Updated 11/27/07

FEDERAL PROJECT

August 01, 2007
Supersedes July 6, 2005

BIDDING INSTRUCTIONS

FOR ALL PROJECTS:

1. Use pen and ink to complete all paper Bids.

2. As a minimum, the following must be received prior to the time of Bid opening:

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

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

3. Include prices for all required items in the Schedule of Items. ("Zero is not considered a Bid price.")

4. Include a Bid Guaranty. Acceptable forms are:

   a. a properly completed and signed Bid Bond on the Department's prescribed form (or on a form that does not contain any significant variations from the Department's form as determined by the Department) for 5% of the Bid Amount or

   b. an Official Bank Check, Cashier's Check, Certified Check, U.S. Postal Money Order or Negotiable Certificate of Deposit in the amount stated in the Notice to Contractors.

5. If a paper Bid is to be sent, Federal Express overnight delivery is suggested as the package is delivered directly to the DOT Headquarters Building 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 in the proper amounts, and deliver to the Civil Rights Office, or fax to (207)624-3431 by 4:30 PM on bid opening day.

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

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

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 Mike Babb at the MDOT Contracts mailbox at: MDOT.contracts@maine.gov. Each bid package will require a separate request.

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

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

NOTICE

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

Bid Enclosed - Do Not Open
PIN:
Town:
Date of Bid Opening:
Name of Contractor with mailing address and telephone number:

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

Double Envelope: Bid Enclosed
PIN:
Town:
Date of Bid Opening:
Name of Contractor:
This should not be much of a change for those of you who use Federal Express or similar services.

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

SAMPLE

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):** _____

_____

_____

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_____

_____

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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:_____

_____

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Response By:_____ Date: _____

NOTICE

Disadvantaged Business Enterprise Proposed Utilization

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

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

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

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

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

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

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

The Contractor Shall:

1. Submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan to the Contract's Engineer by 4:30 P.M. on the Bid day.

2. Extend equal opportunity to MDOT certified DBE firms (as listed in MDOT's DBE Directory of Certified Businesses) in the selection and utilization of Subcontractors and Suppliers.

SPECIFIC INSTRUCTIONS FOR COMPLETING THE FORM:

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

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

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

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

NOTICE

Maine Department of Transportation
Disadvantaged Business Enterprise Program

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

For FFY 2008 (October 1, 2007 through September 30, 2008), MaineDOT has established a DBE participation goal of 4.5% to be achieved through race/gender neutral and race/gender conscious means.

Interested parties may view MaineDOT's DBE goal setting methodology for the next 30 days during normal business hours (8-4, M-F) at the Maine Department of Transportation, Civil Rights Office, 16 State House Station, Augusta ME 04333-0016. Appointments may be scheduled by telephone at (207) 624-3519. The goal setting methodology is also available for viewing on the MaineDOT website: http://www.maine.gov/mdot/disadvantaged-business-enterprises/dbe-home.php.

Public comment will be accepted for 45 days following the last date of publication. The public comment period will be complete on August 28th, 2007. The goal will be submitted for approval to the FHWA on August 1st, 2007 with an update based upon public comment sent to FHWA on August 30th.

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

Several interested stakeholders will be notified directly by e-mail of the goal publication, including Maine SBA, Associated Constructors of Maine, and ACEC, and Maine DBEs.

____ **Original Submission** **Page ___ of ___**

____ **Revision # _____**

MaineDOT CONTRACTOR'S DBE/SUBCONTRACTOR
PROPOSED UTILIZATION FORM

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

Contractor: _____ Telephone: _____ Ext. _____

Prepared by:_____ Fax: _____

BID PRICE: $_____ BID DATE: _____/_____/_____

FEDERAL PROJECT PIN # _____ PROJECT LOCATION: _____

TOTAL DBE _____ % PARTICIPATION FOR THIS SUBMISSION

WBE•	DBE•	Non DBE	Firm Name	Unit/Item Cost	Unit #	Description of Work & Item Number	Actual $ Value
						Total ›	

Contractors must make a good faith effort to include <u>Certified</u> DBE firms in all aspects of the project. If no DBE firms are to be part of this project, a detailed explanation is required. Attach supporting evidence to the maximum participation of DBEs on this project. This is a requirement. This evidence must include name of firm(s) contacted, date contacted, and outcome of solicitation.

Equal Opportunity Use:

Form received: ___/___/___ Verified by: _____

____ Accepted ____ Rejected _____

cc: ☐ Contracts ☐ Other _____

- **WBEs are non-minority women owned firms certified by MaineDOT**
- **DBEs are male and minority owned firms certified by MaineDOT**

For a complete list of certified firms go to <u>http://www.maine.gov/mdot</u>

Rev. 6/06

MaineDOT's

CIVIL RIGHTS OFFICE

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

MAINE DEPARTMENT OF TRANSPORTATION

CERTIFIED DISADVANTAGED AND WOMEN BUSINESS ENTERPRISE

DECEMBER 2005

Information is updated on an ongoing basis and can be retrieved by visiting our Website:
www.maine.gov/mdot/disadvantaged-business-enterprises/dbe-home.php

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 Covered Bridge Replacement in the town of **Norridgewock**" will be received from contractors at the Reception Desk, Maine DOT Building, Child Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on May 21, 2008 and at that time and place publicly opened and read. Bids will be accepted from contractors prequalified by the Department of Transportation for **Bridge Projects**. All other Bids may be rejected. **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: Maine Federal Aid Project No. BH-6900(01)X, PIN 006900.01

Location: In Somerset County, project is located 0.2 miles northerly of route 2 junction over the Kennebec river.

Scope of Work: Norridgewock Covered Bridge replacement and other incidental work.

The basis of award will be Section 0001 combined with the selected structure alternate.

For general information regarding Bidding and Contracting procedures, contact Scott Bickford at (207)624-3410. Our webpage at http://www.maine.gov/mdot/contractor-consultant-information/contractor_cons.php 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 Wayne Frankhauser** 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 Dixfield. 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 134.00 ($142.00 by mail). Half size plans $67.00 ($71.00 by mail), Bid Book $10 ($13 by mail), Single Sheets $2, payment in advance, all non-refundable.

Each Bid must be made upon blank forms provided by the Department and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of $500,000.00 payable to Treasurer, State of Maine as a Bid guarantee. A Contract Performance Surety Bond and a Contract Payment Surety Bond, each in the amount of 100 percent of the Contract price, will be required of the successful Bidder.

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

All work shall be governed by "State of Maine, Department of Transportation, Standard Specifications, Revision of December 2002", price $10 [$13 by mail], and Standard Details, Revision of December 2002, price $20 [$25 by mail]. Standard Detail updates can be found at http://www.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 9, 2008

JOHN E. DORITY
CHIEF ENGINEER

SPECIAL PROVISION 102.7.3
ACKNOWLEDGMENT OF BID AMENDMENTS

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

Amendment Number	Date

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

CONTRACTOR

_____
Date

_____
Signature of authorized representative

_____
(Name and Title Printed)

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 COMMON PROJECT ITEMS					
0010	202.15 REMOVING MANHOLE OR CATCH BASIN	6.000 EA				
0020	202.19 REMOVING EXISTING BRIDGE	LUMP	LUMP			
0030	203.20 COMMON EXCAVATION	4426.000 CY				
0040	203.24 COMMON BORROW	10.000 CY				
0050	203.25 GRANULAR BORROW	655.000 CY				
0060	206.061 STRUCTURAL EARTH EXCAVATION - DRAINAGE AND MINOR STRUCTURES, BELOW GRADE	10.000 CY				
0070	206.082 STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	605.000 CY				
0080	304.08 AGGREGATE BASE COURSE - SCREENED	3800.000 CY				
0090	304.10 AGGREGATE SUBBASE COURSE - GRAVEL	1975.000 CY				
0100	403.207 HOT MIX ASPHALT 19.0 MM HMA	480.000 T				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS		UNIT PRICE DOLLARS	CTS	BID AMOUNT DOLLARS	CTS
0110	403.209 HOT MIX ASPHALT 9.5 MM HMA (SIDEWALKS, DRIVES, INCIDENTALS)	160.000	T				
0120	403.210 HOT MIX ASPHALT 9.5 MM HMA	1610.000	T				
0130	403.213 HOT MIX ASPHALT 12.5 MM HMA BASE	460.000	T				
0140	403.325 HIGH PERFORMANCE RUBBERIZED ASPHALT	37.000	T				
0150	409.15 BITUMINOUS TACK COAT - APPLIED	470.000	G				
0160	501.231 DYNAMIC LOADING TEST	6.000	EA				
0170	501.46 STEEL H-BEAM PILES 73 LBS/FT, DELIVERED	2760.000	LF				
0180	501.461 STEEL H-BEAM PILES 73 LBS/FT, IN PLACE	2540.000	LF				
0190	501.90 PILE TIPS	38.000	EA				
0200	501.91 PILE SPLICES	38.000	EA				
0210	501.92 PILE DRIVING EQUIPMENT MOBILIZATION	LUMP		LUMP			

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0220	502.219 STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	LUMP	LUMP			
0230	502.239 STRUCTURAL CONCRETE PIERS	LUMP	LUMP			
0240	502.261 STRUCTURAL CONCRETE ROADWAY & SIDEWALK SLAB ON CONCRETE BRIDGE	LUMP	LUMP			
0250	502.31 STRUCTURAL CONCRETE APPROACH SLABS	LUMP	LUMP			
0260	502.38 STRUCTURAL CONCRETE ARCH TYPE	LUMP	LUMP			
0270	502.381 STRUCTURAL CONCRETE TIE GIRDER	LUMP	LUMP			
0280	502.431 STRUCTURAL CONCRETE BEAM	LUMP	LUMP			
0290	502.49 STRUCTURAL CONCRETE CURBS AND SIDEWALK	LUMP	LUMP			
0300	503.12 REINFORCING STEEL, FABRICATED AND DELIVERED	660640.000 LB				
0310	503.13 REINFORCING STEEL, PLACING	660640.000 LB				
0320	507.0841 STEEL PIPE HAND RAILING	LUMP	LUMP			

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0330	508.14 HIGH PERFORMANCE WATERPROOFING MEMBRANE	LUMP	LUMP			
0340	510.10 SPECIAL DETOUR 24' ROADWAY WIDTH VEHICULAR & PEDESTRIAN TRAFFIC NOT SEPARATED	LUMP	LUMP			
0350	512.081 FRENCH DRAINS	LUMP	LUMP			
0360	514.06 CURING BOX FOR CONCRETE CYLINDERS	1.000 EA				
0370	515.21 PROTECTIVE COATING FOR CONCRETE SURFACES	LUMP	LUMP			
0380	520.21 EXPANSION DEVICE - GLAND SEAL	2.000 EA				
0390	523.52 BEARING INSTALLATION	28.000 EA				
0400	523.5401 LAMINATED ELASTOMERIC BEARINGS, FIXED	24.000 EA				
0410	523.5404 LAMINATED ELASTOMERIC BEARINGS, EXPANSION SPAN 2	4.000 EA				
0420	525.72 EXTERIOR BENCH CAPS	12.000 EA				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0430	525.73 INTERIOR BENCH UNITS	8.000 EA				
0440	525.74 INTERPRETIVE SIGN BASE	2.000 EA				
0450	526.324 TEXAS CLASSIC RAIL - MODIFIED 1246.00 LF	LUMP	LUMP			
0460	535.61 PRESTRESSED STRUCTURAL CONCRETE I-GIRDERS	LUMP	LUMP			
0470	535.62 PRESTRESSED STRUCTURAL CONCRETE BOX BEAM	LUMP	LUMP			
0480	535.64 POST TENSIONING SYSTEM	LUMP	LUMP			
0490	535.65 STRUCTURAL STRAND HANGER SYSTEM	LUMP	LUMP			
0500	603.159 12 INCH CULVERT PIPE OPTION III	122.000 LF				
0510	603.16 15 INCH CULVERT PIPE OPTION I	72.000 LF				
0520	603.169 15 INCH CULVERT PIPE OPTION III	192.000 LF				
0530	603.179 18 INCH CULVERT PIPE OPTION III	22.000 LF				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0540	603.19 24 INCH CULVERT PIPE OPTION I	48.000 LF				
0550	603.199 24 INCH CULVERT PIPE OPTION III	206.000 LF				
0560	603.42 30 INCH REINFORCED CONCRETE PIPE CLASS IV	14.000 LF				
0570	604.072 CATCH BASIN TYPE A1-C	7.000 EA				
0580	604.15 MANHOLE	2.000 EA				
0590	604.164 REBUILDING CATCH BASIN	1.000 EA				
0600	604.249 CATCH BASIN TYPE F6-C	2.000 EA				
0610	604.252 CATCH BASIN TYPE A5-C	2.000 EA				
0620	604.31 DRYWELL CATCH BASIN	1.000 EA				
0630	605.09 6 INCH UNDERDRAIN TYPE B	174.000 LF				
0640	605.11 12 INCH UNDERDRAIN TYPE C	132.000 LF				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0650	605.12 15 INCH UNDERDRAIN TYPE C	104.000 LF				
0660	605.13 18 INCH UNDERDRAIN TYPE C	328.000 LF				
0670	606.1721 BRIDGE TRANSITION - TYPE 1	3.000 EA				
0680	606.23 GUARDRAIL TYPE 3C - SINGLE RAIL	288.000 LF				
0690	606.231 GUARDRAIL TYPE 3C - 15 FOOT RADIUS AND LESS	25.000 LF				
0700	606.232 GUARDRAIL TYPE 3C - OVER 15 FOOT RADIUS	25.000 LF				
0710	606.265 TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	2.000 EA				
0720	606.353 REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	6.000 EA				
0730	606.48 SINGLE GALVANIZED STEEL POST	3.000 EA				
0740	606.61 STEEL - BACKED TIMBER GUARDRAIL	24.000 LF				
0750	606.79 GUARDRAIL 350 FLARED TERMINAL	1.000 EA				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0760	607.22 CEDAR RAIL FENCE	160.000 LF				
0770	607.24 REMOVE AND RESET FENCE	116.000 LF				
0780	607.25 REMOVE AND RESET CHAIN LINK FENCE	166.000 LF				
0790	608.29 GRANITE WITH STONE DUST BASE	50.000 SY				
0800	609.11 VERTICAL CURB TYPE 1	1230.000 LF				
0810	609.12 VERTICAL CURB TYPE 1 - CIRCULAR	185.000 LF				
0820	609.234 TERMINAL CURB TYPE 1 - 4 FOOT	17.000 EA				
0830	609.237 TERMINAL CURB TYPE 1 - 7 FOOT	8.000 EA				
0840	609.2371 TERMINAL CURB TYPE 1- 7 FT - CIRCULAR	7.000 EA				
0850	609.31 CURB TYPE 3	300.000 LF				
0860	609.34 CURB TYPE 5	122.000 LF				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0870	609.35 CURB TYPE 5 - CIRCULAR	34.000 LF				
0880	610.08 PLAIN RIPRAP	840.000 CY				
0890	610.18 STONE DITCH PROTECTION	17.000 CY				
0900	613.319 EROSION CONTROL BLANKET	59.000 SY				
0910	615.07 LOAM	380.000 CY				
0920	618.13 SEEDING METHOD NUMBER 1	28.000 UN				
0930	618.1401 SEEDING METHOD NUMBER 2 - PLAN QUANTITY	6.000 UN				
0940	619.12 MULCH	35.000 UN				
0950	619.1401 EROSION CONTROL MIX	760.000 CY				
0960	620.58 EROSION CONTROL GEOTEXTILE	65.000 SY				
0970	621.025 EVERGREEN TREES (3 FOOT - 4 FOOT) GROUP A	12.000 EA				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0980	621.026 EVERGREEN TREES (3 FOOT - 4 FOOT) GROUP B	6.000 EA				
0990	621.038 EVERGREEN TREES (5 FOOT - 6 FOOT) GROUP B	6.000 EA				
1000	621.046 EVERGREEN TR (8' - 10') GP A	6.000 EA				
1010	621.048 EVERGREEN TR (8' - 9') GP C	2.000 EA				
1020	621.126 SMALL DECIDUOUS TREES (6 FOOT - 8 FOOT) GROUP A	12.000 EA				
1030	621.195 MEDIUM DECIDUOUS TREE (1.75 INCH - 2 INCH CALIPER) GROUP A	6.000 EA				
1040	621.255 LARGE DECIDUOUS TREES (8 FOOT - 10 FOOT) GROUP A	6.000 EA				
1050	621.262 LARGE DECIDUOUS TREES (10 FOOT - 12 FOOT) GROUP B	6.000 EA				
1060	621.273 LARGE DECIDUOUS TREE (2 INCH - 2.50 INCH CALIPER) GROUP A	12.000 EA				
1070	621.275 LARGE DECIDUOUS TREE (2 INCH - 2.50 INCH CALIPER) GROUP C	6.000 EA				
1080	621.285 LARGE DECIDUOUS TREE (3 INCH - 3.50 INCH CALIPER) GROUP A	3.000 EA				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1090	621.401 DWARF EVERGREENS (2 FOOT - 2.50 FOOT) GROUP A	12.000 EA				
1100	621.546 DECIDUOUS SHRUBS (2 FOOT - 3 FOOT) GROUP A	36.000 EA				
1110	621.547 DECIDUOUS SHRUBS (2 FOOT - 3 FOOT) GROUP B	66.000 EA				
1120	621.559 DECIDUOUS SHRUBS (4 FOOT - 5 FOOT) GROUP B	6.000 EA				
1130	621.71 HERBACEOUS PERENNIALS GROUP A	120.000 EA				
1140	621.711 HERBACEOUS PERENNIALS GROUP B	132.000 EA				
1150	621.80 ESTABLISHMENT PERIOD TWO YEAR MAINTENANCE	LUMP	LUMP			
1160	626.22 NON-METALLIC CONDUIT	175.000 LF				
1170	627.18 12 " SOLID WHITE PAVEMENT MARKING	120.000 LF				
1180	627.711 WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE (PLAN QUANTITY)	8350.000 LF				
1190	627.75 WHITE OR YELLOW PAVEMENT AND CURB MARKING	500.000 SF				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1200	629.05 HAND LABOR, STRAIGHT TIME	80.000 HR				
1210	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	120.000 HR				
1220	631.14 GRADER (INCLUDING OPERATOR)	24.000 HR				
1230	631.15 ROLLER, EARTH AND BASE COURSE (INCLUDING OPERATOR)	24.000 HR				
1240	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	120.000 HR				
1250	634.16 HIGHWAY LIGHTING	LUMP	LUMP			
1260	634.2041 LUMINAIRES	8.000 EA				
1270	634.2043 LUMINAIRES - HORIZONTAL SPOT	20.000 EA				
1280	634.21 CONVENTIONAL LIGHT STANDARD	4.000 EA				
1290	635.14 PREFABRICATED CONCRETE MODULAR GRAVITY WALL	575.000 SF				
1300	638.01 EMBEDDED WORK IN STRUCTURE	LUMP	LUMP			

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1310	639.18 FIELD OFFICE TYPE A	1.000 EA				
1320	652.38 FLAGGER	500.000 HR				
1330	652.39 WORK ZONE TRAFFIC CONTROL	LUMP	LUMP			
1340	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP	LUMP			
1350	659.10 MOBILIZATION	LUMP	LUMP			
1360	660.21 ON-THE-JOB TRAINING (BID)	6000.000 HR				
1370	812.162 ADJUSTING SEWER MANHOLE TO GRADE	3.000 EA				
1380	812.164 REBUILDING SEWER MANHOLE	3.000 EA				
1390	823.332 GATE VALVE BOX, ADJUST TO GRADE	7.000 EA				
	SECTION 0001 TOTAL					.

SECTION 0002 ALTERNATE NO.1 ROCK SOCKETED PILES
ALT GROUP AN1

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1400	206.10 STRUCTURAL EARTH EXCAVATION - PIERS	1055.000 CY				
1410	501.231 DYNAMIC LOADING TEST	8.000 EA				
1420	501.49 STEEL H-BEAM PILES 84 LBS/FT, DELIVERED	1040.000 LF				
1430	501.491 STEEL H-BEAM PILES 84 LBS/FT, IN PLACE	1040.000 LF				
1440	501.70 STEEL PIPE PILES, DELIVERED	2340.000 LF				
1450	501.701 STEEL PIPE PILES, IN PLACE	2132.000 LF				
1460	501.802 ROCK SOCKET	520.000 LF				
1470	501.902 PIPE PILE - CUTTING TEETH	52.000 EA				
1480	501.91 PILE SPLICES	65.000 EA				
1490	501.921 PILE DRIVING EQUIPMENT MOBILIZATION - PIERS	LUMP	LUMP			
1500	502.24 STRUCTURAL CONCRETE PIERS (PLACED UNDER WATER)	1055.000 CY				

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
1510	511.07 COFFERDAM: PIER NO.1	LUMP	LUMP			
1520	511.07 COFFERDAM: PIER NO.2	LUMP	LUMP			
1530	832.071 CONTRACTOR ALLOWANCE	LUMP	LUMP		40000	00
	SECTION 0002 TOTAL					

SECTION 0003 ALTERNATE NO.2, DEEP BEDROCK SEAL
ALT GROUP AN2

1540	206.10 STRUCTURAL EARTH EXCAVATION - PIERS	3380.000 CY				
1550	206.11 STRUCTURAL ROCK EXCAVATION - PIERS	250.000 CY				
1560	502.24 STRUCTURAL CONCRETE PIERS (PLACED UNDER WATER)	3400.000 CY				
1570	511.07 COFFERDAM: PIER NO.1	LUMP	LUMP			
1580	511.07 COFFERDAM: PIER NO.2	LUMP	LUMP			
1590	832.071 CONTRACTOR ALLOWANCE	LUMP	LUMP		128000	00
	SECTION 0003 TOTAL					

CONTRACT ID: 006900.01 PROJECT(S): BH-6900(01)X

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	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 **006900.01**, for the **Covered Bridge Replacement** in the town of **Norridgewock**, County of **Somerset**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

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

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

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **October 1, 2011.** 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 $_____

Section 0003 $_____

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 006900.01 Covered 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: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan by 4:30pm on the day of bid opening to the Contracts Engineer.

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

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

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

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

CONTRACTOR

_____	_____
Date	(Signature of Legally Authorized Representative of the Contractor)
_____	_____
Witness	(Name and Title Printed)

G. Award.

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

Section 0001 ❑
Section 0002 ❑
Section 0003 ❑

Contract Amount: _____

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

MAINE DEPARTMENT OF TRANSPORTATION

_____	_____
Date	By: David A. Cole, Commissioner
_____	
Witness	

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and _____ 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 **006900.01**, for the **Covered Bridge Replacement** in the town of **Norridgewock**, County of **Somerset**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

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

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

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **October 1, 2011.** 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 $_____

Section 0003 $_____

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 006900.01 Covered 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: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan by 4:30pm on the day of bid opening to the Contracts Engineer.

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

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

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

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

CONTRACTOR

_____	_____
Date	(Signature of Legally Authorized Representative of the Contractor)
_____	_____
Witness	(Name and Title Printed)

G. Award.

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

Section 0001 ❑
Section 0002 ❑
Section 0003 ❑

Contract Amount: _____

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

MAINE DEPARTMENT OF TRANSPORTATION

_____	_____
Date	By: David A. Cole, Commissioner
_____	
Witness	

CONTRACT AGREEMENT, OFFER & AWARD

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

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

SAMPLE

A. The Work.

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

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

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

B. Time.

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

C. Price.

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

D. Contract.

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

E. Certifications.

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

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in Appendix A to Division 100 of the Standard Specifications Revision of December 2002 (Federal Contract Provisions Supplement), and the Contract are still complete and accurate as of the date of this Agreement.

2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.

3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

SAMPLE

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

PIN 1234.00 West Eastport, Hot Mix Asphalt Overlay,

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

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

As Offeror also agrees:

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

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

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

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

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

SAMPLE

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)

SAMPLE

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

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

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

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

WITNESSES:	SIGNATURES:
	CONTRACTOR:
Signature.....	.....….....
Print Name Legibly	Print Name Legibly ...…….....
	SURETY:
Signature	.....…….....
Print Name Legibly	Print Name Legibly .....
SURETY ADDRESS:	NAME OF LOCAL AGENCY:
.....	ADDRESS .....
.....	...…….....
.....	.....…….....
TELEPHONE.....	.....…….....

SAMPLE

BOND # _____

CONTRACT PAYMENT BOND
(Surety Company Form)

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

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

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

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

WITNESS:	SIGNATURES:
	CONTRACTOR:
Signature…….....	.....….....
Print Name Legibly .....……..	Print Name Legibly ….....
	SURETY:
Signature.....	...….....
Print Name Legibly	Print Name Legibly ….....
SURETY ADDRESS:	NAME OF LOCAL AGENCY:
...….....	ADDRESS ….....
.....	…….....….....
TELEPHONE	…….....….....

SAMPLE

SPECIAL PROVISION 105
CONSTRUCTION AREA

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

(a) The section of highway under construction beginning at station 10+96.65 and ending at station 30+50.00. The section of highway under construction beginning at station 500+00.00 and ending at station 502+22.44. The section of highway under construction beginning at station 300+00 and ending at station 303+00.00. The section of highway under construction beginning at station 400+00.00 and ending at station 402+25.00.

(b) (Route 201A/ 8) over the Kennebec River from station 10+96.65 to station 30+50.00 of the construction plus approaches. (Depot Street) from station 500+00.00 to station 502+22.44 of the construction plus approaches. (River road) from station 300+00 to station 303+00.00 of the construction plus approaches. (Sophie Mae Lane) from station 400+00.00 to station 402+25.00 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

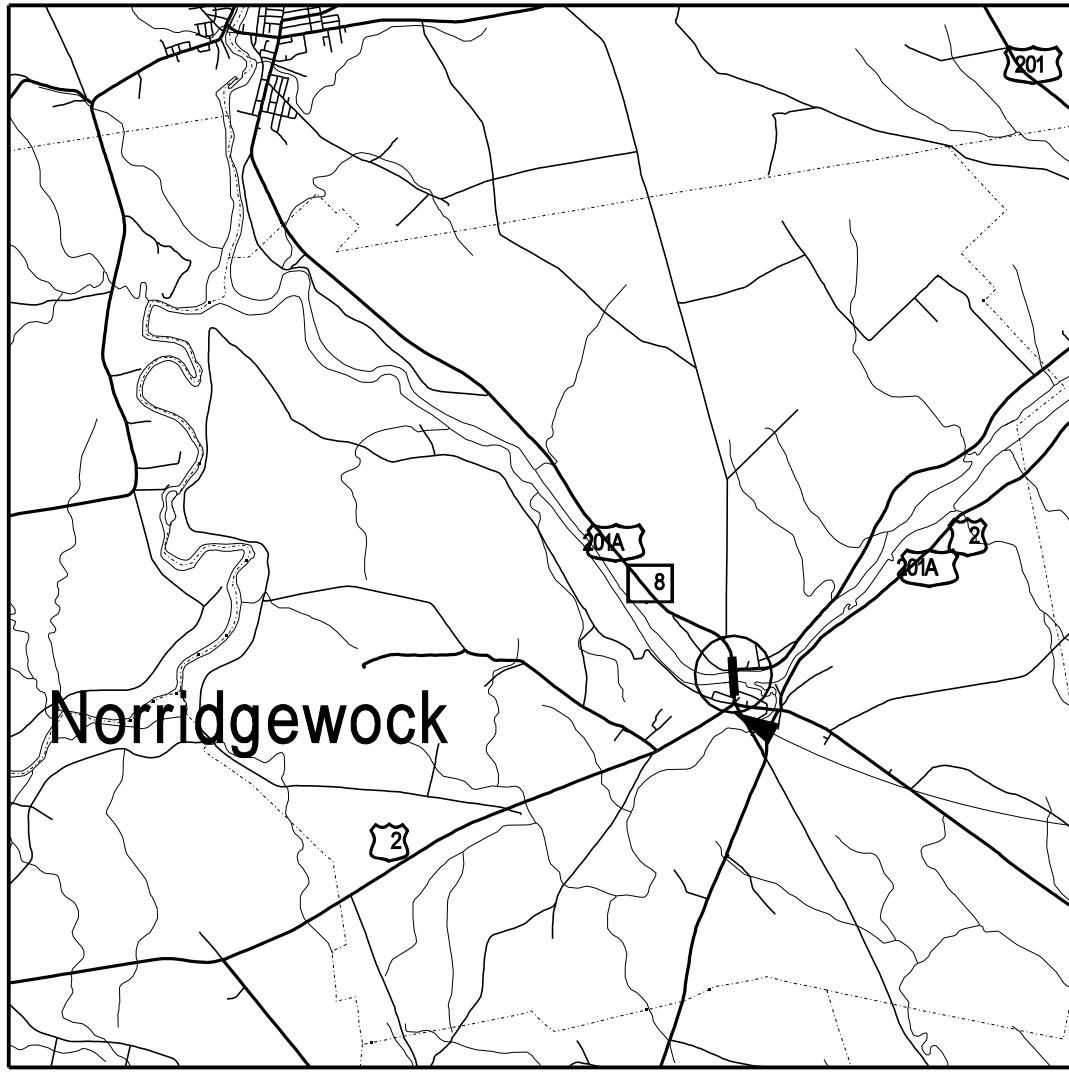
D. For construction areas, carries no fee and does not come within the scope of this section."

The Municipal Officers for the **Town of Norridgewock** 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, 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.

BRIDGE NO. 2187



Project Location

LOCATION MAP

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

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

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

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

General Decision Number: ME080005 04/04/2008 ME5

Superseded General Decision Number: ME20070005

State: Maine

Construction Type: Heavy

Counties: Aroostook, Hancock, Kennebec, Knox, Lincoln, Piscataquis, Sagadahoc, Somerset, Waldo and Washington Counties in Maine.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	02/08/2008
1	04/04/2008

ENGI0004-013 04/01/2007

	Rates	Fringes
Power equipment operators:		
Cranes	$ 17.58	8.30
Drillers	$ 17.58	8.30
Mechanics	$ 17.58	8.30
Oilers	$ 17.58	8.30

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* IRON0496-002 03/16/2008

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 21.15	16.65

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* SUME2000-004 10/24/2000

	Rates	Fringes
Carpenters: (including Form Work)	$ 14.17	2.11
ELECTRICIAN	$ 13.67	1.39
IRONWORKER, REINFORCING	$ 29.00	3.32
Laborers:		
Flaggers	$ 6.00	
Pipelayers	$ 10.79	.60
Unskilled	$ 9.80	
Power equipment operators:		
Backhoes	$ 11.89	1.15
Bulldozers	$ 11.81	1.78
Excavator	$ 13.40	3.78
Graders	$ 12.10	1.40
Loaders	$ 12.40	2.88

Pavers	$ 7.50	
Piledrivers	$ 17.25	
Rollers	$ 10.18	1.46
Truck drivers:		
Dump	$ 9.17	.76

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

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Town: Norridgewock
Project: # BH-6900(01)X
PIN: 6900.01
Date: March 5, 2008

SPECIAL PROVISIONS
SECTION 104
Utilities

MEETING
A Preconstruction Utility Conference, as defined in Subsection 104.4.6 of the Standard Specifications is hereby called for.

GENERAL INFORMATION
These Special Provisions outline the arrangements that have been made by the Department for coordination of the work and for utility and/or railroad adjustments as defined in Subsection 104.4.6 and 104.4.8 of the Standard Specifications. The following list identifies all known utilities or railroads having facilities presently located within the limits of this project or intending to install facilities during project construction, unless otherwise provided.

Overview

Utility/Railroad	Aerial	Underground	Railroad
Central Maine Power Company	X	None	None
TDS (Somerset Telephone)	X	None	None
Time Warner Cable	X	None	None
Norridgewock Water District	None	X	None
Town of Norridgewock Sewer	None	X	None
Maine Central Railroad	None	None	X

Temporary utility adjustments are not contemplated unless herein provided for.

The approximate locations of major items of existing and proposed (permanent and temporary) utility plant 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.

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

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

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

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

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

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

All clearing and tree removal which is a part of this contract in areas where utilities are involved must be completed by the Contractor before the utilities can relocate their facilities. The Contractor shall be prepared to clear trees to the Right of Way line in the vicinity of proposed new poles and utility lines. No clearing shall begin until after the preconstruction utility meeting. Also see General Construction Note #5 in regards to clearing.

AERIAL

Temporary

TDS (Somerset Telephone Company) plans to run a temporary aerial crossing of the Kennebec River downstream of the existing bridge in the area of the relocated sewer main and water main crossing of the Kennebec River.

They plan to install three new temporary poles and run a new temporary cable; their estimated time is 15 working days.

Time Warner Cable plans to run a new temporary cable on the temporary TDS (Somerset telephone Company) poles; their estimated time is 10 working days.

Permanent

Central Maine Power Company plans to install 7 new poles:

Station	Offset
14+78	25 Ft. Right
16+53	30 Ft. Left
17+40	30 Ft. Left
25+65	47 Ft. Left
27+10	28 Ft. Left
27+50	40 Ft. Right
29+00	28 Ft. Left

South Approach (From 11+00 to 18+50)
Transfer existing conductors on the new poles; estimated time is 5 working days.

North Approach (From 25+00 to 30+00)
Run new conductors on the new poles; estimated time is 15 working days.

TDS (Somerset Telephone Company)
South Approach (From 11+00 to 18+50)
Transfer existing cable to the new poles; estimated time is 1 working day.

North Approach (From 25+00 to 30+00)
Run new cables on the new poles; estimated time is 5 working days.

Time Warner Cable
South Approach (From 11+00 to 18+50)
Transfer existing cable to the new poles; estimated time is 1 working day.

North Approach (From 25+00 to 30+00)
Run new cable on the new poles; estimated time is 5 working days.

UNDERGROUND
TDS (Somerset Telephone Company) (From 17+00 to 27+50)
They plan to install a new manhole at Station 17+00, run new conduit and cable to a pole at Station 27+50; their estimated time is 20 working days.
The telephone company has an existing buried fiber optic cable starting at Station 27+50 on the Right and extending all the way to Madison.

Time Warner Cable (From 16+75 to 28+25), plans to install a new manhole at Station 16+75, run new conduit and cable to a pole at Station 28+25; their estimated time is 20 working days.

Norridgewock Water District has relocated their water main downstream to a new in stream crossing. The above work has been completed.
South Approach: The District has 1 gate valve box to adjust.
North Approach: The District has 5 gate valve boxes to adjust. The adjustments of these gate valve boxes are to be accomplished by the Contractor. This work is included as part of the Department's bridge contract.

Town of Norridgewock's Sewer has relocated their sewer main downstream to a new in stream crossing. The above work has been completed. South Approach to the bridge, the

Town still has sewer work to do. They plan to install sewer pump station, sewer force main and hook up two houses that are located adjacent to the river; their estimated time to do the above work is 15 working days. North Approach: the Town has completed their work.
South Approach: The Town has 3 manholes to adjust.
North Approach: The Town has 3 manholes to adjust.
The adjustments of these manholes are to be accomplished by the Contractor. This work is included as part of the Department's bridge contract.

Railroad
Maine Central Railroad Company plans to install a new track panel; their estimated time is 10 working days.

They also plan to relocate the two railroad crossing signals to new locations; their estimated time is 18 working days.

The bridge Contractor is to assist the Railroad with excavation for the conduit trenches, signal bases and excavation for the installation of the new tract panel.

Contractor
It is the responsibility of the Contractor with the utility representatives and the Department's Resident present to layout all of the proposed utility facilities in the field prior to the start of construction.

The Contractor is to remove sections of pavement and replace this pavement to assess the condition of the existing rails, tie and ballast on this railroad crossing. This shall be accomplished within two to three months of the project award. This work shall be coordinated through the Railroad and MDOT Resident. The Railroad shall require 10 working days advance notice prior to this work being accomplished. This shall be discussed in greater detail at the pre-construction utility meeting.

The above work is to be paid for under the appropriate equipment rental item. Any aggregate required shall be paid for under Item #304 aggregate base and sub-base course, and any pavement shall be paid for under Item # 403; hot bituminous pavement.

The Town existing sewer transit pipe is attached to the bridge and is not in use. The Town plans to remove this pipe prior to the existing bridge removal. The bridge Contractor shall plan their work accordingly and in conjunction with the Town.

Utility Specific Issues
Any tree removal or tree trimming required within ten feet of the electrical conductors must be done by a qualified contractor. A list if 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 shall be responsible for determining the presence of underground utility facilities prior to commencing any excavating work and shall notify utilities of proposed excavation in accordance with M.R.S.A. Title 23 §3360-A, Maine "Dig Safe" System.

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

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

THE CONTRACTOR SHALL PLAN AND CONDUCT HIS WORK ACCORDINGLY.

jq

CC: Wayne Frankhauser, Project Manager

Town: Norridgewock
PIN #: 6900.01
Date: August 1, 2007

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, stream, brook, lake, and pond or below the mean high water mark of any tidal water body.

I. **In-Water work is allowed anytime**

II. In-Water work window applies to the following water bodies at the following station #'s:

1. Kennebec River

III. Special Conditions:

1. Impacts are not to exceed those shown on ACOE Permit unless a modification is completed.

IV. Approvals:

1. Soil Erosion and Water Pollution Control Plan

V. All activities are prohibited (including placement and removal of cofferdams unless otherwise permitted) 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.

NOTE: Regulatory Review and Approval is required to modify the existing In-Water work window. Procedure to modify the existing in-water work window can be found on the back of this document or the next page.

PROCEDURE FOR PROCESSING ANY IN-WATER WORK EXTENSION

MaineDOT will not incur any claims as a result of an In-Water modification being denied.

The following procedure will assist in processing a review by the Regulatory Agencies when the in-water work restrictions of a permit cannot be followed:

1. The Contractor must submit to the MaineDOT Resident in writing the in- water work extension request. The written request shall be submitted in accordance with State of Maine DOT Standard Specification section 107.4 Scheduling of Work This is a change in the contract, and per MaineDOT Standard Specification section 109, a change order is required.

2. The Contractor's written request should have the following items identified:

   A) Description of the scope of work In-Water
   B) How long to complete the scope of work In-Water
   C) The reason the In-Water work was not done in accordance with the Permit Conditions and/or Special Provision 105 Specification.
   D) Benefit to the MaineDOT for this change of Contract requirement
   E) Photos of the area of work described

3. Once the Environmental Office receives this request, it will be evaluated for further processing.

4. If the request is approved by the Regulatory Agencies, then a Change Order will be issued by the MaineDOT Resident indicating the implication of or degree of monetary and time commitment this change has on the MaineDOT's contract.

SPECIAL PROVISION
SECTION 105.8.2
Permit Requirements
(Coast Guard Requirements)

The attached **U.S. Coast Guard Bridge Administration -GENERAL CONSTRUCTION REQUIREMENTS** include a description of the additional information required to be submitted by the Contractor prior to starting work. In addition to the submittal requirements, the Contractor shall comply with all other requirements included in this document.

Payment for the work associated with complying with this Special Provision shall not be made directly, but will be considered incidental to related Contract Pay Items.

U.S. Coast Guard Bridge Administration

GENERAL CONSTRUCTION REQUIREMENTS

1. All bridge closures, or bridge operating schedule changes, must be requested in writing, 60 days in advance, from the First Coast Guard District Bridge Branch Office. No channel restrictions, or vertical clearance reductions may be made without written approval from the above office. Waterway closures or safety zones must also be requested 60 days in advance.

2. All submissions to the Coast Guard for review and approval must first be approved by the *owner of the bridge or their authorized agent*. All submission of plans, scope of work, and schedules of operation must be sent to the First Coast Guard District, Bridge Branch Office.

3. At least 30 days prior to commencement of any work**,** we must have for our review, a copy of the construction plans, contractor' schedule, preferably depicted in a time line graphic format, and the contractor's daily hours of operation. The construction plan package must show the following: **(1)** a plan of the entire waterway area in the vicinity of the project. **(2)** The location of work barges and any anchor lines during working and off-hours. **(3)** In addition, a drawing must be included, if applicable, depicting any scaffolding or containment used indicating the location and the total vertical or horizontal channel reduction. All vertical clearance reductions below low steel or concrete under the bridge as a result of the use of scaffolding must be clearly detailed on the drawings shown in total feet. **(4)** Emergency 24 hour telephone numbers for all responsible individuals for this project must be submitted to this office before any phase of construction begins in case of an emergency situation during off-hours.

4. Scaffolding used under ANY span of the bridge must be lighted with constant burning red lights every 50 feet and on all corners. The placement of scaffolding must not interfere with the ability of a moveable bridge to open for vessel traffic. Moveable bridges must continue to operate according to their normal schedule unless special drawbridge operation regulation changes have been requested. Warning signs must be posted on both sides of the bridge, visible for a 1-mile range, to warn mariners of the vertical clearance reduction. The signs shall face upstream and downstream so as to draw the mariner's attention to the fact that the clearance has been reduced.

5. All barges placed in the waterway must be lighted with constant burning white lights on all four corners of the barge. The contractor is required to comply with all provisions of the Navigation Rules International-Inland**,** regarding the use of work barges or floating equipment in the waterway. Copies are available from the U.S. Government Bookstore, Room 110, Federal Building, 26 Federal Plaza, New York, NY 10278. Telephone (212) 264-3825.

6. Placement of construction barges in the navigable channel shall be done so as to provide a minimum horizontal clearance reduction. Only one navigation channel of a swing bridge may be blocked by work equipment at anytime. Barges must be moved out of the navigable channel after working hours unless approved in writing by this office.

7. Barges held in place by anchor lines must be marked by anchor buoys, which should be lighted.

8. An as built survey must be taken upon completion of this project, approved by a professional engineer or land surveyor verifying the bridge clearances.

9. The on-scene contractor must have a VHF-FM marine radio set to the bridge communication channels 16/13 or the designated channel for the bridge. Additional marine radios monitoring the above channels must also be maintained at the main control of any floating equipment or barges on station.

10. Preventive measures must be taken to prevent any hot work, debris, or construction material from entering the waterway. This includes sandblasting material, paint, and any concrete work by-products. Welding and burning must cease upon approach of a vessel and shall not start again until the vessel has passed the bridge.

11. The project manager must contact the Coast Guard Sector Northern New England via marine radio before commencement of any and after completion of any Hot Work. A cell phone back-up may be used to contact the above Coast Guard Unit at (207) 780-3251.

12. If permanent bridge navigational lighting cannot be maintained operational during any phase of this project, temporary battery/power lights must be installed at the same locations. These temporary lights must be visible for a distance of **2,000 yards on 90% of the nights of the year**. Generally, a lamp of **(50 candela)** will meet these requirements. Plans for temporary lighting shall be submitted to this office for written approval. Deviations from the approved temporary lighting shall be permitted only upon written authorization from this office.

13. **All newly constructed bridge piers, or those in the process of demolition, must be lighted with either red or white flashing (60 flashes per minute) lights. All cofferdams used during construction must also be lighted with red or white flashing (60 flashes per minute) on all four corners.**

14. Bridge protective fenders shall not be constructed or rebuilt with any metal surfaces on the rubbing face of the fender system. All bolts, spikes, or other metal fastening devices must be countersunk. Metal splicing plates, if used, shall be mounted on back of outer wales.

15. All piles including those previously damaged or broken that are not being used in the new or repaired fender shall be extracted rather than cut off at the mud line. Upon completion of all fender repairs a bottom sweep is required to determine if any piles or debris are present in the waterway. A wire-drag sweep or side-scan sonar is the preferred method.

16. During the progress of work should any debris or equipment enter the waterway and become a hazard to navigation, immediate notice shall be given to the Coast Guard and the object removed as soon as possible. Until removal can be effected, the obstruction shall be properly marked.

17. Spillage of oil and hazardous substances is specifically prohibited by the **Federal Water Pollution Control Act**, as amended. Approved spill containment equipment and absorbent material must be located at the project site in the event of a spill into the waterway or the shoreline. The Coast Guard must be notified immediately at (800) 424-8802.

18. The bridge owner is responsible to ensure that channel depths are not affected by this work. Any material, machinery or equipment lost, dumped, thrown into, or otherwise entering the waterway must be removed immediately. If immediate removal is impractical and the object entering the waterway could possibly obstruct or hazard navigation, the object must be marked immediately to protect navigation and the Coast Guard shall be notified as soon as possible. Upon request of the Coast Guard or Corps of Engineers, the bridge owner/contractor shall provide the necessary equipment and personnel to determine the presence of any suspected obstructions in the waterway.

19. This approval may be revoked and/or civil penalties imposed for failure to ensure that the above listed stipulations are adhered to or if work is determined to hazard or impair navigation.

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
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).

Norridgewock, Covered Bridge
PIN 6900.01
March 20, 2008

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

The first formula under Item H under Subsection 106.7.1, Standard Deviation Method, of the 2002 Revision of the Standard Specifications is deleted and replaced with the following. This formula shall apply to structural concrete, only:

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

SPECIAL PROVISION
SECTION 107
PROSECUTION AND PROGRESS
(Contract Time)

The specified contract completion date is October 1, 2011.

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

107.8.1 Fabrication Time.

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

Element	Time	Supplemental LD
1) Precast prestressed concrete box beams	80 calendar days	$500 per calendar day
2) Precast Concrete NEBT Girders	50 calendar days	$500 per calendar day
2) Precast concrete deck panels	55 calendar days	$500 per calendar day

The Contractor is responsible for requiring the 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 fabricators, manufacturers and/or suppliers. The Contractor and fabricator/manufacturer 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: tensioning of strands, batching and casting of concrete, breaking of test cylinders, de-tensioning.

Town:
PIN:
Date:

SPECIAL PROVISION
SECTION 107
TIME

107.4.2 Schedule of Work Required. This Section is amended by the following:

In addition to the Contractors initial CPM Schedule, the Department will require the Contractor to update the schedule monthly to show current progress. The submittal date for monthly updates shall be determined by the Resident.

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 202
REMOVING EXISTING BRIDGE

The following shall be added to this Section:

202.03 Removing Existing Bridges The bridge shall be removed in its entirety to the following limits:

- Abutment 1: to elevation 171, one foot behind the back face of abutments and wingwalls.
- Abutment 2: to elevation 168, one foot behind the back face of abutments and wingwalls. The slab apron between the wingwalls shall be removed.
- Pier 1: to elevation 152
- Piers 2 through 6: to one foot below streambed. Blasting will be permitted subject to restrictions described in Section 105 of the Standard Specifications. Containment of pollutants and debris shall be per the contractor's SEWPCP.
- Pier 7: to elevation 157
- Superstructure: complete removal

The Department will mark approximately 100 intact granite slabs in front of the abutments. The Contractor shall remove and stockpile these granite slabs in a safe location taking necessary precautions not to damage them. Approximately 50 will be used to construct the granite terrace; the remaining shall be delivered to the Town of Norridgewock Public Works Garage. Payment for removal, stockpiling and delivery to the Town shall be considered incidental to Item 202.19 Remove Existing Bridge. Any additional slabs may be used on site as riprap. All operations regarding these slabs shall be approved by the Resident

SPECIAL PROVISION
SECTION 206
EXCAVATION AND EMBANKMENT
(Riverbed Excavation -- Dredge Materials)

Description. In Maine, Dredge Material (material excavated from below normal high water, which could be dry at the time of excavation) is regulated as a Special Waste.

The Dredge Materials from the Norridgewock Bridge site meet the grain size exemption for Beneficial Use at the site of generation. This determination allows for the beneficial use of the material at the site in areas adjacent to and draining into the dredged water body. It is acknowledged that the excavation of Dredge may include some boulders. The Maine Department of Environmental Protection has determined that sound boulders (rock approximately 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 and Disposal: At the Contractor's option, Dredge material shall be disposed of in one of two ways:

1.) In approach areas approved by the Resident, the Contractor may use a limited volume of Dredge Material as Construction Fill.

2.) The contractor shall dispose of the dredge material at the Norridgewock Crossroads landfill. Disposal (tipping) fees will be negotiated between MaineDOT and the landfill. The Contractor shall pay the negotiated disposal fees. MaineDOT will reimburse the Contractor the cost of the disposal fees plus a 5% markup. Payment will be made by Contract Modification based on actual invoices plus the 5% markup.

Method of Measurement: Dredge Material will be measured by the cubic yard of material removed. Disposal (tipping) fees at the landfill will be measured by the ton of material delivered.

Basis of Payment: Dredge Material will be paid for at the contract unit price bid for Structural Excavation - Piers. Disposal (tipping) fees will be paid for by Contract Modification based on the actual invoiced tons of material delivered to the Norridgewock Crossroads landfill plus a 5% markup.

Payment shall be full compensation for excavation, dewatering, managing, transporting, and placement.

For bid purposes a lump sum Contractor Allowance of $40,000 for Alternate No. 1 Rock Socketed Pile Foundation and $128,000 for Alternate No. 2 Deep Seal on Bedrock Foundation has been included. The Contractor Allowance will not be paid directly, but has been included to account for the disposal (tipping) fees negotiated between the MaineDOT and the landfill. The Contractor will be reimbursed for the disposal (tipping) fees plus 5% markup by Contract Modification as indicated above.

Payment will be made under:

Pay Item		Pay Unit
206.10	Structural Earth Excavation - Piers	cubic yard
832.071	Contractor Allowance	Lump Sum

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, 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.

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 T312 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 15% reclaimed asphalt pavement (RAP) in any base, binder, surface, or shim course. The Contractor may be allowed to use more than 15% RAP, up to a maximum of 25% RAP, in a base, binder, or shim course provided that PG 58-34 asphalt binder is used in the mixture.

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 @ 50 gyrations 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 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
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

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 135 Mg [150 ton] for stone stockpiles, 70 Mg [75 ton] for sand stockpiles, and 45 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)					Voids Filled with Binder (VFB) (Minimum %)	Fines/Eff. Binder Ratio
				Nominal Maximum Aggregate Size (mm)						
	$N_{initial}$	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.

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 Bituminous Pavement, PGAB shall be 64-28, except that for mixtures containing greater than 15% but no more than 25% RAP the PGAB shall be PG 58-34. 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.

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. 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.

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 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 MDOT projects. On a daily basis, the Contractor shall perform nuclear density testing across the mat being placed, at 300 mm [12 in] intervals. If the values vary by more than 2.0% from the mean, the Contractor shall make adjustments 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 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.

On roads opened to two-way 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.

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 always maintain a uniform head of HMA during the 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 courses or when matching existing low type pavements.

Longitudinal joints shall be constructed in a manner that will best ensure joint integrity. Methods or activities that prove detrimental to the construction of 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
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 note detailing conditions under which the percent of RAP will vary from that specified on the JMF.
s. A note detailing when production will be halted due to QC testing results.

The QCP shall include the following technicians together with these 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 115 Mg [125 ton] (As noted in QC Plan)	ASTM D2950
%TMD (Base)	1 per 225 Mg [250 ton] (As noted in QC Plan)	AASHTO T269
Fines / Effective Binder	1 per 450 Mg [500 ton]	AASHTO T 312*
Gradation	1 per 450 Mg [500 ton]	AASHTO T30
PGAB content	1 per 460 Mg [500 ton]	AASHTO T164 or T308
Voids at N_{design}	1 per 450 Mg [500 ton]	AASHTO T 312*
Voids in Mineral Aggregate at N_{design}	1 per 450 Mg [500 ton]	AASHTO T 312*
Rice Specific Gravity	1 per 450 Mg [500 ton]	AASHTO T209
Coarse Aggregate Angularity	1 per 4500 Mg [5000 ton]	ASTM D5821
Flat and Elongated Particles	1 Per 4500 Mg [5000 ton]	ASTM D4791
Fine Aggregate Angularity	1 Per 4500 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 SHRP 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 900 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. Methods A and 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 0.85. 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 or percent passing 0.075 mm sieve using all Acceptance or all available Quality Control tests for the current lot is less than 0.85.

b. The Coarse Aggregate Angularity or Fine Aggregate Angularity value falls below the requirements of Table 3: Aggregate Consensus Properties Criteria for the design traffic level.

c. 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 individual gradation sieve sizes as required in Table 3, or Percent PGAB.

d. The Flat and Elongated Particles value exceeds 10% by ASTM D4791.

e. There is any visible damage to the aggregate due to over-densification other than on variable depth shim courses.

f. The Contractor fails to follow the approved QCP.

g. 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.

Paving operations shall not resume until the Contactor and the Department determines that material meeting the Contract requirements will be produced. 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.

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

On the first day of production in the current calendar year, or the first day of production of a new JMF the Department will take three random samples, which will be used to calculate the quality level of the in-place material in the event the lot is terminated prematurely. Only one of the three will be tested, the other two will be held onsite until at least three random samples have been taken, at which time the other two will be discarded.

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.

If the Department terminates a Lot prematurely, the samples from the first day's production will be used to calculate a volumetric pay factor, and a minimum of three cores will be used for a density pay factor, if applicable, for quantities placed to date.

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. 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. 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 4050 Mg [4500 tons], with unanticipated over-runs of up to 1350 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 675 Mg [750 ton] for mixture properties, 450 Mg [500 ton] for base or binder densities and 225 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%

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 4050 Mg [4500 tons], with unanticipated over-runs of up to 1350 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 675 Mg [750 ton] for mixture properties, 450 Mg [500 ton] for base or binder densities and 225 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 +/-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%

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 225 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 225 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 recut 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 pay factor for any single property or composite gradation falls below 0.85, the Contractor shall shut down the HMA plant. If any single pay factor for PGAB Content, VMA, or Air Voids 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 pay factor for any single property or composite gradation falls below 0.90, the Contractor shall shut down the HMA plant. 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 screen sizes listed in Table **7** for the type of HMA represented in the JMF. If any pay factor for any single property falls below 0.85, the Contractor shall shut down the HMA plant. If the PGAB content falls below 0.80, then the PGAB pay factor shall be 0.55. If the percent passing the nominal maximum sieve, the 2.36 mm sieve, the 0.300 mm sieve or the 0.075 mm sieve for Method C falls below 0.80, then the composite pay factor for the four sieves 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 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, % passing may only be disputed on sieves which are used for price adjustments

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	1.10 m/km [70 in/mile]
II	1.25 m/km [80 in/mile]
III	1.40 m/km [90 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]
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	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]
403.211	Hot Mix Asphalt (shimming)	MG [Ton]
403.212	Hot Mix Asphalt, 4.75 mm Nominal Maximum Size	MG [Ton]
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size, Base	MG [Ton]

SECTION 401
HOT MIX ASPHALT PAVEMENT
High Performance Rubberized Asphalt Pavement

The Special Provision 400 – Pavements; Section 401 – Hot Mix Asphalt Pavements ; the following subsections have been modified with the following :

401.01 Description. The Contractor shall furnish and place one or more courses of High Performance Rubberized Asphalt Pavement surface, or base, in accordance with the contract documents and in reasonably close conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established by the Resident.

This Special Provision requires the Contractor to design, produce, and install a High Performance Rubberized Asphalt Pavement course system that will serve as a waterproofing layer, as well as a base course / wearing course over the bridge deck surfaces.

The Department will accept this work under Quality Assurance provisions, in accordance with these specifications and the requirements of Section 106 - Quality.

Contractor Option – The contractor shall utilize one of the following materials and processes to design and produce a High Performance Rubberized Asphalt Pavement

Rubber Modifier Additive 401.021 The High Performance Rubberized Asphalt Pavement shall be modified with a polymer modifier packaged in 10.1kg (22.5 pound) units in meltable polyethylene bags, with a minimum of 45 pounds of polymer modifier. The meltable bags shall be introduced into the pug mill without opening, and will melt to disperse the additive through the normal mixing action of the pug mill. The exact rubber modifier content shall be determined by the mix design submitted by the Contractor and modifier supplier based on laboratory testing. The final blend will be in accordance with the rubber modifier manufacturer requirements and approved by the Engineer. The modifier shall be a concentrated thermoplastic virgin polymeric material that is waterproof, has a melting point of 250 degrees Fahrenheit and an embrittlement point of -34 degrees Fahrenheit.

Or

The granulated rubber shall be vulcanized rubber product from the ambient temperature processing of scrap, pneumatic tires. The granulated rubber shall meet the following gradations:

Sieve Size	% Passing
2.00 mm, (#10)	100
1.18 mm, (#16)	90 – 100
0.60 mm, (#30)	25 – 75
0.18 mm, (#80)	0 - 20

The use of rubber of multiple types from multiple sources is acceptable provided that the overall blend of rubber meets the gradation requirements. The length of the individual rubber particles shall not exceed 3 mm, (1/8”). The rubber shall be accepted by certification from the rubber supplier.

The percent of rubber shall be a minimum of 15% by weight of total asphalt-rubber mixture. The exact granulated rubber content shall be determined by the mix design submitted by the Contractor and granulated rubber supplier based on laboratory testing.

The temperature of the asphalt shall be between 177°C and 218°C, (350°F and 425°F), at the time of addition of the granulated reclaimed rubber. The asphalt and rubber shall be combined and mixed together in a blender unit and reacted for a minimum of one hour. The temperature of the asphalt-rubber mixture shall be above 163°C, (325°F), during the reaction period.

A mechanical blender for proper proportioning and thorough mixing of the asphalt-cement and granulated rubber is required. This unit shall be equipped with: an asphalt totaling meter (liters or gallons); a flow rate meter (liters per minute or gallons per minute); a positive displacement auger to feed the rubber properly to mixing chamber at the specified rate; and a static motionless mixer. Blender will have a separate asphalt cement feed pump and finished product pump to maximize production. Blender shall be capable of providing 100% proportional mix at any given time during the blending cycle and documentation from the manufacturer shall be submitted to the Maine DOT.

401.03 Composition of Mixtures; revised as follows:

The Contractor shall compose the High Performance Rubberized Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), mineral filler if required and crumb rubber concentrate. The final job mix design will be according to the crumb rubber modifier manufacturer’s requirements and approved by the Department. The High Performance Rubberized Asphalt Pavement shall be designed and tested according to AASHTO T312 and the design criteria listed below. 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).

Design Criteria

PGAB Content	6.5 – 8.0
Air Void	2.0 +/- 1.5%
Rubber Additive	As recommend by the Manufacturer.

GRADATION REQUIREMENTS

Sieve Size	Percent Passing
12.5 mm	100
9.5 mm [3/8 inch]	75-100
4.75 mm [No. 4]	55-85
2.36 mm [No. 8]	48-65
1.18 mm [No. 16]	15-25
0.600 mm [No. 30]	10-18
0.300 mm [No. 50]	5-10
0.075 mm [No. 200]	2-6.0

The construction of a test strip will be required prior to production of the High Performance Rubberized Asphalt Pavement.

401.031 Test Strip A test strip shall be constructed prior to the placement of High Performance Rubberized Asphalt Pavement on the bridge decks. The test strip will be constructed offsite to establish the proper production, placement, and compaction procedures for this contract prior to full plant production.

The test strip is to be constructed off site, and shall consist of a 20 ton minimum quantity. The Contractor shall notify the Department within 48 hours prior to their intent to construct the strip. The Contractor shall provide the Department with two mix samples from the test strip produced material for mix verification. The samples shall be tested for asphalt content and gradation against the JMF and other contract requirements before further production. A minimum of three cores will be sampled from the test strip, and the average density of the three is required to be above the LSL of 93.0 %. If the average density of the three cores is less than the LSL of 93.0, the test strip will be rejected and a new test strip will be required before further production. There will be no separate payment for material placed in a offsite test strip, but shall be considered incidental to the 403.325 High Performance Rubberized Asphalt Pavement , 9.5 mm item.

Modified bituminous concrete surface course production will not resume unless the Department is confident material meeting the contract requirements can be produced.

401.04 Temperature Requirements This section has been modified with the addition of the following:

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

At the Plant – Additive manufactures recommended mix temp. ± 10°C [20°F]
At the Paver – Additive manufactures recommended compaction temp. ± 10°C [20°F]

The JMF, and the mix subsequently produced, shall meet the requirements of the design criteria and Section 703.07. Under no circumstances will the Department accept HMA (unless the binder has been modified) that has been heated to temperatures exceeding the manufactures

recommendations. The Department will have a full time inspector in the plant during all production of the High Performance Rubberized Asphalt Pavement. The Contractor shall notify the Department within 48 hours prior to producing the High Performance Rubberized Asphalt Pavement.

401.05 Performance Graded Asphalt Binder This section has been modified with the addition of the following:

Unless otherwise noted in Special Provision 403 - Hot Bituminous Pavement, the PGAB shall be 64-28, or 70-28, except that for mixtures containing greater than 15% RAP the PGAB shall be PG 58-34. 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 26-01 Certifying Suppliers of PGAB.

401.08 Hauling Equipment This section has been modified with the addition of the following:

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

401.10 Rollers This section has been modified with the addition of the following:

Full compaction of the High Performance Rubberized Asphalt Pavement is required and shall be achieved by utilizing steel double drum drive rollers used in the static mode. One roller will be required for break down, and one for finish rolling. A third roller, the same as the two being utilized to do the work, will be on the job to cover any breakdowns. The rollers' water system must be in reliable working order, and apply even water coverage to the asphalt mat. High Performance Rubberized Asphalt Pavement may be temperatures are higher than conventional mixes and require more water to keep the material from sticking to the steel rolls. Pneumatic rollers are not required on the High Performance Rubberized Asphalt Pavement.

The contractor may use other compaction means in areas where the specified roller train can't access. The use of an asphalt vibratory whacker may be allowed as long as it is in good working order and the watering system works reliably. Breakdown rolling will be done immediately behind the spreading operation. The finish roller will follow breakdown and used to remove imperfections in the mat. The rolling pattern will be straight with the paving direction, with minimal turning. The Department will work with the Contractor to control the rolling pattern and the frequency of passes in required. Any changes to the paving and rolling procedures must be approved by the Resident and included in a modified QCP.

If methods of compaction other than the conventional the rolling train is required, additional manpower shall be provided by the Contractor to ensure that the areas not accessible by rollers is compacted before the material cools below breakdown compaction temperatures. Areas found

to be deficient due to lack of observed compactive effort, or tested to be below the minimum density requirement, will be corrected in accordance with this Special Provision's Section, 401.20 – Acceptance: Correction of Deficiencies.

401.11 Preparation of Existing Surface This section has been modified with the addition of the following:

(Deck Preparation) Following any required deck patching and prior to placement of the High Performance Rubberized Asphalt Pavement, the concrete deck shall be prepared as follows:

The work under this Item shall consist of cleaning the surface of the concrete deck to remove any milled material or debris which would reduce or prevent bonding, furnishing and applying Edge Sealer, Tack Coat, furnishing and placing on the cleaned and tack coated bridge deck, an impermeable hot-mix waterproofing asphalt course to the lines, grades, width and depth as indicated on the plans, and saw cutting and filling any construction joints with rubberized joint sealer, all in accordance with the specifications and as directed by the Engineer.

High Performance Rubberized Asphalt Pavement shall not be placed until the moisture content of the surface it is to be placed on is at or below 6%. The moisture content will be checked with a "Sovereign Potable Electronic Moisture master" meter or an approved equal. The moisture content shall be checked in a minimum of one location in each span. High Performance Rubberized Asphalt Pavement shall not be placed until the new concrete has been in place a minimum of 7 days. The entire deck shall be shot blasted to achieve an anchor profile which is clean of foreign materials, such as oil or grease, and any sharp protrusions removed and free of laitance. The Contractor shall have a copy of Technical Guideline No. 03732 (Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays) published by the International Concrete Repair Institute. The final concrete surface profile shall range between a CSP 1 and CSP 5 as defined by this guideline. Areas where rapid setting patching materials have been placed shall be cured for a minimum of 72 hours or longer when recommended by the product manufacturer prior to applying the High Performance Rubberized Asphalt Pavement. All surfaces shall then be swept and cleaned by brooms and compressed air as directed by the Resident before the modified bituminous concrete surface course is placed.

The deck must be clean and free of any loose debris and moisture. A 100-150 mm (4-6 inch) application of Edge Sealer specified by the manufacturer, and at a rate specified by the manufacturer, to be used to seal all edges of the planned day's placement of the High Performance Rubberized Asphalt Pavement. Particular attention shall be given to vertical edges of headers, drains, scuppers, expansion joints or wherever compaction may be difficult to achieve. Where vertical edges exist, apply Edge Sealer 100-150 mm (4-6 inch) out from curb scuppers, joints, etc., on the horizontal and up to the top of the proposed finished surface grade. When practical, this should be done the day before or as early as possible to maximize drying time.

The Tack Coat shall be applied to the existing horizontal concrete bridge deck surfaces in a uniform coating at the rate specified by the manufacturer.

Butt joints made during paving operations must have Edge Sealer applied to the butt surface before the joining asphalt lift. Construction joints shall be saw cut to a 12.7 mm (½ inch) width and filled to within 3 mm (1/8 inch) of the surface with the rubberized asphalt joint sealer previously specified. Extreme care shall be taken so as not to overfill these sawed joints since excess joint sealer material will cause ripples in the surface course necessitating corrective work by the Contractor.

Edge Sealer shall be applied to all terminations of the paved asphalt, including curb lines and deck joints, as soon as possible after the pavement has cooled.

The Contractor shall thoroughly clean the surface of all objectionable material upon which modified bituminous concrete surface course is to be placed.

401.15 Spreading and Finishing This section has been modified with the addition of the following:

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 High Performance Rubberized Asphalt Pavement with hand tools to provide the required compacted thickness.
On roads opened to two-way 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.

All pavements shall be placed on surfaces that have a Tack Coat applied, as specified by the manufacturer, and allowed to cure for a minimum period of 40 minutes. An approved Tack Coat shall be applied to the existing concrete deck, and to the first layer of pavement in accordance with the manufacturer's recommendations if required. The film thickness of the Tack Coat shall be 0.04 to 0.15 gallons per square yard, or as otherwise specified by the manufacturer. The Tack Coat shall be allowed to break or dry prior to placement of the modified bituminous concrete surface course. A Tack Coat is not required between the pavement layers if the base and surface layers of pavement are placed the same working day, or unless the base layer surface becomes contaminated with materials that would reduce bond between layers.
The material shall be placed at temperatures specified by the manufacturer.

401.16 Compaction This section has been modified with the addition of the following:

Immediately after the High Performance Rubberized Asphalt Pavement has been spread, struck off, and any surface irregularities adjusted, the Contractor shall thoroughly and uniformly compact the modified bituminous concrete surface course 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 High Performance Rubberized Asphalt Pavement to the rollers or vibrating compactors without the use of fuel oil or other petroleum based release agents.

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 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 High Performance Rubberized Asphalt Pavement 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. If methods of compaction other than the conventional the rolling train is required, additional manpower shall be provided by the Contractor to ensure that the areas not accessible by rollers is compacted before the material cools below breakdown compaction temperatures. Areas found to be deficient due to lack of observed compactive effort, or tested to be below the minimum density requirement, will be corrected in accordance with this Special Provision's Section, 401.20 – Acceptance: Correction of Deficiencies.

Any High Performance Rubberized Asphalt Pavement 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 This section has been modified with the addition of the following:

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 always maintain a uniform head of High Performance Rubberized Asphalt Pavement during the joint construction. The High Performance Rubberized Asphalt Pavement shall be free of segregation and meet temperature requirements. 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.

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

The edges of the pavement shall be sealed by applying Edge Sealer on all vertical faces which will be in contact with the High Performance Rubberized Asphalt Pavement. The material shall be applied so the entire edge of the layer, and a few inches onto the deck surface, is coated.

A Tack Coat shall be applied to the existing concrete deck, and the first layer of pavement in accordance with the manufacturer's recommendations. The film thickness of the tack coat shall be 0.04 to 0.15 gallons per square yard, or as otherwise specified by the manufacturer. The Tack

Coat shall be allowed to break or dry prior to placement of the High Performance Rubberized Asphalt Pavement. A Tack Coat is not required between the pavement layers if the base and surface layers of pavement are placed the same working day, or unless the base layer surface becomes contaminated with materials that would reduce bond between layers.

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 High Performance Rubberized Asphalt 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.

The Contractor shall fill all holes in the pavement resulting from cutting cores acceptable mixture no later than the following working day. The Contractor shall carefully clean the holes and apply a coating of Edge sealer. On surface courses, cores shall not be cut except for Quality Assurance.

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 Resident may at any time, notwithstanding previous sampling and certification, notify and stop the Contractor, reject and require the Contractor to dispose of any batch of bituminous mix which is rendered unfit for use due to temperature, oxidation, contamination, segregation or incomplete coating of aggregate. Such rejection may be based on visual inspection alone.

<u>401.20 Acceptance</u> This section has been modified with the addition of the following:

<u>Pavement Density</u> The Department will High Performance Rubberized Asphalt Pavement density using core samples tested according to AASHTO T-166. The Department will randomly determine core locations. The Contractor shall cut 150 mm [6 in] 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. 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 MaineDOT Lab, 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.

401.203 Acceptance Testing This section has been modified with the addition of the following:

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 4050 Mg [4500 tons], with unanticipated over-runs of up to 1350 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 675 Mg [750 ton] for mixture properties, 450 Mg [500 ton] for base or binder densities and 225 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: 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	2.0% +/-1.5%
Fines to Effective Binder	N/A
Voids in the Mineral Aggregate	N/A
Voids Filled with Binder	N/A
% TMD (In place density)	96.0% +/- 2.5%

Correction of Deficiencies In the event of any portions of pavement fails to comply with specified quality requirements, the Contractor shall replace or repair deficient pavements as directed by the Resident. Corrections shall be made as work progresses and not reserved for a separate operation at some later date**.**

1. For thickness deficiencies, the only acceptable repair methods are removal and replacement, or placement of an overlay layer. Corrective work shall begin and end at the repair, and feather edging will not be permitted.
2. Where more than 6 mm (¼ inch) above the required grade, correct deficiency by removal as necessary to comply with the specifications, except where an approved contour pattern satisfying riding quality and drainage as shown on the Contract Drawings has been established.
3. For deficiency in smoothness tolerance, correct any deficiency by means approved by the Resident and subject to all other provisions hereof. The area for correction of deficiencies in surface smoothness and surface grade tolerance shall be those areas, which fail to satisfy quality requirements. Existing pavement shall be removed as necessary to provide square joints for the full depth of the course.
4. For deficiency of in-place voids, remove and replace deficient pavement in accordance with all requirements specified herein. The area replaced for deficiency of in-place voids shall be the total area paved with-in the deficient paving lot. Existing pavement shall be removed as necessary to provide square joints for the full depth of the course.

5. For deficiency involving a porous surface in the mat at longitudinal joints, or at construction joints, the surface shall be sealed with an asphalt filler/sealer material submitted to and approved by the Resident.

401.222 Pay Factor (PF) This section has been modified with the addition of the following:

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 all of the cores will be randomly recut 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, 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.

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 this specification, the Department will determine a pay factor using acceptance limits from Table **7**: 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 This section has been modified with the addition of the following:

The Department will use density, Performance Graded Asphalt Binder content, and the screen sizes listed in Table **7** for the type of HMA represented in the JMF. If any pay factor for any single property falls below 0.85, the Contractor shall shut down the HMA plant. If the PGAB content falls below 0.80, then the PGAB pay factor shall be 0.55. If the percent passing the nominal maximum sieve, the 2.36 mm sieve, the 0.300 mm sieve or the 0.075 mm sieve falls below 0.80, then the composite pay factor for the four sieves shall be 0.55.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 7: 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**: 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: 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.

Method of Measurement. High Performance Rubberized Asphalt Pavement will be measured by the ton, complete and in place.

Basis of Payment. High Performance Rubberized Asphalt Pavement (HPRA) will be paid for at the contract unit price per ton. Such payment shall be full compensation for obtaining and furnishing all aggregate, additives, and bituminous material including tack and edge sealer, for processing, heating, mixing, weighing, trucking, placing, and rolling; for furnishing the test strip, all labor, equipment, tools and all incidentals necessary to complete the work. Price adjustments will be made in accordance to the designated testing method.

Payment will be made under:

Pay Item	Pay Unit
403.325 High Performance Rubberized Asphalt Pavement, 9.5 mm	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
Bridge Deck						
Wearing	9.5 mm	403.210	N/A	3.0 in	2	1,2,5,8
Bridge Deck – Multi Use Lane						
Wearing	9.5 mm	403.325	N/A	1.5 in	1	10,23
Base	9.5 mm	403.210	N/A	1.5 in	1	1,2,5,8
Travel Way – RTE 201A/8 Approach Areas						
Wearing	9.5 mm	403.210	N/A	3.0 in	2	5,8,12
Binder	12.5 mm	403.213	N/A	2.0 in	1	5,8,13
Base	19.0 mm	403.207	N/A	3.0 in	1	5,8
Shoulders - RTE 201A/8 Approach Areas						
Wearing	9.5 mm	403.210	N/A	3.0 in	2	4,8,12
Travel Way – River Road						
Wearing	9.5 mm	403.210	N/A	3.0 in	2	4,8,12
Base	12.5 mm	403.213	N/A	2.0 in	1	4,8
Shoulder and Non Curbed Sidewalk – River Road						
Wearing	9.5 mm	403.210	N/A	3.0 in	2	4,8,12
Travel Way & Shoulders – Sophie Mae Lane and Depot Street						
Wearing	9.5 mm	403.210	N/A	3.0 in	2	4,8,12
Curbed Sidewalks, Drives, Misc.						
Wearing	9.5 mm	403.209	N/A	2.0 in	2/more	2,3,10,14

COMPLEMENTARY NOTES

1. The use of Recycled Asphalt Pavement (RAP) will not be permitted.
2. The density requirements are waived.
3. The design traffic level for mix placed shall be <0.3 million ESALS.
4. The design traffic level for mix placed shall be 0.3 to <3 million ESALS.
5. The aggregate qualities shall meet the design traffic level of 3 to <10 million ESALS for mix placed under this contract. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **75 gyrations**. (Ndesign)
8. Section 106.6 Acceptance, (2) Method B.
10. Section 106.6 Acceptance, (2) Method D.
12. A mixture meeting the gradation of 12.5 mm hot mix asphalt may be used at the option of the contractor.

13. A mixture meeting the gradation of 9.5 mm hot mix asphalt may be used at the option of the contractor.

14. A mixture meeting the requirements of section 703.09 Grading 'D', with a minimum PGAB content of 6%, and the limits of Section 401, Table 7 (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**.**
23. Refer to Special Provision 401 – High Performance Rubberized Hot Mix Asphalt for project specifics.

Tack Coat

A tack coat of emulsified asphalt, RS-1 or HFMS-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 501
FOUNDATION PILES
(Rock-Socketed Pile Foundation)
- Pier Foundation Alternative -

501.01 Description. Add the following:

This work shall consist of providing material for and construction of a rock-socketed foundation, in accordance with Section 501 of the Standard Specifications, except as amended herein and as shown on the Plans. The work includes advancing pipe pile through the cofferdam seal and overburden, seating pipe piles into bedrock, cleaning the pipe pile of overburden, dynamic pile testing, clearing obstructions, construction of rock-sockets, cleaning of rock-sockets, placement of H-pile and reinforcing steel, and placement of concrete, as specified herein. Rock-socketed foundations, with pipe pile encasement shall be constructed as specified herein and shown on the Plans, or as otherwise directed by the Resident.

501.02 Materials. Add the following:

- Pipe pile: 24 inch diameter pipe pile, with 3/8 inch wall thickness, ASTM A252, Grade 3, F_y = 45 ksi.
- HP Section: HP12x84, ASTM A572, F_y = 50 ksi, with centralizers.
- Cutting teeth: Cutting teeth shall consist of hardened, carbide, steel, or approved equal, capable of drilling through the cofferdam seal and overburden, clear obstructions, and seating into bedrock.
- Reinforcing steel: Section 502, Reinforcing Steel.
- Concrete: Class LP concrete, per Section 502, with the added provision: maximum slump of 7 inches shall be allowed.

CONSTRUCTION

501.03 Equipment for Driving Piles. Add the following:

Advancing Pipe Pile. Pipe pile shall be advanced prior to construction of the rock-sockets. Pipe pile for this alternative shall be advanced by rotary spinning, other methods of advancing the pipe pile may be accepted, as approved by the Resident. The pipe pile shall be equipped with cutting teeth, constructed from carbide steel, or approved equal, capable of advancing the pipe through the cofferdam seal and overburden material shown on the boring logs and interpretive subsurface profile, including obstructions. Obstructions may include, but are not limited to, cobbles, boulders, wood, existing masonry, concrete foundations, and remnants of previous bridge structures. The pipe pile advancement system shall be capable of seating the pipe pile into bedrock and providing a tight seal around the bedrock and the outside of pipe, as shown on the Plans. The excavation and drilling equipment shall have adequate capacity including power, torque and down thrust to excavate a hole of both the diameter and to a depth of 20 percent beyond the depth indicated on the plans.

The material inside the pipe pile shall be excavated to the top of bedrock. When obstructions are encountered during pipe pile advancement or when the material encountered cannot be drilled using conventional earth augers with soil or rock teeth or drill buckets, the Contractor shall provide drilling

equipment, including, but not limited to boulder breakers, bedrock core barrels, rotary percussion drills, down hole hammers, pneumatic rock tools, and other equipment as necessary to construct the excavation and advance the pile to the size and depth required, as approved by the Resident.

Construction of rock sockets. A bedrock socket shall be constructed to the dimensions shown on the plans. The rock socket shall be constructed using augers equipped with rock cutting teeth, drill buckets, or rotary percussion drilling methods, which are capable of preventing over-breakage of bedrock, while providing a planar, horizontal bottom. The equipment used to construct rock sockets shall be capable of constructing a socket twice the depth of that shown in the plans.

Cleaning of excavation. Prior to placing of the H-pile section and concrete, the inside of the pipe and rock socket shall be cleaned of all overburden material and drilled-rock to the limits shown on the plans, and as approved by the Resident. The methods used to clean the inside on the pipe and rock socket shall be subject to Department approval.

Concrete placement. Concrete placement shall be placed under a tremie-seal or pumped.

Submittals. No later than 30 days prior to installing the rock-socketed pile foundations, the Contractor shall submit an installation plan for review and approval by the Department. This plan shall provide information on the following:

(1) list of proposed equipment to be used including drilling equipment, pipe pile cutting teeth, drills, augers, buckets, rock coring equipment, down hole rock hammers, final cleaning equipment, tremies or concrete pumps, etc;
(2) details of overall construction operation sequence;
(3) details of excavation methods in soils and rock
(4) details of methods of removing and clearing any obstructions;
(5) details of methods to clean rock-sockets and bearing surface;
(6) details of centralizers for HP section;
(7) Concrete mix design, the maximum aggregate size shall be small enough to ensure complete encasement of the HP Section and reinforcing steel within the socket and pipe pile
(8) details of concrete placement.

The Department will evaluate the rock-socketed pile installation plans, and all procedural approvals given by the Department shall be subject to trial in the field and shall not relieve the Contractor of the responsibility to satisfactorily complete the work as detailed in the plans and specifications.

Failure by the Contractor to demonstrate adequate methods and equipment shall be reason for the Department to require alterations in equipment and/or method by the Contractor to eliminate unsatisfactory results. Any altered methods or construction equipment shall be at the Contractors expense and incidental to related pay items.

The Contractor shall perform the excavations required for pile rock sockets as shown on the plans, through whatever materials are encountered, to the dimensions and elevations shown on the plans or otherwise required by the Standard Specifications and Special Provisions. The Contractor's methods and equipment shall be suitable for the intended purpose and materials encountered. Blasting shall not be permitted.

501.04 Driving Procedures and Tolerances. Add the following:

The cofferdam seal surface shall be brought to the bottom of the footing elevation prior to installing piles. Pipe pile shall be installed using rotary methods, or other approved methods, and as included in the approved installation plan, as discussed above. Material from within the pipe pile shall be removed in accordance with this Section, and as included in the approved installation plan, as discussed above. The pipe pile shall be seated a minimum distance into bedrock, as shown on the Plans, or as required to achieve an effective seal around the outside of the pipe and bedrock. The seal shall be sufficient to keep overburden material and water from infiltrating the excavation. Additional time and material required to achieve an effective seal between the pipe and bedrock shall be considered incidental.

Obstructions encountered during pipe pile advancement and/or cleaning shall be cleared as discussed above, and as included in the Contractor's installation plan. Obstruction clearing procedures and/or tools shall be employed by the Contractor after the pipe pile cannot be advanced/cleaned using conventional augers fitted with soil or rock teeth, or drilling buckets, as determined by the Resident. Such obstruction clearing procedures/tools may include but are not limited to: chisels, boulder breakers, down hole hammers, bedrock core barrels, rotary percussion drills, pneumatic tools, etc.

Once the pipe pile has been advanced, and seated into rock, four of the piles shall be dynamic load tested to verify the required resistance shown on the Plans. Testing shall be in accordance with Section 501.07 of the Standard Specifications, and as shown on the Plans.

Add the following Section:
501.04.1 Rock Socket Construction

After pipe piles have been cleaned out to the top of the bedrock, the rock socket shall be constructed in accordance with this Section, and as included in the approved installation plan, as discussed above. The rock socket excavation shall extend into bedrock as an uncased rock socket of the length and diameter shown on the plans. If determined by the Resident, that the bedrock encountered is unsuitable for the foundation loading, the Contractor shall excavate a rock socket up to 2 times the depth shown on the plans. Care shall be taken to prevent disturbance of the pile/bedrock seal. Overbreakage of the rock surface shall be avoided. The rock socket shall be constructed so as to have a horizontal, planar bottom.

Add the following Section:
501.04.2 Excavation and Drilling Tools

Excavated materials which are removed from pipe piles and rock socket excavations shall be disposed of by the Contractor in accordance with the applicable specifications for disposal of excavated materials.

Drilling tools which are lost in the excavation shall not be considered obstructions and shall be promptly removed by the Contractor without compensation. All costs due to lost tool removal shall be borne by the Contractor.

Add the following Section:
501.04.3 Alignment and Tolerances

The Contractor shall provide access and equipment for checking the alignment of the pipe pile and for checking the dimension, alignment and cleanliness of the rock socket. Final pile and socket depths shall be measured with suitable weighted tape or other approved methods after final cleaning. The base of each socket shall have no sediment at the time of placement of the concrete. Socket cleanliness shall be demonstrated by the Contractor to the satisfaction of the Resident. Concrete and other fill placement shall not begin until the Resident's approval has been obtained.

The following construction tolerances apply: (a) the pile shall be within 2 inches of the plan position in the horizontal plane at the Plan elevation for the top to the pile. Pulling of piles into position will not be permitted. (b) Vertical alignment of a pipe shall not vary from the plan alignment by more that ¼-inch per foot of depth. (c) The rock socket shall be excavated to the depth shown on the Plans.

Add the following Section:
501.04.4 H-pile and Reinforcing Steel Placement.

H-pile and reinforcing steel shall be placed prior to concrete placement. H-pile and reinforcing steel shall be placed to the lines and dimensions shown on the plans. The H-pile and reinforcing steel shall be centered in the rock socket and pipe pile using centralizers. Centralizers shall be approved by the Resident. Payment for centralizers shall be considered incidental.

At the following Section:
501.04.5 Concrete Placement.

Concrete placement shall be continuous from the bottom of the rock socket to the elevation shown on the Plans. The use of a water-reducing admixture is permissible to provide a workable mix that will surround the piles without the use of vibrators. Actual slump shall be 7 inches maximum, with water-reducing admixture. Concrete shall be placed by a tremie or concrete pump. The free fall placement method will not be permitted. Concrete placed by tremie or pump shall be directed to the base without contacting either the HP shape pile or pipe pile side-wall.

Tremies may be used for concrete placement. The tremie inside diameter shall be at least 6 times the maximum size of the aggregate used in the concrete mix but shall be not less 10 inches. Tremies may be used for underwater concrete placement in wet sockets, if approved by the Resident in writing. In such a case, the concrete placement shall be watertight. The flow of concrete shall be continuous. The concrete in the tremie shall be maintained at a positive pressure differential at all times to prevent water intrusion into the concrete. If at any time during the pour, the tremie line orifice is removed from the fluid concrete column and discharges concrete above the rising concrete level, the socket shall be considered defective, and the cost of replacement of defective concrete shall be the responsibility of the Contractor.

The elapse time from the start of concrete placement to the completion of the placement, in a single socket, shall not exceed 2 hours. All admixtures, if approved for use, shall be adjusted for the conditions encountered on the job so that the concrete remains in a workable plastic state throughout the placement. Prior to concrete placement, the Contractor shall provide test results of both a trial

mix and a slump test, which shall be conducted using concrete and ambient temperatures appropriate for the site conditions.

501.09 Splicing Piles. Add the following:

Splicing of H-pile sections for rock-socketed pile foundation shall not be permitted. Pipe piles shall be spliced in accordance with the Standard Specifications.

COMPENSATION

501.11 Method of Measurement. The following sections are amended as follows:

a) Construction Mobilization. A lump sum price bid for the mobilization shall include the cost of furnishing all labor, materials, and equipment necessary for transporting, erecting, dismantling, and removing the entire pile construction equipment.

b) Piles Furnished. Furnishing of piles for rock-socketed pile foundations shall be as outlined in Section 501 of the Standard Specifications.

c) Piles in Place. Method of measurement for constructing rock-socketed pile foundation as described in this Section shall be measured by the linear foot of piles in place. Method of measurement shall include all materials, excavation, construction methods, and incidentals necessary to complete the work, as described herein.

g) Dynamic Load Test. As included in the Standard Specifications.

Add the following to Section 501.11:
h) Cutting Teeth. Pipe pile cutting teeth will be measured by the number authorized, and satisfactorily installed.

i) Rock-Socket. Rock socket shall be measured by the length furnished and approved by the Resident.

501.12 Basis of Payment. The following is added:

a) Construction mobilization. 50% of the contract bid price for construction mobilization shall be paid when mobilization is complete. 50% of the contract bid price for construction mobilization shall be paid when the Rock-Socketed Pile Foundations are satisfactory installed, as specified herein, and as determined by the Resident.

b) Piles furnished. Furnishing of piles for rock-socketed pile foundation shall be as specified herein.

c) Piles in Place.
Pipe piles: Payment for pipe piles in place shall consider the advancement of pipe through seal concrete, overburden, clearing of any obstructions, seating pipe piles into bedrock, and cleaning all of pipe piles to the top of bedrock. Compensation shall include concrete, reinforcing steel, all material,

excavation, construction methods, and incidentals necessary to complete the work as specified herein. Piles in place shall be measured by the linear foot of piles in place.

H-piles: Payment for H-piles in place shall consider the placement within the rock socket, with appropriate centralizers to maintain proper alignment

d) Rock Sockets: Payment for construction and excavation of rock sockets and cleaning of sockets to the depth shown on the Plans, or as specified herein. Compensation shall include all material, excavation, construction methods, and incidentals necessary to complete the work as specified herein.

Payment shall be under:

Item		Unit
501.231	Dynamic Load Test	Each
501.49	Steel H-beam Piles 84 lbs/ft, delivered	Linear Foot
501.491	Steel H-beam Piles 84 lbs/ft, in place	Linear Foot
501.70	Steel Pipe Piles, delivered	Linear Foot
501.701	Steel Pipe Piles, in place	Linear Foot
501.802	Rock Socket	Linear Foot
501.902	Pipe Pile - Cutting Teeth	Each
501.91	Pile Splices	Each
501.921	Pile Construction Mobilization (Piers)	Lump Sum

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Precast Deck Panels)

Description This work shall consist of casting, furnishing, and erecting prestressed structural concrete deck panels (hereafter called "precast deck panels") and all related materials as an optional stay-in-place forming system in accordance with the contract plans and specifications.

Construction Precast Deck Panels shall comply with Section 535 – Precast, Prestressed Concrete Superstructure.

Precast deck panels shall be manufactured in conformity with the following tolerances:

Depth of slab	- 3 mm, + 6 mm [-1/8 in, + 1/4 in]
Width of slab	-0, + 6 mm [-0, + 1/4 in]
Length of slab	± 6 mm [± 1/4 in]
Horizontal alignment	6 mm [1/4 in] (deviation from line parallel to centerline)
Squareness	13 mm [1/2 in] max. Difference in diagonal meas.
Vertical Position of Strand group	+0, - 6 mm [+0, -1/4 in] Meas. from bottom of slab
Vertical position of individual strands	± 6 mm [± 1/4 in]
Horizontal strand position	± 13 mm [± 1/2 in]
Strand Projection	-6mm, +19 mm [- 1/4 in, + 3/4 in]
Bowing	± 6 mm [± 1/4 in]
Threaded jack inserts	± 6 mm [± 1/4 in] longitudinally and transversely

Basis of Payment All work will be considered incidental to and included in Pay Item 502.261 Structural Concrete Roadway and Sidewalk Slab on Concrete Bridges. Payment shall include full compensation for all materials wholly or partly in the precast deck panels and related materials or work required for the panel erected as shown on the plans. Related materials and work will include, but not limited to furnishing and installing temporary supports, including adhesive and grout bedding, reinforcing steel, welded wire fabric and cast-in-place concrete.

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

CLASS OF CONCRETE	ITEM NUMBER	DESCRIPTION	P	METHOD
A	502.219	Structural Concrete, Abutments and Retaining Walls	$400	A
A	502.239	Structural Concrete Piers	$400	A
S	502.24	Structural Concrete Piers (Placed Under Water)		C
A	502.261	Structural Concrete Roadway and Sidewalk Slab on Conc. Bridge	$400	A
A	502.31	Structural Concrete Approach Slabs		C
A	502.38	Structural concrete Arch	$400	A
A	502.381	Structural Concrete Tie Girder	$425	A
A	502.431	Structural Concrete Beam	$425	A
LP	502.49	Structural Concrete Curbs and Sidewalks	$425	A
LP	526.324	Concrete Barrier Rail	$425	A

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

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Quality Level Analysis)

The second sentence of 502.01, Description, of the 2002 Revision of the Standard Specifications is deleted and replaced by the following:

For METHOD A Statistical Acceptance, or METHOD B Statistical Acceptance, the work shall conform to the Contractor's approved Quality Control (QC) Plan and Quality Assurance (QA) provisions, in accordance with these Specifications and the requirements of Section 106 - Quality.

TABLE 1, under Subsection 502.05, Composition and proportioning, of the 2002 Revision of the Standard Specifications is deleted and replaced by the following:

TABLE 1- Methods A and B

Concrete CLASS	Compressive Strength (PSI)		Permeability (COULOMBS)		Entrained Air (%)		Notes
	LSL	USL	LSL	USL	LSL	USL	
S	2,900	N/A	N/A	N/A	6.0	8.5	1, 5
A	4,350	N/A	N/A	2,400	6.0	8.5	1,2,5,6
A	5,000	N/A	N/A	2,400	6.0	8.5	1,2,5,7,8,9
A	6,000	N/A	N/A	2,400	6.0	8.5	1,2,5,7,8,9
P	-----	-----	-----	-----	4	6	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

NOTE # 1 Target shall be the midpoint of the range of the LSL and USL
NOTE # 2 Permeability testing for all concrete mixes, excluding those containing fly ash (at 20 percent or greater pozzolan cement replacement), will be done at 56 days. Permeability testing for concrete mixes containing fly ash, at 20 percent or greater pozzolan cement replacement, will be done at 120 days. Concrete expected to be exposed to deicing salts prior to the test date shall be sealed with an alcohol based silane sealer listed on the Maine Department of Transportation Prequalified List of Protective Sealers for Structural Concrete in accordance with the manufacturer's recommendation, at no additional cost to the Department.
NOTE # 3 Calcium Nitrite shall be added at the rate of 3 gallons per cubic yard.
NOTE # 4 Strength and permeability requirements will be shown on the Plans.

NOTE # 5 Compressive strength testing for all concrete mixes, excluding those containing fly ash (at 20 percent or greater pozzolan cement replacement), will be done at 28 days. Compressive strength testing for concrete mixes containing fly ash, at 20 percent or greater pozzolan cement replacement, will be done at 56 days.
NOTE # 6 Coarse aggregate for concrete shall meet the requirements of Section 703.02 for Class "A" or "AA".

Note # 7 Compressive strength testing will be performed at 3 days to assure an early compressive strength of 2500 psi, and at 7 days to assure an early compressive strength of 5000 psi.

Note # 8 Total maximum cementitious material content shall be 750 lb/CY

Note # 9 Coarse aggregate for concrete shall meet the requirements of Section 703.02 for Class "AA."

Subsection 502.0503, Quality Assurance METHOD B, of the 2002 Revision of the Standard Specifications is deleted and replaced by 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

Paragraph E, under Subsection 502.18, Method of Measurement, of the 2002 Revision of the Standard Specifications is deleted and replaced by the following:

E. For the purposes of making pay adjustments under Method A, quantities of lots and sublots shall be determined as outlined under Section 502.0502 - Quality Assurance Method A, Section 502.0503- Quality Assurance Method B, and under Section 502.19 - Basis of Payment.

The first sentence in the seventh paragraph of Subsection 502.19, Basis of Payment, of the 2002 Revision of the Standard Specifications is deleted and replaced by the following:

Pay adjustments will be made only for cast-in-place concrete accepted under Method A and Method B.

Subsection 502.191, Pay Adjustment for Compressive Strength, of the 2002 Revision of the Standard Specifications is deleted and replaced by the following:

502.191 Pay Adjustment for Compressive Strength Compressive strength tests will be completed by the Department in accordance with AASHTO-T22 at 28 days.

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

If three consecutive tests fail to meet the below listed strength requirements, the Contractor shall submit remedial actions acceptable to the Department, at no additional cost. These remedial actions shall be taken until the source of the problem can be identified and corrected or new trial batches can be performed. When the average of three consecutive tests falls to less than 1.0 MPa [150 psi] above the specified strength or any single test more than 1.4 MPa [200 psi] below the specified strength, the Resident will notify the Contractor to make corrective changes in the materials, mix proportions, or in the concrete manufacturing procedures before placing additional concrete of the same class. Such changes shall be subject to the approval of the Resident.

Subsection 502.192, Pay Adjustment for Chloride Permeability, of the 2002 Revision of the Standard Specifications is deleted and replaced by the following:

502.192 Pay Adjustment for Chloride Permeability 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.

Subsection 502.193, Pay Adjustment for Air Content, of the 2002 Revision of the Standard Specifications is deleted and replaced by the following:

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

The following subsection is added to the 2002 Revision of the Standard Specifications:

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
(Cast in Place Architectural Concrete)

The following shall be added to this Section:

502.01 Description The furnishing and placing of Portland Cement Concrete shall conform to Standard Specifications Section 502 Structural Concrete, and Special Provision Section 502 Structural Concrete (Span 2). For those portions of the work designated as Architectural Concrete, this Special Provision shall also apply. The Contractor shall conform to the more stringent requirements stated herein for those areas designated as Architectural Concrete.

Architectural Concrete includes:

- All surfaces of the following components:
    a) Structural Concrete Arch
    b) Arch End Connection
- The top and one vertical surface of each Concrete Barrier Rail, on the traveler's side
- Three contiguous surfaces of the Structural Concrete Tie Girder: including the sloped surface supporting the hanger, the vertical surface, and the adjacent sloped surface.

502.0501 Quality Control
Source Limitations for Cast-in-Place Architectural Concrete: The Contractor shall obtain each color, size, type, and variety of concrete material and concrete mixture from one manufacturer with resources to provide cast-in-place architectural concrete of consistent quality in appearance and physical properties.

502.10 Forms and Falsework
The concrete formwork shall be constructed with exterior-grade plywood panels, nonabsorptive, that will provide continuous, true, and smooth architectural concrete surfaces, high-density overlay, Class 1, or better, complying with DOC PS 1.

The chamfers shall be constructed using metal, rigid plastic, elastomeric rubber, or dressed wood; nonstaining in the longest practicable lengths.

A commercially formulated colorless form-release agent shall be used that will not bond with, stain, or adversely affect the architectural concrete surfaces and will not impair subsequent treatments of those surfaces.

Forms shall be fabricated for easy removal without hammering or prying against concrete surfaces. Crush or wrecking plates shall be provided where stripping may damage cast-in-place surfaces. Top forms shall be provided for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Wood rustications, keyways, recesses, and the like, shall be kerfed for easy removal. Form joints and penetrations at form ties shall be sealed with form joint tape or form joint sealant to prevent cement paste leakage.

When forms are reused, the Contractor shall clean surfaces, remove fins and laitance, and tighten to close joints and maintain proper alignment. Split, frayed, delaminated, patched or otherwise

damaged form-facing material will not be permitted. New form-release agent shall be applied prior to placement of additional concrete in a used form.

502.14 Finishing Concrete Surfaces

The Contractor shall apply a grout-cleaned finish as described below to all cast in place architectural concrete surfaces .

> Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match surrounding concrete. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

Corners, edges, and surfaces of cast-in-place architectural concrete shall be protected from damage using guards and barricades. Architectural concrete shall be protected from staining, laitance, and contamination during the remainder of construction period.

The Contractor shall clean concrete surfaces after finishing to remove stains, markings, dust, and debris. Other Work shall be protected from staining or damage due to cleaning operations. Cleaning materials or processes that could change the appearance of cast-in-place architectural concrete finishes will not be permitted.

The Contractor shall repair and cure damaged finished surfaces of cast-in-place architectural concrete when directed by the Engineer. Repairs shall match color, texture, and uniformity of surrounding surfaces. If structural cracks in newly poured concrete appear, or if the concrete cannot be repaired and cured to the Resident's approval, that concrete shall be removed and replaced at the Contractor's expense. Structural cracks are those that can be described as a surface rupture that exhibits some vertical dislocation or sloping between the broken sections.

502.19 Basis of Payment
Payment will be made under related Section 502 Structural Concrete Items.

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Span 2)

The following is added to this Section:

502.10 Forms and Falsework

The following is added to this section:

The Contractor shall design and construct falsework according to the current edition of "AASHTO Guide Design Specifications for Bridge Temporary Works" except where in conflict with these specifications. The design must be signed and sealed by a Professional Engineer licensed in the State of Maine.

The Contractor shall submit working drawings for approval of the proposed forms and falsework supporting the primary members of the bridge (Arch Rib, Arch End Connection, Tie Girder, End Beams, Intermediate Floorbeams, Transverse Bracing) in accordance with Section 105.7. Falsework construction will not be accepted and allowed for loading until the falsework design has been reviewed by the Resident and all comments appropriately addressed as required.

The falsework shall be designed and constructed to support the total applied loads and provide enough redundancy in the design to prevent a failure of the entire system should any individual component fail at any time.

Falsework calculations will likely include, but will not be limited to the following:

- If pile supported, a detailed static pile capacity analysis, lateral pile load analysis, and potential effects of scour on axial and lateral pile support
- The magnitude and location of all loads, equipment, and personnel that will be supported by the falsework shown
- The weight of specific equipment units to be supported by the falsework
- The design loads and material properties used to determine design stresses for each different falsework member shown
- The worst loading and member property condition, rather than the average condition, used to obtain design loads.
- Diaphragm loads or other concentrated loads included in the analysis of supporting beams
- Manufactured assemblies identified as to manufacturer, model, rated working capacity and ultimate capacity

- Allowable stress and the calculated stress listed in the summary for each different falsework member
- Falsework deflection for concrete dead load
- Provisions shown for taking up falsework settlement
- General buckling evaluation for all compression members
- Determination of where temporary bracing will be required
- Design and detailing of connections

Prior to placing concrete to be supported by the falsework, the falsework Design Engineer of Record, accompanied by the Resident, shall field inspect the portion of falsework proposed for use. The inspected portion shall not be loaded until all construction concerns have been addressed and the falsework Design Engineer of record agree, in writing, that the falsework will serve the intended use.

Any use of the permanent concrete structure to support temporary loads during construction/erection will only be allowed with the approval of the Resident based on the Contractor's demonstration that such temporary loads will not adversely affect the permanent structure.

For post-tensioned structures, do not remove falsework until post-tensioning is complete.

502.18 Method of Measurement

The following shall be added to this section:

10. Structural Concrete Arch The limits include the entire Arch Rib from each Arch End Connection construction joint, and the Transverse Bracing. (includes two Arch Ribs and the Transverse Bracing)

11. Structural Concrete Tie Girder The limits include the entire Tie Girder and the Arch End Connection. (2 each)

12. Structural Concrete Beams The limits include the End Floor Beams and all longitudinal Diaphragms.

Note - Intermediate Floor Beams are paid for under Item 535.62 Prestressed Structural Concrete Box Beams.

502.19 Basis of Payment

Payment will be made under:

Pay Item	Pay Unit

502.38	Structural Concrete Arch	Lump Sum
502.381	Structural Concrete Tie Girder	Lump Sum
502.431	Structural Concrete Beams	Lump Sum

SPECIAL PROVISION
SECTION 503
REINFORCING STEEL—SPAN 2

The following is added to Section 503.03 Schedule of Material:

The tables included within this Special Provision will serve as the rebar schedule for the bar marks noted with the designation AR, located in the Arch Rib. Bars are designated as AR5234, which represents a number 5 bar with a mark of 234.

The following is added to Section 503.07 Splicing:

The lengths of the longitudinal bars are provided without allowance for splices. The Contractor may elect to use splices or mechanical couplers, except for the connection between the Arch Rib and Arch End Connection, were mechanical couplers are required. Compression couplers may be used throughout except within 10 feet of hangers, where tension couplers must be used. Splices are not permitted within 10 feet of hangers. Splice length for these bars is 3’-7”.

Payment for additional reinforcing steel used in the splices and mechanical couplers used within the Arch Rib or to connect the Arch Rib to the Arch Rib Connection is considered incidental to the reinforcing steel in the Arch Rib.

Bar Mark	Quant	Length	Type	A	B	C	D	E	F	G	H	O	Desc.
AR5000	8	271 1/2	SO	5 1/2	7 1/2	29	66 1/2	29	25 1/2	5 1/2	96 1/2	27 3/4	Tie
AR5001	8	298	SO	5 1/2	7 1/2	29	66	28 3/4	25 1/2	5 1/2	96	27 3/4	Tie
AR5002	8	296 3/4	SO	5 1/2	7 1/2	29	65 3/4	28 1/2	25 1/2	5 1/2	95 1/2	27 1/2	Tie
AR5003	8	295 1/2	SO	5 1/2	7 1/2	29	65 1/2	28 1/2	25 1/2	5 1/2	95	27 1/4	Tie
AR5004	8	294	SO	5 1/2	7 1/2	29	65 1/4	28	25 1/2	5 1/2	94 1/2	27	Tie
AR5005	8	293	SO	5 1/2	7 1/2	29	65	28	25 1/2	5 1/2	94	26 3/4	Tie
AR5006	8	291 3/4	SO	5 1/2	7 1/2	29	64 1/2	27 3/4	25 1/2	5 1/2	93 1/4	26 1/2	Tie
AR5007	8	290 1/2	SO	5 1/2	7 1/2	29	64 1/4	27 1/2	25 1/2	5 1/2	93	26	Tie
AR5008	8	289	SO	5 1/2	7 1/2	29	64	27 1/2	25 1/2	5 1/2	92 1/4	26	Tie
AR5009	8	287 3/4	SO	5 1/2	7 1/2	29	63 3/4	27	25 1/2	5 1/2	91 3/4	25 3/4	Tie
AR5010	8	286 1/2	SO	5 1/2	7 1/2	29	63 1/2	26 3/4	25 1/2	5 1/2	91 1/4	25 1/2	Tie
AR5011	8	285 1/4	SO	5 1/2	7 1/2	29	63	26 1/2	25 1/2	5 1/2	90 3/4	25 1/4	Tie
AR5012	8	284	SO	5 1/2	7 1/2	29	62 3/4	26 1/2	25 1/2	5 1/2	90 1/4	25	Tie
AR5013	8	282 3/4	SO	5 1/2	7 1/2	29	62 1/2	26	25 1/2	5 1/2	89 1/2	24 3/4	Tie
AR5014	8	281 1/2	SO	5 1/2	7 1/2	29	62 1/4	26	25 1/2	5 1/2	89	24 1/2	Tie
AR5015	8	280	SO	5 1/2	7 1/2	29	62	25 3/4	25 1/2	5 1/2	88 1/2	24 1/4	Tie
AR5016	8	279	SO	5 1/2	7 1/2	29	61 1/2	25 1/2	25 1/2	5 1/2	88	24 1/4	Tie
AR5017	8	277 1/2	SO	5 1/2	7 1/2	29	61 1/4	25 1/2	25 1/2	5 1/2	87 1/2	24	Tie
AR5018	8	276 1/2	SO	5 1/2	7 1/2	29	61	25	25 1/2	5 1/2	87	23 3/4	Tie
AR5019	8	275	SO	5 1/2	7 1/2	29	60 3/4	24 3/4	25 1/2	5 1/2	86 1/2	23 1/2	Tie
AR5020	8	274	SO	5 1/2	7 1/2	29	60 1/2	24 3/4	25 1/2	5 1/2	85 3/4	23 1/4	Tie
AR5021	8	272 1/2	SO	5 1/2	7 1/2	29	60	24 1/2	25 1/2	5 1/2	85 1/4	23	Tie
AR5022	8	271 1/4	SO	5 1/2	7 1/2	29	59 3/4	24	25 1/2	5 1/2	84 3/4	22 3/4	Tie
AR5023	8	270	SO	5 1/2	7 1/2	29	59 1/2	24	25 1/2	5 1/2	84 1/4	22 1/2	Tie
AR5024	8	268 1/2	SO	5 1/2	7 1/2	29	59 1/4	23 3/4	25 1/2	5 1/2	83 3/4	22 1/4	Tie
AR5025	8	267 1/2	SO	5 1/2	7 1/2	29	59	23 1/2	25 1/2	5 1/2	83 1/4	22	Tie
AR5026	8	266 1/4	SO	5 1/2	7 1/2	29	58 1/2	23 1/2	25 1/2	5 1/2	82 3/4	21 3/4	Tie
AR5027	8	265	SO	5 1/2	7 1/2	29	58 1/4	23	25 1/2	5 1/2	82 1/4	21 1/2	Tie
AR5028	8	263 1/2	SO	5 1/2	7 1/2	29	58	23	25 1/2	5 1/2	81 3/4	21 1/4	Tie
AR5029	8	262 1/2	SO	5 1/2	7 1/2	29	57 3/4	22 3/4	25 1/2	5 1/2	81	21 1/4	Tie
AR5030	8	261 1/4	SO	5 1/2	7 1/2	29	57 1/2	22 1/2	25 1/2	5 1/2	80 1/2	21	Tie
AR5031	8	260	SO	5 1/2	7 1/2	29	57	22 1/2	25 1/2	5 1/2	80	20 3/4	Tie
AR5032	8	258 1/2	SO	5 1/2	7 1/2	29	56 3/4	22	25 1/2	5 1/2	79 1/2	20 1/2	Tie
AR5033	8	257 1/2	SO	5 1/2	7 1/2	29	56 1/2	21 3/4	25 1/2	5 1/2	79	20 1/4	Tie
AR5034	8	256 1/4	SO	5 1/2	7 1/2	29	56 1/4	21 3/4	25 1/2	5 1/2	78 1/2	20	Tie
AR5035	8	255	SO	5 1/2	7 1/2	29	56	21 1/2	25 1/2	5 1/2	78	19 3/4	Tie
AR5036	8	254	SO	5 1/2	7 1/2	29	55 3/4	21	25 1/2	5 1/2	77 1/2	19 1/2	Tie
AR5037	8	252 1/2	SO	5 1/2	7 1/2	29	55 1/4	21	25 1/2	5 1/2	77	19 1/4	Tie
AR5038	8	251 1/2	SO	5 1/2	7 1/2	29	55	20 3/4	25 1/2	5 1/2	76 1/2	19	Tie
AR5039	8	250	SO	5 1/2	7 1/2	29	54 3/4	20 1/2	25 1/2	5 1/2	76	19	Tie
AR5040	8	249	SO	5 1/2	7 1/2	29	54 1/2	20 1/2	25 1/2	5 1/2	75 1/2	18 3/4	Tie
AR5041	8	247 3/4	SO	5 1/2	7 1/2	29	54 1/4	20	25 1/2	5 1/2	75	18 1/2	Tie
AR5042	8	246 1/2	SO	5 1/2	7 1/2	29	54	20	25 1/2	5 1/2	74 1/2	18 1/4	Tie
AR5043	8	245 1/2	SO	5 1/2	7 1/2	29	53 1/2	19 3/4	25 1/2	5 1/2	74	18	Tie
AR5044	8	244	SO	5 1/2	7 1/2	29	53 1/4	19 1/2	25 1/2	5 1/2	73 1/2	17 3/4	Tie
AR5045	8	243	SO	5 1/2	7 1/2	29	53	19 1/2	25 1/2	5 1/2	73	17 2/4	Tie
AR5046	8	241 3/4	SO	5 1/2	7 1/2	29	52 3/4	19	25 1/2	5 1/2	72 1/2	17 1/4	Tie
AR5047	8	240 3/4	SO	5 1/2	7 1/2	29	52 1/2	19	25 1/2	5 1/2	72	17 1/4	Tie
AR5048	8	239 2/4	SO	5 1/2	7 1/2	29	52 1/4	18 3/4	25 1/2	5 1/2	71 1/2	17	Tie
AR5049	8	238 1/2	SO	5 1/2	7 1/2	29	52	18 3/4	25 1/2	5 1/2	71	16 3/4	Tie
AR5050	8	237 1/4	SO	5 1/2	7 1/2	29	51 3/4	18 1/2	25 1/2	5 1/2	70 1/2	16 2/4	Tie
AR5051	8	236	SO	5 1/2	7 1/2	29	51 1/4	18 1/2	25 1/2	5 1/2	70	16 1/4	Tie
AR5052	8	235	SO	5 1/2	7 1/2	29	51	18	25 1/2	5 1/2	69 1/2	16	Tie
AR5053	8	233 3/4	SO	5 1/2	7 1/2	29	50 3/4	18	25 1/2	5 1/2	69	16	Tie
AR5054	8	232 1/2	SO	5 1/2	7 1/2	29	50 1/2	17 3/4	25 1/2	5 1/2	68 1/2	15 3/4	Tie
AR5055	8	231 1/2	SO	5 1/2	7 1/2	29	50 1/4	17 1/2	25 1/2	5 1/2	68	15 2/4	Tie
AR5056	8	230 1/2	SO	5 1/2	7 1/2	29	50	17 1/4	25 1/2	5 1/2	67 1/2	15 1/4	Tie
AR5057	8	229 1/4	SO	5 1/2	7 1/2	29	49 3/4	17	25 1/2	5 1/2	67	15	Tie
AR5058	8	228 1/4	SO	5 1/2	7 1/2	29	49 1/2	17	25 1/2	5 1/2	66 1/2	14 3/4	Tie
AR5059	8	227	SO	5 1/2	7 1/2	29	49 1/4	16 3/4	25 1/2	5 1/2	66	14 3/4	Tie
AR5060	8	226	SO	5 1/2	7 1/2	29	49	16 3/4	25 1/2	5 1/2	65 1/2	14 2/4	Tie

Bar Mark	Quant	Length	Type	A	B	C	D	E	F	G	H	O	Desc.
AR5061	8	225	SO	5 1/2	7 1/2	29	48 3/4	16 2/4	25 1/2	5 1/2	65 1/4	14 1/4	Tie
AR5062	8	224	SO	5 1/2	7 1/2	29	48 1/2	16 1/4	25 1/2	5 1/2	64 3/4	14	Tie
AR5063	8	223	SO	5 1/2	7 1/2	29	48	16	25 1/2	5 1/2	64 1/4	13 3/4	Tie
AR5064	8	221 3/4	SO	5 1/2	7 1/2	29	47 3/4	16	25 1/2	5 1/2	63 3/4	13 3/4	Tie
AR5065	8	220 3/4	SO	5 1/2	7 1/2	29	47 1/2	15 3/4	25 1/2	5 1/2	63 1/4	13 2/4	Tie
AR5066	8	219 3/4	SO	5 1/2	7 1/2	29	47 1/4	15 1/2	25 1/2	5 1/2	62 3/4	13 1/4	Tie
AR5067	8	218 3/4	SO	5 1/2	7 1/2	29	47	15 1/2	25 1/2	5 1/2	62 1/2	13	Tie
AR5068	8	217 1/2	SO	5 1/2	7 1/2	29	46 3/4	15 1/4	25 1/2	5 1/2	62	13	Tie
AR5069	8	216 3/4	SO	5 1/2	7 1/2	29	46 1/2	15	25 1/2	5 1/2	61 1/2	12 3/4	Tie
AR5070	8	215 3/4	SO	5 1/2	7 1/2	29	46 1/4	15	25 1/2	5 1/2	61	12 2/4	Tie
AR5071	8	214 3/4	SO	5 1/2	7 1/2	29	46	14 3/4	25 1/2	5 1/2	60 3/4	12 1/4	Tie
AR5072	8	213 1/2	SO	5 1/2	7 1/2	29	45 3/4	14 3/4	25 1/2	5 1/2	60 1/4	12 1/4	Tie
AR5073	8	212 1/2	SO	5 1/2	7 1/2	29	45 1/2	14 1/2	25 1/2	5 1/2	59 3/4	12	Tie
AR5074	8	212	SO	5 1/2	7 1/2	29	45 1/4	14 1/2	25 1/2	5 1/2	59 1/2	11 3/4	Tie
AR5075	8	211	SO	5 1/2	7 1/2	29	45	14 1/4	25 1/2	5 1/2	59	11 2/4	Tie
AR5076	8	210	SO	5 1/2	7 1/2	29	45	14	25 1/2	5 1/2	58 1/2	11 2/4	Tie
AR5077	8	209	SO	5 1/2	7 1/2	29	44 3/4	14	25 1/2	5 1/2	58 1/4	11 1/4	Tie
AR5078	8	208	SO	5 1/2	7 1/2	29	44 1/2	13 3/4	25 1/2	5 1/2	57 3/4	11	Tie
AR5079	8	207	SO	5 1/2	7 1/2	29	44 1/4	13 3/4	25 1/2	5 1/2	57 1/4	11	Tie
AR5080	8	206	SO	5 1/2	7 1/2	29	44	13 1/2	25 1/2	5 1/2	57	10 3/4	Tie
AR5081	8	205 1/4	SO	5 1/2	7 1/2	29	43 3/4	13 2/4	25 1/2	5 1/2	56 1/2	10 2/4	Tie
AR5082	8	204 1/2	SO	5 1/2	7 1/2	29	43 1/2	13 1/4	25 1/2	5 1/2	56 1/4	10 2/4	Tie
AR5083	8	203 1/2	SO	5 1/2	7 1/2	29	43 1/4	13	25 1/2	5 1/2	55 3/4	10 1/4	Tie
AR5084	8	202 1/2	SO	5 1/2	7 1/2	29	43	13	25 1/2	5 1/2	55 1/4	10	Tie
AR5085	8	201 3/4	SO	5 1/2	7 1/2	29	42 3/4	13	25 1/2	5 1/2	55	10	Tie
AR5086	8	201	SO	5 1/2	7 1/2	29	42 3/4	12 3/4	25 1/2	5 1/2	54 1/2	9 3/4	Tie
AR5087	8	200 1/4	SO	5 1/2	7 1/2	29	42 1/2	12 3/4	25 1/2	5 1/2	54 1/4	9 2/4	Tie
AR5088	8	199 1/2	SO	5 1/2	7 1/2	29	42 1/4	12 1/2	25 1/2	5 1/2	54	9 2/4	Tie
AR5089	8	198 1/2	SO	5 1/2	7 1/2	29	42	12 1/2	25 1/2	5 1/2	53 1/2	9 1/4	Tie
AR5090	8	198	SO	5 1/2	7 1/2	29	41 3/4	12 1/4	25 1/2	5 1/2	53 1/4	9	Tie
AR5091	8	197	SO	5 1/2	7 1/2	29	41 1/2	12 1/4	25 1/2	5 1/2	52 3/4	9	Tie
AR5092	8	196 1/4	SO	5 1/2	7 1/2	29	41 1/2	12	25 1/2	5 1/2	52 1/2	8 3/4	Tie
AR5093	8	195 1/2	SO	5 1/2	7 1/2	29	41 1/4	12	25 1/2	5 1/2	52	8 3/4	Tie
AR5094	8	194 3/4	SO	5 1/2	7 1/2	29	41	11 3/4	25 1/2	5 1/2	51 3/4	8 1/2	Tie
AR5095	8	194	SO	5 1/2	7 1/2	29	40 3/4	11 3/4	25 1/2	5 1/2	51 1/2	8 1/2	Tie
AR5096	8	193 1/2	SO	5 1/2	7 1/2	29	40 1/2	11 3/4	25 1/2	5 1/2	51	8 1/4	Tie
AR5097	8	192 1/2	SO	5 1/2	7 1/2	29	40 1/2	11 1/2	25 1/2	5 1/2	50 3/4	8	Tie
AR5098	8	192	SO	5 1/2	7 1/2	29	40 1/4	11 1/2	25 1/2	5 1/2	50 1/2	8	Tie
AR5099	8	191 1/4	SO	5 1/2	7 1/2	29	40	11 1/2	25 1/2	5 1/2	50 1/4	7 3/4	Tie
AR5100	8	190 1/2	SO	5 1/2	7 1/2	29	40	11 1/4	25 1/2	5 1/2	49 3/4	7 3/4	Tie
AR5101	8	190	SO	5 1/2	7 1/2	29	39 3/4	11 1/4	25 1/2	5 1/2	49 1/2	7 1/2	Tie
AR5102	8	189 1/4	SO	5 1/2	7 1/2	29	39 1/2	11	25 1/2	5 1/2	49 1/4	7 1/2	Tie
AR5103	8	188 2/4	SO	5 1/2	7 1/2	29	39 1/4	11	25 1/2	5 1/2	49	7 1/4	Tie
AR5104	8	188	SO	5 1/2	7 1/2	29	39 1/4	11	25 1/2	5 1/2	48 3/4	7 1/4	Tie
AR5105	8	187 1/2	SO	5 1/2	7 1/2	29	39	11	25 1/2	5 1/2	48 1/4	7	Tie
AR5106	8	186 3/4	SO	5 1/2	7 1/2	29	38 3/4	10 3/4	25 1/2	5 1/2	48	7	Tie
AR5107	8	186	SO	5 1/2	7 1/2	29	38 3/4	10 3/4	25 1/2	5 1/2	47 3/4	6 3/4	Tie
AR5108	8	185 1/2	SO	5 1/2	7 1/2	29	38 1/2	10 3/4	25 1/2	5 1/2	47 1/2	6 3/4	Tie
AR5109	8	185	SO	5 1/2	7 1/2	29	38 1/2	10 1/2	25 1/2	5 1/2	47 1/4	6 3/4	Tie
AR5110	8	184 1/2	SO	5 1/2	7 1/2	29	38 1/4	10 1/2	25 1/2	5 1/2	47	6 1/2	Tie
AR5111	8	184	SO	5 1/2	7 1/2	29	38	10 1/2	25 1/2	5 1/2	46 3/4	6 1/2	Tie
AR5112	8	183 1/2	SO	5 1/2	7 1/2	29	38	10 1/2	25 1/2	5 1/2	46 1/2	6 1/4	Tie
AR5113	8	183	SO	5 1/2	7 1/2	29	37 3/4	10 1/4	25 1/2	5 1/2	46 1/4	6 1/4	Tie
AR5114	8	182 1/2	SO	5 1/2	7 1/2	29	37 3/4	10 1/4	25 1/2	5 1/2	46	6	Tie
AR5115	8	182	SO	5 1/2	7 1/2	29	37 1/2	10 1/4	25 1/2	5 1/2	45 3/4	6	Tie
AR5116	8	181 1/2	SO	5 1/2	7 1/2	29	37 1/2	10 1/4	25 1/2	5 1/2	45 1/2	6	Tie
AR5117	8	181 1/4	SO	5 1/2	7 1/2	29	37 1/4	10	25 1/2	5 1/2	45 2/4	5 3/4	Tie
AR5118	8	180 1/2	SO	5 1/2	7 1/2	29	37 1/4	10	25 1/2	5 1/2	45 1/4	5 3/4	Tie
AR5119	8	180 1/4	SO	5 1/2	7 1/2	29	37	10	25 1/2	5 1/2	45	5 3/4	Tie
AR5120	8	180	SO	5 1/2	7 1/2	29	37	10	25 1/2	5 1/2	44 3/4	5 1/2	Tie

Bar Mark	Quant	Length	Type	A	B	C	D	E	F	G	H	O	Desc.
AR5121	8	179 1/2	SO	5 1/2	7 1/2	29	36 3/4	10	25 1/2	5 1/2	44 1/2	5 1/2	Tie
AR5122	8	179 1/4	SO	5 1/2	7 1/2	29	36 3/4	10	25 1/2	5 1/2	44 1/2	5 1/2	Tie
AR5123	8	179	SO	5 1/2	7 1/2	29	36 1/2	9 3/4	25 1/2	5 1/2	44 1/4	5 1/4	Tie
AR5124	8	178 1/2	SO	5 1/2	7 1/2	29	36 1/2	9 3/4	25 1/2	5 1/2	44	5 1/4	Tie
AR5125	8	178	SO	5 1/2	7 1/2	29	36 1/2	9 3/4	25 1/2	5 1/2	44	5 1/4	Tie
AR5126	8	178	SO	5 1/2	7 1/2	29	36 1/4	9 3/4	25 1/2	5 1/2	43 3/4	5 1/4	Tie
AR5127	8	177 1/2	SO	5 1/2	7 1/2	29	36 1/4	9 3/4	25 1/2	5 1/2	43 1/2	5	Tie
AR5128	8	177	SO	5 1/2	7 1/2	29	36 1/4	9 3/4	25 1/2	5 1/2	43 2/4	5	Tie
AR5129	8	177	SO	5 1/2	7 1/2	29	36	9 3/4	25 1/2	5 1/2	43 1/4	5	Tie
AR5130	8	176 1/2	SO	5 1/2	7 1/2	29	36	9 1/2	25 1/2	5 1/2	43 1/4	5	Tie
AR5131	8	176 1/4	SO	5 1/2	7 1/2	29	36	9 1/2	25 1/2	5 1/2	43	5	Tie
AR5132	8	176	SO	5 1/2	7 1/2	29	35 3/4	9 1/2	25 1/2	5 1/2	43	4 3/4	Tie
AR5133	8	176	SO	5 1/2	7 1/2	29	35 3/4	9 1/2	25 1/2	5 1/2	42 3/4	4 3/4	Tie
AR5134	8	175 1/2	SO	5 1/2	7 1/2	29	35 3/4	9 1/2	25 1/2	5 1/2	42 3/4	4 3/4	Tie
AR5135	8	175 1/2	SO	5 1/2	7 1/2	29	35 3/4	9 1/2	25 1/2	5 1/2	42 2/4	4 3/4	Tie
AR5136	8	175 1/2	SO	5 1/2	7 1/2	29	35 1/2	9 1/2	25 1/2	5 1/2	42 2/4	4 3/4	Tie
AR5137	8	175	SO	5 1/2	7 1/2	29	35 1/2	9 1/2	25 1/2	5 1/2	42 2/4	4 3/4	Tie
AR5138	8	175	SO	5 1/2	7 1/2	29	35 1/2	9 1/2	25 1/2	5 1/2	42 1/4	4 1/2	Tie
AR5139	8	174 3/4	SO	5 1/2	7 1/2	29	35 1/2	9 1/2	25 1/2	5 1/2	42 1/4	4 1/2	Tie
AR5140	8	174 3/4	SO	5 1/2	7 1/2	29	35 1/2	9 1/2	25 1/2	5 1/2	42 1/4	4 1/2	Tie
AR5141	8	174 1/2	SO	5 1/2	7 1/2	29	35 1/4	9 1/2	25 1/2	5 1/2	42 1/4	4 1/2	Tie
AR5142	8	174 1/2	SO	5 1/2	7 1/2	29	35 1/4	9 1/2	25 1/2	5 1/2	42	4 1/2	Tie
AR5143	8	174 1/2	SO	5 1/2	7 1/2	29	35 1/4	9 1/2	25 1/2	5 1/2	42	4 1/2	Tie
AR5144	8	174 1/2	SO	5 1/2	7 1/2	29	35 1/4	9 1/2	25 1/2	5 1/2	42	4 1/2	Tie
AR5145	8	174 1/2	SO	5 1/2	7 1/2	29	35 1/4	9 1/2	25 1/2	5 1/2	42	4 1/2	Tie
AR5146	8	174 1/2	SO	5 1/2	7 1/2	29	35 1/4	9 1/2	25 1/2	5 1/2	42	4 1/2	Tie
AR5147	8	174 1/2	SO	5 1/2	7 1/2	29	35 1/4	9 1/2	25 1/2	5 1/2	42	4 1/2	Tie
AR5148	4	174 1/2	SO	5 1/2	7 1/2	29	35 1/4	9 1/2	25 1/2	5 1/2	42	4 1/2	Tie

Barmark	Quantity	Length	Type	A	B	G	Desc.
AR5149	4736	53 1/2	TC	5 1/2	42	6	Standard HorizontalTie
AR5150	148	42 1/2	TC	5 1/2	31	6	Chamfer Horizontal Tie

Barmark	Quantity	Length	Type	A	B	G	Desc.
AR5200	16	108	TC	5 1/2	96 1/2	6	Vertical Tie
AR5201	16	107 1/2	TC	5 1/2	96	6	Vertical Tie
AR5202	16	107	TC	5 1/2	95 1/2	6	Vertical Tie
AR5203	16	106 1/2	TC	5 1/2	95	6	Vertical Tie
AR5204	16	106	TC	5 1/2	94 2/4	6	Vertical Tie
AR5205	16	105 1/2	TC	5 1/2	94	6	Vertical Tie
AR5206	16	104 3/4	TC	5 1/2	93 1/4	6	Vertical Tie
AR5207	16	104 1/2	TC	5 1/2	92 3/4	6	Vertical Tie
AR5208	16	103 3/4	TC	5 1/2	92 1/4	6	Vertical Tie
AR5209	16	103 1/4	TC	5 1/2	91 3/4	6	Vertical Tie
AR5210	16	102 3/4	TC	5 1/2	91 1/4	6	Vertical Tie
AR5211	16	102 1/4	TC	5 1/2	90 3/4	6	Vertical Tie
AR5212	16	101 3/4	TC	5 1/2	90 1/4	6	Vertical Tie
AR5213	16	101	TC	5 1/2	89 1/2	6	Vertical Tie
AR5214	16	100 1/2	TC	5 1/2	89	6	Vertical Tie
AR5215	16	100	TC	5 1/2	88 1/2	6	Vertical Tie
AR5216	16	99 1/2	TC	5 1/2	88	6	Vertical Tie
AR5217	16	99	TC	5 1/2	87 1/2	6	Vertical Tie
AR5218	16	98 1/2	TC	5 1/2	87	6	Vertical Tie
AR5219	16	98	TC	5 1/2	86 1/2	6	Vertical Tie
AR5220	16	97 1/4	TC	5 1/2	85 3/4	6	Vertical Tie
AR5221	16	96 3/4	TC	5 1/2	85 1/4	6	Vertical Tie
AR5222	16	96 1/4	TC	5 1/2	84 3/4	6	Vertical Tie
AR5223	16	95 3/4	TC	5 1/2	84 1/4	6	Vertical Tie
AR5224	16	95 1/4	TC	5 1/2	83 3/4	6	Vertical Tie
AR5225	16	94 3/4	TC	5 1/2	83 1/4	6	Vertical Tie
AR5226	16	94 1/4	TC	5 1/2	82 3/4	6	Vertical Tie
AR5227	16	93 3/4	TC	5 1/2	82 1/4	6	Vertical Tie
AR5228	16	93 1/4	TC	5 1/2	81 3/4	6	Vertical Tie
AR5229	16	92 1/2	TC	5 1/2	81	6	Vertical Tie
AR5230	16	92	TC	5 1/2	80 1/2	6	Vertical Tie
AR5231	16	91 1/2	TC	5 1/2	80	6	Vertical Tie
AR5232	16	91	TC	5 1/2	79 1/2	6	Vertical Tie
AR5233	16	90 1/2	TC	5 1/2	79	6	Vertical Tie
AR5234	16	90	TC	5 1/2	78 1/2	6	Vertical Tie
AR5235	16	89 1/2	TC	5 1/2	78	6	Vertical Tie
AR5236	16	89	TC	5 1/2	77 1/2	6	Vertical Tie
AR5237	16	88 1/2	TC	5 1/2	77	6	Vertical Tie
AR5238	16	88	TC	5 1/2	76 1/2	6	Vertical Tie
AR5239	16	87 1/2	TC	5 1/2	76	6	Vertical Tie
AR5240	16	87	TC	5 1/2	75 1/2	6	Vertical Tie
AR5241	16	86 1/2	TC	5 1/2	75	6	Vertical Tie
AR5242	16	86	TC	5 1/2	74 1/2	6	Vertical Tie
AR5243	16	85 1/2	TC	5 1/2	74	6	Vertical Tie
AR5244	16	85	TC	5 1/2	73 1/2	6	Vertical Tie
AR5245	16	84 1/2	TC	5 1/2	73	6	Vertical Tie
AR5246	16	84	TC	5 1/2	72 1/2	6	Vertical Tie
AR5247	16	83 1/2	TC	5 1/2	72	6	Vertical Tie
AR5248	16	83	TC	5 1/2	71 1/2	6	Vertical Tie
AR5249	16	82 1/2	TC	5 1/2	71	6	Vertical Tie
AR5250	16	82	TC	5 1/2	70 1/2	6	Vertical Tie
AR5251	16	81 1/2	TC	5 1/2	70	6	Vertical Tie
AR5252	16	81	TC	5 1/2	69 1/2	6	Vertical Tie
AR5253	16	80 1/2	TC	5 1/2	69	6	Vertical Tie
AR5254	16	80	TC	5 1/2	68 1/2	6	Vertical Tie
AR5255	16	79 1/2	TC	5 1/2	68	6	Vertical Tie
AR5256	16	79	TC	5 1/2	67 1/2	6	Vertical Tie
AR5257	16	78 1/2	TC	5 1/2	67	6	Vertical Tie
AR5258	16	78	TC	5 1/2	66 1/2	6	Vertical Tie
AR5259	16	77 1/2	TC	5 1/2	66	6	Vertical Tie
AR5260	16	77	TC	5 1/2	65 1/2	6	Vertical Tie

Barmark	Quantity	Length	Type	A	B	G	DESC
AR5261	16	76 3/4	TC	5 1/2	65 1/4	6	Vertical Tie
AR5262	16	76 1/4	TC	5 1/2	64 3/4	6	Vertical Tie
AR5263	16	75 3/4	TC	5 1/2	64 1/4	6	Vertical Tie
AR5264	16	75 1/4	TC	5 1/2	63 3/4	6	Vertical Tie
AR5265	16	74 3/4	TC	5 1/2	63 1/4	6	Vertical Tie
AR5266	16	74 1/4	TC	5 1/2	62 3/4	6	Vertical Tie
AR5267	16	74	TC	5 1/2	62 1/2	6	Vertical Tie
AR5268	16	73 1/2	TC	5 1/2	62	6	Vertical Tie
AR5269	16	73	TC	5 1/2	61 1/2	6	Vertical Tie
AR5270	16	72 1/2	TC	5 1/2	61	6	Vertical Tie
AR5271	16	72 1/4	TC	5 1/2	60 3/4	6	Vertical Tie
AR5272	16	71 3/4	TC	5 1/2	60 1/4	6	Vertical Tie
AR5273	16	71 1/4	TC	5 1/2	59 3/4	6	Vertical Tie
AR5274	16	71	TC	5 1/2	59 1/2	6	Vertical Tie
AR5275	16	70 1/2	TC	5 1/2	59	6	Vertical Tie
AR5276	16	70	TC	5 1/2	58 1/2	6	Vertical Tie
AR5277	16	69 3/4	TC	5 1/2	58 1/4	6	Vertical Tie
AR5278	16	69 1/4	TC	5 1/2	57 3/4	6	Vertical Tie
AR5279	16	68 3/4	TC	5 1/2	57 1/4	6	Vertical Tie
AR5280	16	68 1/2	TC	5 1/2	57	6	Vertical Tie
AR5281	16	68	TC	5 1/2	56 1/2	6	Vertical Tie
AR5282	16	67 3/4	TC	5 1/2	56 1/4	6	Vertical Tie
AR5283	16	67 1/4	TC	5 1/2	55 3/4	6	Vertical Tie
AR5284	16	66 3/4	TC	5 1/2	55 1/4	6	Vertical Tie
AR5285	16	66 1/2	TC	5 1/2	55	6	Vertical Tie
AR5286	16	66	TC	5 1/2	54 1/2	6	Vertical Tie
AR5287	16	65 3/4	TC	5 1/2	54 1/4	6	Vertical Tie
AR5288	16	65 1/2	TC	5 1/2	54	6	Vertical Tie
AR5289	16	65	TC	5 1/2	53 1/2	6	Vertical Tie
AR5290	16	64 3/4	TC	5 1/2	53 1/4	6	Vertical Tie
AR5291	16	64 1/4	TC	5 1/2	52 3/4	6	Vertical Tie
AR5292	16	64	TC	5 1/2	52 1/2	6	Vertical Tie
AR5293	16	63 1/2	TC	5 1/2	52	6	Vertical Tie
AR5294	16	63 1/4	TC	5 1/2	51 3/4	6	Vertical Tie
AR5295	16	63	TC	5 1/2	51 1/2	6	Vertical Tie
AR5296	16	62 1/2	TC	5 1/2	51	6	Vertical Tie
AR5297	16	62 1/2	TC	5 1/2	50 3/4	6	Vertical Tie
AR5298	16	62	TC	5 1/2	50 1/2	6	Vertical Tie
AR5299	16	61 3/4	TC	5 1/2	50 1/4	6	Vertical Tie
AR5300	16	61 1/4	TC	5 1/2	49 3/4	6	Vertical Tie
AR5301	16	61	TC	5 1/2	49 1/2	6	Vertical Tie
AR5302	16	60 3/4	TC	5 1/2	49 1/4	6	Vertical Tie
AR5303	16	60 1/2	TC	5 1/2	49	6	Vertical Tie
AR5304	16	60 1/4	TC	5 1/2	48 3/4	6	Vertical Tie
AR5305	16	59 3/4	TC	5 1/2	48 1/4	6	Vertical Tie
AR5306	16	59 1/2	TC	5 1/2	48	6	Vertical Tie
AR5307	16	59 1/4	TC	5 1/2	47 3/4	6	Vertical Tie
AR5308	16	59	TC	5 1/2	47 1/2	6	Vertical Tie
AR5309	16	58 3/4	TC	5 1/2	47 1/4	6	Vertical Tie
AR5310	16	58 1/2	TC	5 1/2	47	6	Vertical Tie
AR5311	16	58 1/4	TC	5 1/2	46 3/4	6	Vertical Tie
AR5312	16	58	TC	5 1/2	46 1/2	6	Vertical Tie
AR5313	16	57 3/4	TC	5 1/2	46 1/4	6	Vertical Tie
AR5314	16	57 1/2	TC	5 1/2	46	6	Vertical Tie
AR5315	16	57 1/4	TC	5 1/2	45 3/4	6	Vertical Tie
AR5316	16	57	TC	5 1/2	45 1/2	6	Vertical Tie
AR5317	16	57	TC	5 1/2	45 1/2	6	Vertical Tie
AR5318	16	56 3/4	TC	5 1/2	45 1/4	6	Vertical Tie
AR5319	16	56 1/2	TC	5 1/2	45	6	Vertical Tie
AR5320	16	56 1/4	TC	5 1/2	44 3/4	6	Vertical Tie

Barmark	Quantity	Length	Type	A	B	G	Desc.
AR5321	16	56	TC	5 1/2	44 1/2	6	Vertical Tie
AR5322	16	56	TC	5 1/2	44 1/2	6	Vertical Tie
AR5323	16	55 3/4	TC	5 1/2	44 1/4	6	Vertical Tie
AR5324	16	55 1/2	TC	5 1/2	44	6	Vertical Tie
AR5325	16	55 1/2	TC	5 1/2	44	6	Vertical Tie
AR5326	16	55 1/4	TC	5 1/2	43 3/4	6	Vertical Tie
AR5327	16	55	TC	5 1/2	43 1/2	6	Vertical Tie
AR5328	16	55	TC	5 1/2	43 1/2	6	Vertical Tie
AR5329	16	54 3/4	TC	5 1/2	43 1/4	6	Vertical Tie
AR5330	16	54 3/4	TC	5 1/2	43 1/4	6	Vertical Tie
AR5331	16	54 1/2	TC	5 1/2	43	6	Vertical Tie
AR5332	16	54 1/2	TC	5 1/2	43	6	Vertical Tie
AR5333	16	54 1/4	TC	5 1/2	42 3/4	6	Vertical Tie
AR5334	16	54 1/4	TC	5 1/2	42 1/2	6	Vertical Tie
AR5335	16	54	TC	5 1/2	42 1/2	6	Vertical Tie
AR5336	16	54	TC	5 1/2	42 1/2	6	Vertical Tie
AR5337	16	54	TC	5 1/2	42 1/2	6	Vertical Tie
AR5338	16	53 3/4	TC	5 1/2	42 1/4	6	Vertical Tie
AR5339	16	53 3/4	TC	5 1/2	42 1/4	6	Vertical Tie
AR5340	16	53 3/4	TC	5 1/2	42 1/4	6	Vertical Tie
AR5341	16	53 3/4	TC	5 1/2	42 1/4	6	Vertical Tie
AR5342	16	53 1/2	TC	5 1/2	42	6	Vertical Tie
AR5343	16	53 1/2	TC	5 1/2	42	6	Vertical Tie
AR5344	16	53 1/2	TC	5 1/2	42	6	Vertical Tie
AR5345	16	53 1/2	TC	5 1/2	42	6	Vertical Tie
AR5346	16	53 1/2	TC	5 1/2	42	6	Vertical Tie
AR5347	16	53 1/2	TC	5 1/2	42	6	Vertical Tie
AR5348	16	53 1/2	TC	5 1/2	42	6	Vertical Tie

Barmark	Quantity	Length	Type	A	B	C	D	G	Desc.
AR850	144	192	SD	48	24	48	24	48	Hoops @ Hangers

Barmark	Quantity	Length (in)	Length (ft)
AR1100	4	3439	286.59
AR1101	8	1171	97.58
AR1102	8	535	44.58
AR1103	4	3452 3/4	287.73
AR1104	8	243 1/2	20.28
AR1105	4	3368	280.67
AR1106	8	268 1/2	22.39
AR1107	4	3431 1/2	285.95
AR1108	8	542	45.17
AR1109	4	3493	291.08
AR1110	8	1191	99.27
AR1111	4	3478 1/2	289.87
AR1112	4	3509 1/4	292.43
AR1113	2	3409 3/4	284.14
AR1114	2	3460 1/2	288.38
AR1115	2	3343 3/4	278.64
AR1116	2	3463 3/4	288.64

SPECIAL PROVISION
SECTION 503
REINFORCING STEEL—MMFX

Section 503.01 Description is modified to read:

This work shall consist of furnishing and placing reinforcement, either plain, epoxy-coated or MMFX 2, in accordance with these specifications and in conformance with the Plans, Supplemental Specifications and Special Provisions.

MMFX 2 steel bars as shown on the plans shall be as manufactured by MMFX Steel Corporation of America. Bar marks for these bars are shown with a suffix after the mark, for example, S500X.

Section 503.04 Protection of Material, 1st sentence of the 1st paragraph is modified to read:

Reinforcement, either plain, epoxy-coated or MMFX 2, shall be stored on skids or other supports a minimum of 300 mm (12 in) above the ground surface and protected at all times from damage and surface contamination.

Section 503.06 Placing and Fastening, 6th paragraph is modified to include:

Tie wire for MMFX 2 reinforcement shall be soft annealed wire that has been nylon, epoxy, plastic coated or 16 gauge (or heavier) black-annealed ferrous metal wire.

Section 503.07 Splicing is modified to include:

The following splice lengths shall generally be used on this project, where concrete strength is 4350 psi and nominal yield strength of the MMFX2 reinforcing steel is 75 ksi.

Minimum Lap Splice Length for (inches)*								
Bar Type	Bar Size							
	#4	#5	#6	#7	#8	#9	#10	#11
MMFX 2	26	32	39	46	60	77	97	120

The following splice lengths shall be used on the rail and deck overhang of the structure, and include additional length for these components, as recommended by the manufacturer:

Minimum Lap Splice Length (inches)*								
Bar Type	Bar Size							
	#4	#5	#6	#7	#8	#9	#10	#11
MMFX 2	34	43	51	62	80	102	130	160

Section 503.10 Method of Measurement, MMFX 2 reinforcing will not be measured directly for payment.

Section 503.11 Basis of Payment is modified to include:

All MMFX 2 Reinforcing Steel is considered incidental to associated concrete items.

SPECIAL PROVISION
SECTION 506
PROTECTIVE COATING - STEEL

506.01 Description. This work shall consist of preparation of steel surfaces and applying protective coating to steel substrate in accordance with the Plans and this Specification.

506.02 Materials. Materials shall comply with the requirements in the respective Subsections of Section 506.

506.03 Submittals. At least thirty days prior to the start of work, the Contractor shall submit for review by the Department, materials list, containment details, and other such details as described within the plans and the respective subsections of this specification. Work shall not commence until review of submittals is satisfactory.

The Contractor shall provide at least fourteen days notice prior to the start of work.

506.04 General Requirements. Requirements for the containment system or the type of protective coating to be furnished are as follows:

Galvanizing	Subsections 506.10 through 506.19
Zinc Rich Coating System	Subsections 506.20 through 506.29

506.05 Inspection. Quality Control (Q.C.) is the responsibility of the Contractor. The Quality Control Inspector (Q.C.I.) shall inspect all aspects of the work and shall supervise required testing. The Q.C.I. shall record measurements and test results in a Job Control Record (JCR). The Q.C.I. shall reject materials and workmanship that do not meet contract requirements. The Contractor may perform testing in addition to the minimum required. The results of all testing shall be documented and made available to the Quality Assurance Inspector (Q.A.I.).

The JCR shall include the following, as applicable:

- Type of application equipment
- Surface preparation - cleanliness and anchor profile
- Environmental conditions - dew point, relative humidity, temperature
- Coating lot number, date of manufacture and shelf life
- Manufacturer's certification of conformance
- Name(s) of applicator(s)
- Dry Film Thickness (DFT)
- Cure data

Quality Assurance (Q.A.) is the prerogative of the Resident. The Q.A.I. will ensure that the Q.C. Department is performing properly, verify documentation, periodically inspect workmanship and witness testing. Q.A. testing deemed necessary by the Resident in addition to the minimum testing requirements will be scheduled to minimize interference with the production schedule.

The Contractor shall have the most recent edition of the following references available at the job site when work is being done:

1. Steel Structures Painting Council's Steel Structures Painting Manual, Volumes 1 and 2 (Good Painting Practice and Systems and Specifications).

2. SSPC Vis 1, Visual Standard for Abrasive Blast Cleaned Steel

Test methods - Unless otherwise provided in this section, the following test methods shall be used:

Surface profile measured in accordance with ASTM Standard D4417 Method C (replica tape) and ASTM Standard D4417A (angularity profile)

Surface Cleanliness, SSPC Vis 1

Dry film thickness, SSPC PA-2

506.05.1 Inspector's Qualifications. Personnel who perform QC shall have sufficient training and experience to ensure compliance with requirements. Minimum qualifications shall be in accordance with industry standards or as stated in the specifications.

506.06 Inspector's Authority. The Q.A.I. will have the authority to reject material or workmanship that does not meet the contract requirements. The acceptance of material or workmanship by the Q.A.I. will not prevent subsequent rejection, if found unacceptable.

506.07 Rejections. Rejected material and workmanship shall be corrected or replaced by the Contractor in accordance with Subsection 106.8.2.

506.08 Facilities for Inspection. The Contractor shall provide a private office at the coating site for the Q.A.I. The office shall have an area not less than 100 ft^2 and shall be in close proximity to the work. The office shall be climate controlled to maintain the temperature between 65° F and 85° F, lighted and have the exit(s) closed by a door(s) equipped with a lock and 2 keys which shall be furnished to the Q.A.I. The office shall be equipped with a desk or table having a minimum size of 48 in. By 30 in., 2 chairs, a two-line telephone, telephone answering machine, line data port, plan rack and 2-drawer letter size file cabinet with a lock and 2 keys which shall be furnished to the Inspector(s).

The facilities and all furnishings shall remain the property of the Contractor upon completion of the work. Payment for the facilities, heating, lighting, telephone installation, basic monthly telephone charges and all furnishings shall be incidental to the contract.

506.09 Qualification. Shop-applied zinc-rich coating systems shall be applied in facilities holding a current AISC Sophisticated Paint Endorsement (P) or has been qualified in accordance with SSPC QP3-*Standard Procedure for Evaluating Qualifications of Shop Painting Applicators.*

Thermal Spray Coating (TSC), including sealers and top coating, fusion bonded coatings and hot-dip galvanizing shall be applied in facilities with a minimum of five years documented experience of satisfactory performance.

HOT-DIP GALVANIZING

506.10 Description. Hot-dip galvanizing shall meet the requirements of AASHTO M 111 (ASTM A 123). The minimum average coating thickness grade shall conform to Table 1. The frequency of testing shall be in accordance with Section 6. The choice of the test method is the prerogative of the Contractor.

Certification and written test results shall be provided in accordance with Section 10 of AASHTO M 111 (ASTM A 123).

506.11 Surface Preparation. Steel substrate shall be abrasive blast cleaned to a minimum of SSPC SP 6/NACE 3 prior to galvanizing.

506.12 Repairs. Repairs to galvanizing shall be in accordance with Annex A1 or A3 of ASTM A 780. Zinc-rich paints for repair may only be used with prior approval of the Resident.

506.13 Topcoat Galvanized Surfaces The areas of galvanized surfaces to receive a topcoat will be described on the plans or in the specifications.

Chromate quenching or other types of quenching after galvanizing will not be allowed.

Hot Dip Galvanized surfaces to be painted shall be smooth and have a uniform zinc thickness, free of runs or heavy buildup.

Surfaces shall be cleaned to SSPC-SP 1 using either the solvent or steam cleaning alternatives; an alkali alternative may be used provided that the PH is 11 or less. All surfaces shall be prepared in accordance with SSPC-SP 7/NACE No. 4 Brush-Off Blast Cleaning. The surface shall have an anchor profile within the paint manufacturer's recommendations. The blast media shall be a mineral slag or organic product. Steel grit will not be allowed.

Topcoat material shall be any topcoat product from a listed NEPCOAT QPL system.

Surfaces shall be prepared and paint applied in an enclosed facility protected from inclement weather. Paint shall be stored, handled mixed and applied in accordance with manufacturer's published recommendations and in accordance with SSPC PA 1. Primer, if required, shall be as recommended by the topcoat manufacturer.

Touch up shall be in accordance with the coating manufacturer's recommendations. If repairs larger than 6 in.^{2} are made on the top coat of any one piece; the entire piece shall be re-coated after repairs are completed.

506.14 thru 506.19 Vacant.

ZINC-RICH COATING SYSTEMS

506.20 Description. Work shall consist of application of a three-coat, zinc-rich coating system in accordance with the Plans and this Specification.

506.21 Materials. Coatings systems shall be from the Northeast Protective Coating Committee (NEPCOAT) Qualified Products List (QPL). The list may be found through the Department's Web page (http://www.state.me.us/mdot).

The Contractor shall provide the paint batch description, lot number, date of manufacture, shelf life and the manufacturer's published storage requirements to the Resident. In addition, the Contractor shall provide the manufacturer's published instructions for application of each coat of the coating system including equipment, surface preparation, anchor profile, mixing, thinning, application, cure time for the entire range of allowable environmental conditions, dry film thickness (DFT) and recoat time.

The finish topcoat color shall be reddish-brown, similar to the final appearance of weathering steel after two years of weathering. Prior to topcoating, a color-chip shall be supplied by the fabricator for final color selection and approval by the Resident.

The Contractor shall sample each batch of coating to be applied; sampling shall be witnessed by the QAI. Samples shall be sent to and tested by the lab that originally performed the NEPCOAT QPL qualification tests. Samples shall be tested for unit weight and infrared refractory (IR) results; the lab shall evaluate the sample(s) and render an opinion of relative comparison with the original NEPCOAT QPL test. Report(s) of the test results shall be furnished to the Resident. Material that does not compare favorably with the original tests is not acceptable for use. Sampling and testing costs will be borne by the Contractor.

506.22 Limits of work. Locations to be painted shall be as specified herein and on the plans

506.23 Surface Preparation. Prior to abrasive blast cleaning, all corners exposed in the assembled product shall be rounded to approximately a 1/8-in. radius. A series of tangents to the approximate radius will be considered as rounded. The Contractor shall prepare a plate approximately 2 in. x 12 in. with the appropriate rounded corner. The QCI and QAI shall agree upon the acceptability of the corner preparation and the plate shall become the Job Standard. The plate shall remain the property of the Contractor.

Surfaces to be coated shall be abrasive blast cleaned to meet the coating manufacturer's published requirements. SSPC VIS 1 shall be used to determine acceptable cleanliness. The QCI and QAI shall evaluate the first piece using VIS 1 as a comparator. No further blast cleaning shall be done until the QCI and QAI agree upon the acceptable Job Standard for cleanliness. If more than one method of abrasive blast cleaning is used (e.g. centrifugal blast and compressed air), the acceptable Job Standard shall be established for each method. At the Contractor's option, a sample piece may be abrasive blast cleaned and sealed with a clear coating to preserve the surface preparation and the sample piece may be used as a comparator to establish the agreed upon Job Standard.

After abrasive blast cleaning, the surface shall be visually inspected for fins, tears, delaminations and other discontinuities. Fins, tears and other discontinuities shall be removed with a grinder or other suitable power tool and the area shall be blended at a slope of approximately 1:20. The affected area(s) shall be abrasive blast cleaned to develop an acceptable anchor profile.

The anchor profile shall meet the requirements of the coating manufacturer's published recommendations. The blast media shall contain enough grit to provide an angular anchor profile. The anchor profile shall be measured in accordance with ASTM D 4417 Method C. If the anchor profile fails to meet the minimum requirements, the Contractor shall re-blast the substrate until the minimum required anchor profile is achieved. If the anchor profile exceeds the maximum

allowed in the manufacturer's published recommendations, the substrate may only be coated after it has been brought within manufacturer's recommendations.

The QCI shall measure the anchor profile of the substrate on each plane of the first piece and each additional piece with a significant change in size or geometry. The QAI will witness the testing. After it has been established to the satisfaction of the Resident that the abrasive blast equipment is capable of providing uniform, acceptable surface preparation, a diminished degree of testing shall be agreed upon by the QCI and QAI.

If there is a significant change in surface cleanliness or anchor profile due to blast media degradation or other reason, the Contractor shall cease the blast operation until corrective action is taken.

If compressed air is used for abrasive blast cleaning, a blotter test shall be performed in accordance with ASTM D 4285 at the beginning of each shift and at any other time the QAI directs it. The QCI shall be present to witness the blotter test.

The allowable time between abrasive blast cleaning and primer application shall not exceed the manufacturer's published recommendations or eight hours, whichever is less.

506.24 Application. Thinning and mixing of coatings shall be in conformance with the manufacturer's published instructions. Thinner shall be measured using a graduated cup or other container that clearly indicates the amount of thinner being added. Mixing shall be done using the method, equipment and for the amount of time recommended by the coating manufacturer.

Coating equipment including mixers, hoses, tip size and guns shall meet the manufacturer's published requirements. Application technique shall be in accordance with the manufacturer's published instructions.

Primer, intermediate coat and topcoat shall be applied in accordance with the manufacturer's published recommendations and SSPC PA 1. The environmental conditions in the immediate vicinity of the steel to be coated shall be within the ranges in the manufacturer's published requirements during the coating operation and during the curing period. Coating shall be applied in a neat and workmanlike manner; surfaces shall be free of sags, runs, drips or other film defects.

Seal all gaps that are 1/8 inch or larger, between abutting surfaces, prior to coating, with a paintable caulk as recommended by the coating manufacturer.

Environmental conditions shall be measured by the QCI in the immediate vicinity of the steel to be coated. The QAI may perform environmental testing in addition to the testing performed by the QCI. If there are significant differences between the test results, the differences shall be resolved or explained to the satisfaction of the Resident prior to coating application. The results of the environmental testing shall be recorded in the JCR.

Corners, fasteners, welds and inaccessible locations shall be striped in accordance with SSPC PA 1. The striping shall extend a minimum of 1 inch from each edge. Striping will not be required on intermediate and topcoat; however, the Contractor shall meet the minimum DFT requirements on all surfaces.

Recoat time shall be in accordance with the manufacturer's published requirements for the environmental conditions at the time of application and cure. If the coating is contaminated with dust, debris, over spray or other deleterious material, the surface shall be solvent cleaned in accordance with SSPC SP 1 immediately prior to recoating. Other methods of cleaning may be used if approved by the Resident.

The Contractor shall take adequate measures during coating and curing operations to prevent contamination of surfaces with overspray, dust, or other contaminates.

The QAI shall be given ample notice in order to inspect the product prior to coating, recoating or removal of paint from the area. Ample notice shall be as agreed upon between the Q.A.I. and the Q.C.I. Substrates that are primed or surfaces that are recoated without notification of the QAI shall be rejected and no further coating shall be done on the piece. Coating applied without notification of the QAI will be investigated by destructive and non-destructive testing as directed by the Resident and by a review of the JCR. The Resident may reject, conditionally accept or accept the coating based on documentation and test results. Rejected coating shall be removed and re-applied. Conditionally accepted coatings shall be made acceptable as directed by the Resident. The cost of additional testing and repairs shall be borne by the Contractor.

506.25 Dry Film Thickness. Dry film thickness shall be measured in accordance with SSPC PA 2. The results shall be documented in the JCR. The JCR documentation shall include the actual measurements, spot average and the location(s). Each piece or area presented for acceptance, regardless of size shall be considered a separate structure for purposes of determining the number of readings to be taken except that large quantities of small parts and/or secondary framing members coated at the same time may be measured at a lesser frequency when directed by the Resident. When random DFT testing of a large quantity of small parts and/or secondary framing members results in unacceptable DFTs, the Contractor shall have the option of measuring and documenting the DFT of each piece or removing the coating and/or recoating all pieces represented in the production lot.

Coating thickness that does not comply with the manufacturer's recommendations shall be corrected prior to successive coating or acceptance.

506.26 Repairs. Damaged or unacceptable coatings shall be repaired. Damaged areas shall be prepared in accordance with the manufacturer's published instructions or as directed by the Resident. Damaged or unacceptable coatings shall be repaired using the same coating removed and prepared for repair. Environmental conditions, cure times and DFTs shall be in accordance with manufacturer's published directions for the coating being applied. Repairs to topcoat shall result in a uniform gloss and color match. The Resident shall have final authority concerning acceptable appearance.

If repairs larger than 6 in.^{2} are made on the topcoat of fascia beam; the entire beam shall be re-coated after repairs are completed. Coat thickness shall not exceed the manufacturer's published recommendations.

506.27 Handling and Storage. The coating shall be adequately cured before handling but under no circumstances shall the product be handled before the coating has achieved the manufacturer's published minimum cure time. Coated steel members shall be handled in a manner to avoid damage to the coating. Members shall be lifted and moved using non-metallic slings, padded

chains and beam clamps, softeners or other non-injurious methods. Material shall be stored, both at the coating facility and in the field, in a manner that prevents damage to the coating.

Damage to the coating that is discovered after the product is loaded for shipment to the job site shall be documented by the QCI. Repairs shall not be made unless the damaged area is repaired in accordance with Subsection 506.26. Repairs that cannot be acceptably done on the truck shall be done in the shop or in the field at the Contractor's option.

MEASUREMENT and PAYMENT

506.90 Basis of Payment. The entire cost of protective coating shall be considered incidental to the bridge component to which it is applied.

SPECIAL PROVISION
SECTION 510 - SPECIAL DETOURS

510.01 Description This work shall consist of the design, construction, and maintenance in good condition, and removal of temporary structures, approaches and turnaround required for the satisfactory maintenance of vehicular and pedestrian traffic.

Easements or right-of-way for the Special Detour will be furnished by the Department and will be shown on the Contract Plans. If the Contractor proposes an alternative location for the Special Detour, and the alternative location is approved by Department, that easement may only be acquired by the Department. All additional costs associated with the acquisition, including but not limited to obtaining easements, environmental mitigation, restoration and Department time, shall be borne by the Contractor.

510.02 Materials Materials used for the Special Detour structure and approaches shall conform to the detailed plans and specifications submitted by the Contractor.

510.03 Vehicular and Pedestrian Traffic Not Separated The Special Detour shall be located as close as practicable to the new work or as shown on the plans.

The Special Detour, including the temporary structure and approaches, shall be designed and sealed by a Professional Engineer, licensed in accordance with the laws of the State of Maine. The Contractor shall submit the design computations and detailed plans of the temporary structure and approaches that will serve as the temporary detour to the Resident prior to beginning construction of the Special Detour.

If the Department requires changes to Temporary Detour plans or computations, based on Contract requirements, then the Contractor shall implement the changes at no additional cost to the Department.

The Department shall have no obligation to review or comment on any design, construction, maintenance or removal of Temporary Detours. No review or comment by the Department, or any lack of review or comment by the Department, shall relieve the Contractor of its responsibility to properly design, construct, maintain in good condition, and remove Temporary Detours in accordance with the Contract, or to shift any responsibility to the Department. The Contractor shall be responsible for all damages resulting from the failure of temporary structures or approaches.

The Special Detour shall not be opened to traffic until the Contractor's Professional Engineer inspects the temporary structure and provides the Department with a signed and sealed document certifying that the structure was built in accordance with the previously submitted sealed plans and design details of the structure and approaches.

To avoid conflicts with westbound traffic on River Road, the Special Detour design shall prohibit northbound 3 axle and larger trucks and buses on the bridge from making right turns on River Road. Instead, that traffic shall be directed through the River Road intersection to a turnaround located approximately 1000 feet north, as shown on the plans. This turnaround shall also be paved.

In addition, the Contractor may close Sophie Mae Lane to entering and exiting traffic in the vicinity of the work area. Access to the commercial property shall be maintained on both Sophie Mae Lane and Route 201A.

510.031 Structure Design Temporary structures shall be designed in accordance with the AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002, or the current edition of AASHTO LRFD Bridge Design Specifications, except as noted herein, to meet live load requirements of HS20, for ASD and LFD, or HL-93, for LRFD designs.

a. Deflections Primary structural members shall be designed so that deflection due to live load plus impact shall not exceed 1/300 of the span.

b. Fatigue Stresses Fatigue stresses for steel need not be considered if the steel is judged by the Contractor's Professional Engineer to be in sound structural condition.

c. Bridge Railing Loads Bridge railing shall be designed in accordance with AASHTO Standard Specifications, 17th Edition, 2002 or the current edition of AASHTO LRFD Bridge Specifications, except that the Standard Specification design load "P" specified as 10 kips may be decreased to 5 kips. However, allowable design stresses for material used in bridge rails and posts shall not be increased above those allowed by AASHTO Standard Specifications.

d. Waterway Opening The minimum waterway opening of the temporary structure shall be designed to pass the Design Discharge indicated in the Contract Specifications, without any overtopping of the roadway.

Boat traffic shall be maintained during construction. The temporary structure shall be designed to provide a minimum of 5 feet of freeboard at Q1.1 for boat traffic.

e. Foundations Temporary foundations, embankment foundations and earth retaining structures shall be designed in accordance with the AASHTO Standard Specifications, 17th Edition, or the current edition of the AASHTO LRFD Bridge Design Specifications and AASHTO LFRD Bridge Construction Specifications, except as noted herein. The Contractor is responsible for determining the ultimate load carrying capacity of the foundation materials and foundation elements for the Special Detour. The determination of the ultimate load carrying capacity may require characterization of the subsurface conditions by the Contractor by means of subsurface investigation.

The applied loads on foundations shall consider both dead and live loads and all other applicable loads and forces. The Contractor is responsible for choosing an applicable factor of safety for foundations on soil and rock and an appropriate design load group. The factor of safety and maximum applied load, or LRFD factored applied loads and factored geotechnical resistances, used for each foundation design shall be clearly stated on the submitted calculations.

510.032 Geometric and Approach Design The geometric design of the Special Detour, except as otherwise shown on the plans or as noted herein, shall be designed in accordance with the current AASHTO Specification "A Policy on Geometric Design of Highways and Streets".

a. Horizontal Alignment Horizontal curve radius shall not be less than 200 feet at the centerline of roadway, except as otherwise shown on the Plans.

Roadway width as indicated in the Contract shall be the minimum clear travel width between faces of bridge curbs, bridge rails or approach rails, whichever is less. The approach roadway shall have 2 feet wide shoulders, minimum, to the roadway berms, where guardrail is not required, in addition to the roadway width indicated in the Contract.

The roadway width shall be increased on curved portions of the Special Detour to account for the off tracking characteristics of a WB-62 vehicle in accordance with Exhibit 3-49, Case I or Case III, of the AASHTO Standard Specifications.

The turnaround shall provide one lane with a minimum width of 18 feet. The lane width shall be increased as necessary to account for the turning path of a WB-50 design vehicle.

b. Vertical Alignment Grades shall not exceed 10% and any change in grade shall accommodate all legal highway vehicle components or attached loads.

c. Approach Road Guardrail The Special Detour approaches shall have guardrail where side slopes are steeper than three horizontal to one vertical. Approach guardrail shall be attached to the bridge rail in a manner that develops the approach guardrail in tension. Approach guardrail shall consist of Type 3 guardrail or an approved equal**,** unless other rail or barriers are specified.

The termination of approach guardrail and the end treatment of the rail shall be in accordance with the current AASHTO Roadside Design Guide.

d. Approach embankments The earth material used for approach embankments shall have sufficient strength under the placement method specified in the Contractor’s plans to maintain stability throughout the duration of the Special Detour.

e. Approach Road Base Drainage The approach road base structure shall consist of a 1 foot thick layer, minimum, of aggregate subbase course gravel, Type D or E. This layer shall be designed to support legal loads during the use of the detour. Drainage shall be designed to drain the approach area.

f. Approach Road Surface The approach road surface, including the shoulders, shall be paved with a 3 inch, minimum, thickness hot bituminous pavement layer.

g. Design Speed The design speed of the Special Detour shall be not less than the construction area posted speed limit, or the advisory speed limit, as applicable, unless otherwise indicated in the Contract.

510.04 Pedestrian Traffic Only The provisions of Section 510.03 - Vehicular and Pedestrian Traffic Not Separated, shall apply to this Section with the following modifications:

a. Structures shall be designed for a live load of 85 lb/ft^2.
b. The Special Detour shall have a minimum clear width of 5 ft or as specified in the Contract.
c. Vertical alignment and ramps shall be ADA compliant.
d. Deflections due to live load shall not exceed 1/300 of the span.

510.05 Vehicular and Pedestrian Traffic Separated The provisions of both Section 510.03 - Vehicular and Pedestrian Traffic Not Separated, and Section 510.04 - Pedestrian Traffic Only, shall apply to this Section. If vehicles and pedestrians are carried on the same structure, each shall have its own lane as specified. The pedestrian lane shall be protected from vehicular traffic by being at least 225 mm [9 in] above the roadway surface or suitably protected by means of an adequate curb at least 225 mm [9 in] in height above the roadway surface. No bridge rail will be required between vehicle traffic and pedestrian traffic, unless otherwise specified, but shall be located at the exterior side of the sidewalk.

510.06 Special Detour Construction The Special Detour, including temporary structures and approaches, shall be constructed in accordance with the plans submitted by the Contractor. Barricades, warning signs, lights and other traffic control devices shall be provided in accordance with the Contract and the approved Traffic Control Plan.

The temporary structure's deck and floor members shall be fastened or anchored so that all contact surfaces with adjacent supporting members bear continuously. If timber plank decking is used, it shall be secured into timber nailer strips with screw-type nails, or securely fastened by an alternate method that will prevent the decking from loosening. Immediate corrective action shall be taken by the Contractor to remedy any condition in the structure that results in objectionable or distractive noise levels, or results in the decking becoming loose, when subject to traffic loads.

Screw-type nails will not be required to anchor timber plank decking for pedestrian traffic use.

The approach road surface, including shoulders, whether paved or graveled, shall be maintained in a compacted and smooth condition. The temporary structure travel surface shall be constructed and maintained in an acceptably smooth condition, as determined by the Resident. Immediate corrective action shall be taken by the Contractor to remedy objectionable roughness of the Special Detour riding surface.

Provisions shall be made for a skid resistant wearing surface throughout the period of time the temporary structure is open to public travel for vehicular and pedestrian traffic. A steel grid floor may be used for vehicular traffic if installed in accordance with the design plans and these specifications.

Erosion control shall be accomplished in accordance with Section 656 - Temporary Soil Erosion and Water Pollution Control.

When the Project has been opened to traffic, the temporary structure and approaches shall be removed to, or below, the streambed, finish ground line or original ground line, as applicable. The approaches shall be obliterated and the disturbed areas shall be stabilized to original, or better than original, conditions. The provisions of Section 104 - General Rights and Responsibilities, shall apply.

The turnaround on Route 201A and Ward Hill Road shall remain in place when construction is complete.

510.07 Contractor's Responsibility The Contractor shall be responsible for removal of snow from areas provided for pedestrian traffic as well as vehicular traffic in accordance with Section 105, General Scope of Work. In addition to normal maintenance, should any part, or all, of the Special Detour be damaged or destroyed by high water, or any other cause, prior to, or after, opening the Special Detour to traffic, it shall be repaired or replaced by the Contractor without additional compensation.

510.08 Method of Measurement Special Detours will be paid by the lump sum.

510.09 Basis of Payment The accepted Special Detour will be paid for at the contract lump sum price which price shall be full compensation for the respective items, as called for in the Contract, including design, construction, maintenance, complete removal, rehabilitation and permanent stabilization, including loaming, seeding and mulching. All gravel or borrow material and excavation needed to accommodate changes in elevation between temporary structures and existing roadways shall be incidental to this item. All pavement required on the approach roads, including the turnaround, shall be incidental to this item. The lump sum price shall also include the cost of furnishing and revising, as necessary, all plans, computations and certifications, as called for in the Contract.

Traffic control devices, temporary erosion control, and the culverts shown on the plans for the turnaround will be paid in accordance with the applicable Contract items.

Payment will be made under:

Pay Item		Pay Unit
510.10	Special Detour, 24 foot Roadway Width Vehicular and Pedestrian Traffic Not Separated	Lump Sum

SPECIAL PROVISION
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 working drawings.

511.03 Cofferdam Construction

A. Working Drawings. The Contractor shall submit to the Department for review working drawings showing the materials to be used, design calculations, and the proposed method of protecting the substructure Work. Working drawings and design calculations shall be prepared and sealed by a Professional Engineer licensed in the State of Maine in accordance with the AASHTO Standard Specification for Highway Bridges, 17th Edition, 2002, or the current editions of AASHTO LRFD Bridge Design Specifications, and the Guide Specifications for Bridge Temporary Works. Construction shall not be started on cofferdams until such plans have been submitted to the Department. The Department shall have no obligation to review or comment on any design, construction, maintenance or removal of cofferdams. No review or comment by the Department, or any lack of review or comment by the Department, shall relieve the Contractor of its responsibility to properly design, construct, maintain in good condition, inspect, dewater and remove cofferdams in accordance with the Contract, or to shift any responsibility to the Department. The Contractor shall be responsible for all damages resulting from the failure of cofferdams.

B. Construction. Construct cofferdams in conformance with the Working Drawings. Cofferdams shall, in general, be carried well below the elevation of the bottom of footings to adequate depths to ensure stability and adequate heights to seal off water. Cofferdams shall be well braced and 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 be such as to give sufficient clearance for the construction and inspection of forms and to permit pumping outside of forms. The Contractor is responsible for the righting and resetting, as required for construction, of cofferdams tilted or moved laterally. Cofferdams shall be so constructed that water will not come in contact with concrete, as required in Section 502 - Structural Concrete.

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 of 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, care being taken not to disturb or otherwise injure the finished Work.

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

For each cofferdam excavation, the Contractor shall submit a procedure for sediment/overburden removal, handling, disposal, and inspection to the Resident for review. For seal cofferdams excavated to bedrock the inspection procedure shall describe the Contractor's final cleaning and inspection process for attaining cleanliness of each cofferdam excavation. For seal cofferdams not taken to bedrock the plan shall describe the Contractor's final cleaning and inspection process for attaining the bottom of seal elevations shown on the plans.

The Contractor shall notify the Resident at least 48 hours prior to when each cofferdam excavation is ready for final inspection by the Department. The Contractor shall allow a minimum of 4 hours for each occurrence of cofferdam excavation inspection by the Department. The Contractor shall provide and maintain access and equipment for the Resident to independently inspect each cofferdam using steel probes and/or Department Divers.

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, but in no case will pumping be permitted until a minimum of 5 days has elapsed since the completion of the installation of the seal concrete, when the temperature of the water body outside the cofferdam is greater than 40°F, or a minimum of 7 days has elapsed since the completion of the installation of the seal concrete, when the temperature of the water body outside the cofferdam is less than 40°F.

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 entire cost of the cofferdam will be paid for in accordance with Section 109.7 - Equitable Adjustments to Compensation, instead of at the Contract lump sum price.

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

All costs of 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 for cofferdams and related temporary soil erosion and water pollution controls, including inspection and maintenance, will be considered incidental to related Pay Items, unless a specific Pay Item for cofferdams is included in the Contract.

All costs associated with the inspection of the seal cofferdam excavation shall be considered incidental to the cofferdam pay item, 511.07. There shall be no additional payment for repeated inspection of the same excavation.

Payment will be made under:

Pay Item	Pay Unit
511.07 Cofferdam	Lump Sum

SPECIAL PROVISION
SECTION 523
BEARINGS
(Elastomeric Bearings for Span 2)

Sections 523.09, and 523.20 through 523.23 shall be deleted and replaced with the following:

523.09 Installation Bearings Bearings shall be placed upon bridge seats that are properly ground smooth and level to within 1/32" of the elevation shown on the plans. Masonry plates shall be set level in their exact position and shall have a full and even bearing upon the masonry.

523.20 Description Laminated Elastomeric Bearings shall conform to AASHTO M251-06. These bearings consist of layers of elastomer laminated to steel plates. Method B of the AASHTO LRFD Bridge Design Specifications is used for design, which precludes the use of Appendix X1 of AASHTO M251 to meet the testing requirements.

523.21 Materials Materials shall meet the requirements of 523.02, except that the elastomer shall meet the requirements in the following table, derived from AASHTO M251-06 Section 4. The elastomer shall contain only 100% virgin natural rubber (polyisoprene) or 100% virgin neoprene (polychloroprene), and shall be classified as low temperature Grade 3.

ASTM Standard	Material Property	Test Requirement	Polyisoprene (Natural Rubber)	Polychloroprene (Neoprene)
D412	Physical Properties	Minimum Shear Modulus	79.8 psi	79.8 psi
		Minimum Tensile Strength	2250 psi	2250 psi
		Minimum Ultimate Elongation	450 percent	400 percent
D746 Procedure B	Low Temperature Brittleness	Grade 3—Test at -54.4 degrees F	passes	passes

523.22 Fabrication Fabrication and tolerances shall meet the requirements of AASHTO M251-06 Sections 5 and 6.

523.23 Testing Testing shall be performed for a single full sized bearing as described in Sections 8 and 9 of AASHTO M252-06.

Shear modulus shall be determined using testing procedures found in either Annex A1 or Annex A2. Creep and shear bond strength shall be performed in accordance with Annex A2. The elastomer shall be tested for compression stiffness in accordance with Annex A3. Additional shear modulus testing shall be performed in accordance with Section 9.2, including low temperature tests in Section 9.2.3.

Payment will be made under:

Pay Item		Pay Unit
523.5404	Laminated Elastomeric Bearings, Expansion Span 2	EA

Norridgewock
PIN 6900.01
March 17, 2008

SPECIAL PROVISIONS
SECTION 525
GRANITE MASONRY

(Granite Benches and Sign Bases)

DESCRIPTION
This work covers all labor, equipment and materials to transport, cut and install on-site Norridgewock granite for bench units and sign bases in accordance with the plans and specifications.

SUBMITTALS
Contractor shall submit product samples and shop drawings for final construction.

MATERIALS

Granite shall be salvaged from the areas in front of the existing bridge abutments.

CONSTRUCTION

1. Granite to be sawn and rock faced or thermal flame finished on all exposed surfaces.
2. Granite Bench units shall be anchored with two steel dowels per unit as shown on the plans. The steel dowels shall be grouted to both the concrete footings and granite bench units with an approved grout.
3. Bench units to be precisely located to assure smooth continuous radius and smooth consistent top seating surface.

METHOD OF MEASUREMENT
Granite Benches and Sign Bases will be measured by each unit, complete and accepted in place.

Basis of Payment
Payment for Granite Benches and Sign Bases shall include all labor, materials, and equipment necessary to transport, cut, finish and install salvaged Norridgewock granite. Anchor dowels and grout shall be considered part of the granite benches and no separate payment will be made. Payment for the concrete terrace slab, bench cap post and footings shall be made under Item 502.219 Structural Concrete Abutments and Retaining Walls.

Pay Item		Pay Unit
525.72	Exterior Bench Caps	Each
525.73	Interior Bench Units	Each
525.74	Interpretive sign base	Each

SPECIAL PROVISION
SECTION 535
POST TENSIONING SYSTEM

535.01 Description. The work specified in this Section shall consist of furnishing, installing, stressing and grouting prestressing steel in accordance with the details shown on the plans and the requirements of these Specifications.

It shall also include the furnishing and installing of any appurtenant items necessary for the particular prestressing system used, including but not limited to anchorage assemblies, additional reinforcing bars required to resist stresses caused by anchorage assemblies, ducts, vents, inlets, outlets and grout used for pressure grouting ducts.

The members that include post tensioning are the Tie Girder (including the portion within the Arch End Connection) and the Intermediate Floorbeams. Work will involve coordinating the post-tensioning of the Intermediate Floorbeams with the connection to the adjacent Tie Girder.

535.02 Definitions and Terminology. The following terms apply to prestressing of bridge construction:

1. Post-Tensioning: The application of a compressive force to the concrete by stressing tendons or bars after the concrete has been cast and cured. The force in the stressed tendons or bars is transferred to the concrete by means of anchorages.

2. Post-Tensioning Scheme or Layout: The pattern, size and locations of post-tensioning tendons provided by the Designer on the Contract Plans.

3. Post-Tensioning System: A proprietary system where the necessary hardware (anchorages, wedges, strands, bars, couplers, etc.) is supplied by a particular manufacturer or manufacturers of post-tensioning components.

4. Tendon: A single or group of prestressing elements and their anchorage assemblies, which impart prestress to a structural member or the ground. Also included are ducts, grouting attachments and grout. The main prestressing element is usually a high strength steel member made up of a number of strands, wires or bars.

5. Strand: An assembly of several high strength steel wires wound together. Strands usually have six outer wires wound in long-pitch helix around a single straight wire of a similar diameter.

6. Wire: A single, small diameter, high strength steel member and, normally, the basic component of strand, although some proprietary post-tensioning systems are made up of individual or groups of single wires.

7. Anchorage: An assembly of various hardware components that secure a tendon at its ends after it has been stressed and imparts the tendon force into the concrete.

8. Anchor plate: that part of the anchorage hardware that bears directly on the concrete and through which the tendon force is transmitted.

9. Wedge: A small conically shaped steel component placed around a strand to grip and secure it by wedge action in a tapered hole through a wedge plate.

10. Wedge Plate: A circular steel component of the anchorage containing a number of tapered holes through which the strands pass and are secured by conical wedges.

11. Set (Also Anchor Set or Wedge Set): Set is the total movement of a point on the strand just behind the anchoring wedges during load transfer from the jack to the permanent anchorages. Set movement is the sum of slippage of the wedges with respect to the anchorage head and the elastic deformation of the anchor components. For bars, set is the total movement of a point on the bar just behind the anchor nut at transfer and is the sum of slippage of the bar and the elastic deformation of the anchorage components.

12. Anticipated Set: Anticipated set is that set which was assumed to occur in the design calculation of the post-tensioning forces immediately after load transfer.

13. Bleed: the autogenous flow of mixing water within or its emergence from, newly placed grout; caused by the settlement of the solid materials within the mass.

14. Duct: material forming a conduit to accommodate post-tensioned tendon installation.

15. Initial Set of Grout: a degree of stiffening of the grout mixture less than the final set, indicating the time in hours and minutes required for the grout to stiffen sufficiently to resist to an established degree, the penetration of a weighted needle test.

16. Final Set of Grout: a degree of stiffening of the grout mixture greater than the initial set, indicating the time in hours and minutes required for the grout to stiffen sufficiently to resist to an established degree, the penetration of a weighted needle test.

17. Fluidity: A measure of time, expressed in seconds, necessary for a stated quantity of grout to pass through the orifice of the flow cone.

18. Grout: a mixture of cementitious materials and water, with or without mineral additives or admixtures, proportioned to produce a pumpable consistency without segregation of the constituents; injected into the duct to fill the space throughout the prestressing steel, anchorages and ducts.

19. Inlet (also inlet pipe or grout injection port): small diameter tubing or duct used for injection of grout into a duct.

20. Outlet (also ejection pipe or grout outlet vent or vent): a small diameter tubing or duct used to allow the escape of air, water, grout and bleed water.

21. Thixotropic: the property of a material that enables it to stiffen in a short time while at rest, but to acquire a lower viscosity when mechanically agitated, the process being reversible. Grouts having thixotropic properties can be highly resistant to bleed. Admixtures that may produce thixotropic properties include anti-bleed admixtures and silica fume.

535.03 Shop Drawings: The Contractor shall submit detailed shop drawings that include, but are not limited to:

a. A complete description of, and details covering, each of the prestressing systems to be used for permanent and temporary tendons. This shall include:
    1. Designation of the specific prestressing steel, anchorage devices, bar couplers, duct material and accessory items.
    2. Properties of each of the components of the prestressing system.
    3. Details covering assembly of each type of prestressing tendon.
    4. Equipment to be used in the prestressing sequence.
    5. Procedure and sequence of operations for prestressing and securing tendons.
    6. Procedure for releasing the prestressing steel elements.
    7. Parameters to be used to calculate the typical tendon force such as; expected friction coefficients, anchor set and prestress steel relaxation curves.

b. A table of jacking forces and initial elongations of each tendon at each stage of erection for all prestressing will only be required if the parameters used to calculate the typical tendon force differs from the Plans.

c. Complete details of the anchorage system for prestressing including certified copies of the reports covering tests performed on prestress anchorage devices as required in the following Materials Section D, and details for any reinforcing steel needed due to stresses imposed in the concrete by anchorage plates.

d. For the operation of grouting prestressing tendons; the materials and proportions for grout, details of equipment for mixing and placing grout and methods of mixing and placing grout; also, locations and details of inlets and outlets for grouting and the direction of grouting.

e. Elongation calculations shall be revised when necessary to properly reflect the modulus of elasticity of the wire or strand as determined from in-place friction testing in accordance with the following Materials Section J.2.

f. Complete details of the apparatus and method to be used by the Contractor for the test required by the following Materials Sections J.2 and J.3.

535.04 Materials.

A. General

The materials to be incorporated into work covered by this Section shall conform to the requirements set out herein.

B. Prestressing Steel

1. Strand: Unless otherwise noted on plans, strand shall be uncoated, Grade 270, low relaxation 7-wire strand conforming to requirements of ASTM A-416.

2. Wires: Unless otherwise noted on the plans, wire shall be uncoated, low relaxation wire conforming to the requirements of ASTM A-421.

C. Prestress Anchorages

All prestressing steel shall be secured at the ends by means of permanent type anchoring devices. Anchors manufactured from composite materials will not be allowed. Prestress anchorages shall develop at least 95 percent of the minimum specified ultimate tensile strength of the prestressing steel. Wedges shall be three-part (Two part wedges shall not be used).

Testing of anchorage devices shall be performed using samples representing the type of prestressing steel and concrete strength to be used on the project. The test specimen shall be assembled in an unbonded state and, in testing, the anticipated anchor set shall not be exceeded. Certified copies of test results for the anchorage system shall be supplied to the Department. The anchorage system shall be so arranged that the prestressing force in the tendon may be verified prior to the removal of the stressing equipment.

For tendon anchorages other than those specified on the plans, the design and furnishing of any reinforcement (in addition to the reinforcement shown on the plans) which is needed to resist bursting and splitting stresses imposed on the concrete by the proposed anchorage system shall be the responsibility of the Contractor at his expense.

Prestress anchorage devices shall effectively distribute prestressing loads to the concrete and shall conform to the following requirements.

1. The bearing stress in the concrete created by the anchorage plates shall comply with AASHTO LRFD Bridge Design Specifications.

2. Bending stresses in the plates or assemblies induced by the pull of the prestressing steel shall not exceed the yield point of the material in the anchorage plate when 95 percent of the ultimate strength of the tendon is applied. Nor shall it cause visual distortion of the anchor plate as determined by the Department.

3. Galvanize the embedded body of the anchorage in accordance with ASTM 123. Other components of the anchorage including wedges, wedge plate and local zone reinforcement are not required to be galvanized. Equip all anchorages with a permanent grout cap that is vented and bolted to the anchorage.

4. Trumpets associated with anchorages will be made of polypropylene plastic material conforming with polyolefin containing antioxidant(s) with a minimum Oxidation Induction Time (OIT) according to ASTM D 3895 of not less than 20 minutes. Perform OIT test on samples taken from the finished product. Test the remolded finished polyolefin material for stress crack resistance using ASTM F 2136 at an applied stress of 348 psi resulting in a minimum failure time of 3 hours.

D. Ducts

1. General

All duct material shall be sufficiently rigid to withstand loads imposed during placing of concrete and internal pressure during grouting while maintaining its shape, remaining in proper alignment and remaining watertight.

The duct system, including splices and joints shall effectively prevent entrance of cement paste or water into the system and shall effectively contain pressurized grout during grouting of the tendon. The duct system shall also be capable of withstanding water pressure during flushing of a duct in the event the grouting operation is aborted.

The interior diameter of ducts for single strand, bar or wire tendons shall be at least 1/4 inch greater than the nominal diameter of the tendon. The interior diameter of ducts for tendons consisting of more than one strand, bar or wire shall be such that the interior area of the empty duct is not less than 2.25 times the net area of the prestressing steel.

2. Corrugated Plastic Duct:

Do not use ducts manufactured from recycled material. Use seamless fabrication methods to manufacture ducts.

Use corrugated duct manufactured from non-colored, unfilled polypropylene meeting the requirements of ASTM D4101 “Standard Specification for Polypropylene Plastic Injection and Extrusion Materials” with a cell classification range of PP0340B14541 to PP0340B67884. The duct shall be white in color containing antioxidant(s) with a minimum Oxidation Induction Time (OIT) according to ASTM D 3895 of 20 minutes and containing a non-yellowing light stabilizer. Perform OIT test on samples from the finished product. Furnish duct with a minimum thickness as defined in the following table:

Duct Shape	Duct Diameter	Duct Thickness
Round	0.9 inch	0.08 inch
Round	2.375 inches	0.08 inch
Round	3.0 inches	0.10 inch
Round	3.35 inches	0.10 inch
Round	4.0 inches	0.12 inch
Round	4.5 inches	0.14 inch
Round	5.125 inches	0.16 inch
Round	5.71 inches	0.16 inch

Plastic duct shall be corrugated with a pitch not less than 1/10 of the radius of the duct. Material thickness shall be 0.08 inches as manufactured, and 0.06 inches after tensioning.

Minimum Bending Radius for Corrugated Plastic Duct: In addition to the component testing stated herein, the manufacturer shall establish, through testing, the minimum bending radius for the duct. The test apparatus shall be identical to the wear test apparatus with the same

clamping force as a function of the number of strands in the duct; however, modify the procedure as follows: do not move the sample along the strand to simulate wear; the test duration will be 7 days. Upon completion of the test duration, remove the duct and the minimum wall thickness along the strand path must not be less than 0.06 inch for duct up to 3.35 inches diameter and not less than 0.08 inch for duct greater than 3.35 inches in diameter.

Corrugated plastic duct shall be designed so that a force equal to 40 percent of the ultimate tensile strength of the tendon will be transferred through the duct into the surrounding concrete in a length of 2.5 feet. Twelve static pull out tests shall be conducted to determine compliance of a duct with the force transfer requirement. If ten of these tests exceed the specified force transfer, the duct is acceptable. The Contractor shall provide to the Department certified test reports verifying that the duct meets specification requirements in regard to force transfer.

To satisfy the intent of these tests, the results for static pull-out tests from previous projects utilizing identical duct and prestressing steel with similar concrete and grout material may be submitted to the Department in lieu of executing new pull-out tests. However, if the previous results are unacceptable or if there is a significant difference in the materials used, then the Contractor shall provide results from new tests for this project.

2. Corrugated Duct Connections and Fittings: Make all splices, joints, joints between segments couplings and connections to anchorages with devices or methods (i.e. mechanical couplers, plastic sleeves in conjunction with shrink sleeve) producing a smooth interior alignment with no lips or kinks. Design all connections and fittings to be airtight. Duct tape is not permitted to join or repair duct connections. Construct connections and fittings from polyolefin materials containing antioxidant stabilizer(s) meeting the requirements established in 462-4.2.3 or 462-4.2.5.5. For post-tensioned systems intended for use with segmental constructed elements the post-tensioning system shall include duct couplers at the segment joints. The tendon duct coupler located at the segment joint shall be mounted perpendicular to the bulkhead and designed to receive a duct at an angle of 6 degrees deviation from perpendicular. The coupler must be able to accommodate angular deviation of the duct without the tendon strands touching the duct or coupler on either side of the segment joint.

3. Inlets and Outlets (Ports or Vents) for Grout: Inlets (Grout Injection Ports) shall be provided for injecting grout into the duct. Outlets (Grout Exit Vents) shall allow the escape of air, water, rout and bleed water. The inner diameter of inlets and outlets shall be at least 3/4 in for strand tendons and 3/8 in. for single bar tendons. Inlets and Outlets shall be of flexible HDPE or HDPP pipe.

   Plastic Components shall not react with concrete or enhance corrosion of the post-tensioning steel, and shall be free of water-soluble chlorides. Inlets and outlets shall be located and attached in accordance with Construction Requirements.

E. Sampling and Testing of Prestressing Elements: All testing shall be done in accordance with ASTM Specifications. The following samples of materials and devices selected at locations designated by the Department shall be furnished by the Contractor at his expense.

   1. Three samples of seven foot long prestressing wire or bar for each size from each heat number or production Lot.

2. Three samples of five foot long prestressing strand for each size from each heat number or production Lot.
3. If bar couplers are to be used, three samples with two specimens each consisting of four foot lengths of the specific prestressing bar coupled with a bar coupler from the materials to be used on the project.
4. One unit of each prestress anchorage to be used on the project.
5. For each type of duct material intended for the project, one sample, four feet long, from each production lot or per 10,000 linear feet, whichever is greater. Samples shall be furnished at least 90 days in advance of the time they are to be incorporated into the work.

The Department reserves the right to reject for use any material or device which is obviously defective or was damaged subsequent to testing.

F. Manufacturer's Lots (Contractor's Quality Control): The manufacturer of prestressing steel, prestress anchorages and bar couplers shall assign an individual number to each Lot of strand, wire, bar or devices at the time of manufacture. Each reel, coil, bundle or package shipped to the project shall be identified by tag or other acceptable means as to Manufacturer's Lot number. The Contractor shall be responsible for establishing and maintaining a procedure by which all prestressing materials and devices can be continuously identified with the manufacturer's Lot number. Items which at any time cannot be positively identified as to Lot number shall not be incorporated into the work.

Low relaxation strand shall be clearly identified as required by ASTM A-416. Any strand not so identified will not be acceptable. The Contractor shall furnish manufacturer's certified reports covering the tests required by this Specification. A certified test report stating the guaranteed minimum ultimate tensile, yield strength, elongation and composition shall be furnished for each lot of prestressing steel. When requested, typical stress-strain curves for prestressing steel shall be furnished. A certified test report stating strength when tested using the type prestressing steel to be used in the work shall be furnished for each Lot of prestress anchorage devices.

G. Testing of Prestressing Tendons by the Contractor.

1. General: The Contractor shall perform certain testing of prestressing tendons as specified herein.

2. In-Place Friction Test of Tendons: For the purpose of accurately determining the friction loss in stressing draped tendons, prior to stressing a draped tendon, the Contractor shall test, in place, a draped tendon selected by the Department. If deemed necessary by the Department to accurately establish friction loss, the Contractor shall perform tests on additional tendons selected by the Department. The test procedure shall consist of stressing a tendon at an anchor assembly with the dead end anchor incorporating a calibrated load cell. The results of the tests (loss due to friction and modulus of elasticity) shall be submitted to the Department. Apparatus and methods used to perform the tests shall be proposed by the contractor and be subject to the approval of the Department. The Contractor shall notify the Department at least two weeks in advance of performing a friction test. Multiple tests may be required.

H. Grout Materials and Properties

Prepackaged grout shall be used. The prepackaged grout shall meet all the requirements of the February 2001 PTI Guide Specification for Grouting of Post-Tensioned Structures for Class "C" grout. Grout performance testing and on-site testing shall also be as specified in the February 2001 PTI Guide Specification for Grouting of Post-Tensioned Structures.

535.05 Construction Requirements.

A. Protection of Prestressing Steel

1. Before Installation of Tendons in ducts: All prestressing steel shall be protected against physical damage at all times from manufacture to grouting or encasing in concrete. Prestressing steel that has sustained physical damage at any time shall be rejected. Any reel that is found to contain broken wires shall be rejected and the reel replaced.

   Prestressing steel shall be packaged in containers or shipping forms for protection of the steel against physical damage and corrosion during shipping and storage. A corrosion inhibitor, which prevents rust or other results of corrosion, shall be placed in the package or form, or shall be incorporated in a corrosion inhibitor carrier type packaging material, or when permitted by the Department, a corrosion inhibitor may be applied directly to the steel. The corrosion inhibitor shall have no deleterious effect on the steel or concrete or bond strength of steel to concrete. Inhibitor carrier type packaging material shall conform to the provisions of Federal Specifications MIL-P-3420. Packaging or forms damaged from any cause shall be immediately replaced or restored to original condition.

   The prestressing steel shall be stored in a manner which will at all times prevent the packing material from becoming saturated with water and allow a free flow of air around the packages. If the useful life of the corrosion inhibitor in the package expires, it shall immediately be rejuvenated or replaced.

   At the time the prestressing steel is installed in the work, it shall be free from loose rust, loose mill scale, dirt, paint, oil, grease or other deleterious material. Removal of tightly adhering rust or mill scale will not be required. Prestressing steel that has experienced rusting to the extent it exhibits pits visible to the naked eye shall not be used in the work.

   The shipping package or form shall be clearly marked with the heat number and with a statement that the package contains high-strength prestressing steel, and care is to be used in handling. The type and amount of corrosion inhibitor used, the date when placed, safety orders and instructions for use shall also be marked on the package or form.

2. After Installation of Tendons in Ducts: The prestressing steel shall be protected from corrosion and the duct system shall be sealed to prevent moisture intrusion from the time of tendon installation to the time of grouting, as provided below.

   The ends of ducts and anchorages and all duct connections shall be sealed at all times following installation in the forms to prevent entry of moisture and debris. In addition, all grout ports and vents shall be closed or plugged at all times during the period prior to grouting.

Grouting shall proceed as soon as possible after installation and stressing of the tendons. The time from installing the tendons in an unstressed condition to grouting after stressing shall not exceed 10 days without approval of the Department.

a. Tendon Protection Between Installation and Stressing: Measures shall be taken to protect the prestressing steel when there is a period of more than 24 hours between installation of the tendons in ducts and stressing. Bare strand projecting out of the duct shall be wrapped continuously in plastic sheeting and sealed using waterproof tape. The plastic wrap shall extend to the tendon anchorage, and the anchorage opening shall be sealed with plastic and waterproof tape sufficient to prevent moisture intrusion. All grout ports and vents shall be closed or plugged, and all duct connections shall be sealed.

b. Tendon Protection During Staged or Segmental Construction: When plans provide for the tendons to be installed in one unit or segment, either longitudinally, transversely or vertically, with a length of bare strand left projecting for purposes of threading into another unit or segment during later erection operations, the provisions described in Construction Requirements Section A.2a shall apply. All of the prestressing steel shall be protected immediately after it is first installed in the first unit or segment until the tendon is grouted in the second unit or segment.

c. Tendon Protection Between Stressing and Grouting: Anchorages should be capped or otherwise sealed again immediately following stressing and cutting of strand tails.

In the aggressive exposure of this project, where permanent end anchorage protection caps are used, the time period between stressing and installation of the permanent end caps shall not exceed 12 hours without approval of the Department.

In all cases, tendons and ducts shall be thoroughly blown dry with oil-free compressed air immediately prior to sealing or capping of the anchorages. In addition, all grout ports and vents shall remain plugged, sealed or otherwise capped, and all duct connections shall be sealed.

d. Use of Temporary Corrosion Inhibitors: The use of corrosion inhibitors such as vapor hase inhibitors or water-soluble oils for temporary corrosion protection is not permitted without prior approval of the Department.

B. Installation of Ducts, Grout Injection Ports and Outlet Vents

1. Ducts: Ducts shall be securely tied in position, carefully inspected and repaired before placing of the concrete is started. Care shall be exercised during placement of the concrete to avoid displacing or damaging the ducts. Internal ducts shall be supported at intervals necessary to prevent deflection and or displacement, not to exceed four feet. Any additional mild reinforcing required to support post-tensioning ducts shall be supplied by the contractor at no expense to the Department. The tolerance on the location of the tendons shall be plus or minus 1/4-inch (6mm) at any point. After installation in the forms, the ends of ducts shall at all times be sealed to prevent entry of water and debris.

2. Grout Inlets and Outlets: Pipes shall be installed on each duct to serve as injection or vent ports during grouting. These shall be at locations shown on the Contract Plans or approved Shop Drawings and in accordance with the following:

   - Inlets (Grout Injection Ports) shall be provided for injecting grout into the duct.
   - Outlets (Grout Exit Vents) shall allow the escape of air, water, grout and bleed water. The inner diameter of inlets and outlets shall be at least 3/4 in. for strand tendons.
   - Inlets and Outlets shall be of flexible HDPE or HDPP pipe. The length of an inlet port or outlet vent shall extend sufficiently out of the concrete to allow for proper closing. At all high points the outlet shall connect at the uppermost part of the duct profile - except that vents shall not exit to any top deck slab surface. In the latter case, vents shall be gradually turned down (with no kinks) to exit on the underside of the top slab or to an internal face. Inlets and Outlets shall be placed at locations shown on the Contract Plans, on the Approved Shop Drawings, and on the approved Grouting Operation Plan (below). Locations shall be as follows:
     a. At the top of each tendon anchorage and top of grout cap.
     b. At each high point of the duct profile when the vertical distance between the highest and lowest point is more than 20".
     c. An outlet at each low point of the tendon.
     d. An inlet at the lowest point of the tendon. Note judgment should be used in locating the lowest point. For example, if the absolute low point is in a deviation block for an external tendon, then place the inlet close to the block in the accessible portion of the duct.
     e. At all low points the inlet/outlet shall be free draining.
     f. At major changes in the cross section of the duct, such as couplers and anchorages.
     g. At each side of couplers.
     h. At a distance of approximately 3 ft. from each high point in the direction of grout flow.
     i. At regular intervals along straight tendons in order to facilitate control and monitoring of grouting operations.
     j. At other locations recommended by the Department.

   All connections to ducts shall be made with plastic structural fasteners. Waterproof tape shall be used at all connections including vent and grouting pipes, except where otherwise specified herein. Vents shall be mortar tight, taped as necessary, and shall provide means for injection of grout through the vents and for sealing the vents.

   All inlet and outlets shall be permanently sealed to prevent water infiltration to the grouted tendon. Sealing details are to be submitted for approval to the Department. All grout injection and vent pipes shall be fitted with positive mechanical shut-off valves. Vents and injection pipes shall be fitted with valves capable of withstanding the pumping pressures.

3. Care and Protection of Ducts, Vents, Anchorages and Blockouts: Care shall be taken to ensure that all ducts, anchorages, blockouts, openings and vents are kept clean and free of debris, fuel, oils, other contaminants and site trash at all times prior to and after installing the tendons. Temporary plugs, seals and covers shall be used. Minor damage to ducts, defined as a

localized single puncture mark, may be repaired by removing the local damage and splicing duct or couplers onto the intact section (prior to the placing of concrete). Repair of major duct damage, defined as damage that occurs over a length of duct longer than 6 inches, requires the removal and replacement of the entire duct section.

Connections from grout hose to inlet and ejection ports and to vents shall be kept free from dirt and shall be airtight.

4. Pre-Grouting Air Pressure Test of Duct System: Following assembly of the complete duct system, including installation of all ducts, grout inlets and outlets, couplers and connections, and immediately prior to placement of the prestressing tendon or after stressing of the tendon, an air pressure test shall be performed on each complete duct system.

The air pressure test shall involve pressurizing the complete duct system with dry, oil-free air not to exceed 75 psi, and monitoring the pressure in the system for a period of 5 minutes. If the pressure loss during this 5 minutes period exceeds 10%, all sources of leakage shall be identified, and measures shall be taken to reduce or eliminate the identified leaks such that upon repeating the pressure test the pressure loss is limited to less than 10% in 5 minutes.

The operation of each vent shall be tested by blowing dry, oil free air into the duct system and opening and closing each vent in turn.

C. Post-Tensioning Operations

1. General

a. Concrete strength: post-tensioning shall only be applied when the concrete has attained the required compressive strength as determined from test cylinders cured under the same conditions as the structural concrete.

The design of the structure is based on the assumed friction and wobble coefficient shown in the plans. The post-tensioning forces shown are theoretical and do not include losses in the system or thermal effects.

b. Stressing Tendons: All post-tensioning shall be tensioned by means of hydraulic jacks so that the force of the prestressing steel shall not be less than the value shown on the Contract Plans or Approved Shop Drawings or as otherwise approved by the Department. Monostrand stressing shall not be used for tendons with 5 or more strands unless approved by the Department.

c. Maximum Stress at Jacking: The maximum temporary tensile stress (jacking stress) in prestressing steel shall not exceed 80 percent of the specific minimum ultimate tensile strength of the prestressing steel. Tendons shall not be overstressed to achieve elongation.

d. Initial and Permanent Stress: The prestressing steel shall be anchored at initial stresses in a way that will result in the ultimate retention of permanent forces of not less than those shown on the Contract Plans or the Approved Shop Drawings, but in no case shall the initial stress, after anchor set, exceed 70 percent of the specified minimum ultimate tensile strength of the prestressing steel.

Permanent force and permanent stress are the force and stress remaining in the prestressing steel after all losses, including creep and shrinkage of concrete, elastic shortening of concrete, relaxation of steel, thermal affect, losses in post-tensioned prestressing steel due to sequence of stressing friction and take-up of anchorages, and all other losses peculiar to the method or system of prestressing have taken place or have been provided for in an approved stressing plan.

e. Excessive Friction: When friction must be reduced, water-soluble oil or graphite with no corrosive agents may be used as a lubricant subject to the approval of the Department. Lubricants shall be flushed from the duct as soon as possible after stressing is completed by use of water pressure. These ducts shall be flushed again just prior to the grouting operations. Each time the ducts are flushed, they shall be immediately and thoroughly blown dry with oil-free air.

2. Stressing Jacks

a. Stressing Equipment: Each jack shall be equipped with a pressure gauge having an accurate reading dial at least six inches in diameter for determining the jack pressure.

b. Calibration: Prior to use for stressing on the project, each jack and its gauge shall be calibrated as a unit. Initial calibration shall be done, using a proven load cell, at an independent testing laboratory, approved by the Department.

Calibration shall be done with the cylinder extension approximately in the position that it will be when applying the final jacking force and with the jacking assembly in an identical configuration to that which will be used at the job site (i.e. same length hydraulic lines). Certified calibration calculations and a calibration chart, both in English units of measure, shall be furnished to the Department for each jack and gauge unit.

Recalibration of each jack shall be done at six month intervals and at other times when requested by the Department. At the option of the Contractor, calibrations subsequent to the initial laboratory calibration may be accomplished by the use of a master gauge. The master gauge shall be calibrated at the same time as the initial calibration of the jacks, and shall be part of the unit for each jack. The data recorded during the initial calibrations shall be furnished to the Department for use in the field. The master gauge shall be supplied by the Contractor in a protective waterproof container capable of protecting the calibration of the master gauge during shipment. The Contractor shall provide a quick-attach coupler next to the permanent gauge in the hydraulic lines, which enables the quick and easy installation of the master gauge to verify the permanent gauge readings. The master gauge shall remain in the possession of the Department for the duration of the project. If a jack is repaired or modified, including replacing the seals or changing the length of the hydraulic lines, the jack shall be recalibrated by the approved testing laboratory. No extra compensation will be allowed for the initial or subsequent jack calibrations or for the use and required calibration of a master gauge.

3. Stressing of Tendons. Post-tensioning forces shall not be applied until the concrete has attained the specified compressive strength as evidenced by tests on representative samples of

the concrete. These samples shall be stored under the same conditions as the concrete in order to accurately represent the curing condition of the concrete in place.

The tensioning process shall be so conducted that tension being applied and the elongation of the post-tensioning steel may be measured at all times. A permanent record shall be kept of gauge pressures and elongations at all times and shall be submitted to the Department. The post-tensioning force may be verified as deemed necessary by the Department.

For all tendons, the tendon force measured by gauge pressure shall agree within seven percent of the theoretical elongation or the entire operation shall be checked and the source of error determined and remedied to the satisfaction of the Department before proceeding with the work. Elongations shall be measured to the nearest 1/16 in. In determining why the measured tendon force and the theoretical elongation do not agree within seven percent, the Contractor may elect to establish that the apparent modulus of elasticity of the post-tensioning steel varies from the value shown in the general notes to the plans by conducting a bench test on a full size tendon in accordance with a procedure furnished by the Department. This test may be performed at a site remote from the project provided that the Contractor pays the cost to the Department of sending a representative to witness the test. Equipment for tensioning the tendons must be furnished by the manufacturer of the system. Should agreement between pressure gauge readings and measured elongations fall outside the acceptable tolerances, the Department may require without additional compensation to the Contractor, additional in-place friction tests in accordance with the Materials Section G2.

Multi-strand post-tensioning tendons having wires that have failed by breaking or slippage during stressing may be accepted providing that:

a. The completed structure must have a final post-tensioning force of at least 98% of the design total post-tensioning force at the affected sections.

b. At any stage of erection, the post-tensioning force across a mating surface must be at least 98% of the force required for that stage.

c. Any single tendon must have no more than 5% reduction in cross-sectional area of the post-tensioned steel.

If these conditions cannot be met, then the affected tendon(s) shall be removed and replaced. Previously tensioned strands shall not be re-used unless approved by the Department. Any of these conditions may be waived by the Department when the Contractor is able to propose an acceptable means of restoring the post-tensioning force lost due to wire failure or slippage.

Prestressing steel shall be cut by an abrasive saw within 3/4 to 1-1/2 inches away from the anchoring device. Flame cutting of prestressing steel is not allowed, except for pretensioned prestressing steel or with the specific approval of the Department on a case by case basis.

D. Grouting

1. General

After post-tensioning and anchoring of a tendon has been completed and accepted, the annular space between the prestressing steel and the duct shall be grouted in accordance with this Specification. The interval between post-tensioning and grouting shall be limited as specified in Construction Requirements Section A.2. Immediately after post-tensioning, all grout vents, anchorages, and duct connections of each tendon shall be temporarily sealed to prevent entrance of air and water until just prior to tendon grouting.

At least six weeks before grouting commences, the Contractor shall submit to the Department for review and approval a "Grouting Operation Plan". Final written approval of the plan is required before grouting occurs. A preliminary approval of the plan will be made by the Department after review of the written plan and incorporation of any comments by the Department have been incorporated and/or addressed by the Contractor. Final approval of the Grouting Operation Plan will be made by the Department after the successful completion of the Grouting Mock-Up Test that is described below. Grouting operations shall be under the supervision of a qualified and experienced person, acceptable to the Department.

The Grouting Operation Plan shall address the following:

a. Names of grouting crew and Supervisor.
b. Experience of crew members and Supervisor.
c. Training to be provided or undertaken prior to operations.
d. Type of equipment to be used, including capacity in relation to demand.
e. Working condition of equipment, back-up and spare parts.
f. Types, brands and certifications of materials
g. Identity of independent testing laboratory for certification of materials.
h. Production of grout fluidity, on-site flow testing, adjustments and controls.
i. Estimate of grout required per tendon or group of tendons
j. Method of controlling rate of flow and filling of ducts
k. Locations, types and sizes of inlet and outlet vents
l. Means of sealing and protecting tendons and ducts prior to grouting
m. Grout mixing and pumping procedures
n. Tendon or groups of tendons to be grouted in one operation.
o. Direction of grouting and sequence of using inlets and closing vents.
p. Procedures for handling blockages, including flushing of ducts.
q. Procedures for possible re-grouting to detect and fill voids.
r. Procedures for controlling w/c ratio and ensuring that the water used is acceptable.
s. Contractor's QC forms that are to be signed daily by Grout Supervisor.
t. Method of communication between members of grouting crew (i.e. Communications between mixer, injector, and shut-off positions via radios)

Before grouting operations commence, a joint meeting shall be held with the Contractor, Grouting Crew, and Department, to discuss and understand the grouting operation plan, required testing and corrective procedures.

After the Contractor's Grouting Plan is given preliminary approval by the Department and before grouting commences, the Contractor will be required to perform a Mock-Up Test. The purpose of this test is to verify that the materials and procedures proposed will properly grout the tendons. It will also serve as training for the grouting personnel on site. The test will be conducted at the project site.

The Mock-Up Test will consist of grouting an external tendon in a clear duct with a duct profile as indicated below. The Contractor must use the same equipment, materials, connections, and procedures that are in the Approved Grouting Plan.

The Test Specimen must be at least 150' in length with a vertical rise at one end of 6' and a vertical rise of 10' on the other end. The tendon will be divided into thirds with a 50' length for the first rise, a 50' length for a straight portion, and a 50' length the last portion. These requirements for the test specimen are shown in the detail shown.

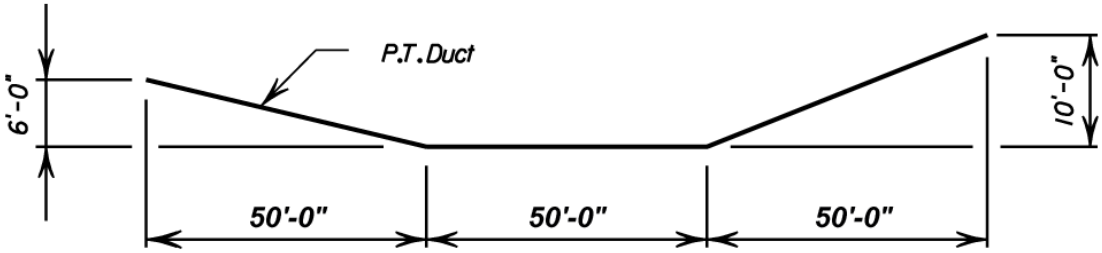
The duct material must be see-through and at least 3" in diameter. Inside the duct, there shall be a seven-strand tendon consisting of normal Post-Tensioning strand. It is not necessary that the Post-Tensioning strand be stressed. If the Contractor thinks stressing of the tendon or other modifications are required to the grout mock-up to demonstrate the success of the Contractors grouting operations, these modifications shall be submitted to the Department for review and approval. Modifications will be considered, but must be at no additional cost to the Department.

The Contractor will submit for approval the test set-up including materials, geometrics, procedures to be followed and the anticipated amount of bleed water for this specimen.

The test will be considered successful if all 3 of the following conditions are satisfied:

(1) The methods and materials in the approved grouting plan can completely grout the tendon.
(2) There are no air voids over 0.5 inches in diameter in the inclined length after the grout has hardened.
(3) There is not excessive bleed water at either end over the anticipated amount.

If the test is run and not considered to be successful by the Department then the Contractor must resubmit his Test Plan procedures to remedy the deficiencies noted by the Department.



GROUTING MOCKUP TEST - TENDON PROFILE

The Contractor must have a successful Mock Up Test completed before post-tensioning operations including stressing can begin.

The cost of all labor, equipment materials and incidental items required to perform this Grouting Mock-Up Test shall be incidental to the cost of the prestressing system.

2. Grouting Personnel Qualifications. All grouting operations shall be carried out by workers trained for the tasks required, and having at least 3 years experience on previously successful projects of similar type and magnitude.

   Grouting shall be performed under the immediate control of a person skilled in the various aspects of grouting, and having experience on at least four previous and satisfactorily completed projects of a similar size and scope. This person shall be named and shall furnish proof of experience as required by the Department.

   One member of each Grouting crew must have ASBI Grouting Certification.

3. Equipment

a. General: Grouting equipment consists of measuring devices for water and admixtures, a mixer, a storage hopper, and a pump with all the necessary connecting hoses, valve, pressure gauges, and test equipment. Accessory equipment shall provide for accurate solid and liquid measures of all materials to be batched.

   The equipment shall have sufficient capacity to ensure that the post-tensioning duct or group of ducts to be grouted can be filled and vented without interruption at the required rate of injection. Under normal conditions, the equipment shall be capable of continuously grouting the longest tendon (or group of tendons) on the project in 30 minutes.

b. Mixer: The mixer shall be capable of continuous mechanical mixing. It shall produce a homogeneous and stable grout free of lumps and undispersed solids (cement or grout mix) and shall be able to deliver a continuous supply of grout to the pumping equipment. (A colloidal mixer is preferred).

   There shall be a gravity feed to the pump inlet from the mixer and/or hopper attached to and directly over it. An additional storage hopper may be incorporated between the mixer and the pump. It shall be fitted with an agitator to keep the grout moving continuously before it is pumped into the duct. The storage hopper shall be kept partially full at all times to prevent air from being drawn into the duct.

   The grouting equipment shall contain a screen having clear openings of 1/8 in maximum size to screen incompletely mixed lumps from the grout prior to its introduction into the grout pump or storage hopper. If the grout contains a thixotropic admixture, a screen opening of 3/16 in will be satisfactory. The screen shall be located between the mixer and the pump, or when a storage hopper is used, between the mixer and the storage hopper. This screen shall be easily accessible for inspection and cleaning.

c. Injection equipment: Grout pumps shall be capable of pumping the grout in a continuous operation with little variation of pressure and shall include a system for re-circulating grout when injection is not in progress. The equipment shall be capable of maintaining a pressure on completely grouted ducts and shall be fitted with a valve that can be locked-off without

loss of pressure in the duct. The use of compressed air for pumping grout shall not be allowed.

Grout pumps shall be a positive displacement type capable of producing an outlet pressure of not less than 145 psi and shall have seals adequate to prevent introduction of oil, air or other foreign substance into the grout and to prevent loss of grout or water.

A pressure gauge having a full scale reading of no greater than 290 psi shall be placed at some point in the grout line between the pumping outlet and the duct inlet.

All piping to the pump shall have a minimum number of bends, valves and changes in diameter and shall incorporate a sampling tee. The diameter and rated pressure capacity of the hoses must be compatible with the pump output, the assumed maximum pressure and the length needed. Grout hoses shall be firmly connected to pump outlets, pipes and inlets of the duct.

d. Stand-by Equipment: During grouting operations, provide adequate flushing equipment to facilitate complete removal of the grout in the event of a breakdown of the grouting equipment or other disruption before the grouting operation has been completed. This equipment shall be kept in working order. Where potable water is unavailable, a tank of sufficient water will be required.

e. Equipment for Thixotropic Grout: The following additional equipment shall be used. The grout equipment shall have two identical charging/holding tank units. Each unit alternates between duties either as a blender or holding tank. The tank units shall have a high-shear (colloidal) mixer and pump and the placing pump shall have exact pressure control capabilities, and be fed from the holding tank. In addition, a pressure filter type grout test kit is required.

4. Mixing Grout

The sequence for charging the mixer shall be: first add water, start mixer and add cement. When cement and water are reasonably well mixed, admixtures shall be introduced in accordance with the written instructions of the manufacturer of each admixture. The mixing procedures shall prevent admixture from getting caught on the blades or sides of the drum and from forming gel globules. The mixing procedure may be varied in accordance with the written recommendations of the manufacturer of the admixtures.

The grout shall be mixed until a uniformly blended mixture is obtained and shall be continuously agitated until it is introduced into the grout pump. Batches of grout shall be placed within 30 minutes of mixing. No water shall be added to the grout to modify its consistency after the initial mixing operation is completed.

5. Cleaning and Flushing Tendons

Tendons shall not be flushed with water except in situations where a water soluble lubricant is applied to the prestressing steel, as described in Construction Requirements Section C.1e, or as otherwise permitted or directed by the Department.

If flushing is to be performed as required in Construction Requirements Section C.1e or as directed by the Department, the inside of the duct system shall be flushed with water (under pressure) meeting the quality requirements of Materials Section K.3c to remove all traces of the lubricant (or other contaminant). Following the flushing operation, water shall be totally drained from within the duct system and it shall be blown out with compressed oil-free air to the extent necessary to dry the prestressing steel and inside surfaces of the ducts. The waste fluid flushed from the duct system shall be captured and disposed of properly.

6. Injecting Grout

a. General Grouting Procedures: Grouting shall start at the lowest injection port will all vents holes open. A continuous one-way flow of grout shall be maintained at all times.

The maximum rate of grout injection shall be 16 ft per minute for vertical ducts and 50 ft per minute for horizontal ducts.

Grout shall be pumped through the duct and flow continuously at the first vent hole after the injection port until no visible slugs or other evidence of air or water are ejected and the grout being ejected has the same consistency as the grout being injected. At this time, at least two gallons of grout shall be vented from the first vent hole into a suitable receptacle and discarded properly. The first vent valve shall then be closed. Grout injection shall continue until all vents have been closed one after another in the direction of flow following the same process. At intermediate crests where vents have been provided both at the crest and immediately downstream from the crest, the vent downstream of the crest shall be closed before the associated crest vent.

When the tendon duct is completely filled with grout and after the last outlet vent has been closed, the injection port shall be closed immediately following stoppage of the grout pump.

When a one-way flow of grout cannot be maintained, or when grouting is interrupted, the grout shall be immediately flushed out of the duct with water. A water pump shall be available on-site for this purpose as part of the standard flushing equipment. The flushing pressure shall not exceed the grouting pressures listed in Construction Requirements Section D.6b below.

b. Grouting Pressure: The pumping pressure at the tendon inlet shall not exceed 145 psi for the internal PE ducts

However, normal operations shall be performed at approximately 75 psi.

If the actual grouting pressure exceeds the maximum permitted pumping pressure, the inlet shall be closed and grouting shall continue at any vent hole that has been or is ready to be closed as long as a one-way flow of grout is maintained. Grout shall not be injected into a succeeding outlet from which grout has not yet flowed. Any such outlet used for injection shall be fitted with a positive shut-off valve.

c. Temperature Considerations: When it is anticipated that the air temperature will fall below 32ºF, ducts shall be kept free of water so as to avoid freeze damage to ducts. No grouting shall be done when the temperature of the grout is below 45ºF. The temperature of the

concrete and air surrounding the tendon shall be maintained at 35ºF or above from the time grout is placed until the compressive strength of the grout, as determined from tests on two inch cubes cured under the same conditions as the in-place grout, exceeds 800 psi.

When it is anticipated that the air temperature will rise above 80ºF, grouting shall take place early in the morning when daily temperatures are the lowest. No grouting shall be done when the temperature of the grout exceeds 90ºF. The temperature of the grout shall be maintained below 90ºF when the grout is placed.

Ungrouted tendons for extended periods will be permitted given strict compliance with the following criteria.

An increased time between stressing and grouting of tendons will only be allowed for post tensioning which cannot be grouted within the lower temperature limits set forth in this specification, and with the approval of the Department. The Contractor shall take every effort to minimize the length of time and number of ungrouted post-tensioning tendons or bars during the winter months. Grouting of ungrouted post-tensioning shall take priority when temperature limits allow grouting operations to continue.

All grout ports and vents shall remain plugged, sealed or otherwise capped, and all duct connections shall be sealed, except for a minimum number of low vent ports shall remain open to allow full drainage of any condensation. All open vent ports shall never be exposed to the weather for the time that the post-tensioning remains ungrouted.

Upon inspection, if ungrouted post-tensioning shows signs of corrosion (other than light surface rust with no pitting) the Contractor shall immediately take corrective measures. Corrective measures may include, but are not necessarily limited to, re-establishing moisture tight seals, providing alternate corrosion protection, applying external heating and grouting, or tendon replacement and restressing.

Details for protecting ungrouted post-tensioning through extended periods and the procedures for expedient grouting of the ungrouted post-tensioning shall be submitted as a part of the Grouting Operation Plan submittal outlined in Section 535.04 D1 of this specification.

d. Post-Grouting Measures at Injection and Vent Ports: Grouting vents at high points shall be reopened 10 minutes after completion of grouting and any escape of air, water or grout recorded.

Within approximately 30 minutes of grouting and before the grout has hardened, all opened vents shall be checked for voids. At locations where voids are observed, grout shall be topped off through the outlet, or a regrouting operation shall be performed using an injection port and outlet vent. Reseal all vents immediately upon completing inspection and remedial work.

Not less than 48 hours after the completion of grouting, the level of grout at all injection port and outlet vent locations shall be inspected and topped up as necessary with freshly mixed grout. This process will continue until the inspection agency is assured that there are no bleed water or subsidence voids. Subsequent spot inspections may be conducted on one or more

selected anchorages per span as long as no voids are found. If voids are found then all tendons will be checked for voids until the Resident is assured that the voids are not occurring.

e. Post-Grouting Inspection of Anchorages. Not less than 48 hours after the completion of grouting, all end anchorages shall be inspected for the presence of voids behind the anchorage.

The grout injection port on the anchorage shall be drilled out or otherwise cleaned of grout to allow the inspection of potential voids immediately behind the anchorage or within the trumpet region of the tendon. Care shall be taken during the drilling process to ensure that the drilling operation does not come into contact with the strands or bar(s) of the tendon.

Assessment of the potential void space shall involve physical probing through the grout injection port with a suitable wire or probe, or visual inspection using of a flexible fiberscope or videoscope. The presence of a void and an estimation of its extent or length shall be recorded.

All voids identified behind anchorages shall be regrouted as follows:

(1) Regrouting shall involve insertion of a grout tube through the grout injection port into the void space, and filling of the void with freshly mixed grout meeting the requirements of Materials Section K.4.
(2) Grout tube shall be a flexible plastic of sufficient rigidity to allow grouting under pressure without excessive bulging or rupture. The size of the grout tube shall be 0.5 in maximum O.D.
(3) Grout material shall be placed by pumping the material at low pressures (<100 psi). Pressure shall be sufficiently low to prevent segregation and bleeding of the grout.
(4) Grout tube shall be inserted into the trumpet as far as possible. Tube shall remain within the trumpet and immersed within the grout at all times during the grouting operation except as specified.
(5) The tendon anchorages shall be grouted continuously. No interruptions in grouting will be allowed.
(6) Grouting shall continue until all air, water, or other foreign material is completely purged from trumpet and duct. Grouting shall further continue until an uninterrupted stream of sound, uncontaminated grout flows from the port for a minimum of ten (10) seconds. At this time, the grout tube shall be slowly and continuously removed from the port while grout is still flowing out of the tube under pressure.
(7) Upon completion of grouting, all ports shall be sealed so as to prevent grout leakage until final set of the grout.

Other regrouting methods, including vacuum grouting, may be used if approved by the Department.

f. Post-Grouting Operations: Except as specified in Construction Requirements Section D.6d, shut off valves shall not be opened on injection ports or vent ports, nor shall pipes or caps at port locations be removed until the grout has set.

After the grout has set, pipes used as injection or vent ports shall be cut off as described below.

Pipes shall be cut off at least one inch below the surface of the concrete. The resulting recess shall be filled with a non-shrink mortar, and an elastomeric waterproof membrane shall be applied over the repair area. Suitable waterproofing membrane materials include urethane, neoprene or silicone-based elastomers with the following minimum properties:

Tensile Strength (ASTM D412)	@ 75ºF 100 psi	@ 0ºF 500 psi
Elongation (ASTM D412)	@ 75ºF 500%	@ 0ºF 250%

All waterproofing materials shall be UV resistant, and shall be approved by the Department prior to use.

All miscellaneous material (tie wire, duct tape, etc.) used for sealing grout inlet or vent connections shall be removed prior to carrying out further work to protect end anchorages. End anchorage protection shall be installed as described in Construction Requirements Section D.7.

7. Protection of Prestress Anchorages

a. Permanent, non-corroding grout caps shall be used. The permanent grout cap shall completely encapsulate the anchorage wedge plate, and shall attach directly to the anchor plate. A suitable gasket shall be used to prevent moisture intrusion behind the grout cap. Any bolts or fixtures used to secure the permanent grout cap to the anchorage shall have a minimum cover of 1 inch and shall be of stainless steel or other rust-free material as approved by the Department.

For recessed anchorages, additional protection shall consist of one coat of epoxy bonding compound, approved non-shrink concrete or mortar to fill the anchorage recess, and an elastomeric waterproofing membrane.

Anchorage recesses or encasements shall be filled as specified in Construction Requirements Section D.7b.

Waterproofing membranes shall be as specified in Construction Requirements Section D.7c.

The permanent grout cap shall remain in place at all times following grouting of the tendon.

b. Filling of Anchorage Recesses or Encasements. For external (not recessed) anchorages to be encapsulated with an encasement, mild steel reinforcement or stainless steel anchors shall be provided to anchor the encasement concrete or mortar to the segment or structural member. A minimum of two (2) hairpin reinforcing ties (bar size #4 or larger) or a minimum of four (4) stainless steel anchors shall be used for each encasement. Minimum clear cover to all reinforcement or anchors shall be 2 1/2 in. Hairpin reinforcement may be installed during segment or member fabrication, or following tendon placement and stressing. In the latter case, all reinforcement shall be dowelled into segment or member concrete a minimum of 4 in. and bonded in-place using an appropriate epoxy adhesive approved by the Department. Stainless steel anchors shall be installed in accordance with the manufacturer's recommendations.

Prior to filling of anchorage recesses or encasements, all exposed end anchorages, strands, grout caps, encasement reinforcement and other metal or non-metal accessories or components shall be cleaned of rust, misplaced mortar, grout and other such materials.

Immediately following cleaning operations, the entire surface of the anchorage recess or area to be covered by the encasement (all metal and concrete) shall be thoroughly dried and uniformly coated with an epoxy bonding compound meeting the requirements of AASHTO Specification M-235, Class III. The epoxy shall be applied in a manner and thickness as recommended by the manufacturer.

Immediately following application of the epoxy bonding compound, tight fitting forms shall be installed to encase the entire anchorage system, including reinforcement ties or anchors, where applicable. The anchorage recess or encasement shall be completely filled with an approved pea-gravel concrete or non-shrink, cement-based mortar. The concrete or mortar filler shall be placed within the time limits specified by the epoxy bonding compound manufacturer. The filler shall exhibit no shrinkage, and shall contain no aluminum powder, iron particles, chlorides, sulfites, fluorides or nitrates.

c. Waterproof Membrane. An elastomeric waterproofing membrane shall be applied at anchorage locations as shown in the plans following finishing and curing of the pour back concrete. Suitable waterproofing membrane materials include urethane, neoprene or silicone-based elastomers with the following minimum properties:

Tensile Strength (ASTM D412)	@ 75ºF 100 psi	@ 0ºF 500 psi
Elongation (ASTM D412)	@ 75ºF 500%	@ 0ºF 250%

All waterproofing materials shall be UV resistant, and shall be approved by the Department prior to use.

The waterproofing membrane shall completely cover the pour-back concrete used to fill the anchorage recess or block-out, and shall extend for a distance of not less than 12 in. beyond the extent of the pour-back concrete. The membrane shall terminate at a groove cut into the concrete not less than 3/8 in. wide by 3/8 in. deep.

D. Records of Stressing and Grouting Operations.

1. Record of Stressing Operations. The Contractor shall keep a record of all post-tensioning operations for each tendon installed and stressed. This shall include, but shall not necessarily be limited to the following:
   (a) Project name, number
   (b) Contractor and/or Sub-Contractor
   (c) Tendon location, size and type
   (d) Date tendon was first installed in ducts
   (e) Coil/reel number for strands or wires and heat number for bars and wire
   (f) Assumed and actual cross-sectional area
   (g) Assumed and actual modulus of elasticity
   (h) Date stressed
   (i) Jack and Gauge numbers per end of tendon
   (j) Required jacking force

(k) Gauge pressures
(l) Elongations (anticipated and actual)
(m) Anchor sets (anticipated and actual)
(n) Stressing sequence (i.e. tendons before and after this)
(o) Stressing mode (1 end only, 2 ends in sequence, or 2 ends simultaneous)
(p) Witnesses to stressing operation (Contractor and Inspector)
(q) Record of any other relevant information

Within 72 hours, the Contractor shall provide the Department with a complete copy of each tendon stressing operation.

2. Record of Grouting Operations. The Contractor shall keep a record of all grouting operations for each tendon installed, stressed and grouted. This shall include, but shall not necessarily be limited to the following:
   (a) Tendon or group of tendons grouted in one continuous operation
   (b) Date grouted
   (c) Number of days from stressing to grouting, per tendon
   (d) Type of grout mix and additives
   (e) Fluidity of grout (flow-cone) per batch for both newly mixed and 30 minute, rested grout
   (f) Density of grout per batch of fresh mix
   (g) Location of injection port and direction of grout flow (note; injection port may not necessarily be at an end anchorage)
   (h) Applied grouting pressure during normal pumping and maximum pressure sustained for one minute after closing all vents grouting
   (i) Theoretical volume of grout anticipated in order to fill the duct or ducts
   (j) Actual quantity of grout in place in the duct(s) after grouting (For one grout mixing and injection operation, this is the quantity mixed less the quantity wasted at the vents, less the quantity remaining in the mixer and injection equipment)
   (k) Summarize any difficulties encountered and corrective action taken
   (l) Witnesses to grouting operation (Contractor and Inspector) within 72 hours, the Contractor shall provide the Department with a complete copy of all tendon grouting operations.
   (m) Condition of anchors at 48 hour inspection as specified in Section 535.04.D.6d

535.06 Method of Measurement. Post-tensioning tendons will be measured as one lump sum, accepted in place.

535.07 Basis of Payment. Unless otherwise specified on the Plans, post-tensioning tendons will be paid for as one lump sum, complete and in place. Payment shall be full compensation for furnishing, installing, stressing and grouting all temporary and permanent post-tensioning tendons

Payment shall also include anchorage assemblies and post-tensioning system hardware which is not embedded in concrete, external ducts, grout and grouting, all testing, anchorage protection systems and all labor, materials, tools, equipment and incidentals necessary for completing the work in accordance with these specifications and the Plans.

This payment shall also include lubricants in the tendon ducts for friction control and flushing the lubricant and/or corrosion inhibitor from the tendon ducts after stressing and prior to grouting.

No separate measurement and payment will be made for anchorage components, local anchorage zone reinforcement supplied as an integral part of a proprietary anchorage system, nor ducts for similar post-tensioning system hardware.

Anchorage components, post-tensioning bar couplers, ducts and similar items of post-tensioning system hardware which are embedded within cast-in-place concrete shall be deemed to be included in the cost of the cast-in-place concrete. Payment shall also include all on-site quality control, testing and records of tendon installation, stressing and grouting operations.

Payment will be made under:

Pay Item		Pay Unit
535.64	Post Tensioning System	Lump Sum

SPECIAL PROVISION
SECTION 535
PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE

535.01 Description. This work shall consist of casting and erecting precast, prestressed concrete products and related material. Materials, work, inspection and documentation not specifically addressed by this Specification shall done be in accordance with the applicable sections of the PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI), *Manual for QUALITY CONTROL for Plants and Production of PRECAST AND PRESTRESSED CONCRETE PRODUCTS* (MNL 116), including Commentary.

MATERIALS

535.02 Materials. Materials for precast and prestressed concrete products shall meet the requirements of the following Subsections:

Cement	**701.01**
Water	**701.02**
Air Entraining Admixture	**701.03**
Water Reducing Admixture	**701.04**
High Range Water Reducing Admixture (HRWR)	**701.0401**
Set-Retarding Admixtures	**701.05**
Fly Ash	**701.10**
Calcium Nitrite Solution	**701.11**
Silica Fume	**701.12**
Ground Granulated Blast Furnace Slag	**701.13**
Fine Aggregate for Concrete	**703.01**
Coarse Aggregate for Concrete	**703.02**
Reinforcing Steel	**709.01**
Welded Wire Fabric	**709.02**
Steel Strand for Concrete Reinforcement	**709.03**

Portland cement shall conform to the requirements of AASHTO M85 (ASTM C 150), Type I, Type II, or Type III. the Contractor shall supply the Department with copies of Certified Mill Tests of the cement. The mill tests shall show the name of the manufacturer, location where produced, silo number and the person or agency conducting the test.

Fine aggregate shall conform to the requirements of subsection 703.01, Fine Aggregate for Concrete. Coarse aggregate shall conform to the requirements of subsection 703.02, Class A, Class AA or Latex.

The Contractor shall provide a Materials Certification from the manufacturer of the pre-stressing strand. The certification shall include a representative load elongation curve for each coil. The manufacturer shall identify each coil of strand and The Contractor shall not remove the identification from the coil. The Contractor may use partial coils with the

approval of the Fabrication Engineer. Failure to maintain trace-ability of a coil will be cause for rejection.

The Contractor shall provide Certified Mill Test Reports for the reinforcing steel, welded wire fabric and fusion bonded epoxy coating when required.

PRODUCTION

535.03. Drawings. The Contractor shall prepare shop detail, erection and other necessary working drawings in accordance with Section 100 of the Standard Specifications. The Department will review and approve the drawings in accordance with the applicable requirements of Section 100 of the Standard Specifications. Changes and revisions to the approved working drawings shall require further approval by the Engineer.

Concrete mix designs shall be part of the shop drawing submittal. The Contractor shall include aggregate specific gravity, absorption, percent fracture, fineness modulus and gradation as part of the mix design. The Contractor shall include the mix design calculations demonstrating how the batch weights, water-cement ratio and admixture dosage rate were determined.

535.04 Plant. The plant shall be a Precast/Pre-stressed Concrete Institute (PCI) Certified facility.

535.05 Facilities for Inspection The Contractor shall provide a private office at the fabrication plant for inspection personnel authorized by the Department. The office shall have an area not less than 100 ft^2 and shall be in close proximity to the work. The office shall be climate controlled to maintain the temperature between 68° F and 72° F and have the exit(s) closed by a door(s) equipped with a lock and 2 keys which shall be furnished to the Inspector(s).

The Inspectors' office shall meet the following minimum requirements:

Description	Quantity
Drafting Table Surface ($ft.^2$)	35
Drafting stools-each	1
Office Desk	1
Ergonomic Swivel Chairs	1
Folding Chairs	2
Lighting Precast/prestressed concrete products (minimum)	2
Electric Wall Outlets	3
Wall Closet	1

Plan Rack	**1**
Waste Basket	**1**
Two-drawer file cabinet (locking)	**1**

The Contractor shall provide one cordless telephone, one answering machine and a high-speed internet connection. Lighting shall consist of florescent light units with rapid start bulbs located over the work areas that produce a minimum of 100 foot-candles throughout the work area. The office shall be furnished with a broom, dustpan, trash bags and cleaning materials. The Contractor will be responsible for disposing of trash.

The Contractor shall provide parking space in close proximity to the entrance to the Inspectors' Office. The Contractor shall maintain the pathway between the parking area and the Inspectors' Office so that it is free of obstacles, debris, snow and ice.

The facilities and all furnishings shall remain the property of the Contractor upon completion of the work. Payment for the facilities, heating, lighting, telephone installation, internet connection, basic monthly telephone charges and all furnishings shall be incidental to the contract.

Failure to comply with the above requirements will be considered denial of access to work for the purpose of inspection. The Department will reject all work done when access for inspection is denied.

535.06 Notice of Beginning Work. The Contractor shall give the Department a minimum of two weeks notice for in-state work and three weeks notice for out-of-state work prior to beginning production. For the purposes of assessing Liquidated Damages, time charges will begin on the Monday of the week in which production is started. If the production schedule changes, The Contractor shall notify the Fabrication Engineer no less than 3 working days prior to the initial start up date. The Department will determine if the new start-up date is acceptable, and if not, will notify The Contractor as to when the Quality Assurance Inspector will be available. Any work done without the Quality Assurance Inspector present will be rejected. The Contractor shall advise the Engineer of the production schedule and any changes to it. If the Contractor suspends work on a project, the Engineer will require 72 hours notice prior to the resumption of work.

535.07 Inspection. The Contractor shall provide a copy of the Quality System Manual (Q.S.M.) when required by the Fabrication Engineer.

Quality Control (Q.C.) is the responsibility of the Contractor. Quality Control Inspectors (QCIs) shall have a valid PCI Quality Control Certification Level I, Level II or Level III. Personnel performing concrete testing shall hold a current ACI Field Testing Technician Grade I Certification or equivalent, or work under the direct supervision of an ACI certified technician.

The QCI shall inspect all aspects of the work in accordance with the Contractor's QSM. The QCI shall record measurements and test results on the appropriate forms from APPENDIX E of MNL 116 or an equivalent form prepared by the user. The Contractor shall provide copies of measurements and test results to the Quality Assurance Inspector (QAI) as follows:

Type of Report	When Provided to Q.A.I*
Aggregate gradations-fine aggregate and coarse aggregate	Prior to beginning work and at least once a week thereafter.
Material certifications / stressing calculations / calibration certifications	Prior to beginning work (anticipate adequate time for review by QAI)
Tensioning report	The same work day
Pre-pour inspection report	Prior to the concrete placement
Concrete Batch Slips	The morning of the next work day
Results of concrete testing	The morning of the next work day
Results of compressive testing (for release)	The same work day
Concrete temperature records	Provide with compressive testing (for release)
Non-conformance reports/repair procedures	Within 24 hours of discovery
Results of compressive testing (for design strength)	Prior to stopping curing / Prior to final acceptance
Post-pour inspection report	Prior to final acceptance

***The Contractor and QAI may, by mutual agreement, modify any part of the schedule, however, failure to provide the documentation when required by the Fabrication Engineer will result in the product being deemed unacceptable.**

The QCI shall reject materials and workmanship that do not meet contract requirements. The Contractor may perform testing in addition to the minimum required. The results of all testing shall be made available to the Department.

Quality Assurance (Q.A.) is the prerogative of the Engineer. The Quality Assurance Inspector (QAI) will verify: documentation, workmanship, testing and will assure that the Contractor is performing in accordance with the Q.S.M.

535.08 Inspector's Authority. The QAI has the authority to reject material or workmanship that does not meet the contract requirements. The acceptance of material or workmanship by the QAI will not prevent subsequent rejection, if the work is unacceptable.

535.9 Rejections. The Contractor shall correct or replace rejected material and/or workmanship. In the event that an item fabricated under this Specification does not meet the contract requirements but is deemed suitable for use by the Engineer, said item will be paid for in accordance with Section 100 of the Standard Specifications.

535.10 Forms and Casting Beds. The Contractor shall construct forms that conform to the shop drawings in all respects. The forms shall be well constructed, carefully aligned

and sufficiently tight to prevent leakage of mortar. The Quality Control Inspector shall reject forms that do not maintain the plan dimensions with allowable tolerances. The Contractor shall separate bulkheads between precast/prestressed concrete products and bulkheads next to abutments by a minimum of 18 inches to facilitate de-tensioning. The Contractor shall inspect the bulkheads after each cast and repair or replace worn or damaged pieces.

The Contractor shall seal wooden forms to prevent absorption of water. The Contractor shall apply and cure the sealer in accordance with the manufacturer's product data sheet.

The Contractor shall remove all paint, adherent material, foreign matter and debris prior to placing concrete.

The Contractor shall apply a non-staining bond-breaking compound to the forms in accordance with the manufacturer's product data sheet.

The Contractor shall solvent clean reinforcing steel and strand that has been contaminated with the bond-breaking compound. The Contractor shall not place concrete until the cleaned strand has been accepted by the Quality Control Inspector.

535.11 Reinforcing Steel. The Contractor shall fabricate, package, handle, store, place, splice and repair reinforcing steel in accordance with Section 503 of the Standard Specifications.

The Contractor shall accurately locate and securely anchor the reinforcing steel to prevent displacement during concrete placement. The Contractor shall install and secure all reinforcing steel prior to beginning the concrete placement.

The concrete cover shown on the approved shop drawings shall be the minimum allowable cover. The concrete cover requirements shall supersede the bending tolerances allowed in ACI 315 of the CRSI Manual Of Standard Practice, MNL 116 and other referenced documents. The Contractor shall use sufficient bar supports and spacers to maintain the minimum concrete cover. The bar supports and spacers shall be made of a dielectric material or other material approved by the Engineer. The Contractor shall not place concrete in the form until the reinforcing steel and void placement has been accepted by the Quality Control Inspector.

535.12 Voids. Voids shall be non-absorbent. The out-to-out dimensions of the voids shall be within 2% of plan dimensions. The Contractor shall repair damaged in a manner acceptable to the Fabrication Engineer. The Contractor shall store, handle and place voids in a manner that prevents damage. The Contractor shall remove residue from void placement from the forms with a blowpipe, vacuum cleaner or other method acceptable to the QAI.

The Contractor shall accurately locate and securely anchor, securely cap and vent the voids in the form. Any portion of a void that is displaced beyond the allowable dimensional tolerances shall be cause for rejection of the slab or beam. The Contractor shall use coated wire to secure the voids when wire is required.

The Contractor shall open the void drains immediately upon removing the product from the form.

535.13 Concrete. New concrete mix designs and mix designs not previously approved by the Fabrication Engineer, including Self-Consolidating Concrete mixes, shall be qualified by trial batches prepared in accordance with AASHTO T 126 (ASTM C 192). The test results shall demonstrate that the concrete meets the requirements of the Plans and this Specification. If accelerated curing is to be used in production, the test specimens shall be similarly cured.

The concrete mix design shall meet the following requirements:

Table 1

Minimum cement content	**658 lbs./c.y.**
Water-cement ratio	**0.40 max.**
Air entrainment	**5 ½ % - 7 ½ %**
Allowable slump	**5 in. – 10 in.**
Allowable Spread (SCC)	**20 inches-26 inches.**
Visual Stability Index (SCC)	**VSI 1.5 (maximum)**
Corrosion inhibitor	**3 gal./c.y. (unless otherwise specified)**
Silica Fume (when required)	**5%-10% of cement content by weight**
Fly Ash	**40% of cementitious material max.**
Slag	**50%of cementitious material max.**

***The water in the DCI solution shall be included when calculating the water/cement ratio**

The batching equipment, mixers and delivery equipment shall meet the requirements of MNL 116. The Contractor shall batch, mix, handle and place concrete in accordance with MNL 116.

535.14 Concrete Placement. The QCI shall test the first two loads of concrete for temperature, air entrainment and slump or spread as required. If the first load is unacceptable, the second load shall be tested as the first. The Contractor shall continue this process until two consecutive loads are acceptable. After two consecutive loads are acceptable, the frequency of testing shall be at the discretion of the QAI.

The Contractor shall test the concrete for temperature, air entrainment and slump or spread as required if there is a change in the dosage rate of any admixture, a change of three inches or more in slump or a change of more than 5° F in mix temperature.

The Contractor shall test any load of 1 cubic yard or less from a stationary mixer or 2 cubic yards or less from a transit mixer for temperature, air entrainment and slump or spread as required prior to placing the concrete in the forms.

The Contractor shall place the concrete as nearly as possible to its final location. The Contractor shall control the depth of each lift in order to minimize entrapped air voids. The maximum depth of an unconsolidated lift shall be 18 in. The Contractor shall vibrate the concrete with internal or internal and external vibrators. The Contractor shall not use external vibrators alone. Internal vibrators shall be inserted vertically and penetrate the lower layer of concrete by at least 4 in. The Contractor shall insert the vibrators in the concrete to assure that the radii of action of the vibrators overlap. The vibrators shall be held in position from 5 to 15 seconds. The Contractor shall not use vibrators to move concrete horizontally.

When concrete placements are interrupted (e.g. placing voids in box beams), no more than 60 minutes shall elapse from the time of the beginning of the placement and the resumption of the concrete placement when the concrete temperature is below 75° F. When the concrete temperature is above 75° F, the elapsed time shall be reduced to 30 minutes. Cold joints may make the precast/prestressed concrete products subject to rejection.

The Contractor shall not re-temper the concrete with water after discharging has begun. The Contractor may add HRWR to the concrete after batching if that practice conforms to the manufacturer's product data sheet. The Contractor shall discard concrete that becomes unworkable.

<u>535.15 Process Control Test Cylinders.</u> The Contractor shall mold, handle, cure and test process control test cylinders in accordance with the following Standards:

AASHTO T23 (ASTM C 31/C31M) Practice for Making and Curing Concrete Test Specimens in Field
AASHTO T 22 (ASTM C 39) Test Method for Compressive Strength of Cylindrical Concrete Specimens
AASHTO T119 (ASTM C 143) Test Method for Slump of Hydraulic Cement Concrete
AASHTO T141 (ASTM C 172) Practice for Sampling Freshly Mixed Concrete
AASHTO T152 (ASTM C 231) Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 1064-Test Method for Temperature of Freshly mixed Portland Cement Concrete

The Contractor shall make a minimum of 8 concrete test cylinders to represent each continuous concrete placement except that, 8 concrete test cylinders shall be made for each bulb "T" girder cast in a continuous placement. The Contractor shall cure six of the cylinders under the same conditions as the precast/prestressed concrete products. The Contractor shall record unit identification, entrained air content, water-cement ratio, slump and temperature of the sampled concrete at the time of cylinder casting. The Contractor shall perform all testing in the presence of the QAI. The QAI will designate the loads to be tested. The Contractor shall make cylinders used to determine release strength during the last 1/3 of the placement.

At least once a week, The Contractor shall make four cylinders for use by the Department. They shall be cured in accordance with AASHTO T23 (ASTM C 31/C31M).

If the Contractor fails to make enough cylinders to demonstrate that the product meets the contract requirements, the product will be considered unacceptable.

The standard size test cylinder for acceptance is 6 inches by 12 inches. If the Contractor uses 4 inch by 8-inch cylinders for acceptance, the compressive strength values will be reduced by 5%. The compressive strength of the concrete will be determined by averaging the compressive strength of two test cylinders made from the same sample. For the purpose of detensioning prestressed products, neither of the test cylinders shall have a compressive strength less than the minimum required transfer strength after the 5% reduction of 4 inch by 8 inch cylinders is taken. For the purpose of acceptance, the average of two cylinders shall meet or exceed the design strength, and, neither cylinder shall be more than 500 psi below design strength.

The Contractor shall perform compressive testing to determine transfer and design strength in the presence of the QAI. Cylinder tests not witnessed by the Quality Assurance Inspector will not be acceptable.

<u>535.16 Curing</u>. The Contractor shall cover the forms immediately after the concrete has been finished with an impermeable barrier to prevent moisture loss. The barrier shall be tight to the form and securely fastened. The exposed surface of the concrete shall be kept moist. The Contractor shall not uncover the concrete until immediately before de-tensioning of the strands takes place.

The Contractor shall moist cure the concrete until it has reached design strength. All surfaces of the product shall be kept moist and the product shall be placed in a moisture retention enclosure with a relative humidity not less than 80%. The product shall not be exposed to temperatures below 10° C (50° F) until design strength is achieved.

Membrane curing compounds shall not be used without the approval of the Fabrication Engineer. The Contractor shall apply the curing compound in strict accordance with the

manufacturer's product data sheet. The Contractor shall provide the QAI with the product data sheet for the compound prior to application. The Contractor shall apply the curing compound immediately after removing the product from the form. If The Contractor fails to apply the curing compound immediately and in accordance with the manufacturer's product data sheet, the Contractor shall moist cure the product as directed by the Fabrication Engineer.

<u>535.17 Accelerated Curing (Optional)</u>. Accelerated curing shall begin after the concrete has attained its initial set. Initial set shall be determined in accordance with ASTM C 403, *Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance.* A strength gain of 3.5 Mpa (500 psi.) indicates initial set. The Contractor shall provide documentation that the mix design used has been tested in accordance with ASTM C 403. Accelerated curing shall begin after the concrete has attained initial set. The application of heat more than 4 hours after initial set will not be considered accelerated curing.

The Contractor may increase the enclosure temperature by a maximum of 10° F/hour prior to initial set. The total temperature gain prior to initial set shall not exceed 40° F. After initial set, the temperature gain of the concrete shall not 40° F/hour. The concrete temperature shall attain a minimum temperature of 120° F and that temperature shall be maintained for a minimum of 8 hours. The maximum allowable concrete temperature shall 180° F. The Contractor shall measure the concrete temperature at each end of the casting set-up and intervals between that do not exceed 100 feet.

The Contractor shall cure the product in an enclosure that allows the free circulation of steam. Steam jets shall provide a uniform distribution of steam without discharging directly on the product or the test cylinders.

When radiant heat is used, the Contractor shall take measures to assure that there is no moisture loss from the product. Free water shall be present on all exposed surfaces at all times.

The Contractor shall use recording thermometers that indicate the time/temperature relationship until transfer/stripping strength has been achieved. The Contractor shall provide copies of the time/temperature records to the QAI.

If the precast/prestressed concrete products have achieved 80% of design strength during the accelerated curing cycle, no further curing will be required unless directed by the Fabrication Engineer.

<u>535.18 Prestressing.</u> The Contractor shall provide stressing calculations to the QAI prior to tensioning strands. The Contractor shall not tension the strands until the QAI has reviewed and accepted the calculations. If there are errors in the stressing calculations,

the Contractor shall correct the errors and re-submit the calculations to the QAI for review and acceptance. The Contractor shall apply initial force and final force to the in the presence of the QAI. The QCI shall be present to monitor and document the application of initial force, final force and the elongation of the strands. The Contractor shall measure the tensioning force by one of the following methods:

1. **Pressure gauges measuring hydraulic pressure**
2. **Dynamometer**
3. **Load cell-digital readout**
4. **Digital readout connected to a transducer measuring hydraulic pressure**

The Contractor shall calibrate the equipment used to measure tensioning force every 6 months. The calibration shall be performed by an approved testing laboratory, calibration service or under the direct supervision of a professional engineer registered in the State of Maine.

The Contractor shall provide a Calibration Report for the tensioning device being used to the QAI for review and approval. The Calibration Report shall include a Calibration Conversion Chart that correlates gauge readings with actual force applied. The Contractor shall use the corrected gauge reading for tensioning the strands.

Equipment used to measure tensioning force shall be graduated to read within 2% of the anticipated force. Rams, gauges, pumps and hoses shall be calibrated as a system. Replacement of any of the previously listed components shall require re-calibration of the jacking system. If the same device is used for initial and final tensioning, separate gauges shall be installed in the system. Both initial force and final tensioning hydraulic gauges shall be at least six inches in diameter and shall be graduated so that the anticipated force falls within the middle third of the gauge range. Gauges shall be at or near eye level and the needles shall remain steady until the load is released.

The Contractor shall tension strands in an orderly sequence to avoid snags and entanglements. When strands from two or more coils are used, the Contractor shall identify the locations of the different strand lots. The Contractor shall calculate the elongation and adjusted gauge pressure readings for each modulus of elasticity and cross sectional area of the strands.

Prior to tensioning, The Contractor shall cycle the hydraulic jacking devices until the hydraulic fluid reaches normal operating temperature.

The Contractor shall tension the strand in a manner that avoids friction and dead load losses due to overlying strands. The Contractor should visually inspect each strand during initial tensioning to assure that the strand is free of overlying strands or reinforcing steel.

After initial tensioning, the Contractor shall establish a permanent and clearly visible reference mark on the strand to determine strand elongation after final tensioning. The Contractor shall measure strand elongation to the nearest 1/16 inch. The gauge pressure reading and strand elongation shall be within five percent of theoretical. The algebraic difference between the error in gauge reading and elongation shall not exceed five percent. If the elongation, gauge reading or the algebraic difference exceeds five percent, The Contractor shall suspend the operation until the cause is determined and corrections are made.

535.19 Detensioning. The Contractor shall detension the strands in the presence of the QAI and QCI.

The Contractor shall measure and record the strand slippage of all precast/prestressed concrete products in the first cast. The QCI shall document the slippage. The QAI may require that the strand slippage be measured on any unit if the QAI has reason to question the concrete consolidation around the strand.

The Contractor shall remove all forms and devices that restrict the horizontal and vertical movement of the precast/prestressed concrete products prior to detensioning. The Contractor shall prevent damage to the precast/prestressed concrete product that is caused by detensioning.

The Contractor shall detension the precast/prestressed concrete products in the sequence shown on the approved shop drawings. Failure to follow this sequence shall be cause for rejection of the product.

The Contractor shall detension as soon as practical after the precast/prestressed concrete products have achieved transfer strength. If the product was accelerated cured, The Contractor shall detension the precast/prestressed concrete products immediately following the curing period while the concrete is still warm and moist.

When detensioning by single strand release, The Contractor shall cut each strand by heating gradually with a low oxygen flame at both ends of the pre-stressing bed and at all intermediate points, in multiple unit casts, simultaneously. A minimum length of 6 inches of strand shall be heated to prevent any shock or snap when the strand is finally severed.

When detensioning by multiple strand release, the equipment shall be capable of releasing the load gradually, without shock, and with a minimum of movement of the precast/prestressed concrete products.

535.20 Finishing Concrete and Repairing Defects. Precast/prestressed concrete products fabricated under this Section shall meet Standard Grade finish requirements as defined in MNL 116 except that The Contractor shall rub fascia members in accordance with

Section 502.14 of the Standard Specifications. The Contractor shall abrasive blast fascia surfaces prior to finishing. The Contractor may use alternative methods of achieving an acceptable finish on fascia members if approved by the Fabrication Engineer.

The Contractor shall repair honeycombing, ragged or irregular edges and other cosmetic defects using a product from the MDOT Prequalified List of Patching Materials. The repair, including preparation of the repair area, mixing, application and curing of the patching material shall be in accordance with the manufacturer's product data sheet. Corners not exposed in the final product may be ground smooth with no further repair necessary if the depth of the defect does not exceed 1/2 inch. The Contractor shall remove form ties and other hardware to a depth of not less than 1 inch from the face of the concrete and patch the holes using a product from the MDOT Prequalified List for Patching Materials.

The Contractor shall repair structural defects only with the approval of the Fabrication Engineer. The Contractor shall submit a non-conformance report (NCR) to the Fabrication Engineer with a proposed repair procedure. The Contractor shall not perform structural repairs without an approved NCR. Structural defects shall include, but not be limited to exposed reinforcing steel or strand, cracks in bearing areas, through cracks and cracks 0.013 in. in width that extend more than 12 inches in length in any direction. The Contractor shall give the QAI adequate notice prior to beginning structural repairs.

The Contractor shall make chamfers and drip notches smooth and uniform. The Contractor shall sandblast keyways to remove mortar paste prior to shipping. The Contractor shall recess strand ends 1 inch and patch the holes with a product from the MDOT Prequalified List of Patching Materials. The Contractor shall coat the entire ends of the precast/prestressed concrete products with a bituminous protective coating unless otherwise specified on the Plans or as directed by the Fabrication Engineer.

<u>535.21 Precast/prestressed Deck Panels</u>. The Contractor shall produce precast/prestressed deck panels recast in accordance with the plans and Standard Details, PRECAST CONCRETE DECK PANELS.

The Contractor shall cast screw jack devices in each corner of the deck slab in order to facilitate bottom-of slab elevation adjustment. The Contractor may use other methods of adjusting the bottom-of-slab elevations if approved by the Engineer.

The Contractor shall cure the deck panels in accordance with 535.16 or 535.17.

535.22 Tolerances. Tolerances for precast precast/prestressed concrete products shall be in conformance with the latest edition of MNL 116, as applicable. Voided slabs shall be manufactured to the following tolerances:

Precast, Prestressed Voided Slabs	
Depth of Slab	±1/4 inch
Width of Slab	±1/4 inch
Length of Slab	±1/8 inch/10 feet of length or1/2 inch, whichever is greater
Skewed Ends	±1/4 inch deviation from required skew
Beam Seat Bearing Area	±1/16 inch
Horizontal Alignment	±1/4 inch [deviation from straight line parallel to centerline of member]
Dowel Tubes	±1/4 inch [center of tubes to sides of member]
Void Tubes	±1/4 inch [vertically and horizontally] ±1/2 inch [location of ends]
Post Tension Ducts	±1/4 inch
Differential camber between Adjacent Precast/prestressed concrete products	±1/8 inch/10 feet of length or 1/2 inch maximum
Center of Gravity of Strand Group	±1/4 inch
Vertical and Horizontal location of individual strands	+/- 1/4 inch
Stirrup Bars	+ 1/4, - 1/2 inch projection above top of beam ±1 inch longitudinal spacing

535.23 Transportation and Storage. After the deck panels are detensioned, they may be handled and moved, but shall not be transported until the 28 day design strength has been attained. The Contractor shall handle and transport deck panels so that the reactions with respect to the panel shall be approximately the same during transportation and storage as in its final position.

The Contractor shall support stored panels above the ground on dunnage in a manner to prevent twisting or distortion. The Contractor shall protect the panels from discoloration and damage.

The Contractor shall replace precast/prestressed concrete panels damaged by improper storing, hoisting or handling.

ERECTION

535.24 Bearings. The Contractor shall finish the bearing areas to the elevation shown on the Plans. The Contractor shall finish the bearing areas flat and level within 1/8 inch in all directions. The Contractor shall not erect Precast/prestressed concrete products on bearing areas that are unacceptable to the Engineer. The Contractor shall install bearings or bearing pads as shown on the Plans.

<u>535.25 Keyway Grout</u>. The Contractor shall fill longitudinal keyways between beams with a non-shrink, flowable, cementitious grout with a design compressive strength of 6000 psi. The grout shall be one of the products listed on the Maine Department of Transportation's list of Pre-qualified Grout Materials for Keyways. The Contractor shall mix, place and cure the grout in accordance with the manufacturer's published recommendations. Gaskets of compressible material are required around duct openings within keyways to prevent blocking of the duct with grout.

The Contractor shall clean the keyways immediately prior to filling the keyways with grout. The Contractor shall soak the keyways with water in order to prevent absorption of water from the grout. The Contractor shall seal the keyways to prevent the loss of grout.

The Contractor may propose the use of alternate grout material and placement methods. The Engineer shall approve alternate grout and placement methods in writing.

<u>535.26 Lateral Post-Tensioning</u>. The Contractor shall post-tension precast/prestressed concrete slabs and beams to 29,000 lbf per strand unless otherwise specified on the Plans. The Contractor shall provide a jacking device that has been calibrated in accordance with 535.18. The Contractor shall provide calibration documentation, a calibration curve and stressing calculations to the Fabrication Engineer and the Resident, allowing adequate time for review. The Contractor shall not post-tension slabs and beams until the documentation has been reviewed and approved. The Contractor shall post-tension the beams or slabs in the presence of the Engineer.

The Contractor shall saw cut or abrasive cut the post-tensioning strand no closer than 1 ¼ inches from the wedges after tensioning is complete. The Contractor shall coat the strand ends and wedges with a corrosion inhibiting grease and cap the ends with a watertight cover. The entire anchorage shall be watertight.

The Contractor shall pack and neatly finish the post-tensioning recesses with a grout made of the same brand and type of cement used to cast the slabs or beams. The Contractor shall clean the post-tensioning recesses prior to packing the grout. No vehicular traffic, including the Contractor's equipment shall be allowed on the bridge until post-tensioning is complete.

<u>535.27 Erection of Precast Deck Panels.</u> The Contractor shall erect deck panels as shown on the plans. The Contractor shall adjust the bottom-of-slab elevation using threaded jacking devices cast into the panels. The Contractor shall only use other methods of adjusting the bottom-of-slab elevations with the approval of the Engineer.

The Contractor shall fill the voids between the top of the girder flange and the bottom of the panels with a non-shrink, flowable, cementitious grout with a design compressive

strength 6000 psi. The Contractor shall use one of the products listed on the Maine Department of Transportation's list of Pre-qualified Grout Materials for Keyways. The Contractor shall mix, place and cure the grout in accordance with the manufacturer's published product data sheet. The Contractor shall provide vent holes at 3-foot intervals to avoid air locks.

The Contractor shall prevent concrete leakage between the deck panels using caulking or other methods approved by the Resident.

The Contractor shall remove all visible contaminants from the deck slabs and protruding reinforcing steel by abrasive blast cleaning prior to placing the deck concrete.

After the deck placement is complete and the Contractor has stripped the formwork, the Contractor shall recess all inserts, ties and other metal devices one inch below the surface and the holes shall be filled with a patching material approved by the Engineer.

535.28 Method of Measurement. Prestressed structural concrete will be measured by the lump sum.

535.29 Basis of Payment. All work done under Prestressed Structural Concrete will be paid for at the contract lump sum price. Payment will be full compensation for furnishing all materials in the precast/pre-stressed unit including anchor dowels, reinforcing steel, and related materials and work. Related materials and work will include, but not be limited to, preformed pads, erecting the products, drilling and grouting of anchor dowels, grouting of keyways and ducts, post-tensioning operations and concrete admixtures used.

Payment will be made under:

Pay Item	Pay Unit
535.61 Prestressed Structural Concrete I-Girders	Lump Sum
535.62 Prestressed Structural Concrete Box Beams	Lump Sum

SPECIAL PROVISION
SECTION 535
Precast, Prestressed Concrete Superstructure

Section 535, Precast, Prestressed Concrete Superstructure of the Standard Specifications is amended as follows:

535.07 Erection of Precast Deck Panels: Paragraph 2, is revised to read as follows:

After precast deck panels have been erected, adjusted and sealed, the void between the top of the girder and the bottom of the panels shall be filled with a non-shrink, flowable cementitious grout or concrete with a design compressive strength of not less than that required for the deck concrete above. This is the material that is referred to in Standard details 502(09) and 502(10) as "non-shrink mortar" and shall not be placed any higher than ½ inch above the bottom of the precast deck panels. The course aggregate shall be the maximum size practical for those areas where the gap between the top flange and the bottom of the deck panel exceeds ¾ inch. For those areas where the gap between top flange and the bottom of the deck panel is less than ¾ inch then the grout shall consist of one of those products on the Maine Department of Transportation's list of pre-qualified grout materials for keyways, and the grout shall be mixed placed and cured in accordance with the manufacturer's published recommendations. Vent holes shall be provided at 3 ft intervals to prevent air lock. Once the grout has cured to sufficient strength any screw type leveling jacks within the deck panels shall be turned back to distribute the dead load of the panel to the grout.

SPECIAL PROVISION
SECTION 535
HANGER SYSTEM

535.01 Description The work specified in this Section shall consist of fabricating, furnishing, installing, and tensioning bridge hanger cable assemblies in accordance with these specifications and to the dimensions, shape, details, and construction sequence shown on the plans.

535.02 Materials

Structural Strand

Each hanger shall be made of one 3 inch diameter helical, multiple-wire, zinc-coated steel structural stand, conforming to the requirements of ASTM A586-98, with all wires to be furnished with Class A weight zinc coating. Strand minimum breaking strength is 538 tons.

Sockets

All sockets shall be designed to meet or exceed the specified minimum strand breaking strength. Steel castings shall meet the requirements of ASTM A148.

Miscellaneous Metals

Hanger components such as extension bars, nuts, washers, bearing plates and sleeve tubes shall be provided and installed as shown on the drawings.

535.03 Fabrication

Structural Strand

Strand shall be fabricated by a manufacturer with demonstrated experience in the manufacture of strand and in the fabrication of hanger assemblies of the type and size specified herein for at least five projects within the past ten years, and whose facilities and experience are approved by the Engineer. Prior to beginning the manufacture of the strand, the Contractor shall submit to the Engineer documentation of minimum breaking strength, modulus of elasticity, and make up of the wires closed in the strand.

The manufacturer shall provide proper facilities for performing the tests required by ASTM A586 at his own expense. If requested by the Engineer, tests shall be made in the presence of an inspector representing the Engineer. Certified test reports covering all tests specified herein shall be furnished to the Engineer.

The strand shall be manufactured to meet the specified strength requirements. Strand shall be made on machines of sufficient size to insure good workmanship and shall be fabricated in the greatest length possible. Once the manufacture of the strand has been started, no changes shall be made in the grade of wire, construction or lay of strand, or any other factors that affect the uniformity of the product.

The manufacturer shall prestretch the strand by stressing with a load equal to 55 percent of the breaking strength in straight tension. Load shall be maintained and/or repeated until the strand reaches a stable condition as defined by ASTM A586. The manufacturer shall determine and report the modulus of elasticity of each prestretched length of strand in accordance with ASTM A586 Paragraph 7.5.

The zinc-coated steel wire used in the strand shall be tested prior to fabrication in accordance with Section 5 of ASTM A586. The zinc coating weight shall be tested in accordance with Section 6.

Strand shall be cut to required lengths for use in hangers and shall be zinc socketed by the hanger assembly manufacturer. The hanger lengths shall be the theoretical final lengths measured at zero tension and shown on the plans.

Each strand shall have a legible waterproof tag firmly attached to it giving the fabricated length and location where it is to be installed on the structure.

Strand and assemblies shall show a well-defined and uniform elastic stretch and recovery under stressing as measured during proof loading operations.

Sockets

Sockets shall be neatly finished to the exact dimensions shown on approved shop drawings. Sockets shall be fabricated by a manufacturer with demonstrated experience in the fabrication of sockets of the type and size shown in the Plans specified herein within the past ten years, and whose facilities and experience are approved by the Engineer. All accessory bolts, nuts, pins and washer shall be galvanized in according to ASTM A153.

The sockets for strands shall be threaded anchor sockets constructed of cast steel, as furnished by Houston Structures, Inc. by Bridon American Corporation, by Wire Rope Corporation of America, Inc., or by approved equal. Cast steel shall conform to the requirements of ASTM A148, Grade 90-60. Sockets shall be galvanized in accordance with ASTM A153.

All sockets, both forgings and castings to be used in the hanger assemblies, shall be tested by the manufacturer as required herein prior to acceptance for use on the bridge. If requested by the Engineer, tests shall be performed in the presence of an inspector representing the Engineer. Certification of all test results shall be provided to the Engineer, who will approve the casting or forging.

> Steel Castings—Steel castings for sockets shall be fabricated, tested, and repaired in accordance with the requirement of ASTM A148. Alloy steel casting for the Lower anchorage plate shall be fabricated, tested, and repaired according to Standard Specifications.
>
> In addition, all castings shall be tested in accordance with ASTM A148 Supplementary Requirements S1, Magnetic Particle Examination (all castings), and S2, Radiographic (one casting from each heat).

Examination. Magnetic Particle Testing shall conform to ASTM E709 with the following acceptance levels per ASTM E125.

Type	Discontinuity	Acceptance Level
1	Linear Discontinuities	*
2	Shrinkage	2
3	Inclusions	2
4	Internal Chills-Chaplets	NA
5	Porosity	1

*All linear indications shall be removed by grinding and blending.

Magnetic Particle Testing shall be conducted by approved ASNT-TC-1A examiners.

Steel forgings—Steel forgings for sockets shall be fabricated and tested in accordance with the requirements of AASHTO M102 (ASTM A668) Class G. In addition, forgings shall be tested in accordance with ASTM A668 Supplementary Requirements S6, Magnetic Particle Test (all forgings), and S7, Ultrasonic Test (10% of all forgings).

535.04 Structural Strand Assembly

The sockets shall be attached to strands in accordance with procedures submitted to the Engineer prior to fabrication, and as required to meet the tests herein specified. Care shall be exercised to ensure socket and strand alignment. Great care shall be taken so that the lengths of the strands after socketing are correct. Fabricated lengths shall be within a tolerance of 0 to ¼ inch long.

The wires of a strand, after being splayed in preparation for socketing shall be cleaned of grease and other impurities by a carefully controlled process that will assure no harm is done to the wire zinc-coating. After socketing, the exposed strand wires adjacent to the socket shall be relubricated.

The basket of the socket shall be preheated to expel moisture and to prevent the molten zinc from congealing before it has completely filed the narrow lower end of the basket. Hanger assemblies will be rejected if the socketing procedure results in bare wires within the socket.

The zinc used to attach the sockets to the strand shall comply with ASTM Specifications B6 Prime Western. The molten zinc shall be placed at the lowest practical temperature to minimize the affect of heat on the strands. The zinc temperature at the time of pouring shall be recorded for each socket and furnished to the Engineer.

523.05 Proofloading

Each completed strand/socket assembly shall be assembled with cast lower anchor plates and proofloaded to 50 percent of the specified minimum ultimate breaking strength of the strand as follows: Apply a load to 5 percent of listed nominal ultimate strength of the strand and measure and record the overall length. Apply a paint stripe to the interface between the strand and the speltered socket. Finally increase the load to 50 percent of the listed nominal ultimate strength and measure and record the overall length again.

After load testing, visually inspect spelter sockets and cables over the entire length for damage or other signs of inadequate performance. Final acceptance shall be determined by the Engineer. Any visual defect in the strand, sockets, or point stripe will be considered sufficient for rejection of the entire assembly. Provide certified load testing and length measurement data to the Engineer with the identity of the individual strand assembly tested clearly indicated.

CONSTRUCTION

535.05 Handling, Shipping, and Storage

After socketing and measuring, each strand shall be rolled on wooden reels of appropriate diameter and in a manner that will prevent twisting of and damage to the strand and that will minimize the loss of prestretching. No more than four strand assemblies shall be shipped on each wooden reel. Any kinked or damaged strand will be rejected. Straightening of bent wires will not be permitted. Reels shall be stored in a well protected location. Handling and shipping of strand shall be in accordance with the applicable requirements of the AISI Wire Rope User's Manual.

Strand assemblies shall be housed and stored at least 1'-8" above the ground. The ropes shall be kept free of dirt, sand, or other deleterious materials.

535.07 Erection of Structural Strand Assemblies

Strand assemblies shall be carefully removed from wooden reels by revolving them. The unreeled strand assemblies shall not be permitted to rest on the ground, on a dirty or dusty surface, or on an abrasive surface such as the concrete bridge deck. They shall be supported on timber blocking for the entire length, spaced closely enough to prevent kinking and contact with the ground. The strand assemblies shall be lifted into position in the structure in a manner which causes no kinking or other distress to the strands. Nylon straps shall be used to lift cable assemblies at all times.

535.08 Pre-Tensioning

All hanger strands shall be hung in place with bars, nuts, etc. installed prior to beginning tensioning operations. Hangers shall be tensioned to the initial load shown on the plans in a measured and careful manner and in the pattern indicated.

Pre-tensioning of the hangers shall proceed as in accordance with the procedures shown on the drawings. The pretension in each hanger shall be measured by means of hydraulic jacks equipped with a calibrated dial gauge, and tensions adjusted to meet the requirements specified on the drawings.

Pre-tensioning shall be performed using center-hole hydraulic jacks. The hydraulic jacks shall be equipped with an accurate pressure gauge at least six inches in diameter. The jacks and the pressure gauge shall have been calibrated within the last six months. A certified calibration chart shall be furnished to the Resident.

Method of Measurement Structural Strand Hanger System will be measured as one lump sum, accepted in place.

Basis of Payment The completed and accepted work for Structural Strand Hanger System will be paid for at the contract lump sum price. Payment shall be full compensation for fabricating, testing, installing materials, and tensioning the structural strand assemblies including fabrication and installation of hanger bar extensions, steel nuts, washers, sleeve tubes and bearing plates. Payment will include all materials, equipment, tools, labor, and incidentals necessary to complete the work as specified.

Payment will be made under:

Pay Item		Pay Unit
535.65	Structural Strand Hanger System	Lump Sum

SPECIAL PROVISION
SECTION 604

MANHOLES AND CATCH BASINS
(Dry Well Catch Basin)

This section is amended by addition of the following:

Description Install Dry Well Catch Basin and connect to existing drainage system as shown on the plans in accordance with the requirements of Section 604 of the Standard Specifications and Standard Details as applicable.

Materials Materials shall meet the requirements specified in the following Sections of Division 700 – Materials.

Crushed Stone	703.31
Erosion Control Geotextile	722.03

Construction Requirements The Dry Well Catch Basin shall be in accordance with Subsection 604.03 in addition to the following requirements. The Dry Well Catch Basin shall have an open bottom and 4 square inch perforations for at one foot centers for the bottom 4 feet. The basin shall be set on 2' of crushed stone and surrounded by 1' of crushed stone for the bottom 4'. The base and sides shall have geotextile between the crushed stone and basin. Outlet and pipe elevations may vary from the elevations shown on the plans depending upon field conditions. New invert connections to the proposed manhole or catch basin shall be core cut at the elevation shown on the plans or as determined by the Resident.

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

Basis of Payment The accepted quantity of Dry Well Catch Basins will be paid for at the contract unit price each complete and in place. Excavation, frames, covers, crushed stone fill, backfill and erosion control geotextile shall be considered part of the structure and no separate payment will be made.

Excavation and backfill will be measured and paid for as provided in Section 206 – Structural Excavation.

Payment will be made under:

Pay Item	Pay Unit
604.31 Dry Well Catch Basin	Each

SPECIAL PROVISION
SECTION 606
GUARDRAIL
(Timber Guardrail)

DESCRIPTION

A. This work shall consist of the installation timber guardrail with timber posts and all the necessary hardware and incidentals required to complete the work as shown on the Contract Plans.

B. All work and materials shall conform to this Special Provision, the details shown on the plans and the applicable Standard Specifications and Details. Any existing dimensions shown on the plans or otherwise needed to complete the work shall be field verified prior to ordering or fabricating.

MATERIALS

A. New timber guardrail and posts shall conform to subsection 710.07 "Guardrail Posts" of the Standard Specifications. The timber posts shall have a stress grade rating of at least 1350 psi.

B. Timber guardrail and posts shall be treated in accordance with the requirements of AASHTO M133 using Pentachlorophenal (Penta), Chromated Copper Arsenate (CCA), Ammoniacal Copper Arsenate (ACA) or Ammoniacal Copper Zinc Arsenate (ACZA) preservative except that the minimum retention shall be 0.60 pcf. The treatment shall conform to AWPA C14 and C5. In case of conflict, AWPA C14 shall govern.

C. Steel splice plates shall be fabricated from structural steel conforming to AASHTO M222 (ASTM A588). Hardware shall conform to ASTM A307 Grade A fasteners and galvanized in accordance with AASHTO M232 (ASTM A153).

CONSTRUCTION REQUIREMENTS

A. The Contractor shall submit shop drawings, materials lists and layout plan for the proposed work to the Resident Engineer for review.

B. New timber posts shall be set plumb in augured holes in granular foundation material. The annular space around the posts shall be backfilled in 6 inch layers with granular borrow and thoroughly tamped.

METHOD OF MEASUREMENT

Measurement for installation of new timber guardrail shall be made per linear foot measured along the front face of the timber rail, complete and accepted, which shall include all materials, labor, equipment and incidentals needed to complete the work in accordance with the plans and specifications.

BASIS OF PAYMENT

Installation of new timber guardrail , complete and accepted, will be paid for at the unit price bid per foot. Payment will include, but not be limited to furnishing and installing the timber guardrail, timber posts, granular fill and all miscellaneous hardware, labor, equipment and incidentals necessary to complete the work.

Payments will be made under:

Pay Items	Description	Unit
606.61	Steel Backed Timber Guardrail	Linear Foot

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

SPECIAL PROVISION
SECTION 608
(Granite with Stone Dust Base)

DESCRIPTION

This work covers all labor, equipment and materials necessary to transport, cut and install on-site Norridgewock granite for walkways and terraces in accordance with the plans and specifications.

SUBMITTALS

Submit material certificate for bedding material approval.

MATERIALS

Granite shall be salvaged from the areas in front of the existing bridge abutments and uniformly sawn 3" thick by 15" wide by 48"– 60" in length. Finished stone paving surface shall be shop manufactured flamed thermal finish per industry standards.

Stone dust setting base shall be placed in close conformity to the lines and grades as shown on the plans. Stone dust base shall meet the following requirements.

Metric Sieve Size	U.S. Size	Percent Passing
9.5mm	3/8"	100
4.75mm	#4	96-100
2.36mm	#8	60-75
1.18mm	#16	32-55
0.30mm	#50	8-28
0.15mm	#100	3-15
0.075mm	#200	2-8

CONSTRUCTION REQUIREMENTS:

Install compacted stone dust base for final terrace grade designs. The Stone Dust Base course shall be mechanically compacted.

Install finish setting bed and align granite paving material to ensure uniform 3/8" width throughout.

Install granite to flush and uniform surface and tamp into place with rubber masonry mallet.

Fill joints with additional stone dust, broom sweep, and wash with water; repeat this operation, and broom sweep clean for final acceptance.

METHOD OF MEASUREMENT:

Granite with Stone Dust Base will be measured by the square yard, complete and accepted in place.

BASIS OF PAYMENT:

Payment shall be full compensation for transporting, saw cutting and resetting salvaged Norridgewock granite, including furnishing and installing stone dust and all labor, materials, equipment and incidentals necessary to complete the work. Payment for the block layout and cutting plan shall be made under item 608.29. Payment for the concrete terrace slab, bench cap post and footings shall be made under Item 502.219 Structural Concrete Abutments and Retaining Walls.

PAY ITEM		PAY UNIT
608.29	Granite with Stone Dust Base	Square yard

SPECIAL PROVISION
SECTION 618
SEEDING
(Seeding Method Number 1)

Add the following:

618.11 Method of Measurement Payment for seeding by the unit will be along the slope of the ground. One Unit will be 100 m^2 [1000 ft^2].

Payment will be under:

Pay Item		Pay Unit
618.13	Seeding Method Number 1	Unit

SPECIAL PROVISION
SECTION 619
MULCH
(Mulch)

Add the following:

619.06 Method of Measurement Payment for hay and straw mulch by the unit will be along the slope of the ground. One Unit will be 100 m^2 [1000 ft^2].

Payment will be under:

Pay Item		Pay Unit
619.12	Mulch	Unit

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

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

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

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

In accordance with Section 104.5.9, a separate Performance Bond will not be required for the Landscape portion of this contract. A Maintenance Bond for a Two-Year Establishment period in the full value of the planting contract shall be included in this project.

PLANT MATERIALS

ITEM NO	Description	Unit	Quantity	Total
621.025	Evergreen Trees 3' – 4' Group A	Ea.		12
	Pinus strobus (Eastern White Pine)		12	
621.026	Evergreen Trees 3' – 4' Group B			6
	Picea glauca (White Spruce)		6	
621.038	Evergreen Trees 5' – 6' Group B			6
	Thuja occidentalis 'Nigra' ('Nigra' Dark American Arborvitae)		6	
621.046	Evergreen Trees 8' – 10' Group A			6
	Pinus strobus (Eastern White Pine)		6	
621.048	Evergreen Trees 8' – 10' Group C			2
	Picea pungens glauca (Colorado'Blue Spruce'		2	
621.126	Small Deciduous Trees 6' – 8' Group C	Ea.		12
	Amelanchier Canadensis (Shadblow) Multistem Clump Form B&B/Cont.		12	
621.195	Medium Deciduous Trees 1 ¾" – 2" cal. Group A			6
	Malus 'Dolgo' ('Dolgo' Flowering Crabapple) Cont.		6	
621.255	Medium Deciduous Trees 8' – 10' –Group A	Ea.		6
	Betula Nigra 'Heritage' ('Heritage' River Birch) Multi-stem B&B/Cont.		6	
621.262	Medium Deciduous Trees 10' – 12'Group B B&B/Cont.	Ea.		6
	Betula Nigra 'Heritage' ('Heritage' River Birch) Multi-stem		6	

621.273	Large Deciduous Trees 2” – 2 1/2” cal. mm - B&B group A B&B	Ea.		12
	Acer rubrum ‘Red Sunset’ (‘Red Sunset’ Swamp Maple)		6	
	Acer saccharum ‘Green Mountain’ (‘Green Mountain’ Sugar Maple)		6	
621.275	Large Deciduous Trees 2” – 2 1/2” cal. mm - B&B group A B&B	Ea.		6
	Quercus rubra (Northern Red Oak)		6	
621.285	Medium Deciduous Trees Group C 3” – 3 ½” cal. B&B			3
	Malus ‘Donald Wyman’ (‘Donald Wyman’ Flowering Crabapple’)		3	
621.401	Dwarf Evergreens 2’ – 2 ½’ B&B Group B	Ea.		12
	Taxus media ‘Hatfieldi’ ‘Hatfield’ Spreading Yew		12	
621.546	Deciduous Shrubs 2’ – 3’ Group A	Ea.		36
	Rosa rugosa ‘Theresa Bugnet’ (‘Theresa Bugnet’ Beach Rose)		36	
621.547	Deciduous Shrubs 2’ – 3’ Group B	Ea.		
	Myrica pennsylvanica (Bayberry)		24	
	Sambucus canadensis ‘Adams’		6	
	Sambucus racemosa ‘Pubens’		12	
	Spiraea x bumalda ‘Anthony Waterer’		12	
	Viburnum lentago (Nannyberry)		12	
621.559	Deciduous Shrubs 4’ – 5’ Group A	Ea.		12
	Syringa vulgaris (Common Lilac)		12	
621.710	Hemerocallis fulva (Native Orange Daylily)		60	
	Hemerocallis flava (Native Yellow Daylily)		60	
621.711	Matteuccia struthiopteris (Ostrich Fern)		60	
	Gaultheria procumbens (Wintergreen)		36	
	Polystichum acrostichoides (Christmas Fern)		36	
621.8	Two-Year Establishment Period	LS		LS
	Two-Year Maintenance Establishment Period		LS	

SPECIAL PROVISION
SECTION 634
HIGHWAY LIGHTING
(Bridge Lighting)

The following shall be added to this Section:

634.01 Description Use the following lighting fixture schedule.

LIGHTING FIXTURE SCHEDULE					
Fixture Type	Generic Description	Manufacturer Specification	Location/ Mounting	Lamping	Lamp Watts/ Ballast Watts
[1] PT-1	25 foot pole mounted 150W HPS Type II Roadway Light	Gardco "Gullwing" #G18-1-2XL-150HPS-277-NP-RPA2+Pole 25'High	Span 1&3 Post top	1@LU150/55 PLUS/ECO	150/15
[2] PT-1A	Hanger mounted 150W HPS Type II Roadway Light	Gardco "Gullwing" #G18-W-2XL-150HPS-277-NP	Span 2 Plate between Hangers	1@LU150/55 PLUS/ECO	150/15
[3] SG-2	70W MH Horizontal Spot Uplight	KIM #AFL17-70PMH277-PSP-HDS-FH/PSP-SMT/PSP	Span 2 Sloped top surface of Tie Girder	1@MCP70/U /MED/830	

Notes:
1: Use 25 foot tapered pole with top diameter 4" or 5". Pole may be a galvanized steel pole or an aluminum pole with heavy pole construction and paint finish natural aluminum powder coat. Poles on bridge have vibration dampers. Fixture paint finish is natural aluminum powdercoat. Fixture mounts to pole with adapter RPA2. 277 V.
2: Fixture mounts to plate between hangers. J-Box feeds from behind plate. Fixture paint finish is natural aluminum powdercoat. 277 V.
3: Fixture with heavy duty swivel and surface mount tenon. Includes fixed hood. Platinum silver powdercoat paint finish is on parts including fixture, swivel, hood, and tenon. 277 V.

634.19 Basis of Payment
Payment for the SG-2 uplights will be made under:

634.2043 Luminaires-Horizontal Spot EA

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SPECIAL PROVISION
SECTION 635
PREFABRICATED BIN TYPE RETAINING WALL
(Prefabricated Concrete Modular Gravity Wall)

The following replaces Section 635 in the Standard Specifications:

Description. This work shall consist of the construction of a prefabricated modular reinforced concrete gravity wall in accordance with these specifications and in reasonably close conformance with the lines and grades shown on the plans, or established by the Resident.

Included in the scope of the Prefabricated Concrete Modular Gravity Wall construction are**:** all grading necessary for wall construction, excavation, compaction of the wall foundation, backfill, construction of leveling pads, and segmental unit erection.

The Prefabricated Concrete Modular Gravity Wall design shall follow the general dimensions of the wall envelope shown in the contract plans. The top of the leveling pad shall be located at or below the theoretical leveling pad elevation. The minimum wall embedment shall be at or below the elevation shown on the plans. The top of the face panels shall be at or above the top of the panel elevation shown on the plans.

The Contractor shall require the design-supplier to supply an on-site, qualified experienced technical representative to advise the Contractor concerning proper installation procedures. The technical representative shall be on-site during initial stages of installation and thereafter shall remain available for consultation as necessary for the Contractor or as required by the Resident. The work done by this representative is incidental.

MATERIALS

Materials. Materials shall meet the requirements of the following subsections of Division 700 - Materials:

Gravel Borrow	703.20
Preformed Expansion Joint Material	705.01
Reinforcing Steel	709.01
Structural Pre-cast Concrete Units	712.061
Drainage Geotextile	722.02

The Contractor is cautioned that all of the materials listed are not required for every Prefabricated Concrete Modular Gravity Wall. The Contractor shall furnish the Resident a Certificate of Compliance certifying that the applicable materials comply with this section of the specifications. Materials shall meet the following additional requirements:

Concrete Units:

Tolerances. In addition to meeting the requirements of 712.061, all prefabricated units shall be manufactured with the following tolerances. All units not meeting the listed tolerances will be rejected.

1. All dimensions shall be within (edge to edge of concrete) 5 mm [±3/16 inch].
2. Squareness. The length differences between the two diagonals shall not exceed 8 mm [5/16 inch].
3. Surface Tolerances. For steel formed surfaces, and other formed surface, any surface defects in excess of 2 mm [.08 inch] in 1.2 m [4 feet] will be rejected. For textured surfaces, any surface defects in excess of 8 mm [5/16 inch] in 1.5 m [5 feet] shall be rejected.

Joint Filler. (Where applicable) Joints shall be filled with material approved by the Resident and supplied by the approved Prefabricated Concrete Modular Gravity Wall supplier. A 100 mm [4 inch] wide, by 13 mm [0.5 inch] preformed expansion joint filler shall be placed in all horizontal joints between facing units. In all vertical joints, a space of 6 mm [0.25 inch] shall be provided. All Preformed Expansion Joint Material shall meet the requirements of subsection 502.03.

Woven Drainage Geotextile. Woven drainage geotextile 300 mm [12 inch] wide shall be bonded with an approved adhesive compound to the back face, covering all joints between units, including joints abutting concrete structures. Geotextile seam laps shall be 150 mm [6 inch] minimum. The fabric shall be secured to the concrete with an adhesive satisfactory to the Resident. Dimensions may be modified per the wall supplier's recommendations, with written approval of the Resident.

Concrete Shear Keys. (Where applicable) Shear keys shall have a thickness at least equal to the pre-cast concrete stem.

Concrete Leveling Pad. Cast-in-place concrete shall be Class A except that permeability requirements will not apply. The horizontal tolerance on the surface of the pad shall be 6 mm [0.25 inch] in 3 m [10 feet]. Dimensions may be modified per the wall supplier's recommendations, with written approval of the Resident.

Backfill and Bedding Material. Bedding and backfill material placed behind and within the reinforced concrete modules shall be gravel borrow conforming to the requirements of Subsection 703.20. The backfill materials shall conform to the following additional requirements: the plasticity index (P.I.) as determined by AASHTO T90 shall not exceed 6. Compliance with the gradation and plasticity requirements shall be the responsibility of the Contractor, who shall furnish a copy of the backfill test results prior to construction.

The backfilling of the interior of the wall units and behind the wall shall progress simultaneously. The material shall be placed in layers not over 200 mm [8

inches] in depth, loose measure, and thoroughly compacted by mechanical or vibratory compactors. Puddling for compaction will not be allowed.

Materials Certificate Letter. The Contractor, or the supplier as his agent, shall furnish the Resident a Materials Certificate Letter for the above materials, including the backfill material, in accordance with Section 700 of the Standard Specifications. A copy of all test results performed by the Contractor or his supplier necessary to assure contract compliance shall also be furnished to the Resident. Acceptance will be based upon the materials Certificate Letter, accompanying test reports, and visual inspection by the Resident.

DESIGN REQUIREMENTS

Design Requirements. The Prefabricated Concrete Modular Gravity Wall shall be designed by a Professional Engineer. The design to be performed by the wall system supplier shall be in accordance with AASHTO Standard Specifications for Highway Bridges, current edition, except as required herein. Thirty days prior to beginning construction of the wall, the design computations shall be submitted to the Resident for review by the Department. The design by the wall system supplier shall consider the stability of the wall as outlined below:

(a) Safety Factors. The minimum factors of safety shall be as follows:

1. Overturning: (No reduction of the overturning safety factor shall be allowed for walls founded on rock.)	2.0
2. Sliding:	1.5
3. Stability of temporary construction slope:	1.2
4. Ultimate bearing capacity:	2.0
5. Pullout Resistance	1.5

(b) Backfill and Wall Unit Soil Parameters. For overturning and sliding stability calculations, earth pressure shall be assumed acting on a vertical plane rising from the back of the lowest wall stem. For overturning, the unit weight of the backfill within the wall units shall be limited to 1602 kg/m^3 [100 pcf]. For sliding analyses, the unit weight of the backfill within the wall units can be assumed to be 1922 kg/m^3 [120 pcf]. Both analyses may assume a friction angle of 34 degrees for backfill within the wall units.

These unit weights and friction angles are based on a wall unit backfill meeting the requirements for select backfill in this specification. Backfill behind the wall units shall be assumed to have a unit weight of 1922 kg/m^3 [120 pcf] and a friction angle of 30 degrees. The friction angle of the foundation soils shall be assumed to be 30 degrees unless otherwise noted on the plans.

(c) Internal Stability. Internal stability of the wall shall be demonstrated using accepted methods, such as Elias' Method, 1991. Shear keys shall not contribute to pullout resistance. Soil-to-soil frictional component along stem shall not contribute to pullout resistance. The failure plane used to determine pullout resistance shall be found by the Rankine theory only for vertical walls with level backfills. When walls are battered or with backslopes > 0 degrees are considered, the angle of the failure plane shall be per Jumikus Method. For computation of pullout force, the width of the backface of each unit shall be no greater than 1.37 m [4.5 feet]. A unit weight of the soil inside the units shall be assumed no greater than 1922 kg/m^3 120 pcf when computing pullout. Coulomb theory may be used.

(d) External loads which affect the internal stability such as those applied through piling, bridge footings, traffic, slope surcharge, hydrostatic and seismic loads shall be accounted for in the design.

(e) The actual applied bearing pressures under the Prefabricated Concrete Modular Gravity block wall shall be clearly indicated on the design drawings.

(f) Stability During Construction. The factors of safety to be used for stability during construction stages shall be the same factors used for the design of the wall.

(g) Hydrostatic forces. Unless specified otherwise, when a design high water surface is shown on the plans at the face of the wall, the design stresses calculated from that elevation to the bottom of wall must include a 0.9 meter [3 foot] minimum differential head of saturated backfill. In addition, the buoyant weight of saturated soil shall be used in the calculation of pullout resistance.

(h) Design Life. Design life shall be in accordance with AASHTO requirements.

(i) Not more than two vertically consecutive units shall have the same stem length, or the same unit depth. Walls with units with extended height curbs shall be designed for the added earth pressure. A separate computation for pullout of each unit with extended height curbs, or extended height coping, shall be prepared and submitted in the design package described above.

Submittals. The Contractor shall supply wall design computations, wall details, dimensions, quantities, and cross sections necessary to construct the wall. Thirty (30) days prior to beginning construction of the wall, the design computations and wall details shall be submitted to the Resident for review. The fully detailed plans shall be prepared in

conformance with Subsection 105.7 of the Standard Specifications and shall include, but not be limited to the following items:

I. A plan and elevation sheet or sheets for each wall, containing the following: elevations at the top of leveling pads, the distance along the face of the wall to all steps in the leveling pads, the designation as to the type of prefabricated module, the distance along the face of the wall to where changes in length of the units occur, the location of the original and final ground line.
II. All details, including reinforcing bar bending details, shall be provided. Bar bending details shall be in accordance with Department standards.
III. All details for foundations and leveling pads, including details for steps in the leveling pads, as well as allowable and actual maximum bearing pressures shall be provided.
IV. All prefabricated modules shall be detailed. The details shall show all dimensions necessary to construct the element, and all reinforcing steel in the element.
V. The wall plans shall be prepared and stamped by a Professional Resident. Four sets of design drawings and detail design computations shall be submitted to the Resident.
VI. Four weeks prior to the beginning of construction, the contractor shall supply the Resident with two copies of the design-supplier's Installation Manual. In addition, the Contractor shall have two copies of the Installation Manual on the project site.

CONSTRUCTION REQUIREMENTS

Excavation. The excavation and use as fill disposal of all excavated material shall meet the requirements of Section 203 -- Excavation and Embankment, except as modified herein.

Foundation. The area upon which the modular gravity wall structure is to rest, and within the limits shown on the submitted plans, shall be graded for a width equal to, or exceeding, the length of the module. Prior to wall and leveling pad construction, this foundation material shall be compacted to at least 95 percent of maximum laboratory dry density. Frozen soils and soils unsuitable or incapable of sustaining the required compaction, shall be removed and replaced.

A concrete leveling pad shall be constructed as indicated on the plans. The leveling pad shall be cast to the design elevations as shown on the plans, or as required by the wall supplier upon written approval of the Resident. Allowable elevation tolerances are +3 mm [+0.01 foot] and -6 mm [-0.02 foot] from the design elevations. Leveling pads which do not meet these requirements shall be repaired or replaced as directed by the Resident at no additional cost to the Department. Placement of wall units may begin after 24 hours curing time of the concrete leveling pad.

Method and Equipment. Prior to erection of the Prefabricated Concrete Modular Gravity Wall, the Contractor shall furnish the Resident with detailed information concerning the proposed construction method and equipment to be used. The erection

procedure shall be in accordance with the manufacturer's instructions. Any pre-cast units that are damaged due to handling will be replaced at the Contractor's expense.

Installation of Wall Units. A field representative from the wall system being used shall be available, as needed, during the erection of the wall. The services of the representative shall be at no additional cost to the Department. Vertical and horizontal joint fillers shall be installed as shown on the plans.

The maximum offset in any unit joint shall be 20 mm [3/4 inch]. The overall vertical tolerance of the wall, plumb from top to bottom, shall not exceed 12 mm per 3 m [1/2 inch per 10 feet] of wall height. The prefabricated wall units shall be installed to a tolerance of plus or minus 20 mm in 3 m [3/4 inch in 10 feet] in vertical alignment and horizontal alignment.

Select Backfill Placement. Backfill placement shall closely follow the erection of each row of prefabricated wall units. The Contractor shall decrease the lift thickness if necessary to obtain the specified density. The maximum lift thickness shall be 200 mm [8 inches] (loose). Gravel borrow backfill shall be compacted in accordance with Subsection 203.12 except that the minimum required compaction shall be 95 percent of maximum density as determined by AASHTO T99 Method C or D. Backfill compaction shall be accomplished without disturbance or displacement of the wall units. Sheepsfoot rollers will not be allowed. Whenever a compaction test fails, no additional backfill shall be placed over the area until the lift is recompacted and a passing test achieved.

The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift. The optimum moisture content shall be determined in accordance with AASHTO T99, Method C or D. At the end of the day's operations, the Contractor shall shape the last level of backfill so as to direct runoff of rain water away from the wall face.

Method of Measurement. Prefabricated Concrete Modular Gravity Wall will be measured by the square meter of front surface not to exceed the dimensions shown on the contract plans or authorized by the Resident. Vertical and horizontal dimensions will be from the edges of the facing units. No field measurements for computations will be made unless the Resident specifies, in writing, a change in the limits indicated on the plans.

Basis of Payment. The accepted quantity of Prefabricated Concrete Modular Gravity Retaining Wall will be paid for at the contract unit price per square meter complete in place. Payment shall be full compensation for furnishing all labor, equipment and materials including pre-cast concrete units hardware, joint fillers, woven drainage geotextile, cast-in-place coping or traffic barrier and technical field representative. Cost of cast-in-place concrete for leveling pad will not be paid for separately, but will be considered incidental to the Prefabricated Concrete Modular Gravity Wall.

Excavation, foundation material and backfill material will all be incidental to the Prefabricated Concrete Modular Gravity Wall.

There will be no allowance for excavating and backfilling for the Prefabricated Concrete Modular Gravity Wall beyond the limits shown on the approved submitted plans, except for excavation required to remove unsuitable subsoil in preparation for the foundation, as approved by the Resident. When it is necessary to excavate unsuitable subsoil payment for such excavation shall be made at 1.5 times the contract unit price for Item 206.082 Structural Excavation. Payment for excavating unsuitable subsoil shall be full compensation for all costs of pumping, drainage, sheeting, bracing and incidentals for proper execution of the work.

Payment will be made under:

Pay Item	Pay Unit
635.14 Prefabricated Concrete Modular Gravity Wall	Square Foot

SPECIAL PROVISION
SECTION 639
ENGINEERING FACILITIES
(Telephone)

639.09 Telephone

Paragraph 1 is amended as follows:

The contractor shall provide **two** telephone lines and two telephones,….

Add-

In addition the contractor will supply one computer broadband connection and modem lease. The type of connection supplied will be contingent upon the availability of services (i.e. DSL or Cable Broadband). It shall be the contractor's option to provide dynamic or static IP addresses through the service. **The selected service will have a minimum downstream connection of 1.5 Mbps and 384 Kbps upstream.** The contractor shall be responsible for the installation charges and all reinstallation charges following suspended periods. Monthly service and maintenance charges shall be billed by the Internet Service Provider (ISP) directly to the contractor.

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
(Traffic Control)

652.7 Method of Measurement. This entire Subsection is revised to read:
Traffic Control Supervisor, furnishing, installation, and maintenance of all traffic control devices will be measured as one **lump sum** for all work authorized and performed.

652.8 Basis of Payment. This entire Subsection is revised to read:
Traffic Control will be paid for at the contract **lump sum** price. Payment will be full compensation for the Traffic Control Supervisor, approach signs, work area signs, drums, cones, panel markers, barricades, arrow boards, replacing damaged signs etc. and maintenance thereof including the setting up and taking down of lane closures as many times as necessary shall be considered part of the lump sum price.

Maintenance of signs includes: replacing signs damaged, lost, or stolen, and cleaning and moving as many times as necessary throughout the life of the contract, regardless whether the work areas or projects are geographically separated or not separated.

The Lump Sum will be payable in installments as follows: 5% of the Lump Sum once the approach signing is complete and approved, with the 95% balance to be paid as the work progresses at a rate proportional to the percentage completion of the Contract.

Failure by the contractor to follow the Contracts 652 Special Provisions and/or The Manual on Uniform Traffic Control Devices (MUTCD) and/or The Contractors own Traffic Control Plan will result in a reduction in payment, computed by reducing The Lump Sum Total by 5% per occurrence. The Departments Resident or any other representative of The Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item.

All other requirements under the Standard Specifications Section 652 will be a part of the lump sum item.

There will be no extra payment for this pay item after the expiration of contract time.

Payment will be made under:

Pay Item	Pay Unit
652.39 Work Zone Traffic Control	Lump Sum

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.

Project Specific Information and Requirements

The following information and requirements apply specifically to this Project. The temporary soil erosion and water pollution control measures associated with this work shall be addressed in the SEWPCP.

1. This project is considered **SENSITIVE** in accordance with the BMP Manual. The Contractor's SEWPCP shall comply with Section II.B., Guidelines for Sensitive Waterbodies in the BMP Manual. The latest version is dated "February 2008" and is available at; http://www.maine.gov/mdot/environmental-office-homepage/surface-water-resources.php
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. **If water is flowing within the drainage system, the water shall be diverted to a stable area or conduit and work shall be conducted in the dry.** The Contractor's plan shall address when and where the diversions will be necessary.
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. Temporary winter stabilization must be used between November 1 and April 1 or outside of said time period if the ground is frozen or snow covered. Temporary winter stabilization involves, at a minimum, covering all disturbed soils and seeded ground that is not Acceptable Work with an approved method. If temporary winter stabilization practices are used, spring procedures for permanent stabilization shall also be described in the SEWPCP. Use of these methods for over-winter temporary erosion control will be incidental to the contract and be paid for as part of Pay Item 656.75.
9. All disturbed ditches shall be stabilized by the end of each workday. Stabilization shall be maintained on a daily basis.
10. 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,*

SPECIAL PROVISION
SECTION 656
Temporary Soil Erosion and Water Pollution Control

Sidewalks and Bridges. Containment and disposal of demolition debris shall be addressed in the Contractor's SEWPCP.

11. 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.

12. 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 disturb the stream bottom or cause erosion.

13. 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 812
SEWER MANHOLE

Description

This work shall consist of the rebuilding and adjustment of manholes as indicated in the Bid Book, Plans, or as directed by the Resident.

Adjust Sewer Manhole to Grade shall consist of adjusting a manhole to the required final grade, including any lowering and any other adjustments that may be necessary prior to setting the final grade and in accordance with this Section and Section 604 - Manholes, Inlets, and Catch Basins.

Rebuild Sewer Manhole shall consist of rebuilding and adjusting a sewer manhole in accordance with this Section and Section 604 - Manholes, Inlets, and Catch Basins

Pay Item		Pay Unit
812.162	Adjust Sewer Manhole to Grade	Each
812.164	Rebuild Sewer Manhole	Each

SPECIAL PROVISION
SECTION 823
GATE VALVE BOXES

Description

This work shall consist of the adjustment of gate valve boxes as indicated in the Bid Book, Plans, or as directed by the Resident.

Gate Valve Box, Adjust to Grade shall consist of adjusting a gate valve box to the required final grade, including any lowering and any other adjustments that may be necessary prior to setting the final grade.

Materials

Gate valve boxes damaged by improper construction methods or handling by the Contractor, as determined by the Department, shall be replaced at the Contractor's expense.

Method of Measurement

Gate Valve Box, Adjust to Grade will be measured by the unit each, complete and in place.

Basis of Payment

Payment for Gate Valve Box, Adjust to Grade shall be full compensation for all equipment, labor, and incidental materials necessary to adjust a gate valve box as specified above.

Pay Item		Pay Unit
823.332	Gate Valve Box, Adjust to Grade	Each

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

SUPPLEMENTAL SPECIFICATION

(Corrections, Additions, & Revisions to Standard Specifications - Revision of December 2002)

SECTION 101
CONTRACT INTERPRETATION

101.2 Definitions

Closeout Documentation Replace the sentence "A letter stating the amount….. DBE goals." with "DBE Goal Attainment Verification Form"

Add "Environmental Information Hazardous waste assessments, dredge material test results, boring logs, geophysical studies, and other records and reports of the environmental conditions. For a related provision, see Section 104.3.14 - Interpretation and Interpolation."

Add "Fabrication Engineer The Department's representative responsible for Quality Assurance of pre-fabricated products that are produced off-site."

Geotechnical Information Replace with the following: "Boring logs, soil reports, geotechnical design reports, ground penetrating radar evaluations, seismic refraction studies, and other records of subsurface conditions. For a related provision, see Section 104.3.14 - Interpretation and Interpolation."

SECTION 102
DELIVERY OF BIDS

102.7.1 Location and Time Add the following sentence "As a minimum, the Bidder will submit a Bid Package consisting of the Notice to Contractors, the completed Acknowledgement of Bid Amendments form, the completed Schedule of Items, 2 copies of the completed Agreement, Offer, & Award form, a Bid Bond or Bid Guarantee, and any other Certifications or Bid Requirements listed in the Bid Book."

102.11.1 Non-curable Bid Defects Replace E. with "E. The unit price and bid amount is not provided or a lump sum price is not provided or is illegible as determined by the Department."

SECTION 103
AWARD AND CONTRACTING

103.3.1 Notice and Information Gathering Change the first paragraph to read as follows: "After Bid Opening and as a condition for Award of a Contract, the Department may require an Apparent Successful Bidder to demonstrate to the Department's satisfaction that the Bidder is responsible and qualified to perform the Work."

SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES

104.3.14 Interpretation and Interpolation In the first sentence, change "…and Geotechnical Information." to "…Environmental Information, and Geotechnical Information."
Delete the entire Section 104.5.9 and replace with the following:

"104.5.9 Landscape Subcontractors The Contractor shall retain only Landscape Subcontractors that are certified by the Department's Environmental Office Landscape Unit."

SECTION 105
GENERAL SCOPE OF WORK

Delete the entire Section 105.6 and replace with the following:

105.6.1 Department Provided Services The Department will provide the Contractor with the description and coordinates of vertical and horizontal control points, set by the Department, within the Project Limits, for full construction Projects and other Projects where survey control is necessary. For Projects of 1,500 feet in length, or less: The Department will provide three points. For Projects between 1,500 and 5,000 feet in length: The Department will provide one set of two points at each end of the Project. For Projects in excess of 5,000 feet in length, the Department will provide one set of two points at each end of the Project, plus one additional set of two points for each mile of Project length. For non-full construction Projects and other Projects where survey control is not necessary, the Department will not set any control points and, therefore, will not provide description and coordinates of any control points. Upon request of the Contractor, the Department will provide the Department's survey data management software and Survey Manual to the Contractor, or its survey Subcontractor, for the exclusive use on the Department's Projects.

105.6.2 Contractor Provided Services Utilizing the survey information and points provided by the Department, described in Subsection 105.6.1, Department Provided Services, the Contractor shall provide all additional survey layout necessary to complete the Work. This may include, but not be limited to, reestablishing all points provided by the Department, establishing additional control points, running axis lines, providing layout and maintenance of all other lines, grades, or points, and survey quality control to ensure conformance with the Contract. The Contractor is also responsible for providing construction centerline, or close reference points, for all Utility Facilities relocations and adjustments as necessary to complete the Work. When the Work is to connect with existing Structures, the Contractor shall verify all dimensions before proceeding with the Work. The Contractor shall employ or retain competent engineering and/or surveying personnel to fulfill these responsibilities.

The Contractor must notify the Department of any errors or inconsistencies regarding the data and layout provided by the Department as provided by Section 104.3.3 - Duty to Notify Department If Ambiguities Discovered.

105.6.2.1 Survey Quality Control The Contractor is responsible for all construction survey quality control. Construction survey quality control is generally defined as, first, performing initial field survey layout of the Work and, second, performing an independent check of the initial layout using independent survey data to assure the accuracy of the initial layout; additional iterations of checks may be required if significant discrepancies are discovered in this process. Construction survey layout quality control also requires written documentation of the layout process such that the process can be followed and repeated, if necessary, by an independent survey crew.

105.6.3 Survey Quality Assurance It is the Department's prerogative to perform construction survey quality assurance. Construction survey quality assurance may, or may not, be performed by the Department. Construction survey quality assurance is generally defined as an independent check of the construction survey quality control. The construction survey quality assurance process may involve physically checking the Contractor's construction survey layout using independent survey data, or may simply involve reviewing the construction survey quality control written documentation. If the Department elects to physically check the Contractor's survey layout, the Contractor's designated surveyor may be required to be present. The Department will provide a minimum notice of 48 hours to the Contractor, whenever possible, if the Contractor's designated surveyor's presence is required. Any errors discovered through the quality assurance process shall be corrected by the Contractor, at no additional cost to the Department.

105.6.4 Boundary Markers The Contractor shall preserve and protect from damage all monuments or other points that mark the boundaries of the Right-of-Way or abutting parcels that are outside the area that must be disturbed to perform the Work. The Contractor indemnifies and holds harmless the Department from all claims to reestablish the former location of all such monuments or points including claims arising from 14 MRSA § 7554-A. For a related provision, see Section 104.3.11 - Responsibility for Property of Others.

SECTION 106
QUALITY

106.4.3 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 More Than	Up to and Including	Amount of Liquidated Damages per Calendar Day
$0	$100,000	$100
$100,000	$300,000	$200
$300,000	$500,000	$400
$500,000	$1,000,000	$575
$1,000,000	$2,000,000	$750
$2,000,000	$4,000,000	$900
$4,000,000	and more	$1,875

SECTION 108
PAYMENT

108.4 Payment for Materials Obtained and Stored First paragraph, second sentence, delete the words "…Delivered on or near the Work site at acceptable storage places."

SECTION 109
CHANGES

109.1.1 Changes Permitted Add the following to the end of the paragraph: "There will be no adjustment to Contract Time due to an increase or decrease in quantities, compared to those estimated, except as addressed through Contract Modification(s)."

109.1.2 Substantial Changes to Major Items Add the following to the end of the paragraph: "Contract Time adjustments may be made for substantial changes to Major Items when the change affects the Critical Path, as determined by the Department"

109.4.4 Investigation / Adjustment Third sentence, delete the words "subsections (A) - (E)"

109.5.1 Definitions - Types of Delays

B. Compensable Delay Replace (1) with the following; "a weather related Uncontrollable Event of such an unusually severe nature that a Federal Emergency Disaster is declared. The Contractor will only be entitled to an Equitable Adjustment if the Project falls within the geographic boundaries prescribed under the disaster declaration."

109.7.2 Basis of Payment Replace with the following: "Equitable Adjustments will be established by mutual Agreement for compensable items listed in Section 109.7.3-Compensable Items, based upon Unit or Lump Sum Prices. If Agreement cannot be reached, the Contractor shall accept payment on a Force Account basis as provided in Section 109.7.5 - Force Account Work, as full and complete compensation for all Work relating to the Equitable Adjustment."

109.7.3 Compensable Items Replace with the following: "The Contractor is entitled to compensation for the following items, with respect to agreed upon Unit or Lump Sum Prices:

1. Labor expenses for non-salaried Workers and salaried foremen.

2. Costs for Materials.

3. A 15 % markup on the totals of Items 1 and 2 of this subsection 109.7.3 for home office overhead and profit of the Contractor, its Subcontractors and suppliers, and any lower tier Subcontractors or suppliers, with no mark-ups on mark-ups.

4. Cost for Equipment, based on Blue Book Rates or leased rates, as set forth in Section 109.7.5(C), or the Contractor's Actual Costs if determined by the Department to be lower.

5. Time.

6. Subcontractor quoted Work, as set forth below in Section 109.7.5 (F)."

109.7.5 Force Account Work

C. Equipment

Paragraph 2, delete sentence 1 which starts; "Equipment leased…."

Paragraph 6, change sentence 2 from "The Contractor may furnish…" to read "If requested by the Department, the Contractor will produce cost data to assist the Department in the establishment of such rental rate, including all records that are relevant to the Actual Costs including rental Receipts, acquisition costs, financing documents, lease Agreements, and maintenance and operational cost records."
Add the following paragraph; "Equipment leased by the Contractor for Force Account Work and actually used on the Project will be paid for at the actual invoice amount plus 10% markup for administrative costs."

Add the following section;

"F. Subcontractor Quoted Work When accomplishing Force Account Work that utilizes Subcontractors, the Contractor will be allowed a maximum markup of 5% for profit and overhead on the Subcontractor's portion of the Force Account Work."

SECTION 110
INDEMNIFICATION, BONDING, AND INSURANCE

Delete the entire Section 110.2.3 and replace with the following:

110.2.3 Bonding for Landscape Establishment Period The Contractor shall provide a signed, valid, and enforceable Performance, Warranty, or Maintenance Bond complying with the Contract, to the Department at Final Acceptance.

The bond shall be in the full amount for all Pay Items for work pursuant to Sec 621, Landscape, payable to the "Treasurer - State of Maine," and on the Department's forms, on exact copies thereof, or on forms that do not contain any significant variations from the Department's forms as solely determined by the Department.

The Contractor shall pay all premiums and take all other actions necessary to keep said bond in effect for the duration of the Landscape Establishment Period described in Special Provision 621.0036 - Establishment Period. If the Surety becomes financially insolvent, ceases to be licensed or approved to do business in the State of Maine, or stops operating in the United States, the Contractor shall file new bonds complying with this Section within 10 Days of the date the Contractor is notified or becomes aware of such change.

All Bonds shall be procured from a company organized and operating in the United States, licensed or approved to do business in the State of Maine by the State of Maine Department of Business Regulation, Bureau of Insurance, and listed on the latest Federal Department of the Treasury listing for "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies."

By issuing a bond, the Surety agrees to be bound by all terms of the Contract, including those related to payment, time for performance, quality, warranties, and the Department's self-help remedy provided in Section 112.1 - Default to the same extent as if all terms of the Contract are contained in the bond(s).

Regarding claims related to any obligations covered by the bond, the Surety shall provide, within 60 Days of Receipt of written notice thereof, full payment of the entire claim or written notice of all bases upon which it is denying or contesting payment. Failure of the Surety to provide such notice within the 60-day period constitutes the Surety's waiver of any right to deny or contest payment and the Surety's acknowledgment that the claim is valid and undisputed.

SECTION 202
REMOVING STRUCTURES AND OBSTRUCTIONS

202.02 Removing Buildings Make the following change to the last sentence in the final paragraph, change "…Code of Maine Regulations 401." to "…Department of Environmental Protection Maine Solid Waste Management Rules, 06-096 CMR Ch. 401, Landfill Siting, Design and Operation."

SECTION 203
EXCAVATION AND EMBANKMENT

203.01 Description Under b. Rock Excavation; add the following sentence: "The use of perchlorate is not allowed in blasting operations."

SECTION 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 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 "14.4 (155)".

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…"

In the last paragraph add the following as the second sentence: "The Department will review and provide comments to the Contractor within 14 days of receipt of the TCP."

652.3.5 Installation of Traffic Control Devices In the first paragraph, first sentence; change "Signs shall be erected…" to "Portable signs shall be erected.." In the third sentence; change "Signs must be erected so that the sign face…" to "Post-mounted signs must also be erected so that the sign face…"

652.4 Flaggers Replace the first paragraph with the following; "The Contractor shall furnish flaggers as required by the TCP or as otherwise specified by the Resident. All flaggers must have successfully completed a flagger test approved by the Department and administered by a Department-approved Flagger-Certifier who is employing that flagger. All flaggers must carry an official certification card with them while flagging that has been issued by their employer. Flaggers shall wear safety apparel meeting ANSI 107-1999 Class 2 risk exposure and clearly identify the wearer as a person, shall be visible at a minimum distance of 300 m [1000 ft], and shall wear a hardhat with retroreflectivity. For nighttime conditions, Class 3 apparel should be considered, retroreflective or flashing SLOW/STOP paddles shall be used, and except in emergency situations the flagger station shall be illuminated to assure visibility."

Second paragraph, first sentence; change "…have sufficient distance to stop before entering the workspace." to "…have sufficient distance to stop at the intended stopping point." Third sentence; change "At a spot obstruction…" to "At a spot obstruction with adequate sight distance,…"

Fourth paragraph, delete and replace with "Flaggers shall be provided as a minimum, a 10 minute break, every 2 hours and a 30 minute or longer lunch period away from the work station. Flaggers may only receive 1 unpaid break per day; all other breaks must be paid. Sufficient certified flaggers shall be available onsite to provide for continuous flagging operations during break periods. Breaker flaggers will not be paid for separately, but shall be considered incidental to the appropriate pay item."

652.8.2 Other Items Replace the last paragraph with the following: "There will be no payment made under any 652 pay items after the expiration of the adjusted total contract time."

SECTION 653
POLYSTYRENE PLASTIC INSULATION

653.05 Placing Backfill In the second sentence; change "…shall be not less than 150 mm [6 in] loose measure." to "…shall be not less than 250 mm [10 in] loose measure." In the third sentence; change "…crawler type bulldozer of not more than 390 kg/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 □m		-	-	-	-
300 □m		-	-	-	-
75 □m	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…"

SECTION 706
NON-METALLIC PIPE

706.06 Corrugated Polyethylene Pipe for Underdrain, Option I and Option III Culvert Pipe Change the first sentence from "…300 mm diameters to 900 mm" to "…300 mm diameters to 1200 mm" Delete, in it's entirety, the last sentence which begins "This pipe and resins…" and replace with the following; "The manufacturing plants of polyethylene pipe shall be certified by the Eastern States Consortium. Polyethylene pipe shall be accepted based on third party certification by the AASHTO's National Transportation Product Evaluation Program."

SECTION 709
REINFORCING STEEL AND WELDED STEEL WIRE FABIC

709.03 Steel Strand Change the second paragraph from "…shall be 12mm [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."

710.07 Guardrail Posts Section b. change "…AASHTO M183/M183M…" to "…AASHTO M 270M/M 270 Grade 250 (36)…"

SECTION 712
MISCELLANEOUS HIGHWAY MATERIALS

712.06 Precast Concrete Units In the first paragraph, change "…ASTM C478M…" to "…AASHTO M199…" Delete the second paragraph and replace with the following; "Approved structural fibers may be used as a replacement of 6 x 6 #10 gauge welded wire fabric when used at an approved dosage rate for the construction of manhole and catch basin units. The material used shall be one of the products listed on the Maine Department of Transportation's Approved Product List of Structural Fiber Reinforcement." Delete the fifth paragraph and replace with the following; "The concrete mix design shall be approved by the Department. Concrete shall contain 6% air content, plus or minus 1½% tolerance when tested according to AASHTO T152. All concrete shall develop a minimum compressive strength of 28 MPa [4000 psi] in 28 days when tested according to AASHTO T22. The absorption of a

specimen, when tested according to AASHTO T280, Test Method "A", shall not exceed nine percent of the dry mass."

Add the following:
"712.07 Tops, and Traps These metal units shall conform to the plan dimensions and to the following specification requirements for the designated materials.

Gray iron or ductile iron castings shall conform to the requirements of AASHTO M306 unless otherwise designated."

712.08 Corrugated Metal Units The units shall conform to plan dimensions and the metal to AASHTO M36/M36M. Bituminous coating, when specified, shall conform to AASHTO M190 Type A.

712.09 Catch Basin and Manhole Steps Steps for catch basins and for manholes shall conform to ASTM C478M [ASTM C478], Section 13 for either of the following material:

(a) Aluminum steps-ASTM B221M, [ASTM B211] Alloy 6061-T6 or 6005-T5.

(b) Reinforced plastic steps Steel reinforcing bar with injection molded plastic coating copolymer polypropylene. Polypropylene shall conform to ASTM D 4101.

712.23 Flashing Lights Flashing Lights shall be power operated or battery operated as specified.

(a) Power operated flashing lights shall consist of housing, adapters, lamps, sockets, reflectors, lens, hoods and other necessary equipment designed to give clearly visible signal indications within an angle of at least 45 degrees and from 3 to 90 m [10 to 300 ft] under all light and atmospheric conditions.

Two circuit flasher controllers with a two-circuit filter capable of providing alternate flashing operations at the rate of not less than 50 nor more than 60 flashes per minute shall be provided.

The lamps shall be 650 lumens, 120 volt traffic signal lamps with sockets constructed to properly focus and hold the lamp firmly in position.
The housing shall have a rotatable sun visor not less than 175 mm [7 in] in length designed to shield the lens.

Reflectors shall be of such design that light from a properly focused lamp will reflect the light rays parallel. Reflectors shall have a maximum diameter at the point of contact with the lens of approximately 200 mm [8 in].

The lens shall consist of a round one-piece convex amber material which, when mounted, shall have a visible diameter of approximately 200 mm [8 in]. They shall distribute light and not diffuse it. The distribution of the light shall be asymmetrical in a downward direction. The light distribution of the lens shall not be uniform, but shall consist of a small high intensity portion with narrow distribution for long distance throw and a larger

low intensity portion with wide distribution for short distance throw. Lenses shall be marked to indicate the top and bottom of the lens.

(b) Battery operated flashing lights shall be self- illuminated by an electric lamp behind the lens. These lights shall also be externally illuminated by reflex-reflective elements built into the lens to enable it to be seen by reflex-reflection of the light from the headlights of oncoming traffic. The batteries must be entirely enclosed in a case. A locking device must secure the case. The light shall have a flash rate of not less than 50 nor more than 60 flashes per minute from minus 30 °C [minus 20 °F] to plus 65 °C [plus 150 °F]. The light shall have an on time of not less than 10 percent of the flash cycle. The light beam projected upon a surface perpendicular to the axis of the light beam shall produce a lighted rectangular projection whose minimum horizontal dimension shall be 5 degrees each side of the horizontal axis. The effective intensity shall not have an initial value greater than 15.0 candelas or drop below 4.0 candelas during the first 336 hours of continuous flashing. The illuminated lens shall appear to be uniformly bright over its entire illuminated surface when viewed from any point within an angle of 9 degrees each side of the vertical axis and 5 degrees each side of the horizontal axis. The lens shall not be less than 175 mm [7 in] in diameter including a reflex-reflector ring of 13 mm [½ in] minimum width around the periphery. The lens shall be yellow in color and have a minimum relative luminous transmittance of 0.440 with a luminance of 2854° Kelvin. The lens shall be one-piece construction. The lens material shall be plastic and meet the luminous transmission requirements of this specification. The case containing the batteries and circuitry shall be constructed of a material capable of withstanding abuse equal to or greater than 1.21 mm thick steel [No. 18 U.S. Standard Gage Steel]. The housing and the lens frame, if of metal shall be properly cleaned, degreased and pretreated to promote adhesion. It shall be given one or more coats of enamel which, when dry shall completely obscure the metal. The enamel coating shall be of such quality that when the coated case is struck a light blow with a sharp tool, the paint will not chip or crack and if scratched with a knife will not powder. The case shall be so constructed and closed as to exclude moisture that would affect the proper operation of light. The case shall have a weep hole to allow the escape of moisture from condensation. Photoelectric controls, if provided, shall keep the light operating whenever the ambient light falls below 215 lx [20 foot candles]. Each light shall be plainly marked as to the manufacturer's name and model number.

If required by the Resident, certification as to conformance to these specifications shall be furnished based on results of tests made by an independent testing laboratory. All lights are subject to random inspection and testing. All necessary random samples shall be provided to the Resident upon request without cost to the Department. All such samples shall be returned to the Contractor upon completion of the tests.

712.32 Copper Tubing Copper tubing and fittings shall conform to the requirements of ASTM B88M Type A [ASTM B88, Type K] or better.

712.33 Non-metallic Pipe, Flexible Non-metallic pipe and pipe fittings shall be acceptable flexible pipe manufactured from virgin polyethylene polymer suitable for transmitting liquids intended for human or animal consumption.

712.34 Non-metallic Pipe, Rigid Non-metallic pipe shall be Schedule 40 polyvinylchloride (PVC) that meets the requirement of ASTM D1785. Fittings shall be of the same material.

712.341 Metallic Pipe Metallic pipe shall be ANSI, Standard B36.10, Schedule 40 steel pipe conforming to the requirements of ASTM A53 Types E or S, Grade B. End plates shall be steel conforming to ASTM A36/A36M.

Both the sleeve and end plates shall be hot dip galvanized. Pipe sleeve splices shall be welded splices with full penetration weld before galvanizing.

712.35 Epoxy Resin Epoxy resin for grouting or sealing shall consist of a mineral filled thixotropic, flexible epoxy resin having a pot life of approximately one hour at 10°C [50°F]. The grout shall be an approved product suitable for cementing steel dowels into the preformed holes of curb inlets and adjacent curbing. The sealant shall be an approved product, light gray in color and suitable for coating the surface.

712.36 Bituminous Curb The asphalt cement for bituminous curb shall be of the grade required for the wearing course, or shall be Viscosity Grade AC-20 meeting the current requirements of Subsection 702.01 Asphalt Cement. The aggregate shall conform to the requirements of Subsection 703.07. The coarse aggregate portion retained on the 2.36 mm [No. 8] sieve may be either crushed rock or crushed gravel.

The mineral constituents of the bituminous mixture shall be sized and graded and combined in a composite blend that will produce a stable durable curbing with an acceptable texture.

Bituminous material for curb shall meet the requirements of Section 403 - Hot Bituminous Pavement.

712.37 Precast Concrete Slab Portland cement concrete for precast slabs shall meet the requirements of Section 502 - Structural Concrete, Class A.

The slabs shall be precast to the dimension shown on the plans and cross section and in accordance with the Standard Detail plans for Concrete Sidewalk Slab. The surface shall be finished with a float finish in accordance with Subsection 502.14(c). Lift devices of sufficient strength to hold the slab while suspended from cables shall be cast into the top or back of the slab.

712.38 Stone Slab Stone slabs shall be of granite from an acceptable source, hard, durable, predominantly gray in color, free from seams which impair the structural integrity and be of smooth splitting character. Natural color variations characteristic of the deposit will be permitted. Exposed surfaces shall be free from drill holes or indications of drill holes. The granite slabs in any one section of backslope must be all the same finish.

The granite slabs shall be scabble dressed or sawed to an approximately true plane having no projections or depressions over 13 mm [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."

APPENDIX A TO DIVISION 100

SECTION 1 - BIDDING PROVISIONS

A. Federally Required Certifications By signing and delivering a Bid, the Bidder certifies as provided in all certifications set forth in this Appendix A - Federal Contract Provisions Supplement including:

- Certification Regarding No Kickbacks to Procure Contract as provided on this page 1 below.
- Certification Regarding Non-collusion as provided on page 1 below.
- Certification Regarding Non-segregated Facilities as provided by FHWA Form 1273, section III set forth on page 21 below.
- "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion" as provided by FHWA Form 1273, section XI set forth on page 32 below.
- "Certification Regarding Use of Contract Funds for Lobbying" as provided by FHWA Form 1273, section XII set forth on page 35 below.

Unless otherwise provided below, the term "Bidder", for the purposes of these certifications, includes the Bidder, its principals, and the person(s) signing the Bid. Upon execution of the Contract, the Bidder (then called the Contractor) will again make all the certifications indicated in this paragraph above. Upon execution of the Contract, the Bidder (then called the Contractor) will again make all the certifications indicated in this paragraph above.

CERTIFICATION REGARDING NO KICKBACKS TO PROCURE CONTRACT Except expressly stated by the Bidder on sheets submitted with the Bid (if any), the Bidder hereby certifies, to the best of its knowledge and belief, that it has not:

(A) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other then a bona fide employee working solely for me) to solicit or secure this contract;

(B) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract, or;

C) paid, or agreed to pay, to any firm, organization, or person (other than a bona fide employee working solely for me) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out the contract;

By signing and submitting a Bid, the Bidder acknowledges that this certification is to be furnished to the Maine Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation in connection with this contract in anticipation of federal aid highway funds and is subject to applicable state and federal laws, both criminal and civil.

CERTIFICATION REGARDING NONCOLLUSION Under penalty of perjury as provided by federal law (28 U.S.C. §1746), the Bidder hereby certifies, to the best of its knowledge and belief, that:

the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with the Contract.

For a related provisions, see Section 102.7.2 (C) of the Standard Specifications - "Effects of Signing and Delivery of Bids" - "Certifications", Section 3 of this Appendix A entitled "Other Federal Requirements" including section XI - "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion" and section XII. - "Certification Regarding Use of Contract Funds for Lobbying."

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B. Bid Rigging Hotline To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

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SECTION 2 - FEDERAL EEO AND CIVIL RIGHTS REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 2 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Nondiscrimination & Civil Rights - Title VI The Contractor and its subcontractors shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Department deems appropriate. The Contractor and subcontractors shall comply with Title VI of the Civil Rights Act of 1964, as amended, and with all State of Maine and other Federal Civil Rights laws.

For related provisions, see Subsection B - "Nondiscrimination and Affirmative Action - Executive Order 11246" of this Section 2 and Section 3 - Other Federal Requirements of this "Federal Contract Provisions Supplement" including section II - "Nondiscrimination" of the "Required Contract Provisions, Federal Aid Construction Contracts", FHWA-1273.

B. Nondiscrimination and Affirmative Action - Executive Order 11246 Pursuant to Executive Order 11246, which was issued by President Johnson in 1965 and amended in 1967 and 1978, this Contract provides as follows.

The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its efforts to achieve maximum results from its actions. The Contractor shall

document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

1. Ensure and maintain a working environment free of harassment, intimidations, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all forepersons, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

2. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and to maintain a record of the organization's responses.

3. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

4. Provide immediate written notification to the Department's Civil Rights Office when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Design-Builder's efforts to meet its obligations.

5. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under B above.

6. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligation; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

7. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review

of these items with on-site supervisory personnel such as Superintendents, General Forepersons, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

8. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractor's and Subcontractors with whom the Contractor does or anticipates doing business.

9. Direct its recruitment efforts, both orally and written to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later that one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above describing the openings, screenings, procedures, and test to be used in the selection process.

10. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth, both on the site and in other areas of a Contractor's workforce.

11. Validate all tests and other selection requirements.

12. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

13. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

14. Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

15. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractor's and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

16. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

C. Goals for Employment of Women and Minorities Per Executive Order 11246, craft tradesperson goals are 6.9% women and .5% minorities employed. However, goals may be adjusted upward at the mutual agreement of the Contractor and the Department. Calculation of these percentages shall not include On-the-Job Training Program trainees, and shall not include clerical or field clerk position employees.

For a more complete presentation of requirements for such Goals, see the federally required document "Goals for Employment of Females and Minorities" set forth in the next 6 pages below.

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Start of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

§60-4.2 Solicitations

(d) The following notice shall be included in, and shall be part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of $10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part (see 41 CFR 60-4.2(a)):

Notice of Requirement for Affirmative Action to Ensure Equal Opportunity (Executive Order 11246)

1. The Offeror's or bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Goals for female participation in each trade 6.9%

Goals for minority participation for each trade
Maine
001 Bangor, ME 0.8%
Non-SMSA Counties (Aroostook, Hancock, Penobscot, Piscataquis, Waldo, Washington)

002 Portland-Lewiston, ME
SMSA Counties: 4243 Lewiston-Auburn, ME 0.5%
(Androscoggin)

6403 Portland, ME 0.6%
(Cumberland, Sagadahoc)

Non-SMSA Counties: 0.5%
(Franklin, Kennebec, Knox, Lincoln, Oxford, Somerset, York)

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be in violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor, estimated dollar amount of the subcontract; estimated started and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the Contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any).

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:

   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department form 941;

   d. "Minority" includes:
      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of the North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the contractor, is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors for Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a. through p. of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical areas where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specific.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant, thereto.

6. In order for the non working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the

apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as expensive as the following:

   a. Ensure and maintain a working environment free of harassment, intimidation, coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, when possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

   b. Establish and maintain a current list of minority and female recruitment sources provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.

   c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment sources or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

   d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

   e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.

   f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific

review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment, efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing prior to the date for the acceptance of applications for apprenticeship or the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of

solicitation to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7 a through p.). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7 a through p. of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program and reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions take on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both make and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, specific minority group of women is underutilized.)

10. The Contractor shall not use the goals and timetables or affirmative action even through the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementation regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the

requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.6.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and location sat which the work was performed. Records be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

End of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

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D. Disadvantaged Business Enterprise (DBE) Requirements The Department has established an annual Disadvantaged Business Enterprise goal to be achieved through race neutral means. This goal will adjusted periodically and will be provided by Supplemental Provision. The Contractor shall comply with all provisions of this section regarding DBE participation and the Department's latest version of the Disadvantaged Business Enterprise Program Manual, said Manual being incorporated herein by reference. In the case of conflict between this Contract and said Manual, this Contract shall control. The Department reserves the right to adjust DBE goals on a project-by-project basis by addendum.

Policy. It is the Department's policy that DBEs as defined in 23 CFR Part 26 and referenced in the Transportation Equity Act for 21st Century of 1998, as amended from the Surface Transportation Uniform Relocation Assistance Act of 1987, and the Intermeddle Surface Transportation Efficiency Act of 1991. The intent hereto remains to provide the maximum opportunity for DBEs to participate in the performance of contracts financed in whole or in part with federal funds.

The Department and its Contractors shall not discriminate on the basis of race, color, national origin, ancestry, sex, age, or disability in the award and performance of DOT assisted contracts.

Disadvantaged Business Enterprises are those so certified by the Maine Department of Transportation Civil Rights Office prior to bid opening date.

The Department has determined that elements of a good faith effort to meet the contract goal include but are not limited to the following:

1. Whether the Contractor advertised in general circulation, trade association, and minority/women's-focus media concerning the subcontracting opportunities;

2. Whether the Contractor provided written notice to a reasonable number of specific DBEs that their interest in the contract is being solicited;

3. Whether the Contractor followed up on initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested;

4. Whether the Contractor selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals;

5. Whether the Contractor provided interested DBEs with adequate information about the plans, specification and requirements of the contract;

6. Whether the Contractor negotiated in good faith with interested DBEs, not rejecting the DBE as unqualified without sound reasons based on a thorough investigation of their capabilities;

7. Whether the Contractor made efforts to assist interested DBEs with other appropriate technical/financial assistance required by the Department or Contractor;

8. Whether the Contractor effectively used the services of available minority/women's community organizations, minority/women's business assistance offices; and other organizations that provide assistance in the recruitment and placement of DBEs.

Substitutions of DBEs. The following may be acceptable reasons for Civil Rights Office approval of such a change order:

- The DBE defaults, voluntarily removes itself or is over-extended;
- The Department deletes portions of the work to by performed by the DBE.

It is not intended that the ability to negotiate a more advantageous contract with another certified DBE be considered a valid basis for such a change in DBE utilization once the DBE Bid Submission review has been passed. Any requests to alter the DBE commitment must be in writing and included with the change order.

Failure to carry out terms of this Standard Specification shall be treated as a violation of this contract and will result in contract sanctions which may include withholding of partial payments totaling the creditable dollars amount which would have been paid for said DBE participation, termination of this contract or other measures which may affect the ability of the Contractor to obtain Department contracts.

Copies of the Maine Department of Transportation's DBE Program may be obtained from:

Maine Department of Transportation
Civil Rights Office
#16 State House Station
Augusta, Maine 04333-0016
tel. (207) 624-3519

Quarterly Reporting Requirement. The Contractor must submit Semi-annual reports of actual dollars paid to Disadvantaged Business Enterprises (DBE's) on this Project to the MDOT Civil Rights Office by the end of the third week of April and October for the period covering the preceding six months considered Federal Fiscal Year periods. The reports will be submitted directly to the Civil Rights Office on the form provided in the latest version of the DBE Program Manual. Failure to submit the report by the deadline may result in a withholding of approval of partial payment estimates by the Department.

SECTION 3 - OTHER FEDERAL REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 3 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Buy America

If the cost of products purchased for permanent use in this project which are manufactured of steel, iron or the application of any coating to products of these materials exceeds 0.1 percent of the contract amount, or $2,500.00, whichever is greater, the products shall have been manufactured and the coating applied in the United States. The coating materials are not subject to this clause, only the application of the coating. In computing that amount, only the cost of the product and coating application cost will be included.

Ore, for the manufacture of steel or iron, may be from outside the United States; however, all other manufacturing processes of steel or iron must be in the United States to qualify as having been manufactured in the United States.

United States includes the 50 United States and any place subject to the jurisdiction thereof.

Products of steel include, but are not limited to, such products as structural steel, piles, guardrail, steel culverts, reinforcing steel, structural plate and steel supports for signs, luminaries and signals.

Products of iron include, but are not limited to, such products as cast iron grates.

Application of coatings include, but are not limited to, such applications as epoxy, galvanized and paint.

To assure compliance with this section, the Contractor shall submit a certification letter on its letterhead to the Department stating the following:

> “This is to certify that products made of steel, iron or the application of any coating to products of these materials whose costs are in excess of $2,500.00 or 0.1 percent of the original contract amount, whichever is greater, were manufactured and the coating, if one was required, was applied in the United States.”

B. Materials

a. Convict Produced Materials References: 23 U.S.C. 114(b)(2), 23 CFR 635.417

Applicability: FHWA's prohibition against the use of convict material only applies to Federal-aid highways. Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if: 1) such materials have been produced by convicts who are on parole, supervised release, or probation from a prison; or 2) such material has been produced in a qualified prison facility, e.g., prison industry, with the amount produced during any 12-month period, for use in Federal-aid projects, not exceeding the amount produced, for such use, during the 12-month period ending July 1, 1987.

Materials obtained from prison facilities (e.g., prison industries) are subject to the same requirements for Federal-aid participation that are imposed upon materials acquired from other sources. Materials manufactured or produced by convict labor will be given no preferential treatment.

The preferred method of obtaining materials for a project is through normal contracting procedures which require the contractor to furnish all materials to be incorporated in the work. The contractor selects the source, public or private, from which the materials are to be obtained (23 CFR 635.407). Prison industries are prohibited from bidding on projects directly (23 CFR 635.112e), but may act as material supplier to construction contractors.

Prison materials may also be approved as State-furnished material. However, since public agencies may not bid in competition with private firms, direct acquisition of materials from a prison industry for use as State-furnished material is subject to a public interest finding with the Division Administrator's concurrence (23 CFR 635.407d). Selection of materials produced by convict labor as State-furnished materials for mandatory use should be cleared prior to the submittal of the Plans Specifications & Estimates (PS&E).

b. Patented/Proprietary Products References: 23 U.S.C. 112, 23 CFR 635.411

FHWA will not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

- the item is purchased or obtained through competitive bidding with equally suitable unpatented items,
- the STA certifies either that the proprietary or patented item is essential for synchronization with the existing highway facilities or that no equally suitable alternative exists, or
- the item is used for research or for a special type of construction on relatively short sections of road for experimental purposes. States should follow FHWA's procedures for "Construction Projects Incorporating Experimental Features" (expermnt.htm) for the submittal of work plans and evaluations.

The primary purpose of the policy is to have competition in selection of materials and allow for development of new materials and products. The policy further permits materials and products that are judged equal may be bid under generic specifications. If only patented or proprietary products are acceptable, they shall be bid as alternatives with all, or at least a

reasonable number of, acceptable materials or products listed; and the Division Administrator may approve a single source if it can be found that its utilization is in the public interest.

Trade names are generally the key to identifying patented or proprietary materials. Trade name examples include 3M, Corten, etc. Generally, products identified by their brand or trade name are not to be specified without an "or equal" phrase, and, if trade names are used, all, or at least a reasonable number of acceptable "equal" materials or products should be listed. The licensing of several suppliers to produce a product does not change the fact that it is a single product and should not be specified to the exclusion of other equally suitable products.

c. State Preference References: 23 U.S.C. 112, 23 CFR 635.409

Materials produced within Maine shall not be favored to the exclusion of comparable materials produced outside of Maine. State preference clauses give particular advantage to the designated source and thus restrict competition. Therefore, State preference provisions shall not be used on any Federal-aid construction projects.

This policy also applies to State preference actions against materials of foreign origin, except as otherwise permitted by Federal law. Thus, States cannot give preference to in-State material sources over foreign material sources. Under the Buy America provisions, the States are permitted to expand the Buy America restrictions provided that the STA is legally authorized under State law to impose more stringent requirements.

d. State Owned/Furnished/Designated Materials References: 23 U.S.C. 112, 23 CFR 635.407

Current FHWA policy requires that the contractor must furnish all materials to be incorporated in the work, and the contractor shall be permitted to select the sources from which the materials are to be obtained. Exceptions to this requirement may be made when there is a definite finding, by MDOT and concurred in by Federal Highway Administration's (FHWA) Division Administrator, that it is in the public interest to require the contractor to use materials furnished by the MDOT or from sources designated by MDOT. The exception policy can best be understood by separating State-furnished materials into the categories of manufactured materials and local natural materials.

Manufactured Materials When the use of State-furnished manufactured materials is approved based on a public interest finding, such use must be made mandatory. The optional use of State-furnished manufactured materials is in violation of our policy prohibiting public agencies from competing with private firms. Manufactured materials to be furnished by MDOT must be acquired through competitive bidding, unless there is a public interest finding for another method, and concurred in by FHWA's Division Administrator.

Local Natural Materials When MDOT owns or controls a local natural materials source such as a borrow pit or a stockpile of salvaged pavement material, etc., the materials may be designated for either optional or mandatory use; however, mandatory use will require a public interest finding (PIF) and FHWA's Division Administrator's concurrence.

In order to permit prospective bidders to properly prepare their bids, the location, cost, and any conditions to be met for obtaining materials that are made available to the contractor shall be stated in the bidding documents.

Mandatory Disposal Sites Normally, the disposal site for surplus excavated materials is to be of the contractor's choosing; although, an optional site(s) may be shown in the contract provisions. A mandatory site shall be specified when there is a finding by MDOT, with the concurrence of the Division Administrator, that such placement is the most economical or that the environment would be substantially enhanced without excessive cost. Discussion of the mandatory use of a disposal site in the environmental document may serve as the basis for the public interest finding.

Summarizing FHWA policy for the mandatory use of borrow or disposal sites:

- mandatory use of either requires a public interest finding and FHWA's Division Administrator's concurrence,
- mandatory use of either may be based on environmental consideration where the environment will be substantially enhanced without excessive additional cost, and
- where the use is based on environmental considerations, the discussion in the environmental document may be used as the basis for the public interest finding.

Factors to justify a public interest finding should include such items as cost effectiveness, system integrity, and local shortages of material.

C. Standard FHWA Contract Provisions - FHWA 1273

Unless expressly otherwise provided in the Bid Documents, the following "Required Contract Provisions, Federal Aid Construction Contracts", FHWA-1273, are hereby incorporated into the Bid Documents and Contract.

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Start of FHWA 1273 REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS(As revised through March 10, 1994)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

   Section I, paragraph 2;
   Section IV, paragraphs 1, 2, 3, 4, and 7;
   Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

   a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

   b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION (Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
   a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

   b. The contractor will accept as his operating policy the following statement:
   "It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment,

upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. EEO Officer. The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy. All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

   a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

   b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

   c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

   d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

   e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment. When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

   a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions. Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion.

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision

for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions. If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

   a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

   b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

   c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

   d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment. The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports. The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the MDOT and the Federal Highway Administration.

The Contractor will submit to the MDOT a report for the month of July, indicating the total hours worked by minority, women and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR-1391. If on-the-job training is being required by "Training Special Provision," the Contractor will be required to furnish Form FHWA-1409. The report is required for week ending July 15 and can be obtained from MDOT, is due by week ending August 20th. This report is to be furnished directly to MDOT - Civil Rights Office.

III. <u>NONSEGREGATED FACILITIES</u> (Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE (Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

   a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the

provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor

as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers. Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT). Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding. The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4

and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation. Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages. The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS (Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3). The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

   a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

   b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in

Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

   (1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

   (2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

   (3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

   a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

   b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

   c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

   a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor,

with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health

standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations

in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:
(Applicable to all Federal-aid contracts - 49 CFR 29)

   a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

   b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

   c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

   d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

   e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out

in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

****

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--
Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or

local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

****

2. Instructions for Certification - Lower Tier Covered Transactions: (Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

****

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--
Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

****

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING
(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
   a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

   b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a

Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

End of FHWA 1273

Chapter 305: PERMIT BY RULE Section 11
State Transportation Facilities

1. **Introduction.** A "permit by rule" or "PBR", when approved by the Department of Environmental Protection (DEP), is an approval for an activity that requires a permit under the Natural Resources Protection Act (NRPA). Only those activities described in this chapter may proceed under the PBR process. A PBR activity will not significantly affect the environment if carried out in accordance with this chapter, and generally has less of an impact on the environment than an activity requiring an individual permit. A PBR satisfies the Natural Resources Protection Act (NRPA) permit requirement and Water Quality Certification requirement.

   If a proposed activity is not described in this chapter, or will not be conducted in accordance with the standards of this chapter, the applicant must obtain an individual permit prior to beginning the activity.

   A. **Location of activity.** The location of an activity may affect whether an activity qualifies for PBR, and whether review by the Department of Inland Fisheries and Wildlife is required.

      (1) Type of resource. For some types of activities, the availability of a PBR is affected by the type of natural resource in or adjacent to which the activity is proposed. For example, an applicant proposing an activity consisting of "Movement of rocks or vegetation" may receive a PBR only if the activity will take place in a great pond, river, stream or brook. Limitations concerning the location of activities are addressed in the "Applicability" provision in each section of this chapter.

      (2) Essential habitat. Essential habitats include areas critical to the survival of threatened and endangered species such as the bald eagle, least tern, roseate tern, and piping plover. If the activity is located in essential habitat, such as near an eagle nesting site, a PBR is only available if the applicant obtains written approval from the Department of Inland Fisheries and Wildlife (IF&W). This approval from IF&W must be submitted to the DEP with the PBR notification form, and the applicant must follow any conditions stated in the IF&W approval.

NOTE: Maps showing areas of essential habitat are available from the Department of Inland Fisheries and Wildlife regional headquarters, municipal offices, the Land Use Regulation Commission (for unorganized territories) and DEP regional offices. If the activity is located in essential habitat, IF&W must be contacted to request and obtain a "certification of review and approval".

   B. **Notification.** The applicant must file notice of the activity with the DEP prior to beginning work on the activity. The notification must be on a form provided by the DEP and must include any submissions required in this chapter. The applicant must keep a copy to serve as the permit.

      The notification form must be sent to the DEP by certified mail (return receipt requested), or hand delivered to the DEP and date stamped by the department.

C. Effective period

(1) Beginning of period. The PBR becomes effective 14 calendar days after the DEP receives the notification form, unless the DEP approves or denies the PBR prior to that date. If the DEP does not speak with or write to the applicant within this 14 day period regarding the PBR notification, the applicant may proceed to carry out the activity.

There are three exceptions regarding the effective date of an approved PBR:

(a) Activities listed in Section 10 (Stream crossings) occurring in association with forest management are exempt from the 14 day waiting period.

(b) Activities listed in Section 2 (Soil disturbance) and Section 10 (Stream crossings) performed or supervised by individuals currently certified in erosion control practices by the DEP are exempt from the 14 day waiting period. To be certified in erosion control practices, an individual must successfully complete all course requirements of the Voluntary Contractor Certification Program administered by the DEP's Nonpoint Source Training and Resource Center.

(c) Activities that are part of a larger project requiring a permit under the Site Location of Development or the Storm Water Management Acts may not proceed until any required permit under those laws is obtained.

NOTE: Activities that are part of a larger project may require other permits from the DEP also. These other laws may prohibit the start of construction of any part of the project unless a permit under that law is obtained. In these cases, while not a violation of this rule, starting work on a PBR approved activity would be a violation of those other applicable laws.

(2) End of period. The PBR is generally effective for 2 years from the date of approval, except that a PBR for "Replacement of structures" under Section 4 is effective for 3 years.

NOTE: Activities that qualify under this chapter may need to meet other local, state and federal requirements. Examples -- (1) If an activity extends below the low water line of a lake, coastal wetland or international boundary water, the applicant should contact the Bureau of Parks and Lands (287-3061) concerning possible lease or easement requirements, or (2) If an activity will involve work below the mean high water line in navigable waters of the United States, the applicant should contact the Army Corps of Engineers (623-8367).

D. Discretionary authority. Notwithstanding compliance with the PBR applicability requirements and standards set forth in this chapter, the DEP may require an individual permit application to be filed in any case where credible evidence indicates that the activity:

(1) May violate the standards of the NRPA (38 M.R.S.A. Section 480-D);

(2) Could lead to significant environmental impacts, including cumulative impacts; or

(3) Could adversely impact a resource of special concern.

If an individual permit is required pursuant to this subsection, the DEP shall notify the applicant in writing within the 14 calendar day waiting period described in sub-section (C) above. When the DEP notifies an applicant than an individual permit is required, no work may be conducted unless and until the individual permit is obtained.

E. Violations. A violation of law occurs when a person, or his or her agent, performs or causes to be performed any activity subject to the NRPA without first obtaining a permit from the DEP, or acts contrary to the provisions of a permit. The person, his or her agent, or both, may be held responsible for the violation. Commonly, the "person" is the landowner, and the "agent" is the contractor carrying out the activity. A violation occurs when:

(1) An activity occurs that is not allowed under PBR, whether or not a PBR notification form has been filed with and/or approved by the DEP;

(2) An activity occurs that is allowed under PBR, but a PBR for the activity has not become effective prior to the beginning of the activity; or

(3) An activity occurs that is allowed under PBR and a PBR for the activity is in effect, but the standards specified in this chapter are not met.

See the "applicability" provision under each activity for rules concerning what activities are allowed under PBR. A PBR is only valid for the person listed on the notification form, or for his or her agent.

Each day that a violation occurs or continues is considered a separate offense. Violations are subject to criminal penalties and civil penalties of not less than $100 nor more than $10,000 for each day of that violation (38 M.R.S.A. Section 349).

NOTE: A local Code Enforcement Officer (CEO) may take enforcement action for a violation of the Natural Resources Protection Act if he or she is authorized to represent a municipality in District Court, and he or she has been certified as familiar with court procedures, 30-A M.R.S.A. Section 4452(7).

Chapter 305 Section 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 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, the Department of Marine Resources, the Atlantic Salmon Authority, and the DEP's Division of Environmental Assessment prior to the notification being filed with the DEP. The activity must be performed according to any recommendations from these authorities.

(3) The activity must be performed in accordance with erosion control measures conforming with the State of Maine Department of Transportation Standard Specifications for Highways and Bridges Revision of April 1995 and with the Department of Transportation's Best Management Practices for Erosion and Sediment Control, September 1997.

NOTE: Guidance on the use of erosion control best management practices can be obtained from the on site Construction Manager.

(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 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(1), 9(B) and 9(C).

(8) The activity may not permanently block any fish passage in any watercourse containing fish. The applicant must improve passage beyond what restriction may already exist unless the Department of Inland Fisheries and Wildlife, the Department of Marine Resources, the Atlantic Salmon Authority and the DEP's Division of Environmental Assessment concur that the improvement is not necessary.

(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, with the exception of culvert installation, the applicant must divert flow away from the activity while work is in progress.

(a) Diversion may be accomplished by the use of stable, inert material. No more than two thirds (2/3) of stream width may be diverted at one time.

(b) Any material used to divert water flow must be completely removed upon completion of the activity, and the stream bottom must be restored to its original condition.

(c) A pump may be operated, where necessary, for a temporary diversion. The pump outlet must be located and operated such that erosion or the discharge of sediment to the water is prevented.

NOTE: Guidance on the appropriate location of a diversion and materials which should be used for a stream diversion can be obtained from the on site Construction Manager.

(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.

(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. Hay bales or silt fence 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. Measures, such as a silt boom or staked fencing, must be employed to reduce and isolate turbidity.

(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, 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) Soil may not be disturbed during any period when soils are saturated due to rain or snow melt, except as necessary to protect work in progress or as required for bridge maintenance activities. Areas where soils are saturated (i.e. water drips from the soil when squeezed by hand, or the soil is capable of being rolled into a rod 1/8th inch in diameter that does not crumble) must be immediately mulched if they are disturbed.

(19) Disturbed soil must be protected within one week from the time it was last actively worked, and prior to any storm event, using temporary or permanent measures such as the placement of riprap, sod, mulch, erosion control blankets, or other comparable measures.

(20) Hay bale or straw mulch, where used, must be applied at a rate of at least one bale per 500 square feet (1 to 2 tons per acre).

(21) If mulch is likely to be moved because of steep slopes or wind exposure, it must be anchored with netting, peg and twine, binder or other suitable method and must be maintained until a catch of vegetation is established over the entire disturbed area.

(22) In addition to the placement of riprap, sod, erosion control blankets or mulch, additional steps must be taken where necessary to prevent sedimentation of the water Evidence of sedimentation includes visible sheet, rill or gully erosion, discoloration of water by suspended particles and/or slumping of banks. Silt fences, staked hay bales and other sedimentation control measures, where planned for, must be in place prior to the commencement of an activity, but must also be installed whenever necessary to prevent erosion and sedimentation.

NOTE: Guidance on the location and proper installation of erosion control measures can be obtained from the on site Construction Manager.

(23) Temporary erosion control measures must be maintained and inspected weekly until the site is permanently stabilized with vegetation or other permanent control measures. Erosion control measures must also be inspected immediately prior to and following storms.

(24) Permanent erosion control measures protecting all disturbed areas must be implemented within 30 days from the time the areas were last actively worked, or for fall and winter activities by the following June 15, except where precluded by the type of activity (e.g. riprap, road surfaces, etc.). The permanent erosion control measures must be maintained.

(25) The applicant shall immediately take appropriate measures to prevent erosion or sedimentation from occurring or to correct any existing problems, regardless of the time of year.

(26) Non-native species may not be planted in restored areas.

(27) 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.

(28) 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.

(29) 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. A rerouting of a river, stream or brook to a location outside of its established 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. Rocks that are fit into place, usually without mortar, on a slope as defined in the State of Maine, Department of Transportation, Standard Specifications for Highway and Bridges, revision of April 1995.

US Army Corps of Engineers®
New England District

PGP WORK START NOTIFICATION FORM
(Minimum Advance Notice: Two Weeks)

MAIL TO: U.S. Army Corps of Engineers, New England District
Regulatory Branch
Policy Analysis/Technical Support Section
696 Virginia Road
Concord, Massachusetts 01742-2751

A Corps of Engineers Permit ( ) was issued to _____. The permit authorized the permittee(s) to _____

_____

_____

_____

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

_____

_____

Business Address: _____

_____

_____

Telephone: ( ) _____ ( ) _____

Proposed Work Dates: Start: _____

Finish: _____

PERMITTEE'S SIGNATURE: _____ DATE: _____

PRINTED NAME: _____ TITLE: _____

FOR USE BY THE CORPS OF ENGINEERS

PM_____ Submittals Required: _____

Inspection Recommendation: _____

US Army Corps of Engineers®
New England District

(Minimum Notice: Permittee must sign and return notification within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

Corps of Engineers Permit No: _____

Name of Permittee: _____

Permit Issuance Date: _____

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

```
*********************************************************************
* MAIL TO: U.S. Army Corps of Engineers, New England District       *
*          Policy Analysis/Technical Support Branch, ATTN: Marie Farese *
*          Regulatory Division                                      *
*          696 Virginia Road                                        *
*          Concord, Massachusetts 01742-2751                        *
*********************************************************************
```

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

DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)

PERMIT BY RULE NOTIFICATION FORM

(For use with DEP Regulation, Chapter 305)

■ **MDOT PIN: 6900.01**

Name of Applicant: State of Maine Department of Transportation **Name of Contact:** Ben Condon
Mailing Address: 16 Station State House **Town/City:** Augusta **State:** Me. **Zip Code:** 04330-0016
Daytime Telephone #: (207)-624-3074 **Name of Wetland, Water Body or Stream:** Kennebec River

Detailed Directions to Site: Replacement of the Covered Bridge (#2187) over Kennebec River, located 0.20 of a mile northerly of Route 2.

Town/City: Norridgewock **Map #:** N/A **Lot #:** N/A **County:** Somerset

Description of Project:. Project consists of bridge replacement. The project will be performed in accordance with erosion control measures conforming with the latest versions of the *State of Maine Department of Transportation Standard Specifications for Highways and Bridges* and the *Department of Transportation's Best Management Practices for Erosion and Sediment Control.*

Part of a larger project? ☐Yes ☒No

(CHECK ONE) This project... ☒ does ☐ does not ...involve work below mean low water.

I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Regulation, Chapter 305. I have a copy of PBR Sections checked below. I have read and will comply with all of the standards.

☐Sec. (2) Soil Disturbance	☐Sec. (8) Shoreline stabilization	☐Sec. (14) Piers, Wharves & Pilings
☐Sec. (3) Intake Pipes	☐Sec. (9) Utility Crossing	☐Sec. (15) Public Boat Ramps
☐Sec. (4) Replacement of Structures	☐Sec. (10) Stream Crossing	☐Sec. (16) Coastal Sand Dune Projects
☐Sec. (5) REPEALED	☒Sec. (11) State Transport. Facilities	☐Sec. (17) Transfers/Permit Extension
☐Sec. (6) Movement of Rocks or Vegetation	☐Sec. (12) Restoration of Natural Areas	☐Sec. (18) Maintenance Dredging
☐Sec. (7) Outfall Pipes	☐Sec. (13) F&W Creation/Enhance/Water Quality Improvement	

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules. I also understand that ***this permit is not valid until approved by the Department or 14 days after receipt by the Department, whichever is less.***

I have attached all of the following required submittals. **NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS:**

- ■ **A $55 (non-refundable) payment shall be done by internal billing.**
- ■ ***Attach* a U.S.G.S. topo map or Maine Atlas & Gazetteer map with the project site clearly marked.**
- ☐ ***Attach* photographs showing existing site conditions (unless not required under standards).**

Signature of Applicant: _____ **Date:** 06/11/07
John E. Dority, Chief Engineer

Keep the bottom copy as a record of permit. Send the form with attachments via certified mail to the Maine Dept. of Environmental Protection **at the appropriate regional office listed below**. The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. **Work carried out in violation of any standard is subject to enforcement action.**

AUGUSTA DEP STATE HOUSE STATION 17 AUGUSTA, ME 04333-0017 (207)287-2111 PORTLAND DEP 312 CANCO ROAD PORTLAND, ME 04103 (207)822-6300 BANGOR DEP 106 HOGAN ROAD BANGOR, ME 04401 (207)941-4570 PRESQUE ISLE DEP 1235 CENTRAL DRIVE PRESQUE ISLE, ME 04769 (207)764-0477

OFFICE USE ONLY	Ck.#	Staff		Staff	
PBR #	FP	Date	Acc. Date	Def. Date	After Photos

Applicant: General Public, State of Maine
Permit Number: NAE-2005-2164

Effective Date: October 11, 2005
Expiration Date: October 11, 2010

DEPARTMENT OF THE ARMY
PROGRAMMATIC GENERAL PERMIT
STATE OF MAINE

The New England District of the U.S. Army Corps of Engineers hereby issues a Programmatic General Permit (PGP) that expedites review of minimal impact work in coastal and inland waters and wetlands within the State of Maine.

I. GENERAL CRITERIA

Activities with minimal impacts, as specified by the terms and conditions of this PGP and on the attached Appendix A, Definition of Categories, are either:

Category 1: Non-reporting. Eligible without screening (provided the authorizations are obtained which this permit states are necessary for activities to be eligible for authorization under this non-reporting category), or,

Category 2: Reporting. Require screening and a written determination of eligibility under the PGP by the Corps after coordination with the U.S. Fish and Wildlife Service (U.S. FWS), U.S. Environmental Protection Agency (EPA) and the National Marine Fisheries Service (NMFS).

This PGP does not affect the Corps Individual Permit review process or activities exempt from Corps jurisdiction.

II. ACTIVITIES COVERED:

Work and structures that are located in, or that affect, navigable waters of the United States (U.S.) (Corps regulates under Section 10 of the Rivers and Harbors Act of 1899); the discharge of dredged of fill material into waters of the United States (Corps regulates under Section 404 of the Clean Water Act); and the transportation of dredged material for the purpose of disposal in the ocean (Corps regulates under Section 103 of the Marine Protection, Research and Sanctuaries Act).

III. PROCEDURES:

A. State Approvals

For projects authorized pursuant to this PGP, the following State approvals are also required. The applicable permits must be obtained in order for this PGP authorization to be valid (applicants are responsible for ensuring that all required State permits and approvals have been applied for and obtained):

- Maine Department of Environmental Protection (DEP): Natural Resources Protection Act (NRPA) permit, including permit-by-rule and general permit authorizations (NRPA permit issuance constitutes both the state permit and the WQC); Site Location of Development Act permit; and Maine Waterway Development and Conservation Act permit.
- Maine Department of Conservation: Land Use Regulation Commission (LURC) permit.
- Maine Department of Marine Resources: Lease.
- Maine Department of Conservation, Bureau of Parks and Lands, Submerged Lands: Lease

NOTE: This PGP may authorize projects that are not regulated by the State of Maine (e.g., seasonal floats or moorings).

B. Corps Authorizations

CATEGORY 1 (Non-Reporting)

Eligibility Criteria

Activities in Maine may proceed without application or notification to the Corps if they:

- Are subject to Corps jurisdiction (see General Condition 2, Page 7),
- Meet the definition of Category 1 in Appendix A - Definition of Categories, and
- Meet the General Conditions of the PGP (see Pages 7 - 15).

If the State or the Corps does not contact the applicant for DEP's Tier One permits during the DEP's Tier One 30-day review period, Corps approval may be assumed and the project may proceed. Refer to the Federal Screening Procedures (see Page 4) for additional information regarding screening.

Project proponents seeking Category 1 authorizations are not relieved of the obligation to comply with this PGP's General Conditions (see Page 7) and other Federal laws such as the National Historic Preservation Act, the Endangered Species Act (ESA) and the Wild and Scenic Rivers Act. Therefore, consultation with the Corps and/or outside experts such as the Maine Historic Preservation Commission and the appropriate Indian tribes is recommended when there is a high likelihood of the presence of resources of concern.

Although Category 1 projects are non-reporting, the Corps reserves the right to require screening under Category 2 or Individual Permit review if there are concerns for the aquatic environment or any other factor of the public interest (see General Condition 4, Discretionary Authority, Page 7).

Work that is not regulated by the State of Maine, but is subject to Corps jurisdiction, is eligible for Corps authorization under this PGP in accordance with the review thresholds and conditions contained herein. The Maine DEP and LURC have waived WQC for projects authorized under Categories 1 and 2 of this PGP and not subject to jurisdiction under the NRPA and LURC Land Use Districts and Standards.

Enforcement cases. This PGP does not apply to any existing or proposed activity in Corps jurisdiction associated with an on-going Corps or EPA enforcement action until such time as the enforcement action is resolved or the Corps determines that the activity may proceed independently without compromising the enforcement action. The Corps may choose not to accept applications or issue permits to any applicant with outstanding violations.

CATEGORY 2 (Reporting – Requiring Screening)

Eligibility Criteria

Activities in Maine require written approval from the Corps if they:

- Are subject to Corps jurisdiction (see General Condition 2, Page 7),
- Meet the definition of Category 2 in Appendix A - Definition of Categories, and
- Meet the General Conditions of the PGP (see Pages 7 - 15),

These projects will be reviewed through interagency screening (see Federal Screening Procedures below) to determine whether such activities may be authorized under this PGP. To be eligible and

subsequently authorized, an activity must result in minimal impacts to the aquatic environment as determined by the Corps based on comments from the review team and the criteria listed above. Mitigation may be required to compensate for unavoidable impacts to ensure net effects of a project are minimal.

For Category 2 projects, applicants must obtain a written authorization from the Corps and State approvals as stated on Page 1.

To ensure compliance with the conditions of this PGP, consultation with the Corps and outside experts is required. This includes consultation with the Maine Historic Preservation Commission and the appropriate Native American Indian tribes to ensure compliance with Condition 8. Also, note the review thresholds under Category 2 apply to single and complete projects only (see General Condition 5).

Enforcement cases. See previous section.

Application Procedures

The Corps must review and approve in writing all Category 2 activities. Generally, the State will provide the Corps with a copy of State applications received, but it is ultimately the applicant's responsibility to ensure the Corps receives the application from the State. Therefore, it is recommended that applicants either verify with the Corps receipt of their application from the State (DEP or LURC), or apply directly to the Corps with either a copy of their State application or a Corps application (ENG Form 4345). Applicants must apply directly to the Corps using ENG Form 4345 if the work is not State regulated.

Upon receipt of the application, the Corps will determine if it:
(a) requires additional information (see "information typically required" on the following page);
(b) is appropriate for screening with the Federal resource agencies (see Category 2 Federal Screening Procedures on the following page);
(c) is ineligible under the terms and/or conditions of this PGP; or
(d) will require Individual Permit review, regardless of whether the terms and conditions of this PGP are met, based on concerns for the aquatic environment or any other factor of the public interest (see General Condition 4, Discretionary Authority).

If open water disposal is proposed, the Corps will make a suitability determination, fully coordinated with the Federal resource agencies, before coordinating a project at a joint processing meeting.

All Category 2 applicants shall submit a copy of their application materials to the Maine Historic Preservation Commission and the Indian tribe(s) listed on Page 17, at the same time, or before, they apply to the DEP, LURC, or the Corps, to be reviewed for the presence of historic, archaeological or tribal resources in the permit area that the proposed work may affect. Submittals to the DEP or Corps shall include information to indicate that this has been done (a copy of the applicant's cover letter to Maine Historic Preservation Commission and tribes or a copy of the Historic Preservation Commission and tribal response letters is acceptable).

Information Typically Required

The following information may not be necessary for all projects. Please see www.nae.usace.army.mil for a more comprehensive checklist. Select "Regulatory/Permitting," "Forms" and then "Application and Plan Guideline Checklist." Please check with our Maine office for project-specific requirements.

(a) purpose of project;
(b) 8½"x 11" locus map. 8½"x 11" plan views of the entire property, including property lines, and project limits with existing and proposed conditions;
(c) typical cross-section views of all wetland and waterway fill areas and wetland replication areas;
(d) legible, reproducible plans. Show mean low water (MLW), mean high water (MHW) and high tide line (HTL) elevations in navigable waters;
(e) each plan should show the NGVD 1929 equivalent for the project's vertical datum (MLW, MLLW, MHW, HTL or other tidal datum for tidal projects) with the vertical units. Do not use local datum;
(f) wetland delineation for the site, Corps wetland delineation data sheets (see web site), and calculations of waterway and wetland impact areas (see General Condition 2);
(g) delineation of submerged aquatic vegetation, e.g., eel grass beds, in tidal waters;
(h) volume, type and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below ordinary high water in inland waters and below the high tide line in coastal waters;
(i) limits of any Federal Navigation Project in the vicinity and State Plane Coordinates for the limits of the proposed work closest to the Federal Navigation Project;
(j) on-site alternatives analysis. Please contact Corps for guidance;
(k) identify and describe potential impacts to Essential Fish Habitat. See General Condition 11 and contact Corps for guidance;
(l) photographs of wetland/waterway to be impacted.

Information typically required for dredging projects:
(a) sediment testing, including physical (e.g., grain-size analysis), chemical and biological testing. For projects proposing open water disposal, applicants are encouraged to contact the Corps as early as possible regarding sampling and testing protocols. Sampling and testing of sediments without such contact should not occur and, if done, would be at the applicant's risk.
(b) the area in square feet and volume of material to be dredged below mean high water;
(c) existing and proposed water depths;
(d) type of dredging equipment to be used;
(e) nature of material (e.g., silty sand);
(f) any existing sediment grain size and bulk sediment chemistry data for the proposed or any nearby projects;
(g) information on the location and nature of municipal or industrial discharges and occurrence of any contaminant spills in or near the project area, location of the disposal site (include locus sheet);
(h) shellfish survey;
(i) identify and describe potential impacts to Essential Fish Habitat (see General Condition 11);
(j) delineation of submerged aquatic vegetation (e.g., eelgrass beds).

Federal Screening Procedures
The Corps will review all complete applications for Category 2 projects requiring Corps approval at interagency screening meetings (or "joint processing" meetings) with the Federal resource agencies (U.S. FWS, EPA and NMFS) to determine whether such activities may be authorized under this PGP. The Federal resource agencies will comprise the interagency review team. The meetings are held at the Corps every three weeks, or coordinated as necessary to provide applicants with a timely response. The Corps and Federal resource agencies, at the branch chief or equivalent level, may agree on certain activities that do not need to be coordinated at these meetings.

If the Corps and Federal resource agencies determine that the activity is eligible for the PGP, the Corps will send an authorization letter directly to the applicant. The Corps will generally issue an eligibility determination within the State's review period, not to exceed 60 days. If the Corps determines that the activity is not eligible under the PGP or that additional information is required, the Corps will notify the applicant in writing and will send a copy of this notification to DEP or LURC.

For projects reviewed with the Federal resource agencies, the agencies may recommend, within ten business days, either 1) special conditions for projects to avoid or minimize adverse environmental effects and to ensure the terms and conditions of the PGP are met, or 2) Individual Permit review. The Corps will determine that a project is ineligible under this PGP and will begin its Individual Permit review procedures if any one of the Federal resource agencies, within ten business days of the screening meeting, expresses a concern within their area of expertise, states the resource or species that could be impacted by the project, and describes the impacts that, either individually or cumulatively, will be more than minimal.

This ten-day notice may be spoken and is not required to be fully documented, but must be confirmed with a written response within an additional ten working days from the date of the spoken comment. Written responses must be signed by the Federal resource agency field supervisor or branch chief, as appropriate, and must identify the affected resource within their area of expertise. The intent of the spoken notification is to allow the Corps to give timely notification to the applicant that additional information is needed and/or an Individual Permit may be required. The Corps may reinstate a project's eligibility under the PGP provided the Federal agencies' concerns are satisfied. The Federal resource agencies may request additional information within their area of expertise within ten business days of the screening meeting. This information shall be commensurate to the level of impact and agreed upon by the Corps. The agencies are allowed an additional ten business days after their receipt of additional information to provide special conditions or a written Individual Permit request to the Corps.

If the applicant is unable to resolve the concerns, the Corps, independently or at the request of the Federal resource agencies, will require an Individual Permit for the project. The applicant will be notified of this in writing, along with information about submitting the necessary application materials.

Minerals Management Service (MMS) Review

Projects with construction of solid fill structures or discharge of fill that may extend beyond the coastline or the baseline from which the territorial sea is measured (i.e., mean low water), must be coordinated with Minerals Management Service (MMS), Outer Continental Shelf (OCS) Survey Group, pursuant to the Submerged Lands Act (43 USC, Section 1301-1315, 33 CFR 320.4(f)). The Corps will forward project information to MMS for their review. The MMS will coordinate their determination with the Department of the Interior (DOI) Solicitor's Office. The DOI will have 15 calendar days from the date MMS is in receipt of project information to determine if the baseline will be affected. No notification to the Corps within 15-day review period will constitute a "no effect" determination. Otherwise, the solicitor's notification to the Corps may be spoken but must be followed with a written confirmation within ten business days from the date of the spoken notification. This procedure will be eliminated if the State of Maine provides a written waiver of interest in any increase in submerged lands caused by a change in the baseline resulting from solid fill structures or fills authorized under this PGP.

Emergency Situations Procedures

Emergency situations are limited to sudden, unexpected occurrences that could potentially result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. If an emergency situation requires action in less than 30 days after the occurrence, it qualifies for the amended notification procedures described below.

Notification Procedures for Emergency Situations:

Any project proponent may request emergency authorization from the Corps, however the Corps will determine if a project qualifies for these emergency situation procedures. The Federal resource agencies, the Maine Historic Preservation Commission and the tribes will each designate an emergency contact and an alternate in the event the regular contact is unavailable. When an application for Category 2 work is received that the Corps determines is an "emergency" as defined above, the Corps will fax a copy of the plans and Determination of Eligibility to the agency representatives and their alternates. The resource agencies would then have 16 business hours to notify the Corps if they have any comments on authorization of the project under the PGP. Objections to the Corps determination of an "emergency" situation will not be accepted. If no response is received within 16 business hours, the Corps will proceed with a decision on the application. If the resource agencies have comments on the proposal, they will have 16 business hours to put their comments in writing. If written comments from the Federal agencies are not received within 16 business hours, the Corps will proceed with a decision on the application.

If a Federal agency requests that an Individual Permit be required for a project or requests modifications to the project based on concerns within their area(s) of expertise, the Corps will notify the applicant within one business day of receipt of that request that the project as proposed does not qualify for authorization under this PGP and the emergency Individual Permit procedures may be followed. In any event, the Corps will notify the applicant within 16 business hours of commencement of the screening process as to whether the project may proceed under this PGP.

IV. CORPS AUTHORIZATION: INDIVIDUAL PERMIT

Work that is defined in the Individual Permit category of Appendix A – Definition of Categories, or that does not meet the terms and conditions of this PGP, will require an application for an Individual Permit from the Corps (see 33 CFR Part 325.1). The screening procedures outlined for Category 2 projects will only serve to delay project review in such cases. The applicant should submit the appropriate application materials (including the Corps application form) at the earliest possible date. General information and application forms can be obtained at our web site or by calling us (see Page 16). Individual water quality certification and coastal zone management consistency concurrence are required when applicable from the State of Maine before Corps permit issuance. The Federal resource agencies' comments are due within ten working days after the Public Notice's expiration date, unless the Corps receives and approves a written request for a time extension within ten working days after the notice's expiration.

V. PROGRAMMATIC GENERAL PERMIT CONDITIONS:

The following conditions apply to activities authorized under this Maine PGP, including all Category 1 (non-reporting) and Category 2 (reporting – requiring screening) activities:

General Requirements

1. Other Permits. Authorization under this PGP does not obviate the need to obtain other Federal, State, or local authorizations required by law. This includes, but is not limited to, the project proponent obtaining a Flood Hazard Development Permit issued by the town, if necessary. Inquiries may be directed to the municipality or to the Maine Floodplain Management Coordinator at (207) 287-8063. See http://www.maine.gov.

2. Federal Jurisdictional Boundaries. Applicability of this PGP shall be evaluated with reference to Federal jurisdictional boundaries. Applicants are responsible for ensuring that the boundaries used satisfy the Federal criteria defined at 33 CFR 328-329. These sections prescribe the policy, practice and procedures to be used in determining the extent of jurisdiction of the Corps concerning "waters of the U.S." and "navigable waters of the U.S." Wetland boundaries shall be delineated in accordance with the January 1987 Corps of Engineers Wetlands Delineation Manual, located at http://www.usace.army.mil/inet/functions/cw/cecwo/reg/ wlman87.pdf. The U.S. FWS publishes the National List of Plant Species that Occur in Wetlands, located at http://www.nwi.fws.gov. The Natural Resources Conservation Service (NRCS) develops the hydric soil definition and criteria, and publishes the current hydric soil lists, located at http://soils.usda.gov/use/hydric/.

3. Minimal Effects. Projects authorized by this PGP shall have no more than minimal individual and cumulative adverse environmental impacts as determined by the Corps.

4. Discretionary Authority. Notwithstanding compliance with the terms and conditions of this permit, the Corps retains discretionary authority to require Category 2 or Individual Permit review based on concerns for the aquatic environment or for any other factor of the public interest [33 CFR 320.4(a)]. This authority is invoked on a case-by-case basis whenever the Corps determines that the potential consequences of the proposal warrant Individual Permit review based on the concerns stated above. This authority may be invoked for projects with cumulative environmental impacts that are more than minimal or if there is a special resource or concern associated with a particular project that is not already covered by the remaining conditions of the PGP and that warrants greater review. Whenever the Corps notifies an applicant that an Individual Permit may be required, authorization under this PGP is void and no work may be conducted until the individual Corps permit is obtained or until the Corps notifies the applicant that further review has demonstrated that the work may proceed under this PGP.

5. Single and Complete Projects. This PGP shall not be used for piecemeal work and shall be applied to single and complete projects. All components of a single project shall be treated together as constituting one single and complete project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) unless the Corps determines that a component has independent utility. (The *Independent Utility* test is used to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.) For linear projects, such as power lines or pipelines with multiple

crossings, the "single and complete project" (i.e., single and complete crossing) will apply to each crossing of a separate water of the U.S. (i.e., single waterbody) at that location; except that for linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project, and may be reviewed for Category 1 eligibility. (However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland or lake, etc., are not separate waterbodies.) If any crossing requires a Category 2 activity, then the entire linear project shall be reviewed as one project under Category 2. Also, this PGP shall not be used for any activity that is part of an overall project for which an Individual Permit is required, unless the Corps determines the activity has independent utility.

6. Permit On-Site. For Category 2 projects, the permittee shall ensure that a copy of this PGP and the accompanying authorization letter are at the work site (and the project office) authorized by this PGP whenever work is being performed, and that all personnel with operation control of the site ensure that all appropriate personnel performing work are fully aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and sub-contracts for work that affects areas of Corps jurisdiction at the site of the work authorized by this PGP. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means this PGP and the authorization letter (including its drawings, plans, appendices and other attachments) and also includes permit modifications. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or sub-contract as a change order. 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 contained within the entire PGP authorization, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps jurisdiction.

National Concerns

7. St. John/St. Croix Rivers. This covers work within the Saint John and Saint Croix River basins that requires approval of the International Joint Commission. This includes any temporary or permanent use, obstruction or diversion of international boundary waters which could affect the natural flow or levels of waters on the Canadian side of the line, as well as any construction or maintenance of remedial works, protective works, dams, or other obstructions in waters downstream from boundary waters when the activity could raise the natural level of water on the Canadian side of the boundary.

8. Historic Properties. Any activity authorized by this PGP shall comply with Section 106 of the National Historic Preservation Act. Information on the location and existence of historic resources can be obtained from the Maine Historic Preservation Commission, the National Register of Historic Places, and the Penobscot, Passamaquoddy, Micmac, and Maliseet Tribal Historic Preservation Officers. See Page 17 for historic properties contacts. If the permittee, either prior to construction or during construction of the work authorized herein, encounters a previously unidentified archaeological or other cultural resource, within the area subject to Department of the Army jurisdiction, that might be eligible for listing in the National Register of Historic Places, he/she shall stop work and immediately notify the District Engineer and the Maine Historic Preservation Commission and/or applicable Tribe(s).

9. National Lands. Activities authorized by this PGP shall not impinge upon the value of any National Wildlife Refuge, National Forest, National Marine Sanctuary, National Park or any other area administered by the National Park Service.

10. Endangered Species. No activity may be authorized under this PGP which:

- is likely to adversely affect a threatened or endangered species, a proposed species, designated critical habitat, or proposed critical habitat as identified under the Federal ESA,
- would result in a "take" of any threatened or endangered species of fish or wildlife, or
- would result in any other violation of Section 9 of the ESA protecting threatened or endangered species of plants.

Applicants shall notify the Corps if any listed species or critical habitat, or proposed species or critical habitat, is in the vicinity of the project and shall not begin work until notified by the District Engineer (DE) that the requirements of the ESA have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species and their critical habitat can be obtained from the U.S. FWS and NMFS (see Page 16 for addresses).

11. Essential Fish Habitat. As part of the PGP screening process, the Corps will coordinate with NMFS in accordance with the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act to protect and conserve the habitat of marine, estuarine and anadromous finfish, mollusks, and crustaceans. This habitat is termed "Essential Fish Habitat (EFH)", and is broadly defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Applicants may be required to describe and identify potential impacts to EFH. Conservation recommendations made by NMFS will normally be included as a permit requirement by the Corps. For additional information, see the EFH regulations at 50 CFR Part 600 (http://www.nmfs.noaa.gov). Additional information on the location of EFH can be obtained from NMFS (see Page 16 for contact information).

Any work in any aquatic habitat in the following rivers and streams, including all tributaries to the extent that they are currently or were historically accessible for salmon migration, shall not be authorized under Category 1 of the PGP and must be screened for potential impacts to EFH.

Androscoggin River	Hobart Stream	Passagassawaukeag River	Saco River
Aroostook River	Kennebec River	Patten Stream	Sheepscot River
Boyden River	Machias River	Penobscot River	St. Croix River
Dennys River	Narraguagus River	Pleasant River	Tunk Stream
Ducktrap River	Orland River	Presumpscot River	Union River
East Machias River			

12. Wild and Scenic Rivers. Any activity that occurs in a component of, or within 0.25 mile up or downstream of, the main stem or tributaries of a river segment of the National Wild and Scenic River System, must be reviewed by the Corps under the procedures of Category 2 of this PGP regardless of size of impact. This condition applies to both designated Wild and Scenic Rivers and rivers designated by Congress as study rivers for possible inclusion while such rivers are in an official study status. The Corps will consult with the National Park Service (NPS) with regard to potential impacts of the proposed work on the resource values of the Wild and Scenic River. The culmination of this coordination will be a determination by the NPS and the Corps that the work: (1) may proceed as proposed; (2) may proceed with recommended conditions; or (3) could pose a direct and adverse effect on the resource values of the river and an individual permit is required. If

preapplication consultation between the applicant and the NPS has occurred whereby NPS has made a determination that the proposed project is appropriate for authorization under this PGP (with respect to Wild and Scenic River issues), this determination should be furnished to the Corps with submission of the application. (See NPS address on Page 16.) National Wild and Scenic Rivers System segments for Maine as of September 2005 include: Allagash River beginning at Telos Dam continuing to Allagash checkpoint at Eliza Hole Rapids, approximately 3 miles upstream of the confluence with the St. John River (length = 92 miles).

13. Federal Navigation Project. Any structure or work that extends closer to the horizontal limits of any Corps Federal Navigation Project (See Appendix B) than a distance of three times the project's authorized depth shall be subject to removal at the owner's expense prior to any future Corps dredging or the performance of periodic hydrographic surveys.

14. Navigation. (a) There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein. (b) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

15. 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 (U.S.) in the public interest; (c) damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit; (d) design or construction deficiencies associated with the permitted work; (e) damage claims associated with any future modification, suspension, or revocation of this permit.

Minimization of Environmental Impacts

16. Minimization. Discharges of dredged or fill material into waters of the United States, including wetlands, shall be avoided and minimized to the maximum extent practicable. Permittees may only fill those jurisdictional wetlands that the Corps authorizes to be filled and impact those wetlands that the Corps authorizes as secondary impacts. For coastal structures such as piers and docks, the height above the marsh at all points should be equal to or exceed the width of the deck. The height shall be measured from the marsh substrate to the bottom of the longitudinal support beam. This will help ensure sunlight reaches the area beneath the structure.

17. Heavy Equipment in Wetlands. Heavy equipment, other than fixed equipment (drill rigs, fixed cranes, etc.), working within wetlands shall not be stored, maintained or repaired in wetlands unless it is less environmentally damaging otherwise, and as much as possible shall not be operated there. Where construction requires heavy equipment operation in wetlands, the equipment shall

either have low ground pressure (<3 psi), or shall not be located directly on wetland soils and vegetation; it shall be placed on swamp or timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation. (See General Condition 18 below.) Other support structures that are less impacting and are capable of safely supporting equipment may be used with written Corps authorization. Similarly, not using mats during frozen, dry or other conditions may be allowed with written Corps authorization. An adequate supply of spill containment equipment shall be maintained on site.

NOTE: "Swamp mats" is a generic term used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes, and they include large timbers bolted or cabled together (timber mats). Corduroy roads, which are not considered to be swamp mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another.

18. Temporary Fill. Fill placed into waters of the U.S. (including wetlands) totaling greater than or equal to 4,300 SF (15,000 SF if a DEP Tier One Permit is issued) in total area (i.e., the sum of permanent and temporary fill areas) exceeds the Category 1 threshold and may not be discharged without written authorization from the Corps. When temporary fill is used (e.g., access roads, swamp mats, cofferdams), it shall be stabilized and maintained during construction in such a way as to prevent soil eroding into portions of waters of the U.S. where it is not authorized. Swamp or timber mats (see Gen.Cond. 17 above) are considered as temporary fill when they are removed immediately upon work completion. The area must be restored in accordance with Gen.Cond. 19.

- Unconfined temporary fill authorized for discharge into flowing water (rivers and streams) shall consist only of clean washed stone.
- Temporary fill authorized for discharge into wetlands shall be placed on geotextile fabric laid on the pre-construction wetland grade. (Swamp and timber mats are excluded from this requirement.)
- Temporary fill shall be removed as soon as it is no longer needed, and it shall be disposed of at an upland site and suitably contained to prevent subsequent erosion into waters of the U.S.
- Waters of the U.S. where temporary fill was discharged shall be restored (see Gen.Cond. 19).
- No temporary work shall drain a water of the U.S. by providing a conduit for water on or below the surface.

19. Restoration.

- Upon completion of construction, all disturbed wetland areas (the disturbance of these areas must be authorized) shall be stabilized with a wetland seed mix containing only plant species native to New England.
- The <u>introduction</u> or <u>spread</u> of invasive plant species in disturbed areas shall be controlled.
- In areas of authorized temporary disturbance, if trees are cut they shall be cut at ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.
- Wetland areas where permanent disturbance is not authorized shall be restored to their original condition and elevation, which under no circumstances shall be higher than the pre-construction elevation. Original condition means careful protection and/or removal of existing soil and vegetation, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized.

20. Coastal Bank Stabilization. Projects involving construction or reconstruction/maintenance of bank stabilization structures within Corps jurisdiction should be designed to minimize environmental effects, effects to neighboring properties, scour, etc. to the maximum extent practicable. For example, vertical bulkheads should only be used in situations where reflected wave energy can be tolerated. This generally eliminates bodies of water where the reflected wave energy may interfere with or impact on harbors, marinas, or other developed shore areas. A revetment is sloped and is typically employed to absorb the direct impact of waves more effectively than a vertical seawall. It typically has a less adverse effect on the beach in front of it, abutting properties and wildlife. For more information, see the Corps Coastal Engineering Manual (supersedes the Shore Protection Manual), located at http://chl.erdc.usace.army.mil. Select "Products/ Services," "Publications." Part 5, Chapter 7-8, a(2)c is particularly relevant.

21. Sedimentation and Erosion Control. Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, vegetated filter strips, geotextile silt fences, hay bales or other devices, shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. They shall be capable of preventing erosion, of collecting sediment, suspended and floating materials, and of filtering fine sediment. These devices must be removed in a timely manner upon completion of work, but not until the disturbed areas have been stabilized. The sediment collected by these devices shall be removed and placed at an upland location in a manner that will prevent its later erosion into a waterway or wetland. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date.

22. Waterway Crossings.
(a) All temporary and permanent crossings of waterbodies (waterways and wetlands) shall be suitably culverted, bridged, or otherwise designed to withstand and to prevent the restriction of high flows, to maintain existing low flows, and to not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction. (NOTE: Areas of fill and/or cofferdams must be included in total waterway/wetlands impacts to determine applicability of this PGP).
(b) Aquatic Life Movements. No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. For new permanent crossings, open bottom arches, bridge spans or embedded culverts are generally preferred over traditional culverts and should be installed when practicable. Coordination with the Corps is recommended for Category 1 projects when site constraints (e.g., placing footings) may render open bottom arches, bridge spans or embedded culverts impractical. In these cases, well-designed culverts may actually perform better. Culverts shall be installed with their inverts embedded below existing streambed grade to avoid "hanging" and associated impediments to fish passage. The "Design of Road Culverts for Fish Passage" provides design guidance and is available at www.nae.usace.army.mil, "Regulatory/Permitting," "Other."
(c) Culverts at waterbody crossings shall be installed in such a manner as to preserve hydraulic connectivity, at its present level, between the wetlands on either side of the road. The permittee shall take necessary measures to correct wetland damage due to lack of hydraulic connectivity.
(d) Culverts and bridges shall span the waterway a minimum of 1.2 times the bankfull width in probable fish bearing waterways to qualify as a Category 1 non-reporting activity. See "Design of Road Culverts for Fish Passage," referenced in (b) above, for information on bankfull width.

(e) Projects using slip lining (retrofitting an existing culvert by inserting a smaller diameter pipe), plastic pipes, and High Density Polyethylene Pipes (HDPP) are not allowed as non-reporting Category 1 activities, either as new work or maintenance activities.
(f) Waterbody crossings shall be culverted to at least municipal or State standards. The Maine DEP's stream crossing standards are at 06-096, Chapter 305: Permit by Rule, Section 10. Stream crossings (bridges, culverts and fords).
(g) Waterway crossings proposed by the Maine Dept. of Transportation should conform to the MDOT Fish Passage Policy and Design Guides.
(h) Construction equipment shall not cross streams without the use of temporary bridges, culverts, or cofferdams.
(i) For projects that otherwise meet the terms of Category 1, in-stream construction work shall be conducted during the low flow period July 15 - October 1 in any year. Projects that are not to be conducted during that time period are ineligible for Category 1 and shall be screened pursuant to Category 2, regardless of the waterway and wetland fill and/or impact area.

23. Discharge of Pollutants. All activities involving any discharge of pollutants into waters of the U.S. authorized under this PGP shall be consistent with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the CWA (33 USC 1251) and applicable State and local laws. If applicable water quality standards, limitations, etc., are revised or modified during the term of this PGP, the authorized work shall be modified to conform with these standards within six months of the effective date of such revision or modification, or within a longer period of time deemed reasonable by the District Engineer in consultation with the Regional Administrator of the EPA. Applicants may presume that State water quality standards are met with the issuance of a LURC or DEP NRPA permit.

24. Spawning Areas. Discharges of dredged or fill material, and/or suspended sediment producing activities in fish and shellfish spawning or nursery areas and amphibian and waterfowl breeding areas during spawning or breeding seasons shall be avoided. During all times of year, impacts to these areas shall be avoided or minimized to the maximum extent practicable.

25. Storage of Seasonal Structures. Coastal structures, such as pier sections and floats, that are removed from the waterway for a portion of the year (often referred to as seasonal structures) shall be stored in an upland location located above mean high water (MHW) and not in tidal wetlands. These seasonal structures may be stored on the fixed, pile-supported portion of the structure that is seaward of MHW. This is intended to prevent structures from being stored on the marsh substrate and the substrate seaward of MHW. Seasonal storage of structures in navigable waters, e.g., in a protected cove on a mooring, requires Corps and local harbormaster approval.

26. Environmental Functions and Values. The permittee shall make every reasonable effort to carry out the construction or operation of the work authorized herein in a manner so as to maintain as much as is practicable, and minimize any adverse impacts on existing fish, wildlife, and natural environmental functions and values.

27. Protection of Vernal Pools. Impacts to uplands in proximity (within 500 feet) to the vernal pools referenced in Appendix A - Definitions of Categories, shall be minimized to the maximum extent possible.

Procedural Conditions

28. Cranberry Development Projects. For cranberry development projects authorized under the PGP, the following conditions apply:

- If a cranberry bog is abandoned for any reason, the area must be allowed to revert to natural wetlands unless an Individual Permit is obtained from the Corps allowing the discharge of fill for an alternate use.
- No stream diversion shall be allowed under this permit.
- No impoundment of perennial streams shall be allowed under this permit.
- The project shall be designed and constructed to not cause flood damage on adjacent properties.

29. Inspections. The permittee shall allow the District Engineer (DE) or his authorized representative(s) to make periodic inspections at any time deemed necessary in order to ensure that the work is being performed in accordance with the terms and conditions of this permit. The DE may also require post-construction engineering drawings for completed work and post-dredging survey drawings for any dredging work.

30. Work Start Notification Form and Compliance Certification. Every permittee who receives a written Category 1 or 2 PGP authorization from the Corps must submit a 1) Work Start Notification Form (WSNF) two weeks before work commencement, and 2) signed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation (but not mitigation monitoring, which requires separate submittals). The Corps will forward the blank WSNF and Compliance Certification Form with the authorization letter. The Compliance Certification Form will include: (a) a statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions; (b) a statement that any required mitigation was completed in accordance with the permit conditions; and (c) the signature of the permittee certifying the completion of the work and mitigation.

31. Maintenance. The permittee shall maintain the work or structures authorized herein in good condition and in conformance with the terms and conditions of this permit. This does not include maintenance of dredging projects. Maintenance dredging is subject to the review thresholds in Appendix A and/or any conditions included in a written Corps authorization. Maintenance dredging includes only those areas and depths previously authorized and dredged. Some maintenance activities may not be subject to regulation under Section 404 in accordance with 33 CFR 323.4(a)(2).

32. Property Rights. This permit does not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations. If property associated with work authorized by the PGP is sold, the PGP authorization is automatically transferred to the new property owner. The new property owner should provide this information to the Corps in writing. No acknowledgement from the Corps is necessary.

33. Modification, Suspension, and Revocation. This permit may be either modified, suspended, or revoked, in whole or in part, pursuant to the policies and procedures of 33 CFR 325.7. Any such action shall not be the basis for any claim for damages against the United States.

34. Restoration. The permittee, upon receipt of a notice of revocation of authorization under this permit, shall restore the wetland or waterway to its former condition without expense to the United States and as directed by the Secretary of the Army or his authorized representative. If the permittee fails to comply with such a directive, the Secretary or his designee may restore the wetland or waterway to its former condition, by contract or otherwise, and recover the cost from the permittee.

35. Special Conditions. The Corps, independently or at the request of the Federal resource agencies, may impose other special conditions on a project authorized pursuant to this general permit that are determined necessary to minimize adverse environmental effects or based on any other factor of the public interest. Failure to comply with all conditions of the authorization, including special conditions, will constitute a permit violation and may subject the permittee to criminal, civil, or administrative penalties or restoration.

36. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under this permit and subsequently discovers that it has relied on false, incomplete, or inaccurate information provided by the permittee, the permit shall not be valid and the government may institute appropriate legal proceedings.

37. Abandonment. If the permittee decides to abandon the activity authorized under this general permit, unless such abandonment is merely the transfer of property to a third party, he/she must restore the area to the satisfaction of the District Engineer.

Duration of Authorization/Grandfathering:

38. Duration of Authorization. This PGP expires five years from the effective date listed at the top of Page 1. Activities authorized under Category 1 of this PGP that have commenced (i.e., are under construction) or are under contract to commence in reliance upon this PGP's authorization will remain authorized provided the activity is completed within 12 months of the PGP's expiration date. Activities authorized under Category 2 of this PGP will remain authorized in accordance with the project-specific date that the Corps provides to the permittee in the PGP authorization letter, unless:
(a) The PGP is either modified or revoked, or
(b) Discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 325.2 (e)(2).

39. Previously Authorized Activities.
(a) Activities completed under the authorizations of past PGPs that were in effect at the time the activity was completed will continue to be authorized by those PGPs.
(b) Completed projects that have received written verification or approval from the Corps, based on applications made to the Corps prior to issuance of this PGP or the previous nationwide permits, regional general permits, or letters of permission shall remain authorized as specified in each authorization.
(c) Activities authorized pursuant to 33 CFR Part 330.3 ("Activities occurring before certain dates") are not affected by this PGP.

VI. CONTACTS FOR MAINE PROGRAMMATIC GENERAL PERMIT:

1. FEDERAL

U.S. Army Corps of Engineers
Maine Project Office
675 Western Avenue #3
Manchester, Maine 04351
(207) 623-8367
(207) 623-8206 (fax)

Federal Endangered Species
U.S. Fish and Wildlife Service
Maine Field Office
1168 Main Street
Old Town, Maine 04468
(207) 827-5938
207-827-6099 (fax)

Federal Endangered Species & Essential Fish Habitat
National Marine Fisheries Service
One Blackburn Drive
Gloucester, Massachusetts 01939
(978) 281-9102
(978) 281-9301 (fax)

Wild and Scenic Rivers
National Park Service
North Atlantic Region
15 State Street
Boston, Massachusetts 02109
(617) 223-5203

Bridge Permits
Commander (obr)
First Coast Guard District
One South Street - Battery Bldg
New York, New York 10004
(212) 668-7021

2. STATE OF MAINE

Maine Department of Environmental Protection
(For State Permits & Water Quality Certifications)
Division of Land Resource Regulation
Bureau of Land and Water Quality
17 State House Station
Augusta, Maine 04333
(207) 287-2111

Southern Maine Regional Office
312 Canco Road
Portland, Maine 04103
(201) 822-6300

Eastern Maine Regional Office
106 Hogan Road
Bangor, Maine 04401
(207) 941-4570

Northern Maine Regional Office
1235 Central Drive - Skyway Park
Presque Isle, Maine 04769
(207) 764-0477

Maine Land Use Regulation Commission (LURC)
[call (800) 452-8711 for appropriate LURC office]
22 State House Station
Augusta, ME 04333-0022
(207) 287-2631
(207) 287-7439 (fax)

45 Radar Road
Ashland, ME 04732-3600
(207) 435-7963
(207) 435-7184 (fax)

Lakeview Drive
P.O. Box 1107
Greenville, ME 04441
(207) 695-2466
(207) 695-2380 (fax)

(For CZM Determinations)
State Planning Office
Coastal Program
184 State Street
State House Station 38
Augusta, Maine 04333
(207) 287-1009

(For Submerged Lands Leases)
Maine Department of Conservation
Bureau of Parks and Lands
22 State House Station
Augusta, Maine 04333
(207) 287-3061

191 Main Street
East Millinocket, ME 04430
(207) 746-2244
(207) 746-2243

(For Aquaculture Leases)
Maine Department of Marine Resources
P.O. Box 8
West Boothbay Harbor, Maine 04575
(207) 633-9500

3. HISTORIC PROPERTIES

Maine Historic Preservation Commission
State House Station 65
Augusta, Maine 04333-0065
(207) 287-2132
(207) 287-2335 (fax)

Aroostook Band of Micmacs
Attn: Mr. Williams Phillips, Chief
7 Northern Road
Presque Isle, Maine 04769
(207) 764-1972
(207) 764-7667 (fax)

Houlton Band of Maliseet Indians
Attn: Tribal Chief
88 Bell Road
Littleton, Maine 04730
(207) 532-4273, x215
(207) 532-2660 (fax)

Passamaquoddy Tribe of Indians
Pleasant Point Reservation
Attn: Tribal Council
P.O. Box 343
Perry, Maine 04667
(207) 853-2600
(207) 853-6039 (fax)

Passamaquoddy Tribe of Indians
Indian Township Reservation
Attn: Donald Soctomah, THPO
P.O. Box 301
Princeton, Maine 04668
(207) 796-2301
(207) 796-5256 (fax)

Penobscot Indian Nation
Indian Island Reservation
Attn: Ms. Bonnie Newsom, THPO
12 Wabanaki Way
Indian Island, Maine 04468
(207) 817-7471
(207) 817-7450 (fax)

4. ORGANIZATIONAL WEBSITES:

Army Corps of Engineers	www.nae.usace.army.mil (click "Regulatory/Permitting")
Corps of Engineers Headquarters	www.usace.army.mil (click "Services for the Public")
Environmental Protection Agency	www.epa.gov/owow/wetlands/
National Marine Fisheries Service	www.nmfs.noaa.gov
U.S. Fish and Wildlife Service	www.fws.gov
National Park Service	www.nps.gov/rivers/index.html
State of Maine	www.maine.gov
State of Maine -Aquaculture Guidelines	www.maine.gov/dmr/aquaculture/index.htm

for Christine J Gray 10-11-05
District Engineer Date

APPENDIX A: DEFINITION OF CATEGORIES

A. INLAND WATERS AND WETLANDS	**Inland Waters and Wetlands:** Waters that are regulated under Section 404 of the Clean Water Act, including rivers, streams, lakes, ponds and wetlands, and excluding Section 10 Navigable Waters of the U.S. The jurisdictional limits are the ordinary high water (OHW) mark in the absence of adjacent wetlands, beyond the OHW mark to the limit of adjacent wetlands when adjacent wetlands are present, and the wetland limit when only wetlands are present. For the purposes of this PGP, fill placed in the area between the mean high water (MHW) and the high tide line (HTL), and in the bordering and contiguous wetlands[1] to tidal waters are reviewed in the Navigable Waters section. (See II. Navigable Waters on the next page.)		
	CATEGORY 1	**CATEGORY 2**	**INDIVIDUAL PERMIT**
(a) NEW FILL/ EXCAVATION DISCHARGES	<4,300 SF inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, cleared or excavated). Fill area includes all temporary and permanent fill, and excavation discharges (except for incidental fallback). Swamp mats are considered as fill. [See General Condition (GC) 18.] Provided: • In-stream (e.g., rivers, streams, brooks, etc.) work limited to Jul 15 - Oct 1 • In-stream work of up to 4,300 SF of fill below OHW in waterways not designated as EFH for Atlantic salmon (see GC 11, Page 9) and performed in accordance with Maine Permit By Rule standards or a LURC permit. • Waterway crossings shall comply with GC 22. • Projects covered by a DEP Tier One permit with no cumulative impacts >15,000 SF in inland wetlands from previous permits, unauthorized work, and/or other state permits. • Subdivision fill complies with GC 5, Single and Complete Projects (see Page 7). This category excludes: • Dams, dikes or activities involving water diversions.[2] • Non-State approved sediment releases/sluices from dams. • Open trench excavation in flowing waters (see GC 22, Page 12).	4,300 SF to <3 acres inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, cleared or excavated). Fill area includes all temporary and permanent fill, and excavation discharges (except for incidental fallback). Swamp mats filling any area ≥4,300 SF are reviewed in Category 2. (See GC 18, Page 11.) Includes: In-stream work, including crossings (other than spanned crossing as described in Category 1) with any discharge of fill below ordinary high water in perennial waterways designated as EFH for Atlantic salmon. Time of year restrictions determined case-by-case. Projects with proactive restoration as a primary purpose with impacts of any area ≥4,300 SF. The Corps, in consultation with State & Federal agencies, must determine that net adverse effects are not more than minimal. Specific activities with impacts of any area ≥4,300 SF required to affect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Wetlands must be restored in place.	≥3 acres inland waterway and/or wetland fill and secondary impacts (e.g., areas drained, flooded, cleared or excavated). Fill area includes all temporary and permanent fill, and excavation discharges (except for incidental fallback).[5] EIS required by the Corps. In-stream work exceeding Category 2 limits.

	CATEGORY 1	CATEGORY 2	INDIVIDUAL PERMIT
	• Work in waters designated as EFH for Atlantic salmon (see GC 11, Page 9), unless the waterway is crossed with a span and footprints of the span abutments are outside ordinary high water with no more than 4,300 SF of associated wetland impact. • Work in Special Inland Waters or Wetlands[3] (vernal pools). • Work in special aquatic sites (SAS)[4] other than wetlands. • Work within ¼ mile of a Wild and Scenic River (see GC 12, Page 9). • Work on National Lands (see GC 9, Pg. 9). • Work affecting threatened or endangered species (see GC 10, Page 9) or EFH salmon migration (see GC 11, Page 9).		
(b) BANK STABILIZATION PROJECTS	Inland bank stabilization <100 FT long and <1 CY of fill per linear foot below OHW. Provided: • In-stream work limited to Jul 15 - Oct 1. • No work in special inland waters & wetlands[3] and SAS[4]. • No open trench excavation in flowing waters (see GC 22, Page 12). • No structures angled steeper than 3H:1V allowed. Only rough-faced stone or fiber roll revetments allowed. • No work affects threatened or endangered species (see GC 10, Page 9) or EFH (see GC 11, Page 9).	Inland bank stabilization ≥100 FT long and/or ≥1 CY of fill per linear foot, or any amount with fill in wetlands.	
(c) REPAIR AND MAINTENANCE OF AUTHORIZED FILLS	Repair or maintenance of existing, currently serviceable, authorized fills with no substantial expansion or change in use. *Conditions of the original authorization apply, however minor deviations in fill design allowed.[6]	Replacement of non-serviceable fills, or repair/maintenance of serviceable fill, with expansion <3 acres, or with a change in use.	Replacement of non-serviceable fill, or repair/maintenance of serviceable fill, with expansion ≥1 acre.

II. NAVIGABLE WATERS	**Navigable Waters of the United States**: Waters that are subject to the ebb and flow of the tide and Federally designated navigable rivers (the Penobscot River, Kennebec River, and Lake Umbagog) (Section 10 Rivers and Harbors Act of 1899). The jurisdictional limits are the mean high water (MHW) line in tidal waters and the ordinary high water (OHW) mark in non-tidal portions of the Federally designated navigable rivers. For the purposes of this PGP, fill placed in the area between the mean high water (MHW) and the high tide line (HTL), and in the bordering and contiguous wetlands[1] to tidal waters are also reviewed in this Navigable Waters section.		
	CATEGORY 1	**CATEGORY 2**	**INDIVIDUAL PERMIT**
(a) FILL	Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the United States, including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided the U.S. Coast Guard authorizes such discharges as part of the bridge permit. Causeways and approach fills are not included in this category and require Category 2 or Individual Permit authorization.	<1 acre fill and/or secondary waterway impacts (e.g., areas drained, flooded or cleared). Fill includes temporary and permanent waterway fill. Temporary fill or excavation <1 acre in SAS[4]. Permanent fill or excavation <1,000 SF in SAS[4]. Permanent fill and/or excavation ≥1,000 SF in SAS[5] when associated with a project with proactive restoration as a primary purpose. The Corps, in consultation with Federal & state agencies, must determine that net adverse effects are not more than minimal. Specific activities with impacts of any area required to affect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Wetlands must be restored in place.	≥1 acre waterway fill and/or secondary waterways or wetland impacts (e.g., areas drained, flooded or cleared). Fill includes temporary and permanent waterway fill. Temporary fill or excavation ≥1 acre in SAS[4]. Permanent fill or excavation ≥1,000 SF in SAS[4] other than as specified in Cat. 2 EIS required by the Corps.
(b) REPAIR AND MAINTENANCE WORK	Repair or maintenance of existing, currently serviceable, authorized structure or fill with no substantial expansion or change in use. *Conditions of the original authorization apply. Must be rebuilt in same footprint, however minor deviations in structure design allowed[6]	Replacement of non-serviceable structures and fills or repair/maintenance of serviceable structures or fills, with fill, replacement or expansion <1 acre, or with a change in use.	Replacement of non-serviceable structures and fills or repair/ maintenance of serviceable structures or fill, with replacement or expansion ≥1 acre.

	CATEGORY 1	CATEGORY 2	INDIVIDUAL PERMIT
(c) DREDGING AND ASSOCIATED DISPOSAL	Maintenance dredging for navigational purposes <1,000 cy with upland disposal. Includes return water from upland contained disposal area. Provided: • Proper siltation controls are used. • Dredging & disposal operation limited to November 1 - January 15. • No impact to special aquatic sites[4]. • No dredging in intertidal areas. • No work affects threatened or endangered species (see GC 10, Page 9) or EFH salmon migration (see GC 11, Page 9).	Maintenance dredging ≥1,000 CY, new dredging <25,000 CY, or projects not meeting Category 1. Includes return water from upland contained disposal areas. Provided: • Disposal includes 1) upland, 2) beach nourishment (above MHW) of any area provided dredging's primary purpose is navigation or sand is from an upland source and Corps, in consultation w/Federal and State agencies, determines the net adverse effects are not more than minimal; and 3) open water & confined aquatic disposal, if Corps, in consultation with Federal and State agencies, finds the material suitable.	Maintenance dredging and/or disposal (any amount) in or affecting a SAS[4]. See II(a) above for dredge disposal in wetlands or waters. New dredging ≥25,000 CY, or any amount in or affecting SAS[4]. Beach nourishment associated with dredging when the primary purpose is not navigation (i.e., aggregate/sand mining) or the material is from an upland source.
(d) MOORINGS	Private, non-commercial, non-rental, single-boat moorings authorized by the local harbormaster. Provided: • Not associated with any boating facility[7] • Not located in a Federal Navigation Project other than a Federal Anchorage. Moorings in Federal Anchorage not associated with a boating facility[7]. • No interference with navigation • Not located in vegetated shallows[8] • Within ¼ mile of the owner's residence or a public access point.[9] Minor relocation of previously authorized moorings and moored floats consistent with Harbormaster recommendations, provided it is also consistent with local regulations, is not located in vegetated shallows, and does not interfere with navigation.	Moorings associated with a boating facility[7]. Moorings that don't meet the terms in Category 1 and don't require an Individual Permit. Moorings located such that they, and/or vessels docked or moored at them, are within the buffer zone of the horizontal limits[10] of a Corps Federal Channel. (See Appendix B.) The buffer zone is equal to three times the authorized depth of that channel.	Moorings within the horizontal limits[10], or with moored vessels that extend, into the horizontal limits of a Federal Navigation Project (See App. B), except those in Federal Anchorages under Category 1. Note: Federal Navigation Projects include both Federal Channels and Federal Anchorages.

	CATEGORY 1	CATEGORY 2	INDIVIDUAL PERMIT
(e) STRUCTURES AND FLOATS	Reconfiguration of existing authorized structures or floats. Provided: • Structures not positioned over vegetated shallows[8] or salt marsh. • Floats supported off substrate at low tide. • No dredging, additional slips or expansion. • No work affects threatened or endangered species (see GC 10, Page 9) or EFH salmon migration (see GC 11, Page 9)..	Private structures or floats, including floatways/skidways, built to access waterway (seasonal and permanent) Expansions to existing boating facilities[7]. Compliance with the following is recommended, but not required: • Pile-supported structures <400 SF, with attached floats totaling ≤200 SF. • Bottom anchored floats ≤200 SF. • Structures are ≤4' wide and have at least a 1:1 height:width ratio[11]. • Floats supported above the substrate during all tides. • Structures & floats not located within 25' of any vegetated shallows[8]. • Moored vessels not positioned over SAS[4]. • No structure located within 25' of the riparian property boundary. • No structure extends across >25% of the waterway width at mean low water. • Not located within the buffer zone of the horizontal limits[10] of a Corps Federal Navigation Project (FNP) (See App. B). The buffer zone is equal to three times the authorized depth of that FNP.	Structures or floats, including floatways/skidways, located such that they and/or vessels docked or moored at them are within the horizontal limits of a Corps Federal Navigation Project (see App. B). Structures and floats associated with a new or previously unauthorized boating facility[7]. Note: Federal Navigation Projects include both Federal Channels and Federal Anchorages.
(f) MISCELLANEOUS	Temporary buoys, markers, floats, etc. for recreational use during specific events, provided they are removed within 30 days after use is discontinued. The placement of aids to navigation and regulatory markers which are approved by and installed in accordance with the requirements of the U.S. Coast Guard. (See 33 CFR part 66, Chapter I, subchapter C)."	Structures or work in or affecting tidal or navigable waters, that are not defined under any of the previous headings listed above. Includes, but is not limited to, utility lines, aerial transmission lines, pipelines, outfalls, boat ramps, floatways/skidways, bridges, tunnels and horizontal directional drilling activities seaward of the MHW line.	EIS required by the Corps. Shellfish/finfish (other than Atlantic salmon), or other aquaculture facilities with more than minimal individual and cumulative impacts to environmental resources or navigation. A 25' eelgrass set back is recommended.

	Oil spill clean-up temporary structures or fill. Fish/wildlife harvesting structures/fill (as defined by 33 CFR 330, App. A-4) Scientific measurement devices and survey activities such as exploratory drilling, surveying and sampling activitities. Does not include oil and gas exploration and fill for roads or construction pads. Shellfish seeding (brushing the flats[12]) projects. Provided: • No work in National Wildlife Refuges. • No work affects threatened or endangered species (see GC 10, Page 9) or EFH salmon migration (see GC 11, Page 9).	Shellfish/finfish (other than Atlantic salmon), or other aquaculture facilities with no more than minimal individual and cumulative impacts to environmental resources or navigation. A 25' eelgrass set back is recommended. Aquaculture guidelines are provided at: www.maine.gov/dmr/aquaculture/index.htm.	Aquaculture guidelines are provided at: www.maine.gov/dmr/aquaculture/index.htm.

[1] **Bordering and Contiguous Wetlands:** A bordering wetland is immediately next to its adjacent waterbody and may lie at, or below, the ordinary highwater mark (MHW in navigable waters) of that waterbody and is directly influenced by its hydrologic regime. Contiguous wetlands extend landward from their adjacent waterbody to a point where a natur or manmade discontinuity exists. Contiguous wetlands include bordering wetlands as well as wetlands that are situated immediately above the ordinary highwater mark and above th normal hydrologic influence of their adjacent waterbody. Note, with respect to the Federally designated navigable rivers, the wetlands bordering and contiguous to the tidally influenced portions of those rivers are reviewed under "II. Navigable Waters."

[2] **Water Diversions:** Water diversions are activities such as bypass pumping or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintaine within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions.

[3] **Special Inland Waters and Wetlands:** Vernal Pools - Temporary to permanent bodies of water occurring in shallow depressions that fill during the spring and fall and may dry during the summer. Vernal pools have no permanent or viable populations of predatory fish. Vernal pools provide the primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp, and provide habitat for other wildlife including several endangered and threatened species.

[4] **Special Aquatic Sites:** Includes wetlands and saltmarsh, mudflats, riffles and pools, and vegetated shallows.

[5] **IP Required:** The greater the impacts, the more likely an Individual Permit will be required. The Corps will determine the need for compensatory mitigation on a case-by-case basi

[6] **Maintenance:** Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards, which are necessary to make repair, rehabilitation, or replacement are permitted, provided the adverse environmental effects resulting from such repair, rehabilitatior or replacement are minimal. No seaward expansion for bulkheads or any other fill activity is considered Category 1 maintenance. Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

[7] **Boating Facilities:** Facilities that provide, rent, or sell mooring space, such as marinas, yacht clubs, boat clubs, boat yards, town facilities, dockominiums, etc.

[8] **Vegetated Shallows:** Subtidal areas that support rooted aquatic vegetation such as eelgrass

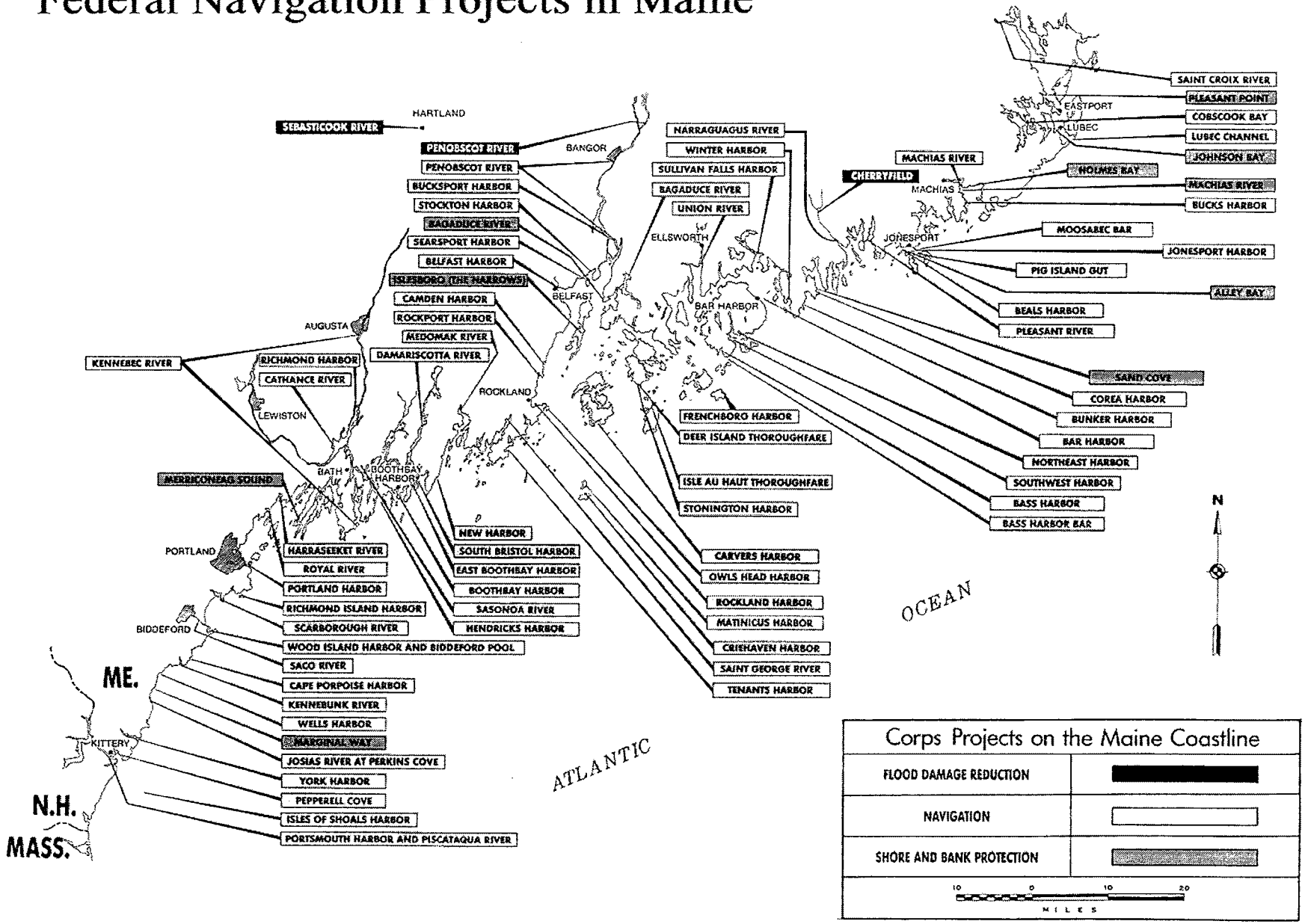
[9] **Mooring Location:** Cannot be at a remote location to create a convenient transient anchorage.

[10] **Horizontal Limits:** The outer edge of a Federal Navigation Project (FNP). Contact the Corps of Engineers for information on FNP's.

[11] **Structures:** The height of structures shall at all points be equal to or exceed the width of the deck. For the purpose of this definition, height shall be measured from the marsh substrate to the bottom of the longitudinal support beam.

[12] **Brushing the Flats:** The placement of tree boughs, wooden lath structure, or small-mesh fencing on mudflats to enhance recruitment of soft-shell clams (*Mya arenaria*).

Federal Navigation Projects in Maine



DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO:
ATTENTION OF:

MAINE PROGRAMMATIC GENERAL PERMIT (PGP)
AUTHORIZATION LETTER AND SCREENING SUMMARY

OFFICE OF ENVIRONMENTAL SERVICES
MAINE DEPT. OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333

CORPS PERMIT # NAE-2007-2062
CORPS PGP ID# 07-266
STATE ID# PBR

DESCRIPTION OF WORK:
Place fill below the ordinary high water line of the Kennebec River and in adjacent freshwater wetlands at Norridgewock, Maine in order to replace the Route 8/201A bridge. Approximately 3,125 s.f. (0.07 acres) of river bottom and wetland will be impacted by the project.

DOT PIN: 6900.01

LAT/LONG COORDINATES : 43.7168879° N 69.7978651° W USGS QUAD: NORRIDGEWOCK, ME

I. CORPS DETERMINATION:
Based on our review of the information you provided, we have determined that your project will have only minimal individual and cumulative impacts on waters and wetlands of the United States. **Your work is therefore authorized by the U.S. Army Corps of Engineers under the enclosed Federal Permit, the Maine Programmatic General Permit (PGP).**

You must perform the activity authorized herein in compliance with all the terms and conditions of the PGP [including any attached Additional Conditions and any conditions placed on the State 401 Water Quality Certification including any required mitigation]. Please review the enclosed PGP carefully, including the PGP conditions beginning on page 7, to familiarize yourself with its contents. You are responsible for complying with all of the PGP requirements; therefore you should be certain that whoever does the work fully understands all of the conditions. You may wish to discuss the conditions of this authorization with your contractor to ensure the contractor can accomplish the work in a manner that conforms to all requirements.

If you change the plans or construction methods for work within our jurisdiction, please contact us immediately to discuss modification of this authorization. This office must approve any changes before you undertake them.

Condition 38 of the PGP (page 15) provides one year for completion of work that has commenced or is under contract to commence prior to the expiration of the PGP on October 11, 2010. You will need to apply for reauthorization for any work within Corps jurisdiction that is not completed by October 11, 2011.

No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained. **This includes but is not limited to a Flood Hazard Development Permit issued by the town if necessary.** Also, this permit requires you to notify us before beginning work and allow us to inspect the project. Hence, you must complete and return the attached Work Start Notification Form(s) to this office no later than 2 weeks before the anticipated starting date. (For projects requiring mitigation, be sure to include the MITIGATION WORK START FORM).

II. STATE ACTIONS: PENDING [X] ISSUED[ ] DENIED [ ] DATE_____

APPLICATION TYPE: PBR: X TIER 1:____ TIER 2:____ TIER 3:____ LURC: ____ DMR LEASE: ____ NA: ____

III. FEDERAL ACTIONS:

JOINT PROCESSING MEETING: 6/28/07 LEVEL OF REVIEW: CATEGORY 1:____ CATEGORY 2: X

AUTHORITY: SEC 10____, 404____ 10/404 X, 103____

EXCLUSIONS: The exclusionary criteria identified in the general permit do not apply to this project.

ESSENTIAL FISH HABITAT (EFH): EFH PRESENT (Y) N (CIRCLE ONE)
IF YES: Based on the terms and conditions of the PGP, which are intended to ensure that authorized projects cause no more than minimal environmental impacts, the Corps of Engineers has preliminary determined that this project will not cause more than minimal adverse effects to EFH identified under the Magnunson-Stevens Fisheries Conservation and Management Act.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA NO, USF&WS NO, NMFS NO

If you have any questions on this matter, please contact my staff at 207-623-8367 at our Manchester, Maine Project Office.

Jay L. Clement
JAY L. CLEMENT
SENIOR PROJECT MANAGER
MAINE PROJECT OFFICE

for/ Rodman / a Stowe 7/17/07
FRANK J. DEL GIUDICE DATE
CHIEF, PERMITS & ENFORCEMENT BRANCH
REGULATORY DIVISION

US Army Corps
of Engineers
New England District

ADDITIONAL CONDITIONS FOR
DEPARTMENT OF THE ARMY
PROGRAMMATIC GENERAL PERMIT
NO. NAE-2007-2062

1. The permittee shall assure that a copy of this permit is at the work site whenever work is being performed and that all personnel performing work at the site of the work authorized by this permit are fully aware of the terms and conditions of the permit. This permit, including its drawings and any appendices and other attachments, shall be made a part of any and all contracts and sub-contracts for work which affects areas of Corps of Engineers' jurisdiction at the site of the work authorized by this permit. This shall be done by including the entire permit in the specifications for the work. If the permit is issued after construction specifications but before receipt of bids or quotes, the entire permit shall be included as an addendum to the specifications. 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 of Engineers jurisdiction.

2. Adequate sedimentation and erosion control devices, such as geotextile silt fences or other devices capable of filtering the fines involved, shall be installed and properly maintained to minimize impacts during construction. These devices must be removed upon completion of work and stabilization of disturbed areas. The sediment collected by these devices must also be removed and placed upland, in a manner that will prevent its later erosion and transport to a waterway or wetland.

3. All exposed soils resulting from the construction will be promptly seeded and mulched in order to achieve vegetative stabilization.

4. This authorization requires you to 1) notify us before beginning work so we may inspect the project, and 2) submit a Compliance Certification Form. You must complete and return the enclosed Work Start Notification Form(s) to this office at least two weeks before the anticipated starting date. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation (but not mitigation monitoring, which requires separate submittals).

5. 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.

Environmental Summary Sheet

PIN #: 6900.01 **Town: Norridgwock**
Environmental Office Contact: **Ben Condon (ben.condon@maine.gov) 592-0921**
Coordination & Permits Manager: Matt Steele **Date Submitted: 8/1/07**
Database/Projex ☒

☒ **Section 106 and Tribal Consultation**

Architectural Resources	PA ☐	Applicable☒	Approved ☒
Archeological Resources	PA ☐	Applicable☒	Approved ☒
Tribal Consultation	Tribal Letters Sent ☒		Approved ☐
Town & Local Hist. Society Contacted	Yes ☒Part of NEPA Process		No☐

☒ **4(f) and 6(f)**
Section 4(f) This process was resolved during the NEPA planning process.

☒ **FEMA** GIS Floodplains Checked ☒ N/A ☐ Applicable☐ Approved ☐

☒ **Maine Department of Inland Fisheries and Wildlife (MDIFW) Essential Habitat**
GIS Essential Habitats Checked ☒

Eagle Nest	N/A ☒	Applicable ☐	Approved ☐
Piping Plover	N/A ☒	Applicable ☐	Approved ☐
Roseate Tern	N/A ☒	Applicable☐	Approved ☐

☒ **Maine Department of Conservation/ Public Lands, Submerged Land Lease** N/A ☒ Applicable ☐

☒ **Land Use Regulation Commission (LURC)** Not Applicable ☒ No permit Required ☐

Notice	☐	Approved ☐
Permit	☐	Approved ☐

☒ **Maine Department of Environmental Protection (MDEP) Site Location of Development**
N/A ☒ Applicable ☐ Approved ☐

☒ **Maine Department of Environmental Protection (MDEP), Natural Resource Protection Act**

No permit required	☐	
Exempt	☐	(Must use erosion and sediment control and not block fish passage.)
PBR	☒	Approved ☒
Tier 1	☐	Approved ☐
Tier 2	☐	Approved ☐
Individual	☐	Approved ☐

☒ **Army Corps of Engineers (ACOE), Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.**

No permit required	☐	
Category 1-NR	☐	Approved ☐
Category 2	☒	Approved ☒
Category 3	☐	Approved ☐

NOTE: If project requires a Category 2 or 3 Permit from the ACOE, then the MaineDOT Resident **must** fill out a **"Work Start Notification Form"** and a **"Compliance Certification Form" (when project has been completed)** and send them to the address listed on the forms.

☒ **IN-STREAM TIMING RESTRICTIONS:** 105 Special Provision ☒ n/a ☐
Dates instream work is allowed: Anytime

☒ Special Provision 656, Erosion Control Plan ☒ Special Provision 203, Dredge Spec and/or Hazardous Waste Spec