

Supplemental Supporting Information for a Finding of Effect

Project: T11 R4 WELS 23460.00

Scope: Bridge Replacement

Finding of Effect: **Adverse Effect**

Purpose and Need

The purpose of the proposed action is to maintain the Small Brook crossing along the Presque Isle Subdivision rail route in T11 R4 WELS in Aroostook County.

The need for this project is because several components of the existing bridge at the crossing have become structurally deficient, including the abutments and wingwalls.

Project Background

The Presque Isle #14.03 Bridge #7801 carries the Presque Isle Subdivision of the Maine Northern Railway over the Small Brook in T11 R4 WELS. The bridge is a 28-foot, three-span rail-top bridge with an open steel beam deck that was built in 1953. The girders are supported on two reinforced concrete abutments and two reinforced concrete piers. According to the 2019 inspection report the deck and channel elements are both in “fair” condition and the superstructure is in “satisfactory” condition. The substructure is in “serious” condition with the following major deficiencies noted below:

- The northeast wingwall is completely detached from the breastwall and is tipping outward.
- The northeast and northwest wingwalls both have large areas of spalling, deteriorated concrete, and exposed/deboned reinforcing.
- The north abutment breastwall has extensive cracking, spalling, delamination and is tipping forward.
- The invert slab in the north span is 90% missing and deteriorated with only the reinforcing remaining.
- Spalling, cracking and deterioration is noted sporadically throughout the other substructure elements.

Additionally, the bridge is hydraulically constrained (tailwater controlled). Evidence also suggests that the brook has migrated toward the north abutment. This has left the flow concentrated within the north span, leaving the middle and south spans dry most of the year and filled with silt, vegetation, and other debris.

Proposed Action

The proposed action would replace the existing bridge with a single-span steel girder superstructure set on precast concrete abutments supported on a single precast concrete footing. There would be a 16-foot hydraulic opening between the faces of the abutments, which approximates the typical bank width upstream and downstream. A six-girder configuration would reduce the required beam depth to approximately 15 inches. Assuming a minimum dapped tie depth of 7.5 inches, the total superstructure depth would be approximately 23 inches. The existing superstructure depth is 15 inches. Additionally, the 16-foot hydraulic opening would provide the best fit to the existing channel by reducing velocities and removing obstructions in the channel.

This alternative would provide an improved hydraulic performance, improved waterway opening, and would realign the center of the bridge with the channel. It would also utilize accelerated construction methods and meets the strength and service requirements.

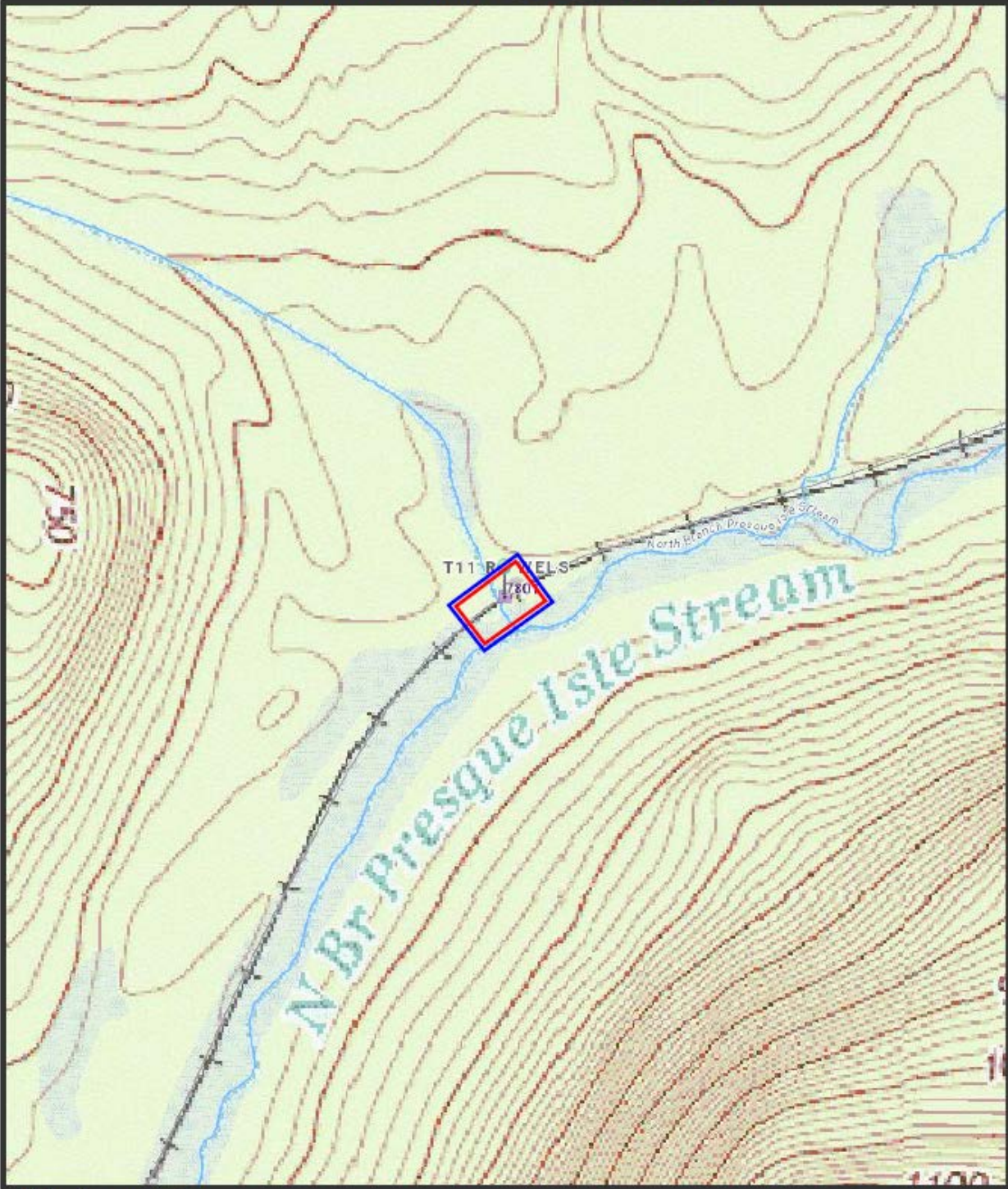
Federal Action

Federal permit.

Definition of Area of Potential Effect (APE)

The proposed project is located in T11 R4. A map is attached below that shows the APE.

T11 R4 WELS 23460.00



Bridge Improvements
Presque Isle #14.03 Bridge #7801
— APE — Survey Boundaries

0.1 Miles
1 inch = 0.14 miles



Figure 1. T11 R4 WELS 23460.00 Area of Potential Effect

Historic Properties

Bangor and Aroostook Railroad Historic District



National Register-eligible

Criteria A, C, Industry, Transportation

*Period of significance
1893 – c.1960*

The Bangor and Aroostook Railroad Historic District is eligible for listing in the National Register under Criteria A and C for its statewide significance in Industry and Transportation. The Presque Isle #14.03 Bridge #7801 is a contributing resource to the historic district. Survey for the line was completed in 1891 and 1892. In 1893, Albert Burleigh and his investors leased the Bangor and Piscataquis with service to Greenville, Old Town, Bangor, and Katahdin Iron Works. Burleigh soon looked to connect the extant Brownville Junction to Houlton and points north. The main line of the Bangor and Aroostook Railroad reached Van Buren in 1899. The railroad's success is attributed to the need for reliable infrastructure for shipping lumber, paper, and agricultural goods from Aroostook County south.

Archeological Resources

There are no archaeological resources in the project area.

Impacts to Properties

Bangor and Aroostook Railroad Historic District

National Register-eligible

Criteria A, C, Industry, Transportation

The proposed action would result in an **Adverse Effect** to the Bangor and Aroostook Railroad Historic District. The preferred alternative would remove the Presque Isle #14.03 Bridge #7801, which is a contributing resource to the district. A single-span steel girder bridge set on precast concrete abutments would be built at the crossing.

Avoidance and Minimization Efforts

A rehabilitation alternative was considered for the Presque Isle #14.03 Bridge #7801, but it was ultimately dismissed (see Dismissed Alternatives below). Mitigation for the loss of the bridge will be recordation. A Draft Memorandum of Agreement can be found at the end of this document.

Dismissed Alternatives

No Build

The No Build Alternative would take no action and would not meet the purpose and need of the project and was therefore removed from further consideration.

Rehabilitation

The Rehabilitation Alternative was considered to address the deteriorated elements that include spalling and cracking noted throughout the substructure, as well as structural deficiencies evident at the wingwalls. However, it was determined that the extensive level of work required to address the deficiencies would be imprudent. Furthermore, rehabilitation would not address the current constraints associated with the existing hydraulic opening. For these reasons, the Rehabilitation Alternative was dismissed.

Replacement Alternative 1

Replacement Alternative 1 would install a three-cell, precast concrete box culvert. Using a box culvert would typically require a desired 12 inches of ballast between the top of the culvert and bottom of the tie. Assuming a 12-inch culvert top slab and 6-inch timber ties, the total depth would be approximately 30 inches. The existing superstructure depth is 15 inches. Additionally, a 12-inch top slab may not be sufficient to meet the requirements of E-80 live loads. Based on these potential structural and hydraulic issues, Replacement Alternative I was dismissed.

Replacement Alternative 2

Replacement Alternative 2 would install a three-span, rail-top superstructure on precast substructure units. Similar to the existing structure, the proposed “rail-top” alternative would utilize a group of nested rails as girders. Assuming a minimum dapped tie depth of 7.5 inches, the total superstructure depth would be approximately 15 inches, which matches the existing superstructure. The girders would sit on two precast concrete abutments and two precast concrete piers. The piers and abutments would all share a single precast concrete slab/footing. Precast concrete substructure units would be selected to minimize construction time and to increase the service life of the proposed structure compared to timber piers. While this alternative would meet several of the hydraulic design criteria, the piers could potentially block and trap debris, which would lead to future maintenance and hydraulic issues. Additionally, the piers would increase flow velocity and scour depth compared to a single span alternative. For these reasons, Replacement Alternative 2 was dismissed.

Replacement Alternative 3B

Replacement Alternative 3B would be nearly identical to Alternative 3A, excepting a 21-foot hydraulic opening between the faces of the abutment. This alternative was studied to determine if additional clear distance between abutments would improve the hydraulic performance. Based on the hydraulic analysis it was determined that there was no significant advantage compared to Alternative 3A. Additionally, this alternative would have deeper girders and heavier substructure units, which would result in a more complex and expensive construction. For these reasons, Replacement Alternative 3B was dismissed.

Public Involvement

MaineDOT contacted the four federally recognized Native American tribes in Maine. The Penobscot Nation and Houlton Band of Maliseets replied with no concern about the undertaking.

The Aroostook County Office was notified of the project initiation and asked to provide comments and information regarding historic resources in the project area. No replies were received. The public comment period is ongoing.

Proposed Materials

Precast concrete, steel girders, heavy riprap.

Attachments

- Leith Smith, MHPC, to Julie Senk, MaineDOT, October 2, 2019
- Kirk F. Mohny, MHPC, to Julie Senk, MaineDOT, December 4, 2019
- Draft Section 106 Memorandum of Agreement
- Preliminary Repair Concept Plans, Maine Railroad Bridge Rehabilitation Projects, Presque Isle-Houlton Sub. Aroostook, Bridge No. 7801 (MP 14.03) Over Small Brook, T11 R8 WELS, MaineDOT WIN 23460.00, February 5, 2021.

STATE OF MAINE
Memorandum

Date: October 2, 2019

To: Julie Senk, Historic Coordinator, Maine DOT/ENV

From: J. N. Leith Smith, MHPC



Subject: Initial Archaeology Review

Project: WIN 23460.00, MHPC #1363-19, Replacement of Presque Isle Rail Bridge (#7801) over Small Brook, T11-R4 WELS.

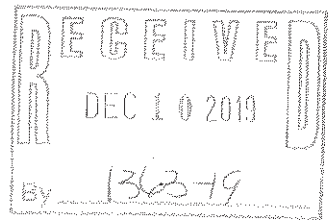
Dear Julie,

After reviewing our archaeological survey records and maps, including historic maps and surficial geology maps, and comparing this information with a predictive model of archaeological site locations, we find that no archaeological fieldwork is necessary for this project, based on the project location and general project description information received with your memo of September 13, 2019. It is extremely unlikely that an archaeological site would be affected by this project, in our opinion.

In following the procedures specified in the Federal Highway/MHPC/MDOT programmatic agreement, we **recommend a finding that there will be no archaeological properties affected by the proposed undertaking.**

STATE OF MAINE

Memorandum



Date: December 4, 2019

To: Kirk F. Mohney, MHPC
From: Julie Senk, Maine DOT/ENV
Subject: Section 106 request for concurrence
Project: T11 R4 WELS 23460.00, MHPC #1363-19
Scope: Bridge improvements

The Maine DOT has reviewed this project pursuant to the Maine Programmatic Agreement (PA) and Section 106 of the National Historic Preservation Act of 1966, as amended.

The proposed project is improvements to Presque Isle #14.03 Bridge #7801 carrying the Bangor & Aroostook Railroad over the Small Brook in T11 R4 WELS.

In accordance with 36 CFR Part 800.4, the following identification efforts of historic properties were made:

- 800.4(a) (1) – The Area of Potential Effect (APE) includes properties/structures adjacent to the bridge and within the project limits. The project limits are defined by the structure and the immediately adjacent area. Properties/structures adjacent to this project limit are considered to be within the APE. The APE is shown as a red polygon on the attached map.
- 800.4(a) (2) – Review of existing information consisted of researching the National Register and MHPC survey databases. The Maine Historic Preservation Commission Archaeological staff has reviewed this undertaking.
- 800.4(a) (3) – The Township of T11 R4 WELS and applicable historical societies were contacted via letter and asked to comment on knowledge of, or concerns with, historic properties in the area, and any issues with the undertaking's effect on historic properties. The town was also requested to provide information regarding local historic societies or groups. No replies have been received to date.
- 800.4(a) (4) – Letters outlining project location and scope were sent to the 4 federally recognized Tribes in Maine. The Houlton Band of Maliseets and Penobscot Nation have replied with no concerns about the undertaking.
- 800.4(c) – The Maine DOT conducted historic architectural surveys within the APE to determine if properties met National Register criteria. Maine Historic Preservation Commission Archaeological staff recommends a finding "that there will be no archaeological properties affected by the proposed undertaking." **The MaineDOT has determined that two properties are eligible for listing in the National Register of Historic Places as part of a historic district.**

In accordance with the PA and 36 CFR Part 800, please reply with your concurrence or objection to the determination of eligibility for listing in the National Register of Historic Places within 30 days. If more information is deemed necessary, please supply a list of the specific resources in question.

Please contact me at Julie.Senk@maine.gov or 592-3486 if you have any questions. Thank you.

cc: CPD e-file
enc: Architectural survey package; J. N. Leith Smith, MHPC, to Julie Senk, Maine DOT, October 2, 2019

CONCUR	
	12/12/19
Kirk F. Mohney, State Historic Preservation Officer	Date

MEMORANDUM OF AGREEMENT
BETWEEN THE ARMY CORPS OF ENGINEERS,
MAINE DEPARTMENT OF TRANSPORTATION,
AND MAINE STATE HISTORIC PRESERVATION OFFICER
REGARDING MAINEDOT WIN 23460.00
PRESQUE ISLE #14.03 BRIDGE #7801 REPLACEMENT
AROOSTOOK COUNTY, MAINE

WHEREAS, the Army Corps of Engineers (ACOE) plans to permit the Presque Isle #14.03 Bridge #7801 Replacement Project (undertaking) in T11 R4 WELS, Maine, pursuant to the National Historic Preservation Act of 1966, 54 U.S.C. 306101 et seq; and

WHEREAS, the ACOE is the "Agency Official" responsible for ensuring that the undertaking complies with Section 106 of the National Historic Preservation Act (NHPA) ((54 U.S.C. § 306108), as amended, and codified in its implementing regulations, 36 CFR Part 800, as amended (August 5, 2004); and

WHEREAS, the undertaking consists of replacing the Presque Isle #14.03 Bridge #7801 with a girder bridge; and

WHEREAS, the ACOE has defined the undertaking's area of potential effects (APE) as displayed in Attachment A; and

WHEREAS, the ACOE has determined that the undertaking has an adverse effect on Bangor and Aroostook Railroad Historic District, which is eligible for listing in the National Register of Historic Places under Criteria A & C and includes the following contributing resources: the Presque Isle #14.03 Bridge #7801, which is eligible under Criteria A & C; and

WHEREAS, the ACOE has consulted with the Maine SHPO pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108); and

WHEREAS, the ACOE has ensured that the significance of all National Register-eligible

resources will be captured in compensatory mitigation; and

WHEREAS, the ACOE has consulted with the Aroostook Band of Micmacs, Houlton Band of Maliseet Indians, Passamaquoddy Tribe, and Penobscot Nation of the proposed action in accordance with 36 CFR Section 800.3 (f)(2). Emails were sent to the Tribes on August 13, 2019, in accordance with their preferred method of receiving information from the Department of Transportation; and

WHEREAS, in accordance with 36 CFR 800.2(c), the ACOE has requested input from consulting parties in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties; and

WHEREAS, in accordance with 36 CFR 800.2(d), the ACOE has requested input from the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties; and

WHEREAS, in accordance with 36 CFR Section 800.6(a)(1), the ACOE has notified the ACHP of the potential for an adverse effect determination. The ACOE has invited the ACHP to consult on _____, and the ACHP has chosen (to/to not) participate in the consultation pursuant to 36 CFR Section 800.6(a)(1)(iii) on _____; and

WHEREAS, in accordance with 36 CFR Section 800.6(c)(2), the ACOE has invited the MaineDOT to be an invited signatory and in accordance with 36 CFR Section 800.6(c)(3);

NOW, THEREFORE, the ACOE and the Maine SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

The ACOE, with assistance from MaineDOT, shall ensure that the following measures are carried out:

I. Recordation

The Presque Isle #14.03 Bridge #7801 will be recorded using the “Outline Format” narrative of the Maine Historic Engineering Recordation (MHER) standards.

II. Duration

This agreement will be null and void if its terms are not carried out within five (5) years from the

date of its execution. Prior to such time, the ACOE may consult with the other signatories to reconsider the terms of the agreement and amend it in accordance with Stipulation VIII.

III. Post-Review Discoveries

If potential historic properties are discovered or unanticipated effects on historic properties found, the ACOE shall consult in accordance with 36 CFR Section 800.6(c)(6). If any unanticipated discoveries of historic properties or archaeological sites are encountered during the implementation of this undertaking, MaineDOT shall suspend work in the area of the discovery in accordance with Maine Department of Transportation Standard Specification 105.9: *Historic and Archaeological Considerations* and DOT shall immediately notify the ACOE. In compliance with 36 CFR §800.13, the ACOE shall notify within 24 hours the ACHP, the Maine SHPO, and the Aroostook Band of Micmacs, Houlton Band of Maliseet Indians, Passamaquoddy Tribe, and Penobscot Nation. The Maine SHPO, the ACOE, MaineDOT, and Tribal representatives, as appropriate, may conduct a joint field review within 72 hours of the notification to the ACOE. The ACOE, in consultation with the appropriate parties, will determine an appropriate treatment of the discovery prior to the resumption of construction activities in the area of the discovery.

IV. Discovery of Human Remains

MaineDOT shall ensure that any human remains and/or grave-associated artifacts encountered during the archaeological investigations are brought to the immediate attention of the ACOE, the Maine SHPO, and any federally recognized Tribes that may attach religious and/or cultural significance to the affected property. Notification will be within 48 hours of the discovery. No activities which might disturb or damage the remains will be conducted until the ACOE, in consultation with the appropriate parties, has developed a treatment plan that considers the comments of the appropriate parties. All procedures will follow the guidance outlined in the National Park Service Publication *National Register Bulletin 41: Guidelines for Evaluating and Registering Cemeteries and Burial Places*, taking into account the Native American Graves Protection and Repatriation Act of 1990 (PL 101-601); and

V. Reporting

Each year following the execution of this agreement until it expires or is terminated, MaineDOT shall provide all parties to this agreement a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in MaineDOT's efforts to carry out the terms of this agreement. Failure to provide such summary report may be considered noncompliance with the terms of this MOA; and

VI. Dispute Resolution

Should any party to this agreement object at any time to any actions proposed or the manner in

which the terms of this MOA are implemented, the ACOE shall consult with the objecting party(ies) to resolve the objection. If the ACOE determines, within 30 days, that such objection(s) cannot be resolved, the ACOE will:

- A. Forward all documentation relevant to the dispute to the ACHP in accordance with 36 CFR Section 800.2(b)(2). Upon receipt of adequate documentation, the ACHP shall review and advise the ACOE on the resolution of the objection within 30 days. Any comment provided by the ACHP, and all comments from the parties to the MOA, will be taken into account by the ACOE in reaching a final decision regarding the dispute.
- B. If the ACHP does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, the ACOE may render a decision regarding the dispute. In reaching its decision, the ACOE will take into account all comments regarding the dispute from the parties to the MOA.
- C. The ACOE's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged. The ACOE will notify all parties of its decision in writing before implementing that portion of the Undertaking subject to dispute under this stipulation. The ACOE's decision will be final.

VII. Resolving Public Objections

At any time during implementation of the terms of this Agreement, should any member of the public raise an objection in writing pertaining to such implementation to any signatory party to this Agreement, that signatory party shall immediately notify the ACOE. The ACOE shall:

- A. Immediately notify the other signatory parties in writing of the objection. Any signatory party may choose to comment on the objection to the ACOE.
- B. Establish a reasonable time frame for this comment period. The ACOE shall consider the objection, and in reaching its decision, the ACOE will take all comments from the other parties into account.
- C. Within 15 days following closure of the comment period, the ACOE will render a decision regarding the objection and respond to the objecting party. The ACOE will promptly notify the other signatory parties of its decision in writing, including a copy of the response to the objecting party. The ACOE's decision regarding resolution of the objection will be final.
- D. Following the issuance of its final decision, the ACOE may authorize the action subject to dispute hereunder to proceed in accordance with the terms of that decision. Nothing in this paragraph creates additional legal rights or responsibilities on the ACOE that are not already afforded under the NHPA.
- E. The ACOE's responsibility to carry out all other actions or terms of this MOA that are not

he subject of the objection remain unchanged and may proceed.

VIII. Amendments

If any signatory to this MOA, including any invited signatory, determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall immediately consult with the other parties to develop an amendment to this MOA pursuant to 36 CFR §§800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all of the original signatories is filed with the ACHP. If the signatories, including any invited signatory, cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation IX.

IX. Termination

If the MOA is not amended following the consultation set out in Stipulation VIII it may be terminated by any signatory or invited signatory. Within 30 days following termination, the ACOE shall notify the signatories if it will initiate consultation to execute an MOA with the signatories under 36 CFR §800.6(c)(1) or request the comments of the ACHP under 36 CFR §800.7(a) and proceed accordingly.

X. Coordination with Other Federal Reviews

In the event that another federal agency not initially a party to or subject to this MOA receives an application for funding/license/permit for the Undertaking as described in this MOA, that agency may fulfill its Section 106 responsibilities by stating in writing it concurs with the terms of this MOA and notifying the ACOE, Maine SHPO, and the ACHP that it intends to do so, and adherence to the terms of this MOA.

SIGNATORIES:

US Army Corps of Engineers

_____ Date _____
Tammy R. Turley
Chief, Regulatory Division

SIGNATORIES:

Maine State Historic Preservation Officer

_____ Date _____
Kirk Mohney
State Historic Preservation Officer

INVITED SIGNATORY:

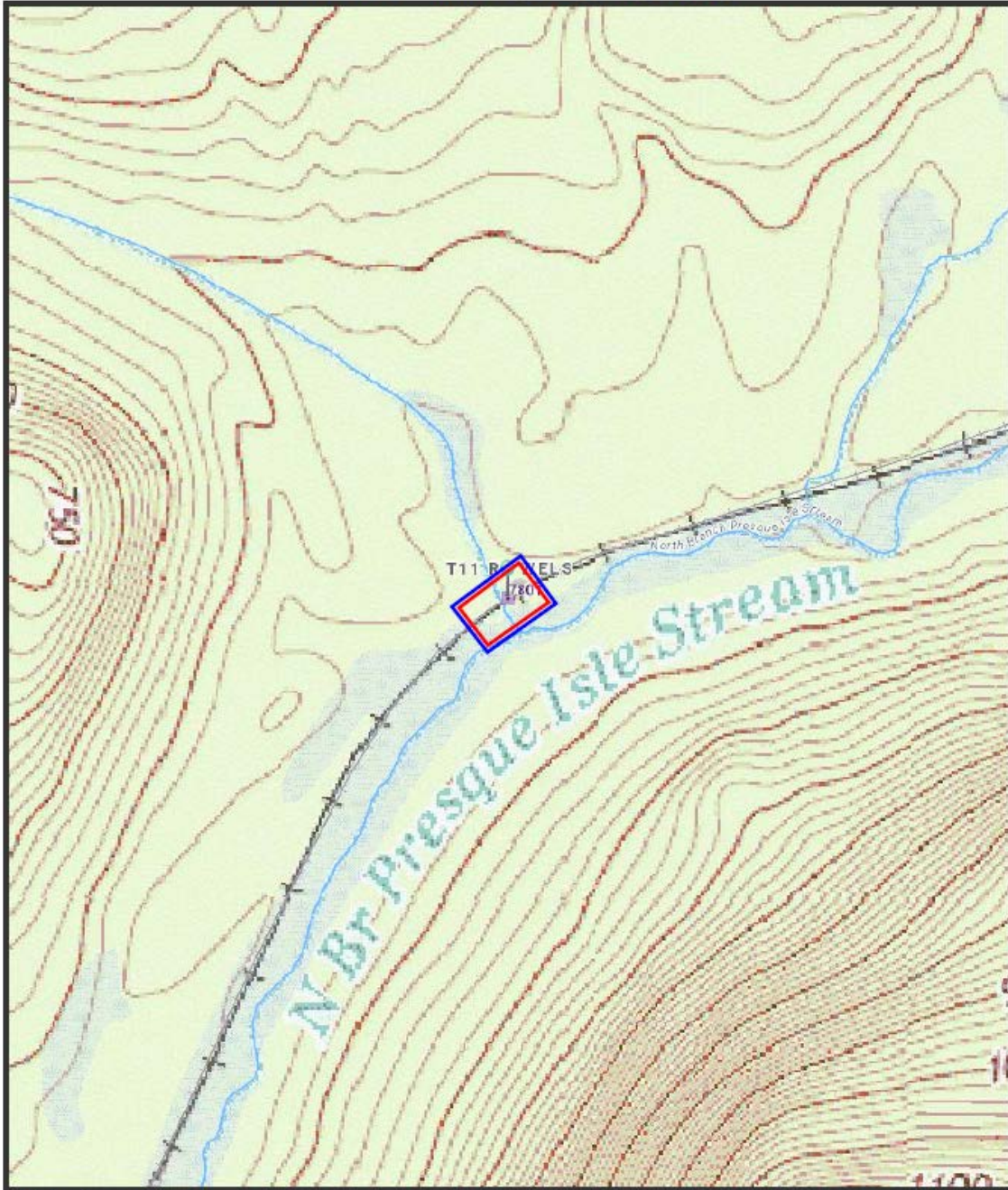
Maine Department of Transportation

_____ Date _____
Joyce Taylor
Chief Engineer

ATTACHMENT A

DRAFT

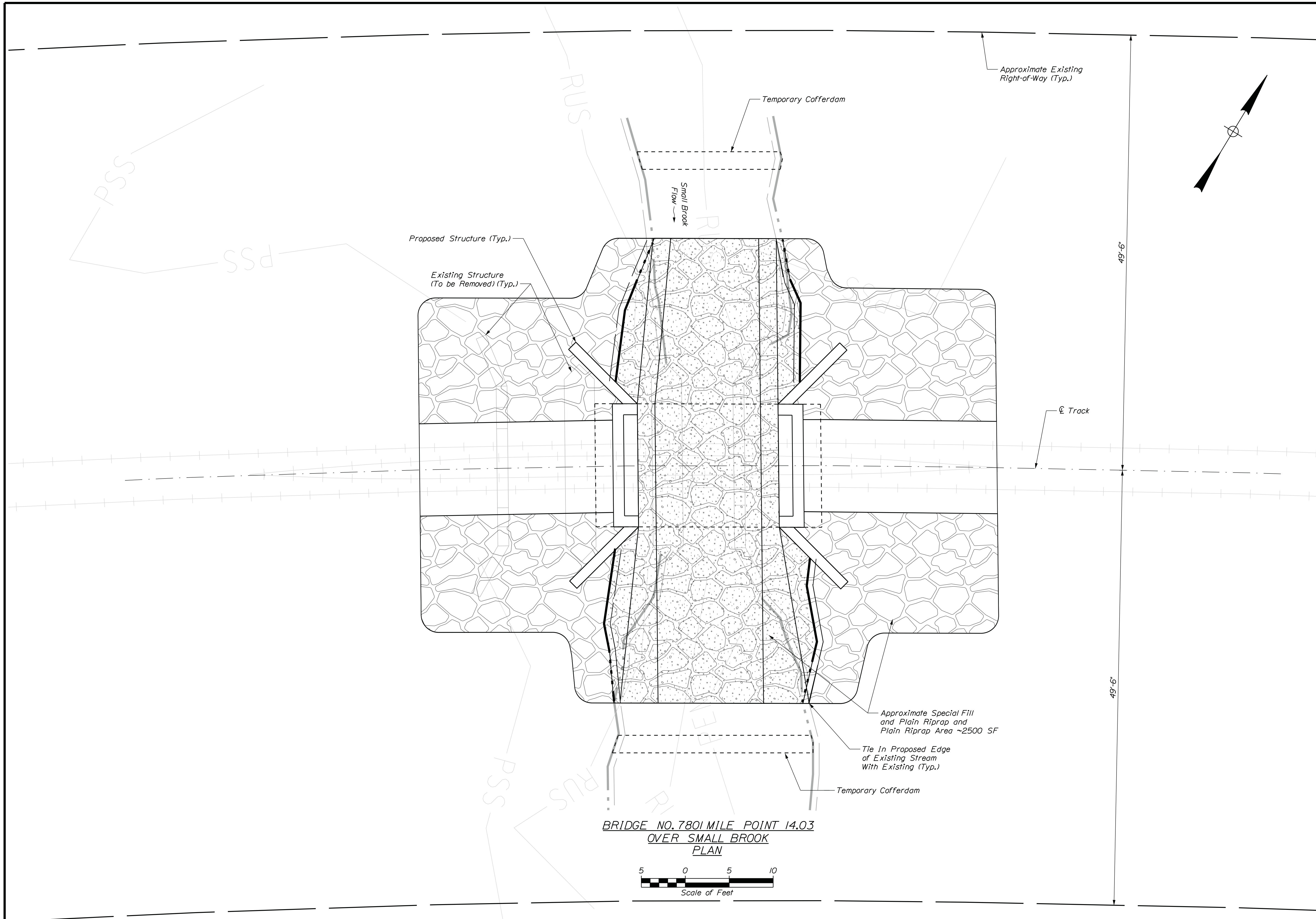
T11 R4 WELS 23460.00



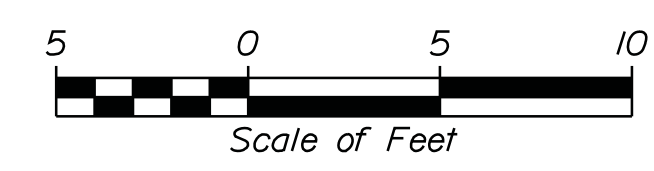
Bridge Improvements
Presque Isle #14.03 Bridge #7801
— APE — Survey Boundaries

0.1 Miles
1 inch = 0.14 miles

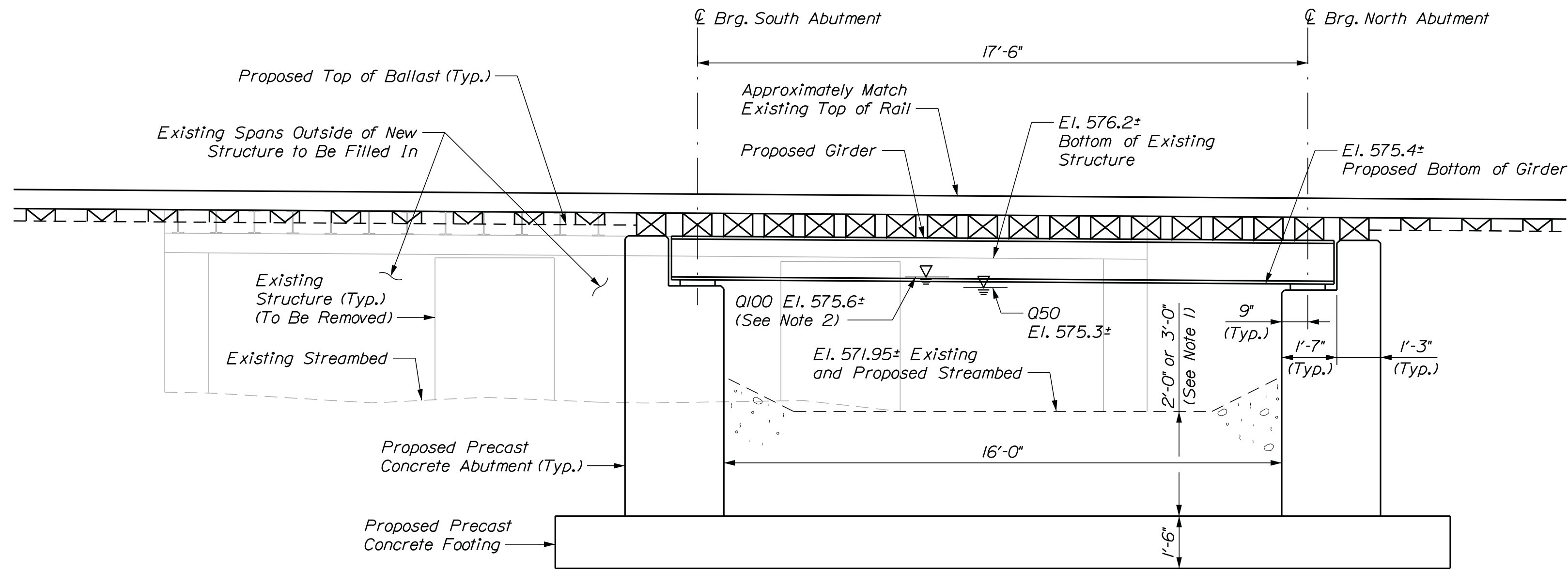




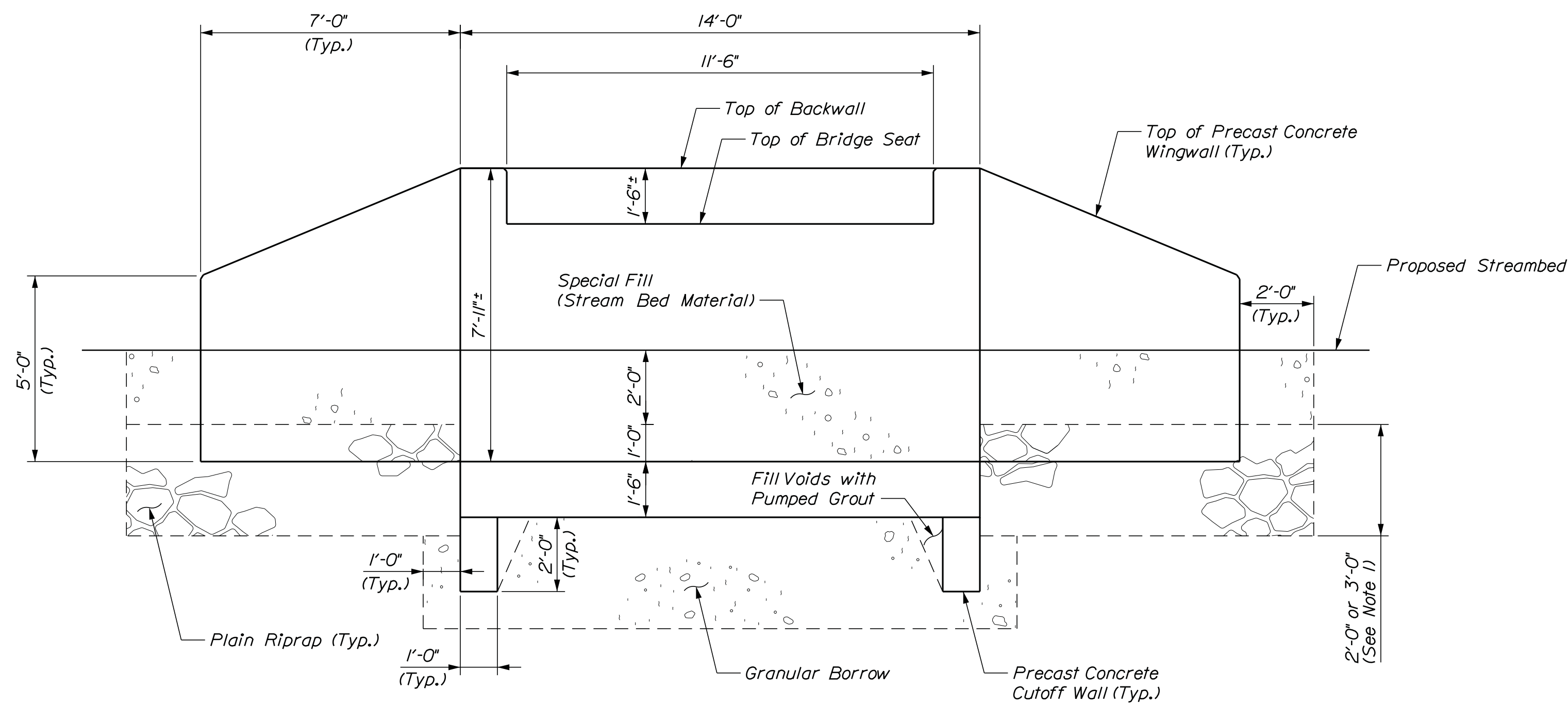
BRIDGE NO. 7801 MILE POINT 14.03
OVER SMALL BROOK
PLAN



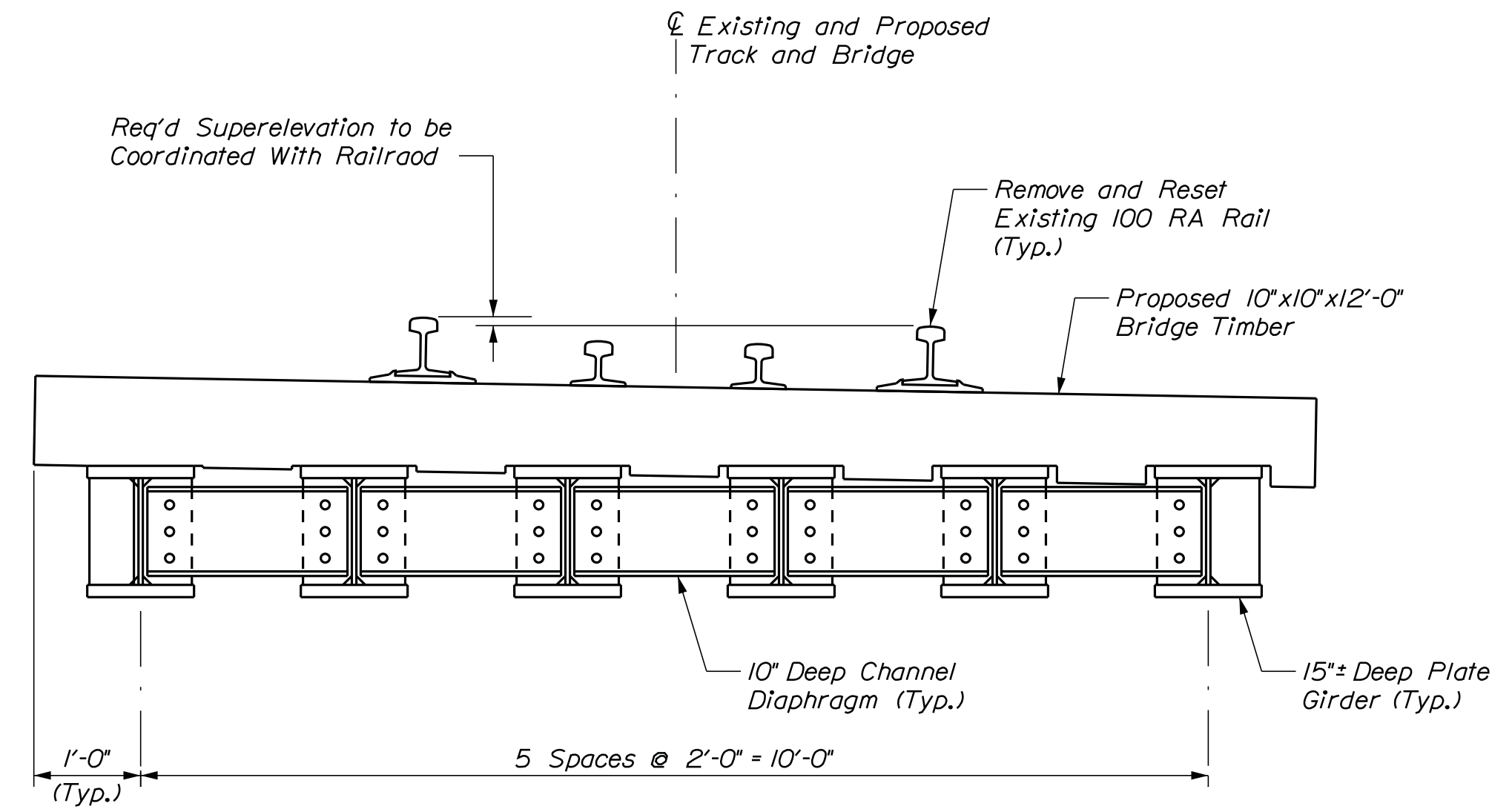
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		v h b	
BRIDGE NO. 7801		WIN 23460.00	
BRIDGE PLANS			
PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED JCM	2/7/2021	BJM	2/7/2021
CHECKED-REVIEWED JCM		GSG	2/7/2021
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
MAINE RAILROAD BRIDGE REHABILITATION PROJECTS PRESQUE ISLE-HOULTON SUB. AROOSTOOK PRELIMINARY REPAIR CONCEPTS			
FIGURE		1	
OF 2			



EXISTING/PROPOSED BRIDGE ELEVATION
 (Shown at Low Rail Elevation)
 Scale: 3/8" = 1'-0"



PROPOSED ABUTMENT ELEVATION
 Scale: 3/8" = 1'-0"

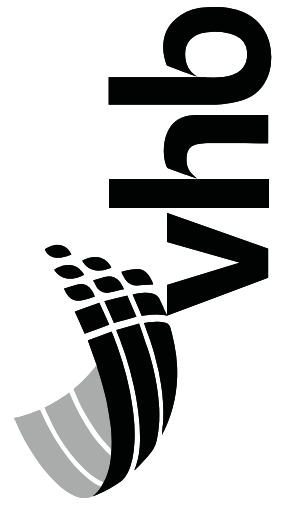


PROPOSED TYPICAL SECTION
 (Looking Upstation)
 Scale: 3/4" = 1'-0"

**BRIDGE NO. 7801 (M.P. P14.03)
 OVER SMALL BROOK**

NOTES

1. Depth of streambed material above footing to be optimized in final design to minimize required excavation.
2. Depth of superstructure will be optimized during final design to maximize freeboard.



PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED JCM	2/2/2021	BAM	2/2/2021
CHECKED-REVIEWED JCM		CSG	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MAINE RAILROAD BRIDGE
 REHABILITATION PROJECTS
 PRESQUE ISLE-HOULTON SUB. AROOSTOOK
PRELIMINARY REPAIR CONCEPTS