

**Updated 11/10/10**

# **STATE PROJECT**

## BIDDING INSTRUCTIONS

### FOR ALL PROJECTS:

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

#### For a Paper Bid:

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

#### For an Electronic Bid:

- a) a completed Bid using Expedite® software and submitted via the Bid Express™ web-based service, b) an electronic Bid Guaranty (if required) or a faxed copy of a Bid Bond (with original to be delivered within 72 hours), and c) any other Certifications or Bid requirements listed in the Bid Documents as due by Bid opening.
3. Include prices for all items in the Schedule of Items (excluding non-selected alternates).
4. Bid Guaranty acceptable forms are:
  - a) a properly completed and signed Bid Bond on the Department's prescribed form (or on a form that does not contain any significant variations from the Department's form as determined by the Department) for 5% of the Bid Amount or
  - b) an Official Bank Check, Cashier's Check, Certified Check, U.S. Postal Money Order or Negotiable Certificate of Deposit in the amount stated in the Notice to Contractors or
  - c) an electronic bid bond submitted with an electronic bid.
5. If a paper Bid is to be sent, Federal Express overnight delivery is suggested as the package is delivered directly to the DOT Headquarters Building located at 16 Child Street in Augusta. Other means, such as U.S. Postal Service's Express Mail has proven not to be reliable.

### IN ADDITION, FOR FEDERAL AID PROJECTS:

6. Complete the DBE Proposed Utilization form, and submit with your bid. If you are submitting your bid electronically, you must FAX the form to (207) 624-3431.

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

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

# NOTICE

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

Prospective bidders, subcontractors or suppliers who wish to download a copy of the bid package and receive a courtesy notification of project specific bid amendments, must provide an email address to Diane Barnes or David Venner at the MDOT Contracts mailbox at: [MDOT.contracts@maine.gov](mailto: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](mailto:Larry.Childs@maine.gov).

# NOTICE

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

Bid Enclosed - Do Not Open

PIN:

Town:

Date of Bid Opening:

Name of Contractor with mailing address and telephone number:

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

Double Envelope: Bid Enclosed

PIN:

Town:

Date of Bid Opening:

Name of Contractor:

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

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

Bid Enclosed: Do Not Open

PIN:

Town:

Name of Contractor:

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

**KNOW ALL MEN BY THESE PRESENTS THAT** \_\_\_\_\_

\_\_\_\_\_, of the City/Town of \_\_\_\_\_ and State of \_\_\_\_\_

as Principal, and \_\_\_\_\_ as Surety, a

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

Business in \_\_\_\_\_ and hereby held and firmly bound unto the Treasurer of

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

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

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

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

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

\_\_\_\_\_ and if the Department shall accept said bid

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

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

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

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

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

force, and effect.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_

WITNESS:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

WITNESS

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PRINCIPAL:

By \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

SURETY:

By \_\_\_\_\_

By: \_\_\_\_\_

Name of Local Agency: \_\_\_\_\_

# NOTICE

## Bidders:

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



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 Full Depth Reclamation with Stabilization and Hot Mix Asphalt Overlay in the town of Harpswell" will be received from contractors at the Reception Desk, Maine DOT Building, Capitol Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on April 6, 2011 and at that time and place publicly opened and read. Bids will be accepted from all bidders. The lowest responsive bidder must have completed, or successfully complete, a Highway Construction or Paving Project, or project specific prequalification to be considered for the award of this contract. **We now accept electronic bids for those bid packages posted on the bidx.com website. Electronic bids do not have to be accompanied by paper bids. Please note: the Department will accept a facsimile of the bid bond; however, the original bid bond must then be received at the MDOT Contract Section within 72 hours of the bid opening.** Until further notice, dual bids (one paper, one electronic) will be accepted, with the paper copy taking precedence.

Description: PIN 013043.00

Location: In Cumberland County, project is located on Cundy's Harbor Road, beginning 0.083 mi. north of Grover Lane and extending southerly 1.25 mi. to 0.077 mi. south of Bethel Point Road.

Outline of Work: Full Depth Reclamation with Stabilization and Hot Mix Asphalt Overlay, and other incidental work.

**The basis of award will be a combination of Section 1 and the contractor chosen alternative (Section 2 or 3.)**

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](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 **Scott Bickford** 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.

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 Scarborough. 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. Bid Book \$10 (\$13 by mail), payment in advance, all non-refundable.

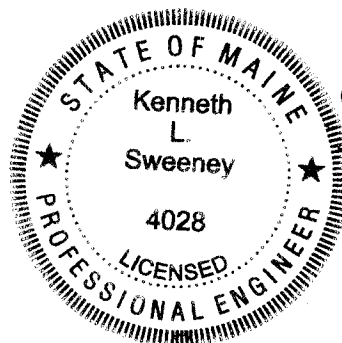
Each Bid must be made upon blank forms provided by the Department and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of **\$20,000** payable to Treasurer, 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 State Laws.

All work shall be governed by "State of Maine, Department of Transportation, Standard Specifications, Revision of December 2002", price \$10 [\$13 by mail], and Standard Details, Revision of December 2002, price \$20 [\$25 by mail]. Standard Detail updates can be found at [http://www.maine.gov/mdot/contractor-consultant-information/contractor\\_cons.php](http://www.maine.gov/mdot/contractor-consultant-information/contractor_cons.php)

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

Augusta, Maine  
March 16, 2011



A handwritten signature in black ink that reads "Kenneth L. Sweeney".

KENNETH L. SWEENEY P. E.  
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)

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 013043.00

PROJECT(S): 13043.00

CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
SECTION 0001 INITIAL GROUP						
0010	204.20 ADD SHOULDER AGGREGATE TO EXISTING SHOULDER, PLAN QUANTITY	SY	4400.000			
0020	403.208 HOT MIX ASPHALT 12.5 MM HMA SURFACE	T	1440.000			
0030	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	T	170.000			
0040	403.213 HOT MIX ASPHALT 12.5 MM BASE	T	1440.000			
0050	409.15 BITUMINOUS TACK COAT - APPLIED	G	1000.000			
0060	411.10 UNTREATED AGGREGATE SURFACE COURSE (TRUCK MEASURE)	CY	80.000			
0070	627.733 4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	LF	6600.000			
0080	627.76 TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW	LUMP		LUMP		
0090	652.34 CONE	EA	60.000			
0100	652.35 CONSTRUCTION SIGNS	SF	200.000			

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 013043.00

PROJECT(S): 13043.00

CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0110	652.36 MAINTENANCE OF TRAFFIC CONTROL DEVICES	28.000 CD				
0120	652.38 FLAGGER	900.000 HR				
0130	659.10 MOBILIZATION	LUMP	LUMP			
SECTION 0001 TOTAL						
SECTION 0002 PAVEMENT OPTION 1 ALT GROUP PA1						
0140	308.36 FULL DEPTH RECYCLED PAVEMENT WITH CEMENT	16500.000 SY				
SECTION 0002 TOTAL						
SECTION 0003 PAVEMENT OPTION 2 ALT GROUP PA2						
0150	309.36 FULL DEPTH REC PAVEMENT W/FOAM ASPHALT 6 INCH DEPTH	16500.000 SY				
SECTION 0003 TOTAL						
TOTAL BID						

## CONTRACT AGREEMENT, OFFER & AWARD

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

\_\_\_\_\_ a corporation or other legal entity organized under the laws of the State of \_\_\_\_\_, with its principal place of business located at \_\_\_\_\_

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

### **A. The Work.**

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN No. **013043.00**, for the **Full Depth Reclamation with Stabilization and Hot Mix Asphalt Overlay** in the town of **Harpwell**, County of **Cumberland**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

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

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

### **B. Time.**

The Contractor agrees to complete all Work, except warranty work, on or before **May 28, 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 \_\_\_\_\_

\_\_\_\_\_ Performance Bond and Payment Bond each being 100% of the amount of this Contract.

**Section 0001 \$** \_\_\_\_\_

**Section 0002 \$** \_\_\_\_\_

**Section 0003 \$** \_\_\_\_\_

**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 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 No. 013043.00, for the Full Depth Reclamation with Stabilization and Hot Mix Asphalt Overlay in the town of Harpswell, County of Cumberland,** State of Maine, on which bids will be received until the time specified in the “Notice to Contractors” do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached “Schedule of Items”.

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

As Offeror also agrees:

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

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

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

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

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

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

CONTRACTOR

\_\_\_\_\_

Date

\_\_\_\_\_  
(Signature of Legally Authorized Representative  
of the Contractor)

\_\_\_\_\_

Witness

\_\_\_\_\_  
(Name and Title Printed)

**G. Award.**

Your offer is hereby accepted.  
documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

\_\_\_\_\_

Date

\_\_\_\_\_  
By: David Bernhardt, Commissioner

\_\_\_\_\_

Witness



## **CONTRACT AGREEMENT, OFFER & AWARD**

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

\_\_\_\_\_ a corporation or other legal entity organized under the laws of the State of \_\_\_\_\_, with its principal place of business located at \_\_\_\_\_

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

### **A. The Work.**

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN No. **013043.00**, for the **Full Depth Reclamation with Stabilization and Hot Mix Asphalt Overlay** in the town of **Harpwell**, County of **Cumberland**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

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

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

### **B. Time.**

The Contractor agrees to complete all Work, except warranty work, on or before **May 28, 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 \_\_\_\_\_

\_\_\_\_\_ Performance Bond and Payment Bond each being 100% of the amount of this Contract.

**Section 0001 \$** \_\_\_\_\_

**Section 0002 \$** \_\_\_\_\_

**Section 0003 \$** \_\_\_\_\_

**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 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 No. 013043.00, for the Full Depth Reclamation with Stabilization and Hot Mix Asphalt Overlay in the town of Harpswell, County of Cumberland,** State of Maine, on which bids will be received until the time specified in the “Notice to Contractors” do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached “Schedule of Items”.

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

As Offeror also agrees:

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

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

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

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

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

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

CONTRACTOR

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Signature of Legally Authorized Representative  
of the Contractor)

\_\_\_\_\_  
Witness

\_\_\_\_\_  
(Name and Title Printed)

**G. Award.**

Your offer is hereby accepted.  
documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

\_\_\_\_\_  
Date

\_\_\_\_\_  
By: David Bernhardt, Commissioner

\_\_\_\_\_  
Witness

## CONTRACT AGREEMENT, OFFER & AWARD

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

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

**A. The Work.**

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

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

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

**B. Time.**

The Contractor agrees to complete all Work, except warranty work, on or before November 15, 2006. Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

**C. Price.**

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

**D. Contract.**

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

**E. Certifications.**

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

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

**F. Offer.**

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

**PIN 1234.00 South Nowhere, Hot Mix Asphalt Overlay**,

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

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

As Offeror also agrees:

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

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

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

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan with their bid.

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

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

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

\_\_\_\_\_  
Date

\_\_\_\_\_  
**(Witness Sign Here)**  
Witness

\_\_\_\_\_  
**(Sign Here)**  
(Signature of Legally Authorized Representative of the Contractor)

\_\_\_\_\_  
**(Print Name Here)**  
(Name and Title Printed)

CONTRACTOR

**G. Award.**

Your offer is hereby accepted. documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

\_\_\_\_\_  
Date

\_\_\_\_\_  
By: David Bernhardt, Commissioner

\_\_\_\_\_  
(Witness)



BOND # \_\_\_\_\_

CONTRACT PERFORMANCE BOND  
(Surety Company Form)

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

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

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

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

WITNESSES:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly .....

Print Name Legibly .....

SURETY:

Signature .....

.....

Print Name Legibly .....

Print Name Legibly .....

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

.....  
.....  
.....

ADDRESS .....  
.....  
.....

TELEPHONE.....

.....

BOND # \_\_\_\_\_

CONTRACT PAYMENT BOND  
(Surety Company Form)

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

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

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

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

WITNESS:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly .....

Print Name Legibly .....

SURETY:

Signature.....

.....

Print Name Legibly .....

Print Name Legibly .....

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

.....

ADDRESS .....

.....

.....

TELEPHONE .....

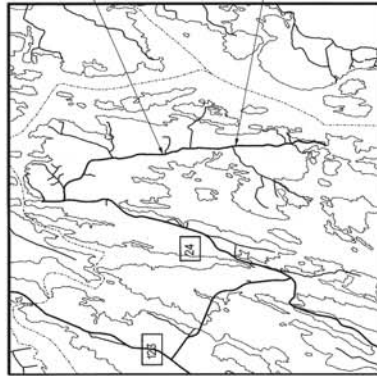
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STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



**HARPSWELL**  
CUMBERLAND COUNTY  
CUNDY'S HARBOR ROAD  
PIN 13043.00

PROJECT LENGTH : 1.250 MILES  
HIGHWAY RECONSTRUCTION



BEGIN PIN 13043.00  
STA. 10+00  
RLUM-270

END PIN 13043.00  
STA. 76+00  
RLUM-45

GROVER LANE  
STA. 14+40

DINGLEY ISLAND ROAD  
STA. 35+96

BEGIN PIN 13043.00  
STA. 10+00  
RLUM-270

BETHEL POINT ROAD  
STA. 7+93

END PIN 13043.00  
STA. 76+00  
RLUM-45

TRAFFIC DATA

Current (2011) AADT	1750
Future (2023) AADT	1960
DHV - % of AADT	12%
Design Hour Volume	235
% Heavy Trucks (ADT)	5%
% Heavy Trucks (DHV)	5%
Directional Distribution (DHV)	54%
18 kip Equivalent P 2.0	86
18 kip Equivalent P 2.5	82
Design Speed (mph)	45
Functional Class:	MIN. COL.

NOT TO SCALE

13043.00 PIN 13043.00

PROGRAM AREA: RURAL ROUTE INITIATIVE  
REGION I  
SCOPE OF WORK: RECONSTRUCTION

SHEET NUMBER

1

OF 1

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER	<i>[Signature]</i>	5/7/11
CHIEF ENGINEER	<i>[Signature]</i>	5/8/11

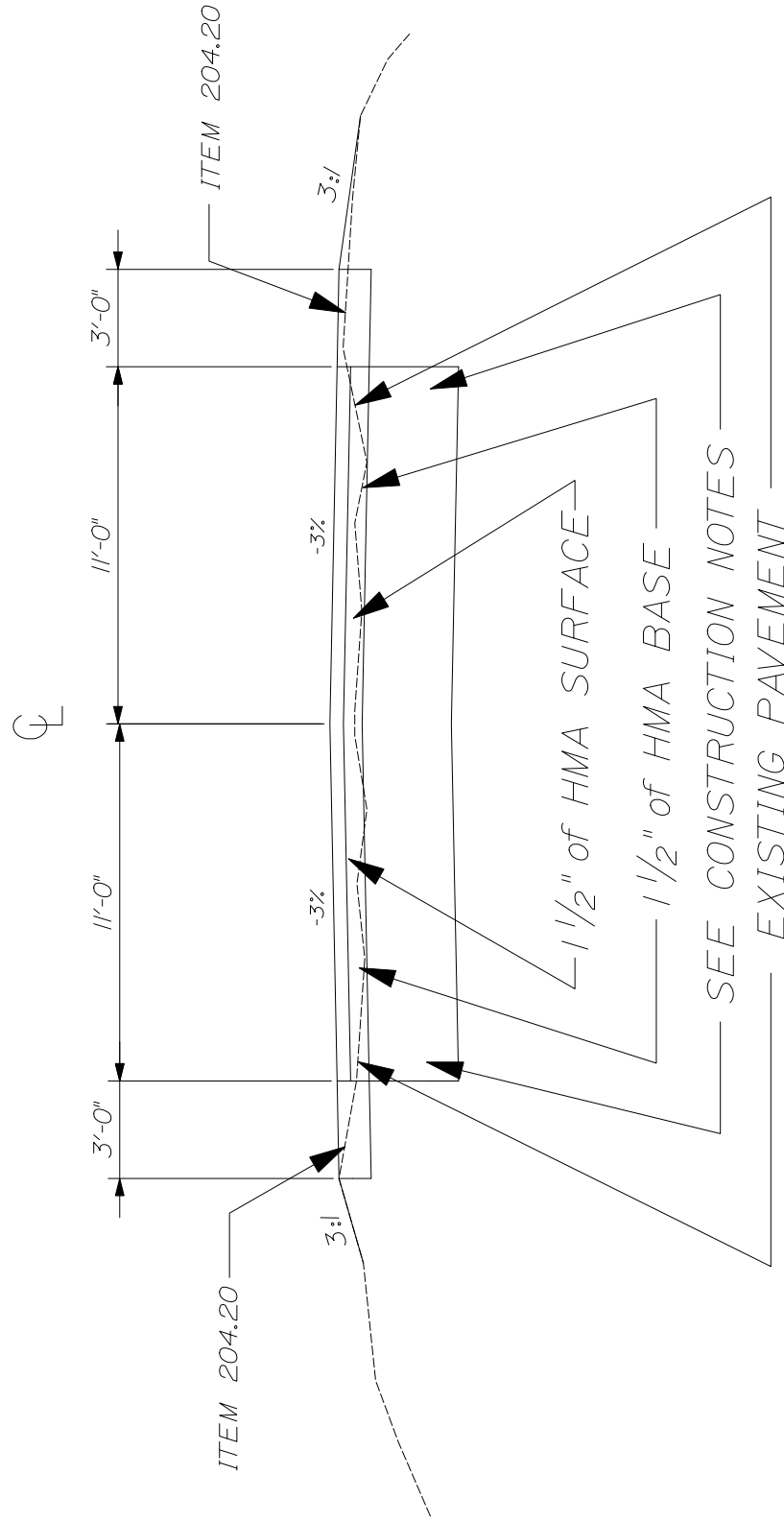


PROJECT INFORMATION	PROGRAM	PROJECT NUMBER	13043.00
PROJECT MANAGER	R. HOUGH	P.E. NUMBER	9318
DESIGNER	C. CALAMIT	DATE	5/7/11
CONTRACTOR			
PROJECT RESIDENT			
PROJECT CONSTRUCTION DATE			

HARPSWELL CUNDY'S HARBOR ROAD	TITLE SHEET
----------------------------------	-------------

HOT MIX ASPHALT OVERLAY  
 FULL DEPTH RECYCLED PAVEMENT  
 W/ CEMENT OR FOAMED ASPHALT

NORMAL SECTION



NOT TO SCALE

SHEET NUMBER  
 1  
 OF 2

HARPSWELL  
 CUNDY'S HARBOR ROAD  
 TYPICAL SECTIONS

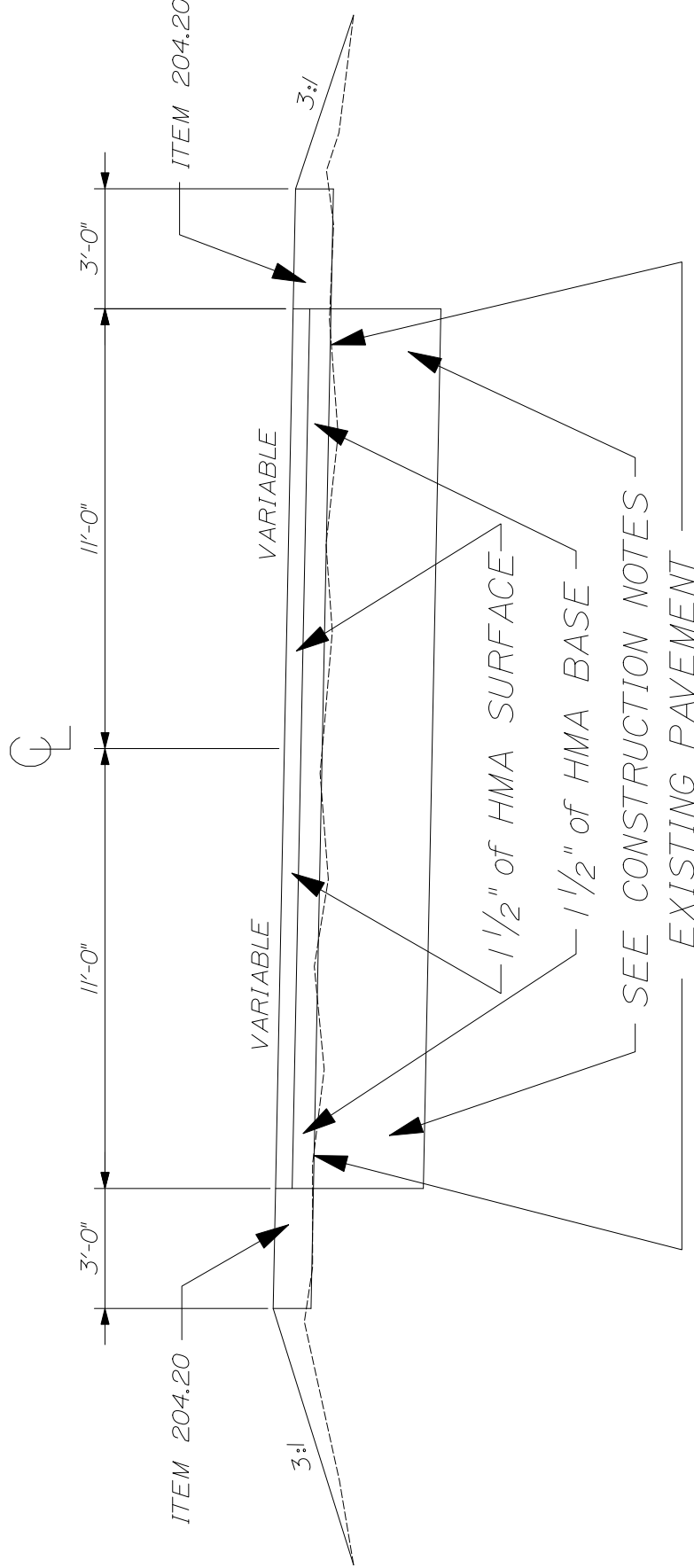
PROJ. NUMBER	R. HOUR	BY	DATE
DESIGN-REVIEWED			
DESIGN-CHECKED			
DESIGN-CREATED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

P.E. NUMBER	SIGNATURE
DATE	

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	13043.00
PIN	13043.00
HIGHWAY PLANS	

HOT MIX ASPHALT OVERLAY  
 FULL DEPTH RECYCLED PAVEMENT  
 W/ CEMENT OR FOAMED ASPHALT

SUPERELEVATED SECTION



NOT TO SCALE

SHEET NUMBER  
 2  
 OF 2

HARPSWELL  
 CUNDY'S HARBOR ROAD  
 TYPICAL SECTIONS

PROJ. NUMBER	R. HOURD	BY	DATE
DESIGN-REVIEWED		SIGNATURE	
DESIGN-CHECKED		P.E. NUMBER	
REVISIONS 1		DATE	
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
 13043.00  
 PIN  
 13043.00  
 HIGHWAY PLANS

### Project Stationing

<u>Left Side</u>	<u>RLM</u>	<u>Station</u>	<u>Right Side</u>
End Project		72+70	End Project
	1.52	71+93	Bethel Pt Rd
Pole 64		71+25	
Pole 63 1/2		69+56	
Pole 63		68+29	
		67+25	Cross Pipe
Pole 62		65+02	
		63+00	Pole 61
		60+82	Cross Pipe
		59+64	Pole 60
		56+82	Pole 59
Pole 58		54+90	
Pole 57		52+92	
Pole 56		50+25	
Pole 55.5		48+57	
Upper Spruce Shore		47+71	
Pole 55		47+37	
Pole 54		44+44	
Pole 53		41+65	
Pole 52		38+49	
Pole 51		36+04	Pole 51S
Dingley Island Rd		35+86	
		34+89	Cross Pipe
Pole 50 1/2		34+59	
		32+05	Pole 50
Cross Pipe		26+95	Cross Pipe
		26+09	Catlin Shore Rd
		24+72	Pole 47
Cross Pipe		23+68	Cross Pipe
		21+88	Pole 46
Pole 45.11		21+07	
Pole 45.1		20+06	
		19+96	Pole 90/45
		18+62	Pole 44 1/2
		16+64	Pole 44
Pole 44.1		16+45	

**Project Stationing**

<u>Left Side</u>	<u>RLM</u>	<u>Station</u>	<u>Right Side</u>
		16+11	Wissmans Pt Rd
		15+50	Pole 43 1/2
Grover Lane		14+40	
		13+80	Pole 43
Pole 43S		13+75	
		12+21	Pole 42 1/2
		10+21	Pole 42
Project Begin	2.53	10+00	Project Begins

## Construction Notes

**204.20 ADD SHOULDER AGGREGATE, PLAN QUANTITY**

Item will be used for shoulders left & right, entire length of project.

**OPTION 1**

**308.36 FULL DEPTH RECYCLED PAVEMENT (W/CEMENT MAINLINE ONLY)**

<u>Station</u>	<u>To</u>	<u>Station</u>	<u>Length(Ft)</u>	<u>Width(Ft)</u>
10+00		76+00	6600	22

**OPTION 2**

**309.36 FULL DEPTH RECYCLED PAVEMENT (W/FOAMED ASPHALT 6" DEPTH)**

<u>Station</u>	<u>To</u>	<u>Station</u>	<u>Length(Ft)</u>	<u>Width(Ft)</u>
10+00		76+00	6600	22

**MaineDOT estimates 12" existing pavement depth  
Contractor shall verify pavement depth.**

**411.10 UNTREATED AGGREGATE SURFACE COURSE, TRUCK MEASURE**

Item will be used to back drives.

<u>Description</u>	<u>Quantity</u>
Gravel Drives	14
Paved Drives	4
Paved Commercial Drives	1



**GENERAL NOTES**

1. All waste material not used on the project shall be disposed of off the project in approved waste areas. The disposal of all waste (including but not limited to obtaining waste permits, grading, mulching and seeding) shall be considered incidental to the contract.
2. Any damage to the slopes caused by the Contractor's equipment, personnel, or operation shall be repaired to the satisfaction of the Resident. All work, equipment and materials required to make repairs shall be at the Contractor's expense.
3. Any necessary cleaning of existing pavement prior to paving shall be incidental to the related paving items.
4. Stations referenced are approximate.
5. All work shall be done in accordance with the Maine Department of Transportation's Best Management Practices for Erosion Control & Sedimentation Control, February, 2008.
6. Contractor will final stripe the project. The Contractor is responsible for transferring the existing striping pattern to the surface course.
7. MaineDOT will provide Digsafe and approach signing. Work Area signing responsibility of the Contractor and paid under appropriate contract items.
8. MaineDOT will provide Soil Erosion and Water Pollution Control.

NOTICE TO CONTRACTORS - PREFERRED EMPLOYEES

Sec. 1303. Public Works; minimum wage

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

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

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

Title of Project: Harpswell PIN 13043 Highway Reconstruction Cundy's Harbor Road

Location of Project: Harpswell, Cumberland County

**2011 Fair Minimum Wage Rates  
 Highway & Earthwork Cumberland County**

<u>Occupation Title</u>	<u>Minimum Wage</u>	<u>Minimum Benefit</u>	<u>Total</u>	<u>Occupation Title</u>	<u>Minimum Wage</u>	<u>Minimum Benefit</u>	<u>Total</u>
Asphalt Raker	\$14.00	\$0.43	\$14.43	Hot Top Plant Operator	\$18.93	\$6.37	\$25.30
Backhoe Loader Operator	\$16.00	\$2.52	\$18.52	Ironworker - Structural	\$20.37	\$5.67	\$26.04
Blaster	\$16.00	\$4.84	\$20.84	Lather	\$11.00	\$0.00	\$11.00
Boom Truck (Truck Crane) Op	\$17.00	\$2.04	\$19.04	Laborers (Incl.Helpers & Tenders)	\$12.00	\$0.85	\$12.85
Bulldozer Operator	\$18.00	\$2.75	\$20.75	Laborer - Skilled	\$16.00	\$1.54	\$17.54
Cable Splicer	\$13.71	\$0.00	\$13.71	Loader Operator - Front-End	\$16.10	\$2.38	\$18.48
Cable Puller	\$25.00	\$2.19	\$27.19	Mechanic, Maintenance	\$18.00	\$2.30	\$20.30
Carpenter	\$18.00	\$1.99	\$19.99	Painter	\$14.25	\$0.00	\$14.25
Cement Mason/Finisher	\$17.50	\$0.92	\$18.42	Paver - Bituminous	\$17.75	\$1.75	\$19.50
Concrete Mixing Plant Operator	\$17.93	\$6.44	\$24.37	Pipelayer	\$22.67	\$11.92	\$34.59
Concrete Pump Operator	\$26.75	\$4.37	\$31.12	Pump Installer	\$17.00	\$2.54	\$19.54
Crane Operator <15 Tons	\$20.00	\$4.02	\$24.02	Reclaimer Operator	\$18.38	\$3.42	\$21.80
Crane Operator =>15 Tons)	\$21.25	\$6.30	\$27.55	Roller Operator - Earth	\$12.00	\$2.94	\$14.94
Crusher Plant Operator	\$18.50	\$5.86	\$24.36	Roller Operator - Pavement	\$15.38	\$2.04	\$17.42
Driller - Rock	\$16.25	\$5.13	\$21.38	Screed Operator	\$18.38	\$5.09	\$23.47
Earth Auger Operator	\$17.25	\$1.06	\$18.31	Stone Mason	\$21.25	\$0.00	\$21.25
Electrician - Licensed	\$23.06	\$6.05	\$29.11	Truck Driver - Light	\$15.00	\$2.35	\$17.35
Excavator Operator	\$18.00	\$2.31	\$20.31	Truck Driver - Medium	\$14.35	\$0.50	\$14.85
Fence Setter	\$13.75	\$0.90	\$14.65	Truck Driver - Heavy	\$14.00	\$1.61	\$15.61
Flagger	\$14.50	\$5.80	\$20.30	Truck Driver - Tractor Trailer	\$17.90	\$3.49	\$21.39
Grader/Scraper Operator	\$16.75	\$2.77	\$19.52	Truck Driver - Mixer (Cement)	\$13.55	\$5.60	\$19.15
Hgway Wrkr/Guardrail Inst	\$19.43	\$3.91	\$23.34				

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

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

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

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

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

Determination No: HI-002-2011

A true copy

Filing Date: January 4, 2011

Attest: 

Expiration Date: 12-31-2011

William A. Peabody  
 Director  
 Bureau of Labor Standards

**SPECIAL PROVISIONS**  
**SECTION 104**  
**Utilities**

**MEETING**

A Pre-construction Utility Conference, as defined in Subsection 104.4.6 of the Standard Specifications **is not** required.

**GENERAL INFORMATION**

These Special Provisions outline the arrangements that have been made by the Department for utility and/or railroad work to be undertaken in conjunction with this project. The following list identifies all known utilities or railroads having facilities presently located within the limits of this project or intending to install facilities during project construction

**Overview:**

<b>Utility/Railroad</b>	<b>Aerial</b>	<b>Underground</b>
Central Maine Power Company	X	
Time Warner Cable	X	
Fairpoint	X	

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

All utility crossings over highways will provide not less than 18 feet vertical clearance over existing ground in cut or over finished grade in fill, during construction of this project.

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

The Contractor shall plan and schedule his work in such a manner that the utilities that are located on this project will not be harmed, damaged or impacted in any way. The Contractor and Utility will coordinate and communicate their work plans in an effort not to interfere with each other's progress or the completion of the project.

### **AERIAL**

Aerial Utility adjustments are underway as part of this project. There are several poles that are being moved away from centerline to comply with our Policy. The department does not anticipate any conflict to the Contractor, their paving operation, and these pole moves. Contractor is required to check, prior to start of construction, to make sure no conflict exist with their paving operations. If not yet moved, Contractor shall notify CMP on their status. After construction all above ground utility locations (hydrants, poles, guys, etc.) will be reviewed for compliance with the Department's Above Ground Pole Policy following the completion of the paving operation. Any above ground utility locations not meeting the Department's Above Ground Pole Policy will require relocation to the proper offset by the utility.

**Special Note to Contractor:** Depending on construction methods and machines to be used the Contractor will need to contact Central Maine Power for covering, disconnect of power line and/or holding of poles if 10 foot clear area or excavation safety will be compromised. Temporary utility adjustments are **not** anticipated. If temporary relocation becomes necessary, the Contractor shall be responsible for such moves and sufficient time.

### **UTILITY SIGNING**

Any utility working within the construction limits of this project shall ensure that the traveling public is adequately protected at all times. All work areas shall be signed, lighted, and traffic flaggers employed as determined by field conditions. All traffic controls shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, as issued by the Federal Highway Administration.

### **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.

Town: **Harpwell, Cundy Harbor**  
Project: **PIN 13043.00**  
Date: **December 22, 2010**

**DIG SAFE**

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

**MAINTAINING UTILITY LOCATION MARKINGS**

The Contractor will be responsible for maintaining the buried utility location markings following the initial locating by the appropriate utility or their designated representative.

**THE CONTRACTOR SHALL PLAN AND CONDUCT HIS WORK ACCORDINGLY.**

The following utilities are known to be located on this project:

<b>Central Maine Power Company</b>	Gary Crabtree	791-8025
<b>Time Warner Cable</b>	Don Johnson	939-3315
<b>Fairpoint</b>	Marty Pease	797-1119

Project No. 013043.00

**SPECIAL PROVISION 105**  
**CONSTRUCTION AREA**

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

- (a) The section of highway under construction in Cumberland County, Project No. 013043.00 is located on Cundy's Harbor Road, beginning 0.083 mi. north of Grover Lane and extending southerly 1.25 mi. to 0.077 mi. south of Bethel Point Road.

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

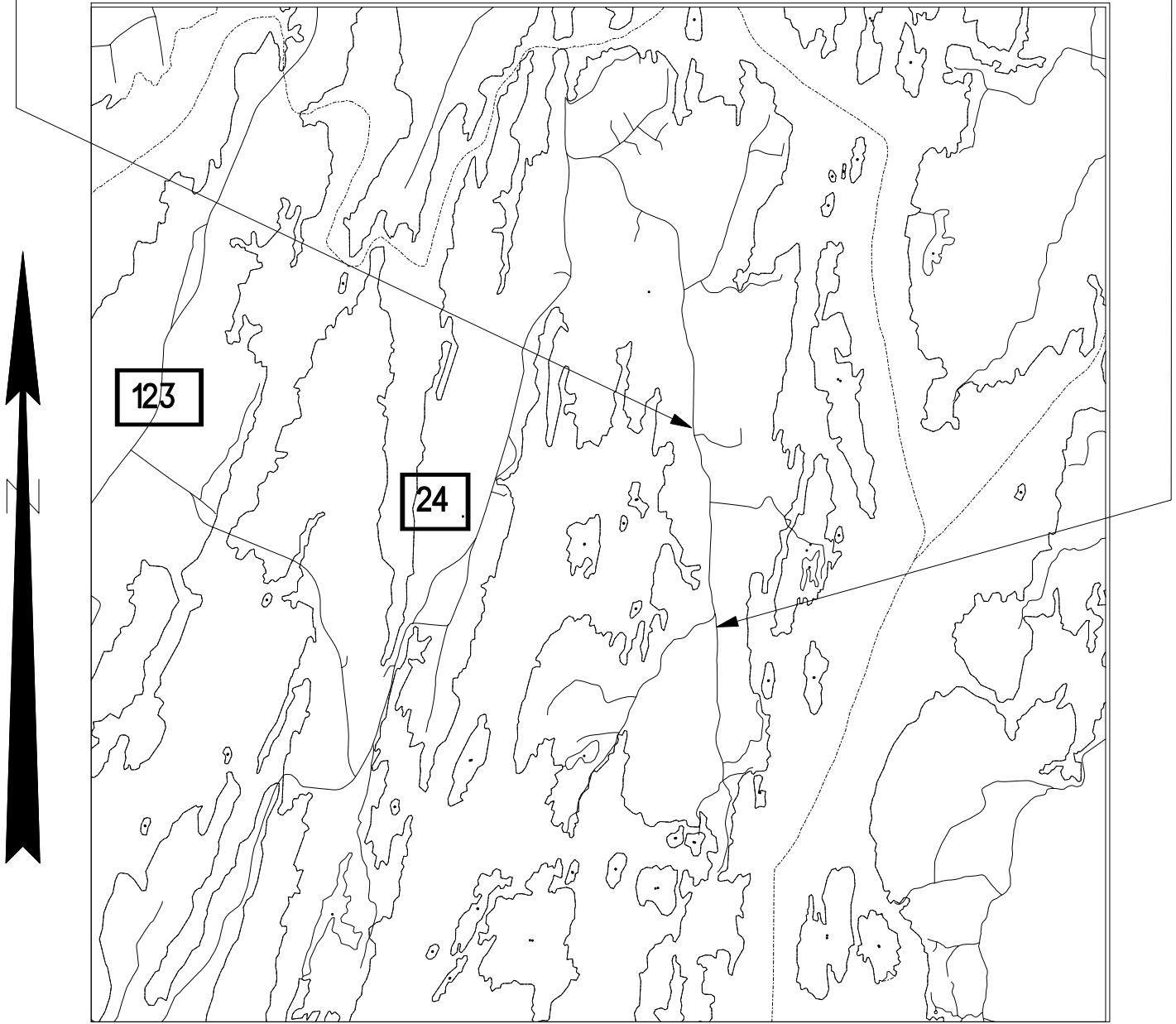
As noted above, a bond may be required by the municipality, the exact amount of said bond to be determined prior to use of any municipal way. The MDOT will assist in determining the bond amount if requested by the municipality.

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

# PIN 13043.00

*BEGIN PROJECT STA. 10+00 RLM=2.70*

*END PROJECT STA. 76+00 RLM=1.45*



LOCATION MAP



*Scale in Miles*



**SPECIAL PROVISION**  
**SECTION 105**

General Scope of Work  
(Limitations of Operations)

1. Contractor shall maintain at least one lane of traffic at all times. When two lanes of traffic can not be maintained, movement of vehicles will be addressed in the traffic control plan.
2. The contractor's traffic control plan shall address construction practices and schedules that will be implemented to minimize traffic disruptions.

**SPECIAL PROVISION**

**SECTION 107**

Prosecution and Progress  
(Contract Time)

1. The contractor will be allowed to commence work anytime on or after May 1, 2011 provided that all required plans/submittals have been received and approved by the MaineDOT.
2. A 24 hour notice will be required for any changes in the work schedule.
3. The completion date for this contract is May 28, 2011.
4. For every weekday not worked once operations commence, (excluding inclement weather days) the contractor will be charged Supplemental Liquidated Damages at as per Standard Specification 107.7.2.

**SPECIAL PROVISION**  
**SECTION 107**  
**SCHEDULING OF WORK**

Replace Section 107.4.2 with the following:

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

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

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

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

SPECIAL PROVISION

SECTION 107

TIME

(Scheduling of Work – Projected Payment Schedule)

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

**SPECIAL PROVISION**  
**SECTION 108**  
**PAYMENT**  
(Asphalt Escalator)

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

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

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

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

Item 403.206: 4.8%

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

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

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

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

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

SPECIAL PROVISION  
SECTION 308  
FULL DEPTH RECYCLING WITH CEMENT

308.01 Description This work shall consist of pulverizing a portion of the existing roadway structure into a homogenous mass, stabilizing the material with cement and placing and compacting this material to the lines, grades, and dimensions shown on the plans or established by the Resident.

MATERIALS

308.02 Pulverized Material Pulverized material shall consist of the existing bituminous pavement and one inch of the underlying gravel, pulverized, and blended into a homogenous mass. Pulverized material will be processed to 100% passing a 50 mm [2 in] square mesh sieve.

308.021 New Aggregate and Additional Recycled Material New aggregate shall meet the requirements of Subsection 703.10 - Aggregate for Untreated Surface Course and Leveling Course. New aggregate if required will be measured and paid for under the appropriate item.

Recycled material, if required, shall consist of material from the project or from off-site stockpiles that has been processed before use to 100% passing a 50 mm [2 in] square mesh sieve. Recycled material shall be conditionally accepted at the source by the Resident. It shall be free of winter sand, granular fill, construction debris, and other materials not generally considered bituminous pavement.

308.022 Portland Cement The Portland Cement shall be Type I or II meeting the requirements of AASHTO M85.

308.023 Water Water shall be clean and free from deleterious concentrations of acids, alkalis, salts or other organic or chemical substances.

EQUIPMENT

308.03 Pulverizer The pulverizer shall be a self-propelled machine, specifically manufactured for full-depth recycling work and capable of reducing the required existing materials to a size that will pass a 50 mm [2 in] square mesh sieve. The machine shall be equipped with standard automatic depth controls and must maintain a consistent cutting depth and width. The machine also shall be equipped with a gauge to show depth of material being processed.

308.031 Cement Spreader Spreading of the Portland cement shall be done with a spreader truck designed to spread dry particulate (such as Portland Cement or Lime) or other approved means to insure a uniform distribution across the roadway and minimize fugitive dust (See also the *Health and Safety/Right to-Know* section of this Special Provision). **Pneumatic application, including through a slotted pipe, will not be permitted.** Other systems that have been developed include fog systems, vacuum

systems, etc. Slurry applications could also be accepted. MaineDOT reserves the right to accept or reject the method of spreading cement based on the concerns specified herein. The Contractor shall provide a method for verifying that the correct amount of cement is being applied.

Health and Safety/Right-to-Know Portland cement is considered a hazardous chemical under US OSHA Hazard Communication Rule 29 CFR 1910.120, therefore, all Contractors and Subcontractors are required to notify their workers of the potential health hazards associated with working with Portland cement.

In no area of the work site, where cement or cement-pavement-gravel combination is being applied, re-worked with reclaimer, rolled or graded, shall respirable dust be allowed to exceed the NIOSH [1974] established respirable dust standard (RDS) recommended exposure limit (REL) of 0.05 mg/m<sup>3</sup> (for up to a 10 hour workday during a 40 hour work week).

The Contractor shall notify the Resident before commencing any work that involves Portland cement application, reclaiming, rolling, or grading.

The Contractor shall designate a Hazardous Waste Operations “Competent Person” to provide direct on-site supervision plus health and safety monitoring for work in the Portland cement impacted sections of the project. The Competent Person shall have certified training and experience in field implementation of the aforementioned regulations.

Submittals The Contractor shall submit a site specific Health and Safety Plan (HASP) to the Resident at least two weeks in advance of any Portland cement related work on the project.

Health and Safety Monitoring In any area of the project where Portland cement is being worked, the Contractor’s designated Competent Person shall monitor the worker breathing zone for respirable dust. In the event the OSHA respirable dust REL is exceeded, the Contractor’s Competent Person shall direct operations to cease. Operations will not recommence until the situation is corrected and respirable air returns to acceptable levels. The Contractor shall provide all required health and safety monitoring equipment.

308.04 Placement Equipment Placement of the Full Depth recycled material to the required slope and grade shall be done with an approved highway grader or by another method approved by the Resident.

308.05 Rollers The full depth recycled material shall be rolled with a vibratory pad/tamping foot roller, a vibratory steel drum soil compactor and a Type II pneumatic tire roller. The pad/tamping foot roller drum shall have a minimum of 112 tamping feet 73 mm [3 in] in height, a minimum contact area per foot of 110 cm<sup>2</sup> [17 in<sup>2</sup>], and a minimum width of 2.15 m [84 in]. The vibratory steel drum roller shall have a minimum 2.15 meter [84 in] width single drum. The pneumatic tire roller shall meet the



requirements of Section 401.10 and the minimum allowable tire pressure shall be 586 kPa [85 psi].

308.06 Pulverizing The entire depth of existing pavement shall be pulverized together with approximately 25 mm [1 in] of the underlying gravel into a homogenous mass. All pulverizing shall be done with equipment that will provide a homogenous mass of pulverized material, processed in-place, which will pass a 50 mm [2 in] square mesh sieve.

#### MIX DESIGN

The Department will supply a mix design for the recycling work based on test results from pavement and soil analysis taken to the design depth. The Department will provide the following information prior to construction:

1. Percent of Portland cement to be used.
2. Optimum moisture content for proper compaction.
3. Additional aggregate (if required).

After a test strip has been completed or as the work progresses, it may be necessary for the Resident to make necessary adjustments to the mix design. Changes to compensation will be in accordance with the Mix Design Special Provision.

#### CONSTRUCTION

308.07 Weather Limitations When Portland cement is used, full depth recycled work shall be performed when;

- A. Cement stabilizing operations will be allowed between May 15<sup>th</sup> and September 15<sup>th</sup> inclusive in Zone 1 - Areas north of US Route 2 from Gilead to Bangor and north of Route 9 from Bangor to Calais. Cement stabilizing will be allowed between May 1<sup>st</sup> and September 30<sup>th</sup> inclusive in Zone 2 - Areas south of Zone 1 including the US Route 2 and Route 9 boundaries.
- B. The atmospheric temperature, as determined by an approved thermometer placed in the shade at the recycling location, is 10°C [50°F] and rising.
- C. When there is no standing water on the surface.
- D. During generally dry conditions, or when weather conditions are such that proper pulverizing, adding, mixing, and curing can be obtained using proper procedures, and when compaction can be accomplished as determined by the Resident.
- E. When the surface is not frozen and when overnight temperatures are expected to be above 0°C [32°F].
- F. Wind conditions as such that the spreading of cement on the roadway ahead of the recycling machine will not adversely affect the operation (cement will not be blown away).

308.08 Surface Tolerance The complete surface of the Full Depth Reclamation course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of 10 mm [ $\frac{3}{8}$  inch].

308.09 Full Depth Recycling Procedure If required by the mix design, a uniform layer of crusher dust shall be spread over the full width of the roadway. New aggregate or recycled pavement meeting the requirements of Section 307.021 - New Aggregate, and Recycled Material shall be added as necessary to restore cross-slope and/or grade. Locations will be shown on the plans or described in the construction notes; the Resident may add other locations while construction of the project is in progress. The Contractor will use recycled pavement to the extent it is available, in lieu of new aggregate. The material shall then be pulverized, processed, and blended into a homogeneous mass passing a 50 mm [2 in] square mesh sieve. Material found not pulverized down to a 50mm [2 in] size will be required to be reprocessed by the recycler with successive passes until approved by the Resident. The material shall then be shaped to the cross-slope and grade shown on the plans, typical, or as directed by the Resident. This pulverized material shall be fine-graded to  $\pm 13$  mm [ $\pm \frac{1}{2}$  in] tolerance. The initial reclaiming process density requirements will be the same as Section 307.101 unless otherwise directed by the Resident.

The cement shall be spread uniformly over the full width of roadway to be recycled just prior to each pass of the stabilizing operation, in a continuous process by means of a mechanical spreader. Dry stabilizing agents shall be spread at the prescribed rate in the job mix formula as provided by the Department. These additives shall then be uniformly blended into a homogeneous mass until an apparent uniform distribution has occurred. The Resident may adjust the rate of application as necessary.

Sufficient water shall be added during the recycling process to meet the moisture requirements as specified.

The resultant material shall be graded and compacted to the cross-slope and profile shown on the plans or as directed by the Resident. The Contractor will also be responsible for re-establishing the existing profile grade. The completed surface of the full depth recycled course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of 10 mm [ $\frac{3}{8}$  in]. Areas not meeting this tolerance will be repaired as described in Section 307.091.

After compaction, the roadway surface shall be treated with a light application of water, and rolled with pneumatic-tired rollers to create a close-knit texture. The finished layer shall be free from:

- A. Surface laminations.
- B. Segregation of fine and coarse aggregate.
- C. Corrugations, centerline differential, potholes, or any other defects that may adversely affect the performance of the layer.

The Contractor shall protect and maintain the recycled layer until a lift of pavement is applied. Frequent light watering shall be performed to keep the finished cement stabilized material moist for at least 48 hours. Watering will continue from 48 hours to 1 week if the equipment is available on-site. Any damage or defects in the layer shall be repaired immediately. An even and uniform surface shall be maintained. The recycled material shall be swept prior to hot mix asphalt placement.

308.091 Repairs Repairs and maintenance of the recycled layers, during and after the curing period, resulting from damage caused by traffic, weather or environmental conditions, or resulting from damage caused by the Contractor's operations or equipment, shall be completed at no additional cost to the Department.

Low areas will be repaired using a hot mix asphalt shim. Areas up to 25mm [1 in] high can be repaired by milling or shimming with hot mix asphalt. Areas greater than 25mm [1 in] high will be repaired using a hot mix asphalt shim. All repair work will be done with the Resident's approval at the Contractor's expense.

#### TESTING REQUIREMENTS

308.10 Quality Control 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 106.4 - Quality Control and this Section. The Contractor shall not begin recycling operations until the Department approves the QCP in writing.

Prior to performing any recycling process, the Department and the Contractor shall hold a Pre-recycle conference to discuss the recycling schedule, type and amount of equipment to be used, sequence of operations, and traffic control. A copy of the QC random numbers to be used on the project shall be provided to the Resident. All field supervisors including the responsible onsite recycling process supervisor shall attend this meeting.

The QCP shall address any items that affect the quality of the Recycling Process including, but not limited to, the following:

- A. JMF(s) including sources for all materials.
- B. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers.
- C. Testing Plan.
- D. Recycling operations including recycling speed, yield monitoring, procedures for avoiding recycling and curing in inclement weather, methods to ensure that segregation is minimized, procedures for mix design modification, grading and compacting operations, and cement application procedure.
- E. Methods for protecting the finished product from damage and procedures for any necessary corrective action.
- F. Method of grade checks.
- G. Examples of Quality Control forms.
- H. Name, responsibilities, and qualifications of the Responsible onsite Recycling Supervisor experienced and knowledgeable with the process.
- I. A note that all testing will be done in accordance with AASHTO and MDOT/ACM procedures.

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 the full depth reclamation process in accordance with the following minimum frequencies:

MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Density	1 per 300 m [1000 ft] / lane	AASHTO T 310
Air Temperature	4 per day at even intervals	
Surface Temperature	At the beginning and end of each days operation	
Yield of all materials (The daily yield, yield since last test, and total project yield.)	1 per 300 m [1000 ft] / lane	

The Department has the right to view any QC test and to request a QC test at any time. The Contractor shall submit all QC test reports and summaries in writing, signed by the appropriate technician, and present them to the Department’s onsite representative by 1:00 P.M. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall make all test results, including randomly sampled densities, available to the Department onsite.

The Contractor shall cease recycling operations whenever one of the following occurs:

- A. The computed yield differs from the approved Job Mix Formula by 10% or more.
- B. The Contractor fails to follow the approved QCP.
- C. The Contractor fails to achieve 98% density after corrective action has been taken.

Recycling operations shall not resume until the Department agree on the corrective action to be taken.

308.101 Test Strip The contractor shall assemble all items of equipment for the recycling operation on the first day of the recycling work. The Contractor shall construct a test strip for the project at a location approved by the Resident. The Responsible onsite Recycling Supervisor will work with Department personnel to determine the suitability of the mixed material, cement dispersion within the mixed material, moisture control within the mixed material, and compaction and surface finish. The test strip section is required to:

- A. Demonstrate that the equipment and processes can produce recycled layers to meet the requirements specified in these special provisions.
- B. Determine the effect on the gradation of the recycled material by varying the forward speed of the recycling machine and the rotation rate of the milling drum.
- C. Determine the sequence and manner of rolling necessary to obtain the compaction requirements and establish a target TMD. The Contractor and the Department will calibrate their respective gauges at this time.

The test strip shall be at least 100 m [300 ft] in length of a full lane-width (or a half-road width). Full recycling production will not start until a passing test strip has been accomplished. If a test strip fails to meet the requirements of this specification, the Contractor will be required to repair or replace the test strip to the satisfaction of the

Resident. Any repairs, replacement, or duplication of the test strip will be at the Contractor's expense.

Acceptance density testing of the recycled material will be performed by the Department using the nuclear method. After the test strip has been pulverized, the cement added and mixed, and the roadway brought to proper shape, it will be rolled as directed until the nuclear density readings show an increase in dry density of less than 16 kg/m<sup>3</sup> [1 pcf] for the final four roller passes. This density will be used as the target TMD for the recycled material. The remaining full depth recycled material shall be compacted to a minimum density of 98% of the target density as determined in the control section.

ACCEPTANCE TEST FREQUENCY

Property	Frequency	Test Method
In-place Density	1 per 600 m [2000 ft] / lane	AASHTO T 310

308.11 Miscellaneous No new pavement shall be placed on the full depth recycled pavement until a curing period of 48 hours has elapsed. If inclement weather occurs, the Department reserves the right to extend the curing period. **Between 24 and 48 hours after compaction, the finished course shall be vibrated with between 2 and 4 passes of a 11 Mg [12 ton] minimum weight steel-wheel vibratory roller, traveling at a speed of approximately 3.2 kph [2 mph] and vibrating at maximum amplitude (or as directed by Resident). The section shall have 100% coverage exclusive of the outside 300 mm [1 ft] to induce minute cracks in the treated base course. Additional passes may be required to achieve the desired crack pattern or section modulus as directed by the Resident.**

308.12 Method of Measurement Full Depth Recycled Pavement with Cement will be measured by the square meter [square yard].

308.13 Basis of Payment The accepted quantity of Full Depth Recycled Asphalt Pavement with Cement will be paid for at the contract unit price per square meter [square yard], complete in-place which price will be full compensation for furnishing all equipment and labor for pulverizing, blending, placing, grading, compacting, and for all incidentals necessary to complete the work.

The addition of materials to restore profile grade and/or cross-slope in areas shown on the plans or described in the construction notes will be paid separately under designated pay items within the contract.

Payments will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
308.36 Full Depth Recycling With Cement	Square Meter [Square Yard]

**SPECIAL PROVISION**

**SECTION 308**

(Full Depth Reclamation Pavement with Cement)

**Mix Design**

**The JMF targets represented in this Special Provision are intended to provide a basis for bidding purposes only. The Department will develop a job mix formula for the recycled pavement during the construction of the project.**

The Recycled Pavement on this project will be treated with the following material proportions:

Water	3.0 – 6.0 %
Portland Cement	3.0 %

The optimum moisture content for compaction shall be determined by the Department using samples obtained from the recycled stockpiled material by means of AASHTO T 180, Method D.

A contract modification will be executed for cement content if percentages change from the requirements above by more than 0.25 %. Positive and negative price adjustments will be made. The price adjustment will be based upon receipted bills for materials delivered to the project site. If a price adjustment is warranted, the contractor will supply the Department with all the receipted bills for cement supplied for the entire project. Adjustments in water content exceeding the initial targets shall not be paid for directly, but shall be incidental to the FDR item.

SPECIAL PROVISION  
SECTION 309  
FULL DEPTH RECYCLED PAVEMENT  
(With Foamed Asphalt)

309.01 Description This work shall consist of pulverizing a portion of the existing roadway structure into a homogenous mass, treating the pulverized material with the foamed asphalt process, and the placing and compacting of this material to the lines, grades, and dimensions shown on the plans or established by the Resident.

MATERIALS

309.020 Pulverized Material Pulverized material shall consist of the entire existing bituminous pavement and, if specified, a designated portion of the underlying gravel, pulverized and blended into a homogenous mass. Pulverized material will be processed to 100 percent passing a 50 mm [2 in] square mesh sieve.

309.021 New Aggregate and Additional Recycled Material New aggregate, if required by the contract or job mix, shall meet the requirements of Section 411.02 Untreated Aggregate Surface Course. New aggregate required as part of the job mix shall be considered part of the 309 item and will not be measured for payment. New aggregate required to restore grade and/or cross-slope shall be measured for payment.

Recycled material, if required, shall consist of material from the project or from off-site stockpiles that have been processed, prior to use to 100 percent passing a 50 mm [2 in] square mesh sieve. The Resident shall conditionally accept recycled material at the source; it shall be free of winter sand, granular fill, construction debris, and other materials not generally considered to be bituminous pavement.

309.022 Asphalt Binder The asphalt binder used in the foamed asphalt process shall be Performance Grade 64-28 meeting the requirements of AASHTO M320.

309.023 Portland Cement The Portland Cement shall be Type I or II meeting the requirements of AASHTO M85.

309.024 Lime Lime for soil stabilization shall meet the requirements of AASHTO M216.

309.025 Crusher Dust Crusher dust, if required by the job mix, shall be free from friable or deleterious material, including excessive mica, and shall meet the following gradation requirements:

Sieve Size	Percent Passing
12.5 mm [½ in]	100
0.075 mm [No. 200]	10 - 15

309.026 Water Water shall be clean and free from deleterious concentrations of acids, alkalis, salts or other organic or chemical substances.

## EQUIPMENT

309.030 Pulverizer The modified milling or recycling machine shall, as a minimum, have the following features:

- a. A minimum power capability of 600 horsepower.
- b. Two microprocessor-controlled systems, complete with 2 independent pumping systems and spraybars, to regulate the application of foamed bitumen stabilizing agent, separate from water (for increasing the moisture content of the recycled material), in relation to the forward speed and mass of the material being recycled.
- c. Two spray bars shall each be fitted with self-cleaning nozzles at a maximum spacing of one nozzle for each 155 mm [6 in] width of the chamber.
- d. The foamed bitumen shall be produced at the spraybar in individual expansion chambers into which both hot bitumen and water are injected under pressure through individual and separate small orifices that promote atomization. The rate of addition of water into hot bitumen shall be kept at a constant (percentage by mass of bitumen) by the same microprocessor.
- e. An inspection (or test) nozzle shall be fitted at one end of the spraybar that produces a representative sample of foamed bitumen.
- f. An electrical heating system capable of maintaining the temperature of all bitumen flow components above 150°C [300°F].
- g. A single bitumen feed pipe installed between the modified milling or recycling machine and the supply tanker. Circulating systems that incorporate a return pipe to the supply tanker shall not be used.
- h. The recycler shall be fitted with a front breaker bar system to ensure that the reclaimed material is broken down to the sizing outlined in 309.020.

309.031 Liquid Mixer Unit or Distributor Only tankers with a capacity exceeding 10,000 L [2500 gal] shall be used to supply the recycling machine with bitumen. Each tanker shall be fitted with two recessed pin-type tow hitches, one in front and the other behind, thereby allowing the tanker to be pushed from behind by the recycling machine, and to push a water tanker in front. No leaking tanker will be permitted on the job site. In addition, each tanker shall be equipped with the following:

- a. A thermometer to show the temperature of the contents in the bottom third of the tank.
- b. A rear feed valve, with a minimum internal diameter of 75 mm [3 in], capable of draining the contents of the tank when fully opened.
- c. Insulation to retain heat.
- d. A calibrated dipstick marked at intervals of no more than 100 L [25 gal], for measuring the contents of the tank.

309.032 Placement Equipment Placement of the full depth recycled material to the required slope and grade shall be done with an approved highway grader or by another method approved by the Resident.

309.033 Rollers The full depth recycled material shall be rolled with a vibratory pad/tamping foot roller, a vibratory steel drum soil compactor and a Type II pneumatic tire roller. The pad/tamping foot roller drum shall have a minimum of 112 tamping feet 73 mm [3 in] in height, a minimum contact area per foot of 110 cm<sup>2</sup> [17 in<sup>2</sup>], and a minimum width of 2.15 m [84 in]. The vibratory steel drum roller shall have a minimum 2.15 meter [84 in] width single drum. The pneumatic tire roller shall meet the requirements of Section 401.10 and the minimum allowable tire pressure shall be 586 kPa [85 psi].



## MIX DESIGN

The Department will supply a mix design for the foamed asphalt based on test results from pavement and soil analysis taken to the design depth. The Department will provide the following information prior to construction:

1. Percent of bitumen to be used.
2. Percent of water to be used in the foaming process.
3. Quantity (if any) of crusher dust to be used.
4. Quantity of lime or cement to be added.
5. Optimum moisture content for proper compaction and dispersion of foamed asphalt.
6. Additional aggregate (if required).

After a test strip has been completed or as the work progresses, it may be necessary for the Resident to make necessary adjustments to the mix design. Changes to compensation will be in accordance with the Mix Design Special Provision.

## CONSTRUCTION REQUIREMENTS

309.04 Weather Limitations When foamed asphalt is used, full depth recycled work shall be performed when;

- a. Foaming operations will be allowed between May 15<sup>th</sup> and September 15<sup>th</sup> inclusive in Zone 1 - Areas north of US Route 2 from Gilead to Bangor and north of Route 9 from Bangor to Calais. Foaming operations will be allowed between May 1<sup>st</sup> and September 30<sup>th</sup> inclusive in Zone 2 - Areas south of Zone 1 including the US Route 2 and Route 9 boundaries.
- b. The atmospheric temperature, as determined by an approved thermometer placed in the shade at the recycling location, is 10°C [50°F] and rising.
- c. When there is no standing water on the surface.
- d. During generally dry conditions, or when weather conditions are such that proper pulverizing, adding, mixing, and curing can be obtained using proper procedures, and when compaction can be accomplished as determined by the Resident.
- e. When the surface is not frozen and when overnight temperatures are expected to be above 0°C [32°F].
- f. Wind conditions as such that the spreading of lime or cement on the roadway ahead of the recycling machine will not adversely affect the operation.

309.05 Full Depth Recycling Procedure If required by the mix design, a uniform layer of crusher dust shall be spread over the full width of the roadway just prior to the foaming procedure. New aggregate or recycled pavement meeting the requirements of Section 309.021 - New Aggregate, and Recycled Material shall be added as necessary to restore cross-slope and/or grade. Locations will be shown on the plans or described in the construction notes; the Resident may add other locations while construction of the project is in progress. The Contractor will use recycled pavement to the extent it is available, in lieu of new aggregate. The material shall then be pulverized, processed, and blended into a homogeneous mass passing a 50 mm [2 in] square mesh sieve. Material found not pulverized down to a 50mm [2 in] size will be required to be reprocessed by the recycler with successive passes until approved by the Resident. The material shall then be shaped to the cross-slope and grade shown on the plans, typicals, or as directed by the Resident. This pulverized material shall be fine-graded to  $\pm 13$  mm [ $\pm \frac{1}{2}$  in] tolerance. The initial reclaiming process density requirements will be the same as Section 309.07 unless otherwise directed by the Resident.

The dry stabilizing agents (lime or cement) shall be spread uniformly over the full width of roadway to be recycled prior to each pass of the foaming operation, in a continuous process by means of a mechanical spreader. Dry stabilizing agents shall be spread at the prescribed rate of application provided by the Department. Foamed asphalt shall be incorporated into the material to a depth determined by the pavement design. These additives shall then be uniformly blended into a homogeneous mass until an apparent uniform distribution has occurred. The Resident may adjust the rate of application as necessary.

Asphalt binder shall be added to the milling or recycling process by pumping from a mobile bulk tanker that is pushed from behind by the recycling machine. Tankers shall be equipped with a built-in thermometer to ensure that the bituminous stabilizing agent is maintained at  $190^{\circ}\text{C} \pm 5^{\circ}\text{C}$  [ $375^{\circ}\text{F} \pm 10^{\circ}\text{F}$ ]. The system employed to add the foamed asphalt to the recycling process shall conform to the equipment requirements specified in these Special Provisions.

Sufficient water shall be added during the recycling process to meet the moisture requirements as specified. Water shall be added only by means of the microprocessor control system on the recycling machine and care shall be taken to prevent excessive wetting. A second water truck will be available during foaming operation to assist in the compaction and water control efforts.

The resultant material shall be graded and compacted to the cross-slope and profile shown on the plans or as directed by the Resident. The Contractor will also be responsible for re-establishing the existing profile grade. The completed surface of the full depth recycled course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of 10 mm [ $\frac{3}{8}$  in]. Areas not meeting this tolerance will be repaired as described in Section 309.051.

After compaction, the roadway surface shall be treated with a light application of water, and rolled with pneumatic-tired rollers to create a close-knit texture. The finished layer shall be free from:

- a. Surface laminations.
- b. Segregation of fine and coarse aggregate.
- c. Corrugations, centerline differential, potholes, or any other defects that may adversely affect the performance of the layer.

The Contractor shall protect and maintain the recycled layer until a lift of pavement is applied. Frequent light watering shall be performed to prevent the surface from drying out. Any damage or defects in the layer shall be repaired immediately. An even and uniform surface shall be maintained. The recycled material shall be swept prior to hot mix asphalt placement.

309.051 Repairs Repairs and maintenance of the recycled layers, during and after the curing period, resulting from damage caused by traffic, weather or environmental conditions, or resulting from damage caused by the Contractor's operations or equipment, shall be completed at no additional cost to the Department.

Low areas will be repaired using a hot mix asphalt shim. Areas up to 25mm [1 in] high can be repaired by milling or shimming with hot mix asphalt. Areas greater than 25mm [1 in] high will be repaired using a hot mix asphalt shim. All repair work will be done with the Resident's approval at the Contractor's expense.

TESTING REQUIREMENTS

309.06 Quality Control 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 106.4 - Quality Control and this Section. The Contractor shall not begin recycling operations until the Department approves the QCP in writing.

Prior to performing any recycling process, the Department and the Contractor shall hold a Pre-recycle conference to discuss the recycling schedule, type and amount of equipment to be used, sequence of operations, and traffic control. A copy of the QC random numbers to be used on the project shall be provided to the Resident. All field and plant supervisors including the responsible onsite recycling process supervisor shall attend this meeting.

The QCP shall address any items that affect the quality of the Recycling Process including, but not limited to, the following:

- a. JMF(s) including sources for all materials.
- b. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers.
- c. Testing Plan.
- d. Recycling operations including recycling speed, yield monitoring, procedures for avoiding recycling and curing in inclement weather, methods to ensure that segregation is minimized, procedures for mix design modification, grading and compacting operations, and cement and lime application procedure.
- e. Methods for protecting the finished product from damage and procedures for any necessary corrective action.
- f. Method of grade checks.
- g. Examples of Quality Control forms.
- h. Name, responsibilities, and qualifications of the Responsible onsite Recycling Supervisor experienced and knowledgeable with the process.
- i. A note that all testing will be done in accordance with AASHTO and MDOT/ACM procedures.

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 the full depth reclamation process in accordance with the following minimum frequencies:

MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Density	1 per 300 m [1000 ft] / lane	AASHTO T 310
Air Temperature	4 per day at even intervals	
Surface Temperature	At the beginning and end of each days operation	
Yield of all materials (The daily yield, yield since last test, and total project yield.)	1 per 300 m [1000 ft] / lane	

The Department has the right to view any QC test and to request a QC test at any time.

The Contractor shall submit all QC test reports and summaries in writing, signed by the appropriate technician, and present them to the Department's onsite representative by 1:00 P.M. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall make all test results, including randomly sampled densities, available to the Department onsite.

Penalties for QCP non-compliance will be in accordance with Standard Specification 106.4.6

The Contractor shall cease recycling operations whenever one of the following occurs:

- a. The computed yield differs from the approved Job Mix Formula by 10% or more.
- b. The Contractor fails to follow the approved QCP.
- c. The Contractor fails to achieve 98% density after corrective action has been taken.
- d. The finished product is visually defective, as determined by the Resident.

Recycling operations shall not resume until the Department agree on the corrective action to be taken.

309.07 Test Strip The contractor shall assemble all items of equipment for the recycling operation on the first day of the foamed asphalt work. The Contractor shall construct a test strip for the project at a location approved by the Resident. The Responsible onsite Recycling Supervisor will work with Department personnel to determine the suitability of the mixed material, bitumen dispersion within the mixed material, moisture control within the mixed material, and compaction and surface finish. The test strip section is required to:

- a. Demonstrate that the equipment and processes can produce recycled layers to meet the requirements specified in these special provisions.
- b. Determine the effect on the gradation of the recycled material by varying the forward speed of the recycling machine and the rotation rate of the milling drum.
- c. Determine the sequence and manner of rolling necessary to obtain the compaction requirements and establish a target TMD. The Contractor and the Department will calibrate their respective gauges at this time.

The test strip shall be at least 100 m [300 ft] in length of a full lane-width (or a half-road width).

Full recycling production will not start until a passing test strip has been accomplished. If a test strip fails to meet the requirements of this specification, the Contractor will be required to repair or replace the test strip to the satisfaction of the Resident. Any repairs, replacement, or duplication of the test strip will be at the Contractor's expense.

Quality Assurance density testing of the recycled material will be performed by the Department using the nuclear method. After the test strip has been pulverized, the foamed asphalt added and mixed, and the roadway brought to proper shape, it will be rolled as directed until the nuclear density readings show an increase in dry density of less than 16 kg/m<sup>3</sup> [1 pcf] for the final four roller passes. This density will be used as the target TMD for the recycled material. The remaining full depth recycled material shall be compacted to a minimum density of 98% of the target density as determined in the control section.

#### ACCEPTANCE TEST FREQUENCY

Property	Frequency	Test Method
In-place Density	1 per 600 m [2000 ft] / lane	AASHTO T 310

309.08 Miscellaneous No new pavement shall be placed on the full depth recycled pavement until a curing period of 48 hours has elapsed. If inclement weather occurs, the Department reserves the right to extend the curing period.

309.09 Method of Measurement Full Depth recycled material (with Foamed Asphalt) will be measured by the square meter [yd<sup>2</sup>]. New aggregate, as defined under section 309.021, added to restore grade and/or cross-slope shall be measured for payment.

309.10 Basis of Payment The accepted quantity of Full Depth Recycled Pavement with Foamed Asphalt shall be paid for at the contract unit price per square meter [yd<sup>2</sup>], complete in-place to the specified limits, which price shall be full compensation for furnishing all equipment and labor for pulverizing, blending, placing, grading, compacting and for all incidentals necessary to complete the work including asphalt binder, water, Portland Cement, lime, and crusher dust.

Payments will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
309.35 Full Depth Recycled Pavement with Foamed Asphalt 125mm [5 in] depth	Square Meter [yd <sup>2</sup> ]
309.36 Full Depth Recycled Pavement with Foamed Asphalt 150mm [6 in] depth	Square Meter [yd <sup>2</sup> ]

SPECIAL PROVISION  
SECTION 309  
FULL DEPTH RECYCLED ASPHALT PAVEMENT  
(with foamed asphalt)

**Mix Design**

The Full Depth Recycled Pavement on this project will be treated with the following material proportions:

PG 58-28 asphalt binder	3.25%
Water needed to ensure proper foaming	3.00 %
Portland cement (Type I or II)	1.00 %

The Contractor shall make available to the Department, for mix design purposes, a representative sample of the pulverized material taken after the initial reclamation process from the roadway section being treated. The Contractor shall deliver the material samples to the Central Laboratory in Bangor. The Contractors schedule shall allow a minimum of three working days for the mix design process. The Department will provide the Project with the recommended percentages of each required additive.

The optimum moisture content for compaction shall be determined by the Department using samples obtained from the pulverized material prior to addition of the foamed asphalt, by means of AASHTO T 180, Method D.

A contract modification will be executed if percentages change from the requirements above for added asphalt, Portland cement or lime changes by more than 0.10%. Positive and negative price adjustments will be made. The price adjustment will be based upon receipted bills for materials delivered the project site. If a price adjustment is warranted, the contractor will supply the Department with all receipted bills for PG asphalt binder, Portland cement or lime for the entire project. Adjustments in water content exceeding the initial targets shall not be paid for directly, but shall be incidental.

SPECIAL PROVISION  
DIVISION 400  
PAVEMENTS

SECTION 401 - HOT MIX ASPHALT PAVEMENT

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

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

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

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

For specification purposes, RAP will be categorized as follows:

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

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

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

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

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

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

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

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

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



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

TABLE 1: VOLUMETRIC DESIGN CRITERIA

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

\*For 9.5 mm nominal maximum aggregate size mixtures, the maximum VFB is 82.

\*For 4.75 mm nominal maximum aggregate size mixtures, the maximum VFB is 84.

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

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

- In the truck at the mixing plant – allowable range 135° to 163°C [275 to 325°F]
- At the Paver – allowable range 135° to 163°C [275 to 325°F]

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

401.05 Performance Graded Asphalt Binder Unless otherwise noted in Special Provision 403 - Hot Mix Asphalt Pavement, the PGAB shall be 64-28, except that for mixtures containing greater than 20 percent but no more than 25 percent RAP the PGAB shall be PG 58-34 (or PG 52-34 when approved by the Department). The PGAB shall meet the applicable requirements of AASHTO M320 - Standard Specification for PGAB. The Contractor shall provide the Department with an approved copy of the Quality Control Plan for PGAB in accordance with AASHTO R 26 Certifying Suppliers of PGAB.

The Contractor shall request approval from the Department for a change in PGAB supplier or source by submitting documentation stating the new supplier or source a minimum of 24 hours prior to the change. In the event that the PGAB supplier or source is changed, the Contractor shall make efforts to minimize the occurrence of PGAB co-mingling.

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

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

The Contractor may place Hot Mix Asphalt Pavement for use other than a traveled way wearing course in either Zone between the dates of April 15<sup>th</sup> and November 15<sup>th</sup>, 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 15<sup>th</sup> and the Saturday following October 15<sup>th</sup>, provided the air temperature determined as above is 10°C [50°F] or higher. For the purposes of this Section, the traveled way includes truck lanes, ramps, approach roads and auxiliary lanes. The atmospheric temperature for all courses on bridge decks shall be 10°C [50°F] or higher.

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

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

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 1<sup>st</sup> and the Saturday following September 1<sup>st</sup> if the work is to be performed, either by contract requirement, or Contractor option, during conditions defined as “night work”.

#### 401.07 Hot Mix Asphalt Plant

401.071 General Requirements HMA plants shall conform to AASHTO M156.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The Contractor shall have the paver at the project site sufficiently before the start of paving operations to be inspected and approved by the Department. The Contractor shall repair or replace any paver found worn or defective, either before or during placement, to the satisfaction of the Department. Pavers that produce an unevenly textured or non-uniform mat will be repaired or replaced before continuing to place HMA on MaineDOT projects.

On a daily basis, the Contractor shall perform nuclear density testing across the mat being placed, prior to being compacted by equipment., at 300 mm [12 in] intervals, If the density values vary by more than 2.0% from the mean, the Contractor shall make adjustments to the screed until the inconsistencies are remedied.

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

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

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

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

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

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

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

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

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

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

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

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

The Contractor shall correct variations exceeding 6 mm [ $\frac{1}{4}$  in] by removing defective work and replacing it with new material as directed by the Department. The Contractor shall furnish a 10 foot straightedge for the Departments use.

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

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

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

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

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

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

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

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

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

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

The Contractor shall roll the surface when the mixture is in the proper condition and when the rolling does not cause undue displacement, cracking, or shoving. The Contractor shall prevent adhesion of the HMA to the rollers or vibrating compactors without the use of fuel oil or other petroleum based release agents. Solvents designed to strip asphalt binders from aggregates will not be permitted as release agents on equipment, tools, or pavement surfaces.

The Contractor shall immediately correct any displacement occurring as a result of the reversing of the direction of a roller or from other causes to the satisfaction of the Department. Any operation other than placement of variable depth shim course that results in breakdown of the aggregate shall be discontinued. Any new pavement that shows obvious cracking, checking, or displacement shall be removed and replaced for the full lane width as directed by the Resident at no cost to the Department.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- a. QCP Administrator - A qualified individual shall administer the QCP. The QCP Administrator must be a full-time employee of or a consultant engaged by the Contractor or paving subcontractor. The QCP Administrator shall have full authority to institute any and all actions necessary for the successful operation of the QCP. The QCP Administrator (or its designee in the QCP Administrator's absence) shall be available to communicate with the Department at all times. The QCP Administrator shall be certified as a Quality Assurance Technologist certified by the New England Transportation Technician Certification Program (NETTCP).
- b. Process Control Technician(s) (PCT) shall utilize test results and other quality control practices to assure the quality of aggregates and other mix components and control proportioning to meet the JMF(s). The PCT shall inspect all equipment used in mixing to assure it is operating properly and that mixing conforms to the mix design(s) and other Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one PCT is required. The Plan shall include the criteria to be utilized by the PCT to correct or reject unsatisfactory materials. The PCT shall be certified as a Plant Technician by the NETTCP.
- c. Quality Control Technician(s) (QCT) shall perform and utilize quality control tests at the job site to assure that delivered materials meet the requirements of the JMF(s). The QCT shall inspect all equipment utilized in transporting, laydown, and compacting to assure it is operating properly and that all laydown and compaction conform to the Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one QCT is required. The QCP shall include the criteria utilized by the QCT to correct or reject unsatisfactory materials. The QCT shall be certified as a Paving Inspector by the NETTCP.

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

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



TABLE 2 : MINIMUM QUALITY CONTROL FREQUENCIES

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

\*Method A and B only

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

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

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

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

The Contractor shall fill all holes in the pavement resulting from cutting cores by the Contractor or the Department with a properly compacted, acceptable mixture no later than the following working day. Before filling, the Contractor shall carefully clean the holes and apply a coating of emulsified asphalt. On surface courses, cores shall not be cut except for Verification of the Nuclear Density Gauge, at a rate not to exceed 3 per day or 2 per 1000 Mg [1000 ton] placed.

The Contractor shall monitor plant production using running average of three control charts as specified in Section 106 - Quality. Control limits shall be as noted in Table 3 below. The UCL and LCL, shall not exceed the allowable control points for the particular type of mixture as outlined in Table 1 of section 703.09

TABLE 3: Control Limits

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

\*Based on AASHTO T 308

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

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

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

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

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

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

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

401.20 Acceptance Method A, B & C These methods utilizes Quality Level Analysis and pay factor specifications.

For Hot Mix Asphalt Pavement designated for acceptance under Quality Assurance provisions, the Department will sample once per subplot on a statistically random basis, test, and evaluate in accordance with the following Acceptance Criteria:

TABLE 4: ACCEPTANCE CRITERIA

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

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

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

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

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

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

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

The Department will take the sample randomly within each sublot. Target values shall be as specified in the JMF. The Department will use Table 5 for calculating pay factors for gradation, PGAB Content, Air Voids at  $N_{design}$ , VMA, Fines to Effective Binder and VFB. The Department will withhold reporting of the test results for the Acceptance sample until 7:00 AM, on the second working day of receipt of the sample, or after receipt of the Contractors results of the Acceptance sample split. Upon conclusion of each lot, where there is a minimum of four sublots, results shall be examined for statistical outliers, as stated in Section 106.7.2 - Statistical Outliers.

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

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

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

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

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

**TABLE 5: METHOD A ACCEPTANCE LIMITS**

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

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

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

**TABLE 6: METHOD B ACCEPTANCE LIMITS**

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

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

TABLE 7: METHOD C ACCEPTANCE LIMITS

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

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

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

TABLE 8: METHOD D ACCEPTANCE LIMITS

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

TABLE 8b Method "D" Price Adjustments

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

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

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

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

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

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

The Department will make a pay adjustment for quality as specified below.

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

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

Density If the pay factor for Density falls below 0.80 for Method A or C or 0.86 for Method B, all of the cores will be randomly re-cut by Sublot. A new pay factor will be calculated that combines all initial and retest results. If the resulting pay factor is below 0.80 for Method A or C or below 0.86 for Method B, the entire Lot shall be removed and replaced with material meeting the specifications at no additional cost to the Department, except that the Department may, when it appears that there is a distinct pattern of defective material, isolate any defective material by investigating each mix sample subplot 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<sub>d</sub>, VMA, VFB, F/B<sub>eff</sub>, and the screen sizes listed in Table 9 for the type of HMA represented in the JMF. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.80, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.55.

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

$$PA = (\text{density PF} - 1.0)(Q)(P)x0.50$$

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

$$PA = (\text{voids @ } N_d \text{ PF} - 1.0)(Q)(P)x0.20 + (\text{VMA @ } N_d \text{ PF} - 1.0)(Q)(P)x0.20 + (\text{PGAB PF} - 1.0)(Q)(P)x0.10$$

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<sub>d</sub>, VMA, VFB, F/B<sub>eff</sub>, and the screen sizes listed in Table 9 for the type of HMA represented in the JMF. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.86, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.70.

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

$$PA = (\text{density PF} - 1.0)(Q)(P)x0.50$$



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

$$PA = (\text{voids @ } N_d \text{ PF- } 1.0)(Q)(P)x0.20 + (\text{VMA @ } N_d \text{ PF- } 1.0)(Q)(P)x0.20 + (\text{PGAB PF- } 1.0)(Q)(P)x0.10$$

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

#### Pay Adjustment Method C

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

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

$$PA = (\text{density PF- } 1.0)(Q)(P)x0.50$$

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:

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

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 Table 10: Dispute Resolution Variance Limits, for the specific test result(s) or property(ies) were exceeded.

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

For Method C only: The results for PGAB content and the screen sizes used for pay adjustment may be disputed.

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

TABLE 10: DISPUTE RESOLUTION VARIANCE LIMITS

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

## SECTION 402 - PAVEMENT SMOOTHNESS

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

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

402.02 Lot Size Lot size for smoothness will be 1000 lane-meters [3000 lane-feet]. A subplot will consist of 20 lane-meters [50 lane-feet]. Partial lots will be included in the previous lot if less than one-half the size of a normal lot. If 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.

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

Computation of Smoothness Pay Adjustment:

$$PA = (PF-1.0)(Q)(P)$$

where:

Q = Quantity of surface course in the Lot (excluding shoulders, side streets, bridge decks, ramps, acceleration and deceleration lanes)

PF = smoothness pay factor for the Lot

P = Contract unit price for surface pavement

PA = pay adjustment

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

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

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
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:

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

**SPECIAL PROVISION**  
**SECTION 403**  
**HOT MIX ASPHALT**

<b>Desc. of Course</b>	<b>Grad. Design</b>	<b>Item Number</b>	<b>Bit Cont. % of Mix</b>	<b>Total Thick</b>	<b>No. Of Layers</b>	<b>Comp. Notes</b>
<b><u>Entrance / Roadway</u></b>						
Wearing	12.5mm	403.208	N/A	1 ½"	1	1,4,8
Base	12.5mm	403.213	N/A	1 ½"	1	1,4,8
<b><u>Drives, Misc.</u></b>						
Wearing	9.5mm	403.209	N/A	2"	1/more	1,2,4,10,14

**COMPLEMENTARY NOTES**

1. All work under this contract shall conform to the 2010 Special Provision 400 - Hot Mix Asphalt Pavement; with the following revisions.
2. The density requirements are waived.
4. The design traffic level for mix placed shall be 0.3 to <3 million ESALS. The design, verification, Quality Control, and acceptance tests for this mix will be performed at 50 Gyration.
8. Section 106.6 Acceptance, (2) Method B.
10. Section 106.6 Acceptance, (2) Method D.
14. A mixture meeting the requirements of section 703.09 Grading 'D', with a minimum PGAB content of 6%, and the limits of Specification 401, Table 8 (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.

**Tack Coat**

A tack coat of emulsified asphalt, RS-1, Item 409.15 shall be applied to any existing pavement at a rate of approximately 0.025 gal/yd<sup>2</sup>, and on milled pavement approximately 0.05 gal/yd<sup>2</sup> prior to placing a new course. A fog coat of emulsified asphalt shall be applied between shim /base courses and the surface course, at a rate not to exceed 0.025 gal/yd<sup>2</sup>.

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 652  
MAINTENANCE OF TRAFFIC

Approaches Approach signing shall include the following signs as a minimum. Field conditions may warrant the use of additional signs as determined by the Resident.

- Road work Next x Miles
- Road work 500 Feet
- End Road Work

Work Area At each work site, signs and channelizing devices shall be used as directed by the Resident. Signs include:

- Road Work xxxx <sup>1</sup>
- One Lane Road Ahead
- Flagger Sign

Other typical signs include:

- Be Prepared to Stop
- Low Shoulder
- Bump
- Pavement Ends

The above lists of Approach signs and Work Area signs are representative of the contract Requirements. Other sign legends may be required.

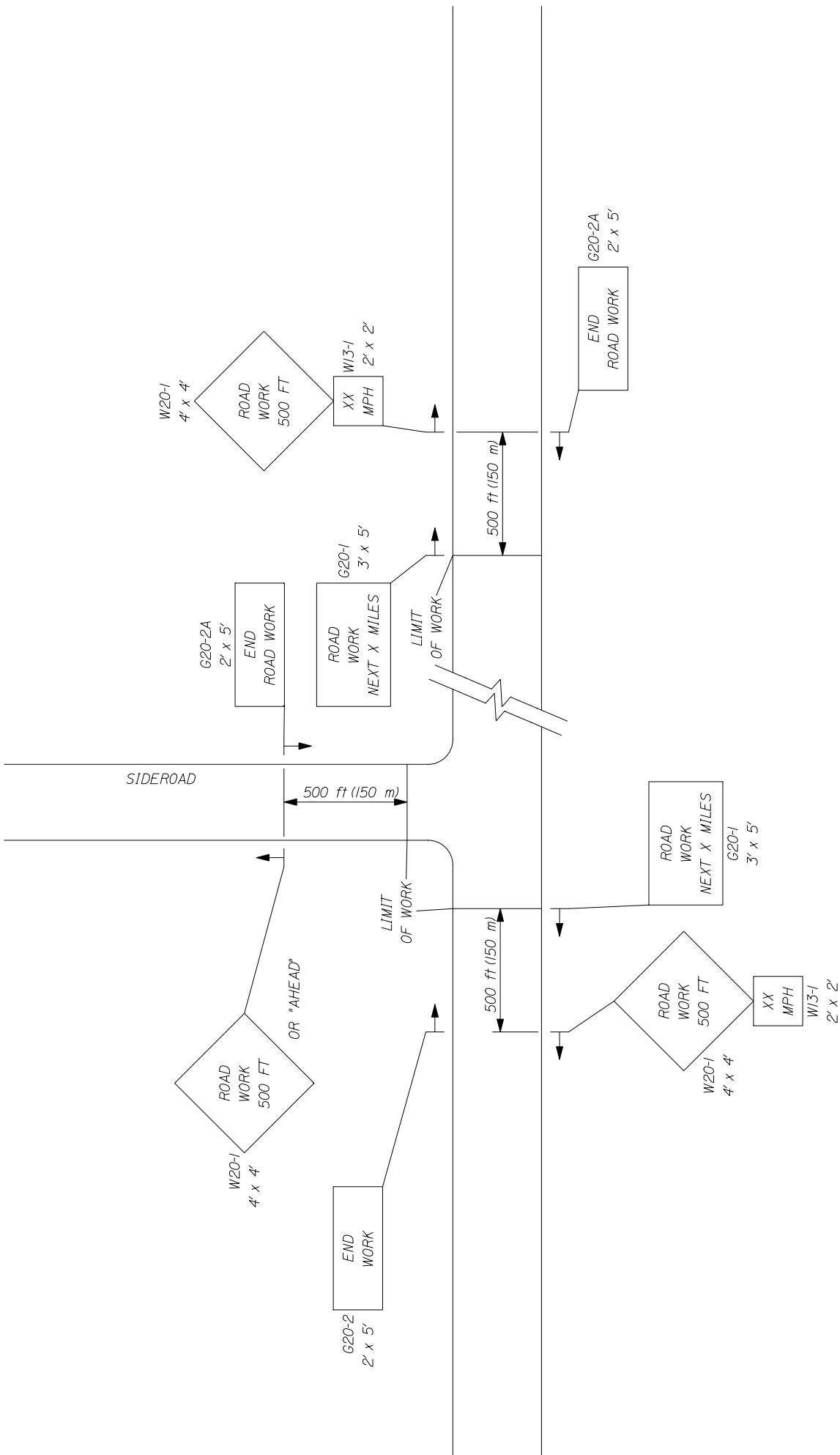
The Contractor shall conduct their operations in such a manner that the roadway will not be restricted to one lane for more than 800 m [2,500 ft] at each work area. To encourage quality paving in warm-weather conditions, the length can be extended to 4,000 ft depending on the traffic impacts. Where more than one work area restricts traffic to one lane operation, these work areas shall be separated by at least 1.6 km [1 mile] of two way operation.

**Temporary Centerline** A temporary centerline shall be placed each day on all new pavement to be used by traffic. The temporary centerline, when specified of reflectorized traffic paint, shall conform to the standard marking patterns used for permanent markings.

Failure to apply a temporary centerline daily will result in a Traffic Control Violation and suspension of paving operations until temporary markers are applied to all previously placed pavement.

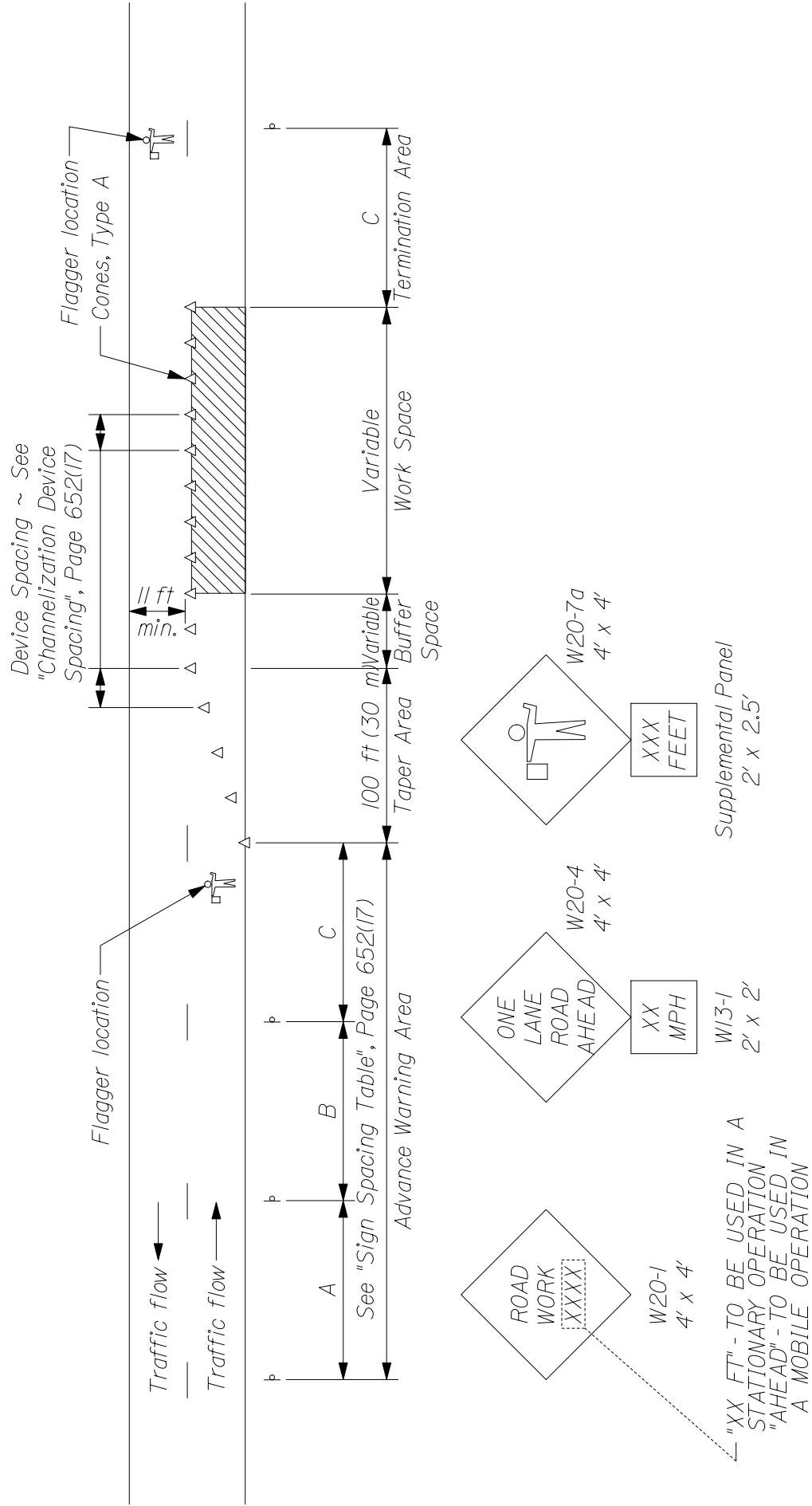
<sup>1</sup> “Road Work Ahead” to be used in mobile operations and “Road Work xx ft” to be used in stationary operations as directed by the Resident.

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-- PROJECT APPROACH SIGNING --  
TWO WAY TRAFFIC





TYPICAL APPLICATION: TWO - WAY, TWO LANE ROADWAY, CLOSING ONE LANE USING FLAGGERS

\* Formulas for L are as follows:

For speed limits of 40 mph (60 km/h) or less:

$$L = \frac{WS^2}{60} \quad (L = \frac{WS^2}{155})$$

For speed limits of 45 mph (70 km/h) or greater:

$$L = WS \quad (L = \frac{WS}{1.6})$$

\* Formulas for L are as follows:

A minimum of 5 channelization devices shall be used in the taper.

TYPE OF TAPER	TAPER LENGTH (L)*
Merging Taper	at least L
Shifting Taper	at least 0.5L
Shoulder Taper	at least 0.33L
One-Lane, Two-Way Traffic Taper	100 ft (30 m) maximum
Downstream Taper	100 ft (30 m) per lane

#### CHANNELIZATION DEVICE SPACING

The spacing of channelization devices shall not exceed a distance equal to 1.0 times the speed limit in mph when used for taper channelization, and a distance in feet of 2.0 times the speed limit in mph when used for tangent channelization.

#### GENERAL NOTES;

1. Final placement of signs and devices may be changed to fit field conditions as approved by the Resident.

Road Type	Distance Between Signs**		
	A	B	C
Urban 30 mph (50 km/h) or less	100 (30)	100 (30)	100 (30)
Urban 35 mph (55 km/h) and greater	350 (100)	350 (100)	350 (100)
Rural	500 (150)	500 (150)	500 (150)
Expressway / Urban Parkway	2,640 (800)	1,500 (450)	1000 (300)

\*\*Distances are shown in feet (meters).

#### SUGGESTED BUFFER ZONE LENGTHS

Speed (mph)	Length (feet)	Speed (mph)	Length (feet)
20	115	40	325
25	155	45	360
30	200	50	425
35	250	55	495

**SPECIAL PROVISION**  
**SECTION 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.

## 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](http://www.maine.gov/mdot/contractor-consultant-information/ss_standard_details_updates.php)

<b><u>Detail #</u></b>	<b><u>Description</u></b>	<b><u>Revision Date</u></b>
504(15)	Diaphragms	12/30/02
507(04)	Steel Bridge Railing	2/05/03
526(33)	Concrete Transition Barrier	8/18/03
645(06)	H-Beam Posts – Highway Signing	7/21/04
645(09)	Installation of Type II Signs	7/21/04
626(09)	Electrical Junction Box for Traffic Signals and Lighting	2/25/05
604(01)	Catch Basins	11/16/05
604(05)	Type “A” & “B” Catch Basin Tops	11/16/05
604(06)	Type “C” Catch Basin Tops	11/16/05
604(07)	Manhole Top “D”	11/16/05
604(09)	Catch Basin Type “E”	11/16/05
606(02)	Multiple Mailbox Support	11/16/05
606(07)	Reflectorized Beam Guardrail Delineator Details	11/16/05
609(06)	Vertical Bridge Curb	11/16/05
504(23)	Hand-Hold Details	12/08/05
609(03)	Curb Type 3	6/27/06
609(07)	Curb Type 1	6/27/06
535(01)	Precast Superstructure - Shear Key	10/12/06
535(02)	Precast Superstructure - Curb Key & Drip Notch	10/12/06
535(03)	Precast Superstructure - Shear Key	10/12/06

535(04)	Precast Superstructure - Shear Key	10/12/06
535(05)	Precast Superstructure - Post Tensioning	10/12/06
535(06)	Precast Superstructure - Sections	10/12/06
535(07)	Precast Superstructure - Precast Slab & Box	10/12/06
535(08)	Precast Superstructure - Sections	10/12/06
535(09)	Precast Superstructure - Sections	10/12/06
535(10)	Precast Superstructure - Sections	10/12/06
535(11)	Precast Superstructure - Sections	10/12/06
535(12)	Precast Superstructure - Sections	10/12/06
535(13)	Precast Superstructure - Sections	10/12/06
535(14)	Precast Superstructure - Stirrups	10/12/06
535(15)	Precast Superstructure - Plan	10/12/06
535(16)	Precast Superstructure - Reinforcing	10/12/06
535(17)	Precast Superstructure - Notes	10/12/06
801(01)	Drives on Sidewalk Sections	2/06/07
801(02)	Drives on Non-Sidewalk Sections	2/06/07
535(03)	Precast Superstructure - Shear Key	12/5/07
535(04)	Precast Superstructure - Shear Key	12/5/07
535(05)	Precast Superstructure - Post Tensioning	12/5/07
535(17)	Precast Superstructure - Notes	12/5/07
801(01)	Drives on Sidewalk Sections	1/04/08
801(02)	Drives on Non-Sidewalk Sections	1/04/08
203(03)	Backslope Rounding	1/29/08
535(02)	Precast Superstructure - Curb Key & Drip Notch	5/20/08

535(05)	Precast Superstructure - Post Tensioning	5/20/08
502(03)	Concrete Curb - Bituminous Wearing Surface	2/2/09
502(03)A	Concrete Curb - Concrete Wearing Surface	2/2/09
502(07)	Precast Concrete Deck Panels - Layout Plan	2/2/09
502(07)A	Precast Concrete Deck Panels - Layout Plan	2/2/09
502(08)	Precast Concrete Deck Panels - Panel Plan	2/2/09
502(09)	Precast Concrete Deck Panels - Blocking Detail	2/2/09
502(10)	Precast Concrete Deck Panels	2/2/09
502(11)	Precast Concrete Deck Panels	2/2/09
502(12)	Precast Concrete Deck Panels - Notes	2/2/09
502(12)A	Precast Concrete Deck Panels - Notes	2/2/09
526(06)	Permanent Concrete Barrier	2/2/09
526(08)	Permanent Concrete Barrier – Type IIIA	2/2/09
526(08)A	Permanent Concrete Barrier – Type IIIA	2/2/09
526(13)	Permanent Concrete Barrier – Type IIIB	2/2/09
526(14)	Permanent Concrete Barrier – Type IIIB	2/2/09
526(21)	Concrete Transition Barrier	2/2/09
526(39)	Texas Classic Rail – Between Window	2/2/09
526(40)	Texas Classic Rail – Through Window	2/2/09
526(41)	Texas Classic Rail – Through Post	2/2/09
526(42)	Texas Classic Rail – Through Nose	2/2/09
606(20)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(21)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(22)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09

606(23)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
609(06)	Vertical Bridge Curb	2/2/09
609(08)	Precast Concrete Transition Curb	2/2/09
502(12)	Precast Concrete Desk Panels	9/09
504(22)	Diaphragm & Crossframe Notes	9/09
626(09)	Electrical Junction Box for Traffic Signals and Lighting	8/20/10
526(08)	Permanent Concrete Barrier	12/7/10
526(08A)	Permanent Concrete Barrier	12/7/10

## SUPPLEMENTAL SPECIFICATION

(Corrections, Additions, & Revisions to Standard Specifications - Revision of December 2002)

### SECTION 101

#### CONTRACT INTERPRETATION

##### 101.2 Definitions

Closeout Documentation Replace the sentence “A letter stating the amount.... DBE goals.” with “DBE Goal Attainment Verification Form”

Add “Environmental Information Hazardous waste assessments, dredge material test results, boring logs, geophysical studies, and other records and reports of the environmental conditions. For a related provision, see Section 104.3.14 - Interpretation and Interpolation.”

Add “Fabrication Engineer The Department’s representative responsible for Quality Assurance of pre-fabricated products that are produced off-site.”

Geotechnical Information Replace with the following: “Boring logs, soil reports, geotechnical design reports, ground penetrating radar evaluations, seismic refraction studies, and other records of subsurface conditions. For a related provision, see Section 104.3.14 - Interpretation and Interpolation.”

### SECTION 102

#### DELIVERY OF BIDS

102.7.1 Location and Time Add the following sentence “As a minimum, the Bidder will submit a Bid Package consisting of the Notice to Contractors, the completed Acknowledgement of Bid Amendments form, the completed Schedule of Items, 2 copies of the completed Agreement, Offer, & Award form, a Bid Bond or Bid Guarantee, and any other Certifications or Bid Requirements listed in the Bid Book.”

102.11.1 Non-curable Bid Defects Replace E. with “E. The unit price and bid amount is not provided or a lump sum price is not provided or is illegible as determined by the Department.”

### SECTION 103

#### AWARD AND CONTRACTING

103.3.1 Notice and Information Gathering Change the first paragraph to read as follows: “After Bid Opening and as a condition for Award of a Contract, the Department may require an Apparent Successful Bidder to demonstrate to the Department’s satisfaction that the Bidder is responsible and qualified to perform the Work.”

### SECTION 104

#### GENERAL RIGHTS AND RESPONSIBILITIES

104.3.14 Interpretation and Interpolation In the first sentence, change “...and Geotechnical Information.” to “...Environmental Information, and Geotechnical Information.”

Delete the entire Section 104.5.9 and replace with the following:



## SECTION 105 GENERAL SCOPE OF WORK

Delete the entire Section 105.6 and replace with the following:

105.6.1 Department Provided Services The Department will provide the Contractor with the description and coordinates of vertical and horizontal control points, set by the Department, within the Project Limits, for full construction Projects and other Projects where survey control is necessary. For Projects of 1,500 feet in length, or less: The Department will provide three points. For Projects between 1,500 and 5,000 feet in length: The Department will provide one set of two points at each end of the Project. For Projects in excess of 5,000 feet in length, the Department will provide one set of two points at each end of the Project, plus one additional set of two points for each mile of Project length. For non-full construction Projects and other Projects where survey control is not necessary, the Department will not set any control points and, therefore, will not provide description and coordinates of any control points. Upon request of the Contractor, the Department will provide the Department's survey data management software and Survey Manual to the Contractor, or its survey Subcontractor, for the exclusive use on the Department's Projects.

105.6.2 Contractor Provided Services Utilizing the survey information and points provided by the Department, described in Subsection 105.6.1, Department Provided Services, the Contractor shall provide all additional survey layout necessary to complete the Work. This may include, but not be limited to, reestablishing all points provided by the Department, establishing additional control points, running axis lines, providing layout and maintenance of all other lines, grades, or points, and survey quality control to ensure conformance with the Contract. The Contractor is also responsible for providing construction centerline, or close reference points, for all Utility Facilities relocations and adjustments as necessary to complete the Work. When the Work is to connect with existing Structures, the Contractor shall verify all dimensions before proceeding with the Work. The Contractor shall employ or retain competent engineering and/or surveying personnel to fulfill these responsibilities.

The Contractor must notify the Department of any errors or inconsistencies regarding the data and layout provided by the Department as provided by Section 104.3.3 - Duty to Notify Department If Ambiguities Discovered.

105.6.2.1 Survey Quality Control The Contractor is responsible for all construction survey quality control. Construction survey quality control is generally defined as, first, performing initial field survey layout of the Work and, second, performing an independent check of the initial layout using independent survey data to assure the accuracy of the initial layout; additional iterations of checks may be required if significant discrepancies are discovered in this process. Construction survey layout quality control also requires written documentation of the layout process such that the process can be followed and repeated, if necessary, by an independent survey crew.

105.6.3 Survey Quality Assurance It is the Department's prerogative to perform construction survey quality assurance. Construction survey quality assurance may, or may not, be performed by the Department. Construction survey quality assurance is generally defined as an independent check of the construction survey quality control. The construction survey

quality assurance process may involve physically checking the Contractor's construction survey layout using independent survey data, or may simply involve reviewing the construction survey quality control written documentation. If the Department elects to physically check the Contractor's survey layout, the Contractor's designated surveyor may be required to be present. The Department will provide a minimum notice of 48 hours to the Contractor, whenever possible, if the Contractor's designated surveyor's presence is required. Any errors discovered through the quality assurance process shall be corrected by the Contractor, at no additional cost to the Department.

105.6.4 Boundary Markers The Contractor shall preserve and protect from damage all monuments or other points that mark the boundaries of the Right-of-Way or abutting parcels that are outside the area that must be disturbed to perform the Work. The Contractor indemnifies and holds harmless the Department from all claims to reestablish the former location of all such monuments or points including claims arising from 14 MRSA § 7554-A. For a related provision, see Section 104.3.11 - Responsibility for Property of Others.

## SECTION 106 QUALITY

106.4.3 Testing Change the first sentence in paragraph three from "...maintain records of all inspections and tests." to "...maintain original documentation of all inspections, tests, and calculations used to generate reports."

106.6 Acceptance Add the following to paragraph 1 of A: "This includes Sections 401 - Hot Mix Asphalt, 402 - Pavement Smoothness, and 502 - Structural Concrete - Method A - Air Content."

Add the following to the beginning of paragraph 3 of A: "For pay factors based on Quality Level Analysis, and"

106.7.1 Standard Deviation Method Add the following to F: "Note: In cases where the mean of the values is equal to either the USL or the LSL, then the PWL will be 50 regardless of the computed value of s."

Add the following to H: "Method C Hot Mix Asphalt:  $PF = [55 + (Quality\ Level * 0.5)] * 0.01$ "

## SECTION 107 TIME

107.3.1 General Add the following: "If a Holiday occurs on a Sunday, the following Monday shall be considered a Holiday. Sunday or Holiday work must be approved by the Department, except that the Contractor may work on Martin Luther King Day, President's Day, Patriot's Day, the Friday after Thanksgiving, and Columbus Day without the Department's approval."

107.7.2 Schedule of Liquidated Damages Replace the table of Liquidated Damages as follows:

From	Up to and	Amount of Liquidated
------	-----------	----------------------

<u>More Than</u>	<u>Including</u>	<u>Damages per Calendar Day</u>
\$0	\$100,000	\$225
\$100,000	\$250,000	\$350
\$250,000	\$500,000	\$475
\$500,000	\$1,000,000	\$675
\$1,000,000	\$2,000,000	\$900
\$2,000,000	\$4,000,000	\$1,000
\$4,000,000	and more	\$2,100

SECTION 108  
PAYMENT

Remove Section 108.4 and replace with the following:

“108.4 Payment for Materials Obtained and Stored Acting upon a request from the Contractor and accompanied by bills or receipted bills, the Department will pay for all or part of the value of acceptable, non-perishable Materials that are to be incorporated in the Work, including Materials that are to be incorporated into the Work, not delivered on the Work site, and stored at places acceptable to the Department. Examples of such Materials include steel piles, stone masonry, curbing, timber and lumber, metal Culverts, stone and sand, gravel, and other Materials. The Department will not make payment on living or perishable Materials until acceptably planted in their final locations.

If payment for Materials is made to the Contractor based on bills, only, then the Contractor must provide receipted bills to the Department for these Materials within 14 days of the date the Contractor receives payment for the Materials. Failure of the Contractor to provide receipted bills for these Materials within 14 days of the date the Contractor receives payment will result in the paid amount being withheld from the subsequent progress payment, or payments, until such time the receipted bills are received by the Department.

Materials paid for by the Department are the property of the Department, but the risk of loss shall remain with the Contractor. Payment for Materials does not constitute Acceptance of the Material. If Materials for which the Department has paid are later found to be unacceptable, then the Department may withhold amounts reflecting such unacceptable Materials from payments otherwise due the Contractor.

In the event of Default, the Department may use or cause to be used all paid-for Materials in any manner that is in the best interest of the Department.”

SECTION 109  
CHANGES

109.1.1 Changes Permitted Add the following to the end of the paragraph: “There will be no adjustment to Contract Time due to an increase or decrease in quantities, compared to those estimated, except as addressed through Contract Modification(s).”

109.1.2 Substantial Changes to Major Items Add the following to the end of the paragraph: “Contract Time adjustments may be made for substantial changes to Major Items when the change affects the Critical Path, as determined by the Department”

109.4.4 Investigation / Adjustment Third sentence, delete the words “subsections (A) - (E)”

109.5.1 Definitions - Types of Delays

B. Compensable Delay Replace (1) with the following; “a weather related Uncontrollable Event of such an unusually severe nature that a Federal Emergency Disaster is declared. The Contractor will only be entitled to an Equitable Adjustment if the Project falls within the geographic boundaries prescribed under the disaster declaration.”

109.7.2 Basis of Payment Replace with the following: “Adjustments will be established by mutual Agreement based upon Unit or Lump Sum Prices. These agreed Unit or Lump Sum prices will be full compensation and no additions or mark-ups are allowed. If Agreement cannot be reached, the Contractor shall accept payment on a Force Account basis as provided in Section 109.7.5 - Force Account Work, as full and complete compensation for all Work relating to the Equitable Adjustment.”

109.7.3 Compensable Items Delete this Section entirely.

109.7.4 Non-Compensable Items Replace with the following: “The Contractor is not entitled to compensation or reimbursement for any of the following items:

- A. Total profit or home office overhead in excess of 15%,
- B. ....”

109.7.5 Force Account Work

C. Equipment

Paragraph 2, delete sentence 1 which starts; “Equipment leased....”

Paragraph 6, change sentence 2 from “The Contractor may furnish...” to read “If requested by the Department, the Contractor will produce cost data to assist the Department in the establishment of such rental rate, including all records that are relevant to the Actual Costs including rental Receipts, acquisition costs, financing documents, lease Agreements, and maintenance and operational cost records.”

Add the following paragraph; “Equipment leased by the Contractor for Force Account Work and actually used on the Project will be paid for at the actual invoice amount plus 10% markup for administrative costs.”

Add the following section;

“F. Subcontractor Work When accomplishing Force Account Work that utilizes Subcontractors, the Contractor will be allowed a maximum markup of 5% for profit and overhead on the Subcontractor’s portion of the Force Account Work. If the Department does not accept the Subcontractor quote, then the Subcontractor work will be subject to the Force Account provisions with a 5% markup for profit & overhead..”

## SECTION 110 INDEMNIFICATION, BONDING, AND INSURANCE

Delete the entire Section 110.2.3 and replace with the following:

110.2.3 Bonding for Landscape Establishment Period The Contractor shall provide a signed, valid, and enforceable Performance, Warranty, or Maintenance Bond complying with the Contract, to the Department at Final Acceptance.

The bond shall be in the full amount for all Pay Items for work pursuant to Sec 621, Landscape, payable to the “Treasurer - State of Maine,” and on the Department’s forms, on exact copies thereof, or on forms that do not contain any significant variations from the Department’s forms as solely determined by the Department.

The Contractor shall pay all premiums and take all other actions necessary to keep said bond in effect for the duration of the Landscape Establishment Period described in Special Provision 621.0036 - Establishment Period. If the Surety becomes financially insolvent, ceases to be licensed or approved to do business in the State of Maine, or stops operating in the United States, the Contractor shall file new bonds complying with this Section within 10 Days of the date the Contractor is notified or becomes aware of such change.

All Bonds shall be procured from a company organized and operating in the United States, licensed or approved to do business in the State of Maine by the State of Maine Department of Business Regulation, Bureau of Insurance, and listed on the latest Federal Department of the Treasury listing for “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies.”

By issuing a bond, the Surety agrees to be bound by all terms of the Contract, including those related to payment, time for performance, quality, warranties, and the Department’s self-help remedy provided in Section 112.1 - Default to the same extent as if all terms of the Contract are contained in the bond(s).

Regarding claims related to any obligations covered by the bond, the Surety shall provide, within 60 Days of Receipt of written notice thereof, full payment of the entire claim or written notice of all bases upon which it is denying or contesting payment. Failure of the Surety to provide such notice within the 60-day period constitutes the Surety’s waiver of any right to deny or contest payment and the Surety’s acknowledgment that the claim is valid and undisputed.

## SECTION 202 REMOVING STRUCTURES AND OBSTRUCTIONS

202.02 Removing Buildings Make the following change to the last sentence in the final paragraph, change “...Code of Maine Regulations 401.” to “...Department of Environmental Protection Maine Solid Waste Management Rules, 06-096 CMR Ch. 401, Landfill Siting, Design and Operation.”

## SECTION 203 EXCAVATION AND EMBANKMENT

203.01 Description Under b. Rock Excavation; add the following sentence: “The use of perchlorate is not allowed in blasting operations.”

Delete the entire Section 203.041 and replace with the following:

“203.041 Salvage of Existing Hot Mix Asphalt Pavement All existing hot mix asphalt pavement designated to be removed under this contract must be salvaged for utilization. Existing hot mix asphalt pavement material shall not be deposited in any waste area or be placed below subgrade in any embankment.

Methods of utilization may be any of the following:

1. Used as a replacement for untreated aggregate surface course on entrances provided the material contains no particles greater than 50 mm [2 in] in any dimension. Payment will be made under Pay Item 411.09, Untreated Aggregate Surface Course or 411.10, Untreated Aggregate Surface Course, Truck Measure. Material shall be placed, shaped, compacted and stabilized as directed by the Resident.

2. Stockpiled at commercial or approved sites for commercial or MaineDOT use.

3. Other approved methods proposed by the Contractor, and approved by the Resident which will assure proper use of the existing hot mix asphalt pavement.

The cost of salvaging hot mix asphalt material will be included for payment under the applicable pay item, with no additional allowances made, which will be full compensation for removing, temporarily stockpiling, and rehandling, if necessary, and utilizing the material in entrances or other approved uses, or stockpiling at an approved site as described above. The material will also be measured and paid for under the applicable Pay Item if it is reused for aggregate in entrances, or other approved uses.”

## SECTION 502 STRUCTURAL CONCRETE

502.05 Composition and Proportioning; TABLE #1; NOTE #2; third sentence; Change “...alcohol based saline sealer...” to “alcohol based silane sealer...”. Add NOTE #6 to Class S Concrete.

502.0502 Quality Assurance Method A - Rejection by Resident Change the first sentence to read: “For an individual subplot with test results failing to meet the criteria in Table #1, or if the calculated pay factor for Air Content is less than 0.80.....”

502.0503 Quality Assurance Method B - Rejection by Resident Change the first sentence to read: “For material represented by a verification test with test results failing to meet the criteria in Table #1, the Department will.....”

502.0505 Resolution of Disputed Acceptance Test Results Combine the second and third sentence to read: “Circumstances may arise, however, where the Department may .....

502.10 Forms and False work

D. Removal of Forms and False work 1., First paragraph; first, second, and third sentence; replace “forms” with “forms and false work”

502.11 Placing Concrete

G. Concrete Wearing Surface and Structural Slabs on Precast Superstructures Last paragraph; third sentence; replace “The temperature of the concrete shall not exceed 24° C [75° F] at the time of placement.” with “The temperature of the concrete shall not exceed 24° C [75° F] at the time the concrete is placed in its final position.”

502.15 Curing Concrete First paragraph; replace the first sentence with the following; “All concrete surfaces shall be kept wet with clean, fresh water for a curing period of at least 7 days after concrete placing, with the exception of vertical surfaces as provided for in Section 502.10 (D) - Removal of Forms and False work.”

Second paragraph; delete the first two sentences.

Third paragraph; delete the entire paragraph which starts “When the ambient temperature....”

Fourth paragraph; delete “approved” to now read “...continuously wet for the entire curing period...”

Fifth paragraph; second sentence; change “...as soon as it is possible to do so without damaging the concrete surface.” to “...as soon as possible.”

Seventh paragraph; first sentence; change “...until the end of the curing period.” to “...until the end of the curing period, except as provided for in Section 502.10(D) - Removal of Forms and False work.”

502.19 Basis of Payment First paragraph, second sentence; add "pier nose armor" to the list of items included in the contract price for concrete.

## SECTION 503 REINFORCING STEEL

503.06 Placing and Fastening Change the second paragraph, first sentence from: “All tack welding shall be done in accordance with Section 504, Structural Steel.” to “All tack welding shall be done in accordance with AWS D1.4 Structural Welding Code - Reinforcing Steel.”

## SECTION 504 STRUCTURAL STEEL

504.09 Facilities for Inspection Add the follow as the last paragraph: “Failure to comply with the above requirements will be consider to be a denial to allow access to work by the Contractor. The Department will reject any work done when access for inspection is denied.”

504.18 Plates for Fabricated Members Change the second paragraph, first sentence from: "...ASTM A 898/A 898 M..." to "...ASTM A 898/A 898 M or ASTM A 435/A 435 M as applicable and..."

504.31 Shop Assembly Add the following as the last sentence: "The minimum assembly length shall include bearing centerlines of at least two substructure units."

504.64 Non Destructive Testing-Ancillary Bridge Products and Support Structures Change the third paragraph, first sentence from "One hundred percent..." to "Twenty five percent..."

## SECTION 535

### PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE

535.02 Materials Change "Steel Strand for Concrete Reinforcement" to "Steel Strand." Add the following to the beginning of the third paragraph; "Concrete shall be Class P conforming to the requirements in this section. 28 day compressive strength shall be as stated on the plans. Coarse aggregate...."

535.05 Inspection Facilities Add the follow as the last paragraph: "If the above requirements are not met, the Contractor shall be considered to be in violation of Standard Specification 104.2.5 – Right to Inspect Work. All work occurring during a violation of this specification will be rejected."

535.26 Lateral Post-Tensioning Replace the first paragraph; "A final tension..." with "Overstressing strands for setting losses cannot be accomplished for chuck to chuck lengths of 7.6 m [25 ft] and less. In such instances, refer to the Plans for all materials and methods. Otherwise, post-tensioning shall be in accordance with PCI standards and shall provide the anchorage force noted in the Plans. The applied jacking force shall be no less than 100% of the design jacking force."

## SECTION 603

### PIPE CULVERTS AND STORM DRAINS

603.0311 Corrugated Polyethylene Pipe for Option III Replace the Minimum Mandrel Diameter Table with the following:

Nominal Size US Customary (in)	Minimum Mandrel Diameter (in)	Nominal Size Metric (mm)	Minimum Mandrel Diameter (mm)
12	11.23	300	280.73
15	14.04	375	350.91
18	16.84	450	421.09
24	22.46	600	561.45
30	28.07	750	701.81
36	33.69	900	842.18
42	39.30	1050	982.54
48	44.92	1200	1122.90



SECTION 604  
MANHOLES, INLETS, AND CATCH BASINS

604.02 Materials Add the following:

“Tops and Traps	712.07
Corrugated Metal Units	712.08
Catch Basin and Manhole Steps	712.09”

SECTION 605  
UNDERDRAINS

605.05 Underdrain Outlets Make the following change:

In the first paragraph, second sentence, delete the words “metal pipe”.

SECTION 606  
GUARDRAIL

606.02 Materials Delete the entire paragraph which reads “The sole patented supplier of multiple mailbox...” and replace with “Acceptable multiple mailbox assemblies shall be listed on the Department’s Approved Products List and shall be NCHRP 350 tested and approved.” Delete the entire paragraph which reads “Retroreflective beam guardrail delineators...” and replace with “Reflectorized sheeting for Guardrail Delineators shall meet the requirements of Section 719.01 - Reflective Sheeting. Delineators shall be fabricated from high-impact, ultraviolet and weather resistant thermoplastic.

606.09 Basis of Payment First paragraph; delete the second and third sentence in their entirety and replace with “Butterfly-type guardrail reflectorized delineators shall be mounted on all W-beam guardrail at an interval of every 10 posts [62.5 ft] on tangents sections and every 5 posts [31.25 ft] on curved sections as directed by the Resident. On divided highways, the delineators shall be yellow on the left hand side and silver/white on the right hand side. On two-way roadways, the delineators shall be silver/white on the right hand side. All delineators shall have retroreflective sheeting applied to only the traffic facing side. Reflectorized guardrail delineators will not be paid for directly, but will be considered incidental to the guardrail items.”

SECTION 609  
CURB

609.04 Bituminous Curb f., Delete the requirement “Color Natural (White)”

SECTION 610  
STONE FILL, RIPRAP, STONE BLANKET,  
AND STONE DITCH PROTECTION

Add the following paragraph to Section 610.02:

“Materials shall meet the requirements of the following Sections of Special Provision 703:

Stone Fill	703.25
Plain and Hand Laid Riprap	703.26
Stone Blanket	703.27
Heavy Riprap	703.28
Definitions	703.32”

Add the following paragraph to Section 610.032.a.

“Stone fill and stone blanket shall be placed on the slope in a well-knit, compact and uniform layer. The surface stones shall be chinked with smaller stone from the same source.”

Add the following paragraph to Section 610.032.b:

“Riprap shall be placed on the slope in a well-knit, compact and uniform layer. The surface stones shall be chinked with smaller stone from the same source.”

Add the following to Section 610.032: “Section 610.032.d. The grading of riprap, stone fill, stone blanket and stone ditch protection shall be determined by the Resident by visual inspection of the load before it is dumped into place, or, if ordered by the Resident, by dumping individual loads on a flat surface and sorting and measuring the individual rocks contained in the load. A separate, reference pile of stone with the required gradation will be placed by the Contractor at a convenient location where the Resident can see and judge by eye the suitability of the rock being placed during the duration of the project. The Resident reserves the right to reject stone at the job site or stockpile, and in place. Stone rejected at the job site or in place shall be removed from the site at no additional cost to the Department.”

SECTION 615  
LOAM

615.02 Materials Make the following change:

<u>Organic Content</u>	<u>Percent by Volume</u>
Humus	“5% - 10%”, as determined by Ignition Test

SECTION 618  
SEEDING

618.01 Description Change the first sentence to read as follows: “This work shall consist of furnishing and applying seed .....” Also remove “,and cellulose fiber mulch” from 618.01(a).

618.03 Rates of Application In 618.03(a), remove the last sentence and replace with the following: “These rates shall apply to Seeding Method 2, 3, and Crown Vetch.”

In 618.03(c) “1.8 kg [4 lb]/unit.” to “1.95 kg [4 lb]/unit.”

618.09 Construction Method In 618.09(a) 1, sentence two, replace “100 mm [4 in]” with “25 mm [1 in] (Method 1 areas) and 50 mm [2 in] (Method 2 areas)”

618.15 Temporary Seeding Change the Pay Unit from Unit to Kg [lb].

## SECTION 620 GEOTEXTILES

620.03 Placement Section (c)

Title: Replace “Non-woven” in title with “Erosion Control”.

First Paragraph: Replace first word “Non-woven” with “Woven monofilament”.

Second Paragraph: Replace second word “Non-woven” with “Erosion Control”.

620.07 Shipment, Storage, Protection and Repair of Fabric Section (a)

Replace the second sentence with the following: “Damaged geotextiles, as identified by the Resident, shall be repaired immediately.”

620.09 Basis of Payment

Pay Item 620.58: Replace “Non-woven” with “Erosion Control”

Pay Item 620.59: Replace “Non-woven” with “Erosion Control”

## SECTION 621 LANDSCAPING

621.0036 Establishment Period In paragraph 4 and 5, change “time of Final Acceptance” to “end of the period of establishment”. In Paragraph 7, change “Final Acceptance date” to “end of the period of establishment” and change “date of Final Acceptance” to “end of the period of establishment”.

## SECTION 626 HIGHWAY SIGNING

626.034 Concrete Foundations Add to the following to the end of the second paragraph: “Pre-cast and cast-in-place foundations shall be warranted against leaning and corrosion for two years after the project is completed. If the lean is greater than 2 degrees from normal or the foundation is spalling within the first two years, the Contractor shall replace the foundation at no extra cost.”

## SECTION 627 PAVEMENT MARKINGS

627.10 Basis of Payment Add to the following to the end of the third paragraph: “If allowed by Special Provision, the Contractor may utilize Temporary Bi-Directional Yellow and White(As required) Delineators as temporary pavement marking lines and paid for at the contract lump sum price. Such payment will include as many applications as required and removal.”

## SECTION 637 DUST CONTROL

637.06 Basis of Payment Add the following after the second sentence of the third paragraph: “Failure by the Contractor to follow Standard Specification or Special Provision - Section 637 and/or the Contractor’s own Soil Erosion and Pollution Control Plan concerning Dust Control and/or the Contractor’s own Traffic Control Plan concerning Dust Control and/or visible evidence of excessive dust problems, as determined by the Resident, will result in a reduction in payment, computed by reducing the Lump Sum Total by 5% per occurrence per day. The Department’s Resident or any other representative of the Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item. Additional penalties may also be assessed in accordance with Special Provision 652 - Work Zone Traffic Control and Standard Specification 656 - Temporary Soil Erosion and Water Pollution Control.”

## SECTION 639 ENGINEERING FACILITIES

639.04 Field Offices Change the forth to last paragraph from: “The Contractor shall provide a fully functional desktop copier...” to “....desktop copier/scanner...”

Description Change “Floor Area” to “Floor Area (Outside Dimension)”. Change Type B floor area from “15 (160)” to “20 (217)”.

639.09 Telephone Paragraph 1 is amended as follows:

“The contractor shall provide **two** telephone lines and two telephones,....”

Add- “In addition the contractor will supply one computer broadband connection, modem lease and router. The router shall have wireless access and be 802.11n or 802.11g capable and wireless. The type of connection supplied will be contingent upon the availability of services (i.e. DSL or Cable Broadband). It shall be the contractor’s option to provide dynamic or static IP addresses through the service. **The selected service will have a minimum downstream connection of 1.5 Mbps and 384 Kbps upstream.** The contractor shall be responsible for the installation charges and all reinstallation charges following suspended periods. Monthly service and maintenance charges shall be billed by the Internet Service Provider (ISP) directly to the contractor.”

## SECTION 652 MAINTENANCE OF TRAFFIC

652.2.3 Flashing Arrow Board Delete the existing 5 paragraphs and replace with the following: Flashing Arrow Panels (FAP) must be of a type that has been submitted to AASHTO’s National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations’ Approved Products List of Portable Changeable Message Signs & Flashing Arrow Panels.

FAP units shall meet requirements of the current Manual on Uniform Traffic Control Devices

(MUTCD) for Type “C” panels as described in Section 6F.56 - Temporary Traffic Control Devices. An FAP shall have matrix of a minimum of 15 low-glare, sealed beam, Par 46 elements capable of either flashing or sequential displays as well as the various operating modes as described in the MUTCD, Chapter 6-F. If an FAP consisting of a bulb matrix is used, each element should be recess-mounted or equipped with an upper hood of not less than 180 degrees. The color presented by the elements shall be yellow.

FAP elements shall be capable of at least a 50 percent dimming from full brilliance. Full brilliance should be used for daytime operation and the dimmed mode shall be used for nighttime operation. FAP shall be at least 2.4 M x 1.2 M [96” x 48”] and finished in non-reflective black. The FAP shall be interpretable for a distance not less than 1.6 km [1 mile].

Operating modes shall include, flashing arrow, sequential arrow, sequential chevron, flashing double arrow, and flashing caution. In the three arrow signals, the second light from the arrow point shall not operate.

The minimum element on-time shall be 50 percent for the flashing mode, with equal intervals of 25 percent for each sequential phase. The flashing rate shall be not less than 25 nor more than 40 flashes per minute. All on-board circuitry shall be solid state.

Primary power source shall be 12 volt solar with a battery back-up to provide continuous operation when failure of the primary power source occurs, up to 30 days with fully charged batteries. Batteries must be capable of being charged from an onboard 110 volt AC power source and the unit shall be equipped with a cable for this purpose.

Controller and battery compartments shall be enclosed in lockable, weather-tight boxes. The FAP shall be mounted on a pneumatic-tired trailer or other suitable support for hauling to various locations, as directed. The minimum mounting height of an arrow panel should be 2.1 M [7 feet] from the roadway to the bottom of the panel.

The face of the trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers.

A portable changeable message sign may be used to simulate an arrow panel display.”

652.2.4 Other Devices Delete the last paragraph and add the following:

“652.2.5 Portable Changeable Message Sign Trailer mounted Portable Changeable Message Signs (PCMS) must be of a type that has been submitted to AASHTO’s National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations’ Approved Products List of Portable Changeable Message Signs & Flashing Arrow Panels. The PCMS unit shall meet or exceed the current specifications of the Manual on Uniform Traffic Control Devices (MUTCD), 6F.55.

The front face of the sign should be covered with a low-glare protective material. The color of the LED elements shall be amber on a black background. The PCMS should be visible from a distance of 0.8 km [0.5 mile] day and night and have a minimum 15° viewing angle. Characters must be legible from a distance of at least 200 M [650 feet].

The message panel should have adjustable display rates (minimum of 3 seconds per phase), so that the entire message can be read at least twice at the posted speed, the off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed. Each message shall consist of either one or two phases. A phase shall consist of up to eight characters per line. The unit must be capable of displaying at least three lines of text with eight characters per line. Each character shall be 457 mm [18"] high. Each character module shall use at least a five wide and seven high pixel matrix. The text of the messages shall not scroll or travel horizontally or vertically across the face of the sign.

Units shall automatically adjust their brightness under varying light conditions to maintain legibility.

The control system shall include a display screen upon which messages can be reviewed before being displayed on the message sign. The control system shall be capable of maintaining memory when power is unavailable. Message must be changeable with either a notebook computer or an on-board keypad. The controller shall have the capability to store a minimum of 200 user-defined and 200 pre-programmed messages. Controller and battery compartments shall be enclosed in lockable, weather-tight boxes.

PCMS units shall have the capability of being made programmable by means of wireless communications. PCMS units shall also be fully capable of having an on-board radar system installed if required for a particular application.

PCMS' primary power source shall be solar with a battery back-up to provide continuous operation when failure of the primary power source occurs. Batteries must be capable of being charged from a 110 volt AC power source. The unit must also be capable of being operated solely from a 110 volt AC power source and be equipped with a cable for this purpose.

The PCMS shall be mounted on a trailer in such a way that the bottom of the message sign panel shall be a minimum of 2.1 M [7 ft] above the roadway in urban areas and 1.5 M [5 ft] above the roadway in rural areas when it is in the operating mode. PCMS trailers should be of a heavy duty type with a 51 mm [2"] ball hitch and a minimum of four leveling jacks (at each corner). The sign shall be capable of being rotated 360° relative to the trailer. The face of the trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers."

652.3.3 Submittal of Traffic Control Plan In item e. change "A list of all certified flaggers..." to "A list of all the Contractor's certified flaggers..."

Add the follow to the list of requirements: "k. The plan for unexpected nighttime work along with a list of emergency nighttime equipment available on-site."

In the last paragraph add the following as the second sentence: "The Department will review and provide comments to the Contractor within 14 days of receipt of the TCP." Add the following as the last sentence: "The creation and modification of the TCP will be considered incidental to the related 652 items."

652.3.5 Installation of Traffic Control Devices In the first paragraph, first sentence; change "Signs shall be erected..." to "Portable signs shall be erected.." In the third sentence; change

“Signs must be erected so that the sign face...” to “Post-mounted signs must also be erected so that the sign face...”

652.4 Flaggers Replace the first paragraph with the following; “The Contractor shall furnish flaggers as required by the TCP or as otherwise specified by the Resident. All flaggers must have successfully completed a flagger test approved by the Department and administered by a Department-approved Flagger-Certifier who is employing that flagger. All flaggers must carry an official certification card with them while flagging that has been issued by their employer. Flaggers shall wear safety apparel meeting ANSI 107-2004 Class 2 risk exposure that clearly identifies the wearer as a person, and is visible at a minimum distance of 300 m [1000 ft], and shall wear a hardhat with 360° retro-reflectivity. For nighttime conditions, Class 3 apparel, meeting ANSI 107-2004, shall be worn along with a hardhat with 360° retro-reflectivity. Retro-reflective or flashing SLOW/STOP paddles shall be used, and the flagger station shall be illuminated to assure visibility in accordance with 652.6.2.”

Second paragraph, first sentence; change “...have sufficient distance to stop before entering the workspace.” to “...have sufficient distance to stop at the intended stopping point.” Third sentence; change “At a spot obstruction...” to “At a spot obstruction with adequate sight distance...”

Fourth paragraph, delete and replace with “Flaggers shall be provided as a minimum, a 10 minute break, every 2 hours and a 30 minute or longer lunch period away from the work station. Flaggers may only receive 1 unpaid break per day; all other breaks must be paid. Sufficient certified flaggers shall be available onsite to provide for continuous flagging operations during break periods. Breaker flaggers will not be paid for separately, but shall be considered incidental to the appropriate pay item.”

Add the following:

“652.5.1 Rumble Strip Crossing When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for 7 calendar days or less, the Contractor shall install warning signs that read “RUMBLE STRIP CROSSING” with a supplemental Motorcycle Plaque, (W8-15P).

When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for more than 7 calendar days, the Contractor shall pave in the rumble strips in the area that traffic will cross, unless otherwise directed by the Resident. Rumble strips shall be replaced prior to the end of the project, when it is no longer necessary to cross them.”

652.6 Nightwork Delete this section entirely and replace with the following:

“652.6.1 Daylight Work Times Unless otherwise described in the Contract, the Contractor is allowed to commence work and end work daily according to the Sunrise/Sunset Table at: <http://www.sunrisesunset.com/usa/Maine.asp>. If the Project town is not listed, the closest town on the list will be used as agreed at the Preconstruction Meeting. Any work conducted before sunrise or after sunset will be considered Night Work.

652.6.2 Night Work When Night Work occurs (either scheduled or unscheduled), the Contractor shall provide and maintain lighting on all equipment and at all work stations.

The lighting facilities shall be capable of providing light of sufficient intensity to permit good workmanship, safety and proper inspection at all times. The lighting shall be cut off and arranged on stanchions at a height that will provide perimeter lighting for each piece of equipment and will not interfere with traffic, including commercial vehicles, approaching the work site from either direction.

The Contractor shall have available portable floodlights for special areas.

The Contractor shall utilize padding, shielding or other insulation of mechanical and electrical equipment, if necessary, to minimize noise, and shall provide sufficient fuel, spare lamps, generators, etc. to maintain lighting of the work site.

The Contractor shall submit, as a subset of the Traffic Control Plan, a lighting plan at the Preconstruction Conference, showing the type and location of lights to be used for night work. The Resident may require modifications be made to the lighting set up in actual field conditions.

Prior to beginning any Night Work, the Contractor shall furnish a light meter for the Residents use that is capable of measuring the range of light levels from 5 to 20 foot-candles.

Horizontal illumination, for activities on the ground, shall be measured with the photometer parallel to the road surface. For purposes of roadway lighting, the photometer is placed on the pavement. Vertical illumination, for overhead activities, shall be measured with the photometer perpendicular to the road surface. Measurements shall be taken at the height and location of the overhead activity.

Night Work lighting requirements:

Mobile Operations: For mobile-type operations, each piece of equipment (paver, roller, milling machine, etc) will carry indirect (i.e. balloon type) lights capable of producing at least 10 foot-candles of lighting around the work area of the equipment.

Fixed Operations: For fixed-type operations (flaggers, curb, bridge, pipes, etc.), direct (i.e. tower) lighting will be utilized capable of illuminating the work area with at least 10 foot-candles of light.

Hybrid Operations: For hybrid-type operations (guardrail, sweeping, Inslope excavation, etc.), either direct or indirect lighting may be utilized. The chosen lights must be capable of producing at least 10 foot-candles of light around the work area of the equipment

Inspection Operations: Areas required to be inspected by the Department will require a minimum of 5 foot-candles of lighting. This may be accomplished through direct or indirect means.

All workers shall wear safety apparel labeled as meeting the ANSI 107-2004 standard performance for Class 3 risk exposure.

The Contractor shall apply 2- inch wide retro-reflective tape, with alternating red and white segments, to outline the front back and sides of construction vehicles and equipment, to define



their shape and size to the extent practicable. Pickup trucks and personal vehicles are exempt from this requirement. The Contractor shall furnish approved signs reading "Construction Vehicle - Keep Back" to be used on trucks hauling to the project when such signs are deemed necessary by the Resident. The signs shall be a minimum of 30 inches by 60 inches, Black and Orange, ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic).

All vehicles used on the project, including pickup trucks and personal vehicles, shall be equipped with amber flashing lights, visible from both front and rear, or by means of single, approved type, revolving, flashing or strobe lights mounted so as to be visible 360°. The vehicle flashing system shall be in continuous operation while the vehicle is on any part of the project.

The Resident or any other representative of the Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item. Failure to follow the approved Lighting Plan will result in a Traffic Control violation.

Payment for lighting, vehicle mounted signs and other costs accrued because of night work will not be made directly but will be considered incidental to the related contract items."

652.8.2 Other Items Replace the last paragraph with the following: "There will be no payment made under any 652 pay items after the expiration of the adjusted total contract time."

### SECTION 653 POLYSTYRENE PLASTIC INSULATION

653.05 Placing Backfill In the second sentence; change "...shall be not less than 150 mm [6 in] loose measure." to "...shall be not less than 250 mm [10 in] loose measure." In the third sentence; change "...crawler type bulldozer of not more than 390 kg/m<sup>2</sup> [80 lb/ft<sup>2</sup>] ground contact pressure..." to "...crawler type bulldozer of not more than 4875 kg/m<sup>2</sup> [2000 lb/ft<sup>2</sup>] ground contact pressure..."

653.06 Compaction In the last sentence; change "...not more than 390 kg/m<sup>2</sup> [80 lb/ft<sup>2</sup>] ground contact..." to "...not more than 4875 kg/m<sup>2</sup> [2000 lb/ft<sup>2</sup>] 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 [1/2 in] sieve and is retained on the 2.00 mm [No. 10] sieve, minus any reclaimed asphalt pavement used."

703.07 Aggregates for HMA Pavements Delete the forth paragraph: "The composite blend shall have..." and replace with "The composite blend, minus any reclaimed asphalt pavement used, shall have a Micro-Deval value of 18.0 or less as determined by AASHTO T 327. In the event the material exceeds the Micro Deval limit, a Washington Degradation test shall be performed. The material shall be acceptable if it has a value of 30 or more as determined by Washington State DOT Test Method T 113, Method of Test for Determination of Degradation Value (March 2002 version) except that the reported degradation value will be the result of testing a single composite specimen from that portion of the sample that passes the 12.5mm [1/2 inch] sieve and is retained on the 2.00mm [No 10] sieve, minus any reclaimed asphalt pavement used."

703.09 HMA Mixture Composition The coarse and fine aggregate shall meet the requirements of Section 703.07. The several aggregate fractions for mixtures shall be sized, graded, and combined in such proportions that the resulting composite blends will meet the grading requirements of the following table.

**AGGREGATE GRADATION CONTROL POINTS**

SIEVE SIZE	Nominal Maximum Aggregate Size---Control Points (Percent Passing)				
	TYPE 25 mm	TYPE 19 mm	TYPE 12.5 mm	TYPE 9.5 mm	TYPE 4.75 mm
	PERCENT BY WEIGHT PASSING - COMBINED AGGREGATE				
37.5 mm	100				
25 mm	90-100	100			
19 mm	-90	90-100	100		
12.5 mm		-90	90-100	100	100
9.5 mm		-	-90	90-100	95-100
4.75 mm		-	-	-90	80-100
2.36 mm	19-45	23-49	28-58	32-67	40 - 80
1.18 mm		-	-	-	-
600 µm		-	-	-	-
300 µm		-	-	-	-
75 µm	1-7	2-8	2-10	2-10	2-10

Gradation Classification---- The combined aggregate gradation shall be classified as coarse-graded when it passes below the Primary Control Sieve (PCS) control point as defined in the following table. All other gradations shall be classified as fine-graded.

**GRADATION CLASSIFICATION**

PCS Control Point for Mixture Nominal Maximum Aggregate Size (% passing)				
Nominal Maximum Aggregate Size	TYPE 25 mm	TYPE 19 mm	TYPE 12.5 mm	TYPE 9.5 mm
Primary Control Sieve	4.75 mm	4.75 mm	2.36 mm	2.36 mm
PCS Control Point (% passing)	40	47	39	47

If a Grading “D” mixture is allowed per Special Provision Section 403, it shall meet the following gradation and the aggregate requirements of Section 703.07.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
½ inch	100
¾ inch	93-100
No. 4	60-80
No. 8	46-65
No. 16	25-55
No. 30	16-40
No. 50	10-30
No. 100	6-22
No. 200	3.0-8.0

703.18 Common Borrow Replace the first paragraph with the following: “Common borrow shall consist of earth, suitable for embankment construction. It shall be free from frozen material, perishable rubbish, peat, and other unsuitable material including material currently or

previously contaminated by chemical, radiological, or biological agents unless the material is from a DOT project and authorized by DEP for use.”

703.22 Underdrain Backfill Material Change the first paragraph from “...for Underdrain Type B...” to “...for Underdrain Type B and C...”

Replace subsections 703.25 through 703.28 with the following:

“703.25 Stone Fill Stones for stone fill shall consist of hard, sound, durable rock that will not disintegrate by exposure to water or weather. Stone for stone fill shall be angular and rough. Rounded, subrounded, or long thin stones will not be allowed. Stone for stone fill may be obtained from quarries or by screening oversized rock from earth borrow pits. The maximum allowable length to thickness ratio will be 3:1. The minimum stone size (10 lbs) shall have an average dimension of 5 inches. The maximum stone size (500 lbs) shall have a maximum dimension of approximately 36 inches. Larger stones may be used if approved by the Resident. Fifty percent of the stones by volume shall have an average dimension of 12 inches (200 lbs).

703.26 Plain and Hand Laid Riprap Stone for riprap shall consist of hard, sound durable rock that will not disintegrate by exposure to water or weather. Stone for riprap shall be angular and rough. Rounded, subrounded or long thin stones will not be allowed. The maximum allowable length to width ratio will be 3:1. Stone for riprap may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (10 lbs) shall have an average dimension of 5 inches. The maximum stone size (200 lbs) shall have an average dimension of approximately 12 inches. Larger stones may be used if approved by the Resident. Fifty percent of the stones by volume shall have an average dimension greater than 9 inches (50 lbs).

703.27 Stone Blanket Stones for stone blanket shall consist of sound durable rock that will not disintegrate by exposure to water or weather. Stone for stone blanket shall be angular and rough. Rounded or subrounded stones will not be allowed. Stones may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (300 lbs) shall have minimum dimension of 14 inches, and the maximum stone size (3000 lbs) shall have a maximum dimension of approximately 66 inches. Fifty percent of the stones by volume shall have average dimension greater than 24 inches (1000 lbs).

703.28 Heavy Riprap Stone for heavy riprap shall consist of hard, sound, durable rock that will not disintegrate by exposure to water or weather. Stone for heavy riprap shall be angular and rough. Rounded, subrounded, or thin, flat stones will not be allowed. The maximum allowable length to width ratio will be 3:1. Stone for heavy riprap may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (500 lbs) shall have minimum dimension of 15 inches, and at least fifty percent of the stones by volume shall have an average dimension greater than 24 inches (1000 lbs).”

Add the following paragraph:

“703.32 Definitions (ASTM D 2488, Table 1).

Angular: Particles have sharp edges and relatively plane sides with unpolished surfaces

Subrounded: Particles have nearly plane sides but have well-rounded corners and edges

Rounded: Particles have smoothly curved sides and no edges”

SECTION 706  
NON-METALLIC PIPE

706.06 Corrugated Polyethylene Pipe for Underdrain, Option I and Option III Culvert Pipe Change the first sentence from "...300 mm diameters to 900 mm" to "...300 mm diameters to 1200 mm" Delete, in it's entirety, the last sentence which begins "This pipe and resins..." and replace with the following; "Manufacturers of corrugated polyethylene pipe must participate in, and maintain compliance with, AASHTO's National Transportation Product Evaluation Program ([www.ntpep.org](http://www.ntpep.org)) which audits producers of plastic pipe. A certificate of compliance must be provided with each shipment."

SECTION 709  
REINFORCING STEEL AND WELDED STEEL WIRE FABIC

709.03 Steel Strand Change the second paragraph from "...shall be 12mm [½ inch] AASHTO M203M/M203 (ASTM A416/A416M)..." to "...shall be 15.24 mm [0.600 inch] diameter AASHTO M203 (ASTM A416)..."

SECTION 710  
FENCE AND GUARDRAIL

710.03 Chain Link Fabric Add the following sentence: "Chain Link fabric for PVC coated shall conform to the requirements of AASHTO M181, Type IV-Class B."

710.04 Metal Beam Rail Replace with the following: "Galvanized steel rail elements shall conform to the requirements of AASHTO M 180, Class A, Type II.

When corrosion resistant steel is specified, rail shall conform to AASHTO M 180, Class A, Type IV. Beams of corrosion resistant steel shall not be painted or galvanized. They shall be so handled and stored that the traffic face of these beams, used in a continuous run of guardrail, shall not show a distinctive color differential.

When metal beam rail is to be installed on a curve having a radius of curvature of 150 ft. or less, the beam sections shall be fabricated on an arc to the required radius and permanently stamped or embossed with the designated radius.

The engineer may take one piece of guardrail, a backup plate, and end or buffer section from each 200 pieces in a lot, or from each lot if less than 200 pieces are included therein for determination of compliance with specification requirements. If one piece fails to conform to the requirements of this specification, two other pieces shall be tested. If either of these pieces fails to conform to the requirements of this specification, the lot of material represented by these samples shall be rejected. A lot shall be considered that quantity of material offered for inspection at one time that bears the same heat and coating identification."

710.07 Guardrail Posts Section b. change "...AASHTO M183/M183M..." to "...AASHTO M 270M/M 270 Grade 250 (36)..."

SECTION 712  
MISCELLANEOUS HIGHWAY MATERIALS

712.04 Stone Curbing and Edging Delete the existing and replace with the following: “Stone for curbing and edging shall be approved granite from acceptable sources. The stone shall be hard and durable, predominantly gray in color, free from seams that would be likely to impair its structural integrity, and of a smooth splitting character. Natural grain size and color variations characteristic of the source deposit will be permitted. Such natural variations may include bands or clusters of mineral crystallization provided they do not impair the structural integrity of the curb stone. The Contractor shall submit for approval the name of the quarry that is the proposed source of the granite for curb materials along with full scale color photos of the granite. Such submission shall be made sufficiently in advance of ordering so that the Resident may have an opportunity to judge the stone, both as to quality and appearance. Samples of curbing shall be submitted for approval only when requested by the Resident. The dimensions, shape, and other details shall be as shown on the plans.”

712.06 Precast Concrete Units In the first paragraph, change “...ASTM C478M...” to “...AASHTO M199...” Delete the second paragraph and replace with the following; “Approved structural fibers may be used as a replacement of 6 x 6 #10 gauge welded wire fabric when used at an approved dosage rate for the construction of manhole and catch basin units. The material used shall be one of the products listed on the Maine Department of Transportation’s Approved Product List of Structural Fiber Reinforcement.” Delete the fifth paragraph and replace with the following; “The concrete mix design shall be approved by the Department. Concrete shall contain 6% air content, plus or minus 1½% tolerance when tested according to AASHTO T152. All concrete shall develop a minimum compressive strength of 28 MPa [4000 psi] in 28 days when tested according to AASHTO T22. The absorption of a specimen, when tested according to AASHTO T280, Test Method “A”, shall not exceed nine percent of the dry mass.”

Add the following:

712.07 Tops, and Traps These metal units shall conform to the plan dimensions and to the following specification requirements for the designated materials.

Gray iron or ductile iron castings shall conform to the requirements of AASHTO M306 unless otherwise designated.”

712.08 Corrugated Metal Units The units shall conform to plan dimensions and the metal to AASHTO M36/M36M. Bituminous coating, when specified, shall conform to AASHTO M190 Type A.

712.09 Catch Basin and Manhole Steps Steps for catch basins and for manholes shall conform to ASTM C478M [ASTM C478], Section 13 for either of the following material:

- (a) Aluminum steps-ASTM B221M, [ASTM B211] Alloy 6061-T6 or 6005-T5.
- (b) Reinforced plastic steps Steel reinforcing bar with injection molded plastic coating copolymer polypropylene. Polypropylene shall conform to ASTM D 4101.

712.23 Flashing Lights Flashing Lights shall be power operated or battery operated as specified.

(a) Power operated flashing lights shall consist of housing, adapters, lamps, sockets, reflectors, lens, hoods and other necessary equipment designed to give clearly visible signal indications within an angle of at least 45 degrees and from 3 to 90 m [10 to 300 ft] under all light and atmospheric conditions.

Two circuit flasher controllers with a two-circuit filter capable of providing alternate flashing operations at the rate of not less than 50 nor more than 60 flashes per minute shall be provided.

The lamps shall be 650 lumens, 120 volt traffic signal lamps with sockets constructed to properly focus and hold the lamp firmly in position.

The housing shall have a rotatable sun visor not less than 175 mm [7 in] in length designed to shield the lens.

Reflectors shall be of such design that light from a properly focused lamp will reflect the light rays parallel. Reflectors shall have a maximum diameter at the point of contact with the lens of approximately 200 mm [8 in].

The lens shall consist of a round one-piece convex amber material which, when mounted, shall have a visible diameter of approximately 200 mm [8 in]. They shall distribute light and not diffuse it. The distribution of the light shall be asymmetrical in a downward direction. The light distribution of the lens shall not be uniform, but shall consist of a small high intensity portion with narrow distribution for long distance throw and a larger low intensity portion with wide distribution for short distance throw. Lenses shall be marked to indicate the top and bottom of the lens.

(b) Battery operated flashing lights shall be self-illuminated by an electric lamp behind the lens. These lights shall also be externally illuminated by reflex-reflective elements built into the lens to enable it to be seen by reflex-reflection of the light from the headlights of oncoming traffic. The batteries must be entirely enclosed in a case. A locking device must secure the case. The light shall have a flash rate of not less than 50 nor more than 60 flashes per minute from minus 30 °C [minus 20 °F] to plus 65 °C [plus 150 °F]. The light shall have an on time of not less than 10 percent of the flash cycle. The light beam projected upon a surface perpendicular to the axis of the light beam shall produce a lighted rectangular projection whose minimum horizontal dimension shall be 5 degrees each side of the horizontal axis. The effective intensity shall not have an initial value greater than 15.0 candelas or drop below 4.0 candelas during the first 336 hours of continuous flashing. The illuminated lens shall appear to be uniformly bright over its entire illuminated surface when viewed from any point within an angle of 9 degrees each side of the vertical axis and 5 degrees each side of the horizontal axis. The lens shall not be less than 175 mm [7 in] in diameter including a reflex-reflector ring of 13 mm [½ in] minimum width around the periphery. The lens shall be yellow in color and have a minimum relative luminous transmittance of 0.440 with a luminance of 2854° Kelvin. The lens shall be one-piece construction. The lens material shall be plastic and meet the luminous transmission requirements of this specification. The case containing the

batteries and circuitry shall be constructed of a material capable of withstanding abuse equal to or greater than 1.21 mm thick steel [No. 18 U.S. Standard Gage Steel]. The housing and the lens frame, if of metal shall be properly cleaned, degreased and pretreated to promote adhesion. It shall be given one or more coats of enamel which, when dry shall completely obscure the metal. The enamel coating shall be of such quality that when the coated case is struck a light blow with a sharp tool, the paint will not chip or crack and if scratched with a knife will not powder. The case shall be so constructed and closed as to exclude moisture that would affect the proper operation of light. The case shall have a weep hole to allow the escape of moisture from condensation. Photoelectric controls, if provided, shall keep the light operating whenever the ambient light falls below 215 lx [20 foot candles]. Each light shall be plainly marked as to the manufacturer's name and model number.

If required by the Resident, certification as to conformance to these specifications shall be furnished based on results of tests made by an independent testing laboratory. All lights are subject to random inspection and testing. All necessary random samples shall be provided to the Resident upon request without cost to the Department. All such samples shall be returned to the Contractor upon completion of the tests.

712.32 Copper Tubing Copper tubing and fittings shall conform to the requirements of ASTM B88M Type A [ASTM B88, Type K] or better.

712.33 Non-metallic Pipe, Flexible Non-metallic pipe and pipe fittings shall be acceptable flexible pipe manufactured from virgin polyethylene polymer suitable for transmitting liquids intended for human or animal consumption.

712.34 Non-metallic Pipe, Rigid Non-metallic pipe shall be Schedule 40 polyvinylchloride (PVC) that meets the requirement of ASTM D1785. Fittings shall be of the same material.

712.341 Metallic Pipe Metallic pipe shall be ANSI, Standard B36.10, Schedule 40 steel pipe conforming to the requirements of ASTM A53 Types E or S, Grade B. End plates shall be steel conforming to ASTM A36/A36M.

Both the sleeve and end plates shall be hot dip galvanized. Pipe sleeve splices shall be welded splices with full penetration weld before galvanizing.

712.35 Epoxy Resin Epoxy resin for grouting or sealing shall consist of a mineral filled thixotropic, flexible epoxy resin having a pot life of approximately one hour at 10°C [50°F]. The grout shall be an approved product suitable for cementing steel dowels into the preformed holes of curb inlets and adjacent curbing. The sealant shall be an approved product, light gray in color and suitable for coating the surface.

712.36 Bituminous Curb The asphalt cement for bituminous curb shall be of the grade required for the wearing course, or shall be Viscosity Grade AC-20 meeting the current requirements of Subsection 702.01 Asphalt Cement. The aggregate shall conform to the requirements of Subsection 703.07. The coarse aggregate portion retained on the 2.36 mm [No. 8] sieve may be either crushed rock or crushed gravel.



The mineral constituents of the bituminous mixture shall be sized and graded and combined in a composite blend that will produce a stable durable curbing with an acceptable texture.

Bituminous material for curb shall meet the requirements of Section 403 - Hot Bituminous Pavement.

712.37 Precast Concrete Slab Portland cement concrete for precast slabs shall meet the requirements of Section 502 - Structural Concrete, Class A.

The slabs shall be precast to the dimension shown on the plans and cross section and in accordance with the Standard Detail plans for Concrete Sidewalk Slab. The surface shall be finished with a float finish in accordance with Subsection 502.14(c). Lift devices of sufficient strength to hold the slab while suspended from cables shall be cast into the top or back of the slab.

712.38 Stone Slab Stone slabs shall be of granite from an acceptable source, hard, durable, predominantly gray in color, free from seams which impair the structural integrity and be of smooth splitting character. Natural color variations characteristic of the deposit will be permitted. Exposed surfaces shall be free from drill holes or indications of drill holes. The granite slabs in any one section of backslope must be all the same finish.

The granite slabs shall be scabble dressed or sawed to an approximately true plane having no projections or depressions over 13 mm [ $\frac{1}{2}$  in] under a 600 mm [2 ft] straightedge or over 25 mm [1 in] under a 1200 mm [4 ft] straightedge. The arris at the intersection of the top surface and exposed front face shall be pitched so that the arris line is uniform throughout the length of the installed slabs. The sides shall be square to the exposed face unless the slabs are to be set on a radius or other special condition which requires that the joints be cut to fit, but in any case shall be so finished that when the stones are placed side by side no space more than 20 mm [ $\frac{3}{4}$  in] shall show in the joint for the full exposed height.

Liftpin holes in all sides will be allowed except on the exposed face.

## SECTION 717 ROADSIDE IMPROVEMENT MATERIAL

717.03 C. Method #3 - Roadside Mixture #3 Change the seed proportions to the following:

Crown Vetch	25%
Perennial Lupine	25%
Red Clover	12.5%
Annual Rye	37.5%

717.05 Mulch Binder Change the third sentence to read as follows:

“Paper fiber mulch may be used as a binder at the rate of 2.3 kg/unit [5 lb/unit].”

SECTION 720  
STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND  
TRAFFIC SIGNALS

720.08 U-Channel Posts Change the first sentence from "..., U-Channel posts..." to "..., Rib Back U-Channel posts..."

SECTION 722  
GEOTEXTILES

722.01 Stabilization/Reinforcement Geotextile Add the following to note #3; "The strengths specified in the columns labeled "<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."

722.02 Drainage Geotextile Add the following to note #3; "The strengths specified in the columns labeled "<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."

722.01 Erosion Control Geotextile Add the following note to Elongation in the Mechanical Property Table; "The strengths specified in the columns labeled "<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."



### Environmental Summary Sheet

Pin: 13043.00-Reclaiming and Paving only

Date Submitted: 2/9/11

Town: Harpswell

CPD Team Leader: Laurie Rowe

NEPA Complete: No Federal \$ in this PIN

**Section 106**  
PA  
Special Conditions:

**Section 4(f) and 6(f)**  
Section 4(f)  
Review Complete- No USDOT \$  
Section 6(f)  
Not Applicable

**Maine Department of Inland Fisheries and Wildlife Essential Habitat**  
**Not Applicable**                      **Timing Window: Not Applicable**

**Section 7**  
**Not Applicable**  
**Species of Concern:**  
  
**Comments/References: Not Applicable**

**Maine Department of Conservation/Public Lands, Submerged Land Lease**  
**Not Applicable**

**Maine Land Use Regulation Commission**  
**Not Applicable**

*\*Applicable Standards and Permits are included with the contract*

**Maine Department of Environmental Protection**  
**Not Applicable**

*\*Applicable Standards and Permits are included with the contract*

**Army Corps of Engineers, Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.**  
**Not Applicable**

*\*Applicable Standards and Permits are included with the contract*

**Coast Guard**  
**Not Applicable**

*\*Applicable Standards and Permits are included with the contract*

<input checked="" type="checkbox"/> <b>Special Provisions Required</b>		
<b>Special Provision 105-Timing of Work Restriction</b>	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/>
<b>Special Provision 656-Erosion Control Plan</b>	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/>
<b>Special Provision 203-Dredge Spec</b>	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/>
<b>General Note for Hazardous Waste</b>	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/>
<b>Special Provision 203-Hazardous Waste</b>	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/>
<b>Special Provision 105.9</b>	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/>

*\*All permits and approvals based on plans/scope as of: 1/4/11*