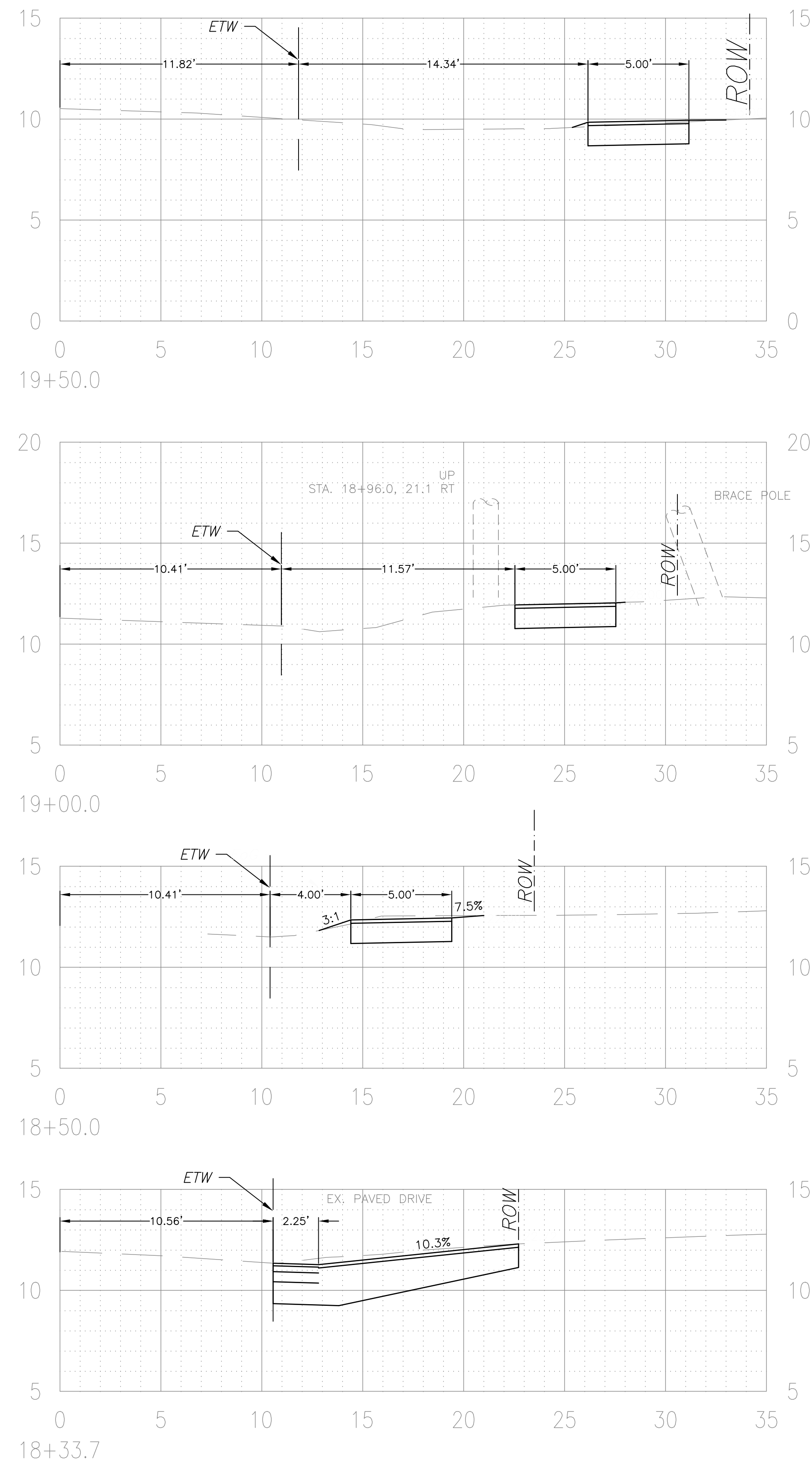
SCALE:
1" = 4'

PROJECT ID #
C-0163

DRAWN BY:
GLC

CHECKED BY:
GFJ

SHEET NO:



CROSS SECTIONS
STA. 18+33 TO 21+00



STATION 18+33 - 21+00

DATE:
JULY 18th, 2018

SCALE:
1" = 4'

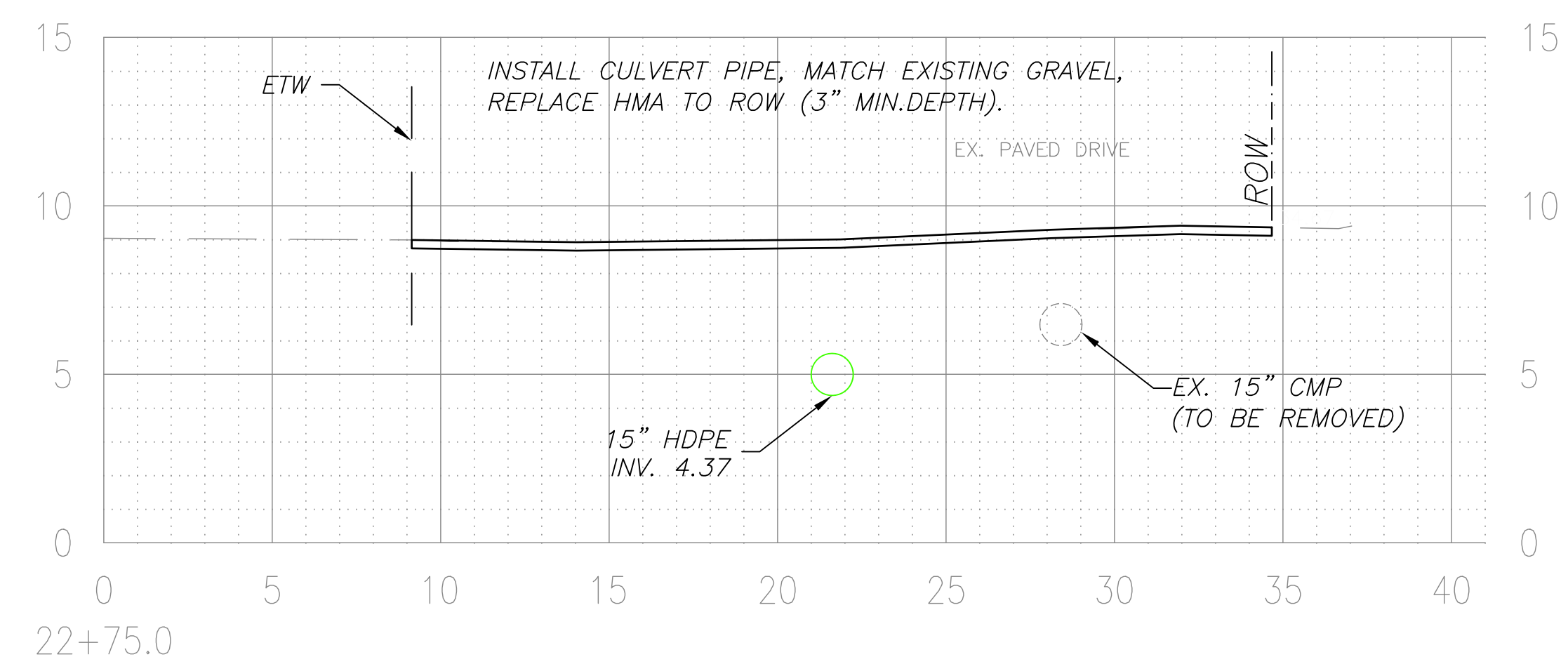
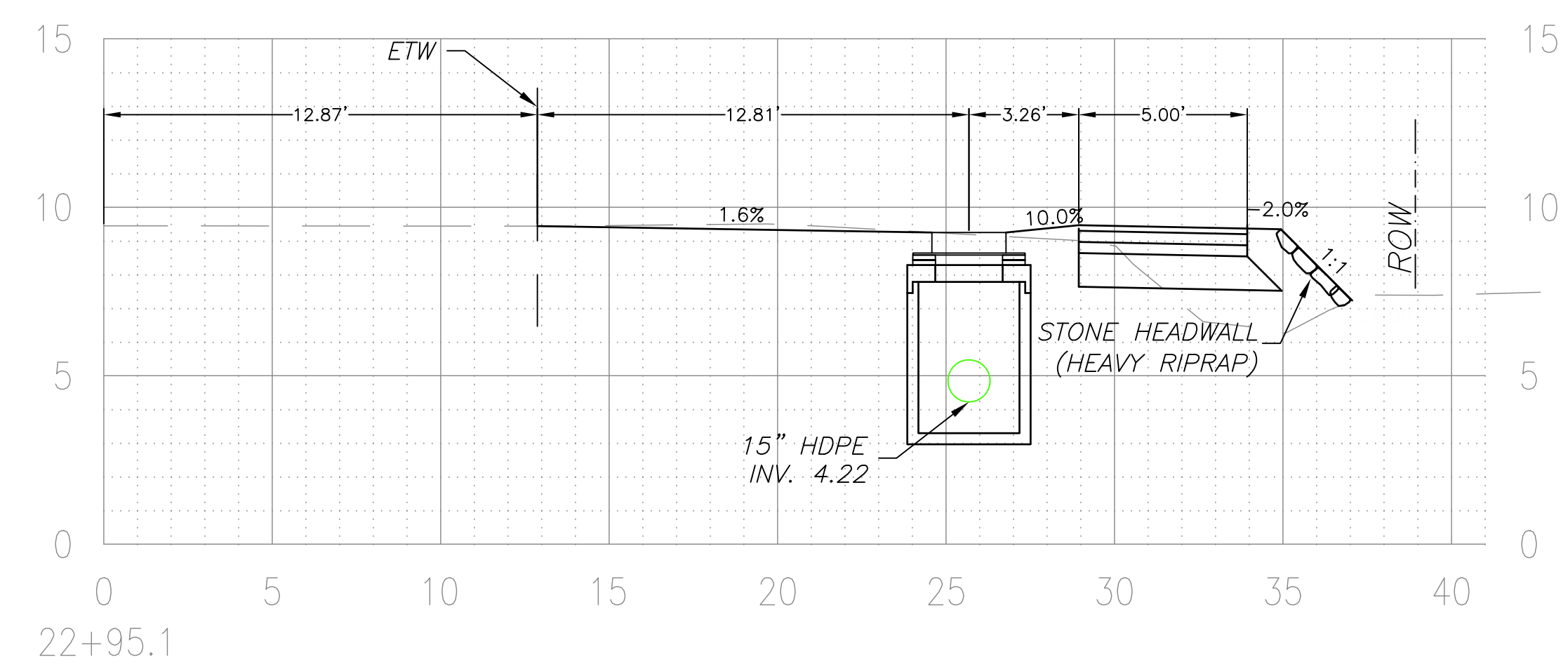
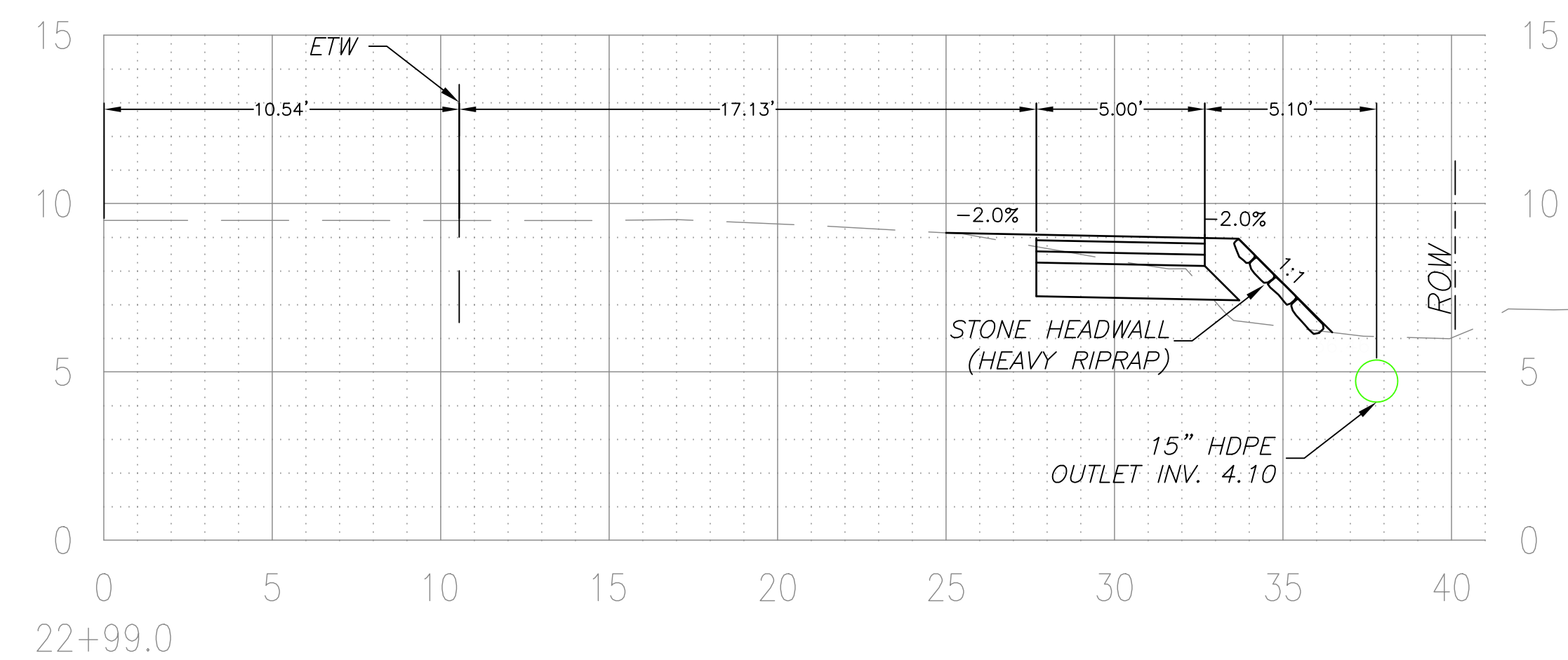
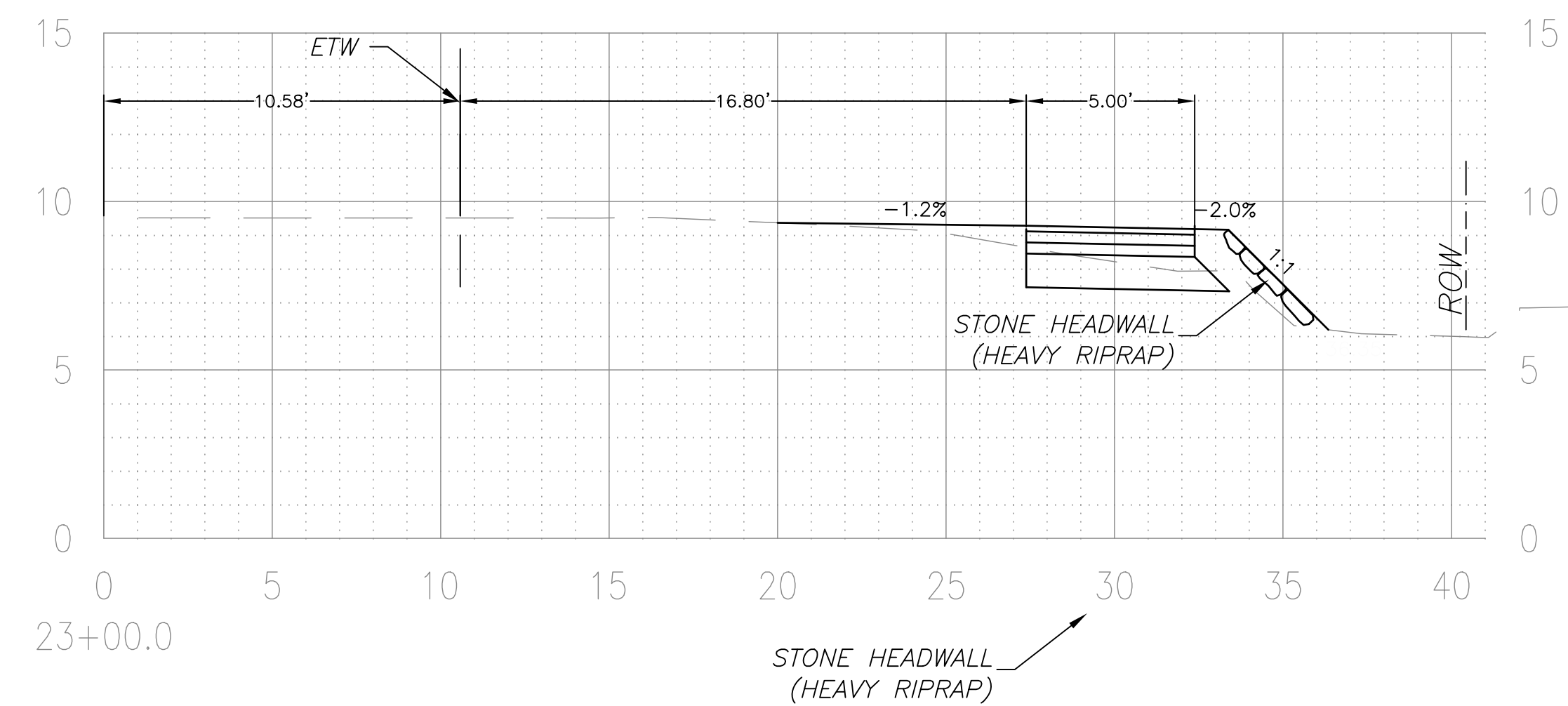
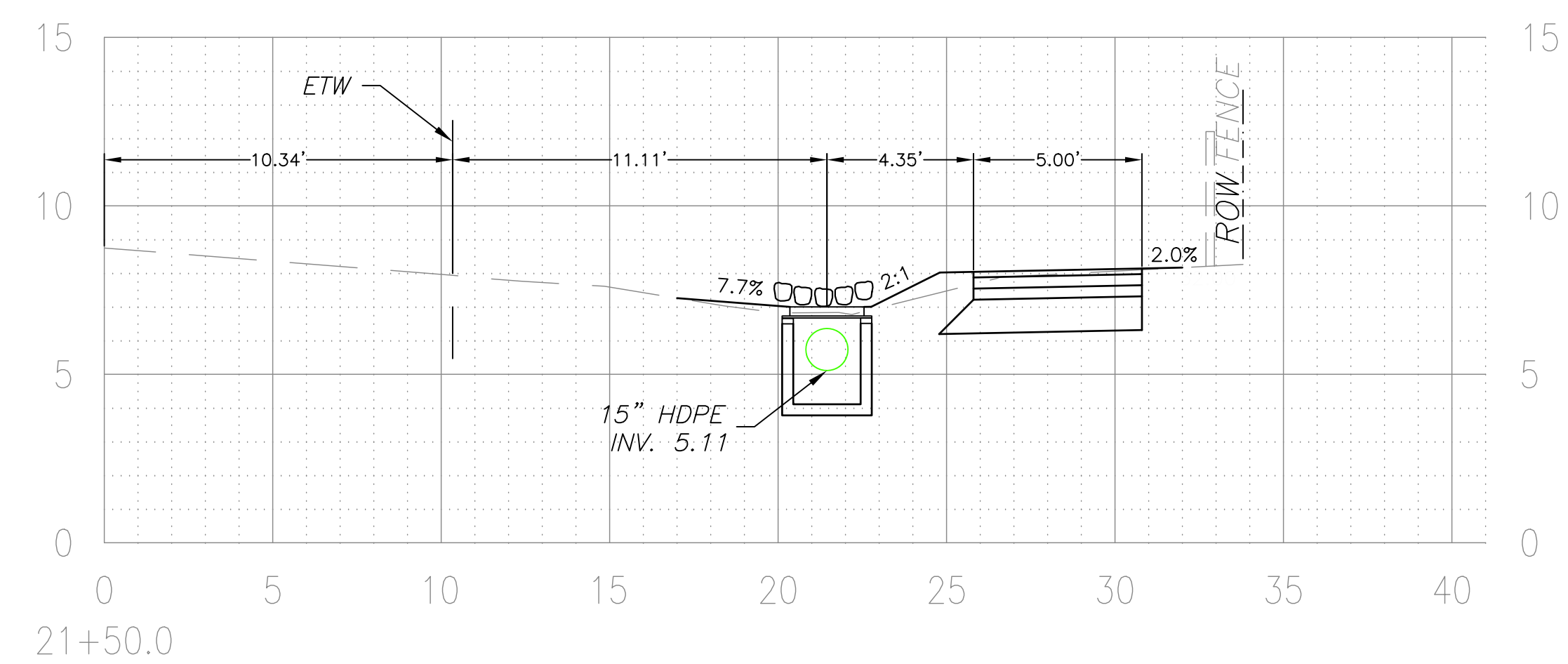
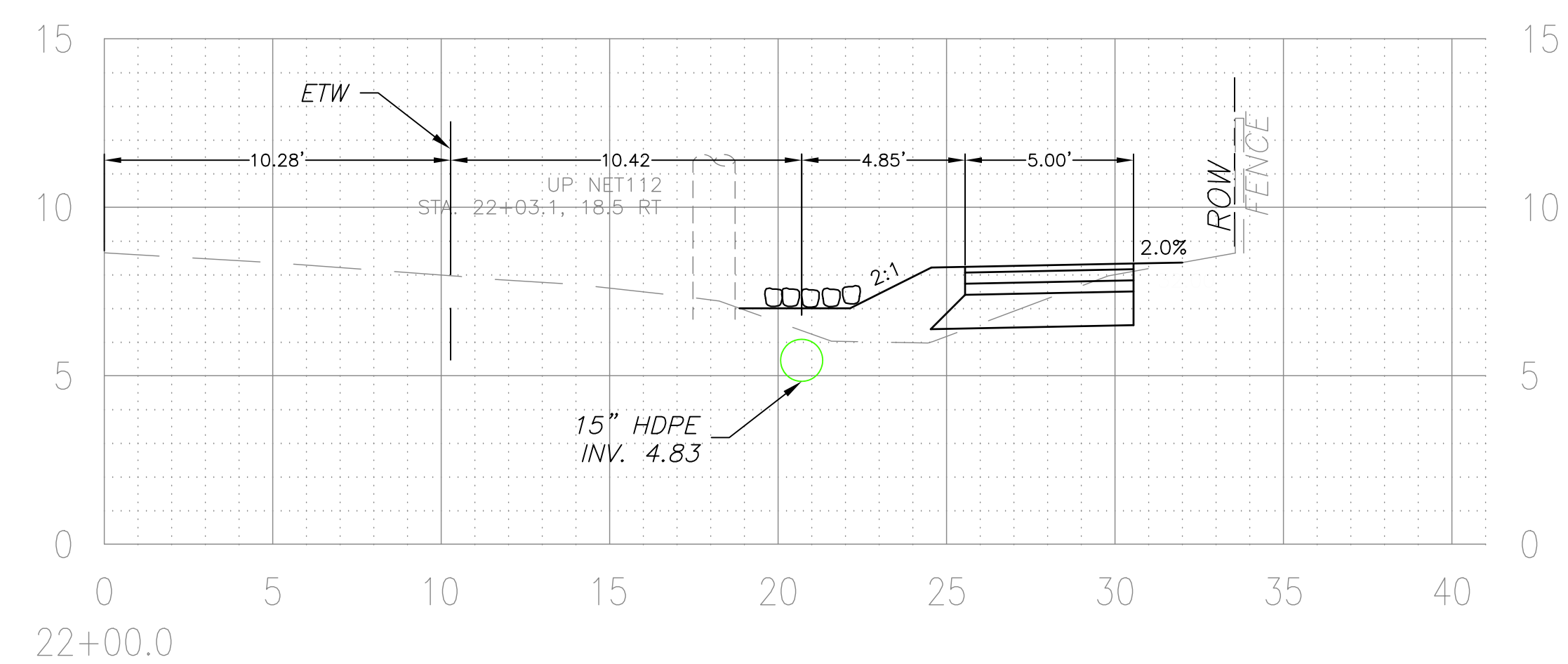
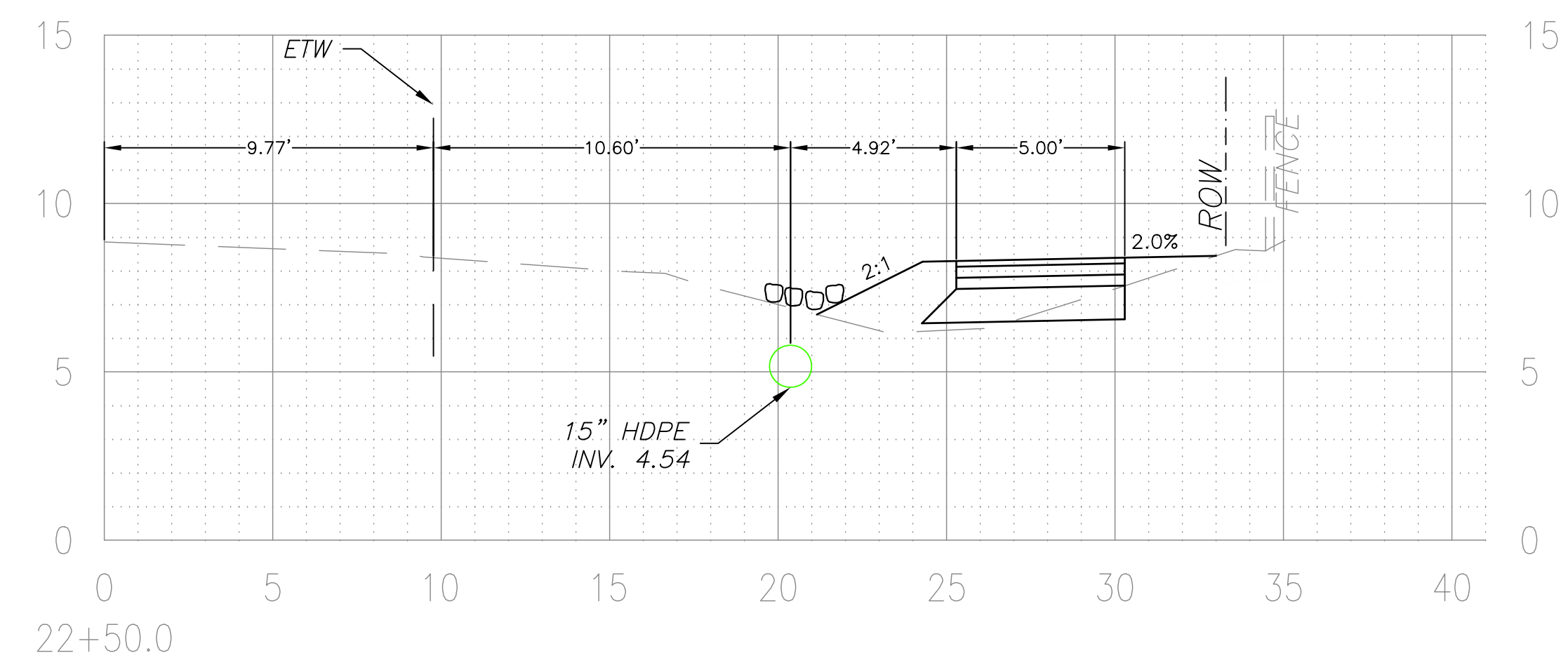
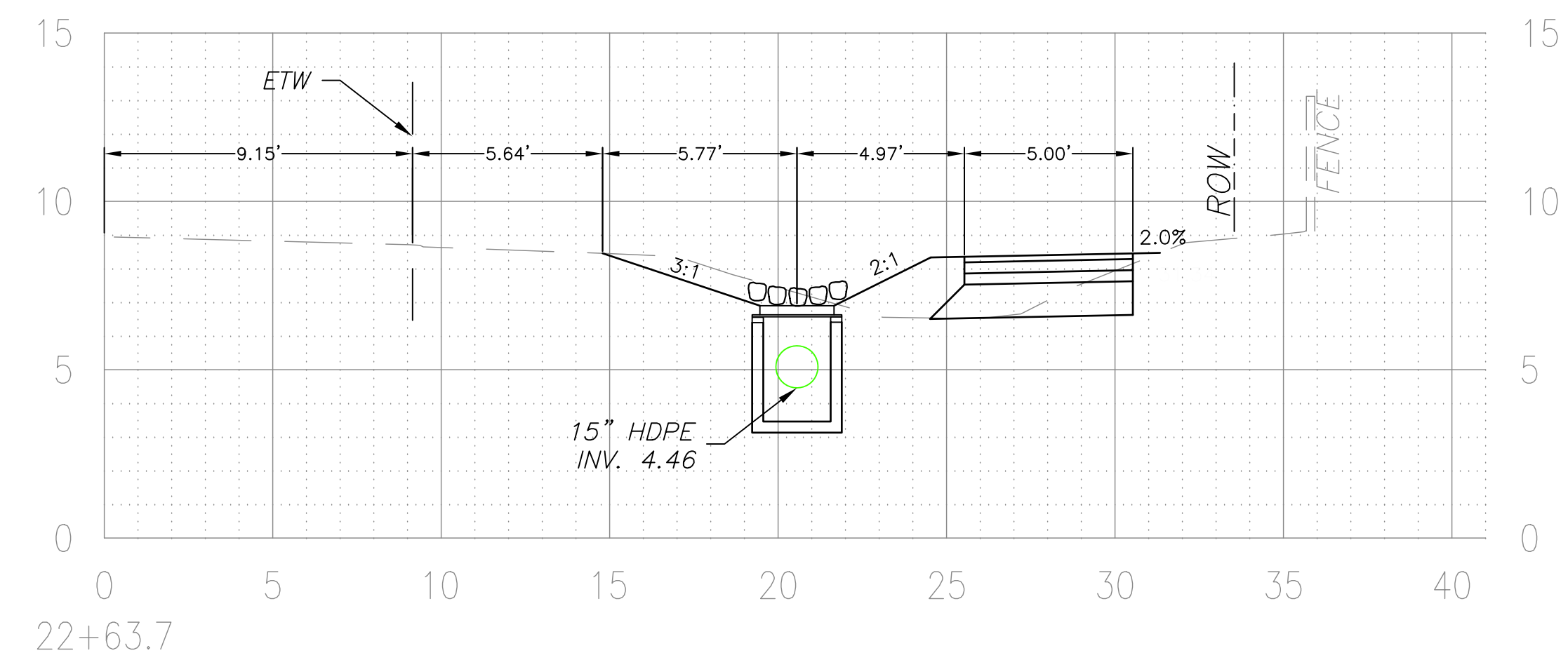
PROJECT ID #
C-0163

DRAWN BY:
GLC

CHECKED BY:
GFJ

SHEET NO:

67



*CROSS SECTIONS
STA. 21+50 TO 23+00*



STATION 21+50 - 23+00

DATE:
JULY 18th, 2018

SCALE:
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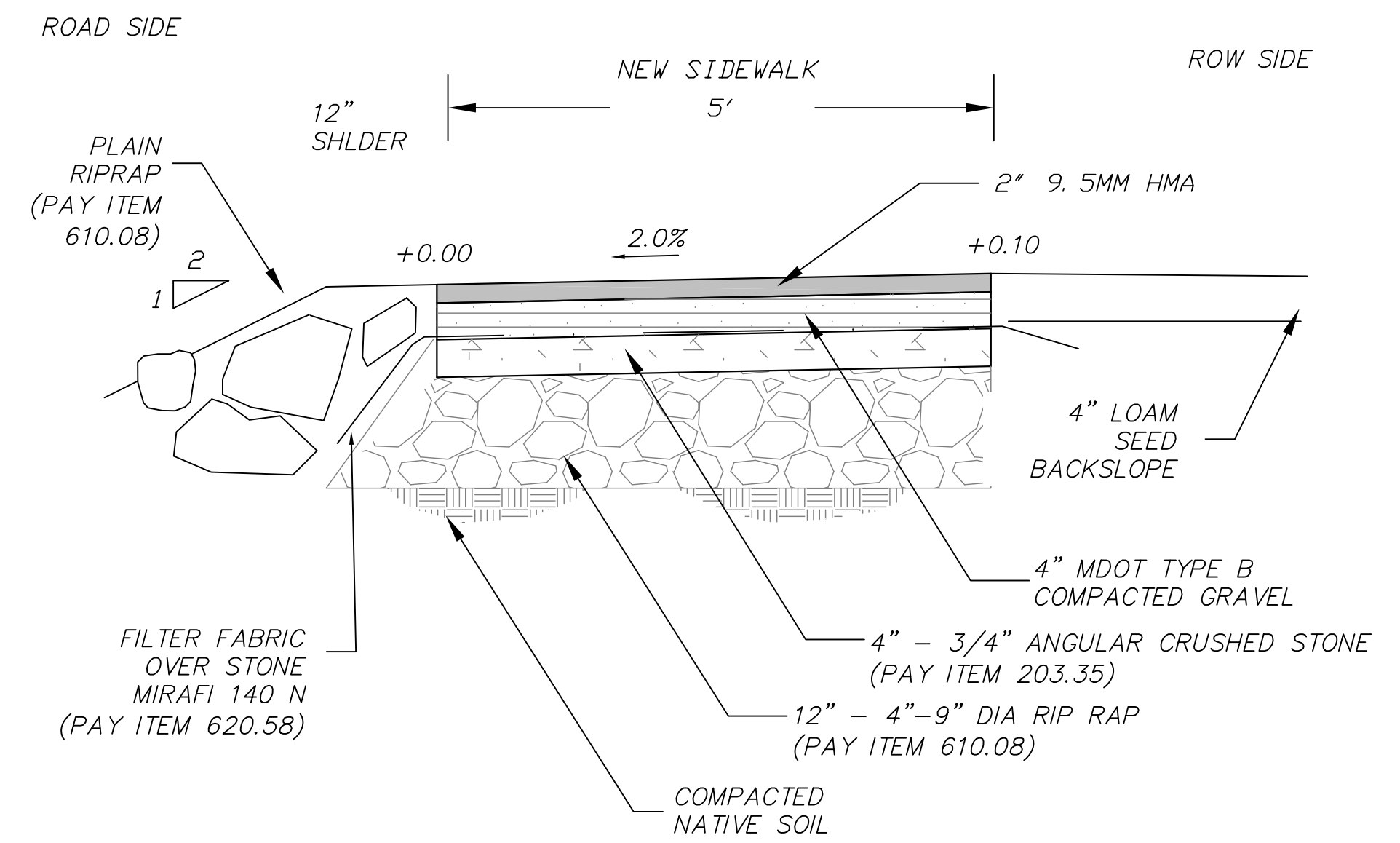
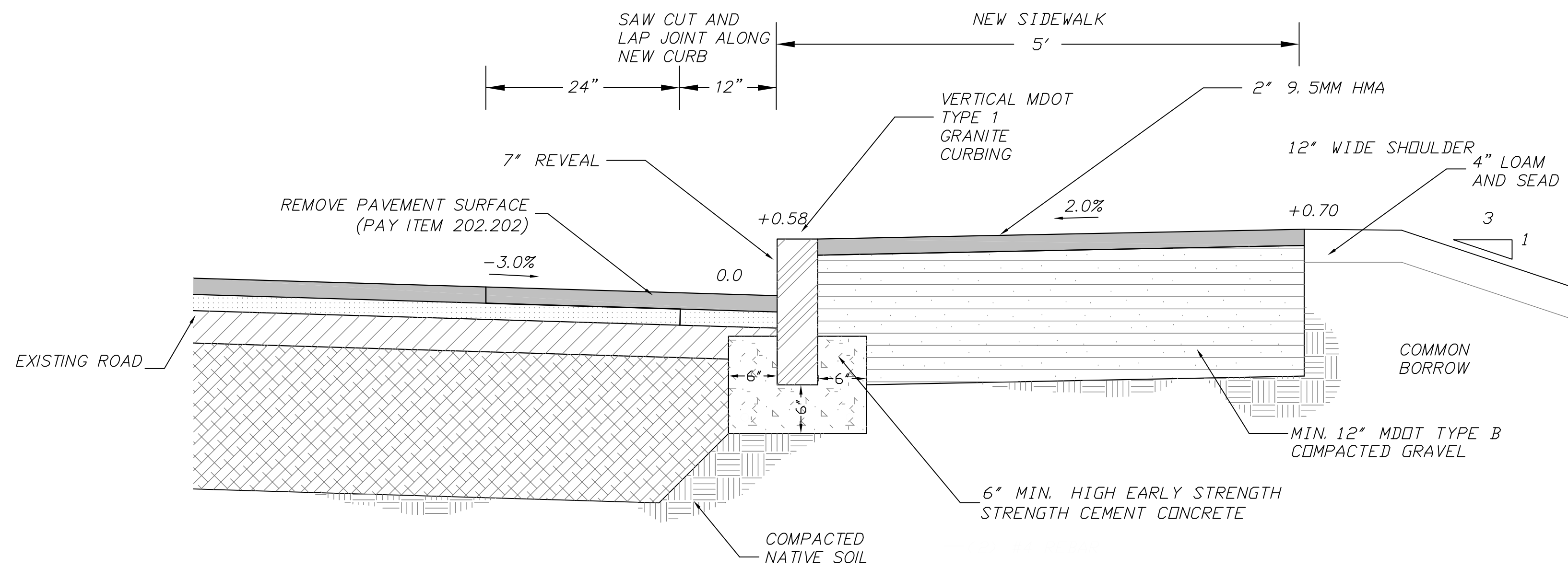
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C-0163

DRAWN BY:
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CHECKED BY:
GFJ

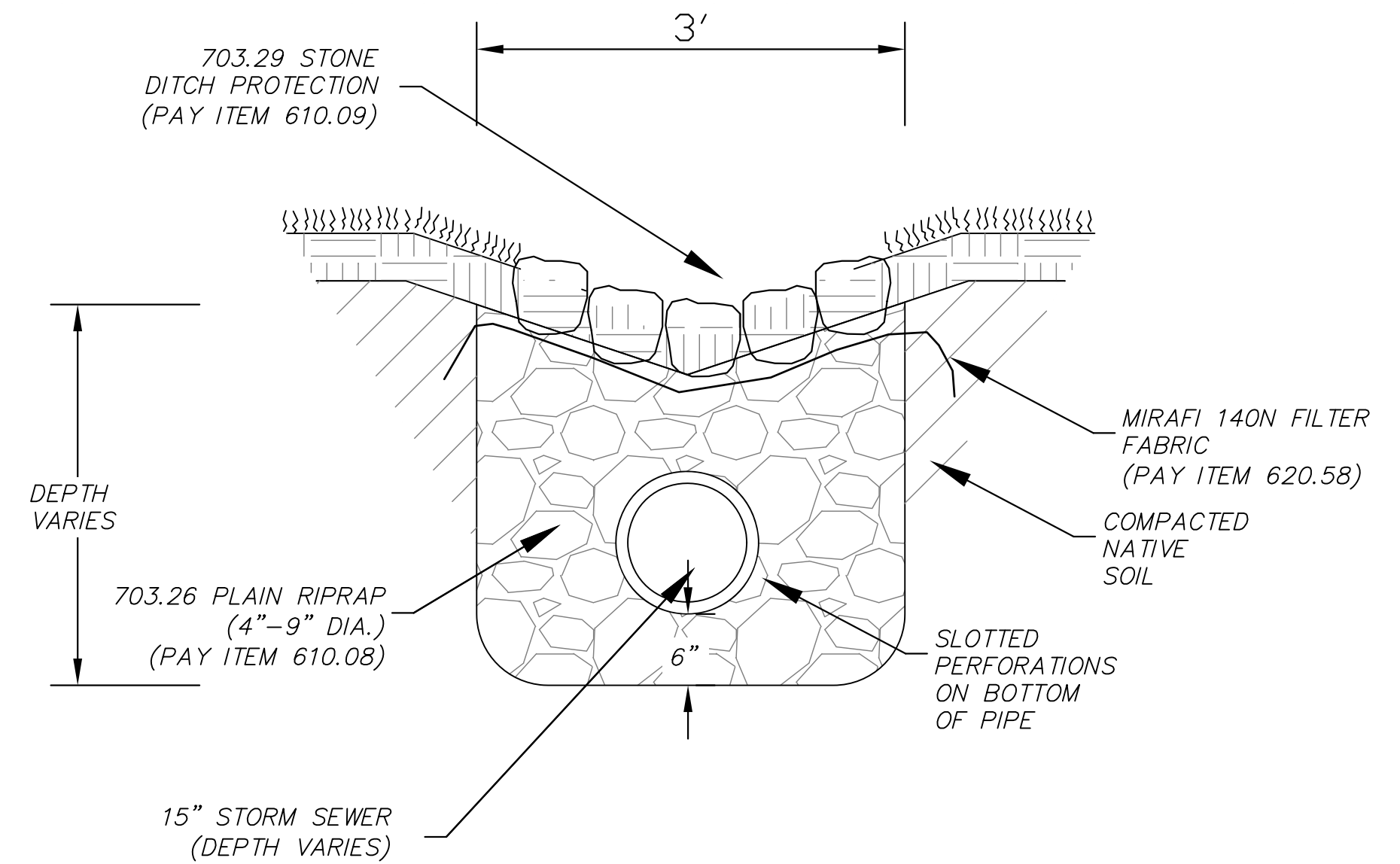
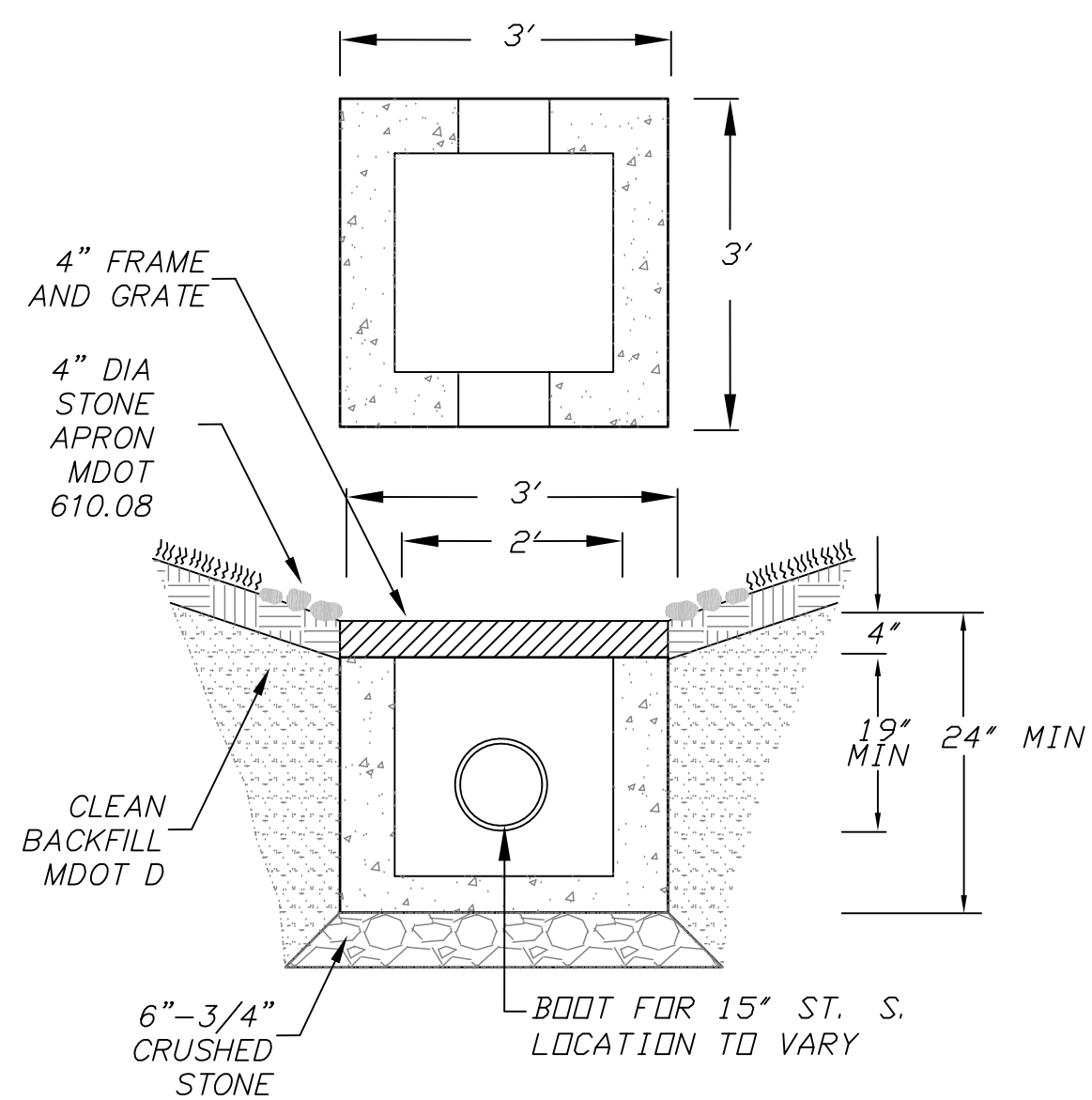
SHEET NO:

68



GRANITE CURBING (TYPICAL)

21+00 TO 23+10 SIDEWALK DETAIL



TYPE F CATCH BASIN

STONE LINED SWALE AND UNDERDRAIN

PLAN NOTES:

1. THESE PLANS HAVE BEEN DEVELOPED REFERRING MDOT DESIGN GUIDE PUBLISHED DECEMBER 2004 AND AS REVISED.
2. TOPOGRAPHY SHOWN HEREON IS BASED ON SURVEY PROVIDED BY MDOT IN MAY OF 2012 AND SURVEY PERFORMED BY G.F. JOHNSTON AND ASSOCIATES IN JUNE OF 2012. ALL ELEVATIONS BASED ON NGVD 29 VERTICAL DATUM.
3. ROW LOCATION SHOWN IS BASED ON COUNTY COMMISSION LAYOUT FROM 1838 WEST OF THE BRIDGE AND EAST OF THE BRIDGE IS COUNTY COMMISSION LAYOUT FROM 1834. DETERMINATION LIMITS EAST OF THE BRIDGE FURTHER REFINED BY CORRESPONDANCE LICENSED SURVEYOR JOSEPH COFFEY PLS. # 2329 CONFIRMED IN CORRESPONDANCE WITH MDOT CHIEF SURVEYOR P.BELANGER PLS DATED JULY 13, 2012 AND ON FILE AT G.F. JOHNSTON AND ASSOCIATES. ROW LOCATIONS MAY BE ALTERED BY MDOT IN THE FUTURE BASE ON WROUGHT PORTIONS AND ANY FUTURE IMPROVEMENTS CONTEMPLATED.
4. PRIVATE PROPERTY LINES SHOWN ALONG STATE HIGHWAY ARE APPROXIMATE AND HAVE BEEN DEVELOPED USING TAX MAPS. THESE LINES DO NOT REPRESENT ACTUAL BOUNDARY SURVEY OF PRIVATE LANDS. THESE LINES ARE SHOWN FOR REFERENCE PURPOSES ONLY.

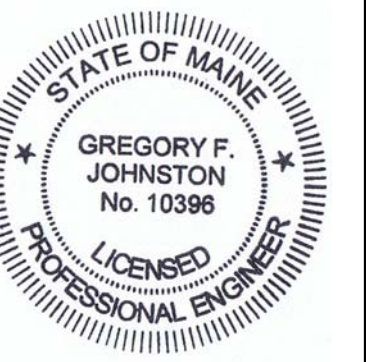
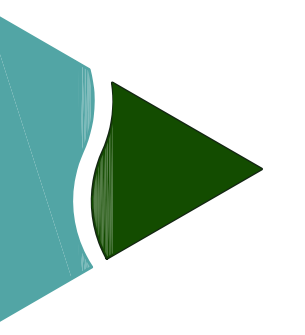
UTILITY NOTES:

1. THERE MAY BE ADDITIONAL UTILITIES CONCEALED AND OTHERWISE NOT SHOWN AS PART OF THESE PLANS. CONTRACTORS MUST NOTIFY DIG SAFE 48 HRS PRIOR TO ANY ONSITE ACTIVITY.

NOTES:

1. CONSTRUCTION METHODS AND DETAILS SHALL BE INSTALLED PER MDOT STANDARDS. DETAILS SHOWN FOR ON THIS SHEET ARE FOR EASE OF REFERENCE AND ELEVATION DIFFERENTIAL AT CURBLINE. PAY ITEMS WILL BE PERDETAILS IN ACCORDANCE WITH MDOT DETAIL MANUAL.

G.F. Johnston & Associates
Consulting Civil Engineers
P.O. Box 197
Southwest Harbor, Maine 04679
207-244-1200



DATE:
JULY 18th, 2018

SCALE:

PROJECT.ID #
0163

RAWN BY:
MV

CHECKED BY:
FJ

SHEET NO: