STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Ninth Edition 2020.

DESIGN LOADING

Live Load ..... HL - 93 Modified for Strength I

HYDROLOGIC DATA

Drainage Area	3.59 sq mi
Design Discharge (Q50)	190 cfs
Check Discharge (Q100)	215 cfs
Headwater Elevation (Q1.1)	160.43 ft
Headwater Elevation (Q25)	162.21 ft
Headwater Elevation (Q50)	162.55 ft
Headwater Elevation (Q100)	162.82 ft
Discharge Velocity (Q1.1)	2.23 fps
Discharge Velocity (Q50)	4.13 fps
Discharge Velocity (Q100)	4.31 fps

MATERIALS

Concrete:	
Precast:	Class "P"
All Other:	Class "A"
Reinforcing Steel:	ASTM A615, Grade 60

BASIC DESIGN STRESSES

Concrete	f 'c = 4,000 psi
Precast Concrete	f 'c = 5,000 psi
Reinforcing Steel	f y = 60,000 psi

VASSALBORO
KENNEBEC COUNTY
MEADOW BROOK BRIDGE
OVER
MEADOW BROOK
BOG ROAD
FEDERAL AID PROJECT NO. 2644200
PROJECT LENGTH 0.076 mi.
BRIDGE NO. 5856

LIST OF DRAWINGS

Title Sheet 1
Estimated Quantities & General Costruction Notes 2
General Plan & Profile 3
Boring Location Plan 4
Interpretive Subsurface Profile 5
Cross Sections 6-11
Box Culvert Details 12-13
Box Mounted Guardrail Details 14
Detour Map 15
Right Of Way Map 16

TRAFFIC DATA

Current (2023) AADT	1240
Future (2043) AADT	1360
DHV - % of AADT	14%
Design Hour Volume	190
Heavy Trucks (% of AADT)	7%
Heavy Trucks (% of DHV)	7%
Directional Distribution (% of DHV)	54%
18 kip Equivalent P 2.0	35
18 kip Equivalent P 2.5	34
Design Speed (mph)	45

UTILITIES

CMP (Central Maine Power)
Charter Communications, Inc.
Consolidated Communications of Maine Company

MAINTENANCE OF TRAFFIC

Bridge will be closed during construction with traffic detoured on local roads.

PROJECT LOCATION	Meadow Brook Bridge (#5856) over Meadow Brook. Located 0.66 of a mile west of Route 32. Lat./Long. 44°26'59.7" N 69°3710.10" W
PROGRAM AREA	Highway Bridges - Traditional
OUTLINE OF WORK	Bridge Replacement

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED

	DATE
COMMISSIONER:	12-6-24
CHIEF ENGINEER:	12-6-2024

STATE OF MAINE Roger M. Naous 9918 LICENSED PROFESSIONAL ENGINEER

SIGNATURE
P.E. NUMBER 9918
DATE NOV 12 2024

PROJECT INFORMATION

PROGRAM	BRIDGE PROGRAM
PROJECT MANAGER	Gerald Libby, Jr.
DESIGNER	ROGER NAOUS
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

VASSALBORO
MEADOW BROOK BRIDGE

TITLE SHEET

SHEET NUMBER
1
OF 16

WIN 026442.00
02644200

Filename:\In\Cadd Files\001_Title.dgn Division: BRIDGE Username: Gerald.G.Libby.Jr Date:11/12/2024

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.19	Removing Existing Bridge (100 CY)	1	LS
202.202	Removing Pavement Surface	320	SY
203.20	Common Excavation	770	CY
203.24	Common Borrow	50	CY
203.25	Granular Borrow	60	CY
203.33	Special Fill	120	CY
203.55	Culvert Bedding Stone	45	CY
206.061	Structural Earth Excavation - Drainage & Minor Structures Below Grade	60	CY
304.10	Aggregate Subbase Course - Gravel	640	CY
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	130	T
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course)	170	T
409.15	Bituminous Tack Coat, Applied	90	G
508.13	Sheet Waterproofing Membrane (60 SY)	1	LS
511.07	Cofferdam: Upstream	1	LS
511.07	Cofferdam: Downstream	1	LS
515.21	Protective Coating for Concrete Surfaces (60 CY)	1	LS
526.301	Portable Concrete Barrier Type 1 (60 LF)	1	LS
534.71	Precast Concrete Box Culvert (120 CY)	1	LS
606.1301	31" W-Beam Guardrail - Mid-Way Splice - Single Faced	262.5	LF
606.1305	31" W-Beam Guardrail - Mid-Way Splice Flared Terminal	4	EA
606.353	Reflectorized Flexible Guardrail Marker	8	EA
606.743	Guardrail - Single Rail Culvert Mounted	44	LF
610.08	Plain Riprap	180	CY
610.18	Stone Ditch Protection	10	CY
610.213	Void Filled Riprap	80	CY
613.319	Erosion Control Blanket	60	SY
615.07	Loam	50	CY
618.14	Seeding Method Number 2	8	UN
619.12	Mulch	8	UN
619.14	Erosion Control Mix	100	CY
620.54	Stabilization/Reinforcement Geotextile	210	SY
620.58	Erosion Control Geotextile	215	SY
627.733	4" White or Yellow Painted Pavement Marking Line	1200	LF
629.05	Hand Labor, Straight Time	40	HR
631.12	All Purpose Excavator (including operator)	20	HR
631.172	Truck-large (including operator)	10	HR
639.19	Field Office, Type B	1	EA
652.312	Type III Barricades	4	EA
652.33	Drum	25	EA
652.34	Cone	50	EA
652.35	Construction Signs	310	SF
652.38	Flaggers	100	HR
652.361	Maintenance of Traffic Control Devices (120 CD)	1	LS
652.41	Portable Changeable Message Sign	2	EA
656.75	Temporary Soil Erosion and Water Pollution Control	1	LS
659.10	Mobilization	1	LS
834.322	Dry Hydrant - Install Only	1	LS

GENERAL CONSTRUCTION NOTES

1. For easements, construction limits, and right of way lines, refer to the 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. Two reflectorized guardrail markers will be installed at each guardrail end.

5. Where called for on the Plans, where new pavement joins existing pavement, the existing pavement shall be sawcut along a smooth line to a neat, even, vertical joint as directed by the Resident. Broken or raveled edges will not be permitted. All work necessary for the preparation of this joint will be considered incidental to the related contract items.

6. All embankment material, except as otherwise shown, shall be Granular Borrow meeting the requirements of Standard Specifications Subsection 703.19, Granular Borrow, for Material for Underwater Backfill with the additional requirement that the maximum particle size shall be limited to 4 inches.

7. Place riprap on sideslopes according to plan view.

8. Stones which cannot be rolled or compacted into the surface of the shoulder shall be removed by hand raking. Payment for hand raking will be considered incidental to Pay Item 304.10, Aggregate Subbase Course - Gravel.

9. Place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.

10. 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 Pay Item 619.14, Erosion Control Mix.

11. Place a 24 inch wide strip of Erosion Control Blanket on the sideslopes along the top of the riprap and behind the wingwalls.

12. A MASH compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.

13. Where it is apparent that runoff will cause continual erosion, 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. Payment will be made under the appropriate Contract items.

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

Concrete headwalls, including to one foot inside the box;
Exposed tops of vertical walls and to one foot below the ground on the back side;
Exposed faces of vertical walls and to one foot inside the box.

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

16. 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.

17. Reports on hydrology and/or hydraulics applicable to the bridge site may be accessed at the MaineDOT web address. The reports are 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.

18. The project geotechnical report titled: Geotechnical Design Report, Meadow Brook Bridge Culvert Replacement, Bridge NO. 5856, Vassalboro, Maine, dated November 24, may be accessed at the MaineDOT web address.

19. 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.

20. 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 and Time.

21. Additional posts required in advance of and behind Item 606.743, Guardrail - Single Rail Culvert Mounted will be considered incidental to Item 606.1301, 31" W-Beam Guardrail - Mid-Way Splice - Single Faced.

22. Parcel(s) #1,#2,#3 and #4 are held in reserve as indicated in Special Provision 104 General Rights and Responsibilities (Reserved Limits).

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

PROJ. MANAGER GERALD LIBBY, JR.	BY	DATE
DESIGN-DETAILED	MRP	11/2024
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

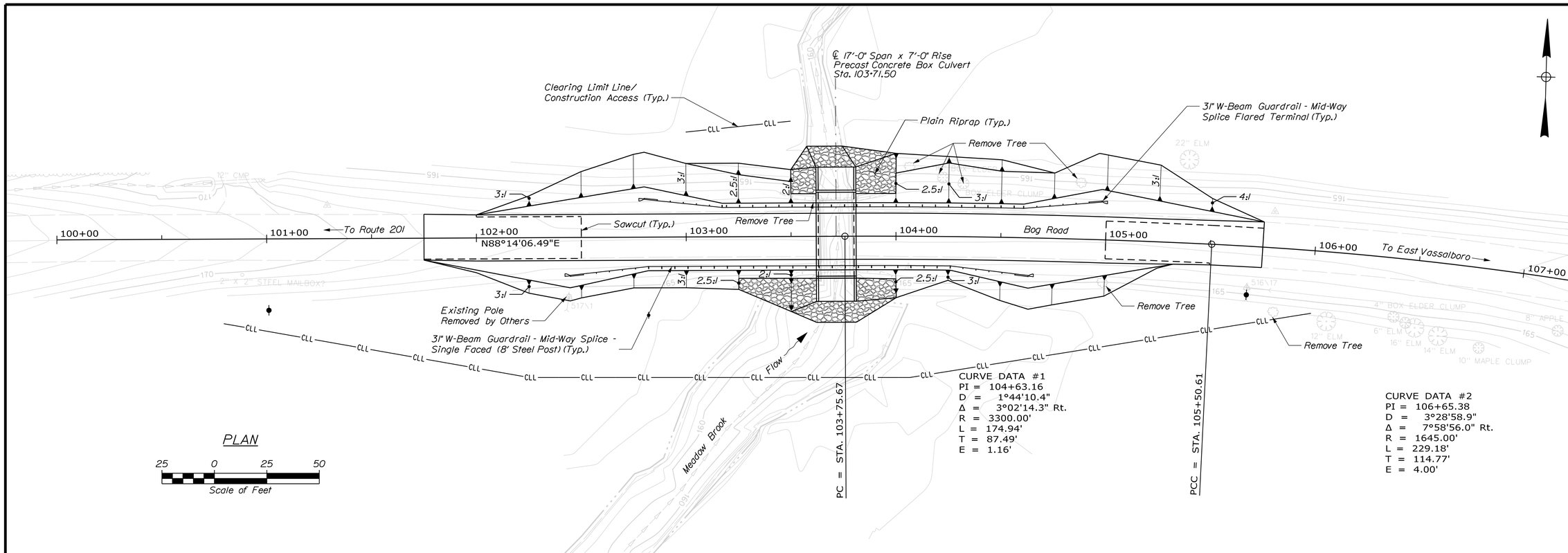
DATE

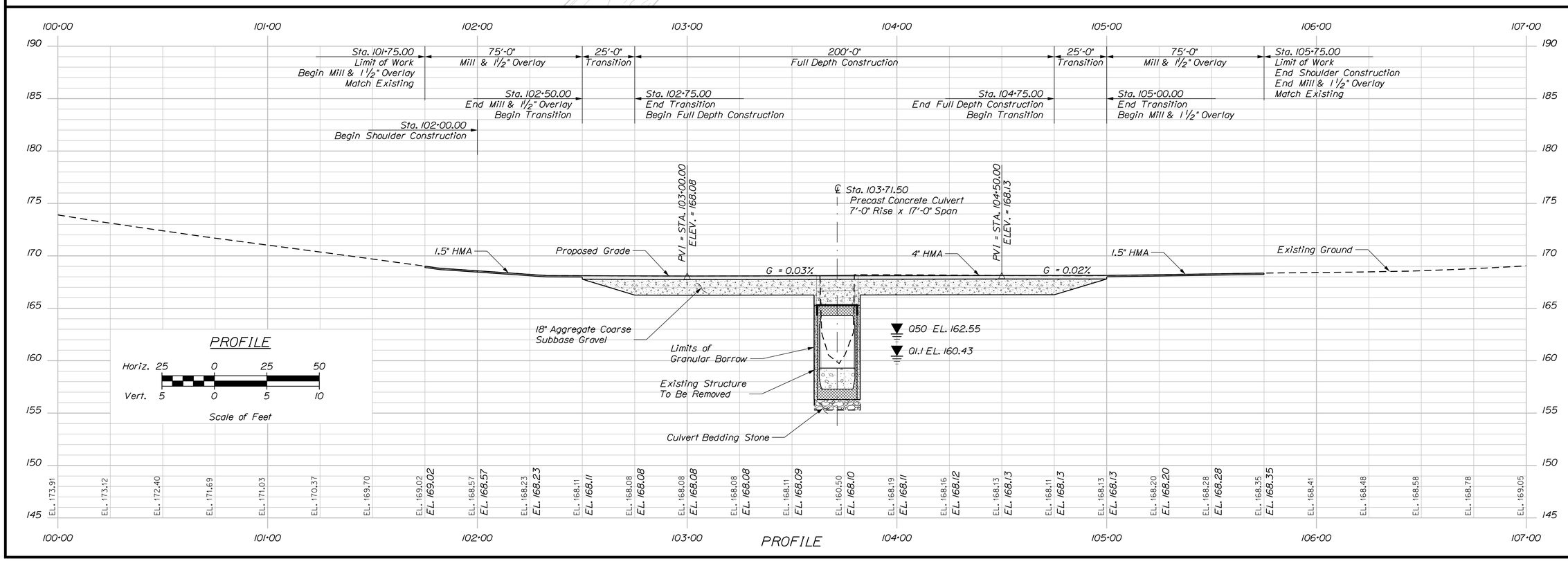
MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

ESTIMATED QUANTITIES &
GENERAL CONSTRUCTION NOTES

SHEET NUMBER
2
OF 16

Filename: ...\002_Estimate_GeneralNotes.dgn Division: BRIDGE Username: Gerald.G.Libby.Jr Date:11/20/2024





STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

PROJ. MANAGER	GERALD J. LIBBY, JR.		
DESIGN-DETAILED	R. NADUS	MRP	11/2024
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

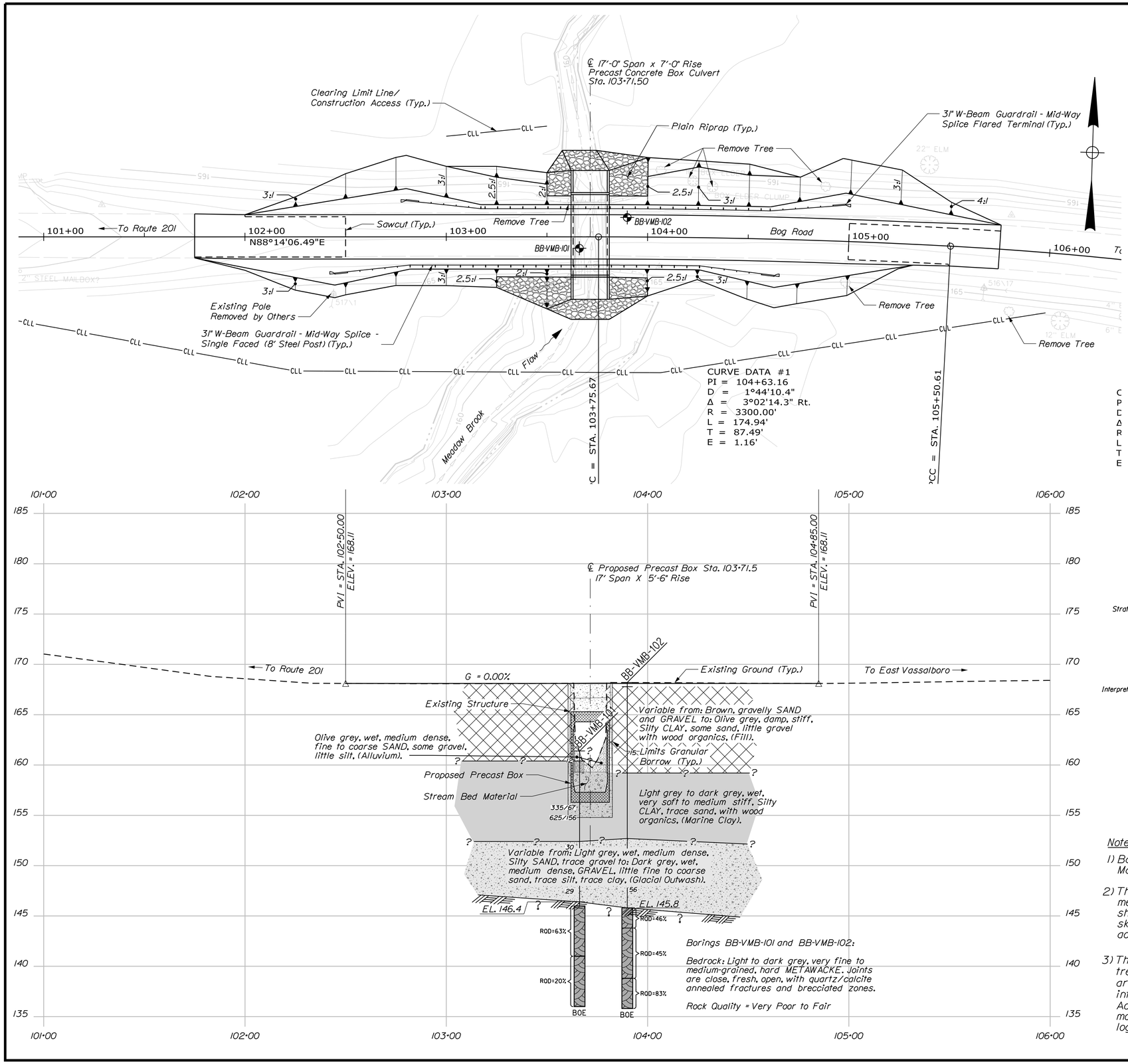
GENERAL PLAN & PROFILE

SHEET NUMBER

3

OF 16

Filename: ...\003_Bridge Plan_Profile.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024



Legend

Location and designation of BB-VMB-101 and BB-VMB-102 Series borings drilled by MaineDOT between November 14 and 15, 2022.

PLAN

25 0 25 50

Scale of Feet

Notes:

1) Base map developed from elecatronic files (alignments.dgn, Bridge.dgn, contours.dgn, topo.dgn and text.dgn) provide by MaineDOT.

2) The as-drilled locations of BB-VMB-101 and BB-VMB-102 test borings were measured from existing site features to the approximate locations shown on this plan by MaineDOT personnel and provided as a hand sketch on November 22, 2022. This data should be considered accurate only to the degree implied by the method used.

LEGEND

Boring No.
Offset, if shown

Pavement Thickness if applicable

6 — Energy-Corrected SPT N60 Value (blows/foot)

WOH — Indicates weight of hammer

WOR — Indicates weight of rod

Encountered Groundwater Level

Strata Interface

879/137 — Indicates in-situ field vane strength (peak/residual) in pounds per square foot.

R — Split Spoon Refusal(>50 blows for 1" penetration)

Advancement of rollerbit prior to coring

Interpreted Top of Bedrock

RQD = Rock Quality Designation for Rock Core Sample

NR — Bottom of Exploration, Refusal

R — Bottom of Exploration, No Refusal

BOE — Bottom of Exploration

PROFILE

HORIZ 25 0 25 50

VERT 5 0 5 10

SCALE

Notes:

1) Base Profile developed from electronic file (Profile.dgn) provide by MaineDOT.

2) The as-drilled locations of BB-VMB-101, and -102 test borings were measured from existing site features to the approximate locations shown on this plan by MaineDOT personnel and provided as a hand sketch on November 22, 2022. This data should be considered accurate only to the degree implied by the method used.

3) 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

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER GERALD LIBBY, JR.		
DESIGN-DETAILED	R. NADUS	MRP	11/2024
CHECKED-REVIEWED	11-22	T. WHITE	NOV 2024
DESIGN2-DETAILED2	B.CARDALI		
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

BORING LOCATION PLAN &
INTERPRETIVE SUBSURFACE PROFILE

SHEET NUMBER

4

OF 15

Filename: ...\BRIDGE\MSTA\004_BLP&ISP1.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024

Filename: ...\MSTA\005_BORING LOGS1.dgn   Division: BRIDGE   Username: Gerald.G.LibbyJr   Date:11/20/2024

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Meadow Brook Bridge #5856 carries Bog Road over Meadow Brook
Location: Vassalboro, Maine

Boring No.: BB-VMB-101
WIN: 26442.00

Driller:	MaineDOT	Elevation (ft.)	161.4	Auger ID/OD:	N/A
Operator:	Daggett/Brook	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	J. Manahan	Rig Type:	CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	11/15/2022; 08:45-15:00	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	103+66.2, 5.6 ft Rt.	Casing ID/OD:	HW-4" & NW-3"	Water Level*:	4.7 ft bgs.
Hammer Efficiency Factor: 0.906		Hammer Type:	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
V = Field Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Field Vane Shear Test Attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = Weight of 140lb. Hammer
WOR/C = Weight of Rods or Casing
WO1P = Weight of One Person
S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw Field SPT N-value
Hammer Efficiency Factor = Rig Specific Annual Calibration Value
N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
T_v = Pocket Torvane Shear Strength (psf)
WC = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in. Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)
0	1D	24/7	0.00 - 2.00	4/5/3/2	8	12	a31	
							a19	160.4
							a15	
	2D	24/24	3.00 - 5.00	WOH/WOH/WOH/WOH	---		OPEN HOLE	
5	1U	24/24	5.00 - 7.00	WOR/WOR/WOR/WOR	---			
	3D V1	24/21	7.00 - 9.00 7.63	WOR/WOR/WOR/WOH Su=335/67 psf	---			
	V2		8.00 8.63 - 9.00	Su=625/156 psf				152.4
	4D	24/8	9.00 - 11.00	4/10/10/14	20	30		
10								
	5D	24/7	13.00 - 15.00	17/9/10/17	19	29		
15	R1	60/60	15.40 - 20.40	RQD = 63%			NQ-2	146.4
20	R2	60/60	20.40 - 25.40	RQD = 20%				
25								136.0

Visual Description and Remarks / Laboratory Testing Results/AASHTO and Unified Class

Olive grey, medium dense, wet, fine to coarse SAND, some gravel, little silt, (Alluvium). — 1.0

Light grey, wet, very soft, Silty CLAY, trace sand, layer of wood organics. (Marine Clay). — G#303227 A-6, CL WC=30.9% LL=32 PL=19 PI=13

Grey, varved, very soft, Silty CLAY, trace sand (Marine Clay). — G,C#303226 A-4, CL-ML WC=23.5% LL=21 PL=15 PI=6

Light grey, wet, medium stiff, Silty CLAY, trace sand, (Marine Clay).
55x110 mm vane raw torque readings:
V1: 7.5/1.5 ft-lbs
V2: 14.0/3.5 ft-lbs
Last 1/2" of V2 much harder to push. — 9.0 — G#303228 A-4, CL-ML WC=26.3% LL=23 PL=19 PI=4

Light grey, wet, medium dense, Silty SAND, trace gravel. (Glacial Outwash).
Drove NW Casing to 20.0 ft bgs.

Dark grey, wet, medium dense, GRAVEL, little fine to coarse sand, trace silt, trace clay, (Glacial Outwash). — 15.0

Top of Bedrock at Elev. 146.4 ft.
Roller Coned ahead, to 15.4 ft. bgs. and set up to core.
R1: Bedrock: Light to dark grey, very fine to medium-grained, hard, METAWACKE, fresh and quartz/calcite annealed fractures, brecciated zones.
[Mayflower Hill Formation]
Rock Quality = Fair
100% Recovery
R1: Core Times (min:sec)
15.4-16.4 ft (1:37)
16.4-17.4 ft (1:18)
17.4-18.4 ft (1:45) no water return
18.4-19.4 ft (2:01)
19.4-20.4 ft (2:51)
R2: Bedrock: Similar to R1.
Rock Quality = Very Poor
100% Recovery
R2: Core Times (min:sec)
20.4-21.4 ft (1:26)
21.4-22.4 ft (1:19)
22.4-23.4 ft (1:21)
23.4-24.4 ft (4:12)
24.4-25.4 ft (3:04) — 25.4

Bottom of Exploration at 25.4 feet below ground surface.

Remarks:

7.0 ft from Bridge Deck to bottom of Stream.
a HW-4" Casing.

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

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

Page 1 of 1
Boring No.: BB-VMB-101

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Meadow Brook Bridge #5856 carries Bog Road over Meadow Brook
Location: Vassalboro, Maine

Boring No.: BB-VMB-102
WIN: 26442.00

Driller:	MaineDOT	Elevation (ft.)	168.2	Auger ID/OD:	5" Solid Stem
Operator:	Daggett/Brook	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	J. Manahan	Rig Type:	CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	11/14/2022; 09:15-13:30	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	103+89.9, 9.7 ft Lt.	Casing ID/OD:	HW-4" & NW-3"	Water Level*:	4.7 ft bgs.
Hammer Efficiency Factor: 0.906		Hammer Type:	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
V = Field Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Field Vane Shear Test Attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = Weight of 140lb. Hammer
WOR/C = Weight of Rods or Casing
WO1P = Weight of One Person
S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw Field SPT N-value
Hammer Efficiency Factor = Rig Specific Annual Calibration Value
N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
T_v = Pocket Torvane Shear Strength (psf)
WC = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in. Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)
0							SSA	167.8
5	1D	24/23	5.00 - 7.00	7/5/5/3	10	15		
								159.2
10	2D	24/24	10.00 - 12.00	WOH/WOH/WOH/WOH	---		1	
							5	
							6	
							6	
							7	
15	3D MV	6/4	15.00 - 15.50	WOR	---		20	152.7
							30	
							56	
							67	
							70	
20	4D	21.6/21.6	20.00 - 21.80	14/23/14/33(3.6)	37	56	53	
							78	
	R1	24/19	22.40 - 24.40	RQD = 46%			a95 NQ-2	145.8
	R2	60/60	24.40 - 29.40	RQD = 45%				
25								
	R3	36/34	29.40 - 32.40	RQD = 83%				
30								135.8

Visual Description and Remarks / Laboratory Testing Results/AASHTO and Unified Class

5" HMA. — 0.4

Brown sand and gravel cuttings, (Fill).

Olive grey, damp, stiff, Silty CLAY, some sand, little gravel, trace wood organics, (Fill). — G#303229 A-4, CL WC=20.0% — 9.0

Light grey, moist, very soft, Silty CLAY, trace fine sand, (Marine Clay). — G#303230 A-6, CL WC=29.8% LL=34 PL=19 PI=15

Grey, wet, Silty CLAY, trace fine sand, (Marine Clay). — 15.5 — G#303231 A-4, CL WC=23.9%
Failed 55x110 mm vane attempt, vane refusal.

Light brown, damp, hard, Silty CLAY, some sand, trace gravel, (Glacial Outwash). — G#303232 A-4, CL WC=16.7%

a95 blows for 0.4 ft. — 22.4

Top of Bedrock at Elev. 145.8 ft.
R1: Bedrock: light to dark grey, very fine to medium-grained, hard, METAWACKE, fresh, open joints, close.
[Mayflower Hill Formation]
Rock Quality = Poor.
79% Recovery
R1: Core Times (min:sec)
22.4-23.4 ft (1:05)
23.4-24.4 ft (0:48)
R2: Bedrock: Similar to R1, except with quartz/calcite annealed fractures.
[Mayflower Hill Formation]
Rock Quality = Poor.
100% Recovery
R2: Core Times (min:sec)
24.4-25.4 ft (2:03)
25.4-26.4 ft (1:51)
26.4-27.4 ft (1:45)
27.4-28.4 ft (1:47)
28.4-29.4 ft (2:19)
R3: Bedrock: Similar to R1.
[Mayflower Hill Formation]
Rock Quality = Good.
94% Recovery
R3: Core Times (min:sec)
29.4-30.4 ft (1:40)
30.4-31.4 ft (2:28)
31.4-32.4 ft (2:30) — 32.4

Bottom of Exploration at 32.4 feet below ground surface.

Remarks:

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

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

Page 1 of 1
Boring No.: BB-VMB-102

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2644200
WIN 26442.00
BRIDGE NO. 5856
BRIDGE PLANS

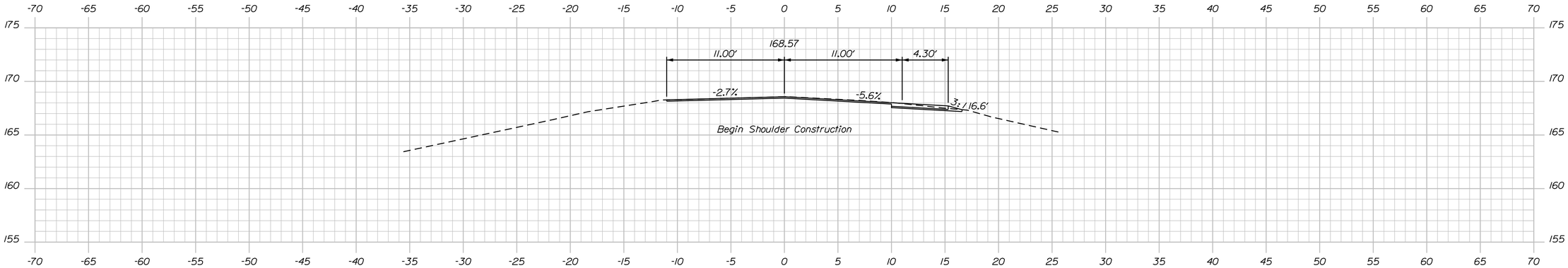
PROJ. MANAGER GERALD LIBBY, JR.	BY	DATE
DESIGN-DETAILED	R. NAOUS	MRP	11/2024
CHECKED-REVIEWED	11-22	-----	-----
DESIGN2-DETAILED2	B.CARDALI	T.WHITE	NOV 2024
DESIGN3-DETAILED3	-----	-----	-----
REVISIONS 1	-----		
REVISIONS 2	-----		
REVISIONS 3	-----		
REVISIONS 4	-----		
FIELD CHANGES	-----		

SIGNATURE
P.E. NUMBER
DATE

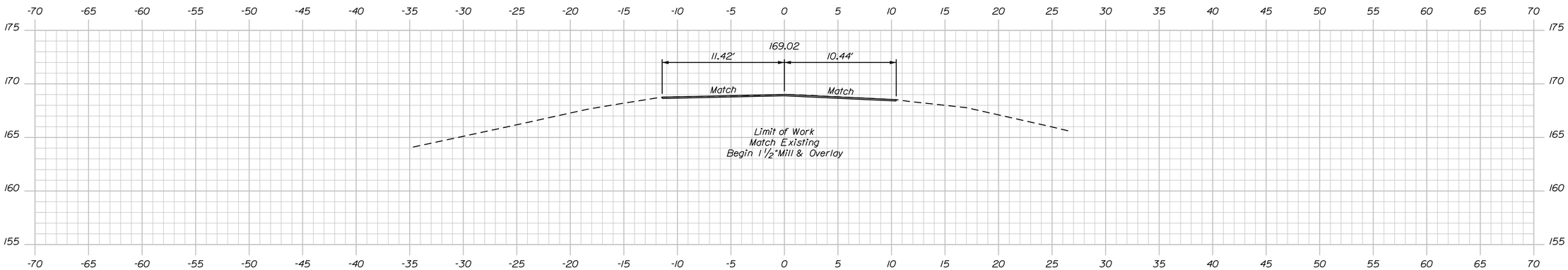
MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

BORING LOGS

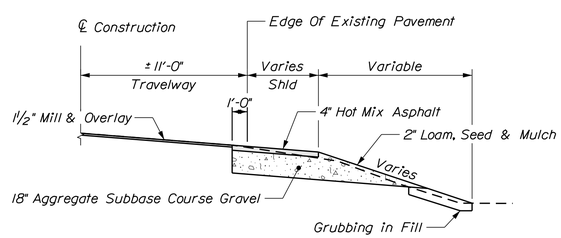
SHEET NUMBER
5
OF 15



102+00.00

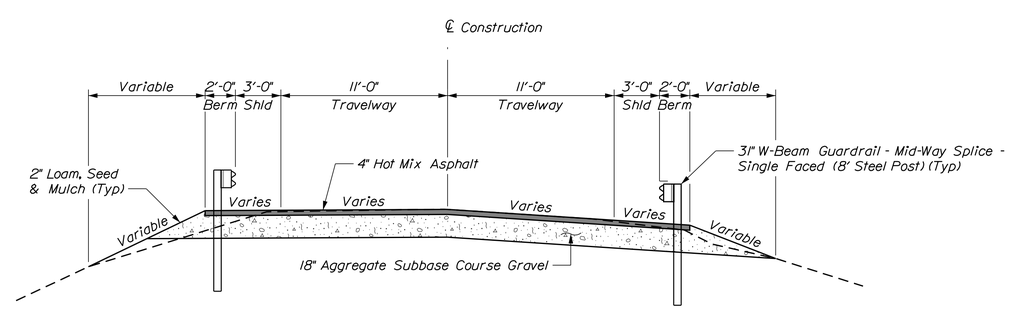


101+75.00



TYPICAL SHOULDER SECTION

(Mill and Overlay Areas)



TYPICAL APPROACH SECTION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

SIGNATURE

P.E. NUMBER

DATE

		BY	DATE
PROJ. MANAGER	GERALD LIBBY, JR.		
DESIGN-DETAILED	R. NAOUS	MRP	11/2024
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

TYPICAL SECTIONS & CROSS SECTIONS

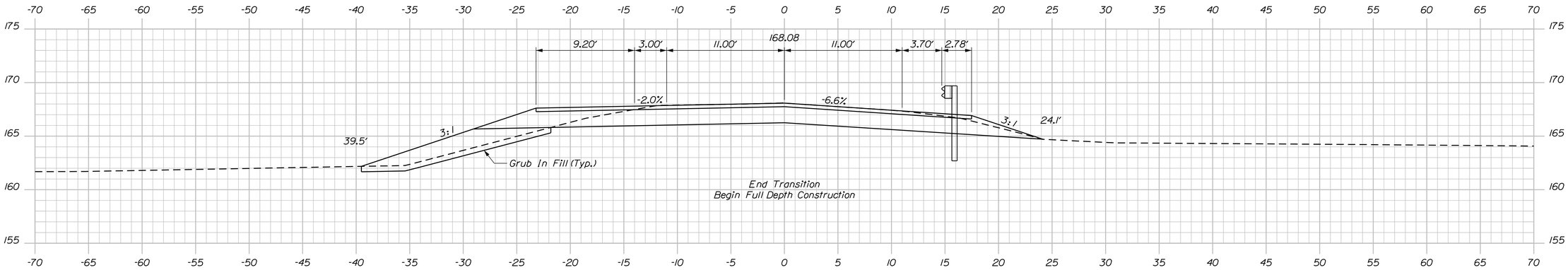
SHEET NUMBER

6

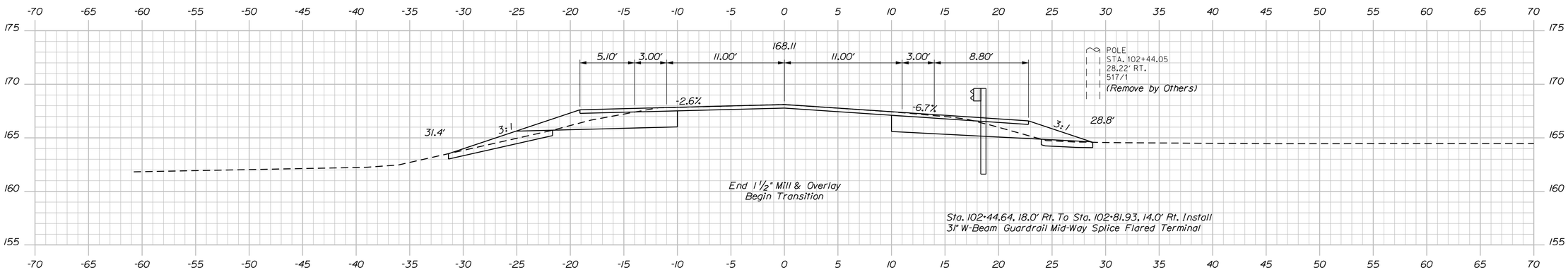
OF 16

Sta. 101+75.00 to Sta. 102+00.00

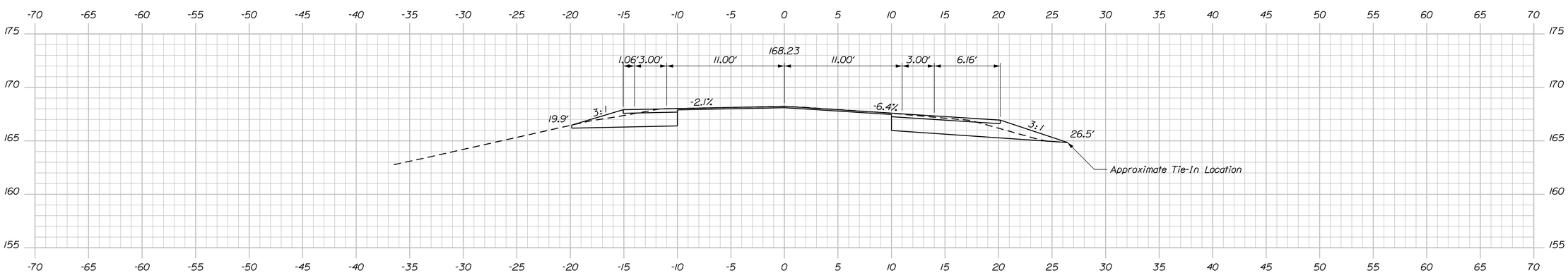
Filename: ...\MSTA\006_XSECT_101+75_001.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024



102+75.00



102+50.00



102+25.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	GERALD L.LIBBY, JR.		
DESIGN-DETAILED	R. NAOUS	MRP	11/2024
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

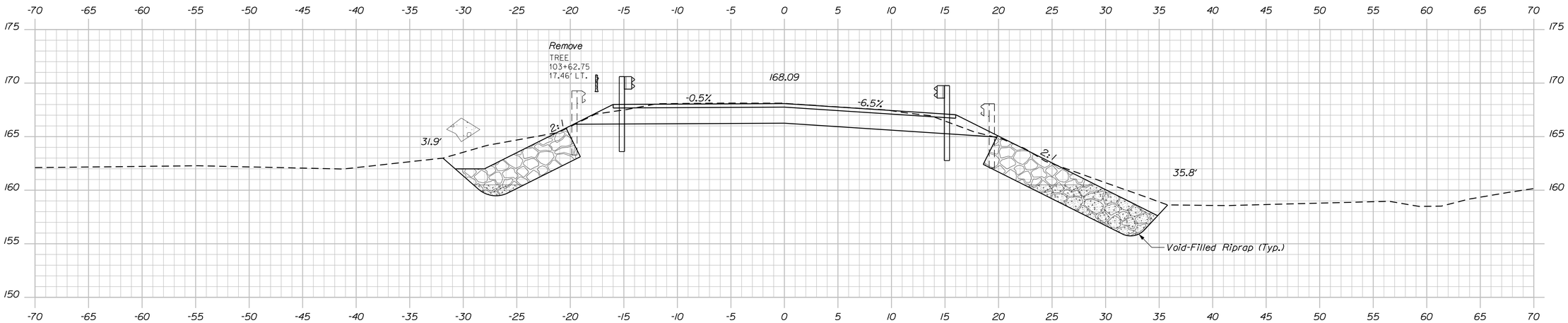
MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

CROSS SECTIONS

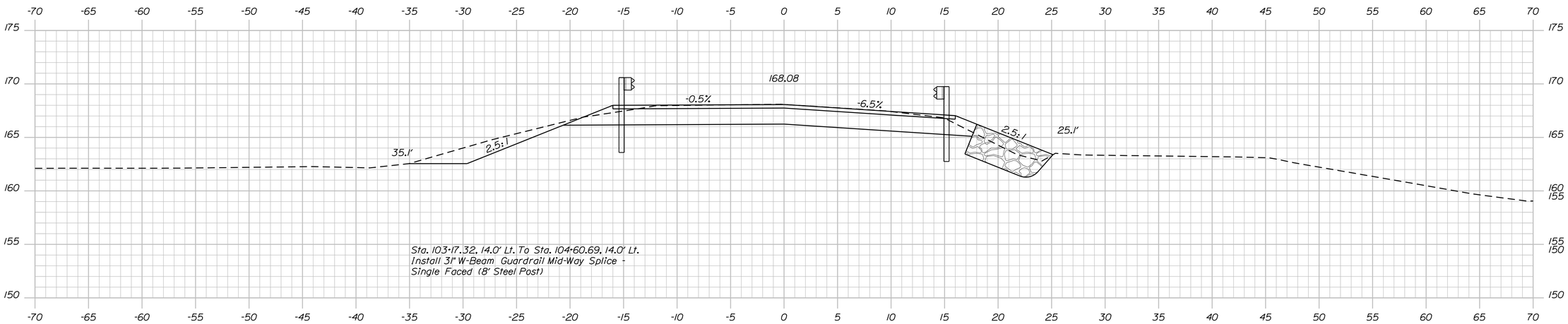
SHEET NUMBER
7
OF 16

Sta. 102+25.00 to Sta. 102+75.00

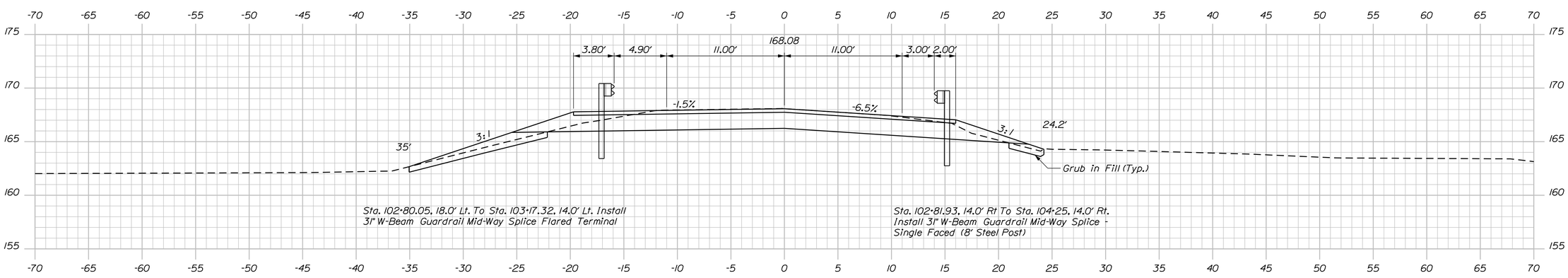
Filename: ...\MSTA\007_XSECT_102+25_002.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024



103+50.00



103+25.00



103+00.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

SIGNATURE

P.E. NUMBER

DATE

	BY	DATE
PROJ. MANAGER GERALD LIBBY, JR.	MRP	11/2024
DESIGN-DETAILED		
CHECKED-REVIEWED	R. NADUS	
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

CROSS SECTIONS

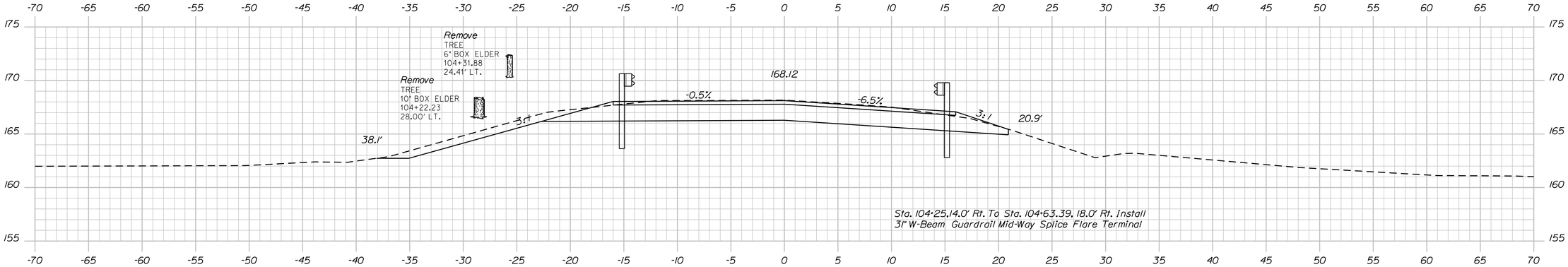
SHEET NUMBER

8

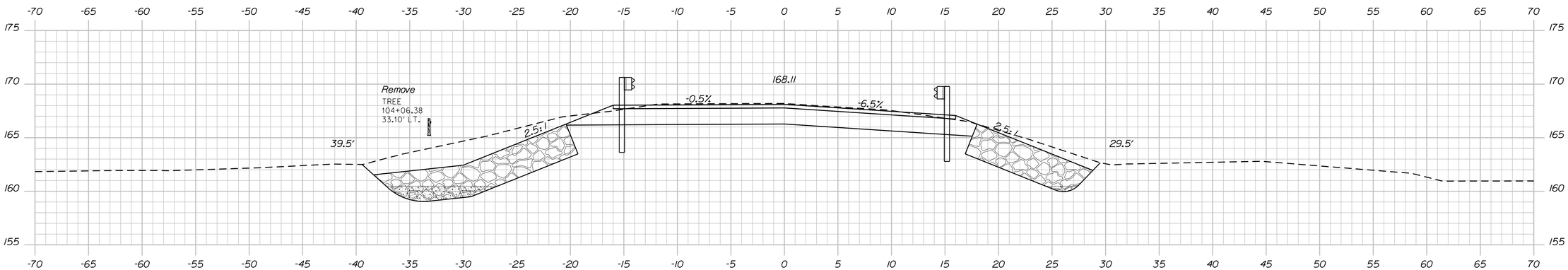
OF 16

Filename: ...\MSTA\008_XSECT_103+00_003.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024

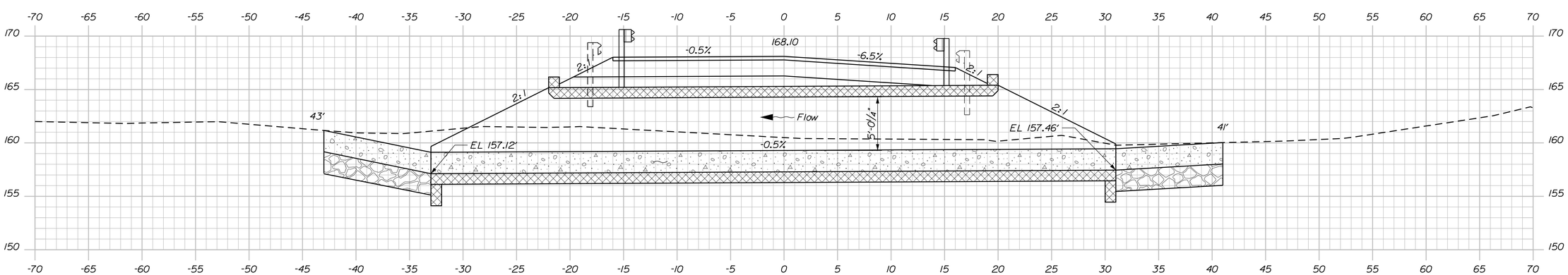
Sta. 103+00.00 to Sta. 103+50.00



104+25.00



104+00.00



103+75.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

PROJ. MANAGER GERALD L.LIBBY, JR		BY	DATE
DESIGN-DETAILED	R. NADUS	MRP	11/2024
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

CROSS SECTIONS

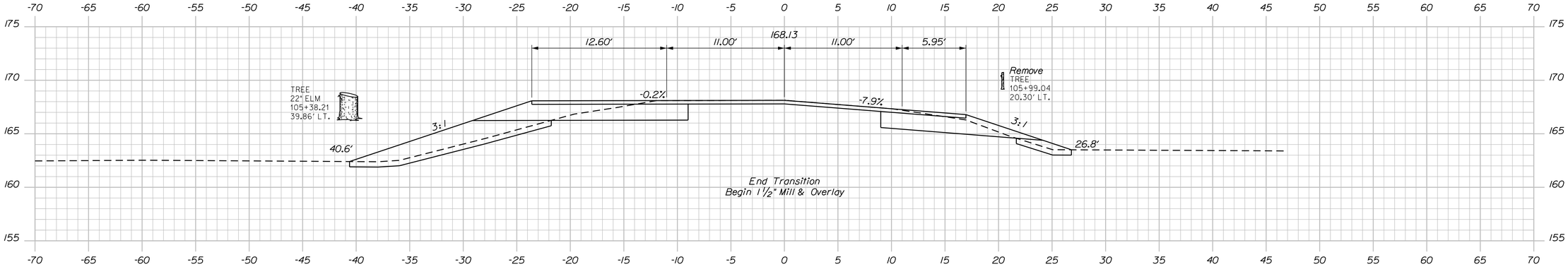
SHEET NUMBER

9

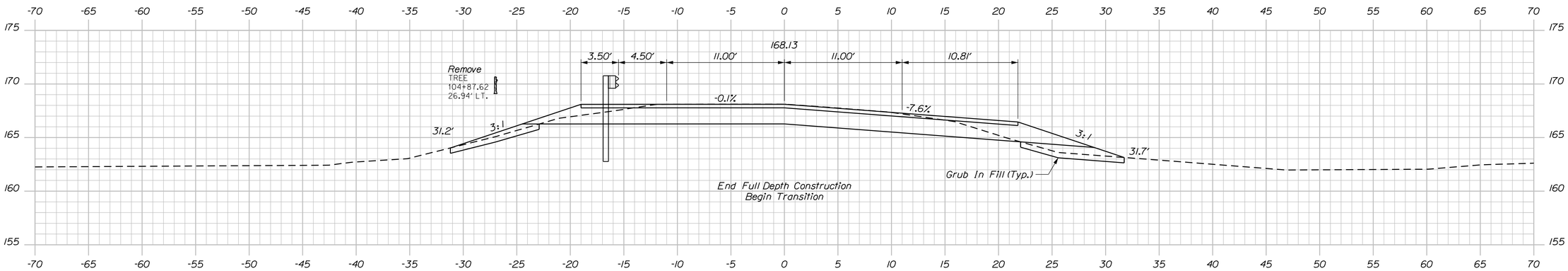
OF 16

Filename: ...\MSTA\009_XSECT_103+75_004.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024

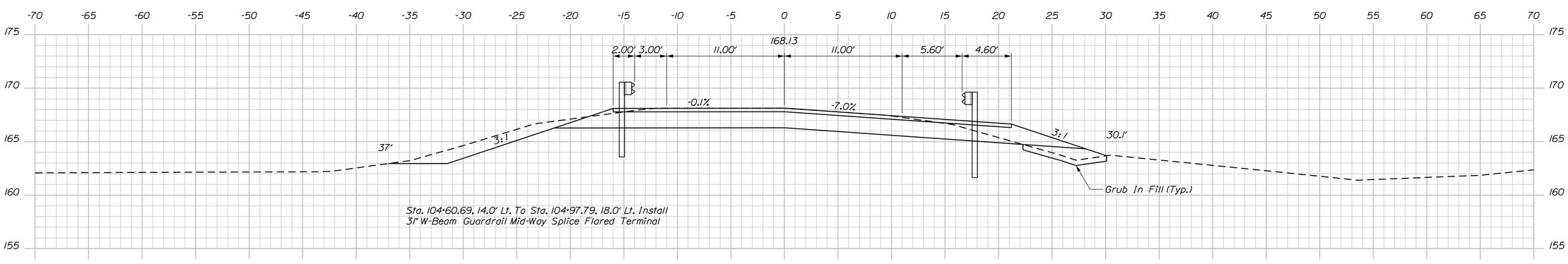
Sta. 103+75.00 to Sta. 104+25.00



105+00.00



104+75.00



104+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER GERALD LIBBY, JR.		
DESIGN-DETAILED	MRP	11/2024
CHECKED-REVIEWED		
DESIGN2-DETAILED2	R. NADUS	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

CROSS SECTIONS

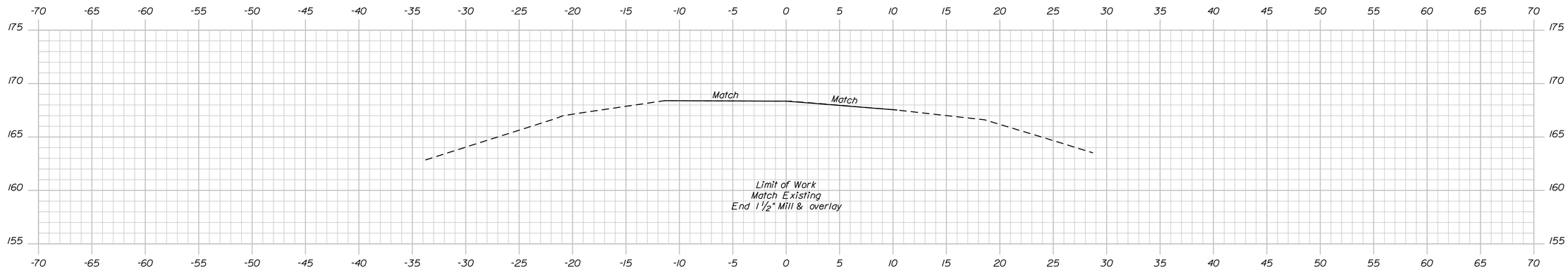
SHEET NUMBER

10

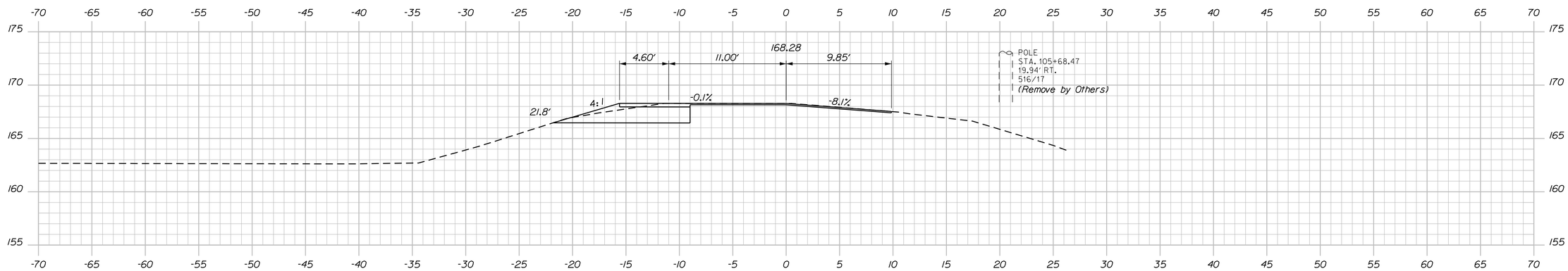
OF 16

Filename: ...\MSTA\010_XSECT_104+50_005.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024

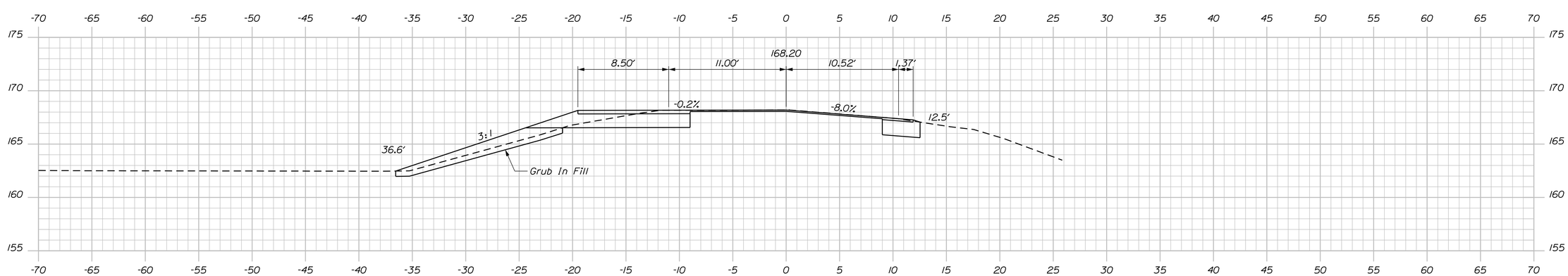
Sta. 104+50.00 to Sta. 105+00.00



105+75.00



105+50.00



105+25.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	GERALD LIBBY, JR.		
DESIGN-DETAILED	R. NAOUS	MRP	11/2024
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MEADOW BROOK BRIDGE
MEADOW BROOK
KENNEBEC COUNTY
VASSALBORO

CROSS SECTIONS

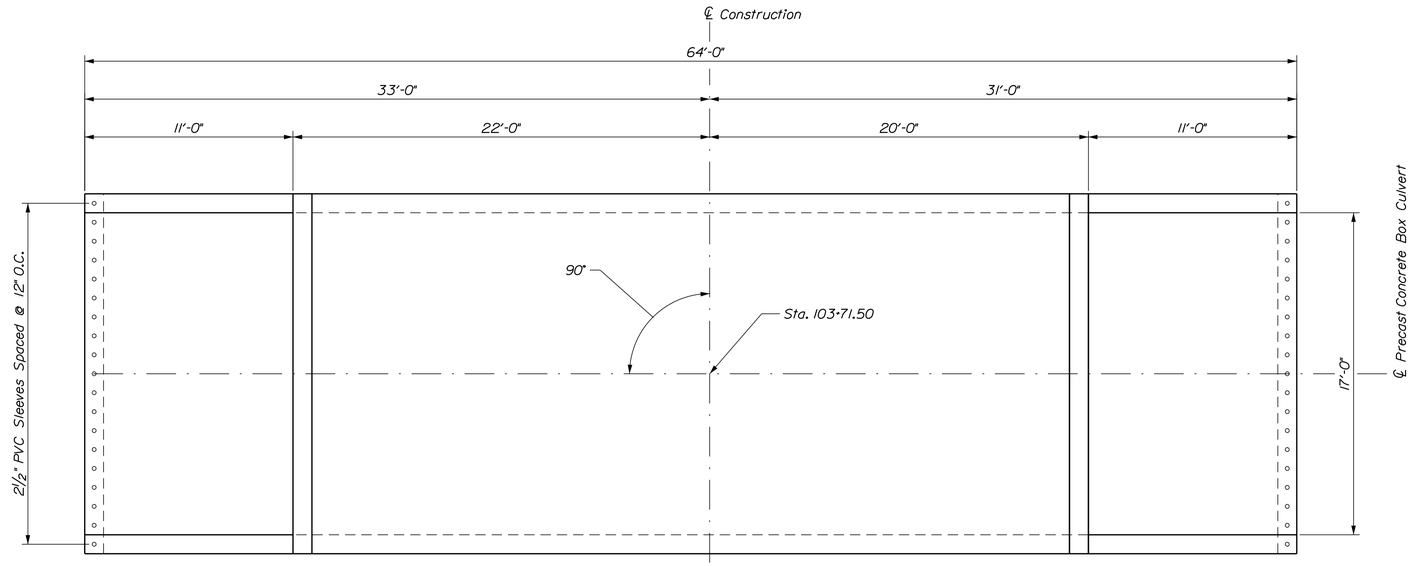
SHEET NUMBER

11

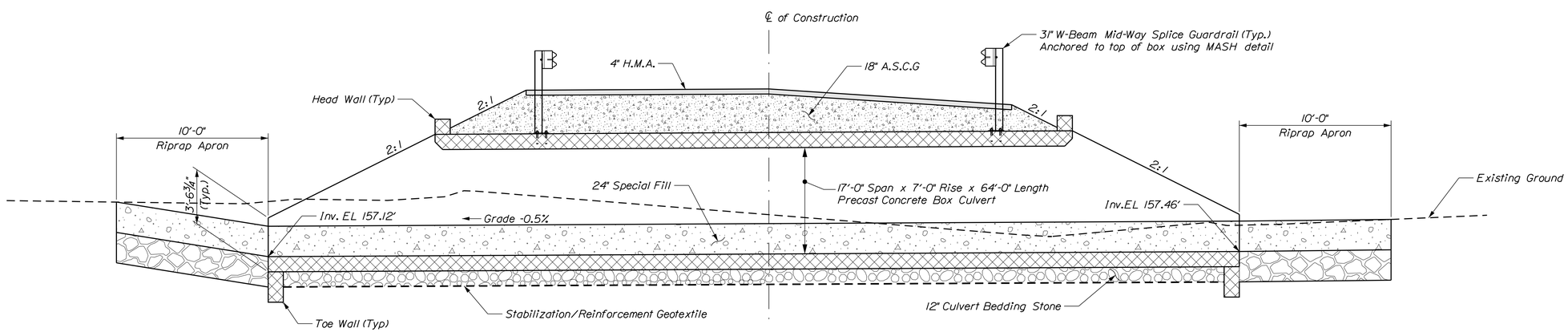
OF 16

Sta. 105+25.00 to Sta. 105+75.00

Filename: ...\MSTA\011_XSECT_105+25_006.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024



BOX CULVERT PLAN



BOX CULVERT LONGITUDINAL SECTION

Flow

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

PROJ. MANAGER GERALD LIBBY, JR.			
DESIGN-DETAILED	R. NAOUS	MRP	11/2024
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

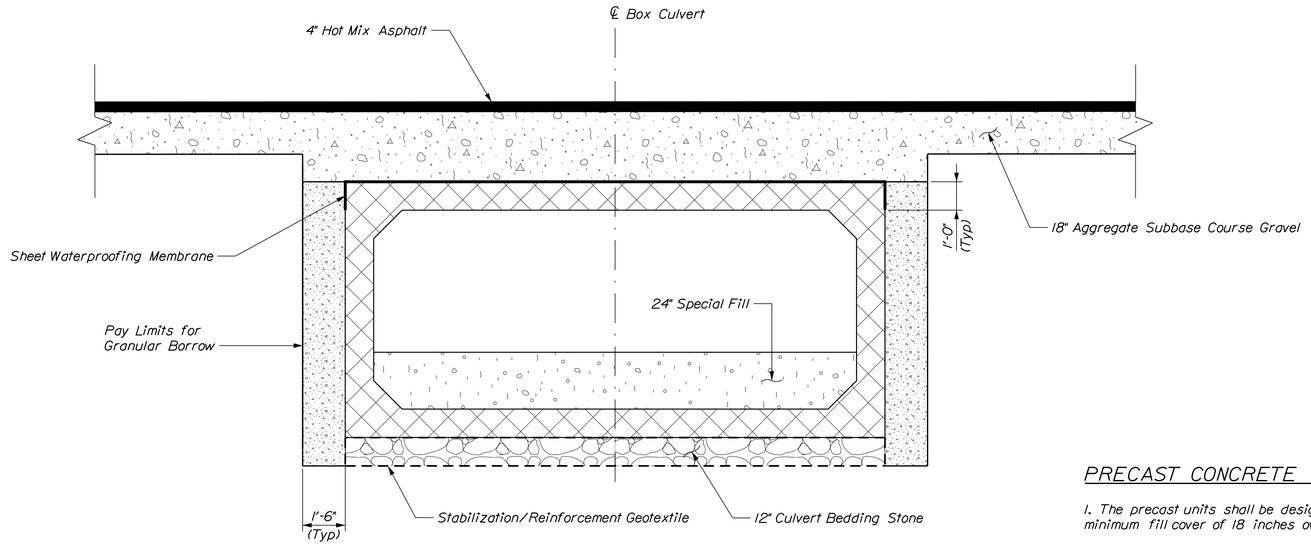
BOX CULVERT DETAILS (1 Of 2)

SHEET NUMBER

12

OF 16

Filename: ...\MSTA\012_Box_Detail1.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024



PROPOSED BOX SECTION

17'-0" Span x 7'-0" Rise

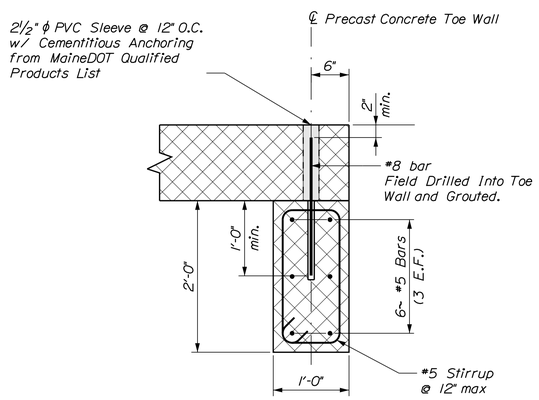
PRECAST CONCRETE BOX NOTES

1. The precast units shall be designed to carry construction loadings with a minimum fill cover of 18 inches over the top of the units.

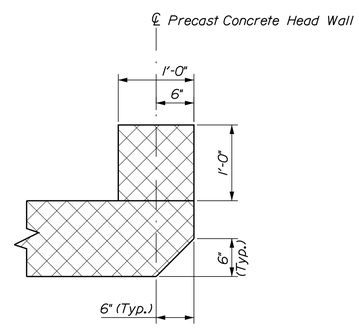
2. The construction, handling, and assembly of the precast units shall be in accordance with Standard Specification Section 534, Precast Structural Concrete, and with the manufacturer's specifications as applicable.

3. Install standard membrane waterproofing over the top and to 12 inches down the exterior sides of the precast units.

4. In accordance with Standard Specification Subsection 534.04, Precast Structural Concrete, The Contractor shall submit design calculations for the precast structure to the Department for review. The calculations shall demonstrate that the factored bearing pressures at the Strength Limit and Service Limit States do not exceed the factored geotechnical bearing resistances provided in the project geotechnical design report.



PRECAST CONCRETE TOE WALL DETAIL



PRECAST CONCRETE HEADWALL DETAIL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

PROJ. MANAGER GERALD LIBBY, JR.	BY	DATE
DESIGN-DETAILED R. NAOUS	MRP	11/2024
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

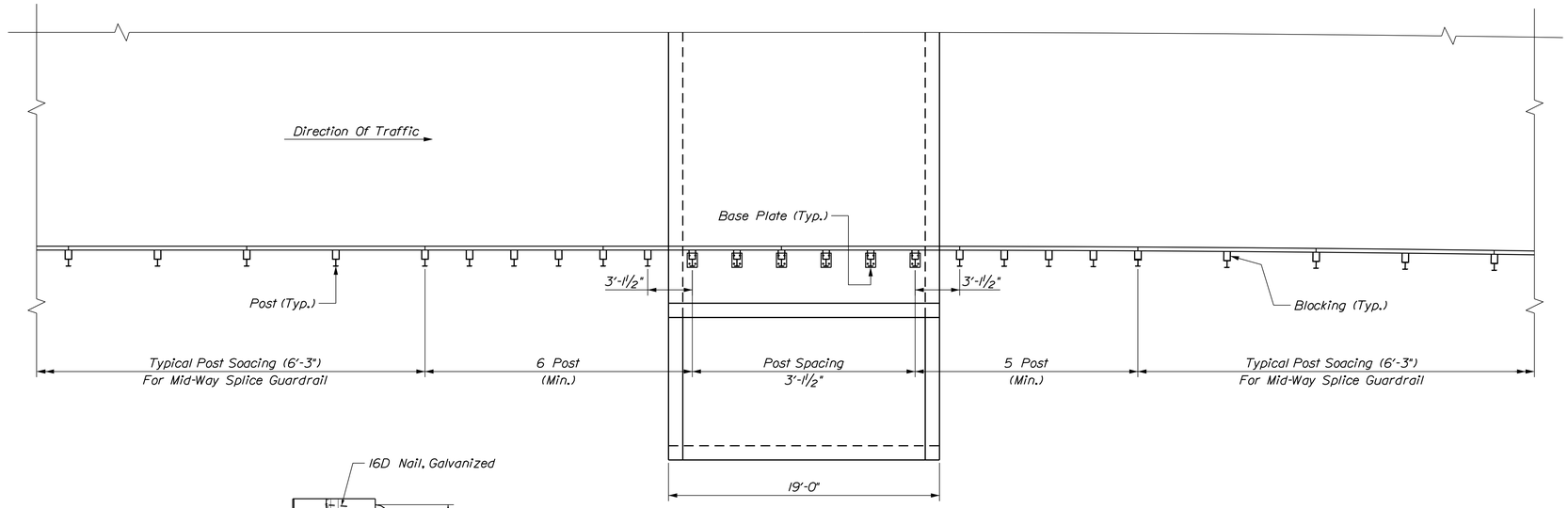
BOX CULVERT DETAILS (2 Of 2)

SHEET NUMBER

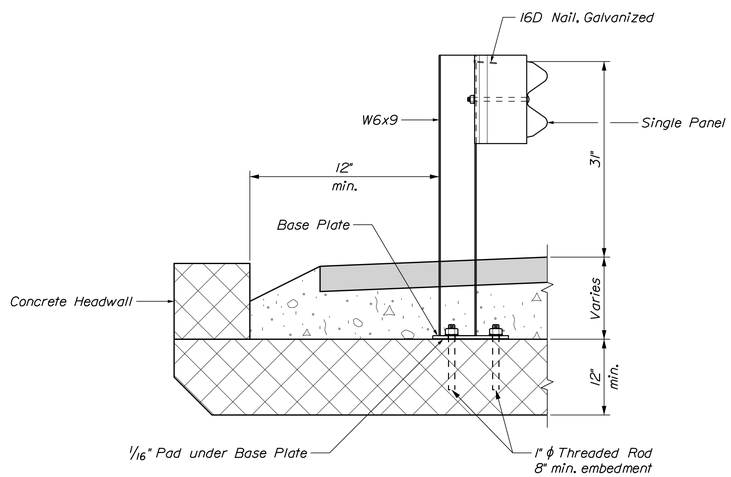
13

OF 16

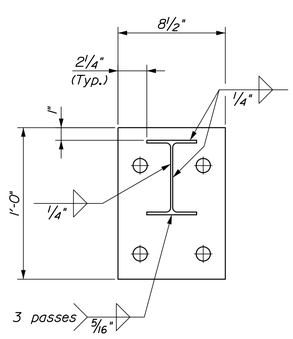
Filename: ...\MSTA\013_Box_Detail2.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024



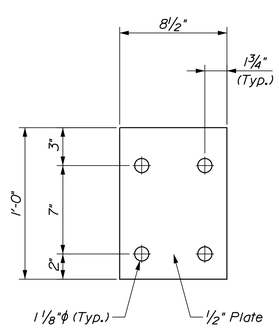
POST SPACING FOR GUARDRAIL



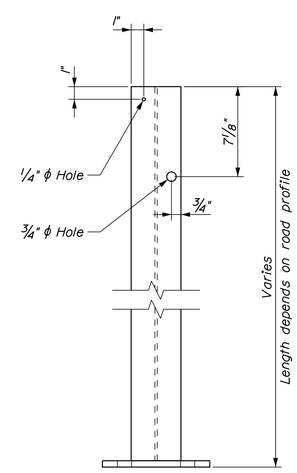
CULVERT-MOUNTED GUARDRAIL SYSTEM



POST ASSEMBLY



BASE PLATE



ELEVATION

BOLTED GUARDRAIL NOTES

1. All work and materials shall comply with Standard Specification Section 606 Guardrail.

2. Bolted post and materials shall be installed prior to backfilling the concrete box culvert.

3. Pavement around the Culvert-Mounted Posts shall be compacted with a plate compactor prior to installing the W-Beam Rail.

4. Posts may be cut to length and drilled in the field. Cut posts shall be repaired with hot-stick galvanizing. Cold-galv paint is not permitted.

5. Anchor bolts shall be set with a template. Nuts securing the post base shall be tightened to a snug fit and given an additional 1/8" turn.

6. All work and materials associated with the Culvert-Mounted Guardrail System shall be considered incidental to the 606 Pay Items.

7. Threaded rod shall be ASTM A307 with a minimum strength of 60 ksi.

8. The embedment depth of the epoxy anchors shall be the greater of 8" or the manufacturer's requirements. A minimum of 3" of concrete must remain under the drilled hole.

9. All posts, plates, bolts, nuts, washers, threaded rod, and other misc. hardware shall be galvanized.

10. The number of posts at half spacing on each side of the structure is conceptual and may need to be increased for a specific site.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

BRIDGE NO. 5856

WIN 26442.00

BRIDGE PLANS

PROJ. MANAGER	GERALD L. LIBBY, JR.	BY	DATE
DESIGN-DETAILED	R. NADUS	MRP	11/2024
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

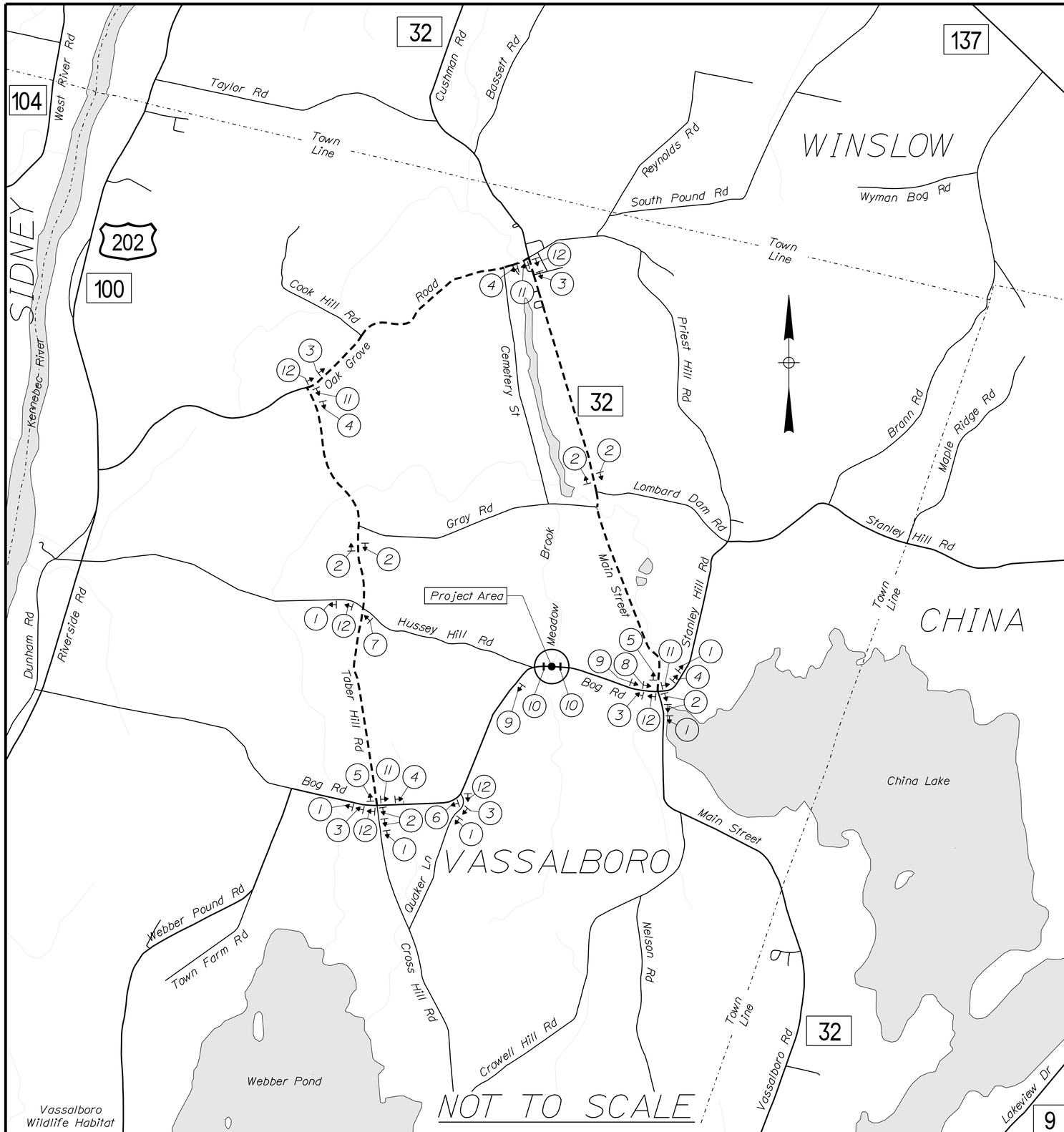
BOX MOUNTED GUARDRAIL DETAIL

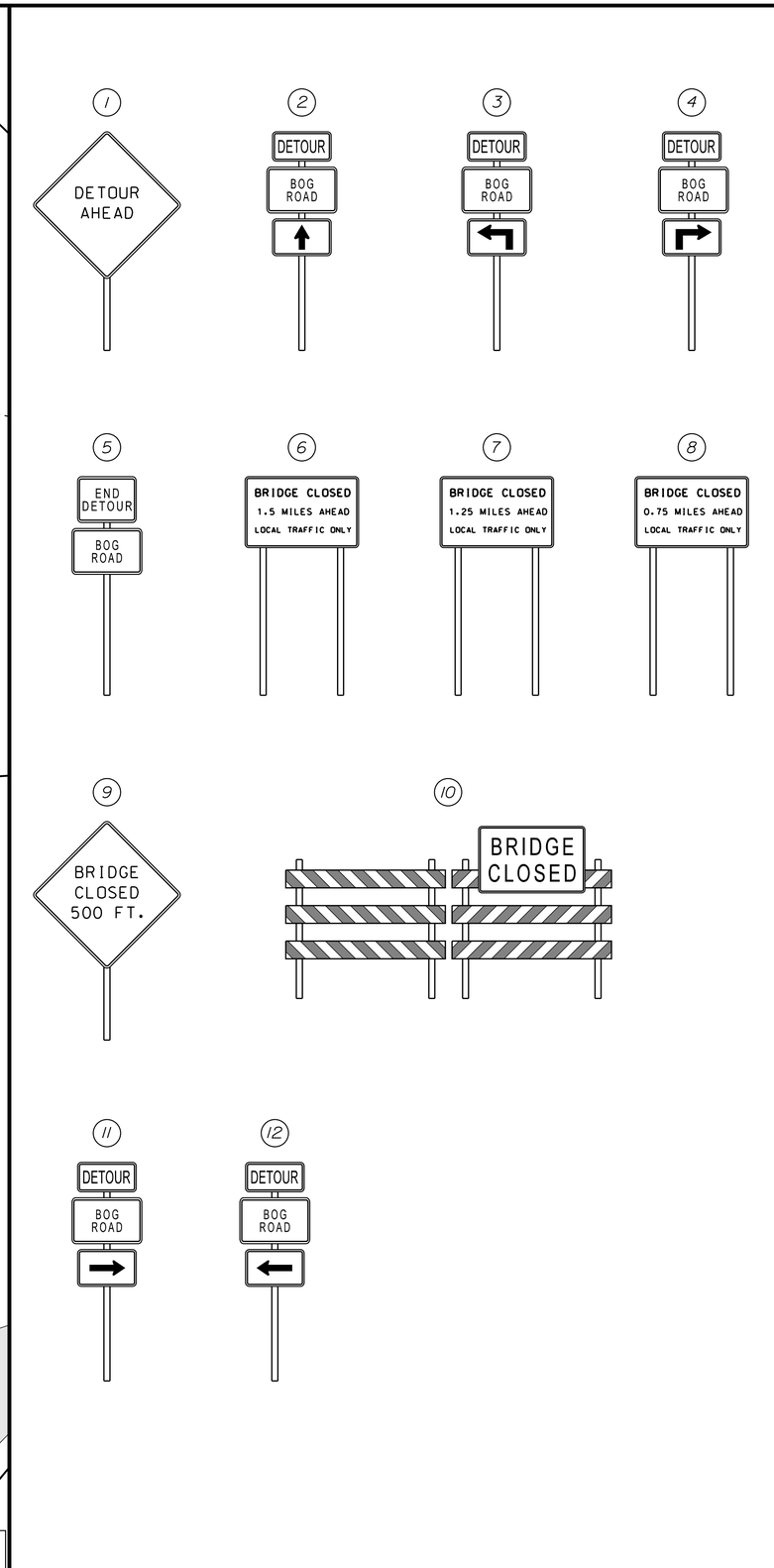
SHEET NUMBER

14

OF 16

Filename: ...\014_Mounted_Guardrail_Box.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024





STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2644200

WIN 26442.00

BRIDGE NO. 5856

BRIDGE PLANS

SIGNATURE

P.E. NUMBER

DATE

PROJ. MANAGER GERALD LIBBY, JR.	BY	DATE
DESIGN-DETAILED	R. NAOUS	MRP	11/2024
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

MEADOW BROOK BRIDGE
MEADOW BROOK
VASSALBORO KENNEBEC COUNTY

DETOUR MAP

SHEET NUMBER

15

OF 16

Filename: ...\BRIDGE\MSTA\015_Detour_Map.dgn Division: BRIDGE Username: Gerald.G.Libbyjr Date:11/20/2024

PLAN LEGEND

Town, County, State	New R/W Along Existing R/W	Existing / Proposed: Sanitary Sewer, Telephone Line, Electric Line, Water Line, Underdrain Line, Gas Line, Guardrail, Culvert	Existing / Proposed: Traveled Way, Ditch, Catch Basin, Manhole, Sewer Manhole, Utility Pole, Fire Hydrant, Curbing	Cut Line, Fill Line, Stonewall, Retaining Wall, Baseline 10+00 11+00 12+00, Monument, Traverse Point, Iron Rod Found IRF, Pipe Found IPF, Replacement Pin Set	
Approx. Property Lines P.L.	Building, Clearing Limit Line				
Existing Right of Way	Trees Conifer, Deciduous				
Limits of Wrought Portion L.O.W.P.	Tree Line, Bush Line				
Control Of Access C.O.A.	Water Edge				
New Right of Way	Ledge, Rock/Boulder, Flag Pole				
New Easement	Fence CHAIN LINK, BARB WIRE, STOCKADE				
New Temporary Rights	Sign, Well WELL, Mailbox				
New R/W Within Existing R/W					

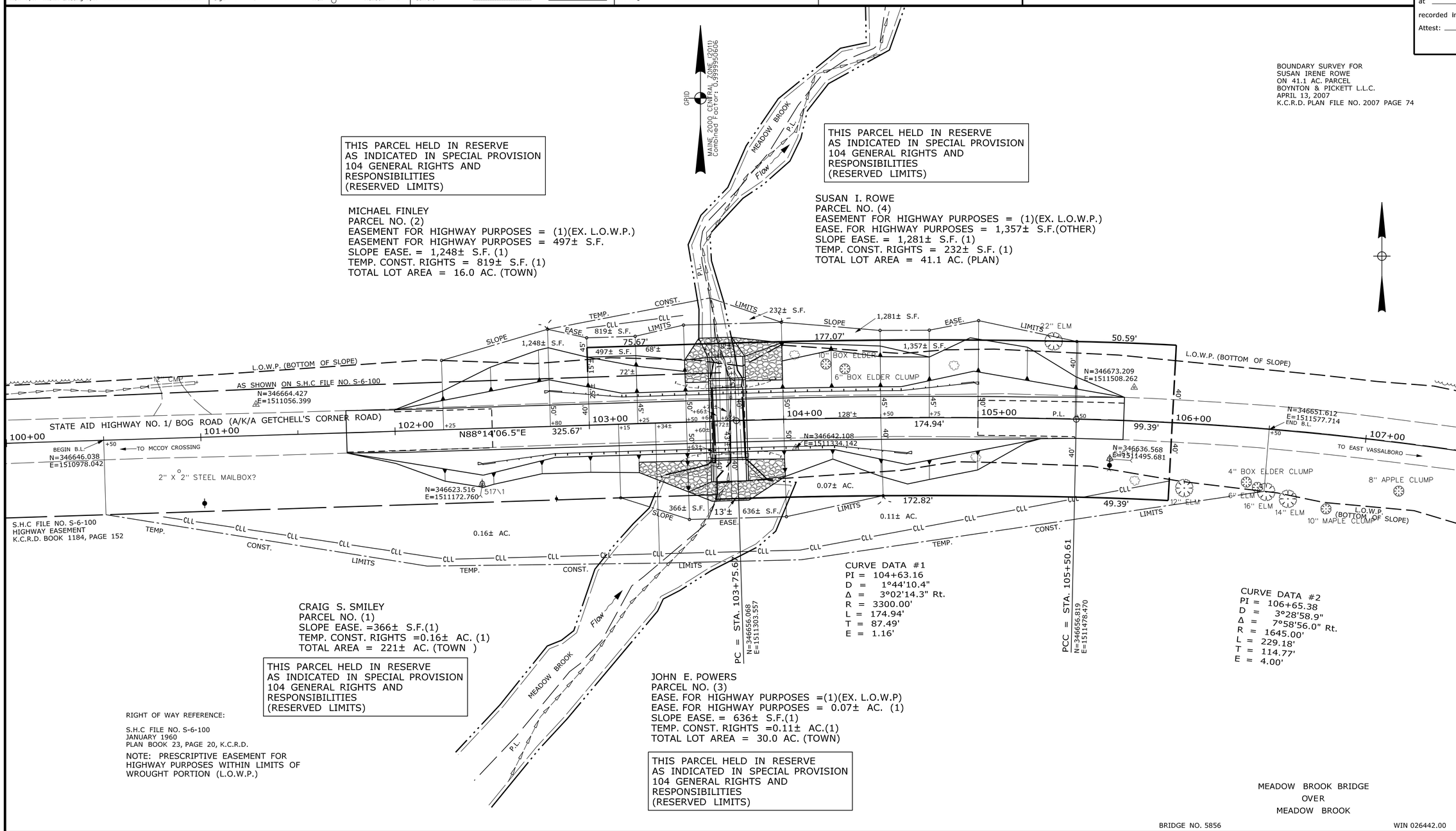
THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ABUTTING PROPERTY OWNERS.

25 0 25 50 75 100
Scale of Feet

STATE OF MAINE
REGISTRY OF DEEDS

COUNTY _____
RECEIVED _____, _____
at _____h_____m_____M and
recorded in Plan Bk _____, Pg._____
Attest: _____
REGISTER

BOUNDARY SURVEY FOR
SUSAN IRENE ROWE
ON 41.1 AC. PARCEL
BOYNTON & PICKETT L.L.C.
APRIL 13, 2007
K.C.R.D. PLAN FILE NO. 2007 PAGE 74



RIGHT OF WAY REFERENCE:

S.H.C FILE NO. S-6-100
JANUARY 1960
PLAN BOOK 23, PAGE 20, K.C.R.D.

NOTE: PRESCRIPTIVE EASEMENT FOR HIGHWAY PURPOSES WITHIN LIMITS OF WROUGHT PORTION (L.O.W.P.)

MEADOW BROOK BRIDGE
OVER
MEADOW BROOK

BRIDGE NO. 5856 WIN 026442.00

ITEM	CHECKED	TECH
EXISTING CONDITION PLAN	D.H.	S.N./B.S.
FINAL RIGHT OF WAY	P.N.S.	K.D.M.
AREAS	P.N.S.	K.D.M.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016 - 207-624-3460
VASSALBORO
RIGHT OF WAY MAP

REVISIONS

NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK	PAGE	COUNTY RECORD			
NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE

BRUCE A. VAN NOTE
COMMISSIONER
JOYCE NOEL TAYLOR
CHIEF ENGINEER
DATE

STATE AID HIGHWAY NO. 1
BOG ROAD
VASSALBORO KENNEBEC COUNTY
FEDERAL AID PROJECT NO. 2644200

OCTOBER 2024	RIGHT-OF-WAY MAP	D.O.T. FILE NO. 6-507
SCALE 1" = 25'	SHEET 1 OF 1	

SHEET NUMBER
16
OF 16

Date: $date$
Username: $user$
Division: $wkgroup$
Filename: $file$