

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design:
2018 American Railway Engineering and Maintenance-of-Way Association (AREMA) (Railroad).

Load and Resistance Factor Design per
AASHTO LRFD Bridge Design Specifications, Eighth Edition 2017 (Highway).

DESIGN LOADING

Live Load (Railroad) Cooper E80
Live Load (Highway) HL - 93 Modified

TRAFFIC DATA

Current (2018) AADT 3100
Future (2038) AADT 3410
DHV - % of AADT 9%
Design Hour Volume 307
Heavy Trucks (% of AADT) 10%
Heavy Trucks (% of DHV) 14%
Directional Distribution (% of DHV) 54%
18 kip Equivalent P 2.0 286
18 kip Equivalent P 2.5 272
Design Speed (mph) 50

HYDROLOGIC DATA

Drainage Area 7.00 sq mi
Design Discharge (Q50) 809.2 cfs
Check Discharge (Q100) 948.2 cfs
Headwater Elevation (Q50) 479.6 ft
Headwater Elevation (Q100) 480.6 ft
Discharge Velocity (Q50) 14.5 fps
Discharge Velocity (Q100) 14.9 fps
Headwater Elevation (Q1.1) 475.5 ft
Discharge Velocity (Q1.1) 1.0 fps

MATERIALS

Concrete:
Precast Class "P"
Fill "Fill"
All Other Class "A"
Reinforcing Steel ASTM A 615/A 615M, Grade 60

Timber Southern Yellow Pine - Structural Grade No. 1

Structural Steel:
All Materials (except as noted) ASTM A 572, Grade 50 (Galvanized)
High Strength Bolts ASTM A 3254, Type I
Threadbar - Tiebacks ASTM A 722, Grade 150

BASIC DESIGN STRESSES

Concrete f'c = 4,000 psi
Precast Concrete f'c = 5,000 psi
Reinforcing Steel f'y = 60,000 psi
ASTM A 572, Grade 50 f'y = 50,000 psi
ASTM A 325 f'u = 120,000 psi
ASTM A 722 f'y = 150,000 psi

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FRENCHVILLE AROOSTOOK COUNTY MADAWASKA SUBDIVISION AND U.S. ROUTE 1 OVER GAGNON BROOK BRIDGE REPLACEMENT PROJECT LENGTH 0.16 mi. BRIDGE NO. 7831 AT M.P. 259.11 (RAILROAD) WIN 21776.00 AND BRIDGE NO. 2303 (HIGHWAY) WIN 23565.00

UTILITIES

Maine Fiber Company
Charter Communications
Emera Maine
Consolidated Communications
MaineDOT Railroad
Maine Northern Railway Company

MAINTENANCE OF TRAFFIC

Railroad closure period of 7 days for Bridge No. 7831.
Maintain one lane of alternating two-way highway traffic
using temporary alignment for Bridge No. 2303.

PROJECT LOCATION:	Madawaska Subdivision at Mile Post 259.11 and U.S. Route 1 in Frenchville, approximately 0.47 of a mile south of Pelletier Avenue (N47°19.172' W68°22.92').
PROGRAM AREA:	Multimodal Program
OUTLINE OF WORK:	Bridge replacement and approach work

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED COMMISSIONER: <i>[Signature]</i> CHIEF ENGINEER: <i>[Signature]</i>	DATE 1-24-2020
PROJECT INFORMATION	SIGNATURE 13225 P.E. NUMBER January 9, 2020 DATE	DATE 1-24-2020
PROGRAM MULTIMODAL	PROJECT MANAGER MATE BENOIT	DESIGNER GREG GOODRICH
CONSULTANT	PROJECT RESIDENT VHB	CONTRACTOR
PROJECT COMPLETION DATE		
FRENCHVILLE GAGNON BROOK BRIDGE		
TITLE SHEET		
SHEET NUMBER		
1		
OF 44		

Earthwork Summary:

COMMON EXCAVATION FOR ESTIMATE			
COMMON EXCAVATION (FROM CROSS SECTIONS)		1,270	
EARTH FROM DRIVES, OLD ROAD, ETC.		0	
GRUBBING IN FILL		384	
LOAM SALVAGE IN FILL		0	
UNDERCUT		0	
MUCK EXCAVATION		0	
CULVERT INLET AND OUTLET DITCHES		0	
PAVEMENT SALVAGE IN FILL		0	
TOTAL COMMON EXCAVATION (for estimate)			1,654
FILL FOR BORROW CALCULATIONS			
COMMON FILL (FROM CROSS SECTIONS)		9,410	
FILL FOR DRIVES		0	
GRUBBING IN FILL		384	
LOAM SALVAGE IN FILL		0	
UNDERCUT		0	
MUCK EXCAVATION		0	
PAVEMENT SALVAGE IN FILL		0	
TOTAL FILL			9,794
ROCK EXCAVATION FOR ESTIMATE			
ROCK EXCAVATION (FROM CROSS SECTIONS)		0	
ROCK EXCAVATION (BOULDERS)		0	
TOTAL ROCK EXCAVATION			0
UNCLASSIFIED EXCAVATION FOR ESTIMATE			
TOTAL UNCLASSIFIED EXCAVATION			0
AVAILABLE COMMON EXCAVATION FOR BORROW CALCULATIONS			
(1) TOTAL COMMON EXCAVATION			1,654
DEDUCTIONS:			
GRUBBING IN CUT			
GRUBBING IN FILL			
LOAM SALVAGE IN CUT		0	
LOAM SALVAGE IN FILL		0	
UNDERCUT		0	
MUCK EXCAVATION		0	
PAVEMENT SALVAGE (CUT & FILL)		0	
(2) TOTAL DEDUCTIONS			0
TOTAL AVAILABLE COMMON EXCAVATION (1) MINUS (2)			1,654
TOTAL AVAILABLE STRUCT. EXCAVATIONS (USUALLY UNDERDRAIN ONLY)			0
RIPRAP EXCAVATION			0
TOTAL AVAILABLE NON-ROCK EXCAVATION			1,654
COMPUTATION OF GRANULAR BORROW FOR ESTIMATE			
GRANULAR BORROW TO REPLACE MUCK		0	
GRANULAR BORROW IN LOW WET AREAS		0	
GRANULAR BORROW TO MAINTAIN TRAFFIC		0	
GRANULAR BORROW FOR UNDERCUTTING		0	
GRANULAR BORROW =		0 x 1.00 =	0
COMPUTATION FOR COMMON BORROW FOR ESTIMATE			
(3) TOTAL FILL			9,794
TOTAL AVAIL. NON-ROCK EXCAV.	1,654 x 0.90 =	1,489	
TOTAL AVAIL. ROCK EXCAV.	0 x 1.30 =	0	
TOTAL AVAIL. STR. ROCK EXCAV.	0 x 1.30 =	0	
TOTAL WASTE MATERIAL TO BE UTILIZED	0 x 0.00 =	0	
(4) TOTAL AVAILABLE EXCAVATION			1,489
BORROW NEEDED = TOTAL FILL MINUS TOTAL AVAILABLE EXCAVATION			8,305



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

CAPITAL PROJECTS

BRIDGE NO. 7831 & 2303
WIN 211776.00 & 235665.00
BRIDGE PLANS

PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	1/30/2020	JRD	1/30/2020
CHECKED-REVIEWED		JRD	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
EARTHWORK SUMMARY

SHEET NUMBER

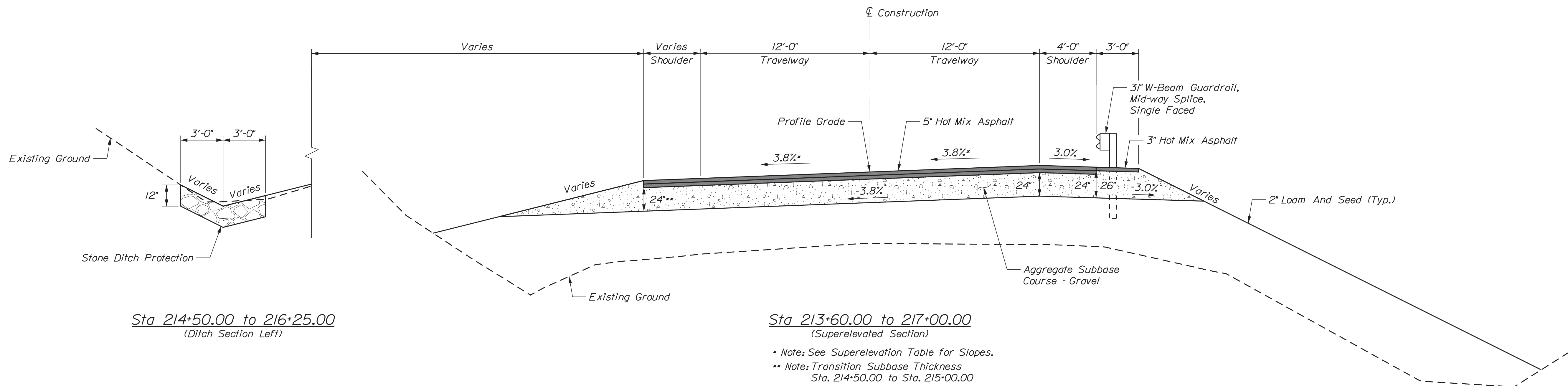
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Date: 1/30/2020

Username: kwentworth

Division: MULTIMODAL

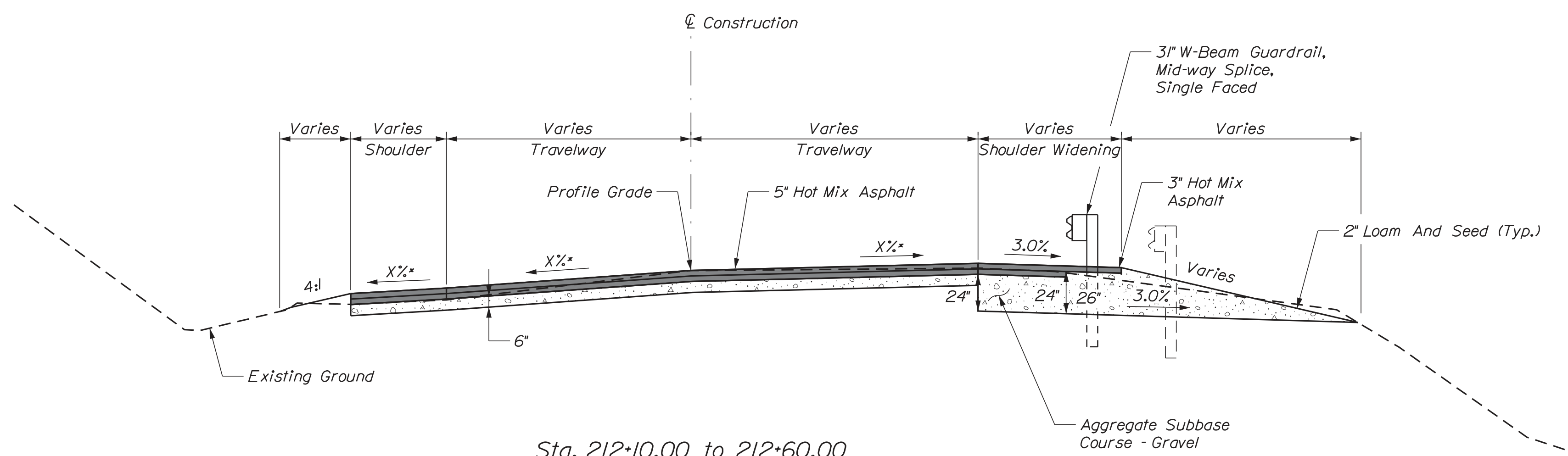
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Sta 214+50.00 to 216+25.00
(Ditch Section Left)

Sta 213+60.00 to 217+00.00
(Superelevated Section)

* Note: See Superelevation Table for Slopes.
** Note: Transition Subbase Thickness
Sta. 214+50.00 to Sta. 215+00.00



Sta. 212+10.00 to 212+60.00
(Full Depth HMA with Right Shoulder Reconstruction)

* Note: See Superelevation Table for Slopes.

US ROUTE 1 SUPERELEVATION TABLE				
LT SHLDR %	LT TW %	STATION	RT TW %	RT SHLDR %
		START		
MATCH	MATCH	212+10	MATCH	MATCH
-7.5	-7.5	212+50	2.4	-3.0
-5.8	-5.8	213+00	3.0	-3.0
-4.1	-4.1	213+50	3.7	-3.0
-3.8	-3.8	213+60	3.8	-3.0
		TO		
-3.8	-3.8	215+00	3.8	-3.0
-3.0	-3.0	215+24	3.0	-3.0
-3.0	-3.0	215+50	2.1	-3.0
-3.0	-3.0	216+00	0.4	-3.0
-3.0	-3.0	216+50	-1.3	-3.0
-3.0	-3.0	217+00	-3.0	-3.0
		TO		
-3.0	-3.0	218+50	-3.0	-3.0
MATCH	MATCH	219+00	MATCH	MATCH
		219+50		
		220+00		
		220+50		
		END		

Notes:

- The pavement, base and subbase depths as shown on the plans are intended to be nominal.
- When superelevation exceeds the slope of the low side of the shoulder, the low side shoulder shall have the same slope as the travelway.
- Crown for both the normal and superelevated sections for all courses of subbase and pavement shall be straight.
- The algebraic difference between the shoulder and travelway cross slopes "rollover" shall not exceed 8%.
- The stationing shown under each typical is approximate.

Not To Scale

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. 7831 & 2303
WIN
211776.00 & 235665.00
BRIDGE PLANS



PROJ. MANAGER	DATE	BY	DATE
DESIGN DETAILED	1/30/2020	JRD	
CHECKED-REVIEWED	1/30/2020	JRD	
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
TYPICAL APPROACH
SECTIONS (1 OF 2)

SHEET NUMBER

4

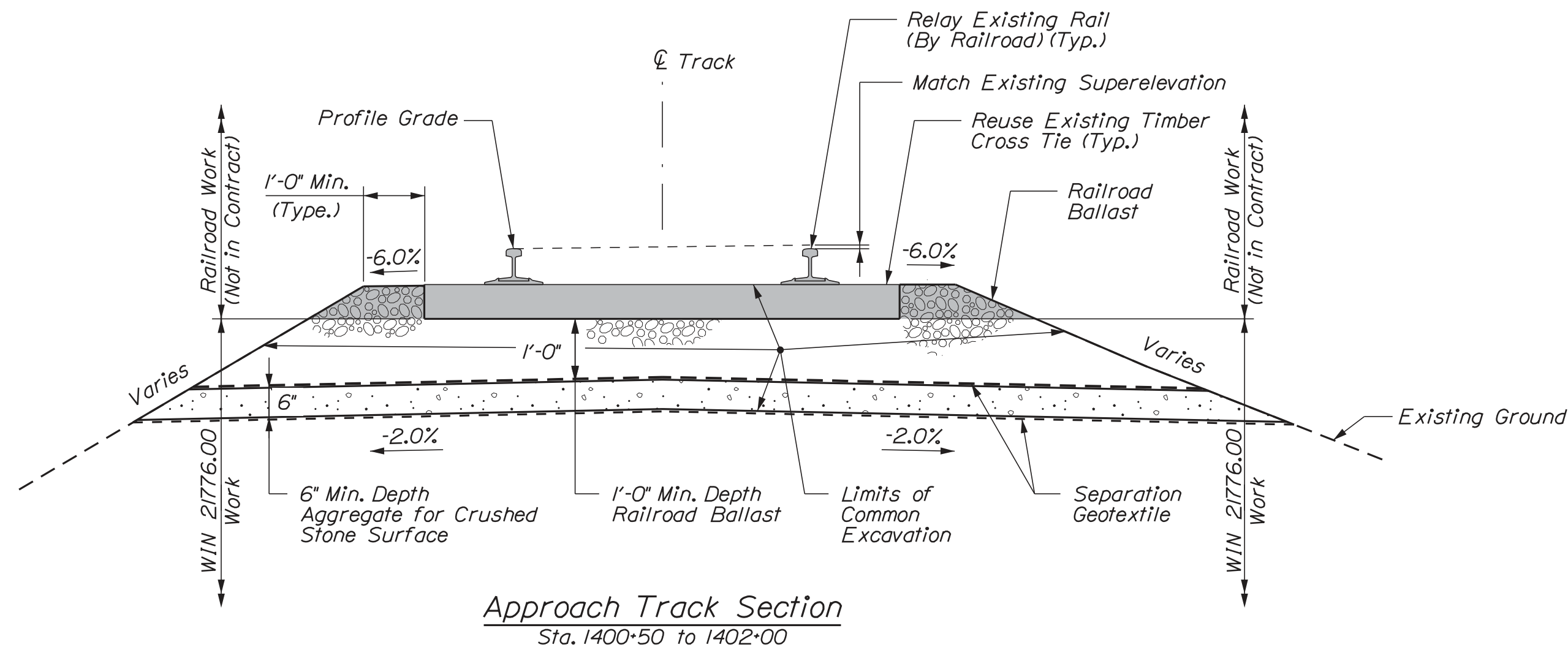
OF 44

Date: 1/30/2020

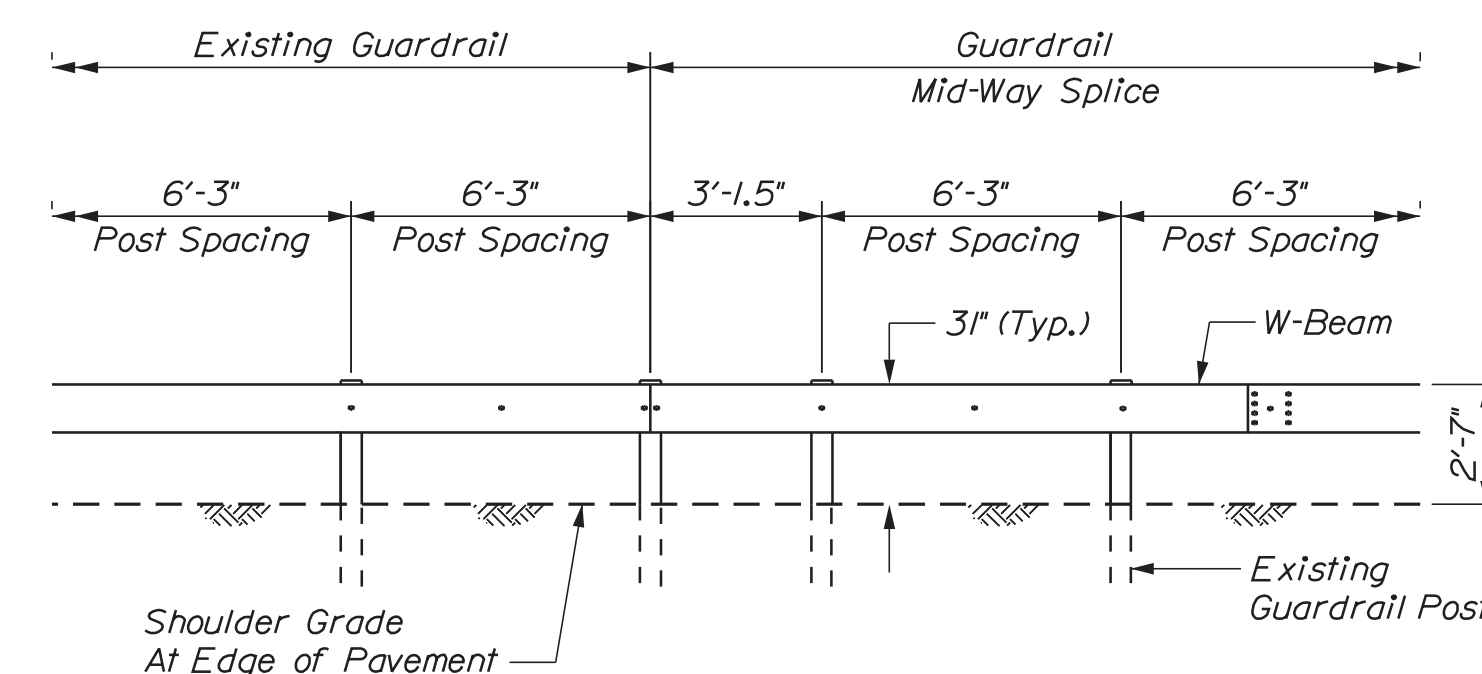
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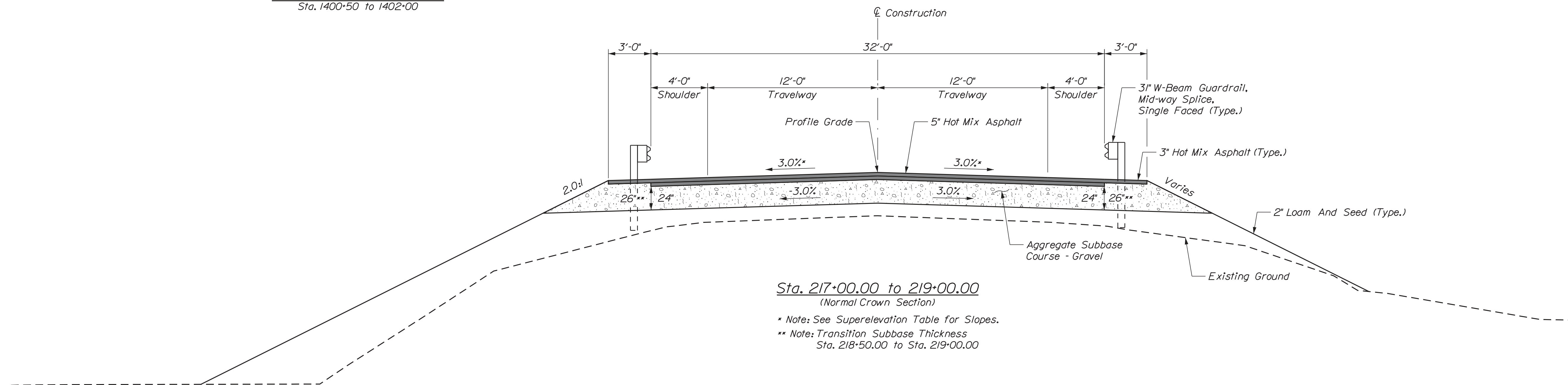
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Approach Track Section
Sta. 1400+50 to 1402+00

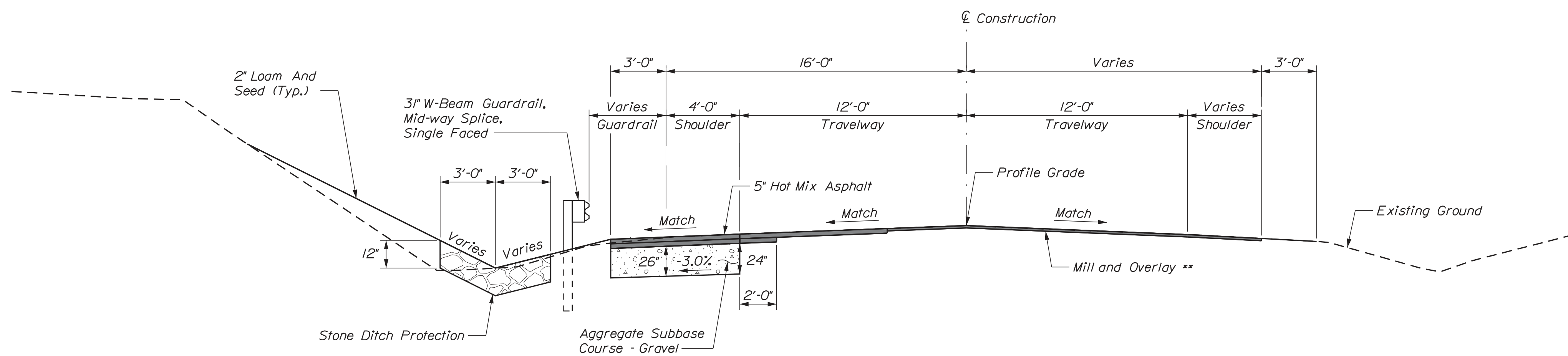


Guardrail Connection Detail
(Sta. 212+26 Rt.)



Sta. 217+00.00 to 219+00.00
(Normal Crown Section)

* Note: See Superelevation Table for Slopes.
** Note: Transition Subbase Thickness
Sta. 218+50.00 to Sta. 219+00.00



Sta. 219+00.00 to 220+50.00
(Mill & Overlay With Left Shoulder Reconstruction)

** Note: See Profile For Mill & Overlay Pavement Depths.

Notes:

1. The pavement, base and subbase depths as shown on the plans are intended to be nominal.
2. When superelevation exceeds the slope of the low side of the shoulder, the low side shoulder shall have the same slope as the travelway.
3. Crown for both the normal and superelevated sections for all courses of subbase and pavement shall be straight.
4. The algebraic difference between the shoulder and travelway cross slopes "rollover" shall not exceed 8%.
5. The stationing shown under each typical is approximate.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. WIN 21776.00 & 23565.00
7831 & 2303 BRIDGE PLANS



PROJ. MANAGER	DATE	BY	DATE
DESIGN DETAILED	1/30/2020	JRD	1/30/2020
CHECKED-REVIEWED		JRD	
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
TYPICAL APPROACH
SECTIONS (2 OF 2)

SHEET NUMBER

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OF 44

Not To Scale

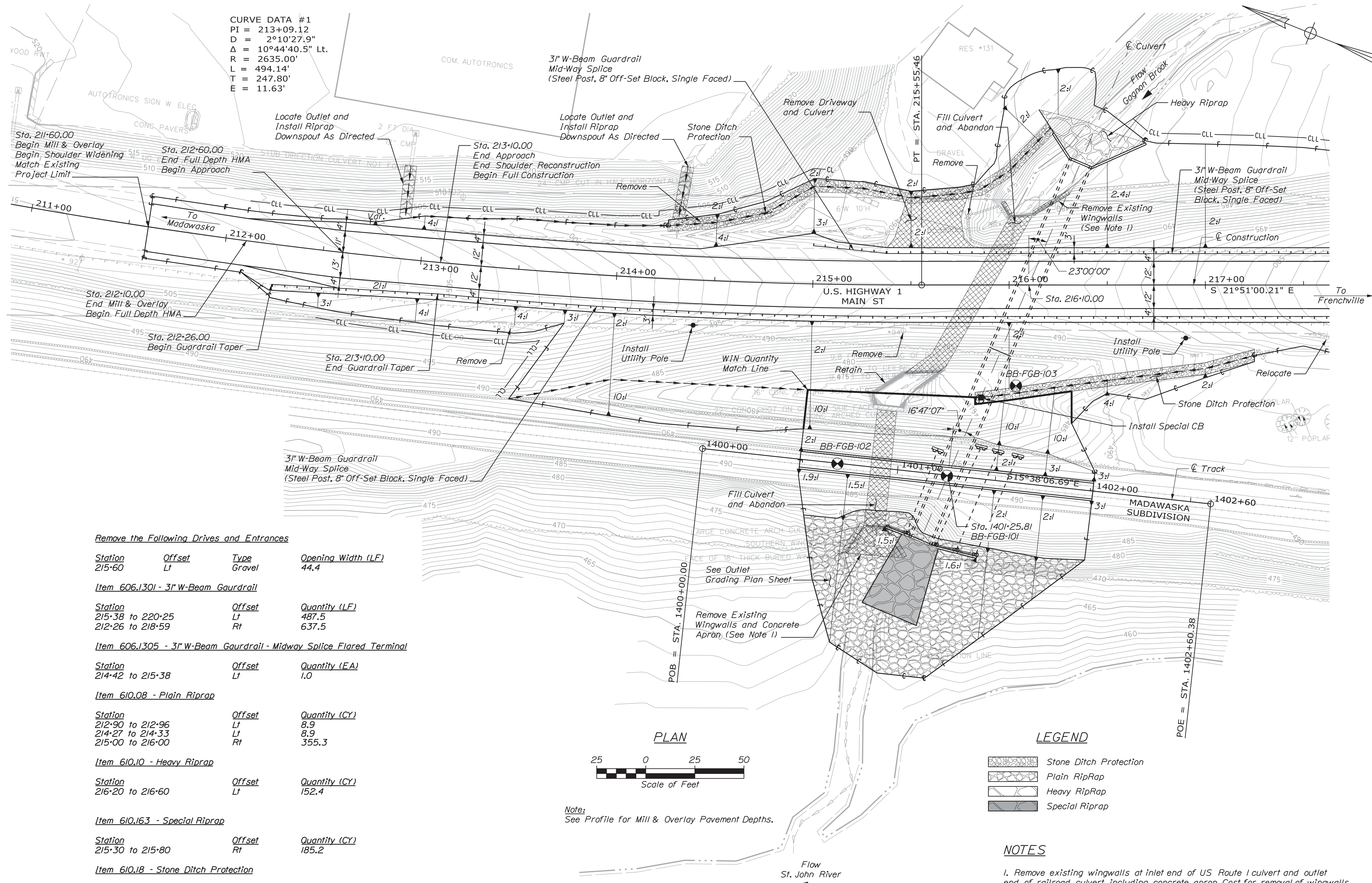
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Division: MULTIMODAL

Filename: 006_plan_01.dgn

CURVE DATA #1
 PI = 213+09.12
 D = 2°10'27.9"
 Δ = 10°44'40.5" Lt.
 R = 2635.00'
 L = 494.14'
 T = 247.80'
 E = 11.63'



Remove the Following Drives and Entrances

Station	Offset	Type	Opening Width (LF)
215+60	Lt	Gravel	44.4

Item 606.1301 - 3" W-Beam Gaurdrail

Station	Offset	Quantity (LF)
215+38 to 220+25	Lt	487.5
212+26 to 218+59	Rt	637.5

Item 606.1305 - 3" W-Beam Gaurdrail - Midway Splice Flared Terminal

Station	Offset	Quantity (EA)
214+42 to 215+38	Lt	1.0

Item 610.08 - Plain Riprap

Station	Offset	Quantity (CY)
212+90 to 212+96	Lt	8.9
214+27 to 214+33	Lt	8.9
215+00 to 216+00	Rt	355.3

Item 610.10 - Heavy Riprap

Station	Offset	Quantity (CY)
216+20 to 216+60	Lt	152.4

Item 610.163 - Special Riprap

Station	Offset	Quantity (CY)
215+30 to 215+80	Rt	185.2

Item 610.18 - Stone Ditch Protection

Station	Offset	Quantity (CY)
214+25 to 216+25	Lt	70.7
215+86 to 217+30	Rt	47.9

PLAN



Note:
See Profile for Mill & Overlay Pavement Depths.

LEGEND

- Stone Ditch Protection
- Plain Riprap
- Heavy Riprap
- Special Riprap

NOTES

1. Remove existing wingwalls at inlet end of US Route 1 culvert and outlet end of railroad culvert, including concrete apron. Cost for removal of wingwalls at apron shall be included in Item 202.12, Removing Existing Structural Concrete. Existing wingwalls between US Route 1 and railroad culvert may remain in-place.
2. Existing culvert shall be filled with concrete fill. Cost included in Item 502.525, Concrete Fill.

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 CAPITAL PROJECTS
 BRIDGE NO. 7831 & 2303
 WIN 21776.00 & 23565.00
 BRIDGE PLANS



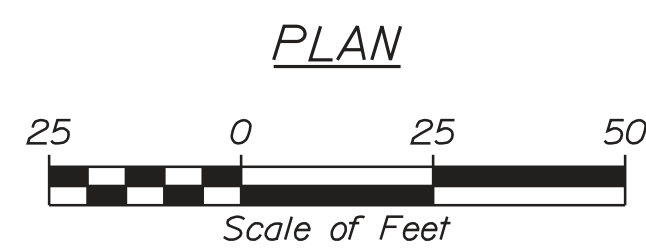
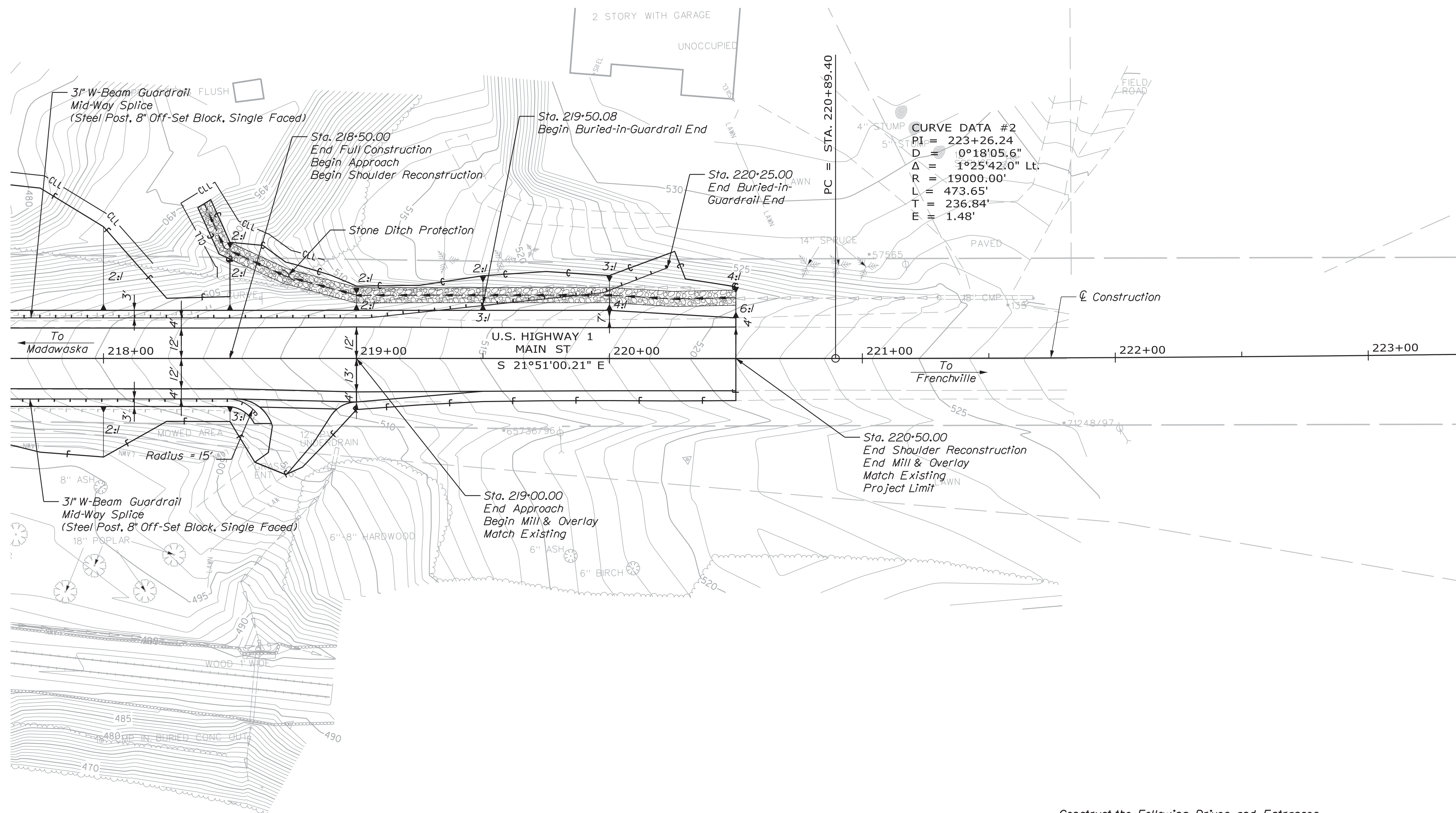
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DESIGN REVIEWED			
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
 OVER GAGNON BROOK
 FRENCHVILLE AROOSTOOK COUNTY
 GENERAL PLAN (1 OF 2)

SHEET NUMBER

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Note:
See Profile for Mill & Overlay Pavement Depths.

Construct the Following Drives and Entrances

Station	Offset	Type	Opening Width (LF)
218+72	Rt	Field	50.0

Item 606.1303 - 3' W-Beam Guardrail - Midway Splice - 15ft Radius & Less

Station	Offset	Quantity (LF)
218+50 to 218+65	Rt	25.0

Item 606.1318 - Buried-In-Guardrail End

Station	Offset	Quantity (EA)
219+00 to 220+25	Lt	1.0

Item 606.265 - Terminal End - Single Rail - Galvanized Steel

Station	Offset	Quantity (EA)
218+60	Rt	1.0

Item 610.18 - Stone Ditch Protection

Station	Offset	Quantity (CY)
218+35 to 220+50	Lt	74.6



PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	1/30/2020	JRD	1/30/2020
CHECKED-REVIEWED		JRD	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

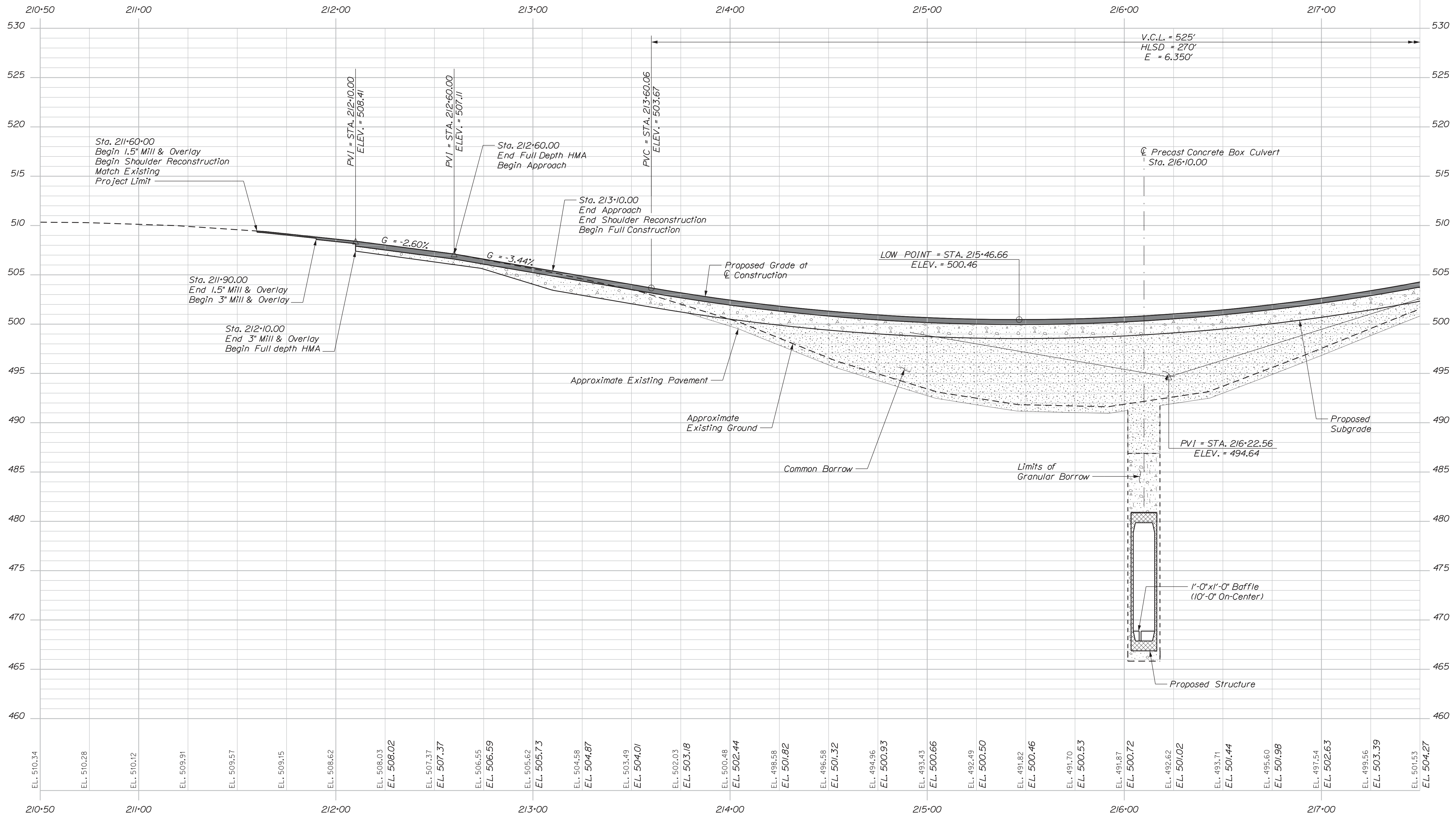
GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
GENERAL PLAN (2 OF 2)

Date: 1/30/2020

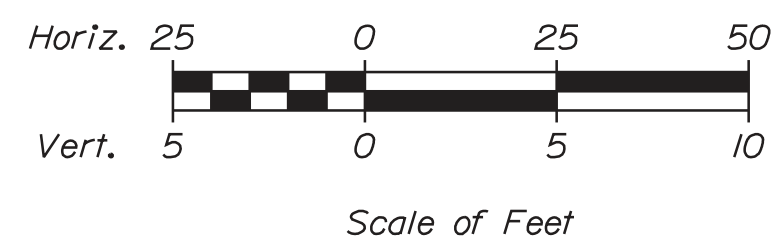
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Division: MULTIMODAL

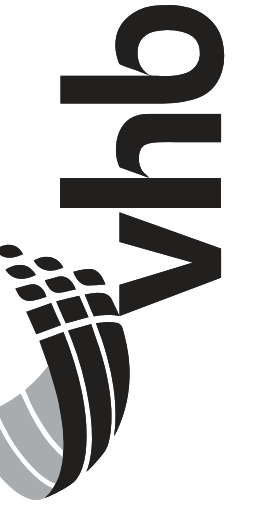
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PROFILE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. 7831 & 2303
WIN 211776.00 & 235665.00
BRIDGE PLANS



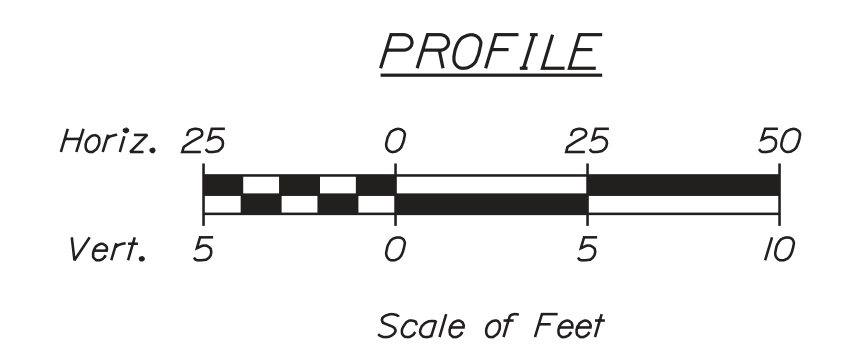
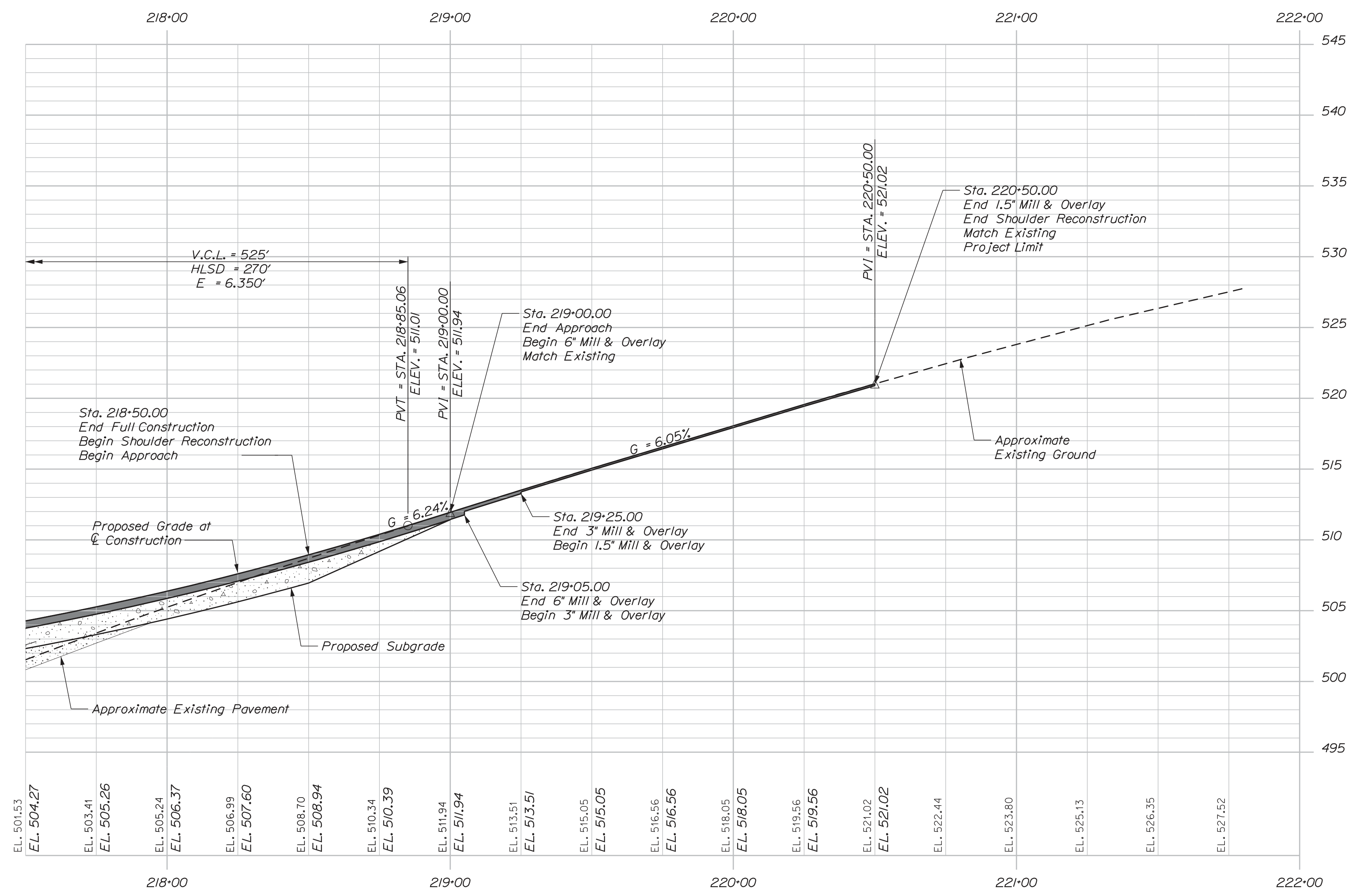
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ECF	1/30/2020	JRD	1/30/2020
ECF		JRD	
DESIGN DETAILED			
CHECKED-REVIEWED			
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			


GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
U.S. ROUTE 1
PROFILE (1 OF 2)

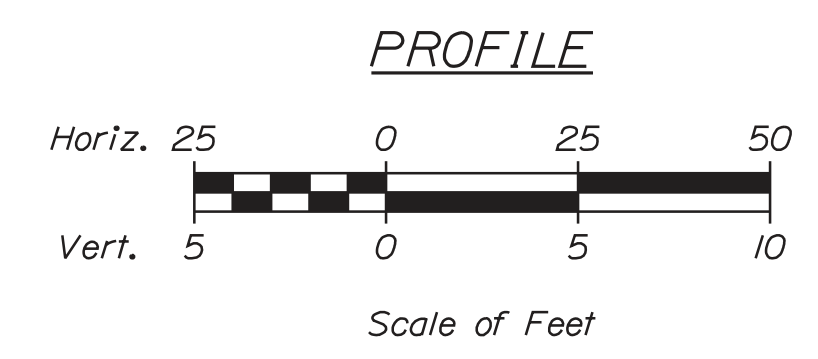
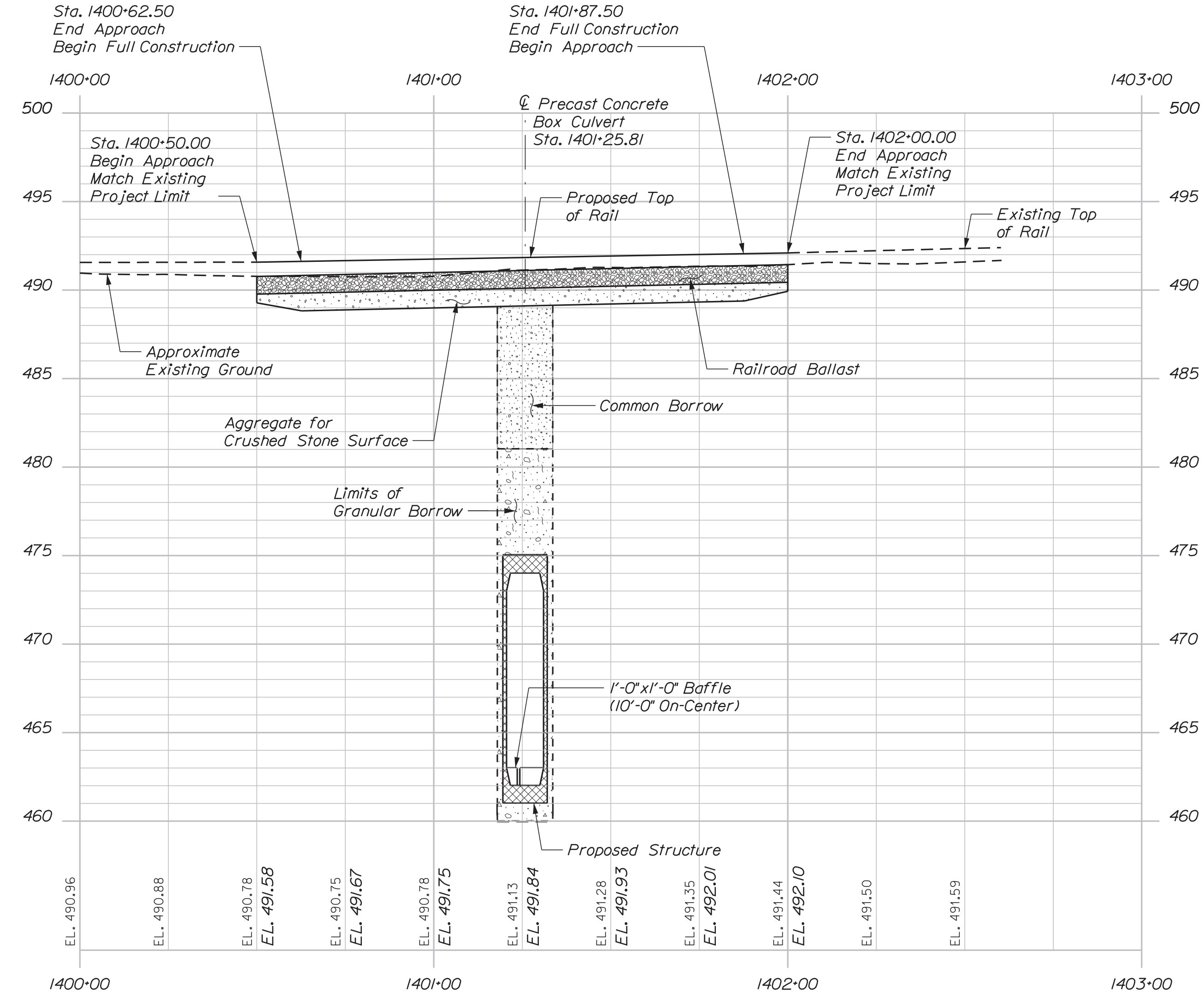
SHEET NUMBER

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STATE OF MAINE DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS	
BRIDGE NO. 7831 & 2303		WIN 211776.00 & 235665.00	
BRIDGE PLANS			
			
PROJ. MANAGER DATE DETAILED CHECKED-REVIEWED DESIGNS DETAILED	DATE BENEFIT BY JRD JRD	DATE 1/30/2020 1/30/2020	REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES
GAGNON BROOK BRIDGE OVER GAGNON BROOK FRENCHVILLE AROOSTOOK COUNTY		U.S. ROUTE 1 PROFILE (2 OF 2)	
SHEET NUMBER			
9			
OF 44			



PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	1/30/2020	KDW	1/30/2020
CHECKED-REVIEWED		GSG	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
RAILROAD PROFILE

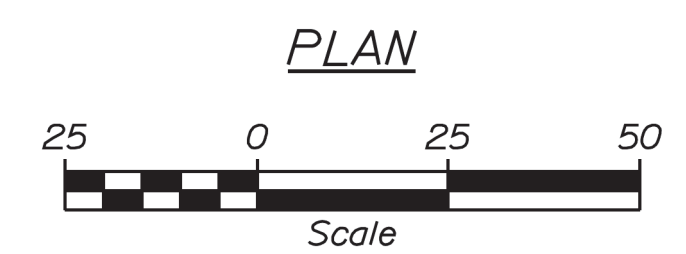


NOTES

- 1) Base map developed from electronic files (Alignments.dgn, Alignments_Rail.dgn, Bridge.dgn, Conours.dgn, Highway.dgn, RWPlan.dgn, Text.dgn, and Topo.dgn) provided by VHB on September 11, 2019 and January 8, 2020.
- 2) The as-drilled locations of the test borings were surveyed by MaineDOT and provided to GZA in an electronic file (borings.dgn) on October 4, 2019.
- 3) BB-FGB-100 and BB-FGB-200 series bridge borings were performed by New England Boring Contractors and observed by GZA personnel between August 7 and 11, 2017, and on October 2, 2019.

BORING LOCATION PLAN LEGEND

BB-FGB-201 Location and designation of cased wash boring



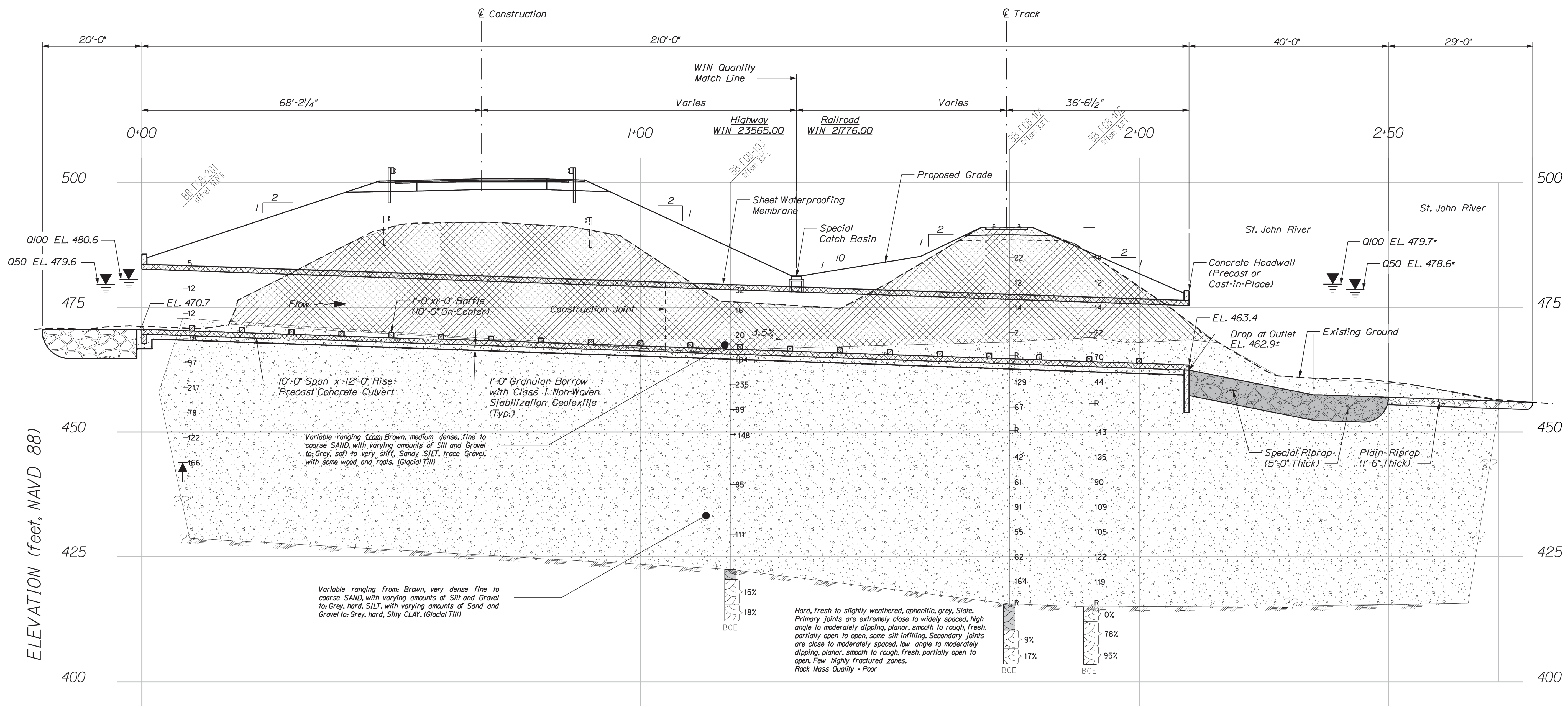
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. 7831 & 2303
WIN 21776.00 & 23565.00
BRIDGE PLANS

SIGNATURE: *[Signature]*
P.E. NUMBER: 7275
DATE: 1-8-2020

PROJ. MANAGER	DATE	BY
DESIGN-DETAILED		
CHECKED-REVIEWED		
DESIGN-DETAILED		
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE
ARROSTOCK COUNTY
BORING LOCATION PLAN

PREPARED BY:
SHEET NUMBER
11
OF 43



ELEVATION (feet, NAVD 88)

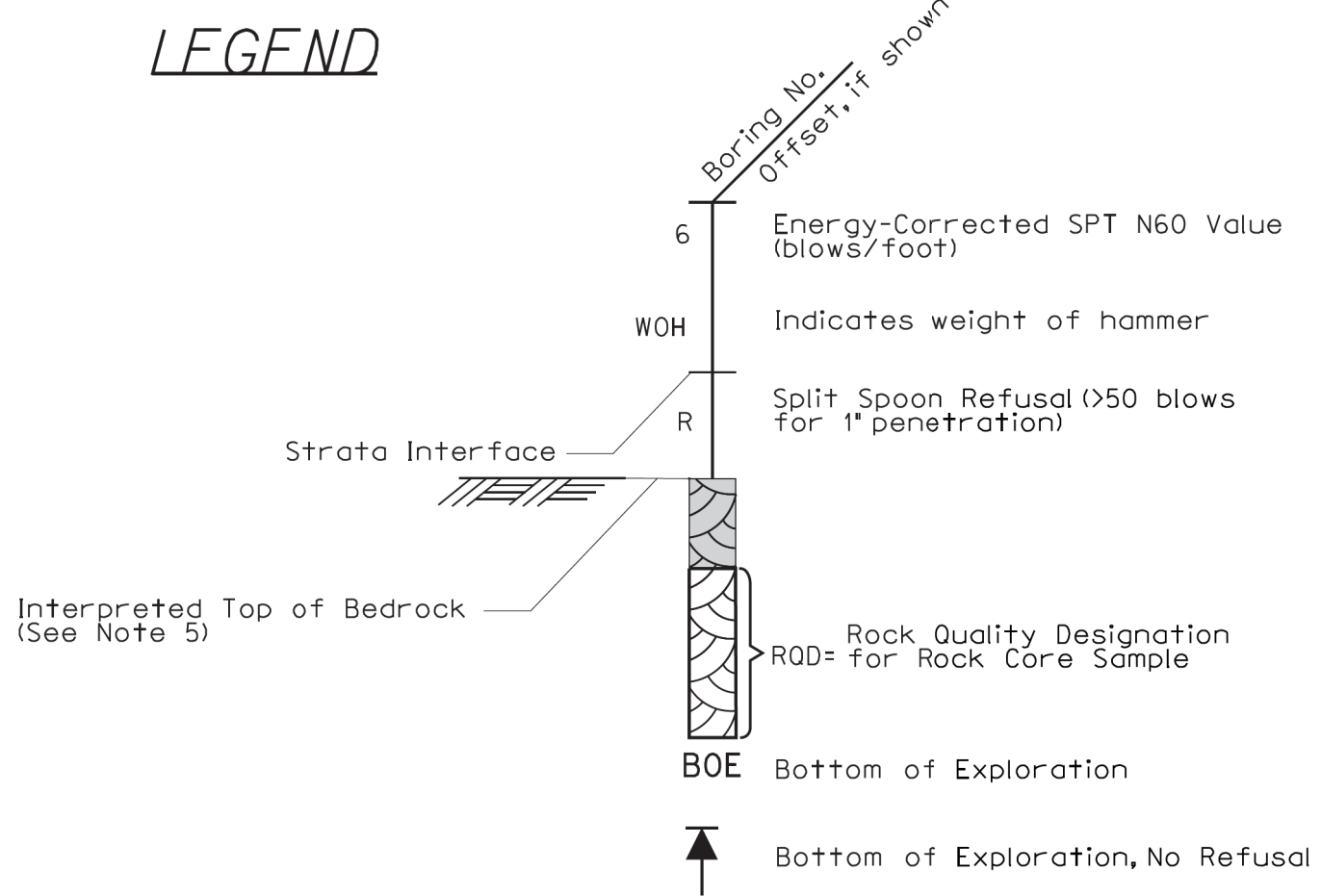
LONGITUDINAL BOX CULVERT SECTION A-A

* Water surface elevations provided are based on gage data for St. John River and are not in conjunction with controlling headwater elevations for Gagnon Brook. See hydraulic memo.

NOTES

- 1) Base map developed from electronic files (032_details_01.dgn, Bridge Profile.dgn, and Rail_Profile.dgn) provided by VHB on September 11, 2019 and January 8, 2020.
- 2) Stationing is based on the culvert centerline. Station 0+00 is located at the inlet of the culvert (East edge).
- 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.

LEGEND



PREPARED BY:



SHEET NUMBER

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
WIN
BRIDGE NO. 7831 & 2303
21776.00 & 23565.00
BRIDGE PLANS



Signature: [Handwritten Signature]
SIGNATURE
7275
P.E. NUMBER
1-8-2020
DATE


PROJ. MANAGER	DATE	BY	DATE	REVISIONS	FIELD CHANGES
DESIGN-DETAILED					
CHECKED-REVIEWED					
DESIGN-DETAILED01					
DESIGN-DETAILED02					
DESIGN-DETAILED03					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE
AROOSTOOK COUNTY
INTERPRETIVE SUBSURFACE PROFILE

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gagnon Brook Railway Bridge #7831 Route 1 Bridge #2303 Frenchville, Maine	Boring No.: BB-FGB-101																																																																																																					
Driller: New England Boring Contractors	Elevation (ft.): 491.4	Auger ID/OD: 4.5" SSA	WIN: 21776.00																																																																																																					
Operator: Mike Porter	Datum: NAVD 88	Sampler: Standard Splitspoon																																																																																																						
Logged By: B. Woodman	Rig Type: High-Rail	Hammer Wt./Fall: 140#/30"																																																																																																						
Date Start/Finish: 8-23-17/8-24-17	Drilling Method: SPT / Drive & Wash	Core Barrel: NQ																																																																																																						
Boring Location: N1271563.1, E2170832.3	Casing ID/OD: 4.4 5"	Water Level*: 24.7 bgs																																																																																																						
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Bottom of Precast Concrete Box Culvert

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STATE OF MAINE DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS	
BRIDGE NO. 7831 & 2303		WIN 21776.00 & 23565.00 BRIDGE PLANS	
			
SIGNATURE: <i>Christopher L. Souty</i>		DATE: 1-8-2020	
P.E. NUMBER: 7275		FIELD CHANGES	
PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED			
CHECKED-REVIEWED			
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
GAGNON BROOK BRIDGE OVER GAGNON BROOK FRENCHVILLE AROOSTOOK COUNTY BORING LOG (3 OF 6)			
SHEET NUMBER			
15			
OF 44			

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gagnon Brook Railway Bridge #7831 Route 1 Bridge #2303 Location: Frenchville, Maine	Boring No.: BB-FGB-102 WIN: 21776.00																																																		
Driller: New England Boring Contractors	Elevation (ft.): 491.1	Auger ID/OD: 4.5" SSA																																																			
Operator: Mike Porter	Datum: NAVD 88	Sampler: Standard Splitspoon																																																			
Logged By: B. Woodman	Rig Type: High-Rail	Hammer Wt./Fall: 140#/30"																																																			
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Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gagnon Brook Railway Bridge #7831 Route 1 Bridge #2303 Location: Frenchville, Maine	Boring No.: BB-FGB-102 WIN: 21776.00																																											
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Sample Information																																														
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STATE OF MAINE DEPARTMENT OF TRANSPORTATION CAPITAL PROJECTS	BRIDGE NO. 7831 & 2303 WIN 21776.00 & 23565.00 BRIDGE PLANS
	SIGNATURE <i>Christopher L. Sison</i> 7275 P.E. NUMBER 1-8-2020 DATE
GAGNON BROOK BRIDGE OVER GAGNON BROOK FRENCHVILLE AROOSTOOK COUNTY	BORING LOG (4 OF 6)
SHEET NUMBER <h1 style="margin: 0;">16</h1> OF 44	

Bottom of Precast Concrete Box Culvert

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gagnon Brook Railway Bridge #7831 Route 1 Bridge #2303 Frenchville, Maine	Boring No.: BB-FGB-103
Driller: New England Boring Contractors		Elevation (ft.): 479.5	Auger ID/OD: 4.5" SSA
Operator: Mike Porter		Date: NAVD 88	Sampler: Standard Splitspoon
Logged By: B. Woodman		Rig Type: Mobile Drill B-53 (ATV)	Hammer Wt./Fall: 140#/30"
Date Start/Finish: 8-28-17/8-28-17		Drilling Method: Drive & Wash	Core Barrel:
Boring Location: N1271547.5, E2170888.0		Casing ID/OD: 4.4.5"	Water Level*: 11.0' bgs
Hammer Efficiency Factor: 0.677		Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>	

Sample Information						Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class	
Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.)	Blows (12 in.)			
0	1D	24/13	0.0 - 2.0	2-12-16-19	28	32	SSA	Brown, dry, medium dense, fine to coarse SAND, some gravel, little silt, with roots. (FH)
5	2D	24/3	4.0 - 6.0	15-4-10-22	14	16		Brown, dry, medium dense, fine to coarse SAND, some gravel, little silt, with roots. (FH)
10	3D	24/10	9.0 - 11.0	4-9-9-19	18	20	17	Brown-olive-brown, wet, medium dense, Silty SAND, little gravel. (FH)
15	4D	24/13	14.0 - 16.0	30-30-62-77	92	104	104	Grey, wet, hard, Silty CLAY, some sand, little gravel. (Glacial Till)
20	5D	18/11	19.0 - 20.5	33-84-124	208	235		Grey, wet, hard, Sandy CLAY, trace gravel. (Glacial Till)
25	6D	24/17	24.0 - 26.0	22-41-38-60	79	89		Grey, wet, hard, Sandy CLAY, trace gravel. (Glacial Till)

Remarks:

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- Automatic Hammer NEBC #2 Energy Transfer Ratio = 0.677.
- Water level measurements were taken immediately after removal of casing.

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

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Page 1 of 3
Boring No.: BB-FGB-103

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Hammer Efficiency Factor: 0.677		Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>	

Sample Information						Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class	
Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.)	Blows (12 in.)			
25	7D	24/24	29.0 - 31.0	70-64-67-87	131	148		Grey, wet, very dense, fine to coarse SAND, little silt, trace gravel (Glacial Till)
40	8D	24/21	39.0 - 41.0	14-31-44-66	75	85		Grey, wet, hard, Silty CLAY, trace fine to medium sand, few fine sand lenses, one medium sand lens. (Glacial Till)
50	9D	24/20	49.0 - 51.0	31-42-54-73	98	111		Grey, wet, hard, Silty CLAY, trace fine sand, few fine sand lenses. (Glacial Till)

Remarks:

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Page 2 of 3
Boring No.: BB-FGB-103

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Driller: New England Boring Contractors		Elevation (ft.): 479.5	Auger ID/OD: 4.5" SSA
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Boring Location: N1271547.5, E2170888.0		Casing ID/OD: 4.4.5"	Water Level*: 11.0' bgs
Hammer Efficiency Factor: 0.677		Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>	

Sample Information						Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class	
Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.)	Blows (12 in.)			
50								
55								
60	R1	60/48	59.0 - 64.0	RQD = 15%				Hard, fresh to slightly weathered, aphantic, grey, SLATE. Primary joints are extremely close to closely spaced, high angle, planar, rough, fresh, partially open to open, with trace silt infilling. Secondary joints are moderately spaced, low angle to moderately dipping, planar, rough, discolored, open. Rock Mass Quality = Very Poor Recovery = 80% Rock Core Times (min:sec): 59.0-60.0 (3:28), 60.0-61.0 (2:56), 61.0-62.0 (2:38), 62.0-63.0 (3:08), 63.0-64.0 (2:32)
65	R2	40/39	64.0 - 67.3	RQD = 18%				Hard, fresh to slightly weathered, aphantic, grey, SLATE. Joints are extremely close to closely spaced, high angle, planar, rough, fresh, open, with trace silt infilling. Rock Mass Quality = Very Poor Recovery = 88% Rock Core Times (min:sec): 64.0-65.0 (1:59), 65.0-66.0 (3:03), 66.0-67.0 (2:54), 67.0-67.3 (1:27)
70								
75								

Remarks:

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Page 3 of 3
Boring No.: BB-FGB-103

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS



SIGNATURE: *Chris No.*
7275
P.E. NUMBER
1-8-2020
DATE

PROJ. MANAGER	DATE	BY	REVISIONS
DESIGN-DETAILED			
CHECKED-REVIEWED			
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE
AROOSTOOK COUNTY

BORING LOG (5 OF 6)

SHEET NUMBER
17
OF 44

BRIDGE NO.
7831 & 2303

WIN
21776.00 & 23565.00

BRIDGE PLANS

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gagnon Brook Railway Bridge #7831 Route 1 Bridge #2303 Frenchville, Maine	Boring No.: BB-FGB-201 WIN: 21776.00																																																													
Driller: New England Boring Contractors	Elevation (ft.): 484.9	Auger ID/OD: 4.5" SSA																																																														
Operator: Brad Enos	Datum: NAVD 88	Sampler: Standard Splitspoon																																																														
Logged By: B. Woodman	Rig Type: Mobile Drill B-53 (Truck)	Hammer Wt./Fall: 140#/30"																																																														
Date Start/Finish: 10-2-19/10-2-19	Drilling Method: Drive & Wash	Core Barrel:																																																														
Boring Location: N1271596.3, E2170998.6	Casing ID/OD: 4.4.5"	Water Level*: 15.3' bgs																																																														
Hammer Efficiency Factor: 0.937	Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>																																																															
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Page 1 of 2		Boring No.: BB-FGB-201																																																														

Bottom of Wingwall

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Gagnon Brook Railway Bridge #7831 Route 1 Bridge #2303 Frenchville, Maine	Boring No.: BB-FGB-201 WIN: 21776.00																																																													
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Page 2 of 2		Boring No.: BB-FGB-201																																																														

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS	
BRIDGE NO. 7831 & 2303		WIN 21776.00 & 23565.00	
BRIDGE PLANS		BRIDGE PLANS	

PROJ. MANAGER	DATE	BY	DATE
CHECKED-REVIEWED			
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY

BORING LOG (6 OF 6)

SHEET NUMBER

18

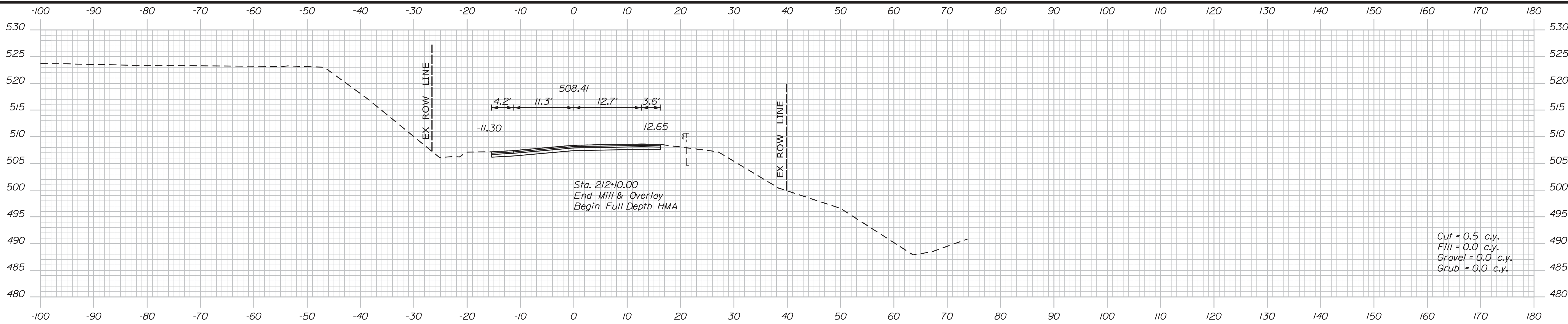
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Date: 1/30/2020

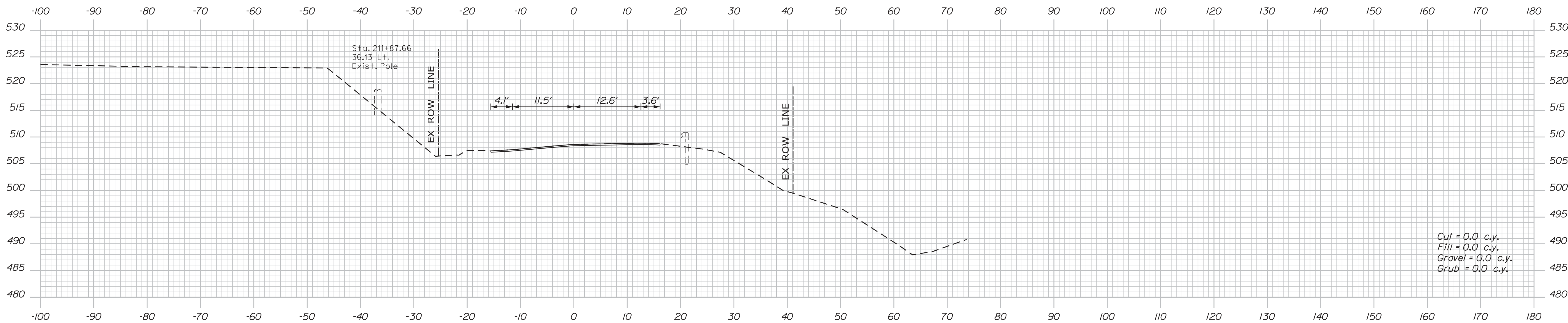
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Division: MULTIMODAL

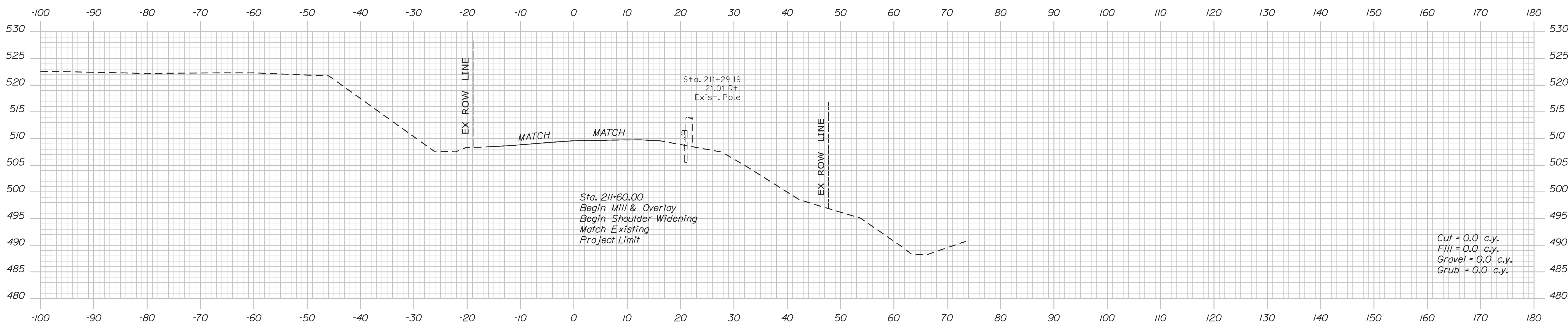
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212+00.00



211+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. 7831 & 2303
WIN 211776.00 & 23565.00
BRIDGE PLANS



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CHECKED-REVIEWED	1/30/2020	JRD
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FIELD CHANGES		

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
US ROUTE 1
CROSS SECTIONS

SHEET NUMBER
19
OF 44

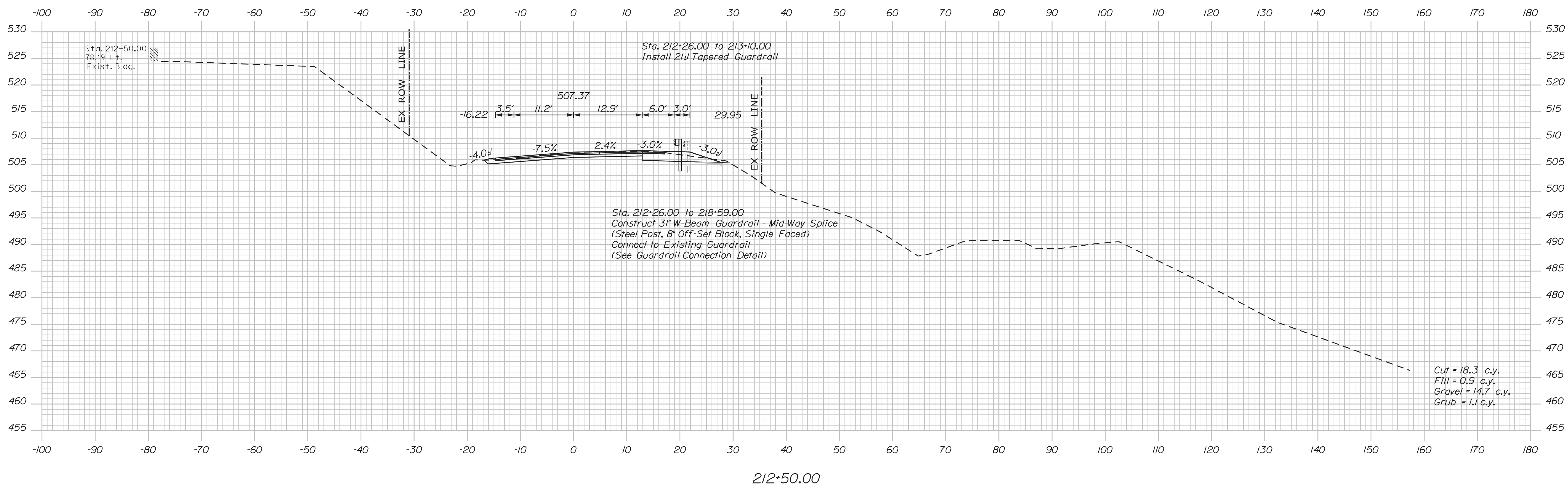
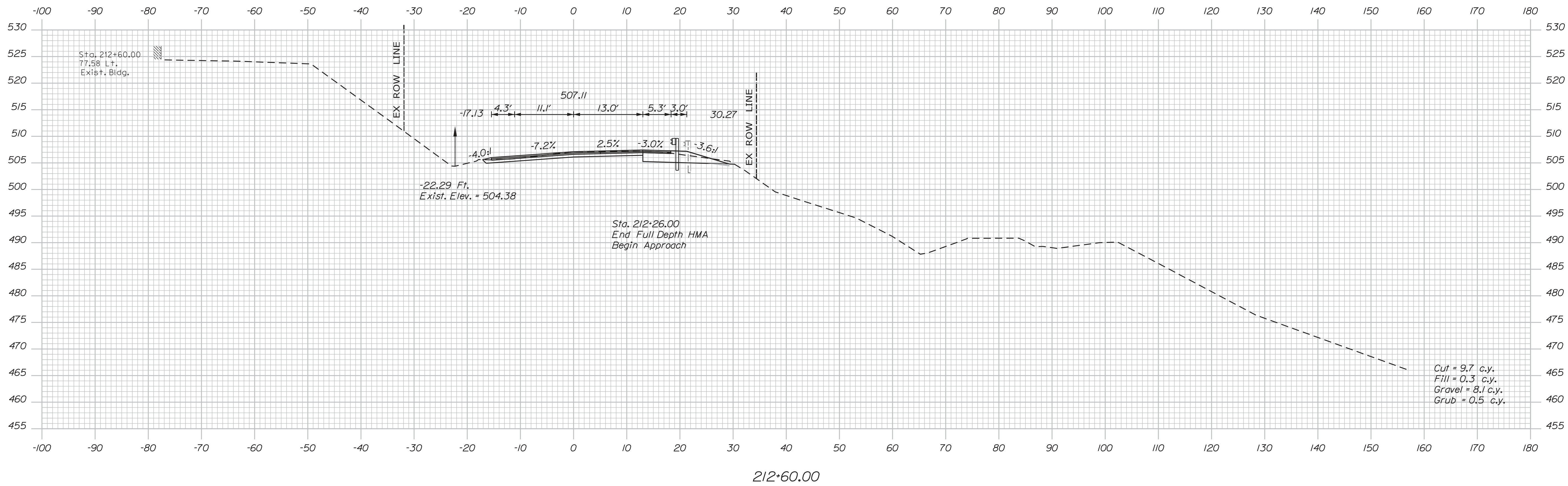
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Division: MULTIMODAL

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. 7831 & 2303
WIN 21776.00 & 23565.00
BRIDGE PLANS



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DESIGNED-REVIEWED			
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REVISIONS 3			
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FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
US ROUTE 1
CROSS SECTIONS

SHEET NUMBER
20
OF 44

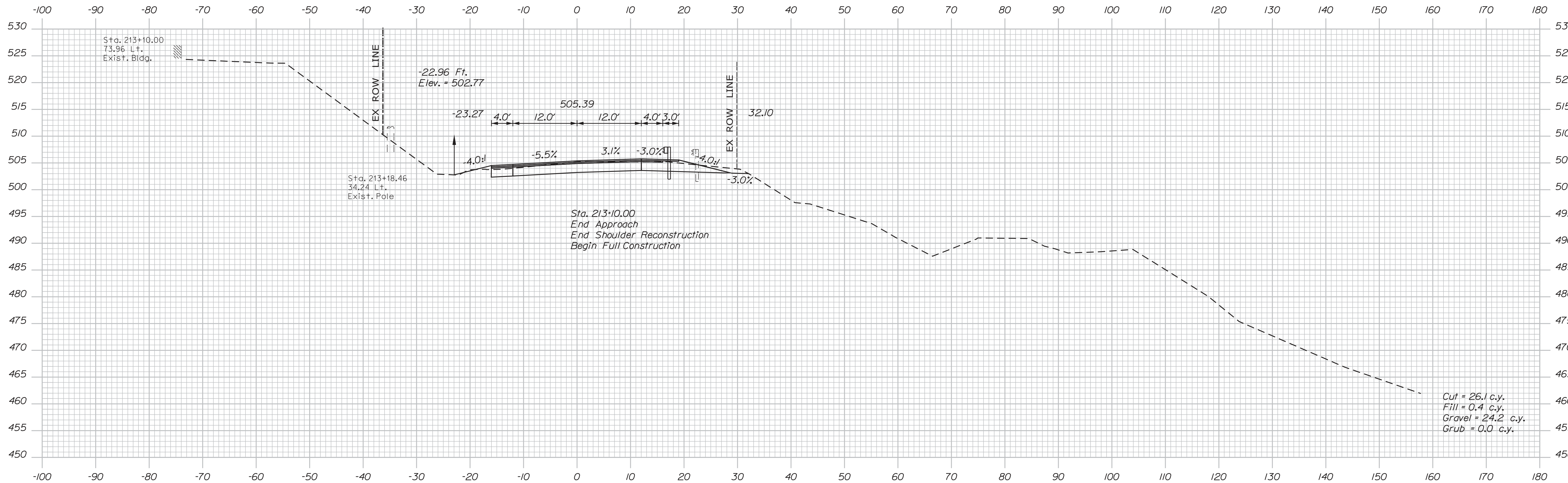
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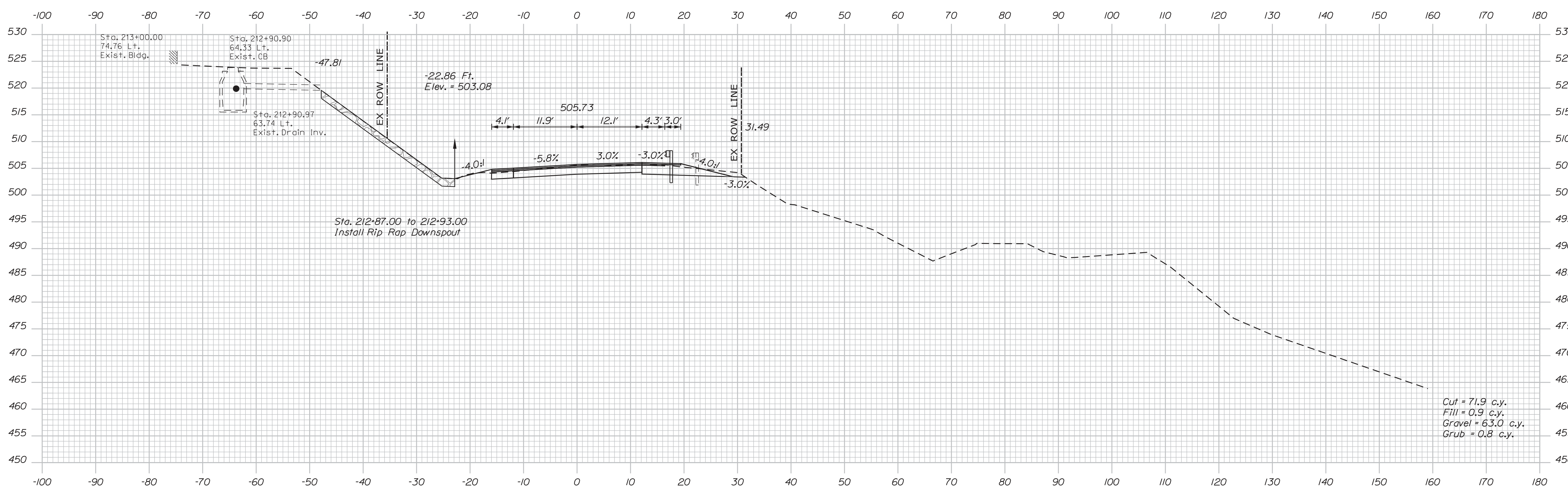
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Division: MULTIMODAL

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STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS	
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US ROUTE 1		CROSS SECTIONS		BRIDGE NO. 7831 & 2303	
SHEET NUMBER		21		WIN 211776.00 & 23565.00	
OF 44				BRIDGE PLANS	



PROJ. MANAGER	DATE	BY
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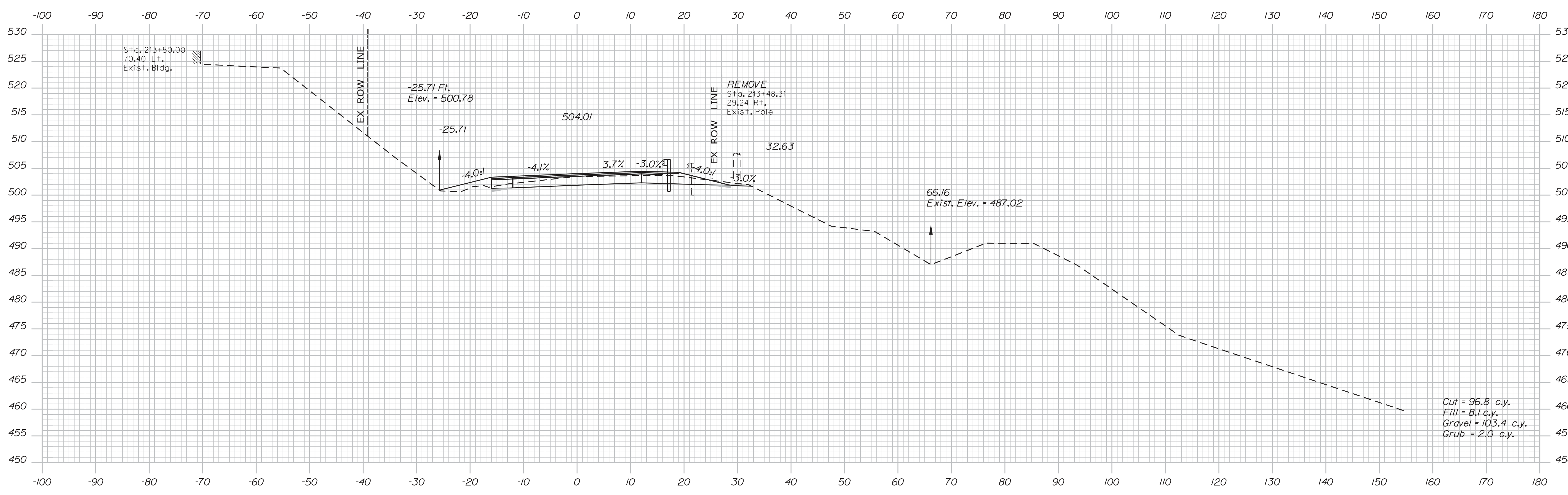
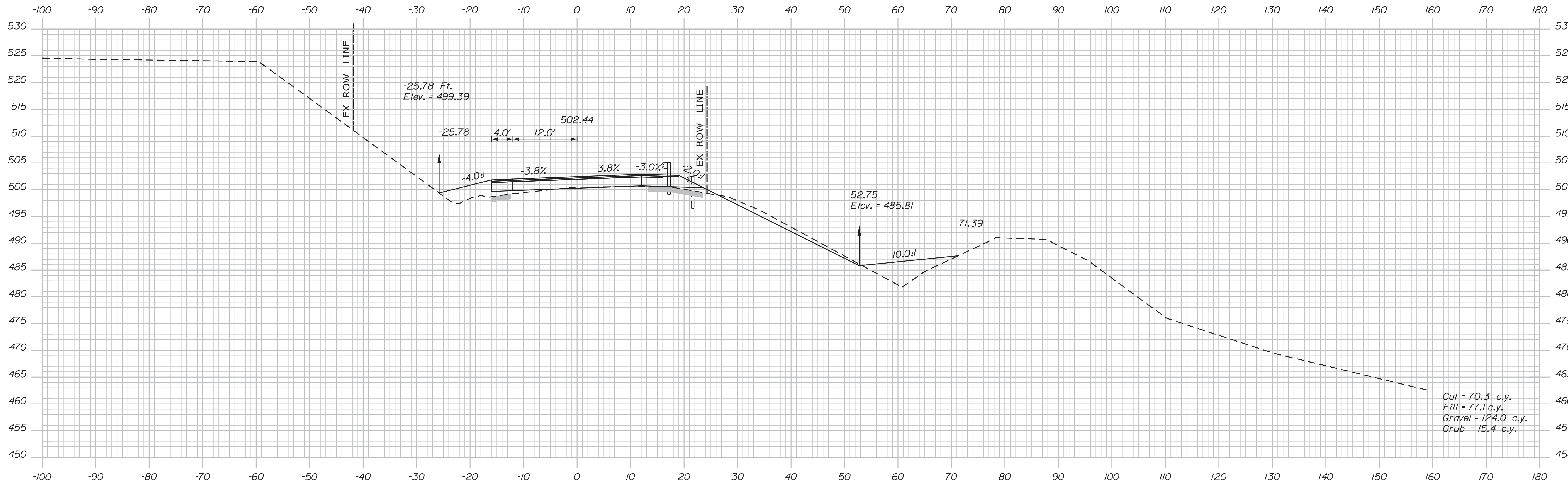
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Date: 1/30/2020

Username: kventworth

Division: MULTIMODAL

Filename: 022_Route1_04.dgn



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 CAPITAL PROJECTS
 BRIDGE NO. 7831 & 2303
 WIN 21776.00 & 23565.00
 BRIDGE PLANS



PROJ. MANAGER	DATE	BY	DATE
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REVISIONS 1			
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FIELD CHANGES			

GAGNON BROOK BRIDGE
 OVER GAGNON BROOK
 FRENCHVILLE AROOSTOOK COUNTY
 US ROUTE 1
 CROSS SECTIONS

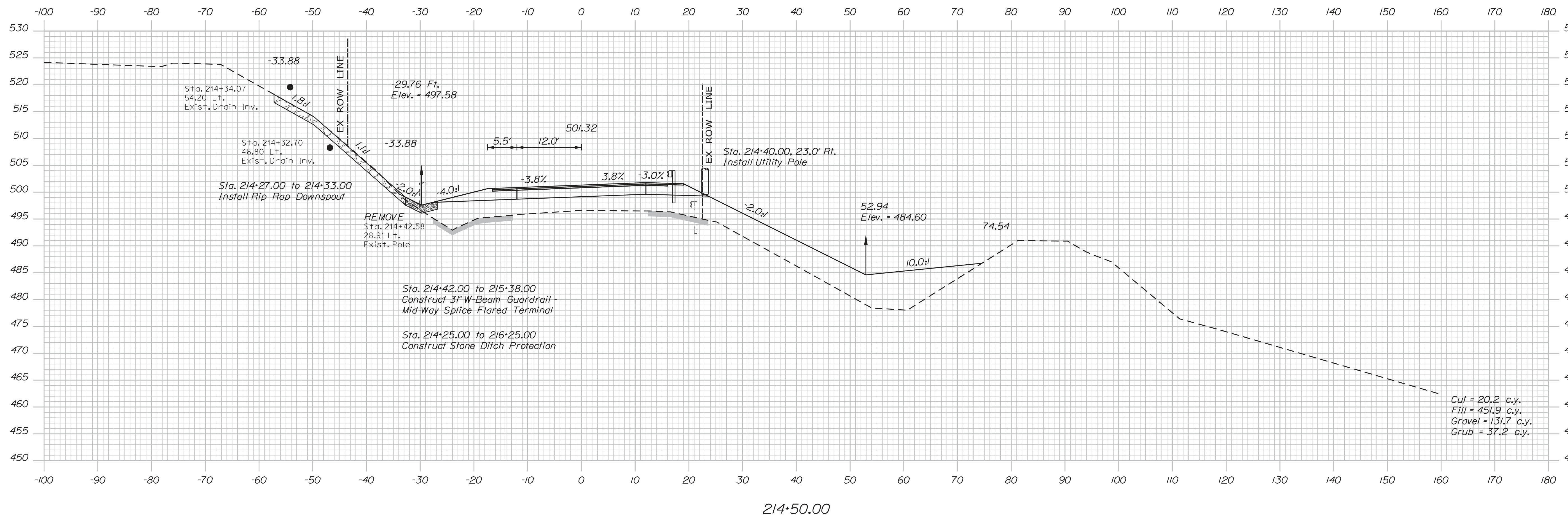
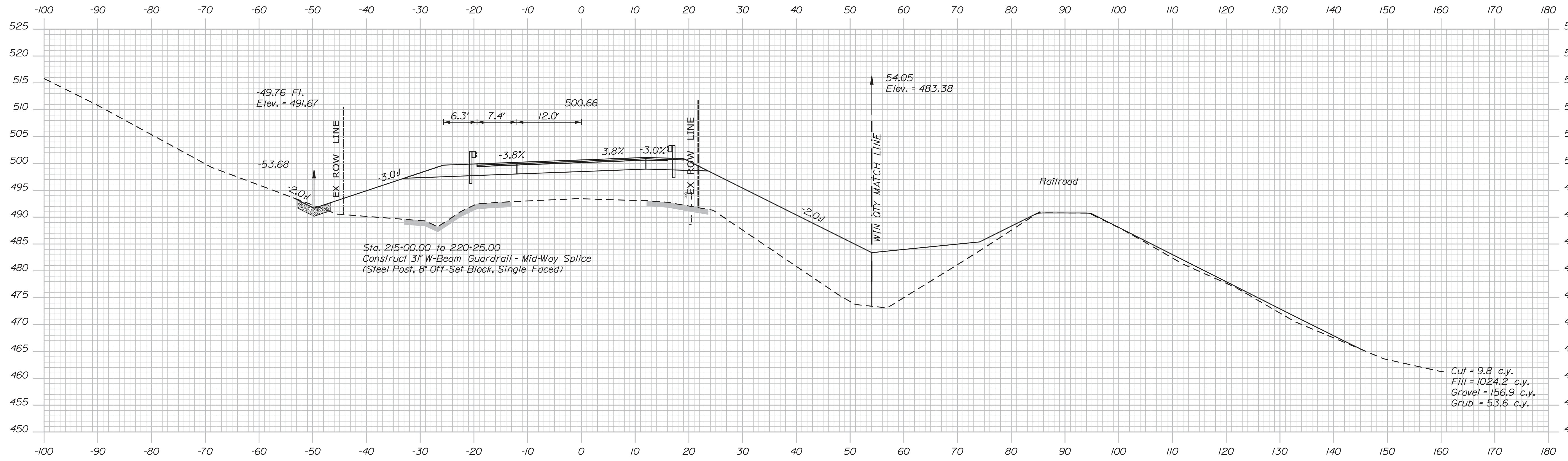
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 OF 44

Date: 1/30/2020

Username: kwentworth

Division: MULTIMODAL

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STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS	
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US ROUTE 1		CROSS SECTIONS		BRIDGE NO. 7831 & 2303	
SHEET NUMBER		23		WIN 21776.00 & 23565.00	
OF 44				BRIDGE PLANS	



PROJ. MANAGER	DATE	BY	DATE
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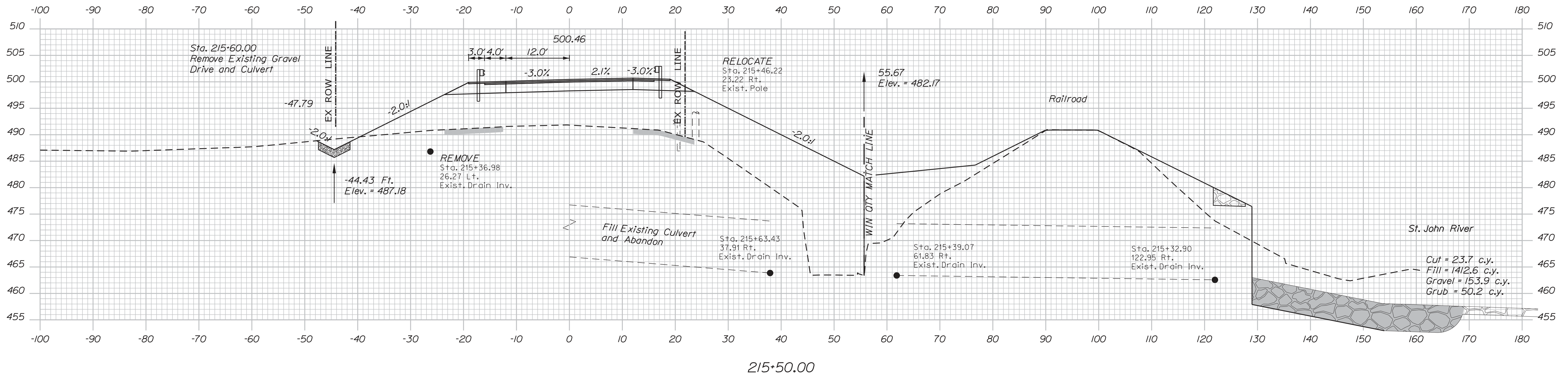
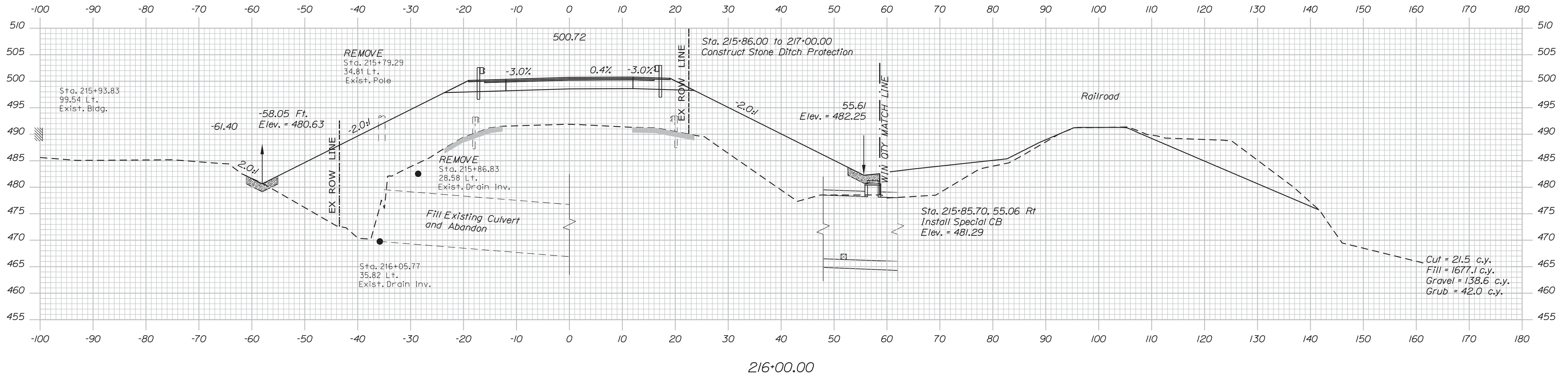
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Date: 1/30/2020

Username: kwentworth

Division: MULTIMODAL

Filename: 024_Route1_06.dgn



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CHECKED-REVIEWED	ECF	BY	ECF
DESIGN DETAILED		BY	
REVISIONS 1		BY	
REVISIONS 2		BY	
REVISIONS 3		BY	
REVISIONS 4		BY	
FIELD CHANGES		BY	

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
US ROUTE 1
CROSS SECTIONS

SHEET NUMBER

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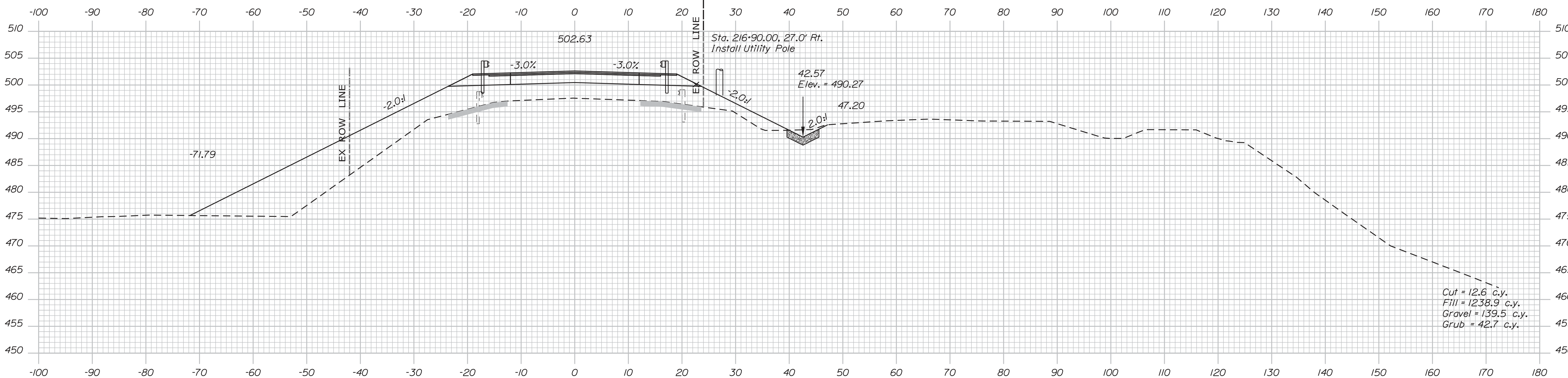
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Date: 1/30/2020

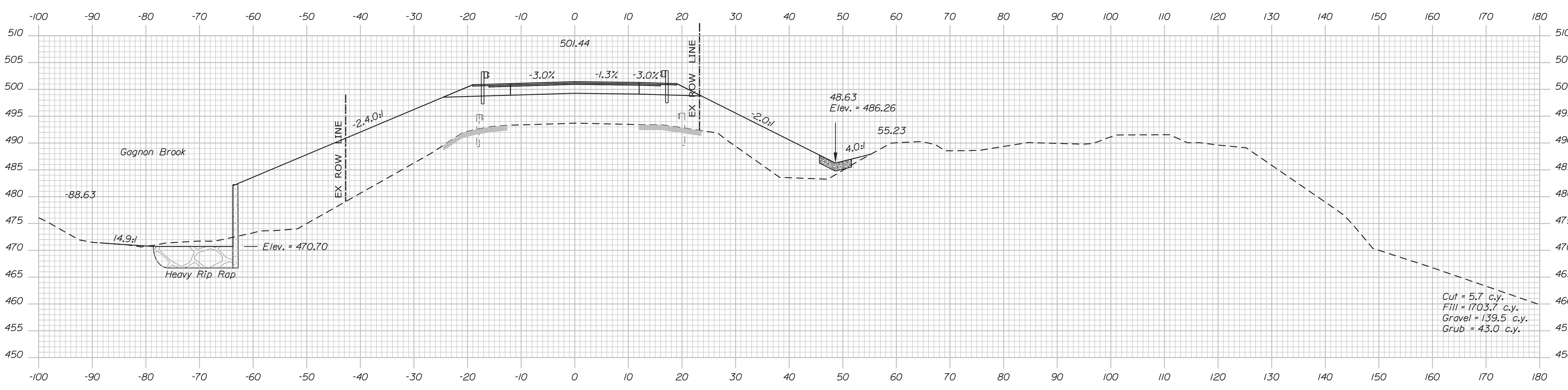
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Division: MULTIMODAL

Filename: 025_Route1_07.dgn



217+00.00



216+50.00



PROJ. MANAGER	DATE	BY	DATE
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ECF		JRD	
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GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
US ROUTE 1
CROSS SECTIONS

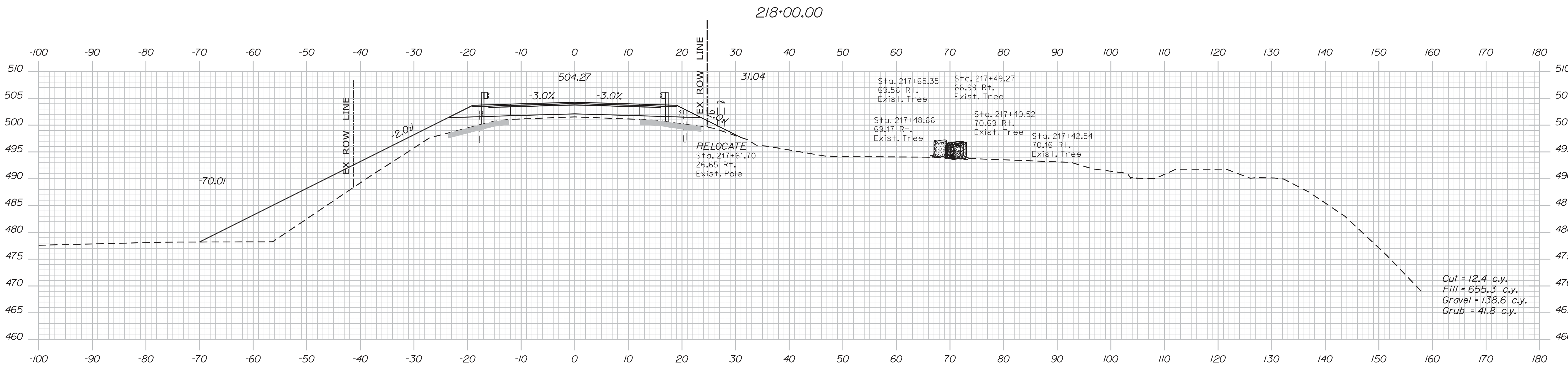
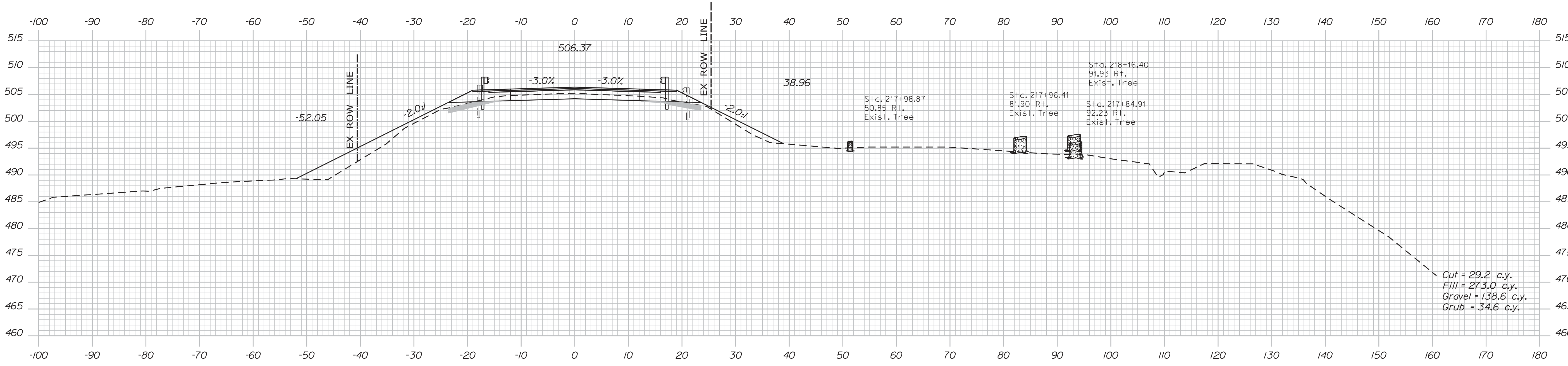
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OF 44

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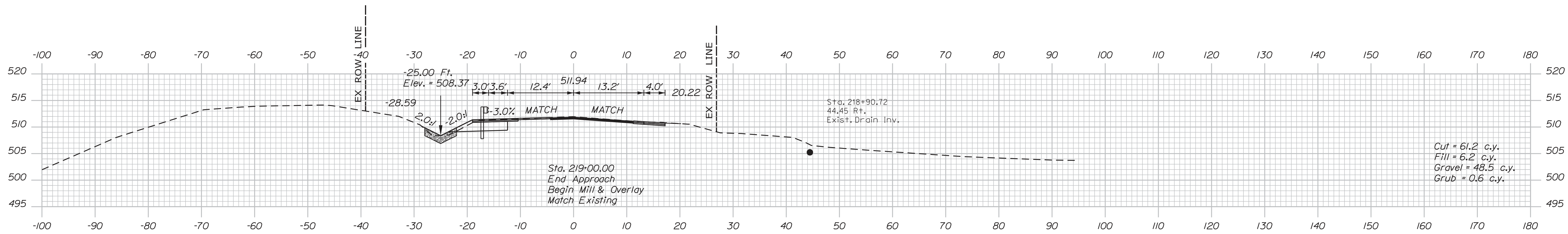
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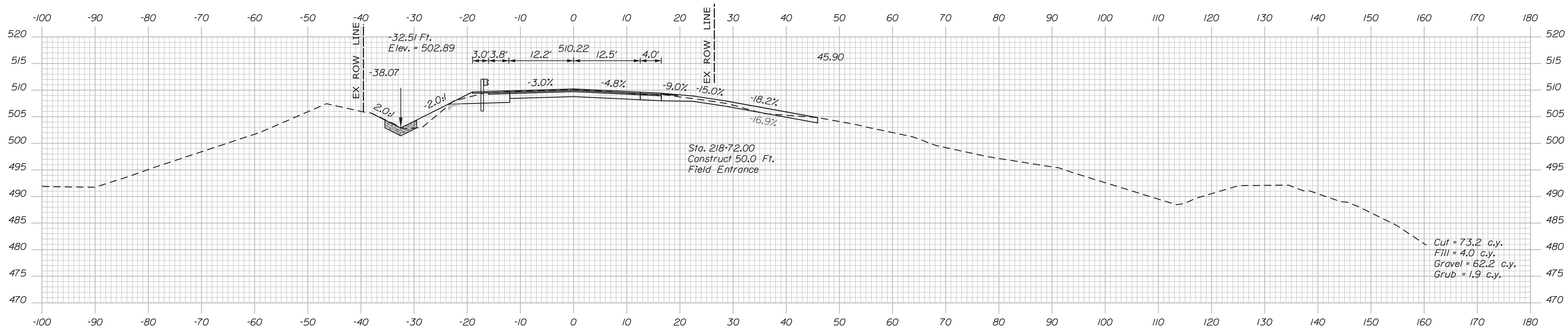


PROJ. MANAGER	DATE	BY	DATE
DATE DETAILED	1/30/2020	JRD	1/30/2020
CHECKED-REVIEWED	ECF	JRD	ECF
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DESIGN REVIEWED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

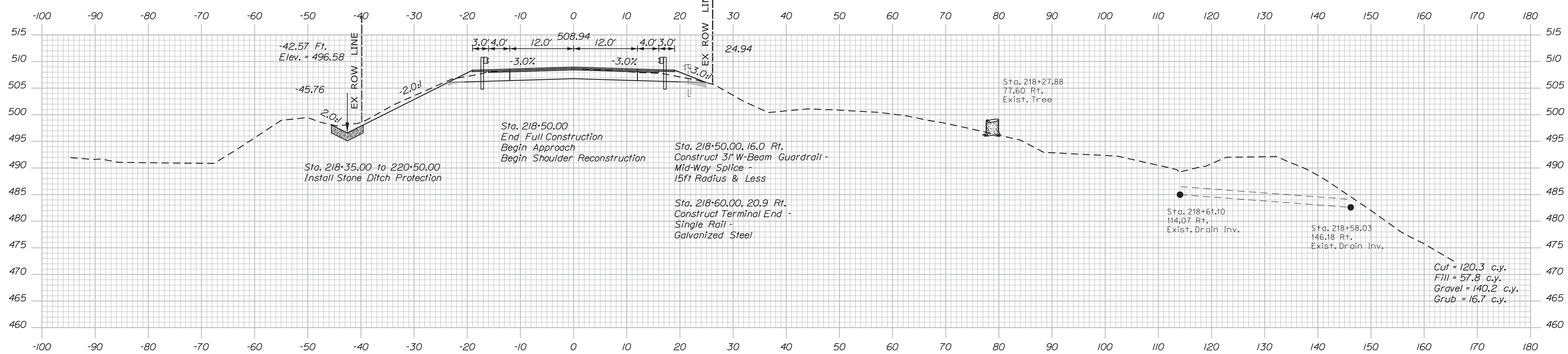
GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
US ROUTE 1
CROSS SECTIONS



219+00.00



218+72.00



218+50.00



PROJ. MANAGER	DATE	BY	DATE
DATE	1/30/2020	BY	1/30/2020
CHECKED-REVIEWED	ECF	BY	ECF
DESIGN-REVIEWED	ECF	BY	ECF
DESIGN-DETAILED		BY	
REVISIONS 1		BY	
REVISIONS 2		BY	
REVISIONS 3		BY	
REVISIONS 4		BY	
FIELD CHANGES		BY	

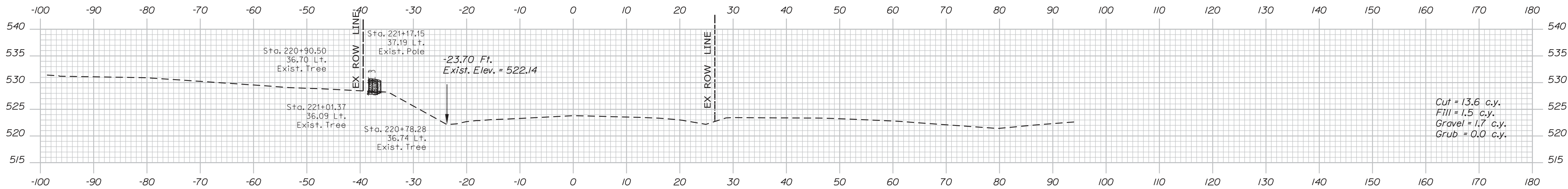
GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
US ROUTE 1
CROSS SECTIONS

Date: 1/30/2020

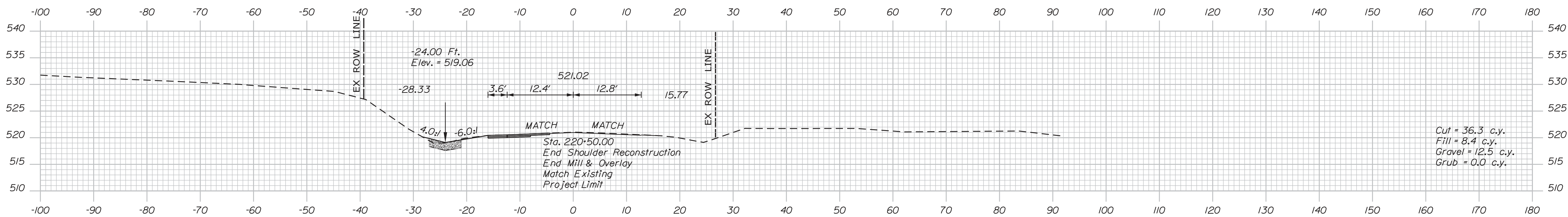
Username: kventworth

Division: MULTIMODAL

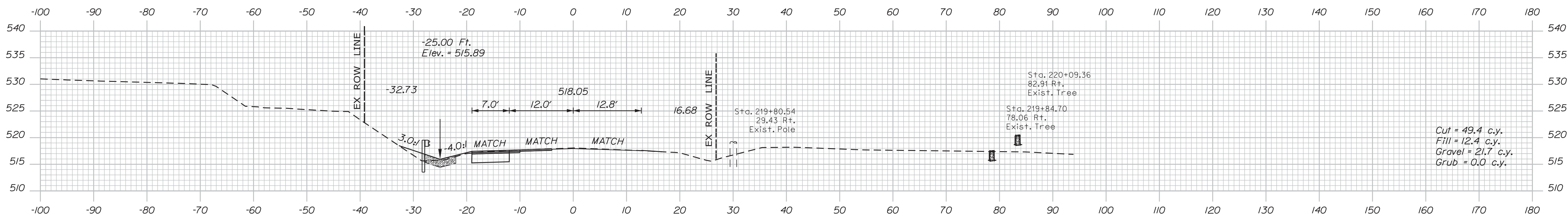
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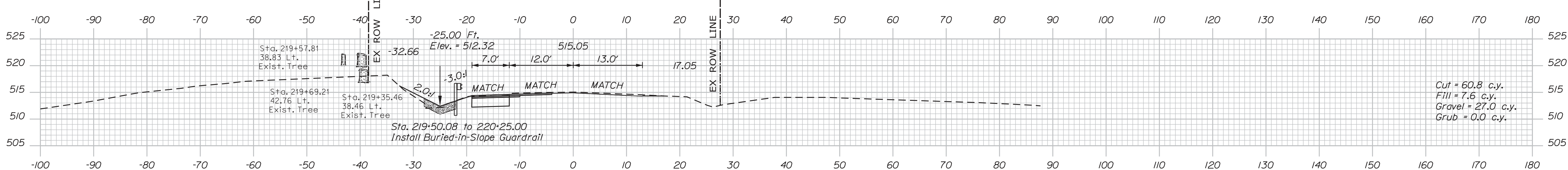
221+00.00



220+50.00



220+00.00



219+50.00



PROJ. MANAGER	DATE	BY	DATE
ECF	1/30/2020	JRD	1/30/2020
ECF		JRD	
DESIGN DETAILED			
CHECKED-REVIEWED			
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REVISIONS 1			
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REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

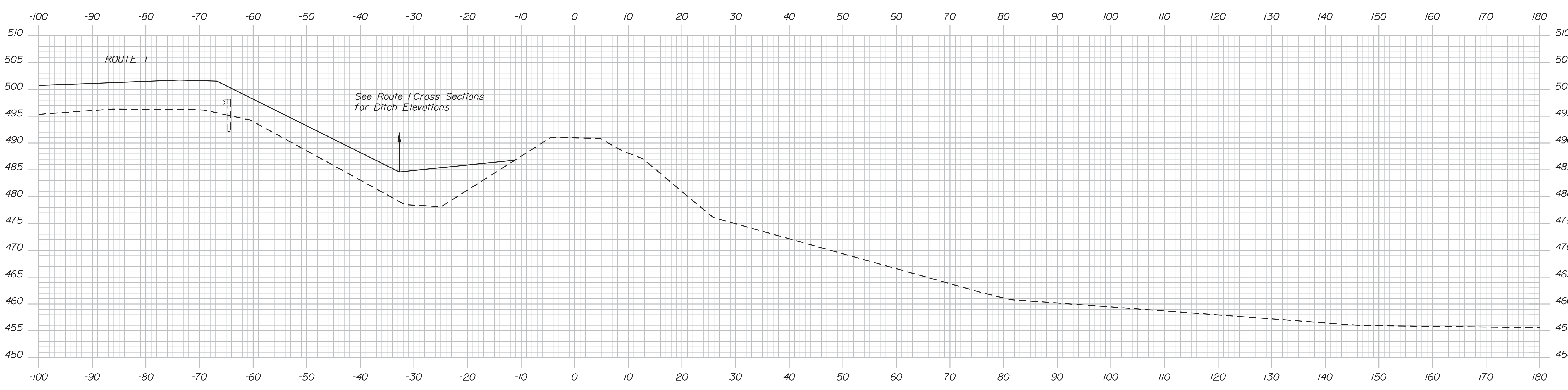
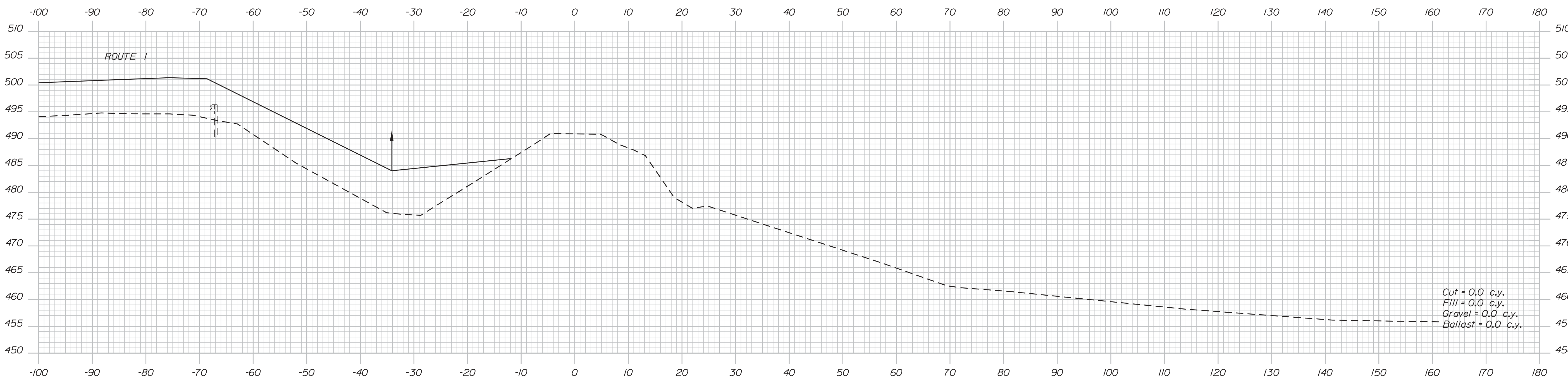
GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
US ROUTE 1
CROSS SECTIONS

Date: 1/30/2020

Username: kwentworth

Division: MULTIMODAL

Filename: 029_Railroad_01.dgn



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. 7831 & 2303 WIN 211776.00 & 235665.00
BRIDGE PLANS



PROJ. MANAGER	DATE	BY	DATE
NAVE BENNETT	1/30/2020	JRD	1/30/2020
ECF		JRD	
DESIGN DETAILED			
CHECKED-REVIEWED			
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
RAILROAD
CROSS SECTIONS

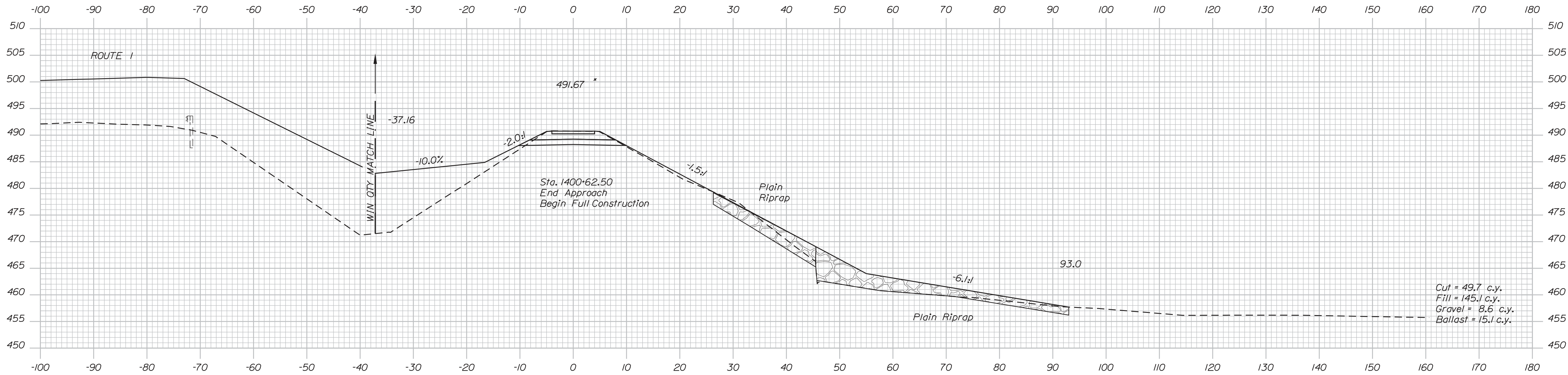
SHEET NUMBER
29
OF 44

Date: 1/30/2020

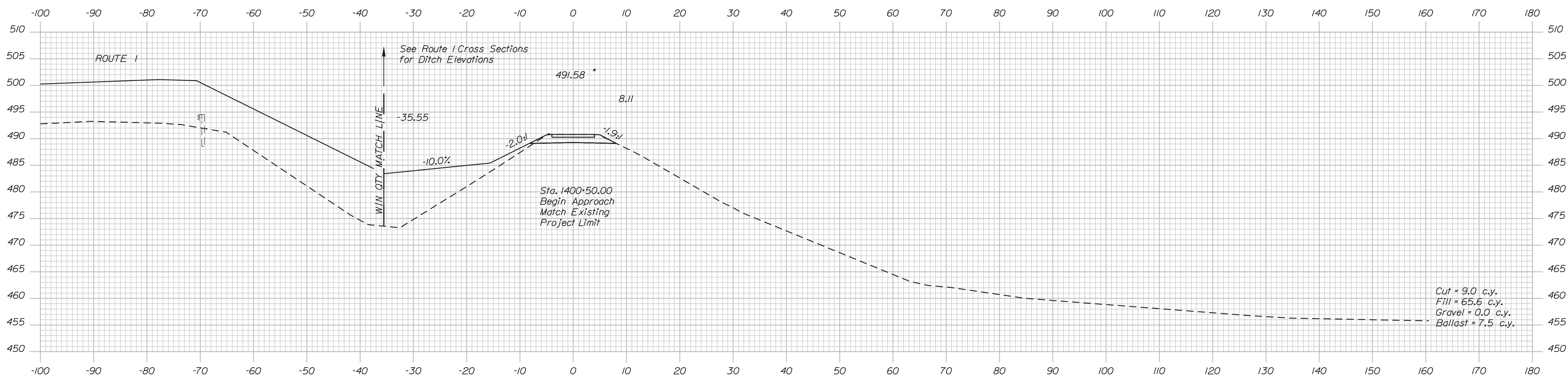
Username: kventworth

Division: MULTIMODAL

Filename: 030_Railroad_02.dgn



1400+75.00



1400+50.00

* Note: Elevation of Top of Rail (Not Shown)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. 7831 & 2303 WIN 211776.00 & 23565.00
BRIDGE PLANS



PROJ. MANAGER	DATE	BY	DATE
DATE DETAILED	1/30/2020	JRD	1/30/2020
CHECKED-REVIEWED	ECF	JRD	1/30/2020
DESIGN DETAILED			
DESIGN REVIEWED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
RAILROAD
CROSS SECTIONS

SHEET NUMBER
30
OF 44

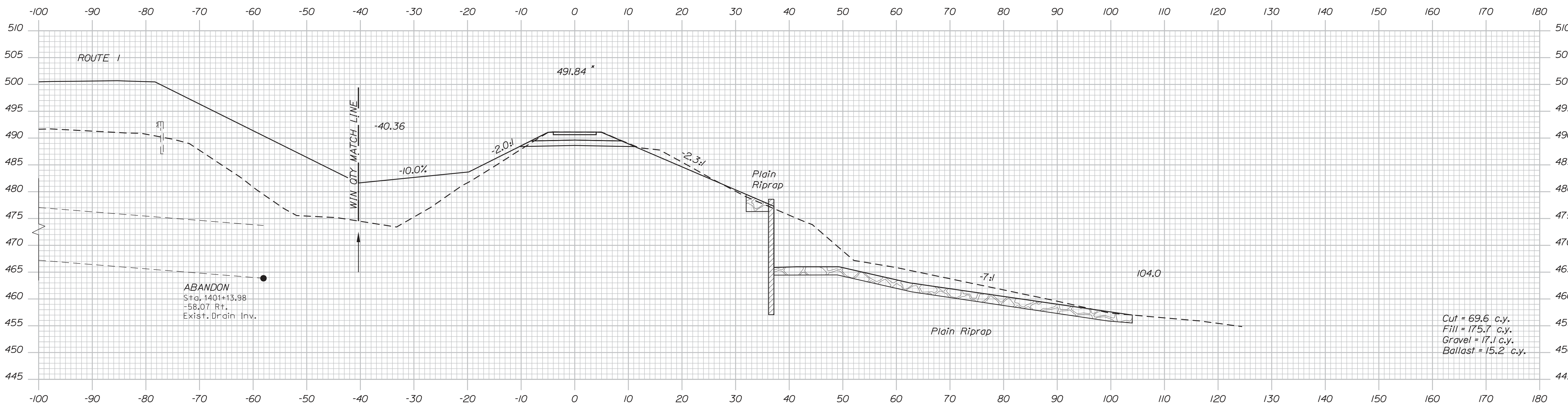
Sta. 1400+50.00 to Sta. 1400+75.00

Date: 1/30/2020

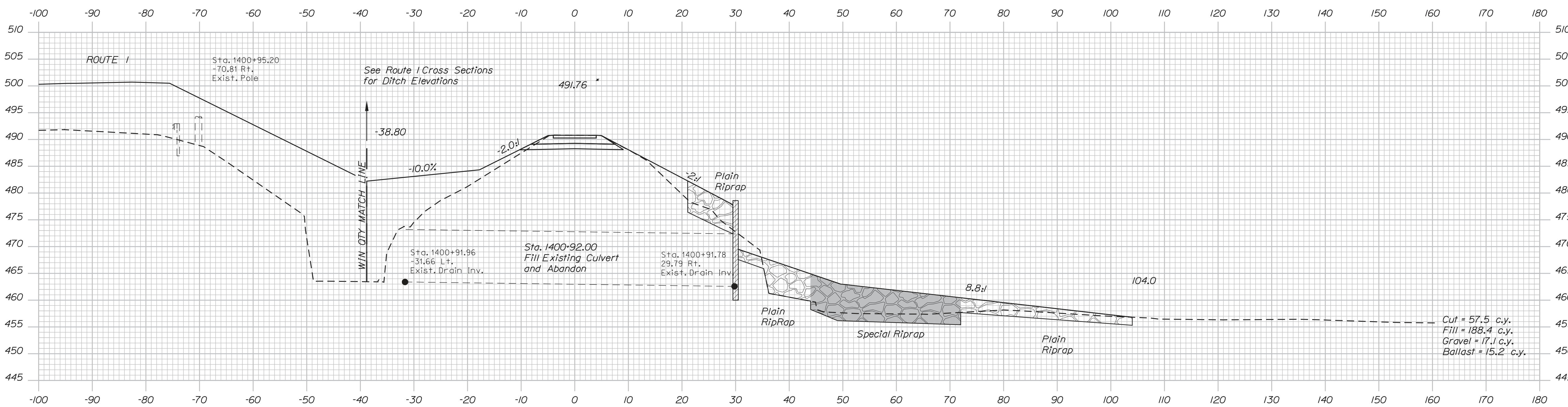
Username: kwentworth

Division: MULTIMODAL

Filename: 031_Railroad_03.dgn



1401+25.00



1401+00.00

* Note: Elevation of Top of Rail (Not Shown)



PROJ. MANAGER	DATE	BY	DATE
NAVE BENNET	1/30/2020	JRD	1/30/2020
ECF		JRD	
DESIGN DETAILED			
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REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

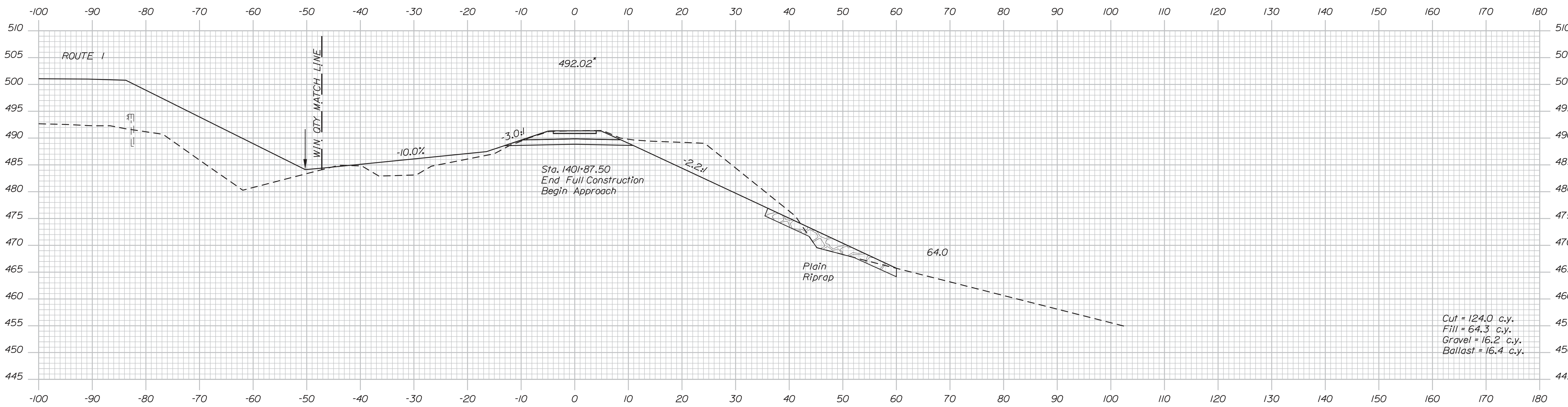
GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
RAILROAD
CROSS SECTIONS

Date: 1/30/2020

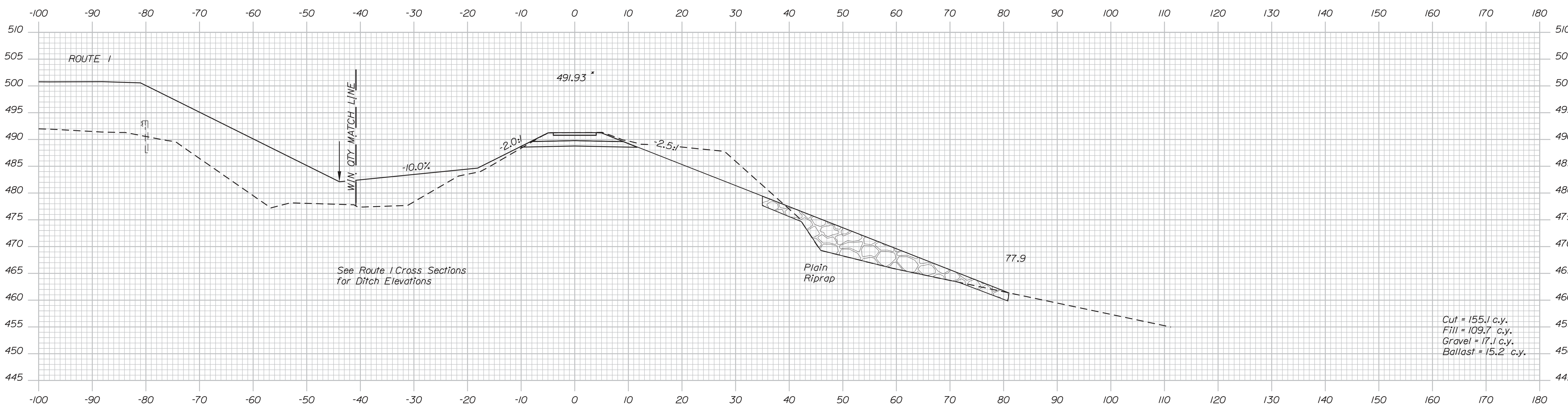
Username: kwentworth

Division: MULTIMODAL

Filename: 032_Railroad_04.dgn



140I+75.00



140I+50.00

* Note: Elevation of Top of Rail (Not Shown)



PROJ. MANAGER	DATE	BY	DATE
DESIGN DETAILED	1/30/2020	JRD	1/30/2020
CHECKED/REVIEWED		JRD	
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REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

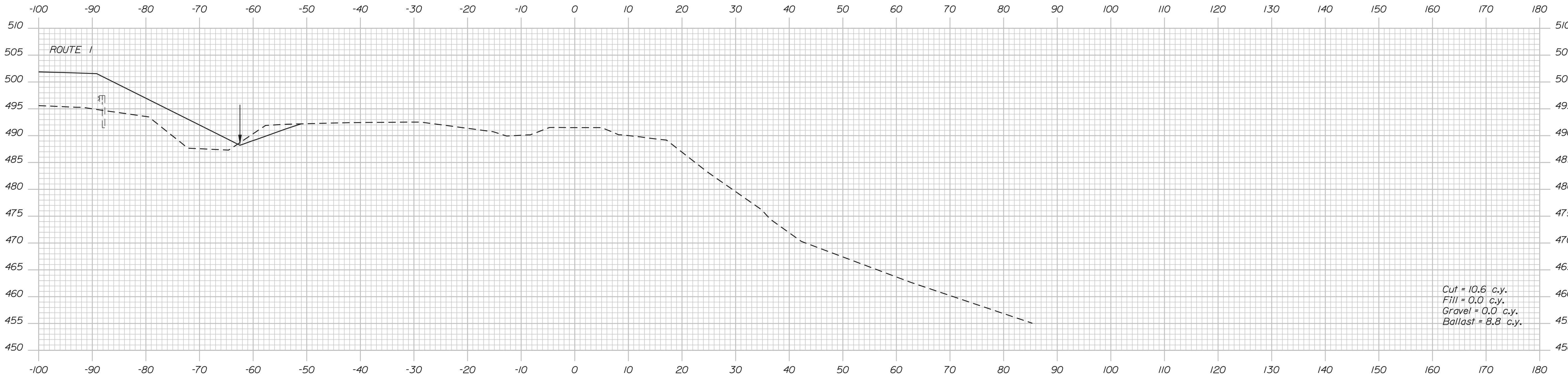
GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
RAILROAD
CROSS SECTIONS

Date: 1/30/2020

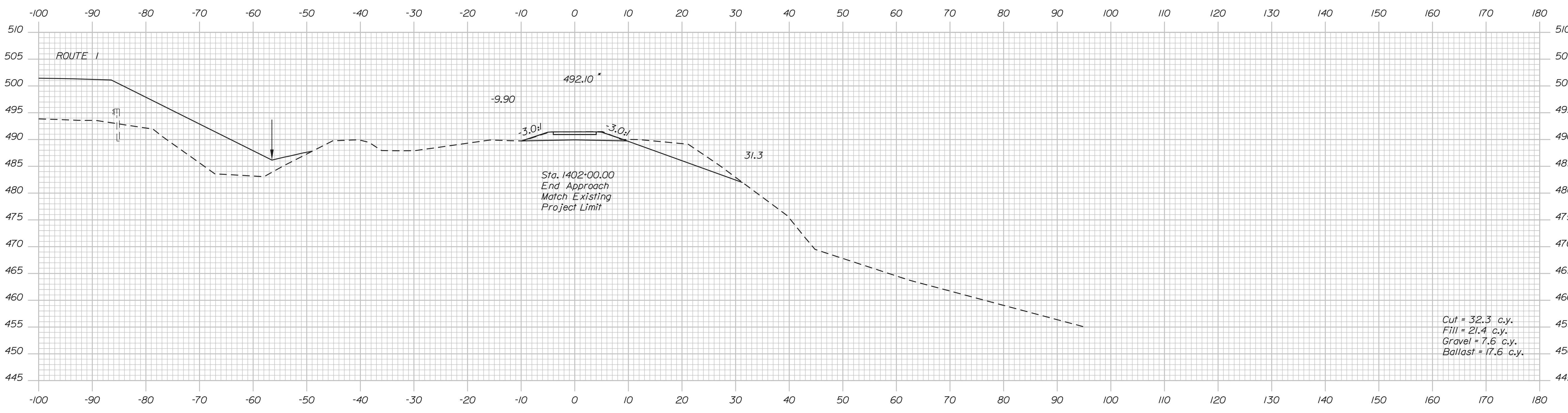
Username: kwentworth

Division: MULTIMODAL

Filename: 033_Railroad_05.dgn



1402+25.00



1402+00.00

* Note: Elevation of Top of Rail (Not Shown)

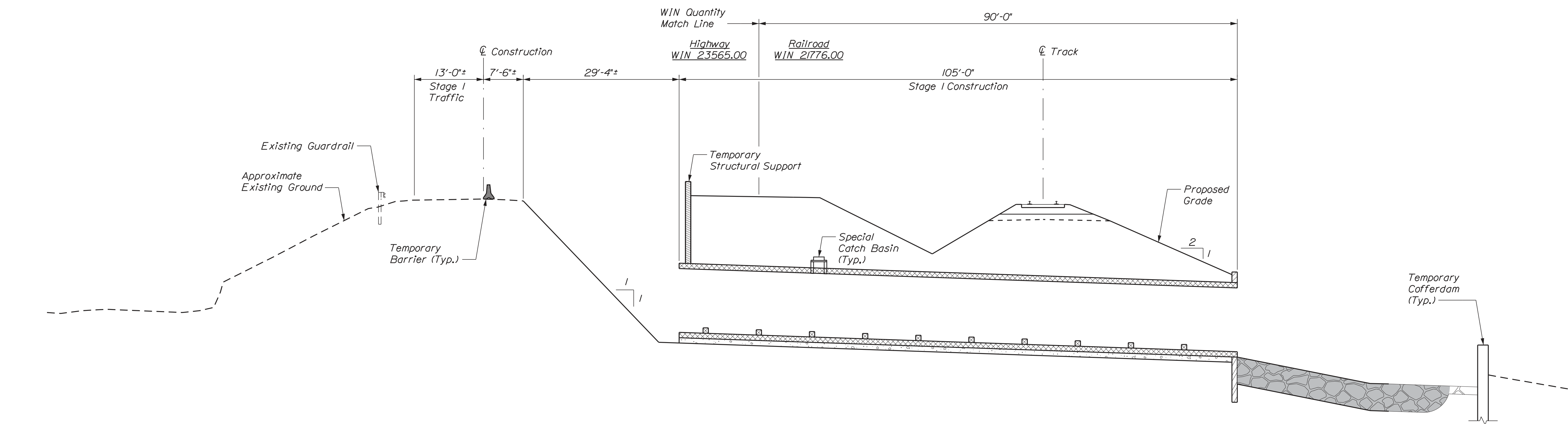
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
BRIDGE NO. 7831 & 2303 WIN 211776.00 & 235665.00
BRIDGE PLANS



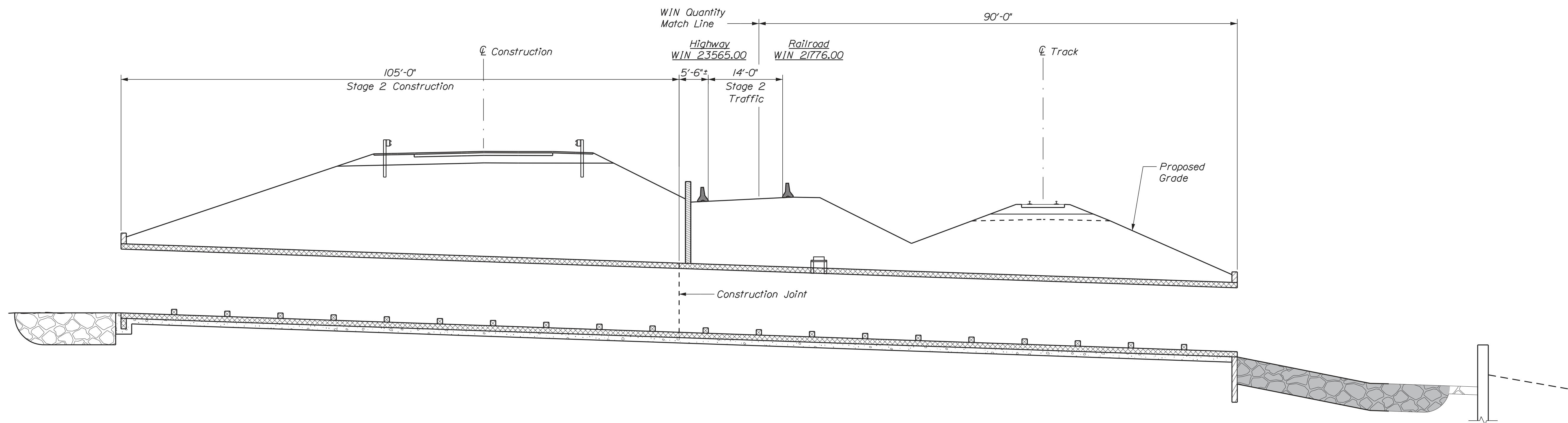
PROJ. MANAGER	DATE	BY	DATE
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CHECKED-REVIEWED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
RAILROAD
CROSS SECTIONS

SHEET NUMBER
33
OF 44



STAGE 1 CONSTRUCTION
(Flow Maintained in Existing Culvert)

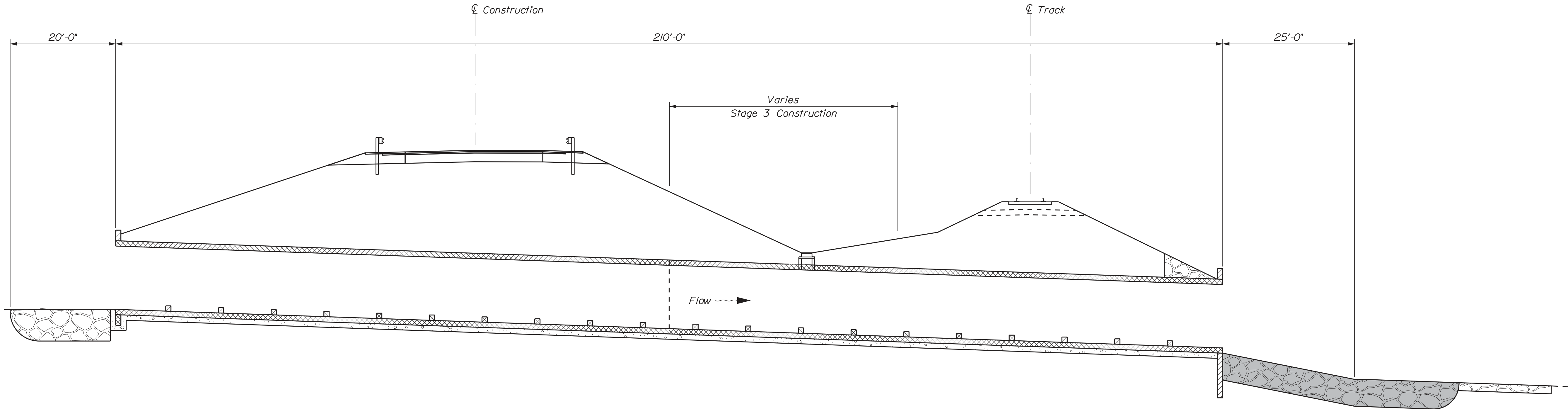


STAGE 2 CONSTRUCTION
(Flow Maintained in Existing Culvert)



PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	1/30/2020	KDW	1/30/2020
CHECKED-REVIEWED	1/30/2020	GSG	1/30/2020
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
STAGE CONSTRUCTION
SECTIONS (1 OF 2)



STAGE 3 CONSTRUCTION
 (Final Grading, Flow Through Proposed Culvert)

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
CAPITAL PROJECTS
 BRIDGE NO. 7831 & 2303 WIN 211776.00 & 235665.00
 BRIDGE PLANS



PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	1/30/2020	KDW	1/30/2020
CHECKED-REVIEWED	1/30/2020	GSG	1/30/2020
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
 OVER GAGNON BROOK
 FRENCHVILLE AROOSTOOK COUNTY
STAGE CONSTRUCTION
SECTIONS (2 OF 2)

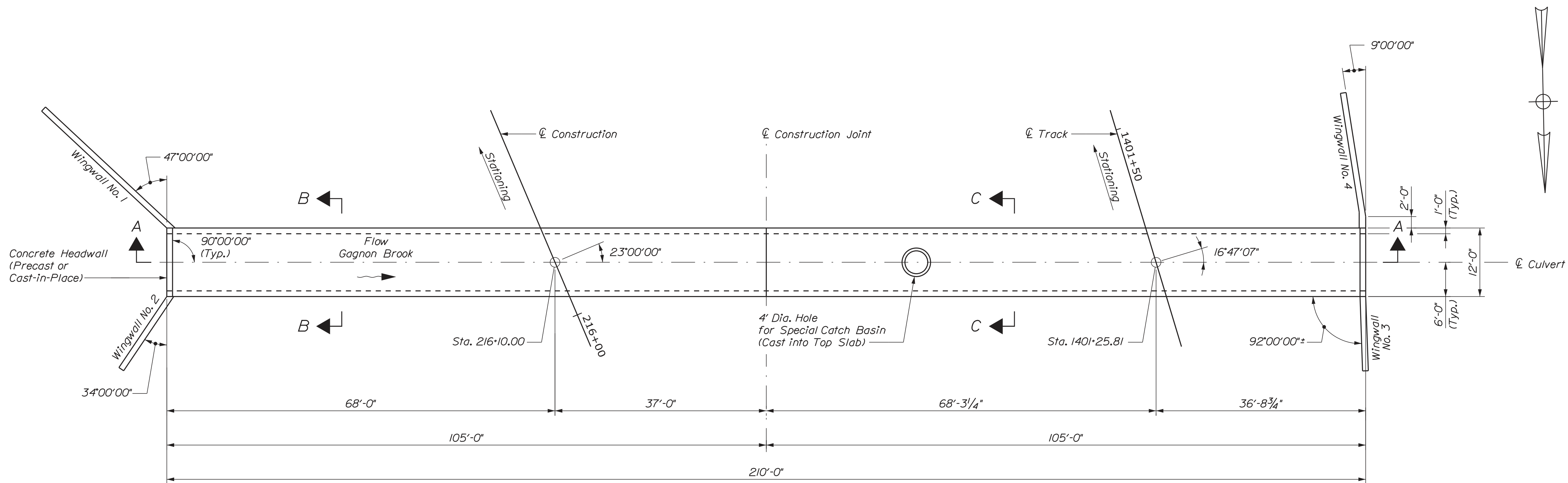
SHEET NUMBER
35
 OF 44

Date: 1/30/2020

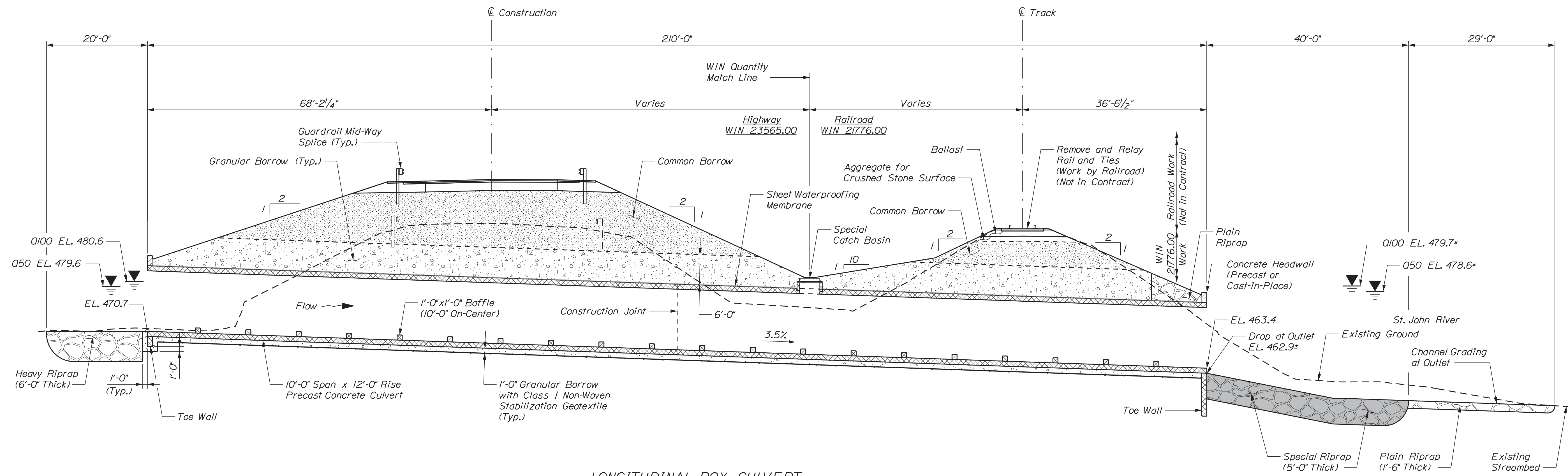
Username: kwentworth

Division: MULTIMODAL

Filename: 036_details_01.dgn



PLAN
Scale: 1/32" = 1'-0"



LONGITUDINAL BOX CULVERT
SECTION A-A
Scale: 1/32" = 1'-0"

NOTE

1. See Culvert Details (2 of 2) for Precast Concrete Box Notes.

* Water surface elevations provided are based on gage data for St. John River and are not in conjunction with controlling headwater elevations for Gagnon Brook. See hydraulic memo.



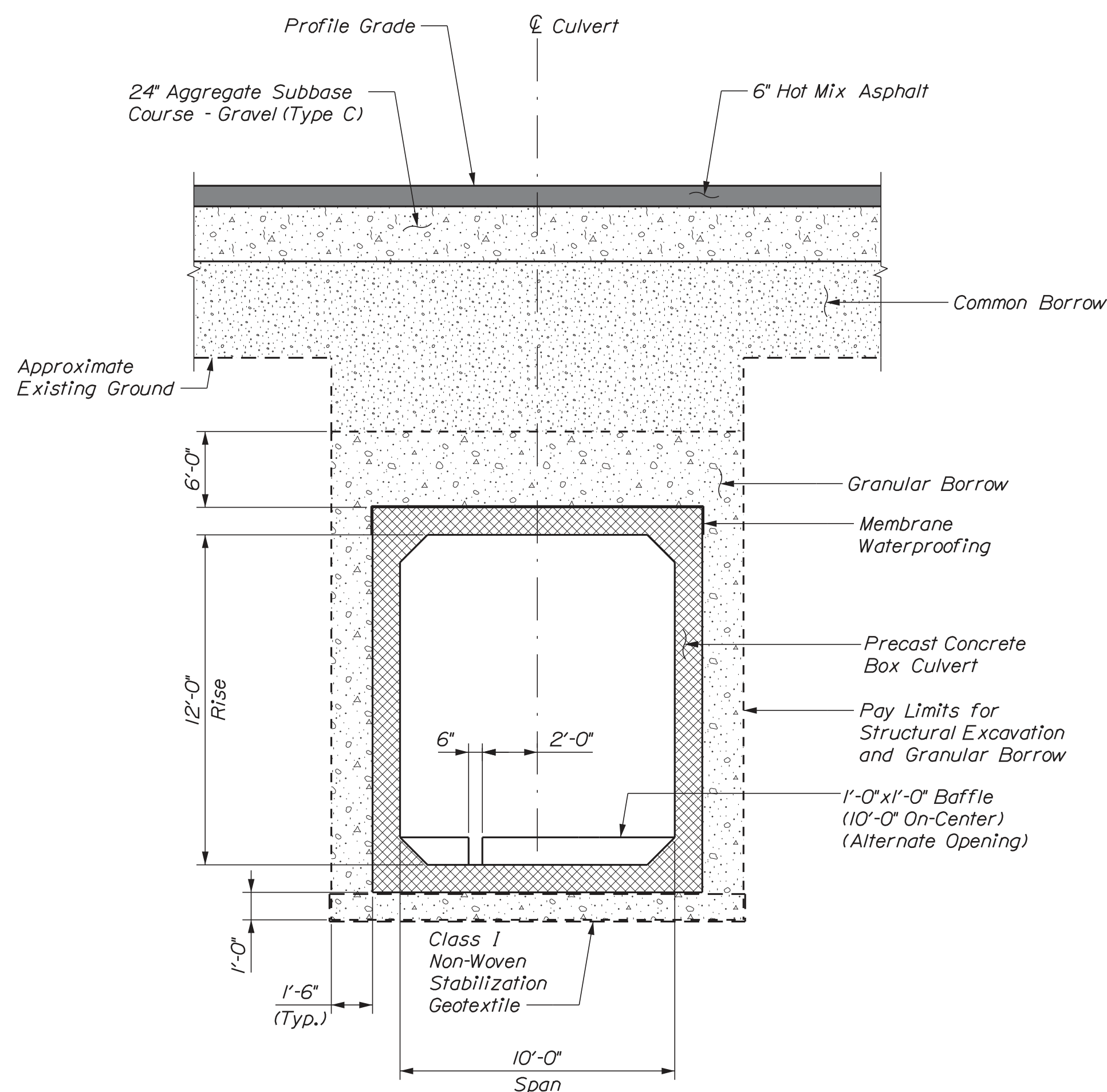
PROJ. MGR.	DATE	BY	DATE
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REVISIONS			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date: 1/30/2020

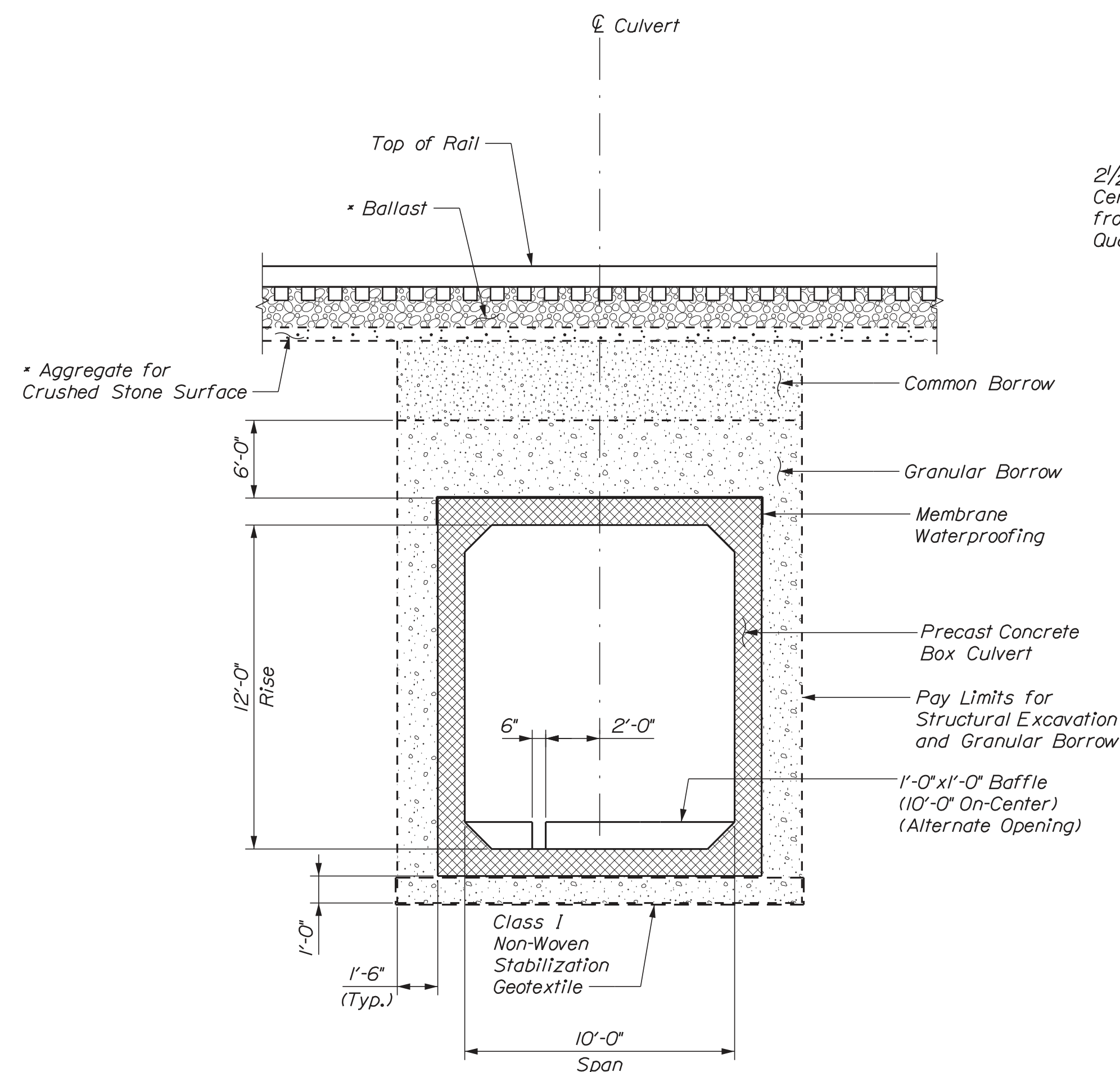
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Division: MULTIMODAL

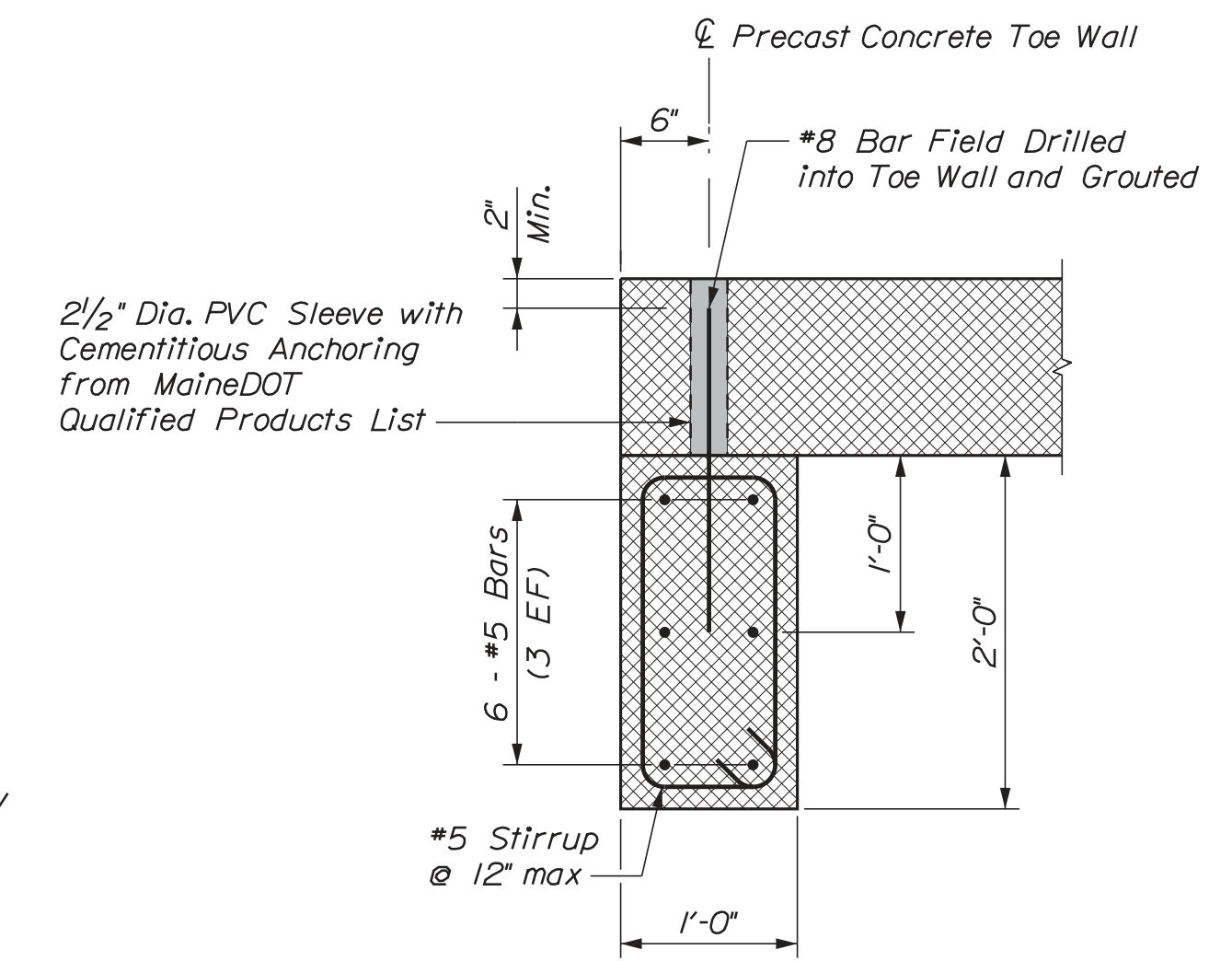
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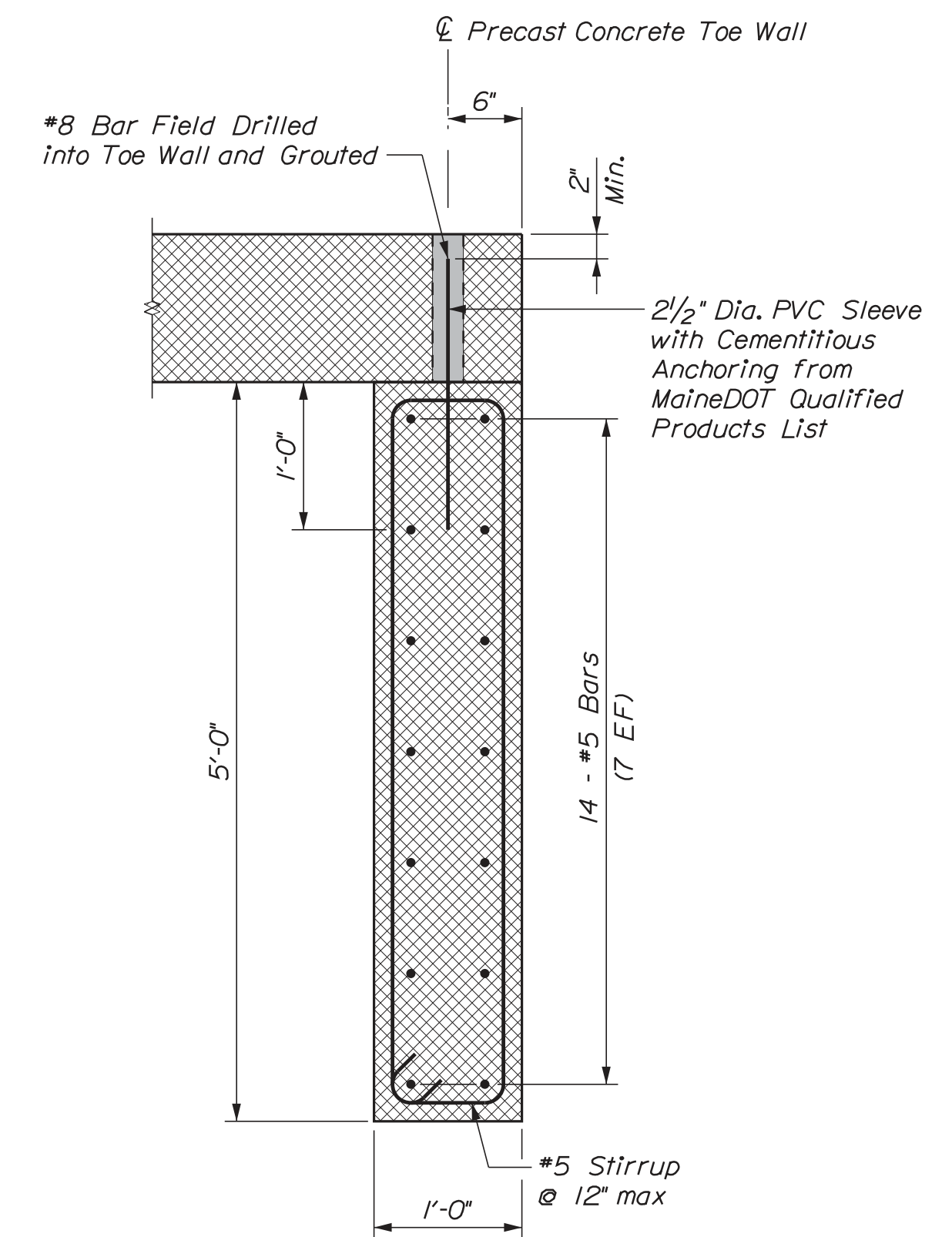
**U.S. ROUTE 1 BOX CULVERT
SECTION B-B**
Not to Scale



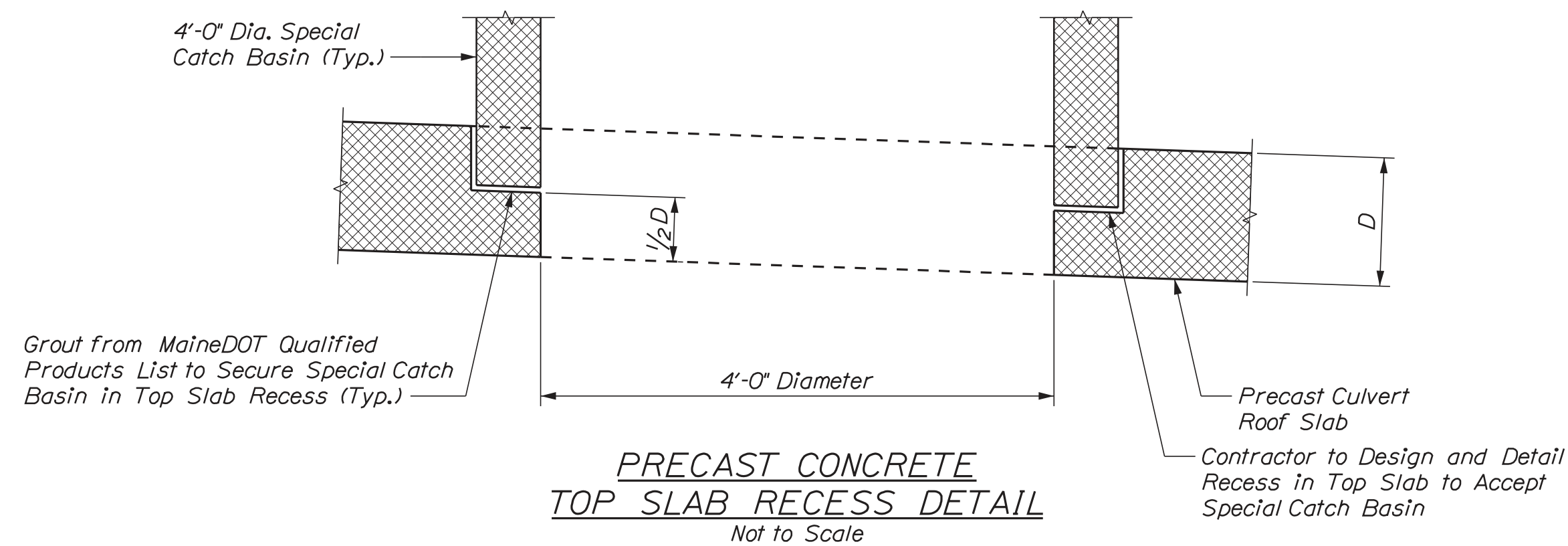
**RAILROAD BOX CULVERT
SECTION C-C**
Not to Scale
* See Typical Section for Depth.



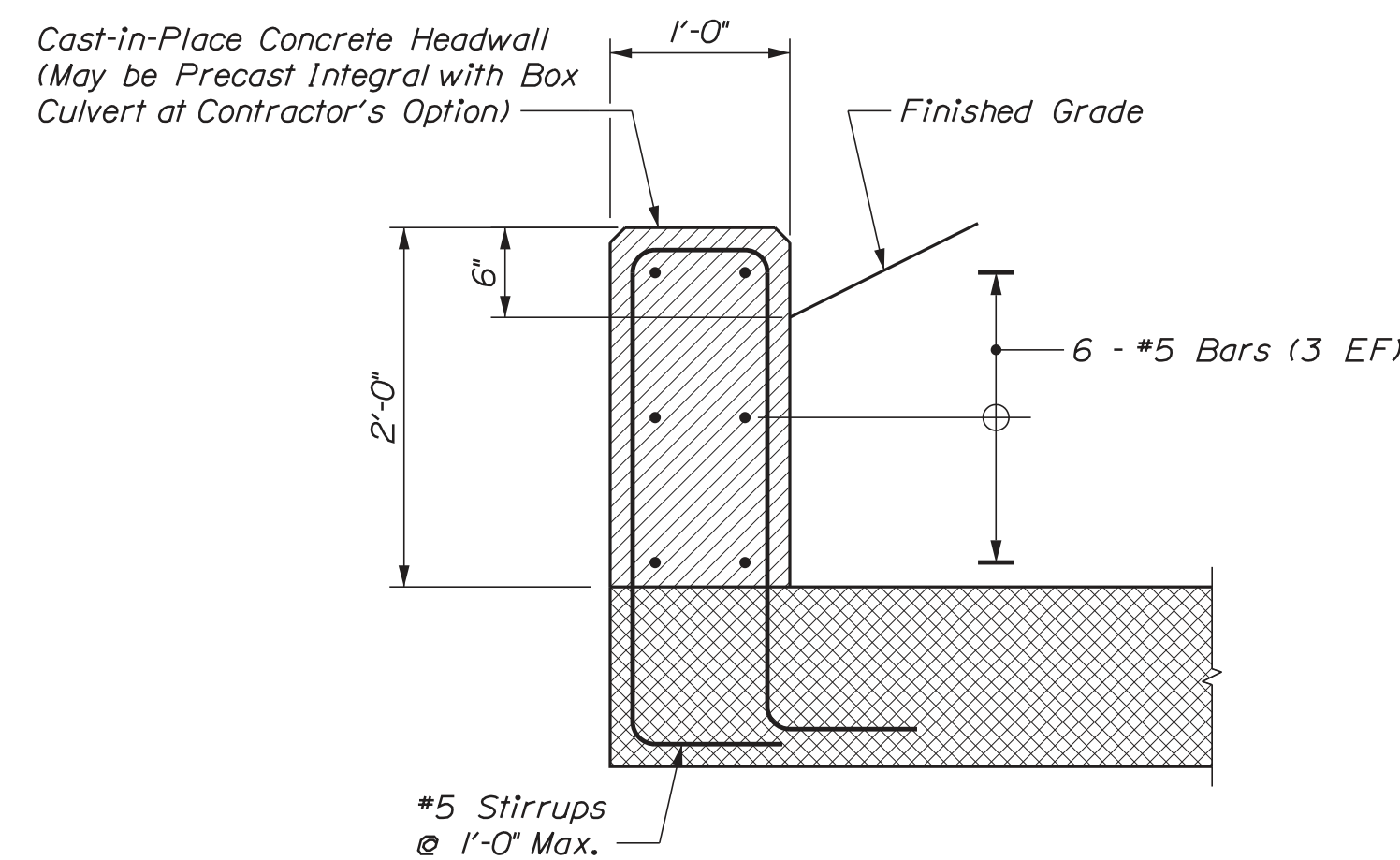
**PRECAST CONCRETE INLET
TOE WALL DETAIL**
Not to Scale



**PRECAST CONCRETE OUTLET
TOE WALL DETAIL**
Not to Scale



**PRECAST CONCRETE
TOP SLAB RECESS DETAIL**
Not to Scale



HEADWALL DETAIL
Not to Scale

PRECAST CONCRETE ARCHES OR BOXES 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 Special Provisions 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. The Contractor shall design the precast concrete box culvert in accordance with the 2018 American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, or the 2017 AASHTO LRFD Bridge Design Specifications Eighth Edition, as appropriate. The bridge's load rating capacity shall be expressed in Cooper's E configurations and the speed in which it was rated or HL-93 modified for Strength I, as appropriate.



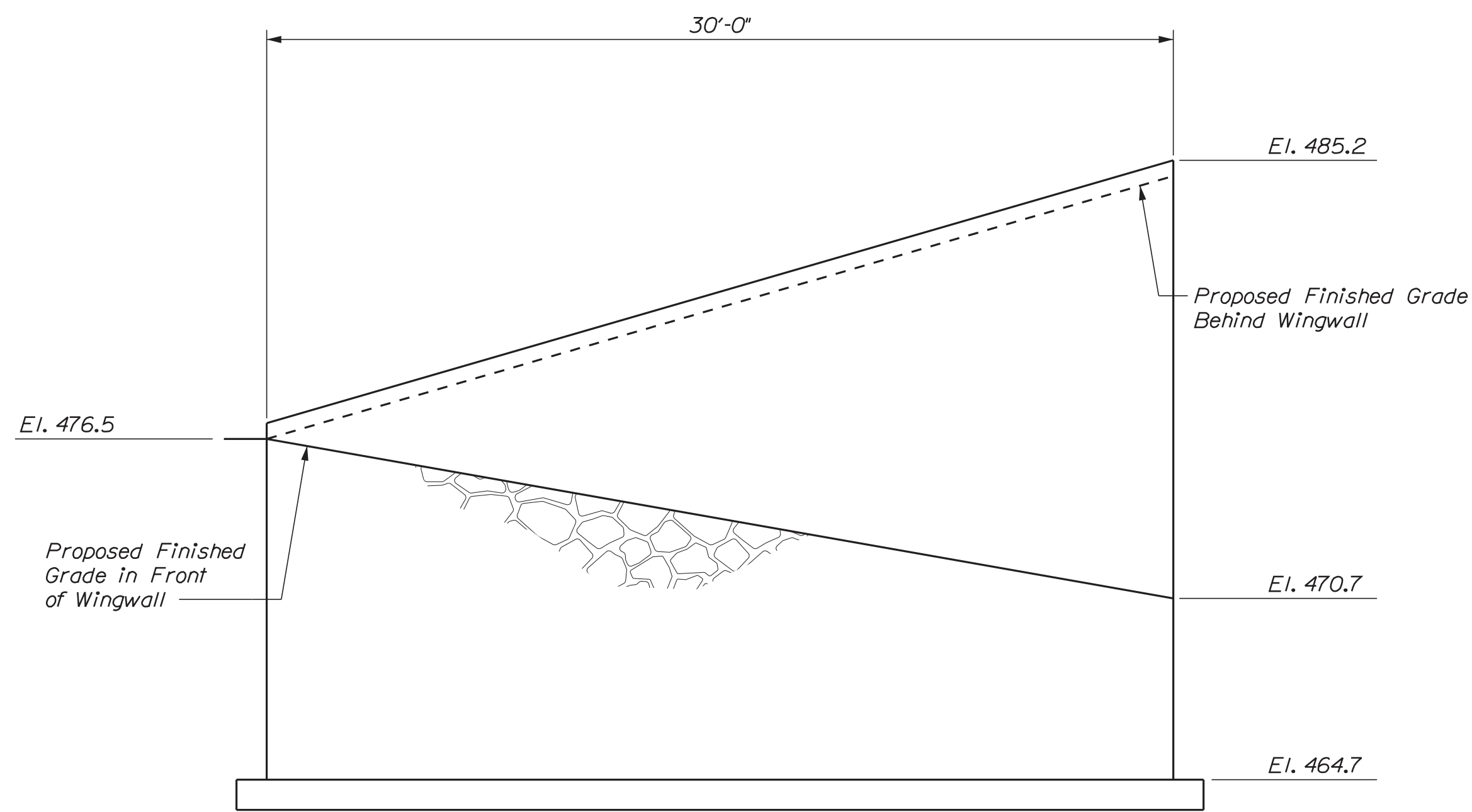
PROJ. MANAGER	DATE	BY	DATE
DESIGN DETAILED	1/30/2020	KW	1/30/2020
CHECKED-REVIEWED	JAW	GSS	JAW
DESIGN DETAILED			
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date: 1/30/2020

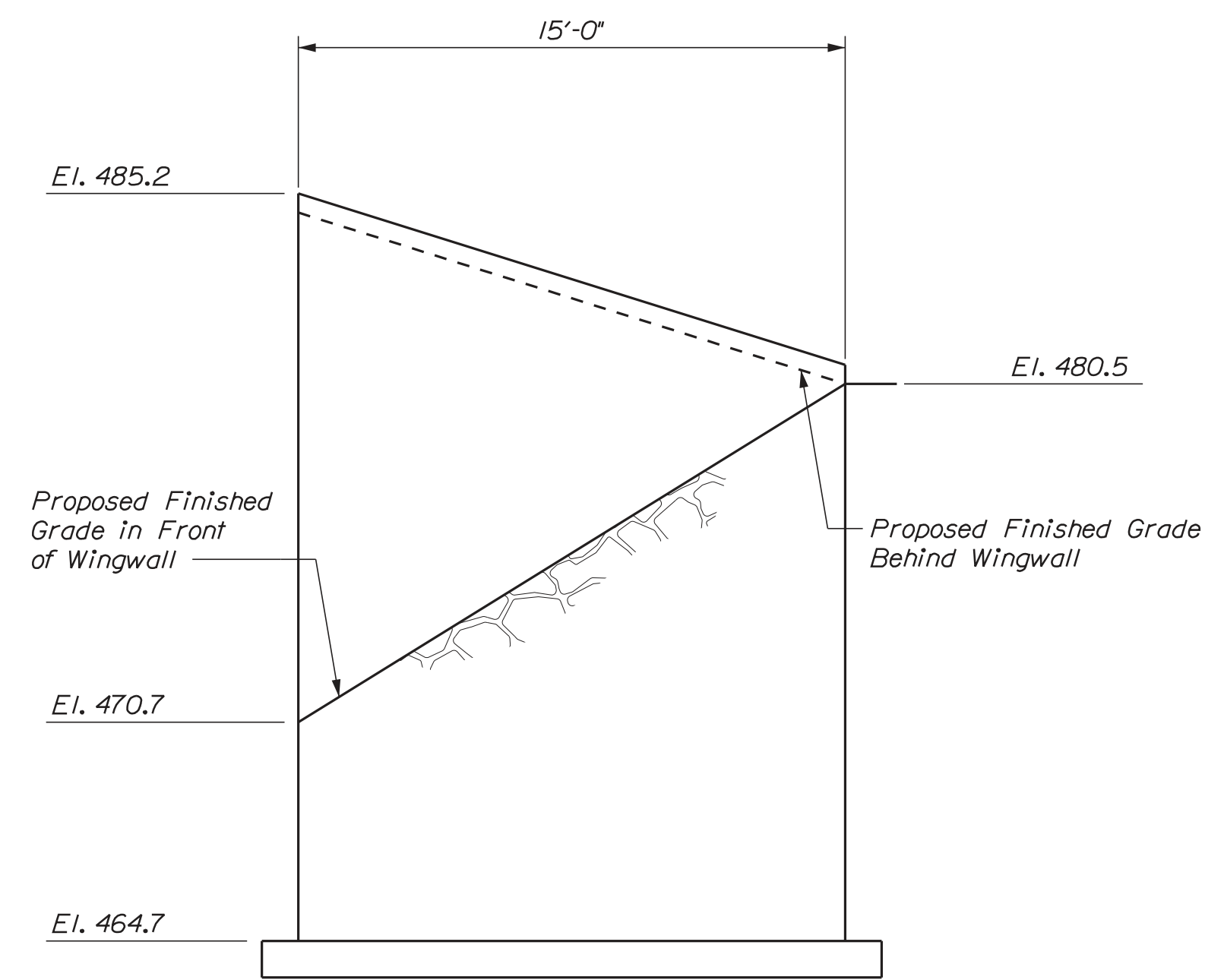
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Division: MULTIMODAL

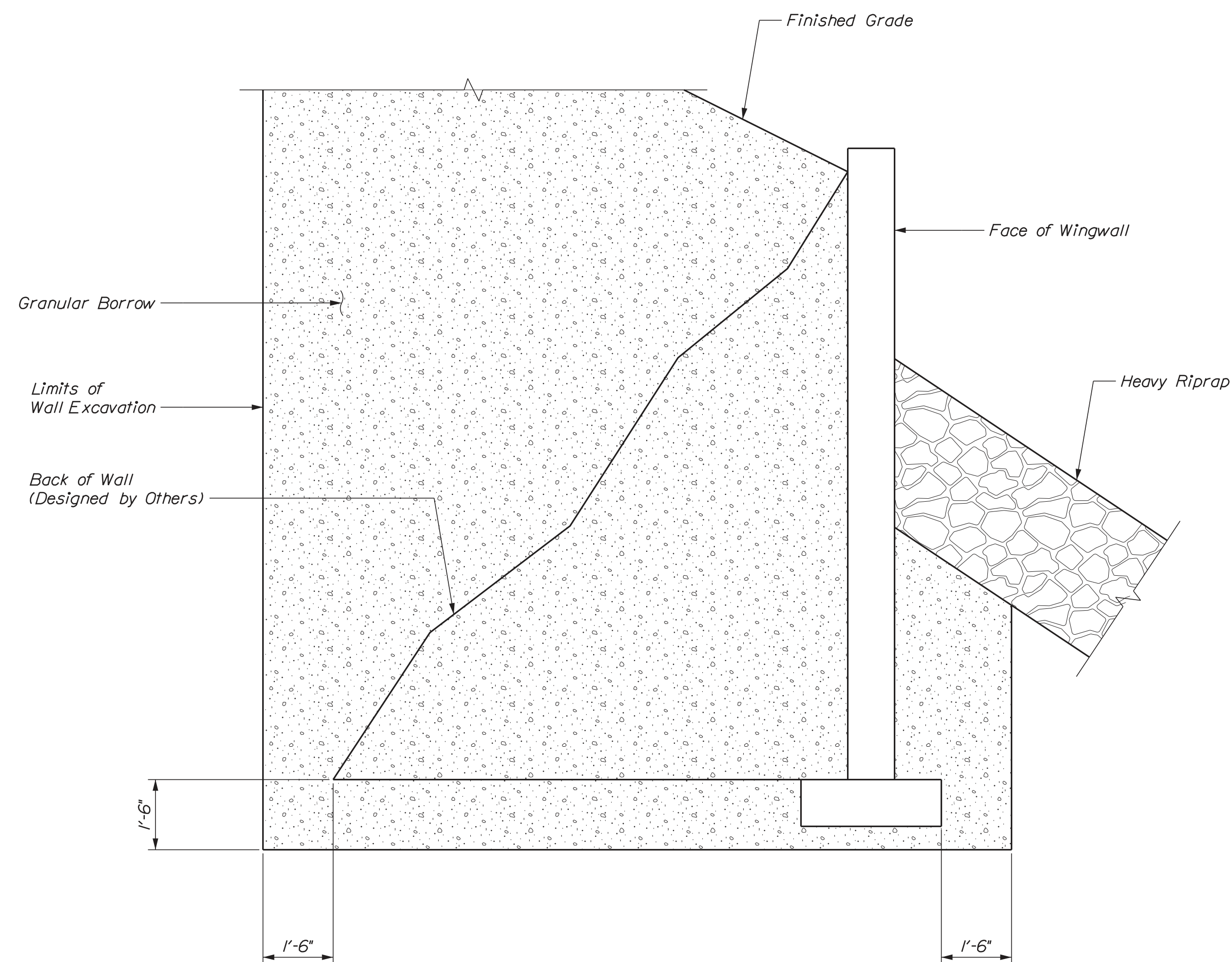
Filename: 038_ww_details_01.dgn



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



WINGWALL NO. 2
Scale: 1/4" = 1'-0"



TYPICAL WINGWALL SECTION
Not to Scale

WINGWALL NOTES

- The Contractor shall provide Precast Concrete Wingwalls in accordance with Standard Specifications Section 534. The Walls shall be designed and stamped by a Registered Professional Engineer and the design shall be submitted to the resident for review. Plan details are shown for estimating purposes only. Cost of Wingwalls included in Item 534.71.
- The precast units shall be one of the following, or approved equal:
 - "T-Wal" as manufactured by a licensed manufacturer of Neel Company.
 - "DoubleWal" as manufactured by a licensed manufacturer of DoubleWal Corp., Plain, Connecticut.
- The maximum factored bearing resistance for the inlet wingwalls is 10 ksf for the strength condition, and 8 ksf for the service condition based on footing widths ranging from 5 to 15 feet.
- Elevation at bottom of Walls may be lowered for constructability at no additional cost to the Department.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS	
GAGNON BROOK BRIDGE		OVER GAGNON BROOK		FRENCHVILLE AROOSTOOK COUNTY	
WINGWALL NO. 1 AND NO. 2		DETAILS		BRIDGE NO. WIN 7831 & 2303	
PROJECT NO. 211776.00 & 235665.00		BRIDGE PLANS			

PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	1/30/2020	KDW	1/30/2020
CHECKED-REVIEWED		GSG	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date: 1/30/2020

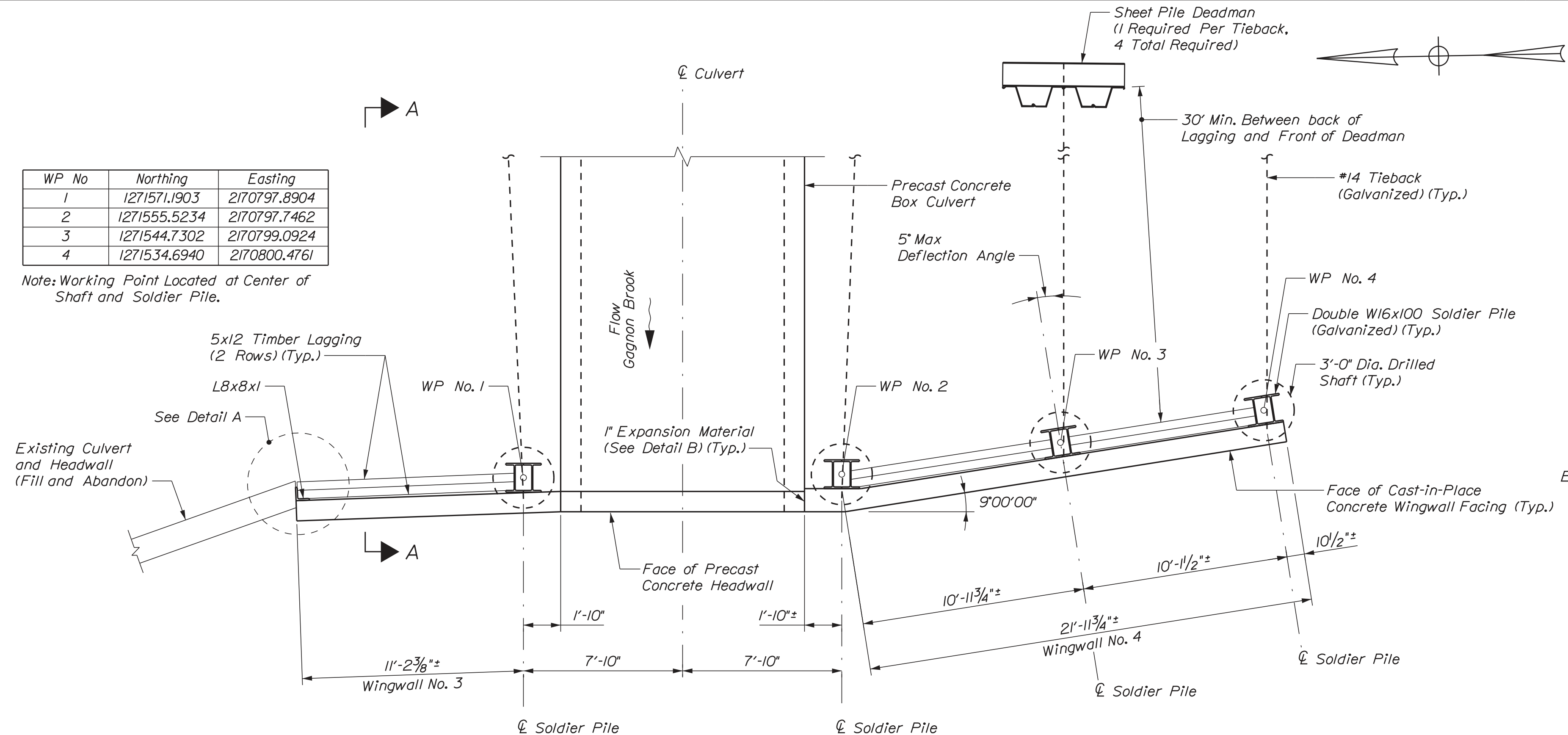
Username: kventworth

Division: MULTIMODAL

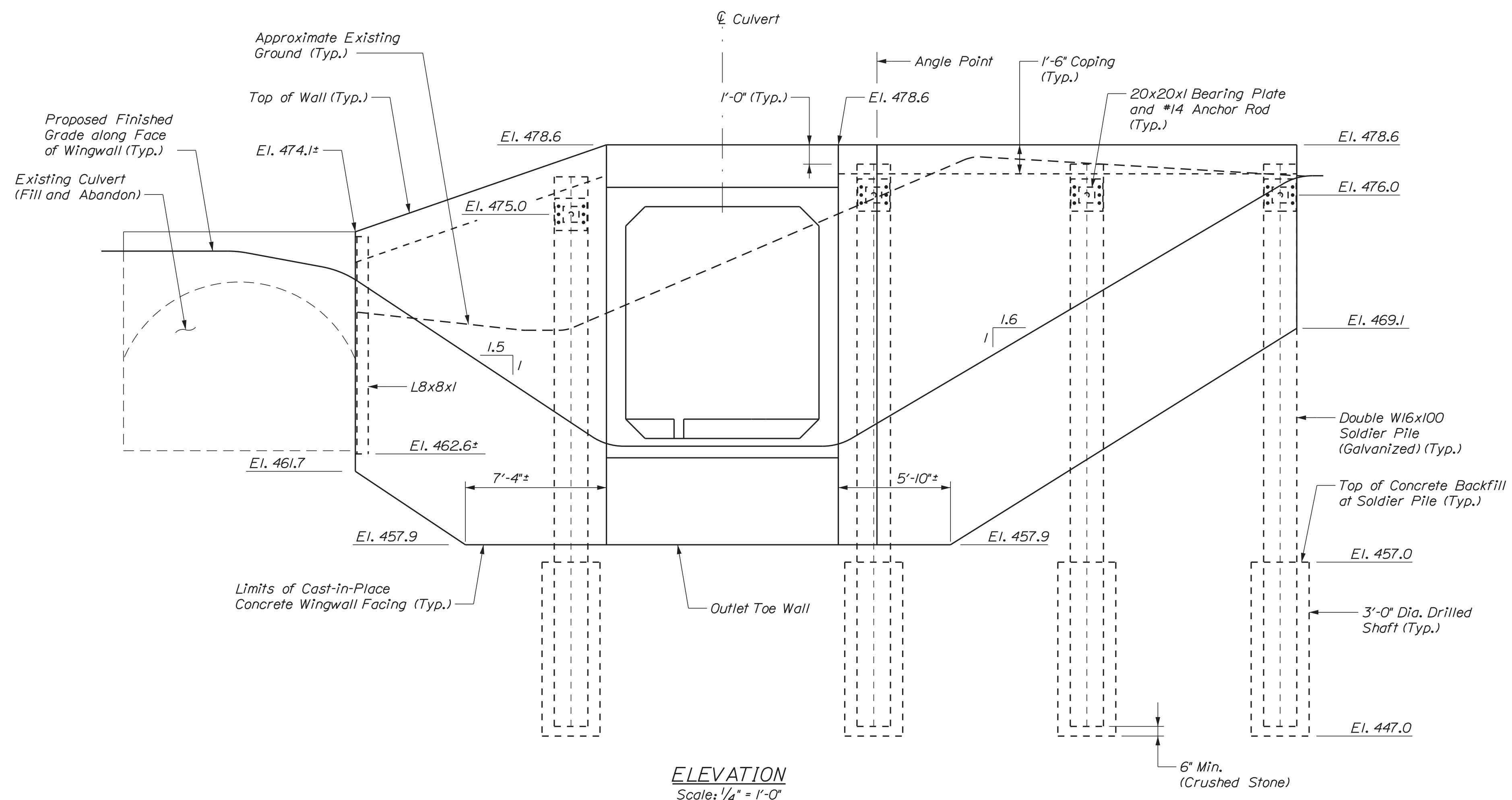
Filename: 039_outlet_01.dgn

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3	1271544.7302	2170799.0924
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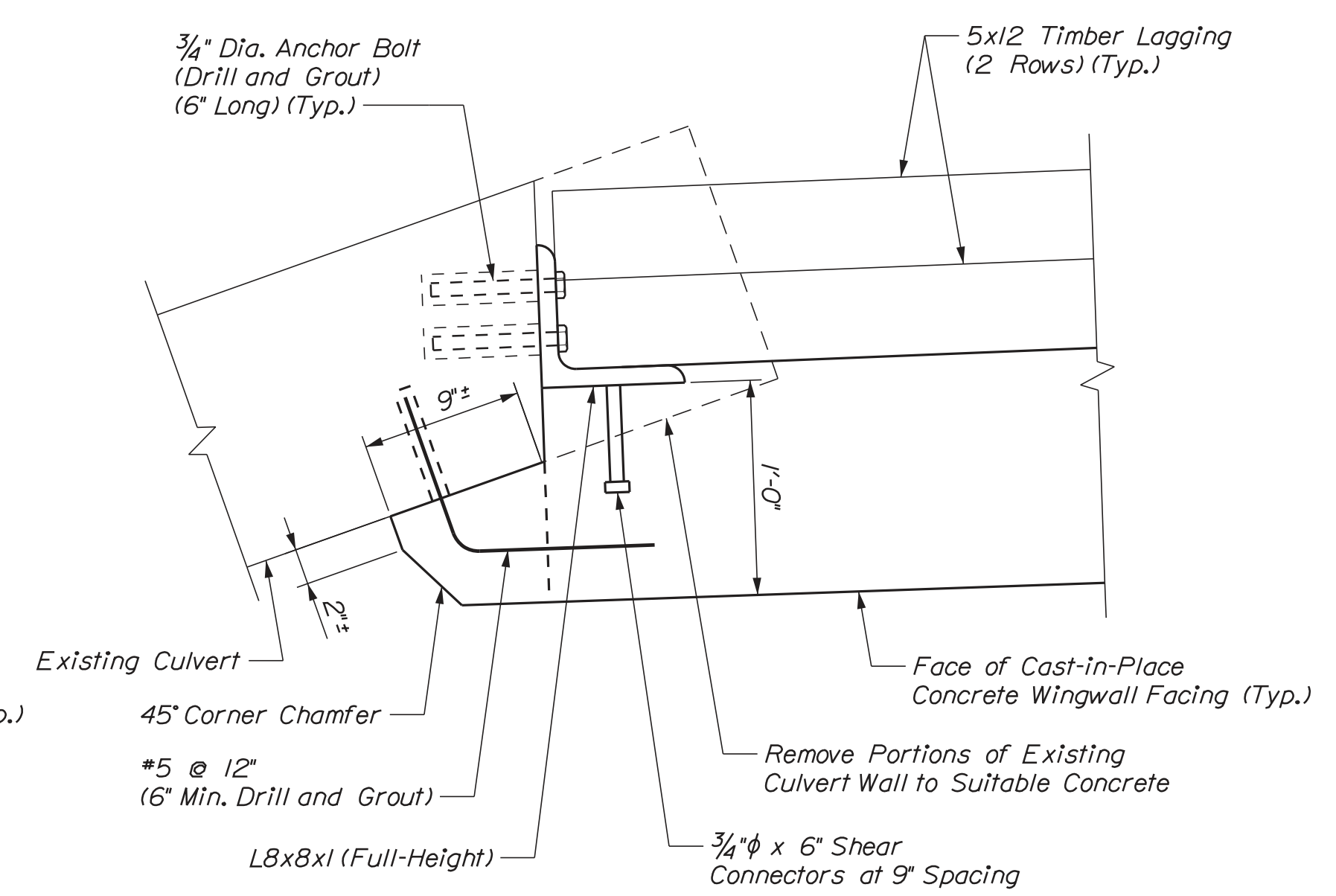
Note: Working Point Located at Center of Shaft and Soldier Pile.



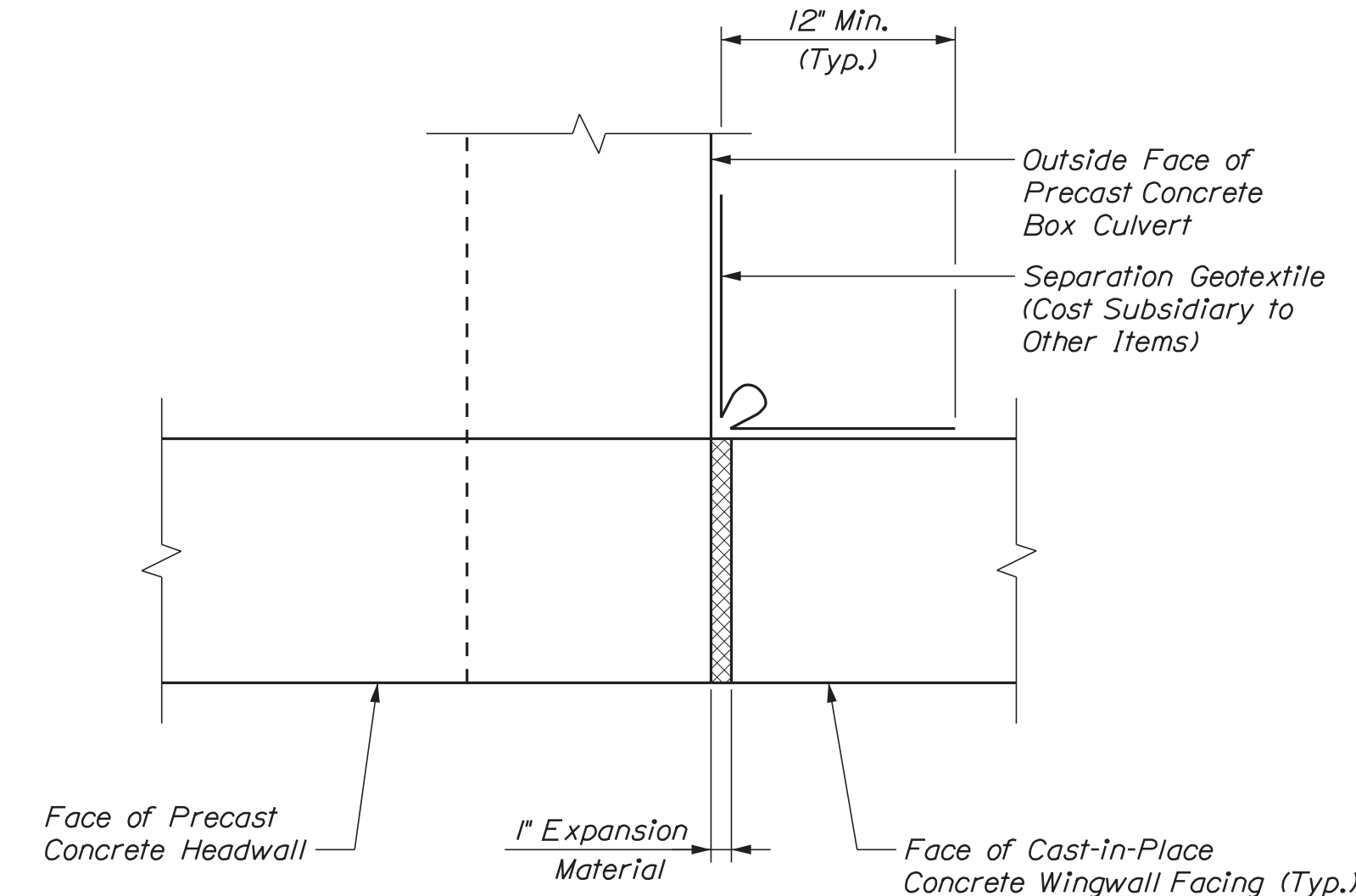
SOLDIER PILE PLAN
(Wall Coping Not Shown)
Scale: 1/4" = 1'-0"



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



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

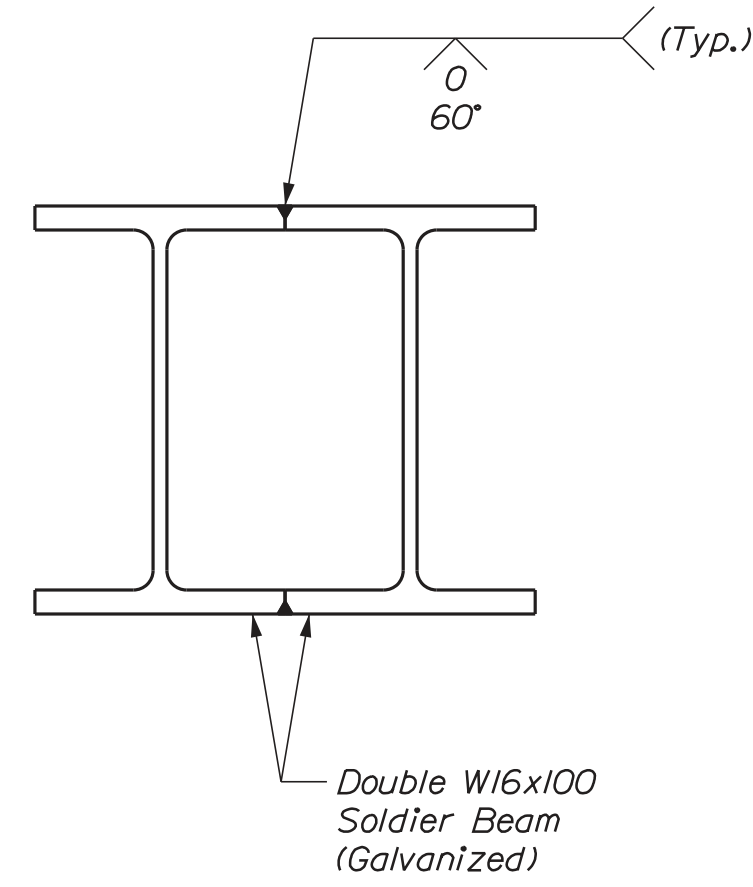


DETAIL B
Scale: 1/2" = 1'-0"

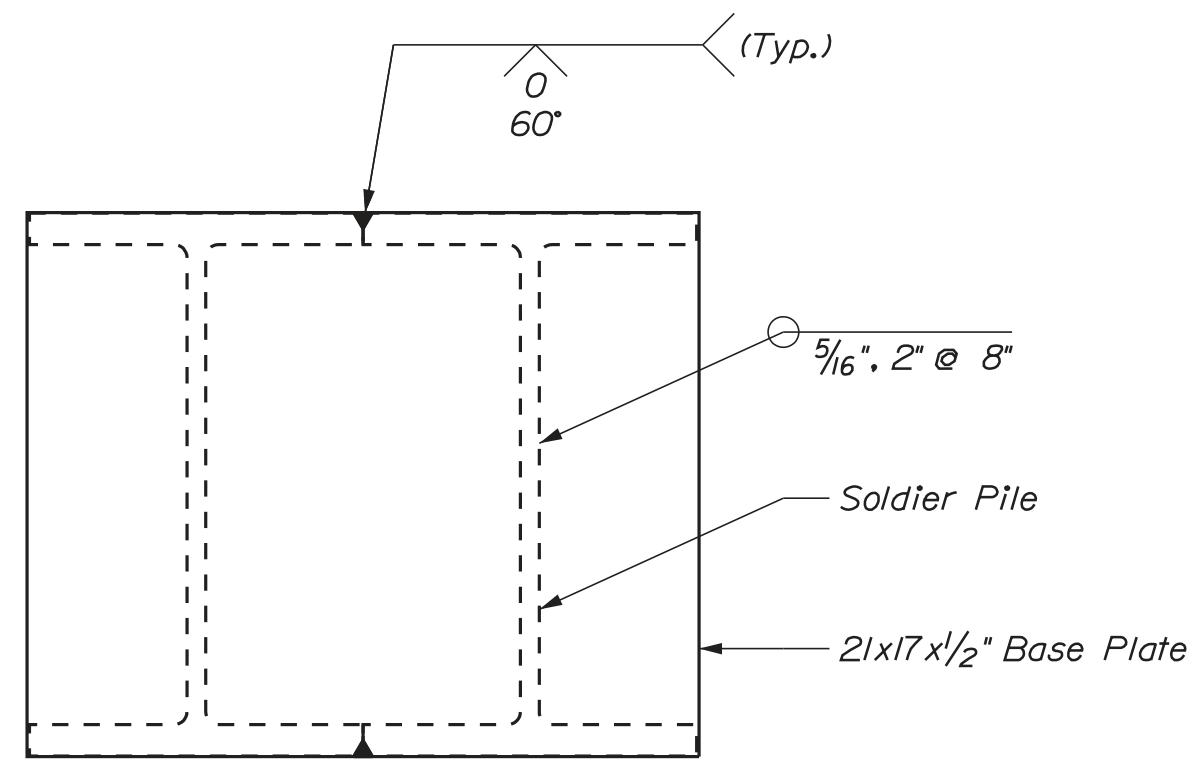
NOTES

- See Wingwall No. 3 and No. 4 Details (3 of 4) Sheet for Section A-A.
- Payment for Wingwall No. 3 and No. 4 soldier pile and tieback system shall be under the following items:
501.306, Tieback and Deadman System
501.504, Drilled Soldier Piles in Place
501.8042, Drilling Equipment and Mobilization Soldier Piles
- Payment for the Wingwall No. 3 and No. 4 Cast-in-Place Concrete Facing and Coping shall be under the following items:
502.219, Structural Concrete, Abutments and Retaining Walls
503.141, Epoxy-Coated Reinforcing Steel, Fabricated and Delivered
503.151, Epoxy-Coated Reinforcing Steel, Placing

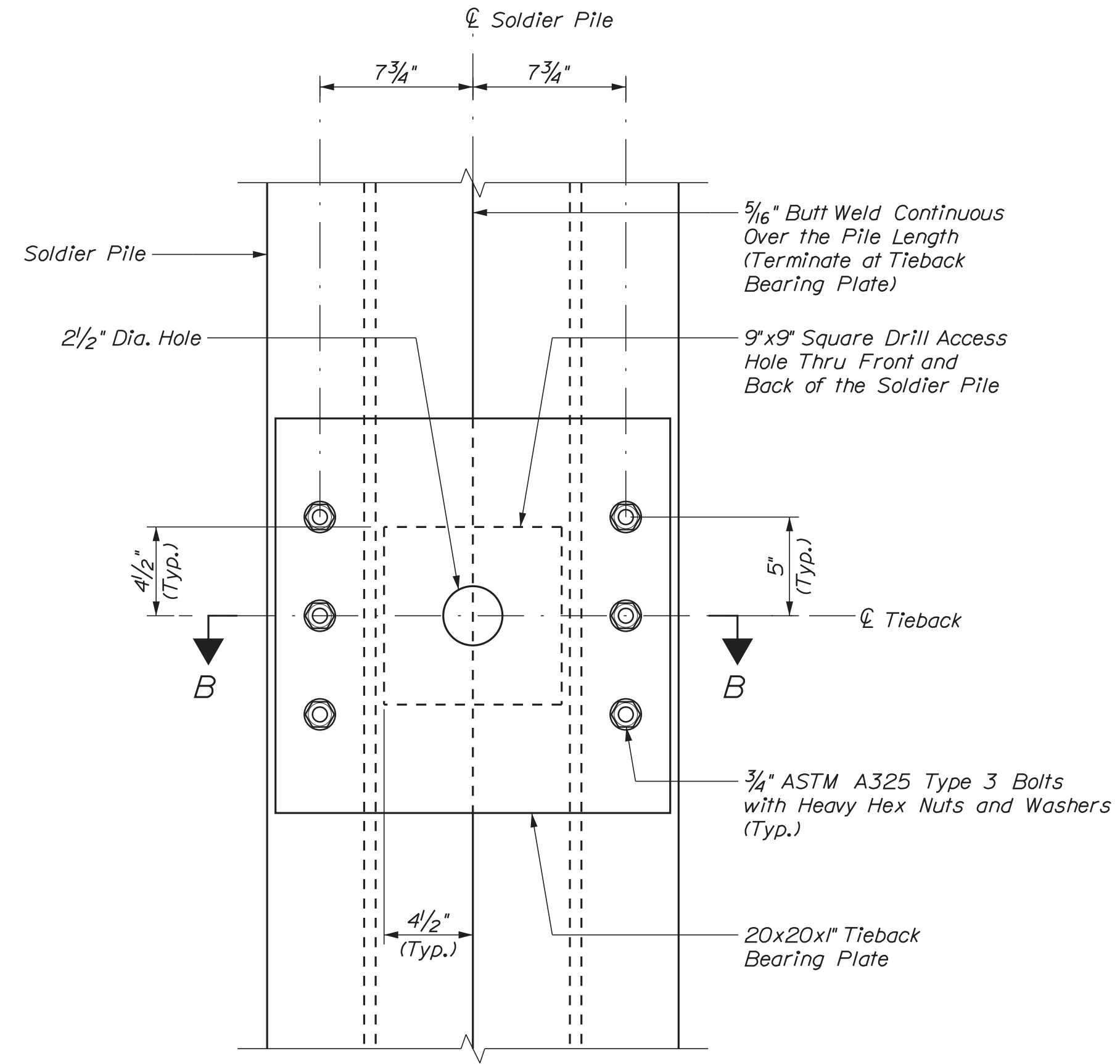
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS	
BRIDGE NO. 7831 & 2303		WIN 21776.00 & 23565.00	
BRIDGE PLANS			
SIGNATURE Chris Stovall		P.E. NUMBER 7275	
DATE 1-8-2020			
DATE	BY	DATE	BY
1/30/2020	KW	1/30/2020	CLS
DESIGN DETAILED	CLS	CHECKED-REVIEWED	NW
DESIGN DETAILED	CLS	DESIGN DETAILED	CLS
REVISIONS 1		REVISIONS 1	
REVISIONS 2		REVISIONS 2	
REVISIONS 3		REVISIONS 3	
REVISIONS 4		REVISIONS 4	
FIELD CHANGES		FIELD CHANGES	
GAGNON BROOK BRIDGE OVER GAGNON BROOK FRENCHVILLE AROOSTOOK COUNTY WINGWALL NO. 3 AND NO. 4 DETAILS (1 OF 4)			
SHEET NUMBER			
39			
OF 44			



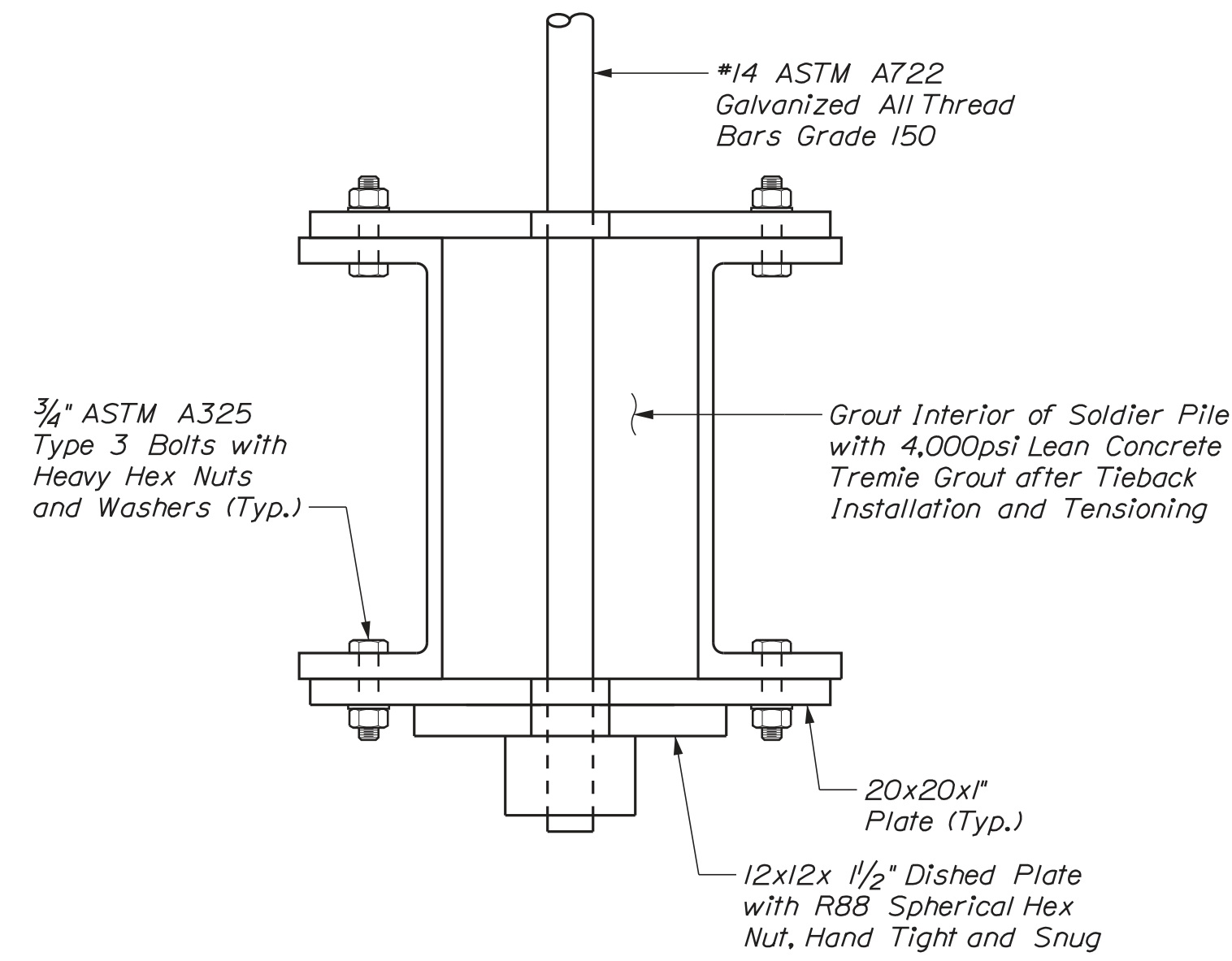
**SOLDIER PILE
WELD DETAIL**
Scale: 1/2" = 1'-0"



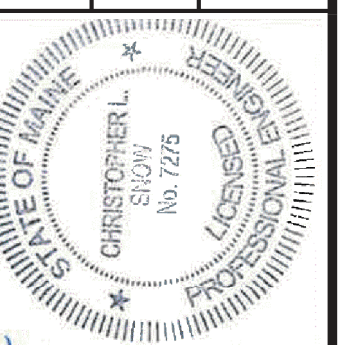
**SOLDIER PILE
BASE PLATE DETAIL**
Scale: 2" = 1'-0"



ELEVATION
(12x12x1/2" Dished Plate Not Shown for Clarity)



SECTION B-B
**SOLDIER PILE
ANCHORAGE DETAILS**
Scale: 2" = 1'-0"



Christopher L. Stovall
SIGNATURE
7275
P.E. NUMBER
1-8-2020
DATE

PROJ. MANAGER	DATE	BY	DATE	REVISIONS	FIELD CHANGES
DESIGN-DETAILED	1/30/2020	KDW	1/30/2020	1	
CHECKED-REVIEWED		CLS		2	
DESIGN-DETAILED				3	
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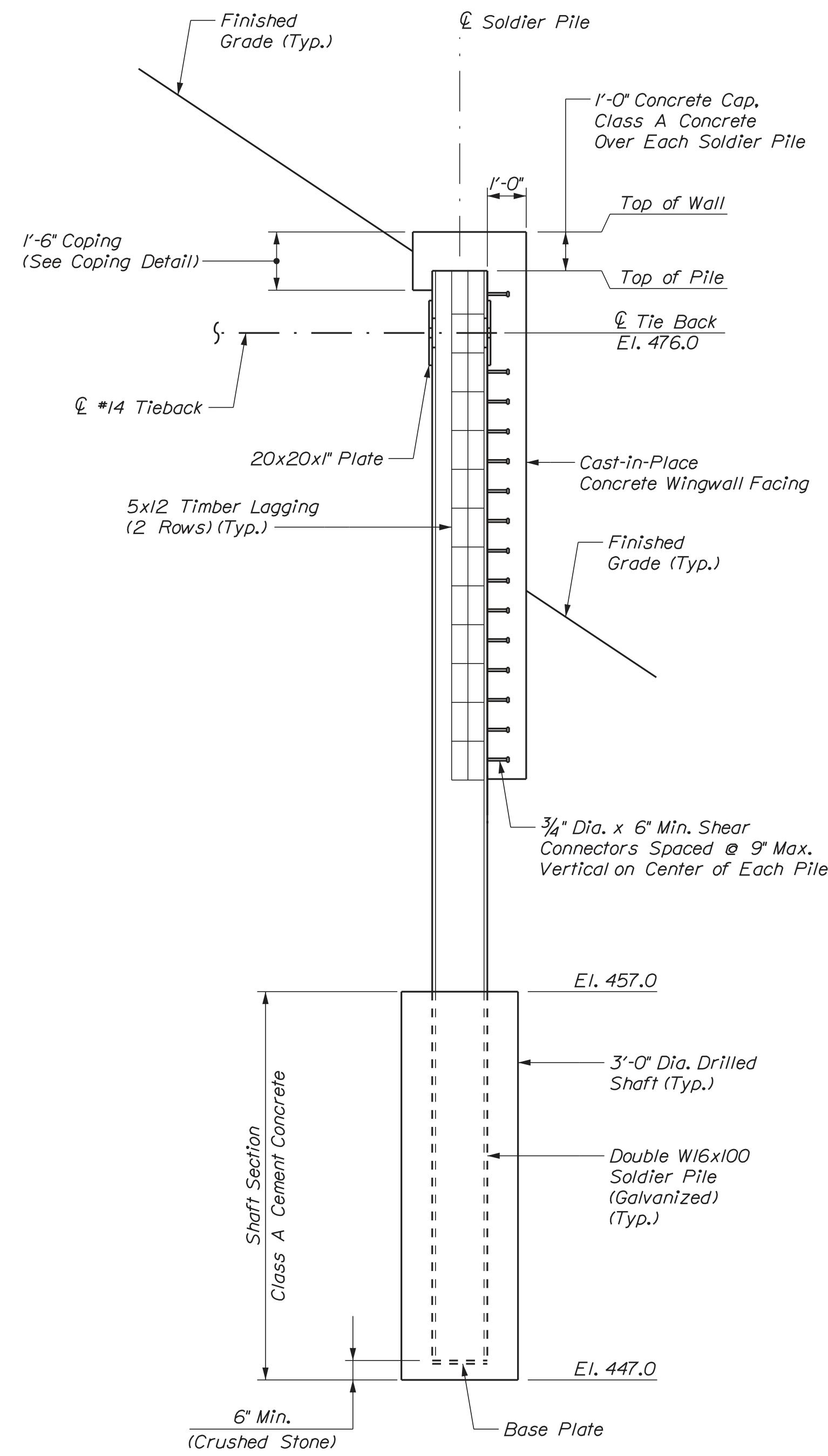
GAGNON BROOK BRIDGE
OVER GAGNON BROOK
FRENCHVILLE AROOSTOOK COUNTY
WINGWALL NO. 3 AND NO. 4
DETAILS (2 OF 4)

Date: 1/30/2020

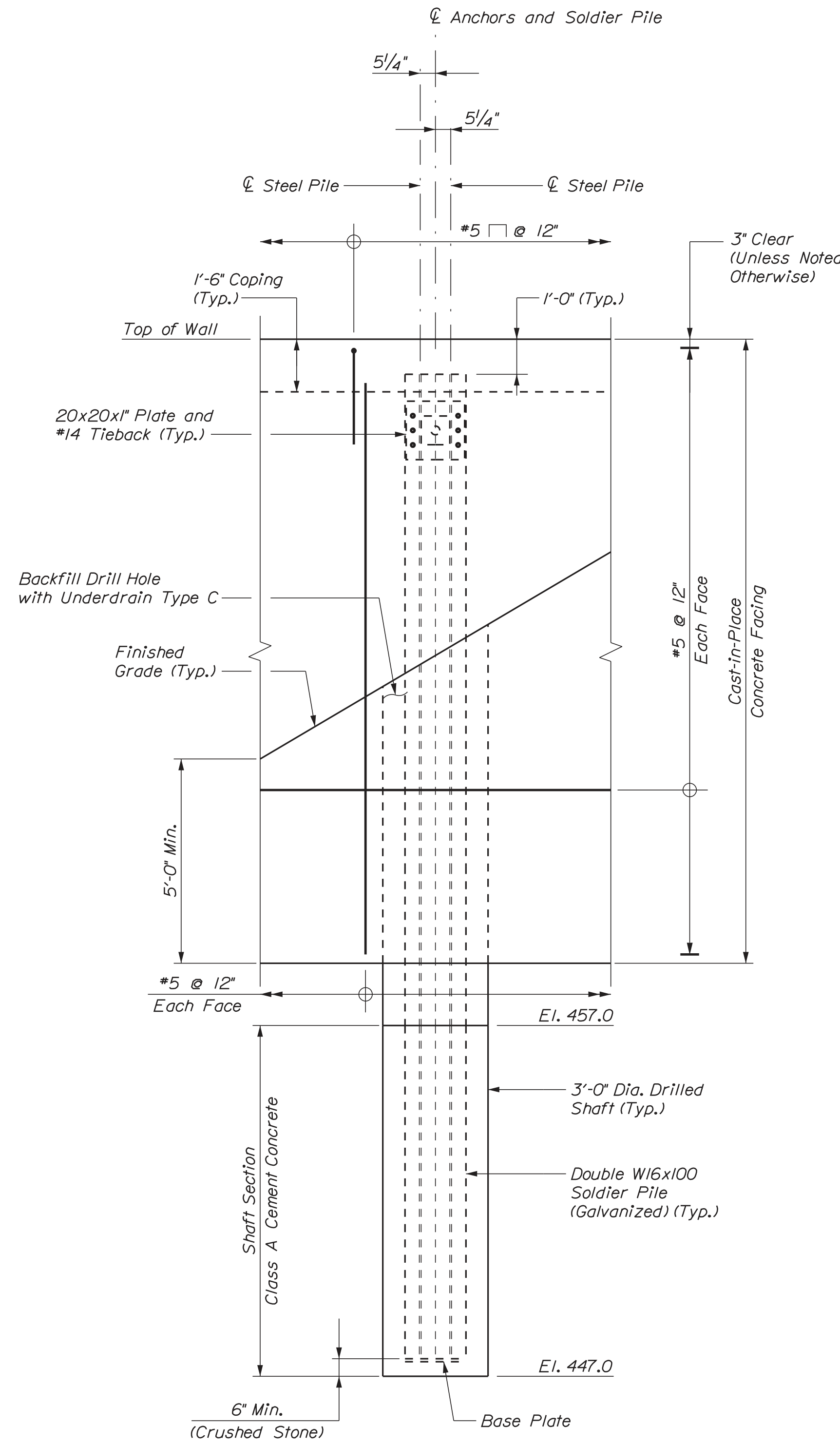
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Division: MULTIMODAL

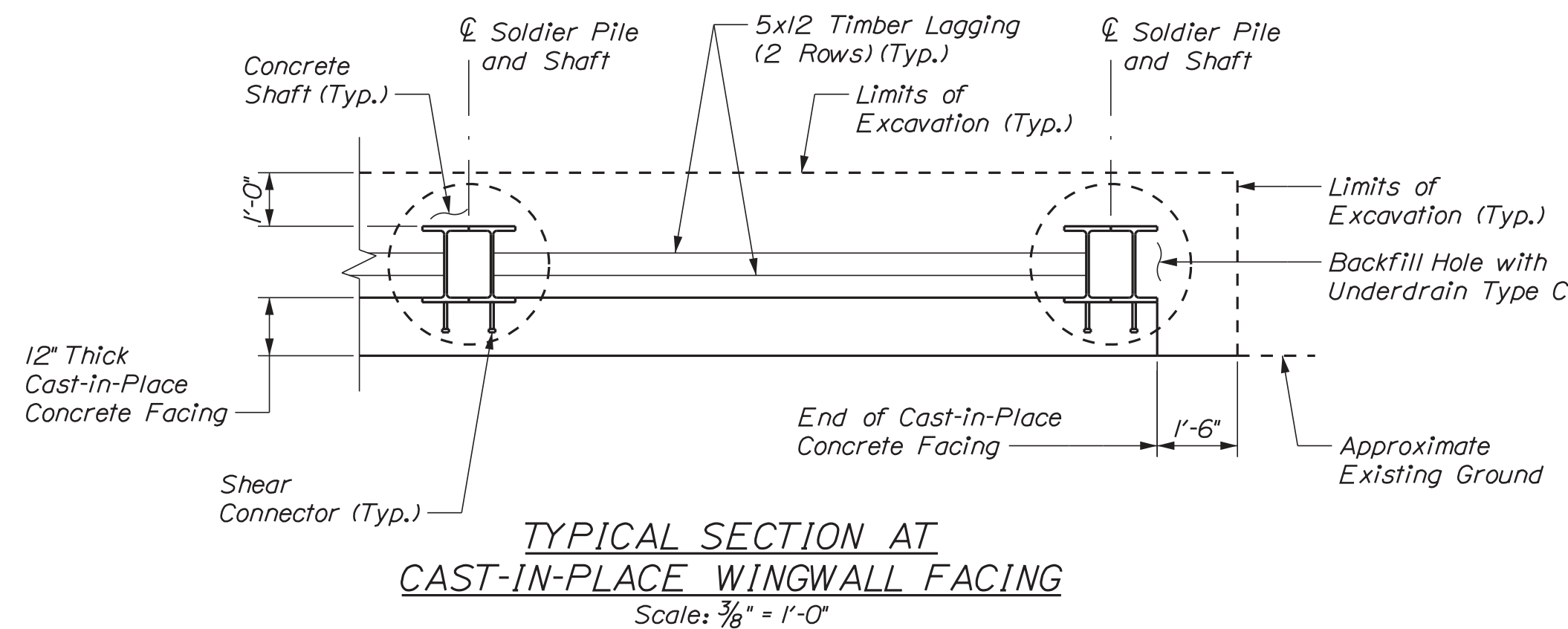
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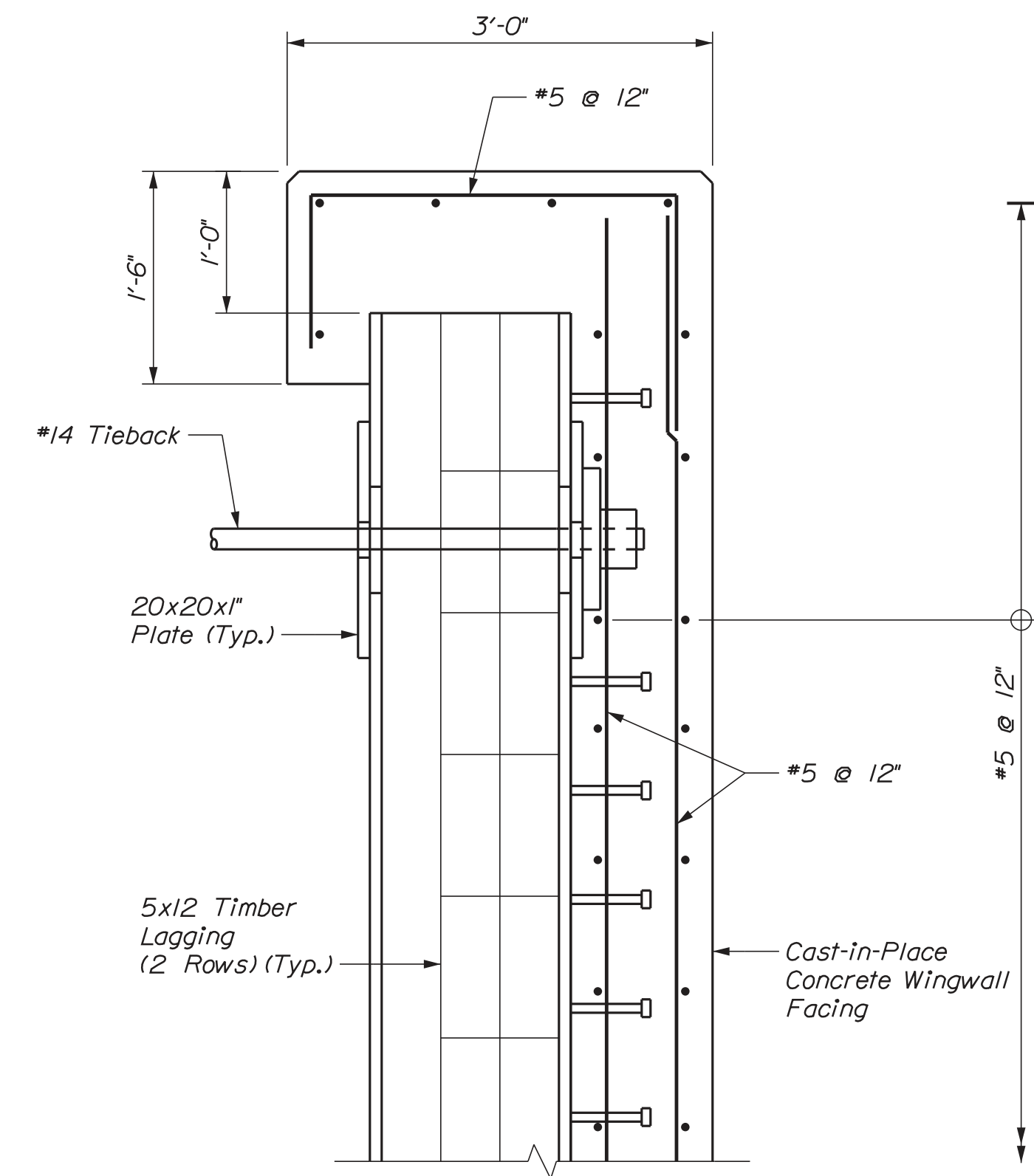
SECTION A-A
(Reinforcing Not Shown for Clarity)
Scale: $\frac{3}{8}$ " = 1'-0"



PARTIAL WALL ELEVATION
Scale: $\frac{3}{8}$ " = 1'-0"



**TYPICAL SECTION AT
CAST-IN-PLACE WINGWALL FACING**
Scale: $\frac{3}{8}$ " = 1'-0"



COPING DETAIL
Scale: 1" = 1'-0"

NOTE

1. Reinforcing shall be detailed by the contractor.
Cost included in Item 503.141.

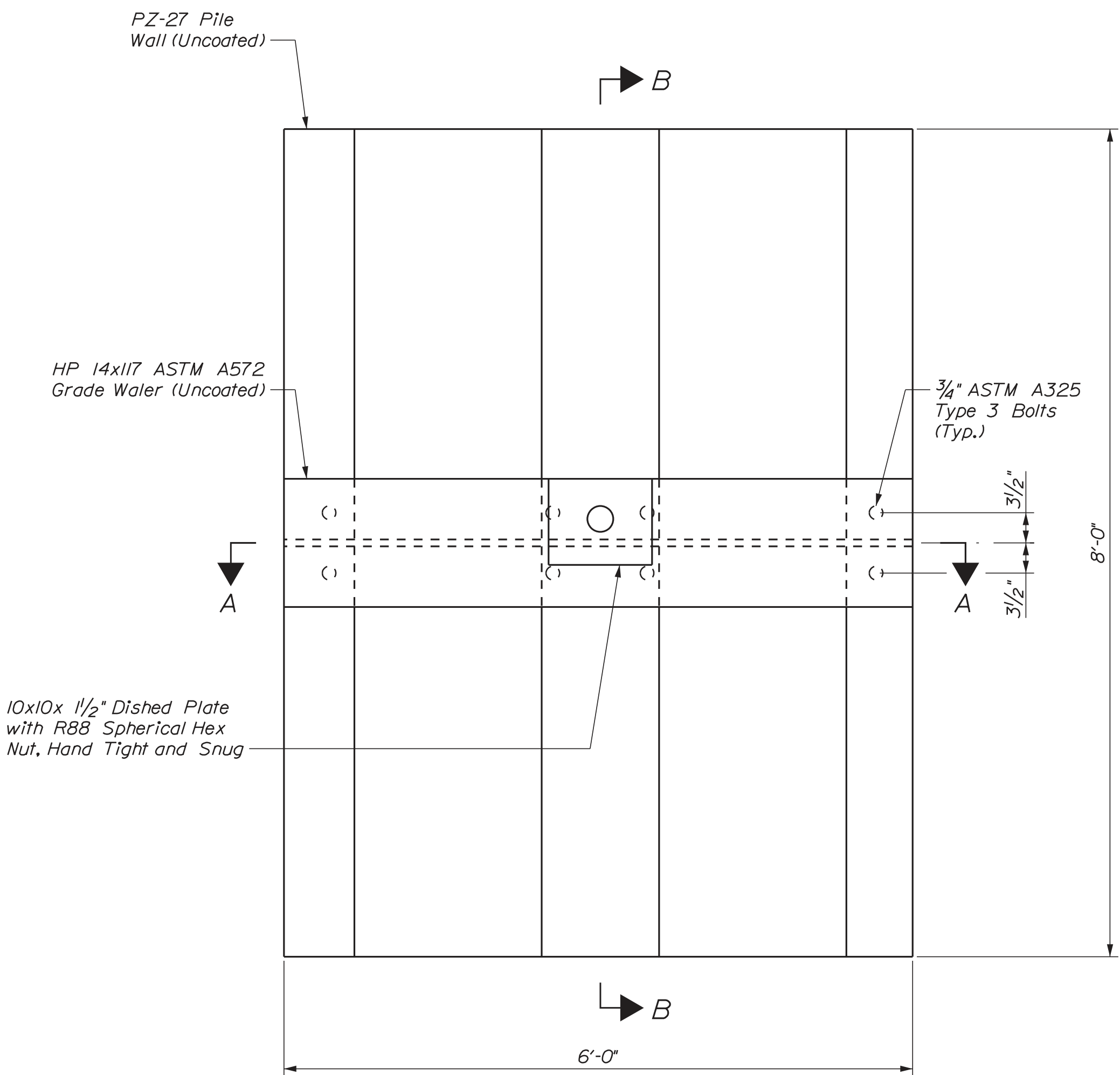
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS	
BRIDGE NO. 7831 & 2303		WIN 211776.00 & 235665.00	
BRIDGE PLANS		BRIDGE PLANS	
SIGNATURE		DATE	
7275		1-8-2020	
P.E. NUMBER		DATE	
1-8-2020		1-8-2020	
PROJ. MANAGER	DATE	BY	DATE
DESIGN DETAILED	1/30/2020	KW	1/30/2020
CHECKED/REVIEWED		CLS	
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
GAGNON BROOK BRIDGE OVER GAGNON BROOK FRENCHVILLE AROOSTOOK COUNTY WINGWALL NO. 3 AND NO. 4 DETAILS (3 OF 4)			
SHEET NUMBER			
41			
OF 44			

Date: 1/30/2020

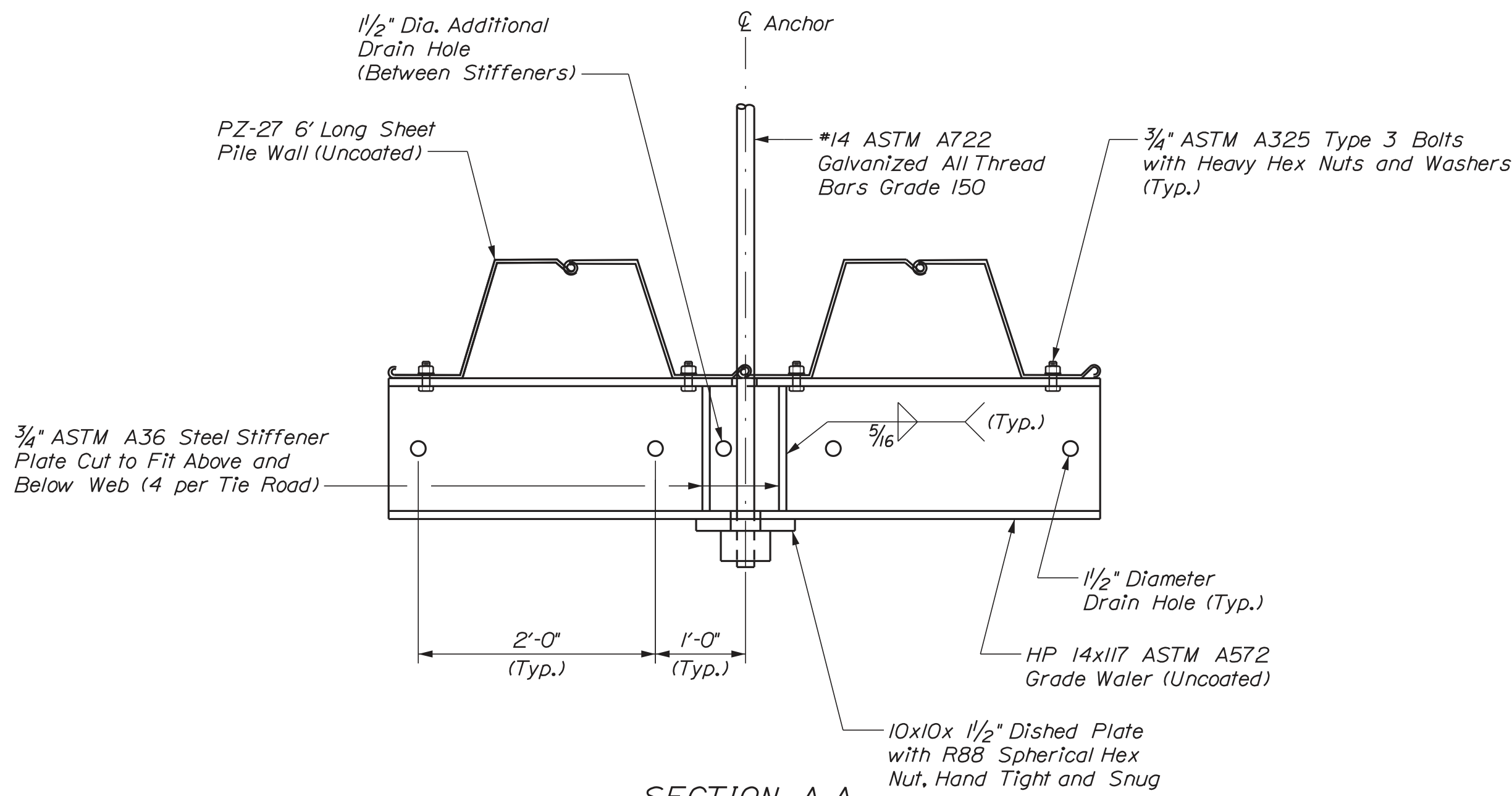
Username: kwentworth

Division: MULTIMODAL

Filename: 042_outlet_04.dgn

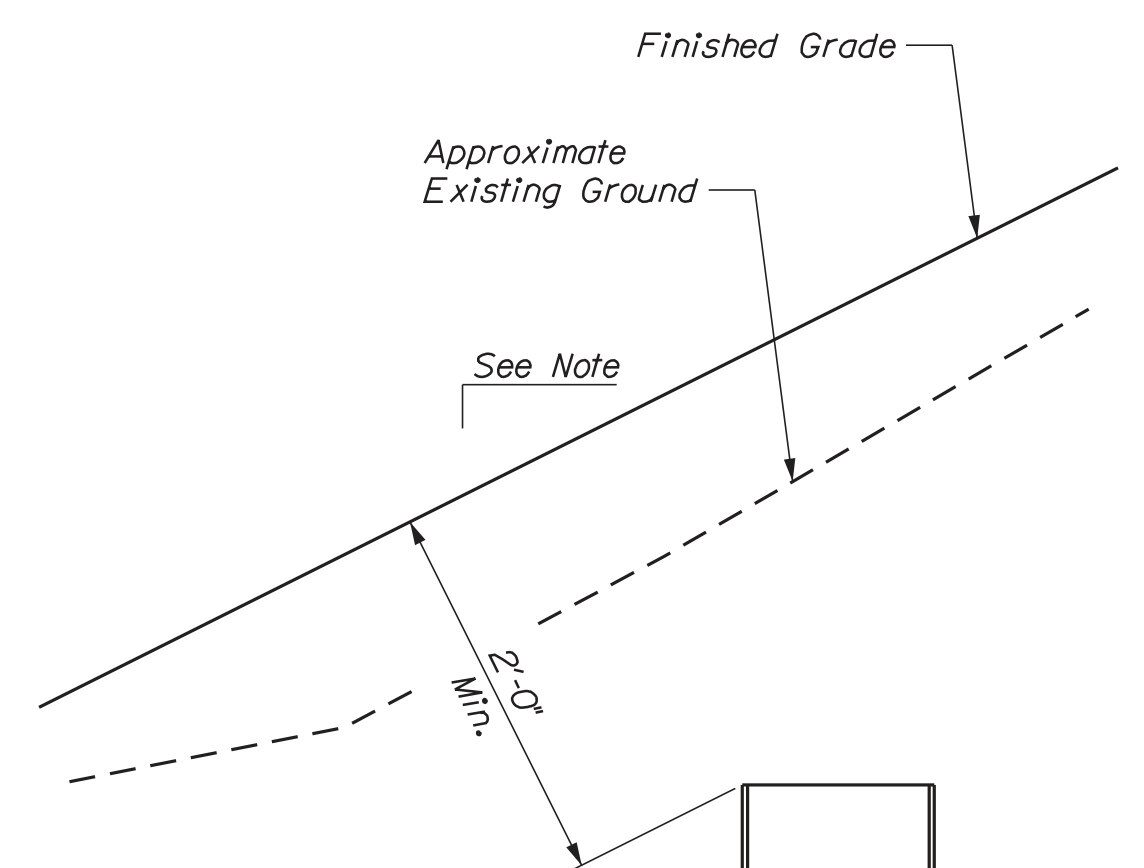


BACK ELEVATION



SECTION A-A

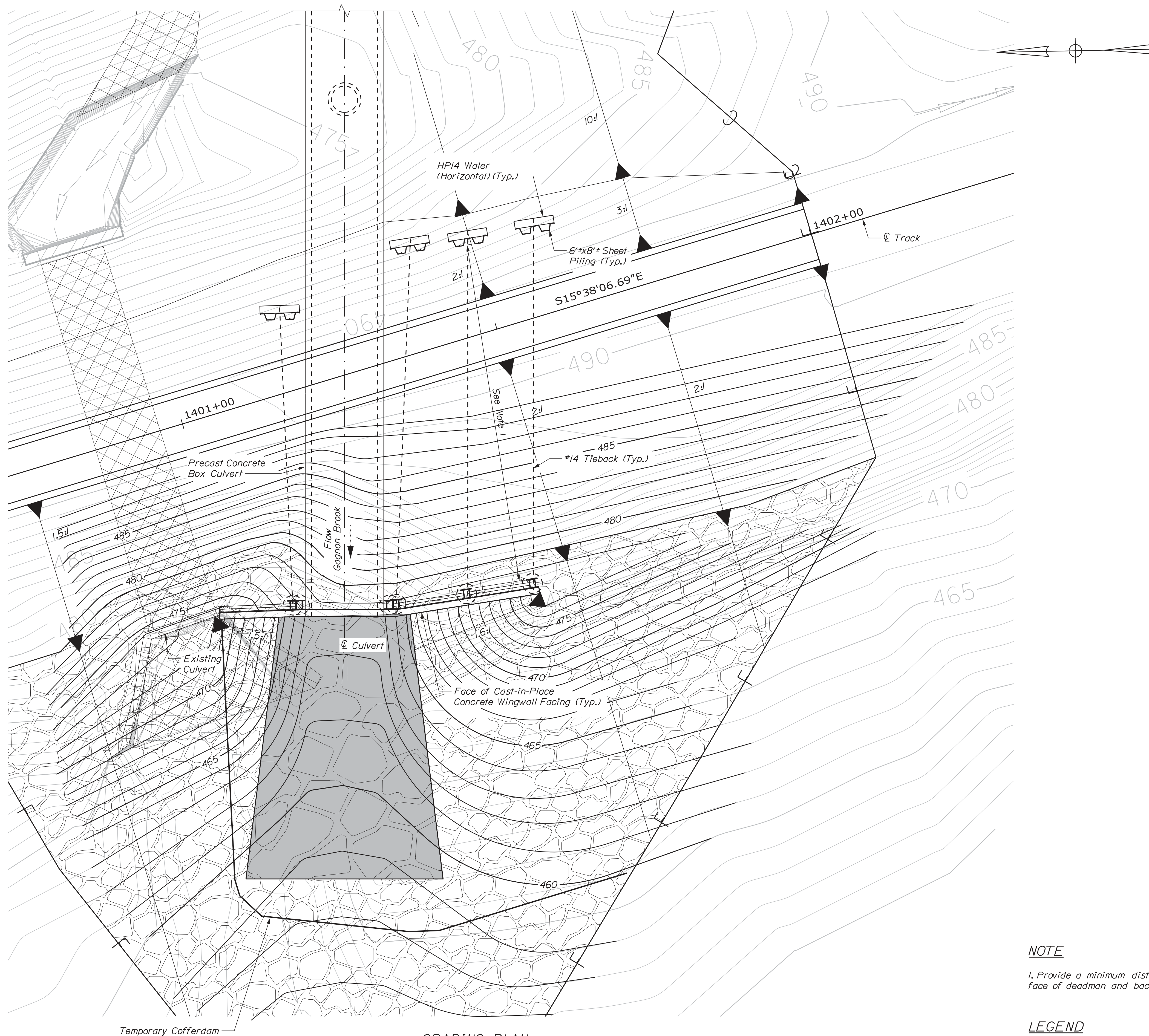
SHEET PILE DEADMAN DETAILS
Scale: 1" = 1'-0"



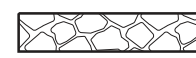
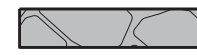
SECTION B-B

NOTE
Slope varies. See Cross Sections for grading.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		CAPITAL PROJECTS		BRIDGE NO. 7831 & 2303	BRIDGE PLANS
GAGNON BROOK BRIDGE OVER GAGNON BROOK FRENCHVILLE AROOSTOOK COUNTY		WINGWALL NO. 3 AND NO. 4 DETAILS (4 OF 4)		WIN	211776.00 & 235665.00
				BRIDGE NO. 7831 & 2303	BRIDGE PLANS
DATE	BY	DATE	BY	DATE	BY
1/30/2020	KDW	1/30/2020	CLS		
DESIGN-DETAILED	CLS	CHECKED-REVIEWED	NW	DESIGN-DETAILED	
DESIGN-DETAILED		DESIGN-DETAILED		REVISIONS 1	
				REVISIONS 2	
				REVISIONS 3	
				REVISIONS 4	
				FIELD CHANGES	
SHEET NUMBER					
42					
OF 44					



NOTE
 1. Provide a minimum distance of 30 feet between the nearest face of deadman and back of the soldier beams.

LEGEND
 Plain Riprap
 Special Riprap

GRADING PLAN
 Scale: 1/8" = 1'-0"



PROJ. MANAGER	DATE	BY	DATE
DESIGN DETAILED	1/30/2020	KDW	1/30/2020
CHECKED-REVIEWED	JAW	GSG	1/30/2020
DESIGN DETAILED	JAW		
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GAGNON BROOK BRIDGE
 OVER GAGNON BROOK
 FRENCHVILLE AROOSTOOK COUNTY
OUTLET GRADING PLAN

