

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Eighth Edition 2017.

DESIGN LOADING

Live Load HL - 93 Modified for Strength I

TRAFFIC DATA

Current (2018) AADT	1460
Future (2028) AADT	1610
DHV - % of AADT	9%
Design Hour Volume	158
Heavy Trucks (% of AADT)	14%
Heavy Trucks (% of DHV)	14%
Directional Distribution (% of DHV)	60%
18 kip Equivalent P 2.0	247
18 kip Equivalent P 2.5	235
Design Speed (mph)	55

HYDROLOGIC DATA

Drainage Area	18.3 sq mi
Design Discharge (Q50)	1952 cfs
Check Discharge (Q100)	2266 cfs
Headwater Elevation (Q1.1)	500.0 ft
Headwater Elevation (Q25)	504.0 ft
Headwater Elevation (Q50)	504.5 ft
Headwater Elevation (Q100)	505.1 ft
Discharge Velocity (Q1.1)	2.5 fps
Discharge Velocity (Q25)	5.9 fps
Discharge Velocity (Q50)	6.4 fps
Discharge Velocity (Q100)	6.9 fps

MATERIALS

Concrete:
 Curbs Class "LP"
 All Other Class "A"
 Plain Reinforcing Steel ASTM A 615/A 615M, Grade 60
 Stainless Reinforcing Steel ASTM A 955, Grade 75

Structural Steel:
 All Material (except as noted) ASTM A 709, Grade 50W (unpainted)
 High Strength Bolts ASTM F 3125, Grade A325, Type 3
 H-Piles ASTM A 572, Grade 50

BASIC DESIGN STRESSES

Concrete
 Class "A" f'c = 4000 psi
 Class "LP" f'c = 5000 psi

Plain Reinforcing Steel f_y = 60,000 psi
 Stainless Reinforcing Steel f_y = 75,000 psi

Structural Steel:
 ASTM A 709, Grade 50W F_y = 50,000 psi
 ASTM A 709, Grade 36 F_y = 36,000 psi
 ASTM F 3125 Bolts F_u = 120,000 psi
 ASTM A 572 F_y = 50,000 psi

ATHENS SOMERSET COUNTY GILMAN BRIDGE OVER EAST BRANCH OF WESSERUNSETT STREAM STATE ROUTE 150 (HARMONY ROAD) STATE PROJECT NO. 18952.00 PROJECT LENGTH 0.055 mi. BRIDGE NO. 2313

LIST OF DRAWINGS

Title Sheet	1
Estimated Quantities & General Construction Notes	2
General Plan	3
Profiles	4
Boring Location Plan & Interpretive Subsurface Profile	5
Boring Logs	6-8
Highway Approach Cross Sections	9-14
Gilman Road Cross Sections	15
Pile Details	16
Abutment No. 1	17-19
Abutment No. 2	20-22
Girder Support Details	23
Framing Plan and Structural Steel Details	24
Girder Details	25
Superstructure Plans	26-28
Grading Plan	29
Steel Bridge Railing 3-Bar	30
Reinforcing Steel Schedule	31
Right of Way Map	32

UTILITIES

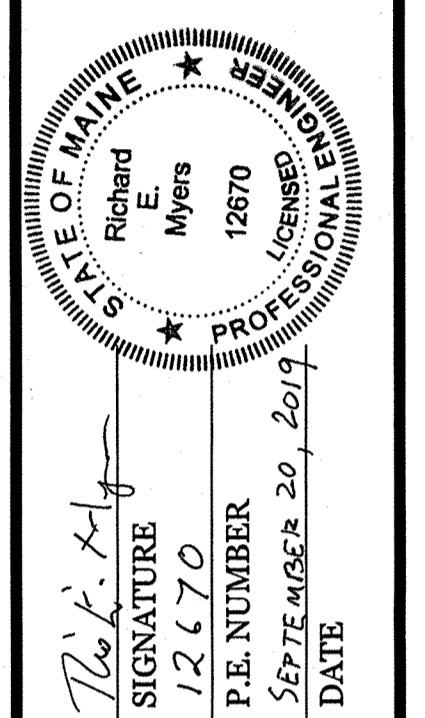
Central Maine Power Company
 Somerset Telephone Company

MAINTENANCE OF TRAFFIC

Provide bypass road and 16' wide temporary bridge with signalized alternating one-way traffic also controlling Gilman Road intersection on east side of the bridge.

PROJECT LOCATION	On Harmony Road / Route 150, 116ft north of the intersection with the Stickney Hill Road. Lat./Long. 44°57'17.0" N 69°38'44.0" W
PROGRAM AREA	Highway Bridges-Traditional
OUTLINE OF WORK	Bridge Replacement

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
APPROVED: *[Signature]*
COMMISSIONER: *[Signature]*
CHIEF ENGINEER: *[Signature]*
DATE: 9-30-19
DATE: 9-27-19



PROGRAM	BRIDGE
PROJECT MANAGER	MIKE WIGHT
DESIGNER	MARK GRAY
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

ATHENS
GILMAN BRIDGE
TITLE SHEET

SHEET NUMBER
1
OF 32

WIN 18952.00

Username: armand.j.paradis Date: 9/20/2019

Division: BRIDGE

Filename: \\00\BRIDGE\MSTAN001_Title.dgn

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
201.23	REMOVING SINGLE TREE TOP ONLY	1	EA
201.24	REMOVING STUMP	1	EA
202.13	REMOVING EXISTING RAILINGS (RETAINED BY DEPARTMENT)	110	LF
202.19	REMOVING EXISTING BRIDGE	1	LS
202.202	REMOVING PAVEMENT SURFACE	320	SY
203.20	COMMON EXCAVATION	700	CY
203.2318	DISPOSAL OF SPECIAL WASTE	250	T
203.24	COMMON BORROW	20	CY
203.25	GRANULAR BORROW	460	CY
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	770	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	640	CY
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE	215	T
403.213	HOT MIX ASPHALT 12.5 MM BASE	195	T
409.15	BITUMINOUS TACK COAT - APPLIED	106	G
501.231	DYNAMIC LOADING TEST	1	EA
501.502	ROCK SOCKETED H-PILES	96	LF
501.54	STEEL H-BEAM PILES 117 LBS/FT, DELIVERED	237	LF
501.541	STEEL H-BEAM PILES 117 LBS/FT, IN PLACE	141	LF
501.804	DRILLING EQUIPMENT MOBILIZATION	1	LS
501.90	PILE TIPS	6	EA
501.92	PILE DRIVING EQUIPMENT MOBILIZATION	1	LS
502.219	STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	(108 CY)	1
502.26	STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLABS ON STEEL BRIDGES	(201 CY)	1
502.291	SAW CUT GROOVING	(4350 SF)	1
502.31	STRUCTURAL CONCRETE APPROACH SLABS	(28 CY)	1
502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS	(12 CY)	1
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	27,300	LB
503.13	REINFORCING STEEL, PLACING	27,300	LB
503.17	MECHANICAL WELDED SPLICE	68	EA
503.26	STAINLESS STEEL REINFORCEMENT - FABRICATED & DELIVERED	48,400	LB
503.27	STAINLESS STEEL REINFORCEMENT - PLACING	48,400	LB
504.702	STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED	(156,700 LB)	1
504.71	STRUCTURAL STEEL ERECTION	(156,700 LB)	1
505.08	SHEAR CONNECTORS	(1,750 EA)	1
507.0821	STEEL BRIDGE RAILING, 3 BAR	(275 LF)	1
510.10	SPECIAL DETOUR 16 FT. RDWAY WIDTH VEHICULAR & PEDESTRIAN TRAFFIC NOT SEPARATED	1	LS
511.07	COFFERDAM: ABUTMENT NO. 1	1	LS
511.07	COFFERDAM: ABUTMENT NO. 2	1	LS
514.06	CURING BOX FOR CONCRETE CYLINDERS	1	EA
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES	(645 SY)	1
520.232	EXPANSION DEVICE - ASPHALTIC PLUG JOINT	74	LF
526.301	TEMPORARY CONCRETE BARRIER TYPE I	(800 LF)	1
527.34	WORK ZONE CRASH CUSHIONS	4	UN
603.179	18 INCH CULVERT PIPE OPTION III	72	LF
606.1301	31" W-BM GR, MID-WAY SPLICE-SGL FACED	138	LF
606.1303	31" W-BM GR, MID-WAY SPLICE-15' RAD AND LESS	25	LF
606.1304	31" W-BM GR, MID-WAY SPLICE-OVER 15' RAD	63	LF
606.1721	BRIDGE TRANSITION - TYPE I	3	EA
606.1721	BRIDGE TRANSITION - TYPE I - MODIFIED	1	EA
606.265	TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	3	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	6	EA
606.356	UNDERDRAIN DELINEATOR POST	2	EA
610.08	PLAIN RIPRAP	205	CY
610.16	HEAVY RIPRAP	940	CY
610.18	STONE DITCH PROTECTION	10	CY
613.319	EROSION CONTROL BLANKET	50	SY
615.07	LOAM	25	CY
618.14	SEEDING METHOD NUMBER 2	5	UN
619.12	MULCH	5	UN
619.14	EROSION CONTROL MIX	15	CY
620.58	EROSION CONTROL GEOTEXTILE	860	SY
620.66	DRAINAGE GEOCOMPOSITE	111	SY
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	1,200	LF
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	130	SF
627.77	REMOVING PAVEMENT MARKINGS	200	SF
627.78	TEMPORARY 4 INCH PAINTED PAVEMENT MARKING LINE, WHITE OR YELLOW	400	LF
629.05	HAND LABOR, STRAIGHT TIME	20	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	20	HR
631.14	GRADER (INCLUDING OPERATOR)	20	HR
631.15	ROLLER, EARTH AND BASE COURSE (INCLUDING OPERATOR)	20	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	20	HR
631.18	CHAIN SAW RENTAL (INCLUDING OPERATOR)	20	HR
631.22	FRONT END LOADER (INCLUDING OPERATOR)	20	HR
637.071	DUST CONTROL	1	LS
639.19	FIELD OFFICE TYPE B	1	EA
643.72	TEMPORARY TRAFFIC SIGNAL	1	LS
645.116	REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	1	EA
652.312	TYPE III BARRICADE	4	EA
652.33	DRUM	30	EA
652.34	CONE	30	EA
652.35	CONSTRUCTION SIGNS	155	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	(270 CD)	1
652.38	FLAGGER	250	HR
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS

GENERAL CONSTRUCTION NOTES

1. For easements, construction limits and right of way lines, refer to Right of Way Map.

2. The clearing limits as shown on the plans are approximate. The exact limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract items.

3. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.

4. All aluminum bridge rail, rail posts, and associated hardware which are to be removed shall be carefully salvaged by the Contractor and will remain the property of the Department.

5. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.

6. In areas where the Resident directs the Contractor not to excavate to the subgrade line shown on the plans, payment for removing existing pavement, grubbing, shaping, ditching, and compacting the existing subbase and layers of new subbase 6 inches or less thick will be made under appropriate equipment rental items.

7. Unless otherwise shown, place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.

8. Erosion Control Mix may be substituted in those areas normally receiving loam and seed as directed by the Resident. Placement shall be in accordance with Standard Specifications Section 619, Mulch. Payment will be made under Item No. 619.14, Erosion Control Mix.

9. Place a 24-in. wide strip of Temporary Erosion Control Blanket on the sideslopes along the top of the riprap and behind the wingwalls.

10. Extended-use Erosion Control Blanket, seeded gutters, riprap downspouts, and other gutters lined with Stone Ditch Protection shall be constructed after paving and shoulder work is completed, where it is apparent that runoff will cause continual erosion. Payment will be made under the appropriate Contract items.

11. Providing and installing the neoprene pads separating the backwall from the abutment are to be incidental to other contract pay items. No separate measurement and payment will be made.

12. Protective Coating for Concrete Surfaces shall be applied to the following areas:

All exposed surfaces of concrete curbs, Fascias down to the drip notch, Concrete wearing surfaces, All exposed substructure surfaces and to one foot below the top of backwalls on the back side.

13. All temporary ramps utilized for winter suspension will be paid for under the appropriate HMA base course pay items.

14. Project information referred to below may be accessed at the following MaineDOT web address: <http://www.maine.gov/mdot/contractors/>.

15. The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.

16. The hydrologic report of the bridge site may be accessed at the MaineDOT web address. The hydrologic report is based on MaineDOT's interpretation of the information obtained for the subject site. No assurance is given that the information or the conclusions of the report will be representative of actual conditions at the time of construction.

17. The project geotechnical report titled: Geotechnical Design Report for the Replacement of Gilman Bridge, Athens, Maine, Soils Report 2017-38, dated August 24, 2017 may be accessed at the MaineDOT web address.

18. Geotechnical information furnished or referred to in this plan set is for the use of the Bidders and the Contractor. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the construction site. MaineDOT will not be responsible for the Bidders' or Contractor's interpretations of, or conclusions drawn from, the geotechnical information. The boring logs contained in the plan set present factual and interpretive subsurface information collected at discrete locations. Data provided may not be representative of the subsurface conditions between the boring locations.

19. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:

a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation.

20. The existing bridge shall be removed by and become the property of the Contractor. The steel portions of the existing bridge may be coated with a lead-based paint system. The Contractor is responsible for the containment, proper management and disposal of all lead-contaminated hazardous waste generated by the process of demolishing the bridge. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards related to this process. Once the existing bridge is removed, the Contractor is solely responsible for the care, custody and control of the components of the existing bridge and any hazardous waste generated as a result of the storage, recycling or disposal of the bridge components, including lead-coated steel. The Contractor shall recycle or reuse the steel in accordance with the Maine Department of Environmental Protection's "Maine Hazardous Waste Management Regulations," Chapter 850. A copy of this regulation is available at MaineDOT's offices on Child Street in Augusta. Payment for all labor, materials, equipment and other costs required to remove and dispose of the existing bridge will be considered incidental to the bridge removal pay item.

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

18952.00

WIN

18952.00

BRIDGE NO. 2313

BRIDGE PLANS

SIGNATURE

P.E. NUMBER

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OF 32

GILMAN BRIDGE

EAST BRANCH WESERUNSETT STREAM

SOMERSET COUNTY

ATHENS

ESTIMATED QUANTITIES &

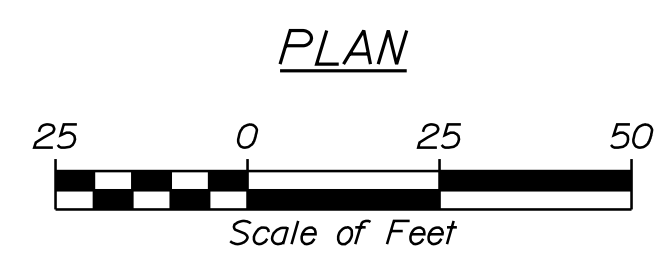
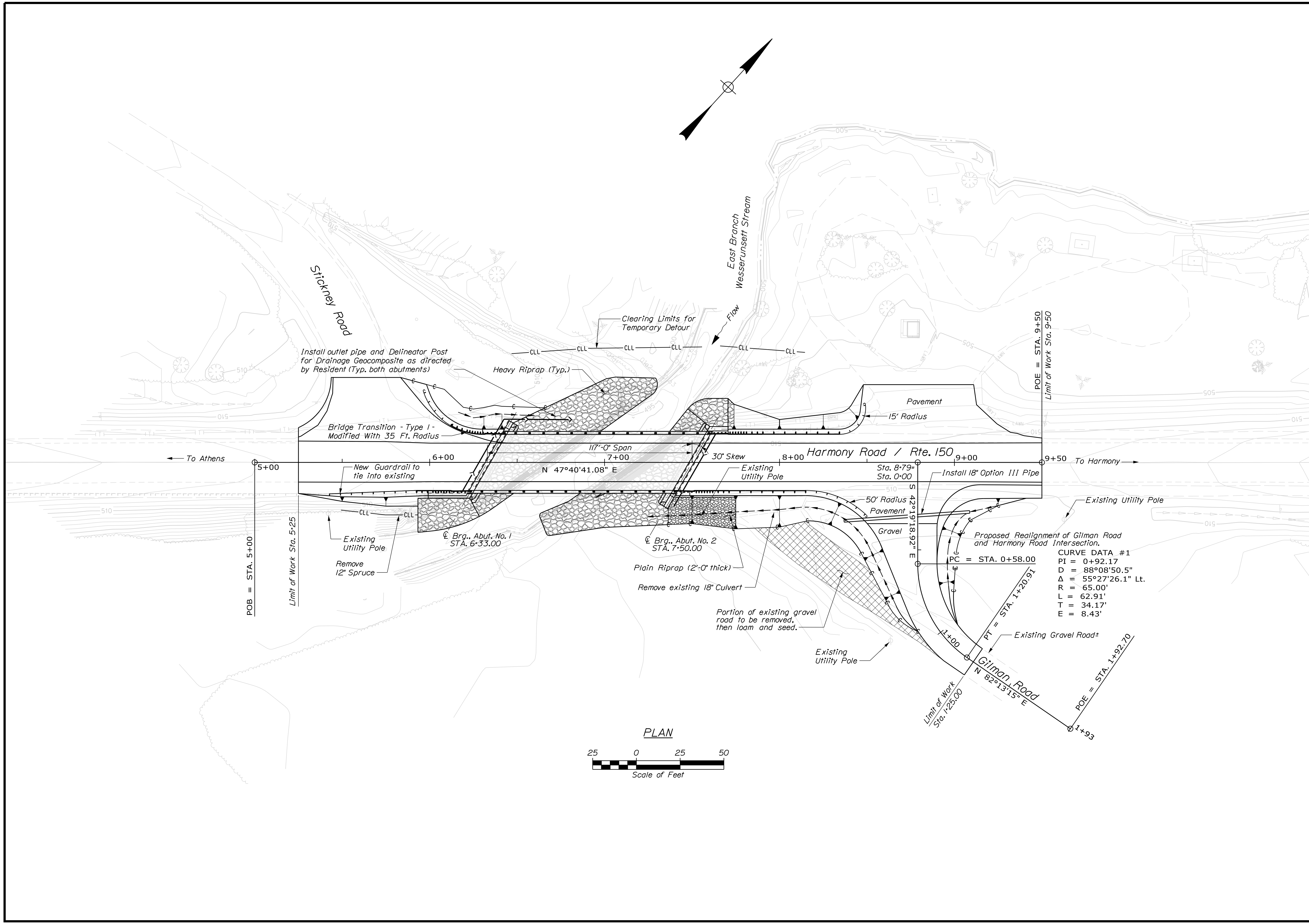
GENERAL CONSTRUCTION NOTES

Date: 9/23/2019

Username: David.Shaw

Division: BRIDGE

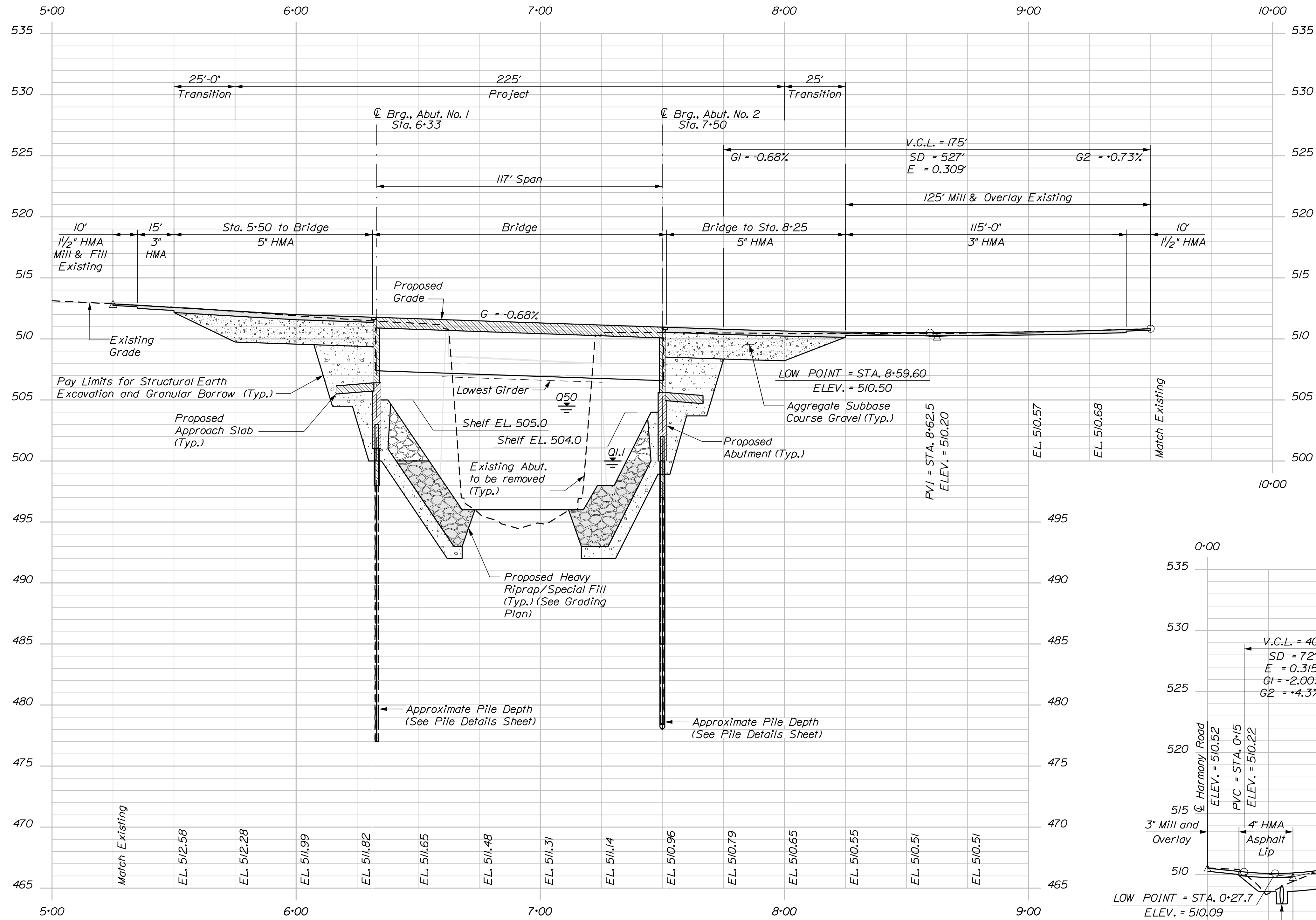
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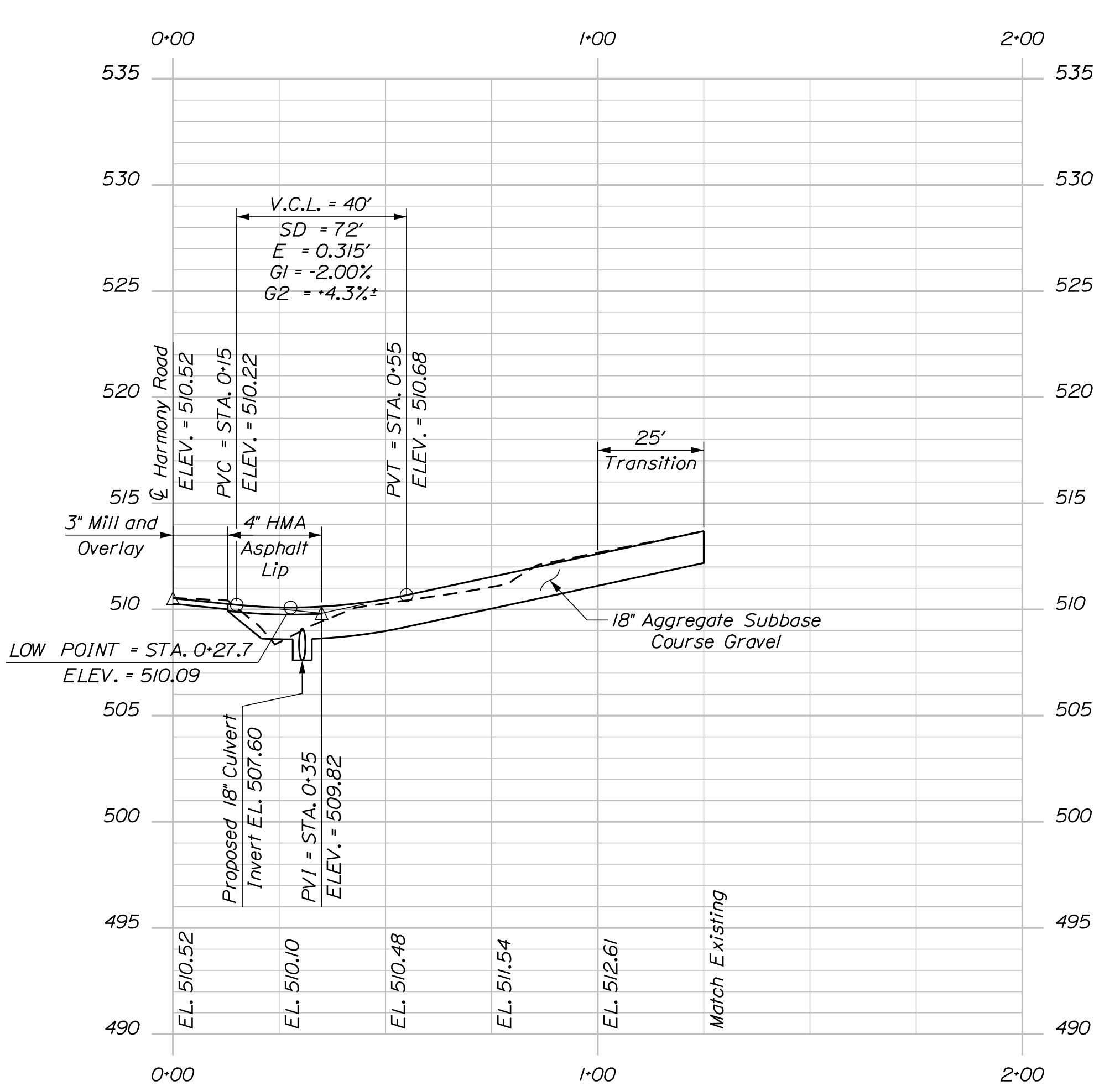
CURVE DATA #1

PI	= 0+92.17
D	= 88°08'50.5"
Δ	= 55°27'26.1" Lt.
R	= 65.00'
L	= 62.91'
T	= 34.17'
E	= 8.43'

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
GILMAN BRIDGE		18952.00	
EAST BRANCH WESERUNSETT STREAM		WIN	
ATHENS		18952.00	
SOMERSET COUNTY		BRIDGE NO. 2313	
GENERAL PLAN		BRIDGE PLANS	
PROJ. MANAGER	BY	DATE	SIGNATURE
DESIGN DETAILED: M. GRAY	A. PARADIS	SEP 2019	[Signature]
CHECKED/REVIEWED: BSE	R. MYERS	SEP 2019	[Signature]
DESIGNED DETAILED: B.SJAVEN	T. WHITE	OCT 2016	[Signature]
DESIGNS DETAILED:			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SHEET NUMBER		3	
		OF 32	



HARMONY ROAD PROFILE



GILMAN ROAD PROFILE

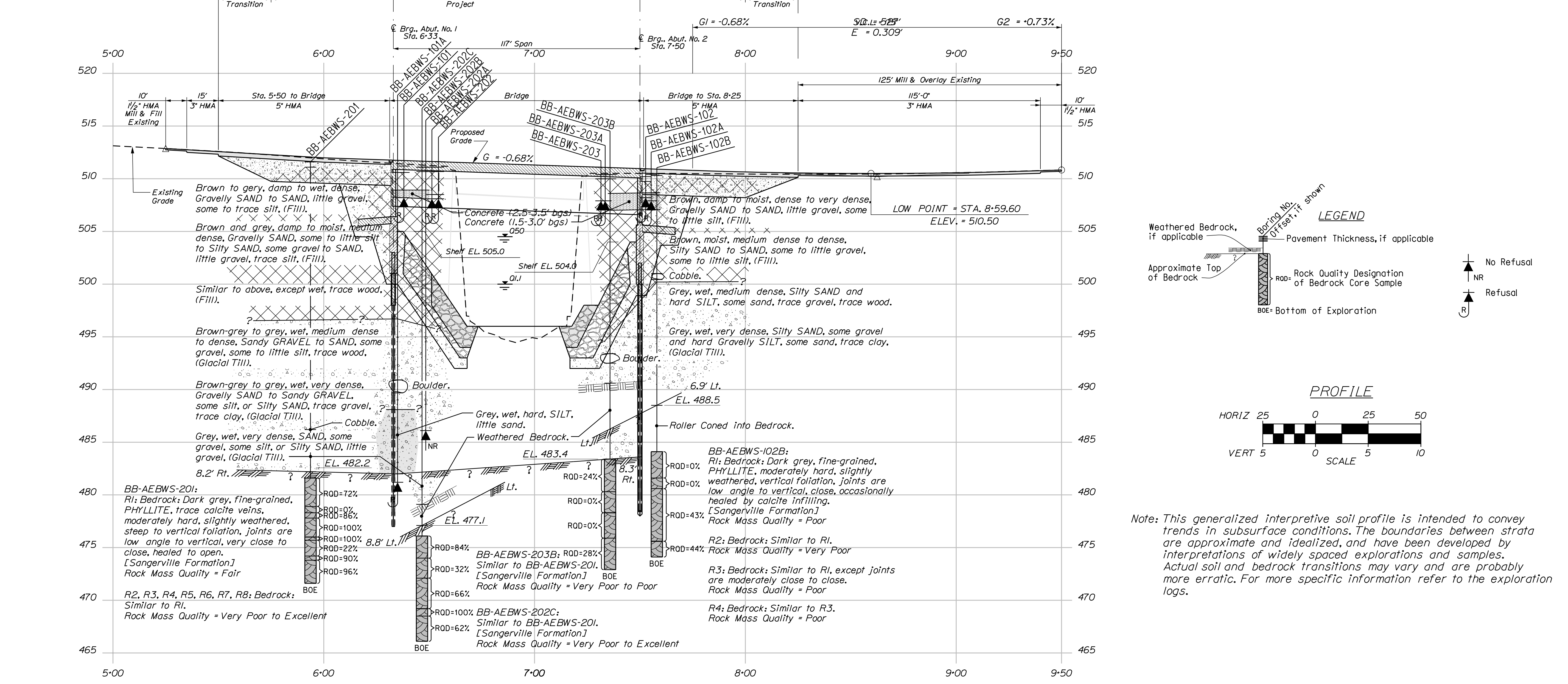
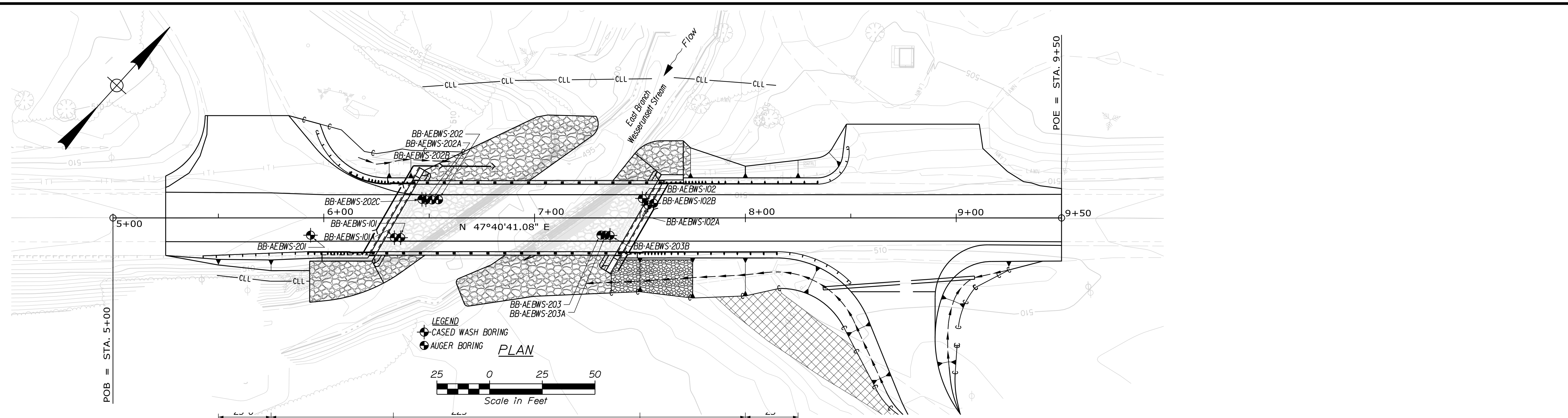
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 2313		BRIDGE PLANS	
PROJECT NUMBER		18952.00		WIN		18952.00	
DESIGNER		A. PARADIS		DATE		SIGNATURE	
CHECKED		M. GRAY		SEP 2019		P.E. NUMBER	
DESIGNED		R. MYERS		SEP 2019		DATE	
DESIGNED		B. SLAVEN		OCT 2016			
REVISIONS 1							
REVISIONS 2							
REVISIONS 3							
REVISIONS 4							
FIELD CHANGES							
GILMAN BRIDGE				PROFILES			
EAST BRANCH WESERUNSETT STREAM				SOMERSET COUNTY			
ATHENS							
SHEET NUMBER				4			
				OF 32			

Date: 9/25/2019

Username: armand.i.paradis

Division: BRIDGE

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Note: This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and bedrock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		18952.00	
GILMAN BRIDGE		EAST BRANCH WESERUNSETT STREAM		ATHENS	
SOMERSET COUNTY		BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE		SHEET NUMBER	
BRIDGE NO. 2313		WIN		18952.00	
BRIDGE PLANS		DATE		P.E. NUMBER	
BY: W. Robinson		CHECKED: M. Gray		DESIGNED: T. White	
DATE: AUG 2017		SIGNATURE		P.E. NUMBER	
REVISIONS 1		REVISIONS 2		REVISIONS 3	
REVISIONS 4		FIELD CHANGES		DATE	

Date: 9/23/2019

Username: David.Shaw

Division: BRIDGE

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Maine Department of Transportation		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: BB-AEBWS-201		WIN: 18952.00	
Operator: S. W. Cole Explorations, LLC		Elevation (ft.): 511.6		Auger ID/OD: 5" Solid-Stem Auger		Date Started/Finished: 04/25/2017 / 04/25/2017	
Operator: S. Hollibaugh		Datum: NAVD88		Sampler: Standard Split-Spoon		Date Started/Finished: 04/25/2017 / 04/25/2017	
Logged By: N. Strout		Rig Type: Diaphragm D-50		Home: Wt./Fall: 140W/30"		Date Started/Finished: 04/25/2017 / 04/25/2017	
Date Start/Finish: 04/25/2017 / 04/25/2017		Drilling Method: Cased Wash		Core Barrel: ND-2"		Date Started/Finished: 04/25/2017 / 04/25/2017	
Boring Location: 5+93.7, 8.2 ft Rt.		Casing ID/OD: HW 4" x 4.5"		Water Level: 12.0' (after drilling)		Date Started/Finished: 04/25/2017 / 04/25/2017	
Depth (ft.)	Sample No.	Pen./Reb. (ft./in.)	Sample Depth (ft./in.)	Blow (1/6 in. Stroke) (blows/ft)	Number of Blows	Visual Description and Remarks	Laboratory Testing Results/ASHTO and Unified Class
10	24/16	1.00 - 3.00	15/13/11/11	24	35	0.50 Brown, moist, dense, SAND, little gravel, trace silt. (F111).	
20	24/10	5.00 - 7.00	4/4/5/5	9	13	26 Brown, moist, medium dense, Silty SAND, some gravel. (F111).	
30	24/12	10.00 - 12.00	8/7/4/9	11	16	7 Brown, wet, medium dense, Silty SAND, little gravel. (F111).	
40	24/13	15.00 - 17.00	5/13/9/9	22	32	61 Dark grey, wet, medium dense, SAND, some gravel, little silt, trace organics (wood fiber).	G030383 A-4, SC-5M WC=2.0% Ignition Loss 2-5%
50	24/12	22.00 - 24.00	16/18/21/25	49	71	105 Grey, wet, very dense, Silty SAND, some silt, (G1acial T111).	
60	17/5	28.00 - 29.42	14/12/100-5"	-	-	42 Grey, wet, very dense, SAND, some gravel, some silt, (G1acial T111).	
70	32/32	30.00 - 32.67	R00 = 72%	-	-	29.40 Top of Bedrock at Elev. 482.2 ft. Advanced by collar cone through bedrock to 30 ft bgs. R1: Bedrock: Dark grey, fine-grained, PHYLITE, trace calcite veins, moderately hard, slightly weathered, steep to vertical foliation, joints are low angle to vertical, very close to close, healed to open. (Sangerville Formation) Rock Mass Quality = Fair. R1: Core Times (min:sec) 30.0-31.0 ft (2128) 31.0-32.0 ft (2453) 32.0-32.7 ft (1108) Recovery = 100%	
80	4/4	35.58 - 35.98	R00 = 100%	-	-	32.67 R2: Bedrock: Similar to R1. Rock Mass Quality = Very Poor. R2: Core Times (min:sec) 32.7-33.0 ft (1049) 33.0-33.3 ft (1155) Recovery = 100%	
90	5/5	37.41 - 40.00	R00 = 80%	-	-	33.25 R3: Bedrock: Similar to R1. Rock Mass Quality = Good. R3: Core Times (min:sec) 33.3-33.8 ft (2153) Recovery = 100%	
100	7/7	37.41 - 40.00	R00 = 80%	-	-	33.83 R4: Bedrock: Similar to R1. Rock Mass Quality = Excellent. R4: Core Times (min:sec) 33.8-34.0 ft (1022) 34.0-35.0 ft (1023) 35.0-35.6 ft (2103) Recovery = 100%	
110	7/7	37.41 - 40.00	R00 = 80%	-	-	35.58 R5: Bedrock: Similar to R1. Rock Mass Quality = Excellent. R5: Core Times (min:sec) 35.6-35.9 ft (1115) Recovery = 100%	
120	7/7	37.41 - 40.00	R00 = 80%	-	-	35.91 R6: Bedrock: Similar to R1. Rock Mass Quality = Very Poor. R6: Core Times (min:sec) 35.9-37.0 ft (1508) 37.0-37.4 ft (1204) Recovery = 100%	
130	7/7	37.41 - 40.00	R00 = 80%	-	-	37.41 R7: Bedrock: Similar to R1. Rock Mass Quality = Good. R7: Core Times (min:sec) 37.4-37.8 ft (1253) Recovery = 100%	
140	7/7	37.41 - 40.00	R00 = 80%	-	-	37.83 R8: Bedrock: Similar to R1. Rock Mass Quality = Excellent. R8: Core Times (min:sec) 37.8-38.0 ft (1021) 38.0-39.0 ft (1244) 39.0-40.0 ft (1246) Recovery = 92%	
150	7/7	37.41 - 40.00	R00 = 80%	-	-	40.00 Bottom of Exploration at 40.00 feet below ground surface.	

Maine Department of Transportation		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: BB-AEBWS-101A		WIN: 18952.00	
Operator: S. W. Cole Explorations, LLC		Elevation (ft.): 511.2		Auger ID/OD: 5" Solid-Stem Auger		Date Started/Finished: 09/20/2016	
Operator: Scott Hollibaugh		Datum: NAVD88		Sampler: Standard Split-Spoon		Date Started/Finished: 09/20/2016	
Logged By: Michael St. Pierre		Rig Type: Diaphragm D-50		Home: Wt./Fall: 140W/30"		Date Started/Finished: 09/20/2016	
Date Start/Finish: 09/20/2016		Drilling Method: Cased Wash		Core Barrel: ND-2"		Date Started/Finished: 09/20/2016	
Boring Location: 6+35, 9.4 ft Rt.		Casing ID/OD: HW 4" x 4.5", NW 3" x 3.5"		Water Level: 11.9' after completion		Date Started/Finished: 09/20/2016	
Depth (ft.)	Sample No.	Pen./Reb. (ft./in.)	Sample Depth (ft./in.)	Blow (1/6 in. Stroke) (blows/ft)	Number of Blows	Visual Description and Remarks	Laboratory Testing Results/ASHTO and Unified Class
0						See BB-AEBWS-101 for description of strata from 0 to 3 ft bgs.	
30	24/12	5.00 - 7.00	5/5/6/4	11	17	301A) 5-5.5 ft bgs: Brown, damp, very stiff, fine to coarse Silty SAND, some gravel. (F111).	
40	24/10	7.00 - 9.00	4/6/9/11	15	23	301B) 5.5-7 ft bgs: Grey, damp, medium dense, Gravely SAND, some silt. (F111).	G026282 A-1-b, SC-5M WC=1.5%
50	24/10	9.50 - 11.50	25/14/13/11	27	42	Grey and brown, moist, medium dense, Gravely SAND, little silt. (F111).	G026283 A-1-b, SC-5M WC=2.0%
60	24/7	14.50 - 16.50	20/17/12/7	29	45	47 Brown-grey, wet, dense, Silty SAND, little silt. (F111).	
70	3/1	20.00 - 20.25	50-3"	50	77	147 Brown-grey, wet, very dense, Gravely SAND, some silt. (G1acial T111).	
80	24/15	22.00 - 24.00	33/26/22/24	58	90	33 NW casing refusal on probable boulder of 200.3 lbs bgs. 801A) 22-23.1 ft bgs: Grey, wet, very dense, Silty SAND, little silt, occasional cobbles. (G1acial T111).	G026284 A-1-b, SC-5M WC=1.3%
90	24/9	25.00 - 27.00	10/13/22/18	35	54	27 Grey, wet, very dense, SAND, some silt, some platy gravel. (G1acial T111).	G026285 A-2-4, SC-5M WC=11.3%
100						482.20 Metal cutting in wash water. During driving NW casing trace broke off. Casing left in borehole. Probable Bedrock. Bottom of Exploration at 30.00 feet below ground surface.	

Maine Department of Transportation		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: BB-AEBWS-101		WIN: 18952.00	
Operator: S. W. Cole Explorations, LLC		Elevation (ft.): 511.2		Auger ID/OD: 5" Solid-Stem Auger		Date Started/Finished: 04/24/2017	
Operator: Scott Hollibaugh		Datum: NAVD88		Sampler: Standard Split-Spoon		Date Started/Finished: 04/24/2017	
Logged By: Michael St. Pierre		Rig Type: Diaphragm D-50		Home: Wt./Fall: 140W/30"		Date Started/Finished: 04/24/2017	
Date Start/Finish: 04/24/2017		Drilling Method: Cased Wash		Core Barrel: ND-2"		Date Started/Finished: 04/24/2017	
Boring Location: 6+38, 9.4 ft Rt.		Casing ID/OD: HW 4" x 4.5"		Water Level: Not Encountered		Date Started/Finished: 04/24/2017	
Depth (ft.)	Sample No.	Pen./Reb. (ft./in.)	Sample Depth (ft./in.)	Blow (1/6 in. Stroke) (blows/ft)	Number of Blows	Visual Description and Remarks	Laboratory Testing Results/ASHTO and Unified Class
10	24/3	0.75 - 2.70	14/12/10/15	22	34	510.50 7.25' of Pavement Brown, damp, dense, fine to coarse Gravely SAND, some silt. (F111).	
20	3/5/3	2.70 - 2.99	50-3"	100	155	508.20 301A) Similar to 10 301B) Concrete Offset to BB-AEBWS-101A Bottom of Exploration at 3.00 feet below ground surface.	
30						482.20 Metal cutting in wash water. During driving NW casing trace broke off. Casing left in borehole. Probable Bedrock. Bottom of Exploration at 30.00 feet below ground surface.	

Maine Department of Transportation		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: BB-AEBWS-202C		WIN: 18952.00	
Operator: S. W. Cole Explorations, LLC		Elevation (ft.): 511.1		Auger ID/OD: 5" Solid-Stem Auger		Date Started/Finished: 04/24/2017	
Operator: S. Hollibaugh		Datum: NAVD88		Sampler: Standard Split-Spoon		Date Started/Finished: 04/24/2017	
Logged By: N. Strout		Rig Type: Diaphragm D-50		Home: Wt./Fall: 140W/30"		Date Started/Finished: 04/24/2017	
Date Start/Finish: 04/24/2017		Drilling Method: Cased Wash		Core Barrel: ND-2"		Date Started/Finished: 04/24/2017	
Boring Location: 6+46.6, 8.8 ft Lt.		Casing ID/OD: HW 4" x 4.5"		Water Level: 12.7' on 04/25/2017		Date Started/Finished: 04/24/2017	
Depth (ft.)	Sample No.	Pen./Reb. (ft./in.)	Sample Depth (ft./in.)	Blow (1/6 in. Stroke) (blows/ft)	Number of Blows	Visual Description and Remarks	Laboratory Testing Results/ASHTO and Unified Class
10	24/15	26.00 - 28.00	12/12/13/14	25	36	15.00 Grey, wet, dense, SAND, some gravel, some silt, occasional cobbles. (G1acial T111).	
20	17/14	30.00 - 31.42	39/46/100-5"	-	-	479.10 Grey, wet, very dense, Silty SAND, little gravel. (G1acial T111).	
30						477.10 Weathered Bedrock	
35	25/23	35.00 - 37.08	R00 = 84%	-	-	34.00 Top of Bedrock at Elev. 477.1 ft. Advanced by collar cone through bedrock from 32 to 35 ft bgs. R1: Bedrock: Dark grey, fine-grained, PHYLITE, trace calcite veins, moderately hard, slightly weathered, steep to vertical foliation, joints are low angle to vertical, very close to close, healed to open. (Sangerville Formation) Rock Mass Quality = Good. R1: Core Times (min:sec) 35.0-36.0 ft (1336) 36.0-37.0 ft (1211) 37.0-37.3 ft (1043) Recovery = 92%	
40	35/34	39.00 - 41.92	R00 = 66%	-	-	37.08 R2: Bedrock: Similar to R1. Rock Mass Quality = Poor. R2: Core Times (min:sec) 37.1-38.0 ft (1332) 38.0-38.9 ft (1303) Recovery = 96%	
45	8/8	41.92 - 42.59	R00 = 100%	-	-	39.00 R3: Bedrock: Similar to R1. Rock Mass Quality = Fair. R3: Core Times (min:sec) 39.0-40.0 ft (1225) 40.0-41.0 ft (1212) 41.0-41.9 ft (1342) Recovery = 97%	
50	29/19	42.59 - 45.01	R00 = 62%	-	-	41.92 R4: Bedrock: Similar to R1. Rock Mass Quality = Excellent. R4: Core Times (min:sec) 41.9-42.0 ft (1019) 42.0-42.6 ft (1143) Recovery = 100%	
60						42.59 R5: Bedrock: Similar to R1. Rock Mass Quality = Very Poor. R5: Core Times (min:sec) 43.0-44.0 ft (1213) 44.0-49.0 ft (1218) Recovery = 66%	
70						45.00 Bottom of Exploration at 45.00 feet below ground surface.	

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

GILMAN BRIDGE
EAST BRANCH WESSERUNETT STREAM
ATHENS
SOMERSET COUNTY

BORING LOGS

18952.00
WIN
18952.00

BRIDGE NO. 2313

PROJ. MANAGER	DATE	BY	REVISIONS
M. Gray	AUG 2017	T. WHITE	1
W. Robinson			2
B. SJAVERN			3
			4

DESIGNED-Detailed: M. Gray
CHECKED-Reviewed: W. Robinson
DESIGNED-Detailed: B. SJAVERN
DESIGNED-Detailed: T. White

SIGNATURE: _____
P.E. NUMBER: _____
DATE: _____

SHEET NUMBER **6** OF 32

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: <u>BB-AEWS-202B</u> WIN: <u>18952.00</u>	
Drillers:	S. W. Cole Explorations, LLC	Elevation (ft.):	511.1	Auger ID/OD:	5" Solid-Stem Auger
Operator:	S. Hollibaugh	Datum:	NAVD88	Sampler:	Standard Split-Spoon
Logged By:	N. Strout	Rig Type:	Diagraph D-50	Hammer Wt./Fall:	140#/30"
Date Started/Finished:	04/24/2017	Drilling Method:	Auger	Core Barrel:	
Boring Location:	6484.4, 8.5 ft Lt.	Casing ID/OD:	HW 4" x 4.5"	Water Level:	Not Encountered
Header Efficiency Factor: 0.873		Header Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>		
Definitions: S _u = Peak/Retained Flat Vane Undrained Shear Strength (psf) T _v = Pocket Torque Shear Strength (psf) S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected C = Consolidation Test C = Consolidation Test C = Consolidation Test C = Consolidation Test					
Sample Information Sample No. Pen./Rec. (ft.) Sample Depth (ft.) Blow 1/4" In. Strength (blows/ft) (ASTM D1586) Unconsolidated N ₆₀ (blows/ft) Moisture Content (%) Plasticity Index (PI) Liquid Limit (LL) Shrinkage Limit (SL) Unified Class					
Visual Description and Remarks 5' of Pavement See BB-AEWS-202 for description of strata from 0 to 2.5 ft bgs. Concrete from 2.6 to 3.5 ft bgs. Brown, moist, medium dense, SAND, little gravel, trace silt. (FI11). Similar to above except wet. Grey, wet, dense, SAND, some gravel, some silt. (G10) (FI11). Boulder from 17 to 17.9 ft bgs. Advanced by rollers over through cobble to 18 ft bgs. Place NW casting. Grey, wet, very dense, silty SAND, trace gravel, trace clay. (G10) (FI11). Metal shavings in wash water while advancing to 25 ft bgs. NW casting broke at 20 ft bgs. 5 ft of casing abandoned. Bottom of Exploration at 25.00 feet below ground surface. Bottom of Exploration at 25.00 feet below ground surface.					
Laboratory Testing Results (ASTM D1586 and Unified Class) G4934384 A-1-b, SW Moist. 15					
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.					

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: <u>BB-AEWS-202A</u> WIN: <u>18952.00</u>	
Drillers:	S. W. Cole Explorations, LLC	Elevation (ft.):	511.1	Auger ID/OD:	5" Solid-Stem Auger
Operator:	S. Hollibaugh	Datum:	NAVD88	Sampler:	Standard Split-Spoon
Logged By:	N. Strout	Rig Type:	Diagraph D-50	Hammer Wt./Fall:	140#/30"
Date Started/Finished:	04/24/2017	Drilling Method:	Auger	Core Barrel:	
Boring Location:	6481.3, 8.5 ft Lt.	Casing ID/OD:	HW 4" x 4.5"	Water Level:	Not Encountered
Header Efficiency Factor: 0.873		Header Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>		
Definitions: S _u = Peak/Retained Flat Vane Undrained Shear Strength (psf) T _v = Pocket Torque Shear Strength (psf) S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected C = Consolidation Test C = Consolidation Test C = Consolidation Test C = Consolidation Test					
Sample Information Sample No. Pen./Rec. (ft.) Sample Depth (ft.) Blow 1/4" In. Strength (blows/ft) (ASTM D1586) Unconsolidated N ₆₀ (blows/ft) Moisture Content (%) Plasticity Index (PI) Liquid Limit (LL) Shrinkage Limit (SL) Unified Class					
Visual Description and Remarks 5' of Pavement See BB-AEWS-202 for description of strata from 0 to 2.5 ft bgs. Concrete, Auger refusal at 3 ft bgs. Offset to BB-AEWS-202B. Bottom of Exploration at 3.00 feet below ground surface.					
Laboratory Testing Results (ASTM D1586 and Unified Class) Auto-Hammer #562					
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.					

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: <u>BB-AEWS-203</u> WIN: <u>18952.00</u>	
Drillers:	S. W. Cole Explorations, LLC	Elevation (ft.):	510.4	Auger ID/OD:	5" Solid-Stem Auger
Operator:	S. Hollibaugh	Datum:	NAVD88	Sampler:	Standard Split-Spoon
Logged By:	N. Strout	Rig Type:	Diagraph D-50	Hammer Wt./Fall:	140#/30"
Date Started/Finished:	04/26/2017	Drilling Method:	Auger	Core Barrel:	
Boring Location:	7431.5, 8.1 ft Rt.	Casing ID/OD:	HW 4" x 4.5"	Water Level:	Not Encountered
Header Efficiency Factor: 0.873		Header Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>		
Definitions: S _u = Peak/Retained Flat Vane Undrained Shear Strength (psf) T _v = Pocket Torque Shear Strength (psf) S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected C = Consolidation Test C = Consolidation Test C = Consolidation Test C = Consolidation Test					
Sample Information Sample No. Pen./Rec. (ft.) Sample Depth (ft.) Blow 1/4" In. Strength (blows/ft) (ASTM D1586) Unconsolidated N ₆₀ (blows/ft) Moisture Content (%) Plasticity Index (PI) Liquid Limit (LL) Shrinkage Limit (SL) Unified Class					
Visual Description and Remarks 5' of Pavement Brown, moist, dense, SAND, little gravel, trace silt. (FI11). Concrete, Auger refusal at 2.5 ft bgs. Offset to BB-AEWS-203A. Bottom of Exploration at 2.50 feet below ground surface.					
Laboratory Testing Results (ASTM D1586 and Unified Class) Auto-Hammer #562					
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.					

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: <u>BB-AEWS-202</u> WIN: <u>18952.00</u>	
Drillers:	S. W. Cole Explorations, LLC	Elevation (ft.):	511.1	Auger ID/OD:	5" Solid-Stem Auger
Operator:	S. Hollibaugh	Datum:	NAVD88	Sampler:	Standard Split-Spoon
Logged By:	N. Strout	Rig Type:	Diagraph D-50	Hammer Wt./Fall:	140#/30"
Date Started/Finished:	04/24/2017	Drilling Method:	Auger	Core Barrel:	
Boring Location:	6484.4, 8.1 ft Lt.	Casing ID/OD:	HW 4" x 4.5"	Water Level:	Not Encountered
Header Efficiency Factor: 0.873		Header Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>		
Definitions: S _u = Peak/Retained Flat Vane Undrained Shear Strength (psf) T _v = Pocket Torque Shear Strength (psf) S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected C = Consolidation Test C = Consolidation Test C = Consolidation Test C = Consolidation Test					
Sample Information Sample No. Pen./Rec. (ft.) Sample Depth (ft.) Blow 1/4" In. Strength (blows/ft) (ASTM D1586) Unconsolidated N ₆₀ (blows/ft) Moisture Content (%) Plasticity Index (PI) Liquid Limit (LL) Shrinkage Limit (SL) Unified Class					
Visual Description and Remarks 5' of Pavement Brown, moist, dense, SAND, some gravel, little silt. (FI11). Concrete, Auger refusal at 3 ft bgs. Offset to BB-AEWS-202A. Bottom of Exploration at 3.00 feet below ground surface.					
Laboratory Testing Results (ASTM D1586 and Unified Class) Auto-Hammer #562 Casing driven with 140# Automatic Hammer.					
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.					

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: <u>BB-AEWS-203A</u> WIN: <u>18952.00</u>	
Drillers:	S. W. Cole Explorations, LLC	Elevation (ft.):	510.4	Auger ID/OD:	5" Solid-Stem Auger
Operator:	S. Hollibaugh	Datum:	NAVD88	Sampler:	Standard Split-Spoon
Logged By:	N. Strout	Rig Type:	Diagraph D-50	Hammer Wt./Fall:	140#/30"
Date Started/Finished:	04/26/2017	Drilling Method:	Auger	Core Barrel:	
Boring Location:	7433.5, 8.1 ft Rt.	Casing ID/OD:	HW 4" x 4.5"	Water Level:	Not Encountered
Header Efficiency Factor: 0.873		Header Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>		
Definitions: S _u = Peak/Retained Flat Vane Undrained Shear Strength (psf) T _v = Pocket Torque Shear Strength (psf) S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected C = Consolidation Test C = Consolidation Test C = Consolidation Test C = Consolidation Test					
Sample Information Sample No. Pen./Rec. (ft.) Sample Depth (ft.) Blow 1/4" In. Strength (blows/ft) (ASTM D1586) Unconsolidated N ₆₀ (blows/ft) Moisture Content (%) Plasticity Index (PI) Liquid Limit (LL) Shrinkage Limit (SL) Unified Class					
Visual Description and Remarks 5' of Pavement See BB-AEWS-203 for description of strata from 0 to 2.1 ft. Concrete, Auger refusal at 2.5 ft bgs. Offset to BB-AEWS-203B. Bottom of Exploration at 2.50 feet below ground surface.					
Laboratory Testing Results (ASTM D1586 and Unified Class) Auto-Hammer #562 Casing driven with 140# Automatic Hammer.					
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.					

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gilman Bridge #2313 carries Route 150 over East Branch Wesserunett Location: Athens, Maine		Boring No.: <u>BB-AEWS-203B</u> WIN: <u>18952.00</u>	
Drillers:	S. W. Cole Explorations, LLC	Elevation (ft.):	510.4	Auger ID/OD:	5" Solid-Stem Auger
Operator:	S. Hollibaugh	Datum:	NAVD88	Sampler:	Standard Split-Spoon
Logged By:	N. Strout	Rig Type:	Diagraph D-50	Hammer Wt./Fall:	140#/30"
Date Started/Finished:	04/24/2017	Drilling Method:	Auger	Core Barrel:	
Boring Location:	7435.8, 8.3 ft Rt.	Casing ID/OD:	HW 4" x 4.5"	Water Level:	Not Encountered
Header Efficiency Factor: 0.873		Header Type:	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>		
Definitions: S _u = Peak/Retained Flat Vane Undrained Shear Strength (psf) T _v = Pocket Torque Shear Strength (psf) S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Soil Shear Capacity S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Unsuccessful Split Spoon Sample Attempt S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Thin Wall Tube Sample S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Unsuccessful Thin Wall Tube Sample Attempt S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Field Vane Shear Test S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Unsuccessful Field Vane Shear Test Attempt S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected S _u = Home Efficiency Factor/PSI/uncorrected C = Consolidation Test C = Consolidation Test C = Consolidation Test C = Consolidation Test					
Sample Information Sample No. Pen./Rec. (ft.) Sample Depth (ft.) Blow 1/4" In. Strength (blows/ft) (ASTM D1586) Unconsolidated N ₆₀ (blows/ft) Moisture Content (%) Plasticity Index (PI) Liquid Limit (LL) Shrinkage Limit (SL) Unified Class					
Visual Description and Remarks 5' of Pavement See BB-AEWS-202 for description of strata from 0 to 2.2 ft bgs. Concrete. Brown, moist, medium dense, SAND, little gravel, little silt. (FI11). 20ft: Brown, wet, dense, silty GRAVEL, little sand. (FI11). 20ft: Dark grey, wet, hard, SILT, some sand, trace organics (wood fiber). Grey, wet, very dense, silty SAND, some gravel. (G10) (FI11). Boulder from 17 to 17.9 ft bgs. Advanced by rollers over through cobble to 18 ft bgs. Place NW casting. Highly weathered bedrock. Similar to above. Similar to above. Top of Bedrock at Elev. 483.4 ft. R1: Bedrock: Dark grey, fine-grained, PHYLITE, trace calcite veins, moderately hard, slightly weathered to vertical, very close to close, needed to open. (Sangerville Formation) Rock Mass Quality = Very Poor. 27.0-28.0 ft (1656) 28.0-29.0 ft (1740) 29.0-30.0 ft (1824) 30.0-30.1 ft (1823) Recovery = 65% R2: Bedrock: Similar to R1. Rock Mass Quality = Very Poor. 31.0-32.0 ft (1944) 32.0-32.1 ft (1943) Recovery = 96% R3: Bedrock: Similar to R1. Rock Mass Quality = Very Poor. 32.1-33.0 ft (1610) 33.0-34.0 ft (1599) 34.0-34.5 ft (1519) Recovery = 93% R4: Bedrock: Similar to R1. Rock Mass Quality = Poor. 34.5-35.0 ft (1343) 35.0-35.5 ft (1328) 36.0-37.0 ft (1447) 37.0-37.5 ft (1301) Recovery = 50% Bottom of Exploration at 37.50 feet below ground surface.					
Laboratory Testing Results (ASTM D1586 and Unified Class) Auto-Hammer #562 Casing driven with 140# Automatic Hammer.					
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.					

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

GILMAN BRIDGE
EAST BRANCH WESSERUNETT STREAM
ATHENS

SOMERSET COUNTY

BORING LOGS

18952.00

WIN 18952.00

BRIDGE NO. 2313

BRIDGE PLANS

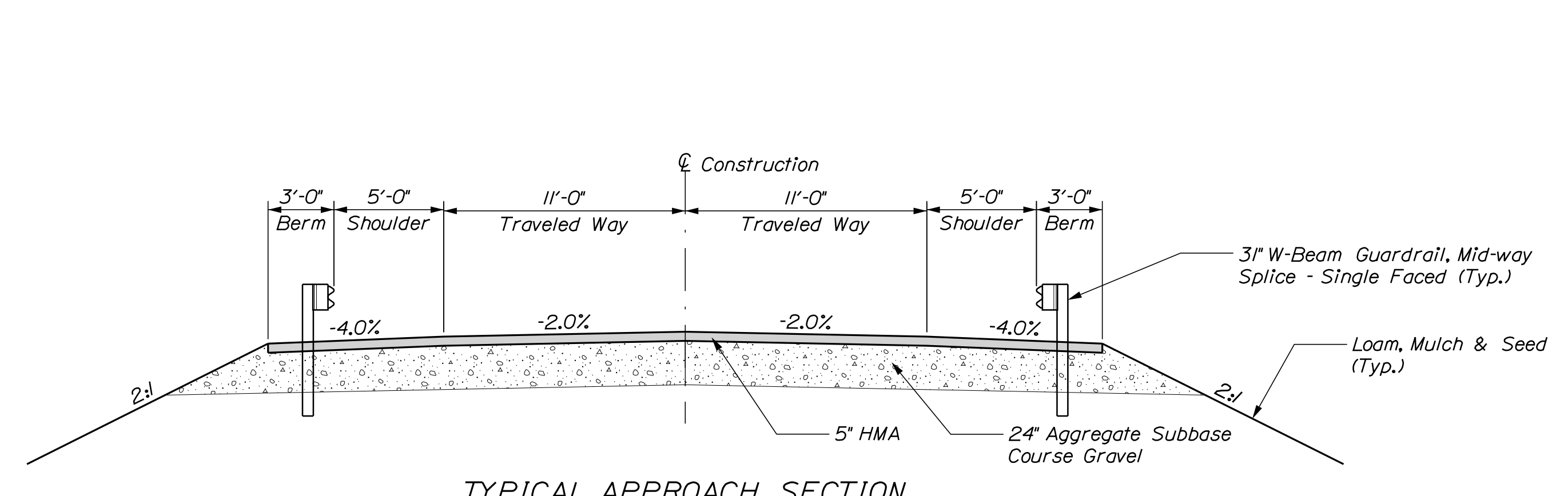
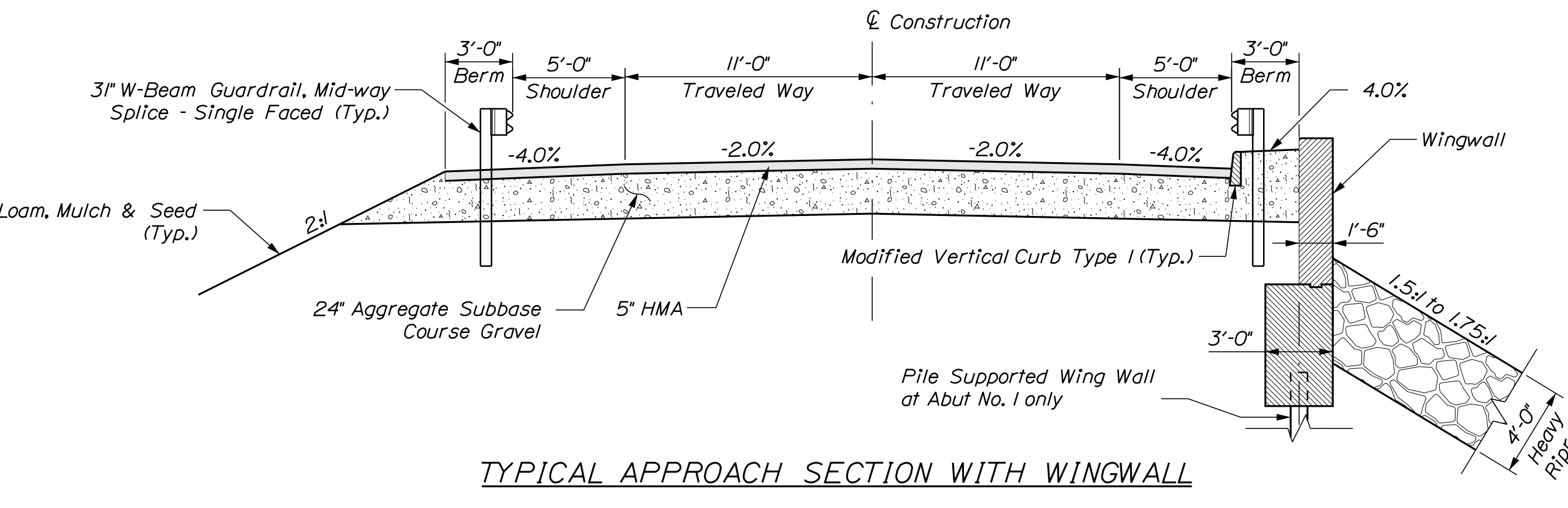
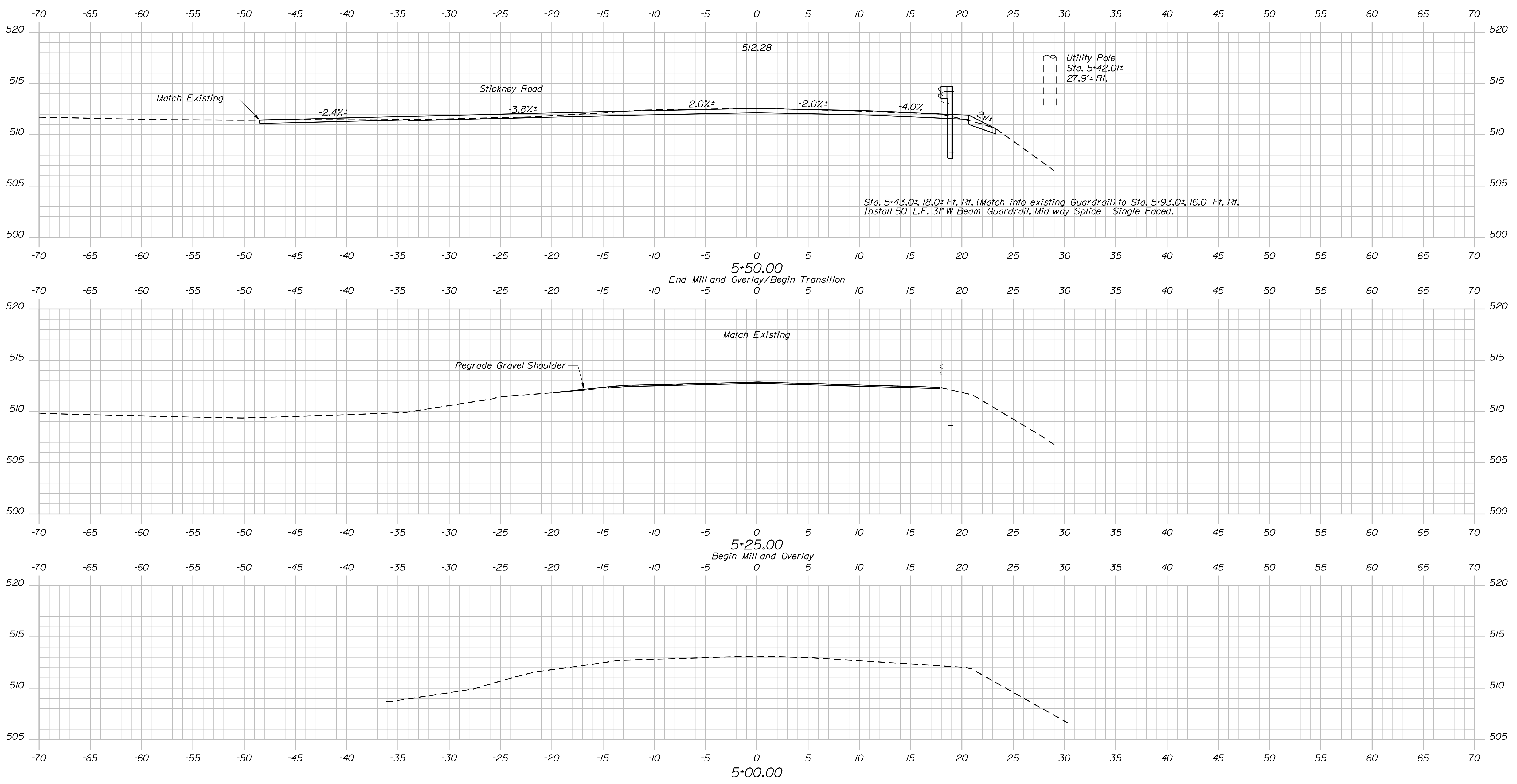
PROJ. MANAGER	BY	DATE
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CHECKED-REVIEWED	M. Gray	
DESIGNS-DETAILED	T. WHITE	AUG. 2017
DESIGNS-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE _____ P.E. NUMBER _____ DATE _____

SHEET NUMBER **7**

OF 32

Filename: ... \MSTAD09_XSECT_5+00-5+50.dgn Division: BRIDGE Username: armand.i.paradis Date: 9/25/2019



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		18952.00	
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ATHENS		SOMERSET COUNTY		18952.00	
CROSS SECTIONS		SHEET NUMBER		BRIDGE NO. 2313	
9		OF 32		BRIDGE PLANS	

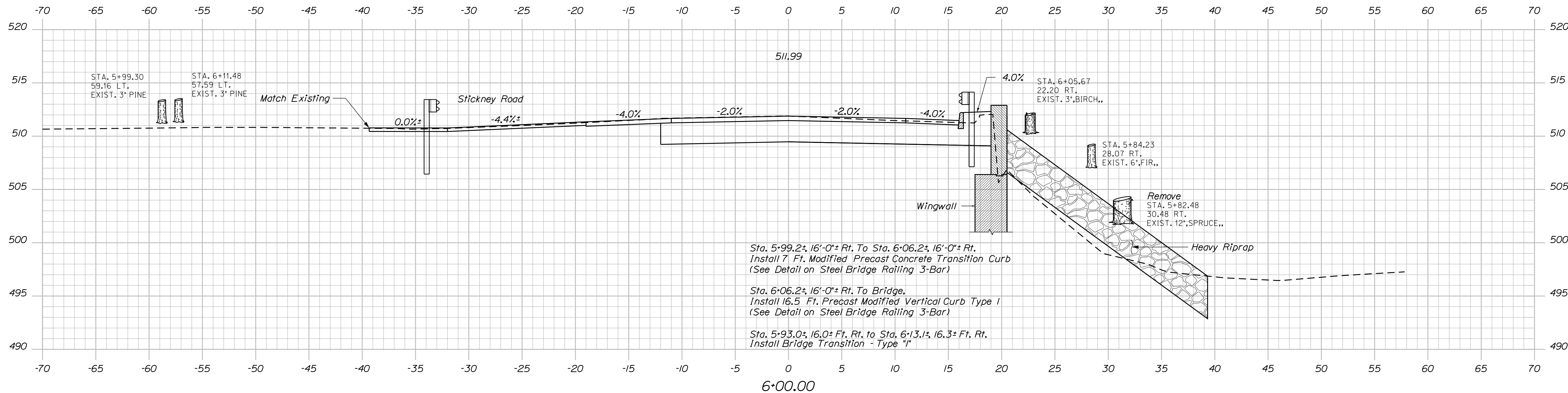
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DESIGN DETAILED: B.S. LAVEN	OCT 2016	T. WHITE	OCT 2016			
REVISIONS 1						
REVISIONS 2						
REVISIONS 3						
REVISIONS 4						
FIELD CHANGES						

Date: 9/23/2019

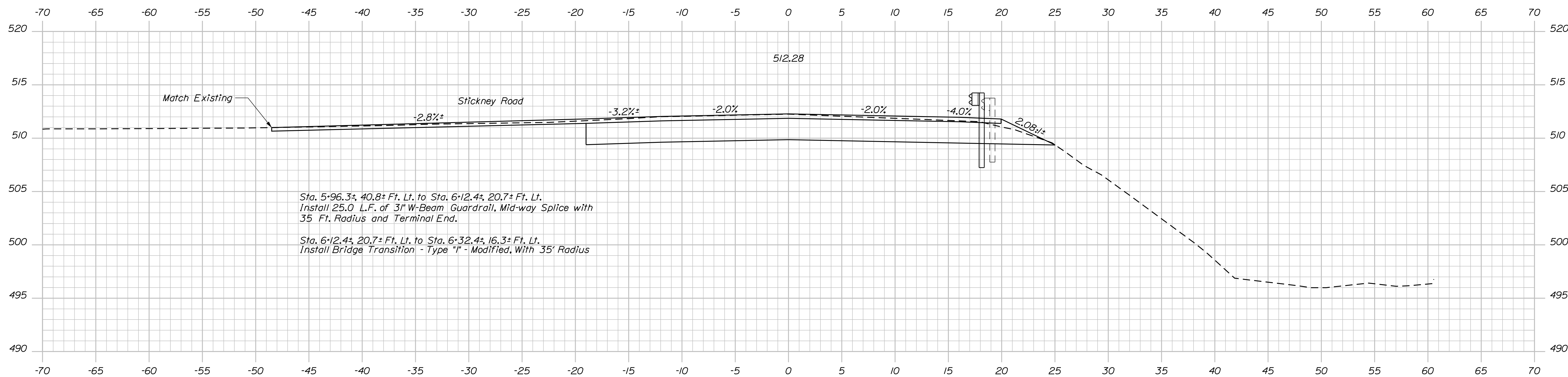
Username: David.Shaw

Division: BRIDGE

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6+00.00



5+75.00
End Transition/Begin Project

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
18952.00
WIN
18952.00
BRIDGE NO. 2313
BRIDGE PLANS

SIGNATURE
P.E. NUMBER
DATE

PROJ. MANAGER	DATE
A. PARADIS	SEP 2019
R. MYERS	SEP 2019
T. WHITE	OCT 2016

GILMAN BRIDGE
EAST BRANCH WESSERUNSETT STREAM
ATHENS
SOMERSET COUNTY
CROSS SECTIONS

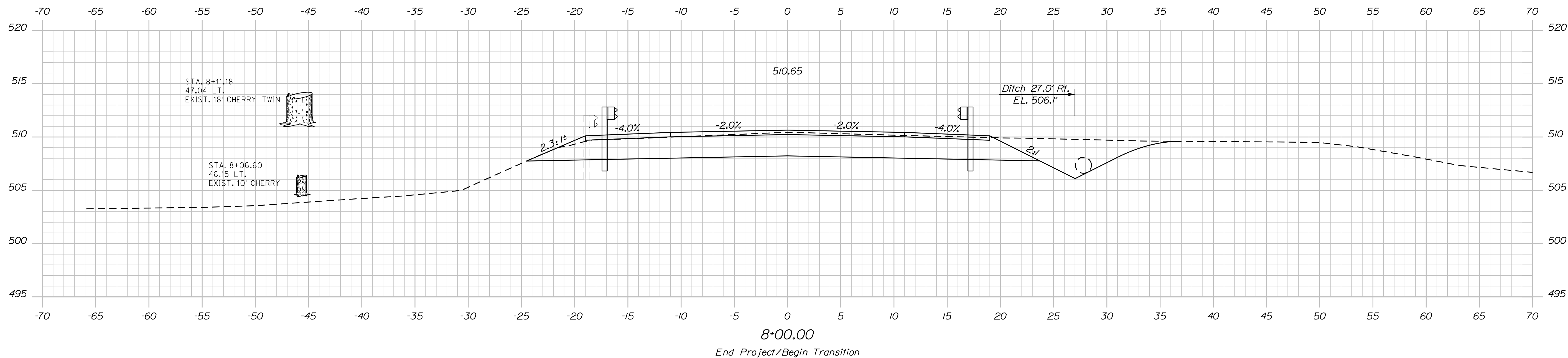
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OF 32

Date: 9/23/2019

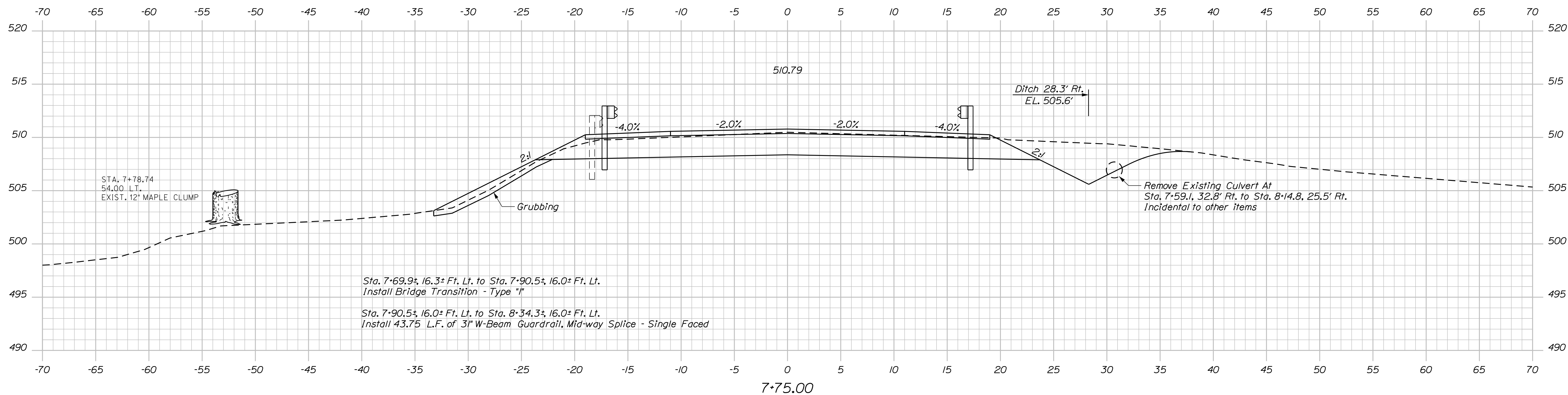
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Division: BRIDGE

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8+00.00
End Project/Begin Transition



Sta. 7+69.9±, 16.3± Ft. Lt. to Sta. 7+90.5±, 16.0± Ft. Lt.
Install Bridge Transition - Type "I"

Sta. 7+90.5±, 16.0± Ft. Lt. to Sta. 8+34.3±, 16.0± Ft. Lt.
Install 43.75 L.F. of 3" W-Beam Guardrail, Mid-way Splice - Single Faced

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		18952.00	
GILMAN BRIDGE		EAST BRANCH WESSERUNSETT STREAM		ATHENS	
SOMERSET COUNTY		CROSS SECTIONS		BRIDGE NO. 2313	
SHEET NUMBER		12		OF 32	
WIN		18952.00		BRIDGE PLANS	

PROJ. MANAGER	DATE	BY	DATE
DESIGN: DETAILED	SEP 2019	A. PARADIS	SEP 2019
CHECKED: REVIEWED	SEP 2019	R. MYERS	SEP 2019
DESIGN: DETAILED	OCT 2016	T. WHITE	OCT 2016
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REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

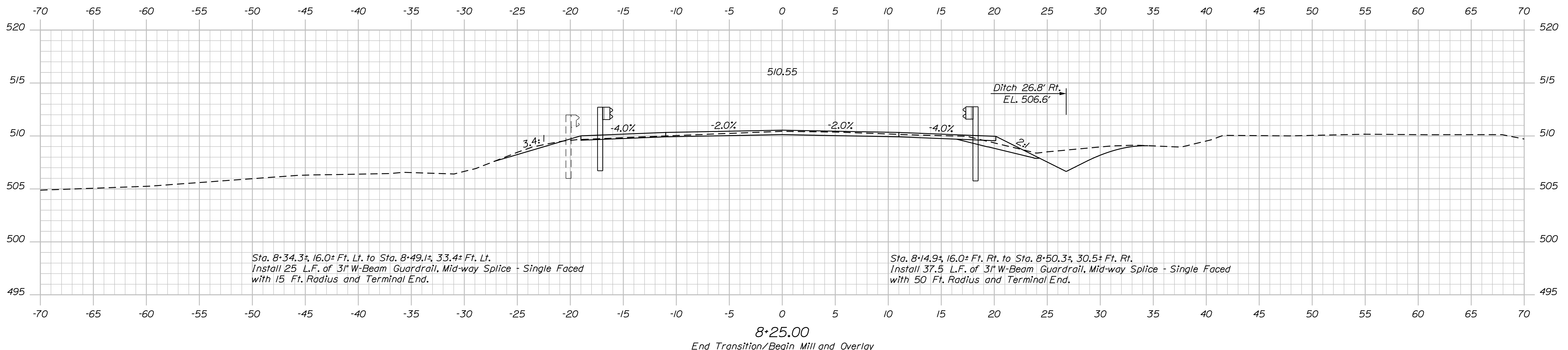
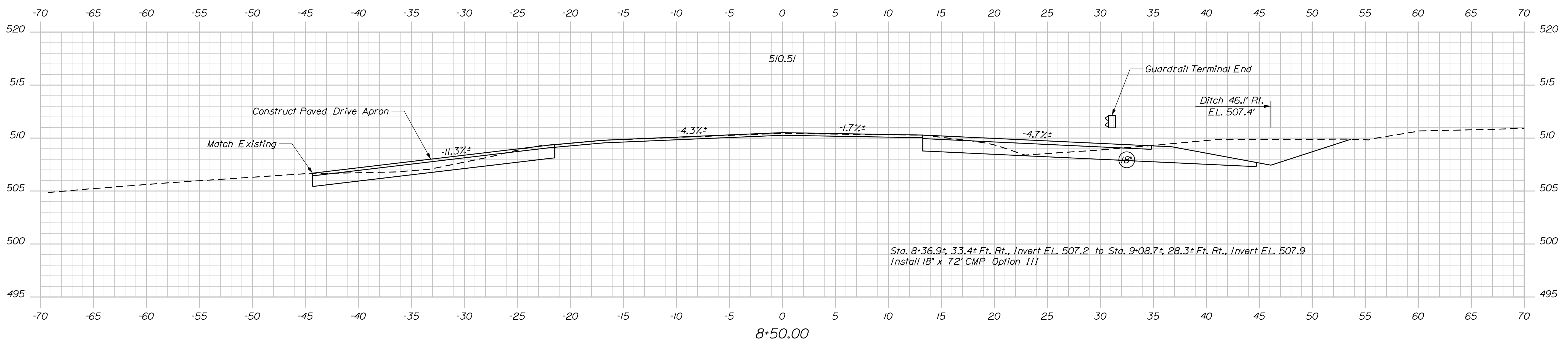
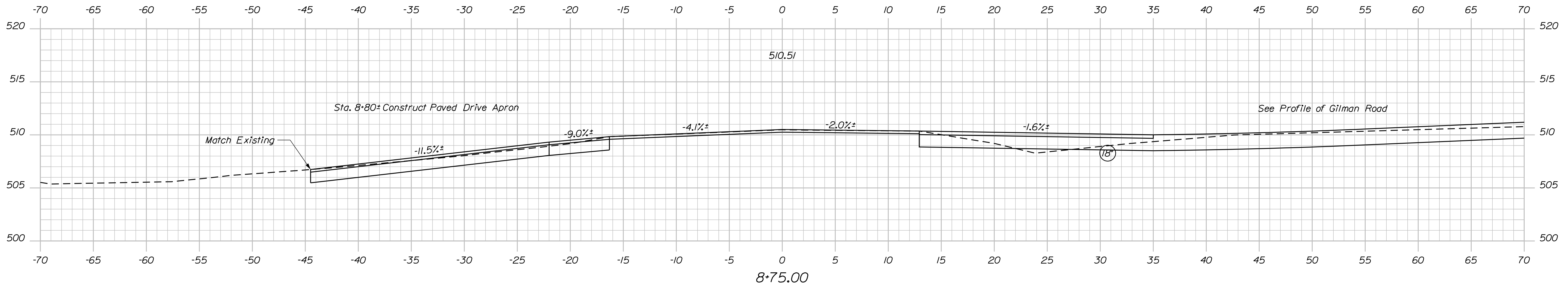
SIGNATURE	P.E. NUMBER	DATE

Date: 9/23/2019

Username: David Shaw

Division: BRIDGE

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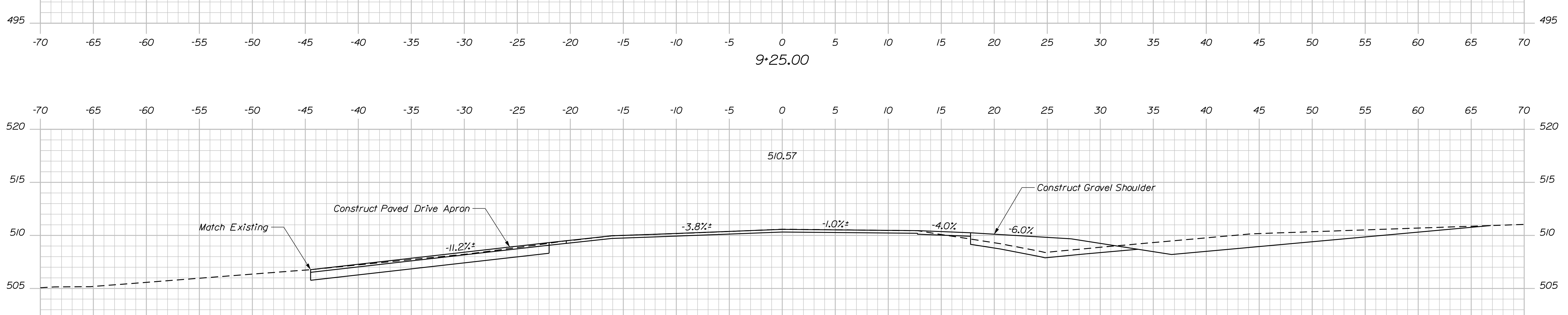
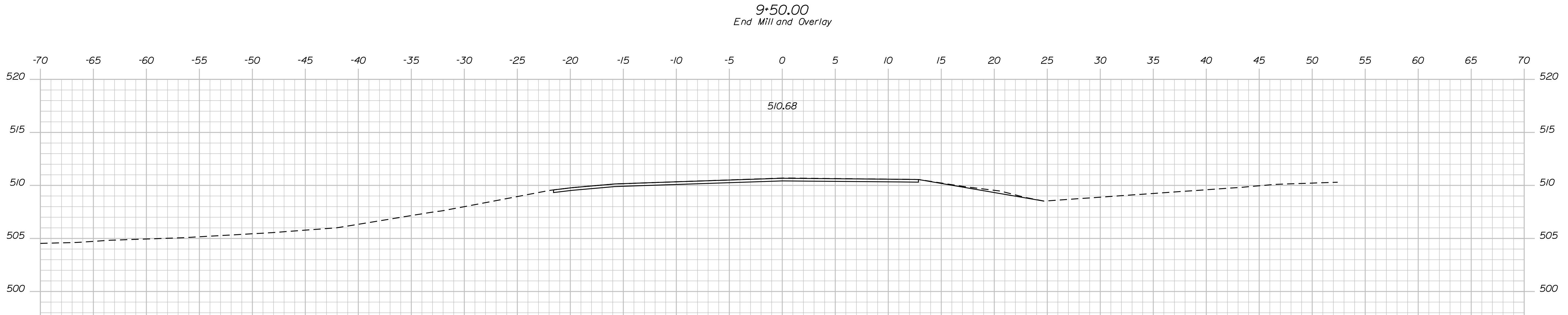
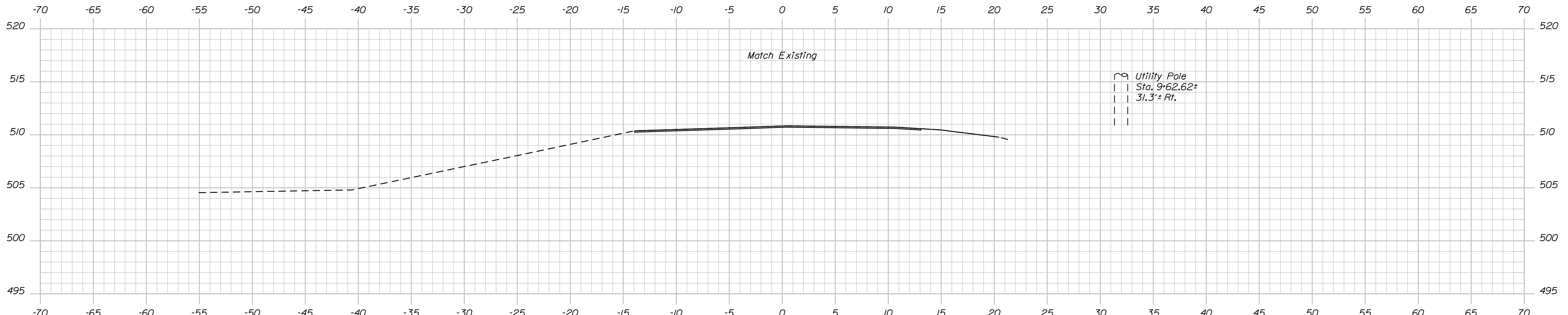
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CROSS SECTIONS		SHEET NUMBER		13	
OF 32		BRIDGE NO. 2313		WIN 18952.00	
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CHECKED-REVIEWED: BSE		R. MYERS	SEP 2019		
DESIGN DETAILED: B. SLAVEN		T. WHITE	OCT 2016		
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

Date: 9/23/2019

Username: David.Shaw

Division: BRIDGE

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
18952.00
WIN
18952.00
BRIDGE NO. 2313
BRIDGE PLANS

DESIGN-DETAILED	M. GRAY	SEP 2019	SIGNATURE
CHECKED-REVIEWED	R. MYERS	SEP 2019	P.E. NUMBER
DESIGN-DETAILED	B. SLAVEN	OCT 2016	DATE
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

PROJ. MANAGER	MIKE WIGHT	DATE
DESIGN-DETAILED	A. PARADIS	SEP 2019
CHECKED-REVIEWED	R. MYERS	SEP 2019
DESIGN-DETAILED	T. WHITE	OCT 2016
REVISIONS 1		
REVISIONS 2		
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FIELD CHANGES		

GILMAN BRIDGE
EAST BRANCH WESSERUNSETT STREAM
ATHENS
SOMERSET COUNTY
CROSS SECTIONS

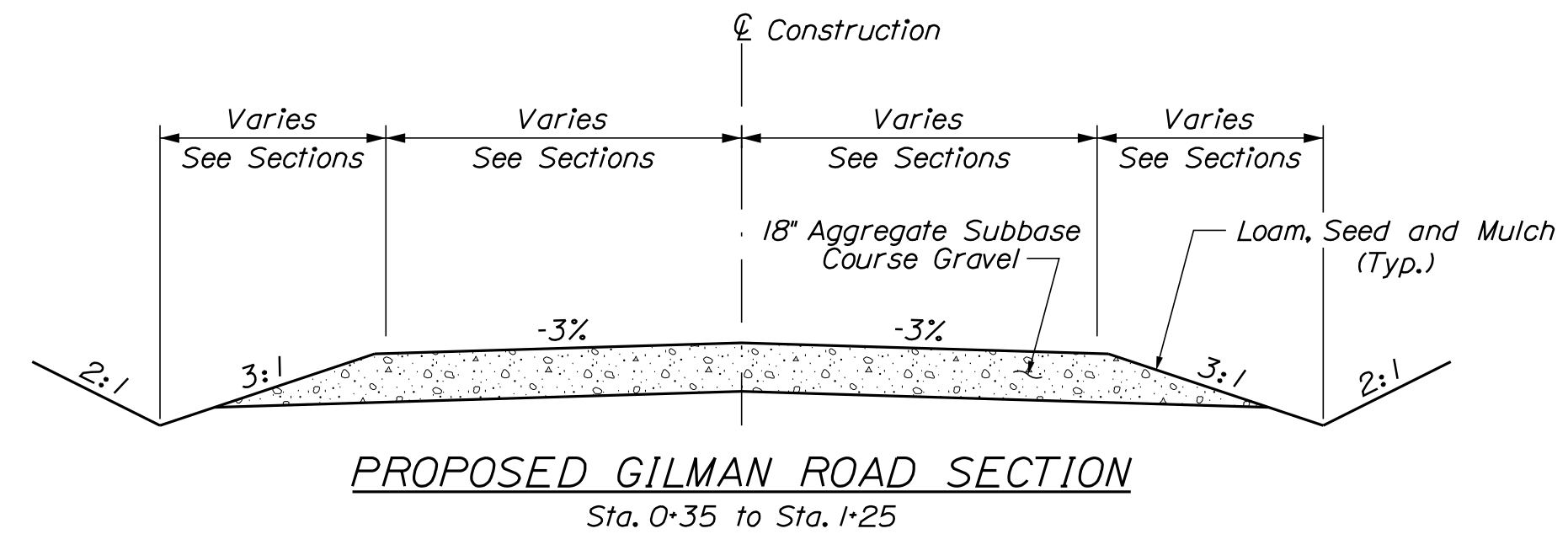
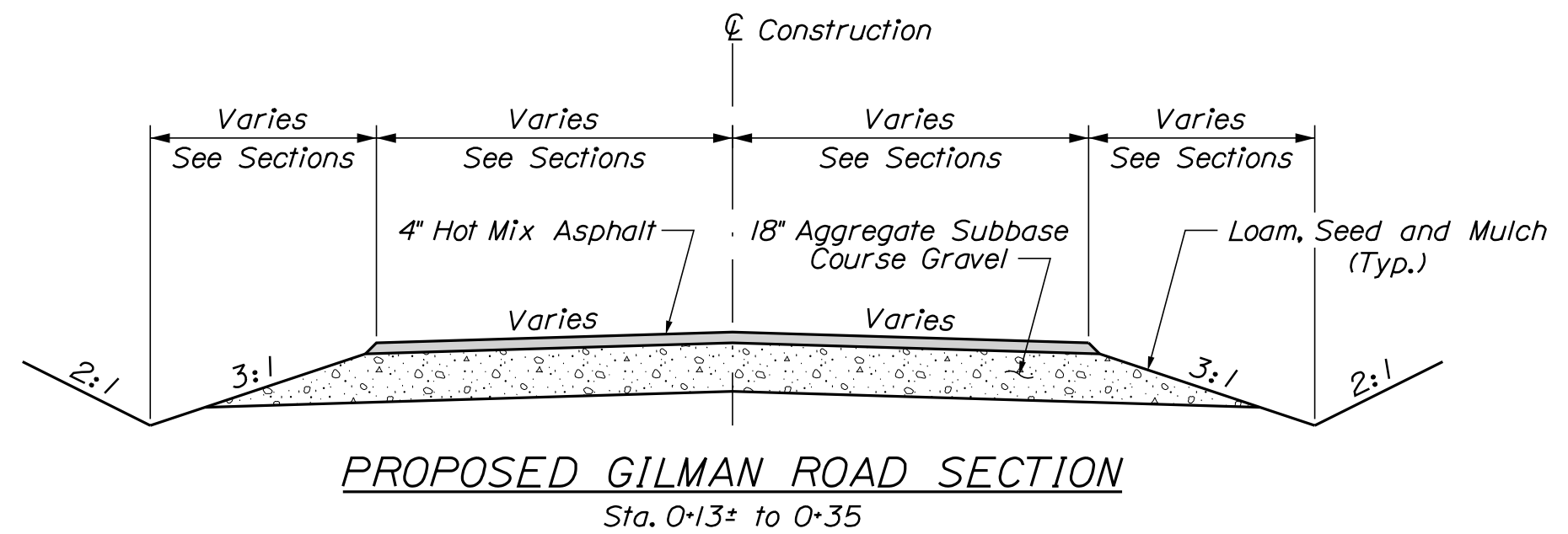
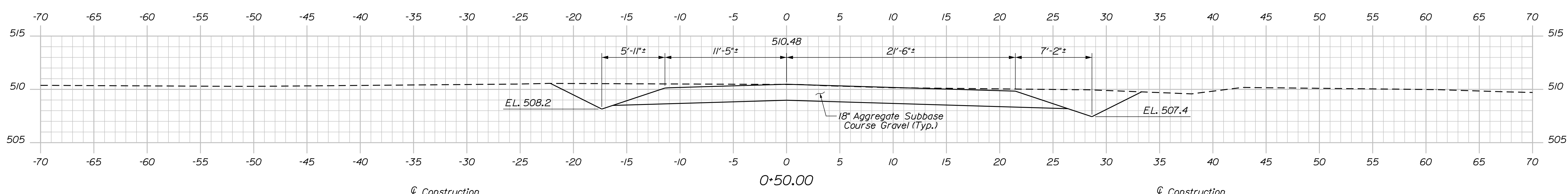
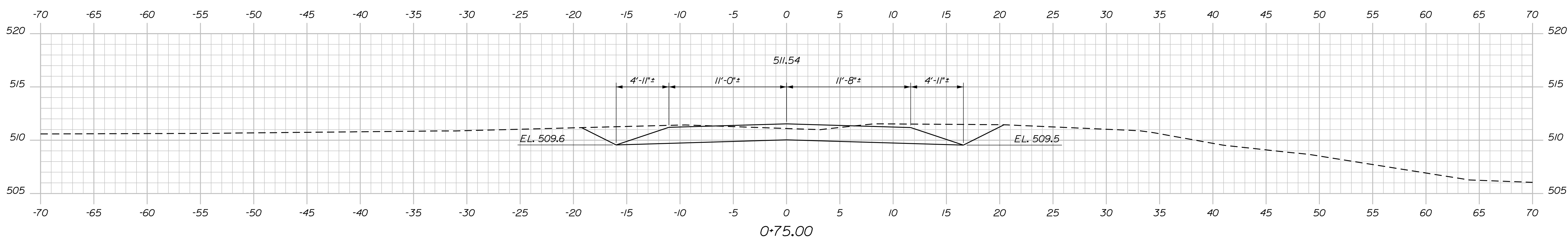
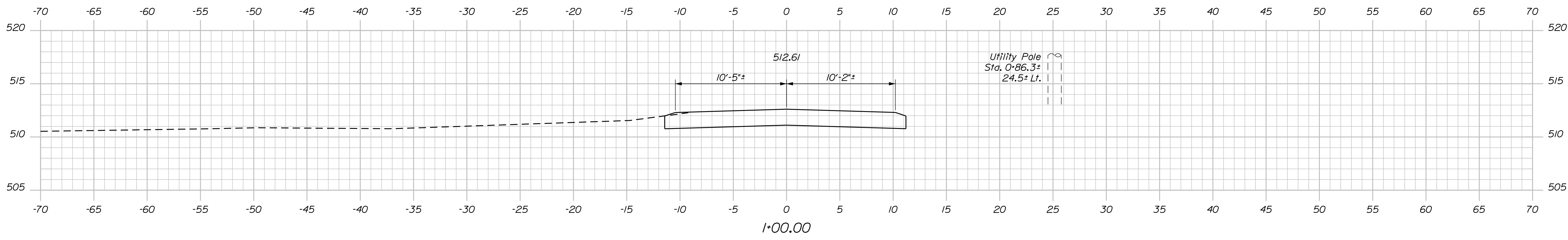
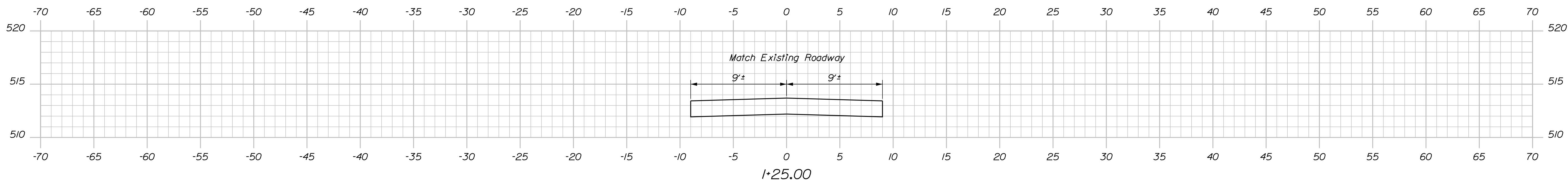
SHEET NUMBER
14
OF 32

Date: 9/23/2019

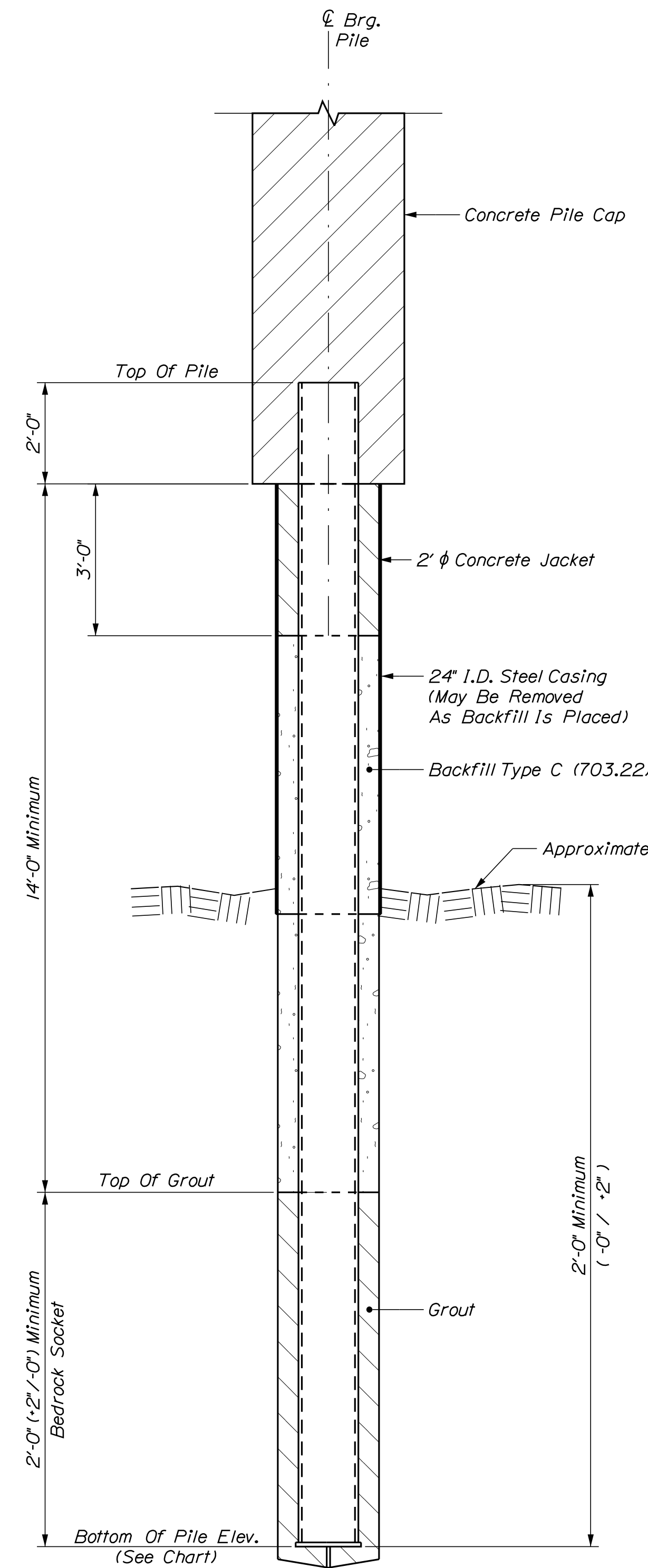
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Division: BRIDGE

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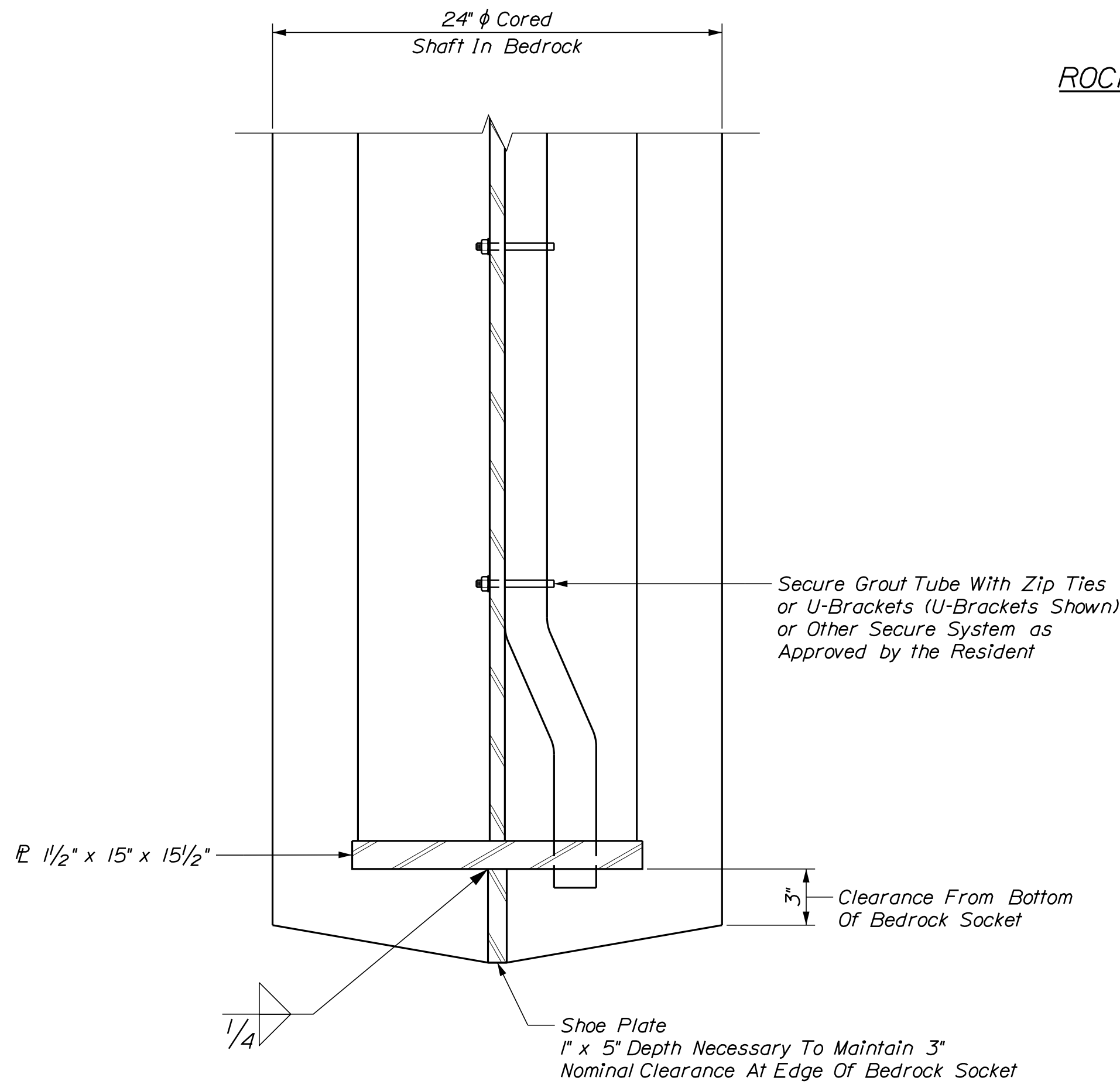
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ATHENS		GILMAN ROAD CROSS SECTIONS		BRIDGE NO. 2313	
SHEET NUMBER		15		OF 32	
PROJ. MANAGER	MIKE WIGHT	BY	DATE	SIGNATURE	P.E. NUMBER
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CHECKED/REVIEWED	BSE	R. MYERS	SEP. 2019		
DESIGN/DETAILED	B.S. LAVEN	T. WHITE	OCT. 2016		
REVISIONS 1					
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				WIN	
				18952.00	
				BRIDGE PLANS	



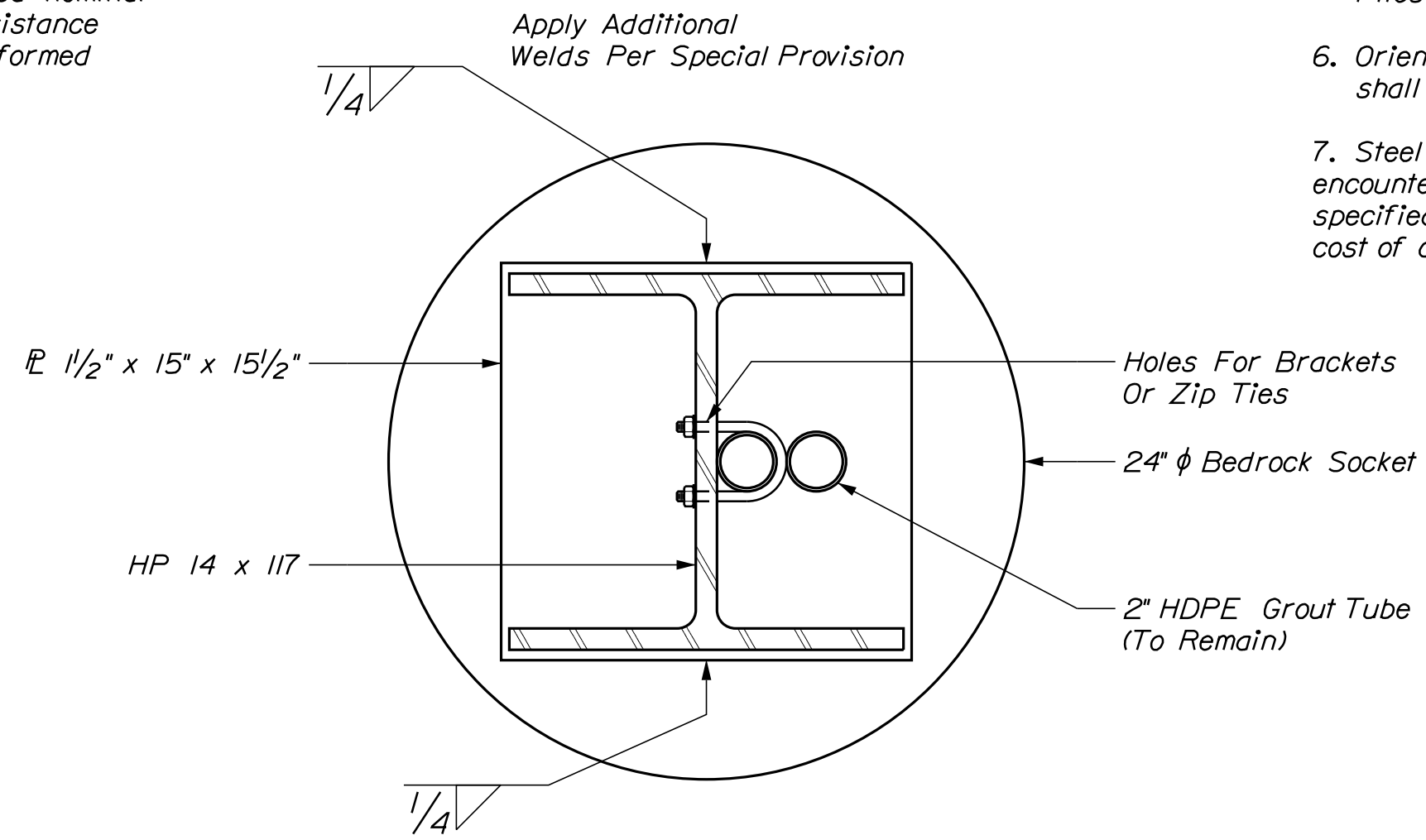
ROCK SOCKETED PILE DETAIL
(Abut. No. 2 only)

PILE NOTES (ABUT. NO. 1 ONLY)

- All piles shall be equipped with a pile tip in accordance with Standard Specifications Section 501.048, Prefabricated Pile Tips.
- Piles shall be driven to the required nominal resistance on or within bedrock in accordance with Standard Specification Section 501 - Foundation Piles.
- The Contractor shall perform and submit a wave equation analysis for review and acceptance by the Resident. The maximum allowable driving stress is 0.90 times F_y . The submittal analyses shall include the proposed stopping criteria based on the wave equation analysis and the proposed driving system.
- The Contractor shall perform one dynamic load test with minimum 24-hr restrike test to confirm the nominal resistance of the piles. The required nominal resistance for the pile is the factored axial pile load divided by a resistance factor of 0.65 per LRFD Specifications. The dynamic test shall be performed on the first production pile driven.

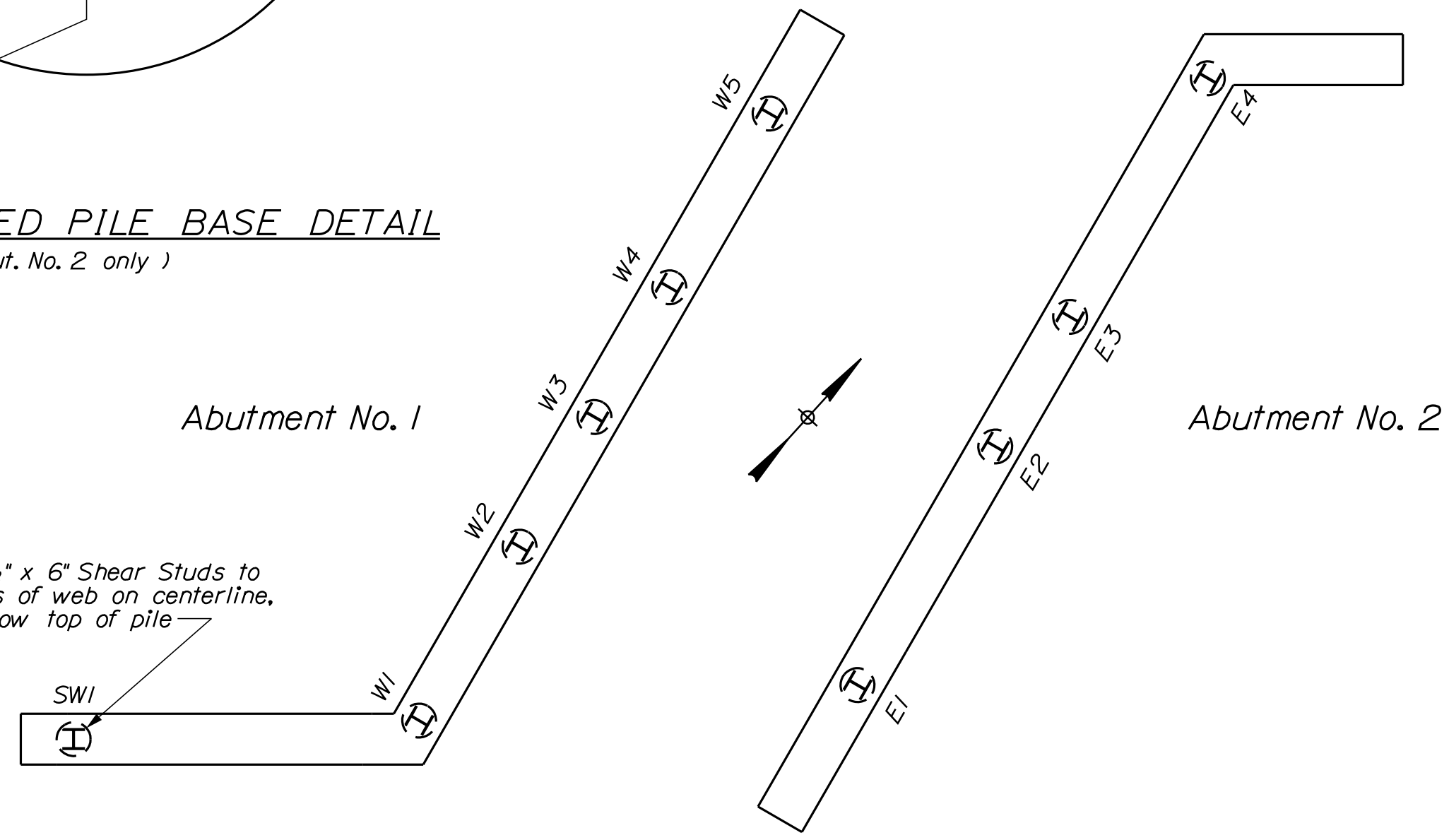


ROCK SOCKETED H - PILE
(Abut. No. 2 only)



ROCK SOCKETED PILE BASE DETAIL
(Abut. No. 2 only)

Weld 2 ~ 7/8" x 6" Shear Studs to opposite sides of web on centerline, 6" below top of pile.



PILE INDEX PLAN
See Abutment Sheets For Pile Layout

Pile	BOTTOM OF PILE CAP ELEVATION	APPROX. TOP OF BEDROCK ELEVATION*	BOTTOM OF PILE ELEVATION**	APPROX. PILE LENGTH - FEET**
SW1	501.0	482		21
W1	501.0	481		22
W2	501.0	480		23
W3	501.0	479		24
W4	501.0	478		25
W5	501.0	477		26
E1	500.0	483	478	24
E2	500.0	485	478	24
E3	500.0	486	478	24
E4	500.0	488	478	24

* These approximate bedrock elevations have been estimated by interpolations of widely spaced explorations. Actual top of bedrock elevations may vary.

** Adjust bottom of pile elevation and length of pile to assure at least 2' of grouted embedment into bedrock.

PILE NOTES (BOTH ABUTMENTS)

- The maximum factored axial pile load is 415 kips for Strength I Limit State.
- H-pile material shall be ASTM A 572, Grade 50, uncoated.
- Estimate of piles required:
Abutment No. 1 with wing walls: 6 - HP 14x117 @ (see chart) feet
Abutment No. 2: 4 - HP 14x117 @ (see chart) feet.
The order length of the piles at Abutment No. 1 shall include an additional 5 feet for the test pile to accommodate dynamic pile testing equipment.
- Piles shall not be out of position shown by more than 2 inches in any direction.
- Piles for Abutment No. 1 shall be driven with Pile Tips. Piles for Abutment No. 2 shall be drilled, socketed, and grouted into bedrock.
- Orientation of piles is important to the design. The orientation of the pile shall be within 10 degrees of the orientation shown on the design plans.
- Steel casings that were abandoned during subsurface explorations may be encountered during pile driving operations. Clearing of obstructions shall be as specified in Section 501. The method shall be approved by the Resident. The cost of clearing obstructions will be considered incidental to related items.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
18952.00
WIN 18952.00
BRIDGE NO. 2313
BRIDGE PLANS

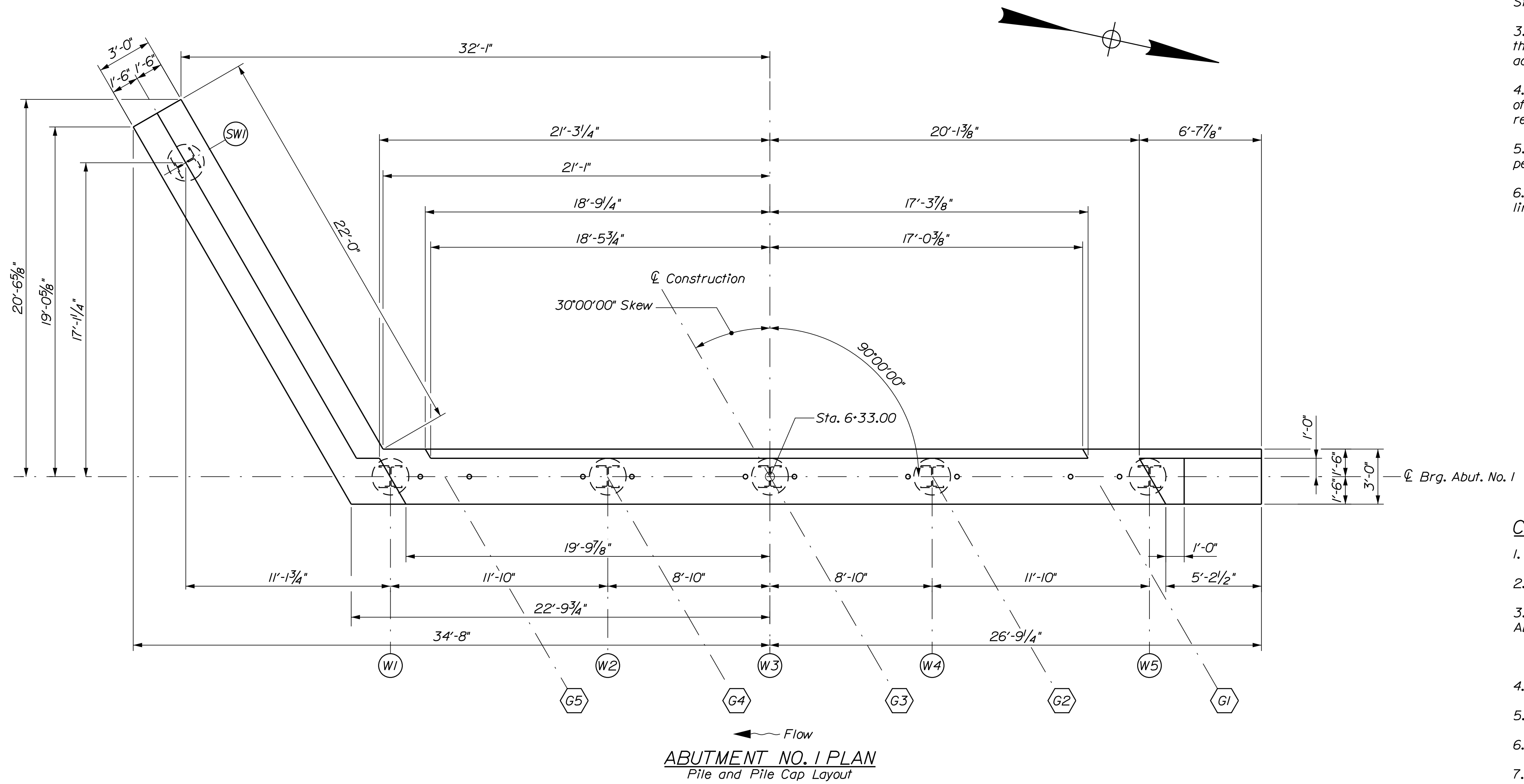
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CHECKED/REVIEWED	SEP 2019	R. MYERS	SEP 2019
DESIGN DETAILED	OCT 2016	T. WHITE	OCT 2016
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GILMAN BRIDGE
EAST BRANCH WESERUNSETT STREAM
ATHENS SOMERSET COUNTY
PILE DETAILS

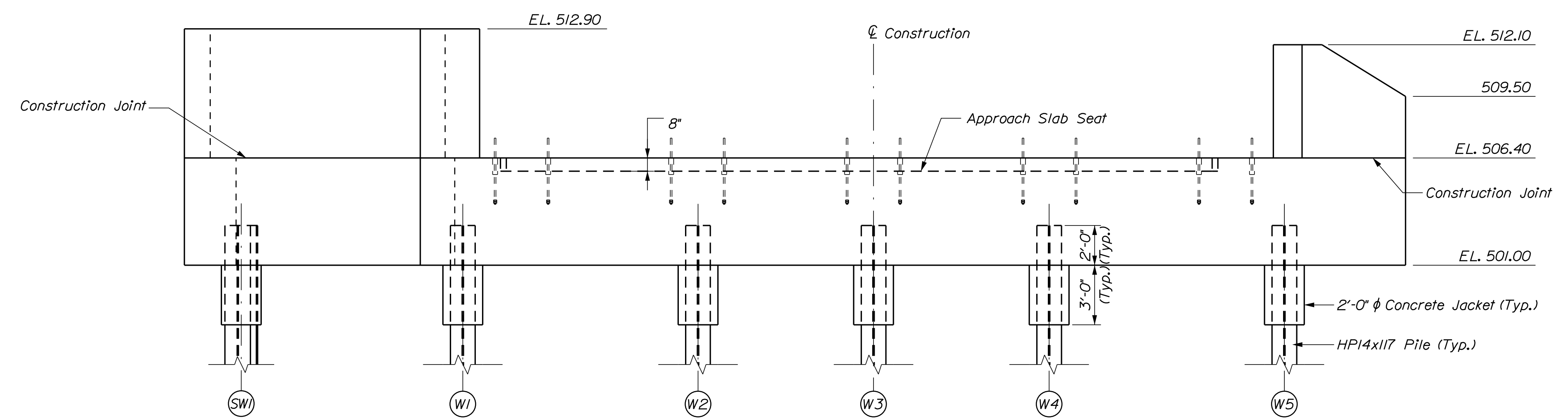
SHEET NUMBER

16

OF 32



ABUTMENT NO. 1 PLAN
Pile and Pile Cap Layout



ABUTMENT NO. 1 ELEVATION
Bridge deck and backwall not shown for clarity

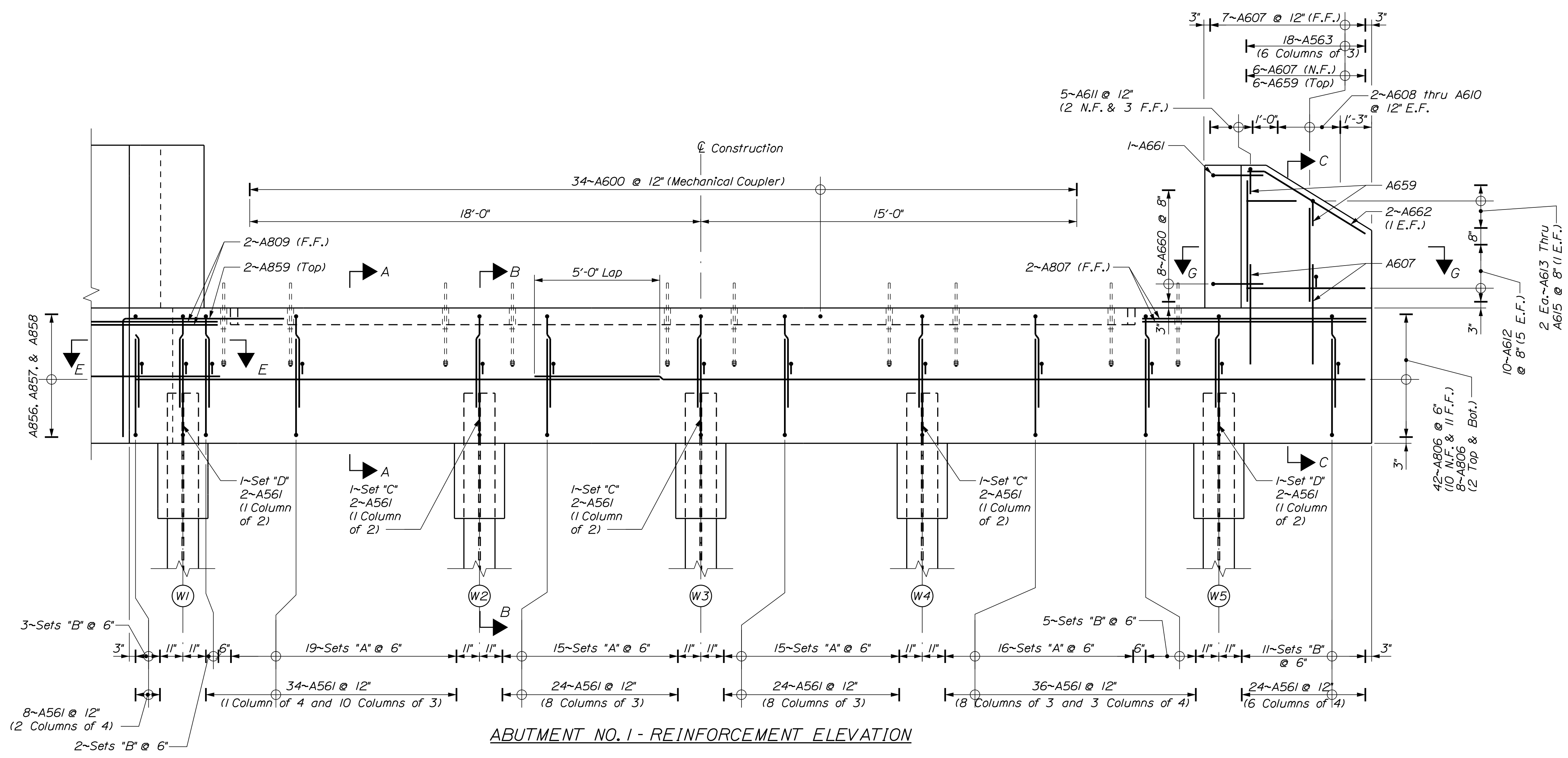
ABUTMENT NOTES

1. Reinforcing steel shall have a minimum concrete cover of 2 inches in the walls unless otherwise noted.
2. Cover joints where waterstops are not required in accordance with Standard Detail 502(01).
3. Structural Earth Excavation, Abutments and Retaining Walls, required more than 12 inches below the bottom of the structure will be paid for in accordance with Standard Specifications Section 206, Structural Excavation.
4. Work and materials required to construct the concrete jackets near the top of the piles will not be paid for separately, but will be considered incidental to related items. Fill concrete may be used for the concrete jackets.
5. Contractor shall survey anchor bolt locations and adjust reinforcing steel per Resident to avoid interferences prior to concrete placement.
6. Abutments and wingwalls shall be backfilled with Granular Borrow. Pay limits will be as shown on the Bridge Profile Sheet.

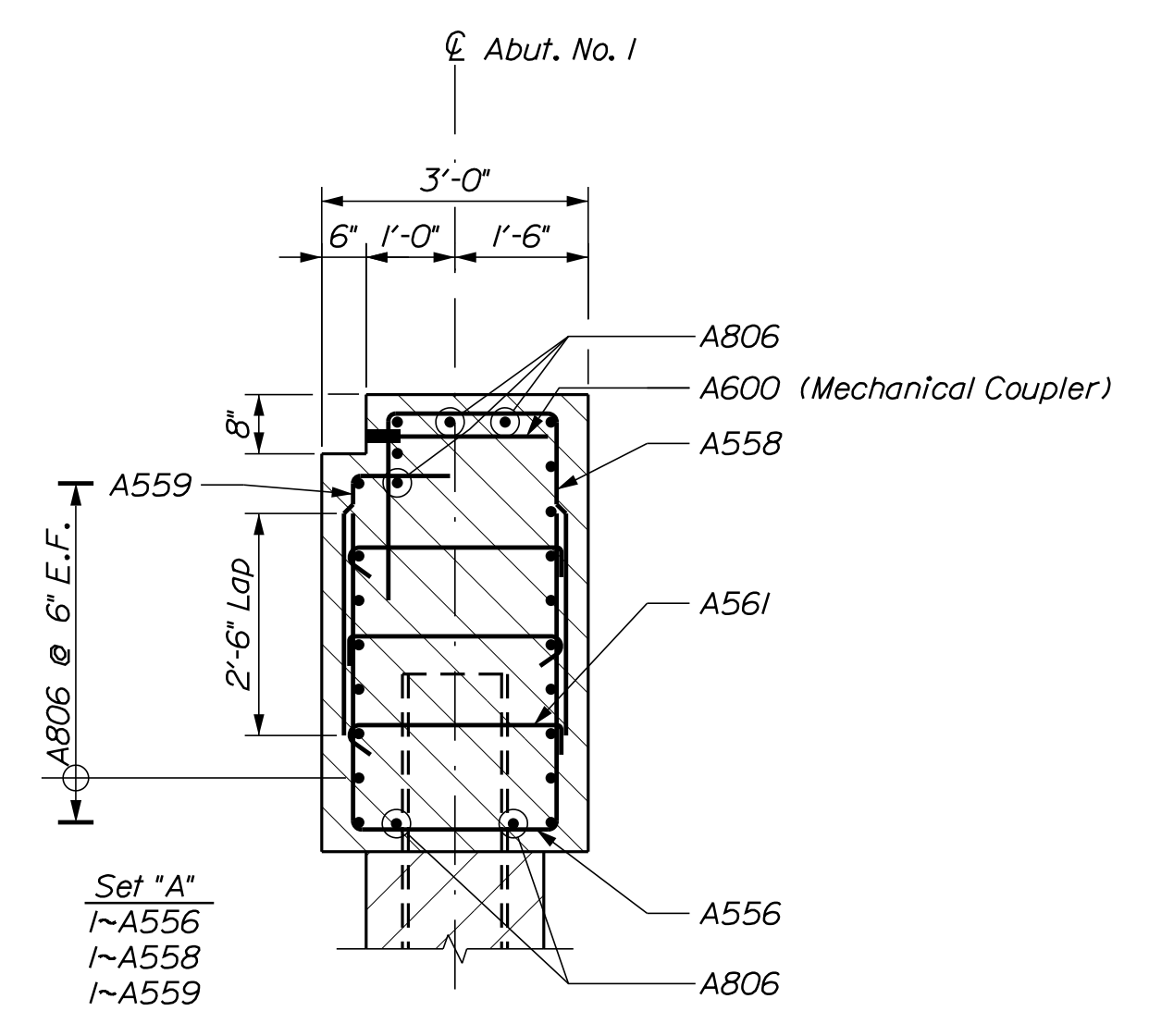
CONSTRUCTION SEQUENCE (BOTH ABUTMENTS TYP.)

1. Place pile protection (concrete jackets) after pile installation.
2. Place abutments and wingwalls up to the first construction joint.
3. Complete Riprap and Borrow material as specified in front and behind the Abutments and Wingwalls to min. elevation:
 - EL. 505.0 at Abutment No. 1 and Wingwall
 - EL. 504.0 at Abutment No. 2 and Wingwall
4. Place neoprene pads.
5. Erect girder support plates, girders, cross-frames and diaphragms.
6. Place approach slabs.
7. Place backwalls. Wait three days or 3,000 psi backwall concrete breaks prior to placing deck forms.
8. Place deck slab and curbs.
9. Place remaining wingwalls above first construction joint.

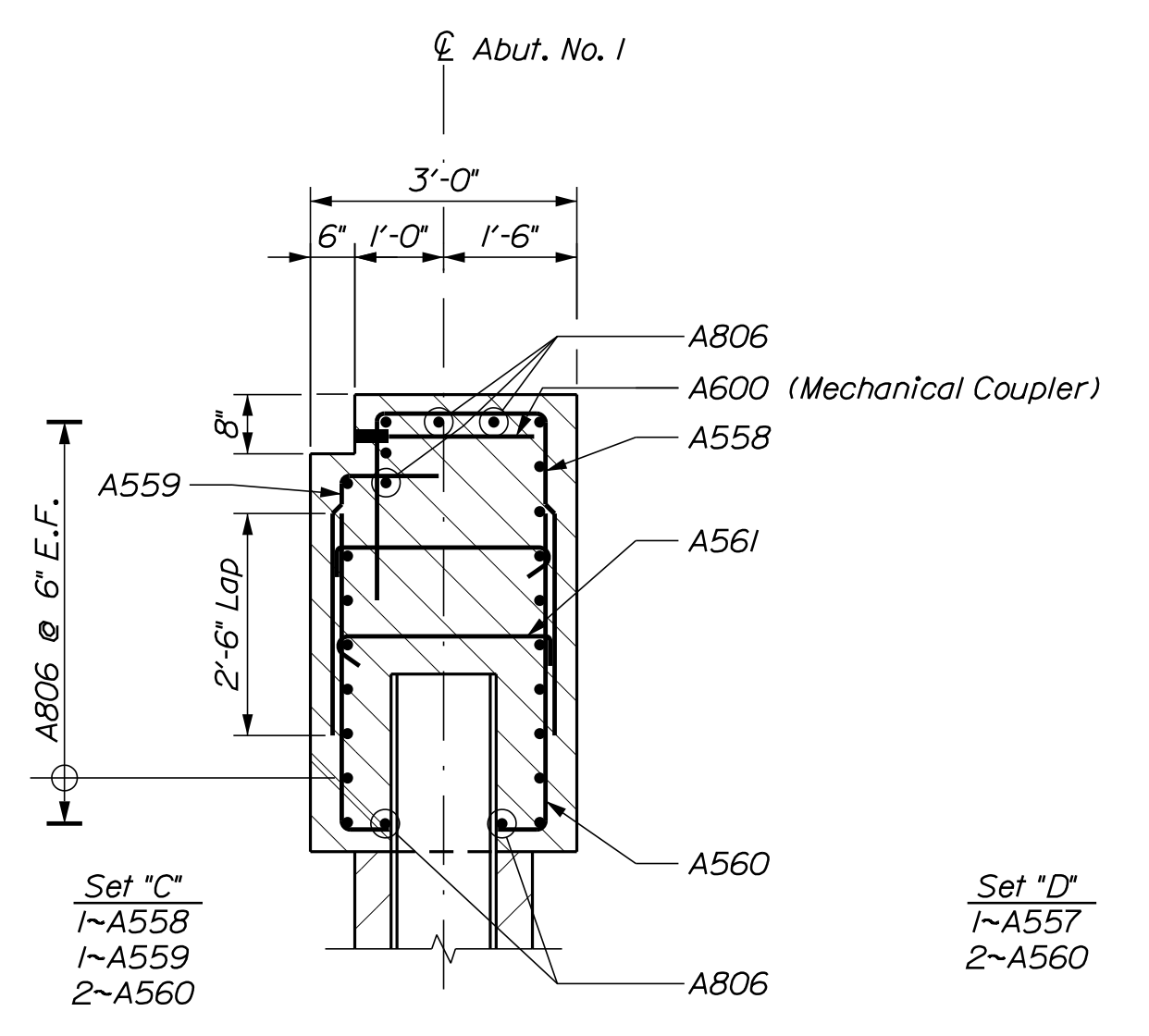
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GILMAN BRIDGE EAST BRANCH WESERUNSETT STREAM ATHENS SOMERSET COUNTY ABUTMENT NO. 1 PLAN AND ELEVATION
SHEET NUMBER 17 OF 32



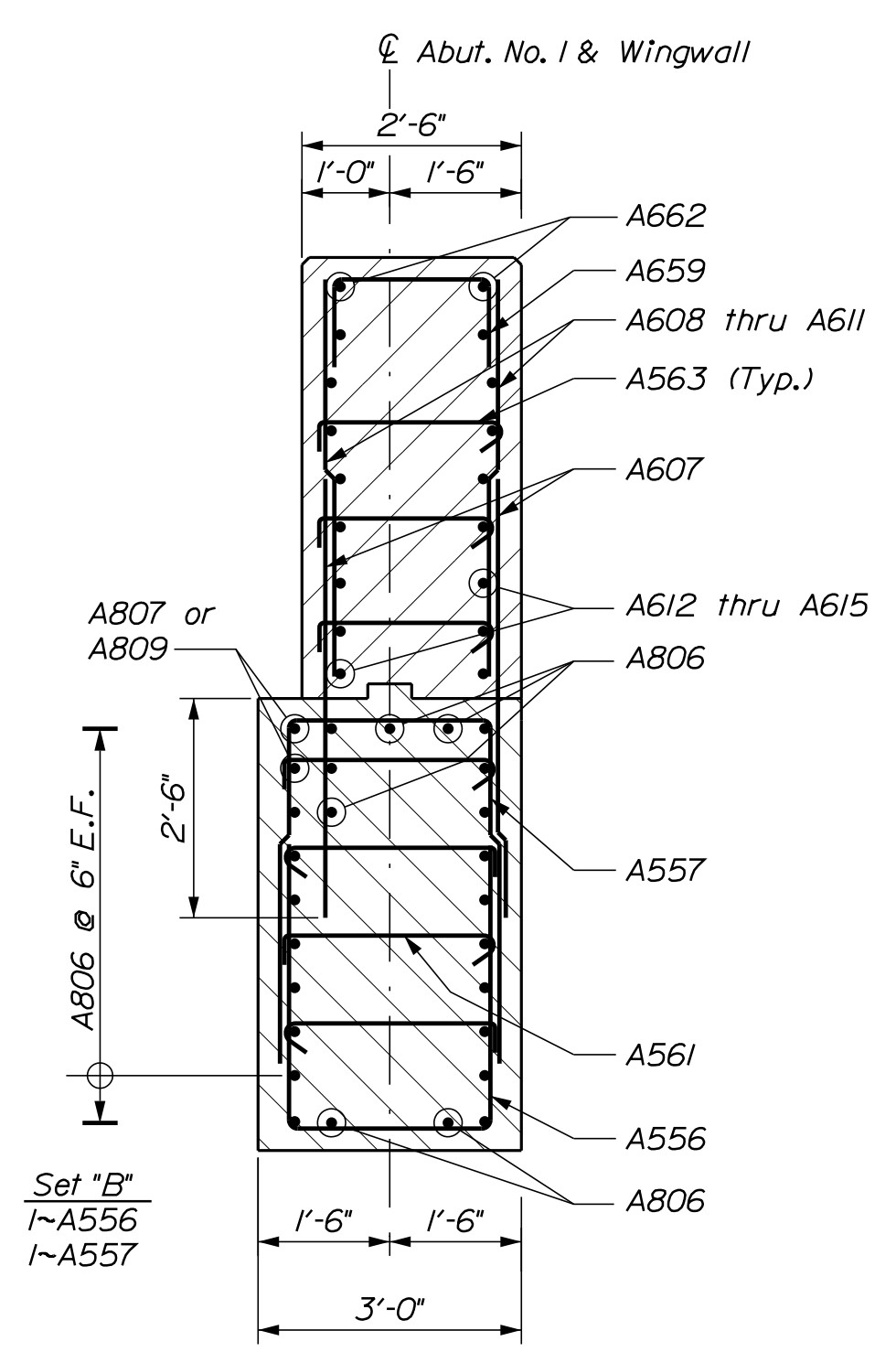
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ABUTMENT SECTION A-A
(Between Piles)

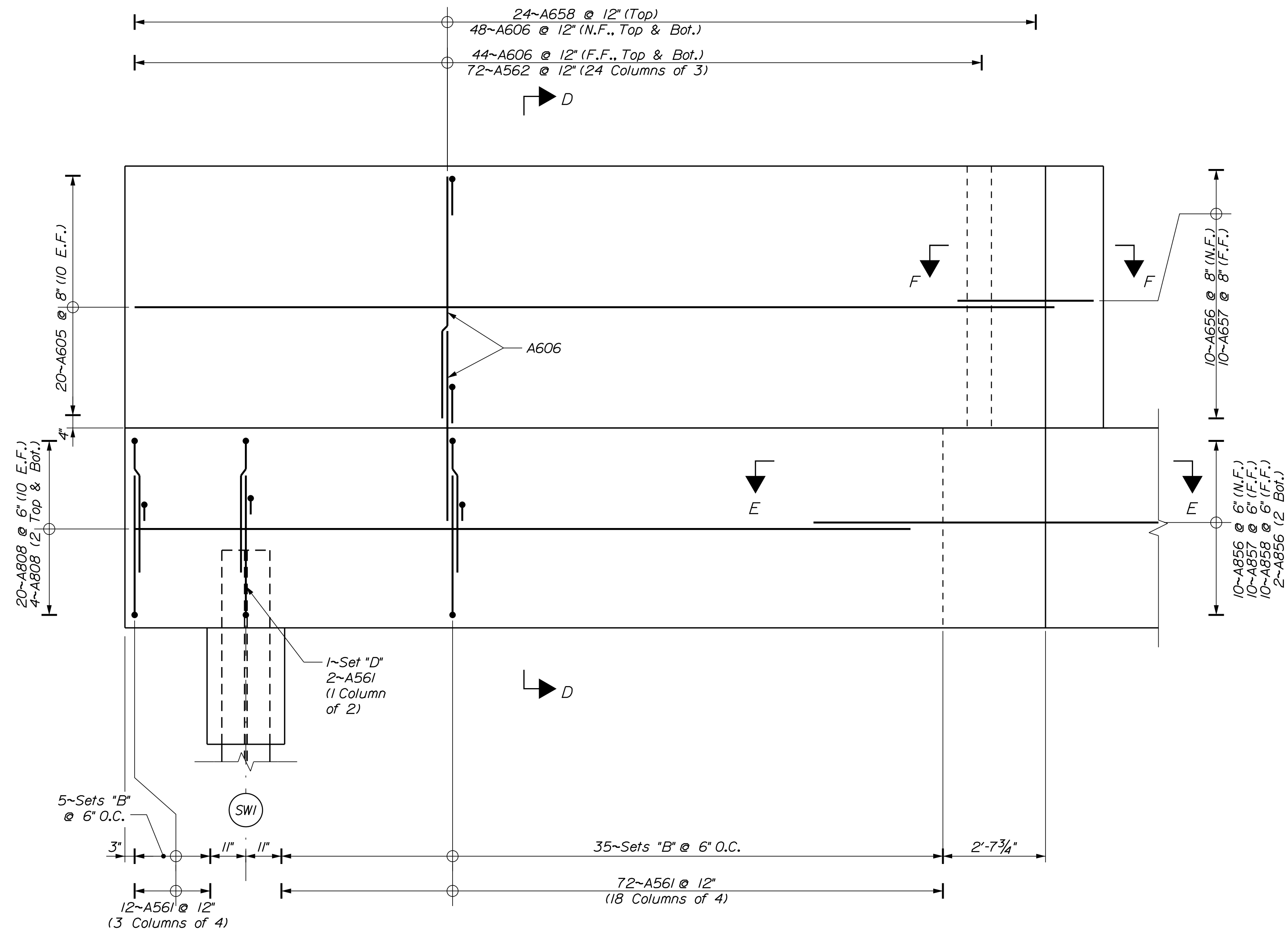


ABUTMENT SECTION B-B
(At Piles)

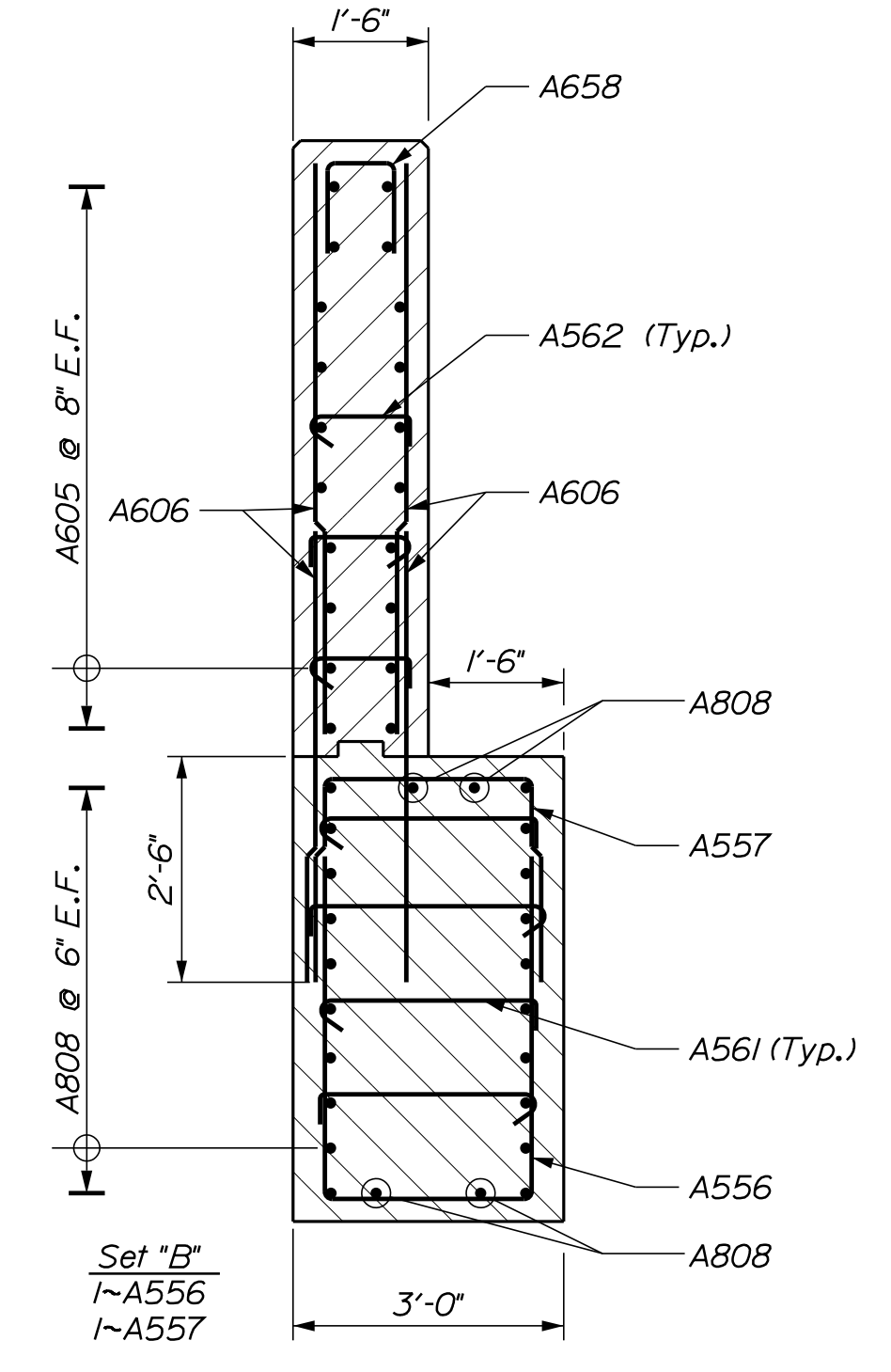


WINGWALL SECTION C-C

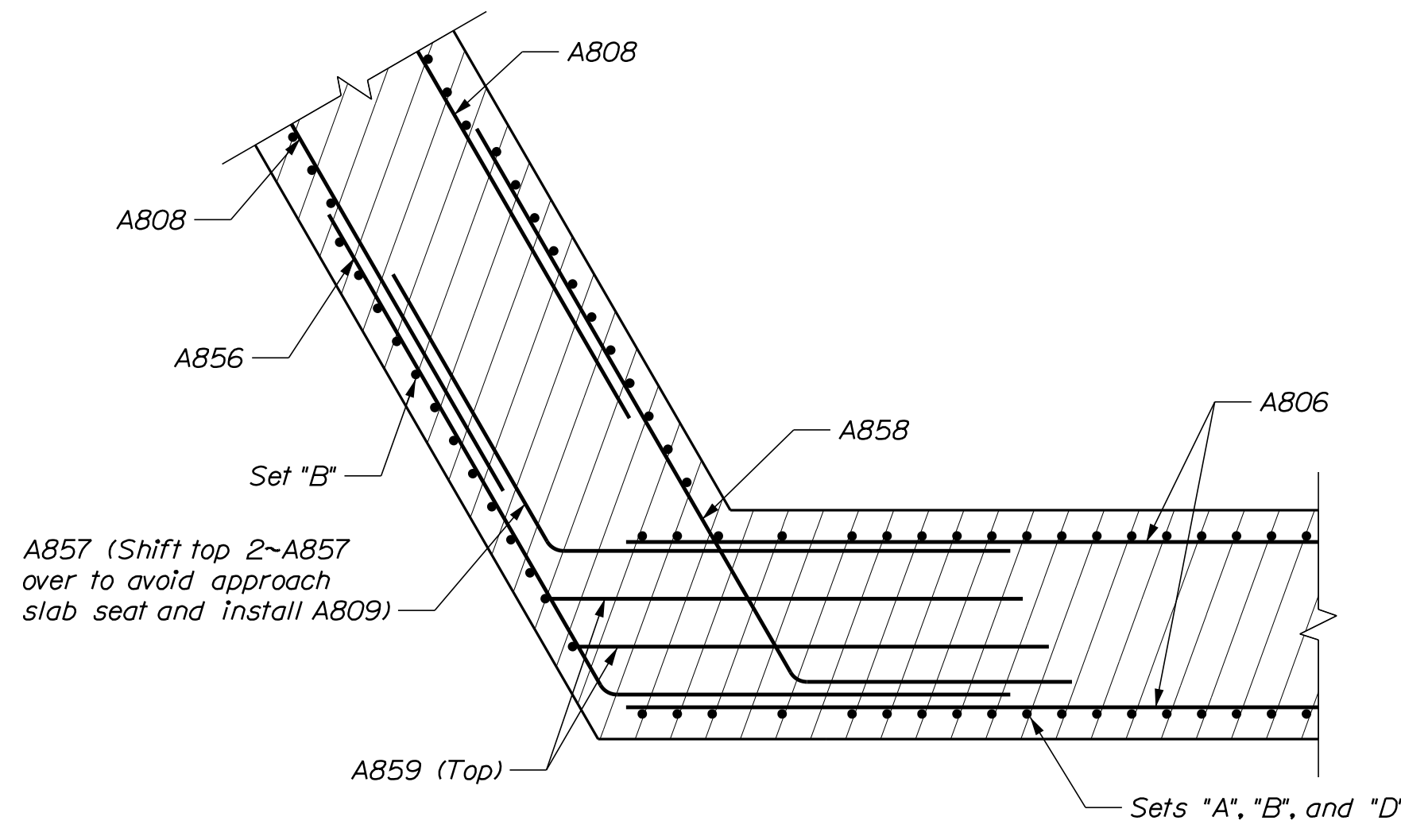
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GILMAN BRIDGE EAST BRANCH WESERUNSETT STREAM ATHENS SOMERSET COUNTY		BRIDGE NO. 2313 WIN 18952.00	
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PROJ. MANAGER	DATE	SIGNATURE	DATE
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CHECKED-REVIEWED E. BROWNELL	9/23/19		
DESIGN-DETAILED			
REVISIONS 1		P.E. NUMBER	
REVISIONS 2		DATE	
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FIELD CHANGES			
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		OF 32	



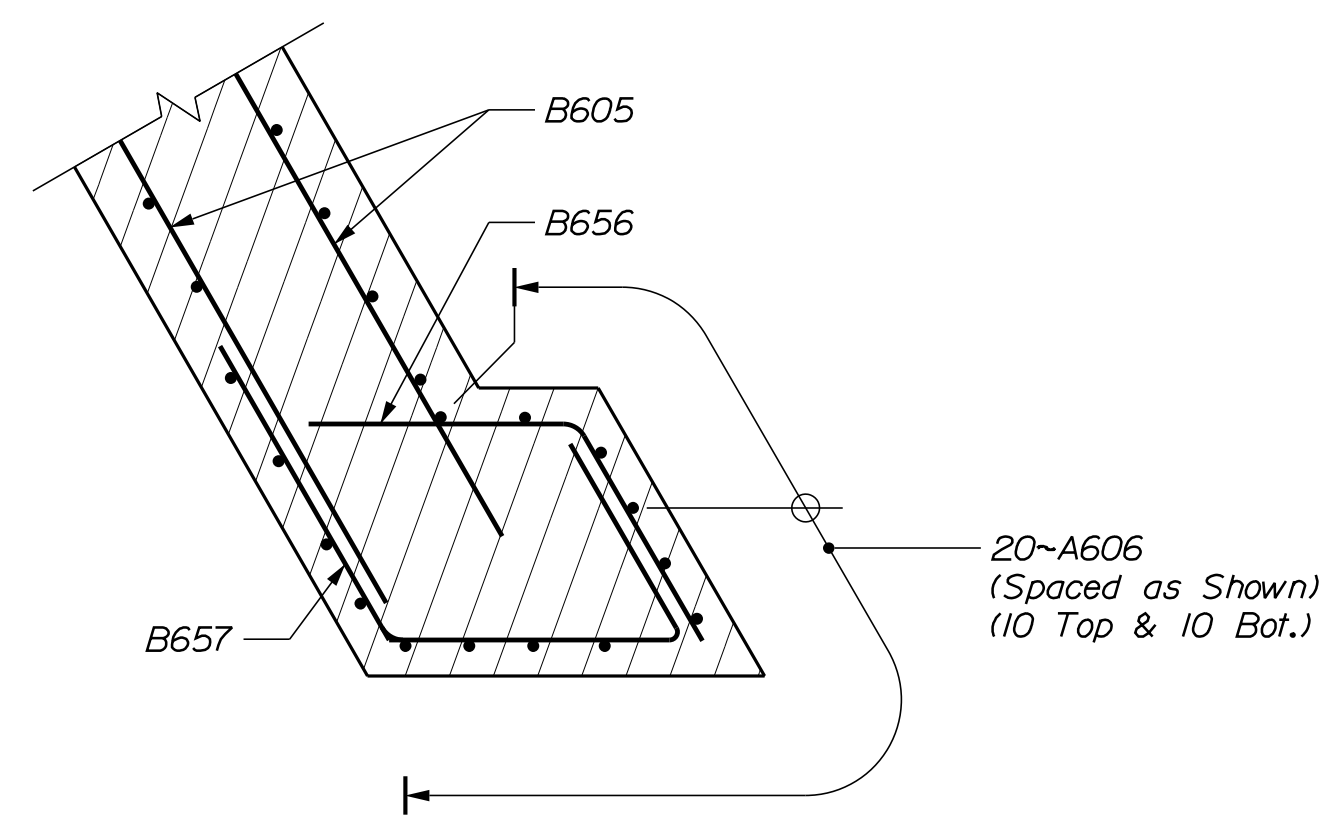
ABUTMENT NO. 1 SOUTHWEST WINGWALL REINFORCEMENT ELEVATION



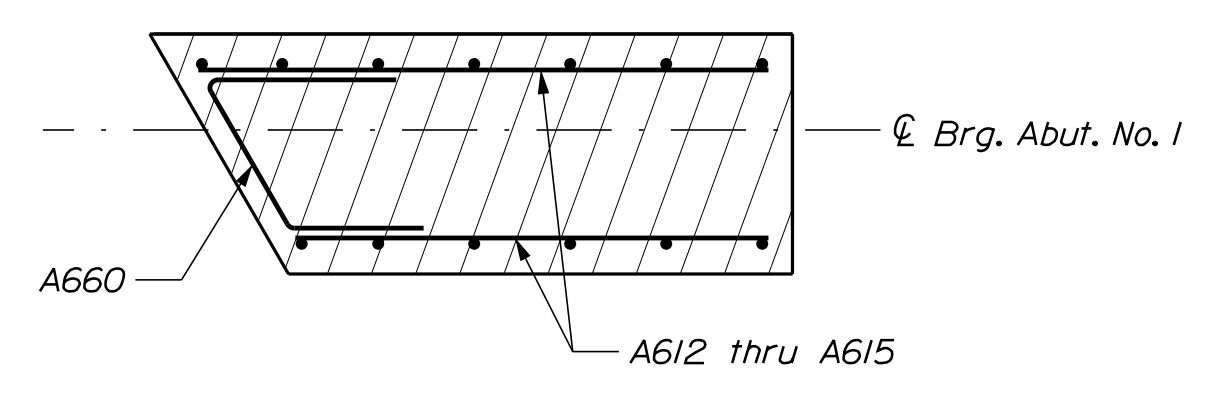
WINGWALL SECTION D-D



SECTION E-E (Below Construction Joint)

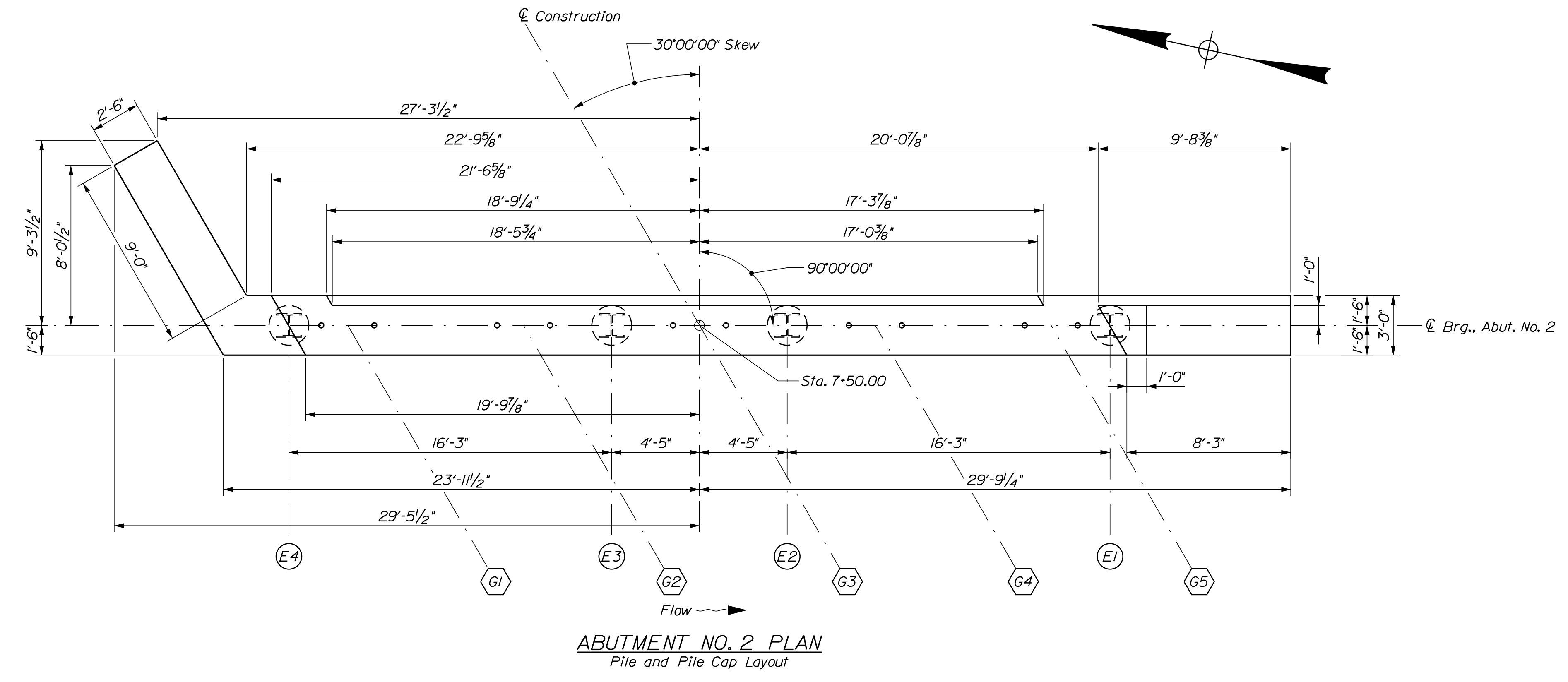


SECTION F-F (Above Construction Joint)

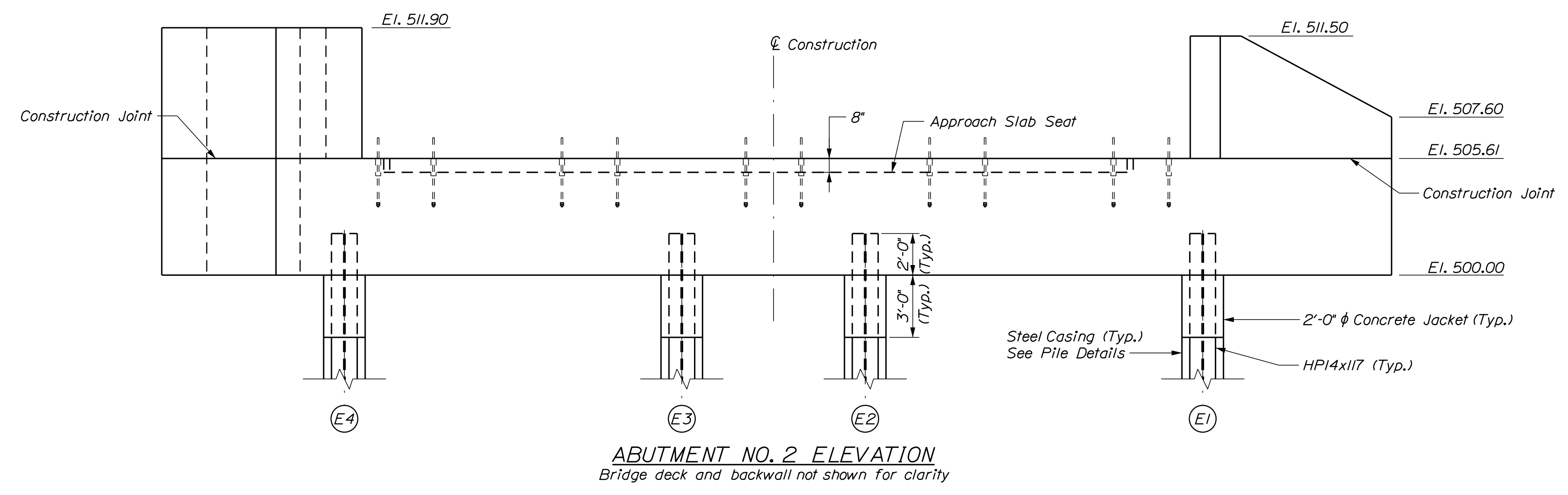


SECTION G-G (Above Construction Joint)

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		18952.00	
GILMAN BRIDGE EAST BRANCH WESERUNSETT STREAM ATHENS SOMERSET COUNTY		BRIDGE NO. 2313	
ABUTMENT NO. 1 WINGWALL REINFORCEMENT		WIN 18952.00	
PROJ. MANAGER	DATE	SIGNATURE	DATE
DESIGNED BY	9/23/19		
CHECKED BY	9/23/19		
DESIGNED BY			
DESIGNED BY			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SHEET NUMBER		BRIDGE PLANS	
19			
OF 32			



ABUTMENT NO. 2 PLAN
Pile and Pile Cap Layout



ABUTMENT NO. 2 ELEVATION
Bridge deck and backwall not shown for clarity

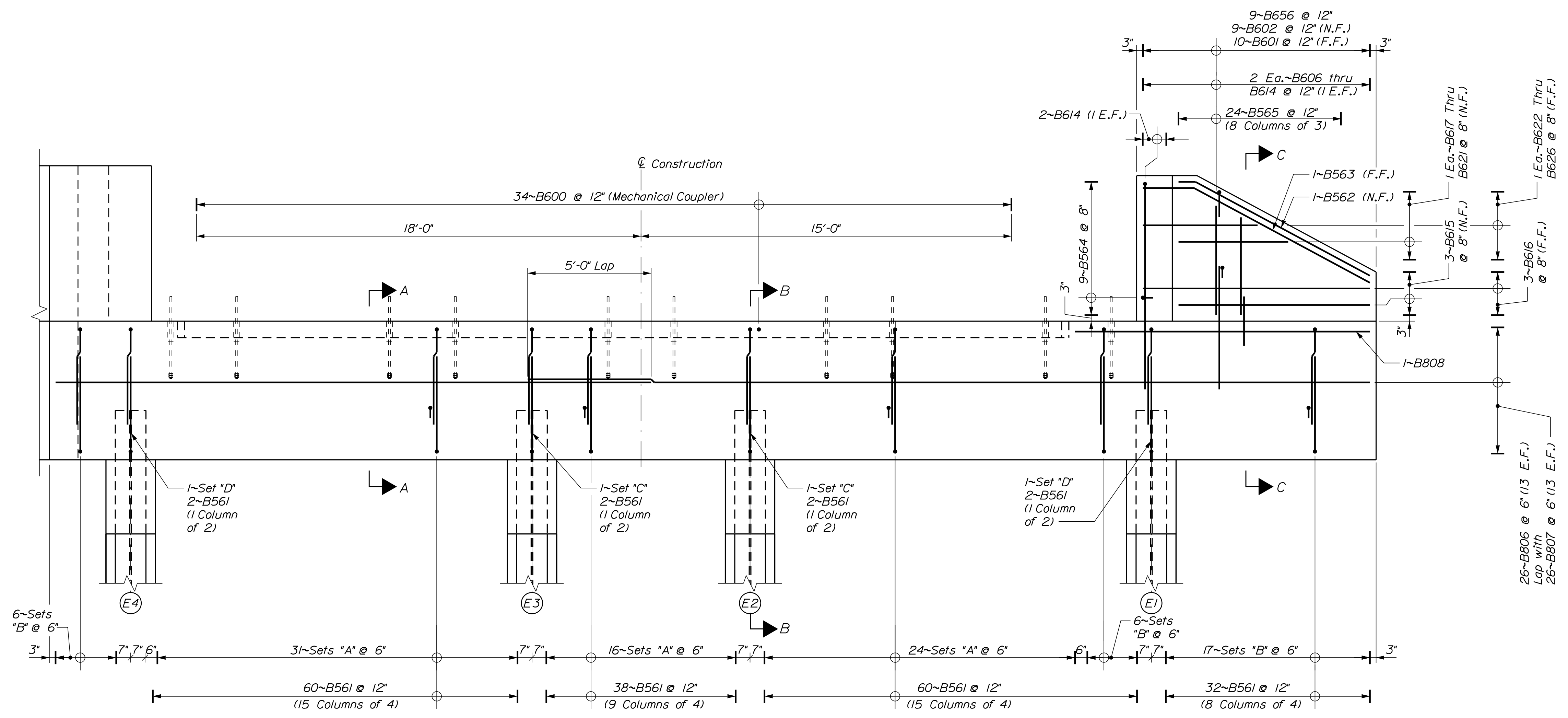
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GILMAN BRIDGE EAST BRANCH WESERUNSETT STREAM ATHENS SOMERSET COUNTY		WIN 18952.00	
ABUTMENT NO. 2 PLAN AND ELEVATION		BRIDGE NO. 2313 BRIDGE PLANS	
PROJ. MANAGER	DATE	SIGNATURE	DATE
DESIGN-DETAILED E. BROWNELL	9/23/19		
CHECKED-REVIEWED E. BROWNELL	9/23/19		
DESIGN-DETAILED E. BROWNELL			
REVISIONS 1		P.E. NUMBER	
REVISIONS 2		DATE	
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SHEET NUMBER		20	
		OF 32	

Date: 9/23/2019

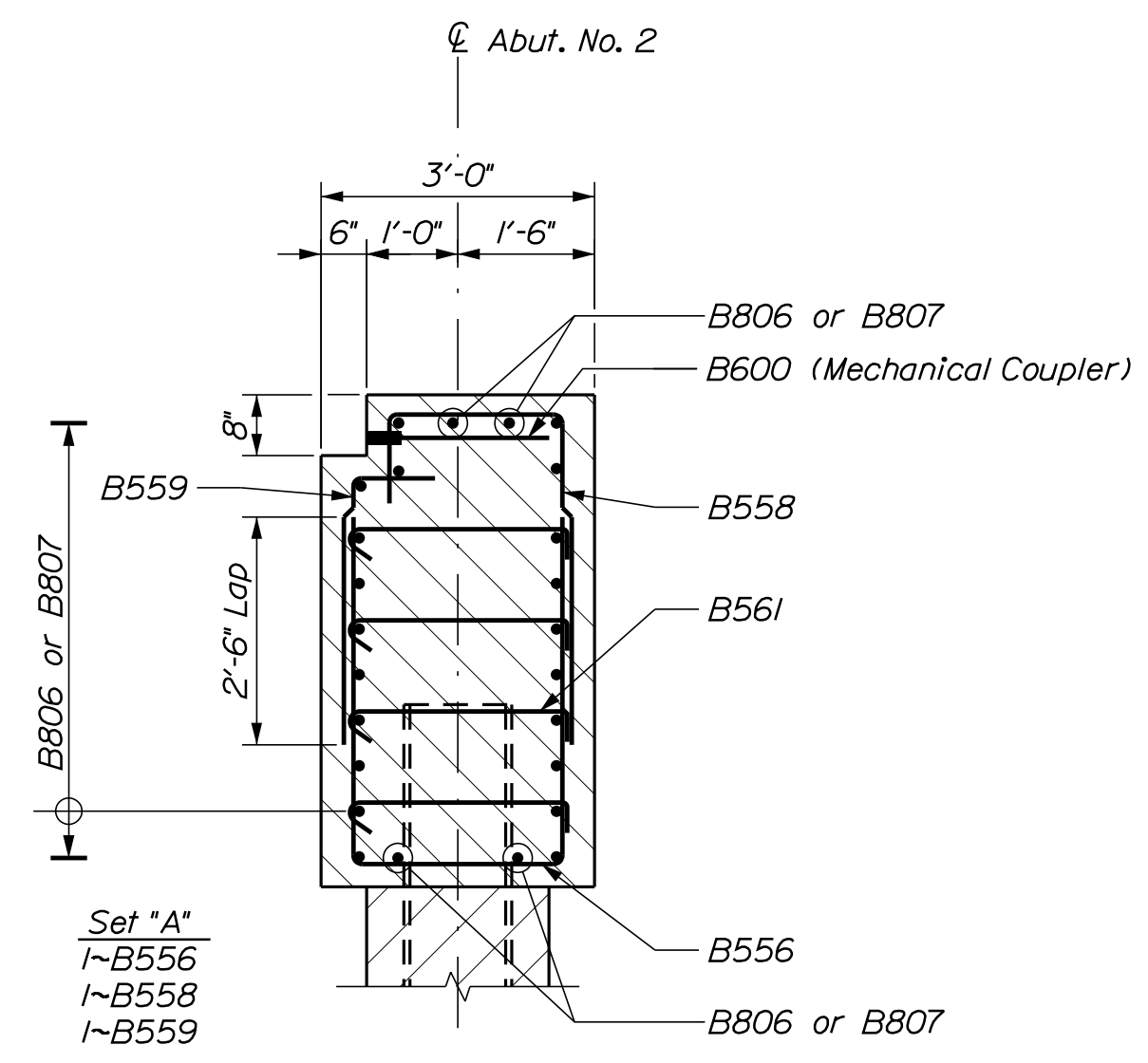
Username: David.Shaw

Division: BRIDGE

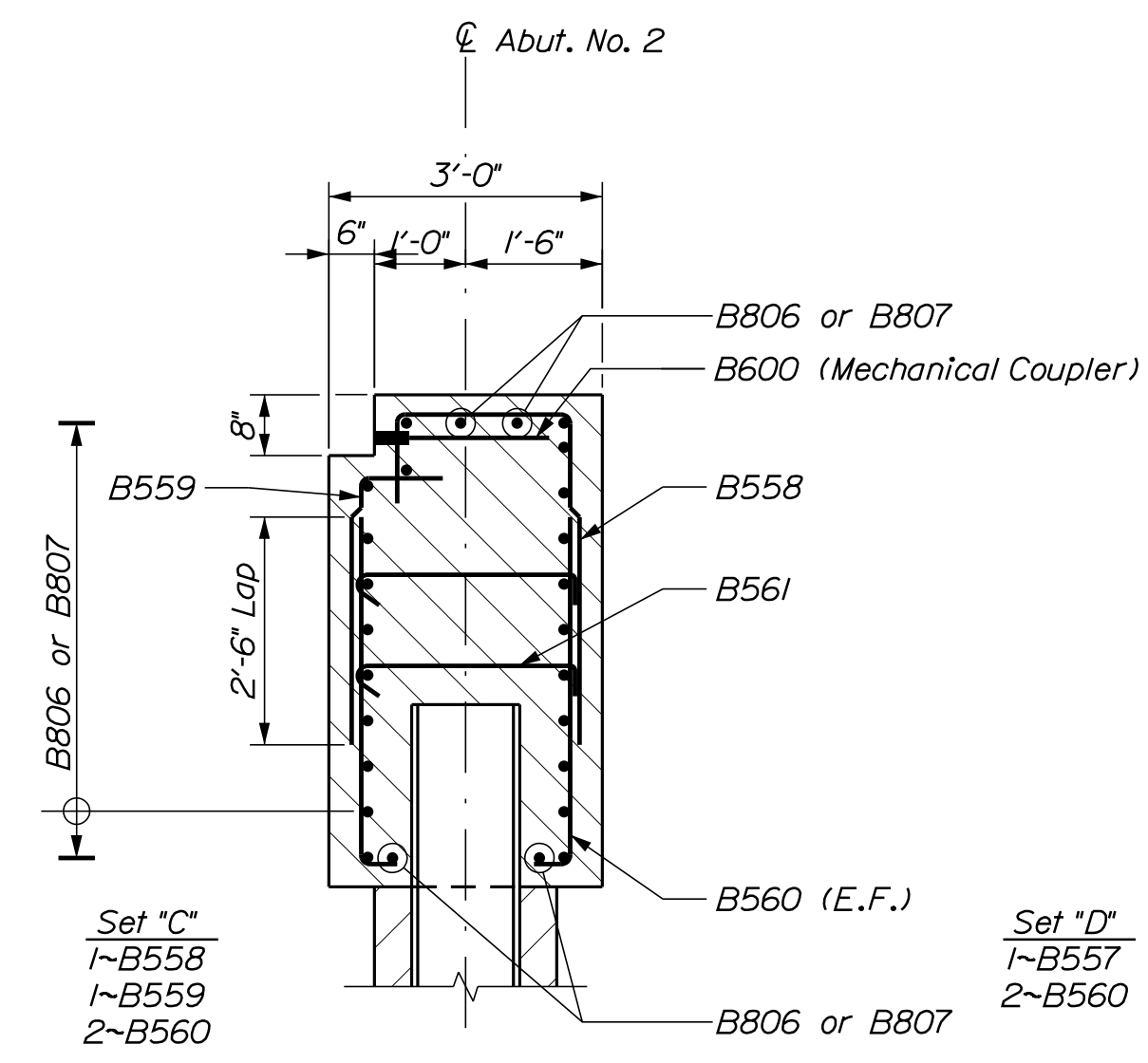
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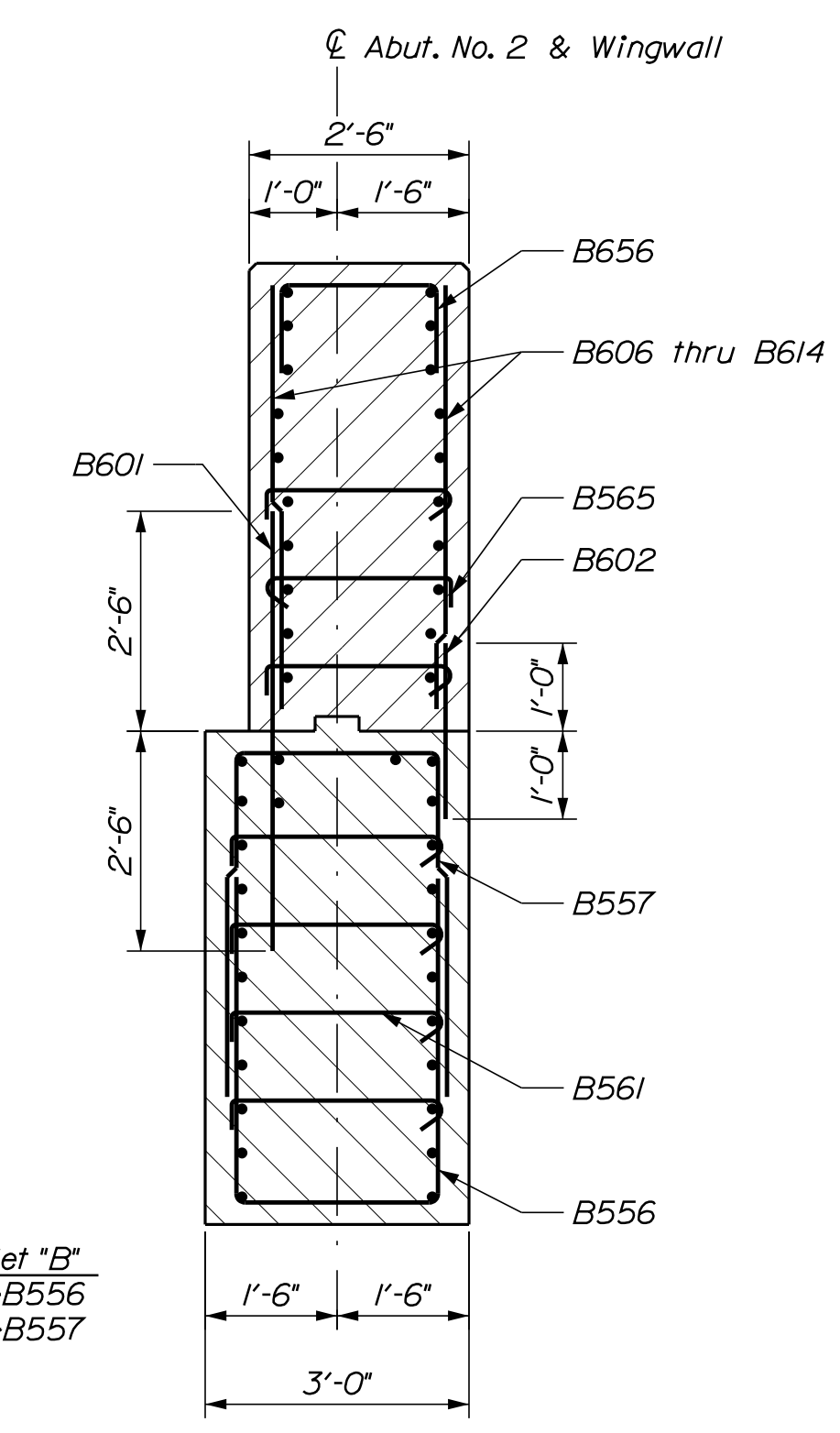
ABUTMENT NO. 2 - REINFORCEMENT ELEVATION
 (Pile skew not shown for clarity)



ABUTMENT SECTION A-A
 (Between Piles)

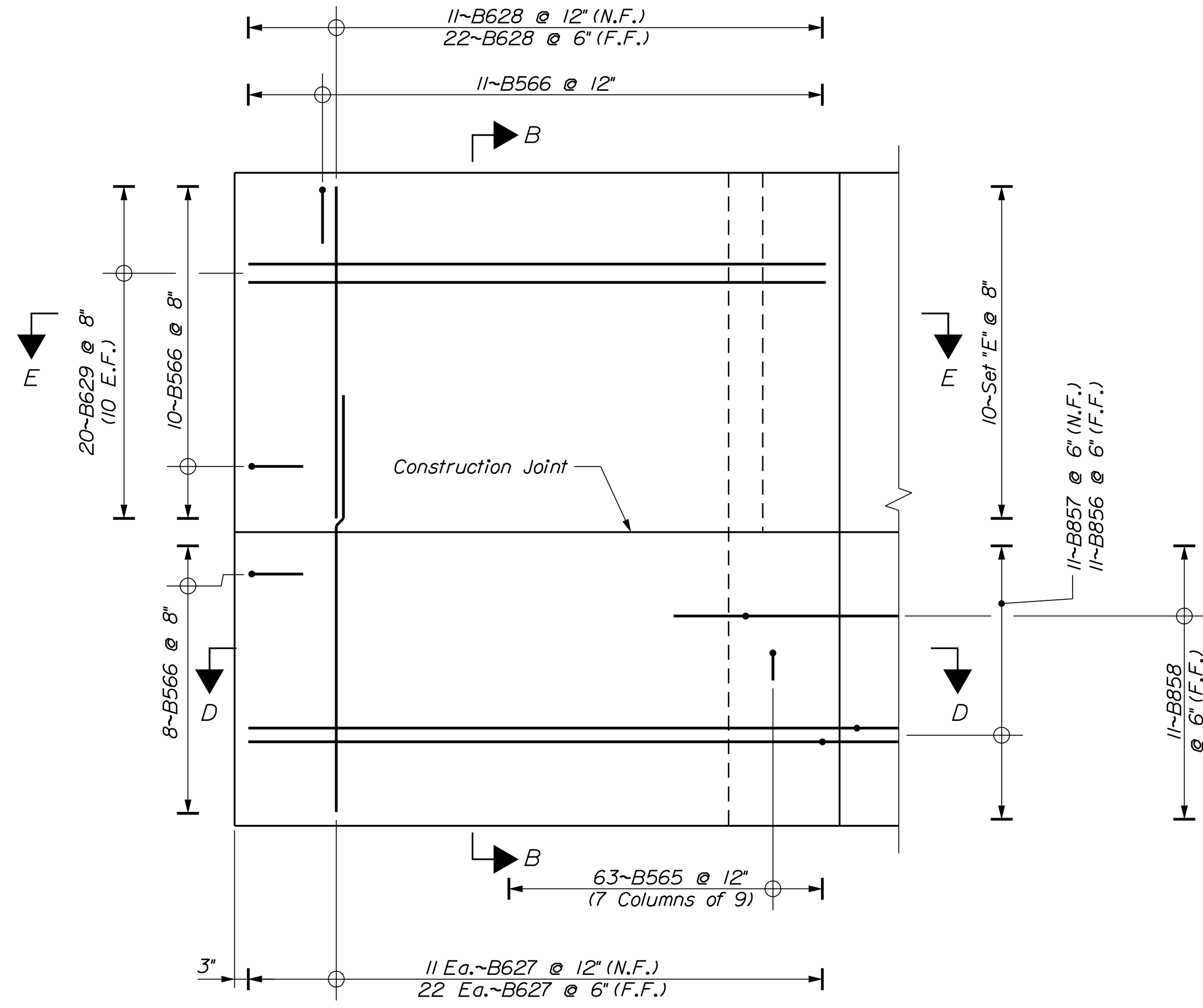


ABUTMENT SECTION B-B
 (At Piles)

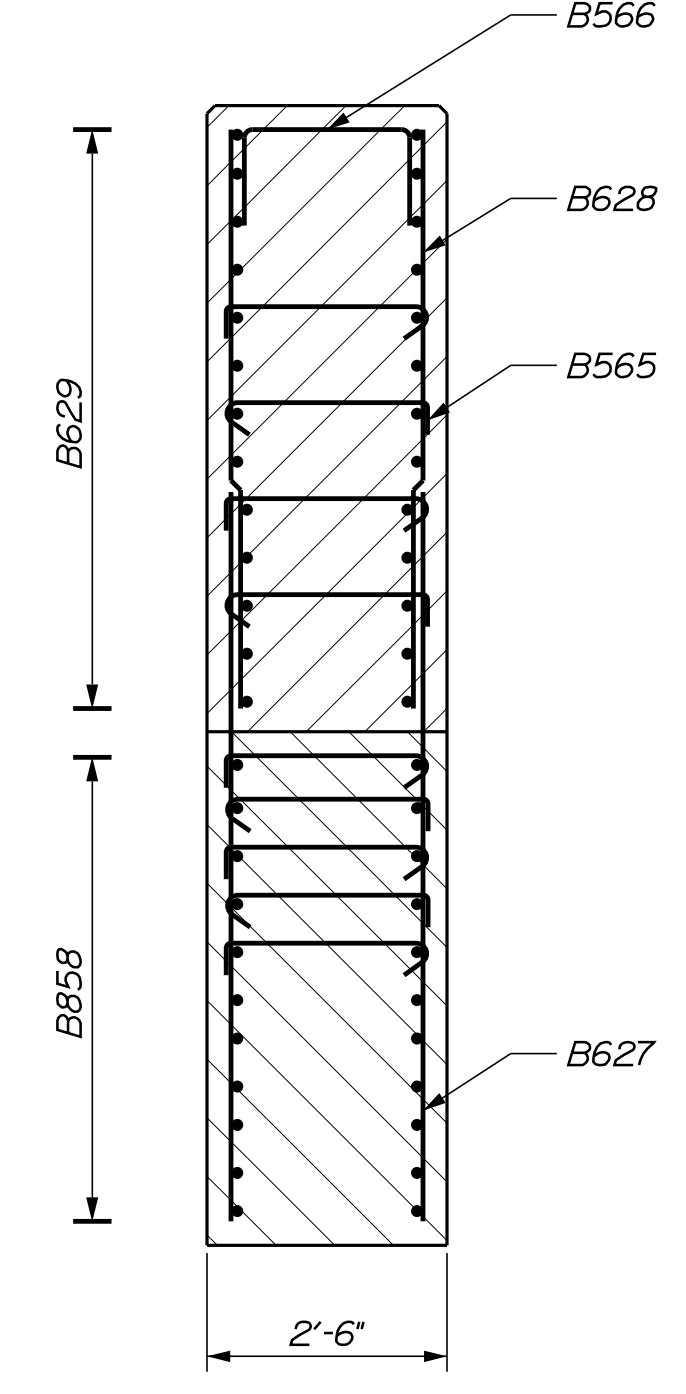


WINGWALL SECTION C-C

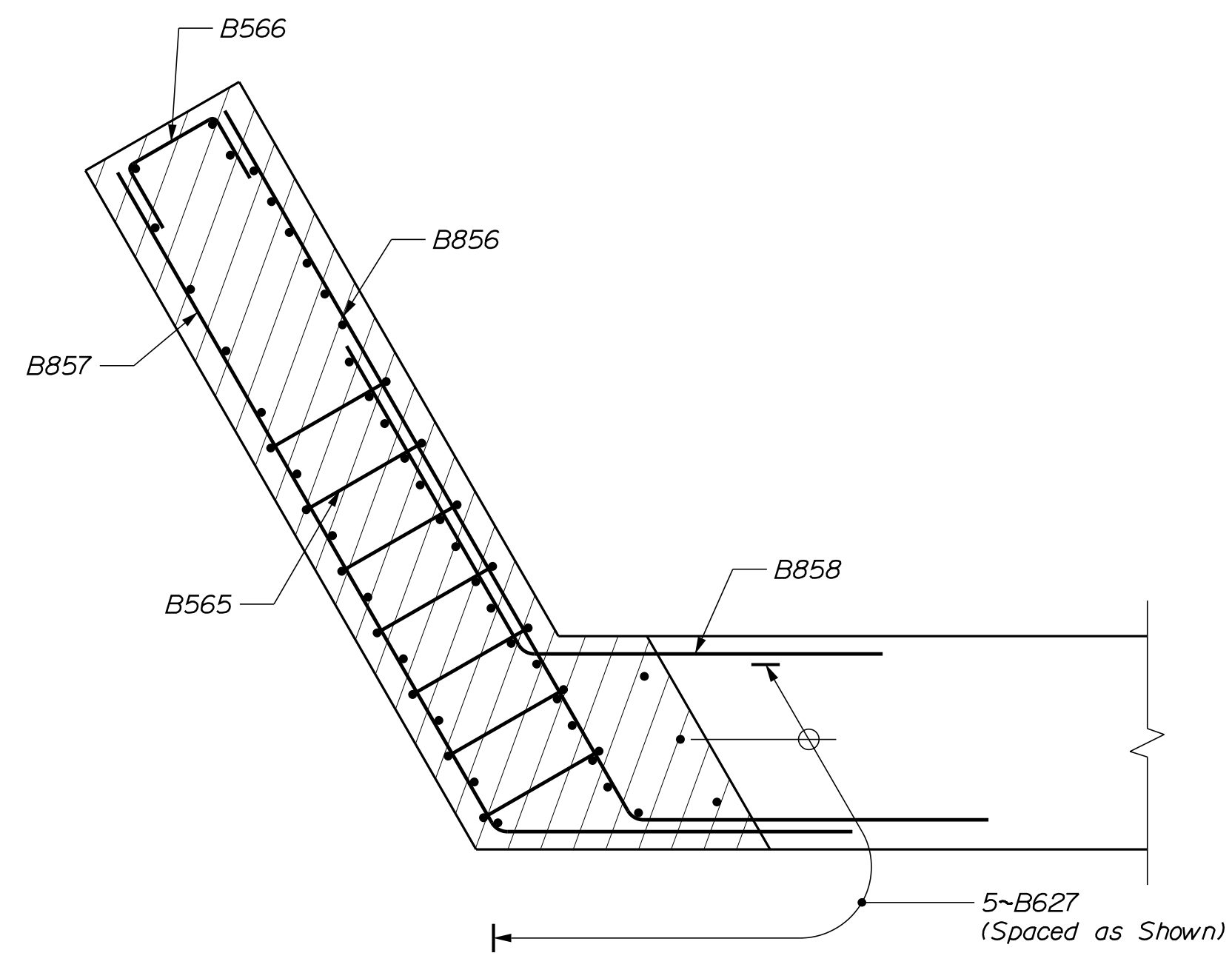
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 2313		BRIDGE PLANS	
18952.00		WIN		18952.00	
GILMAN BRIDGE EAST BRANCH WESERUNSETT STREAM ATHENS		SOMERSET COUNTY		ABUTMENT NO. 2 REINFORCEMENT	
PROJ. MANAGER	DATE	BY	DATE	SIGNATURE	P.E. NUMBER
DESIGN-DETAILED	9/23/19	E. BROWNELL	9/23/19		
CHECKED-REVIEWED		E. BROWNELL			
DESIGN-DETAILED		B. WELCH			
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					
SHEET NUMBER		21		OF 32	



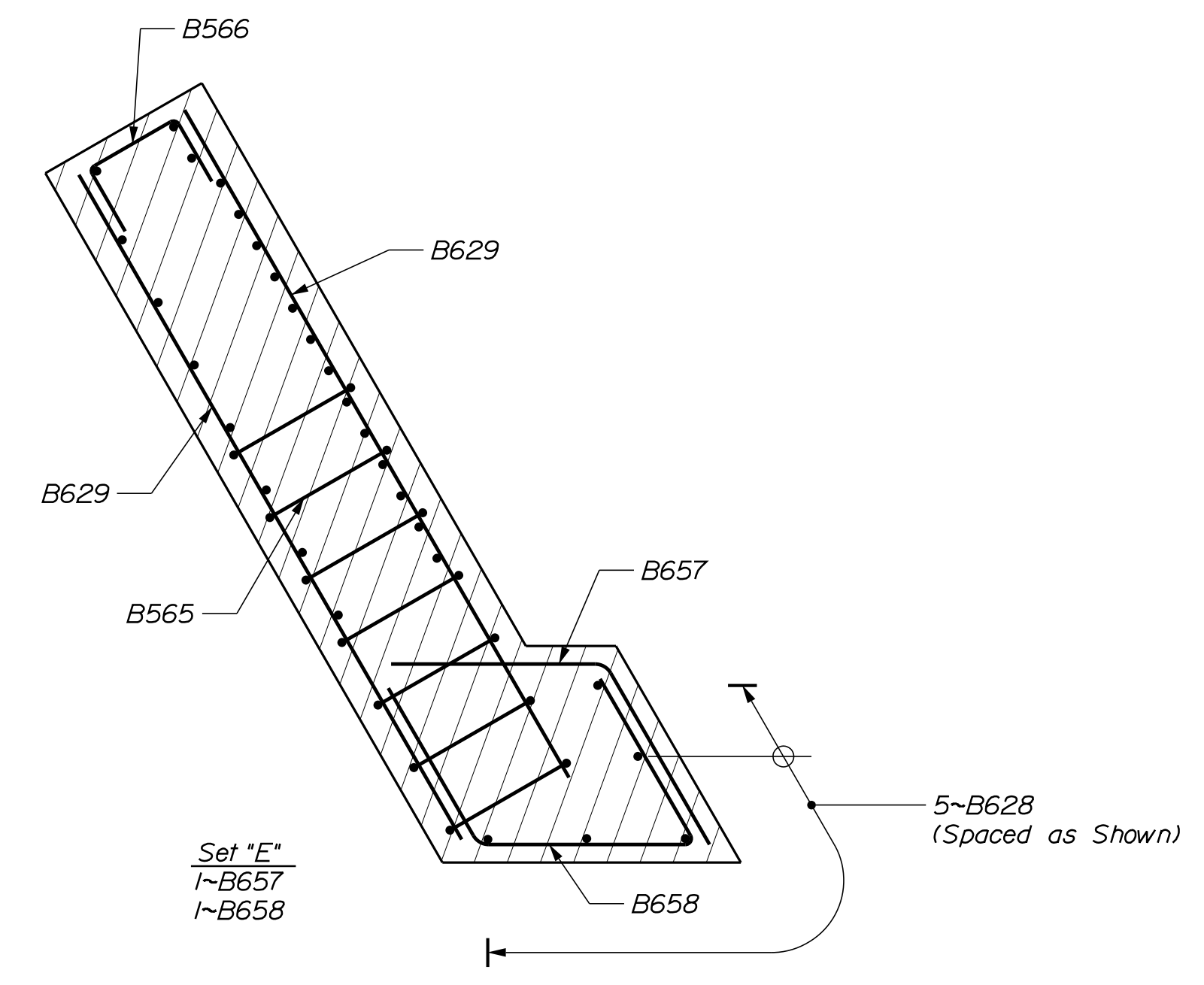
ABUTMENT NO. 2 WINGWALL ELEVATION (NORTH)



WINGWALL SECTION B-B

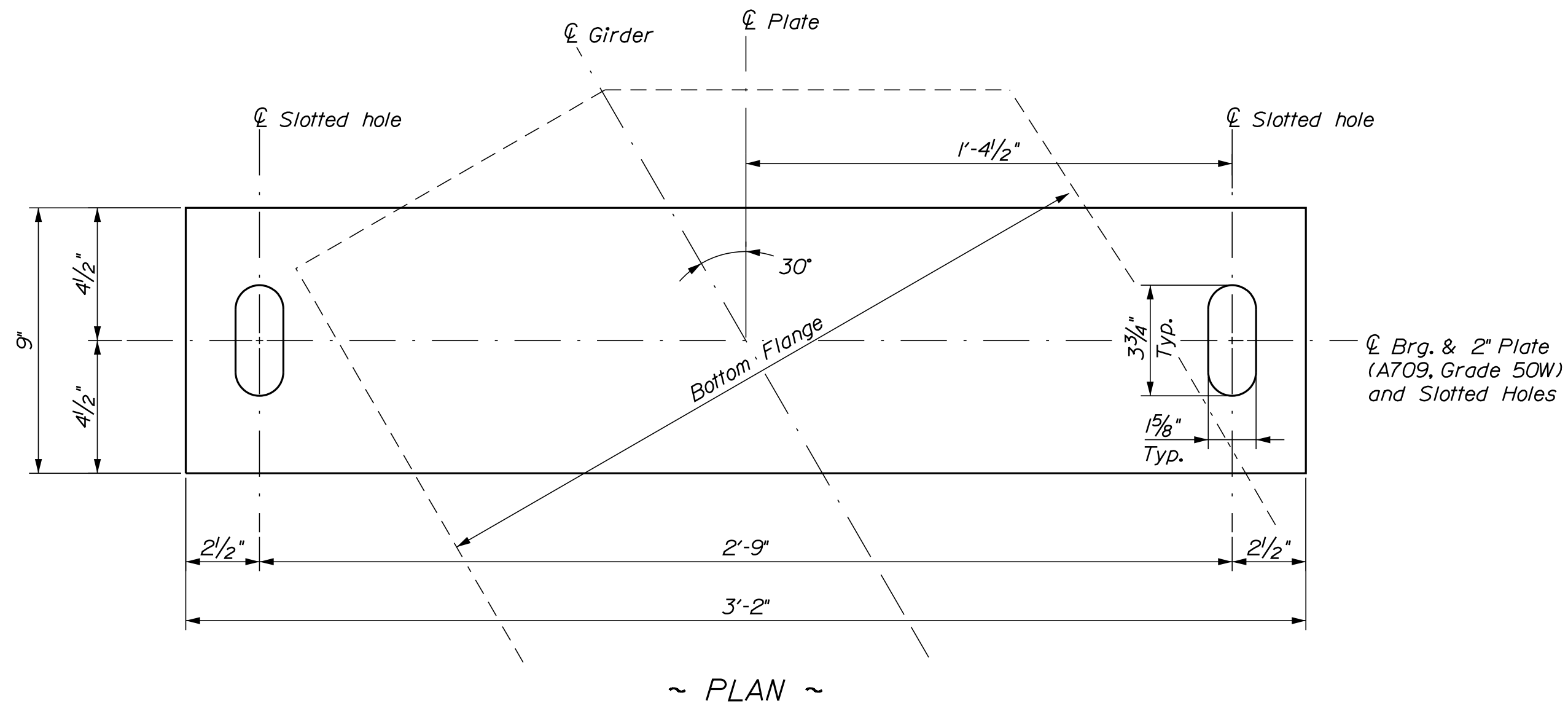


SECTION D-D
(Below Construction Joint)



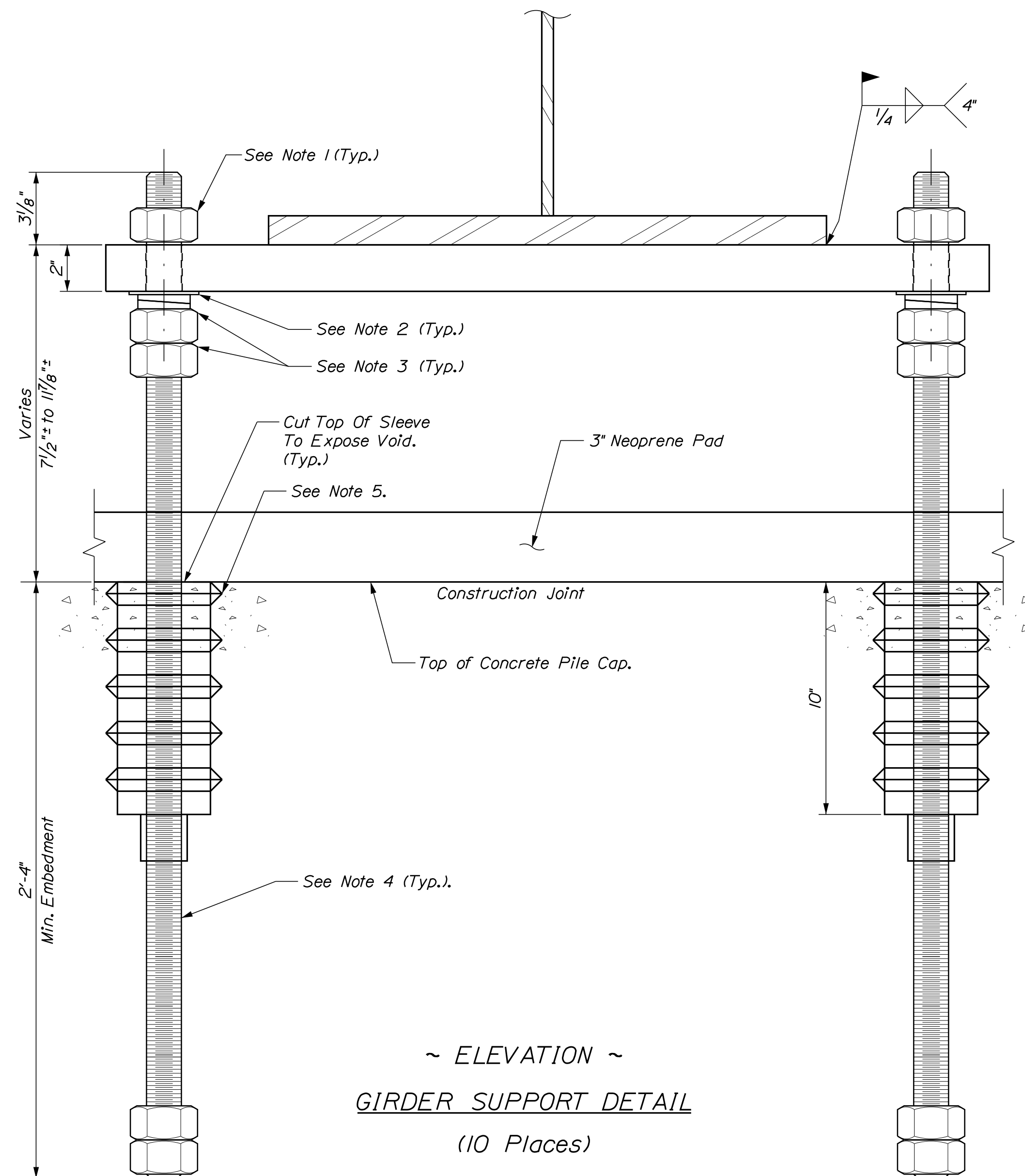
SECTION E-E
(Above Construction Joint)

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		18952.00	
BRIDGE NO. 2313		WIN 18952.00	
BRIDGE PLANS			
PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	9/23/19	E. BROWNELL	9/23/19
CHECKED-REVIEWED		D. BURGESS	
DESIGN-DETAILED		E. BROWNELL	
REVISIONS 1		B. WELCH	
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
GILMAN BRIDGE EAST BRANCH WESSERUNSETT STREAM ATHENS SOMERSET COUNTY		SIGNATURE	
ABUTMENT NO. 2 WINGWALL REINFORCEMENT		P.E. NUMBER	
SHEET NUMBER		DATE	
22			
OF 32			



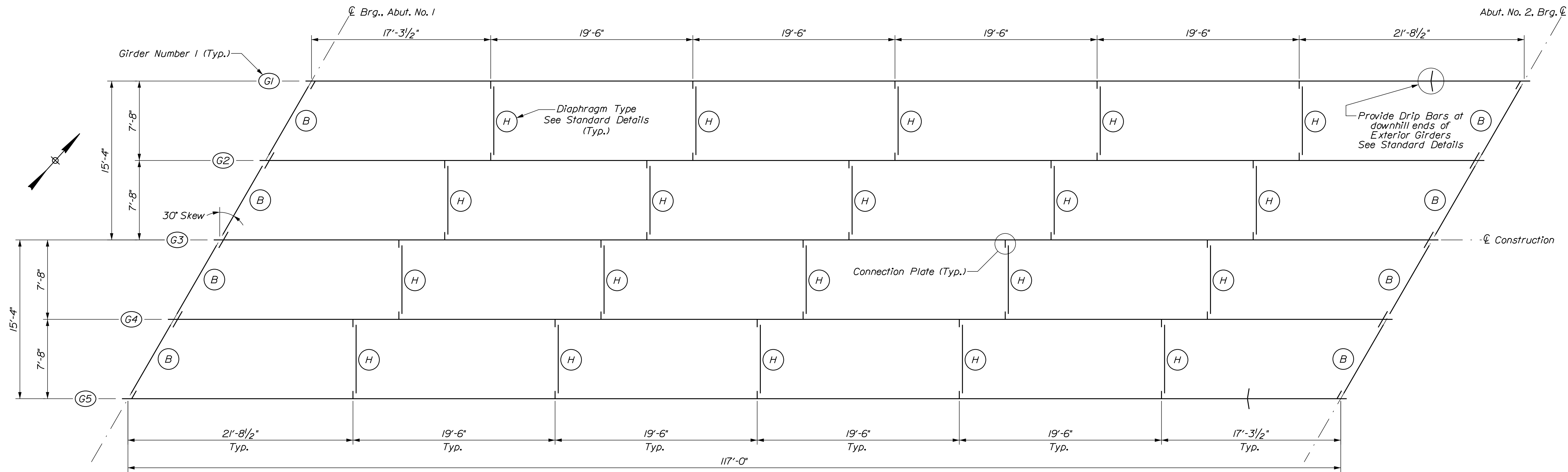
GIRDER SUPPORT NOTES

1. All nuts to be ASTM A563, hex nuts. Do not tighten top nut; leave 1/16" space between nut and plate.
2. Provide hardened washers ASTM F436.
3. Provide a pair of hex nuts, snugged against one another to be used to set plate to desired grade after plate rotation has been achieved.
4. ASTM F1554 Grade 105 threaded anchor rods. Rod may be threaded over its entire length or only in those areas requiring the installation of a nut. Diameter is 1.5".
5. Provide 4"x15" Wilson or Contec anchor sleeves with 10" concrete embedment. Cut off top of sleeve and fill void between sleeve and rod with Polyurethane foam sealant as manufactured by Dow or, equal, after concrete has cured.
6. Girder Support Detail, on this sheet, incidental to structural steel pay items.
7. In addition to supporting the steel girders at erection, anchor rods installed as part of the girder support detail provide measured resistance to vertical, lateral and rotational movement of the deck system relative to the abutment. These anchor rods are part of the fully constructed structural system for the bridge.
8. It is the Contractor's responsibility to evaluate the girder support detail for temporary construction loads and to determine if temporary blocking/bracing is required.

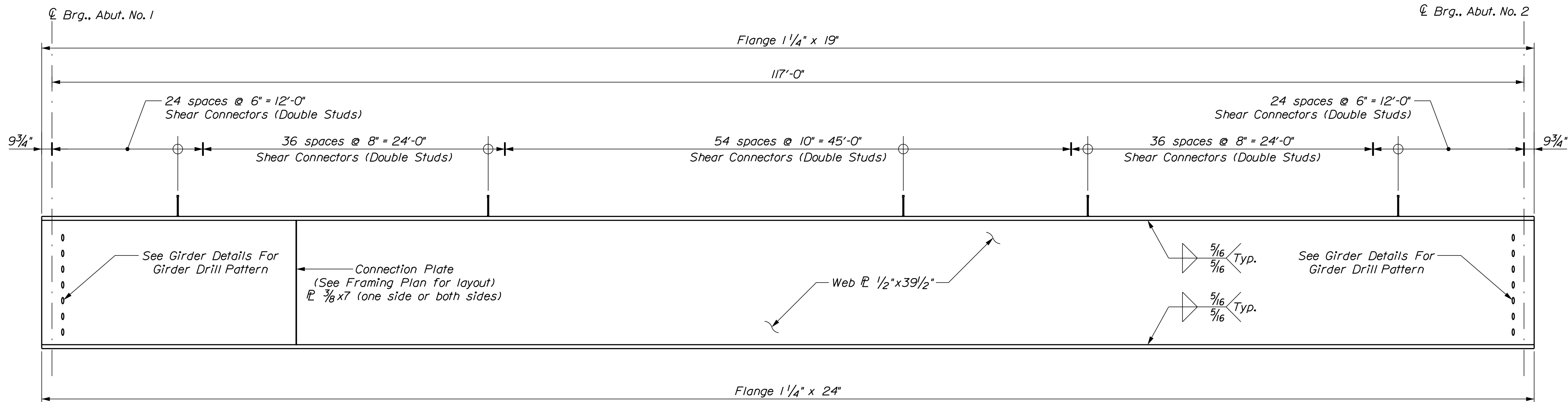


Bottom of Girder Flange Elevation at the Centerline of Backwall and Centerline of Girder					
	G1	G2	G3	G4	G5
Abutment No. 1	507.03	507.21	507.40	507.27	507.15
Abutment No. 2	506.23	506.42	506.60	506.48	506.35

STATE OF MAINE DEPARTMENT OF TRANSPORTATION 18952.00	BRIDGE NO. 2313 WIN 18952.00 BRIDGE PLANS
GILMAN BRIDGE EAST BRANCH WESSERUNSETT STREAM ATHENS SOMERSET COUNTY	GIRDER SUPPORT DETAILS
SHEET NUMBER 23 OF 32	



FRAMING PLAN



GIRDER ELEVATION
350 Total Shear Connectors Per Girder;
1752 Total Shear Connectors
(2 at Pile SW)

STRUCTURAL STEEL NOTES

1. Camber ordinates, as shown, are computed to compensate for all dead load deflections.
2. Detailing and fabrication of structural steel girders, diaphragms and web plates shall assume a fully deflected condition with all dead load applied.
3. No transverse butt weld splices will be allowed in the flange plates or web plates.
4. Bearing stiffeners shall be plumb after erection and dead loading of the structure. Intermediate web stiffeners may be either plumb or normal to the top flange.
5. Cross-frame or diaphragm connection plates may be either plumb or normal to the top flange.
6. Coat girder ends to a distance of 10 feet from each abutment centerline of bearing in accordance with Section 506, Shop Applied Protective Coating - Steel (Zinc Rich Coating System), except NEPCOAT Qualified Products List C may be used. The color shall be Federal Standard 595B, Color No. 30045 (Brown). Payment for painting of girder ends is incidental to other items.
7. After placement of the superstructure concrete, thoroughly clean the abutments of all stains with a method approved by the Resident. Payment will be considered incidental to related Contract items.
8. During installation of diaphragms and cross-frames uplift, may occur at bridge corners.
9. Girder ends to be clipped to fit within skewed backwall. Clip geometry to be approved through the Working Drawings submittal.

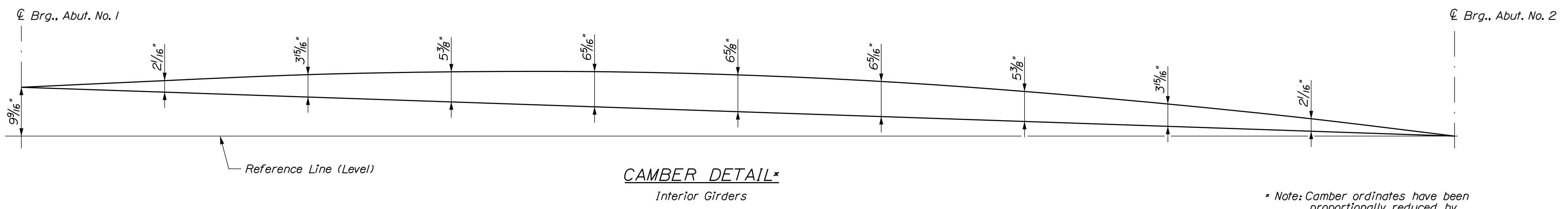
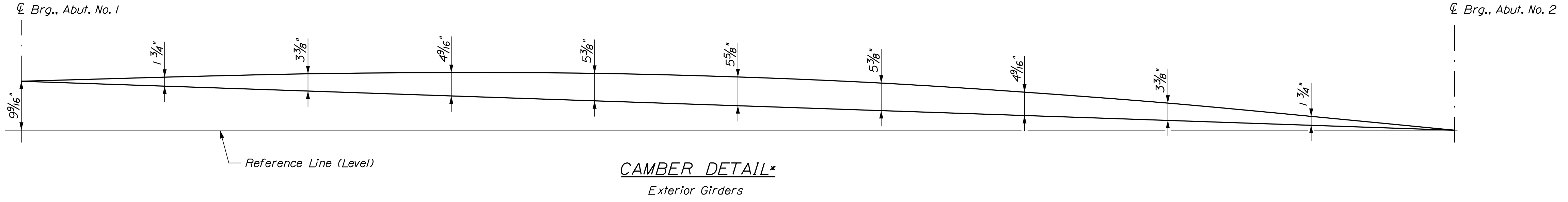
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	18952.00	WIN 18952.00
	BRIDGE NO. 2313	BRIDGE PLANS

PROJ. MANAGER	DATE
DESIGN DETAILED	SEP 2019
CHECKED/REVIEWED	SEP 2019
DESIGN DETAILED	OCT 2016
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

BY	DATE
A. PARADIS	SEP 2019
R. MYERS	SEP 2019
T. WHITE	OCT 2016
PROJ. MANAGER	
DATE	

GILMAN BRIDGE EAST BRANCH WESERUNSETT STREAM ATHENS SOMERSET COUNTY	FRAMING PLAN AND STRUCTURAL STEEL DETAILS
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SHEET NUMBER	24
	OF 32



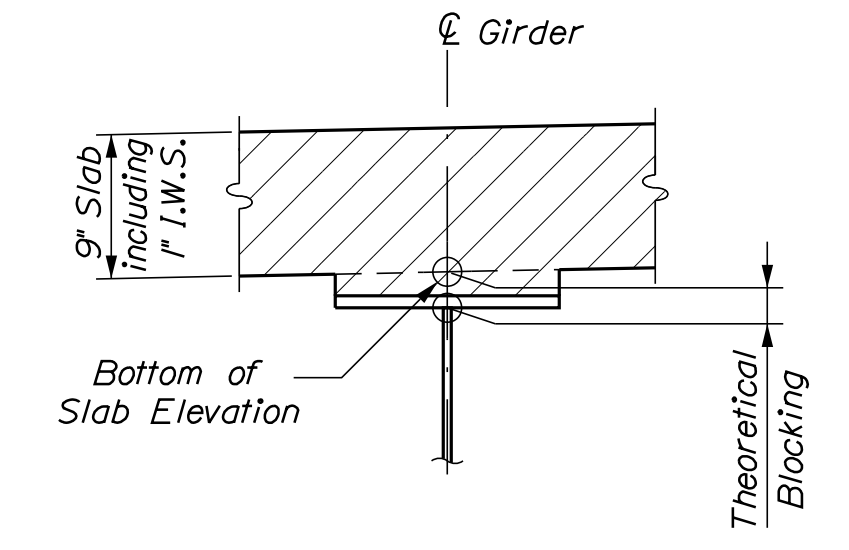
* Note: Camber ordinates have been proportionally reduced by 0.5" at mid-span.

Bottom of Slab Elevations in Feet

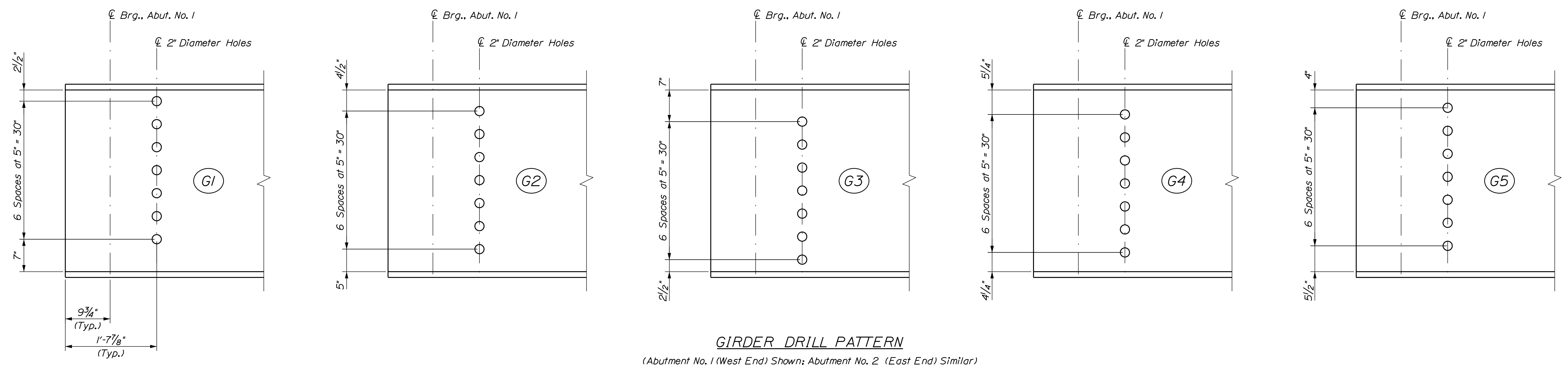
Girder	Abut. No. 1	1st Tenth	2nd Tenth	3rd Tenth	4th Tenth	Midspan	6th Tenth	7th Tenth	8th Tenth	9th Tenth	Abut. No. 2
	0	11.70	23.40	35.10	46.80	58.50	70.20	81.90	93.60	105.30	117.00
G1	510.65	510.70	510.72	510.73	510.70	510.64	510.55	510.41	510.25	510.06	509.86
G2	510.84	510.90	510.96	510.98	510.96	510.91	510.81	510.66	510.48	510.27	510.04
G3	511.02	511.09	511.14	511.16	511.15	511.09	510.99	510.84	510.66	510.45	510.22
G4	510.90	510.96	511.02	511.04	511.03	510.97	510.87	510.72	510.54	510.33	510.10
G5	510.77	510.82	510.84	510.85	510.82	510.76	510.67	510.53	510.37	510.18	509.98

Table of Deflections - Exterior and Interior girders in Inches

	Dead Load	Abut. No. 1	1st Tenth	2nd Tenth	3rd Tenth	4th Tenth	Midspan	6th Tenth	7th Tenth	8th Tenth	9th Tenth	Abut. No. 2
	0.00	0.47	0.89	1.22	1.42	1.49	1.42	1.22	0.89	0.47	0.00	
	0.00	1.34	2.53	3.47	4.06	4.26	4.06	3.47	2.53	1.34	0.00	
	0.00	0.12	0.23	0.32	0.37	0.39	0.37	0.32	0.23	0.12	0.00	
	0.00	0.48	0.90	1.23	1.44	1.52	1.44	1.23	0.90	0.48	0.00	
	0.00	1.65	3.12	4.28	5.01	5.26	5.01	4.28	3.12	1.65	0.00	
	0.00	0.12	0.22	0.30	0.35	0.37	0.35	0.30	0.22	0.12	0.00	



BLOCKING DETAIL
Theoretical blocking is 2 3/4" at \bar{C} Bridge Abutments.
(Do not use theoretical blocking to set forms.)



GIRDER DRILL PATTERN
(Abutment No. 1 (West End) Shown; Abutment No. 2 (East End) Similar)

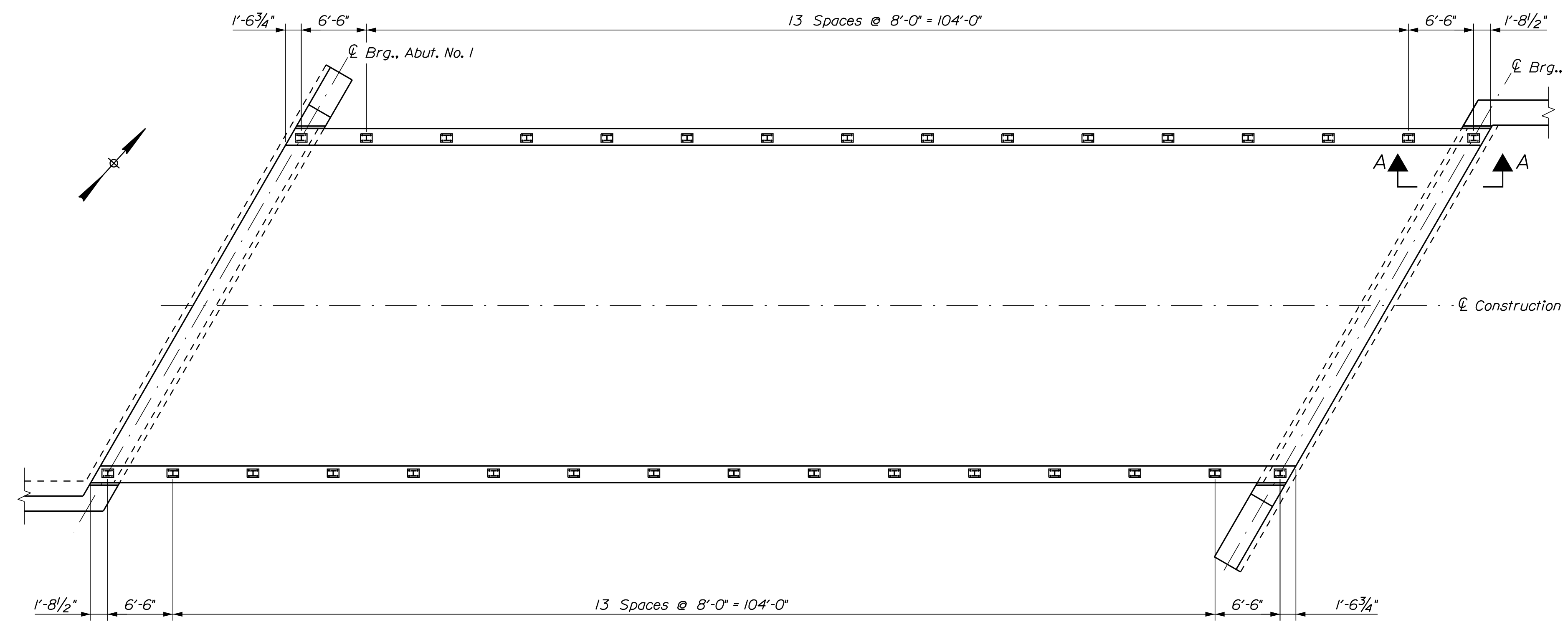
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		18952.00	
BRIDGE NO. 2313		WIN 18952.00	
GILMAN BRIDGE EAST BRANCH WESERUNSETT STREAM ATHENS SOMERSET COUNTY		GIRDER DETAILS	
SHEET NUMBER		25	
OF 32		BRIDGE PLANS	

Date: 9/25/2019

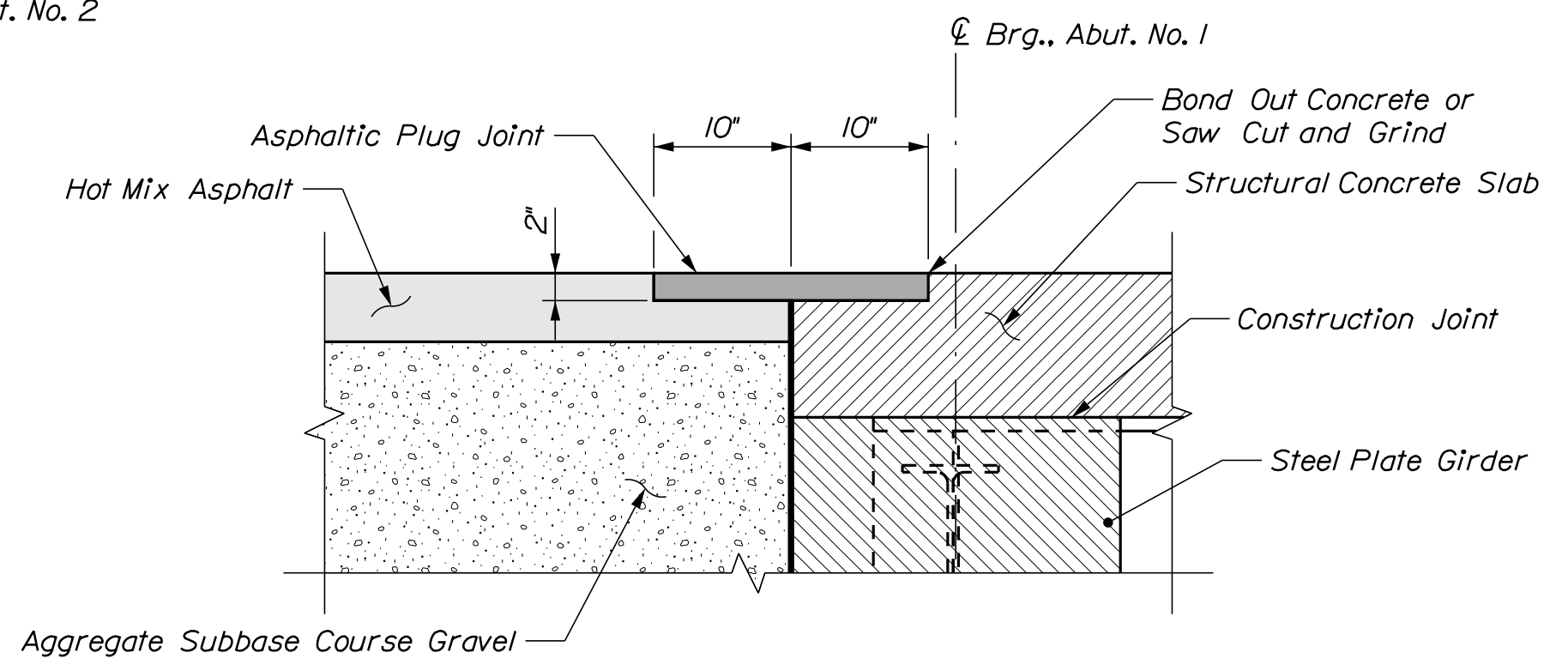
Username: armand.i.paradis

Division: BRIDGE

Filename: ... \MSTA\026_Superstructure.dgn



SUPERSTRUCTURE PLAN

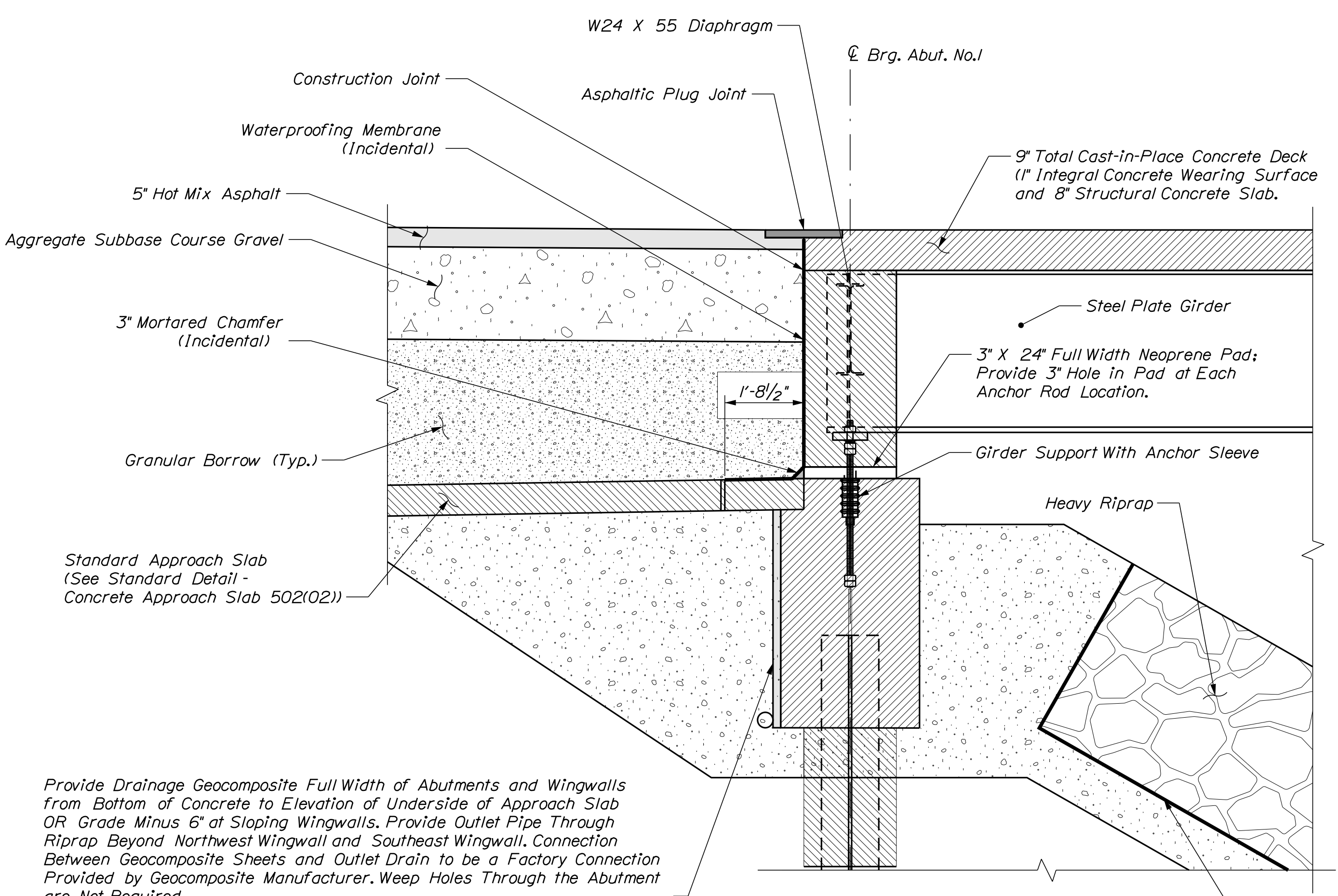


ASPHALTIC PLUG JOINT SECTION

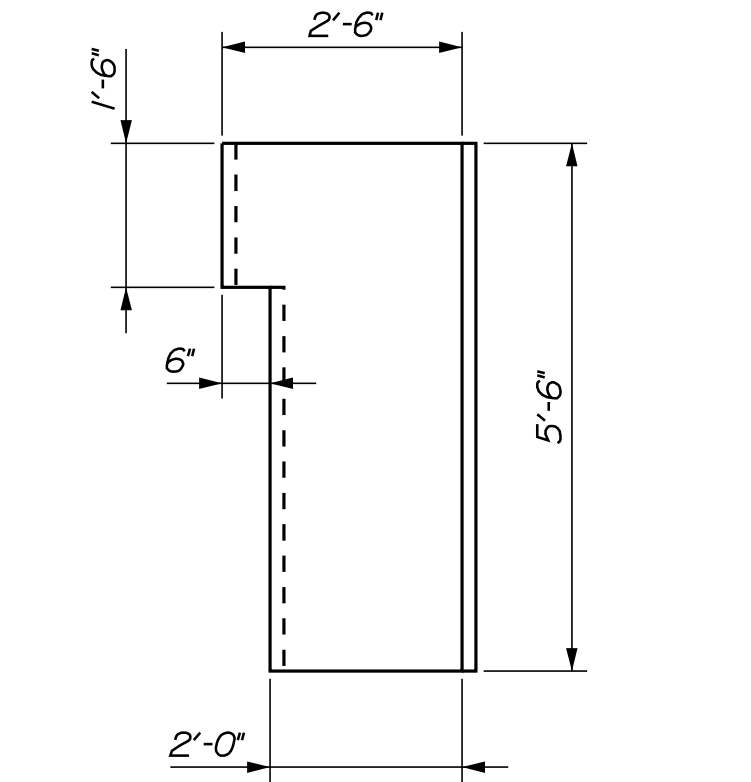
Abutment #1 Shown, Abutment #2 Similar
Asphaltic Plug Joint Applies From Curb to Curb
(Section Drawn Normal to Abutment)

SUPERSTRUCTURE NOTES

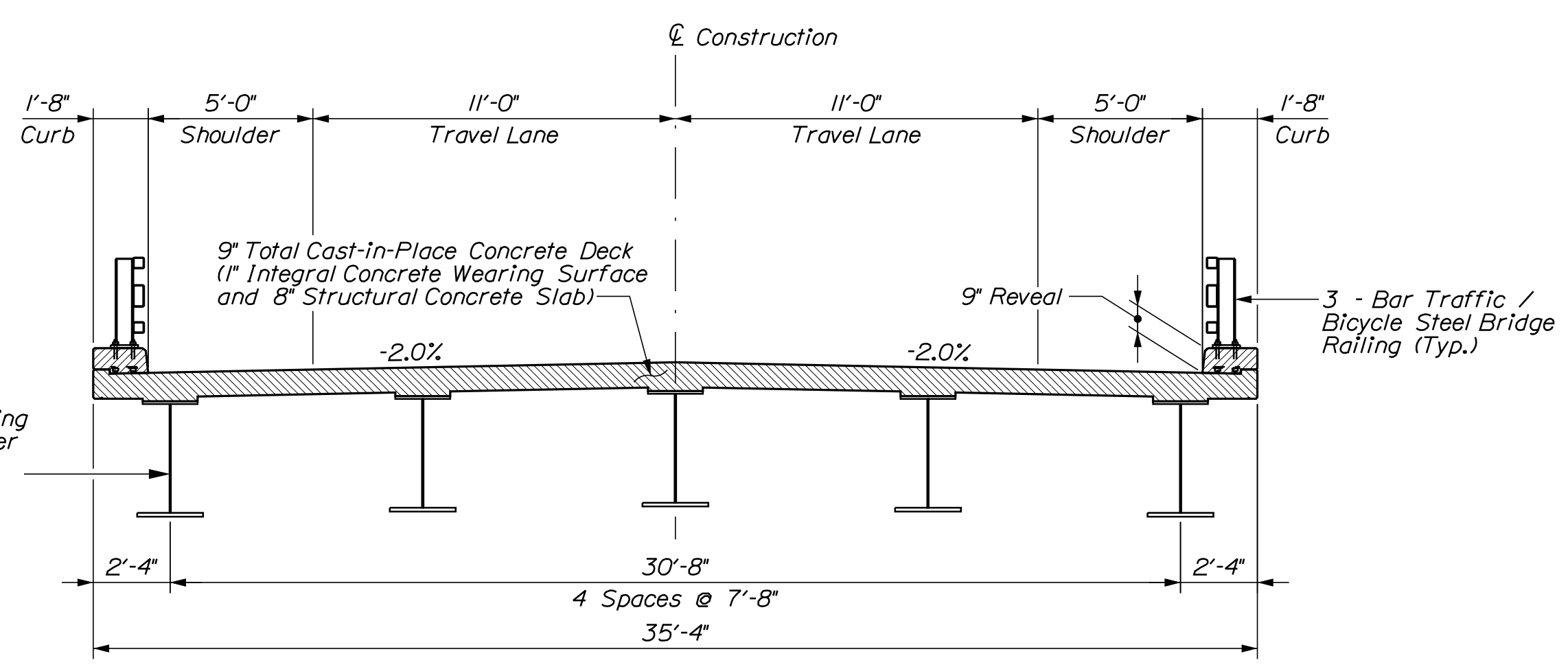
1. The Blocking Dimension used for design of the structure is 2.75' from underside of slab to top of girder web at the centerline of bearing of the abutments. Refer to Standard Detail 502(03) for blocking details.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
4. The superstructure slab concrete (second placement) shall be placed continuously and shall be kept plastic until the entire placement has been made.
5. Precast Deck Panels are not allowed.
6. Standard specification 502.13(F) Transverse Saw Cut Grooving of Concrete Wearing Surfaces shall apply except that the direction shall be changed from transverse to longitudinal.
7. Outrigger form brackets supporting concrete deck placement on the outside of the exterior girders shall bear the bottom of the compression strut at the junction of the web and the bottom flange.
8. Bridging plate and backer rod specified in Section 520 - Asphaltic Plug Joint are not required.
9. Anchor rods for the steel bridge rail posts shall be shortened by 1" from the Standard Details to provide clearance between the top of the deck and bottom of the anchor rod.
10. Flexible Closure material to be W.R. Meadows Sof-Seal. Material is liquid when applied and adheres strongly to surfaces when cured. Apply form release material to forms but leave concrete surfaces clean. Forms should be caulked to prevent leakage of liquid closure material at time of placement. See manufacturer's instructions for curing time and mixing procedure. Payment for material and installation will be considered incidental to related Contract Items.



ABUTMENT NO. 1 DETAIL
(Abut. No. 2 Similar)



SECTION A-A FLEXIBLE CLOSURE DETAIL

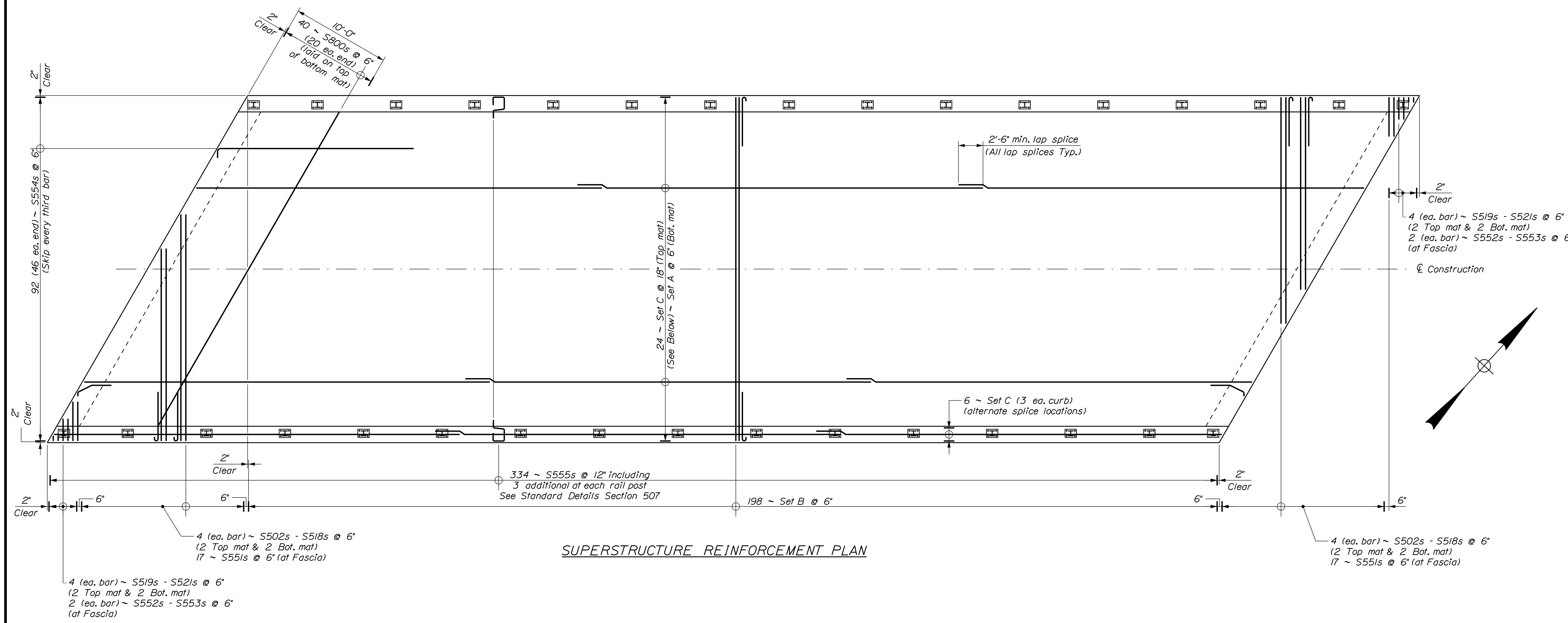


TYPICAL BRIDGE SECTION

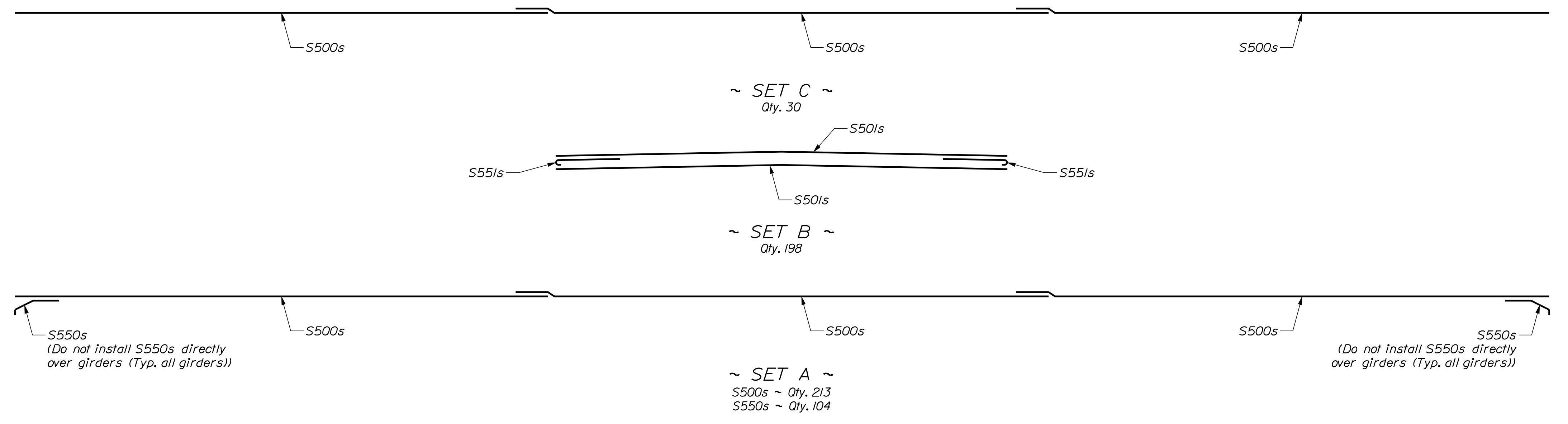
Provide Drainage Geocomposite Full Width of Abutments and Wingwalls from Bottom of Concrete to Elevation of Underside of Approach Slab OR Grade Minus 6" at Sloping Wingwalls. Provide Outlet Pipe Through Riprap Beyond Northwest Wingwall and Southeast Wingwall. Connection Between Geocomposite Sheets and Outlet Drain to be a Factory Connection Provided by Geocomposite Manufacturer. Weep Holes Through the Abutment are Not Required.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 2313	
18952.00		WIN		18952.00	
GILMAN BRIDGE		EAST BRANCH WESERUNSETT STREAM		SOMERSET COUNTY	
ATHENS		SUPERSTRUCTURE PLANS		SHEET NUMBER	
26		OF 32		DATE	

PROJ. MANAGER	DATE	BY	DATE	SIGNATURE	P.E. NUMBER
DESIGN DETAILED	SEP 2019	A. PARADIS	SEP 2019		
CHECKED/REVIEWED	SEP 2019	R. MYERS	SEP 2019		
DESIGN DETAILED	OCT 2016	T. WHITE	OCT 2016		
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					



SUPERSTRUCTURE REINFORCEMENT PLAN



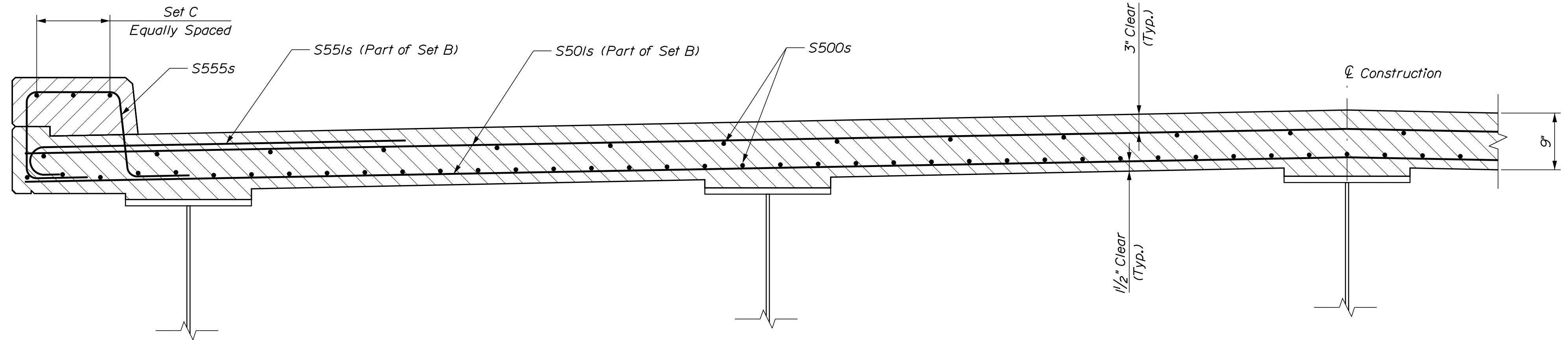
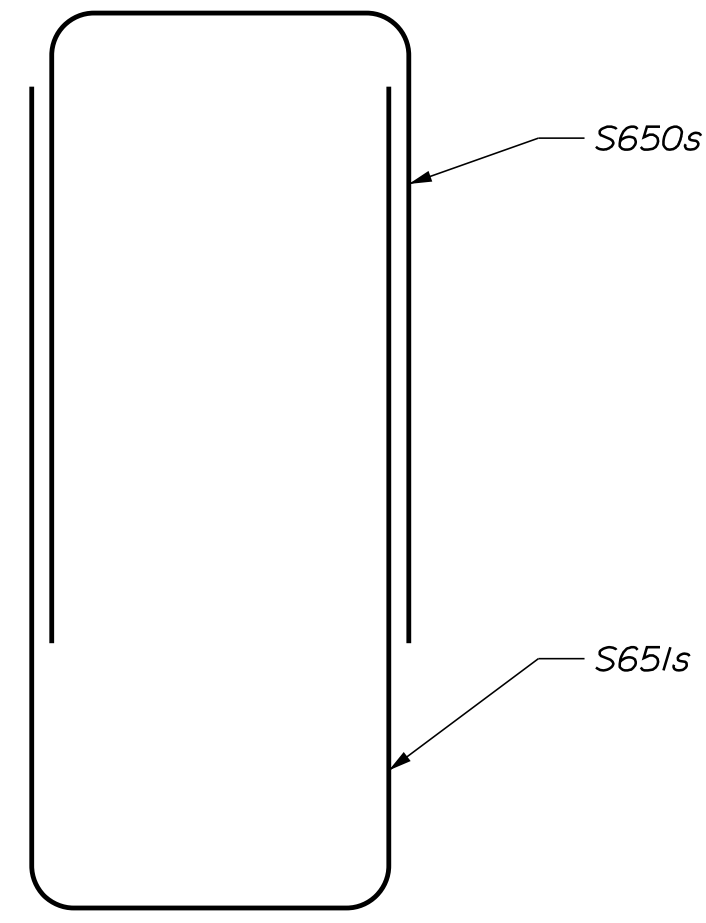
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		BRIDGE PLANS	
		18952.00		WIN	
		18952.00		BRIDGE NO. 2313	
GILMAN BRIDGE		EAST BRANCH WESERUNSETT STREAM		SHEET NUMBER	
ATHENS		SOMERSET COUNTY		27	
SUPERSTRUCTURE REBAR				OF 32	
PROJ. MANAGER	MIKE WRIGHT	BY	DATE	SIGNATURE	P.E. NUMBER
DESIGN-DETAILED	L. GRAY	A. PARADIS	SEP 2019		
CHECKED-REVIEWED	R. MYERS	R. MYERS	SEP 2019		
DESIGN-DETAILED	B. SLAVEN	T. WHITE	OCT 2016		
REVISIONS 1					
REVISIONS 2					
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REVISIONS 4					
FIELD CHANGES					

Date: 9/23/2019

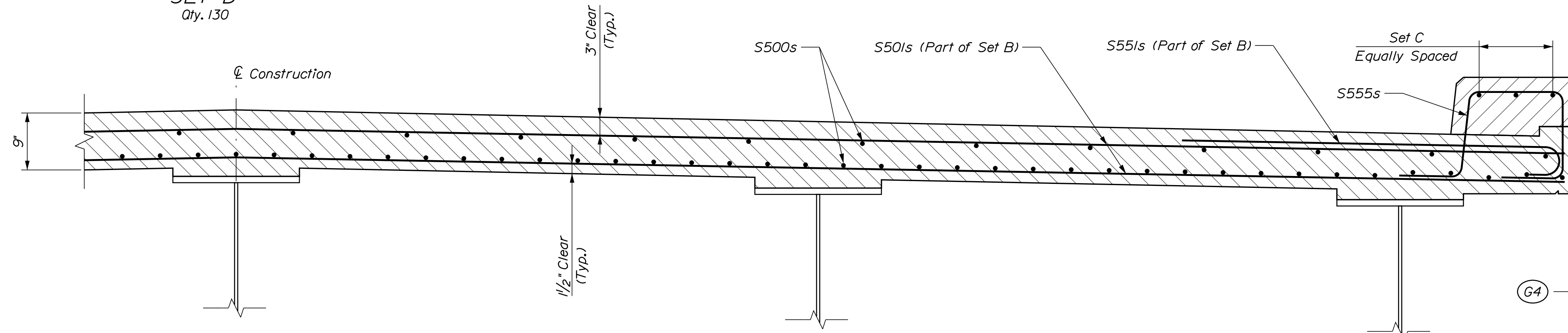
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Division: BRIDGE

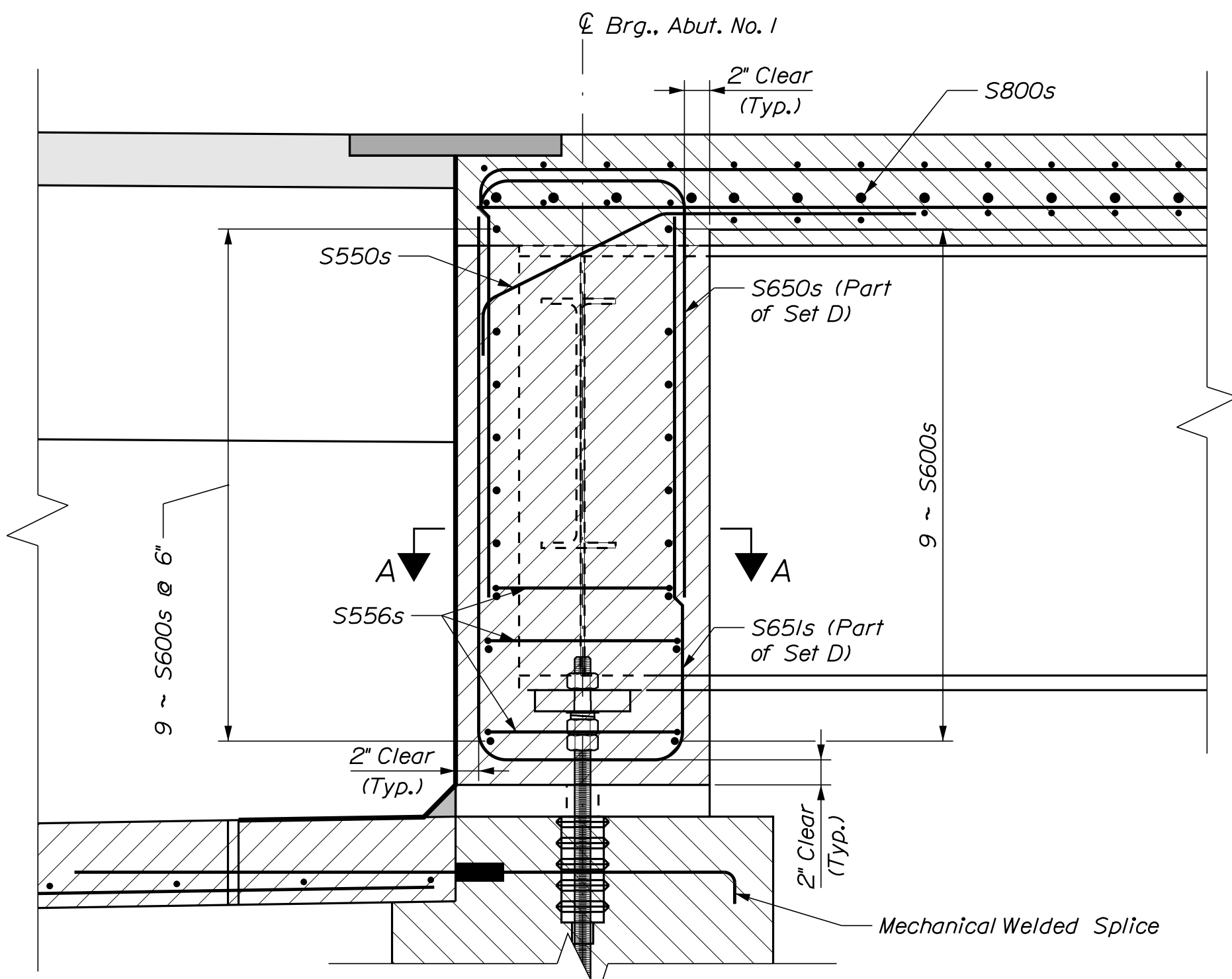
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SUPERSTRUCTURE SECTION
North Portion



SUPERSTRUCTURE SECTION
South Portion

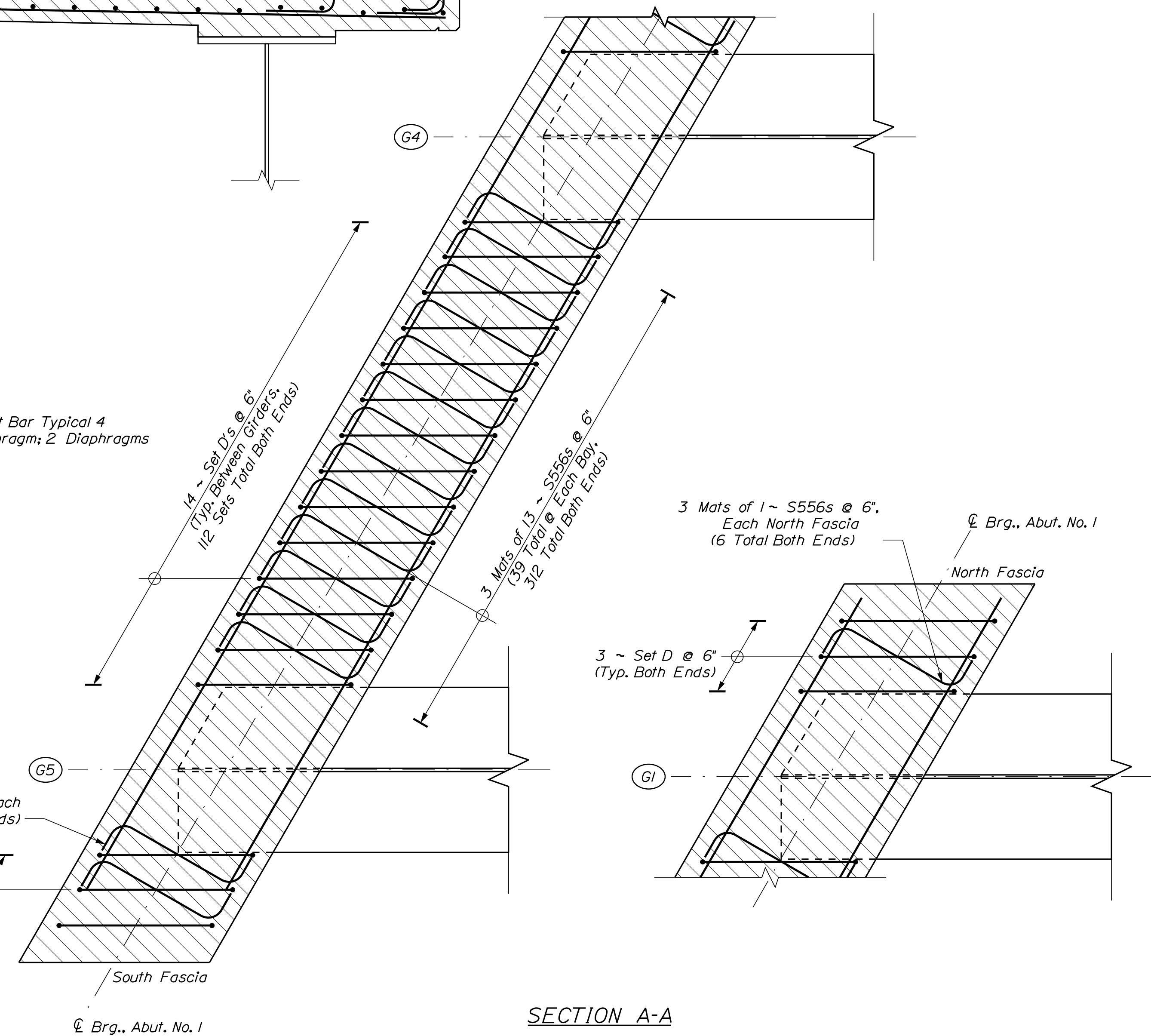


END DIAPHRAGM SECTION AT CONSTRUCTION
(Abutment No. 1 Shown; Abutment No. 2 Similar)

Note: Reinforcement Bar Typical 4
Places Each Diaphragm; 2 Diaphragms
Similar On Bridge

3 Mats of 2 ~ S556s @ 6", Each
South Fascia (12 Total Both Ends)

3 ~ Set D @ 6"
(Typ. Both Ends)



SECTION A-A
(Abutment No. 1 Shown; Abutment No. 2 Similar)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
18952.00
WIN
18952.00
BRIDGE NO. 2313
BRIDGE PLANS

PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	SEP 2019	A. PARADIS	SEP 2019
CHECKED-REVIEWED	SEP 2019	R. MYERS	SEP 2019
DESIGN-DETAILED	OCT 2016	T. WHITE	OCT 2016
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GILMAN BRIDGE
EAST BRANCH WESERUNSETT STREAM
ATHENS
SOMERSET COUNTY
SUPERSTRUCTURE SECTIONS

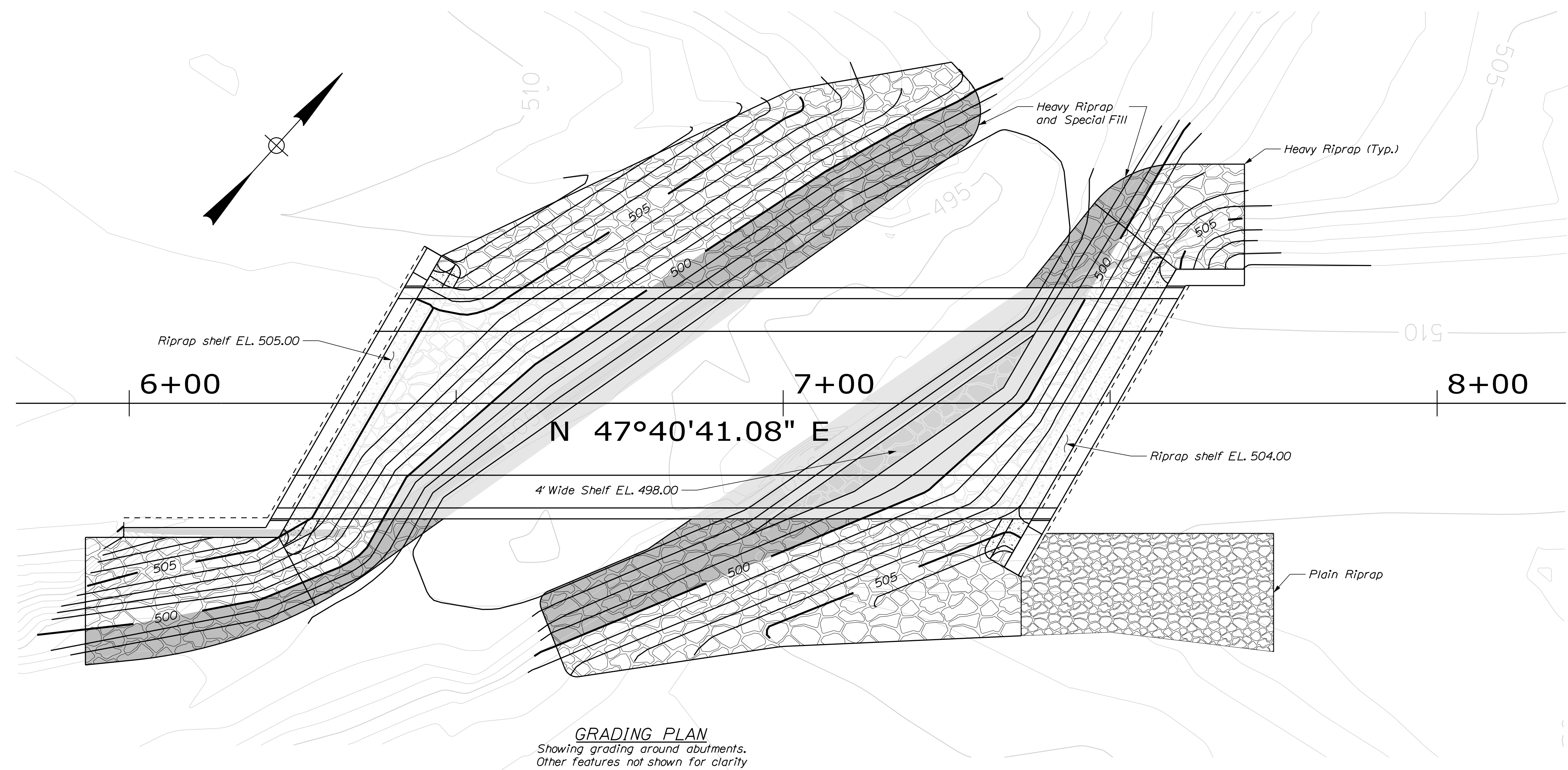
SHEET NUMBER
28
OF 32

Date: 9/23/2019

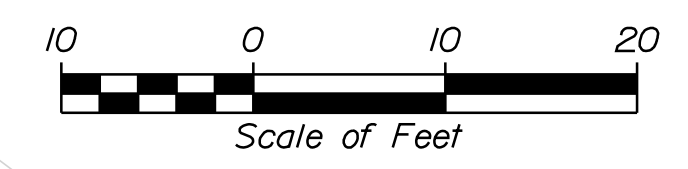
Username: David.Shaw

Division: BRIDGE

Filename: ... \MSTA\029_Grading_Plan.dgn



GRADING PLAN
 Showing grading around abutments.
 Other features not shown for clarity



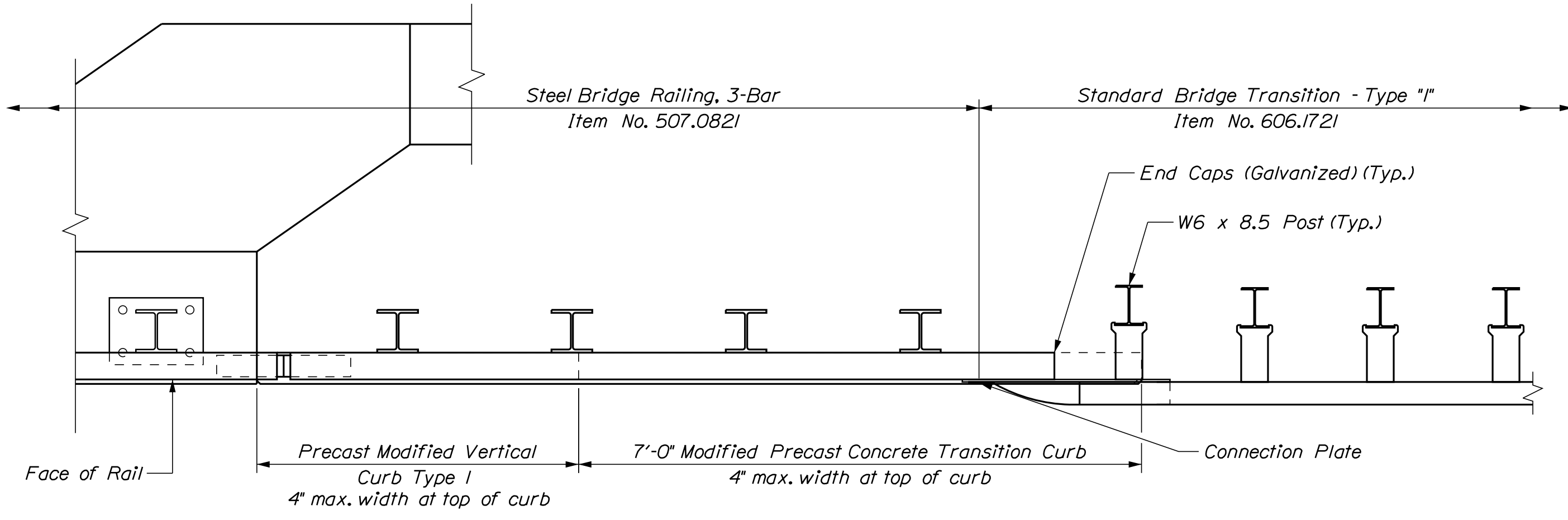
NOTES:

1. Heavy Riprap (4 feet thick) will be placed below elevation 505.0 and Plain Riprap (3 feet thick) will be placed above elevation 505.0.
2. Special Fill (Heavy Riprap with voids filled with streambed gravel) is applied to portions of Heavy Riprap installation. See Special Provisions.
3. See Profile Sheet for section.
4. Fill voids in Heavy Riprap below elevation 500.0 with Special Fill.

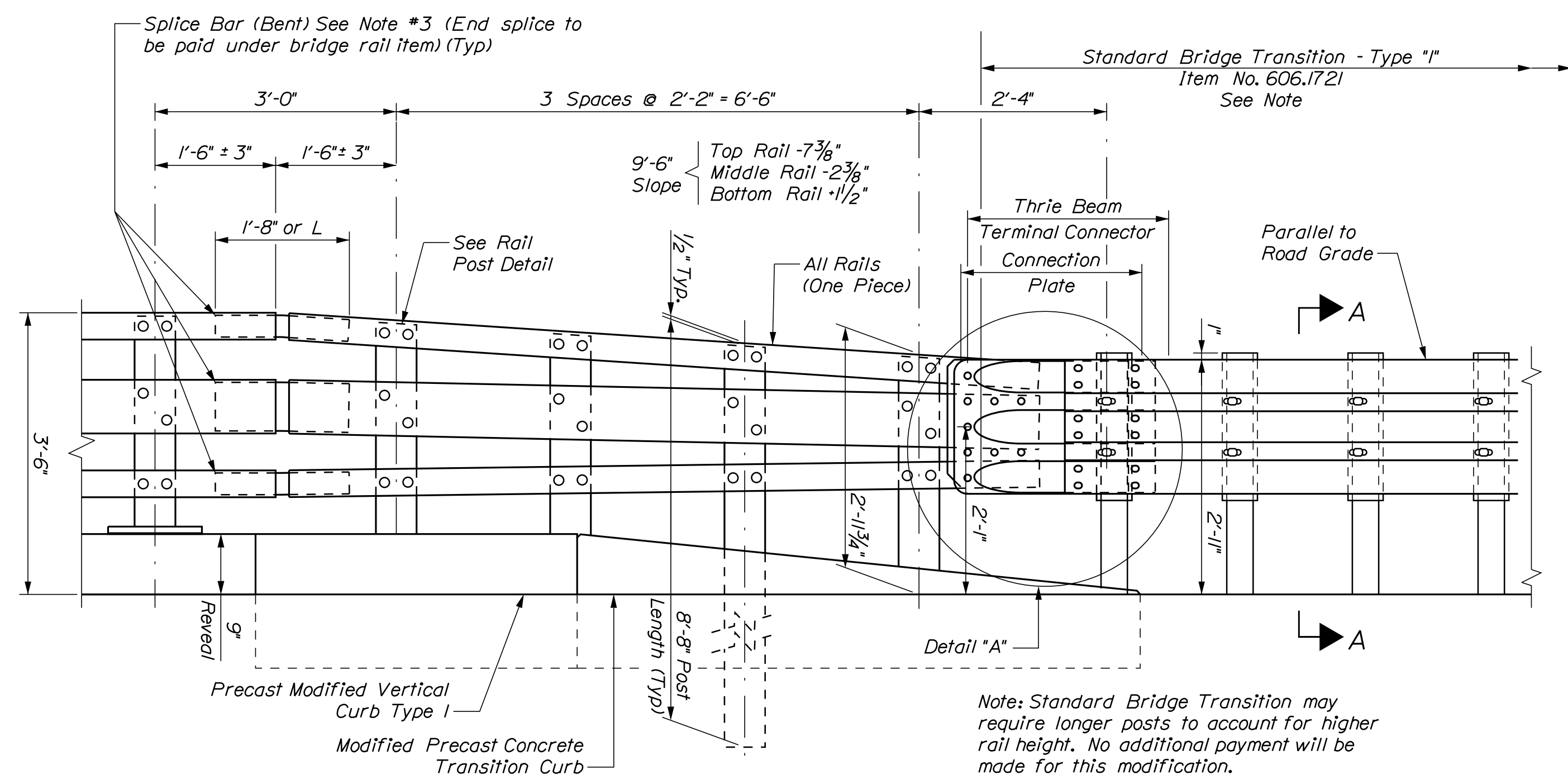
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		18952.00	
GILMAN BRIDGE		EAST BRANCH WESSERUNSETT STREAM		ATHENS	
SOMERSET COUNTY		GRADING PLAN		SHEET NUMBER	
29		OF 32		BRIDGE NO. 2313	
WIN		18952.00		BRIDGE PLANS	

PROJ. MANAGER	MIKE WRIGHT	BY	DATE	SIGNATURE	P.E. NUMBER
DESIGN DETAILED	M. GRAY	A. PARADIS	SEP 2019		
CHECKED/REVIEWED	BSE	R. MYERS	SEP 2019		
DESIGN DETAILED	B.S. LAVEN	T. WHITE	OCT 2016		
REVISIONS	1				
REVISIONS	2				
REVISIONS	3				
REVISIONS	4				
FIELD CHANGES					

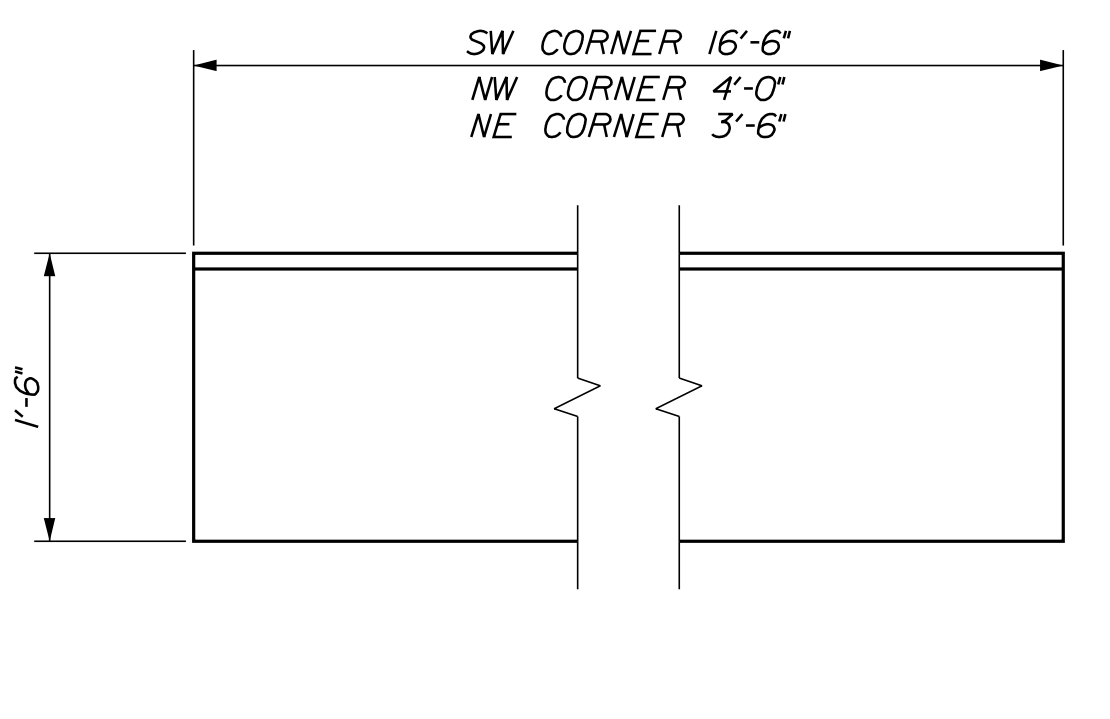
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 Division: BRIDGE
 Username: armand.i.paradis
 Date: 9/25/2019



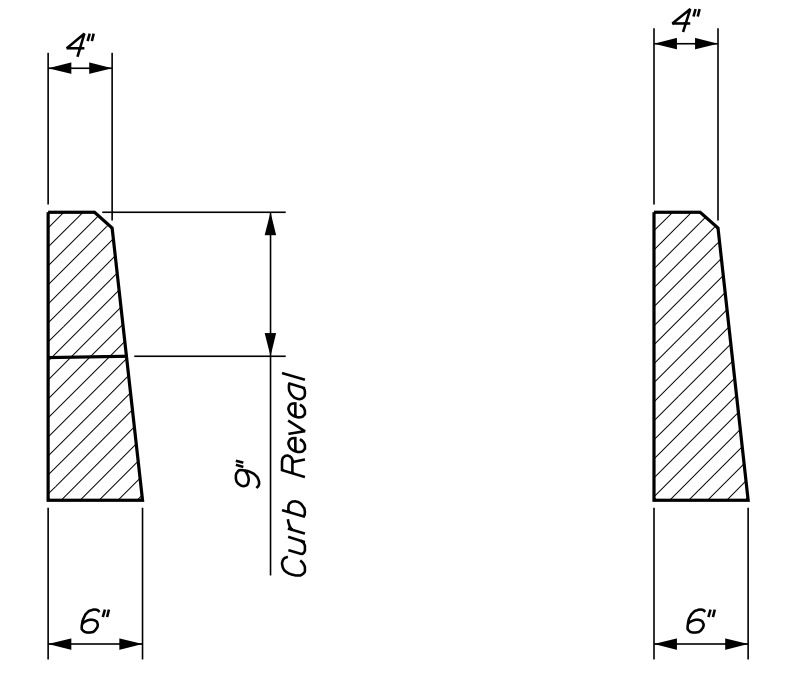
PLAN VIEW: STEEL BRIDGE RAILING, 3-BAR



ELEVATION VIEW- STEEL BRIDGE RAILING, 3-BAR



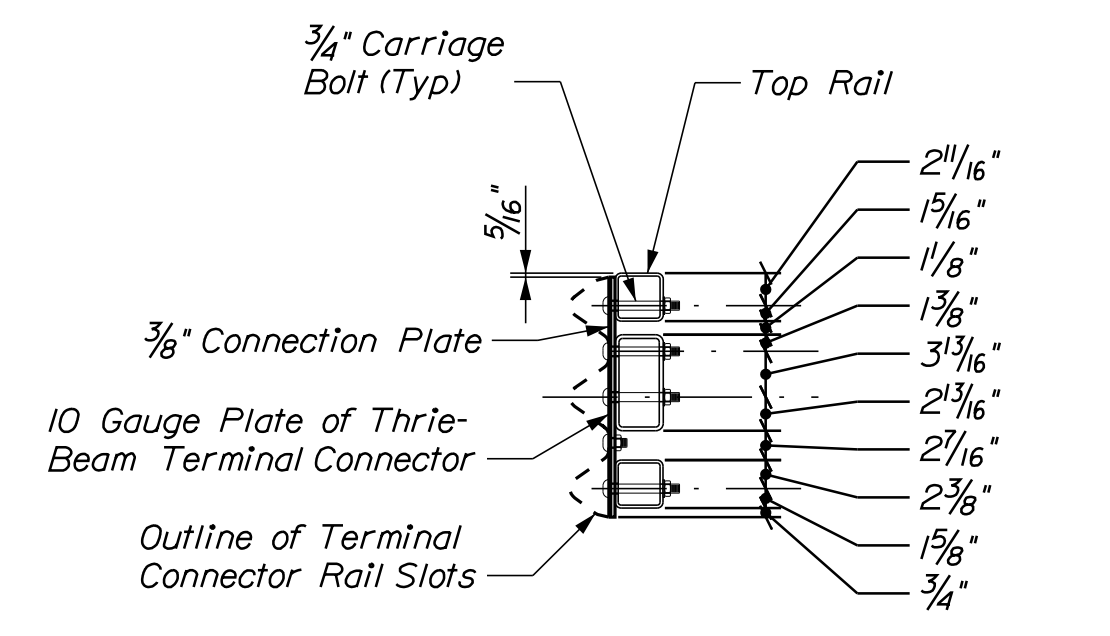
PRECAST MODIFIED VERTICAL CURB TYPE I



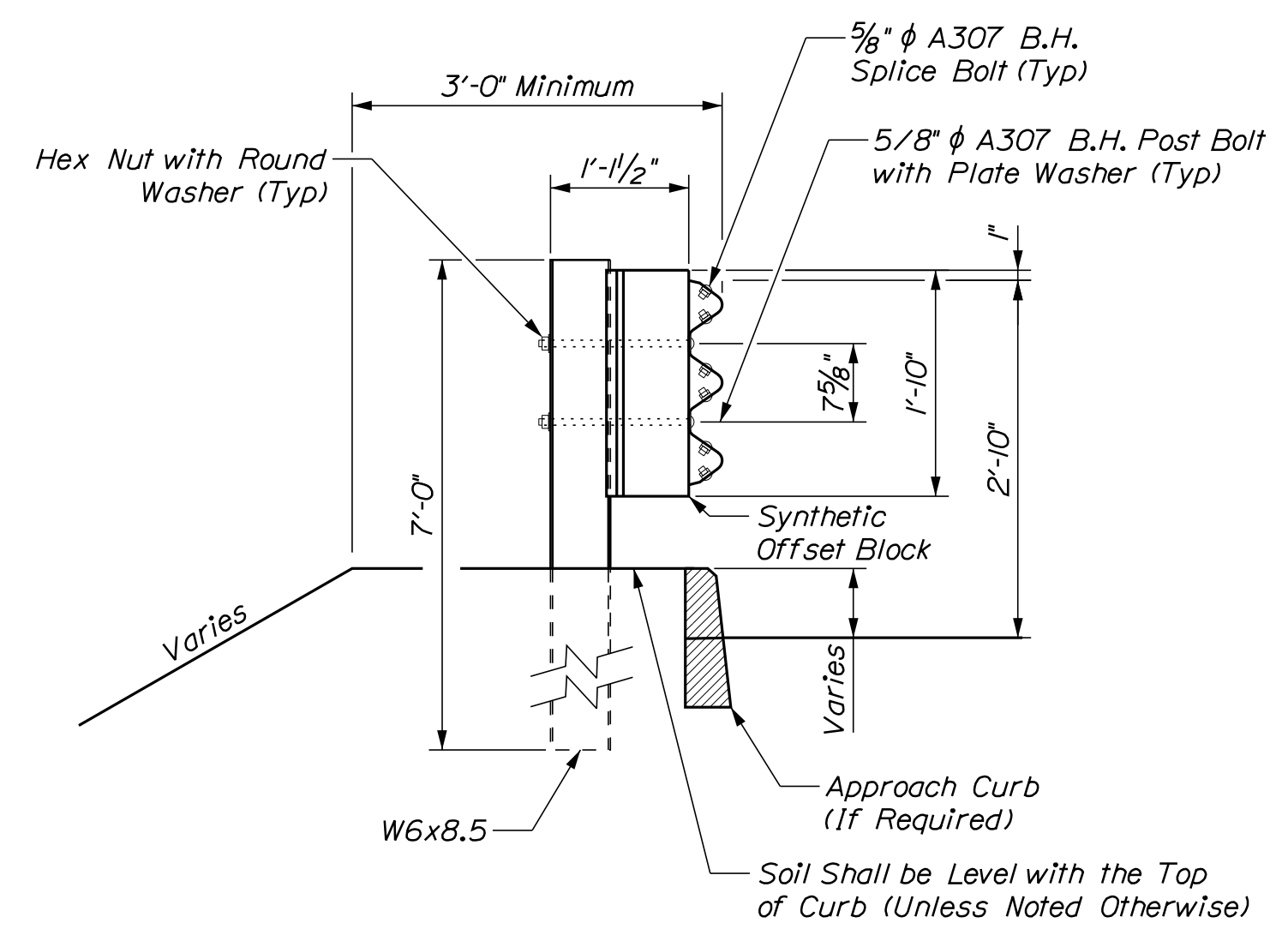
MODIFIED PRECAST CONCRETE TRANSITION CURB

NOTES

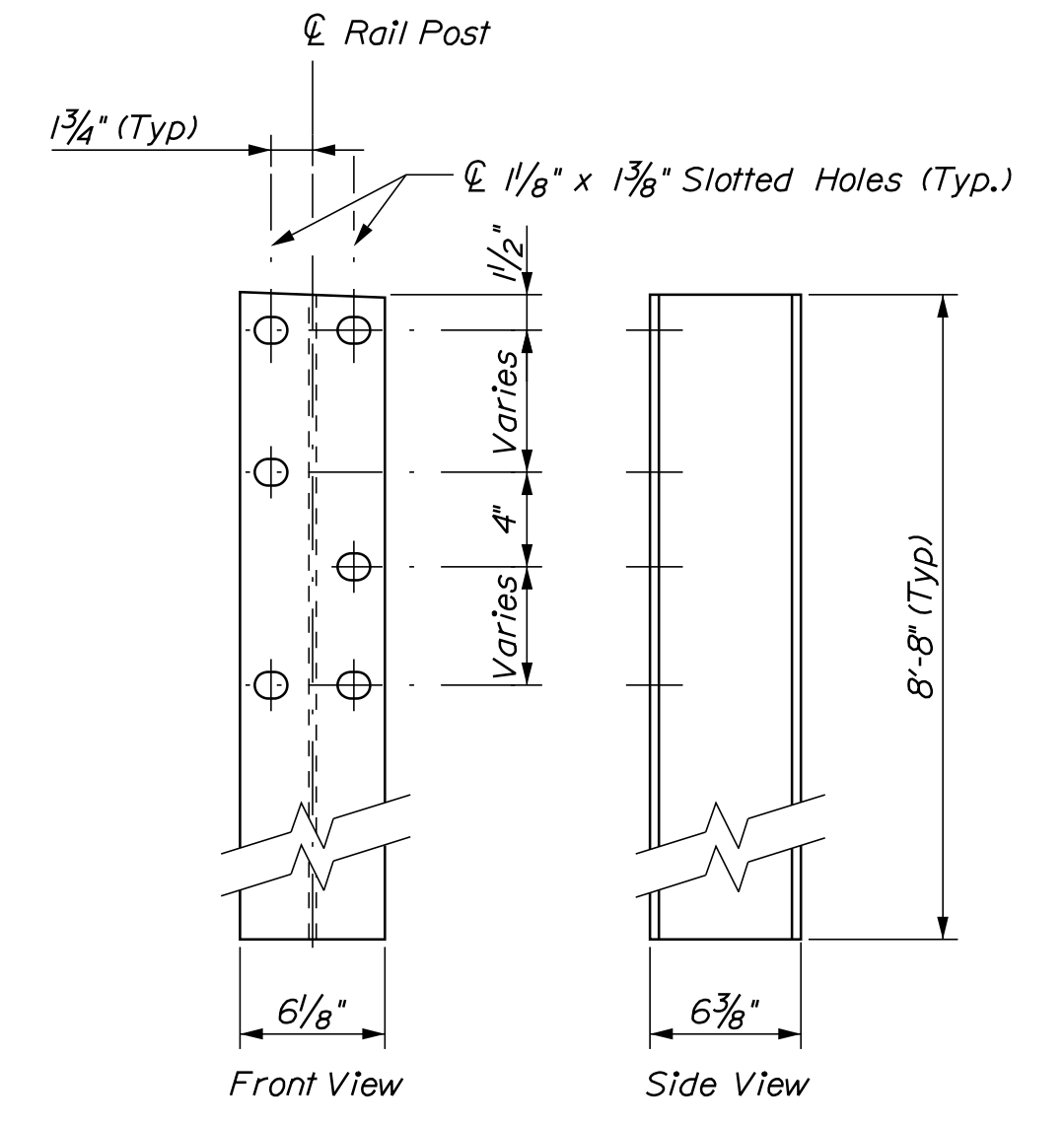
1. All bridge approach rail materials, dimensions, sizes, and notes shall be the same as those of the bridge rail, unless otherwise noted.
2. Carriage bolts shall be ASTM A307, and nuts shall be ASTM A563 Grade A or better (galvanized).
3. Weld splice bar to fit bend. Use complete joint penetration butt weld (B-U2).
4. Precast concrete curbs will not be paid for separately, but shall be considered incidental to other items.



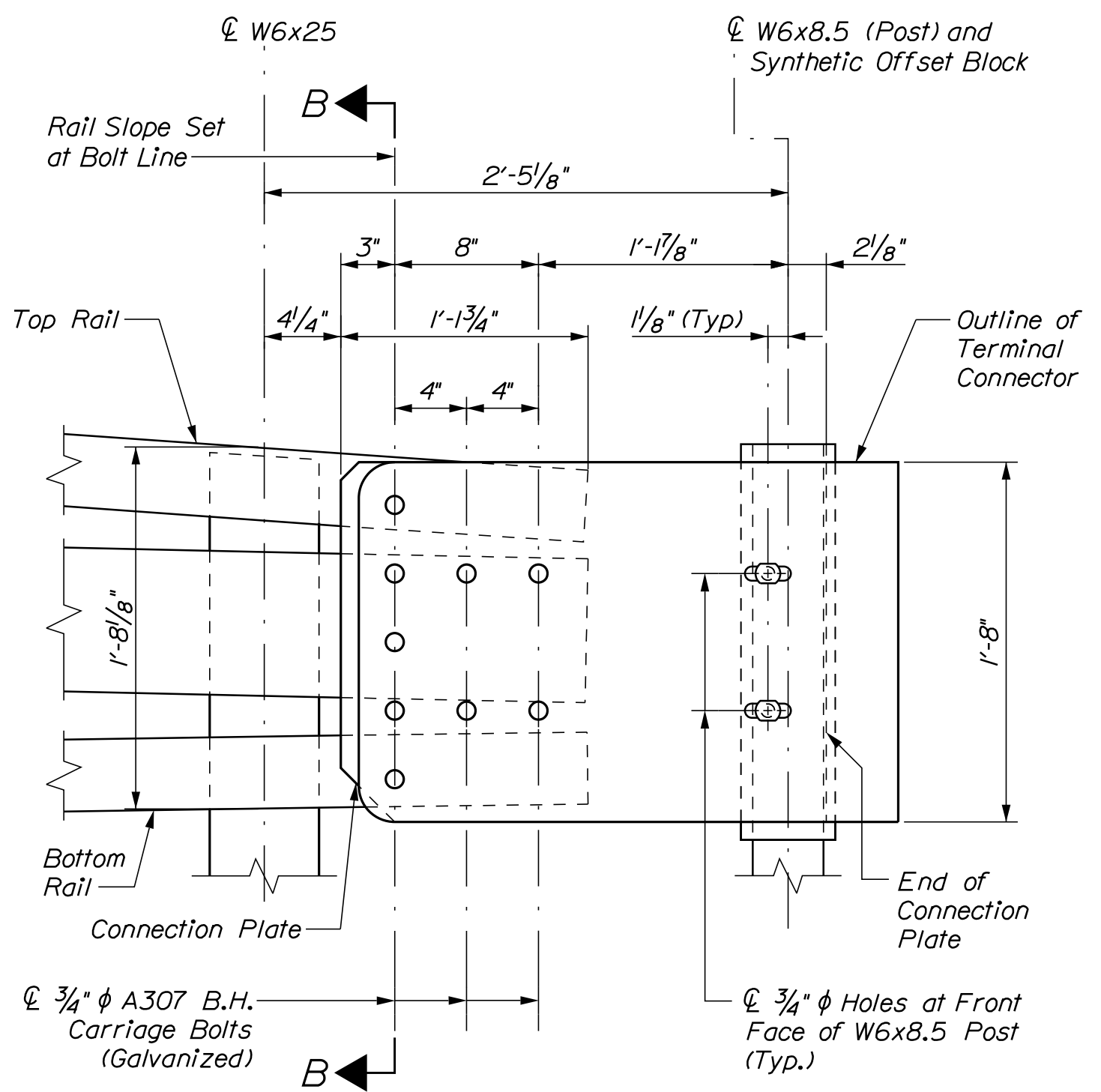
SECTION B-B (CONNECTION PLATE)



SECTION A-A (POST RAIL ASSEMBLY)

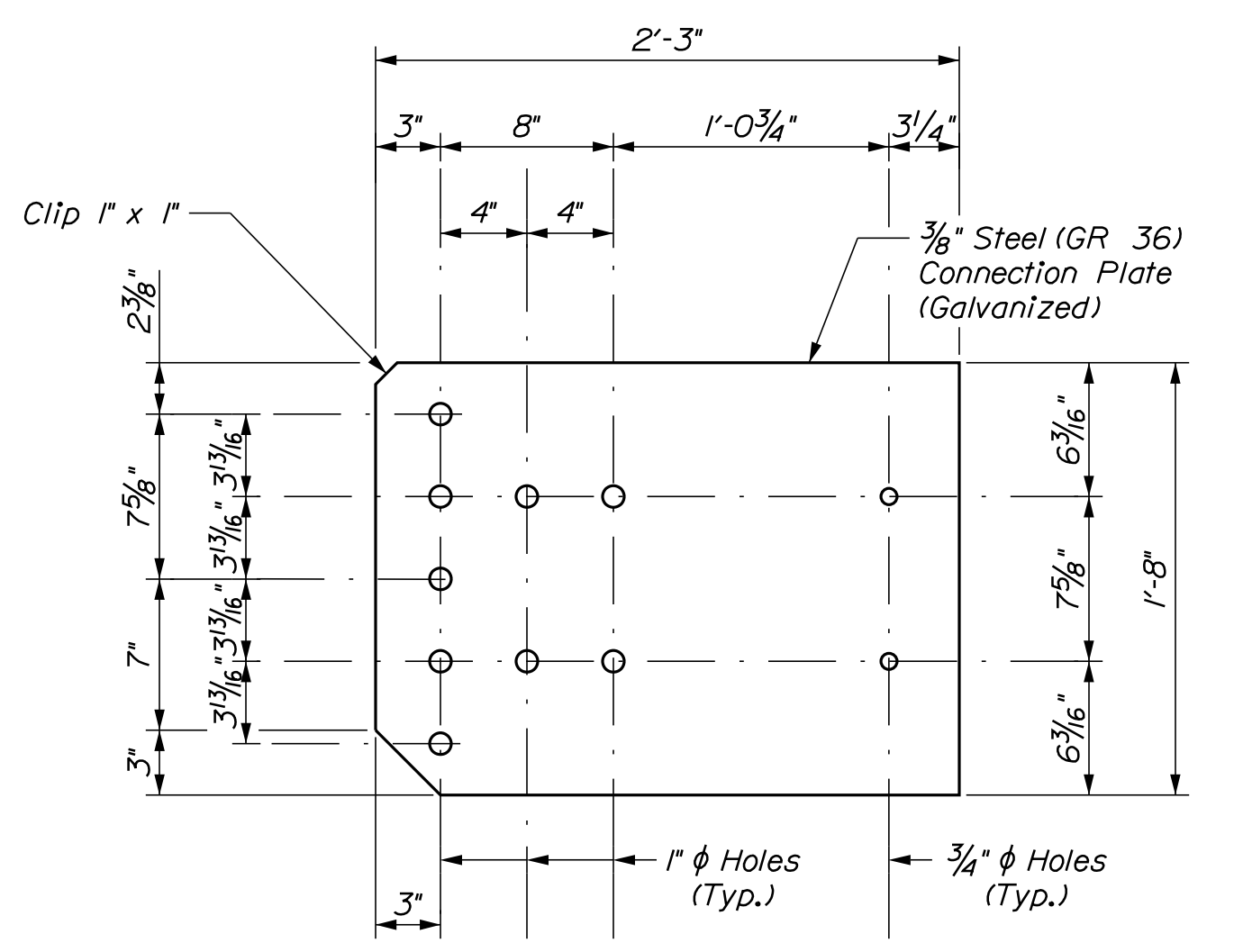


RAIL POST (W6x25)



DETAIL A

(Overlapping of Double Nested Thrie-Beam not Shown for Clarity)



CONNECTION PLATE

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 2313		BRIDGE PLANS	
		18952.00		WIN		18952.00	
PROJ. MANAGER	MIKE WIGHT	BY	DATE	DESIGN DETAILED	A. PARADIS	SEP 2019	SIGNATURE
CHECKED/REVIEWED	BSE	R. MYERS	SEP 2019	DESIGN DETAILED	B.S. LAIVEN	OCT 2016	P.E. NUMBER
DESIGN DETAILED	B.S. LAIVEN	T. WHITE	OCT 2016	REVISIONS 1			DATE
REVISIONS 2				REVISIONS 3			
REVISIONS 4				FIELD CHANGES			
GILMAN BRIDGE				EAST BRANCH WESERUNSETT STREAM			
ATHENS				SOMERSET COUNTY			
STEEL BRIDGE RAILING				3-BAR			
SHEET NUMBER				30			
				OF 32			

Date: 9/23/2019

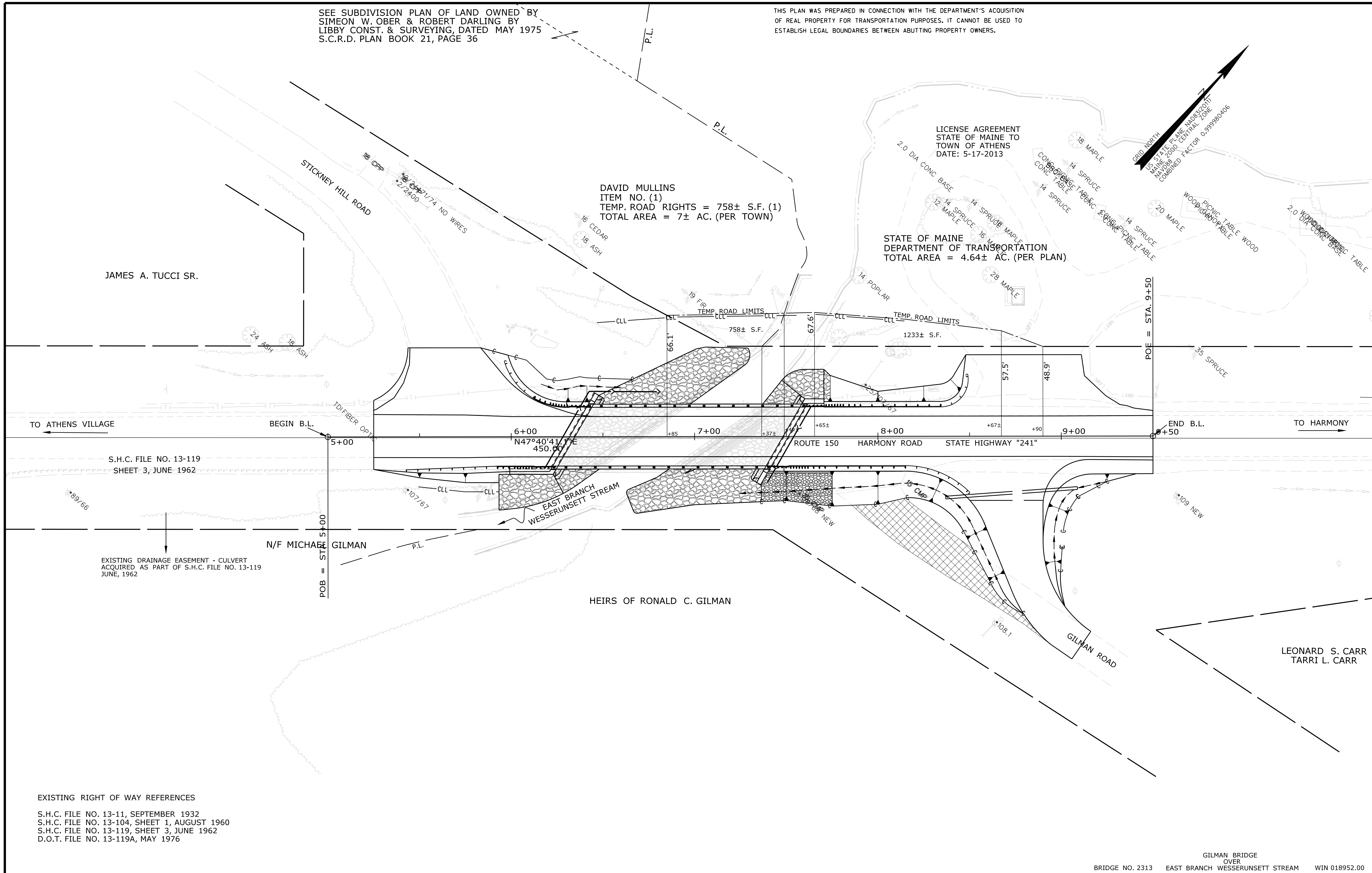
Username: David.Shaw

Division: BRIDGE

Filename: ... \MSTA\001_temproadlimits.dgn

SEE SUBDIVISION PLAN OF LAND OWNED BY SIMEON W. OBER & ROBERT DARLING BY LIBBY CONST. & SURVEYING, DATED MAY 1975 S.C.R.D. PLAN BOOK 21, PAGE 36

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ABUTTING PROPERTY OWNERS.



JAMES A. TUCCI SR.

DAVID MULLINS
ITEM NO. (1)
TEMP. ROAD RIGHTS = 758± S.F. (1)
TOTAL AREA = 7± AC. (PER TOWN)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
TOTAL AREA = 4.64± AC. (PER PLAN)

HEIRS OF RONALD C. GILMAN

LEONARD S. CARR
TARRI L. CARR

EXISTING RIGHT OF WAY REFERENCES
S.H.C. FILE NO. 13-11, SEPTEMBER 1932
S.H.C. FILE NO. 13-104, SHEET 1, AUGUST 1960
S.H.C. FILE NO. 13-119, SHEET 3, JUNE 1962
D.O.T. FILE NO. 13-119A, MAY 1976

GILMAN BRIDGE
OVER
BRIDGE NO. 2313 EAST BRANCH WESSERUNSETT STREAM WIN 018952.00

SYMBOLS

○	(WELL)
—	GRADING LIMIT LINE
—	CONSTRUCTION LIMIT LINE
—	PROPERTY LINE
—	LIMITS OF WROUGHT PORTION (L.O.W.P.)
—	EXISTING RIGHT OF WAY
—	NEW RIGHT OF WAY
—	NEW ROW WITHIN EXIST. ROW
—	CONTROL OF ACCESS
●	PIP (IRON PIPE OR PIN FOUND)
□	S.T. (SEPTIC TANK)
△	TRAVEL POINT
—	WATER LINE
—	GAS LINE
—	ELECTRIC LINE
—	TELEPHONE LINE
—	SEWER LINE

ITEM	TECH	CHECKED
BASE MAP		
EXIST. R/W	PNS	
PROP. LINES	PNS	
AREAS		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016
ATHENS
RIGHT OF WAY MAP

NO.	DATE	REVISIONS DESCRIPTION	BY	PLAN FILED IN PLAN BOOK				COUNTY RECORD				DAVID BERNHARDT COMMISSIONER JOYCE NOEL TAYLOR CHIEF ENGINEER DATE	
				NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE	NO.	DATE		BOOK
						COND.	9/12/17	5203	6				

STATE HIGHWAY "241"
HARMONY ROAD ROUTE 150
ATHENS SOMERSET COUNTY
STATE PROJECT NO. 18952.00

JULY 2017
SCALE 1" = 25'

RIGHT-OF-WAY MAP
SHEET 1 OF 1

SHEET NUMBER
32
OF 32