

BIDDING INSTRUCTIONS

FOR ALL PROJECTS:

1. Use pen and ink to complete all paper Bids.
2. As a minimum, the following must be received prior to the time of Bid opening:

For a Paper Bid:

a) a copy of the Notice to Contractors, b) the completed Acknowledgement of Bid Amendments form, c) the completed Schedule of Items, d) two copies of the completed and signed Contract Offer, Agreement & Award form, e) a Bid Guaranty, and f) any other certifications or Bid requirements listed in the Bid Documents as due by Bid opening.

For an Electronic Bid:

a) a completed Bid using Expedite® software and submitted via the Bid Express™ web-based service, b) a Bid Guaranty (as described below) or a faxed copy of a Bid Bond (with original to be delivered within 72 hours), and c) any other certifications or Bid requirements listed in the Bid Documents as due by Bid opening.

3. Include prices for all required items in the Schedule of Items. (“Zero is not considered a Bid price.”)
4. Include a Bid Guaranty. Acceptable forms are:
 - a. a properly completed and signed Bid Bond on the Department’s prescribed form (or on a form that does not contain any significant variations from the Department’s form as determined by the Department) for 5% of the Bid Amount or
 - b. an Official Bank Check, Cashier’s Check, Certified Check, U.S. Postal Money Order or Negotiable Certificate of Deposit in the amount stated in the Notice to Contractors.
5. If a paper Bid is to be sent, Federal Express overnight delivery is suggested as the package is delivered directly to the DOT Headquarters Building in Augusta. Other means, such as U.S. Postal Service’s Express Mail has proven not to be reliable.

IN ADDITION, FOR FEDERAL AID PROJECTS:

6. Complete the DBE Proposed Utilization form in the proper amounts, and deliver to the Contracts section by 4:30 PM on bid opening day

If you need further information regarding Bid preparation, call the DOT Contracts Section at (207)624-3410.

For complete bidding requirements, refer to Section 102 of the Maine Department of Transportation, Standard Specifications, Revision of December 2002.

NOTICE

The Maine Department of Transportation is attempting to improve the way Bid Amendments/Addendums are handled, and allow for an electronic downloading of bid packages from our website, while continuing to maintain a planholders list.

Prospective bidders, subcontractors or suppliers who wish to download a copy of the bid package and receive a courtesy notification of project specific bid amendments, must provide an email address to Diane Barnes or Mike Babb at the MDOT Contracts mailbox at: MDOT.contracts@maine.gov. Each bid package will require a separate request.

Additionally, interested parties will be responsible for reviewing and retrieving the Bid Amendments from our web site, and acknowledging receipt and incorporating those Bid Amendments in their bids using the Acknowledgement of Bid Amendment Form.

The downloading of bid packages from the MDOT website is not the same as providing an electronic bid to the Department. Electronic bids must be submitted via <http://www.BIDX.com>. For information on electronic bidding contact Larry Childs at Larry.Childs@maine.gov.

NOTICE

For security and other reasons, all Bid Packages which are mailed, shall be provided in double (one envelope inside the other) envelopes. The *Inner Envelope* shall have the following information provided on it:

Bid Enclosed - Do Not Open

PIN:

Town:

Date of Bid Opening:

Name of Contractor with mailing address and telephone number:

In Addition to the usual address information, the *Outer Envelope* should have written or typed on it:

Double Envelope: Bid Enclosed

PIN:

Town:

Date of Bid Opening:

Name of Contractor:

This should not be much of a change for those of you who use Federal Express or similar services.

Hand-carried Bids may be in one envelope as before, and should be marked with the following information:

Bid Enclosed: Do Not Open

PIN:

Town:

Name of Contractor:

STATE OF MAINE DEPARTMENT OF TRANSPORTATION
Bid Guaranty-Bid Bond Form

KNOW ALL MEN BY THESE PRESENTS THAT _____

_____, of the City/Town of _____ and State of _____

as Principal, and _____ as Surety, a

Corporation duly organized under the laws of the State of _____ and having a usual place of

Business in _____ and hereby held and firmly bound unto the Treasurer of

the State of Maine in the sum of _____ for payment which Principal and Surety bind

themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

The condition of this obligation is that the Principal has submitted to the Maine Department of

Transportation, hereafter Department, a certain bid, attached hereto and incorporated as a

part herein, to enter into a written contract for the construction of _____

_____ and if the Department shall accept said bid

and the Principal shall execute and deliver a contract in the form attached hereto (properly

completed in accordance with said bid) and shall furnish bonds for this faithful performance of

said contract, and for the payment of all persons performing labor or furnishing material in

connection therewith, and shall in all other respects perform the agreement created by the

acceptance of said bid, then this obligation shall be null and void; otherwise it shall remain in full

force, and effect.

Signed and sealed this _____ day of _____ 20_____

WITNESS:

WITNESS

PRINCIPAL:

By _____

By: _____

By: _____

SURETY:

By _____

By: _____

Name of Local Agency: _____

NOTICE

Bidders:

Please use the attached “Request for Information” form when faxing questions and comments concerning specific Contracts that have been Advertised for Bid. Include additional numbered pages as required. Questions are to be faxed to the number listed in the Notice to Contractors. This is the only allowable mechanism for answering Project specific questions. Maine DOT will not be bound to any answers to Project specific questions received during the Bidding phase through other processes.

NOTICE

Disadvantaged Business Enterprise Proposed Utilization

The Apparent Low Bidder must submit the Disadvantaged Business Enterprise Proposed Utilization form by close of Business (4:30 P.M.) on Bid day.

The Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan form contains additional information that is required by USDOT.

The Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan form must be used.

A copy of the new Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan and instructions for completing it are attached.

Note: Questions about DBE firms, or to obtain a printed copy of the DBE Directory, contact the Civil Rights Office at (207) 624-3066.

MDOT's DBE Directory of Certified firms can also be obtained at www.maine.gov/mdot/disadvantaged-business-enterprises/dbe-home.php

INSTRUCTIONS FOR PREPARING THE CONTRACTOR'S DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION PLAN

The Contractor Shall:

1. Submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan to the Contract's Engineer by 4:30 P.M. on the Bid day.
2. Extend equal opportunity to MDOT certified DBE firms (as listed in MDOT's DBE Directory of Certified Businesses) in the selection and utilization of Subcontractors and Suppliers.

SPECIFIC INSTRUCTIONS FOR COMPLETING THE FORM:

Insert Contractor name, the name of the person(s) preparing the form, and that person(s) telephone and fax number.

Provide total Bid price, Federal Project Identification Number, and location of the Project work.

In the columns, name each DBE firm to be used, provide the Unit or Item cost of the Work/Product to be provided by the DBE firm, give a brief description of the Work, and the dollar value of the Work.

If no DBE firm is to be utilized, the Contractor must document the reason(s) why no DBE firms are being used. Specific supporting evidence of good faith efforts taken by Contractors to solicit DBE Bidders must be attached. This evidence, as a minimum, includes phone logs, e-mail and/or mail DBE solicitation records, and the documented results of these solicitations.

NOTICE

Maine Department of Transportation Disadvantaged Business Enterprise Program

Notice is hereby given that in accordance with US DOT regulation 49 CFR Part 26, the Maine Department of Transportation has established a DBE Program for disadvantaged business participation in the federal-aid construction program; MaineDOT contracts covered by the program include consulting, construction, supplies, manufacturing, and service contracts.

For FFY 2006 (October 1, 2005 through September 30, 2006), MaineDOT has established a DBE participation goal of 5% to be achieved through race/gender neutral means, with an additional 1.6% to be achieved through race/gender conscious contract goals.

Interested parties may view MaineDOT's DBE goal setting methodology for the next 30 days during normal business hours (8-4, M-F) at the Maine Department of Transportation, Office of Civil Rights, 16 State House Station, Augusta ME 04333-0016. Appointments may be scheduled by telephone at (207) 624-3066. The goal setting methodology is also available for viewing on the MaineDOT website: <http://www.maine.gov/mdot/disadvantaged-business-enterprises/dbe-home.php>.

Comments on the goal will be accepted for 45 days from the date of this notice. Written comments should be addressed to Holly Anderson, Maine Department of Transportation, Civil Rights Office, 16 State House Station, Augusta, Maine 04333-0016 or by e-mail at: holly.anderson@maine.gov.

**MaineDOT CONTRACTOR'S DISADVANTAGED BUSINESS ENTERPRISE
PROPOSED UTILIZATION FORM**

Low Bidder must furnish this form to Contracts Section Bid Opening day.

Contractor: _____

Telephone: _____

Prepared by: _____

Fax: _____

BID PRICE: \$ _____

BID DATE: ____/____/____

FEDERAL PIN # _____

PROJECT LOCATION: _____

TOTAL DBE _____ % PARTICIPATION FOR THIS PROJECT

W B E•	D B E•	Firm Name	Unit/Item Cost	Unit #	Description of Work & Item Number	Actual \$ Value
Total >						

Attach supporting evidence to the maximum participation of DBEs on this project. This is a requirement. This evidence must include name of firm(s) contacted, date contacted, and outcome of solicitation.

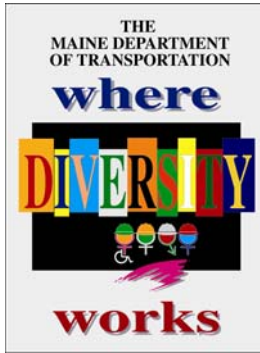
Equal Opportunity Use:

Form received: ____/____/____ Verified by: _____

____ Accepted ____ Rejected _____

cc: Contracts Other _____

- WBEs are non-minority women owned firms certified by MaineDOT
 - DBEs are male and minority owned firms certified by MaineDOT
- For a complete list of certified firms go to <http://www.state.me.us/mdot/disadvantaged-business-enterprises/dbe-home.php>



MaineDOT's CIVIL RIGHTS OFFICE

To search for a specific work item, click on the binoculars, type in the word you want to search for and click on find. To go to the next selected item, click on the binoculars with the arrow.

MAINE DEPARTMENT OF TRANSPORTATION

CERTIFIED DISADVANTAGED AND WOMEN BUSINESS ENTERPRISE

DECEMBER 2005

Information is updated on an ongoing basis and
can be retrieved by visiting our Website:

www.maine.gov/mdot/disadvantaged-business-enterprises/dbe-home.php

State of Maine
VENDOR FORM

For New Vendors & for Updates on Current Vendors

Special Instructions:

PLEASE PRINT CLEARLY

Return this form to:

*** = MUST BE COMPLETED TO PROCESS**

ONLY ONE NAME/VENDOR PER FORM

New Vendor	Address Change	Multi Address	Name Change	Contact Update	ID # Change
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Social Security Number*
Individual or Sole Proprietor

Federal Taxpayer ID Number*
Corporation

OR

Please fill in ONE.

S

Business name in "DBA" field below.

E

Business name in "Name" field below.

This form will affect all transactions with ALL state agencies.

<p>NEW:*</p> <p>Remit to Address: Individual or Business Name.</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border: 1px solid black; padding: 2px;">Name*</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">DBA or C/O</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">Address*</td></tr> <tr><td style="border: 1px solid black; padding: 2px;"> </td></tr> <tr><td style="border: 1px solid black; padding: 2px;"> </td></tr> <tr><td style="border: 1px solid black; padding: 2px;">Tel #*</td></tr> </table>	Name*	DBA or C/O	Address*			Tel #*	OR	<p>OLD:</p> <p>Old number:</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border: 1px solid black; padding: 2px;">Name</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">DBA or C/O</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">Address</td></tr> <tr><td style="border: 1px solid black; padding: 2px;"> </td></tr> <tr><td style="border: 1px solid black; padding: 2px;"> </td></tr> <tr><td style="border: 1px solid black; padding: 2px;">Tel #</td></tr> </table>	Name	DBA or C/O	Address			Tel #
Name*														
DBA or C/O														
Address*														
Tel #*														
Name														
DBA or C/O														
Address														
Tel #														

<input type="checkbox"/> Is this the same name on your Social Security card?		Acct #
<input type="checkbox"/> If not, have you told Social Security about your name change?		Provider #

Signature* _____

Contact Name _____

Print Name or Title _____

Accounts Receivable Contact Name _____

Date* _____ (within 3 months)

Phone # if Different or for Contact Info _____

Vendor Indicators: Enter Y (Yes) For All Categories Listed Below That Apply To This Vendor

Dealer: <input type="checkbox"/>	Manufacturer: <input type="checkbox"/>	Factory Rep: <input type="checkbox"/>
Jobber: <input type="checkbox"/>	Retailer: <input type="checkbox"/>	Commodity: <input type="checkbox"/>
Individual: <input type="checkbox"/>	Partnership: <input type="checkbox"/>	Incorporated: <input type="checkbox"/>
Minority: <input type="checkbox"/>	Small Business: <input type="checkbox"/>	In-State: <input type="checkbox"/>

Information on State Agency Submitting Vendor Form

State Agency* & SHS #	Contact Person Name & Title*	Telephone #*
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Send to: Maine Department of Transportation/ Contracts 16 SHS, Augusta, ME 04333-0014 Attn: Pat Brown

INSTRUCTIONS FOR COMPLETING VENDOR FORM

1. **Print Clearly**
2. **All sections marked with an * must be completed for processing**
3. **Send completed form to requesting State agency OR remit to address at bottom of form.**
4. **Do NOT send by Fax. Only originals will be accepted.**

<u>FIELDS</u>	<u>INFORMATION NEEDED FOR FIELD</u>
<i>Special Instructions</i>	<i>Instructions to Vendor from Agency requesting information.</i>
<i>Return to</i>	<i>The location of agency where the form is to be mailed back to. If none use address at bottom of form.</i>
Boxes above SSN/EIN Fields	Please check mark all that apply to the vendor. If other, please specify. If it's a new vendor only one will apply: "New Vendor"
Social Security Number	Individuals, individuals "doing business as", and individuals without a Federal Taxpayer ID #. Use if not using EIN
Federal Taxpayer ID Number*	Businesses or professionals providing services. (ID # needs to be use for REMITTANCE purposes.) Use if not using SSN
New	Current Information
Old	Old information (If another ID# had been used please put it next to "OLD")
Name	Individual's Name or Business Name. ONLY ONE name per a form.
DBA or C/O	"Doing business as" or "In Care Of"
Address	REMITTANCE ADDRESS - Street Address OR PO Box (one or the other)
Tel #	Phone Number of individual or business
Signature	Individual or authorized representative of individual or authorized representative of the business
Date	Current Date (no more than 3 months old)
Contact Name	Contact person at business
Accounts Receivable Contact Name	Contact person at business for accounts receivables.
Phone #	Phone for Act Rec Contact
Vendor Indicators	Indicate all that apply for the vendor, as needed
Agency Info	For Agency personnel submitting the form. Contact info incase of questions.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION NOTICE TO CONTRACTORS

Sealed Bids addressed to the Maine Department of Transportation, Augusta, Maine 04333 and endorsed on the wrapper "Bids for Constructing New Border Crossing and Wetland Mitigation in the city of Calais" will be received from contractors at the Reception Desk, Maine DOT Building, Child Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on December 6, 2006, and at that time and place publicly opened and read. Bids will be accepted from contractors prequalified by the Department of Transportation for Highway Construction projects. All other Bids may be rejected. MDOT provides the option of electronic bidding. We now accept electronic bids for those bid packages posted on the bidx.com website. Electronic bids do not have to be accompanied by paper bids. Please note: the Department will accept a facsimile of the bid bond; however, the original bid bond must then be received at the MDOT Contract Section within 72 hours of the bid opening. During this transition, dual bids (one paper, one electronic) will be accepted, with the paper copy taking precedence.

Description: Maine Federal Aid Project No. NCPD/CBI-HP-8483(320)X and NCPD/CBI-HP-8483(330)X, PINS. 8483.32 & 8483.33

Location: In Washington County. Project is for new construction of border crossing between Route 1 and the Canadian border. Also wetland mitigation at the Water District and Hardscrabble Road sites.

Outline of Work: Grading, drainage, base, hot mix asphalt, BSCR and IPAR Bridges over Maine Central Railroad, guardrail, curb, plantings, highway lighting, signing, and other incidental work.

The basis of award will be Section 0001 only.

For general information regarding Bidding and Contracting procedures, contact Scott Bickford at (207)624-3410. Our webpage at <http://www.state.me.us/mdot/project/design/homepg.htm> contains a copy of the schedule of items, Plan Holders List, written portions of bid amendments (not drawings), and bid results. For Project-specific information fax all questions to **Project Manager Joel Kittridge** at (207)624-3431. Questions received after 12:00 noon of Monday prior to bid date will not be answered. Bidders shall not contact any other Departmental staff for clarification of Contract provisions, and the Department will not be responsible for any interpretations so obtained. Hearing impaired persons may call the Telecommunication Device for the Deaf at (207) 624-3007.

Plans, specifications and bid forms may be seen at the Maine DOT Building in Augusta, Maine. They may be purchased from the Department between the hours of 8:00 a.m. to 4:30 p.m. by cash, credit card (Visa/Mastercard) or check payable to Treasurer, State of Maine sent to Maine Department of Transportation, Attn.: Mailroom, 16 State House Station, Augusta, Maine 04333-0016. They also may be purchased by telephone at (207)624-3536 between the hours of 8:00 a.m. to 4:30 p.m. Full size plans \$156.00 (\$168.00 by mail). Half size plans \$78.00 (\$88.00 by mail), Bid Book \$10 (\$13 by mail), Single Sheets \$2, payment in advance, all non-refundable.

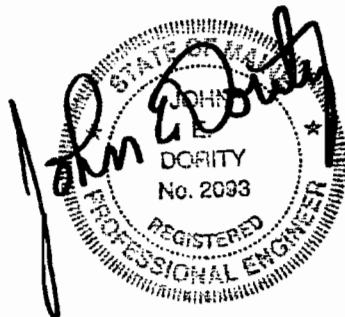
Each Bid must be made upon blank forms provided by the Department and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of \$175,000.00 payable to Treasurer, State of Maine as a Bid guarantee. A Contract Performance Surety Bond and a Contract Payment Surety Bond, each in the amount of 100 percent of the Contract price, will be required of the successful Bidder.

This Contract is subject to all applicable Federal Laws. This contract is subject to compliance with the Disadvantaged Business Enterprise program requirements as set forth by the Maine Department of Transportation.

All work shall be governed by "State of Maine, Department of Transportation, Standard Specifications, Revision of December 2002", price \$10 [\$13 by mail], and Standard Details, Revision of December 2002, price \$20 [\$25 by mail] Standard Detail updates can be found at <http://www.state.me.us/mdot/project/design/homepg.htm>

The right is hereby reserved to the MDOT to reject any or all Bids.

Augusta, Maine
November 15, 2006



JOHN E. DORITY
CHIEF ENGINEER

SPECIAL PROVISION 102.7.3
ACKNOWLEDGMENT OF BID AMENDMENTS

With this form, the Bidder acknowledges its responsibility to check for all Amendments to the Bid Package. For each Project under Advertisement, Amendments are located at <http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php> It is the responsibility of the Bidder to determine if there are Amendments to the Project, to download them, to incorporate them into their Bid Package, and to reference the Amendment number and the date on the form below. The Maine DOT will not post Bid Amendments any later than noon the day before Bid opening without individually notifying all the planholders.

Amendment Number	Date

The Contractor, for itself, its successors and assigns, hereby acknowledges that it has received all of the above referenced Amendments to the Bid Package.

CONTRACTOR

_____ Date

_____ Signature of authorized representative

_____ (Name and Title Printed)

Calais
8483.32
Sept 27, 2006

DISADVANTAGE/WOMEN BUSINESS ENTERPRISE
UTILIZATION BID PROPOSAL

This bid assurance identifies the certified D/WBE firms which the bidder intends to use in meeting the D/WBE goal of this project.

Bidders who do not comply accordingly will find their bid rejected.

Provide in the space below the name and a brief description of the work or bid item(s) to be completed by the D/WBE. Bidders are reminded that the more detailed Pre-Signature Compliance Review form is required by close of business on bid opening day. It is to be presented to the Civil Rights Office, DOT Building. Completed DBE Proposed Utilization Forms may be faxed to 624-3431 ATTENTION, Civil Rights, but must be received prior to close of business.

D/WBE 5 % goal

Name of D/WBE

Description of participation

Projected Cost of the Above _____

*Signature _____ Date _____

*Signature indicates statement of intended utilization is accurate and reflects the bidder's good faith efforts.

SPECIAL PROVISION
Required Participation by
DISADVANTAGED BUSINESS ENTERPRISE

The goal of work to be performed by Disadvantaged Business Enterprises for this contract is found on the DBE Utilization Bid Proposal sheets immediately following the Schedule of Items. For the purpose of this Special Provision, Disadvantage Business Enterprises are those which are so certified by the Civil Rights Office prior to the performance of the DBE on this contract.

Compliance with this Special Provision may be fulfilled by Disadvantaged Business Enterprise as either:

- A sole prime contractor,
- A member of a joint venture, may count towards commitment only the percentage of the ownership and control of the DBE partner in the joint venture,
- An approved subcontractor,
- An owner-operator of construction equipment.
- A renter of construction equipment to a prime or subcontractor,
- A consultant,
- A regular dealer of materials and/or equipment but only 60 percent of expenditures to DBE suppliers may be counted toward the commitment unless the supplier is also the manufacturer,
- Any combination of the above.

In determining compliance with the Special Provision the total creditable dollars paid to the Disadvantaged Business Enterprise shall be subtracted from the amount stated in the DBE Utilization Bid Proposal. The Contractor shall maintain records of payment in a form acceptable to that Office before requesting retent from the Contracts Section.

Failure by the Contractor to achieve the stated DBE goal, or more of this Contract performed by Disadvantaged Business Enterprise will result in the reduction in Contract payments by the amount determined by subtracting the resulting dollar value of work actually creditable to Disadvantaged Business Enterprise unless MDOT, Civil Rights Office waives requirement because the Contractor has demonstrated a good faith effort to meet the contract goal in accordance with the following standards;

1. Whether the Contractor attended any pre-bid meetings that were scheduled by the MDOT to inform DBE's of subcontracting opportunities;
2. Whether the Contractor advertised in general circulation, trade association, and minority/women's focus media concerning the subcontracting opportunities;
3. Whether the Contractor provided written notice to a reasonable number of specific DBE's that their interest in the contract is being solicited:

4. Whether the Contractor followed up on initial solicitation of interest by directly contacting DBE's to determine with certainty whether the DBE's were interested;
5. Whether the Contractor selected portions of the work to be performed by DBE's in order to increase the likelihood of meeting the DBE goals;
6. Whether the Contractor provided interested DBE's with adequate information about the plans, specifications and requirements of the Contract;
7. Whether the Contractor negotiated in good faith with interested DBE's, not rejecting DBE's as unqualified without sound reasons based on a thorough investigation of their capabilities;
8. Whether the Contractor made efforts to assist interested DBE's in obtaining bonding or insurance, or made efforts to provide DBE's with other appropriate technical/financial assistance required by the MDOT or contractor;
9. Whether the Contractor effectively used the services of available minority/women's community organizations, minority/women's contractors' groups; local, state and federal minority/women's business assistance offices; and other organizations that provide assistance in the recruitment and placement of DBE's;
10. Quarterly reports of actual dollars paid to DBE's on this project will be submitted to the Civil Rights Office by the end of the first week of January, April, July and October for the period covering the proceeding three months considered Federal Fiscal year quarters. The reports will be submitted directly on forms provided by that office. Failure to submit the form by the deadline may result in a withholding of approval of partial payment estimates by the Resident;
11. Any substitution of the named DBE firm(s) or the approved activity of the said firm(s) from that firm or activity and in the pre-contract signature compliance review form must be approved by Contract Modification which must be submitted by the Resident to the Civil Rights Office.

The following are acceptable reasons for approval of such a change order:

The DBE defaults or is over-extended:

The MDOT deletes portions of the work to be performed by the DBE.

It is not intended that the ability to negotiate a more advantageous contract with another sub-contractor be considered a valid basis for such a change in the DBE utilization once the pre-contract review has been passed. This Special Provision is in addition to all other Equal Employment Opportunity requirements of this contract. The Contractor must report the use of any bona-fide DBE.

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS

SECTION 0001 HWY. / BR. ITEMS

0010	201.11 CLEARING	2.000 HA				
0020	201.23 REMOVING SINGLE TREE TOP ONLY	22.000 EA				
0030	201.24 REMOVING STUMP	22.000 EA				
0040	202.08 REMOVING BUILDING NO.: 1	LUMP	LUMP			
0050	202.08 REMOVING BUILDING NO.: 10	LUMP	LUMP			
0060	202.08 REMOVING BUILDING NO.: 11	LUMP	LUMP			
0070	202.08 REMOVING BUILDING NO.: 12	LUMP	LUMP			
0080	202.08 REMOVING BUILDING NO.: 13	LUMP	LUMP			
0090	202.08 REMOVING BUILDING NO.: 14	LUMP	LUMP			
0100	202.08 REMOVING BUILDING NO.: 15	LUMP	LUMP			

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0110	202.08 REMOVING BUILDING NO.: 16	LUMP	LUMP			
0120	202.08 REMOVING BUILDING NO.: 17	LUMP	LUMP			
0130	202.08 REMOVING BUILDING NO.: 18	LUMP	LUMP			
0140	202.08 REMOVING BUILDING NO.: 19	LUMP	LUMP			
0150	202.08 REMOVING BUILDING NO.: 2	LUMP	LUMP			
0160	202.08 REMOVING BUILDING NO.: 20	LUMP	LUMP			
0170	202.08 REMOVING BUILDING NO.: 3	LUMP	LUMP			
0180	202.08 REMOVING BUILDING NO.: 4	LUMP	LUMP			
0190	202.08 REMOVING BUILDING NO.: 5	LUMP	LUMP			
0200	202.08 REMOVING BUILDING NO.: 6	LUMP	LUMP			
0210	202.08 REMOVING BUILDING NO.: 7	LUMP	LUMP			

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0220	202.08 REMOVING BUILDING NO.: 8	LUMP	LUMP			
0230	202.08 REMOVING BUILDING NO.: 9	LUMP	LUMP			
0240	202.15 REMOVING MANHOLE OR CATCH BASIN	EA	2.000			
0250	202.20 REMOVING BITUMINOUS CONCRETE PAVEMENT	M2	12500.000			
0260	202.202 REMOVING PAVEMENT SURFACE	M2	1650.000			
0270	202.203 PAVEMENT BUTT JOINTS	M2	750.000			
0280	203.20 COMMON EXCAVATION	M3	23600.000			
0290	203.21 ROCK EXCAVATION	M3	390.000			
0300	203.232 MITIGATION EXCAVATION	M3	1900.000			
0310	203.24 COMMON BORROW	M3	62561.000			
0320	203.242 DIRTY BORROW	M3	1100.000			

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X

NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0330	203.25 GRANULAR BORROW	490.000 M3				
0340	206.061 STRUCTURAL EARTH EXCAVATION - DRAINAGE AND MINOR STRUCTURES, BELOW GRADE	50.000 M3				
0350	304.10 AGGREGATE SUBBASE COURSE - GRAVEL	18000.000 M3				
0360	403.207 HOT MIX ASPHALT 19.0 MM NOMINAL MAX SIZE	3497.000 MG				
0370	403.208 HOT MIX ASPHALT 12.5 MM, SURFACE	4650.000 MG				
0380	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	62.000 MG				
0390	403.211 HOT MIX ASPHALT (SHIM)	660.000 MG				
0400	403.213 HOT MIX ASPHALT 12.5 MM, BASE	1400.000 MG				
0410	409.15 BITUMINOUS TACK COAT APPLIED	3000.000 L				
0420	501.231 DYNAMIC LOADING TEST	8.000 EA				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0430	501.46 STEEL H-BEAM PILES 109 KG/M, DELIVERED	640.000 M				
0440	501.461 STEEL H-BEAM PILES 109 KG/M, IN PLACE	640.000 M				
0450	501.90 PILE TIPS	38.000 EA				
0460	501.91 PILE SPLICES	38.000 EA				
0470	501.92 PILE DRIVING EQUIPMENT MOBILIZATION	LUMP	LUMP			
0480	502.219 STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	LUMP	LUMP			
0490	502.25 STRUCTURAL CONCRETE SUPERSTRUCTURE SLABS	LUMP	LUMP			
0500	502.31 STRUCTURAL CONCRETE APPROACH SLABS	LUMP	LUMP			
0510	502.341 STRUCTURAL CONCRETE ROADWAY MEDIAN	39.000 M3				
0520	502.345 STRUCTURAL CONCRETE - COLORED PAVEMENT	110.000 M3				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0530	503.12 REINFORCING STEEL, FABRICATED AND DELIVERED	33300.000 KG				
0540	503.13 REINFORCING STEEL, PLACING	33300.000 KG				
0550	508.14 HIGH PERFORMANCE WATERPROOFING MEMBRANE	LUMP	LUMP			
0560	514.06 CURING BOX FOR CONCRETE CYLINDERS	2.000 EA				
0570	515.21 PROTECTIVE COATING FOR CONCRETE SURFACES	LUMP	LUMP			
0580	524.40 PROTECTIVE SHIELD	LUMP	LUMP			
0590	526.321 PERMANENT CONCRETE BARRIER TYPE III A	LUMP	LUMP			
0600	535.62 PRESTRESSED STRUCTURAL CONCRETE BOX BEAM	LUMP	LUMP			
0610	602.30 FLOWABLE CONCRETE FILL	2.000 M3				
0620	603.159 300 MM CULVERT PIPE OPTION III	12.000 M				
0630	603.17 450 MM CULVERT PIPE OPTION I	51.000 M				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X

NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0640	603.1753 450 MM RCP CLASS V	22.000 M				
0650	603.179 450 MM CULVERT PIPE OPTION III	250.000 M				
0660	603.199 600 MM CULVERT PIPE OPTION III	44.000 M				
0670	603.205 750 MM REINFORCED CONCRETE PIPE CLASS III	10.000 M				
0680	603.209 750 MM CULVERT PIPE OPTION III	97.000 M				
0690	603.21 900 MM CULVERT PIPE OPTION I	22.000 M				
0700	603.215 900 MM REINFORCED CONCRETE PIPE CLASS III	69.000 M				
0710	603.239 1200 MM CULVERT PIPE OPTION III	51.000 M				
0720	603.39 1825 MM SPAN 1375 MM RISE PIPE ARCH OPTION III	71.000 M				
0730	604.072 CATCH BASIN TYPE A1-C	6.000 EA				
0740	604.076 1500 MM CATCH BASIN TYPE A1-C	2.000 EA				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0750	604.09 CATCH BASIN TYPE B1	3.000 EA				
0760	604.092 CATCH BASIN TYPE B1-C	3.000 EA				
0770	605.09 150 MM UNDERDRAIN TYPE B	110.000 M				
0780	605.11 300 MM UNDERDRAIN TYPE C	59.000 M				
0790	606.1721 BRIDGE TRANSITION - TYPE 1	6.000 EA				
0800	606.23 GUARDRAIL TYPE 3C - SINGLE RAIL	620.000 M				
0810	606.232 GUARDRAIL TYPE 3C - OVER 4.5 M RADIUS	34.000 M				
0820	606.258 CABLE RELEASING TERMINAL ANCHORAGE ASSEMBLY	1.000 EA				
0830	606.265 TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	1.000 EA				
0840	606.353 REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	13.000 EA				
0850	606.79 GUARDRAIL 350 FLARED TERMINAL	5.000 EA				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0860	607.244 REMOVE AND DISPOSE FENCE	LUMP	LUMP			
0870	609.12 VERTICAL CURB TYPE 1 - CIRCULAR	56.000 M				
0880	609.31 CURB TYPE 3	510.000 M				
0890	609.34 CURB TYPE 5	530.000 M				
0900	609.35 CURB TYPE 5 - CIRCULAR	17.000 M				
0910	610.08 PLAIN RIPRAP	560.000 M3				
0920	610.18 STONE DITCH PROTECTION	25.000 M3				
0930	613.319 EROSION CONTROL BLANKET	5650.000 M2				
0940	613.329 EXTENDED USE EROSION CONTROL BLANKETS	100.000 M2				
0950	615.07 LOAM	25.000 M3				
0960	615.08 WETLANDS LOAM	610.000 M3				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0970	615.0862 LOAM / SALVAGE MIX	1475.000 M3				
0980	615.09 TOPSOIL SALVAGE	1300.000 M3				
0990	617.37 WOODWASTE MULCH	350.000 M3				
1000	618.1301 SEEDING METHOD NUMBER 1 - PLAN QUANTITY	3.000 UN				
1010	618.1401 SEEDING METHOD NUMBER 2 - PLAN QUANTITY	220.000 UN				
1020	618.1411 SEEDING METHOD NUMBER 3 - PLAN QUANTITY	290.000 UN				
1030	618.143 SPECIAL SEED MIX: WATER DISTRICT #1	28.000 UN				
1040	618.143 SPECIAL SEED MIX: WATER DISTRICT #2	80.000 UN				
1050	618.25 APPLIED WATER	5.000 M3				
1060	619.1201 MULCH - PLAN QUANTITY	500.000 UN				
1070	619.1401 EROSION CONTROL MIX	240.000 M3				

SCHEDULE OF ITEMS

REVISED:

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PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1080	619.141 SPECIAL MULCH	108.000 UN				
1090	620.56 DRAINAGE GEOTEXTILE	460.000 M2				
1100	621.014 EVERGREEN TREES (450 MM - 600 MM) GROUP A	614.000 EA				
1110	621.038 EVERGREEN TREES (1500 MM - 1800 MM) GROUP B	6.000 EA				
1120	621.054 EVERGREEN TREES (3000 MM - 3600 MM) GROUP C	8.000 EA				
1130	621.202 MEDIUM DECIDUOUS TREE (50 MM - 65 MM CALIPER) GROUP B	20.000 EA				
1140	621.246 LARGE DECIDUOUS TREES (900 MM - 1200 MM) GROUP A	327.000 EA				
1150	621.267 LARGE DECIDUOUS TREE (45 MM - 50 MM CALIPER) GROUP A	6.000 EA				
1160	621.285 LARGE DECIDUOUS TREE (75 MM - 90 MM CALIPER) GROUP A	10.000 EA				
1170	621.498 BROADLEAF EVERGREENS (750 MM - 900 MM) GROUP A	8.000 EA				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X

NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1180	621.54 DECIDUOUS SHRUBS (450 MM - 600 MM) GROUP A	936.000 EA				
1190	621.711 HERBACEOUS PERENNIALS GROUP B	460.000 EA				
1200	621.80 ESTABLISHMENT PERIOD HIGHWAY LANDSCAPING	LUMP	LUMP			
1210	621.80 ESTABLISHMENT PERIOD MITIGATION - PIN. 8483.33	LUMP	LUMP			
1220	626.11 PRECAST CONCRETE JUNCTION BOX: _____	8.000 EA				
1230	626.21 METALLIC CONDUIT	910.000 M				
1240	626.32 600 MM FOUNDATION	26.000 EA				
1250	626.38 GROUND MOUNT CABINET FOUNDATION	2.000 EA				
1260	627.18 300 MM SOLID WHITE PAVEMENT MARK LINE	35.000 M				
1270	627.711 WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE (PLAN QUANTITY)	7400.000 M				

SCHEDULE OF ITEMS

REVISED:

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PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1280	627.75 WHITE OR YELLOW PAVEMENT AND CURB MARKING	42.000 M2				
1290	627.76 TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW	LUMP	LUMP			
1300	627.77 REMOVING PAVEMENT MARKINGS	29.000 M2				
1310	629.05 HAND LABOR, STRAIGHT TIME	128.000 HR				
1320	631.10 AIR COMPRESSOR (INCLUDING OPERATOR)	60.000 HR				
1330	631.11 AIR TOOL (INCLUDING OPERATOR)	60.000 HR				
1340	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	70.000 HR				
1350	631.13 BULLDOZER (INCLUDING OPERATOR)	60.000 HR				
1360	631.132 SMALL BULLDOZER (INCLUDING OPERATOR)	10.000 HR				
1370	631.14 GRADER (INCLUDING OPERATOR)	60.000 HR				
1380	631.171 TRUCK - SMALL (INCLUDING OPERATOR)	90.000 HR				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1390	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	80.000 HR				
1400	631.20 STUMP CHIPPER (INCLUDING OPERATOR)	60.000 HR				
1410	631.22 FRONT END LOADER (INCLUDING OPERATOR)	70.000 HR				
1420	631.221 SMALL FRONT-END LOADER (INCLUDING OPERATOR)	60.000 HR				
1430	631.32 CULVERT CLEANER (INCLUDING OPERATOR)	24.000 HR				
1440	634.16 HIGHWAY LIGHTING	LUMP	LUMP			
1450	634.206 LIGHT STANDARD FOR POST TOP LUMINAIRE 10500 MM	19.000 EA				
1460	634.206 LIGHT STANDARD FOR POST TOP LUMINAIRE 6000 mm	2.000 EA				
1470	634.206 LIGHT STANDARD FOR POST TOP LUMINAIRE 7500 mm	2.000 EA				
1480	634.206 LIGHT STANDARD FOR POST TOP LUMINAIRE 9000 mm	2.000 EA				
1490	636.40 MSE RETAINING WALL	1390.000 M2				

SCHEDULE OF ITEMS

REVISED:

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PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT		
			DOLLARS	CTS	DOLLARS	CTS	
1500	643.60 FLASHING BEACON AT: STA. 0+700 (SIGN E)	LUMP	LUMP				
1510	645.161 BREAKAWAY DEVICES SINGLE POLE	1.000 EA					
1520	645.271 REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS, TYPE I	9.000 M2					
1530	645.280 WOOD POST	15.000 EA					
1540	645.281 125 MM ALUMINUM POLE	1.000 EA					
1550	652.38 FLAGGER	7000.000 HR					
1560	652.381 UNIFORM TRAFFIC OFFICERS	200.000 HR					
1570	652.39 WORK ZONE TRAFFIC CONTROL	LUMP	LUMP				
1580	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP	LUMP				
1590	658.20 ACRYLIC LATEX COLOR FINISH, GREEN	20.000 M2					
1600	659.10 MOBILIZATION	LUMP	LUMP				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1610	660.21 ON-THE-JOB TRAINING (BID)	6000.000 HR				
SECTION 0001 TOTAL						.

SECTION 0002 SEWER ITEMS

1620	202.1912 REMOVE OR ABANDON SEWER SERVICE	7.000 EA				
1630	203.242 DIRTY BORROW OUTSIDE CONST. LIMITS	7.000 M3				
1640	460.22 HOT BITUMINOUS PAVEMENT	130.000 MG				
1650	460.22 HOT BITUMINOUS PAVEMENT OUTSIDE CONST. LIMITS	40.000 MG				
1660	461.131 TEMPORARY PAVEMENT	45.000 MG				
1670	618.1401 SEEDING METHOD NUMBER 2 - PLAN QUANTITY OUTSIDE CONST. LIMITS	1.000 UN				
1680	652.39 WORK ZONE TRAFFIC CONTROL OUTSIDE CONST. LIMITS	LUMP	LUMP			
1690	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP	LUMP			

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1700	801.06 VERTICAL SEWER CLEANOUT	1.000 EA				
1710	801.17 200 MM PVC SANITARY SEWER (SDR-35)	445.000 M				
1720	801.17 200 MM PVC SANITARY SEWER (SDR-35) outside const. limits	22.000 M				
1730	801.175 250 MM PVC SANITARY SEWER	85.000 M				
1740	801.175 250 MM PVC SANITARY SEWER OUTSIDE CONST. LIMITS	14.000 M				
1750	801.18 300 MM PVC SANITARY SEWER (SDR-35)	1.500 M				
1760	801.18 300 MM PVC SANITARY SEWER (SDR-35) OUTSIDE CONST. LIMITS	24.000 M				
1770	801.44 SEWER PIPE INSULATION	4.000 M				
1780	803.01 TEST PITS	20.000 EA				
1790	803.134 100MM SERVICE LATERAL	40.000 M				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 008483.32

PROJECT(S): NCPD/CBI-HP-8483(320)X
NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1800	803.134 100MM SERVICE LATERAL OUTSIDE CONST. LIMITS	15.000 M				
1810	803.135 150MM SERVICE LATERAL	60.000 M				
1820	803.135 150MM SERVICE LATERAL OUTSIDE CONST. LIMITS	20.000 M				
1830	803.16 1.2 M DIAMETER PRECAST SEWER MANHOLE	4.000 EA				
1840	803.1651 1.5 M DIAMETER PRECAST SEWER MANHOLE	2.000 EA				
1850	822.45 REMOVE OR ABANDON WATER SERVICE	5.000 EA				
1860	823.332 GATE VALVE BOX, ADJUST TO GRADE	2.000 EA				
1870	824.30 FIRE HYDRANTS INSTALL ONLY	2.000 EA				
1880	824.304 FIRE HYDRANT SERVICE, ADJUST TO GRADE	1.000 EA				
1890	825.30 ROCK EXCAVATION FOR SANITARY SEWER	100.000 M3				
1900	825.343 WATER SERVICE RELOCATION	2.000 M				

SCHEDULE OF ITEMS

REVISED:

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PROJECT(S): NCPD/CBI-HP-8483(320)X
 NCPD/CBI-HP-8483(330)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1910	827.311 UNSUITABLE SOIL EXCAVATION, REMOVE AND REFILL- BELOW GRADE	50.000 M3				
1920	830.101 WATER LINE RELOCATION	4.000 M				
1930	832.07 OWNERS TESTING ALLOWANCE	LUMP	LUMP			
	SECTION 0002 TOTAL					
	TOTAL BID					

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and

_____ with its principal place of business located at _____

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN No's. **8483.32 / 8483.33**, for **New Border Crossing Construction and Wetland Mitigation** in the **City of Calais** County of **Washington**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **October 31, 2008**. Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is

Section 0001 \$ _____

Section 0002 \$ _____

Performance Bond and Payment Bond each being 100% of the amount awarded under this Contract (see award amount in Section G below).

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, Standard Specifications, Revision of December 2002, Standard Details Revision of December 2002 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in Appendix A to Division 100 of the Standard Specifications Revision of December 2002 (Federal Contract Provisions Supplement), and the Contract are still complete and accurate as of the date of this Agreement.
2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.
3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, Standard Specifications Revision of December 2002, Standard Details Revision of December 2002 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of: **PINS 8483.32 / 8483.33 New Border Crossing Construction and Wetland Mitigation in the City of Calais**, State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached "Schedule of Items".

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached "Schedule of Items" in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items", which may be ordered by the Resident, and to accept as full compensation the amount determined upon a "Force Account" basis as provided in the Standard Specifications, Revision of December 2002, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier's check, certificate of deposit or U. S. Postal Money Order in the amount given in the "Notice to Contractors", payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work as stated in Section 107.2 of the Standard Specifications Revision of December 2002 and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan by 4:30pm on the day of bid opening to the Contracts Engineer.

Fifth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Sixth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in

any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

Date

(Signature of Legally Authorized Representative
of the Contractor)

Witness

(Name and Title Printed)

G. Award.

Your offer is hereby accepted for (see checked boxes):

Section 0001

Section 0002

Contract Amount: _____

This award consummates the Contract, and the documents referenced herein.

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: David A. Cole, Commissioner

Witness

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and

_____ with its principal place of business located at _____

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN No's. **8483.32 / 8483.33**, for **New Border Crossing Construction and Wetland Mitigation** in the **City of Calais** County of **Washington**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **October 31, 2008**. Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is

Section 0001 \$ _____

Section 0002 \$ _____

Performance Bond and Payment Bond each being 100% of the amount awarded under this Contract (see award amount in Section G below).

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, Standard Specifications, Revision of December 2002, Standard Details Revision of December 2002 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in Appendix A to Division 100 of the Standard Specifications Revision of December 2002 (Federal Contract Provisions Supplement), and the Contract are still complete and accurate as of the date of this Agreement.
2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.
3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, Standard Specifications Revision of December 2002, Standard Details Revision of December 2002 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of: **PINS 8483.32 / 8483.33 New Border Crossing Construction and Wetland Mitigation in the City of Calais**, State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached "Schedule of Items".

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached "Schedule of Items" in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items", which may be ordered by the Resident, and to accept as full compensation the amount determined upon a "Force Account" basis as provided in the Standard Specifications, Revision of December 2002, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier's check, certificate of deposit or U. S. Postal Money Order in the amount given in the "Notice to Contractors", payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work as stated in Section 107.2 of the Standard Specifications Revision of December 2002 and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan by 4:30pm on the day of bid opening to the Contracts Engineer.

Fifth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Sixth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in

any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

Date

(Signature of Legally Authorized Representative
of the Contractor)

Witness

(Name and Title Printed)

G. Award.

Your offer is hereby accepted for (see checked boxes):

Section 0001

Section 0002

Contract Amount: _____

This award consummates the Contract, and the documents referenced herein.

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: David A. Cole, Commissioner

Witness

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and (Name of the firm bidding the job) a corporation or other legal entity organized under the laws of the State of Maine, with its principal place of business located at (address of the firm bidding the job)

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN No. 1224.00, for the Hot Mix Asphalt Overlay in the town/city of West Eastport, County of Washington, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before November 15, 2003. Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is (Place bid here in alphabetical form such as One Hundred and Two dollars and 10 cents)
\$ (repeat bid here in numerical terms, such as \$102.10) Performance Bond and Payment Bond each being 100% of the amount of this Contract.

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, Standard Specifications, Revision of December 2002, Standard Details Revision of December 2002, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in Appendix A to Division 100 of the Standard Specifications Revision of December 2002 (Federal Contract Provisions Supplement), and the Contract are still complete and accurate as of the date of this Agreement.
2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.
3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, Standard Specifications, Revision of December 2002, Standard Details Revision of December 2002, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

PIN 1234.00 West Eastport, Hot Mix Asphalt Overlay

State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached "Schedule of Items".

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached "Schedule of Items" in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items", which may be ordered by the Resident, and to accept as full compensation the amount determined upon a "Force Account" basis as provided in the Standard Specifications, Revision of December 2002, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier's check, certificate of deposit or U. S. Postal Money Order in the amount given in the "Notice to Contractors", payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work on the date specified in the Engineer's "Notice to Commence Work" as stated in Section 107.2 of the Standard Specifications Revision of 2002 and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan by 4:30pm on the day of bid opening to the Contracts Engineer.

Fifth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Sixth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

(Sign Here)

Date (Signature of Legally Authorized Representative of the Contractor)

(Witness Sign Here) (Print Name Here)

Witness (Name and Title Printed)

G. Award.

Your offer is hereby accepted. documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: David A. Cole, Commissioner

(Witness)

BOND # _____

CONTRACT PERFORMANCE BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That _____
_____ **and the State of** _____, as principal,
and _____,
a corporation duly organized under the laws of the State of _____ and having a
usual place of business _____,
as Surety, are held and firmly bound unto the Treasurer of the State of Maine in the sum
of _____ **and 00/100 Dollars (\$** _____ **)**,
to be paid said Treasurer of the State of Maine or his successors in office, for which
payment well and truly to be made, Principal and Surety bind themselves, their heirs,
executors and administrators, successors and assigns, jointly and severally by these
presents.

The condition of this obligation is such that if the Principal designated as Contractor in
the Contract to construct Project Number _____ in the Municipality of
_____ promptly and faithfully performs the Contract, then this
obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the State
of Maine.

Signed and sealed this _____ day of _____, 20.....

WITNESSES:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY:

Signature

.....

Print Name Legibly

Print Name Legibly

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

ADDRESS

.....

.....

.....

.....

TELEPHONE.....

.....

BOND # _____

CONTRACT PAYMENT BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That _____
_____ **and the State of** _____, as principal,
and _____
a corporation duly organized under the laws of the State of _____ and having a
usual place of business in _____,
as Surety, are held and firmly bound unto the Treasurer of the State of Maine for the use
and benefit of claimants as herein below defined, in the sum of
_____ **and 00/100 Dollars (\$** _____ **)**
for the payment whereof Principal and Surety bind themselves, their heirs, executors and
administrators, successors and assigns, jointly and severally by these presents.

The condition of this obligation is such that if the Principal designated as Contractor in
the Contract to construct Project Number _____ in the Municipality of
_____ promptly satisfies all claims and demands incurred for all
labor and material, used or required by him in connection with the work contemplated by
said Contract, and fully reimburses the obligee for all outlay and expense which the
obligee may incur in making good any default of said Principal, then this obligation shall
be null and void; otherwise it shall remain in full force and effect.

A claimant is defined as one having a direct contract with the Principal or with a
Subcontractor of the Principal for labor, material or both, used or reasonably required for
use in the performance of the contract.

Signed and sealed this _____ day of _____, 20 .. .

WITNESS:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

.....

ADDRESS

.....

.....

TELEPHONE

.....

GENERAL DECISION: **ME20030011** ME11

Date: June 13, 2003

General Decision Number: **ME20030011**

Superseded General Decision No. ME020011

State: Maine

Construction Type:
HIGHWAY

County(ies):
WASHINGTON

HIGHWAY CONSTRUCTION PROJECTS excluding major bridging (for example: bascule, suspension and spandrel arch bridges; those bridging waters presently navigatin or to be navigable; and those involving marine construction in any degree); tunnels, building structures in rest area projects and railroad construction

Modification Number	Publication Date
0	06/13/2003

COUNTY(ies):
WASHINGTON

SUME4027A 10/24/2000

	Rates	Fringes
CARPENTERS	10.00	.76
LABORERS		
Flaggers	6.00	
Unskilled	8.75	
POWER EQUIPMENT OPERATORS		
Backhoes	12.17	
Bulldozers	10.96	
Excavators	10.50	
Loaders	18.23	
Rollers	18.23	
TRUCK DRIVERS		
Dump	9.47	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be

prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.
END OF GENERAL DECISION

SPECIAL PROVISION PARTNERING

The successful bidder will have the opportunity to enter into a cooperative partnership agreement with the State Department of Transportation for the contract. The objective of this agreement is the effective completion of the work on time and to the standard of quality that will be a source of pride to both the State and the Contractor. The partnering agreement will not affect the terms of the contract. It is intended only to establish an environment of cooperation between the parties. If the partnering agreement is accepted.

1. Contractor shall select and provide a third-party facilitator to conduct the team building workshop for the Contractor and Department personnel. Facilitator selection shall require Department concurrence. The cost for the facilitator and his associated expenses will be shared equally by the Department on the next monthly estimate, following receipt of invoice(s) from the Contractor, on an extra work basis.
2. Contractor and Department will exchange lists of the key personnel to be participants in the workshop. The list will contain the name and job title of each person, a contact phone number, and the address for job related correspondence.
3. The Contractor shall select the location and make all arrangements for space as required by facilitator, and for any meals required. This cost to be shared equally.
4. A working arrangement for the partnership will be agreed upon in writing at the workshop. The arrangement will set out the mutually recognized goals and expectation of the parties.
5. The Contractor and the Department agree to make an effort to maintain identified key personnel assigned to the work for its duration. A timely notice by each shall be given if changes by either must be made.
6. Project issues shall be processed in the manner agreed upon by the parties during the orientation.
7. Follow-up workshops may be held periodically throughout the duration of the contract as agreed by the Contractor and the Department.
8. The Partnering Agreement is not intended to be a legal document. Failure by either party to follow the process identified will not be grounds for any claim under the contract.
9. ARE YOU INTERESTED IN THIS OPPORTUNITY? YES _____ NO _____

SPECIAL PROVISION

SECTION 102.3

**EXAMINATION OF DOCUMENTS, SITE AND OTHER INFORMATION
(Geotechnical Information)**

Geotechnical Information pertaining to this project has been collected and assembled. Bidders and Contractors are obligated to examine and, if necessary, obtain geotechnical information. Geotechnical Information is available at the Maine Department of Transportation office on Child Street, Augusta, Maine. Geotechnical Information will be provided to interested parties who request this information. Requests for this information should be directed to the Project Manager as outlined in the "Notice to Contractors".

The Department shall not be responsible for Bidder's and Contractor's interpretations of, or estimates or conclusions drawn from, the Geotechnical Information. Data provided may not be representative of the subsurface conditions between the boring locations.

This section does not diminish the duties imposed upon parties in Section 102 or in any other sections.

Town: Calais
Location: Route 1, Industrial Park,
Access Road, Border Station
Connector Road
Project: NCPD-CBI-8483(320)X
NCPD-CBI-8483(330)X
PIN (s): 8483.32 & 8483.33
Date: November 2, 2006

SPECIAL PROVISIONS
SECTION 104
Utilities

MEETING

A Preconstruction Utility Conference, as defined in Subsection 104 4 6 of the Standard Specifications is thereby called for

GENERAL INFORMATION

These Special Provisions outline the arrangements that have been made by the Department for coordination of the work and for utility and/or railroad adjustments as defined in Subsection 104 4 6 and 104 4 8 of the Standard Specifications. The following list identifies all known utilities or railroads having facilities presently located within the limits of this project or intending to install facilities during project construction, unless otherwise provided.

Overview

Utility/Railroad	Aerial	Underground	Railroad
Lincolnton Communications	X	None	None
Eastern Maine Electric Coop.	X	None	None
Pan Am Railways	None	None	X
Verizon	X	None	None
Time Warner Cable	X	None	None
City of Calais Sewer	None	X	None
City of Calais Water	None	X	None

Temporary utility adjustments are contemplated unless herein provided for

The approximate locations of major items of existing utility plant are shown on the highway construction plans

Town: Calais
Location: Route 1, Industrial Park,
Access Road, Border Station
Connector Road
Project: NCPD-CBI-8483(320)X
NCPD-CBI-8483(330)X
PIN (s): 8483.32 & 8483.33
Date: November 2, 2006
Page 2.

All utility crossings over highways will provide not less than 20 feet vertical clearance over existing ground in cut or over finished grade in fill, during construction of this project

Manholes, valve boxes, service connections, and similar incidental utility plant are to be adjusted in cooperation with work being done by the Contractor.

Unless otherwise provided, utilities will not be required to make underground installations in frozen ground

Any times and dates mentioned are estimates only and are dependent upon favorable weather, working conditions, and freedom from emergencies. The Contractors shall have no claim against the Department if they are exceeded.

Utility working days are Monday through Friday, conditions permitting. Times are estimated on the basis of a single crew for each utility.

In all cases, the utilities shall be advised well in advance (generally three weeks) before work, dependent upon other work to be done by the Contractor, in any particular area, is to be commenced by them.

Unless otherwise specified, any underground utility facilities shown on the project plans represent approximate locations gathered from available information. The Department cannot certify the level of accuracy of this data. Underground facilities indicated on the topographic sheets (plan views) have been collected from historical records and/or on-site designations provided by the respective utility companies. Underground facilities indicated on the cross-sections have been carried over from the plan view data and may also include further approximations of the elevations (depths) based upon straight-line interpolation from the nearest manholes, gate valves, or test pits.

All clearing and tree removal which is a part of this contract in areas where utilities are involved must be completed by the Contractor before the utilities can relocate their facilities.

Town: Calais
Location: Route 1, Industrial Park,
Access Road, Border Station
Connector Road
Project: NCPD-CBI-8483(320)X
NCPD-CBI-8483(330)X
PIN (s): 8483.32 & 8483.33
Date: November 2, 2006
Page 3.

AERIAL

U S Route 1

Verizon set 17 (seventeen) new poles, run new cable and transfer old cable to new poles, and remove old poles, estimated time is as follows

Set new poles-	12	working days
Run new cable and transfer old cable-	58	working days
Remove old poles-	30	working days
Total estimated time	<u>100</u>	working days

Eastern Maine Electrical Coop plans to run new conductors on new poles and remove old conductors from old poles, estimated time is as follows

Run new conductors-	35	working days
Remove old conductors-	15	working days
Total estimated time	<u>50</u>	working days

Time Warner Cable plans to run new cables on new poles, and transfer existing cable from old poles to new poles, estimated time is 15 (fifteen) working days

Lincolville Communications plan to run a new cable on the new poles sometime in the future This work may be accomplished after the project is completed

Border Station Connector Road

No aerial facilities to be involved

Nield Avenue

Eastern Maine Electrical Coop and **Verizon** have an existing joint pole line from U S Route 1 to west of the existing at grade railroad crossing on Nield Avenue These aerial existing facilities shall remain in use until the new aerial facilities on the new Industrial Park Access Road is constructed and activated

Town: Calais
Location: Route 1, Industrial Park,
Access Road, Border Station
Connector Road
Project: NCPD-CBI-8483(320)X
NCPD-CBI-8483(330)x
PIN (S): 8483.32 & 8483.33
Date: November 2, 2006
Page 4.

Industrial Park Access Road

Verizon plans to set 8 (eight) new poles, and run new cables on the new poles, estimated time is as follows

Set new poles- 5 working days
Run new cables- 25 working days

Total estimated time 30 working days

Eastern Maine Electric Coop plans to run new conductors on the new poles, estimated time is as follows

Run new conductor- 15 working days

Time Warner Cable has no proposed facilities

Lincolnvile Communications plan to run a new cable on the new poles sometime in the future This work may be accomplished after the project is completed

UNDERGROUND

U.S. Route 1

Verizon has an existing buried cable from Station 0+355 on the Left to Station 1+500 on the left They plan to relocate their buried facilities, to aerial facilities when the new pole line is installed Their buried facilities shall remain active until the new aerial facilities have been activated

The **City of Calais** is planning to include their sewer work in the Department's contract They do reserve the right to remove their work from the Department's contract if the bid prices on their sewer work exceed their engineer's estimate by 15% or more

Industrial Park Access Road

No proposed underground facilities at this time

Border Station Connector Road

No proposed underground facilities with the Department project limits at this time

Town: Calais
Location: Route 1, Industrial Park,
Access Road, Border Station
Connector Road
Project: NCPD-CBI-8483(320)X
NCPD-CBI-8483(330)X
PIN (s): 8483.32 & 8483.33
Date: November 2, 2006
Page 5.

Nields Avenue

The City of Calais has to relocate two hydrants outside of the project limits. This work is to be accomplished prior to the highway work beginning.

Railroad- Side track into Industrial Park

Pan Am Railways is planning to remove the existing side track to make way for the new bridge over their main line track at the Border Station Connector Road, estimated time is 5 working days.

Nield Avenue

Pan Am Railways is planning to remove the existing at grade rail crossing of Nield Avenue, estimated time is 2 working days.

Industrial Park Access Road and Border Station Crossing Road

Pan Am Railways has two new bridges to do flagging and inspection. For further information and/or details on what is required within the area around or adjacent to the railroad, please see the "Protection of Railroad Traffic and Structure Special Provisions".

CONTRACTOR

The aerial utilities require assistance for the installation of their new facilities on U S Route 1 and the Industrial Park Access Road. This assistance may be in the form of access to the new pole locations or cuts and fill at the new pole locations. This assistance as to the locations and what it is shall be discussed in greater detail at the pre-construction utility meeting. If the City of Calais opts out of the Department's contract because the contractor's bid price on their work exceeds their engineer's estimate by 15% or more, the estimated time to do this work by another contractor is 40 working days.

UTILITY SPECIFIC ISSUES

Any tree removal or tree trimming required within ten feet of the electrical conductors must be done by a qualified contractor. A list of tree removal contractors qualified to remove trees or limbs within ten feet of the electrical conductors may be obtained from the power company.

Town: Calais
Location: Route 1, Industrial Park,
Access Road, Border Station
Connector Road
Project: NCPD-CBI-8483(320)X
NCPD-CBI-8483(330)X
PIN (s): 8483.32 & 8483.33
Date: November 2, 2006
Page 6.

DIG SAFE

The Contractor shall be responsible for determining the presence of underground utility facilities prior to commencing any excavating work and shall notify utilities of proposed excavation in accordance with M R S A Title 23 §3360-A, Maine "Dig Safe" System

SAFE PRACTICES AROUND UTILITY FACILITIES

The Contractor shall be responsible for complying with M R S A Title 35-A, Chapter 7-A - Sections 751 - 761 Overhead High-Voltage Line Safety Act Prior to commencing any work that may come within ten (10) feet of any aerial electrical line, the Contractor shall notify the aerial utilities as per Section 757 of the above act

BLASTING

In addition to any other notice which may be required, the Contractor shall notify an authorized representative of each utility having plant close to the site not later than 3 00 P M on the working day (Monday through Friday) before he intends to blast Notice shall state the approximate time of the blast

THE CONTRACTOR SHALL PLAN AND CONDUCT HIS WORK ACCORDINGLY.

Jq

CC Ernie Martin, Project Manager

SPECIAL SPECIFICATION

PROTECTION OF RAILROAD TRAFFIC AND STRUCTURES

INSTRUCTIONS: These instructions are not a part of the Special Specifications.

The Special Specification for the Protection of Railroad Traffic and Structures is, by Department policy, to be made a part of the highway contract documents for any project where work is to be done by the Contractor on or adjacent to the right of way of a railroad.

The Railroad is to complete the shaded areas on the form, the Department is to complete all other information. Where the information requested does not adequately describe the situation, that portion of the specification is to be revised as necessary. The limits of work to be established by the Department under "Inspection" will be no nearer the track than the limits specified by the Railroad.

This PRTS form was revised in December 2000. The modifications were primarily minor format changes, however, there was one clarification of content: wherever the word "days" was previously used, the term "calendar days" is now used. There were no other changes to the content of the document.

Town: **Calais**
Project: **NCPD/CBI-8483(32)X**
PIN: **008483.32**
10/27/06

SPECIAL PROVISION PROTECTION OF RAILROAD TRAFFIC AND STRUCTURES

1. GENERAL REQUIREMENTS

Part of the work required by the Contract will be performed within a railroad right of way and/or adjacent to the tracks, telephone, telegraph, signal and electric supply lines of a railroad or railroads. The Contractor agrees to perform all such work in compliance with all of the terms of this Special Provision and all safety rules, regulations, or standards applicable to the Railroad. The Contractor shall be fully responsible for all damages arising from his failure to comply with the requirements of this Special Provision. The Contractor shall be deemed to have included all costs in the unit prices of the Schedule of Prices and the Proposal.

2. AMOUNT OF RAILROAD WORK

The estimated amount of work to be done within 15.24 Meters (50 feet) of the track of the **Maine Central Railroad Company/Springfield Terminal** is **25%** of the contract.

3. NUMBER OF TRAINS AND TRAIN SPEED

The Contractor is notified that a maximum speed of **16.09** kph (**10** mph) will be considered as prevailing for the operation of trains of the Railroad at this project and that the approximate number of trains per day at this project is **2**.

4. PRIORITY OF RAILROAD OPERATIONS

The train movements of the Railroad, and its lessees, and licensees shall have absolute priority over the performance of the Construction Project within the railroad right of way. The Contractor hereby agrees that the hours and times of work within the Railroad right of way must be coordinated through the Railroad and that such hours and times are subject to change without prior notice to the Contractor, unless other prior arrangements have been made through the Railroad.

5. AUTHORITY OF RAILROAD TO STOP WORK

If the Contractor fails to comply with the safety terms of this Special Provision, or if the Chief Engineer of the Railroad determines that the Contractor is using unsafe practices that threaten the safety of rail traffic, rail workers, or the general public, the Railroad shall have the right to immediately order the Contractor to cease work and vacate the Railroad's property. The Railroad agrees to confirm any cessation of work in writing by delivering to the Department's Construction Manager a completed Stop Work Order form attached as Exhibit A within 24 hours of giving any such order.

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6. ENTRY UPON RAILROAD PROPERTY

The Railroad hereby agrees to permit the Contractor, together with their subcontractors, suppliers, consultants and engineers (the "Contractor"), to enter upon the Railroad property for the purpose of performing the Construction Project, PROVIDED THAT the Contractor complies with all of the terms of this Special Provision and all safety requirements and directions of the Chief Engineer of the Railroad, or his authorized representative (the "Railroad's Chief Engineer").

7. NOTICE REQUIRED BEFORE ENTRY

The Contractor shall give written notice to the Railroad's Chief Engineer at least **seven (7)** calendar day(s) in advance of the time it proposes to do work within the limits of the Railroad right-of-way or perform operations that may create a Hazard as specified by this Special Provision. The Contractor shall give such notice regardless of whether the work may also be within the limits of a public highway.

8. HAZARDS

The Contractor shall assess to its own satisfaction hazards which may be caused by its operations. At a minimum, the Contractor agrees that the following shall constitute Hazards.

An operating track shall be considered fouled and subject to hazard when any object is brought nearer than **4.57** meters (**15** feet) to the gauge line of the near rail of the track.

A signal line or communication line shall be considered fouled and subject to hazard when any object is brought nearer than **1.22** meters (**4** feet) to any wire or cable.

An electric supply line shall be considered fouled and subject to hazard when any object is brought nearer than **3.04** meters (**10** feet) to any wire of the line.

Cranes, trucks, power shovels or any other equipment shall be considered as fouling and subjecting to hazard a track, signal line, communication or electric supply line when working in such position that failure of equipment, with or without load, could foul the track, signal line, communication or electric supply line.

Railroad operation will be considered subject to hazard when explosives are used in the vicinity of railroad premises, or during the driving or pulling of sheeting for any footing adjacent to a track, or when erecting structural steel adjacent to a track, or when performing work under, across or adjacent to a track, or when operations involve, swinging booms or chutes that could in any way come nearer than **4.57** meters (**15** feet) to the gauge line of the near rail of the track, or when erection or removal of staging, false work or forms fouls a track or wire line.

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None of the operations specified as a Hazard above shall be carried on during the approach or passing of a train or without permission from the Railroad's Chief Engineer and the presence of a railroad inspector/flagman, unless other prior arrangements have been made through the Railroad.

9. MINIMUM CLEARANCES

During the construction of staging, false work or forms, the Contractor shall at all times maintain a minimum vertical clearance of **6.55** meters (**22.5** feet) above the top of high rail and a minimum side clearance of **3.04** meters (**10** feet) from the gauge line of the near rail where track is tangent. Additional side clearance must be maintained where track is on a curve.

10. WORK PLAN SUBMITTAL AND APPROVAL

The Contractor shall submit in writing to the Railroad's Chief Engineer or duly authorized representative, and the Department's Railroad Property Manager or his appointed representative, at least **fourteen (14)** calendar day(s) in advance of the start of the project, an outline of his plan for work within the Railroad right of way including contemplated method(s) of construction. This plan must meet with the approval of the Railroad's Chief Engineer and the Department's Railroad Property Manager in every respect. If the Contractor contemplates the use of "on the track equipment", it should so state and obtain from the Railroad the conditions pertaining to such operations. All Railroad costs included in this operation will be borne by the Contractor. In a like manner, any of the Contractor's equipment or material on cars for this project shall be handled in conformance with existing traffic rules with all costs borne by the Contractor.

Prior to submitting his Proposal, the Contractor shall have ascertained from the Railroad and from the Department's Railroad Property Manager or his appointed representative, all information relating to its requirements and regulations and all costs in connection with compliance thereto.

11. EXCAVATIONS

Before excavation for footings adjacent to tracks and/or within the Railroad's right-of-way may commence, whether or not also within the limits of a public highway, plans and calculations for such excavations, prepared by a Professional Engineer authorized to practice in Maine, shall be submitted to the Railroad's Chief Engineer for review and approval. Unless other prior arrangements have been made, the Railroad's Chief Engineer shall have **two (2)** week(s) to perform such review and approval and issue a written permission to proceed with the excavation. No excavation shall proceed without such permission.

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At a minimum, excavations must utilize proper bracing, shoring, sheeting or other support as determined by the Railroad's Chief Engineer, to support the tracks with railroad traffic. Open excavation shall be suitably planked over when construction operations are not in progress, the location of any wires, conduits, pipes, cables or other railroad facilities below the surface of the ground. Damage to any such facilities caused by the failure of the Contractor to ascertain the location of such facilities or by failure to use due care to avoid injury to such facilities shall be at the expense of the Contractor.

12. EQUIPMENT

Equipment of the Contractor shall be in such condition so as to prevent failure that would cause delay in the operation of trains or damage to railroad facilities. Equipment shall not be placed or put in operation adjacent to a track without first obtaining permission of the Railroad. The Railroad agrees that such permission shall not be unreasonably withheld.

13. RAILROAD SERVICES - GENERALLY

When work is to be performed within the Railroad's right-of-way, the Railroad shall provide the services, equipment and materials provided in this Special Provision including, but not limited to, engineering, flagging, inspection, signal protection and/or relocation, and restoration or replacement of the Railroad's track structure of ballast. Further, if the Railroad's Chief Engineer determines that the Contractor's operations do not comply with all of the safety requirements of this Special Provision and all safety requirements and directions of said Chief Engineer, the Railroad will employ the necessary qualified employees to protect its trains and other facilities. The Contractor shall pay to the Railroad the cost for performing all Railroad Services unless said costs are to be paid by the Department as specified in this Special Provision.

14. INSPECTION / FLAGGING

The Railroad shall furnish and assign all inspectors / flaggers for general inspection purposes of general protection of railroad property and operations during construction as the Railroad's Chief Engineer determines are necessary to preserve safety.

(a) Responsibility for Cost. The Department will bear the cost of flagging or inspection (including travel time) or any combination thereof up to **200** man days of said flagging or inspection. If, in the opinion of the Railroad's Chief Engineer, further services of a flagger or inspector will be required due to the operations of the Contractor, the services will be furnished and the cost thereof (salary, expenses, insurance, taxes and vacation allowance, etc.) shall be paid to the Railroad by the Department, and will be recovered by the Department from the Contractor.

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(b) Terms. The minimum hours per day for the Railroad employees engaged in inspection flagging services shall be eight (8) hours. Time at rates for straight time, overtime or for deadheading starts in accordance with established practices in effect in the territory in which the project is located. Information as to these practices should be obtained from the Railroad's Chief Engineer.

The Contractor shall notify the Railroad's Chief Engineer and the Chief Engineer of the Department in writing seven (7) calendar day(s) before beginning, resuming or suspending work within 15.24 meters (50 feet) of the track, so that an inspector may be provided or removed in accordance with the requirements of this Special Provision. An inspector may be removed upon two (2) calendar day(s) notice, but not before the inspector has worked five (5) consecutive days. Failure to give notice of intent to suspend work shall be cause of charge to the Contractor the cost of inspection during the period when work is suspended.

(c) Estimated Cost. The following is an estimate of the cost per day of inspection/flagging necessary for this project. The rates shown include all overhead charges, travel time, deadheading and personal expenses.

Date of estimate 09/06.

Estimated daily rate for four (4) consecutive hours Monday-Friday (straight time): \$592.20

Estimated daily rate for four (4) consecutive hours Saturday, Sunday, Holiday (overtime): \$888.30

Estimated rate for hours worked in excess of eight (8) hours in any one day: \$53.93

Rates charged will be those in effect at the time of performing the inspection/ flagging which may be different than the rates used at the date of the Estimate. The Railroad agrees to notify the Department if rates used to calculate the above estimates change before the date bids are received for this Contract. Rates do not include personal expenses, including mileage for private vehicles.

(d) Definitions.

Man day (M.D.) - eight (8) consecutive hours or any portion thereof.

Overtime - Each additional hour or fraction thereof consecutive to and beyond the standard man day will count as 3/16 of a man day.

Standard Man day - Eight (8) consecutive hours, Monday - Friday between the hours of 0700 a.m. to 1530 p.m.; does not include lunch period from 12:00-12:30 pm.; unless otherwise noted and agreed to by all parties.

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Travel Time - Time required by flagger and/or inspector to commute between his or her point of headquarters to the project site. This time shall not be charged used in determining available man days.

15. OTHER CONTRACTOR RESPONSIBILITIES

The restoring and resurfacing of tracks, if disturbed due to Contractor's operations, shall be at the expense of the Contractor.

Any other changes made or services furnished by the Railroad as a result of the Contractor will be at the Contractor's expense.

16. EXTRA-CONTRACT SERVICES

Temporary and permanent changes of tracks and telephone, signal and electric supply lines made necessary by or to clear the permanent work of the Contractor as shown on the construction plans and included in the Railroad force account as collectable from the State will be made or caused to be made by the Railroad without expense to the Contractor.

17. INDEMNIFICATION

Where work is being performed over, under, across or adjacent to Railroad premises, the Contractor shall defend, indemnify and save harmless the Railroad and the Maine Department of Transportation from and against any and all loss, cost, damage, claims, suits, demands, or liability for damages for personal injury including death and for damage to property, which may arise from or out of the operations conducted under his contract, occurring by reason of any act or omission of the Contractor, his agents, servants or employees, or by reason of any act or omission of any subcontractor, his agents, servants or employees.

18. INSURANCE

In addition to any other forms of insurance or bonds required under the terms of the Contract, the Contractor will be required to procure and maintain, at its sole cost and expense, the following insurance coverages naming the Railroad as an insured.

(a) Railroad Protective Liability Insurance with limits not less than **\$2,000,000.00** per single occurrence and **\$6,000,000.00** per aggregate total occurrences.

(b) Comprehensive General Liability Insurance protecting against liability from bodily injury or property damage arising out of the Construction Project with limits of not less than **\$2,000,000.00** per single occurrence and **\$6,000,000.00** per aggregate total occurrences.

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(c) Workers Compensation and Occupational Disease Insurance, as required by law.

(d) Automobile Liability Insurance covering all motor vehicles used about or in connection with the Construction Project.

If any part of the work is sublet, these insurance coverages shall be provided by or on behalf of the subcontractors to cover their operations

Each policy shall carry an endorsement covering the "save harmless" clause in favor of the Railroad and the Maine Department of Transportation, as set forth in the paragraph, "Responsibility for Damage Claims".

If blasting is to be done in the vicinity of the Railroad, the insurance policies shall include such coverage.

The policies shall be in force before any work is done on the project and shall remain in effect until all work required to be performed under the terms of the contract is satisfactorily completed as evidenced by the formal acceptance by the State and the Railroad.

Before any work is done on the project, the Department of Transportation and the Railroad's Chief Engineer shall be furnished certificates of each policy. Further, the original policy of the Comprehensive General Liability Insurance and the Railroad Protective Liability Insurance shall be furnished to the Railroad's Chief Engineer and a duplicate shall be furnished to the Department of Transportation.

The policy or policies of the Railroad's protective public liability and property damage liability shall be written by a Company authorized to do business in the State of Maine, and shall be signed by the President and Secretary of the Insurance Company and shall be countersigned by an authorized representative of the Company.

19. ROADWAY WORKER SAFETY REGULATION

Notice to all Contractors/Subcontractors and individuals must be aware of the Federal Roadway Worker Safety Regulation, CFR 49, Part 214(c). They may be required to comply with this regulation. Any requirements for them to comply will be discussed at the pre-construction utility meeting.

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EXHIBIT A
 ORIGINAL TO CONTRACTOR

MDOT/RAILROAD STOP WORK ORDER

Section A - Contractor <input type="checkbox"/>	Town <input type="checkbox"/>
	DOT Railroad Project #
Railroad Name	Location <input type="checkbox"/>
	Notice # <input type="checkbox"/>
DESCRIPTION OF SAFETY HAZARD/REASON FOR ORDER	
<input type="checkbox"/>	
Standard Violated <input type="checkbox"/>	RAC (Risk Assessment Code) N/R
Railroad Official (Flagger/Inspector) Name	Date
Signature	
<input type="checkbox"/>	
SECTION B - ACTION TAKEN:	
<input type="checkbox"/>	

cc: MDOT – R. E. or Inspector
 MDOT – Utility Coordinator
 MDOT- Project Manager
 MDOT- Bob Pray, Bridge Program
 Railroad – Chief Engineer

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1. Risk Assessment. Each identified/validated hazard shall be assigned a Risk Assessment Code (RAC) by the Safety Office. The RAC represents the degree of risk associated with the deficiency and combines the elements of hazard severity and mishap probability. The RAC is derived as follows:

a. Hazard Severity. The hazard severity is an assessment of the worst potential consequence: Defined by degree of injury, occupational illness, or property damage, which is likely to occur as a result of a deficiency. Hazard severity categories shall be assigned by roman numeral according to the following criteria.

- (1) Category I - Catastrophic: The hazard may cause death or loss of a facility.
- (2) Category II - Critical: May cause severe injury, severe occupational illness, or major property damage.
- (3) Category III - Marginal: May cause minor injury, minor occupational illness, or minor property damage.
- (4) Category IV - Negligible: Probably would not affect personnel safety or health, but is nevertheless in violation of a NAVOSH standard.

b. Mishap Probability. The mishap probability is the probability that a hazard will result in a mishap, based on an assessment of such factors as location, exposure in terms of cycles or hours of operation, and affected population. Mishap probability shall be assigned an Arabic letter according to the following criteria:

- (1) Sub-category A - Likely to occur immediately or within a short period of time.
- (2) Sub-category B - Probably will occur in time.
- (3) Sub-category C - May occur in time.
- (4) Sub-category D - Unlikely to occur.

c. Risk Assessment Code. The RAC is an expression of risk which combines the elements of hazard severity and mishap probability. Using the matrix shown below, the RAC is expressed as a single Arabic number that can be used to help determine hazard abatement priorities.

	Mishap Probability				RAC	
		A	B	C	D	
Hazard Severity	I	1	1	2	3	1 - Critical
	II	1	2	3	4	2 - Serious
	III	2	3	4	5	3 - Moderate
	IV	3	4	5	5	4 - Minor
						5 - Negligible

SPECIAL PROVISION 105
CONSTRUCTION AREA

A Construction Area located in the **City of Calais** has been established by the Maine Department of Transportation (MDOT) in accordance with provisions of 29-A § 2382 Maine Revised Statutes Annotated (MRSA).

- (a) The section of highway under construction beginning at Sta. 6+190.000 and ending at Sta. 1+440.000 of the construction centerline plus approaches.
- (b) (Rte.1) The section of highway under construction beginning at Sta. 6+190.000 and ending at Sta. 1+440.000 of the new construction centerline plus approaches.

Per 29-A § 2382 (7) MRSA, the MDOT may “*issue permits for stated periods of time for loads and equipment employed on public way construction projects, United States Government projects or construction of private ways, when within construction areas established by the Department of Transportation. The permit:*

- A. *Must be procured from the municipal officers for a construction area within that municipality;*
- B. *May require the contractor to be responsible for damage to ways used in the construction areas and may provide for:*
 - (1) *Withholding by the agency contracting the work of final payment under contract; or*
 - (2) *The furnishing of a bond by the contractor to guarantee suitable repair or payment of damages.*

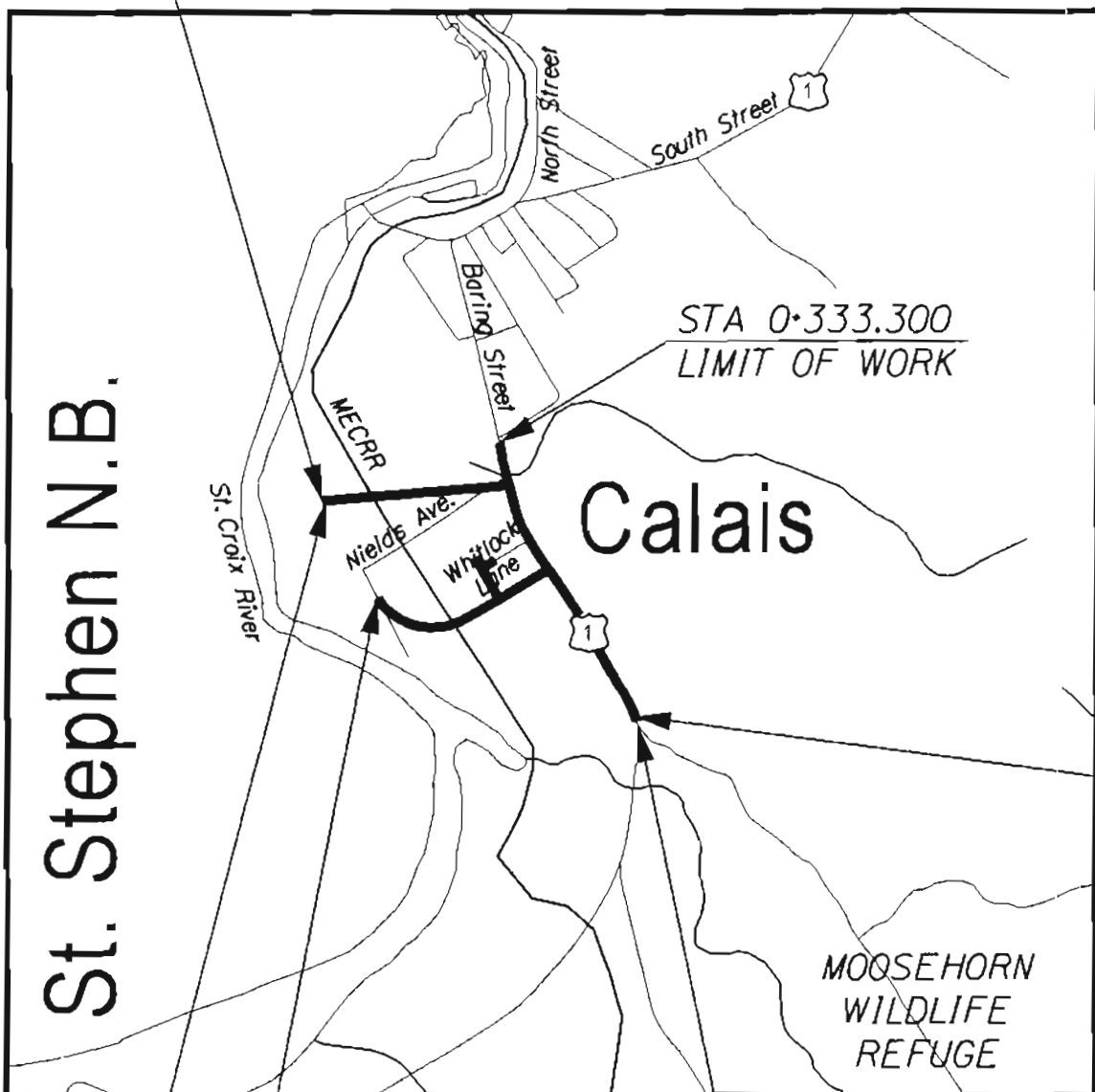
The suitability of repairs or the amount of damage is to be determined by the Department of Transportation on state-maintained ways and bridges, otherwise by the municipal officers;
- C. *May be granted by the Department of Transportation or by the state engineer in charge of the construction contract; and*
- D. *For construction areas, carries no fee and does not come within the scope of this section.”*

The Municipal Officers for the **City of Calais** agreed that an Overlimit Permit will be issued to the Contractor for the purpose of using loads and equipment on municipal ways in excess of the limits as specified in 29-A MRSA, on the municipal ways as described in the “Construction Area”.

As noted above, a bond may be required by the municipality, the exact amount of said bond to be determined prior to use of any municipal way. The MDOT will assist in determining the bond amount if requested by the municipality.

The maximum speed limits for trucks on any town way will be 25 mph (40 km per hour) unless a higher legal limit is specifically agreed upon in writing by the Municipal Officers concerned.

STA 6+190.000
BEGIN PROJECT NCPD/CBI-8483(320)X
MATCH GSA PLAZA



MITIGATION

BEGIN PROJ

STA 1+440.00
END PROJEC

STA. 6+092.849
MIT OF WORK

STA. 2+560.000
LIMIT OF WORK

STA. 1+500.000
LIMIT OF WORK

LOCATION MAP



Scale in Meters

SPECIAL PROVISION 105
OVERLIMIT PERMITS

Title 29-A § 2382 MRSA Overlimit Movement Permits.

1. Overlimit movement permits issued by State. The Secretary of State, acting under guidelines and advice of the Commissioner of Transportation, may grant permits to move nondivisible objects having a length, width, height or weight greater than specified in this Title over a way or bridge maintained by the Department of Transportation

2. Permit fee. The Secretary of State, with the advice of the Commissioner of Transportation, may set the fee for single trip permits, at not less than \$6, nor more than \$30, based on weight, height, length and width. The Secretary of State may, by rule, implement fees that have been set by the Commissioner of Transportation for multiple trip, long-term overweight movement permits. Rules established pursuant to this section are routine technical rules pursuant to Title 5, chapter 375, subchapter II-A.

3. County and municipal permits. A county commissioner or municipal officer may grant a permit, for a reasonable fee, for travel over a way or bridge maintained by that county or municipality

4. Permits for weight. A vehicle granted a permit for excess weight must first be registered for the maximum gross vehicle weight allowed for that vehicle.

5. Special mobile equipment. The Secretary of State may grant a permit, for no more than one year, to move pneumatic-tire equipment under its own power, including Class A and Class B special mobile equipment, over ways and bridges maintained by the Department of Transportation. The fee for that permit is \$15 for each 30-day period.

6. Scope of permit. A permit is limited to the particular vehicle or object to be moved, the trailer or semitrailer hauling the overlimit object and particular ways and bridges.

7. Construction permits. A permit for a stated period of time may be issued for loads and equipment employed on public way construction projects, United States Government projects or construction of private ways, when within construction areas established by the Department of Transportation. The permit:

A. Must be procured from the municipal officers for a construction area within that municipality;

B. May require the contractor to be responsible for damage to ways used in the construction areas and may provide for:

(1) Withholding by the agency contracting the work of final payment under contract; or

(2) The furnishing of a bond by the contractor to guarantee suitable repair or payment of damages.

The suitability of repairs or the amount of damage is to be determined by the Department of Transportation on state-maintained ways and bridges, otherwise by the municipal officers;

C. May be granted by the Department of Transportation or by the state engineer in charge of the construction contract; and

D. For construction areas, carries no fee and does not come within the scope of this section.

8. Gross vehicle weight permits. The following may grant permits to operate a vehicle having a gross vehicle weight exceeding the prescribed limit:

A. The Secretary of State, with the consent of the Department of Transportation, for state and state aid highways and bridges within city or compact village limits;

B. Municipal officers, for all other ways and bridges within that city and compact village limits; and

C. The county commissioners, for county roads and bridges located in unorganized territory.

9. Pilot vehicles. The following restrictions apply to pilot vehicles.

A. Pilot vehicles required by a permit must be equipped with warning lights and signs as required by the Secretary of State with the advice of the Department of Transportation.

B. Warning lights may be operated and lettering on the signs may be visible on a pilot vehicle only while it is escorting a vehicle with a permit on a public way.

With the advice of the Commissioner of Transportation and the Chief of the State Police, the Secretary of State shall establish rules for the operation of pilot vehicles.

9-A. Police escort. A person may not operate a single vehicle or a combination of vehicles of 125 feet or more in length or 16 feet or more in width on a public way unless the vehicle or combination of vehicles is accompanied by a police escort. The Secretary of State, with the advice of the Commissioner of Transportation, may require a police escort for vehicles of lesser dimensions.

A. The Bureau of State Police shall establish a fee for state police escorts to defray the costs of providing a police escort. A county sheriff or municipal police department may establish a fee to defray the costs of providing police escorts.

B. The Bureau of State Police shall provide a police escort if a request is made by a permittee. A county sheriff or municipal police department may refuse a permittee's request for a police escort.

C. A vehicle or combination of vehicles for which a police escort is required must be accompanied by a state police escort when operating on the interstate highway system.

10. Taxes paid. A permit for a mobile home may not be granted unless the applicant provides reasonable assurance that all property taxes, sewage disposal charges and drain and sewer assessments applicable to the mobile home, including those for the current tax year, have been paid or that the mobile home is exempt from those taxes. A municipality may waive the requirement that those taxes be paid before the issuance of a permit if the mobile home is to be moved from one location in the municipality to another location in the same municipality for purposes not related to the sale of the mobile home.

11. Violation. A person who moves an object over the public way in violation of this section commits a traffic infraction.

Section History:

PL 1993, Ch. 683, §A2 (NEW).

PL 1993, Ch. 683, §B5 (AFF).

PL 1997, Ch. 144, §1,2 (AMD).

PL 1999, Ch. 117, §2 (AMD).

PL 1999, Ch. 125, §1 (AMD).

PL 1999, Ch. 580, §13 (AMD).

PL 2001, Ch. 671, §30 (AMD).

PL 2003, Ch. 166, §13 (AMD).

PL 2003, Ch. 452, §Q73,74 (AMD).

PL 2003, Ch. 452, §X2 (AFF).

SPECIAL PROVISION
SECTION 105
General Scope of Work
(Limitations of Operations)

The Contractor will be allowed to commence work and end work daily according to the Department of Marine Resources Sunrise/Sunset Table at the following Web address (http://www.maine.gov/dmr/sunrise_table.htm). Contractor will be allowed to enter roadway at Sunrise and must be off the roadway before Sunset. Any work outside these times will require nighttime lighting and safety attire.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK

(Cooperation & Project Access Between Contractors)

It is hereby brought to the Contractor's attention that the Department has awarded and plans to award contracts adjacent to the limits of this contract, which may be in progress simultaneously.

The Contractor shall cooperate with other Contractors at all times and provide project access as necessary and as directed by the Resident.

The Contractor shall ensure that access to the site for work (by others) on the International Bridge and the GSA facilities shall be maintained at all times.

SPECIAL PROVISION
SECTION 106
QUALITY
(Quality Level Analysis- Structural Concrete)

106.7.1 Standard Deviation Method Under H. Replace the Method A payfactor with the following;

“Method A: $PF = [32.5 + (Quality\ Level * 0.75)] * 0.01$ ”

SPECIAL PROVISION
SECTION 107 - TIME
(Contract Time and Contract Completion Dates)

107.1.1 Contract Time and Completion Dates. The following activities at the Water District Wetland Mitigation Site must be completed by the dates specified:

Completion by: October 1, 2007. Salvage of wetland topsoil, mitigation excavation, construction of stone-lined ditch and grassed swale, placement of salvaged wetlands loam, placement of loam/salvage mix, mitigation planting, all permanent seeding and mulching of disturbed or exposed soils, and overall site clean-up.

107.8 Supplemental Liquidated Damages. Supplemental Liquidated Damages will be assessed to the Contractor in the amount of five hundred dollars (\$500.00) per day for each calendar day that the above stated work remains incomplete. This assessment of Supplemental Liquidated Damages shall be in addition to the liquidated damages per working day, as specified in Subsection 107.7.2 of the Standard Specifications.

SPECIAL PROVISION
SECTION 107

TIME

(Supplemental Liquidated Damages for Fabrication Time)

107.8.1 Fabrication Time.

The Department has budgeted for the following amounts of continuous full time fabrication/shop inspection for certain Work components:

<u>Element</u>	<u>Time</u>	<u>Supplemental LD</u>
1) Prestressed Beams (BSCR Br.)	70 calendar days	\$500 per calendar day
2) Prestressed Beams (IPAR Br.)	35 calendar days	\$500 per calendar day

The Contractor is responsible for requiring their fabricators and suppliers to produce these products for the Work continuously until finished, including any needed actions to correct unacceptable workmanship or materials. If the Department determines that shop inspection beyond these times is required, then the corresponding Supplemental Liquidated Damages will be deducted as they occur from amounts otherwise due the Contractor. The Contractor will be notified by the Department when these times begin and when the allotted time will expire.

If a fabricator or supplier works more than one shift per day and the Department determines that inspection is required for each shift, each shift will count as a calendar day and the LD rate will be the noted amount per shift per calendar day in lieu of per calendar day.

Inspection is required for the following activities:

For metal fabrication work - welding, including tack welding, heat correcting, non-destructive examination, assembly verification, protective coating application.

For concrete work – tensioning of strands, batching and casting of concrete, breaking of test cylinders, de-tensioning.

Special Provision
Section 107
Prosecution and Progress
(Contract Time)

- 1) **The contractor will be allowed to commence work on this project as long as all applicable plans as required under this contract have been submitted and approved and the office trailer is 100% complete.**
- 2) **The completion date for this contract is October 31, 2008.**
- 3) **For every workday not worked once operations commence, the contractor will be charged supplemental liquidated damages per standard specification 107.7.2 (excluding days lost to inclement weather).**
- 4) **The contractor shall cease all operations and have all lanes open to traffic on Route 1 and the roadway in safe operating condition as directed on the following dates :**
 - May 25, 2007 by end of day, and shall not commence work again until May 29, 2007 (Memorial Day).**
 - June 29, 2007 by end of day, and shall not commence work again until July 5, 2007 (4th of July).**
 - August 31, 2007 by end of day, and shall not commence work again until September 4, 2007 (Labor Day).**
- 5) **The contractor shall cease all operations and have all lanes open to traffic and the roadway in safe operating condition as directed on the following dates :**
 - May 23, 2008 by end of day, and shall not commence work again until May 26, 2008 (Memorial Day).**
 - June 27, 2008 by end of day, and shall not commence work again until July 7, 2008 (4th of July).**
 - August 29, 2008 by end of day, and shall not commence work again until September 1, 2008 (Labor Day).**

SPECIAL PROVISION
SECTION 202
REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Under Section 202.02 of the Standard Specifications, ownership of buildings and all equipment, fixtures, and materials therein shall be interpreted as meaning all equipment, fixtures, and materials that are recognized as real property. Any items that are recognized as personal property are excepted and are reserved to the owner. If the bidder is in doubt as to whether any item not listed is real or personal property, they shall request a determination of the matter prior to date on which bids are to be received.

The following list of items is to be reserved to the property owners and/or occupants of Building No's. 1 thru 20.

No Reservations

Buildings and properties to be removed and or reserved to owner under Section 202 - Removing Structures and Obstructions of the contract will be made available to the Contractor as shown in the attached document:

Failure by the Maine State Department of Transportation to meet dates of availability may entitle the Contractor to time extension if requested by the Contractor, in writing, such request indicating delays in construction, if any, caused by changes in availability dates.

With the "Notice to Proceed", or when a building becomes available to the Contractor, the Department will designate whether rodent control measures are required or not.

The Contractor shall not remove a building until the Department has certified it to be free of rodents. Should rodent control measures be required, the Contractor shall procure the extermination services as soon as possible. The Department will re-inspect the building within seven days after the extermination services are performed. The cost of extermination services until the building is found to be rodent free will be paid for as a specialty Pay Item under Section 109.3 - Extra Work.

This building may or may not contain asbestos. Prior to any demolition of building(s) the Contractor will conduct an asbestos survey on the building(s) to determine if any asbestos exists. The survey will be conducted by a DEP certified Asbestos Inspector. No separate payment will be made for the survey and it shall be considered incidental. The survey results will be communicated with the Resident. If no asbestos is discovered, the demolition process may proceed. If asbestos is found, the Contractor will employ a DEP certified Asbestos Abatement Contractor for its' removal and disposal. The Department will bear all expenses incurred in the abatement of any asbestos containing material as detailed in Standard Specification 109.7 – Equitable Adjustments to Compensation. Any questions can be directed to the Office of Legal Service (624-3020).

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Each building shall be removed promptly after notification that it is free of rodents. All subsequent inspection costs and extermination services necessary to assure that the building is rodent free at time of removal will be at the expense of the Contractor.

<u>Parcel #</u>	<u>Former Owner</u>	<u>Stationing</u>
2	Tom and C Realty, LLC	
Item:	Commercial Steel Building	
Status:	Structure removed	
Agreed Vacancy:	Vacated on June 21, 2006	
Reserve Limits:	None Needed	
Limits effective until:	N/A – Site currently Available	
4	John & Sadie Smith	
Item:	Commercial Steel Building	
Status:	Structure removed	
Agreed Vacancy:	Vacated on January 12, 2006	
Reserve Limits:	None Needed	
Limits effective until:	N/A – Site currently Available	
13	Building #1	Mary Carol Porter
Item:	Single Family Residence	
Status:	Vacant	
Agreed Vacancy:	Vacated on October 19, 2006	
Reserve Limits:	None Needed	
Limits effective until:	N/A – Site currently Available	
	Building #2	
Item:	Garage	
Status:	Removed	
Agreed Vacancy:	Vacated on November 1, 2006	
Reserve Limits:	None Needed	
Limits effective until:	N/A – Site currently Available	
16	Building #3	Ann Doris Buchnam
Item:	Single Family Residence	
Status:	Building Vacant	
Agreed Vacancy:	Vacated on August 25, 2006	
Reserve Limits:	None Needed	
Limits effective until:	N/A – Site currently Available	
Item:	Structure in woods behind home	
Status:	Building Vacant	
Agreed Vacancy:	N/A	
Reserve Limits:	None Needed	
Limits effective until:	N/A – Site currently Available	

<u>Parcel #</u>	<u>Former Owner</u>	<u>Stationing</u>
17	John & Patricia Owen	
Building #6	Item: Single Family Residence	
	Status: Structure Vacant	
	Agreed Vacancy: December 1, 2006	
	Reserve Limits: 25 feet around and including Single Family Residence at 0+680 Right	
	Limits effective until: January 1, 2007 or until notified by MaineDOT	
	Building #5	
	Item: Garage	0+670 RT
	Status: To be removed by former owner by May 31, 2007	
	Agreed Vacancy: December 1, 2006	
	Reserve Limits: 25 feet around and including garage at station 0+670 Right	
	Limits effective until: January 1, 2007 or until notified by MaineDOT	
	Building #4	
	Item: Commercial Storefront	
	Status: Personal Property in Building	
	Agreed Vacancy: December 1, 2006	
	Reserve Limits: 25 feet around and including commercial storefront at 0+660 Right	
	Limits effective until: January 1, 2007 or until notified by MaineDOT	
	Item: Driveway Access to US 1	
	Status: Maintain access for building removal	
	Agreed Vacancy: May 31, 2007	
	Reserve Limits: 25 feet either side of the existing driveway @ 0+670 RT	
	Limits effective until: June 1, 2007 or until notified by MaineDOT	
19-1	Thomas Diczno, Inc.	
	Item: Materials Stockpiles – See attached	
	Status: To be removed by former owner by January 28, 2007	
	Agreed Vacancy: January 28, 2007	
	Reserve Limits: Full width of ROW including any work adjacent to 2+110 to 2+300 and 10+000 to 10+110	
	Limits effective until: March 1, 2007 or until notified by MaineDOT	
21A	William & Joan Tracy	
Building #7	Item: Manufactured Home (Tenant Improvements)	
	Status: To be removed by former owner by May 31, 2007	
	Agreed Vacancy: Currently Vacant	
	Reserve Limits: 25 feet around and including commercial storefront at 0+70 Left	
	Limits effective until: June 1, 2007 or until notified by MaineDOT	

Parcel #**Former Owner****Stationing**

- Item:** Driveway Access to US 1
Status: Maintain access for building removal
Agreed Vacancy: May 31, 2007
Reserve Limits: 25 feet either side of the existing driveway @ 0+768 Left
Limits effective until: June 1, 2007 or until notified by MaineDOT
- 22 Building #8 Donald Carr**
- Item:** Single Family Residence
Status: Minor items of Personal Property remain
Agreed Vacancy: Vacated on November 1, 2006
Reserve Limits: 25 feet around and including Single Family Residence at 0+820 Left
Limits effective until: January 1, 2007 or until notified by MaineDOT
- Item:** Driveway Access to US 1
Status: Maintain access for building removal
Agreed Vacancy: May 31, 2007
Reserve Limits: 25 feet either side of the existing driveway @ 0+825 Left
Limits effective until: June 1, 2007 or until notified by MaineDOT
- 24 Building #10 Howard & Lorraine Cottrell**
- Item:** Manufactured Home
Status: Structure removed
Agreed Vacancy: Vacated May 11, 2006
Reserve Limits: None Needed
Limits effective until: N/A – Site currently Available
- Building #9**
- Item:** Storage Shed
Status: Structure Vacant
Agreed Vacancy: N/A
Reserve Limits: None Needed
Limits effective until: N/A – Site currently Available
- 25 Building #11 Marc L. Rohde**
- Item:** Single Family Residence 1+200 LT
Status: **OCCUPIED**
Agreed Vacancy: January 15, 2007
Reserve Limits: 25 feet around and including Single Family Residence at 1+200 left
Limits effective until: March 1, 2007 or until notified by MaineDOT

Parcel # **Former Owner** **Stationing**

Building #12

Item: Garage 1+230 LT
Status: OCCUPIED
Agreed Vacancy: January 15, 2007
Reserve Limits: 25 feet around and including garage at 1+230 left
Limits effective until: March 1, 2007 or until notified by MaineDOT

Item: Driveway Access to US 1
Status: Maintain access for building removal
Agreed Vacancy: January 15, 2007
Reserve Limits: 25 feet either side of the existing driveway @ 1+228 Left
Limits effective until: March 1, 2007 or until notified by MaineDOT

26 Building #13 Linda L. Winchester

Item: Single Family Residence
Status: Vacant – Personal Property remains
Agreed Vacancy: November 15, 2006
Reserve Limits: 25 feet around and including Single Family Residence at 1+260 Left
Limits effective until: January 1, 2007 or until notified by MaineDOT

Building #14

Item: Garage
Status: Vacant – Personal Property remains
Agreed Vacancy: November 15, 2006
Reserve Limits: 25 feet around and including garage at 1+280 Left
Limits effective until: January 1, 2007 or until notified by MaineDOT

Item: Well House / Storage Building
Status: Vacant – Personal Property remains
Agreed Vacancy: November 15, 2006
Reserve Limits: 25 feet around and including well house/storage building at 1+271 Left
Limits effective until: January 1, 2007 or until notified by MaineDOT

Building #15

Item: Shelter
Status: Vacant – Personal Property remains
Agreed Vacancy: November 15, 2006
Reserve Limits: 25 feet around and including shelter at 1+271 Left
Limits effective until: January 1, 2007 or until notified by MaineDOT

27 Building #16 Larry & Catherine Wilcox

Item: Single Family Residence
Status: Vacated September 20, 2006

Parcel #**Former Owner****Stationing**

Agreed Vacancy: N/A
Reserve Limits: 25 feet around and including Single Family Residence at 1+410 Left
Limits effective until: June 1, 2007 or until notified by MaineDOT

Building #20

Item: Wood Barn
Status: N/A
Agreed Vacancy: December 1, 2006
Reserve Limits: 25 feet around and including Wood Barn in woods behind home
Limits effective until: June 1, 2007 or until notified by MaineDOT

Item: Driveway Access to US 1
Status: Maintain access for building removal
Agreed Vacancy: May 31, 2007
Reserve Limits: 25 feet either side of the existing driveway @ 1+290 Left
Limits effective until: June 1, 2007 or until notified by MaineDOT

SPECIAL PROVISION
SECTION 203 - EXCAVATION AND EMBANKMENT
(Mitigation Excavation)

203.01 Description. This work shall consist of furnishing labor, equipment, and materials necessary for excavating soil from specified wetland creation and wetland enhancement areas that are to be deepened and re-shaped at the Water District Wetland Mitigation Site. Work shall also consist of excavating an approximately 10-meter long section of drainage ditch through an existing man-made berm on-site. As detailed below, some excavated soil shall be stockpiled on-site for later use and the rest removed from the site. All work shall be done in accordance with the specifications and in conformity with the lines, grades, proposed contours, and re-soiling boundaries shown on the Plans.

203.04 General. Mitigation Excavation shall conform to Subsection 203.04 of the Standard Specifications. The approximate locations and limits of mitigation excavation are shown on the Plans. These locations and limits shall be laid out by the Contractor prior to excavation for review and approval by the Resident. A Wetland Specialist will be available to answer questions in regard to the layout. Due to the lack of woody vegetation, no clearing or grubbing will be required in the mitigation excavation areas. As directed by the Resident or Wetland Specialist, some excavated soil shall be stockpiled on-site for later use as topsoil.

Erosion Control. Temporary erosion and sedimentation control measures shall be installed and maintained in accordance with the requirements of Special Provision Section 656 - Temporary Soil Erosion and Water Pollution Control.

Equipment Constraints. The operation of motorized equipment for excavation, re-grading, stockpiling, moving, and re-use of soil material during all operations at the site shall be restricted to the established access routes, staging areas, and designated excavation and soil-spreading areas, as shown on the Plans or as directed by the Resident. The general operation of equipment at the site shall conform to the constraints outlined in Special Provision 656 and shown on the Plans, particularly the re-fueling constraints in place due to portions of the site being within the protection zone for an existing wellhead that supplies public drinking water.

Mitigation Excavation and Grading. The proposed mitigation excavation areas include one upland area to be re-graded to create a wetland, one shallow wetland basin to be deepened, and a short section of ditch and drainage swale to be constructed. The limits of excavation and desired finished depths shall be as shown on the Plans or as directed by the Resident. These areas shall be excavated to the appropriate subgrades as shown on the plans and as directed. Finished subgrades shall be relatively smooth, compacted surfaces in preparation for subsequent re-soiling. The excavated areas shall have finished side slopes no steeper than 3:1 (horizontal:vertical) and shall be tracked or smeared with the excavator bucket to compact the soil and restrict vertical drainage or percolation by surface water.

The Contractor shall use care while excavating the pool within Wetland Enhancement Area #1 (shown on the Plans), stopping excavation if the underlying sand and gravel layer is encountered. Though it is not anticipated that this granular layer will be encountered during excavation to the specified depth, the Contractor shall closely observe the excavation as it progresses. In the event that the gravel layer is encountered before the specified subgrade, the Contractor shall cease excavation and notify the Resident. At the direction of the Resident, the Contractor may then be required to replace excavated clay as necessary to re-seal the bottom of the excavated basin to keep water from percolating into the gravel layer.

At the direction of the Resident or Wetland Specialist, the Contractor shall stockpile those excavation spoils having the consistency and properties of topsoil, including existing topsoil and topsoil piles within the mitigation excavation areas shown on the Plans. The Contractor shall stockpile this topsoil for later use in re-soiling the proposed planting areas as described in Special Provision Section 615 – Loam/Salvage Mix. The Contractor shall have the option of stockpiling this material at the mitigation site within the designated stockpile/laydown areas shown on the Plans. The stockpiles shall be protected from erosion as required under Special Provision Section 656 – Temporary Soil Erosion and Water Pollution Control. Excess or unsuitable excavated material that cannot be used as topsoil shall be disposed of off-site in approved waste areas.

203.18 Method of Measurement. Mitigation Excavation will be measured by the number of cubic meters in its original position, as determined by comparison of existing and as-built conditions of the areas of excavation or by cross-section elevations of the areas excavated, and in accordance with the Standard Specifications Subsection 203.18.

203.19 Basis of Payment. The accepted quantity of Mitigation Excavation will be paid for at the contract unit price per cubic meter. Payment will be full compensation for excavating, loading, hauling, salvaging, stockpiling and/or removing all materials; providing, establishing, and maintaining layout stakes; rough grading and detailed machine work; providing specialized equipment and mats as needed; and for all labor, materials, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
203.232 Mitigation Excavation	Cubic Meter

SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(Dirty Borrow)

Description: This work shall consist of furnishing and placing dirty borrow for seeding, in reasonably close conformity with the thicknesses called for on the plans or as authorized by the Resident.

Materials: Materials shall conform to the requirements specified in the following Sections of Division 700 – Materials:

Common Borrow	703.18
Humus	717.09

Dirty Borrow shall meet the requirements of Section 703.18 Common Borrow with the following addition and deletions: 703.18 Second sentence, delete the word peat.

Dirty Borrow shall contain no particles or fragments with a maximum dimension in excess of the compacted thickness of the layer being placed.

The granular material must have at least 20 percent, but not more than 50 percent, of the minus 25 mm [1 in] material passing the 75 micron [No. 200] mesh sieve.

The Dirty Borrow must have an organic humus content of 3% to 8% as determined by ignition test.

The Contractor may elect to manufacture Dirty Borrow from a combination of project materials that the contractor is entitled to use, combined with other suitable materials furnished by the Contractor.

CONSTRUCTION REQUIREMENTS

Application of Dirty Borrow: Dirty Borrow shall be spread evenly and uniformly on prepared areas in a thickness as shown on the plans.

Method of Measurement: Dirty Borrow will be measured by the cubic meter [cubic yard] complete in place after finishing to the required depth as shown on the plans or directed by the Resident. Lateral measurements will be parallel with the slope of the ground.

Basis of Payment: The accepted quantities of dirty borrow will be paid for at the contract unit price per cubic meter [cubic yard] complete in place.

Payment shall be full compensation for furnishing and placing the Dirty Borrow.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
203.242 Dirty Borrow	Cubic Meter [Cubic Yard]

SPECIAL PROVISION
SECTION 304
AGGREGATE BASE AND SUBBASE COURSE
(Aggregate Subbase)

If the Contractor wishes to route public traffic over the completed aggregate subbase course, the course shall be constructed with a minimum 50 mm [2 in] surcharge above the design grade, except as described below. Whenever the surcharge is used, it shall be constructed with material meeting the requirements of Section 703.06(b), Type D Aggregate. Also, whenever the surcharge is used, it shall be placed on all the aggregate subbase course subjected to public driveways, sidewalks, approach roads, or the outer portions of the shoulders. Removal of the surcharge shall be followed immediately in succession by the fine grading of the aggregate subbase and construction of the next course.

The furnishing, placing, maintaining, and removal of the surcharge will not be paid for directly, but will be considered incidental to the Aggregate Subbase Course pay item.

If salvaged bituminous pavement is placed as the top layer of the aggregate subbase course, a surcharge is not required.

SUPPLEMENTAL SPECIFICATION
SECTION 401
HOT MIX ASPHALT PAVEMENT

The Standard Specification 401 – Hot Mix Asphalt Pavement, has been modified with the following revisions. All sections not revised by this Supplemental Specification shall be as outlined in Section 401 of the Standard Specifications.

TABLE 1: VOLUMETRIC DESIGN CRITERIA

Design ESAL's (Millions)	Required Density (Percent of G _{mm})			Voids in the Mineral Aggregate (VMA)(Minimum Percent)					Voids Filled with Binder (VFB) (Minimum %)	Fines/Eff. Binder Ratio
				Nominal Maximum Aggregate Size (mm)						
	N _{initial}	N _{design}	N _{max}	25 [1 inch]	19 [¾ inch]	12.5 [½ inch]	9.5 [⅜ inch]	4.75 [#4]		
<0.3	≤91.5	96.0	≤98.0	12.5	13.5	14.5	15.5	16.0	70-80	0.6-1.2
0.3 to <3	≤90.5								65-78	
3 to <10	≤89.0								65-75*	
10 to <30										
≥ 30										

*For 9.5 mm [⅜ in] nominal maximum aggregate size mixtures, the maximum VFB is 76.

*For 4.75 mm [#4] nominal maximum aggregate size mixtures, the maximum VFB is 80.

401.04 Temperature Requirements After the JMF is established, the temperatures of the mixture shall conform to the following tolerances:

In the truck at the mixing plant - allowable range - 275 to 325 °F [135 to 162°C]
At the Paver - allowable range - 275 to 325 °F [135 to 162°C]

The JMF and the mix subsequently produced shall meet the requirements of Tables 1 and Section 703.07. Under no circumstances will the Department accept HMA (unless the binder has been modified) that has been heated to temperatures over 325°F [162°C].

SUPPLEMENTAL SPECIFICATION
SECTION 401
HOT MIX ASPHALT PAVEMENT

The Standard Specification section 401 – Hot Mix Asphalt Pavement, has been modified with the following revisions. All sections not revised by this Supplemental Specification shall be as outlined in Section 401 of the Standard Specifications.

401.20 Acceptance – subsection 401.201 Method A – paragraph c:

c. Acceptance Testing The Department will obtain samples of Hot Mix Asphalt Pavement in conformance with AASHTO T168 Sampling Bituminous Paving Mixtures, and the MDOT/ACM Sampling Policy, which will then be transported by the Contractor to the designated MDOT Laboratory, as directed by MDOT in approved transport containers to be provided by the Department, unless otherwise directed by the Resident. The Department will take the sample randomly within each subplot. Target values shall be as specified in the JMF. The Department will use Table 5 for calculating pay factors for gradation, PGAB Content, Air Voids at N_{design} , VMA, Fines to Effective Binder and VFB. The Department will retain the test results for the Acceptance sample until 7:00 AM, on the second working day of receipt of the sample, or after receipt of the Contractors results of the Acceptance sample split. Upon conclusion of each lot, where there is a minimum of four sublots, results shall be examined for statistical outliers, as stated in Section 106.7.2 - Statistical Outliers.

401.222 Pay Factor (PF) (Methods A and B) - (revised paragraph 1 and 2)

The Department will use density, Performance Graded Asphalt Binder content, voids @ N_d , VMA, VFB, F/B^c, and the screen sizes listed in Table 8 for the type of HMA represented in the JMF. The Department will evaluate materials using the following price adjustment factors under Section 106.7 - Quality Level Analysis.

The Department will apply price adjustments to the appropriate Hot Mix Asphalt Pavement pay items. Price adjustments shall be applied based on test results for each lot. If any pay factor for any single property (or composite gradation) falls below 0.85, the Contractor shall shut down the HMA plant.

If any single pay factor for PGAB Content, VMA, or Air Voids under :

- a. Method A falls below 0.80, but above 0.74, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be paid at the lowest computed value.
If any single pay factor for PGAB Content, VMA, or Air Voids falls at, or below 0.74, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.55.
- b. Method B falls below 0.83, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.70.

401.223 Process for Dispute Resolution (Methods A & B only)

a. Dispute Resolution sampling At the time of Hot-Mix Asphalt sampling, the Department will obtain a split sample of each Acceptance test random sample for possible dispute resolution testing. The Contractor shall also obtain a split sample of the HMA at this same time. If the Contractor wishes to retain the option of requesting dispute testing of the initial Acceptance sample, the Contractor will test their split of the Acceptance sample and shall report their results to the Resident, with a copy to the QA Engineer at the Central Laboratory in Bangor by 7:00 AM, on the second working day from time of sampling. The Department's dispute resolution split sample will be properly labeled and stored for a period of not more than two weeks, or until the sample is tested.

SPECIAL PROVISION
SECTION 403
HOT MIX ASPHALT

Desc. of Course	Grad. Design	Item Number	Bit Cont. % of Mix	Total Thick	No. Of Layers	Comp. Notes
<u>225mm HMA Travelway</u>						
<u>Full Reconstruction Sections</u>						
Wearing	12.5 mm	403.208	N/A	50mm	1	1,5,7,22
Base	12.5 mm	403.213	N/A	50mm	1/more	1,5,7
Base	19.0 mm	403.207	N/A	125mm	2/more	1,5,7,11,15
<u>225mm HMA Turnlanes</u>						
<u>Shoulders, and Widening Areas</u>						
Wearing	12.5 mm	403.208	N/A	40mm	1	1,5,7
Base	12.5 mm	403.213	N/A	60mm	1/more	1,5,7
Base	19.0 mm	403.207	N/A	125mm	2/more	1,5,7,11,15
<u>100mm HMA</u>						
<u>Shoulders, Side Roads, and Ind. Park Road</u>						
Wearing	12.5 mm	403.208	N/A	50mm	1	1,5,7
Base	12.5 mm	403.213	N/A	50mm	1/more	1,5,7
<u>Overlay Areas</u>						
Wearing	12.5 mm	403.208	N/A	40mm	1	1,5,7,22
Shim	9.5mm	403.211	N/A	variable	1/more	1,5,9
<u>Drives, Islands, and Sidewalks</u>						
Wearing	9.5 mm	403.209	N/A	50mm	2/more	2,3,9,10,13

COMPLEMENTARY NOTES

1. The required PGAB for this mixture will meet a **PG 58-28** grading. The use of Recycled Asphalt Pavement (RAP) will not be permitted.
2. The density requirements are waived.
3. The design traffic level for mix placed shall be <0.3 million ESALS.
5. The aggregate qualities shall meet the design traffic level of 3 to <10 million ESALS for mix placed under this contract. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **75 gyrations**. (Ndesign)
7. Section 106.6 Acceptance, (1) Method A.
9. Section 106.6 Acceptance, (2) Method C, as per Special Provision 401.
10. A **“FINE”** 9.5 mm mix with a gradation above or through the restricted zone shall be used for this item.
11. A mixture meeting the gradation of 12.5 mm hot mix asphalt may be used at the option of the contractor.
13. A mixture meeting the requirements of section 703.09 Grading ‘D’, with a minimum PGAB content of 6%, and the limits of Special Provision 401, Table 9 (Drives and Sidewalks) for PGAB content and gradation may be substituted for this item. A job mix formula shall be submitted to the department for approval.
15. Any areas reconstructed and exposed to traffic over winter suspension shall have the full depth, full width layers of 19.0 mm HMA base, and a 12.5mm HMA base layer (substituted for the 19.0mm layer if

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so specified) placed prior to winter suspension of work on the project. All work associated with this item will be required to be done within the standard seasonal limitations, and evaluated in accordance with all applicable specifications. Any work performed outside the seasonal limitations dates will be considered temporary, and removed and replaced at no cost to the Department when work resumes in the next working season.

22. The final pavement surface shall be evaluated for smoothness in accordance with the Standard Specifications, revision of December 2002, Section 402 - Pavement Smoothness.

Tack Coat

A tack coat of emulsified asphalt, RS-1 or HFMS-1, Item #409.15 shall be applied to any existing pavement or **recycled layer** at a rate of approximately 0.08 L/m², and on milled pavement approximately 0.2 L/m², prior to placing a new course. A fog coat of emulsified asphalt shall be applied between shim / intermediate course and the surface course, at a rate not to exceed 0.08 L/m².

Tack used between layers of pavement will be paid for at the contract unit price for Item 409.15 Bituminous Tack Coat.

SPECIAL PROVISIONS
SECTION 502
STRUCTURAL CONCRETE
COLORED PAVEMENT

502.01 Description. This work shall consist of furnishing and placing a colored Portland cement concrete pavement and incidental construction for all colored pavements, including the roundabout truck apron and approach road splitter islands, as shown on the plans and as directed. Except as otherwise specified in this Special Provision, all work shall be in conformity with the applicable provisions of Section 502, Structural Concrete; Section 503, Reinforcing Steel; and, Section 515, Protective Coating for Concrete Surfaces. Colored pavement shall consist of a permanent, fade-resistant, uniform, and streak-free integral color-conditioning for Portland cement concrete.

MATERIALS

502.02 Concrete Mix. Portland cement concrete shall be class LP and shall be colored throughout the mix. The mix design must be approved by the Engineer prior to any concrete construction taking place. The concrete mix design shall have a maximum slump of 100 mm (4 in) and must contain a minimum of 275 kilograms per cubic meter (5 sacks per cubic yard) of cement. No calcium chloride shall be added. The same brand of cement, source of sand, and water/cement ratio shall be maintained for each load of concrete of the same color.

502.03 Reinforcement. Steel reinforcement shall be 100 mm x 100 mm (4-inch by 4-inch) W4 x W4 Steel Welded Wire Reinforcement, Deformed, conforming to Section 503 and Section 709.02.

502.04 Preformed Expansion Joint Filler. Preformed Expansion Joint Fillers shall meet the requirements of Section 705.01

502.05 Color Conditioning Admixture. Colored pavement shall consist of Portland cement concrete replicating color # 3292-Navajo Red or color # 4821-Shady Red, as manufactured by L. M. Scofield Company, or approved equal, as directed by the Engineer.

The color-conditioning admixture shall be a single-component, colored, water-reducing, set-controlling admixture, factory formulated and packaged in cubic meter dosage increments, not multiple additives and pigments added separately into the mix. It shall comply with ASTM C 494, ASTM C979, and AASHTO M194.

CONSTRUCTION REQUIREMENTS

502.06 Test Slabs. Test slabs of colored pavement shall be poured replicating jobsite conditions, using the contemplated materials and construction techniques, and shall be submitted for approval. Each test slab of colored concrete shall be a minimum of 100 mm (4-in) thick and 0.6 meter (2-feet) by 0.6 meter (2-feet) square. Four separate test slabs replicating each of the two colors shall be cast as directed by the Engineer

502.07 Preparation of Foundation. Existing material shall be removed to the subgrade elevations. The foundation bed shall be well graded and drained, and compacted as directed by the Engineer to provide adequate and uniform load-bearing characteristics. Gravel shall be placed to provide the thickness of the Aggregate Subbase Course as shown on the plans. Prior to concrete placement the foundation bed shall be thoroughly and uniformly saturated with water, and shall be free of puddles and excessive surface water.

502.08 Placement of Concrete. Concrete shall be placed in a continuous operation between preformed expansion joints. No construction joints will be allowed. Expansion Joints shall have an approved expansion joint sealer matching the color of the concrete, installed as detailed on the plans. Preformed Expansion Joints shall be continuous and of an approved material; and, Control Joints shall be saw cut into the surface. Expansion Joints and Control Joints shall be placed as shown on the plans.

502.09 Weather and Curing Limitations. Colored pavement shall only be placed between the dates of May 1 and October 1, provided the air temperature as determined by an approved thermometer placed in the shade at the paving location is 10 degrees C (50 degrees F) or higher. During the curing process, the concrete shall not be covered with plastic sheeting, burlap, or other material which might disturb the uniformity of color throughout the concrete.

502.10 Mixing, Placing and Finishing. The concrete mix shall be controlled to provide good batch-to-batch uniformity. Ready-mix trucks shall be in good condition. If required by the Engineer, the Contractor shall wet-check the approximate color of each load before placing in accordance with the color admixture manufacturer's recommendations.

Before batching, the drum must be thoroughly clean and wet. The quantity of colored concrete mixed shall not be less than one-third of the capacity of the mixing drum, and shall always be in full cubic meter increments. Approximately 150 L (40 gal) of the mix water and a portion of the aggregates shall be batched into the mixer drum. Then one bag of the approved admixture, correctly packaged for the mix design, shall be added for each cubic meter of concrete. The remaining ingredients shall be added, and the load mixed at the specified mixing speed for a minimum of 130 revolutions, before discharging. Admixtures shall never be added to an empty drum or at the tail end of a load. When depositing, the concrete shall be deposited near its final position to avoid segregation due to rehandling or flowing. The concrete shall be placed and consolidated

so that it completely fills all space inside the forms and provides a suitable surface for finishing.

No water shall be added after the truck has left the batch plant. Concrete that has started to set must not be retempered, but shall be discarded.

The surface of the concrete shall receive a float finish in accordance with Subsection 502.14(A) of the Standard Specifications. Immediately following the float finish, the surface shall be textured in the direction of traffic flow using an approved open pile, stiff bristle broom or mat or rigid tined rake. Extra precautions shall be taken to ensure that the surface is uniformly finished so that it will not be slippery. Surrounding areas, landscaping, and adjacent surfaces shall be protected. The work area shall be roped off, nearby vehicles removed, and appropriate sections closed to traffic.

Approved colored curing agents shall be used per the manufacturer's recommendations to cure the colored pavement. The curing period for the concrete shall be seven days and shall meet the requirements of Standard Specification 502.15. The finished surface of the concrete shall receive a protective coating in accordance with Section 515.

502.11 Quality Assurance. Quality assurance of Structural Concrete, Colored Pavement will be by Method B as defined in Section 502.0504 of the Standard Specifications.

502.12 Method of Measurement. Structural Concrete, Colored Pavement, satisfactorily placed and accepted, will be measured for payment by the number of cubic meters of colored concrete delivered and accepted in place, in accordance with the dimensions shown on the plans or authorized by the Engineer. There will be no separate measurement for admixtures, reinforcement, expansion and contraction joints, joint filler material, joint sealant, concrete coloring or finishing, or related and incidental construction.

502.08 Basis of Payment. The accepted quantity of Structural Concrete, Colored Pavement will be paid for at the contract unit price per cubic meter, which payment will be full compensation for all labor, materials, tools, equipment, and incidentals necessary to complete the work, including the fabrication, delivery and placement of colored concrete and reinforcement, admixtures, furnishing and placement of expansion and contraction joints and joint filler material and sealant, and the furnishing and application of curing agents and protective coatings.

Payment will be made under:

Pay Item		Pay Unit
502.345	Structural Concrete, Colored Pavement	Cubic Meter

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(QC/QA Acceptance Methods)

CLASS OF CONCRETE	ITEM NUMBER	DESCRIPTION	P	METHOD
A	502.219	Structural Concrete Abutment & Retaining Walls	\$475	A
A	502.25	Structural Concrete Superstructure Slab	\$475	A
A	502.31	Structural Concrete Approach Slab	-	C
LP	626.32	600 mm Foundation	-	C
LP	502.345	Structural Concrete Colored Pavement	\$500	A
LP	526.321	Permanent Concrete Barrier – Type III A	\$500	A
LP	502.341	Structural Concrete Roadway Median	\$500	A

P values listed above reflect the price per cubic meter (M³) for all pay adjustment purposes.

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Quality Level Analysis)

502.01 Description In second sentence, replace "...METHOD B Small Quantity Product Verification..." with "...METHOD B Statistical Acceptance..."

502.05 Composition and Proportioning Delete Table 1 and replace with the following;

TABLE 1- Methods A and B

Concrete CLASS	Compressive Strength (PSI)		Permeability (COULOMBS)		Entrained Air (%)		Notes
	LSL	USL	LSL	USL	LSL	USL	
S	2,900	N/A	N/A	N/A	6.0	8.5	1, 5
A	4,350	-----	-----	2,400	6.0	8.5	1,2,5,6
P	-----	-----	-----	-----	5 ½	7 ½	1,2,3,4,5
LP	5,075	-----	-----	2,000	6.0	8.5	1,2,5,6
Fill	2,900	N/A	N/A	N/A	N/A	N/A	6

502.503 Delete and replace with the following;

“502.0503 Quality Assurance METHOD B The Department will determine the acceptability of the concrete through a quality assurance program.

The Department will take Quality Assurance samples a minimum of once per subplot on a statistically random basis. Quality Assurance tests will include compressive strength, air content and permeability.

Concrete sampling for quality assurance tests will be taken at the discharge point, with pumped concrete sampling taken at the discharge end of the pump line.

Lot Size A lot size shall consist of the total quantity represented by each class of concrete in the Contract, except in the case when the same class of concrete is paid for under both lump sum items and unit price items in the Contract; in this case, the lump sum item quantities shall comprise 1 lot and the unit price item quantities shall comprise a separate lot. A lot shall consist of a minimum of 3 and a maximum of 10 sublots. If a lot is comprised of more than 10 sublots, sized in accordance with Table #3, then this quantity shall be divided equally into 2, or more, lots such that there is a minimum of 3 and a maximum of 10 sublots per lot. If there is insufficient quantity in a lot to meet the recommended minimum subplot size, then the lot shall be divided into 3 equal sublots.

Sublot Size, General The size of each subplot shall be determined in accordance with Table #3. The Resident may vary subplot sizes based on placement sizes and sequence.

Sublot Size, Unit Price Items Sublot sizes will initially be determined from estimated quantities. When the actual final quantity of concrete is determined: If there is less than one-half the estimated subplot quantity in the remaining quantity, then this quantity shall be combined with the previous subplot, and no further Acceptance testing will be performed; if there is more than one-half the estimated subplot quantity in the remaining quantity, then this quantity shall constitute the last subplot and shall be represented by Acceptance test results. If it becomes apparent part way through a lot that, due to an underrun in quantity, there will be an insufficient quantity of concrete to comprise three sublots, then the Resident may adjust the sizes of the remaining sublots and select new sample locations based on the revised estimated quantity of concrete remaining in the lot.

Sublot Size, Lump Sum Items Each lot shall be divided into sublots of equal size, based on the estimated quantity of concrete.

TABLE 3

Quantity m ³ [cy]	Recommended Sublot Size m ³ [cy]
0-400 [0-500]	40 [50]
401-800 [501-1000]	60 [75]
801-1600 [1001-2000]	80 [100]
1601 [2001] or greater	200 [250]

Determination of the concrete cover over reinforcing steel for structural concrete shall be made prior to concrete being placed in the forms. Bar supports, chairs, slab bolsters, and side form spacers shall meet the requirements of Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice, Chapter 3 Section 2.5 Class 1, Section 2.6 Class 1A, or Section 4. All supports shall meet the requirements for type and spacing as stated in the CRSI Manual of Standard Practice, Chapter 3. Concrete will not be placed until the placing of the reinforcing steel and supports have been approved by the Resident. If the Contractor fails to secure Department approval prior to placement, the Contractor's failure shall be cause for removal and replacement at the Contractor's expense. The Contractor shall notify the Resident, at least 48 hours prior to the placement, when the reinforcing steel will be ready for checking. Sufficient time must be allowed for the checking process and any needed repairs.

Evaluation of materials will be made using the specification limits in Table 1.

Compressive strength tests will be completed by the Department in accordance with AASHTO-T22 at ≥ 28 days, except that no slump will be taken. The average of two concrete cylinders per subplot will constitute a test result and this average will be used to determine the compressive strength for pay adjustment computations.

Testing for Entrained Air in concrete, at the rate of one test per subplot, shall be in accordance with AASHTO T152.

Rapid Chloride Permeability test specimens will be completed by the Resident in accordance with AASHTO T-277 at an age \geq 56 days. Two 100 mm x 200 mm [4 in x 8 in] cylinders will be taken per subplot placed.

Surface Tolerance, Alignment and Trueness, Plumb and Batter, and Finish will be measured as described in Section 502.0502.

Rejection by Resident For an individual subplot with a calculated pay factor of less than 0.80, the Department will, at its sole discretion:

A. Require the Contractor to remove and replace the entire affected placement with concrete meeting the Contract requirements at no additional expense to the Department, or

B. Accept the material, at a reduced payment as determined by the Department. (See also Section 502.191)

For a lot in progress, the Contractor shall discontinue operations whenever one or more of the following occurs:

A. The pay factor for any property drops below 1.00 and the Contractor is taking no corrective action

B. The pay factor for any property is less than 0.90

C. The Contractor fails to follow the QC Plan”

502.18 Method of Measurement Under Section E. make the following change from “...Method A, and under Section 502.19...” to “...Method A, Section 502.0503- Quality Assurance Method B, and under Section 502.19...”

502.19 Basis of Payment Modify the first sentence of the seventh paragraph from “...accepted under Method A.” to “...accepted under Method A and Method B.”

502.191 Pay Adjustment for Compressive Strength Add the following as the second sentence to the first paragraph; “Pay factors (PF) for pay adjustments for compressive strength will be determined using the Quality Level Analysis as specified in Section 106.”

502.192 Pay Adjustment for Chloride Permeability Delete and replace with the following;

“Pay factors (PF) for pay adjustments for Chloride Permeability will be determined using the Quality Level Analysis as specified in Section 106.

Values greater than 4000 coulombs shall be subject to rejection and replacement at no additional cost to the Department.”

502.193 Pay Adjustment for Air Content Delete and replace with the following;

“Pay factors (PF) for pay adjustments for air content will be determined using the Quality Level Analysis as specified in Section 106.”

Add the following Section;

“502.195 Pay Adjustments for Compressive Strength, Chloride Permeability and Air Content The Composite Pay Factor (CPF) for each lot of concrete shall be computed as follows:

$$\text{CPF} = [(\text{Compressive Strength PF}-1)(0.20)] + [(\text{Air Content PF}-1)(0.40)] \\ + [(\text{Chloride Permeability PF}-1)(0.40)]$$

The pay adjustment for each lot of concrete shall be computed as follows:

$$\text{Lot Pay Adjustment} = P \times \text{CPF} \times \text{Lot Size}$$

There will be no positive pay adjustments for Method B Concrete.”

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Roadway Median)

Description This work shall consist of furnishing and placing a portland cement concrete pavement and incidental construction as shown on the plans, or as directed by the Resident. Except as otherwise specified in this Special Provision, all work shall be in conformity with the applicable provisions of Section 502 - Structural Concrete, Section 503 - Reinforcing Steel, and Section 515 - Protective Coating for Concrete Surfaces.

MATERIALS

Concrete Concrete shall be Class A.

Reinforcing Steel Reinforcing steel shall be Grade 60 and conform to Section 503 - Reinforcing Steel and be epoxy coated or galvanized.

Epoxy coated reinforcing steel shall meet the requirements of Section 503 - Reinforcing Steel.

Galvanized reinforcing steel shall be hot-dipped galvanized with a Class I coating in accordance with ASTM A767. Nickel and aluminum shall be allowed in the galvanizing bath, but the zinc content shall not be less than 98 percent by mass. The Contractor shall furnish a written certification that the coating and coated bars meet the requirements of ASTM A767.

Control Joint Zip strip control joint shall be 38 mm [1 ½ inch] type as manufactured by Superior Featherweight Tool Company, 1325, Bixby Drive, City of Industry, CA 91745; Harris Plastic Control Joint Former 38 mm [1 ½ inch] type as manufactured by A.H. Harris & Sons, Inc., 21 Ellis Street, New Britain, CT 06050; or an equivalent.

Joint Sealant Per Section 714.04 - Sealant.

CONSTRUCTION REQUIREMENTS

Preparation of Foundation The foundation bed shall be well graded and compacted, as directed by the Resident, to provide the thickness of concrete indicated on the plans.

Prior to the concrete placement, the foundation bed shall be thoroughly and uniformly saturated with water. The bed shall be free of puddles and excessive surface water.

Placement of Concrete The concrete mix shall be placed in a continuous placement operation when possible so that construction joints will be kept to a minimum. Construction joints shall be constructed when there is a break in a placement. Construction joints shall be used to provide

access to driveways and roads as directed by the Resident. 600 mm [2 ft] long dowels spaced at 300 mm [12 in] on center shall be placed at the construction joint. Construction joints shall be brushed with a neat cement paste immediately prior to making the adjacent placement. Control joints shall be constructed with a zip strip placed transversely at 3 m [10 ft] on centers.

Joint sealant shall be applied at the top surface of the concrete median at construction joints.

The surface of the concrete shall receive a float finish in accordance with Section 502.14(A) - Float Finish. Immediately following the float finish, the surface shall be textured at right angles to the roadway using an approved open-pile, stiff bristle broom or mat.

The curing period for the concrete shall be four days and shall meet the requirements of Section 502.15 - Curing Concrete. The finished surface of the concrete shall receive a protecting coating in accordance with Section 515 - Protective Coating for Concrete Surfaces.

Method of Measurement Structural concrete, roadway median, satisfactorily placed and accepted, will be measured for payment by the cubic meter [cubic yard], in accordance with the dimensions shown on the plans or authorized by the Resident.

Basis of Payment The accepted quantity of Structural Concrete, Roadway Median will be paid for at the contract unit price per cubic meter [cubic yard], which payment will be full compensation for all labor, materials, equipment, and incidentals necessary to complete the work, including the fabrication, delivery, and placement of reinforcement; the furnishing and the application of the protective coating; the fabrication, delivery, and placement of dowels; furnishing and placement of control joint strip and sealant.

Excavation for the placement of the Structural Concrete, Roadway Median will be paid for under the appropriate contract pay item, Section 203 - Excavation and Embankments.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
502.341 Structural Concrete, Roadway Median	Cubic Meter [Cubic Yard]

SPECIAL PROVISION
SECTION 524
TEMPORARY STRUCTURAL SUPPORTS
(Protective Shield)

The following subsection is in addition to the standard specifications.

Description:

This work shall consist of all labor, equipment, and materials required to protect the railroad from forming, and placement of concrete and other activities during bridge construction on this project. The protective shield shall be installed in approved locations as directed.

Construction Requirements:

Prior to the start of work, the contractor shall submit to the Engineer a set of plans for review and comment indicating the proposed method to protect the railroad, sizes and dimension of material used, and indicating connections and fasteners to be used. The protective shield shall be designed by a Licensed Professional Engineer of the State of Maine.

The Protective shield shall be designed to safely support all anticipated loads from small pieces of concrete and materials from falling from the deck during saw cutting or initial handling operations while the bridge deck is being constructed, and to protect against small tools falling onto vehicles or pedestrians below. The shield shall be approved by the Engineer and installed prior to the start of construction on the superstructure, and shall remain in position during any demolition work, new deck installation and placement of concrete. The shield shall not be installed, relocated or removed without approval of the Engineer.

During handling of large pieces of work over the areas of concern the Contractor shall close those areas to through traffic in accordance with the approved traffic control plan for only the duration of time each immediate handling operation is ongoing.

Method of Measurement:

The protective shield shall be measured for payment as one lump sum unit, complete in place and accepted.

Basis of Payment:

Payment shall include design, labor, and equipment, furnishing all material necessary to complete the work and as directed by the Engineer. Payment for traffic control plan and flaggers will not be made under this item, but will be considered incidental to item number 652.39, Work Zone Traffic Control.

Pay Item

524.40 Protective Shield

Pay Unit

Lump Sum

SPECIAL PROVISION
SECTION 602
FLOWABLE CONCRETE FILL

Description. This work shall consist of providing and placing flowable concrete fill at the locations designated on the plans.

MATERIALS

Materials shall conform to the requirements specified in the following Subsections of Division 700 – Materials:

Portland Cement	701.01
Water	701.02
Air Entraining Admixtures	701.03
Fine Aggregate	703.01
Fly Ash	701.10
Water Reducing Admixtures	701.04
Accelerating Admixtures	AASHTO M-194 Type "C"

CONSTRUCTION REQUIREMENTS

Composition and Proportioning. Flowable concrete fill shall be composed of a homogeneous mixture of Portland cement and/or pozzolans, fine aggregate, water, and chemical admixtures proportioned according to these specifications.

The flowable concrete fill shall be proportioned to produce a 28-day compressive strength of 760 kPa.

The water cement ratio for flowable concrete fill shall not be high enough to cause segregation of the mix.

Air content of 5 – 15% is the target. Higher air contents may be acceptable but will increase set time. All flowable concrete fill shall be air entrained by the addition of an air entraining admixture or other chemical admixtures.

At least 30 days prior to the first placement, a flowable concrete fill mix design shall be submitted by the Contractor to the Department for approval. No flowable concrete fill shall be placed on the project until the mix design is approved by the Department. At a minimum, the mix design submitted by the Contractor shall include the following:

- A. Target water cement ratio
- B. Target strength
- C. Target air content

Quality Control. Process control measurements of air content, mix temperature, and slump shall be performed on the portion or portions of flowable concrete fill batches delivered to the site. At least one set of measurements for air content, temperature, and slump of flowable concrete fill mix shall be performed per placement or per day, whichever is less frequent. Test cylinders will not be required.

Air content shall be measured following the requirements of AASHTO T152 utilizing Type B equipment.

Slump shall be measured by Modified Slump Test as described below:

Apparatus:

Scoop, measuring tape, flat edge, 75 mm x 150 mm cylinder mold open at both ends, and a flat non-absorbent surface.

Procedure:

1. Set cylinder upright on flat non-absorbent surface.
2. Scoop representative sample of flowable concrete fill.
3. Fill the cylinder with the sample in one lift without tamping. Strike off the top with the flat edge to form a level surface.
4. Clear any residue from around the bottom of the cylinder.
5. During a count of three seconds, lift the cylinder straight up allowing the sample to spread on the flat surface.
6. Measure the spread diameter to the nearest 15 mm. A spread of 225-350 mm is considered flowable.

Batching. Measuring and batching of materials shall be performed at an approved batching plant, either commercial or otherwise.

Mixing and Delivery. The Contractor shall provide a Certificate of Compliance as described in Standard Specification 502 Structural Concrete, Section 502.0501 Quality Control METHOD A, METHOD B and METHOD C for each truckload of flowable concrete fill.

Cold Weather Placement. The requirements of Standard Specification 502 Structural Concrete, Section 502.08 Cold Weather Concrete, amended as follows, apply.

The Cold Weather Temperature Table does not apply to flowable concrete fill. The minimum concrete temperature as placed shall be 4.40° C. No housing framework or heating will be required when placed under approved cold weather conditions.

Forms and Containment Berms. When necessary to contain flowable concrete fill within a defined area, berms shall be constructed of compacted granular material.

Placing Flowable Concrete Fill. Flowable concrete fill shall not be placed until forms and/or containment berms have been checked and approved. Flowable concrete fill shall not be placed under water. The method and sequence of placing flowable concrete fill shall be approved by the Department before any flowable concrete fill is placed. A technical representative from the flowable concrete fill supplier shall be present during the initial placement.

All flowable concrete fill shall be placed before it has taken its initial set. Flowable concrete fill shall be placed in such a manner as to avoid separation and segregation of the mix.

Consolidation, tamping, and vibration is not required or allowed.

Flowable concrete fill shall be discharged directly from the truck into the space to be filled. The drop height of the flowable concrete fill shall be as low as practicable. Flowable concrete fill shall not flow down the vertical face of a trench causing erosion of the trench face.

Finishing and curing of flowable concrete fill is not required.

Flowable concrete fill placed will not be opened to traffic or covered with structural concrete or pavement for a minimum of 24 hours.

Method of Measurement. Flowable concrete fill satisfactorily placed and accepted will be measured by the cubic meter, in accordance with the pay limits established, if such limits have been established. If the Contractor elects to omit forms, or berms, then any excavation or flowable concrete fill placed beyond the pay limits indicated on the Plans shall not be paid for, but shall be at the Contractor's expense. In the absence of pay limits, the Resident may use discretion to accept the delivered quantity as the measurement for payment.

Basis of Payment. The accepted work done under flowable concrete fill will be paid for at the contract unit price per cubic meter. Payment will be full compensation for furnishing and placing flowable concrete fill, including all forms, berms, granular material, pumping, dewatering and necessary incidentals.

Payment will be made under:

Pay Item	Pay Unit
602.30 Flowable Concrete Fill	Cubic Meter

Town: Calais
PIN: 8483(32)
Date: September 28, 2006

SPECIAL PROVISIONS
SECTION 603
PIPE CULVERTS AND STORM DRAINS

This section is amended by addition of the following:

Basis of Payment. Payment shall be in accordance with Subsection 603.12.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
603.1753	450 mm Reinforced Conc. Pipe Class V	M
603.205	750 mm Reinforced Conc. Pipe Class III	M
603.215	900 mm Reinforced Conc. Pipe Class III	M

Town: Calais
PIN: 8483(32)
Date: September 28, 2006

SPECIAL PROVISIONS
SECTION 604
MANHOLES AND CATCH BASINS
(Large Type)

This section is amended by addition of the following:

Description. This work shall consist of constructing catch basins and manholes in accordance with the requirements of Section 604 of the Standard Specifications and as shown on the special details of the plans.

CONSTRUCTION REQUIREMENTS

Method of Measurement. Measurement shall be in accordance with Subsection 604.05.

Basis of Payment. Payment shall be in accordance with Subsection 604.06.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
604.076	1500 mm Catch Basin Type A1-C	Each

SPECIAL PROVISION
SECTION 606
GUARDRAIL

606.01 Description This work shall consist of furnishing and installing guardrail components in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans or as established. The types of guardrail are designated as follows:

Type 3-Galvanized steel "w" beam, wood posts or galvanized steel posts.

Type 3a-Galvanized steel "w" beam, wood posts, wood or composite offset blocks.

Type 3aa-Corrosion resistant steel "w" beam, wood posts, wood or composite offset blocks.

Type 3b-Galvanized steel "w" beam, galvanized steel posts, galvanized steel offset blocks.

Type 3c-Galvanized steel "w" beam, wood posts or galvanized steel posts, wood or composite offset blocks.

Type 3d-Galvanized steel "w" beam, galvanized steel posts, wood or composite offset blocks.

Thrie Beam-Galvanized steel thrie beam, wood posts or galvanized steel posts, wood or composite offset blocks.

Median barriers shall consist of two beams of the above types, mounted on single posts. Except for thrie beam, median barriers may include rub rails when called for.

Bridge mounted guardrail shall consist of furnishing all labor, materials, and equipment necessary to install guardrail as shown on the plans. This work shall also include drilling for and installation of offset blocks if specified, and incidental hardware necessary for satisfactory completion of the work.

Remove and Reset and Remove, Modify, and Reset guardrail shall consist of removing the existing designated guardrail and resetting in a new location as shown on the plans or directed by the Resident. Remove, Modify, and Reset guardrail and Modify guardrail include the following guardrail modifications: Removing plate washers at all posts, except at anchorage assemblies as noted on the Standard Details, Adding offset blocks, and other modifications as listed in the Construction Notes or General Notes. Modifications shall conform to the guardrail Standard Details.

Bridge Connection shall consist of the installation and attachment of beam guardrail to the existing bridge. This work shall consist of constructing a concrete end post or modifying an existing endpost as required, furnishing, and installing a terminal connector, necessary hardware, and incidentals required to complete the work as shown on the plans. Bridge Transition shall consist of a bridge connection and furnishing and installing guardrail components as shown in the Standard Details.

606.02 Materials Materials shall meet the requirements specified in the following Sections of Division 700 - Materials:

Timber Preservative	708.05
Metal Beam Rail	710.04
Guardrail Posts	710.07
Guardrail Hardware	710.08

Guardrail components shall meet the applicable standards of "A Guide to Standardized Highway Barrier Hardware" prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee, Task Force 13 Report.

Reflectorized Flexible Guardrail Markers shall be mounted on all guardrails. A marker shall be mounted onto guardrail posts at the flared end treatment's terminal and its tangent point, both at the leading and trailing ends of each run of guardrail. The marker's flexible posts shall be grey with either silver-white or yellow reflectors (to match the edge line striping) at the tangents, red at leading ends, and green at trailing ends. Whenever the end treatment is not flared, markers will only be required at the end treatment's terminal. These shall be red or green as appropriate. Markers shall be installed on the protected side of guardrail posts unless otherwise approved by the Resident. Reflectorized flexible guardrail markers shall be from the Maine DOT's Approved Product List of Guardrail Material. The marker shall be grey, flexible, durable, and of a non-discoloring material to which 75 mm [3 in] by 225 mm [9 in] reflectors shall be applied, and capable of recovering from repeated impacts. Reflective material shall meet the requirements of Section 719.01 for ASTM D 4956 Type III reflective sheeting. The marker shall be secured to the guardrail post with two fasteners, as shown in the Standard Details.

Reflectorized beam guardrail ("butterfly"-type) delineators shall be mounted on all "w"-beam guardrail. The delineators shall be mounted within the guardrail beam at guardrail posts. Delineators shall be fabricated from high-impact, ultraviolet & weather resistant thermoplastic. Reflectorized beam guardrail delineators shall be placed at approximately 20 m [62.5 ft] intervals or every tenth post on tangents and at approximately 10 m [31.25 ft] intervals or every fifth post on curves. Exact locations of the delineators shall be as directed by the Resident. On divided highways, the left hand delineators shall be yellow and the right hand delineators shall be silver/white. On two directional highways, the right hand side shall be silver/white and no reflectorized delineator used on the left. All reflectors shall have reflective sheeting applied to only one side of the delineator facing the direction of traffic as shown in the Standard Detail 606(07). Reflectorized sheeting for guardrail delineators shall meet the requirements of Section 719.01.

Single wood post shall be of cedar, white oak, or tamarack, well seasoned, straight, and sound and have been cut from live trees. The outer and inner bark shall be removed and all knots trimmed flush with the surface of the post. Posts shall be uniform taper and free of kinks and bends.

Single steel post shall conform to the requirements of Section 710.07 b.

Single steel pipe post shall be galvanized, seamless steel pipe conforming to the requirements of ASTM A120, Schedule No. 40, Standard Weight.

Acceptable multiple mailbox assemblies shall be listed on the Department's Approved Products List and shall be NCHRP 350 tested and approved.

The Guardrail 350 Flared Terminal shall be a terminal with a 1.2 m [4 ft] offset as shown in the Manufacturer's installation instructions.

Existing materials damaged or lost during adjusting, removing and resetting, or removing, modifying, and resetting, shall be replaced by the Contractor without additional compensation. Existing

guardrail posts and guardrail beams found to be unfit for reuse shall be replaced when directed by the Resident.

606.03 Posts Posts for guardrail shall be set plumb in holes or they may be driven if suitable driving equipment is used to prevent battering and distorting the post. When posts are driven through pavement, the damaged area around the post shall be repaired with approved bituminous patching. Damage to lighting and signal conduit and conductors shall be repaired by the Contractor.

When set in holes, posts shall be on a stable foundation and the space around the posts, backfilled in layers with suitable material, thoroughly tamped.

The reflectorized flexible guardrail markers shall be set plumb with the reflective surface facing the oncoming traffic. Markers shall be installed on the protected side of guardrail posts. Markers, which become bent or otherwise damaged, shall be removed and replaced with new markers.

Single wood posts shall be set plumb in holes and backfilled in layers with suitable material, thoroughly tamped. The Resident will designate the elevation and shape of the top. The posts, that are not pressure treated, shall be painted two coats of good quality oil base exterior house paint.

Single steel posts shall be set plumb in holes as specified for single wood posts or they may be driven if suitable driving equipment is used to prevent battering and distorting the post.

Additional bolt holes required in existing posts shall be drilled or punched, but the size of the holes shall not exceed the dimensions given in the Standard Details. Metal around the holes shall be thoroughly cleaned and painted with two coats of approved aluminum rust resistant paint. Holes shall not be burned.

606.04 Rails Brackets and fittings shall be placed and fastened as shown on the plans. Rail beams shall be erected and aligned to provide a smooth, continuous barrier. Beams shall be lapped with the exposed end away from approaching traffic.

End assemblies shall be installed as shown on the plans and shall be securely attached to the rail section and end post.

All bolts shall be of sufficient length to extend beyond the nuts but not more than 13 mm [$\frac{1}{2}$ in]. Nuts shall be drawn tight.

Additional bolt holes required in existing beams shall be drilled or punched, but the size of the holes shall not exceed the dimensions given in the Standard Details. Metal around the holes shall be thoroughly cleaned and painted with two coats of approved aluminum rust resistant paint. Holes shall not be burned.

606.045 Offset Blocks The same offset block material is to be provided for the entire project unless otherwise specified.

606.05 Shoulder Widening At designated locations the existing shoulder of the roadway shall be widened as shown on the plans. All grading, paving, seeding, and other necessary work shall be in accordance with the Specifications for the type work being done.

606.06 Mail Box Post Single wood post shall be installed at the designated location for the support of the mailbox. The multiple mailbox assemblies shall be installed at the designated location in accordance with the Standard Details and as recommended by the Manufacturer. Attachment of the mailbox to the post will be the responsibility of the home or business owner.

606.07 Abraded Surfaces All galvanized surfaces of new guardrail and posts, which have been abraded so that the base metal is exposed, and the threaded portions of all fittings and fasteners and cut ends of bolts shall be cleaned and painted with two coats of approved rust resistant paint.

606.08 Method of Measurement Guardrail will be measured by the meter [linear foot] from center to center of end posts along the gradient of the rail except where end connections are made to masonry or steel structures, in which case measurement will be as shown on the plans.

Terminal section, low volume end, NCHRP 350 end treatments, reflectorized flexible guardrail marker, terminal end, bridge transition, bridge connection, multiple mailbox post, and single post will be measured by each unit of the kind specified and installed.

Widened shoulder will be measured as a unit of grading within the limits shown on the plans.

Excavation in solid rock for placement of posts will be measured by the cubic meter [cubic yard] determined from the actual depth of the hole and a hypothetical circle diameter of 600 mm [2 ft].

606.09 Basis of Payment The accepted quantities of guardrail will be paid for at the contract unit price per meter [linear foot] for the type specified, complete in place. Reflectorized beam guardrail ("butterfly"-type) delineators will not be paid for directly, but will be considered incidental to guardrail items. Terminal section, buffer end, NCHRP 350 end treatment, bridge connection, single post and reflectorized flexible guardrail markers will be paid for at the contract unit price each for the kind specified complete in place.

NCHRP 350 end treatments and low volume guardrail ends will be paid for at the contract price each, complete in place which price shall be full payment for furnishing and installing all components including the terminal section, posts, offset blocks, "w" beam, cable foundation posts, plates and for all incidentals necessary to complete the installation within the limits as shown on the Standard Details or the Manufacturer's installation instructions. Such payment shall also be full compensation for furnishing all material, excavating, backfilling holes, assembling, and all incidentals necessary to complete the work, except that for excavation for posts or anchorages in solid ledge rock, payment will be made under Pay Item 206.07. Type III Retroreflective Adhesive Sheeting shall be applied to the approach buffer end sections and sized to substantially cover the end section. On all roadways, the ends shall be marked with alternating black and retroreflective yellow stripes. The stripes shall be 75 mm [3 in] wide and sloped down at an angle of 45 degrees toward the side on which traffic is to pass the end section. Guardrail 350 flared terminal shall also include a set of installation drawings supplied to the

Resident, and the Contractor shall provide one complete set of replacement parts per contract and deliver the spare parts to the local Regional Office.

Anchorage to bridge end posts will be part of the bridge work. Connections thereto will be considered included in the unit bid price for guardrail.

Guardrail to be placed on a radius of curvature of 45 m [150 ft] or less will be paid for under the designated radius pay item for the type guardrail being placed.

Widened shoulder will be paid for at the contract unit price each complete in place and will be full compensation for furnishing and placing, grading and compaction of aggregate subbase and any required fill material.

Adjust guardrail will be paid for at the contract unit price per meter and will be full compensation for adjusting to grade. Payment shall also include adjusting terminal end treatments where required.

Modify guardrail will be paid for at the contract unit price per meter and will be full compensation for furnishing and installing offset blocks, additional posts, and other specified modifications; removing, modifying, installing, and adjusting to grade existing posts and beams; removing plate washers and backup plates, and all incidentals necessary to complete the work. Payment shall also include removing and resetting terminal ends where required.

Remove and Reset guardrail will be paid for at the contract unit price per meter and will be full compensation for removing, transporting, storing, reassembling all parts, necessary cutting, furnishing new parts when necessary, reinstalling at the new location, and all other incidentals necessary to complete the work. Payment shall also include removing and resetting terminal ends when required. No payment will be made for guardrail removed, but not reset and all costs for such removal shall be considered incidental to the various contract pay items.

Remove, Modify, and Reset guardrail will be paid for at the contract unit price per meter and will be full compensation for the requirements listed in Modify guardrail and Remove and Reset guardrail.

Bridge Connections will be paid for at the contract unit price each. Payment shall include, attaching the connection to the endpost including furnishing and placing concrete and reinforcing steel necessary to construct new endposts if required, furnishing and installing the terminal connector, and all miscellaneous hardware, labor, equipment, and incidentals necessary to complete the work.

Bridge Transitions will be paid for at the contract unit price each. Payment shall include furnishing and installing the thrie beam or "w"-beam terminal connector, doubled beam section, and transition section, where called for, posts, hardware, precast concrete transition curb, and any other necessary materials and labor, including the bridge connection as stated in the previous paragraph.

Payment will be made under:

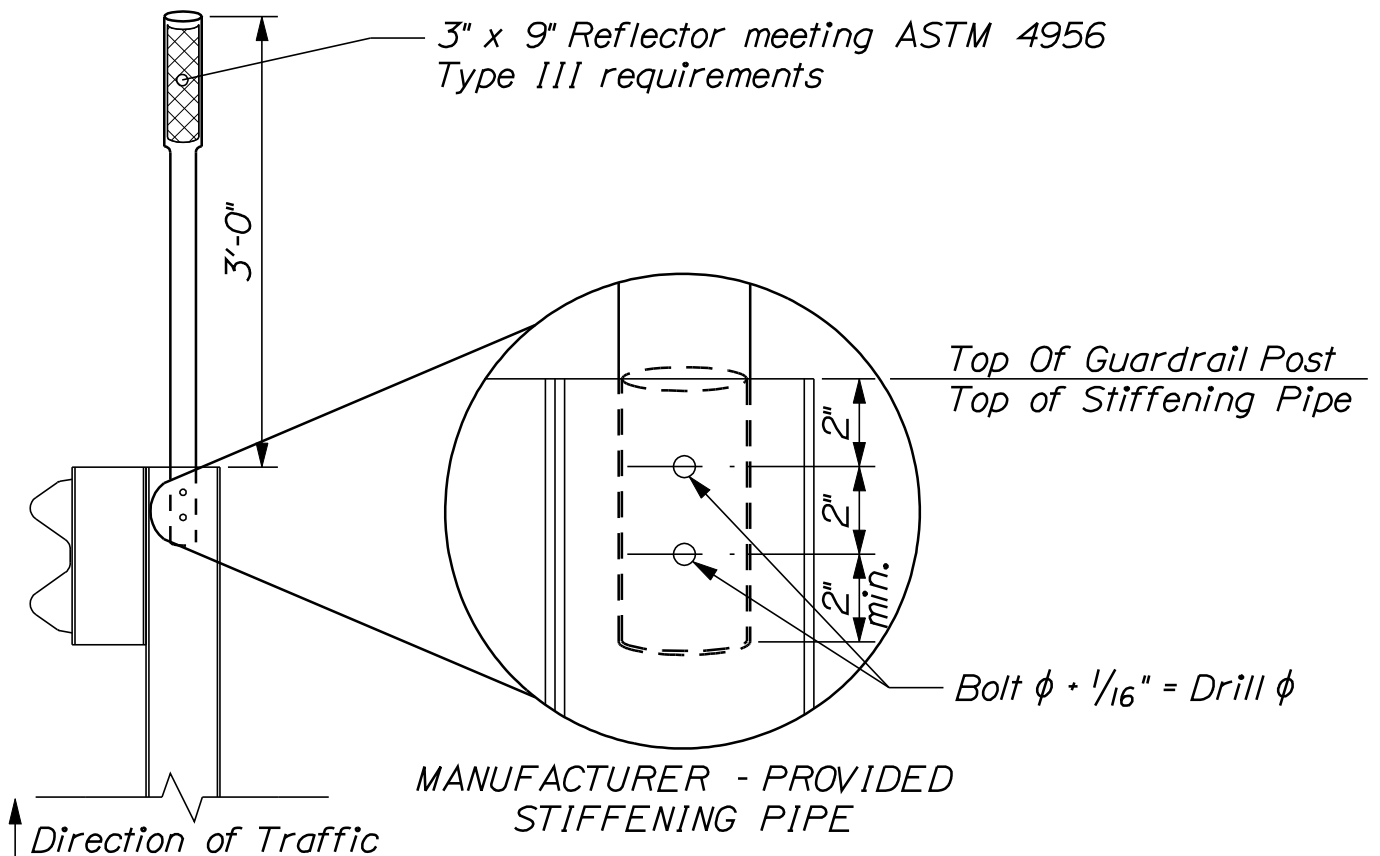
	<u>Pay Item</u>	<u>Pay Unit</u>
606.15	Guardrail Type 3a-Single Rail	meter [Linear Foot]
606.151	Guardrail Type 3aa-Single Rail	meter [Linear Foot]
606.17	Guardrail Type 3b-Single Rail	meter [Linear Foot]
606.1721	Bridge Transition - Type I	Each
606.1722	Bridge Transition - Type II	Each
606.1731	Bridge Connection - Type I	Each
606.1732	Bridge Connection - Type II	Each
606.178	Guardrail Beam	meter [Linear foot]
606.18	Guardrail Type 3b - Double Rail	meter [Linear foot]
606.19	Guardrail Type 3a - 4.5 m [15 ft] radius and less	meter [Linear Foot]
606.191	Guardrail Type 3aa - 4.5 m [15 ft] radius and less	meter [Linear Foot]
606.20	Guardrail Type 3a - over 4.5 m [15 ft] radius	meter [Linear Foot]
606.201	Guardrail Type 3aa - over 4.5 m [15 ft] radius	meter [Linear Foot]
606.21	Guardrail Type 3b - 4.5 m [15 ft] radius and less	meter [Linear Foot]
606.22	Guardrail Type 3b - over 4.5 m [15 ft] radius	meter [Linear Foot]
606.23	Guardrail Type 3c - Single Rail	meter [Linear Foot]
606.2301	Guardrail Type 3c - Double Rail	meter [Linear Foot]
606.231	Guardrail Type 3c - 4.5 m [15 ft] radius and less	meter [Linear Foot]
606.232	Guardrail Type 3c - over 4.5 m [15 ft] radius	meter [Linear Foot]
606.24	Guardrail Type 3d - Single Rail	meter [Linear Foot]
606.2401	Guardrail Type 3d - Double Rail	meter [Linear Foot]
606.241	Guardrail Type 3d - 4.5 m [15 ft] radius and less	meter [Linear Foot]
606.242	Guardrail Type 3d - over 4.5 m [15 feet] radius	meter [Linear Foot]
606.25	Terminal Connector	Each
606.257	Terminal Connector - Thrie Beam	Each
606.265	Terminal End-Single Rail - Galvanized Steel	Each
606.266	Terminal End-Single Rail - Corrosion Resistant Steel	Each
606.275	Terminal End-Double Rail - Galvanized Steel	Each
606.276	Terminal End-Double Rail - Corrosion Resistant Steel	Each
606.353	Reflectorized Flexible Guardrail Marker	Each
606.354	Remove and Reset Reflectorized Flexible Guardrail Marker	Each
606.358	Guardrail, Modify, Type 3b to 3c	meter [Linear Foot]
606.3581	Guardrail, Modify Existing to Type 3d	meter [Linear Foot]
606.362	Guardrail, Adjust	meter [Linear Foot]
606.365	Guardrail, Remove, Modify, and Reset, Type 3b to 3c	meter [Linear Foot]
606.3651	Guardrail, Remove, Modify, and Reset Existing to Type 3d	meter [Linear Foot]
606.366	Guardrail, Removed and Reset, Type 3c	meter [Linear Foot]
606.367	Replace Unusable Existing Guardrail Posts	Each
606.47	Single Wood Post	Each
606.48	Single Galvanized Steel Post	Each
606.50	Single Steel Pipe Post	Each
606.51	Multiple Mailbox Support	Each
606.55	Guardrail Type 3 - Single Rail	meter [Linear Foot]
606.551	Guardrail Type 3 - Single Rail with Rub Rail	meter [Linear Foot]

606.56	Guardrail Type 3 - Double Rail	meter [Linear Foot]
606.561	Guardrail Type 3 - Double Rail with Rub Rail	meter [Linear Foot]
606.568	Guardrail, Modify Type 3c -Double Rail	meter [Linear Foot]
606.59	Guardrail Type 3 - 4.5 m [15 ft] radius and less	meter [Linear Foot]
606.60	Guardrail Type 3 - over 4.5 m [15 ft] radius	meter [Linear Foot]
606.63	Thrie Beam Rail Beam	meter [Linear Foot]
606.64	Guardrail Thrie Beam - Double Rail	meter [Linear Foot]
606.65	Guardrail Thrie Beam - Single Rail	meter [Linear Foot]
606.66	Terminal End Thrie Beam	Each
606.70	Transition Section - Thrie Beam	Each
606.71	Guardrail Thrie Beam - 4.5 m [15 ft] radius and less	meter [Linear Foot]
606.72	Guardrail Thrie Beam - over 4.5 m [15 ft] radius	meter [Linear Foot]
606.73	Guardrail Thrie Beam - Single Rail Bridge Mounted	meter [Linear Foot]
606.74	Guardrail Type 3 - Single Rail Bridge Mounted	meter [Linear Foot]
606.753	Widen Shoulder for Low Volume Guardrail End - Type 3	Each
606.754	Widen Shoulder for Guardrail 350 Flared Terminal	Each
606.78	Low Volume Guardrail End - Type 3	Each
606.79	Guardrail 350 Flared Terminal	Each

1. ReflectORIZED Flexible Guardrail Markers shall be from Maine DOT's Approved Product List of Guardrail Material.

2. Installation:

- a. Each bolt-hole diameter shall be the bolt diameter + $1/16$ ".
- b. Wood post attachment - attach marker with 2, $5/16$ " diameter zinc-coated lag bolts, having 2" of embedment into wood post.
- c. Steel post attachment - attach marker with 2, $1/4$ " diameter zinc-coated bolt, washer and nut assemblies, having $1/2$ " of bolt extension behind steel post.
- d. When provided by the marker manufacturer, a stiffening pipe shall be inserted into the base of the marker prior to drilling bolt holes and shall remain in-place.



REFLECTORIZED FLEXIBLE GUARDRAIL MARKER DETAILS

606(34)

SPECIAL PROVISION
SECTION 614
(Mitigation Trees and Brush)

614.01 Description. This work shall consist of furnishing and placing logs, branches, and brush on the Wetland Creation and Wetland Enhancement #1 areas at the mitigation site in accordance with the Plans and as directed by the Resident or Wetland Specialist.

614.02 Materials. Mitigation Trees and Brush shall include rotten/fallen logs, cut logs, small whole trees or saplings, tree limbs, and cut shrubs. Large stumps and root wads shall not be included. Only materials from plant species native to Maine shall be included.

Mitigation Trees and Brush shall be obtained from areas that are free of invasive plant species, including but not limited to buckthorn, Japanese barberry, oriental bittersweet, multiflora rose, black locust, Norway maple, and non-native honeysuckles. The Contractor shall submit the proposed source(s) to the Resident for approval at least 10 days prior to delivery on-site. The Wetland Specialist will make inspections upon delivery and after installation and will reject material that does not conform to the description above.

All unsuitable material shall be removed from the site by the Contractor and disposed of in an approved location.

614.03 Time of Installation. The Contractor shall deliver and place Mitigation Trees and Brush following finish grading but before planting and seeding.

614.04 Delivery and Placement.

(a) Delivery The Contractor shall supply and deliver up to three 12-cubic meter (yard) dump truck loads of Mitigation Trees and Brush. Delivery shall be made to the Water District Mitigation Site.

(b) Placement. The Contractor shall scatter Mitigation Trees and Brush, by hand or by equipment, as individual pieces and/or in small piles within the Wetland Creation and Wetland Enhancement #1 areas, as directed by the Resident or Wetland Specialist.

614.05 Method of Measurement. Preparation, transport, and installation of acceptable Mitigation Trees and Brush will be measured by the hours of work performed, including Hand Labor and Equipment Rental, to the nearest one quarter hour.

614.06 Basis of Payment. Mitigation Trees and Brush will be paid for under the appropriate items of Section 629 - Hand Labor and Section 631 - Equipment Rental. Payment will be full compensation for furnishing, cutting, pruning, loading, hauling, stockpiling, placement, installation, clean-up, and for all labor, materials, and equipment necessary to perform the work.

SPECIAL PROVISION
SECTION 615
LOAM

(Wetland Topsoil Salvage – For Use at the Water District Mitigation Site Only)

615.01 Description. This work shall consist of furnishing labor, equipment, and materials for salvaging, transporting, and stockpiling wetland topsoil for use as Wetlands Loam at the Water District Mitigation Site and for use in manufacturing Loam/Salvage Mix, as shown on the Plans and as directed. This work shall be undertaken as part of the construction of the Border Station Connector Road.

615.02 Materials. Topsoil shall be salvaged from existing emergent and shrub wetland areas within the permitted impact limits of the Border Station Connector Road in the general area of the proposed Maine Central Railroad crossing. The approximate locations of the salvage areas, from Stations 6+145 to 6+220 and 6+240 to 6+300, are shown on the Plans. Topsoil shall be salvaged from the mapped wetland areas within the designated stationing and within the limits of earthwork unless otherwise directed. Shrub vegetation (i.e., above-ground stems) shall be cleared prior to soil salvage.

The Contractor shall generally salvage the upper 300 millimeters (12 inches) of topsoil within the designated salvage areas. At the direction of the Resident or Wetland Specialist, the Contractor shall first remove the upper 100–150 millimeters (4–6 inches) of wetland soil from the salvage areas to be stockpiled separately for later use in the Wetland Creation and Enhancement Areas of the Water District Mitigation Site (refer to Special Provision Section 615 – Wetlands Loam). Following removal of the upper layer of topsoil, the Contractor shall salvage the next 150-millimeter layer of wetland topsoil to be stockpiled separately for later use in accordance with Special Provision Section 615 – Loam/Salvage Mix.

The wetland Topsoil Salvage shall be free of excessive quantities of stones and other objectionable debris, as determined by the Resident or Wetland Specialist. Small clumps of herbaceous vegetation and shrub roots may remain with the salvaged soil, but large stumps or clumps (i.e., greater than 900 millimeters [3 feet] in diameter) shall be removed, as directed, prior to transport to the mitigation site.

615.03 Delineation of Salvage Areas. The Contractor shall notify the Resident three days prior to beginning excavation/salvage operations. A Wetland Specialist will be available to assist the Resident and the Contractor in delineating and marking the topsoil areas to be salvaged.

615.04 Stockpiling. Approved wetland Topsoil Salvage shall be stockpiled separately in clearly-marked stockpiles as approved by the Resident. As noted above, the upper 150 millimeters of salvaged soil shall be stockpiled separately from the lower 150 millimeters. The Contractor shall have the option of stockpiling this material at the

mitigation site within the designated stockpile/laydown areas shown on the Plans. Topsoil stockpile(s) shall be stabilized and covered with woodwaste mulch to prevent erosion and desiccation. Unauthorized mixing or use of salvaged wetland topsoil shall be corrected to the Resident's satisfaction and/or restored by the Contractor at no additional expense.

615.05 Method of Measurement. Wetland Topsoil Salvage will be measured by the number of cubic meters in its original position, as determined by comparison of digital terrain models of existing and as-built conditions of the area of excavation, or by cross-section elevations of the salvage areas excavated and in accordance with Subsection 203.18.

615.06 Basis of Payment. The accepted quantities of wetland Topsoil Salvage will be paid for at the contract unit price per cubic meter. Payment shall be full compensation for excavating, loading, hauling, stockpiling, protecting, and maintaining stockpiles; and for all labor, materials, and incidentals necessary to complete the work.

Furnishing and placing woodwaste mulch on stockpiles shall be considered incidental to the contract and no separate payment will be made.

Payment shall be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
615.09 Topsoil Salvage	Cubic Meter

SPECIAL PROVISION
SECTION 615
LOAM
(Wetlands Loam)

615.01 Description. This work will consist of furnishing labor, equipment, and materials for the installation of salvaged wetland topsoil on the prepared Wetland Creation Area and Wetland Enhancement Area #1 at the Water District Mitigation Site as shown on the Plans and as directed.

615.02 Materials. Wetlands Loam for the Wetland Creation Area and Wetland Enhancement Area #1 shall consist of wetland topsoil salvaged in accordance with Special Provision Section 615 – Loam (Wetland Topsoil Salvage).

615.03 Preparing Areas. The Contractor shall establish and maintain layout stakes as defined in Special Provision Section 203 – Mitigation Excavation, and as directed by the Resident. All areas where Wetlands Loam is to be placed shall be smoothly shaped to the required subgrades prior to placement.

615.04 Placing Loam. After the subgrades are established in accordance with Special Provision Section 203 – Mitigation Excavation, the Contractor shall apply Wetlands Loam and complete finish grading as follows:

Wetland Creation Area: Apply approximately 200–300 millimeters (8–12 inches) of Wetlands Loam to form pit and mound micro-topography at the average finish grades shown on the Plans and as shown on the Special Detail. A Wetland Specialist will be on-site to assist the Contractor in determining the final grades and depths of Wetlands Loam to be placed in the Wetland Creation Area. Shallow depressions and mounds shall be formed by placing or grading the Wetlands Loam at varying depths as shown on the Plans.

Wetland Enhancement Area #1: Apply approximately 100 millimeters (4 inches) of Wetlands Loam to form a relatively smooth finished surface within the excavated basin. The basin is expected to fill with water and will not be planted.

Apply approximately 150–200 millimeters (6–8 inches) of Wetlands Loam around the perimeter of the excavated basin in Wetland Enhancement Area #1 to form shallow pit and mound micro-topography, as shown on the Plans and Special Details. A Wetland Specialist will be on-site to assist the Contractor in determining the final grades and depths of Wetlands Loam to be placed in the Wetland Enhancement Area. Depressions and mounds shall be formed by placing or grading the Wetlands Loam at varying depths as shown on the Plans.

Excessive compaction of the Wetlands Loam shall be avoided. The Resident may require additional hand raking to form or shape the desired micro-topography within the

Wetland Creation and Enhancement Areas, as well as to remove excessive quantities of rocks and debris as directed.

With the exception of the excavated basin in Wetland Enhancement Area #1, the areas receiving Wetlands Loam will be planted, seeded, and mulched after the completion of final grading in accordance with Special Provisions Section 618 – Seeding, Section 619 – Special Mulch-Straw, and Section 621 – Mitigation Planting.

615.05 Method of Measurement. Wetlands Loam will be measured by the cubic meter complete in place after being finished to the required depths and micro-topography, as shown on the Plans or as directed. Lateral measurements will be parallel with the slope of the ground.

615.06 Basis of Payment. The accepted quantities of Wetlands Loam will be paid for at the contract unit price per cubic meter complete in place. The contract unit price will include the cost of loading and hauling salvaged Wetlands Loam from topsoil stockpile areas; placing and grading salvaged Wetlands Loam in the Wetland Creation and Enhancement Areas; and providing, establishing, and maintaining layout stakes. Detailed machine work, specialized equipment, mats, and hand raking will not be paid for separately but shall be incidental to this item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
615.08 Wetlands Loam	Cubic Meter

SPECIAL PROVISION
SECTION 615 - LOAM
(Loam/Salvage Mix)

615.01 Description. This work shall consist of furnishing labor, equipment, and materials necessary for mixing existing topsoil stockpiles with wetland Topsoil Salvage (Item 615.09) and spreading the mixture onto specified upland areas at the Water District Mitigation Site in preparation for planting and seeding. All work shall be done in accordance with the specifications and in conformity with the lines, grades, thicknesses, contours, and re-soiling boundaries shown on the Plans.

615.02 Materials. Loam/Salvage Mix shall be prepared by the Contractor by mixing existing topsoil stockpiles at the Water District Mitigation Site with wetland Topsoil Salvage – Item 615.09. The materials from these two sources shall be thoroughly and evenly mixed together as necessary to manufacture the quantity of Loam/Salvage Mix required to re-soil the upland portions of the mitigation site as shown on the Plans and as directed. Refer to Special Provision Section 615 – Topsoil Salvage for a description of the salvaged loam and to Special Provision Section 203 – Mitigation Excavation for information on existing loam sources from the Water District Mitigation site that will be available for use in the Loam/Salvage Mix.

The Contractor will not be required to screen the Loam/Salvage Mix to remove small stones, clods, roots, rhizomes or vegetation. However, stones larger than 250 millimeters in diameter shall be removed from the mix prior to placement and shall be disposed of by the Contractor.

615.03 Preparing Areas. All areas where Loam/Salvage Mix is to be placed shall be smoothed and shaped as needed prior to spreading to fill ruts or holes and to promote drainage. The approximate limits of areas to be re-soiled with Loam/Salvage Mix are as shown on the Plans.

615.04 Placing Loam/Salvage Mix. Loam/Salvage Mix shall be spread uniformly on prepared upland re-soil areas to a thickness of 150 millimeters (6 inches). The placed Loam/Salvage Mix shall meet the specified thickness without compaction. The Contractor shall not compact the Loam/Salvage Mix following placement. The total volume of Loam/Salvage Mix, available after mixing the sources described above in 615.02, shall be spread to cover as much of the designated re-soil areas as possible to the specified thickness. If this thickness is achieved throughout the specified upland re-soil areas, and if more Loam/Salvage Mix is available, the Contractor shall uniformly spread the remaining mix on the re-soil areas as directed by the Resident, thereby increasing the thickness in some or all of the re-soil areas. Conversely, if the volume of Loam/Salvage Mix is insufficient to cover all designated re-soil areas to the specified thickness, the Contractor shall, at the direction of the Resident, reduce the area of re-soiling but maintain the specified thickness.

615.05 Method of Measurement. Loam/Salvage Mix will be measured by the number of cubic meters complete in place after finishing to the required thickness, as described herein, as shown on the Plans, or as directed. Lateral measurements shall be parallel with the slope of the ground. Removal of existing topsoil from within the Wetland Creation and Wetland Enhancement Area #1 limits will be measured for payment in accordance with Special Provision Section 203 – Mitigation Excavation.

615.06 Basis of Payment. The accepted quantity of Loam/Salvage Mix will be paid for at the contract unit price per cubic meter complete in place. The removal and stockpiling of existing topsoil from the Wetland Creation and Wetland Enhancement Area #1 limits for later use in the manufacturing of Loam/Salvage Mix will be paid for under Pay Item 203.23 – Mitigation Excavation after removal and stockpiling. Subsequent handling of this material will be paid for under Pay Item 615.0862 – Loam/Salvage Mix after mixing and placement in its final position. Payment will be full compensation for moving and mixing the Loam/Salvage Mix; removing and disposing of large rocks and debris from the mix; preparing areas; placing and spreading to specified thickness; providing, establishing, and maintaining layout stakes; rough grading and detailed machine work; and all labor, materials and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
615.0862 Loam/Salvage Mix	Cubic Meter

SPECIAL PROVISION
SECTION 617
SOIL CONDITIONERS
(Woodwaste Mulch)

617.01 Description. This work will consist of furnishing labor, equipment, and material for installing Woodwaste Mulch as a soil amendment mulch on all plant groups as shown on the Plans and as directed by the Engineer.

617.02 Materials. Materials shall meet the following requirements:

Woodwaste Mulch: Woodwaste Mulch shall be a composted organic substance of source separated materials, separated at the point of waste generation, that may include forest residues, bark, sawdust, wood shavings, and/or other clean wood waste materials. Woodwaste Mulch shall be free of refuse, physical contaminants, material toxic to plant growth, and re-processed wood products. Woodwaste shall be a well-graded material conforming to the following:

- (a) pH - Range 5.5 - 7.0
- (b) Particle Size – 100 percent passing a 75 mm (3 inch) screen
- (c) Soluble Salts – content <4.0 mmhos/cm
- (d) Organic Content - no less than 50 percent dry weight basis
- (e) Moisture Content - <60 percent and the product shall be loose and friable, not dusty

Submittals. The Contractor shall furnish a 5-gallon sample and, upon request, provide documentation by a laboratory that the Woodwaste Mulch meets the materials requirement outlined above, for approval by the Resident within 15 days prior to use of this material at the mitigation site.

617.03 Construction Requirements. In the Wetland Creation Area, Wetland Enhancement Area #1, Upland Buffer Planting areas, and Visual Screen planting groups that are to be prepared with topsoil, Woodwaste Mulch shall be placed to a uniform depth of 100 millimeters (4 inches) within all plant groups following topsoil application and final grading. In Wetland Enhancement Area #2 and the Visual Screen planting areas requiring no prior re-soiling (i.e., in the cranberry bed), Woodwaste Mulch shall be placed on top of native soil to a uniform depth of 100 millimeters (4 inches) within all plant groups. Equipment access constraints shall conform to Special Provision, Section 203 - Mitigation Excavation.

617.04 Method of Measurement. Woodwaste Mulch will be measured by the cubic meter complete in place after finishing to the required depth as shown on the Plans or as directed. Measurements will be parallel to the slope of the ground.

617.05 Basis of Payment. The accepted quantities of Woodwaste Mulch will be paid for at the contract unit price per cubic meter complete in place. Payment will constitute full compensation for furnishing, loading, hauling, placement, final grading and hand raking of Woodwaste Mulch; and all labor, equipment, tools, and any other incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
617.37 Woodwaste Mulch	Cubic Meter

SPECIAL PROVISION
SECTION 618 - SEEDING
(Special Seed Mix: Water District #1)

618.01 Description. This work shall consist of furnishing labor, equipment, and materials for preparing the soil and applying Special Seed Mix: Water District #1 to exposed soils within the Wetland Creation Area and Wetland Enhancement Area #1 following regrading, re-soiling, and planting of those areas, as shown on the Plans or as directed. Seed shall be applied only on exposed soil; no seeding shall be done in mulched plant groups.

618.02 Materials. The subsection is revised to add the following:

Special Seed Mix. Seeding of exposed soils within the limits of the Wetland Creation Area and Wetland Enhancement Area #1 following planting shall be done with the Special Seed Mix: Water District #1, specified below and shown on the Plans. Seed shall meet the germination and purity requirements in Subsection 717.03.

The Water District #1 mix shall consist of seeds proportioned as follows:

Common Name	Botanical Name	% by Weight
Switchgrass	<i>Panicum virgatum</i>	35%
Virginia Wild Rye	<i>Elymus virginicus</i>	20%
Little Bluestem	<i>Schizachyrium scoparium</i>	15%
Fox Sedge	<i>Carex vulpinoidea</i>	10%
Soft Rush	<i>Juncus effusus</i>	05%
Flat-top Aster	<i>Aster umbellatus</i>	05%
Green Bulrush	<i>Scirpus atrovirens</i>	05%
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	05%

Possible Seed Sources.

Allen, Sterling, and Lothrop
191 U.S. Route One
Falmouth, ME 04105
(207) 781-4142

Ernst Conservation Seeds LLP
9006 Mercer Pike
Meadville, PA 16335-9299
(800) 873-3321

New England Wetland Plants, Inc.
820 West Street
Amherst, MA 01002
(413) 548-8000

Fertilizer and Lime. No fertilizer or other soil amendments will be required.

618.03 Rate of Application. This entire subsection is revised to read:

The Water District #1 special seed mix shall be uniformly applied to all areas specified herein and on the Plans at the rate of 0.2 kilograms per unit (+/- 15 pounds per acre). One unit is defined as 100 square meters.

618.05, 618.06, and 618.07 Applying Fertilizer and Sowing Seed. These subsections are replaced with the following:

Seed shall be applied by hand cyclone seeder or similar means in accordance with Subsection 618.06 of the Standard Specifications, uniformly at the required rate. The hydraulic spray method will not be allowed. Immediately following application, the seed shall be raked lightly by hand to promote contact with bare soil.

618.08 Mulching. This subsection is revised to read:

After seeding, the Contractor shall place straw mulch to cover the seeded areas (refer to Special Provision Section 619 - Special Mulch: Straw). The use of hay mulch is strictly prohibited.

618.09 Construction Method. The entire subsection is deleted and replaced with the following:

Immediately prior to application of Special Seed Mix: Water District #1, the top 50 mm (2 inches) of the soil shall be loosened by hand raking. On freshly graded areas, raking may be waived if the Resident determines that the soil surface is loose enough to provide bedding for the seed. No fertilizer or ground agricultural limestone will be needed.

618.10 Maintenance and Acceptance. The Resident will accept areas seeded with Special Seed Mix: Water District #1 upon attainment of a reasonably thick, uniform stand of grasses and other herbaceous species with at least 90 percent coverage, free from sizable thin or bare spots. The Contractor shall perform final re-seeding as follows: Upon completion of all other work on the mitigation project, seeded areas that have not been accepted shall, within 60 calendar days, meet the 90 percent coverage requirement of be re-seeded a final time. Final re-seeding shall be done at the end of the 60-day period or any time within 60 days, as directed by the Resident. The Contractor will not be allowed to perform final re-seeding between September 15 and April 30, and this time will not be counted as part of the 60-day period. All re-seeding shall comply with Sections 618.03 through 618.09. The Contractor shall maintain and protect all seeded areas until acceptance.

618.11 Method of Measurement. The first paragraph is revised to read:

Areas seeded with Special Seed Mix: Water District #1 will be measured by the area of seeded and mulched surface in units of 100 square meters. Measurements will be made parallel with the slope of the ground.

618.12 Basis of Payment. The first paragraph is revised to read:

The accepted quantities of Special Seed Mix: Water District #1 will be paid for at the contract unit price per unit or portions thereof complete in place and satisfactorily established. Payment shall constitute full payment for raking, furnishing, and placing seed and straw mulch; for initial watering and clean up of seeded areas; and all labor, equipment, tools, and any other incidentals necessary to complete the work. The price shall also include any re-seeding, watering, and maintenance necessary to meet the requirements of Section 618.10 of the Standard Specifications. No additional payment shall be made for multi-phase seeding.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
618.143 Special Seed Mix: Water District #1	Unit

SPECIAL PROVISION
SECTION 618 - SEEDING
(Special Seed Mix: Water District #2)

618.01 Description. This work shall consist of furnishing labor, equipment, and materials for preparing the soil and applying Special Seed Mix: Water District #2 to exposed soils within the designated upland buffer areas following regrading, re-soiling, and planting, as shown on the Plans or as directed. Seed shall be applied only on exposed soil; no seeding shall be done in mulched plant groups.

618.02 Materials. The subsection is revised to add the following:

Special Seed Mix. Seeding of exposed soils within the limits of upland buffer areas following planting shall be done with the Special Seed Mix: Water District #2, specified below and shown on the Plans. Seed shall meet the germination and purity requirements in Subsection 717.03.

The Water District #2 mix shall consist of seeds proportioned as follows:

<u>Common Name</u>	<u>Botanical Name</u>	<u>% by Weight</u>
Autumn Bentgrass	<i>Agrostis perennans</i>	70%
Blue Wood (heart-leaved) Aster	<i>Aster cordifolius</i>	10%
Synonym	<i>Symphotrichum cordifolium</i>	
Grey Goldenrod	<i>Solidago nemoralis</i>	10%
Ryegrass	<i>Lolium perenne</i>	10%

Possible Seed Sources

Allen, Sterling, and Lothrop
191 U.S. Route One
Falmouth, ME 04105
(207) 781-4142

Ernst Conservation Seeds LLP
9006 Mercer Pike
Meadville, PA 16335-9299
(800) 873-3321

New England Wetland Plants, Inc.
820 West Street
Amherst, MA 01002
(413) 548-8000

Fertilizer and Lime. No fertilizer or other soil amendments will be required.

618.03 Rate of Application. This entire subsection is revised to read:

The Water District #2 special seed mix shall be uniformly applied to all areas specified herein and on the Plans at the rate of 0.2 kilograms per unit (+/- 15 pounds per acre). One unit is defined as 100 square meters.

618.05, 618.06, and 618.07 Applying Fertilizer and Sowing Seed. These subsections are replaced with the following:

Seed shall be applied by hand cyclone seeder or similar means in accordance with Subsection 618.06 of the Standard Specifications, uniformly at the required rate. The hydraulic spray method will not be allowed. Immediately following application, the seed shall be raked lightly by hand to promote contact with bare soil.

618.08 Mulching. This subsection is revised to read:

After seeding, the Contractor shall place straw mulch to cover the seeded areas (refer to Special Provision Section 619 - Special Mulch: Straw). The use of hay mulch is strictly prohibited.

618.09 Construction Method. The entire subsection is deleted and replaced with the following:

Immediately prior to application of Special Seed Mix: Water District #2, the top 50 mm (2 inches) of the soil shall be loosened by hand raking. On freshly graded areas, raking may be waived if the Resident determines that the soil surface is loose enough to provide bedding for the seed. No fertilizer or ground agricultural limestone will be needed.

618.10 Maintenance and Acceptance. The Resident will accept areas seeded with Special Seed Mix: Water District #2 upon attainment of a reasonably thick, uniform stand of grasses and other herbaceous species with at least 90 percent coverage, free from sizable thin or bare spots. The Contractor shall perform final re-seeding as follows: Upon completion of all other work on the mitigation project, seeded areas that have not been accepted shall, within 60 calendar days, meet the 90-percent coverage requirement of be re-seeded a final time. Final re-seeding shall be done at the end of the 60-day period or any time within 60 days, as directed by the Resident. The Contractor will not be allowed to perform final re-seeding between September 15 and April 30, and this time will not be counted as part of the 60-day period. All re-seeding shall comply with Sections 618.03 through 618.09. The Contractor shall maintain and protect all seeded areas until acceptance.

618.11 Method of Measurement. The first paragraph is revised to read:

Areas seeded with Special Seed Mix: Water District #2 will be measured by the area of seeded and mulched surface in units of 100 square meters. Measurements will be made parallel with the slope of the ground.

618.12 Basis of Payment. The first paragraph is revised to read:

The accepted quantities of Special Seed Mix: Water District #2 will be paid for at the contract unit price per unit or portions thereof complete in place and satisfactorily established. Payment shall constitute full payment for raking, furnishing, and placing seed and straw mulch; initial watering and clean up of seeded areas; and all labor, equipment, tools, and any other incidentals necessary to complete the work. The price shall also include any reseeding, watering, and maintenance necessary to meet the requirements of Section 618.10 of the Standard Specifications. No additional payment shall be made for multi-phase seeding.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
618.1431 Special Seed Mix: Water District #2	Unit

SPECIAL PROVISION
SECTION 619 - MULCH
(Special Mulch - Straw)

619.01 Description. Replace Subsection 619.01 with the following:

This work shall consist of furnishing and applying straw for mulching seeded areas within the Water District Mitigation Site following grading, re-soiling, and planting and for temporary erosion control purposes.

619.02 Mulch. Straw mulch shall conform to standards set forth in Section 717.04. The use of hay mulch is strictly prohibited.

619.07 Basis of Payment. The accepted areas mulched with Special Mulch – Straw shall be incidental to Items 618.143 (Special Seed Mix: Water District #1 and Special Seed Mix: Water District #2), and 656.75 (Temporary Soil Erosion and Water Pollution Control), and other applicable Items.

SPECIAL PROVISION
SECTION 621 - LANDSCAPING
(Mitigation Plantings)

621.0001 Description. This work shall consist of the Contractor furnishing and planting trees and shrubs on the mitigation site, as well as the care and replacement of plants during the establishment period, all in accordance with the specifications, planting plans and schedules, and the directions of the Resident. This work shall conform to Section 621 – Landscaping except where noted herein.

Planting operations will be Class B for all plant stock covered herein.

621.0002 Materials - General.

Fertilizer. Only the trees and shrubs planted in the upland buffer areas (i.e., not in the Wetland Creation or Enhancement Areas) shall be fertilized. Where used, fertilizer shall be added to the plant pits at the time that trees and shrubs are planted. Fertilizer shall be organic, water-soluble, slow-release dry tablets or packets, with a Nitrogen-Phosphorous-Potassium ratio of 16-6-8 or similar (note: a relatively low phosphorous content is desired due to the proximity of plantings to the river).

Suggested sources:

Right Start™
Treessentials Company
60 E Plato Boulevard, Suite 130
Saint Paul, MN 55107
(800) 248-8239
www.treessentials.com

Nutri-Pak™
<http://www.treequest.com/> or www.nutripak.com

Mulch. Mulch for the planted trees and shrubs shall be a natural substance composed of chipped, green (i.e., not aged) wood, the source of which may include whole trees, tree limbs, tree tops, and/or other natural woody materials. The woodchip mulch shall not be composted and shall be free of refuse, physical contaminants, material toxic to plant growth, and re-processed wood products. Woodchip mulch shall be a well-graded material conforming to the following:

- (a) pH - Range 5.5 - 7.0
- (b) Particle Size – 100 percent passing a 50 mm (2 inch) screen
- (c) Soluble Salts – content <4.0 mmhos/cm
- (d) Organic Content – 80 to 100 percent, dry weight basis

Submittals. The Contractor shall furnish a 5-gallon sample and, upon request, provide documentation by a laboratory that the woodchip mulch meets the materials requirement outlined above, for approval by the Resident at least 15 days prior to use of this material at the mitigation site.

Wire Layout Flags. Wire layout flags shall be a minimum of 380 millimeters (15 inches) high. The Contractor shall supply a minimum of 10 different flag colors for organizing plant layout. The Contractor shall develop a coding system and mark the necessary flags with an indelible marker and organize the flags in marked groups corresponding to the plans and as directed by the Resident.

621.0006 Inspection. Add the following:

Due to the importance of establishing the native species plant communities shown on the Plans, changes in quantities, size, kind or quality of plants from these specifications will be permitted only with approval by the Resident. Any substitution requests shall be submitted in writing at least 21 days prior to planting. Substitutions that are not pre-approved will be rejected upon delivery to the site.

621.0018 Layout. Add the following:

A Wetland Specialist will be on-site to assist the Resident in determining plant layout and monitoring plant installation. The Contractor shall assist the Wetland Specialist and/or Resident in plant layout by developing a color-coded layout system and by providing groups of flags as described above for use in layout. A skilled laborer shall be provided by the Contractor to assist the Wetland Specialist and/or Resident in transporting, counting, and installing plant group layout stakes/markers and colored wire layout flags.

The trees and shrubs shall be installed in the planting group areas shown on the Plans. The Contractor shall be responsible for locating and staking the boundaries or centers of the planting group areas. The location of the planting group areas shall be considered approximate, but layout shall conform to the Plans in regard to the approximate size (square meters) so that the number of each species to be installed in each planting group area, and the approximate spacing between individual plants, will conform to the Plans.

621.0019 Planting Pits and Plant Groups.

621.0019 (a). This subsection is revised to read:

All plants shall be installed in plant groups. Plant groups shall be designated by the Wetland Specialist during earthwork operations. Prior to planting, plant group areas shall be prepared with Salvaged Wetlands Loam, Loam/Salvage Mix, and/or Woodwaste Mulch as a soil amendment (see Special Provisions, Sections 615 and 617).

Plant groups in inaccessible areas or outside of loamed areas shall receive only Woodwaste Mulch prior to planting (see Special Provision, Section 617).

Locations of plant stock in wetland areas will vary depending on the degree of soil saturation or inundation at the time of planting. In saturated or inundated soils, the Contractor shall elevate plants by mounding as shown on the special details and as directed by the Wetland Specialist.

621.0020 Planting Seasons. Substitute the following for the dates applicable to this project:

All Trees and Shrubs:

Spring - May 1 to June 30

Fall - August 15 to October 1

621.0023 Setting Plants. Plants will be set in accordance with Subsection 621.0023 except for those to be located in wetlands. Wetland plantings will be set slightly higher in elevation as shown on the details. The Resident will reject any plants not installed correctly, and the Contractor shall re-install plant stock as directed by the Resident.

621.0025 Fertilizing. Add the following:

Fertilizer tablets shall be added to the plant pits at the time of planting in accordance with this subsection of the Standard Specifications. Where used, the amount of fertilizer to be used with each plant shall be in accordance with the fertilizer manufacturer's recommendations.

621.0026 Mulching. This subsection is revised to read:

The entire area of each plant group shall be uniformly covered to a depth of 75 millimeters (3 inches) with woodchip mulch as indicated on the Plans. The Resident may waive the installation of woodchip mulch where access is limited due to highly saturated or inundated soils.

621.0027 Cultivation. The entire subsection is revised to read:

All plant pits and beds shall be kept free of weeds and grass by the Contractor from the time the plants are installed until final acceptance. This shall be accomplished by manual weeding or cultivation. Herbicides will not be allowed. There will be no payment for unsatisfactory work.

621.0036 Establishment Period. The Establishment Period for plantings in this contract shall conform to Subsection 621.0036 of the Standard Specifications and shall

extend for a period of two years beginning at the end of planting. It shall also conform to the following:

The Contractor shall check and repair mulch within the planting areas as needed throughout the Establishment Period. The Contractor shall also remove or control weed growth as necessary to preserve the installed plants in a healthy and vigorously-growing condition and to insure their successful establishment. Weeding shall include only hand-pulling or grass-whip methods; no herbicide use or cultivation shall be allowed. The Contractor shall keep records for all maintenance work performed, locations and quantities of plant losses and replacements, and diagnosis of unhealthy plant material. This record shall be submitted to the Resident in the monthly written reports in accordance with Subsection 621.0036 of the Standard Specifications.

621.0037 Method of Measurement. The quantity of plants to be measured for payment will be the number of individual plants furnished, planted, and mulched as required and accepted, excluding replacements.

621.0038 Basis of Payment. Add the following to the first paragraph:

“for all wood stakes (plant group markers), wire flags for (plant layout),”

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
621.014	Evergreen Tree (450 mm –600 mm) Gp A	Each
621.246	Large Deciduous Tree (900 mm –1200 mm) Gp A	Each
621.54	Deciduous Shrubs (450 mm –600 mm) Gp A	Each
621.80	Establishment Period	Lump Sum

SPECIAL PROVISIONS
SECTION 621
LANDSCAPE
(Plant Species Specification and Quantities List)

The following list of items provides the estimated quantities for use on this project. The scientific name of the plant material is provided along with the common name in parenthesis.

The contractor shall follow MDOT Standard Specifications, December 2002, for landscape materials and installation procedures (sec 621).

The MDOT Landscape Architect or his designee will be available to inspect plant materials and stake the location of plant materials at the time of planting.

One spruce will be planted in the middle of the Roundabout circle and the other trees located on the approaches and around the outside of the circle.

Locations for Items 621.038 and 621.267 will be determined in the field by the Landscape Architect.

All shrubs shall be planted in a mulched bed 1800 mm o.c..

Item 621.711 shall be planted with staggered o.c. spacing as needed to form a complete circle.

ITEM NO	Description	Unit	Quantity	Total
621.038	Evergreen Trees (1500mm-1800mm) B&B	Ea		6
	Picea pungens (Colorado Green Spruce) Group B		6	
621.054	Evergreen Trees (3000mm-3600mm) B&B	Ea		8
	Picea pungens 'Glauca' (Colorado Blue Spruce) Group C		8	
621.202	Md Deciduous Trees (50 mm - 65 mm cal) B&B Group B	Ea		20
	Malus s. Prairefire (Prairefire Crabapple)		20	
621.267	Lg Deciduous Trees (45 mm - 50 mm cal) B&B Group A	Ea		6
	Acer rubrum (Red Maple)		6	
621.285	Lg Deciduous Trees (75 mm - 90 mm cal) B&B Group A	Ea		10
	Acer rubrum (Red Maple)		10	
621.498	Broadleaf Evergreens (750 mm - 900 mm) 2.5-3' B&B Group B	Ea		8
	Rhododendron 'Aglo' (Aglo Rhododendron)		8	

621.711	Herbaceous Perennials Group B (No. 1 Container)	Ea		460
	Paeonia x 'Kansas'		80	
	Iris siberica 'Caesar's Brother'		80	
	Hemerocallis x hybrida 'Pardon Me'		90	
	Hemerocallis x hybrida 'Happy Returns'		50	
	Aster novi-belgii 'Woods Purple'		80	
	Aster novae-angliae 'Purple Dome'		80	
621.80	Establishment Period	LS	1	1

SPECIAL PROVISION
SECTION 626
Foundations

626.034 Concrete Foundations:

Pre-cast Foundations shall not be permitted.

SPECIAL PROVISION
SECTION 634
HIGHWAY LIGHTING

Under 634.024 Light Standards, add the following to the 3rd paragraph just prior to the last 2 sentences:

“High mast poles” exceeding 15 meters [50 ft] but less than 30 meters [100 ft] in height shall be classified as Fatigue Category II with Fatigue Importance Factors (I_f) of 0.65 for Vortex Shedding and 0.72 for Natural Wind Gusts. “High mast poles” of 30 meters [100 ft] or more in height, shall be classified as Fatigue Category I with Fatigue Importance Factors (I_f) of 1.0 for Vortex Shedding and 1.0 for Natural Wind Gusts.”

634.08 Service, add the following after the last paragraph:

“All meter mounting devices shall be installed so that the meters will be upright (plumb). They shall be installed with the top of the meter not less than 1.2 M [48 in] nor more than 1.5 M [60 in] from the floor to the final grade. Exceptions to this height requirement will be made where special permission has been given to install group or modular metering, overall metering enclosures, or pole-mounted meters. Level grade shall be maintained for a minimum of 1.0 M [3 ft] in front of the meter enclosure to provide a safe working space. In order to meet this requirement on uneven terrain, as an option, the Contractor may install a pressure-treated wood platform.

For any non-residential (industrial or commercial) self-contained meter socket the bypass requirements are single phase, 100 or 150 amp, single handle lever operated.

The Contractor shall meet all requirements and regulations of Utility Companies when installing equipment on their poles and for the service connection. It is the responsibility of the Contractor to contact the appropriate Utility to determine their specific requirements.”

SPECIAL PROVISION
SECTION 636
MECHANICALLY STABILIZED EARTH RETAINING WALL

636.01 Description. The work under this item shall consist of design, fabrication, furnishing, transportation, and erection of Mechanically Stabilized Earth (MSE) retaining wall system of the required type, including miscellaneous items necessary for a complete installation.

The MSE retaining walls shall consist of reinforcing strips or reinforcing mesh earth wall systems utilizing architectural precast concrete facing panels supported on cast-in-place concrete leveling pads. All reinforcing strips or mesh material shall consist of galvanized steel. The wall structures shall be dimensioned to achieve the design criteria shown on the plans and specified herein.

The MSE retaining walls shall be constructed in accordance with these specifications and in conformity with the lines, grades, design criteria, and dimensions shown on the plans or established by the Resident.

636.02 Quality Assurance. Approved MSE retaining wall systems are:

1. "Reinforced Earth Walls" by the Reinforced Earth Company, 10 Tower Office Park, Suite 318, Woburn, Massachusetts.
2. "Retained Earth" by Foster Geotechnical Corporation, 1372 Old Bridge Road Suite 101, Woodbridge VA 22192

The Contractor shall design and build the MSE retaining wall system using only one of the above approved systems. Alternate systems will not be considered. Value engineering is not applicable to the work of this Item.

The Contractor shall bid one of the approved wall systems and shall indicate the proposed wall system in the bid proposal. No substitution will be allowed after the bid.

All necessary materials, except backfill and cast in-place concrete shall be obtained from the approved system designer.

Mechanically Stabilized Earth (MSE) retaining walls shall be designed and constructed as specified herein. The design shall be subject to review and acceptance by the Resident. The acceptability of a MSE retaining wall design shall be at the sole discretion of the Resident. Any additional design, construction or other costs arising as a result of rejection of a retaining wall design by the Resident shall be borne by the Contractor.

Precast facing panels shall be manufactured in a concrete products plant with approved facilities. Before proceeding with production, precast sample units shall be provided for the Resident's acceptance. These samples shall be kept at the plant to be used for comparison purposes during production.

All calculations and Shop Drawings shall be signed and stamped by a Professional Engineer registered in the State of Maine and specializing in geotechnical construction.

The Contractor installing the MSE retaining walls shall have demonstrated experience constructing MSE walls and shall use personnel having demonstrated experience in the installation procedures recommended by the manufacturers and as specified herein.

Requirements for the precast facing panels are different from the standard panels from the approved systems. Appropriate, alternate details shall be prepared by the Contractor.

All MSE walls shall be built in accordance with the plans and accepted shop drawings for the proposed wall systems.

A qualified representative from the wall design-supplier shall be present during construction of the MSE walls. The services of the qualified representative shall be at no additional cost to the project. The qualified experienced technical representative will advise the Contractor and the Resident concerning proper installation procedures.

The vendor's representative shall specify the required back-batter so that the final position of the wall is vertical. Furthermore, footing berms shall be placed in front of the first 3 levels of panels erected, to maintain verticality.

636.03 Design Requirements. The MSE retaining walls shall be designed to provide the grade separation shown on the plans with a service life of not less than 100 years.

In general, the MSE wall system shall be designed in accordance with the manufacturer's requirements, as specified herein and shown on the plans, and in accordance with this Special Provision the current AASHTO Standard Specification for Highway Bridges, Section 5.8 section for the design of MSE retaining walls. Where conflicting requirements occur the more stringent requirements shall govern.

The MSE wall design shall follow the general dimensions of the wall envelope shown on the plans. Base of footing elevation shall be as shown on the plans, or may be lower. All wall elements shall be within the right-of-way limits shown on the plans. The panels shall be placed so as not to interfere with drainage or other utilities, or other potential obstructions.

All appurtenances behind in front of, under, mounted upon, or passing through the wall such as drainage structures, utilities, fences, concrete parapet wall or other appurtenances shown on the plans shall be accounted for in the stability design of the wall.

Facing panels shall have tongue and groove, ship lap or similar approved connections along all joints, both vertical and horizontal. The shape of the panels shall be such that adjacent panels will have continuous, vertical joints, or as noted on the Plans.

MSE facing panels shall be installed on cast-in-place concrete leveling pads. The top of the leveling pad shall be located at or below the theoretical leveling pad elevation. The minimum wall embedment shall be 1.22 m [4 ft] as measured to the top of the leveling pad, or as shown on the plans, whichever is greater. The top of the face panels shall be at or above the top of the panel elevation shown on the plans. Where coping or barrier are used, the wall face shall extend up into the coping or barrier a minimum of 50 mm (2 in).

The MSE walls shall be dimensioned so that the allowable bearing pressures noted on the plans are not exceeded. Requirements for over excavation of native foundation soils and replacement with compacted structural fill are detailed on the plans.

The design by the wall system supplier shall consider the stability of the wall as outlined below and in the Contract Documents:

- (a) **Failure Plane.** The theoretical failure plane within the reinforced soil mass shall be determined per AASHTO Section 5.8 and be analyzed so that the soil stabilizing components extend sufficiently beyond the failure plane within the reinforced soil mass, as determined by AASHTO, to stabilize the material. External loads which affect the internal stability such as those applied through piling, bridge footings, traffic, slope surcharge, hydrostatic, and seismic loads shall be accounted for in the design.
- (b) **Safety Factors.** MSE walls shall be designed to resist failure by overturning, sliding instability of temporary construction slope, bearing capacity, reinforcement pullout, panel connection pullout or rupture. The minimum factors of safety shall be as follows:

1. Overturning	2.0
2. Sliding	1.5
3. Stability of temporary construction slope:	1.2
4. Ultimate bearing capacity:	2.0
5. Reinforcement pullout	1.5
6. Panel connection pullout or rupture:	2.0

At the end of the design life for the maximum allowable reinforcement tension.)

Calculations for stresses and factors of safety shall be based upon assumed conditions at the end of the design life.

Passive pressure in front of the wall mass shall be assumed to be zero for design proposes.

The actual applied bearing pressures under the MSE Mass for each reinforced length shall be clearly indicated on the design drawing.

- (c) **Backfill and Foundation Soils Parameters.** The friction angle of the select backfill used in the reinforced fill zone for the internal stability design of the wall shall be assumed to be 34° unless noted otherwise. The friction angle of the foundation soils and random backfill shall be assumed to be 30° unless otherwise shown on the plans.
- (d) **Reinforcement length.** The soil reinforcement shall be the same length from the bottom to the top of each wall section. The reinforcement length defining the width of the entire reinforced soil mass may vary with wall height. The minimum length of the soil reinforcement shall be 2.44 m [8 ft], but shall not be less than 0.7 H for walls with level surcharges or 0.7 H1 for walls with a sloped surcharge or walls supporting an abutment. The mechanical height, H or H1, shall be the vertical difference between the leveling footing and the elevation at which the failure surface, as described above, intercepts the ground surface supported by the wall.
- (e) **Steel Reinforcement.** For steel reinforcements, all structural connections, tie strips and loop inserts, the following galvanization and carbon steel loss rates shall be assumed:

	<u>microns/year/side</u>
Zinc galvanizing (first 2 years)	15

Zinc galvanizing (subsequent years to depletion):	4
Carbon Steel (after galvanizing depletion):	12
Carbon Steel (75 to 100 years)	12

The allowable tensile stress in steel reinforcements and connections, including tie-strips and loop inserts shall be determined at the end of the service life. The allowable tensile stress for steel reinforcements and connections shall be in accordance with Article 10.32 of AASHTO. For grid reinforcing members, the allowable tensile stress shall be reduced to 0.48 Fy. Transverse and horizontal grid members shall be of the same size.

When the expected differential settlement normal to the wall exceeds 75 mm (3 in), the lower level reinforcement facing connections shall be designed to accommodate the increased tensile forces due to settlement.

(f) Facing Panel Requirements.

1. The wall facing shall be designed to accommodate differential settlements of 305 mm [1.0 ft] in 30.5 m [100 ft].
2. The minimum spacing between adjacent panels shall be 19 mm [0.75 in] in order to accommodate differential settlements without impairing the appearance of the facing or compromising the structural integrity of the individual panels. Joints between panels shall be no more than 19 mm [0.75 in]. Joint between panels shall have a ship lap configuration or tongue and groove connection. There shall be no openings through the wall facing, except for utilities to pass through the wall. Slip joints to accommodate differential settlement shall be included where shown on the plans.
3. Where wall or wall sections intersect with an angle of 130 ° or less, a special vertical corner element panel shall be used. The corner element panel shall cover the joint of the panels that abut the corner and allow for independent movement of the abutting panels. Corner elements shall not be formed by connecting standard facing panels that abut the acute corner.

MATERIALS

636.04 Materials. The Contractor shall be responsible for the purchase or manufacture of the precast concrete facing panels, reinforcing mesh or strips, panel/reinforcement connections, bearing pads, joint filler, and all other necessary components. The Contractor shall furnish to the Resident the appropriate Certificates of Compliance certifying that the applicable wall materials meet the requirements of the project specifications. All materials used in the construction of the MSE retaining walls shall meet the requirements specified in the following subsections of the Maine Standard Specifications and as specified herein.

Materials not conforming to this section of the specifications, or from sources not listed in the contract documents, shall not be used without written consent from the Resident.

636.041 Reinforced Concrete Facing Panels. Reinforced concrete facing panels shall meet the requirements specified in the following subsections:

Structural Precast Concrete Units	712.061
Drainage Geotextile	722.02

636.042 Precast Panel Tolerances and Surface Finish. Concrete surface for the front face shall be as noted on the Plans. The rear face shall have an unformed surface finish. The rear face of the panel shall be roughly screeded to eliminate open pockets of aggregate and surface distortions in excess of 6 mm [1/4 in]. All uncoated steel projecting from the panel unit shall be galvanized in accordance with AASHTO M111 (ASTM A123) with a minimum coating thickness of 610g/m² [2oz/sf]

Precast panel tolerances shall comply with the following; units that do not meet the listed tolerances will be rejected.

1. Panel dimensions (edge to edge of concrete) within ± 5 mm [3/16 in].
2. Panel thickness: ± 6 mm [1/4 in].
3. Squareness: The length difference between the two diagonals shall not exceed 12 mm [1/2 in].
4. Distance between the centerline of dowel and dowel sleeve, and to centerline of reinforcing steel shall be ± 3 mm [1/8 in].
5. Face of panel to centerline of dowel and dowel sleeve, and to centerline of reinforcing steel shall be ± 3 mm [1/8 in].
6. Position of panel connection devices Tie Strip shall be ± 25 mm [1 in].
7. Location of Coil and loop Imbeds shall be ± 3 mm [1/8 in].
8. Warping of the exposed panel face shall not exceed 6 mm [1/4 in] in 1.52 m [5 ft].
9. Surface defects on smooth-formed surfaces measured over a length of 1.52 m [5 ft] shall not exceed 3 mm [1/8 in]. Surface defects on textured-finished surfaces measured over a length of 1.52 m [5 ft] shall not exceed 5 mm [5/16 in].

636.043 Reinforcing. All reinforcing, tie strips, and attachment devices shall be carefully inspected to insure they are true to size and free from defects that may impair their strength and durability.

- (a) Reinforcing Mesh shall be shop fabricated from cold drawn steel wire conforming to the requirements of AASHTO M 32M/M 32 (ASTM A 82) yield strength minimum of 450 Mpa (65 ksi) and shall be welded into the finished mesh fabric in accordance with AASHTO M 55M/M 55 (ASTM A 185). Galvanizing shall be in accordance with AASHTO M 111 (ASTM A 123) after fabrication. The minimum coating thickness shall be 610g/m² [2 oz/sf]. Any damage done to the mesh galvanization prior to the installation shall be repaired in an acceptable manner and provide a minimum galvanized coating of 610g/m² [2 oz/sf].
- (b) Reinforcing Strips shall be fabricated from hot rolled bars to the required shape and dimensions. Their physical and mechanical properties shall conform to ASTM A572/A 572M Grade 450 (65), or approved equal. Reinforcing strips shall be hot dipped galvanized in accordance with AASHTO M111 (ASTM A 123) after fabrication. The minimum galvanization coating thickness shall be 610g/m² [2 oz/sf].

Any damage done to the mesh galvanization prior to the installation shall be repaired 610g/m^2 [2 oz/sf].

- (c) Tie strips shall be fabricated of hot rolled steel conforming to ASTM A 570/A 570M Grade 345 (50) or equivalent. Tie strips shall be hot dipped galvanized in accordance with AASHTO M111 (ASTM A 123) after fabrication. The minimum coating thickness shall be 610g/m^2 [2 oz/sf].
- (d) The tie strips and reinforcing strips shall be cut to lengths and tolerances shown on the submitted plans. Holes for bolts shall be punched in the locations shown.

636.044 Attachment Devices.

- A. Loop Embeds - Shall be fabricated of cold drawn steel wire conforming to ASTM A510M, UNS G 10350 or AASHTO M 32M/M32 (ASTM A82). Loop imbeds shall be welded in accordance with AASHTO M 55M/M55 (ASTM A185). Both shall have electrodeposited coatings of zinc applied in accordance with ASTM B633.
- B. Fasteners - Fasteners shall consist of hexagonal cap screw bolts and nuts, which are galvanized and conform to the requirements of AASHTO M164M (ASTM A325M) or equivalent.
- C. Connector Pins - Connector pins and mat bars shall be fabricated from AASHTO M 183M/ M 183 (ASTM A 36/A 36M) steel and welded to the soil reinforcement mats as shown on the plans. Galvanization shall conform to AASHTO M111 (ASTM A123) with a minimum coating thickness of 610g/m^2 [2 oz/sf]. Connector bars shall be fabricated of cold drawn steel wire conforming to the requirements of ASTM A 82 (AASHTO M32) and galvanized in accordance with ASTM A 123.
- D. Structural plate connectors and fasteners used for yokes to connect reinforcements to wall panels around pile or utility conflicts shall conform to the material requirements for reinforcing strips and fasteners in 636.042 (c).

636.045 Joint Materials. Joint material shall be installed to the dimensions and thicknesses in accordance with the plans or approved shop drawings.

- A. Provide flexible foam strips for filler for vertical joints between panels, and in horizontal joints where pads are used.
- B. Provide either preformed EPDM rubber pads conforming to ASTM D2000 for 4AA, 812 rubbers or neoprene elastomeric pads having a Durometer Hardness of 55 ± 5 .

636.046 Nonwoven Drainage Geotextile. The Cover all joints between panels on the back side of the wall with a geotextile fabric. Slit film and multifilament woven and resin bonded woven geotextile fabrics are not allowed for this application. The minimum width of the fabric shall be 300 mm [12 in]. Lap fabric at least 100 mm [4 in] where splices are required. Nonwoven Drainage Geotextile shall be bonded with an approved adhesive compound to the back face covering all joints between panels. Adhesives used to hold the geotextile filter fabric material to the rear of the facing panels prior to backfill placement shall be supplied by the wall supplier and approved by the Resident.

636.047 Concrete Leveling Pad. The cast-in-place leveling pad shall be constructed of Class B concrete conforming to the requirements of Section 502, Structural Concrete. Leveling pad shall have minimum dimensions of 150 mm [6 in] thickness and 300 mm [12 in] width and be placed at the design elevation shown on the shop drawings within a 3 mm [1/8 in] tolerance.

636.048 Vacant

636.049 Backfill Materials. All backfill materials used in the MSE Walls volume shall conform to Gravel Borrow conforming to the requirements of Subsection 703.20, with the maximum aggregate size limited to 100 mm (4 inches) and the following additional requirements:

- A. Soundness. The material shall be substantially free of shale or other soft, poor durability particles. The materials shall have a magnesium sulfate soundness loss, as determined by AASHTO T104 (ASTM C88), of less than 30 percent after four cycles.
- B. Electrochemical Requirements. The backfill materials shall meet the following criteria:

<u>Requirements</u>		<u>Test Methods</u>
Resistivity	>3,000 ohm centimeters	AASHTO T288
pH between	5 and 10, inclusive	AASHTO T289
Chlorides	<100 parts per million	AASHTO T291
Sulfates	<200 parts per million	AASHTO T290
Organic Content	<1%	AASHTO T267-86

- C. The plasticity index (PI) as determined by AASHTO T90 shall not exceed 6.
- D. The select backfill material shall exhibit an angle of internal friction of not less than 34 degrees, as determined by the standard Direct Shear Test, AASHTO T236 (ASTM D3080-72), on the portion finer than the 2 mm [#10 sieve], compacted to 95 percent of AASHTO T99, Methods C or D (with oversized correction as outlined in Note 7) at optimum moisture content. No testing is required for backfills where 80 percent of sizes are greater than 19 mm [3/4 in]. Before construction begins, the borrow material selected shall be subject to show conformance with this frictional requirement. Compliance with the test requirements shall be the responsibility of the Contractor, who shall furnish a copy of the backfill test results prior to construction.

636.050 Crushed Stone for Abutment Foundation. Crushed stone for use in the foundation layer below the abutment shall be crushed stone conforming to the requirements of Section 703.31.

636.051 Impervious Membrane. An impervious geomembrane shall be installed near the top of the reinforced backfill to reduce the chance of water infiltrating into the reinforced backfill. The geomembrane shall be bonded to the inside face of the wall panels and extend perpendicularly from the wall face into the fill, while being parallel to the top of the wall. The membrane should be sloped to drain away from the facing and outlet beyond the reinforcing zone. The impervious geomembrane shall extend into the fill a distance of 0.3 m (1 ft) beyond the MSE reinforcement. The geomembrane shall have the following properties.

<u>Properties</u>	<u>Min. Value</u>
Thickness	0.8 mm (1/32 in)

The geomembrane shall have both sides textured with a rough finish to improve resistance against sliding. The texture shall be approved by the Resident before installation. The geomembrane shall be shown on the design drawings of the MSE submittal of the Contractor.

636.052 Acceptance of Material. The Contractor shall furnish to the Resident a Certificate of Compliance certifying that the above materials comply with the applicable contract specifications including the backfill material, in accordance with Section 700. A copy of all test results performed by the Contractor necessary to assure contract compliance shall also be furnished to the Resident. Acceptance will be based on the Certificate of Compliance, accompanying test reports, and visual inspection by the Resident.

SUBMITTALS

636.06 Submittals.

- A. Design computations demonstrating compliance with the criteria specified herein and shown on the plans, shall be prepared, signed and stamped by a registered professional engineer licensed in the State of Maine and specializing in geotechnical engineering.

The design calculations shall include:

1. Statement of all assumptions made and copies of all references used in the calculations.
 2. Analyses demonstrating compliance with all applicable earth, water, surcharges, seismic, or other loads, as specified herein and required by AASHTO.
 3. Analyses or studies demonstrating durability and corrosion resistance of retaining wall systems for the proposed location and environment. The designers shall provide all corrosion protection devices necessary for the retaining wall to have a minimum service life of 100 years in the proposed location and environment.
- B. A detailed resume of the wall designer listing similar projects with references, and demonstrating necessary experience to perform the MSE retaining wall design, including a brief description of each project that is similar in scope.
- C. A detailed listing of MSE walls that the Contractor has constructed including a brief description of each project and a listing of personnel who will construct the walls demonstrating their experience in construction of MSE retaining walls. A reference shall be included for each project listed. As a minimum, the reference shall include an individual's name, address and current phone number.
- D. Manufacturer's product data for the MSE wall system, including material, manufacture and erection specifications, all specified erection equipment necessary, details of buried MSE wall elements, special details required of reinforcing layout around drainage structures and sign foundations, structures design properties, type of backfill and details for connections between facing panels.
- E. Details of precast yard and concrete mix design.

- F. Shop drawing showing the configuration and all details, dimensions, quantities and cross sections necessary to construct the MSE wall, including but not limited to the following:
1. A plan view of the wall, which shall include Contract limits, stations and offsets, and the face of wall line shown on the plans.
 2. An elevation view of the wall which shall include the elevation at the top of the wall at all horizontal and vertical break points and at least every 15 m [50 ft] along the face of the wall, all steps in the leveling pads, the designation as to the type of retaining wall system(s), and an indication of the final ground line and maximum calculated bearing pressures. The face of wall shown on the plans shall be indicated.
 3. A typical cross section or cross sections showing the elevation relationship between existing ground conditions and proposed grades, and the proposed wall configuration, including details for the proposed methods for connecting to existing conditions. The sections shall also indicate the location of the face of wall shown on the plans.
 4. General notes pertaining to design criteria and wall construction.
 5. A listing of the summary of material quantities for each wall.
 6. Details of sleeves and pipes and other embedded items to be installed through the walls.
 7. Clearly indicated details for construction of walls or reinforcing elements around drainage, foundations, utilities or any other potential obstructions.
 8. Details of the architectural treatment of facing panels.
 9. Drainage design detail and design scheme.
 10. Location of utilities.
 11. Sequence and schedule of construction, including overall construction schedule.
 12. Methods of excavation and backfill.
 13. Method of maintaining stability of excavated trenches.
 14. Method of monitoring plumbness and deviation of wall.
 15. Excavation support system, if any.
 16. Any acceptance testing and frequency.
 17. Details and location of all necessary construction and expansion joints along the wall.
 18. Connection details at the interface of the wall and any adjacent proposed cast in place retaining wall or abutment structure.
 19. Details of impermeable membrane connection to abutment in roadway runoff collection system.

CONSTRUCTION REQUIREMENTS

636.07 Delivery, Storage and Handling.

- A. Contractor shall check the material upon delivery to assure that the proper material has been received. A product certification should be provided with each shipment.

- B. Material shall be stored above -20° F.
- C. Contractor shall prevent excessive mud, wet cement, epoxy and like substances which may affix themselves to the material from coming in contact with the material.
- D. Material may be laid flat and stored outside for 30 days. For extended storage, material shall be stored in or beneath a trailer or covered with a colored tarpaulin to prevent long-term exposure.

636.08 Wall Excavation. The excavation and use as fill disposal of all excavated material shall meet the requirements of Section 203 -- Excavation and Embankment, except as modified herein.

636.09 Foundation Preparation. The foundation for the structure shall be graded level for a width equal to the length of reinforcement elements plus 1.52 m [5 ft] or as shown on the plans. Prior to wall construction the foundation shall be compacted with at least 10 passes of a smooth wheel vibratory roller weighing at least 4536 kg [10,000 lbs]. Any foundation soils found to be unsuitable or incapable of sustaining the required compaction shall be removed and replaced with Special Borrow Material. The foundation for the structure shall be approved by the Resident before erection is started.

A concrete leveling pad shall be constructed as indicated on the submitted plans. The leveling pad shall be cast to the design elevations as shown on the plans. Allowable elevation tolerances are +3 mm [+0.01 ft] and -6 mm [-0.02 ft] from the design elevations. Placement of wall panels may begin after 24 hours curing time of the concrete leveling pad.

636.10 Wall Erection. A field representative from the proprietary wall system being used shall be available, as needed, during the erection of the wall. The services of the representative shall be at no additional cost to the project.

Precast concrete panels shall be placed so that their final position is vertical or battered as shown on the plans. The vendor representative shall specify the required back-batter so that the final position of the wall is vertical. Earth berms at the footing shall be placed to maintain the desired position of panels. For erection, panels are handled by means of lifting devices connected to the upper edge of the panel. Panels should be placed in successive horizontal lifts in the sequence shown on the approved shop drawings as backfill placement proceeds. As backfill material is placed behind the panels, the panels shall be maintained in position by means of temporary wedges or bracing according to the wall supplier's recommendations.

Concrete facing vertical tolerances and horizontal alignment tolerances shall not exceed 6 mm per meter (0.006 ft per ft). During construction, the maximum allowable offset in any panel joint shall be 19 mm [$\frac{3}{4}$ in]. The overall vertical tolerance of the wall (for top to bottom) shall not exceed 4 mm per meter (0.004 ft per ft) of wall height.

636.11 Backfill Placement. Backfill shall not be placed between November 1st and April 1st. Backfill placement shall closely follow erection of each course of panels. Backfill shall be placed and compacted in such a manner as to avoid any damage or disturbance of the wall materials or misalignment of the facing panels or reinforcing element. Any wall materials which become damaged during backfill placement shall be removed and replaced at the Contractor's expense. Any misalignment or distortion of the wall facing panels due to placement of backfill outside the limits of this specification shall be corrected by the Contractor at his expense. Prior to the placement of the soil reinforcement the backfill elevation after compaction shall be at the required elevation of the reinforcements. At each reinforcement level, the backfill shall be placed to the level

of the connection. Backfill placement methods near the panels shall assure that no voids exist directly beneath the reinforcing element.

Gravel borrow backfill shall be compacted in accordance with Subsection 203.12 except that the minimum required compaction shall be 95 percent of maximum density as determined by AASHTO T99, Method C or D (with oversize correction, as outlined in Note 7. If 30 percent or more of the backfill material is greater than 19 mm [3/4 in] in size, AASHTO T99 is not applicable, and the acceptance criterion for control of compaction shall be either a minimum of 70 percent of the relative density of the material as determined by ASTM D4253 and D4254, or a method of compaction consisting of at least 4 (four) passes by a heavy roller. Where spread pads support bridge or other structural loads, the top 1.5 m (5 ft) below the pad elevation shall be compacted to 100 percent of the maximum density as determined by AASHTO T99, Method C or D (with oversize correction, as outlined in Note 7).

The moisture content (determined in accordance with AASHTO T99, Method C or D) of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer. Backfill materials shall have a placement moisture content less than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniformly acceptable throughout the entire lift.

At each reinforcing level, backfill shall be leveled before placing and bolting the reinforcing. The maximum lift thickness after compaction shall not exceed 300 mm [12 in]. The Contractor shall decrease this lift thickness, if necessary, to obtain the specified density.

Heavy compaction equipment shall not be used to compact backfill within 900 mm (3 ft) of the wall face. Compaction within 900 mm (3 ft) of the back face of the wall shall be achieved by at least three passes of lightweight mechanical tamper, lightweight roller, or vibratory system. The specified lift thickness shall be adjusted as warranted by the type of compaction equipment actually used. No vehicular equipment shall be operated within 1 m [3 ft] of the panels.

The frequency of sampling of the backfill material necessary to assure gradation control throughout construction shall be as directed by the Resident.

At the end of each day's operation, the Contractor shall slope the least level of the backfill away from the wall facing to rapidly direct runoff away from the wall face. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

636.12 Reinforcement Placement. Prior to placing the first layer of reinforcements (strips, mats or grids), backfill shall be placed and compacted in accordance with 636.12, Backfill Placement.

Bending of reinforcements in the horizontal plane resulting in a permanent deformation in their alignment shall not be allowed. Gradual bending in the vertical direction that does not result in permanent deformations is allowable.

Cutting of longitudinal or transverse reinforcement bars to avoid conflicts with utility obstructions or piles will not be allowed. A structural connection (yokes) from the wall panel to the reinforcement shall be used whenever it is necessary to avoid cutting or excessive skewing of reinforcement due to pile or utility conflicts.

Soil reinforcements shall be placed normal to the face of the wall, unless otherwise shown on the plans or directed by the Resident. If skewing of the soil reinforcements is required due to obstructions in the reinforced fill, rotatable bolted connections shall be used and the maximum skew angle shall not exceed 15

degrees from the normal position except in the case of acute corner where redundant reinforcements are used. The tensile capacity of splayed reinforcement shall be reduced by the cosine of the splay angle.

COMPENSATION

636.13 Method of Measurement. Mechanically Stabilized Earth Retaining Wall will be measured by the square meter (square foot) of face area computed using the plan dimensions. No adjustment in the pay quantity will be made if the computed quantity, based on the working drawings, varies from the plan quantity.

Vertical dimension limits will be from the top of leveling pad to the top of the wall facing units, as shown on the plans. The horizontal dimension limits will be from the edges of the facing units at each end of a wall, as shown on the plans. No field measurements will be made unless the Resident specifies, in writing, a change ~~in~~ to the limits indicated on the plans.

The wall surface, as shown on the plans, includes the surface area of nominal panel joint openings and wall penetrations such as pipes and other utilities.

636.14 Basis of Payment. The accepted quantity of Mechanically Stabilized Earth Retaining Wall will be paid for at the contract unit price per square meter (square foot). Payment shall be full compensation for design, fabrication and erection of MSE retaining walls, furnishing all labor, equipment and materials including concrete face panels, fasteners, reinforcing mesh, reinforcing strips, tie strips, hardware, joint fillers, coping, woven drainage geotextile, impervious membrane, **select granular backfill** and technical field representative. Cost of cast-in-place concrete for leveling pad will not be paid for separately but will be considered incidental to the Mechanically Stabilized Earth Retaining Wall.

Excavation, including extra excavation due to unsuitable foundation material, will be measured and paid for under Item 203.20, Common Excavation. Foundation material will be measured and paid for under Item 203.26, Gravel Borrow.

The unit price for Mechanically Stabilized Earth Wall shall include costs for:

1. All design work, preparation of written submittals and plans, revision of submittals, sample submittals and any other necessary preliminary work prior to and after acceptance of the retaining wall by the Resident.
2. All materials, including transportation, for the MSE walls, including facing panels, MSE reinforcing elements, attachment devices, fasteners, bearing blocks and shims, joint materials, copings, vertical corner elements, concrete masonry, reinforcing steel, crushed stone, select backfill and incidentals.
3. All labor and equipment required to excavate and prepare the wall foundation, form and cast the leveling pad, erect the MSE wall to the lines and grades shown on the plans, place and compact backfill, place and compact the drainage layer, and construct any other items necessary to complete the MSE wall.
4. All temporary sheeting, temporary excavation, and temporary dewatering necessary to perform the other work in this section.

There will be no allowance for excavating and backfilling for the Mechanically Stabilized Earth Retaining Wall beyond the limits shown on the approved submitted plans, except for excavation required to remove unsuitable subsoil in preparation for the foundation.

Payment will be made under:

Pay Item

Pay Unit

636.40 Mechanically Stabilized Earth Retaining Wall

Square meter (Square foot)

SPECIAL PROVISION
SECTION 636
MECHANICALLY STABILIZED EARTH RETAINING WALL

636.02 Quality Assurance. Change the first sentence to read as follows: “Approved MSE retaining wall systems are:

1. “Reinforced Earth Walls” by the Reinforced Earth Company, 133 Park Street, North Reading, MA 01864.
2. “Retained Earth” by Foster Geotechnical Corporation, 1372 Old Bridge Road Suite 101, Woodbridge VA 22192”

636.03 Design Requirements. Change to first sentence of the second paragraph to read as follows: “In general, the MSE wall system shall be designed in accordance with the manufacturer’s requirements, as specified herein and shown on the plans, and in accordance with this Special Provision the AASHTO Standard Specification for Highway Bridges - 17th Edition (2002) Section 5.8, for the design of MSE retaining walls.”

Change the first sentence of 636.03 (a) Failure Plane to read as follows: “(a) Failure Plane. The theoretical failure plane within the reinforced soil mass shall be determined per AASHTO Section 5.8 and be analyzed so that the soil stabilizing components extend sufficiently beyond the failure plane within the reinforced soil mass, as determined by AASHTO, to stabilize the material.”

Add the following after the first sentence of 636.03 (b): “The minimum factors of safety shall be as follows:

- | | |
|--|-----|
| 1. Overturning | 2.0 |
| 2. Sliding | 1.5 |
| 3. Stability of temporary construction slope | 1.2 |
| 4. Ultimate bearing capacity | 2.0 |
| 5. Reinforcement pullout | 1.5 |
| 6. Panel connection pullout or rupture | 2.0 |
- (At the end of the design life for the maximum allowable reinforcement tension.)”

Add the following to 636.03 (e) Steel Reinforcement: “The allowable tensile stress in steel reinforcements and connections, including tie-strips and loop inserts shall be determined at the end of the service life. The allowable tensile stress for steel reinforcements and connections shall be in accordance with Article 10.32 of AASHTO. For grid reinforcing members, the allowable tensile stress shall be reduced to 0.48 Fy. Transverse and horizontal grid members shall be of the same size.”

SPECIAL PROVISION
SECTION 639
ENGINEERING FACILITIES
(Telephone)

639.09 Telephone

Paragraph 1 is amended as follows:

The contractor shall provide **two** telephone lines and two telephones,....

Add-

In addition the contractor will supply one computer broadband connection and modem lease. The type of connection supplied will be contingent upon the availability of services (i.e. DSL or Cable Broadband). It shall be the contractor's option to provide dynamic or static IP addresses through the service. **The selected service will have a minimum downstream connection of 1.5 Mbps and 384 Kbps upstream.** The contractor shall be responsible for the installation charges and all reinstallation charges following suspended periods. Monthly service and maintenance charges shall be billed by the Internet Service Provider (ISP) directly to the contractor.

SPECIAL PROVISION
SECTION 645
HIGHWAY SIGNING

Under 645.023 Support Structures, add the following to the first paragraph just prior to the last sentence:

Minimum fatigue design default values for cantilever & butterfly sign support structures shall be classified as Fatigue Category I with Fatigue Importance Factors (I_f) of 1.0 for Galloping, 1.0 for Natural Wind Gusts and 1.0 for Truck-Induced Gusts. Bridge type sign support structures supporting variable message signs (VMS) shall also use this fatigue criteria in their design.

Minimum fatigue design default values for bridge type structures, without VMS, shall be classified as Fatigue Category II with Importance Factors (I_f) of 0.65 for Galloping, 0.75 for Natural Wind Gusts and 0.89 for Truck-Induced Gusts.

Under 645 Support Structures, b. Bridge, Cantilever, and Butterfly Type Sign Supports, modify the 1st sentence in paragraph 2 to read:

“Signs shall be placed on the support structure such that the bottom edges are aligned (unless written consent from the Fabrication Engineer is obtained), while accommodating the minimum height requirement - see Section 645.06.

Modify the 4th sentence of paragraph 2 to read:

“This additional theoretical sign load shall be computed by: For single signs increasing the sign widths an additional 25% without changing the horizontal midpoint of the sign; For multiple signs the sign widths shall be increased 25% toward the outside sign edges. The height shall be increased 25% without changing the bottom edge elevation of the signs.”

Under 645.06 Installation of Type I Signs, b. Sign Panels, modify the 4th sentence of the 1st paragraph to read:

“Sign panels on overhead structures shall provide a minimum vertical clearance of 5.5 meters [18 ft] to the highest point of the roadway surface under the sign(s).

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
(Traffic Control)

652.7 Method of Measurement. This entire Subsection is revised to read:
Traffic Control Supervisor, furnishing, installation, and maintenance of all traffic control devices will be measured as one **lump sum** for all work authorized and performed.

652.8 Basis of Payment. This entire Subsection is revised to read:
Traffic Control will be paid for at the contract **lump sum** price. Payment will be full compensation for the Traffic Control Supervisor, approach signs, work area signs, drums, cones, panel markers, barricades, arrow boards etc. and maintenance thereof including the setting up and taking down of lane closures as many times as necessary shall be considered part of the lump sum price.

Maintenance of signs includes: replacing devices damaged, lost, or stolen, and cleaning and moving as many times as necessary throughout the life of the contract, regardless whether the work areas or projects are geographically separated or not separated.

The Lump Sum will be payable in installments as follows: 5% of the Lump Sum once the approach signing is complete and approved, with the 95% balance to be paid as the work progresses at a rate proportional to the percentage completion of the Contract.

Failure by the contractor to follow the Contracts 652 Special Provisions and/or The Manual on Uniform Traffic Control Devices (MUTCD) and/or The Contractors own Traffic Control Plan will result in a reduction in payment, computed by reducing The Lump Sum Total by 5% per occurrence. The Departments Resident or any other representative of The Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item.

All other requirements under the Standard Specifications Section 652 will be a part of the lump sum item.

There will be no extra payment for this pay item after the expiration of contract time.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
652.39 Work Zone Traffic Control	Lump Sum

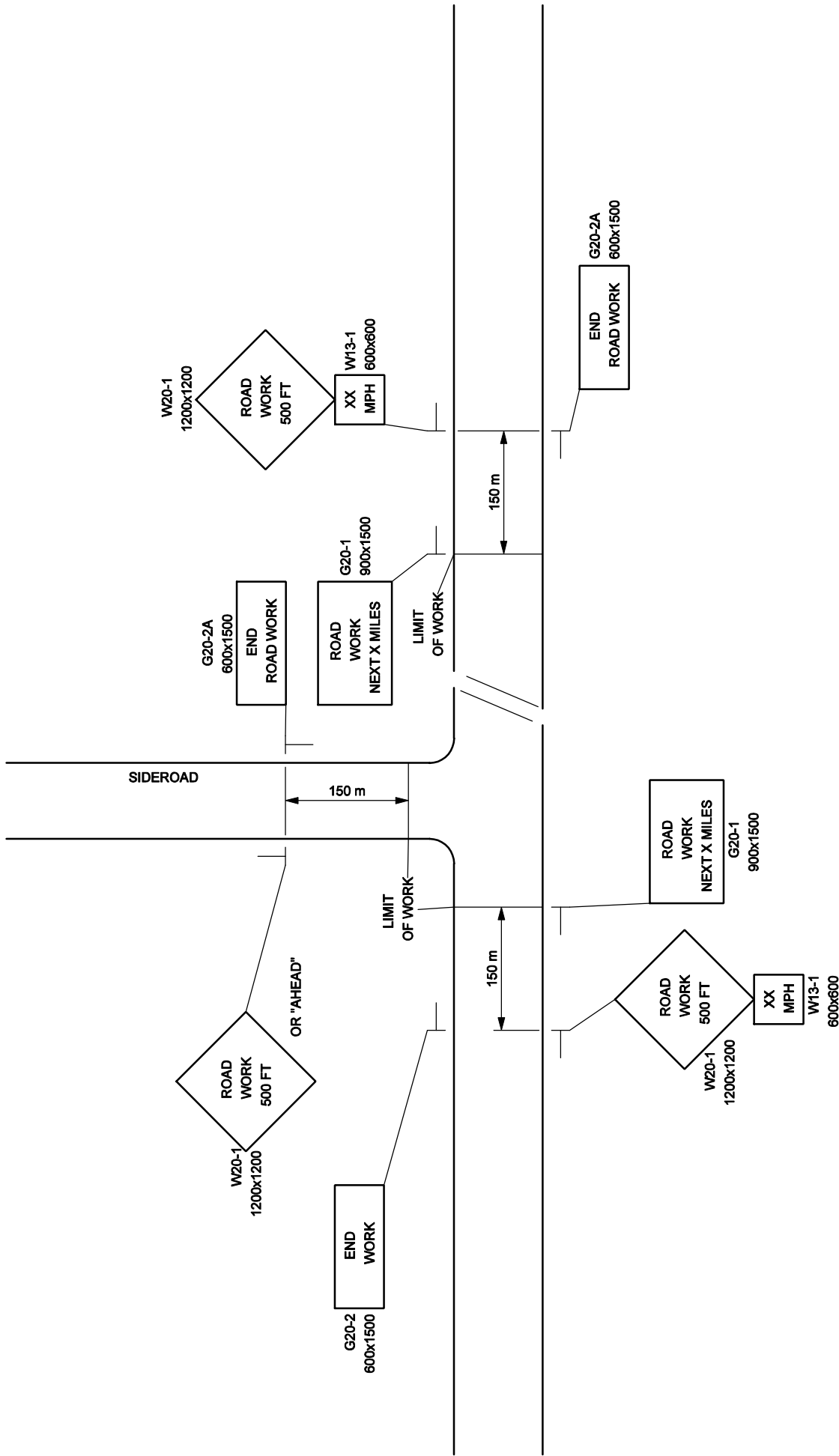
SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
Construction Sign Sheeting Material

Maine DOT is transitioning to super high intensity fluorescent retroreflective sheeting, ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic), for construction signs.

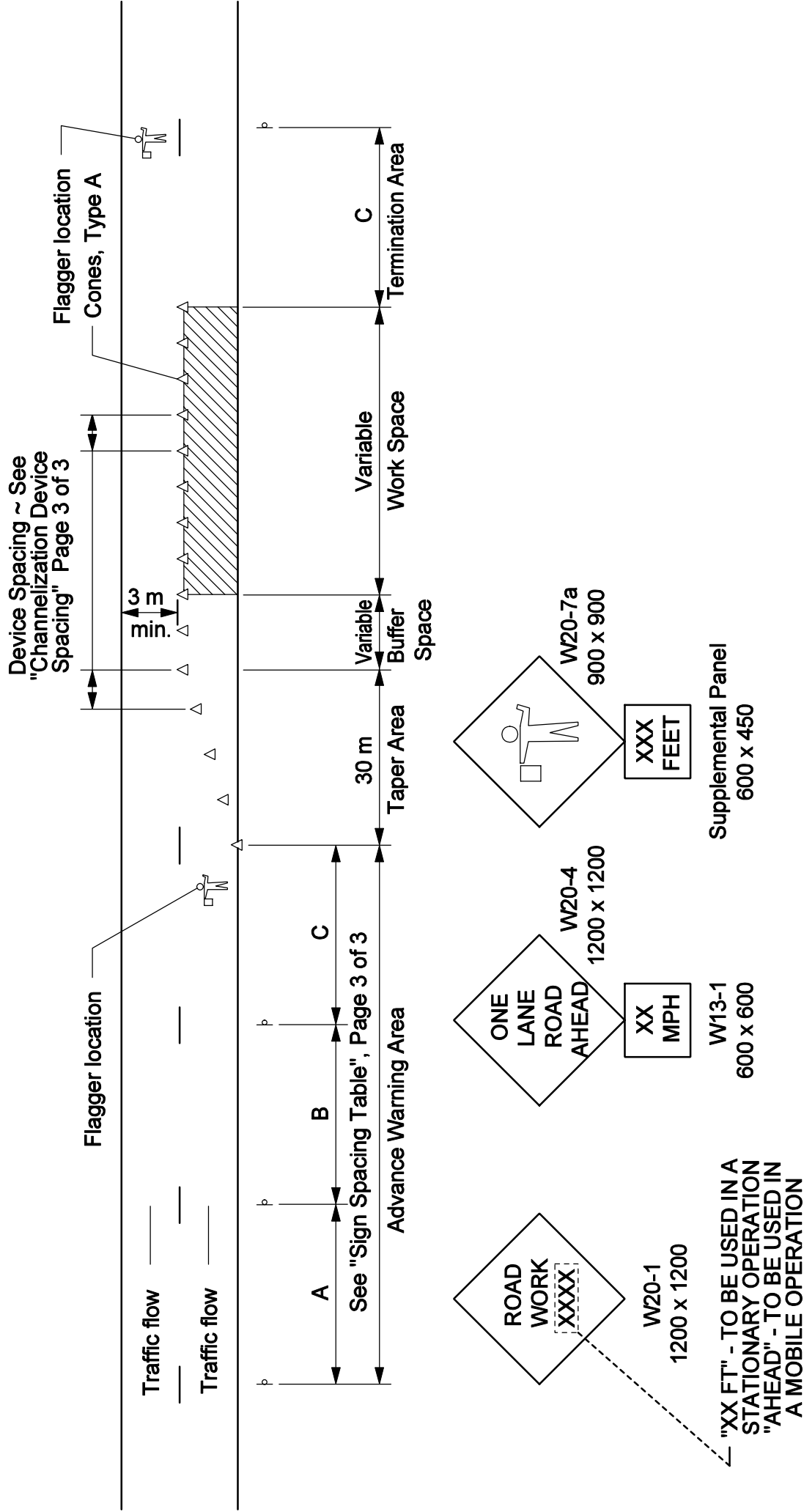
Currently serviceable Type III signs will be allowed until the final transition date. New signs bought after January 19, 2005 will conform to Type VII, Type VIII, or Type IX (prismatic) requirements. All signs will be Type VII, Type VIII, or Type IX (prismatic) after the final transition date of April 1, 2007.

During this transition period, sign packages will be of the same sheeting material (all Type III or all Type VII)

All Interstate Projects advertised after January 1, 2005 will be required to use the Type VII, Type VIII, or Type IX (prismatic) sheeting.



TYPICAL -- PROJECT APPROACH SIGNING -- TWO WAY TRAFFIC



TYPICAL APPLICATION: TWO - WAY, TWO LANE ROADWAY,
CLOSING ONE LANE USING FLAGGERS

* Formulas for L are as follows:

For speed limits of 40 mph (60 km/h) or less:

$$L = \frac{WS^2}{60} \quad (L = \frac{WS^2}{155})$$

For speed limits of 45 mph (70 km/h) or greater:

$$L = WS \quad (L = \frac{WS}{1.6})$$

* Formulas for L are as follows:

A minimum of 5 channelization devices shall be used in the taper.

TYPE OF TAPER	TAPER LENGTH (L)*
Merging Taper	at least L
Shifting Taper	at least 0.5L
Shoulder Taper	at least 0.33L
One-Lane, Two-Way Traffic Taper	100 ft (30 m) maximum
Downstream Taper	100 ft (30 m) per lane

CHANNELIZATION DEVICE SPACING

The spacing of channelization devices shall not exceed a distance equal to 1.0 times the speed limit in mph when used for taper channelization, and a distance in feet of 2.0 times the speed limit in mph when used for tangent channelization.

GENERAL NOTES;

1. Final placement of signs and devices may be changed to fit field conditions as approved by the Resident.

Road Type	Distance Between Signs**		
	A	B	C
Urban 30 mph (50 km/h) or less	100 (30)	100 (30)	100 (30)
Urban 35 mph (55 km/h) and greater	350 (100)	350 (100)	350 (100)
Rural	500 (150)	500 (150)	500 (150)
Expressway / Urban Parkway	2,640 (800)	1,500 (450)	1000 (300)

**Distances are shown in feet (meters).

SUGGESTED BUFFER ZONE LENGTHS

Speed (mph)	Length (feet)	Speed (mph)	Length (feet)
20	115	40	325
25	155	45	360
30	200	50	425
35	250	55	495

SPECIAL PROVISION
SECTION 656
Temporary Soil Erosion and Water Pollution Control

The following is added to Section 656 regarding Project Specific Information and Requirements. All references to the Maine Department of Transportation Best Management Practices for Erosion and Sediment Control (a.k.a. Best Management Practices manual or BMP Manual) are a reference to the latest revision of said manual. The "Table of Contents" of the latest version is dated "1/19/00" (available at <http://www.state.me.us/mdot/mainhtml/bmp/bmpjan2000.pdf>.)

Procedures specified shall be according to the BMP Manual unless stated otherwise.

Any and all references to "bark mulch" or "composted bark mix" shall be a reference to "Erosion Control Mix" in accordance with *Standard Specification, Section 619 - Mulch*.

Project Specific Information and Requirements

The following information and requirements apply specifically to this Project. The temporary soil erosion and water pollution control measures associated with this work shall be addressed in the SEWPCP.

- 1) This project is in the St. Croix River watershed, which is listed as an Outstanding River Segment and is considered **SENSITIVE** in accordance with the BMP Manual. The Contractor's SEWPCP shall comply with Section II.B., Guidelines for Sensitive Waterbodies in the BMP Manual.
- 2) The Contractor is required to submit, to MaineDOT, a Spill Prevention Plan for review and approval. Refueling operations shall not take place within Wellhead Protection Zone 1, per the City of Calais Wellhead Protection Rules. Re-fueling operations may take place within Wellhead Protection Zone 2, with City of Calais Planning Board approval. It is the Contractor's responsibility to obtain permission, in writing, from the City of Calais. Said documentation shall be supplied to the Resident before any re-fueling is to occur within Wellhead Protection Zone 2 (see map in Special Provision 100 Environmental Requirements and Commitments).
- 3) **A preconstruction field review is mandatory for this project. The preconstruction field review shall take place before commencing any work that involves soil disturbance or potential impacts on water quality. Attendees shall include the Environmental Coordinator, the preparer of the SEWPCP, the Resident, and a representative from the Department's ENV Water Resources Unit. The date and time shall be set by the Contractor in consultation with the Resident and ENV Water Resources Unit representative.**

SPECIAL PROVISION
SECTION 656
Temporary Soil Erosion and Water Pollution Control

- 4) Due to the project sensitivity, **CONSTRUCTION SHALL BE PHASED** to limit the amount of disturbed area. The Contractor's SEWPCP shall include specific provisions for phasing the work. Each section must be stabilized to the approval of the Resident and the Water Resources Unit before work can begin on any subsequent section.
- 5) Newly disturbed earth shall be mulched by the end of each workday. Mulch shall be maintained on a daily basis.
- 6) The SEWPCP shall describe the location and method of temporary erosion and sediment control for existing and proposed catch basins, outlet areas and culvert inlets and outlets.
- 7) **If water is flowing within the drainage system, the water shall be diverted to a stable area or conduit and work shall be conducted in the dry.** The Contractor's plan shall address when and where the diversions will be necessary.
- 8) Dust control items other than those under *Standard Specification, Section 637 – Dust Control*, if applicable, shall be included in the plan.
- 9) Permanent slope stabilization measures shall be applied within one week of the last soil disturbance.
- 10) Permanent seeding shall be done in accordance with *Standard Specification, Section 618 - Seeding* unless the Contract states otherwise.
- 11) Culvert inlet and outlet protection shall be installed within 48 hours of culvert installation, or prior to a storm event, whichever is sooner.
- 12) After November 1 the Contractor shall use winter stabilization methods, such as Erosion Control Mix as specified in *Standard Specification, Section 619 - Mulch*. If required, spring procedures for permanent stabilization shall also be described in the plan. Use of this product for over-winter temporary erosion control will be incidental to the contract and be paid for as part of Pay Item 656.75.
- 13) All disturbed ditches shall be stabilized by the end of each workday. Stabilization shall be maintained on a daily basis.

SPECIAL PROVISION
SECTION 656
Temporary Soil Erosion and Water Pollution Control

14) Erosion control blanket shall be installed in the bottoms of all ditches except where a stone lining is planned. Seed shall be applied prior to the placement of the blanket.

15) If check dams are used, they shall be constructed of stone in accordance with BMP Manual, Section 9. *Hay Bale Temporary Check Dams* **are not allowed**. Delete all reference to them in Section 9.

16) **CLEARING LIMIT LINES SHALL BE MINIMIZED**. Clearing shall be minimized as shown on the design plans. Areas to be cleared shall be discussed at the preconstruction field review.

SPECIFICATIONS FOR
BARING STREET
SEWER IMPROVEMENTS
CITY OF CALAIS, MAINE
(DOCUMENTS FOR INCLUSION
IN MDOT CONTRACT)

Prepared by:
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BARING STREET SEWER IMPROVEMENTS

CITY OF CALAIS, MAINE

DRAWING LIST

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SECTION 01018

ITEMS PROVIDED BY OWNER

SECTION 01018 - ITEMS PROVIDED BY OWNER

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section defines items provided by Owner, and the Contractor's limitations in their use.

1.02 SCHEDULE OF PROVIDED ITEMS

- A. All new hydrant fixtures required for project will be provided by Owner.
- B. Contractor is responsible to provide all fittings, valves, thrust blocks, and incidentals as required to install Owner supplied hydrants. Owner is responsible to provide hydrant fixtures only.

1.03 LIMITATIONS OF OWNER'S RESPONSIBILITY

- A. Equipment provided by Owner is limited to only those items specifically identified herein.
- B. All other incidentals and costs associated with the installation of items provided by the Owner are the responsibility of the Contractor.
- C. Contractor shall install all Owner provided equipment following all requirements established by the manufacturer's instructions and by the requirements specified in these contract documents.
- D. Contractor will unload and take full responsibility for all equipment and items provided by Owner immediately upon that equipment or items reaching the site.
- E. Contractor shall be responsible for protecting and storing all Owner provided items on-site.
- F. Owner's responsibility for prepurchased items is limited to ordering equipment and items and paying for those items outside of contract. Contractor is responsible for all other requirements related to the unloading, storage, handling, and installation of the equipment as if these items were being provided by the Contractor.

PART 2 – PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 INSTALLATION OF OWNER PROVIDED ITEMS

- A. Contractor is responsible for installation of all Owner provided items including equipment, labor, materials, and incidentals.
- B. Comply with all requirements of manufacturer of each equipment item for installation.
- C. Comply with all contract document requirements for installation of each item.

END OF SECTION

SECTION 01026

MEASUREMENT AND PAYMENT

SECTION 01026 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope: This section describes the measurement and payment for the work to be completed under each sewer bid item in the Proposal. The descriptions may not reference all of the associated Work. Work specified, but not specifically designated as a bid item, is considered incidental to all bid items.
- B. Payment procedures are described in the Agreement, General Conditions, and related documents.
- C. Work Covered: The total price for the Contract shall cover all work shown on the Contract Drawings and required by the Specifications and other Contract Documents. All costs in connection with the Work, including furnishing all materials, equipment, supplies and appurtenances; providing all construction, and tools; and performing all necessary labor and supervision to fully complete the Work, shall be included in the lump sum price bid or the unit prices specified on the bid sheets. No item that is required for the proper and successful completion of the Work will be paid for outside of, or in addition to, the prices submitted in the bid. All Work not specifically identified within this section shall be considered incidental to the project and a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices. Owner's responsibility for any item listed as being provided by Owner is limited to prepurchase and payment of that equipment outside of contract. Contractor is responsible for the unloading, storage, installation, and startup of all Owner provided items.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION

- 3.01 Measurement: Notify Engineer when necessary measurements must be taken. Do not proceed until measurements have been taken.

A. Item 1 (202.1912) – Remove or Abandon Sewer Services:

1. Payment: Unit quantity per each as stated in the Proposal.
2. Measurement: Per unit of work.
3. Includes removal or abandonment of existing buried utility pipe along new sewer routes where encountered and as shown on the Drawings including all disposal costs.
4. Schedule of Payment: 100% upon completion.

B. Item 2 (803.01) - Test Pits:

1. Payment: Unit quantity per each test pit unit as stated in the Proposal.
2. Measurement: Per unit completed.
3. Includes clearing, excavation, dewatering, backfilling, and compaction in locations as shown in Drawings or as directed by the Engineer.
4. Schedule of Payment: 100% upon completion.

C. Item 3 (825.30) – Rock Excavation for Sanitary Sewer:

1. Payment: Unit quantity per cubic meter as stated in the Proposal.
2. Measurement: Measurement of ledge in place either prior to or after blasting and excavation within pay limits as shown on the Drawings and as determined by the Engineer. If measured after blasting, it shall be adjusted down by a factor of 20% for payment to compensate for swelling.
3. Includes preblast survey, seismic monitoring, drilling and blasting, excavation, dewatering, removal and disposal of rock and boulders greater than 1.5 cubic meters (2 cubic yards).
4. Schedule of Payment: Upon excavation - 100%.

D. Item 4 (827.311) – Unsuitable Soil Excavation, Remove and Refill:

1. Payment: Unit quantity per cubic meter as stated in the Proposal.
2. Measurement: Cubic meters as measured in place within the pay limits shown on the Drawings and as directed by the Engineer.
3. Includes removal and disposal of unsuitable material and placement of select gravel backfill or aggregate base as specified and as directed by the Engineer.
4. Schedule of Payment: Installation - 100%.

E. Item 5 (825.343) - At-grade Water Service Relocation:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: As measured as complete units of all relocated water services.
3. Includes excavation, backfill, dewatering, fittings, pipe, corporation stop, curb stop, thrust blocks, disinfection, and appurtenances as specified and as shown on Drawings wherever at-grade water service line conflicts are encountered. Only direct at-grade conflicts with new utilities will be paid for under this item. Contractor remains responsible, at no cost to Owner, for repairing any encountered water service that is not an at-grade conflict.
4. Schedule of Payment: Installation - 100%

F. Item 6 (830.101) - At-grade Water Line Relocation:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: As measured as complete units of all relocated water lines.
3. Includes excavation, backfill, dewatering, fittings, pipe, corporation stop, thrust blocks, disinfection, and appurtenances as specified and as shown on Drawings or wherever direct on-grade water line conflicts with new utilities are encountered. Contractor

remains responsible, at no cost to Owner, for repairing any encountered water line that is not an at-grade conflict.

4. Schedule of Payment: Installation 0 90%; flushing, disinfection, and testing – 10%.

G. Item 7 (822.45) - Remove or Abandon Water Services:

1. Payment: Unit quantity per each as stated in the Proposal.
2. Measurement: Per unit of work.
3. Includes removal or abandonment of existing water services only where shown on the Drawings, including all disposal costs.
4. Schedule of Payment: 100% upon completion.
5. Explanation: Water Services called out on Drawings to be abandoned shall be disconnected and capped off at corporation stop on main water line. Coordinate with Calais Water Department.

H. Item 8 (824.30) – Fire Hydrants (Owner Provided) with Wedge Valves:

1. Payment: Unit quantity per unit as stated in the Proposal.
2. Measurement: Per unit installed, including all fittings, valves and appurtenances required to provide unit in accordance with Drawings and as specified.
3. Includes: Clearing, installation of owner provided hydrant, with contractor providing all fittings, bracing, wedge valves, thrust blocks, piping from main to hydrant, and site work as specified and as shown on Drawings.
4. Schedule of Payment: 100% upon installation.
5. Owner Provided Equipment: Owner will provide all new hydrants for existing hydrants to be relocated. Contractor will provide all other piping, valves, fittings, and incidentals needed to install Owner supplied hydrants.

I. Item 9 (823.332) – Adjust Gate Valve Box to Grade:

1. Payment: Unit quantity per adjustment as stated in the Proposal.
2. Measurement: As measured as complete units of all adjusted gate boxes.
3. Includes: excavation, backfill, fittings, gate box riser, and appurtenances as specified and as shown on Drawings where valve boxes are required to be raised to proposed new roadway elevation.
4. Schedule of Payment: 100% upon installation.

J. Item 10 (824.304) – Fire Hydrant Service Adjust to Grade:

1. Payment: Unit quantity per adjustment as stated in the Proposal.
2. Measurement: As measured as complete units of all adjusted fire hydrants.
3. Includes: excavation, backfill, fittings, and appurtenances as specified and as shown on Drawings where hydrants are required to be adjusted to proposed new roadway elevation.
4. Schedule of Payment: 100% upon installation.

K. Item 11 (460.22) – Hot Bituminous Pavement Outside Road Reconstruction Limits:

1. Payment: Unit quantity per megagram of pavement as stated in the Proposal.
2. Measurement: As measured in place within the pay limits and to the thickness shown on the Drawings and as directed by the Engineer.
3. Includes preparation and placement of specified thickness of hot mixed asphalt (12.5 mm and 19 mm) and final surface course pavement (12.5 mm) in pipe installation areas including trench areas outside the MDOT road reconstruction limits. Work shall include adjusting rims and covers of existing buried improvements, if necessary, shimming prior to pavement as necessary, saw cutting all edges prior to excavation and again before paving as noted on

the Drawings and as directed by the Engineer and cutting in butt joints as required to match into existing pavement.

4. Schedule of Payment: 100% upon installation.

L. Item 12 (460.22) - Hot Bituminous Pavement:

1. Payment: Unit quantity per megagram of pavement as stated in the Proposal.
2. Measurement: As measured in place within the pay or work limits and to the thickness shown on the Drawings and as directed by the Engineer.
3. Includes preparation and placement of specified thickness of hot mixed asphalt (12.5 mm and 19 mm) pavement in roadway areas within 3.3 meters from proposed roadway centerline, including adjusting rims and covers of existing buried improvements, if necessary, shimming prior to pavement as necessary, saw cutting all edges prior to excavation and again before paving as noted on the Drawings and as directed by the Engineer and cutting in butt joints as required to match into existing pavement.
4. Schedule of Payment: 100% upon installation.

M. Item 13 (461.131) - Temporary Pavement:

1. Payment: Unit quantity per megagram of initially placed temporary pavement as stated in the Proposal.
2. Measurement: As measured in place when initially placed within the pay or work limits and to the thickness shown on the Drawings and as directed by the Engineer.
3. Includes preparation and placement of specified thickness of temporary pavement, maintenance of temporary pavement during duration of its use, replacement or augmentation of temporary pavement as needed, removal of temporary pavement, and preparation for transition to final pavement.
4. Schedule of Payment: 50% upon installation and 50% upon removal.

5. Payment Limitation: Only one payment shall be made for use of temporary pavement when initially placed. This payment shall include all further placement or maintenance of additional temporary pavement in same location as may be needed or directed by Engineer to maintain temporary pavement in acceptable condition over full duration of its use. If Contractor fails to maintain temporary pavement to satisfaction of Owner or Engineer, Owner may have additional pavement installed and charge these costs to Contractor.
6. Explanation: Temporary pavement only applies sewer replacement in areas which are greater than 3.3 meters beyond roadway centerline. Depending on project phasing, temporary pavement may be necessary.

N. Item 14 (801.17) - 200 mm Ø PVC Sewer Outside Road Reconstruction Limits:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe; measured from and to inside face of manhole.
3. Includes clearing, excavation, compaction, stone bedding, backfill, roadway base and subbase, shoring and bracing, dewatering, cleaning, pipe, fittings, trench tape and incidentals as shown on the Drawings or as required.
4. Schedule of Payment: Installation - 85%; compaction and air testing - 10%; cleaning - 5%.

O. Item 15 (801.17) - 200 mm Ø PVC Sewer:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe; measured from and to inside face of manhole.
3. Includes clearing, excavation, compaction, stone bedding, backfill, trench tape, shoring and bracing, dewatering, cleaning, pipe, fittings and incidentals as shown on the Drawings or as required.

4. Schedule of Payment: Installation - 85%; compaction and air testing - 10%; cleaning - 5%.

P. Item 16 (801.175) - 250 mm Ø PVC Sewer Outside Road Reconstruction

Limits:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe; measured from and to inside face of manhole or wetwell.
3. Includes clearing, excavation, compaction, stone bedding, backfill, roadway base and subbase, shoring and bracing, dewatering, cleaning, pipe, fittings, trench tape, and incidentals as shown on the Drawings or as required.
4. Schedule of Payment: Installation - 85%; compaction and air testing - 10%; cleaning - 5%.

Q. Item 17 (801.175) - 250 mm Ø PVC Sewer:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe; measured from and to inside face of manhole.
3. Includes clearing, excavation, compaction, stone bedding, backfill, trench tape, shoring and bracing, dewatering, cleaning, pipe, fittings and incidentals as shown on the Drawings or as required.
4. Schedule of Payment: Installation - 85%; compaction and air testing - 10%; cleaning - 5%.

R. Item 18 (801.18) 300 mm Ø PVC Sewer Outside Road Reconstruction

Limits:

1. Payment: Unit quantity per linear meter as stated in the Proposal.

2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe; measured from and to inside face of manhole or wetwell.
3. Includes clearing, excavation, compaction, stone bedding, backfill, roadway base and subbase, shoring and bracing, dewatering, cleaning, pipe, fittings, trench tape, and incidentals as shown on the Drawings or as required.
4. Schedule of Payment: Installation - 85%; compaction and air testing - 10%; cleaning - 5%.

S. Item 19 (801.18) - 300 mm Ø PVC Sewer:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe; measured from and to inside face of manhole.
3. Includes clearing, excavation, compaction, stone bedding, backfill, roadway base and subbase, shoring and bracing, dewatering, cleaning, pipe, fittings, trench tape and incidentals as shown on the Drawings or as required.
4. Schedule of Payment: Installation - 85%; compaction and air testing - 10%; cleaning - 5%.

T. Item 20 (803.134) - 100 mm Ø PVC Service Laterals Outside Road Reconstruction Limits:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe from the main sewerline to the right-of-way.
3. Includes clearing, excavation, stone bedding, backfill, compaction, shoring and bracing, dewatering, pipe, fittings and incidentals as shown on the Drawings or as required to provide complete installation.

4. Schedule of Payment: Installation - 90%; compaction and testing 10%.

U. Item 21 (803.134) - 100 mm Ø PVC Service Laterals:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe from the main sewerline to the right-of-way.
3. Includes clearing, excavation, stone bedding, backfill, compaction, shoring and bracing, dewatering, pipe, fittings and incidentals as shown on the Drawings or as required to provide complete installation.
4. Schedule of Payment: Installation - 90%; compaction and testing 10%.

V. Item 22 (803.135) - 150 mm Ø PVC Service Laterals Outside Road Reconstruction Limits:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters as measured along the horizontal projection of the centerline of the pipe from the main sewerline to the right-of-way.
3. Includes clearing, excavation, stone bedding, backfill, compaction, roadway base and subbase, shoring and bracing, dewatering, pipe, fittings and incidentals as shown on the Drawings or as required to provide complete installation.
4. Schedule of Payment: Installation - 90%; compaction and testing 10%.

W. Item 23 (803.135) - 150 mm Ø PVC Service Laterals:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Linear meters measured along the horizontal projection of the centerline of the pipe from the main sewerline to the right-of-way.

3. Includes clearing, excavation, stone bedding, backfill, compaction, shoring and bracing, dewatering, pipe, fittings and incidentals as shown on the Drawings or as required.
4. Schedule of Payment: Installation - 90%; compaction and testing - 10%.

X. Item 24 (801.06) – Vertical Sewer Cleanouts:

1. Payment: Unit quantity per each installation as stated in the Proposal.
2. Measurement: Measured as complete units.
3. Includes earthwork, shoring and bracing, dewatering, frame and cover, insulation, concrete, and all piping, fittings and supports contained as specified and as shown on the Drawings.
4. Schedule of Payment: Installation - 90%; testing - 10%.

Y. Item 25 (803.16) – 1.2M Ø Precast Sewer Manhole:

1. Payment: Unit quantity per each installation as stated in the Proposal.
2. Measurement: Measured as complete units.
3. Includes earthwork, shoring and bracing, dewatering, manholes, frames and covers and all piping, fittings and supports within the manholes as specified and as shown on Drawings.
4. Schedule of Payment: Manhole installation - 60%; inverts – 10%; compaction – 10%, frames and covers – 10%, and leakage testing – 10%.

Z. Item 26 (803.1651) – 1.5 M Ø Precast Sewer Drop Manhole:

1. Payment: Unit quantity per each installation as stated in the Proposal.
2. Measurement: Measured as complete units.

3. Includes earthwork, shoring and bracing, dewatering, manholes, frames and covers and all piping, fittings, and supports within the manholes as specified and shown on the Drawings.
4. Schedule of Payment: Installation – 60%; inverts – 10%, frames and covers – 10%, compaction testing – 10%, and leakage testing – 10%.

AA. Item 27 (801.44) – Sewer Pipe Insulation:

1. Payment: Unit quantity per linear meter as stated in the Proposal.
2. Measurement: Measured in place as shown on the Drawings or as directed by the Engineer.
3. Includes insulation over pipe and structures as shown on the Drawings and as specified.
4. Schedule of Payment: 100% upon installation.
5. Explanation: If 100 mm insulation called for in places, payment will be based on double the 50 mm price.

BB. Item 28 (832.07) – Owner’s Testing Allowance:

1. Explanation: Testing listed in the Contract Documents as being the Owner’s responsibility will be paid for by the Contractor and reimbursed through this allowance. This allowance does not apply to any tests which are stated in the Contract Documents as being the Contractor’s responsibility.
2. Payment: Actual costs incurred.
3. Measurement: Submit evidence of paid invoices from testing firm.
4. Includes: Testing costs, such as concrete tests, compaction tests, etc., that are specified as Owner’s responsibility are included in this item. Contractor shall pay for all such tests. All testing costs specified as the Contractor’s responsibility shall remain so and in no way shall the included allowance be used for such costs. All testing costs shall be billed directly to Contractor, and a final Change Order will be issued balancing the actual testing costs to the Contractor as compared to the stated allowance.

5. Schedule of Payment: 100% - upon completion of tests and evidence of paid invoice submitted.

CC. Item 29 (203.242) – 2” Dirty Borrow Outside Road Reconstruction Limits:

1. Payment: Unit quantity per cubic meter.
2. Measurement: As measured in place within the pay or work limits shown on the Drawings and as directed by the Engineer.
3. Includes: Dirty borrow for grass areas and installation in accordance with specifications.
4. Schedule of Payment: 100% when installed.

DD. Item 30 (618.1401) – Seeding Method #2 Outside Road Reconstruction Limits:

1. Payment: Per unit as stated in Proposal where unit is equivalent to 100 square meters.
2. Measurement: As measured in place within the pay or work limits shown on the Drawings and as directed by the Engineer.
3. Includes: Seed, fertilizer, mulch, erosion control mesh, jute, mat, and installation in accordance with specifications.
4. Schedule of Payment: 50% when installed, 50% when established and accepted by Owner.

EE. Item 31 (652.39) – Traffic Control Outside Road Reconstruction Limits:

1. Payment: Lump sum price as stated in Proposal.
2. Measurement: Paid in proportion to percentage of work completed at time of requisition.
3. Includes all costs associated with traffic control including labor, flaggers, equipment, signage, and incidentals. Traffic control shall

include adherence to Maine Department of Transportation Manual on Uniform Traffic Control Devices for Street and Highways.

4. Schedule of Payment: 100% upon completion.
5. Payment Limitation: No payment shall be made for any period during which Contractor does not provide adequate traffic control after being notified in writing by Engineer that traffic control is inadequate. Prorated deductions from the traffic control payment item may be withheld and retained by Owner in the event that adequate traffic control is not provided and Owner reserves the right to retain private traffic control using retained funds or to backcharge contractor for private traffic control if retained funds are insufficient. If Owner's cost to provide traffic control exceeds Contractor's payment item value, Owner reserves the right to deduct excess traffic control cost from balance of contract value.

FF. Item 32 (656.75) – Temporary Soil Erosion and Water Pollution Control:

1. Payment: Lump sum price as stated in Proposal.
2. Measurement: One lump sum unit including temporary erosion control during project construction and throughout the warranty period.
3. Includes: Installation and maintenance of all erosion control as necessary to comply with Federal, State, and local regulations, applicable permits, and to prevent adverse impacts on adjacent lands or waterway. Erosion control shall also follow the Maine Department of Transportation's Best Management Practices.
4. Schedule of Payment: Installation – 75%; removal at end of project – 25%.

*** END OF SECTION ***

SECTION 01300

SUBMITTALS

SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Submittal requirements specified in this section include product data, samples and miscellaneous Work-related submittals. Individual submittal requirements are specified in applicable sections for each unit of work. Refer to other Division-1 sections and other Contract Documents for requirements of administrative submittals.
- B. Definitions: Work-related submittals of this section are categorized for convenience as follows:
 - 1. Product data include standard printed information on materials, products and systems.
 - 2. Samples include both fabricated and unfabricated physical examples of materials, products and units of Work; both as complete units and as smaller portions of units of Work; either for limited visual inspection or (where indicated) for more detailed testing and analysis.
- C. Miscellaneous submittals related directly to the Work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standards, Record Drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the Work.

1.02 GENERAL SUBMITTAL REQUIREMENTS

- A. Coordination and Work Sequencing:
 - 1. Coordinate preparation and processing of submittals with performance of the Work so that Work will not be delayed by submittals.

2. Coordinate and sequence different categories of submittals for same Work, and for interfacing units of Work, so that one will not be delayed for coordination of Engineer's review with another.
 3. Determine and verify all interface conditions, catalog numbers and similar data.
 4. Indicate all deviations from the requirements of the Contract Documents.
 5. Field measure all critical project dimensions prior to issuing submittal and to fabricating products shown on the submittals.
- B. Preparation of Submittals: Provide permanent marking on each submittal to identify project, date, Contractor, Subcontractor, submittal name and similar information to distinguish it from other submittals. Show Contractor's executed review and approval marking and provide space for Engineer's "Action" marking. Submittals which are received from sources other than through Contractor's office will be returned by Engineer "without action".
- C. Grouping of Submittals: Unless otherwise specified, make submittals in groups containing all associated items to ensure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying with the provisions of the Contract Documents.
- D. Number of Submittals: Submit number of copies to be returned plus 4 copies which will be retained by the Engineer. Additional copies may be requested by the Engineer.
- E. General Distribution: Provide additional distribution of submittals (not included in foregoing copy submittal requirements) to Subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for proper performance of the Work. Include such additional copies in transmittal to Engineer where required to receive "Action" marking before final distribution. Record distributions on transmittal forms.

1.03 SUBMITTAL CONTENTS

- A. Product Data: Collect required data into one submittal for each unit of Work or system; and mark each copy to show which choices and options are applicable to project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals,

notation of field measurements which have been checked, and special coordination requirements.

- B. Samples: Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than 3 units) where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where Engineer's selection is required. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Engineer will not "test" samples (except as otherwise indicated) for compliance with other requirements, which are therefore the exclusive responsibility of Contractor.

1.04 PROCESSING OF SUBMITTALS

- A. Engineer's Action: Where action and return is required or requested, Engineer will review each submittal, mark with "Action", and where possible return within two weeks of receipt. Where submittal must be held for coordination, or additional time is required for review of complex items, Contractor will be so advised by Engineer without delay.
- B. Action Stamp: Engineer's action stamp, for use on submittals to be returned to Contractor, is self-explanatory.
- C. Additional Submittals: If an intermediate submittal is necessary, process the same as the initial submittal.
- D. Allow two weeks for reprocessing each submittal.
- E. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the Work to permit processing.

1.05 INCORPORATION OF WORK

- A. No work shall be incorporated into project until such time as Contractor has formally submitted a Submittal for all materials and until Engineer has reviewed and approved submittal.
- B. No payment will be approved for any work incorporated into project without an approved submittal.

- C. Failure by Contractor to provide Submittals for work in a timely manner shall be grounds for suspension of contract by Owner at no penalty to Owner. Contract will not be resumed until Contractor has properly issued all Submittals. No additional contract time will be provided for period of time that project is delayed due to submittals not being issued in a timely manner.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

END OF SECTION

SECTION 02160

EXCAVATION SUPPORT SYSTEMS

SECTION 02160 - EXCAVATION SUPPORT SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. General support system work includes, but is not limited to, the following:
1. Shoring and bracing necessary to protect existing buildings, streets, walkways, utilities, and other improvements and excavation against loss of ground or caving embankments.
 2. Maintenance of shoring and bracing.
 3. Removal of shoring and bracing, as required.
- B. Types of shoring and bracing systems include, but are not limited to, the following:
1. Steel H-section (soldier) piles.
 2. Timber lagging.
 3. Steel sheet piles.
 4. OSHA approved trench boxes.

1.02 SUBMITTALS

- A. General: Submit each item in this Article in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Layout drawings for excavation support system and other data prepared by, or under the supervision of, a qualified professional engineer. System design and calculations must be acceptable to local authorities having jurisdiction.

1.03 QUALITY ASSURANCE

- A. Engineer Qualification: A professional engineer legally authorized to practice in jurisdiction where Project is located, and experienced in providing successful engineering services for excavation support systems similar in extent required for this Project.
- B. Supervision: Engage and assign supervision of excavation support system to a qualified professional engineer foundation consultant.
 - 1. Submit name of engaged consultant and qualifying technical experience.
- C. Regulations: Comply with codes and ordinances of governing authorities having jurisdiction.

1.04 JOB CONDITIONS

- A. Before starting work, verify governing dimensions and elevations.
 - 1. Verify condition of adjoining properties.
 - 2. Take photographs to record any existing settlement or cracking of structures, pavements, and other improvements.
 - 3. Prepare a list of such damages, verified by dated photographs, and signed by Contractor and others conducting investigation.
- B. Survey adjacent structures and improvements, employing qualified professional engineer, and establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
- C. During excavation, resurvey benchmarks weekly, maintaining accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags, or other damage is evident.

1.05 EXISTING UTILITIES AND STRUCTURES

- A. Protect existing active sewer, water, gas, electricity, and other utility services and adjacent structures.

- B. Notify municipal agencies and service utility companies having jurisdiction. Comply with requirements of governing authorities and agencies for protection, relocation, removal, and discontinuing of services.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Provide adequate shoring and bracing materials which will support loads imposed. Materials need not be new, but should be in serviceable condition.
- B. Structural Steel: ASTM A 36.
- C. Steel Sheet Piles: ASTM A 328.
- D. Timber Lagging: Any species, rough-cut, mixed hardwood, nominal 3 inches thick, unless otherwise indicated.

PART 3 - EXECUTION

3.01 CONFORMANCE WITH OSHA

- A. Comply with all OSHA regulations.

3.02 SHORING

- A. Wherever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces.
- B. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures.
- C. Shoring systems retaining earth on which the support or stability of existing structures is dependent must be left in place at completion of work.

3.03 BRACING

- A. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.
- B. Remove sheeting, shoring, and bracing in stages to avoid disturbance to underlying soils and damage to structures, pavements, facilities, and utilities.
- C. Repair or replace, as acceptable to Engineer and Owner, adjacent work damaged or displaced through installation or removal of shoring and bracing work.

END OF SECTION

SECTION 02170

USE OF EXPLOSIVES

SECTION 02170 - USE OF EXPLOSIVES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Covers the work necessary for the use of explosives and blasting in connection with trench excavation.

1.02 RELATED SECTIONS

- A. Section 02200 - Earthwork.

1.03 SUBMITTALS

- A. Submittals shall be made in accordance with Section Submittals in Division 1, General Requirements. In addition, the following specific information shall be provided:
 - 1. Permits: The Contractor shall submit a copy of all applicable permits for transportation, storage, and use of explosives to the Engineer.
 - 2. Evidence of Blasting Notification published in local newspaper as required.
 - 3. Initial Blast Designs: The Contractor shall submit the following information for initial blast design for each surface or trench excavation as appropriate:
 - a. Number, location, diameter, depth, and inclination of drill holes on a scaled drawing of the excavation.
 - b. Type of explosive, location, and weight of charge in each hole.
 - c. Total amount of explosives in the blast and maximum charge per delay period.
 - d. Delay arrangement showing delay period in each hole.

- e. The method of detonation, including the type of blasting cap, character, and source of firing current.
4. Blasting Monitoring Plan: Prior to commencement of blasting operations, the Contractor shall submit, in writing, Contractor's plan for monitoring operations to assure compliance with the vibration limitation. As a minimum, this plan shall provide for the following:
- a. The Contractor's recommended vibration limitation provided that it does not exceed that specified in these Contract Documents.
 - b. Name of a qualified blast vibration specialist who will be responsible for establishing the monitoring program and interpretation of the vibration readings. The vibration specialist shall not be an employee of the blasting company performing the work. Only independent personnel working for an independent geotechnical engineering firm shall be acceptable.
 - c. Names of the trained personnel provided to operate the equipment and interpret the recordings.
 - d. The type and model of blasting seismograph proposed for use.
 - e. The number and location of proposed monitoring stations.
 - f. The methods to be used to coordinate blast detonation with recording of the blast.
 - g. The steps to be taken if blasting vibrations equal or exceed the vibration limits.
5. Blasting Records: The Contractor shall submit the following blasting records and information for each blast detonated:
- a. Location of the blast in relation to project stationing or elevation.
 - b. Date and time of loading and detonation of the blast.
 - c. Name of person in responsible charge of the loading and firing and blaster permit number.

- d. Signature and title of person making recording entries.
- e. Details of each blast according to the criteria listed above for the initial blast design.
- f. Vibration records including the location and distance of the seismograph geophones to the blast and to the nearest structure, and the measured peak particle velocity.
- g. Air blast overpressure records, if appropriate.
- h. Comments by the blaster in charge regarding any misfires, unusual results, or unusual effects.
- i. Any other records required by Maine Statute and local codes and regulations.

PART 2 - PRODUCTS

2.01 MINIMUM SEISMOGRAPH REQUIREMENTS

- A. Seismic frequency range of 2 to 150 HZ.
- B. Sound frequency range of 2 to 500 HZ.
- C. Capability of recording longitudinal, transverse, and vertical peak particle velocity and frequency.
- D. Capability of printing out the following data on-site for immediate review by Engineer and Contractor.
 - 1. Date and time of blast.
 - 2. Instrument location.
 - 3. Distance to blast.
 - 4. Peak particle velocity (longitudinal, vertical, and transverse).
 - 5. Frequency (HZ).

- 6. Airblast (dB and psi).
- E. Provide instrument type data, last calibration date, and seismograph operator.
- F. Calibration must have occurred within past year.
- G. Instrument shall be owned and operated by independent qualified vibration specialist hired by Contractor to monitor blast.

PART 3 - EXECUTION

3.01 HOURS OF OPERATION

- A. All blasting shall occur during daylight hours, 8:00 AM to 5:00 PM EST, Monday through Friday.

3.02 WARNING SYSTEM

- A. The Contractor shall erect signboards of adequate size stating that blasting operations are taking place in the area, and such signs shall be clearly visible at all points of access to the area.
- B. Air horn shall be sounded prior to each blast using the following sequence:
 - 1. Three whistles at five minutes prior to blast.
 - 2. Two whistles at one minute prior to blast.
 - 3. Single whistle when “all clear” after shot has been checked for misfires.
- C. Traffic control shall be utilized to keep traffic and pedestrians clear of blast area during all blasting operations. Traffic shall be stopped prior to the first warning signal on the air horn and shall not be allowed to pass through the blast area until the “all clear” signal has been given.
- D. Blasting mats shall be used over all blast areas to prevent the possibility of flying rock and debris.
- E. Signage shall be used to clearly mark all blasting areas and to define the different air horn warning sequences that will be used.

3.03 SAFEGUARDS

- A. Explosives shall be handled, transported, used, controlled, stored, and monitored as prescribed by the most stringent of the rules promulgated by the State of Maine, the provisions specified in the OSHA Standards, these Specifications, and local codes and ordinances.
- B. The first blasting operation at each location shall be monitored by the Contractor as a test case, and the proper drilling pattern and amount and type of explosive to be subsequently used shall be determined from the vibration record.
- C. Vibration recording shall be continued for every blast round. Changes in drilling patterns, delay sequence, and amount of explosives shall be made when records indicate vibration in excess of the established vibration limits.
- D. Blasting mats shall be used over all blast areas to prevent the possibility of flying rock and debris.
- E. After a blast is fired, all loose and shattered rock or other loose material which may endanger the structure or the workers shall be removed and the excavation made safe before proceeding with the work.
- F. Before drilling of a new round, the ledge face shall be thoroughly cleaned and examined for holes containing unexploded powder.
- G. Blasting techniques shall be developed and improved as work progresses.
- H. The fact that the removal of loose or shattered rock or other loose material may enlarge the excavation beyond the required limits shall not relieve the Contractor of responsibility for such removal and subsequent additional backfill, and the Contractor shall not be entitled to additional payment.
- I. In the event damage to any structure occurs due to blasting work, all blasting shall be suspended immediately and a report shall be made to the Engineer. Before being allowed to resume blasting operations, the Contractor may be required to adjust the hole pattern, delay sequence, weight of explosives, or take other appropriate measures to control the effects of blasting.

3.04 PREBLAST SURVEY

A. Preblast survey shall be conducted by Contractor:

1. Schedule preblast survey with Engineer ten days before any blasting is to take place to allow Engineer to send letter notification to affected property owners. No preblast survey work shall be allowed until all property owners are notified by Engineer in writing. Placing notices in doorways prior to blast shall not be allowed to substitute for this requirement.
2. Provide preblast survey at least 5 days prior to any blasting or blasting related operations.
3. Survey to be performed by an independent geotechnical business entity, acceptable to the Engineer, with a minimum 5 years experience in similar type surveys.
4. Property owner must be present during preblast survey.
5. Preblast Survey shall include, but not be limited to:
 - a. Still photos taken at 50 foot maximum stationing along project baseline. (4" x 6" glossy color prints)
 - b. Video tape of entire construction area.
 - c. Video tape of each structure within 500 LF of blasting location to show both interior and exterior preblast conditions. Highlight existing defects in structures and pavements. Provide some means of establishing scale of existing defects; i.e. include tape measure or folding ruler at defect during video taping.
 - d. Video taping shall be done with commercial grade equipment to allow equipment still viewing without distortion of the viewed area.
 - e. Still photos and video tapes shall be retained by the preblast surveyor and shall be available for viewing by the Owner and Engineer within 24 hours upon request.

- f. Copy of tape shall be given to Engineer before any blasting begins. Confirm type of video format with Engineer.
- 6. Engineer shall be given copy of preblast survey at least two business days prior to beginning of blasting.

3.05 NOTICE OF IMPENDING BLAST

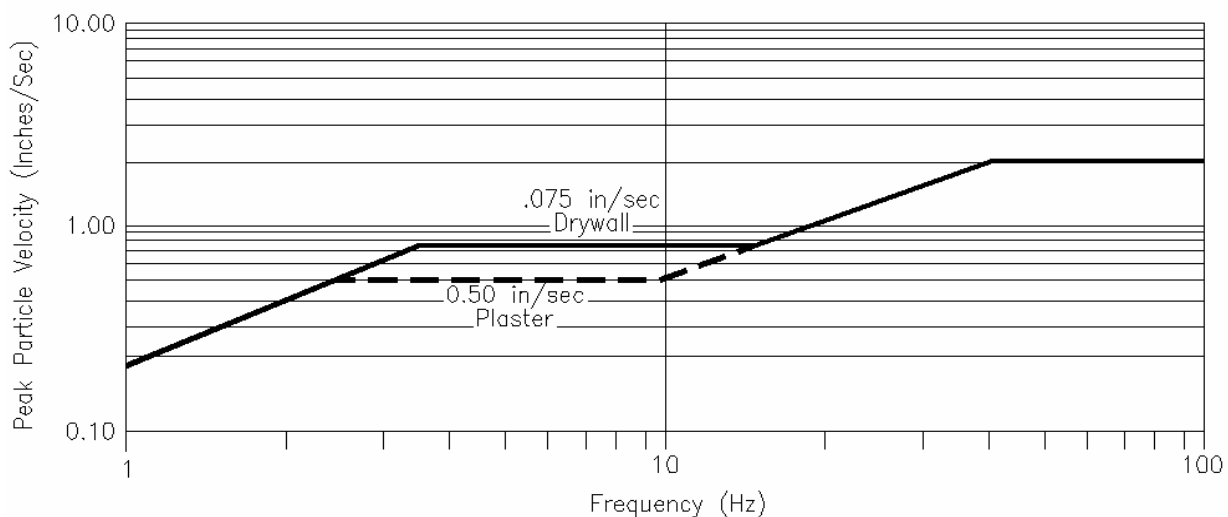
- A. Contractor shall publish notice of impending blast in newspaper of local general circulation at least ten days and no more than thirty days prior to commencement of blasting operations.
- B. Copy of notice shall be submitted to Engineer prior to publication.
- C. Published notice shall include the following information:
 - 1. Name, address, and telephone numbers of the general contractor and the blasting subcontractor.
 - 2. Identification of specific areas where blasting will occur.
 - 3. Anticipated dates and times of blasting operations.
 - 4. Methods to be used to control access to blasting area.

3.06 VIBRATION LIMITATION AND RECORDING

- A. All blasting shall be done in such a manner so that vibrations reaching adjacent structures and facilities are within specified limits.
- B. Vibrations shall be recorded using an approved seismograph(s) for each blasting occurrence.
- C. Recording of blast vibrations and interpretation of the results shall be done by trained personnel under the direction of a qualified blast vibration specialist approved by the Engineer.
- D. Vibrations shall be monitored by measuring the Peak Particle Velocity in the vicinity of blasting.

- E. Peak Particle Velocity is defined as a maximum of the three velocity components, measured in three mutually perpendicular directions at any point by an appropriate instrument.
- F. The maximum Peak Particle Velocity occurring on, or at, the structure closest to the point of blasting operations, shall be established by the Contractor if not specified for a project. However, the established Peak Particle Velocity shall not exceed 2 inches per second. At blasting frequencies lower than 10 HZ, the maximum peak particle velocity shall be established from the following graph:

Frequency vs. Peak Particle Velocity



- G. Blasting operations shall be controlled so that air blast overpressures, measured at the building nearest to the surface opening, do not exceed 0.015 psi.
- H. The blast vibration specialist shall, at the Contractor's cost, supervise establishment of the program and initial operation of the equipment, be on-site of the job during all blasting operations within 100 LF of a structure or utility, or if requested by the Engineer.

3.07 BLASTING RECORDS

- A. The Contractor shall maintain a record of each blast detonated. This record shall include the information listed above. Results and interpretation of individual blasting records shall be made available to the Engineering within 24 hours of blasting.

END OF SECTION

SECTION 02200

EARTHWORK

SECTION 02200 - EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Earthwork includes the following:

1. Excavation of soils, rock, debris, fill, and miscellaneous as required.
2. Excavation and sawcutting of paved areas.
3. Dewatering, drainage, and moisture control in excavated areas as required.
4. Aggregates for fill, backfill, base, subbase, bedding, and miscellaneous as required.
5. Backfilling of trench excavation.
6. Compaction of trench excavation.
7. Grading of areas prior to surface restoration.
8. Disposal of excess material.
9. Test pits as required.
10. Trench marking tape where required.
11. Flowable fill as required in areas where rapid backfilling is needed or where adjacent slabs or structures have been undermined by excavation.
12. Clay dams where required.

1.02 RELATED SECTIONS

- A. Section 02160 - Excavation Support Systems.

- B. Section 02170 - Use of Explosives.
- C. Section 02510 – Water Distribution Systems.
- D. Section 02700 - Sewerage and Drainage.
- E. Section 02720 - Precast Concrete Sewerage Structures.

1.03 PAY LIMITS

- A. Excavation Measurement: Volume of excavation actually removed, measured in original position, but not to exceed the following unless specifically shown otherwise on Drawings.
 - 1. 600 mm (24") outside of precast manhole walls measured as square.
 - 2. Pipe pay limits as shown on Drawings.
 - 3. As shown or stated on Drawings or Contract Documents.
- B. Unit prices for rock excavation include replacement with approved materials.

1.04 DEFINITIONS

- A. Base Course: The layer placed above the subbase.
- B. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.
- C. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- D. Subbase Course: The layer placed between the subgrade and base course.
- E. Subgrade: The uppermost surface of an excavation or the top surface of a fill on backfill at elevations defined on the Drawings.
- F. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions or pay limits without direction by the

Engineer. Unauthorized excavation, as well as remedial work directed by the Engineer, shall be at the Contractor's expense.

G. Utilities include on-site underground pipes, conduits, ducts, and cables.

1.05 SUBMITTALS

A. Submit the following according to the Conditions of the Contract and Division 1 Specification Sections:

1. Product data for the following:

a) Each type of warning tape.

2. Samples of the following when requested:

a) Samples sealed in air-tight containers of each proposed soil material required from on-site or borrow sources.

3. Test Reports: Submit the following:

a) Grain size analysis of each soil material proposed for incorporation into work with one test provided for every 1000 CY of material placed or at other frequency determined by Engineer.

b) One optimum moisture-maximum density curve for each soil material incorporated into work or at other frequency as determined by Engineer.

1.06 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.

B. Testing and Inspection Service: Owner will employ a qualified independent geotechnical engineering testing agency to verify that soils comply with specified requirements and to perform required field and laboratory testing.

1.07 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Engineer and then only after acceptable temporary utility services have been provided.
 - 1. Provide a minimum 72 hours notice to the Engineer and receive written notice to proceed before interrupting any utility.
- B. Demolish and abandon existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.
- C. Test pits: Excavate test pits to gain additional information on project conditions where shown on the Drawings or as directed by Engineer. Comply with earthwork requirements of this Section.

1.08 PROTECTION

- A. Protection of surfaces: Do not operate equipment on surfaces beyond the work area as much as practicable. Surfaces which are outside the specified limits of Work which become damaged shall be repaired by the Contractor at no additional cost to the Owner.
- B. Maintain excavations with approved barricades, lights, and signs to protect life and property until excavation is filled and graded to a condition acceptable to the Engineer.
- C. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
- D. Provide Preblast Survey as defined in Section 02170 prior to rock removal.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. Provide approved soil materials complying with this specification.
- B. Suitable materials: As indicated on Drawings or that meet these specifications.

- C. Unsuitable materials: Material containing excessive clay, vegetation, organic matter; debris; pavement over four inches in greatest dimension; stones or boulders over four inches in greatest dimension; frozen material and material which, in the opinion of the Engineer, will not provide a suitable foundation or subgrade, or does not meet these specifications.
- D. Inspection: The Engineer may inspect off-site sources of materials and order tests of these materials to verify compliance with these specifications.
- E. Testing: All materials shall be tested for gradation analysis at the rate of one test per 1000 cubic yards or, in the opinion of the Engineer, if approved material appears to have significantly changed quality since last test.

2.02 Gravel/Select Backfill: Well graded granular material free of organic material. Sieve analysis by weight:

<u>Sieve size</u>	<u>% Passing By Weight</u>
100 mm (4")	100
75 mm (3")	90 - 100
6.25 mm (1/4")	25 - 90
No. 40	0 - 30
No. 200	0 - 5

2.03 19 mm (3/4") Crushed Stone: Durable, clean angular rock fragments obtained by breaking and crushing rock material. Sieve analysis by weight:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
25 mm (1")	100
19 mm (3/4")	75 - 100
12.5 mm (1/2")	35 - 70
9.5 mm (3/8")	0 - 25
No. 200	0 - 2

2.04 Flowable Fill:

- A. Type II Portland: Cement, 45 kg per cubic meter (75 lbs per cubic yard).
- B. Sand: 1400 kg per cubic meter (2350 lbs per cubic yard).
- C. Air content: -25%.

2.05 Aggregate Base: Shall be screened or crushed gravel of hard durable particles free from organic material. Sieve analysis by weight:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
75 mm (3")	100
12.5 mm (1/2")	35 - 75
6.25 mm (1/4")	25 - 60
No. 40	0 - 25
No. 200	0 - 5

- 2.06 Aggregate Subbase: Shall be screened or crushed gravel of hard durable particles free from organic material. Sieve analysis by weight:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
150 mm (6")	100
75 mm (3")	95 - 100
6.25 mm (1/4")	25 - 70
No. 40	0 - 30
No. 200	0 - 5

2.07 CLAY DAM

- A. Synthetic clay dam shall be Volclay, water stoppage, loose bentonite supplied by CETCO or approved equal.
- B. Natural clay dam shall be manufactured with natural material approved by Engineer. Contractor shall submit permeability testing results of proposed natural clay source.

2.08 ACCESSORIES

- A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 3 inches wide and 5 mils thick minimum, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 2'-6" deep.
- B. Tape Colors: Provide tape colors to utilities as follows:
1. Blue: Water systems.
 2. Green: Sewer systems.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect structure, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- D. Provide tree protection as required.
- E. Obtain copies of all applicable permits governing excavation.

3.02 EXCAVATION CLASSIFICATIONS

- A. Excavation is classified as follows and includes excavation to required subgrade elevations. Excavation will be classified as earth excavation or rock excavation on land and as submerged excavation or submerged rock excavation below mean low water of tidal areas as follows:
 - 1. Earth excavation includes roadway excavation of pavements, bases, subbases and subgrades, and other obstructions visible on surface; underground structures, utilities, and other items indicated to be demolished and removed; together with soil and other materials encountered that are not classified as rock or unauthorized excavation.
 - a) Intermittent drilling, blasting, or ripping to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.
 - 2. Rock excavation includes removal and disposal of rock material and obstructions encountered that cannot be removed by the following heavy-duty rock excavating equipment without systematic drilling, blasting, or ripping.

- a) Rock material includes boulders 1.5 cubic meters or more in volume and rock in beds, ledges, unstratified masses, and conglomerate deposits.
- b) Rock excavation will be paid by unit prices included in the Contract Documents.
- c) Do not excavate rock until it has been classified and cross-sectioned by Engineer.

3.03 STABILITY OF EXCAVATIONS

- A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.

3.04 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 30 mm (0.10 foot). Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.

3.05 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated slopes, lines, depths, and invert elevations.
- B. Excavate uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 300 mm (12 inches) higher than top of pipe or conduit, unless otherwise indicated.
 - 1. Clearance: 300 mm (12 inches) each side of pipe or conduit or as indicated on Drawings.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit or appropriate space for bedding where bedding is required as indicated on Drawings.
- D. Remove all sharp items and objects from trench.
- E. Where encountering rock or another unyielding bearing surface, carry trench excavation 150 mm (6 inches) below invert elevation to receive bedding course.

3.06 EXCAVATION OF PAVED AREAS

- A. Sawcut pavement prior to excavation and again prior to paving to provide a clean, uniform edge.
- B. Minimize disturbance of remaining pavement.
- C. Cut and remove the minimum amount of pavement required to do the Work.
- D. Use shoring and bracing where sides of excavation will not stand without undermining pavement.

3.07 ROCK EXCAVATION shall be performed in accordance with Section 02170, "Use of Explosives."

3.08 TEST PITS

- A. Excavate test pits in locations as directed by Engineer.
- B. Utilize smallest equipment required for excavation and appropriately tracked or wheeled equipment to minimize damage to ground surfaces and vegetation in areas not otherwise to be disturbed by Contractor's activities.
- C. To the extent possible, restore surface conditions to existing prior to excavation.

3.09 APPROVAL OF SUBGRADE

- A. Notify Engineer when excavations have reached required subgrade. Allow time for verification of subgrade elevations prior to proceeding with placement of subbase material.
- B. When Engineer determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work.

- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Engineer.

3.10 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavations under other construction as directed by Engineer.
- B. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Engineer.

3.11 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.
- B. Stockpile soil materials away from edge of excavation. Do not store within drip line of remaining trees.
- C. Stockpiling excavated soils along roadway is prohibited.

3.12 DEWATERING

- A. Prevent surface water and subsurface or groundwater from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- C. Do not allow water to accumulate in excavations. Provide and maintain pumps, dewatering system components necessary to convey water away from excavations.
- D. Convey water removed from excavations and rain water to collection or run-off areas. Establish and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches.

3.13 BACKFILL AND FILL

- A. Place acceptable soil material in layers to required elevations as shown on the Drawings and as listed below.
- B. Fill, backfill, and compact to produce minimum subsequent settlement of the material and provide adequate support for the surface treatment or structure to be placed on the material.
- C. Place material in approximately horizontal layers of beginning at lowest area to be filled. Do not impair drainage.
- D. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Scarify surfaces so that fill material will bond with existing surface.
- E. When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.
- F. Place backfill and fill materials in layers not more than 300 mm (12") in loose depth for material compacted by heavy compaction equipment, and not more than 150 mm (6") in loose depth for material compacted by hand-operated tampers. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
- G. Place backfill and fill materials evenly adjacent to structures, to required elevations. Prevent wedging action of backfill against structures by carrying material uniformly around structure to approximately same elevation in each lift. No backfill shall be placed around new concrete structures until concrete has reached 75% of its design strength.
- H. Do not allow heavy machinery within five feet of structures during backfilling and compaction.
- I. Backfill excavations as promptly as Work permits, but not until completion of the following:
 - 1. Acceptance of construction below finish grade.

2. Surveying locations of underground utilities for record documents.
 3. Testing, inspecting, and approval of underground utilities.
 4. Removal of trash and debris from excavation.
 5. Removal of temporary shoring and bracing, and sheeting.
 6. Where sheeting is to remain, cut off temporary piling drain below bottom of structures and remove in a manner to prevent settlement of structure or utility, or leave in place.
- J. Use care in backfilling to avoid damage or displacement of underground structures and pipe.
- K. Backfill under all existing utility pipes crossed by sewer construction with 19 mm (3/4") crushed stone or flowable fill. The crushed stone backfill will extend continuously from the bedding of the new sewer to the utility pipe crossed, including a 150 mm (6") thick envelope of crushed stone all around the existing utility pipes. The 19 mm (3/4") crushed stone backfill shall stand at its own angle of repose. No "haunching" or "forming" with common fill will be allowed.

3.14 UTILITY TRENCH BACKFILL

- A. Place and compact bedding course on rock and other unyielding bearing surfaces and to fill unauthorized excavations. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Bed pipe in crushed stone to limits of bedding and requirements for remaining trench backfill.
- C. Trenches in cross-country runs: Restore surface to the existing prior to construction. Mound trench 300 mm (6 inches) above existing grade if required by the Engineer.
- D. Place and compact initial backfill of satisfactory soil material or subbase material, free of particles larger than 25 mm (1 inch), to a height of 300 mm (12 inches) over the utility pipe or conduit.

- E. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- F. Coordinate backfilling with utilities testing.
- G. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.
- H. Place and compact final backfill of satisfactory soil material to final subgrade.
- I. Install warning tape directly above utilities, 300 mm (12 inches) below finished grade, except 150 mm (6 inches) below subgrade under pavements and slabs.

3.15 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within two percent of optimum moisture content.
- B. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
- C. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density.
- D. Stockpile or spread and dry removed wet satisfactory soil material.

3.16 COMPACTION

- A. Place backfill and fill materials in layers not more than 300 mm (12 inches) in loose depth for material compacted by heavy compaction equipment, and not more than 150 mm (6 inches) in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Compact to the following minimum densities:

FILL AND BACKFILL LOCATION

DENSITY

Top 600 mm (2 feet) under pavement	95%
Below top 600 mm (2 feet) under pavement	92%
Trenches through unpaved areas	90%
Pipe Bedding	92%
Around street manholes and wet wells	92%

Maximum density: ASTM D1557, modified.

Field density tests: ASTM D2922 (nuclear methods).

- D. Determine actual in place densities using field tests as directed by the Engineer. Tests will be made by an independent laboratory. Costs for initial tests will be paid by Owner or by testing allowance bid item. Subsequent retests will be paid by Contractor.
- E. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Engineer.
- F. At paved area subgrades and at each compacted fill and backfill layer, perform at least one field in-place density test for every 185 M² (2,000 square feet) or less of paved area, but in no case fewer than three tests.
- G. In each compacted initial and final trench backfill layer, perform at least one field in-place density test for each 61 meters (200 feet) or less of trench, and at every 600 mm (2') vertical layer, but no fewer than two tests.
- H. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact, and retest until required density is obtained.

3.17 FINAL DISPOSAL OF EXCESS MATERIALS

- A. Remove excess excavated material not wanted by the Owner and dispose of it off Owner's property to an approved waste dump.
- B. Grade material to the satisfaction of the Owner of the property on which the material is deposited. Keep roads free of debris. Use suitable watertight vehicles for hauling wet materials over roads and streets.

- C. Clean up materials dropped from or spread by vehicles promptly or when directed by the Engineer.
- D. Dispose of materials in accordance with all applicable regulations.

END OF SECTION

SECTION 02510

WATER DISTRIBUTION SYSTEMS

SECTION 02510 - WATER DISTRIBUTION SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. General: This section includes:

1. Water main relocation at proposed culvert crossing.
2. Ductile iron water main.
3. Water line fittings and adapters.
4. Water wedge valves.
5. Valve box extensions.
6. Hydrants.

1.02 RELATED SECTIONS

A. Section 02200 - Earthwork.

1.03 PERFORMANCE REQUIREMENTS

A. Water Main Pressure Ratings: At least equal to 1.5 times system operating pressure, but not less than 200 psig.

1.04 SUBMITTALS

A. Product data for pipe, fittings, and valves.

B. Record drawings at project closeout of installed water service piping and products in accordance with requirements of Division 1, Section 'Project Closeout'.

1.05 QUALITY ASSURANCE

- A. For water line work, comply with all requirements of the water utility owner. All materials and workmanship are subject to approval by the water utility.
- B. Perform all water line relocation work in accordance with Department of Human Services standards, where more stringent than local requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Use the following precautions for pipes and valves during storage:
 - 1. All materials shall be kept safe from damage. Materials shall be kept free from dirt and foreign materials at all times.
 - 2. Store gaskets in cool location out of direct sunlight. Gaskets should not come in contact with petroleum products.
 - 3. Protect from moisture and dirt.

1.07 SEQUENCING AND SCHEDULING

- A. Coordinate relocation of water main with Owner and Maine Department of Transportation's Contractor.

PART 2 - PRODUCTS

2.01 BURIED PIPES AND TUBES

- A. General: Provide fittings and other required piping accessories of same type and class of material as conduit, or of material having equal or superior physical and chemical properties.
- B. Ductile-Iron Pipe: AWWA C151, thickness Class 52.
 - 1. Lining: AWWA C104, cement mortar, seal coated.
 - 2. Gaskets, Glands, and Bolts and Nuts: AWWA C111.
 - 3. Mechanical-Joint-Type or Push-On Type Pipe: AWWA C111, rubber gaskets, ductile or cast iron glands, and stainless steel bolts and nuts.

4. Exterior Coating: Bituminous.

2.02 PIPE AND TUBE FITTINGS

A. Ductile Iron Pipe Fittings: AWWA C110, ductile iron, 250 psig (1725 kPa) minimum pressure rating.

2.03 JOINING MATERIALS

A. Ductile Iron Pipe and Ductile Iron or Cast Iron Fittings: The following materials apply:

1. Mechanical Joints: AWWA C111 ductile iron or gray iron glands, high strength steel bolts and nuts, and rubber gaskets.

B. Gaskets: Rubber.

C. Bolts and Nuts: AWWA C111.

D. Equal to: Megalug.

E. Products with set screw grips not allowed.

2.04 VALVES

A. Resilient Wedge Valves:

1. Comply with AWWA C509.

2. Equal to Mueller Series 2360.

3. Working pressure 250 psi (1725 kPa).

4. Test pressure 400 psi (2760 kPa).

5. Wedge shall be ductile iron encapsulated in urethane rubber bonded permanently to meet ASTM 2000.

6. Stems shall be cast bronze with integral thrust collar.

7. Two O-ring seals shall be provided above thrust collar and be replaceable with valve fully open under rated working pressure.
8. Two low torque Delvin thrust bearings shall be located above and below stem collar.
9. Actuator stem nut shall be cast iron.
10. Actuator nut shall be held onto valve with removable nut. Stainless steel punchout pins or hex nuts shall not be acceptable.
11. All bolts shall be Type 18-8 stainless steel.
12. Valve type shall be MJ x MJ unless other connection type required in-field.
13. UL and FM approved.

B. Gate Box Risers:

1. Ductile iron, gate box riser.
2. Top flange and minimum 5 1/4" (133 mm) inside diameter.
3. Box cover shall be 2" (50 mm) drop-type cover to fit 5 1/4" (133 mm) opening.
4. Lettering "WATER".
5. Interior and exterior of all components shall be coated with bituminous.

2.05 HYDRANTS (OWNER PROVIDED)

1. Equal to Mueller Super Centrion 250 Fire Hydrant.
2. Meeting AWWA C-502-85.
3. Body shall be cast iron with ductile iron cap nut.
4. Breakoff flange at bottom.

5. Compression type hydrant with main valve closing under water pressure.
6. Rising stem to indicate open/close.
7. Valve opening 5 1/4" (133 mm).
8. O-ring seals at stem.
9. Plugged drain required.
10. Two hose nozzles at 2 1/2" (63 mm) with NSF threads.
11. One pumper nozzle with 4 1/2" (114 mm) NSF threads shall be provided in front of hydrant.
12. Galvanized chain on nozzles.
13. Opens right.
14. Exterior finish: Red alkyd-gloss enamel paint.

2.06 ANCHORAGES

- A. Clamps, Straps, and Washers: ASTM A 506, steel.
- B. Rods: ASTM A 575, steel.
- C. Rod Couplings: ASTM A 197, malleable iron.
- D. Bolts: ASTM A 307 steel.
- E. Cast Iron Washers: ASTM A 126, gray iron.
- F. Pipe Lubricant: Suitable for use in potable water supply.

PART 3 - EXECUTION

3.01 PIPE

- A. Grade trench bottom to provide a smooth, firm, stable, and rock-free foundation for all buried pipes.
- B. Remove unstable, soft, and unsuitable materials at trench bottom upon which pipes are to be laid and filled with compacted select backfill.
- C. Bedding for ductile iron pipe shall be gravel or native material as approved by engineer from 150 mm (6 inches) below to 150 mm (6 inches) above pipe.
- D. Ductile-Iron Pipe: Install with cement mortar lined mechanical joint and retainer glands or push on joint fittings and rubber gaskets in accordance with AWWA C600.
- E. Clean interior of pipe thoroughly prior to installation. Utilize plugs to minimize entry of foreign materials into pipe.
- F. Torque wrenches required to tighten all mechanical joint fittings with applied torque conforming to pipe and fitting manufacturer's requirements.
- G. Piping shall be carefully lowered into the excavation. Suitable excavated material shall be placed to maintain equal depth on both sides of the pipe and to prevent movement of the pipe from its proper alignment.
- H. All damage resulting from inadequate bracing or shoring will be the responsibility of the Contractor, who shall make all necessary repairs at his/her own expense.
- I. The Contractor shall use extra caution to avoid disturbing any water service connections. Any disruption of water service shall be immediately reported to the Water Company and the property Owner.
- J. Property owners whose driveways will be blocked shall be notified 24 hours in advance of the excavation. Driveways shall not be blocked at night without the expressed consent of the property owner.

- K. Pipe shall be laid directly on the trench bottom. Prior to lowering pipe into trench, the trench bottom shall be made flat and cut true and even to grade so as to provide continuous contact of the trench bottom with the pipe.
- L. No pipe shall be laid, in wet trench conditions, on frozen trench bottom, or when Engineer determines weather conditions are unsuitable for proper installation.

3.02 EXISTING WATER MAIN CONNECTION

- A. Tap water main location indicated in coordination with requirements of Water Company.
- B. Install tapping sleeve and tapping valve in accordance with manufacturer's instructions. Position flanged outlet for wedge valve.

3.03 PLACEMENT OF WATER LINE THRUST BLOCKS

- A. Concrete shall be poured in place or precast:
 - 1. Poured in place thrust blocks shall be constructed by pouring concrete between the fitting and the undisturbed wall of the trench. Care shall be exercised to ensure that the concrete is placed clear of joint accessories, bolts, nuts, and flanges.
- B. Thrust blocks are required whenever the pipe:
 - 1. Changes direction at tees, bends, crosses, and tapping sleeves.
 - 2. Changes sizes as at reducers.
 - 3. Stops as at dead ends and hydrants.

3.04 HYDRANTS

- A. Install fire hydrants in locations indicated on drawings and to requirements of Water Company.
- B. Clean hydrants prior to installation.
- C. Support hydrant to maintain vertical position while concrete restraints are curing.

3.05 FLUSHING AND DISINFECTION

- A. General: At completion of water distribution line installation but prior to connection to existing water supply, flush and disinfect in conformance with AWWA C651, the Maine Department of Human Services, and Water Department requirements.
- B. Initial flushing shall be conducted to remove dirt, sediment and debris from the line. Ductile iron pipe shall be flushed at a rate of 2.5 FPS (0.76 MPS) and PVC pipe shall be flushed at a rate of 3.0 FPS (0.91 MPS) in accordance with AWWA C605-94.
- C. Disinfect the lines using one of two methods in accordance with AWWA C651-99:
 - 1. Slug method – Apply 100 mg/l slug dose of free chlorine throughout the entire line length for a minimum of three hours. Time begins when the 100 mg/l dose reaches the end of the line. Over a three hour period, the free chlorine level in the line may not fall below 50 mg/l.
 - 2. Continuous Feed Method – Apply a 1% chlorine bleach solution to the lines to provide a free chlorine level of at least 25 mg/l at the end of the line. After 24 hours, the residual at the end of the line must not be below 10 mg/l.
- D. During the disinfection process, flush all valves and hydrants to ensure adequate chlorine contact.
- E. The disinfection test fails and must be repeated if any of the above residual target levels are not met.
- F. Final flushing of the line must be completed within 24 hours after the required contact period to remove chlorine to a residual of 1 mg/l or less.
- G. Bacteriologic Test: Two samples for coliform testing must be conducted 24 hours apart from a location every 365 LM (1200 LF) along the pipe and also at the end of the new line. Sampling must begin no less than 16 hours after the completion of flushing.
- H. If bacteria tests fail, lines must be reflashed, re-disinfected, and resampled until the tests pass.

3.06 TESTING

- A. Notify Engineer and Water Department at least 48 hours prior to testing.
- B. Hydrostatic testing of completed lines shall be at least 1.5 times the working pressure for 2 hours, but shall be no less than 200 psi (1380 kPa).
- C. Leakage shall be less than the allowable quantities as defined in AWWA 600-77 Section 4 as shown below:

Allowable Leakage per 30 meters (100 ft) of Pipeline – 10⁻³m³/hr

Avg. Test pressure psi (mPa)	Nominal Pipe Diameters – mm.															
	75	100	150	200	250	300	350	400	450	500	600	750	900	1050	1200	1350
450 (3.10)	1.81	2.42	3.59	4.80	6.01	7.22	8.43	9.64	10.85	12.02	14.44	18.07	21.66	25.29	28.88	32.51
400 (2.76)	1.70	2.27	3.40	4.54	5.67	6.80	7.94	9.07	10.21	11.34	13.61	17.01	20.45	23.85	27.25	30.66
350 (2.41)	1.59	2.12	3.18	4.23	5.29	6.39	7.45	8.51	9.56	10.62	12.74	15.91	19.13	22.30	25.48	28.65
300 (2.07)	1.47	1.97	2.95	3.93	4.91	5.90	6.88	7.86	8.85	9.83	11.79	14.74	17.69	20.64	23.59	26.54
275 (1.90)	1.40	1.89	2.84	3.78	4.69	5.63	6.58	7.52	8.47	9.41	11.30	14.10	16.93	19.77	22.60	25.40
250 (1.72)	1.36	1.78	2.68	3.59	4.61	5.37	6.27	7.18	8.09	8.96	10.77	13.46	16.14	18.86	21.55	24.23
225 (1.55)	1.29	1.70	2.57	3.40	4.59	5.10	5.97	6.80	7.67	8.51	10.21	12.78	15.31	17.88	20.45	22.79
200 (1.38)	1.21	1.63	2.42	3.21	4.01	4.84	5.59	6.43	7.22	8.01	9.64	12.06	14.44	16.86	19.24	21.66
175 (1.21)	1.13	1.51	2.23	3.02	4.15	4.50	5.25	6.01	6.77	7.48	9.00	11.26	13.53	15.76	18.03	20.26
150 (1.03)	1.06	1.40	2.08	2.80	4.12	4.16	4.88	5.56	6.27	6.96	8.35	10.43	12.51	14.59	16.67	18.79
125 (0.86)	0.95	3.53	1.89	3.66	3.18	3.82	4.46	5.07	5.71	6.35	7.60	9.53	11.42	13.34	15.23	17.12
100 (0.69)	0.87	1.13	1.70	2.27	2.84	3.40	3.97	4.54	5.10	5.67	6.80	8.505	10.21	11.91	13.61	15.31

END OF SECTION

SECTION 02700

SEWERAGE AND DRAINAGE

SECTION 02700 - SEWERAGE AND DRAINAGE

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide exterior sanitary and storm sewer systems as shown on the Drawings.
This section includes:

Smooth interior polyethylene (SI CPE) clay dam drainage pipe
Fernco couplings
Abandoning sewerage systems
PVC gravity sewers
PVC gravity building sewers
Sewer line cleanouts
Fittings and couplings between pipe types
Maximum allowable open trench limitations

1.02 RELATED SECTIONS

- A. Section 02160 - Excavation Support Systems.
B. Section 02170 - Use of Explosives.
C. Section 02200 - Earthwork (includes excavation, bedding, backfill, compaction).
D. Section 02720 - Precast Concrete Sewerage Structures.

1.03 DEFINITIONS

- A. Drainage Piping: System of sewer pipe, fittings, and appurtenances for gravity flow of storm drainage.
B. Sewerage Piping: System of sewer pipe, fittings, and appurtenances for gravity flow of sanitary sewage.

1.04 PERFORMANCE REQUIREMENTS

- A. Gravity Flow, Non-pressure Piping Pressure Ratings: At least equal to system test pressure.

1.05 SUBMITTALS

- A. Submit each item in this Article according to the Conditions of the Contract and Division 1 Specifications Sections:

1. Manufacturer's product data and installation instructions.
2. Certified copies of tests on pipe units.
3. Shop Drawings or Catalog Cuts of adapters for joining pipes of different materials.
4. Construction Records: Record depth and location of the following:
 - a) House service connection points, bends in house service connection points to sewer main;
 - b) Bends
 - c) Repairs to existing pipes
 - d) All utilities encountered during excavation
5. Record neatly in a permanently bound notebook and submit at substantial completion. Provide access to records for Engineer at all times. Submit copies to Engineer on a weekly basis.

1.06 QUALITY ASSURANCE

- A. Environmental Agency Compliance: Comply with regulations pertaining to sanitary sewerage and storm drainage systems as promulgated by Maine DEP and U.S. EPA.
- B. Utility Compliance: Comply with regulations pertaining to sanitary sewerage and storm drainage systems. Include standards of water and other utilities where appropriate and Maine DOT utility location and road opening permits.

- C. Product Options: Drawings indicate sizes, profiles, connections, and dimensional requirements of system components and are based on specific manufacturer types indicated.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Do not store plastic structures in direct sunlight.
- B. Do not store plastic pipe or fittings in direct sunlight.
- C. Protect pipe, pipe fittings, and seals from dirt and damage.

1.08 PROJECT CONDITIONS

- A. Site Information: Perform site survey, research public utility records, and verify existing utility locations prior to excavation.
- B. Locate existing structures and piping to be closed and abandoned or to remain.
- C. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted under the following conditions and then only after arranging to provide acceptable temporary utility services.
 - 1. Notify Engineer not less than 72 hours in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without receiving Engineer's written permission.

1.09 SEQUENCING AND SCHEDULING

- A. Coordinate sanitary sewerage system connections to utility company's sanitary sewer.
- B. Coordinate with other utility work.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. Plastic Polyvinyl Chloride (PVC) Gravity Sewer:

1. ASTM D3034 strength requirement SDR 35 with push on gasketed joints meeting ASTM D3212.
2. Gaskets elastomeric seal meeting ASTM F477.
3. Fittings of identical joint and gasket design.

B. Smooth Interior Corrugated Polyethylene Pipe (SI CPE) Solid Drain Pipe:

1. ASTM D3350 Annular Smooth Interior pipe meeting 'Standard Specifications for Polyethylene Plastic Pipe and Fitting Materials'.
2. Polyethylene pipe fittings of identical joint design.
3. Solid or perforated as defined in project plans.

2.02 PIPE COUPLINGS

A. Non-pressure PVC sewers shall be Fernco flexible coupling for appropriate pipe or equal.

B. Water main crossings shall utilize full section of ductile iron pipe coupled at each end to PVC pipe using solid sleeve ductile iron mechanical joint fittings consisting of:

1. Class 350 ductile iron meeting ANSI/AWWA A21.53/C-153.
2. Joints shall meet ANSI/AWWA A21.11/C-111.
3. Cement linings shall meet ANSI/AWWA A21.4/C-104.
4. Mechanical joint nuts and bolts shall be Corten or ductile iron, high strength, low alloy steel meeting ANSI/AWWA A21.11/C-111.

5. Mechanical joint gaskets shall meet AWWA C-111 and ANSI A21.11 for SBR rubber gaskets and shall be compatible with two types of pipe ends being jointed.

C. SI CPE pipe shall be fittings provided by pipe manufacturer.

2.03 MARKING TAPE

A. Metal detector compatible for future location.

B. Width of 75 mm (three inches) minimum.

C. Green color required.

D. Equal to Liveguard III by Tri-Sales Inc.

2.04 CLEANOUT COVER

A. Neenah # R-1978-A2 Frame and cover, or equal.

PART 3 - EXECUTION

3.01 INSTALLATION OF GRAVITY SEWERS AND FITTINGS

A. General Locations and Arrangements: Drawings (plans and details) indicate the general location and arrangement of underground sewerage and drainage systems piping. Location and arrangement of piping layout take into account many design considerations. Install piping as indicated, to extent practical.

B. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

C. Laser beam required for establishing pipe invert grades in field.

D. Bedding for each pipe length shall be completed before next pipe length installed.

- E. Lay pipe to line and grade shown on the Drawings. If grade is not shown, determine elevations of start and finish points for each run of pipe. Lay pipe to a uniform grade between these points.
- F. Use manholes for changes in direction, except where fittings or cleanouts are indicated. Use fittings for branch connections, except where direct tap into existing sewer is indicated.
- G. Use proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reduction of the size of piping in the direction of flow is prohibited.
- H. Extend sewerage piping and connect to building's sanitary drain, of sizes and in locations indicated. Terminate piping as indicated.
- I. Lay pipe in the dry. Do not use installed pipe to remove water from Work area.
- J. Flush all pipe and remove debris. Flushing method must be approved by Engineer. Gravity flushing is not acceptable.
- K. Size of house service leads: 100 mm (4") or 150 mm (6") unless otherwise indicated. Depth and location of service to be determined by Engineer in field.
- L. Provide 2"x4" (50 mm x 100 mm) witness stakes at end of all new capped sewer stubs.

3.02 WATER MAIN CROSSINGS

- A. Preferred vertical separation distances between water mains and sewer lines at the crossings of these two utilities is 450 mm (18") between the bottom of the water main and the top of the sewer line with the water main being located over the sewer main.
- B. Where the plans show preferred vertical separation distances not being attained, the following measures will be taken:
 - 1. Sewer line material shall be changed from PVC to ductile iron over a distance 3 M (10 LF) from each side of the water main centerline.
 - 2. Ductile iron sewer pipe lengths shall be 6 meters (twenty-feet) or the longest length practical under specific field conditions.

3. Solid sleeves rubber gasketed mechanical joint sleeves shall be used to transition the PVC to ductile iron pipe materials.
4. Sewer joints shall be the maximum possible distance away from the centerline of the water main.

3.03 CLEANOUT INSTALLATION

- A. Install cleanouts and riser extension from sewer pipe to cleanout at grade. Use cast-iron soil pipe or SDR 21 PVC fittings in sewer pipes at branches for cleanouts and cast-iron soil pipe or SDR 21 PVC for riser extensions to cleanouts. Install piping so cleanouts open in direction of flow in sewer pipe.
- B. Set cleanout frames and covers in earth in a cast-in-place concrete block, 450 mm x 450 mm x 300 mm deep (18 by 18 by 12 inches). Set with tops 25 mm (1 inch) below surrounding earth grade.
- C. Set cleanout frames and covers in paving with tops flush with surface of paving.
- D. Set cleanout frames and covers in gravel or lawns 300 mm (12") below grade and provide sealed cap.

3.04 ABANDONING SEWERAGE PIPES

- A. Close open ends of abandoned underground piping that is indicated to remain in place. Include closures strong enough to withstand hydrostatic and earth pressures that may result after ends of abandoned piping have been closed. Use either of the following procedures:
 1. Close open ends of piping with at least 200 mm (8 inch) thick brick masonry bulkheads.
 2. Close open ends of piping with threaded metal caps, plastic plugs, or other acceptable methods suitable for size and type of material being closed. Do not use wood plugs.
 3. Close open ends of pipe by encasing in concrete mass that extends at least 450 mm (18") outside of pipe end in all directions.

3.05 EXISTING UTILITIES

- A. If, either for the convenience of the contractor, or accidentally existing utilities or structures of any kind are disrupted, damaged, or proposed temporarily disconnected, contractor shall repair, reconnect, or reinstall the utility to the complete satisfaction of the Utility Owner, Engineer, and Owner. This may require replacement of existing facilities with new materials.

3.06 FIELD QUALITY CONTROL

- A. Clear interior of piping and structures of dirt and superfluous material as the work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.
 - 1. In large, accessible piping, brushes and brooms may be used for cleaning.
 - 2. Place plug in end of incomplete piping at end of day and whenever work stops.
 - 3. Flush piping between manholes and other structures, if required by authorities having jurisdiction, to remove collected debris.
- B. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 600 mm (24 inches) of backfill is in place, and again at completion of the Project.
 - 1. Submit separate reports for each system inspection.
 - 2. Defects requiring correction include the following:
 - a) Alignment: Less than full diameter of inside of pipe is visible between structures.
 - b) Deflection: Flexible piping with deflection that prevents passage of a ball or cylinder of a size not less than 92.5 percent of piping diameter.
 - c) Crushed, broken, cracked, or otherwise damaged piping.
 - d) Infiltration: Water leakage into piping.

- e) Exfiltration: Water leakage from or around piping.
- C. Replace defective piping using new materials and repeat inspection until defects are within allowances specified.
- D. Reinspect and repeat procedure until results are satisfactory.
- E. Test new piping systems and parts of existing systems that have been altered, extended, or repaired for leaks and defects.
 - 1. Do not enclose, cover, or put into service before inspection and approval.
 - 2. Test completed piping systems according to authorities having jurisdiction.
 - 3. Schedule tests, and their inspections by authorities having jurisdiction, with at least 48 hours' advance notice.
 - 4. Submit separate reports for each test.

3.07 TESTING OF GRAVITY SEWERS

- A. Test all gravity sewer pipes after backfilling. Cap off all house service stubs on main line before testing. Perform tests in presence of Engineer.
- B. A maximum of 300 meters (1000 feet) of pipe may be installed but not tested at any time.
- C. Use low pressure air test as follows:
 - 1. Plug ends of section to be tested.
 - 2. Supply air slowly to the pipe to be tested until the air pressure inside the pipe is 4.0 psi (28 kPa) greater than the average back pressure of any groundwater submerging the pipe.
 - 3. Disconnect air supply and allow a minimum of two minutes for stabilization of pressure.
 - 4. Following stabilization period measure drop in pressure over a six minute test period.

5. Acceptable drop: No more than 1.0 psi (6.90 kPa).
- D. Deflection Test for Gravity Sewer Pipe: Test flexible pipe for deflection after a minimum of 30 days after final backfilling, using a rigid ball or mandrel of 92.5% of the inside diameter of the pipe. No mechanical pulling devices permitted.
- E. Repair all pipes not passing tests using materials and methods approved by the Engineer, and retest.

END OF SECTION

SECTION 02720

PRECAST CONCRETE SEWERAGE STRUCTURES

SECTION 02720 - PRECAST CONCRETE SEWERAGE STRUCTURES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide precast concrete structures as shown on the Drawings and as specified.
This section includes:

Precast standard sanitary manholes and all accessories
Precast drop manhole and all accessories as required
Precast concrete riser rings
Frames, covers, and grates
Masonry materials

1.02 RELATED SECTIONS

- A. Section 02200 - Earthwork.
B. Section 02700 - Sewerage and Drainage.

1.03 QUALITY ASSURANCE

- A. Provide precast structures, risers, and covers capable of supporting AASHTO H-20 loading.
B. All precast concrete shall comply with ASTM C913 "Standard Specification for Precast Concrete Water and Wastewater Structures."

1.04 SUBMITTALS

- A. Submit shop drawings for precast structures. Show components to be used, elevations of top and base of precast sections, base and pipe inverts, location of pipe penetrations and steps for each precast concrete item.
B. Provide manufacturers' product data and installation instructions for frames, covers, grates, precast items, sleeves, joint sealants, and frost barrier.
C. Field confirm finished grade elevation prior to ordering precast concrete structures.

PART 2 – PRODUCTS

2.01 PRECAST CONCRETE REQUIREMENTS

- A. General: Cast-in-place concrete according to ACI 318, ACI 350R, and the following
1. Cement: ASTM C 150, Type II.
 2. Fine Aggregate: ASTM C 33, sand.
 3. Coarse Aggregate: ASTM C 33, crushed gravel.
 4. Water: Potable.
- B. Structures: Portland-cement design mix, 3000 psi (20.69 mPa) minimum at 28 days, with 0.45 maximum water-cement ratio.
1. Reinforced Fabric: ASTM A 185, steel, welded wire fabric, plain.
 2. Reinforcement Bars: ASTM A 615, Grade 60 (ASTM A 615M, Grade 400), deformed steel.
- C. Structure Channels and Benches: Factory or field formed from concrete. Portland-cement design mix, 3000 psi (20.69 mPa) minimum, with 0.45 maximum water-cement ratio.
- D. Include channels and benches in manholes.
- E. Manhole Channels: Concrete invert, formed to same width as connected piping, with height of the vertical sides to 3/4 of the pipe diameter. Form curved channels with smooth, uniform longest possible radius and slope.
1. Invert Slope: 30 mm (1.2 inches) through manhole, unless otherwise indicated on Drawings.
- F. Manhole Benches: Concrete, sloped to drain into channel.
1. Slope: 83 mm per meter (1 inch per foot).

2.02 MANHOLES

- A. Precast Concrete Manholes: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for rubber gasket joints meeting AASHTO H-20 loading.
- B. Ballast: Increase thickness of precast concrete sections or add concrete to base section, as required to prevent flotation.
- C. Base Section: Minimum thickness for floor slab, as shown on plans, and minimum thickness for walls and base riser section, as shown on plans, and having a separate base slab or base section with integral floor.
- D. Riser Sections: Minimum thickness, as shown on plans, 1.2 meters (48 inch) minimum diameter, or as shown on plans, and lengths to provide depth indicated.
- E. Top Section: Eccentric cone type, unless concentric cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
- F. Sealants: ASTM C 443 butyl rubber, two rings sealant around each joint for watertight connection.
- G. Steps: Provide steps for manholes greater than four feet deep.
 - 1. ASTM C 478 individual steps or ladder.
 - 2. Aluminum alloy 6061-T6 or copolymer polypropylene plastic with 1/2" Grade 60 reinforcing bar meeting ASTM D4101 Type II and ASTM A 615.
 - 3. Meet all OSHA requirements.
 - 4. Minimum width 350 mm (14").
 - 5. Maximum spacing 300 mm (12") on center.
 - 6. Coat with bitumastic paint where cast in concrete.

H. Pipe Connections:

1. Pipe sizes 150 mm (6") or larger: Flexible manhole sleeves equal to CP series manufactured by Interpace Corp. size to fit diameter and type of pipe without use of gaskets.
2. Pipe sizes less than 150 mm (6"): Flexible Manhole sleeves as above or, thermoplastic pipe sleeve equal to "Link-Seal Century Line" model CS100 by Thunderline Corp. with sleeve seal equal to "Link-Seal" by Thunderline Corp.
3. As specified on drawings if in conflict with above.

- I. Drop Manholes: Fabricate 304 stainless steel brackets and provide stainless steel anchor bolts and straps to firmly secure vertical pipe into concrete manhole wall. Provide pipe and fittings as indicated on Drawings.

2.03 PROTECTIVE COATINGS

- A. Include factory or field applied protective coatings to structures and appurtenances according to the following:
 1. Coating: 1 or 2 coat, coal-tar epoxy, bitumastic, or Conseal coating, 15 mil minimum thickness, except where otherwise indicated.
 2. Manholes: On exterior surface.

2.04 RISER RINGS TO GRADE

- A. Provide reinforced riser rings to grade.
- B. Use number of rings required to achieve grade elevation.
- C. Seal all joints with bitumastic sealant.
- D. Ring inside diameter shall be 600 mm (24").

2.05 MANHOLE FRAMES AND COVERS

- A. Fully machined frame and cover.

- B. Gray cast iron construction meeting ASTM A48 Class 30.
- C. Rated for H-20 wheel loading.
- D. Diamond pattern on cover.
- E. Lettering on cover should be 75 mm (3") high and marked as "SEWER".
- F. Minimum weight shall be 150 kg (330 pounds).
- G. Minimum flange width: 100 mm (4").
- H. Minimum riser height: 150 mm (6").
- I. Minimum inside frame diameter: 625 mm (25 inches).
- J. Minimum cover diameter: 619 mm (24 3/4").
- K. Minimum clear frame opening diameter: 575 mm (23").
- L. Equal to Frame No. 23/62060-600 and Cover No. 23/62070-600 by E.J. Prescott Inc.

2.06 FROST BARRIERS

- A. Frost Barrier: U.V. Resistant, high grade polyethylene, minimum thickness 6 mils.

2.07 MISCELLANEOUS

- A. Manhole cover lifting tools: Provide 2 lifting tools similar to Neenah cover lift compatible with manhole covers provided.

PART 3 - EXECUTION

3.01 INSTALLATION OF PRECAST STRUCTURES

- A. Place bases on compacted bedding material so precast structure is plumb and pipe inverts are at proper elevations.
- B. Place riser and top sections in the appropriate height combinations.

- C. Plug all lifting holes inside and out with non-shrink grout.
- D. Follow manufacturer's instructions for sealing joints between precast sections. Provide two rings of 25 mm (1") diameter butyl rubber sealant.
- E. Point joints inside and out with butyl caulk.
- F. Set frames and covers to 12.5 mm (1/2") below final pavement grade or as shown on the Drawings in paved areas. Set 50 mm (2") below finish grade in unpaved roads or set at 600 mm (24") above grade in cross country runs.
- G. Provide adequate temporary covers to prevent accidental entry until final placement of frame and cover is made.
- H. Use two rings of 25 mm (1-inch) diameter butyl rubber sealant between frame and riser rings.
- I. Provide downward force to frame so as to compress the joint and provide a watertight seal and prevent future settlement.
- J. Point compressed joint with butyl rubber caulk sealant.
- K. Set frames and covers to final grade only after pavement base course has been applied, or after final grading of gravel roads.
- L. Install seals at each joint if specified.
- M. Install cover seal if specified.

3.02 FROST BARRIERS

- A. Wrap each installed precast structure to the maximum excavation depth or not less than 2.1 meters (7 ft) below grade, with a minimum of four layers of 6 mils each of polyethylene plastic.
 - 1. Clean manhole exterior of all dirt and remove any protrusions.
 - 2. Apply a 150 mm (6 inch) wide vertical strip of bituminous waterproofing adhesive from the top of manhole to the bottom of the plastic wrap depth.

3. Start poly wrap at adhesive strip and proceed around manhole continuously, overlapping adhesive strip a minimum of 600 mm (24") on the final layer.
4. Tuck and pleat poly at top in a continuous manner, minimizing size of folds. Extend poly past top of manhole frame and temporarily tuck remainder inside frame, until final backfill and paving.
5. Paved areas: Cut poly flush with manhole rim after pavement is in place.
6. Unpaved areas: Pull loose ends of poly together, remove excess air and tie off end with galvanized wire. Bury with manhole below grade.

3.03 LEAKAGE TESTING - MANHOLES

- A. Tests must be observed and certified by the Engineer. Manholes and tanks must be complete including backfill for final test acceptance except for shelf and invert brickwork. Plug all pipes and other openings in the manhole walls prior to test.
- B. Infiltration Test: For manholes with groundwater table above highest joint. Manhole passes infiltration test if there is no visible leakage into manhole.
- C. Exfiltration Test:
 1. Plug pipes into and out of manhole and secure plugs.
 2. Lower groundwater table (GWT) to below manhole. Maintain GWT at this level throughout test. Provide means of determining GWT level at any time throughout test.
 3. Fill manhole with water to top of cone.
 4. Allow a period of time for absorption (determined by Contractor).
 5. Refill to top of cone.
 6. Determine volume of leakage in an 8 hour (min) test period and calculate rate.
 7. Acceptable leakage rate: Not more than 0.012 m³ per vertical meter (1 gallon per vertical foot) per 24 hours.

- D. Manhole Vacuum Test: The manhole being tested must not be backfilled or wrapped with vapor barrier. The test is passing if the manhole holds 250 mm (10”) Mercury vacuum for 3 minutes, with 25 mm (1”) of Mercury loss allowable.

3.04 REPAIRS TO NON-CONFORMING NEW MANHOLES

- A. Determine causes of all leaks and repair them. Perform earthwork required if manhole has been backfilled.
- B. Perform repairs using methods and materials approved by the Engineer. Remove and replace or reconstruct manhole if necessary. Remove and replace defective sections if required by Engineer.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide all cast-in-place concrete work, including:

Concrete thrust blocks at all pressure pipe bends
Manhole inverts
Blocks for cleanout covers

1.02 QUALITY ASSURANCE

- A. Codes and Standards: Comply with provisions of following codes, Specifications and standards, except where more stringent requirements are shown or specified:
ACI "Manual of Concrete Practice".
Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice".
ANSI or ASTM standards for concrete as referenced or appropriate.
- B. Testing by Owner: Field tests will be by the Engineer's representative or by an independent testing laboratory.
1. Tests will be done for slump, air content and concrete temperature.
 2. Compression test specimens will be taken and tested for compression.
- C. Testing and Services by Contractor: Performed by an approved testing laboratory at the Contractor's expense:
1. Retesting of rejected materials and installed work.
 2. Any additional testing conducted for early detection of strength to accommodate Contractor's work schedule.
 3. Contractor to furnish equipment including buckets, shovels, and wheelbarrows for proper sampling of concrete mix, facilities for storing

and curing specimens at the job site, and labor to assist technician performing field tests.

- D. Materials and installed work may require testing and retesting at any time during the progress of the Work as directed by the Engineer. Allow free access to material stockpiles and facilities. These tests will be done by an independent approved laboratory at the Contractor's expense.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's product data with application and installation instructions for proprietary materials and items, including:

1. Admixtures.
2. Curing compounds.
3. Others as requested by Engineer.

- B. Material Certificates:

1. Provide materials certificates in lieu of materials laboratory test reports when permitted by Engineer.
2. Material certificates shall be signed by manufacturer and Contractor certifying that each material item complies with, or exceeds, specified requirements.

- C. Samples: Submit samples of materials as specified and as otherwise requested by Engineer, including names, sources and descriptions.

- D. Laboratory Test Reports and Mix Designs:

1. Submit laboratory test reports for concrete materials for all products to be incorporated into work and mix design tests as specified.
2. Testing shall be conducted within twelve months of material use.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Portland Cement: ANSI/ASTM C 150, Type II. Use one brand of cement throughout project, unless otherwise acceptable to Engineer.
- B. Normal Weight Aggregates:
 - 1. ANSI/ASTM C 33, and as herein specified.
 - 2. Provide aggregates from a single source for exposed concrete.
 - 3. Local aggregates not complying with ANSI/ASTM C 33, but which have shown by special test or actual service to produce concrete of adequate strength and durability, may be used when acceptable to the Engineer.
- C. Water: Potable.
- D. Air-Entraining Admixture: ANSI/ASTM C 260.
- E. Water-Reducing Admixture: ANSI/ASTM C 494, Type A, and containing not more than 1% chloride ions.
- F. High Range Water Reducing Admixture (Super Plasticizer): ASTM C 494, Type F or Type G and containing not more than 1% chloride ions.
- G. Calcium chloride not permitted.

2.02 RELATED MATERIALS

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- B. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.
 - 1. Waterproof paper.
 - 2. Polyethylene film.
 - 3. Polyethylene coated burlap.

C. Curing Compound:

1. For concrete surfaces not to receive further surface treatment, provide liquid type membrane forming curing compound complying with ASTM C 309, Type I, Class A. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal equal to Euco cure by Euclid Chemical Co.
2. For surfaces to which there will be subsequent application of grout, waterproofing, sealant, or other treatment, provide dissipating curing compound meeting ASTM C 309, Type 1 or 1D and AASHTO M 148-, Harris Emulsion Kurseal 309 Clear Emulsion, or equal.

D. Evaporation Control: Monomolecular film forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss equal to Confilm by Master Builders.

2.03 PROPORTIONING AND DESIGN OF MIXES

A. Prepare design mixes by either laboratory trial batch or field experience methods as specified in ACI 301.

1. If trial batch method used, use an independent testing facility acceptable to Engineer for preparing and reporting proposed mix design.
2. Test data provided shall be no more than one year old and shall be conducted on materials to be incorporated into work.

B. Submit written reports to Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by Engineer. Include the following in mix design submittals:

- Identification of aggregate source.
- Results of compliance tests for aggregates.
- Scale weights of each aggregate.
- Absorbed water in each aggregate.
- Brand, type, and amount of each cement and each admixture.
- Proportions of each material required per cubic yard.

C. Design mixes to provide normal weight concrete with the following properties.

1. General Use Concrete:

- Type II Portland Cement.
- Min. 28 day compressive strength: 4000 psi.
- Max. water/cement ratio: 0.45.
- Min. cement content: 564 lbs per cubic yard.
- Slump: Concrete for general use: not less than 1", not more than 4".
- Sloping surfaces: slump not more than 3".
- Concrete with high range water reducer (HRWR) admixture: not more than 8".
- Max. aggregate size: 3/4".
- Air Content: 6% +/- 1% by volume for 3/4" aggregate.

- D. Adjustment of Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Engineer before using in work.

2.04 CONCRETE MIXING

A. Job-Site Mixing:

1. Mix materials for concrete in appropriate drum type batch machine mixer.
2. For mixers of one cu. yd., or smaller capacity, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
3. For mixers of capacity larger than one cu. yd., increase minimum 1-1/2 minutes of mixing time by 15 seconds for each additional cu. yds., or fraction thereof.

B. Ready-Mix Concrete:

1. Comply with requirements of ANSI/ASTM C 94, and as herein specified.
2. Water may be added for retempering provided maximum permissible slump and maximum water cement ratio is not exceeded. Do not make additions without notifying the Engineer.
3. Additional field tests and compressive test specimens may be required.
4. Provide batch ticket for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity, and amount of water introduced.

C. Maximum Delivery Time:

1. 1 1/2 hours below 85°F, or
2. When air temperature is between 85° F and 90° F, reduce mixing and delivery time from 1 1/2 hours to 75 minutes, or
3. When air temperature is above 90° F, reduce mixing and delivery time to 60 minutes.
4. Calculation of delivery time shall start at the point that water is first added to the mix.

PART 3 - EXECUTION

3.01 ADMIXTURES

- A. General: Comply strictly with manufacturer's instructions for use of admixtures.
- B. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) meeting ASTM C-494 in concrete, as required, for placement and workability.
- C. Use accelerating admixture meeting ASTM C 494 in concrete slabs placed at ambient temperatures below 50° F (10° C).
- D. High range water reducing admixture may be used in pumped concrete, concrete for heavy use industrial slabs, architectural concrete, parking structure slabs, concrete required to be watertight.

- E. Use air-entraining admixture meeting ASTM C-260 in all concrete. Add air-entraining admixture at six percent or manufacturer's prescribed rate to result in concrete at point of placement having air content within limits stated above.

3.02 CONCRETE PLACEMENT

A. General:

1. Comply with ACI 304, and these specifications.
2. Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in.
3. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel.

B. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness.

1. If a section cannot be placed continuously, provide construction joints as herein specified.
2. Deposit concrete as nearly as practicable to its final location to avoid segregation.
3. Maximum concrete freefall drop shall be four feet.
4. Use chute or tremie to minimize freefall.

C. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.

D. Do not use vibrators to transport concrete horizontally inside forms.

1. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine.
2. Place vibrators to penetrate placed layer and at least 6" into preceding layer.
3. Do not insert vibrators into lower layers of concrete that have begun to set.
4. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

E. Cold Weather Placing:

1. Comply with ACI 306. When air temperature has fallen to or is expected to fall below 40°F (4°C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50°F (10°C), and not more than 80°F (27°C) at point of placement.
2. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures.
3. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
4. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators.

F. Hot Weather Placing:

1. Comply with ACI 305 when hot weather conditions exist that would impair quality and strength of concrete.
2. Maintain concrete temperature at time of placement below 90°F (32°C).
3. Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing.

4. Wet forms thoroughly before placing concrete.
5. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

G. Wet Weather Placing:

1. Do not place concrete in any wet weather event with the exception of light mist or drizzle where, in the opinion of the Engineer, vibration of the concrete might incorporate falling rain into the concrete mixture.
2. Contractor is responsible to assure weather is appropriate prior to concrete pour.
3. Remove all concrete placed in wet weather as directed by Engineer.

3.03 CONCRETE CURING AND PROTECTION

A. General:

1. Comply with ACI 308.
2. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
3. Start curing as soon as free water has disappeared from concrete surface after placing and finishing.
4. Where water cure is utilized, keep continuously moist for not less than 7 days or until 70% of design strength is attained.
5. Where curing compounds are utilized, begin curing procedures immediately following final finishing procedures and before concrete has dried.

B. Curing Methods: Perform curing of concrete by one of the following methods or by combinations thereof:

1. Provide moisture curing with added water by following methods.

- a) Keep concrete surface continuously wet by covering with water.
 - b) Continuous water-fog spray.
 - c) Provide absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.
2. Provide moisture retaining cover curing as follows:
- a) Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive.
 - b) Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. Provide curing compound as follows:
- a) Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours).
 - b) Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions.
 - c) Recoat areas subjected to heavy rainfall within 3 hours after initial application.
 - d) Maintain continuity of coating and repair damage during curing period.
 - e) Do not use non-dissipating curing compounds on surfaces which are to be covered with concrete or to receive subsequent application of grout, waterproofing, adhesive, or other treatments.
 - f) If dissipating curing compounds are used, remove prior to applying future surface treatments in accordance with manufacturer's requirements.

- g) Do not allow curing compound to contact reinforcing steel and waterstops.
- h) Curing compound shall not be used on finish floors where adhesive products will be subsequently applied unless approved by Engineer.

3.04 INADEQUATE CONCRETE STRENGTH

- A. Defective Structural Work: Any work which fails to comply with the requirements of these specifications or does not comply with the acceptance requirements of Chapters 17 and 18 of ACI 301.
- B. Remedies: Work which may be modified to comply with these specifications using methods approved by Engineer may be accepted. All modifications are at the Contractor's expense.
- C. If test results show inadequate concrete strength the following may be required at the Contractor's expense:
 - 1. Additional curing of areas with inadequate concrete.
 - 2. Modifications to mix designs for remaining work.
 - 3. Removal and replacement of concrete.

3.05 PLACEMENT OF PRESSURE PIPE THRUST BLOCKS

- A. Concrete shall be poured in place or precast.
 - 1. Poured in place thrust blocks shall be constructed by pouring concrete between the fitting and the undisturbed wall of the trench. Care shall be exercised to ensure that the concrete is clear of joint accessories, bolts, nuts, and flanges.
- B. Thrust blocks are required wherever the pipe:
 - 1. Changes direction at tees, bends, crosses, and tapping sleeves.
 - 2. Changes sizes, as at reducers.

3. Stops, as at dead ends and hydrants.

3.06 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. The Owner will employ an independent testing laboratory to perform field tests and to submit test reports. If so specified, payment for testing may be through a Contractor's testing allowance.
- B. Sampling and testing for quality control during placement of concrete may include the following, as directed by Engineer:
 1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 2. Slump: ASTM C 143; at point of discharge.
 3. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231 pressure for normal weight concrete.
 4. Concrete Temperature: Test hourly when air temperature is 40° F (4°C) and below, and when 80°F (27°C) and above.
 5. Compression Test Specimen: ASTM C 31; one set of 4 standard cylinders made and cured for each 50 CY or fraction thereof of each type of concrete placed in any one day.
 6. Compressive Strength Tests: ASTM C 39; 1 specimen tested at 7 days, 2 specimens tested at 28 days, 1 specimen retained in reserve for later testing if required.
 - a) When frequency of testing will provide less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if fewer than 5 are used.
 - b) Concrete is satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength, and no individual strength test result falls below specified compressive strength by more than 500 psi.

7. Field Testing for Small Placements: For small placements of 10 cubic yards or less, sampling and testing the first portion of a batch will be required prior to placement. Prior to small placements meet with Engineer and determine an acceptable testing procedure based on the first portion of each batch.

C. Test results will be reported in writing to Engineer.

1. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength and type of break for both 7-day tests and 28-day tests.

D. Additional Tests:

1. The independent testing laboratory will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Engineer.
2. Independent testing laboratory may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as stated in ACI 301.
3. Contractor shall pay for such tests conducted, and any other additional testing as may be required, when unacceptable concrete is identified.

END OF SECTION

SECTION 07200

INSULATION

SECTION 07200 - INSULATION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Install insulation as shown on Drawings and indicated by provisions of this section. Insulation specified in this section includes the following:

Rigid foam insulation

1.02 QUALITY ASSURANCE

Thermal Conductivity: Thicknesses indicated for board insulation are for thermal conductivity (k-value at 75°F or 24°C) specified for each material. Provide adjusted thicknesses as directed for equivalent use of material having different thermal conductivity.

1.03 PRODUCT HANDLING

- A. General Protection: Protect insulations from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

1.04 SUBMITTALS

- A. Product data for each type of insulation proposed.
- B. Technical data showing thermal properties of product.

PART 2 - PRODUCTS

2.01 INSULATION

- A. Rigid Board-Type Insulation for Trenches and Pipe Insulation: Closed-cell rigid foamed polystyrene, equal to "Styrofoam" HI-60, by Dow Chemical. Thickness as shown.

1. Thermal resistance: Aged R-value = 200 per meter (5 per inch) of 75°F mean temperature.
2. Compressive strength ≥ 60 psi (4.5 kPa).
3. Flexural strength ≥ 75 psi (520 kPa).
4. Minimum density 1.60 PCF (25.7 kg/m³).
5. Water adsorption ≤ 0.1 percent by volume.
6. Coefficient of linear thermal expansion: maximum 3.5 x 10⁻⁵ in/in F°.
7. Complies with ASTM C578 Type VII.

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

- A. Clean substrates of substances harmful to insulations including removal of projections which might cause punctures.

3.02 INSTALLATION OF RIGID BOARD INSULATION

A. General:

1. Comply with manufacturer's instructions for particular conditions of installation in each case. If printed instructions are not available or do not apply to project conditions, consult manufacturer's mechanical representative for specific recommendations before proceeding with work.
2. Extend board insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.
3. Apply a single layer of board insulation of required thickness, unless otherwise shown or required to make up total thickness.
4. For pipe trench insulation, provide to the extent practical, full sheets of insulation over trench width to minimize the number of openings between

sheets. Use four foot minimum width sheets centered on pipe(s), and add additional width to fill trench as necessary, or as directed by Engineer.

5. Over precast concrete structures, provide 1.2 meters (4') wide sheets over structure and extend outside structural wall a minimum of 600 mm (2') for full perimeter.

3.03 PROTECTION

- A. General: Protect installed insulation and vapor barriers from harmful weather exposures and from possible physical abuses, where possible by nondelayed installation of concealing work or, where that is not possible, by temporary covering or enclosure. Installer shall advise Contractor of exposure hazards, including possible sources of deterioration and fire hazards.

END OF SECTION

STANDARD DETAIL UPDATES

Standard Details and Standard Detail updates are available at:

http://www.maine.gov/mdot/contractor-consultant-information/ss_standard_details_updates.php

<u>Detail #</u>	<u>Description</u>	<u>Revision Date</u>
504(15)	Diaphragms	12/30/02
507(04)	Steel Bridge Railing	2/05/03
801(02)	Drives on Non-Sidewalk Sections	4/04/03
526(33)	Concrete Transition Barrier	8/18/03
645(06)	H-Beam Posts – Highway Signing	7/21/04
645(09)	Installation of Type II Signs	7/21/04
626(09)	Electrical Junction Box for Traffic Signals and Lighting	2/25/05
604(01)	Catch Basins	11/16/05
604(05)	Type “A” & “B” Catch Basin Tops	11/16/05
604(06)	Type “C” Catch Basin Tops	11/16/05
604(07)	Manhole Top “D”	11/16/05
604(09)	Catch Basin Type “E”	11/16/05
606(02)	Multiple Mailbox Support	11/16/05
606(07)	Reflectorized Beam Guardrail Delineator Details	11/16/05
609(06)	Vertical Bridge Curb	11/16/05
504(23)	Hand-Hold Details	12/08/05
609(03)	Curb Type 3	6/27/06
609(07)	Curb Type 1	6/27/06
535(01)	Precast Superstructure - Shear Key	10/12/06

535(02)	Precast Superstructure - Curb Key & Drip Notch	10/12/06
535(03)	Precast Superstructure - Shear Key	10/12/06
535(04)	Precast Superstructure - Shear Key	10/12/06
535(05)	Precast Superstructure - Post Tensioning	10/12/06
535(06)	Precast Superstructure - Sections	10/12/06
535(07)	Precast Superstructure - Precast Slab & Box	10/12/06
535(08)	Precast Superstructure - Sections	10/12/06
535(09)	Precast Superstructure - Sections	10/12/06
535(10)	Precast Superstructure - Sections	10/12/06
535(11)	Precast Superstructure - Sections	10/12/06
535(12)	Precast Superstructure - Sections	10/12/06
535(13)	Precast Superstructure - Sections	10/12/06
535(14)	Precast Superstructure - Stirrups	10/12/06
535(15)	Precast Superstructure - Plan	10/12/06
535(16)	Precast Superstructure - Reinforcing	10/12/06
535(17)	Precast Superstructure - Notes	10/12/06

SUPPLEMENTAL SPECIFICATION

(Corrections, Additions, & Revisions to Standard Specifications - Revision of December 2002)

SECTION 101

CONTRACT INTERPRETATION

101.2 Definitions

Closeout Documentation Replace the sentence “A letter stating the amount.... DBE goals.” with “DBE Goal Attainment Verification Form”

Add “Environmental Information Hazardous waste assessments, dredge material test results, boring logs, geophysical studies, and other records and reports of the environmental conditions. For a related provision, see Section 104.3.14 - Interpretation and Interpolation.”

Add “Fabrication Engineer The Department’s representative responsible for Quality Assurance of pre-fabricated products that are produced off-site.”

Geotechnical Information Replace with the following: “Boring logs, soil reports, geotechnical design reports, ground penetrating radar evaluations, seismic refraction studies, and other records of subsurface conditions. For a related provision, see Section 104.3.14 - Interpretation and Interpolation.”

SECTION 102

DELIVERY OF BIDS

102.7.1 Location and Time Add the following sentence “As a minimum, the Bidder will submit a Bid Package consisting of the Notice to Contractors, the completed Acknowledgement of Bid Amendments form, the completed Schedule of Items, 2 copies of the completed Agreement, Offer, & Award form, a Bid Bond or Bid Guarantee, and any other Certifications or Bid Requirements listed in the Bid Book.”

102.11.1 Non-curable Bid Defects Replace E. with “E. The unit price and bid amount is not provided or a lump sum price is not provided or is illegible as determined by the Department.”

SECTION 103

AWARD AND CONTRACTING

103.3.1 Notice and Information Gathering Change the first paragraph to read as follows: “After Bid Opening and as a condition for Award of a Contract, the Department may require an Apparent Successful Bidder to demonstrate to the Department’s satisfaction that the Bidder is responsible and qualified to perform the Work.”

SECTION 104

GENERAL RIGHTS AND RESPONSIBILITIES

104.3.14 Interpretation and Interpolation In the first sentence, change “...and Geotechnical Information.” to “...Environmental Information, and Geotechnical Information.”

Delete the entire Section 104.5.9 and replace with the following:

104.5.9 Landscape Subcontractors The Contractor shall retain only Landscape Subcontractors that are certified by the Department's Environmental Office Landscape Unit.

SECTION 105 GENERAL SCOPE OF WORK

Delete the entire Section 105.6 and replace with the following:

105.6.1 Department Provided Services The Department will provide the Contractor with the description and coordinates of vertical and horizontal control points, set by the Department, within the Project Limits, for full construction Projects and other Projects where survey control is necessary. For Projects of 1,500 feet in length, or less: The Department will provide three points. For Projects between 1,500 and 5,000 feet in length: The Department will provide one set of two points at each end of the Project. For Projects in excess of 5,000 feet in length, the Department will provide one set of two points at each end of the Project, plus one additional set of two points for each mile of Project length. For non-full construction Projects and other Projects where survey control is not necessary, the Department will not set any control points and, therefore, will not provide description and coordinates of any control points. Upon request of the Contractor, the Department will provide the Department's survey data management software and Survey Manual to the Contractor, or its survey Subcontractor, for the exclusive use on the Department's Projects.

105.6.2 Contractor Provided Services Utilizing the survey information and points provided by the Department, described in Subsection 105.6.1, Department Provided Services, the Contractor shall provide all additional survey layout necessary to complete the Work. This may include, but not be limited to, reestablishing all points provided by the Department, establishing additional control points, running axis lines, providing layout and maintenance of all other lines, grades, or points, and survey quality control to ensure conformance with the Contract. The Contractor is also responsible for providing construction centerline, or close reference points, for all Utility Facilities relocations and adjustments as necessary to complete the Work. When the Work is to connect with existing Structures, the Contractor shall verify all dimensions before proceeding with the Work. The Contractor shall employ or retain competent engineering and/or surveying personnel to fulfill these responsibilities.

The Contractor must notify the Department of any errors or inconsistencies regarding the data and layout provided by the Department as provided by Section 104.3.3 - Duty to Notify Department If Ambiguities Discovered.

105.6.2.1 Survey Quality Control The Contractor is responsible for all construction survey quality control. Construction survey quality control is generally defined as, first, performing initial field survey layout of the Work and, second, performing an independent check of the initial layout using independent survey data to assure the accuracy of the initial layout; additional iterations of checks may be required if significant discrepancies are discovered in this process. Construction survey layout quality control also requires written documentation of the layout process such that the process can be followed and repeated, if necessary, by an independent survey crew.

105.6.3 Survey Quality Assurance It is the Department's prerogative to perform construction survey quality assurance. Construction survey quality assurance may, or may not, be performed by the Department. Construction survey quality assurance is generally defined as an independent check of the construction survey quality control. The construction survey quality assurance process may involve physically checking the Contractor's construction survey layout using independent survey data, or may simply involve reviewing the construction survey quality control written documentation. If the Department elects to physically check the Contractor's survey layout, the Contractor's designated surveyor may be required to be present. The Department will provide a minimum notice of 48 hours to the Contractor, whenever possible, if the Contractor's designated surveyor's presence is required. Any errors discovered through the quality assurance process shall be corrected by the Contractor, at no additional cost to the Department.

105.6.4 Boundary Markers The Contractor shall preserve and protect from damage all monuments or other points that mark the boundaries of the Right-of-Way or abutting parcels that are outside the area that must be disturbed to perform the Work. The Contractor indemnifies and holds harmless the Department from all claims to reestablish the former location of all such monuments or points including claims arising from 14 MRSA § 7554-A. For a related provision, see Section 104.3.11 - Responsibility for Property of Others.

SECTION 106 QUALITY

106.6 Acceptance Add the following to paragraph 1 of A: "This includes Sections 401 - Hot Mix Asphalt, 402 - Pavement Smoothness, and 502 - Structural Concrete - Method A - Air Content."

Add the following to the beginning of paragraph 3 of A: "For pay factors based on Quality Level Analysis, and"

SECTION 107 TIME

107.3.1 General Add the following: "If a Holiday occurs on a Sunday, the following Monday shall be considered a Holiday. Sunday or Holiday work must be approved by the Department, except that the Contractor may work on Martin Luther King Day, President's Day, Patriot's Day, the Friday after Thanksgiving, and Columbus Day without the Department's approval."

107.7.2 Schedule of Liquidated Damages Replace the table of Liquidated Damages as follows:

<u>From</u> <u>More Than</u>	<u>Up to and</u> <u>Including</u>	<u>Amount of Liquidated</u> <u>Damages per Calendar Day</u>
\$0	\$100,000	\$100
\$100,000	\$300,000	\$200
\$300,000	\$500,000	\$400
\$500,000	\$1,000,000	\$575
\$1,000,000	\$2,000,000	\$750
\$2,000,000	\$4,000,000	\$900
\$4,000,000	and more	\$1,875

SECTION 108
PAYMENT

108.4 Payment for Materials Obtained and Stored First paragraph, second sentence, delete the words "...Delivered on or near the Work site at acceptable storage places."

SECTION 109
CHANGES

109.1.1 Changes Permitted Add the following to the end of the paragraph: "There will be no adjustment to Contract Time due to an increase or decrease in quantities, compared to those estimated, except as addressed through Contract Modification(s)."

109.1.2 Substantial Changes to Major Items Add the following to the end of the paragraph: "Contract Time adjustments may be made for substantial changes to Major Items when the change affects the Critical Path, as determined by the Department"

109.4.4 Investigation / Adjustment Third sentence, delete the words "subsections (A) - (E)"

109.5.1 Definitions - Types of Delays

B. Compensable Delay Replace (1) with the following; "a weather related Uncontrollable Event of such an unusually severe nature that a Federal Emergency Disaster is declared. The Contractor will only be entitled to an Equitable Adjustment if the Project falls within the geographic boundaries prescribed under the disaster declaration."

109.7.2 Basis of Payment Replace with the following: "Equitable Adjustments will be established by mutual Agreement for compensable items listed in Section 109.7.3- Compensable Items, based upon Unit or Lump Sum Prices. If Agreement cannot be reached, the Contractor shall accept payment on a Force Account basis as provided in Section 109.7.5 - Force Account Work, as full and complete compensation for all Work relating to the Equitable Adjustment."

109.7.3 Compensable Items Replace with the following: "The Contractor is entitled to compensation for the following items, with respect to agreed upon Unit or Lump Sum Prices:

1. Labor expenses for non-salaried Workers and salaried foremen.
2. Costs for Materials.
3. A 15 % markup on the totals of Items 1 and 2 of this subsection 109.7.3 for home office overhead and profit of the Contractor, its Subcontractors and suppliers, and any lower tier Subcontractors or suppliers, with no mark-ups on mark-ups.
4. Cost for Equipment, based on Blue Book Rates or leased rates, as set forth in Section 109.7.5(C), or the Contractor's Actual Costs if determined by the Department to be lower.
5. Costs for extended job-site overhead.

6. Time.
7. Subcontractor quoted Work, as set forth below in Section 109.7.5 (F).”

109.7.5 Force Account Work

C. Equipment

Paragraph 2, delete sentence 1 which starts; “Equipment leased....”

Paragraph 6, change sentence 2 from “The Contractor may furnish...” to read “If requested by the Department, the Contractor will produce cost data to assist the Department in the establishment of such rental rate, including all records that are relevant to the Actual Costs including rental Receipts, acquisition costs, financing documents, lease Agreements, and maintenance and operational cost records.”

Add the following paragraph; “Equipment leased by the Contractor for Force Account Work and actually used on the Project will be paid for at the actual invoice amount plus 10% markup for administrative costs.”

Add the following section;

“F. Subcontractor Quoted Work When accomplishing Force Account Work that utilizes Subcontractors, the Contractor will be allowed a maximum markup of 5% for profit and overhead on the Subcontractor’s portion of the Force Account Work.”

SECTION 110 INDEMNIFICATION, BONDING, AND INSURANCE

Delete the entire Section 110.2.3 and replace with the following:

110.2.3 Bonding for Landscape Establishment Period The Contractor shall provide a signed, valid, and enforceable Performance, Warranty, or Maintenance Bond complying with the Contract, to the Department at Final Acceptance.

The bond shall be in the full amount for all Pay Items for work pursuant to Sec 621, Landscape, payable to the “Treasurer - State of Maine,” and on the Department’s forms, on exact copies thereof, or on forms that do not contain any significant variations from the Department’s forms as solely determined by the Department.

The Contractor shall pay all premiums and take all other actions necessary to keep said bond in effect for the duration of the Landscape Establishment Period described in Special Provision 621.0036 - Establishment Period. If the Surety becomes financially insolvent, ceases to be licensed or approved to do business in the State of Maine, or stops operating in the United States, the Contractor shall file new bonds complying with this Section within 10 Days of the date the Contractor is notified or becomes aware of such change.

All Bonds shall be procured from a company organized and operating in the United States, licensed or approved to do business in the State of Maine by the State of Maine Department of Business Regulation, Bureau of Insurance, and listed on the latest Federal Department of the Treasury listing for “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies.”

By issuing a bond, the Surety agrees to be bound by all terms of the Contract, including those related to payment, time for performance, quality, warranties, and the Department’s self-help remedy provided in Section 112.1 - Default to the same extent as if all terms of the Contract are contained in the bond(s).

Regarding claims related to any obligations covered by the bond, the Surety shall provide, within 60 Days of Receipt of written notice thereof, full payment of the entire claim or written notice of all bases upon which it is denying or contesting payment. Failure of the Surety to provide such notice within the 60-day period constitutes the Surety’s waiver of any right to deny or contest payment and the Surety’s acknowledgment that the claim is valid and undisputed.

SECTION 202 REMOVING STRUCTURES AND OBSTRUCTIONS

202.02 Removing Buildings Make the following change to the last sentence in the final paragraph, change “...Code of Maine Regulations 401.” to “...Department of Environmental Protection Maine Solid Waste Management Rules, 06-096 CMR Ch. 401, Landfill Siting, Design and Operation.”

SECTION 203 EXCAVATION AND EMBANKMENT

203.01 Description Under b. Rock Excavation; add the following sentence: “The use of perchlorate is not allowed in blasting operations.”

SECTION 401 HOT MIX ASPHALT PAVEMENT

401.18 Quality Control Method A & B Make the following change to paragraph a. QCP Administrator; in the final sentence, change “...certified as a Plant Technician or Paving Inspector...” to “...certified as a Quality Assurance Technologist...”

401.201 Method A Under a. Lot Size, add the following; “Each lot will be divided into a minimum of four sublots for mix properties and five sublots for percent TMD.”

401.203 Method C Second paragraph, fourth sentence, change “...Method B and C Acceptance...” to “...Method B and C Acceptance Limits, Method C the Department will pay the contract unit price. If the test results for each 250 Mg [275 ton] increment are outside these limits, the following deductions (Table 7b) shall...”

SECTION 402
PAVEMENT SMOOTHNESS

Add the following: “Projects to have their pavement smoothness analyzed in accordance with this Specification will be so noted in Special Provision 403 - Bituminous Box.”

“402.02 Lot Size Lot size for smoothness will be 1000 lane-meters [3000 lane-feet]. A subplot will consist of 20 lane-meters [50 lane-feet]. Partial lots will be included in the previous lot if less than one-half the size of a normal lot. If greater than one-half the normal lot size, it will be tested as a separate lot.”

SECTION 502
STRUCTURAL CONCRETE

502.05 Composition and Proportioning; TABLE #1; NOTE #2; third sentence; Change “...alcohol based saline sealer...” to “alcohol based silane sealer...”. Add NOTE #6 to Class S Concrete.

502.0502 Quality Assurance Method A - Rejection by Resident Change the first sentence to read: “For an individual subplot with test results failing to meet the criteria in Table #1, or if the calculated pay factor for Air Content is less than 0.80.....”

502.0503 Quality Assurance Method B - Rejection by Resident Change the first sentence to read: “For material represented by a verification test with test results failing to meet the criteria in Table #1, the Department will.....”

502.0505 Resolution of Disputed Acceptance Test Results Combine the second and third sentence to read: “Circumstances may arise, however, where the Department may”

502.10 Forms and False work

D. Removal of Forms and False work 1., First paragraph; first, second, and third sentence; replace “forms” with “forms and false work”

502.11 Placing Concrete

G. Concrete Wearing Surface and Structural Slabs on Precast Superstructures Last paragraph; third sentence; replace “The temperature of the concrete shall not exceed 24° C [75° F] at the time of placement.” with “The temperature of the concrete shall not exceed 24° C [75° F] at the time the concrete is placed in its final position.”

502.15 Curing Concrete First paragraph; replace the first sentence with the following; “All concrete surfaces shall be kept wet with clean, fresh water for a curing period of at least 7 days after concrete placing, with the exception of vertical surfaces as provided for in Section 501.10 (D) - Removal of Forms and False work.”

Second paragraph; delete the first two sentences.

Third paragraph; delete the entire paragraph which starts “When the ambient temperature....”

Fourth paragraph; delete “approved” to now read “...continuously wet for the entire curing period...”

Fifth paragraph; second sentence; change “...as soon as it is possible to do so without damaging the concrete surface.” to “...as soon as possible.”

Seventh paragraph; first sentence; change “...until the end of the curing period.” to “...until the end of the curing period, except as provided for in Section 502.10(D) - Removal of Forms and False work.”

502.19 Basis of Payment First paragraph, second sentence; add "pier nose armor" to the list of items included in the contract price for concrete.

SECTION 503 REINFORCING STEEL

503.06 Placing and Fastening Change the second paragraph, first sentence from: “All tack welding shall be done in accordance with Section 504, Structural Steel.” to “All tack welding shall be done in accordance with AWS D1.4 Structural Welding Code - Reinforcing Steel.”

SECTION 504 STRUCTURAL STEEL

504.09 Facilities for Inspection Add the follow as the last paragraph: “Failure to comply with the above requirements will be consider to be a denial to allow access to work by the Contractor. The Department will reject any work done when access for inspection is denied.”

504.18 Plates for Fabricated Members Change the second paragraph, first sentence from: “...ASTM A 898/A 898 M...” to “...ASTM A 898/A 898 M or ASTM A 435/A 435 M as applicable and...”

504.31 Shop Assembly Add the following as the last sentence: “The minimum assembly length shall include bearing centerlines of at least two substructure units.”

504.64 Non Destructive Testing-Ancillary Bridge Products and Support Structures Change the third paragraph, first sentence from “One hundred percent...” to “Twenty five percent...”

SECTION 535 PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE

535.02 Materials Change “Steel Strand for Concrete Reinforcement” to “Steel Strand.” Add the following to the beginning of the third paragraph; “Concrete shall be Class P conforming to the requirements in this section. 28 day compressive strength shall be as stated on the plans. Coarse aggregate....”

535.05 Inspection Facilities Add the follow as the last paragraph: “Failure to comply with the above requirements will be consider to be a denial to allow access to work by the Contractor. The Department will reject any work done when access for inspection is denied.”

535.26 Lateral Post-Tensioning Replace the first paragraph; “A final tension...” with “Overstressing strands for setting losses cannot be accomplished for chuck to chuck lengths of 7.6 m [25 ft] and less. In such instances, refer to the Plans for all materials and methods. Otherwise, post-tensioning shall be in accordance with PCI standards and shall provide the anchorage force noted in the Plans. The applied jacking force shall be no less than 100% of the design jacking force.”

SECTION 603

PIPE CULVERTS AND STORM DRAINS

603.0311 Corrugated Polyethylene Pipe for Option III Replace the Minimum Mandrel Diameter Table with the following:

Nominal Size US Customary (in)	Minimum Mandrel Diameter (in)	Nominal Size Metric (mm)	Minimum Mandrel Diameter (mm)
12	11.23	300	280.73
15	14.04	375	350.91
18	16.84	450	421.09
24	22.46	600	561.45
30	28.07	750	701.81
36	33.69	900	842.18
42	39.30	1050	982.54
48	44.92	1200	1122.90

SECTION 604

MANHOLES, INLETS, AND CATCH BASINS

604.02 Materials Add the following:

“Tops and Traps	712.07
Corrugated Metal Units	712.08
Catch Basin and Manhole Steps	712.09”

SECTION 605

UNDERDRAINS

605.05 Underdrain Outlets Make the following change:

In the first paragraph, second sentence, delete the words “metal pipe”.

SECTION 606

GUARDRAIL

606.02 Materials Delete the entire paragraph which reads “The sole patented supplier of multiple mailbox...” and replace with “Acceptable multiple mailbox assemblies shall be listed on the Department’s Approved Products List and shall be NCHRP 350 tested and approved.”

Delete the entire paragraph which reads “Retroreflective beam guardrail delineators...” and replace with “Reflectorized sheeting for Guardrail Delineators shall meet the requirements of Section 719.01 - Reflective Sheeting. Delineators shall be fabricated from high-impact, ultraviolet and weather resistant thermoplastic.

606.09 Basis of Payment First paragraph; delete the second and third sentence in their entirety and replace with “Butterfly-type guardrail reflectorized delineators shall be mounted on all W-beam guardrail at an interval of every 10 posts [62.5 ft] on tangents sections and every 5 posts [31.25 ft] on curved sections as directed by the Resident. On divided highways, the delineators shall be yellow on the left hand side and silver/white on the right hand side. On two-way roadways, the delineators shall be silver/white on the right hand side. All delineators shall have retroreflective sheeting applied to only the traffic facing side. Reflectorized guardrail delineators will not be paid for directly, but will be considered incidental to the guardrail items.”

SECTION 609 CURB

| 609.04 Bituminous Curb f., Delete the requirement “Color Natural (White)” |

SECTION 615 LOAM

615.02 Materials Make the following change:

<u>Organic Content</u>	<u>Percent by Volume</u>
Humus	“5% - 10%”, as determined by Ignition Test

SECTION 618 SEEDING

618.01 Description Change the first sentence to read as follows: “This work shall consist of furnishing and applying seed” Also remove “,and cellulose fiber mulch” from 618.01(a).

618.03 Rates of Application In 618.03(a), remove the last sentence and replace with the following: “These rates shall apply to Seeding Method 2, 3, and Crown Vetch.”

In 618.03(c) “1.8 kg [4 lb]/unit.” to “1.95 kg [4 lb]/unit.”

618.09 Construction Method In 618.09(a) 1, sentence two, replace “100 mm [4 in]” with “25 mm [1 in] (Method 1 areas) and 50 mm [2 in] (Method 2 areas)”

618.15 Temporary Seeding Change the Pay Unit from Unit to Kg [lb].

SECTION 620
GEOTEXTILES

620.03 Placement Section (c)

Title: Replace “Non-woven” in title with “Erosion Control”.

First Paragraph: Replace first word “Non-woven” with “Woven monofilament”.

Second Paragraph: Replace second word “Non-woven” with “Erosion Control”.

620.07 Shipment, Storage, Protection and Repair of Fabric Section (a)

Replace the second sentence with the following: “Damaged geotextiles, as identified by the Resident, shall be repaired immediately.”

620.09 Basis of Payment

Pay Item 620.58: Replace “Non-woven” with “Erosion Control”

Pay Item 620.59: Replace “Non-woven” with “Erosion Control”

SECTION 621
LANDSCAPING

621.0036 Establishment Period In paragraph 4 and 5, change “time of Final Acceptance” to “end of the period of establishment”. In Paragraph 7, change “Final Acceptance date” to “end of the period of establishment” and change “date of Final Acceptance” to “end of the period of establishment”.

SECTION 626
HIGHWAY SIGNING

626.034 Concrete Foundations Add to the following to the end of the second paragraph: “Pre-cast and cast-in-place foundations shall be warranted against leaning and corrosion for two years after the project is completed. If the lean is greater than 2 degrees from normal or the foundation is spalling within the first two years, the Contractor shall replace the foundation at no extra cost.”

SECTION 627
PAVEMENT MARKINGS

627.10 Basis of Payment Add to the following to the end of the third paragraph: “If allowed by Special Provision, the Contractor may utilize Temporary Bi-Directional Yellow and White(As required) Delineators as temporary pavement marking lines and paid for at the contract lump sum price. Such payment will include as many applications as required and removal.”

SECTION 637
DUST CONTROL

637.06 Basis of Payment Add the following after the second sentence of the third paragraph: “Failure by the Contractor to follow Standard Specification or Special Provision - Section 637

and/or the Contractor's own Soil Erosion and Pollution Control Plan concerning Dust Control and/or the Contractor's own Traffic Control Plan concerning Dust Control and/or visible evidence of excessive dust problems, as determined by the Resident, will result in a reduction in payment, computed by reducing the Lump Sum Total by 5% per occurrence per day. The Department's Resident or any other representative of the Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item. Additional penalties may also be assessed in accordance with Special Provision 652 - Work Zone Traffic Control and Standard Specification 656 - Temporary Soil Erosion and Water Pollution Control."

SECTION 639 ENGINEERING FACILITIES

639.04 Field Offices Change the forth to last paragraph from: "The Contractor shall provide a fully functional desktop copier..." to "...desktop copier/scanner..."

SECTION 652 MAINTENANCE OF TRAFFIC

652.2.3 Flashing Arrow Board Delete the existing 5 paragraphs and replace with the following: Flashing Arrow Panels (FAP) must be of a type that has been submitted to AASHTO's National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations' Approved Products List of Portable Changeable Message Signs & Flashing Arrow Panels.

FAP units shall meet requirements of the current Manual on Uniform Traffic Control Devices (MUTCD) for Type "C" panels as described in Section 6F.56 - Temporary Traffic Control Devices. An FAP shall have matrix of a minimum of 15 low-glare, sealed beam, Par 46 elements capable of either flashing or sequential displays as well as the various operating modes as described in the MUTCD, Chapter 6-F. If an FAP consisting of a bulb matrix is used, each element should be recess-mounted or equipped with an upper hood of not less than 180 degrees. The color presented by the elements shall be yellow.

FAP elements shall be capable of at least a 50 percent dimming from full brilliance. Full brilliance should be used for daytime operation and the dimmed mode shall be used for nighttime operation. FAP shall be at least 2.4 M x 1.2 M [96" x 48"] and finished in non-reflective black. The FAP shall be interpretable for a distance not less than 1.6 km [1 mile].

Operating modes shall include, flashing arrow, sequential arrow, sequential chevron, flashing double arrow, and flashing caution. In the three arrow signals, the second light from the arrow point shall not operate.

The minimum element on-time shall be 50 percent for the flashing mode, with equal intervals of 25 percent for each sequential phase. The flashing rate shall be not less than 25 nor more than 40 flashes per minute. All on-board circuitry shall be solid state.

Primary power source shall be 12 volt solar with a battery back-up to provide continuous

operation when failure of the primary power source occurs, up to 30 days with fully charged batteries. Batteries must be capable of being charged from an onboard 110 volt AC power source and the unit shall be equipped with a cable for this purpose.

Controller and battery compartments shall be enclosed in lockable, weather-tight boxes.

The FAP shall be mounted on a pneumatic-tired trailer or other suitable support for hauling to various locations, as directed. The minimum mounting height of an arrow panel should be 2.1 M [7 feet] from the roadway to the bottom of the panel.

The face of the trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers.

A portable changeable message sign may be used to simulate an arrow panel display.”

652.2.4 Other Devices Delete the last paragraph and add the following:

“652.2.5 Portable Changeable Message Sign Trailer mounted Portable Changeable Message Signs (PCMS) must be of a type that has been submitted to AASHTO’s National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations’ Approved Products List of Portable Changeable Message Signs & Flashing Arrow Panels. The PCMS unit shall meet or exceed the current specifications of the Manual on Uniform Traffic Control Devices (MUTCD), 6F.55.

The front face of the sign should be covered with a low-glare protective material. The color of the LED elements shall be amber on a black background. The PCMS should be visible from a distance of 0.8 km [0.5 mile] day and night and have a minimum 15° viewing angle. Characters must be legible from a distance of at least 200 M [650 feet].

The message panel should have adjustable display rates (minimum of 3 seconds per phase), so that the entire message can be read at least twice at the posted speed, the off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed. Each message shall consist of either one or two phases. A phase shall consist of up to eight characters per line. The unit must be capable of displaying at least three lines of text with eight characters per line. Each character shall be 457 mm [18”] high. Each character module shall use at least a five wide and seven high pixel matrix. The text of the messages shall not scroll or travel horizontally or vertically across the face of the sign.

Units shall automatically adjust their brightness under varying light conditions to maintain legibility.

The control system shall include a display screen upon which messages can be reviewed before being displayed on the message sign. The control system shall be capable of maintaining memory when power is unavailable. Message must be changeable with either a notebook computer or an on-board keypad. The controller shall have the capability to store a minimum of 200 user-defined and 200 pre-programmed messages. Controller and battery compartments shall be enclosed in lockable, weather-tight boxes.

PCMS units shall have the capability of being made programmable by means of wireless communications. PCMS units shall also be fully capable of having an on-board radar system installed if required for a particular application.

PCMS' primary power source shall be solar with a battery back-up to provide continuous operation when failure of the primary power source occurs. Batteries must be capable of being charged from a 110 volt AC power source. The unit must also be capable of being operated solely from a 110 volt AC power source and be equipped with a cable for this purpose.

The PCMS shall be mounted on a trailer in such a way that the bottom of the message sign panel shall be a minimum of 2.1 M [7 ft] above the roadway in urban areas and 1.5 M [5 ft] above the roadway in rural areas when it is in the operating mode. PCMS trailers should be of a heavy duty type with a 51 mm [2"] ball hitch and a minimum of four leveling jacks (at each corner). The sign shall be capable of being rotated 360° relative to the trailer. The face of the trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers."

652.3.3 Submittal of Traffic Control Plan In item e. change "A list of all certified flaggers..." to "A list of all the Contractor's certified flaggers..."

In the last paragraph add the following as the second sentence: "The Department will review and provide comments to the Contractor within 14 days of receipt of the TCP."

652.3.5 Installation of Traffic Control Devices In the first paragraph, first sentence; change "Signs shall be erected..." to "Portable signs shall be erected.." In the third sentence; change "Signs must be erected so that the sign face..." to "Post-mounted signs must also be erected so that the sign face..."

652.4 Flaggers Replace the first paragraph with the following; "The Contractor shall furnish flaggers as required by the TCP or as otherwise specified by the Resident. All flaggers must have successfully completed a flagger test approved by the Department and administered by a Department-approved Flagger-Certifier who is employing that flagger. All flaggers must carry an official certification card with them while flagging that has been issued by their employer. Flaggers shall wear safety apparel meeting ANSI 107-1999 Class 2 risk exposure and clearly identify the wearer as a person, shall be visible at a minimum distance of 300 m [1000 ft], and shall wear a hardhat with retroreflectivity. For nighttime conditions, Class 3 apparel should be considered, retroreflective or flashing SLOW/STOP paddles shall be used, and except in emergency situations the flagger station shall be illuminated to assure visibility."

Second paragraph, first sentence; change "...have sufficient distance to stop before entering the workspace." to "...have sufficient distance to stop at the intended stopping point." Third sentence; change "At a spot obstruction..." to "At a spot obstruction with adequate sight distance,..."

Fourth paragraph, delete and replace with "Flaggers shall be provided as a minimum, a 10 minute break, every 2 hours and a 30 minute or longer lunch period away from the work station. Flaggers may only receive 1 unpaid break per day; all other breaks must be paid."

Sufficient certified flaggers shall be available onsite to provide for continuous flagging operations during break periods. Breaker flaggers will not be paid for separately, but shall be considered incidental to the appropriate pay item.”

652.8.2 Other Items Replace the last paragraph with the following: “There will be no payment made under any 652 pay items after the expiration of the adjusted total contract time.”

SECTION 653 POLYSTYRENE PLASTIC INSULATION

653.05 Placing Backfill In the second sentence; change “...shall be not less than 150 mm [6 in] loose measure.” to “...shall be not less than 250 mm [10 in] loose measure.” In the third sentence; change “...crawler type bulldozer of not more than 390 kg/m² [80 lb/ft²] ground contact pressure...” to “...crawler type bulldozer of not more than 4875 kg/m² [2000 lb/ft²] ground contact pressure...”

653.06 Compaction In the last sentence; change “...not more than 390 kg/m² [80 lb/ft²] ground contact...” to “...not more than 4875 kg/m² [2000 lb/ft²] ground contact...”

SECTION 656 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

656.5.1 If Pay Item 656.75 Provided Replace the second paragraph with the following: “Failure by the Contractor to follow Standard Specification or Special Provision - Section 656 and/or the Contractor’s own Soil Erosion and Pollution Control Plan will result in a reduction in payment, computed by reducing the Lump Sum Total by 5% per occurrence per day. The Department’s Resident or any other representative of the Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item.”

SECTION 701 STRUCTURAL CONCRETE RELATED MATERIALS

701.10 Fly Ash - Chemical Requirements Change all references from “ASTM C311” to “ASTM C114”.

SECTION 703 AGGREGATES

703.05 Aggregate for Sand Leveling Change the percent passing the 9.5 mm [3/8 in] sieve from “85 – 10” to “85 – 100”

703.06 Aggregate for Base and Subbase Delete the first paragraph: “The material shall have...” and replace with “The material shall have a minimum degradation value of 15 as determined by Washington State DOT Test Method T113, Method of Test for Determination of Degradation Value (March 2002 version), except that the reported degradation value will be

the result of testing a single specimen from that portion of a sample that passes the 12.5 mm [$\frac{1}{2}$ in] sieve and is retained on the 2.00 mm [No. 10] sieve, minus any reclaimed asphalt pavement used."

703.07 Aggregates for HMA Pavements Delete the forth paragraph: "The composite blend shall have..." and replace with "The composite blend, minus any reclaimed asphalt pavement used, shall have a Micro-Deval value of 18.0 or less as determined by AASHTO T 327. In the event the material exceeds the Micro Deval limit, a Washington Degradation test shall be performed. The material shall be acceptable if it has a value of 30 or more as determined by Washington State DOT Test Method T 113, Method of Test for Determination of Degradation Value (March 2002 version) except that the reported degradation value will be the result of testing a single composite specimen from that portion of the sample that passes the 12.5mm [$\frac{1}{2}$ inch] sieve and is retained on the 2.00mm [No 10] sieve, minus any reclaimed asphalt pavement used."

703.18 Common Borrow Replace the first paragraph with the following: "Common borrow shall consist of earth, suitable for embankment construction. It shall be free from frozen material, perishable rubbish, peat, and other unsuitable material including material currently or previously contaminated by chemical, radiological, or biological agents unless the material is from a DOT project and authorized by DEP for use."

703.22 Underdrain Backfill Material Change the first paragraph from "...for Underdrain Type B..." to "...for Underdrain Type B and C..."

SECTION 706 NON-METALLIC PIPE

706.06 Corrugated Polyethylene Pipe for Underdrain, Option I and Option III Culvert Pipe Change the first sentence from "...300 mm diameters to 900 mm" to "...300 mm diameters to 1200 mm" Delete, in it's entirety, the last sentence which begins "This pipe and resins..." and replace with the following; "The manufacturing plants of polyethylene pipe shall be certified by the Eastern States Consortium. Polyethylene pipe shall be accepted based on third party certification by the AASHTO's National Transportation Product Evaluation Program."

SECTION 709 REINFORCING STEEL AND WELDED STEEL WIRE FABIC

709.03 Steel Strand Change the second paragraph from "...shall be 12mm [$\frac{1}{2}$ inch] AASHTO M203M/M203 (ASTM A416/A416M)..." to "...shall be 15.24 mm [0.600 inch] diameter AASHTO M203 (ASTM A416)..."

SECTION 710 FENCE AND GUARDRAIL

710.03 Chain Link Fabric Add the following sentence: "Chain Link fabric for PVC coated shall conform to the requirements of AASHTO M181, Type IV-Class B."

710.07 Guardrail Posts Section b. change "...AASHTO M183/M183M..." to "...AASHTO M 270M/M 270 Grade 250 (36)..."

SECTION 712 MISCELLANEOUS HIGHWAY MATERIALS

712.06 Precast Concrete Units In the first paragraph, change "...ASTM C478M..." to "...AASHTO M199..." Delete the second paragraph and replace with the following; "Approved structural fibers may be used as a replacement of 6 x 6 #10 gauge welded wire fabric when used at an approved dosage rate for the construction of manhole and catch basin units. The material used shall be one of the products listed on the Maine Department of Transportation's Approved Product List of Structural Fiber Reinforcement." Delete the fifth paragraph and replace with the following; "The concrete mix design shall be approved by the Department. Concrete shall contain 6% air content, plus or minus 1½% tolerance when tested according to AASHTO T152. All concrete shall develop a minimum compressive strength of 28 MPa [4000 psi] in 28 days when tested according to AASHTO T22. The absorption of a specimen, when tested according to AASHTO T280, Test Method "A", shall not exceed nine percent of the dry mass."

Add the following:

"712.07 Tops, and Traps These metal units shall conform to the plan dimensions and to the following specification requirements for the designated materials.

Gray iron or ductile iron castings shall conform to the requirements of AASHTO M306 unless otherwise designated.

712.08 Corrugated Metal Units The units shall conform to plan dimensions and the metal to AASHTO M36/M36M. Bituminous coating, when specified, shall conform to AASHTO M190 Type A.

712.09 Catch Basin and Manhole Steps Steps for catch basins and for manholes shall conform to ASTM C478M [ASTM C478], Section 13 for either of the following material:

- (a) Aluminum steps-ASTM B221M, [ASTM B211] Alloy 6061-T6 or 6005-T5.
- (b) Reinforced plastic steps Steel reinforcing bar with injection molded plastic coating copolymer polypropylene. Polypropylene shall conform to ASTM D 4101.

712.23 Flashing Lights Flashing Lights shall be power operated or battery operated as specified.

- (a) Power operated flashing lights shall consist of housing, adapters, lamps, sockets, reflectors, lens, hoods and other necessary equipment designed to give clearly visible signal indications within an angle of at least 45 degrees and from 3 to 90 m [10 to 300 ft] under all light and atmospheric conditions.

Two circuit flasher controllers with a two-circuit filter capable of providing alternate flashing operations at the rate of not less than 50 nor more than 60 flashes per minute shall be provided.

The lamps shall be 650 lumens, 120 volt traffic signal lamps with sockets constructed to properly focus and hold the lamp firmly in position.

The housing shall have a rotatable sun visor not less than 175 mm [7 in] in length designed to shield the lens.

Reflectors shall be of such design that light from a properly focused lamp will reflect the light rays parallel. Reflectors shall have a maximum diameter at the point of contact with the lens of approximately 200 mm [8 in].

The lens shall consist of a round one-piece convex amber material which, when mounted, shall have a visible diameter of approximately 200 mm [8 in]. They shall distribute light and not diffuse it. The distribution of the light shall be asymmetrical in a downward direction. The light distribution of the lens shall not be uniform, but shall consist of a small high intensity portion with narrow distribution for long distance throw and a larger low intensity portion with wide distribution for short distance throw. Lenses shall be marked to indicate the top and bottom of the lens.

(b) Battery operated flashing lights shall be self-illuminated by an electric lamp behind the lens. These lights shall also be externally illuminated by reflex-reflective elements built into the lens to enable it to be seen by reflex-reflection of the light from the headlights of oncoming traffic. The batteries must be entirely enclosed in a case. A locking device must secure the case. The light shall have a flash rate of not less than 50 nor more than 60 flashes per minute from minus 30 °C [minus 20 °F] to plus 65 °C [plus 150 °F]. The light shall have an on time of not less than 10 percent of the flash cycle. The light beam projected upon a surface perpendicular to the axis of the light beam shall produce a lighted rectangular projection whose minimum horizontal dimension shall be 5 degrees each side of the horizontal axis. The effective intensity shall not have an initial value greater than 15.0 candelas or drop below 4.0 candelas during the first 336 hours of continuous flashing. The illuminated lens shall appear to be uniformly bright over its entire illuminated surface when viewed from any point within an angle of 9 degrees each side of the vertical axis and 5 degrees each side of the horizontal axis. The lens shall not be less than 175 mm [7 in] in diameter including a reflex-reflector ring of 13 mm [½ in] minimum width around the periphery. The lens shall be yellow in color and have a minimum relative luminous transmittance of 0.440 with a luminance of 2854° Kelvin. The lens shall be one-piece construction. The lens material shall be plastic and meet the luminous transmission requirements of this specification. The case containing the batteries and circuitry shall be constructed of a material capable of withstanding abuse equal to or greater than 1.21 mm thick steel [No. 18 U.S. Standard Gage Steel]. The housing and the lens frame, if of metal shall be properly cleaned, degreased and pretreated to promote adhesion. It shall be given one or more coats of enamel which, when dry shall completely obscure the metal. The enamel coating shall be of such quality that when the coated case is struck a light blow with a sharp tool, the paint will not chip or crack and if scratched with a knife will not powder. The case shall be so constructed and closed as to exclude moisture that would affect the proper operation of light. The

case shall have a weep hole to allow the escape of moisture from condensation. Photoelectric controls, if provided, shall keep the light operating whenever the ambient light falls below 215 lx [20 foot candles]. Each light shall be plainly marked as to the manufacturer's name and model number.

If required by the Resident, certification as to conformance to these specifications shall be furnished based on results of tests made by an independent testing laboratory. All lights are subject to random inspection and testing. All necessary random samples shall be provided to the Resident upon request without cost to the Department. All such samples shall be returned to the Contractor upon completion of the tests.

712.32 Copper Tubing Copper tubing and fittings shall conform to the requirements of ASTM B88M Type A [ASTM B88, Type K] or better.

712.33 Non-metallic Pipe, Flexible Non-metallic pipe and pipe fittings shall be acceptable flexible pipe manufactured from virgin polyethylene polymer suitable for transmitting liquids intended for human or animal consumption.

712.34 Non-metallic Pipe, Rigid Non-metallic pipe shall be Schedule 40 polyvinylchloride (PVC) that meets the requirement of ASTM D1785. Fittings shall be of the same material.

712.341 Metallic Pipe Metallic pipe shall be ANSI, Standard B36.10, Schedule 40 steel pipe conforming to the requirements of ASTM A53 Types E or S, Grade B. End plates shall be steel conforming to ASTM A36/A36M.

Both the sleeve and end plates shall be hot dip galvanized. Pipe sleeve splices shall be welded splices with full penetration weld before galvanizing.

712.35 Epoxy Resin Epoxy resin for grouting or sealing shall consist of a mineral filled thixotropic, flexible epoxy resin having a pot life of approximately one hour at 10°C [50°F]. The grout shall be an approved product suitable for cementing steel dowels into the preformed holes of curb inlets and adjacent curbing. The sealant shall be an approved product, light gray in color and suitable for coating the surface.

712.36 Bituminous Curb The asphalt cement for bituminous curb shall be of the grade required for the wearing course, or shall be Viscosity Grade AC-20 meeting the current requirements of Subsection 702.01 Asphalt Cement. The aggregate shall conform to the requirements of Subsection 703.07. The coarse aggregate portion retained on the 2.36 mm [No. 8] sieve may be either crushed rock or crushed gravel.

The mineral constituents of the bituminous mixture shall be sized and graded and combined in a composite blend that will produce a stable durable curbing with an acceptable texture. Bituminous material for curb shall meet the requirements of Section 403 - Hot Bituminous Pavement.

712.37 Precast Concrete Slab Portland cement concrete for precast slabs shall meet the requirements of Section 502 - Structural Concrete, Class A.

The slabs shall be precast to the dimension shown on the plans and cross section and in accordance with the Standard Detail plans for Concrete Sidewalk Slab. The surface shall be finished with a float finish in accordance with Subsection 502.14(c). Lift devices of sufficient strength to hold the slab while suspended from cables shall be cast into the top or back of the slab.

712.38 Stone Slab Stone slabs shall be of granite from an acceptable source, hard, durable, predominantly gray in color, free from seams which impair the structural integrity and be of smooth splitting character. Natural color variations characteristic of the deposit will be permitted. Exposed surfaces shall be free from drill holes or indications of drill holes. The granite slabs in any one section of backslope must be all the same finish.

The granite slabs shall be scabble dressed or sawed to an approximately true plane having no projections or depressions over 13 mm [$\frac{1}{2}$ in] under a 600 mm [2 ft] straightedge or over 25 mm [1 in] under a 1200 mm [4 ft] straightedge. The arris at the intersection of the top surface and exposed front face shall be pitched so that the arris line is uniform throughout the length of the installed slabs. The sides shall be square to the exposed face unless the slabs are to be set on a radius or other special condition which requires that the joints be cut to fit, but in any case shall be so finished that when the stones are placed side by side no space more than 20 mm [$\frac{3}{4}$ in] shall show in the joint for the full exposed height.

Liftpin holes in all sides will be allowed except on the exposed face.

SECTION 717 ROADSIDE IMPROVEMENT MATERIAL

717.03 C. Method #3 - Roadside Mixture #3 Change the seed proportions to the following:

Crown Vetch	25%
Perennial Lupine	25%
Red Clover	12.5%
Annual Rye	37.5%

717.05 Mulch Binder Change the third sentence to read as follows:

“Paper fiber mulch may be used as a binder at the rate of 2.3 kg/unit [5 lb/unit].”

SECTION 720 STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS

720.08 U-Channel Posts Change the first sentence from “..., U-Channel posts...” to “..., Rib Back U-Channel posts...”

SECTION 722
GEOTEXTILES

722.01 Stabilization/Reinforcement Geotextile Add the following to note #3; “The strengths specified in the columns labeled”<50%” and “≥ 50%” refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the “<50%” column. Submittals must include the percent elongation at which the material was tested.”

722.02 Drainage Geotextile Add the following to note #3; “The strengths specified in the columns labeled”<50%” and “≥ 50%” refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the “<50%” column. Submittals must include the percent elongation at which the material was tested.”

722.01 Erosion Control Geotextile Add the following note to Elongation in the Mechanical Property Table; “The strengths specified in the columns labeled”<50%” and “≥ 50%” refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the “<50%” column. Submittals must include the percent elongation at which the material was tested.”

APPENDIX A TO DIVISION 100

SECTION 1 - BIDDING PROVISIONS

A. Federally Required Certifications By signing and delivering a Bid, the Bidder certifies as provided in all certifications set forth in this Appendix A - Federal Contract Provisions Supplement including:

- Certification Regarding No Kickbacks to Procure Contract as provided on this page 1 below.
- Certification Regarding Non-collusion as provided on page 1 below.
- Certification Regarding Non-segregated Facilities as provided by FHWA Form 1273, section III set forth on page 21 below.
- "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion" as provided by FHWA Form 1273, section XI set forth on page 32 below.
- "Certification Regarding Use of Contract Funds for Lobbying" as provided by FHWA Form 1273, section XII set forth on page 35 below.

Unless otherwise provided below, the term "Bidder", for the purposes of these certifications, includes the Bidder, its principals, and the person(s) signing the Bid. Upon execution of the Contract, the Bidder (then called the Contractor) will again make all the certifications indicated in this paragraph above. Upon execution of the Contract, the Bidder (then called the Contractor) will again make all the certifications indicated in this paragraph above.

CERTIFICATION REGARDING NO KICKBACKS TO PROCURE CONTRACT Except expressly stated by the Bidder on sheets submitted with the Bid (if any), the Bidder hereby certifies, to the best of its knowledge and belief, that it has not:

(A) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me) to solicit or secure this contract;

(B) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract, or;

(C) paid, or agreed to pay, to any firm, organization, or person (other than a bona fide employee working solely for me) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out the contract;

By signing and submitting a Bid, the Bidder acknowledges that this certification is to be furnished to the Maine Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation in connection with this contract in anticipation of federal aid highway funds and is subject to applicable state and federal laws, both criminal and civil.

CERTIFICATION REGARDING NONCOLLUSION Under penalty of perjury as provided by federal law (28 U.S.C. §1746), the Bidder hereby certifies, to the best of its knowledge and belief, that:

the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with the Contract.

For a related provisions, see Section 102.7.2 (C) of the Standard Specifications - "Effects of Signing and Delivery of Bids" - "Certifications", Section 3 of this Appendix A entitled "Other Federal Requirements" including section XI - "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion" and section XII. - "Certification Regarding Use of Contract Funds for Lobbying."

B. Bid Rigging Hotline To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SECTION 2 - FEDERAL EEO AND CIVIL RIGHTS REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 2 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Nondiscrimination & Civil Rights - Title VI The Contractor and its subcontractors shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Department deems appropriate. The Contractor and subcontractors shall comply with Title VI of the Civil Rights Act of 1964, as amended, and with all State of Maine and other Federal Civil Rights laws.

For related provisions, see Subsection B - "Nondiscrimination and Affirmative Action - Executive Order 11246" of this Section 2 and Section 3 - Other Federal Requirements of this "Federal Contract Provisions Supplement" including section II - "Nondiscrimination" of the "Required Contract Provisions, Federal Aid Construction Contracts", FHWA-1273.

B. Nondiscrimination and Affirmative Action - Executive Order 11246 Pursuant to Executive Order 11246, which was issued by President Johnson in 1965 and amended in 1967 and 1978, this Contract provides as follows.

The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its efforts to achieve maximum results from its actions. The Contractor shall

document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

1. Ensure and maintain a working environment free of harassment, intimidations, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all forepersons, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
2. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and to maintain a record of the organization's responses.
3. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
4. Provide immediate written notification to the Department's Civil Rights Office when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Design-Builder's efforts to meet its obligations.
5. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under B above.
6. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligation; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
7. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review

of these items with on-site supervisory personnel such as Superintendents, General Forepersons, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

8. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractor's and Subcontractors with whom the Contractor does or anticipates doing business.
9. Direct its recruitment efforts, both orally and written to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above describing the openings, screenings, procedures, and test to be used in the selection process.
10. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth, both on the site and in other areas of a Contractor's workforce.
11. Validate all tests and other selection requirements.
12. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
13. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
14. Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
15. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractor's and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.
16. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

C. Goals for Employment of Women and Minorities Per Executive Order 11246, craft tradesperson goals are 6.9% women and .5% minorities employed. However, goals may be adjusted upward at the mutual agreement of the Contractor and the Department. Calculation of these percentages shall not include On-the-Job Training Program trainees, and shall not include clerical or field clerk position employees.

For a more complete presentation of requirements for such Goals, see the federally required document "Goals for Employment of Females and Minorities" set forth in the next 6 pages below.

Start of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

§60-4.2 Solicitations

(d) The following notice shall be included in, and shall be part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part (see 41 CFR 60-4.2(a)):

Notice of Requirement for Affirmative Action to Ensure Equal Opportunity (Executive Order 11246)

1. The Offeror's or bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Goals for female participation in each trade 6.9%

Goals for minority participation for each trade

Maine

001 Bangor, ME 0.8%

Non-SMSA Counties (Aroostook, Hancock, Penobscot, Piscataquis, Waldo, Washington)

002 Portland-Lewiston, ME

SMSA Counties: 4243 Lewiston-Auburn, ME 0.5%
(Androscoggin)

6403 Portland, ME 0.6%
(Cumberland, Sagadahoc)

Non-SMSA Counties: 0.5%
(Franklin, Kennebec, Knox, Lincoln, Oxford, Somerset, York)

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be in violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor, estimated dollar amount of the subcontract; estimated started and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the Contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any).

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department form 941;
 - d. "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

- (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of the North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
 3. If the contractor, is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors for Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
 4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a. through p. of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical areas where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specific.
 5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant, thereto.
 6. In order for the non working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the

apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as expensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, when possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment sources or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.
 - f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific

review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment, efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing prior to the date for the acceptance of applications for apprenticeship or the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on site and in other areas of a Contractor's work force.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of

solicitation to minority and female contractor associations and other business associations.

- p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7 a through p.). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7 a through p. of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program and reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions take on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
 9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, specific minority group of women is underutilized.)
 10. The Contractor shall not use the goals and timetables or affirmative action even through the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if standards to discriminate against any person because of race, color, religion, sex, or national origin.
 11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
 12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementation regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
 13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the

requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.6.

- 14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and location at which the work was performed. Records be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
- 15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

End of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

D. Disadvantaged Business Enterprise (DBE) Requirements The Department has established an annual Disadvantaged Business Enterprise goal to be achieved through race neutral means. This goal will adjusted periodically and will be provided by Supplemental Provision. The Contractor shall comply with all provisions of this section regarding DBE participation and the Department’s latest version of the Disadvantaged Business Enterprise Program Manual, said Manual being incorporated herein by reference. In the case of conflict between this Contract and said Manual, this Contract shall control. The Department reserves the right to adjust DBE goals on a project-by-project basis by addendum.

Policy. It is the Department’s policy that DBEs as defined in 23 CFR Part 26 and referenced in the Transportation Equity Act for 21st Century of 1998, as amended from the Surface Transportation Uniform Relocation Assistance Act of 1987, and the Intermeddle Surface Transportation Efficiency Act of 1991. The intent hereto remains to provide the maximum opportunity for DBEs to participate in the performance of contracts financed in whole or in part with federal funds.

The Department and its Contractors shall not discriminate on the basis of race, color, national origin, ancestry, sex, age, or disability in the award and performance of DOT assisted contracts.

Disadvantaged Business Enterprises are those so certified by the Maine Department of Transportation Civil Rights Office prior to bid opening date.

The Department has determined that elements of a good faith effort to meet the contract goal include but are not limited to the following:

1. Whether the Contractor advertised in general circulation, trade association, and minority/women's-focus media concerning the subcontracting opportunities;
2. Whether the Contractor provided written notice to a reasonable number of specific DBEs that their interest in the contract is being solicited;
3. Whether the Contractor followed up on initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested;
4. Whether the Contractor selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals;
5. Whether the Contractor provided interested DBEs with adequate information about the plans, specification and requirements of the contract;
6. Whether the Contractor negotiated in good faith with interested DBEs, not rejecting the DBE as unqualified without sound reasons based on a thorough investigation of their capabilities;
7. Whether the Contractor made efforts to assist interested DBEs with other appropriate technical/financial assistance required by the Department or Contractor;
8. Whether the Contractor effectively used the services of available minority/women's community organizations, minority/women's business assistance offices; and other organizations that provide assistance in the recruitment and placement of DBEs.

Substitutions of DBEs. The following may be acceptable reasons for Civil Rights Office approval of such a change order:

- The DBE defaults, voluntarily removes itself or is over-extended;
- The Department deletes portions of the work to be performed by the DBE.

It is not intended that the ability to negotiate a more advantageous contract with another certified DBE be considered a valid basis for such a change in DBE utilization once the DBE Bid Submission review has been passed. Any requests to alter the DBE commitment must be in writing and included with the change order.

Failure to carry out terms of this Standard Specification shall be treated as a violation of this contract and will result in contract sanctions which may include withholding of partial payments totaling the creditable dollars amount which would have been paid for said DBE participation, termination of this contract or other measures which may affect the ability of the Contractor to obtain Department contracts.

Copies of the Maine Department of Transportation's DBE Program may be obtained from:

Maine Department of Transportation
Civil Rights Office
#16 State House Station
Augusta, Maine 04333-0016
tel. (207) 624-3519

Quarterly Reporting Requirement. The Contractor must submit Semi-annual reports of actual dollars paid to Disadvantaged Business Enterprises (DBE's) on this Project to the MDOT Civil Rights Office by the end of the third week of April and October for the period covering the preceding six months considered Federal Fiscal Year periods. The reports will be submitted directly to the Civil Rights Office on the form provided in the latest version of the DBE Program Manual. Failure to submit the report by the deadline may result in a withholding of approval of partial payment estimates by the Department.

SECTION 3 - OTHER FEDERAL REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 3 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Buy America

If the cost of products purchased for permanent use in this project which are manufactured of steel, iron or the application of any coating to products of these materials exceeds 0.1 percent of the contract amount, or \$2,500.00, whichever is greater, the products shall have been manufactured and the coating applied in the United States. The coating materials are not subject to this clause, only the application of the coating. In computing that amount, only the cost of the product and coating application cost will be included.

Ore, for the manufacture of steel or iron, may be from outside the United States; however, all other manufacturing processes of steel or iron must be in the United States to qualify as having been manufactured in the United States.

United States includes the 50 United States and any place subject to the jurisdiction thereof.

Products of steel include, but are not limited to, such products as structural steel, piles, guardrail, steel culverts, reinforcing steel, structural plate and steel supports for signs, luminaries and signals.

Products of iron include, but are not limited to, such products as cast iron grates.

Application of coatings include, but are not limited to, such applications as epoxy, galvanized and paint.

To assure compliance with this section, the Contractor shall submit a certification letter on its letterhead to the Department stating the following:

“This is to certify that products made of steel, iron or the application of any coating to products of these materials whose costs are in excess of \$2,500.00 or 0.1 percent of the original contract amount, whichever is greater, were manufactured and the coating, if one was required, was applied in the United States.”

B. Materials

a. Convict Produced Materials References: 23 U.S.C. 114(b)(2), 23 CFR 635.417

Applicability: FHWA's prohibition against the use of convict material only applies to Federal-aid highways. Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if: 1) such materials have been produced by convicts who are on parole, supervised release, or probation from a prison; or 2) such material has been produced in a qualified prison facility, e.g., prison industry, with the amount produced during any 12-month period, for use in Federal-aid projects, not exceeding the amount produced, for such use, during the 12-month period ending July 1, 1987.

Materials obtained from prison facilities (e.g., prison industries) are subject to the same requirements for Federal-aid participation that are imposed upon materials acquired from other sources. Materials manufactured or produced by convict labor will be given no preferential treatment.

The preferred method of obtaining materials for a project is through normal contracting procedures which require the contractor to furnish all materials to be incorporated in the work. The contractor selects the source, public or private, from which the materials are to be obtained (23 CFR 635.407). Prison industries are prohibited from bidding on projects directly (23 CFR 635.112e), but may act as material supplier to construction contractors.

Prison materials may also be approved as State-furnished material. However, since public agencies may not bid in competition with private firms, direct acquisition of materials from a prison industry for use as State-furnished material is subject to a public interest finding with the Division Administrator's concurrence (23 CFR 635.407d). Selection of materials produced by convict labor as State-furnished materials for mandatory use should be cleared prior to the submittal of the Plans Specifications & Estimates (PS&E).

b. Patented/Proprietary Products References: 23 U.S.C. 112, 23 CFR 635.411

FHWA will not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

- the item is purchased or obtained through competitive bidding with equally suitable unpatented items,
- the STA certifies either that the proprietary or patented item is essential for synchronization with the existing highway facilities or that no equally suitable alternative exists, or
- the item is used for research or for a special type of construction on relatively short sections of road for experimental purposes. States should follow FHWA's procedures for "Construction Projects Incorporating Experimental Features" ([expermnt.htm](#)) for the submittal of work plans and evaluations.

The primary purpose of the policy is to have competition in selection of materials and allow for development of new materials and products. The policy further permits materials and products that are judged equal may be bid under generic specifications. If only patented or proprietary products are acceptable, they shall be bid as alternatives with all, or at least a

reasonable number of, acceptable materials or products listed; and the Division Administrator may approve a single source if it can be found that its utilization is in the public interest.

Trade names are generally the key to identifying patented or proprietary materials. Trade name examples include 3M, Corten, etc. Generally, products identified by their brand or trade name are not to be specified without an "or equal" phrase, and, if trade names are used, all, or at least a reasonable number of acceptable "equal" materials or products should be listed. The licensing of several suppliers to produce a product does not change the fact that it is a single product and should not be specified to the exclusion of other equally suitable products.

c. State Preference References: 23 U.S.C. 112, 23 CFR 635.409

Materials produced within Maine shall not be favored to the exclusion of comparable materials produced outside of Maine. State preference clauses give particular advantage to the designated source and thus restrict competition. Therefore, State preference provisions shall not be used on any Federal-aid construction projects.

This policy also applies to State preference actions against materials of foreign origin, except as otherwise permitted by Federal law. Thus, States cannot give preference to in-State material sources over foreign material sources. Under the Buy America provisions, the States are permitted to expand the Buy America restrictions provided that the STA is legally authorized under State law to impose more stringent requirements.

d. State Owned/Furnished/Designated Materials References: 23 U.S.C. 112, 23 CFR 635.407

Current FHWA policy requires that the contractor must furnish all materials to be incorporated in the work, and the contractor shall be permitted to select the sources from which the materials are to be obtained. Exceptions to this requirement may be made when there is a definite finding, by MDOT and concurred in by Federal Highway Administration's (FHWA) Division Administrator, that it is in the public interest to require the contractor to use materials furnished by the MDOT or from sources designated by MDOT. The exception policy can best be understood by separating State-furnished materials into the categories of manufactured materials and local natural materials.

Manufactured Materials When the use of State-furnished manufactured materials is approved based on a public interest finding, such use must be made mandatory. The optional use of State-furnished manufactured materials is in violation of our policy prohibiting public agencies from competing with private firms. Manufactured materials to be furnished by MDOT must be acquired through competitive bidding, unless there is a public interest finding for another method, and concurred in by FHWA's Division Administrator.

Local Natural Materials When MDOT owns or controls a local natural materials source such as a borrow pit or a stockpile of salvaged pavement material, etc., the materials may be designated for either optional or mandatory use; however, mandatory use will require a public interest finding (PIF) and FHWA's Division Administrator's concurrence.

In order to permit prospective bidders to properly prepare their bids, the location, cost, and any conditions to be met for obtaining materials that are made available to the contractor shall be stated in the bidding documents.

Mandatory Disposal Sites Normally, the disposal site for surplus excavated materials is to be of the contractor's choosing; although, an optional site(s) may be shown in the contract provisions. A mandatory site shall be specified when there is a finding by MDOT, with the concurrence of the Division Administrator, that such placement is the most economical or that the environment would be substantially enhanced without excessive cost. Discussion of the mandatory use of a disposal site in the environmental document may serve as the basis for the public interest finding.

Summarizing FHWA policy for the mandatory use of borrow or disposal sites:

- mandatory use of either requires a public interest finding and FHWA's Division Administrator's concurrence,
- mandatory use of either may be based on environmental consideration where the environment will be substantially enhanced without excessive additional cost, and
- where the use is based on environmental considerations, the discussion in the environmental document may be used as the basis for the public interest finding.

Factors to justify a public interest finding should include such items as cost effectiveness, system integrity, and local shortages of material.

C. Standard FHWA Contract Provisions - FHWA 1273

Unless expressly otherwise provided in the Bid Documents, the following "Required Contract Provisions, Federal Aid Construction Contracts", FHWA-1273, are hereby incorporated into the Bid Documents and Contract.

Start of FHWA 1273 REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS(As revised through March 10, 1994)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.
4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.
6. Selection of Labor: During the performance of this contract, the contractor shall not:
 - a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
 - b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION (Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
 - a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.
 - b. The contractor will accept as his operating policy the following statement:
"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment,

upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. EEO Officer. The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
3. Dissemination of Policy. All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
 - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
 - c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.
 - d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
4. Recruitment. When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
 - a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

- b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
 - c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.
5. Personnel Actions. Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:
- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
 - b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
 - c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
 - d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.
6. Training and Promotion.
- a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
 - b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision

for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

- c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
 - d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.
7. Unions. If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:
- a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
 - b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
 - c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.
 - d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.
8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment. The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

- a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.
 - b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.
 - c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.
9. Records and Reports. The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.
- a. The records kept by the contractor shall document the following:
 - (1) The number of minority and non-minority group members and women employed in each work classification on the project;
 - (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
 - (4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
 - b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the MDOT and the Federal Highway Administration.

The Contractor will submit to the MDOT a report for the month of July, indicating the total hours worked by minority, women and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR-1391. If on-the-job training is being required by "Training Special Provision," the Contractor will be required to furnish Form FHWA-1409. The report is required for week ending July 15 and can be obtained from MDOT, is due by week ending August 20th. This report is to be furnished directly to MDOT - Civil Rights Office.

III. NONSEGREGATED FACILITIES (Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

- a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.
- b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).
- c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE (Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

- a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the

provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

- b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.
- c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

- a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.
- b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:
 - (1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;
 - (2) the additional classification is utilized in the area by the construction industry;
 - (3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and
 - (4) with respect to helpers, when such a classification prevails in the area in which the work is performed.
- c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

- d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary
- e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

- a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.
- b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

- (1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.
- (2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor

as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

- (3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.
- (4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

- (1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.
- (2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation. Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.
9. Withholding for Unpaid Wages and Liquidated Damages. The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS (Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3). The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.
2. Payrolls and Payroll Records:
 - a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.
 - b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in

Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

- c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.
- d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;
 - (2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;
 - (3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.
- f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

- g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:
 - a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.
 - b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.
 - c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.
2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).
 - a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor,

with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

- b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.
4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).
3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health

standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations

in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:
(Applicable to all Federal-aid contracts - 49 CFR 29)
 - a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
 - b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
 - c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
 - d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
 - e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out

in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

- f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.
- i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--
Primary Covered Transactions

- 1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or

local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
- d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Covered Transactions: (Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--
Lower Tier Covered Transactions:

- 1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- 2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

- 1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
 - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a

December 14, 2005
Supersedes September 1, 2005

Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

End of FHWA 1273

Permits & Cultural Resources Unit

Summary Sheet

PIN #: 8483.33&34 Town: Calais
 Permit Member: J Nichols
 ENV Coordinator and Date submitted to ENV Coordinator: 9/25/06
 Database/Projex

Section 106 Consultation

Architectural Resources	PA <input type="checkbox"/>	Applicable <input checked="" type="checkbox"/>	Approved <input checked="" type="checkbox"/>
Archeological Resources	PA <input type="checkbox"/>	Applicable <input checked="" type="checkbox"/>	Approved <input checked="" type="checkbox"/>

4(f) and 6(f)

Section 4(f)

Are there Right of Way Takes or Easements on Public Park Property	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are there Right of Way Takes or Easements on Public Recreational Property	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are there Right of Way Takes or Easements on Public Wildlife/ Waterfowl Refuge Property	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are there Right of Way Takes or Easements on Historic Eligible or Listed Property	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are there Right of Way Takes or Easements on Property within a Historic District	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Has MHPC Determined an Adverse Effect	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is a Programmatic or Full 4(f) Document Required	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

LAWCON 6(f) N/A Applicable Approved

FEMA GIS Floodplains Checked N/A Applicable

Maine Department of Inland Fisheries and Wildlife (MDIFW) Essential Habitat

GIS Essential Habitats Checked	<input type="checkbox"/>	
Eagle Nest	N/A <input type="checkbox"/>	Applicable <input checked="" type="checkbox"/> Approved <input checked="" type="checkbox"/>
Piping Plover	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/> Approved <input type="checkbox"/>
Roseate Tern	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/> Approved <input type="checkbox"/>

Maine Department of Conservation/ Public Lands, Submerged Land Lease N/A Applicable

Land Use Regulation Commission (LURC) Not Applicable

No permit	<input type="checkbox"/>	
Notice	<input type="checkbox"/>	Approved <input type="checkbox"/>
Permit	<input type="checkbox"/>	Approved <input type="checkbox"/>

Maine Department of Environmental Protection (MDEP) Site Location of Development

N/A Applicable Approved

Maine Department of Environmental Protection (MDEP), Natural Resource Protection Act

No permit required	<input type="checkbox"/>	
Exempt	<input type="checkbox"/>	(Must use erosion and sediment control and not block fish passage.)
PBR	<input type="checkbox"/>	Approved <input type="checkbox"/>
Tier 1	<input type="checkbox"/>	Approved <input type="checkbox"/>
Tier 2	<input type="checkbox"/>	Approved <input type="checkbox"/>
Individual	<input checked="" type="checkbox"/>	Approved <input checked="" type="checkbox"/>

Army Corps of Engineers (ACOE), Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.

No permit required	<input type="checkbox"/>	
Category 1-NR	<input type="checkbox"/>	Approved <input type="checkbox"/>
Category 2	<input type="checkbox"/>	Approved <input type="checkbox"/>
Category 3	<input checked="" type="checkbox"/>	Approved <input checked="" type="checkbox"/>

IN-STREAM TIMING RESTRICTIONS: 105 Special Provision n/a

Dates instream work is allowed: 6/30 to 9/30 (See Special Provision 105 for exceptions).

Special Provision 656, Erosion Control Plan

*Boxes marked in red indicate items that are attached and need to be placed in the contract by the Project Manager.

Special Provision 100
Environmental Requirements and Commitments

Execution of this contract requires the Contractor to comply with all applicable environmental, laws, rules, regulation, and statutes, U.S. State and Federal regulatory requirements.

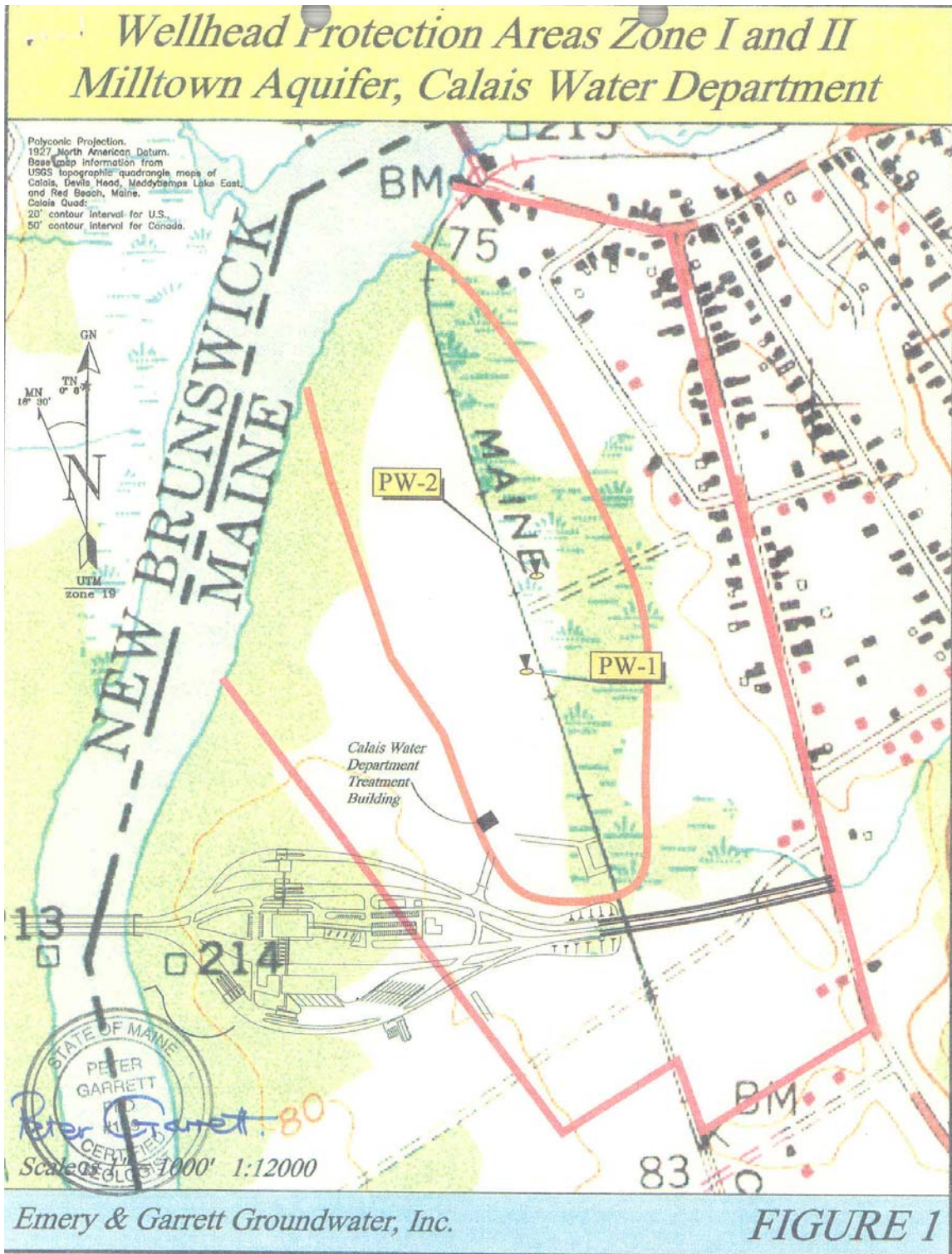
1. All reasonable efforts will be made to minimize particulate matter, lighting and noise that might affect wildlife as determined by the Resident.
2. A Maine DOT biologist will do a pre-construction survey to identify and protect any wildlife in the project area. The contractor shall notify the Resident at least 14 working days prior to clearing in the U.S. Construction activities should be conducted in such a way as to avoid as much as reasonably possible migratory bird species and their nests. 10. Construction at the extreme southern end of the project shall be performed outside the bald eagle nesting period of February 15 to August 31 of any year in order to minimize potential impacts to a known eagle nest located off Route 1, approximately 2000' to the north. In addition, the permittee shall not site construction staging areas, equipment storage, or construction vehicle parking areas within ¼ mile of the bald eagle nest.
3. Injured wildlife will be reported and/or taken to the proper authorities for rehabilitation.
4. In the event of unexpected discovery of archaeological or historical cultural resources, all activity shall cease in the area of discovery. Immediate telephone notification of the discovery shall be made to an appropriate responsible state or federal official, as provided in the Section 105.9 of the State of Maine Department of Transportation General Conditions, Supplemental Specifications, and Supplemental Standard Details for Construction, dated February 1, 2002, and the National Historic Preservation Act of 1966. In addition, reasonable efforts to protect the cultural resources discovered shall be made. The activity may resume only after the appropriate federal and state agency officials have authorized a continuance.
5. The Contractor is required to submit to MaineDOT a Spill Prevention Plan. Refueling operations shall not take place within Wellhead Protection Zone 1 per the City of Calais Wellhead Protection rules. Re-fueling operations may take place within Wellhead Protection Zone 2 with City of Calais Planning Board approval. It is the Contractor's responsibility to obtain permission, in writing, from the City of Calais. Said documentation shall be supplied to the Resident

Special Provision 100
Environmental Requirements and Commitments

before any refueling is to occur within Wellhead Protection Zone 2 (see attached map).

6. The Contractor shall notify the Resident at least 21 working days prior to winter shutdown so as to allow sufficient time for an on-site meeting to be arranged with all appropriate environmental Regulators to assess the site prior to the Contractor leaving the site.
7. There are no in-stream work timing restrictions associated with the two unnamed streams located on the project. Work during low flows and appropriate BMP's are required. Low flow shall be defined by the Resident.

Special Provision 100
Environmental Requirements and Commitments





STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

MAINE DEPARTMENT OF TRANSPORTATION) NATURAL RESOURCES PROTECTION ACT
Calais, Washington County) FRESHWATER WETLAND ALTERATION
THIRD INTERNATIONAL BRIDGE) WATER QUALITY CERTIFICATION
L-22770-L6-A-N (approval)) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S.A. Sections 480-A et seq. and Section 401 of the Federal Water Pollution Control Act, the Department of Environmental Protection has considered the application of MAINE DEPARTMENT OF TRANSPORTATION with the supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. Summary: The applicant is proposing to construct a third international bridge linking Calais with St. Stephan, New Brunswick, Canada. In addition to the bridge crossing, the facility will include a Border Patrol Facility run by the U.S. Department of Homeland Security. The wetland alterations for the entire site are included in this Order; the U.S government will apply for a Site License at a later date. The applicant does not propose additional wetland alteration outside the boundaries of the project. The applicant is not proposing the widening of Route 1 through the Moosehorn National Wildlife Refuge as part of this project.

The applicant is requesting a permit to alter a total of 296,540 square feet of freshwater wetland. The amounts of wetlands, type of wetland and the placement of the wetland within the site (i.e. road, station, etc.) to be altered are detailed in Exhibit 14 of the application. The project is shown on a set of plans included with the application, the first of which is entitled "Location", prepared by the applicant and dated September 8, 2004. The project site is located on Route 2 in the Town of Calais.

The Department received a request for a Public Hearing; however, no credible conflicting technical information was received by the Department and the Commissioner denied the request.

B. Current Use of the Site: The site is currently part of the Calais Industrial Park.

2. WATER QUALITY CONSIDERATIONS:

Provided that the project erosion and sedimentation controls are implemented and maintained in accordance with the MDOTs' Best Management Practices as outlined in Exhibit 8 of the application, the Department does not anticipate that the proposed project will violate any state water quality law, including those governing the classification of the State's waters.

3. HABITAT CONSIDERATIONS:

Information provided to the Department from the Department of Marine Resources (DMR) indicates that the proposed project should not cause any significant adverse impacts to marine resources, navigation or recreation.

Information provided to the Department from the Maine Department of Inland Fisheries and Wildlife indicates that there are no Essential or Significant Wildlife Habitats at the project site.

4. WETLANDS AND WATERBODIES PROTECTION RULES:

The Department's Wetlands and Waterbodies Protection Rules, Chapter 310, require that the applicant meet the following standards:

Avoidance. No activity may be permitted if there is a practicable alternative to the project that would be less damaging to the environment. Each application for a freshwater wetland alteration permit must provide an analysis of alternatives in order to demonstrate that a practicable alternative does not exist. The applicant submitted an alternative analysis for the proposed project completed by the applicant and entitled "Reevaluation of the 2001 Environmental Assessment", dated January 2006. The analysis is included as Exhibit 20 of the application. In the alternative analysis, the applicant looked at several possible locations for the new bridge crossing along the Route 1/Route 9 corridor between Baileyville and Calais. The review of each possible location demonstrates that the proposed project as outlined in the application provides the least amount of alteration to freshwater wetlands, undeveloped lands and good agricultural areas.

b. Minimal Alteration. The amount of wetland to be altered must be kept to the minimum amount necessary for meeting the overall purpose of the project. The proposed wetland alteration is the least amount necessary to construct the project.

c. Compensation. Compensation is required to achieve the goal of no net loss of wetland functions and values. Due to the amount of wetland alteration, the applicant is required to compensate for the lost functions and values of the wetlands. The applicant is proposing to preserve approximately 178 acres of wetland and associated adjacent upland to the Moosehorn National Wildlife Refuge (Refuge) and deeded to the Refuge. The

parcel is currently owned by the City of Calais. In an email dated April 4, 2006, the City indicates intent to transfer the parcel to MDOT by December 31, 2006. Due to federal regulations regarding land, the 178 acres may not have any associated encumbrances. By May 1, 2007, the applicant shall submit evidence to the Department indicating that the parcel has been accepted by and transferred to the Refuge.

The Department finds that the applicant has avoided and minimized wetland impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project.

5. OTHER CONSIDERATIONS:

The Department did not identify any other issues involving existing scenic, aesthetic, or navigational uses, soil erosion, habitat or fisheries, the natural transfer of soil, natural flow of water, water quality, or flooding.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S.A. Sections 480-A et seq. and Section 401 of the Federal Water Pollution Control Act:

- A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.
- B. The proposed activity will not cause unreasonable erosion of soil or sediment.
- C. The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.
- D. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life.
- E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.
- F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.
- G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.
- H. The proposed activity is not on or adjacent to a sand dune.

- I. The proposed activity is not on an outstanding river segment as noted in Title 38 M.R.S.A. Section 480-P.

THEREFORE, the Department APPROVES the above noted application of Maine Department of Transportation to construct a third international bridge, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:

1. Standard Conditions of Approval, a copy attached.
2. The applicant shall take all necessary measures to ensure that their activities or those of their agents do not result in measurable erosion of soil on the site during the construction of the project covered by this approval.
3. By May 1, 2007, the applicant shall submit evidence to the Department indicating that the parcel has been accepted by and transferred to the Refuge.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED AT AUGUSTA, MAINE, THIS 14th DAY OF April, 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

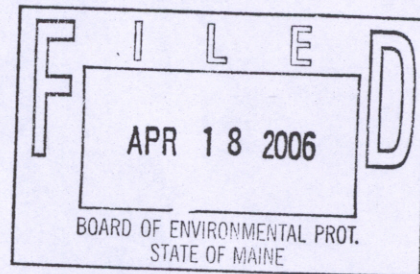
By: *David R. Littell*
 DAVID R LITTELL, COMMISSIONER

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application January 30, 2006

Date of application acceptance February 9, 2006

Date filed with Board of Environmental Protection
 RC/57025/22770AN





NATURAL RESOURCE PROTECTION ACT (NRPA) STANDARD CONDITIONS

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCE PROTECTION ACT, TITLE 38, M.R.S.A. SECTION 480-A ET.SEQ. UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

- A. **Approval of Variations From Plans.** The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.
- B. **Compliance With All Applicable Laws.** The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.
- C. **Erosion Control.** The applicant shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval.
- D. **Compliance With Conditions.** Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicant construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated.
- E. **Initiation of Activity Within Two Years.** If construction or operation of the activity is not begun within two years, this permit shall lapse and the applicant shall reapply to the Board for a new permit. The applicant may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits shall state the reasons why the applicant will be able to begin the activity within two years form the granting of a new permit, if so granted. Reapplications for permits may include information submitted in the initial application by reference.
- F. **Reexamination After Five Years.** If the approved activity is not completed within five years from the date of the granting of a permit, the Board may reexamine its permit approval and impose additional terms or conditions to respond to significant changes in circumstances which may have occurred during the five-year period.
- G. **No Construction Equipment Below High Water.** No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit.
- H. **Permit Included In Contract Bids.** A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.
- I. **Permit Shown To Contractor.** Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit.



**US Army Corps
of Engineers®**
New England District

(Minimum Notice: Permittee must sign and return notification
within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

Corps of Engineers Permit No: _____

Name of Permittee: _____

Permit Issuance Date: _____

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

```

*****
* MAIL TO: U.S. Army Corps of Engineers, New England District      *
*           Policy Analysis/Technical Support Branch, ATTN: Marie Farese *
*           Regulatory Division                                     *
*           696 Virginia Road                                     *
*           Concord, Massachusetts 01742-2751                     *
*****

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Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

Printed Name

Date of Work Completion

() _____
Telephone Number

() _____
Telephone Number

Permit No: GP-39

Effective Date: Sept. 29, 2000

Expiration Date: Sept. 29, 2005

Applicant: General Public, State of Maine

**DEPARTMENT OF THE ARMY
PROGRAMMATIC GENERAL PERMIT
STATE OF MAINE**

The New England District of the U.S. Army Corps of Engineers hereby issues a programmatic general permit (PGP) that expedites review of minimal impact work in coastal and inland waters and wetlands within the State of Maine. Activities with minimal impacts, as specified by the terms and conditions of this general permit and on the attached DEFINITION OF CATEGORIES sheets, are either non-reporting (provided required local and state permits are received), or are reporting, to be screened by the Corps and Federal Resource Agencies for applicability under the general permit. This general permit does not affect the Corps individual permit review process or activities exempt from Corps jurisdiction.

Activities Covered: work and structures that are located in, or that affect, navigable waters of the United States (regulated by the Corps under Section 10 of the Rivers and Harbors Act of 1899) and the discharge of dredged or fill material into waters of the United States (regulated by the Corps under Section 404 of the Clean Water Act), and the transportation of dredged material for the purpose of disposal in the ocean (regulated by the Corps under Section 103 of the Marine Protection, Research and Sanctuaries Act).

PROCEDURES:

A. State Approvals

For projects authorized pursuant to this general permit that are also regulated by the State of Maine, the following state approvals are also required and must be obtained in order for this general permit authorization to be valid (applicants are responsible for ensuring that all required state permits and approval have been obtained):

- (a) Maine Department of Environmental Protection (DEP): Natural Resources Protection Act permit, including permit-by-rule and general permit authorizations; Site Location and Development Act permit; and Maine Waterway Development and Conservation Act.
- (b) Maine Department of Conservation: Land Use Regulation Commission (LURC) permit.
- (c) Maine Department of Marine Resources: Lease.
- (d) Bureau of Public Lands, Submerged Lands: Lease.

Note that projects not regulated by the State of Maine (e.g., seasonal floats or moorings) may still be authorized by this general permit.

B. Corps Authorizations : Category I (Non-Reporting)

Work in Maine subject to Corps jurisdiction that meets the definition of Category I on the attached DEFINITION OF CATEGORIES sheets and that meets all of this permit's other conditions, does not require separate application to the Corps of Engineers. If the State or the Corps does not contact the applicant for PBRs and Tier One permits during the State's Tier One 30-day review period, Corps approval may be assumed and the project may proceed. Refer to the Procedures Section at Paragraph E below for additional information regarding screening.

Note that the review thresholds under Category I apply to single and complete projects only (see special condition 5). **Also note that Category I does not apply to projects occurring in a component of, or within 0.25 miles up and downstream of the main stem or tributaries of a river segment of the National Wild and Scenic River System** (see condition 11, and page 9 for the listed rivers in Maine).

There are also restrictions on other national lands or concerns which must be met in order for projects to be eligible for authorization under this PGP. Refer to special conditions 6-13 under Paragraph F below.

Work that is not regulated by the State of Maine, but that is subject to Corps jurisdiction, is eligible for Corps authorization under this PGP in accordance with the review thresholds and conditions contained herein.

Although Category I projects are non-reporting, the Corps reserves the right to require screening or an individual permit review if there are concerns for the aquatic environment or any other factor of the public interest (see special condition 4 on Discretionary Authority). The Corps review or State/Federal screening process may also result in project modification, mitigation or other special conditions necessary to minimize impacts and protect the aquatic environment as a requirement for PGP approval.

C. Corps Authorization: Category II (Reporting – requiring screening)

APPLICATION PROCEDURES

For projects that do not meet the terms of Category I (see DEFINITION OF CATEGORIES sheets), the Corps, State, and Federal Resource Agencies will conduct joint screening meetings to review applications. If projects are concurrently regulated by the DEP or LURC, applicants do not need to submit separate applications to the Corps. For projects not regulated by DEP or LURC, applicants must submit an application to the Corps Maine Project Office for a case-by-case determination of eligibility under this general permit (Category II). **Category II projects may not proceed until written notification is received from the Corps.**

Category II projects which occur in a component of, or within 0.25 mile up or downstream of the main stem or tributaries of a river segment of the National Wild and Scenic River System, will be coordinated with the National Park Service (see special condition 11, and page 9 for listed rivers in Maine).

There are also restrictions on other national lands or concerns which must be met in order for projects to be eligible for authorization under this PGP. Refer to special conditions 6-14 under Paragraph E below.

Category II applicants shall submit a copy of their application materials to the Maine Historic Preservation Commission and/or applicable Indian tribe(s) at the same time, or before, they apply to the DEP, LURC, or the Corps so that the project can be reviewed for the presence of historic/archaeological resources in the project area that may be affected by the proposed work. **Applications to the DEP or the Corps should include information to indicate that this has been done (applicant's statement or copy of cover letter to Maine Historic Preservation Commission and/or Indian tribe(s)).**

The Corps may require additional information on a case-by-case basis as follows:

- (a) purpose of project;
- (b) 8 1/2" by 11" plan views of the entire property including property lines and project limits with existing and proposed conditions (**legible, reproducible plans required**);
- (c) wetland delineation for the site, information on the basis of the delineation, and calculations of waterway and wetland impact areas (see special condition 2);
- (d) typical cross-section views of all wetland and waterway fill areas and wetland replication areas;
- (e) delineation of submerged aquatic vegetation, e.g., eel grass beds, in tidal waters;
- (f) area, type and source of fill material to be discharged into waters and wetlands, including the volume of fill below ordinary high water in inland waters and below the high tide line in coastal waters;
- (g) mean low, mean high water and high tide elevations in navigable waters;
- (h) limits of any Federal navigation project in the vicinity and State Plane coordinates for the limits of the proposed work closest to the Federal project;
- (i) on-site alternatives analysis (contact Corps for guidance);
- (j) identify and describe potential impacts to Essential Fish Habitat (contact Corps for guidance);
- (k) for dredging projects, include:
 - 1) the volume of material and area in square feet to be dredged below mean high water,
 - 2) existing and proposed water depths,
 - 3) type of dredging equipment to be used,
 - 4) nature of material (e.g., silty sand),

- 5) any existing sediment grain size and bulk sediment chemistry data for the proposed or any nearby projects,
- 6) information on the location and nature of municipal or industrial discharges and occurrences of any contaminant spills in or near the project area,
- 7) location of the disposal site (include locus sheet),
- 8) shellfish survey, and
- 9) sediment testing, including physical, chemical and biological testing. For projects proposing open water disposal, applicants are encouraged to contact the Corps as early as possible regarding sampling and testing protocols.

The Corps may request additional information. Dredging applicants may be required to conduct a shellfish and/or eel grass survey and sediment testing, including physical, chemical and biological testing. Sediment sampling and testing plans should be prepared or approved by the Corps before the samples are collected.

STATE-FEDERAL SCREENING PROCEDURES:

The Corps intends to utilize the application information required by the State for its regulatory program to the maximum extent practicable and the Corps normally will not be interacting with an applicant who is concurrently making application to the DEP or LURC. Projects not regulated by the State, but needing Corps of Engineers approval, **must apply directly to the Corps**. The joint screening meeting for Category II projects will occur regularly at the Corps or State offices and will involve representatives from the DEP, the Corps, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service.

The Corps and Federal Resource Agencies will classify the project within the State's review period, not to exceed 60 days, as: 1) approvable under the PGP as proposed; 2) needs additional information, including possible project modification, mitigation or other special conditions to minimize impacts; or 3) exceeds the terms or conditions of the PGP, including the minimal effects requirement, and an individual permit review will be required. In addition, the Corps retains the ability to exercise its discretionary authority and require an individual permit, irrespective of whether the terms and conditions of this general permit are met, based on concerns for the aquatic environment or any factor of the public interest (see special condition 4 on Discretionary Authority). All Category II projects must receive written approval from the Corps before work can proceed. If the project is not approvable as proposed, the DEP, LURC, or the Corps will contact the applicant to discuss the concerns raised. If the applicant is unable to resolve the concerns, the Corps, independently or at the request of the Federal Resource Agencies, will require an individual permit for the project. The applicant will be notified of this in writing, along with information about submitting the necessary application materials. The comments from the Federal Resource Agencies to the Corps may be verbal initially, and must be made within 10 working days of the screening meeting. These comments must be confirmed in writing within 10 calendar days of the verbal response if the Resource Agency(ies) will request an individual permit. The Federal Resource Agency's comments must reflect a concern within their area of expertise, state the species or resources that could be impacted by the project, and describe the impacts that either individually or cumulatively will be more than minimal.

MINERALS MANAGEMENT SERVICE (MMS) REVIEW

For Category II projects which involve construction of solid fill structures or discharge of fills along the coast which may extend the coastline or baseline from which the territorial sea is measured, coordination between the Corps and Minerals Management Service (MMS), Continental Shelf (OCS) Survey Group, will be needed (pursuant to the Submerged Lands Act, 43 U.S.C., Section 1301-1315, 33 CFR 320.4(f)). During the screening period, the Corps will forward project information to MMS for their review. MMS will coordinate their determination with the Department of the Interior (DOI) Solicitor's Office. The DOI will have 15 calendar days from the date MMS is in receipt of project information to determine if the baseline will be affected. No notification to the Corps within 15 day review period will constitute a "no affect" determination. Otherwise, the solicitor's notification to the Corps may be verbal but must be followed with a written confirmation within 10 business days from the date of the verbal notification. This procedure will be eliminated if the State of Maine provides a written waiver of interest in any increase in submerged lands caused by a change in the baseline resulting from solid fill structure or fills authorized under this general permit.

D. Corps Authorization: Category III (Individual Permit)

Work that is in the INDIVIDUAL PERMIT category on the attached DEFINITION OF CATEGORIES sheets, or that does not meet the terms and conditions of this general permit, will require an application for an individual permit from the Corps of Engineers (see 33 CFR Part 325.1). The screening procedures outlined above will only serve to delay project review in such cases. The applicant should submit the appropriate application materials (including the Corps application form) at the earliest possible date. General information and application forms can be obtained at (207) 623-8367 (Maine Field Office), (800) 343-4789, or (800) 362-4367 in Massachusetts. Individual water quality certification and coastal zone management consistency concurrence will be required from the State of Maine before Corps permit issuance.

E. Programmatic General Permit Conditions:

The following conditions apply to activities authorized under the PGP, including all Category I (non-reporting) and Category II (reporting – requiring screening) activities:

GENERAL REQUIREMENTS:

1. **Other Permits.** Authorization under this general permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
2. **Applicability of this general permit shall be evaluated with reference to Federal jurisdictional boundaries.** Applicants are responsible for ensuring that the boundaries used satisfy the federal criteria defined at 33 CFR 328-329.
3. **Minimal Effects.** Projects authorized by this general permit shall have minimal individual and cumulative adverse environmental impacts as determined by the Corps.

4. **Discretionary Authority.** Notwithstanding compliance with the terms and conditions of this permit, the Corps of Engineers retains discretionary authority to require review for an individual permit based on concerns for the aquatic environment or for any other factor of the public interest. This authority is invoked on a case-by-case basis whenever the Corps determines that the potential consequences of the proposal warrant individual review based on the concerns stated above. This authority may be invoked for projects with cumulative environmental impacts that are more than minimal or if there is a special resource or concern associated with a particular project that is not already covered by the remaining conditions of the PGP and that warrants greater review.

Whenever the Corps notifies an applicant that an individual permit may be required, authorization under this general permit is void and no work may be conducted until the individual Corps permit is obtained or until the Corps notifies the applicant that further review has demonstrated that the work may proceed under this general permit.

5. **Single and Complete Projects.** This general permit shall not be used for piecemeal work and shall be applied to single and complete projects. All components of a single project and/or all planned phases of multi-phased projects shall be treated together as constituting one single and complete project (e.g., subdivisions should include all work such as roads, utilities, and lot development). This general permit shall not be used for any activity that is part of an overall project for which an individual permit is required.

NATIONAL CONCERNS:

6. **St. John/St. Croix Rivers.** This covers work within the Saint John and Saint Croix River basins that requires approval of the International Joint Commission. This includes any temporary or permanent use, obstruction or diversion of international boundary waters which could affect the natural flow or levels of waters on the Canadian side of the line, as well as any construction or maintenance of remedial works, protective works, dams, or other obstructions in waters downstream from boundary waters when the activity could raise the natural level of water on the Canadian side of the boundary.
7. **Historic Properties.** Any activity authorized by this general permit shall comply with Section 106 of the National Historic Preservation Act. Information on the location and existence of historic resources can be obtained from the Maine Historic Preservation Commission and the National Register of Historic Places. Federally recognized tribes (Penobscots, Passamaquoddys, Micmacs, and Maliseets) may know of the existence of other sites that may be of significance to their tribes. See page 14 for historic properties contacts.

Applicants with projects which will undergo the screening process (Category II) shall submit a copy of their application materials, with the name and address of the applicant clearly indicated, to the Maine Historic Preservation Commission, 55 Capitol Street, State House Station 65, Augusta, Maine 04333, and to the applicable tribe(s) to be reviewed for the presence of historic and/or archaeological resources in the permit area that may be affected by the proposed work. The Corps will then be notified by the Commission and/or

Tribe within 10 days if there are State and/or tribal concerns that the proposed work will have an effect on historic resources. The applicant should include with their application to the State or the Corps either a copy of their cover letter or a statement of having sent their application material to the Commission and Tribe(s).

If the permittee, either prior to construction or during construction of the work authorized herein, encounters a previously unidentified archaeological or other cultural resource, within the area subject to Department of the Army jurisdiction, that might be eligible for listing in the National Register of Historic Places, he/she shall stop work and immediately notify the District Engineer and the Maine Historic Preservation Commission and/or applicable Tribe(s).

8. **National Lands.** Activities authorized by this general permit shall not impinge upon the value of any National Wildlife Refuge, National Forest, or any area administered by the National Park Service.
9. **Endangered Species.** No activity is authorized under this general permit which
 - may affect a threatened or endangered species or a species proposed for such designation as identified under the Federal Endangered Species Act (ESA),
 - is likely to destroy or adversely modify the critical habitat or proposed critical habitat of such species,
 - would result in a 'take' of any threatened or endangered species of fish or wildlife, or
 - would result in any other violation of Section 9 of the ESA protecting threatened or endangered species of plants.

Applicants shall notify the Corps if any listed species or critical habitat, or proposed species or critical habitat, is in the vicinity of the project and shall not begin work until notified by the District Engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species and their critical habitat can be obtained from the U.S. Fish and Wildlife Service and National Marine Fisheries Service (addresses attached, page 14).

10. **Essential Fish Habitat.** As part of the PGP screening process, the Corps will coordinate with the National Marine Fisheries Service (NMFS) in accordance with the 1996 amendments to the Magnuson-Stevens Fishery and Conservation Management Act to protect and conserve the habitat of marine, estuarine and anadromous finfish, mollusks, and crustaceans. This habitat is termed "essential fish habitat (EFH)", and is broadly defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Applicants may be required to describe and identify potential impacts to EFH based upon the location of the project, the activity proposed, and the species present. Conservation recommendations made by NMFS will normally be included as a permit requirement by the Corps. Information on the location of EFH can be obtained from the NMFS regulations (50 CFR Part 600) (address listed on page 14) and on their web site (<http://www.nero.nmfs.gov/ro/doc/webintro.html>).

The EFH designation for Atlantic salmon includes all aquatic habitats in the watershed of the following rivers and streams, including all tributaries to the extent that they are currently or were historically accessible for salmon migration:

St. Croix River	Pleasant River	Union River
Boyden River	Narraguagus River	Ducktrap River
Dennys River	Tunk Stream	Sheepscot River
Hobart Stream	Patten Stream	Kennebec River
Aroostook River	Orland River	Androscoggin River
East Machias River	Penobscot River	Presumpscot River
Machias River	Passagassawaukeag River	Saco River

11. **Wild and Scenic Rivers**. Any activity that occurs in a component of, or within 0.25 mile up or downstream of the main stem or tributaries of a river segment of the National Wild and Scenic River System, **must be reviewed by the Corps under the procedures of Category II of this general permit regardless of size of impact**. This condition applies to both designated wild and scenic rivers and rivers designated by Congress as study rivers for possible inclusion while such rivers are in an official study status. The Corps will consult with the National Park Service (NPS) with regard to potential impacts of the proposed work on the resource values of the Wild and Scenic River. The culmination of this coordination will be a determination by the NPS and the Corps that the work: (1) may proceed as proposed; (2) may proceed with recommended conditions; or (3) could pose a direct and adverse effect on the resource values of the river and an individual permit is required. If preapplication consultation between the applicant and the NPS has occurred whereby the NPS has made a determination that the proposed project is appropriate for authorization under this PGP (with respect to wild and scenic river issues), this determination should be furnished to the Corps with submission of the application. The address of the NPS can be found on Page 14 of this permit. *National Wild/Scenic Rivers System (Designated River in Maine) as of 5/2/00*: Allagash River beginning at Telos Dam continuing to Allagash checkpoint at Eliza Hole Rapids, approximately 3 miles upstream of the confluence with the St. John River. Length = 92 miles
12. **Federal Navigation Project**. Any structure or work that extends closer to the horizontal limits of any Corps navigation project than a distance of three times the project's authorized depth (see attached map following page 16 for locations of these projects) shall be subject to removal at the owner's expense prior to any future Corps dredging or the performance of periodic hydrographic surveys.
13. **Navigation**. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein.

The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure

or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

14. **Federal Liability.** In issuing this permit, the Federal Government does not assume any liability for the following: (a) damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; (b) damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest; (c) damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit; (d) design or construction deficiencies associated with the permitted work; (e) damage claims associated with any future modification, suspension, or revocation of this permit.

MINIMIZATION OF ENVIRONMENTAL IMPACTS:

15. **Minimization.** Discharges of dredged or fill material into waters of the United States shall be avoided and minimized to the maximum extent practicable, regardless of review category.
16. **Work in Wetlands.** Heavy equipment working in wetlands shall be avoided if possible, and **if required, shall be placed on mats or other measures taken** to minimize soil and vegetation disturbance. Disturbed areas in wetlands shall be restored to preconstruction contours and conditions upon completion of the work.
17. **Temporary Fill.** Temporary fill in waters and wetlands authorized by this general permit (e.g., access roads, cofferdams) shall be properly stabilized during use to prevent erosion. Temporary fill in wetlands shall be placed on geotextile fabric laid on existing wetland grade. Temporary fills shall be disposed of at an upland site, suitably contained to prevent erosion and transport to a waterway or wetland. Temporary fill areas shall be restored to their approximate original contours but not higher. No temporary fill shall be placed in waters or wetlands unless specifically authorized by the Corps.
18. **Sedimentation and Erosion Control.** Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, vegetated filter strips, geotextile silt fences or other devices, shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. They shall be capable of preventing erosion, of collecting sediment, suspended and floating materials, and of filtering fine sediment. These devices shall be removed upon completion of work and the disturbed areas shall be stabilized. The sediment collected by these devices shall be removed and placed at an upland location in a manner that will prevent its later erosion into a waterway or wetland. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date.

19. **Waterway Crossings.**

- (a) All temporary and permanent crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed to withstand and to prevent the restriction of high flows, to maintain existing low flows, and to not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
- (b) Temporary bridges, culverts, or cofferdams shall be used for equipment access across streams (NOTE: areas of fill and/or cofferdams must be included in total waterway/wetlands impacts to determine applicability of this general permit).
- (c) For projects that otherwise meet the terms of Category I, instream construction work shall be conducted during the low flow period July 15 - October 1 in any year. Projects that are not to be conducted during that time period are ineligible for Category I and shall be screened pursuant to Category II, regardless of the waterway and wetland fill and/or impact area.

20. **Discharge of Pollutants.** All activities involving any discharge of pollutants into waters of the United States authorized under this general permit shall be consistent with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the Clean Water Act (33 U.S.C. 1251) and applicable state and local laws. If applicable water quality standards, limitations, etc., are revised or modified during the term of this permit, the authorized work shall be modified to conform with these standards within six months of the effective date of such revision or modification, or within a longer period of time deemed reasonable by the District Engineer in consultation with the Regional Administrator of the Environmental Protection Agency. Applicants may presume that state water quality standards are met with issuance of the 401 Water Quality Certification.

21. **Spawning Areas.** Discharges into known 1) fish and shellfish spawning or nursery areas; and 2) amphibian and waterfowl breeding areas, during spawning or breeding seasons shall be avoided, and impacts to these areas shall be avoided or minimized to the maximum extent practicable during all times of year.

22. **Storage of Seasonal Structures.** Coastal structures such as pier sections and floats that are removed from the waterway for a portion of the year shall be stored in an upland location located above mean high water and not in tidal marsh.

23. **Environmental Values.** The permittee shall make every reasonable effort to carry out the construction or operation of the work authorized herein in a manner so as to maintain as much as is practicable, and to minimize any adverse impacts on, existing fish and wildlife and natural environmental values.

24. **Protection of Vernal Pools.** Impacts to uplands in proximity (within 500 feet) to the vernal pools referenced in DEFINITIONS OF CATEGORIES shall be minimized to the maximum extent possible.

PROCEDURAL CONDITIONS:

25. **Cranberry Development Projects.** For Cranberry development projects authorized under the PGP, the following conditions apply:
 1. If a cranberry bog is abandoned for any reason, the area must be allowed to convert to natural wetlands unless an individual permit is obtained from the Corps of Engineers allowing the discharge of fill for an alternate use.
 2. No stream diversion shall be allowed under this permit.
 3. No impoundment of perennial streams shall be allowed under this permit.
 4. The project shall be designed and constructed to not cause flood damage on adjacent properties.

26. **Inspections.** The permittee shall permit the District Engineer or his authorized representative(s) to make periodic inspections at any time deemed necessary in order to ensure that the work is being performed in accordance with the terms and conditions of this permit. The District Engineer may also require post-construction engineering drawings for completed work, and post-dredging survey drawings for any dredging work. **To facilitate these inspections, the attached work notification form should be filled out and returned to the Corps for all Category II projects.**

27. **Maintenance.** The permittee shall maintain the work or structures authorized herein in good condition, including maintenance, to ensure public safety. Dredging projects: note that this does not include maintenance of dredging projects. Maintenance dredging is subject to the review thresholds described on the attached DEFINITION OF CATEGORIES sheets and/or any conditions included in a written Corps authorization.

28. **Property Rights.** This permit does not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations. **If property associated with work authorized by the PGP is sold, the PGP authorization is automatically transferred to the new property owner. The new property owner should provide this information to the Corps in writing. No acknowledgement from the Corps is necessary.**

29. **Modification, Suspension, and Revocation.** This permit may be either modified, suspended, or revoked, in whole or in part, pursuant to the policies and procedures of 33 CFR 325.7 and any such action shall not be the basis for any claim for damages against the United States.

30. **Restoration.** The permittee, upon receipt of a notice of revocation of authorization under this permit, shall restore the wetland or waterway to its former condition without expense to the United States and as directed by the Secretary of the Army or his authorized representative. If the permittee fails to comply with such a directive, the Secretary or his designee may restore the wetland or waterway to its former condition, by contract or otherwise, and recover the cost from the permittee.

31. **Special Conditions**. The Corps, independently or at the request of the Federal Resource Agencies, may impose other special conditions on a project authorized pursuant to this general permit that are determined necessary to minimize adverse environmental effects or based on any other factor of the public interest. Failure to comply with all conditions of the authorization, including special conditions, will constitute a permit violation and may subject the permittee to criminal, civil, or administrative penalties or restoration.
32. **False or Incomplete Information**. If the Corps makes a determination regarding the eligibility of a project under this permit and subsequently discovers that it has relied on false, incomplete, or inaccurate information provided by the permittee, the permit shall not be valid and the government may institute appropriate legal proceedings.
33. **Abandonment**. If the permittee decides to abandon the activity authorized under this general permit, unless such abandonment is merely the transfer of property to a third party, he/she must restore the area to the satisfaction of the District Engineer.
34. **Enforcement cases**. This general permit does not apply to any existing or proposed activity in Corps jurisdiction associated with an on-going Corps of Engineers or Environmental Protection Agency enforcement action until such time as the enforcement action is resolved or the Corps determines that the activity may proceed independently without compromising the enforcement action. The Corps may choose not to accept applications or issue permits to any applicant with outstanding violations.
35. **Emergency situations**. This PGP can be used to authorize the repair, rehabilitation, or replacement of those structures destroyed by storms, floods, fire or other discrete unexpected and catastrophic event. In such situations and if the work exceeds Category I limitations, if applicant applies to the Corps within 30 days of the event, the Corps will attempt to contact the resource agencies for their approvals but, if unable to contact them, will issue an emergency permit and review them after-the-fact with the agencies at the next joint processing meeting. Proposed work submitted more than 30 days after the emergency will go through the standard PGP procedures.

DURATION OF AUTHORIZATION/GRANDFATHERING:

36. **Duration of Authorization**. Activities authorized under this general permit that have commenced (i.e., are under construction) or are under contract to commence in reliance upon this authorization will remain authorized provided the activity is completed within twelve months of the date of the general permit's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 325.2 (e)(2). Activities completed under the authorization of the general permit that was in effect at the time the activity was completed will continue to be authorized by the general permit.

37. **Previously Authorized Activities.**

- (a) Activities which have commenced (i.e., are under construction or are under contract to commence) prior to the issuance date of this general permit, in reliance upon the terms and conditions of the non-reporting category of the previous Maine PGP shall remain authorized provided the activity is completed within twelve months of the date of issuance of this general permit, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with special condition 4. The applicant must be able to document to the Corps satisfaction that the project was under construction or contract by the appropriate date.
- (b) Projects that have received written verification or approval from the Corps, based on applications made to the Corps prior to issuance of this general permit, for the previous Maine SPGP and PGP, Nationwide permits, regional general permits, or letters of permission shall remain authorized as specified in each authorization.
- (c) This general permit does not affect activities authorized pursuant to 33 CFR Part 330.3 (activities occurring before certain dates).

{PRIVATE}DISTRICT
ENGINEER _____

DATE _____

CONTACTS FOR MAINE PROGRAMMATIC GENERAL PERMIT:

U.S. Army Corps of Engineers
Maine Project Office
675 Western Avenue #3
Manchester, Maine 04351
207-623-8367
Fax # 207-623-8206

Federal Endangered Species
U.S. Fish and Wildlife Service
Maine Field Office
1033 South Main Street
Old Town, Maine 04468
207-827-5938
Fax # 207-827-6099

Wild and Scenic Rivers
National Park Service
North Atlantic Region
15 State Street
Boston, MA 02109
617-223-5203

Maine Historic Preservation Commission
55 Capitol Street
State House Station 65
Augusta, Maine 04333
207-287-2132
Fax # 207-287-2335

Aroostook Band of Micmacs
P.O. Box 772
Presque Isle, Maine 04769
207-764-1972
Fax # 207-764-7667

Passamaquoddy Tribe of Indians
Pleasant Point Reservation
Attn: Tribal Council
P.O. Box 343
Perry, Maine 04667
207-853-2600
Fax # 207-853-6039

*Federal Endangered Species and Essential
Fish Habitat*
National Marine Fisheries Service
One Blackburn Drive
Gloucester, Massachusetts 01939
978-281-9102
Fax # 978-281-9301

Houlton Band of Maliseet Indians
Attn: Brenda Commander, Tribal Chief
Route 3 – Box 450
Houlton, Maine 04730
207-532-4273
Fax # 207-532-2660

Passamaquoddy Tribe of Indians
Indian Township Reservation
Attn: Donald Soctomah
P.O. Box 301
Princeton, Maine 04668
207-796-2301
Fax # 207-796-5256

Penobscot Indian Nation
Richard Hamilton, Chief
6 River Road
Indian Island Reservation
Old Town, Maine 04468
(207) 827-7776
Fax # 207-827-1137

*Maine Department of Environmental Protection
(For State Permits and Water Quality
Certifications)*

Natural Resources Division
Bureau of Land and Water Quality Control
State House Station 17
Augusta, Maine 04333
207-287-2111

Southern Maine Regional Office
312 Canco Road
Portland, Maine 04103
201-822-6300

Eastern Maine Regional Office
106 Hogan Road
Bangor, Maine 04401
207-941-4570

Northern Maine Regional Office
1235 Central Drive
Skyway Park
Presque Isle, Maine 04769
207-764-0477

*Maine Land Use Regulation Commission (LURC)
offices*

22 State House Station
Augusta, ME 04333-0022
207-287-2631
800-452-8711 (call to obtain appropriate LURC
office)
Fax # 207-287-7439

45 Radar Road
Ashland, ME 04732-3600
207-435-7963
Fax # 207-435-7184

Lakeview Drive
P.O. Box 1107
Greenville, ME 04441
207-695-2466
Fax # 207-695-2380

191 Main Street
East Millinocket, ME 04430
207-746-2244
Fax # 207-746-2243

(For CZM Determinations)

State Planning Office
Coastal Program
184 State Street
State House Station 38
Augusta, Maine 04333
207-287-1009

*Maine Department of Marine Resources
(For Aquaculture Leases)*
McKown Point
Boothbay Harbor, Maine 04575
207-633-9500

(For Submerged Lands Leases)

Maine Department of Conservation
Bureau of Parks and Lands
22 State House Station
207-287-3061

A. INLAND WETLANDS (WATERS OF THE U.S.)¹	CATEGORY I	CATEGORY II	INDIVIDUAL PERMIT
<p>(a) NEW FILL/ EXCAVATION DISCHARGES</p>	<p>Less than 4,300 sf inland waterway and/or wetland fill and secondary impacts (e.g., areas drained, flooded or cleared). -- Includes projects covered by a State Tier permit with no cumulative impacts over 15,000 sf in inland wetlands from previous permits, unauthorized work, and/or other state permits. --Includes crossing of perennial waterways designated as Essential Fish Habitat (EFH) for Atlantic salmon² if the waterway is crossed with a span and footprints of the span abutments are outside ordinary high water with no more than 4,300 sf of associated wetland impact. --Includes in-stream work of up to 4,300 sf of fill below ordinary high water in waterways not designated as EFH for Atlantic salmon² and performed in accordance with Maine Permit By Rule standards or a LURC permit.</p>	<p>4,300 sf to 3 acres inland waterway and/or wetland fill and secondary impacts (e.g., areas drained, flooded or cleared). --Impact area includes all temporary and permanent fill and excavation discharges except for incidental fallback. --Includes in-stream work, including crossings (other than spanned crossing as described in Category I) with any discharge of fill below ordinary high water in perennial waterways designated as EFH for Atlantic salmon². --Time of year restrictions determined case-by-case.</p>	<p>Greater than 3 acres inland waterway and/or wetland fill and secondary impacts (e.g., areas drained, flooded or cleared). --Impact area includes all temporary and permanent fill and excavation discharges except for incidental fallback³. In-stream work exceeding Category II limits. If EIS required by the Corps.</p>

¹ Waters of the U.S. in inland rivers, streams, lakes, ponds and wetlands.

² Essential Fish Habitat for Atlantic salmon includes all aquatic habitats in the watersheds of the following rivers and streams, including all tributaries to the extent that they are currently or were historically accessible for salmon migration: St. Croix, Boyden, Dennys, Hobart Stream, Aroostook, East Machias, Machias, Pleasant, Narraguagus, Tunk Stream, Patten Stream, Orland, Penobscot, Passagassawaukeag, Union, Ducktrap, Sheepscot, Kennebec, Androscoggin, Presumpscot, and Saco River.

The larger the impacts, the more likely an individual permit will be required. Projects involving widening, expansion or impacts to degraded or low value wetlands between 1-3 acres may be approved under Category II, subject to the Federal screening. The Corps recognizes and endorses the DEP Tier 2 upper thresholds of 1 acre. Compensatory mitigation is likely to be required at this level of impact.

CATEGORY I	CATEGORY I	CATEGORY II	INDIVIDUAL PERMIT
(a) NEW FILL/ EXCAVATION DISCHARGES (continued)	<p>--Impact area includes all temporary and permanent fill and excavation discharges except for incidental fallback.</p> <p>--In-stream work limited to July 15-Oct. 1.</p> <p>--This category excludes situations when a vernal pool of any size may be impacted, in accordance with the ME DEP definition of vernal pool⁴.</p> <p>--This category excludes work within ¼ mile of a Wild and Scenic River⁵.</p> <p>--This category excludes dams, dikes, or activities involving water withdrawal or water diversion.</p> <p>--This category excludes work in National Wildlife Refuges.</p>	<p>Proactive restoration projects with any amount of impact can be reviewed under Category II. The Corps, in consultation with State and Federal agencies, must determine that net adverse effects are not more than minimal.</p>	
(b) BANK STABILIZATION PROJECTS	<p>Inland bank stabilization less than 500 ft. long and less than 1 cy fill per linear foot below ordinary high water in ponds, lakes, and waterways not designated as EFH for Atlantic Salmon², provided there is no wetland fill.</p> <p>--In-stream work limited to July 15-October 1.</p>	<p>--Inland bank stabilization in ponds, lakes, and waterways not designated as EFH for Atlantic salmon² which exceeds Category I limits.</p> <p>--Inland bank stabilization of any size below ordinary high water in waterways designed as EFH for Atlantic salmon².</p> <p>--Other stabilization exceeding Category I.</p>	
(c) REPAIR AND MAINTENANCE OF AUTHORIZED FILLS	<p>Repair or maintenance of existing, currently serviceable, authorized fills with no substantial expansion or change in use.</p>	<p>Replacement of non-serviceable fills, or repair or maintenance of serviceable fills with expansion of any amount up to 1 acre, or with a change in use.</p>	<p>Replacement of non-serviceable fills, or repair or maintenance of serviceable fills with greater than 1 acre of expansion.</p>

⁴ Vernal Pool: Naturally-occurring, or intentionally created for the purposes of compensatory mitigation, temporary to permanent bodies of water occurring in shallow depressions that fill during the spring and fall and may dry during the summer. Vernal pools have no permanent or viable populations of predatory fish. Vernal pools provide the primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp, and provide habitat for other wildlife including several endangered and threatened species.

⁵ National Wild/Scenic Rivers System (Designated River in Maine): Allagash River beginning at Telos Dam continuing to Allagash checkpoint at Eliza Hole Rapids, approximately 3 miles upstream of the confluence with the St. John River. Length = 92 miles

B. TIDAL WATERS AND NAVIGABLE WATERS⁶	CATEGORY I	CATEGORY II	INDIVIDUAL PERMIT
(a) FILL		<p>Up to 1 acre waterway or wetland fill and secondary impacts (e.g., areas drained, flooded or cleared). Includes temporary and permanent waterway fill.</p> <p>--Temporary tidal marsh impacts up to 1 acre.</p> <p>--Permanent tidal marsh, mudflat, or vegetated shallows⁷ fill up to 1,000 sf.</p> <p>-- Proactive restoration projects with any amount of impact can be reviewed under Cat. II. The Corps, in consultation with State and Federal agencies, must determine that net adverse effects are not more than minimal.</p>	<p>Greater than 1 acre waterway fill and secondary impacts (e.g., areas drained, flooded or cleared). Includes temporary and permanent waterway fill.</p> <p>--Temporary tidal marsh impacts over 1 acre.</p> <p>--Permanent tidal marsh, mudflat, or vegetated shallows⁶ fill over 1,000 sf.</p>
(b) REPAIR AND MAINTENANCE WORK	<p>Repair or maintenance of existing, currently serviceable, authorized structure or fill with no substantial expansion or change in use.</p> <p>--Work must be in same footprint as original structure or fill.</p>	<p>Repair or replacement of any non-serviceable structure or fill, or repair or maintenance of serviceable fills, with expansion of any amount up to 1 acre, or with a change in use.</p>	<p>Replacement of non-serviceable structures or fill or repair or maintenance of serviceable structures or fill with expansion greater than 1 acre.</p>

⁶ Navigable Waters: waters that are subject to the ebb and flow of the tide and Federally designated navigable waters (Penobscott River to Medway, Kennebec River to Moosehead Lake, and the portion of Umbagog Lake in Maine).

⁷ Vegetated Shallows: subtidal areas that support rooted aquatic vegetation such as eelgrass.
SHEET 3 OF 5

	CATEGORY I	CATEGORY II	INDIVIDUAL PERMIT
(c) DREDGING	<p>Maintenance dredging of less than 1,000 cy with upland disposal.</p> <p>--Proper siltation controls used</p> <p>--Limited to work between November 1 and January 15</p> <p>--No impact to special aquatic sites⁸.</p>	<p>Maintenance dredging of greater than 1,000 cy, new dredging of up to 25,000 cy, or projects that do not meet Category I. Disposal includes upland, open water or beach nourishment (above mean high water), only if material is determined suitable.</p>	<p>Maintenance dredging (any amount) in or affecting special aquatic sites⁷. See B(a) above for dredge disposal in wetlands or waters.</p> <p>New dredging greater than 25,000 cy or any amount in or affecting special aquatic sites⁷.</p>
(d) MOORINGS	<p>--Private, non-commercial, non-rental single boat moorings not associated with any boating facility⁹ provided not located in a Federal Navigation Project, there is no interference with navigation, it is not located in vegetated shallows⁶, and it is within ¼ mile of the owner's residence or a public access point¹⁰.</p> <p>--Minor relocation of previously authorized moorings and moored floats consistent with Harbormaster recommendations, provided it is also consistent with local regulations, is not located in vegetated shallows, and does not interfere with navigation.</p>	<p>Moorings that do not meet the terms of Category I (e.g., rental or service moorings) and moorings that meet the terms of Category I that are located in a Federal anchorage.</p>	<p>Moorings within the horizontal limits, or with moored vessels that extend, into the horizontal limits of a Federal Navigation Project, except those in Federal anchorages under Category II.</p>

⁸ Special Aquatic Sites: include wetlands and salt marsh, mudflats, riffles and pools, and vegetated shallows.

⁹ Boating Facilities: facilities that provide, rent, or sell mooring space, such as marinas, yacht, clubs, boat yards, town facilities, dockminiums, etc.

¹⁰ Cannot be at a remote location to create a convenient transient anchorage.

	CATEGORY I	CATEGORY II	INDIVIDUAL PERMIT
(e) PILE-SUPPORTED STRUCTURES AND FLOATS	Reconfiguration of existing authorized docks, provided structures are not positioned over vegetated shallows ⁶ or salt marsh and provided floats are supported off substrate at low tide. No dredging, additional slips or expansion allowed.	Private piers and floats for navigational access to waterway (seasonal and permanent).	Structures, piers or floats that extend, or with docked/moored vessels that extend, into the horizontal limits of a Federal Navigation Project. Structures, including piers and floats, associated with a new or previously unauthorized boating facility ⁸ .
(f) MISCELLANEOUS	<ul style="list-style-type: none"> --Temporary buoys, markers, floats, etc., for recreational use during specific events, provided they are removed within 30 days after use is discontinued. --Coast Guard approved aids to navigation. --Oil spill clean-up temporary structures or fill. --Fish/wildlife harvesting structures/fill (as defined by 33 CFR 330, App. A-4) --Scientific measurement devices and survey activities such as exploratory drilling, surveying or sampling. --Shellfish seeding (brushing the flats) projects¹¹ --Does <u>not</u> include oil or gas exploration and fills for roads or construction pads. --This category excludes work in National Wildlife Refuges. 	<ul style="list-style-type: none"> --Structures or work in or affecting tidal or navigable waters that are not defined under any of the previous headings. Includes, but is not limited to, utility lines, aerial transmission lines, pipelines, outfalls, boat ramps, bridge fills/abutments, etc. --Shellfish/finfish (other than Atlantic salmon), or other aquaculture facilities which are consistent with the Corps revised standard siting requirements and standard permit conditions dated 7/6/94, or as revised. 	If EIS required by Corps.

¹¹ Brushing the flats: the placement of tree boughs, wooden lath structures, or small-mesh fencing on mudflats for the purpose of enhancing recruitment of soft-shell clams (*Mya arenaria*).

WORK START NOTIFICATION FORM
(Minimum Notice: Two Weeks before Work Begins)

MAIL TO: U.S. Army Corps of Engineers, New England District
Regulatory Branch
Policy Analysis/Technical Support Section
696 Virginia Road
Concord, Massachusetts 01742-2751

A Corps of Engineers Permit (No. _____) was issued to the permittee. The permit authorized the permittee to _____

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

Business Address: _____

Telephone Number: (____) _____ (____) _____

Proposed Work Dates: Start: _____ Finish: _____

PERMITTEE'S SIGNATURE: _____ **DATE:** _____

PRINTED NAME: _____ **TITLE:** _____

FOR USE BY THE CORPS OF ENGINEERS

PM: _____ Submittals Required: _____

Inspection Recommendation: _____

MITIGATION WORK-START NOTIFICATION FORM
(Minimum Notice: Two Weeks Before Mitigation Work Begins)

MAIL TO: U.S Army Corps of Engineers, New England District
Regulatory Branch
Policy Analysis/Technical Support Section
696 Virginia Road
Concord, Massachusetts 01742-2751

Corps of Engineers Permit No. (_____) was issued to **[insert name of permittee]**. The permit authorized the permittee to **[insert brief description of the authorized work and location]**.

The permit required compensatory mitigation. **[Briefly describe the requirements, including, if applicable, submitting a final mitigation plan and monitoring reports.]**

Those listed below will do the mitigation, including monitoring and remediation if required. They understand the requirements of the permit and the mitigation and monitoring plan.

PLEASE PRINT OR TYPE

Environmental
Consultant/Scientist

Mitigation
Contractor

Name of Person/Firm: _____

Business Address: _____

Telephone Number: () _____ () _____

Proposed Mitigation Work Dates: Start _____ Finish _____

PERMITTEE'S SIGNATURE: _____ **DATE:** _____

PRINTED NAME: _____ **TITLE:** _____

Corps PMs: _____



DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:
ATTENTION OF
Regulatory Division

CENAE-R-51

Permit Number: NAE-2006-704

1 SEP 2006

2 1 SEP 2006

John E. Doherity, Chief Engineer
Maine Dept. of Transportation
16 State House Station
Augusta, Maine 04333

Dear Mr. Doherity:

Enclosed are two copies of a Department of the Army permit authorizing the work described therein. Your signature is necessary to execute this permit. The authorized work cannot start until we receive a complete, signed copy of the permit. If the conditions are acceptable, please sign both copies and return one signed copy of the entire permit to "Regulatory Division" at the address above. No fee is required.

Please post the enclosed ENG Form 4336 (i.e., Notice of Authorization) in a conspicuous location at the job site whenever work is ongoing. If you need to change the plans or construction methods (i.e., for work in our jurisdiction), please contact us immediately to discuss modifying your permit prior to undertaking these changes.

This authorization requires you to 1. notify us before beginning work so we may inspect the project, and 2. submit a Compliance Certification Form. You must complete and return the enclosed Work Start Notification Form(s) to this office at least two weeks before the anticipated starting date. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation (but not mitigation monitoring, which requires separate submittals).

This permit is a limited authorization containing a specific set of conditions. Please read the permit thoroughly to familiarize yourself with those conditions, including any conditions contained on the attached state water quality certification. If a contractor does the work for you, both you and the contractor are responsible for ensuring that the work is done in compliance with the permit's terms and conditions, as any violations could result in civil or criminal penalties.

Our verification of this project's wetland delineation under the 1987 Corps of Engineers Wetland Delineation Manual (U.S. Army Engineer Waterways Experiment Station Tech. Rep. Y-87-1, 1987) is valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

Please note that the Department of the Army permit process does not supersede any other agency's jurisdiction.

This letter contains an initial proffered permit for your activity. If you object to this permit decision because of certain terms and conditions therein, you may request that the permit be modified accordingly under Corps regulations at 33 CFR 331. Enclosed you will find a combined Notification of Appeal Process (NAP) and Request for Appeal (RFA) form. If you object to this permit decision you must submit a completed RFA form to me, Regulatory Division Chief at 696 Virginia Road, Concord, Massachusetts 01742. Direct questions regarding the Corps of Engineers appeals process to Ms. Ruth Ladd, Chief, Policy and Technical Analysis Branch at (978) 318-8818 or at the above address.

In order for the Corps to accept an RFA, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR 331.5, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by 11 NOV 2006. It is not necessary to submit an RFA form to the District Office if you do not object to the permit decision in this letter.

If you have any questions regarding this correspondence, please contact Jay Clement at 207-623-8367 at our Manchester, Maine Project Office.

Sincerely,

Robert J. DeSista
Chief, Regulatory Division

Enclosures

AC
PROJ MCR
PM
ERS
PM
CHF POLICY
HL
BRANCH
JL
OFF COORDINATOR
JD
CHF REG DIV

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL**

Applicant: Maine Dept. of Transportation		File Number: NAE-2006-704	Date:
Attached is:			See Section below
X	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A	
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B	
	PERMIT DENIAL	C	
X	APPROVED JURISDICTIONAL DETERMINATION	D	
	PRELIMINARY JURISDICTIONAL DETERMINATION	E	

SECTION II - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/mer/functions/cw/secwo/reg> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization in care of "Regulatory Division." If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the District Engineer, in care of the Chief, Regulatory Division, as specified in the last paragraph of the coverletter. Your objections must be received within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the District Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the District Engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization in care of "Regulatory Division." If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer in care of: James W. Haggerty, Regulatory Appeals Review Officer, US Army Engineer Division, North Atlantic Fort Hamilton Military Community, Bldg. 301, General Lee Avenue, Brooklyn, NY 11252-6700 Telephone: (718) 765-7150, E-mail: James.W.Haggerty@nad02.usace.army.mil. The Division Engineer must receive this form within 60 days of the date of this notice.

• C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer in care of: James W. Haggerty, Regulatory Appeals Review Officer, US Army Engineer Division, North Atlantic Fort Hamilton Military Community, Bldg. 301, General Lee Avenue, Brooklyn, NY 11252-6700. Telephone: (718) 765-7150, E-mail: James.W.Haggerty@nad02.usace.army.mil. The Division Engineer must receive this form within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer in care of: James W. Haggerty, Regulatory Appeals Review Officer, US Army Engineer Division, North Atlantic Fort Hamilton Military Community, Bldg. 301, General Lee Avenue, Brooklyn, NY 11252-6700. Phone: (718) 765-7150, E-mail: James.W.Haggerty@nad02.usace.army.mil. The Division Engineer must receive this form within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district at the address below for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact Ms. Ruth Ladd at:

Chief, Policy Analysis/Technical Support Branch
Corps of Engineers
696 Virginia Road
Concord, MA 01742 or by calling (978) 318-8818

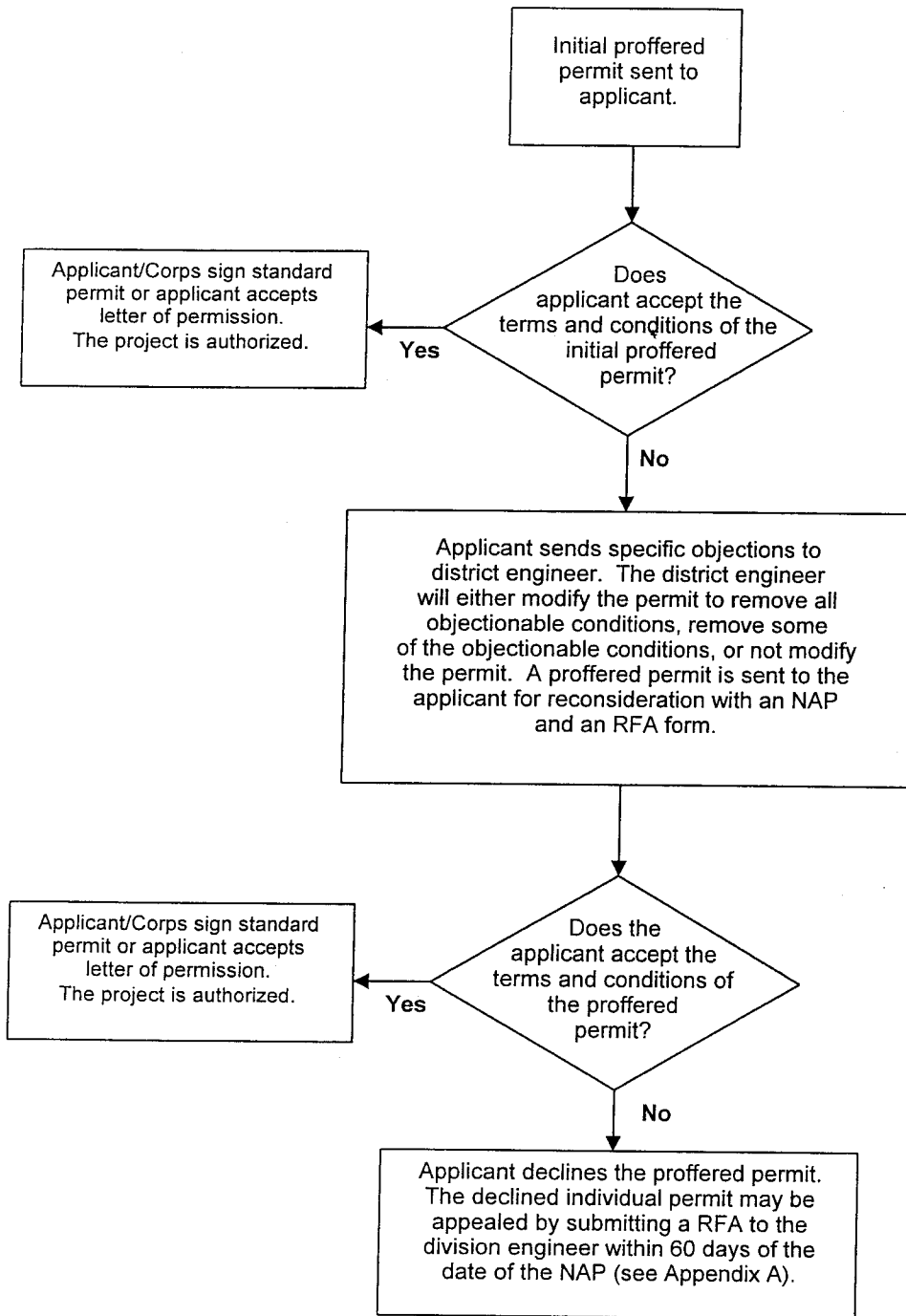
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

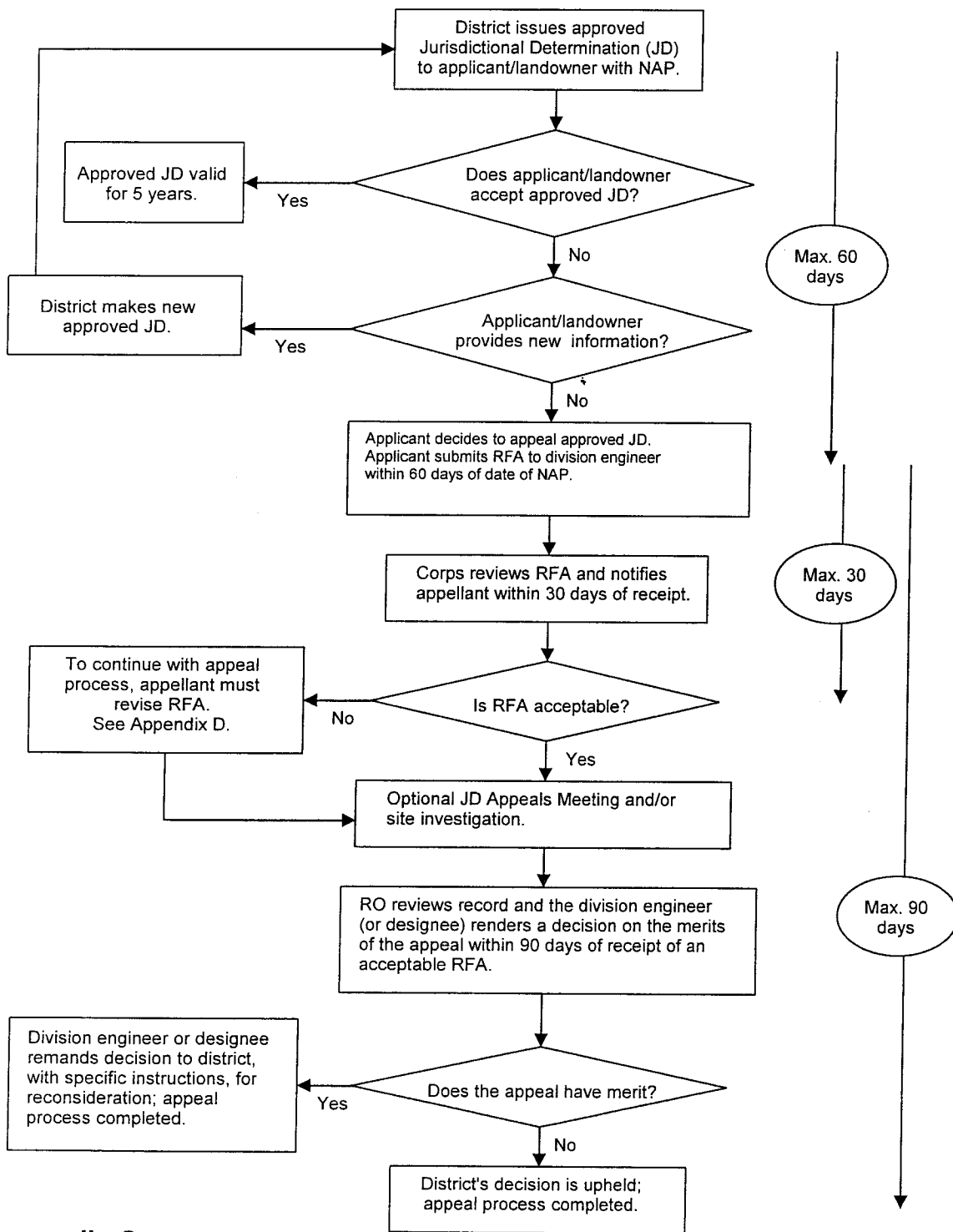
Date:

Telephone number:

Applicant Options with Initial Proffered Permit



Administrative Appeal Process for Approved Jurisdictional Determination



Appendix C

JURISDICTIONAL DETERMINATION

Revised 8/13/04

U.S. Army Corps of Engineers

DISTRICT OFFICE: New England District

FILE NUMBER & APPLICANT: NAE-2006-704; Maine Dept. of Transportation

PROJECT LOCATION INFORMATION:

State: Maine

County: Washington

Center coordinates of site (latitude/longitude): 43.6796072 N; 70.4434658 W.

Approximate size of area (parcel) reviewed, including uplands: 50 acres.

Name of nearest waterway: St. Croix River

Name of watershed: St. Croix

JURISDICTIONAL DETERMINATION

Completed: Desktop determination



Date: July 7, 2000

Site visit(s)



Date(s): August 9, 2005, July 11, 2006, August 24, 2006

Jurisdictional Determination (JD):

Preliminary JD - Based on available information, *there appear to be* (or) *there appear to be no* "waters of the United States" and/or "navigable waters of the United States" on the project site. A preliminary JD is not appealable (Reference 33 CFR part 331).

Approved JD - An approved JD is an appealable action (Reference 33 CFR part 331).
Check all that apply:

There are "navigable waters of the United States" (as defined by 33 CFR part 329 and associated guidance) within the reviewed area.
Approximate size of jurisdictional area:

There are "waters of the United States" (as defined by 33 CFR part 328 and associated guidance) within the reviewed area.
Approximate size of jurisdictional area:

There are "isolated, non-navigable, intra-state waters or wetlands" within the reviewed area.
 Decision supported by SWANCC/Migratory Bird Rule Information Sheet for Determination of No Jurisdiction.

BASIS OF JURISDICTIONAL DETERMINATION:

A. Waters defined under 33 CFR part 329 as "navigable waters of the United States":

The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

B. Waters defined under 33 CFR part 328.3(a) as "waters of the United States":

(1) The presence of waters, which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

(2) The presence of interstate waters including interstate wetlands¹.

(3) The presence of other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such waters (check all that apply):

(i) which are or could be used by interstate or foreign travelers for recreational or other purposes.

(ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

(iii) which are or could be used for industrial purposes by industries in interstate commerce.

(4) Impoundments of waters otherwise defined as waters of the US.

(5) The presence of a tributary to a water identified in (1) - (4) above.

(6) The presence of territorial seas.

(7) The presence of wetlands adjacent² to other waters of the US, except for those wetlands adjacent to other wetlands.

Rationale for the Basis of Jurisdictional Determination (applies to any boxes checked above). *If the jurisdictional water or wetland is not itself a navigable water of the United States, describe connection(s) to the downstream navigable waters. If B(1) or B(3) is used as the Basis of Jurisdiction, document navigability and/or interstate commerce connection (i.e., discuss site conditions, including why the waterbody is navigable and/or how the destruction of the waterbody could affect interstate or foreign commerce). If B(2, 4, 5 or 6) is used as the Basis of Jurisdiction, document the rationale used to make the determination. If B(7) is used as the Basis of Jurisdiction, document the rationale used to make adjacency determination:* Unnamed waterways on site are tributaries to the St. Croix River which is a navigable water of the US. The wetlands are either contiguous, bordering, or neighboring to these water courses.

Lateral Extent of Jurisdiction: (Reference: 33 CFR parts 328 and 329)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Ordinary High Water Mark indicated by: | <input checked="" type="checkbox"/> High Tide Line indicated by: |
| <input checked="" type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> oil or scum line along shore objects |
| <input checked="" type="checkbox"/> the presence of litter and debris | <input type="checkbox"/> fine shell or debris deposits (foreshore) |
| <input checked="" type="checkbox"/> changes in the character of soil | <input type="checkbox"/> physical markings/characteristics |
| <input checked="" type="checkbox"/> destruction of terrestrial vegetation | <input type="checkbox"/> tidal gages |
| <input checked="" type="checkbox"/> shelving | <input type="checkbox"/> other: |
| <input type="checkbox"/> other: | |
- Mean High Water Mark indicated by:
 survey to available datum; physical markings; vegetation lines/changes in vegetation types.
- Wetland boundaries, as shown on the attached wetland delineation map and/or in a delineation report prepared by: Maine DOT staff

Basis For Not Asserting Jurisdiction:

- The reviewed area consists entirely of uplands.
- Unable to confirm the presence of waters in 33 CFR part 328(a)(1, 2, or 4-7).
- Headquarters declined to approve jurisdiction on the basis of 33 CFR part 328.3(a)(3).
- The Corps has made a case-specific determination that the following waters present on the site are not Waters of the United States:
- Waste treatment systems, including treatment ponds or lagoons, pursuant to 33 CFR part 328.3.
 - Artificially irrigated areas, which would revert to upland if the irrigation ceased.
 - Artificial lakes and ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
 - Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
 - Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States found at 33 CFR 328.3(a).
 - Isolated, intrastate wetland with no nexus to interstate commerce.
 - Prior converted cropland, as determined by the Natural Resources Conservation Service. Explain rationale:
 - Non-tidal drainage or irrigation ditches excavated on dry land. Explain rationale:
 - Other (explain):

DATA REVIEWED FOR JURISDICTIONAL DETERMINATION (mark all that apply):

- Maps, plans, plots or plat submitted by or on behalf of the applicant.
- Data sheets prepared/submitted by or on behalf of the applicant.
- This office concurs with the delineation performed by Maine DOT staff and reviewed in the field on 8/9/05:
- This office does not concur with the delineation report, dated _____, prepared by (company): _____
- Data sheets prepared by the Corps.
- Corps' navigable waters' studies:
- U.S. Geological Survey Hydrologic Atlas:
- U.S. Geological Survey 7.5 Minute Topographic maps: Calais, ME
- U.S. Geological Survey 7.5 Minute Historic quadrangles: Calais, ME
- U.S. Geological Survey 15 Minute Historic quadrangles:
- USDA Natural Resources Conservation Service Soil Survey: Washington County, Calais, ME
- National wetlands inventory maps: Calais, ME
- State/Local wetland inventory maps:
- FEMA/FIRM maps (Map Name & Date): Calais, ME; 8/3/94
- 100-year Floodplain Elevation is: unknown (NGVD)
- Aerial Photographs (Name & Date): Calais, ME vicinity; unknown date
- Other photographs (Date): Ground photos taken by applicant in 2005
- Advanced Identification Wetland maps:
- Site visit/determination conducted on: August 9, 2005
- Applicable/supporting case law:
- Other information (please specify):

¹Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).

²The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.

**NON-TIDAL NAVIGABLE WATERS OF THE UNITED STATES
NEW ENGLAND DISTRICT**

The following non-tidal waters have been determined to be Navigable Waters of the United States subject to permit jurisdiction in the New England District area.

Maine – Kennebec River to Moosehead Lake; Penobscot River to the confluence of the East and West Branch at Medway, Maine; Lake Umbagog within the State of Maine.

New Hampshire – Merrimack River from the MA – NH state line to Concord, New Hampshire; Lake Umbagog within the State of New Hampshire; Connecticut River to Pittsburg, New Hampshire.

Massachusetts – Merrimack River to the New Hampshire state line; all of the Connecticut River within the Massachusetts state line.

Connecticut – Connecticut River to the Massachusetts state line.

Vermont – Navigability studies and determination has been completed in Vermont. The following lists show the results of these determinations:

Navigable waterways based on present or potential future use for interstate commerce:

Lake Champlain
Lake Memphremagog
Connecticut River
Ompompanoosuc River to Mile 3.8
Waits River to Mile 0.9

Navigable waterways based on past historical use for interstate commerce:

Black River from mouth to Mile 25 Craftsbury
Battenkill River to Mile 50 Manchester
Lamoille River from mouth to Mile 79 Greensboro
Missisquoi River from mouth to Mile 88.5 Lowell
Otter Creek from mouth to Mile 63.8 Procter
Winooski River from mouth to Marshfield
Moose River from Passumpsic River to Victory Town line
Nulhegan River from its mouth to its source including the East Branch, Back Branch,
and Yellow Branch
Paul Stream from mouth to source
East Branch, Passumpsic River from Passumpsic River to East Haven
Passumpsic River from mouth to the East Branch
Wells River from mouth to Groton Pond
White River from mouth to its source

DEPARTMENT OF THE ARMY PERMIT

Permittee Maine Dept. of Transportation, 16 State House Station, Augusta, Maine 04333

Permit No. NAE-2006-704

Issuing Office New England District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Fill approximately 296,540 s.f. (6.8 acres) of wetlands and stream bed in order to construct a new International Border Crossing. The project involves new roadway and bridge construction as well as overlay and widening of existing roadways. It is split into six main components, the overlay

(Project Description Continued on Page 4)

This work is shown on the attached plans entitled "BSCR CALAIS-ST. STEPENS BORDER CROSSING" on 28 sheets undated and "ST. CROIX RIVER BRIDGE" on 4 sheets undated.

Project Location:

In unnamed tributaries to the St. Croix River and in adjacent freshwater wetlands at Calais, Maine

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on 21 SEP 2011. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The permittee shall ensure that a copy of this permit is at the work site whenever work is being performed and that all personnel performing work at the site of the work authorized by this permit are fully aware of the terms and conditions of the permit. This permit, including its drawings and any appendices and other attachments, shall be made a part of any and all contracts and sub-contracts for work which affects areas of Corps of Engineers jurisdiction at the site of the work authorized by this permit. This shall be done by including the entire permit in the specifications for work.

(Special Conditions continued on Page 4)

Further Information:

1. **Congressional Authorities:** You have been authorized to undertake the activity described above pursuant to:
 - Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - Section 404 of the Clean Water Act (33 U.S.C. 1344).
 - Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. **Limits of this authorization.**
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. **Limits of Federal Liability.** In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

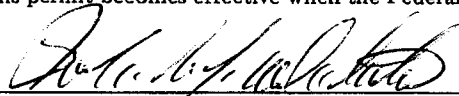
6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE)

(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.



(DISTRICT ENGINEER)

9/21/00

(DATE)

Curtis L. Thalken
Colonel, Corps of Engineers
District Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEE)

(DATE)

(Project Description Continued from Page 1)

and widening of a 0.69 mile section of US Route 1; the construction of a 1902' long industrial park access road; the construction of an 820' long connector from the new industrial park access road to Whitlock Lane within the industrial park; the construction of an 1138' long connector road from Route 1 to the new border station; the construction of the new border station; and the construction of a new bridge over the St. Croix River to St. Stephen, NB. The new border crossing facility would be constructed and operated by the General Services Administration (GSA).

DOT PIN: 8483.32

(Special Conditions continued from Page 2)

If the permit is issued after the construction specifications but before receipt of bids or quotes, the entire permit shall be included as an addendum to the specifications. If the permit is issued after receipt of bids or quotes, the entire permit shall be included in the contract or sub-contract as a change order. The term "entire permit" includes permit amendments. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions of the entire permit, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps jurisdiction.

2. Adequate sedimentation and erosion control devices, such as geotextile silt fences or other devices capable of filtering the fines involved, shall be installed and properly maintained to minimize impacts during construction. These devices must be removed upon completion of work and stabilization of disturbed areas. The sediment collected by these devices must also be removed and placed upland, in a manner that will prevent its later erosion and transport to a waterway or wetland. All exposed soils resulting from the construction will be promptly seeded and mulched in order to achieve vegetative stabilization.

3. The permittee shall complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

4. The permittee shall implement all terms and conditions contained in the attached water quality certification from the Maine Dept. of Environmental Protection dated "April 14, 2006". Copies of all required submittals shall also be provided to the Corps.

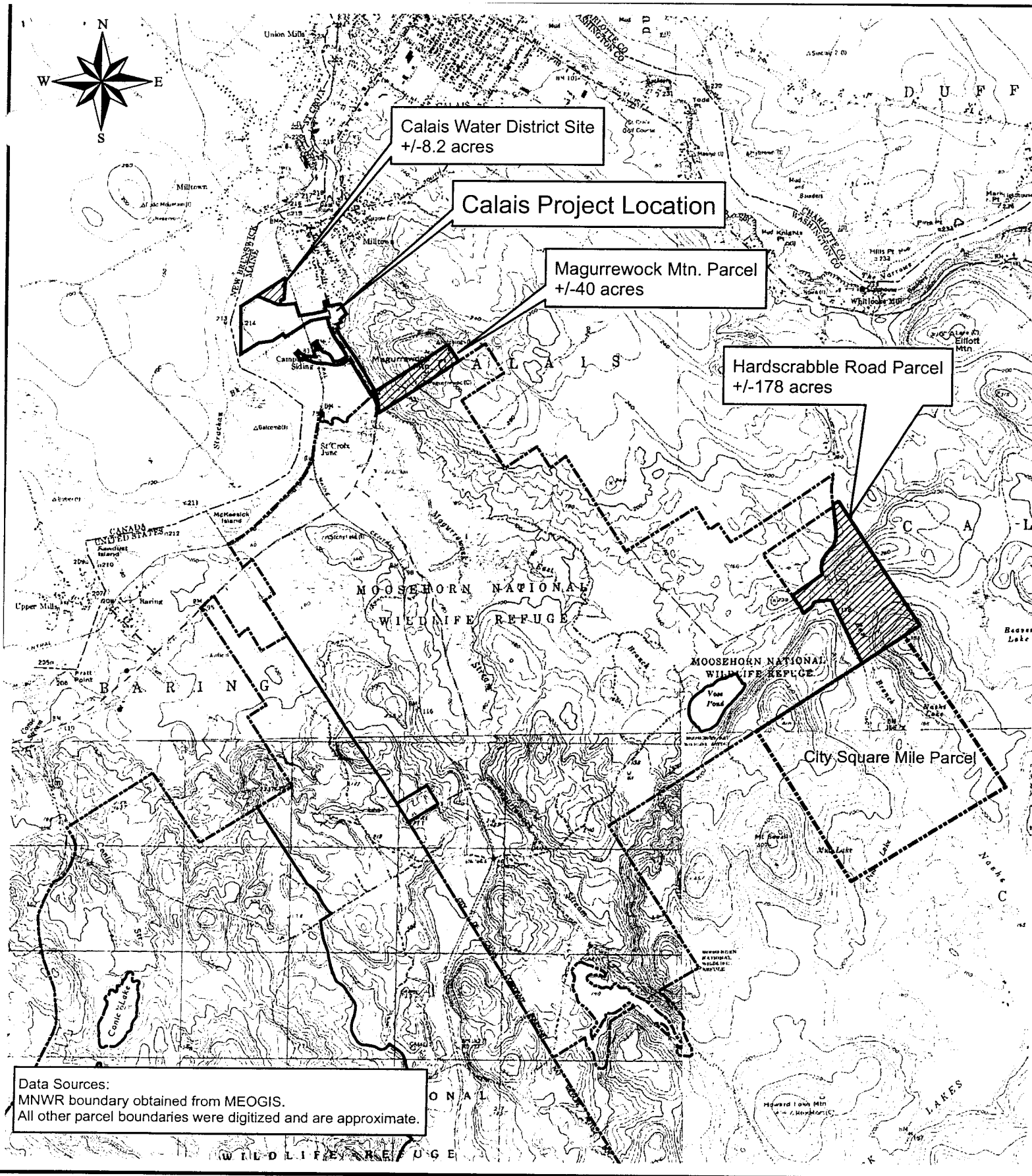
5. The permittee and his contractors shall conduct a pre-construction meeting with Corps, Maine Dept. of Environmental Protection and other appropriate resource agency staff prior to construction at the project site.

6. This permit authorizes impacts to only those areas of wetlands shown on the attached plans. No other filling, clearing or other disturbance in wetlands shall occur.

Special Conditions Continued on Page 5


Special Conditions Continued from Page 4

7. Culverts shall be installed with their inverts at or below existing grade so as to preserve hydraulic connectivity, at its present level, between the wetlands on either side of the road. If future inspections discover wetland damage likely due to lack of hydraulic connectivity, the Permittee shall take necessary measures to correct this deficiency. Any road crossing of wetlands shall be culverted to municipal or state standards (number & size) sufficient to prevent restriction of flows and/or faunal movement.
8. Mitigation shall be performed in accordance with the attached mitigation plan entitled, "WETLAND COMPENSATION PLAN, MAINE DOT CALAIS-ST. STEPHEN INTERNATIONAL BRIDGE AND BORDER CROSSING PROJECT" and dated "JANUARY 2006" and revised "JUNE 2006".
9. Except where stated otherwise, reports, drawings, correspondence and any other submittals required by this permit shall be marked with the words "Permit No. NAE-2006-704" and shall be addressed to "Inspection Section, CENAE-R, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751." Documents which are not marked and addressed in this manner may not reach their intended destination and do not comply with the requirements of this permit.



Data Sources:
 MNWR boundary obtained from MEOGIS.
 All other parcel boundaries were digitized and are approximate.

PREPARED BY:



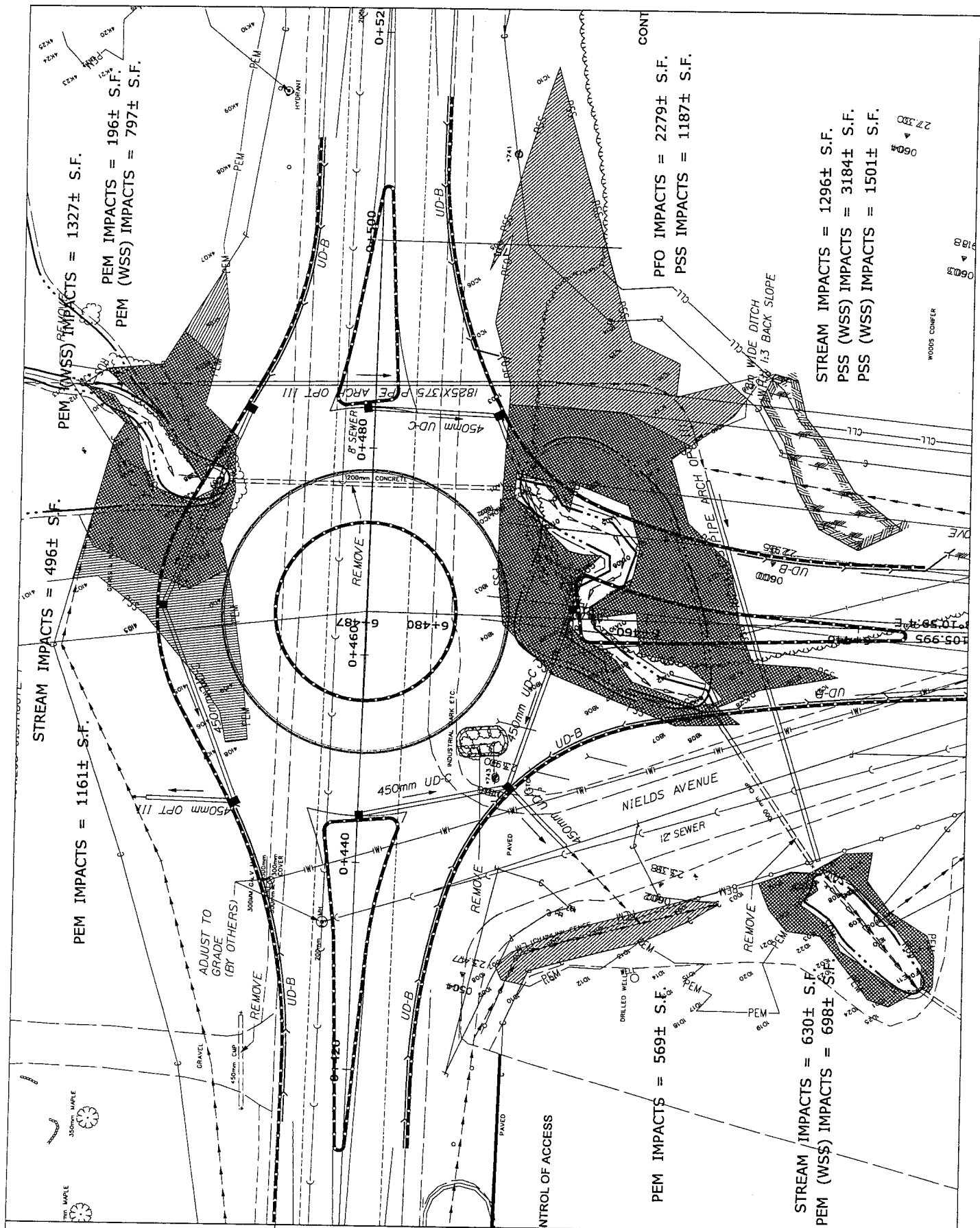
WOODLOT
 ALTERNATIVES, INC.
 ENVIRONMENTAL CONSULTANTS

DATE:	December 2005
SCALE:	1:1200 meters
JOB NO.	105131.01
FILE:	105131-F001-locus.mxd

*Figure 1 - Project Location Map
 Wetland Compensation Plan
 Calais - St. Stephen International Border Crossing
 MaineDOT PIN - 8483.32*

CA/MS 8483.39 WETLAND IMPACT PLAN INDEX SHEET





PEM (WSS) IMPACTS = 1327± S.F.
 PEM IMPACTS = 196± S.F.
 PEM (WSS) IMPACTS = 797± S.F.

STREAM IMPACTS = 496± S.F.
 PEM IMPACTS = 1161± S.F.

CONT
 PFO IMPACTS = 2279± S.F.
 PSS IMPACTS = 1187± S.F.

STREAM IMPACTS = 1296± S.F.
 PSS (WSS) IMPACTS = 3184± S.F.
 PSS (WSS) IMPACTS = 1501± S.F.

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

BSCR CALAIS - ST. STEPHENS
 BORDER CROSSING

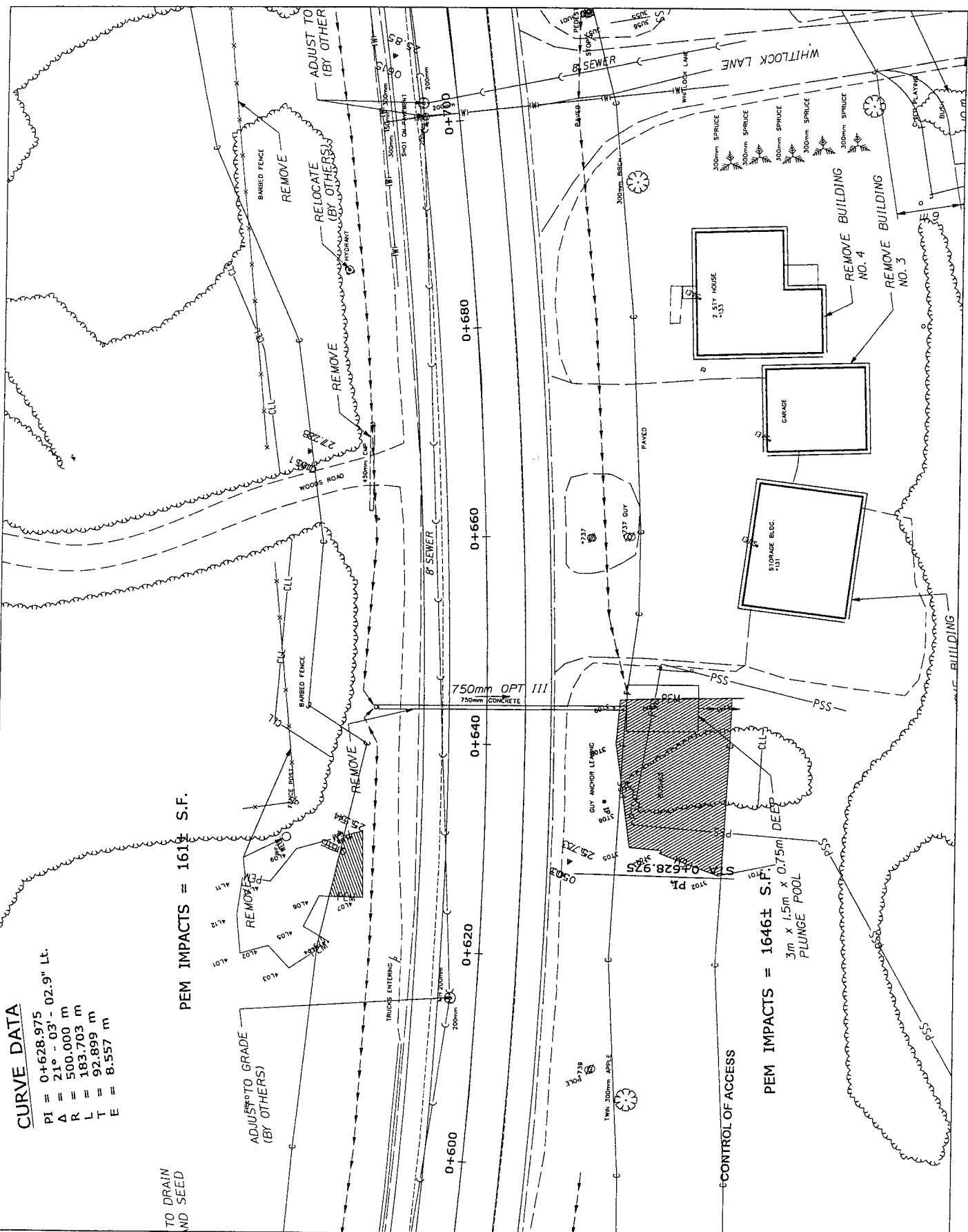
SHEET NUMBER

1

PLANS

8483.32

OF 28



CURVE DATA
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 A = 500.000 m
 R = 183.703 m
 LT = 92.899 m
 E = 8.557 m

PEM IMPACTS = 161± S.F.

PEM IMPACTS = 1646± S.F.
 3m x 1.5m x 0.75m DEEP
 PLUNGE POOL

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

BSCR CALAIS - ST. STEPHENS
 BORDER CROSSING

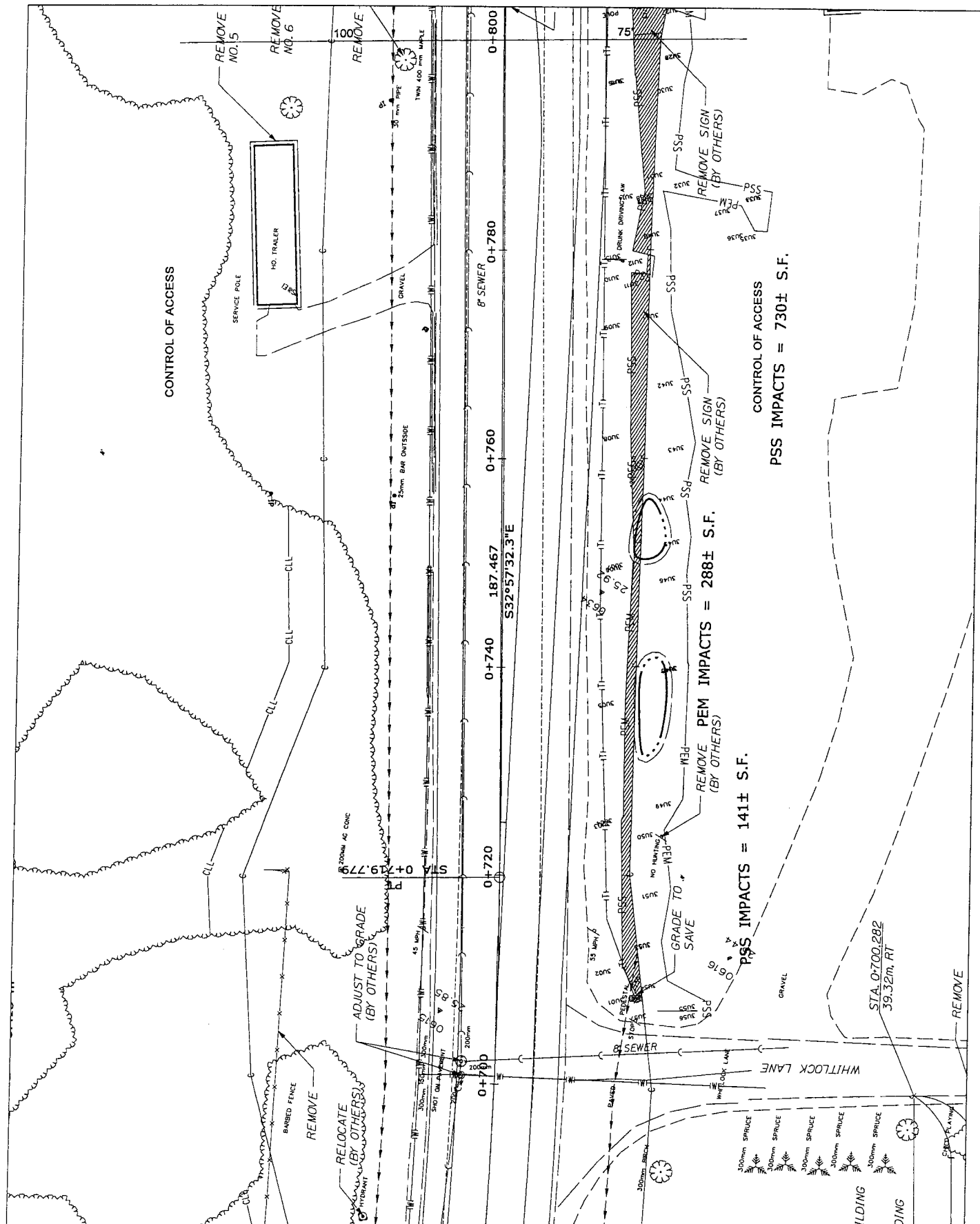
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8483.32

PLANS

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

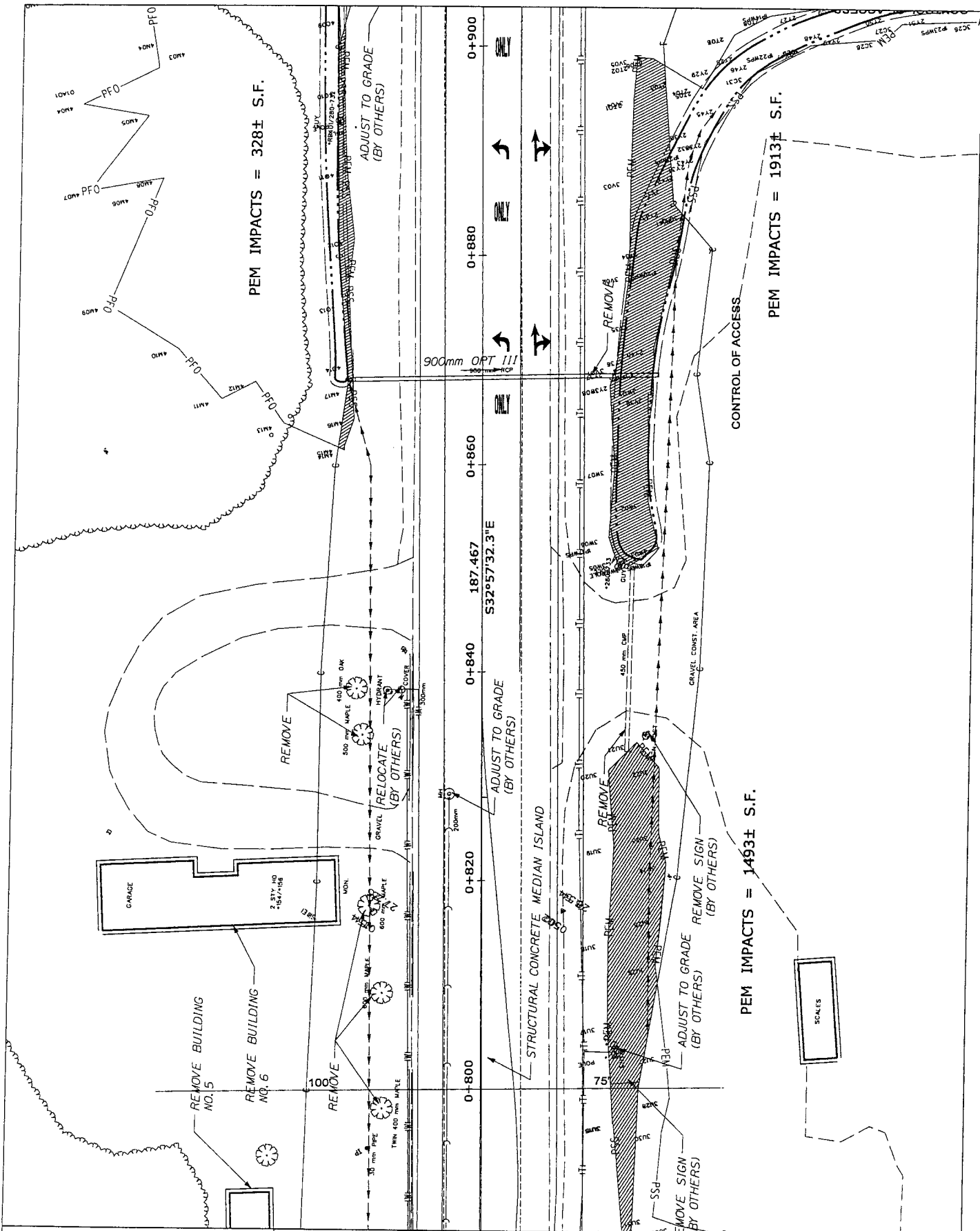
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BORDER CROSSING

PLANS

SHEET NUMBER

3

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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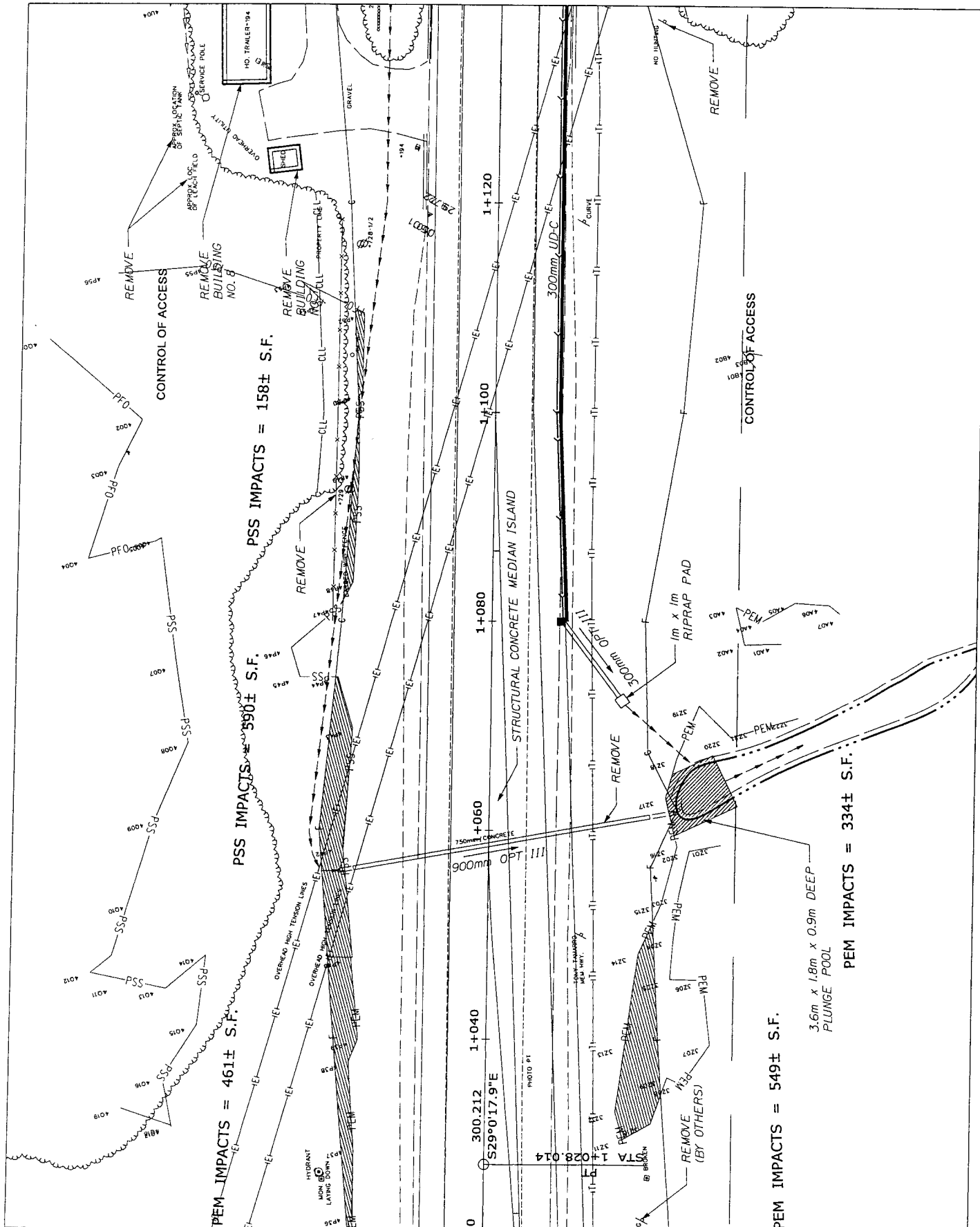
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BORDER CROSSING

PLANS

SHEET NUMBER

4

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

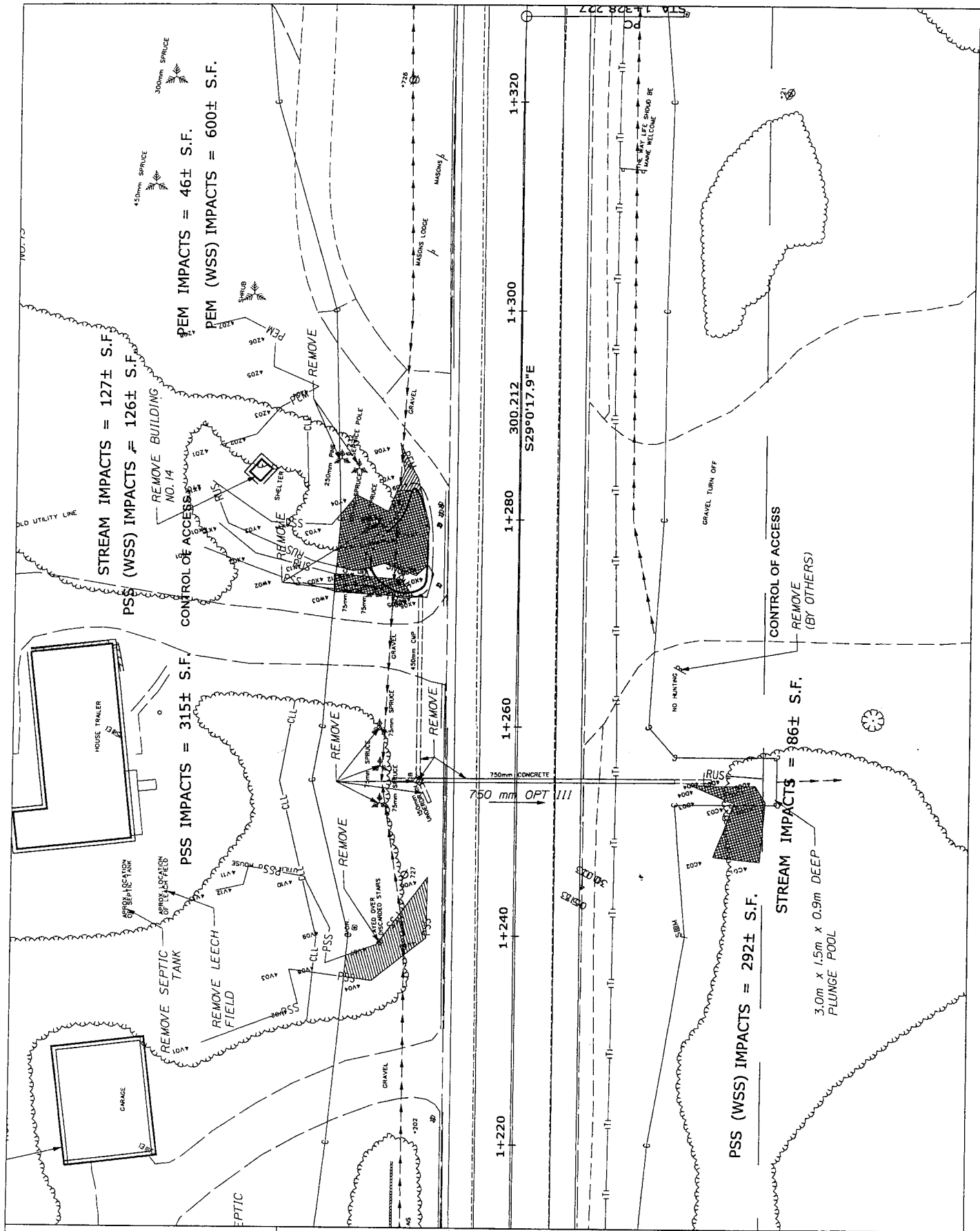
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BORDER CROSSING

PLANS

SHEET NUMBER

6

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

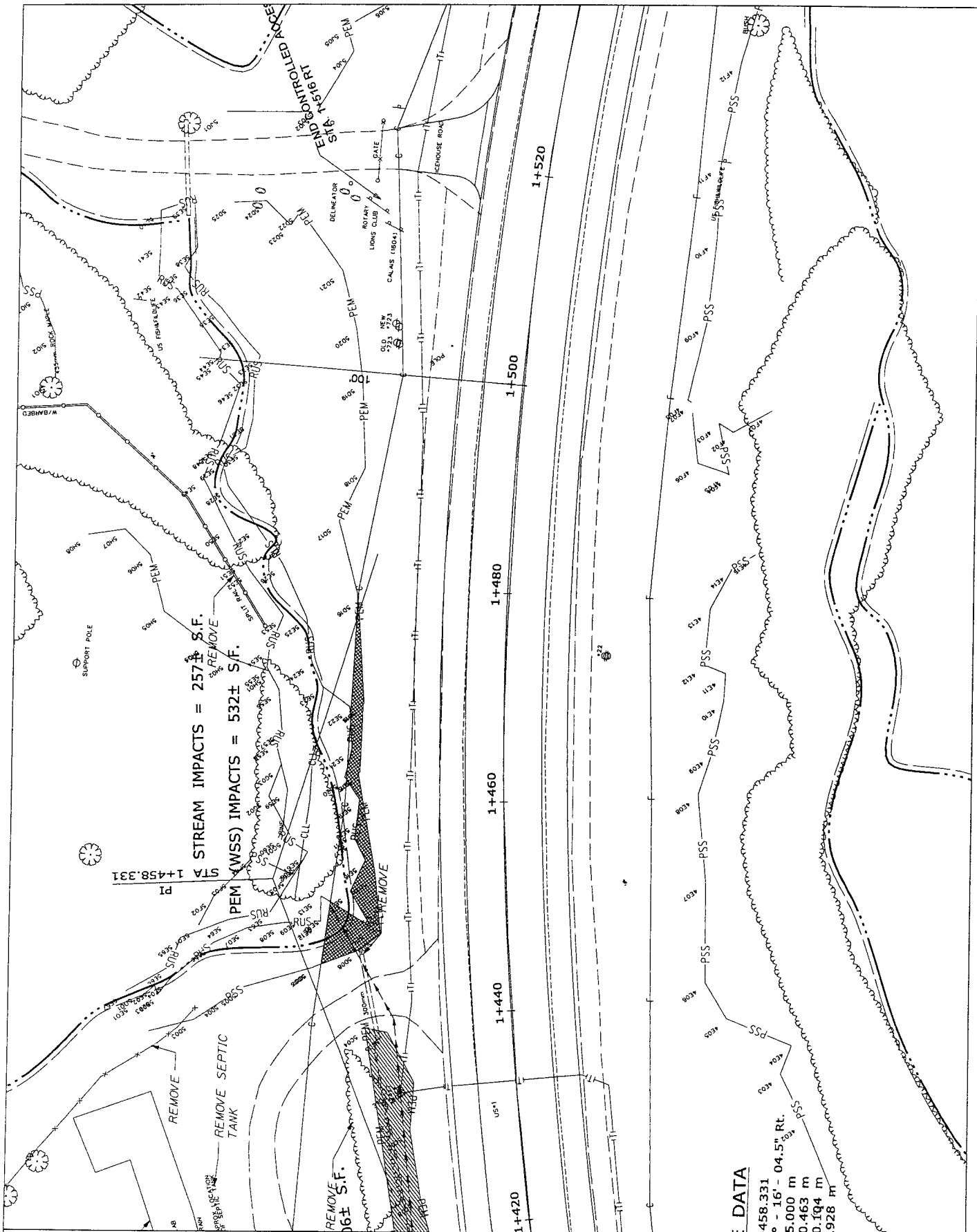
BSCR CALAIS - ST. STEPHENS
BORDER CROSSING

PLANS

SHEET NUMBER

7

OF 28



STREAM IMPACTS = 257± S.F.
 (PEM) REMOVE
 WSSS IMPACTS = 532± S.F.
 (WSSS) REMOVE

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 5.000 m
 0.463 m
 0.194 m
 .928 ft

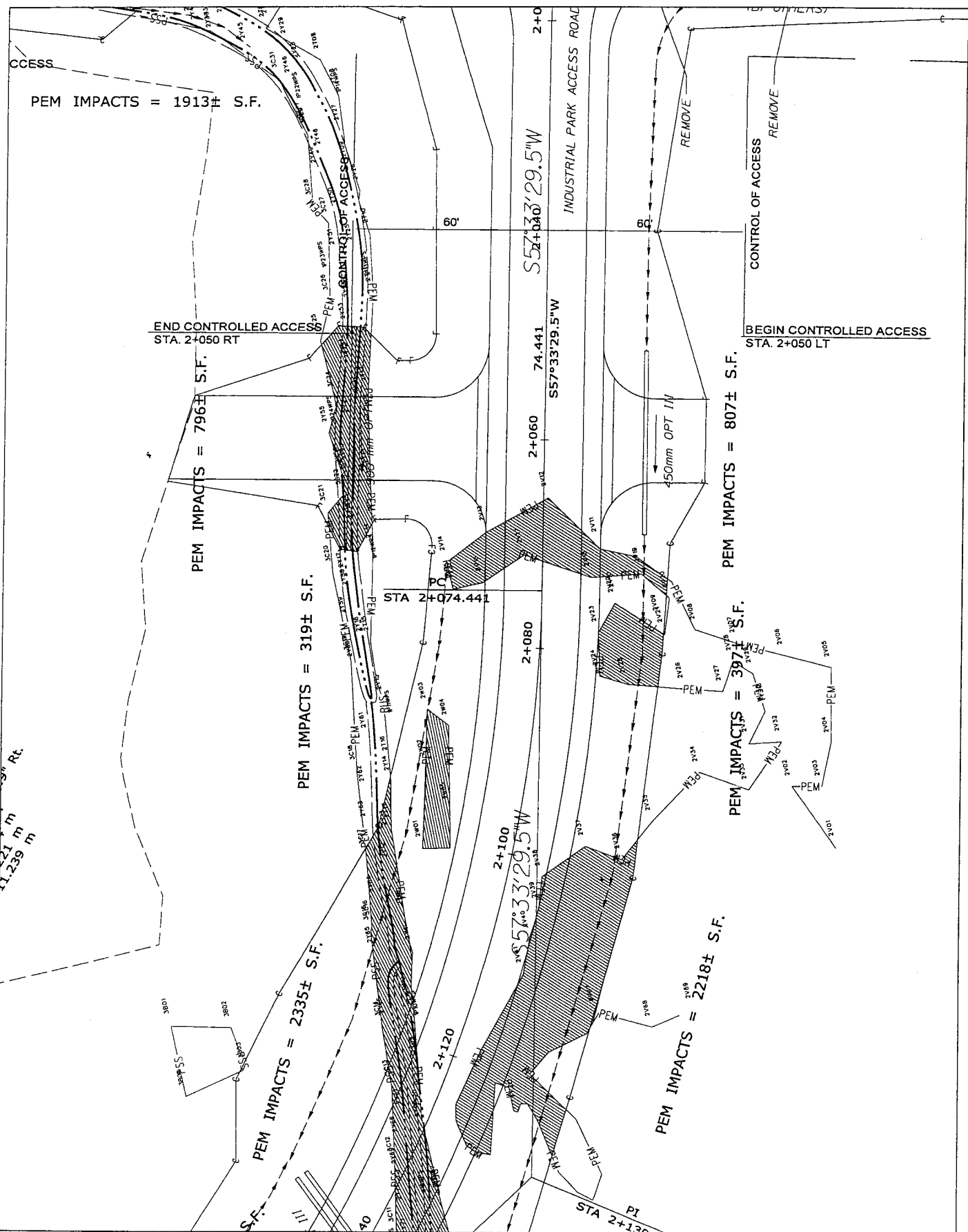
STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

 8483.32

BSCR CALAIS - ST. STEPHENS
 BORDER CROSSING

 PLANS

SHEET NUMBER
 9
 OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

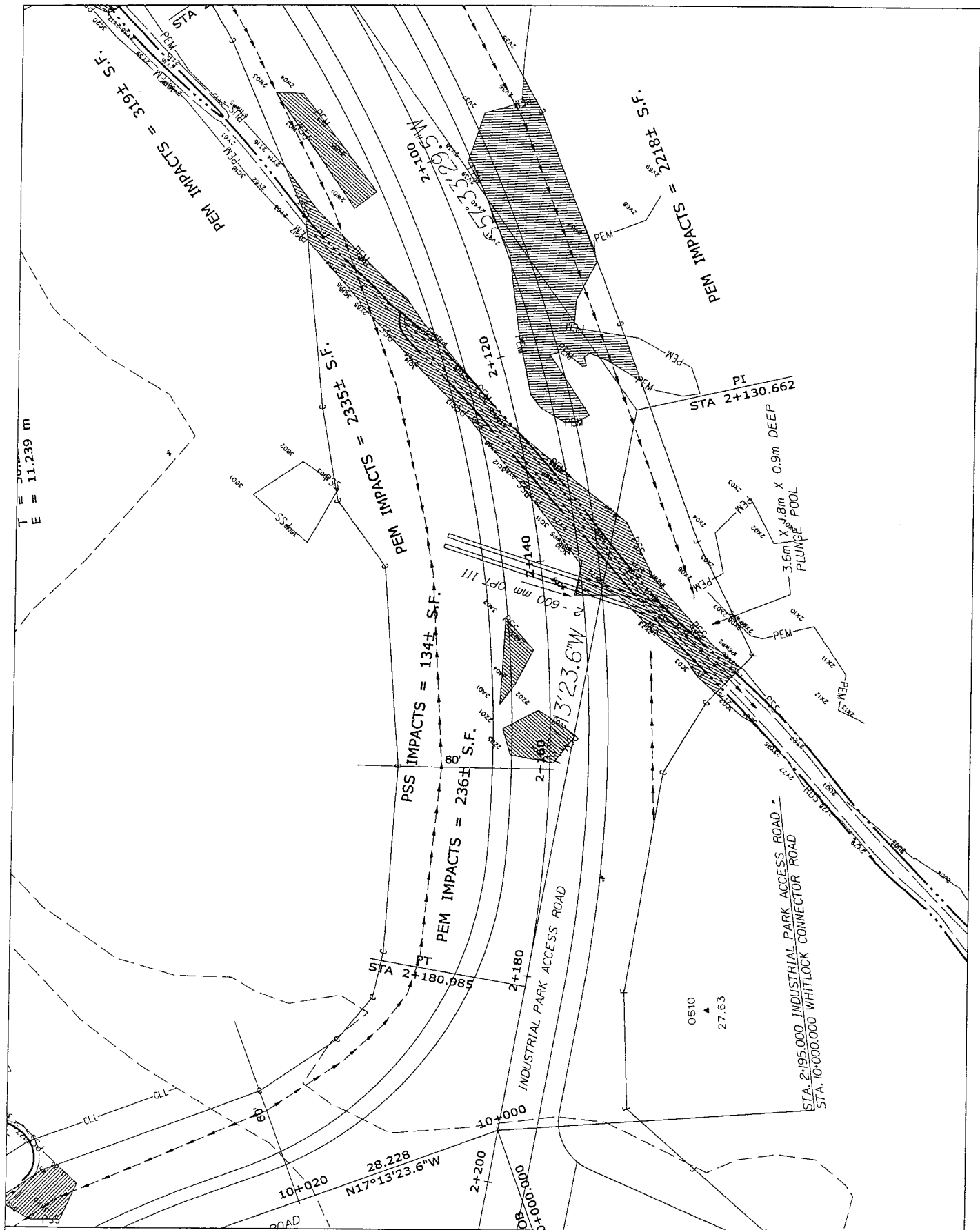
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BORDER CROSSING

PLANS

SHEET NUMBER

10

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

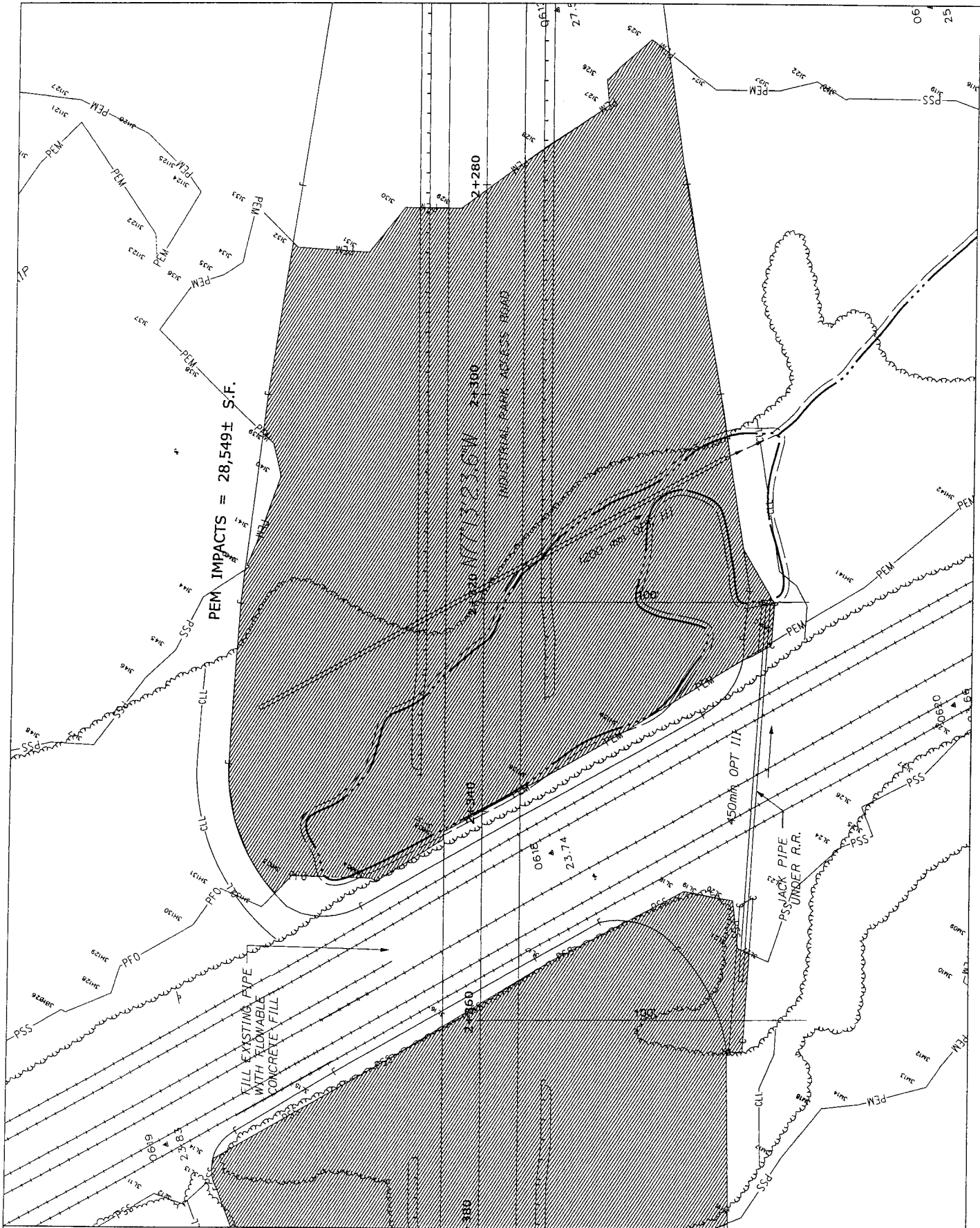
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BORDER CROSSING

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8483.32

PLANS

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

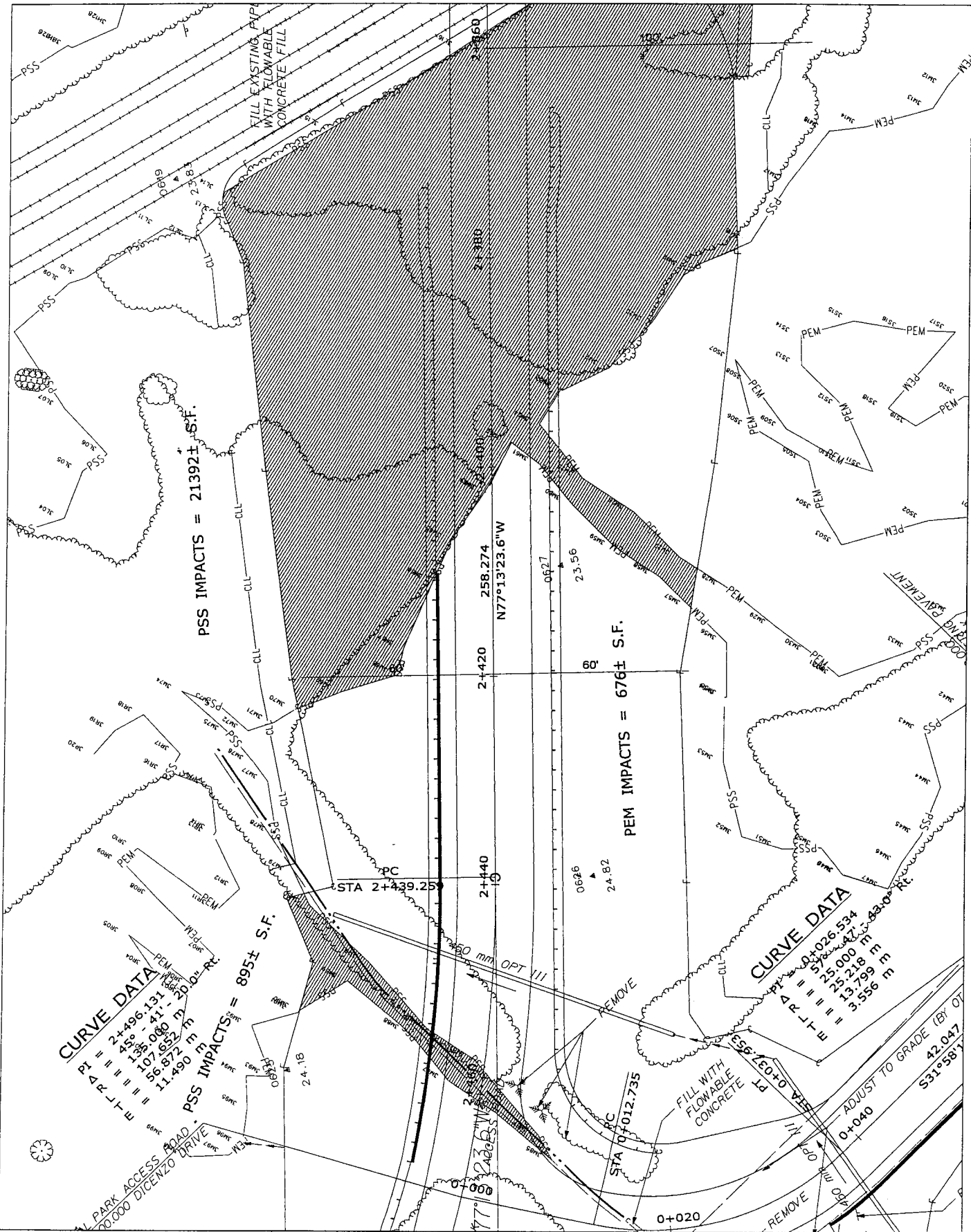
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BORDER CROSSING

SHEET NUMBER
12

8483.32

PLANS

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

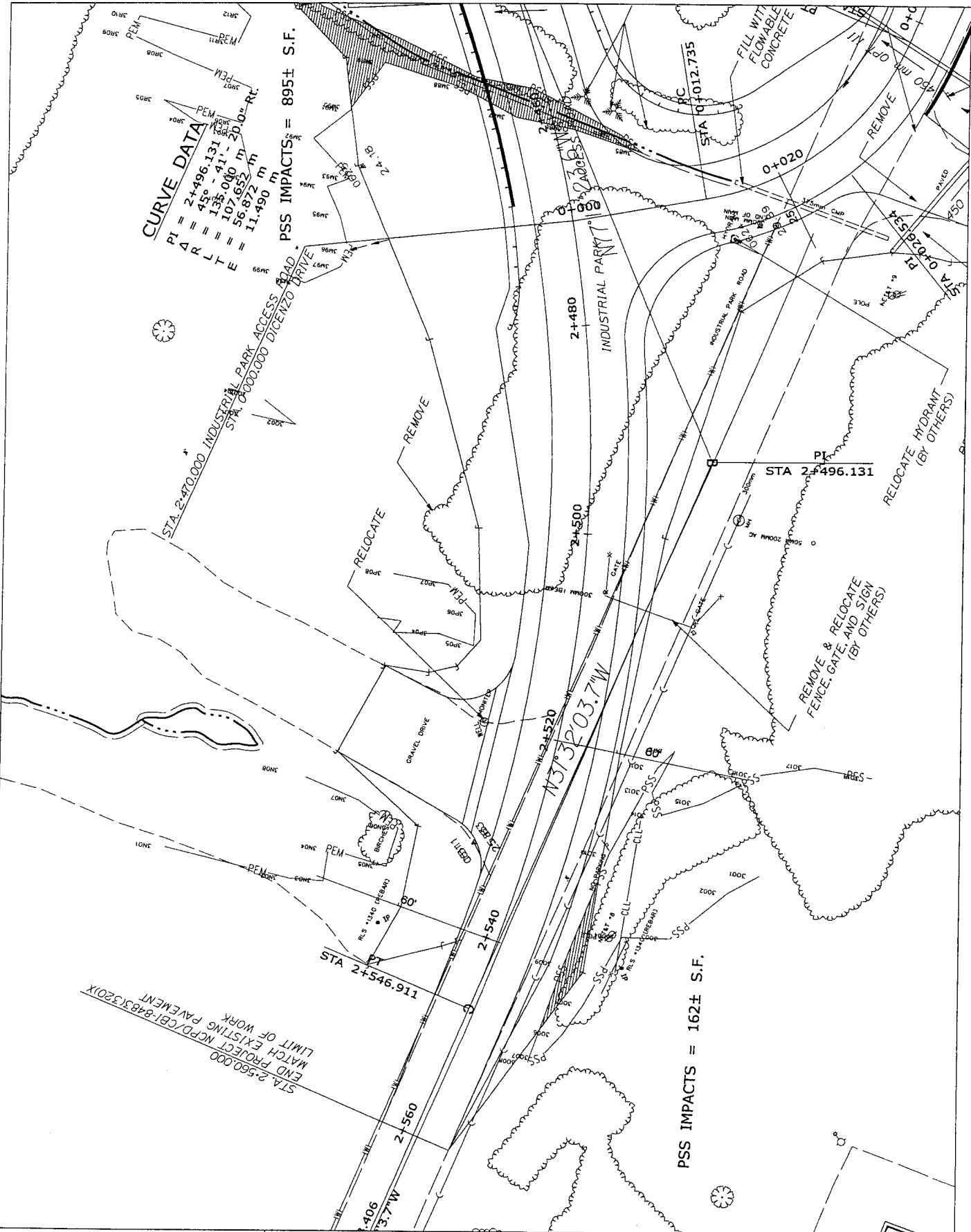
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BORDER CROSSING

PLANS

SHEET NUMBER

13

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STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

8483.32

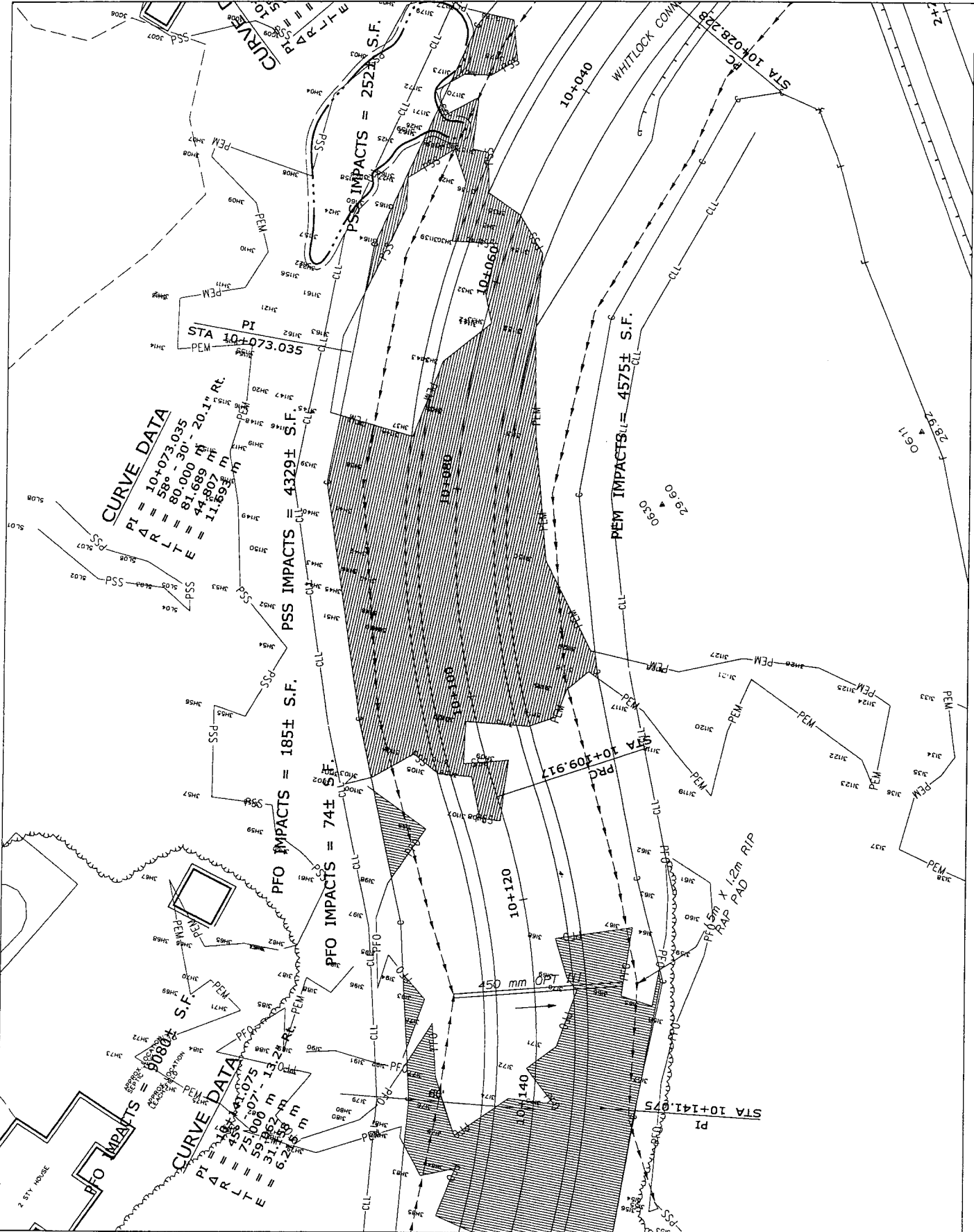
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 BORDER CROSSING

PLANS

SHEET NUMBER

14

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

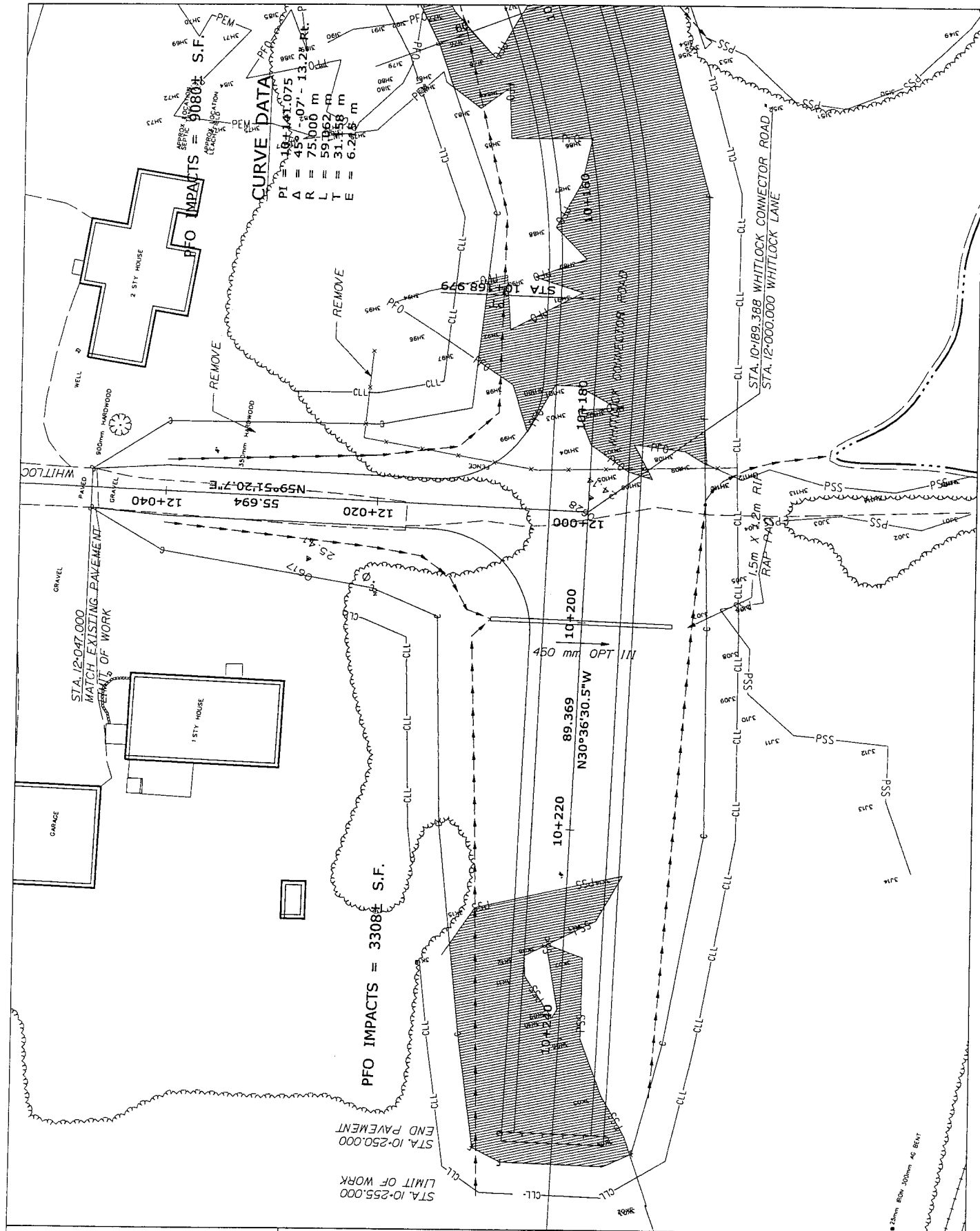
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BORDER CROSSING

PLANS

SHEET NUMBER

15

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

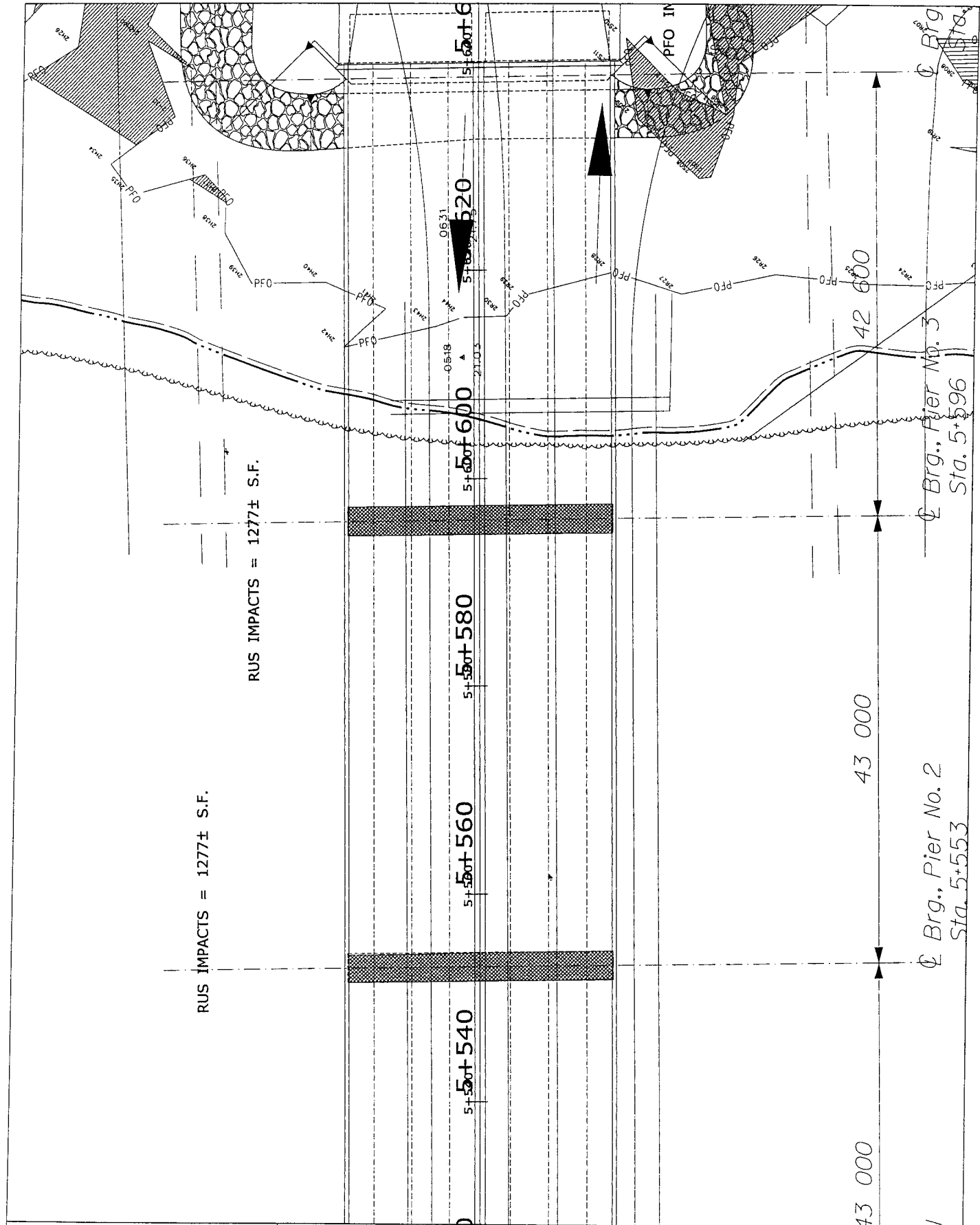
BSCR CALAIS - ST. STEPHENS
BORDER CROSSING

PLANS

SHEET NUMBER

16

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

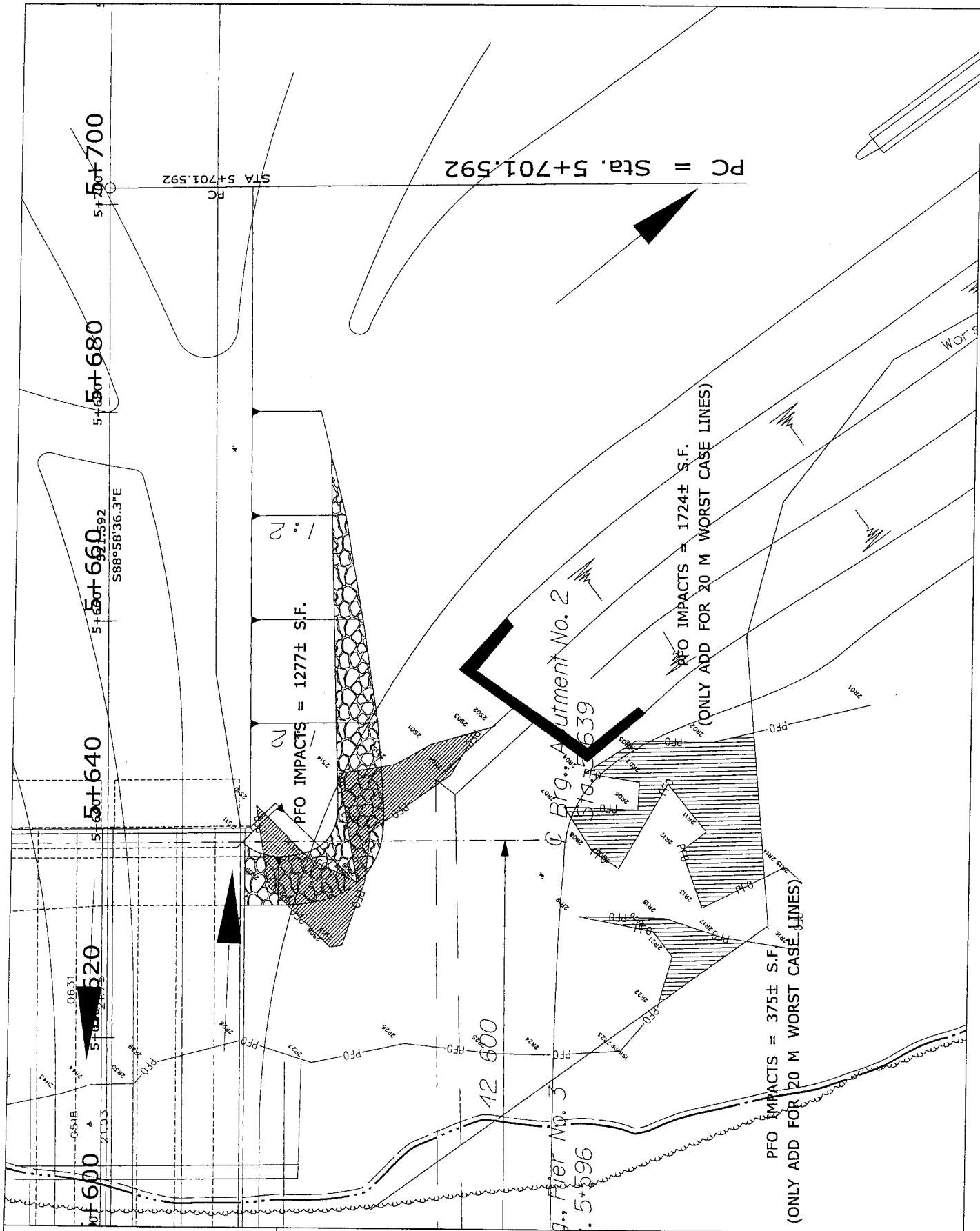
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BORDER CROSSING

PLANS

SHEET NUMBER

17

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

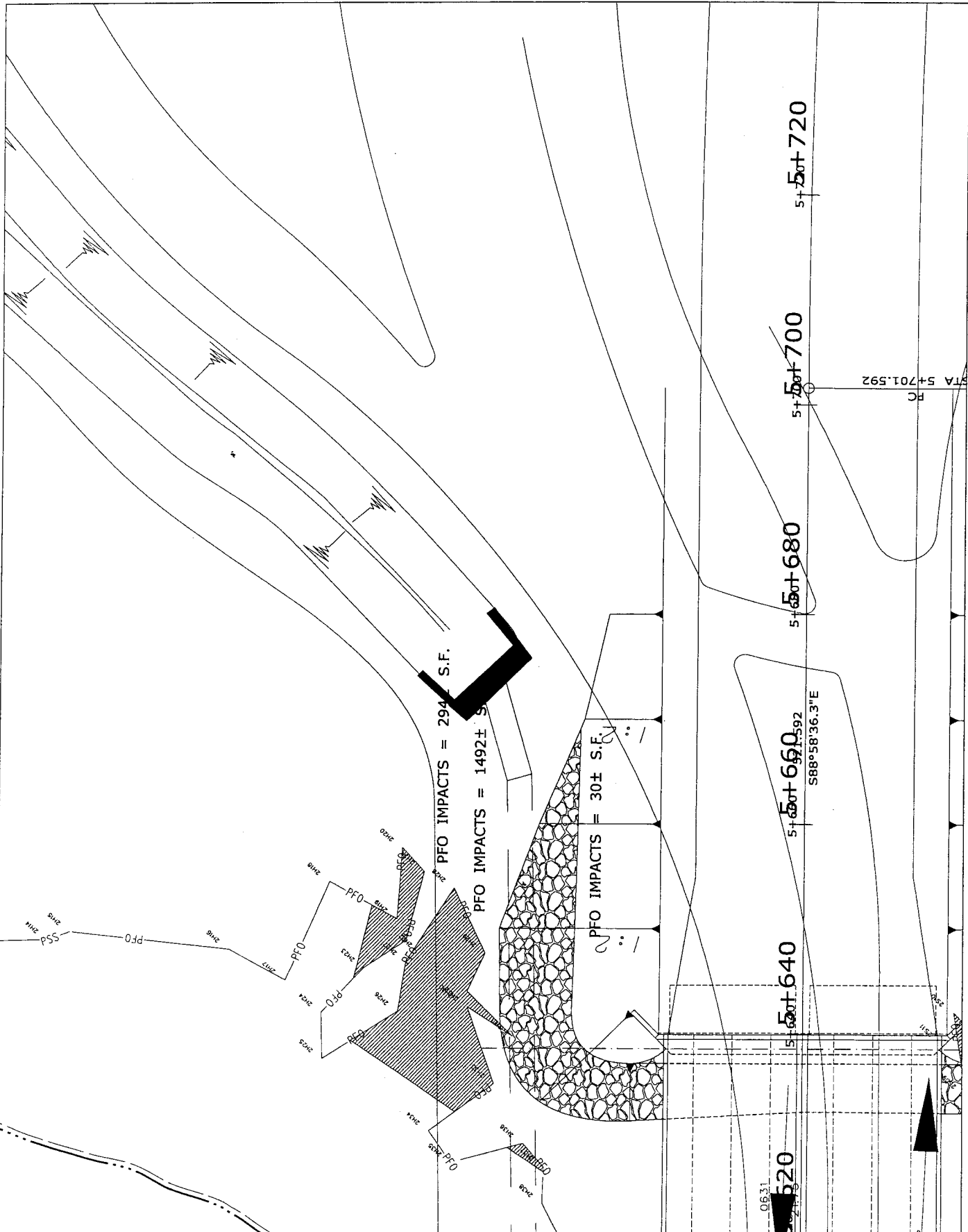
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BORDER CROSSING

PLANS

SHEET NUMBER

18

OF 28



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

8483.32

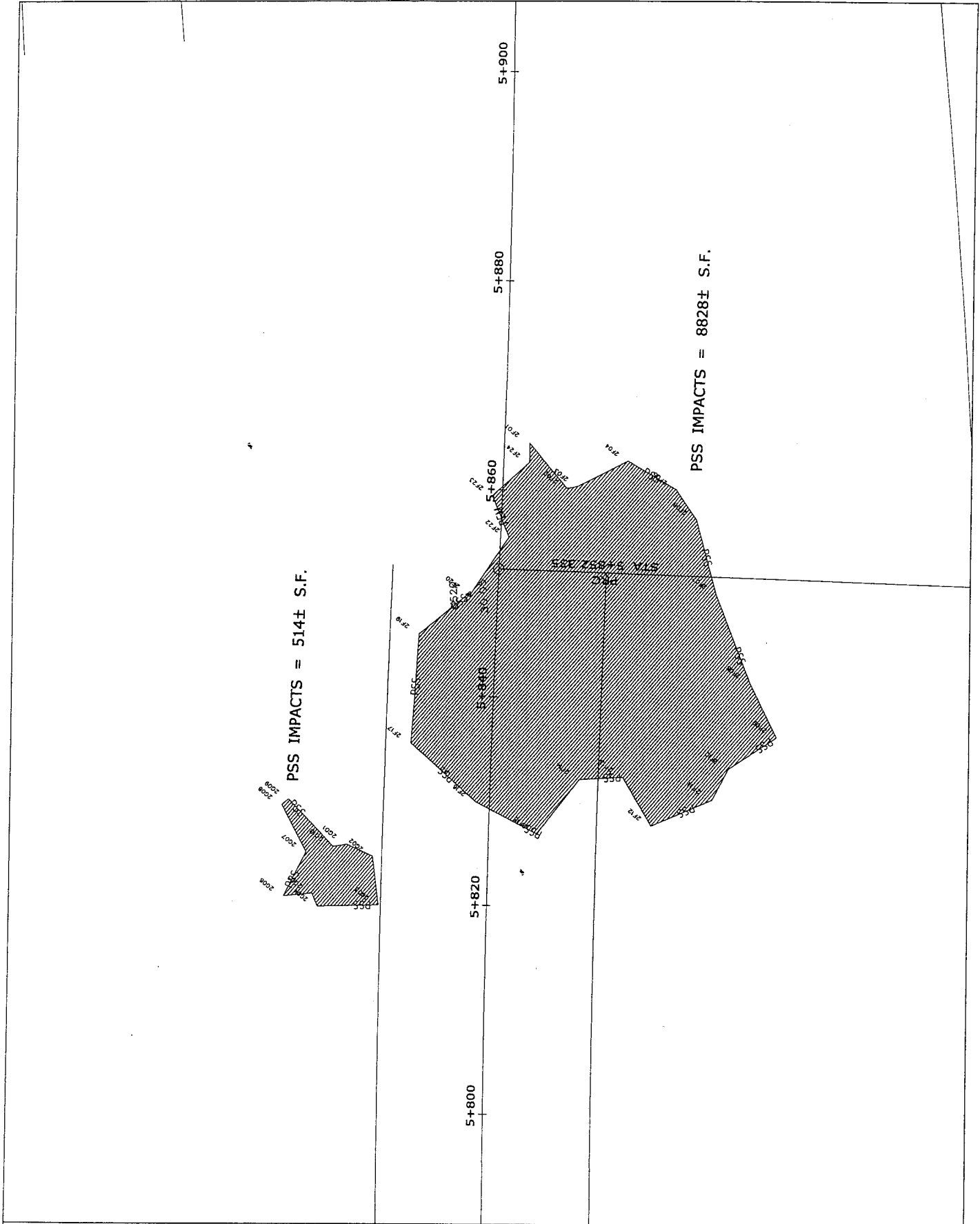
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 BORDER CROSSING

PLANS

SHEET NUMBER

19

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

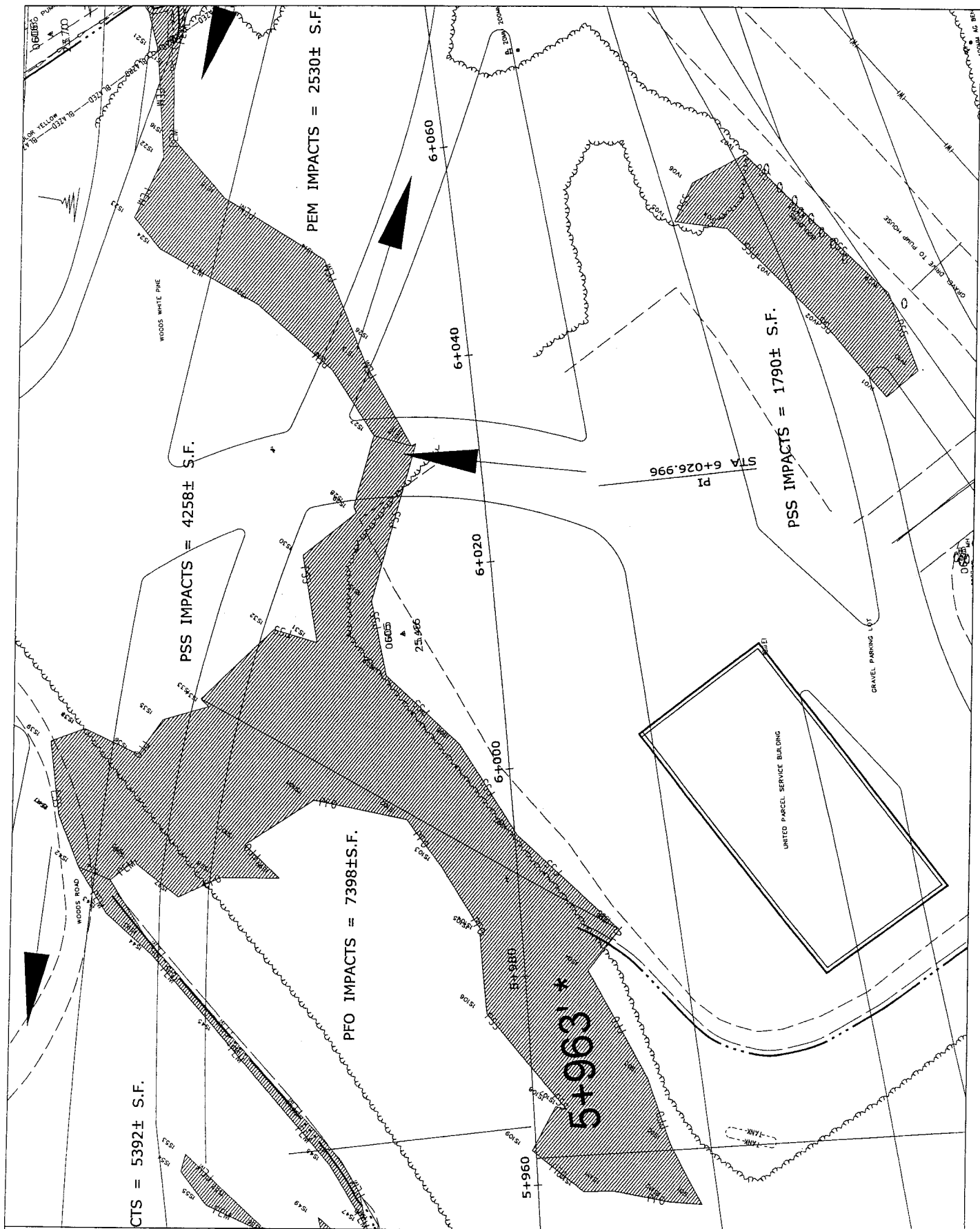
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BORDER CROSSING

SHEET NUMBER
20

8483.32

PLANS

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

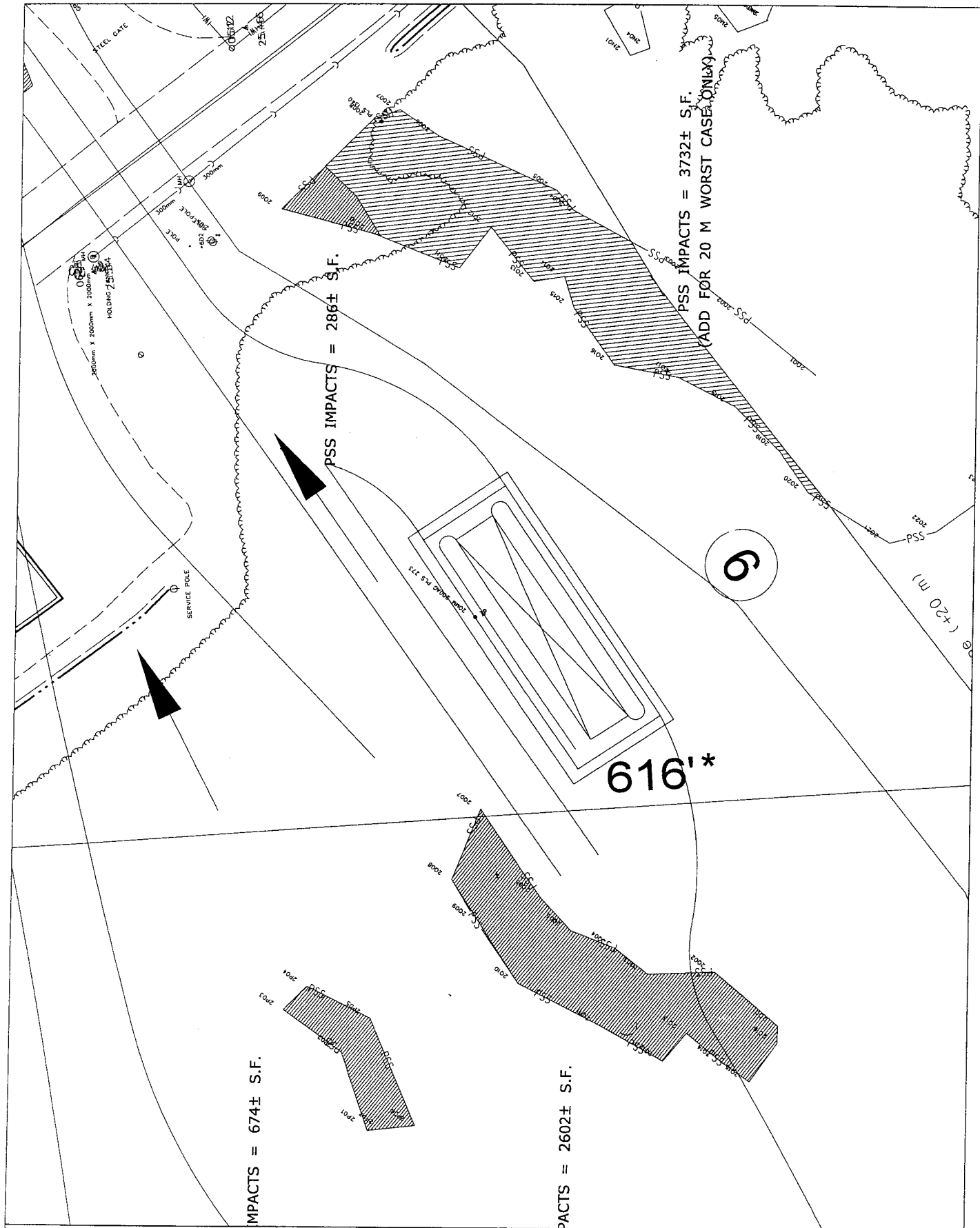
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BORDER CROSSING

PLANS

SHEET NUMBER

22

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

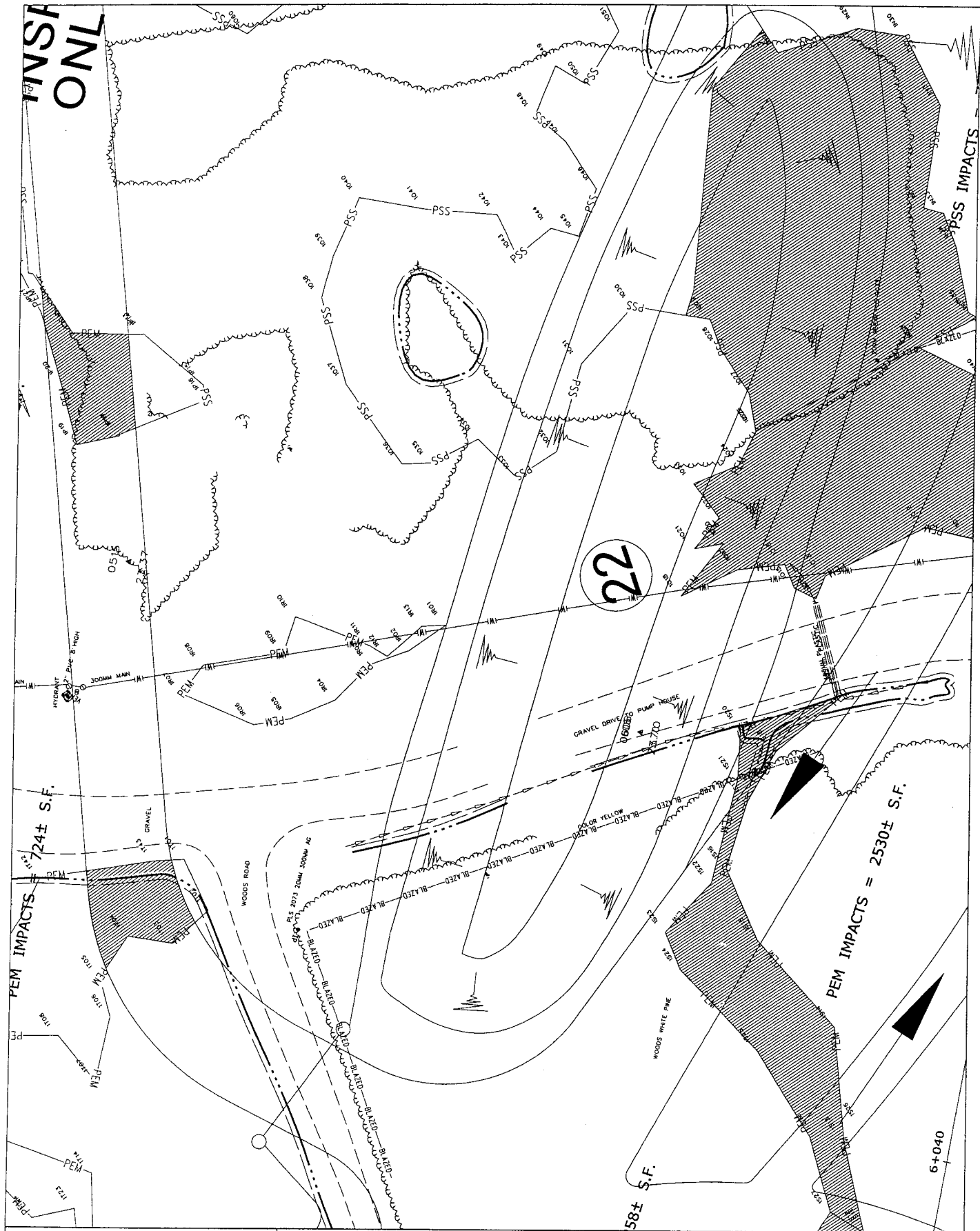
BSCR CALAIS - ST. STEPHENS
BORDER CROSSING

SHEET NUMBER
23

8483.32

PLANS

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BSCR CALAIS - ST. STEPHENS
BORDER CROSSING

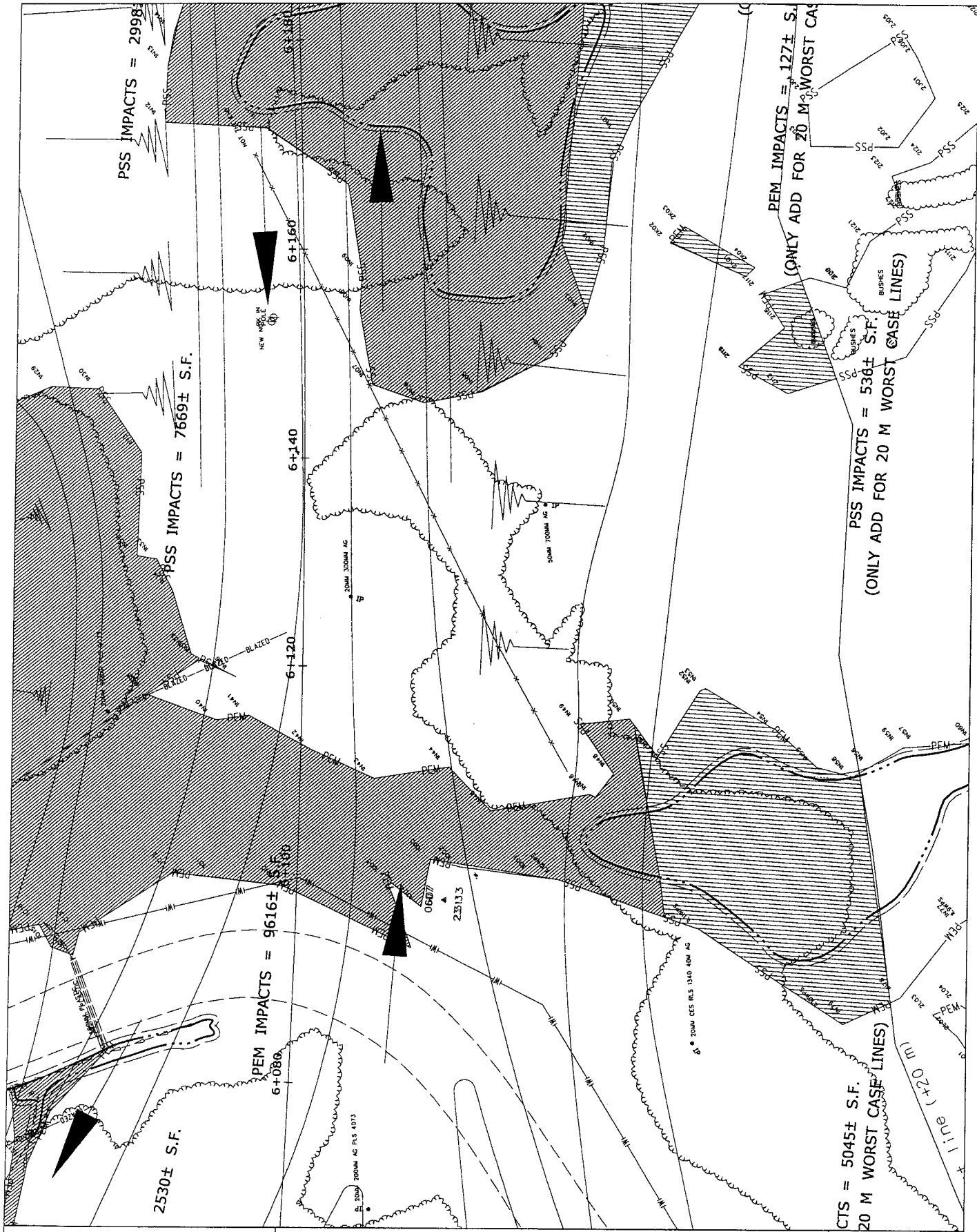
SHEET NUMBER

24

8483.32

PLANS

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

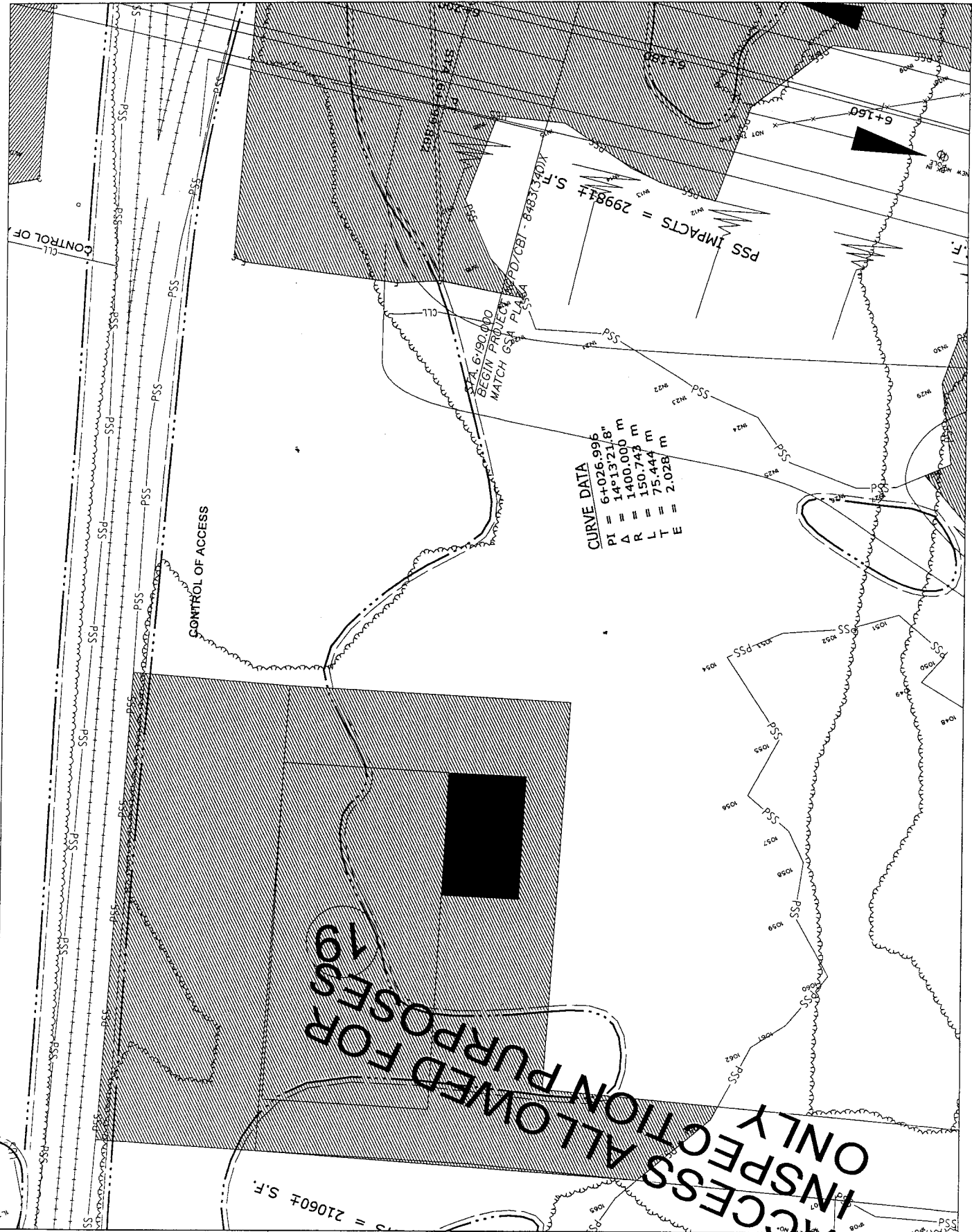
BSCR CALAIS - ST. STEPHENS
BORDER CROSSING

PLANS

SHEET NUMBER

25

OF 28



CURVE DATA
 PC = 6+026.996
 PI = 14°13'21.8"
 Δ = 1400.000 m
 R = 150.743 m
 LT = 75.444 m
 E = 2.028 m

ACCESS ALLOWED FOR
 PURPOSES OF
 CONSTRUCTION
 ONLY

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

BSCR CALAIS - ST. STEPHENS
 BORDER CROSSING

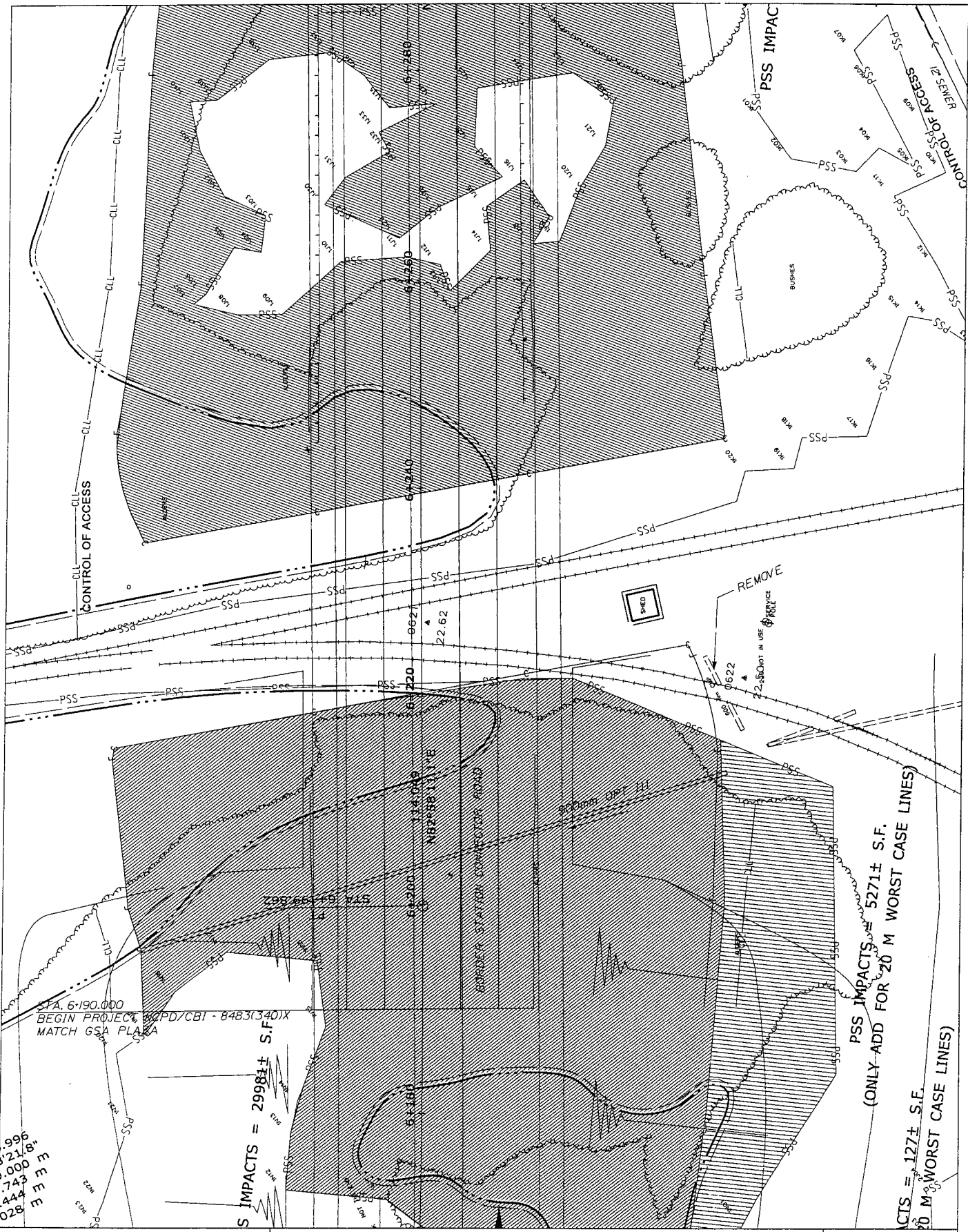
SHEET NUMBER

26

8483.32

PLANS

OF 28



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

8483.32

BSCR CALAIS - ST. STEPHENS
BORDER CROSSING

PLANS

SHEET NUMBER

27

OF 28

996
21.8'
1,000
743
444
028
m m m

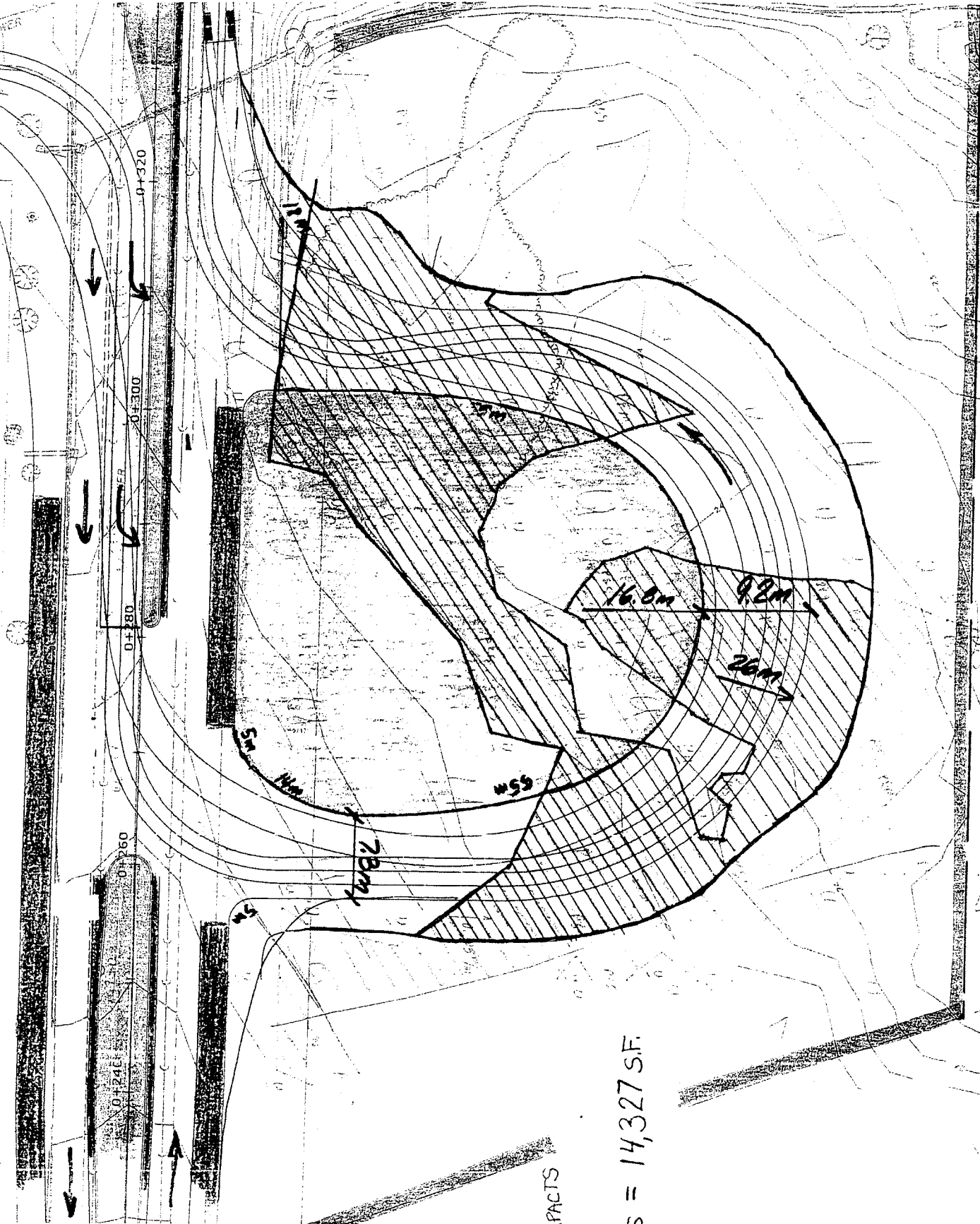
STA. 6+190.000
BEGIN PROJECT (20' PD/CBI - 8483(340)X
MATCH GSA PLANS


S IMPACTS = 29981± S.F.

PSS IMPACTS = 5271± S.F.
(ONLY ADD FOR 20 M WORST CASE LINES)

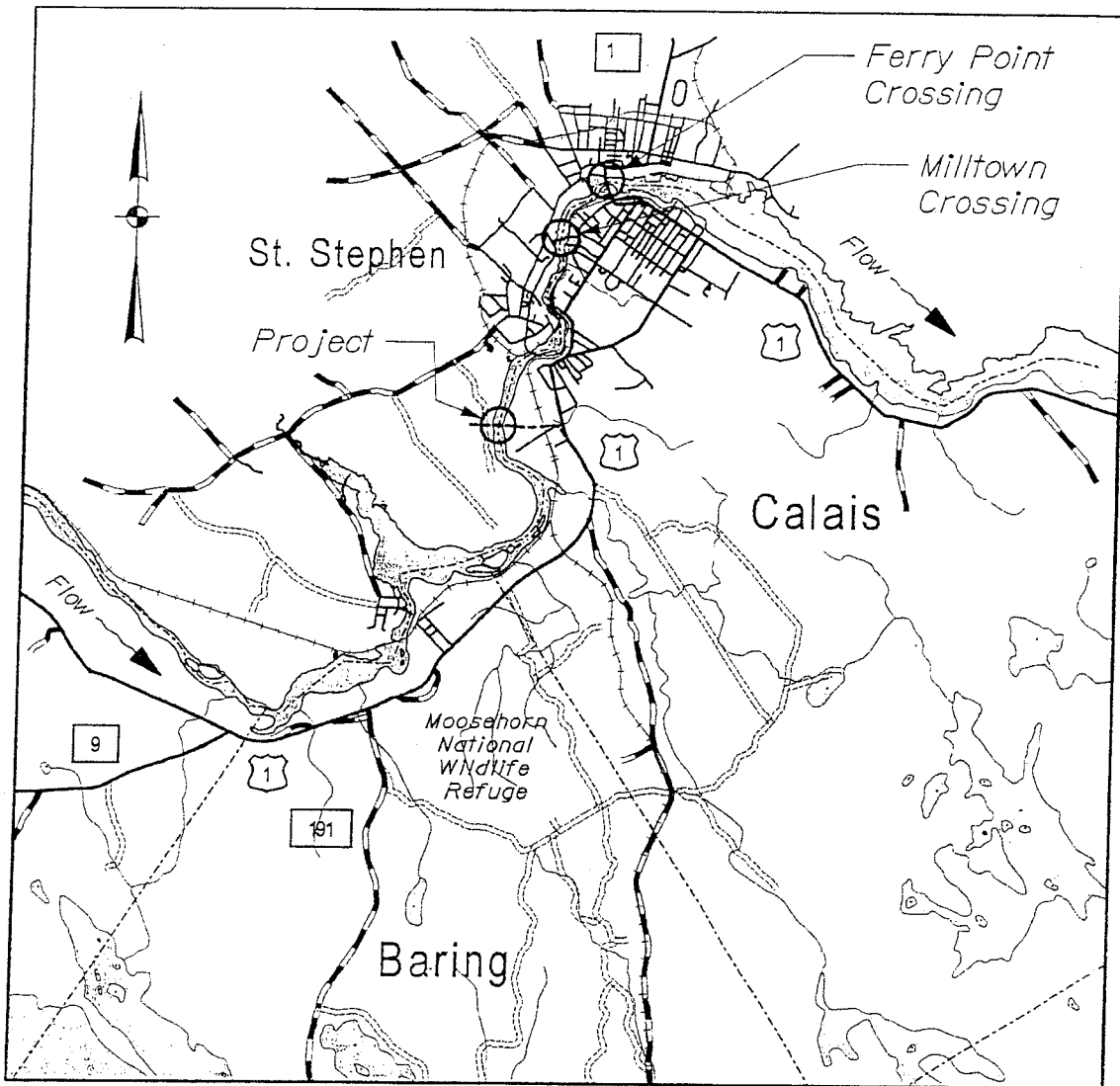
ACTS = 127± S.F.
(20 M WORST CASE LINES)

Proposed JOG HANDLE

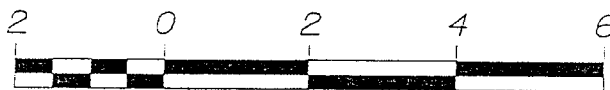


 = PSS IMPACTS

PSS IMPACTS = 14,327 S.F.



LOCATION MAP



Scale of kilometers



Scale of miles

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
February 2005
NCPD/CBI-6483(350)X Mile Point 16
PIN 6483.36 BRIDGE NO. 6440

ST. CROIX RIVER BRIDGE
ST. STEPHEN, CHARLOTTE CTY., N.B., CANADA
CALAIS, WASHINGTON CTY., MAINE, U.S.A.

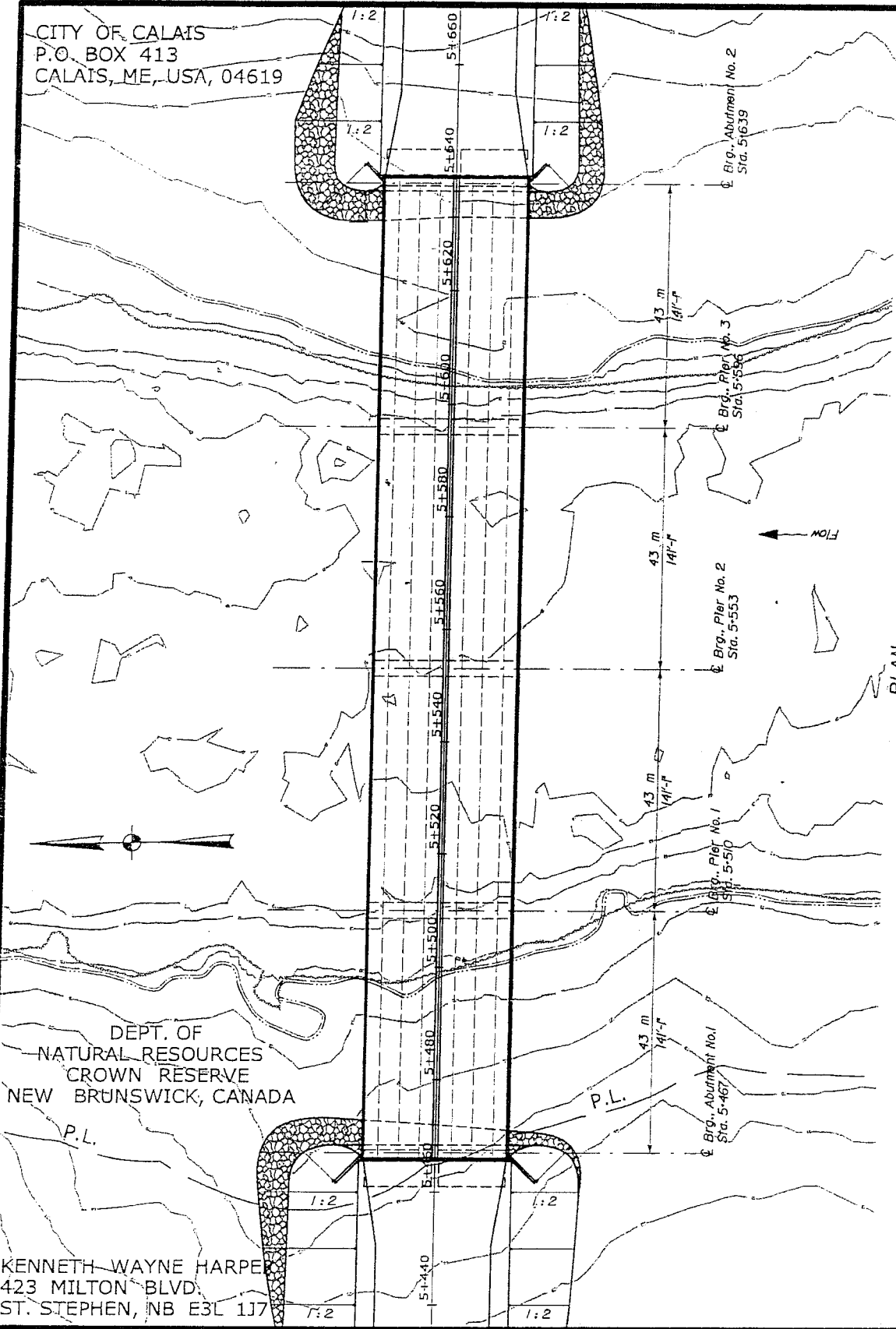
PRELIMINARY BRIDGE PLANS

SHEET NUMBER

1

OF 4

CITY OF CALAIS
 P.O. BOX 413
 CALAIS, ME, USA, 04619



DEPT. OF
 NATURAL RESOURCES
 CROWN RESERVE
 NEW BRUNSWICK, CANADA

KENNETH WAYNE HARPER
 423 MILTON BLVD.
 ST. STEPHEN, NB E3L 1J7

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 February 2005

ST. CROIX RIVER BRIDGE
 ST. STEPHEN, CHARLOTTE CTY., N.B., CANADA
 CALAIS, WASHINGTON CTY., MAINE, U.S.A.

SHEET NUMBER
 2
 OF 4

NCPD/CBI-8483(360)X Mile Point 16
 PIN 8483.36 BRIDGE NO. 6440

PRELIMINARY BRIDGE PLANS



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

MAINE DEPARTMENT OF TRANSPORTATION) NATURAL RESOURCES PROTECTION ACT
Calais, Washington County) FRESHWATER WETLAND ALTERATION
THIRD INTERNATIONAL BRIDGE) WATER QUALITY CERTIFICATION
L-22770-L6-A-N (approval)) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S.A. Sections 480-A et seq. and Section 401 of the Federal Water Pollution Control Act, the Department of Environmental Protection has considered the application of MAINE DEPARTMENT OF TRANSPORTATION with the supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. Summary: The applicant is proposing to construct a third international bridge linking Calais with St. Stephan, New Brunswick, Canada. In addition to the bridge crossing, the facility will include a Border Patrol Facility run by the U.S. Department of Homeland Security. The wetland alterations for the entire site are included in this Order; the U.S government will apply for a Site License at a later date. The applicant does not propose additional wetland alteration outside the boundaries of the project. The applicant is not proposing the widening of Route 1 through the Moosehorn National Wildlife Refuge as part of this project.

The applicant is requesting a permit to alter a total of 296,540 square feet of freshwater wetland. The amounts of wetlands, type of wetland and the placement of the wetland within the site (i.e. road, station, etc.) to be altered are detailed in Exhibit 14 of the application. The project is shown on a set of plans included with the application, the first of which is entitled "Location", prepared by the applicant and dated September 8, 2004. The project site is located on Route 2 in the Town of Calais.

The Department received a request for a Public Hearing; however, no credible conflicting technical information was received by the Department and the Commissioner denied the request.

B. Current Use of the Site: The site is currently part of the Calais Industrial Park.

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2. WATER QUALITY CONSIDERATIONS:

Provided that the project erosion and sedimentation controls are implemented and maintained in accordance with the MDOTs' Best Management Practices as outlined in Exhibit 8 of the application, the Department does not anticipate that the proposed project will violate any state water quality law, including those governing the classification of the State's waters.

3. HABITAT CONSIDERATIONS:

Information provided to the Department from the Department of Marine Resources (DMR) indicates that the proposed project should not cause any significant adverse impacts to marine resources, navigation or recreation.

Information provided to the Department from the Maine Department of Inland Fisheries and Wildlife indicates that there are no Essential or Significant Wildlife Habitats at the project site.

4. WETLANDS AND WATERBODIES PROTECTION RULES:

The Department's Wetlands and Waterbodies Protection Rules, Chapter 310, require that the applicant meet the following standards:

a. Avoidance. No activity may be permitted if there is a practicable alternative to the project that would be less damaging to the environment. Each application for a freshwater wetland alteration permit must provide an analysis of alternatives in order to demonstrate that a practicable alternative does not exist. The applicant submitted an alternative analysis for the proposed project completed by the applicant and entitled "Reevaluation of the 2001 Environmental Assessment", dated January 2006. The analysis is included as Exhibit 20 of the application. In the alternative analysis, the applicant looked at several possible locations for the new bridge crossing along the Route 1/Route 9 corridor between Baileyville and Calais. The review of each possible location demonstrates that the proposed project as outlined in the application provides the least amount of alteration to freshwater wetlands, undeveloped lands and good agricultural areas.

b. Minimal Alteration. The amount of wetland to be altered must be kept to the minimum amount necessary for meeting the overall purpose of the project. The proposed wetland alteration is the least amount necessary to construct the project.

c. Compensation. Compensation is required to achieve the goal of no net loss of wetland functions and values. Due to the amount of wetland alteration, the applicant is required to compensate for the lost functions and values of the wetlands. The applicant is proposing to preserve approximately 178 acres of wetland and associated adjacent upland to the Moosehorn National Wildlife Refuge (Refuge) and deeded to the Refuge. The

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parcel is currently owned by the City of Calais. In an email dated April 4, 2006, the City indicates intent to transfer the parcel to MDOT by December 31, 2006. Due to federal regulations regarding land, the 178 acres may not have any associated encumbrances. By May 1, 2007, the applicant shall submit evidence to the Department indicating that the parcel has been accepted by and transferred to the Refuge.

The Department finds that the applicant has avoided and minimized wetland impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project.

5. OTHER CONSIDERATIONS:

The Department did not identify any other issues involving existing scenic, aesthetic, or navigational uses, soil erosion, habitat or fisheries, the natural transfer of soil, natural flow of water, water quality, or flooding.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S.A. Sections 480-A et seq. and Section 401 of the Federal Water Pollution Control Act:

- A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.
- B. The proposed activity will not cause unreasonable erosion of soil or sediment.
- C. The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.
- D. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life.
- E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.
- F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.
- G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.
- H. The proposed activity is not on or adjacent to a sand dune.

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- I. The proposed activity is not on an outstanding river segment as noted in Title 38 M.R.S.A. Section 480-P.

THEREFORE, the Department APPROVES the above noted application of Maine Department of Transportation to construct a third international bridge, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:

- 1. Standard Conditions of Approval, a copy attached.
- 2. The applicant shall take all necessary measures to ensure that their activities or those of their agents do not result in measurable erosion of soil on the site during the construction of the project covered by this approval.
- 3. By May 1, 2007, the applicant shall submit evidence to the Department indicating that the parcel has been accepted by and transferred to the Refuge.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED AT AUGUSTA, MAINE, THIS 14th DAY OF April, 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: 
 DAVID R LITTELL, COMMISSIONER

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application January 30, 2006

Date of application acceptance February 9, 2006

Date filed with Board of Environmental Protection

RC/57025/22770.AN

NRPA EXHIBIT 18

WETLAND COMPENSATION PLAN

MAINEDOT CALAIS - ST. STEPHEN INTERNATIONAL BRIDGE AND BORDER CROSSING PROJECT

**CALAIS, MAINE – ST. STEPHEN, NEW BRUNSWICK
PIN 8483.32**

JANUARY 2006 (REVISED JUNE 2006)



PREPARED FOR

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

PREPARED BY

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- Appendix E. Letter from Moosehorn National Wildlife Refuge to MaineDOT Regarding Acceptance of Hardscrabble Parcel
- Appendix F. U.S. Army Corps of Engineers' Comments and MaineDOT Response to Comments Memo (April 2006)

1.0 GENERAL INFORMATION

1.1 Project Description

The Maine Department of Transportation (MaineDOT) is proposing to construct a new international border crossing in Calais, Maine (Figure 1). The project, known as the Calais–St. Stephen Border Crossing Facility, will include a new bridge across the St. Croix River to St. Stephen, New Brunswick (Canada), a new border station, a new connector road from the river crossing to U.S. Route 1, upgrades to U.S. Route 1 (including a new roundabout intersection), and relocation of several local roads to accommodate the new facility. The project's purpose and need are detailed in Exhibits 1 and 2 of the Natural Resources Protection Act (NRPA) wetland alteration application. As described in Exhibit 11 of the application, MaineDOT has taken appropriate mitigation measures to avoid and minimize wetland impacts in the design of the project. This Wetland Compensation Plan outlines the compensatory mitigation that will be implemented to offset the unavoidable wetland impacts associated with the project. Note that this Compensation Plan was developed to meet the application requirements of both the Maine Department of Environmental Protection (DEP) and the U.S. Army Corps of Engineers (Corps) in a single document, even though the individual compensation packages being proposed are slightly different for each agency. Those differences are explained below.

1.2 Wetland Impacts

The wetland impacts from the proposed project are detailed in Exhibit 14 of the NRPA application, and are summarized below in Table 1. The wetland types being impacted include approximately 1.71 acres of emergent (PEM), 4.45 acres of scrub-shrub (PSS), 0.52 acre of forested (PFO), and 0.13 acre of streambed (RUS)¹. The impacted wetlands include approximately 0.25 acre of NRPA Wetlands of Special Significance (WSS). Overall, the two primary functions being impacted are water quality protection (i.e., sediment/nutrient/toxicant retention and transformation) and wildlife habitat. Other functions associated with the impacted wetlands include groundwater interchange, flood flow alteration, and aquatic habitat.

1.3 Mitigation Site Search

MaineDOT conducted a search for compensatory mitigation opportunities as described and detailed in the document entitled "Mitigation Site Search Summary", contained in Appendix A. The search process led to the investigation of 15 or more sites in the general vicinity of the proposed project. All but four of these sites were dropped from consideration based on such factors as size (e.g., too small), compatibility and extent of wetland functions, effectiveness and likelihood of success, site availability, distance from project area, and agency recommendations. The two sites that were ultimately chosen were approved in concept in October 2005 by the Corps and the DEP. These two sites, and one additional site added to the package since then by MaineDOT, are described in detail in Sections 2 and 3 below. The Maine Historic Preservation Commission (MHPC) has reviewed the proposed mitigation areas pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended. In a memo dated October 27, 2005, MHPC notified the MaineDOT Permits and Cultural Resources Unit that the proposed mitigation activities would not affect any structure or site of historic or archaeological significance.

¹ Wetland types (i.e., PEM, PSS, PFO, etc.) per Cowardin *et al.* 1979. Classifications of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Washington, DC.

Table 1. Summary of wetland impacts for the MaineDOT Calais – St. Stephen Bridge and Border Crossing Project.

Wetland Type ²	Estimated Impacts ¹		
	Square Meters	Square Feet	Acres
PEM	6,606	71,108	1.63
PEM – WSS ³	317	3,417	0.08
PSS	17,532	188,712	4.33
PSS - WSS	472	5,079	0.12
PFO	2,116	22,775	0.52
PFO - WSS	0	0	0
RUS - WSS	506	5,449	0.13
Total Non-WSS	26,254	282,595	6.49
Total WSS	1,295	13,945	0.32
Total Wetland Impacts	27,549	296,540	6.81

Notes:

1. Wetland impact numbers per MaineDOT estimate, dated 1-23-06.
2. Per Cowardin *et al.* 1979.
3. WSS = Maine NRPA Freshwater Wetland of Special Significance.

1.4 June 2006 Revision – Response to Review Comments

The New England District of the Corps Regulatory Division has reviewed this wetland compensation plan (dated January 2006 and submitted with the permit application) and provided MaineDOT with a completed copy of their Mitigation Plan Checklist. That document, dated April 4, 2006, contains comments and questions regarding the plan. In a memo dated April 14, 2006, MaineDOT responded to the comments and questions raised in the Corps' review. On May 12, 2006, the Corps responded to MaineDOT, via e-mail (Paul Minkin to Mark Lickus), indicating that MaineDOT's response of April 14 contained all the information requested and addressed all of the Corps' concerns regarding the compensation plan. The Corps subsequently requested that MaineDOT submit a revised Wetland Compensation Plan that incorporates the Corps' review comments and MaineDOT's written response. Copies of the Corps' mitigation plan checklist and MaineDOT's response are attached in Appendix F.

In summary, the Corps' review concluded that the mitigation measures outlined in the Wetland Compensation Plan would provide adequate compensation for the impacted wetland functions and values. The bulk of the comments and questions raised required only clarification by MaineDOT. As the documents in Appendix F show, the primary comments and questions involved lengths of stream impacts, mitigation for stream impacts, existing and future land uses surrounding the proposed Water District mitigation site, anticipated construction schedules, organic content of mitigation topsoil, documentation on acceptance of preservation areas by the receiving agency, and control of potential invasive plant species.

2.0 SUMMARY OF PROPOSED COMPENSATORY MITIGATION

The wetland mitigation measures outlined in this plan are intended to compensate for the approximately 6.8 acres of freshwater wetland and stream-bottom impacts from the proposed project. Wetland mitigation is proposed at one on-site area and one off-site area. Preservation is also proposed at an additional on-site area, which is intended to minimize impacts from future development to nearby

Moosehorn National Wildlife Refuge² (NWR). These measures are summarized in Table 2 below and described in more detail in Section 3.

The proposed on-site mitigation involves wetland enhancement, wetland creation, and upland buffer enhancement at the Water District Site, a disturbed site near the St. Croix River and directly adjacent to the proposed project area (Figure 1). The two other mitigation areas are preservation parcels abutting Moosehorn NWR. These are referred to herein as the Hardscrabble Road parcel and the Magurrewock Mountain parcel. In general, the proposed mitigation package is designed to replace and protect the types of wetland functions and values associated with the impacted wetlands, rather than to provide in-kind replacement of wetland acreages and types.

As mentioned above, the individual compensation packages being proposed are slightly different for the Corps versus the DEP. Based on approvals of the concept plans and pre-application consultations with these regulatory agencies, MaineDOT is offering the Water District site, the Hardscrabble Road parcel, and the Magurrewock Mountain parcel as a mitigation package to satisfy Corps requirements, while only the Hardscrabble Road parcel is being offered to satisfy DEP mitigation requirements. Note that Appendix B contains a checklist of the Corps' requirements, guidelines, and suggested language for mitigation plans, indicating where in this plan those items are addressed.

MaineDOT will be responsible for planning, implementing, and monitoring the on-site wetland enhancement/creation mitigation area at the Water District site, and will purchase the two preservation areas in fee to be transferred to the Moosehorn NWR for long-term ownership and management.

² Moosehorn NWR is owned and managed by the U.S. Fish and Wildlife Service (USFWS)

Table 2. Summary of proposed compensatory mitigation for the MaineDOT Calais – St. Stephen Bridge and Border Crossing Project.

Compensation Site	Type of Compensation	Size (acres)	Offered For:
1. Water District Site	Wetland Enhancement Wetland Creation Upland Buffer Enhancement	E = 0.52 C = 0.42 B = 2.56	Corps only
2. Hardscrabble Road Parcel	Wetland and Upland Preservation adjacent to Moosehorn NWR	P = ±178	Corps and DEP
3. Magurrewock Mountain Parcel	Upland Buffer Preservation adjacent to Moosehorn NWR	P = ±40	Corps only

3.0 EXISTING AND PROPOSED CONDITIONS

Following are descriptions of existing and proposed conditions for the three mitigation sites. Also listed are specific mitigation objectives for each site.

3.1 Water District Site

Site Description: Disturbed site with wetland enhancement, wetland creation, and upland buffer enhancement opportunities.

Location: Adjacent to the proposed GSA Facility, Calais

Type of Mitigation: Wetland Enhancement = 0.52 acre
Wetland Creation = 0.42 acre
Upland Buffer Enhancement = 2.56 acres

3.1.1 Existing Conditions

The Water District mitigation site is located on a parcel owned by the City of Calais, situated between some railroad tracks and the St. Croix River (Figures 1, 2, and 3). The Calais Water District currently maintains a groundwater production well on the parcel that serves as the primary water supply for the city. Prior to the installation of the well and associated infrastructure (i.e., an access road and a pump/filtration station) circa 2001, the site was disturbed some time within the last 10 years by the construction of an agricultural cranberry bog and some dug irrigation ponds, and by land grading and topsoil stripping activities (refer to Figures 2 and 3, Photos 1 and 2). Prior to the cranberry-growing operation, the site was primarily an agricultural field.

The Water District site is currently a mixture of upland and wetland habitats. Much of the topsoil within the proposed mitigation area was stripped or piled on-site when the cranberry bog was constructed, exposing a layer of marine clay subsoil. The clay overlays a relatively thin gravel aquifer layer, from which the municipal water is being pumped. According to a report produced during the well-development process³, the aquifer is sandwiched between the layer of clay and the bedrock below. The thickness of the clay layer at the site is variable, ranging from about 6–30 feet. The clay acts as a relatively impermeable “confining layer” that keeps surface water from reaching the aquifer, and with the exception of one irrigation pond that was dug deep enough to penetrate the clay layer, the site has a perched water table and effectively no interchange with groundwater. These perched conditions have resulted in the formation of several wetland pockets where surface water is retained for extended periods (Figures 2 and 3). These wetlands total approximately 1.9 acres within the proposed mitigation area. The source of their hydrology is limited to surface runoff from the surrounding up-slope drainage area. During seasonally wet periods and rain events, water from these wetland pockets drains off-site to the

³ *Groundwater Exploration & Development, Milltown Aquifer, Calais, Maine*. February 23, 2003. Prepared for the City of Calais by Emery & Garrett Groundwater, Inc., 24 Common Street, Waterville, Maine.



Photo 1. Water District site looking west from soil stockpile toward cranberry bog (raised berm in background). Note lack of vegetative cover and topsoil. Photo by MaineDOT, October 2005.



Photo 2. Water District site looking northeast from cranberry bog. Note soil pile and lack of vegetative cover and topsoil. Photo by MaineDOT, October 2005.

south towards the excavated irrigation ponds and eventually to a ditch along the railroad bed that feeds into the large wetland directly to the east.

Vegetation within the proposed mitigation area is variable, and to a large extent influenced by the quality or lack of topsoil. Areas without topsoil range from unvegetated to sparsely-vegetated, while other areas are more densely vegetated with herbaceous and shrub species common in “old field” habitats (Photos 3 and 4). Common species include several species of aster (*Symphotrichum* spp.) and goldenrod (*Solidago* spp.), meadow-sweet (*Spiraea latifolia*), speckled alder (*Alnus incana*), quaking aspen shrubs (*Populus tremuloides*), gray birch shrubs (*Betula populifolia*), vetch (*Vicia* sp.), clover (*Trifolium* spp.), redtop grass (*Agrostis gigantea*), timothy (*Phleum pratense*), and many herbaceous species common to disturbed areas and pastures. Some of the wetland basins are densely vegetated with hydrophytic herbaceous and shrub species, including cat-tail (*Typha latifolia*), sedges (*Carex* spp.), wool-grass (*Scirpus cyperinus*), soft-rush (*Juncus effusus*), speckled alder, and willows (*Salix* spp.). At least one wetland basin, the largest, appears to contain areas of permanent inundation, while the rest likely exhibit seasonally-inundated to seasonally-saturated conditions.

Wetland Functions and Values: The functions and values associated with the existing wetland areas at the Water District site are limited by the disturbed nature of the site, but do include sediment/toxicant retention, nutrient removal and transformation, floodflow alteration (i.e., surface water detention/retention), and wildlife habitat. These wetlands are currently not functioning at a high level due to the disturbed nature of the site and low vegetative diversity. Sediment and nutrient retention are the only functions that would be considered primary, and only in the largest basin (Photo 4).

Design Constraints: The most notable design constraint associated with this mitigation site involves its close proximity to municipal water wells (i.e., it is within the wellhead protection zone) and to the existing irrigation pond that is reported to have a connection to the groundwater aquifer. Notwithstanding that constraint, it is both feasible and practicable to design a wetland enhancement and creation project that will not adversely affect the wells or the aquifer. This is due primarily to the existing drainage patterns and the impermeable nature of the clay soils that cover the site. First, it is expected that the permanent irrigation pond (i.e., the most southerly one) will be filled in, either by the City or in association with construction of the border crossing facility, thereby eliminating the opportunities for potential pollution of the aquifer by the mitigation activities. Second, any re-grading or soil disturbance necessary to enlarge or enhance the wetlands will be shallow and close to the surface, and as such will not penetrate the protective clay layer.

Another potential design constraint is that wetland hydrology within the mitigation area will be limited to surface runoff. However, the conditions observed in the existing wetlands and excavated pond areas suggest that the water budget from the local drainage area will be sufficient to support additional wetland acreage, and that the creation and enhancement areas will contain *at least* seasonal saturation or inundation to support persistent hydrophytic plant communities.

A third potential design constraint is the current lack of topsoil that is suitable for plant growth. This situation will be rectified by importing good quality wetland and upland soils to support plant growth and other functions (see Section 3.1.3 below).

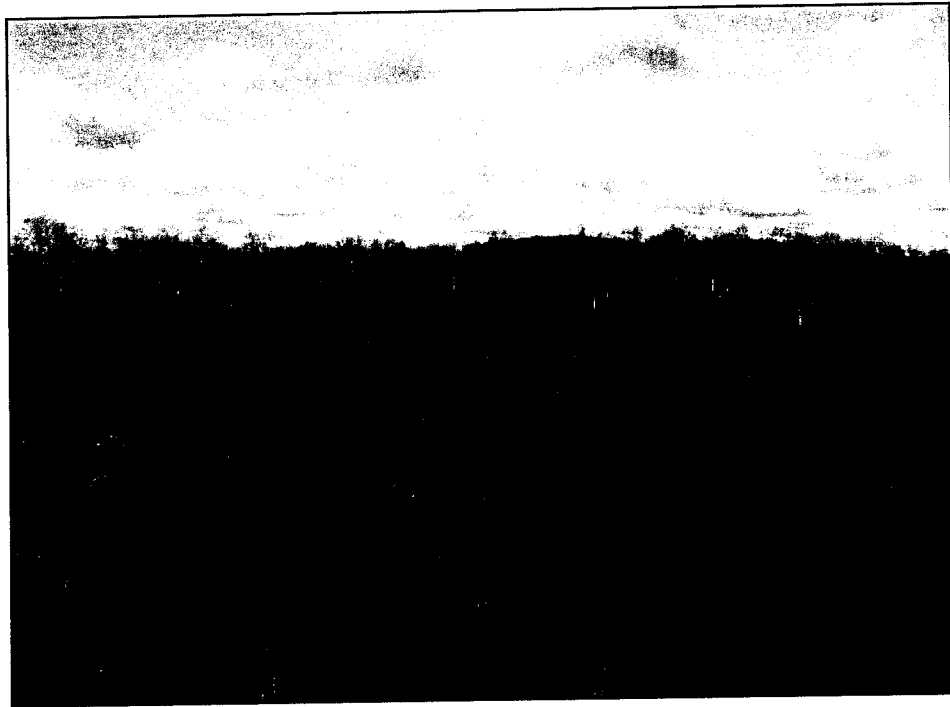


Photo 3. Water District site looking northwest along northern edge of mitigation area, showing typical old field vegetation. Lighter area in center of photo is an emergent wetland basin. Photo by MaineDOT, October 2005.

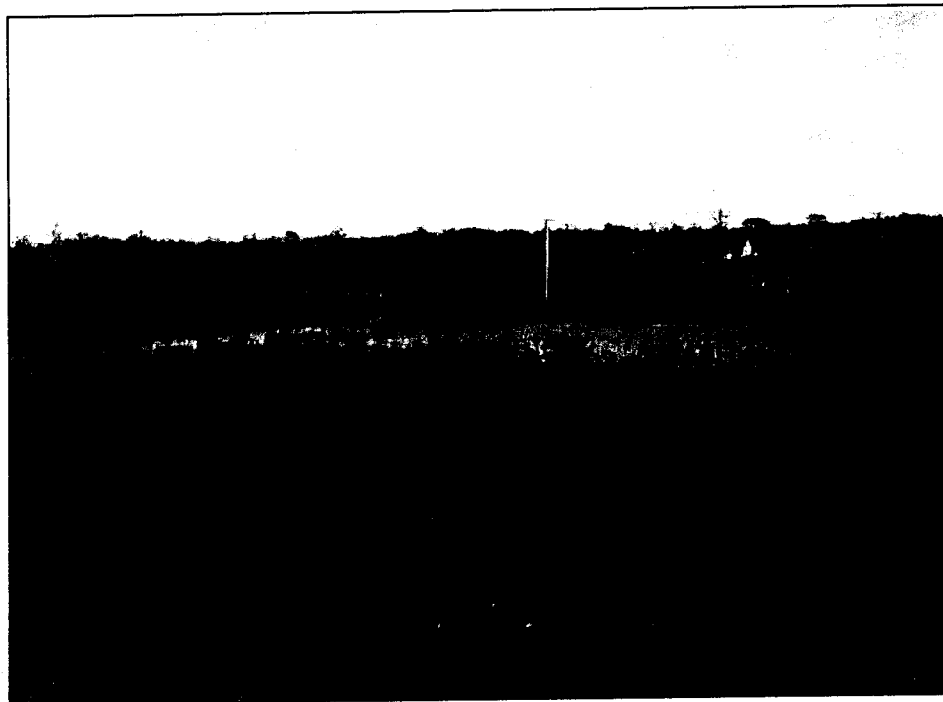


Photo 4. Water District site looking northeast along northern edge of mitigation area showing typical vegetation. Open water in center of photo is the largest existing wetland on-site, which is likely permanently inundated. Photo by MaineDOT, October 2005.

3.1.2 Mitigation Objectives

1. Enhance the soils and hydrologic conditions of the existing wetlands, where needed, to improve the density and diversity of the vegetation, thereby improving the wetland functions associated with water quality, retention of surface runoff, and wildlife habitat.
2. Enhance one of the existing shallow wetland basins to provide more plant diversity and some seasonal shallow pool habitat.
3. Create additional wetland areas through re-grading, re-soiling, seeding, and planting.
4. Create/enhance woody buffers around the existing and created wetlands to further enhance and protect their functions and values.
5. Over time, establish a patchwork of wetland and upland habitats vegetated with a mix of emergent, herbaceous, shrub, and tree species.

3.1.3 Proposed Conditions

MaineDOT proposes to purchase approximately 8.2 acres of the Water District parcel and to enhance and create wetlands within that area. More specifically, the proposed mitigation at the Water District site will include: (1) enhancing portions of the existing wetland basins and drainageways through soil amendments, woody plantings, and re-grading; (2) creating new wetlands adjacent to existing ones by re-grading, adding wetland topsoil, seeding, and planting; (3) enhancing the existing on-site wetlands by re-grading soil piles, adding or amending topsoil where needed, and planting trees and shrubs on approximately 2.56 acres of adjacent upland buffer; and (4) stabilizing other on-site areas of exposed soil that are currently subject to erosion. Figure 4 illustrates in plan view the locations of various mitigation measures proposed for this site. Figures 5 and 6 contain cross sections showing existing and proposed grades and habitat types.

The proposed mitigation activities are designed to improve the overall functioning of the existing 1.9 acres of on-site wetlands, and to stabilize and re-vegetate the surrounding upland area that has been affected by past topsoil stripping and stockpiling. As shown on Figures 4, 5, and 6, one of the existing wetland basins will be deepened to provide for increased plant diversity, increased capacity for sediment/toxicant/nutrient retention, and enhanced value to wildlife (possibly including breeding amphibians⁴). One upland area largely devoid of vegetation will be converted to a shallow wetland basin by excavating the clay to the appropriate elevation, adding wetland topsoil, and establishing emergents, shrubs, and trees. Upland areas adjacent to the existing and created wetlands will be enhanced by establishing woody vegetation, which will eventually provide shade and increased structural diversity to benefit wildlife. Re-soiling, seeding, and planting efforts will also help to stabilize the site and reduce erosion of the silty clay soils into nearby surface waters during rain events.

⁴ Note: Even though the deepened basin may support breeding amphibians, it is not the specific intent of MaineDOT to create vernal pool habitat at this location.

3.2 Hardscrabble Road Parcel

Site Description: Large preservation parcel adjacent to Moosehorn Wildlife Refuge
Location: Off-site, in Calais, 3.5 mi from GSA Facility
Type of Mitigation: Wetland/Upland Preservation = 178 acres

3.2.1 Existing Conditions

The Hardscrabble Road mitigation site consists of a large preservation parcel located adjacent to the Moosehorn National Wildlife Refuge (NWR) (Figures 7 and 8). The proposed preservation parcel, which is currently owned by the City of Calais, is approximately 178 acres in size. The parcel directly abuts the easterly boundary of Moosehorn NWR, and contains a section of the East Branch of Magurrewock Stream. Hardscrabble Road, a gravel town road that provides the only access to a large block of city-owned property at the northern end of Nashs Lake, skirts and crosses the parcel. The parcel is undeveloped except for that gravel road and a small, inactive borrow pit adjacent to the road.

The cover types on the Hardscrabble Road parcel include upland forests, wetland forests, and emergent/shrub stream-associated wetlands. The predominant upland forest type is mixed coniferous-deciduous dominated by white pine (*Pinus strobus*), red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), white birch (*Betula papyrifera*), northern red oak (*Quercus rubra*), and red maple (*Acer rubrum*). Much of the parcel was lightly-harvested within the last few years, but most areas appear to remain well-stocked (Photos 5 and 6, Figure 7). These forests provide high-quality habitat for several USFWS Partners in Flight high-priority species, including the bay-breasted warbler, blackburnian warbler, and black-throated blue warbler. The Gulf of Maine Habitat Analysis indicates that this area provides above-average habitat for whip-poor-wills, red-shouldered hawks, and goshawks. A mapped bald eagle nesting site (BE 072F) is located northeast of Vose Pond, near the existing refuge boundary (Figure 8).

A tally of National Wetlands Inventory (NWI) data indicates that the Hardscrabble Road parcel contains approximately 35.9 acres of wetland habitats, as outlined in Table 3 by wetland type. The Maine Natural Areas Program (MNAP) Beginning With Habitat resource maps show the stream-associated wetland areas as inland wading bird and waterfowl habitat (Photo 7, Figure 8). Information provided by Moosehorn NWR indicates that these wetlands provide habitat for pied-billed grebes, American bitterns, black ducks and wood ducks. The streams on the tract contain brook trout and American eel. The eel has been proposed for listing under the Endangered Species Act.

Table 3. NWI wetland types found on the Hardscrabble Road parcel.

Wetland Type	Amount (Acres)
Emergent/Scrub-Shrub	10.6
Scrub-Shrub	7.8
Forested	12.0
Open Water (Stream)	5.6
Totals:	35.9

Design Constraints: There are no design constraints because only preservation is proposed. However, the parcel contains an access road that the City of Calais will need to retain, as it provides the only existing access to their “City Square Mile” parcel. As a result, continued public access will be allowed and the City will continue to maintain the road (see Section 9.2 below).

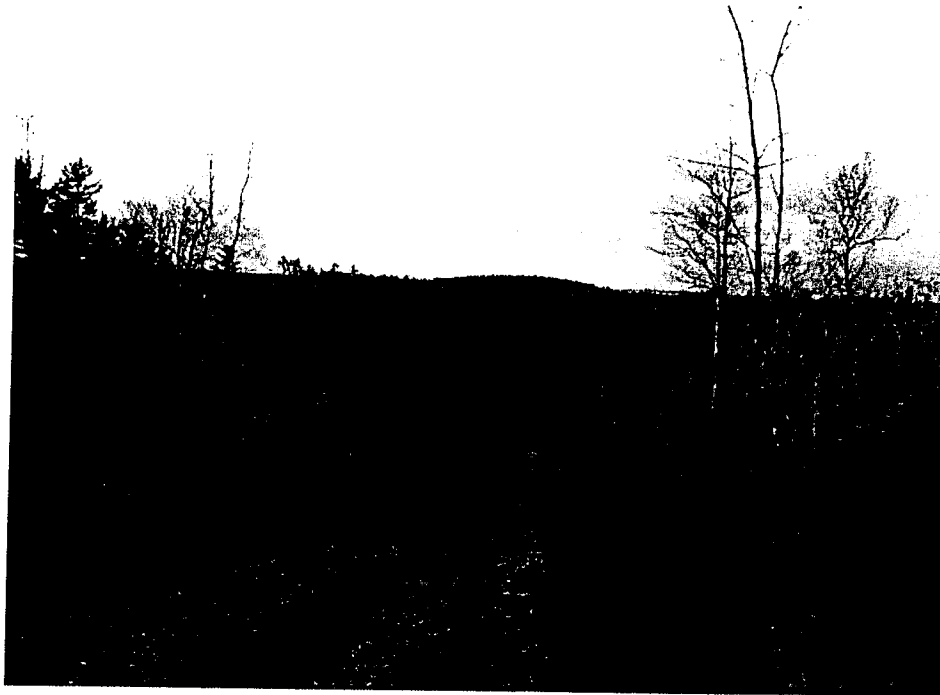


Photo 5. Hardscrabble Road parcel, showing typical forest conditions as seen from gravel access road, looking north. Photo by MaineDOT, October 2005.



Photo 6. Hardscrabble Road parcel, showing a small stream and typical forest conditions as seen from gravel access road. Photo by MaineDOT, October 2005.



Photo 7. Hardscrabble Road parcel, showing typical high-value, stream-associated emergent-shrub-open water wetland habitats on the eastern side of the parcel. Photo by MaineDOT, October 2005.

3.2.2 Mitigation Objectives

The mitigation objective for the Hardscrabble Road preservation parcel is to protect, in perpetuity, approximately 170–175 acres (i.e., the acreage of the parcel minus the access road) of wetland and upland habitats from development, for the benefit of natural communities, wildlife, and water quality. The intent is for MaineDOT to transfer ownership of this land to the USFWS to be added to the Moosehorn refuge, and to be managed by USFWS in keeping with their short- and long-term management objectives for the refuge.

3.2.3 Proposed Conditions

Acquisition and preservation of this parcel will permanently protect the significant natural communities and conservation values that are currently present. It will maintain high-quality habitat for migratory birds that use both wetland and forested habitats. The uplands provide a buffer that will permanently protect portions of the Vose Pond watershed and the East Branch of Magurrewock Stream. Acquisition will also provide permanent protection for part of the designated essential habitat around the eagle nest, contributing to the Maine Department of Inland Fisheries and Wildlife bald eagle recovery plan goals. Addition of a ± 175-acre habitat block directly adjacent to the refuge will increase the value of existing refuge lands to forest interior species. Moosehorn NWR/USFWS would accept the parcel as a donation, as they have received no funding for land acquisition in FY 2004, 2005, and 2006. Potential development threats in this area include unrestricted off-road vehicle use, intensive forest harvesting, and recreational and residential development.

3.3 Magurrewock Mountain Parcel

Site Description: Large preservation parcel adjacent to Moosehorn Wildlife Refuge
Location: On-site, in Calais, along U.S. Route 1
Type of Mitigation: Upland Buffer Preservation = ± 40 acres

MaineDOT is proposing to preserve a second large parcel, this one along the northern boundary of the Moosehorn NWR in Calais⁵. The Magurrewock Mountain parcel, as it is referred to here, is located along Route 1 near the southeasterly end of the proposed border crossing project. The parcel consists of approximately 40 acres of upland forest on the slopes of Magurrewock Mountain (Figure 9). The southeastern edge of the parcel borders on U.S. Route 1 just north of Magurrewock Stream and its associated marsh. A house, utility line and two communications towers are located on the parcel. The house is slated for removal as part of the Route 1 reconstruction work, but it is anticipated that the communications towers will remain in place. MaineDOT is planning to acquire the entire parcel to address access management requirements along Route 1 as part of the right-of way acquisition for the border crossing project. Like the Hardscrabble Road parcel, MaineDOT intends to transfer this land to USFWS to be managed by Moosehorn NWR in keeping with their short- and long-term management objectives for the refuge. The transfer will be subject to all existing leases and easements.

This addition to the Moosehorn refuge of approximately 40 acres of forested upland will provide increased opportunities for the refuge to manage for various species of wildlife, including upland game and non-game passerine birds. Though this parcel contains no mapped wetland habitat (per NWI data), its preservation will maintain an undeveloped buffer along Magurrewock Stream and Route 1 in an area that may experience increased development pressures in the future.

4.0 EROSION CONTROL

During construction of the Water District mitigation site, specific erosion control measures will be designed and implemented by the construction contractor(s) in accordance with MaineDOT Standard Specification #656, Temporary Soil Erosion and Water Pollution Control. These measures will follow Best Management Practices for Erosion and Sediment Control (DEP 2003⁶, MaineDOT 2002⁷), and will include the use of sediment barriers (e.g., silt fencing, erosion control berms, staked straw bales), erosion control blankets, temporary seeding, and temporary check dams, as needed.

Permanent erosion control measures will be shown on the construction plans (to be developed prior to construction). Temporary measures will be described in a detailed erosion control plan prepared by the contractor(s) in accordance with the Memorandum of Agreement between MaineDOT and DEP regarding compliance with Maine's Erosion and Sediment Control Laws (38 M.R.S.A. S. 420 C.). The project-specific Special Provision included in the contract documents will require the contractor(s) to write the Erosion Control Plan and submit it to MaineDOT prior to construction. A pre-construction meeting will be held with the contractor(s), MaineDOT's construction and mitigation staff, and a wetland specialist to explain the purpose of the mitigation project and to review the construction plans and specifications.

Erosion control measures and structures will be monitored and maintained until the site is fully stabilized with vegetation. Temporary erosion control devices and structures in and around the mitigation site will

⁵ In response to comments received from the Corps, MaineDOT acknowledges that preservation of the Magurrewock Mountain parcel does not yield mitigation credit for impacts to aquatic resources. MaineDOT has decided, however, to include this site in the mitigation package in order to minimize impacts of the project on Moosehorn NWR by providing an additional buffer from existing and future development along this section of Route 1.

⁶ DEP. 2003. Maine Erosion and Sediment Control Best Management Practices. Maine Dept. of Environmental Protection, Augusta, Maine. March 2003.

⁷ MaineDOT. 2002. Best Management Practices for Erosion and Sediment Control. Maine Dept. of Transportation, Augusta, Maine. Revised September, 2002.

be disassembled and properly disposed of before November 1st, three full growing seasons after construction. Sediment collected by these devices will be removed and placed in an upland area in a manner that prevents its erosion and transport to a waterway or wetland.

5.0 PLANTING PLANS

Specific planting and seeding measures will be implemented only at the Water District mitigation site. The general planting and seeding areas for the Water District site are shown on the proposed conditions plan (Figure 4). Following are details of the planting plan in regard to soils, seeding, plant species, and general planting methods.

5.1 Soils and Microtopography

Because of the past disturbance to the site that removed or piled the topsoil, it is expected that either existing soils will need to be amended or topsoil will need to be added to most of the proposed planting and seeding areas. To the extent practicable, the intent is to use suitable wetland topsoil salvaged from the impact areas as a soil amendment or where topsoil needs to be added, though other sources of topsoil may be used if needed (e.g., if the salvaged soil is too mucky, it may not be suitable for upland buffer areas). Depending on the construction schedules for the project and the Water District mitigation site, the wetland soil salvaged from the impact areas will either be transported to, and placed directly on, the mitigation site, or stockpiled for later use.

In areas where topsoil is lacking or of poor quality, it will be imported to provide a suitable growing medium for the proposed plantings and seed mixes. Topsoil used in wetland creation and enhancement areas will consist of the salvaged wetland topsoil, which is expected to exceed the Corps' minimum requirement for having 4–12 percent organic carbon content (by weight). It is also expected that this wetland topsoil will provide optimum conditions for wetland plant growth and floodwater/runoff retention, as well as a viable source of seeds and propagules of wetland plants from the impact areas. In the wetland creation areas, the existing clay will be removed to a level approximately 8–12 inches below the desired finish grade, and the wetland topsoil will be added to bring the average grade up to that of the adjacent wetland areas. The salvaged topsoil will be placed loosely over the creation areas with an excavator to achieve finish grades. The intent will be to create a slightly varied microtopography, whereby shallow pits and mounds will be allowed to occur at finish grade, with a maximum variation of 4–6 inches above or below the finish grade (to be specified in the construction plans). This technique will help create slightly-varied hydrologic conditions that will be conducive to higher flora and fauna diversity and better surface water retention. Immediately following finish grading, the newly-topsoiled areas may be covered with straw mulch or erosion control blanket as needed to minimize soil erosion and desiccation.

In wetland enhancement areas where planting is proposed, the existing topsoil will be evaluated to determine the need for amendment or addition of topsoil. If amending is needed, wetland topsoil will be spread loosely 2–4 inches thick over the areas to be planted. If addition is needed, particularly for tree and shrub plantings, wetland topsoil will be spread in the planting areas to form shallow mounds approximately 8–12 inches high and large enough to accommodate the planting groups (see Section 5.2 below). If necessary, the clay soil beneath the topsoil mounds will be hand-tilled or broken up to facilitate good root penetration by woody plants.

5.2 Vegetation Establishment

Plans for vegetation establishment at the Water District mitigation site include a combination of transplantings, natural recruitment from the salvaged wetland soil, existing plant cover, and installed container-grown plantings. The goal will be to accelerate the establishment of emergent, scrub-shrub, and forested cover following re-grading and re-soiling activities. Depending on the timing of the bridge/border crossing project, some or much of the plant materials to be installed at the Water District

mitigation site may be transplants from the nearby wetland impact areas, including emergent and shrub clumps, live stakes, and possibly small trees. These materials will be carefully obtained by means of an excavator, transported by truck to the mitigation site, and placed by hand or with an excavator onto the prepared wetland creation and enhancement areas. The use of transplanted material will be preferred over containerized stock in wetland areas. Nursery-grown containerized trees and shrubs in the wetland creation and enhancement areas will be used only as needed to supplement the transplanted materials and to introduce plant species that may be slow to volunteer on their own. The upland buffer areas will be planted primarily with container-grown stock obtained from a local or regional nursery. Both transplant and nursery stock materials will include quick-growing pioneer species that will provide shelter, shade and structure to benefit wildlife using the site (see Table 4). Plant species were selected based on the composition of nearby wetland and upland forest communities, commercial availability, and performance on past projects. All of the species specified are native to northern Maine. Species not specified in the plan will not be used without written approval from the Corps. Plant species listed by the Corps as invasive, non-native or otherwise undesirable will not be used.

The locations of plantings shown on the plans are approximate. During layout, a qualified mitigation specialist may relocate plant groups to best fit site-specific conditions. All relocations will stay within their designated planting zones. The planting contractor will be responsible for watering and maintaining the installed plants during the 2-year plant establishment period in accordance with MaineDOT's Standard Specifications. To protect planted material from potential herbivore damage, tree tubes or similar protectors may be installed on some stock where appropriate (i.e., on hardwood trees of sufficient height).

Four types of vegetative zones will be created or enhanced at the Water District mitigation site: (1) Emergent/Shrub/Shallow Pool Wetland; (2) Transitional Wetland/Upland Buffer; (3) Upland Buffer; and 4) Visual Screen. Plant species, types, and estimated quantities for each vegetative zone are summarized in Table 4.

1. Emergent/Shrub/Shallow Pool Wetland: This vegetative zone includes wetland enhancement and creation areas as shown on Figure 4. In the enhancement areas, existing herbaceous and shrub vegetation will be enhanced with additional shrub plantings and limited seeding with a wetland seed mix where needed (refer to Table 5). Only the fringe of the excavated shallow pool areas will be planted. In the wetland creation areas, the imported topsoil may be seeded with a wetland seed mix (depending on season constructed) and shrubs will be installed. It is expected that the majority of installed shrubs will be transplants salvaged from the wetland impact areas. Seeded areas will be mulched with straw as needed to promote seed germination and control soil erosion.

Proposed shrub wetland areas will consist of shrubs planted in mulched beds around the upper limits of emergent zones. Plant groups will be spaced approximately 20 feet apart, with approximately 12 shrubs per group at an overall density of 600 shrubs per acre. Planting beds will be topdressed with 3–4 inches of natural mulch material such as woodchips, bark, or other wood by-products to control weed growth around the plants. If container-grown shrubs are used, they will be 2–3 feet tall at installation.

Table 4. Summary of proposed planting and seeding treatments for the four planned vegetative zones at the Water District Mitigation Site

Proposed Vegetative Zone (Area)	Tree Species and Type	Tree Planting Density and Spacing	Shrub Species and Type	Shrub Planting Density and Spacing	Herbaceous Seeding (As Needed)	Seeding Rate
1. Emergent/Shrub/Shallow Pool Wetland (0.94 Acres)	None	N/A	Primarily transplantable shrub clumps salvaged from wetland impact areas, including Speckled alders, willows, and other wetland shrubs.	Approximately 480 shrubs total, with 12 shrubs planted in each mulched group. Overall density equivalent to approximately 600 shrubs/acre (excluding planned pool area)	Wetland Seed Mixes #1 and #2 (see Table 5).	22 lbs/ac
2. Transitional Wetland/Upland Buffer Enhancement ¹ (0.30 Acres)	A mix of transplantable trees salvaged from wetland impact areas, including Red maple, Gray birch, and other wetland trees, and 3'-4' container grown trees including at least 4 of the following species: Red maple, Striped maple, N. White Cedar, Balsam fir, Green ash, Gray Birch, Tamarack, White pine.	Approximately 60 trees total, with 3 trees planted in each mulched group along with shrubs. Groups will be spaced approx. 15 feet o.c. Overall density equivalent to approximately 200 trees/acre	A mix of transplantable shrub clumps salvaged from wetland impact areas, including Speckled alders, willows, and other wetland shrubs, and 2'-3' container grown shrubs, including at least 2 willow species and 3 of the following: N. arrowwood, Winterberry, Speckled alder, Black chokeberry, Red-osier dogwood	Approximately 120 shrubs total, with 6 shrubs planted in each mulched group with trees. Groups will be spaced approx. 15 feet o.c. Overall density equivalent to approximately 400 shrubs/acre	Wetland Seed Mix #2 (see Table 5).	22 lbs/ac
3. Upland Buffer Enhancement (2.26 Acres)	3'-4' (0.6-1.2 m) container grown trees including at least 4 of the following species: White pine, Red pine, Balsam fir, White or Green ash, Paper birch, American beech	Approximately 768 trees total, with 10 trees planted in each mulched group with shrubs. Groups will be spaced approx. 50 feet o.c. Overall density equivalent to approximately 300 trees/acre	2'-3' container grown shrubs, including at least 3 of the following species: Black chokeberry, Sweetgale, Meadowsweet, Nannyberry	Approximately 384 shrubs total, with 5 shrubs planted in each mulched group with trees. Equivalent to approximately 150 shrubs/acre	Mixture of annual rye, red fescue and redbud for erosion control and stabilization	85 lbs/ac
4. Visual Screen	3'-4' (0.6-1.2 m) container grown trees including the following species: White pine, Red pine, Balsam fir, Northern White Cedar	Plant approximately 168 trees in 2 staggered, parallel rows, 10 feet o.c., to create a dense visual screen	None	N/A	None	N/A

¹ Note: The final design might include the use of Transitional Wetland/Upland groups in the Upland Buffer areas, depending on hydrologic conditions.

Table 5. Typical wetland seed mixes for the Water District Mitigation Site

Wetland Seed Mix #	Location	Herbaceous Species ¹
1	Emergent zone	Eastern burreed, Northern arrowhead, Pickerelweed, Arrow arum, Soft-stem bulrush, Hard-stem bulrush, Blue Flag iris (depending on availability)
2	Upper Emergent Zones, Scrub-Shrub zones	Virginia wild rye, Nodding Bur Marigold, Swamp Milkweed, Blue vervain, Joe-pye weed (depending on availability).

¹ Note: The species/mixes listed above are preliminary. The actual seed mixes used may be different based on availability and conditions at the time of seeding.

2. Transitional Wetland/Upland Buffer Enhancement: This treatment will consist of groups of native wetland and transitional upland trees and shrubs planted in mulched beds around the upper limit of the two proposed wetland enhancement areas (see Figure 4). The source of the plants will include salvaged transplants supplemented with container-grown nursery stock. Installed plant groups will be spaced approximately 15 feet apart, with 3 trees and 6 shrubs per group at an overall density of 600 trees and shrubs per acre. Planting beds will be topdressed with 3–4 inches of natural mulch material such as woodchips, bark, or other wood by-products to control weed growth. Container grown trees will be 3–4 feet tall, and shrubs 2–3 feet tall. The sizes and heights of salvaged plants will vary depending upon availability, time of year, whether or not plants need to be stockpiled and stored, and overall ease of handling the salvaged materials.

3. Upland Buffer Enhancement: This treatment will consist of groups of native upland trees and shrubs planted in mulched beds at a density of 450 trees and shrubs per acre, including trees at a minimum density of 300 per acre. Plant groups will be spaced approximately 50 feet apart, with 10 trees and 5 shrubs per group. Plants will be primarily from container grown stock (trees 3–4 feet tall, and shrubs 2–4 feet tall), though transplant materials may also be used if suitable. All tree and shrub planting beds will be topdressed with 3–4 inches of natural mulch material such as woodchips, bark, or other wood by-products to control weed growth. Each planting in the upland buffer will be individually fertilized with a slow-release granular product. The arrangement of plants in mulched groups within the upland buffer areas will result in islands of trees and shrubs that will be more resistant to herbaceous competition, and also will provide varied cover and structure to attract wildlife.

4. Visual Screen: This treatment will include installing two staggered rows of coniferous trees along the southerly boundary of the mitigation site to establish a year-round visual screen. Individual trees will be spaced approximately 10 feet on-center, and will be from container-grown stock 3-4 feet in height at the time of planting.

5.3 Coarse Woody Debris

Coarse woody debris will be spread in the enhanced and created wetland areas, including small branches and limbs within the shallow pool to provide egg-attachment potential for breeding amphibians. Approximately 4 percent of the ground surface within the enhanced and created wetlands will be covered with coarse woody debris.

6.0 CONSTRUCTION MONITORING

A qualified, professional wetland scientist will be on-site to monitor construction of the Water District wetland mitigation site, as needed, to ensure compliance with this plan. In particular, the individual monitoring the construction will check that grading, re-soiling, seeding, planting, and erosion control measures are implemented properly and according to the plans and specifications. The limits of construction will be clearly marked with colored survey flagging or erosion control fencing to minimize disturbance to soils and vegetation in adjacent areas.

As-built plans will be submitted to the regulatory agencies with the first-year monitoring report. These plans will show approximate finish grades where any re-grading was done, including plan and cross-section views of the site showing upland/wetland boundaries, and general hydrologic conditions. Methods for preparation of the as-built survey will include spot elevation checks or similar means. As-built sections will be limited to areas where re-grading occurred in wetlands. Actual planting details, if significantly different than proposed, will also be shown on the as-built plans where applicable.

7.0 INVASIVE AND NOXIOUS SPECIES

7.1 Risk of Invasion

No common reed plants have been observed within or adjacent to the proposed Water District mitigation site. A few purple loosestrife plants have, however, been found within the cranberry bog, and it is possible that this invasive plant will need to be closely monitored and controlled at the mitigation site. Because wetland topsoil salvaged from the impact sites will be used to re-soil the wetland enhancement and creation areas, it will be necessary to have a botanist or wetland scientist survey the salvage areas for the presence of noxious invasive plant species. Efforts will be made to obtain wetland topsoil only from those areas that are deemed to be free of invasive species such as purple loosestrife, common reed, reed canarygrass (*Phalaris arundinacea*), Japanese knotweed (*Fallopia japonica*), Morrow's honeysuckle (*Lonicera morrowii*), and other aggressive, non-native plant species. Topsoil used in the uplands will also be specified to be free of the plants, roots, or rhizomes of purple loosestrife or common reed, and the source areas will be inspected prior to salvage. Seed mixes proposed for use at the site will be specified to be free of invasive species.

7.2 Invasive Control Constraints

The ability to control invasive species at the Water District mitigation site will be somewhat constrained by the site's proximity to the drinking-water wellheads and the below-ground gravel aquifer. Though the chances of contaminating the wells or the aquifer are reduced because of the thick clay layer, no herbicides will be used to control invasive species should they become established. Only mechanical (e.g., hand pulling or cutting) or biological methods (e.g., release of biocontrol agents such as beetles) will be used to control invasive plants (see Section 7.3 below).

7.3 Invasive Species Control Plan

The Water District mitigation site will be monitored annually during the monitoring period for signs of problem invasives. If any invasive species are identified during monitoring activities, MaineDOT will implement site-specific control measures with a goal of reducing the density of the plants or minimizing their spread. Cattail is considered an acceptable species and will not be controlled. Invasive species control may include mechanical or biological means. Descriptions of typical methods that may be used to control purple loosestrife and common reed are contained in the sample plan in Appendix C

8.0 ATV USE

ATV and snowmobile use will be controlled at the Water District mitigation site to the greatest practicable extent. It is not expected that ATVs, snowmobiles, and other off-road vehicles will enter the Water District wetland mitigation area because access will be controlled by a security fence to be installed for the GSA Border Crossing facility to the south, and from other directions by the Water District's restricted access measures and policies. Signs on posts will also be installed stating that ATVs and motorized vehicles are prohibited from the mitigation area.

9.0 PROTECTION AND LONG-TERM STEWARDSHIP

9.1 Water District Site

MaineDOT anticipates acquiring the ±8.2-acre Water District mitigation site from the City of Calais on or before March 15, 2006. MaineDOT is currently developing a right-of-way map for the area, and will be completing an appraisal in accordance with Federal Highway Administration requirements in preparation for acquisition.

In accordance with the latest version of the Corps' Mitigation Plan Guidance document, covenants and restrictions will be placed on the parcel. A draft of the Declaration of Covenants and Restrictions document is provided in Appendix D. This document may be revised by MaineDOT pending the development of final design plans for the site. Significant changes to the draft document will be submitted to the Corps for approval prior to signature. The Declaration will be executed by MaineDOT and recorded within 90 days of permit issuance, and a copy of the recorded document will be forwarded to the Corps within 30 days of receipt of the recorded document from the Washington County registry. MaineDOT plans to retain ownership of the site until a state or federal conservation agency, or local land trust, is identified that is willing to take possession and is able to provide appropriate long-term management.

9.2 Hardscrabble Road Parcel

MaineDOT anticipates acquiring the ±178-acre Hardscrabble Road preservation parcel from the City of Calais on or before December 31, 2006. In response to a request from the City, the public will retain a right to use the existing gravel road that crosses the Hardscrabble parcel, and the City will have the responsibility to maintain that road. This road allows public access to the so-called "City Square Mile", a large parcel of City-owned land that surrounds the northern end of Nashs Lake. MaineDOT has started a title search and a boundary survey of the parcel, and will be completing an appraisal in accordance with Federal Highway Administration requirements in preparation for acquisition.

Following acquisition, MaineDOT will transfer ownership of the Hardscrabble Road mitigation parcel to the USFWS so that it can be incorporated into Moosehorn NWR for long-term management and stewardship. Public access to the parcel for traditional, low-impact recreational activities such as hiking, cross-country skiing, hunting, and fishing will be maintained in accordance with existing Moosehorn NWR management plans, rules, and regulations. In keeping with US Department of Justice policy regarding land transfers to the federal government, MaineDOT will not place any affirmative restrictions on the parcel prior to transfer. Instead, MaineDOT proposes herein that incorporation of the parcel into Moosehorn NWR and management of the parcel under the existing laws and rules governing USFWS activities on wildlife refuges meets the intent of the DEP and Corps' long-term protection requirements for compensatory mitigation sites (refer to letter from Moosehorn NWR in Appendix E). MaineDOT will transfer the parcel to Moosehorn NWR within 120 days of the actual acquisition date. Documentation of the transfer will be provided to DEP and the Corps within 30 days of the transfer.

9.3 Magurrewack Mountain Parcel

As part of the right-of-way acquisition process for the proposed bridge and border crossing project, MaineDOT anticipates acquiring the ±40-acre Magurrewack Mountain mitigation parcel from the current owner on or before December 31, 2006. In the same manner as the Hardscrabble Road parcel, MaineDOT plans to transfer ownership of the Magurrewack Mountain parcel to the USFWS so that it can be incorporated into Moosehorn NWR for long-term management and stewardship, subject to the same conditions in regard to transfer timeframe, use restrictions, and long-term protection. Any transfer will be subject to existing leases or easements associated with the parcel.

10.0 MITIGATION MONITORING PLAN

Post-construction monitoring will be conducted at the Water District mitigation site to determine whether wetland enhancement and creation and buffer establishment measures are successful in meeting the specific mitigation objectives outlined in this plan, as well as the appropriate Corps' standards and guidelines⁸. This monitoring plan contains: (1) specific performance standards that will be used to evaluate whether the mitigation objectives and performance standards have been met; (2) detailed methods for evaluating the performance standards; and (3) a list of potential deficiencies and corresponding remedial measures. Monitoring will continue for 5 years after construction and planting have been completed at the mitigation site.

10.1 Performance Standards

Following are specific performance standards related to the Water District mitigation site.

1. Volunteer and/or Planted Woody Stock: (1) The planted wetland and wetland/upland transition areas of the site shall have at least 500 shrubs and trees per acre. The planted upland buffer areas shall have at least 360 trees and shrubs per acre. These minimum planting densities shall consist of plants that are healthy and vigorous, including volunteer and/or planted stock. (2) The site shall have at least 3 non-exotic species present (including planted and volunteer stock). To be counted, a species must be well represented on the site. Volunteer species must support the functions consistent with the design goals. *Note: It is understood that creating forested conditions (i.e., in the upland buffer) will take at least 15–20 years, the time it typically takes for plantings to attain sufficient heights to be considered trees. However, if at the end of the monitoring period the buffer areas meet the above performance standards for woody plant stocking density, it will be assumed that the mitigation objective has been met in regard to creation of forested habitats.*

2. Percent Areal Cover: The planned wetland portions of the mitigation site, where soils have been added or disturbed, shall have at least 80% areal cover by noninvasive hydrophytes, excluding planned open water areas and planted shrub/tree groupings. For this project, invasive species of hydrophytes are:

Common Reed – *Phragmites australis*;

Purple Loosestrife – *Lythrum salicaria*; and

For the purposes of this monitoring plan, other seeded areas (i.e., upland buffers) shall be stabilized and well-vegetated.

⁸ Note that no monitoring will need to be done for the DEP because the mitigation package being offered to that agency includes only the preservation of the Hardscrabble Road parcel.

3. **Invasive Species Control:** Common reed and purple loosestrife plants at the mitigation site are being controlled.
4. **Erosion Control:** All slopes, soils, substrates, and constructed features within the mitigation site are stabilized.
5. **ATV Use:** Appropriate control measures are in place and being monitored for their effectiveness.

10.2 Monitoring Methods

The primary objective of monitoring will be to determine how well performance standards are being met at the Water District mitigation site. Monitoring will include assessments of wetland hydrology, vegetation, plant survivorship, general wildlife use, and general site characteristics. More specifically, monitoring will consist of:

- Visiting the mitigation site to collect data for annual monitoring reports. Wetland enhancement and creation areas and planted upland buffers will be monitored for 5 years after construction has been completed. Monitoring site visits will occur two times a year for the first 3 years, and once each in years 4 and 5. The success of the mitigation will be evaluated at the end of year 5 to determine if additional monitoring or corrective measures are necessary.
- Monitoring for the first 3 years will include a spring site visit (April to June) to assess the general condition of the mitigation site and to check for significant winter damage or plant mortality. Another site visit will be conducted in the middle to end of the growing season (July to September) to collect more detailed information on wetland soils, hydrology, vegetation, and the need for corrective measures (e.g., replanting, erosion control). Site visits within the same year will be at least 30 days apart. For years 4 and 5, only the growing season site visit will be conducted.
- Establishing vegetation monitoring transects in the wetland creation and selected wetland enhancement areas of the mitigation site to sample vegetation and record signs of wetland hydrology. Transects will be located to allow for representative sampling of planted and seeded areas. Multiple transects may be established, as needed, to provide adequate sampling intensity. Vegetation data will be collected in meter-square plots located every 10–15 meters along the length of the transects. Data collected in each plot will include: (1) a list of the well represented (>10% coverage) species in the plot; (2) percent coverage by those species; (3) overall percent coverage for the plot; and (4) general hydrologic conditions (i.e., saturated to surface, inundated, etc.). A meander survey will also be done within the wetland creation and enhancement areas to assess overall vegetative cover, plant survivorship, invasive species, and soil erosion.
- Sampling a percentage of the planting groups within the upland buffer area to assess overall survivorship and plant vigor. A random stratified sample of planting groups will be selected, representing at least 30 percent of the total number of groups installed in the buffer. As a measure of survivorship, all live woody plants within the selected groups, including volunteers, will be counted and compared to the original number of plants installed in those groups. The total number of live plants found within the sample groups selected for monitoring will then be used to extrapolate the percent of overall plant survival for the entire buffer.
- Collecting data on general wildlife use or signs observed throughout the mitigation site during each site visit.
- Taking representative photographs of the mitigation site from established points to provide year-to-year comparisons of the vegetative and hydrologic conditions.

- Preparing annual monitoring reports, which will contain methods used to collect data, the results for that monitoring year, and recommended remedial actions that have been or should be implemented (see Section 10.3 below).

10.3 Annual Monitoring Reports

The Water District mitigation site will be monitored for each of the first 5 full growing seasons following mitigation construction. Monitoring reports will be submitted to the Corps no later than March 31 of year following the monitoring. The reports will address the performance standards (listed in Section 10.1) and the items listed below. The reports will also include the four monitoring report appendices listed below. The first year of monitoring will be the first year that the site has been through a full growing season after completion of construction and planting. For the purposes of this monitoring plan, a growing season starts no later than May 31.

As necessary, remedial measures will be implemented by MaineDOT to ensure that the site will meet the performance standards by the end of the monitoring period. Remedial measures requiring earth movement or changes in hydrology will not be implemented without prior written approval from the Corps⁹.

Items for Narrative Discussion:

- A description of the monitoring inspections that occurred since the last report.
- A description of the soils (i.e., wetland delineation soil profiles), with data to be collected after construction and every alternate year throughout the monitoring period. *Note: Because the proposed enhancement measures will not significantly alter the existing soils, soil descriptions will only be done for the wetland creation areas.*
- A description of remedial actions done during the monitoring year to meet the success standards, including actions such as replanting, controlling invasive plant species, re-grading the site, applying additional topsoil or soil amendments, adjusting site hydrology, etc.
- A report on the status of erosion control measures at the mitigation site, with a description of how they are functioning and, if temporary measures are no longer needed, whether they have been removed.
- Where soils have been added or disturbed, visual estimates of (1) percent vegetative cover and (2) percent cover of the invasive species listed in the success standards.
- A list of wildlife species that have been observed using the site, and what they use it for (nesting, feeding, shelter, etc.). This will include a list of species inhabiting or using the shallow basin that will be deepened. Use by vernal pool species will be noted but not specifically monitored because creation of a vernal pool is not one of the mitigation objectives.
- By species planted, a description of the general health and vigor of the surviving plants, the prognosis for their future survival and a diagnosis of the cause of mortality/morbidity.
- A description of remedial measures that are recommended to achieve or maintain the specific success standards or to otherwise improve the extent of functioning.

Monitoring Report Appendices:

Appendix A – A copy of this permit's mitigation special conditions and a summary of the mitigation objectives.

⁹ If there are problems that need to be addressed and if the measures to correct them require prior approval from the Corps, MaineDOT will contact the Corps to discuss the need for corrective action.

Appendix B – An as-built planting plan for the mitigation site showing the location and extent of the designed vegetative zones (refer to Figure 4). Within each of these zones, the plan will show the species planted. This will be included only in the first monitoring report unless there are additional plantings of different species in subsequent years.

Appendix C – A list of dominant volunteer species in each vegetative zone. Dominant volunteer species will include those that cover over 10% of their vegetative layer.

Appendix D – Representative photos of the mitigation site, taken from the same locations for each monitoring event.

10.4 Assessment Plan

Post-construction assessments to determine the condition of the mitigation site will be performed after the first 5 full growing seasons following completion of construction, or by the end of the monitoring period, whichever is later. “Growing season” in this context begins no later than May 31. To ensure objectivity, the person(s) who prepared the annual monitoring reports will not perform this assessment without written approval from the Corps. The assessment report will be submitted to the agencies, along with the 5th year monitoring report, by March 31 of the year following the assessment.

The post-construction assessment will include the four assessment appendices listed below, and will:

1. Summarize the original or modified mitigation objectives and discuss the level of attainment of these objectives at the mitigation site.
2. Describe significant problems and solutions during construction and maintenance (monitoring) of the mitigation site.
3. Identify agency procedures or policies that encumbered implementation of the mitigation plan. Specifically, note procedures or policies that contributed to less success or less effectiveness than anticipated in the mitigation plan.
4. Recommend measures to improve the efficiency, reduce the cost, or improve the effectiveness of similar projects in the future.

Appendices for Year Five Assessment Report:

Appendix A – Summary of the results of function-value assessments of the mitigation site, using the same methodology used to determine the functions and values of the impacted wetlands.

Appendix B – Calculation of the area of wetland creation using the Corps’ 1987 Wetlands Delineation Manual. Supporting documents will include (1) a scaled drawing showing the wetland boundaries and representative transects, and (2) datasheets for corresponding data points along each transect.

Appendix C – Comparison of the area and extent of delineated wetlands the site (from Appendix B above) with the area and extent of created wetland proposed in the mitigation plan. This comparison will be made on a scaled drawing or as an overlay on the as-built plan. This plan will also show the major vegetation community types.

Appendix D – Photos of each mitigation site taken from the same locations as the previous monitoring photos.

10.5 Corrective Remediation

To ensure mitigation success, problems identified during monitoring visit at the Water District site will be addressed in a timely manner. The Corps will be consulted on a case-by-case basis regarding the need for

remedial measures. Given the types of wetland enhancement and creation and buffer-planting measures proposed under this plan, it is expected that potential remedial measures will be fairly minor and should not require major redesign of the mitigation site. Possible measures may include replacing dead shrubs and trees, herbivore control (e.g., fencing, tree guards), minor re-grading, supplemental seeding, fertilizing woody plantings, erosion repair, and invasive species control.

11.0 ESTIMATED SCHEDULE

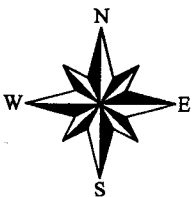
MaineDOT's overall schedule for construction of the Calais – St. Stephen Border Crossing Project is described in Exhibit 7 of the Corps and DEP/NRPA permit applications. The schedule has been broken down into phases that take into account the type of construction activity (i.e. bridge or highway) and the construction duration. Under the proposed schedule, the first contract to be issued will be for the St. Croix River bridge. The second contract to be issued will be for the two bridges spanning the railroad and for the associated approach work. Construction of this portion of the project is scheduled to begin in the fall of 2006. This phase of work will result in the majority of the wetland impacts associated with the project. It is anticipated that the final design of the Water District mitigation site will occur in the spring and summer of 2006, with construction and planting to follow beginning in the summer and fall of 2007 and extending into the Spring of 2008, depending on site conditions and the availability of plant materials. The following milestones for the Water District site are based on this anticipated schedule, and are subject to change by MaineDOT in consultation with the Corps and DEP.

<u>Item</u>	<u>Date</u>
▪ Final Survey/Field Data Collection	Spring 2006
▪ Final Wetland Enhancement and Creation Design	Summer 2006
▪ Submit Draft Final Construction Plans to Corps	September 2006
▪ Mitigation Project Advertised	October 2006
▪ Wetland Loam and Plant Salvage	Fall/Winter 2006
▪ Wetland Creation Earthwork	Summer 2007
▪ Wetland Enhancement and Creation Planting	Fall 2007 - Spring 2008

MaineDOT is submitting this narrative Compensation Plan to provide DEP and the Corps with a sufficient level of detail for NRPA and Section 404 permitting purposes. Issuance of a project permit by these agencies is contingent, in part, on regulatory approval of this Plan. The Compensation Plan will be revised, as necessary, in response to comments from the DEP and the Corps, and the final approved plan will serve as a regulatory record of compensation objectives, the proposed design, and performance standards for NRPA and Section 404 permit compliance. In addition, MaineDOT will develop final construction plans for the compensation measures proposed at the Water District Site. These plans will be submitted to the Corps for review before the mitigation project is put out to bid by MaineDOT.

Wetland Compensation Plan
MaineDOT Calais – St. Stephen Bridge and Border Crossing

FIGURES



Note:
The location of the southwesterly mitigation site boundary is subject to change pending final design of the GSA facility, but the mitigation area will be no smaller than what is shown.

Calais Water District Mitigation Site
±/8.2 acres

Data Sources:
Parcel Boundaries provided by MaineDOT.
Mitigation Area Boundary was digitized by Woodlot and is approximate.

PREPARED BY:



WOODLOT
ALTERNATIVES, INC.

DATE:	December 2005
SCALE:	1:60 meters
JOB NO.	105131.01
FILE:	105131_5002_420_cadnal.mxd

Figure 2 - Calais Water District Mitigation Site
Wetland Compensation Plan
Calais - St. Stephen International Border Crossing
MaineDOT PIN - 8483.32

NOTES:

1. BASE MAP SURVEY INFORMATION INCLUDING TOPOGRAPHY PROVIDED BY MaineDOT. EXISTING WETLAND BOUNDARIES WERE DETERMINED BY WOODLOT ALTERNATIVES USING AERIAL PHOTO INTERPRETATION AND ARE APPROXIMATE.
2. EXISTING IRRIGATION PONDS AS SHOWN WILL REMAIN PART OF CALAIS WATER DISTRICT PROPERTY AND HAVE POTENTIAL HYDROLOGIC CONNECTIONS TO THE GROUND WATER AQUIFER UNDERLYING THE SITE.
3. REFER TO THE CROSS SECTIONS SHOWING EXISTING AND PROPOSED CONDITIONS PROVIDED IN FIGURE 5 AND FIGURE 6.

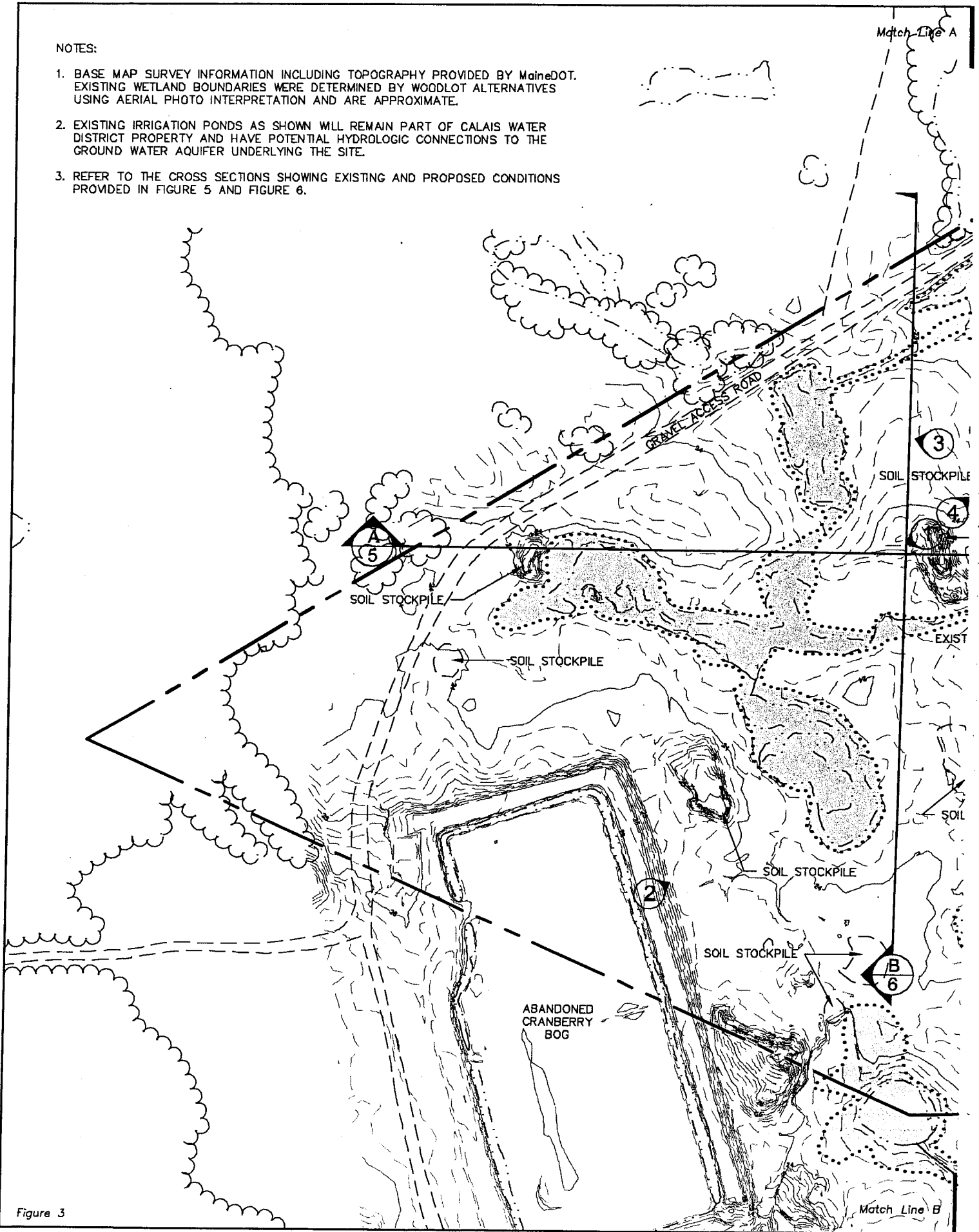


Figure 3

NOTES:

1. THE LOCATIONS AND QUANTITIES OF PLANTS SHOWN ARE PRELIMINARY. REFER TO TABLE 4 IN THE COMPENSATION PLAN NARRATIVE FOR DETAILED INFORMATION ON PLANT SPECIES, DENSITIES, AND SOURCES.
2. EXISTING IRRIGATION PONDS AS SHOWN WILL REMAIN PART OF CALAIS WATER DISTRICT PROPERTY AND HAVE POTENTIAL HYDROLOGIC CONNECTIONS TO THE GROUND WATER AQUIFER UNDERLYING THE SITE. PROPOSED MITIGATION MEASURES NOT TO AFFECT THESE PONDS.
3. REFER TO THE CROSS SECTIONS SHOWING EXISTING AND PROPOSED CONDITIONS PROVIDED IN FIGURE 5 AND FIGURE 6.
4. APPROXIMATELY 7 SOIL STOCKPILES ARE LOCATED THROUGHOUT THE COMPENSATION AREA. THESE SHALL BE ANALYZED TO DETERMINE SUITABILITY FOR PLANTINGS OR AS TOPDRESS, AND WHETHER SOIL AMENDMENTS ARE REQUIRED. STOCKPILED SOIL NOT SUITABLE FOR SITE RESTORATION SHALL BE REMOVED AS WASTE.
5. PROPOSED OUTLET AND DITCH FROM ABANDONED CRANBERRY BOG SHALL BE STABILIZED WITH STONE DITCH PROTECTION (AS NEEDED ON STEEP AREAS ONLY), GEOTEXTILE, AND SEEDING. BANKS SHALL BE PLANTED WITH GROUPINGS OF WILLOW OR DOGWOOD (LIVE STAKES OR CONTAINER PLANTS, DEPENDING ON CONSTRUCTION SCHEDULE).
6. THE ERODED AREA ADJACENT TO THE ABANDONED CRANBERRY BOG SHALL BE STABILIZED BY RE-GRADING, TOPDRESS, GEOTEXTILE, AND SEEDING.

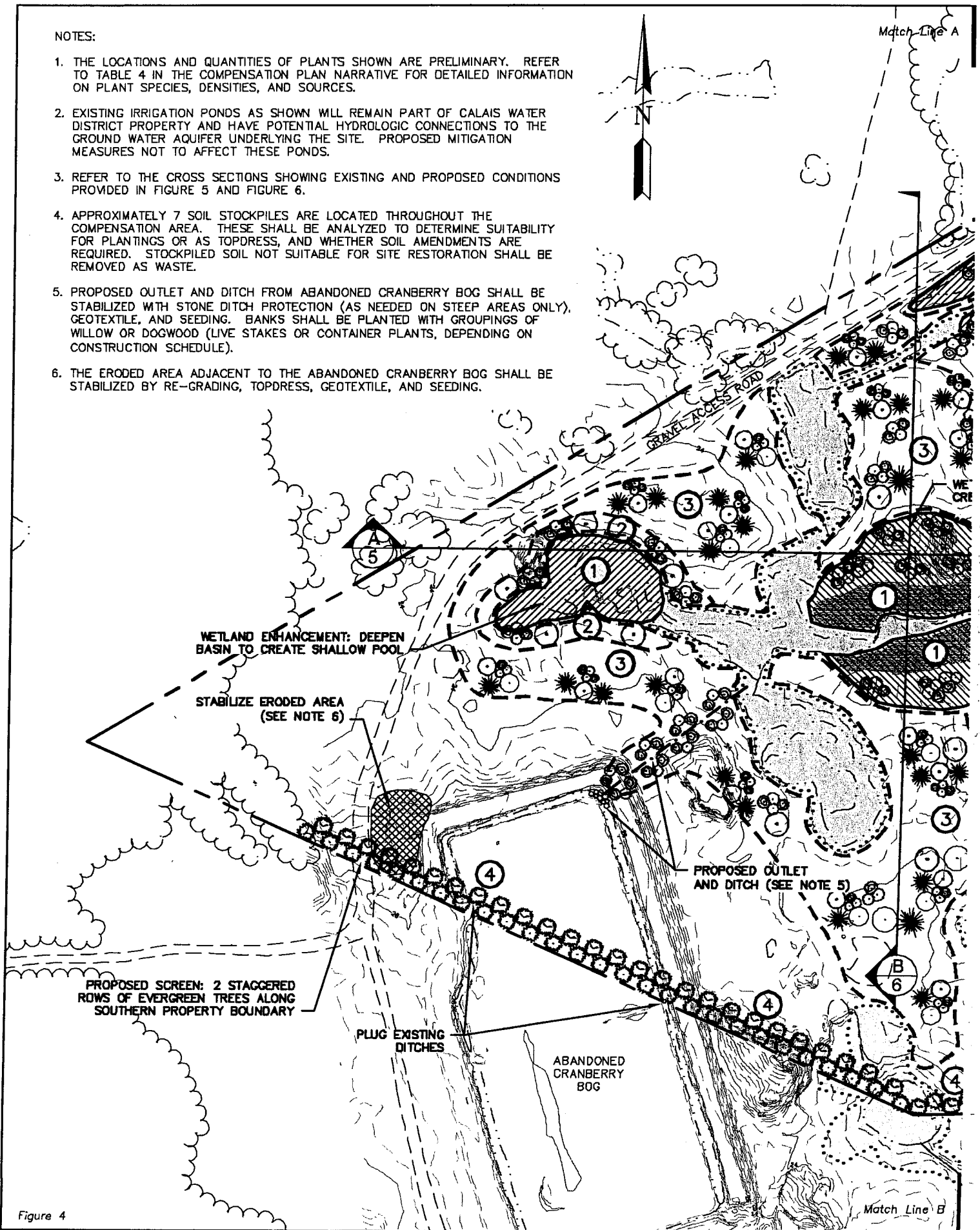





Figure 4

Match Line A





MITIGATION TYPES

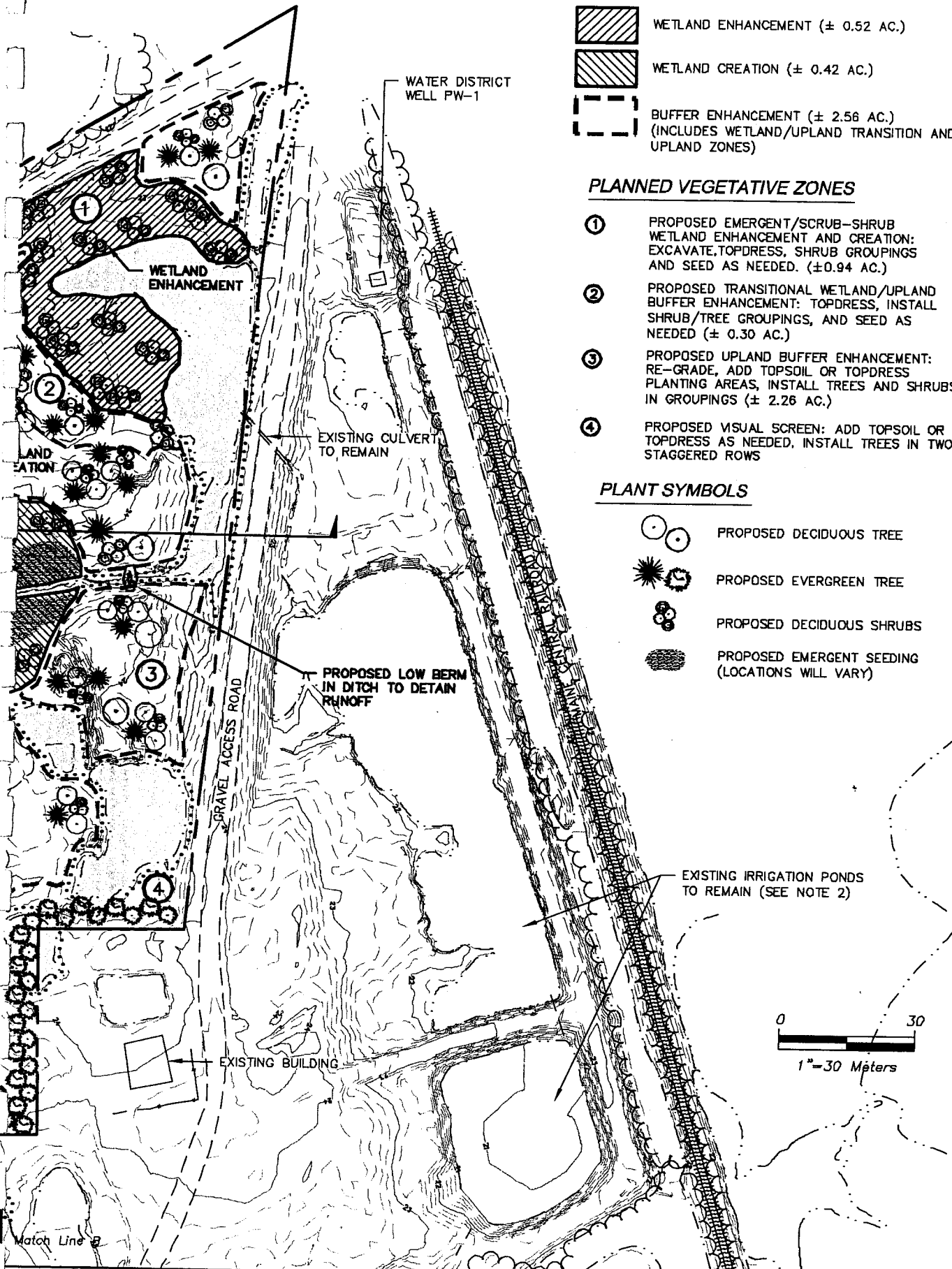
-  WETLAND ENHANCEMENT (± 0.52 AC.)
-  WETLAND CREATION (± 0.42 AC.)
-  BUFFER ENHANCEMENT (± 2.56 AC.)
(INCLUDES WETLAND/UPLAND TRANSITION AND UPLAND ZONES)

PLANNED VEGETATIVE ZONES

- ① PROPOSED EMERGENT/SCRUB-SHRUB WETLAND ENHANCEMENT AND CREATION: EXCAVATE, TOPDRESS, SHRUB GROUPINGS AND SEED AS NEEDED. (±0.94 AC.)
- ② PROPOSED TRANSITIONAL WETLAND/UPLAND BUFFER ENHANCEMENT: TOPDRESS, INSTALL SHRUB/TREE GROUPINGS, AND SEED AS NEEDED (± 0.30 AC.)
- ③ PROPOSED UPLAND BUFFER ENHANCEMENT: RE-GRADE, ADD TOPSOIL OR TOPDRESS PLANTING AREAS, INSTALL TREES AND SHRUBS IN GROUPINGS (± 2.26 AC.)
- ④ PROPOSED VISUAL SCREEN: ADD TOPSOIL OR TOPDRESS AS NEEDED, INSTALL TREES IN TWO STAGGERED ROWS

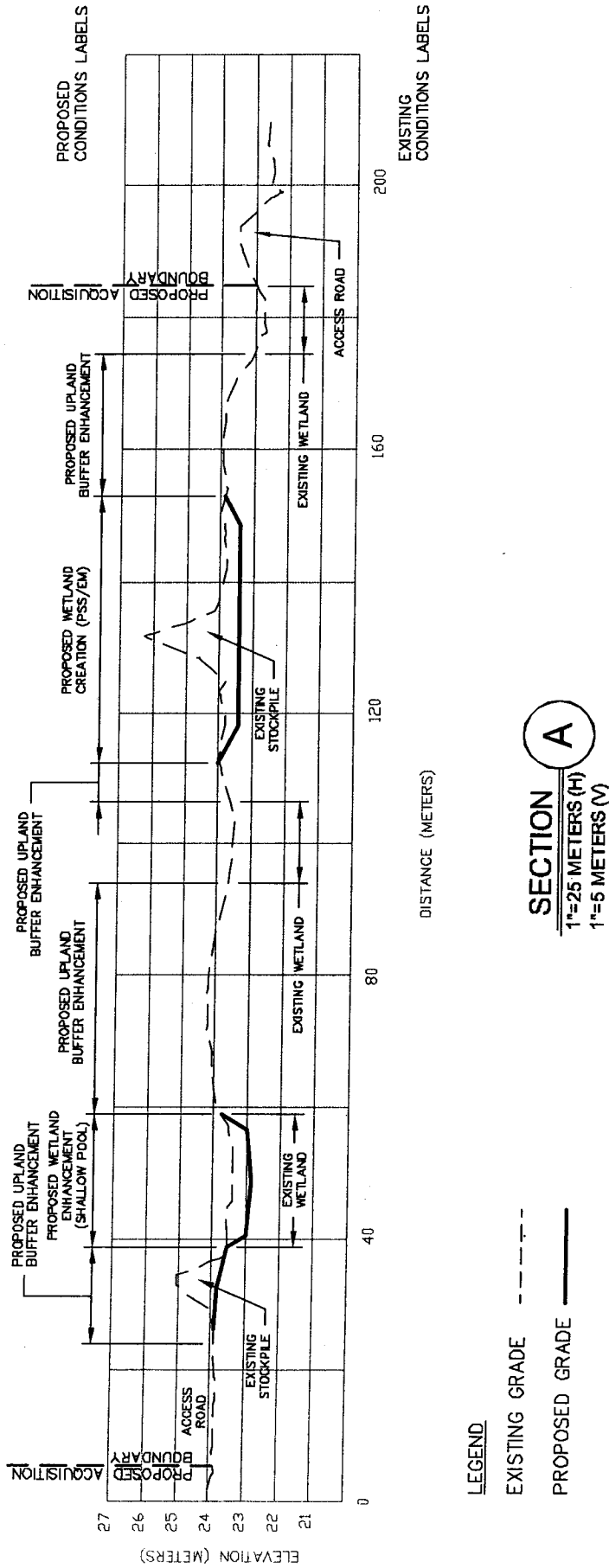
PLANT SYMBOLS

-  PROPOSED DECIDUOUS TREE
-  PROPOSED EVERGREEN TREE
-  PROPOSED DECIDUOUS SHRUBS
-  PROPOSED EMERGENT SEEDING (LOCATIONS WILL VARY)

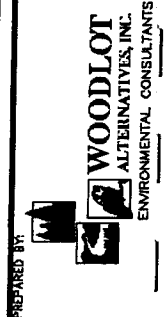


PROJECT:	Wetland Compensation	SHEET TITLE:	Calais Water District Mitigation Site
	Calais - St. Stephen International Border Crossing		Proposed Conditions
ADDRESS:	Calais, Maine	SCALE:	1"=30 meters
PREPARED BY:	Msina/DOT/DIN 0409 00	DATE:	
PROJ. NO.	105131	FIGURE NO.	
		4	

WOODLOT
ALTERNATIVES, INC.
ENVIRONMENTAL CONSULTANTS
105131-F004-H20-rmt.dwg



Wetland Compensation
 MaineDOT PIN - 8483.32



PREPARED BY

DESIGN:	DATE: December 2005
DRAFT:	JOB NO: 105131
CHECKED:	SCALE: As Shown
FILE NAME:	105131-F5_6-H20-sections.dwg

DRAWING NAME:

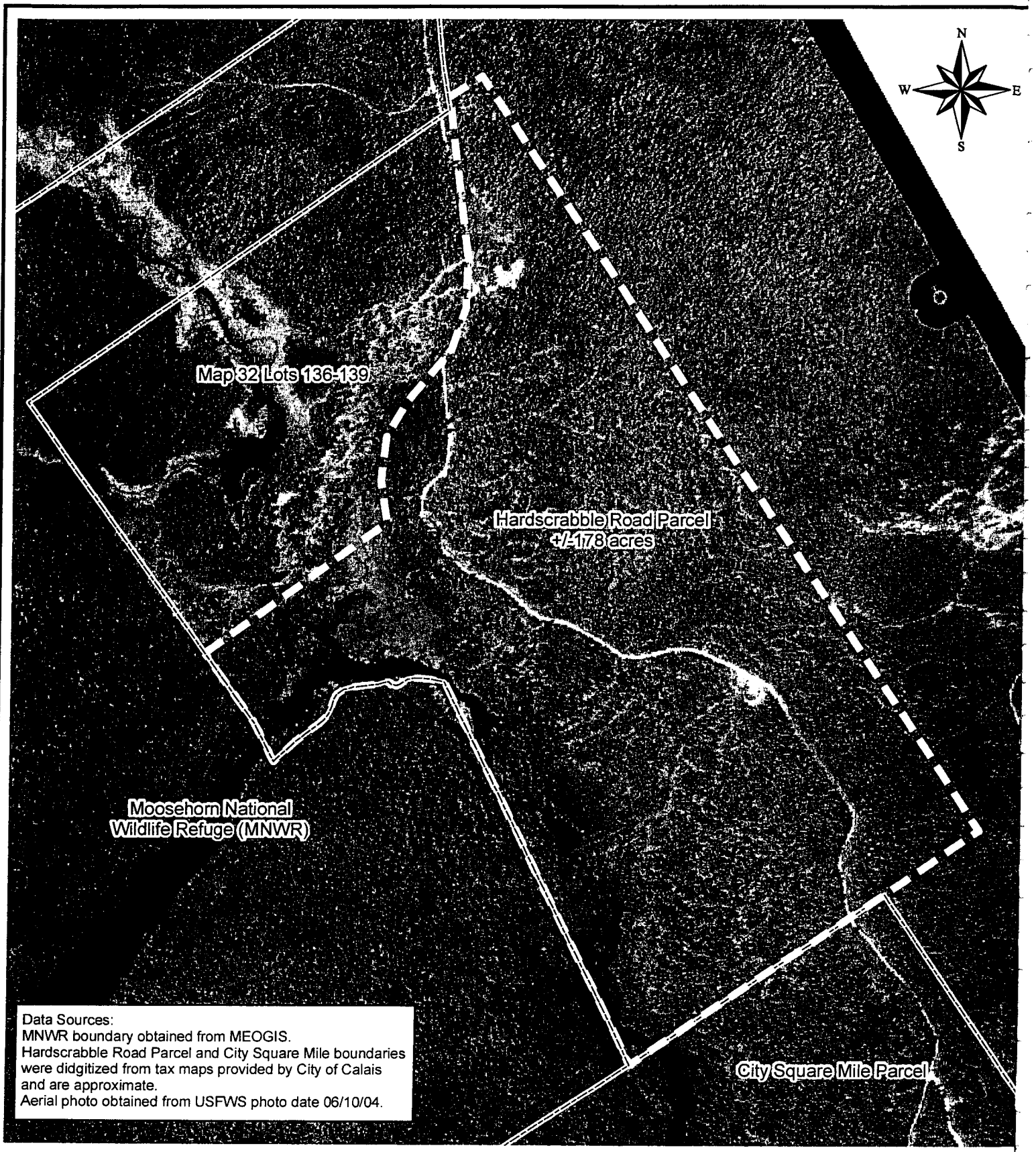
Calais Water District Mitigation Site - Cross Section A

PROJECT:

Calais - St. Stephen International Border Crossing

FIGURE NO.

5



Data Sources:
 MNWR boundary obtained from MEOGIS.
 Hardscrabble Road Parcel and City Square Mile boundaries
 were digitized from tax maps provided by City of Calais
 and are approximate.
 Aerial photo obtained from USFWS photo date 06/10/04.

PREPARED BY:



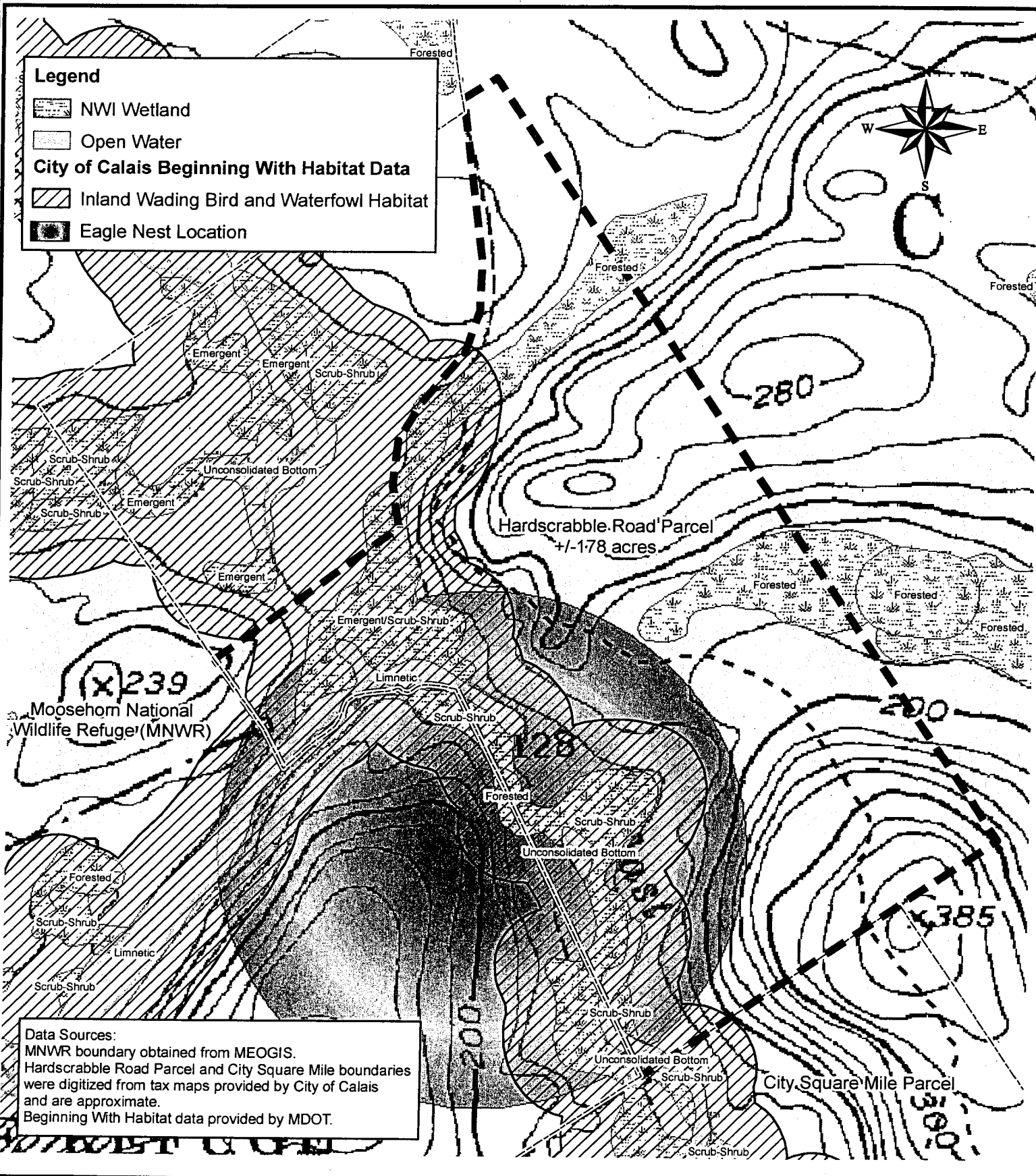
DATE: December 2005

SCALE: 1:200 meters

JOB NO. 105131.01

FILE: 105131-F007-Hard_aerial.mxd

*Figure 7 - Hardscrabble Road Parcel
 Wetland Compensation Plan
 Calais - St. Stephen International Border Crossing
 MaineDOT PIN - 8483.32*



Legend

- NWI Wetland
- Open Water
- City of Calais Beginning With Habitat Data**
- Inland Wading Bird and Waterfowl Habitat
- Eagle Nest Location

Data Sources:
 MNWR boundary obtained from MEOGIS.
 Hardscrabble Road Parcel and City Square Mile boundaries were digitized from tax maps provided by City of Calais and are approximate.
 Beginning With Habitat data provided by MDOT.

PREPARED BY:



DATE: December 2005
 SCALE: 1:200 meters
 JOB NO. 105131.01
 FILE: 105131-F008-Hard_quad.mxd

*Figure 8 - Hardscrabble Road Parcel Wetland Compensation Plan
 Calais - St. Stephen International Border Crossing
 MaineDOT PIN - 8483.32*

APPENDIX A

Mitigation Site Search Summary
(Revised October 2005 and November 2005)

Calais (PIN 8483.32)

MITIGATION SITE SEARCH SUMMARY (REVISED)
MAINEDOT CALAIS-ST.STEPHEN INTERNATIONAL BRIDGE AND
BORDER CROSSING PROJECT (PIN 8483.32)

Calais, Maine – St. Stephen, New Brunswick

OCTOBER 2005

Prepared By:

MaineDOT Environmental Office
Natural Resource Mitigation Unit
State House Station 16
Augusta, ME 04333

October 11, 2005

MITIGATION SITE SEARCH SUMMARY

Summary of Potential Sites, October 11, 2005

This report provides an updated summary of the potential wetland mitigation sites that MaineDOT has identified to date for the Calais-St. Stephen International Bridge and Border Crossing Project. The enclosed information is provided as a basis for agency review, site screening and final selection.

MaineDOT initiated a search in anticipation of wetland impacts of approximately 2.5 acres as reported in the Draft Environmental Assessment – Calais-St. Stephen Area International Border Crossing Study, December 2001. Prior to the 2005 field season, the amount of compensation required was estimated to be approximately 4 acres in anticipation of changes to the project during the final design process (primarily the configuration of the GSA customs facility) and updated wetland information. The impact estimate is currently being finalized, but as of 10/6/05 it is estimated that the wetland impacts will be approximately 6 acres. Therefore, the mitigation options presented in this summary report are based on the assumption that approximately 6 acres of compensation credit will be needed to meet agency mitigation requirements.

A number of potential sites were reviewed in the field with the agencies in August, 2005. Since that time, additional information has been obtained and the sites have undergone further screening. Information on additional potential sites was also collected to allow screening and concept development. As a result, DOT has developed a short-list of sites with the greatest potential to mitigate for the project impacts.

Table 1 summarizes information about the 13 sites previously identified, and 2 additional sites that were identified since the August meeting. The attached maps of the project area show the locations of the short-listed sites.

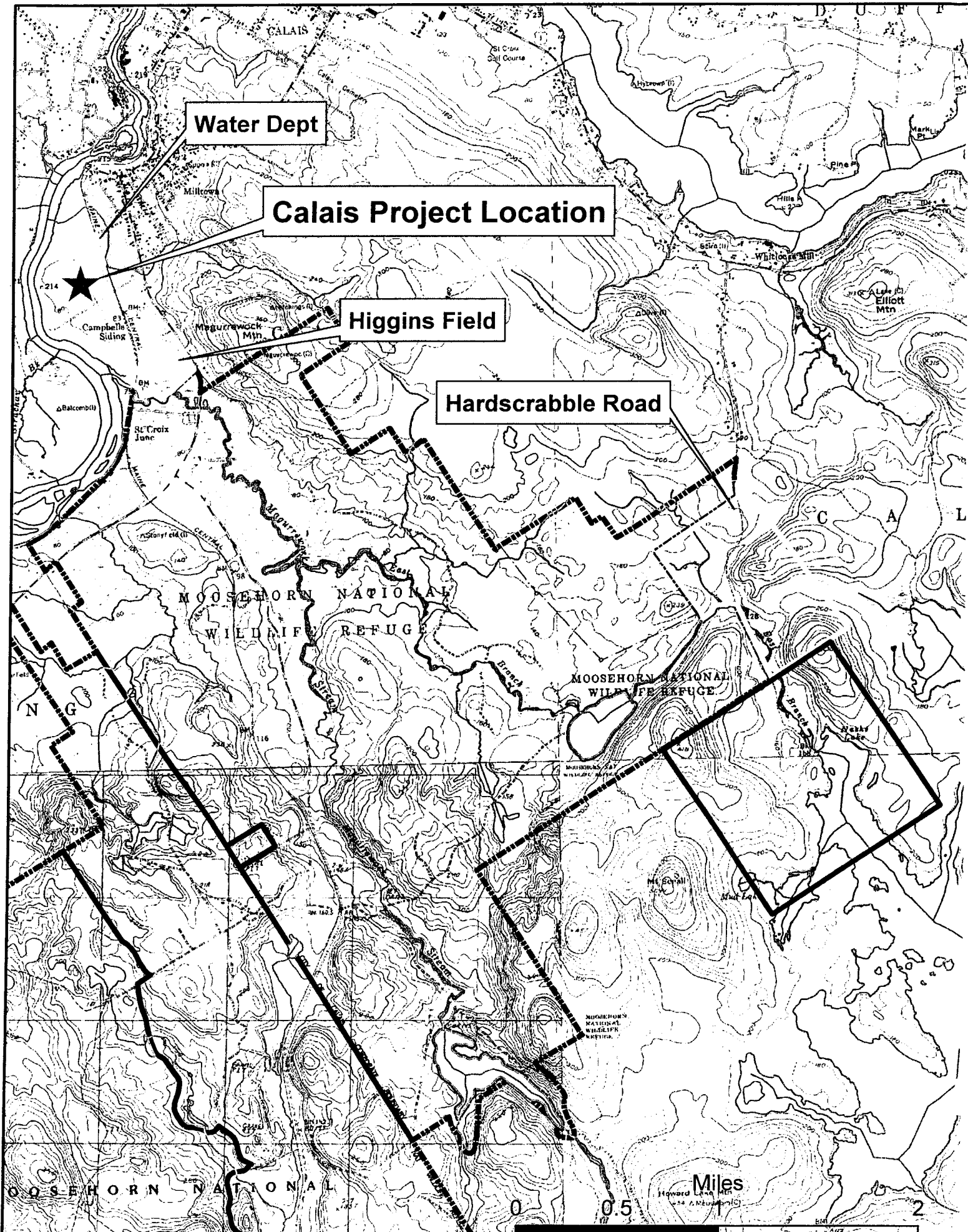
The sites that appear to offer the best opportunity to mitigate the impacts associated with the Crossing project are described in more detail on the following pages. The description includes a representative photograph and a concept plan.

Table 2 describes potential mitigation packages (single sites or sites in combination) for the project along with recommendations.

Questions regarding mitigation for the proposed projects in Calais should be directed to Mark Lickus, MaineDOT Environmental Office, 624-3102 or via email at mark.lickus@maine.gov.

Table 1. Updated Summary of Potential Mitigation Sites Reviewed by MaineDOT for the Calais-St. Stephen Project (PIN 8483.33)

ID #	Site Name	Town	Owner/Contact	Existing Conditions	Compensation Type*	Approx. Size	Potential Functions**	Comments
	October 11, 2005							
1	Water Department	Calais	City of Calais	basins excavated in upland; wetlands formed in disturbed upland	C/E	± 1.3 ac ± 4.7 ac	STR, NRT, WH	former irrigation basins with depths from 3 to 15 feet below adjacent wetland grade; basins receive runoff and backwash from filter plant; potential to backfill basins and create shallow, depositional wetlands and enhance existing wetlands through planting trees and shrubs
2	Industrial Park Lot	Calais	R. Goodwin	permitted lot with existing concrete foundation; PSS	C (some R?)	± 1 - 2 ac	STR, FFA, NRT, WH	filled, graded buildable lot, adjacent to existing PSS wetland; prior conditions unknown; existing utilities along Niels St.; limited source of hydrology and soil conditions limit feasibility, surrounded by development
3	Niels St. - North	Calais	St. Croix Investors	PSS/PFO wetland complex/stream; upland buffer	P	± 12 ac	STR, NRT, PE, WH	covers easterly portion of wellhead protection zone; near existing QRLT conservation land; landowners not interested
4	Calais waterfront	Calais	City of Calais	vacant lot, old fill along St. Croix River	R - Riparian Buffer	± 1 ac	SS, WH, VQA	currently used as City of Calais snowdump; not feasible
5	Higgins Field - Route 1	Calais	DiCenzo Realty	PFO/PSS wetlands Swale and wet meadow Upland fields	E/P	± 1.5 ac ± 3.0 ac P (maximum)	GM/STR, NRT, WH, VQA	potential to enhance existing swale and wetlands with tree and shrub plantings; and to construct stormwater BMPs; preservation of high value wetlands adjacent to MNWR; zoned commercial
6	Cookson Parcel - Route 1	Calais	Cookson	Mixed forested upland	P (upland)	± 30 ac	WH, VQA	landowner interest depends on area needed
7	Route 1 - Commercial Lot	Baring	Prout Ent.	former commercial lot, upland	none	N/A	none	backland of parcel to be acquired for highway purposes; includes summit of Magurewoc Mtn.; adjacent to MNWR
8	Route 1 - Baring Airstrip	Baring	Bridges Bros.	former airstrip; crosses several streams; adjacent PSS wetland	R (stream), P	± 0.4 ac R	GM, STR, SS, WH	concrete building slabs in upland adjacent to PSS wetland; no compensation value
9	Moosehorn National Wildlife Inholdings	Baring	various	forested upland; PFO/PSS wetlands	P	± 5 - 30 ac	WH	potential to reestablish stream channel and limited PSS riparian buffer; partly adjacent to MNWR; landowner not interested - restoration would restrict access and impact current commercial use of remainder
10	So. Princeton Road	Baileyville	Mahan Realty	forested upland	P (upland)	12 ac	WH	private inholdings within MNWR acquisition boundary; parcels lack significant wetland area; landowners not interested
11	DOMTAR Bark Pile	Baileyville	DOMTAR Inc.	site of former debarking mill; permitted wood waste disposal site	C/P	± 3 ac	GM/STR, NRT, WH	upland subdivision lot for sale; located near Waspsconhagen Stream; limited compensation value
12	Sawtelle Heath	Baileyville/Princeton	Typhoon LLC, New England Forestry Foundation (NEFF)	wooded shrub and shrub heath; State-listed Focus Area	P	± 500 ac	WH, UH	bark pile adjacent to Woodland Lake (St. Croix River) currently being mined/processed for landscape mulch; portion of site underlain by clay; potential to create ± 3 acres of wetland; preserve existing buffer; may require diverting intermittent stream as hydrology source
13	Denny's River Powerhouse - Rt 191	Meddybemps	State of Maine - Smith Family	wooden and concrete powerhouse structure over Denny's River	R/E?	TBD	SS, FSH, VQA	NEFF holds a working forest conservation easement over lands containing the portion of the heath in Baileyville; landowner not interested in placing additional restrictions on forest management.
14	Sand/salt pile	Princeton	Passamaquoddy Tribe	sand/salt pile adjacent to forested wetland	R?	± 1 - 2 ac	STR	upstream of Rt 191 bridge, downstream of Meddybemps Lake outlet dam; adjacent to Eastern Surplus Superfund site; removal and shoreline stabilization would protect salmon habitat; legal and potential contamination issues
15	Hardscrabble Road	Calais	City of Calais	PFO/PSS/PFO wetlands stream and riparian habitat; forested upland	P	± 250 ac	WH	existing unimproved sand/salt storage facility in need of upgrade; vegetation in adjacent wetland damaged by salt leachate; potential to upgrade facility to current standards; upgrade would require acquisition of property right over tribal lands



Calais Project Location

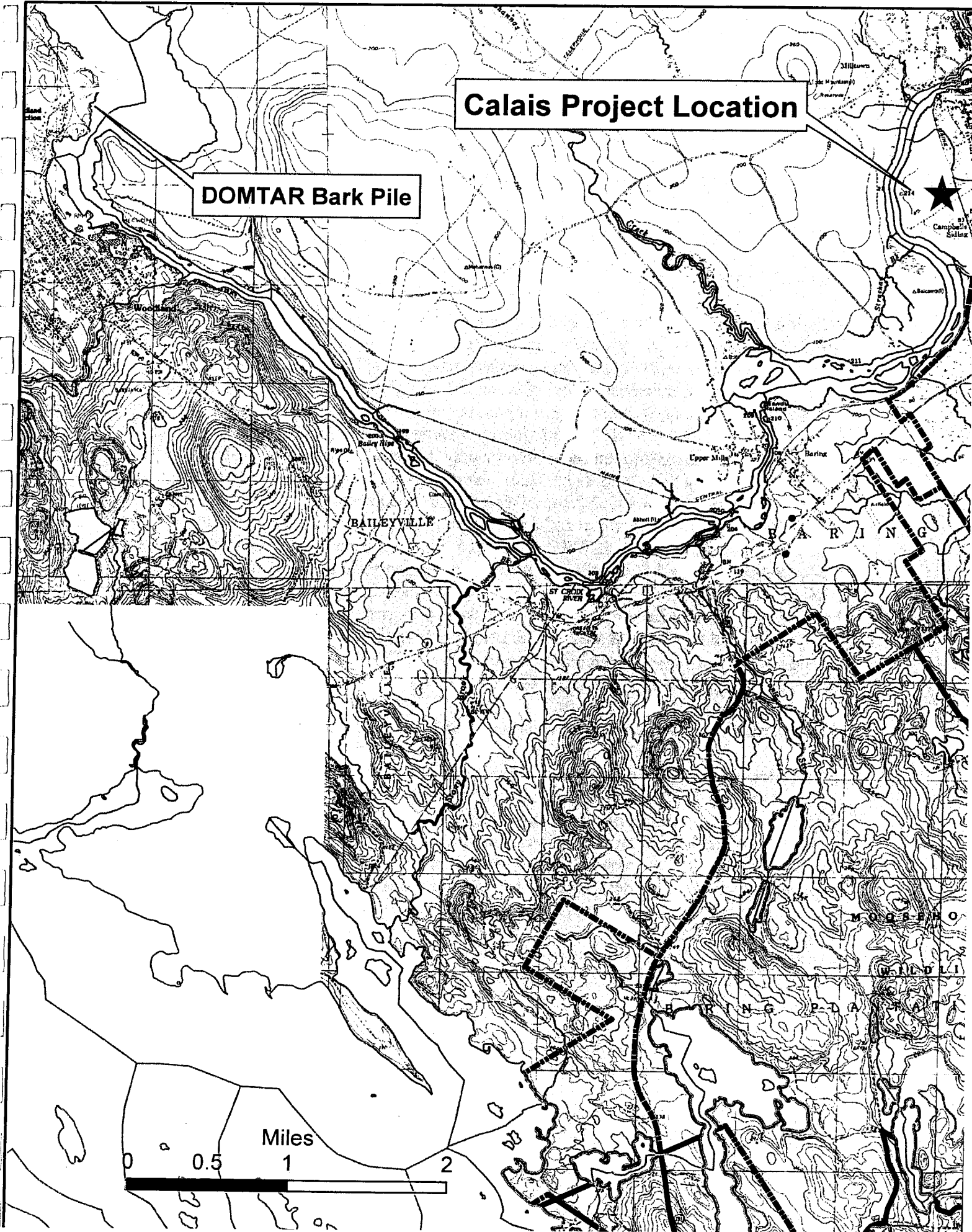
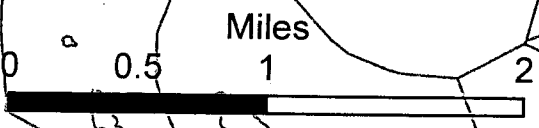
DOMTAR Bark Pile



BAILEYVILLE

BARRING

ST CROIX RIVER



Site 1

Site Name: Hardscrabble Road

Location: Calais

Owner: City of Calais

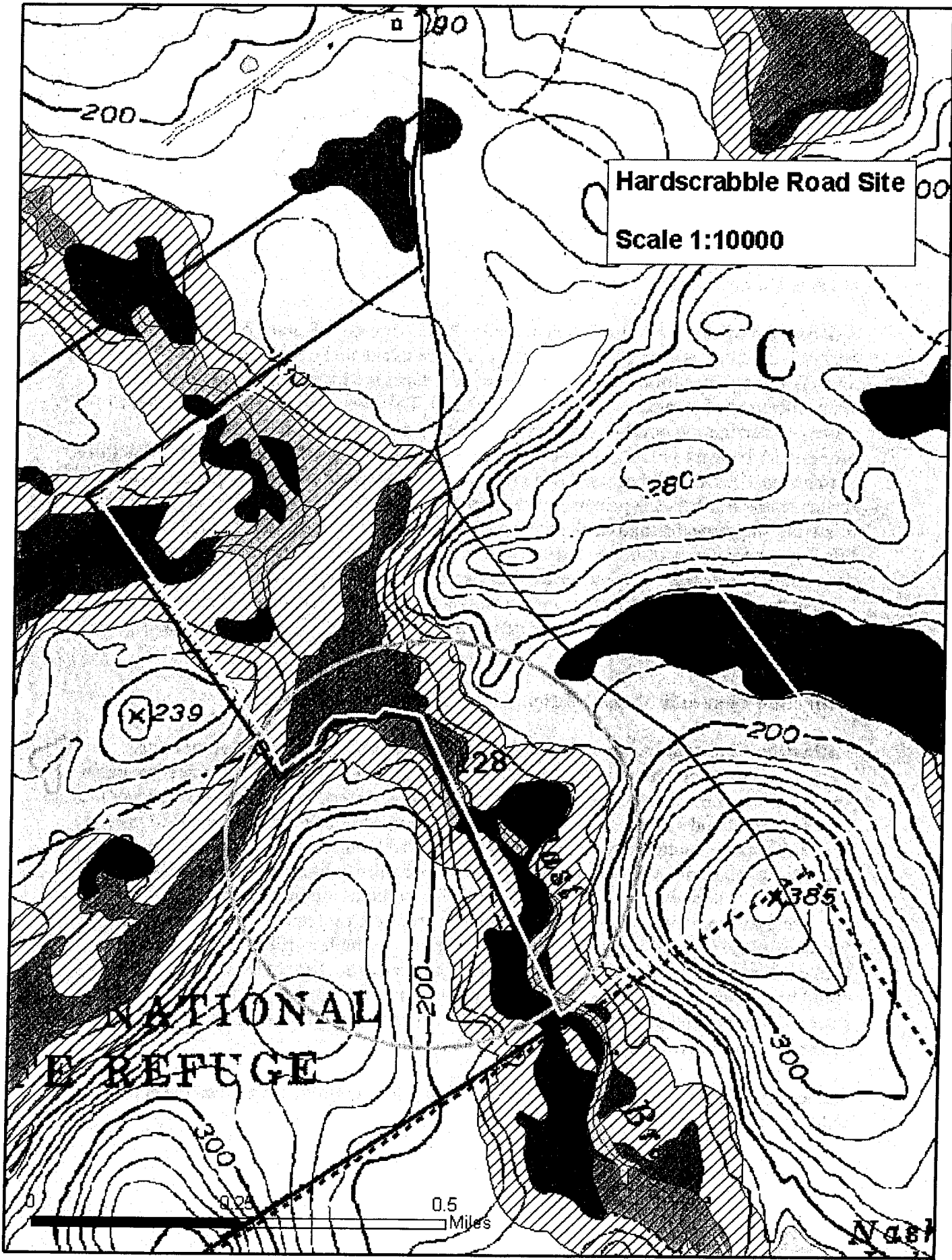
Existing Conditions: The ± 250 acre parcel abuts the easterly boundary of Moosehorn NWR on two sides. Hardscrabble Road, a town way that provides access to a large block of city-owned property that surrounds the northerly end of Nashs Lake, crosses the parcel. The parcel is comprised of ± 60 acres of a mix of emergent, scrub-shrub, and forested wetland in approximately equal parts, open water and stream channel, and forested uplands. The MNAP Beginning with Habitat resource maps show the wetland areas as inland wading bird and waterfowl habitat. Information provided by Moosehorn NWR indicates that the wetlands provide habitat for pied-billed grebes, American bitterns, black ducks and wood ducks. The forested uplands are a mix of red maple and white pine, with some hardwood and lowland conifer stands. These areas provide high-quality habitat for several USFWS Partners in Flight high-priority species, including the bay-breasted warbler, blackburnian warbler, and black-throated blue warbler. The Gulf of Maine Habitat Analysis indicates that this area provides above average habitat for whip-poor-wills, red-shouldered hawks, and goshawks. A mapped bald eagle nesting site (BE 072F) is located northeast of Vose Pond, near the existing refuge boundary. The streams on the tract contain brook trout and the American eel. The eel has been proposed for listing under the Endangered Species Act.

Mitigation Type and Area: Preservation, ± 250 acres (6+ ac credit at 40:1)

Mitigation Potential: Acquisition and preservation of this parcel would permanently protect the significant habitat and conservation values of this area. It would provide high-quality habitat for migratory birds that inhabit both wetland and forested habitats. The uplands provide a buffer which will permanently protect the watershed of Vose Pond and the East Branch of Magurrewock Stream. Acquisition would also provide permanent protection for part of the designated essential habitat around the eagle nest contributing to the Maine Dept. of Inland Fisheries and Wildlife bald eagle recovery plan goals. Acquisition of a ± 250 acre habitat block adjacent to the refuge would increase the value of existing refuge lands to forest interior species. Moosehorn NWR would accept the parcel as a donation as they have received no funding for land acquisition in FY 2004, 2005, and 2006.

Potential development threats in this area include unrestricted off-road vehicle use, intensive forestry and harvesting, and recreational and residential development.

Anticipated Functions: groundwater discharge, sediment/toxicant retention, production export, floodflow alteration, wildlife habitat



Hardscrabble Road Site
Scale 1:10000

NATIONAL
WETLANDS
REFUGE

0.5
Miles

N 48°

Site 2

Site Name: Water Department

Location: Calais

Owner: City of Calais

Existing Conditions: Mixture of disturbed upland, approx. 1.8 acres of shallow wetland basins, a diked cranberry bog, and a series of three excavated detention basins (0.9 acres total) that range in depth from 3 to 15 feet. The basins are located between the City's water filtration plant access road and the railroad. They were originally constructed to serve as an irrigation ponds for a cranberry bog operation formerly located on the property. A brown to blue-gray silt/clay surface layer overlies the sand and gravel aquifer in this area. The underlying sand and gravel aquifer is tapped by pumping wells on-site further to the north as the primary water supply for the City of Calais. The clay layer is relatively impermeable and does not produce water (Emory and Garrett, 2003). A utility line crosses the site on the east side of the access road. Many of the existing wetlands to the west of the access road appear to have been created in depressions resulting from the construction activities at the site. Herbaceous wetland vegetation has begun to colonize the wetter areas. Soils in this area are generally poor, and woody vegetation occurs only in limited areas.

Mitigation Type and Area: Creation \pm 1.3 ac; Enhancement \pm 4.7 ac

Mitigation Potential: After additional review, it appears that a limited amount of wetland could be created within the area of existing basins at this site. The deepest basin appears to have penetrated the clay layer into the aquifer, and receives drainage from the filtration plant and surface runoff. The City is interested in filling these basins to protect the aquifer from contamination by surface water. Wetland creation would require backfilling the basins with compacted fine textured soils to limit infiltration, regrading the area into a series of shallow depressions with wetland microtopography, and amending the soils with wetland loam salvaged from the project. Sources of hydrology for the wetlands would include direct precipitation, available surface runoff, and backwash water from the Water Dept. In addition, the function of the existing wetlands could be enhanced by planting trees and shrubs within the upper portions and in a buffer surrounding the wetlands. A breach in the dike surrounding the cranberry bog could be repaired to maintain wetland conditions in this area.

Anticipated Functions: sediment/toxicant retention, nutrient removal/transformation, wildlife habitat



Photo 1. Water Dept. site – view toward east of deep basin at the south end of the site. Railroad track lies behind berm. Outlet from filtration plant is in upper left corner.

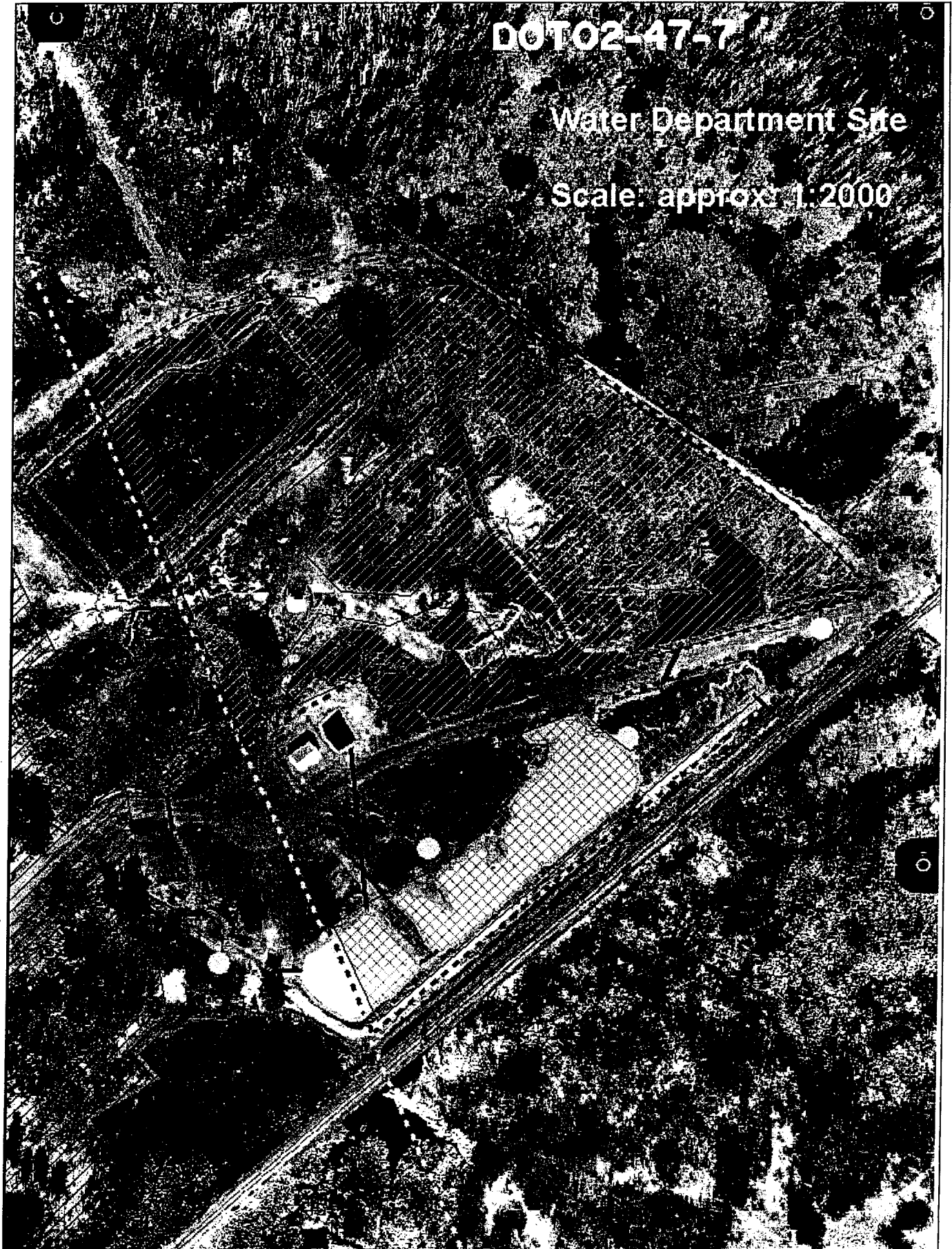


Photo 2. Water Dept. site – view toward north of second and third basins. Pipe in foreground is overflow outlet from deep basin shown in Photo 1. Railroad tracks to right of photo.

DOT02-47-7

Water Department Site

Scale: approx 1:2000



Site 3

Site Name: Higgins Field

Location: Calais

Owner: DiCenzo Realty

Existing Conditions: The site is comprised of a mixture of mowed field, approximately 1.5 acres of wet meadow and drainage swales, and approximately 22 acres of shrub wetlands. Soils are mapped as Wonsqueak and Bucksport in the lower portion of the site, and Lamoine-Buxton complex in the upper parts. The area is located adjacent to Route 1, less than one mile from the proposed facility, and abuts the Moosehorn National Wildlife Refuge to the south. The area currently receives drainage from Route 1. The parcel is zoned commercial.

Mitigation Type and Area: Enhancement \pm 1.5 ac (max),
Preservation \pm 30 ac (\pm 2.5 ac max @ 10:1 -15:1)

Mitigation Type: This site offers enhancement and preservation opportunities adjacent to Magurrewoc Stream and the St. Croix River. Areas of more poorly drained soils along drainage swales and around wet meadow depressions could be planted with a buffer of trees and shrubs to provide shading and cover enhancing sediment/toxicant retention, and wildlife habitat functions. Buffer plantings could also be placed to screen the site from adjacent commercial activities. Enhancement combined with preservation of scrub/shrub wetland areas could provide functional benefits similar to the project impacts. The level of landowner interest varies with the size of the area proposed to be acquired for mitigation purposes.

Anticipated Functions: groundwater discharge, sediment/toxicant retention, nutrient removal/transformation, wildlife habitat, visual quality

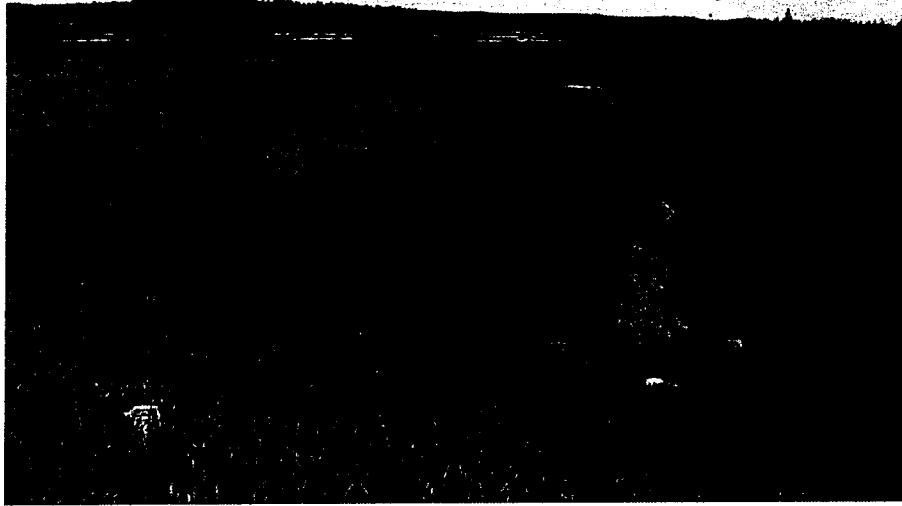


Photo 1. Higgins Field - View to west of culvert outlet and beginning of swale in mowed field. Scrub-shrub wetlands along Magurrewock Stream within Moosehorn Refuge are in the background.



Photo 2. Higgins Field - View to northwest of drainage swale along southern portion of mowed field.



Higgins Field

Scale: approx. 1:1200

Site 4

Site Name: DOMTAR Bark Pile

Location: Baileyville

Owner: DOMTAR, Inc.

Existing Conditions: Site of former debarking mill, permitted by former owner (Georgia Pacific) as a woodwaste disposal facility. Site is approximately 13 acres and is covered with large woodwaste pile that in the past was over 50 feet high. Woodwaste is currently being excavated and processed for use as bark mulch. The site is 9 miles (by road) from the Border Crossing project and lies along the Woodland flowage of the St. Croix River. An intermittent stream and associated wetland flows along the southerly edge of the pile. Small, isolated scrub-shrub and emergent wetlands occur adjacent to the site and along the margins of the river. Preliminary test pits found that grey marine clay, and a thin buried soil in some locations, underlies the southerly 4 acres of the site where most of the woodwaste has been removed.

Mitigation Type and Area: Creation \pm 3.0 ac

Mitigation Potential: There appears to be the potential to create approximately 3 acres of wetland at this site. The source of hydrology would primarily be direct precipitation and limited surface water runoff. Runoff into the site would be limited by the relatively small size of the watershed (approx 15 acres). The underlying fine textured soil appears suitable to perch water at the surface, but groundwater is unlikely to be a large source of hydrology. Creation may require diverting a portion of flow from an adjacent intermittent stream into the creation area. The creation area would be regraded and loamed with wetland loam salvaged from the project site. The landowner is willing to grant DOT a conservation easement over the area.

Anticipated Functions: groundwater discharge, sediment/toxicant retention, nutrient removal/transformation, wildlife habitat



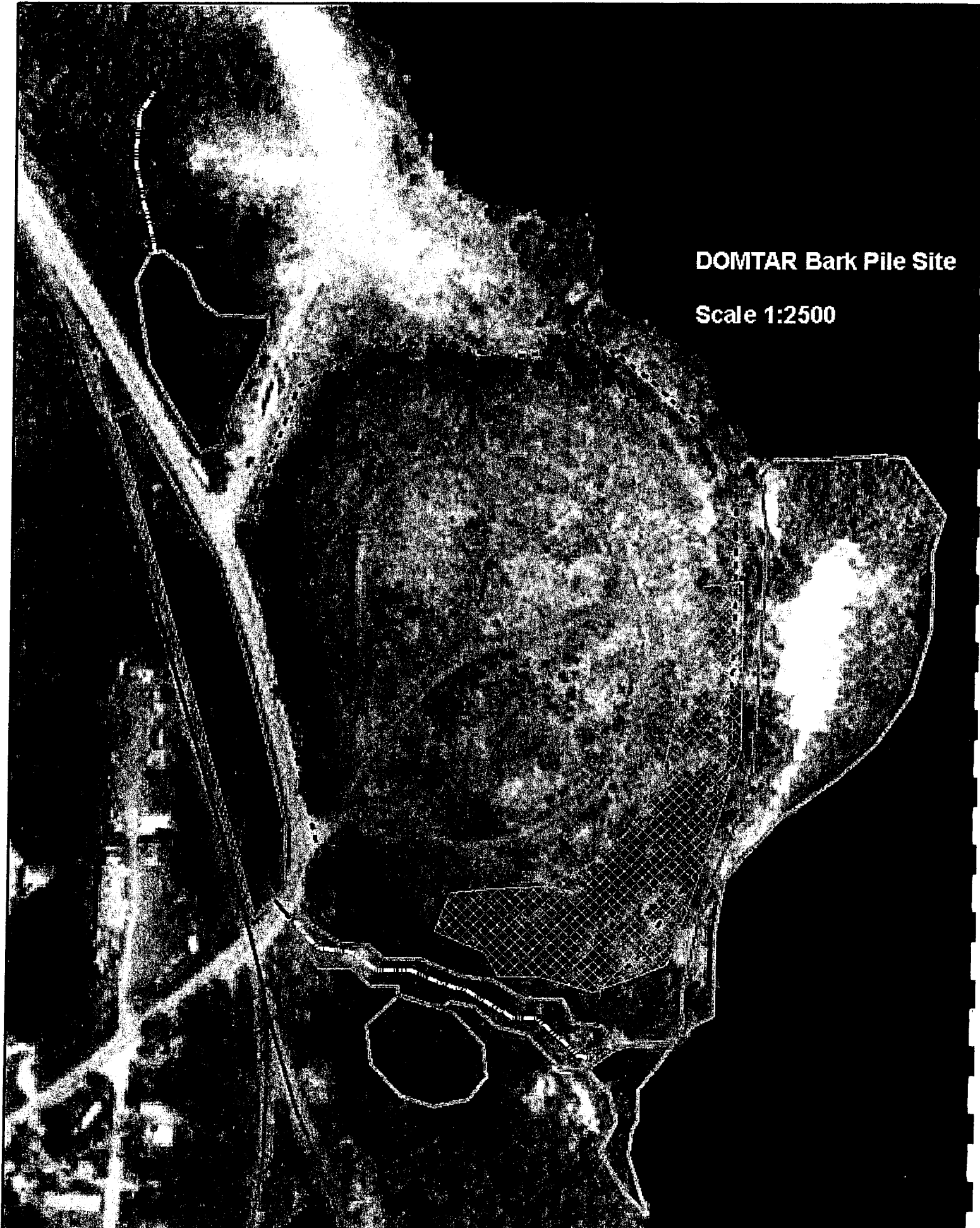
Photo 1. DOMTAR – View from top of woodwaste pile showing St. Croix River, and existing vegetated buffer. Much of the woodwaste in this area has been mined since the photo was taken.



Photo 2. DOMTAR – view of proposed wetland creation area showing partially excavated woodwaste in lower portion of site and existing vegetated buffer. St. Croix River is to the left of photo.

DOMTAR Bark Pile Site

Scale 1:2500



Potential Mitigation Packages:

After reviewing the potential sites and considering factors including location, kind, size, functional match/benefits, effort/cost, technical difficulty, likelihood of success, and availability, a short-list of four potential mitigation packages was developed as shown in Table 2. DOT recommends that Package 1 be selected as the preferred mitigation for the Calais project. Given the location and characteristics of the affected wetlands, this package will provide meaningful and cost-effective mitigation to off-set the functional impacts.

Table 2. Potential Mitigation Packages for the Calais-St. Stephen Border Crossing Project (PIN 8483.32)

Package	Site(s)	Compensation Type/Area (ac)	Comments
A	Water Department Hardscrabble Road	C / 1.0 P / 5.0	On-site Creation in basins; Off-site Preservation of ± 250 ac of wetland and upland habitat adjacent to Moosehorn NWR
B	Water Department	C / 1.3 E / 4.7	On-site Creation in basins; On-site Enhancement of existing small wetlands
C	Water Department Higgins Field (Medium-Low)	C / 1.3 E / 2.0 - 2.7 E / 0 - 0.7 P / 2.0	On-site Creation in basins and enhancement of existing small wetlands; On-site Enhancement of drainage swale and small wetlands; On-site Preservation of habitat adjacent to Moosehorn NWR
D	DOMTAR Hardscrabble Road	C / 1.0 P / 5.0	Off-site Creation at woodwaste disposal site; Off-site Preservation of f ± 250 ac of wetland and upland habitat adjacent to Moosehorn NWR

**Summary of Follow Up Items to October 11, 2005 Interagency Meeting and
Revisions to the Proposed Mitigation Package for the
MaineDOT Calais Border Crossing Project (PIN 8483.33)**

November 9, 2005

Higgins Field Site:

At the request of the Corps, after the October Interagency Meeting DOT re-contacted the owner of the Higgins Field site regarding the availability of all or portions of the property for mitigation purposes. Two options with between 0.5 and 1 acre of enhancement credit that would have provided DOT with the balance of mitigation required by the Corps were discussed. Despite an attempt to accommodate the owner's concern about the loss of land for future commercial development by leaving substantial acreage between the new industrial park access road and the proposed mitigation area, the owner stated that they were not interested in selling any of this area. Given this response, this left the City Water District property as the only remaining on-site mitigation option that was available and that provides the opportunity for wetland restoration, enhancement or creation.

Hardscrabble Road site

Shortly after the IA meeting, DOT received tax records and a deed from the City of Calais showing that the parcel owned by the city was in fact smaller than originally thought. The tax records show that there were 4 lots in the northwesterly corner that are privately owned. Lot 32-136 (approx. 40 acres) is owned by a local resident (Dineen) and lots 32-137, 138 & 139 (approx 34 acres) are owned by a resident of Connecticut (Voegtlin). Using the information provided by the town, each owner was contacted by letter explaining DOT's interest in their property for mitigation and requesting a meeting. The out-of-state owner has not responded and their phone number is unlisted so DOT has not been able to make contact with them. DOT will make additional attempts to reach this owner and determine whether they are interested in selling. A meeting was held with the local owner last week to inquire about their interest in selling their property. A DOT Right-of Way representative contacted the owner by phone on November 2 and was told that they were not interested.

In addition, the existing deed provided by the city suggests that there may be an approximately 11 acre gap in ownership along Magurrewock Stream between the city-owned parcel and existing land of Moosehorn refuge. The description in the deed lacks detail, and states that the lot is, "believed to contain 137 acres". Areas scaled from the tax maps however indicate that the lot is closer to 170 acres. DOT's Property Office has begun researching titles in this area and has started work on a boundary survey to confirm ownership and provide an accurate boundary description. This information will not be available in time to include in the mitigation plan, but will be provided to the agencies when it becomes available.

Despite these changes, this area still has significant wildlife habitat values identified by the refuge as important for protection. DOT plans to acquire the lot owned by the city, and the area located between that lot and the refuge. Based on the existing information available, the estimated area of the site has been revised to approximately 180 acres.

(see attached updated plan)

Water District Site:

After determining that the Higgins Field site was unavailable, DOT and its consultant revised the mitigation concept at the Water District site. The former irrigation pond and irrigation return ponds were determined to be better left undisturbed because of concerns expressed by FHWA about work by DOT within Zone 1 of the Wellhead Protection Zone, and because of concerns that the loss of existing stormwater detention provided by these ponds could result in potential adverse effects to the existing railroad embankment. The revised concept is shown in the attached plan.

Within the approx. 3.5 acre area shaded in green approx. 0.3 ac. of shrub wetland will be created through regrading of selected upland areas located between existing wetlands; approx. 1.5 acres of existing emergent wetland and shallow open water areas will be enhanced by approx. 3 acres of tree and shrub plantings both within selected portions of the wetlands, and in the adjacent upland areas as a buffer. The plantings are intended to jump start the establishment of native woody vegetation on this formerly disturbed site, and improve the water quality treatment and wildlife habitat functions at the site. In addition, one or two existing depressions may be deepened to prolong the hydroperiod, and provide potential amphibian breeding sites. A buffer of conifers will be planted along the r/w boundary to help screen the site from the adjacent GSA facility. This boundary (dashed yellow line) has been revised to accommodate the anticipated buffer requirements of the Department of Homeland Security. The mitigation site will, at a minimum, be comprised of the area outlined in dashed red, which encompasses the creation, enhancement and planting areas and other non-treated areas. This area will be acquired by DOT and will be protected by restrictive covenants in accordance with Corps requirements.

(see attached concept plan)

Cookson parcel

As a result of the changes in the area available at the Hardscrabble site, DOT is prepared to add the Cookson parcel to the mitigation package. This 30+ acre parcel is predominantly forested upland and includes the summit of Magurrewock Mtn. and abuts Moosehorn Refuge along its southerly boundary. This parcel will be acquired by DOT as a result of the access management provisions of the project. An existing house on the property is slated to be removed. Two existing telecommunications towers are located at the summit, and are serviced by a utility line running diagonally across the parcel from Route 1. Preservation of this parcel would protect a portion of the headwaters of Furlong Brook. This stream flows into the project area in the vicinity of the intersection of Route 1 and the proposed border crossing access road. Drainage from the front side of this parcel flows toward Route 1 before reaching Magurrewock Stream. DOT will add this parcel to the mitigation package at the request of the agencies.

(see attached site plan)

Hardscrabble Road Site (REVISED)

Scale 1:12000

**Voegtlin
32-137, 138, 139**

**Dineen
32-136**

**City of Calais
32-132**

**US Government
MNWR**

City of Calais

0

0.25

0.5
Miles

DOT02-47-7

Water Department Site (Revised)

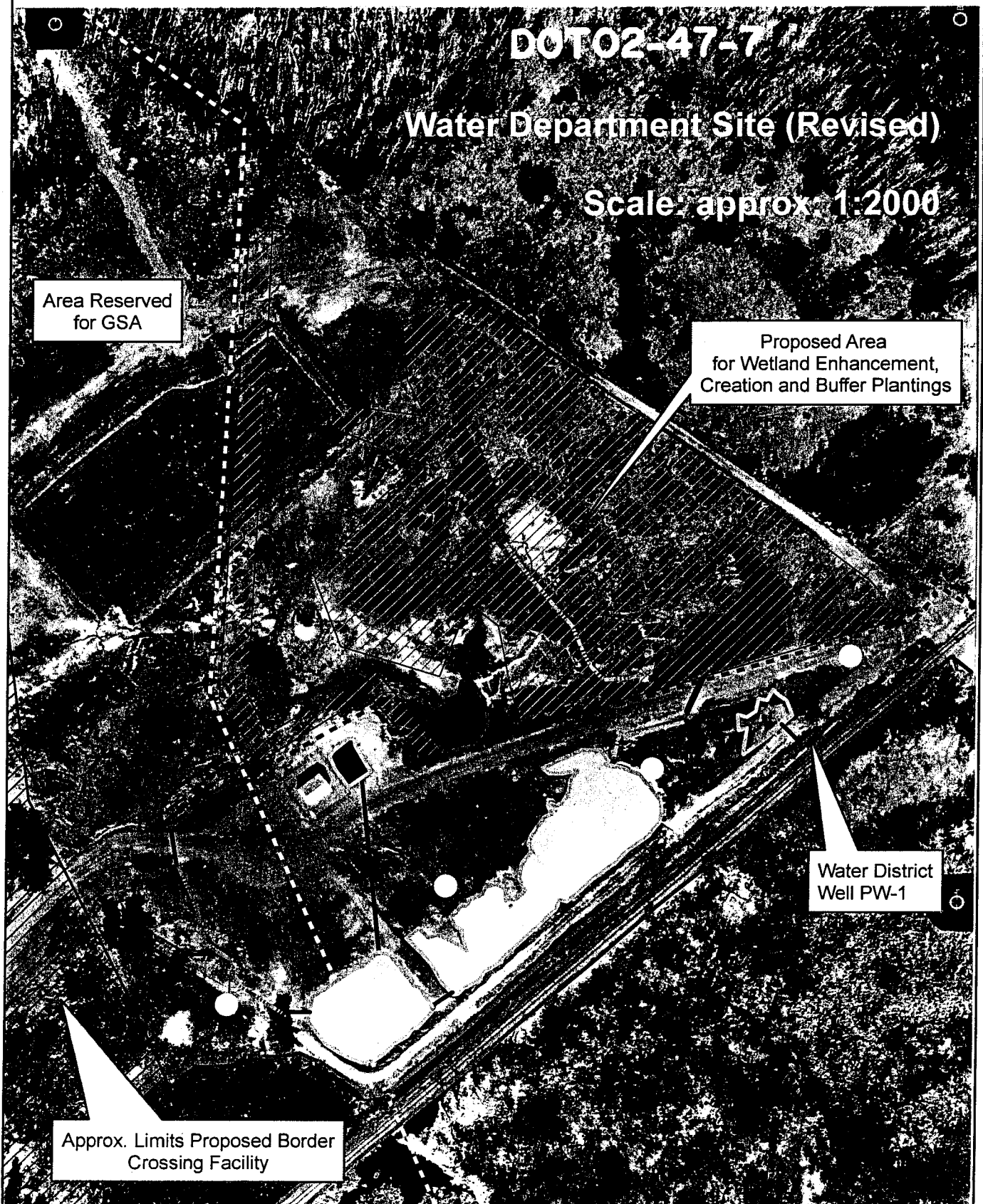
Scale: approx. 1:2000

Area Reserved
for GSA

Proposed Area
for Wetland Enhancement,
Creation and Buffer Plantings

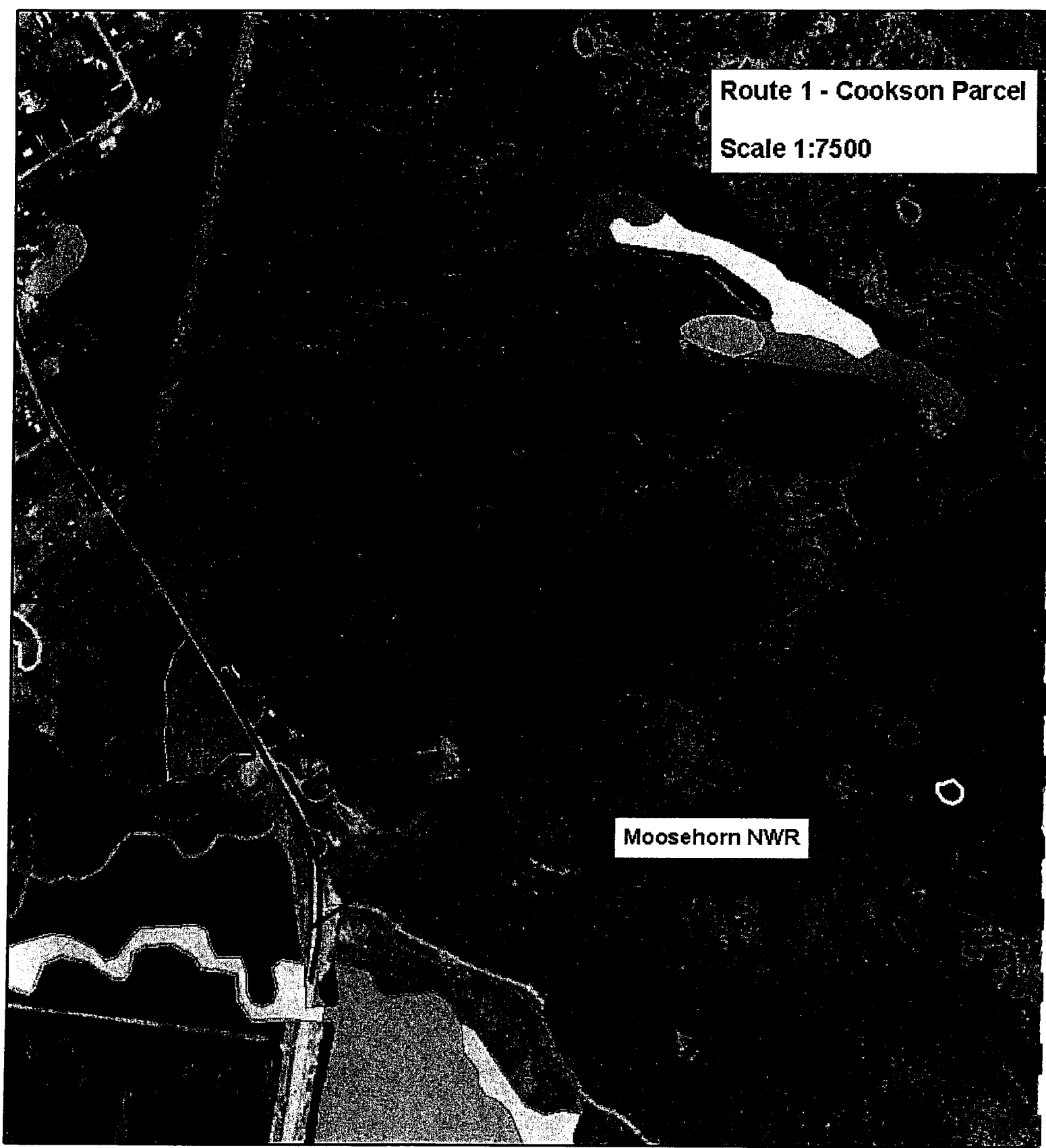
Water District
Well PW-1

Approx. Limits Proposed Border
Crossing Facility



Route 1 - Cookson Parcel
Scale 1:7500

Moosehorn NWR



APPENDIX B

**Cross Reference Between Mitigation Plan
and
U.S. Army Corps of Engineers, N.E. District
Mitigation Plan Checklist**

Wetland Compensation Plan
MaineDOT Calais – St. Stephen Bridge and Border Crossing

APPENDIX B

Cross-reference Between Calais –St. Stephen Border Crossing Project Mitigation Plan
 And U.S. Army Corps of Engineers, New England District *Mitigation Plan Checklist*, 6/15/04

Check-list Item	Description	Relevant Section	Page Number
A. General Information			
1.	One complete document	N/A	
2.a	Site location map	Figure 1	
2.b	Lat/Long	Figure 1	
3.a	Impact area - wetland acreages and stream lengths	Section 1.2	pp. 1, 2, Table 1
3.b	Impact area - wetland classes	Section 1.2	pp. 1, 2, Table 1
3.c	Impact area - wetland functions and values	Section 1.2, Exhibit 14	p. 1
3.d	Impact area - type and purpose of work	Section 1.1	p. 1
4.a	Mitigation area - wetland acreages at each site	Sections 2.0 and 3.0	pp. 2, 3, Table 2
4.b	Mitigation area - wetland classes at each site	Sections 3.0	pp. 3-11
4.c	Mitigation area - wetland functions and values proposed at each site	Sections 3.1 and 3.2	pp. 3-11
5.	Design Constraints	Sections 3.1.1 and 3.2.1	pp. 5, 8
6.	Wetland scientist to monitor construction and compliance	Section 6.0	p. 16
7.	Timing of mitigation	Section 11.0	p. 23
8.	Party responsible	Section 2.0	p. 2
B. Hydrology			
1.	Seasonal depth, duration, and timing of inundation/ saturation for each zone	Sections 3.1	pp. 3-7
2.	Groundwater or surface water driven, substantiation	Sections 3.1	pp. 3-7
3.	If vernal pool, evidence of adequate hydrology for at least one obligate species	N/A	
C. Grading Plan			
1.a	Plan View - existing 2' contours, proposed wetlands 1' contours plus spot elevations	Figures 3 and 4	
1.b	Plan View - microtopography max. and min. elevations and typical section(s)	Figures 3 and 4	
1.c	Plan View - Scale 1"=20' to 1"=100'	Figures 3 and 4	
1.d	Plan View - legible 8-1/2 x11" sheets	Figures 3 and 4	
2.	Section View(s) with seasonal water level range(s)	Figures 5 and 6	
3.	Other grading comments (if any)	N/A	
D. Topsoil			
1.	Proposed source	Sections 3.1 and 5.1	pp. 7, 12
2.	6-12" or more natural or man-made soil	Section 5.1	p. 12
3.	Natural soil with 4-12% o.m. (specify), or amended/created soil 50-50 o.m./mineral mix	Section 5.1	p. 12
4.	Identify subsurface soil conditions	Section 5.1	p. 12
5.	Include specific language regarding soil source,	Section 5.1	p. 12

Wetland Compensation Plan
MaineDOT Calais – St. Stephen Bridge and Border Crossing

	thickness and composition		
E. Planting Plan			
1.	Use scientific names	Throughout	
2.	Native and indigenous plant materials	Sections 5.2, Table 4	pp. 12-15
3.	Classify plant communities according to Cowardin et al. (1979) or similar	Section 1.2	p. 1
4.	Plan view shows proposed locations of plantings or uniform planting areas	Figure 4	
5.	More than 50% in each planting zone are structural determinants for the community type, unlikely to volunteer	Section 5.2 and Table 4	pp. 12-15
6.	Where appropriate, at least 600 trees and shrubs per acre, including 400 trees in forested types	Section 5.2 and Table 4	pp. 12-15
7.	Herbaceous stock at 3' o.c. (spreading) or 2' o.c. (clumping)	N/A	
8.	Provide seed mix composition, no undesirable species	Section 5.2 and Table 5	pp. 12-15
9.	Representative cross-section(s)	Figures 5 and 6	
10.	Include language re: native and indigenous, no unauthorized substitutions, no invasives	Section 5.2	p. 13
11.	Include language re: allowance for/limits on relocation due to as-built conditions	Sections 5.2	p. 13
12.	Other planting comments (if any)	N/A	
F. Coarse Woody Debris			
	At least 2% coverage with various sizes and stages of decomposition	Section 5.3	p. 15
G. Erosion Controls			
	Removal of erosion control devices	Section 4.0	p. 11
H. Invasive and Noxious Species			
1.	Discuss/assess risk of invasion	Section 7.1	p. 16
2.	Discuss/assess regulatory and ecological constraints that influence plan to control invasives	Section 7.2	p. 16
3.	Control plan	Section 7.3 and Appendix C	p. 16
I. Off-Road Vehicle Use			
1.	No use in vicinity, or control measures addressed	Section 8.0	p. 17
2.	If ORV potential, barriers planned/access limited to prevent damage	Section 8.0	p. 17
J. Preservation			
	Include specified language	Section 9.0 and Appendix D	pp. 17-18
K. Monitoring Plan			
	Include specified language	Section 10.0	pp. 18-22
L. Assessment Plan			
	Include specified language	Section 10.4	pp. 21
M. Other Comments (if any)			

APPENDIX C

Preliminary Plan for Control of Potential Invasive Plants
at the Water District Mitigation Site

**Preliminary Plan for Control of Potential Invasive Plants at the
Water District Mitigation Site**

Purple loosestrife (*Lythrum salicaria*) is considered an aggressive and highly invasive non-native species that has the potential to take over and dominate natural wetland plant communities. Loosestrife produces large numbers of viable seeds and a massive seed bank can build up in the soil. Under the right conditions, seeds germinate in high numbers and prevent native wetland species from becoming established. This plant is especially invasive in areas of disturbed wetland, where it can quickly colonize exposed soils. It is difficult to eradicate once it becomes established, but can be controlled using a variety of proven methods including mechanical, chemical, or biological means.

Common reed (*Phragmites australis*) is also considered aggressive and highly invasive. It has the potential to quickly displace desirable native wetland species with dense monotypic stands that provide little food or shelter for wildlife. This plant is also especially invasive in areas of disturbed wetland. Common reed thrives in sunny wetland habitats and spreads to new areas by both seed and rhizome fragments. Common reed spreads predominantly by sending long rhizomes horizontally from the existing plant in all directions during the growing season. The accumulation of dead leaves and stems, as well as the pervasive rhizome system, prohibits the growth of desirable wetland plant species. Common reed is very difficult to completely eradicate. Small single plants can be hand dug, but larger stands need to be treated more aggressively.

Control Methods

Control of these invasive species will be done in a manner that minimizes disturbance to soils and vegetation in the wetland in order to prevent these species from re-colonizing the disturbed area. A healthy, late-successional wetland ecosystem is generally more resistant to invasive species. MaineDOT will take an Integrated Pest Management (IPM) approach in controlling invasive species at the Water District mitigation site. The range of control options is outlined below, and the choice of method(s) will depend on the degree of infestation that occurs and any regulatory or ecological constraints. The methods may be adjusted and/or combined to provide the most cost-effective control. The long term overall goal will be to reduce, not necessarily eliminate, purple loosestrife and common reed so that they do not develop into dominant, homogenous stands that can severely reduce plant species diversity. Because the Water District mitigation site is located in a wellhead protection zone, **NO HERBICIDES OR OTHER CHEMICAL TREATMENTS** will be used to control invasive plants.

***Wetland Compensation Plan
MaineDOT Calais – St. Stephen Bridge and Border Crossing***

Early Detection and Prevention

Early detection and prevention measures will be implemented to prevent the spread of loosestrife and common reed before they become established. Meander surveys to detect these plants will be conducted at the mitigation site during early July to early August, when these plants are in flower but have not yet begun to seed. Occurrences of purple loosestrife and common reed will be documented, and may be located with Global Positioning System (GPS) for subsequent removal.

Spot Hand-Digging

Where individual loosestrife and common reed plants are present in small numbers, the hand-digging method will be used. A shovel will be used to dig up the plant. The entire plant including root rhizomes, stems, leaves, and flowers will be securely bagged and removed from the site to be properly disposed as trash. When removing these plants, the soil in a 6-inch radius surrounding the plant will be removed in order to minimize any residual seed or root fragments. Disturbance to soil and native vegetation beyond the 6-inch radius will be minimized during the removal process. Black plastic may be used to cover the disturbed area to prevent residual root fragments and potential seeds from sprouting. This process may have to be repeated each summer in those areas where scattered plants continue to sprout from an existing seed bank.

Biocontrol

Biocontrol methods may be used to control larger populations of purple loosestrife or where significant loosestrife populations occur adjacent to the mitigation site. Leaf-eating beetles (*Galerucella* sp.) that selectively feed on loosestrife and that have been approved by the U.S. Department of Agriculture for use as biocontrol agents will be released early in the growing season. The number of beetles released will vary with the level of infestation, but will be sufficient to promote the establishment of a self-sustaining population that will provide long-term control.

APPENDIX D

**Draft Declaration of Covenants and Restrictions
for the Water District Mitigation Site**

DRAFT

Water District Site, Calais, 12/8/05

**DECLARATION OF COVENANTS AND RESTRICTIONS
AFFECTING PROPERTY OF THE STATE OF MAINE, by and through its
DEPARTMENT OF TRANSPORTATION, located at WATER DISTRICT SITE,
CALAIS, WASHINGTON COUNTY, STATE OF MAINE**

THIS DECLARATION is made this _____ day of _____, 2006, by the **STATE OF MAINE**, by and through its Department of Transportation, having an address of 16 State House Station, Augusta, ME 04333-0016, (hereafter "Department");

WHEREAS, the Department holds title to certain real property situated in Calais, Maine, as described and as shown on Maine Department of Transportation Right-of-Way Map, State Highway "111", Calais, County of Washington, Federal Aid Project No. NCPD/CBI-8483(320)X (P.I.N. 8483.32), dated February 2005, on file in its office at Augusta, D.O.T. File No. 15-293, and described in Notice of Layout and Taking recorded in the Washington County Registry of Deeds on TBD, in Book TBD, Page TBD, said real property being more specifically described in Exhibit A, attached hereto and incorporated herein; and

WHEREAS, the Department was issued a permit by the US Army Corps of Engineers (hereafter "Corps") Action Number TBD pursuant to (1) Section 404 of the Clean Water Act (33 U.S.C. section 1344) or Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401) under the administrative regulatory authority of the Corps New England District, Regulatory Branch, setting forth authorization for certain dredge and/or discharge of fill activities in waters of the United States, including wetlands and streams; and

WHEREAS, said permit is attached hereto as Exhibit "B" and by this reference is made a part hereof; and

WHEREAS, dredge and/or discharge of fill material in jurisdictional waters of the United States including wetlands and streams pursuant to the Clean Water Act, Section 404, and/or the Rivers and Harbors Act of 1899, Section 10, requires compensatory mitigation and perpetual protection of the mitigation property; and

WHEREAS, the real property described in Exhibit A is being preserved, restored or enhanced as a wetland, buffer to wetlands, stream, streamside buffer, and/or upland buffer to jurisdictional waters of the United States, as well as non-jurisdictional waters of the United States where such property has been accepted as compensatory mitigation for the environmental effects of the Department's transportation project known as the Calais-St. Stephen International Bridge and Border Crossing Project (MDOT PIN 8483.32) pursuant to the permit; and

WHEREAS, the Protected Property consists of a total of TBD acres in one parcel of land; and

WHEREAS, the environmental conservation functions and values are summarized and described in Exhibit "C", attached hereto and made a part hereof; and

WHEREAS, the Department and the Corps, recognizing the functions and values of the Protected Property, have the common purpose of placing the within covenants and restrictions over the Protected Property to benefit, protect and conserve the functions and values of the Protected Property, conserve and protect the indigenous plant and animal populations, and prevent the use or development of the Protected Property for any purpose or in any manner that would conflict with its condition, for the benefit of Washington County and the people of the State of Maine; and

WHEREAS, the Protected Property shall have significant educational, aesthetic, and ecological functions and values (the "Conservation Values"); and

WHEREAS, preservation of the Protected Property is consistent with federal, state, and local governmental conservation policy; and

WHEREAS, the Department intends to convey herein to the Corps the right to preserve and protect the Conservation Values of the Protected Property by enforcing the covenants and restrictions set forth herein; and

NOW THEREFORE, in consideration of the above and as required mitigation for dredge and/or discharge of fill material in waters of the United States including wetlands and streams, the Department does hereby covenant and agree that the Protected Property is and shall be held, and if conveyed shall be subject to, the restrictions, covenants, conditions, servitudes and easements set forth in the various clauses of this Declaration, which shall inure to the benefit of and be binding upon the Department, its successors and assigns, and shall be binding upon the Protected Property as described herein.

1. PURPOSE: It is the purpose of this Declaration to assure that the Protected Property: (1) will be retained forever in its preserved status; and (2) will not be used in a way that will significantly impair or impede the Conservation Values of the Protected Property.

2. RIGHTS OF THE THIRD PARTY BENEFICIARY: To accomplish the purposes of this Declaration, the Corps, or its successor, as third party beneficiary hereof, is hereby specifically granted the authority to enforce the provisions of the Declaration and shall have the following enforcement rights:

- a. The right to preserve and protect the Conservation Values of the Protected Property;
- b. The right to enter and inspect the Protected Property over other lands, easements, or rights-of-way of the Department (if any) at any reasonable time and in any reasonable manner provided that the time and manner of such entry does not unreasonably interfere with the uses of the Protected Property permitted hereunder or the quiet

enjoyment of other lands of the Department (if any), and to enforce by proceedings at law or in equity the covenants hereinafter set forth, including the right to require restoration of the Protected Property to its condition prior to any breach hereof; and,

- c. The right to prevent any activity on or use of the Protected Property that is inconsistent with the purpose of this Declaration, however, the actual activities and outcomes will determine compliance with this Declaration; and
- d. Appropriate remedy for violation of this Declaration is contemplated to include, without limitation, injunctive relief to restrain such violation, restoration of such areas or features of the Protected Property that may be damaged by any inconsistent activity or use, administrative, civil or criminal penalties as well as any other remedy available under law or equity. However, no violation of this covenant shall result in a forfeiture or reversion of title. Nothing herein shall be construed to entitle any governmental agency to enforce the terms of this Declaration against the Department for any changes to the Protected Property due to causes beyond the Department's control, such as changes caused by fire, flood, storm, industrial accident, earth movement, or the unauthorized wrongful acts of a third party, or for any prudent action taken by the Department under emergency conditions to prevent, abate, or mitigate significant injury to the Protected Property resulting from such causes.

3. RIGHTS OF DEPARTMENT AND USE OF THE PROPERTY: The Protected Property shall be used only for limited educational and conservation purposes provided that any such use is consistent with the purposes of this Declaration. It is expressly understood and agreed that this covenant does not grant or convey to the general public, any rights of ownership, interest in, or use of the Protected Property. However, the protection of jurisdictional and non-jurisdictional waters of the United States, its buffers and uplands, its floodplains, vegetation, open space, aquatic and wildlife habitat, are considered herein a benefit to the general public and to the people of the State of Maine. Under this Declaration the Department reserves the following rights:

- a. The right (1) to carry out wetland restoration and creation, and enhance the natural habitat as approved by the Corps, (2) to undertake management and maintenance of the Protected Property, and (3) to carry out additional compensatory mitigation efforts, if any, as may be required by the permits described on Page 1 of this Declaration, and by applicable laws and regulations in effect on the date of this Declaration or permitted in the future.
- b. The right to manage vegetation on the Protected Property, to:
 - i. control and prevent the spread of fire and disease,
 - ii. prune or remove diseased or unsafe vegetation in accordance with current scientifically based practices recommended by the Maine Forest Service, or its successor;
 - iii. control invasive species using manual, chemical or biological methods, in accordance with all state and federal requirements; and
 - iv. maintain and improve important wildlife habitat values of the Protected Property; and

- v. as necessary to the exercise of the reserved rights in Sections c and d below
- c. The right to permit limited excavation of the surface of the Protected Property for ecological, educational, or scientific research conducted under then current generally accepted professional standards, and without adverse impact to the Conservation Values protected by this Declaration, subject to prior approval of the Maine Historic Preservation Commission ("MHPC") with regard to excavation location;
- d. The right to construct and maintain minor structures, such as: boundary signs and markers; walking trails in the uplands using pervious materials; and barriers to keep out livestock, trespassers or to protect fragile features and areas under management or study.
- e. The right to sell, give, or otherwise convey the Protected Property, provided such conveyance is subject to the terms of this Declaration and the condition that the Protected Property must remain in its current configuration, and shall not be divided, subdivided, or otherwise conveyed in lots or parcels, and the terms, conditions, covenants, restrictions and purposes imposed herein shall be binding upon the Department only so long as the Department shall own the Protected Property. Notwithstanding the foregoing, the Department shall have the right to transfer any portion of the Protected Property to a state agency, municipality or qualified conservation organization. In the event that the Protected Property shall be sold or transferred, said terms, conditions, covenants, restrictions and purposes imposed herein shall be binding upon all other successors to the Department in interest, and shall continue as a servitude running with the Protected Property in perpetuity.

4. PROHIBITED ACTIVITIES AND USES: Any activity on or use of the Protected Property inconsistent with the purposes of this Declaration is prohibited, including, but not limited to, the following:

- A. Residential, commercial, or industrial development, quarrying, mining, agriculture, farming or ranching;
- B. Raising of any structures, temporary or permanent, except as allowed under Section 3 above.
- C. Filling, paving, dumping, excavation or other alteration to the surface of the Protected Property other than that caused by the forces of nature, except as allowed under Section 3 above.
- D. The placement, storage or dumping of refuse, trash, debris, waste materials, vehicle bodies or parts, pollutants or other fill materials within the Protected Property,.

10. SEVERABILITY: If any provision of this Declaration or the application thereof is found to be invalid, the remainder of the provisions of the Declaration, or the application of such provisions to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

11. AMENDMENTS: The Department, its successors and assigns reserve the right to propose and implement amendments to this Declaration. This Declaration shall not be amended or extinguished except by written approval of the Corps, or its successor in administration of the Clean Water Act or the Rivers and Harbors Act of 1899.. Any such amendment shall be recorded in the Registry of Deeds of Washington County, and shall specifically cross reference this Declaration.

IN WITNESS WHEREOF the Department, has executed and sealed this document the day and year first above written.

**STATE OF MAINE
DEPARTMENT OF
TRANSPORTATION**

Witness

By: _____
David A. Cole, Commissioner

STATE OF MAINE
COUNTY OF KENNEBEC

Dated: _____, 2005

Then personally appeared the above named David A. Cole, Commissioner of the Maine Department of Transportation, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the Maine Department of Transportation.

Before me,

Attorney/Notary Public
Print Name:
My Commission Expires:

EXHIBIT A

Boundary Description - to be determined

EXHIBIT B

Copy of Corps Permit – to be provided

EXHIBIT C

Summary of Environmental Conservation Functions and Values – to be provided

APPENDIX E

**Letter from Moosehorn National Wildlife Refuge to MaineDOT
Regarding Acceptance of Hardscrabble Parcel**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

U.S. Fish & Wildlife Refuge
Moosehorn NWR
103 Headquarters Road
Baring, Maine 04694



Maine Department of Transportation
Environmental Office
Mr. Mark Lickus
16 State House Station
Augusta, ME, 04333

DEC 12 2005


Dear Mark:

The refuge is very interested in accepting the Hardscrabble road property as an addition to the Baring Division of the Moosehorn NWR. The site described in our earlier letter fulfills the mission of the refuge with the unique opportunity to protect wetlands, Bald Eagle and other migratory birds. The property will be managed under the Refuge Improvement Act of 1997 and this will insure that the resources are protected to the full extent. All uses will be evaluated through the biological compatibility process to insure they are compatible with the refuge mission. The current legal uses that exist on the property will be allowed to continue until such a time that a formal evaluation can be conducted.

The U.S. Fish and Wildlife Service (Service) does not normally accept properties with restrictions on it to include conservation easements. However, it is the refuge's opinion that the current management practices and protection afforded the existing 28,000 acres at the Baring Unit will service the Hardscrabble property equally as well. The current protection should realize all the protection measures that the easement would affect on the property.

It is the refuge's desire to move forward with this process. Please contact my office at any time to speak with me or the Deputy Refuge Manager, Bob Peyton, concerning this acquisition project. The cooperation of the state DOT and its consideration of the refuge are very much appreciated by the Service.

Sincerely,


William J. Kolodnicki
Project Leader

APPENDIX F

**U.S. Army Corps of Engineers' Comments
and MaineDOT Response to Comments Memo
(April 2006)**

**NEW ENGLAND DISTRICT
MITIGATION PLAN CHECKLIST**

(see New England District Mitigation Guidance
document for information on these items)

Project: MEDOT – Calais to St. Stephen
File No: NAE-2006-704
Corps Project Manager: Clement
City: Calais
State: Maine
Plan Title, Preparer, Date: Wetland Compensation Plan, MEDOT Calais-St.
Stephen International Bridge and Border Crossing Project; Woodlot Alternative, Inc.;
January 2006

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- H. Coarse Woody Debris and Other Features**
- I. Erosion Controls**
- J. Invasive and Noxious Species**
- K. Off-Road Vehicle Use**
- L. Preservation**
- M. Monitoring Plan**
- N. Assessment Plan**
- O. Contingency**
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A. General Information

1. [OK] Mitigation plan and documentation submitted as one complete package.
2. Site location:
 - a. [OK] Locus map(s)
 - b. [OK] Aerial photo(s)
 - c. [] Latitude/Longitude of mitigation site(s) in decimal format.

Stated as being on Figure 1, but not there.

- d. [] 8-digit Hydrologic Unit Code(s) for impact area(s) and mitigation area(s).

B. Impact area(s)

1. [OK] Wetland acreage at each impact site.
 - 1.71 acres PEM*
 - 4.45 acres PSS*
 - 0.52 acre PFO*
 - 0.13 acre RUS* = total 6.81 acres

2. [OK] Wetland classes at each impact site.

3. [] Stream(s) at each impact site.

Area given, but not stream length

4. [OK] Describe both site specific and landscape level wetland and stream functions and values at each impact site.

Primary functions impacted are water quality protection and wildlife habitat; also groundwater interchange, floodflow alteration, and aquatic habitat. Stream functions were not separated out, but presumably they include aquatic habitat and floodflow alteration.

5. [OK] Describe type and purpose of work at each impact site.

New bridge

6. [] Watershed or regional plans for the area.

C. Mitigation area(s)

1. Background information

a. [OK] Mitigation alternatives.

b. [OK] Existing wildlife use.

c. [OK] Existing soil.

d. [OK] Existing vegetation.

e. [] Surrounding land use.

f. [] USFWS and/or NOAA Clearance Letter or Biological Opinion

g. [OK] SHPO Cultural Resource Clearance Letter

2. Mitigation proposed

a. [OK] Wetland acreage proposed at each site.

Water District - 0.52 acre enhancement

0.42 acre creation

2.56 acres upland buffer enhancement

Hardscrabble Road - 178 acres preservation

Magurrewack Mountain - 40 acres preservation - upland, buffer to Magurrewack Stream

b. [] Wetland classes (e.g., Cowardin, et. al. and hydrogeomorphic classification) proposed at each site.

c. [OK] Site specific and landscape level functions and values proposed at each site.

Water quality enhancement and wildlife habitat; while not specified, the preservation of various stream bank buffers in the Hardscrabble Road and Magurrewack Mountain will preserve stream functions

d. [] Describe nature of any stream mitigation.

e. [OK] Reference site(s).

f. [OK] Design Constraints

close proximity to municipal water wells

g. [OK] Construction oversight.

h. [] Project construction timing.

Mitigation at Water District to be constructed 1-2 years after impacts

i. [OK] Responsible parties.

j. [] Appropriate financial assurances.

- k. Potential to attract waterfowl and other bird species that might pose a threat to aircraft?

D. Hydrology

1. [OK] Evidence of adequate hydrology to support the desired wetland or stream.
 - a. [N/A] "Typical" year water budget
 - b. [N/A] "Wet" year water budget
 - c. [N/A] "Dry" year water budget
2. [OK] Water source(s)
Surface runoff
3. [N/A] Vernal pool (if any) hydrology is appropriate.

E. Grading Plan

1. Plan View
 - a. [OK] Existing and proposed grading plans.
 - b. [OK] Microtopography
 - c. [OK] The scale should be in the range of 1"=20' to 1"=100'.
 - d. [OK] All items on the plan must be legible on 8 ½ x 11" sheets.
 - e. [OK] Plans have a bar scale.
2. [OK] Representative cross-sections
3. [NONE] Other - Specific staff recommendations related to grading.

F. Topsoil

1. [OK] Proposed source of topsoil.
2. [OK] Twelve or more inches of natural or manmade topsoil in all wetland mitigation areas.
8-12 inches proposed; it is noted that the clay soil may need to be hand-tilled and broken to facilitate root penetration by woody plants - if this is done, care should be taken not to penetrate any confining layers
3. Appropriate organic content of topsoil.
Not specified, but anticipated that reused topsoil from impact area will meet minimum; this should be ensured

G. Planting Plan

1. Plans use scientific names.
2. [OK] Plant materials are native and indigenous to the area of the site(s).
Many of plants will be transplanted from impact areas
3. [OK] Vegetation community types or zones are classified in accordance with Cowardin, et al. (1979) or other similar classification system.
4. [OK] Plan view drawings show proposed locations of planted stock.
5. [OK] More than 50% of the plantings in each zone are structural determinants for the community type designated for that zone.
6. [OK] Woody stock density is appropriate.
7. Herbaceous stock density is appropriate.
8. Seed mix composition is provided.
9. [OK] Representative cross section plans showing vegetative community zones.
10. [OK] Invasive species not proposed for planting or seeding.

11. Relocation of plantings allowed when appropriate.
12. [NONE] Other - Specific staff recommendations related to planting.

H. Coarse Woody Debris and Other Features

[OK] Appropriate amounts and range of decomposition of coarse woody debris are proposed.

I. Erosion Controls

[OK] Erosion control removal deadline is included.

J. Invasive and Noxious Species

1. [OK] Risk
2. [OK] Constraints
Herbicides cannot be used due to drinking water source
3. [OK] Control Plan

K. Off-Road Vehicle Use

1. [OK] No off-road vehicle use in immediate vicinity, or if so, control measures addressed.
2. [N/A] Control plan, if appropriate.

L. Preservation

1. [OK] Adequate buffers
2. [N/A] Wetlands within subdivisions are protected along with appropriate buffers.
3. [OK] Required preservation language is included.
4. [OK] Plans of preservation area(s).
5. [OK] Form of legal means of preservation
Hardscrabble Road and Magurrewock Mountain parcels to be transferred to FWS for incorporation into Moosehorn NWR
6. Documentation of acceptance by receiving agency (if applicable)

M. Monitoring Plan

Appropriate monitoring is proposed.
Only common reed (Phragmites australis) and purple loosestrife (Lythrum salicaria) are proposed for control at the Water District site. Reed canary grass (Phalaris arundinacea) should also be controlled. Otherwise, OK.

N. Assessment Plan

[OK] An appropriate assessment plan is included.

O. Contingency

[OK] Plan for dealing with unanticipated site conditions or changes.

P. Other Comments

The mitigation plan largely followed our mitigation checklist, which was very helpful. Appendix B also included a cross-reference between the checklist and the document. However, although this cross-reference noted the current (15 June 2004) checklist, it actually used an older version of the checklist and several necessary items were not included in the document. The missing information is noted above.

Overall, the proposed mitigation appears adequate compensation for impacted wetland functions and values. While there will be a net loss of wetland acreage, some functions will be enhanced at the Water District site and the two preservation areas will protect aquatic resources there from subsequent impacts.

ERS Scientist: Paul Minkin Date Plan Reviewed: 4 April 2006



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

JOHN ELIAS BALDACCI
 GOVERNOR

DAVID A. COLE
 COMMISSIONER

To: Paul Minkin, Jay Clement, U.S. Army Corps of Engineers

From: Mark Lickus, MaineDOT Environmental Office *ML*

Re: MaineDOT Response to 4-04-2006 Corps Comments on Wetland Compensation Plan (January 2006) for Calais – St. Stephen International Bridge and Border Crossing Project

Date: 14 April 2006

VIA EMAIL

The MaineDOT has prepared the following response to the Corps' request for additional information and comments on the MaineDOT Wetland Compensation Plan dated January 2006 (hereafter the Plan) for the Calais – St. Stephen International Bridge and Border Crossing Project. The information and responses to comments provided below are keyed to the Table of Contents on the New England District Mitigation Plan Checklist. MaineDOT appreciates the Corps' comments and will incorporate the recommendations into the final design of the mitigation site as appropriate. Please contact me if you have any further questions about the Plan or the status of the mitigation project.

A. General Information

2. c. *Latitude/Longitude of the mitigation site(s) in decimal format –*

<u>Site</u>	<u>Latitude</u>	<u>Longitude</u>
Hardscrabble Road	45.138225	67.232565
Magurrewock Mountain	45.154933	67.283580
Water District	45.162550	67.295818

2. d. *8-digit Hydrologic Unit Code(s) for impact area(s) and mitigation area(s) –* The impact areas and the mitigation areas are located in the Eastern Maine Coastal – St. Croix River watershed HUC 01050001.

B. Impact Areas

3. *Stream(s) at each impact site –*

Sta. 0+480 = 675'

Sta. 1+255 = 400'

Sta. 1+520 = 85' (revised plans dated 3-16-06 show impacts to this stream have been avoided)

St. Croix River impacts = pier only

4. *Functions and values* – Functions and values of the impact wetlands are described in Exhibit 13 of the MaineDOT NRPA permit application and were only summarized in the Plan. The MaineDOT Environmental Office prepared the functional assessment dated 1/27/06. The principal stream functions impacted are floodflow alteration and aquatic habitat, as inferred by the Corp.
6. *Watershed or regional plans for area* – MaineDOT is not aware of any watershed management plans or regional plans for the project vicinity. The St. Croix River is outside the Downeast Maine Salmon Recovery Plan area. The Hardscrabble Road mitigation site, however, includes an area along Magurrewock Stream identified by Moosehorn Refuge as a priority area for acquisition and incorporation into the Refuge.

C. Mitigation Area(s)

1. e. *Surrounding land use* – The proposed Water District mitigation site is currently surrounded by both public and private property that support commercial, public utility, and conservation land uses. The parcel to the north of the site was previously acquired by others as mitigation for impacts associated with a private development project. This parcel was conveyed to the Quoddy Regional Land Trust and is protected by a conservation easement. The parcel to the east is owned by the City of Calais and managed by the Calais Water District and contains a water supply well, pump station and gravel access road. The Calais industrial park lies to the south and west of the site. A warehouse, a commercial office and storage building, and several undeveloped lots are located adjacent to the site.

Land use to the south of the site will change with the construction of the proposed border crossing project. Several developed and undeveloped parcels in the industrial park that abut the mitigation site will be acquired by MaineDOT in order to obtain part of the right-of-way needed to construct the proposed GSA border crossing facility. The new facility will consist of access and approach roads, parking areas, customs and immigration buildings and inspection stations and will be fully lit. The new facility will be operated 24/7 by the Department of Homeland Security.

1. f. *USFWS and/or NOAA Clearance Letter or Biological Opinion* – The USFWS issued a letter to MaineDOT dated November 8, 2005 which concurred with MaineDOT's determination that the proposed border crossing project was not likely to adversely affect a bald eagle nest site located approximately 2,000 feet from the southerly limit of the project along Route 1. The Water District mitigation site is located approximately 6000 feet north of the eagle nest.
2. b. *Wetland classes proposed at each site* – Information on the proposed vegetative cover is described in the plan on p.13 and Table 4, and shown on Figure 4; however specific acreages were not included in order to allow for flexibility and additional site evaluation during the final design process. The table below summarizes the anticipated ratios of wetland classes and upland tree/shrub cover.

Compensation type	Acreage	Wetland class
Enhancement (wetland)	0.52	PEM/PSS/ PUB (shallow pool) (approx. 1:3:1 ratio)
Creation (wetland)	0.42	PEM/PSS (approx. 1:1 ratio)
Subtotal	0.94	
Enhancement (transitional wetland & upland buffer)	0.30	PSS/PFO (approx 2:1 ratio)
Enhancement (upland buffer)	2.26	Trees/Shrubs (approx 2:1 ratio)
Subtotal	2.56	

2. d. *Describe nature of any stream mitigation* – The opportunity for stream mitigation is not available at the Water District site and was not proposed in the mitigation plan. Preservation of stream channels and adjacent wetland and upland buffer areas will be provided at the Hardscrabble Road site as mitigation for adverse impacts to streams from the border crossing project.
2. h. *Project construction timing* – Section 11.0 of the Plan described the estimated project schedule at the time of permit application. The construction timing of the Water District mitigation site is currently being evaluated as part of the final design process. The border crossing project will be constructed in three phases over a period of two and a half years. In accordance with the Plan, mitigation construction at the site will be advertised as part of Phase II of the project in October 2006. Phase II consists of the construction of the border crossing access road and two bridges over the railroad and has the largest share of wetland impacts. Mitigation construction will proceed concurrently with the construction of Phase II and will be completed no later than Spring 2008. However, MaineDOT is currently assessing whether it would be feasible to complete the mitigation earthwork in 2006 and the initial planting in the Spring or Fall of 2007. In either case, mitigation construction is expected to begin 3 to 4 months after the start of bridge construction (Phase I), will be constructed concurrently with the project, and will be completed before the anticipated completion October 2008 date of Phase III (Route 1 upgrade).
2. j. *Appropriate financial assurances* – MaineDOT understands that unlike private developers public transportation agencies are not required to provide financial assurance of their ability to implement a mitigation project. The MaineDOT has budgeted funding for preliminary and final engineering, land acquisition, construction, construction engineering, and post-construction monitoring sufficient to fully implement the proposed mitigation. The Calais Border Crossing project is

one of MaineDOT's highest priority projects and has received a Congressional earmark to allow the project to be constructed.

- 2.k. *Potential wildlife attractants and threat to aircraft* – The proposed mitigation project will not result in conditions hazardous to aircraft safety as described in FAA Advisory Circular 150/5200-33. The closest municipal airport is located in Princeton, over 13 miles northwest of the Water District site.

F. Topsoil

2. *Topsoil thickness* - We concur with the Corps' comment that confining or perching layers of the subsoil should not be disturbed during mitigation grading in order to maintain existing wetland hydrology.
3. *Appropriate organic content of topsoil* – As described in the Plan, wetland topsoil will be salvaged selectively from the impact areas and placed on the finished subgrade of the creation area. Samples of the existing wetland topsoil will be taken and analyzed during final design to determine the organic content of the soil. Soils not meeting the minimum 4% organic content requirement as specified in the Corps guidelines will be amended with suitable upland topsoil or, depending on availability, other sources of organic carbon such as composted woodwaste, as necessary to achieve the standard.

G. Planting Plan

1. *Plans use scientific names* – Scientific names of vegetative species were used throughout the text, but were omitted from Table 4 for brevity. The common and scientific names of the trees and shrubs proposed for planting at the site are as follows:

	Common Name	Scientific Name
Trees:		
	American beech	<i>Fagus grandifolia</i>
	Balsam fir	<i>Abies balsamea</i>
	Gray birch	<i>Betula populifolia</i>
	Green ash	<i>Fraxinus pennsylvanica</i>
	Northern white cedar	<i>Thuja occidentalis</i>
	Paper birch	<i>Betula papyrifera</i>
	Red maple	<i>Acer rubrum</i>
	Red pine	<i>Pinus resinosa</i>
	Striped maple	<i>Acer pensylvanicum</i>
	Tamarack	<i>Larix laricina</i>
	White ash	<i>Fraxinus americana</i>
	White pine	<i>Pinus strobus</i>
Shrubs:		
	Black chokeberry	<i>Aronia melanocarpa</i>
	Meadowsweet	<i>Spiraea latifolia</i>
	Nannyberry	<i>Viburnum lentago</i>

	Northern arrowwood	<i>Viburnum recognitum</i>
	Red-osier dogwood	<i>Cornus sericea</i>
	Speckled alder	<i>Alnus incana ssp. rugosa</i>
	Sweetgale	<i>Myrica gale</i>
	Willow (native only)	<i>Salix spp.</i>
	Winterberry	<i>Ilex verticillata</i>

7. *Herbaceous stock density* – Not applicable. Herbaceous plantings are not proposed at the site.
8. *Seed mix composition* – Preliminary wetland and upland seed mixes are provided in Table 5, p. 15.
11. *Relocation of plantings* – As noted in the Plan, the species listed and the locations of the plantings shown are approximate and will be confirmed during the final design process. Species not specified in the Plan will not be used without written approval from the Corps. In accordance with Section 11.0 Estimated Schedule, final design plans for the Water District site will be submitted to the Corps for review before the mitigation project is advertised for construction by MaineDOT.

L. Preservation

6. *Documentation* – Appendix E of the Plan contains a letter from William J. Kolodnicki, Project Leader of Moosehorn NWR, confirming the refuge's interest in adding the Hardscrabble Road parcel to the Baring Division of the refuge. Mr. Kolodnicki has also confirmed via email the refuge's interest in accepting the Magurrewock Mountain parcel. A copy of the email is available upon request.

M. Monitoring Plan

Appropriate monitoring is proposed – Reed canary grass was not noted as a dominant herbaceous species in the areas proposed for wetland creation and enhancement, but is known to occur in wetlands and uplands in the project vicinity. Some reed canary grass establishment within the site is not unexpected and will be considered acceptable provided it is limited to scattered plants or small clumps within the site. As a preventative measure, topsoil will not be salvaged from impact wetlands infested with reed canary grass for use within the mitigation site. To reduce the potential for reed canary grass establishment, areas disturbed during mitigation construction will be seeded with a mix of native wetland and/or upland species. Areas treated with salvaged wetland topsoil are expected to revegetate quickly with desirable wetland species and will only be seeded with a temporary stabilization mix as necessary. Competition and shade from volunteer and planted vegetation within the enhancement area is expected to minimize the potential for widespread colonization of the site by reed canary grass. As noted in the Plan, herbicides will not be used to control invasive species within the mitigation site because of the site's proximity to the public drinking water wells.

P. Other Comments

The discrepancy between the 15 June 2004 date on the cross-reference table and the older version of the contents of the table was an oversight and will be updated in future MaineDOT compensation plans.