Updated 11/10/10

STATE PROJECT

Effective November 10, 2010
Supersedes January 20, 2010

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, (if required), 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) an electronic Bid Guaranty (if required) 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 items in the Schedule of Items (excluding non-selected alternates).
4. 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 or
   c) an electronic bid bond submitted with an electronic bid.

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 located at 16 Child Street 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, and submit with your bid. If you are submitting your bid electronically, you must FAX the form to (207) 624-3431.

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.

January 30, 2004
Supercedes February 11, 2003

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 David Venner 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 infrormation:

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, executers, 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.

State of Maine
Department of Transportation

REQUEST FOR INFORMATION

Date _____ Time _____

Information Requested: **PIN: _____** **Town(s): _____**

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Request by: _____ **Phone: (_____)_____**
Bid Date: _____ **Fax: (_____)_____**

Complete top portion of form and transmit to the number listed in the Notice to Contractors

RFI No: _____ **RFI received: _____**

Response:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Response By:_____ Date: _____

September 14, 2007

Vendor Registration

Prospective Bidders must register as a vendor with the Department of Administrative & Financial Services if the vendor is awarded a contract. Vendors will not be able to receive payment without first being registered. Vendors/Contractors will find information and register through the following link –
http://www.maine.gov/purchases/vendorinfo/vss.htm .

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 Stanley Brook Bridge Replacement in the town of **MOUNT DESERT**" will be received from contractors at the Reception Desk, Maine DOT Building, Capitol Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on May 18, 2011 and at that time and place publicly opened and read. Bids will be accepted from all bidders. The lowest responsive bidder must have completed, or successfully complete, a bridge, or project specific prequalification to be considered for the award of this contract. **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. Until further notice, dual bids (one paper, one electronic) will be accepted, with the paper copy taking precedence.**

Description: Project No. 016718.00

Location: In Hancock County, project is located on route 3 approximately 2.7 miles east of route 198.

Scope of Work: Stanley Brook Bridge replacement plus 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.maine.gov/mdot/contractors/ 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 Steve Bodge** 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 888-516-9364.

Plans, specifications and bid forms may be seen at the Maine DOT Building in Augusta, Maine and at the Department of Transportation's Regional Office in Bangor. 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 $29.00 ($33.50 by mail). Half size plans $14.50 ($17.50 by mail), Bid Book $10 ($13 by mail), Single Sheets $2, payment in advance, all non-refundable.

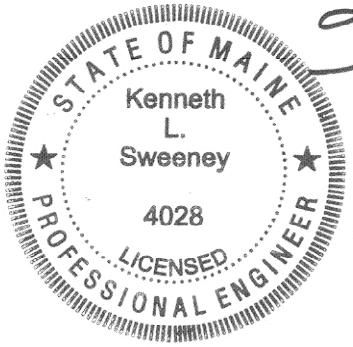
Each Bid must be made upon blank forms provided by the Department and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of $30,000.00 payable to Treasurer, State 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.

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.maine.gov/mdot/contractor-consultant-information/contractor_cons.php

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

Augusta, Maine
April 27, 2011



KENNETH L. SWEENEY P.E.
CHIEF ENGINEER

Mount Desert
Stanley Brook Bridge
PIN 016718.00
April 14, 2011
Supercedes August 3, 2004

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/contractors/ . 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)

March 14, 2007
Supersedes March 3, 1966

Non-federal Projects Only

NOTICE TO CONTRACTORS - PREFERRED EMPLOYEES

Sec. 1303. Public Works; minimum wage

In the employment of laborers in the construction of public works, including state highways, by the State or by persons contracting for the construction, preference must first be given to citizens of the State who are qualified to perform the work to which the employment relates and, if they can not be obtained in sufficient numbers, then to citizens of the United States. Every contract for public works construction must contain a provision for employing citizens of this State or the United States. The hourly wage and benefit rate paid to laborers employed in the construction of public works, including state highways, may not be less than the fair minimum rate as determined in accordance with section 1308. Any contractor who knowingly and willfully violates this section is subject to a fine of not less than $250 per employee violation. Each day that any contractor employs a laborer at less than the wage and benefit minimum stipulated in this section constitutes a separate violation of this section. [1997, c. 757, §1 (amd).]

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 SECTION NO.1					
0010	202.15 REMOVING MANHOLE OR CATCH BASIN	1.000 EA				
0020	202.19 REMOVING EXISTING BRIDGE	LUMP	LUMP			
0030	202.1913 REMOVE ABANDONED ASBESTOS-CONTAINING PIPE	75.000 LF				
0040	202.1914 REMOVE OR ABANDON SEWER SERVICE	LUMP	LUMP			
0050	203.20 COMMON EXCAVATION	790.000 CY				
0060	203.24 COMMON BORROW	5.000 CY				
0070	203.25 GRANULAR BORROW	165.000 CY				
0080	203.33 SPECIAL FILL	150.000 CY				
0090	203.35 CRUSHED STONE FILL	190.000 CY				

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0100	206.082 STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	715.000 CY				
0110	304.10 AGGREGATE SUBBASE COURSE - GRAVEL	1510.000 CY				
0120	403.207 HOT MIX ASPHALT 19.0 MM HMA	326.000 T				
0130	403.208 HOT MIX ASPHALT 12.5 MM HMA SURFACE	184.000 T				
0140	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	48.000 T				
0150	403.213 HOT MIX ASPHALT 12.5 MM BASE	184.000 T				
0160	409.15 BITUMINOUS TACK COAT - APPLIED	106.000 G				
0170	502.21 STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	5.000 CY				
0180	502.83 PRECAST BLOCK MAT	900.000 SF				
0190	503.12 REINFORCING STEEL, FABRICATED AND DELIVERED	530.000 LB				
0200	503.13 REINFORCING STEEL, PLACING	530.000 LB				

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0210	508.13 MEMBRANE WATERPROOFING	LUMP	LUMP			
0220	511.07 COFFERDAM: DOWNSTREAM	LUMP	LUMP			
0230	511.07 COFFERDAM: UPSTREAM	LUMP	LUMP			
0240	513.22 CRUSHED STONE SLOPE PROTECTION	175.000 SY				
0250	525.325 DRY-LAID STONE RETAINING WALL	715.000 SF				
0260	525.34 GRANITE MASONRY FACING	200.000 SF				
0270	526.30 TEMPORARY CONCRETE BARRIER - TYPE 1	60.000 LF				
0280	528.9101 GLUE - LAMINATED TIMBER BRIDGE RAIL	LUMP	LUMP			
0290	528.9101 GLUE - LAMINATED TIMBER BRIDGE RAIL TRANSITION	LUMP	LUMP			
0300	528.9104 GLUE-LAM TIMBER BRIDGE RAIL, 4 BAR	LUMP	LUMP			
0310	534.71 PRECAST CONCRETE BOX CULVERT	LUMP	LUMP			

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0320	603.159 12 INCH CULVERT PIPE OPTION III	88.000 LF				
0330	604.072 CATCH BASIN TYPE A1-C	6.000 EA				
0340	604.201 12 INCH STORM WATER CHECK VALVE	2.000 EA				
0350	605.09 6 INCH UNDERDRAIN TYPE B	510.000 LF				
0360	605.11 12 INCH UNDERDRAIN TYPE C	424.000 LF				
0370	606.353 REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	8.000 EA				
0380	607.22 CEDAR RAIL FENCE	294.000 LF				
0390	608.26 CURB RAMP DETECTABLE WARNING FIELD	19.000 SF				
0400	609.11 VERTICAL CURB TYPE 1	878.000 LF				
0410	609.12 VERTICAL CURB TYPE 1 - CIRCULAR	128.000 LF				
0420	609.234 TERMINAL CURB TYPE 1 - 4 FOOT	3.000 EA				

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS		UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0430	609.237 TERMINAL CURB TYPE 1 - 7 FOOT	10.000	EA				
0440	609.26 CURB TRANSITION SECTION B TYPE 1	1.000	EA				
0450	610.08 PLAIN RIPRAP	210.000	CY				
0460	610.16 HEAVY RIPRAP	600.000	CY				
0470	610.18 STONE DITCH PROTECTION	3.000	CY				
0480	613.329 EXTENDED USE EROSION CONTROL BLANKETS	20.000	SY				
0490	615.07 LOAM	11.000	CY				
0500	618.1301 SEEDING METHOD NUMBER 1 - PLAN QUANTITY	3.000	UN				
0510	619.1201 MULCH - PLAN QUANTITY	2.000	UN				
0520	620.58 EROSION CONTROL GEOTEXTILE	300.000	SY				
0530	620.65 REINFORCEMENT GEOGRID	110.000	SY				

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0540	621.541 DECIDUOUS SHRUBS (18 INCH - 24 INCH) GROUP B	25.000 EA				
0550	627.733 4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	1800.000 LF				
0560	627.75 WHITE OR YELLOW PAVEMENT & CURB MARKING	160.000 SF				
0570	627.77 REMOVING PAVEMENT MARKINGS	115.000 SF				
0580	629.05 HAND LABOR, STRAIGHT TIME	40.000 HR				
0590	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	10.000 HR				
0600	631.131 SMALL BULLDOZER-GRADER (INCLUDING OPERATOR)	10.000 HR				
0610	631.15 ROLLER, EARTH AND BASE COURSE (INCLUDING OPERATOR)	10.000 HR				
0620	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	20.000 HR				
0630	639.19 FIELD OFFICE TYPE B	1.000 EA				
0640	641.891 RELOCATE KIOSK	1.000 EA				

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0650	645.116 REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	9.000 EA				
0660	645.271 REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS, TYPE I	2.500 SF				
0670	652.312 TYPE III BARRICADE	4.000 EA				
0680	652.33 DRUM	12.000 EA				
0690	652.34 CONE	12.000 EA				
0700	652.35 CONSTRUCTION SIGNS	600.000 SF				
0710	652.36 MAINTENANCE OF TRAFFIC CONTROL DEVICES	90.000 CD				
0720	652.38 FLAGGER	160.000 HR				
0730	652.41 PORTABLE CHANGEABLE MESSAGE SIGN	1.000 EA				
0740	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP	LUMP			
0750	659.10 MOBILIZATION	LUMP	LUMP			

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0760	801.17 8 INCH PVC SANITARY SEWER (SDR-35)	19.000 LF				
0770	801.18 12 INCH PVC SANITARY SEWER (SDR-35)	10.000 LF				
0780	803.01 TEST PITS	5.000				
0790	803.16 4 FOOT DIAMETER PRECAST SEWER MANHOLE	2.000 EA				
0800	812.164 REBUILDING SEWER MANHOLE	2.000 EA				
0810	822.3403 8 INCH CLASS 51 DUCTILE IRON PIPE	63.000 LF				
0820	822.3403 8 INCH CLASS 51 DUCTILE IRON PIPE CONCRETE ENCASED	50.000 LF				
0830	825.30 ROCK EXCAVATION FOR SANITARY SEWER	10.000 CY				
0840	827.331 TRENCH INSULATION	22.000 SY				
0850	832.07 OWNERS TESTING ALLOWANCE	LUMP	LUMP			
	SECTION 0001 TOTAL				.	

SECTION 0002 SECTION NO.2 WATER DISTRICT

CONTRACT ID: 016718.00 PROJECT(S): 016718.00

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0860	603.1576 12 INCH RESTRAINED END CAP WELDED	2.000 EA				
0870	825.60 12" HIGH DENSITY POLYETHYLENE WATER MAIN SDR 11	120.000 LF				
0880	827.33 TRENCH INSULATION	600.000 LF				
0890	830.14 WATER MAIN BRIDGE CROSSING INSTALL ONLY	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

_____

a corporation or other legal entity organized under the laws of the State of _____, 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 **016718.00** for the **Stanley Brook Bridge Replacement** in the town of **Mount Desert**, County of **Hancock** 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 **May 18, 2012.** 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: **PIN 016718.00 Stanley Brook Bridge Replacement,** 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: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Fifth: 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 Bernhardt, 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

_____

a corporation or other legal entity organized under the laws of the State of _____, 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 **016718.00** for the **Stanley Brook Bridge Replacement** in the town of **Mount Desert**, County of **Hancock** 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 **May 18, 2012.** 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: **PIN 016718.00 Stanley Brook Bridge Replacement,** 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: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Fifth: 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 Bernhardt, 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 **South Nowhere,** 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, 2006.** 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 **____(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 South Nowhere, 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 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 with their bid.

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

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 _____ _____ **in 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 **_____ _____ in 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.

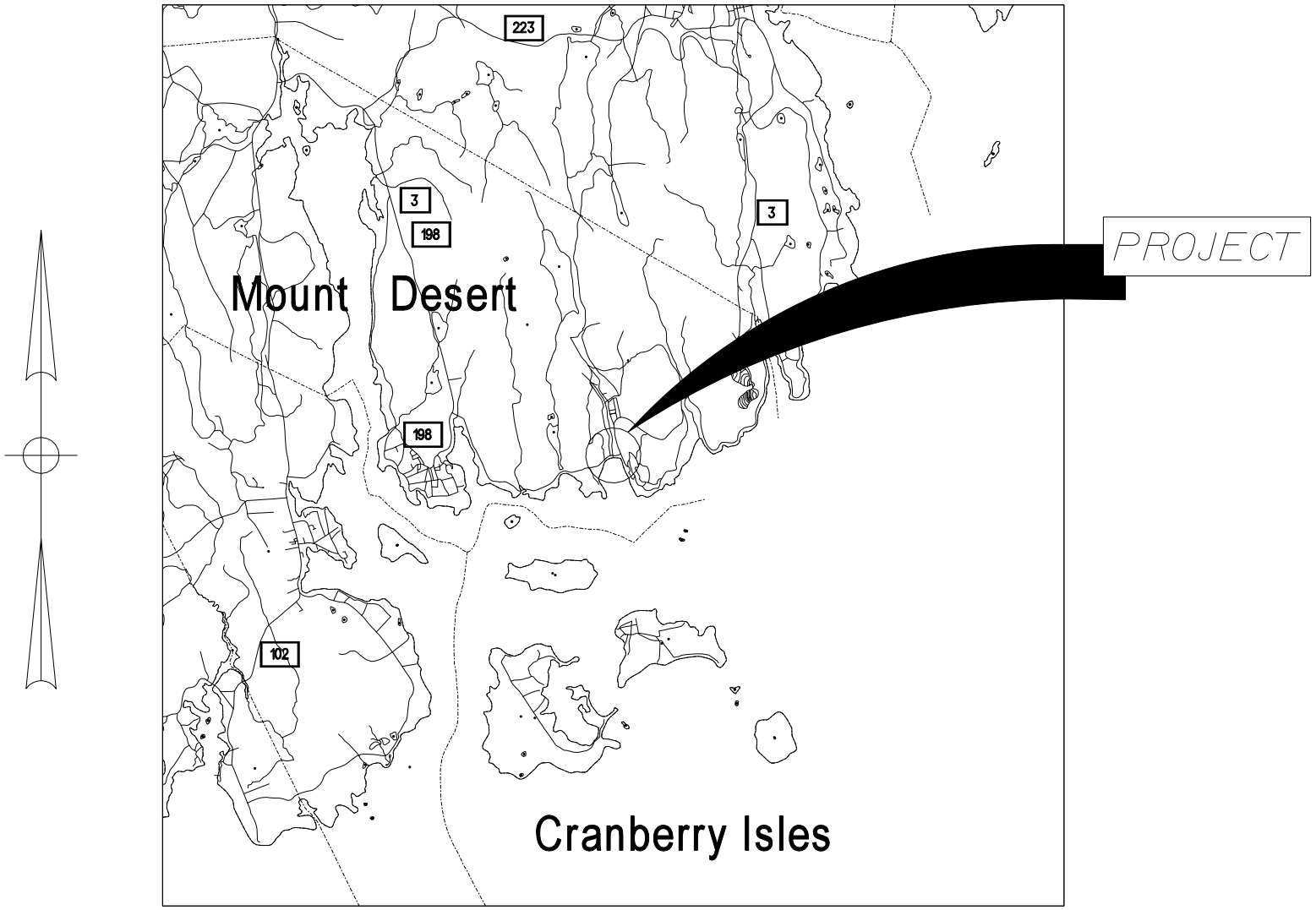
The condition of this obligation is such that if the Principal designated as Contractor in the Contract to construct Project Number _____ in the Municipality of _____ promptly satisfies all claims and demands incurred for all labor and material, used or required by him in connection with the work contemplated 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	…….…....

BRIDGE NO. 5570



LOCATION MAP

State of Maine
Department of Labor
Bureau of Labor Standards
Technical Services Division
Augusta, Maine 04333-0045
Telephone (207) 623-7906

Wage Determination - In accordance with 26 MRSA §1301 et. seq., this is a determination by the Bureau of Labor Standards, of the fair minimum wage rate to be paid laborers and workers employed on the below titled project.

Title of Project Mount Desert Stanley Brook Bridge Replacement 16718.00

Location of Project Mount Desert, Hancock County

2011 Fair Minimum Wage Rates
Heavy & Bridge Hancock County

Occupation Title	Minimum Wage	Minimum Benefit	Total	Occupation Title	Minimum Wage	Minimum Benefit	Total
Asbestos/Lead Removal Worker	$17.00	$0.90	$17.90				
Asphalt Raker	$14.75	$0.35	$15.10	Insulation Installer	$16.00	$2.69	$18.69
Backhoe Loader Operator	$18.25	$2.00	$20.25	Ironworker - Reinforcing	$20.37	$16.82	$37.19
Boilermaker	$32.02	$7.82	$39.84	Ironworker - Structural	$20.37	$5.67	$26.04
Boom Truck (Truck Crane) Operator	$17.00	$2.04	$19.04	Laborers (Incl.Helpers & Tenders)	$13.74	$2.86	$16.60
Bricklayer	$22.05	$0.00	$22.05	Laborer - Skilled	$16.00	$4.90	$20.90
Bulldozer Operator	$16.38	$3.55	$19.93	Line Erector - Power	$20.56	$9.55	$30.11
Cable Splicer	$16.65	$0.00	$16.65	Loader Operator - Front-End	$16.50	$2.61	$19.11
Carpenter	$18.50	$5.54	$24.04	Mechanic, Maintenance	$17.63	$3.71	$21.34
Carpenter - Rough	$16.03	$6.36	$22.39	Mechanic, Refrigeration	$21.82	$3.71	$25.53
Cement Mason/Finisher	$17.50	$0.92	$18.42	Millwright	$26.00	$8.70	$34.70
Communication Equip Installer	$21.00	$3.88	$24.88	Painter	$26.78	$6.90	$33.68
Communication Transmission Erector	$15.73	$3.12	$18.85	Paver - Bituminous	$18.13	$2.35	$20.48
Crane Operator <15 Tons	$20.00	$4.02	$24.02	Pile Driver Operator	$24.53	$5.21	$29.74
Crane Operator =>15 Tons)	$22.25	$6.89	$29.14	Pipe/Steam/Sprinkler Fitter	$24.75	$13.21	$37.96
Crusher Plant Operator	$16.00	$4.45	$20.45	Pipelayer	$20.00	$5.31	$25.31
Driller - Rock	$17.00	$2.25	$19.25	Roller Operator - Earth	$16.13	$1.22	$17.35
Electrician - Licensed	$26.80	$12.21	$39.01	Roller Operator - Pavement	$15.50	$3.30	$18.80
Electrician Helper/Cable Puller (Licensed)	$17.75	$4.29	$22.04	Sheet Metal Worker	$17.91	$3.31	$21.22
Excavator Operator	$17.50	$2.27	$19.77	Truck Driver - Light	$15.00	$2.35	$17.35
Flagger	$14.50	$5.80	$20.30	Truck Driver - Medium	$14.85	$0.84	$15.69
Grader/Scraper Operator	$17.50	$2.56	$20.06	Truck Driver - Heavy	$12.05	$1.90	$13.95
Hot Top Plant Operator	$18.93	$6.21	$25.14	Truck Driver - Tractor Trailer	$16.00	$1.91	$17.91
Industrial Truck (Forklift) Operator	$22.38	$6.60	$28.98				

The Laborer classifications include a wide range of work duties. Therefore, if any specific occupation to be employed on this project is not listed in this determination, call the Bureau of Labor Standards at the above number for further clarification.

Welders are classified in the trade to which the welding is incidental.

Apprentices - The minimum wage rate for registered apprentices are those set forth in the standards and policies of the Maine State Apprenticeship and Training Council for approved apprenticeship programs.

Posting of Schedule - Posting of this schedule is required in accordance with 26 MRSA §1301 et. seq., by any contractor holding a State contract for construction valued at $50,000 or more and any subcontractors to such a contractor.

Appeal - Any person affected by the determination of these rates may appeal to the Commissioner of Labor by filing a written notice with the Commissioner stating the specific grounds of the objection within ten (10) days from the filing of these rates with the Secretary of State.

Determination No: HB-012-2011

Filing Date: April 21, 2011

Expiration Date: 12-31-2011

A true copy

Attest: _____
Michael Roland
Acting Bureau Director
Bureau of Labor Standards

SPECIAL PROVISION
SECTION 102.3
EXAMINATION OF DOCUMENTS, SITE, AND OTHER INFORMATION
(Geotechnical Information)

Add the following to Section 102.3, Examination of Documents, Site and Other Information:

102.3.1 Geotechnical Information In most cases, Geotechnical Information pertaining to the project has been collected and assembled. Bidders and Contractors are obligated to examine and, if necessary, obtain geotechnical information. If one is available, the project geotechnical report may be accessed at the following web address:

http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php.

The Department shall not be responsible for the Bidders' and Contractors' 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.

SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS & RESPONSIBILITIES
(Bridge Closure Notification)

Section 104, General Rights and Responsibilities, of the Standard Specifications is amended as follows:

104.4.10 Coordination of Bridge Closure/Bridge Width Restriction Notification:

Paragraphs 4 and 5 are revised to read as follows:

The Contractor shall notify the following public officials, agencies and organizations approximately thirty days prior to, and then again both ten days before, and the day before the date of the beginning of the closure. The thirty day notice should provide an approximate date and length of closure whereas the ten and one day notices should provide the exact date and the anticipated length of the closure. When the bridge is reopened to traffic, the following list will again be notified. The Contractor shall provide the Department with documentation that the listed public officials, agencies and organizations received the notification at least 10 days prior to the closure/restriction or with proof that the notification was mailed 15 days prior to the closure/restriction.

Town Officials (Manager or First Selectperson) of both Mount Desert and Bar Harbor
County Sheriff's Department
Fire Department (both Mount Desert and Bar Harbor)
Police Department (both Mount Desert and Bar Harbor)
State Police
Rescue Service
Hospitals
Mount Desert Island Regional School System (including school bus services)
Post Office
Chamber of Commerce
Any Large Employers
Acadia National Park Service
Department of Motor Vehicle- Commercial Vehicle Center (207-626-8630)
MaineDOT Maintenance Region Office

All newspaper notices, radio announcements and any notifications will be subject to the approval of the Resident and all costs will be considered incidental to the Contract.

Town: **Mt. Desert**
Project: **16712.00**
Date: **April 14, 2011**

SPECIAL PROVISIONS
SECTION 104
Utilities

MEETING

A Preconstruction Utility Conference, as defined in Subsection 104.4.6 of the Standard Specifications **is** required.

GENERAL INFORMATION

These Special Provisions outline the arrangements that have been made by the Department for utility and/or railroad work to be undertaken in conjunction with this project. 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

.

Overview:

Utility	Aerial	Underground
Bangor Hydro-Electric Company	**X**	**X**
Fairpoint Communications	**X**	
Acadia National Park/U.S.G.S.		**X**
Time Warner Cable	**X**	

Utility Contact Information:

Bangor Hydro-Electric Company – Bob Peasley 973-2518 bpeasley@bhe.com
Fairpoint Communications – Steve Ogden 990-5290 sogden@fairpoint.com
Time Warner Cable – Alan Alexander 458-8031 alan.alexander@twcable.com
Mount Desert Public Works - Tony Smith 276-5743 director@mtdesert.org
Mount Desert Water District – Paul Slack 276-3733 paul.mdwd@roadrunner.com
Acadia National Park/U.S.G.S. - Bruce Connery 288-8726 bruce_connery@nps.gov

"The utility contact information is provided as part of contract documents for utility correspondence after contract award. If the Contractor has any questions regarding the utility work or relocations associated with the Project during bidding, the Contractor shall submit questions through the Request for Information process outlined in the contract documents."

Utility Specific Issues:

** **Special Note to Contractor**

The Contractor is responsible for all clearing and tree removal in areas where utilities are involved and must be completed before the utilities are able to relocate their facilities. All clearing will be paid for under the related contract items.

Town: **Mt. Desert**
Project: **16712.00**
Date: **April 14, 2011**

The Contractor shall use extreme care when excavating in and around the area at Sta. 15+60 +/- because of the underground power line running from the pole to the sewer pump station.

AERIAL

Summary:

Utility	Pole Set	New Wires/ Cables	Trans. Wires/ Cables	Remove Poles	Estimated Working Days
Bangor Hydro-Electric Company			**X**		**2**
Fairpoint Communications					**0**
Time Warner Cable					**0**
				Total:	**2**

- Bangor Hydro-Electric Company (BHE) will install 10' alley arms to the backside of the poles located at Sta. 13+43.53 – 24.2' LT & Sta. 14+63.47 – 31' LT, this move if necessary will be discussed further at the Utility Pre-Construction Meeting. BHE requires two (2) working days to complete this work. The utility pole at Sta. 14+63.47 – 31' LT can be held by BHE if the Contractor feels it is necessary during the excavation and placement of the riprap near the pole. If the Contractor requires the pole to be held, BHE requires three (3) working days notice.
- Fairpoint Communications have facilities located within the area but should not be involved in the project at this time.
- Time Warner Cable have facilities located within the area but should not be involved in the project at this time.

UNDERGROUND

Utility	Location	Estimated Working Days
Mount Desert Public Works	**Sta. 13+73 +/- LT to Sta. 14+87.7 +/- LT**	**15**
Mount Desert Water District	**Sta. 13+70 RT. to Sta. 14+90 RT.**	**2**
Bangor Hydro-Electric Company	**Sta. 15+60+/-**	**None Anticipated**

- Bangor Hydro-Electric Company (BHE) has underground power line running from the pole at Sta. 15+60 +/- LT to the sewer pump station, the Contractor shall use extreme care when excavating in and around their facilities.

- Mount Desert Water District has included the installation of 120' of water main work from Sta. 13+70 RT. to Sta. 14+90 RT. as part of the Project contract as Section Number Two. For more information, see the plans, specifications and estimate for the location of the new water main work. If the bid price exceeds the engineer's estimate by 15% or more, the District reserves the right to remove their work from the Department's contract. If this work is removed, they may negotiate with the Contractor or others for the performance of this work. Coordination of the above work will occur between the parties before the work begins. The specifications for the water main work follow the Special Provision 104 Spec.
- Mount Desert Public Works has a sewer main that has to be relocated. The existing sewer main located at Sta. 13+75 +/- LT and Sta. 14+89 +/- LT is to be discontinued. A new sewer main run will start at Sta.13+75 +/- LT and continue to a new manhole at Sta. 13+73 +/- LT. continuing on to the new manhole located at Sta. 14+87 +/- LT. The existing 12" sewer main from Sta. 14+89 +/- LT will need to be installed into the new manhole at Sta. 14+89, which continues on to the sewer pump station. The existing manholes at Sta. 13+75 & Sta. 14+89 are to remain in place. For more information, see the plans, specifications for the relocation of the sewer main work on Sheet Numbers 27-29. All submittals for sewer relocation related work shall be reviewed and approved by the Town Engineer in accordance with their Specifications before proceeding with any work. The installation/design of the sewer main work shall comply with all State and Federal regulations. The specifications for the sewer main work follow the Special Provision 104 Spec.
- Acadia National Park/U.S.G.S. will be moving the fish monitoring equipment for more information please refer to Special Provision Section 641. This work will be discussed further at the Pre-Construction Utility Meeting.

GENERAL NOTES

Temporary aerial utility adjustments are not anticipated.

All adjustments are to be made by the respective utility/railroad unless otherwise specified herein.

Fire hydrants shall not be disturbed until all necessary work has been accomplished to provide proper fire protection.

Utilities have been notified and will be furnished a project specification book. If utility relocations, though unexpected, become necessary, they will be scheduled in compliance with Section 104 of the Standard Specifications and will be done by the utilities in conjunction with the work by the Contractor.

The approximate locations of major items of existing and proposed (permanent and temporary) utility plan are shown on the highway construction plans.

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.

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.

BLASTING

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

UTILITY SPECIFIC ISSUES

Any tree removal or tree trimming required within ten feet of 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.

DIG SAFE

The contractor will be responsible for determining the presence of underground utility facilities prior to commencing any excavation work and shall notify utilities of proposed excavation in accordance with **M.R.S.A. Title 23 §3360-A, Maine "Dig Safe" System. Call 1-888-344-7233.**

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.

THE CONTRACTOR SHALL PLAN AND CONDUCT HIS WORK ACCORDINGLY.

Town: Mount Desert
PIN #: 16718.00
Date: 4/20/11

SPECIAL PROVISION
SECTION 105
General Scope of Work
(Environmental Requirements)

In-Water work consists of any activity conducted below the normal high water mark of a river, steam, brook, lake, pond or "Coastal Wetland" areas that are subject to tidal action during the highest tide level for the year which an activity is proposed as identified in the tide tables published by the National Ocean Service. http://www.oceanservice.noaa.gov/ For the full definition of "Coastal Wetlands", please refer to 38 MRSA 480-B(2)

I. In-Water Work shall not be allowed between the dates of October 16 and July 14.
(In-Water work is allowed from July 15 to October 15)

All in-water work, including installation and removal of cofferdams, must be completed within the prescribed work window. Requests for work window extensions must be submitted to the MaineDOT Environmental Office. Approval of requests for work window extensions is not guaranteed and may result in delays to construction schedule that are the sole responsibility of the contractor.

II. In-Water work window applies to the following water bodies at the following station #'s:
1. Stanley Brook at proposed bridge (approximately Station 14+00)

III. Special Conditions:
1. Special Conditions of Army Corps of Engineers (ACOE) 2009 Bridge Batch Individual Permit (July 15, 2009) and Permit Amendment (December 28, 2010) apply.
2. Conditions of DEP 2009 Bridge Batch Permit and Permit-By-Rule Section 11 apply.
3. The contractor shall contact MaineDOT Environmental Office Field Staff (John Perry, 592-2581) to coordinate fish evacuation and cofferdam installation and notification of Maine MDIFW at least one week prior to anticipated in-water work.
4. Pumps used for cofferdam dewater shall have intake screens of ¼-inch or smaller
5. The contractor shall avoid all disturbance and removal of vegetation beyond clearing limit line shown on the plans to minimize impacts to vegetation between Route 3 and the beach on the western approach (approximately Station 10+21 to Station 14 right).
6. The box must be installed under observation by the Resident and/or MaineDOT Environmental Office staff to ensure that it is embedded as intended. In the event that the design elevation and the observed streambed conflict, the box must be embedded relative to the observed streambed rather than a design elevation.

IV. Approvals:
1. Temporary Soil Erosion and Water Pollution Control Plan
2. ACOE permitted permanent impacts: 2000 square feet (temporary-includes coffer dams and sewer line relocation); 3200 square feet permanent

V. All activities are prohibited (including placement and removal of cofferdams unless otherwise permitted by Regulatory Agencies) below the normal high water mark if outside the prescribed in-water work window, except for the following:

1. Work within a cofferdam constructed according to MaineDOT's Standard Specifications and in adherence with the contractors approved "Soil Erosion and Water Pollution Control Plan".

VI. No work is allowed that completely blocks a river, stream, or brook without providing downstream flow.

SPECIAL PROVISION
SECTION 105
LEGAL RELATIONS WITH AND RESPONSIBILITY TO PUBLIC
(NPDES)

105.8.2 Permit Requirements This Section is revised by the addition of the following paragraph:

"The Contractor is advised that the Environmental Protection Agency has issued a final National Pollutant Discharge Elimination System (NPDES) General Permit for storm water discharges from construction sites disturbing more than 2 ha [5 acres]. This permit requires:

- Storm Water Pollution Prevention Plan
- Submission of a Notification of Intent (NOI) at least 48 hours before construction commences
- Submission of a Notification of Termination (NOT) when a site has been finally stabilized and all storm water discharges from construction activities are eliminated.

If the project's land disturbances is 2 ha [5 acres] or more, the Department will prepare the plan and submit the NOI (and NOT). The Contractor shall prepare plans and submit NOI's (and NOT's) for regulated construction activities beyond the project limits (e.g., borrow pits).

The Contractor shall be familiar with and comply with these regulations."

SPECIAL PROVISION 105
CONSTRUCTION AREA

A Construction Area located in the **Town of Mount Desert** 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 in the town of Mount Desert, Hancock County on Route 3 over Stanley Brook.

(b) (Route 3) over Stanley Brook station 10+50.00 to station 16+50.00 of the construction 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 **Town of Mount Desert** 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.

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 107
PROSECUTION AND PROGRESS
(Contract Time)

The specified contract completion date is May 18, 2012.

SPECIAL PROVISION
SECTION 107
TIME
(Bridge Closure, Limitation of Operations, & Supplemental Liquidated Damages)

The Contractor shall not begin work prior to August 1st, 2011.

Prior to August 15th, 2011, no lane closures are permitted and the parking lot adjacent to the project shall remain fully open. After August 15th, 2011, prior to the bridge closure, a minimum of one 11 foot lane of alternating traffic shall be maintained at all times and the disruption to the parking lot shall be kept to a minimum.

The Contractor shall plan and conduct his operations in such a manner that State Route 3 in Seal Harbor is closed to traffic for a maximum of 21 consecutive Calendar Days, after which time a minimum of one 11 foot lane of alternating traffic shall be maintained at all times. This closure will be allowed between September 10th, 2011 and October 15th, 2011. All traffic control items necessary to maintain one lane of alternating traffic shall be considered incidental to related Contract items. By October 15th, 2011, the Contractor shall have at least the base pavement placed on both travel lanes.

Should State Route 3 in Seal Harbor remain closed to traffic beyond 21 consecutive Calendar Days, or the closure extend beyond October 15th, 2011, the Contractor shall be assessed supplemental liquidated damages at the rate of One Thousand Dollars ($1000.00) per day for each day that the roadway remains closed to traffic. This assessment of supplemental liquidated damages will be in addition to the liquidated damages specified in Section 107 of the Standard Specifications.

The Contractor shall coordinate the Bridge Closure Notification in accordance with Standard Specification 104.4.10.

Once the Contractor commences work on this project, the work shall be continuous through completion unless the work stoppage is allowed by the Resident.

SPECIAL PROVISION
SECTION 107
TIME
(Sunday Work)

Subsection 107.3.3 of the Standard Specifications is amended as follows:

The Contractor shall be allowed to work on Sunday when the road is closed to traffic. The Contractor shall provide the Resident with a minimum 48 hours notice before commencing work on a Sunday.

SPECIAL PROVISION
SECTION 107
TIME
(Supplemental Liquidated Damages for Fabrication Time)

Append Section 107.8 with the following:

107.8.1 Fabrication Time

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

Element	Time	Supplemental LD
1) Precast Structural Concrete	75 calendar days	$500 per calendar day

The Contractor is responsible for requiring their fabricators, manufacturers, and/or 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.

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

SPECIAL PROVISION
SECTION 107
SCHEDULING OF WORK

Replace Section 107.4.2 with the following:

"107.4.2 Schedule of Work Required Within 21 Days of Contract Execution and before beginning any on-site activities, the Contractor shall provide the Department with its Schedule of Work. The Contractor shall plan the Work, including the activity of Subcontractors, vendors, and suppliers, such that all Work will be performed in Substantial Conformity with its Schedule of Work. The Schedule must include sufficient time for the Department to perform its functions as indicated in this Contract, including QA inspection and testing, approval of the Contractor's TCP, SEWPCP and QCP, and review of Working Drawings.

At a minimum, the Schedule of Work shall include a bar chart which shows the major Work activities, milestones, durations, and a timeline. Milestones to be included in the schedule include: (A) start of Work, (B) beginning and ending of planned Work suspensions, (C) Completion of Physical Work, and (D) Completion. If the Contractor Plans to Complete the Work before the specified Completion date, the Schedule shall so indicate.

Any restrictions that affect the Schedule of Work such as paving restrictions or In-Stream Work windows must be charted with the related activities to demonstrate that the Schedule of Work complies with the Contract.

The Department will review the Schedule of Work and provide comments to the Contractor within 20 days of receipt of the schedule. The Contractor will make the requested changes to the schedule and issue the finalized version to the Department."

SPECIAL PROVISION
SECTION 107
TIME
(Scheduling of Work – Projected Payment Schedule)

Description The Contractor shall also provide the Department with a Quarterly Projected Payment Schedule that estimates the value of the Work as scheduled, including requests for payment of Delivered Materials. The Projected Payment Schedule must be in accordance with the Contractor's Schedule of Work and prices submitted by the Contractor's Bid. The Contractor shall submit the Projected Payment Schedule as a condition of Award.

SPECIAL PROVISION
SECTION 108
PROSECUTION AND PROGRESS
(Reserved Areas)

The use of the following area shall not be available to the Contractor until the Contractor receives written notification from the Department:

All areas outside the existing right of way limits.

The Contractor shall not present any claim hereunder to the Department other than for an adjustment of working days allowed for completion of work caused by failure of the Department to meet the above availability date. The Contractor may be entitled to time extension if requested by the Contractor, in writing, such request indicating delays in construction, if any caused by a change in the availability date.

SPECIAL PROVISION
SECTION 108
PAYMENT
(Asphalt Escalator)

108.4.1 Price Adjustment for Hot Mix Asphalt: For all contracts with hot mix asphalt in excess of 500 tons total, a price adjustment for performance graded binder will be made for the following pay items:

Item 403.206 Hot Mix Asphalt - 25 mm
Item 403.207 Hot Mix Asphalt - 19 mm
Item 403.2071 Hot Mix Asphalt - 19 mm (Polymer Modified)
Item 403.2072 Hot Mix Asphalt - 19 mm (Asphalt Rich Base)
Item 403.2073 Warm Mix Asphalt - 19 mm
Item 403.208 Hot Mix Asphalt - 12.5 mm
Item 403.2081 Hot Mix Asphalt - 12.5 mm (Polymer Modified)
Item 403.2083 Warm Mix Asphalt - 12.5 mm
Item 403.209 Hot Mix Asphalt - 9.5 mm (sidewalks, drives, & incidentals)
Item 403.210 Hot Mix Asphalt - 9.5 mm
Item 403.2101 Hot Mix Asphalt - 9.5 mm (Polymer Modified)
Item 403.2102 Hot Mix Asphalt - 9.5 mm (Asphalt Rich Base)
Item 403.2103 Warm Mix Asphalt - 9.5 mm
Item 403.211 Hot Mix Asphalt – Shim
Item 403.2111 Hot Mix Asphalt – Shim (Polymer Modified)
Item 403.2113 Warm Mix Asphalt - Shim
Item 403.212 Hot Mix Asphalt - 4.75 mm (Shim)
Item 403.2123 Warm Mix Asphalt - 4.75 mm (Shim)
Item 403.213 Hot Mix Asphalt - 12.5 mm (base and intermediate course)
Item 403.2131 Hot Mix Asphalt - 12.5 mm (base and intermediate course Polymer Modified)
Item 403.2132 Hot Mix Asphalt - 12.5 mm (Asphalt Rich Base and intermediate course)
Item 403.2133 Warm Mix Asphalt - 12.5 mm (base and intermediate course)
Item 403.214 Hot Mix Asphalt - 4.75 mm (Surface)
Item 403.2143 Warm Mix Asphalt - 4.75 mm (Surface)
Item 461.13 Maintenance Surface Treatment

Price adjustments will be based on the variance in costs for the performance graded binder component of hot mix asphalt. They will be determined as follows:

The quantity of hot mix asphalt for each pay item will be multiplied by the performance graded binder percentages given in the table below times the difference in price between the base price and the period price of asphalt cement. Adjustments will be made upward or downward, as prices increase or decrease.

Item 403.206: 4.8%

Item 403.207–5.2%	Item 403.2071–5.2%	Item 403.2072–5.8%	Item 403.2073–5.2%
Item 403.208–5.6%	Item 403.2081–5.6%		Item 403.2083–5.6%
Item 403.209–6.2%			
Item 403.210–6.2%	Item 403.2101–6.2%	Item 403.2102–6.8%	Item 403.2103–6.2%

Item 403.211–6.2%	Item 403.2111–6.2%		Item 403.2113–6.2%
Item 403.212–6.8%			Item 403.2123–6.8%
Item 403.213–5.6%	Item 403.2131–5.6%	Item 403.2132–6.2%	Item 403.2133–5.6%
Item 403.214–6.8%			Item 403.2143–6.8%
Item 461.13–6.4%			

Hot Mix Asphalt**:** The quantity of hot mix asphalt will be determined from the quantity shown on the progress estimate for each pay period.

Base Price: The base price of performance graded binder to be used is the price per standard ton current with the bid opening date. This price is determined by using the average New England Selling Price (Excluding the Connecticut market area), as listed in the Asphalt Weekly Monitor.

Period Price: The period price of performance graded binder will be determined by the Department by using the average New England Selling Price (Excluding the Connecticut market area), listed in the Asphalt Weekly Monitor current with the paving date. The maximum Period Price for paving after the adjusted Contract Completion Date will be the Period Price on the adjusted Contract Completion Date.

SPECIAL PROVISION
SECTION 109.5
ADJUSTMENTS FOR DELAY
(Delays due to Flooding)

Subsection 109.5.1, Definitions- Types of Delays, is replaced with the following:

109.5.1 Definitions - Types of Delays Delays are defined as follows and may be divided into more than one type depending upon cause.

A. Excusable Delay Except as expressly provided otherwise by this Contract, an "Excusable Delay" is a Delay to the Critical Path that is directly and solely caused by: (1) an Uncontrollable Event, or (2) a flooding event at the effected location of the Project that results in a Q25 headwater elevation, or greater, but less than a Q50 headwater elevation. Theoretical headwater elevations will be determined by the Department; actual headwater elevations will be determined by the Contractor and verified by the Department.

B. Compensable Delay A "Compensable Delay" is a Delay to the Critical Path that is directly and solely caused by: (1) 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 (2) an Uncontrollable Event caused by a Utility Company or other third party (not Subcontractors) Working on Project-related Work within the Project Limits if, and only if, the Utility Company or such other third party offers the Department reimbursement for such Delay~~,~~ (3) acts by the Department that are in violation of applicable laws or the Contract, or (4) a flooding event at the effected location of the Project that results in a Q50 headwater elevation, or greater. Theoretical Q50 headwater elevations will be determined by the Department; actual headwater elevations will be determined by the Contractor and verified by the Department.

C. Inexcusable Delay "Inexcusable Delays" are all Delays that are not Excusable Delays or Compensable Delays.

For a related provision, see Section 101.2 - Definition of Uncontrollable Event.

SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(Dredge Materials)

Description: Dredge Material (See MaineDOT Standard Specifications § 101.2) is regulated as a Special Waste. However, select granular materials are exempt from this classification as long as specific regulatory requirements are met. The Dredge Material from the Stanley Brook Bridge Replacement Project is granular in nature and meets the grain size exemption for Beneficial Use at the site of generation.

Work associated with the Stanley Brook Bridge Replacement initiative will require the excavation of select Dredge Material. It is anticipated that all dredge material will meet the granular Beneficial Use exemption. There is onsite Beneficial Use for all of this Dredge Material. The contractor shall Beneficially Use all Dredge Material excavated at the Stanley Brook Bridge Replacement Project in an area adjacent to and draining into the dredged water body.

It is acknowledged that the excavation of Dredge for this work may include some boulders. The Maine Department of Environmental Protection has determined that sound boulders (rock 12-inches or more in diameter), that are free of adhering sediment or other contaminants, shall be deemed to be Inert Fill material and shall not be included in the Dredge Material Quantities.

CONSTRUCTION REQUIREMENTS

Management: The contractor shall Beneficially Use all Dredge Material excavated at the Stanley Brook Bridge Replacement initiative in areas adjacent to and draining into the dredged water body.

Method of Measurement: Dredge Material will be measured by the cubic yard of material removed.

Basis of Payment: Payment for the Beneficial Use of Dredge Material will be incidental to the Contract Pay Items.

Payment shall be full compensation for excavation, dewatering, managing, transporting, and placement of the Dredge Materials.

SPECIAL PROVISION
203.33 Special Fill
(In-Culvert Fill - Work)

Description

This work shall consist of placing site excavated dredge materials and/or granular borrow and large cobbles as needed inside the culvert to create a natural stream bottom as shown on the Contract Plans and described herein or as directed by the Resident. Large cobbles shall be limited to a maximum dimension of 12 inches.

In addition, this work shall consist of using site excavated dredge materials and/or Granular Borrow, Material for Underwater Backfill to mix in with riprap used for the riprap aprons so that the apron is one solid mass with no voids.

Construction

Once the culvert is placed to final grade, the bottom course of in-culvert fill shall be placed in one foot lifts to an elevation as shown on Plans or as directed by the Resident. The in-culvert fill shall be constructed of site-excavated dredge materials and if needed, Granular Borrow, Material for Underwater Backfill satisfying subsection 703.19. Compaction of the bottom course is not necessary.

The Contractor shall be careful not to damage the culvert during installation of the in-culvert fill material. Any damage to the culvert shall be paid for by the Contractor.

Method of Measurement

Payment for placing dredge materials, Granular Borrow, and large cobble shall be measured in place by the cubic yard.

Basis of Payment

All work associated with placing the dredge materials, Granular Borrow and large cobbles to form the in-culvert streambed and the solid riprap aprons shall be paid for at the Contract unit price per cubic yard.

Payments will be made under:

Pay Item	Pay Unit
203.33 Special Fill	Cubic yard

SPECIAL PROVISION
SECTION 203
CRUSHED STONE

Description This work shall consist of constructing a leveling pad of crushed stone in accordance with these specifications and in reasonably close conformity with the width, grade and thickness shown on the plans or established by the Resident.

MATERIALS

Aggregate Crushed stone material shall meet the requirements of ASTM Standard Specification C33, Standard Specification for Concrete Aggregates.

The aggregate shall meet the following gradation requirements:

Particle size	Percent by Weight Passing
1 inch	100
¾ inch	90 – 100
½ inch	20 – 55
⅜ inch	0 – 15
No. 4	0 - 5

Construction Requirements The crushed stone shall be placed and graded as shown on the plans or as directed by the Resident. The crushed stone shall be compacted as required to ensure that all voids in the stone are filled, as approved by the Resident.

Method of Measurement Aggregate for crushed stone will be measured by the cubic yard complete in place.

Basis of Payment The accepted quantity of crushed stone will be paid for at the contract unit price per cubic yard of aggregate complete in place.

Payment will be under

Pay Item	Unit
203.35 Crushed Stone	Cubic Yard

SPECIAL PROVISION
DIVISION 400
PAVEMENTS

SECTION 401 - HOT MIX ASPHALT PAVEMENT

401.01 Description The Contractor shall furnish and place one or more courses of Hot Mix Asphalt Pavement (HMA) on an approved base in accordance with the contract documents and in reasonably close conformity with the lines, grades, thickness, and typical cross sections shown on the plans or established by the Resident. The Department will accept this work under Quality Assurance provisions, in accordance with these specifications and the requirements of Section 106 – Quality, the provisions of AASHTO M 323 except where otherwise noted in sections 401 and 703 of these specifications, and the Maine DOT Policies and Procedures for HMA Sampling and Testing.

401.02 Materials Materials shall meet the requirements specified in Section 700 - Materials:

Asphalt Cement	702.01
Aggregates for HMA Pavement	703.07
HMA Mixture Composition	703.09

401.021 Recycled Asphalt Materials Recycled Asphalt Pavement (RAP) may be introduced into the mixture at percentages approved by the Department. If approved by the Department, the Contractor shall provide documentation stating the source, test results for average residual asphalt content, and stockpile gradations showing RAP materials have been sized to meet the maximum aggregate size requirements of each mix designation. The Department will obtain samples for verification and approval prior to its use.

For specification purposes, RAP will be categorized as follows:

Classified RAP – RAP consisting of processed millings from federal, state or municipal roadways that is free of materials not generally considered to be asphalt pavement. Millings from other sources that have been fractionated or otherwise processed so as to improve the consistency of the RAP may be considered Classified RAP if approved by the Department.

Unclassified RAP – RAP from unknown sources, from excavated or reclaimed pavements, millings from repaired areas or other sources.

In the event that RAP source or properties change, the Contractor shall notify the Department of the change and submit new documentation stating the new source or properties a minimum of 72 hours prior to the change to allow for obtaining new samples and approval.

401.03 Composition of Mixtures The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. HMA shall be designed and tested according to AASHTO R35 and the volumetric criteria in Table 1. The Contractor shall size, uniformly grade, and combine the aggregate fractions in proportions that provide a mixture meeting the grading requirements of the Job Mix Formula (JMF). The Contractor may use a maximum of 20 percent Classified RAP in any base, binder, surface, or shim course. For Unclassified RAP stockpiles no more than 15 percent shall be used. The Contractor may be allowed to use more than 20 percent Classified RAP, up to a maximum of 25 percent Classified RAP, in a base, binder, or shim course provided that PG 58-34 asphalt binder is used in the mixture. A PG 52-34 may be used when approved by the Department.

The Contractor shall submit for Department approval a JMF to the Central Laboratory in Bangor for each mixture to be supplied. The Department may approve 1 active design per nominal maximum size, per traffic level, per plant, plus a 9.5mm "fine" mix for shimming and where required, a non-RAP design for bridge decks. The Department shall then have 15 calendar days in which to process a new design before approval. The JMF shall establish a single percentage of aggregate passing each sieve size within the limits shown in section 703.09. The mixture shall be designed and produced, including all production tolerances, to comply with the allowable control points for the particular type of mixture as outlined in 703.09. The JMF shall state the original source, gradation, and percentage to be used of each portion of the aggregate including RAP when utilized, and mineral filler if required. It shall also state the proposed PGAB content, the name and location of the refiner, the supplier, the source of PGAB submitted for approval, the type of PGAB modification if applicable, and the location of the terminal if applicable.

In addition, the Contractor shall provide the following information with the proposed JMF:

Properly completed JMF indicating all mix properties (Gmm, VMA, VFB, etc.)
Stockpile Gradation Summary
Design Aggregate Structure Consensus Property Summary
Design Aggregate Structure Trial Blend Gradation Plots (0.45 power chart)
Trial Blend Test Results for at least three different asphalt contents
Design Aggregate Structure for at least three trial blends
Test results for the selected aggregate blend at a minimum of three binder contents
Specific Gravity and temperature/viscosity charts for the PGAB to be used
Recommended mixing and compaction temperatures from the PGAB supplier
Material Safety Data Sheets (MSDS) For PGAB
Asphalt Content vs. Air Voids trial blend curve
Test report for Contractor's Verification sample
Summary of RAP test results (if used), including count, average and standard deviation of binder content and gradation

At the time of JMF submittal, the Contractor shall identify and make available the stockpiles of all proposed aggregates at the plant site. There must be a minimum of 150 Mg [150 ton] for stone stockpiles, 75 Mg [75 ton] for sand stockpiles, and 50 Mg [50 ton] of blend sand before the Department will sample. The Department shall obtain samples for laboratory testing. The Contractor shall also make available to the Department the PGAB proposed for use in the mix in sufficient quantity to test the properties of the asphalt and to produce samples for testing of the mixture. Before the start of paving, the Contractor and the Department shall split a production sample for evaluation. The Contractor shall test its split of the sample and determine if the results meet the requirements of the Department's written policy for mix design verification (See Maine DOT Policies and Procedures for HMA Sampling and Testing available at the Central Laboratory in Bangor). If the results are found to be acceptable, the Contractor will forward their results to the Department's Lab, which will test the Department's split of the sample. The results of the two split samples will be compared and shared between the Department and the Contractor. If the Department finds the mixture acceptable, an approved JMF will be forwarded to the Contractor and paving may commence. The first day's production shall be monitored, and the approval may be withdrawn if the mixture exhibits undesirable characteristics such as checking, shoving or displacement. The Contractor shall be allowed to submit aim changes within 24 hours of receipt of the first Acceptance test result. Adjustments will be allowed of up to 2% on the percent passing the 2.36 mm sieve through the 0.075 mm and 3% on the percent passing the 4.75 mm or larger sieves. Adjustments will be allowed on the %PGAB of up to 0.2%. Adjustments will be allowed on GMM of up to 0.010.

The Contractor shall submit a new JMF for approval each time a change in material source or materials properties is proposed. The same approval process shall be followed. The cold feed percentage of any aggregate may be adjusted up to 10 percentage points from the amount listed on the JMF, however no aggregate listed on the JMF shall be eliminated. The cold feed percentage for RAP may be adjusted up to 5

percentage points from the amount listed on the JMF but shall not exceed the maximum allowable percentage for RAP for the specific application.

TABLE 1: VOLUMETRIC DESIGN CRITERIA

Design ESAL's (Millions)	Required Density (Percent of G_{mm})			Voids in the Mineral Aggregate (VMA)(Minimum Percent) Nominal Maximum Aggregate Size (mm)					Voids Filled with Binder (VFB) (Minimum %)	Fines/Eff. Binder Ratio
	$N_{initial}$	N_{design}	N_{max}	25	19	12.5	9.5	4.75		
<0.3	≤91.5	96.0	≤98.0	13.0	14.0	15.0	16.0	16.0	70-80	0.6-1.2**
0.3 to <3	≤90.5								65-80	
3 to <10	≤89.0								65-80*	
10 to <30										
≥ 30										

*For 9.5 mm nominal maximum aggregate size mixtures, the maximum VFB is 82.
*For 4.75 mm nominal maximum aggregate size mixtures, the maximum VFB is 84.
**For 4.75 mm nominal maximum aggregate size mixtures, the Fines/Effective Binder Ratio is 0.6-1.4.

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 135° to 163°C [275 to 325°F]
At the Paver – allowable range 135° to 163°C [275 to 325°F]

The JMF and the mix subsequently produced shall meet the requirements of Tables 1 and Section 703.07.

401.05 Performance Graded Asphalt Binder Unless otherwise noted in Special Provision 403 - Hot Mix Asphalt Pavement, the PGAB shall be 64-28, except that for mixtures containing greater than 20 percent but no more than 25 percent RAP the PGAB shall be PG 58-34 (or PG 52-34 when approved by the Department). The PGAB shall meet the applicable requirements of AASHTO M320 - Standard Specification for PGAB. The Contractor shall provide the Department with an approved copy of the Quality Control Plan for PGAB in accordance with AASHTO R 26 Certifying Suppliers of PGAB.
The Contractor shall request approval from the Department for a change in PGAB supplier or source by submitting documentation stating the new supplier or source a minimum of 24 hours prior to the change. In the event that the PGAB supplier or source is changed, the Contractor shall make efforts to minimize the occurrence of PGAB co-mingling.

401.06 Weather and Seasonal Limitations The State is divided into two paving zones as follows:

a. Zone 1 Areas north of US Route 2 from Gilead to Bangor and north of Route 9 from Bangor to Calais.
b. Zone 2 Areas south of Zone 1 including the US Route 2 and Route 9 boundaries.

The Contractor may place Hot Mix Asphalt Pavement for use other than a traveled way wearing course in either Zone between the dates of April 15th and November 15th, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 4°C [40°F] or higher and the area to be paved is not frozen. The Contractor may place Hot Mix Asphalt Pavement as traveled way wearing course in Zone 1 between the dates of May 1st and the Saturday following October 1st and in Zone 2 between the dates of April 15th and the Saturday following October 15th, provided the air temperature determined as above is 10°C [50°F] or higher. For the purposes of this Section, the traveled way includes truck lanes, ramps, approach roads and auxiliary lanes. The atmospheric temperature for all courses on bridge decks shall be 10°C [50°F] or higher.

Hot Mix Asphalt Pavement used for curb, driveways, sidewalks, islands, or other incidentals is not subject to seasonal limitations, except that conditions shall be satisfactory for proper handling and finishing of the mixture. All mixtures used for curb, driveways, sidewalks, islands, or other incidentals shall conform to section 401.04 - Temperature Requirements. Unless otherwise specified, the Contractor shall not place Hot Mix Asphalt Pavement on a wet or frozen surface and the air temperature shall be 4°C [40°F] or higher.

On all sections of overlay with wearing courses less than 25 mm [1 in] thick, the wearing course for the travelway and adjacent shoulders shall be placed between the dates of May 15th and the Saturday following September 15th.

On all sections of overlay with wearing courses less than 1 inch thick, the wearing course for the travelway and adjacent shoulders shall be placed between the dates of June 1st and the Saturday following September 1st if the work is to be performed, either by contract requirement, or Contractor option, during conditions defined as "night work".

401.07 Hot Mix Asphalt Plant

401.071 General Requirements HMA plants shall conform to AASHTO M156.

a. Truck Scales When the hot mix asphalt is to be weighed on scales meeting the requirements of Section 108 - Payment, the scales shall be inspected and sealed by the State Sealer as often as the Department deems necessary to verify their accuracy.

Plant scales shall be checked prior to the start of the paving season, and each time a plant is moved to a new location. Subsequent checks will be made as determined by the Resident. The Contractor will have at least ten 20 Kg [50 pound] masses for scale testing.

401.072 Automation of Batching Batch plants shall be automated for weighing, recycling, and monitoring the system. In the case of a malfunction of the printing system, the requirements of Section 401.074 c. of this specification will apply.

The batch plant shall accurately proportion the various materials in the proper order by weight. The entire batching and mixing cycle shall be continuous and shall not require any manual operations. The batch plant shall use auxiliary interlock circuits to trigger an audible alarm whenever an error exceeding the acceptable tolerance occurs. Along with the alarm, the printer shall print an asterisk on the delivery slip in the same row containing the out-of-tolerance weight. The automatic proportioning system shall be capable of consistently delivering material within the full range of batch sizes. When RAP is being used, the plant must be capable of automatically compensating for the moisture content of the RAP.

All plants shall be equipped with an approved digital recording device. The delivery slip load ticket shall contain information required under Section 108.1.3 - Provisions Relating to Certain Measurements, Mass and paragraphs a, b, and c of Section 401.073

401.073 Automatic Ticket Printer System on Automatic HMA Plant An approved automatic ticket printer system shall be used with all approved automatic HMA plants. The requirements for delivery slips for payment of materials measured by weight, as given in the following Sections, shall be waived: 108.1.3 a., 108.1.3 b., 108.1.3 c., and 108.1.3 d. The automatic printed ticket will be considered as the Weight Certificate.

The requirements of Section 108.1.3 f. - Delivery Slips, shall be met by the weigh slip or ticket, printed by the automatic system, which accompanies each truckload, except for the following changes:

a. The quantity information required shall be individual weights of each batch or total net weight of each truckload.
b. Signatures (legible initials acceptable) of Weighmaster (required only in the event of a malfunction as described in 401.074 c.).
c. The MDOT designation for the JMF.

401.074 Weight Checks on Automatic HMA Plant At least twice during each 5 days of production either of the following checks will be performed:

a. A loaded truck may be intercepted and weighed on a platform scale that has been sealed by the State Sealer of Weights and Measures within the past 12 months. Whenever the discrepancy in net weights is greater than 1.0%, but does not exceed 1.5%, the plant inspector will notify the producer to take corrective action; payment will still be governed by the printed ticket.

The producer will be allowed a period of two days to make any needed repairs to the plant and/or platform scales so that the discrepancy in net weights between the two is less than 1.0%. If the discrepancy exceeds 1.5%, the plant will be allowed to operate as long as payment is determined by truck platform scale net weight. Effective corrective action shall be taken within two working days.

b. Where platform scales are not readily available, a check will be made to verify the accuracy and sensitivity of each scale within the normal weighing range and to assure that the interlocking devices and automatic printer system are functioning properly.

c. In the event of a malfunction of the automatic printer system, production may be continued without the use of platform truck scales for a period not to exceed the next two working days, providing total weights of each batch are recorded on weight tickets and certified by a Licensed Public Weighmaster.

401.08 Hauling Equipment Trucks for hauling Hot Mix Asphalt Pavement shall have tight, clean, and smooth metal dump bodies, which have been thinly coated with a small amount of approved release agent to prevent the mixture from adhering to the bodies. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.

All truck dump bodies shall have a cover of canvas or other water repellent material capable of heat retention, which completely covers the mixture. The cover shall be securely fastened on the truck, unless unloading.

All truck bodies shall have an opening on both sides, which will accommodate a thermometer stem. The opening shall be located near the midpoint of the body, at least 300 mm [12 in] above the bed.

401.09 Pavers Pavers shall be self-contained, self-propelled units with an activated screed (heated if necessary) capable of placing courses of Hot Mix Asphalt Pavement in full lane widths specified in the contract on the main line, shoulder, or similar construction.

On projects with no price adjustment for smoothness, pavers shall be of sufficient class and size to place Hot Mix Asphalt Pavement over the full width of the mainline travel way with a 3 m [10 ft] minimum main screed with activated extensions.

The Contractor shall place Hot Mix Asphalt Pavement on the main line with a paver using an automatic grade and slope controlled screed, unless otherwise authorized by the Department. The controls shall automatically adjust the screed and increase or decrease the layer thickness to compensate for irregularities in the preceding course. The controls shall maintain the proper transverse slope and be readily adjustable so that transitions and superelevated curves can be properly paved. The controls shall operate from a fixed or moving reference such as a grade wire or ski type device (floating beam) with a minimum length of 10 m [30 ft], a non-contact grade control with a minimum span of 7.3 m [24 ft], except that a 12 m [40 ft] reference shall be used on Expressway projects.

The Contractor shall operate the paver in such a manner as to produce a visually uniform surface texture and a thickness within the requirements of Section 401.101 - Surface Tolerances. The paver shall have a receiving hopper with sufficient capacity for a uniform spreading operation and a distribution system to place the mixture uniformly, without segregation in front of the screed. The screed assembly shall produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Pavers with extendible screeds shall have auger extensions and tunnel extenders as per the manufacturer's recommendations, a copy of which shall be available if requested.

The Contractor shall have the paver at the project site sufficiently before the start of paving operations to be inspected and approved by the Department. The Contractor shall repair or replace any paver found worn or defective, either before or during placement, to the satisfaction of the Department. Pavers that produce an unevenly textured or non-uniform mat will be repaired or replaced before continuing to place HMA on MaineDOT projects.
On a daily basis, the Contractor shall perform nuclear density testing across the mat being placed, prior to being compacted by equipment., at 300 mm [12 in] intervals, If the density values vary by more than 2.0% from the mean, the Contractor shall make adjustments to the screed until the inconsistencies are remedied.

Failure to replace or repair defective placement equipment may result in a letter of suspension of work and notification of a quality control violation resulting in possible monetary penalties as governed by Section 106 - Quality

401.10 Rollers Rollers shall be static steel, pneumatic tire, or approved vibrator type. Rollers shall be in good mechanical condition, capable of starting and stopping smoothly, and be free from backlash when reversing direction. Rollers shall be equipped and operated in such a way as to prevent the picking up of hot mixed material by the roller surface. The use of rollers, which result in crushing of the aggregate or in displacement of the HMA will not be permitted. Any Hot Mix Asphalt Pavement that becomes loose, broken, contaminated, shows an excess or deficiency of Performance Graded Asphalt Binder, or is in any other way defective shall be removed and replaced at no additional cost with fresh Hot Mix Asphalt Pavement, which shall be immediately compacted to conform to the adjacent area.

The Contractor shall repair or replace any roller found to be worn or defective, either before or during placement, to the satisfaction of the Department. Rollers that produce grooved, unevenly textured or non-uniform mat will be repaired or replaced before continuing to place HMA on MaineDOT projects.

The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided specification densities are attained and with the following requirements:

a. On variable-depth courses, the first lift of pavement over gravel, reclaimed pavement, an irregular surface, or on bridges, at least one roller shall be 14.5 Mg [16 ton] pneumatic-tired. Unless otherwise allowed by the Resident, pneumatic-tired rollers shall be equipped with skirting to minimize the pickup of

HMA materials from the paved surface. When required by the Resident, the roller shall be ballasted to 18.1 Mg [20 ton].

b. Compaction with a vibratory or steel wheel roller shall precede pneumatic-tired rolling, unless otherwise authorized by the Department.

c. Vibratory rollers shall not be operated in the vibratory mode when checking or cracking of the mat occurs, or on bridge decks.

d. Any method, which results in cracking or checking of the mat, will be discontinued and corrective action taken.

The maximum operating speed for a steel wheel or pneumatic roller shall not exceed the manufacturer's recommendations, a copy of which shall be available if requested.

401.101 Surface Tolerances The Department will check surface tolerance utilizing the following methods :

a.) A 5 m [16 ft] straightedge or string line placed directly on the surface, parallel to the centerline of pavement.
b.) A 3 m [10 ft] straightedge or string line placed directly on the surface, transverse to the centerline of pavement.

The Contractor shall correct variations exceeding 6 mm [¼ in] by removing defective work and replacing it with new material as directed by the Department. The Contractor shall furnish a 10 foot straightedge for the Departments use.

401.11 Preparation of Existing Surface The Contractor shall thoroughly clean the surface upon which Hot Mix Asphalt Pavement is to be placed of all objectionable material. When the surface of the existing base or pavement is irregular, the Contractor shall bring it to uniform grade and cross section. All surfaces shall have a tack coat applied prior to placing any new HMA course. Tack coat shall conform to the requirements of Section 409 – Bituminous Tack Coat, Section 702 – Bituminous Material, and all applicable sections of the contract.

401.12 Hot Mix Asphalt Documentation The Contractor and the Department shall agree on the amount of Hot Mix Asphalt Pavement that has been placed each day.

401.13 Preparation of Aggregates The Contractor shall dry and heat the aggregates for the HMA to the required temperature. The Contractor shall properly adjust flames to avoid physical damage to the aggregate and to avoid depositing soot on the aggregate.

401.14 Mixing The Contractor shall combine the dried aggregate in the mixer in the amount of each fraction of aggregate required to meet the JMF. The Contractor shall measure the amount of PGAB and introduce it into the mixer in the amount specified by the JMF.

The Contractor shall produce the HMA at the temperature established by the JMF.

The Contractor shall dry the aggregate sufficiently so that the HMA will not flush, foam excessively, or displace excessively under the action of the rollers. The Contractor shall introduce the aggregate into the mixer at a temperature of not more than 14°C [25°F] above the temperature at which the viscosity of the PGAB being used is 0.150 Pa•s.

The Contractor shall store and introduce into the mixer the Performance Graded Asphalt Binder at a uniformly maintained temperature at which the viscosity of the PGAB is between 0.150 Pa•s and 0.300 Pa•s. The aggregate shall be coated completely and uniformly with a thorough distribution of the PGAB. The Contractor shall determine the wet mixing time for each plant and for each type of aggregate used.

401.15 Spreading and Finishing On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the Contractor shall spread, rake, and lute the HMA with hand tools to provide the required compacted thickness. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.

On roadways with adjoining lanes carrying traffic, the Contractor shall place each course over the full width of the traveled way section being paved that day, unless otherwise noted by the Department in Section 403 - Hot Bituminous Pavement.

401.16 Compaction Immediately after the Hot Mix Asphalt Pavement has been spread, struck off, and any surface irregularities adjusted, the Contractor shall thoroughly and uniformly compact the HMA by rolling.

The Contractor shall roll the surface when the mixture is in the proper condition and when the rolling does not cause undue displacement, cracking, or shoving. The Contractor shall prevent adhesion of the HMA to the rollers or vibrating compactors without the use of fuel oil or other petroleum based release agents. Solvents designed to strip asphalt binders from aggregates will not be permitted as release agents on equipment, tools, or pavement surfaces.
The Contractor shall immediately correct any displacement occurring as a result of the reversing of the direction of a roller or from other causes to the satisfaction of the Department. Any operation other than placement of variable depth shim course that results in breakdown of the aggregate shall be discontinued. Any new pavement that shows obvious cracking, checking, or displacement shall be removed and replaced for the full lane width as directed by the Resident at no cost to the Department.

Along forms, curbs, headers, walls, and other places not accessible to the rollers, the Contractor shall thoroughly compact the HMA with mechanical vibrating compactors. The Contractor shall only use hand tamping in areas inaccessible to all other compaction equipment. On depressed areas, the Contractor may use a trench roller or cleated compression strips under a roller to transmit compression to the depressed area.

Any HMA that becomes unacceptable due to cooling, cracking, checking, segregation or deformation as a result of an interruption in mix delivery shall be removed and replaced, with material that meets contract specifications at no cost to the Department.

401.17 Joints The Contractor shall construct wearing course transverse joints in such a manner that minimum tolerances shown in Section 401.101 - Surface Tolerances are met when measured with a straightedge.

The paver shall maintain a uniform head of HMA during transverse and longitudinal joint construction.

The HMA shall be free of segregation and meet temperature requirements outlined in section 401.04. Transverse joints of the wearing course shall be straight and neatly trimmed. The Contractor may form a vertical face exposing the full depth of the course by inserting a header, by breaking the bond with the underlying course, or by cutting back with hand tools. The Department may allow feathered or "lap" joints on lower base courses or when matching existing base type pavements.

Longitudinal joints shall be generally straight to the line of travel, and constructed in a manner that best ensure joint integrity. Methods or activities that prove detrimental to the construction of straight, sound longitudinal joints will be discontinued.

The Contractor shall apply a coating of emulsified asphalt immediately before paving all joints to the vertical face and 75 mm [3 in] of the adjacent portion of any pavement being overlaid except those formed by pavers operating in echelon. The Contractor shall use an approved spray apparatus designed for covering a narrow surface. The Department may approve application by a brush for small surfaces, or in the event of a malfunction of the spray apparatus, but for a period of not more than one working day.

Where pavement under this contract joins an existing pavement, or when the Department directs, the Contractor shall cut the existing pavement along a smooth line, producing a neat, even, vertical joint. The Department will not permit broken or raveled edges. The cost of all work necessary for the preparation of joints is incidental to related contract pay items.

401.18 Quality Control Method A, B & C The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The QCP shall meet the requirements of Section 106.6 - Acceptance and this Section. The Contractor shall not begin paving operations until the Department approves the QCP in writing.

Prior to placing any mix, the Department and the Contractor shall hold a Pre-paving conference to discuss the paving schedule, source of mix, type and amount of equipment to be used, sequence of paving pattern, rate of mix supply, random sampling, project lots and sublots and traffic control. A copy of the QC random numbers to be used on the project shall be provided to The Resident. The Departments' random numbers for Acceptance testing shall be generated and on file with the Resident and the Project Manager. All field and plant supervisors including the responsible onsite paving supervisor shall attend this meeting.

The QCP shall address any items that affect the quality of the Hot Mix Asphalt Pavement including, but not limited to, the following:

a. JMF(s)
b. Hot mix asphalt plant details
c. Stockpile Management (to include provisions for a minimum 2 day stockpile)
d. Make and type of paver(s)
e. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers
f. Name of QCP Administrator, and certification number
g. Name of Process Control Technician(s) and certification number(s)
h. Name of Quality Control Technicians(s) and certification number(s)
i. Mixing & transportation including process for ensuring that truck bodies are clean and free of debris or contamination that could adversely affect the finished pavement
j. Testing Plan
k. Laydown operations including longitudinal joint construction, procedures for avoiding paving in inclement weather, type of release agent to be used on trucks tools and rollers, compaction of shoulders, tacking of all joints, methods to ensure that segregation is minimized, procedures to determine the maximum rolling and paving speeds based on best engineering practices as well as past experience in achieving the best possible smoothness of the pavement. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.
l. Examples of Quality Control forms including a daily plant report and a daily paving report

m. Silo management and details (can show storage for use on project of up to 36 hours)
n. Provisions for varying mix temperature due to extraordinary conditions.
o. Name and responsibilities of the Responsible onsite Paving Supervisor.
p. Method for calibration/verification of Density Gauge
q. A note that all testing will be done in accordance with AASHTO and the Maine DOT Policies and Procedures for HMA Sampling and Testing.
r. A detailed description of RAP processing, stockpiling and introduction into the plant as well as a note detailing conditions under which the percent of RAP will vary from that specified on the JMF.
s. A detailed procedure outlining when production will be halted due to QC or Acceptance testing results.
t. A plan to address the change in PGAB source or supplier and the potential co-mingling of differing PGAB's.
u. A procedure to take immediate possession of acceptance samples once released by MaineDOT and deliver said samples to the designated acceptance laboratory.

The QCP shall include the following technicians together with following minimum requirements:

a. QCP Administrator - A qualified individual shall administer the QCP. The QCP Administrator must be a full-time employee of or a consultant engaged by the Contractor or paving subcontractor. The QCP Administrator shall have full authority to institute any and all actions necessary for the successful operation of the QCP. The QCP Administrator (or its designee in the QCP Administrator's absence) shall be available to communicate with the Department at all times. The QCP Administrator shall be certified as a Quality Assurance Technologist certified by the New England Transportation Technician Certification Program (NETTCP).

b. Process Control Technician(s) (PCT) shall utilize test results and other quality control practices to assure the quality of aggregates and other mix components and control proportioning to meet the JMF(s). The PCT shall inspect all equipment used in mixing to assure it is operating properly and that mixing conforms to the mix design(s) and other Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one PCT is required. The Plan shall include the criteria to be utilized by the PCT to correct or reject unsatisfactory materials. The PCT shall be certified as a Plant Technician by the NETTCP.

c. Quality Control Technician(s) (QCT) shall perform and utilize quality control tests at the job site to assure that delivered materials meet the requirements of the JMF(s). The QCT shall inspect all equipment utilized in transporting, laydown, and compacting to assure it is operating properly and that all laydown and compaction conform to the Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one QCT is required. The QCP shall include the criteria utilized by the QCT to correct or reject unsatisfactory materials. The QCT shall be certified as a Paving Inspector by the NETTCP.

The QCP shall detail the coordination of the activities of the Plan Administrator, the PCT and the QCT. The Project Superintendent shall be named in the QCP, and the responsibilities for successful implementation of the QCP shall be outlined.

The Contractor shall sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with the following minimum frequencies:

TABLE 2 : MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Temperature of mix	6 per day at street and plant	-
Temperature of mat	4 per day	-
%TMD (Surface)	1 per 125 Mg [125 ton] (As noted in QC Plan)	ASTM D2950
%TMD (Base)	1 per 250 Mg [250 ton] (As noted in QC Plan)	AASHTO T269
Fines / Effective Binder	1 per 500 Mg [500 ton]	AASHTO T 312*
Gradation	1 per 500 Mg [500 ton]	AASHTO T30
PGAB content	1 per 500 Mg [500 ton]	AASHTO T164 or T308
Voids at N_{design}	1 per 500 Mg [500 ton]	AASHTO T 312*
Voids in Mineral Aggregate at N_{design}	1 per 500 Mg [500 ton]	AASHTO T 312*
Rice Specific Gravity	1 per 500 Mg [500 ton]	AASHTO T209
Coarse Aggregate Angularity	1 per 5000 Mg [5000 ton]	ASTM D5821
Flat and Elongated Particles	1 Per 5000 Mg [5000 ton]	ASTM D4791
Fine Aggregate Angularity	1 Per 5000 Mg [5000 ton]	AASHTO T304

*Method A and B only

The Contractor may utilize innovative equipment or techniques not addressed by the Contract documents to produce or monitor the production of the mix, subject to approval by the Department.

The Contractor shall submit all Hot Mix Asphalt Pavement plant test reports, inspection reports and updated pay factors in writing, signed by the appropriate technician and present them to the Department by 1:00 P.M. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall also retain splits of the previous 5 QC tests, with QC results enclosed for random selection and testing by The Department during QA inspections of the HMA production facility. Test results of splits that do not meet the Dispute Resolution Variance Limits in Table 10 shall trigger an investigation by the MDOT Independent Assurance Unit, and may result in that lab losing NETTCP certification and the ability to request a dispute [Section 401.223 - Process for Dispute Resolution (Methods A , B and C only)].

The Contractor shall make density test results, including randomly sampled densities, available to the Department onsite. Summaries of each day's results, including a daily paving report, shall be recorded and signed by the QCT and presented to the Department by 1:00 p.m. the next working day.

The Contractor shall have a testing lab at the plant site, equipped with all testing equipment necessary to complete the tests in Table 2. The Contractor shall locate an approved Gyratory Compactor at the plant testing lab or within 30 minutes of the plant site.

The Contractor shall fill all holes in the pavement resulting from cutting cores by the Contractor or the Department with a properly compacted, acceptable mixture no later than the following working day. Before filling, the Contractor shall carefully clean the holes and apply a coating of emulsified asphalt. On surface courses, cores shall not be cut except for Verification of the Nuclear Density Gauge, at a rate not to exceed 3 per day or 2 per 1000 Mg [1000 ton] placed.
The Contractor shall monitor plant production using running average of three control charts as specified in Section 106 - Quality. Control limits shall be as noted in Table 3 below. The UCL and LCL, shall not exceed the allowable control points for the particular type of mixture as outlined in Table 1 of section 703.09

TABLE 3: Control Limits

Property	UCL and LCL
Passing 4.75 mm and larger sieves	Target +/-4.0
Passing 2.36 mm sieve	Target +/-2.5
Passing .075 mm sieve	Target +/-1.2
PGAB Content*	Target +/-0.3
Voids in the Mineral Aggregate	LCL = LSL + 0.2
% Voids at N_{design}	JMF Target +/-1.3

*Based on AASHTO T 308

The Contractor shall cease paving operations whenever one of the following occurs on a lot in progress:

a. Method A: The Pay Factor for VMA, Voids @ N_d, Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.85.
b. Method B: The Pay Factor for VMA, Voids @ N_d, Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.90.
c. Method C: The Pay Factor for VMA, Voids @ N_d, Percent PGAB, percent passing the nominal maximum sieve, percent passing 2.36 mm sieve, percent passing 0.300 mm sieve, percent passing 0.075 mm sieve or density using all Acceptance or all available Quality Control tests for the current lot is less than 0.85.
d. The Coarse Aggregate Angularity or Fine Aggregate Angularity value falls below the requirements of Table 3: Aggregate Consensus Properties Criteria in Section 703.07 for the design traffic level.
e. Each of the first 2 control tests for a Method A or B lot fall outside the upper or lower limits for VMA, Voids @ Nd, or Percent PGAB; or under Method C, each of the first 2 control tests for the lot fall outside the upper or lower limits for the nominal maximum, 2.36 mm, 0.300 mm or 0.075 mm sieves, or percent PGAB.
f. The Flat and Elongated Particles value exceeds 10% by ASTM D4791.
g. There is any visible damage to the aggregate due to over-densification other than on variable depth shim courses.
h. The Contractor fails to follow the approved QCP.

The Contractor shall notify the Resident in writing as to the reason for shutdown, as well as the proposed corrective action, by the end of the work day. Failure to do so will be treated as a second incident under 106.4.6 QCP Non-compliance. The Department will consider corrective action acceptable if the pay factor for the failing property increases, based on samples already in transit, or a verification sample is tested and the property falls within the specification limits.

In cases where the corrective action can be accomplished immediately, such as batch weight or cold feed changes, the Contractor may elect to resume production once the corrective action is completed. Additional QC testing shall be performed to verify the effectiveness of the corrective action. Subsequent occurrences of shutdown for the same property in a Lot in progress will require paving operations to cease. Paving operations shall not resume until the Contactor and the Department determines that material meeting the Contract requirements will be produced. The Department may allow the Contractor to resume production based upon a passing QC sample, with a split of the sample being sent to the Department for verification testing. If the submitted verification sample test results fall outside the specification limits, the Contractor shall cease production until a verification sample is submitted to the Department has been tested by the Department and found to be within specification limits.

If the Contractor's control chart shows the process to be out of control (defined as a single point outside of the control limits on the running average of three chart) on any property listed in Table 3: Control Limits, the Contractor shall notify the Resident in writing of any proposed corrective action by 1:00 PM the next working day.

The Department retains the exclusive right, with the exception of the first day's production of a new JMF, to determine whether the resumption of production involves a significant change to the production process. If the Department so determines, then the current lot will be terminated, a pay factor established, and a new lot will begin.

401.19 Quality Control Method D For Items covered under Method D, the Contractor shall submit a modified QC Plan detailing, how the mix is to be placed, what equipment is to be used, and what HMA plant is to be used. All mix designs (JMF) shall be approved and verified by MDOT prior to use. Certified QC personnel shall not be required. The Contractor shall certify the mix and the test results for each item by a Certificate of Compliance.

401.20 Acceptance Method A, B & C These methods utilizes Quality Level Analysis and pay factor specifications.
For Hot Mix Asphalt Pavement designated for acceptance under Quality Assurance provisions, the Department will sample once per sublot on a statistically random basis, test, and evaluate in accordance with the following Acceptance Criteria:

TABLE 4: ACCEPTANCE CRITERIA

PROPERTIES	POINT OF SAMPLING	TEST METHOD
Gradation	Paver Hopper	AASHTO T30
PGAB Content	Paver Hopper	AASHTO T308
%TMD (Surface)	Mat behind all Rollers	AASHTO T269
%TMD (Base or Binder)	Mat behind all Rollers	AASHTO T269
Air Voids at N_d	Paver Hopper	AASHTO T 312
%VMA at N_d	Paver Hopper	AASHTO T 312
Fines to Effective Binder	Paver Hopper	AASHTO T 312
%VFB	Paver Hopper	AASHTO T 312

In the event the Department terminates a Lot prematurely but fails to obtain the required number of acceptance samples to calculate the volumetric property pay factor under the test method specified in the contract, the pay factor shall be calculated using the number of samples actually obtained from the contract. Should the number of acceptance samples taken total less than three, the resulting pay factor shall be 1.0 for volumetric properties. A minimum of three cores will be used for a density pay factor, if applicable, for quantities placed to date.

Should the Contractor request a termination of the Lot in progress prior to three acceptance samples being obtained, and the Department agrees to terminate the Lot, then the pay factor for mixture properties shall be 0.80. A minimum of three cores will be used to determine a density pay factor, if applicable, for quantities placed to date.

Lot Size For purposes of evaluating all acceptance test properties, a lot shall consist of the total quantity represented by each item listed under the lot size heading.

Sublot size - Refer to section 401.201, 401.202, and 401.203 for minimum size and number of sublots. The quantity represented by each sample will constitute a sublot.

If there is less than one-half of a sublot remaining at the end, then it shall be combined with the previous sublot. If there is more than one-half sublot remaining at the end, then it shall constitute the last sublot and shall be represented by test results. If it becomes apparent partway through a Lot that, due to an underrun, there will be insufficient mix quantity to obtain the minimum number of sublots needed, the Resident may adjust the size of the remaining sublots and select new sample locations based on the estimated quantity of material remaining in the Lot.

Acceptance Testing The Department will obtain samples of Hot Mix Asphalt Pavement in conformance with AASHTO T168 Sampling Bituminous Paving Mixtures, and the Maine DOT Policies and Procedures for HMA Sampling and Testing, which will then be transported by the Contractor to the designated MDOT Laboratory within 48 hours (except when otherwise noted in the project specific QCP due to local restrictions), as directed by MDOT in approved transport containers to be provided by the Department, unless otherwise directed by the Resident. Failure to deliver an acceptance sample to the designated acceptance laboratory will be considered the second incident under 106.4.6–QCP Non-Compliance.

The Department will take the sample randomly within each sublot. 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 withhold reporting of 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.

Isolated Areas During the course of inspection, should it appear that there is an isolated area that is not representative of the lot based on a lack of observed compactive effort, excessive segregation or any other questionable practice, that area may be isolated and tested separately. An area so isolated that has a calculated pay factor below 0.80, based on three random tests shall be removed and replaced at the expense of the Contractor for the full lane width and a length not to be less than 50 m [150 ft].

Pavement Density The Department will measure pavement density using core samples tested according to AASHTO T-166. The Department will randomly determine core locations. The Contractor shall cut 6 inch diameter cores at no additional cost to the Department by the end of the working day following the day the pavement is placed, and immediately give them to the Department. Cores for Acceptance testing shall be cut such that the nearest edge is never within 0.225 m (9 inches) of any joint. The cores will be placed in a transport container provided by the Department and transported by the Contractor to the designated MDOT Lab as directed by the Department. Pre-testing of the cores will not be allowed. At the time of sampling, the Contractor and the Department shall mutually determine if a core is damaged. If it is determined that the core(s) is damaged, the Contractor shall cut new core(s) at the same offset and within 1 m [3 ft] of the initial sample. At the time the core is cut, the Contractor and the Department will mutually determine if saw cutting of the core is needed, and will mark the core at the point where sawing is needed. The core may be saw cut by the Contractor in the Department's presence onsite, or in an MDOT Lab by The Department, without disturbing the layer being tested to remove lower layers of Hot Mix Asphalt Pavement, gravel, or RAP. No recuts are allowed at a test location after the core has been tested. Upon conclusion of each lot, density results shall be examined for statistical outliers as stated in Section 106.7.2.

On all sections of overlay with wearing courses designed to be 19 mm [3/4 in] or less in thickness, there shall be no pay adjustment for density otherwise noted in Section 403 - Hot Bituminous Pavement. For overlays designed to be 19 mm [3/4 in] or less in thickness, density shall be obtained by the same rolling train and methods as used on mainline travelway surface courses with a pay adjustments for density, unless otherwise directed by the Department.

There shall be no pay adjustment for density on shoulders unless otherwise noted in Section 403 - Hot Bituminous Pavement. Density for shoulders shall be obtained by the same rolling train and methods as used on mainline travelway, unless otherwise directed by the Department. Efforts to obtain optimum compaction will not be waived by the Department unless it is apparent during construction that local conditions make densification to this point detrimental to the finished pavement surface course.

401.201 Method A Lot Size will be the entire production per JMF for the project, or if so agreed at the Pre-paving Conference, equal lots of up to 4500 Mg [4500 tons], with unanticipated over-runs of up to 1500 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 750 Mg [750 ton] for mixture properties, 500 Mg [500 ton] for base or binder densities and 250 Mg [250 ton] for surface densities. The minimum number of sublots for mixture properties shall be 4, and the minimum number of sublots for density shall be five.

TABLE 5: METHOD A ACCEPTANCE LIMITS

Property	USL and LSL
Passing 4.75 mm and larger sieves	Target +/-7%
Passing 2.36 mm to 1.18 mm sieves	Target +/-4%
Passing 0.60 mm	Target +/-3%
Passing 0.30 mm to 0.075 mm sieve	Target +/-2%
PGAB Content	Target +/-0.4%
Air Voids	4.0% +/-1.5%
Fines to Effective Binder	0.6 to 1.2
Voids in the Mineral Aggregate	LSL Only from Table 1
Voids Filled with Binder	Table 1 values plus a 4% production tolerance for USL only
% TMD (In place density)	95.0% +/- 2.5%

**For 4.75 mm nominal maximum aggregate size mixtures, the Fines/Effective Binder Ratio is 0.6-1.4.

401.202 Method B Lot Size will be the entire production per JMF for the project and shall be divided into 3 equal sublots for Mixture Properties and 3 equal sublots for density.

TABLE 6: METHOD B ACCEPTANCE LIMITS

Property	USL and LSL
Percent Passing 4.75 mm and larger sieves	Target +/-7
Percent Passing 2.36 mm to 1.18 mm sieves	Target +/-5
Percent Passing 0.60 mm	Target +/-4
Percent Passing 0.30 mm to 0.075 mm sieve	Target +/-3
PGAB Content	Target +/-0.5
Air Voids	4.0% +/-2.0
Fines to Effective Binder	0.6 to 1.4
Voids in the Mineral Aggregate	LSL from Table 1
Voids Filled with Binder	Table1 plus a 4% production tolerance for USL.
% TMD (In-place Density)	95.0% +/- 2.5%

401.203 Testing Method C Lot Size will be the entire production per JMF for the project, or if so agreed at the Pre-paving Conference, equal lots of up to 4500 Mg [4500 tons], with unanticipated over-runs of up to 1500 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 750 Mg [750 ton] for mixture properties, 500 Mg [500 ton] for base or binder densities and 250 Mg [250 ton] for surface densities. The minimum number of sublots for mixture properties shall be 4, and the minimum number of sublots for density shall be five.

TABLE 7: METHOD C ACCEPTANCE LIMITS

Property	USL and LSL
Passing 4.75 mm and larger sieves	Target +/-7%
Passing 2.36 mm to 1.18 mm sieves	Target +/-5%
Passing 0.60 mm	Target +/-4%
Passing 0.30 mm to 0.075 mm sieve	Target +/-2%
PGAB Content	Target +/-0.4%
Air Voids	4.0% +/-1.5%
Fines to Effective Binder	0.6 to 1.2
Voids in the Mineral Aggregate	LSL Only from Table 1
Voids Filled with Binder	Table 1 values plus a 4% production tolerance for USL only
% TMD (In place density)	95.0% +/- 2.5%

**For 4.75 mm nominal maximum aggregate size mixtures, the Fines/Effective Binder Ratio is 0.6-1.4.

401.204 Testing Method D For hot mix asphalt items designated as Method D in Section 403 - Hot Bituminous Pavement, one sample will be taken from the paver hopper or the truck body per 250 Mg [250 ton] per pay item. The mix will be tested for gradation and PGAB content. Disputes will not be allowed. If the mix is within the tolerances listed in Table 8: Method D Acceptance Limits, the Department will pay the contract unit price. If the test results for each 250 Mg [250 ton] increment are outside these limits, the following deductions (Table 8b) shall apply to the HMA quantity represented by the test.

TABLE 8: METHOD D ACCEPTANCE LIMITS

Property	USL and LSL
Percent Passing 4.75 mm and larger sieves	Target +/-7
Percent Passing 2.36 mm to 1.18 mm sieves	Target +/-5
Percent Passing 0.60 mm	Target +/-4
Percent Passing 0.30 mm to 0.075 mm sieve	Target +/-3
PGAB Content	Target +/-0.5
% TMD (In-place Density)	95.0% +/- 2.5%

TABLE 8b Method “D” Price Adjustments

PGAB Content	-5%
2.36 mm sieve	-2%
0.30 mm sieve	-1%
0.075 mm sieve	-2%
Density	-10%*

*Only applies when called for in Section 403 - Hot Bituminous Pavement. Contractor shall cut two 150 mm [6 in] cores, which shall be tested for percent TMD per AASHTO T-269. If the average for the two tests falls below 92.5% the disincentive shall apply.

401.21 Method of Measurement The Department will measure Hot Mix Asphalt Pavement by the Mg [ton] in accordance with Section 108.1 - Measurement of Quantities for Payment.

401.22 Basis of Payment The Department will pay for the work, in place and accepted, in accordance with the applicable sections of this Section, for each type of HMA specified.

The Department will pay for the work specified in Section 401.11, for the HMA used, except that cleaning objectionable material from the pavement and furnishing and applying bituminous material to joints and contact surfaces is incidental.

Payment for this work under the appropriate pay items shall be full compensation for all labor, equipment, materials, and incidentals necessary to meet all related contract requirements, including design of the JMF, implementation of the QCP, obtaining core samples, transporting cores and samples, filling core holes, applying emulsified asphalt to joints, and providing testing facilities and equipment.
The Department will make a pay adjustment for quality as specified below.

401.221 Pay Adjustment The Department will sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with Section 106 - Quality and Section 401.20 - Acceptance, of this Specification.

401.222 Pay Factor (PF) The Department will use the following criteria for pay adjustment using the pay adjustment factors under Section 106.7 - Quality Level Analysis:

Density If the pay factor for Density falls below 0.80 for Method A or C or 0.86 for Method B, all of the cores will be randomly re-cut by Sublot. A new pay factor will be calculated that combines all initial and retest results. If the resulting pay factor is below 0.80 for Method A or C or below 0.86 for Method B, the entire Lot shall be removed and replaced with material meeting the specifications at no additional cost to the Department, except that the Department may, when it appears that there is a distinct pattern of defective material, isolate any defective material by investigating each mix sample sublot and require removal of defective mix sample sublots only, leaving any acceptable material in place if it is found to be free of defective material. Pay factors equal to or greater than the reject level will be paid accordingly.

Gradation For HMA evaluated under Acceptance Method A or B, the Department will determine a composite pay factor (CPF) using applicable price adjustment factors “f“ from Table 9: Table of Gradation Composite “f” Factors, and Acceptance limits from Table 5: Method A Acceptance Limits, for Method A or Table 6: Method B Acceptance Limits, for Method B. The Department will not make price adjustments for gradation on Methods A and B, but will monitor them as shutdown criteria.

TABLE 9: TABLE OF GRADATION COMPOSITE " f " FACTORS (Methods A and B)

Constituent		"f" Factor			
		19 mm	12.5 mm	9.5 mm	4.75 mm
Gradation	25 mm	-	-	-	-
	19 mm	4	-	-	-
	12.5 mm		4	4	-
	9.50 mm				4
	2.36 mm	6	6	6	8
	1.18 mm				
	0.60 mm	2	2	2	2
	0.30 mm	2	2	2	2
	0.075 mm	6	6	6	8

For HMA evaluated under Acceptance Method C, the Department will determine a pay factor using acceptance limits from Table **7**: Method C Acceptance Limits.

VMA, Air Voids, VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using the applicable Acceptance Limits.

The following variables will be used for pay adjustment:

PA = Pay Adjustment
Q = Quantity represented by PF in Mg [ton]
P = Contract price per Mg [ton]
PF = Pay Factor

Pay Adjustment Method A

The Department will use the following criteria for pay adjustment: density, Performance Graded Asphalt Binder content, voids @N_d, VMA, VFB, F/B_{eff}, and the screen sizes listed in Table 9 for the type of HMA represented in the JMF. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.80, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.55.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 5: Method A Acceptance Limits:

PA = (density PF- 1.0)(Q)(P)x0.50

PGAB Content, VMA and Air Voids: The Department will determine a pay adjustment using Table 5: Method A Acceptance Limits as follows:

PA = (voids @ N_d PF- 1.0)(Q)(P)x0.20 + (VMA @ N_d PF- 1.0)(Q)(P)x0.20 + (PGAB PF- 1.0)(Q)(P)x0.10

VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using Table 5: Method A Acceptance Limits. The Department will not make price adjustments for VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

Pay Adjustment Method B

The Department will use the following criteria for pay adjustment: density, Performance Graded Asphalt Binder content, voids @N_d, VMA, VFB, F/B_{eff}, and the screen sizes listed in Table 9 for the type of HMA represented in the JMF. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.86, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.70.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 6: Method B Acceptance Limits:

PA = (density PF- 1.0)(Q)(P)x0.50

PGAB Content, VMA and Air Voids: The Department will determine a pay adjustment using Table 6: Method B Acceptance Limits as follows:

PA = (voids @ N_d PF- 1.0)(Q)(P)x0.20 + (VMA @ N_d PF- 1.0)(Q)(P)x0.20 + (PGAB PF- 1.0)(Q)(P)x0.10

VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using Table 6: Method B Acceptance Limits. The Department will not make price adjustments for VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

Pay Adjustment Method C

The Department will use density, Performance Graded Asphalt Binder content, and the percent passing the nominal maximum, 2.36 mm, 0.300 mm and 0.075 mm sieves for the type of HMA represented in the JMF. If the PGAB content falls below 0.80, then the PGAB pay factor shall be 0.55.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 7: Method C Acceptance Limits:

PA = (density PF- 1.0)(Q)(P)x0.50

PGAB Content and Gradation The Department will determine a pay factor using Table **7**: Method C Acceptance Limits. The Department will calculate the price adjustment for Mixture Properties as follows:

PA = (% Passing Nom. Max PF-1.0)(Q)(P)X0.05+(% passing 2.36 mm PF-1.0)(Q)(P)X0.05+(%passing 0.30 mm PF-1.0)(Q)(P)X0.05+(%passing 0.075 mm PF-1.0)(Q)(P)X0.10+(PGAB PF-1.0)(Q)(P)X0.25

VMA, Air Voids, VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using Table 7: Method C Acceptance Limits. The Department will not make price adjustments for VMA, Air Voids, VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

Pay Adjustment Method D

The Department will use density, Performance Graded Asphalt Binder content, and the screen sizes listed in Table 8b for the type of HMA represented in the JMF. If test results do not meet the Table 8 requirements, deducts as shown in Table 8b shall be applied to the quantity of mix represented by the test.

401.223 Process for Dispute Resolution (Methods A B & C 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 QA sampling, otherwise dispute resolution will not be initiated. 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.

b. Disputing Acceptance results The Contractor may dispute the Department's Acceptance results and request (Methods A, B, & C) that the dispute resolution split sample be tested by notifying the Department's Resident and the QA Engineer at the Central Laboratory in Bangor in writing within two working days after receiving the results of the Acceptance test. The following shall be provided in the request:

- Acceptance sample reference number
- The specific test result(s) or property(ies) being disputed, and
- The complete, signed report of the Contractor's testing (In a lab certified by the NETTCP and MDOT) of their split of the Acceptance sample indicating that the variances in Table10: Dispute Resolution Variance Limits, for the specific test result(s) or property(ies) were exceeded.

c. Disputable items The Contractor may dispute any or all of the following Method A or B test results when the difference between the Department's value and the Contractor's value for that test equals or exceeds the corresponding allowable variation in Table 10: Dispute Resolution Variance Limits, PGAB content, G_{mb}, and G_{mm}. In addition, if the allowable variation for these tests is not met or exceeded, the Contractor may dispute either or both of the following material properties provided the difference between results for them equals or exceeds the corresponding allowable variation in Table 10: Voids at N_{design}, and VMA.
For Method C only: The results for PGAB content and the screen sizes used for pay adjustment may be disputed.

d. Outcome The value of any disputed result or property reported for the initial Acceptance sample shall stand if the value reported for the dispute resolution sample is not closer to the value the Contractor reported for their split sample than to the value reported for the initial Acceptance sample. If the value reported for the dispute resolution falls precisely half-way between the other two values the value reported for the dispute resolution will replace the original acceptance value. Otherwise, the value reported for the dispute resolution sample will replace the value reported for the initial Acceptance sample, and will be used to re-calculate any other affected results or properties.

TABLE 10: DISPUTE RESOLUTION VARIANCE LIMITS

PGAB Content	+/-0.4%
G_{mb}	+/-0.030
G_{mm}	+/-0.020
Voids @ N_d	+/-0.8%
VMA	+/-0.8%
Passing 4.75 mm and larger sieves	+/- 4.0%
Passing 2.36 mm to 0.60 mm sieves	+/- 3.0%
Passing 0.30 mm to 0.15	+/- 2.0 %
0.075 mm sieve	+/- 1.0%

SECTION 402 - PAVEMENT SMOOTHNESS

402.00 Smoothness Projects Projects to have their pavement smoothness analyzed in accordance with this Specification will be so noted in Special Provision 403 - Bituminous Box

402.01 Pavement Smoothness The final pavement surface shall be evaluated for smoothness using a Class I or Class II profiler as defined by ASTM E950 (94). Smoothness measurements will be expressed in terms of the International Roughness Index (IRI) as defined by the World Bank, in units of inches/mile.

402.02 Lot Size Lot size for smoothness will be 1000 lane-meters [3000 lane-feet]. A sublot 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 equal to or greater than one-half the normal lot size, it will be tested as a separate lot.

402.03 Acceptance Testing The Department will conduct Acceptance testing following completion of the surface course. Sections to be excluded from testing include the following:

Bridge decks and joints (no smoothness measurements will be taken within 30 m [100 ft] of bridge joints)
Acceleration and deceleration lanes
Shoulders and ramps
Side streets and roads
Within 30 m [100 ft] of transverse joints at the beginning and end of the project
Within 30 m [100 ft] of railroad crossings
Urban areas with speed limits of 50 kph [30 mph] or lower

Each lot shall have 2 measurements made in each wheel path. The average of the 4 measurements will determine the smoothness for that lot.

The smoothness measurements will be statistically evaluated for pay factors as described in Subsection 106.7 - Quality Level Analysis, using the specification limits shown below.

ACCEPTANCE LIMITS

Level	USL
I	0.95 m/km [60 in/mile]
II	1.10 m/km [70 in/mile]
III	1.25 m/km [80 in/mile]

Computation of Smoothness Pay Adjustment:

PA = (PF-1.0)(Q)(P)
where:
Q = Quantity of surface course in the Lot (excluding shoulders, side streets, bridge decks, ramps, acceleration and deceleration lanes)
PF = smoothness pay factor for the Lot
P = Contract unit price for surface pavement
PA = pay adjustment

402.04 Unacceptable Work In the event that any Lot is found to have a pay factor less than 0.80, the Contractor shall take whatever remedial action is required to correct the pavement surface in that Lot at no additional expense to the Department. Such remedial action may include but is not limited to removal and replacement of the unacceptable pavement. In the event remedial action is necessary, the Contractor shall submit a written plan to the Resident outlining the scope of the remedial work. The Resident must approve this plan before the remedial work can begin. Following remedial work, the Lot shall be retested, and will be subject to the specification limits listed above. The resulting pay factor, if within the acceptable range, will be used in the final pay adjustment. The Contractor shall pay the cost of retesting the pavement following corrective action.

Localized surface tolerance defects will be subject to the provisions outlined in Section 401.101 Surface Tolerances.

Payment will be made under:

Pay Item	Pay Unit
402.10 Incentive/Disincentive - Pavement Smoothness	Lump Sum

SECTION 403 - HOT BITUMINOUS PAVEMENT

403.01 Description This work shall consist of constructing one or more courses of bituminous pavement on an approved base in accordance with these specifications, and in reasonably close conformity with the lines, grades, thickness and typical cross sections shown on the plans or established.

The bituminous pavement shall be composed of a mixture of aggregate, filler if required, and bituminous material.

403.02 General The materials and their use shall conform to the requirements of Section 401 - Hot Mix Asphalt Pavement.

403.03 Construction The construction requirements shall be as specified in Section 401 - Hot Mix Asphalt Pavement.
In addition, hot bituminous pavement placed on bridges shall also conform to the following requirements.

a. The mixture shall be composed of aggregate, PGAB and mineral filler but no recycled asphalt pavement and placed in courses as specified in the Special Provisions.

b. The bottom course shall be placed with an approved rubber mounted bituminous paver of such type and operated in such a manner that the membrane waterproofing will not be damaged in any way.

c. The top course shall not be placed until the bottom course has cooled sufficiently to provide stability.

d. The Contractor will not be required to cut sample cores from the compacted pavement on the bridge deck.

e. After the top course has been placed, the shoulder areas shall be sealed 1 meter [3 ft] wide with two applications of an emulsified bituminous sealer meeting the requirements of Section 702.12 - Emulsified Bituminous Sealing Compound. The first application shall be pre-mixed with fine, sharp sand, similar to mortar sand, as needed to fill all voids in the mix in the area being sealed. The second application may be applied without sand. The sealer shall be carried to the curb at the gutter line in sufficient quantity to leave a bead or fillet of material at the face of the curb. The area to be sealed shall be clean, dry and the surface shall be at ambient temperature.

f. The furnishing and applying of the required quantity of sealer for the bridge shoulder areas shall be incidental to placing the hot bituminous pavement.

g. The atmospheric temperature for all courses on bridge decks shall be 10°C [50°F] or higher.

403.04 Method of Measurement Hot bituminous pavement will be measured as specified in Section 401.21- Method of Measurement.

403.05 Basis of Payment The accepted quantities of hot bituminous pavement will be paid for at the contract unit price per Megagram [ton] for the bituminous mixtures, including bituminous material complete in place.

Method A, Method B, Method C and Method D shall be used for acceptance as specified in Section 401 - Hot Mix Asphalt Pavements. (See Complementary Notes, Section 403 - Hot Bituminous Pavement, for Method location).

Payment will be made under:

Pay Item		Pay Unit
403.102	Hot Mix Asphalt Pavement for Special Areas	MG [Ton]
403.206	Hot Mix Asphalt, 25 mm Nominal Maximum Size	MG [Ton]
403.207	Hot Mix Asphalt, 19.0 mm Nominal Maximum Size	MG [Ton]
403.2071	Hot Mix Asphalt , 19.0 mm Nominal Maximum Size	MG [Ton]
403.2072	Asphalt Rich Hot Mix Asphalt,19.0 mm Nominal Maximum Size (Asphalt Rich Base and Intermediate course)	MG [Ton]
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	MG [Ton]
403.2081	Hot Mix Asphalt - 12.5 mm Nominal Maximum Size (PG 70-28)	MG [Ton]
403.209	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals)	MG [Ton]
403.210	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size	MG [Ton]
403.2101	Hot Mix Asphalt - 9.5 mm Nominal Maximum Size (PG 70-28)	MG [Ton]
403.2102	Asphalt Rich Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Asphalt Rich Intermediate course)	MG [Ton]
403.211	Hot Mix Asphalt (shimming)	MG [Ton]
403.212	Hot Mix Asphalt, 4.75 mm Nominal Maximum Size	MG [Ton]
403.2131	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size, (PG 70-28) (Base and Intermediate Base course)	MG [Ton]
403.2132	Asphalt Rich Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	MG [Ton]

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
Route 3 Travel Way, Shoulder & Approach Areas						
Wearing	12.5 mm	403.208	N/A	1.5 in	1	4,8
Binder	12.5 mm	403.213	N/A	1.5 in	1	4,8
Base	19.0 mm	403.207	N/A	3.0 in	1	4,8,16
Park Loop Road						
Wearing	12.5 mm	403.208	N/A	1.5 in	1	4,8
Base	12.5 mm	403.213	N/A	1.5 in	1	4,8
Parking Lot Entrances						
Wearing	12.5 mm	403.208	N/A	1.5 in	1	4,8
Base	12.5 mm	403.213	N/A	1.5 in	1	4,8
Parking Lot Sewer Area						
Wearing	9.5 mm	403.209	N/A	4.0 in	2	2,3,10,14
Sidewalks, Drives, Islands & Incidentals						
Wearing	9.5 mm	403.209	N/A	2 in	2/more	2,3,10,14

COMPLEMENTARY NOTES

2. Mixtures will not be evaluated for density, and will not be subject to a density pay adjustment. Mixtures placed on bridge deck surfaces shall be compacted using the same equipment used for approach work. In addition, the use of an oscillating steel roller shall be required to compact all HMA pavements placed on bridge decks.
3. The design traffic level for mix placed shall be <0.3 million ESALS.
4. The design traffic level for mix placed shall be 0.3 to <3 million ESALS. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **75 gyrations.**
8. Section 106.6 Acceptance, (2) Method B.
10. Section 106.6 Acceptance, (2) Method D.
14. 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.
16. Any base or binder mix left exposed to traffic over the winter shall have a layer of 12.5 mm mix substituted for the 19mm mix. If this substitution is made, the specified layers may need to be modified, as approved by the Resident.

Tack Coat

A tack coat of emulsified asphalt, RS-1, Item 409.15 shall be applied to any existing pavement at a rate of approximately 0.025 gal/yd², and on milled pavement approximately 0.05 gal/yd², 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 0.025 gal/yd².

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

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

CLASS OF CONCRETE	ITEM NUMBER	DESCRIPTION	P	METHOD
A	502.21	Struct. Conc., Abut. and Retaining Walls	$400	C

P values listed above reflect the price per cubic yard (yd^3) 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, B, and C

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 sublot 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 sublot size, then the lot shall be divided into 3 equal sublots.

Sublot Size, General The size of each sublot shall be determined in accordance with Table #3. The Resident may vary sublot 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 sublot quantity in the remaining quantity, then this quantity shall be combined with the previous sublot, and no further Acceptance testing will be performed; if there is more than one-half the estimated sublot quantity in the remaining quantity, then this quantity shall constitute the last sublot 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 sublot 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 sublot, 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 ≥ 56 days. Two 100 mm x 200 mm [4 in x 8 in] cylinders will be taken per sublot 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 sublot 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:

CPF = [(Compressive Strength PF-1)(0.20)] + [(Air Content PF-1)(0.40)]
+ [(Chloride Permeability PF-1)(0.40)]

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

Lot Pay Adjustment = P x CPF x Lot Size

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

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Precast Block Mat)

502.195 Description Precast block mat is an articulated concrete block revetment system. This system shall be made up of 4' x 16' or 8' x 16' mattresses (if needed, irregular mat sizes may be designed), which are placed side by side and clamped together to provide one homogeneous erosion protection system. The mats are made up of concrete blocks held together by integrally woven stainless steel cables, which are poured within each block. A geotextile shall be installed on the sub base prior to the installation of the articulated concrete mats. The size of the concrete blocks shall be 15.5" square at the base and 11.5" square at the top face and 8 ½" thick (a truncated pyramid shape). Blocks shall be solid. Open cell blocks will not be accepted.

502.196 Concrete The minimum required concrete strength shall be 4000 psi @ 28 days. Air entrainment of 4% to 7% shall also be added. All ASTM standards shall be met in the production of the concrete. The finished concrete product shall consist of a minimum density of 140lbs/cf, in an average of 3 units. No individual block shall consist of a minimum concrete density lower than 135lbs/cf.

502.197 Cables The cables shall be made of stainless steel aircraft cable of type 302. The cable shall be of type 1 X 19 construction. Cables shall be integral (poured into) to the concrete block, and shall traverse through each block in both longitudinal & lateral directions of the mat system.

502.198 Geotextile The geotextile shall be Class I, Non-woven, Erosion Control Geotextile meeting the requirements of Standard Specificiation 722.03. The geotextile fabric is to be placed on the prepared sub base prior to the installation of the articulated concrete mats.

502.199 Clamps Stainless steel wire rope clamps shall be used to secure loops of adjoining precast block mats. The standard placement of clamps shall be placed on 4' interlocking adjoining mats together. Clamps are required only in applications exceeding 10' per section. In slope applications greater than 2 to 1 where the mats are placed end to end, clamps shall be placed on 4' centers interlocking adjoining mats together.

502.200 Anchoring Precast block mats shall be anchored in accordance with the manufacturer's recommendations. Mats will be exposed to occasional maintenance vehicular traffic as well as ocean tidal surges and wave action. Anchorage of the mats shall be designed accordingly by the manufacturer.

502.201 Ground Preparation The graded area shall be clear of all deformities such as roots, grade stakes, and large stones. The entire area needs to be smooth so that intimate contact with each individual block can be achieved. To obtain required elevation, clear stone may be used as a drainage membrane as well as a leveling base. Once the area to be installed is approved by the Resident, installation can proceed.

502.202 Installation The supplier shall have a technician experienced in the installation of the precast block mat available at the start of an installation to assist in any special techniques needed to assure a proper installation.

The gaps between each mat shall not be greater then 2 inches. Otherwise, the gap must be closed using a grout mixture. The outside edges of the mat system shall be keyed in at least one block to add extra stability to the system and also to prevent undercutting.

The gaps between blocks shall be backfilled with Crushed Stone meeting the requirements of Standard Specification 703.31. Crushed stone shall not be placed until inspection of the precast block mat system's placement, clamping, and anchoring is complete and accepted.

502.203 Method of Measurement Precast Block Mat will be measured for payment by the number of square feet of the total mat system complete and in place.

502.204 Basis of Payment The accepted quantity of Precast Block Mat shall be paid for at the Contract unit price per square foot complete in place and accepted. Such payment shall include full compensation for all labor, materials, equipment, and incidentals necessary to complete the work including geotextile, anchors, stainless steel wire rope clamps, and crushed stone backfill.

Payment will be made under:

Pay Item		Pay Unit
502.83	Precast Block Mat	SF

SECTION 511- COFFERDAMS

511.01 Description This work shall consist of the complete design, construction, maintenance and removal of cofferdams and other related work, including dewatering and inspection, required to allow for the excavation of foundation units, to permit and protect the construction of bridge or other structural units and to protect adjacent Roadways, embankments or other structural units, in accordance with the Contract.

511.02 Materials As specified in the cofferdam Working Drawings.

511.03 Cofferdam Construction

A. Working Drawings. The Contractor shall submit Working Drawings, showing the materials to be used and the proposed method of construction of cofferdams to the Department. Construction shall not start on cofferdams until such Working Drawings have been submitted. Any review of or comment on, or any lack of review of or comment on, these Working Drawings by the Department shall not result in any liability upon the Department and it shall not relieve the Contractor of the responsibility for the satisfactory functioning of the cofferdam.

B. Construction. Construct cofferdams in conformance with the submitted Working Drawings. Cofferdams shall, in general, be carried below the elevation of the bottom of footings to adequate depths to ensure stability and adequate heights to seal off water. Cofferdams shall be braced and be as watertight as necessary for the safe and proper construction of the substructure Work inside them. With the exception of construction of a concrete foundation seal placed under water, the interior dimensions of cofferdams shall provide sufficient clearance for the construction and inspection of forms and to permit pumping outside of forms. The Contractor shall be responsible for the righting and resetting of cofferdams that have tilted or moved laterally, as required for construction.

During the placing and curing of seal concrete, the elevation of the water inside the cofferdam shall be controlled to prevent flow through the concrete.

No timber or bracing shall be used in cofferdams in such a way as to remain in the substructure Work.

Cofferdams shall be constructed to protect fresh concrete against damage from the sudden rising of the water body, to prevent damage by erosion and to prevent damage to adjacent Roadways, embankments or other structural units.

Unless otherwise noted, cofferdams, including all sheeting and bracing involved, shall be removed after the completion of the substructure Work in a manner that prevents disturbance or injury to the finished Work.

Cofferdams shall be constructed, dewatered and removed in accordance with the requirements of Section 656 - Temporary Soil Erosion and Water Pollution Control and related Special Provisions.

C. Inspection of Seal Cofferdams. Seal cofferdam excavations shall initially be inspected and approved by the Contractor.

For each seal cofferdam excavation, the Contractor shall submit a written procedure to the Resident for sediment/overburden removal and excavation inspection. For cofferdams where seal concrete is to be placed on bedrock, the inspection procedure shall describe the Contractor's final cleaning and inspection process for attaining cleanliness of each cofferdam excavation. For cofferdams where seal concrete is not excavated to bedrock, the procedure shall describe the Contractor's final cleaning and inspection process for attaining the bottom of seal elevation shown on the Plans.

The Contractor shall notify the Resident at least 48 hours prior to when each seal cofferdam excavation will be ready for final inspection by the Department. The Contractor shall allow adequate time for each occurrence of cofferdam excavation inspection by the Department. The Contractor shall provide and maintain access and equipment, such as steel probes, for the Resident and/or the Department's Dive Team to independently inspect each cofferdam excavation.

No seal concrete placement shall begin until the Department has approved the cofferdam excavation.

511.04 Pumping Pumping from the interior of any cofferdam shall be done in such a manner as to prevent any current of water that would carry away or segregate the concrete.

Pumping to dewater a sealed cofferdam shall not commence until the seal concrete has set sufficiently to withstand the hydrostatic pressure and meets the following minimum curing time, after the completion of the installation of the seal concrete:

1. When the temperature of the water body outside the cofferdam is greater than 40°F, a minimum of 5 days.
2. When the temperature of the water body outside the cofferdam is less than 40°F, a minimum of 7 days.

Procedures for the removal of all water and materials from cofferdams shall be described in the Soil Erosion and Water Pollution Control Plan as required in Section 656 Temporary Soil Erosion and Water Pollution Control and related Special Provisions.

511.05 Method of Measurement Cofferdams will be measured as one lump sum unit, as indicated on the Plans or called for in the Contract.

511.06 Basis of Payment The accepted quantity of cofferdam will be paid for at the Contract lump sum price for the respective cofferdam items, which price shall be full compensation for design, construction, maintenance, inspection and removal.

When required, the elevation of the bottom of the footing of any substructure unit may be lowered, without change in the price to be paid for cofferdams. However, if the average elevation of more than 25% of the area of the excavation is more than 3 feet below the elevation shown on the Plans, and if requested by the Contractor, then the additional costs incurred that are included in the cofferdam Pay Item will be paid for in accordance with Section 109.7 - Equitable Adjustments to Compensation. The Contractor shall immediately notify the Department when these additional costs commence. Failure of the Contractor to provide this notification will result in undocumented additional work that will be non-reimbursable. The Department will evaluate this additional work to determine an appropriate time extension, if warranted.

All costs for sedimentation control practices, including, but not limited to, constructing, maintaining, and removing sedimentation control structures, and pumping or transporting water and other materials for sedimentation control will not be paid for directly, but will be considered incidental to the cofferdam Pay Item(s).

All costs for related temporary soil erosion and water pollution controls, including inspection and maintenance, will not be paid for directly, but will be considered incidental to the cofferdam Pay Item(s).

All costs associated with preparation of Working Drawings, design calculations, written procedure for sediment/overburden removal and excavation inspection, and the inspection of the seal cofferdam excavation shall be considered incidental to the cofferdam Pay Item(s). There shall be no additional payment for repeated inspection by the Department of the same cofferdam excavation.

All costs for cofferdams and related temporary soil erosion and water pollution controls, including inspection and maintenance, will be considered incidental to related Pay Items, when a specific Pay Item for cofferdams is not included in the Contract.

Payment will be made under:

Pay Item	Pay Unit
511.07 Cofferdam	Lump Sum

SPECIAL PROVISION
SECTION 525
GRANITE MASONRY
(Dry-Laid Stone Masonry Wall)

Description This work shall consist of supplying material for and constructing a Dry-Laid Stone Masonry Wall in accordance with these Specifications and in reasonably close conformity with the lines, grades, and dimensions shown on the Plans or as directed by the Resident.

The Dry-Laid Stone Masonry Wall consists of the following components:

- Leveling pad - a 12 inch thick bed of crushed stone used to provide a level surface to place wall stones.
- Wall stones – Stones shall be granite blocks that are dense, sound, durable, and free from seams, cracks, starts and other structural defects. Granite shall be Jonesboro Red per the color classification system of the National Building Granite Quarries Association. All granite stones shall have a split face finish with exposed surfaces free from tool marks. All stones shall be so finished that no holes or portions of holes shall show on surfaces that will be exposed in the finished work. Stone dimensions shall be a minimum of 12 inches tall by 12 inches deep by 4 feet long.
- Filter Fabric - drainage geotextile meeting the requirements of Section 722.
- Backfill - soil is placed behind the wall and leveling pad (below aggregate subbase course)

Terminology:

- Split faced - stone on which the face has been broken to an approximate plane.
- Seam - a crack or fissure in a rough quarry block.
- Start - the beginning of a crack, caused by quarrying, fabrication or handling.

Construction Requirements The top of the leveling pad shall be placed so that the embedment depth of the wall is adequate to maintain stability. The minimum embedment depth to the top of the pad shall be 9 inches.

The Dry-Laid Stone Masonry Wall shall be built by a skilled mason thoroughly experienced in this type of wall construction.

1. The foundation shall have sufficient strength to maintain global stability of the wall. The in-situ soils may be used at the direction of the Resident.

2. The leveling pad shall be placed to the lines and grades as shown on the construction drawings, and shall have a minimum thickness of 12 inches. The leveling pad shall

extend at least 3 in beyond the wall stones in all directions. Steps in the leveling pad shall have a minimum overlap of 8 in.

3. The backfill used behind the wall shall meet the requirements of Granular Borrow, Section 703.19 - Material for Embankment Construction. Backfill shall be placed, spread, and compacted from the back of the stone wall toward the limits of the excavation. Backfill shall be placed in lifts not to exceed 8 in and compacted with lightweight, hand operated compaction equipment. Backfill beyond 3 ft from the back of the stone wall shall be compacted to 95% of the maximum density as determined by AASHTO T-180, Method C or D. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be within 2 percentage points dry of optimum.

4. The filter fabric shall be a geotextile meeting the requirements of Section 722.02, Drainage Geotextile. It shall be placed between the stone wall/leveling pad and the backfill.

5. The wall stones shall be placed in running bond with adequate chinking to resist frost action.

6. Joints shall be level and horizontal; only short vertical joints will be allowed and no more than two vertical joints may be stacked above each other. Stones shall be stacked in a manner such that diagonal joints are kept to a minimum. Joint size in the face of the wall should be kept to a minimum and should not exceed 1.5 in.

Method of Measurement Dry-Laid Stone Masonry Wall will be measured by the square foot of front surface not to exceed the measurements shown on the plans or as authorized by the Resident. Vertical dimension limits will be from the top of the leveling pad to the top of the wall. Horizontal dimension limits will be from each end of the wall.

Basis of Payment The accepted quantity of Dry-Laid Stone Masonry Wall will be paid for at the contract unit price per square foot, complete, cleaned of debris and accepted in place. The unit price shall be full compensation for excavation, leveling pad, filter fabric, backfill, and grading beyond the face of the wall and furnishing all materials, labor, equipment, and other incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
525.325	Dry-Laid Stone Masonry Wall	Square foot

SPECIAL PROVISION
SECTION 525
GRANITE MASONRY
(Granite Masonry Facing)

Description This work shall consist of furnishing and placing granite facing in accordance with these Specificiations and as shown on the Plans. Unless otherwise modified herein and on the Plans, requirements of Standard Specification Section 525 shall apply.

Materials Granite shall be Jonesboro Red per the color classification system of the National Building Granite Quarries Association. All granite stones shall have a split face finish.

Stone heights shall be a minimum of 8 inches. A minimum of three courses, including the capstone, shall be placed.

Method of Measurement Granite Masonry Facing will be measured for payment by the number of square feet of exposed granite masonry, including joints, in the completed work and measured from the pitch lines as shown on the Plans.

Basis of Payment Granite Masonry Facing will be be paid for at the Contract unit price per square foot complete in place and accepted. This price shall include all materials, labor and incidentals necessary to complete the work. The cost of the anchors and dowels for the masonry shall be included in the Contract unit price of this item.

Payment will be made under:

Pay Item		Pay Unit
525.34	Granite Masonry Facing	Square foot

May 13, 2008
Supercedes June 24, 2004

SPECIAL PROVISION
SECTION 526
CONCRETE BARRIER
(Temporary Concrete Barrier)

Materials

Temporary concrete barriers must be connected in accordance with Standard Detail 526(02) except as indicated below:

The top of the rod may be hooked over the top connector instead of using the hex nut and washer.

SPECIAL PROVISION
SECTION 528
STRUCTURAL TIMBER
(Glued Laminated Timber Bridge Rail)

Description This work shall consist of detailing, fabricating, treating, delivering, assembling, and erecting the structural glued laminated timber (glulam) rail system over the bridge structure.

The rail system shall consist of rail posts, traffic rails, pedestrian rails, splice plates, and all necessary hardware.

Materials The materials required for timber construction shall conform to the following requirements:

(a) Structural Timber

1. Manufacture, grading, and quality control of structural glued laminated timber shall be in accordance with AASHTO M168 Wood Products and AWPA (American Institute of Timber Construction) Voluntary Product Standard PS 56.

2. Adhesives shall be for wet-use conforming to ASTM D 2559.

3. Glued laminated timber shall be manufactured from either Southern Pine or coastal Douglas Fir, with allowable design values equal to or exceeding the following:

   E = 1,800,000 psi
   F_c perpendicular to grain = 650 psi
   F_{by} = 2400 psi
   F_v parallel to wide face = 260 psi
   F_v perpendicular to wide face = 300 psi

4. Material shall be sound and free from any decay. Materials which are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned, or too small shall not be used.

5. All lumber shall have a moisture content between 16 and 19% (oven dry basis) after preservative treatment and prior to fabrication and assembly. Moisture content is to be confirmed in accordance with AWPA A6, using a minimum sample size of 40 cores per lot of lumber taken at random throughout the lot. The length of each core sample shall be one-half the thickness of the section. The cored lumber shall be discarded and shall not be used in the manufacture of the superstructure.

6. All lumber and timber shall be graded, approved, and stamped or tagged by a lumber grader, certified by an agency that has been approved by the Board of Review of the American Lumber Standards Committee.

(b) Treatment

1. All Timber shall be treated in accordance with AASHTO M 133-86 (1990) Preservatives and Pressure Treatment Process for Timber.

2. The rail system shall be treated with Alkaline Chromated Copper Arsenate – Type B (Ammoniacal Copper Zinc Arsenate for Douglas Fir) conforming to AWPA Standard P5 to a minimum retention of 0.6 PCF in accordance with AWPA Standard C14.

3. All glulam to be treated with preservative in accordance with AWPA Standard C28 for glulam. All members shall be free of excess preservative and solvent at the conclusion of the treating process.

4. As specified in section M4 of the AWPA standards, all lumber and timber members shall be dimensioned, cut, machined and drilled to the maximum extent prior to preservative treatment.

5. Field cuts shall be limited to holes and trimming rail pieces to the correct length**.** Any field drilling, field cutting or abrasions shall be site flooded with copper naphthenate preservative or treated in accordance with AWPA Standard M4 or the damaged components shall be replaced if required by the inspector.

6. Holes remaining after removal of nails and spikes used to attach temporary forms or bracing to treated material shall be filled by plugging holes with plugs treated with the same preservative as the material.

7. Any damaged members are subject to rejection by the Resident.

8. Field treatment of materials with CCA shall be done in such a manner to prevent any CCA from entering the surface waters. CCA shall not be applied over water unless absolutely necessary, in which case a tarp or other containment system shall be provided to catch the drips. Spraying will not be allowed.

(c) Hardware

1. Except as modified herein, all steel required to assemble the rail system, including posts, splice plates, and all hardware, shall conform to Standard Specification Section 504 – Structural Steel and shall be hot dip galvanized.

2. Bolts shall be as specified in the Plans.

Drawings The Contractor shall prepare shop detail, erection, and any other necessary working drawings in accordance with the requirements of Subsection 105.7 Working Drawings.

Rail pieces shall be attached to a minimum of 2 rail posts.

Rejections Rejected material and workmanship shall be replaced promptly or corrected by the Contractor. Acceptance of any material or finished members by the Resident will not preclude their subsequent rejection, if found defective at a later date.

CONSTRUCTION REQUIREMENTS

General

1. Type of construction shall be as shown on plans. Workmanship and finish shall be equal to best general practice in modern timber fabrication shop.

2. Glued laminated timber furnished under this Specification shall be fabricated by an AITC Licensed Laminator with proven experience in the field of timber bridge design and construction. Fabrication must comply with the latest edition of the American National Standards for Wood Products – Structural Glued Laminated Timber, ANSI/AITC A 190.1.

3. Unless otherwise specified, all material shall be fabricated prior to treatment.

4. Bolt hole dimensions and locations within prefabricated material shall be within a tolerance of 1/16” of the details specified.

Storage and Handling

1. Timber stored on site shall be kept in orderly piles, close stacked and on supports that provide at least 12 inches of ground clearance. For outside storage, ground area in the vicinity of the material shall be cleared of grass, weeds, and rubbish. When authorized by Resident, treated material may be left uncovered.

2. Prior to assembly, fabricated material shall be stored in a manner that will prevent distortion of the members, such as warping or bending.

3. All handling of timber shall be conducted so that the timber is kept clean and free from injury. Timber shall be so handled that there is no breaking of outer fibers or penetrating of the surface with tools. No material shall be dropped, thrown or dragged on the ground.

4. Lifting equipment shall employ fabric belts or other slings which will not mar or dent the timber.

Framing

1. All framing shall be true and exact so that joints will have full and even bearing over the entire contact surface. Shimming will not be accepted.

2. Contractor shall provide false work and all tools & machinery necessary for expeditious conduct of the work.

Connections

Bolt holes shall be perpendicular to the face of the material and 1/16" larger in diameter than the bolts.

Posts

Bridge railing posts shall be installed as truly vertical as possible within the following tolerance limit: 5/16" in any direction as measured from grade to the top of the post.

Method of Measurement Each Glued Laminated Timber Bridge Rail component listed below shall be measured as Lump Sum of bridge rail erected and accepted. Measurements will be along the face in reasonable close conformity with the lines shown on the Plans.

Basis of Payment The accepted quantity of each Glued Laminated Timber Bridge Rail component listed below will be paid for at the Contract unit price per Lump Sum, completed, and accepted. Price shall be full compensation for detailing, furnishing, transporting, handling, installing/erecting, painting or treating the material as specified, all hardware, and the furnishing of all labor, materials, tools, equipment and incidentals necessary to complete the work. False work, forms, bracing, sheeting, or other timber used for erection purposes will not be paid for directly but shall be considered as included in the unit price for these items.

Payment will be made under:

Pay Item		Pay Unit
528.9101	Glue - Lam Timber Bridge Rail	Lump Sum
528.9101	Glue - Lam Timber Bridge Rail - Transition	Lump Sum
528.9104	Glue - Lam Timber Bridge Rail, 4 Bar	Lump Sum

SPECIAL PROVISION
SECTION 534
PRECAST STRUCTURAL CONCRETE
(Precast Structural Concrete Arches, Box Culverts, Frames)

534.10 Description The Contractor shall design, manufacture, furnish, and install elements, precast structural concrete structures, arches, box culverts or three sided frames and associated wings, headwalls, toe walls/cut off walls and appurtenances, in accordance with the Contract Documents.

534.20 Materials Unless otherwise specified in this Special Provision, structural precast elements for the arch, box culvert, or frame and associated precast elements shall meet the requirements of the following Subsection:

Structural Precast Concrete Units	712.061

Maximum permeability of the concrete shall be 2,000 Coulombs at 56 days.

Material for reinforcing shall meet the requirements of Special Provision Section 709 – Reinforcing Steel and Welded Steel Wire Fabric.

Grout, concrete patching material, and geotextiles shall be one of the products listed on the Department's list of prequalified materials, unless otherwise approved by the Department.

Box culvert bedding and backfill material shall consist of Standard Specification 703.19, Granular Borrow, Material for Underwater Backfill, with the additional requirement that the maximum particle size be limited to 4 inches, or as shown on the Plans.

534.30 Design Requirements The Contractor shall design the precast structural concrete structure in accordance with the AASHTO LRFD Bridge Design Specifications, current edition. The live load in the AASHTO LRFD Bridge Design Specifications shall be used for all limit states except for Strength I. The live load used for the Strength I limit state is the Maine Modified Live Load which consists of the standard HL-93 Live Load with a 25% increase in the Design Truck. Wheel loads based on the Design Truck shall be increased 25%.

The live load deflection check per AASHTO LRFD Bridge Design Specifications Section 2.5.6.2 for the top slab of box culverts with clear spans 15 feet or greater and cover depths of 4 feet or less is mandatory. The live load deflection check shall be documented in the design computations.

Design calculations that consist of computer program generated output shall be supplemented with at least one hand calculation and graphic demonstrating the design methodology used. The hand calculation shall document as a minimum the Strength I load case flexural design check of

the top slab positive moment reinforcing steel. Design calculations shall provide thorough documentation of the sources of equations used and material properties.

All design options shall be load rated in accordance with the AASHTO Manual for Bridge Evaluation, latest edition by the LRFR method. The design shall be load rated based on both the HL-93 Live Load and the HL-93 Modified Live Load. The live load rating computations shall include a completed MaineDOT Summary of Rating Form based on the rating factors for the HL-93 Live Load only. The MaineDOT Summary of Rating Form maybe accessed at the following MaineDOT web address: http://www.maine.gov/mdot/contractors/

Loading ratings shall be provided in the following situations:

1. All structures with clear spans between 10 feet and 15 feet with 3 feet or less of fill over the top of the structure.

2. All structures with clear spans between 15 feet and 20 feet with 8 feet or less of fill over the top of the structure.

3. All structures with clear spans 20 feet or greater.

The Contractor shall submit design calculations, load rating if applicable, and working/shop drawings for the precast structure to the Department for approval. A Registered Professional Engineer, licensed in accordance with State of Maine laws, shall sign and seal all design calculations and drawings. Drawings shall conform with Section 105.7 - Working Drawings.

The Contractor shall submit the following items for review by the Resident at least ten working days prior to production:

A) The name and location of the manufacturer.
B) Method of manufacture and material certificates.
C) Description of method of handling, storing, transporting, and erecting the members.
D) Design computations (bound and indexed)
E) Load rating computations and completed load rating form (bound and indexed)
F) Shop Drawings with the following minimum details:

   a. Fully dimensioned views showing the geometry of the members, including all projections, recesses, notches, openings, block outs, and keyways.
   b. Details and bending schedules of reinforcing steel including the type, size, spacing, and location. Reinforcing provided under lifting devices shall be shown in detail.
   c. Details and locations of all items to be embedded.
   d. Total mass (weight) of each member.

534.40 Construction Requirements The applicable provisions of Subsection 535.10 - Forms and Casting Beds and Subsection 535.20 – Finishing Concrete and Repairing Defects shall be met.

Each precast unit shall not be placed in its final position, exposed to salt water, until a minimum of 28 days after that unit was cast.

Manufacture of Precast Units The internal dimensions shall not vary by more than 1 percent from the design dimensions or 38 mm [1 ½ in], whichever is less, with the exception of the cross diagonal dimension which shall not vary by more than 12 mm [½ in] from the design dimension. The haunch dimensions shall not vary by more than 19 mm [¾ in] from the design dimension. The dimension of the legs shall not vary by more than 6 mm [¼ in] from the dimension shown on the approved shop drawings.

The slab and wall thickness shall not be less than the design thickness by more than 6 mm [¼ in]. Where the thickness is greater than the design thickness, this shall not be cause for rejection.

Variations in laying lengths of two opposite surfaces shall not be more than 15 mm [⅝ in] in any section, except where beveled ends for laying of curves are specified.

The under-run in length of any section shall not be more than 12 mm [½ in].

The cover of concrete over the outside circumferential reinforcement shall be 50 mm [2 in] minimum. The concrete cover over the inside reinforcement shall be 50 mm [2 in] minimum. The clear distance of the end of circumferential wires shall not be less than 25 mm [1 in] or more than 50 mm [2 in] from the end of the sections. Reinforcement shall be single or multiple layers of welded wire fabric or a single layer of deformed steel bars.

Welded wire fabric shall meet the space requirements and contain sufficient longitudinal wires extending through the section to maintain the shape and position of the reinforcement. Longitudinal distribution reinforcement may be welded wire fabric or deformed steel bars which meet the spacing requirements. The ends of the longitudinal distribution reinforcement shall be not more than 75 mm [3 in] from the ends of the sections.

Bar chairs and wire ties required for shipping, placing, and fastening the steel reinforcement shall meet the following:

A) Bar chairs shall be plastic coated, epoxy coated, plastic, or plastic tipped stainless steel conforming to the requirements of ASTM A493, UNS designation S31600, Type 316. Legs of chairs shall be turned up a minimum of 1/8 inch.
B) Wire ties shall be plastic coated, epoxy coated, plastic, or stainless steel conforming to the requirements of ASTM A493, UNS designation S31600, Type 316.

The inside circumferential reinforcing steel for the haunch radii or fillet shall be bent to match the radii or fillets of the forms.

Tension splices in the reinforcement will not be permitted. For splices other than tension splices, the overlap shall be a minimum of 300 mm [12 in] for welded wire fabric or deformed steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet shall be not less

than 50 mm [2 in] or more than 100 mm [4 in]. For the wire fabric, the spacing center to center of the longitudinal wires shall not be more than 200 mm [8 in]. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 375 mm [15 in].

The members shall be free of fractures. The ends of the members shall be normal to the walls and centerline of the section, within the limits of variation provided, except where beveled ends are specified. The surfaces of the members shall be a smooth steel form or troweled surface finish, unless a form liner is specified. The ends and interior of the assembled structure shall make a continuous line of members with a smooth interior surface.

Defects which may cause rejection of precast units include the following:

A) Any discontinuity (crack or rock pocket etc.) of the concrete which could allow moisture to reach the reinforcing steel.
B) Rock pockets or honeycomb over 4000 mm² [6 in²] in area or over 25 mm [1 in] deep.
C) Edge or corner breakage exceeding 300 mm [12 in] in length or 25 mm [1 in] in depth.
D) Extensive fine hair cracks or checks.
E) Any other defect that clearly and substantially impacts the quality, durability, or maintainability of the structure as measured by accepted industry standards.

The manufacturer of the members shall sequentially number and shop fit each adjacent member to ensure that they fit together in the field. This fit up shall be witnessed by the QA inspector. Any non-fitting members shall be corrected or replaced at no cost to the Department.

The Contractor shall store and transport members in a manner to prevent cracking or damage. The Contractor shall not place precast members in an upright position until a compressive strength of at least 30 MPa [4350 psi] is attained.

Installation of Precast Units The Contractor shall not ship precast members until sufficient strength has been attained to withstand shipping, handling and erection stresses without cracking, deformation, or spalling (but in no case less than 30 MPa [4350 psi]).

The Contractor shall set precast members on 12 mm [½ in] neoprene pads during shipment to prevent damage to the section legs. The Contractor shall repair any damage to precast members resulting from shipping or handling by saw cutting a minimum of 12 mm [½ in] deep around the perimeter of the damaged area and placing a polymer-modified cementitious patching material.

When footings are required, the Contractor shall install the precast members on concrete footings that have reached a compressive strength of at least 20 MPa [2900 psi]. The Contractor shall construct the completed footing surface to the lines and grades shown on the plans. When checked with a 3 m [10 ft] straightedge, the surface shall not vary more than 6 mm [¼ in] in 3

meters [10 ft]. The footing keyway shall be filled with a non-shrink flowable cementitious grout with a design compressive strength of at least 35 MPa [5075 psi].

The Contractor shall fill holes that were cast in the units for handling, with either Portland cement mortar, or with precast plugs secured with Portland cement mortar or other approved adhesive. The Contractor shall completely fill the exterior face of joints between precast members with an approved material and cover with a minimum 300 mm [12 in] wide joint wrap. The surface shall be free of dirt and deleterious materials before applying the filler material and joint wrap. The Contractor shall install the external wrap in one continuous piece over each member joint, taking care to keep the joint wrap in place during backfilling. The Contractor shall seal the joints between the end unit and attached elements with a non-woven geotextile. The Contractor shall install and tighten the bolts fastening the connection plate(s) between the elements that are designed to be fastened together as designated by the manufacturer. Final assembly shall be approved by the manufacturer's representative prior to backfilling.

The Contractor shall place and compact the bedding material as shown on the Plans prior to lifting and setting the box culvert sections. The Contractor shall backfill the structure in accordance with the manufacturer's instructions and the Contract Documents. The Contractor shall uniformly distribute backfill material in layers of not more than 200 mm [8 in] depth, loose measure, and thoroughly compact each layer using approved compactors before successive layers are placed. The Contractor shall compact the Granular Borrow bedding and backfill in accordance with Section 203.12 - Construction of Earth Embankment with Moisture and Density Control, except that the minimum required compaction shall be 92 percent of maximum density as determined by AASHTO T180, Method C or D. The Contractor shall place and compact backfill without disturbance or displacement of the wall units, keeping the fill at approximately the same elevation on both sides of the structure. Whenever a compaction test fails, the Contractor shall not place additional backfill over the area until the lift is re-compacted and a passing test achieved.

The Contractor shall use hand-operated compactors within 1.5 m [5 ft] of the precast structure as well as over the top until it is covered with at least 300 mm [12 in] of backfill. The Contractor shall take adequate precautions to protect the top of the culvert from damage during backfilling and/or paving operations. Any damage to the top of the culvert shall be repaired or members replaced at no cost to the Department.

534.50 Method of Measurement The Department will measure Precast Structural Concrete Arch or Box Culvert for payment per Lump Sum each, complete in place and accepted.

534.60 Basis of Payment The Department will pay for the accepted quantity of Precast Structural Concrete Arch or Box Culvert at the Contract Lump Sum price, such payment being full compensation for all labor, equipment, materials, professional services, and incidentals for furnishing and installing the precast concrete elements and accessories. Falsework, reinforcing steel, jointing tape, grout, cast-in-place concrete fill or grout fill for anchorage of precast wings and/or other appurtenances is incidental to the Lump Sum pay item. Cast-in-place concrete, reinforcing steel in cast-in-place elements, and membrane waterproofing will be measured and

paid for separately under the provided Contract pay items. Pay adjustments for quality level will not be made for precast concrete.

Payment will be made under:

Pay Item	Pay Unit
534.71 Precast Concrete Box Culvert	Lump Sum

SPECIAL PROVISION
SECTION 604
MANHOLES, INLETS, AND CATCH BASINS
(Storm Water Check Valve)

Description This work shall consist of furnishing and installing storm water check valve(s) where required as shown on the plans, in accordance with these specifications or as directed by the Resident.

Storm water check valves shall be used in the following locations:

Station14+45, 33.6' left (outlet for 12" diameter culvert pipe option III)

Station14+12 +/-, 13.5 '+/- right (Outlet for12" diameter Type C Underdrain)

Materials

The check valve shall be manufactured with no metal, mechanical hinges or fasteners. Check valves are to be made of all rubber and flow operated check type. All metal components and/or hardware shall be either aluminum or stainless steel

Design Requirements

The check valves shall prevent backflow from tides When the line pressure exceeds the backpressure, the line pressure forces the check valve open, allowing flow to pass. When the backpressure exceeds the line pressure, the check valve is forced closed, preventing backflow.

The storm water check valve used at Station14+45, 33.6' left (outlet for 12" diameter culvert pipe option III) shall be a slip on style that is secured to the pipe with stainless steel bands.

The storm water check valve used at Station14+12 +/-, 13.5 '+/- right (Outlet for12" diameter Type C Underdrain) shall be style that slips inside the end of the pipe. The entire elastomeric valve shall slip inside the pipe and fit within the pipe inside diameter. The check valve shall not extend more than 3" beyond the inside face of the box culvert.

Installation

Valve shall be installed in accordance with manufacturer's written Installation and Operation Manual and approved submittals.

Method of Measurement Storm Water Check Valve will be measured by each unit, complete in place and accepted.

Basis of Payment The accepted quantity of storm water check valve(s) will be paid for at the contract unit price each, which shall be full compensation for all materials including anchorage systems, labor and incidental necessary for furnishing and installing the storm water check valve(s).

Payment will be made under:

Pay Item		Pay Unit
604.201	12” Storm Water Check Valve	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.

Posts for underdrain delineators shall be “U” channel steel, 2.44m [8 ft] long, 3.72 kg/m [2 ½ lb/ft] minimum and have 9.5 mm [3/8 in] round holes, 25 mm [1 in] center to center for a minimum distance of 610 mm [2 ft] from the top of the post.

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 [½ 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. Each end treatment will be clearly marked with the manufacturers name and model number to facilitate any future needed repair. 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.

Anchorages 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.

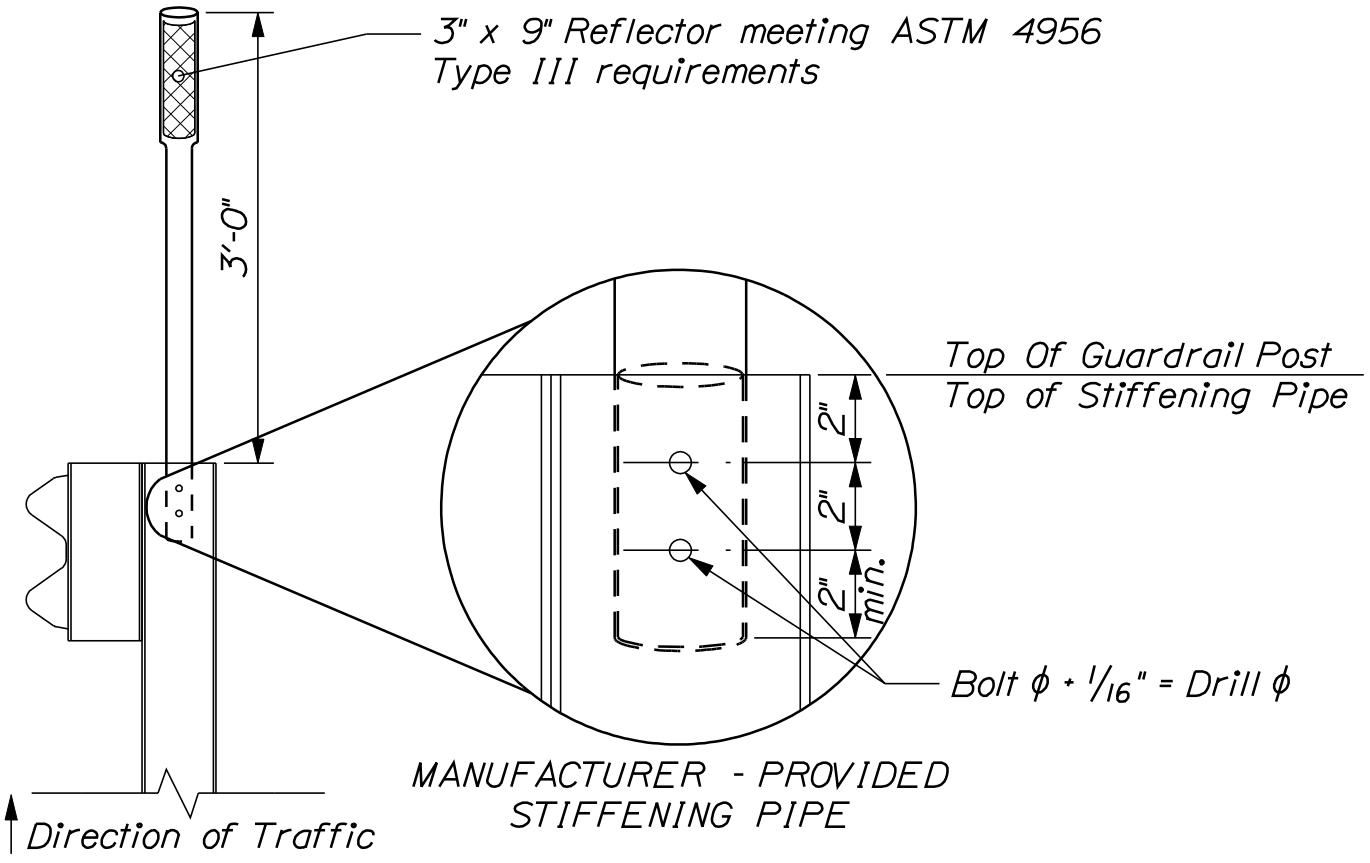
Payment will be made under:

	Pay Item	Pay Unit
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
606.356	Underdrain Delineator Post	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 607
FENCES
(Cedar Rail Fence)

Description This work shall consist of furnishing and installing the Cedar Rail Fence in accordance with the Plans and Specifications. Unless otherwise modified herein and on the Plans, requirements of Standard Specification Section 607 shall apply.

Materials The pin connecting the fence posts to the Dry-Laid Stone Masonry Wall shall be galvanized or stainless steel.

Construction Requirements All fence posts shall be pinned to the Dry-Laid Stone Masonry Wall. Anchor the pins into the masonry by drilling and anchoring using one of the Cementitious Anchoring Materials from the MaineDOT Qualified Products List. Holes for the pins shall be as close to mid-depth of the stone masonry block as possible.

Basis of Payment Payment for furnishing, drilling, and anchoring the pins for the Cedar Rail Fence as well as installing the fence on the pins shall be considered incidental to Pay Item 607.22, Cedar Rail Fence.

SPECIAL PROVISION
SECTION 608
DETECTABLE WARNINGS
(Cast Iron)

Description This work shall consist of furnishing and installing curb ramp detectable warning plates with truncated domes at the locations shown on the plans or as established by the Resident.

MATERIALS

Detectable Warnings The Contractor shall provide new cast iron detectable warning plates as manufactured by one of the manufacturers listed on Maine DOT's Qualified Products list of Cast Iron Detectable Warning Plates. This list can be found at:

http://www.maine.gov/mdot/transportation-research/qpl.php

Each field shall match the width of the ramp and shall have a natural finish.

Prior to starting this work, the Contractor shall submit for approval the name of the selected supplier, manufacturer's literature describing the product, installation procedures, and routine maintenance required.

Concrete Portland cement concrete shall meet the requirements of Section 502, Structural Concrete, Class A

CONSTRUCTION REQUIREMENTS

Existing Concrete Curb Ramps Existing Concrete shall be saw-cut to a dimension 100mm [4 in] larger than the detectable warning plates. New concrete shall be placed in the resulting opening and finished, and the new plates set into the wet concrete, according to manufacturer recommendations. New plates shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage.

New Concrete Curb Ramps New concrete shall be placed and finished for the ramp, and the new plates set into the wet concrete, according to manufacturer recommendations. New plates shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage

New Asphalt Ramps Asphalt shall be saw cut and removed to provide an opening that will allow for the dimensions of the cast iron plate surrounded by an additional 100mm [4 in] border on all sides of the plate. New concrete shall be placed in the resulting opening and finished, and the new plates set into the wet concrete, according to manufacturer

recommendations. New plates shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage.

Method of Measurement Detectable warning fields properly placed and accepted shall be measured for payment by the square meter [ft^2]. Measurement shall include actual plate area, not surrounding concrete.

Basis of Payment Payment will be full compensation at the contract unit price for all labor, materials, and equipment required to install the detectable warning fields. This shall include surface preparation and removal of concrete or asphalt, and necessary replacement concrete. On new concrete ramps, concrete shall be paid for under separate items

Pay Item		Pay Unit
608.26	Curb Ramp Detectable Warning Field	Square Meter [Square Foot]

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

CURB RAMP

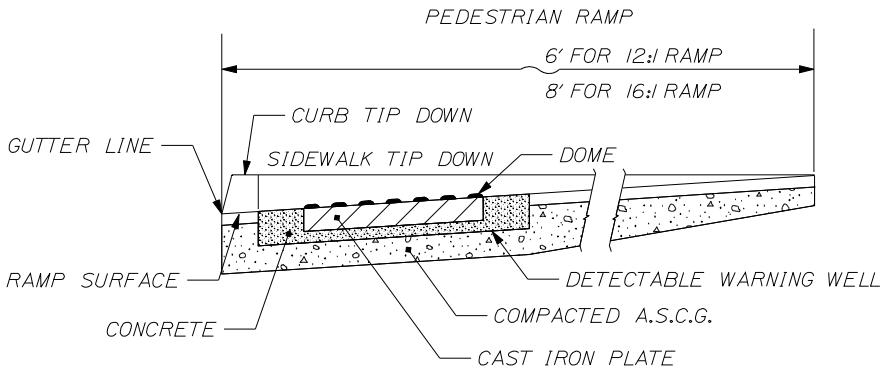
VIEWS AND DETAILS OF THE DETECTABLE WARNING

DETAILS

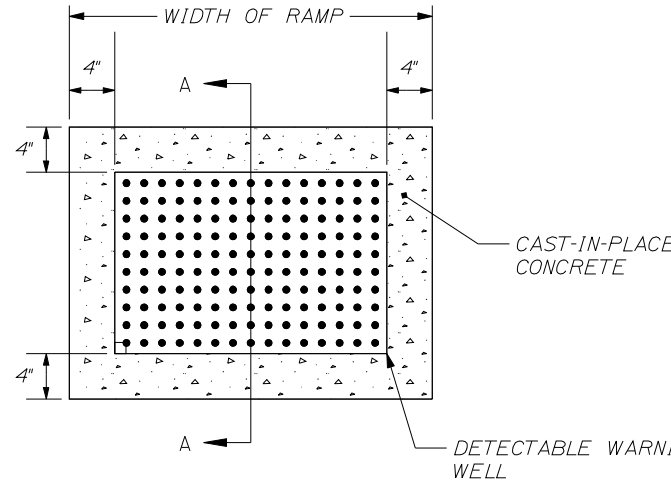
SHEET NUMBER 1 16

VIEWS AND DETAILS OF THE DETECTABLE WARNING

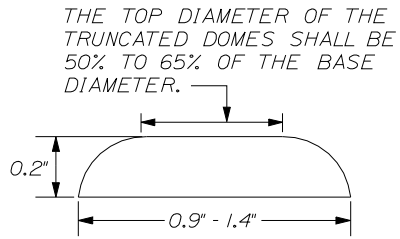
(NOT TO SCALE)



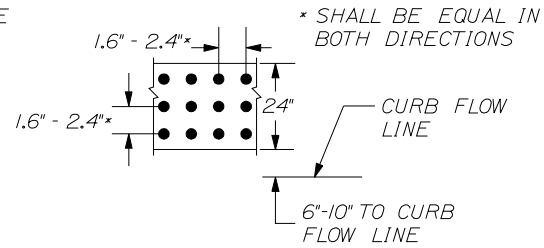
SIDE SECTION VIEW OF
DETECTABLE WARNING, WELL, CURB AND GUTTER



PLAN VIEW OF
DETECTABLE WARNING AND WELL

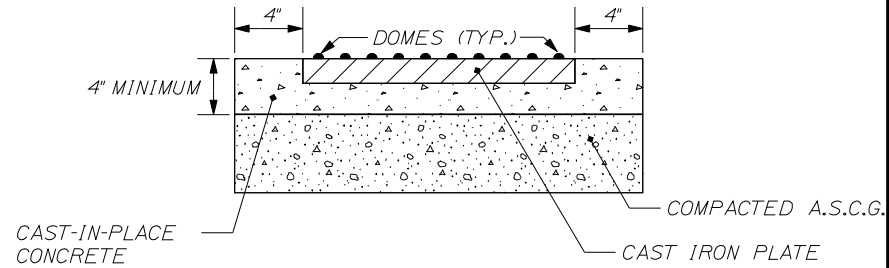


ELEVATION VIEW



PLAN VIEW

DOME AND DETECTABLE WARNING DETAILS



SECTION A-A

NOTE: ALL DETECTABLE WARNING AREAS SHALL START 6-10" FROM THE FLOW LINE OF THE CURB, BE 24" IN DEPTH, AND COVER THE COMPLETE WIDTH OF THE RAMP AREA ONLY.

SPECIAL PROVISION
SECTION 613
EROSION CONTROL BLANKETS

The last paragraph of Subsection 613.09, Basis of Payment is revised by the addition of the following:

Pay Item		**Pay Unit**
613.329	Extended Use Erosion Control Blankets	SY

SPECIAL PROVISION
SECTION 620
REINFORCEMENT GEOGRID

Description

This work shall consist of furnishing and installing reinforcement geogrid in accordance with these specifications and in reasonably close conformity with the lines, grades, and dimensions shown on the plans or as directed by the Resident.

Material

Geogrids shall consist of a regular network of non-woven, integrally formed, polymeric tensile elements with aperture geometry sufficient to permit significant mechanical interlock with the surrounding soil, aggregate or other material. The geogrid structure shall be dimensionally stable to retain its geometry under construction stresses and shall have high resistance to damage during construction, ultraviolet degradation, and all forms of chemical and biological degradation encountered in the soil being reinforced. Woven geogrids are not acceptable for this application.

The reinforcement geogrid shall meet or exceed the Minimum Average Roll Values (MARV) of the properties in Table 1.

Acceptable manufacturers for reinforcement geogrids must be approved by the Resident.

Table 1. - Physical Property Requirements
(Non-Woven Biaxial Reinforcement Geogrid)

Reinforcement Geogrid Mechanical Property	Test Method	Minimum Average Roll Value (MARV)[1]
Tensile Strength at 5% Strain MD	ASTM D-6637	600 lb/ft
Tensile Strength at 5% Strain XD	ASTM D-6637	1,200 lb/ft
Rib Junction Strength	GRI-GG2	1,000 lb/ft in both directions
Aperture Openings		Between 0.75 and 3 inches
Percent Open Area		50 to 80%

Certification

Prior to construction the Contractor shall submit to the Resident the Manufacturer's certification that the geogrid supplied has been evaluated in full compliance with this Specification and is fit for long-term, critical soil reinforcement applications. The Contractor's submittal package shall include, but not be limited to, actual tests for tension/creep, durability/aging, construction damage, and quality control tensile testing.

Delivery, Storage and Handling

The Contractor shall check the reinforcing geogrid upon delivery to ensure that the proper material has been received. Each geogrid roll shall be shipped in a protective bag and clearly marked with roll number, lot number, geogrid style and principle strength direction. During all

[1] Values are minimum average roll values determined in accordance with ASTM D-4759.

periods of shipment and storage, the geogrid shall be protected from temperatures greater than 140°F and all deleterious materials that might otherwise become affixed to the geogrid and affect its performance. The manufacturer's recommendations shall be followed with regard to protection from direct sunlight. The geogrid shall be stored off the ground in a clean, dry environment out of the pathway of construction equipment.

Construction Requirements

Reinforcement geogrid shall be installed, in accordance with the manufacturer's recommendations, to the proper elevation and alignment, as shown on the plans or as directed by the Resident.

1. The geogrid shall be laid at the proper elevation and alignment as shown on the plans. The Contractor shall verify correct orientation of the geogrid. Geogrid may be temporarily secured in-place with staples, pins, sand bags or backfill as required by fill properties, fill placement procedures, or weather conditions, or as directed by the Resident.

2. Reinforcement geogrid shall be oriented such that the roll length runs parallel to the construction centerline.

3. Adjacent rolls of reinforcement geogrid shall be overlapped a minimum of 1 foot.

4. Lengths of reinforcement geogrid shall be continuous, splicing along the length will not be allowed.

5. Seams along adjacent lengths of reinforcement geogrid shall be tied together with hog rings or cable ties every 3 to 6 feet.

6. The reinforcement geogrid shall be anchored at each end, and pulled taut, to reduce any considerable slack, as directed by the Resident.

7. Fill shall not be dumped directly onto the Reinforcement Geogrid or Reinforcement Geotextile. It shall be dumped at the edge of Reinforcement Geogrid/Reinforcement Geotextile or on a previous course of fill with a minimum compacted depth of 8 inches.

8. The geogrid shall be covered with fill materials within 14 days of placement to protect against unnecessary exposure.

9. Fill may then be pushed onto the reinforcement geogrid using a track mounted bulldozer. At no time shall construction equipment be allowed directly onto the reinforcement geogrid. Track mounted equipment shall be allowed on previous courses of fill with a minimum compacted depth of 8 inches. Smooth drum roller compaction equipment shall be allowed on previous courses of fill with a minimum compacted depth of 8 inches and spread fill with a minimum depth of 12 inches, loose measure. At no time shall rubber tired or sheeps-foot rollers be allowed onto the reinforced fill. Turning of vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid. Sudden breaking and sharp turning shall be avoided. Equipment speeds over 15 MPH shall not be allowed.

10. Placement, spreading, and compaction of soil on top of the reinforcement geogrid shall advance from one end of the reinforcement geogrid and move towards the other. Care shall be taken to minimize the development of wrinkles and to ensure that the reinforcement geogrid doesn't move from its position during fill placement. Limited stacking may the permitted, as directed by the Resident.

11. Fill shall be compacted as specified in (1) the Standard Specifications or (2) to at least 90 percent of the maximum dry density determined in accordance with AASHTO T-180, whichever is greater. Density testing shall be made at a minimum frequency of one (1) test per lift or as otherwise specified in the Standard Specifications.

12. During construction the surface of the fill shall be kept approximately horizontal. Fill shall be graded away from the slope crest and rolled at the end of each work day to prevent ponding of water on the surface of the reinforced soil mass.

13. Any geogrid damage shall be repaired or replaced in accordance with the manufacturer's recommendations. The Contractor shall replace any geogrid damaged during installation at no additional cost to the Department.

14. Rutting may develop within the initial granular lift but rut depths should not exceed 3 inches. It may be necessary to decrease the size and/or weight of the construction equipment or increase the thickness of the granular lift if rut depths of 3 inches or less cannot be maintained.

15. All rutting formed during construction shall be filled with new base material. In no case shall rutting be filled by blading down

Method of Measurement

Reinforcement Geogrid measurement will be by the square yard of material installed. Incidental overlaps for connections, splices, etc. are not included in the pay item.

Basis of Payment

Reinforcement geogrid placement will be paid for at the Contract unit price per square yard which shall be full compensation for all off-loading, inspection, storage, labor, materials, equipment, tools and any incidentals to complete the installation.

Pay Item	Description	Pay Unit
620.65	Reinforcement Geogrid	Square Yard

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

This work shall consist of planting deciduous shrubs in accordance with the Plans and Specificiations. The shrubs shall be planted in a bed of soil created by void space in the riprap side slopes. The soil bed shall be at least 2 feet deep by 3 feet square in plan. Plants shall be spaced approximately every 12 feet with direction from the Resident. In addition, this work shall include replacement of any existing plants damaged during constuction from station 10+25 RT to 13+65 RT as drected by the Resident.

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 MaineDOT Standard Specifications Rev. December, 2002 for landscape materials and installation procedures (sec 621).

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

In accordance with Section 104.5.9, a separate Performance Bond will not be required for the Landscape portion of this contract. The requirement for a Two-Year Maintenance Bond for Establishment period will not be required for this project. A Two-Year warrantee for the plant materials is required and shall be considered incidental to this Pay Item.

PLANT MATERIALS

ITEM NO	Description	Unit	Quantity	Total
621.541	Deciduous shrubs, 18 – 24 inches			
	Rosa Rugosa	EA	25	25

SPECIAL PROVISION
SECTION 627
PAVEMENT MARKINGS

The last paragraph of Subsection 627.10, Basis of Payment is revised by the addition of the following:

Pay Item		Pay Unit
627.733	4" White or Yellow Painted Pavement Marking Line	LF

SPECIAL PROVISION
SECTION 641
REST AREA FACILITIES
(Relocate Kiosk)

Description

This work shall consist of removal, storage, transporting, and reinstallation of the information board with the roof on it (kiosk) at approximate station 14+58 LT. In addition, this work shall consist of providing a power line from the utility pole at approximate station 13+44 LT to the sign post of the brown informational sign at approximate station 13+46 LT. Work shall be done in accordance with the Plans and Specifications. Relocation of the kiosk shall be done with guidance from the Resident.

Construction

The kiosk shall be removed and reinstalled carefully so as not to damage it. The kiosk shall be lifted by using nylon straps or a method approved by the Resident. The kiosk shall be put back at approximately the same location as originally located.

The Contractor shall coordinate with Bangor Hydro Electric Company and Acadia National Park to provide a power line for fish monitoring equipment used by Acadia National Park. The electric meter and data box for the existing fish monitoring equipment is normally attached to the kiosk at approximate station 14+58 LT. Prior to construction, the data box and electric meter will be moved by Acadia National Park and attached to the sign post of the brown informational sign at approximate station 13+46 LT. The Contractor shall work with Bangor Hydro Electric Company to run a power line from the utility pole at approximate station 13+44 LT to the temporary location of the data box and electric meter. Electricity will be paid for by the owner of the fish monitoring equipment (to be coordinated through Acadia National Park). This portion of the work shall be completed by August 8th, 2011.

Method of Measurement

Removal and reinstallation of the kiosk will be measured for payment by each kiosk.

Basis of Payment

The accepted quantity will be paid for at the Contract unit price for each kiosk specified. Payment will be full compensation for removal, storage, transporting, and reinstallation of the kiosk. In addition, payment will include work associated with providing a power line for fish monitoring equipment used by Acadia National Park as described above.

Payment will be made under:

Pay Item		Pay Unit
641.891	Relocate Kiosk	EA

SPECIAL PROVISION
SECTION 645
HIGHWAY SIGNING

Description

This work shall consist of furnishing and installing the specified new signs and removal, storage, transporting, and reinstallation of specified existing signs listed below. In addition, this work shall include rebuilding the *Acadia National Park, Stanley Brook Entrance* sign at approximate station 14+35 LT as directed below. Work shall be done in accordance with the Plans and Specifications. Relocation of signs shall be done with guidance from the Resident.

Existing Signs

Approx. Station	Sign
11+00 RT	No Parking This Side of Street
13+00 RT	No Parking Anytime
13+30 RT	Lighthouse Restaurant
14+56 RT	Pedestrian Xing
15+40 RT	Don't Take Rocks
	No Dogs on Beach
	Swim at Your Own Risk
13+50 LT	Curve Ahead
14+35 LT	Acadia National Park – Stanley Brook Entrance

New Signs

1) "Pedestrians Prohibited" - 18" long x 12" tall sign with black lettering on white background
2) No Pedestrian Crossing (sign R9-3 per the MUTCD) - 12" x 12"

Construction

Signs shall be removed and reinstalled carefully so as not to damage the existing signs. Signs shall be lifted by using nylon straps or a method approved by the Resident.

The two new signs shall be placed on the downstream face of the top slab of the box culvert, as directed by the Resident. These signs shall be securely fastened to the box culvert by mechanical means with corrosion resistant fasteners, minimum 4 fasteners per sign.

The posts of the *Acadia National Park, Stanley Brook Entrance* sign at approximate station 14+35 LT shall be replaced with 4 x 6 pressure treated timber posts. The 4 x 6 posts shall be considered incidental to Pay Item 645.116.

Method of Measurement

New signs will be measured for payment by square foot of new sign.

Removal, reinstallation, and as directed, rebuilding of specified existing signage will be measured for payment by each sign.

Basis of Payment

The accepted new signs will be paid for at the Contract unit price per square foot of new sign specified. Payment will be full compensation for furnishing and installing the new signs.

The reinstallation of existing signs will be paid for at the Contract unit price per each sign. Payment will be full compensation for removing, storing, transporting, reinstalling, and as directed, rebuilding the specified existing signs.

Payment will be made under:

Pay Item		Pay Unit
645.116	Reinstall Regulatory, Warning, Confirmation And Route Marker Assembly Sign	EA.
645.271	Regulatory, Warning, Confirmation and Route Assembly Sign, Type I	S.F.

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
(Traffic Control)

Failure by the contractor to follow the Contracts 652 Special Provisions and Standard Specification and/or The Manual on Uniform Traffic Control Devices (MUTCD) and/or The Contractors own Traffic Control Plan will result in a violation letter and result in a reduction in payment as shown in the schedule below. 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. Any reduction in payment under this Special Provision will be in addition to forfeiting payment of maintenance of traffic control devices for that day.

ORIGINAL CONTRACT AMOUNT

from	Up to and	Amount of Penalty
More Than	**Including**	**Damages per Violation**
$0	$100,000	$250
$100,000	$300,000	$500
$300,000	$500,000	$750
$500,000	$1,000,000	$1,500
$1,000,000	$2,000,000	$2,500
$2,000,000	$4,000,000	$5,000
$4,000,000	and more	$10,000

April 17, 2007
Supersedes May 10, 2006

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
Construction Sign Sheeting Material

Super high intensity fluorescent retroreflective sheeting, ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic), is required for all construction signs.

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 Sedimentation Control (a.k.a. Best Management Practices manual or BMP Manual) are a reference to the latest revision of said manual. The latest version is dated "February 2008" and is available at:

http://www.maine.gov/mdot/environmental-office-homepage/surface-water-resources.php

Procedures specified shall be according to the BMP Manual unless stated otherwise.

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 Soil Erosion and Water Pollution Control Plan (SEWPCP.)

1) This project is in the Seal Harbor estuary, which is listed as Class SA. Also, Seal Harbor is located within the Distinct Population Segment (DPS) for Atlantic Salmon and is considered **SENSITIVE** in accordance with the BMP Manual. The Contractor's SEWPCP shall comply with Section II, Standards and Commitments in the BMP Manual.

2) Newly disturbed earth shall be mulched by the end of each workday. Mulch shall be maintained on a daily basis.

3) 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.

4) The Contractors SEWPCP shall identify how water will be managed during the course of construction activities. Specific water management activities to be addressed shall include type and location of cofferdams, means of maintaining stream flow, and the type, location and size of sedimentation basins.

5) Dust control items other than those under *Standard Specification, Section 637 – Dust Control* , if applicable, shall be included in the plan.

6) Permanent slope stabilization measures shall be applied within one week of the last soil disturbance.

7) Permanent seeding shall be done in accordance with *Standard Specification, Section 618 - Seeding* unless the Contract states otherwise.

8) 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.

SPECIAL PROVISION
SECTION 656
Temporary Soil Erosion and Water Pollution Control

9) All disturbed ditches shall be stabilized by the end of each workday. Stabilization shall be maintained on a daily basis.

10) 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.

11) Demolition debris (including debris from wearing surface removal, saw cut slurry, dust, etc.) shall be contained and shall not be allowed to discharge to any resource. All demolition debris shall be disposed of in accordance with *Standard Specifications, Section 202.03 Removing Existing Superstructure, Structural Concrete, Railings, Curbs, Sidewalks and Bridges*. Containment and disposal of demolition debris shall be addressed in the Contractor's SEWPCP.

12) **CLEARING LIMIT LINES SHALL BE MINIMIZED.** Clearing shall be minimized as shown on the design plans.

13) Stream flow shall be maintained at all times.

14) The SEWPCP shall describe the containment method for removal of the existing abutments, including installation of cofferdams and dewatering procedures.

15) If a cofferdam sedimentation basin is used, it shall be located in an upland area where the water can settle and sink into the ground or be released slowly to the resource in a manner that will not cause erosion. The location of such a cofferdam sedimentation basin shall be addressed in the SEWPCP.

16) Prior to release to a natural resource, any impounded water that has been in contact with concrete placed during construction must have a pH between 6.0 and 8.5, must be within one pH unit of the background pH level of the resource and shall have a turbidity no greater than the receiving resource. This requirement is applicable to concrete that is placed or spilled (including leakage from forms) as well as indirect contact via tools or equipment. Water not meeting release criteria shall be addressed in the SEWPCP. Discharging impounded water to the stream must take place in a manner that does not cause erosion or disturb the stream bottom. **The rate of discharge must be less than 20% of the flow rate of the stream.**

17) The Contractor shall be responsible for monitoring pH with a calibrated meter accurate to 0.1 units. A record of pH measurements shall be kept in the Environmental Coordinator's log (*Standard Specification, Section 656.4.4 Inspection and Record Keeping.*)

SPECIAL PROVISION
SECTION 703
AGGREGATES
(Plain and Heavy Riprap)

703.26 Plain and Hand Laid Riprap Add the following to the Supplemental Specifications:

Stone shall be Jonesboro Red granite per the National Building Granite Quarries Association. Stone from the existing bridge abutments and approach retaining walls may be reused as Plain Riprap as long as the geometric requirements in the Specifications are satisfied.

703.28 Heavy Riprap Add the following to the Supplemental Specifications:

Stone shall be Jonesboro Red granite per the National Building Granite Quarries Association. Stone from the existing bridge abutments and approach retaining walls may be reused as Heavy Riprap as long as the geometric requirements in the Specifications are satisfied.

SPECIAL PROVISION
SECTION 709
REINFORCING STEEL AND WELDED STEEL WIRE FABRIC

Remove section 709.01 of the Standard Specifications and replace with the following:

"709.01 Reinforcing Steel Reinforcing steel shall be deformed stainless steel bars conforming to the requirements of ASTM A955. Bars shall be Grade 60 and have a chemical composition conforming to UNS designation S24100, Type XM-28.

Heat treatment condition per ASTM A955 is hot rolled.

Bars shall be finished in accordance with ASTM A955, section 15.

Remove section 709.02 of the Standard Specifications and replace with the following:

"709.02 Welded Steel Wire Fabric Welded steel wire fabric shall be plain or deformed stainless steel welded wire for concrete reinforcement conforming to the requirements of ASTM A1022. The minimum yield and tensile strength of plain wire shall be 65 ksi and 75 ksi respectively. The minimum yield and tensile strength of deformed wire shall be 70 ksi and 80 ksi respectively. Wire shall have a chemical composition conforming to UNS designation S24100, Type XM-28.

Mount Desert Water District
Water Main Specifications

WATER DISTRIBUTION PIPING

PART 1 -GENERAL

1.01 DESCRIPTION OF WORK: Water transmission piping includes:

A. Installation of 12” HDPE water main piping across the Stanley Brook Bridge from approximately station 13+70 to approximately 14+90 as shown on the Drawings. Work also includes installation of 12” welded end caps on water main and bedding pipe with MDOT
703.06 aggregate subbase course gravel and trench insulation as shown on the Drawings.

1.02 RELATED WORK:

A. N/A

1.03 QUALITY ASSURANCE:

A. Code Compliance: Comply with Maine Department of Human Services, Division of Health Engineering, Drinking Water Program rules.

B. AWWA Standards: Comply with requirements of Section 4 of AWWA C601, "Preventive Measures During Construction" for cleanliness.

1.04 SUBMITTALS: Submit manufacturer's product data and installation instructions for each product specified for water service piping. PART 2 -PRODUCTS

2.01 PRESSURE PIPE AND ACCESSORIES:

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.

All products used in the construction that come in contact with drinking water shall meet the National Sanitation Foundation Standard 61 for Drinking Water System Components – Health Effects. The products and/or materials covered include, but are not limited to, protective materials (coatings, linings, liners, etc.), joining and sealing materials (solvent cements, welding materials, gaskets, etc.), and mechanical devices used in transmission/distribution systems, (valves, etc.).

B. High Density Polyethylene (HDPE) Pressure Pipe and Fittings: Shall be made from materials conforming to PE 3408 HDPE and conform to outside diameters (ODs) conforming to iron pipe sizing (IPS) system (ANSI B36.10). Provide transition couplings and stiffeners as recommended by pipe manufacturers. Dimension Ratio (DR) shall conform to DR 11 unless otherwise noted.

1 Sizes 1/2–inch through 3-inch: Conforming to “Blue-Stripe” AWWA C901, latest revision.

2 Sizes 4-inch through 63-inch: Conforming to “Blue-Stripe” AWWA C906, latest revision.

3. All HDPE pipe connections to fittings or valves of differing materials shall be by an Engineer-approved HDPE mechanical joint adapter.

C. End Caps: End caps shall be HDPE 3408 SDR 11 butt cap.

D. Trench Insulation: Shall be polystyrene foam insulation board equal to Styrofoam SM brand as manufactured by the Dow Chemical Co. or approved equal. Average compressive strength shall equal 40 psi with minimum of 25 psi.

PART 3 -EXECUTION

3.01 INSTALLATION:

A. General: Install products in compliance with manufacturer's instructions. Provide restrained joints and thrust blocks at all fittings as detailed on the Drawings. Install all pipe in a dry trench. Prevent introduction of any groundwater or foreign materials into pipe during construction. Provide watertight plug in ends of pipe at all times when construction is not in progress. Coordinate all work with Mount Desert Water District.

B. Bedding of Pipe: Bed in MDOT 703.06 aggregate subbase course gravel. Refer to detail on Drawings.

E. Cleaning: Clear interior of pipe of dirt and other superfluous material as work progresses. Place plugs in end of uncompleted pipe whenever work stops.

3.02 WATER MAIN FLUSHING:

A. Flush water main at a minimum of 3 ft/sec velocity prior to installing end caps to remove debris.

3.03 TESTING: Pressure and Leakage Testing.

A. CONTRACTOR to provide all labor, equipment, material, gauges, pumps, etc. to test for leaks in accordance with AWWA Standard C600 as follows:

1. Test newly laid pipe sections as follows:

a. Test pressure: System shall be tested at a hydrostatic test pressure of one-hundred fifty (150) pounds per square inch.
b. Test pressure: Not to exceed pipe or thrust restraint design pressures.
c. Test duration: 2 hours, minimum.
d. Pressure variation tolerance: less than +5 psi.
e. Test pressure not to exceed valve or hydrant pressure ratings on sections including closed valves or hydrants.

2. Pressurization of Pipe:

a. Fill each valved pipe section slowly with water at specified test pressure.
b. Apply by means of pump or other approved method.

3. Air Removal:

a. Expel all air from pipe, valves, and hydrants before applying test pressure.
b. Install corporation stops at high point to vent air if no release valves available.
c. After air removal, close stops and apply test pressure.
d. After test, remove stops and plug holes or leave stops in place permanently if directed by ENGINEER.

4. Examination:

a. Examine exposed pipe, fittings, valves, hydrants, and joints during test.
b. Repair or replace defective appurtenances discovered during test.

5. Leakage Test:

a. Leakage: Quantity of water supplied to pipe test section to maintain pressure within +5 psi.
b. Leakage shall not exceed the following limits:

$$L = \frac{SD\sqrt{P}}{133\,200}$$

,

L = allowable leakage, in gallons per hour (gph) S = length of pipe tested in feet D = nominal pipe diameter, in inches P = average pressure during test, in pounds per square inch (gauge)

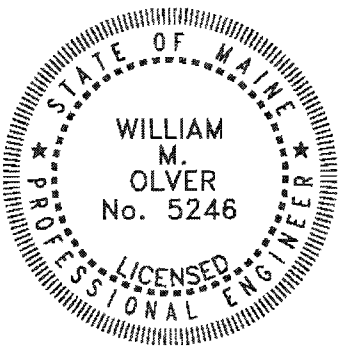
c. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gph/inch of nominal valve size shall be allowed.
d. Repair visible leaks regardless of leakage amount.
e. If failing leakage tests:
Locate and correct leak.
Repeat leakage test until passing test attained.

*** END OF SECTION ***

SPECIFICATIONS
FOR
STANLEY BROOK BRIDGE
SANITARY SEWER RELOCATION

TOWN OF MOUNT DESERT, MAINE
(DOCUMENTS FOR INCLUSION IN MDOT CONTRACT)

FEBRUARY, 2011



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TECHNICAL SPECIFICATIONS

DIVISION 1

GENERAL REQUIREMENTS

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 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.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION

3.01 MEASUREMENT

A. Notify Engineer when necessary measurements must be taken. Do not proceed until measurements have been taken.

3.02 SCHEDULE OF PAYMENT ITEMS

A. Item 1- (202.1914) Abandon Sewers:

1. Payment: Lump sum price as stated in the Proposal.

2. Measurement: One lump sum payment.

3. Includes removal and/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 – (202.1913) Removal/Disposal of Asbestos Cement Piping:

1. Payment: Unit price as stated in the Proposal.

2. Measurement: Unit price per linear foot as measured along the horizontal projection of the centerline of the pipe.

3. Includes removal of existing buried asbestos cement pipe along new sewer routes where encountered or disturbed and as shown on the Drawings including all handling costs, storage costs, transportation costs, disposal costs and incidentals.

4. Schedule of Payment: 100% upon completion.

5. Explanation: Asbestos cement pipe that is not encountered or disturbed during construction, or that is shown on plans to be abandoned, shall be capped and abandoned in place.

C. Item 3- (812.164) Rebuilding Sewer Manhole:

1. Payment: Unit price per unit as stated in the Proposal.

2. Measurement: Per completion of work.

3. Includes: Manhole modification to accept new sewer work including coring, patching, boots, invert adjustment, rim adjustment, new manhole covers and incidentals.

4. Schedule of Payment: 100% per unit upon completion.

D. Item 4 – (803.01) Test Pits:

1. Payment: Unit price 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.

E. Item 5 – (825.30) Rock Excavation for Sanitary Sewer:

1. Payment: Unit price per cubic yard as stated in the Proposal.

2. Measurement: Measured in place prior to blasting and excavation within pay limits as shown on the Drawings and as determined by the Engineer unless prior written approval is provided by Engineer to measure after blasting. 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 two cubic yards each.

4. Schedule of Payment: Upon excavation - 100%.

5. Note: No additional unit price adjustment will be made for ledge removal if quantity varies from that estimated on the bid sheet. This is an indeterminate item and it should be recognized that the quantity may be higher or lower than stated.

F. Item 6 – (801.17) 8"Ø SDR 35 PVC Sanitary Sewer:

1. Payment: Unit price per linear foot as stated in the Proposal.

2. Measurement: Linear feet 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, base and subbase, trench tape, shoring and bracing, dewatering, cleaning, pipe, fittings, bypass pumping, and incidentals as shown on the Drawings or as required.

4. Schedule of Payment: Installation - 85%; compaction and testing - 10%; cleaning - 5%.

G. Item 7 – (801.18) 12"Ø SDR 35 PVC Sanitary Sewer:

1. Payment: Unit price per linear foot as stated in the Proposal.

2. Measurement: Linear feet as measured along the horizontal projection of the centerline of the pipe; measured from and to inside face of manhole.

3. Includes clearing, excavation, stone bedding, backfill, compaction, base and subbase, trench tape, shoring and bracing, dewatering, cleaning, pipe, fittings, bypass pumping, and incidentals as shown on the Drawings or as required.

4. Schedule of Payment: Installation - 85%; compaction and testing - 10%; cleaning - 5%.

5. Explanation: This pay item is also applicable to 12"Ø SDR35 PVC storm drain to repair existing 12"ØVC drain pipe, if required.

H. Item 8 – (822.3403) 8"Ø Class 51 DI Sewer Pipe Without Concrete Encasement:

1. Payment: Unit price per linear foot as stated in the Proposal.

2. Measurement: Linear feet as measured along the horizontal projection of the centerline of the pipe; measure from and to inside face of manhole.

3. Includes clearing, excavation, bedding, backfill, compaction, base and subbase, trench tape, shoring and bracing, dewatering, pipe, and fittings and incidentals as shown on the Drawings or as required.

4. Schedule of Payment: Installation - 85%; compaction and testing - 10%; cleaning - 5%.

I. Item 9 – (822.3403) 8"Ø DI Class 51 Concrete Encased Sewer Stream Crossing Pipe:

1. Payment: Unit price per linear foot as stated in the Proposal.

2. Measurement: Linear feet as measured along the horizontal projection of the centerline of the pipe; measure from and to inside face of manhole.

3. Includes clearing, excavation, compaction, stone bedding, backfill, base and subbase, trench tape, shoring and bracing, dewatering, pipe, cleaning, concrete encasement, pipe insulation and wrapping, filter fabric, fittings, bypass pumping and incidentals and any added costs the contractor may incur by crossing Stanley Brook as shown on the Drawings or as required.

4. Schedule of Payment: Installation - 85%; compaction and testing - 10%; cleaning - 5%.

J. Item 10 – (803.16) 4'Ø Precast Sewer Manholes:

1. Payment: Unit price 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%.

K. Item 11 – (827.331) Pipe Trench Insulation:

1. Payment: Unit price per square yard 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 full trench width as shown on the Drawings and as specified.

4. Schedule of Payment: 100% upon installation.

5. Explanation: If 4" insulation called for in places, payment will be based on double the 2" price.

L. Item 12 – (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.

*** 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 Shop Drawings, 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. Shop Drawings include specially-prepared technical data for this project, including drawings, diagrams, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information.

2. Product data include standard printed information on materials, products and systems.

3. 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, 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. Coordinate with other trades.

5. Indicate all deviations from the requirements of the Contract Documents.

6. 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. Include specifications section reference and submittal log reference to clearly define to what portion of Work that is applicable to submittal. 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. Shop Drawings: Provide newly-prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated), with name of preparer indicated (firm name). Show dimensions and note which are based on field measurement. Identify materials and products in the Work shown. Indicate compliance with standards, and special coordination requirements. Do not allow Shop Drawing copies without appropriate final "Action" markings by Engineer to be used in connection with the Work.

B. 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.

C. 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. Samples are submitted for review and confirmation of color, pattern, texture and type by Engineer. 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

DIVISION 2

SITE CONSTRUCTION

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 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, 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.

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. Install internal bracing, if required, to prevent spreading or distortion of braced frames.

B. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

C. Remove sheeting, shoring, and bracing in stages to avoid disturbance to underlying soils and damage to structures, pavements, facilities, and utilities.

D. 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 sewer 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. Provide index sheet for all photo and video survey reports.

f. 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.

g. 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.

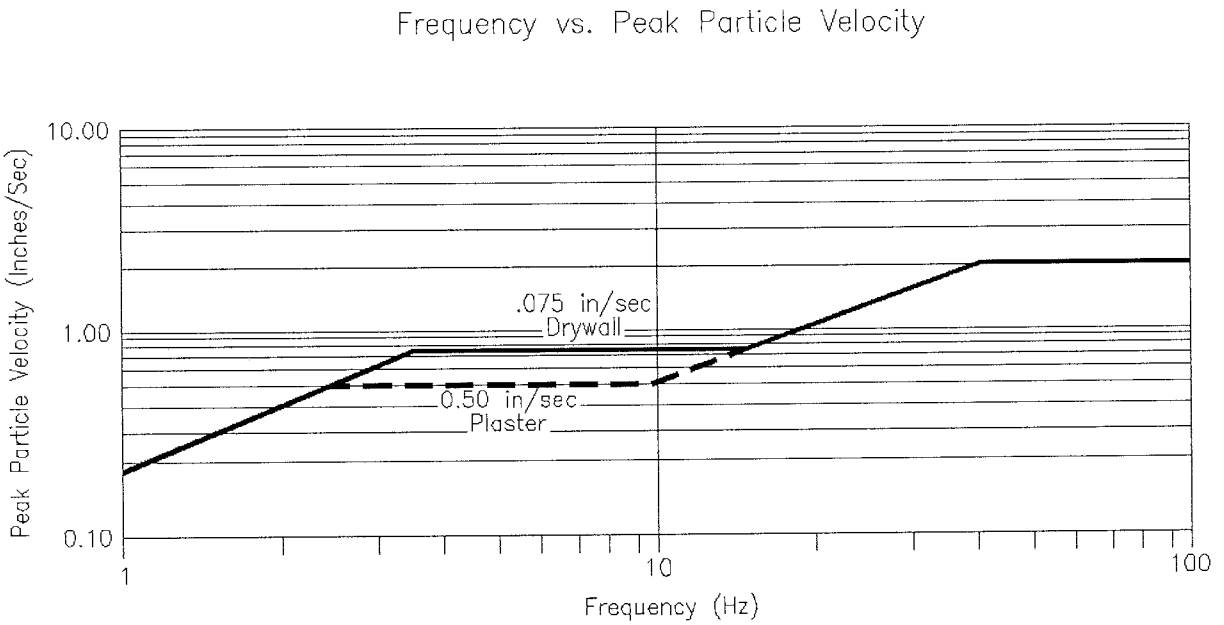
B. Vibrations shall be recorded using an approved seismograph(s) for each blasting occurrence.

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:



H. 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.

I. 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

SEWER RELOCATION RELATED EARTHWORK

SECTION 02200 - SEWER RELOCATION RELATED EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Sewer relocation related earthwork includes the following:

1. Excavation of soils, rock, debris, fill, and miscellaneous as required for sewer relocation.

2. Excavation and sawcutting of paved areas.

3. Dewatering, drainage, and moisture control in excavated areas as required for sewer relocation.

4. Aggregates for fill, backfill, base, subbase, bedding and miscellaneous as required for sewer relocation.

5. Backfilling of sewer trench excavation.

6. Compaction of sewer trench excavation.

7. Grading of areas prior to surface restoration in sewer area.

8. Disposal of excess material from sewer work.

9. Test pits as required for sewer work.

10. Filter fabric where required for sewer work.

11. Trench marking tape where required for sewer work.

1.02 RELATED SECTIONS

A. Section 02160 - Excavation Support Systems.

B. Section 02170 - Use of Explosives.

C. Section 02700 - Sewerage.

D. Section 02720 - Precast Concrete Sewerage Structures.

E. Section 03300 – Cast-in-Place Concrete.

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. 24 inches outside of precast manhole 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. Subbase Course: The layer placed between the subgrade and base course.

D. Subgrade: The uppermost surface of an excavation or the top surface of a fill on backfill at elevations defined on the Drawings.

E. 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.

F. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

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.

b) Filter fabric.

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.

b) 12-by-12-inch sample of filter fabric.

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.

C. Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood that Owner will not be responsible for interpretations or conclusions drawn therefrom by Contractor. Data is made available for convenience of Contractor who may make additional subsurface explorations at his/her own cost to obtain additional data on subsurface conditions.

D. 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:

Sieve size	% Passing By Weight
4"	100
3"	90 - 100
1/4"	25 - 90
No. 40	0 - 30
No. 200	0 - 5

2.03 Sand: Well graded durable particles free from organic matter. Sieve analysis by weight:

Sieve Size	% Passing by Weight
3/8"	100
No. 4	95 - 100
No. 16	50 - 85
No. 100	2 - 10
No. 200	0 - 5

2.04 3/4" Crushed Stone: Durable, clean angular rock fragments obtained by breaking and crushing rock material. Sieve analysis by weight:

Sieve Size	% Passing by Weight
1"	100
3/4"	75 - 100
1/2"	35 - 70
3/8"	0 - 25
No. 200	0 - 2

2.05 Flowable Fill:

A. Type II Portland: Cement, 75 lbs per cubic yard.
B. Sand: 2350 lbs per cubic yard.
C. Air content: –25%.

2.06 Aggregate Base: Shall be screened or crushed gravel of hard durable particles free from organic material. Sieve analysis by weight:

Sieve Size	% Passing by Weight
3"	100
1/2"	35 - 75
1/4"	25 - 60
No. 40	0 - 25
No. 200	0 - 5

2.07 Aggregate Subbase: Shall be screened or crushed gravel of hard durable particles free from organic material. Sieve analysis by weight:

Sieve Size	% Passing by Weight
6"	100
3"	95 - 100
1/4"	25 - 70
No. 40	0 - 30
No. 200	0 - 5

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. Green: Sewer systems.

C. Filter Fabric for General Use: Manufacturer's standard nonwoven pervious geotextile fabric of polypropylene, nylon or polyester fibers, or a combination.

1. Provide filter fabrics that meets or exceeds the listed minimum physical properties determined according to ASTM D 4759 and the referenced standard test method in parenthesis:

a) Grab Tensile Strength (ASTM D 4632): 120 lb.

b) Apparent Opening Size (ASTM D 4751): #70 U.S. Standard sieve.

c) Permittivity (ASTM D 4491): 1.8 per second.

d) Flow rate (ASTM D4491): 135 gallons per minute per square foot.

2. Fabric shall be equal to MIRAFI 140N manufactured by T.C. MIRAFI.

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 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 2.0 cubic yards 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 0.10 foot. Extend excavations a sufficient distance from structures for installing services and other construction, and for inspections.

3.05 EXCAVATION FOR SEWER 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 12 inches higher than top of pipe or conduit, unless otherwise indicated.

1. Clearance: 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 6 inches below invert elevation to receive bedding course.

F. Maximum excavated length of utility trench that may be left open and not backfilled to grade shall at end of day be 200 LF.

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 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 12" in loose depth for material compacted by heavy compaction equipment, and not more than 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.

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.

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 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 6" thick envelope of crushed stone all around the existing utility pipes. The 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 SEWER 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 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 1 inch, to a height of 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 as indicated on Drawings.

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 12 inches in loose depth for material compacted by heavy compaction equipment, and not more than 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 2 feet under gravel shoulder	95%
Top 2 feet under pavement	95%
Below top 2 feet under pavement	92%
Trenches through unpaved areas	90%
Pipe Bedding	92%
Around manholes	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. In each compacted initial and final trench backfill layer, perform at least one field in-place density test for each 200 feet or less of trench, and at every 2' vertical layer, but no fewer than two tests.

G. 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 GRADING

A. Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

B. Provide a smooth transition between existing adjacent grades and new grades.

C. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.

D. Slope grades to direct water away from buildings and to prevent ponding.

E. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.

2. Walks: Plus or minus 0.10 foot.

3. Pavements: Plus or minus 1/2 inch when tested with 10 foot straightedge.

F. After grading, compact subgrade surfaces to the percentage of maximum density for each area classification.

G. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

H. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

I. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

3.18 SUBBASE AND BASE COURSES

A. Under pavements, place subbase course material on prepared subgrades. Place base course material over subbases to pavements.

B. Compact subbase and base courses at optimum moisture content to required grades, lines, cross sections and thickness to not less than 95 percent of ASTM D 1557 modified.

C. Shape subbase and base to required crown elevations and cross-slope grades.

D. When thickness of compacted subbase or base course is 6 inches or less, place materials in a single layer.

E. When thickness of compacted subbase or base course exceeds 12 inches, place materials in equal layers, with no layer more than 12 inches thick or less than 6 inches thick when compacted.

F. Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders at least 12 inches wide of acceptable soil materials and compact simultaneously with each subbase and base layer.

3.19 FINAL DISPOSAL OF EXCESS MATERIALS

A. Remove excess excavated material not wanted by the Owner and dispose of it off Owner's property.

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 02700

SEWERAGE

SECTION 02700 - SEWERAGE

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Provide exterior sanitary sewer systems as shown on the Drawings. This section includes:

Fernco couplings
Abandoning sewerage systems
PVC gravity sewers
DI gravity sewers
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.

E. Section 03300 - Cast-in-Place Concrete.

1.03 DEFINITIONS

A. 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) Bends
b) Repairs to existing pipes
c) 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 Town's sanitary sewer.

B. Coordinate with other utility work.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. Lined Ductile Iron Gravity Sewer Pipe:

1. AWWA C151, Class 150 minimum, for push on joints, thickness class 51 minimum.

2. Fittings standard pattern meeting AWWA C110 for push on joints with 250 psi minimum rating.

3. Interior pipe and fittings coating asphaltic material seal coating, double cement lined, meeting AWWA C104 with minimum 1 mil thickness.

4. Gaskets rubber meeting AWWA C111 with mechanical or lock on joints.

5. Where mechanical joints are shown on the plans, provide traditional mechanical joint piping or equivalent locking connections, Locktite or equivalent, or special transition fittings as specified.

B. 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.

2.02 BURIED PIPE JOINTS

A. Gravity and non-pressure ductile iron pipe - mechanical joint, locking ring, or push on pipes.

2.03 PIPE COUPLINGS

A. Non-pressure PVC or ductile iron sewers shall be Fernco flexible coupling for appropriate pipe or equal.

B. Mechanical Joint: ANSI/AWWA C110/A 21.10 and ANSI/AWWA C111/A 21.11.

C. Push-On: ANSI/AWWA C110 and ANSI/AWWA C111, Pacific States Cast Iron Pipe Company or U.S. Pipe and Foundry Tyton joint, or equal.

2.04 MARKING TAPE

A. Metal detector compatible for future location.

B. Width of three inches minimum.

C. Green color required.

D. Equal to Liveguard III by Tri-Sales Inc.

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. Lay pipe in the dry. Do not use installed pipe to remove water from Work area.

I. Flush all pipe and remove debris. Flushing method must be approved by Engineer. Gravity flushing is not acceptable.

3.02 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 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 18" outside of pipe end in all directions.

3.03 REMOVAL OF ASBESTOS CEMENT PIPE

A. Asbestos Cement Piping shall be disposed of as required by the DEP. Asbestos pipe is expected to be encountered in this work.

1. All disturbed or encountered asbestos cement (AC) sewer piping shall be removed from trench and segregated from general construction fill. Disposal of all AC piping materials is regulated under DEP Chapters 401 and 425.

2. Disposal of all other piping materials shall comply with DEP disposal requirements and may require a beneficial use license prior to use as construction fill.

3.04 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.

3.05 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 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.

3.06 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. 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 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.

C. 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.

D. 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 concrete riser rings
Frames and covers
Masonry materials
Installing boots for new pipes in existing manholes
Watertight manhole covers

1.02 RELATED SECTIONS

A. Section 02200 - Earthwork.

B. Section 02700 – Sewerage.

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 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 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: 1.2 inches through manhole, unless otherwise indicated on Drawings.

F. Manhole Benches: Concrete, sloped to drain into channel.

1. Slope: 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, 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 14".

5. Maximum spacing 12" on center.

6. Coat with bitumastic paint where cast in concrete.

H. Pipe Connections:

1. Pipe sizes 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. As specified on drawings if in conflict with above.

2.03 PROTECTIVE COATINGS

A. Include factory or field applied protective coatings to structures and appurtenances according to the following:

1. Manholes: On exterior surface, bitumastic, PPS 922 superseal or equal.

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 twenty four inches.

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 3" high and marked as "SEWER" as appropriate.

F. Minimum weight shall be 330 pounds.

G. Minimum flange width: 4" with reinforcing webs and 4 anchoring holes.

H. Minimum riser height: 6".

I. Minimum inside frame diameter: 25 inches.

J. Minimum cover diameter: 24 3/4".

K. Minimum clear frame opening diameter: 23".

L. Equal to Frame No. 23/62060-600 and Cover No. 23/62070-600 by E.J. Prescott Inc.

2.06 WATERTIGHT FRAME AND COVER

A. Fully machined seamtight bolted 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 3" high and marked as "SEWER" as appropriate.

F. Minimum weight shall be 300 pounds.

G. Minimum flange width: 3 1/4"

H. Minimum riser height: 4"

I. Minimum inside frame diameter: 26 ½" clear.

J. Minimum cover diameter: 27"

K. Minimum overall cover and flange: 33 1/2"

L. Equal to Neenah R-6460-C

2.07 FROST BARRIERS

A. Frost Barrier: U.V. Resistant, high grade polyethylene, minimum thickness 6 mils.

2.08 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 1-inch diameter butyl rubber sealant.

E. Point joints inside and out with butyl caulk.

F. Set frames and covers to 1/2" below final pavement grade or as shown on the Drawings in paved areas. Set 2" below finish grade in unpaved roads or set at 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 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.

3.02 FROST BARRIERS

A. Wrap each installed precast structure to the maximum excavation depth or not less than 7 feet 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 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 24 inches 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 wet wells 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. 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. Fill wet well to very top of structure.

4. Allow a period of time for absorption (determined by Contractor).

5. Refill to top of cone or wet well.

6. Determine volume of leakage in an 8 hour (min) test period and calculate rate.

7. Acceptable leakage rate: Not more than 1 gallon per vertical foot per 24 hours.

C. Manhole Vacuum Test: The manhole being tested must not be backfilled or wrapped with vapor barrier. The test is passing if the manhole or wet well can sustain 10 inches of Mercury vacuum for 3 minutes, with 1 inch 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

DIVISION 3

CONCRETE

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 pipe encasement
Manhole inverts
Non-shrink Grout
Concrete bonding agents
Concrete waterstops

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. Reinforcement.

2. Intended method of supporting rebar and forming accessories.

3. Admixtures.

4. Waterstops.

5. Curing compounds.

6. 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.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

A. Forms for Unexposed Finish Concrete: Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material.

B. Form Release Agent: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

C. All Forms: The type, size, shape, quality and strength of all materials of which the forms are made shall be subject to the review of the Engineer, but the responsibility for their adequacy shall rest with the Contractor.

2.02 REINFORCING MATERIALS

A. Epoxy Coated Reinforcing Bars: For all salt or seawater exposed areas or as noted on the Drawings. ASTM A 775.

B. Supports for Reinforcement:

1. Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars in place.

2. Use wire bar type supports complying with CRSI recommendations, unless otherwise acceptable.

2.03 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.

2.04 RELATED MATERIALS

A. Waterstops:

1. Provide one-component type water swelling sealant where required on Drawings with the following properties:

a. Designed to expand in water and adhere to concrete and various other substrate

b. Tack-free time: 8 hours @ 23 °C, 60% R.H.

c. Hardness: 35

d. Tensile strength: 2.94 MPA

e. Elongation: 1250%

f. Tear strength: 9.8N/mm

g. Equal to: Leakmaster by C.I. Kasei Co., Ltd.

B. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.

C. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.

1. Waterproof paper.

2. Polyethylene film.

3. Polyethylene coated burlap.

D. Curing Compound:

1. For concrete surfaces, 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 Eucocure by Euclid Chemical Co.

E. 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.

F. Non-Shrink Grout:

1. CRD-C 621 (ASTM C1107), factory pre-mixed grout with minimum 1000 psi compressive strength in 1 day and 5000 psi compressive strength in 28 days as tested per ASTM C109.

2. Equal to Sikagrout 212, or Masterflow 928,

G. Bonding Agent: 2-component, solvent-free, moisture insensitive structural epoxy adhesive complying with ASTM C-881, Type II, Grade 2, Class C, unless otherwise acceptable to Engineer. Equal to "Sikadur 32, Hi-Mod", by Sika Corp., or Concresive Liquid LPL by Master Builders.

2.05 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. Corrosive Environment or Seawater Contact Concrete:

- Type II Portland Cement with Silica or Flyash added in accordance with ASTM C618.
- Min. 28 day compressive strength: 4000 psi.
- Max. water/cement ratio: 0.45 including flyash or silica.
- Slump: not less than 1", not more than 4" unless with high range water reducer (HRWR) admixture, then not more than 8".
- Max. size aggregate: 1".
- Air content: 6% to 8%.
- Use epoxy coated reinforcing bar.
- Minimum concrete cover over rebar: 3".
- No calcium chloride allowed.
- Flyash shall be Class F and shall not exceed 20% of cement content.
- Silica fume shall not exceed 35 lbs/CY.

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.

2.06 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 PREPARATION OF CONCRETE SURFACES

A. Chip and scarify existing concrete surfaces over or against which new concrete will be placed.

B. Clean and etch existing concrete surfaces over which specialty concrete surfaces will be bonded. Use etching material and procedure required by manufacturer of specialty mix products.

3.02 PREPARATION OF FORM SURFACES

A. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

B. Thin form-coating compounds only with thinning agent of type, and in amount, and under conditions of form-coating compound manufacturer's directions.

1. Do not allow excess form-coating material to accumulate in forms or to come into contact with concrete surfaces against which fresh concrete will be placed.

2. Apply in compliance with manufacturer's instructions.

C. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

3.03 FORMWORK

A. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete structure.

B. Construct and select formwork so concrete members and structures are of correct size, shape, alignment, elevation, position, and have correct finish.

C. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.

1. Formwork tolerances shall be such that final concrete work complies with Table 3 at end of this section.

2. If release agents are used, apply prior to assembly of formwork. Do not spray release agents onto rebar surfaces.

D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only.

E. Cleaning and Tightening:

1. Thoroughly clean forms and adjacent surfaces to receive concrete.

2. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed.

3. Retighten forms and bracing after concrete placement to eliminate mortar leaks and maintain proper alignment.

F. Closing Up Forms:

1. Do not close forms to obscure rebar until Engineer has inspected rebar and approved its configuration.

2. Remove forms to expose rebar if forms are closed prior to Engineer's inspection.

3.04 PLACING REINFORCEMENT

A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.

D. Tolerances for placing reinforcement are given in Table 1 at the end of this section.

E. Place reinforcement to obtain at least minimum coverages for concrete protection as indicated on Table 2 at end of this section or as shown on Drawings.

1. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations.

2. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

F. Reinforcing bars shall not be field bent without approval by the Engineer.

G. Touchup epoxy on epoxy-coated rebar.

3.05 JOINTS

A. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.

B. Water sealant materials: Install as shown on the Drawings and in accordance with manufacturer's instructions.

3.06 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.

3.07 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. Maintain reinforcing in proper position during concrete placement operations.

F. 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.

G. 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. Cover reinforced steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature before embedment in concrete.

5. Wet forms and rebar thoroughly before placing concrete.

6. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

H. 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.

3.08 FINISH OF FORMED SURFACES

A. Rough Form Finish:

1. Provide rough form finish for formed concrete surfaces not exposed-to-view unless otherwise indicated.

2. Retain concrete surface having texture imparted by form facing material used.

3.09 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) Do not allow curing compound to contact reinforcing steel.

4. Provide curing with forms left in place:

a) If forms are removed, continue curing by methods specified above, as applicable.

3.10 CONTINUING WORK ON OR NEAR NEWLY PLACED CONCRETE

A. Prior to beginning new work on top of newly poured concrete, the following criteria must be met:

1. For concrete pipe encasement, wait at least 24 hours after concrete placement before backfilling.

3.11 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.

TABLE 1

TOLERANCES FOR PLACING REINFORCEMENT

Clear distance to formed surfaces	+/- 1/4 in.
Minimum spacing between bars:	- 1/4 in.

TABLE 2

MINIMUM CONCRETE COVERAGES OVER REINFORCEMENT BAR

	Cover	Minimum Inches
a.	Concrete cast against earth	3

TABLE 3

TOLERANCES FOR FORMED SURFACES

1.	Variation in cross-sectional dimensions and in the thickness:	
	Minus	1/4 in.
	Plus	1/2 in.

* Tolerances apply to concrete dimensions only, not to positioning of vertical reinforcing steel, dowels, or embedded items.

END OF SECTION

DIVISION 7

THERMAL AND MOISTURE PROTECTION

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 for pipe trenches
Pipe insulation for buried pipe in concrete encasement

1.02 QUALITY ASSURANCE

A. 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 Pipe Trenches: Closed-cell rigid foamed polystyrene, equal to "Styrofoam" HI-60, by Dow Chemical. Thickness as shown.

1. Thermal resistance: Aged R-value = 5 per inch of 75°F mean temperature.

2. Compressive strength ≥ 60 psi.

3. Flexural strength ≥ 75 psi.

4. Minimum density 1.60 PCF.

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.

B. Pipe insulation for buried pipe in concrete encasement:

1. Thermal resistance: Aged R-value = 4.2 per inch of 75°F mean temperature.

2. Compressive strength 20 psi.

3. Minimum density 1.60 PCF.

4. Water adsorption <0.5% by volume.

5. Coefficient of linear thermal expansion: 3.5 x 10^{-5} in/in F°.

6. Thickness as shown on Drawings.

7. Equal to "Styrofoam" pipe insulation for low temperature applications by Dow Plastics.

8. Wrapping: Provide Insulwrap 30 or equal waterproof and damage resistant, membrane over insulation.

9. Tape: Provide ¾" filament tape at seams and as recommended by manufacturer.

10. Seal exposed insulation edges with asphaltic mastic equal to Childers CP-25. Apply as recommended by manufacturer and as shown on Drawings.

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

A. Clean substrates of substances harmful to insulations or vapor and moisture barriers, 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 4' wide sheets over structure and extend outside structural wall a minimum of 2' for full perimeter.

3.03 INSTALLATION OF BURIED CONCRETE ENCASED PIPE INSULATION

A. According to manufacturer's recommendations and as shown on Drawings.

3.04 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

December 7, 2010
Supersedes August 30, 2010

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

Detail #	Description	Revision Date
504(15)	Diaphragms	12/30/02
507(04)	Steel Bridge Railing	2/05/03
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
801(01)	Drives on Sidewalk Sections	2/06/07
801(02)	Drives on Non-Sidewalk Sections	2/06/07
535(03)	Precast Superstructure - Shear Key	12/5/07
535(04)	Precast Superstructure - Shear Key	12/5/07
535(05)	Precast Superstructure - Post Tensioning	12/5/07
535(17)	Precast Superstructure - Notes	12/5/07
801(01)	Drives on Sidewalk Sections	1/04/08
801(02)	Drives on Non-Sidewalk Sections	1/04/08
203(03)	Backslope Rounding	1/29/08
535(02)	Precast Superstructure - Curb Key & Drip Notch	5/20/08

535(05)	Precast Superstructure - Post Tensioning	5/20/08
502(03)	Concrete Curb - Bituminous Wearing Surface	2/2/09
502(03)A	Concrete Curb - Concrete Wearing Surface	2/2/09
502(07)	Precast Concrete Deck Panels - Layout Plan	2/2/09
502(07)A	Precast Concrete Deck Panels - Layout Plan	2/2/09
502(08)	Precast Concrete Deck Panels - Panel Plan	2/2/09
502(09)	Precast Concrete Deck Panels - Blocking Detail	2/2/09
502(10)	Precast Concrete Deck Panels	2/2/09
502(11)	Precast Concrete Deck Panels	2/2/09
502(12)	Precast Concrete Deck Panels - Notes	2/2/09
502(12)A	Precast Concrete Deck Panels - Notes	2/2/09
526(06)	Permanent Concrete Barrier	2/2/09
526(08)	Permanent Concrete Barrier – Type IIIA	2/2/09
526(08)A	Permanent Concrete Barrier – Type IIIA	2/2/09
526(13)	Permanent Concrete Barrier – Type IIIB	2/2/09
526(14)	Permanent Concrete Barrier – Type IIIB	2/2/09
526(21)	Concrete Transition Barrier	2/2/09
526(39)	Texas Classic Rail – Between Window	2/2/09
526(40)	Texas Classic Rail – Through Window	2/2/09
526(41)	Texas Classic Rail – Through Post	2/2/09
526(42)	Texas Classic Rail – Through Nose	2/2/09
606(20)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(21)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(22)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09

606(23)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
609(06)	Vertical Bridge Curb	2/2/09
609(08)	Precast Concrete Transition Curb	2/2/09
502(12)	Precast Concrete Desk Panels	9/09
504(22)	Diaphragm & Crossframe Notes	9/09
626(09)	Electrical Junction Box for Traffic Signals and Lighting	8/20/10
526(08)	Permanent Concrete Barrier	12/7/10
526(08A)	Permanent Concrete Barrier	12/7/10

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:

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

106.4.3 Testing Change the first sentence in paragraph three from "…maintain records of all inspections and tests." to "…maintain original documentation of all inspections, tests, and calculations used to generate reports."

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"

106.7.1 Standard Deviation Method Add the following to F: "Note: In cases where the mean of the values is equal to either the USL or the LSL, then the PWL will be 50 regardless of the computed value of s."

Add the following to H: "Method C Hot Mix Asphalt: PF = [55 + (Quality Level *0.5)] * 0.01"

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:

From	Up to and	Amount of Liquidated

More Than	Including	Damages per Calendar Day
$0	$100,000	$225
$100,000	$250,000	$350
$250,000	$500,000	$475
$500,000	$1,000,000	$675
$1,000,000	$2,000,000	$900
$2,000,000	$4,000,000	$1,000
$4,000,000	and more	$2,100

SECTION 108
PAYMENT

Remove Section 108.4 and replace with the following:

"108.4 Payment for Materials Obtained and Stored Acting upon a request from the Contractor and accompanied by bills or receipted bills, the Department will pay for all or part of the value of acceptable, non-perishable Materials that are to be incorporated in the Work, including Materials that are to be incorporated into the Work, not delivered on the Work site, and stored at places acceptable to the Department. Examples of such Materials include steel piles, stone masonry, curbing, timber and lumber, metal Culverts, stone and sand, gravel, and other Materials. The Department will not make payment on living or perishable Materials until acceptably planted in their final locations.

If payment for Materials is made to the Contractor based on bills, only, then the Contractor must provide receipted bills to the Department for these Materials within 14 days of the date the Contractor receives payment for the Materials. Failure of the Contractor to provide receipted bills for these Materials within 14 days of the dated the Contractor receives payment will result in the paid amount being withheld from the subsequent progress payment, or payments, until such time the receipted bills are received by the Department.

Materials paid for by the Department are the property of the Department, but the risk of loss shall remain with the Contractor. Payment for Materials does not constitute Acceptance of the Material. If Materials for which the Department has paid are later found to be unacceptable, then the Department may withhold amounts reflecting such unacceptable Materials from payments otherwise due the Contractor.

In the event of Default, the Department may use or cause to be used all paid-for Materials in any manner that is in the best interest of the Department."

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: "Adjustments will be established by mutual Agreement based upon Unit or Lump Sum Prices. These agreed Unit or Lump Sum prices will be full compensation and no additions or mark-ups are allowed. 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 Delete this Section entirely.

109.7.4 Non-Compensable Items Replace with the following: "The Contractor is not entitled to compensation or reimbursement for any of the following items:

A. Total profit or home office overhead in excess of 15%,
B. ……."

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 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. If the Department does not accept the Subcontractor quote, then the Subcontractor work will be subject to the Force Account provisions with a 5% markup for profit & overhead.."

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."

Delete the entire Section 203.041 and replace with the following:
"203.041 Salvage of Existing Hot Mix Asphalt Pavement All existing hot mix asphalt pavement designated to be removed under this contract must be salvaged for utilization. Existing hot mix asphalt pavement material shall not be deposited in any waste area or be placed below subgrade in any embankment.

Methods of utilization may be any of the following:

1. Used as a replacement for untreated aggregate surface course on entrances provided the material contains no particles greater than 50 mm [2 in] in any dimension. Payment will be made under Pay Item 411.09, Untreated Aggregate Surface Course or 411.10, Untreated Aggregate Surface Course, Truck Measure. Material shall be placed, shaped, compacted and stabilized as directed by the Resident.

2. Stockpiled at commercial or approved sites for commercial or MaineDOT use.

3. Other approved methods proposed by the Contractor, and approved by the Resident which will assure proper use of the existing hot mix asphalt pavement.

The cost of salvaging hot mix asphalt material will be included for payment under the applicable pay item, with no additional allowances made, which will be full compensation for removing, temporarily stockpiling, and rehandling, if necessary, and utilizing the material in entrances or other approved uses, or stockpiling at an approved site as described above. The material will also be measured and paid for under the applicable Pay Item if it is reused for aggregate in entrances, or other approved uses."

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 sublot 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 502.10 (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: "If the above requirements are not met, the Contractor shall be considered to be in violation of Standard Specification 104.2.5 – Right to Inspect Work. All work occurring during a violation of this specification will be rejected."

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 610
STONE FILL, RIPRAP, STONE BLANKET, AND STONE DITCH PROTECTION

Add the following paragraph to Section 610.02:
"Materials shall meet the requirements of the following Sections of Special Provision 703:

Stone Fill	703.25
Plain and Hand Laid Riprap	703.26
Stone Blanket	703.27
Heavy Riprap	703.28
Definitions	703.32"

Add the following paragraph to Section 610.032.a.
"Stone fill and stone blanket shall be placed on the slope in a well-knit, compact and uniform layer. The surface stones shall be chinked with smaller stone from the same source."

Add the following paragraph to Section 610.032.b:
"Riprap shall be placed on the slope in a well-knit, compact and uniform layer. The surface stones shall be chinked with smaller stone from the same source."

Add the following to Section 610.032: "Section 610.032.d. The grading of riprap, stone fill, stone blanket and stone ditch protection shall be determined by the Resident by visual inspection of the load before it is dumped into place, or, if ordered by the Resident, by dumping individual loads on a flat surface and sorting and measuring the individual rocks contained in the load. A separate, reference pile of stone with the required gradation will be placed by the Contractor at a convenient location where the Resident can see and judge by eye the suitability of the rock being placed during the duration of the project. The Resident reserves the right to reject stone at the job site or stockpile, and in place. Stone rejected at the job site or in place shall be removed from the site at no additional cost to the Department."

SECTION 615
LOAM

615.02 Materials Make the following change:

Organic Content	Percent by Volume
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 warranteed 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…"

Description Change "Floor Area" to "Floor Area (Outside Dimension)". Change Type B floor area from "15 (160)" to "20 (217)".

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, modem lease and router. The router shall have wireless access and be 802.11n or 802.11g capable and wireless. 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."

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 15º 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…"
Add the follow to the list of requirements: "k. The plan for unexpected nighttime work along with a list of emergency nighttime equipment available on-site."
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." Add the following as the last sentence: "The creation and modification of the TCP will be considered incidental to the related 652 items."

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 107-2004 Class 2 risk exposure that clearly identifies the wearer as a person, and is visible at a minimum distance of 300 m [1000 ft], and shall wear a hardhat with 360° retro-reflectivity. For nighttime conditions, Class 3 apparel, meeting ANSI 107-2004, shall be worn along with a hardhat with 360° retro-reflectivity. Retro-reflective or flashing SLOW/STOP paddles shall be used, and the flagger station shall be illuminated to assure visibility in accordance with 652.6.2."

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."

Add the following:
"652.5.1 Rumble Strip Crossing When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for 7 calendar days or less, the Contractor shall install warning signs that read "RUMBLE STRIP CROSSING" with a supplemental Motorcycle Plaque, (W8-15P).

When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for more than 7 calendar days, the Contractor shall pave in the rumble strips in the area that traffic will cross, unless otherwise directed by the Resident. Rumble strips shall be replaced prior to the end of the project, when it is no longer necessary to cross them."

652.6 Nightwork Delete this section entirely and replace with the following:
"652.6.1 Daylight Work Times Unless otherwise described in the Contract, the Contractor is allowed to commence work and end work daily according to the Sunrise/Sunset Table at: http://www.sunrisesunset.com/usa/Maine.asp . If the Project town is not listed, the closest town on the list will be used as agreed at the Preconstruction Meeting. Any work conducted before sunrise or after sunset will be considered Night Work.

652.6.2 Night Work When Night Work occurs (either scheduled or unscheduled), the Contractor shall provide and maintain lighting on all equipment and at all work stations.

The lighting facilities shall be capable of providing light of sufficient intensity to permit good workmanship, safety and proper inspection at all times. The lighting shall be cut off and arranged on stanchions at a height that will provide perimeter lighting for each piece of equipment and will not interfere with traffic, including commercial vehicles, approaching the work site from either direction.

The Contractor shall have available portable floodlights for special areas.

The Contractor shall utilize padding, shielding or other insulation of mechanical and electrical equipment, if necessary, to minimize noise, and shall provide sufficient fuel, spare lamps, generators, etc. to maintain lighting of the work site.

The Contractor shall submit, as a subset of the Traffic Control Plan, a lighting plan at the Preconstruction Conference, showing the type and location of lights to be used for night work. The Resident may require modifications be made to the lighting set up in actual field conditions.

Prior to beginning any Night Work, the Contractor shall furnish a light meter for the Residents use that is capable of measuring the range of light levels from 5 to 20 foot-candles.

Horizontal illumination, for activities on the ground, shall be measured with the photometer parallel to the road surface. For purposes of roadway lighting, the photometer is placed on the pavement. Vertical illumination, for overhead activities, shall be measured with the photometer perpendicular to the road surface. Measurements shall be taken at the height and location of the overhead activity.

Night Work lighting requirements:

Mobile Operations: For mobile-type operations, each piece of equipment (paver, roller, milling machine, etc) will carry indirect (i.e. balloon type) lights capable of producing at least 10 foot-candles of lighting around the work area of the equipment.

Fixed Operations: For fixed-type operations (flaggers, curb, bridge, pipes, etc.), direct (i.e. tower) lighting will be utilized capable of illuminating the work area with at least 10 foot-candles of light.

Hybrid Operations: For hybrid-type operations (guardrail, sweeping, Inslope excavation, etc.), either direct or indirect lighting may be utilized. The chosen lights must be capable of producing at least 10 foot-candles of light around the work area of the equipment
Inspection Operations: Areas required to be inspected by the Department will require a minimum of 5 foot-candles of lighting. This may be accomplished through direct or indirect means.

All workers shall wear safety apparel labeled as meeting the ANSI 107-2004 standard performance for Class 3 risk exposure.

The Contractor shall apply 2- inch wide retro-reflective tape, with alternating red and white segments, to outline the front back and sides of construction vehicles and equipment, to define

their shape and size to the extent practicable. Pickup trucks and personal vehicles are exempt from this requirement. The Contractor shall furnish approved signs reading "Construction Vehicle - Keep Back" to be used on trucks hauling to the project when such signs are deemed necessary by the Resident. The signs shall be a minimum of 30 inches by 60 inches, Black and Orange, ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic).

All vehicles used on the project, including pickup trucks and personal vehicles, shall be equipped with amber flashing lights, visible from both front and rear, or by means of single, approved type, revolving, flashing or strobe lights mounted so as to be visible 360º. The vehicle flashing system shall be in continuous operation while the vehicle is on any part of the project.

The 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. Failure to follow the approved Lighting Plan will result in a Traffic Control violation.

Payment for lighting, vehicle mounted signs and other costs accrued because of night work will not be made directly but will be considered incidental to the related contract items."

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/m^2 [80 lb/ft^2] ground contact pressure…" to "…crawler type bulldozer of not more than 4875 kg/m^2 [2000 lb/ft^2] ground contact pressure…"

653.06 Compaction In the last sentence; change "…not more than 390 kg/m^2 [80 lb/ft^2] ground contact…" to "…not more than 4875 kg/m^2 [2000 lb/ft^2] 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 [½ 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 [1/2 inch] sieve and is retained on the 2.00mm [No 10] sieve, minus any reclaimed asphalt pavement used."

703.09 HMA Mixture Composition The coarse and fine aggregate shall meet the requirements of Section 703.07. The several aggregate fractions for mixtures shall be sized, graded, and combined in such proportions that the resulting composite blends will meet the grading requirements of the following table.

AGGREGATE GRADATION CONTROL POINTS

SIEVE SIZE	Nominal Maximum Aggregate Size---Control Points (Percent Passing)				
	TYPE 25 mm	TYPE 19 mm	TYPE 12.5 mm	TYPE 9.5 mm	TYPE 4.75 mm
	PERCENT BY WEIGHT PASSING - COMBINED AGGREGATE				
37.5 mm	100				
25 mm	90-100	100			
19 mm	-90	90-100	100		
12.5 mm		-90	90-100	100	100
9.5 mm		-	-90	90-100	95-100
4.75 mm		-	-	-90	80-100
2.36 mm	19-45	23-49	28-58	32-67	40 - 80
1.18 mm		-	-	-	-
600 µm		-	-	-	-
300 µm		-	-	-	-
75 µm	1-7	2-8	2-10	2-10	2-10

Gradation Classification---- The combined aggregate gradation shall be classified as coarse-graded when it passes below the Primary Control Sieve (PCS) control point as defined in the following table. All other gradations shall be classified as fine-graded.

GRADATION CLASSIFICATION

PCS Control Point for Mixture Nominal Maximum Aggregate Size (% passing)				
Nominal Maximum Aggregate Size	TYPE 25 mm	TYPE 19 mm	TYPE 12.5 mm	TYPE 9.5 mm
Primary Control Sieve	4.75 mm	4.75 mm	2.36 mm	2.36 mm
PCS Control Point (% passing)	40	47	39	47

If a Grading "D" mixture is allowed per Special Provision Section 403, it shall meet the following gradation and the aggregate requirements of Section 703.07.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
½ inch	100
⅜ inch	93-100
No. 4	60-80
No. 8	46-65
No. 16	25-55
No. 30	16-40
No. 50	10-30
No. 100	6-22
No. 200	3.0-8.0

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…"

Replace subsections 703.25 through 703.28 with the following:
"703.25 Stone Fill Stones for stone fill shall consist of hard, sound, durable rock that will not disintegrate by exposure to water or weather. Stone for stone fill shall be angular and rough. Rounded, subrounded, or long thin stones will not be allowed. Stone for stone fill may be obtained from quarries or by screening oversized rock from earth borrow pits. The maximum allowable length to thickness ratio will be 3:1. The minimum stone size (10 lbs) shall have an average dimension of 5 inches. The maximum stone size (500 lbs) shall have a maximum dimension of approximately 36 inches. Larger stones may be used if approved by the Resident. Fifty percent of the stones by volume shall have an average dimension of 12 inches (200 lbs).

703.26 Plain and Hand Laid Riprap Stone for riprap shall consist of hard, sound durable rock that will not disintegrate by exposure to water or weather. Stone for riprap shall be angular and rough. Rounded, subrounded or long thin stones will not be allowed. The maximum allowable length to width ratio will be 3:1. Stone for riprap may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (10 lbs) shall have an average dimension of 5 inches. The maximum stone size (200 lbs) shall have an average dimension of approximately 12 inches. Larger stones may be used if approved by the Resident. Fifty percent of the stones by volume shall have an average dimension greater than 9 inches (50 lbs).

703.27 Stone Blanket Stones for stone blanket shall consist of sound durable rock that will not disintegrate by exposure to water or weather. Stone for stone blanket shall be angular and rough. Rounded or subrounded stones will not be allowed. Stones may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (300 lbs) shall have minimum dimension of 14 inches, and the maximum stone size (3000 lbs) shall have a maximum dimension of approximately 66 inches. Fifty percent of the stones by volume shall have average dimension greater than 24 inches (1000 lbs).

703.28 Heavy Riprap Stone for heavy riprap shall consist of hard, sound, durable rock that will not disintegrate by exposure to water or weather. Stone for heavy riprap shall be angular and rough. Rounded, subrounded, or thin, flat stones will not be allowed. The maximum allowable length to width ratio will be 3:1. Stone for heavy riprap may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (500 lbs) shall have minimum dimension of 15 inches, and at least fifty percent of the stones by volume shall have an average dimension greater than 24 inches (1000 lbs)."

Add the following paragraph:
"703.32 Definitions (ASTM D 2488, Table 1).
Angular: Particles have sharp edges and relatively plane sides with unpolished surfaces
Subrounded: Particles have nearly plane sides but have well-rounded corners and edges
Rounded: Particles have smoothly curved sides and no edges"

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; "Manufacturers of corrugated polyethylene pipe must participate in, and maintain compliance with, AASHTO's National Transportation Product Evaluation Program (www.ntpep.org) which audits producers of plastic pipe. A certificate of compliance must be provided with each shipment."

SECTION 709
REINFORCING STEEL AND WELDED STEEL WIRE FABIC

709.03 Steel Strand Change the second paragraph from "…shall be 12mm [½ 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."

710.04 Metal Beam Rail Replace with the following: "Galvanized steel rail elements shall conform to the requirements of AASHTO M 180, Class A, Type II.

When corrosion resistant steel is specified, rail shall conform to AASHTO M 180, Class A, Type IV. Beams of corrosion resistant steel shall not be painted or galvanized. They shall be so handled and stored that the traffic face of these beams, used in a continuous run of guardrail, shall not show a distinctive color differential.

When metal beam rail is to be installed on a curve having a radius of curvature of 150 ft. or less, the beam sections shall be fabricated on an arc to the required radius and permanently stamped or embossed with the designated radius.

The engineer may take one piece of guardrail, a backup plate, and end or buffer section from each 200 pieces in a lot, or from each lot if less than 200 pieces are included therein for determination of compliance with specification requirements. If one piece fails to conform to the requirements of this specification, two other pieces shall be tested. If either of these pieces fails to conform to the requirements of this specification, the lot of material represented by these samples shall be rejected. A lot shall be considered that quantity of material offered for inspection at one time that bears the same heat and coating identification."

710.07 Guardrail Posts Section b. change "…AASHTO M183/M183M…" to "…AASHTO M 270M/M 270 Grade 250 (36)…"

SECTION 712
MISCELLANEOUS HIGHWAY MATERIALS

712.04 Stone Curbing and Edging Delete the existing and replace with the following: "Stone for curbing and edging shall be approved granite from acceptable sources. The stone shall be hard and durable, predominantly gray in color, free from seams that would be likely to impair its structural integrity, and of a smooth splitting character. Natural grain size and color variations characteristic of the source deposit will be permitted. Such natural variations may include bands or clusters of mineral crystallization provided they do not impair the structural integrity of the curb stone. The Contractor shall submit for approval the name of the quarry that is the proposed source of the granite for curb materials along with full scale color photos of the granite. Such submission shall be made sufficiently in advance of ordering so that the Resident may have an opportunity to judge the stone, both as to quality and appearance. Samples of curbing shall be submitted for approval only when requested by the Resident. The dimensions, shape, and other details shall be as shown on the plans."

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 [½ 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 [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."

DEPARTMENT OF THE ARMY PERMIT

Permittee **Maine Dept. of Transportation, 16 State House Station, Augusta, Maine 04333**

Permit No. **NAE-2009-00514**

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:

Place permanent and temporary fill below the ordinary high water line and the high tide line of numerous waterways and in their adjacent freshwater and tidal wetlands throughout the State of Maine in order to repair, rehabilitate, or replace numerous existing deteriorated bridges or culverts.

Project Description Continued on Page 4

This work is shown on the attached plans entitled, "MAINE DOT, 2 YEAR BRIDGE PROJECTS", on six sheets, and dated "JUNE 2009" and with the 1:2000 USGS Quadrangle Map location plans and tables contained in the administrative record.

Project Location:

In numerous waterways and in their adjacent freshwater and tidal wetlands throughout the State of Maine

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2019. 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 subcontracts 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:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) 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.

Trudy C. Gates for John Dority — 7/15/09

(PERMITTEE) *(DATE)*

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

for JM Carthy — 7/15/09

(DISTRICT ENGINEER) *(DATE)*

Philip T. Feir
Colonel, Corps of Engineers

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.

(TRANSFEREE) *(DATE)*

☆U.S. GOVERNMENT PRINTING OFFICE: 1986 — 717-425

Project Description Continued from Page 1

This work is being conducted in response to Federal and State stimulus efforts and is designed to address critical bridges and other structures that need immediate attention to insure public safety and protect the economic vitality of Maine's transportation network. Refer to attached table(s) for a list of locations, scope of work, and anticipated impacts.

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. The permittee shall complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

3. 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.

4. The permittee shall implement all terms and conditions contained in the attached water quality certification from the Maine Dept. of Environmental Protection dated "May 13, 2008". Copies of all required submittals shall also be provided to the Corps.

5. No temporary fill (e.g., access roads, cofferdams) may be placed in waters or wetlands unless specifically authorized by this permit. If temporary fill is used, it shall be disposed of at an upland site and suitably contained to prevent its subsequent erosion into a water of the U.S., and the area shall be restored to its original contours (but not higher) and character upon completion of the project. During use, such temporary fill must be stabilized to prevent erosion or, in the case fill placed in flowing water (rivers or streams), clean washed stone should be used.

6. Except where stated otherwise, reports, drawings, correspondence and any other submittals required by this permit shall be marked with the words "Permit No. NAE-2009-00514" 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.

Special Conditions Continued on Page 5

Special Conditions Continued from Page 4

7. In order to minimize potential impacts to federally endangered shortnose sturgeon and Atlantic salmon and its critical habitat (NMFS Resources), the permittee shall comply with the attached conditions entitled "Corps of Engineers Permit No. NAE-2009-00514, Permit Special Conditions Resulting From Informal Endangered Species Act Consultation With National Marine Fisheries Service".

8. The permittee shall minimize the adverse effects to Atlantic salmon and its critical habitat and incidental take of Atlantic salmon in the rivers and streams where bridge or culvert projects will occur by employing construction techniques that avoid or minimize adverse effects to water quality, aquatic and riparian habitats, and other aquatic organisms. He shall also minimize adverse effects to Atlantic salmon and its critical habitat and incidental take of Atlantic salmon by ensuring that fish passage and habitat connectivity at culverts and bridges is either maintained in its current condition or is improved by the replacement or rehabilitated structure. In meeting these requirements, the permittee shall comply with the attached conditions entitled "Corps of Engineers Permit No. NAE-2009-00514, Permit Special Conditions Resulting From Formal Endangered Species Act Consultation With US Fish & Wildlife Service".

9. In-water work window extension. A project-specific time-of-year restriction may be extended by as much as 10 days without having to formally request permit modification provided:

a. The project site does not support federally endangered shortnose sturgeon, Atlantic salmon, or Atlantic salmon critical habitat. Any extension requests for these sites will be reviewed on a case-by-case basis and may require re-initiation of consultation.

b. Only the Maine DOT Coordination & Permits Division Manager or the Environmental Office Director may grant such an extension and only after state and/or federal fisheries agencies that initially requested the restriction have been notified and approve the extension request. It is understood that any request to fisheries agencies will include the need and justification for such an extension; that it will be a one-time only request; and that Maine DOT will not submit extension requests for projects delayed due to issues of scheduling or failure to complete work due to conditions within a contractor's control.

For any project that receives an extension to its time of year restriction, Maine DOT shall notify the Corps in writing to include the agency approval so the modification of an approved in-water work window for the project can be documented in the permit record.

10. Prior to construction on any single project, the permittee shall provide the Corps of Engineers with project plans for that project. The plans must be on 8-1/2" x 11" paper with a 3/4" margin at the top and must adequately show the proposed work. All plans must be labeled with the bridge number, DOT PIN if applicable, location (roadway name), town, and county. Plans shall be sent to the US Army Corps of Engineers, Maine Project Office, 675 Western Avenue #3, Manchester, Maine 04351; ATTN: Jay Clement. Any submittal(s) to the Corps in compliance with this condition should reference Corps permit no. NAE-2009-00514.

Special Conditions Continued on Page 6

Special Conditions Continued from Page 5

11. This permit does not authorize construction identified as a "Design Build" project. Any work subject to Corps jurisdiction for those bridges may not begin until after the permittee provides project plans that adequately show the proposed work and the Corps approves the work in writing by either an amendment to this permit or a separate permit action. Project plans shall be submitted in a timely fashion that will allow for review and as necessary, coordination/consultation with federal and state resource agencies and the Maine Historic Preservation Commission.

12. In order to fulfill the requirements of Section 106 of the National Historic Preservation Act of 1966, the permittee shall implement the stipulations contained in the attached Memorandum of Agreement.

13. For any bridge project that crosses navigable waters, the permittee must obtain a bridge permit or exemption from the US Coast Guard before beginning construction. For information contact Commander (obr), First Coast Guard District, One South Street - Battery Bldg, New York, NY 10004-5073; phone (212) 668-7021. Navigable waters in the State of Maine are all waters subject to the ebb and flood of the tide, the Penobscot River to Medway, the Kennebec River to Moosehead Lake, and the portion of Lake Umbagog within Maine.

MaineDOT PIN 16718.00
Stanley Brook Bridge (#5570) Replacement
Mount Desert, Maine

US Army Corps of Engineers ®
New England District

INDIVIDUAL PERMIT
WORK-START NOTIFICATION FORM
(Minimum Notice: Two weeks before work begins)

****
* MAIL TO: U.S. Army Corps of Engineers, New England District *
*
* Policy Analysis/Technical Support Branch *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *
****

Corps of Engineers Permit No. NAE-2009-00514 was issued to the Maine Dept. of Transportation. This work is located in numerous waterways and wetlands throughout the State of Maine. The permit authorized the permittee to place permanent and temporary fills in order to repair, rehabilitate, or replace existing deteriorated bridges and culverts.

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 Numbers: ( ) _____ ( ) _____

Proposed Work Dates: **Start:** _____ **Finish:** _____

Permittee/Agent Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Date Permit Issued: 7-15-09 Date Permit Expires: 12-31-19

****

FOR USE BY THE CORPS OF ENGINEERS

PM: Clement **Submittals Required:** _____

Inspection Recommendation: Inspections should be tied to annual random inspections of PGP projects

_____

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

USACE Project Number: NAE-2009-00514

MaineDOT PIN 16718.00
Stanley Brook Bridge (#5570) Replacement
Mount Desert, Maine

Name of Permittee: Maine Dept. of Transportation

Permit Issuance Date: 7-15-09

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.

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* 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 *
****

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***

Corps of Engineers Permit No. NAE-2009-00514
Permit Special Conditions Resulting From
Formal Endangered Species Act Consultation
With US Fish & Wildlife Service
(Reference USFWS Biological Opinion dated "June 19, 2009")

1. Maine DOT shall hold a pre-construction meeting for each project with appropriate Maine DOT Environmental Office staff, other Maine DOT staff, and the Maine DOT construction crew (as practicable) or the contractor(s), to review all procedures and requirements for avoiding and minimizing impacts to Atlantic salmon and to emphasize the importance of these measures for protecting salmon and their habitat. Corps staff will attend these meetings as practicable.

2. Maine DOT and their contractors will minimize the potential for impacts to Atlantic salmon and their habitat by conducting all instream work (which includes the installation and removal of cofferdams, as well as other activities) according to the work windows specified in Table 1 (page 6) of the US Fish & Wildlife Service Biological Opinion dated "June 19, 2009".

3. Maine DOT and their contractors will minimize the potential for impacts to Atlantic salmon and their habitat by conducting all construction activities for each project in accordance with the Maine DOT-approved Soil Erosion and Water Pollution Control Plan.

4. A fish evacuation plan must be implemented by appropriate Maine DOT staff during construction and dewatering of all cofferdams to carefully remove juvenile Atlantic salmon from the work area.

5. All Atlantic salmon mortalities from electrofishing or other activities will be reported to the USFWS (Wende Mahaney at 827-5938, Ext. 20; FAX 827-6099; or wende_mahaney@fws.gov) and NMFS (Jeff Murphy at 866-7379; FAX 866-7342; or jeff.murphy@noaa.gov) within 48 hours of occurrence. Mortalities shall be immediately preserved (refrigerate or freeze) for delivery to the NMFS office in Orono, Maine (contact Jeff Murphy at 866-7379 to arrange for delivery).

6. To minimize the effects of entrainment and impingement from diversion pumps, Maine DOT and their contractors shall use a screen on all intake hoses with a maximum mesh size of 6.35 mm. Furthermore, Maine DOT shall insure that the approach velocity to the intake hose does not exceed 0.24 m/sec. Intake hoses shall be regularly monitored while pumping to minimize adverse effects to Atlantic salmon.

7. The Maine DOT or their contractor will follow a Spill Prevention Control and Countermeasure Plan designed to avoid effects to rivers and streams from hazardous materials associated with construction activities. This plan will be approved by appropriate Maine DOT Environmental Office staff prior to the start of construction and then carefully enforced throughout the duration of each construction project.

8. To minimize adverse effects to Atlantic salmon and ensure that salmon and other fish species are able to pass through rehabilitated culverts and that stream habitat is not fragmented, Maine DOT will monitor the efficacy of fish passage through all culverts rehabilitated by invert lining or slip lining, regardless of whether or not fish passage structures are installed (e.g., weirs). Monitoring reports shall be submitted to USFWS (Attn: Wende Mahaney, 1168 Main Street, Old Town, ME 04468) with a copy to the Corps (Attn: Jay Clement, Maine Project Office, 675 Western Avenue #3, Manchester, ME 04351).

Monitoring will be completed at the following projects: 1) Farmington PIN 15640, 2) Farmington PIN 12693, and 3) Ebeemee PIN 17088. Monitoring will follow the procedures outlined in Appendix D, except as modified below. Monitoring will be completed during the first, third, and fifth years after construction during appropriate stream flows as discussed in Appendix D. Monitoring reports will be submitted in a timely fashion that will allow for the planning and implementation of any necessary instream construction work to correct identified fish passage problems during the following July 15 to September 30 work window (unless another work window is approved by USFWS). After the fifth year monitoring report is evaluated, the USFWS will determine the need for any further monitoring or corrective measures.

9. To minimize adverse effects to Atlantic salmon and ensure that salmon and other fish species are able to pass through replacement culverts and that stream habitat is not fragmented, Maine DOT will monitor the efficacy of fish passage through the following culvert replacement projects: 1) Prentiss Township (PIN 16742); 2) Meddybemps (No PIN); 3) Weston (PIN 15968); and 4) Bradley (PIN 16687). Electro-fishing is not necessary at Prentiss unless indirect monitoring indicates there may be problems with fish passage through the new structure.

Monitoring will follow the procedures outlined in Appendix D, except as modified below. Monitoring will be completed during the first, third, and fifth years after construction during appropriate stream flows. Monitoring reports will be submitted in a timely fashion that will allow for the planning and implementation of any necessary instream construction work to correct identified fish passage problems during the following July 15 to September 30 work window (unless another work window is approved by USFWS). After the fifth year monitoring report is evaluated, the USFWS will determine the need for any further monitoring or corrective measures.

10. All cofferdams shall be removed from the stream immediately following completion of construction, allowing for minor delays due to high stream flows following heavy precipitation, so that fish and other aquatic life passage is not unnecessarily restricted. If a project is not completed but there will be substantial delays in construction, cofferdams will need to be at least partially removed to allow unobstructed passage of Atlantic salmon until construction resumes.

11. If any project proposes to use blasting, Maine DOT will submit a project-specific blasting plan to USFWS for review and approval prior to any blasting activities. This plan must demonstrate that blasting will not produce overpressure in surrounding waters that exceeds 100 kPa. These plans must be submitted at least 30 days before the anticipated blasting activities to allow for adequate review and approval by USFWS.

12. To minimize adverse effects to Atlantic salmon from pile driving, equipment operators shall conduct a few light "taps" on the pile prior to normal pile driving operations in an effort to scare Atlantic salmon and other fish away from the piles.

13. To minimize adverse effects to Atlantic salmon from water column noise produced by demolition of the existing bridge piers (likely with a hoe ram), pier demolition shall be conducted inside a cofferdam at the following projects: 1) Island Falls (PIN 15097), Oakfield (PIN 15630), and New Sharon (PIN 16719). The cofferdam does not need to be dewatered, but dewatering would serve to further reduce the amount of noise in the adjacent water column and minimize effects on Atlantic salmon.

14. To minimize adverse effects to Atlantic salmon, particularly physical injury or mortality, any piles larger than 61 cm (24 in) in diameter will be driven using one or more noise attenuation techniques. Such techniques can include (but are not limited to) an air bubble curtain and isolation of the piles within a cofferdam. Driving of piles with noise attenuation techniques shall meet the interim noise criteria of the FHWG (2008) of 206 dB_{Peak} and 187 dB SEL measured in the water at 10 m from pile.

15. Corps of Engineers staff shall carefully monitor the actions described in this opinion and document the level of incidental take to ensure that these projects are minimizing the take of Atlantic salmon. The Corps will provide the USFWS with an annual report summarizing the work done under this opinion and accounting for all cumulative take of Atlantic salmon, until such time as all projects are completed. When all construction projects are completed, the Corps shall submit a final report to the USFWS summarizing the total amount of incidental take from all projects.

Table 1. Projects being considered under the 2009 MEDOT bridge and culvert batched section 7 consultation.

No.	Project	PIN	Atlantic Salmon *DPS*	Atlantic Salmon *CH*	Stream/River	Watershed	Scope	Instream Work Window
	Rehabilitation (with/without external weirs)							
1	Farmington	15640	X	X	Abbott Brook	Sandy River	Slipline	July 15-Sept 30
2	Farmington	12693	X	X	Cascade Str.	Sandy River	Invert Line	July 15-Sept 30
3	Ebeemee		X	X	Stinking Brook	WB Pleasant	Slipline	July 15-Sept 30
4	Sebec	11487	X	X	Piscataquis	Repair	July 15-Sept 30	
	Replacement (culverts and boxes)							
5	Prentiss Twp	16742	X	X	Mud Brook	Mattawamkeag	Bridge Replacement	July 15-Sept 30
6	Meddybemps	No Pin	X	X	Unnamed Trib	Dennys River	Culvert Replacement	July 15-Sept 30
7	Weston	15968	X		Trout Brook	Mattawamkeag	Strut Replacement	July 15-Sept 30
	Bridge abutment work on stream banks (no in-channel piers)							
8	Winterport	16763	X	X	Marsh Stream	Penobscot	Bridge Replacement	July 15-Sept 30
9	New Sharon	16721	X	X	Fillibrown Brook	Sandy River	Bridge Replacement	July 15-Sept 30
	Bridge Pier(s) work with/without associated abutment work							
10	Whitneyville	16762	X	X	Machias River	Machias River	Pier Rehab	July 15-Sept 30
11	Bradley	16687	X	X	Great Works St	Penobscot	Bridge Replacement	July 15-Sept 30
12	Island Falls	15097	X	X	WB Mattawam	Mattawamkeag	Bridge Replacement	July 15-Sept 30
13	Bangor	15090	X	X	Meadow Brook	Penobscot	Bridge Replacement	Sept 1-May 1
14	Howland	15635	X	X	Piscataquis	Piscataquis	Bridge Replacement	Open
15	Oakfield	15630	X	X	Mattawamkeag	Mattawamkeag	Bridge Replacement	July 15-Sept 30
16	Norridgewock	6900.01	X	X	Kennebec	Kennebec	Bridge Replacement	Open
	Bridge Removal							
17	New Sharon	16719	X	X	Muddy Brook	Sandy River	Bridge Removal	July 15-Sept 30
	Linear Projects with Multiple Stream Crossings							
18	Sherman to Houlton	16819	X	X	Tributaries	Mattawamkeag	I-95 Reconstruction	July 15-Sept 30
19	T2R9-Veazie	15954	X	X	Unnamed Trib	Penobscot	I-95 Reconstruction	July 15-Sept 30
	New England Cottontail Project							
20	Falmouth	15094	New England Cottontail		Presumpscot R	Presumpscot R	Bridge Replacement	

Corps of Engineers Permit No. NAE-2009-00514
Permit Special Conditions Resulting From
Informal Endangered Species Act Consultation
With National Marine Fisheries Service
(Reference COE/Maine DOT Biological Assessment dated "March 2009")

1. The permittee shall implement Maine DOT Best Management Practices ("BMPs") for Erosion and Sedimentation Control for all work authorized by this permit.

2. All work authorized by this permit shall be designed in accordance with Maine DOT's 2008 Waterway and Wildlife Crossing Policy and Design Guide.

3. All projects authorized by this permit shall utilize works windows specified in Matrix 1 of the biological assessment ("BA") and as noted below:

a. Open Work Window - Mayfield Township, Garland, Waldoboro, Amherst, Canaan, Lincoln, Monroe, Ellsworth Rail Trail, Lisbon, Searsmont, Carmel, Lisbon-Sabattus, Ellsworth Rout 1A,

b. July 15 to September 30 Work Window – Brooks, Auburn Route 136, Old Town,

c. November 8 to April 9 Work Window - South Thomaston, Topsham, Sedgewick-Deer Isle,

d. Modified Work Window (July 15 to September 30 and November 8 to April 9) – Orland

e. Modified Work Window (June 1 to September 30) - Gardiner-Brunswick I-295

4. Any cofferdam constructed as part of the authorized project shall adhere to the specifications contained in Section 3.1 (Coffer Dam Descriptions) of the BA.

5. Any culvert installations authorized by this permit must adhere to the specifications contained in Section 3.1.2 (Replacement Projects) of the BA.

6. If any listed shortnose sturgeon or Atlantic salmon are encountered in the project areas of this permit, including during dewatering of cofferdams, all work must cease and NMFS shall be contacted immediately.

7. Within 90 days of permit issuance, the permittee must develop fish passage monitoring plans in consultation with NMFS, USFWS, and the Corps for any stream crossings requiring the installation of invert or slip-lined culverts. Instream work shall not begin on these projects until the monitoring plans have been approved by the Services and the Corps.

Maine DOT

2 Year Bridge Projects

MAINE DOT
2 YEAR BRIDGE PROJECTS

SHEET 1 OF 7 JUNE 2009

Project Location					Project Information		
BR#	Location	Town	County	Bridge Name	Scope	On-Site Temporary Detour?	Construction Overview
0077	Old Danville Road	Auburn	Aroostook	ROYAL RIVER BRIDGE	Bridge Replacement (wider)	No	Demolish deck and rail with hydraulic hammer, remove debris from channel with clam-shell/hand labor. Remove exiitisting bridge beams with large excavator. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing structure. Divert flow away from abutment (sandbags, Jersey barriers). Demolish abutment. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
125	Richardson Road	Easton	Aroostook	PRESTILE STREAM #1	Bridge Culvert Replacement (Longer, possible removal?)	No	Place cofferdam upstream at narrowest point of stream (some clearing may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Pipe removed, new pipe/riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
2403	Route 2	Island Falls	Aroostook	IRON	Bridge Replacement	No	Drive pile (H-pile or Pipe-pile, may require pre-excavation by crane with clam-shell) for temporary work trestle beside existing bridge. Drive pile to support "false-work" under structure to contain debris from deck/rail removal. Install barges, if sufficient depth of water, to contain bulk of pier demo. If there is not sufficient depth: remove center pier via open demolition with a hoe-ram from work trestle and/or blast; remove concrete from river with clam-shell. Cannot blast inside a cofferdam, generally destroys cofferdam. Repeat for other piers. Install cofferdams for new pier placement: sheet-pile, may require pre-excavation with clam-shell. Excavate for concrete seal within flooded cofferdam. Place seal concrete underwater in flooded cofferdam. Dewater cofferdam by pumping clean water into river. When water gets within a few feet of seal, pump to a cofferdam sediment basin to capture water with concrete sediment. Once dewatered, manually clean seal surface (shovels, and brooms. Once cleaned, the cofferdam can be allowed to flood at night and dewatered the next day by pumping overboard. Form, cast, and clean footing and pier in the "dry". Remove cofferdam. Repeat for other piers. Divert flow away from exiting abutments/riprap (sandbags/Jersey barriers), demo, excavate for footing, form, cast, and clean foo
2898	Main Street	Oakfield	Aroostook	Village	Bridge Replacement	No	Remove deck by saw cutting timbers and ripping with excavator, lift beams. Excavate for new footings and abutments behind existing abutments until it is time to demolish abutments.Excavate for new footings and abutments behind existing abutments until it is time to demolish existing structure. Divert flow away from abutment (sandbags, Jersey barriers). Demolish abutment. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
	Bancroft Road	Weston	Aroostook		Strut Replacement	No	Place cofferdam upstream at narrowest point of stream (some clearing may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Pipe removed, new pipe/riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
5340	Winn Road	Cumberland	Cumberland	RIDEOUT	Bridge Culvert Rehabilitation (Invert w/ wiers)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Place invert liner by spraying shot-crete, form and place external weirs, install riprap installed in "dry" work area between cofferdams. Block final weir outlet notch and use as containment for flushing of liner. The diversion pump system will stopped intermittently to provide flush water for liner. Flush water captured behind the last weir will be pumped to the cofferdam sedimentation basin until pH is tested to be within one pH of the receiving waters. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream cofferdam will be removed.
2702	Route 26/100	Falmouth	Cumberland	RR and River CROSSING	Bridge Replacement	No	There appears to be very little in-stream work associated with this project. Pier replacement: Install cofferdams for new pier placement: sheet-pile, may require pre-excavation with clam-shell. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation). Excavate for concrete seal within dewatered cofferdam. Place seal concrete underwater in flooded cofferdam. Dewater cofferdam by pumping clean water into river. When water gets within a few feet of seal, pump to a cofferdam sediment basin to capture water with concrete sediment. Once dewatered, manually clean seal surface (shovels, and brooms. Once cleaned, the cofferdam can be allowed to flood at night and dewatered the next day by pumping overboard. Form, cast, and clean footing and pier in the "dry". Remove cofferdam.
5646	Hallowell Road/ Route 9	Pownal	Cumberland	POWNAL CENTER	Bridge Culvert Rehabilitation (Invert w/ wiers)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Place invert liner by spraying shot-crete, form and place external weirs, install riprap installed in "dry" work area between cofferdams. Block final weir outlet notch and use as containment for flushing of liner. The diversion pump system will stopped intermittently to provide flush water for liner. Flush water captured behind the last weir will be pumped to the cofferdam sedimentation basin until pH is tested to be within one pH of the receiving waters. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream cofferdam will be removed.
3945	Route 1	South Portland	Cumberland	VETERANS MEMORIAL	**Design Build** Bridge Replacement *	??	Drive pile (H-pile or Pipe-pile, may require preexcavation by crane with clam-shell) for temporary work trestle beside existing bridge. Drive pile to support "false-work" under structure to contain demolition debris from deck/rail removal. Install barges, if sufficent depth of water, to contain bulk of pier demo. If there is not sufficent depth: remove center pier via open demolition with a ho-ram from work trestle or blast; remove concrete from river with clam-shell. Cannot blast inside a cofferdam, generally destoys cofferdam. Repeat for other piers. Install cofferdams for new pier placement: sheet-pile, may require pre-excavation with clam-shell. Excavate for concrete seal within dewatered cofferdam. Place seal concrete underwater in flooded cofferdam. Dewater cofferdam by pumping clean water into river. When water gets within a few feet of seal, pump to a cofferdam sediment basin to caputure water with concrete sediement. Once dewatered, manually clean seal surface (shovels, and brooms. Once cleaned, the cofferdam can be allowed to flood at night and dewatered the next day by pumping overboard. Form, cast, and clean footing and pier in the "dry". Remove cofferdam. Repeat for other piers. Divert flow away from exiting abutmerits/riprap (sandbags/Jersey barriers), demo, excavate for footing, form, cast, a
3987	E. Bridge Street	Westbrook	Cumberland	LITTLE	Arch with Natural Bottom	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Remove culverts, form and cast footings, prepare streambed, and install arch in the "dry". The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.

*Will apply "MaineDOT Special In-water Work Conditions" as standard practice.

MAINE DOT
2 YEAR BRIDGE PROJECTS

SHEET 2 OF 7 JUNE 2009

Project Location					Project Information		
BR#	Location	Town	County	Bridge Name	Scope	On-Site Temporary Detour?	Construction Overview
2004	Route 4/27/43	Farmington	Franklin	Abbot	Slipline	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Install liner and seal ends with only vent holes remaining. Place sheet plastic/tarps on streambed to capture any excess grout/spillage. Begin pumping grout (generally downstream to upstream). Can only place a limited amount of grout at a time as liner can float and move breaking the seals on the end. Operation needs to be closely monitored as unforeseen holes in pipe may lead to leakage. Leakage captured immediately downstream of pipe and removed from work area. Capture overflow when interstitial space is filled via vent holes. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream coff
2311	Route 2/27	Farmington	Franklin	Gilbert Brook	Slipline	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Install liner and seal ends with only vent holes remaining. Place sheet plastic/tarps on streambed to capture any excess grout/spillage. Begin pumping grout (generally downstream to upstream). Can only place a limited amount of grout at a time as liner can float and move breaking the seals on the end. Operation needs to be closely monitored as unforseen holes in pipe may lead to leakage. Leakage captured immediately downstream of pipe and removed from work area. Capture overflow when interstitial space is filled via vent holes. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream coff
0408	Swan Road	New Sharon	Franklin	SWAN ROAD	Bridge Replacement (Possible Removal)	No	Remove deck by saw cutting timbers and ripping with excavator, lift beams. Excavate for new footings and abutments behind existing abutments until it is time to demolish abutments. Divert flow away from abutment (sandbags, Jersey barriers). Demolish abutment. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
2594	Townway Road	New Sharon	Franklin	MUDDY BROOK	Bridge Removal	No	Drive pile to support "false-work" under structure to contain demolition debris generated by deck/rail removal. Remove deck via hydraulic hammer to expose piers. Install barges, if sufficient depth of water, to contain bulk of pier demo. If there is not sufficient depth: remove center pier via open demolition with a hydraulic hammer from work trestle or blast downs to mudline; remove concrete from river with clam-shell. Cannot blast inside a cofferdam, generally destroys cofferdam. Remove abutments by same means.
5570	Route 3	Mt Desert	Hancock	STANLEY BROOK	Bridge Replacement (Longer Span)	??	Remove deck by saw cutting timbers and ripping with excavator, lift beams. Excavate for new footings and abutments behind existing abutments until it is time to demolish abutments.Excavate for new footings and abutments behind existing abutments until it is time to demolish existing structure. Divert flow away from abutment (sandbags, Jersey barriers). Demolish abutment. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
498	Blair Road	Augusta	Kennebec	BLAIR ROAD	Bridge Replacement	LAP	Remove pavement with excavator, demolish deck with hydraulic hammer and lift beams. Excavate for new footings and abutments behind existing abutments until it is time to demolish abutments. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing structure. Divert flow away from abutment (sandbags, Jersey barriers). Demolish abutment. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
2719	Route 100/201	Augusta	Kennebec	RIGGS	Bridge Replacement	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation). Probably will not need a downstream cofferdam as there is a set of falls below structure. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below existing outlet. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Complete Replacement work in the "dry". The diversion pump system will be stopped and the upstream coffer dam will slowly be breached.
2412	Cobbosseecontee Road	Monmouth	Kennebec	JOCK STREAM	Bridge Replacement	No	Install floating silt-boom up and downstream. Plug bridge deck drains. Saw cut deck capturing slurry. Lift bridge deck and rail with small crane/large excavator. Repeat on other span. Drill and blast pier. Remove debris with clam shell. Work behind existing abutments until it is time to demolish abutments. Contain abutment demolition and riprap placement behind floating silt boom. Demolish abutment and place riprap. Repeat other side.
3228	Garland Road	Winslow	Kennebec	MILE BROOK	Design Build Bridge Replacement	No	Drive pile (H-pile or Pipe-pile, may require pre-excavation by crane with clam-shell) to create a temporary work trestle beside existing bridge. Drive pile to support "false-work" under structure to contain demolition debris generated by deck/rail removal. Remove deck and rails. Clear and install access roads on both sides of stream. Place rock fill or crane mats to access piers. Hammer piers into manageable chunks, drill and blast footings, remove debris with excavator and trucks. Place fill to eliminate piers. Drive pile, form, cast footing and abutment (both sides). Span the rest of the stream. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
5578	Island Road	South Thomaston	Knox	SPRUCE HEAD	Bridge Replacement	Yes	Build temporary abutments with sheetpile/riprap fill. Drive temporary piles (H-pile, pipe-pile) bents for temporary detour. Set old bridge beams and install precast concrete panels to create temporary bridge deck. Work tides and behind existing abutments until it is time to demolish abutments. Divert low flow with sandbags away from abutment/riprap. Demolish abutment and place riprap at low tide. Swap sandbags to opposite abutment and repeat.
2151	Shave Hill Road	Fryeburg	Oxford	CHARLES RIVER	Replacement or Bridge Removal	No	Drive pile to support "false-work" under structure to contain demolition debris generated by deck/rail removal. Remove deck and rails. Drive pile to create rail system. Install large roller system on existing bridge beams. Jack beams above existing abutments and roll beams onto shore to be dismantled. Divert flow with sandbags away from abutment/riprap. Demolish existing abutment. Build new abutment and place riprap in the "dry".
2708	McNeil Road	Fryeburg	Oxford	RED IRON	Bridge Replacement or Bridge Removal	No	Drive pile to support "false-work" under structure to contain demolition debris generated by deck/rail removal. Remove deck and rails. Surround pier with barges to access bearings on pier and contain debris. Disconnect bearings from beams, and lift beams with crane. Hammer concrete pier cap. Pull piles that make-up pier foundation. Divert flow with sandbags away from abutment/riprap. Demolish existing abutment. Build new abutment and place riprap in the "dry". Dive pile bent for new pier. Form, cast, and finish pier cap from barge. Set beams, form, place, and finish deck.
2917	Route 2	Mexico	Oxford	WEBB RIVER	Bridge Replacement (Longer Span)	No	Build Temporary abutments with Jersey barriers/concrete "waste" blocks. Line with geotextile and backfill with granular material. Set beams, place pre-cast concrete deck panels, and install temporary rail. Demolish deck and rail with hydraulic hammer, remove debris from channel with clam-shell/hand labor. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing abutment. Divert flow away from abutment (sandbags, Jersey barriers). Demolish abutment. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.

*Will apply "MaineDOT Special In-water Work Conditions" as standard practice.

MAINE DOT
2 YEAR BRIDGE PROJECTS

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Project Location					Project Information		
BR#	Location	Town	County	Bridge Name	Scope	On-Site Temporary Detour?	Construction Overview
5855	Cobern Fields Road	Riley Twp	Oxford	BULL BRANCH	Replacement (Possible Rehabilitation)	No	Remove wooden deck cut saw cutting and removing with an excavator. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing structure. Divert flow with sandbags away from abutment. Demolish abutment with hyraulic hammer. Form/place footing and abutment, place riprap. Swap sandbags to opposite abutment and repeat. Set beams, form/cast deck (possibly wood). Loam and seed.
0792	Cobern Fields Road	Riley Twp	Oxford	BULL BRANCH #2	Replacement (Possible Rehabilitation)	No	Remove wooden deck cut saw cutting and removing with an excavator. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing structure. Divert flow with sandbags away from abutment. Demolish abutment with hyraulic hammer. Form/place footing and abutment, place riprap. Swap sandbags to opposite abutment and repeat. Set beams, form/cast deck (possibly wood). Loam and seed.
2711	Route 2	Bangor	Penobscot	Red	Bridge Replacement	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose; intake installed in sump surrounded by small plastic perforated riser filled with crushed stone to prevent clogging. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Bridge removed, new bridge/riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
3365	Cram Street	Bradley	Penobscot	JENKINS (CRAM STREET)	Bridge Replacement (In-kind or possble span)	??	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose; intake installed in sump surrounded by small plastic perforated riser filled with crushed stone to prevent clogging. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Bridge removed, new bridge/riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
5102	Fuller Road	Carmel	Penobscot	Norton	Bridge Replacement	No	Demolish deck and rail with hydraulic hammer, remove debris from channel with clam-shell/hand labor. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing abutment. Divert flow away from abutment (sandbags, Jersey barriers). In this case, divert flow to one side of the center pier. Demolish abutment and place riprap. Swap sandbags to opposite side of center pier. Demolish abutment/place riprap. Install barges, if sufficient depth of water, to contain bulk of pier demo. If there is not sufficient depth; remove center pier via open demolition with a hydraulic hammer from work trestle or blast; remove concrete from resource with clam-shell. Set beams, form/cast deck, install membrane and wearing surface, loam and seed.
3972	Bradford Road	Charleston	Penobscot	RICHARDS	Bridge Culvert Rehabilitation (slip line or possible replacement)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Install liner and seal ends with only vent holes remaining. Place sheet plastic/tarps on streambed to capture any excess grout/spillage. Begin pumping grout (generally downstream to upstream). Can only place a limited amount of grout at a time as liner can float and move breaking the seals on the end. Operation needs to be closely monitored as unforeseen holes in pipe may lead to leakage. Leakage captured immediately downstream of pipe and removed from work area. Capture overflow when interstitial space is filled via vent holes. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream coff
2436	Caribou Road	Enfield	Penobscot	Kimball	Bridge Replacement		Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose; intake installed in sump surrounded by small plastic perforated riser filled with crushed stone to prevent clogging. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Pipe removed, new pipe/riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
3040	Coffin Street/ Route 116	Howland	Penobscot	PISCATAQUIS	**Design Build** Bridge Replacement	No	Build temporary abutments with sheetpile/riprap fill. Drive pile (H-pile or Pipe-pile, may require pre-excavation by crane with clam-shell) to create a temporary work trestle beside existing bridge. Drive pile to create rail system. Install large roller system on existing bridge beams and shear mechanical connections between trusses and piers. Jack beams above existing abutments and roll trusses onto shore to be dismantled. Install cofferdams for new pier placement: sheet-pile, may require pre-excavation with clam-shell. Excavate for concrete seal within dewatered cofferdam. Place seal concrete underwater in flooded cofferdam. Dewater cofferdam by pumping clean water into river. When water gets within a few feet of seal, pump to a cofferdam sediment basin to capture water with concrete sediment. Once dewatered, manuelly clean seal surface (shovels, and brooms. Once cleaned, the cofferdam can be allowed to flood at night and dewatered the next day by pumping overboard. Form, cast, and clean footing and pier in the "dry". Remove cofferdam. Repeat for other piers. Set beams, form/cast deck, install membrane, pave, loam and seed.
2170	Route 2	Lincoln	Penobscot	COMBELLASSIE	Bridge Replacement w/ pipe or box	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
2501	Route 2	Newport	Penobscot	Main Street	Bridge Replacement	No	Install large pumping system. Drive sheetpile cofferdam upstream of structure. Dewater area between sheetpile cofferdam and permanent dam downstream. Use pumps to maintain downstream flow during low flows. Allow for flood events by pulling sheets if required. Demolish and construct in the dry.
6103	Moosehead Trail/ Route 7/11	Newport	Penobscot	MULLIGAN STREAM	Bridge Culvert Replacement	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose; intake installed in sump surrounded by small plastic perforated riser filled with crushed stone to prevent clogging. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.

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MAINE DOT
2 YEAR BRIDGE PROJECTS

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Project Location					Project Information		
BR#	Location	Town	County	Bridge Name	Scope	On-Site Temporary Detour?	Construction Overview
5707	Center Street/ Route 171	Prentiss Twp	Penobscot	LITTLE MUD BROOK	Bridge Replacement (arch w/ longer sturcture)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose; intake installed in sump surrounded by small plastic perforated riser filled with crushed stone to prevent clogging. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
3868	Route 11	Eberemee (T5 R9 NWP)	Piscataquis	Stinking Brook Bridge	Slipline w/ weirs	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose; intake installed in sump surrounded by small plastic perforated riser filled with crushed stone to prevent clogging. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Place invert liner by spraying shot-crete, form and place external weirs, install riprap installed in "dry" work area between cofferdams. Block final weir outlet notch and use as containment for flushing of liner. The diversion pump system will stopped intermittently to provide flush water for liner. Flush water captured behind the last weir will be pumped to the cofferdam sedimentation basin until pH is tested to be within one pH of the receiving waters. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam
3825	Foreside Road	Topsham	Sagadahoc	MUDDY RIVER	Bridge Substructure Rehabilitation	No	Build temporary access by placing Jersey barriers/driving sheets, lining with geotextile and placing stone fill. Drive pile on both sides of bridge and on either side of pier, slide beams under bridge creating temporary piers. Remove existing pier with chainsaw to mudline. Install sandbag/Jersey barrier around pier "footing". Excavate for new pier from access road. Place distribution slab (like a seal using excavated hole as "form" instead of sheetpile. Form/cast footing, form cast pier shaft and cap. Place riprap around new pier. Remove temporary piers. Build temporary access road with Jersey barriers, geotextile and granular fill. Divert flow away from abutments with sandbags or Jersey barriers and sheet plastic, remove spalling concrete with rock-hammers/small hydraulic hammer, form/cast abutment repairs, finish concrete, place riprap, and remove cofferdam.
5584	River Road/ Route 128	Woolwich	Sagadahoc	CHOPPS CREEK	Bridge Culvert Rehabilitation (Invert w/ wiers)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Place invert liner by spraying shot-crete, form and place external weirs, install riprap installed in "dry" work area between cofferdams. Block final weir outlet notch and use as containment for flushing of liner. The diversion pump system will stopped intermittently to provide flush water for liner. Flush water captured behind the last weir will be pumped to the cofferdam sedimentation basin until pH is tested to be within one pH of the receiving waters. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream cofferdam will be removed.
2767	Route 2	Canaan	Somerset	SIBLEY POND	**Design Build** Bridge Replacement	Yes	Construct new structure on new alignment, leaving old structure as detour. Work from barges. Drive pipe piles to refusal for foundation. Install floating boom around piles, Air-lift to clean piles, install re-bar "cages", fill with concrete. Form, cast and finish pier caps, set, beams. Form/cast deck, install membrane, pave, loam and seed. Put traffic on new structure. Move barges under old structure to contain demolition debris. If the debris is falling from too great a height (can destroy a barge): plug bridge drains, saw cut into manageable pieces and lift out with crane. Pull existing piles if possible, if not, cut underwater by diver at mudline.
3496	Route 23	Canaan	Somerset	HASKELL	In-kind Bridge Replacement	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
2579	Route 201A/8/16	Embden	Somerset	MOORE	Bridge Replacement Staged Construction	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
2525	Route 16	Mayfield Twp	Somerset	MAYFIELD	Bridge Culvert Rehabilitation (Invert w/ wiers)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Place invert liner by spraying shot-crete, form and place external weirs, install riprap installed in "dry" work area between cofferdams. Block final weir outlet notch and use as containment for flushing of liner. The diversion pump system will stopped intermittently to provide flush water for liner. Flush water captured behind the last weir will be pumped to the cofferdam sedimentation basin until pH is tested to be within one pH of the receiving waters. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream cofferdam will be removed.
2187	Route 2	Norridgewock	Somerset	Covered	Bridge Replacement	Yes	Build temporary abutments with sheetpile/riprap fill. Drive temporary piles (H-pile, pipe-pile) bents for temporary detour. Set old bridge beams and install precast concrete panels to create temporary bridge deck. Construct false-work under structure to be demolished to catch debris from deck. Demolish arches, deck and piers with hydraulic hammer. Remove demolition debris from ice via hand labor or small machine. Drill and blast piers. Remove rubble with a clam-shell when excavating for riprap. Install cofferdams for new pier placement: sheet-pils, may require pre-excavation with clam-shell. Excavate for concrete seal within dewatered cofferdam. Place seal concrete underwater in flooded cofferdam. Dewater cofferdam by pumping clean water into river. When water gets within a few feet of seal, pump to a cofferdam sediment basin to capture water with concrete sediment. Once dewatered, manually clean seal surface (shovels, and brooms. Once cleaned, the cofferdam can be allowed to flood at night and dewatered the next day by pumping overboard. Form, cast, and clean footing and pier in the "dry". Remove cofferdam. Repeat for other piers. Set beams, form/cast deck, install membrane, pave, loam and seed.

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MAINE DOT
2 YEAR BRIDGE PROJECTS

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Project Location					Project Information		
BR#	Location	Town	County	Bridge Name	Scope	On-Site Temporary Detour?	Construction Overview
5233	Route 201	Sandy Bay Twp	Somerset	KELLEY BROOK 2	Bridge Replacement	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
2777	Hilton Hill Road	Skowhegan	Somerset	SMITH POND (OLD)	Bridge Removal	No	Place barge/float under deck to contain debris and demolish with Hydraulic hammer to remove deck and rail. Lift beams off abutments. Excavate behind abutments, "crack" abutments with hydraulic hammer, pull pieces of abutment away from pond. Remove to water level, cover with riprap, final grading of slopes, loam and seed.
2775	Route 139	Monroe	Waldo	SMITH	Bridge Replacement w/ pipe or box (longer/deeper)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
3344	Loggin Road	Winterport	Waldo	TIBBETTS	Bridge Replacement	No	After suspending false-work from existing structure, demolish deck and rail with hydraulic hammer and catch the debris on false work. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing abutment. Divert flow away from abutment (sandbags/Jersey barriers). Demolish abutment with hydraulic hammer. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
5875	Vancebore Road/ Route 6	Codyville Plt	Washington	BEAVER BROOK	Bridge Culvert Rehabilitation (Invert w/ wiers)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Place invert liner by spraying shot-crete, form and place external weirs, install riprap installed in "dry" work area between cofferdams. Block final weir outlet notch and use as containment for flushing of liner. The diversion pump system will stopped intermittently to provide flush water for liner. Flush water captured behind the last weir will be pumped to the cofferdam sedimentation basin until pH is tested to be within one pH of the receiving waters. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream cofferdam will be removed.
3584	Milford Street	Grand Lake Stream Plt	Washington	MILFORD STREET	Bridge Replacement (wider w/ longer span)	No	Demolish deck and rail with hydraulic hammer, remove debris from channel with clam-shell/hand labor. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing abutment. Divert flow away from abutment (sandbags/Jersey barriers). Demolish abutment with hydraulic hammer. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
2688	Calais Road, Route 1	Princeton	Washington	PRINCETON	Bridge Replacement (wider structure)	Most Likely	Build Temporary abutments with Jersey barriers/concrete "waste" blocks. Line with geotextile and backfill with granular material. Set beams, place pre-cast concrete deck panels, and install temporary rail. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing structure. Divert flow with sandbags away from abutment. Demolish abutment. Form/place footing and abutment, place riprap. Swap sandbags to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
5375	Route 191	Twp 18 Ed Bpp	Washington	SOUTHERN INLET	Bridge Culvert Replacement (longer pipe or box)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
3462	Route 1A	Whitneyville	Washington	MACHIAS RIVER	Bridge Substructure Rehabilitation	No	Build temporary abutments with sheetpile/granular fill. Drive pile (H-pile or Pipe-pile, may require pre-excavation by crane with clam-shell) to create a temporary work trestle(s) beside existing bridge. Remove spalling concrete with hand-held rock hammers. Remove debris by hand. Insert dowels in good concrete and build forms. Pump concrete from temporary trestle. Remove forms and finish concrete. Place riprap from temporary trestle(s).
3300	Acton Bridge Road	Acton	York	BALCH MILLS	In-kind Bridge Culvert Replacement	No	substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
1271	Back Road	Alfred	York	NUTTER'S	Bridge Replacement (wider w/ longer span)	No	Demolish deck and rail with hydraulic hammer, remove debris from channel with clam-shell/hand labor. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing abutment. Divert flow away from abutment (sandbags/Jersey barriers). Demolish abutment with hydraulic hammer. Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
5825	Alfred Road/ Route 111	Lyman	York	KENNEBUNK RIVER	Bridge Culvert Rehabilitation (Invert w/ wiers)	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Place invert liner by spraying shot-crete, form and place external weirs, install riprap installed in "dry" work area between cofferdams. Block final weir outlet notch and use as containment for flushing of liner. The diversion pump system will stopped intermittently to provide flush water for liner. Flush water captured behind the last weir will be pumped to the cofferdam sedimentation basin until pH is tested to be within one pH of the receiving waters. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached/removed. When the water behind downstream cofferdam is clean the downstream cofferdam will be removed.

*Will apply "MaineDOT Special In-water Work Conditions" as standard practice.

MAINE DOT
2 YEAR BRIDGE PROJECTS

SHEET 6 OF 7 JUNE 2009

Project Location					Project Information		
BR#	Location	Town	County	Bridge Name	Scope	On-Site Temporary Detour?	Construction Overview
1236	Great Hill Road	South Berwick	York	GREAT HILL BR	Replacement (longer span w/ slight re-alignment)	??	Remove wooden deck cut saw cutting and removing with an excavator. Excavate for new footings and abutments behind existing abutments until it is time to demolish existing structure. Divert flow with sandbags away from abutment. Demolish abutment with hyraulic hammer.Form/place footing and abutment, place riprap. Swap diversion to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
5610	Dow Highway/ Route 236	South Berwick	York	GREAT WORKS RIVER	Bridge Replacement	No	Place barge/float under deck to contain debris and demolish with Hydraulic hammer to remove deck and rail. Lift beams off abutments. Excavate behind abutments, "crack" abutments with hydraulic hammer, pull pieces of abutment away from River down just above water level. Divert flow with sandbags away from remaining abutment/footing. Demolish abutment/footing. Form/place footing and abutment, place riprap. Swap sandbags to opposite abutment and repeat. Set beams, form/cast deck, install membrane, loam/seed, pave, stripe.
3096	Organug Road	York	York	SEWALLS	Bridge Rehabilitation	No	Build temporary access by placing Jersey barriers/driving sheets, lining with geotextile and placing stone fill. Drive pile on both sides of bridge and on either side of pier, slide beams under bridge creating temporary piers. Remove existing pier with chainsaw to mudline. Install sandbag/Jersey barrier around pier "footing". Excavate for new pier from access road. Place distribution slab (like a seal using excavated hole as "form" instead of sheetpile. Form/cast footing, form cast pier shaft and cap. Place riprap around new pier. Remove temporary piers. Build temporary access road with Jersey barriers, geotextile and granular fill. Divert flow away from abutments with sandbags or Jersey barriers and sheet plastic, remove spalling concrete with rock-hammers/small hydraulic hammer, form/cast abutment repairs, finish concrete, place riprap, and remove cofferdam.
5848	Route 103	York	York	Station 34	Bridge Replacement with Box Culvert	No	Place cofferdam upstream at narrowest point of stream (some cutting may be required to access cofferdam locations. Sandbags: compress substrate, minor sedimentation. Jersey barriers with sheet plastic: compress substrate, minor sedimentation) repeat downstream below outlet pool. Install diversion: most likely pump, install "sleeve" under work area to protect hose. Pump outlet installed so that discharge does not scour. Clean water pumped from above upstream cofferdam back into stream below downstream cofferdam. Dirty water within cofferdam is pumped to a cofferdam sedimentation basin. Demolish structure and remove debris. Undercut existing material, install new "bed", pipe/box and riprap installed in "dry" work area between cofferdams. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. First flush of dirty water captured by the "dirty water" pump and sent to cofferdam sedimentation basin. When the water behind downstream cofferdam is clean, that dam will be breached as well. The remainder of the upstream cofferdam and the diversion pump system will then be removed.

*Will apply "MaineDOT Special In-water Work Conditions" as standard practice.

MAINE DOT
2 YEAR BRIDGE PROJECTS

SHEET 7 OF 7 JUNE 2009

MEMORANDUM OF AGREEMENT

AMONG THE UNITED STATES ARMY CORPS OF ENGINEERS, NEW ENGLAND DISTRICT,

THE MAINE STATE HISTORIC PRESERVATION OFFICER,

AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING VARIOUS BRIDGE PROJECTS WITHIN THE STATE OF MAINE

WHEREAS, the Maine Department of Transportation (MaineDOT), is proposing a variety of bridge projects which will be processed under a single United States Army Corps of Engineers (ACOE) Permit; and

WHEREAS, the projects are located throughout the state and, cumulatively, cover a large land area; and

WHERAS, the bridge projects are part of the 2010-2011 Maine DOT Work Plan and are listed in Attachment 1; and

WHEREAS, the ACOE and MaineDOT will establish an Area of Potential Effect for each specific project in accordance with 36 CFR Section 800.16(d); and

WHEREAS, the ACOE has determined that some of these projects may have an effect on National Register (NR)-listed or -eligible architectural and archaeological resources and has consulted with the Maine State Historic Preservation Officer, referred herein as the Maine Historic Preservation Commission (MHPC), pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. Section 470(f); and

WHEREAS, the ACOE and the MHPC have identified the likely presence of architectural and archeological properties within the cumulative area of potential effects through background research, consultation and an appropriate level of field investigation; and

WHEREAS, the ACOE is consulting with the Aroostook Band of Micmacs, the Houlton Band of Maliseet Indians, the Passamaquoddy Tribe, and the Penobscot Nation in accordance with 36 CFR Section 800.3 (f)(2) and will apprise them of any findings; and

WHEREAS, the scope and limits of these projects still remain under investigation; and

WHEREAS, 36 CFR Section 800.4(b)(2) allows for phased identification and evaluation of historic properties where alternatives under consideration consist of corridors or large land areas, and allows the agency official to defer final identification and evaluation of historic properties if it is specifically provided for in a memorandum of agreement executed pursuant to

Section 800.6, a programmatic agreement executed pursuant to Section 800.14 (b), or the documents used by an agency official to comply with the National Environmental Policy Act pursuant to Section 800.8; and

WHEREAS, the ACOE has consulted with MaineDOT regarding the effects of the undertaking on potential National Register-eligible resources and has invited them to sign this MOA as a concurring party; and

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

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

STIPULATIONS

The ACOE shall ensure that the following measures are carried out:

I. For each project, the MaineDOT shall conduct identification and evaluation of architectural and archeological properties in accordance with 36 CFR Section 800.4(b)(1) and (c), as the limits and scopes of that project are refined, and in accordance with the provisions of the current Statewide Programmatic Agreement for Federal Aid Highway and Federal Transit Programs in Maine.

II. Identification (Phase I) archeological field investigations shall begin during the spring of 2009, followed as needed by eligibility determination (Phase II) investigations. Archaeological investigations shall be directed by archaeologist(s) meeting the Maine State Historic Preservation Officer's Standards for Archaeological Work in Maine (Chapter 812[94-089]), and meeting the Secretary of the Interior's Standards (36 CFR 61).

III. In order to ensure that historic properties are fully considered during the project development phase, Section 106 consultation must be concluded, prior to the approval of any applicable National Environmental Policy Act and Section 4(f) documentation. Resolution of any adverse effects shall be conducted in accordance with 36 CFR Section 800.6 which seeks ways to avoid, minimize or mitigate adverse effects. Any disputed determinations shall be processed in accordance with Stipulation VII.

IV. DURATION. This agreement will be null and void if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, The ACOE may consult with the other signatories to reconsider the terms of the agreement and amend in accordance with

Stipulation VIII below.

V. POST-REVIEW DISCOVERIES. If potential historic properties are discovered or unanticipated effects on historic properties found, the signatory parties shall consult in accordance with 36 CFR Section 800.6(c)(6).

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

VII. DISPUTE RESOLUTION. Should any signatory to this Agreement object within 30days to any actions proposed or carried out pursuant to this agreement, the ACOE shall consult with all parties to resolve the objection. If the ACOE determines that the objection cannot be resolved, the ACOE will request that the Council join consultation pursuant to 36 CFR Part 800.6(b). Any Council comment provided in response to such a request will be taken into account by the ACOE in accordance with 36 CFR Part 800.6(c)(2) with reference only to the subject of the dispute. The ACOE's responsibility to carry out all actions under this agreement that are not the subjects of the dispute will remain unchanged.

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

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

Execution of this Memorandum of Agreement by ACOE and MHPC, and implementation of its terms, are evidence that ACOE has afforded MHPC an opportunity to comment on this project and its effects on historic properties, and ACOE has taken into account the effects of the undertaking on historic properties.

NEW ENGLAND DISTRICT, U.S. ARMY CORPS OF ENGINEERS

By: _____ Date: 2/26/09
Heather L. Sullivan, Acting Chief, Regulatory Division

for

MAINE STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 2/2/09
Earle G. Shettleworth, Jr., State Historic Preservation Officer

CONCURRENCE by Maine Dept. of Transportation

By: _____ 2-5-09 Date:
David A. Cole, Commissioner

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Maine Dept. of Transportation	File Number: NAE-2009-00514	Date:
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
X	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - 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/inet/functions/cw/cecwo/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: Michael G. Vissichelli, Administrative Appeals Review Officer, North Atlantic Division, Corps of Engineers, North Atlantic Fort Hamilton Military Community, Bldg. 301, General Lee Avenue, Brooklyn, NY 11252-6700 Telephone: (718) 765-7163, E-mail: Michael.G.Vissichelli@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: Michael G. Vissichelli, Administrative Appeals Review Officer, North Atlantic Division, Corps of Engineers, North Atlantic Fort Hamilton Military Community, Bldg. 301, General Lee Avenue, Brooklyn, NY 11252-6700 Telephone: (718) 765-7163, E-mail: Michael.G.Vissichelli@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: Michael G. Vissichelli, Administrative Appeals Review Officer, North Atlantic Division, Corps of Engineers, North Atlantic Fort Hamilton Military Community, Bldg. 301, General Lee Avenue, Brooklyn, NY 11252-6700 Telephone: (718) 765-7163, E-mail: Michael.G.Vissichelli@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:

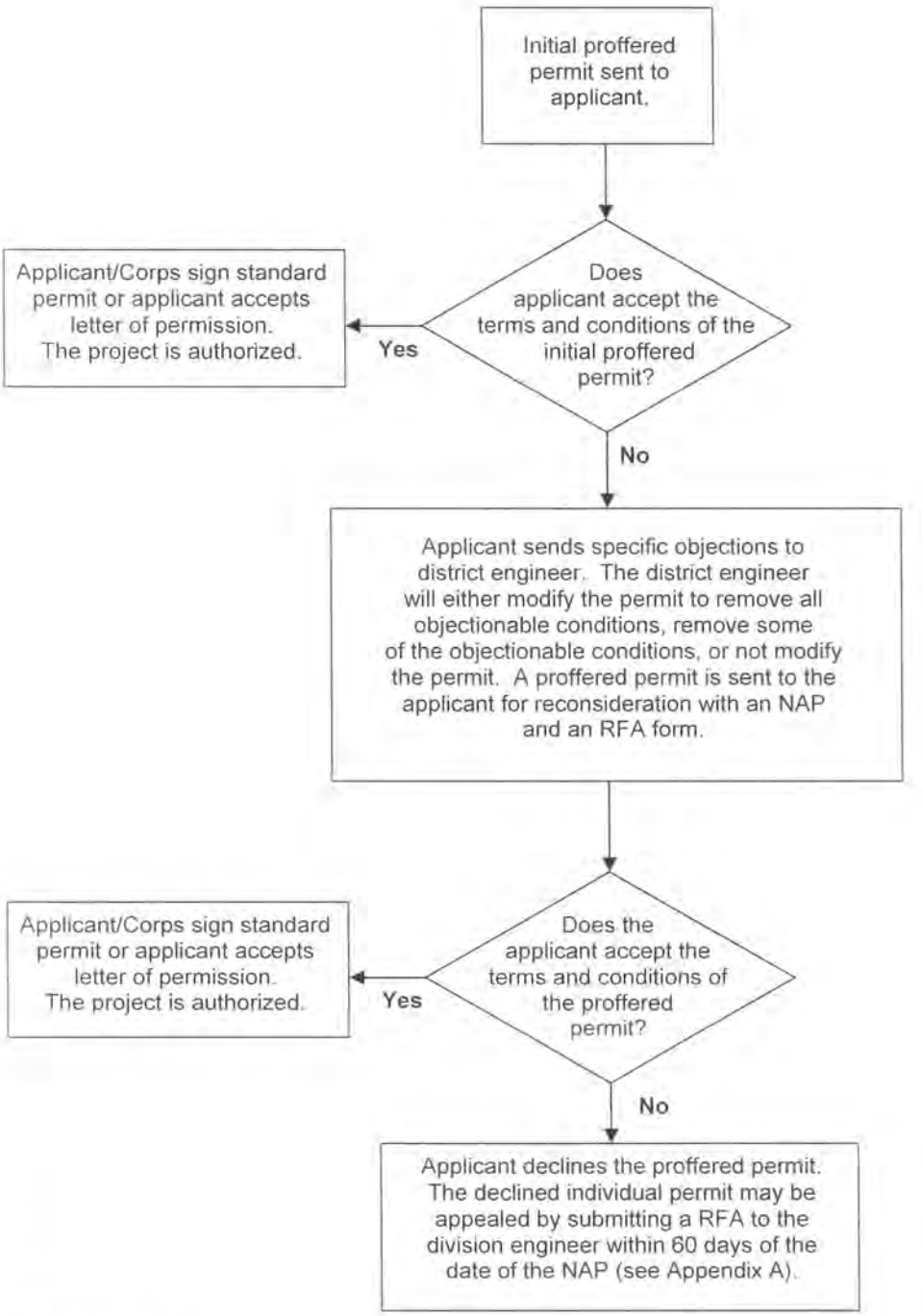
If you have questions regarding this decision and/or the appeal process you may contact Ms. Ruth Ladd at:

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.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

Applicant Options with Initial/Proffered Permit



Appendix B

ATTACHMENT to MaineDOT Batch Permit

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 2/25/09

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD: Richard Bostwick, MaineDOT Environmental Office, 16 SHS, Augusta, ME 04333

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: New England District; ME DOT 2-Year Bridge Permit Application; NAE-2009-00514

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: Place fill below the ordinary high water line and the high tide line of numerous waterways and in their adjacent freshwater and tidal wetlands throughout the State of Maine in order to replace, rehabilitate, or repair numerous bridges and culverts. This work is being conducted in response to Federal and State stimulus efforts and is designed to address critical bridges that need immediate attention to insure public safety and protect the economic vitality of Maine's transportation network.

SEE ATTACHED TABLE OF WATERS AND WETLANDS AND THEIR IMPACTS

State: **Maine** County/parish/borough: **Various** City: **Various**
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**
, Long. ° **Pick List**.
Universal Transverse Mercator: **Zone 19N - see Table**
Name of nearest waterbody: **Various- see Table**

Identify (estimate) amount of waters in the review area: **See attached Table**
Non-wetland waters: linear feet: width (ft) and/or acres.
Cowardin Class:
Stream Flow:
Wetlands: acres.
Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters: **See attached Table**
Tidal: **Noted on attached table**
Non-Tidal: **Penobscot & Kennebec Rivers**

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: **Various- last on 2/25/09**

☒ Field Determination. Date(s): **Various and limited**

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary

to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Contained in administrative record.**

☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: .

☐ Corps navigable waters' study: .

☐ U.S. Geological Survey Hydrologic Atlas: .

☐ USGS NHD data.

☒ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name: **Multiple.**

☒ USDA Natural Resources Conservation Service Soil Survey. Citation **all Maine counties Mapped**

☒ National wetlands inventory map(s). Cite name: **Statewide layer in Maine Office of GIS (MEGIS) Database used:**

☐ State/Local wetland inventory map(s): .

☒ FEMA/FIRM maps: **Various as Mapped in the MEGIS database:**

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): **MEGIS Ortho Rectified mapping of various dates since 2002**.

or ☒ Other (Name & Date): **Ground photos taken by John Perry and Dan Tierney (DOT Staff) taken fall 2008 and MaineDOT Bridge maintenance files from 1970s to present**..

☐ Previous determination(s). File no. and date of response letter: .

☒ Other information (please specify): **All of these projects are bridges or culverts with wetland area immediately adjacent to USGS mapped streams, that flow into other mapped waterways and eventually into the Gulf of Maine**

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Jay L. Clement 2/26/09

Jay L. Clement Date
Senior Project Manager
Maine Project Office

Judy C. Gates 2/26/09

Judy Gates Date
Director, Environmental Office
Maine Dept. of Transportation

Matrix for Juridictional Determination- County, Town , Road, Waterway, and UTM coordinates; and Resource by Cowardin type, and Impact Amounts							Waterway and permit type	
BR#	UTM Easting in Meters	UTM Northing in Meters	Location	Town	County	Bridge Name	Resource Name & Max. Anticipated Impacts (S.F.) to cowardin types and non-wetland waters (RUS)	Anticipated Permitting Levels All are CORPS 404 permitting unless noted
0077	398053	4874310	Old Danville Road	Auburn	Androscoggin	ROYAL RIVER BRIDGE	Royal River 3000 PSS, 1000 RUS	DEP PBR ACOE Cat II
125	584702	5167200	Richardson Road	Easton	Aroostook	PRESTILE STREAM #1	Prestisle Stream 9000 PFO/EM	DEP PBR ACOE Cat II
2403	556684	5095124	Route 2	Island Falls	Aroostook	IRON	5000 PSS/FO on Alignment 10000 PSS/FO off alignment.	DEP PBR ACOE Ind. As of April 2009
2898	565173	5105531	Main Street	Oakfield	Aroostook	Village	Mattawamkeag River <7000 PEM/PSS	DEP PBR ACOE Ind. As of April 2009
0168?	585597	5060774	Bancroft Road	Weston	Aroostook	Trout Brook	Trout Brook 3500 PFO 1000 RUS	DEP PBR ACOE Ind. As of April 2009
5340	398774	4848250	Winn Road	Cumberland	Cumberland	RIDEOUT	Mill Brook 6500 PFO/SS	DEP PBR ACOE Cat II
2702	395649	4842677	Route 26/100	Falmouth	Cumberland	RR and River CROSSING	Presumpscot River 18000 PSS wetland impact 4000 RUS	DEP Individual ACOE Cat II
5646	404674	4860324	Hallowell Road/ Route 9	Pownal	Cumberland	POWNAL CENTER	E Branch Royal River 5000 PSS/EM	DEP PBR ACOE Cat II
3945	396452	4832981	Route 1	South Portland	Cumberland	VETERANS MEMORIAL	Fore River 5000 EUS Intertidal flats, cobble gravel, adjacnet to shellfish	Condition requiring agency review and approval of plans prior to construction.
3987	392783	4839316	E. Bridge Street	Westbrook	Cumberland	LITTLE	Mill Brook 3000 PEM	DEP PBR ACOE Cat II
2004	408841	4946157	Route 4/27/43	Farmington	Franklin	Abbot	Abbott Brook 2000 PSS	DEP PBR ACOE Ind. As of April 2009
2311	410348	4945082	Route 2/27	Farmington	Franklin	Gilbert Brook	Gilbert Brook 1000 PEM, 1000 RUS	DEP PBR ACOE Ind. As of April 2009
0408	422519	4942730	Swan Road	New Sharon	Franklin	SWAN ROAD	Fillibrown Brook 4000 PFO	DEP PBR ACOE Cat II
2594	418424	4944055	Townway Road	New Sharon	Franklin	MUDDY BROOK	Muddy Brook 2000 PSS	DEP PBR ACOE Ind. As of April 2009
5570	560512	4905066	Route 3	Mt Desert	Hancock	STANLEY BROOK	Stanley Brook New Bridge will have no impacts. Possible on site detour	DEP PBR ACOE Cat II SECTION 10
498	441105	4911005	Blair Road	Augusta	Kennebec	BLAIR ROAD	Riggs Brook/LAP less than 4300 PFO/SS	DEP PBR ACOE Cat II
2719	439629	4909699	Route 100/201	Augusta	Kennebec	RIGGS	Riggs Book 2000 RUS	DEP PBR ACOE Cat II
2412	422789	4896235	Cobbosseeconte	Monmouth	Kennebec	JOCK STREAM	Jock Stream Great Pond	DEP PBR ACOE Cat II
5578	490047	4872527	Island Road	South Thomaston	Knox	SPRUCE HEAD	Atlantic Ocean Tidal 4000 Unveg EUS. 1000 EEM Veg. w/o TD - ACOE	DEP PBR Need to be less than 1000 vegitated to stayat ACOE Cat II SECT
2151	344138	4888200	Shave Hill Road	Fryeburg	Oxford	CHARLES RIVER	Charles River 2500 PFO	DEP PBR ACOE Cat II
2708	344924	4887925	McNeil Road	Fryeburg	Oxford	RED IRON	Old Course Saco River 2500 PFO/SS w/ Detour	DEP PBR ACOE Cat II
2917	384032	4931922	Route 2	Mexico	Oxford	WEBB RIVER		DEP PBR ACOE Cat II
5855	347822	4929548	Cobern Fields	Riley Twp	Oxford	BULL BRANCH	Goose Eye Brook 5000 PFO	LURC ACOE Cat II
0792	347791	4929513	Cobern Fields	Riley Twp	Oxford	BULL BRANCH #2	Goose Eye Brook 5000 PFO	LURC ACOE Cat II

Matrix for Juridictional Determination- County, Town , Road, Waterway, and UTM coordinates; and Resource by Cowardin type, and Impact Amounts							Waterway and permit type	
BR#	UTM Easting in Meters	UTM Northing in Meters	Location	Town	County	Bridge Name	Resource Name & Max. Anticipated Impacts (S.F.) to cowardin types and non-wetland waters (RUS)	Anticipated Permitting Levels All are CORPS 404 permitting unless noted
2711	531324	4962820	Route 2	Bangor	Penobscot	Red	Meadow Brook <4300 RUS	DEP PBR ACOE Ind. As of April 2009
3365	530509	4973809	Cram Street	Bradley	Penobscot	JENKINS (CRAM STREET)	Great Works Stream 6000 PEM/FO w/o TD	DEP PBR ACOE Ind. As of April 2009
5102	500736	496377	Fuller Road	Carmel	Penobscot	Norton	3000 PSS Black Stream	DEP PBR ACOE Cat II
3972	500673	4989204	Bradford Road	Charleston	Penobscot	RICHARDS	Richards Brook 8000 PSS	DEP PBR ACOE Cat II
2436	533484	5009699	Caribou Road	Enfield	Penobscot	Kimball	Cold Stream <3300 PFO/PSS	DEP PBR ACOE Ind. As of April 2009
3040	526769	5009656	Coffin Street/ Route 116	Howland	Penobscot	PISCATAQUIS	Piscataquis River 4000 PFO/SS-RUS	DEP PBR ACOE Ind. As of April 2009
2170	539454	5026232	Route 2	Lincoln	Penobscot	COMBELLASSIE	Camballassie Stream 2000 RUS	DEP PBR ACOE Cat II
2501	478870	4964681	Route 2	Newport	Penobscot	Main Street	East Branch <4300 PFO	DEP PBR ACOE Cat II
6103	478246	4970546	Moosehead Trail/ Route 7/11	Newport	Penobscot	MULLIGAN STREAM	Milligan Stream 7000 PEM/SS	DEP PBR ACOE Cat II
5707	571378	5040896	Center Street/ Route 171	Prentiss Twp	Penobscot	LITTLE MUD BROOK	Little Mud Brook 5000 PEM	DEP PBR ACOE Ind. As of April 2009
3868	497678	5032813	Route 11	Ebeemee (T5 R9 NWP)	Piscataquis	Stinking Brook Bridge	Stinky Brook <4300 PFO	LURC ACOE Ind. As of April 2009
3825	428253	4866986	Foreside Road	Topsham	Sagadahoc	MUDDY RIVER	Muddy River 4999 EUS	DEP PBR ACOE Cat II SECTION 10
5584	435322	4872525	River Road/ Route 128	Woolwich	Sagadahoc	CHOPPS CREEK	Chopps Creek 6000 PEM/SS/FO	DEP PBR ACOE Cat II SECTION 10
2767	459233	4959549	Route 2	Canaan	Somerset	SIBLEY POND	Sibley Pond 10000 PEM/SS w/ staged construcion. 30000 PEM/SS w/	DEP PBR ACOE Cat II
3496	454073	4951420	Route 23	Canaan	Somerset	HASKELL	PEM/Stream	DEP PBR ACOE Cat II
2579	431684	4971122	Route 201A/8/16	Embden	Somerset	MOORE	Jackin Brook 4000 PFO	DEP PBR ACOE Cat II
2525	445558	4994720	Route 16	Mayfield Twp	Somerset	MAYFIELD	Bigelow Brook 6000 PFO Add 3500 PFO w/ TD	LURC ACOE Cat II
2187	436848	4951821	Route 2	Norridgewock	Somerset	Covered	Kennebunk River <3000 RUS 100 PEM	DEP PBR ACOE Ind. As of April 2009 SECTION 10
5233	392761	5072918	Route 201	Sandy Bay Twp	Somerset	KELLEY BROOK 2	Kelly Brook 5000 PSS/FO	LURC ACOE Cat II
2777	444425	4961659	Hilton Hill Road	Skowhegan	Somerset	SMITH POND (OLD)	West Branch Wesserunsett Stream 5000 PEM/FO	DEP PBR ACOE Cat II
2775	493785	4937618	Route 139	Monroe	Waldo	SMITH	Works Brook 4300 PFO	DEP PBR ACOE Cat II
3344	503875	4940737	Loggin Road	Winterport	Waldo	TIBBETTS	Marsh Stream 5000 PFO	DEP PBR ACOE Ind.

Matrix for Juridictional Determination- County, Town , Road, Waterway, and UTM coordinates; and Resource by Cowardin type, and Impact Amounts							Waterway and permit type	
BR#	UTM Easting in Meters	UTM Northing in Meters	Location	Town	County	Bridge Name	Resource Name & Max. Anticipated Impacts (S.F.) to cowardin types and non-wetland waters (RUS)	Anticipated Permitting Levels All are CORPS 404 permitting unless noted
5875	608659	5037044	Vanceboro Road/ Route 6	Codyville Plt	Washington	BEAVER BROOK	Beaver Brook 8000 PEM/SS	LURC ACOE Cat II
3584	596173	5003557	Milford Street	Grand Lake Stream Plt	Washington	MILFORD STREET	Grand Lake Stream 1000 PEM 3000 RUS w/ TD	LURC ACOE Cat II
2688	611771	5008935	Calais Road, Route 1	Princeton	Washington	PRINCETON	Lewy Lake/ Grand Lake Flowage 10000 PUB/ PEM shorland stabilization to a Great Pond.	DEP Individual ACOE Cat II
5375	624478	4967704	Route 191	Twp 18 Ed Bpp	Washington	SOUTHERN INLET	Southern Inlet 6000 PEM/SS	LURC ACOE Cat II
3462	616915	4953459	Route 1A	Whitneyville	Washington	MACHIAS RIVER	Machias River (North Channel) 4000 PEM/SS	DEP PBR ACOE Ind.
3300	343588	4829846	Acton Bridge Road	Acton	York	BALCH MILLS	Little Ossippee River 3000 PFO	DEP PBR ACOE Cat II
1271	362278	4815379	Back Road	Alfred	York	NUTTER'S	Littlefield River PSS/FO 3000	DEP PBR ACOE Cat II
5825	368769	4815326	Alfred Road/ Route 111	Lyman	York	KENNEBUNK RIVER	Kennebunk River 5000 PEM	DEP PBR ACOE Cat II
1236	359120	4792113	Great Hill Road	South Berwick	York	GREAT HILL BR	Great Works River 3500 PFOw/o TD	DEP PBR ACOE Cat II
5610	354481	4786352	Dow Highway/ Route 236	South Berwick	York	GREAT WORKS RIVER	Great Works River 7000 PFO/SS w/o TD	DEP PBR ACOE Cat II
3096	364948	4777253	Organug Road	York	York	SEWALLS	Tidal w/ Shellfish 1000 EUS Shellfish 5000 Tidal	DEP PBR ACOE Cat II SECTION 10
5848	365803	4776595	Route 103	York	York	Station 34	1614 EUS Mudflat without shellfish	DEP PBR ACOE Ind. SECTION 10

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

DEC 2 8 2010

RECEIVED
DEC 3 0 2010

Kristen Chamberlain
Office of Environmental Services
16 State House Station
Augusta, Maine 04333

Dear Ms. Chamberlain:

This concerns Department of the Army permit, number NAE-2009-00514 which authorized the placement of fill in numerous waterways and wetlands within the State of Maine in order to repair, rehabilitate, or replace numerous bridges and culverts.

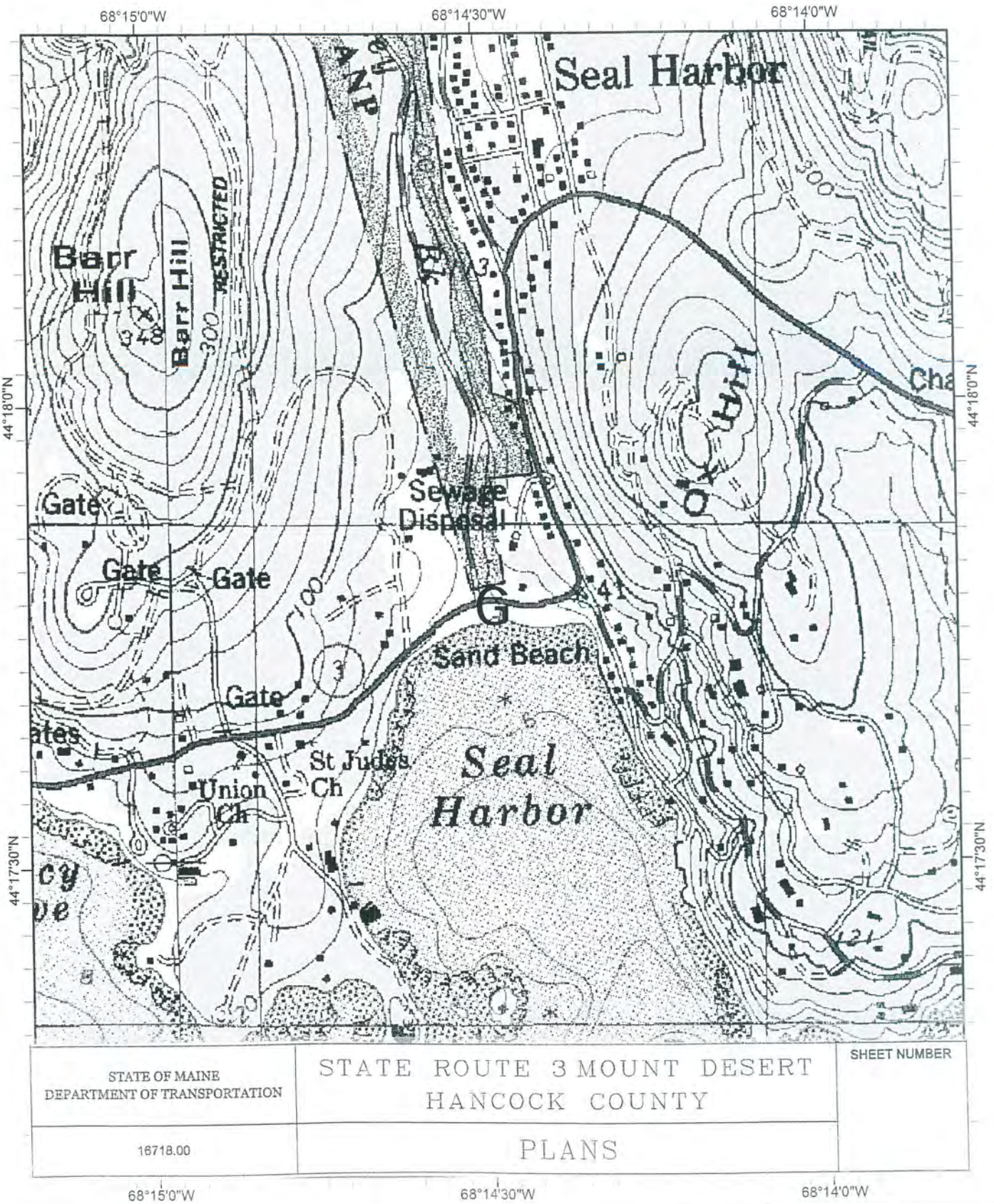
In accordance with your request, the permit is hereby amended to authorize specific design changes at the Route 3 bridge replacement over Stanley Brook at Seal Harbor, Maine. The final design is a 26'x 76' precast concrete box culvert that will be embedded a minimum of 2' below the existing stream bed. Excavated stream bed material will be used as backfill within the new culvert. An existing sewer line, currently located downstream from the existing bridge will be relocated upstream of the new structure as part of the project. Approximately 3,200 s.f. of stream bed and adjacent wetland will be permanently impacted by the project. Another 2,000 s.f. of stream bed will be temporarily impacted as cofferdams and the sewer line are installed. This work is shown on the attached plan entitled "STATE ROUTE 3, MOUNT DESERT, HANCOCK COUNTY" in two sheets undated and "STATE ROUTE 3, MOUNT DESERT, STANLEY BROOK BRIDGE" in two sheets undated.

The conditions of the original permit remain in full force and effect.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://per2.nwp.usace.army.mil/survey.html

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Philip T. Feir
Colonel, Corps of Engineers
District Engineer

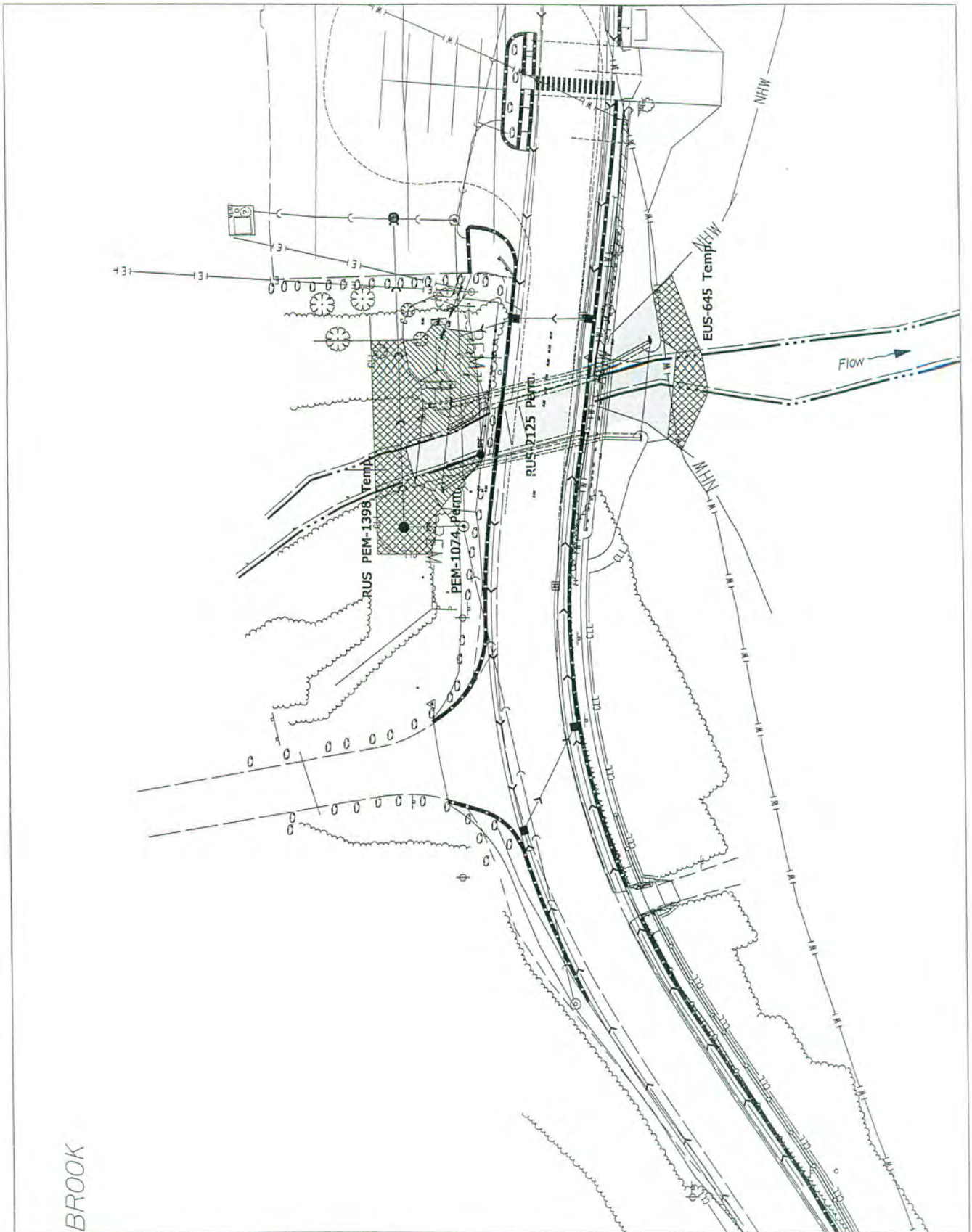


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	STATE ROUTE 3 MOUNT DESERT HANCOCK COUNTY	SHEET NUMBER
16718.00	PLANS	

Date: March 2009
Road Names: Route 3
Town(s): Mt. Desert
1:10,000

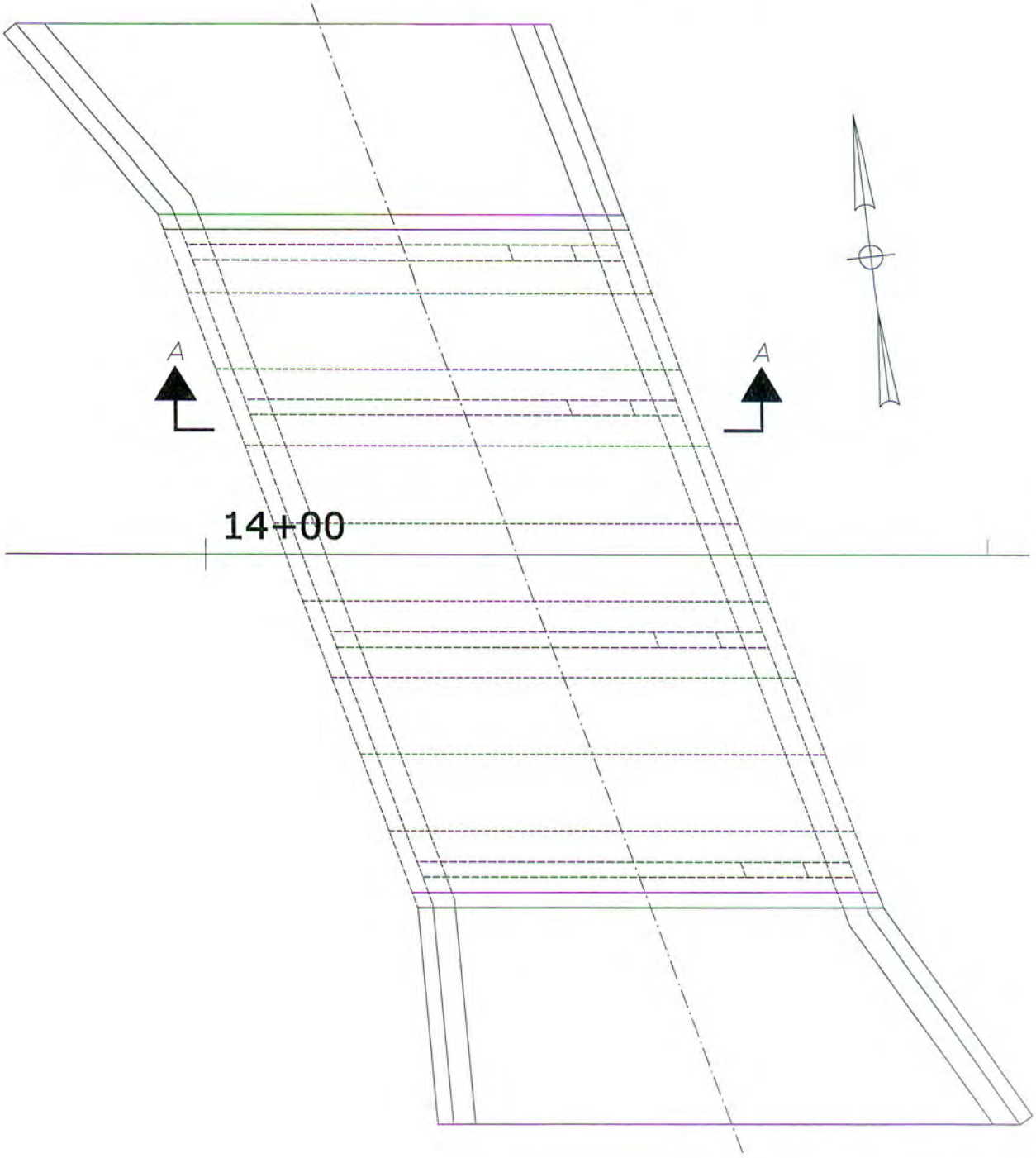
G Project location

Bridge #5570



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	STATE ROUTE 3 MOUNT DESERT HANCOCK COUNTY	SHEET NUMBER
16718.00	PLANS	

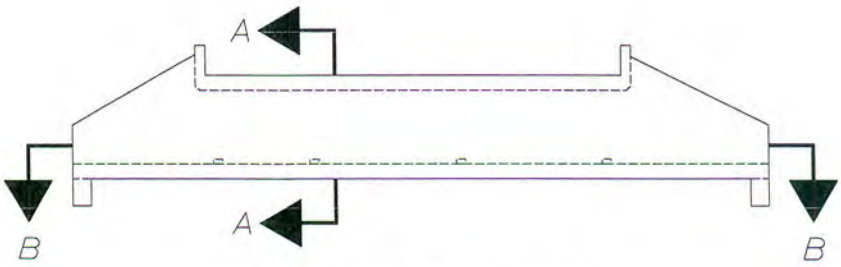
℄ Precast Concrete Box Culvert
26'-0" Span, 8'-0" Rise Opening



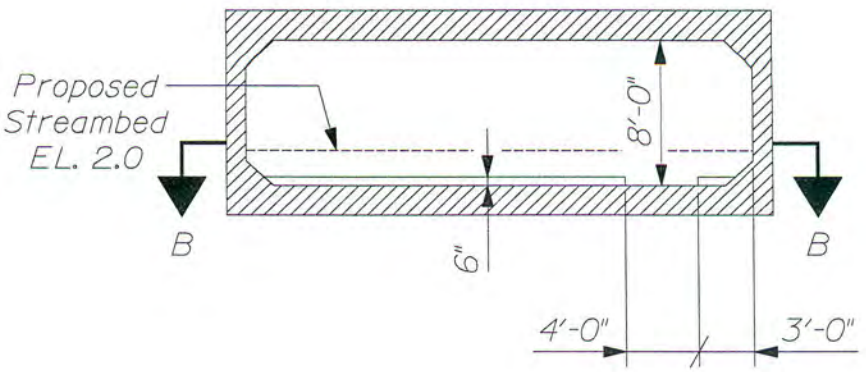
Not For Construction

PLAN

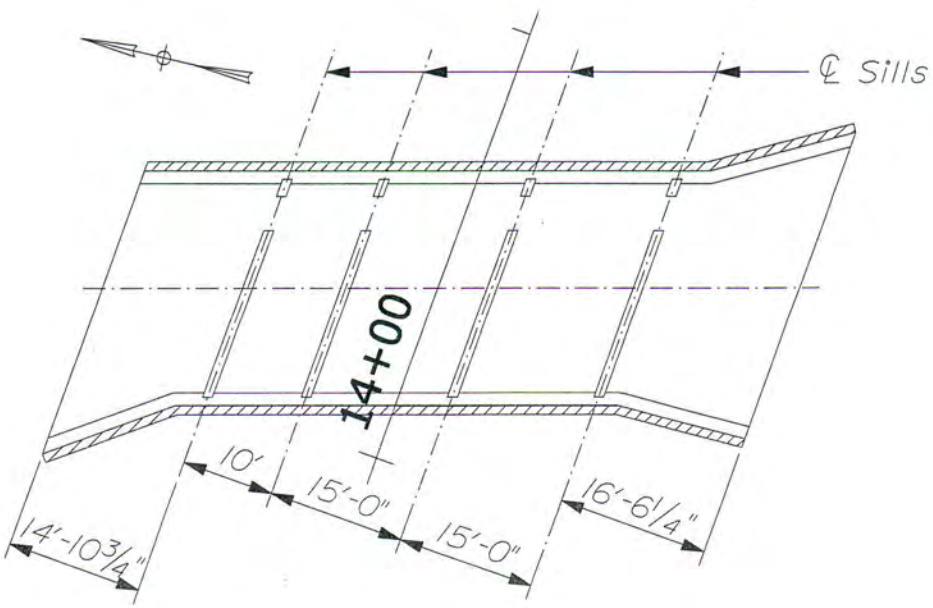
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	STATE ROUTE 3 MOUNT DESERT STANLEY BROOK BRIDGE	SHEET NUMBER 1
16718.00	CONCRETE BOX PLAN	OF 2



BOX ELEVATION



SECTION A-A



SECTION B-B
SILL LAYOUT

Not For Construction

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	STATE ROUTE 3 MOUNT DESERT STANLEY BROOK BRIDGE	SHEET NUMBER 2
16718.00	CONCRETE BOX SECTIONS	OF 2

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

MAINE DEPARTMENT OF TRANSPORTATION	) NATURAL RESOURCES PROTECTION
Falmouth & S. Portland, Cumberland County	) COASTAL WETLAND ALTERATION
Princeton, Washington County	) FRESHWATER WETLAND ALTERATION
2010-2011 BRIDGE PERMIT	) WATER QUALITY CERTIFICATION
L-24524-L6-A-N (approval)	)
L-24524-2B-B-N	) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S.A. § 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. History: The project is being proposed in response to Public Law, Chapter 647 "An Act To Keep Bridges Safe" and "Keeping our Bridges Safe", a report on Maine's bridge inspection and improvements program dated November 26, 2007. The report listed critical bridges requiring immediate attention to ensure public safety and protect the economic vitality of Maine's transportation network. The Maine Department of Transportation (applicant) screened approximately 300 bridges that had been identified on the list of critical bridges and determined that a significant number of the proposed bridge repair projects do not require a permit from the Department based on the scope or nature of the work required to complete the repair. The remaining bridges were divided into two permitting phases: phase I (2010-2011), included herein, and phase II (2012-2013), which will be submitted to the Department for permitting in 2011. In February 2009, the applicant and the Department established a Memorandum of Agreement (MOA), which established an umbrella style of permitting multiple projects within a single application.

B. Summary: The applicant proposes to repair and/or replace 51 bridges at various locations across the State as phase I of the "Keeping our Bridges Safe" initiative. The applicant has designed 49 of the bridge repair and/or replacement projects to meet the standards pursuant to Chapter 305, Permit-by-Rule Standards (PBR), Sections # 4 Replacement of Structures and #11 State Transportation Facilities (PBR #47992). The applicant agrees to all the terms and conditions of Chapter 305 for the 49 qualifying bridges including work window timing restrictions required by the Maine Department of Inland Fisheries & Wildlife (MDIF&W), except as provided by the Special Permit Conditions associated with this permit. The bridges are listed in Attachments #1 and #3 of the application, which includes the bridge identification numbers, locations, scope of the work, proposed impacts, and review agency comments.

In addition to the 49 bridge projects that qualify for permitting pursuant to Chapter 305, the applicant proposes to undertake repairs at two (2) bridge locations that require approval through an individual Natural Resources Protection Act (NRPA) permit. The two (2) bridges are the Route 26/100 Presumpscot River bridge in Falmouth and the Route 1 Calais Road bridge located over Lewy Lake in Princeton. The specific detail of these three proposed bridge projects are as follows:

1) Falmouth, Route 26/100, Presumpscot River Bridge. The bridge project is identified as bridge #2702 in attachments #1 and #3 of the application. The applicant proposes to replace and expand the existing bridge structure, impacting approximately 18,000 square feet of palustrine scrub shrub wetland and 4,000 square feet of river bottom for the placement of piers for the new bridge.

2) Princeton, Calais Road (Rt # 1) bridge. The bridge project is identified as bridge #2688 in attachments #1 and #3 of the application. The applicant proposes to replace the existing structure with a wider structure and impact approximately 10,000 square feet of palustrine unconsolidated bottom and emergent wetland impacts to accommodate snowmobile and pedestrian use at the request of the Passamaquoddy Nation.

The applicant has proposed project specifications for all in-water work associated with the bridge repair and replacements as discussed further in Findings #3-5. The entire project specifications will be annually reviewed beginning in January 2010, which will provide the Department an opportunity to request the applicant address any project specific concerns. The applicant intends to advertise and construct the bridges at various times over the next 2 years starting in May 2009. To facilitate construction monitoring, the applicant included in the application a spreadsheet, which will facilitate project tracking review, and construction under this application. Starting in May, the applicant will update the spreadsheet on a monthly basis to provide current information regarding project status and construction timing to the Department.

C. Current Use of the Site: The proposed project sites contain bridges over numerous rivers, streams, brooks, great ponds, and tidal wetlands throughout the State of Maine.

2. EXISTING SCENIC, AESTHETIC, RECREATIONAL OR NAVIGATIONAL USES:

In accordance with Chapter 315, Assessing and Mitigating Impacts to Scenic and Aesthetic Uses, the applicant submitted a copy of the Department's Visual Evaluation Field Survey Checklist as Appendix A to the application along with a description of the property and the proposed project. The applicant also submitted several photographs of each proposed project site.

The proposed projects requiring individual permit review are located over the Presumpscot River and Lewy Lake, which are scenic resources visited by the general public, in part, for the use, observation, enjoyment and appreciation of its natural and cultural visual qualities. The proposed projects are expansions or replacements of existing bridges. The applicant has submitted photographs of all the sites where work is proposed. The proposed replacements or expansions do not significantly change the dimensions of the bridges as viewed from the scenic resource.

The proposed projects were evaluated using the Department’s Visual Impact Assessment Matrix and were found to have an acceptable potential visual impact rating. Based on the information submitted in the application and the visual impact rating, the Department determined that the location and scale

of the proposed activity is compatible with the existing visual quality and landscape characteristics found within the viewshed of the scenic resource in the project area.

The Department did not identify any issues involving existing recreational and navigational uses.

The Department finds that the proposed activities will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses of the protected natural resources.

3. SOIL EROSION:

The applicant proposes to adhere to the most recent version of MaineDOT's Highway Standard Specifications including Special Provision 656-Temporary Soil Erosion and Water Pollution Control Plan (SEWPCP) for each bridge project. Language requiring that all contractors follow these specifications will be incorporated into the contract terms and conditions for all construction project contracts. In addition, the applicant will ensure that the following erosion control provisions are followed for each bridge repair project:

A. The MaineDOT Best Management Practices (BMPs) for Erosion and Sedimentation Control Manual (February 2008) will be applied and maintained on all projects. As standard practice for all projects, Surface Water Quality personnel and Regional Environmental Coordinators will review the draft SEWPCP, make final recommendations, and the project resident will approve temporary and permanent erosion and sedimentation provisions for inclusion in each contract awarded by the applicant. In addition, Maine DOT Environmental Office staff will provide oversight of the appropriate application of BMPs, technical assistance to resident engineers, and on-site response on a project specific basis.

B. The applicant will utilize the following in-water work standards to mitigate against unreasonable erosion of soil material and operate outside of standard in-water work windows provided that:

1). The applicant will use turbidity limiting measures to limit the effects of siltation for all pile removals and replacements in fine substrates such as clay, silt and mud. Turbidity limiting measure will include but are not limited to working on an out-going tide, or the use of silt booms, floating curtains, etc.

2). Stream flow diversion and re-establishment will be performed in conformance with the latest version of the MaineDOT BMP manual.

3). Sandbags or jersey barriers used for coffer dams or temporary stream diversions will be removed either by hand or by use of shore-based machinery and reach-in techniques.

4). The applicant will utilize temporary work staging platforms to facilitate bridge repair and re-construction activities. Staging platforms will consist of temporary pile supported work platforms, work via barge, work via adjacent upland, or work from the existing structure. Placement and/or removal of staging equipment will occur in accordance with the MaineDOT BMP manual.

5). In all waterways, the applicant will divert stream flow as necessary to create a stable dry work environment using techniques described in the MaineDOT BMP manual.

Based on a review of the Best Management Practices documents submitted by the applicant as part of the application and the standard project provisions outlined above, the Department has determined that the applicant has made adequate provision to ensure that the project will not result in an unreasonable discharge of sediment into the resource.

Therefore, the Department finds that the activities will not cause the unreasonable erosion of soil or sediment discharge into the resource nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment provided that the applicant: applies the provisions of the MaineDOT BMPs for Erosion and Sedimentation Control BMP Manual (February 2008) on all projects; ensures that Surface Water Quality personnel and Regional Environmental Coordinators review, and approve temporary and permanent erosion and sedimentation provisions for inclusion in each contract awarded; ensures that Environmental Office staff provide oversight of the appropriate application of BMPs, technical assistance to resident engineers and on-site response on a project specific basis; and follows the in-water work standards outlined above for all bridge repair and replacement projects.

4. HABITAT CONSIDERATIONS:

The applicant proposes to utilize its "Waterway and Wildlife Crossing Policy and Design Guide" (July 2008) on all projects. The Waterway and Wildlife Crossing Policy and Design Guide requires the applicant to develop effective methods of building, repairing, and maintaining transportation infrastructure, while protecting important aquatic, wildlife, and surface water resources. The applicant is not proposing to block fish passage during the re-construction of any of the Route 26/100, Presumpscot River Bridge or the Calais Road Bridge.

A. Falmouth, Route 26/100, Presumpscot River Bridge (Bridge #2702): The Department reviewed a Geographic Information System database and did not identify any significant wildlife habitat associated with this project site. The proposed project was reviewed by the Department of Inland Fisheries & Wildlife (MDIFW), which stated that it did not identify any issues with regard to rare, threatened or endangered species at the proposed project site. The Department of Marine Resources (DMR) review the proposed project and requests that the applicant limit construction activity for the Route 26/100 Presumpscot River bridge project to the period between August 1st and April 31st due to the presence of alewives and herring. The applicant has agreed to this in-water work window restriction.

B. Princeton, Calais Road (Rt #1) bridge (Bridge #2688): The Department reviewed a Geographic Information System database, which did not identify any rare, threatened or endangered species with the proposed project site. MDIFW reviewed the proposed project site and did not identify any issues of concern, rare, threatened or endangered species at the site. DMR has reviewed the proposed project site and did not identify any species of concern or any construction window restrictions.

The applicant further proposes to include language within each bridge repair/replacement contract that restricts in-water work to a specific time of year if determined necessary in consultation with MDIFW and DMR. Agency staff from MDIFW and DMR and/or the Department may modify any in-water work window if necessary to address specific fisheries concerns identified during the construction process. In addition, the Coordination and Permits Division Manager or the Environmental Office Director at MaineDOT may extend a project's in-water work window by up to 10 days without requesting a permit modification from the Department provided that a notice of justification and need is submitted to the Department prior to granting the extension.

The Department finds that the activities will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life provided that the applicant will limit construction of the Route 26/100 Presumpscot River Bridge in Falmouth to a August 1st to April 30th in-water work window, the applicant will apply its "Waterway and Wildlife Crossing Policy and Design Guide" (July 2008) to all projects, and the applicant may extend a project's in-water work window by up to 10 days without requesting a permit modification from the Department provided that they submit a notice of justification and need to the Department prior to granting the extension.

5. WATER QUALITY CONSIDERATIONS:

The applicant's Best Management Practices for Erosion and Sedimentation Control Manual requires each contractor to install and maintain appropriate erosion controls and to utilize good housekeeping practices for equipment utilized on construction projects. Each contractor is required to utilize proper fuel filling procedures for equipment and maintain equipment to prevent leaks. Each site is required to have a spill kit to clean up spills if they occur and a project specific plan for responding to spills including contacting the Department to report and remediate a spill.

The Department finds that the proposed project will violate any state water quality law, including those governing the classification of the State's waters.

6. WETLANDS AND WATERBODIES PROTECTION RULES:

The applicant proposes to impact approximately 18,000 square feet of palustrine scrub shrub and 4,000 square feet of riverine bottom to replace the Route 26/100 Presumpscot River bridge in Falmouth and impact approximately 10,000 square feet of palustrine unconsolidated bottom and palustrine emergent wetlands associated with Lewy Lake to replace the Route 1 Lewy Lake bridge in Princeton..

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 Natural Resources Protection Act permit must provide an analysis of alternatives in order to demonstrate that a practicable alternative does not exist. The applicant submitted an alternatives analysis for the proposed project dated February 18, 2009. The applicant considered alternatives to bridge replacement where ever possible; however given the structural condition of some of the bridges the applicant is unable to avoid impacts while meeting the project purpose of ensuring an adequate transportation system and protecting public safety.

B. Minimal Alteration. The amount of waterbody to be altered must be kept to the minimum amount necessary for meeting the overall purpose of the project. The applicant has minimized wetland impacts by installing new abutments in back of existing structures and removing the existing abutments to increase the bank full width of the waterway whenever practicable. The 48 bridges qualifying for PBR include replacing 10 of the bridges with wider structures, 6 of the projects consist of large pipes that will have weirs installed to enhance fish passage, and 1 project

will have a natural bottom pipe-arch installed. The Department notes that replacing the existing structures with longer spans or wider structures will increase aquatic habitat and flood flow capacity. Some of these projects will restore fish passage in water bodies where previously none occurred due to the structure limitations such as hanging culverts. Weirs will be installed in structures where a need is identified to improve aquatic organism passage. Finally, the applicant intends to remove 2 redundant bridges: the Muddy Brook Bridge on the Townway Road in New Sharon and the Smith Pond Bridge on the Hilton Hill Road in Skowhegan, both of which contain critical habitat for Atlantic salmon.

C. Compensation. In accordance with Chapter 310 Section 5 (C), compensation is required to achieve the goal of no net loss of waterbody functions and values. The applicant is not proposing compensation as many of the projects meet PBR standards and have minimal impact. The remaining two projects involve approximately 28,000 square feet of impacts and would otherwise require compensation in accordance with Chapter 310. However, the scope of the projects include the removal of 2 redundant or archaic bridges, increasing channel width in the majority of replacement projects, and improving hydrologic capacity wherever possible, which will offset the proposed impacts. In addition, the 10 projects involving longer spans or wider structures will result in more riverine habitat at the locations. Therefore, the Department is not requiring compensation as the nature of the projects is self-mitigating.

The Department finds that the applicant has avoided and minimized waterbody impacts to the greatest extent practicable, and that the proposed projects represent the least environmentally damaging alternative that meets the overall purpose of the project, and that the function and value benefits of the projects overall outweigh any potential adverse impacts resulting from limited encroachment of replaced or rehabilitated structures into the protected natural resources.

7. 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 provided that the applicant's BMP manual for Erosion and Sedimentation Control Manual (February 2008) will be applied and maintained on all projects as indicated in Finding #3A.

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 or adjacent upland habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life provided that the applicant will

utilize an August 1st to April 30th in-water work window for the Route 26/100 Presumpscot River Bridge in Falmouth except as specified in the Special In-Water Work Provisions included in the application, the applicant will apply its "Waterway and Wildlife Crossing Policy and Design Guide" (July 2008) to all projects, and the applicant may extend a project's in-water work window by up to 10 days without requesting a permit modification from the Department provided that they submit a notice of justification and need to the Department prior to granting the extension.

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 for the 2010-2011replacement, rehabilitation, or removal of bridges as proposed, 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 its activities or those of its agents do not result in measurable erosion of soil on the site during the construction of the project covered by this approval.

3. The applicant's BMP manual for Erosion and Sedimentation Control Manual (February 2008) shall be applied and maintained on all projects.

4. The applicant shall utilize an August 1st to April 30th in-water work window for the Route 26/100 Presumpscot River Bridge in Falmouth except as specified in the Special In-Water Work Provisions included in the application.

5. The applicant shall apply its "Waterway and Wildlife Crossing Policy and Design Guide" (July 2008) to all projects.

6. The applicant may extend a project specific time of year restriction by as much as 10 days without having to formally modify the permit provided that it submits a notice of justification and need to the Department prior to granting the extension.

7. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

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.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

do/ats#69527/l24524an

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.

Revised (4/92/DEP LW0428

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Erosion Control for Homeowners

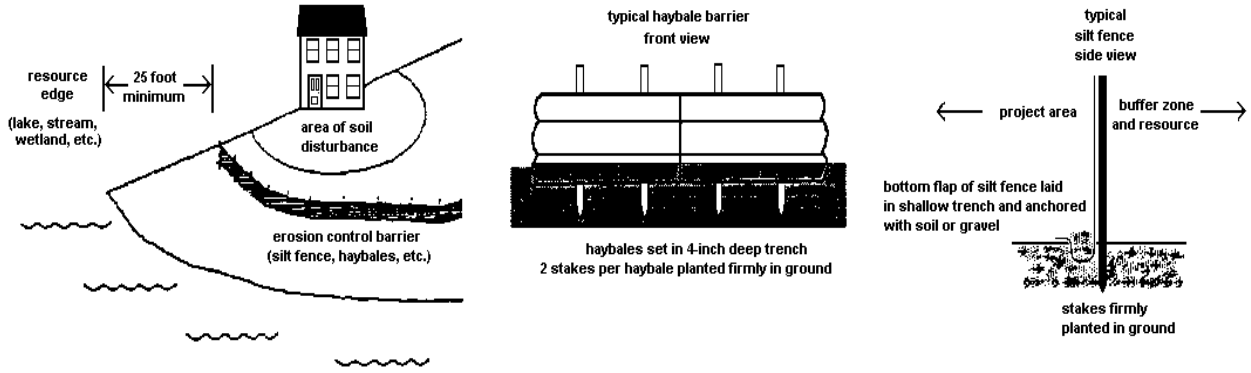
Before Construction

1. If you have hired a contractor, make sure you discuss your permit-by-rule with them. Talk about what measures they plan to take to control erosion. Everybody involved should understand what the resource is, and where it is located. Most people can identify the edge of a lake or river. However, the edges of wetlands are often not so obvious. Your contractor may be the person actually pushing dirt around, but you are both responsible for complying with the permit-by-rule.

2. Call around to find where erosion control materials are available. Chances are your contractor has these materials already on hand. You probably will need silt fence, hay bales, wooden stakes, grass seed (or conservation mix), and perhaps filter fabric. Places to check for these items include farm & feed supply stores, garden & lawn suppliers, and landscaping companies. It is not always easy to find hay or straw during late winter and early spring. It also may be more expensive during those times of year. Plan ahead -- buy a supply early and keep it under a tarp.

3. Before any soil is disturbed, make sure an erosion control barrier has been installed. The barrier can be either a silt fence, a row of staked hay bales, or both. Use the drawings below as a guide for correct installation and placement. The barrier should be placed as close as possible to the soil-disturbance activity.

4. If a contractor is installing the erosion control barrier, double check it as a precaution. Erosion control barriers should be installed "on the contour", meaning at the same level or elevation across the land slope, whenever possible. This keeps stormwater from flowing to the lowest point along the barrier where it can build up and overflow or destroy the barrier.



During Construction

1. Use lots of hay or straw mulch on disturbed soil. The idea behind mulch is to prevent rain from striking the soil directly. It is the force of raindrops hitting the bare ground that makes the soil begin to move downslope with the runoff water, and cause erosion. More than 90% of erosion is prevented by keeping the soil covered.

2. Inspect your erosion control barriers frequently. This is especially important after a rainfall. If there is muddy water leaving the project site, then your erosion controls are not working as intended. You or your contractor then need to figure out what can be done to prevent more soil from getting past the barrier.

3. Keep your erosion control barrier up and maintained until you get a good and healthy growth of grass and the area is permanently stabilized.

11. State transportation facilities

A. Applicability

(1) This section applies to the maintenance, repair, reconstruction, rehabilitation, replacement or minor construction of a State Transportation Facility carried out by, or under the authority of, the Maine Department of Transportation (MaineDOT) or the Maine Turnpike Authority, including any testing or preconstruction engineering, and associated technical support services.

(2) This section does not apply to an activity within a coastal sand dune system.

NOTE: The construction of a transportation facility other than roads and associated facilities may be subject to the Storm Water Management Law, 38 M.R.S.A. Section 420-D.

B. Standards

(1) Photographs of the area to be altered by the activity must be taken before work on the site begins. The photographs must be kept on file and be made available at the request of the DEP.

(2) The activity must be reviewed by the Department of Inland Fisheries and Wildlife and the Department of Marine Resources, as applicable. The applicant must coordinate with the reviewing agencies and incorporate any recommendations from those agencies into the performance of the activity.

(3) All construction activities undertaken must be detailed in a site-specific Soil Erosion and Water Pollution Control Plan and conducted in accordance with MaineDOT's Best Management Practices for Erosion and Sediment Control, dated January 2000, and Standard Specifications, dated December 2002.

(4) Alignment changes may not exceed a distance of 200 feet between the old and new center lines in any natural resource.

(5) The activity may not alter more than 300 feet of shoreline (both shores added together) within a mile stretch of any river, stream or brook, including any bridge width or length of culvert.

(6) The activity may not alter more than 150 feet of shoreline (both shores added together) within a mile stretch of any outstanding river segment identified in 38 M.R.S.A. 480-P, including any bridge width or length of culvert.

(7) The activity must minimize wetland intrusion. The activity is exempt from the provisions of Chapter 310, the Wetland and Waterbodies Protection Rules, if the activity alters less than 15,000 square feet of natural resources per mile of roadway (centerline measurement) provided that the following impacts are not exceeded within the 15,000 square foot area:

(a) 1,000 square feet of coastal wetland consisting of salt tolerant vegetation or shellfish habitat; or

(b) 5,000 square feet of coastal wetland not containing salt tolerant vegetation or shellfish habitat; or

(c) 1,000 square feet of a great pond.

All other activities must be performed in compliance with all sections of Chapter 310, the Wetland Protection Rules, except 310.2(C), 5(A), 9(A), 9(B) and 9(C).

(8) The activity may not permanently block any fish passage in any watercourse containing fish. The applicant must coordinate with the reviewing agencies listed in paragraph 2 above to improve fish passage and incorporate any recommendations from those agencies into the performance of the activity.

NOTE: For guidance on meeting the design objectives for fish passage, including peak flow, maximum velocity, mining depth and gradient, see the MaineDOT Waterbody and Wildlife Crossing Policy and Design Guide (July 2008), developed in conjunction with state and federal resource and regulatory agencies.

(9) Rocks may not be removed from below the normal high water line of any coastal wetland, freshwater wetland, great pond, river, stream or brook except to the minimum extent necessary for completion of work within the limits of construction.

(10) If work is performed in a river, stream or brook that is less than three feet deep at the time and location of the activity, the applicant must isolate the work area from the resource and divert stream flows around the work area, maintaining downstream flows while work is in progress.

(11) Wheeled or tracked equipment may not operate in the water. Equipment operating on the shore may reach into the water with a bucket or similar extension. Equipment may cross streams on rock, gravel or ledge bottom. If avoiding the operation of wheeled or tracked equipment in the water is not possible, the applicant must explain the need to operate in the water. Approval from the DEP to operate in the water must be in writing, and any recommendations from the DEP must be incorporated into the performance of the activity.

(12) All wheeled or tracked equipment that must travel or work in a vegetated wetland area must travel and work on mats or platforms.

(13) Any debris or excavated material must be stockpiled either outside the wetland or on mats or platforms. Erosion and sediment control best management practices must be used, where necessary, to prevent sedimentation. Any debris generated during the activity must be prevented from washing downstream and must be removed from the wetland or water body. Disposal of debris must be in conformance with the Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Section 1301 *et seq.*

(14) Work below the normal high water line of a great pond, river, stream or brook must be done at low water except for emergency work or work agreed to by the resource agencies listed in paragraph 2 above.

(15) Perimeter controls must be installed before the work starts. Disturbance of natural resources beyond the construction limits shown on the plans is not allowed under this rule.

NOTE: Guidance on the location of construction limits can be obtained from the on site Construction Manager.

(16) The use of untreated lumber is preferred. Lumber pressure treated with chromated copper arsenate (CCA) may be used only if necessary and only if use is allowed under federal law and not prohibited from sale under 38 M.R.S.A. 1682, and provided it is cured on dry land in a manner that exposes all surfaces to the air for a period of at least 21 days prior to construction. Wood treated with creosote or pentachlorophenol may not be used where it will contact water.

(17) A temporary road for equipment access must be constructed of crushed stone, blasted ledge, or similar materials that will not cause sedimentation or restrict fish passage. Such roads must be completely removed at the completion of the activity. In addition, any such temporary roads which are in rivers, streams or brooks, must allow for a passage of stormwater flows associated with a 10-year storm.

(18) Non-native species may not be planted in restored areas.

(19) Disposal of debris must be in conformance with Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Sections 1301 *et seq.*

(20) Disturbance of vegetation must be avoided, if possible. Where vegetation is disturbed outside of the area covered by any road or structure construction, it must be reestablished immediately upon completion of the activity and must be maintained.

(21) A vegetated area at least 25 feet wide must be established and maintained between any new stormwater outfall structure and the high water line of any open water body. A velocity reducing structure must be constructed at the outlet of the stormwater outfall that will create sheet flow of stormwater, and prevent erosion of soil within the vegetated buffer. If the 25 foot vegetated buffer is not practicable, the applicant must explain the reason for a lesser setback in writing. Approval from the DEP must be in writing and any recommendations must be incorporated into the activity.

C. Definitions. The following terms, as used in this chapter, have the following meanings, unless the context indicates otherwise:

(1) Diversion. The rerouting of a river, stream or brook around a construction site and then back to the downstream channel.

(2) Fill. a. (verb) To put into or upon, supply to, or allow to enter a water body or wetland any earth, rock, gravel, sand, silt, clay, peat, or debris; b. (noun) Material, other than structures, placed in or immediately adjacent to a wetland or water body.

(3) Floodplain wetlands. Freshwater wetlands that are inundated with flood water during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Agency or other site specific information.

(4) Riprap. Heavy, irregularly shaped rocks that are fit into place, without mortar, on a slope as defined in the MaineDOT Standard Specifications, dated December 2002.

Environmental Summary Sheet

Pin: **16718.00** **Date Submitted:** 4-20-11
Town: **Mount Desert**
CPD Team Leader: Kristen Chamberlain **ENV Surface Water Field Contact:** Ryan Annis
NEPA Complete: **N/A -No Federal $**

☒ **Section 106**
SHPO Concurrence

☒ **Section 4(f) and 6(f)**
Section 4(f)
Review Complete- No USDOT $-no properties
Section 6(f)
Not Applicable

☒ **Maine Department of Inland Fisheries and Wildlife Essential Habitat**
Not Applicable **Timing Window: Not Applicable**

☒ **Section 7**
No Effect (per USFWS)
Species of Concern: Atlantic Salmon DPS

☒ **Maine Department of Conservation/Public Lands, Submerged Land Lease**
Not Applicable

☒ **Maine Land Use Regulation Commission**
Not Applicable

☒ **Maine Department of Environmental Protection**
2009 Bridge Batch Individual Permit and Permit-by-Rule Section 11 Standards
-Fish evacuation of coffer dams by MaineDOT ENV Biologist required. Need to notify Gregg Burr (IFW Jonesboro, 434-5925) when fish evacuation 48 hours prior.
-Pump screens in coffer dams must be ¼-inch or smaller
-No spring in-water work (to avoid newly hatched young of the year movement)
- Preferred in water work July 15-October 15 to avoid fall brook trout spawning
-avoid disturbance/removal of vegetation beyond clearing limit line shown on the plans to minimize impacts to dune vegetation between Route 3 and the beach on the western approach
-Bridge will coordinate relocation of fish passage monitoring system with NPS

☒ **Army Corps of Engineers, Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.**
2009 Bridge Batch Individual Permit and Permit Amendment dated 12/28/10
-Work Start Notification and Compliance Certification Form must be submitted to ACOE
-Permitted permanent stream and adjacent wetland impact: 3200 sf
-Permitted temporary stream and adjacent wetland impact: 2000 sf (includes cofferdams and sewer line)
-The contractor must embed the box relative to observed streambed rather than a design elevation if the two conflict. The box must be embedded under observation by MaineDOT Environmental Office staff/resident to ensure that it is installed as intended.

☒ **Coast Guard**
Not Applicable

☒ **Special Provisions Required**

Special Provision 105-Timing of Work Restriction	N/A☐	Applicable☒
Special Provision 656-Erosion Control Plan	N/A☐	Applicable☒
Special Provision 203-Dredge Spec	N/A☐	Applicable☒
General Note for Hazardous Waste	N/A☒	Applicable☐
Special Provision 203-Hazardous Waste	N/A☒	Applicable☐
Special Provision 105.9	N/A☒	Applicable☐