



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

February 24, 2021

Maria Eggett
Maine Department of Environmental Protection
106 Hogan Road
Bangor, ME 04401

RE: Highway Construction, MaineDOT WIN# 18915.00 – Route 9 Connector, Brewer-Holden-Eddington

Dear Ms. Eggett,

The Maine Department of Transportation (MaineDOT) proposes to construct a new 6.1 mile highway that connects Route 9 in Eddington with I-395 in Brewer. Enclosed please find an application for an Individual Natural Resources Protection Act permit for proposed natural resource impacts associated with the project. Because the file is large, please visit the FTP site to download the full application.

MaineDOT coordinated with the Maine Historic Preservation Commission (MHPC) as part of the federal National Environmental Policy Act review and approval. Megan Hopkinton with MHPC confirmed that a review copy is not needed. Review copies of this application have been provided directly to:

Jay Clement, U.S. Army Corps of Engineers (electronic copy only)
City Clerk, City of Brewer
Town Clerk, Town of Holden
Town Clerk, Town of Eddington

Please contact me if you have any questions or require additional information to complete your review. MaineDOT intends to advertise this project for construction bidding in September 2021 and construction beginning in November 2021.

Sincerely,

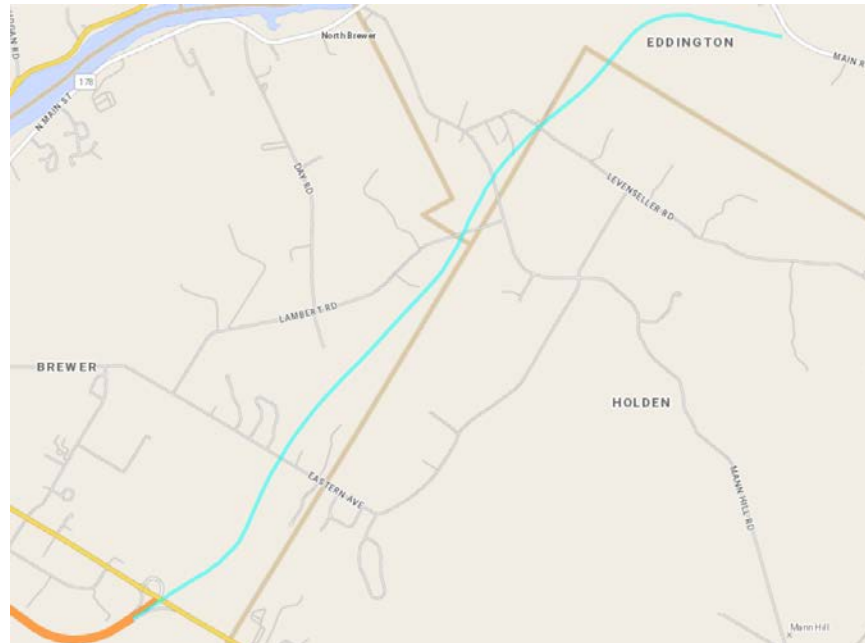
A handwritten signature in black ink, appearing to read 'Danielle Tetreau'.

Danielle Tetreau
MaineDOT Environmental Team Leader

Mobile: 207-592-2358
Email: Danielle.Tetreau@maine.gov

Individual Permit Application

Maine Department of Environmental Protection
US Army Corps of Engineers



Route 9 Connector Project

Brewer, Holden, and Eddington, Maine

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Permit Application Forms

MDEP Natural Resources Protection Act: Individual

Application for Department of Army Permit

Submitted: 2/19/2021

Approved: *pending*

Town Copies:

Brewer

Holden

Eddington

APPLICATION FOR A NATURAL RESOURCES PROTECTION ACT PERMIT

→ PLEASE TYPE OR PRINT IN **BLACK INK ONLY**

1. Name of Applicant: Maine Department of Transportation		5. Name of Agent: Danielle Tetreau							
2. Applicant's Mailing Address: 16 State House Station Augusta ME 04333		6. Agent's Mailing Address:							
3. Applicant's Daytime Phone #: 207-624-3000		7. Agent's Daytime Phone #: 207-592-2358							
4. Applicant's Email Address (Required from either applicant or agent):		8. Agent's Email Address: danielle.tetreau@maine.gov							
9. Location of Activity: (Nearest Road, Street, Rt.#) Route 1A and Route 9		10. Town: Brewer, Holden, Eddington	11. County: Penobscot						
12. Type of Resource: (Check all that apply) <input checked="" type="checkbox"/> River, stream or brook <input type="checkbox"/> Great Pond <input type="checkbox"/> Coastal Wetland <input checked="" type="checkbox"/> Freshwater Wetland <input checked="" type="checkbox"/> Wetland Special Significance <input checked="" type="checkbox"/> Significant Wildlife Habitat <input type="checkbox"/> Fragile Mountain		13. Name of Resource: See Attachment 3							
		14. Amount of Impact: (Sq.Ft.) 1,016,316 SF (23.3 acres)		Fill: Dredging/Veg Removal/Other: Temp impact: 602,810 SF (13.8 acres)					
15. Type of Wetland: (Check all that apply) <input checked="" type="checkbox"/> Forested <input checked="" type="checkbox"/> Scrub Shrub <input checked="" type="checkbox"/> Emergent <input checked="" type="checkbox"/> Wet Meadow <input type="checkbox"/> Peatland <input type="checkbox"/> Open Water <input type="checkbox"/> Other _____		FOR FRESHWATER WETLANDS							
		<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 33%;"><i>Tier 1</i></td> <td style="text-align: center; width: 33%;"><i>Tier 2</i></td> <td style="text-align: center; width: 33%;"><i>Tier 3</i></td> </tr> <tr> <td style="border: none;"> <input type="checkbox"/> 0 - 4,999 sq ft. <input type="checkbox"/> 5,000-9,999 sq ft <input type="checkbox"/> 10,000-14,999 sq ft </td> <td style="border: none;"> <input type="checkbox"/> 15,000 – 43,560 sq. ft. </td> <td style="border: none;"> <input checked="" type="checkbox"/> > 43,560 sq. ft. or smaller than 43,560 sq. ft., not eligible for Tier 1 </td> </tr> </table>		<i>Tier 1</i>	<i>Tier 2</i>	<i>Tier 3</i>	<input type="checkbox"/> 0 - 4,999 sq ft. <input type="checkbox"/> 5,000-9,999 sq ft <input type="checkbox"/> 10,000-14,999 sq ft	<input type="checkbox"/> 15,000 – 43,560 sq. ft.	<input checked="" type="checkbox"/> > 43,560 sq. ft. or smaller than 43,560 sq. ft., not eligible for Tier 1
<i>Tier 1</i>	<i>Tier 2</i>	<i>Tier 3</i>							
<input type="checkbox"/> 0 - 4,999 sq ft. <input type="checkbox"/> 5,000-9,999 sq ft <input type="checkbox"/> 10,000-14,999 sq ft	<input type="checkbox"/> 15,000 – 43,560 sq. ft.	<input checked="" type="checkbox"/> > 43,560 sq. ft. or smaller than 43,560 sq. ft., not eligible for Tier 1							
16. Brief Activity Description: New roadway construction to connect I-395 and Route 9.									
17. Size of Lot or Parcel & UTM Locations: <input type="checkbox"/> _____ square feet, or <input type="checkbox"/> _____ acres		UTM Northing: _____ UTM Easting: _____							
18. Title, Right or Interest: Imminent Domain applies. <input checked="" type="checkbox"/> own <input type="checkbox"/> lease <input checked="" type="checkbox"/> purchase option <input checked="" type="checkbox"/> written agreement									
19. Deed Reference Numbers: Book#: _____ Page: _____		20. Map and Lot Numbers: Map #: _____ Lot #: _____							
21. DEP Staff Previously Contacted: Jessica Damon, Maria Eggett		22. Part of a larger project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
23. Resubmission of Application?: <input type="checkbox"/> Yes → <input checked="" type="checkbox"/> No		After-the-Fact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
24. Written Notice of Violation?: <input type="checkbox"/> Yes → <input checked="" type="checkbox"/> No		25. Previous Wetland Alteration: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
26. Detailed Directions to the Project Site: Project begins at the terminus of I-395 and continues overland north and northeast to Route 9.									
TIER 1		TIER 2/3 AND INDIVIDUAL PERMITS							
<input type="checkbox"/> Title, right or interest documentation <input type="checkbox"/> Topographic Map <input type="checkbox"/> Narrative Project Description <input type="checkbox"/> Plan or Drawing (8 1/2" x 11") <input type="checkbox"/> Photos of Area <input type="checkbox"/> Statement of Avoidance & Minimization <input type="checkbox"/> Statement/Copy of cover letter to MHPC		<input checked="" type="checkbox"/> Title, right or interest documentation <input checked="" type="checkbox"/> Topographic Map <input checked="" type="checkbox"/> Copy of Public Notice/Public Information Meeting Documentation <input checked="" type="checkbox"/> Wetlands Delineation Report (Attachment 1) that contains the information listed under Site Conditions <input checked="" type="checkbox"/> Alternatives Analysis (Attachment 2) including description of how wetland impacts were Avoided/Minimized <input checked="" type="checkbox"/> Erosion Control/Construction Plan <input checked="" type="checkbox"/> Functional Assessment (Attachment 3), if required <input checked="" type="checkbox"/> Compensation Plan (Attachment 4), if required <input checked="" type="checkbox"/> Appendix A and others, if required <input checked="" type="checkbox"/> Statement/Copy of cover letter to MHPC <input type="checkbox"/> Description of Previously Mined Peatland, if required							
28. FEES Amount Enclosed: Direct Invoice to MaineDOT									

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

DEP SIGNATORY REQUIREMENT

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

CORPS SIGNATORY REQUIREMENT

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fined not more than \$10,000 or imprisoned not more than five years or both. I authorize the Corps to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

DEP SIGNATORY REQUIREMENT

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #4 for the applicant and #8 for the agent)."



SIGNATURE OF AGENT/APPLICANT

Date: 2/24/2021

NOTE: Any changes in activity plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.

U.S. Army Corps of Engineers (USACE)
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved -
OMB No. 0710-0003
Expires: 02-28-2022

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.dod.mil/Privacy/SORNS/Index/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Danielle Middle - D Last - Tetreau Company - Maine Department of Transportation E-mail Address - danielle.tetreau@maine.gov	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Middle - Last - Company - E-mail Address -
6. APPLICANT'S ADDRESS: Address- 16 State House Station City - Augusta State - ME Zip - 04333 Country - USA	9. AGENT'S ADDRESS: Address- City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax 207-592-2358	10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

SIGNATURE OF APPLICANT

DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Route 9 Connector	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Various freshwater wetlands and streams	14. PROJECT STREET ADDRESS (if applicable) Address City - State - Zip -
15. LOCATION OF PROJECT Latitude: °N Longitude: °W	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID Municipality Brewer, Holden, and Eddington, ME Section - Township - Range -	

17. DIRECTIONS TO THE SITE

The project is begins at the terminal end of I-395 and continues overland north and northeast to Route 9. See Attachment 3 for the location map.

18. Nature of Activity (Description of project, include all features)

The project involves constructing a new roadway that requires permanent wetland fill, temporary impacts for construction, new stream crossings, and permanent fill in a vernal pool. See Attachment 1 for more information on the scope of work proposed.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the project is to improve transportation linkages and safety in the Route 9 and Route 1A corridor. See Attachment 1 of this application or the FEIS on the project website for more details about the purpose and need.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres Perm. wetland: 23.3 acres; Temp. wetland: 13.8 acres; Perm. RUS: 0.5 acres; Temp. RUS: 0.1 acres
or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See Attachment 2 of this application for discussion of the alternatives, and the avoidance and minimization measures implemented.

Compensation for the project impacts is proposed and the plan is included as Exhibit A of the application. MaineDOT has proposed to purchase a 1,600 acre parcel for wetland preservation in Holden.

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

The bridge replacement on Wilson Street over I-395 is under construction, however that work did not require any work in or around wetlands or streams. All disturbed soil was more than 75 feet from any wetland or water body.

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- [Redacted]
 City - [Redacted] State - [Redacted] Zip - [Redacted]

b. Address- [Redacted]
 City - [Redacted] State - [Redacted] Zip - [Redacted]

c. Address- [Redacted]
 City - [Redacted] State - [Redacted] Zip - [Redacted]

d. Address- [Redacted]
 City - [Redacted] State - [Redacted] Zip - [Redacted]

e. Address- [Redacted]
 City - [Redacted] State - [Redacted] Zip - [Redacted]

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
FHWA	NEPA	[Redacted]	[Redacted]	June 23, 2016	[Redacted]
MDEP	NRPA Permit	[Redacted]	2/24/2021	pending	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

 2/24/2021 [Redacted Signature] [Redacted Date]
 SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

February 24, 2021

City Clerk
City of Brewer
80 North Main Street
Brewer, ME 04412

RE: Highway Construction, MaineDOT WIN# 18915.00 – Route 9 Connector, Brewer-Holden-Eddington

To the City Clerk,

The Maine Department of Transportation (MaineDOT) proposes to construct a new 6.1 mile highway that connects Route 9 in Eddington with I-395 in Brewer. As required by the Natural Resources Protection Act (NRPA), a copy of the permit application is required to be available to the public at the city offices. Enclosed please find a review copy of the application for an Individual NRPA permit for proposed natural resource impacts associated with the project.

In addition to the City of Brewer, review copies of this application have been provided directly to:

Maria Eggett, Maine Department of Environmental Protection (electronic copy only)
Jay Clement, U.S. Army Corps of Engineers (electronic copy only)
Town Clerk, Town of Holden
Town Clerk, Town of Eddington

Please contact me if you have any questions or require additional information to complete your review. MaineDOT intends to advertise this project for construction bidding in September 2021 and construction beginning in November 2021.

Sincerely,

A handwritten signature in black ink, appearing to read 'Danielle Tetreau'.

Danielle Tetreau
MaineDOT Environmental Team Leader

Mobile: 207-592-2358
Email: Danielle.Tetreau@maine.gov



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

February 24, 2021

Town Clerk
Town of Eddington
906 Main Road
Eddington, ME 04428

RE: Highway Construction, MaineDOT WIN# 18915.00 – Route 9 Connector, Brewer-Holden-Eddington

To the Town Clerk,

The Maine Department of Transportation (MaineDOT) proposes to construct a new 6.1 mile highway that connects Route 9 in Eddington with I-395 in Brewer. As required by the Natural Resources Protection Act (NRPA), a copy of the permit application is required to be available to the public at the town offices. Enclosed please find a review copy of the application for an Individual NRPA permit for proposed natural resource impacts associated with the project.

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Town Clerk, Town of Holden

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Danielle Tetreau
MaineDOT Environmental Team Leader

Mobile: 207-592-2358
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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

February 24, 2021

Town Clerk
Town of Holden
570 Main Street
Holden, ME 04429

RE: Highway Construction, MaineDOT WIN# 18915.00 – Route 9 Connector, Brewer-Holden-Eddington

To the Town Clerk,

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Danielle Tetreau
MaineDOT Environmental Team Leader

Mobile: 207-592-2358
Email: Danielle.Tetreau@maine.gov

Attachment 1 – Project Description

The Maine Department of Transportation (MaineDOT) and the Federal Highway Administration (FHWA) completed a transportation study to improve transportation linkages between I-395 and Route 9 in Brewer, Eddington, and Holden, Maine. The study identified potential solutions and evaluated their environmental effects.

The study was authorized by FHWA for preliminary corridor engineering in 1998 with scoping for the National Environmental Policy Act (NEPA) as an Environmental Assessment (EA) in 2000. The EA was elevated to an Environmental Impact Assessment (EIS) by FHWA in October 2005. The EIS evaluated 5 families of alternatives for the improvements that will be discussed in more detail in Attachment 2 of this application document. The families of alternatives included: Upgrade Alternatives, Northern Route Alternatives, Central Route Alternatives, Southern Route Alternatives, and Parallel Existing Utility Easement Route Alternatives.

On January 20, 2015 the Final EIS was distributed for review by cooperating agencies and public comment with Alternative 2B-2 as the preferred route. On June 23, 2016 the Record of Decision (ROD) was issued by FHWA with Alternative 2B-2 as the selected route to continue to final design¹. On February 6, 2020 FHWA signed a re-evaluation to address changes to the preliminary design scoped in the FEIS.

The selected Alternative 2B-2 was kicked off to begin final design in 2016. It includes reconfiguring the existing interchange with Route 1A (Wilson Street) and I-395; construction of 6.1 miles of new 2 lane highway to connect the current divided 4-lane highway of I-395 to a new 2- to Route 9 in Eddington (Project, Connector). From the Route 1A interchange there are significant cuts and fills. The Project will intersect local roadways, impact wetlands, streams, and various wildlife and fishery resources. Table 1 below describes the local road crossings, and the remaining Exhibits of this application document will describe and detail the natural resource impacts. The Project will create a T-intersection with the current Route 9 and the Project will be designated Route 9 and the current Route 9 will be designated Route 9 Business.

Table 1. Project Road Crossing Details

Road Name	Type of Crossing	Coordinates of Road Crossing at Centerline
Eastern Avenue	Underpass	44.782967, -68.707022
Lambert Road	Overpass	44.801829, -68.685465
Clewleyville Road	Underpass	44.806436, -68.681993
Levenseller Road	Underpass	44.810693, -68.676539

There were 3 changes from the preliminary design and scope of the Connector since the Record of Decision that were included in a 2020 NEPA re-evaluation: definitively replacing the Route 1A bridge (separately from the Connector construction phasing, to be discussed further in Exhibit 7), reconfiguring Ramp D (southbound exit ramp to Route 1A) which required realignment of a section of Felts Brook, and

¹ The FEIS and ROD are available at the project website: <https://www.maine.gov/mdot/projects/i395rt9connector/materials/>

eliminating left turns onto Route 1A for safety reasons and instead creating a jug-handle at Arista Drive to change direction.

Project Impacts

The project involves 23.3 acres of permanent and 13.8 acres of temporary impacts at 43 wetland resources along the 6.1-mile length of the project. Of the 43 resources, 12 are considered Wetlands of Special Significance by the MDEP Chapter 310 definitions. Table 2 provides the details about each resource impact, classification type, and where it is located on the impact sheets provided in Attachment 5. Information about the wetlands is provided in Attachment 9.

Table 2. Wetland and Stream Impact Table

Wetland ID	Wetland Type ¹	Wetland of Special Significance ²	Permanent Impact (SF)	Temporary Impact (SF)	Impact Sheet Number ³
WET01	PEM	-	673	144	1
WET02	PEM	-	1,864	662	2
WET03	PEM	-	175	643	3
WET04	PEM, PSS	R	43,558	5,760	4, 5
STR01-ATS	Felts Brook	-	13,584	683	4, 5
WET05	PSS	-	5,274	668	5
WET06	PEM	R	94,436	23,023	4, 5, 6
WET07	PSS	-	13,333	364	7
WET08	PSS	R	22,210	4,280	8
STR02-ATS	Trib Felts Brook	-	2,210	314	8
WET09	PSS	R	35,219	13,986	8, 9
WET10	PSS	R	23,963	11,103	9
STR03-ATS	Trib Felts Brook	-	2,753	145	9
WET11	PFO	-	805	2,328	10
WET12	PEM	-	1,017	1,287	10
WET13	PSS	-	76,003	26,195	11, 12
WET14	PEM	-	7,393	7,987	13
WET15	PSS	-	2,105	2,111	14
WET16	PSS	-		515	15
WET17	PEM	-	631	533	15
WET18	PFO	-	202	670	16
WET19	PFO	-	14,915	18,805	17
WET20	PFO	-	78,375	93,633	18, 19, 20
STR04	Trib Eaton Brook	-	1,168	962	21
WET21	PSS	R	21,404	11,086	22
STR05-ATS	Eaton Brook	-	612	931	22
WET22	PEM	R	12,277	11,411	22
WET23	PFO	-	16,601	26,249	23
WET24	PFO	-	44,693	13,901	24
WET25	PSS	-	32,528	11,994	25

Wetland ID	Wetland Type ¹	Wetland of Special Significance ²	Permanent Impact (SF)	Temporary Impact (SF)	Impact Sheet Number
WET26	PFO	-	73,531	30,941	26, 27
WET27	PFO	-	-	1,030	27
WET28	PEM	-	22,173	3,663	28
WET29	PFO	-	26,416	27,448	29, 30
WET30	PFO	-	47,490	56,508	30, 31
WET31	PFO + PSS	-	29,502	8,753	32
WET32	PFO	-	14,675	16,027	33
WET33	PFO	-	63,672	35,135	34, 35
WET34	PFO	-	-	568	35
WET35	PEM	R, S	15,814	6,460	36
STR06	Trib Eaton Brook	-	1,776	237	36
WET36	PEM	R, S	41,431	14,610	36
WET37	PSS + PEM	E, S (IWWH)	25,284	19,242	37
WET38	PFO	R, S (IWWH)	37,674	21,245	38
STR07	Trib Eaton Brook	-	1,082	472	38
WET39	PFO	-	46,250	40,099	39, 40
WET40	PEM	-	19,375	19,694	41
WET41	PFO	-	3,203	3,895	42
WET42	PFO	-	36	287	42
WET43	PFO	S (SVP)	136	4,123	43
Wetland Total (acres)			23.3	13.8	
Stream (RUS) Total (acres)			0.5	0.1	
<p>¹Wetland Type: Follows Cowardin, Lewis, M., et al., 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. December 1979. For details on individual wetlands, see ACOE plot data, site photographs, and wetland conditions report. PEM wetlands are wet meadow except where designated as Wetland of Special Significance category "E" for greater than 20,000 SF of emergent marsh vegetation or open water habitat.</p> <p>²Wetland of Special Significance: Defined in Chapter 310 - Wetlands and Waterbodies Protection. I - critically imperiled or imperiled community (S1 or S2 defined by MNAP); S - significant wildlife habitat defined in 38 M.R.S.A. § 480-B(10); C - located within 250 feet of a coastal wetland; G - located within 250 feet of GPA great pond; E - contains at least 20,000 sf of aquatic vegetation, emergent marsh vegetation, or open water; F - located within the FEMA mapped 100-year floodplain; P - contains peatlands; R - wetland area located within 25 feet of a river, stream, or brook.</p> <p>³Impact Sheets: are included with this application as Attachment 5.</p>					

Project Purpose and Need

The Record of Decision (ROD), which was signed on June 23, 2016 states the following:

“The need (i.e., the problems) for transportation improvements is based on poor roadway geometry in the study area combined with an increase in local and regional commercial and passenger traffic that has resulted in poor system linkage safety concerns and traffic congestion.”

The Corps prepared a basic project purpose as part of the Section 404(b)(1) guidelines: "...to provide for the safe and efficient flow of east-west traffic and shipment of goods from Brewer (I-395 to Eddington (Route 9), Maine, for current and projected traffic volumes."

In addition, the project will decrease travel times, vehicle miles traveled (VMT), and vehicle hours traveled (VHT). These decreases are projected to provide an estimated cost savings of 16% for passenger vehicles and trucks compared with the current highway system.

The detailed analysis of the purpose and need is available in the FEIS on the project website².

Title, Right, or Interest Documentation

MaineDOT has eminent domain authority to acquire interests in property for transportation purposes when a public need has been determined. The state statute which governs this right is cited as Title 23 M.R.S.A. sections 651 and 151-159. MaineDOT is required to acquire property rights in conformance with the federal Uniform Act and the Federal Highway Administration (FHWA) approved Right of Way Manual. MaineDOT is pursuing the rights for 56 properties to construct the new roadway.

Mitigation

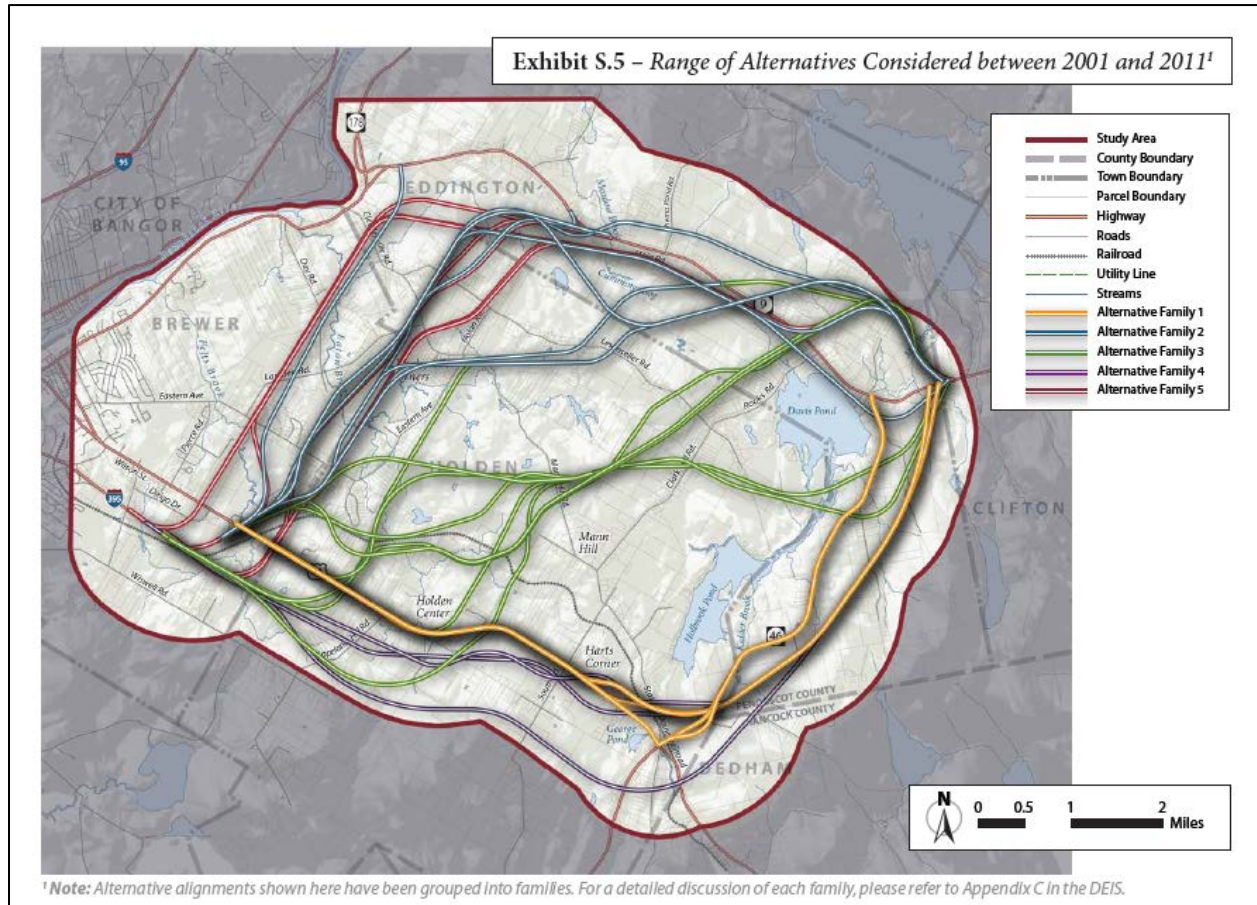
The Project involves 23.3 acres of direct wetland impact and 6 new stream crossings. As a condition of the NEPA process, compensatory mitigation is required. The Compensation Plan proposes to preserve 2 parcels in Holden, totaling 1,628 acres of upland and wetland. MaineDOT is working with Maine Department of Inland Fisheries and Wildlife (MDIFW) on a plan to transfer ownership and management of the property to their Department after the property is purchased later in 2021. The Compensation Plan is included with this permit application as Exhibit A.

² The FEIS and ROD are available at the project website: <https://www.maine.gov/mdot/projects/i395rt9connector/materials/>

Attachment 2 – Alternatives Analysis

From 2001 to 2011, MaineDOT and FHWA evaluated more than 70 build alternatives for the project for the draft EIS, along with the no-build alternative. The details of that analysis and process of how the alternatives were evaluated are available in the FEIS³. Figure 1 below is from the FEIS and shows the location of various alternatives and the families of alternatives.

Figure 1. Exhibit S.5 from the FEIS – Alternatives Considered between 2001 and 2011. Source: FEIS

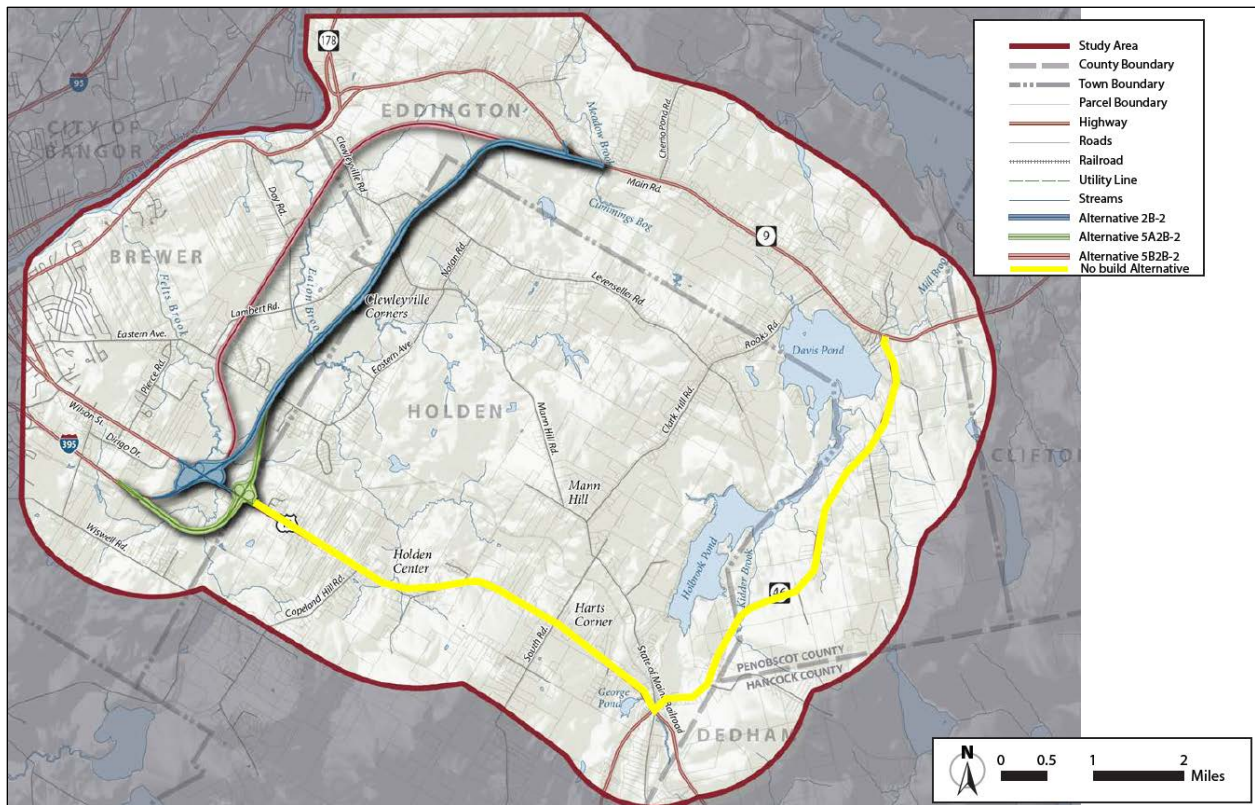


The following alternatives will be discussed generally in this document, more detail is provided in the FEIS³. As described in the FEIS, the impacts resulting from the build alternatives are all similar in nature. During the development of the EIS, other alternatives appeared to meet the purpose and need of the project better than Alternative 2B-2. However, it became clear that those alternatives involved more natural resource impacts than 2B-2. The following discussion, figures, and tables summarizes and compares the alternatives.

1. No-Build Alternative
2. Alternative 5B2B-2
3. Alternative 5A2B-2
4. Alternative 2B-2 (Selected Alternative)

³ The FEIS and ROD are available at the project website: <https://www.maine.gov/mdot/projects/l395rt9connector/materials/>

Figure 2. Alternatives Retained for Analysis (Source: FEIS, Edited to show No Build Route)



No Build Alternative

The No Build Alternative is a route of existing roadways (shown in yellow on Figure 2) would involve maintenance and Transportation System Management (TSM) improvements. This would include no new construction or major reconstruction of the roadways for lane width or shoulder construction. Any improvement projects would be limited to intersection improvements. TSM would involve traffic signal timing or phasing adjustments, designation of turning lanes at intersections or driveways, signs or pavement markings, and access management at intersections or driveways.

The No Build Alternative has potential to address minor congestion issues along Route 1A and Route 46 by managing light phases, restriping lanes, and improving intersections. However, these improvements and changes do not meet the purpose and need of the project by improving safety and system linkage in this corridor. The No-Build Alternative would not reduce the volume of heavy truck traffic on local highways. The No Build Alternative was not selected.

Alternative 5B2B-2

Alternative 5B2B-2 is a new construction alternative that begins at the terminus of I-395 and continues north and east before connecting with Route 9. Based on the layout shown in Figure 2 (shown in red) this alternative involves 7 stream crossings and 4 road crossings. A conceptual design anticipated that 6 of the stream crossings would require bridges and 1 would be a culvert. Specific details about the analysis and conceptual design of this alternative is available in the FEIS and Table 3 compares the direct impacts of the Alternatives. This alignment was estimated to require approximately 30 acres of wetland impact. Of the 7 stream crossings 6 are within Atlantic salmon critical habitat and one is above an

impassible waterfall. This alignment includes approximately 3 acres of impacts to a mapped IFW deer wintering area and 3 acres of impacts to mapped inland wading bird and waterfowl habitat. This alternative involves impacts to floodplains and 1 vernal pool. Additionally, this alternative involves 6 residential displacements and 2 business displacements.

When comparing the environmental impacts of this alternative to the others carried through the NEPA process, it was determined that while this alternative meets the purpose and need by creating system linkages and improving safety of local roadways; there are more impacts to sensitive natural resources than other alternatives identified. This alternative was not the selected alternative.

Alternative 5A2B-2

Alternative 5B2B-2 is a new construction alternative that creates a new interchange southeast of the current terminus of I-395 and continues north and east before connecting with Route 9. Based on the layout shown in Figure 2 (shown in green) this alternative differs from Alternative 2B-2 by the construction of a new interchange area (and removal of the existing Interchange), and a railroad crossing and otherwise follows the alignment of Alternative 2B-2. This alternative involves 6 stream crossings, 4 road crossings (see Table 1), and a crossing of the railroad. A conceptual design anticipated that 5 of the stream crossings would require bridges and 1 would be a culvert. Specific details about the analysis and conceptual design of this alternative is available in the FEIS and Table 3 compares the direct impacts of the Alternatives. This alignment was estimated to require approximately 31 acres of wetland impact. Of the 6 stream crossings, 5 are within Atlantic salmon critical habitat, one stream crossing is above an impassible waterfall. This alignment includes approximately 29 acres of impacts to mapped inland wading bird and waterfowl habitat. This alternative involves impacts to floodplains and 1 vernal pool. Additionally, this alternative involves 8 residential displacements and 16 business displacements.

When comparing the environmental impacts of this alternative to the others carried through the NEPA process, it was determined that while this alternative meets the purpose and need by creating system linkages and improving safety of local roadways; there are more impacts to sensitive natural resources than other alternatives identified, particularly by developing a new interchange and removing the existing interchange. This alternative was not the selected alternative.

Alternative 2B-2 (Selected)

Alternative 2B-2 is a new construction alternative that begins at the terminus of I-395 and continues north and east before connecting with Route 9. Based on the layout shown in Figure 2 (shown in blue) this alternative differs from Alternative 2B-2 by the addition of an interchange area and otherwise follows the alignment of Alternative 2B-2. This alternative involves 6 stream crossings and 4 road crossings (see Table 1). A conceptual design anticipated that 5 of the stream crossings would require bridges and 1 would be a culvert. Specific details about the analysis and conceptual design of this alternative is available in the FEIS and Table 3 compares the direct impacts of the Alternatives. This alignment was estimated to require approximately 31 acres of wetland impact. Of the 6 stream crossings, 5 are within Atlantic salmon critical habitat, one stream crossing is above an impassible waterfall. This alignment includes approximately 29 acres of impacts to mapped inland wading bird and waterfowl habitat. This alternative involves impacts to floodplains and 1 vernal pool. Additionally, this alternative involves 8 residential displacements and 16 business displacements.

The FHWA consulted with the U.S. Army Corps of Engineers (the Corps) while developing the FEIS to identify the Least Environmentally Damaging Practicable Alternative (LEPDA) as part of the Section 404 permitting process. Alternative 2B-2 meets the Corps basic purpose for the project and was approved as the LEPDA.

Table 3. Exhibit S.7 – Direct Impacts of Alternatives. Source: FEIS

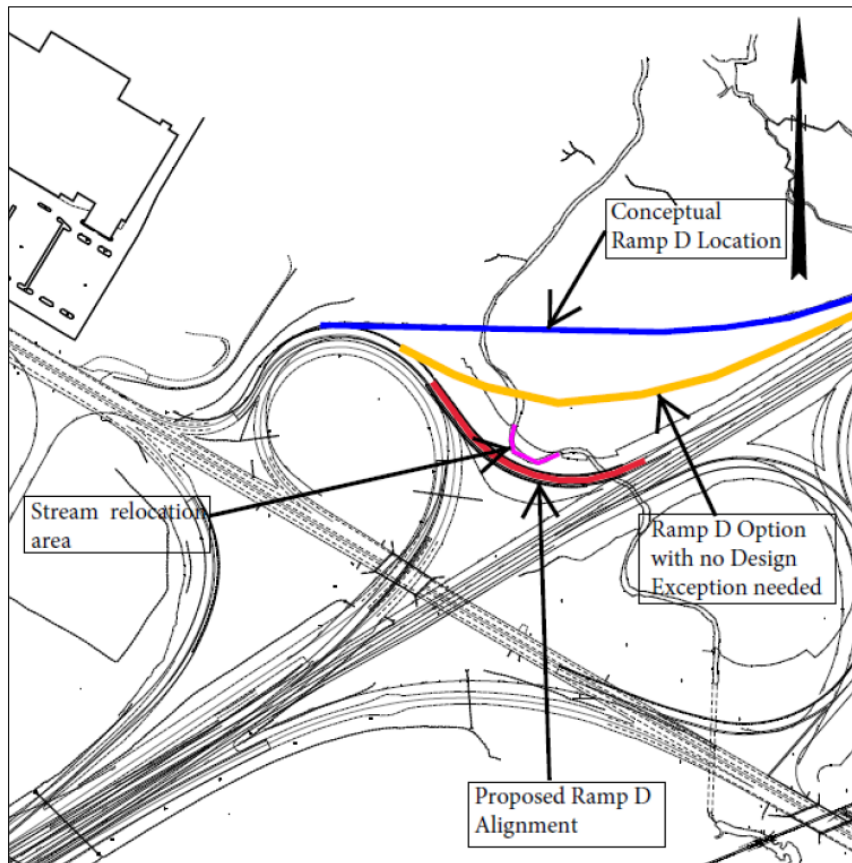
Alternatives	Physical and Biological														Land Use					
	Wetlands (acres)	Roadway contaminants within 100 feet ¹ (acres)		Bridges and culverts/feet	Streams			Floodplains (acres)	Vernal pools ² /dispersal habitat ⁴ (acres)	Waterfowl and wading bird habitat (acres)	Deer-wintering areas (acres)	Federally-Listed Endangered Species	Vegetation (acres)	Undeveloped habitat	Area to be acquired (acres)	Historic Properties	4(f) Properties	Residential displacements ⁵	Business displacements ⁶	Business impacts ⁷
		Roadway contaminants within 160 feet ² (acres)	Roadway contaminants within 100 feet ¹ (acres)		Roadway contaminants within 160 feet ² (acres)	Sediments within 3,300 feet ³ acres)														
No-Build	-	17	64	-	0.3 ac. (17,000 sq. ft.)	0.7 ac. (29,000 sq. ft.)	12 ac.	-	-	-	-	-	-	-	-	-	-	-	-	-
	Impacts from maintenance activities		Impacts from maintenance activities					Impacts from maintenance activities												
2B-2/the Preferred Alternative	26	31	66	5 bridges 1 culvert/ 212 feet	0.9 ac. (39,100 sq. ft.)	1.8 ac. (78,300 sq. ft.)	13 ac.	10	1/17	9 acres along Eaton Brook and its tributaries	-	Yes	103	Eliminates two blocks; fragments three blocks	163	No	No	8	-	-
5A2B-2	31	34	71	5 bridges 1 culvert/ 212 feet	0.6 ac. (24,300 sq. ft.)	1.5 ac. (63,000 sq. ft.)	18 ac.	2	1/25	20 acres along Felts Brook and 9 acres along Eaton Brook	-	Yes	136	Eliminates two blocks; fragments four blocks	215	No	No	16	Brewer Fence Company, Eden Pure Heaters, Mitchell's Landscaping and Garden Center, Town 'N Country Apartments	-
5B2B-2	30	30	80	6 bridges 1 culvert/ 222 feet	1.0 ac. (43,700 sq. ft.)	2.0 ac. (90,000 sq. ft.)	17 ac.	11	1/8	3 acres along a tributary to Eaton Brook	3 acres along a tributary to Eaton Brook	Yes	102	Fragments four blocks	186	No	No	6	Bangor Hydro-Electric Co. Building, Maritimes and Northeast Pipeline Compressor Station	-

Notes:
 Primary road contaminants are salt and lead.
 No-Build Alternative consisted of Route 1A from I-395 to Route 46, and Route 46 from Route 1A to Route 9.
¹Source: USACE New England District, "Compensatory Mitigation Guidance", 2010.
²Source: Maine Audubon Society, "Conserving Wildlife On and Around Maine's Roads", 2007.
³All vernal pools are insignificant.
⁴ Upland habitat within 250 ft.
⁵ The taking of a residence
⁶ The taking of a business
⁷ An impact to the business without the taking of the business

Avoidance and Minimization Measures

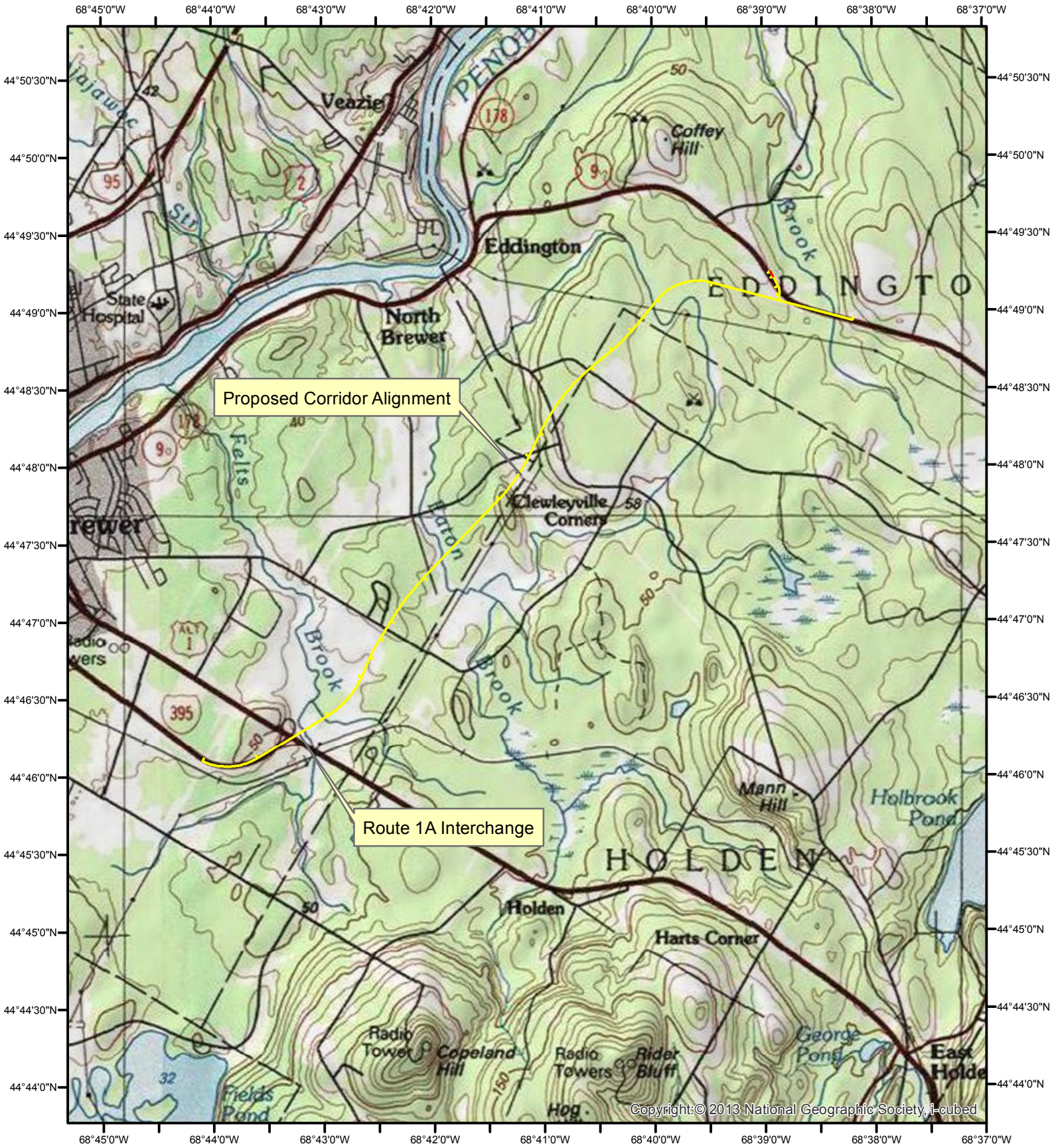
The process of identifying a preferred alternative represents the largest attempt to avoid and minimize impacts to wetlands and streams. Within the preferred alignment, we identified areas where the alignment or slopes were adjusted to avoid and minimize impacts. The changes include re-aligning Ramp D (the southbound lane's exit onto Route 1A), closer to the mainline of the roadway which consolidated 2 crossings of Felts Brook into one longer crossing, and eliminated 2.5 acres of direct wetland impact. Project designers were able to adjust the fill slope of a culvert replacement on current Route 9, near the end of the project which avoids impacts to a Wetland of Special Significance (forested wetland containing a SVP). The estimated direct wetland impact from the FEIS was 26 acres. The total proposed direct wetland impact in this permit application is 23.3 acres, an additional 0.2 acres of impact was avoided by implementing various design elements to adjust slopes and elevation along the alignment where possible while still meeting the design elements and engineering guidelines.

Figure 3. Ramp D Realignment Options

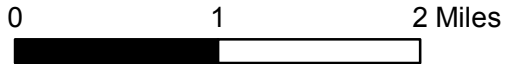


MaineDOT designed the 2-lane highway as a limited access highway, meaning there are no entrances onto or off the Connector except at the Route 9 and I-395 ends of the project. Notable design elements incorporated into the project include: 2 wildlife crossing underpasses which are sized to accommodate large mammals (e.g. deer), small mammal passage included with most stream crossing bridges and culverts, stream crossings include a streambed designed to be fully accessible for fish passage (as required from the NEPA consultation process). The purpose of these features is to minimize the effects of a new road crossing to local wildlife.

Attachment 3 – Location Map



Project Location Map
 I-395 / Route 9 Connector WIN 18915.00
 Brewer, Holden, Eddington, ME
 Penobscot County



Attachment 4 – Project Photos

APPENDIX D: PHOTOGRAPHS

Streams



Felts Brook north of Route 1A (left) and perennial tributary of Felts Brook (right).



Eaton Brook (left) and tributary of Eaton Brook (right) partially obscured by vegetation.

Wildlife

Wetlands 28 and 47: Felts Brook



Top: game trails through PSS (left) and PEM (right) north of Route 1A.

Bottom: turtle egg shells (left) and deer tracks near culvert inlet (right) south of Route 1A

Wetland 15: Eaton Brook



Beaver dam built on top of rocks (left) and coyote scat (right).

Wetland 7: Tributary of Eaton Brook



Game trails: at forest edge (left) and through PEM (right).

Wetland 4: Beaver impoundment

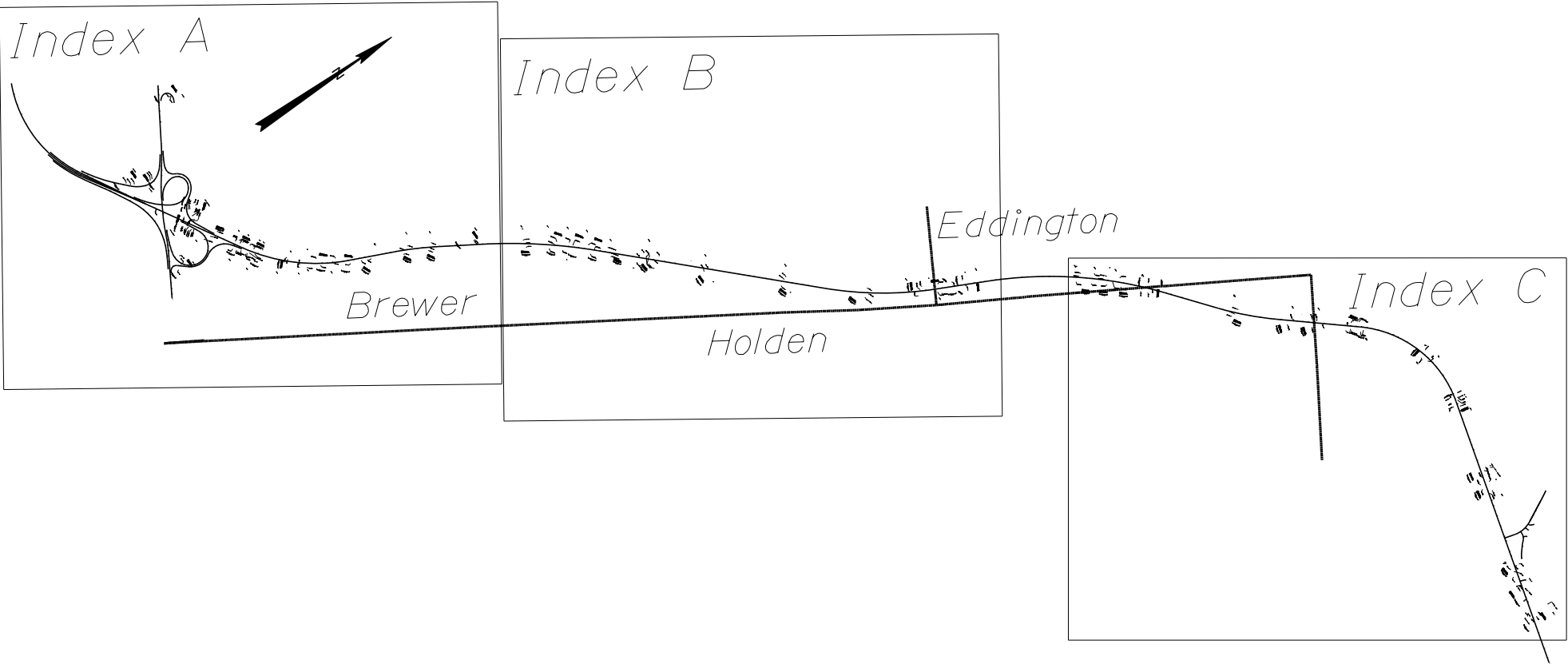


Top: Rusty blackbird SGCN 1

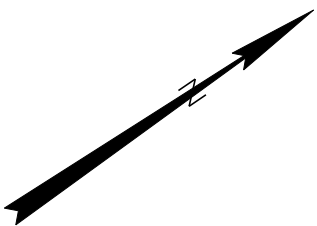
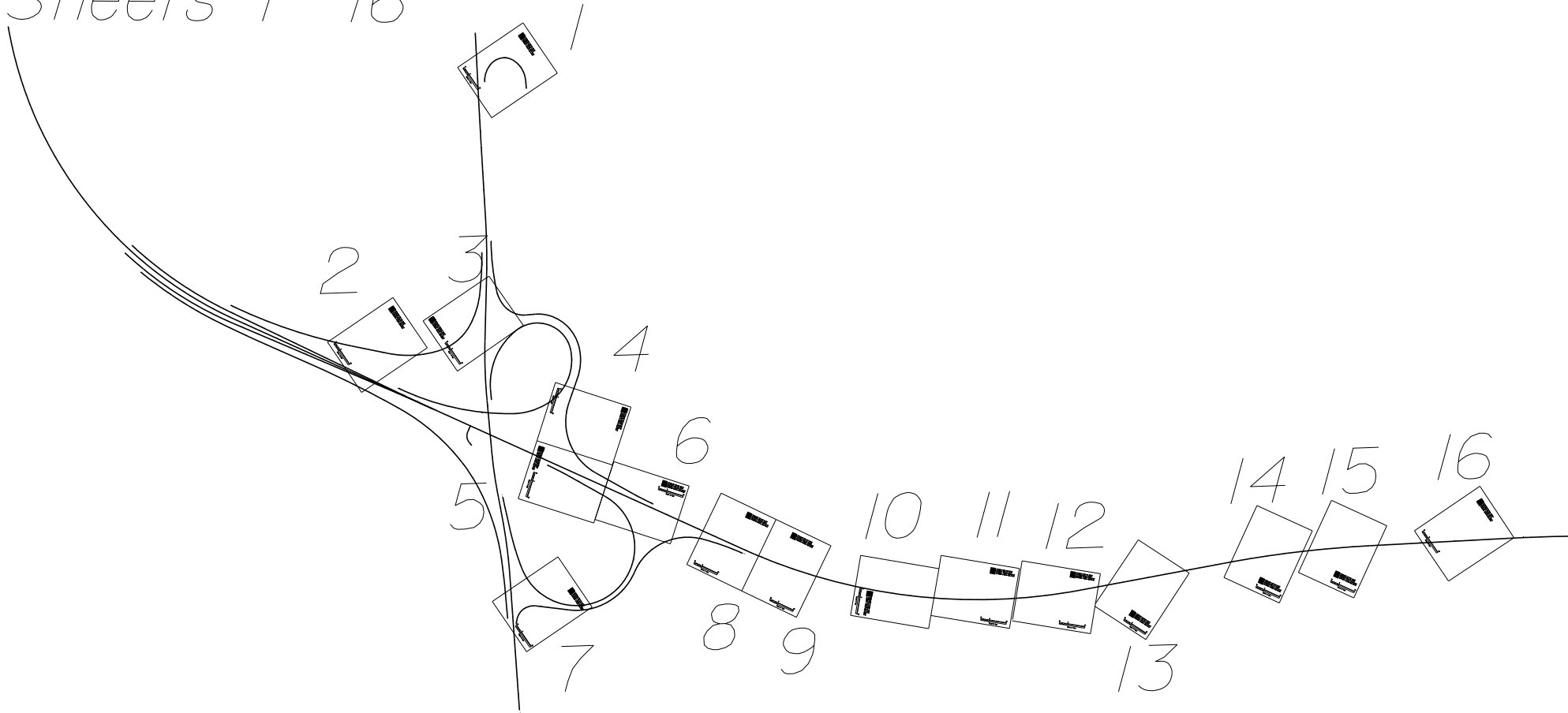
Bottom: Deer track in mud (left) and raccoon track (right).

Attachment 5 – Project Impact Plans

Route 9 Connector - Brewer-Eddington-Holden
Impact Plans Index
Sheets 1 - 43

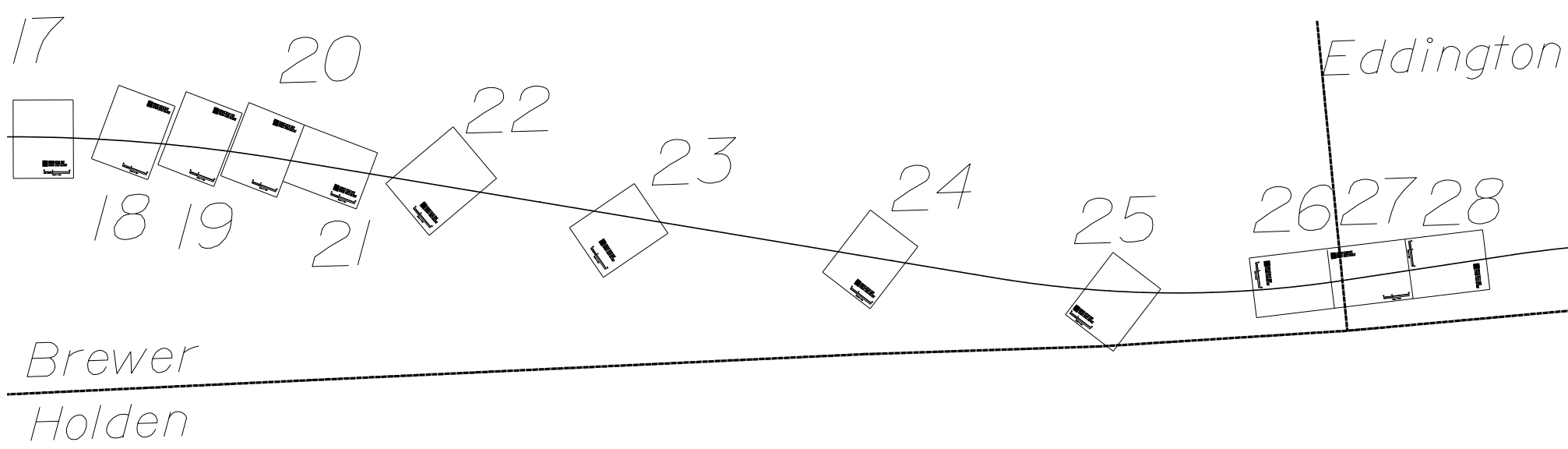


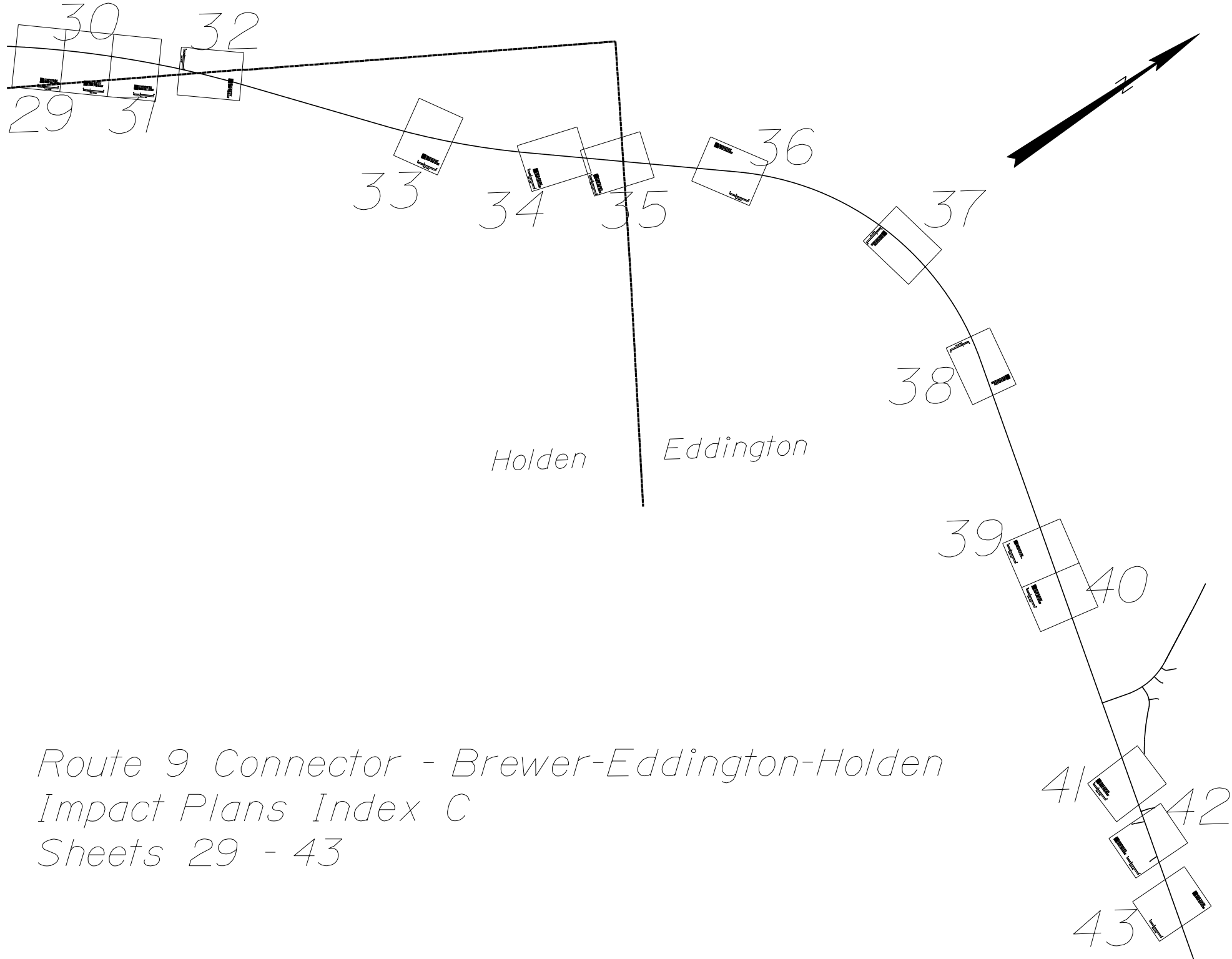
Route 9 Connector - Brewer-Eddington-Holden
Impact Plans Index A
Sheets 1 - 16



Brewer
Holden

Route 9 Connector - Brewer-Eddington-Holden
Impact Plans Index B
Sheets 17 - 28

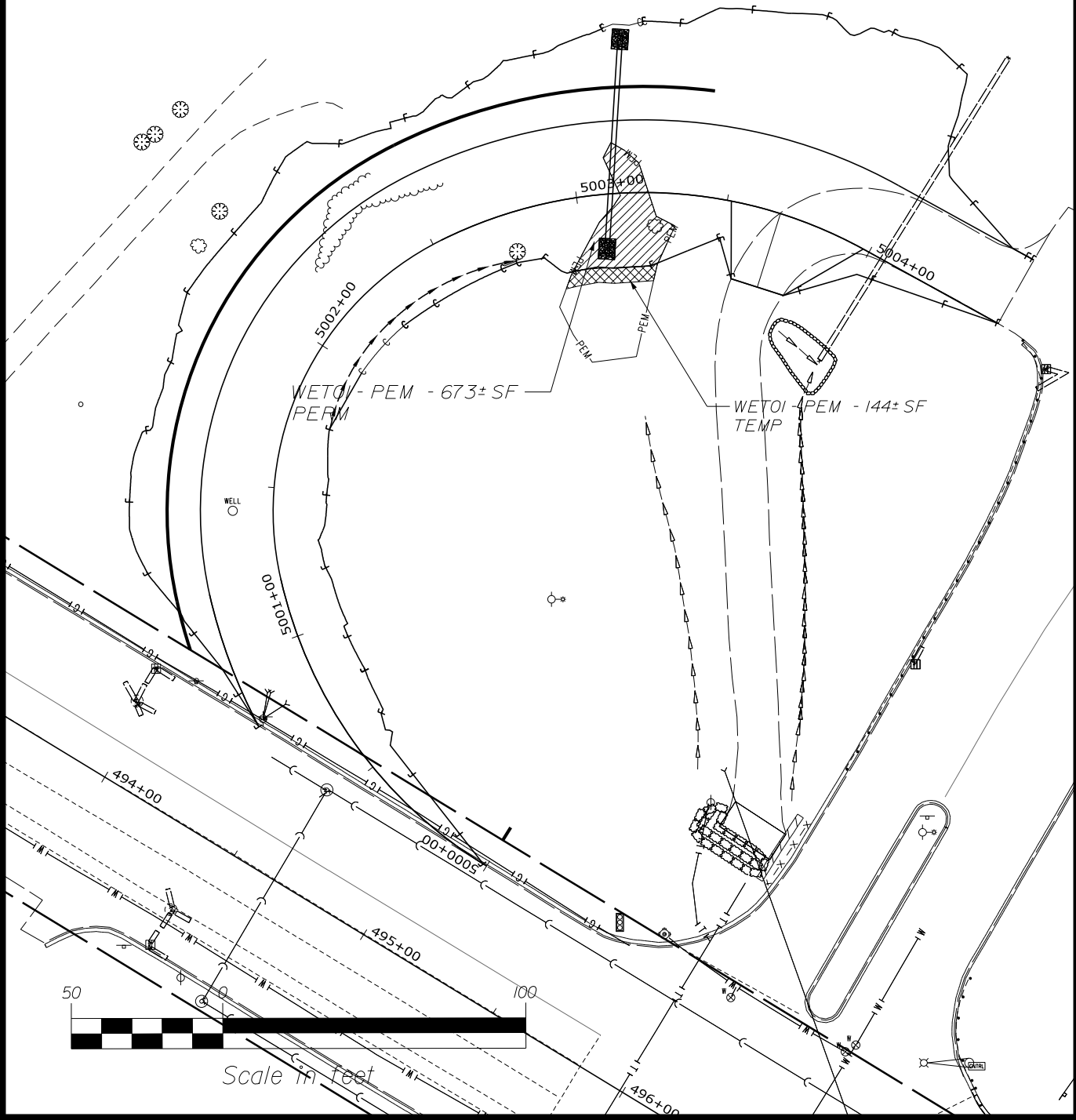




*Route 9 Connector - Brewer-Eddington-Holden
Impact Plans Index C
Sheets 29 - 43*



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

SHEET NUMBER

1

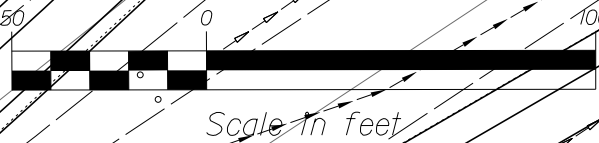
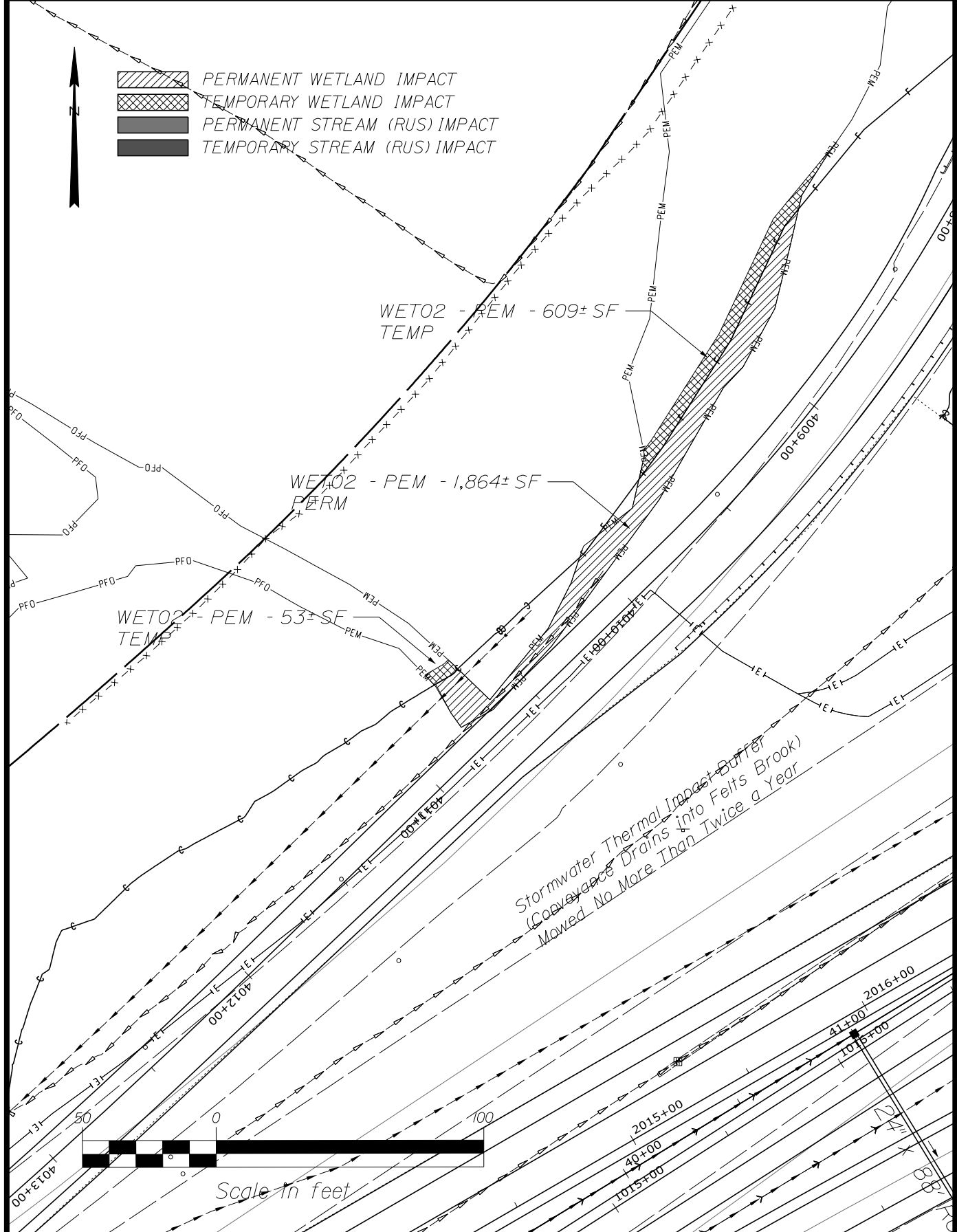
18915.00

IMPACT PLANS

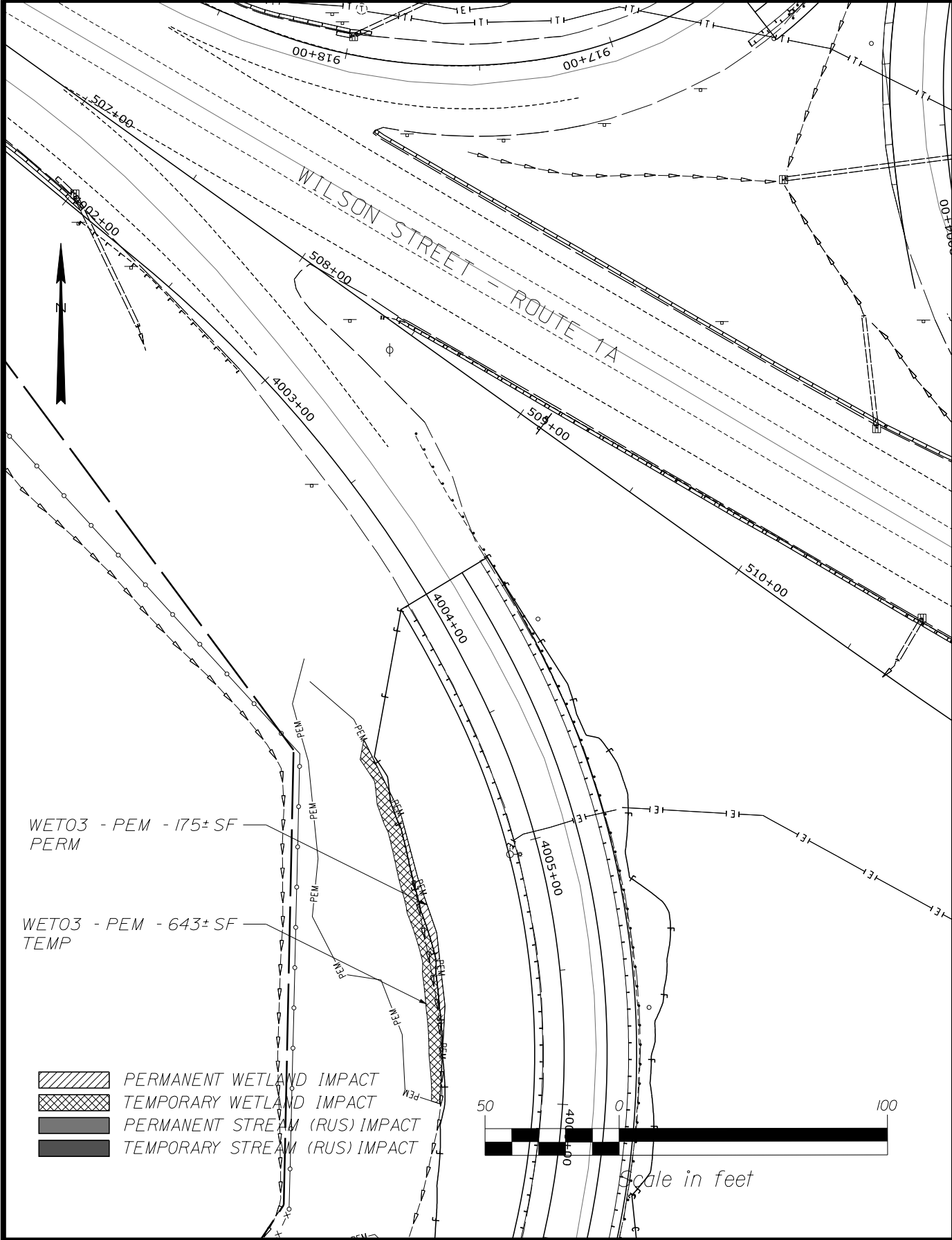
OF 43



- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- PERMANENT STREAM (RUS) IMPACT
- TEMPORARY STREAM (RUS) IMPACT



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	ROUTE 9 CONNECTOR BREWER PENOBSCOT COUNTY	SHEET NUMBER <div style="font-size: 2em; font-weight: bold;">2</div>
18915.00	IMPACT PLANS	OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

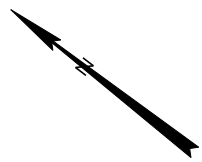
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3

18915.00

IMPACT PLANS

OF 43

-  PERMANENT WETLAND IMPACT
 -  TEMPORARY WETLAND IMPACT
 -  PERMANENT STREAM (RUS) IMPACT
 -  TEMPORARY STREAM (RUS) IMPACT
- *RUS INDICATES DELINEATED OHWM



WET06 - PSS - 8,084± SF
TEMP (also shown on Sheet 5 & 6)

WET06 - PEM - 7,996± SF
PERM (also shown on Sheet 5)
Stream relocation, wetland conversion to stream

WET04 - PSS - 850± SF
TEMP

WET06 - PEM - 10,079± SF
TEMP (also shown on Sheet 5)

STRO1-ATS - Felts Brook - 243± SF
TEMP

WET04 - PEM - 2,268± SF
TEMP

WET06 - PSS - 1,764± SF
PERM

STRO1-ATS - Felts Brook - 13,584± SF
PERM (also shown on Sheet 5)

WET04 - PEM & PSS - 43,558± SF
PERM (also shown on Sheet 5)

WET04 - PSS - 813± SF
TEMP (also shown on Sheet 5)

Stormwater Thermal Impact Buffer
(Conveys Road Runoff to Felts Brook)
No Mowing



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	ROUTE 9 CONNECTOR BREWER PENOBSCOT COUNTY	SHEET NUMBER 4
18915.00	IMPACT PLANS	OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

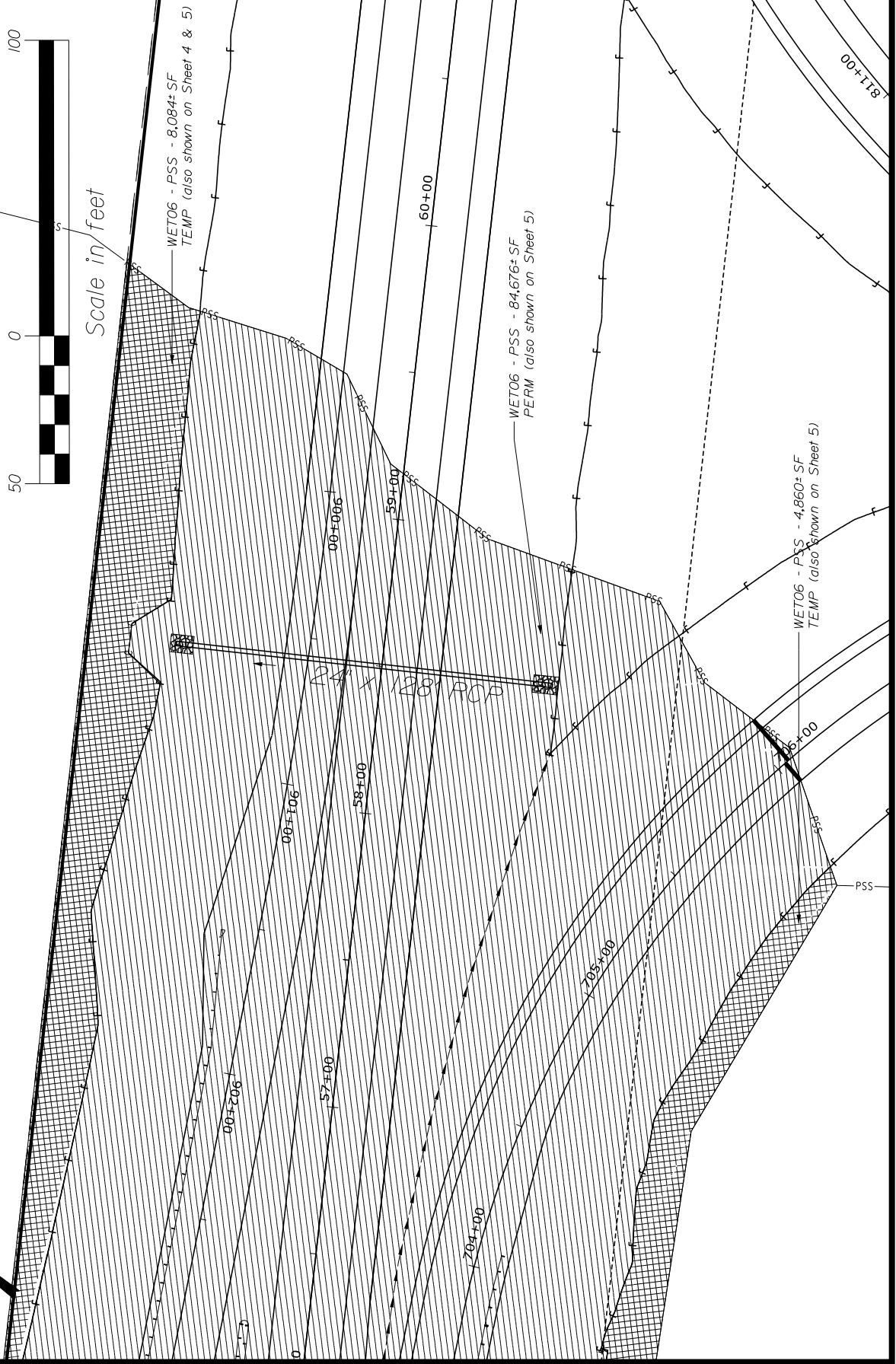
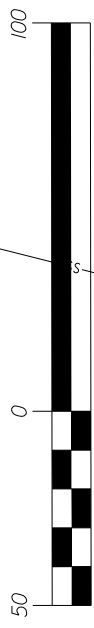
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18915.00

IMPACT PLANS

OF 43

-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

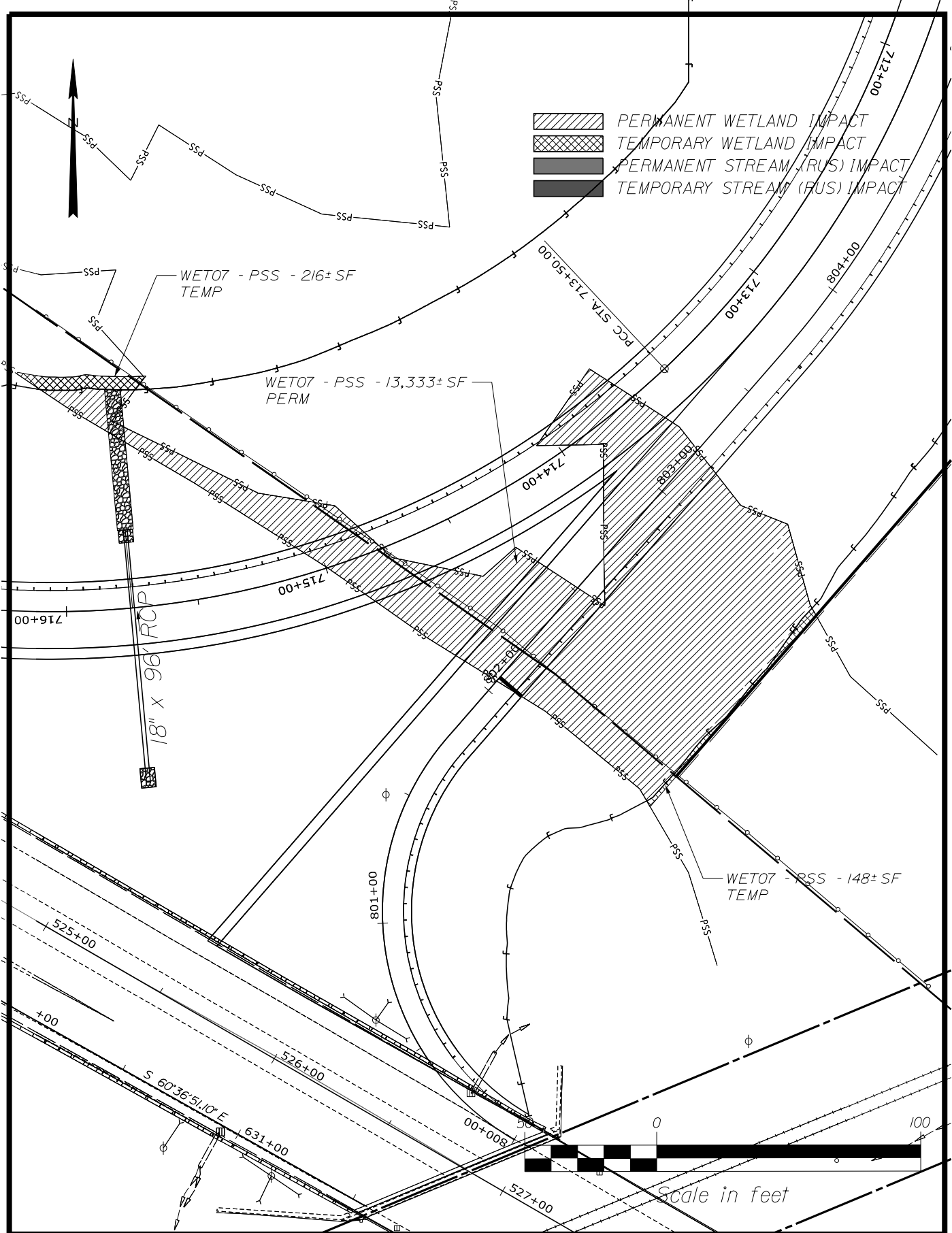
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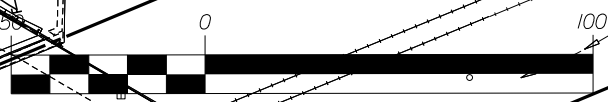
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IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

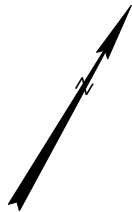
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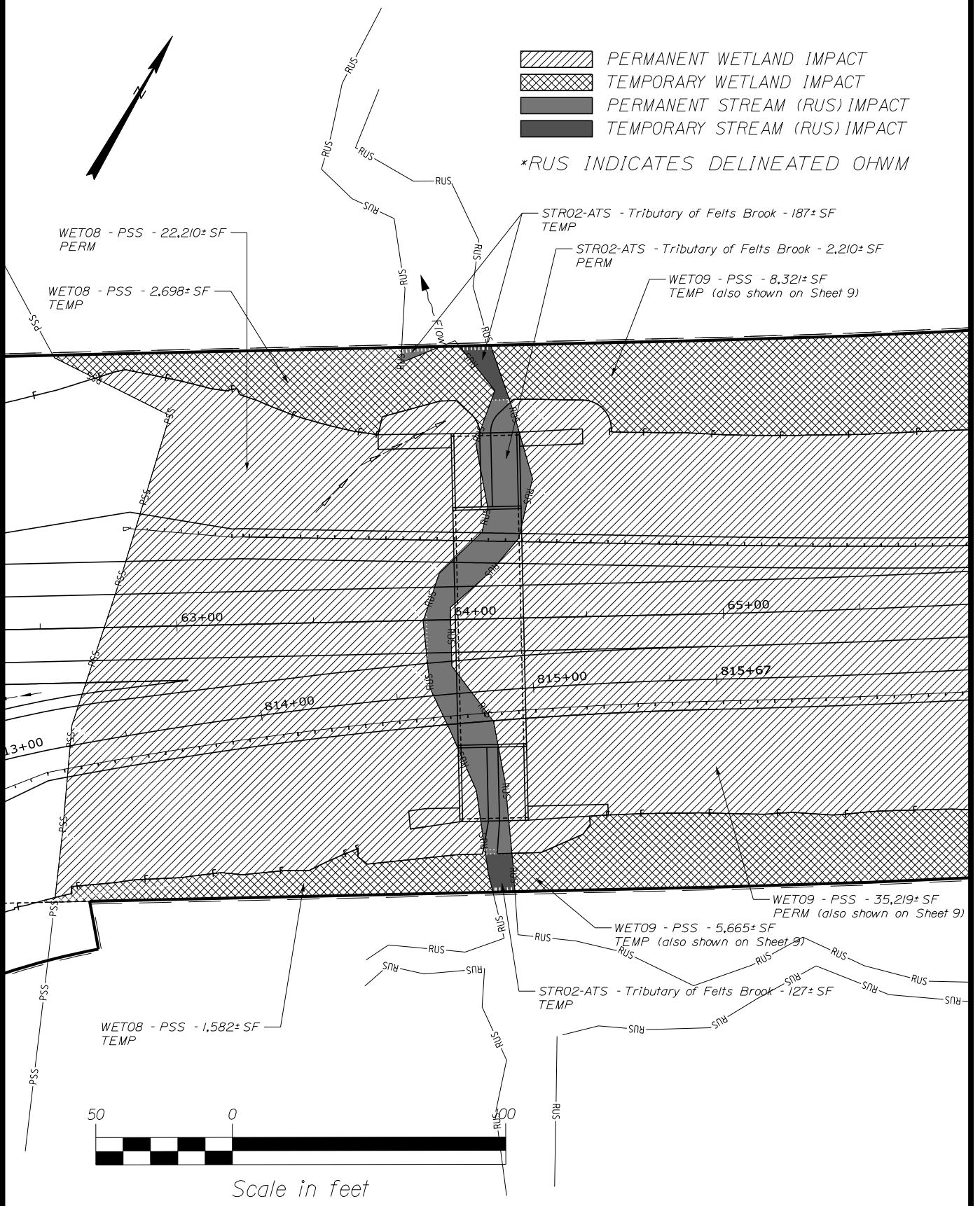
IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT

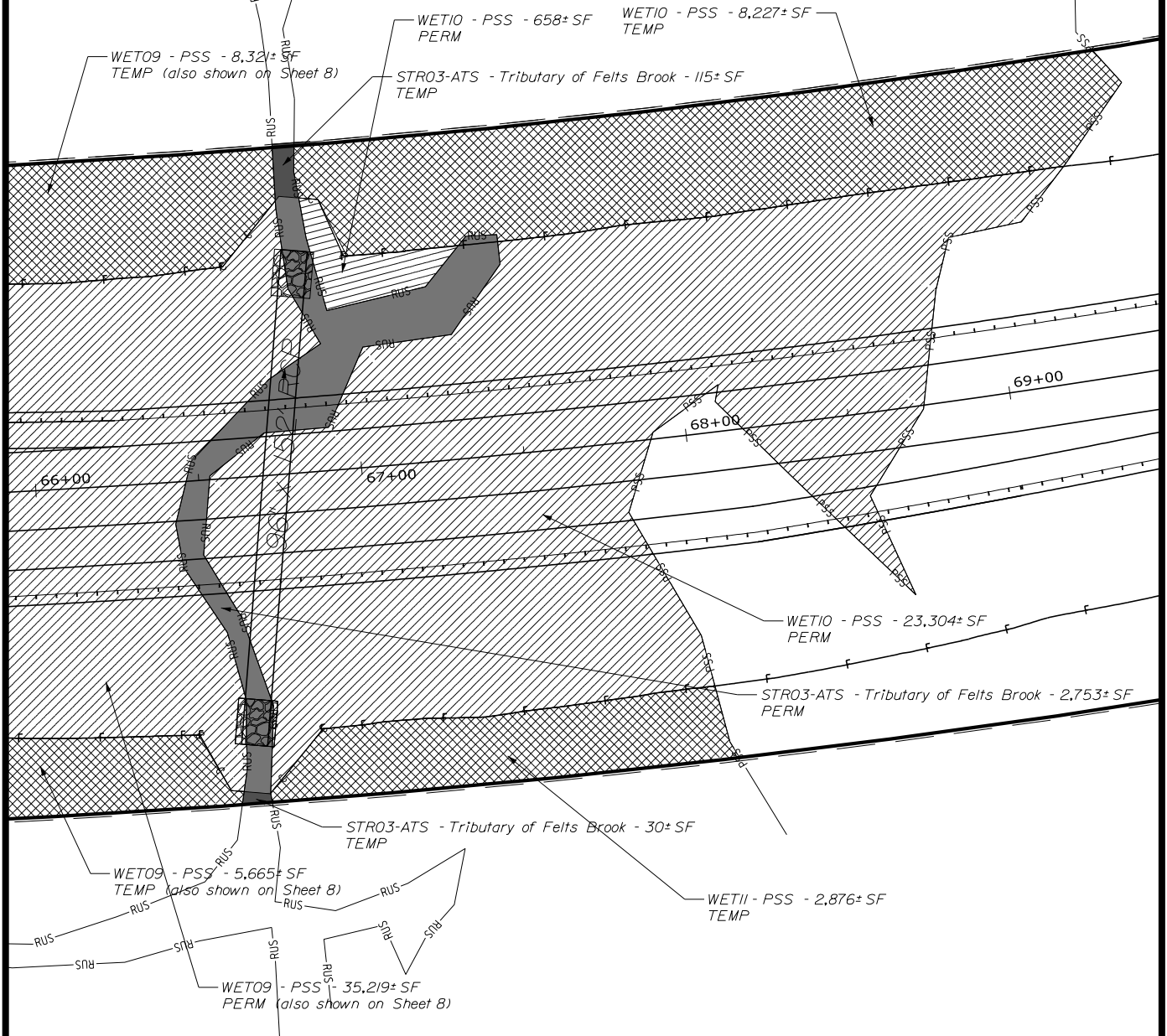
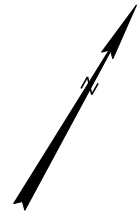
*RUS INDICATES DELINEATED OHWM



Scale in feet

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	ROUTE 9 CONNECTOR BREWER PENOBSCOT COUNTY	SHEET NUMBER 8
18915.00	IMPACT PLANS	OF 43

-  PERMANENT WETLAND IMPACT
 -  TEMPORARY WETLAND IMPACT
 -  PERMANENT STREAM (RUS) IMPACT
 -  TEMPORARY STREAM (RUS) IMPACT
- *RUS INDICATES DELINEATED OWHM



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

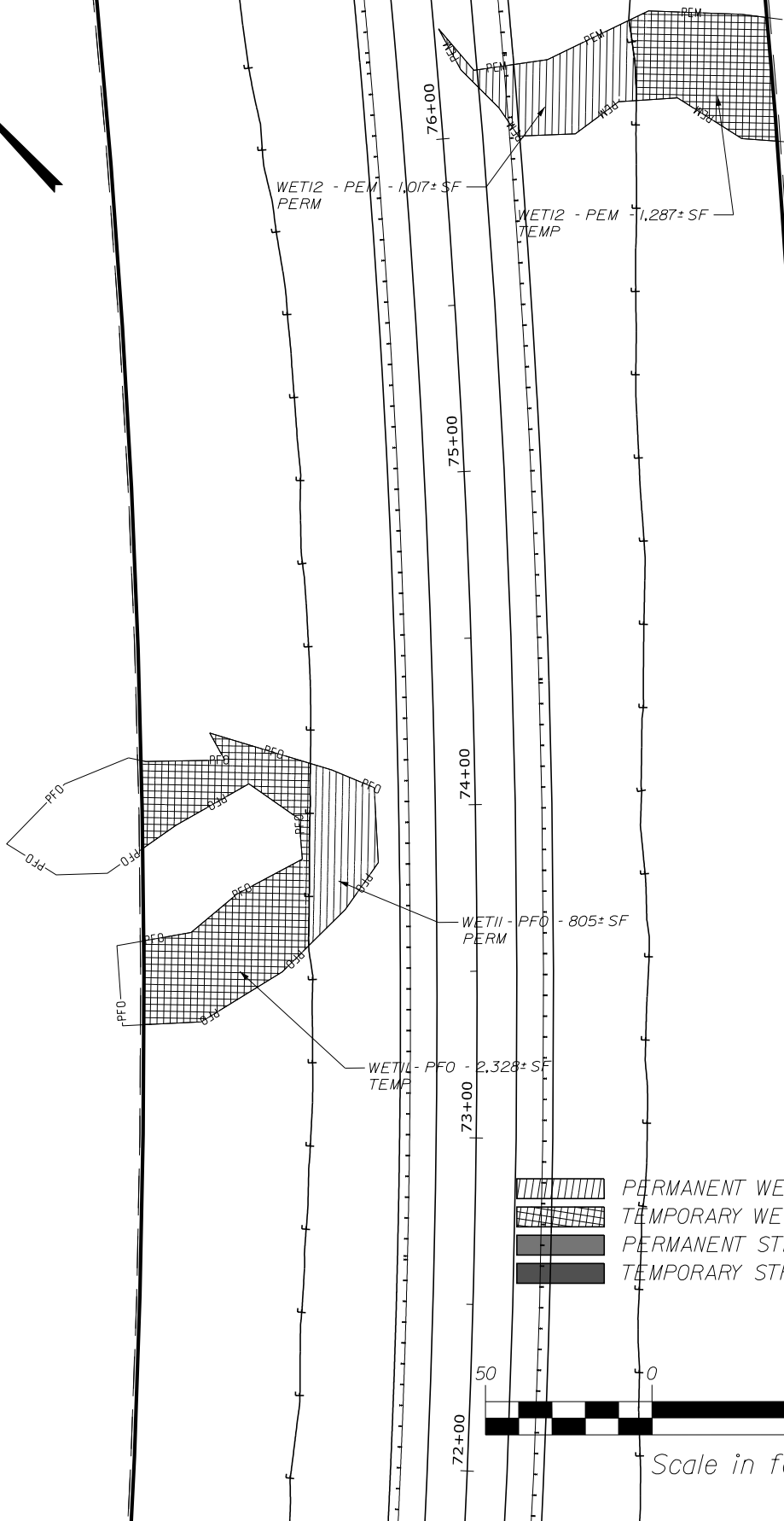
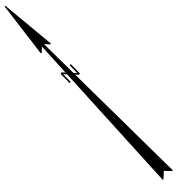
SHEET NUMBER

9

18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

SHEET NUMBER

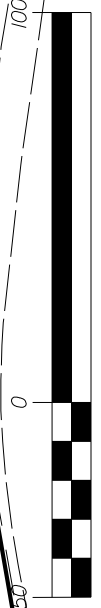
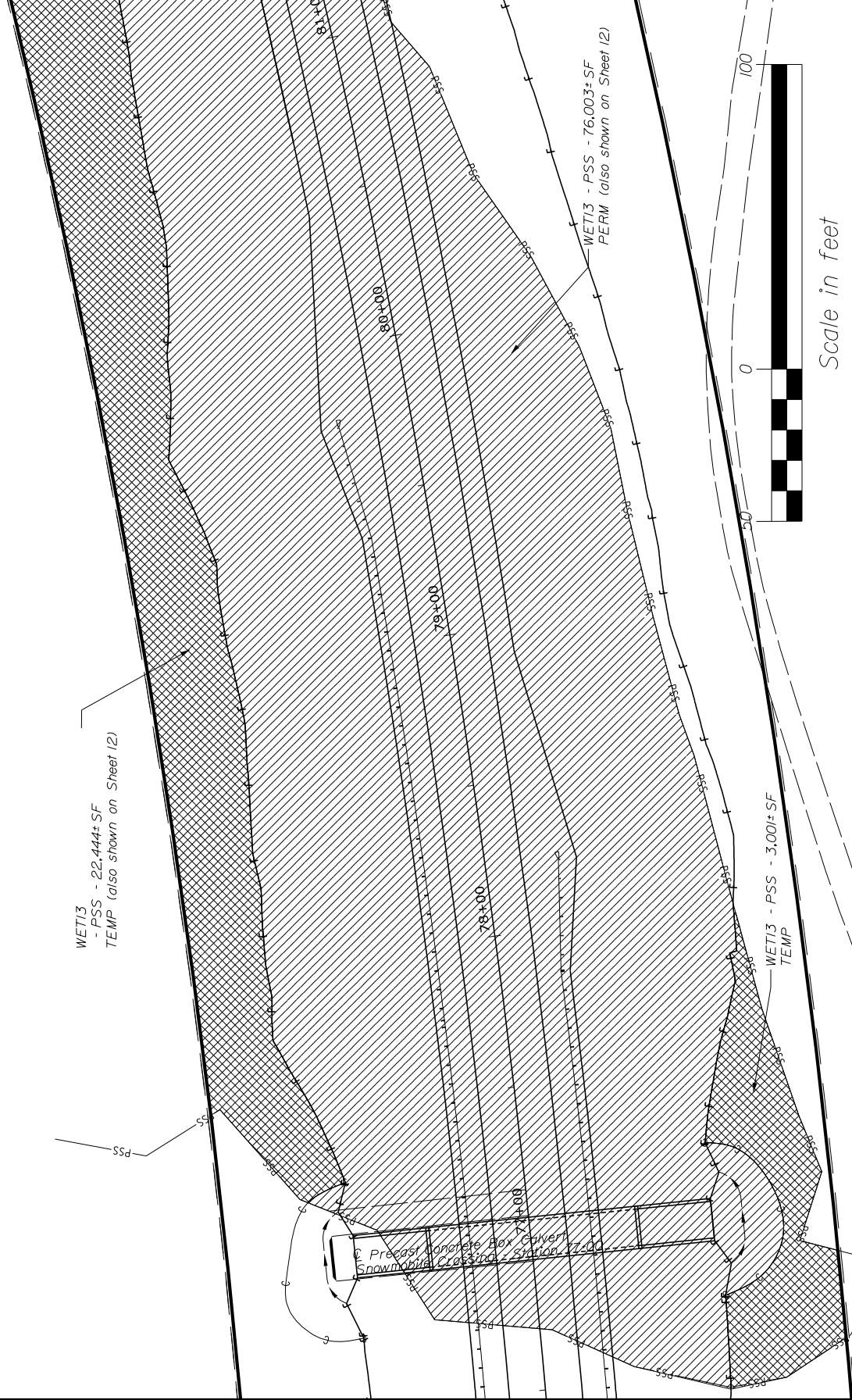
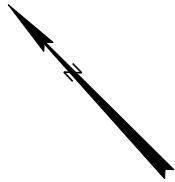
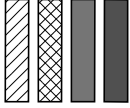
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18915.00

IMPACT PLANS

OF 43

- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- PERMANENT STREAM (RUS) IMPACT
- TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

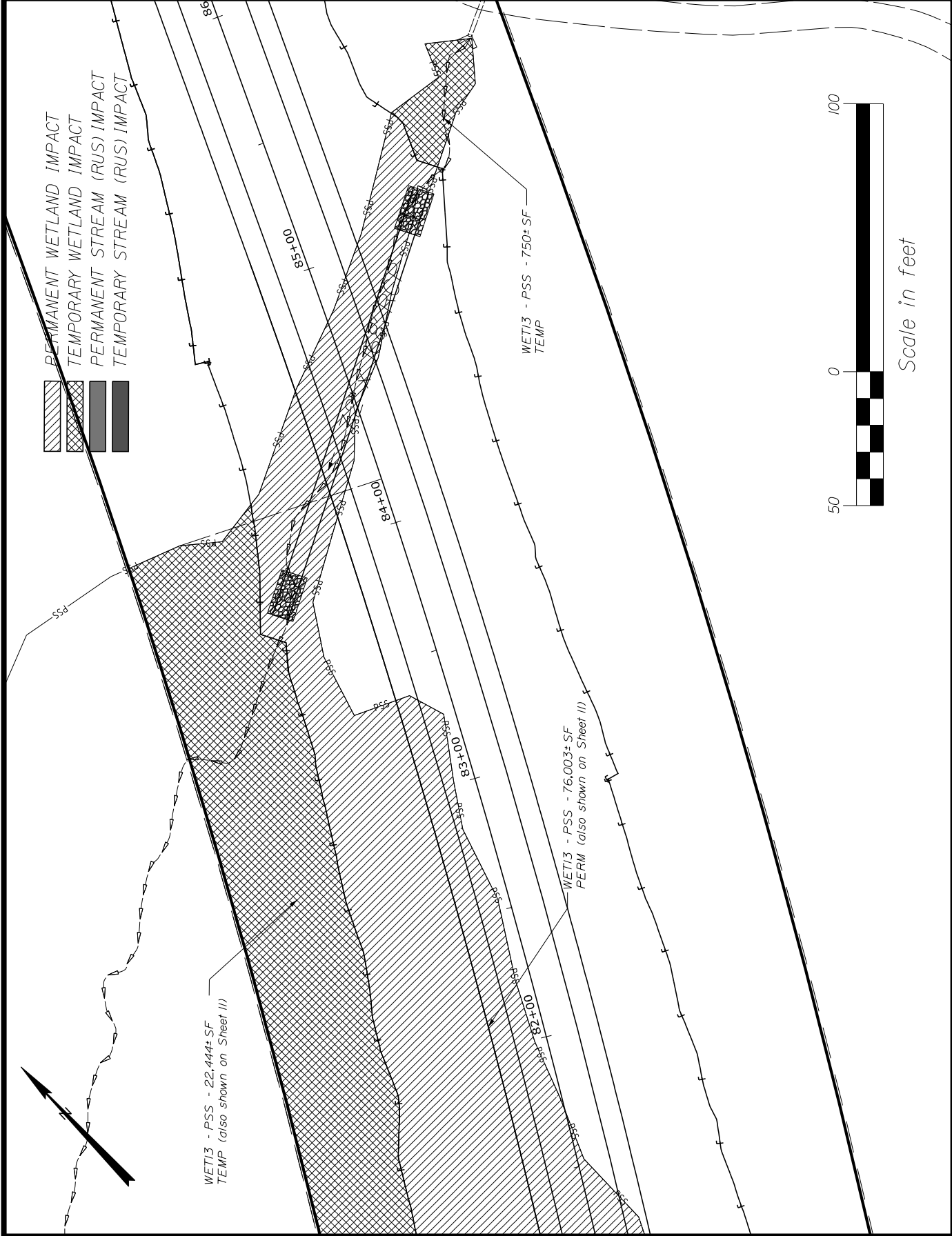
ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

SHEET NUMBER
11

18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

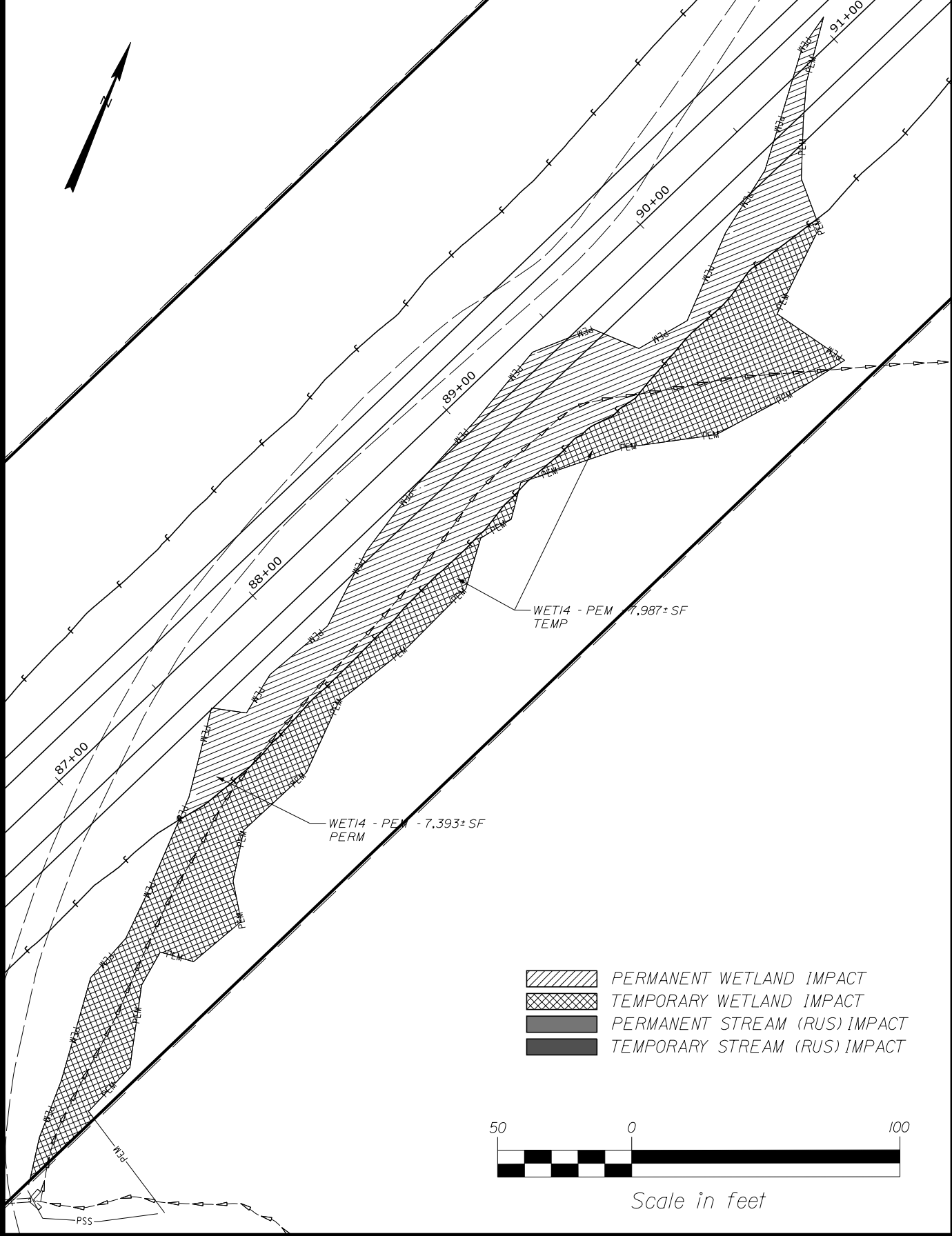
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 PENOBSCOT COUNTY

SHEET NUMBER
12

18915.00

IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

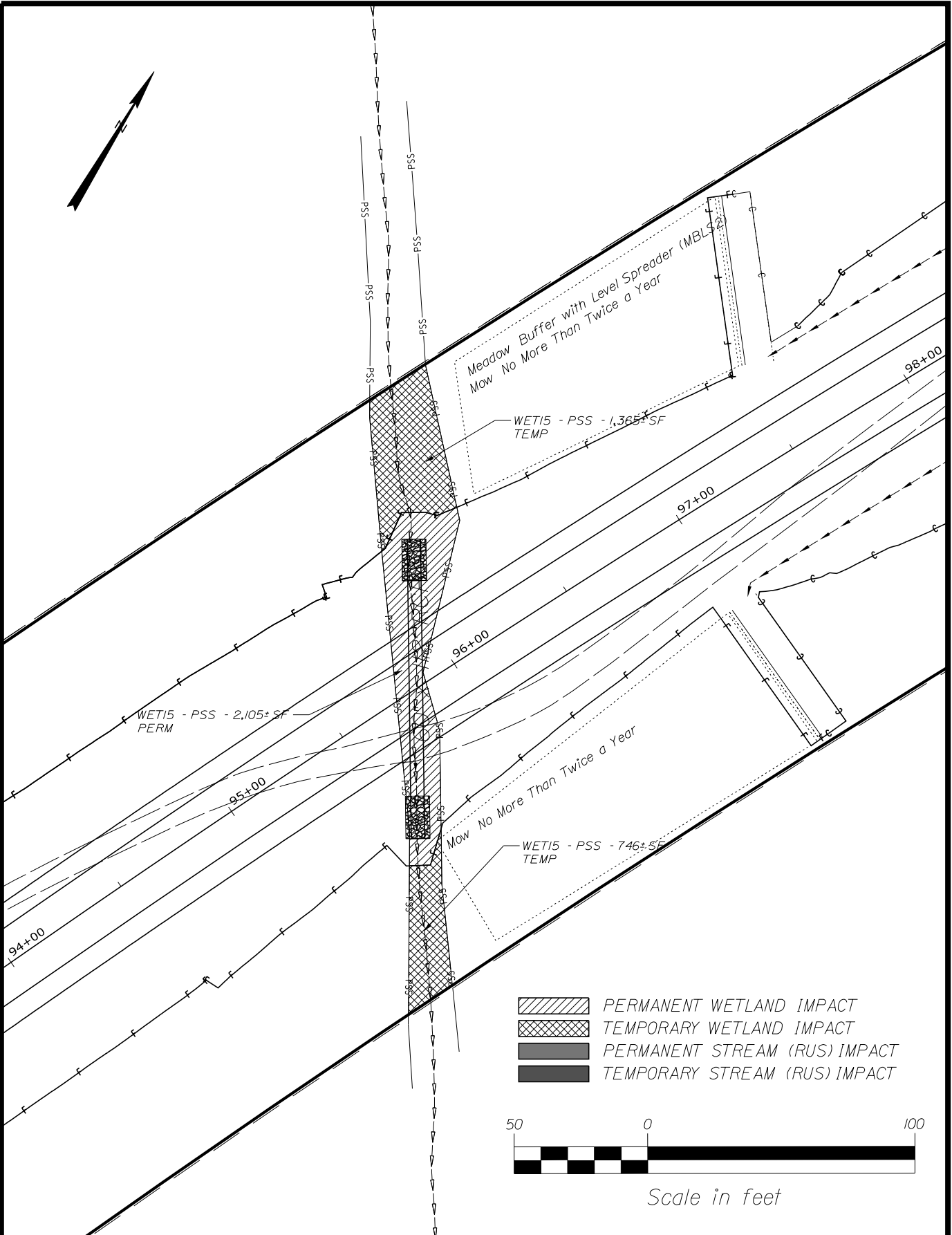
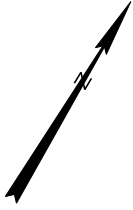
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PENOBSCOT COUNTY

SHEET NUMBER
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IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

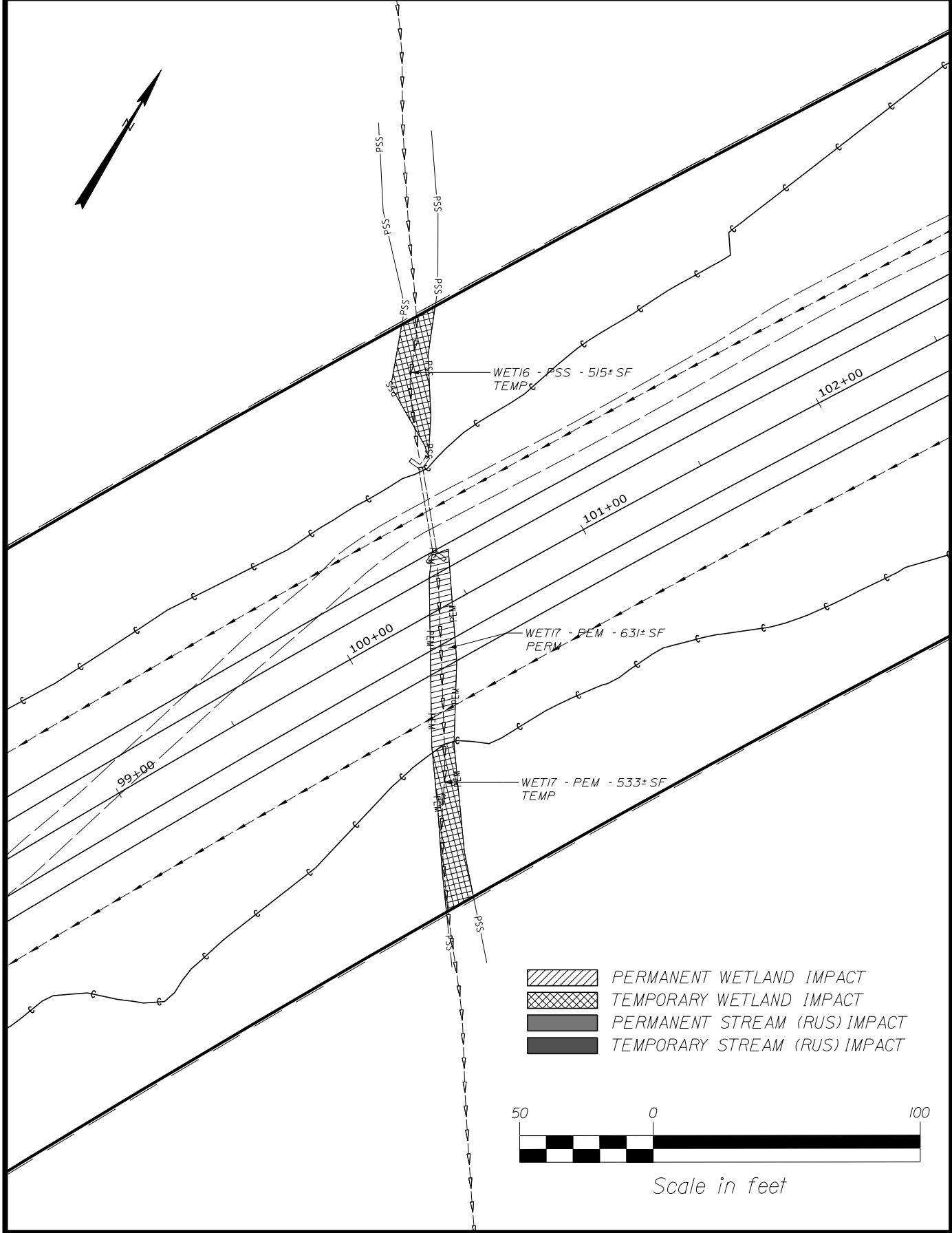
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PENOBSCOT COUNTY

SHEET NUMBER
14

18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

SHEET NUMBER

15

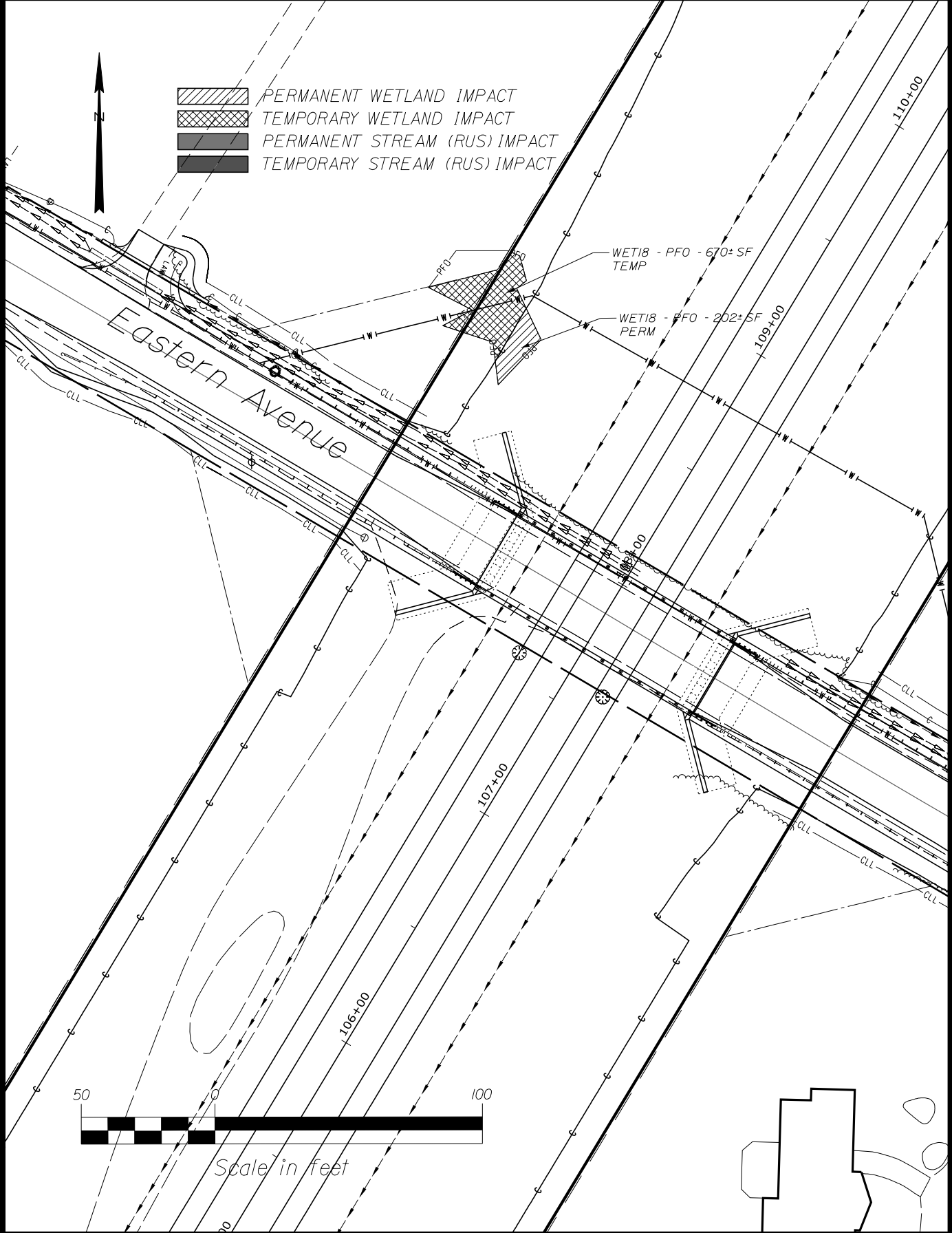
18915.00

IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

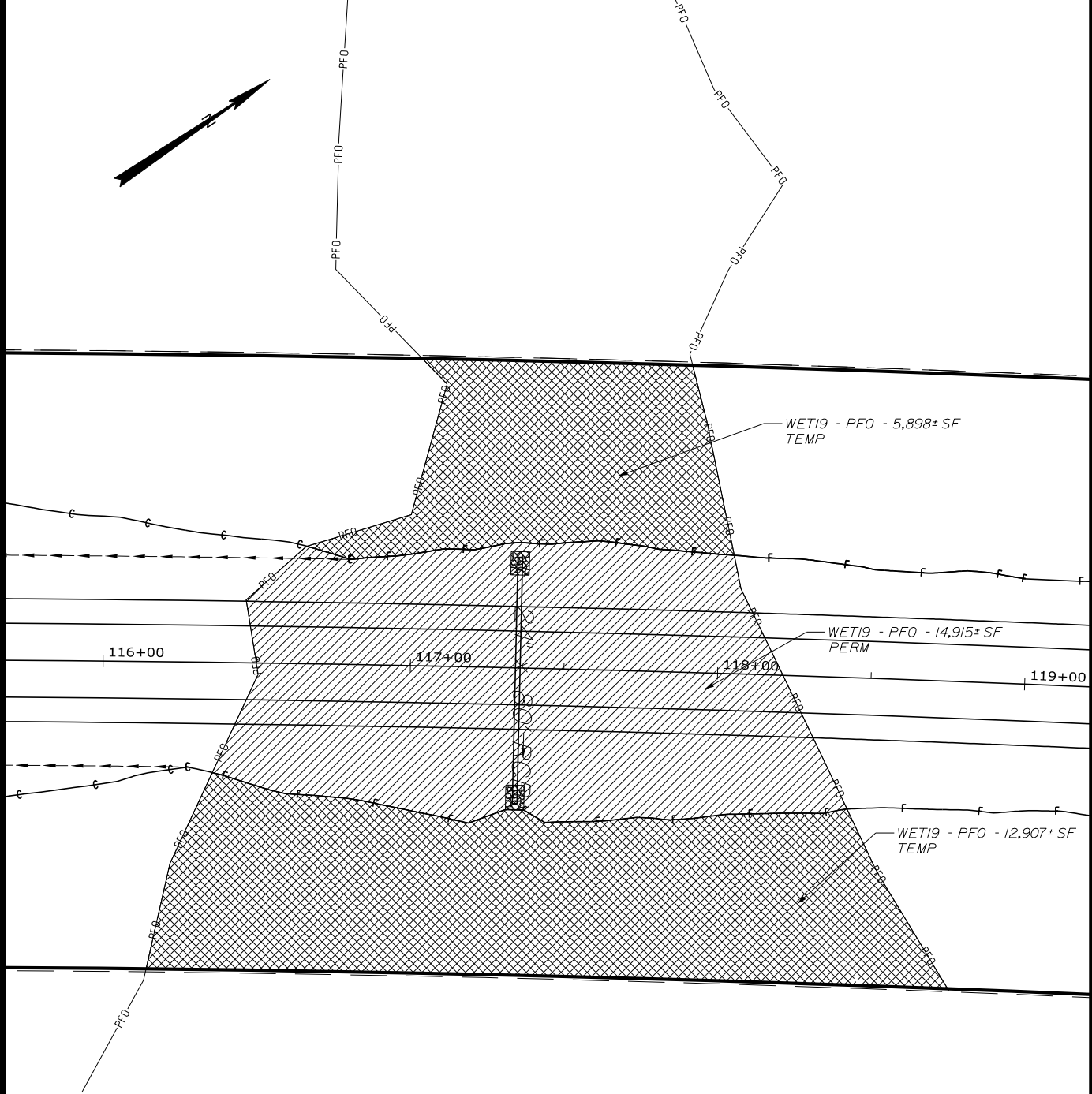
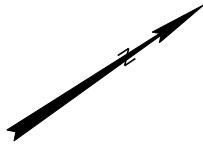
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PENOBSCOT COUNTY

SHEET NUMBER
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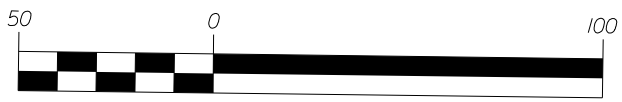
18915.00

IMPACT PLANS

OF 43



- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- PERMANENT STREAM (RUS) IMPACT
- TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

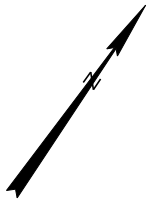
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17

18915.00

IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT

WET20 - PFO - 39,233± SF
TEMP (also shown on Sheet 19 & 20)

WET20 - PFO - 78,375± SF
PERM (also shown on Sheet 19 & 20)

WET20 - PFO - 54,400± SF
TEMP (also shown on Sheet 19 & 20)



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

SHEET NUMBER

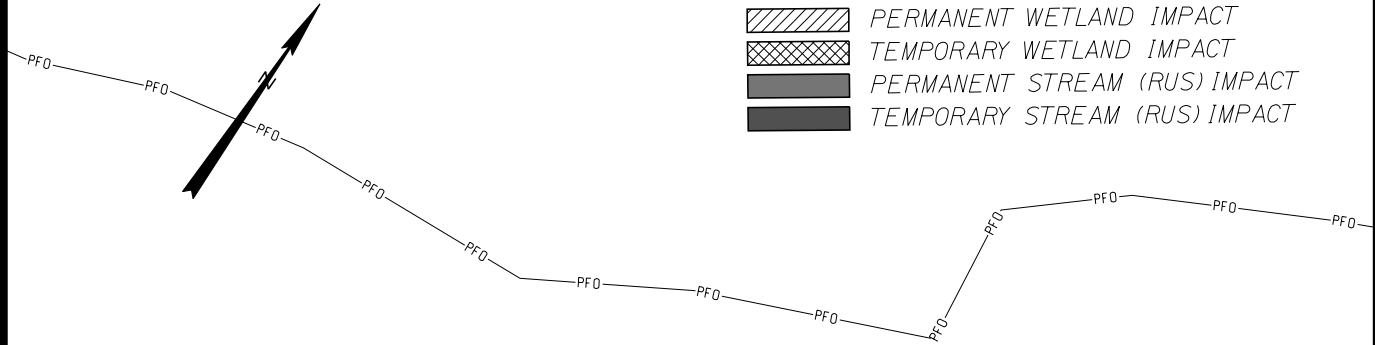
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18915.00

IMPACT PLANS

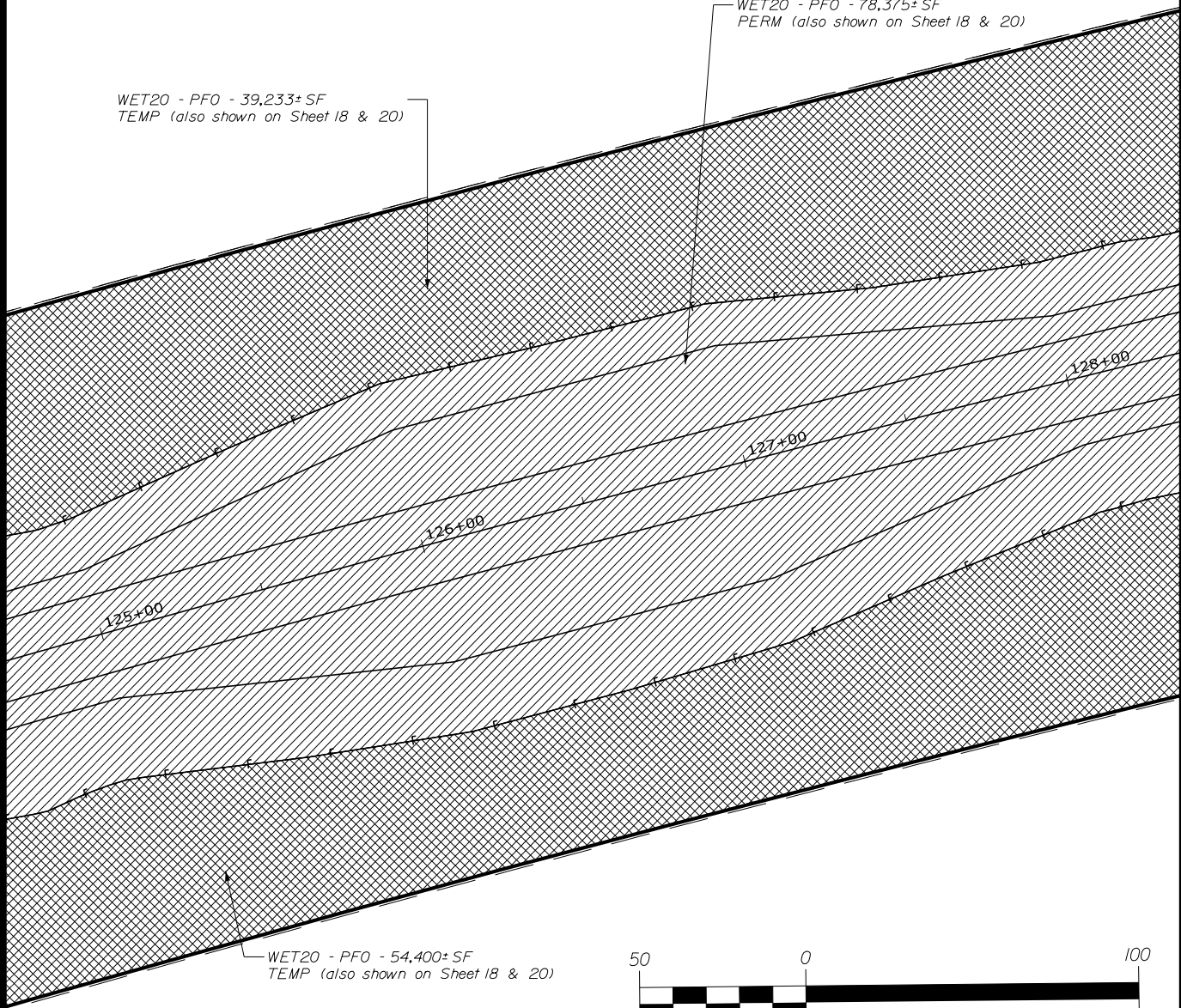
OF 43

-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



WET20 - PFO - 39,233± SF
TEMP (also shown on Sheet 18 & 20)

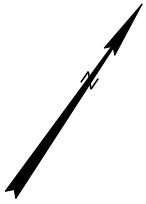
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PERM (also shown on Sheet 18 & 20)



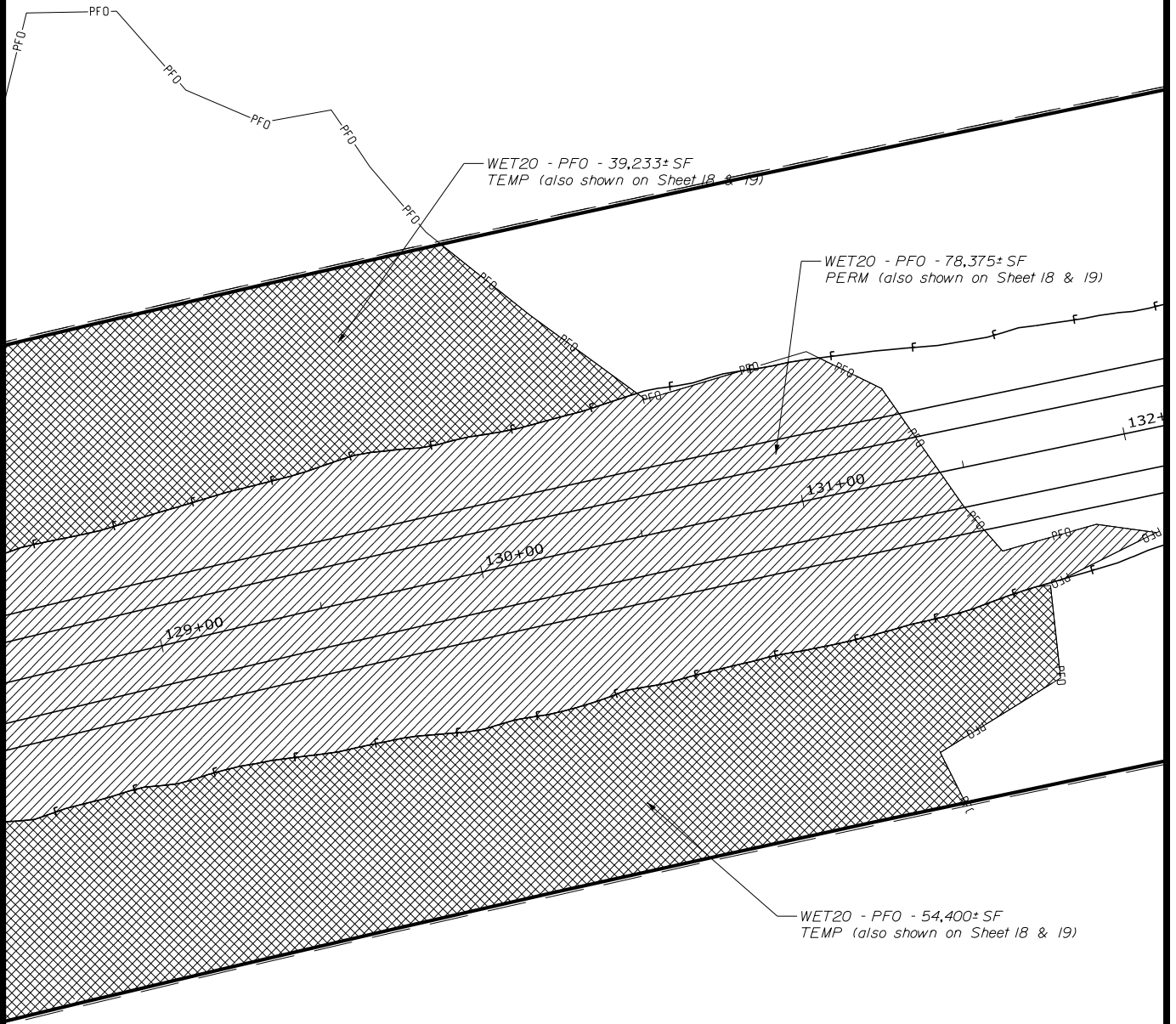
WET20 - PFO - 54,400± SF
TEMP (also shown on Sheet 18 & 20)



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	ROUTE 9 CONNECTOR BREWER PENOBSCOT COUNTY	SHEET NUMBER
18915.00	IMPACT PLANS	19
		OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

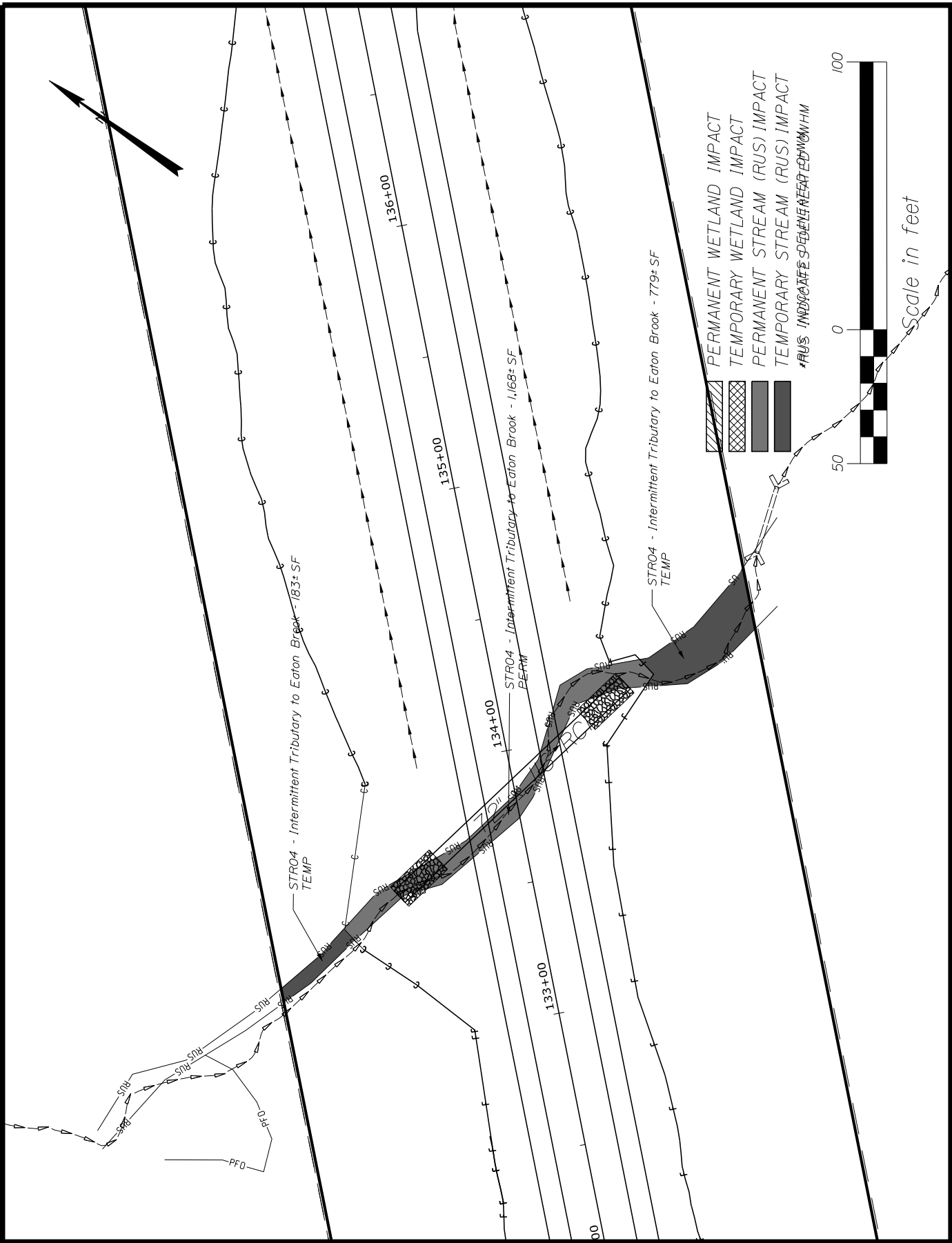
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20

18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

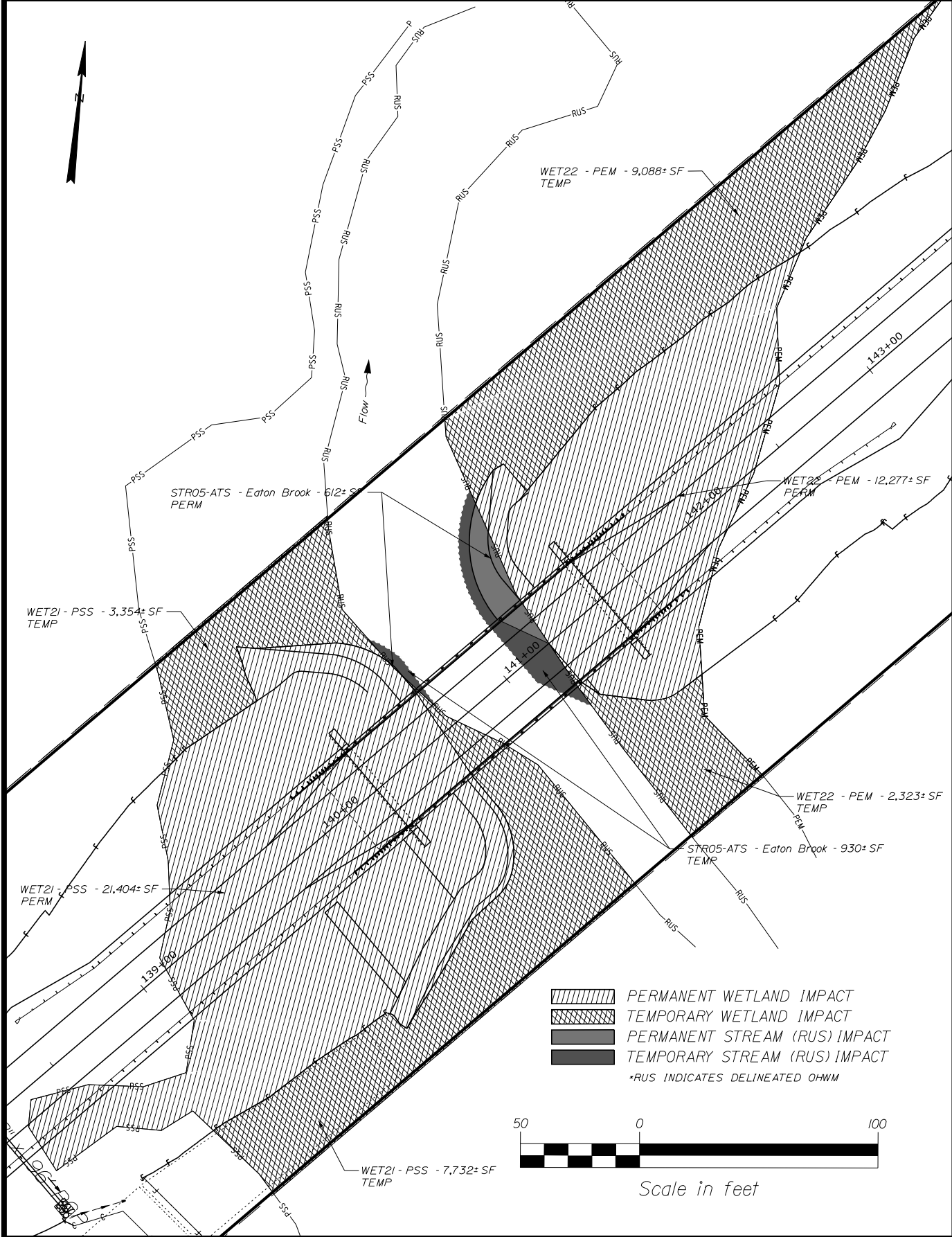
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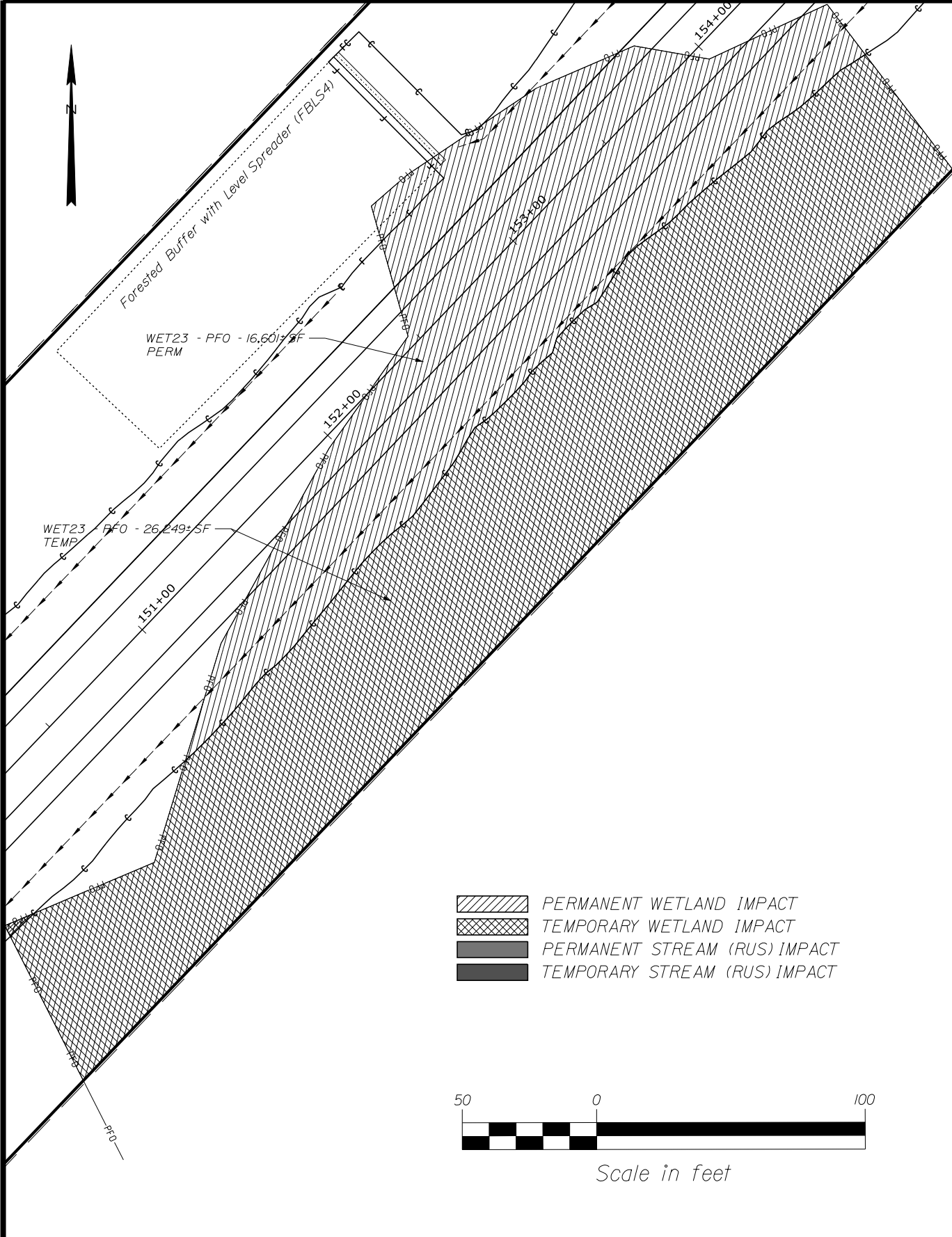
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18915.00

IMPACT PLANS

OF 43





STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

18915.00

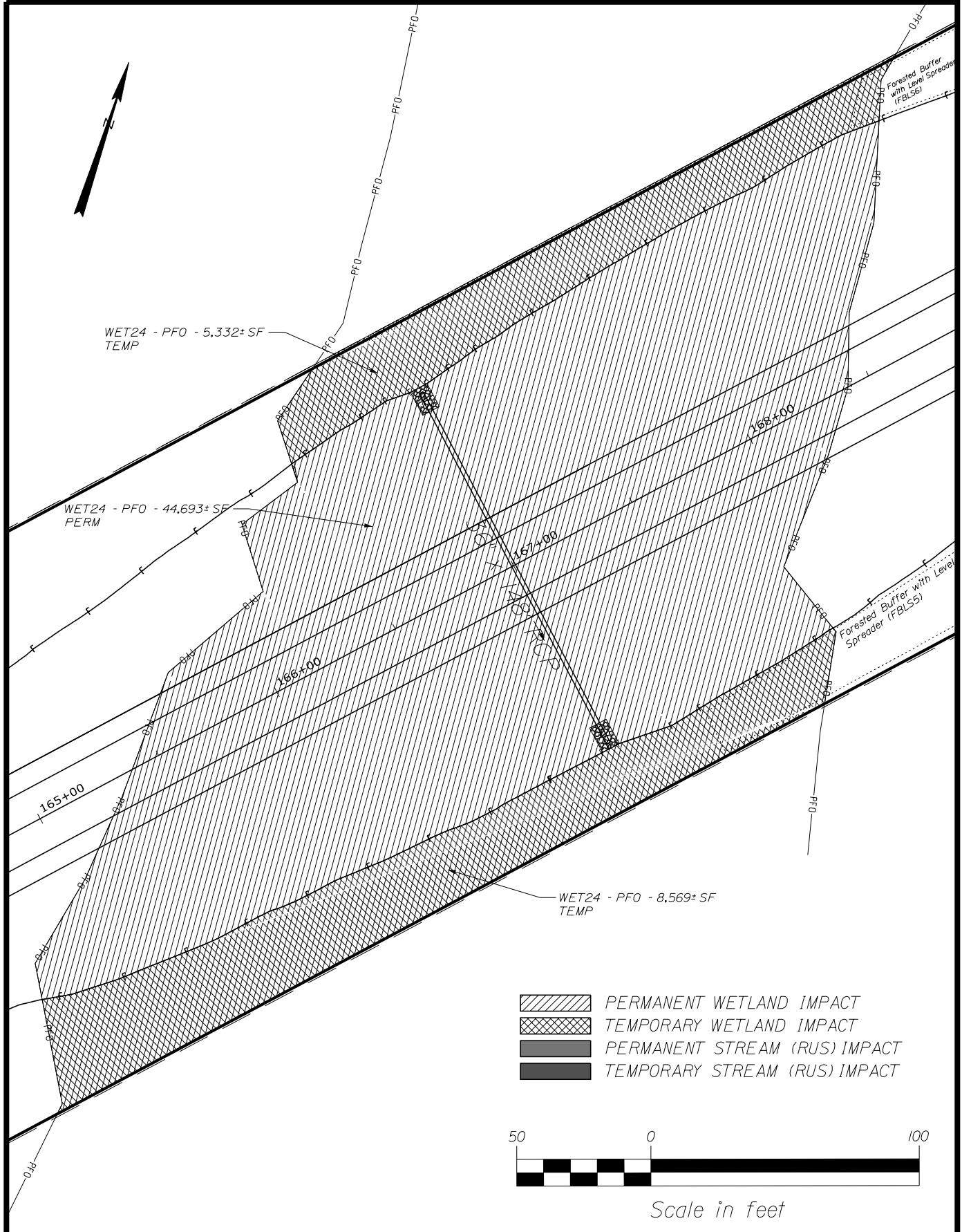
ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

IMPACT PLANS

SHEET NUMBER

23

OF 43



- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- PERMANENT STREAM (RUS) IMPACT
- TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

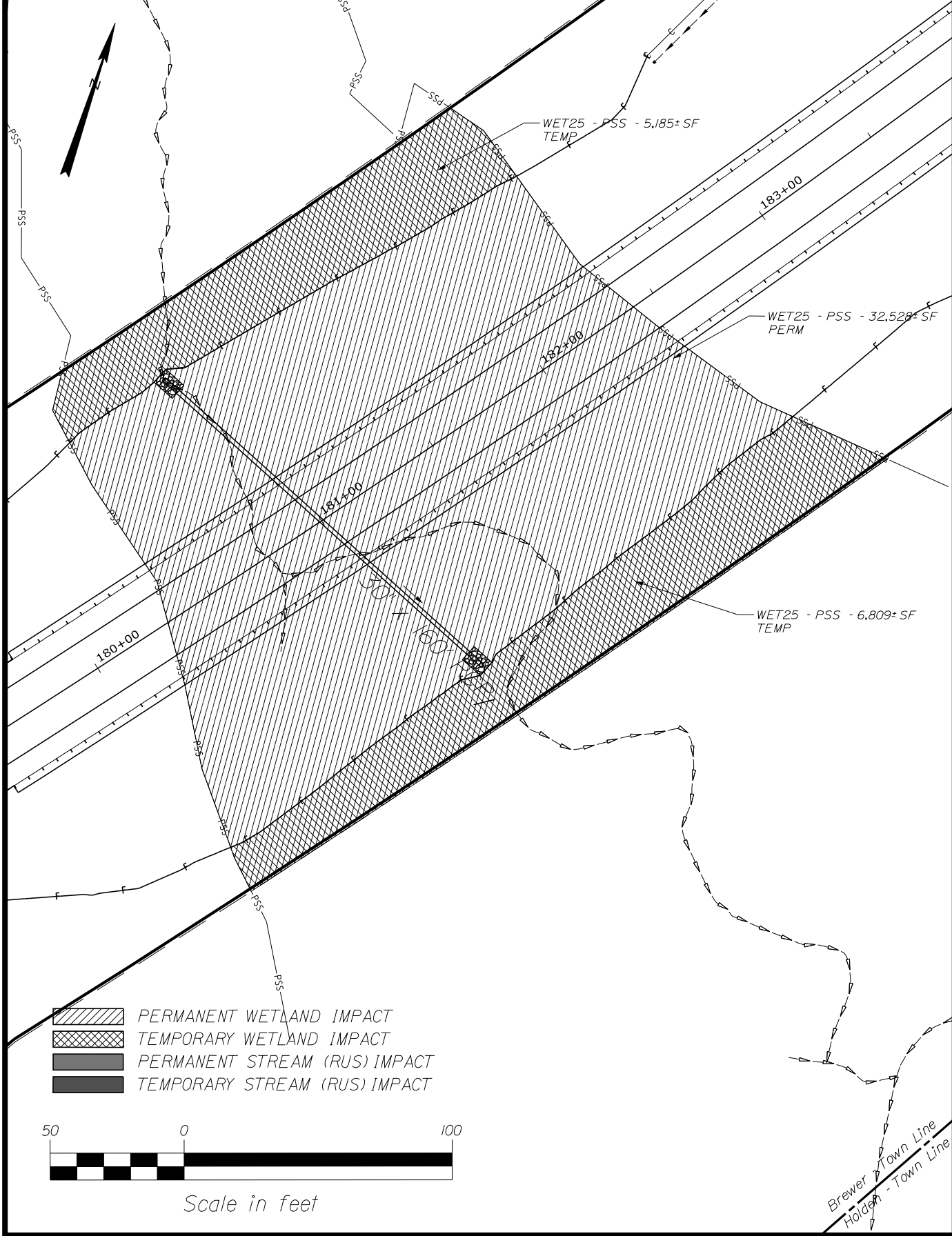
ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

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IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

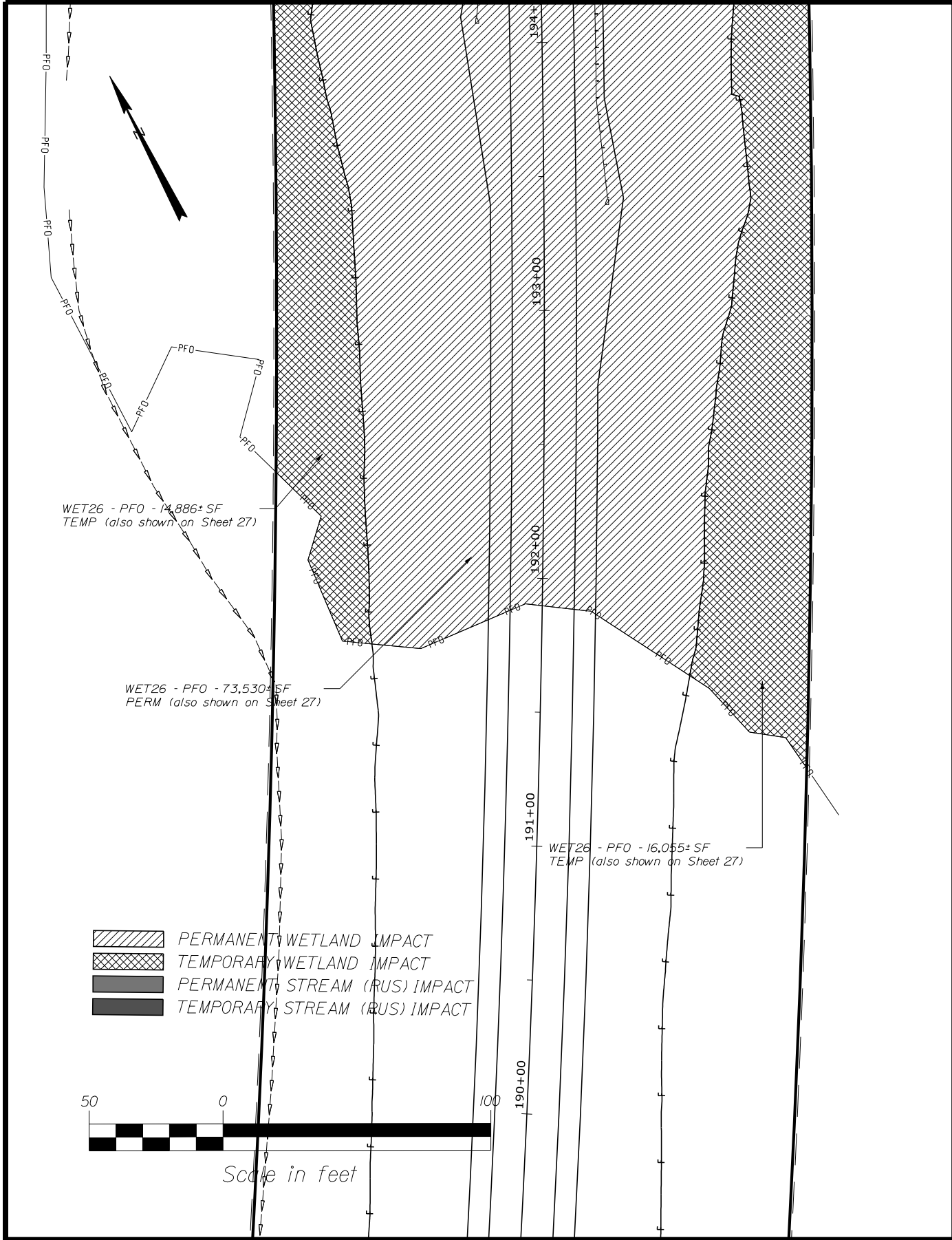
ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

SHEET NUMBER
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IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR BREWER
PENOBSCOT COUNTY

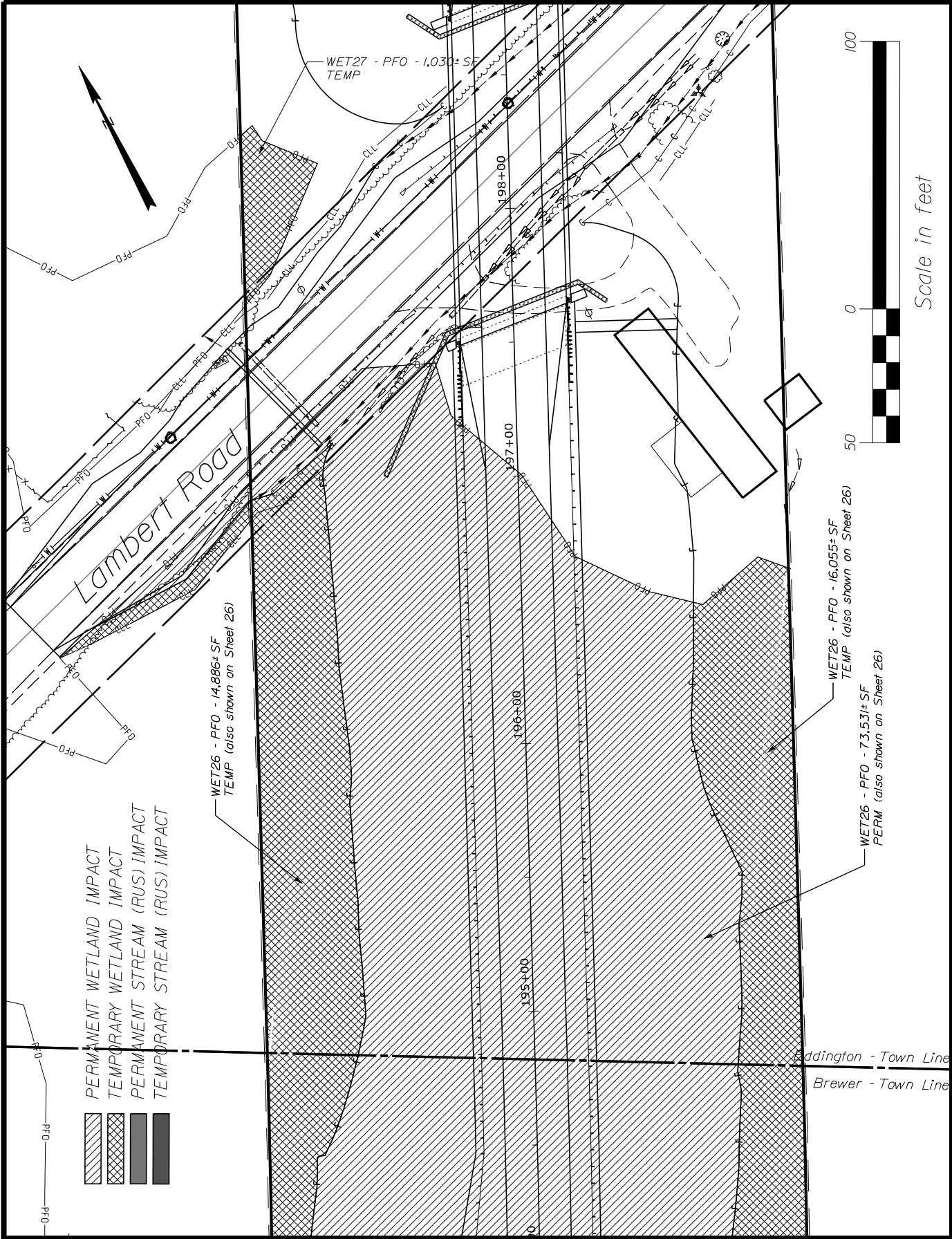
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IMPACT PLANS

OF 43



- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- PERMANENT STREAM (RUS) IMPACT
- TEMPORARY STREAM (RUS) IMPACT

WET26 - PFO - 14,886± SF
TEMP (also shown on Sheet 26)

WET27 - PFO - 1,030± SF
TEMP

WET26 - PFO - 16,055± SF
TEMP (also shown on Sheet 26)

WET26 - PFO - 73,531± SF
PERM (also shown on Sheet 26)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR BREWER-EDDINGTON
PENOBSCOT COUNTY

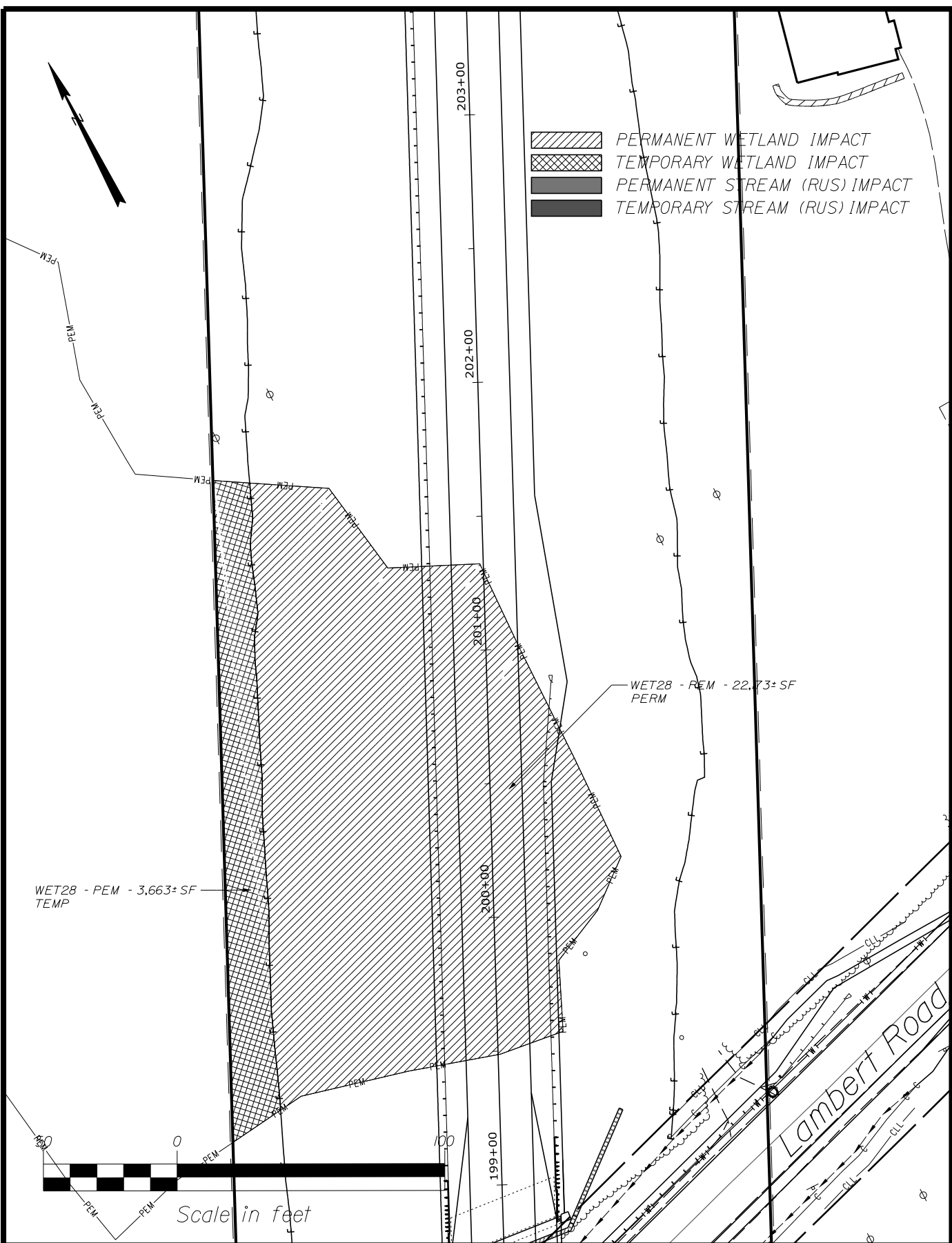
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IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

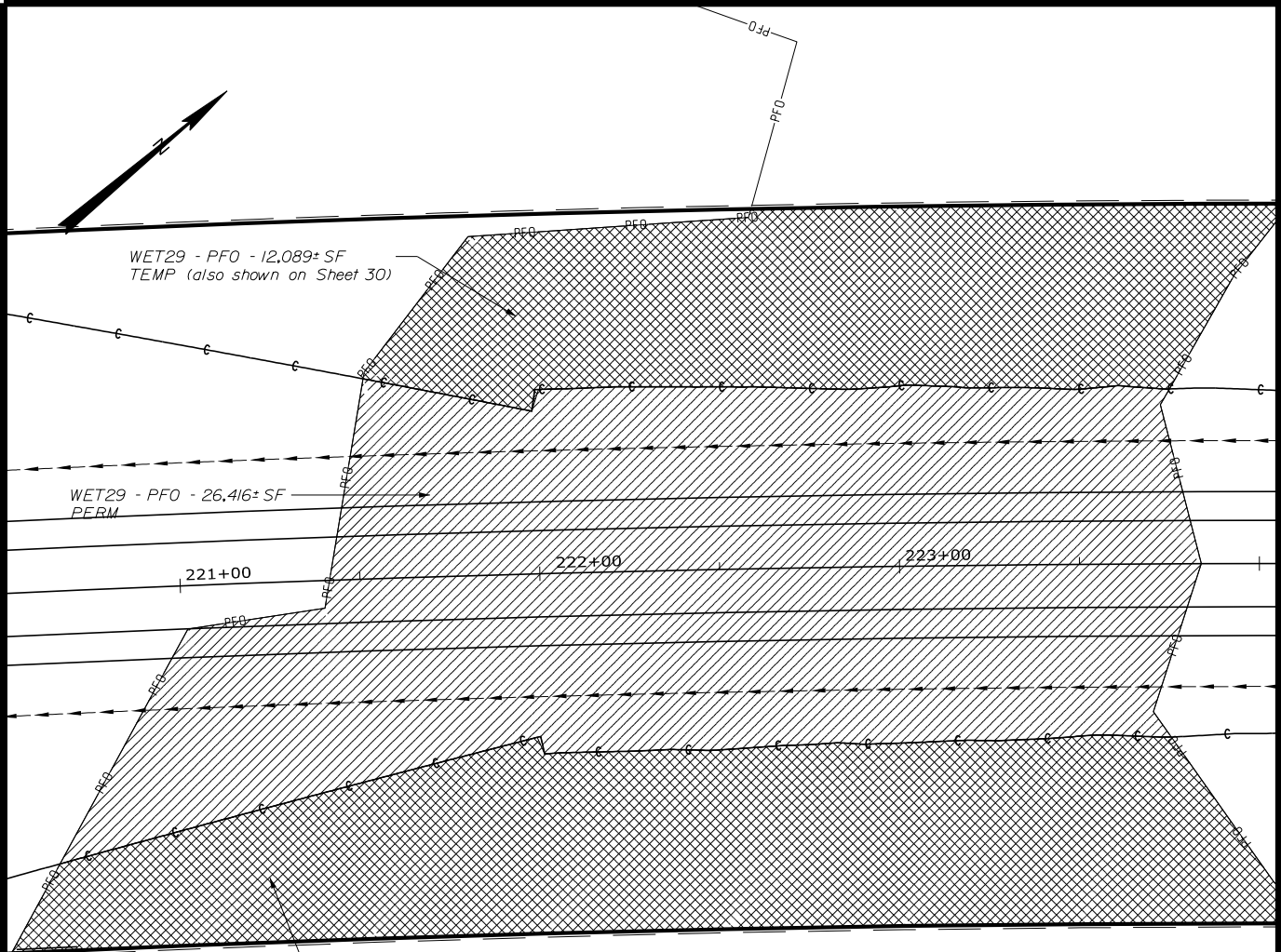
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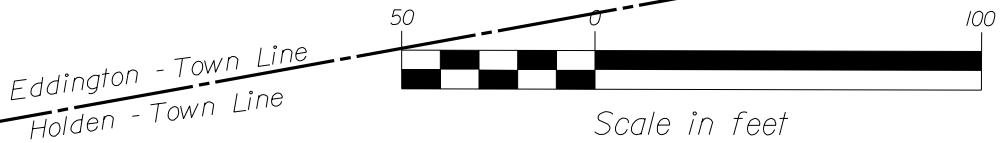
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IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

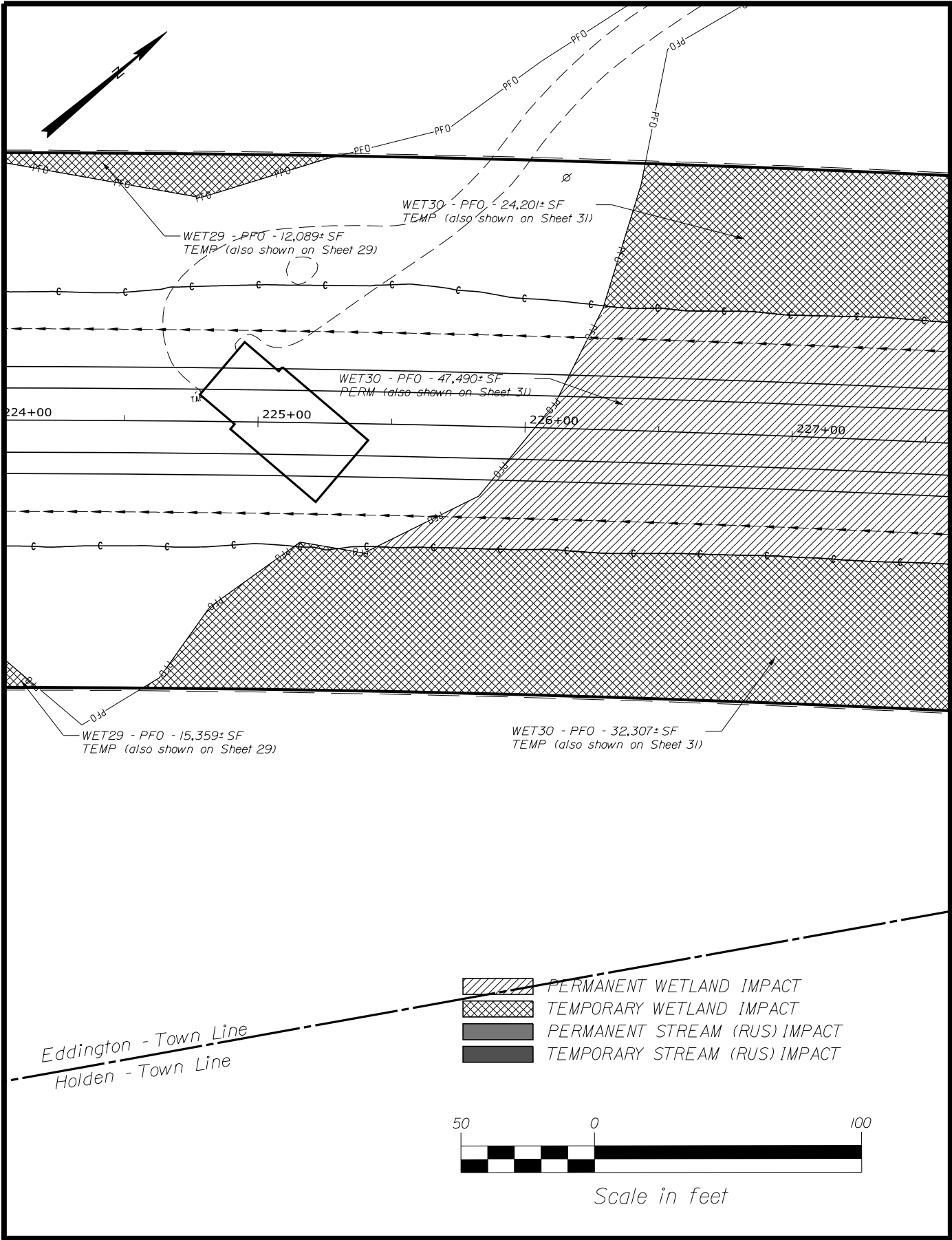
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18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

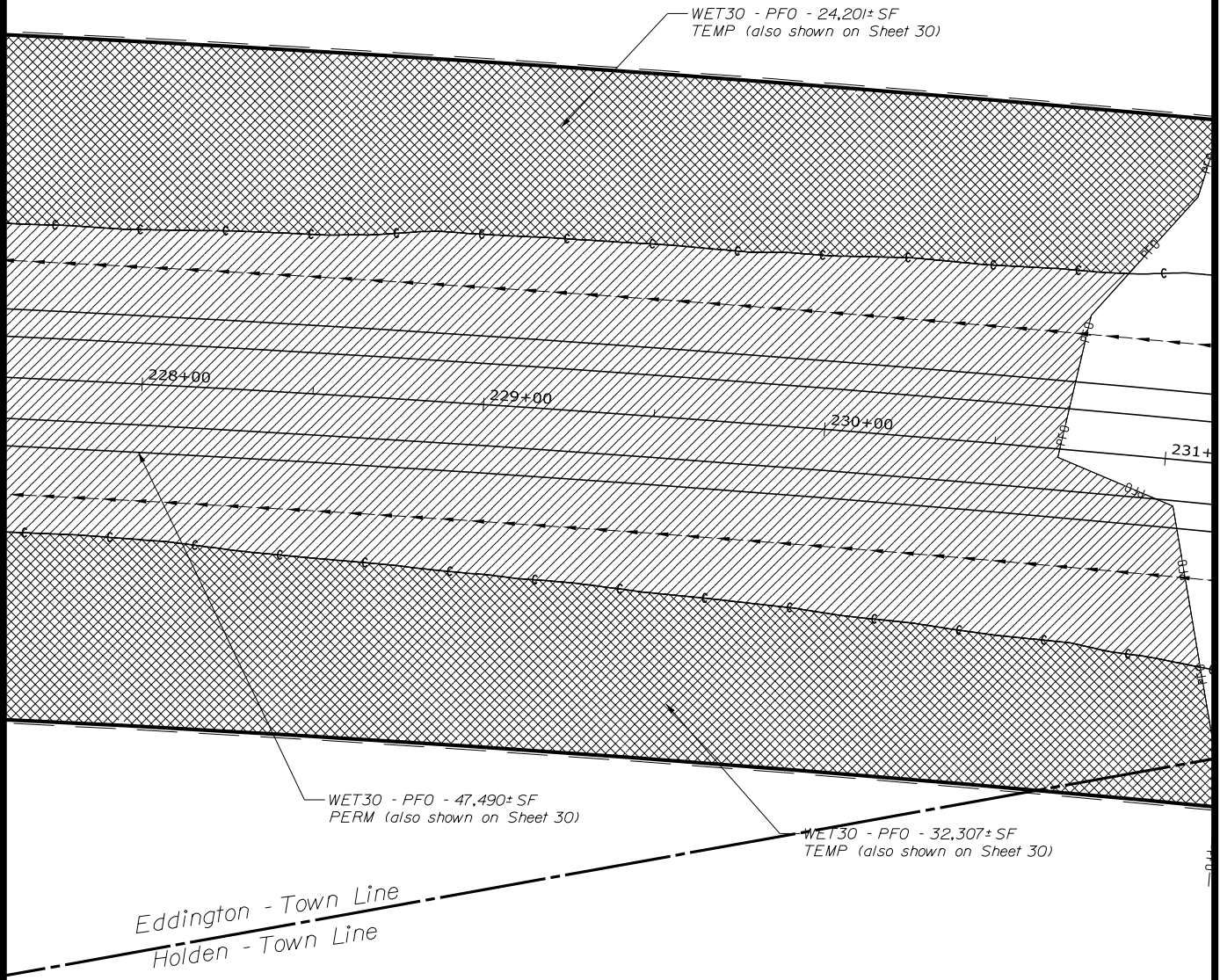
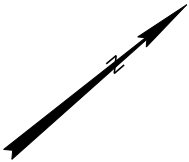
RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

SHEET NUMBER
30

18915.00

IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

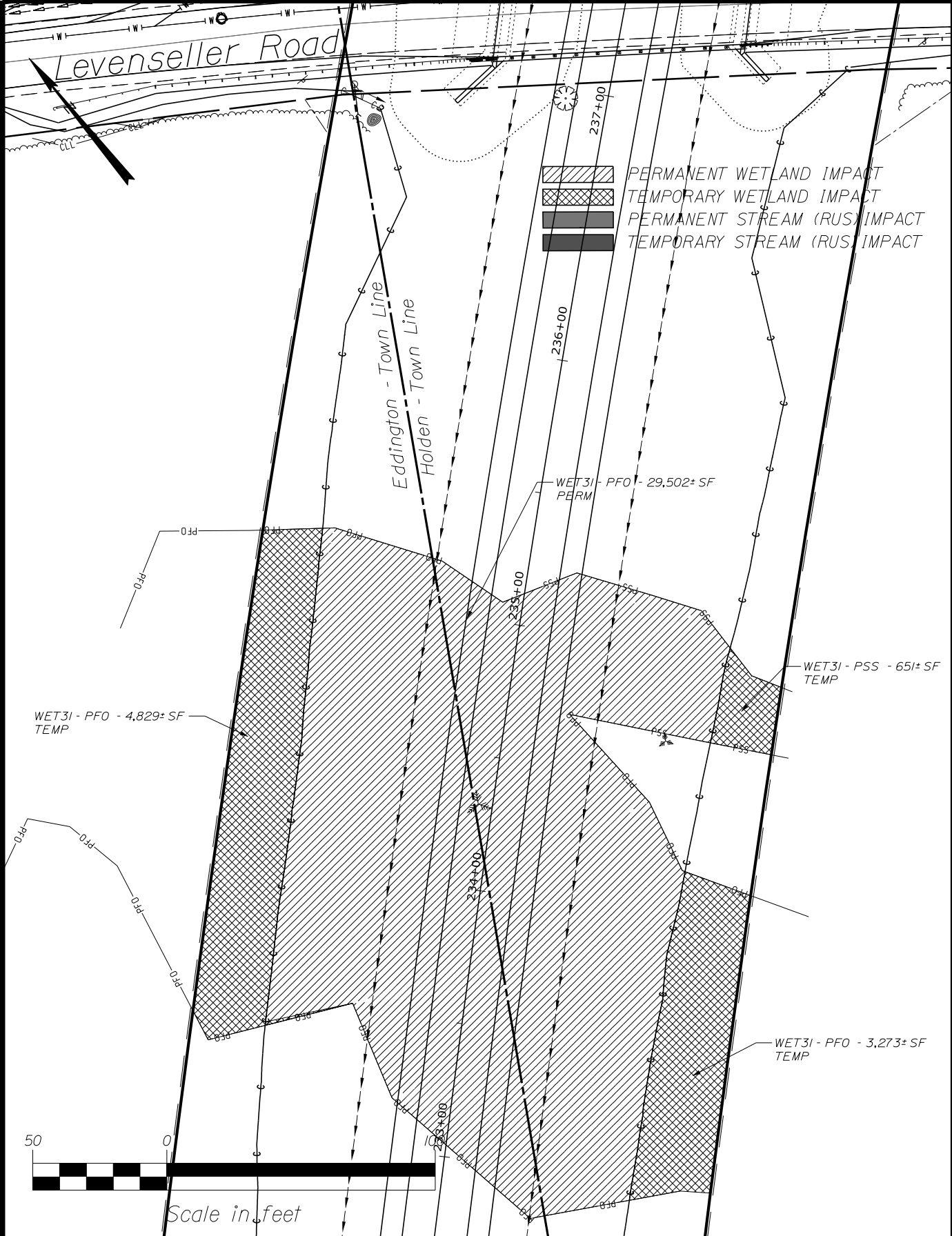
RTE 9 CONNECTOR EDDINGTON-HOLDEN
PENOBSCOT COUNTY

SHEET NUMBER
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18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON-HOLDEN
PENOBSCOT COUNTY

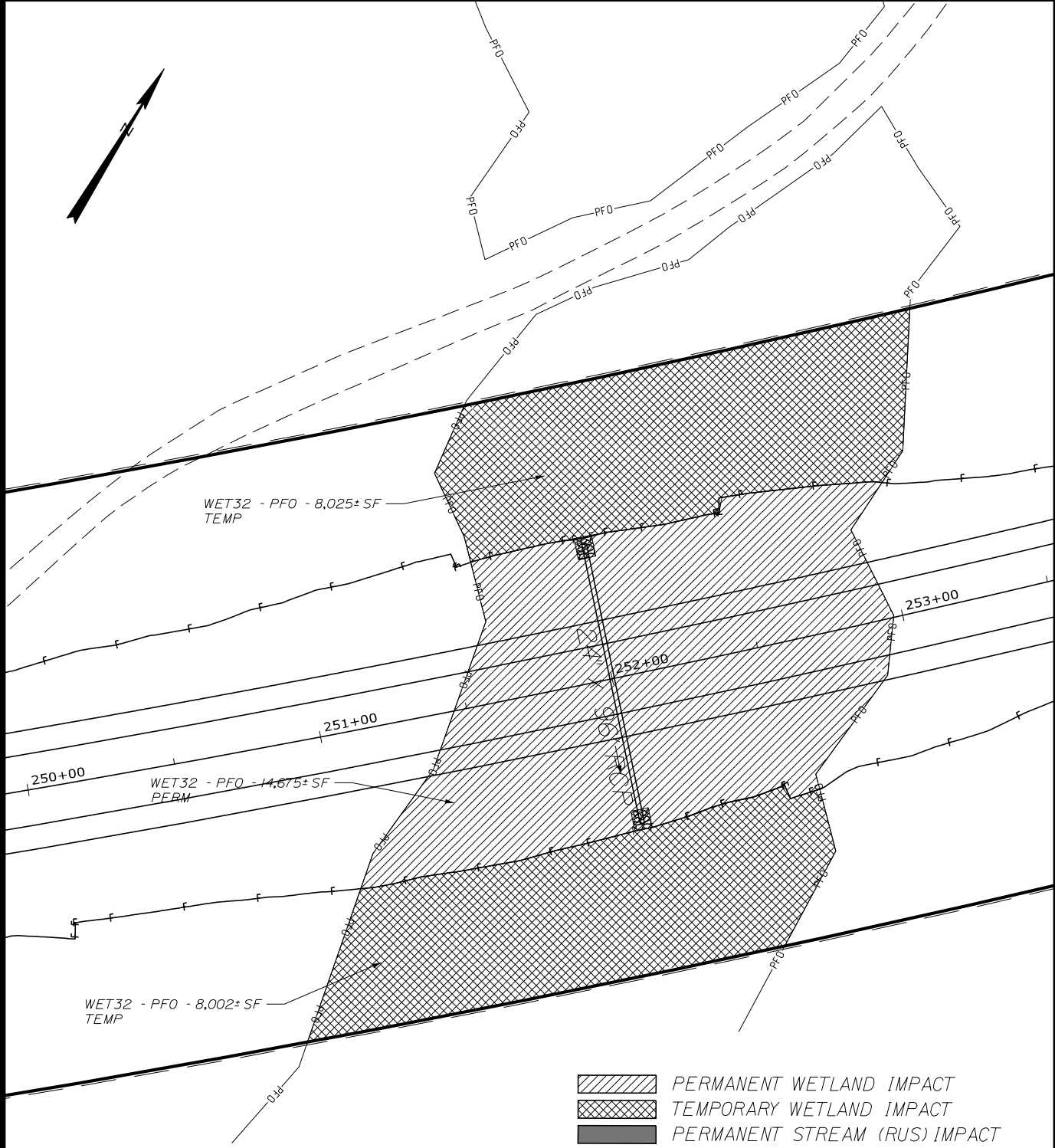
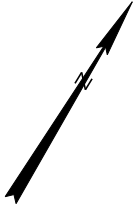
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32

18915.00

IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ROUTE 9 CONNECTOR HOLDEN
PENOBSCOT COUNTY

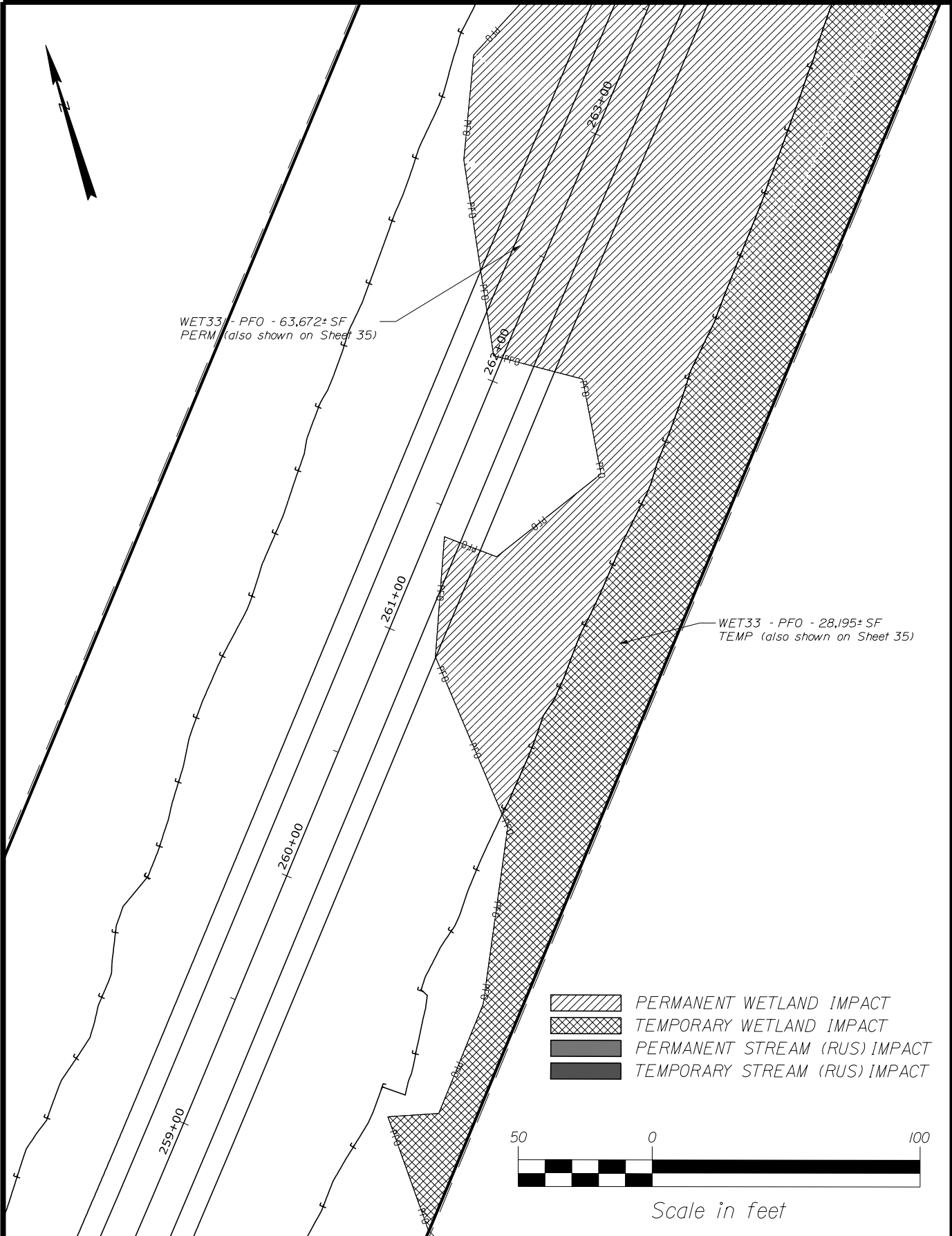
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18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

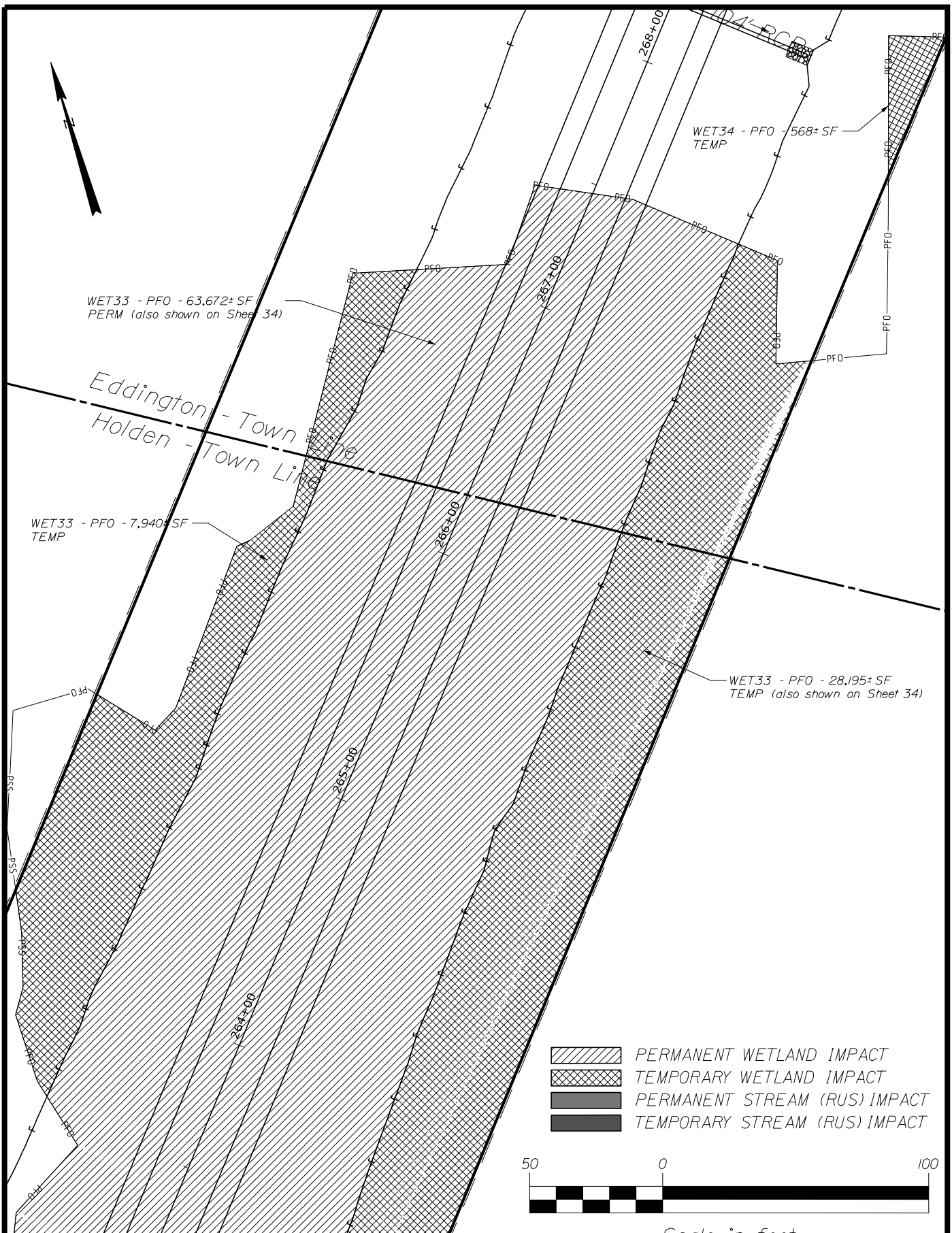
ROUTE 9 CONNECTOR HOLDEN
PENOBSCOT COUNTY

SHEET NUMBER
34

18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

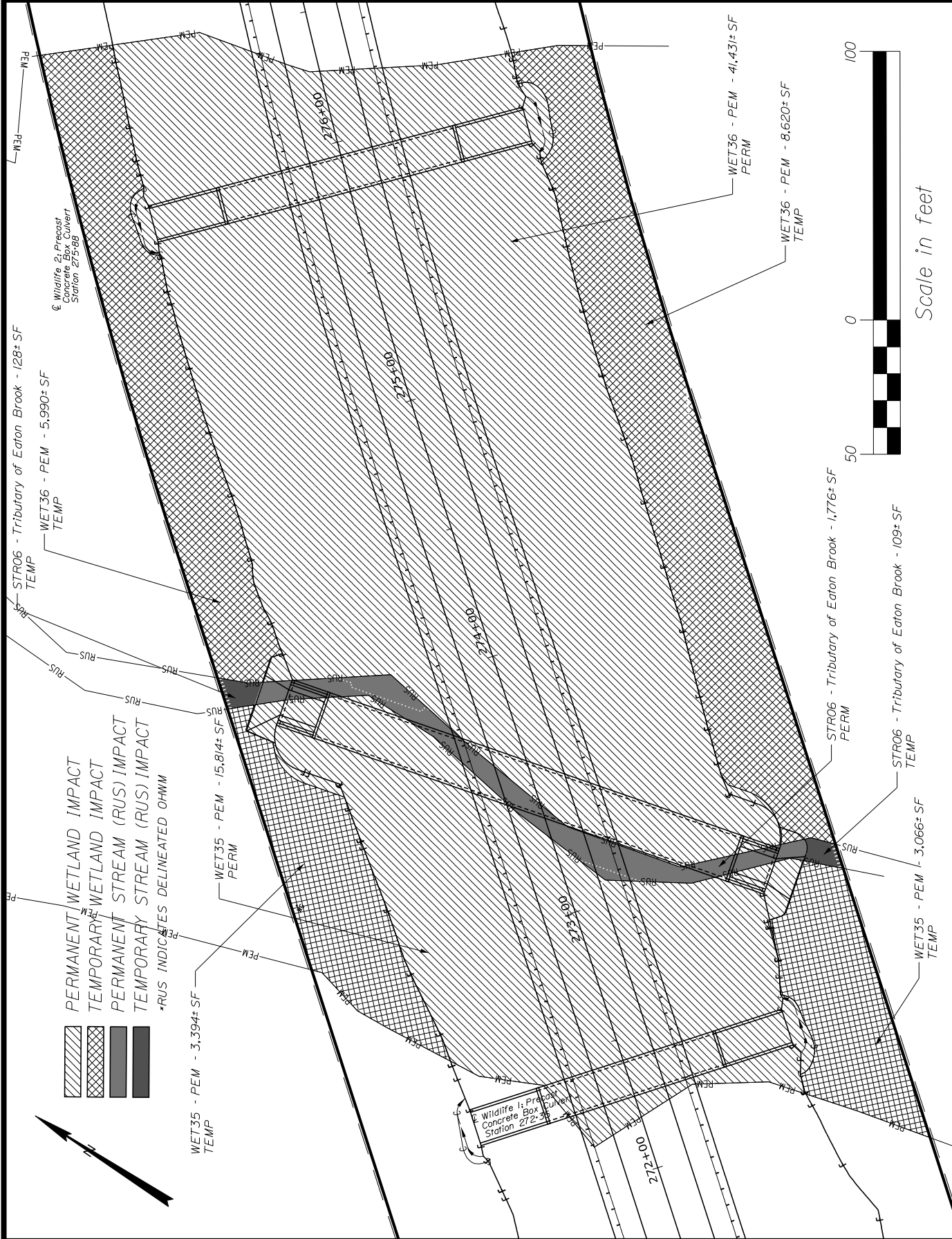
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PENOBSCOT COUNTY

SHEET NUMBER
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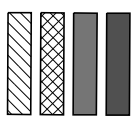
18915.00

IMPACT PLANS

OF 43



- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- PERMANENT STREAM (RUS) IMPACT
- TEMPORARY STREAM (RUS) IMPACT
- *RUS INDICATES DELINEATED OHMM



WET35 - PERM - 3,394± SF
TEMP

WET35 - PERM - 15,814± SF
PERM

STR06 - Tributary of Eaton Brook - 1,28± SF
TEMP

WET36 - PERM - 5,990± SF
TEMP

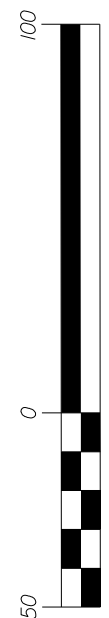
WET36 - PERM - 41,431± SF
PERM

WET36 - PERM - 8,620± SF
TEMP

STR06 - Tributary of Eaton Brook - 1,776± SF
PERM

STR06 - Tributary of Eaton Brook - 109± SF
TEMP

WET35 - PERM - 3,066± SF
TEMP



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

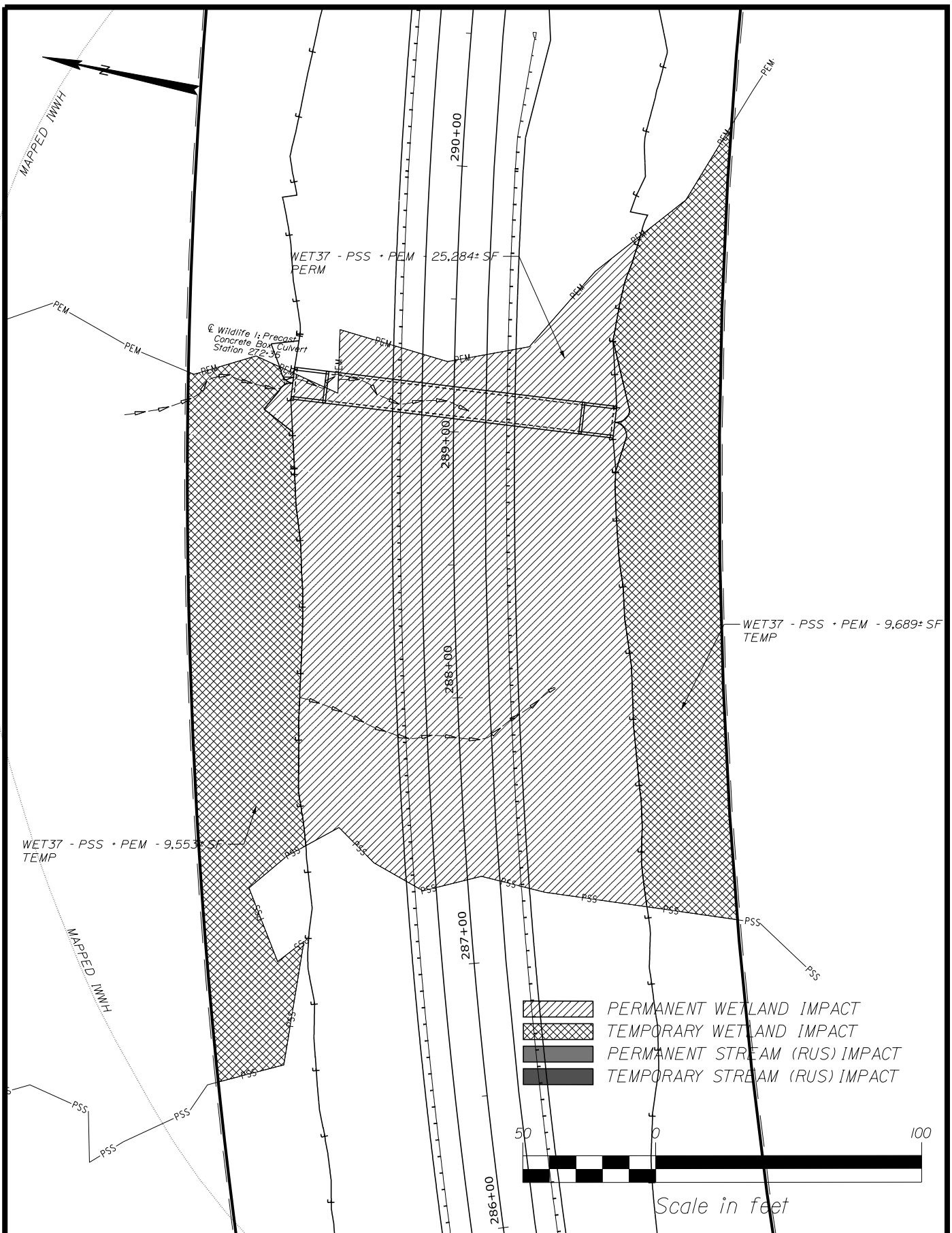
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18915.00

IMPACT PLANS

OF 43



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

SHEET NUMBER
37

18915.00

IMPACT PLANS

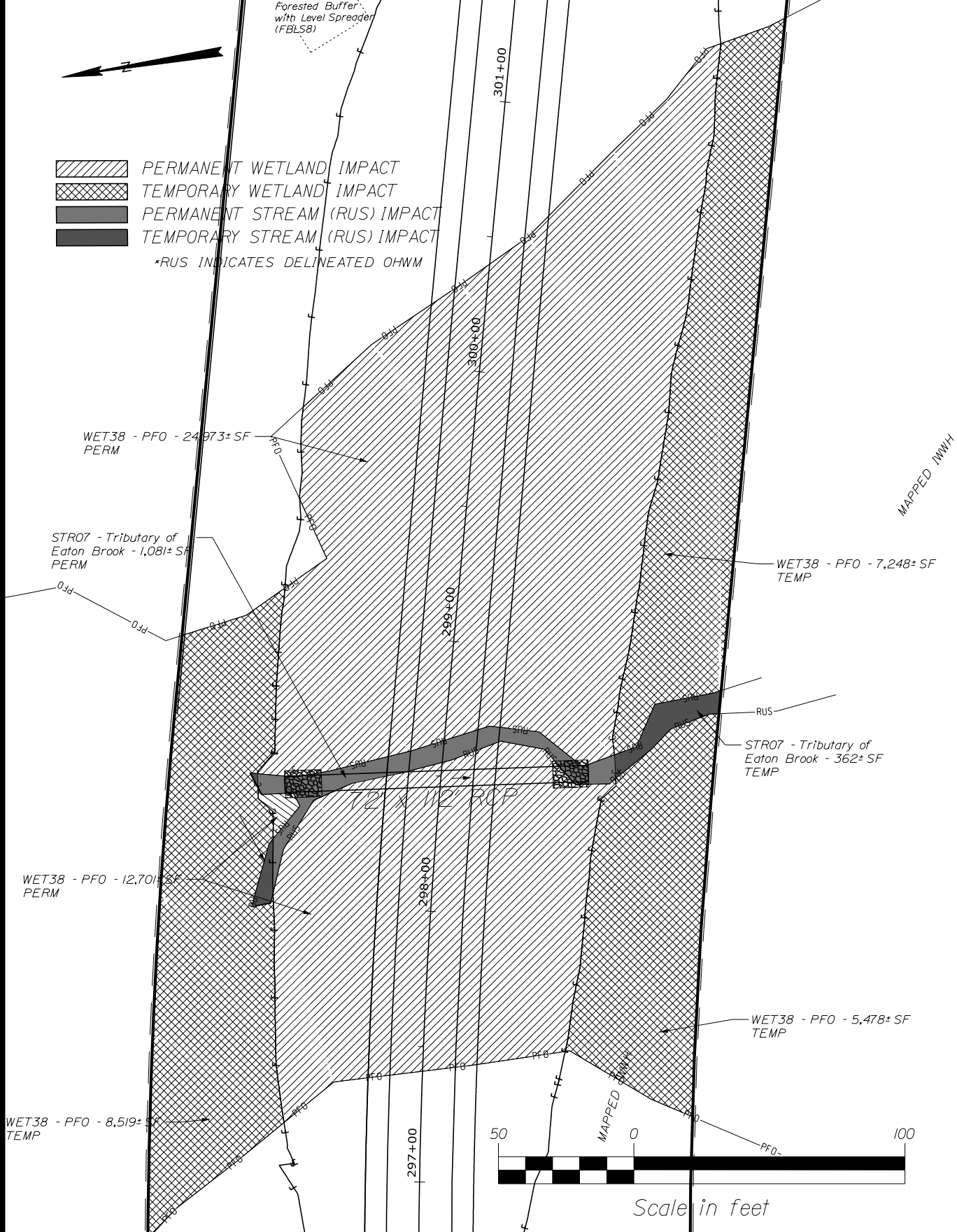
OF 43



Forested Buffer
with Level Spreader
(FBL58)

-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT

*RUS INDICATES DELINEATED OHWM



WET38 - PFO - 24,973± SF
PERM

STR07 - Tributary of
Eaton Brook - 1,081± SF
PERM

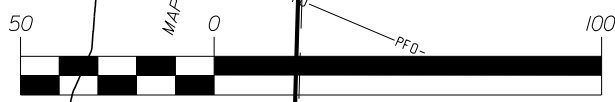
WET38 - PFO - 7,248± SF
TEMP

STR07 - Tributary of
Eaton Brook - 362± SF
TEMP

WET38 - PFO - 12,701± SF
PERM

WET38 - PFO - 5,478± SF
TEMP

WET38 - PFO - 8,519± SF
TEMP



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

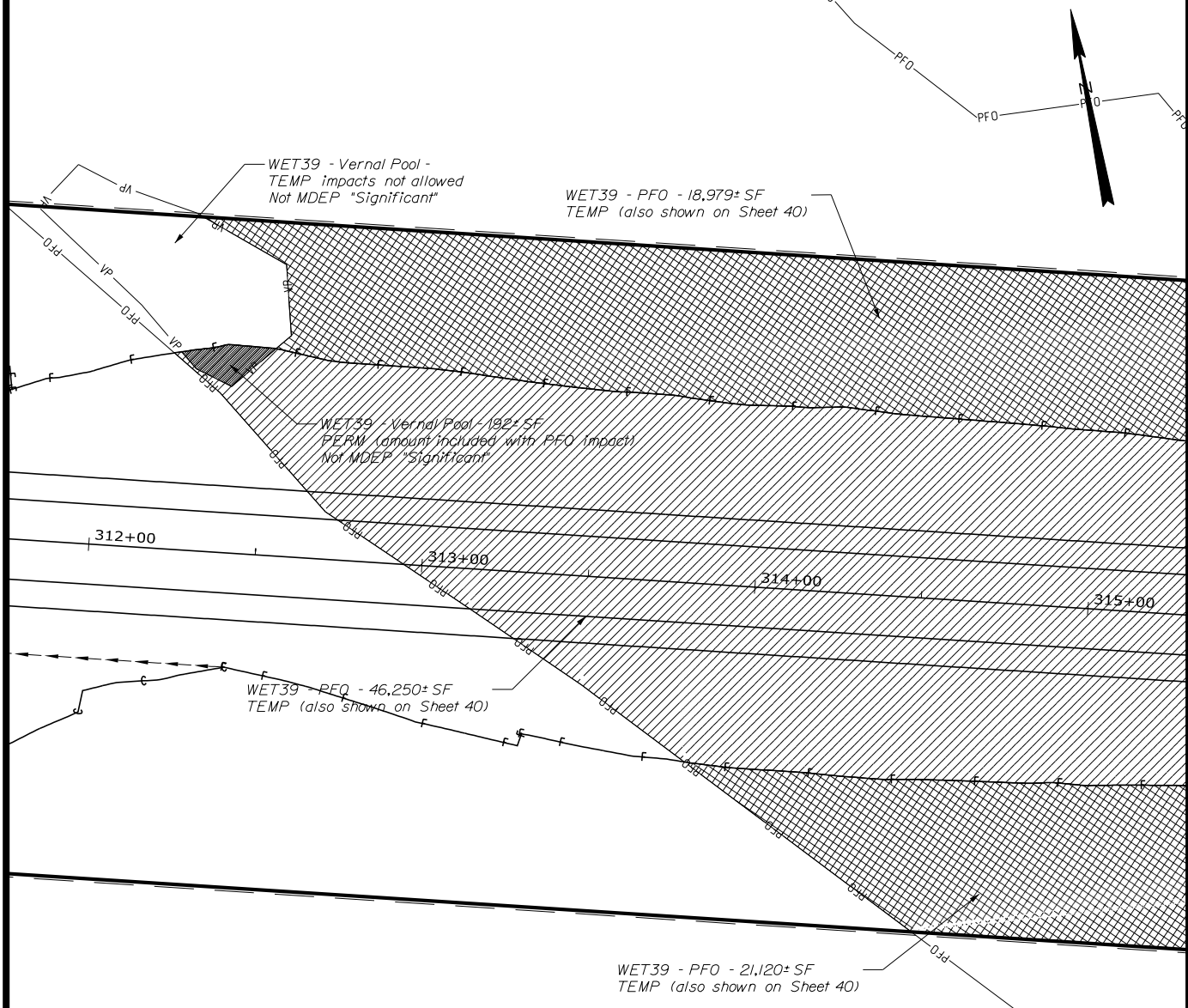
SHEET NUMBER

38

18915.00

IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT VERNAL POOL IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

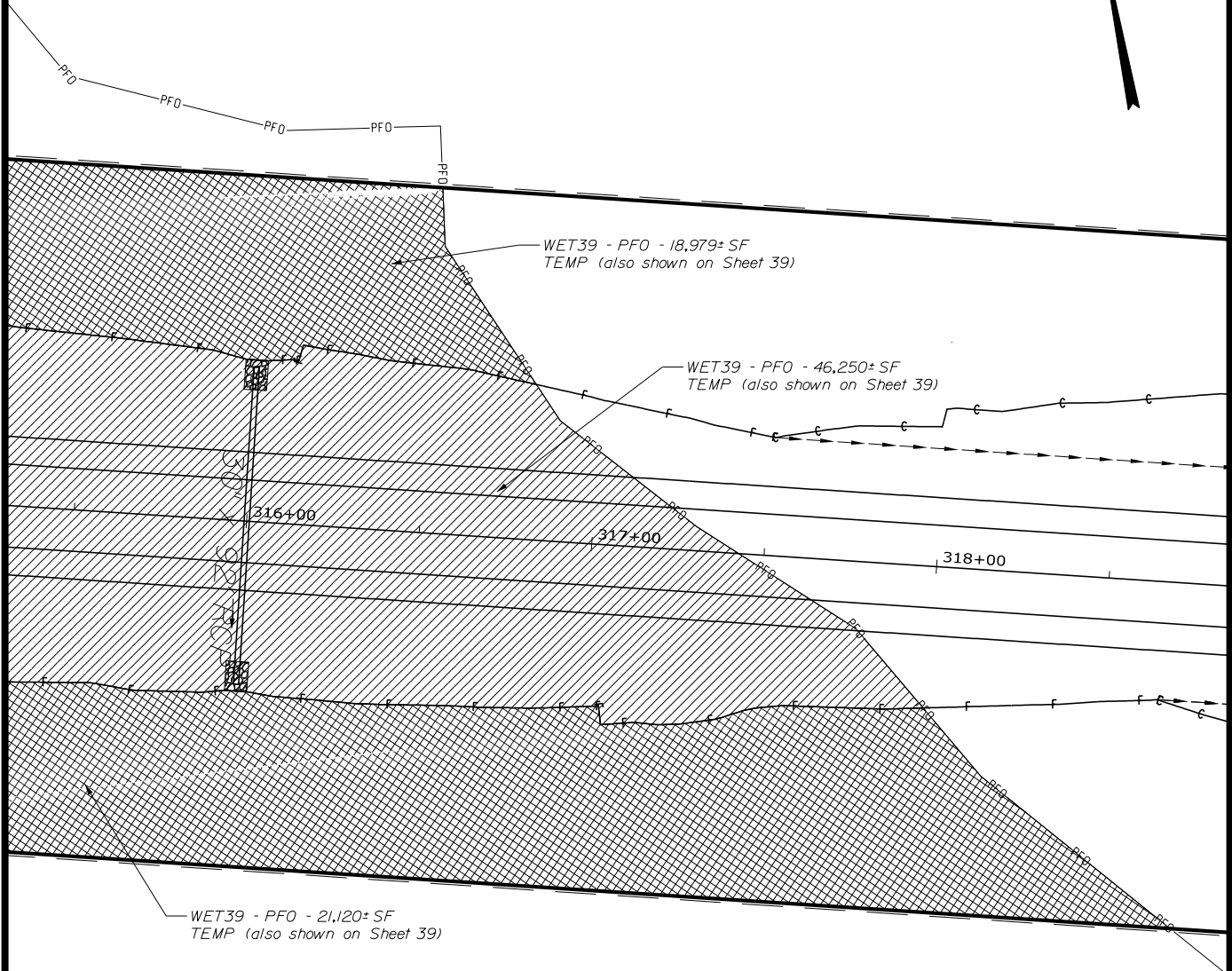
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39

18915.00

IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

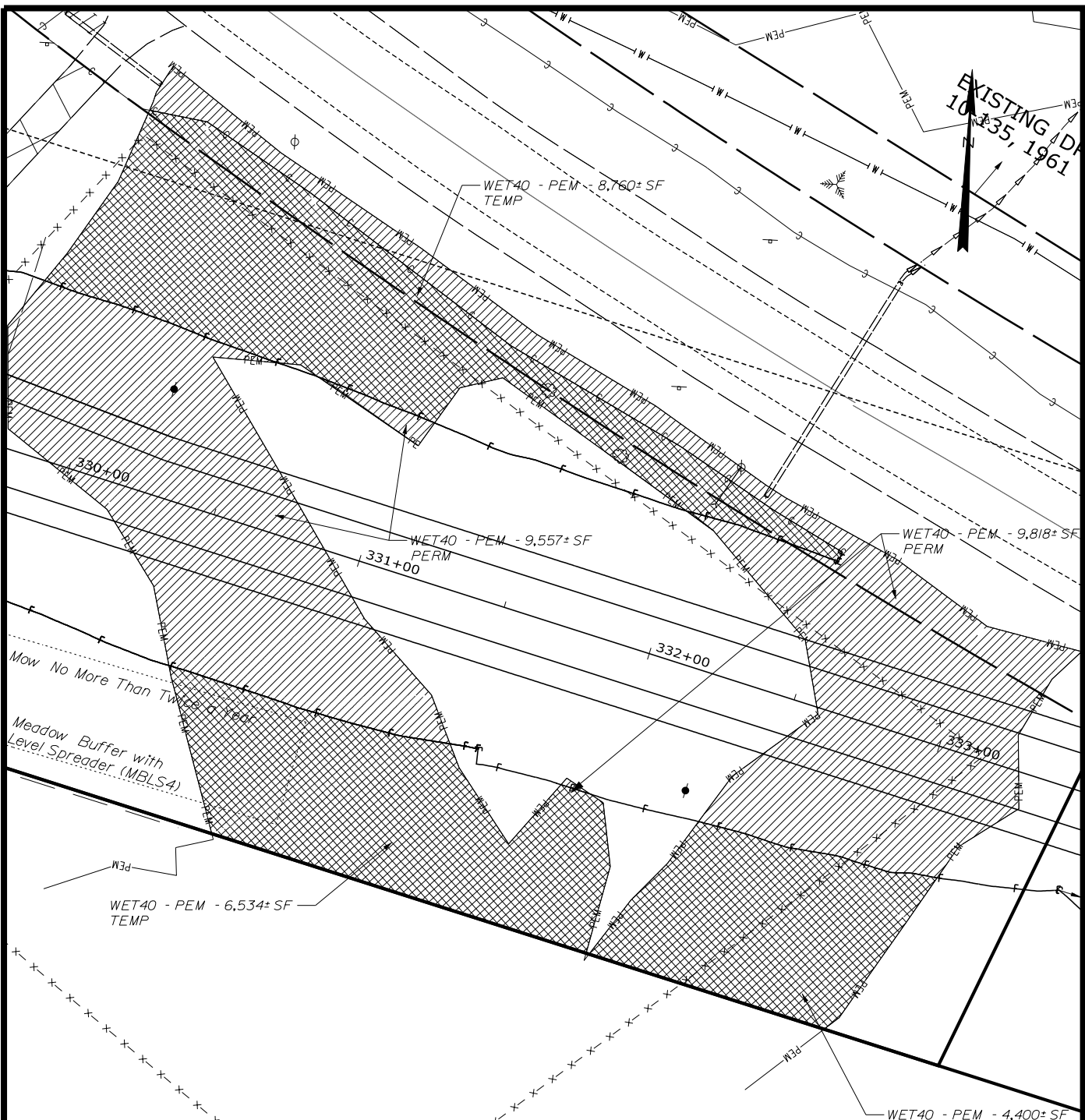
SHEET NUMBER
40





18915.00

IMPACT PLANS

OF 43

EXISTING ID
10-235, 1961



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

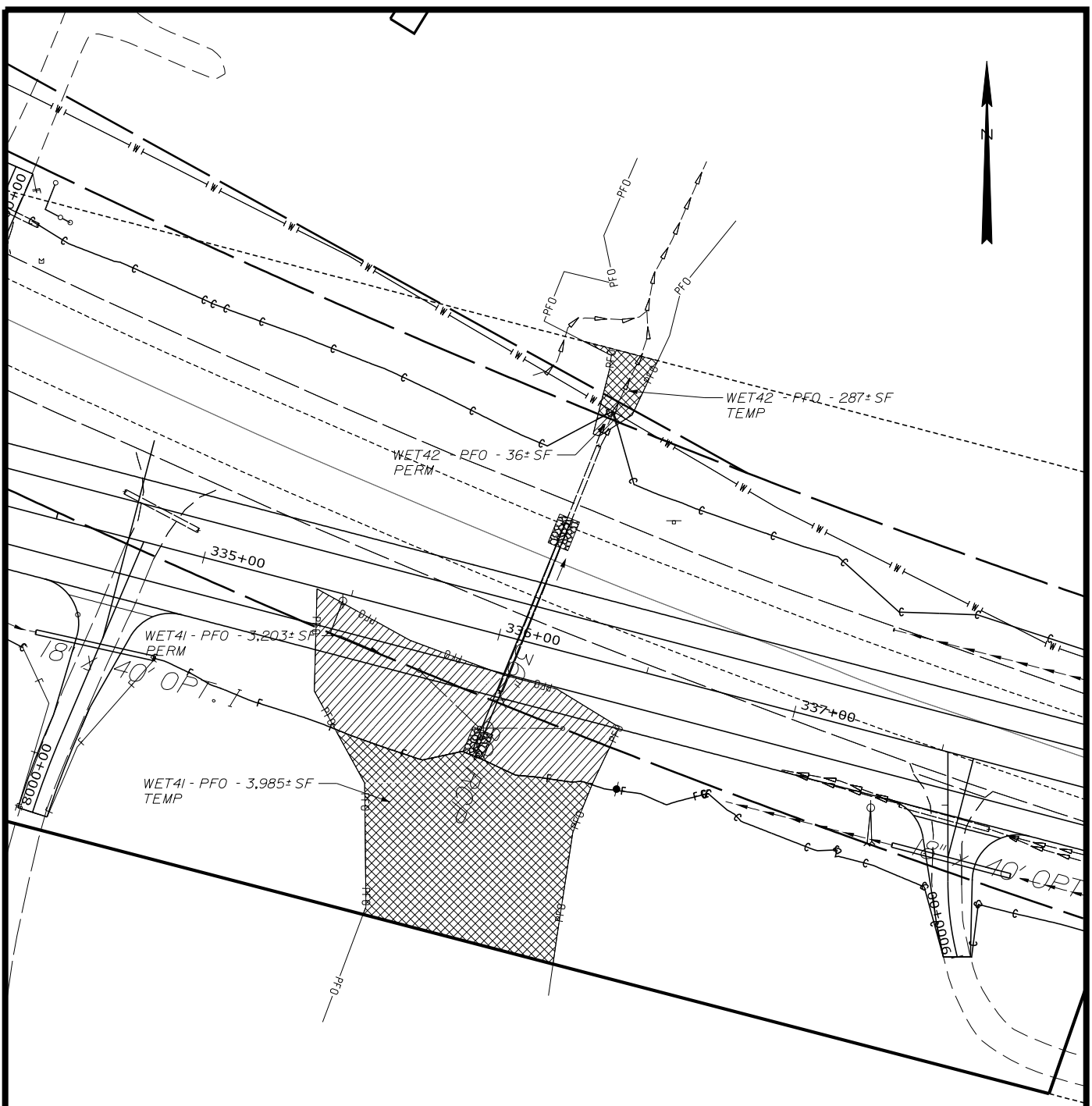
RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

SHEET NUMBER
41

18915.00

IMPACT PLANS

OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT

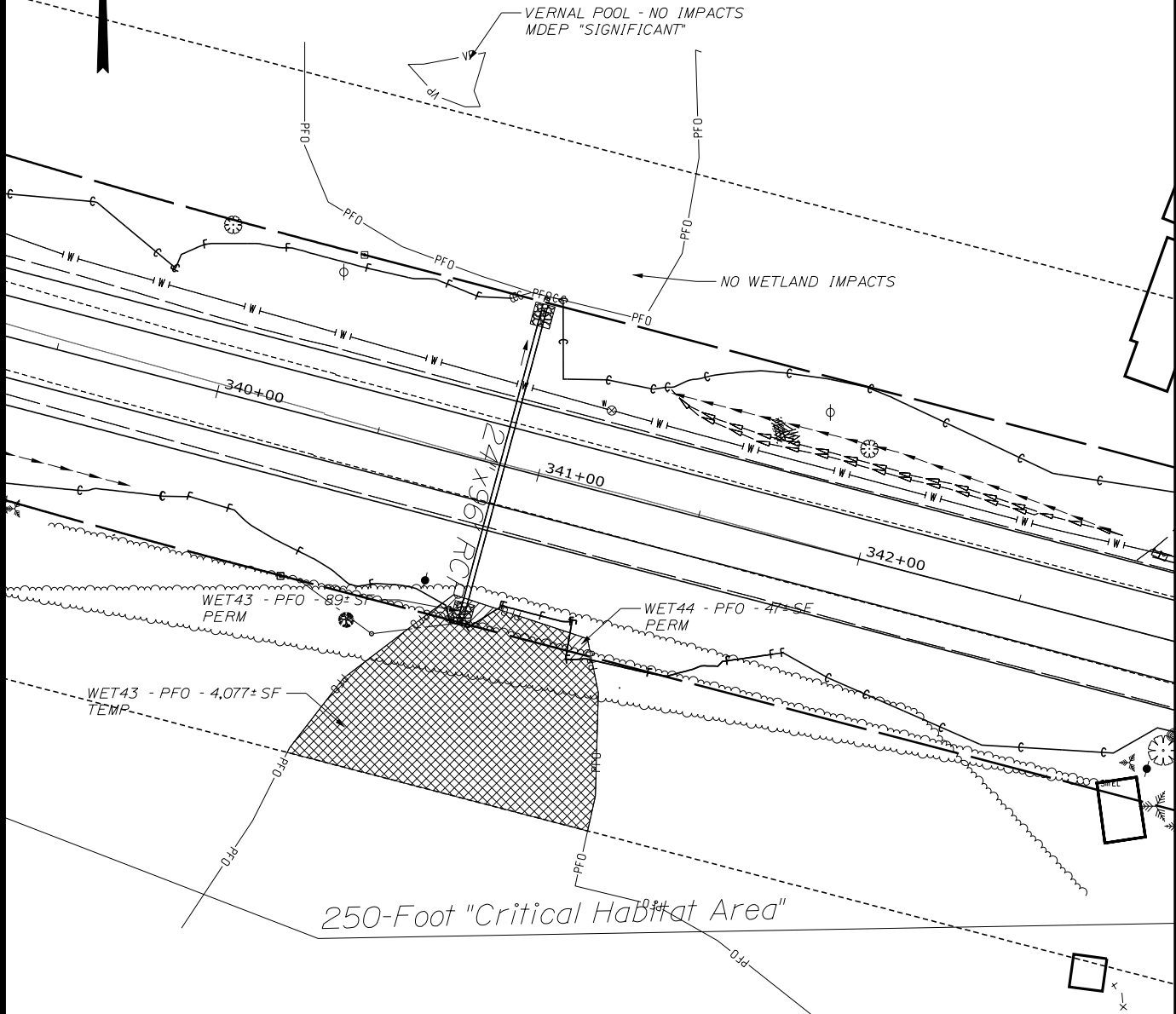


Scale in feet

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	RTE 9 CONNECTOR EDDINGTON PENOBSCOT COUNTY	SHEET NUMBER <h1 style="margin: 0;">42</h1>
18915.00	<h2 style="margin: 0;">IMPACT PLANS</h2>	OF 43



-  PERMANENT WETLAND IMPACT
-  TEMPORARY WETLAND IMPACT
-  PERMANENT STREAM (RUS) IMPACT
-  TEMPORARY STREAM (RUS) IMPACT



Scale in feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RTE 9 CONNECTOR EDDINGTON
PENOBSCOT COUNTY

SHEET NUMBER

43

18915.00

IMPACT PLANS

OF 43

Attachment 6 – Additional Plans

Highway Program: Project Plan View, Profile, and Cross Sections

Due to size the highway plans and cross sections are provided as a separate files.

Bridge Program: Project Plan View, Profile and Cross Sections

Stream Crossings

Road Crossings

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

STRUCTURE LIST

Structure	Station
Felts Brook	55+08
Felts Brook Tributary	64+14
Snowmobile 10C	77+00
Eaton Brook	140+90
Wildlife 1	272+35
Eaton Brook Tributary	273+50
Wildlife 2	275+88
Snowmobile 107	284+27
Wetland	289+11

LIST OF DRAWINGS

Title Sheet	1
Plan - Felts Brook	2
Profile - Felts Brook	3
Precast Box Details - Felts Brook	4
Plan and Profile - Felts Brook Tributary	5
Precast Box Details - Felts Brook Tributary	6
Plan and Profile - Snowmobile 10C	7
Precast Box Details - Snowmobile 10C	8
Plan - Eaton Brook	9
Profile - Eaton Brook	10
Bridge Typical Section - Eaton Brook	11
Plan - Station 272+36 Through 275+89	12
Profile - Station 272+36 Through 275+89	13
Precast Box Details - Wildlife 1	14
Precast Box Details - Eaton Brook Tributary	15
Precast Box Details - Wildlife 2	16
Plan and Profile - Snowmobile 107	17
Precast Box Details - Snowmobile 107	18
Plan and Profile - Wetland Crossing	19
Precast Box Details - Wetland Crossing	20

BREWER-EDDINGTON PENOBSCOT COUNTY I-395 - ROUTE 9 CONNECTOR STREAM AND SNOWMOBILE CROSSINGS FEDERAL AID PROJECT NO. STP-1891(500) PART I

Date:9/28/2020

Username: common

Filename:\001_Title (Stream and Snowmobile).dgn Division: HIGHWAY

STP-1891(500) WIN018915.00

BREWER-EDDINGTON
I-395 - ROUTE 9 CONNECTOR
TITLE SHEET

SHEET NUMBER

1

OF 20

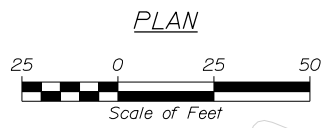
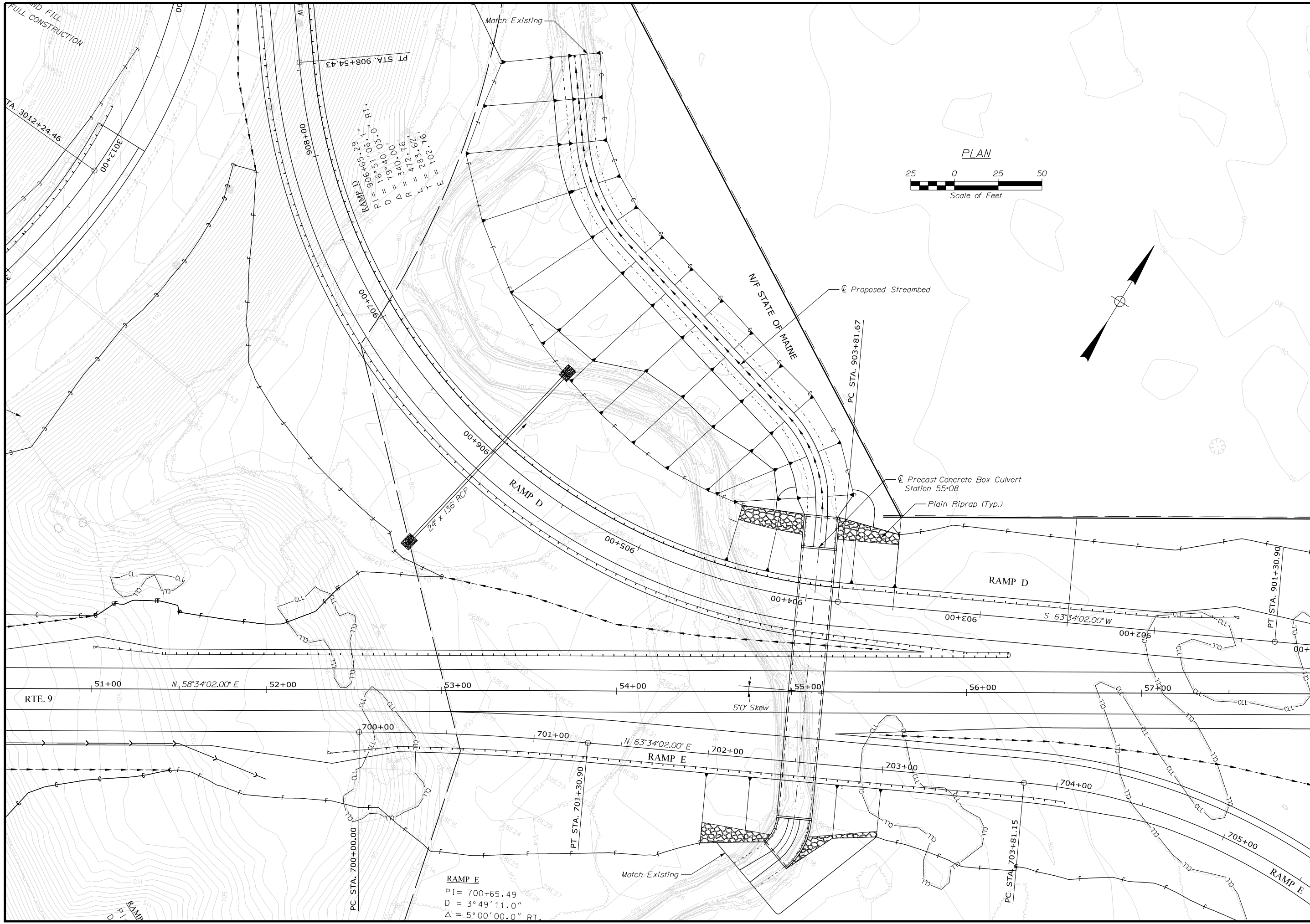
PROJECT LOCATION

Starting in Brewer at the intersection of I-395 and Wilson Street (Route 1A).
Ending in Eddington on Route 9 approximately 1000' west of where Route 9 crosses Meadow Brook.

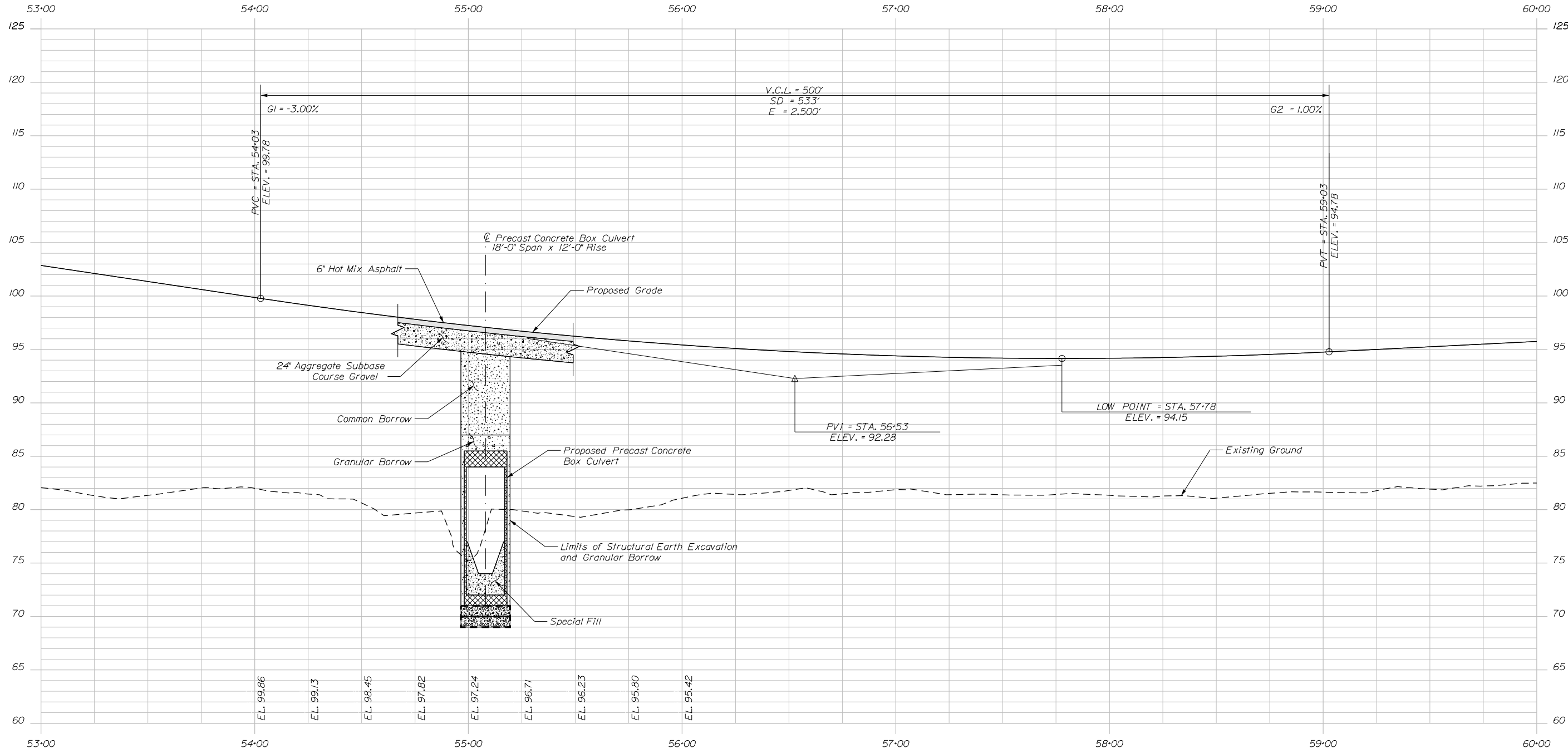
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
	COMMISSIONER:	
	CHIEF ENGINEER:	

PROJECT INFORMATION	SIGNATURE	P.E. NUMBER	DATE
PROGRAM			
PROJECT MANAGER			
DESIGNER			
CONSULTANT			
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			

BRIDGE	
M. WIGHT	
R. MYERS	
N/A	



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-1891(500)		BRIDGE NO. WIN 018915.00	
I-395 - ROUTE 9 CONNECTOR		DATE	
FELTS BROOK (55+00)		BY	
BREWER-EDDINGTON PENOBSCOT COUNTY		M. WIGHT	
PLAN - FELTS BROOK		R. MYERS	
SHEET NUMBER		D. SHAW	
2		R. MAYER	
OF 20		M. GRAY	
		SIGNATURE	
		P.E. NUMBER	
		DATE	
		REVISIONS 1	
		REVISIONS 2	
		REVISIONS 3	
		REVISIONS 4	
		FIELD CHANGES	



PROFILE

DESIGN-DETAILED	R. MYERS	DATE	
CHECKED-REVIEWED	D. SHAW	BY	
DESIGN-DETAILED	M. GRAY	M. WIGHT	
DESIGN-DETAILED		REVISIONS 1	
		REVISIONS 2	
		REVISIONS 3	
		REVISIONS 4	
		FIELD CHANGES	

SIGNATURE	
P.E. NUMBER	
DATE	

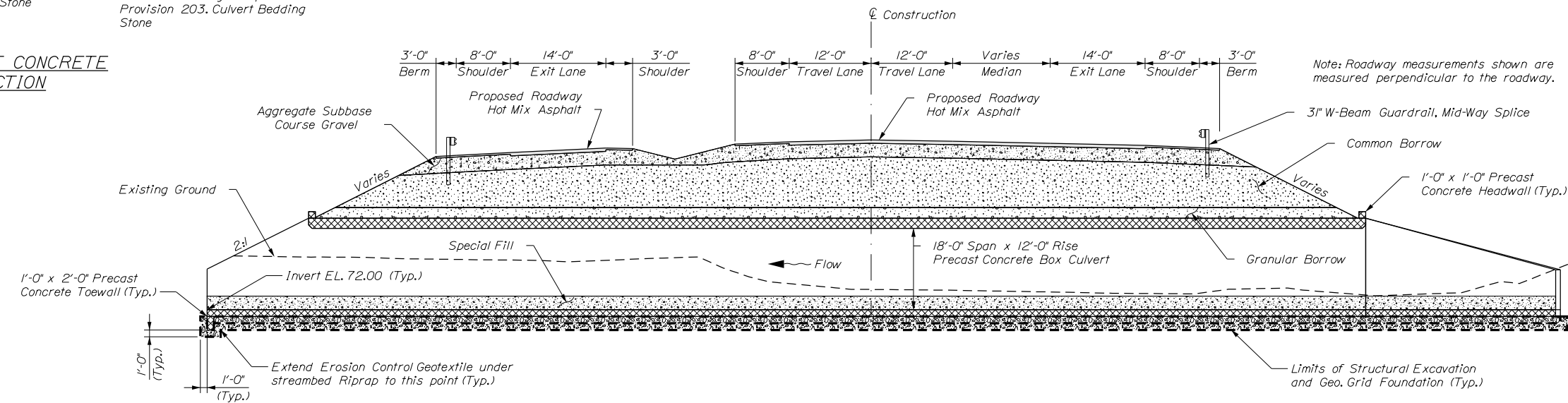
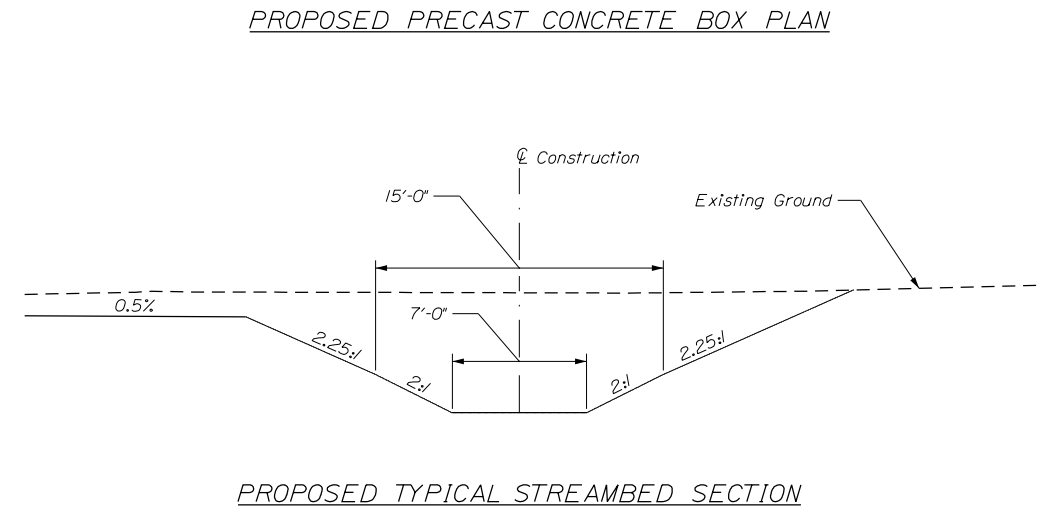
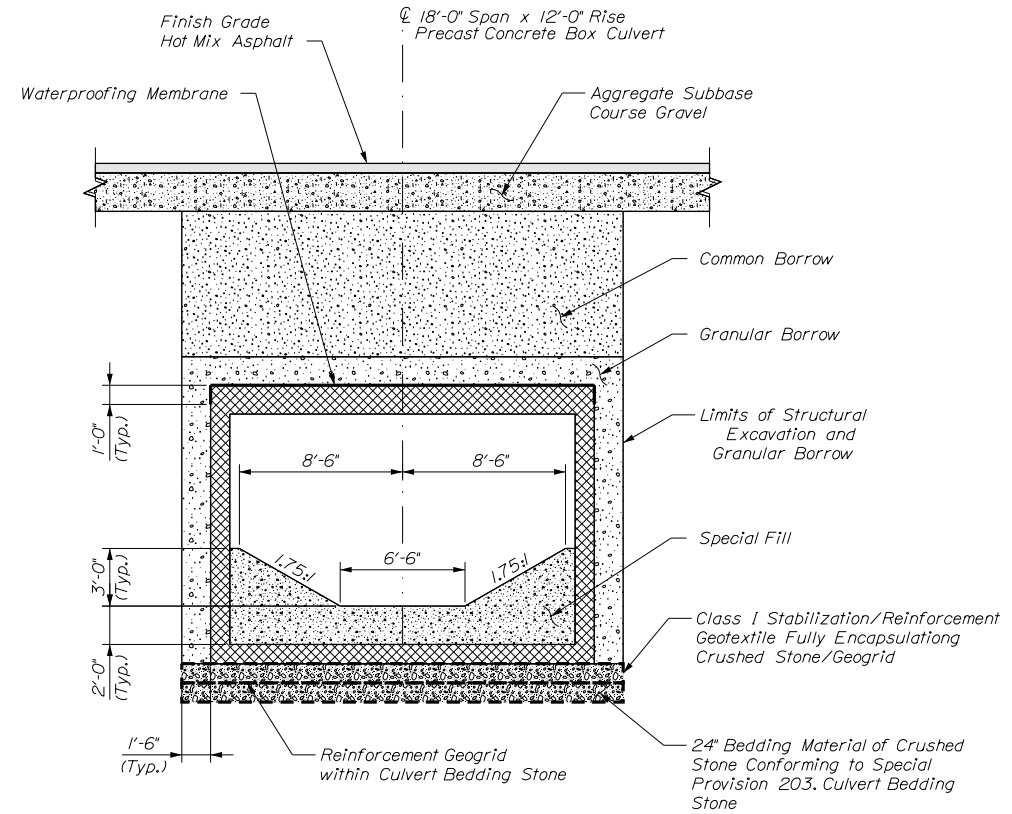
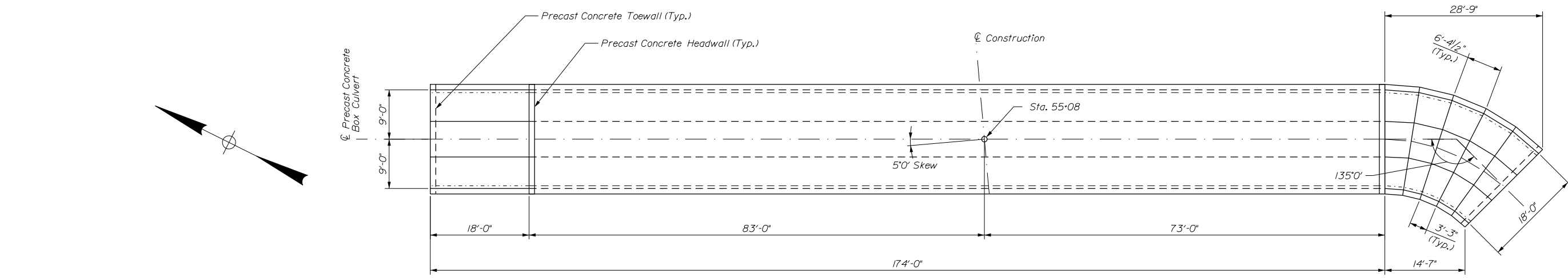
I-395 - ROUTE 9 CONNECTOR
FELTS BROOK (55+00)
BREWER-EDDINGTON PENOBSCOT COUNTY
PROFILE - FELTS BROOK

Date: 9/28/2020

Username: common

Division: HIGHWAY

Filename: ... \004_Btypical_FeltsBrook.dgn



PROPOSED TYPICAL PRECAST CONCRETE BOX LONGITUDINAL SECTION
Section Along \bar{C} of Concrete Box at Sta. 55+08 Skewed 5' Ahead on Left

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-1891(500)
BRIDGE NO. WIN 018915.00
BRIDGE PLANS

PROJ. MANAGER	DATE	BY	M. WIGHT	DATE
DESIGN-DETAILED		D. SHAW		
CHECKED-REVIEWED		R. MYERS		
DESIGN-DETAILED		M. GRAY		
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

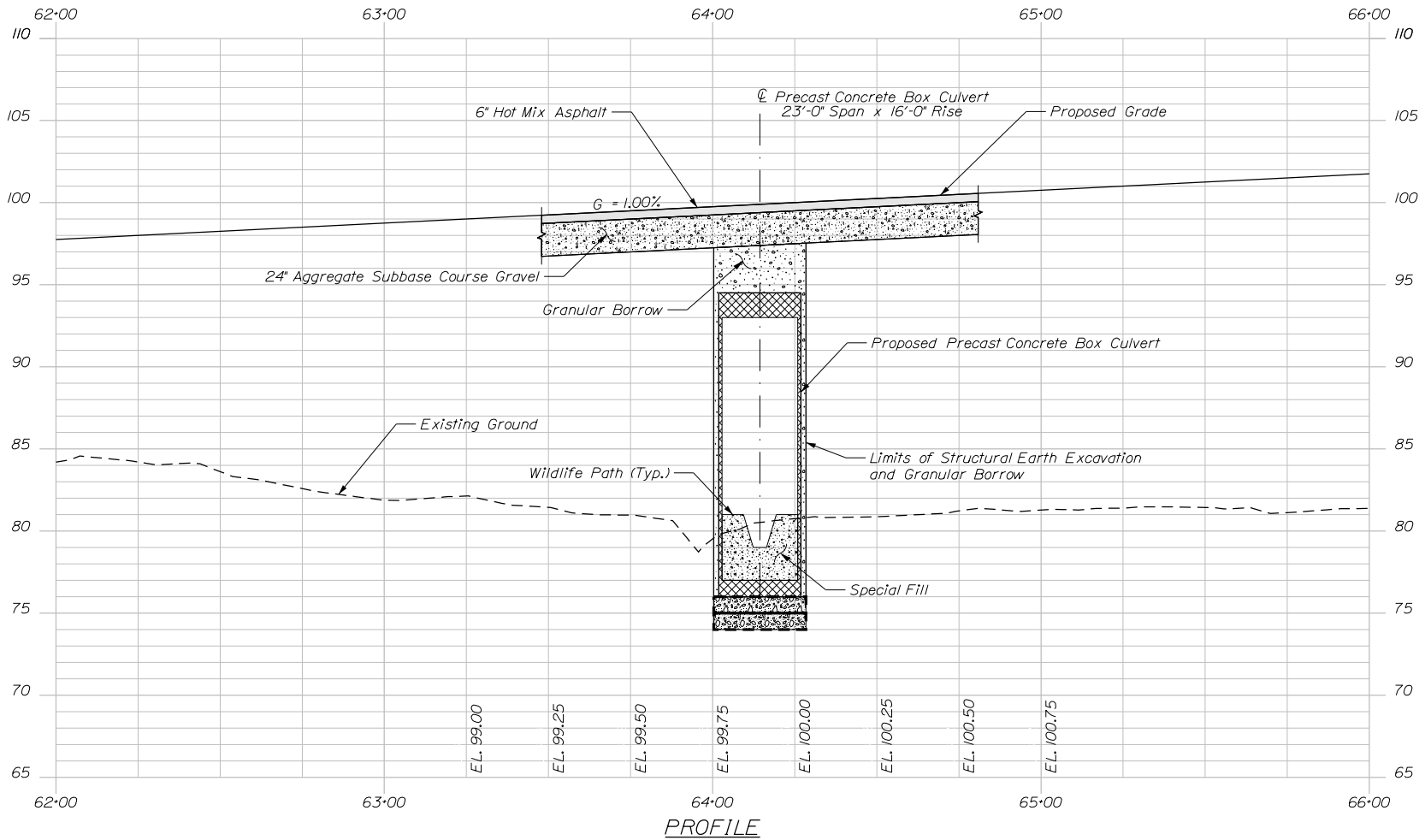
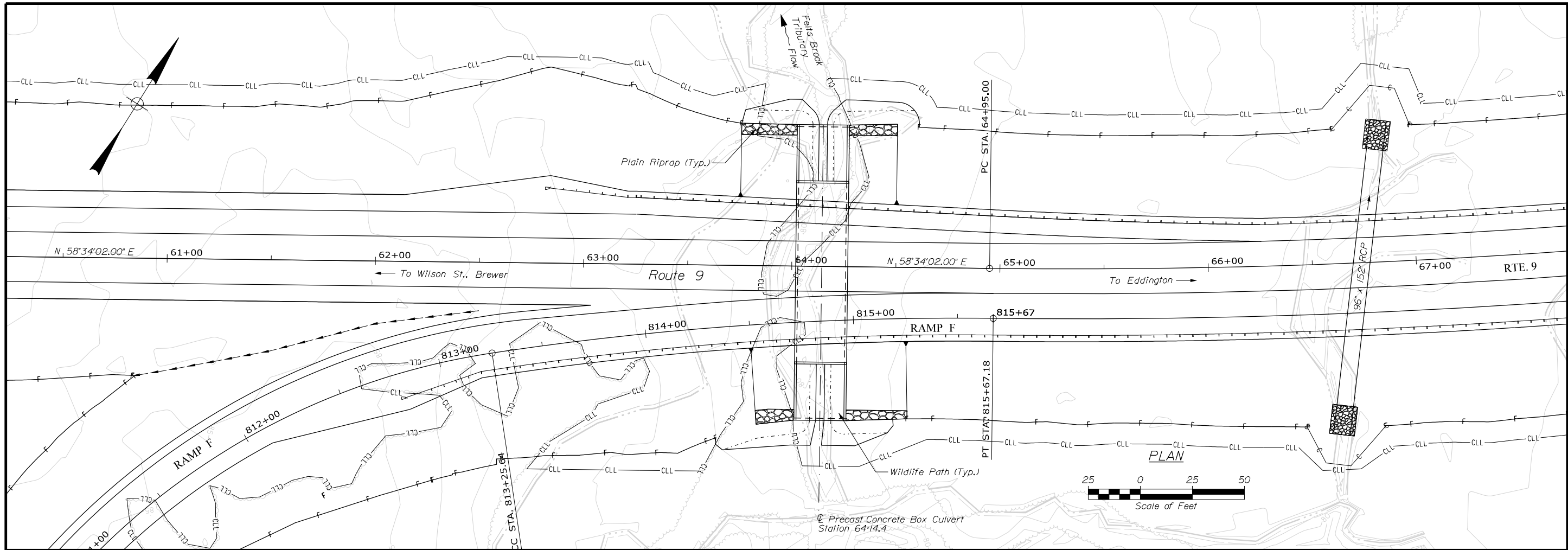
I-395 - ROUTE 9 CONNECTOR
FELTS BROOK (55+00)
BREWER-EDDINGTON PENOBSCOT COUNTY
PRECAST BOX DETAILS -
FELTS BROOK

SHEET NUMBER
4
OF 20

Date: 9/28/2020

Username: common

Filename: ... \005_Plan_Profile_FeltsBrookTrib.dgn Division: HIGHWAY



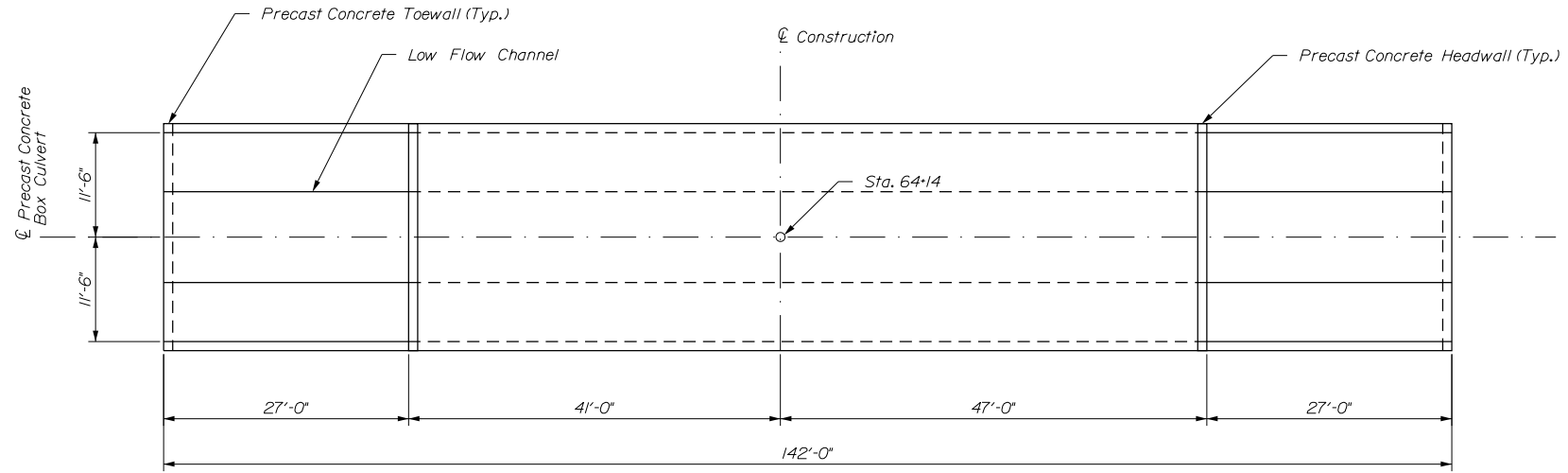
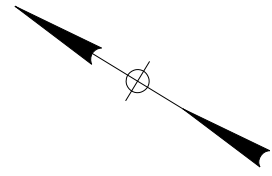
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-1891(500)
WIN 018915.00
BRIDGE NO.

DATE
SIGNATURE
P.E. NUMBER
DATE

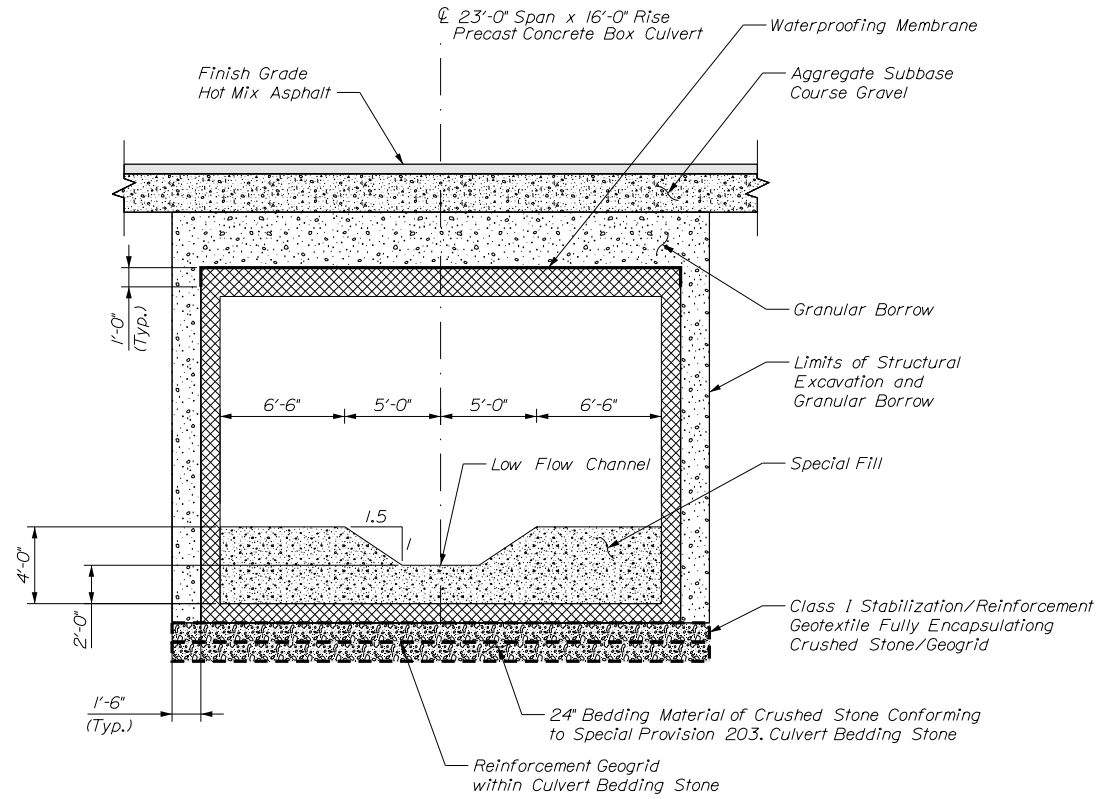
PROJ. MANAGER	M. WIGHT	BY	DATE
DESIGN-DETAILED	R. MYERS	D. SHAW	
CHECKED-REVIEWED	M. GRAY	R. MAYER	
DESIGNS-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

I-395 - ROUTE 9 CONNECTOR
FELTS BROOK TRIBUTARY (64 + 14)
BREWER-EDDINGTON PENOBSCOT COUNTY
PLAN AND PROFILE -
FELTS BROOK TRIBUTARY

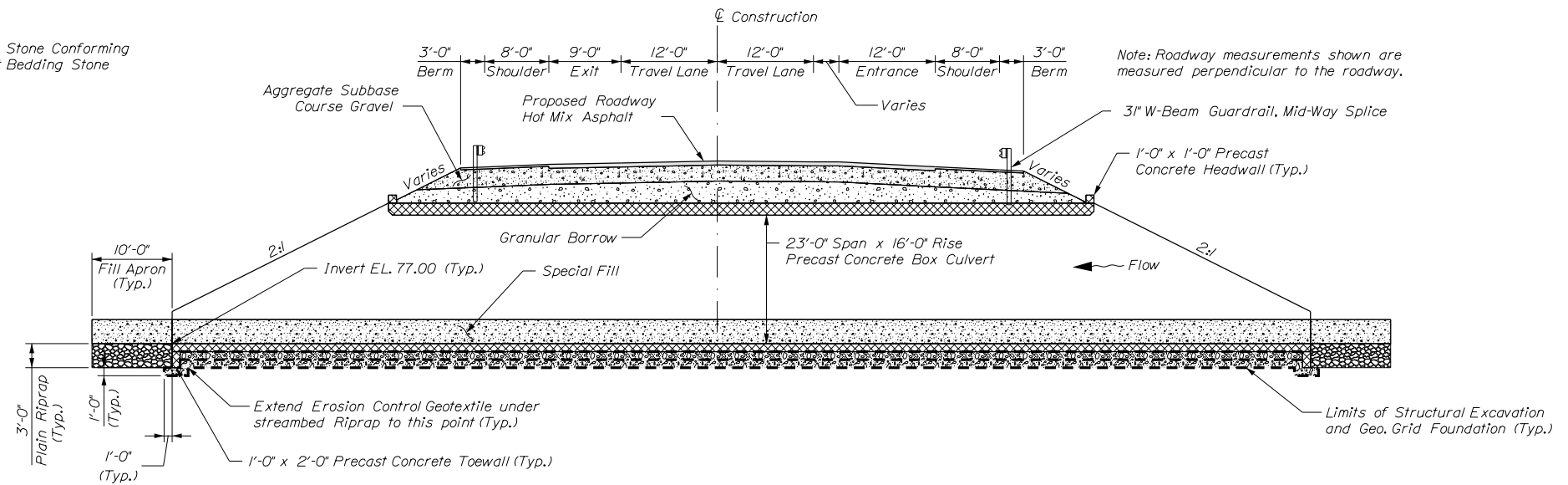
SHEET NUMBER
5
OF 20



PROPOSED PRECAST CONCRETE BOX PLAN



PROPOSED TYPICAL PRECAST CONCRETE BOX TRANSVERSE SECTION



PROPOSED TYPICAL PRECAST CONCRETE BOX LONGITUDINAL SECTION

Section Along \bar{C} of Concrete Box at Station 64+14

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED	D. SHAW				
CHECKED-REVIEWED	R. MYERS				
DESIGN-DETAILED	M. GRAY				
DESIGN-DETAILED	R. MAYER				
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

I-395 - ROUTE 9 CONNECTOR
FELTS BROOK TRIBUTARY (64 + 14)
BREWER-EDDINGTON PENOBSCOT COUNTY
PRECAST BOX DETAILS -
FELTS BROOK TRIBUTARY

SHEET NUMBER

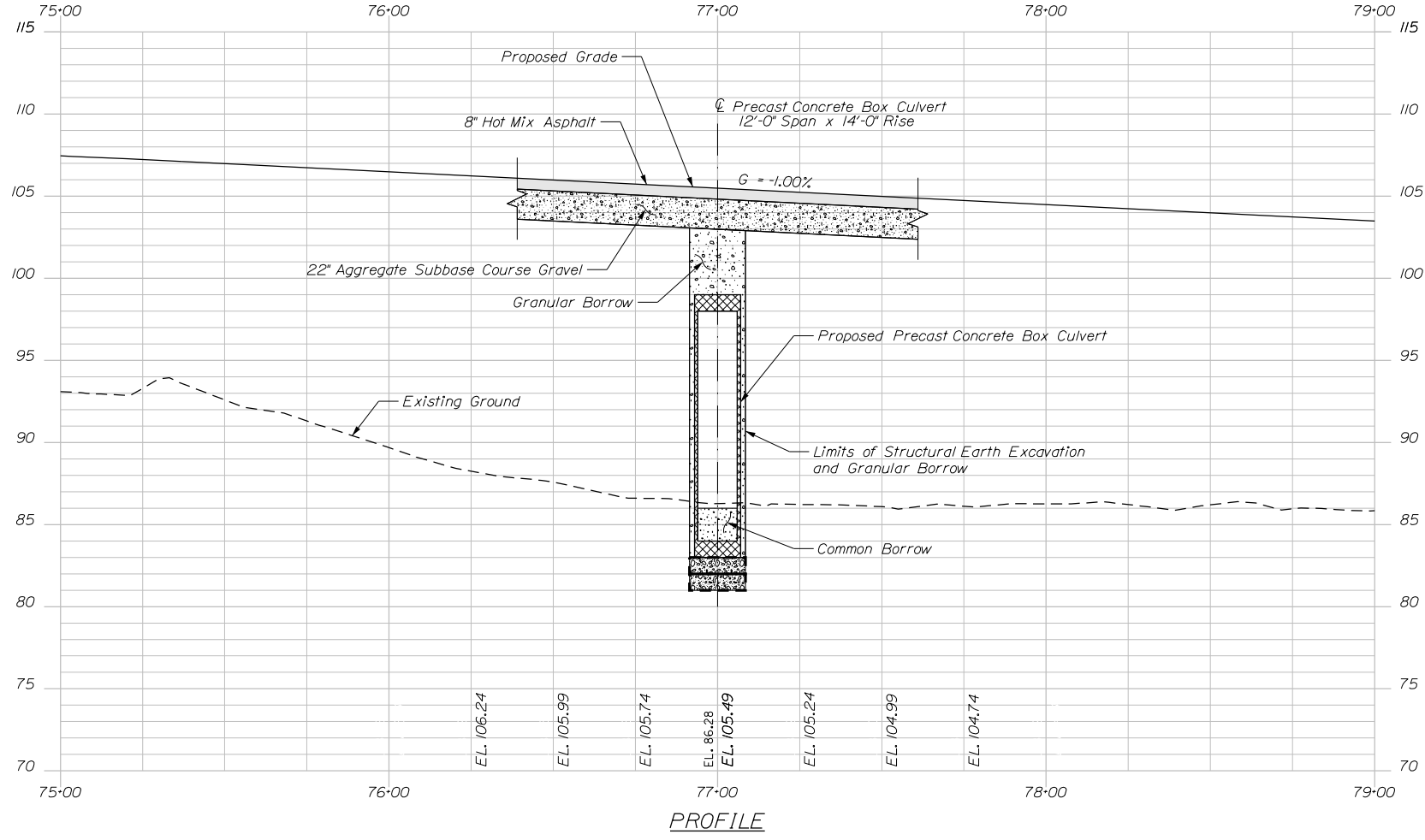
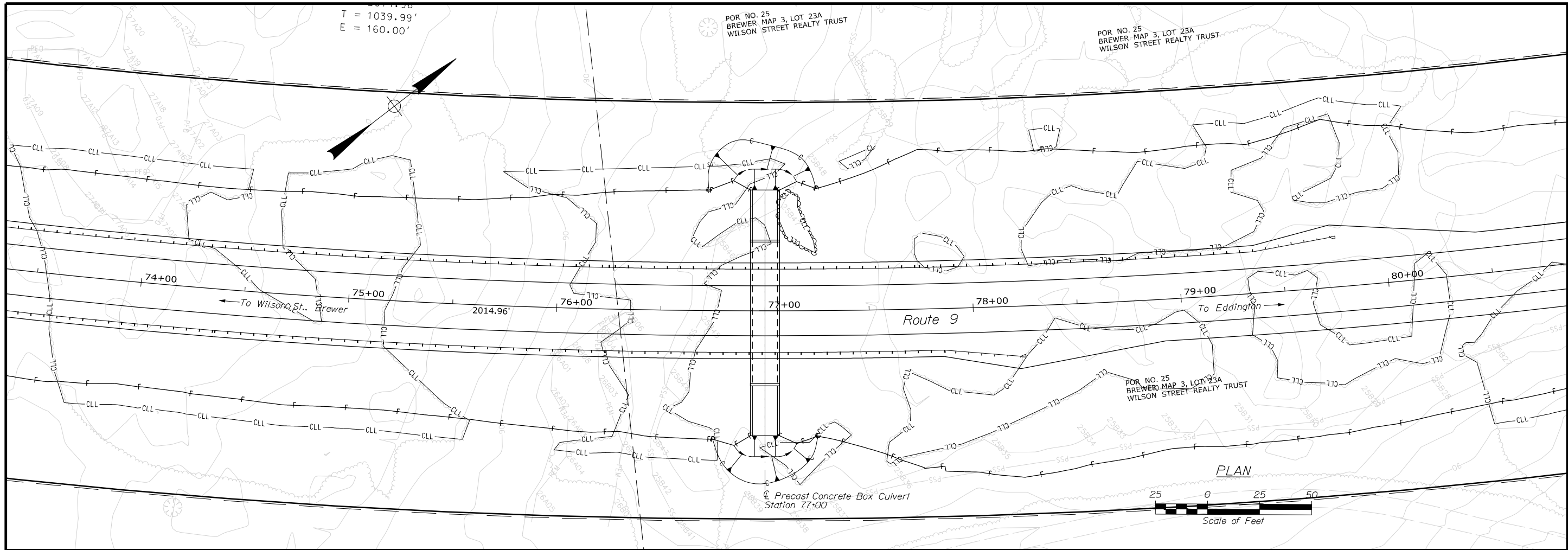
6

OF 20

Date: 9/28/2020

Username: common

Filename: ... \007_Plan_Profile_Snowmobile10C.dgn Division: HIGHWAY



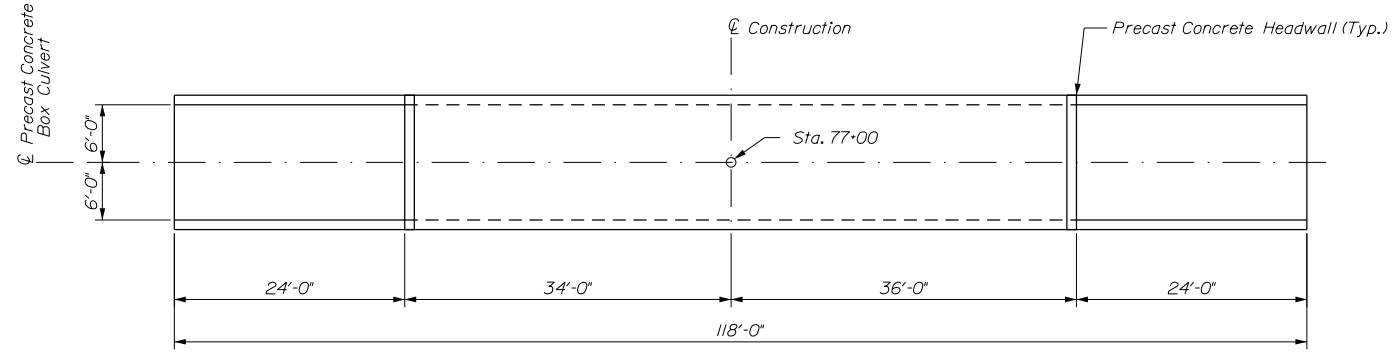
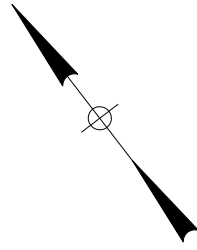
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-1891(500)
BRIDGE NO. WIN 018915.00
BRIDGE PLANS

PROJ. MANAGER	DATE	SIGNATURE	P.E. NUMBER	DATE
M. WIGHT				
D. SHAW				
R. MYERS				
M. GRAY				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

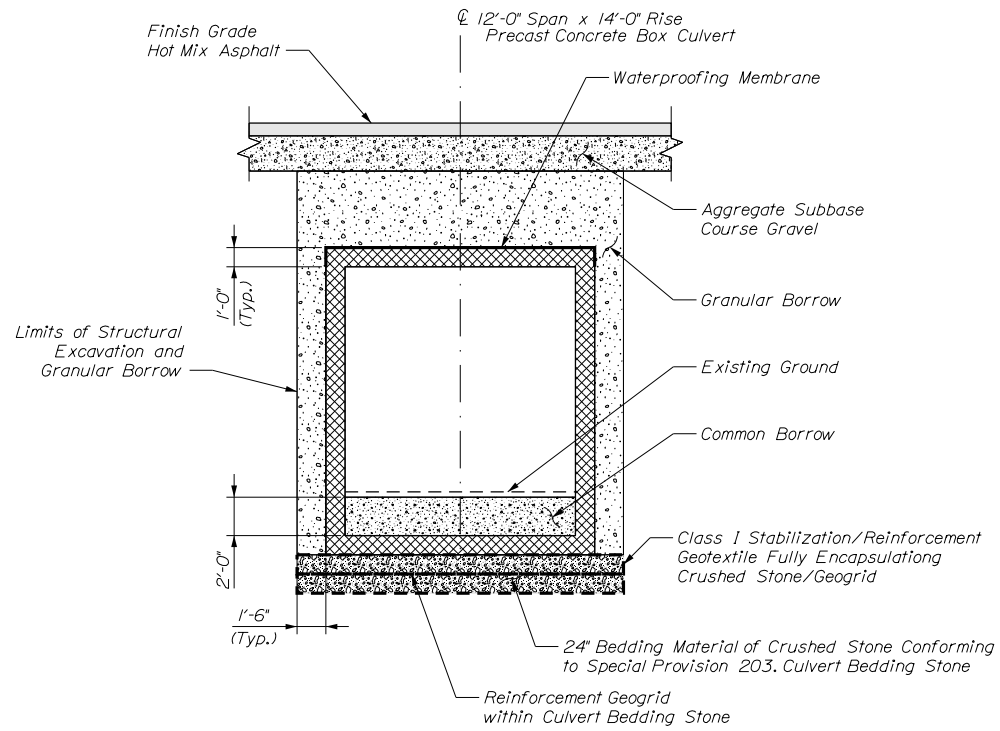
PROJ. MANAGER	DATE	SIGNATURE	P.E. NUMBER	DATE
M. WIGHT				
D. SHAW				
R. MYERS				
M. GRAY				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

I-395 - ROUTE 9 CONNECTOR
SNOWMOBILE 10C (77+55)
BREWER-EDDINGTON PENOBSCOT COUNTY
PLAN AND PROFILE -
SNOWMOBILE 10C

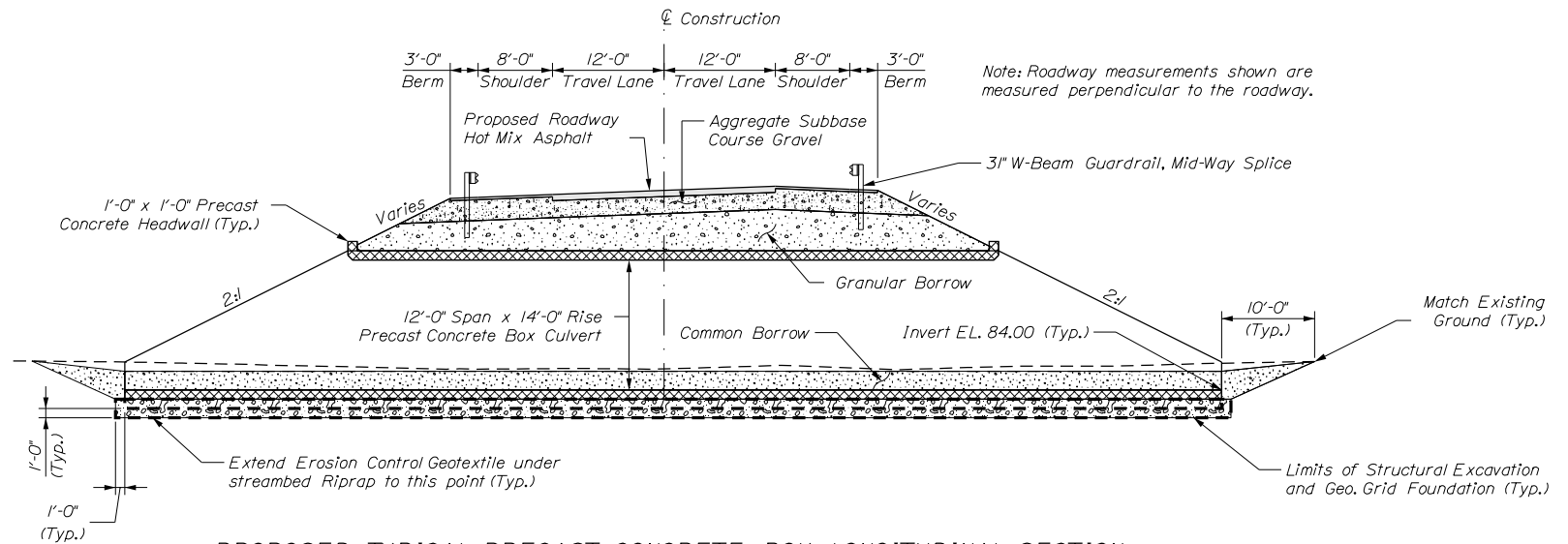
SHEET NUMBER
2
OF 20



PROPOSED PRECAST CONCRETE BOX PLAN



PROPOSED TYPICAL PRECAST CONCRETE BOX TRANSVERSE SECTION



PROPOSED TYPICAL PRECAST CONCRETE BOX LONGITUDINAL SECTION

Section Along ϕ of Concrete Box at Station 77+00

PROJ. MANAGER	BY	DATE	SIGNATURE
DESIGN-DETAILED	D. SHAW		
CHECKED-REVIEWED	R. MYERS		
DESIGN-DETAILED	M. GRAY		
DESIGNS-DETAILED	R. MAYER		
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

I-395 - ROUTE 9 CONNECTOR
SNOWMOBILE 10C (77+55)
BREWER-EDDINGTON PENOBSCOT COUNTY
PRECAST BOX DETAILS -
SNOWMOBILE 10C

SHEET NUMBER

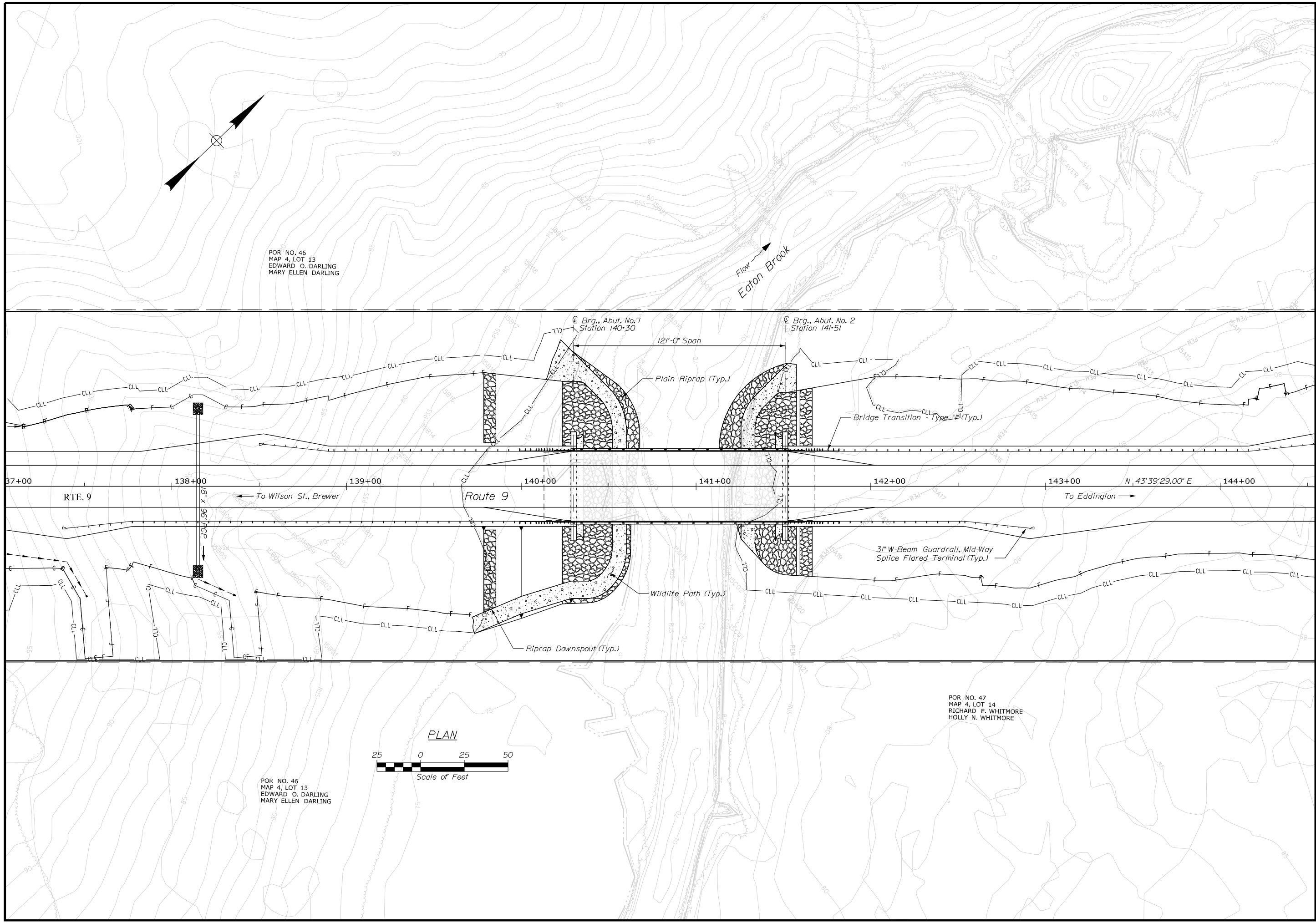
8

Date: 9/28/2020

Username: common

Division: HIGHWAY

Filename: ... \009_Plan_EatonBrook.dgn



POR NO. 46
 MAP 4, LOT 13
 EDWARD O. DARLING
 MARY ELLEN DARLING

POR NO. 46
 MAP 4, LOT 13
 EDWARD O. DARLING
 MARY ELLEN DARLING

POR NO. 47
 MAP 4, LOT 14
 RICHARD E. WHITMORE
 HOLLY N. WHITMORE

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 STP-1891(500)
 WIN 018915.00
 BRIDGE NO. BRIDGE PLANS

PROJ. MANAGER	M. WIGHT	BY	DATE
DESIGN-DETAILED	R. MYERS	D. SHAW	
CHECKED-REVIEWED	M. GRAY	R. MAYER	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

I-395 - ROUTE 9 CONNECTOR
 EATON BROOK (141+00)
 BREWER-EDDINGTON PENOBSCOT COUNTY
 PLAN - EATON BROOK

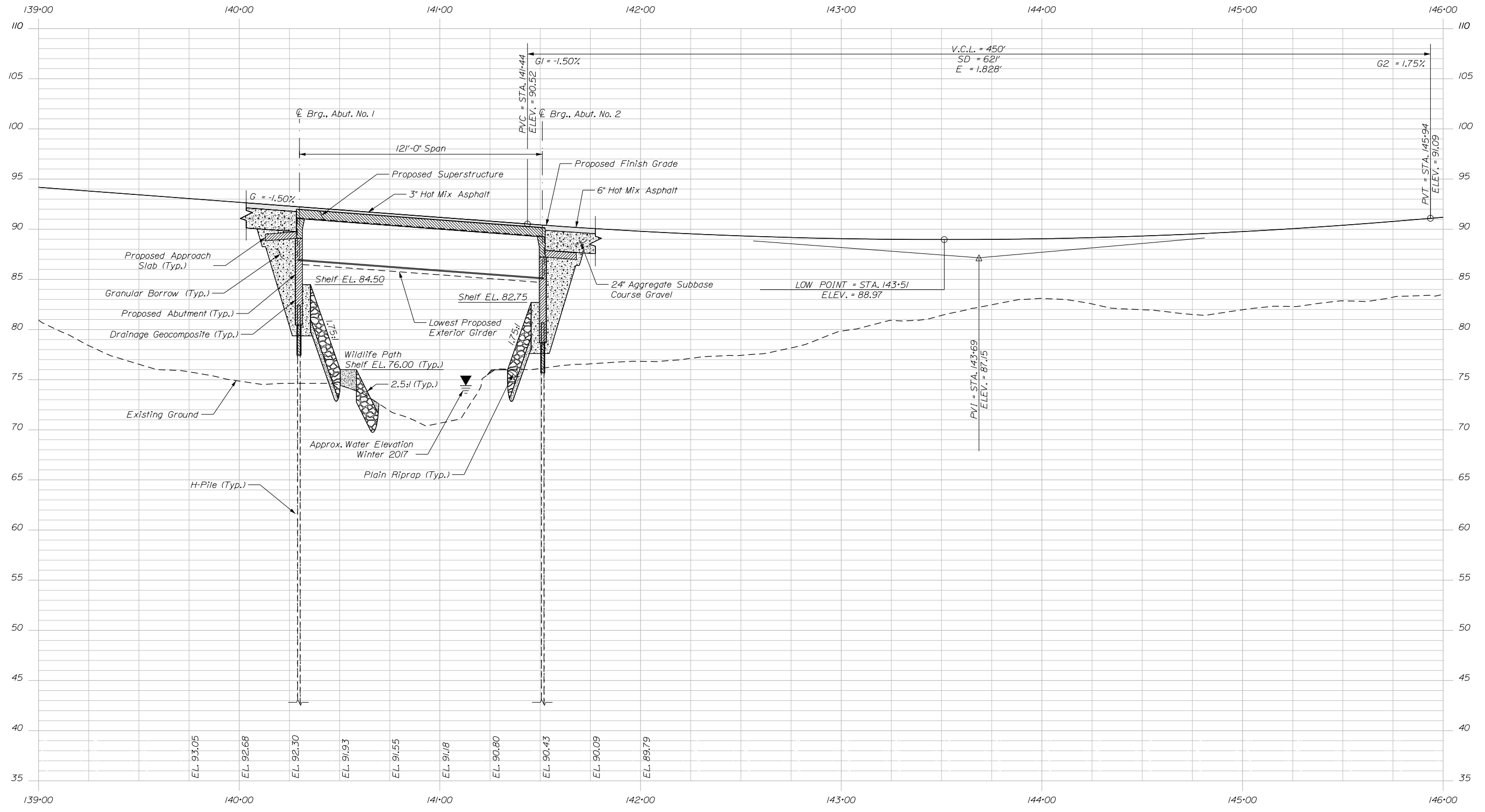
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 9
 OF 20

Date: 9/28/2020

Username: common

Division: HIGHWAY

Filename: ... \010_Profile_EatonBrook.dgn



PROFILE

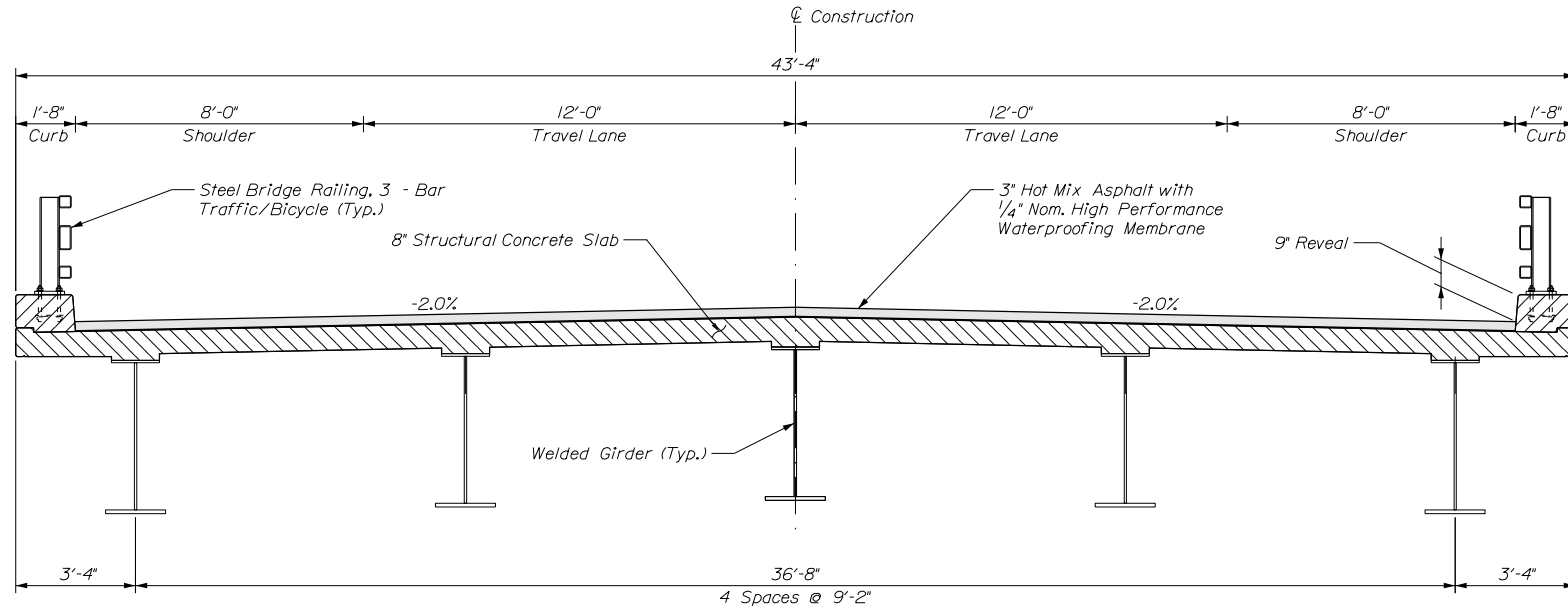
STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
STP-1891(500)
 WIN
 018915.00
 BRIDGE NO.
 BRIDGE PLANS

PROJ. MANAGER	BY	DATE
M. WIGHT	D. SHAW	
DESIGN-DETAILED	R. MYERS	
CHECKED-REVIEWED	R. MYERS	
DESIGN-DETAILED	M. GRAY	
DESIGN-DETAILED	R. MYER	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE	P.E. NUMBER	DATE

I-395 - ROUTE 9 CONNECTOR
 EATON BROOK (141+00)
 BREWER-EDDINGTON PENOBSCOT COUNTY
PROFILE - EATON BROOK

SHEET NUMBER
10
 OF 20



PROPOSED TYPICAL BRIDGE SECTION

Eaton Brook

I-395 - ROUTE 9 CONNECTOR
 EATON BROOK (141+00)
 BREWER-EDDINGTON PENOBSCOT COUNTY
 BRIDGE TYPICAL SECTION -
 EATON BROOK

SHEET NUMBER

11

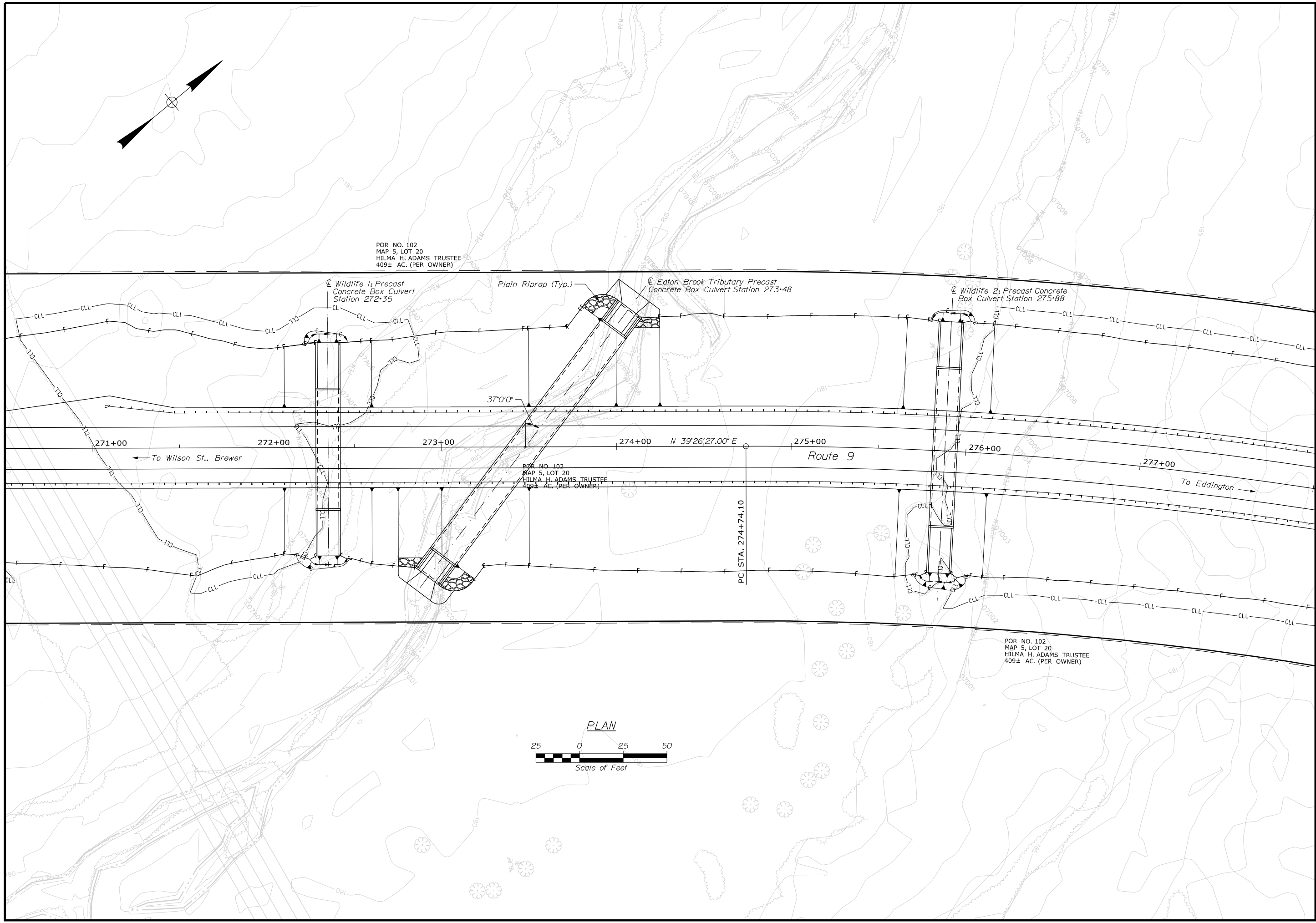
OF 20

STATE OF MAINE	BRIDGE NO.	BRIDGE PLANS
DEPARTMENT OF TRANSPORTATION	WIN	
STP-1891(500)	018915.00	
PROJ. MANAGER	M. WIGHT	BY
DESIGN-DETAILED	R. MYERS	D. SHAW
CHECKED-REVIEWED		R. MYER
DESIGN-DETAILED	M. GRAY	R. MYER
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		
SIGNATURE	P.E. NUMBER	DATE

Date: 9/28/2020

Username: common

Filename: ... \012_Plan_Group(272+36-275+89).dgn Division: HIGHWAY

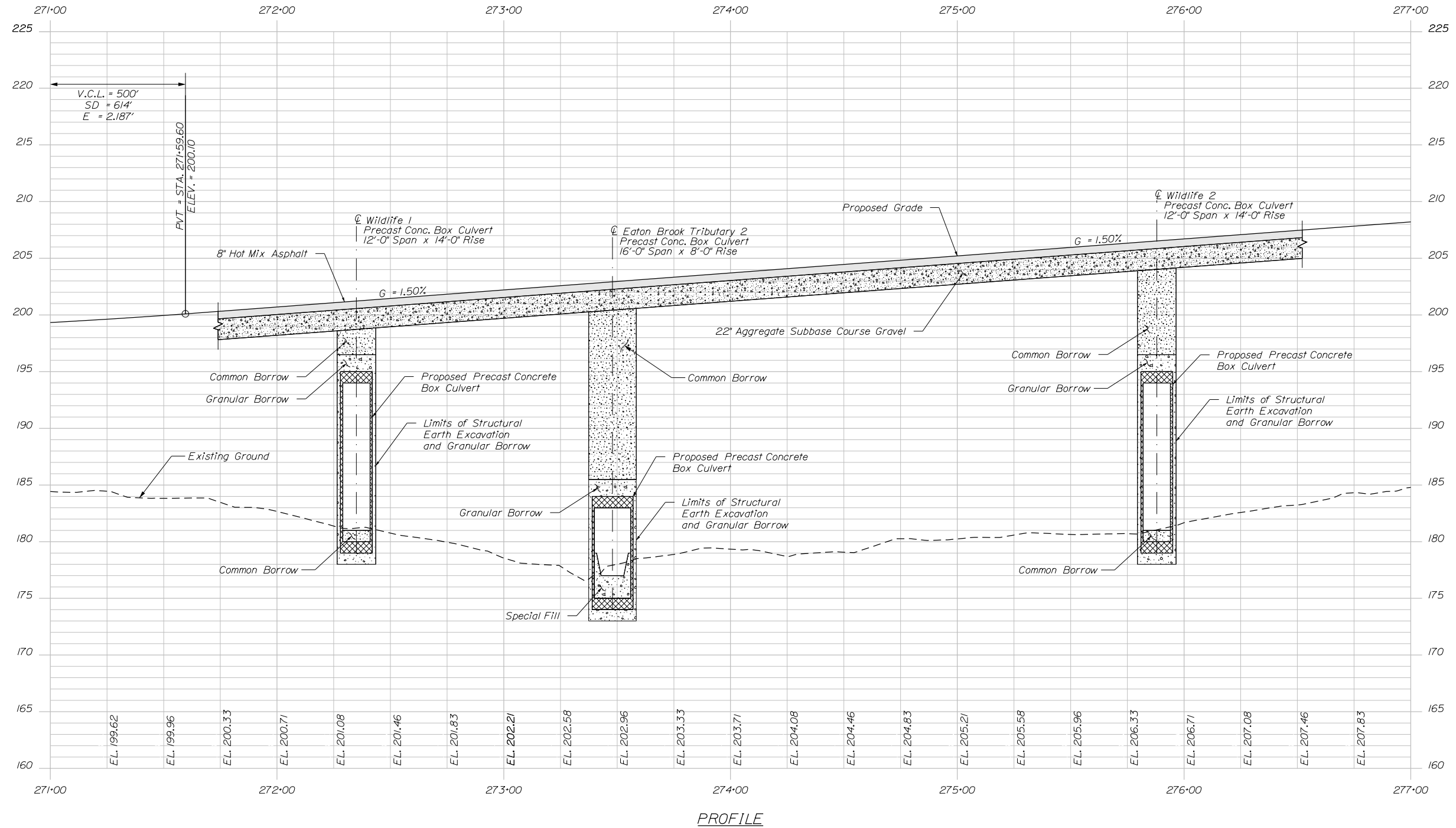


STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 STP-1891(500)
 WIN 018915.00
 BRIDGE NO.
 BRIDGE PLANS

PROJ. MANAGER	M. WIGHT	BY	DATE
DESIGN-DETAILED	R. MYERS	D. SHAW	
CHECKED-REVIEWED	M. GRAY	R. MYER	
DESIGNS-DETAILED			SIGNATURE
REVISIONS 1			P.E. NUMBER
REVISIONS 2			DATE
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

I-395 - ROUTE 9 CONNECTOR
 STATION 272+36 THROUGH 275+89
 BREWER-EDDINGTON PENOBSCOT COUNTY
 PLAN - STATION 272+36 THROUGH 275+89

SHEET NUMBER
 12
 OF 20



PROJ. MANAGER	M. WIGHT	DATE
DESIGN-DETAILED	R. MYERS	
CHECKED-REVIEWED	D. SHAW	
DESIGN-DETAILED	M. GRAY	
DESIGN-DETAILED	R. MAVER	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE	P.E. NUMBER	DATE

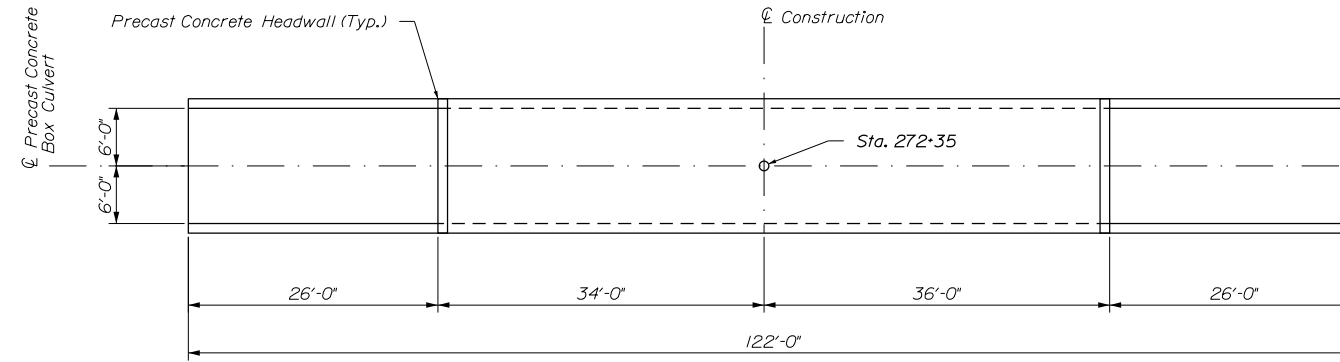
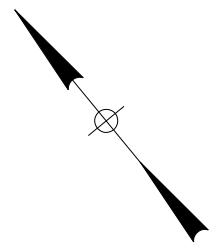
I-395 - ROUTE 9 CONNECTOR
STATION 272+36 THROUGH 275+89
BREWER-EDDINGTON PENOBSCOT COUNTY
PROFILE - STATION 272+36 THROUGH 275+89

Date: 9/28/2020

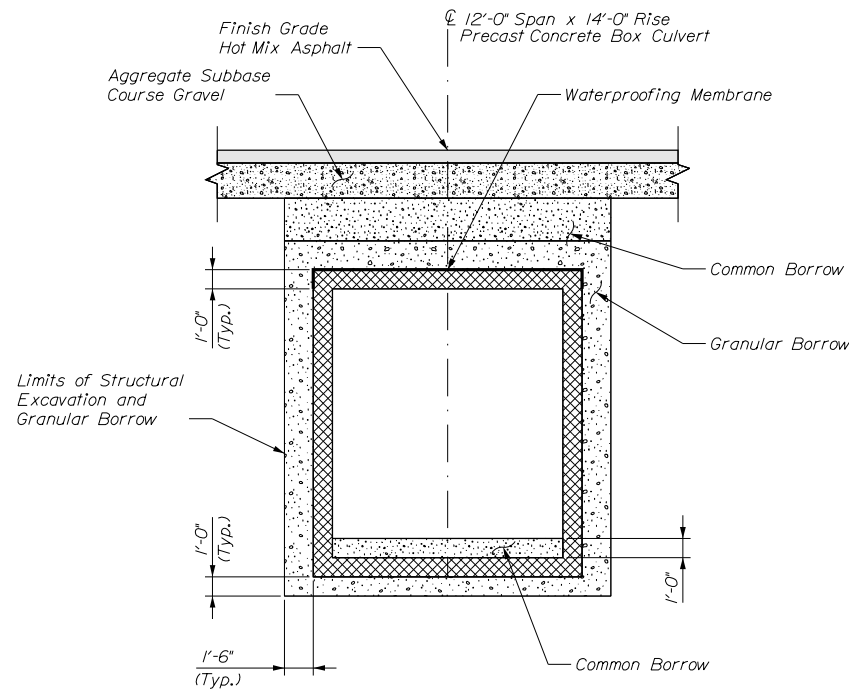
Username: common

Division: HIGHWAY

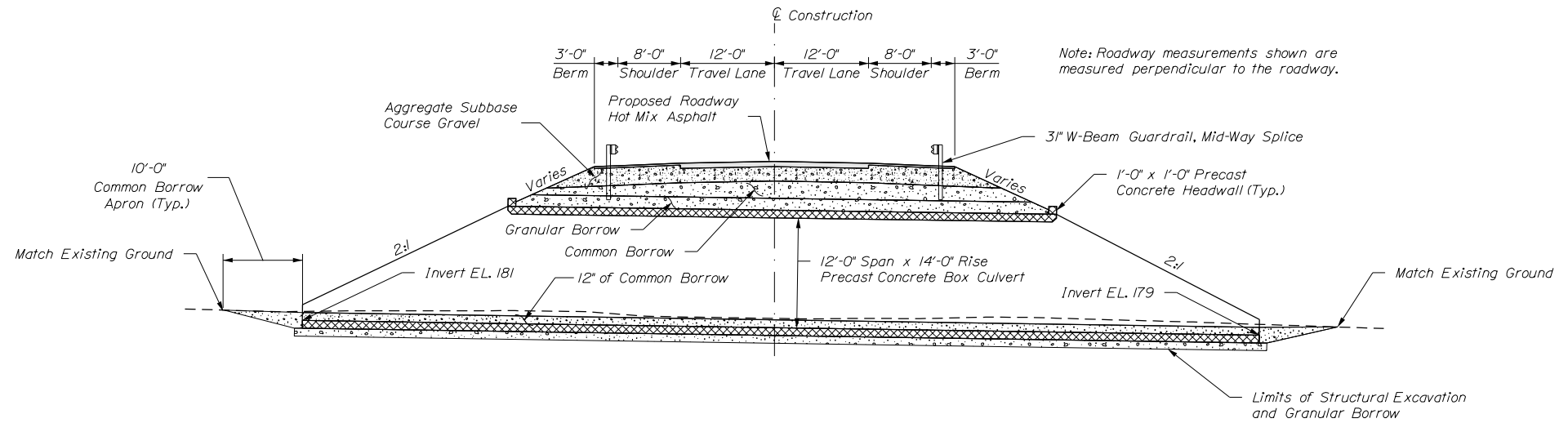
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PROPOSED PRECAST CONCRETE BOX PLAN



PROPOSED TYPICAL PRECAST CONCRETE BOX TRANSVERSE SECTION



PROPOSED TYPICAL PRECAST CONCRETE BOX LONGITUDINAL SECTION

Section Along ℄ of Concrete Box at Station 272+35

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-1891(500)

BRIDGE NO. WIN 018915.00 BRIDGE PLANS

PROJ. MANAGER	DATE	BY	M. WIGHT	SIGNATURE
DESIGN-DETAILED		D. SHAW		
CHECKED-REVIEWED		R. MYERS		
DESIGN-DETAILED		R. MAYER		
DESIGN-DETAILED		M. GRAY		
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

I-395 - ROUTE 9 CONNECTOR
WILDLIFE 1 (272+36)
BREWER-EDDINGTON PENOBSCOT COUNTY
PRECAST BOX DETAILS -
WILDLIFE 1

SHEET NUMBER

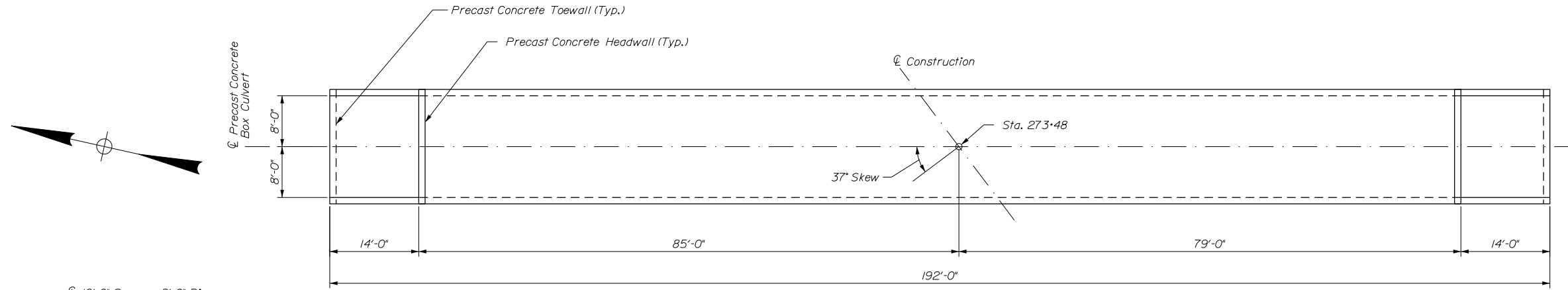
14

OF 20

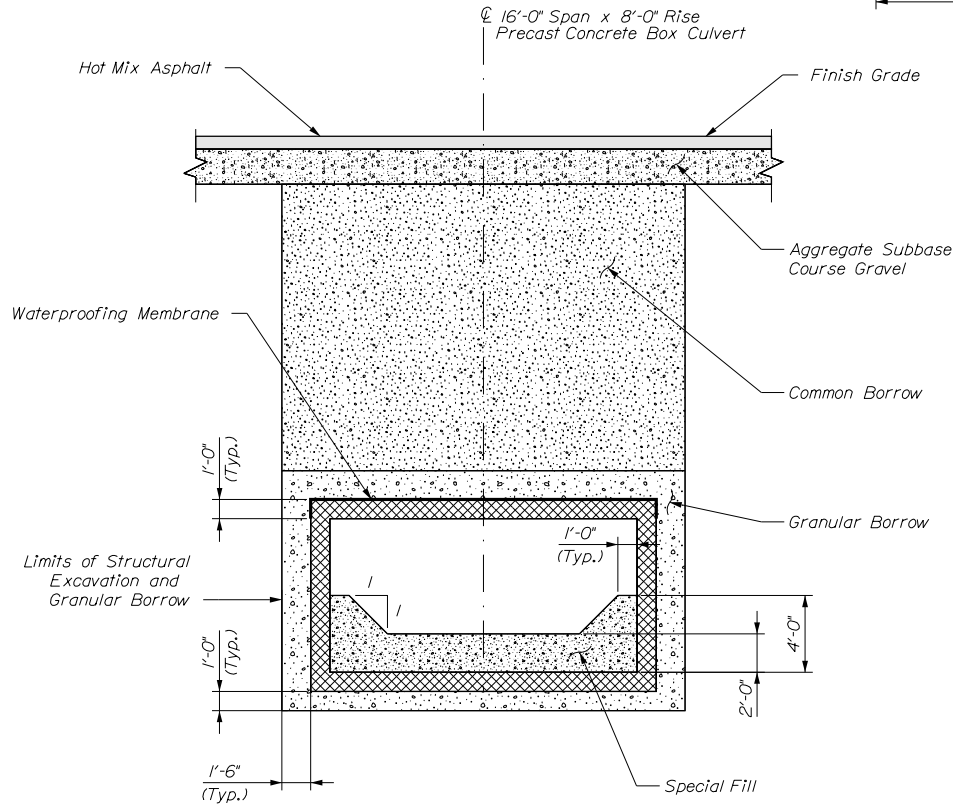
Date: 9/28/2020

Username: common

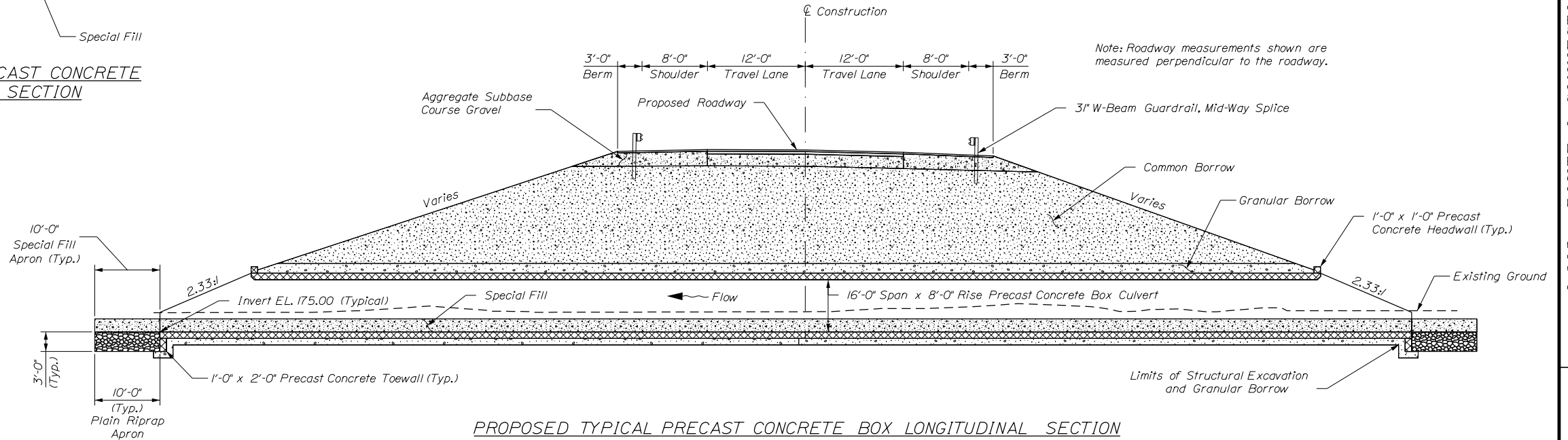
Filename: ... \015_Btypical_EatonBrook.Trib(273+36).dgn



PROPOSED PRECAST CONCRETE BOX PLAN



PROPOSED TYPICAL PRECAST CONCRETE BOX TRANSVERSE SECTION



PROPOSED TYPICAL PRECAST CONCRETE BOX LONGITUDINAL SECTION

Section Along \hat{C} of Concrete Box at Sta. 273+48 Skewed 37° Ahead on Left

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-1891(500)

BRIDGE NO. WIN 018915.00 BRIDGE PLANS

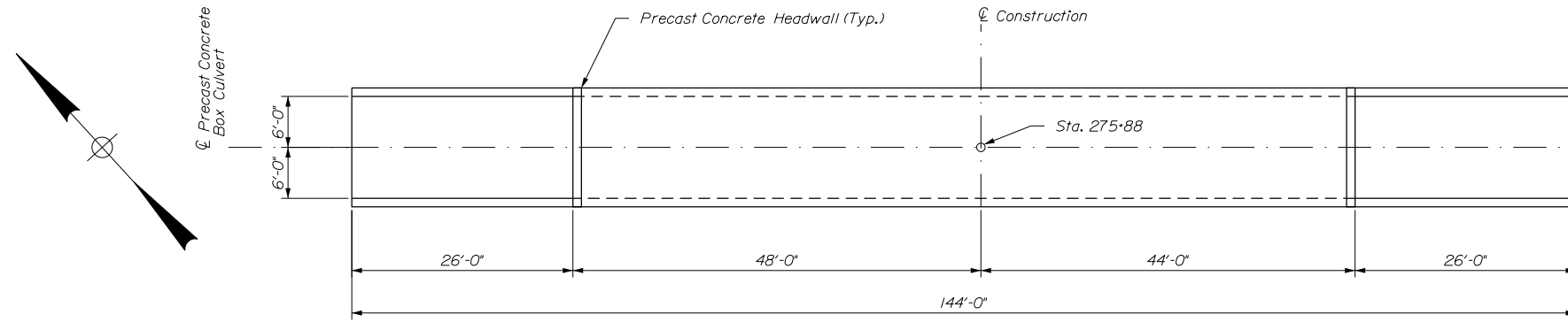
PROJ. MANAGER	DATE	BY	M. WIGHT	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED		D. SHAW	R. MYERS				
CHECKED-REVIEWED		R. MAYER	M. GRAY				
DESIGNS-DETAILED							
REVISIONS 1							
REVISIONS 2							
REVISIONS 3							
REVISIONS 4							
FIELD CHANGES							

I-395 - ROUTE 9 CONNECTOR
EATON BROOK TRIBUTARY (273+36)
BREWER-EDDINGTON PENOBSCOT COUNTY
PRECAST BOX DETAILS -
EATON BROOK TRIBUTARY

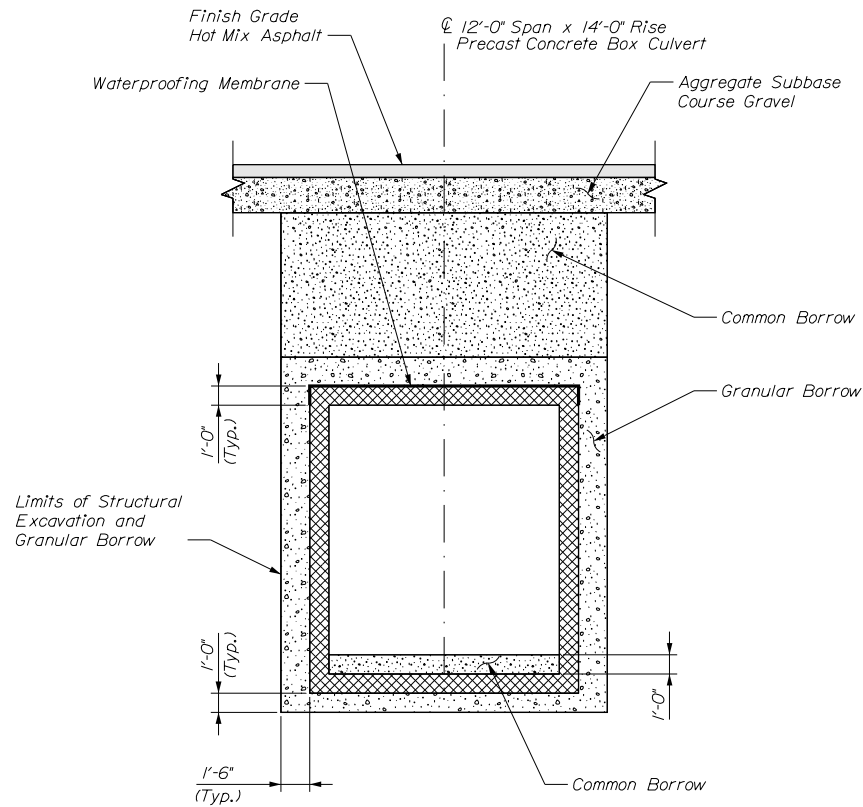
SHEET NUMBER

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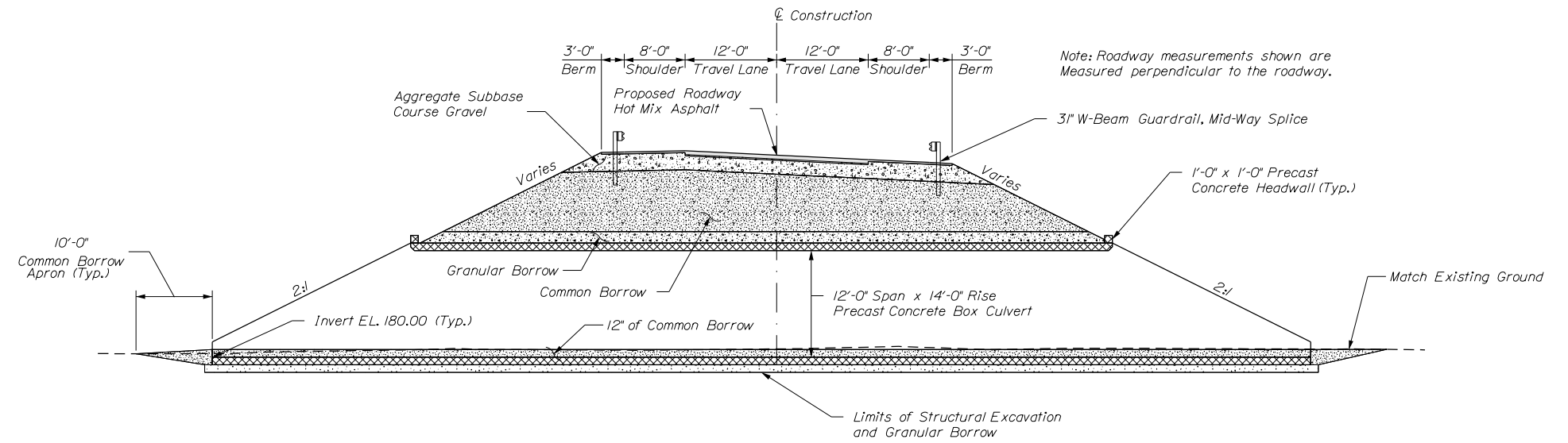
OF 20



PROPOSED PRECAST CONCRETE BOX PLAN



PROPOSED TYPICAL PRECAST CONCRETE BOX TRANSVERSE SECTION



PROPOSED TYPICAL PRECAST CONCRETE BOX LONGITUDINAL SECTION

Section Along $\text{\textcircled{C}}$ of Concrete Box at Station 275+88

PROJ. MANAGER	DATE	BY	M. WIGHT	DATE
DESIGN-DETAILED		R. MYERS	D. SHAW	
CHECKED-REVIEWED		M. GRAY	R. MAYER	
DESIGNS-DETAILED				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

I-395 - ROUTE 9 CONNECTOR
WILDLIFE 2 (275+89)
BREWER-EDDINGTON PENOBSCOT COUNTY
PRECAST BOX DETAILS -
WILDLIFE 2

SHEET NUMBER

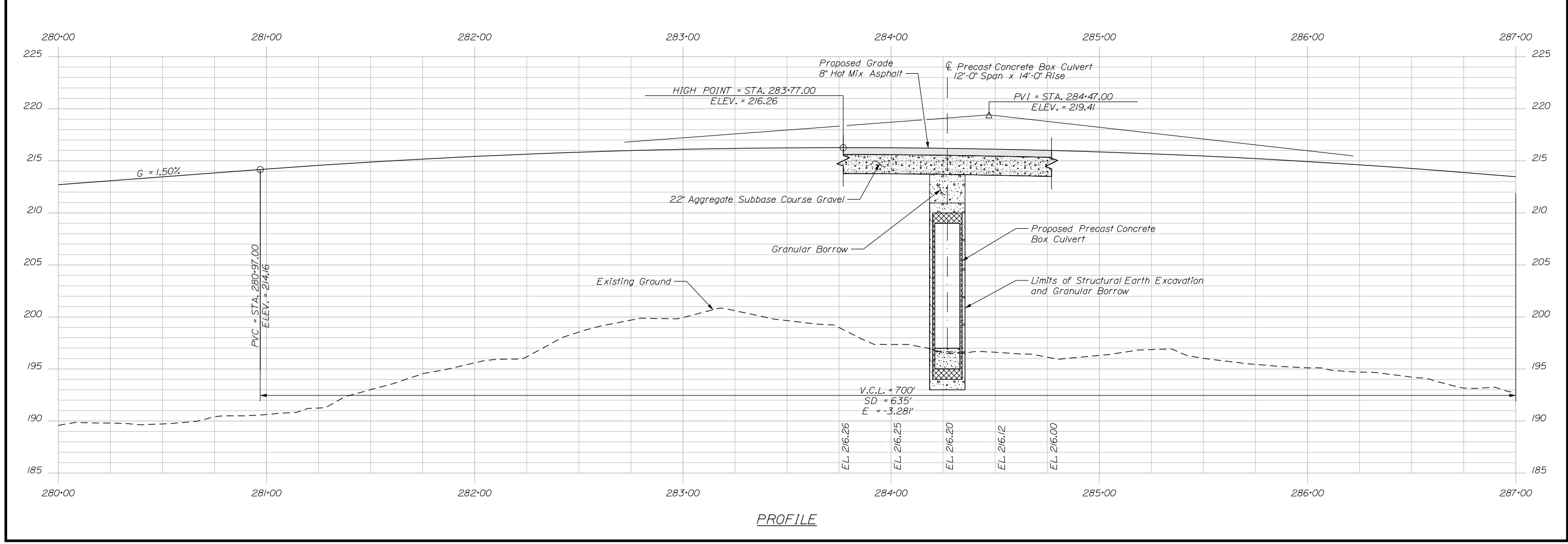
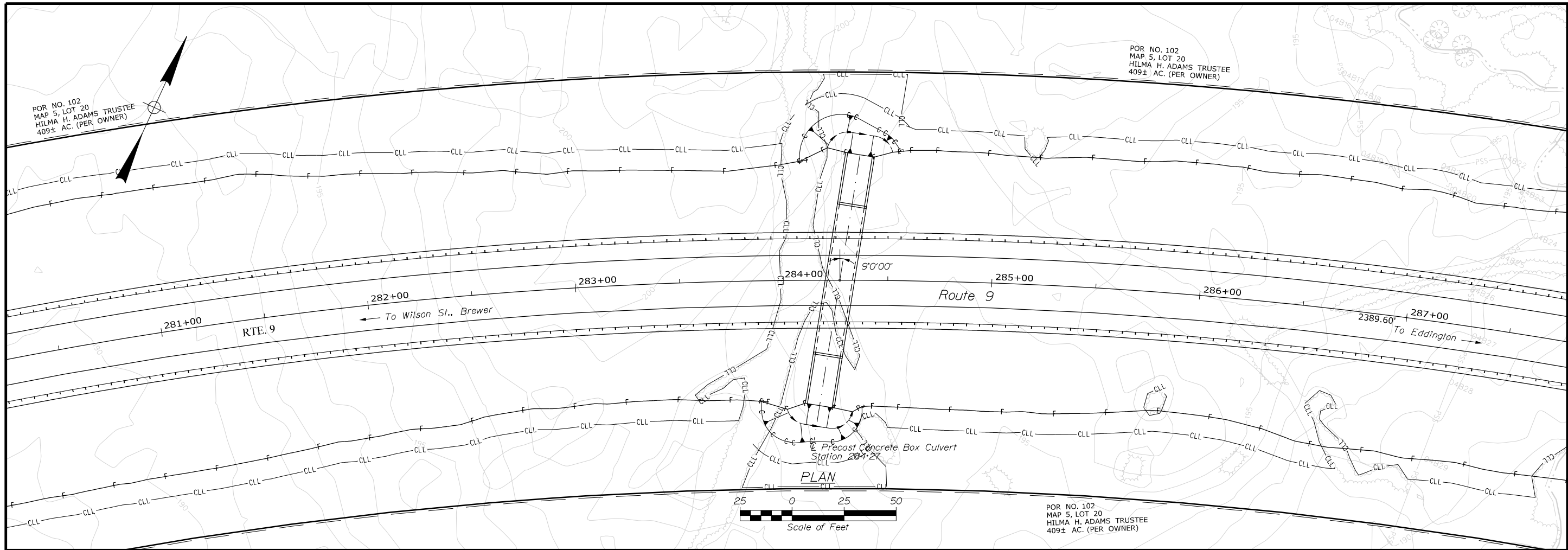
16

OF 20

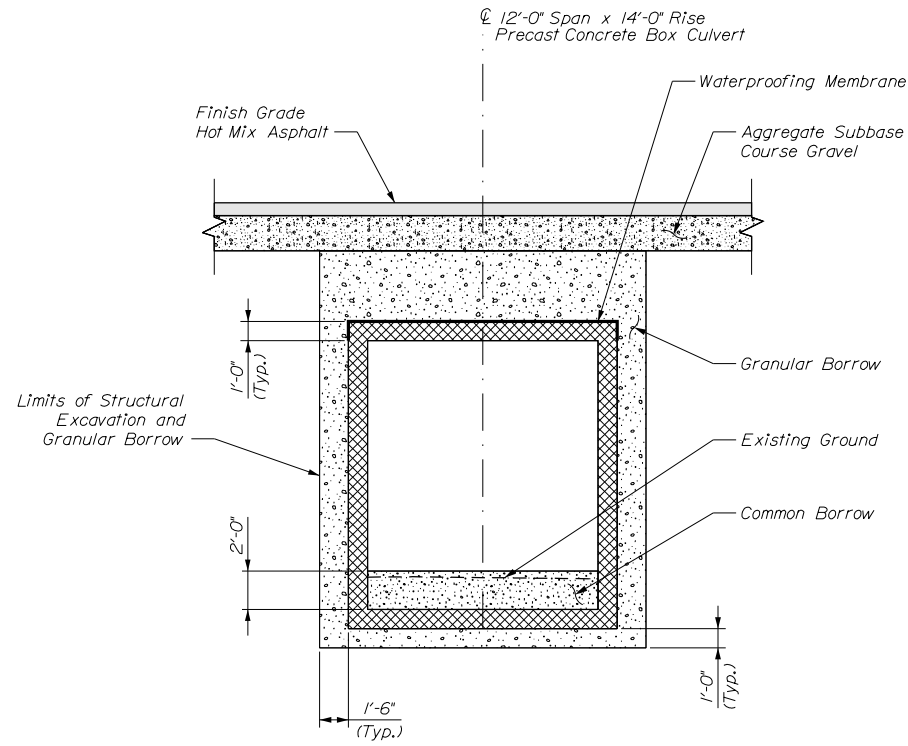
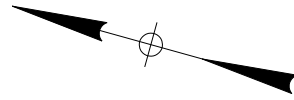
Date: 9/28/2020

Username: common

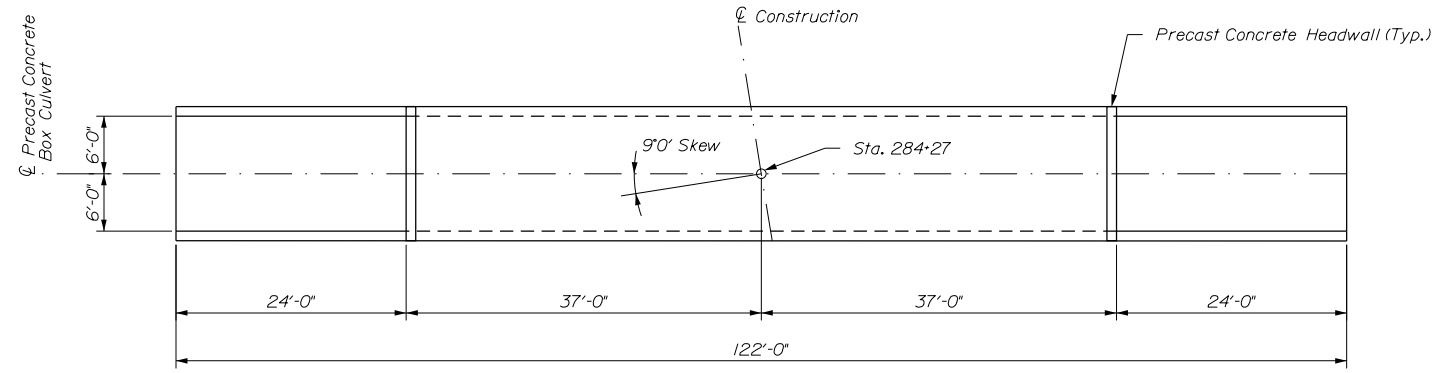
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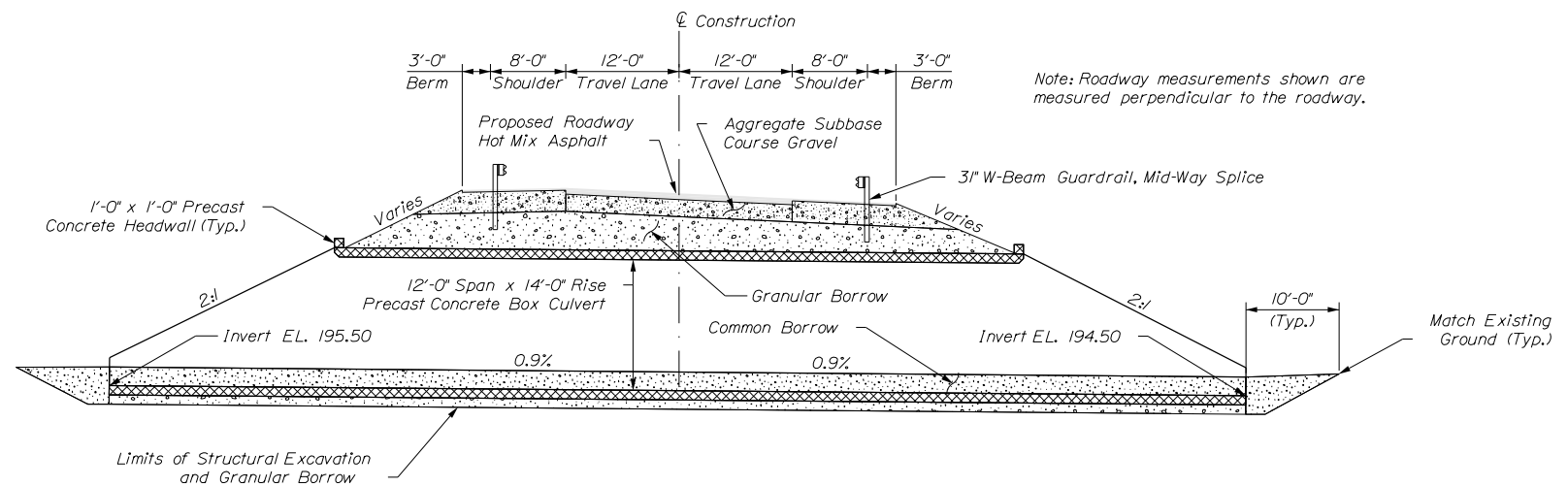
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-1891(500)		BRIDGE NO.		WIN		018915.00		BRIDGE PLANS	
PROJECT TITLE		PROJECT NO.		DATE		BY		M. WIGHT		SIGNATURE		P.E. NUMBER	
I-395 - ROUTE 9 CONNECTOR		SNOWMOBILE 107 (284+06)		9/28/2020		D. SHAW		R. MYERS		R. MAYER		DATE	
BREWER-EDDINGTON PENOBSCOT COUNTY		PLAN AND PROFILE -		SNOWMOBILE 107		DESIGN-DETAILED		CHECKED-REVIEWED		DESIGN-DETAILED		REVISIONS 1	
SHEET NUMBER		17		OF 20		DESIGN-DETAILED		REVISIONS 2		REVISIONS 3		REVISIONS 4	
FIELD CHANGES													



PROPOSED TYPICAL PRECAST CONCRETE BOX TRANSVERSE SECTION



PROPOSED PRECAST CONCRETE BOX PLAN



PROPOSED TYPICAL PRECAST CONCRETE BOX LONGITUDINAL SECTION

Section Along ϕ of Concrete Box at Station 284+27 Skewed 9° Ahead on Left

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED R. MYERS	D. SHAW	
CHECKED-REVIEWED M. GRAY	R. MAYER	
DESIGN-DETAILED M. GRAY		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

I-395 - ROUTE 9 CONNECTOR
SNOWMOBILE 107 (284+06)
BREWER-EDDINGTON PENOBSCOT COUNTY
PRECAST BOX DETAILS -
SNOWMOBILE 107

SHEET NUMBER

18

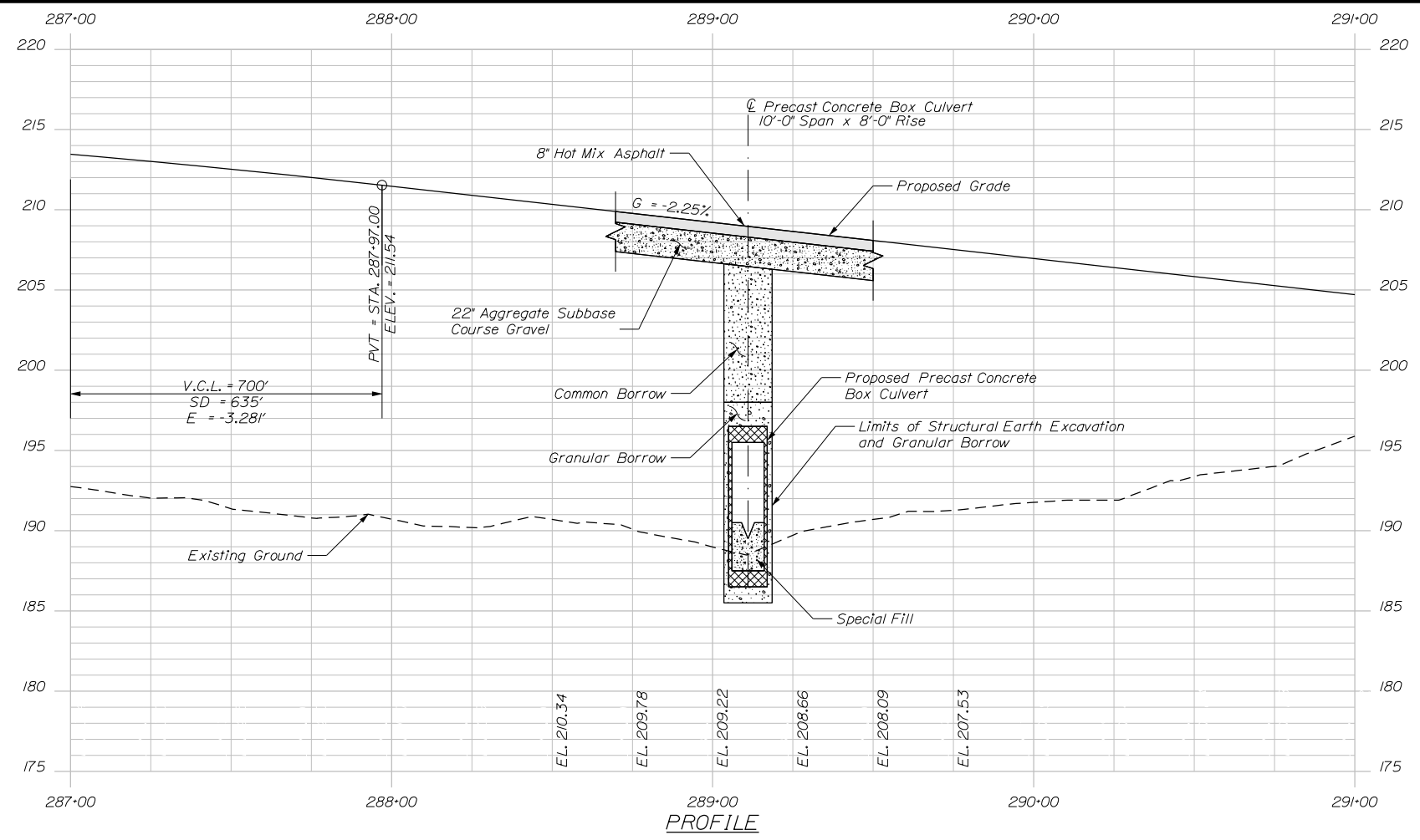
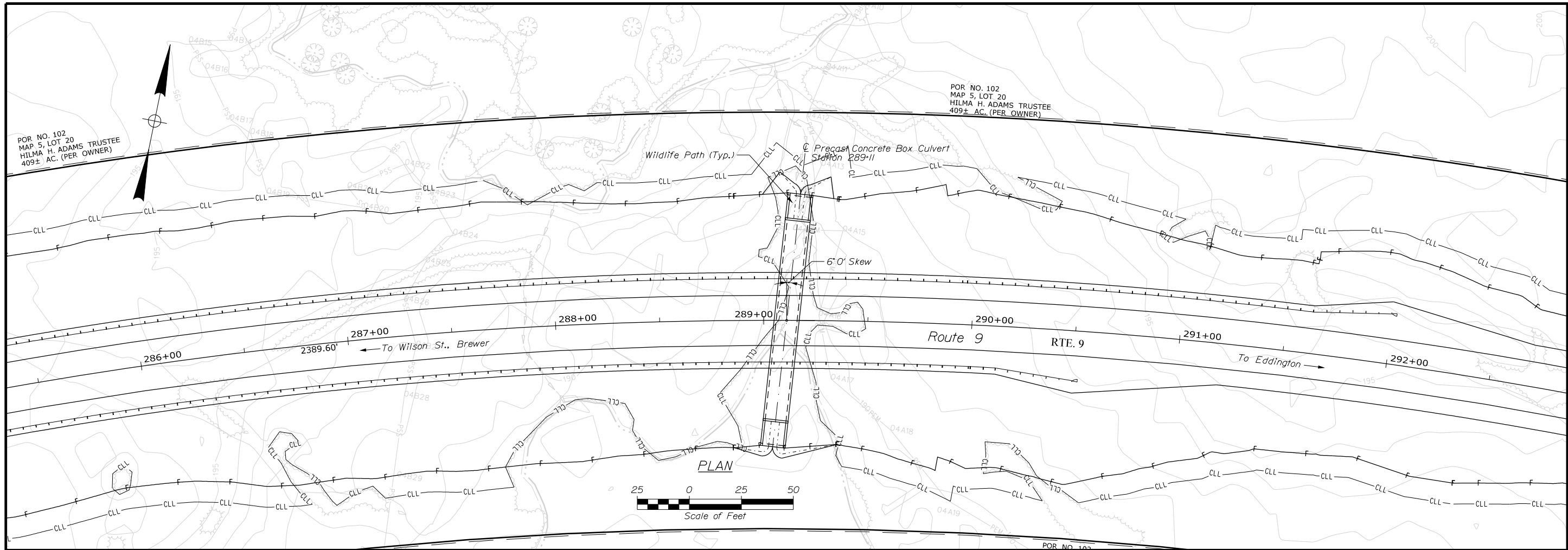
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Division: HIGHWAY

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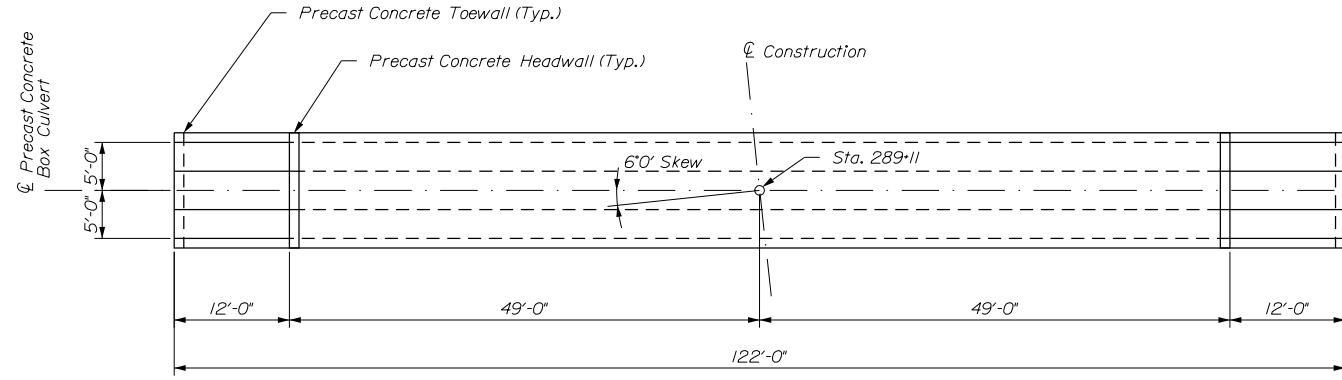
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 DEPARTMENT OF TRANSPORTATION
 STP-1891(500)
 WIN 018915.00
 BRIDGE NO. _____
 BRIDGE PLANS

PROJ. MANAGER	M. WIGHT	DATE
DESIGN-DETAILED	R. MYERS	
CHECKED-REVIEWED	D. SHAW	
DESIGN-DETAILED	M. GRAY	
DESIGN-DETAILED	R. MAYER	
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FIELD CHANGES		

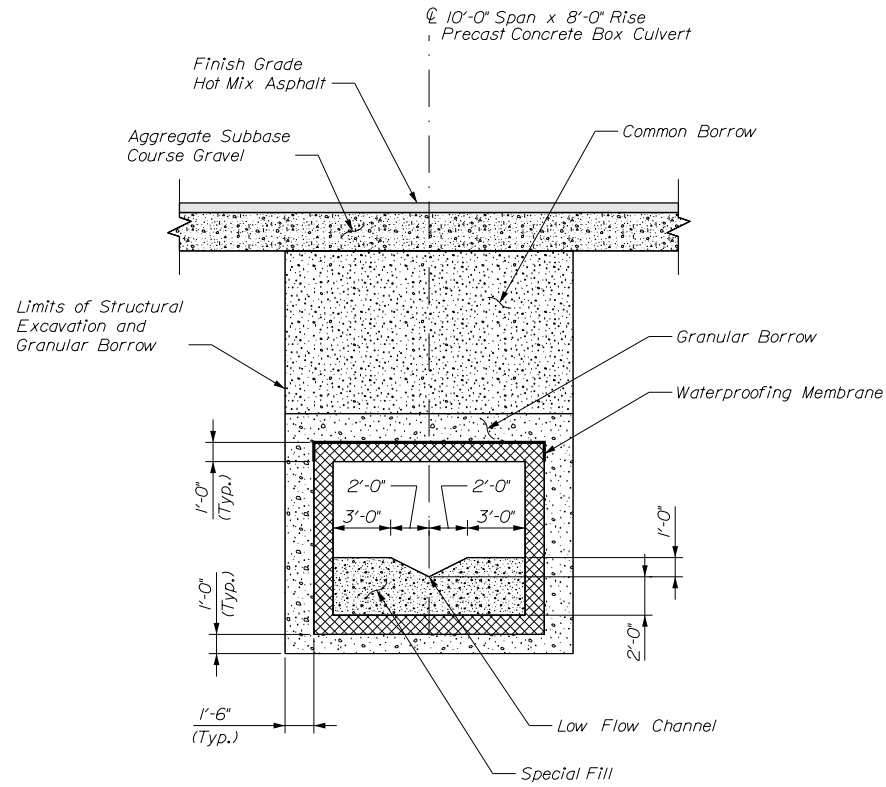
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I-395 - ROUTE 9 CONNECTOR
 WETLAND CROSSING (289+11)
 BREWER-EDDINGTON PENOBSCOT COUNTY
 PLAN AND PROFILE -
 WETLAND CROSSING

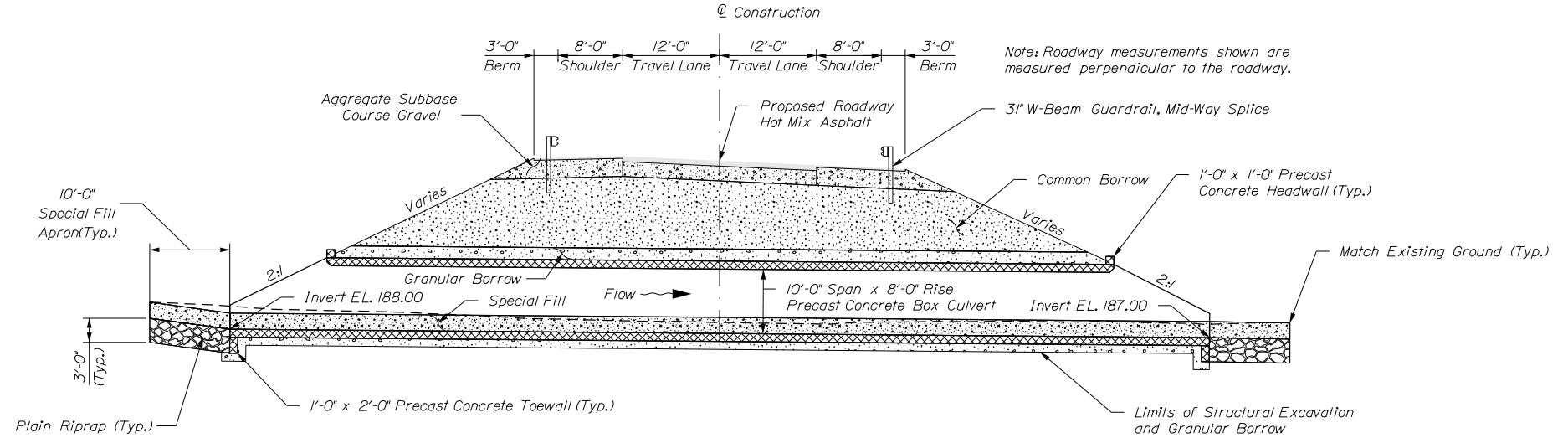
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 OF 20



PROPOSED PRECAST CONCRETE BOX PLAN



PROPOSED TYPICAL PRECAST CONCRETE BOX TRANSVERSE SECTION



PROPOSED TYPICAL PRECAST CONCRETE BOX LONGITUDINAL SECTION

Section Along ϕ of Concrete Box at Sta. 289+11 Skewed 6° Ahead on Left

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED R. MYERS	D. SHAW				
CHECKED-REVIEWED M. GRAY	R. MAYER				
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REVISIONS 4					
FIELD CHANGES					

I-395 - ROUTE 9 CONNECTOR
WETLAND CROSSING (289+11)
BREWER-EDDINGTON PENOBSCOT COUNTY
PRECAST BOX DETAILS -
WETLAND CROSSING

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



LIST OF DRAWINGS

Title Sheet	1
Plan - Eastern Avenue	2
Profile - Eastern Avenue	3
Plan - Lambert Road	4
Profile - Lambert Road	5
Profile - Route 9 Over Lambert Road	6
Plan - Clewleyville Road	7
Profile - Clewleyville Road	8
Plan - Levenseller Road	9
Profile - Levenseller Road	10
Bridge Typical Sections	11

BREWER-EDDINGTON PENOBSCOT COUNTY I-395 - ROUTE 9 CONNECTOR ROADWAY CROSSINGS FEDERAL AID PROJECT NO. STP-1891(500) PART I

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

MATERIALS

Concrete:
 Curbs Class "LP"
 Precast Class "P"
 All Other Class "A"
 Reinforcing Steel ASTM A 955, Grade 75

Structural Steel:
 All Material (except as noted) ASTM A 709, Grade 50
 High Strength Bolts ASTM F 3125, Grade A 325, Type 3

BASIC DESIGN STRESSES

Concrete $f'c = 4000$ psi
 Reinforcing Steel $f_y = 75,000$ psi
 Structural Steel:
 ASTM A 709, Grade 50 $F_y = 50,000$ psi
 ASTM A 709, Grade 36 $F_y = 36,000$ psi
 ASTM F 3125, Grade A 325 $F_u = 120,000$ psi

PROJECT LOCATION

Starting in Brewer at the intersection of I-395 and Wilson Street (Route 1A).
 Ending in Eddington on Route 9 approximately 1000' west of where Route 9
 crosses Meadow Brook.

STP-1891(500) WIN018915.00

BREWER-EDDINGTON
I-395 - ROUTE 9 CONNECTOR

TITLE SHEET

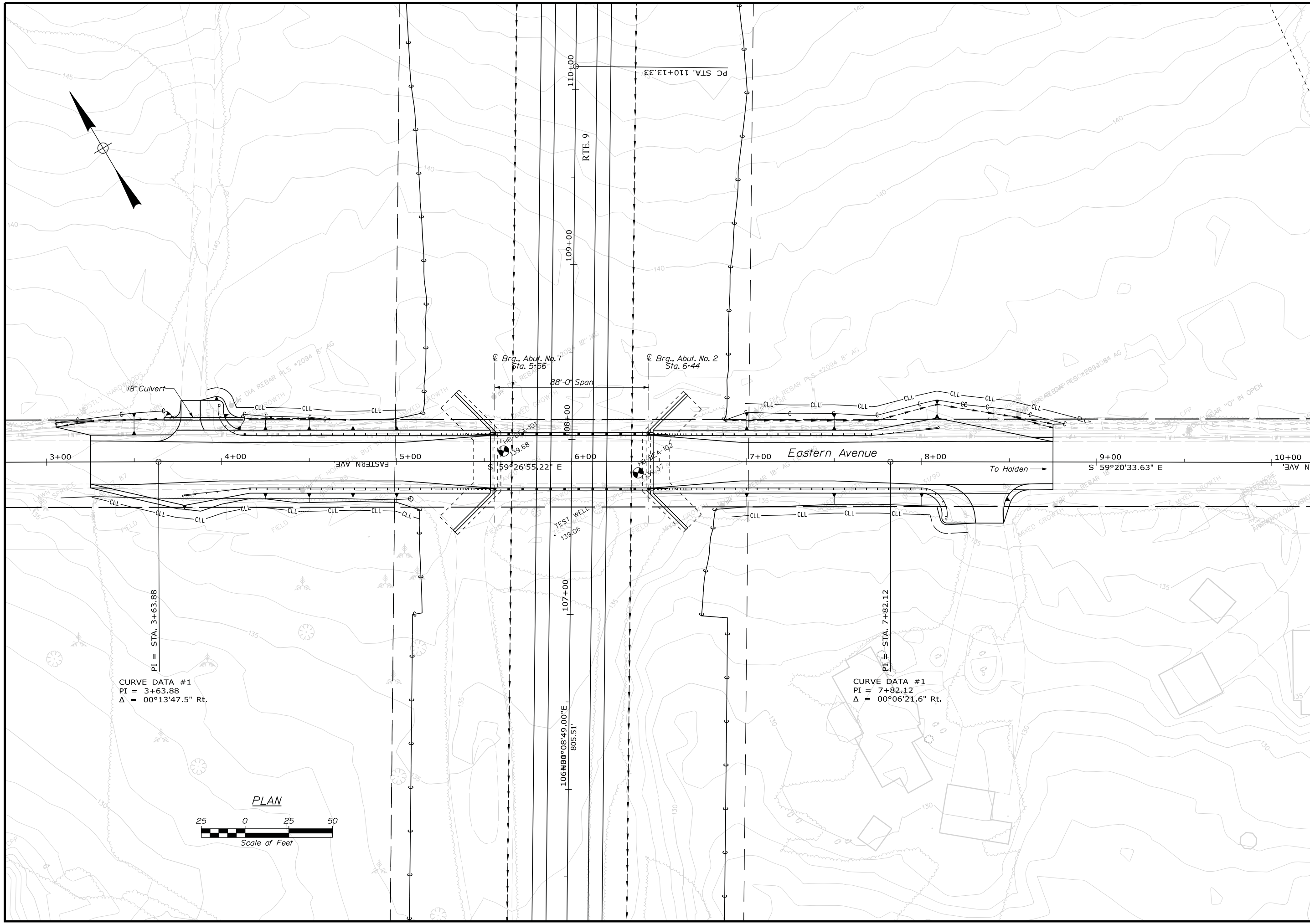
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OF 11

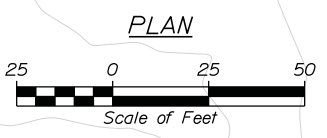
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COMMISSIONER:	SIGNATURE	P. E. NUMBER
CHIEF ENGINEER:	DATE	DATE

Date:6/11/2020
User:David.Show
Division: BRIDGE
Filename: \\MSTA\001_Title(Roadways).dgn



CURVE DATA #1
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CURVE DATA #1
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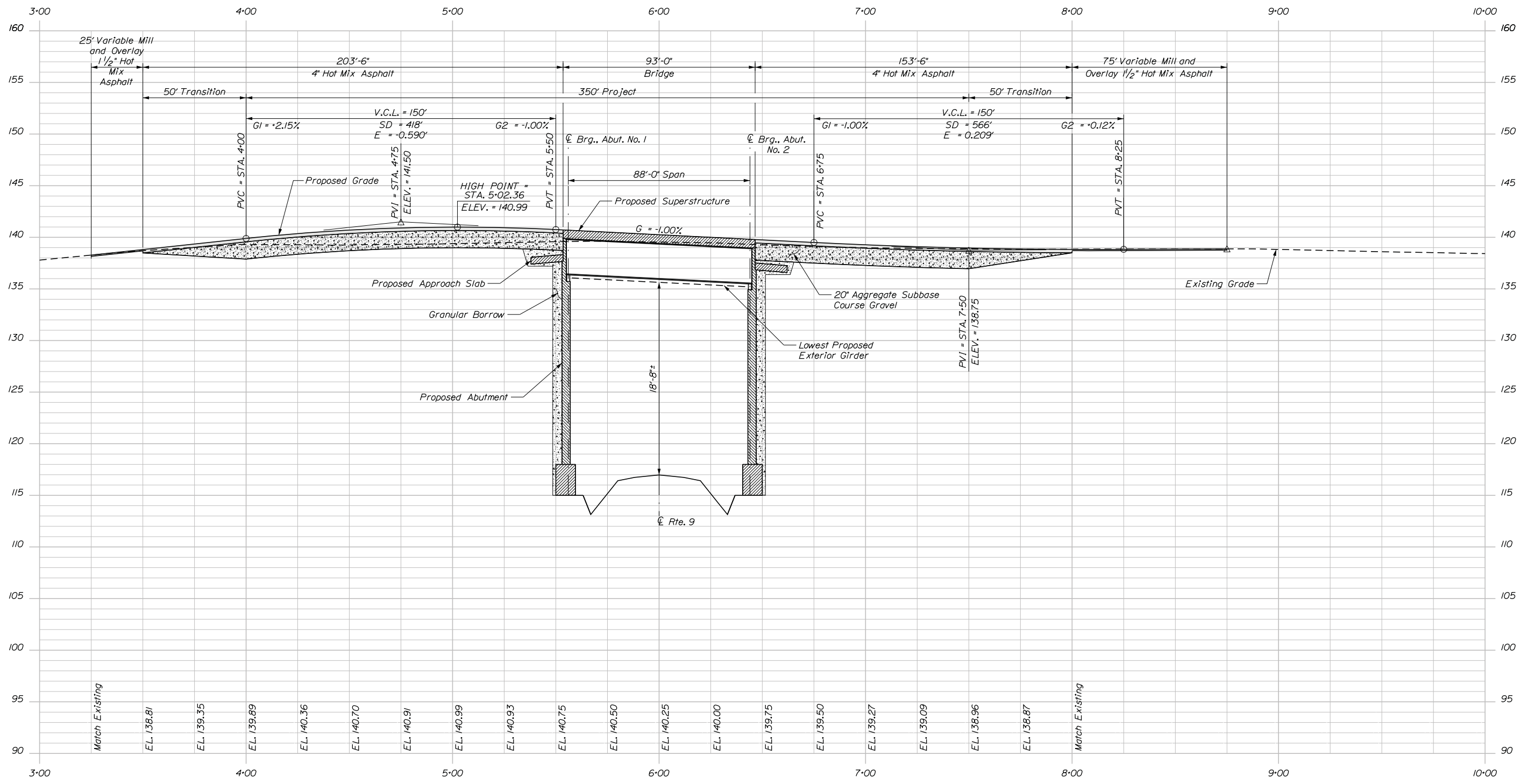
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CHECKED-REVIEWED	M. GRAY	R. MYER	
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PLAN - EASTERN AVENUE			
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Date: 6/11/2020

Username: David Shaw

Division: BRIDGE

Filename: ... \003_Profile_EasternAvenue.dgn



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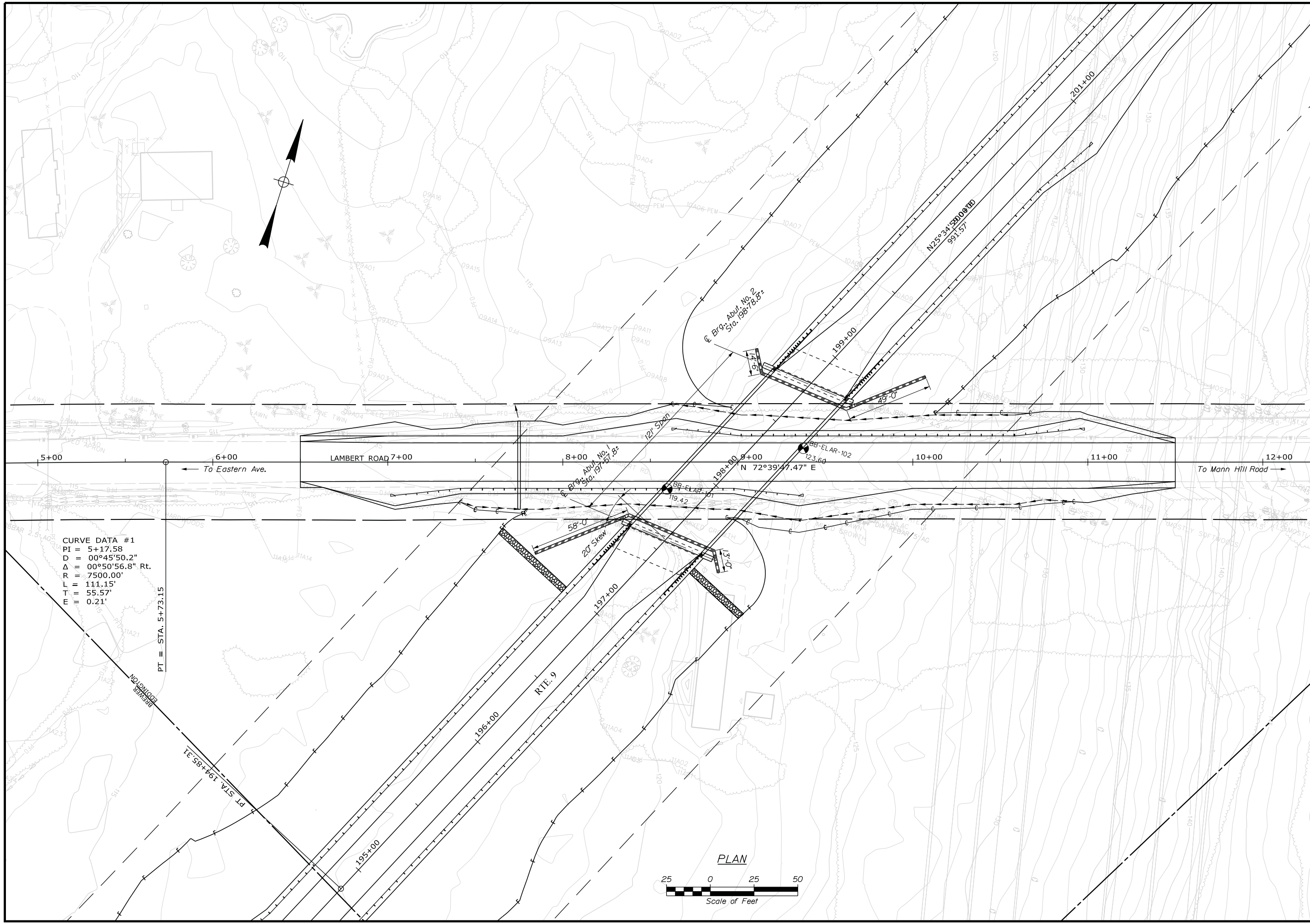
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 STP-1891(500)
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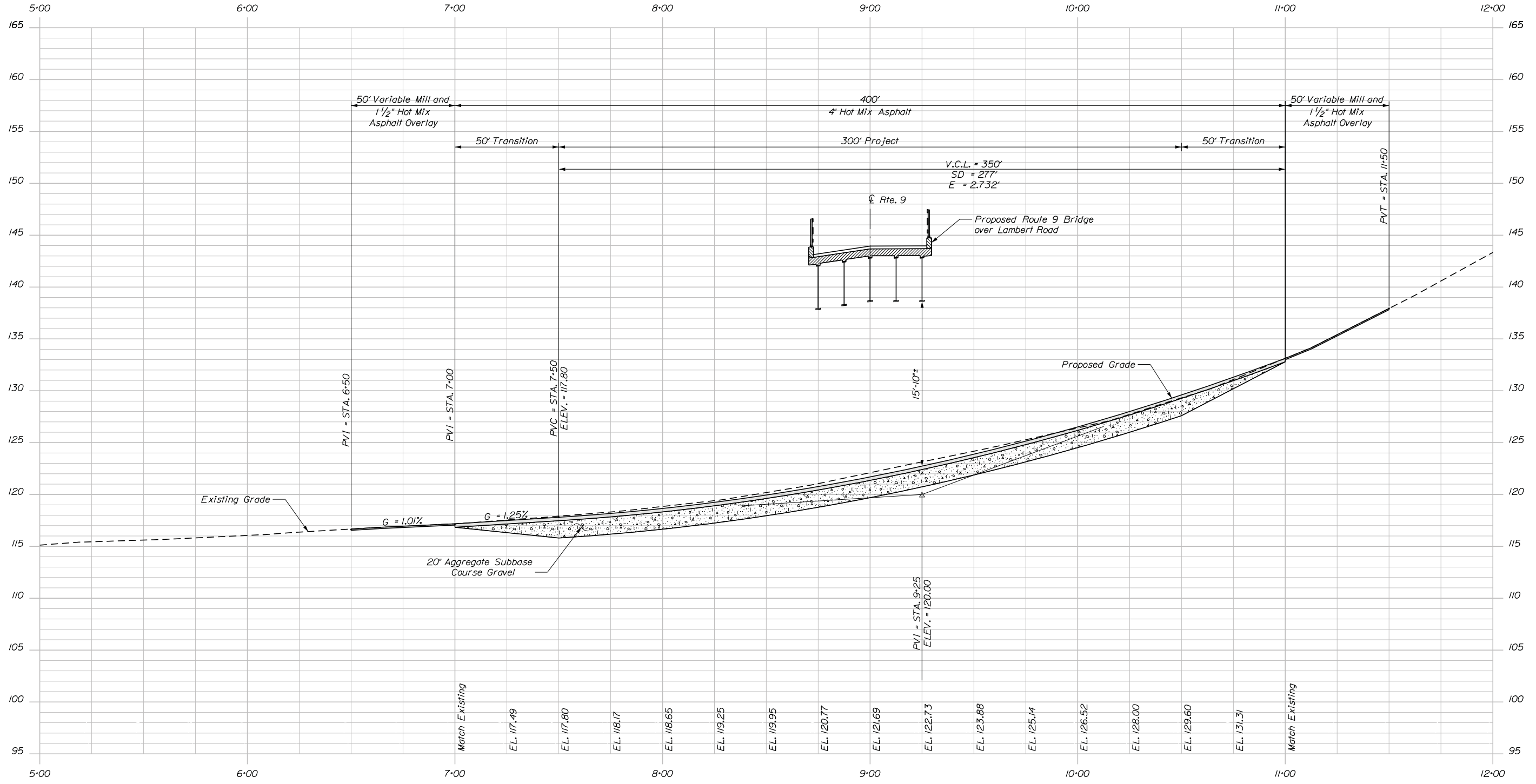
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I-395 - ROUTE 9 CONNECTOR
 ROUTE 9
 BREWER-EDDINGTON PENOBSCOT COUNTY
 PROFILE - EASTERN AVENUE

SHEET NUMBER
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 OF 11



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
I-395 - ROUTE 9 CONNECTOR		STP-1891(500)	
LAMBERT ROAD		BRIDGE NO. 018915.00	
BREWER-EDDINGTON PENOBSCOT COUNTY		WIN 018915.00	
PLAN - LAMBERT ROAD		BRIDGE PLANS	
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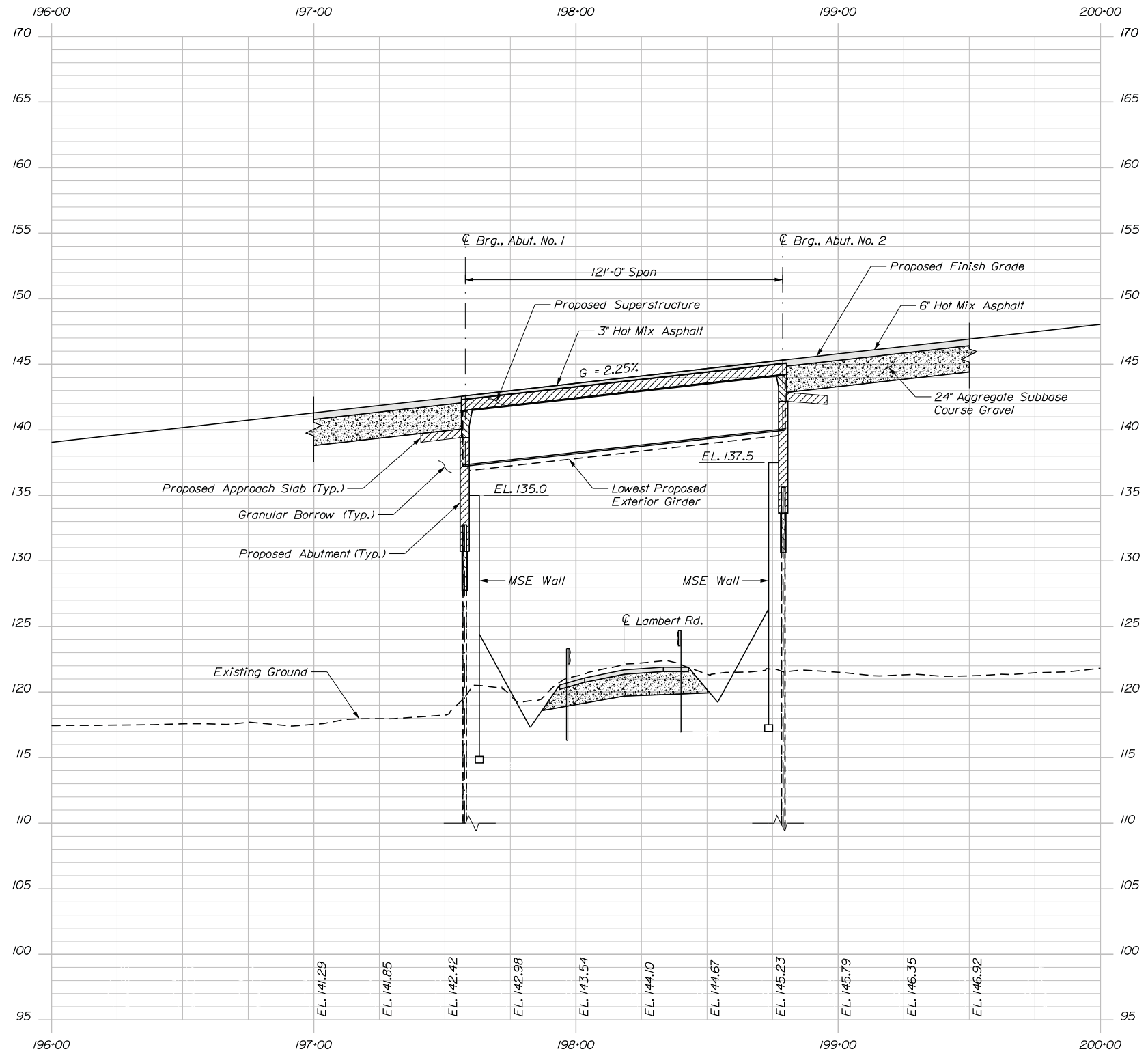


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DESIGN-REVIEWED	M. GRAY	R. MYER	
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FIELD CHANGES			

I-395 - ROUTE 9 CONNECTOR
LAMBERT ROAD
BREWER-EDDINGTON PENOBSCOT COUNTY
PROFILE - LAMBERT ROAD



PROFILE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-1891(500)
BRIDGE NO. WIN 018915.00
BRIDGE PLANS

DESIGN-DETAILED	R. MYERS	DATE
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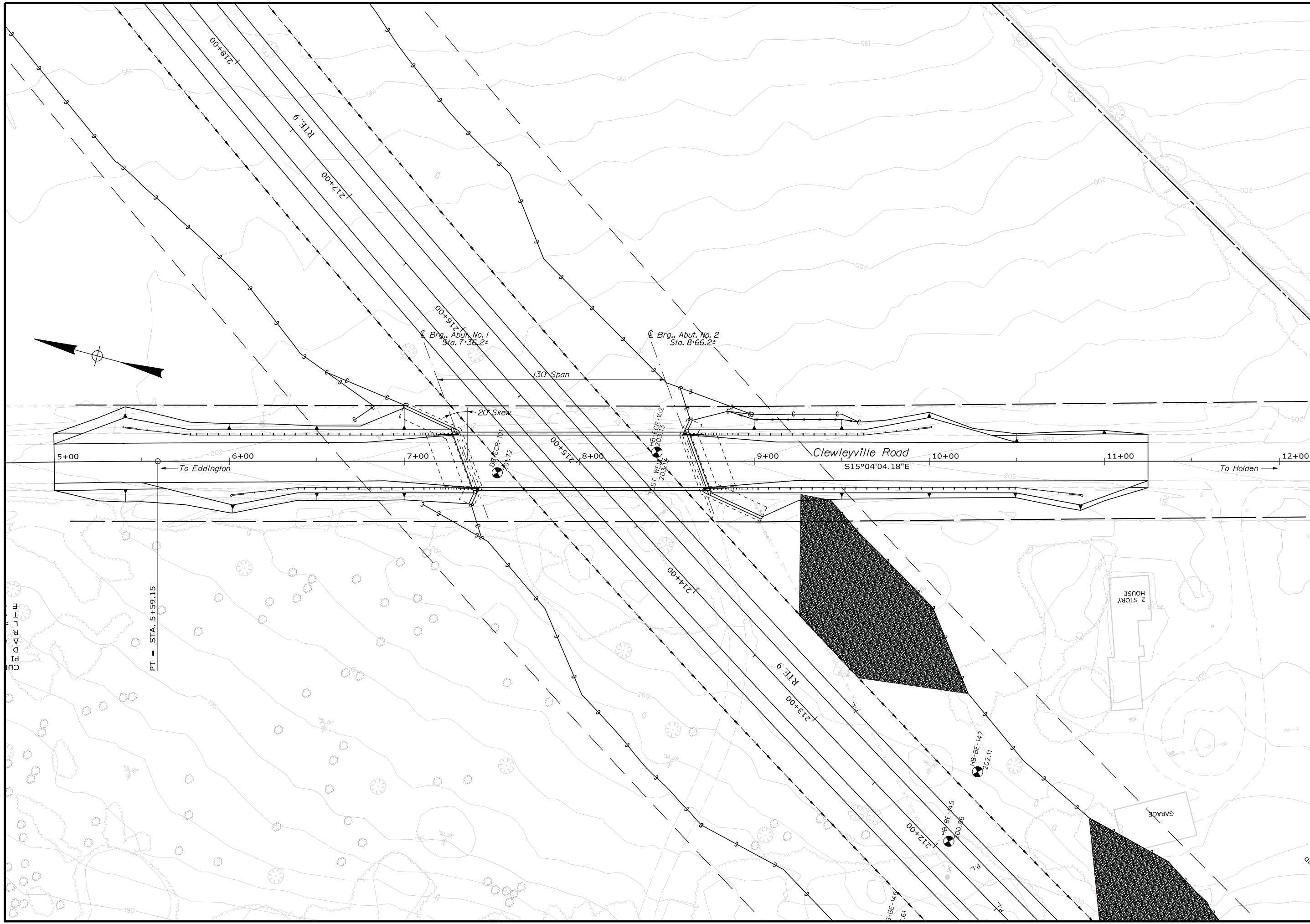
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I-395 - ROUTE 9 CONNECTOR
LAMBERT ROAD
BREWER-EDDINGTON PENOBSCOT COUNTY
PROFILE - ROUTE 9
OVER LAMBERT ROAD

SHEET NUMBER

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OF 11



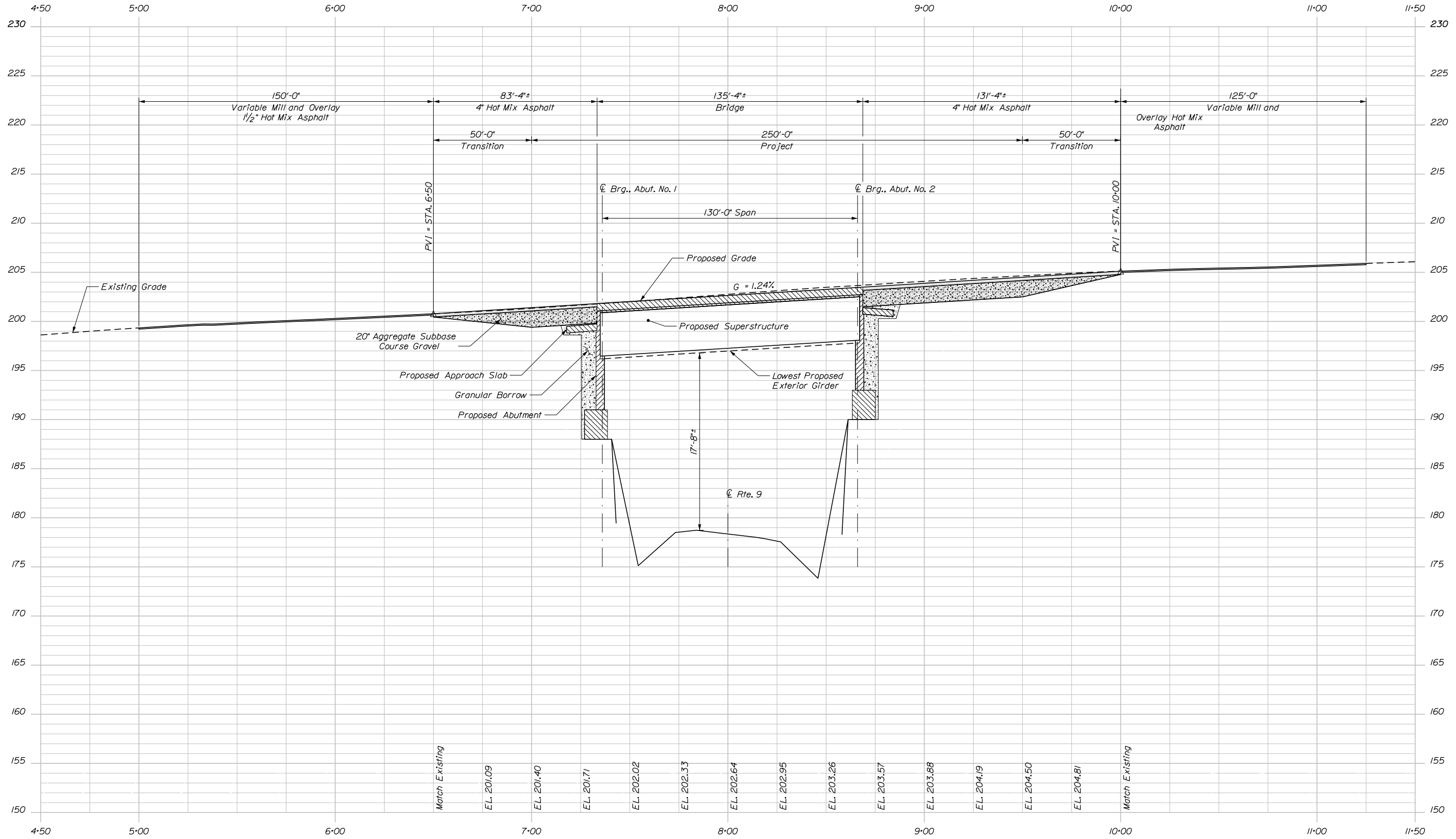
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FIELD CHANGES			

Date: 6/11/2020

Username: David.Shaw

Division: BRIDGE

Filename: ... \008_Profile_ClewleyvilleRoad.dgn



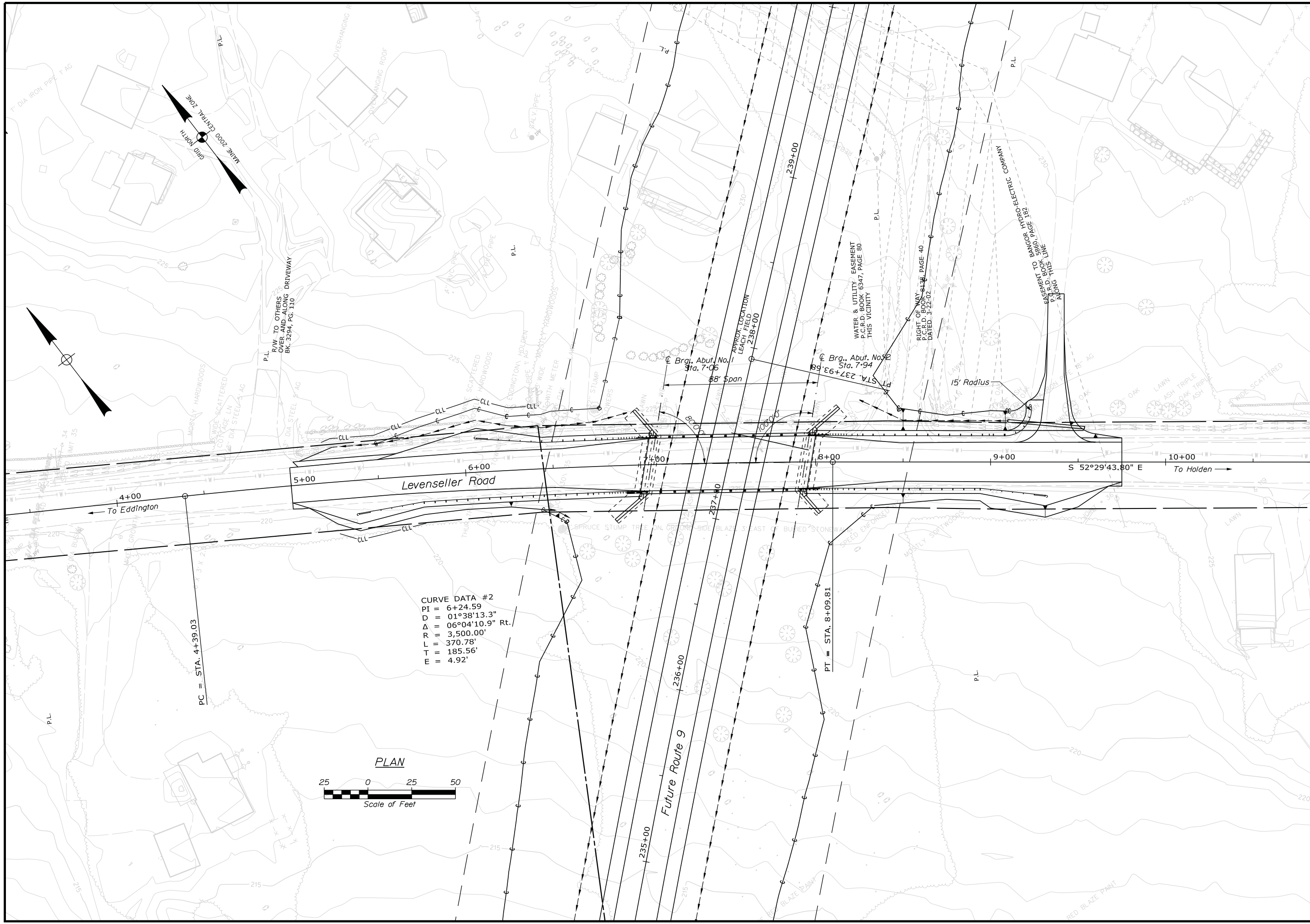
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STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 STP-1891(500)
 WIN 018915.00
 BRIDGE NO. 018915.00
 BRIDGE PLANS

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I-395 - ROUTE 9 CONNECTOR
 ROUTE 9
 BREWER-EDDINGTON PENOBSCOT COUNTY
 PROFILE - CLEWLEYVILLE ROAD

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 OF 11

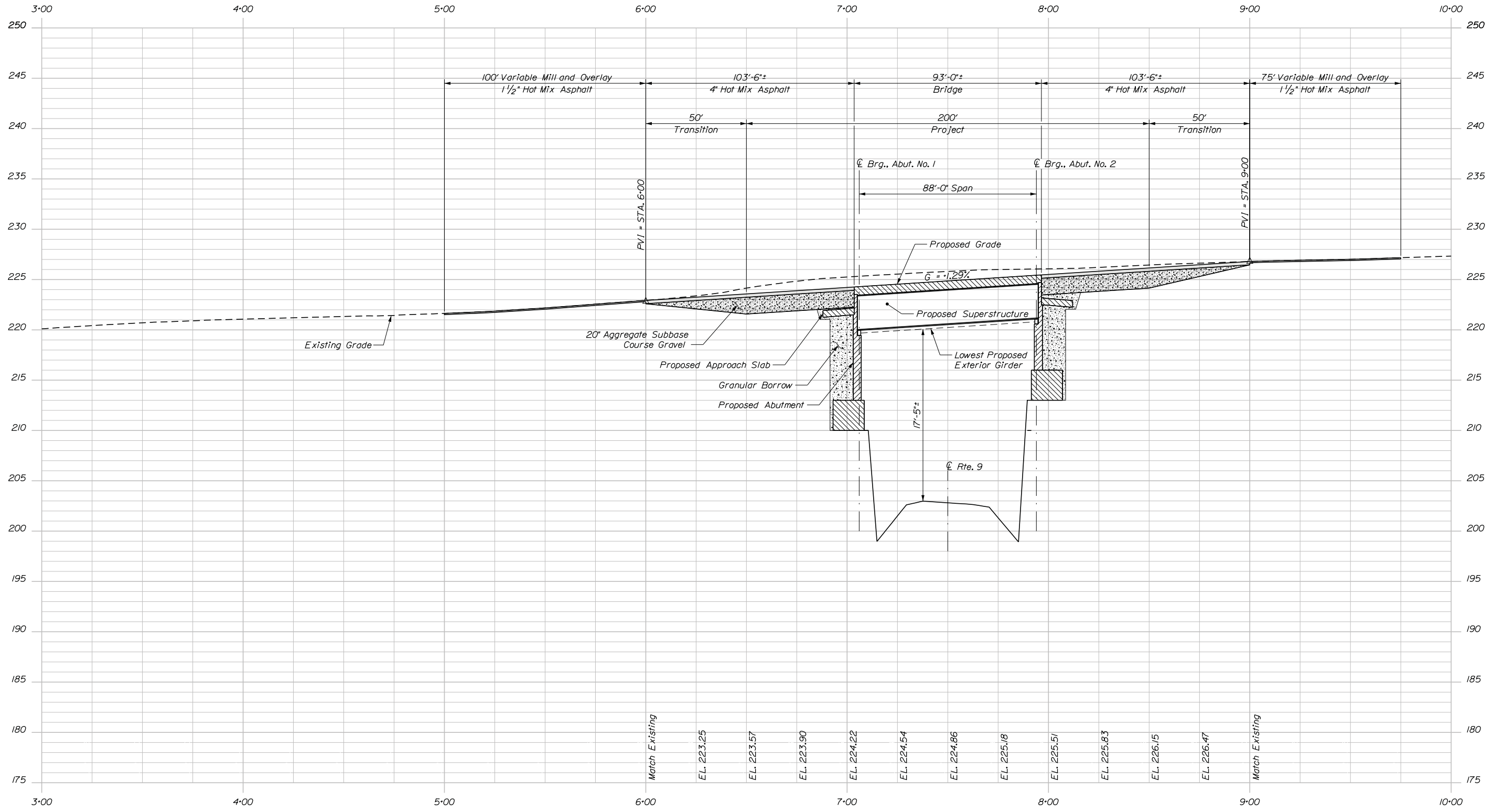


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OF 11

I-395 - ROUTE 9 CONNECTOR
ROUTE 9
BREWER-EDDINGTON PENOBSCOT COUNTY
PLAN - LEVENSELLER ROAD

PROJ. MANAGER	M. WIGHT	BY	DATE
DESIGN-DETAILED	R. MYERS	D. SHAW	
CHECKED-REVIEWED	M. GRAY	R. MAYER	
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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-1891(500)
BRIDGE NO. WIN 018915.00
BRIDGE PLANS



PROFILE

PROJ. MANAGER	M. WIGHT	BY	DATE
CHECKED-REVIEWED	R. MYERS	D. SHAW	
DESIGN-DETAILED	M. GRAY	R. MAYER	
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I-395 - ROUTE 9 CONNECTOR
ROUTE 9
BREWER-EDDINGTON PENOBSCOT COUNTY
PROFILE - LEVENSELLER ROAD

SHEET NUMBER

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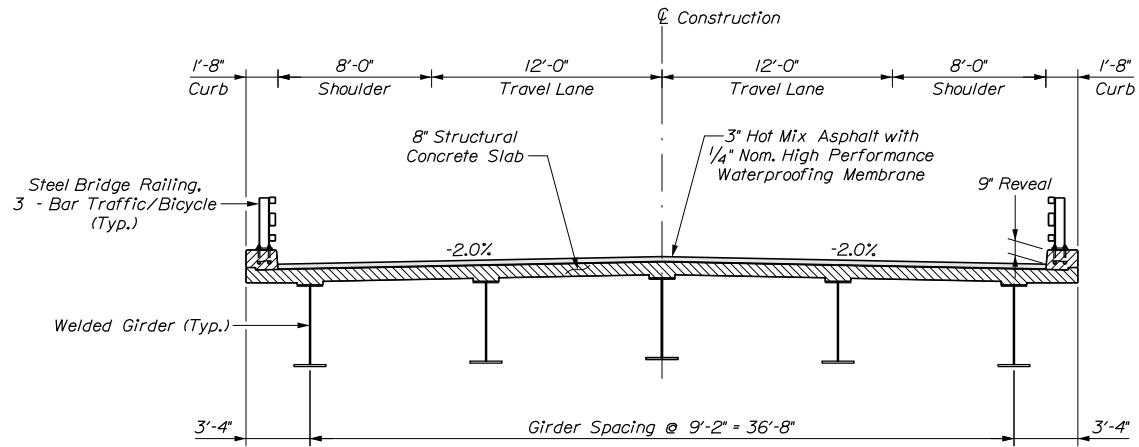
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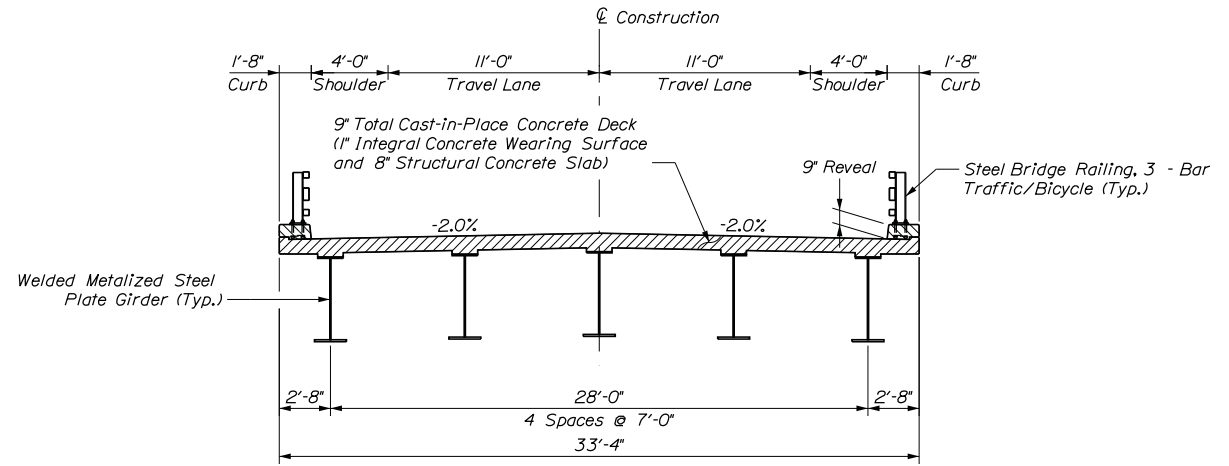
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Division: BRIDGE

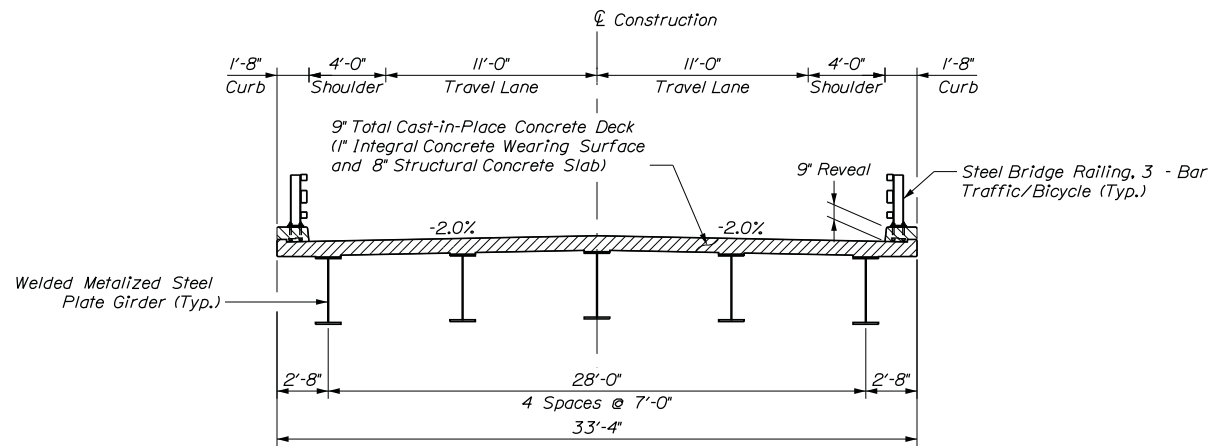
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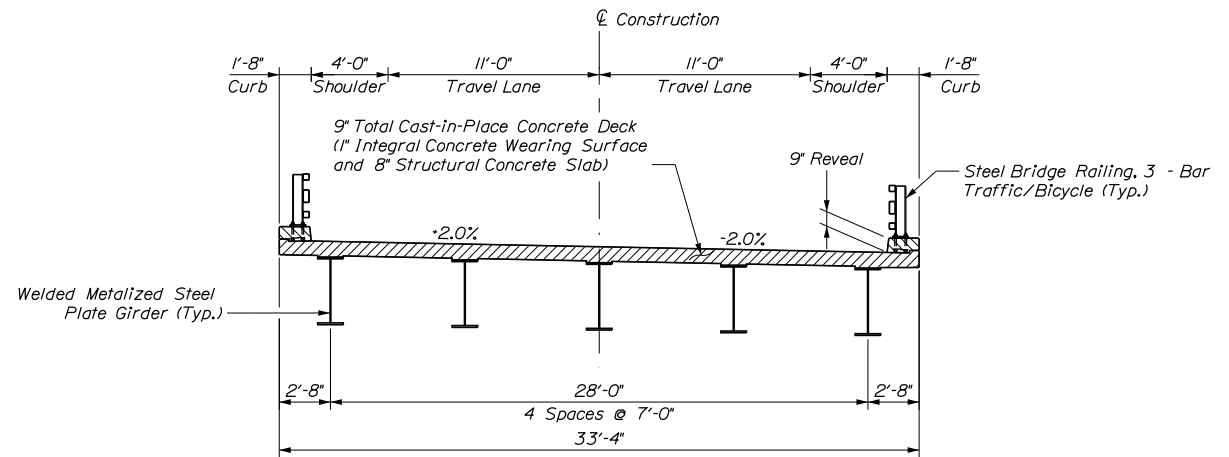
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Rt. 9 Over Lambert Road



PROPOSED TYPICAL BRIDGE SECTION
Clewleyville Road



PROPOSED TYPICAL BRIDGE SECTION
Eastern Avenue



PROPOSED TYPICAL BRIDGE SECTION
Levenseller Road

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-1891(500)

WIN
018915.00

BRIDGE NO. BRIDGE PLANS

PROJ. MANAGER	BY	DATE
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I-395 - ROUTE 9 CONNECTOR
VARIOUS BRIDGES
BREWER-EDDINGTON PENOBSCOT COUNTY

BRIDGE TYPICAL SECTIONS

SHEET NUMBER

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OF 11

Attachment 7 – Construction Plan

Construction of the Project is currently scheduled to begin in January 2022 and is expected to be complete in July 2025.

Construction of the roadway and bridges will be slightly different than a typical MaineDOT project. Typically, traffic management plays a bigger role in sequencing the construction activities. This new alignment will have to manage traffic where it ties into the existing infrastructure, but it largely does not require the maintenance of traffic. There are also no existing crossings to maneuver around waterway crossings and wetlands. However, the steps to build the road and bridges largely remain the same. The sequences are how MaineDOT with construction experience could see a contractor completing construction. Different contractors may choose different sequences if they are advantageous. Roadway construction will occur following a sequence similar to below. This construction will be completed in compliance with all environmental commitments.

- Vegetation clearing
- Erosion control placement
- Fill placement for road base (excavation of existing materials where necessary)
- Construction of drainage features
- Construction of the road at finished grade
- Final stabilization

A constructability team has been working since August of 2020. We are determining the most likely schedule and construction methods that will be used to build the project, and most importantly how the bridges with environmental impacts will be best constructed. Many of the bridges have unsuitable soil conditions under and around them. To construct a proper base to place the bridges on we will likely need to excavate and remove much of this soil. To accomplish this work in dry conditions coffer dams will need to be constructed and water will bypass the construction area. This will likely be accomplished with pumps, gravity diversion pipes, or ditches.

Construction of these crossings is likely to occur in a sequence similar to below

- Build access to the stream crossing location
- Construction of cofferdams
- Installation of water control devices
- Removal of undesirable soils
- Placement of base material for bridge foundations
- Construction of bridge foundations
- Construct bridge super structures
- Finish roadway work up to crossing locations (see above sequence)

Attachment 8 – Erosion Control Plan

Erosion Control

Temporary Erosion and Sedimentation Control is achieved in full compliance of the Basic Standards of Chapter 500 Stormwater Management Rules as agreed to in the Memorandum of Agreement for Stormwater Management between the Maine Department of Transportation, Maine Turnpike Authority and Maine Department of Environmental Protection (2007).

MaineDOT Standard Specification 656 requires the contractor to write and submit the Soil Erosion and Water Pollution Control Plan meeting the requirements in the Standard and in accordance with the Maine Department of Transportation Best Management Practices for Erosion and Sedimentation Control (2008). The Plan is submitted for revision and approval prior to construction. MaineDOT field staff ensure daily compliance with the Plan.

Permanent erosion control on all disturbed soil is achieved by seeding with a perennial seed mix or placement of riprap. The Method 2 seed mix will be used on all seeded areas. A 90 percent coverage is required before this practice is accepted for payment by the MaineDOT.

Standard Specification can be found under Section 656 in the following hyperlink:

<http://maine.gov/mdot/contractors/publications/standardspec/docs/2014/div600.pdf>

Details of the Method 2 Seed Mix can be found under Section 717 in the following hyperlink:

<http://maine.gov/mdot/contractors/publications/standardspec/docs/2014/div700.pdf>

Stormwater Compliance

MaineDOT's Stormwater Engineer coordinated with the MDEP's Stormwater Engineer for the proposed Stormwater Management Plan. The Progress Report attached here includes details about the requirements to meet the standards in the 2017 Memorandum of Agreement for Stormwater Management.

Stormwater Management Progress Report

1. Scope & Objective:

- Design a stormwater management system for the I395-Route 9 Connector project (the Connector project hereafter) to comply with the applicable environmental regulations of the state.

2. Regulatory Requirements & Conditions:

- Site Location of Development Act (SLODA) General Permit (GP) for MaineDOT (Effective Date: 2/19/2013): The GP applies to all developments constructed under the authority of MaineDOT (GP Section I.B). MaineDOT is required to construct and operate the development in accordance with the most recent “Memorandum of Agreement (MoA) for Stormwater Management between the MaineDOT, Maine Turnpike Authority (MTA), and Maine Department of Environmental Protection (DEP)” (GP Section II.D).
- MoA for Stormwater Management between MaineDOT, MTA, and DEP (Effective Date: 6/27/17): MoA addresses the application of the state’s “Stormwater Management Rules (Chapter 500)” on MaineDOT and MTA projects. Chapter 500 is administered by DEP Bureau of Land Resources (BLR).
- Following stormwater standards apply to the project (Chapter 500 Section 4):
 - a. *Basic Standards*: These standards address “Erosion and Sedimentation Control”, “Inspection and Maintenance” and “Housekeeping” (Chapter 500 Section 4(B) and Appendices A thru C).
 - MaineDOT shall meet the “Basic Standards” through the implementation of “MaineDOT Best Management Practices for Erosion and Sedimentation Control” with in-house staff as stated in MoA. MaineDOT’s compliance with these standards is beyond the scope of this report.
 - b. *General Standards*: These standards mainly set the stormwater quality treatment requirements for the development projects (Chapter 500 Section 4(C)). Specific provisions for the transportation projects are listed in MoA Section 3(B). The provisions applicable to the Connector project are:
 - “A linear portion of a project associated with an existing travel corridor constructed prior to 7/19/2007, and not located in the direct watershed of a lake most at risk from new development or in the watershed of an urban impaired stream, shall not be required to meet the General Standards.” (MoA Section 3(B)(2))
 - “A linear portion of a project that is not associated with an existing travel corridor shall meet the General Standards to the extent practicable as

determined through consultation with and agreement by DEP.” (MoA Section 3(B)(3))

c. *Flooding Standard*: This standard is for controlling the stormwater quantity from the development projects. The standard requires the post-development peak flows not to exceed the pre-development peak flows for the 2-, 10-, and 25-year 24-hour (synthetic) storms. Following provision applies to the Connector project:

- “For a state transportation project that triggers the thresholds of the Flooding Standard, MaineDOT and MTA shall apply design and engineering measures to the extent practicable such that project drainage avoids adverse impacts to offsite property resulting from project-related peak flow.” (MoA Section 3(E))

- Record of Decision (RoD) (Effective Date: 6/23/2016): RoD imposed the following terms and conditions (T&C) on the stormwater management system of the Connector project:
 - T&C #1: “Runoff quantity and quality must be treated using best management practices that incorporate water infiltration and/or filtration to avoiding direct water discharge into designated Atlantic salmon critical habitat (ASCH) or any surface waterway that subsequently directly discharges into critical habitat, raising stream temperatures above the pre-construction conditions.”
 - T&C #13: “The MaineDOT and FHWA, for those sections of the proposed alignment that discharge into streams, shall design a stormwater management systems that provide the greatest thermal buffering.”

3. Stormwater Management Related Characteristics of the Connector Project:

Entire Connector project is a “linear project” per Chapter 500 Section 3(P). Portions of the Connector project are within an “existing travel corridor” as defined in MoA Section 2(C). Chapter 500 defines “developed area” as the sum of the impervious, landscaped, and unvegetated areas in Section 3(D). The Connector project will not result in any unvegetated area. The revegetated grass areas within the clear zone may be managed more frequently mainly for safety reasons (e.g. grass mowing more than twice a year). Remaining revegetated areas will revert to their natural condition. It is assumed that the project will result in *de minimis* “landscaped area” as defined in Chapter 500 Section 3(O). Therefore, the project’s developed area is equal its impervious area.

The Connector project is eligible for the following “General Standards” exceptions or exemptions:

- a. Treatment exemption for the portions of the project within existing I395 and Route 9 travel corridors (MoA Section 3(B)(2)),
- b. Exception for the linear projects: No less than 75% of the impervious may be treated (Chapter 500 Section 4(C)(5)(c)),¹
- c. Treatment exemption for the wetland road crossings: that portion of a road crossing a wetland is not required to meet the general standards if the design provides for passage of flows through a culvert(s), bridge span, or use of a permeable base material that will allow flow under the road (Chapter 500 Section 4(C)(5)(e)).

4. Stormwater Management System Design:

4.a. Design Approach:

The right-of-way (RoW) for the Connector project was finalized before the stormwater management system (SMS) design commenced. Therefore, the ROW limitation was a major factor affecting the SMS design. The road profile and cross-section plans were available when the SMS design started. Potential sites for the stormwater treatment measures were inslopes, ditches, and the areas between the toe of the slope and the RoW boundary line.

A low-impact development (LID) approach prioritizing the use of vegetative treatment measures and opportunistic infiltration was followed in the SMS design. The approach is justified by:

- Vegetative treatment measures are accepted by DEP and widely used in the linear and non-linear development projects in Maine,
- Opportunistic infiltration of the roadway runoff addresses the RoD T&C #1 & #13,
- Vegetative treatment measures have low capital and low operation & maintenance (O&M) costs (NCHRP, 2019).

Structural measures that will pond stormwater (e.g. detention, retention ponds) were not considered since they could potentially increase the stormwater temperature in summer (see RoD T&C above).

Table 1. I395-Route 9 Connector Stormwater Treatment Measures

A. Chapter 500 Vegetative Treatment Measures			
Type	Vegetative Cover	Sizing Criteria	Design Reference
Vegetated buffer with stone bermed level lip spreaders		<ul style="list-style-type: none">• Treated impervious, lawn area• Buffer Slope• Hydrologic Soil Group• Flow Path	Chapter 500 Appendix F &

¹ Typical impervious area treatment requirement is minimum 95%.

Brewer-Eddington I395-Rt9 Connector Project (WIN#: 18915.00)

Stormwater Management Progress Report

Date: 6/11/2020

By Kerem Gungor, P.E.

Stormwater Engineer

Environmental Office

Buffer adjacent to the downhill side of a road	Meadow, Forested	<ul style="list-style-type: none"> Travel lane draining into buffer 	Maine Stormwater BMP Manual Chapter 5	
Ditch turn-out buffer		<ul style="list-style-type: none"> Length of ditch draining into buffer Buffer Slope Hydrologic Soil Group Flow Path 		
B. Washington State DOT (WSDOT) Treatment Measures				
Type	Vegetative Cover	Design Criteria/Objectives	Design Reference	Reference MaineDOT Project
Compost Amended Vegetated Filter Strip (CAVFS)	Meadow	<ul style="list-style-type: none"> Maximum allowable velocity Maximum flow depth Minimum residence time 	WSDOT Highway Runoff Manual (2019): 5-4.1.3 RT.02 – Vegetated Filter Strip	Rte. 180 Relocation in Ellsworth (WIN#: 10063.10) Completed in 2013
Media Filter Drain (MFD)	Meadow (MFD covered with grass)	<ul style="list-style-type: none"> Design flow MFD length MFD width Long-term infiltration rate of the MFD mix 	WSDOT Highway Runoff Manual (2019): 5-4.1.3 RT.07 – Media Filter Drain	Falmouth-Yarmouth I295 Emergency Safety Areas (WIN#: 23663.01) <i>Under Construction</i>
Engineered Dispersion with Soil Amendment	Meadow, Forested	<ul style="list-style-type: none"> Increase soil organic content Improve water retention and infiltration capacity of the topsoil 	WSDOT Highway Runoff Manual (2019): 5-4.2.2 FC.02 – Engineered Dispersion & 5.4.3.2	Not Applicable

Treatment level attained by the proposed stormwater system is given in the table below. It must be noted that the treatment level is reported on a linear foot basis. It will be converted into “impervious area treatment percentage” (pending) as required by Chapter 500. The preliminary treatment levels shown in Table 2 indicate that the proposed stormwater treatment system exceeds the treatment level required by Chapter 500 for linear projects which is minimum 75% impervious area treatment.

Table 2. Stormwater Treatment Level of the Alignment

	Left	Right	Both
Total Treated (linear ft)	22,531	23,663	
Total Untreated (linear ft)	2,755	1,795	3,501
Treatment Level (%)	78.27	81.71	
Exempt (linear ft)	2,063	2,889	24,884
Total Requiring Treatment per Chapter 500 MOA (lf)	28,787	28,959	

4.b. Buffer Adjacent to the Downhill Side of a Road: Roadside Buffers

The roadside buffers were used as the preferred stormwater treatment measure for every segment of the alignment where the following limitations did not apply:

- Embankment slope is greater than 3:1 (H:V),
- Insufficient flow path length because of downgradient flow concentration or RoW limitation.

Alternative treatment measures were considered for the segments where the above limitations applied.

Since the roadside buffers do not require structures, they are not shown in the PIC plans. Their exact locations and flow paths (or widths) are stored in an Excel workbook. The table will be provided for the PS&E.

Special Provision or Pay Item Necessary: No.

Improve Infiltration of the Inslope: Approximately 2-inch scarification of the embankment before hydroseeding to improve infiltration contingent upon the approval of the geotechnical engineer.

Gravel Spreader for Steep (3:1) Slopes: One-ft wide unvegetated gravel between the edge of the pavement and grassed inslope is recommended to ensure sheet flow into the roadside buffer and minimize flow concentration which may result in sloughing or rill formation.

Maintenance & Operations: The buffers should be mowed no more than twice a year per Chapter 500. This requirement needs to be observed by M&O to the extent practicable. The clear zone, safety requirements may override the Chapter 500 buffer maintenance requirement.

4.c Vegetated Buffer with Stone Bermed Level Lip Spreaders

These measures are used for treating road runoff concentrated in and conveyed by roadside ditches. The roadside ditches will be extended to the proposed level spreaders. Siting and sizing of these buffers were mainly dictated by the site topography and the RoW. Project area soils are predominantly hydrologic soil group (HSG) D type soils with low infiltration and high runoff potential. Chapter 500 calls for maximizing the buffer strips for HSG D soils. Chapter 500 standards could not be met for all but one buffer strip (see Table 3) because of the previously stated limitations for which a design exception will be used and the buffer soils will be amended to improve their infiltration capacity (See "Engineered Dispersion with Soil Amendment" in Table 1). The "clearing limit lines" were extended downgradient the proposed level spreaders to provide the clearance within the buffer strip for potential soil amendment (see the PIC plan set dated 6/2/2020). WSDOT amendments for meadow and forested buffer strips are shown in **Fig. 1**.

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By Kerem Gungor, P.E.

Stormwater Engineer

Environmental Office

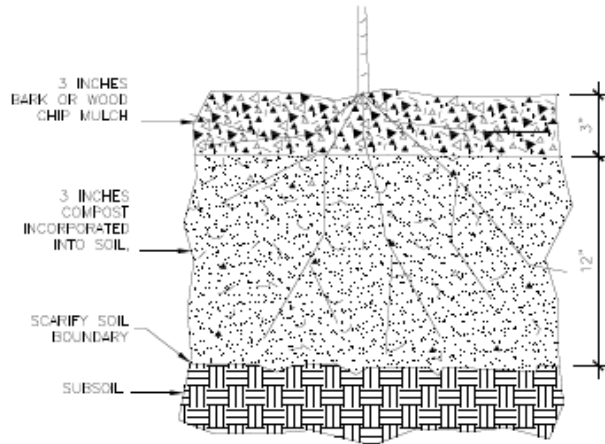


Figure A – Amendments to encourage native woody plants.

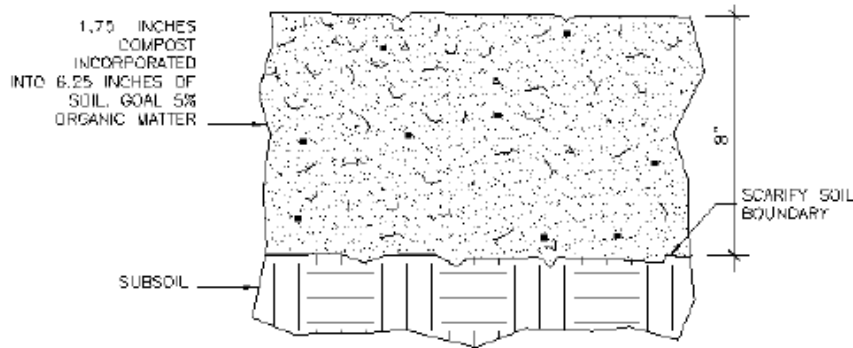


Figure B – Amendments for grass or CAVFS areas.

Figure 1. WSDOT Engineered Vegetated Filter Strip Amendments (WSDOT HRM (2019)).

Table 3. I395-Route 9 Vegetated Buffers with Stone Bermed Level Lip Spreaders

Station	Location (Left/Right)	Buffer ID	Buffer Type	Buffer Flow Path (ft)	Level Spreader Length (ft)
97+06	Right	MBLS1	Meadow Buffer with Level Spreader (MBLS)	140	58
97+50	Left	MBLS2	Meadow Buffer with Level Spreader (MBLS)	110	64
137+40	Right	FBLS1a*	Forested Buffer with Level Spreader (FBLS)	195	35
138+39	Right	FBLS1b	Forested Buffer with Level Spreader (FBLS)	112	35
148+50	Left	FBLS2	Forested Buffer with Level Spreader (FBLS)	150	58
148+50	Right	FBLS3	Forested Buffer with Level Spreader (FBLS)	150	49
153+14	Left	FBLS4	Forested Buffer with Level Spreader (FBLS)	150	56
169+80	Right	FBLS5	Forested Buffer with Level Spreader (FBLS)	150	27

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170+31	Left	FBLS6	Forested Buffer with Level Spreader (FBLS)	120	32
186+83	Left	MBLS3	Meadow Buffer with Level Spreader (MBLS)	150	28
208+00	Left	FBLS7	Forested Buffer with Level Spreader (FBLS)	150	50
256+28	Right	FDTB1	Forested Ditch Turn-out Buffer (FDTB)	70	20
257+14	Left	FDTB2	Forested Ditch Turn-out Buffer (FDTB)	55	20
296+70	Right	FDTB3	Forested Ditch Turn-out Buffer (FDTB)	60	20
301+92	Left	FBLS8	Forested Buffer with Level Spreader (FBLS)	40	25
302+38	Right	FBLS9	Forested Buffer with Level Spreader (FBLS)	70	25
329+17	Right	MBLS4	Meadow Buffer with Level Spreader (MBLS)	150	35
409+21	Left (Connector) & Right (Route 9 Interchange)	FBLS10	Forested Buffer with Level Spreader (FBLS)	60	107

*: The buffer meets Chapter 500 Appendix F standards.

Special Provision or Pay Item: Yes. A special provision will be necessary for amending the buffer soils (pending). The provision will be created using WSDOT Highway Runoff Manual (2019). A special provision is available for the “stone berm level spreader (SP 610)” from WIN#18282.00.

PIC Plan Correction: Identifications of the forested buffer with level spreaders at Sta. 148+50 need to be corrected as follows: The one on the left → FBLS2 and the one on the right → FBLS3.

4.d Compost Amended Vegetated Filter Strip (CAVFS)

CAVFS was used as an alternative to treat the sheet flow from the road surface where Chapter 500 buffer flow path standards could not be met because of downgradient flow concentration or RoW limitation. CAVFS has better infiltration and rigorous grass growth characteristics which presumably requires a shorter retention time/flow path through the buffer strip for water quality treatment. The measure was previously used in Ellsworth by MaineDOT (see Table 1) and shortly named as “bioslope”. CAVFS maximum slope limitation is 33%. Therefore, it was not considered for any slope exceeding 33% grade.

Since the roadside buffers do not require structures, they are not shown in the PIC plans. Their exact locations and flow paths (or widths) are stored in an Excel workbook. The table will be provided for the PS&E.

Special Provision or Pay Item Necessary: Yes. “Compost Blanket (SP 615.081)” is available from WIN#10063.10.

Implications of Inslope Runoff Infiltration: Feedback necessary from geotechnical engineer about the impact of the CAVFS on the road prism/slope stability particularly for 3:1 inslopes.

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Improve Infiltration of the Inslope: Approximately 2-inch scarification of the embankment before hydroseeding to improve infiltration contingent upon the approval of the geotechnical engineer.

Gravel Spreader for Steep (3:1) Slopes: One-ft wide unvegetated gravel between the edge of the pavement and grassed inslope is recommended to ensure sheet flow into the roadside buffer and minimize flow concentration which may result in sloughing or rill formation.

Maintenance & Operations: The buffers should be mowed no more than twice a year per Chapter 500. This requirement needs to be observed by M&O to the extent practicable. The clear zone, safety requirements may override the Chapter 500 buffer maintenance requirement.

4.e. Media Filter Drain

Two roadside ditches outlet into areas that are infeasible for the vegetated buffers with level spreaders, which are the preferred measures for treating the ditch flows. One of the ditches is approximately 545 ft long (Sta. 173+65– Sta. 179+10) and the other one is 4,265 ft long (Sta. 205+35– Sta. 248+00). Both ditches receive runoff from superelevated segments of the alignment. Their drainage areas are 0.4 and 2.9 acres, respectively. Not treating these segments, particularly second one, decreases the overall quality treatment percentage of the project significantly. Since conventional Chapter 500 stormwater treatment measures are not applicable for these segments, it was decided to use the “media filter drain (MFD)” measure developed by WSDOT. The project site soil is HSG D (corroborated by the soil boring logs), underdrain configuration of MFD (Type 1 Configuration in WSDOT HRM) was proposed to ensure free drainage through the MFD mix (see PIC Plan Sheets 32-33 for MFD1; PIC Plan Sheets 37-43 for MFD2). The proposed configuration was re-evaluated following the issuance of the PIC plans:

Re-evaluation of the MFD: Space available for a treatment measure along the alignment is the 4:1 (H:V) inslope which is approximately 14 ft wide (i.e. the linear distance between the edge of the pavement and the ditch line). An MFD configuration consisting of one-ft wide vegetation free gravel zone, three-ft wide grass strip, and five-ft wide MFD mix bed can be placed in the ditch foreslope. “Aggregate Base Course- Type C” will enable lateral movement of the stormwater treated by the MFD mix into the ditch.

- *Revision Recommendation:* Remove the MFD underdrains and associated manholes from the plans and use the MFD configuration without underdrain shown in **Fig. 2**. If possible, lower the ditch line by one ft.

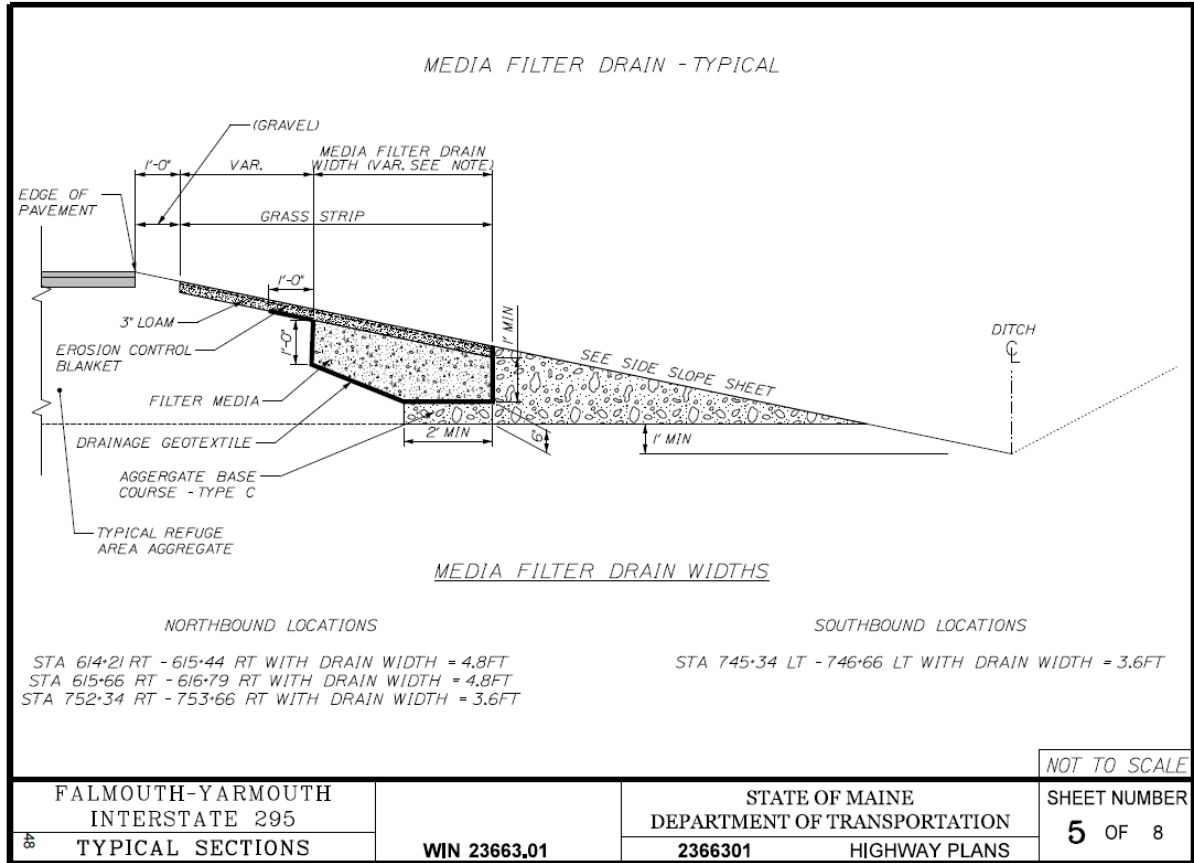


Figure 2. Media Filter Drain (WSDOT MFD Type 3) for MaineDOT I295 ESA Project (WIN#: 23663.01).

5. Compliance with Chapter 500 Flooding Standard

MaineDOT is required to apply design and engineering measures to the “extent practicable” such that project drainage avoids adverse impacts to off-site property resulting from project related peak flow per Chapter 500 MoA Section 3(E).

It is anticipated that the project’s impact on the peak flows will be rather limited since:

- Project area soils are HSG D with high runoff potential. The pre-development runoff volume and peak flows are relatively high,
- The project does not have closed stormwater drainage systems that would decrease the time-of-concentration significantly,
- Concentrated stormwater flows from the proposed roadside ditches will be redistributed into sheet flow via level spreaders before the runoff exits the RoW.

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A pre- and post-development hydrologic model will be developed to assess the project's impact on the peak flows (pending). Results of the modeling will be shared with Maine DEP per the consultation requirements of Chapter 500 MoA.

References

1. Washington State DOT (WSDOT). 2019. Highway Runoff Manual (HRM). Accessible from <https://www.wsdot.wa.gov/Design/Hydraulics/HighwayRunoffManual.htm>
2. NCHRP (2019). Stormwater Infiltration in the Highway Environment: Guidance Manual Research Report 922. Accessible from <http://www.trb.org/Main/Blurbs/180229.aspx>
3. MaineDOT WIN#18915.00 PIC Plans:
 - a. 018915.00 PIC Plans 6-2-20.pdf,
 - b. 018915.00 PIC Sections 6-2-20.pdf.
4. Maine DEP (2016). Maine Stormwater Management Design Manual. Accessible from <https://www.maine.gov/dep/land/stormwater/stormwaterbmps/>
5. Maine DEP (2015). Chapter 500 Stormwater Management Rules. Accessible from <https://www.maine.gov/dep/land/rules/index.html>

Attachment 9 – Site Condition Report

Wetland Delineation Report and Functions and Values Assessment

ACOE Wetland Determination Data Forms

MDEP Significant Vernal Pool Forms

MaineDOT Stream Habitat Forms

Maine Department of Transportation

I-395/Route 9 Connector

Wetland, Stream, and Wildlife Survey

Environmental Office

11-13-2017

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Figure 1: Project Location Map

Table 1: Summary of Wetland Information

Table 2: Army Corps of Engineers Functions and Values

Table 3: Summary of Delineated Wetland Functions

Table 4: Characteristics of Surveyed Streams

Table 5: Summary of Wildlife Observations

1.0 INTRODUCTION

During the autumn of 2016 and 2017, Maine Department of Transportation (MaineDOT) conducted wetland and stream surveys along a proposed federally-funded connector highway linking I-395 in Brewer to Route 9 in Eddington, Maine. The proposed route, known as alternative 2B-2, will continue northerly from the I-395/Route 1A interchange, roughly paralleling the Brewer/Holden town line, and connect to Route 9 west of Meadow Brook. The two-lane connector is approximately 5.3 miles in length. It is expected to improve safety, traffic flow and traffic congestion in the area. *I-395/Route 9 Transportation Study: A Final Environmental Impact Statement*, a report submitted jointly in January 2015 by Federal Highway Administration and MaineDOT, analyzes the various connector alternatives.

2.0 METHODS

2.1 FIELD SURVEY

MaineDOT uploaded the proposed highway connector route to Google Maps and used cell phone service to access the map on-site. The map cursor showed, in real-time, MaineDOT's position in relation to the proposed route, which was not flagged. Topographical maps were also used as reference, as needed. Wetland and stream boundaries were mapped using a Trimble GeoXH Geoexplorer 6000 series unit.

Wetland boundaries were determined using the technical criteria described in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2, January 2012*. A Function and Values (F&V) datasheet was completed for each delineated wetland. Streams and Wetlands of Special Significance (WSS) were identified in the field using criteria from Chapter 310 of the Maine Natural Resources Protection Act (NRPA). A MaineDOT stream assessment datasheet was completed for all stream resources, as defined by NRPA.

Potential vernal pools were noted, and revisited in Spring 2017, to document amphibian breeding activity by counting egg masses. A Maine Department of Inland Fisheries and Wildlife (MDIFW) Maine State Vernal Pool Assessment form was completed for those pools containing amphibian egg masses.

Special attention was paid during the field survey to areas with signs of animal use (tracks, scat, trails). Photographs were taken of each resource and of relevant features, such as wildlife trails.

2.2 DESKTOP ANALYSIS

Field observations recorded on the Wetland F&V datasheets were compared, in the office, to the considerations/qualifiers listed in Appendix A of *The Highway Methodology Workbook Supplement* (U.S. Army Corps of Engineers, New England District, September 1999). The principal and auxiliary F&Vs for each wetland were determined through this exercise, and summarized on a Standard MaineDOT F&V Form. Hydrogeomorphic type, photographs, and plant and wildlife observations are also included on this form. Plant lists represent the common identifiable plant species observed at the time of the survey. Wildlife was noted incidentally. A desktop GIS analysis was conducted to determine whether the proposed route intersects rare wildlife or plant occurrences. A shapefile of rare animal occurrences was provided by MDIFW. Maine Natural Areas Program (MNAP) provided a shapefile of rare plant and natural community occurrences.

F&V forms, MDIFW Maine State Vernal Pool Assessment forms, lists of plant and wildlife observations and photographs are included in Appendices A, B, C and D.

3.0 SURVEY RESULTS

3.1 GENERAL SITE DESCRIPTION

The route of the proposed connector traverses a primarily forested area interspersed with emergent and shrub wetlands, light residential development and agricultural land uses. No mapped occurrences of rare plants or animals are known to intersect the proposed connector route. From south to north, the proposed highway connector will cross six existing roads: Route 1A, Eastern Avenue, Lambert Road, Clewleyville Road, Levenseller Road, and Route 9. At Lambert Road, it will cross a powerline right-of-way. Four perennial streams, and one intermittent stream, will also be traversed. The location of streams, wetlands and vernal pools are shown in Figure 1.

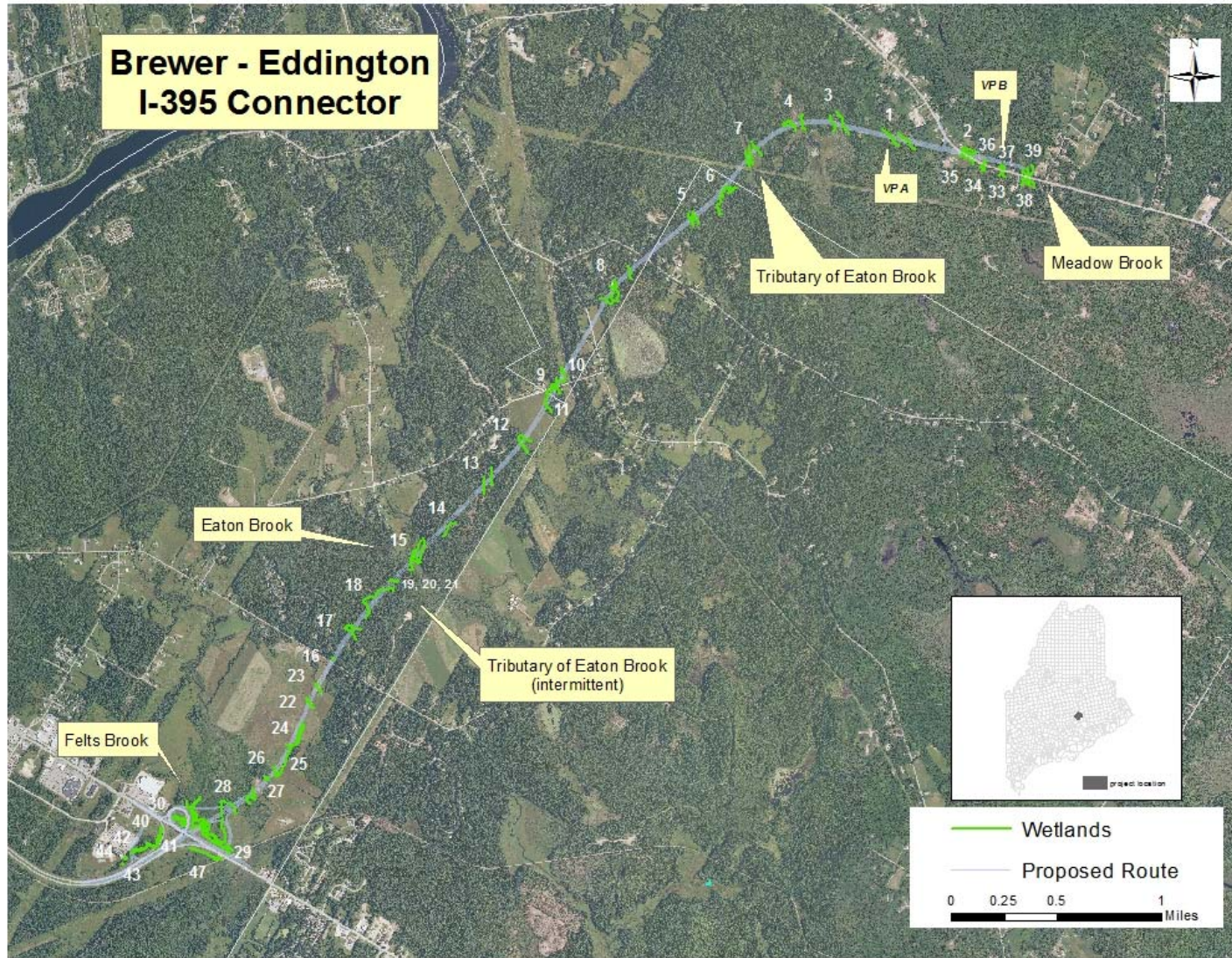


Figure 1. Locations of streams, wetlands and vernal pools along the proposed I-395 - Route 9 Connector.

3.2 WETLANDS

3.2.1 Summary of Wetland Types

Forty-four wetlands, identified by hydrology, hydric soils (per Munsell Soil Color Books) and hydrophytic plants, were delineated along the proposed connector highway (Table 1). These resources, all freshwater, include 22 forested wetlands, 15 emergent wetlands and seven scrub-shrub wetlands. Eleven of the 44 wetlands included more than one wetland type. The trees, shrubs and herbaceous plants most commonly observed in each wetland type were:

Forested wetland (PFO) - Northern white cedar, red maple, balsam fir, speckled alder

Scrub-shrub wetland (PSS) - Willow species and speckled alder

Emergent wetland (PEM) - hydrophilic sedges and grasses

Two vernal pools were identified within forested wetlands on the proposed route. The first, located in Wetland #1 and labeled VP A in this report, was documented by Kleinschmidt (Pool ID 01H) during a vernal pool survey in 2006. In May 2017, MaineDOT biologists counted 3 spotted salamander (*Ambystoma maculatum*) egg masses and 2 wood frog (*Rana sylvatica*) egg masses in VP A. The second vernal pool (VP B) is located within Wetland #37. Twenty blue-spotted salamander (*Ambystoma laterale*) egg masses were counted in VP B in May 2017, indicating potential significance under Maine NRPA.

Impact ID	Resource ID	Station	Cowardin Classification				Stream Type	WSS	MDIFW SWH	Wetland Information: all soils hydric		Notes
Impact Sheet			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydrology Indicators	
n/a	20a	133+50	D							Balsam fir, speckled alder, <i>Carex</i> spp., sensitive fern, <i>Equisetum</i> spp.	Seasonally saturated.	Three small wetlands (19,20,21) located adjacent to a small stream.
n/a	21a	133+70-133+80	D							Balsam fir, speckled alder, <i>Carex</i> spp., sensitive fern, <i>Equisetum</i> spp.	Seasonally saturated.	Three small wetlands (19,20,21) located adjacent to a small stream.
WET15 14	22a,b	95+70-96+00		D						Willow spp., broad-leaved cattail, reed canary grass	Seasonally saturated. Potential for standing water.	Drainage swale wetland located adjacent to cornfield.
WET16 WET17 15	23a,b	100+30-100+40		D	X					Willow spp., speckled alder, broad-leaved cattail, reed canary grass	Seasonally saturated.	Vegetated drainage swale that passes through a permeable boulder culvert beneath a gravel road that connects Eastern Avenue to cornfields.
WET14 13	24a	86+00-91+00			D					Willow spp., <i>Carex</i> spp., marsh bedstraw	Seasonally saturated.	Small vegetated drainage that carries flow off adjacent fields to a culvert. A shrubby vegetated swale converges with Wetland 24a upgradient of the culvert. Wetland 25a is down gradient of the culvert.
WET13 11,12	25a,b	76+60-85+50		D	X					Bebb's willow, other willow spp., speckled alder, <i>Carex</i> spp., wool grass, soft rush	Seasonally saturated.	Moderate-sized block of shrub/emergent wetland.
WET12 10	26a,b	76+00-76+30			D					Speckled alder (sparse), wool grass, soft rush	Seasonally saturated.	Small isolated wet meadow formed by a berm that blocks overland flow to a downgradient shrub thicket.
WET11 10	27a	73+80-74+10	D							Red maple, gray birch, balsam fir, speckled alder, broad-leaved meadowsweet, <i>Carex</i> spp., <i>Sphagnum</i> spp.	Seasonally saturated. Possible seasonal ponding.	Small isolated basin in upland that is formed by a berm of soil pushed from adjacent fields. It has a hummocky topography that may indicate seasonal ponding.
WET10 WET08 WET09 8, 9	28a,d	62+70-68+70 903+20 706+00	X	D	X				X	Tamarack, American elm, speckled alder, giant goldenrod, wool grass, <i>Scirpus</i> spp., <i>Calamagrostis</i> spp.	Seasonally saturated.	This wetland (PSS) borders an unnamed tributary of Felts Brook and is somewhat separated by a vegetated berm from PEM that is formed by discharge along a gentle slope. A small area of PFO connects to the PSS/PEM.
STR03-ATS 9	28 b,c	66+50					P					Tributary of Felts Brook

Impact ID	Resource ID	Station	Cowardin Classification				Stream Type	WSS	MDIFW SWH	Wetland Information: all soils hydric		Notes	
			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydrology Indicators		
WET04 WET05 WET06 4, 5, 6	28d,g	59+20- 62+70 914+00 706+00		X	D				X		Red maple, American elm, speckled alder, broad-leaved meadowsweet, reed canary grass, <i>Carex</i> spp.	Seasonally saturated. Potentially seasonally flooded.	This PEM floodplain borders Felts Brook and connects to a large complex of PFO/PSS/PEM. Some wooded upland is located to the north.
STR01-ATS 4, 5	28e,f	55+00 913+50 702+50					P						Felts Brook. Shells of unidentified mussel and freshwater clam species were observed in stream.
WET07 7	29a,b	715+00 802+00			D						Speckled alder, willow spp., broad-leaved meadowsweet, purple loosestrife, wool grass, <i>Calamagrostis</i> spp.	Seasonally saturated.	Located at toe of Route 1A inslope and borders Felts Brook.
n/a	30a	49+50			D						Willow spp., broad-leaved cattail, purple loosestrife, reed canary grass	Seasonally saturated.	Small basin with an inlet, but no obvious outlet, enclosed by highway on/off ramps.
WET43 43	33a	340+80- 341+30	D					X	SVP		Red maple, tamarack, northern white cedar, balsam fir, common winterberry, broad-leaved meadowsweet, cinnamon fern, sheep laurel, bristly dewberry, <i>Sphagnum</i> spp.	Seasonally saturated.	This wetland likely drains to a small tributary of Meadow Brook, although no channel was observed in the area surveyed. Small depressions in the hummocky ground may be potential vernal pools. Within 250-ft critical habitat area of SVP
n/a	34a	335+40- 336+50	D		X						Balsam fir, northern white cedar, speckled alder, wool grass, valerian sp., sensitive fern, <i>Sphagnum</i> spp.	Seasonally saturated.	This wetland drains through a culvert to a larger wetland that is adjacent to Meadow Brook north of Route 9. PEM wetland extends linearly south along an old skidder path.
n/a	35a	329+50- 333+30			D						Tamarack (sparse), speckled alder (sparse), <i>Carex</i> spp., wool grass, <i>Glyceria</i> spp.	Seasonally saturated.	This wetland drains through a culvert to a drainage channel north of Route 9, and farther northward to wetlands bordering Meadow Brook.
n/a	36a	336+20	D								Tamarack, red maple, speckled alder, <i>Carex</i> spp., sensitive fern	Saturated with some standing water.	This wetland is located north of Route 9, and connects through a culvert to Wetland 34a which is south of Route 9. It borders a non-stream channel that disperses into a large PSS/PEM wetland adjacent to Meadow Brook.

Impact ID	Resource ID	Station	Cowardin Classification				Stream Type	WSS	MDIFW SWH	Wetland Information: all soils hydric		Notes
Impact Sheet			PFO	PSS	PEM	PUB				Dominant Vegetation	Hydrology Indicators	
n/a	37a	340+20-341+10	D					X	SVP	N. white cedar, balsam fir, speckled alder, winterberry, A. elm, <i>Carex</i> spp., cinnamon fern, sphagnum spp.		Basin wetland with inlet. No outlet observed. Located north of Route 9, and connects through a culvert to Wetland 33a which is south of Route 9. VP B is located within Wetland 37.
n/a	38a,b 39d,e	347+50 347+60					P					Meadow Brook south and north of Route 9.
n/a	38c,d	346+00-348+70			D			X		Speckled alder, willow spp., <i>Scirpus</i> spp., <i>Calamagrostis</i> spp., <i>Carex</i> spp.	Seasonally flooded, some ponding.	Emergent wetland bordering Meadow Brook south of Route 9.
n/a	39a,b	346+00-348+50		D	X			X	IWWH	Red maple, speckled alder, willow spp., <i>Calamagrostis</i> spp., <i>Carex</i> spp.	Seasonally flooded, some ponding.	Mixed scrub-shrub and emergent wetland bordering Meadow Brook north of Route 9.
WET03 3	40a	4004+00-4006+00			D					Willow spp., purple loosestrife, <i>Carex</i> spp.	Seasonally saturated.	Located at toe of I-395 on-ramp inslope.
WET02 2	41a	4007+00-4010+50		X	D					Speckled alder, willow spp., green ash, sensitive fern, purple loosestrife, <i>Carex</i> spp.	Seasonally saturated.	Located at toe of I-395 on-ramp inslope down gradient of Wetland 40a.
WET02 2	42a	4010+50	D		X					Red maple, green ash, speckled alder, willow spp., broad-leaved meadowsweet, sensitive fern, purple loosestrife	Seasonally saturated.	Located between the I-395 entrance ramp inslope and a hospital parking lot, becomes more herbaceous closer to highway.
n/a	43b	4018+94	D							Red maple, balsam fir, N. white cedar, broad-leaved meadowsweet, sensitive fern, watercress (in pooled areas)	Seasonally saturated, seasonal pooling.	Located between the I-395 entrance ramp in-slope and a hospital parking lot, underlain by tight soils indicative of previous disturbance.
n/a	44c	4018+00	D							Red maple, green ash, N. white cedar, broad-leaved meadowsweet, speckled alder, sensitive fern, <i>Carex</i> spp.	Seasonally saturated.	Likely formed by drainage through a culvert from the hospital access road.
n/a	47a,b,c	525+50					P					Felts Brook south of Route 1A. Line c is the limit of a large pooled area dry in October 2017.
n/a	47d,e,f,g	518+00-524+50			D					Speckled alder, broad-leaved meadowsweet, <i>Carex</i> spp., <i>Typha</i> sp, wool grass, purple loosestrife	Seasonally saturated, potentially seasonally flooded.	Separated by Route 1A from Wetlands 28 and 29 to the north. Highly recommend passage for terrestrial species as large as moose.
WET01 1		5003+20			D					<i>Typha</i> sp. dominant, purple loosestrife, <i>Salix</i> sp.	Seasonally saturated, some standing water.	Wetland located west of Lowe's access road, north of Route 1A.

3.2.2 Wetland Functions and Values

Wetland functions are defined as “self-sustaining properties of a wetland ecosystem that exist in the absence of society. Functions relate to the ecological significance of wetland properties without regard to subjective human values. Values are benefits that derive from either one or more functions and physical characteristics associated with a wetland,” (*The Highway Methodology Workbook Supplement*, US Army Corps of Engineers, New England District, September 1999). The functions and values considered by ACOE in the permitting process are listed in Table 2.

Functions		Values	
GRD	Groundwater Recharge/Discharge	REC	Recreation
FFA	Floodflow Alteration	ESV	Educational/Scientific Value
FSH	Fish and Shellfish Habitat	U/H	Uniqueness/Heritage
STR	Sediment/Toxicant Retention	VQA	Visual Quality/Aesthetics
NRRT	Nutrient Removal/Retention/Transformation	ES	Threatened/Endangered Species Habitat
PE	Production Export		
SSS	Sediment/Shoreline Stabilization		
WH	Wildlife Habitat		

In 2016 and 2017, MaineDOT assessed functions of 44 wetlands delineated on the proposed I-395 Connector route. Although some of these wetlands may have significant value, per the ACOE definition, wetland values were not assessed during the field surveys. Wildlife habitat (WH) was the primary function of 17 wetlands, and a co-primary function of 21 additional wetlands. Floodflow alteration (FFA) shared primary function with WH in 7 wetlands, particularly those bordering larger streams (e.g., Felts Brook). Sediment/toxicant retention (STR) or nutrient removal/retention/transformation (NRRT) were the primary functions in four wetlands, and co-primary functions in 17 wetlands. These wetlands were chiefly located near existing roads, agricultural fields, or recently logged forests where erosion and/or sedimentation is likely to occur. Wetland functions, Cowardin wetland classification (Cowardin, Lewis M. et al., 2013), and hydrogeomorphic class (HGM) are summarized for each wetland in Table 3.

Table 2. Wetland Functions and Values Table

Impact ID	Resource ID	Stations	Resource Type	Cowardin Classification	HGM Class	Functions P (primary), O (occurs)	Comments
WET39	A	312+50	Vernal pool	PFO		P: WH	Located within Wetland 1.
n/a	B	340+50	Vernal pool	PFO		P: WH	Located within Wetland 37.
WET39	01a, b	313+00-317+50	Wetland	PFO	Slope <i>forested</i>	P: WH O: GRD, FFA, NRRT, PE	Likely headwater of down gradient stream.
WET40	02a	330+00-333+50	Wetland	PEM	Depressional <i>herbaceous</i>	P: WH O: GRD, FFA, STR, NRRT	Isolated basin with no defined inlet/outlet.
WET38	03a, b	297+40-300+40	Wetland	PFO	Slope <i>herbaceous/forested</i>	P: WH O: GRD, STR, NRRT, PE	Headwater wetland that drains to beaver flowage south of wetland 4.
WET37	04a, b	287+30-289+30	Wetland	PEM	Riverine <i>herbaceous/scrub shrub</i>	P: WH O: GRD, FFA, STR, NRRT, PE	Large PEM with PSS fringe located up gradient of a beaver dam.
WET32	05a, b	251+50-253+00	Wetland	PFO	Slope <i>forested</i>	P: WH O: GRD, FFA, STR, NRRT, PE	Bisected by a woods road, more herbaceous north of the road and forested south of the road.
WET33 WET34	06a	259+00-264+60	Wetland	PFO	Slope <i>forested</i>	P: WH O: GRD, FFA, STR, NRRT, PE	Drains toward a tributary of Eaton Brook.
WET35 WET36	07a, d	272+20-276+30	Wetland	PEM	Riverine <i>herbaceous</i>	P: WH, FFA O: GRD, FSH, STR, NRRT, PE, SSS	Floodplain wetland that borders stream within larger PEM.
WET29 WET30	08a,b,c	222+50-230+70	Wetland	PFO	Slope <i>forested</i>	P: STR, NRRT O: GRD, FFA, FSH, PE, WH	Wetland discharging from base of slope.
WET27	09a	198+40	Wetland	PFO/PEM	Slope <i>forested, herbaceous</i>	P: NRRT O: GRD (limited), STR, PE, WH	Wetland at base of gentle discharging slope.
WET28	10a	199+50-201+30	Wetland	PEM	Slope <i>herbaceous, forested</i>	P: WH O: GRD (limited), NRRT, PE (limited)	Wetland at base of low-moderate discharging slope.
WET26	11a	191+90-197+00	Wetland	PFO	Slope <i>forested</i>	P: WH O: GRD (limited), STR, NRRT, PE (limited)	Wetland located at base of two slopes.
WET25	12a	180+30-182+40	Wetland	PSS	Slope <i>forested</i>	P STR, WH O: GRD, FFA, NRRT, PE (limited)	Linear wetland located at eastern base of moderate steep slope.
WET24	13a	165+40-168+40	Wetland	PFO	Slope <i>forested</i>	P: WH O: GRD, FFA, STR, NRRT, PE	Wetland located at western base of same slope as wetland 12a.

WET23	14a	150+00-154+50	Wetland	PFO	Slope <i>forested</i>	P: WH O: GRD, FFA, NRRT, PE	Wetland located at base of low discharging slope, bisected by skidder road.
WET21 WET22	15a, b	138+30-142+40	Wetland	PSS/PEM	Riverine <i>herbaceous/forested/scrub shrub</i>	P: FFA, WH O: GRD, FSH, STR, NRRT, PE, SSS	Floodplain wetland along Eaton Brook.
WET18	16a	108+50	Wetland	PFO	Depressional <i>forested</i>	P: WH O: GRD, FFA, STR, NRRT, PE	Basin wetland that receives drainage from roadside ditch.
WET19	17a	116+50-118+30	Wetland	PFO	Slope <i>forested</i>	P: WH, STR O: GRD, FFA, NRRT, PE	Forested wetland recently logged, canopy cover <50%.
WET20	18a	121+10-132+00	Wetland	PFO	Slope <i>forested</i>	P: WH, STR O: GRD, FFA, NRRT, PE	Forested wetland recently logged, canopy cover <50%.
N/A	19a,b,c	132+50	Wetland	PFO	Slope/Riverine <i>forested</i>	P: WH (limited) O: GRD, FFA, FSH, NRRT, PE	Small wetland located adjacent to intermittent stream.
N/A	20a	133+50	Wetland	PFO	Slope/Riverine <i>forested</i>	P: WH (limited) O: GRD, FFA, FSH, NRRT, PE	Small wetland located adjacent to same intermittent stream as wetlands 19 and 21.
N/A	21a	133+70-133+80	Wetland	PFO	Slope/Riverine <i>forested</i>	P: WH (limited) O: GRD, FFA, FSH, NRRT, PE	Small wetland located adjacent to same intermittent stream as wetlands 19 and 20.
WET15	22a	95+70-96+00	Wetland	PSS	Depressional <i>scrub shrub</i>	P: STR (limited), NRRT (limited), WH O: GRD, FFA, PE	Drainage swale that may receive runoff from agricultural fields.
WET16 WET17	23a, b	100+30-100+40	Wetland	PSS/PEM	Depressional <i>herbaceous, scrub shrub</i>	P: STR (limited), NRRT (limited), WH O: GRD, FFA, PE	Drainage swale bisected by gravel road, may receive runoff from agricultural fields.
WET14	24a	86+00-91+00	Wetland	PEM	Slope <i>herbaceous</i>	P: STR (limited), NRRT (limited), WH O: GRD, FFA, PE	Small vegetated drainage embedded in cornfields.
WET13	25a, b	76+60-85+50	Wetland	PSS/PEM	Slope/Riverine <i>scrub shrub, herbaceous</i>	P: STR, NRRT, WH O: GRD, FFA, PE	PSS/PEM that that connects through culvert to up gradient wetland 24.
WET12	26a,b	76+00-76+30	Wetland	PEM	Slope <i>herbaceous</i>	P: STR (limited), WH O: GRD, FFA, NRRT, PE	Small isolated wet meadow on discharging slope, a down gradient berm has likely contributed to wetland formation.
WET11	27a	73+80-74+10	Wetland	PFO	Depressional <i>forested</i>	P: WH O: GRD, FFA, NRRT, PE	Small isolated basin in upland with a berm on its down gradient margin.
WET04 WET05 WET06	28d, g*	51+00-59+20	Wetland	PEM/PSS	Riverine <i>herbaceous/scrub shrub</i>	P: FFA, WH O: GRD, FSH, STR, NRRT, PE, SSS	Floodplain wetland of Felts Brook.

WET04 WET05 WET06	28a, d*	62+70- 68+70	Wetland	PSS/PEM/PFO	Riverine <i>herbaceous/scrub shrub/forested</i>	P: FFA, WH O: GRD, STR, NRRT, PE, SSS	PSS wetland bordering a tributary of Felts Brook and connecting to PEM and PFO.
WET07	29a	53+20	Wetland	PEM	Riverine <i>herbaceous</i>	P: STR (limited), WH O: GRD, FFA, FSH, NRRT, PE, SSS	Located at toe of slope (Route 1A) and borders Felts Brook.
N/A	30a	49+50	Wetland	PEM	Slope <i>herbaceous</i>	P: STR (limited) O: FFA, NRRT, PE, WH	Small basin enclosed by highway on/off ramp.
WET43	33a	340+80- 341+30	Wetland	PFO	Slope or Depressional <i>forested</i>	P: WH O: GRD, FFA, STR, NRRT, PE	Drains to small tributary of Meadow Brook.
N/A	34a	225+40- 336+50	Wetland	PFO/PEM	Slope or Depressional <i>Forested/herbaceous</i>	P: STR (limited), WH O: GRD, FFA, NRRT, PE	Upper reach of wetland located on small tributary of Meadow Brook.
N/A	35a	329+50- 333+30	Wetland	PEM	Slope <i>herbaceous</i>	P: STR, NRRT, WH O: GRD, FFA, PE	Located on low discharging slope in old pasture.
N/A	36a	336+20	Wetland	PFO	Riverine or Slope <i>forested</i>	P: STR, NRRT, WH O: GRD, FFA, PE	Connects through a culvert under Route 9 to Wetland 34.
N/A	37a	340+20- 341+10	Wetland	PFO	Slope <i>forested</i>	P: STR, WH O: GRD, FFA, NRRT, PE	Connects through a culvert under Route 9 to Wetland 33.
N/A	38c,d	346+00- 348+70	Wetland	PEM	Riverine <i>herbaceous</i>	P: FFA, WH O: GRD, FSH, STR, NRRT, PE, SSS	Connects through a culvert under Route 9 to Wetland 39.
N/A	39a,b	346+00- 348+50	Wetland	PSS/PEM	Riverine <i>herbaceous, scrub-shrub</i>	P: FFA, WH O: GRD, FSH, STR, NRRT, PE, SSS	Connects through culvert under Route 9 to Wetland 38 which is more herbaceous.
WET03	40a	4004+00- 4006+00	Wetland	PEM	Slope <i>herbaceous</i>	P: STR O: FFA, NRRT, PE, WH	Located at toe of I-395 entrance ramp inslope.
WET02	41a	4007+00- 4010+50	Wetland	PEM/PSS	Slope <i>herbaceous, scrub-shrub</i>	P: STR, O: FFA, PE, WH	Located at toe of I-395 entrance ramp inslope down gradient of Wetland 40.
WET02	42a	4010+50	Wetland	PFO	Slope <i>forested</i>	P: STR, WH O: FFA, NRRT, PE	Located between the I-395 on-ramp and a hospital parking lot.
N/A	43b	4018+94	Wetland	PFO	Depressional <i>forested</i>	P: WH O: GRD, PE	Disturbed area possibly affected by previous construction activities. Located between the I-395 on-ramp and a hospital parking lot.
N/A	44c	4018+00	Wetland	PFO	Depressional <i>forested</i>	P: STR, NRRT O: GRD (limited), PE (limited), WH	Formed by drainage through a culvert from the hospital access road. Located between the I-395 on-ramp and a hospital parking lot.

N/A	47d,e,f,g	518+00-524+50	Wetland	PEM/PSS	Riverine <i>herbaceous, scrub-shrub</i>	P: FFA, STR, WH O: GRD, FSH, NRRT, PE, SSS	Borders Felts Brook south of Route 1A and connects through culvert to Wetlands 28 and 29 north of Route 1A.
WET01		5003+20	Wetland	PEM	Slope <i>Herbaceous</i>	P: STR, NRRT O: WH	Located at the base of the jug handle extension of Lowe's access road on a gently descending northeast slope.
	PFO PEM PSS	Forested wetland Emergent wetland Scrub-shrub wetland					
	GRD FFA FSH STR NRRT PE SSS WH	Groundwater Recharge/Discharge Floodflow Alteration Fish and Shellfish Habitat Sediment/Toxicant Retention Nutrient Removal/Retention/Transformation Production Export Sediment/Shoreline Stabilization Wildlife Habitat					
	*	Main road stationing. See Table 1 for additional stationing if wetland crosses proposed ramp locations.					

3.3 STREAMS

The proposed highway will cross four perennial streams and one intermittent stream. From south to north these streams are: Felts Brook; an unnamed tributary of Felts Brook; an unnamed, intermittent tributary of Eaton Brook; an unnamed, perennial tributary of Eaton Brook; and Eaton Brook (Fig. 1). The Felts Brook crossing of Route 1A in Brewer and the Meadow Brook crossing of Route 9 in Eddington were also assessed; new construction may tie in with existing roads and culverts at these locations. Observations of fish and wildlife in and near the surveyed streams are discussed in sections 3.4 and 3.5. Physical and biological characteristics of the streams are summarized in Table 4.

Felts Brook

North of Route 1A (Station 55+00 (main road), 913+50 (ramp D), 702+50 (ramp E))

Felts Brook, a tributary of the Penobscot River, flows northerly in the project area after passing beneath Route 1A in Brewer in an approximately 12 ft. diameter, multiplate culvert. The main stem of the proposed connector highway will intersect the stream north of Route 1A. The entrance ramp from Route 1A to the new highway will also cross the stream. Bankfull widths of Felts Brook were measured by MaineDOT biologists in 2008, and range from 10 - 15 ft. Felts Brook is low-gradient and meandering near the proposed crossings. The stream traverses an extensive emergent wetland dominated by hydrophilic sedges and grasses; an alder/willow scrub-shrub wetland borders the emergent wetland. The stream substrate, at the location of the proposed crossings, is composed of silt and clay; however, rocky substrate occurs elsewhere along the stream. The banks of the stream are vertical and typically undercut on the outside of meanders.

South of Route 1A

Felts Brook, south of Route 1A, is partially blocked near the culvert inlet by a breached beaver (*Castor canadensis*) dam. A railroad crossing slightly constricts the stream approximately 300 ft. upstream of the inlet. Between the inlet and the railroad bridge, the stream shows signs of impoundment at higher water levels than those present during MaineDOT's survey in October 2017. The streambed substrate is primarily composed of mud and sand. Stream banks are vertical or steeply sloping (>30%). An extensive floodplain wetland borders the stream.

Unnamed tributary of Felts Brook (Station 66+50)

The unnamed tributary of Felts Brook passes through a dense speckled alder wetland. At the time of the stream assessment in October 2016, the stream was nearly dry. Bankfull width, measured in 2008, was approximately 10 ft. The stream channel appears to end upstream of the proposed crossing. It is partially blocked downstream by a beaver dam. The stream substrate is muddy and the stream banks range from virtually no slope to steeply sloping (>30%). The stream channel is >75% shaded by vegetation.

Unnamed Tributary to Eaton Brook (Station 133+80)

This unnamed tributary to Eaton Brook is intermittent and was dry when surveyed in October 2016. The substrate is primarily silt and clay underlain by an impermeable layer. The stream is bordered by two, small forested wetlands and a small, emergent wetland. Some areas adjacent to the stream were recently logged and wood debris is abundant in the stream. Upstream of the proposed crossing, the stream may have been ditched. Due to its intermittent flow, the stream is of low habitat value to fish.

Eaton Brook (Station 140+70-141+30)

Eaton Brook is a perennial tributary of the Penobscot River. The easterly side of the stream at the proposed highway crossing is bordered by a mixed wetland composed of emergent floodplain species (e.g., *Calamagrostis* sp.) and speckled alder. On the westerly side of the stream, the vegetation occurs in distinct bands, transitioning from a streamside wetland dominated by sedges (*Dulichium* sp., *Eleocharis* sp.), to a *Calamagrostis*-dominated emergent wetland, then to a speckled alder scrub-shrub wetland that borders a forested upland. Aquatic floating and submersed vegetation (waterlily, water shield) is abundant in the stream where flow velocity is reduced. The stream substrate is muddy. Measured bankfull width in 2008 was 30 ft. A rock dam capped with woody material placed by beavers, partially impedes stream flow and diverts some flow to a side channel. Stream banks are steeply sloping (>30%) to vertical and undercut.

Unnamed Tributary of Eaton Brook (Station 273+30)

At the site of the proposed highway crossing, an unnamed, perennial tributary of Eaton Brook flows through an extensive emergent wetland. A powerline corridor crosses the stream upstream of the proposed new road construction. Dominant vegetation in the wetland includes mixed *Carex* spp. and *Calamagrostis* sp. Scattered snags occur in the wetland and it is fringed with alders transitioning to gray birch, tamarack and spruce at the forest edge. The banks of the stream are steeply sloping (>30%) or vertical/undercut. Stream flow and the few pools observed were typically shallow, < 1 ft. and 1 – 2 ft., respectively.

Meadow Brook (Route 9, Eddington) (Station 347+50)

Meadow Brook, at the northeastern end of the I-395 Connector project, is a tributary of the Penobscot River. It passes through a metal culvert (~ 54 inch span x ~60 inch rise) beneath Route 9 in Eddington, and is bordered by extensive wetlands on both sides of the road. The channel has been dammed by beavers in several locations downstream of the culvert; it is ponded immediately upstream of the culvert. The average upstream and downstream bankfull width was measured at 8.5 feet. The channel can be characterized as a deadwater at the low flow conditions present at the time of the MaineDOT survey. The stream substrate is primarily organic-rich mud upstream, and includes sand, and some pea gravel, downstream of the culvert. The stream banks are well-defined and vertical upstream, and vertical or steeply sloping (>30%) downstream.

Table 3. Stream Information Table

Impact ID	Stream ID	Stream Name	Stream Information					Habitat characteristics						Fish and Wildlife		
			Station	Date surveyed	Flow	Temp. (F)	Type (P/I)	Dominant Substrate	Aquatic Veg.	Habitat type	% Canopy Cover	Stream Bank	Woody debris	Fish	Wildlife*	Potential Barriers
STR01-ATS	28e,f	Felts Brook (north of Rt. 1A)	55+08	10/24/16	Low	50	P	Silt/clay/mud	X	Deadwater	0-5	Vertical/undercut, steeply sloping (>30)	X SWD	Xa	1,2,4,5,6,7	None observed
N/A	47a,b	Felts Brook (south of Rt. 1A)	524+50	10/6/17	Low	57	P	Silt/clay/mud	X	Deadwater	0-5	Steeply sloping (>30)	X SWD	X	1,3	Beaver dam
STR03-ATS		Tributary of Felts Brook	61+14	4/24/20	Moderate	Unknown	P	Silt/clay/mud	X	Deadwater	5-25	Steeply sloping (>30), gradual/no slope (<30)	S SWD	Xa	1,2,3,5	Beaver dam
STR02-ATS	28b,c	Tributary of Felts Brook	66+73	10/19/16	Low	67	P	Silt/clay/mud	X	Deadwater	76-100	Steeply sloping (>30), gradual/no slope (<30)	X SWDa, LWDF	Xa	1,2,3,5	Beaver dam ~75-100 ft. downstream
STR04	19a,b	Tributary of Eaton Brook	133+85	10/13/16	None	n/a	I	Silt/clay/mud	----	----	51-75 (US) 76-100 (DS)	Steeply sloping (>30)	X SWDa, LWDF	---	1	---
STR05-ATS	15c,d	Eaton Brook	140+90	10/14/16	Low	57	P	Silt/clay/mud	X	Deadwater	0-5	Vertical/undercut, steeply sloping (>30)	X SWD	Xa	1,5,6	Rock and beaver dam
STR06	07b,c	Tributary of Eaton Brook	273+50	9/28/16	Low	57	P	Silt/clay/mud	X	Deadwater	6-25	Vertical/undercut, steeply sloping (>30)	Not present	X	0,1,2,5	
STR07		Tributary of Eaton Brook	298+49	6/11/20	Low	unknown		Organic		Deadwater	0-5	Discontinuous	X SWD			
N/A	38a,b 39a,b	Meadow Brook	347+50 347+60	9/28/17	Low	68	P	Organic	X	Deadwater	5 (US) 6-25 (DS)	Vertical/undercut, steeply sloping (>30)	X SWD	Xa	1,2,3,5,6,7	Beaver dam

* Wildlife or wildlife sign (e.g. scat, tracks, rubs, trail) observed near stream

P = perennial; I = intermittent; US = upstream; DS = downstream

X = present, SWD = small woody debris, LWD = large woody debris, a = abundant, f = few

0 = coyote, 1 = white-tailed deer, 2 = beaver, 3 = raccoon, 4 = waterfowl, 5 = frog, 6 = odonate, 7 = mussels/freshwater clams

3.4 FISH PASSAGE

Passage for fish, and other aquatic species, will be provided at perennial stream crossings along the proposed connector route in accordance with design methods summarized in *Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings* (USDA, 2008). Fish were observed at each perennial stream crossing along the route, and were abundant in Felts Brook, Eaton Brook and Marsh Brook. An intermittent tributary of Eaton Brook (station 133+80) offers limited habitat for fish upstream of the proposed crossing and is a low priority for fish passage.

3.5 WILDLIFE PASSAGE

The proposed connector does not pass through areas mapped by MDIFW as containing rare state wildlife occurrences; however, sign of deer, small mammals, birds, reptiles and amphibians was typically abundant where the proposed highway connector route crossed streams and their bordering wetlands. Although moose (*Alces alces*) or moose sign were not observed during resource surveys, they are likely present in the project area based on habitat type and quality. Therefore, wildlife passage structures at all perennial stream crossings should accommodate this species, most importantly at Felts Brook, Eaton Brook and its tributary, and Meadow Brook (Table 5).

Felts Brook (North of Route 1A, Station 55+00) and South of Route 1A

Felts Brook, which flows north to the Penobscot River is bordered by extensive emergent wetlands owned by Maine Department of Transportation. The wetland, south of Route 1A, is mapped by MDIFW as Inland Waterfowl and Wading Bird Habitat (IWWH). Approximately 200 acres of wetland adjacent to Felts Brook are owned or managed by either MaineDOT or MDIFW. Felts Brook, and its bordering wetlands, connect blocks of undeveloped land greater than 100 acres in size that occur to the east and northwest of proposed highway connector route (Beginning with Habitat, 2013). The wetlands are bordered by relatively extensive areas of agricultural land to the north along Eastern Avenue.

MaineDOT biologists observed numerous and diverse signs of wildlife use in the stream and in the adjacent emergent and scrub-shrub wetlands north and south of Route 1A (Tables 3 and 4). These included macroinvertebrates, freshwater clam and mussel shells (unidentified species), frogs, and mallard ducks (*Anas platyrhynchos*) in the stream. White-tailed deer tracks, were especially numerous near the inlet and outlet ends of the culvert, perhaps indicating deer currently use, or attempt to use, the culvert for passage. Deer tracks, scat, and trails were also common in the nearby wetland and fields. Coyote (*Canis latrans*) scat, raccoon tracks, and wood debris generated by beaver activity were also observed. The carcass of a painted turtle (*Chrysemys picta*) was discovered on the shoulder of Route 1A, likely killed attempting to cross the road between wetlands. Turtle nests, and egg shells, were present in the sand/gravel bank of the railroad bed.

Wildlife passage for all species, including moose, is highly recommended at both proposed crossings of Felts Brook north of Route 1A due to the abundant evidence of wildlife use and the value of Felts Brook and its wetlands as a link between nearby habitat blocks. Wildlife passage, for moose and other species, between the wetlands north and south of Route 1A should also be addressed given the high traffic volume on Route 1A east of the I-395 ramp (22,236 average annual daily traffic in 2010) and evidence that wildlife (e.g., white-tailed deer, turtles) may currently attempt to cross near the present culvert.

Unnamed tributary of Felts Brook (Station 66+50)

This unnamed tributary of Felts Brook flows through a scrub-shrub wetland that is part of the extensive mixed wetland complex that borders Felts Brook. The wetland is traversed by numerous, well-used white-tailed deer trails. Raccoon tracks were observed in the muddy substrate of the stream. A beaver dam and pond are located downstream of the proposed highway crossing. The stream appears to dead end upstream of the crossing. Based on the abundant evidence of use by deer and its connection to wetlands bordering Felts Brook, the proposed crossing at this location should provide passage for small and large wildlife, including moose.

Unnamed Tributary to Eaton Brook (Station 133+80)

The area adjacent to the proposed highway crossing, is wooded, though recently logged. White-tailed deer tracks and scat were observed near the stream. Based on these observations, and the possible presence of small mammals, wildlife passage is recommended.

Eaton Brook (Station 140+70-141+30)

Eaton Brook, at the site of the proposed highway crossing, is bordered by a large emergent/scrub-shrub wetland complex that is mapped by MDIFW as IWWH. Numerous game trails used by white-tailed deer, coyote, and beaver reflect the importance of this wetland as a wildlife corridor. Past beaver activity is evidenced by a beaver dam built atop an existing manmade rock dam that traverses the stream. Unidentified small mammal prints were noted on the dam. River otter (*Lontra canadensis*) have also been reported in the stream near the proposed project. Wood ducks (*Aix sponsa*), and an unidentified duck species (mallard or black duck), were observed in the stream.

The proposed highway connector will fragment a large block of undeveloped, mostly forested land. Additional large blocks of forested land, separated by secondary roads with sparse development, exist nearby. The provision of wildlife passage for large and small terrestrial species, including moose, at this proposed roadway crossing is a high priority due to the abundance of wildlife sign and the presence of large, nearby blocks of forested habitat.

Unnamed Tributary of Eaton Brook (Station 273+30)

The proposed highway connector crosses a large emergent wetland that borders an unnamed tributary of Eaton Brook. The wetland is approximately 200 - 300 feet in width at the proposed crossing, and has numerous snags, suggesting beavers may have dammed the brook downstream in the past. MDIFW has mapped this wetland as IWWH. The wetland is surrounded by forested upland and likely provides a

valuable corridor for wildlife movement based on field evidence. Numerous game trails, tracks, scat, snags and stumps indicate past and present use by white-tailed deer, coyote and beaver. A powerline corridor to the south of the proposed crossing also provides travel and foraging opportunities for wildlife.

The proposed crossing is located in the interior of a large habitat block over 3,000 acres in size. Based on the abundance of wildlife sign for terrestrial and semi-aquatic species, passage is recommended for the range of wildlife expected in the area, including moose.

Additional passage should be provided for deer, and other large terrestrial species, at the emergent wetland/upland forest edge.

Wetland Drainage (Station 287+30 – 289+30)

This wetland drainage is located approximately 1200 feet northeast of the unnamed tributary of Eaton Brook (station 273+30) in the same large interior block of undeveloped land. Similar to that wetland, it is mapped by MDIFW as IWWH and is approximately 200 – 300 feet in width. A beaver dam impounds a small ponded area near the center line and in the right-of-way of the proposed connector road. Several channels, the largest located at the northeast end of the beaver dam, drain the wetland and connect it to a larger emergent wetland downgradient. The wetland is characterized by a complex of habitat types and structural elements (e.g., emergent wetland, shallow pond, snags) creating high quality wildlife habitat within a bordering forest. A rusty blackbird (*Euphagus carolinus*), a species listed by MDIFW as a Priority 1 Species of Greatest Conservation Need (SGCN) (Maine 2015 Wildlife Action Plan), was observed foraging in the wetland. A belted kingfisher (*Megaceryle alcyon*), Priority 3 SGCN, and wood warblers were also observed. Numerous snags may provide opportunities for woodpeckers and other cavity-nesting and roosting birds. Signs of mammal use include white-tailed deer and raccoon tracks. Odonates and green frogs (*Rana clamitans*) were also observed.

Wildlife passage should be provided for the range of species that may use this wetland.

Meadow Brook (Station 347+50-347+60)

Abundant and diverse signs of wildlife were observed along Meadow Brook and in the wetlands north and south of the stream. These include white-tailed deer tracks, trails and beds; raccoon, and unidentified small mammal prints; beaver dams; and freshwater mussel and clam shells. Green frogs and odonates were also present. Moose, although not observed, are also likely present in the area.

MDIFW identifies Meadow Brook, and its adjacent wetlands, as a connector between two large blocks of relatively unfragmented habitat, approximately 3000 acres south of Route 9 and more than 4700 acres north of Route 9. In addition, the scrub-shrub wetland north of Route 9 is mapped by MDIFW as IWWH. Wildlife passage should be provided at Meadow Brook for all species that may utilize this connector and habitat.

Table 5. Summary of wildlife observations along the proposed connector route (alternative 2B-2) (September – November, 2016, September – October, 2017).

			Wildlife - Mammals					Wildlife - Other						
			White-tailed deer	Coyote	Beaver	Raccoon	Small mammal	Bird	Reptile	Frog	Mollusc	Fish	Odonates	Macro-invertebrates (aquatic)
Stream/Wetland ID	Stream Name	Station												
47a,b	Felts Brook	524+50	1		6,7	1	1	10	16,17	12	14,15	X	X	
28e,f	Felts Brook	Main road: 55+00, Ramp D 913+50, Ramp E 702+50	1,2,4	1	7	1	1,8	9,10		12		Xa		X
28b,c	Tributary of Felts Stream	66+50	1,2,3,4		6,7	1						Xa		
19a,b	Tributary of Eaton Brook	133+80	1									stream dry		
15c,d	Eaton Brook	140+70-141+30	1,2,4	1	6		1	9,10		12		Xa	X	
07b,c	Tributary of Eaton Brook	273+30	1,2,4,5	1	4,6,7			9,10	11		14	X	X	
04a,b	No stream	287+30-289+30	1		6	1		10		12			X	
38a,b 39a,b	Meadow Brook	347+50 347+60	1,3,4		6,7	1	1			12	14	Xa	X	
1=tracks, 2=scat, 3=beds, 4=trails, 5=rubs, 6=dams, 7=stumps/sticks, 8=soil castings, 9=waterfowl, 10=other bird, 11=garter snake, 12=adult frog, 13=tadpole, 14=shells, 15=snail (live), 16=turtle eggs, 17=turtle carcass (on Route1A above wetland) X=present, a=abundant														

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APPENDIX A: FUNCTION AND VALUE FORMS

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 01a/01b	5. Cowardin Class: PFO	6. Stationing/Location: Sta 313+00 - Sta 317+50
7. Dominant Vegetation: Tree: red maple, northern white cedar Shrub: speckled alder, balsam fir Herbaceous: cinnamon fern, sensitive fern		8. Wetland Morphology: HGM type Slope: <i>forested</i> Likely headwater of downgradient stream. PFO is located between two ridges, at base of gentle to moderate slope. Seasonally saturated/standing water.

9. Notes: PFO with ~75% canopy cover, lush fern understory, and abundant sphagnum groundcover. Hydric soils present.

10. FVA Table:
Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X			X	X		X					
Principal								X					

The habitat of the wetland is fairly uniform. It likely provides nesting opportunities for forest-dwelling bird species and contains some mast-bearing trees; e.g. red maple. Deer tracks common in wetland.

11. Is this wetland part of larger complex - This wetland is part a larger wetland area.

12. Impact Notes/Photos - Some logging has occurred in surrounding upland and wetland edge.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 02a	5. Cowardin Class: PEM	6. Stationing/Location: Sta 330+00 – Sta 333+50
7. Dominant Vegetation: Tree: tamarack at edge Shrub: willow sp. Herbaceous: broad-leaved cattail		8. Wetland Morphology: HGM type Depressional: <i>herbaceous</i> Isolated basin with no defined inlet or outlet. Seasonally saturated with some standing water likely present.

9. Notes: PEM dominated by broad-leaved cattail; *Scirpus* sp., *Carex* spp. and joe-pye weed (*Eutrochium* sp.) also observed. Hydric soils present. Hydrology is likely somewhat altered by a nearby drainage ditch.

10. FVA Table:
Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					

The wetland enhances overall habitat value of the adjacent landscape. Food and cover is available for nesting birds and other species. Woodcock were observed.

11. Is this wetland part of larger complex – No, this wetland is an isolated basin that drains into a nearby drainage ditch.

12. Impact Notes/Photos



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 03a,b	5. Cowardin Class: PFO	6. Stationing/Location: Sta 297+40 – Sta 300+40
7. Dominant Vegetation: Tree: red maple, northern white cedar, balsam fir Shrub: speckled alder, red maple, steplebush, winterberry Herbaceous: <i>Calamagrostis</i> , <i>Carex spp.</i> , wool grass Groundcover: <i>Sphagnum spp.</i>		8. Wetland Morphology: HGM type Slope: <i>herbaceous/forested</i> Headwater wetland, drains to beaver flowage south of Wetland 4. Saturated soils with periodic standing water are present.

9. Notes: The northeastern edge of this wetland is at the base of a steep slope.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X			X	X	X		X					
Principal								X					

Abundant signs of white-tailed deer observed (tracks, scat, rubs). Seasonal pools may be present, green frog was observed.

11. Is this wetland part of larger complex – Yes, wetland is part of a much larger complex of wetlands.

12. Impact Notes/Photos



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 04a,b	5. Cowardin Class: PEM	6. Stationing/Location: Sta 287+30 – Sta 289+30
7. Dominant Vegetation: Tree: northern white cedar (snags) Shrub: speckled alder, red maple Herbaceous: tussock sedge, bur-reed, <i>Calamagrostis</i> , cattail, wool grass Open water: pond lily		8. Wetland Morphology: HGM type Riverine: <i>herbaceous/scrub-shrub</i> Large PEM with PSS fringe located up-gradient of a beaver dam. Parts of this wetland are permanently flooded.

9. Notes: Currently, more than one channel drains the impoundment.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					

Rusty blackbird, palm warblers, belted kingfisher, green frogs, and odonates observed. Deer sign (tracks, scat) and raccoon tracks abundant. **Passage for aquatic and terrestrial species is recommended.**

11. Is this wetland part of larger complex – Yes, a much larger PEM is located down gradient along a stream. Habitat quality is excellent and diverse (ponded areas, marsh, snags, bordering PSS, PFO and upland forest).

12. Impact Notes/Photos



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington		2. Route: Route 9 and I-395 connector		3. PIN: 18915.00									
4. Wetland ID/Line ID: 05a,b		5. Cowardin Class: PFO		6. Stationing/Location: Sta 251+50 – Sta 253+00									
7. Dominant Vegetation: Tree: green ash, northern white cedar, balsam fir Shrub: winterberry, balsam fir Herbaceous: cinnamon fern, <i>Carex</i> spp., sensitive fern Groundcover: <i>Sphagnum</i> spp.			8. Wetland Morphology: HGM type Slope: <i>forested</i> Wetland drains downgradient toward a tributary of Eaton Brook. Stream channel not evident. Saturated, probably seasonally flooded.										
9. Notes: This wetland is bisected by an unpaved woods road. The upgradient (north) wetland is notably more herbaceous, with a dense <i>Carex</i> sp. understory, and green ash dominant in the tree layer. It shows less evidence of standing water than the downgradient (south) half. The downgradient wetland is distinctly hummocky with sparse herbaceous and shrub layers and a co-dominant tree layer (red maple, balsam fir, northern white cedar, green ash). Stained leaves and basin/hummock topology may indicate seasonal pooling.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					
Bees and nuthatches were observed. Deer tracks were also evident.													
11. Is this wetland part of larger complex – Yes, wetland is part of a large block of interspersed wetland and upland.													

12. Impact Notes/Photos



North of woods road.



South of woods road.

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Holden	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 06a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 259+00 – Sta 264+60
7. Dominant Vegetation: Tree: northern white cedar, eastern hemlock, bigtooth poplar Shrub: balsam fir Herbaceous: cinnamon fern, <i>Carex</i> spp. (<i>crinita/gynandra</i>), bunchberry		8. Wetland Morphology: HGM type Slope: <i>forested</i> Wetland drains toward a tributary of Eaton Brook. Stream channel is not evident. Seasonally saturated, no standing water.
9. Notes: Strongly hydric soils. Wetland has numerous small openings in dense conifer cover.		

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					

Solitary vireo, black-capped chickadees and blue jays were heard.

11. Is this wetland part of larger complex: Yes, located in a large block of interspersed wetland/upland.

12. Impact Notes/Photos



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 07a,d; stream 7b,c.	5. Cowardin Class: PEM	6. Stationing/Location: Sta 272+20 – Sta 276+30
7. Dominant Vegetation: Shrub: speckled alder (at fringe) Herbaceous: <i>Carex</i> spp., <i>Calamagrostis</i> , <i>Scirpus</i> spp.		8. Wetland Morphology: HGM type Riverine: <i>herbaceous</i> Floodplain wetland that borders stream within larger PEM. Seasonally flooded.
9. Notes: Three-way sedge and Canada rush are common on the lower floodplain fringe of the stream. Snags and patches of steplebush are scattered throughout the wetland. Aquatic plants noted include <i>Potamogeton</i> spp., <i>Polygonum</i> spp., and yellow pond lily. Spruce, gray birch, tamarack and balsam fir occur at the forest edge.		

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X	X	X					
Principal		X						X					

Green frogs, fish (1-2 inches long) and tadpoles were observed in the stream. Turkey vultures (soaring overhead), downy woodpecker, sparrow spp., garter snake, and odonates were also observed. The wetland is bisected by numerous animal trails (deer, coyote, beaver). Deer and coyote scat, deer beds, and beaver-cut stumps were present. **Fish and wildlife passage is recommended.**

Wetland also provides a floodflow alteration function by attenuating floodwaters and reducing downstream flood damage.

11. Is this wetland part of larger complex: Yes, this large PEM connects to other wetlands upstream and downstream along the stream. A much larger PEM/PFO complex is located upstream of the proposed route.

12. Impact Notes/Photos: The wetland is bisected by a powerline.



Wetland



Stream

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 08a,b,c	5. Cowardin Class: PFO	6. Stationing/Location: Sta 222+50 – Sta 230+70											
7. Dominant Vegetation: Tree: northern white cedar Shrub: balsam fir Herbaceous: lady fern, cinnamon fern, sensitive fern		8. Wetland Morphology: HGM type Slope: <i>forested</i> Wetland is located at base of gentle-moderate slope. Seasonally flooded and saturated, discharging from base of slope.											
9. Notes: Hydric soils present – thick A/O, chroma 2 with redox features. The wetland probably adds base flow to a stream downgradient, though no channel was observed. Skunk cabbage and cattail were observed in very wet patches in the wetland interior. Wetland likely disturbed by fill associated by adjacent residential development.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X		X					
Principal				X	X								
Wetland provides retention of sediment and/or toxicants from the adjacent gravel road, and likely a nutrient removal/retention function due to residential dwellings next to the wetland.													

11. Is this wetland part of larger complex: Yes, wetland is part of a large block of interspersed wetland/upland.

12. Impact Notes/Photos: A gravel road intersects the wetland and several residences are located on the road. Wetland has been altered by the addition of fill for the gravel road and house lots. Some invasive shrub species are present.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer/Eddington		2. Route: Route 9 and I-395 connector		3. PIN: 18915.00									
4. Wetland ID/Line ID: 09a		5. Cowardin Class: PFO/PEM		6. Stationing/Location: Sta 198+40									
7. Dominant Vegetation: Tree: balsam fir Shrub: speckled alder, willow spp., balsam fir Herbaceous: soft rush, lady fern, sensitive fern		8. Wetland Morphology: HGM type Slope: <i>forested/herbaceous</i> Wetland is located at base of a gentle discharging slope. Seasonally saturated.											
9. Notes: This wetland is located downslope of a powerline corridor. It transitions from PFO to PSS and, where cleared, into wet meadow (PEM). An impermeable soil layer may limit this wetland's water storage capacity. The meadow vegetation includes purple loosestrife, graminoids, wool grass, cattails, and aster/goldenrod species.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X*			X	X	X		X					
Principal					X								
* limited													

11. Is this wetland part of larger complex: Yes, wetland is part of a larger block of interspersed wetland/upland.

12. Impact Notes/Photos: A dug pond is located behind the house that is adjacent to the wetland. No stream channel was observed.



Wet meadow



Forested/scrub shrub

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer/Eddington		2. Route: Route 9 and I-395 connector		3. PIN: 18915.00									
4. Wetland ID/Line ID: 10a		5. Cowardin Class: PEM		6. Stationing/Location: Sta 199+50 –Sta 201+30									
7. Dominant Vegetation: Tree: red maple, balsam fir Shrub: speckled alder Herbaceous: wool grass, <i>Poa palustris</i> , purple loosestrife, sensitive fern				8. Wetland Morphology: HGM type Slope: <i>herbaceous, forested</i> Wetland is located at base of a low- moderate discharging slope. Seasonally saturated.									
9. Notes: This wetland overlaps a powerline corridor and includes both wet meadow and forested wetlands. Habitat complexity provides good, overall wildlife value. An impermeable soil layer may limit water retention/capacity. A forested swale upgradient of the wetland shows evidence of surface runoff.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X*				X	X*		X					
Principal								X					
* limited													

11. Is this wetland part of larger complex: Yes, wetland is part of a larger block of interspersed wetland and upland.

12. Impact Notes/Photos: The wetland is fragmented by the road, powerline, and residences.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer/Holden	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 11a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 191+90 – Sta 197+00
7. Dominant Vegetation: Tree: northern white cedar, red maple, balsam fir Shrub: speckled alder, willow spp., balsam fir Herbaceous: sensitive fern		8. Wetland Morphology: HGM type Slope, <i>forested</i> Wetland is situated in a low area bordered by a moderate slope to the east. It likely drains southward toward a stream. Seasonally flooded (evidence of pooling) and seasonally saturated.

9. Notes: This wetland is bordered by a powerline corridor to the east and by a cornfield to the west. A low, earthen berm exists between the cornfield and the west margin of the wetland. Surface rooting and hummocks seasonal flooding and/or an underlying impermeable layer that may limit water retention/capacity. No continuous channel was observed.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X*			X	X	X*		X					
Principal								X					

* limited

11. Is this wetland part of larger complex: Yes, wetland is part of a larger block of interspersed wetland and upland.

12. Impact Notes/Photos: The wetland is fragmented by the road, powerline, agricultural fields, and a residence.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer/Holden	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 12a	5. Cowardin Class: PSS	6. Stationing/Location: Sta 180+30 – Sta 182+40
7. Dominant Vegetation: Tree: red maple Shrub: speckled alder Herbaceous: cinnamon fern, sensitive fern, <i>Carex</i> spp. Sparse tree layer present.		8. Wetland Morphology: HGM type Slope, <i>forested</i> Wetland is linear in shape and located at the base of a moderately steep slope. It drains south toward a tributary of Eaton Brook. Seasonal pooling and soil saturation was observed.

9. Notes: This wetland is bordered by a hayfield to the east and by a forested slope to the west. Surface flooding was observed between hummocks. No continuous channel was observed.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X*		X					
Principal				X				X					

* limited

11. Is this wetland part of larger complex: Yes, wetland is part of a larger complex of wetlands associated with Eaton Brook.

12. Impact Notes/Photos: The wetland occurs in a landscape fragmented by roads, a powerline, agricultural fields, and new building construction.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 13a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 165+40 – Sta 168+40
7. Dominant Vegetation: Tree: red maple, balsam fir Shrub: speckled alder, balsam fir Herbaceous: cinnamon fern, sensitive fern Groundcover: sphagnum spp.		8. Wetland Morphology: HGM type Slope, <i>forested</i> Wetland is located at the base of a moderate slope (east of wetland). Seasonal saturation with some pockets of standing water was observed.

9. Notes: Wetland drains southward toward a tributary of Eaton Brook. Shallow rooting is common due to an impermeable (clay) soil layer.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					

Deer and small mammal tracks were observed.

11. Is this wetland part of larger complex: Yes, wetland is part of a larger complex of wetlands associated with Eaton Brook.

12. Impact Notes/Photos: Some residential development is present to the north of the wetland.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer		2. Route: Route 9 and I-395 connector		3. PIN: 18915.00									
4. Wetland ID/Line ID: 14a		5. Cowardin Class: PFO		6. Stationing/Location: Sta 150+00 – Sta 154+50									
7. Dominant Vegetation: Tree: red maple, balsam fir, bigtooth poplar Shrub: speckled alder, balsam fir, <i>Rubus</i> spp. Herbaceous: <i>Solidago</i> spp., <i>Scirpus</i> sp, <i>Carex</i> spp. Groundcover: <i>Sphagnum</i> spp.				8. Wetland Morphology: HGM type Slope, <i>forested</i> Wetland is located at the base of a low slope. It drains southward toward Eaton Brook. Seasonal saturation. No standing water was observed.									
9. Notes: Forested wetland is intersected by an old skidder road vegetated by herbaceous species.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X			X	X		X					
Principal								X					

11. Is this wetland part of larger complex: Yes, wetland is part of a complex of wetlands associated with Eaton Brook.

12. Impact Notes/Photos:



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 15a,b; 15 c,d (stream)	5. Cowardin Class: PSS/PEM/PFO	6. Stationing/Location: Sta 138+30 – Sta 142+40											
7. Dominant Vegetation: East of stream: Tree: balsam fir, red maple Shrub: speckled alder, Herbaceous: <i>Calamagrostis</i> , blue vervain, <i>Solidago</i> spp. West of stream: Tree: red maple Shrub: speckled alder, willow spp, arrowwood, hawthorne Herbaceous: <i>Calamagrostis</i> , <i>Dulichium</i> spp., <i>Eleocharis</i> spp., meadowsweet, Floating: <i>Nymphaea</i> spp. Submerged: <i>Potomageton</i> spp.		8. Wetland Morphology: HGM type Riverine, <i>herbaceous/forested/scrub-shrub</i> Wetlands border Eaton Brook. Floodplain width at the proposed highway connector route is approximately 200 ft.											
9. Notes: The east side of the wetland consists of mixed PSS/PEM while the PEM and PSS wetland types on the west side occur in bands. Floating-leaved and submerged aquatic species occur in the stream due to a rock dam across the stream that slow stream flow velocity. The rock dam is located within the route alignment. Beavers have added woody material to the rock dam.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X	X	X					
Principal		X						X					
Fish and ducks (mallard or black, wood) were observed in the stream. Numerous wildlife paths traverse the wetland, approach, cross, and enter the stream. Coyote and deer scat were observed as well as small mammal tracks. Ruffed grouse was heard in surrounding forest. Based on observed wildlife sign, wildlife passage is highly recommended.													
11. Is this wetland part of larger complex: Yes, the wetland is part of a larger complex of wetlands associated with Eaton Brook.													

12. Impact Notes/Photos:



Wetland on west side of Eaton Brook



Wetland on east side of Eaton Brook

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 16a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 108+50											
7. Dominant Vegetation: Tree (high canopy): red maple, bigtooth poplar, balsam fir Tree (sub-canopy): red maple, balsam fir Shrub: meadowsweet, balsam fir Herbaceous: <i>Carex</i> spp. Groundcover: mosses Upland/wetland margin: American beech, white pine, lowbush blueberry		8. Wetland Morphology: HGM type Depressional, <i>forested</i> No outlet was observed; however, a roadside ditch may overflow into the basin during high flow events. Likely seasonally flooded.											
9. Notes: Basin shaped wetland, approximately 50-60 ft. in diameter, may provide habitat for vernal pool organisms. A 2006 vernal pool survey (Kleinschmidt, 2006) did not identify the basin as a vernal pool. A MaineDOT survey of the basin in May 2017 also found no evidence of vernal pool wildlife. Canopy cover is approximately 75% with sparse shrub/herbaceous cover; water-stained leaves observed.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					
*Limited Large tree cavities created by a pileated woodpecker were observed.													

11. Is this wetland part of larger complex: No. It is an isolated basin.

12. Impact Notes/Photos:



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 17a, 18a	5. Cowardin Class: PFO	6. Stationing/Location: 17: Sta 116+50 – Sta 118+30 18: Sta 121+10 – Sta 132+00
7. Dominant Vegetation: Tree: red maple, balsam fir Shrub: balsam fir, speckled alder, hazelnut Herbaceous: <i>Carex</i> spp., bigtooth poplar seedlings, cinnamon fern		8. Wetland Morphology: HGM type Slope, forested Wetlands located in the watershed of Eaton Brook. Likely seasonally saturated.

9. Notes: Due to recent logging, canopy cover at these two wetlands is <50%. A balsam fir overstory typically overlies a sparse shrub layer. A *Carex*-dominated herbaceous layer is present in the forest openings. Shallow tree rooting is evident and ponding occurs in skidder ruts. Some ledge is present beneath the soil.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal				X				X					

Because of the amount of disturbance and tree clearing, the wetland functions to retain sediment (and potential toxicants from logging equipment), thereby mitigating adverse effects to downstream water quality.

Green frogs were observed. Deer tracks were common.

11. Is this wetland part of larger complex: Yes, this wetland is part of a complex of wetlands that drain to Eaton Brook.

12. Impact Notes/Photos: Recent logging activity may have decreased cover for wildlife, but increased browse for deer.



Regrowth on recently logged wetland



Speckled alders in wetland

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer		2. Route: Route 9 and I-395 connector		3. PIN: 18915.00									
4. Wetland ID/Line ID: 19 a,b,c; 20a; 21a		5. Cowardin Class: PFO		6. Stationing/Location: Sta 133+80									
7. Dominant Vegetation: Tree: balsam fir Shrub: speckled alder Herbaceous: <i>Carex</i> spp., sensitive fern, <i>Equisetum</i> spp.		8. Wetland Morphology: HGM type Slope and/or Riverine, <i>forested</i>		Three small, seasonally saturated wetlands bordering a small, intermittent stream. Seasonally saturated.									
9. Notes: A logging road crosses the stream and logging debris is present in the channel. The stream was dry when visited on 10/13/16. The wetlands occur as small pocket wetlands along the stream channel, and likely have minor value for water retention/storage or as wildlife habitat.													
10. FVA Table:													
Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X		X					
Principal								X*					
* limited													
Green frogs were observed. Deer tracks were common.													

11. Is this wetland part of larger complex: Yes, this wetland is part of a larger complex of wetlands draining to Eaton Brook.

12. Impact Notes/Photos: Recent logging activity may have decreased cover, but increased browse for wildlife.



Wetland 19 (left) and wetland 20 (right).



Wetland 21 (left) and dry stream (right).

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 22a,b	5. Cowardin Class: PSS	6. Stationing/Location: Sta 95+70 – Sta 96+00
7. Dominant Vegetation: Tree: none Shrub: willow spp. Herbaceous: broad-leafed cattail, reed canary grass		8. Wetland Morphology: HGM type Depressional, <i>scrub-shrub</i> Wetlands are drainage swales that receive runoff from adjacent agricultural and cleared land and potentially some groundwater input. Seasonally saturated. Potential for standing water.

9. Notes:

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					

The thick brushy cover in the drainage swales provides good cover and nesting habitat for birds, and perhaps cover for other wildlife in an otherwise mostly open landscape. While the drainage swales may function to retain some sediment and nutrients from the adjacent cornfields, the narrow, linear configuration of the swales limits their value in providing this function.

11. Is this wetland part of larger complex: This wetland primarily conveys flow off cornfields and likely drains to the large wetland complex associated with Felts Brook.

12. Impact Notes/Photos: Adjacent cornfields may deliver sediment, toxicant, and nutrient runoff to the wetland. Wetland swale provides minimal retention and treatment.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 23a,b	5. Cowardin Class: PSS/PEM	6. Stationing/Location: Sta 100+30 – Sta100+40
7. Dominant Vegetation: Tree: none Shrub: willow spp., speckled alder Herbaceous: broad-leafed cattail, reed canary grass		8. Wetland Morphology: HGM type Depressional, <i>herbaceous</i> , <i>scrub-shrub</i> Wetland is a vegetated drainage swale, that is seasonally saturated. No scoured channel observed in swale.

9. Notes: This drainage swale passes through a permeable boulder culvert beneath a gravel road that connects Eastern Avenue to cornfields. The wetland is primarily PSS west of the gravel road and PEM east of the gravel road. It adds some diversity to otherwise low value habitat; the shrubs and grasses likely provide nesting, foraging, and cover opportunities for birds and small mammals.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					

The thick, vegetative cover in the drainage swales provides good cover and nesting habitat for birds, and cover for other wildlife in an otherwise mostly open landscape. While the drainage swales may function to retain some sediment and nutrients from the adjacent cornfields, the narrow, linear configuration of the swales limits their value in providing this function.

11. Is this wetland part of larger complex: This wetland primarily conveys flow off cornfields and likely connects to Wetland #22 (drainage swale). The drainage swale is within the large wetland complex associated with Felts Brook.

12. Impact Notes/Photos: Adjacent cornfields may deliver sediment, toxicant, and nutrient runoff to the wetland.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 24a	5. Cowardin Class: PEM	6. Stationing/Location: Sta 86+00 – Sta 91+00
7. Dominant Vegetation: Tree: none Shrub: willow spp. Herbaceous: <i>Carex</i> spp., marsh bedstraw		8. Wetland Morphology: HGM type Slope, <i>herbaceous</i> Small vegetated drainage embedded in fields. Seasonally saturated.

9. Notes: The PEM is drained by a channel (not a stream resource) and likely receives surface flows from adjacent fields, which drain to a culvert beneath a gravel access road. A shrubby vegetated swale converges with Wetland #24 upgradient of the culvert. Wetland #25 is downgradient of the culvert. The sedges and other wetland herbs adds some habitat diversity to otherwise low value agricultural fields.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal				X*	X*			X					

* potentially traps sediment/nutrients from agricultural field

Sediment and nutrients from the cornfields are likely trapped in the wetland, improving water quality in Felts Brook. Many deer paths, beds, and droppings were observed.

11. Is this wetland part of larger complex: This wetland primarily conveys flow off fields; however, it hydrologically connected to the Wetland #25 and to the complex of wetlands associated with Felts Brook.

12. Impact Notes/Photos: Adjacent cornfields may deliver sediment, toxicant, and nutrient runoff to the wetland.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 25a,b	5. Cowardin Class: PSS/PEM	6. Stationing/Location: Sta 76+60 – Sta 85+50
7. Dominant Vegetation: Tree: none Shrub: Bebb's willow, willow spp., speckled alder Herbaceous: <i>Carex</i> spp., wool grass, soft rush		8. Wetland Morphology: HGM type Slope or Riverine, <i>scrub-shrub, herbaceous</i> Moderate sized block of scrub-shrub/emergent wetland. Seasonally saturated. No standing water observed.

9. Notes: This wetland is connected by a culvert to upgradient wetland #24. It appears to be in the upper reaches of the Felts Brook floodplain, and may offer good storage capacity during storm events. The shrub layer constitutes ~50% cover. Aspen is common at the wetland/upland margin.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal				X*	X*			X					

*potentially traps sediment/nutrients from adjacent cornfields.

Sediment and nutrient from the cornfields are likely trapped in the wetland, improving water quality in Felts Brook. Numerous deer paths, beds and droppings were observed. Shrubs and *Carex* spp. offer ample foraging, nesting, and cover for songbirds and other species.

11. Is this wetland part of larger complex: Yes, this wetland is up gradient of the large, diverse wetland adjacent to Felts Brook.

12. Impact Notes/Photos: Adjacent cornfields may deliver sediment, toxicant, and nutrient runoff to the wetland.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 26a,b	5. Cowardin Class: PEM	6. Stationing/Location: Sta 76+00 – Sta 76+30
7. Dominant Vegetation: Tree: white pine (single tree) Shrub: speckled alder (sparse) Herbaceous: wool grass, soft rush		8. Wetland Morphology: HGM type Slope, <i>herbaceous</i> Small, isolated wet meadow on gentle slope and bordered in downgradient margin by a berm. Seasonally saturated.

9. Notes: This small wetland (~150' x 75') is part of a complex of active agricultural fields, wetlands, and upland. A berm located along its downgradient margin along a shrubby thicket has likely contributed to the wetlands formation by blocking overland flow.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal								X					

A woodcock was flushed from the bordering woods. Due to the proximity of agricultural land, the wetland may provide some sediment/nutrient trapping and retention function proportional to its size.

11. Is this wetland part of larger complex: Yes, this wetland is upgradient of the large, diverse wetlands adjacent to Felts Brook.

12. Impact Notes/Photos: Adjacent cornfields may deliver sediment, toxicant, and nutrient runoff to the wetland.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 27a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 73+80 – Sta 74+10											
7. Dominant Vegetation: Tree: red maple, gray birch Shrub: gray birch, balsam fir, speckled alder Herbaceous: meadowsweet, <i>Carex</i> spp. Groundcover: <i>Sphagnum</i> spp.		8. Wetland Morphology: HGM type Depressional, <i>forested</i> Small isolated basin in upland with a berm on its downgradient margin. Seasonally saturated and possible seasonal ponded.											
9. Notes: This small (~150' x 150') basin-shaped wetland has no inlet or outlet. It appears to have formed behind a berm of soil pushed from adjacent fields. It has hummocky topography that may indicate seasonal ponding. A 2006 vernal pool survey (Kleinschmidt, 2006) did not identify the depression as a vernal pool. Canopy cover is ~60-75%. Although the woodland bordering the wetland has been partially cleared, remaining woods may offer valuable cover and foraging habitat for some species.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X			X	X		X					
Principal								X					
Many crows observed in canopy trees. Black-capped chickadees, warblers, and signs of wild turkeys were also noted.													

11. Is this wetland part of larger complex: No, this is an isolated wetland.

12. Impact Notes/Photos:



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer		2. Route: Route 9 and I-395 connector		3. PIN: 18915.00									
4. Wetland ID/Line ID: 28d,g; Felts Brook 28e,f		5. Cowardin Class: PEM/PSS		6. Stationing/Location: Sta 51+00 – Sta 59+20									
7. Dominant Vegetation: Tree: red maple, American elm Shrub: speckled alder, broad-leaved meadowsweet Herbaceous: reed canary grass, <i>Carex</i> spp.			8. Wetland Morphology: HGM type Riverine, <i>herbaceous, scrub-shrub</i> The PEM borders Felts Brook and connects to a large complex of PFO/PSS/PEM. Some wooded upland is located to the north. Seasonally saturated and potentially seasonally flooded during high flow events.										
9. Notes: The assessment focuses on the southern section of the large wetland located north of Route 1A and the I-395 on/off ramp. The northern section of the wetland surrounding a tributary of Felts Brook is assessed separately in Wetland ID/Line ID 28a,d; tributary of Felts Brook 28b,c.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X	X	X					
Principal		X						X					
Shells of unidentified mussel species were observed in stream. White-tailed deer trails, beds and scat are common throughout wetland. Recommend aquatic and terrestrial animal passage.													
11. Is this wetland part of larger complex: Yes, this wetland is part of a large block of interspersed wetland types (PSS/PEM/PFO) associated with Felts Brook.													

12. Impact Notes/Photos: Highway runoff from Route 1A and I-395 may affect this wetland.



ACOE Wetland Determination Data Forms for PEM and PSS wetlands were completed in Wetland 28.

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 28a,d; trib of Felts Brook 28b,c.	5. Cowardin Class: PSS/PEM/PFO	6. Stationing/Location: Sta 62+70 – Sta 68+70
7. Dominant Vegetation: PFO: Tree: tamarack, American elm, white spruce PSS: Tree: none Shrub: speckled alder Herbaceous: giant goldenrod, arrow-leaved tearthumb, <i>Bidens</i> spp., <i>Glyceria</i> spp. PEM: Tree: none Shrub: speckled alder Herbaceous: wool grass, <i>Scirpus</i> spp., <i>Calamagrostis</i> spp. Berm: bigtooth poplar, common buckthorn, hawthorn, gray birch		8. Wetland Morphology: HGM type Riverine: <i>herbaceous, scrub-shrub, forested</i> The wetland (PSS) borders an unnamed tributary of Felts Brook and is somewhat separated by a vegetated berm from a PEM that is formed by seepage along a gentle slope. A small area of PFO connects to the PSS/PEM. Seasonally saturated.

9. Notes:

This assessment focuses on the northern section of the large wetland located north of Route 1A and the I-395 on/off ramp. The southern section of the wetland surrounding Felts Brook is assessed separately in Wetland ID/Line ID 28d,g; 28e,f Felts Brook.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X	X	X					
Principal		X						X					

White-tailed deer trails common. **Recommend terrestrial animal passage.**

11. Is this wetland part of larger complex: Yes, this wetland is part of a large complex of interspersed wetlands (PSS/PEM/PFO) associated with Felts Brook.

12. Impact Notes/Photos: Mowed fields and a powerline corridor are located upstream of this wetland.



Scrub shrub/emergent wetland.



Tributary of Felts Brook bordered by speckled alder.

ACOE Wetland Determination Data Forms for PEM and PSS wetlands were completed in Wetland 28.

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer		2. Route: Route 9 and I-395 connector		3. PIN: 18915.00									
4. Wetland ID/Line ID: 29a		5. Cowardin Class: PEM		6. Stationing/Location: Sta 53+20									
7. Dominant Vegetation: Tree: none Shrub: speckled alder, willow spp., broad-leaved meadowsweet Herbaceous: purple loosestrife, wool grass, <i>Calamagrostis</i> spp.				8. Wetland Morphology: HGM type Riverine: <i>herbaceous</i> Located at toe of the Route 1A in-slope and borders Felts Brook. Seasonally saturated.									
9. Notes: The wetland is primarily PEM with a small area of PSS. It is bordered by open grassy fields that are adjacent to a railroad and a powerline corridor to the north and east.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X	X	X					
Principal				X*				X					
*The wetland may serve to mitigate sediment/nutrient input from the Rt. 1A travel corridor and therefore protect the water quality of Felts Brook.													

11. Is this wetland part of larger complex: Yes, part of the large mixed PFO/PSS/PEM wetland adjacent to Felts Brook.

12. Impact Notes/Photos: Wetland may be affected by road runoff from Route 1A.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 30a	5. Cowardin Class: PEM	6. Stationing/Location: 49+50
7. Dominant Vegetation: Tree: none Shrub: willow spp. Herbaceous: broad-leaved cattail, purple loosestrife, reed canary grass		8. Wetland Morphology: HGM type Slope: <i>herbaceous</i> Wetland is situated in a small basin within the highway on/off ramps. Seasonally saturated.

9. Notes: This is a small drainage basin with an outlet, but no obvious inlet. Its value as wildlife foraging habitat is minimized due to its location within the highway on/off ramp.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs		X		X	X	X		X					
Principal				X*									

*The wetland likely provides some sediment/toxicant retention function for road runoff from Rt. 1A and the on/off ramp.

11. Is this wetland part of larger complex: Although the wetland isolated with the highway on/off ramp, it does drain into wetlands bordering Felts Brook.

12. Impact Notes/Photos: Wetland is likely affected by road runoff.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID:/ Line ID 33a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 340+80 – Sta 341+30											
7. Dominant Vegetation: Tree (high canopy): red maple, tamarack Tree (sub-canopy): red maple, northern white cedar Shrub: balsam fir, common winterberry, broad-leaved meadowsweet Herbaceous: cinnamon fern, sheep laurel, bristly dewberry Groundcover: sphagnum spp.		8. Wetland Morphology: HGM type Slope or Depressional: <i>forested</i> Wetland contains no channel but drains to Wetland #37, which likely flows to a small tributary of Meadow Brook. Seasonally saturated and localized ponding.											
9. Notes: This wetland likely drains to a small tributary of Meadow Brook, although no channel was observed in the area surveyed. Small depressions in the hummocky ground may provide habitat for vernal pool wildlife. Woody species with raised root systems indicate seasonal flooding or saturation. Denser herbaceous cover is present in an area where tree-cutting has occurred.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal				X*				X					
* Due to the wetland's location next to Rt. 9, it provides some sediment/toxicant retention function. This wetland may provide breeding habitat for amphibians. One spotted salamander egg mass was observed during re-visit on 5/4/17.													
11. Is this wetland part of larger complex: Yes, this wetland is part of a large block of interspersed wetland and upland.													

12. Impact Notes/Photos: Wetland may be affected by road runoff from Route 9.



An ACOE Wetland Determination Data Form was completed in PFO Wetland 33.

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 34a	5. Cowardin Class: PFO/PEM	6. Stationing/Location: Sta 335+40 – Sta 336+50
7. Dominant Vegetation: Tree (high canopy): balsam fir, northern white cedar Tree (sub-canopy): northern white cedar, balsam fir Shrub: speckled alder, balsam fir Herbaceous: wool grass, valerian sp., sensitive fern Groundcover: sphagnum spp.		8. Wetland Morphology: HGM type Slope or Depressional: <i>forested, herbaceous</i> Upper reach of a wetland that drains to Wetland #36, and likely flows to Meadow Brook. Seasonally saturated.

9. Notes: This wetland drains through a culvert to Wetland #36 whose flows likely drain to Meadow Brook. PEM wetland extends linearly south along what may be an old skidder path. It is bordered by PFO at the margins of the wetland before transitioning to upland. No inlet was observed.

10. FVA Table:
Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal				X*				X					

* Due to the wetland's location next to Rt. 9, it provides some sediment/toxicant retention function.

11. Is this wetland part of larger complex: Yes, this wetland is part of a large block of interspersed wetland and upland.

12. Impact Notes/Photos: Wetland may be affected by previous logging activity (skidder path?) and road runoff from Route 9.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 35a	5. Cowardin Class: PEM	6. Stationing/Location: Sta 329+50 – Sta 333+50
7. Dominant Vegetation: Tree: tamarack (sparse, margins of wetland) Shrub: speckled alder (sparse) Herbaceous: <i>Carex</i> spp., wool grass, <i>Glyceria</i> spp., New York aster		8. Wetland Morphology: HGM type Slope: <i>herbaceous</i> Wetland is located on a gently sloping, old pasture. Seasonally saturated.

9. Notes: This wetland, located on the lower section of a pasture, drains through a culvert to a drainage channel north of Route 9. The drainage ditch likely drains to wetlands bordering Meadow Brook.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal				X*	X			X					

* Wetland may provide nutrient retention/removal function due to its location at the lower edge of a pasture. Woodcock were observed; wetland may offer nesting/courting and feeding habitat. Deer sign was present.

11. Is this wetland part of larger complex: Yes, this wetland is partially contiguous with adjacent forest, which is located in a larger block of interspersed forest and wetlands.

12. Impact Notes/Photos: Wetland may be affected by grazing animals in the pasture.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 36a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 336+20											
7. Dominant Vegetation: Tree: tamarack, red maple Shrub: speckled alder Herbaceous: <i>Carex</i> spp., sensitive fern		8. Wetland Morphology: HGM type Riverine or Slope: <i>forested</i> Wetland borders a vegetated channel (non-stream resource). Saturated with some standing water.											
9. Notes: This wetland is located north of Route 9, and connects through a culvert to Wetland #34 which is south of Route 9. It borders a non-stream channel that disperses into a large PSS/PEM wetland adjacent to Meadow Brook.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal				X				X					
A game trail was observed where PFO transitions to PSS/PEM. The PFO provides cover and foraging habitat for wildlife, as well as a corridor for wildlife moving to the large PSS/PEM wetland.													
Wetland likely retains and detoxifies sediment and contaminants from Rt. 9, minimizing degradation of downstream wetlands.													
11. Is this wetland part of larger complex: Yes, this wetland is part of a large block of interspersed wetland and upland.													

12. Impact Notes/Photos: Wetland may be affected by road runoff from Route 9 and septic system of neighboring residence. Some fill was added east of culvert.



View from road along channel toward forested wetland.



View of PSS/PEM into which PFO transitions.

Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 37a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 340+20 – Sta 341+10											
7. Dominant Vegetation: Tree: northern white cedar, balsam fir Shrub: balsam fir, speckled alder, common winterberry, balsam fir Herbaceous: <i>Carex</i> spp., sensitive fern, cinnamon fern Groundcover: sphagnum spp.		8. Wetland Morphology: HGM type Slope: <i>forested</i> Basin wetland with inlet. No outlet observed. Seasonally flooded and/or saturated.											
9. Notes: This wetland is located north of Route 9, and connects through a culvert to Wetland #33 which is south of Route 9. More shrubby and hummocky with small pools in wetland area near inlet; overall greater plant diversity because of exposure. Some pools provide breeding habitat for vernal pool wildlife. Forested wetland surrounds the shrubby wetland.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X		X	X	X		X					
Principal				X				X					
A potentially significant vernal pool is located within this wetland. On 5/4/17, 20 blue spotted salamander hybrid egg masses were observed.													

11. Is this wetland part of larger complex: Yes, this wetland is part of a large block of interspersed wetland and upland with adjacent light residential development.

12. Impact Notes/Photos: Wetland may be affected by road runoff from Route 9.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington		2. Route: Route 9 and I-395 connector		3. PIN: 18915.00									
4. Wetland ID/Line ID: 38c,d		5. Cowardin Class: PEM		6. Stationing/Location: Sta 346+00 – Sta 348+70									
7. Dominant Vegetation: Tree: tamarack, red maple, northern white cedar at edge Shrub: speckled alder, willow sp. Herbaceous: <i>Scirpus</i> sp., <i>Calamagrostis</i> spp., <i>Carex</i> spp.			8. Wetland Morphology: HGM type Riverine: <i>herbaceous</i> Emergent wetland bordering stream Seasonally flooded. Some ponding.										
9. Notes: <i>Typha</i> sp. present in patches. <i>Nuphar</i> sp. observed in ponded areas.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X	X	X					
Principal		X						X					
The wetland enhances overall habitat value of the adjacent landscape. Food and cover is available for nesting birds and other species. White-tailed deer tracks, trails and beds are common. Raccoon and other small animal tracks were observed in the mud at the stream edge. Freshwater mussel and clam shells were also present.													

11. Is this wetland part of larger complex – Yes, this wetland connects through a culvert to a PSS/PEM wetland north of Route 9.

12. Impact Notes/Photos: May receive run-off from road.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Eddington	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 39a,b	5. Cowardin Class: PSS/PEM	6. Stationing/Location: Sta 346+00 – Sta 348+50
7. Dominant Vegetation: Tree: Balsam fir, red maple, northern white cedar at edge Shrub: speckled alder, willow sp. Herbaceous: <i>Calamagrostis</i> spp., <i>Carex</i> spp.,		8. Wetland Morphology: HGM type Riverine: <i>herbaceous, scrub-shrub</i> Mixed scrub-shrub and emergent wetland bordering stream Seasonally flooded. Some ponding.
9. Notes: Beaver damming present on stream. Dead trees/snags observed in wetland.		

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X	X	X					
Principal		X						X					

The wetland enhances overall habitat value of the adjacent landscape. Food and cover is available for nesting birds and other species. White-tailed tracks, trails and beds are common. Raccoon and other small animal tracks were observed in the mud at the stream edge.

11. Is this wetland part of larger complex – Yes, this wetland connects through a culvert to a PEM wetland south of Route 9.

12. Impact Notes/Photos: May receive run-off from road.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 40a	5. Cowardin Class: PEM	6. Stationing/Location: Sta 44+00
7. Dominant Vegetation: Tree: none Shrub: willow spp. Herbaceous: sensitive fern, purple loosestrife, New England aster, bulrush, <i>Carex</i> spp., <i>Typha</i> spp.		8. Wetland Morphology: HGM type Slope: <i>herbaceous</i> Located at toe of I-395 entrance ramp inslope. Seasonally saturated.
9. Notes: This wetland receives drainage adjacent to the I-395 entrance ramp in a heavily developed urban area. It is at the toe of a steep in-slope just upslope of Wetland #41.		

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs		X		X	X	X		X					
Principal				X									

11. Is this wetland part of larger complex – Yes, this wetland is located upslope of larger PSS and PFO wetlands.

12. Impact Notes/Photos – The wetland likely receives runoff from Rt. 1A and Rt. 395 on-ramp. Grading of the upland slope just west of the wetland was underway during Maine DOT's site visit on 10/2/17. A silt fence was installed below the fill slope.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 41a	5. Cowardin Class: PEM/PSS	6. Stationing/Location: Sta 40+50 – Sta 43+00											
7. Dominant Vegetation: Tree: red maple, green ash Shrub: speckled alder, willow spp., red maple Herbaceous: sensitive fern, purple loosestrife, New England aster, bulrush, <i>Carex</i> spp., <i>Typha</i> spp.		8. Wetland Morphology: HGM type Slope: <i>herbaceous, scrub-shrub</i> Located at toe of I-395 entrance ramp in-slope. Seasonally saturated.											
9. Notes: Wetland #41 is located adjacent to the I-395 entrance ramp and just downslope of Wetland #40 in a heavily developed urban area. It includes both scrub-shrub and emergent wetlands.													
10. FVA Table:													
Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs		X		X	X	X		X					
Principal				X									
Deer tracks and beds were observed.													

11. Is this wetland part of larger complex – Yes, this wetland is adjacent to a PFO wetland.

12. Impact Notes/Photos – The wetland likely receives runoff from Rt. 1A and Rt. 395 on-ramp. Grading of the upland slope just west of the wetland was underway during Maine DOT’s site visit on 10/2/17. A silt fence was installed below the fill slope.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 42a	5. Cowardin Class: PFO	6. Stationing/Location: Sta 34+00 – Sta 40+00											
7. Dominant Vegetation: Tree: red maple, green ash Shrub: speckled alder, willow spp., arrowwood, meadowsweet Herbaceous: sensitive fern, purple loosestrife (near highway), willow herb, horsetail spp.		8. Wetland Morphology: HGM type Slope: <i>forested</i> Located between the I-395 entrance ramp in-slope and a hospital parking lot Seasonally saturated											
9. Notes: The head of Wetland #42 is located below the hospital parking lot. Wetland #42 drains toward Wetland #41 and the I-395 on-ramp. A culvert from the hospital parking lot was not observed at the head of the wetland. The wetland becomes more herbaceous closer to I-395.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs		X		X	X	X		X					
Principal				X				X					
Foraging birds were observed: red-breasted nuthatch, white-throated sparrow, black-capped chickadees, blue jay.													

11. Is this wetland part of larger complex – Yes, this wetland connects to Wetland #41, and drainage swales, near I-395.

12. Impact Notes/Photos – Wetland #42 likely receives run-off from the hospital parking lot although no culvert was found.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewew	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 43b	5. Cowardin Class: PFO	6. Stationing/Location: Sta 31+50											
7. Dominant Vegetation: Tree: red maple, balsam fir, northern white cedar Shrub: broad-leaved meadowsweet Herbaceous: sensitive fern, willow herb, jewelweed Pooled areas (dry when observed): watercress		8. Wetland Morphology: HGM type Depressional: <i>forested</i> Located in wooded area between the I-395 entrance ramp in-slope and a hospital parking lot. Confined basin with no apparent inlet or outlet. Seasonally saturated, shallow seasonal pooling											
9. Notes: Wetland #43 is a small (~35 ft. by 35 ft.) forested wetland that shows signs of seasonal pooling, but is too shallow to be a viable vernal pool. The wetland appears to be underlain by impervious soils and many rocks are present. Many trees exhibit shallow rooting probably due to the impervious soils in the wetland.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X					X		X					
Principal								X					
Wetland functions are limited in wetland because of its small size. Although the underlying soils are relatively impervious, this basin wetland may provide groundwater recharge due to its lack of an inlet or outlet.													
11. Is this wetland part of larger complex – No, other wetlands are located nearby.													

12. Impact Notes/Photos – Possibly impacted by previous construction activities.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00											
4. Wetland ID/Line ID: 44c	5. Cowardin Class: PFO	6. Stationing/Location: Sta 32+50											
7. Dominant Vegetation: Tree: red maple, green ash, northern white cedar Shrub: broad-leaved meadowsweet, speckled alder Herbaceous: sensitive fern, <i>Carex</i> spp.		8. Wetland Morphology: HGM type Depressional: <i>forested</i> Located below hospital parking lot Seasonally saturated											
9. Notes: This wetland is formed by drainage from a 1 ft. diameter culvert that conveys flows from the hospital access road and parking lot.													
10. FVA Table: Impacted area													
F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X*			X	X	X*		X					
Principal				X	X								

11. Is this wetland part of larger complex – No, although other wetlands are located nearby.

12. Impact Notes/Photos – Receives runoff from the hospital parking lot and access road.



Standard MaineDOT Information/ F&V form

Maine DOT Functional assessment:

1. Town: Brewer	2. Route: Route 9 and I-395 connector	3. PIN: 18915.00
4. Wetland ID/Line ID: 47d,e,f,g	5. Cowardin Class: PEM/PSS	6. Stationing/Location: Sta 48+00
7. Dominant Vegetation: Tree: none Shrub: speckled alder, broad-leaved meadowsweet Herbaceous: <i>Carex</i> spp., <i>Typha</i> sp., wool grass, purple loosestrife		8. Wetland Morphology: HGM type Riverine: <i>herbaceous, scrub-shrub</i> Extensive PEM/PSS wetland bordering Felts Brook south of Route 1A. Seasonally saturated and potentially seasonally flooded during high flow events.

9. Notes: Wetland #47 borders Felts Brook south of Route 1A near the I-395 off-ramp. It is part of the extensive and diverse wetland complex that borders Felts Brook on both sides of Route 1A. Wetlands #28 and #29, located north of Route 1A, border the downstream reach of Felts Brook. Wetland #47 is bisected by a railroad crossing.

10. FVA Table:

Impacted area

F/V	GRD	FFA	FSH	STR	NRRT	PE	SSS	WH	REC	ESV	U/H	VQA	ES
Occurs	X	X	X	X	X	X	X	X					
Principal		X						X					

Shells of unidentified mussel species were observed near the stream. White-tailed deer tracks, trails, beds and scat are common throughout wetland. Raccoon and small mammal tracks were also observed. A painted turtle, killed crossing the road, was found on Route 1A. Predated turtle eggs were scattered on the bank of the railroad bed. **Highly recommend terrestrial passage for all species including moose.**

Wetland #47 may retain/detoxify sediment/contaminants from Rt. 1A, thereby preventing degradation of water quality in Felts Brook.

11. Is this wetland part of larger complex: Yes, this wetland is part of a large block of interspersed wetland types (PSS/PEM/PFO) associated with Felts Brook.

12. Impact Notes/Photos: Highway runoff from Route 1A and I-395 is directed to this wetland.



APPENDIX B: MAINE STATE VERNAL POOL ASSESSMENT FORMS



Maine State Vernal Pool Assessment Form



INSTRUCTIONS:

- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.

Observer's Pool ID: WET39 VP

MDIFW Pool ID: _____

1. PRIMARY OBSERVER INFORMATION

- a. Observer name: Leslie Latt
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other _____
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name: Route 9 Connector

3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)
- Name: MaineDOT ROW Phone: _____
- Street Address: _____ City: _____ State: _____ Zip: _____
- c. Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Eddington

Brief site directions to the pool (using mapped landmarks):

This pool is located to the west of Route 9 in a forested wetland.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: _____ Latitude/Northing: _____

Coordinate system: _____

- Check one: GIS shapefile
 - send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)
- The pool perimeter is delineated by multiple GPS points. (Excellent)
 - Include map or spreadsheet with coordinates.
- The above GPS point is at the center of the pool. (Good)
- The center of the pool is approximately _____ m ft in the compass direction of _____ degrees from the above GPS point. (Acceptable)



Maine State Vernal Pool Assessment Form



5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): 5/4/17

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- Isolated depression
- Floodplain depression
- Pool associated with larger wetland complex
- Other: _____

■ Check all wetland types that best apply to this pool:

- Forested swamp
- Shrub swamp
- Peatland (fen or bog)
- Emergent marsh
- Wet meadow
- Lake or pond cove
- Abandoned beaver flowage
- Active beaver flowage
- Slow stream
- Floodplain
- Mostly unvegetated pool
- ATV or skidder rut
- Dug pond or borrow pit
- Roadside ditch
- Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Part of the pool is located in an overgrown skidder road at the base of a slope.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- Permanent
- Semi-permanent (drying partially in all years and completely in drought years)
- Ephemeral (drying out completely in most years)
- Unknown

Explain:

Pool was dry, but saturated, when visited in the fall of 2016 and 2017.

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: _____ m ft Length: _____ m ft

■ Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- Mineral soil (sphagnum moss present)
- Organic matter (peat/muck) shallow or restricted to deepest portion
- Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- Sphagnum moss (anchored or suspended)
- Wet site ferns (e.g. royal fern, marsh fern)
- Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- No vegetation in pool

■ Faunal indicators (check all that apply):

- Fish
- Bullfrog or Green Frog tadpoles
- Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- No inlet or outlet
- Intermittent inlet or outlet
- Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Other or Unknown (explain): _____



Maine State Vernal Pool Assessment Form



6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/4/17

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? Yes No
- Was the entire pool surveyed for egg masses? Yes No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)						Tadpoles/Larvae ⁴				
	Visit #1	Visit #2	Visit #3	Confidence Level ¹		Egg Mass Maturity ²		Observed		Confidence Level ¹	
Wood Frog	2			3			H				
Spotted Salamander	3			3			M				
Blue-spotted Salamander											
Fairy Shrimp ³											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

- SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool is located in a forested wetland with hummocky vegetation and small drainage channels. A young of year wood frog was observed in August 2017.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: Significant Potentially Significant but lacking critical data Not Significant due to: does not meet biological criteria. does not meet MDEP vernal pool criteria.

Comments: _____

APPENDIX C: PLANT AND WILDLIFE LISTS

Plants

Common Name	Scientific Name	Class
American beech	<i>Fagus grandifolia</i>	tree
American elm	<i>Ulmus americana</i>	tree
Ash spp	<i>Fraxinus</i> spp	tree
Balsam fir	<i>Abies balsamea</i>	tree
Bigtooth poplar	<i>Populus grandidentata</i>	tree
Cherry spp	<i>Prunus</i> spp	tree
Eastern hemlock	<i>Tsuga canadensis</i>	tree
Gray birch	<i>Betula populifolia</i>	tree
Green ash	<i>Fraxinus pennsylvanica</i>	tree
Northern white cedar	<i>Thuja occidentalis</i>	tree
Paper birch	<i>Betula papyrifera</i>	tree
Quaking aspen	<i>Populus tremuloides</i>	tree
Red maple	<i>Acer rubrum</i>	tree
Red spruce	<i>Picea rubens</i>	tree
Spruce spp	<i>Picea</i> spp	tree
Tamarack	<i>Larix laricina</i>	tree
White pine	<i>Pinus strobus</i>	tree
Yellow birch	<i>Betula alleghaniensis</i>	tree
Bebb willow	<i>Salix bebbiana</i>	shrub
Broad-leaved meadowsweet	<i>Spiraea alba</i>	shrub
Chokeberry spp	<i>Aronia</i> spp	shrub
Common winterberry	<i>Ilex verticillata</i>	shrub
Dogwood spp	<i>Cornus</i> spp	shrub
Glossy buckthorn	<i>Frangula alnus</i>	shrub
Hawthorn	<i>Crataegus</i> spp	shrub
Hazelnut spp	<i>Corylus</i> spp	shrub
Highbush blueberry	<i>Vaccinium corymbosum</i>	shrub
Highbush cranberry	<i>Viburnum trilobium</i>	shrub
Lowbush blueberry	<i>Vaccinium angustifolium</i>	shrub
Northern arrowwood	<i>Viburnum dentatum</i>	shrub
Redosier dogwood	<i>Cornus sericea</i>	shrub
Rubus spp	<i>Rubus</i> spp	shrub
Sheep laurel	<i>Kalmia angustifolia</i>	shrub
Speckled alder	<i>Alnus incana</i>	shrub
Steeplebush	<i>Spiraea tomentosa</i>	shrub
Viburnum spp	<i>Viburnum</i> spp	shrub

Common Name	Scientific Name	Class
Wild raisin	<i>Viburnum cassinoides</i>	shrub
Willow spp	<i>Salix</i> spp	shrub
Aster spp	<i>Aster</i> spp	herb
Bentgrass	<i>Agrostis</i> spp	herb
Bidens spp	<i>Bidens</i> spp	herb
Bittersweet nightshade	<i>Solanum dulcamara</i>	herb
Bladder sedge	<i>Carex intumescens</i>	herb
Blue vervain	<i>Verbena hastata</i>	herb
Bracken fern	<i>Pteridium aquilinum</i>	herb
Bristly dewberry	<i>Rubus hispida</i>	herb
Broad-leaved cattail	<i>Typha latifolia</i>	herb
Bugleweed	<i>Ajuga reptans</i>	herb
Bulb-bearing water hemlock	<i>Cicuta bulbifera</i>	herb
Bulrush spp	<i>Scirpus</i> spp	herb
Bunchberry	<i>Cornus canadensis</i>	herb
Bur reed spp	<i>Sparganium</i> spp	herb
Buttercup spp	<i>Ranunculus</i> spp	herb
Canada mayflower	<i>Maianthemum canadense</i>	herb
Canada rush	<i>Juncus canadensis</i>	herb
Canada thistle	<i>Cirsium arvense</i>	herb
Cinnamon fern	<i>Osmunda cinnamomea</i>	herb
Crested woodfern	<i>Dryopteris cristata</i>	herb
Dwarf scouring rush	<i>Equisetum scirpoides</i>	herb
Flat-topped aster	<i>Doellingeria umbellata</i>	herb
Fox sedge	<i>Carex vulpinoidea</i>	herb
Giant goldenrod	<i>Solidago gigantea</i>	herb
Goldenrod	<i>Solidago</i> spp	herb
Grasses	<i>Brachyelytrum</i> spp	herb
Grasses (hydrophilic)	<i>unidentified</i>	herb
Grass-leaved goldenrod	<i>Solidago graminifolia</i>	herb
Hawkweed	<i>Hieracium</i> spp	herb
Horsetail spp	<i>Equisetum</i> spp	herb
Interrupted fern	<i>Osmunda claytoniana</i>	herb
Iris spp	<i>Iris</i> spp	herb
Jewelweed	<i>Impatiens capensis</i>	herb
Joe pye weed	<i>Eutrochium</i> spp	herb
Knotweed	<i>Polygonum</i> spp	herb
Labrador tea	<i>Ledum groenlandicum</i>	herb
Lady fern	<i>Athyrium filix-femina</i>	herb
Manna grass	<i>Glyceria</i> spp	herb
Marsh bedstraw	<i>Galium palustre</i>	herb
Marsh fern	<i>Thelypteris palustris</i>	herb
Milkweed spp	<i>Asclepias</i> spp	herb
Narrow-leaved cattail	<i>Typha angustifolia</i>	herb
New England aster	<i>Symphyotrichum novae-angliae</i>	herb

Common Name	Scientific Name	Class
New York aster	<i>Symphyotrichum novi-belgii</i>	herb
New York fern	<i>Thelypteris noveboracensis</i>	herb
Nodding burr marigold	<i>Bidens cernua</i>	herb
Nodding sedge/fringed sedge	<i>Carex gynandra/crinita</i>	herb
Northern bedstraw	<i>Galium boreale</i>	herb
Poa	<i>Poa palustris</i>	herb
Purple loosestrife	<i>Lythrum salicaria</i>	herb
Reed canary grass	<i>Phalaris arundinacea</i>	herb
Reed grass	<i>Calamagrostis spp</i>	herb
Royal fern	<i>Osmunda regalis</i>	herb
Saxifrage spp	<i>Chrysosplenium spp</i>	herb
Sedge spp	<i>Carex spp</i>	herb
Sedge spp (hop sedge)	<i>Cyperus spp</i>	herb
Sedge spp (spikerush)	<i>Eleocharis spp</i>	herb
Sensitive fern	<i>Onoclea sensibilis</i>	herb
Skunk cabbage	<i>Symplocarpus foetidus</i>	herb
Soft rush	<i>Juncus effusus</i>	herb
Softstem rush	<i>Schoenoplectus tabernaemontani</i>	herb
Starflower	<i>Trientalis borealis</i>	herb
Steeplebush	<i>Spiraea tomentosa</i>	herb
Swamp candles	<i>Lysimachia terrestris</i>	herb
Swamp valerian	<i>Valeriana uliginosa</i>	herb
Three-seeded sedge	<i>Carex trisperma</i>	herb
Threeway sedge	<i>Dulichium arundinaceum</i>	herb
Tussock sedge	<i>Carex stricta</i>	herb
Vetch	<i>Vicia spp</i>	herb
Virgin's bower	<i>Clematis virginiana</i>	herb
Water dock	<i>Rumex spp</i>	herb
Whorled aster	<i>Oclemena acuminata</i>	herb
Wild sarsparilla	<i>Aralia nudicaulis</i>	herb
Willowherb spp	<i>Epilobium spp</i>	herb
Wood fern spp	<i>Dryopteris spp</i>	herb
Woodland horsetail	<i>Equisetum sylvaticum</i>	herb
Woodreed	<i>Cinna spp</i>	herb
Wool grass	<i>Scirpus cyperinus</i>	herb
Moss spp	<i>unidentified</i>	groundcover
Moss spp	<i>Pleurozium spp</i>	groundcover
Peat moss spp	<i>Sphagnum spp</i>	groundcover
Arrow arum	<i>Peltandra virginica</i>	aquatic
Bulrush	<i>Scirpus spp</i>	aquatic
Pond lily	<i>Nuphar spp</i>	aquatic
Pondweed	<i>Potamogetan spp</i>	aquatic
Water plantain	<i>Alisma spp</i>	aquatic
Water shield	<i>Brasenia schreberi</i>	aquatic

Common Name	Scientific Name	Class
Watercress sp	<i>Nasturtium</i> sp	aquatic
Waterlily spp	<i>Nymphaea</i> spp	aquatic

Wildlife

Common Name	Scientific Name	Class
Blue-spotted salamander	<i>Ambystoma laterale</i>	amphibian
Green frog	<i>Rana clamitans</i>	amphibian
Spotted salamander	<i>Ambystoma maculatum</i>	amphibian
Tadpole spp	<i>unidentified</i>	amphibian
Wood frog	<i>Rana sylvatica</i>	amphibian
American crow	<i>Corvus brachyrhynchos</i>	bird
American woodcock	<i>Scolopax minor</i>	bird
Belted kingfisher	<i>Megaceryle alcyon</i>	bird
Black-capped chickadee	<i>Poecile atricapillus</i>	bird
Blue jay	<i>Cyanocitta cristata</i>	bird
Canada goose	<i>Branta canadensis</i>	bird
Common grackle	<i>Quiscalus quiscula</i>	bird
Duck (mallard or black)	<i>Anas platyrhynchos/Anas rubripes</i>	bird
Eastern phoebe	<i>Sayornis phoebe</i>	bird
Gray catbird	<i>Dumetella carolensis</i>	bird
Palm warbler	<i>Setophaga palmarum</i>	bird
Pileated woodpecker	<i>Dryocopus pileatus</i>	bird
Red-breasted nuthatch	<i>Sitta canadensis</i>	bird
Ruffed grouse	<i>Bonasa umbellus</i>	bird
Rusty blackbird	<i>Euphagus carolinus</i>	bird
Solitary vireo	<i>Vireo solitarius</i>	bird
Turkey vulture (fly over)	<i>Cathartes aura</i>	Bird
White-breasted nuthatch	<i>Sitta carolinensis</i>	bird
White-throated sparrow	<i>Zonotrichia albicollis</i>	bird
Wild turkey	<i>Meleagris gallopavo</i>	bird
Wood duck	<i>Aix sponsa</i>	bird
Yellow-rumped warbler	<i>Setophaga coronata</i>	bird
Fish spp	<i>unidentified</i>	fish
Odonate spp	<i>unidentified</i>	insect
Beaver	<i>Castor canadensis</i>	mammal
Eastern coyote	<i>Canis latrans</i>	mammal
Gray squirrel	<i>Sciurus carolinensis</i>	mammal
Racoon	<i>Procyon lotor</i>	mammal
Red squirrel	<i>Tamiasciurus hudsonicus</i>	mammal
Small mammal	<i>unidentified</i>	mammal
White-tailed deer	<i>Odocoileus virginianus</i>	mammal

Common Name	Scientific Name	Class
Freshwater clam spp	<i>unidentified</i>	mollusc
Freshwater mussel spp	<i>unidentified</i>	mollusc
Snail spp.	<i>unidentified</i>	mollusc
Garter snake	<i>Thamnophis sirtalis</i>	reptile
Painted turtle	<i>Chrysemys picta</i>	reptile

APPENDIX D: PHOTOGRAPHS

Streams



Felts Brook north of Route 1A (left) and perennial tributary of Felts Brook (right).



Eaton Brook (left) and tributary of Eaton Brook (right) partially obscured by vegetation.

Wildlife

Wetlands 28 and 47: Felts Brook



Top: game trails through PSS (left) and PEM (right) north of Route 1A.

Bottom: turtle egg shells (left) and deer tracks near culvert inlet (right) south of Route 1A

Wetland 15: Eaton Brook



Beaver dam built on top of rocks (left) and coyote scat (right).

Wetland 7: Tributary of Eaton Brook



Game trails: at forest edge (left) and through PEM (right).

Wetland 4: Beaver impoundment



Top: Rusty blackbird SGCN 1

Bottom: Deer track in mud (left) and raccoon track (right).

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Eddington, Penobscot Sampling Date: 10/2/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL1
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): slightly convex
 Slope (%): 12 Lat: 44.818455 Long: -68.652275 Datum: WGS84
 Soil Map Unit Name: TcC - Chesuncook-Telos complex, 8-15% slope, very stony NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 313 Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>40 ft. x 70 ft.</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88</u> (A/B)
1. <u>Abies balsamea</u>	<u>66</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Thuja occidentalis</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Acer rubrum</u>	<u>33</u>	<u>yes</u>	<u>FAC</u>	
4. <u>Tsuga canadensis</u>	<u>17</u>	<u>no</u>		
5. <u>Betula allegheniensis</u>	<u>7</u>	<u>no</u>		
6. _____				
7. _____				
	<u>163</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Acer rubrum</u>	<u>19</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Abies balsamea</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	
3. <u>White pine</u>	<u>9</u>	<u>yes</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
	<u>38</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Parathelypteris noveboracensis</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Dryopteris intermedia</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Osmunda cinnamomea</u>	<u>5</u>	<u>no</u>		
4. <u>Chamaepericlymenum canadense</u>	<u>5</u>	<u>no</u>		
5. <u>Fraxinus sp.</u>	<u>5</u>	<u>no</u>		
6. <u>Mitchella repens</u>	<u>2</u>	<u>no</u>		
7. <u>Pinus strobus</u>	<u>1</u>	<u>no</u>		
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	<u>48</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. <u>none</u>				
2. _____				
3. _____				
4. _____				
	<u>0</u>	= Total Cover		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: (Include photo numbers here or on a separate sheet.)

Upland and wetland plots located approximately 40 ft. apart along transect located perpendicular to slope; a woods road is located between the plots.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Eddington, Penobscot Sampling Date: 10/2/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL1
 Investigator(s): L. Latt. A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 44.81856 Long: -68.65218 Datum: WGS84
 Soil Map Unit Name: MXA - Monarda-Burnham complex, 0-3% slope, very stony NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>~18</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland plot is at the base of a slope in a low-lying area with moss-covered logs and hummocks.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: <u>30 ft. radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Thuja occidentalis</u>	57	yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Abies balsamea</u>	10	no		
3. <u>Fraxinus nigra</u>	10	no		
4. <u>Tsuga canadensis</u>	10	no		
5. <u>Betula alleghaniensis</u>	7	no		
6. <u>Acer rubrum</u>	6	no		
7. _____				
<u>100</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Acer rubrum</u>	30	yes	FAC	
2. <u>Abies balsamea</u>	21	yes	FAC	
3. <u>Betula alleghaniensis</u>	4	no		
4. <u>Tsuga canadensis</u>	3	no		
5. <u>Pinus strobus</u>	3	no		
6. _____				
7. _____				
<u>63</u> = Total Cover				
Herb Stratum (Plot size: <u>5 ft. radius</u>)				
1. <u>Onoclea sensibilis</u>	27	yes	FACW	
2. <u>Osmunda cinnamomea</u>	13	yes	FACW	
3. <u>Galium palustre</u>	8	no		
4. <u>Carex trisperma</u>	5	no		
5. <u>Viola sp.</u>	5	no		
6. <u>Thuja occidentalis</u>	3	no		
7. <u>Dryopteris intermedia</u>	2	no		
8. <u>Graminoid sp.</u>	1	no		
9. _____				
10. _____				
11. _____				
12. _____				
<u>64</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				
1. <u>none</u>				
2. _____				
3. _____				
4. _____				
<u>0</u> = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: (Include photo numbers here or on a separate sheet.)

Well defined wetland/upland boundary. Sphagnum spp. with >50% cover in plot. Old woods road located between upland and wetland plots.

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10 YR 2/1		none				SCL	organic (e.g., conifer needles)
12-18	5Y 4/1		none				CLAY	
18-24	GLE Y 2 4 10B		none				CLAY	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)		<input type="checkbox"/> Other (Explain in Remarks)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>Clay</u> Depth (inches): <u>24</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 SCL - Sandy clay loam

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Eddington, Penobscot Sampling Date: 10/2/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL4
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): gently sloping
 Slope (%): _____ Lat: 44.819885 Long: -68.662057 Datum: WGS84
 Soil Map Unit Name: MwA - Medomak-Wonsqueak-Swanville complex, 0-3% slope NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 287 +25. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>20 ft. x 70 ft.</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)
1. <u>Abies balsamea</u>	<u>85</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Acer rubrum</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>110</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Abies balsamea</u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Acer rubrum</u>	<u>8</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Picea glauca</u>	<u>1</u>	<u>no</u>	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>36</u> = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Brachyelytrum aristosum</u>	<u>20</u>	<u>yes</u>	<u>NR</u>	
2. <u>Dryopteris intermedia</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Carex sp.</u>	<u>5</u>	<u>no</u>	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>45</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. <u>none</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Well defined wetland boundary.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Eddington, Penobscot Sampling Date: 10/2/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL4
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): slightly concave
 Slope (%): 0 Lat: 44.819977 Long: -68.662023 Datum: _____
 Soil Map Unit Name: MwA - Medomak-Wonsqueak-Swanville complex, 0-3% slope NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 287 +25. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Soil moist, location is seasonally saturated.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>3</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)</p> <hr/> <p>Prevalence Index worksheet:</p> <p>Total % Cover of: _____ Multiply by: _____</p> <p>OBL species _____ x 1 = _____</p> <p>FACW species _____ x 2 = _____</p> <p>FAC species _____ x 3 = _____</p> <p>FACU species _____ x 4 = _____</p> <p>UPL species _____ x 5 = _____</p> <p>Column Totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p> <hr/> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines – All woody vines greater than 3.28 ft in height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
1. <u>Acer rubrum</u>	<u>51</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Thuja occidentalis</u>	<u>13</u>	<u>no</u>		
3. <u>Abies balsamea</u>	<u>10</u>	<u>no</u>		
4. _____				
5. _____				
6. _____				
7. _____				
	<u>74</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Alnus incana</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Acer rubrum</u>	<u>5</u>	<u>no</u>		
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	<u>35</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				
1. <u>Calamagrostis canadensis</u>	<u>75</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Spiraea tomentosa</u>	<u>3</u>	<u>no</u>		
3. <u>Alnus incana</u>	<u>3</u>	<u>no</u>		
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	<u>81</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				
1. <u>none</u>				
2. _____				
3. _____				
4. _____				
		= Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 2/1		none				SCL	sandy clay loam
6-8	2.5Y 6/2		10YR 4/6	2	C	PL	SC	sandy clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

- | | | |
|---|---|--|
| <p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)</p> | <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> | <p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)</p> <p><input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> |
|---|---|--|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> <p>Type: <u>hardpan</u></p> <p>Depth (inches): <u>8</u></p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Holden, Penobscot Sampling Date: 10/5/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL5
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): gently sloping
 Slope (%): 1-2% Lat: 44.813051 Long: -68.67204 Datum: WGS84
 Soil Map Unit Name: CTB - Telos-Chesuncook complex, 0-8% slope, very stony NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 251+25. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Water-Stained Leaves (B9) ___ High Water Table (A2) ___ Aquatic Fauna (B13) ___ Saturation (A3) ___ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3) ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5) ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7) ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Plot is on slight rise in depression.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Acer rubrum</u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Abies balsamea</u>	<u>32</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Pinus strobus</u>	<u>25</u>	<u>yes</u>	<u>FACU</u>	
4. <u>Populus grandidentata</u>	<u>19</u>	<u>no</u>	<u>FACU</u>	
5. <u>Fraxinus americana</u>	<u>17</u>	<u>no</u>	<u>FACU</u>	
6. <u>Thuja occidentalis</u>	<u>4</u>	<u>no</u>	<u>FACW</u>	
7. <u>Betula papyrifera</u>	<u>3</u>	<u>no</u>	<u>FACU</u>	
	<u>135</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Abies balsamea</u>	<u>18</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Picea rubens</u>	<u>6</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Fraxinus americana</u>	<u>6</u>	<u>yes</u>	<u>FACU</u>	
4. <u>Quercus rubra</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
5. <u>Pinus strobus</u>	<u>4</u>	<u>no</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>39</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Parathelypteris noveboracensis</u>	<u>55</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Polystichum acrostichoides</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Abies balsamea</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
4. <u>Quercus rubra</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>73</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Hydrophytic Vegetation Present? Yes _____ No <u>X</u>				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	2.5YR 5/4		none				SL	sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>10</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 Tried several locations, rock present at 10",

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Holden, Penobscot Sampling Date: 10/5/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL5
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): slight concex
 Slope (%): 1-2% Lat: 44.813111 Long: -68.671844 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association, 0-3% slope NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 251+25. Maine has been in drought conditions all summer, last rain was on September 30 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Plot is in depression with hummocky topography. Water likely seasonally pools in depressions during years of more normal precipitation.	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 5

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>35 ft. x 25 ft.</u>)					
1. <u>Abies balsamea</u>	<u>27</u>	<u>yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
2. <u>Acer rubrum</u>	<u>27</u>	<u>yes</u>	<u>FAC</u>		
3. <u>Fraxinus pennsylvanica?</u>	<u>23</u>	<u>yes</u>	<u>FACW</u>		
4. <u>Thuja occidentalis</u>	<u>5</u>	<u>no</u>	<u>FACW</u>		
5. _____					
6. _____					
7. _____					
	<u>82</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)					
1. <u>Abies balsamea</u>	<u>62</u>	<u>yes</u>	<u>FAC</u>		
2. <u>Fraxinus pennsylvanica?</u>	<u>8</u>	<u>no</u>	<u>FACW</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
	<u>70</u>	= Total Cover			
Herb Stratum (Plot size: <u>5 ft. radius</u>)					
1. <u>Osmundastrum cinnamomeum</u>	<u>60</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Abies balsamea</u>	<u>5</u>	<u>no</u>	<u>FAC</u>		
3. <u>Parathelypteris novaboracensis</u>	<u>5</u>	<u>no</u>	<u>FAC</u>		
4. <u>Equisetum sylvaticum</u>	<u>3</u>	<u>no</u>	<u>FACW</u>		
5. <u>Fraxinus nigra</u>	<u>3</u>	<u>no</u>	<u>FACW</u>		
6. <u>Onoclea sensibilis</u>	<u>3</u>	<u>no</u>	<u>FACW</u>		
7. <u>Glyceria melicaria</u>	<u>3</u>	<u>no</u>	<u>OBL</u>		
8. _____					
9. _____					
10. _____					
11. _____					
12. _____					
	<u>82</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)					
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.	
2. _____					
3. _____					
4. _____					
	<u>0</u>	= Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 2/1		none				loam	organic content: pine needles
2-8	10YR 2/1		none				SCL	sandy clay loam
8-12	10YR 3/1		7.5YR 4/6	2	C	M	SCL	
12-15	2.5Y 5/2		7.5YR 4/6	7	C	M	SCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock
 Depth (inches): 15

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Eddington, Penobscot Sampling Date: 10/2/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL8
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): gently sloping
 Slope (%): ~3% Lat: 44.809556 Long: -68.678065 Datum: WGS84
 Soil Map Unit Name: CTB - Telos-Chesuncook complex, 0-8%, very stony NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 231. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Some shallow rooting of trees observed.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)
1. <u>Abies balsamea</u>	<u>23</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Quercus rubra</u>	<u>22</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Acer rubrum</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
4. <u>Populus tremuloides</u>	<u>8</u>	<u>no</u>	<u>FACU</u>	
5. <u>Thuja occidentalis</u>	<u>4</u>	<u>no</u>	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>67</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Abies balsamea</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Picea rubens</u>	<u>3</u>	<u>no</u>	<u>FACU</u>	
3. <u>Ilex verticillata</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
4. <u>Larix laricina</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>20</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Solidago rugosa</u>	<u>6</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Dryopteris intermedia</u>	<u>5</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Gymnocarpium dryopteris</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
4. <u>Prunus serotina</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>13</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/3		none				SL	sandy loam
6-10	10YR 3/3		none				SCL	sandy clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>10</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 Tried several locations, rock present at 10",

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Eddington, Penobscot Sampling Date: 10/2/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL8
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): slightly concave
 Slope (%): 1% Lat: 44.809575 Long: -68.678208 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association, 0-3% slope NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 231. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Shallow rooting of trees observed.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30 ft. radius</u>)					
1. <u>Thuja occidentalis</u>	<u>103.5</u>	<u>yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83%</u> (A/B)	
2. <u>Abies balsamea</u>	<u>37</u>	<u>yes</u>	<u>FAC</u>		
3. <u>Picea rubens</u>	<u>30</u>	<u>no</u>	<u>FACU</u>		
4. <u>Betula papyrifera</u>	<u>11</u>	<u>no</u>	<u>FACU</u>		
5. _____					
6. _____					
7. _____					
	<u>181.5</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)					
1. <u>Abies balsamea</u>	<u>56</u>	<u>yes</u>	<u>FAC</u>		
2. <u>Quercus rubra</u>	<u>5</u>	<u>no</u>	<u>FACU</u>		
3. <u>Ilex verticillata</u>	<u>3</u>	<u>no</u>	<u>FACW</u>		
4. <u>Thuja occidentalis</u>	<u>3</u>	<u>no</u>	<u>FACW</u>		
5. _____					
6. _____					
7. _____					
	<u>67</u>	= Total Cover		Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: <u>5 ft. radius</u>)					
1. <u>Osmundastrum cinnamomeum</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>		
2. <u>Rubus sp. (unid.)</u>	<u>5</u>	<u>yes</u>	<u>?</u>		
3. <u>Aster sp. (unid.)</u>	<u>5</u>	<u>yes</u>	<u>?</u>		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
12. _____					
	<u>20</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)					
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.	
2. _____					
3. _____					
4. _____					
	<u>0</u>	= Total Cover		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 2/1		none				CL	clay loam
6-11	2.5Y 3/1		10YR 4/6	2	C	M	SCL	sandy clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>11</u>	Hydric Soil Present? Yes <u>X</u> No _____
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Remarks:
 Tried several locations, rock present at 11",

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/5/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL12
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none
 Slope (%): 2-3% Lat: 44.797922 Long: -68.688611 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association, 0-3% slope NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 180+25. Maine has been in drought conditions all summer, last rain was on September 30, 2020. Site has been recently logged. Rocky soil has been disturbed. Logging road is located just uphill from plot. Slope is very steep above the road.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Plot is on slope above wetland. Upland and wetland plots are located approximately 25 ft. from each other.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B)
1. <u>Populus tremuloides</u>	<u>65</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Abies balsamea</u>	<u>24</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Acer rubrum</u>	<u>4</u>	<u>no</u>	<u>FAC</u>	
4. <u>Betula papyrifera</u>	<u>3</u>	<u>no</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>94</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Abies balsamea</u>	<u>13</u>	<u>yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>13</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Cornus canadensis</u>	<u>18</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Carex laxiflora</u>	<u>10</u>	<u>yes</u>	<u>UPL</u>	
3. <u>Populus tremuloides</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>29</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks: (Include photo numbers here or on a separate sheet.)
 Wetland located at the base of a steep hill; woods above narrow buffer heavily logged.

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	2.5Y 4/3		none				CL	clay loam
6-9	2.5Y 5/4		none				CL	clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	
<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	
<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>9</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 Tried multiple locations before finding a site where rock was more than a few inches below surface.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/5/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL12
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 44.79799 Long: -68.688601 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association, 0-3% slope NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 180+25. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Seasonally saturated at toe of slope. Shallow rooting of trees and fallen trees observed. Upland and wetland plots are located approximately 25 ft. from each other.	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 12

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>5</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)</p> <hr/> <p>Prevalence Index worksheet:</p> <p>Total % Cover of: <u>33</u> = Total Cover Multiply by: _____</p> <p>OBL species _____ x 1 = _____</p> <p>FACW species _____ x 2 = _____</p> <p>FAC species _____ x 3 = _____</p> <p>FACU species _____ x 4 = _____</p> <p>UPL species _____ x 5 = _____</p> <p>Column Totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p> <hr/> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines – All woody vines greater than 3.28 ft in height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____</p>
1. <u>Abies balsamea</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Populus tremuloides</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Acer rubrum</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>33</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Alnus incana</u>	<u>63</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Rubus idaeus</u>	<u>7</u>	<u>no</u>	<u>FACU</u>	
3. <u>Spiraea latifolia</u>	<u>4</u>	<u>no</u>	<u>FAC</u>	
4. <u>Aronia sp. (unid.)</u>	<u>4</u>	<u>no</u>	<u>FACW</u>	
5. <u>Abies balsamea</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>91</u> = Total Cover				
Herb Stratum (Plot size: <u>5 ft. radius</u>)				
1. <u>Carex lacustris</u>	<u>65</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Ribes glandulosum</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
3. <u>Rubus pubescens</u>	<u>8</u>	<u>no</u>	<u>FACW</u>	
4. <u>Dryopteris intermedia</u>	<u>7</u>	<u>no</u>	<u>FAC</u>	
5. <u>Acer rubrum</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
6. <u>Unid. sp.</u>	<u>1</u>	<u>no</u>	<u>?</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>93</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				
1. <u>Solanum dulcamara</u>	<u>2</u>	<u>yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>2</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 2/1		none				CL	clay loam
6-12	10YR 3/1		7.5YR 5/6	2	C	PL	SC	silty clay
12-17	2.5Y 4/1		7.5YR 5/6	5	C	M	clay	small rocks interspersed

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock
 Depth (inches): 17

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/5/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL13
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): slightly sloping
 Slope (%): 3-4% Lat: 44.794828 Long: -68.692515 Datum: WGS84
 Soil Map Unit Name: PbB - Pushaw-Boothbay complex, 3-8% slope NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 165+25. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Plot is on slight slope above wetland.
 Upland and wetland plots are located approximately 60 ft. from each other and bisected by a tote road
 Area in vicinity of plots has been logged, but vegetation and soils within the test plot are intact.

VEGETATION – Use scientific names of plants.

Sampling Point: WL 13

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>40 ft. x 70 ft.</u>)					
1. <u>Populus tremuloides</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)	
2. <u>Abies balsamea</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
	<u>30</u>			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)					
1. <u>Abies balsamea</u>	<u>45</u>	<u>yes</u>	<u>FAC</u>		
2. <u>Populus tremuloides</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
	<u>65</u>				
Herb Stratum (Plot size: <u>5 ft. radius</u>)					
1. <u>Pteridium aquilinum</u>	<u>6</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Carex laxiflora</u>	<u>5</u>	<u>yes</u>	<u>UPL</u>		
3. <u>Abies balsamea</u>	<u>2</u>	<u>no</u>	<u>FAC</u>		
4. <u>Populus grandidentata</u>	<u>2</u>	<u>no</u>	<u>FACU</u>		
5. <u>Lysimachia borealis</u>	<u>2</u>	<u>no</u>	<u>FAC</u>		
6. <u>Maianthemum canadense</u>	<u>1</u>	<u>no</u>	<u>FACU</u>		
7. <u>Solidago sp. (unid.)</u>	<u>1</u>	<u>no</u>	<u>?</u>		
8. _____					
9. _____					
10. _____					
11. _____					
12. _____					
	<u>19</u>				
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)					
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.	
2. _____					
3. _____					
4. _____					
	<u>0</u>				
Hydrophytic Vegetation Present? Yes _____ No <u>X</u>					
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/3		none				CL	clay loam
6-10	10YR 5/3		none				CL	clay loam
10-14	10YR 6/3		7.5YR 5/6	1	C	M	CL	clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>14</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/5/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL13
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): slightly concave
 Slope (%): 0-3 Lat: 44.794736 Long: -68.692324 Datum: WGS84
 Soil Map Unit Name: SVA - Swanville silt loam, 0-3% slope NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 165+25. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Upland and wetland plots are located approximately 60 ft. from each other and bisected by a tote road. Wetland plot is located at toe of slope in a low-lying area between two hills. Saturated to surface. Surface water present nearby. Shallow rooting of trees and fallen trees observed. Area in vicinity of wetland plot has been logged, but vegetation and soils within the test plot are intact.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>Abies balsamea</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Fraxinus nigra</u>	<u>18</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Acer rubrum</u>	<u>6</u>	<u>no</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>64</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Alnus incana</u>	<u>65</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Ilex verticillata</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>70</u> = Total Cover				
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Onoclea sensibilis</u>	<u>70</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Calamagrostis canadensis</u>	<u>20</u>	<u>no</u>	<u>OBL</u>	
3. <u>Osmundastrum cinnamomeum</u>	<u>12</u>	<u>no</u>	<u>FACW</u>	
4. <u>Rubus pubescens</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
5. <u>Dryopteris intermedia</u>	<u>6</u>	<u>no</u>	<u>FAC</u>	
6. <u>Dryopteris cristata</u>	<u>5</u>	<u>no</u>	<u>OBL</u>	
7. <u>Abies balsamea</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
8. <u>Equisetum sylvaticum</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>126</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2		none				SCL	silty clay loam
8-12	2.5Y 3/1		none				SC	silty clay, H2S odor
12-18	2.5Y 5/1		7.5YR 5/8	2	C	M	clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: clay
 Depth (inches): 18

Hydric Soil Present? Yes No

Remarks:

Wetland plot located in depression with higher tufts and hillocks nearby.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/6/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL15
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): very gently sloping Local relief (concave, convex, none): none
 Slope (%): 0-3 Lat: 44.790222 Long: -68.698539 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association, 0-3% slope NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 142+60. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Some shallow rooting observed. Soil is rocky, water likely periodically perches on top. Distance between wetland and upland plots is ~25 ft.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>4</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)</p> <hr/> <p>Prevalence Index worksheet:</p> <p>Total % Cover of: _____ Multiply by: _____</p> <p>OBL species _____ x 1 = _____</p> <p>FACW species _____ x 2 = _____</p> <p>FAC species _____ x 3 = _____</p> <p>FACU species _____ x 4 = _____</p> <p>UPL species _____ x 5 = _____</p> <p>Column Totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p> <hr/> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines – All woody vines greater than 3.28 ft in height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
1. <u>Abies balsamea</u>	<u>63</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Betula populifolia</u>	<u>7</u>	<u>no</u>	<u>FAC</u>	
3. <u>Populus tremuloides</u>	<u>4</u>	<u>no</u>	<u>FACU</u>	
4. <u>Acer rubrum</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>77</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Abies balsamea</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Alnus incana</u>	<u>6</u>	<u>no</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>31</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				
1. <u>Cornus canadensis</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Brachyletrum aristosum</u>	<u>15</u>	<u>yes</u>	<u>NR</u>	
3. <u>Scirpus cyperinus</u>	<u>5</u>	_____	<u>OBL</u>	
4. <u>Coptis trifolia</u>	<u>2</u>	_____	<u>FACW</u>	
5. <u>Vaccinium angustifolium</u>	<u>1</u>	_____	<u>FACU</u>	
6. <u>Acer rubrum</u>	<u>1</u>	_____	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>44</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 5/3		none				CL	clay loam
3-10	10YR 6/3		none				CL	clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)		<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>rock</u> Depth (inches): <u>10</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/6/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL15
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none
 Slope (%): 0-1% Lat: 44.790229 Long: -68.698634 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association, 0-3% slope NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 142+60. Maine has been in drought conditions all summer, last rain was on September 30, 2020. Distance between wetland and upland plots is 30-40 ft.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Soil is moist from top down.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83%</u> (A/B)
1. <u>Picea rubens</u>	<u>12</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Abies balsamea</u>	<u>7</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Betula populifolia</u>	<u>7</u>	<u>yes</u>	<u>FAC</u>	
4. <u>Acer rubrum</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>29</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Alnus incana</u>	<u>17</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>17</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Carex lurida</u>	<u>35</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Scirpus atrocinctus</u>	<u>25</u>	<u>yes</u>	<u>OBL</u>	
3. <u>Calamagrostis canadensis</u>	<u>6</u>	<u>no</u>	<u>OBL</u>	
4. <u>Spiraea latifolia</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
5. <u>Rubus hispidus</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
6. <u>Lycopus uniflora</u>	<u>1</u>	<u>no</u>	<u>OBL</u>	
7. <u>Thalictrum polygonamum</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
8. <u>Scirpus hattorianus</u>	<u>1</u>	<u>no</u>	<u>OBL</u>	
9. <u>Juncus effusus</u>	<u>1</u>	<u>no</u>	<u>OBL</u>	
10. <u>Carex sp. (Ovales, unid.)</u>	<u>1</u>	<u>no</u>	<u>?</u>	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>73</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2		5YR 4/6	2	C	PL	SC	silty clay
10-16	2.5YR 3/1		5YR 4/6	2	C	PL	SC	silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	
<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	
<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>clay</u> Depth (inches): <u>14</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Wetland plot is located in PEM along Eaton Brook.
 Layer 10-16" has sparse dark accretions resembling charcoal.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/6/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL17
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): gently sloping
 Slope (%): 3-5 Lat: 44.785005 Long: -68.705273 Datum: WGS84
 Soil Map Unit Name: MOB - Monarda-Telos complex, 0-8% slope, very stony NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 116+50. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Area has been logged, aspen regrowth.
 Soil is rocky, water probably periodically perches on top.
 Distance between wetland and upland plots is ~50 ft.

VEGETATION – Use scientific names of plants.

Sampling Point: WL 17

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30 ft. radius</u>)					
1. <u>Abies balsamea</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)	
2. <u>Betula papyrifera</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>		
3. <u>Black ash</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>		
4. <u>Acer rubrum</u>	<u>5</u>	<u>no</u>	<u>FAC</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>40</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)					
1. <u>Populus tremuloides</u>	<u>70</u>	<u>yes</u>	<u>FACU</u>		
2. <u>Abies balsamea</u>	<u>16</u>	<u>no</u>	<u>FAC</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
<u>86</u> = Total Cover					
Herb Stratum (Plot size: <u>5 ft. radius</u>)					
1. <u>Osmundastrum cinnamomeum</u>	<u>18</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Carex laxiflora</u>	<u>6</u>	<u>yes</u>	<u>UPL</u>		
3. <u>Dryopteris intermedia</u>	<u>3</u>	<u>no</u>	<u>FAC</u>		
4. <u>Viburnum nudum</u>	<u>1</u>	<u>no</u>	<u>FACW</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
<u>28</u> = Total Cover					
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)					
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
<u>0</u> = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/6/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL17
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none
 Slope (%): 3 Lat: 44.784996 Long: -68.70507 Datum: WGS84
 Soil Map Unit Name: MOB - Monarda-Telos complex, 0-8% slope, very stony NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 116+50. Maine has been in drought conditions all summer, last rain was on September 30, 2020. Area has been relatively recently logged.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Distance between wetland and upland plots is ~50 ft. Likely seasonally saturated to surface with occasional pooling in pockets. Soil gets moister, denser, at increasing depth.	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71%</u> (A/B)
1. <u>Fraxinus nigra</u>	<u>26</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Abies balsamea</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
3. <u>Betula papyrifera</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	<u>30</u>	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>Populus tremuloides</u>	<u>21</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Abies balsamea</u>	<u>6</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Fraxinus nigra</u>	<u>3</u>	<u>no</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	<u>30</u>	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Typha latifolia</u>	<u>20</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Rubus flagellaris</u>	<u>18</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Epilobium ciliatum</u>	<u>18</u>	<u>yes</u>	<u>FACW</u>	
4. <u>Scirpus cyperinus</u>	<u>18</u>	<u>yes</u>	<u>OBL</u>	
5. <u>graminoid sp. (unid.)</u>	<u>15</u>	<u>no</u>	<u>?</u>	
6. <u>Populus tremuloides</u>	<u>3</u>	<u>no</u>	<u>FACU</u>	
7. <u>Potentilla simplex</u>	<u>2</u>	<u>no</u>	<u>FACU</u>	
8. <u>Solidago rugosa</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
9. <u>Viburnum nudum</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	<u>97</u>	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/2		10YR 4/6	2	C	M	SCL	silty clay loam
6-14	10YR 5/2		10YR 4/6	20	C	M	SCL	silty clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: clay
 Depth (inches): 14

Hydric Soil Present? Yes No

Remarks:

Wetland plot is located downhill from upland plot but above a patch of cattail marsh.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/6/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL25
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): very gently sloping
 Slope (%): 1-3 Lat: 44.77588 Long: -68.711724 Datum: WGS84
 Soil Map Unit Name: PbB - Pushaw-Boothbay complex, 3-8% slope NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation , Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - Station 79+10, located approximately 50 ft. from wetland plot. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Plot is on edge of plowed field (not recently disturbed).	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 25

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. x 100 ft.</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				
1. <u>Phleum pratense</u>	<u>60</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Agrostis alba</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Viccia cracca</u>	<u>20</u>	<u>yes</u>	<u>NR</u>	
4. <u>Salix petiolaris</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
5. <u>Solidago gigantea</u>	<u>6</u>	<u>no</u>	<u>FACW</u>	
6. <u>Solidago canadensis</u>	<u>6</u>	<u>no</u>	<u>FACU</u>	
7. <u>Doellingeria umbellata</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
8. <u>Trifolium pratense</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
9. <u>Plantago major</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>145</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. x 100 ft.</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation plot is located in a plowed field.				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

Dominance Test is >50%

Prevalence Index is ≤3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No X

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/3		none				CL	clay loam
4-8	2.5Y 4/3		7.5YR 5/6	1	C	M	CL	clay loam
8-14	10YR 4/4		none				CL	clay loam
14-16	2.5Y 5/2		7.5YR 5/6	1	C	M	CL	clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)</p>	<p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)</p> <p><input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> <p>Type: <u>clay</u></p> <p>Depth (inches): <u>16</u></p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Remarks:

Marginal hydric soil at deepest level.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 10/6/20
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL25
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): slightly concave
 Slope (%): 0-1% Lat: 44.775959 Long: -68.711891 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association, 0-3% slope NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 79+10, located approximately 50 ft. from upland plot. Maine has been in drought conditions all summer, last rain was on September 30, 2020.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Plot is located in low-lying area between gently sloping hillsides, drains towards Felts Brook. Soil gets moister, denser, at increasing depth.	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 25

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>40 ft. x 70 ft.</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Salix petiolaris</u>	<u>85</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Alnus incana</u>	<u>10</u>	<u>no</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
95 = Total Cover				
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Agrostis stolonifera</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Veronica scutellata</u>	<u>20</u>	<u>yes</u>	<u>OBL</u>	
3. <u>Solidago gigantea</u>	<u>18</u>	<u>no</u>	<u>FACW</u>	
4. <u>Carex sp. (unid.)</u>	<u>15</u>	<u>no</u>	<u>?</u>	
5. <u>Spiraea latifolia</u>	<u>6</u>	<u>no</u>	<u>FACW</u>	
6. <u>Alnus incana</u>	<u>2</u>	<u>no</u>	<u>FACW</u>	
7. <u>Galium palustre</u>	<u>2</u>	<u>no</u>	<u>OBL</u>	
8. <u>Hieracium sp. (unid.)</u>	<u>2</u>	<u>no</u>	<u>?</u>	
9. <u>Lycopus uniflora</u>	<u>2</u>	<u>no</u>	<u>OBL</u>	
10. <u>Scirpus atrocinctus</u>	<u>1</u>	<u>no</u>	<u>OBL</u>	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
98 = Total Cover				
Woody Vine Stratum (Plot size: <u>40 ft. x 70 ft.</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. <u>none</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/2		none				SCL	silty clay loam
2-6	10YR 3/1		7.5YR 5/6	2	C	PL	SCL	silty clay loam
8-10	2.5Y 3/1		7.5YR 5/6	5	C	PL	SCL	silty clay loam
14-16	10YR 4/1		10YR 4/6	15	C	M	SCL	silty clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: clay
 Depth (inches): 16

Hydric Soil Present? Yes No

Remarks:

Wetland plot located in slight depression in willow shrub wetland. Likely seasonally saturated to surface with occasional pooling.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 11/2/16
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL28
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): very gently sloping
 Slope (%): 0-1 Lat: 44.77027 Long: -68.7174 Datum: WGS84
 Soil Map Unit Name: PsB - Pushaw-Swanville complex, 0-8 slope NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation X, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - station 802+50. Distance between upland and wetland plot is ~ 25 ft. Marginal hydric soil at deepest level Upland plot located on edge of abandoned agricultural field (not recently mowed). Drought persisted in the northeast with warm and dry conditions prevailing in November 2016 (National Climate Report - November 2016).	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <u>X</u> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Possible, but unlikely, seasonal saturation. Hydric soil marginal.	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 28

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. x 100 ft.</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>5 ft. radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Poa pratensis</u>	85	yes	FACU	
2. <u>Vicia cracca</u>	20	yes	NR	
3. <u>Phleum pratense</u>	10	no	FACU	
4. <u>Daucus carota</u>	10	no	UPL	
5. <u>Fragaria vesca</u>	3	no	UPL	
6. <u>Ranunculus sp. (unid.)</u>	1	no	?	
7. <u>Cirsium arvense</u>	1	no	FACU	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>130</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft. x 100 ft.</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	2.5Y 5/3		none	20	C	M	SL	silt loam
7-12	2.5Y 6/3		10YR 4/6	50	C	M	SL	silt loam
12-20	5Y 5/2		10YR 4/6	50	C	M	SL	silt loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 11/2/16
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL28
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): very gently sloping
 Slope (%): 0-1 Lat: 44.7702 Long: -68.71738 Datum: WGS84
 Soil Map Unit Name: PsB - Pushaw-Swanville complex 0-8% slope NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation , Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - Station 802+50 located approximately 25 ft. from upland plot. Wetland plot may be located on the edge of an abandoned agricultural field (not recently disturbed). Drought persisted in the northeast with warm and dry conditions prevailing in November 2016 (National Climate Report - November 2016).	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 28

<u>Tree Stratum</u> (Plot size: <u>30 ft. 100 ft.</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>		
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
	<u>0</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft. radius</u>)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
	<u>0</u>	= Total Cover		Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<u>Herb Stratum</u> (Plot size: <u>5 ft. radius</u>)					
1. <u>Carex sp. (unid.)</u>	<u>85</u>	<u>yes</u>	<u>?</u>		
2. <u>Symphotrichum novi-belgii</u>	<u>38</u>	<u>yes</u>	<u>FACW</u>		
3. <u>Solidago gigantea</u>	<u>11</u>	<u>no</u>	<u>FACW</u>		
4. <u>Soldago altissima</u>	<u>3</u>	<u>no</u>	<u>FACU</u>		
5. <u>Mentha sp. (unid.)</u>	<u>1</u>	<u>no</u>	<u>?</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
	<u>138</u>	= Total Cover		Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.	
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft. x 100 ft.</u>)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
	<u>0</u>	= Total Cover		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	2.5Y 5/2		10YR 4/6	2	C	M	SL	silt loam
10-18	5Y 5/2		10YR 4/6	20	C	M	SL	silt loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 11/2/16
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL28
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): very gently sloping
 Slope (%): 0-3 Lat: 44.77229 Long: -68.71776 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association, 0-3% slope NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - south of station 59+00, approximately 50 ft. from wetland plot. Drought persisted in the northeast with warm and dry conditions prevailing in November 2016 (National Climate Report - November 2016).	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 28

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30 ft. radius</u>)					
1. <u>Populus tremloides</u>	<u>123</u>	<u>yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>43%</u> (A/B)	
2. <u>Abies balsamea</u>	<u>15</u>	<u>no</u>	<u>FAC</u>		
3. <u>Salix sp. (unid.)</u>	<u>4</u>	<u>no</u>	<u>?</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>142</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)					
1. <u>Picea rubens</u>	<u>11</u>	<u>yes</u>	<u>FACU</u>		
2. <u>Abies balsamea</u>	<u>11</u>	<u>yes</u>	<u>FAC</u>		
3. <u>Alnus incana</u>	<u>3</u>	<u>no</u>	<u>FACW</u>		
4. <u>Spiraea latifolia</u>	<u>3</u>	<u>no</u>	<u>FACW</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>27</u> = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: <u>5 ft. radius</u>)					
1. <u>Phleum pratense</u>	<u>11</u>	<u>yes</u>	<u>FACU</u>		
2. <u>Solidago altissima</u>	<u>11</u>	<u>yes</u>	<u>FACU</u>		
3. <u>Symphotrichum novi-belgii</u>	<u>11</u>	<u>yes</u>	<u>FACW</u>		
4. <u>Agrostis alba</u>	<u>11</u>	<u>yes</u>	<u>FACW</u>		
5. <u>Prunella vulgaris</u>	<u>3</u>	<u>no</u>	<u>FAC</u>		
6. <u>Potentilla simplex</u>	<u>3</u>	<u>no</u>	<u>FACU</u>		
7. <u>Vicia cracca</u>	<u>3</u>	<u>no</u>	<u>FACU</u>		
8. <u>Anthoxanthum odoratum</u>	<u>3</u>	<u>no</u>	<u>FACU</u>		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
<u>56</u> = Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.	
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
<u>0</u> = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	2.5Y 4/3		none				SL	silt loam
7-12	2.5Y 5/3		10YR 4/6	2	C	M	SL	silt loam
12-18	2.5Y 5/3		10YR 4/6	20	C	M	SL	silt loam
18-22	2.5Y 5/2		10YR 4/6	20	C	M	SL	silt loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Marginal hydric soil at deepest level.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Brewer, Penobscot Sampling Date: 11/2/16
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL28
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none
 Slope (%): 0-1 Lat: 44.77231 Long: -68.71796 Datum: WGS84
 Soil Map Unit Name: SQA - Swanville-Wonsqueak Association 0-3% slope NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - south of station 59+00, approximately 50 ft. from upland plot.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Seasonally saturated. Drought persisted in the northeast with warm and dry conditions prevailing in November 2016 (National Climate Report - November 2016).	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 28

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30 ft. radius</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>0</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)					
1. <u>Alnus incana</u>	<u>63</u>	<u>yes</u>	<u>FACW</u>		
2. <u>Spiraea latifolia</u>	<u>11</u>	<u>no</u>	<u>FACW</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>74</u> = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: <u>15 ft. radius</u>)					
1. <u>Rubus hispidus</u>	<u>38</u>	<u>yes</u>	<u>FACW</u>		
2. <u>Solidago altissima</u>	<u>21</u>	<u>yes</u>	<u>FACU</u>		
3. <u>Persicaria sagittata</u>	<u>21</u>	<u>yes</u>	<u>OBL</u>		
4. <u>Solidago rugosa</u>	<u>11</u>	<u>no</u>	<u>FAC</u>		
5. <u>Juncus effusus</u>	<u>3</u>	<u>no</u>	<u>OBL</u>		
6. <u>Vicia cracca</u>	<u>3</u>	<u>no</u>	<u>NR</u>		
7. <u>Rosa virginiana</u>	<u>3</u>	<u>no</u>	<u>FAC</u>		
8. <u>Spiraea latifolia</u>	<u>3</u>	<u>no</u>	<u>FACW</u>		
9. <u>Calamagrostis canadensis</u>	<u>3</u>	<u>no</u>	<u>OBL</u>		
10. <u>Galium sp. (unid.)</u>	<u>1</u>	<u>no</u>	<u>?</u>		
11. <u>Lycopus uniflorus</u>	<u>1</u>	<u>no</u>	<u>OBL</u>		
12. _____	_____	_____	_____		
<u>108</u> = Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.	
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)					
1. <u>Clematis virginiana</u>	<u>1</u>	<u>yes</u>	<u>FAC</u>		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
_____ = Total Cover					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 4/2		none				CL	clay loam
10-22	2.5Y 5/2		10YR 4/6	5-10	C	M	SCL	silty clay loam
22-24	2.5Y 5/2		10YR 4/6	40	C	M	SCL	silty clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Eddington, Penobscot Sampling Date: 11/2/16
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL33
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): very gently sloping
 Slope (%): 2-3 Lat: 44.81654 Long: -68.641861 Datum: WGS84
 Soil Map Unit Name: KWA - Kinsman-Wonsqueak complex, 0-3% slope NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland plot - station 341+00, located approximately 40 ft. from wetland plot. Drought persisted in the northeast with warm and dry conditions prevailing in November 2016 (National Climate Report - November 2016).	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Raised root systems.	

VEGETATION – Use scientific names of plants.

Sampling Point: WL 33

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft. radius</u>)				
1. <u>Larix laricina</u>	<u>64</u>	<u>yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. <u>Acer rubrum</u>	<u>59</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Abies balsamea</u>	<u>36</u>	<u>no</u>	<u>FAC</u>	
4. <u>Picea rubens</u>	<u>26</u>	<u>no</u>	<u>FACU</u>	
5. <u>Pinus strobus</u>	<u>19</u>	<u>no</u>	<u>FACU</u>	
6. <u>Thuja occidentalis</u>	<u>6</u>	<u>no</u>	<u>FACW</u>	
7. _____				
	<u>210</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)				
1. <u>Abies balsamea</u>	<u>63</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <u>Thuja occidentalis</u>	<u>3</u>	<u>no</u>	<u>FACW</u>	
3. <u>Acer rubrum</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
	<u>69</u>	= Total Cover		
Herb Stratum (Plot size: <u>5 ft. radius</u>)				
1. <u>Abies balsamea</u>	<u>3</u>	<u>yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	<u>3</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)				
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
2. _____				
3. _____				
4. _____				
	<u>0</u>	= Total Cover		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1							organic
4-8	10YR 4/6		none					silt loam
8-11	10YR 6/4		none					silt loam w/ inclusions 10YR 6/3
11-14	2.5Y 6/3		none					silt loam with pebbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: refusal
 Depth (inches): 15

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: I-395 Connector WIN 18915 City/County: Eddington, Penobscot Sampling Date: 11/2/16
 Applicant/Owner: Maine Department of Transportation State: ME Sampling Point: WL33
 Investigator(s): L. Latt, A. Walsh Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Outwash delta Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 44.816478 Long: -68.641992 Datum: WGS84
 Soil Map Unit Name: KWA - Kinsman-Wonsqueak complex, 0-3% slope NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Wetland plot - south of station 341+00, approximately 50 ft. from upland plot. Drought persisted in the northeast with warm and dry conditions prevailing in November 2016 (National Climate Report - November 2016).	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) ___ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) ___ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3) ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5) ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7) ___ Other (Explain in Remarks) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1 - 2</u> Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): <u>2</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Saturation to surface is present. Water level is 18" below soil surface. Standing water is present 1-2 ft. from soil plot. May get seasonal pooling - basin/hummock topography. Drought persisted in the northeast with warm and dry conditions prevailing in November 2016 (National Climate Report - November 2016).	

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: <u>30 ft. radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>101</u>	<u>yes</u>	<u>FAC</u>
2. <u>Larix laricina</u>	<u>64</u>	<u>yes</u>	<u>FACW</u>
3. <u>Pinus strobus</u>	<u>7</u>	<u>no</u>	<u>FACU</u>
4. <u>Picea rubens</u>	<u>5</u>	<u>no</u>	<u>FACU</u>
5. <u>Abies balsamea</u>	<u>4</u>	<u>no</u>	<u>FAC</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____

181 = Total Cover

Sapling/Shrub Stratum (Plot size: <u>15 ft. radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Abies balsamea</u>	<u>21</u>	<u>yes</u>	<u>FAC</u>
2. <u>Acer rubrum</u>	<u>11</u>	<u>yes</u>	<u>FAC</u>
3. <u>Thuja occidentalis</u>	<u>3</u>	<u>no</u>	<u>FACW</u>
4. <u>Ilex verticillata</u>	<u>3</u>	<u>no</u>	<u>FACW</u>
5. <u>Spiraea latifolia</u>	<u>3</u>	<u>no</u>	<u>FACW</u>
6. <u>Aronia arbutifolia</u>	<u>3</u>	<u>no</u>	<u>FACW</u>
7. _____	_____	_____	_____

44 = Total Cover

Herb Stratum (Plot size: <u>5 ft. radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Graminoid sp. (unid.)</u>	<u>38</u>	<u>yes</u>	<u>?</u>
2. <u>Abies balsamea</u>	<u>21</u>	<u>yes</u>	<u>FAC</u>
3. <u>Onoclea sensibilis</u>	<u>11</u>	<u>no</u>	<u>FACW</u>
4. <u>Osmundastrum cinnamomeum</u>	<u>3</u>	<u>no</u>	<u>FACW</u>
5. <u>Calamagrostis canadensis</u>	<u>3</u>	<u>no</u>	<u>FACW</u>
6. <u>Pinus strobus</u>	<u>3</u>	<u>no</u>	<u>FACU</u>
7. <u>Symphotrichum novae-angliae</u>	<u>3</u>	<u>no</u>	<u>FACW</u>
8. <u>Dryopteris sp. (unid.)</u>	<u>1</u>	<u>no</u>	<u>?</u>
9. <u>Carex sp. (unid.)</u>	<u>1</u>	<u>no</u>	<u>?</u>
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

84 = Total Cover

Woody Vine Stratum (Plot size: <u>30 ft. radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

0 = Total Cover

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1		none				organic	not fibric
4-18	10YR 2/1		none				organic	highly decomposed
18-20	2.5Y 3/1		none				SC	silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)</p>	<p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)</p> <p><input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
---	---	--

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> <p>Type: <u>silty clay</u></p> <p>Depth (inches): <u>18</u></p>	<p>Hydric Soil Present? Yes <u>X</u> No <u> </u></p>
--	--

Remarks:

Soil is peat to 18", then denser silty clay.

Attachment 10 – Notice of Intent to File

Public Notice Documentation

Project Public Meeting Documentation

MaineDOT and FHWA have held public hearings and open houses as part of the NEPA process when the Draft EIS was released to the public in 2012. The Public Hearing was held on May 2, 2012 and 19 attendees offered public comment. MaineDOT submitted a preliminary permit application to the Corps and the comment period for that application closed on May 17, 2012. That portion of the NEPA process concluded in 2016 when the FHWA issued a signed Record of Decision, NEPA continues to play an active role in the planning, design, and coordination of the project.

The final public meeting for the project was held online beginning July 17, 2020 and comments were accepted until August 7, 2020. A copy of the public notice and comments received is attached. The virtual public involvement dashboard documented users which viewed the public meeting documents and 111 members of the public viewed the presentation, 24 individuals provided comments. The MDEP Public Participation handout was provided in the Environment section of that online meeting for the public to save and review for their records and to fulfill DEP requirements for a Public Information Meeting under DEP's Chapter 2 Rules.

PUBLIC NOTICE FILING AND CERTIFICATION

Department Rules, Chapter 2, require an applicant to provide public notice for all Tier 2, Tier 3 and individual Natural Resources Protect Act projects. In the notice, the applicant must describe the proposed activity and where it is located. **“Abutter”** for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.
2. **Abutting Property Owners:** You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.
3. **Municipal Office:** You must send a copy of the Notice of Intent to File and a **duplicate of the entire application** to the Municipal Office.

ATTACH a list of the names and addresses of the owners of abutting property.

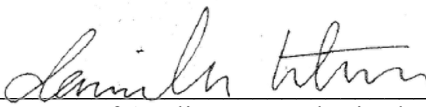
CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
4. Provided notice of and held a public informational meeting, if required, in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 13, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on between July 17 and August 7, 2020 (virtually due to COVID-19)
Date

Approximately 111 members of the public attended the Public Informational Meeting. and 24 provided comments


Signature of Applicant or authorized agent

2/23/2021
Date

(blue)

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Legal Notices
NOTICE OF PUBLIC SALE

Notice is hereby given that in accordance with the Stipulated Judgment of Foreclosure and Sale entered January 15, 2021, in the action entitled **Nationstar Mortgage LLC d/b/a Champion Mortgage Company v. Samuel M. Sherry, Esq., Special Administrator of the Estate of Stanley A. Engstrom, et al.**, by the Maine District Court, Division of Newport, Docket No. **NEWDC19-17** wherein the Court adjudged the foreclosure of a mortgage granted by Jean M. Engstrom and Stanley A. Engstrom, mortgagees, to Wells Fargo Bank, N.A. dated May 30, 2008 and recorded in the Penobscot County Registry of Deeds in Book 11415, Page 307, should the period of redemption have expired without redemption of the property by the Estate of Stanley A. Engstrom, a public sale of the property described in the mortgage will be conducted on

March 12, 2021 commencing at 10:00 AM at the Office of Brock & Scott, PLLC, 100 U.S. River One, 2nd Floor, Bangor, ME 04910.

The property is located at 33 Highland Avenue, Newport, ME 04963, in Penobscot County, reference as described in said mortgage.

The sale will be by public auction. All bidders for the property will be required to make a deposit of \$5,000.00 in cash, certified or bank check at the time of the public sale made payable to Brock & Scott, PLLC, which deposit is non-refundable as to the highest bidder. The balance of the purchase price shall be paid within thirty (30) days of the public sale. In the event a representative of Nationstar Mortgage LLC d/b/a Champion Mortgage Company is not present at the public sale, the sale shall be deemed to have occurred and all rights to reschedule a subsequent sale are reserved.

Additional terms will be announced at the public sale.

Nationstar Mortgage LLC d/b/a Champion Mortgage Company, by its attorneys, Brock & Scott, PLLC, John Michael New, Jr., Esq., 100 U.S. River One, 2nd Floor, Suite 200 Pawtucket, RI 02860

Feb. 5, 12, 19, 2021

Legal Notices
NOTICE OF AGENCY WAIVER AMENDMENT

AGENCY: Department of Health and Human Services, MaineCare Services

RULE TITLE OR SUBJECT: Chapter 101, MaineCare Benefits Manual, Section 20, Home and Community Based Services for Adults with Other Related Conditions

WAIVER: ME 0995: Home and Community Based Services for Members with Other Related Conditions

CONCISE SUMMARY: The Department plans to submit a waiver amendment to the new rule for Section 20, Home and Community Based Services for Adults with Other Related Conditions. The proposed amendment seeks to update the eligibility groups served in Appendix B of this waiver to include the Adult Group as specified in 42 CFR 4345.119. Additionally, the proposed amendment attempts to remove outdated reference to Appendix C limiting homes to the only four participants eligible for service.

The Department is accepting comments from February 12, 2021 through March 14th, 2021. Any interested party may obtain a copy of the waiver application by going to the website noted below or at any regional Office for Family Independence location (a list of the offices and locations can be found at this link <https://www.maine.gov/dhhs/ocomr/rules/index.shtml>). A printed copy may be obtained by calling Thomas Lett at (207) 624-4068 or emailing Thomas.Lett@maine.gov.

See <http://www.maine.gov/dhhs/ocomr/rules/index.shtml> for waiver amendment and to submit comments.

STATUTORY AUTHORITY: 42 CFR 8441.304

DEADLINE FOR COMMENTS: Comments must be received by 11: 59 pm, March 14, 2021.

AGENCY CONTACT PERSON: Thomas Lett, Long Term Services and Supports Manager
AGENCY NAME: MaineCare Services
ADDRESS: 109 Capitol St., Augusta, Maine 04333-0111
EMAIL: Thomas.Lett@maine.gov
TELEPHONE: 207-624-4068; (207) 287-1864 TTY: 701

Feb. 12, 2021

Legal Notices
NOTICE OF PUBLIC SALE

Pursuant to the Judgment of Foreclosure and Order of Sale entered in the Maine District Court (Machias, Washington County) on September 23, 2020, in the civil action entitled **MACHIAS SAVINGS BANK v. KEVIN C. FEENEY and STATE OF MAINE, MAINE RECEIVED, SHERIFFS**, Docket No. RE-2020-03, for the foreclosure of (1) a mortgage dated September 4, 2008, on real estate located on Route 191 and Little Machias Road, Town of Cutler, Washington County, and State of Maine, recorded in the Washington County Registry of Deeds in Book 3451, Page 302, and (b) a mortgage dated September 21, 2009, on real estate located on Number Nine Road, Town of Cutler, Washington County and State of Maine, which mortgage is recorded in the Washington County Registry of Deeds in Book 3576, Page 105, to which mortgage deeds reference is made for more particular descriptions of the premises to be sold, the statutory 90-day redemption period having ended without redemption, notice is hereby given that sales will be held as follows:

• **March 18, 2021, at 12:00 noon** - property located on Route 191 (commercial garage) and Little Machias Road (Map 15, Lot 15, abutting land only), Cutler, Maine (Book 3451, Page 302); and

• **March 18, 2021, at 12:30 p.m.** - vacant land parcel located on Number Nine Road, Cutler, Maine (Book 3576, Page 105).

All public sales will take place at the commercial garage, which is believed to have a street address of 2401 Cutler Road, Route 191, Cutler, ME 04626.

The properties may be inspected before the date of the sale by making an appointment. Further information regarding the terms of the public sale of the property may be obtained from Central Maine Auction Center, Attention Emily Tilton, 44 Concord Drive, Hermon, Maine 04401; (207) 848-7027.

TERMS OF SALE: Oral bids will be accepted beginning at 12:00 p.m. for Route 191 commercial garage and abutting land; and 12:30 p.m. for parcel located on Number Nine Road, Cutler, Maine. All bidders will be required to submit a deposit of \$5,000.00 in cash or certified funds for each auction before their bid will be accepted. The highest bidder's deposit will be transferred to MACHIAS SAVINGS BANK which sum shall be non-refundable. The highest bidder must also sign a purchase and sale agreement with MACHIAS SAVINGS BANK which requires a closing within 30 days of the public sale, at which time the balance will be due in cash or certified funds, and MACHIAS SAVINGS BANK will deliver a duly executed quitclaim deed without covenant. If the highest bidder does not close as required, the Bank may, at its option, either sell the property to the second highest bidder or hold another public sale. Additional or different terms of sale may be announced at the time of sale.

Dated: February 10, 2021

ALLISON A. ECONOMY, ESQ.,
Rudman & Winchell
Attorneys for MACHIAS SAVINGS BANK
84 Harlow Street - P.O. Box 140
Bangor, Maine 04403-0140
(207) 947-4500

Published Feb. 12, 19, 26, 2021

2016 Chevy 2500 HD 61k 4x4
\$26,999

2016 Toyota Camry LE
Auto with 41K. \$14,800

2017 Chevrolet 2500 HD
4x4, only 30k, \$30,999

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Not happy with your trade in allowance at a Big Box Dealer?
Having trouble selling your car privately?
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We will make you a CASH OFFER on the spot!

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Legal Notices
PUBLIC NOTICE
NOTICE OF INTENT TO FILE

Please take notice that The Maine Department of Transportation; 16 State House Station, Augusta, ME; 207-624-3000; is intending to file a Natural Resources Protection Act permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S. §§ 480-A thru 480-BB on or about February 19, 2021. The application is for construction of the Route 9 Connector and associated wetland impacts and new stream crossings in Brewer, Eddington, and Holden, Maine (Penobscot County). A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

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Feb. 12, 2021

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FLATBED TRAILER 17
2 axle, New, homemade, can fit road steer or sm. tractor. \$900 or best offer. 944-6756, 945-3141 or 945-3236

Transportation General 351

MOTOR HOME 2014 Tuscany XTE
4000G excellent condition, with a 360 Cummings engine (61000 miles) 6 speed Allison transmission, 4 slides, King size bed, sleeps 4, washer & dryer, large spacious living area, 9000kw generator (250 hours) coach has been well maintained, 2 axles 6 tires, 41" length, all set up all you need to food & personally items, motivated seller. \$135,000.00 207-416-4011

NEWMAR MOTOR HOME 2004 Newmar 37 motor home in excellent condition. New brakes, engine, generator and gel batteries. Sleeps 6 includes washer, dryer and sat. \$25,900 207-869-6772

NISSAN 2010 TITAN SE 4WD AT 148K
"RE CAL CREDIT YOUR APPROVED!"
WWW.GABRIELTSAUTO.COM
1A 2nd Fl/Brewer Watmark. 989-4777

KEYSTONE 17 BULLET 26 Like new, TV, Bluetooth, sleeps 8, outdoor shower, nice sleeping, sound system. Winterproof. \$14,000.00 or offers 350-9224

MOTORHOME 2014 40 COACHMAN
Diesel, King bed plus bunk, 30 front Slide & generator, 1000 miles. \$20K, \$100,000. Call 207-287-8989

POLARIS 2011 900 RUSH PRIDE LTD. ED. Exc. cond. All other items included. 2000 miles. Many extras. \$5,000 call 843-5387 or vms.

WILDERNESS 2006 BUNK MODEL / TRAVEL TRAILER model 3902BDSC- generator used, all other items in working condition. \$12,000.00 207-966-3161

NEW HOLLAND 3800 BALER w/Kicker, Rebuilt, runs great. \$2500 or offers. Call 945-6756 or 945-3141 or 945-3236

WINTER WASH BUTTER Cup Butter. New. Auto. Etc. All naturally grown. No spray calls. Please text 207-686-9800. Full bushels mix n match your own. \$3.50 no limits. 207-266-3606

Merchandise General 605

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Files, saws, routers, chisels, \$50-\$100 ea. 207-249-0389

Large computer desk, heavy oak, Artisan, maple, 3 drawer, Like new. \$500 207-631-4257

PRESSURE WASHER Portable hotsty pressure washer with 7 Top Subaru gas motor w/accessories, 2000 psi, 3 years old, never used. Paid \$4200, will sell for \$2250. Trades considered for generator/ ATV Honda/Yamaha in very good or great condition & working order only or partial trade on pre 1994 silver coins. Call Mike 207-649-3117

SNOWBLOWERS Toro power clear, model # 7210CR. \$300. Toro power max, model#260AE, approx. 3 hrs on unit. \$800 w/cover. 207-557-9159, call after noon.

Fuel & Firewood 610

DYSARTS FIREWOOD
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FIREWOOD Clean premium firewood. Mostly Beech & Maple. Green \$210. Seasoned \$620. 207-476-4272

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Pets 620

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PAM MERRY

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LIVING ROOM SET 3 pc. sectional w/ sofa bed, brown, non-smoking home. \$300 207-249-0369

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\$100 complete 22" monitor, printer, DVD, HD, 500 mhz, 4G Ram, BT, Wi-Fi, USB3. Hobbyist or serious user. Call 207-228-8504. 10am-2am

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Legal Notices
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Feb. 12, 2021

2-12 **CRYPTOQUIP**

O X U J X U W Z C Z E O X Z C U
L Z Q J U R C M S Z Q K W I W F V U Q U E S R L Z
L I V F D C R M J L R V D P Z E U P I U Q E
J X Z P F M ? U P K Q I E Z.

Yesterday's Cryptquip: DARK YELLOWISH-BROWN COLOR THAT PICKLES TURN WHEN THEY SIT OUT AND BECOME SPOILED: CUKE UMBER.

Today's Cryptquip Clue: P equals B



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

PUBLIC NOTICE:

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PIN 018915.00 Linwood E. Lord 358 Elm Street Brewer, ME 04412	PARCEL #: 1	PIN 018915.00 Michelle L. Phillips PO Box 7 Eddington, ME 04428-0007	PARCEL #: 2	PIN 018915.00 Roger P. Ruhlin 119 Morey Road Kenduskeag, ME 04450	PARCEL #: 3
PIN 018915.00 Hal A. Meyers Laurie A. Meyers 651 Main Road Eddington, ME 04428	PARCEL #: 4	PIN 018915.00 Judith A. Josiah-Martin Thomas C. Martin 104 Levenseller Road Holden, ME 04429	PARCEL #: 5	PIN 018915.00 David H. Lakeman, Sr. 1747 Pebble Beach Drive, Apt 12 Fort Myers, FL 33907-5734	PARCEL #: 6
PIN 018915.00 Rebekah A. Flanders n/k/a Rebekah A. Huskins 3 Cottage Lane Eddington, ME 04428	PARCEL #: 7	PIN 018915.00 RLV Holdings, LLC c/o Rick L. Varney 260 Hogan Road Bangor, ME 04401	PARCEL #: 999	PIN 018915.00 Eastern Maine Medical Center 489 State Street PO Box 404 Bangor, ME 04401	PARCEL #:
PIN 018915.00 State of Maine 16 State House Station Augusta, ME 04333	PARCEL #:	PIN 018915.00 State of Maine 16 State House Station Augusta, ME 04333	PARCEL #:	PIN 018915.00 City of Brewer 80 North Main Street Brewer, ME 04412	PARCEL #:
PIN 018915.00 Brian J. Copeland 22 Snowberry Drive Scarborough, ME 04074	PARCEL #:	PIN 018915.00 Maritimes & Northeast Pipeline LLC PO Box 1642 Houston, TX 77251-1642	PARCEL #:	PIN 018915.00 Scott Maroon 92 Century Street Brewer, ME 04412	PARCEL #:
PIN 018915.00 Mary Louella Dixon Robert R. Smith 41 Lamson Drive Merrimack, NH 03054	PARCEL #:	PIN 018915.00 State of Maine 22 State House Station Augusta, ME 04333	PARCEL #:	PIN 018915.00 Maine Electric Power Company One City Center Portland, ME 04101	PARCEL #:
PIN 018915.00 State of Maine 16 State House Station Augusta, ME 04333	PARCEL #:	PIN 018915.00 Hamover Associates 11 Bangor Mall Blvd Suite 1 Bangor, ME 04401	PARCEL #:	PIN 018915.00 BEV Inc c/o Eremita & Valley 43 Broadlawn Drive Brewer, ME 04412-1203	PARCEL #:
PIN 018915.00 City of Brewer 80 North Main Street Brewer, ME 04412	PARCEL #:	PIN 018915.00 EV Properties LLC PO Box 2444 Bangor, ME 04402-2444	PARCEL #:	PIN 018915.00 Lowe's Home Centers Inc 1000 Lowe's Blvd Mooresville, NC 28117-8520	PARCEL #:
PIN 018915.00 State of Maine 22 State House Station Augusta, ME 04333	PARCEL #:	PIN 018915.00 State of Maine 22 State House Station Augusta, ME 04333	PARCEL #:	PIN 018915.00 Dorothy A. Nelligan & Margaret Bush Trust 90 Emerald Road Holden, ME 04429	PARCEL #:
PIN 018915.00 Dorothy A. Nelligan & Margaret Bush Trust 90 Emerald Road Holden, ME 04429	PARCEL #:	PIN 018915.00 Bruce R. Blackmer 14 Enterprise Drive Dedham, ME 04429-4729	PARCEL #:	PIN 018915.00 Lovely Properties LLC PO Box 36 Newport, ME 04953-0036	PARCEL #:

PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Scott D. Deabay 63 Etna Pond Road Carmel, ME 04419-3128		State of Maine 22 State House Station Augusta, ME 04333		Wilson Street Realty Trust 60 Edro Isle Westminister, MA 01473-1628	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Retha K. Berube Roland Berube 643 Eastern Avenue Brewer, ME 04412		Daniel C. Pooler 655 Eastern Avenue Brewer, ME 04412-9624		Wilson Street Realty Trust 60 Edro Isle Westminister, MA 01473-1628	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Gary N. Ames 695 Eastern Avenue Brewer, ME 04412-9621		Daniel M. Cox 14 Hatfield Road Orrington, ME 04474		Jane T. Hinckley 5 Woodridge Road Brewer, ME 04412-9627	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Larry T. Adams Mary L. Adams 17 Woodridge Road Brewer, ME 04412-9627		Vern E. Craig PO Box 772 Brewer, ME 04412-0772		James R. Ruhlin c/o Robert Ruhlin PO Box 18 Kenduskeag, ME 04450-0018	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
James R. Ruhlin c/o Robert Ruhlin PO Box 18 Kenduskeag, ME 04450-0018		James R. Ruhlin c/o Robert Ruhlin PO Box 18 Kenduskeag, ME 04450-0018		Ronald P. Ruhlin Tracey L. Ruhlin 27 Ruhlin Way Brewer, ME 04412-9605	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Carol J. Smith Vinal S. Smith 27 Woodridge Road Brewer, ME 04412-9627		John P. Huskins Leslie J. Beers-Huskins 69 East Bucksport Road Orrington, ME 04474		William M. Butterfield 65 Woodridge Road Brewer, ME 04412-9627	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Ronald P. Ruhlin Tracey L. Ruhlin 27 Ruhlin Way Brewer, ME 04412-9605		Ruhlin Properties LLC c/o Roger Ruhlin 35 Higginsville Road Kenduskeag, ME 04450		Heirs of Delores A. Havlir c/o Christy Gaffey 3621 Lake Pontchatrain Drive Arlington, TX 76016	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Carol Kwiatkowsky Colt Kwiatkowsky 1 Woody Lane Brewer, ME 04412-9610		Edward O. Darling Mary Ellen Darling 7 Primrose Place Bangor, ME 04401-5891		Holly N. Whitmore Richard E. Whitmore 16 Timber Lane Holden, ME 04429-7286	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
David K. Burgason Tracy T. Burgason PO Box R3426765 Mont Belvieu, TX 77580		Karen M. Turner Todd P. Turner 42 Night Road Brewer, ME 04412		Aaron R. St. Peter Melinda J. St. Peter 516 Lambert Road Brewer, ME 04412	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Gregg Stewart 508 Lambert road Brewer, ME 04412		Alan E. Howard James R. Howard Jr. 48 Mill Creek Road Orrington, ME 04474		Traditions Golf Club Inc. 1 Main Road Holden, ME 04429	

PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Felt Brook Go Karts 330 Eastern Avenue Brewer, ME 04412		Felt Brook Go Karts 330 Eastern Avenue Brewer, ME 04412		William B. Nichols 26C Airport Road Brewer, ME 04412	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Derek M. Legasse Jeremy J. Legasse PO Box 358 Brewer, ME 04412		Trustees of McDonald Family Trust 57 Monument Drive Eddington, ME 04428		James McDonald 517 Lambert Road Holden, ME 04429	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Victoria Lee 152 Levenseller Road Holden, ME 04429		Haynes Timberland, Inc. 122 Abbott Drive Enfield, ME 04493		Sarah L. Spratt 89 South Road Holden, ME 04429	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Lakeman & Sons, Inc. PO Box 787 Holden, ME 04429		Julie Hatch Richard Hatch PO Box 806 Brewer, ME 04412		David H. Lakeman Sr. PO Box 207 Holden, ME 04429	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Tina L. Bouffard 37 Pondview Way Ellsworth, ME 04605		Ethel S. Salinas Javier G. Salinas 135 Levenseller Road Holden, ME 04429		Ricci V. More Susan G. More 304 Clewleyville Road Holden, ME 04429	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Darrin W. Gray Jill M. Malanowski 518 Lambert Road Holden, ME 04429		Ronald Lenfest 317 Clewleyville Road Holden, ME 04429		Priscilla E. Hartery 309 Clewleyville Road Holden, ME 04429	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Edwin S. Cossette Stephanie M. Cossette 57 Lambert Road Eddington, ME 04428		Jo-Ann R. Arbo Kenneth A. Arbo 44 Lambert Road Eddington, ME 04428		Commonsense Housing Inc. 29 Lambert Road Eddington, ME 04428	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Commonsense Housing Inc. 29 Lambert Road Eddington, ME 04428		Joanne T. Harvey Kenneth J. Harvey 283 Clewleyville Road Eddington, ME 04428		Aaron R. St.Peter Melinda J. St.Peter 516 Lambert Road Brewer, ME 04412	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Edwin S. Cossette Stephanie M. Cossette 57 Lambert Road Eddington, ME 04428		Anthony R. Long Carol D. Long 213 Clewleyville Road Eddington, ME 04428		Tracy A. Proulx 253 Clewleyville Road Eddington, ME 04428	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Vicki Proulx 300 Green Point Rd Brewer, ME 04412		Richard E. Bryant 258 Clewleyville Road Eddington, ME 04428		Michael Wade 252 Clewleyville Road Eddington, ME 04428	

PIN 018915.00 Teresa A. Luce 25 Levenseller Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Chris-Anne Brown Ronald J. Chrzan 28 Graham Lane Eddington, ME 04428	PARCEL #:	PIN 018915.00 Brian Currier 7 Painting Lane Eddington, ME 04428	PARCEL #:
PIN 018915.00 Brian R. Currier 7 Painting Lane Eddington, ME 04428	PARCEL #:	PIN 018915.00 Joseph P. Beaulieu Sarah M. Beaulieu 55 Levenseller Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Beth M. Sutherland Scott A. Sutherland 71 Levenseller Road Eddington, ME 04428	PARCEL #:
PIN 018915.00 Benjamin J. Birch Jr. Bonnie L. Birch 83 Levensellar Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Troy T. Stubbs PO Box 36 Eddington, ME 04428-0036	PARCEL #:	PIN 018915.00 Troy T. Stubbs PO Box 36 Eddington, ME 04428-0036	PARCEL #:
PIN 018915.00 Leon F. Sutherburg Shelby W. Sutherburg 80 Levenseller Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Charles E. Mulldune Mary Mulldune 6 Cottage Lane Eddington, ME 04428	PARCEL #:	PIN 018915.00 Robert S. Connor 8470 Dogwood Drive Rockwell, NC 28138	PARCEL #:
PIN 018915.00 Frederick M. Storen Jr. Lynn K. Storen 20 Lakeman Lane Eddington, ME 04428	PARCEL #:	PIN 018915.00 Thomas M. French c/o Malcolm French 122 Abbot Drive Enfield, ME 04493	PARCEL #:	PIN 018915.00 Hilma H. Adams Trustee Hilma Adams Living Trust 263 Main Road Eddington, ME 04428	PARCEL #:
PIN 018915.00 Donald F. Boynton 533 Main Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Gerald Damboise Jr. 1221 Pushaw Road Glenburn, ME 04401	PARCEL #:	PIN 018915.00 Katahdin Council, Inc. Boy Scouts of America P.O. Box 1869 Bangor, ME 04402	PARCEL #:
PIN 018915.00 Erica Wolfe Terry Wolfe 561 Main Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Denis Santerre Stella Santerre 569 Main Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Dale Harmon Ramona Harmon 573 Main Road Eddington, ME 04428	PARCEL #:
PIN 018915.00 Dana Kearns Susan Kearns 587 Main Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Jerard M. Murray 16 Lunn Lane Eddington, ME 04428	PARCEL #:	PIN 018915.00 Allen S. Mertz 597 Main Road Eddington, ME 04428	PARCEL #:
PIN 018915.00 John T. Giron Theresa B. Giron 603 Main Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Holly Whitmore Richard Whitmore 6 Timber Lane Holden, ME 04429	PARCEL #:	PIN 018915.00 Jerard M. Murray 16 Lunn Lane Eddington, ME 04428	PARCEL #:
PIN 018915.00 Jeffrey S. Cunningham Shawn W. Clewley 731 Airline Road Clifton, ME 04428	PARCEL #:	PIN 018915.00 Ray S. Achorn 614 Main Road Eddington, ME 04428	PARCEL #:	PIN 018915.00 Timothy J. Lander William J. Lander Jr. 602 Main Road Eddington, ME 04428	PARCEL #:

PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Charles Baker and Carolyn Baker(Heirs Of)		Town of Eddington		Daniel P. Soucie	
706 Main Road		906 Main Road		741 Main Road	
Eddington, ME 04428		Eddington, ME 04428		Eddington, ME 04428	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Charles McKay Jr.		Town of Eddington		James H. White	
Susan McKay		906 Main Road		Joan M. White	
34 Lois Lane		Eddington, ME 04428		P.O. Box 92	
Eddington, ME 04428				Eddington, ME 04428	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Commonsense Housing Inc.		Phillip Robertson		Suzanne Flood	
15 Riverside Drive		691 Main Road		709 Main Road	
Eddington, ME 04428		Eddington, ME 04428		Eddington, ME 04428	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Charles L. Baker		Otis Godley		Larry Lancaster	
706 Main Road		672 Main Road		650 Main Road	
Eddington, ME 04428		Eddington, ME 04428		Eddington, ME 04428	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Linda L. Bauer		Robert E. Sherwood		Judith R. Sullivan	
638 Main Rd		634 Main Road		214 Forest Avenue	
Eddington, ME 04428-3213		Eddington, ME 04428		Orono, ME 04473	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
Darlene Young		Charles C. Grover Jr.		Jamie L. Ferris	
James Young		Marlene Grover		Jeremy Ferris	
596 Main Road		566 Main Road		592 Main Road	
Eddington, ME 04428		Eddington, ME 04428		Eddington, ME 04428	
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:
U.S. Bank National Assoc.		Harry M. Hayes		Lisa A. Simko	
4801 Frederica Street		Michelle L. Hayes		554 Main Road	
Owensboro, KY 42301		576 Main Road		Eddington, ME 04428	
		Eddington, ME 04428			
PIN 018915.00	PARCEL #:	PIN 018915.00	PARCEL #:		
Northern New England Telephone Operations, LLC		R D Realty Trust			
770 Elm Street		60 Edro Isle			
2nd FL		Westminster, MA 01473-1628			

Legal Notices
LEGAL NOTICE: NOTICE OF HEARING

STATE OF MAINE DISTRICT COURT
LOCATION: BANGOR
Docket No.: BAN-PC-19-090

IN RE: Christopher and Jacob R.

NOTICE IS HEREBY GIVEN TO: Jessica A. Harris, whereabouts unknown:

Pursuant to 22 M.R.S. §4001 et seq., the Maine Department of Health & Human Services (hereafter, "DHHS") has petitioned the Court for a Child Protection Order and/or Termination of Parental Rights Order, concerning the children: Christopher R. d/o/b: 05/06/2004 born at Bangor, ME, and Jacob R. d/o/b: 10/07/2006 born at Bangor, ME. The mother is Jessica A. Harris and the father is/or may be Christopher A. Reynolds.

DHHS has met the requirements of M.R. Civ. P. Rule 4(g)(1)(A)-(C). Hearing, on the pending Petition(s) will be held at Maine District Court, 78 Exchange Street, Bangor, Maine 04401 on 8/17/20 at 1:00 p.m. Failure to appear at this hearing may result in the issuance of a child protection order, the termination of your parental rights, and/or any other order permissible under 22 M.R.S. §4001 et seq.

You may be entitled to legal counsel in these proceedings - Contact the attorney at the above address or 207-561-2300. To obtain a copy of the Petition(s), contact the court or DHHS at 207-561-4100, 19 Maine Avenue, Bangor, ME 04401. DHHS is represented by the Maine Office of the Attorney General, 84 Harlow Street, Bangor, ME 04401.

Dated: 6/23/2020

GA
Judge, Maine District Court


John A. Clark
A True Attested Copy
Clerk, Maine District Court
TRUE COPY

Attest: *John A. Clark*
Clerk of Courts

Published: July 3, 10, 17, 2020.

Legal Notices
NOTICE OF SALE

Legal Notices


**Notice of Formal
ONLINE PUBLIC MEETING
Route 9 Connector**

Due to COVID 19 precautions, the public hearing will be conducted online.

To Discuss the Proposed Route 9 Connector project (18915.00) in the towns of Brewer, Holden, and Eddington

Access to the public meeting is available through the project website at www.mainedot.gov/vpi With opportunity for public comment.

MaineDOT will have an online presentation available that will act as our Formal/Final Public Meeting. This presentation will be to give information of the proposed construction of a new roadway from I395 in Brewer to Route 9 in Eddington.

The Department is conducting the public meeting for the purpose of informing the public and inviting public comments and is particularly interested in learning local views, discovering local resources, and identifying local concerns and issues. Anyone with an interest is invited to view the presentation at the above website.

MaineDOT invites and encourages you to review the website and share your thoughts on this project from the **July 20, 2020** when the presentation will be available online until **August 7, 2020**. Accommodations will be made for persons with disabilities.

Questions, comments, or inquiries can be made directly through the project website or directed to the attention of Rhobe Moulton, Senior Project Manager, Maine Department of Transportation, Highway Program, 24 Child Street, 16 State House Station, Augusta, Maine 04333-0016. Telephone: (207) 624-3391 Email: Rhobe.Moulton@maine.gov.

**Work Identification Numbers 18915.00
Federal Aid Project Number STP-1891(500)**

July 17, 2020

Legal Notices

OLDER AMERICANS ACT STATE PLAN ON AGING PUBLIC HEARINGS

Maine DHHS will hold virtual public hearings on the proposed four-year State Plan on Aging for Older Americans Act (OAA) funded programs and services that help older Mainers, those with disabilities, and their care partners remain healthy and safe in their communities.

Agenda items include:

- Overview of OAA services in Maine
- Summary of State Plan on Aging
- Public comments

Legal Notices

**NOTICE OF SALE BY SEALED BID -
1995 E-350 RESCUE VEHICLE**

The Board of Selectmen, Town of Kenduskeag, is accepting bids for a 1995 Ford E-350 Road Rescue. Each bid must be in writing, in a sealed envelope marked "Ford Rescue" on the outside. All bids must be received at the Town Office no later than 5:00 pm on August 4, 2020. The minimum bid is \$5,000. Late bids will not be considered.

Mobile Home Rentals 220

ATTENTION!

NEWPORT Elm St. Mobile Home Park, 2BR, newly renovated. Sm pets welcome under 40lbs. Non-refund \$200 pet dep. \$850/mo., \$850 dep. 745-0028

Mobile Home Lot Rentals 221

**SEBASTIAN FALLS
MOBILE HOME PARK**
*several lots available
Quiet, convenient location near downtown Bangor.
Rental \$350 per month.
NO ENTRANCE FEE
Call Keystone Management
207-866-2658

Rooms 230

BANGOR RIVERVIEW MOTEL
\$229.95/wk, on bus rte, 1 mi. from EMMC/malls. 947-0125

CALL NOW!

BANGOR Single occupancy, fridge, Wi-Fi, no drugs or drinking. \$485+/mo. plus deposit. Leave msg 990-2378

BREWER Auditorium, NEW ROOMS 1 mi. Downtwn Bangor., \$280+/wk. WiFi, Village Green Motel 560-7090



Comment	Date	Status	Stakeholder	Stakeholder Support	Topic	Message	Response
5476	7/18/2020	Closed	Sarah Beaulieu	Less In Favor	Property Owner/Right of Way	09272016 you sent requests for home/landowners to do your research. In said letter you asked for permission to be on our property, we said no, call so we can be available. NEVER heard from your PM again. We would like to know what exactly you're doing with our 2 acres slated to be involved. COMMUNICATION would be nice	Those requests from 2016 were for exploratory drilling. Now that we are close to determining our final impacts, we will be beginning our right of way process. You will be contacted by our appraisers. Timeframe most likely next spring.
5478	7/19/2020	New	Stephen Condon	In Favor		please email me future notices,	
5479	7/19/2020	New	Stephen Condon	In Favor		please email me future notices,	
5480	7/19/2020	New	Stephen Condon	In Favor		please email me future notices,	
5481	7/20/2020	Closed	VICKI PROULX	Neutral	Property Owner/Right of Way	HOW MANY MORE YEARS WILL PROPERTY OWNERS HAVE TO WAIT FOR YOU TO TAKE WHAT YOUR TAKING??? ANY HOW MUCH OF THE PROPERTY ARE YOU TAKE?	We are starting the right of way process. Affected property owners will be contact by our appraisers as soon as the right of way impacts have been determined. Likely timeline spring of 2021.
5482	7/20/2020	Closed	Hope Eye	Leaning In Favor	Environmental	Are you planning on implementing roadkill mitigation infrastructure? We already have a big problem with dead wildlife along route 1A. Wildlife bridges would be highly effective and installing one would shoe us to be a pioneer in conservation as only a few other states have built these. Is there a chance for that? https://api.nationalgeographic.com/distribution/public/amp/animals/2019/04/wildlife-overpasses-underpasses-make-animals-people-safer	Thank you for your comment. We are putting in 2 wildlife crossing structures on this project as well as making our stream crossing structures accessible for wildlife crossing.
5483	7/20/2020	Closed	Kevin O'Connell	Not In Favor	Other	This started at \$61 million and now is \$104 million. How can this be justified especially in the fiscal climate we are in now?	Economic growth is an important consideration in these times. The new connector will provide a regional solution to congestion, connectivity, mobility, and safety problems. The greater Bangor/Brewer area is the economic and employment center for the north central region of the state. It's also a hub for the movement of goods because of its proximity to the interstate highway system and Canadian markets. The Department has been successful in securing additional Federal funds to help offset the increased cost.
5483	7/20/2020	Closed	Kevin O'Connell	Not In Favor	Other	This started at \$61 million and now is \$104 million. How can this be justified especially in the fiscal climate we are in now?	I am confused in that this route only met 3 of the 9 DOT criteria. The Ring Route was the one that met the original guidelines set by the DOT. Why the change?
5483	7/20/2020	Closed	Kevin O'Connell	Not In Favor	Other	This started at \$61 million and now is \$104 million. How can this be justified especially in the fiscal climate we are in now?	Please see the Final Environmental Impact Statement which can be found at the following link https://www.maine.gov/mdot/projects/l395rt9connector/materials/ .
5484	7/20/2020	Closed	Adam Eldridge	Not In Favor	Environmental, Noise , Property Owner/Right of Way	Has the comparison between a bridge from Hogan Rd to Route 9 been reviewed. This seems like the least amount of impact on environment and people.	First, it's not within the study area. It doesn't meet purpose and need. The purposes of the I-395/Route 9 Transportation Study are to (1) identify a section of the NHS in Maine from I-395 in Brewer to Route 9 in Eddington, consistent with the current American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets; (2) improve regional system linkage; (3) improve safety on Routes 1A and 46; and (4) improve the current and future flow of traffic and the shipment of goods to the Interstate system. The logical termini of the project was identified and defined as (1) I-395 near Route 1A and (2) the portion of Route 9 in the study area. Putting the link to the interstate way up off from Hogan Road would not capture those vehicles coming to and going from the South.
5484	7/20/2020	Closed	Adam Eldridge	Not In Favor	Environmental, Noise , Property Owner/Right of Way	Has the comparison between a bridge from Hogan Rd to Route 9 been reviewed. This seems like the least amount of impact on environment and people.	Thank you for your response. I understand the study area is from the end of 395 to Route 9, but with current trucks going down Route 9 instead of 46 and getting onto 395 at South Main St, I figured a little glance at doing a bridge and connecting to 95 would be easier. Trucks are going to take the path of least resistance, if a bridge was built connecting Hogan Rd and Route 9 this would be a lot easier path than the current 395 to 1A to 46 or 395 to Route 9 and through Brewer. The impact on people and environment will be less with a bridge then the current plan.
5485	7/20/2020	New	steven Carr	In Favor	Other	Thank you all for your hard work on making this project come to fruition. Getting the large trucks off from Route 46 will make the area much safer for the kids at Holbrook middleschool.	

Comment	Date	Status	Stakeholder	Stakeholder Support	Topic	Message	Response
5486	7/21/2020	Closed	COURTNEY EVANS	Not In Favor	Environmental, Noise , Property Owner/Right of Way	I just purchased a home on Brian Dr with the understanding that the proposed connector would be on the other side of Sylvan at minimum. Now it's going to be practically around the corner. Not looking forward to 3 years of construction noise, extensive detours and disturbance of the natural beauty of this area. I can only hope that the eventual traffic noise is minimal.	
5496	7/21/2020	Closed	Peter Lyford	Neutral		<p>Good morning! Just thought of another question....once the connector is finished and open, can Rt. 46 be posted to 33,000 GVW? Peter Lyford Sent from my iPad </p>	Good afternoon No it cannot because no state road can be posted..... see Ch 104" Rule here: https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.maine.gov%2Fsos%2Fcec%2Frules%2F17%2Fchaps17.htm&data=02%7C01%7CLaurie.Rowe%40maine.gov%7C1502960530574e5d25d208d82e593877%7C413fa8ab207d4b629bcdea1a8f2f864e%7C0%7C0%7C637310308017226132&sdata=EQGHe4XMdJn8GiGh6bFNP4T4kPacj6H2SWI7ffHlOI%3D&reserved=0 Thanks Rhobe
5492	7/22/2020	Closed	Carol Smith	Not In Favor	Environmental, Noise , Property Owner/Right of Way	Since this project is a 'done deal' I am unsure why we are being asked our opinions now, nearly 20 years after this began. Feels kind of like all the time we wasted at the PAC meetings years ago. No one cared what we had to say then and I'm sure no one cares what we have to say now. Most people think we are NIMBYs and sure, this is true. Would you want it behind your home? So lets look at this another way. There is no more mill in Bucksport so this route is currently unnecessary. This road will not benefit Maine in any way and this particular route never met the full criteria of this project! The project has disrupted our emotional lives for YEARS and soon will disrupt our lives with construction and noise. Our property values have already gone down. So, with all of that in mind, we would wish to see something helpful - for us. A sound barrier, a fence, something so we don't have to look at it and hear it on a daily basis. We moved to this neighborhood for a reason, it's close to town, it's a lovely neighborhood and very, very quiet. I am also not sure what will happen to all the wildlife. We have deer, bear, moose, lynx, skunks raccoons to mention a few. We anticipate a lot of dead animals on this road not to mention motorists speeding and causing a fair share of accidents.	Thank you for your comments. There will be two specific wildlife crossings as well as a number of stream crossings that accommodate wildlife. Noise levels were addressed in the Final Environmental Impact Statement which can be found at the following link https://www.maine.gov/mdot/projects/i395rt9connector/materials/
5492	7/22/2020	Closed	Carol Smith	Not In Favor	Environmental, Noise , Property Owner/Right of Way	Since this project is a 'done deal' I am unsure why we are being asked our opinions now, nearly 20 years after this began. Feels kind of like all the time we wasted at the PAC meetings years ago. No one cared what we had to say then and I'm sure no one cares what we have to say now. Most people think we are NIMBYs and sure, this is true. Would you want it behind your home? So lets look at this another way. There is no more mill in Bucksport so this route is currently unnecessary. This road will not benefit Maine in any way and this particular route never met the full criteria of this project! The project has disrupted our emotional lives for YEARS and soon will disrupt our lives with construction and noise. Our property values have already gone down. So, with all of that in mind, we would wish to see something helpful - for us. A sound barrier, a fence, something so we don't have to look at it and hear it on a daily basis. We moved to this neighborhood for a reason, it's close to town, it's a lovely neighborhood and very, very quiet. I am also not sure what will happen to all the wildlife. We have deer, bear, moose, lynx, skunks raccoons to mention a few. We anticipate a lot of dead animals on this road not to mention motorists speeding and causing a fair share of accidents.	Thank you for your comments. There will be two specific wildlife crossings as well as a number of stream crossings that accommodate wildlife. Noise levels were addressed in the Final Environmental Impact Statement which can be found at the following link https://www.maine.gov/mdot/projects/i395rt9connector/materials/ . The new connector will provide a regional solution to congestion, connectivity, mobility, and safety problems. The greater Bangor/Brewer area is the economic and employment center for the north central region of the state. It's also a hub for the movement of goods because of its proximity to the interstate highway system and Canadian markets.
5493	7/23/2020	Closed	Christopher Larson	Less In Favor	Environmental, Other, Property Owner/Right of Way	We are concerned about our well water and blasting during this process.	Good Morning. We will be sending out letters requesting to sample your well before the project begins likely next spring/summer and you will be sent a copy of the test report. If something happens to your well related to the construction of this project, we have to investigate the problem and come up with a solution. Thanks.

Comment	Date	Status	Stakeholder	Stakeholder Support	Topic	Message	Response
5495	7/23/2020	Closed	Peter Lyford	Neutral		Good morning - I have a few questions on the connector: 1. The 395-1A bridge bid has been awarded. When will it start? 2. Not all land and buildings have been purchased. When will this be finished? 3. When will the connector project go out for bid? 4. How many bridges or overpasses will there be within the connector? Thank you for any information you can give me. Peter Lyford I have another question... the 2 wildlife crossings - would these be tunnels like was built on the Gorham bypass? Peter	Good morning Thank you for your feedback. I have embedded answers to your questions below. Thanks Rhobe 1. The 395-1A bridge bid has been awarded. When will it start? The contractor is still working on their schedule of work [for the 395-1A bridge. It's sounding like some utility work may begin mid-August with the bridge work getting underway mid to late September. These dates are preliminary at this point 2. Not all land and buildings have been purchased. When will this be finished? Right of way process will take up to fourteen months. For more specific right of way information, refer to the video on line at https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.maine.gov%2Fmdot%2Fpi%2F&data=02%7C01%7CLaurie.Rowe%40maine.gov%7C264dd778fa964f1d0f8b08d82e4eac4f%7C413fa8ab207d4b629bcdea1a8f2f864e%7C0%7C0%7C637310262734494703&sdata=XT7uWOGWNwvBEhRePUKRZte3LNZlmYdcWju8FmykqMg%3D&reserved=0 3. When will the connector project go out for bid? Currently scheduled to advertise the fall of 2021 4. How many bridges or overpasses will there be within the connector? There are many bridges and structures on this project. There are five roadway crossings, two snowmobile crossings, seven stream crossings, three wetland crossings and two wildlife crossings. The connector will go under Route 1A, under Eastern Avenue, over Lambert Road, under Clewleyville Road, and under Levenseller Road. Thank you for any information you can give me.
5495	7/23/2020	Closed	Peter Lyford	Neutral		I have another question... the 2 wildlife crossings - would these be tunnels like was built on the Gorham bypass? Peter </rhobe.moulton@maine.gov></lyfordinc@msn.com> </p>	Good morning The wildlife crossings will be large box culverts. Thanks Rhobe
5497	7/24/2020	New	Jane Hinckley	Not In Favor	Noise , Other	This has been hanging over our heads for years. It has caused neighbors to sell, and I feel it will devalue my house. The noise of the construction, then the ensuing noise of the trucks is a big issue for me.	
5506	7/29/2020	Closed	David True	In Favor	Property Owner/Right of Way	Will you be using my lot adjacent to the Levenseller road intersection?	Hi David. Can you please provide us with more details about where your lot is located. Thanks.
5506	7/29/2020	Closed	David True	In Favor	Property Owner/Right of Way	Will you be using my lot adjacent to the Levenseller road intersection?	It's a lot that was cleared out in 2014 and is straight across from Lakeman lane.
5506	7/29/2020	Closed	David True	In Favor	Property Owner/Right of Way	Will you be using my lot adjacent to the Levenseller road intersection?	I have written on the screenshot below on my thought of where your property is, please confirm.
5506	7/29/2020	Closed	David True	In Favor	Property Owner/Right of Way	Will you be using my lot adjacent to the Levenseller road intersection?	That is not it, it is the property directly across From Lakeman lane to the other side of Levenseller. The registration number to the lot is Book/3545 page 134.
5506	7/29/2020	Closed	David True	In Favor	Property Owner/Right of Way	Will you be using my lot adjacent to the Levenseller road intersection?	I'm sorry David, I'm confused as to where your property is. Can you please mark it on the attached below aerial Screen shot and send it back. Thank you.

*Note that yellow-highlighted boxes are part of a response conversation between MaineDOT and the Stakeholder.

Note that the cells highlighted in yellow represent questions and follow up responses from the MaineDOT PM.

Comment	Date	Status	Stakeholder	Stakeholder Support	Topic	Message	Response
5508	8/3/2020	Closed	Lisa Sturgeon	Not In Favor	Environmental, Other, Property Owner/Right of Way	<p>I have been a Brewer resident, living close to this proposed project for over 20 years. For years the proposed route of 3EIK-2 was the working model, and then that switched unbeknownst to City officials and local residents. The "re-selected" 2B2 did not meet any of the original study needs, but did create safety concerns (as stated in PAC Meeting April 15, 2009). From this change, it appears that this project has been full steam ahead regardless of local government and business community consideration.</p> <p>Furthermore, the price tag being associated by this wetland/wildlife concentrated route is fiscally irresponsible when many other state roads, highways, and bridges are in need of major repair.</p> <p>With the current economic situation inflicted due to COVID-19, less tourism and travel to our state not only does this project negatively impact locals by missing the mark of the original (now nearly 20 years) need, but cost of this negatively will impact the entire state and future generations that have to pay it.</p> <p>Last year when an independent study was requested to see if the need of the project was still valid, residents were basically told \$2million was already spent and the project needs to proceed regardless. This project has raised more questions than has given answers both in validity of the original study and with the communities directly impacted by this route.</p> <p>I would like to know (and see) the data that caused the route to shift from 3-EIK-2 to 2B2, and know why aside from updates to the Wilson Street bridge this project generates an ROI that matches its cost?</p>	Your questions are addressed in the Final Environmental Impact Statement which can be found at the following link https://www.maine.gov/mdot/projects/i395rt9connector/materials/
5509	8/3/2020	New	Lloyd Stinson	In Favor	Freight, Other	GLAD TO SEE THE PROJECT IS BEING DONE. CAN'T WAIT TO USE IT. IT WILL MAKE RT.46 MUCH SAFER TO TRAVEL ALSO. GONNA BE NICE TO GET TO BREWER SO MUCH FASTER.	
5510	8/3/2020	New	David Hocking	In Favor	Property Owner/Right of Way	totally in favor of the project to make better and easier access to Bangor and Brewer	
5511	8/4/2020	New	Hilma Adams	In Favor	Property Owner/Right of Way	I look forward to a successful completion of this project	
5513	8/5/2020	Closed	Larry Adams	Not In Favor	Environmental, Noise , Other	I will email my comments directly to the project manager; 20 years cannot be contained within 4000 characters.	
5512	8/5/2020	New	Suzanne Flood	Less In Favor	Noise , Other, Property Owner/Right of Way	I am concerned about the increased amount of traffic, how much land you're taking people on route nine in Eddington, how long the whole construction project will take and if there will be A traffic light to exit or enter rt 9	
5524	8/6/2020	New	Judith Sullivan	Not In Favor	Other	<p>i continue to be stunned that this project is still happening. Plans are being developed based on traffic data gathered over twenty years ago that do not reflect current traffic conditions. Commercial and non commercial traffic from Canada has decreased dramatically in the last several years. I religiously attended meeting regarding this proposal for over 10 years. At the conclusion of those meetings, the proposed route was a diagonal 4 lane road from RT 1 to RT 46/RT 9 intersection. That route would have required only ONE property to be acquired, no bridges or overpasses and alleviated traffic on RT 9, 46 and 1. The scope of work was changed to eliminate safety concerns on RT 9 in order for this new configuration to work. The whole process smells rotten. More importantly the project is akin to Alaska's then Governor Pallin's rejection of [quote]a bridge to no where[quote]. It is based on outdated data, disrupts the lives of 100s of people, cost more than \$20 million dollars than originally estimated and will be obsolete before it is completed. Al lof this to cut travel time from RT 9 to RT 1 by 10 minutes! Other than being a traffic engineer's design dream it has no positive redemption.</p>	
5525	8/6/2020	New	Judith Sullivan	Not In Favor	Other	I wish your maps showed homes that are in the path of destruction. 50+ homes negatively impacted is serious.	
5526	8/6/2020	New	Judith Sullivan	Not In Favor	Other	Why do you require a 200 foot right of way? The 2 lane road is only 40 ft wide.	

Comment	Date	Status	Stakeholder	Stakeholder Support	Topic	Message	Response
5535	8/7/2020	Closed	Victoria Lee	Not In Favor	Property Owner/Right of Way	When will DOT be contacting me regarding my land? I want to know if they are purchasing the whole lot or will I have access to the other side. The only contact has been if they can have access to do what they have to do - not answer any questions. In the meantime I'm left with a tax bill I need to pay by Sept and having no idea what I can do with my land up back. This is a total waste of money - as we all know this was started 20+ years ago when the mills were going strong. The mills are now closed and therefor this is totally not needed! Now we are doing it mainly for Canadian truckers and losing our beautiful forest, privacy and way of life.	As indicated in the presentation, we are progressing with deed and title research and plotting those on the plans. You should be hearing something from our appraiser next spring.
5531	8/7/2020	New	Kevin Faulkner	Not In Favor	Other	What a waste, bigger traffic problems not far away that are ignored	
5532	8/7/2020	New	John & Roberta Gray	Neutral	Noise	information on start date	
5537	8/7/2020	New	Julie and Jim Hayes	In Favor	Property Owner/Right of Way	We are in favor of this project as we live on Rte. 46, which is not suited to heavy traffic, especially big trucks. It is difficult to grasp exactly how the addition of ramps on 1A will work.	

Exhibit A – Compensatory Mitigation Plan

Compensation Plan

Attachment 1 – Mitigation Site Search Matrix

Attachment 2 - Wrentham Woods Site Condition Report

Route 9 Connector Compensation Plan

Executive Summary

MaineDOT and the Federal Highway Administration have proposed a new highway in the towns of Brewer, Holden, and Eddington, Maine to improve the transportation linkages and safety in the Route 9 and Route 1A corridor. MaineDOT and FHWA evaluated over 70 alternatives as part of the National Environmental Policy Act (NEPA) process, which involved an Environmental Impact Statement (EIS). The U.S. Army Corps of Engineers (Corps) was consulted during the EIS process and agreed that the Alternative 2B-2 was the least environmentally damaging practicable alternative (LEPDA). This alternative was selected and proceeded to be designed by MaineDOT. Alternative 2B-2 was estimated to involve 26 acres of wetland impact, final design includes 23.8 acres of wetland impact. Compensatory mitigation is required for the project, and in-coordination with the state and federal regulatory agencies a payment to the in-lieu fee program was not preferred. MaineDOT performed a site search for properties suitable for mitigation and coordinated the process with state and federal agencies. The Wrentham Woods property was identified as the most suitable site as mitigation for the project and would involve preservation of a 1,628 acre parcel that contains 333 acres of wetland. The property contains a diverse assemblage of habitats and the functions and values present represent the same functions and values lost as a result of the project. The property is at risk of development, it has been listed for sale throughout the last 10 years. There is also a preliminary agreement for the future management of the property with the Maine Department of Inland Fisheries and Wildlife.

General Information

The proposed project is a 6.1-mile, 2-lane highway connecting I-395 in Brewer to Route 9 in Eddington, Maine. The purpose of the project is to provide for the safe and efficient flow of east-west traffic and shipment of goods from Brewer (I-395 to Eddington (Route 9), Maine, for current and projected traffic volumes. The project evaluated approximately 70 alternatives that included no-build, upgrade, and new build options within the defined study area. Ultimately 4 alternatives were evaluated in the Final Environmental Impact Statement (FEIS). The No-Build Alternative did not meet the purpose and need of the project and was not selected. The build alternatives all involved similar impacts. Alternative 2B-2 was selected as the Least Environmentally Damaging Practicable Alternative (LEPDA) in the FHWA Record of Decision, which was signed on June 23, 2016. The project began final design phase in 2018 and included alignment shifts and adjustments which has avoided and minimized wetland impacts.

Impact Area(s)

In the region of Brewer, Holden, and Eddington, wetlands are common, and it is not practicable to avoid wetland impacts of road construction on a new alignment. Portions of 43 individual wetlands, as delineated by MaineDOT are directly impacted by the proposed alignment. The impact area within each wetland ranges from 36 square feet to 2 acres. A total of 23.8 acres of wetland will be impacted by the proposed alignment. These wetlands are all Corps jurisdictional, and most are regulated by the Maine Department of Environmental Protection (MDEP) as Wetlands of Special Significance (WOSS).

The project will impact approximately 11.4 acres of freshwater forested wetlands (PFO); 7.9 acres of freshwater scrub shrub (PSS) wetland, and 4 acres of emergent (PEM) wetlands. Table 1 provides a more detailed breakdown of the wetland types and impact amounts along the project corridor.

Based on the impacts proposed for the project (23.3 acres), in order to compensate for the wetland losses, the Corps requires a 20:1 ratio for preservation and MDEP requires an 8:1 ratio for preservation. This totals 466 acres of wetland preservation for the Corps and 187 acres for MDEP.

Table 1. Wetland Impact Table (also shown in Attachment 1 of NRPA permit application)

Wetland ID	Wetland Type ¹	Wetland of Special Significance ²	Permanent Impact (SF)	Temporary Impact (SF)	Impact Sheet Number
WET01	PEM	-	673	144	1
WET02	PEM	-	1,864	662	2
WET03	PEM	-	175	643	3
WET04	PEM, PSS	R	43,558	5,760	4, 5
STR01-ATS	Felts Brook	-	13,584	683	4, 5
WET05	PSS	-	5,274	668	5
WET06	PEM	R	94,436	23,023	4, 5, 6
WET07	PSS	-	13,333	364	7
WET08	PSS	R	22,210	4,280	8
STR02-ATS	Trib Felts Brook	-	2,210	314	8
WET09	PSS	R	35,219	13,986	8, 9
WET10	PSS	R	23,963	11,103	9
STR03-ATS	Trib Felts Brook	-	2,753	145	9
WET11	PFO	-	805	2,328	10
WET12	PEM	-	1,017	1,287	10
WET13	PSS	-	76,003	26,195	11, 12
WET14	PEM	-	7,393	7,987	13
WET15	PSS	-	2,105	2,111	14
WET16	PSS	-	-	515	15
WET17	PEM	-	631	533	15
WET18	PFO	-	202	670	16
WET19	PFO	-	14,915	18,805	17
WET20	PFO	-	78,375	93,633	18, 19, 20
STR04	Trib Eaton Brook	-	1,168	962	21
WET21	PSS	R	21,404	11,086	22
STR05-ATS	Eaton Brook	-	612	931	22
WET22	PEM	R	12,277	11,411	22
WET23	PFO	-	16,601	26,249	23
WET24	PFO	-	44,693	13,901	24
WET25	PSS	-	32,528	11,994	25
WET26	PFO	-	73,531	30,941	26, 27
WET27	PFO	-	-	1,030	27
WET28	PEM	-	22,173	3,663	28

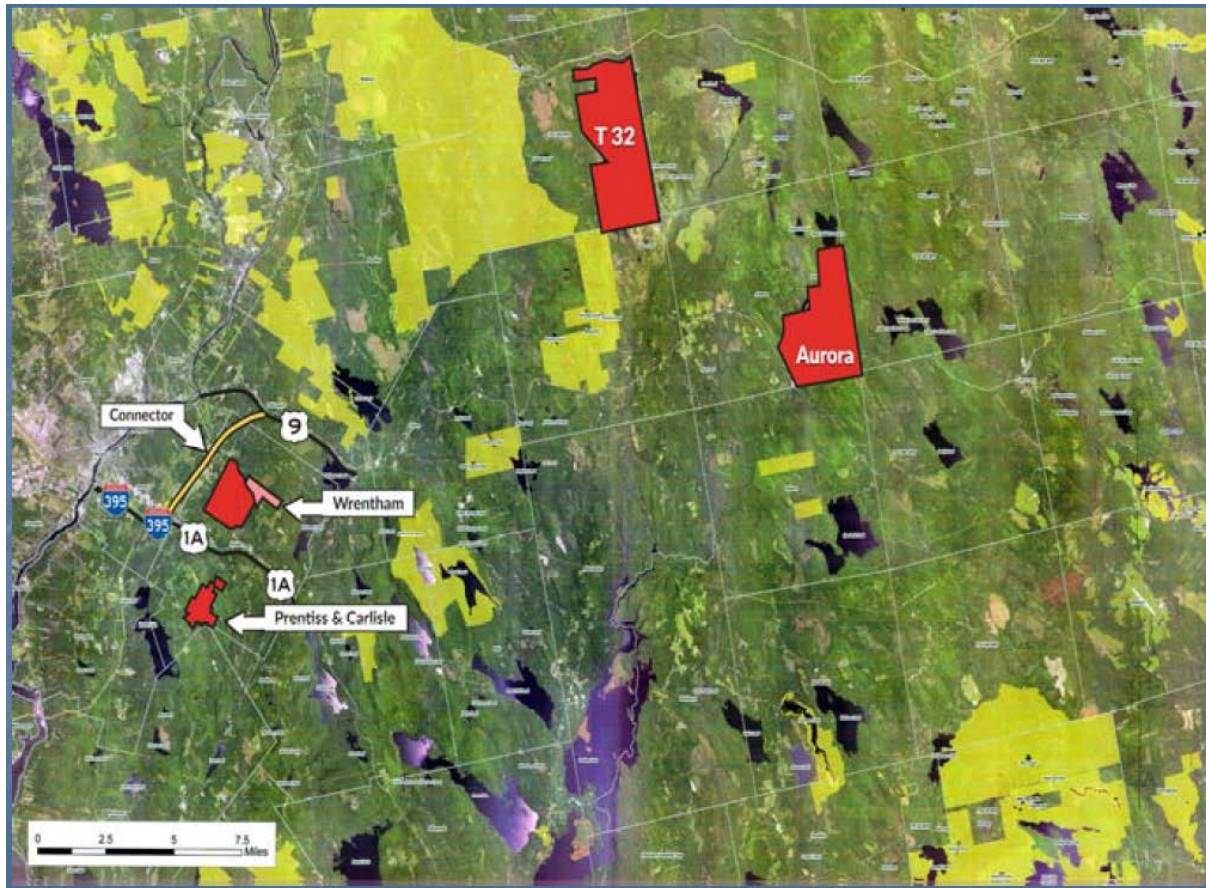
Wetland ID	Wetland Type ¹	Wetland of Special Significance ²	Permanent Impact (SF)	Temporary Impact (SF)	Impact Sheet Number
WET29	PFO	-	26,416	27,448	29, 30
WET30	PFO	-	47,490	56,508	30, 31
WET31	PFO + PSS	-	29,502	8,753	32
WET32	PFO	-	14,675	16,027	33
WET33	PFO	-	63,672	35,135	34, 35
WET34	PFO	-	-	568	35
WET35	PEM	R, S (IWWH)	15,814	6,460	36
STR06	Trib Eaton Brook	-	1,776	237	36
WET36	PEM	R, S (IWWH)	41,431	14,610	36
WET37	PSS + PEM	E, S (IWWH)	25,284	19,242	37
WET38	PFO	R, S (IWWH)	37,674	21,245	38
STR07	Trib Eaton Brook	-	1,082	472	38
WET39	PFO	-	46,250	40,099	39, 40
WET40	PEM	-	19,375	19,694	41
WET41	PFO	-	3,203	3,895	42
WET42	PFO	-	36	287	42
WET43	PFO	S (SVP)	136	4,123	43

Mitigation Site Search

In 2018 MaineDOT initiated a mitigation site search and contacted various land trusts, forestry, and conservation organizations for information on parcels or tracts of land they were interested in purchasing. Based on commitments in the FEIS and Agency feedback during the EIS process the priorities for the compensation is a multifaceted approach that is not exclusively in lieu fee, with a package that includes significant preservation for vernal pools and wildlife habitat, aquatic organism passage, and addressing any shortfall with a payment to the in lieu fee program¹. Table 2 provided in Attachment 1 is a matrix summary of the mitigation areas considered as compensation for the project impacts. The 4 areas identified as mitigation site options were presented to a team of agency stakeholders in October 2018 and are in Holden, Aurora, and Township 32.

¹ MaineDOT calculated the In Lieu Fee based on the wetland impact, special habitats affected by the project, and the 2020-2021 Resource Compensation Rates. Based on 23.3 acres of permanent wetland impact and wetlands of special significance the in lieu fee to compensate for those impacts in Penobscot County is \$4,939,209.00

Figure 1. Location of Mitigation Site Options Identified by MaineDOT.



Aurora – Whale’s Back

A representative from The Frenchman Bay Conservancy presented this compensation alternative to the interagency group, and for privacy concerns, the information about the site or the agency is not publicly available. This option would involve providing a payment to the agency towards purchasing a large tract of land as shown in Figure 1. The land management program would involve ongoing timber harvest and forest management, existing camp easements, and would require specific areas be written into a deed document to ensure that sufficient wetland and upland areas are set aside for preservation. The property is over 4,700 acres and has a diverse assemblage of wetland types according to the NWI with nearly 1,000 acres of NWI wetland. Accordingly the functions and values present, or presumed to be present include groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment and toxicant retention, wildlife habitat, nutrient removal/retention/transformation, education and scientific value, unique/heritage site, and visual quality/aesthetics This property is located within the watershed of the Union River. The property is at risk of recreational development, timber harvest, and industrial development (i.e., gravel mining or renewable energy development). While the land would be managed by another group, the complicated nature of the land management with multiple groups, the requirement for ongoing timber management, and the location of the property in a different watershed were the reasons this option was not preferred by MaineDOT and FHWA, and interagency partners agreed this property was not the ideal mitigation site for the Route 9 Connector Project.

T32 – Sunkhaze Meadows

A representative from the Northeast Forestry Conservancy presented this compensation alternative to the interagency group, and for privacy concerns, the information about the site or the agency is not publicly available. This option would involve providing a payment to the agency towards purchasing a large tract of land as shown in Figure 1. The land management program would involve ongoing timber harvest and forest management, existing camp easements, and would require specific areas be written into a deed document to ensure that sufficient wetland and upland areas are set aside for preservation. The property is over 5,000 acres and has a diverse assemblage of wetland types according to the NWI with nearly 600 acres of NWI wetland. Accordingly the functions and values present, or presumed to be present include groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment and toxicant retention, wildlife habitat, nutrient removal/retention/transformation, education and scientific value, unique/heritage site, and visual quality/aesthetics. This property is located within the watershed of the Penobscot River. The property is a National Priority Area due to its connection to the Sunkhaze National Wildlife Refuge system, it contains mapped brook trout habitat, it is priority habitat of endangered, threatened, and special concern species, and it includes a North American Waterfowl Management Plan. The property is at risk of recreational development, timber harvest, and industrial development (i.e., gravel mining or renewable energy development). While the property would be managed by another group, the complicated nature of the land management with multiple groups, the requirement for ongoing timber management, and the location of the property in a different watershed were the reasons this option was not preferred by MaineDOT and FHWA, and interagency partners agreed this property was not the ideal mitigation site for the Route 9 Connector Project.

Holden – Prentiss & Carlisle

The Prentiss & Carlisle property is located south of Route 1A as shown on Figure 1. This option would involve purchasing lots owned by the timber management company and preserving the land. The property is over 950 acres and has a limited assemblage of wetlands, primarily associated with a stream drainage in the southwest portion of the property (Copeland Brook). The parcel contains the beginning of Eaton Brook and according to the NWI there are 69 acres of wetland on the property. Given the USGS Streams mapped on the property and the low lying and flat topographic areas it is likely that additional wetlands not mapped by the NWI are included on the parcel. The parcel was included in one of the alignments evaluated as part of the NEPA process, and MaineDOT identified 14 vernal pools during that survey effort. There is also one area of significant wildlife habitat on the property, an inland wading bird and waterfowl area that occupies 28 acres of wetland and upland on the parcel. The parcel is near the project footprint, and contains functions and values that are impacted by the project including: wildlife habitat, floodflow attenuation, sediment and toxicant retention, and production export. The parcel would require agency hand off for management as a conservation area. There is a parcel in the center of the parcel that was not included in the purchase option. The property is at risk of residential and commercial development and timber harvest and management. The cost to purchase this property is comparable to other sites considered, however in order to compensate for the project impacts a significant in lieu fee payment would be required. This option was not preferred by MaineDOT and FHWA, and interagency partners agreed this property was not the ideal mitigation site for the Route 9 Connector Project.

Holden – Wrentham Woods

The Wrentham Woods property is located north of Route 1A and approximately 3,900 feet east of the proposed Route 9 Connector project as shown on Figure 1. This option would involve purchasing lots owned by a private landowner and preserving the land. The property is over 1,600 acres and has a diverse assemblage of wetlands, primarily associated with stream drainages and low-lying areas throughout the property. MaineDOT estimates that approximately 333 acres of wetland exists on the property. Wrentham Woods includes significant wildlife habitat as inland wading bird and waterfowl habitat, deer wintering area, among other habitats tracked by Maine Department of Inland Fisheries and Wildlife. The parcel was included in one of the alignments evaluated as part of the NEPA process, and MaineDOT identified 23 vernal pools during that survey effort.

The property is large and includes a network of roads which are used by the landowner for hunting access. The property was listed for sale at various times in the last 10 years and the land is at risk of residential and commercial development and continued timber harvest and management. The parcels make up one of the largest tracts of undeveloped land in the greater Bangor area, it is located near the project footprint, and has potential for hand-off to another agency for long term management in conservation. This option was preferred by MaineDOT and FHWA, and interagency partners agreed this property was the ideal mitigation site for the Route 9 Connector Project. To support this preference, MaineDOT completed additional surveys of the property during the spring and summer of 2020, and a report of the current site conditions of the parcel is provided as Attachment 2 to this compensation plan. MaineDOT and MDIFW land management staff have been developing a plan for IF&W to take ownership and management responsibility of the parcel. Wrentham Woods represents the best assemblage of natural resources, and agency partner interest in the habitats of the parcels identified. The remainder of this conservation plan will discuss activities specifically as they relate to the Wrentham Woods property.

Proposed Mitigation Plan

MaineDOT coordinated with state and federal agencies during multiple interagency meetings in 2018, 2020, and 2021. The purpose of those meetings was to familiarize the agencies with the process of identifying mitigation sites, present the sites identified, and come to a preliminary agreement on the site best suited as compensatory mitigation for the Route 9 Connector project. Following the 2018 interagency meeting, the preliminary agreement identified Wrentham Woods as the best suited mitigation site.

As described above and shown in Attachment 1, Wrentham Woods contains the most wetlands and the least complicated management commitments. The property provides a 14:1 ratio of wetland preservation, which is less than the 20:1 ratio in the Corps Mitigation Guidance however because of the unique habitats it contains, proximity to the project, risk of development, interest of MDIFW in managing, presence of many streams, and the representation of the functions and values that will be lost by the project.

The property contains approximately 3 miles of stream channel, as measured along USGS-mapped streams, some are the headwaters of tributaries to Eaton Brook. Eaton Brook is a direct tributary to the Penobscot River, and is mapped as Critical Habitat for Atlantic salmon. Preserving this property will keep

it out of commercial or residential development and commercial timber harvest which will maintain water quality within this watershed.

Grading Plans

This Compensation Plan involves preservation, there are no plans to grade or disturb the soil to create new or enhance existing wetlands. The Wrentham Woods parcels contain large wetland complexes that are relatively undisturbed and in various phases of natural succession of habitat types. Attachment 2 describes the existing conditions on the property.

Erosion Controls

The Compensation Plan involves preservation, there were no sites of erosion or sedimentation controls identified on the Wrentham Woods site. Many of the roads within the property are grass covered and maintained by periodic mowing.

Invasive Species

MaineDOT visited the Wrentham Woods property in the spring and summer of 2020. During those surveys, biologists did not delineate the wetlands or streams and likewise did not map specific locations of invasive plants observed. Individual occurrences of honeysuckle (*Lonicera morrowii*) were sporadically observed along roads and in disturbed soil locations. Overall, the density of invasive plants observed is low given the size of the property. New excavation work or new plantings are not proposed as part of this Compensation Plan and there is no risk of introducing new populations of invasive species as a result of this Compensation Plan.

Off-Road Vehicle Use

The Wrentham Woods property contains 4 access points onto the property, all points are gated and locked. Any current use of off road vehicles on the property is limited to existing gravel or grass roads maintained for private use. There is an easement for a utility ROW that bisects a portion of the larger parcel to the northeast. The poles for this utility company appear to have been replaced within the last 3 years. The ROW showed no evidence of off-road all terrain vehicle use on the parcel. The ROW crosses other private property adjacent to the road crossings, so access to Wrentham Woods via the utility ROW is limited. During visits to the smaller parcel, it appeared that the roads were less well maintained by mowing and were not investigated fully.

In conversations with MDIFW, it was clear that the road network was beneficial for providing access to the interior areas of the property, and they anticipated that the goals for the property is to maintain for wild game species for hunting. It is expected that access into the property will be restricted, and parking areas may be established; like properties managed by MDIFW for similar purposes. That scope is not part of this Compensation Plan.

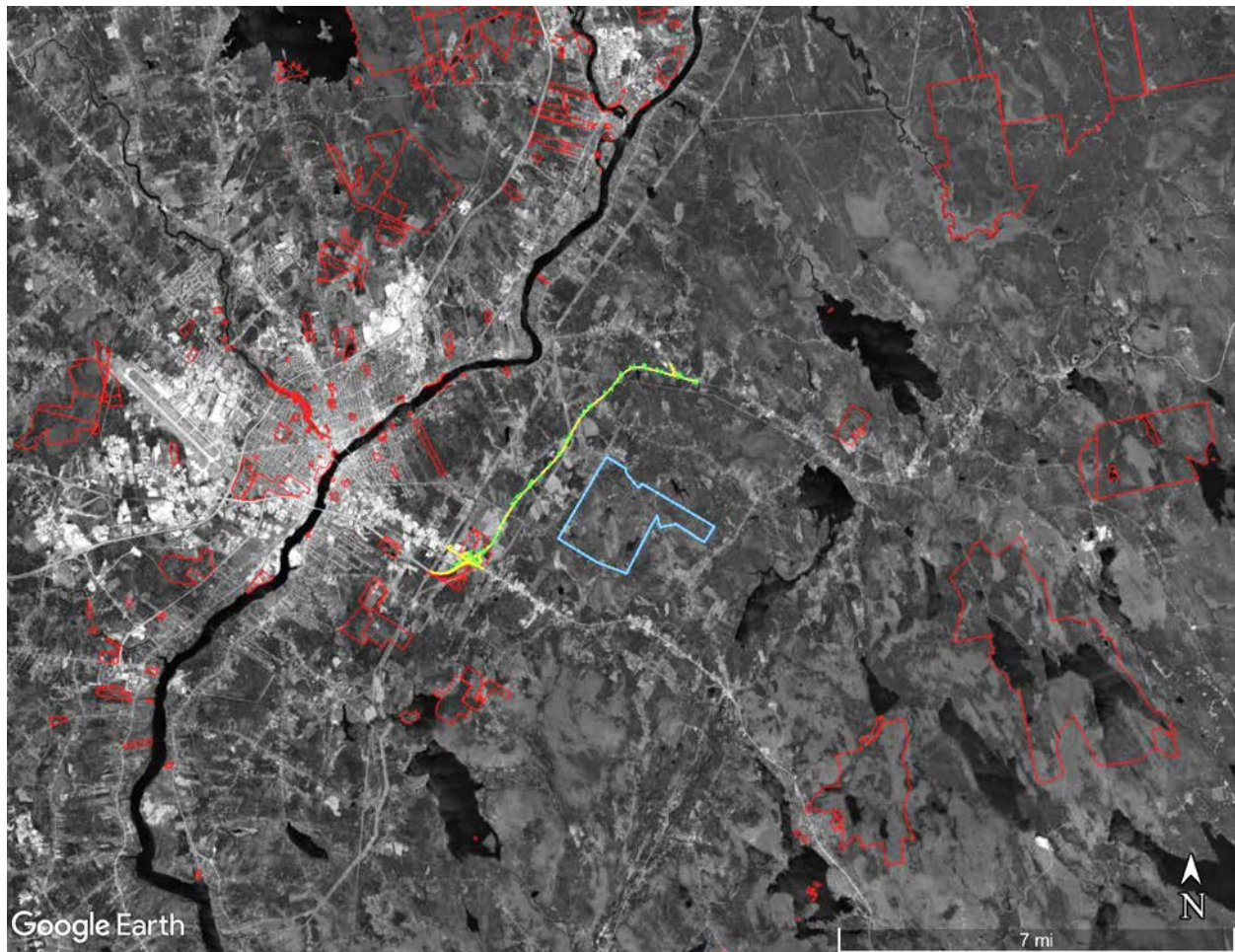
Preservation

The mitigation proposed in this Compensation Plan involves preservation of over 1,628 acres which includes an assemblage of wetland types and interconnected drainageways throughout the property. Attachment 2 provides a detailed look at the current site conditions and description of the wetlands with an assessment of their functions and values observed while on site in 2020.

The property is one of the largest tracts of undeveloped land in the greater Bangor area and would provide open space for public access. The site supports habitats which uncommon and state listed

special concern species are known to use, like the wood turtle (*Glyptemys insculpta*), great blue heron (*Ardea herodias*), bog elfin (*Callophrys lanoraieensis*), and northern harrier (*Circus hudsonius*). Figure 2 shows the location of the Route 9 Connector project (yellow), the Wrentham Woods property (blue), and conservation lands in the area (red). The protection of this tract of land would fill a gap in protected open space in the area east of Bangor and Brewer, and south of the Sunhaze Meadows National Wildlife Refuge system.

Figure 2. Landscape context of Wrentham Woods and other conservation lands in the region.



Monitoring

This compensation plan proposes preservation as the mitigation tool, and monitoring is not proposed as part of this plan. Further study of the site would be interesting from an ecological perspective; however it will not change the purpose of the mitigation: compensating for wetland losses as a result of the Route 9 Connector project.

Assessment

MaineDOT visited the site on several occasions during the spring and summer of 2020. The purpose of those surveys was to assess the current site conditions of the property, document wetland communities, and make a general assessment about the functions and values provided by the site. Further, the wetland estimates developed as part of the site search process included National Wetland Inventory and

MaineDOT wanted a more accurate estimate of the resources on site. More information about the site including a detailed description of the wetlands and other habitats is provided in Attachment 2 of this compensation plan.

Contingency

This compensation plan proposes preservation as the mitigation tool, and planning for contingencies is not proposed as part of this plan.

Long Term Stewardship

MaineDOT has a conceptual agreement in place with Maine Inland Fisheries and Wildlife to assume long-term management and control of the property. That transfer of control between State of Maine agencies is expected to occur after appropriate survey and title exercises have been completed, likely by Fall 2021. We anticipate entering into a formal inter-agency agreement after MaineDOT has purchased the property in May.

Financial Assurances

MaineDOT entered into an Option to Purchase with the landowner in June 2020, and recently elected to exercise that option. A formal purchase agreement is imminent, pending final review and execution by the parties, which should be complete by mid-March 2021. A closing is anticipated on or around May 3, 2021. MaineDOT has formally obligated the funds necessary to complete this purchase.

Attachment 1 – Mitigation Site Search Table

	Connector Corridor Impacts	Compensation Need Corps Preservation Ratio 20:1	Compensation Need MDEP Preservation Ratio 8:1	Wrentham Woods (estimate, based on available data) Evaluated based on preservation ratio	Prentiss & Carlisle (estimate, based on available data) Evaluated based on preservation ratio	T32 (estimate, based on available data) Evaluated based on preservation ratio	Aurora (estimate, based on available data) Evaluated based on preservation ratio
Total Acres of parcel or project	142	-	-	1628	959	5009	4768
Watershed	Penobscot	-	-	Penobscot	Penobscot	Penobscot	Union
RUS (miles, USGS Streams)				3.09	2.28		
PFO (acres)	11.4	228	91	165	6	300	365
PSS (acres)	7.9	158	63	79	40	245	417
PEM (acres)	4	80	32	81	22	10	169
PUB (acres)	-	-	-	9	1	35	45
Total Wetland (acres)	23.3	466	186	333	69	590	996
Inland Wading Bird and Waterfowl Habitat (wetland & upland, acres)	1.9	38	15	250	27.9	0	659.8
Wetland Clearing (temporary impacts, acres)	4.5	-	-				
Wetland Clearing (permanent conversion, acres)	9.2	-	-				
Significant Vernal Pools (count)	0	-	-	8	0	0	0
Non-significant Vernal Pools (count)	1	-	-	23	14	0	0
Func & Values*	WH, FFA, STR, NRT	-	-	FFA, FSH, STR, NRT, PE, WH, R, ESV, UH	WH, FFA, STR, PE	GWR, FF, FSH, STR, NR, WH, R, ESV, UH, VQ	GWR, FFA, FSH, STR, NR, WH, R, ESV, UH, VQ
Threat	-	-	-	Residential and Commercial Development; Timber Harvest	Residential and Commercial Development; Timber Harvest	Timber Harvest; Gravel Mining; Camp/Recreational Development	Timber Harvest; Gravel Mining; Camp/Recreational Development
Notes	Stream impacts mitigated by construction measures, not included with this compensation site search, temporary impact mitigation and permanent conversion is likely to be required, but will be at a reduced amount	Assumes no other Compensation Type opportunities exist on the compensation site	Assumes no other Compensation Type opportunities exist on the compensation site	One of largest tracts undeveloped land in greater Bangor area, near project footprint, requires agency hand off for long term management. Includes headwaters of Eaton Brook.	Near project footprint, requires agency hand off for long term management, piecemeal collection of parcels, middle parcel not included. Includes 3,300 feet of Eaton Brook Headwaters, other streams are headwaters for Brewer Lake and Long Pond.	North American Waterfowl Mgmt. Plan; National Priority Area, Brook Trout Habitat, Priority Habitat of ETSC Species; Partnership with other land management group/groups; would likely involve ongoing Timber Management	Ecological Occurrence Ranking "A" for S4 Habitat, Brook Trout Habitat, 7.4 miles of stream/river frontage, Partnership with other land management group/groups; would likely involve ongoing Timber Management

*Functions and Values Abbreviations: GWR - Groundwater Recharge/Discharge, FFA - Floodflow Alteration, FSH - Fish and Shellfish Habitat, STR - Sediment/Toxicant Retention, NR - Nutrient Removal/Retention/Transformation, PE - Production Export, SSS - Sediment/Shoreline Stabilization, WH - Wildlife Habitat, R - Recreation, ESV - Educational/Scientific Value, UH - Uniqueness/Heritage, VQ - Visual Quality/Aesthetics, ES - Threatened/Endangered Species Habitat

Attachment 2 – Wrentham Woods Existing Conditions Report

EXISTING CONDITIONS REPORT
ROUTE 9 CONNECTOR COMPENSATION AREA
HOLDEN, MAINE



Prepared by:

Maine Department of Transportation
Environmental Office
16 State House Station
Augusta, ME 04333

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INTRODUCTION

The Maine Department of Transportation (MaineDOT) has proposed a new approximately 6.1-mile roadway in Brewer, Holden, and Eddington to connect Route 9 in Eddington with I-395 in Brewer (Route 9 Connector, Connector). The Federal Highway Administration (FHWA) and MaineDOT developed a full Environmental Impact Statement (EIS) for the project from 2001 to 2015 to evaluate the alternatives, and FHWA issued a Record of Decision (ROD) on June 23, 2016. MaineDOT and FHWA worked with public partners on identifying and evaluating more than 70 build alternatives that would best meet the purpose and need of the project. Three alternatives were retained for detailed analysis in the EIS, with Alternative “2B-2” identified as the least environmentally damaging practicable alternative. The EIS estimated that the project would directly impact 26 acres of wetland and the mitigation site search commenced. Throughout the process of designing the final alignment, the final preliminary design and the final planned impacts to wetlands was refined.

MaineDOT began a mitigation site search in 2016 to meet the requirement in the ROD for robust compensation that is not in-lieu fee mitigation for the project impacts. The search identified 4 potential opportunities within an approximately 20-mile radius of the Connector project, including properties in Aurora, Township 32, and two sites in Holden, including the Wrentham Woods property described in this report.

GENERAL SITE DESCRIPTION

The Wrentham Woods property is located in Holden, approximately 4.5 miles east of Bangor and 3.5 miles east of the proposed Route 9 Connector (Figure 1). The property consists of two parcels separated by Mann Hill Road. The larger parcel is 1,290 acres located on the southwest side of Mann Hill Road and roughly delimited by Eastern Ave. to the west, Mann Hill Road to the north, and an out of service railroad line to the south. The parcel to the north of Mann Hill Road is smaller, approximately 330 acres. The total acreage of Wrentham Woods is approximately 1,620 acres.

The property is a matrix of forested and open meadow upland areas, with large wetland complexes in the low-lying areas and around the headwater tributary streams of Eaton Brook. The property has been managed for timber over the last 10-20 years with varying levels of regeneration observed throughout the parcels. Areas of relatively intact or regenerated forest, both wetland and upland, are interspersed throughout the parcels. Most of the regenerating forest on the property consists of a heterogeneous mix of red maple (*Acer rubrum*), poplar (*Populus spp.*), northern red oak (*Quercus rubra*), balsam fir (*Abies balsamea*), and eastern white pine (*Pinus strobus*). Wetlands are found throughout the property, often along streams and often influenced by beavers (*Castor canadensis*), which have created some areas with large open water impoundments. The wetlands are diverse and include emergent marsh, wet meadow, white cedar swamp, and spruce bogs dominated by various ericaceous shrub species.

The property is closed to public access with locked gates installed at all entrance locations. The parcels contain a network of gravel or grassy roads that are generally maintained by mowing. Gravel roads on the larger parcel are currently accessible from two entrances: one off Eastern Ave. and the other off Mann Hill Road (Figure 1). The small parcel is also accessed by two entrances off Mann Hill Road. Numerous unmaintained secondary roads and abandoned skidder trails provide foot access to upland areas of the property that were previously logged. The property can also be accessed by foot along a utility right of way (ROW), which extends along the northeastern margin of the larger parcel.

Geographic Setting

The Wrentham Woods property is located within the Central Interior Biophysical Region of Maine (McMahon, 1990), which is characterized by flat to gently rolling terrain and a comparatively moderate climate. The region’s northern and eastern boundaries occur at a transition zone between the northern

Appalachian forest of oak, pine, and mixed hardwoods (southern Maine) and the spruce-fir-northern hardwood forest (northern and eastern Maine).

Topography

The property is within the watershed of Eaton Brook (HUC 12), a tributary of the Penobscot River. Several unnamed tributaries of Eaton Brook drain the wetlands and impounded streams on the property. The topography of the site is hilly to gently rolling with low, swampy basins (Fig. 4). A few prominent hills and ridges occur on the property with 50 to 110 feet (ft.) of topographic relief. The larger parcel abuts the northwest side of Mann Hill (elevation 462 ft.), the highest point in the immediate area. Topographic elevations on the property range from approximately 100 ft. on the northwest margin of the large parcel (tributary of Eaton Brook) to 370 ft. on the northern slope of Mann Hill.

Geology

The property is underlain by the Bucksport Formation, a Devonian-Ordovician-age calcareous sandstone with interbedded sandstone and impure limestone (Bedrock Geologic Map of Maine; 1985). Most of the property's lowlands are overlaid by glaciomarine deposits of the Presumpscot Formation (silt, clay, sand, minor amount of gravel) (Maine Surficial Geologic Map of Maine; 1995). Hills are covered with glacially deposited till consisting of mud, sand, gravel, and boulders. Some low, swampy areas are mapped as sand. Soil types vary widely based on geomorphic setting and underlying parent material, among other factors, and range from somewhat excessively-drained Thorndike-Winnecook complex (3 to 15 percent slopes, rocky) on hills to very poorly-drained Bucksport and Wonsqueak mucks (0 to 2 percent slopes, ponded) in lowland basins (Web Soil Survey).

SURVEY METHODS

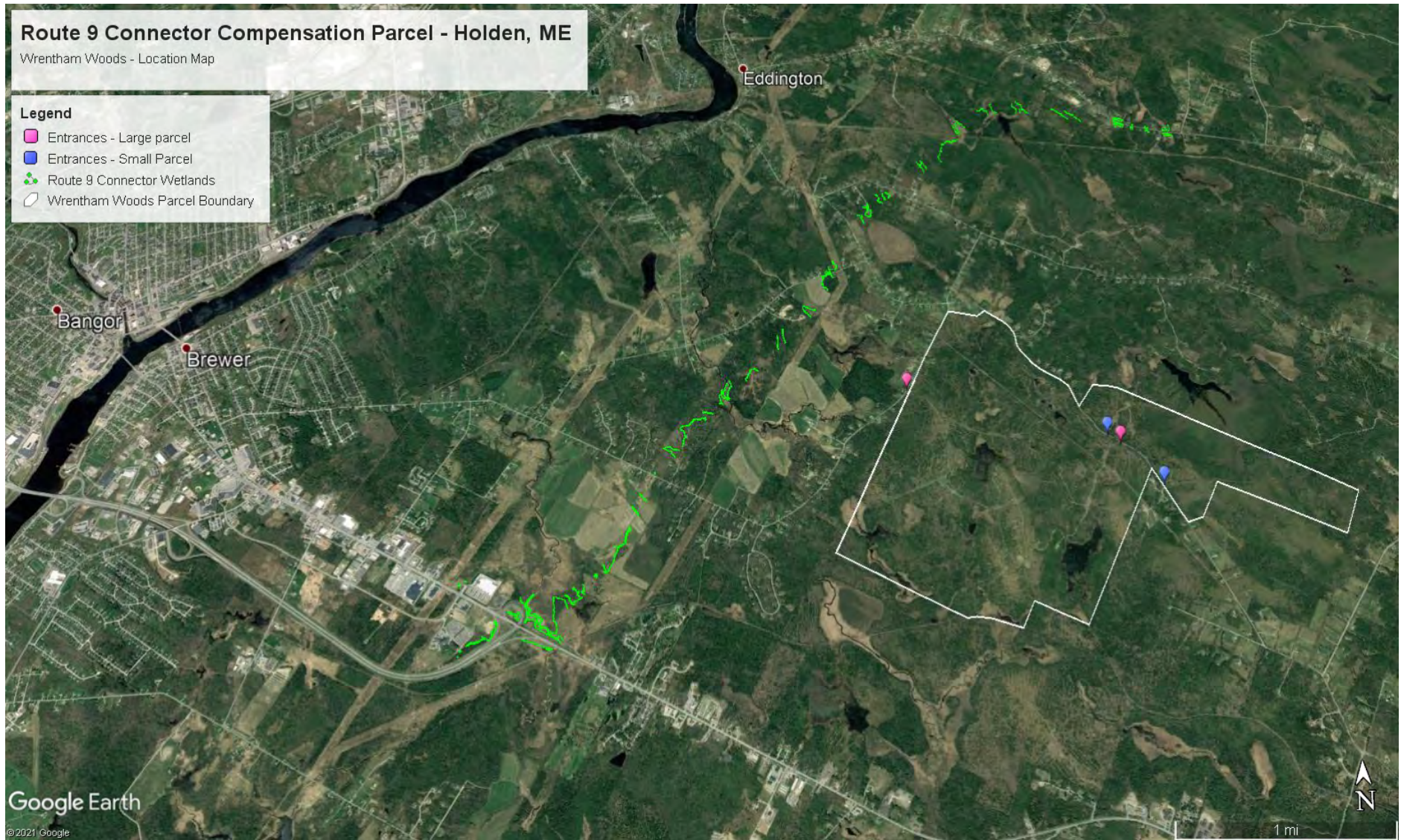
Desktop Analysis

Several web-based sources were accessed to collect preliminary natural resource data and mapping for the site, as well as to assist in planning field work. National Wetlands Inventory (NWI) mapping provided the location of many wetlands on the property, as well as wetland classification (Cowardin, 1979) and size (acres). GIS (Geographic Information Systems) data was used to gain a general understanding of site topography, soil units, rare species occurrences, Significant Wildlife Habitats (e.g., Inland Waterfowl and Wading Bird Habitat, Deer Wintering Areas), wild brook trout habitat, and other resource attributes. Google Earth Pro aerial imagery was used to confirm wetland types and distribution and to approximate boundaries for some wetlands that were incompletely located in the field. The boundaries of NWI wetland polygons that were not field-checked, were reviewed for accuracy using aerial photography (Google Earth). Soil data (Web Soil Survey), topography, and aerial imagery were used to guide efforts to identify and locate potential wetlands not included in the NWI. Beginning with Habitat (BwH) maps, including Water Resources & Riparian Habitats, High Value Plant & Animal Habitats, and Undeveloped Habitat Blocks & Habitat Connections, were reviewed to characterize natural resources on the property and to understand the broader conservation context of the property in relation to adjacent lands.

Other resource data included in for this review included the MaineDOT survey of vernal pools in 2006 and 2007. The survey was completed as part of the EIS alternatives analysis for the Connector that was not selected. State natural resource agency staff, including Maine Department of Marine Resources, Maine Inland Fisheries & Wildlife, and Maine Natural Areas Program were contacted to clarify specific natural resources issues, including species presence/absence and natural plant community ranking status.

MaineDOT – Route 9 Connector Compensation Area
Wrentham Woods – Existing Conditions Report

Figure 1. Wrentham Woods Location Map



Field Assessment

Field surveys of the property were completed by MaineDOT biologists during the spring and summer of 2020. The site visits were qualitative assessments of the landscape to refine the initial desktop analysis of wetland and wildlife habitats completed as part of the initial site search process. The purpose of the field survey was to determine the approximate extent, acreage, and type of wetland resources on the Wrentham Woods property. A Garmin GPSMAP 64 was used to approximate the wetland boundaries with spatial data transferred to Google Earth Pro and ArcMap for analysis. Field mapping focused primarily on areas likely to be wetlands but were not mapped by NWI.

Field-based wetland identification was based on the criteria from the Army Corps of Engineers (ACOE) criteria defined in the Army Corps of Engineers Wetland Delineation Manual (1987). No effort was made to formally delineate the wetland boundaries; but biologists targeted specific locations intended to approximate the extent of the wetlands based on the presence or absence of ACOE wetland indicators and map GPS points for the general extents. Wetland types are classified according to Cowardin's Classification of Wetlands and Deepwater Habitats of the United States (1979). Figure 2 shows the wetlands included with the NWI as well as the results of the biologists' field and aerial photo interpretation of the properties.

Wetland characteristics, including community type, general plant species composition and structure, hydrology, microtopography, etc., were noted for most wetlands visited. Observation of many wetlands was limited to a single visit and only on a portion of any given wetland area. Several of the larger NWI wetlands were not visited in the field and assessed using Google Earth imagery. Field surveys were limited to the observable conditions at the time of the visit, more detailed information was obtained for a subset of wetlands in July.

Other resources, including vernal pools, wildlife, wildlife habitat features, invasive plants, etc., were noted as incidental observations during field surveys. Vernal pools observed during the April and May field visits survey were geolocated and the number of egg masses counted. Significance of vernal pools was determined based on Chapter 335 (Significant Wildlife Habitat) of Maine Department of Environmental Protection (MDEP) Natural Resources Protection Act (NRPA)¹. In addition to vernal pools mapped by MaineDOT in 2006, 2007, and 2020 several potential vernal pools were observed during the 2020 field surveys (see Figure 3).

MaineDOT assessed the ability of wetland areas on the site to provide 13 specific functions and values based on field observations, desktop analysis, available technical resources, and known biological, chemical, and physical interactions of wetlands. The assessment follows the ACOE *Highway Methodology* (1999). Functions and values supported by wetland areas on the Wrentham Woods property are summarized in Table 2.

SURVEY RESULTS

Desktop Assessment

MDIFW Habitat Maps

The NWI mapped 202.7 acres of wetlands on the property, ranging from large emergent marshes and bogs, to small, isolated wetlands (Figure 2). MDIFW GIS layers identified open water and emergent marsh habitat on southern half of the larger parcel, as well as a peatland complex on the small parcel, as

¹ A vernal pool habitat is significant if it has a high habitat value, either because (1) a state-listed threatened or endangered species, such as a spotted turtle, or a rare species, such as a ribbon snake, uses it to complete a critical part of its life history, or (2) there is a notable abundance of specific wildlife, such as blue spotted salamander, wood frog, or fairy shrimp (e.g., meets certain abundance criteria, such as number of egg masses).

Inland Waterfowl and Wading Bird habitat (IWWH). Significant Wildlife Habitat protections extend to moderate value IWWH (Wetland 2) and high value IWWH (Wetlands 1, 5 and 10) under Maine’s Natural Resources Protection Act. Great blue heron (*Ardea herodias*), considered Special Concern species, is the only rare, threatened, or endangered species documented on the property (Wetlands 5 and 6). A small portion of the smaller parcel is mapped as a deer wintering area; MaineDOT did not complete a DWA survey to confirm if the area is used by deer as a wintering area.² A summary of the natural resources on the property is provided in Table 1.

Table 1. Natural Resources Present on Wrentham Woods Parcels

Notable Features and Habitats
202.7 NWI acres
Peatland complex
4 Inland Wading Bird and Waterfowl Habitats
2 Great Blue Heron Nesting Areas
Deer Wintering Area
Gulf of Maine Distinct Population Segment and Critical Habitat for Atlantic salmon (<i>Salmo salar</i> , Endangered)

Beginning with Habitat

The BwH-Undeveloped Habitat Blocks & Connectors and Conserved Lands map shows the property is located within a 3,545-acre undeveloped block of habitat bordered by Route 1A (south), Eastern Ave. (west) and Mann Hill and Bagaduce Roads (east). Except for Mann Hill Road and a small section of Bagaduce Road, connectivity with adjacent habitat blocks is somewhat limited by traffic, development, and/or land use (non-forested habitat), especially along Route 1. Beginning with Habitat’s Wetlands Characterization map indicates that several of the larger wetlands on the property are likely to provide wetland functions including runoff/floodflow alteration, finfish and/or shellfish habitat, and/or plant and animal habitat based on wetland habitat type. The peatland complex on the small parcel (Wetland 10) has the highest level of resource co-occurrence (i.e., concentrations of environmental resource attributes) of any area on the property (BwH-Natural Resource Co-occurrence Map).

Endangered Species Maps

Eaton Brook and its tributaries on the property are located within the Gulf of Maine Distinct Population Segment and Critical Habitat for Atlantic salmon (*Salmo salar*, Endangered) and within mapped Essential Fish Habitat for Atlantic salmon. Eaton Brook and its northern tributary, which crosses the northern corner of the property, are mapped as modeled rearing habitat for Atlantic salmon. Only the mainstem of Eaton Brook, located adjacent to the property, is mapped as an active alewife stream. The property is also located within the range of Northern Long-eared Bat (*Myotis septentrionalis*), a Threatened species.

² Forested areas possibly used by deer for shelter during periods of deep snow and cold temperatures. Locations depicted should be considered as approximate only.

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Wrentham Woods – Existing Conditions Report

Figure 2. Wrentham Woods National Wetland Inventory

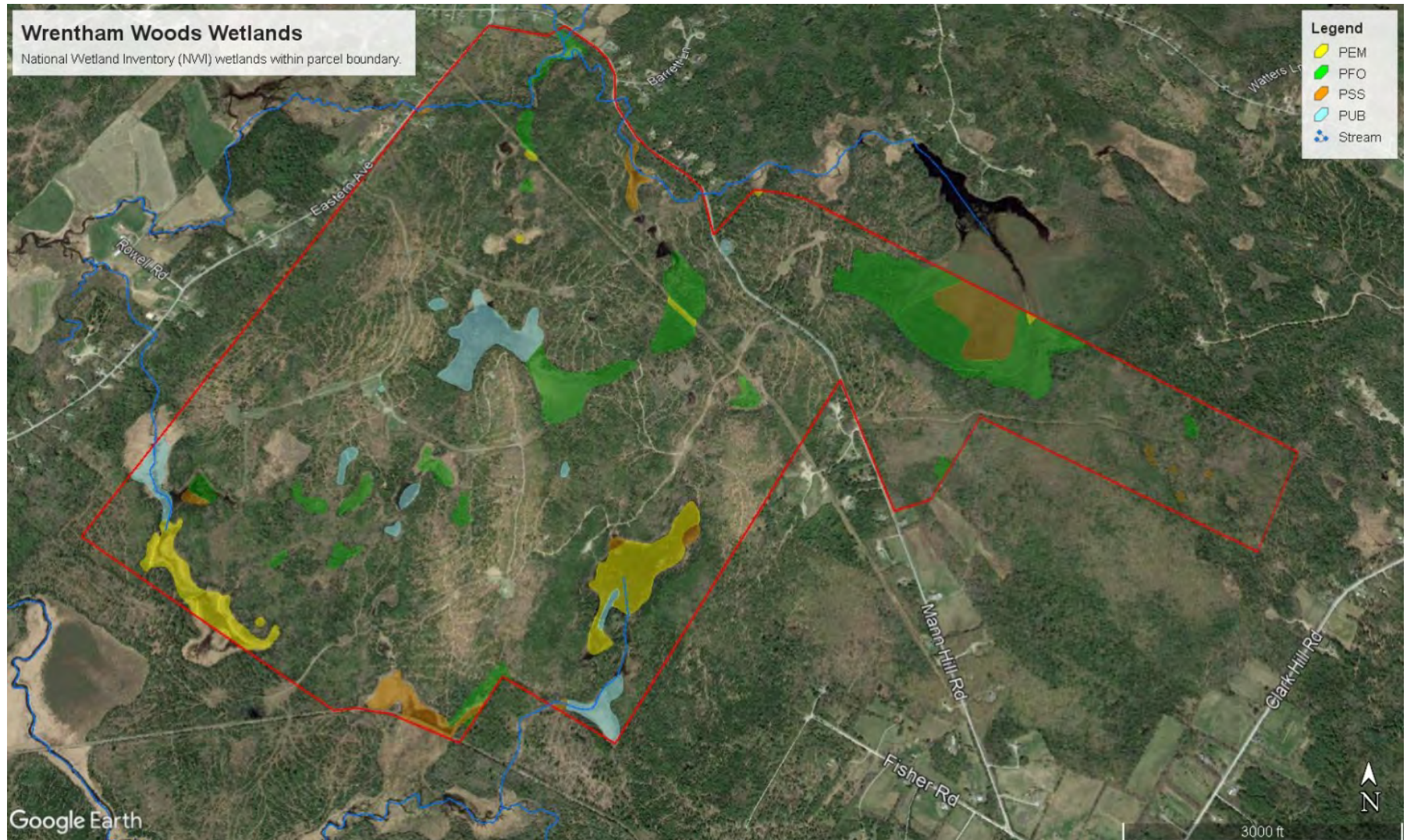
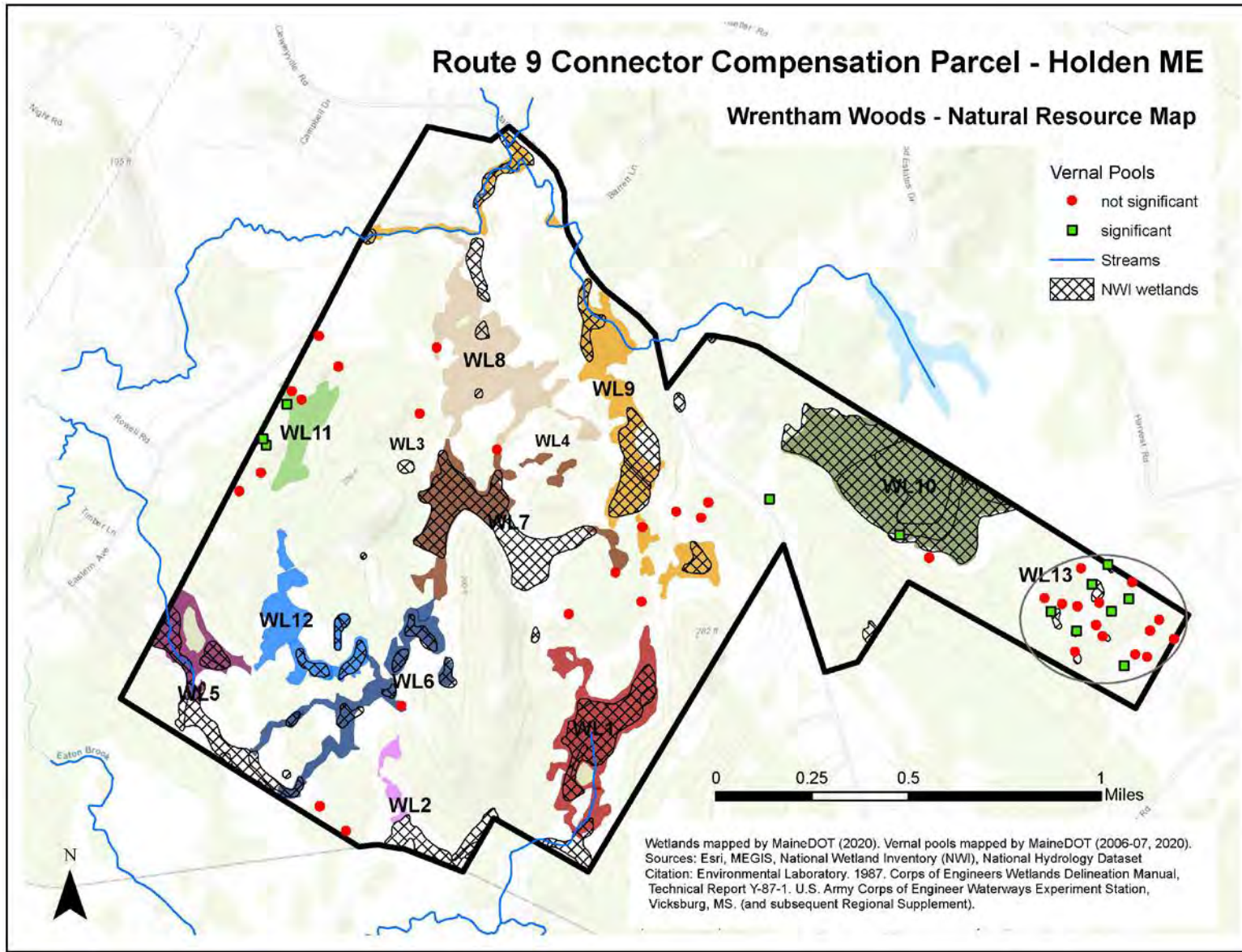


Figure 3. Wrentham Woods Natural Resources Map



Field Survey

MaineDOT biologists identified 13 wetland areas on the Wrentham Woods parcels, which includes NWI and additional areas mapped by MaineDOT (Figures 2, 3). Many of the wetlands includes a complex of wetland community types. The wetland areas are grouped into sub-drainages for simplicity and summarized in Table 2. Wetlands shown in Figure 3 with cross-hatching are NWI-mapped wetland boundaries. Wetlands shown as a color polygon represent wetlands mapped in the field or with aerial photography by MaineDOT.

See Table 2 for details about the wetlands and area calculations within the Wrentham Woods property.

Wetland 1

Wetland 1 is shown in pink on Figure 3. The core wetland, mapped by NWI, is an approximately 20-acre palustrine emergent wetland (PEM) with shallow, open water areas (Palustrine Unconsolidated Bottom; PUB) interspersed with floating-leaved and emergent aquatic plant communities (Open-water Marsh, S5). Palustrine forested (PFO), palustrine scrub-shrub (PSS), and PEM wetland (marsh) border the core wetland, as well as the stream drainages in the southern portion of this wetland. Emergent marsh fringes the margin of this large wetland. Common plant species include yellow pond-lily (*Nuphar advena*), water-shield (*Brasenia schreberi*), pickerelweed (*Pontederia cordata*), broad-leaved cat-tail (*Typha latifolia*), bulrushes (*Scirpus* spp.), and bluejoint (*Calamagrostis canadensis*). Water levels within Wetland 1 are controlled by beaver dams at the southern end of the wetland. Outflow from the PEM enters streams on either side of a forested upland and through a series of beaver impoundments to large PEM that extends off the property. The western outlet stream is mapped as perennial, while the eastern branch is likely intermittent.

Both drainages flow into a PEM dominated by bluejoint at the southern corner of the property. Drier plant communities vegetated by speckled alder (*Alnus incana*), broad-leaf meadowsweet (*Spiraea latifolia*), red maple, spruce (*Picea* sp.) and grey birch (*Betula populifolia*) occur along some margins of this PEM. These marginally wet areas were likely flooded in the past by beavers but have since been abandoned. Forested wetlands dominated by eastern arborvitae (*Thuja occidentalis*) occur on side slopes adjoining the low-lying PEM.

Wetland 1 contains two areas of mapped IWWH, one area is ranked high value and one is moderate value. The wetland contains a diversity of emergent and open water habitat which is known to be preferred characteristics of habitat for breeding and foraging waterfowl and wading birds. The list of bird and other wildlife species observed during field visits is provided in Tables 4 and 5. The PSS and PEM areas along the edge of Wetland 1 are habitat known to support nesting birds such as song sparrow (*Melospiza melodia*), swamp sparrow (*Melospiza georgiana*) and common yellowthroat (*Geothlypis trichas*).

Wetland 1 is a wetland of special significance (WOSS)³ because of the presence of significant wildlife habitat (i.e., IWWH), at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation and open water, and its location within 25 feet of a river, stream or brook. Wetland 1, including NWI and MaineDOT-mapped wetlands, is 38.3 acres.

Wetland 2

Wetland 2 is located on the southern edge of the property and flows south to Eaton Brook. The larger, downgradient section of this wetland (north of the railroad bed) is mapped by NWI and is predominantly

³ Wetlands of special significance (WOSS) include coastal wetlands and great ponds, as well as other freshwater wetlands with certain qualifying attributes such as size, the presence of critical or imperiled plant communities, or location within significant wildlife habitat or a peatland. WOSS are defined in State of Maine's Natural Resources Protection Act, Wetlands and Waterbodies Protection Rules Chapter 310.

PEM. The upper wetland section, mapped by MaineDOT, was influenced by beavers and contains more diverse wetland types. Drainage from Wetland 2 is likely intermittent.

The upper wetland areas include PEM and PSS bordering a small stream that flows to the large PEM. This wetland system, approximately 3.5 acres, is bisected by an access road. Both abandoned and more recent beaver flowages characterize this part of Wetland 2. The northern, upper section of the wetland consists of two abandoned beaver flowages with the largest impoundment furthest up the drainage. Common plant species include black-girdle bulrush (*Scirpus atrocinctus*), rattlesnake manna grass (*Glyceria canadensis*), bluejoint, broad-leaf meadowsweet (*Spiraea latifolia*), and eastern marsh fern (*Thelypteris palustris*) growing beneath a semi-open canopy of red maple.

Wetland 2 is a WOSS based on the presence of moderate value IWWH and its location within 25 ft. of a stream. MaineDOT observed 2 vernal pools (not significant) near the property boundary between Wetlands 2 and 5. Wetland 2, including both NWI wetlands and MaineDOT-mapped wetlands, is 12.4 acres.

Wetland 3

Wetland 3 is a small, isolated mixed PSS and PEM located approximately 300 ft. northwest of Wetland 7. Much of the wetland basin is vegetated by sensitive fern (*Onoclea sensibilis*) and red osier (*Cornus alba*), with willow (*Salix* spp.) and few grasses and sedges. Scattered maple (*Acer* sp.), gray birch, and common winterberry (*Ilex verticillata*) are also present. Since biologists observed limited evidence of pooling, it is unlikely that the wetland functions as a vernal pool. Wetland 3, mapped by NWI, is approximately 0.8 acres in size.

Wetland 4

Wetland 4 consist of two, small, isolated wetlands in close proximity of each other that located within 300-400 ft. northeast of Wetland 7. Both wetlands are predominantly PFO. The larger, eastern PFO is dominated by a semi-open canopy of red maple and balsam fir. An approximately 5,600 square foot (SF) area of shallow, open water habitat (PUB; ~12% of surrounding wetland) occurs at the southern end of the wetland. This small ponded area may provide breeding habitat for vernal pool dependent species. Broad-leaf cat-tail, sedge sp. (*Carex* sp.), Sphagnum sp., and broad-leaf meadowsweet are common. Blue flag iris (*Iris versicolor*) is also present. Caddisfly larvae (likely Family *Limnephilidae*) were observed actively foraging in the potential vernal pool.

The smaller, western wetland is adjacent to a maintained woods road. Common winterberry dominates with lesser amounts of eastern arborvitae and balsam fir also present. Peat moss (*Sphagnum* sp.) are common groundcover. The combined acreage of these two MaineDOT-mapped wetlands is 1.5 acres.

Wetland 5

Wetland 5 is located on the southwestern corner of the property and is drained by a perennial tributary of Eaton Brook. MaineDOT biologists observed 4 locations where beaver activity has affected the flow through the wetland, creating impoundments of shallow, open water habitat (PUB) and PEM of various sizes. Bluejoint, sedges (*Carex* spp.), and broad-leaf cat-tail were observed as the dominant emergent marsh species in this large wetland. Standing dead trees are common throughout. Extensive areas of bluejoint dominated wet meadow wetland areas are classified as Bluejoint Meadow (S4). MaineDOT mapped additional PFO along the northeast edge of the NWI and additional PEM on the northeastern edge of the wetland where it receives inflow from Wetland 12.

High value IWWH is mapped within Wetland 5 along with one of the mapped occurrences of great blue heron. A nesting colony at this location was last known to be active in 2010 and was last surveyed in 2015 (MDIFW, 2021). Wetland 5 is a WOSS based on the presence of significant wildlife habitat, greater than 20,000 SF of aquatic vegetation and open water, and its location within 25 ft. of a stream. Wetland 5, including NWI and MaineDOT-mapped wetlands, is 26.6 acres.

Wetland 6

Wetland 6 is a complex of wetlands that drain into two, small streams that flow southwesterly into Wetland 5. A gravel access road is located on the northern boundary of Wetland 6, which separates it from Wetland 7. South of the access road there are three beaver impoundments and a small PFO situated in a shallow basin between the two, prominent linear hills. MaineDOT biologists observed evidence of recent beaver activity along the dam of the middle impoundment, more extensive ponding, and numerous standing dead trees. PEM and PSS are the dominant wetland community types in this chain of beaver-influenced wetlands, with the existing beaver impoundment classified as PUB. The species composition varies according to the beaver activity. Speckled alder, willow, broad-leaf meadowsweet, steeplebush (*Spirea tomentosa*), red maple, black-girdle bulrush, *Glyceria* sp., and bluejoint are the common species. Morrow's honeysuckle (*Lonicera morrowii*) was observed occasionally in Wetland 6 near wetland edges but did not appear to be common. Morrow's honeysuckle is ranked as severely invasive by the Maine Natural Areas Program (2019).

Red maple is the dominant canopy species in the small PFO with eastern arborvitae, yellow birch (*Betula alleghaniensis*), white pine, and balsam fir also present. The dominant shrub species is common winterberry with highbush blueberry (*Vaccinium corymbosum*), and balsam fir saplings occurring in lesser numbers. Cinnamon fern (*Osmundastrum cinnamomeum*) and peat moss are the most common herbaceous and ground cover species. Pit and mound microtopography may be seasonally flooded, no vernal pool activity was observed during MaineDOT's field survey. This small wetland drains into the uppermost beaver wetland (i.e., just south of the gravel access road).

Overflow from the beaver wetlands enters a small PFO, then concentrates flow into two streams that both flow into Wetland 5. Red maple, eastern arborvitae, common winterberry, cinnamon fern, royal fern (*Osmunda regalis*), interrupted fern (*Osmunda claytoniana*), sedges (*Carex* spp.), and peat moss were observed species. Two potential vernal pools were observed along the western branch of the stream. The downgradient section of Wetland 6 was largely mapped based on aerial photography.

A known occurrence of great blue heron is located among the chain of beaver ponds in Wetland 6. Two observed nests were surveyed in 2012 and 2017, but were inactive (MDIFW, 2021). During field surveys, MaineDOT biologists observed no evidence of nesting. Evidence of wood frog (*Lithobates sylvaticus*) breeding activity was observed in one of the inactive beaver impoundments; however, the depression does not meet the definition of a significant vernal pool.⁴ Wetland 6 is a WOSS due to the presence of significant wildlife habitat, over 20,000 SF of open water and wetland within 25 ft. of a stream. The total area of Wetland 6, including NWI and MaineDOT-mapped wetlands, is 21.4 acres.

Wetland 7

Wetland 7 is centrally located on the large parcel and abuts the larger of the two, prominent, linear hills. It consists of a large, NWI-mapped wetland and two, smaller wetlands mapped by MaineDOT that are hydrologically connected to these larger wetlands. The Wetland 7 complex drains north into Wetland 8 via two outlets.

The large NWI-mapped wetland consists of two sections that are differentiated by species composition and wetland community type. The northwestern half of Wetland 7 is a PEM emergent marsh dominated by broad-leaf cat-tail (Cat-tail Marsh; S5). The northern outlet areas and other areas along its northeastern edge are also mainly PEM wet meadow community. Shallow, open water habitat exists

⁴ A significant vernal pool is determined by the number and type of pool-breeding amphibian egg masses in a pool, the presence of fairy shrimp, use by rare, threatened or endangered species, or other criteria as specified in Section 9(B) of Chapter 335 (Significant Wildlife Habitat) of Maine's Natural Resources Protection Act (NPR).

Significant vernal pool habitat consists of a vernal pool depression and that portion of the critical terrestrial habitat within 250 ft. of the spring or fall high water mark of the depression. An activity that takes place in, on, or over a significant vernal pool habitat must meet the standards of this chapter.

behind a beaver dam near the outlet (PUB). Plant species were recorded in a vegetation plot at the south end of this section of Wetland 7 near the boundary between the PEM and a shallow water/floating-leaved plant community. Cattail is the dominant species in wetter portion of the plot. Other plant species growing in the Cattail Marsh closer to the upland edge included cyperus-like sedge (*Carex pseudocyperus*), greater water dock (*Rumex brittanica*), northern water horehound (*Lycopus uniflorus*), Virginia St. John's-wort (*Hypericum virginicum*), bulblet-bearing water-hemlock (*Cicuta bulbifera*), lakebank sedge (*Carex lacustris*), broad-leaf meadowsweet, swampcandles (*Lysimachia terrestris*), three-way sedge (*Dulichium arundinaceum*), black-girdle bulrush, common marsh bedstraw (*Galium palustre*), and water-dragon (*Calla palustris*). Bladderwort (*Utricularia* sp.), water shield, bur-reed (*Sparganium* sp.), and duckweed (*Lemna* sp.) were observed in the floating-leaved emergent plant community.

The southeastern portion of Wetland 7 contains a small beaver impoundment (PUB), PEM, and transitions to PFO. MaineDOT biologists observed broad-leaf cat-tail and sedge species dominant in the PEM.

MaineDOT identified two additional wetlands that are hydrologically connected Wetland 7. A mixed PFO and PSS community drains into Wetland 7 from the south. The majority of this wetland is PFO, dominated by red maple, common winterberry, speckled alder, cinnamon fern, and peat moss. The PSS observed matches the extent of previous beaver activity in the wetland. Speckled alder is dominant with red maple, common winterberry, gray birch, and broad-leaf meadowsweet also present in the PSS (Alder Shrub Thicket; S5). Grasses and herbaceous species occurring in the PSS include rattlesnake manna grass (*Glyceria canadensis*), three-way sedge, bluejoint, cottongrass bulrush (*Scirpus cyperinus*), and common marsh bedstraw. A PFO identified in aerial imagery drains into Wetland 7 from the east.

Wetland 7 is a WOSS due to the presence of a large emergent marsh (over 20,000 SF). The total area of Wetland 7, including NWI and MaineDOT mapped wetlands, is 38.4 acres.

Wetland 8

Wetland 8, located in the north-central section of the larger parcel, comprises a series of PEM, PSS, and PFO wetlands along an unnamed, north-flowing stream. The stream flows from Wetland 7 and drains into a tributary of Eaton Brook (Wetland 9). Only a small portion of Wetland 8 was mapped by NWI, with significant additional wetlands mapped by MaineDOT. The wetlands along the mid and lower sections of the stream are beaver impoundments with varying amounts of shallow, open water habitat, PEM, and PSS. At least five beaver impoundments occur along the stream with the lowermost appearing to be the most recent construction. PEM in the upper reaches of this stream were created by beaver activity and are following natural succession with shrubs encroaching along the margins and little shallow, open water habitat observed.

Bluejoint, broad-leaf meadowsweet, and speckled alder are common species throughout this wetland complex. Some of the larger grassy beaver meadows may be classified as Bluejoint Meadow (S4). White pine saplings have encroached into the PEMs higher in the drainage. Forested wetlands, including patches of Northern white cedar swamp (S4), occur elsewhere in Wetland 8. Four, non-significant vernal pools were identified in this wetland. Wetland 8 is a WOSS due to the presence of significant wildlife habitat, over 20,000 SF of open water and emergent marsh, and wetland within 25 ft. of a stream. Wetland 8, including NWI and MaineDOT mapped wetlands is 43.5 acres.

Wetland 9

Wetland 9 extends along the northeastern boundary of the large parcel and just west of Mann Hill Road. Varied wetland community types occur within this wetland complex, including a perennial stream, beaver flowages, and PEM (emergent marsh) and PFO (Red Maple Swamp, Northern White Cedar Swamp) wetlands. All of Wetland 9 flows to the north in perennial and intermittent streams to Eaton Brook. The mainstem of the stream extends off the property (crossing beneath Mann Hill Road) and receives flow from several adjacent wetlands and a large impoundment off the property that is associated with an

expansive bog (part of which is Wetland 10). The remaining portion of Wetland 9 occurs along an intermittent stream that continues for another mile to the south within the property.

The northern half of Wetland 9 (between Eastern Ave. and Mann Hill Rd.) generally consists of patches of PEM and PSS bordering the stream, with a few pockets of PFO. The stream ranges in bankfull width from 15-25 ft. and has an average gradient of 1-2 percent. The channel substrate is typically gravelly but likely varies depending on gradient and flow velocity. Small, unidentified fish were abundant in sections of the stream.

A series of four beaver impoundments and associated emergent marsh and wet meadow wetlands continue upstream. The main branch of the stream exits the property just upstream the lowermost beaver pond. The four beaver ponds are bordered by PEM and PSS wetlands, dominated by sedges (*Carex* spp.) and speckled alder. Standing dead trees were observed in the beaver ponds. PFO wetlands, dominated by red maple, were observed along the margins away from the influence of beaver flooding.

Upstream of the chain of beaver ponds, the forested wetland transitions to a Northern White Cedar Swamp (S4). The cedar swamp is bisected by the transmission line ROW. Eastern arborvitae is the dominant tree species with balsam fir, yellow birch, black ash (*Fraxinus nigra*), and red maple as non-dominant species present. Speckled alder, black ash, and balsam fir comprise the understory. The herbaceous layer is composed of cinnamon fern, sensitive fern, teaberry (*Gaultheria procumbens*), hop sedge (*Carex lupulina*), and three-seeded sedge (*Carex trisperma*). Mosses formed a nearly continuous ground cover and included *Hylocomium splendens*, *Pleurozium schreberi*, *Hypnum* sp., *Bazzania trilobata*, Liverwort (unid.), and *peat moss*. Pit and mound microtopography was common throughout the PFO.

Upgradient of the PFO are two additional PEM and PSS wetlands previously created by beaver dams. The lower and larger of the two appears to be an abandoned impoundment with plant species that indicate a change in hydrology. A non-significant vernal pool was mapped in this beaver wetland during the 2006-2007 MaineDOT survey. The upper wetland, which still impounds water, is a PEM with a shrubby margin (PSS). Similar plant species occur in both wetlands including speckled alder, steplebush, *Carex gynandra*, rattlesnake manna grass, black-girdle bulrush, New England groundel (*Packera schweinitziana*), and marsh fern. An emergent marsh dominated by broad-leaf cat-tail is situated at the southern end of Wetland 9. Four additional non-significant vernal pools were mapped in vicinity of Wetland 9 during MaineDOT's 2006-2007 survey.

Wetland 9 is a WOSS due to the presence of significant wildlife habitat, over 20,000 SF of open water and emergent marsh, and wetland within 25 ft. of a stream. Wetland 9, including NWI and MaineDOT mapped wetlands, is 44.2 acres.

Wetland 10

Wetland 10 is part of a large bog complex that straddles the boundary of the smaller parcel on the northeast portion of the parcel. The bog complex consists predominantly of Dwarf Shrub Bog (S4) and Black Spruce Bog (S4) communities, with Red Maple Fen (S4) along the bog margins where there is more nutrient-rich groundwater input. Water from the bog system is ponded at the surface on the northern boundary and provides flow to the unnamed tributary of Eaton Brook described as part of Wetland 9.

Community types shift from more minerotrophic Red Maple Fen near the wetland/upland edge, to Black Spruce Bog, then to a Dwarf Shrub Bog community within 200-500 ft. of the upland edge. The Red Maple Fen community is characterized by red maple in the canopy, with lesser amounts of American larch (*Larix laricina*), red spruce (*Picea rubens*), black spruce, and eastern arborvitae. The canopy has some open areas where the shrub layer is denser. Speckled alder is the most common shrub species with balsam fir, black spruce (*Picea mariana*), American larch, sheep-laurel (*Kalmia angustifolia*), highbush blueberry also present, but in fewer numbers. Common winterberry occurs near the wetland edge. The

herbaceous layer includes sensitive fern, northern water horehound, marsh fern, cinnamon fern, round-leaf sundew (*Drosera rotundifolia*), Virginia St. John's-wort, dwarf red raspberry (*Rubus pubescens*), and peat moss. A muddy swale extends along the edge of the Red Maple Fen near the base of the upland slope. Significant portions of the swale are not vegetated. Sensitive fern, bulblet-bearing water-hemlock, nodding sedge (*Carex gynandra*), three-way sedge, *burr-reed*, and catberry (*Nemopanthus mucronatus*) occur in vegetated areas of the swale.

The Red Maple Fen transitions quickly to a Black Spruce Bog community. This community type is dominated by black spruce with red maple and occasional white pine. American larch was observed elsewhere in the wetland. Patches of catberry, highbush blueberry, and rusty Labrador-tea (*Rhododendron groenlandicum*) occur in the understory. Ground cover and herbs include peat moss, reindeer lichens (*Cladonia* sp.), creeping-snowberry (*Gaultheria hispidula*), three-leaf goldthread (*Coptis trifolia*), three-seed sedge (*Carex trisperma*), with shrub and tree species seedlings. Bog microtopography is hummocky.

Toward the interior, the Black Spruce Bog community transition to a Dwarf Shrub Bog community as ericaceous shrub species become increasingly dense and species diverse, while tree cover (black spruce, occasional larch) diminishes. Sheep-laurel, rusty Labrador-tea, leatherleaf (*Chamaedaphne calyculata*), and rhodora (*Rhododendron canadense*) are among the shrubs present in the bog. Bryophytes and lichens form a continuous cover.

Wetland 10 is mapped by NWI, the total wetland area is approximately 106 acres. Approximately 71.2 acres of this bog complex is included within the Wrentham Woods property boundaries. Wetland 10 meets the definition of a Peatland according to Chapter 310 of the NRPA and would be considered a WOSS by MDEP.

Wetland 11

Wetland 11 is a Northern White Cedar Swamp (S4) located near the northwest property boundary of the large parcel. This wetland is not mapped by NWI. Eastern arborvitae is the dominant canopy species, with lesser amounts of red maple, balsam fir, white birch, white pine, and occasional black ash present. Patches of common winterberry occur where the canopy is more open and seasonal ponding occurs. Cinnamon fern, sensitive fern, and sedges (*Carex* spp.) are common, as well as bryophytes (*Hylocomium splendens*, *Bazzania trilobata*) are commonly occurring ground cover, except in small depressions subject to seasonal flooding. Discharge from Wetland 11 drains west off the property to a tributary of Eaton Brook.

A vernal pool was observed in Wetland 11 during a field visit in May 2020. MaineDOT biologists observed 8 spotted salamander egg masses, and 1 wood frog egg mass. This pool did not meet the threshold for significance according to MDEP based on this single visit. MaineDOT's 2006-2007 vernal pool survey identified an additional five non-significant vernal pools in vicinity of Wetland 11.

Due to the presence of significant wildlife habitat, peatlands, and wetland within 25 ft. of a stream, Wetland 11 is a WOSS. Wetland 11 was mapped by MaineDOT and is 11.4 acres.

Wetland 12

Wetland 12 is shown in blue on Figure 3 and is located in the large parcel of Wrentham Woods between Wetlands 5 and 6. Three of the wetlands are mapped by NWI as PFO and PUB; the fourth was mapped by MaineDOT as PEM. All of Wetland 12 drains southwesterly into Wetland 5. The PEM was created by beaver activity, but the impoundment has been abandoned and the open water has reverted to a wet meadow. Beaver activity was observed at the stream outlet into Wetland 5. MaineDOT biologists found bluejoint to be dominant in the PEM, with standing dead trees common throughout the wetland. Rough bedstraw (*Galium asprellum*), broad-leaf cat-tail, reed canary grass (*Phalaris arundinacea*), Simpler's Joy (*Verbena hastata*), common red raspberry (*Rubus idaeus*), marsh fern, spotted touch-me-not (*Impatiens capensis*), arrow-leaf tearthumb (*Persicaria sagittata*), steeplebush, and goldenrod (*Solidago*

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sp.) were also observed. Shrubs are sparse but include speckled alder, gray birch, and red maple. A mowed grass access road crosses the northern end of Wetland 12.

Three isolated PSS wetlands occur just east and southeast of the larger PEM and PFO complex that are not mapped by NWI. Common winterberry occurs in dense patches with sparse trees species including red maple, red spruce, American larch, and balsam fir. The ground cover is composed of sedges (*Carex* spp.) and peat moss. One of these PSS wetlands includes a topographical depression that may contain water sufficient to support vernal pool breeding, however no activity was observed during 2020 site visits.

Wetland 12 is a WOSS due to the presence of wetland within 25 ft. of a stream. The cumulative area of Wetland 12, including both NWI and MaineDOT mapped wetlands is 18.8 acres.

Wetland 13

Wetland 13 is a complex of several isolated PSS and PFO wetlands located on the southeastern end of the smaller parcel that are mapped by NWI. During the 2006 and 2007 vernal pool survey, 7 vernal pools were identified and determined to be significant, and 14 were identified and did not meet the threshold for significance. At least two additional potential vernal pools were identified during the 2020 site visits.

The cumulative area of the wetlands in this area is 5 acres. Wetland 13 is a WOSS due to the presence of significant wildlife habitat.

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Table 2. Wrentham Woods Wetland Summary Table

Wetland Number	Wetland Types ¹	Total Wetland Area (Acres)	Mapped NWI Area (Acres)	MaineDOT Mapped Wetland Acreage	Maine Natural Areas Program Community Type (Status)	Wetland of Special Significance ²	Note ³
1	PSS, PEM, PFO, PUB	38.3	24.1	14.2	Open-water Marsh (S5)	S, E, R	IWWH
2	PEM, PSS	12.4	7.6	4.8	Bluejoint Meadow (S4)	S, R	IWWH
3	PSS, PEM	0.8	0.8	0			
4	PFO, PUB	1.5	0	1.5			PVP
5	PEM, PUB	26.6	24.9	1.7	Bluejoint Meadow (S4)	S, R	IWWH; great blue heron; PVP
6	PEM, PSS, PFO, PUB	21.4	7.1	14.3		E, R	Vernal pool; great blue heron
7	PEM, PSS, PFO, PUB	38.4	31.5	6.9	Cattail Marsh (S5); Red Maple Swamp (S4); Alder Shrub Thicket (S5)	E	
8	PEM, PSS	43.5	4.2	39.3	Alder Shrub Thicket (S5); Bluejoint Meadow (S4)	E, R	Vernal pools
9	PEM, PFO, PSS, PUB	44.2	24.8	19.4	Bluejoint Meadow (S4); Northern White Cedar Swamp (S4); Cattail Marsh (S5)	E, R	Vernal pool
10	PFO, PSS	71.2	71.2	0	Black Spruce Bog (S4); Dwarf Shrub Bog (S4); Red Maple Fen (S4)	S, P	IWWH
11	PFO	11.4	0	11.4	Northern White Cedar Swamp (S4)	R	Vernal pool
12	PEM, PSS, PFO, PUB	18.8	5.0	13.8	Bluejoint Meadow (S4)	E	
13	PFO, PSS	5.0	1.5	3.5		S	SVP
	Total:	333.5					

¹Wetland Type follows Cowardin 1978.

²Wetlands of Special Significance (State of Maine DEP, Natural Resources Protection Act, Wetlands and Waterbodies Protection Rules Chapter 310): S – significant wildlife habitat, E – >20,000 SF of emergent marsh or aquatic vegetation, P – peatland, R – located within 25 feet of a river, stream, or brook

³Significant Wildlife Habitat (State of Maine DEP, Natural Resources Protection Act, Significant Wildlife Habitat Chapter 335): SVP– Significant Vernal Pool, IWWH – Inland Wading Bird & Waterfowl Habitat. PVP – Potential Vernal Pool

WETLANDS FUNCTIONS AND VALUES

The functions and values of wetlands at Wrentham Woods were assessed based on field observations, GIS mapping, technical resources accessed from publicly available resources and professional knowledge of wetland science and ecology. Wetland functions are defined in the U.S. Army Corps of Engineers *Highway Methodology Workbook Supplement - Wetland Functions and Values: A Descriptive Approach* as “self-sustaining properties of a wetland ecosystem that exist in the absence of society. Functions relate to the ecological significance of wetland properties without regard to subjective human values.” “Values are benefits that derive from either one or more functions and the physical characteristics associated with a wetland. Most wetlands have corresponding societal value.” “The value of a particular wetland function, or combination thereof, is based on human judgment of the worth, merit, quality, or importance attributed to those functions.”

The 8 wetland functions and 5 wetland values identified in the Highway Methodology Workbook Supplement are listed and defined below.

Wetland Functions

Groundwater Recharge/Discharge — This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where groundwater can be discharged to the surface.

Floodflow Alteration (Storage & Desynchronization) — This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.

Fish and Shellfish Habitat — This function considers the effectiveness of seasonal or permanent waterbodies associated with the wetland in question for fish and shellfish habitat.

Sediment/Toxicant/Pathogen Retention — This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens.

Nutrient Removal/Retention/Transformation — This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

Production Export — This function relates to the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

Sediment/Shoreline Stabilization — This function relates to the effectiveness of a wetland to stabilize streambanks and shorelines against erosion.

Wildlife Habitat — This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.

Wetland Values

Recreation (Consumptive and Non-Consumptive) — This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting, and other active or passive recreational activities. Consumptive activities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland, whereas non-consumptive activities do not.

Educational/Scientific Value — This value considers the effectiveness of the wetland as a site for an “outdoor classroom” or as a location for scientific study or research.

Uniqueness/Heritage — This value relates to the effectiveness of the wetland or its associated waterbodies to produce certain special values. Special values may include such things as archaeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geologic features.

Visual Quality/Aesthetics — This value relates to the visual and aesthetic qualities of the wetland.

Threatened or Endangered Species Habitat — This value relates to the effectiveness of the wetland or associated waterbodies to support threatened or endangered species.

Wetland Functions and Values Assessment

The functions and values for all 13 wetland areas on the Wrentham Woods property are described below and summarized in Table 3.

Groundwater Recharge/Discharge

The surficial geology of most of the interior upland on the property is mapped as till, a heterogeneous, usually non-stratified sediment deposited directly from glacial ice. Particle sizes typically range from clay, silt, sand, and gravel to large boulders. Lowlands, including streams, wetlands, and riparian areas, are underlain by a silty clay deposit known as the Presumpscot Formation. These glacially derived materials have low to very low permeability that retards water flow directly into the ground. Freshwater wetlands are underlain by muck, peat, silt, and sand, which, in turn, is underlain by the Presumpscot silty clay. As such, wetland soils also have low or no permeability and, therefore, the ability of water to recharge is limited.

No significant sand and gravel aquifers (i.e., yields greater than 10 gallons/minute) are identified on the property based on aquifer mapping by the Maine Geological Survey (2008). The entire property is mapped as an area with moderate to low or no potential groundwater yield (or generally less than 10 gallons/minute) based on its surficial geology (i.e., glacial till and silty clays).

Most wetlands on the property are situated in topographic depressions (e.g., Wetlands 7 and 11) and are likely fed by discharge of groundwater to the surface. Small wetlands, such as Wetland 13 with a vernal pool, may intersect seasonally high groundwater. Wetlands like Wetland 1 appear to be supported by groundwater discharge near the toe of slope. Groundwater discharge at the base of a slope is recognized in the field by seepage and the presence of predominantly wetland plant species. This function exists for Wetlands 1, 2, and 4-12.

Floodflow Alteration (Storage and Desynchronization)

Wetlands on the property function to attenuate flood-flows in proportion to their size and storage capacity. The wetlands and streams on the Wrentham Woods property all flow to Eaton Brook which flows into the Penobscot River. A wetland's ability to retain water lessens the peak flow of major storm events at points downstream in the watershed. Smaller wetlands in the upper reaches of sub-watersheds on the property also contribute to flood modification by temporary ponding and the diversion or slowing of flows like with the PFO portion of Wetland 1. The numerous beaver dams like were described in Wetland 6, that impound flows throughout the property also act to temporarily store floodwaters. Larger wetlands bordering streams, like Wetland 5 can store water within their floodplain proportional to their size, particularly when these riparian wetlands contain dense, marshy vegetation that dissipate flow velocity during flooding events. Peatlands, including the large bog complex, Wetland 10 act as a natural buffer to flooding by capturing and temporarily storing runoff and groundwater inputs from adjacent uplands. Small, isolated wetlands on the property like Wetland 3 and Wetland 13 also provide this function in a more limited capacity. This function exists for wetlands 2 and 4; and it is the principal function for Wetlands 1 and 5-12.

Fish and Shellfish Habitat

Perennial streams on the property, including the unnamed tributaries of Eaton Brook on the northern and southwestern sections of the large parcel, provide good quality stream habitat. Fish species could not be

identified during MaineDOT field surveys, but dace (*Rhinichthys* sp.), creek chub (*Semotilus atromaculatus*), common shiner (*Luxilus cornutus*), and/or Eastern brook trout (*Salvelinus fontinalis*) are among the fishes that occur in similar waterbodies in this region. Intermittent streams are also likely to support most or all of these fishes seasonally. The section of perennial stream in Wetland 5, between Eastern Ave. to a point approximately 1,400 ft. upstream of Eastern Ave. is mapped as modeled rearing habitat for Atlantic salmon (*Salmo salar*). The stream reach contains both Class 1 habitat (81% of selected reach modeled as suitable habitat) and Class 2 habitat (48% of reach is suitable). The Maine Department of Marine Resources (DMR) indicated that Atlantic salmon have historically been documented in Eaton Brook (most recently in 2004). No recent field survey data is available. DMR believes that with the removal of Veazie Dam on the Penobscot River in 2013, salmon are less likely to enter tributaries, including and in vicinity of Eaton Brook. Although salmon have swim access from the Penobscot River to the property, the likelihood of salmon presence is very low.

No state-listed freshwater mussel occurrences are mapped on the property. However, freshwater mussels are found in nearly every permanent water body in the state and can be expected to occur in perennial streams on the property. This function exists for Wetlands 2 and 6-8; and it is the principal function for Wetlands 1, 5, and 9.

Sediment/Toxicant Retention

Many, if not the majority, of wetlands on the property serve to retain sediments, toxicants, and/or pathogens as they move downstream in the property's sub-watersheds. Wetlands typically occur in shallow basins or have low gradients that slow outflow, thereby detaining floodwaters and their accompanying load of sediments and toxicants. Dense emergent marsh or wet meadow vegetation (e.g., cattails, bluejoint) and the thick layers of organic soils that typically underlie emergent wetlands cause floodwaters to drain slowly. Emergent wetlands on the property colonized by dense herbaceous vegetation (e.g., Wetlands 1, 2, 5, 7 and 8) are especially well suited for trapping sediments and chemical pollutants. The roots of wetland plants bind the accumulated sediments, removing as much as 90% of sediments in runoff and floodwaters. Chemical pollutants, such as heavy metals, adhere (or sorb) onto soil particles and settle out in vegetated floodplains and in the bottom sediments of impounded waters.

Since the property is undeveloped, significant sources of pollutants may be few or absent. Extensive logging on the property has likely caused at least some erosion and sedimentation into streams during storm events. While sources of pollutants may not occur on the property, some sub-watersheds extend beyond the property boundary and, therefore may receive sediments and/or pollutants generated on neighboring properties. The abundance of wetlands on the property, especially those bordering streams, have likely minimized the movement of sediments and/or pollutants from on- and/or off-site sources from impacting valuable stream habitat downgradient of the site. This function exists for Wetlands 2-4 and 11-13; and it is the principal function for Wetlands 1 and 5-10.

Nutrient Removal/Retention/Transformation

As with sediment and pollutant retention, the property's abundant wetlands function to remove, retain, and transform nutrients that may harm water quality in downstream resources, such as streams, rivers, and aquifers. Timber harvesting is known to increase nutrient concentrations and loads in receiving waters, which may degrade water quality through eutrophication (the gradual increase in nutrients in an aquatic system) and the formation of algal blooms (Palviainen, et al., 2015). Nutrients, such as nitrogen and phosphorus, increase in downstream waters following tree harvesting because the removal of trees reduce water and nutrient uptake and increases overland runoff. In addition, decomposing logging residue increase nutrients as do warmer soil temperatures (less shading by tree canopies), which accelerate mineralization and nitrification. If the property was subdivided and developed for housing, fertilizer applied for lawn care would similarly increase nitrogen and phosphorous in streams. Excessive nutrients can increase the productivity of aquatic plant life, trigger eutrophication events, and lower dissolved

oxygen in the water column. Consequently, water quality may decrease, altering aquatic habitats and adversely impacting fish and other aquatic species.

Wetlands, including those on the property, remove nitrogen and phosphorus through physical, chemical, and biological processes as nutrients in the water slowly flow through the wetlands. Emergent wetlands with dense vegetation are among the most proficient in nutrient uptake and assimilation. The Wrentham Woods wetlands likely contribute significantly to the capture and treatment of nutrient loads generated by past logging on the property and potentially from offsite nutrient sources. Reduction of nutrient concentrations in waterbodies leaving the property lessen the overall nutrient loads to downstream resources, including Eaton Brook watershed and the Penobscot River. This function exists for Wetlands 2, 4, 6, and 11-13; and it is the principal function for Wetlands 1, 5, and 7-10.

Production Export (Nutrient)

Wetlands have among the highest primary production of all ecosystems, producing resources consumed by organisms at various trophic levels and used by wildlife and humans. Vegetated wetlands, such as forested, shrub, and emergent wetlands, have the highest productivity, and larger wetlands have the potential for the greatest biomass production. Export of organic carbon from wetlands to streams contributes toward support of organisms that consume non-living organic matter. All wetlands on the property are contributing to this function, proportional to their size and wetland characteristics. Isolated wetlands that serve as breeding habitat for vernal pool organisms like Wetland 13, 8, and 4) and insects provide food sources for higher trophic level species, including fish, birds, bats, and other mammals. Other wetland types throughout the property have the potential to provide valuable resources to the human community, including PFO swamps (lumber), fur-bearing mammals that live in wetlands [mink (*Mustela vison*), beaver (*Castor canadensis*)], and perennial streams (brook trout). This function exists for Wetlands 2, 6-8, and 10-12; and it is the principal function for Wetlands 5 and 9.

Sediment/Shoreline Stabilization

Wetlands that border a stream and have a densely vegetated floodplain which absorbs and/or diffuses high flow velocities during flood events likely serve to stabilize sediment/shorelines within their own boundaries and downstream (Wetland 5). Other wetlands providing this function include those situated within a basin or with a gentle gradient that reduces high flow velocities during flood events that cause downstream erosion (Wetland 1 and 7).

All or part of Wetlands 2, 5, 6, 8, and 9 have streams with adjacent vegetated floodplains that store floodwaters. The storage of floodwaters effectively reduces erosion of the stream/wetland itself, as well as in downgradient stream/river channels because of the reduction in peak flow. All or part of Wetlands 1, 4, 7, 9, and 10 are situated in concave basins that detain floodwaters, reducing flood flows and their erosive potential. The many beaver ponds on the property also temporarily store floodwaters, and when acting in concert throughout the property diffuse downstream flows. This function exists for Wetlands 2, 6, and 13; and it is the principal function for Wetlands 1, 5, and 7-12.

Wildlife Habitat

The abundance and diversity of wetland types on the property support habitat for many species of wildlife. The section of this report describing the Survey Results and Table 2 summarizing the results demonstrates the abundance and diversity of wetland types on the Wrentham Woods property. The abundance of beaver ponds creates a continuum of wetland habitats that provide habitat for a wide array of wildlife over time. Perennial streams on the property are few, but provide habitat for fish species, including brook trout.

Wetlands, ponds, and streams on the property provide breeding and/or feeding habitat for numerous species of birds including ducks, herons, raptors, and various songbirds (Table 4). Open water and emergent marsh habitat on southern half of the large parcel (Wetlands 1 and 5), as well as peatlands (Wetland 10) on the small parcel are mapped by MDIFW as high and moderate value IWWH. Wetland 2

is mapped as moderate value IWWH. Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), black duck (*Anas rubripes*), and wood duck (*Aix sponsa*) are among the waterfowl observed on the property. Wetlands throughout the property contain habitat suitable for nesting for these species. The abundance of standing dead trees in many of the wetlands (a result of beaver activity) provide nesting habitat for cavity nesting birds (e.g., tree swallow, wood duck) and great blue heron (state Special Concern species), which build nests in standing dead trees in remote beaver ponds. Extensive wet meadows and marshes (Wetlands 1, 5, 7) likely support marsh nesting birds, including red-winged blackbirds (*Agelaius phoeniceus*), swamp sparrow, and possibly marsh wrens (*Cistothorus palustris*), rails, and bitterns. Northern harrier (*Circus cyaneus*; State Special Concern species) and short-eared owl (*Asio flammeus*; State Threatened species) are known to forage in habitat like what is present on Wrentham Woods (Wetlands 5, 8). Songbirds, including common yellowthroat and song sparrow, commonly nest in the shrubby edges of wetlands. The peatland complex (Wetland 10) may provide habitat for bird species with a preference for bogs, such as Lincoln's sparrow (*Melospiza lincolnii*) and rusty blackbird (*Euphagus carolinus*).

The diverse wetlands also support the life history needs of aquatic and semi-aquatic species, such as beaver (*Castor canadensis*; a keystone species), mink (*Neovison vison*), river otter (*Lontra canadensis*), painted turtle (*Chrysemys picta*), and Northern water snake (*Nerodia sipedon*) (Table 5). Wetland edges with abundant opportunities for browse support large mammals. Ponds, marshes, and ephemeral wetlands (vernal pools) provide habitat for other non-game species, such as frogs, salamanders, and dragonflies/damselflies. Wetland 13 represents a concentration of vernal pools, both significant and non-significant, serve as breeding habitat for vernal pool-dependent wildlife such as wood frog and spotted salamander (*Ambystoma maculatum*). The abundance of ponded and marshy wetlands, as well as grassy road corridors also likely support a diverse assemblage of odonates, including skimmers, darners, pond damsels, and broad-winged damsels. Wetland 10 has potential to host the bog elfin butterfly (*Callophrys lanoraieensis*; Maine Species of Greatest Conservation Need, Priority 3) whose host plant is black spruce. This species has been recorded in nearby towns.

Wildlife observations were limited to incidental observations during MaineDOT field visits, visible sign, and identifiable calls. Species observed are provided in Table 4 and Table 5. Wildlife sign was numerous throughout the property, including scat and tracks (coyote; *Canis latrans*), chewed bark, game trails along marsh edges (white-tail deer; *Odocoileus virginianus*), egg masses of ambystomid salamanders and frogs (spotted salamander, wood frog), and evidence of active beaver colonies (felled trees).

From the landscape conservation perspective, the property is located within a 3,545-acre undeveloped block of habitat bordered by Route 1 (south), Eastern Ave. (west) and Mann Hill and Bagaduce Roads (east) (BwH-Undeveloped Habitat Blocks & Connectors and Conserved Lands Map). Except for sections of Mann Hill Road and a small section of Bagaduce Road, connectivity with adjacent habitat blocks is somewhat limited by traffic, residential development, and/or agricultural land use (non-forested habitat), and commercial development in the Route 1A corridor. This function exists for Wetlands 2, 3, and 11; and it is the principal function for Wetlands 1, 4-10, 12, and 13.

Recreation (Consumptive and Non-Consumptive)

The potential for wetlands on the property to provide for recreation varies. Many habitats, such as open water ponds and marshes, upland forests, and edge habitats with good access would likely provide opportunities for hunting a variety of species. The availability of land open to the public for hunting in this area is limited. Wetland 1 with the large beaver impoundment may provide good trout fishing, especially if there is an underlying coldwater spring. Without some infrastructure improvements, the marshy border of the large pond in Wetland 1 would prevent easy public access for fishing or the launching of a canoe or small watercraft. The many wetlands on the property would not directly facilitate active recreational activities, such as hiking, off-road biking, or horseback riding. However, wetlands may be more accessible during winter by visitors on snowshoes and cross-country skis. The many and

varied wetland resources of the property would also be of great interest and value to naturalists and birdwatchers. All the above passive recreational activities would benefit from the scenic backdrop that the property's diverse wetlands provide.

The property's extensive network of maintained roads currently provides access to much of the larger parcel. Road access on the smaller parcel is less well developed. Improvements to the existing road network would greatly facilitate access to wetlands with the best recreation potential (hunting, fishing, birdwatching, nature study), such as Wetlands 1, 5, 6, 7, 8, 10, and 13. This function exists for Wetlands 2 and 4-10; and it is the principal function for Wetland 1.

Education/Scientific Value

The varied wetland types on the property, including marshes, beaver ponds, cedar swamps, streams, vernal pools, and bogs offer excellent opportunities for outdoor learning. Ecology, botany, wildlife tracking, birding, or specialties such as dragonfly or vernal pool study could be pursued by science classes at local schools, or in workshops and nature walks coordinated by local or regional environmental organizations. Appropriate public access and infrastructure (e.g., trails, parking, restrooms) may be necessary to make these educational opportunities possible. The abundant and diverse wetlands on the property also have scientific value for specialists searching for rare plant and animal species, rare natural community types, or specific taxa (e.g., Odonata, Lepidoptera, Ephemeroptera). This value exists, but it is not a principal value for any of the wetlands on the property due to the lack of infrastructure to support students or the public.

Uniqueness/Heritage

None of the wetlands on the property are classified by the Maine Natural Areas Program as critically imperiled (S1), imperiled (S2), or rare (S3) natural community types, and no noteworthy history is known for on the property. Bluejoint Meadow occurs in portions of former beaver impoundments on the property and has a state rarity rank of S4 (apparently secure in Maine). Black Spruce Bog and Dwarf Shrub Bog communities comprising the 71 acres of bog on the small parcel (Wetland 10) are also ranked S4. These community types contain highly specialized plant and animal species adapted to life in this unusual environment. The bog's aesthetic values are heightened by its transition from wooded bog to dwarf shrub over a large area (total area is 160 acres). Because of its combination of aesthetic quality, unusual flora and fauna relative to other wetlands on the property, and assemblage of community types, Wetland 10 provides uniqueness value, but it is not a principal value for the wetland.

Visual Quality/Aesthetics

Given the wide range of wetland types, their aesthetic qualities are generally considered subjective. However, some of the larger wetlands on the property are highly scenic due to the breadth of view, interspersed of diverse habitats, extent of undisturbed habitats, and the surrounding landscape context. The large pond and marsh complex at Wetland 1 is highly scenic because of its size, mix of diverse wetland habitats, expansive views, and surrounding landscape. The extensive cat-tail marsh in Wetland 7 possesses significant aesthetic qualities based on its large size and hilly backdrop. Scenic views of both wetlands can be accessed from the existing road network on the large parcel. The large bog on the small parcel (Wetland 10) also has significant aesthetic value. However, easy access to the edge of the bog is not currently available. As mentioned above under Recreation, active recreational activities like hiking, snowshoeing, off-road biking, or horseback riding would benefit from the scenic qualities of the property's wetlands. This value exists for Wetland 5; and it is the principal value for Wetlands 1, 7, and 10.

Endangered Species Habitat

No state or federally endangered or threatened species have been documented on the property. As previously mentioned, the perennial stream in the northern section of the large parcel (Wetland 9) is mapped as modeled rearing habitat for Atlantic salmon, a federally listed endangered species. Atlantic

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salmon have not been documented to occur on the property and no spawning or rearing habitat has been surveyed or mapped in Eaton Brook. Maine Department of Marine Resources indicated while Atlantic salmon have been historically documented in Eaton Brook, it is very unlikely they would be found in streams on the property (Ruksznis, Maine DMR, pers. comm., January 12 and 14, 2021). This value is not provided by the Wrentham Woods property. The Wrentham Woods property is also within the range of northern long-eared bat (*Myotis septentrionalis*), a federally threatened species. This rare *Myotis* species roosts singly or in colonies underneath bark and in cavities or in crevices of both live trees and snags (dead trees) during the summer. In winter, it hibernates in caves and mines. Although the range of the northern long-eared bat encompasses the property, no roosting sites or hibernacula are known to exist on or near the property.

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Table 3. Wrentham Woods Functions and Values

Wetland Functions and Values	Wetland Number												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Groundwater Recharge/Discharge	x	x		x	x	x	x	x	x	x	x	x	
Floodflow Alteration	X	x		x	X	X	X	X	X	X	X	X	
Fish and Shellfish Habitat	X	x			X	x	x	x	X				
Sediment/Toxicant Retention	X	x	x	x	X	X	X	X	X	X	x	x	x
Nutrient Removal/ Retention/ Transformation	X	x		x	X	x	X	X	X	X	x	x	x
Production Export	x	x			X	x	x	x	X	x	x	x	X
Sediment/Shoreline Stabilization	X	x			X	x	X	X	X	X	X	X	x
Wildlife Habitat	X	x	x	X	X	X	X	X	X	X	x	X	X
Recreation	X	x		x	x	x	x	x	x	x			
Educational/Scientific Value	X								x	X	x		X
Uniqueness/Heritage										X			
Visual Quality/Aesthetics	X				x		X			X			
Threatened/Endangered Species Habitat									x				

X = Function or value served by the wetland is high relative to all wetlands on the property.

x = Function or value is served by the wetland.

Note: Unmarked boxes either do not provide the function or value or do so in a very limited way.

SUMMARY

Wrentham Woods, a 1,620-acre property in the Town of Holden, was selected as the mitigation site to compensate for wetland impacts resulting from the proposed 6.1-mile Route 9 Connector between I-395 and Route 9 in Eddington. MaineDOT biologists conducted field surveys in 2020 to identify and qualitatively assess the property's wetlands and wildlife habitats. In addition to National Wetland Inventory mapping, MaineDOT identified and field mapped 130.8 acres of additional wetlands on the property based on criteria in the Army Corps of Engineers Wetlands Delineation Manual (1987). The combined area of wetlands on the property (NWI and MaineDOT wetlands) is approximately 333.5 acres. An estimated 165.2 acres of the total wetland acreage is forested wetland (Palustrine Forested Wetland). The remaining wetland types were classified as Palustrine Emergent Wetland (80.9 acres), Palustrine Scrub-Shrub Wetland (78.4 acres), and Palustrine Unconsolidated Bottom (9.0 acres).

Thirteen wetland areas were identified on the property during the survey. The areas included wetland complexes grouped according to sub-watershed, if connected by a stream, and individual wetlands if they occurred in isolation on the landscape. Wetlands ranged in size from a small, isolated wetland less than an acre in area, to a large bog complex occupying more than 70 acres. Cattail Marsh, Red Maple Fen, open water/floating-leaved/submergent vegetation communities, Northern White Cedar Swamp, Alder Shrub Thicket, Black Spruce Bog, and Dwarf Shrub Bog communities are among the wetland types occurring on the property. Although a formal vernal pool survey was not completed, from available data and 2020 site visits 45 vernal pools were identified and mapped; 12 of which were determined to be Significant by MDEP standards and protected as Significant Wildlife Habitat under Maine's NRPA. The IWWH mapped on the site are also protected as Significant Wildlife Habitat. No rare natural community types or rare species were identified during the field surveys. Great blue heron, a state species of Special Concern, has two documented nesting locations on the property (both nesting colonies are currently inactive). The parcels contain headwater wetlands of tributary streams that flow into Eaton Brook which is a direct tributary of the Penobscot River. Only one invasive plant species (*Lonicera morrowii*; Morrow's honeysuckle) was observed on the property (Wetland 6). Although few individuals were observed, additional invasive plants may be present on the property, especially along the property margins and along the edges of clearings present on both parcels.

Wetlands were assessed based on 13 functions and values, as defined by the U.S. Army Corps of Engineers *Highway Methodology Workbook Supplement - Wetland Functions and Values: A Descriptive Approach*. Floodflow alteration, sediment/toxicant retention, nutrient removal/retention/ transformation, sediment/shoreline stabilization, and wildlife habitat were among the functions best served by the wetlands. The many and diverse wetlands on the property support habitat for a wide range of plant and animal species. Recreational opportunities, both consumptive (hunting) and non-consumptive (hiking, birdwatching), as well as educational opportunities for outdoor learning could be readily developed on the property. The existing network of well-maintained access roads, with the addition of trails, parking, and basic visitor infrastructure would help capitalize on these user opportunities.

Habitat on the Wrentham Woods property represent resources typical for this region of Maine and comparable to wetlands impacted by the Route 9 Connector project.

MaineDOT – Route 9 Connector Compensation Area
Wrentham Woods – Existing Conditions Report

Table 4. Wrentham Woods Bird Species Observed

Species	Scientific Name
Alder flycatcher	<i>Empidonax alnorum</i>
American black duck	<i>Anas rubripes</i>
American goldfinch	<i>Spinus tristis</i>
American robin	<i>Turdus migratorius</i>
American woodcock	<i>Scolopax minor</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Black and white warbler	<i>Mniotilta varia</i>
Black-capped chickadee	<i>Poecile atricapillus</i>
Black-throated green warbler	<i>Setophaga virens</i>
Blue-headed vireo	<i>Vireo solitarius</i>
Blue jay	<i>Cyanocitta cristata</i>
Broad-winged hawk	<i>Buteo platypterus</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Common nighthawk	<i>Chordeiles minor</i>
Common raven	<i>Corvus corax</i>
Common yellowthroat	<i>Geothlypis trichas</i>
Canada goose	<i>Branta canadensis</i>
Eastern bluebird	<i>Sialia sialis</i>
Eastern kingbird	<i>Tyrannus tyrannus</i>
Eastern phoebe	<i>Sayornis phoebe</i>
Golden-crowned kinglet	<i>Regulus satrapa</i>
Great blue heron	<i>Ardea herodias</i>
Great crested flycatcher	<i>Myiarchus crinitus</i>
Guinea fowl	<i>Numididae</i> family
Hairy woodpecker	<i>Dryobates villosus</i>
Hermit thrush	<i>Catharus guttatus</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning dove	<i>Zenaida macroura</i>
Nashville warbler	<i>Leiothlypis ruficapilla</i>
Northern flicker	<i>Colaptes auratus</i>
Palm warbler	<i>Setophaga palmarum</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>
Pine warbler	<i>Setophaga pinus</i>
Purple finch	<i>Haemorhous purpureus</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Swamp sparrow	<i>Melospiza georgiana</i>
Turkey vulture	<i>Cathartes aurea</i>
White-throated sparrow	<i>Zonotrichia albicollis</i>
Wild turkey	<i>Meleagris gallopavo</i>
Winter wren	<i>Troglodytes hiemalis</i>
Wood duck	<i>Aix sponsa</i>
Yellow bellied sapsucker	<i>Sphyrapicus varius</i>

MaineDOT – Route 9 Connector Compensation Area
 Wrentham Woods – Existing Conditions Report

Table 5. Wrentham Woods Wildlife Species Observed

Species	Scientific Name
American Mink	<i>Neovison vison</i>
Beaver	<i>Castor canadensis</i>
Coyote	<i>Canis latrans</i>
Moose	<i>Alces alces</i>
North American Porcupine	<i>Erithizon dorsatum</i>
White-tailed deer	<i>Odocoileus virginianus</i>
Woodchuck	<i>Marmota monax</i>
Shrew	<i>Sorex</i> sp.
Amphibians	
Spring peeper	<i>Pseudocris crucifer</i>
Pickerel frog	<i>Lithobates palustris</i>
Spotted salamander	<i>Ambystoma maculatum</i>
Wood frog	<i>Lithobates sylvaticus</i>
Reptiles	
Garter snake	<i>Thamnophis sirtalis</i>
Insects	
Northern pearly-eye	<i>Enodia anhedon</i>
Spangled fritillary	<i>Speyeria</i> sp.
European skipper	<i>Thymelicus lineola</i>
Indian skipper	<i>Hesperia sassacus</i>
Four-spotted skimmer	<i>Libellula quadrimaculata</i>
Twelve-spotted skimmer	<i>Libellula pulchella</i>
Caddisfly	<i>Limnephilidae</i> family

SITE PHOTOGRAPHS

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Appendix A – Maine Department of Environmental Protection Visual Evaluation Checklist

**APPENDIX A - MDEP VISUAL EVALUATION
FIELD SURVEY CHECKLIST**

(Natural Resources Protection Act, 38 M.R.S. §§ 480 A - Z)

Name of applicant: Maine Department of Transportation Phone: 207-592-2358

Application Type: Individual NRPA

Activity Type: (brief activity description) Wetland and stream impacts for new road construction

Activity Location: Town: Brewer, Holden, Eddington County: Penobscot

GIS Coordinates, if known: 44.789966, -68.697736

Date of Survey: October 2, 2020 Observer: J. Andrew Walsh Phone: 207-624-3000

**Distance Between the Proposed Visibility Activity
and Resource (in Miles)**

1. Would the activity be visible from:	0-1/4	1/4-1	1+
A. <i>A National Natural Landmark or other outstanding natural feature?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. <i>A State or National Wildlife Refuge, Sanctuary, or Preserve or a State Game Refuge?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C. <i>A state or federal trail?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D. <i>A public site or structure listed on the National Register of Historic Places?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
E. <i>A National or State Park?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F. 1) <i>A municipal park or public open space?</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) <i>A publicly owned land visited, in part, for the use, observation, enjoyment and appreciation of natural or man-made visual qualities?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3) <i>A public resource, such as the Atlantic Ocean, a great pond or a navigable river?</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. What is the closest estimated distance to a similar activity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. What is the closest distance to a public facility intended for a similar use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the visibility of the activity seasonal? (i.e., screened by summer foliage, but visible during other seasons)		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5. Are any of the resources checked in question 1 used by the public during the time of year during which the activity will be visible?		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

(blue)