

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

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

DESIGN LOADING

Live Load HL - 93 Modified for Strength I
CL-625-ONT

TRAFFIC DATA

Current (2020) AADT 2220
 Future (2040) AADT 4080
 DHV - % of AADT 10
 Design Hour Volume 408
 Heavy Trucks (% of AADT) 5
 Heavy Trucks (% of DHV) 5
 Directional Distribution (% of DHV) 55
 18 kip Equivalent P 2.0 144
 18 kip Equivalent P 2.5 137
 Design Speed (mph) 25

HYDROLOGIC DATA

Drainage Area 5,985 sq mi
 Design Discharge (Q50) 163,120 cfs
 Check Discharge (Q100) 176,980 cfs
 Headwater Elevation (Q1.1) 455.3 ft
 Headwater Elevation (Q10) 465.0 ft
 Headwater Elevation (Q25) 466.2 ft
 Headwater Elevation (Q50) 467.3 ft
 Headwater Elevation (Q100) 468.3 ft
 Discharge Velocity (Q1.1) 7.4 fps
 Discharge Velocity (Q10) 8.0 fps
 Discharge Velocity (Q25) 8.3 fps
 Discharge Velocity (Q50) 8.5 fps
 Discharge Velocity (Q100) 9.5 fps

MATERIALS

Concrete:
 Curbs & Transition Barriers Class "LP"
 All Other Class "A"

Reinforcing Steel:
 Plain Reinforcing Steel ASTM A 615, Grade 60
 Stainless Reinforcing Steel ASTM A 955, Grade 75

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

BASIC DESIGN STRESSES

Concrete, Class "A" $f'c = 4,000$ psi
 Concrete, Class "LP" $f'c = 5,000$ psi
 Plain Reinforcing Steel $f_y = 60,000$ psi
 Stainless Reinforcing Steel $f_y = 75,000$ psi
 Structural Steel:
 ASTM A 709, Grade 50W $F_y = 50,000$ psi
 ASTM F 3125, Grade A325, Type 3 $F_u = 120,000$ psi

LIST OF DRAWINGS

Title Sheet 1
 Typical Sections 2
 Project Site Plan 3
 General Plans 4-7
 Profiles 8-11

REVIEWER NOTES

Information depicted on these plans are for the purpose of relative comparisons between two structure-type alternatives; the designs are based on an approximate 15% level of design completion and with incomplete coordination efforts.

The bridge-end flare width, landing location, and alignment orientation at the U.S. LPOE are subject to change based upon further coordination needs surrounding LPOE operations and land use.

The bridge landing location and orientation at the Canadian POE are subject to minor adjustments based upon further coordination needs surrounding POE operations and construction phasing.

The overall bridge width and distribution of shoulder widths are subject to change.

UTILITIES

Twin Rivers Paper Company
 Maine Northern Railroad
 Canadian National Railroad
 Town of Madawaska (Water and Sewer)
 City of Edmundston (Water and Sewer)
 Bell Aliant
 Consolidated Communications

MAINTENANCE OF TRAFFIC

Maintain two lanes of traffic on the existing bridge.

MADAWASKA - EDMUNDSTON AROOSTOOK COUNTY - NEW BRUNSWICK INTERNATIONAL BRIDGE OVER SAINT JOHN RIVER BRIDGE AVE. PROJECT LENGTH 0.36 mi. BRIDGE NO. 2399 STEEL ALTERNATIVE

PROJECT LOCATION:	International Bridge #2399 between Madawaska, Maine and Edmundston, New Brunswick carrying Bridge Avenue over the Saint John River. Latitude: 47°21'35"N Longitude: 68°19'57"W
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Replacement of the International Bridge with minor approach work.

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3/1/2019



WIN 021736.00

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER:	SIGNATURE	P.E. NUMBER
CHIEF ENGINEER:	DATE	DATE
PROJECT INFORMATION		
PROGRAM	DESIGNER	PROJECT RESIDENT
BRIDGE	HNTB	CONTRACTOR
JOEL KITTEDGE	HNTB	PROJECT COMPLETION DATE
MADAWASKA-EDMUNDSTON INTERNATIONAL BRIDGE STEEL ALTERNATIVE TITLE SHEET		
SHEET NUMBER		
1		
OF 11		

Date:3/1/2019

Username:

Division:

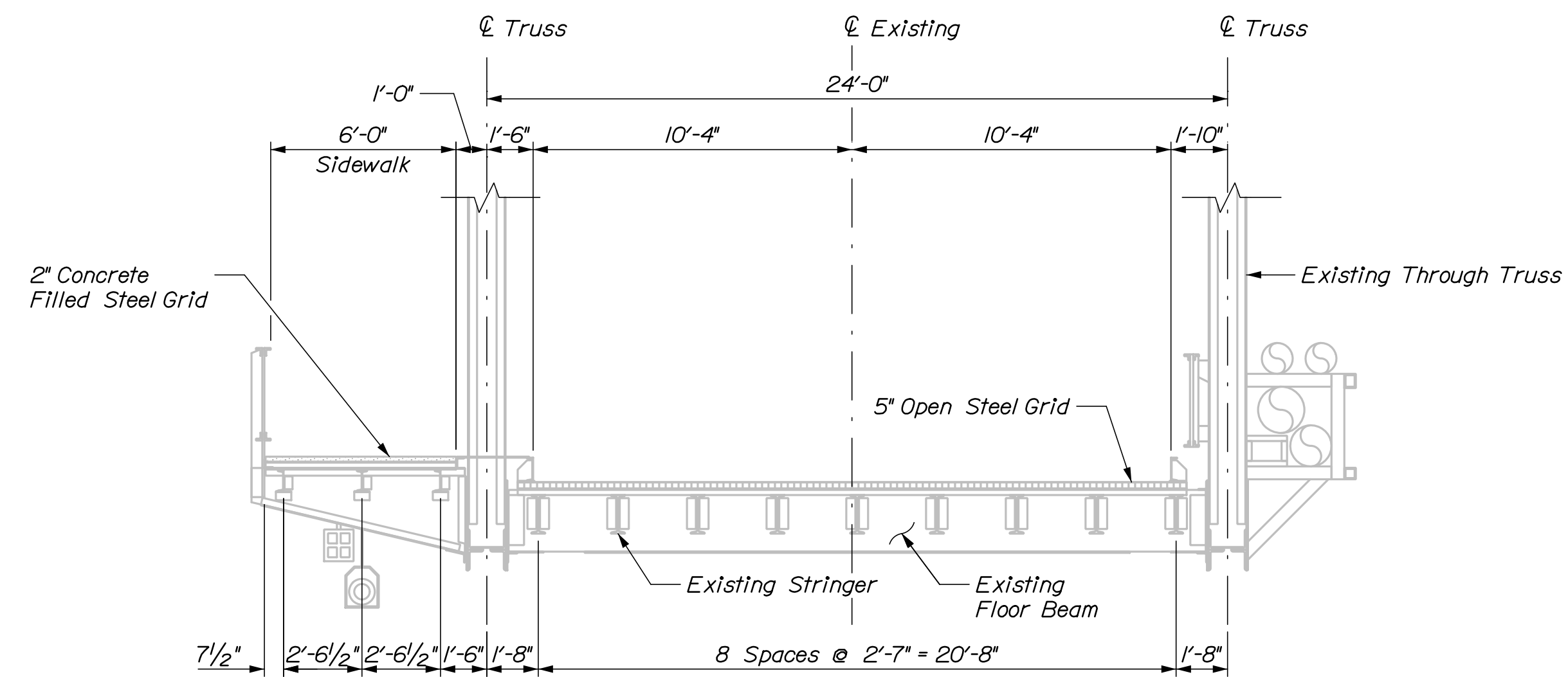
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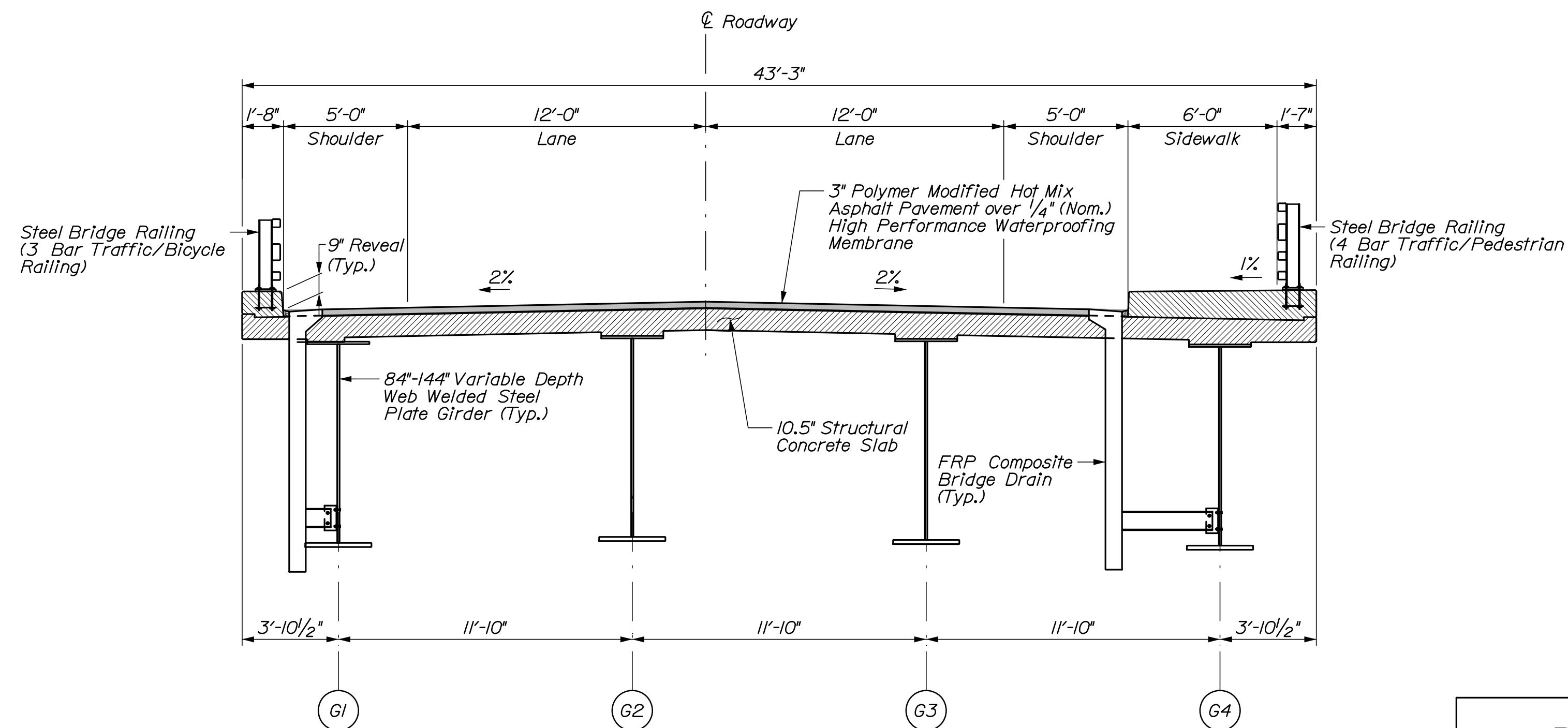
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EXISTING BRIDGE SECTION



PROPOSED BRIDGE SECTION

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BRIDGE NO. 2399
WIN
021736.00
BRIDGE PLANS

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

INTERNATIONAL BRIDGE
SAINT JOHN RIVER
MADAWASKA, ME
EDMUNDSTON, NB

STEEL ALTERNATIVE
TYPICAL SECTIONS

SHEET NUMBER

2

OF 11

Date: 3/1/2019

Username:

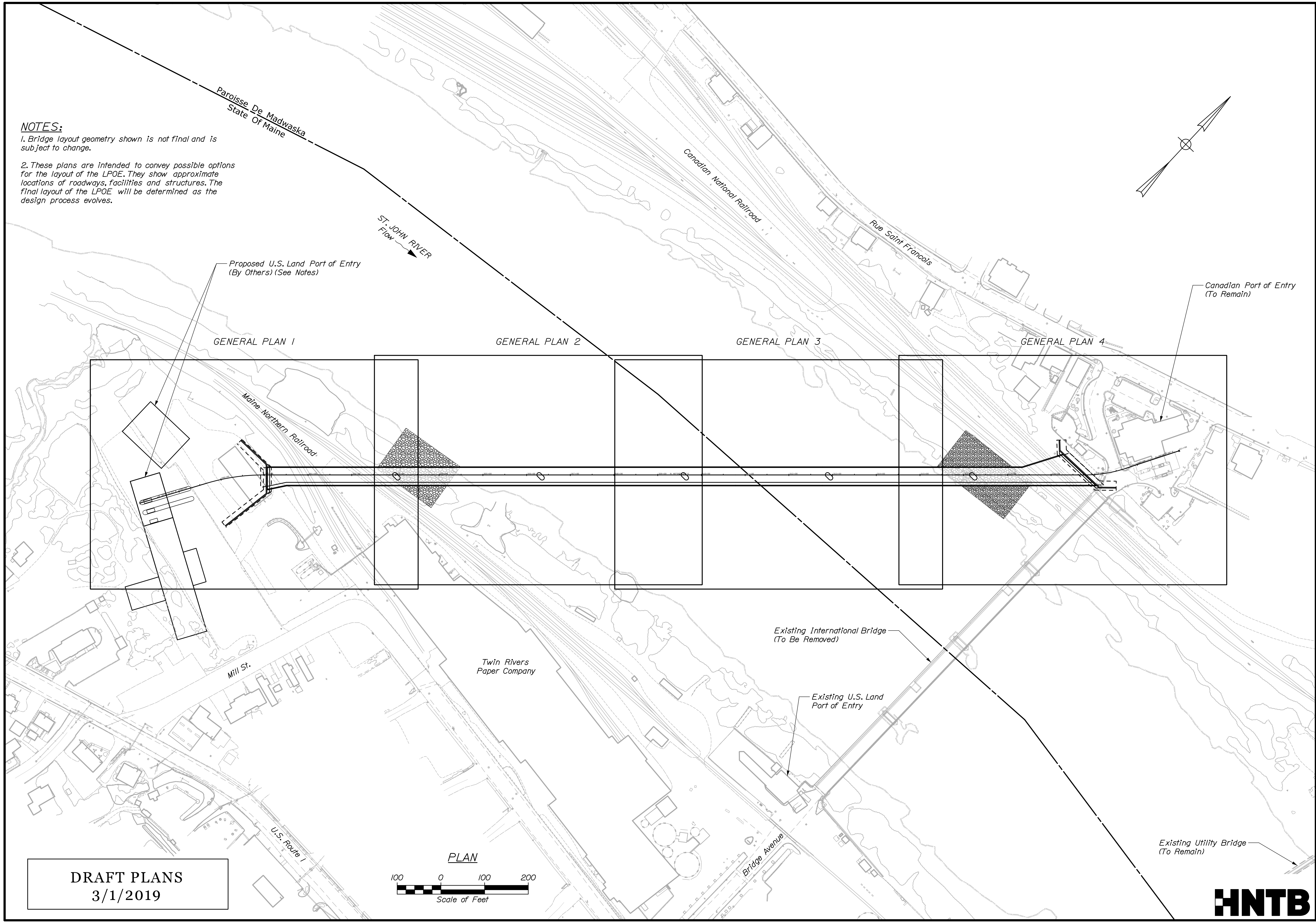
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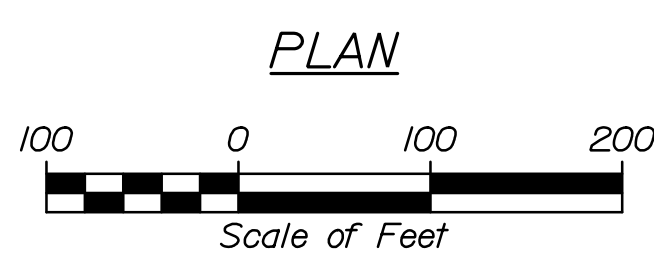
NOTES:

1. Bridge layout geometry shown is not final and is subject to change.

2. These plans are intended to convey possible options for the layout of the LPOE. They show approximate locations of roadways, facilities and structures. The final layout of the LPOE will be determined as the design process evolves.



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STATE OF MAINE DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 2399		WIN 021736.00		BRIDGE PLANS	
INTERNATIONAL BRIDGE SAINT JOHN RIVER MADAWASKA, ME	EDMUNDSTON, NB	DESIGN-DETAILED	DATE	SIGNATURE	P.E. NUMBER	DATE	
STEEL ALTERNATIVE PROJECT SITE PLAN		CHECKED-REVIEWED					
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		REVISIONS 2					
	REVISIONS 3						
	REVISIONS 4						
	FIELD CHANGES						
SHEET NUMBER		3		OF 11			

NOTES:

1. Bridge layout geometry shown is not final and is subject to change.

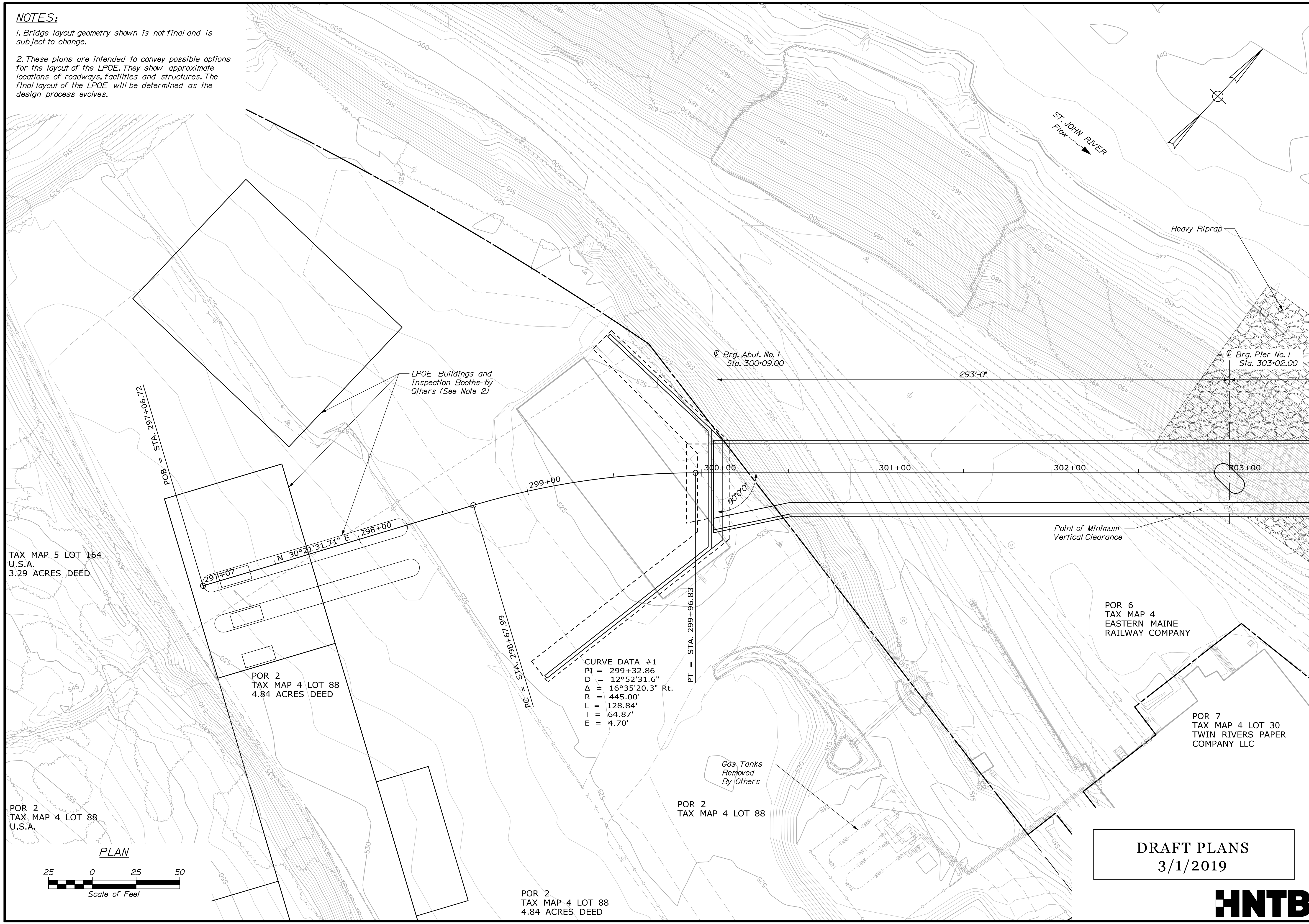
2. These plans are intended to convey possible options for the layout of the LPOE. They show approximate locations of roadways, facilities and structures. The final layout of the LPOE will be determined as the design process evolves.

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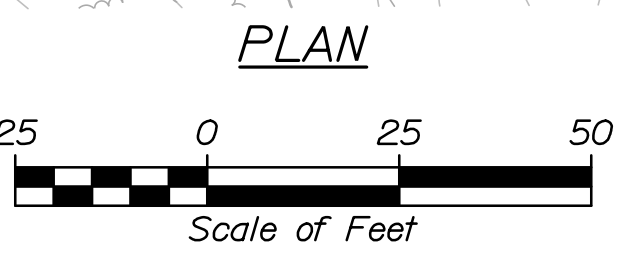


TAX MAP 5 LOT 164
U.S.A.
3.29 ACRES DEED

POR 2
TAX MAP 4 LOT 88
4.84 ACRES DEED

POR 2
TAX MAP 4 LOT 88
U.S.A.

CURVE DATA #1
PI = 299+32.86
D = 12°52'31.6"
Δ = 16°35'20.3" Rt.
R = 445.00'
L = 128.84'
T = 64.87'
E = 4.70'



POR 2
TAX MAP 4 LOT 88
4.84 ACRES DEED

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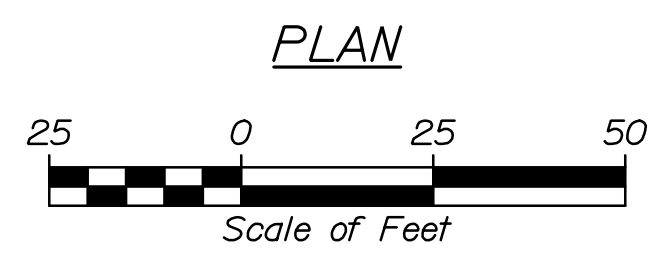
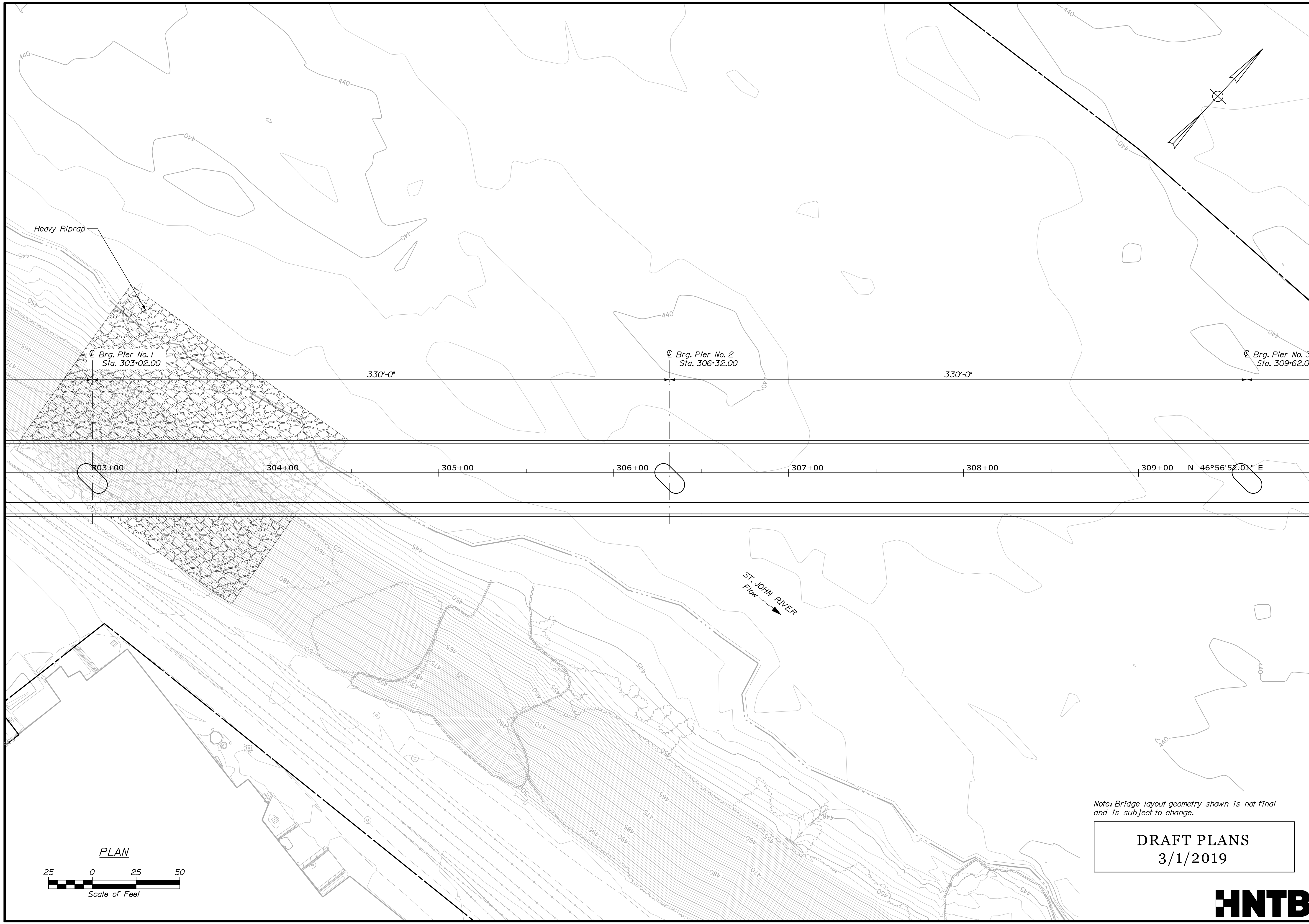
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								FIELD CHANGES			
INTERNATIONAL BRIDGE						SAINT JOHN RIVER EDMUNDSTON, NB					
MADAWASKA, ME						STEEL ALTERNATIVE GENERAL PLAN 1					
SHEET NUMBER						4					
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Date: 3/1/2019

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Note: Bridge layout geometry shown is not final and is subject to change.

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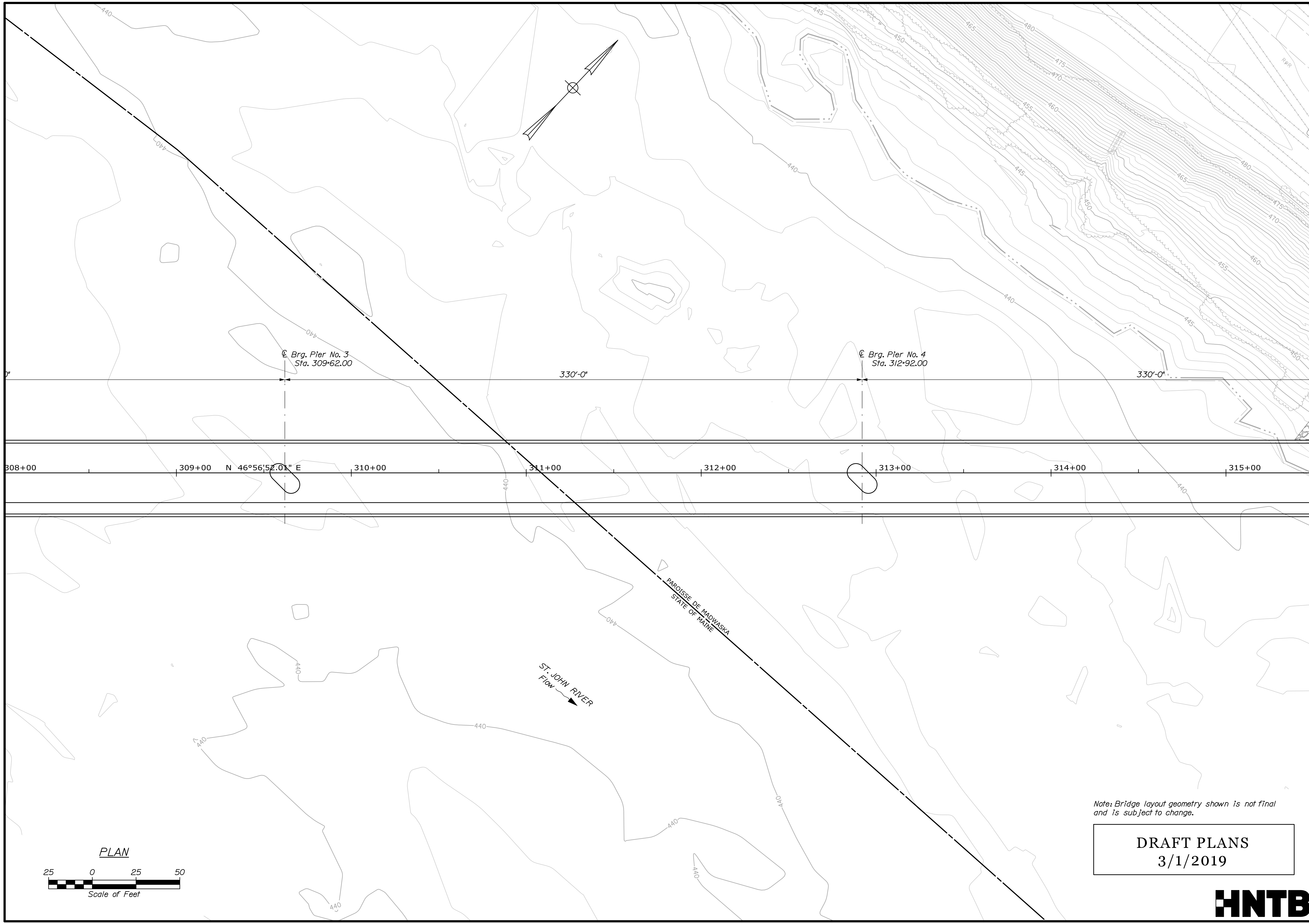
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Filename: 006_6Span_Plan_03.dgn



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BRIDGE NO. 2399
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021736.00
BRIDGE PLANS

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DESIGN-DETAILED	-	-	-
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REVISIONS 2	-	-	-
REVISIONS 3	-	-	-
REVISIONS 4	-	-	-
FIELD CHANGES	-	-	-

INTERNATIONAL BRIDGE
SAINT JOHN RIVER
MADAWASKA, ME
EDMUNDSTON, NB
STEEL ALTERNATIVE
GENERAL PLAN 3

SHEET NUMBER
6
OF 11

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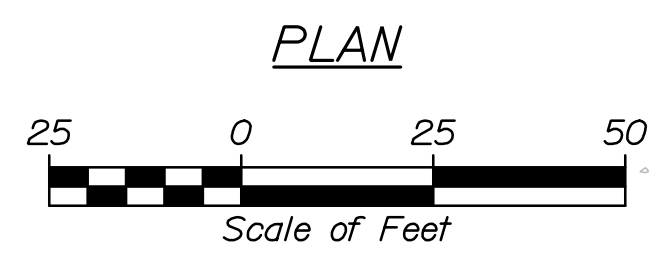
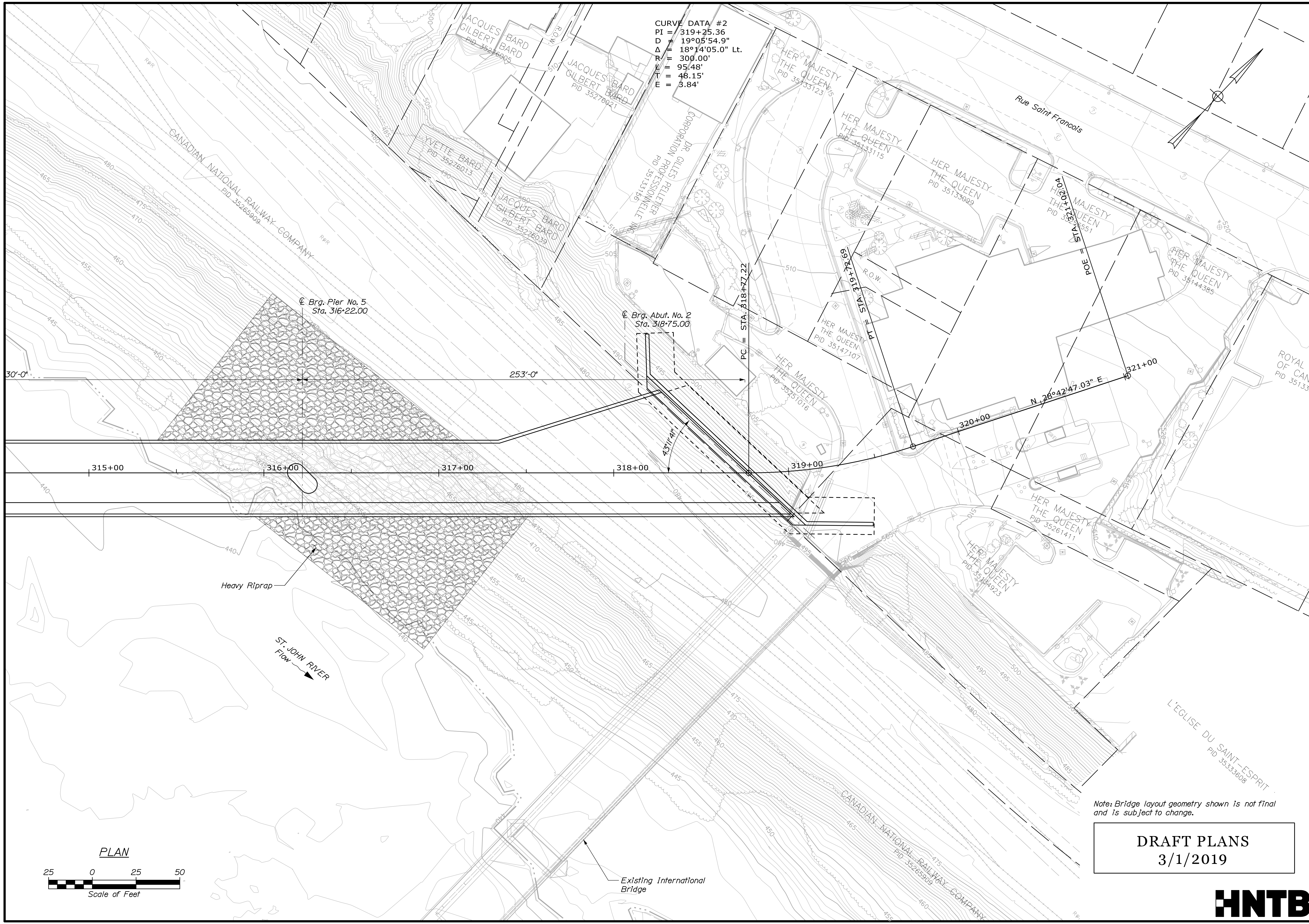
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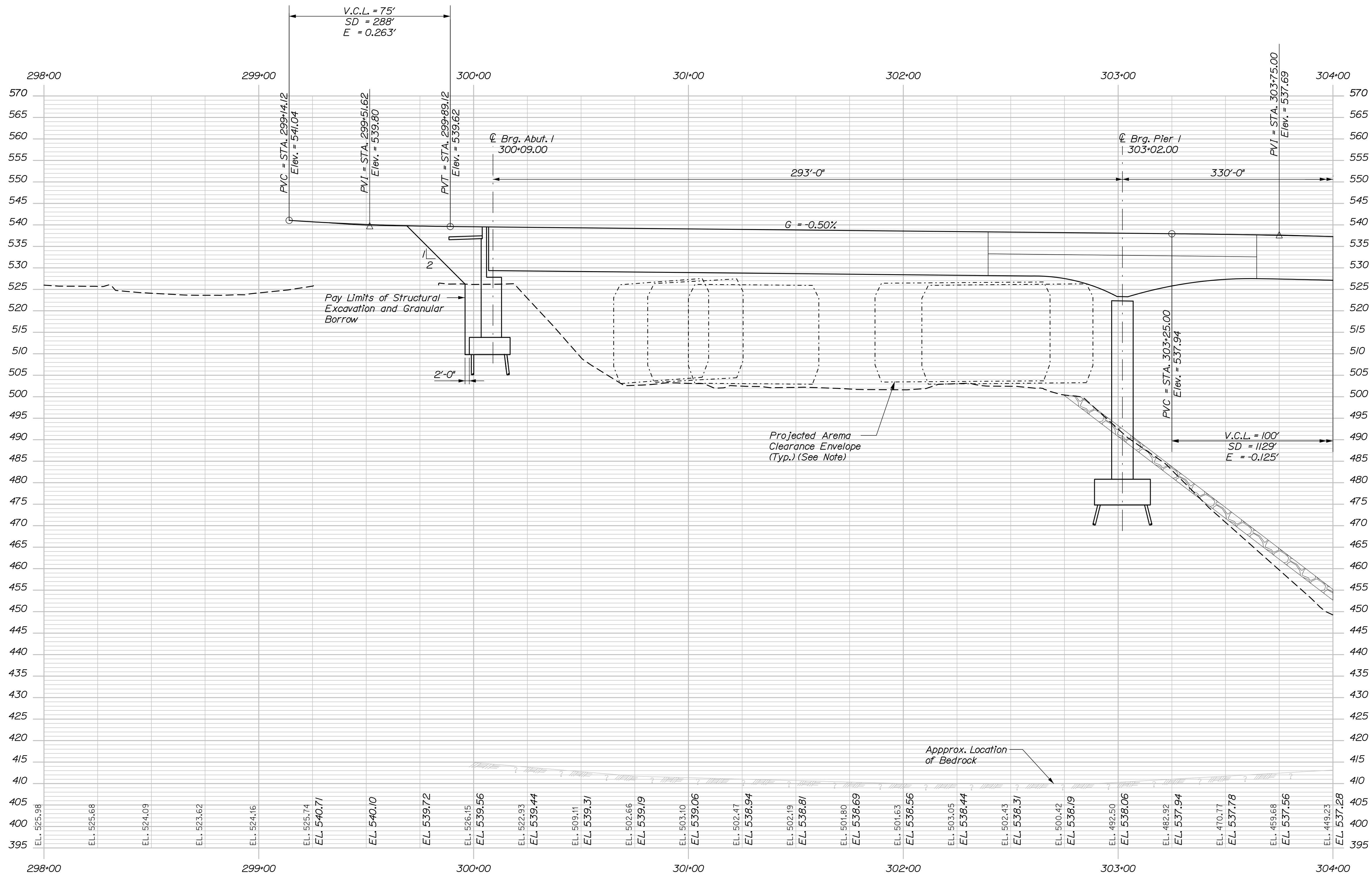
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 E = 3.84'

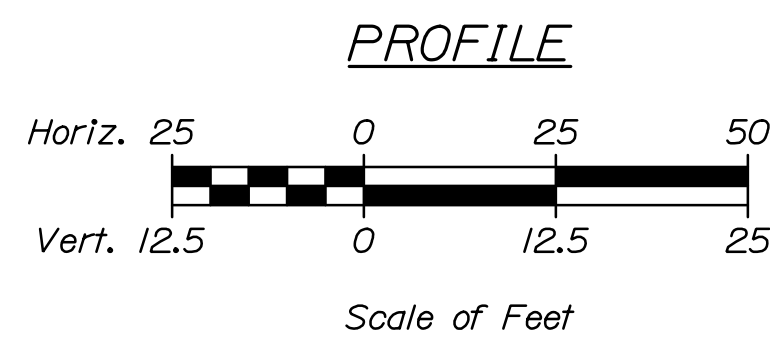


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STATE OF MAINE DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 2399		WIN		021736.00		BRIDGE PLANS	
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INTERNATIONAL BRIDGE SAINT JOHN RIVER MADAWASKA, ME					EDMUNDSTON, NB				
STEEL ALTERNATIVE GENERAL PLAN 4									
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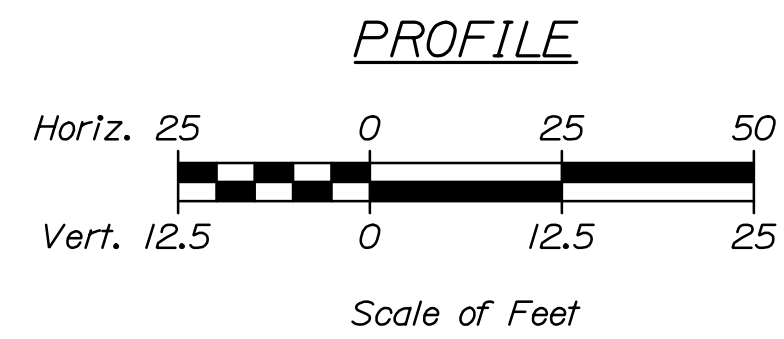
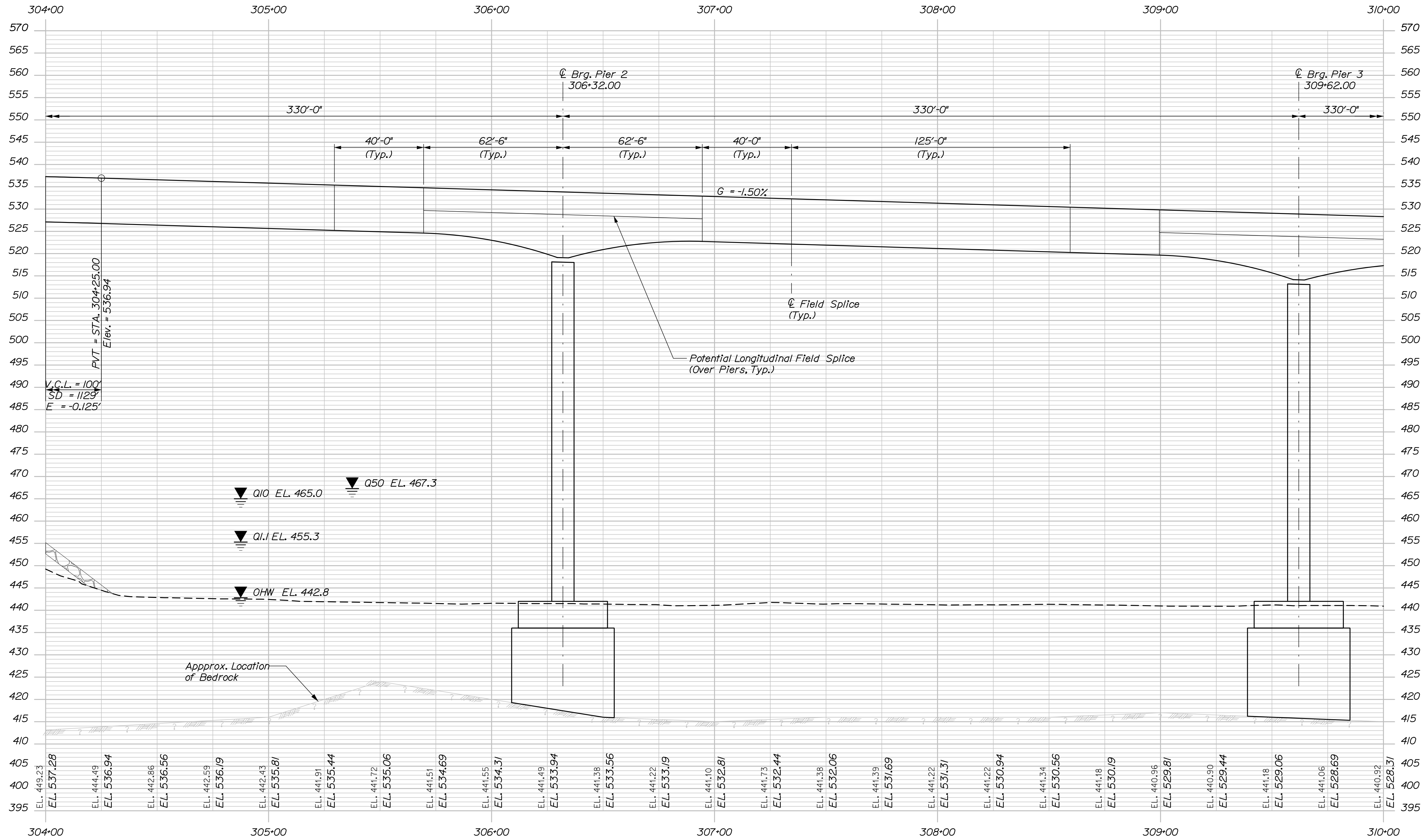
NOTE:
Minimum vertical clearance, measured from top of track, shall be 18'-0" during construction and 23'-0" in the final conditions.



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STATE OF MAINE DEPARTMENT OF TRANSPORTATION																																																	
INTERNATIONAL BRIDGE SAINT JOHN RIVER MADAWASKA, ME	EDMUNDSTON, NB STEEL ALTERNATIVE PROFILE 1																																																
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PROJ. MANAGER	BY	DATE	SIGNATURE
J. Kirtredge			

DESIGN-REVIEWED	BY	DATE	SIGNATURE

DESIGN-DETAILED	BY	DATE	SIGNATURE

REVISIONS 1	BY	DATE	P.E. NUMBER

REVISIONS 2	BY	DATE	P.E. NUMBER

REVISIONS 3	BY	DATE	P.E. NUMBER

REVISIONS 4	BY	DATE	P.E. NUMBER

FIELD CHANGES	BY	DATE	P.E. NUMBER

INTERNATIONAL BRIDGE
SAINT JOHN RIVER
MADAWASKA, ME
EDMUNDSTON, NB
**STEEL ALTERNATIVE
PROFILE 2**

SHEET NUMBER

9

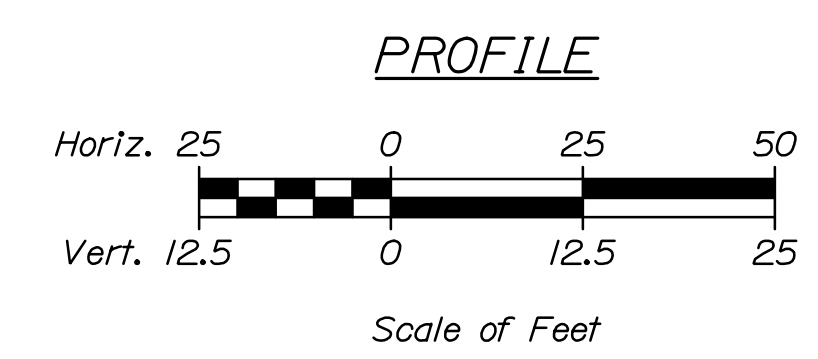
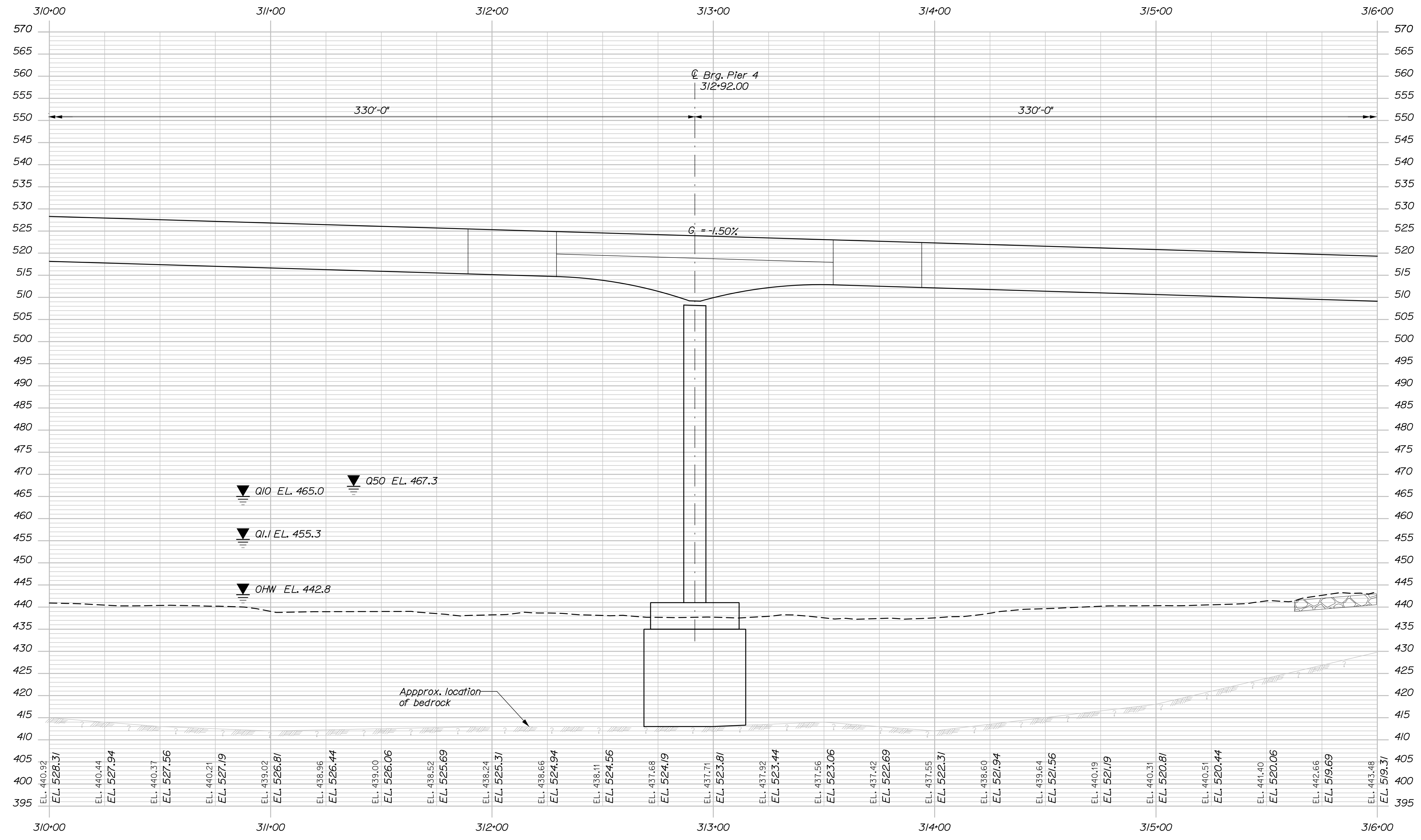
OF 11

Date: 3/1/2019

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Division:

Filename: 010_6Span_Profile_3.dgn



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STATE OF MAINE DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 2399		WIN 021736.00		BRIDGE PLANS	
INTERNATIONAL BRIDGE SAINT JOHN RIVER MADAWASKA, ME		EDMUNDSTON, NB		STEEL ALTERNATIVE PROFILE 3		SHEET NUMBER	
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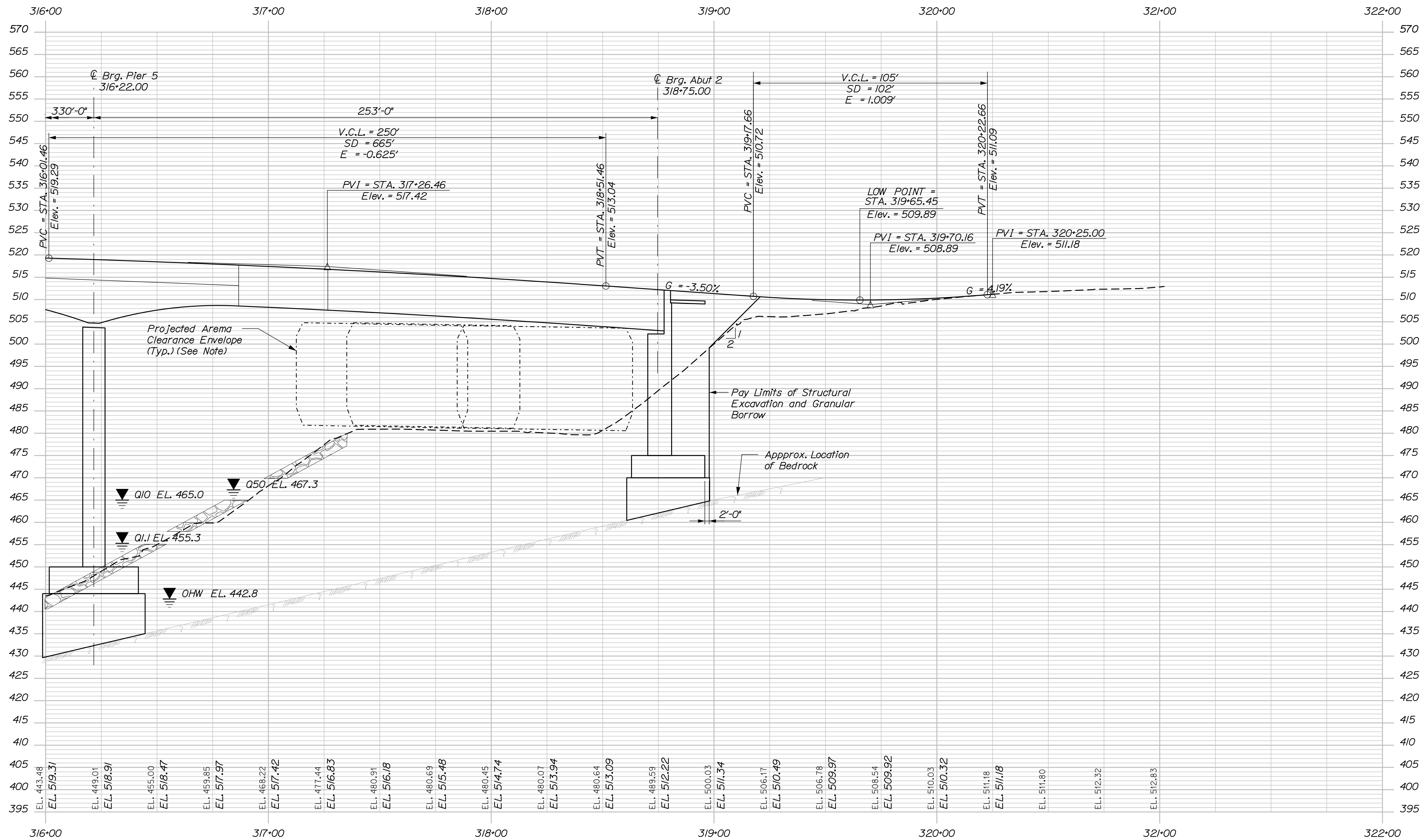
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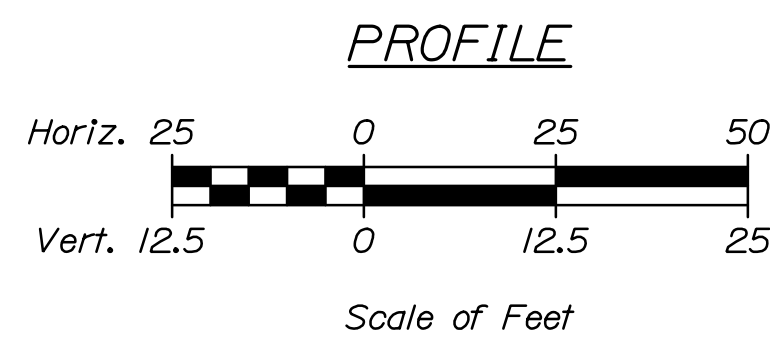
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NOTE:
 Minimum vertical clearance, measured from top of track, shall be 22'-0" during construction and 23'-0" in the final conditions.



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 3/1/2019



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 2399		WIN 021736.00		BRIDGE PLANS	
INTERNATIONAL BRIDGE SAINT JOHN RIVER MADAWASKA, ME		EDMUNDSTON, NB		STEEL ALTERNATIVE PROFILE 4		SHEET NUMBER	
11		OF 11		DATE		P.E. NUMBER	
BY		DATE		SIGNATURE		DATE	
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CHECKED-REVIEWED		-		-		-	
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REVISIONS 1		-		-		-	
REVISIONS 2		-		-		-	
REVISIONS 3		-		-		-	
REVISIONS 4		-		-		-	
FIELD CHANGES		-		-		-	