

Updated 05/15/2020

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:

NOTE: Not all projects accept Electronic Bids. Please review the Notice to Contractors and see if it specifically states that Electronic Bids will be accepted.

- 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, "FedEx First 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. This is a curable defect.

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, March 2020 Edition.

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 an optional plan holders 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 fill out the on-line plan holder registration form and provide an email address to the MDOT Contracts mailbox at: MDOT.contracts@maine.gov. Each bid package will require a separate request.

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

The downloading of bid packages from the MDOT website is not the same as providing an electronic bid to the Department. Electronic bids must be submitted via <http://www.BIDX.com>. For information on electronic bidding contact Rebecca Snowden at rebecca.snowden@maine.gov or Diane Barnes at diane.barnes@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:

October 16, 2001

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 submitting questions concerning specific Contracts that have been advertised for Bid, include additional numbered pages as required. RFI’s may be faxed to 207-624-3431, submitted electronically through the Departments web page of advertised projects by selecting the RFI tab on the project details page or via e-mail to RFI-Contracts.MDOT@maine.gov.

These are the only allowable mechanisms 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.

When submitting RFIs by Email please follow the same guidelines as stated on the “Request for Information” form and include the word “RFI” along with the Project name and Identification number in the subject line.

RFI No: _____

Date _____ **Time** _____

WIN(S): _____ **Town(s):** _____ **Bid Date:** _____

Question(s):_____

Request by: _____
Company Name:_____ **Phone:(_____)**_____

Email: _____ **Fax:** (____) _____

7

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/venbid/index.shtml>

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 **Large Culvert Replacement** in the Town of **St. Agatha**" will be received from contractors at the Reception Desk, MaineDOT Building, Capitol Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on **December 8, 2021** and at that time and place, publicly opened and read. Bids will be accepted from all bidders. The lowest responsive bidder must demonstrate successful completion of projects of similar size and scope to be considered for the award of this contract. We now accept electronic bids for 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: WIN. 021830.00

Location: In Aroostook County, project is located on the Cleveland Rd. 0.01 mi. south of Brise Culottle Rd./ Cleveland Rd. intersection and extends 0.04 mi. northeasterly.

Outline of Work: Large Culvert Replacement and other incidental work.

For general information regarding Bidding and Contracting procedures, contact George Macdougall at (207) 624-3410. Our webpage at <http://www.maine.gov/mdot/contractors/> contains a copy of the Schedule of Items, Plan Holders List, written portions of bid amendments, drawings, bid results and an electronic form for RFI submittal. For Project-specific information fax all questions to Project Manager Roger Soucy at (207) 624-3431, use electronic RFI form or email questions to RFI-Contracts.MDOT@maine.gov, project name and identification number should be in the subject line. Questions received after 12:00 noon of Monday (or if that Monday is a state holiday, Friday) 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. TTY users call Maine Relay 711.

Plans, specifications and bid forms may be seen at the MaineDOT 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. Full size plans \$14.00 (\$17.50 by mail). Half size plans \$7.00 (\$9.25 by mail), Bid Book \$10 (\$13 by mail), Single Sheets \$2, payment in advance, all non-refundable.

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

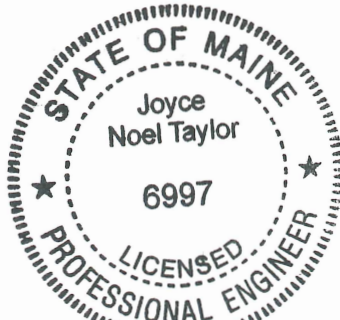
This Contract is subject to all applicable State Laws.

All work shall be governed by *State of Maine, Department of Transportation, Standard Specifications, March 2020 Edition*, price \$10 [\$15 by mail], and *Standard Details, March 2020 Edition*, price \$10 [\$15 by mail]. They also may be purchased by telephone at (207) 624-3536 between the hours of 8:00 a.m. to 4:30 p.m. *Standard Detail* updates can be found at <http://www.maine.gov/mdot/contractors/publications/>.

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

Augusta, Maine
November 17, 2021


JOYCE NOEL TAYLOR P. E.
CHIEF ENGINEER



NOTICE

(COVID-19 Pandemic)

The Department considers the COVID-19 Pandemic an Uncontrollable Event as defined in Section 101.2 of the Department's Standard Specifications.

Accordingly, any documented delay to the project's Critical Path due to COVID-19 related issues, such as impacted workforce, subcontracts, or material supply, will be considered an Excusable Delay as defined in Section 109.5(A)(3) of the Department's Supplemental Specifications.

As an Excusable Delay, the Contractor is entitled to an extension of time provided that other associated notification, documentation, and procedural requirements set forth in the Contract are met.

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).]

SPECIAL PROVISION 102.7.3
ACKNOWLEDGMENT OF BID AMENDMENTS

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

Amendment Number	Date

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

CONTRACTOR

Date

Signature of authorized representative

(Name and Title Printed)

10/20/2021

Maine Department of Transportation

Proposal Schedule of Items

Page 1 of 4

Proposal ID: 021830.00

Project(s): 021830.00

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0010	203.20 COMMON EXCAVATION	760.000 CY	_____	 _____	_____	 _____
0020	203.25 GRANULAR BORROW	160.000 CY	_____	 _____	_____	 _____
0030	203.33 SPECIAL FILL	70.000 CY	_____	 _____	_____	 _____
0040	203.55 CULVERT BEDDING STONE	90.000 CY	_____	 _____	_____	 _____
0050	206.061 STRUCTURAL EARTH EXCAVATION - DRAINAGE AND MINOR STRUCTURES, BELOW GRADE	45.000 CY	_____	 _____	_____	 _____
0060	304.16 AGGREGATE BASE COURSE - TYPE C	1,000.000 CY	_____	 _____	_____	 _____
0070	403.208 HOT MIX ASPHALT 12.5 MM HMA SURFACE	85.000 T	_____	 _____	_____	 _____
0080	403.213 HOT MIX ASPHALT 12.5 MM BASE	130.000 T	_____	 _____	_____	 _____
0090	409.15 BITUMINOUS TACK COAT - APPLIED	30.000 G	_____	 _____	_____	 _____
0100	511.07 COFFERDAM: Downstream	LUMP SUM	LUMP SUM		_____	 _____
0110	511.07 COFFERDAM: Upstream	LUMP SUM	LUMP SUM		_____	 _____
0120	603.4076 112" X 75" POLYMER COATED PIPE ARCH	98.000 LF	_____	 _____	_____	 _____

10/20/2021

Maine Department of Transportation

Proposal Schedule of Items

Page 2 of 4

Proposal ID: 021830.00

Project(s): 021830.00

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0130	610.08 PLAIN RIPRAP	30.000 CY	_____	_____	_____	_____
0140	610.210 STREAM CHANNEL ROCK	20.000 CY	_____	_____	_____	_____
0150	610.212 STREAMBED ROCK FEATURES	2.000 CY	_____	_____	_____	_____
0160	615.10 DIRTY BORROW	60.000 CY	_____	_____	_____	_____
0170	618.14 SEEDING METHOD NUMBER 2	9.000 UN	_____	_____	_____	_____
0180	619.12 MULCH	9.000 UN	_____	_____	_____	_____
0190	620.54 STABILIZATION/REINFORCEMENT GEOTEXTILE	350.000 SY	_____	_____	_____	_____
0200	620.58 EROSION CONTROL GEOTEXTILE	60.000 SY	_____	_____	_____	_____
0210	620.65 REINFORCEMENT GEOGRID	135.000 SY	_____	_____	_____	_____
0220	627.733 4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	750.000 LF	_____	_____	_____	_____
0230	629.05 HAND LABOR, STRAIGHT TIME	10.000 HR	_____	_____	_____	_____
0240	631.10 AIR COMPRESSOR (INCLUDING OPERATOR)	10.000 HR	_____	_____	_____	_____

10/20/2021

Maine Department of Transportation

Proposal Schedule of Items

Page 3 of 4

Proposal ID: 021830.00

Project(s): 021830.00

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0250	631.11 AIR TOOL (INCLUDING OPERATOR)	10.000 HR				
0260	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	10.000 HR				
0270	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	10.000 HR				
0280	631.18 CHAIN SAW RENTAL (INCLUDING OPERATOR)	10.000 HR				
0290	631.212 SMALL PAVEMENT GRINDER (INCLUDING OPERATOR)	10.000 HR				
0300	631.32 CULVERT CLEANER (INCLUDING OPERATOR)	10.000 HR				
0310	639.20 FIELD OFFICE TYPE C	1.000 EA				
0320	643.72 TEMPORARY TRAFFIC SIGNAL	LUMP SUM				
0330	652.33 DRUM	25.000 EA				
0340	652.34 CONE	50.000 EA				
0350	652.35 CONSTRUCTION SIGNS	600.000 SF				
0360	652.36 MAINTENANCE OF TRAFFIC CONTROL DEVICES	35.000 CD				

10/20/2021

Maine Department of Transportation

Proposal Schedule of Items

Page 4 of 4

Proposal ID: 021830.00

Project(s): 021830.00

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0370	652.38 FLAGGER	40.000 HR				
0380	652.61 STAGED CONSTRUCTION AND TRAFFIC CONTROL	LUMP SUM		LUMP SUM		
0390	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP SUM		LUMP SUM		
0400	659.10 MOBILIZATION	LUMP SUM		LUMP SUM		
Section: 1			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, **WIN. 021830.00 for Large Culvert Improvements in the town of St. Agatha., County of Aroostook, Maine.**

The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

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

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

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **October 3, 2022** 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, March 2020 Edition* 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.

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, March 2020 Edition, Standard Details March 2020 Edition* 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 March 2020 Edition*, *Standard Details March 2020 Edition* as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

WIN. 021830.00 - for Large Culvert Improvements - in the town of St. Agatha, County of Aroostook, 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, March 2020 Edition*, 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 March 2020 Edition* 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: Bruce A. Van Note, 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, **WIN. 021830.00 for Large Culvert Improvements in the town of St. Agatha., County of Aroostook, Maine.**

The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

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

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

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **October 3, 2022** 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, March 2020 Edition* 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.

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, March 2020 Edition, Standard Details March 2020 Edition* 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 March 2020 Edition*, *Standard Details March 2020 Edition* as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

WIN. 021830.00 - for Large Culvert Improvements - in the town of St. Agatha, County of Aroostook, 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, March 2020 Edition*, 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 March 2020 Edition* 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: Bruce A. Van Note, 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.01 **12345.00**, 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, March 2020 Edition* 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, March 2020 Edition, Standard Details March 2020 Edition*, 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 March 2020 Edition* (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, March 2020 Edition, Standard Details March 2020 Edition*, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

PIN 012345.00 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, March 2020 Edition*, 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 March 2020 Edition* 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

CONTRACTOR

(Sign Here)
(Signature of Legally Authorized Representative of the Contractor)

(Print Name Here)
(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: Bruce A. Van Note, 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:

Signature.....
Print Name Legibly

Signature
Print Name Legibly

SURETY ADDRESS:

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

TELEPHONE.....

SIGNATURES:

CONTRACTOR:

.....
Print Name Legibly

SURETY:

.....
Print Name Legibly

NAME OF LOCAL AGENCY:

ADDRESS

.....
.....

.....

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

.....

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

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

**2021 Fair Minimum Wage Rates
Highway & Earth Aroostook 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	\$ 19.06	\$ 4.68	\$ 23.74	Ironworker - Reinforcing	\$ 28.36	\$ 0.00	\$ 28.36
Backhoe Loader Operator	\$ 33.80	\$ 10.28	\$ 44.08	Laborer - Skilled	\$ 18.32	\$ 3.52	\$ 21.84
Boom Truck (Truck Crane) Operator	\$ 25.00	\$ 5.86	\$ 30.86	Laborers (Helpers & Tenders)	\$ 18.00	\$ 1.01	\$ 19.01
Bulldozer Operator	\$ 20.00	\$ 1.88	\$ 21.88	Loader Operator - Front-End	\$ 22.00	\$ 7.62	\$ 29.62
Carpenter - Rough	\$ 30.76	\$ 19.72	\$ 50.48	Mechanic- Maintenance	\$ 22.75	\$ 1.59	\$ 24.34
Cement Mason/Finisher	\$ 20.50	\$ 1.42	\$ 21.92	Millwright	\$ 25.75	\$ 5.41	\$ 31.16
Communication Equip Installer	\$ 22.00	\$ 0.00	\$ 22.00	Painter	\$ 20.90	\$ 2.07	\$ 22.97
Crane Operator =>15 Tons)	\$ 29.00	\$ 6.68	\$ 35.68	Paver Operator	\$ 23.91	\$ 13.25	\$ 37.16
Crusher Plant Operator	\$ 22.96	\$ 7.90	\$ 30.86	Pipelayer	\$ 25.00	\$ 3.36	\$ 28.36
Electrician - Licensed	\$ 31.98	\$ 17.24	\$ 49.22	Reclaimer Operator	\$ 26.83	\$ 13.25	\$ 40.08
Electrician Helper/Cable Puller	\$ 18.50	\$ 2.39	\$ 20.89	Roller Operator - Earth	\$ 23.91	\$ 2.97	\$ 26.88
Excavator Operator	\$ 23.74	\$ 2.26	\$ 26.00	Roller Operator - Pavement	\$ 23.91	\$ 9.21	\$ 33.12
Fence Setter	\$ 18.50	\$ 2.00	\$ 20.50	Screed/Wheelman	\$ 20.00	\$ 3.01	\$ 23.01
Flagger	\$ 13.75	\$ 0.00	\$ 13.75	Stone Mason	\$ 25.00	\$ 1.88	\$ 26.88
Grader/Scraper Operator	\$ 26.29	\$ 10.70	\$ 36.99	Truck Driver - Heavy	\$ 19.49	\$ 4.13	\$ 23.62
Highway Worker/Guardrail Installer	\$ 24.87	\$ 1.36	\$ 26.23	Truck Driver - Light	\$ 24.15	\$ 0.38	\$ 24.53
Hot Top Plant Operator	\$ 23.91	\$ 13.25	\$ 37.16	Truck Driver - Medium	\$ 19.25	\$ 1.09	\$ 20.34
Industrial Truck (Forklift) Operator	\$ 26.83	\$ 3.25	\$ 30.08	Truck Driver - Tractor Trailer	\$ 18.00	\$ 0.00	\$ 18.00

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.

Title 26 §1310 requires that a clearly legible statement of all fair minimum wage and benefits rates to be paid the several classes of laborers, workers and mechanics employed on the construction on the public work must be kept posted in a prominent and easily accessible place at the site by each contractor and subcontractor subject to sections 1304 to 1313.

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.

A true copy

Attest: Scott R. Cotnoir
Scott R. Cotnoir
Wage & Hour Director
Bureau of Labor Standards

Expiration Date: 12-31-2021

Revised 2-25-2021

SPECIAL PROVISIONS
SECTION 104
Utilities

UTILITY COORDINATION

The contractor has primary responsibility for coordinating their work with utilities after contract award. The contractor shall communicate directly with the utilities regarding any utility work necessary to maintain the contractor's schedule and prevent project construction delays. The contractor shall notify the resident of any issues.

THE CONTRACTOR SHALL PLAN AND CONDUCT WORK ACCORDINGLY.

MEETING

A Pre-Utility meeting, as defined in Subsection 104.4.6 of the Standard Specifications **is** required.

GENERAL INFORMATION

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

Utilities have been notified and shall be furnished a project booklet and plan set electronically.

Utility Overview & Contact Information				
Utility	Aerial	Subsurface	Contact Person	Contact Phone
Spectrum-Charter Communications		X	Patrick Hardgrove	253-2443 office

Temporary utility adjustments **are not** anticipated as part of this project. If any unexpected utility relocations become necessary after the contract award, they shall be scheduled in compliance with Section 104 of the Standard Specifications and shall be performed by the appropriate utility company in conjunction with the work by the Contractor. Should the contractor choose to have any poles temporarily relocated, over and above the temporary work already coordinated, this work shall be done at the Contractor's request and expense with no additional cost or schedule impacts to the Department.

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

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

All clearing and tree removal in areas where utilities are involved must be completed before the utilities are able to relocate their facilities.

Utility working days are Monday through Friday. Times are estimated based on a single crew for each utility. 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 notify all utility companies **ten (10) working days** prior to beginning any work on this project.

AERIAL

Aerial utility adjustments **are not** anticipated as part of this project. If any unexpected utility relocations become necessary, they shall be scheduled in compliance with Section 104 of the Standard Specifications and shall be done by the utilities in conjunction with the work by the Contractor.

SUBSURFACE

Subsurface utility adjustments **are** anticipated as part of this project. If any unexpected utility relocations become necessary, they shall be scheduled in compliance with Section 104 of the Standard Specifications and shall be done by the utilities in conjunction with the work by the Contractor.

Summary:

Utility	Summary of Work	Estimated Working Days
Spectrum-Charter Communications	coordinate/oversee/perform-splices/excavate/remove all necessary safety protection materials	3
Total:		3

Utility Specific Information:

Spectrum-Charter Communications:

Spectrum-Charter Communications owns/operates an existing subsurface communication cable through the project corridor, along the outlet side of the new culvert and aligns along the existing gravel shoulder (south side). This existing subsurface cable is active, routes to the existing pole #47248 (northeast) and changes to aerial. This shall require Spectrum to coordinate work activities with the contractor during excavation, installing the culvert, and backfilling/compacting. The contractor is responsible for confirming the location of the existing facilities with a Spectrum representative prior to performing any excavation activities. Spectrum intends to keep this cable active through the duration of the construction. Spectrum shall coordinate the necessary work activities for installation of a temporary cable beyond the construction limits of the disturbed area at the culvert outlet (approximately 85' offset from centerline alignment along the clearing limits). Spectrum shall be required to adjust their temporary cable as necessary while the contractor's construction activities progress. The contractor is responsible for using best practices when digging around existing/active subsurface utilities. Spectrum shall require **ten (10) working days** prior notice to schedule their work. See the above table for summary of work and estimated work days.

MAINTAINING UTILITY LOCATION MARKNIGS

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

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.

SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES
(Electronic Payroll Submission)
(Payment Tracking)

104.3.8.1 Electronic Payroll Submission The prime contractor and all subcontractors and lower-tier subcontractors will submit their certified payrolls electronically on this contract utilizing the Elation System web based reporting. There is no charge to the contracting community for the use of this service. The submission of paper payrolls will not be allowed or accepted. Additional information can be found at <http://www.maine.gov/mdot/contractors/> under the first “Notice”.

104.3.8.2 Payment Tracking The prime contractor and all subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System

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

Work within stream (“In Stream Work,” see MaineDOT Standard Specifications 101.2 Definitions) requires special conditions to minimize impacts. The following special conditions shall apply to this project:

- I. In Stream Work applied to the following culvert location:
XC- 182487 Lat/Long: 42.27400, - 68.29700. Work between Station 11+00 and 13+00.
- II. In Stream Work shall not be allowed between the dates of October 1st to July 14th.
In Stream Work shall be allowed from July 15th to September 30th. This is a time of year restriction.
- III. Special Conditions of Army Corps of Engineers (ACOE) Maine General Permit (GP) 22 permit NAE-2020-03169 apply (see permit and conditions in contract documents).
The Maine General Permits (GPs) can be found at:
<https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Maine-General-Permit/>
- IV. Approvals:
 1. Soil Erosion and Water Pollution Control Plan (SEWPCP)
 2. Permitted Resource Impacts (square feet), see ACOE permit for locations:
XC-182487 RUS impacts: Temporary 276 s.f., Permanent 561 s.f.
Wetland impacts: Temporary 6,750 s.f., Permanent 3,466
- V. All activities are prohibited (including placement and removal of cofferdams unless otherwise permitted by Regulatory Agencies) below the normal high water mark if outside the prescribed in-water work window, except for the following:
 1. Work in adherence with the contractors approved “Soil Erosion and Water Pollution Control Plan”.
- VI. No work is allowed that completely blocks a river, stream, or brook without providing downstream flow.

NOTE: Reauthorization of the ACOE Permit is required for any work in jurisdictional resources that is not completed by October 14, 2025. The Contractor shall allow up to 2 weeks for MaineDOT to reauthorize the permit prior to beginning construction.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(LIMITATIONS OF OPERATIONS)

1. The Contractor shall plan operations so that the Resident will have sufficient advance notification to provide the necessary inspection and testing. Sufficient advance notification is considered 48 hours.
2. A 48-hour notice is required prior to working any Saturdays.
3. The Contractor's traffic control plan shall be operationally effective, complete and in conformity with Federal requirements, Contract provisions, the current edition of the MUTCD, and Department policy and procedures as determined by the Department prior to beginning work.
4. The Contractor shall request absences at least 72 hours in advance. The Department will review and approve based on existing roadway condition, paving deadlines, adherence to schedule, traffic restrictions, detours, etc. The Contractor shall assure that the roadway surface and signage are maintained for safe passage of the traveling public during any approved absences. The Department will not modify the Contract Completion Date for approved absences.
5. Once operations commence, for every weekday not worked the Contractor will be charged supplemental liquidated damages per Section 107.7.2 of the Standard Specifications; excluding days lost to inclement weather, holidays, and approved absences.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Buy America Certification)

105.11 Federal Requirements Add the following as the third and subsequent paragraphs:

“Prior to payment by the Department, the Contractor shall provide a certification from the producer of steel or iron, or any product containing steel or iron as a component, stating that all steel or iron furnished or incorporated into the furnished product was manufactured in the United States in accordance with the requirements of the Buy America provisions of 23 CFR 635.410, as amended. Such certification shall also include (1) a statement that the iron or steel product or component was produced entirely within the United States, or (2) a statement that the iron or steel product or component was produced within the United States except for minimal quantities of foreign steel and iron valued at \$ (actual value).

All manufacturing processes must take place domestically. Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size and shape, or the final finish is considered a manufacturing process. These processes include rolling, extruding, machining, bending, grinding, drilling, and coating. “Coating” includes epoxy coating, galvanizing, painting, or any other coating that protects or enhances the value of the material.

A Buy America Certification is required from each manufacturer, fabricator, supplier, subcontractor, etc. that meets the “manufacturing” definition above.

Buy America does not apply to raw materials (iron ore and alloys), scrap, pig iron, or processed, pelletized, and reduced iron ore.”

SPECIAL PROVISION
SECTION 107
PROSECUTION AND PROGRESS
(Contract Time – Calendar Days)

This Contract shall be completed within 35 continuous calendar days. The Contractor may begin work **July 12th** in accordance with Standard Specification 104.4.2 and upon approval of all required submittals. The Contract Completion Date will be no later than **October 3, 2022**

At least 21 calendar days prior to the desired Begin Construction Date and no later than July 12th, the Contractor shall submit an **electronic copy of their signed request to begin work and the Begin Construction Date**. This signed request shall be sent read receipt through **email** with their **Schedule of Work**, in accordance with Standard Specification 107.4.2, to Ryan.Sullivan@Maine.gov, Shawn.Smith@Maine.gov, and Scott.Bickford@Maine.gov. The Contractor shall notify all utility contacts listed in the 104 Special Provision and provide the utility contacts the submitted schedule of work within 2 calendar days of the schedule of work submittal. **A penalty in the amount of \$500/day will be assessed for each calendar day or partial calendar day beyond July 12th that the schedule of work is not received.** Upon receipt of the schedule of work, a pre-construction meeting will be scheduled. A Contract Modification will be executed to document the new Contract Completion Date based upon the Begin Construction Date. The modified Contract Completion Date shall not exceed the Contract Completion Date specified in this special provision.

The Contractor may request to adjust the submitted schedule of work and Begin Construction Date once after the initial submittal. The Department will allow adjustments in the Begin Construction Date of up to seven calendar days if the request is made at least 14 calendar days prior to the updated Begin Construction Date. This signed request shall be sent read receipt through **email** with their **Schedule of Work**, in accordance with Standard Specification 107.4.2, to Ryan.Sullivan@Maine.gov, Shawn.Smith@Maine.gov, and Scott.Bickford@Maine.gov. The Contractor shall notify all utility contacts listed in the 104 Special Provision and provide the utility contacts the updated schedule of work within 2 calendar days of the request to adjust the Begin Construction Date.

SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(Dredge Materials)

Description: Dredge Material (See MaineDOT Standard Specifications § 101.2 Definitions) is regulated as a Special Waste.

Work associated with the St. Agatha – Cross Culvert (#182487) Replacement initiative on the Cleveland Road will require excavation of select Dredge Material from an unnamed stream (Class B Waterbody) that drains to Long Lake. It is estimated that approximately 70 cubic yards of dredge will be excavated at the project location. There is onsite Beneficial Use for all Dredge Material.

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

CONSTRUCTION REQUIREMENTS

Management: The Contractor shall Beneficially Use all Dredge Material excavated at the St. Agatha – Cross-Culvert (#182487) Replacement initiative in areas adjacent to the dredged waterbody. No more than 500-cubic yards of Dredge Material may be excavated at the project location.

Method of Measurement: Excavation of Dredge Material will be measured for payment under related Contract items.

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

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

SPECIAL PROVISION
SECTION 203
(Special Fill - Streambed Material)

203.01 Description This work shall consist of furnishing and placing stone and granular material inside, upstream and downstream of a culvert to form a nature-like streambed.

203.02 Materials Special fill shall be a well graded mix of cobbles, gravel, sand and fines similar in size and shape to those found in natural channels and may be obtained as bank run or screening materials from earth borrow pits. Unwashed stone, and stone with naturally fractured faces will be allowed.

Where applicable, suitable material excavated on-site within the limits of the stream channel in accordance with Special Provision Section 203, Excavation and Embankment - Dredge Materials, may be used to meet the gradation requirements, or as filler material with the approval of the Resident.

Special fill shall conform to the following requirements:

- a. Streambed gravel - shall be a well graded bank run gravel meeting the gradation requirements of Section 703.06 – Type D aggregate for subbase gravel, except that the part passing the no. 200 sieve shall be a minimum of 3 percent.
- b. 9-inch cobble – shall be a well graded mix of stones with a minimum size of 1 inch and a maximum size of 9 inches average dimension. Fifty percent of the stones by volume shall have an average dimension greater than 5 inches, and at least seventy five percent of the material shall be within the specified minimum and maximum sizes.
- c. Filler material - shall consist of a well graded mix of gravel, sand and fines used to fill voids and seal the surface of the streambed. It shall have enough fines, as determined by visual inspection, so that water pools on the surface. Filler material shall be free from vegetable matter, debris, peat and other unsuitable material, and shall not contain oversized stones larger than 6 inches. The material may be obtained from earth borrow pits, dredge, on-site excavation or other sources approved by the Resident.
- d. Mix Proportions: Special fill shall be mixed in the following proportions:

Streambed gravel	9-inch cobble
1 part	3 parts

Mix proportions and material gradations shall be within the above limits or as otherwise adjusted by the Resident to obtain a well graded mix. Special fill shall conform to the requirements at the time it is placed to form the streambed.

e. Testing and Inspection: At least 10 working days prior to the start of streambed construction the Contractor shall identify the source and proposed materials for inspection and shall furnish to the Resident a copy of gradation test results from a certified laboratory for the streambed gravel portion of the mix. The Department may obtain samples of the streambed gravel for Process Control prior to placement.

The grading of stone shall be determined by the Resident in accordance with the Standard Specifications, Section 610.032.d Inspection.

Acceptance will be based on the test results, and visual inspection by the Resident.

203.03 Construction Requirements

1. Construct a channel with a streambed surface, banklines and rock bands as shown on the plans and in accordance with Special Provision 610 – Stream Channel Rock and Special Provision 610 – Streambed Rock Features. The Contractor shall construct a test section beginning at the downstream end of the culvert for review by the Resident.

2. Place special fill in well mixed layers without pockets of either fine or coarse material. The material shall be placed by machine or by hand as necessary to achieve the specified shape and thickness. Larger stones may protrude above the average surface but shall be firmly embedded in the mix.

3. The material shall be placed in a manner that protects the culvert and the protective coating from damage.

4. Special fill shall be thoroughly washed-in with water immediately after placement. If voids remain in the streambed after the initial washing-in, filler material shall be spread on the surface as required to fill remaining voids. Wash-in until water remains on the surface with minimal infiltration.

5. Mechanical methods of compaction may be used with the approval of the Resident. If the Contractor uses mechanical methods the void-filling and washing-in requirements shall still apply.

6. Prior to exposure to natural flow conditions the streambed shall be thoroughly wetted and compacted with voids filled and the surface sealed, checked and approved by the Resident. After washing-in, the minimum thickness of the special fill shall be as called for on the plans with an allowable surcharge of up 3 inches above the design grade.

St. Agatha
Cleveland Road
WIN 21830.00
March 11, 2021

203.04 Method of Measurement Special fill will be measured in place by the cubic yard.

203.05 Basis of Payment The accepted quantity of special fill will be paid for at the contract price per cubic yard complete in place. Payment shall be full compensation for furnishing all materials, equipment, and labor and washing-in with water.

Pay Item

Pay Unit

203.33 Special Fill – Streambed Material

CY

SECTION 401 - HOT MIX ASPHALT PAVEMENT

401.01 Description The Contractor shall furnish a uniformly blended, homogeneous mixture placed as 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 MaineDOT 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
RAP for HMA Pavement	703.08
HMA Mixture Composition	703.09

401.03 Composition of Mixtures The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), approved antistrip, warm mix additive, and/or mineral filler if required. HMA shall be designed and tested according to AASHTO R 35 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). Unless otherwise noted in Special Provision 403 - Hot Mix Asphalt Pavement, the design, verification, Quality Control, and Acceptance tests for this mix will be performed at 65 gyrations. **TABLE 1: VOLUMETRIC DESIGN CRITERIA**

Design ESAL's (Millions)	Required Density (Percent of G _{mm})			Voids in the Mineral Aggregate (VMA) (Minimum Percent)					Voids Filled with Binder (VFB) (Minimum %)	Fines/Eff · Binder Ratio
				Nominal Maximum Aggregate Size (mm)						
	N _{initial}	N _{design}	N _{max}	25.0	19.0	12.5	9.5	4.75		
	< 3.0	≤90.5	96.0	≤98.0	13.0	14.0	15.0	16.0		
3 to <10	≤89.0									
> 10										

*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.

The Contractor shall submit a JMF to the Department for each mixture to be supplied. The JMF will be approved by the Department in accordance with the MaineDOT HMA Policies and Procedures for HMA Sampling and Testing Manual. 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 ton for coarse aggregate stockpiles and 75 ton for fine aggregate stockpiles before the JMF may be submitted. The Contractor shall provide aggregate samples to the Department unless otherwise required. 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. 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 for a JMF as outlined in the MaineDOT HMA Policies and Procedures for HMA Sampling and Testing Manual: Mix Design Approval Section.

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 reduced up to 10 percentage points from the amount listed on the JMF and shall not exceed the percentage of RAP approved in the JMF or for the specific application under any circumstances.

401.031 Warm Mix Technology The Contractor may place Hot Mix Asphalt Pavement produced with an accepted WMA technology if approved by the Department. Methods or technologies shall generally be at the Contractors option, but will be limited to proven, Agency and Industry accepted practice. Mixture production, placement and volumetric testing details, including temperatures, shall be included in the project specific QCP, and submitted to the Department for approval prior to any work.

401.04 Temperature Requirements The temperature of the mixture shall conform to the tolerances in Table 2 as measured at the truck at the mixing plant and at the paver unless otherwise authorized by the Department.

TABLE 2: ALLOWABLE TEMPERATURE RANGES

PGAB Grade(s)	Temperature Range (°F)
PG58-28 / PG64-28	275-325
PG64E-28 / PG70E-28	285-335

401.05 Performance Graded Asphalt Binder The Contractor shall utilize either a PG58-28, PG64-28, PG64E-28, PG70E-28, or other grade as specified in the 403 Special Provision. The Contractor shall utilize a PG64-28 if no liquid grade is specified within the 403 Special Provision.

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.

TABLE 3: SEASONAL AND TEMPERATURE LIMITATIONS

Use	Minimum Ambient Air Temperature	Zone 1 Allowable Placement Dates	Zone 2 Allowable Placement Dates
Surface course (travelway & adjacent shoulders) less than 1 in. thick placed during conditions defined as “night work”	50°F	June 1 to Saturday following September 1	
Surface course (travelway & adjacent shoulders) less than 1 in. thick	50°F	May 15 to Saturday following September 15	
Travelway surface course greater than or equal to 1 in. thick	50°F	May 1 to Saturday following October 1	April 15 to Saturday following October 15
HMA for surface course on bridge decks	50°F	May 1 to Saturday following October 1	April 15 to Saturday following October 15
HMA for base or shim course on bridge decks	50°F	April 15 to November 15	
HMA for use other than travelway surface course	40°F	April 15 to November 15	
HMA for curb, driveways, sidewalks, islands, or other incidentals	40°F	N/A	N/A
HMA produced with an approved WMA technology for base or shim course	35°F	April 15 to November 15	

The ambient air temperature shall be determined by an approved thermometer placed in the shade at the paving location. Unless otherwise specified, the Contractor shall not place Hot Mix Asphalt Pavement on a wet or frozen surface regardless of the ambient air temperature. The Hot Mix Asphalt Pavement produced with an approved WMA technology shall meet the requirements of section 401.04 - Temperature Requirements, unless otherwise approved by the Department. For the purposes of this Section, the traveled way includes truck lanes, ramps, approach roads and auxiliary lanes.

401.07 Hot Mix Asphalt Plant

401.071 General Requirements HMA plants shall conform to AASHTO M 156, Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures with exception of Section 4.2.1, 4.2.2, 4.3.4, 4.3.5, and 4.12.2.

All HMA plants will be inspected annually by the Department prior to producing HMA for Department projects. The Contractor shall provide the Department at least 72 hours’ notice that the plant is ready for inspection. The Contractor shall equip the plant with ladders and platforms that are accessible and safe to obtain samples of PGAB, aggregate and mix from the relevant tanks, collector belts and haul units. Silo storage time of mixtures shall not exceed 36 hours.

401.072 Stockpiles The Contractor shall provide sufficient space for stockpiles and maintain a minimum of supply for 2 days production of all aggregate products used in MaineDOT approved mix designs currently under production. A minimum stockpile supply of 100 ton (70 yards) shall be maintained at all times. The Contractor shall construct stockpiles to prevent intermingling and to

minimize segregation. All stockpiles used in MaineDOT mixes shall be identified with weatherproof signs at least 12" high and 24" wide, with reflective lettering at least 2" high.

401.073 Cold Feeds Cold Feed Bins will have bin dividers to keep aggregate products separated. Adequate means must be provided for obtaining samples of the combined flow of all Cold feed bins.

401.074 Dryer Dryer shall be capable of heating aggregate to required mixing temperature and shall be in good operation and condition. Dryer shall be subject to annual inspection prior to start-up. The Contractor shall dry and heat the aggregates for the HMA to the required temperature, adjusting flames to avoid damaging the aggregates. The Contractor shall provide the Department a minimum period of 72 hours to inspect the dryer and provide at least 24 hours' notice that the dryer is ready for inspection.

401.075 Asphalt Binder The plant shall include a heating system and insulation to maintain the asphalt binder at a uniform temperature for proper mixing and compaction. A thermometer shall be provided in the asphalt binder line. No direct flame may come in contact with tank. A sampling valve shall be provided in the circulation line downstream of any binder additive used unless otherwise approved by the Department. The Contractor shall drain down the asphalt as low as safely possible in any tank that will be switched to a new source or grade prior to adding the new PGAB.

401.076 Additives Additives (WMA, anti-strip, etc.) introduced into the binder at the HMA plant shall be introduced per the supplier's recommendations and shall be approved by the Department. The system for introducing additives shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all production rates and batch sizes. Additive introduction systems shall be controlled by a proportioning device to the amount required on the JMF plus or minus 0.1% of the target. Additive introduction systems shall be interlocked with the plant and the recordation (batch tickets or drum recordation) shall display the additive and the weight and percentage added. A means for sampling the PG binder with additive introduced will be provided. The sampling point shall be after the additive is mixed with the PGAB before entering the drum or mixer unit.

401.077 Batch Plants

Hot Bins Hot bins shall provide uniform continuous operation and be in good working condition. The plant shall be able to provide samples of hot bins upon request. Overflow shall be provided for each hot bin. Hot bin gates shall close without leaking. Bin walls must prevent intermingling between bins. Each hot bin shall have low level indicators which will alert the operator when the bin is empty.

Mixer Unit Clearance between blades and liner shall be 1" maximum, unless the aggregate exceeds 1 ¼" then the clearance shall be 1 ½". The spray bar length shall be at least 75% of the mixer length. The mixer unit shall be a twin pug mill-type mixer capable of mixing continuously for at least 45 seconds after all materials have been introduced into the mixer. The blades in the mixer shall be capable of producing a homogenous mixture. If the mixer is not enclosed, it shall be equipped with an adjustable hood to prevent loss of dust by dispersion. The mixer unit shall be subject to annual inspection prior to removal of safety features and being readied for service. The Contractor shall provide the Department the opportunity to inspect the mixer unit prior to the annual inspection. The Contractor shall provide the Department a minimum period of 72 hours to inspect the mixer unit and provide at least 24 hours' notice that the mixer unit is ready for inspection.

Mineral Filler Mineral filler and fiber shall utilize separate bins and feed systems to store and proportion the required quantity into the mixture. The feed systems shall be accurate to no more than 10% of the required weight with a convenient and accurate means of calibration. Mineral filler and fiber shall be introduced in the weigh hopper and uniformly distributed prior to the injection of the asphalt binder.

Automation The HMA batch plant shall automatically batch, mix and discharges mixes. 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.

The HMA batch plant shall be operated within the following tolerances:

Each aggregate component	+/- 1.5% cumulative, per bin
Mineral Filler	+/- 0.5%
Bituminous Material	+/- 0.1%
Zero return (aggregate)	+/- 0.5%
Zero Return (AC)	+/- 0.1%
Additives	+/- 0.1%

Recordation All plants shall be equipped with an approved digital recording device. The printer shall mark any weight on the ticket that exceeds tolerance. The delivery slip shall contain information required under Section 108.1.3 - Provisions Relating to Certain Measurements, Mass and paragraphs a, b, and c of Section 401.078.

401.078 Drum Plants

Cold Feeds and Delivery System A scalper screen shall be used to remove oversize material. The accuracy of the belt scale shall be within +/- 1.0% of the actual weight being measured. The plant shall be capable of correcting for aggregate moisture. Mineral filler and fiber shall utilize separate bin(s) and feeder systems to store and proportion the required quantity into the mixture. The feed systems shall be accurate to no more than +/- 10% of the required weight with a convenient and accurate means of calibration. The plant shall be equipped with a single control to change all feed rates. Mineral filler and fiber shall be introduced such that dry mixing is accomplished no less than 18 inches prior to the injection of the asphalt binder. The Contractor shall ensure that the mineral filler does not become entrained in the exhaust stream of the dryer.

Binder System The flow of asphalt binder shall adjust automatically with dry aggregate weights. The Department will conduct an asphalt flow meter check annually and after each change of plant location. The flow meter check must be performed prior to producing mix for Department projects. The plant must be configured to provide a convenient means to check accuracy of the flow meter. The flow meter will be considered accurate if the measured weight is within 1% of actual weight.

Drum Mixer The plant shall be equipped with a diversion system where mix can be diverted at startup/shutdown and any time. The drum mixer shall be subject to annual inspection prior to removal of safety features and being readied for service. The Contractor shall provide the Department a minimum period of 72 hours to inspect the drum mixer while providing at least 72 hours' notice that the drum mixer is ready for inspection.

Recordation An approved automatic ticket printer system shall be used to print delivery slips. 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 dry aggregate weights and binder flow shall be recorded as well as mineral filler and all binder additives. The recordation of materials shall be printed a minimum of every ten minutes while in production.

The requirements of Section 108.1.3 f. - Delivery Slips, shall be met by the delivery slip 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 MaineDOT designation for the JMF.

401.079 Scales and Weight Checks Scales shall meeting the requirements of Section 108 - Payment. The scales shall be inspected and sealed by the State Sealer (or approved alternative) 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 50 pound masses for scale testing at batch plants. At Contractor's option, the Contractor can use one single test weight that has been checked on sealed scales. This weight shall be 1,000 lbs. or greater. 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. The inspector will notify the producer to take corrective action on any discrepancy over 1.0%. The producer may continue to operate for 48 hours under the following conditions.
 1. If the discrepancy does not exceed 1.5%; payment will still be governed by the printed ticket.
 2. 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.

If, after 48 hours the discrepancy has not been addressed and reduced below 1.0%, then plant operations will cease. Plant operation may resume after the discrepancy has been brought within 1.0%.

- 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. If platform scales are not readily

available, a weight with a known mass-verified and sealed annually by a licensed scale company, may be used by hanging weight from silo or surge hopper, at lower middle and upper third levels upon request to verify scale accuracy.

d. 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 Units hauling HMA shall have tight, clean, and smooth metal bodies, which have been thinly coated with a small amount of approved release agent to prevent the mixture from adhering to the bodies. Release agents that dissolve or strip asphalts, including diesel fuel, will not be allowed.

All mix haul units shall have a cover of water repellent material capable of heat retention, which completely covers the mixture. The cover shall be securely fastened on the truck, unless unloading. Haul units shall have an opening on both sides near the midpoint of the body, at least 12 in above the bed, which will accommodate a thermometer stem.

401.09 Pavers The Contractor shall use pavers meeting the requirements of this section unless otherwise authorized by the Department. Pavers shall meet the requirements of Table 4: Paver Requirements.

TABLE 4: PAVER REQUIREMENTS

Use	Paver Requirement
Traveled Way & Auxiliary Lanes	Equipped with a 10 ft minimum main screed with activated extensions. The minimum tractor weight shall be 30,000 pounds.
	Equipped with automatic grade and slope controls that 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 30 ft, a non-contact grade control with a minimum span of 24 ft, except that a 40 ft reference shall be used on interstate and divided highway projects.
All HMA Placement	Self-contained, self-propelled units of sufficient class and size to place Hot Mix Asphalt Pavement in full lane widths specified in the contract on the main line, shoulder, or similar construction.
	Equipped with a free-floating activated heated main screed with activated extensions. 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.
	Equipped with 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.
	Operated in such a manner as to produce a visually uniform surface texture and a thickness within the requirements of Section 401.11 - Surface Tolerances. The screed assembly shall produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture.

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 density testing across that mat as detailed in Section 401.191 Quality Control - Method A, B & C.

401.10 Rollers Rollers shall be static steel, pneumatic tire, oscillatory, 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 drums or tires. Crushing of the aggregate or displacement of the HMA during rolling will not be permitted. Any HMA Pavement that becomes loose, broken, contaminated, shows an excess or deficiency of PGAB, or is in any other way defective shall be removed and replaced at no additional cost with fresh material 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. The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option unless otherwise specified in the contract, provided specified density is attained and with the following requirements:

- a. On variable-depth courses, the first lift of pavement over gravel, reclaimed pavement, on irregular or milled surfaces, or on bridges, at least one roller shall be 16 ton pneumatic-tired. 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 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 on bridge decks.
- d. Any method, which results in cracking or checking of the mat, will be discontinued and corrective action taken.
- e. The use of an oscillating steel roller shall be required to compact all mixtures placed on bridge decks.

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.

401.11 Surface Tolerances The Department will check the following surface tolerances:

- a.) Longitudinally: The pavement surface profile shall be free of deviations in excess of $\pm \frac{1}{4}$ inches from the required pavement surface profile grade. To verify the surface tolerance a straight plane shall be established using 16 foot straight edge or a taught string line placed parallel to the direction of travel and checked continuously across the width of the lane.
- b.) Transversely: The pavement surface profile shall be free of deviations in excess of 0 inches below and $\frac{1}{4}$ inches above the required cross-sectional profile grade. To verify the surface tolerance a straight plane shall be established using a 10 foot straight edge or taught string line

placed perpendicular to the direction of travel and checked continuously along the length of the lane.

The Contractor shall correct defective areas 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 Department's use.

401.12 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.

401.13 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. Release agents that dissolve or strip asphalts, including diesel fuel, will not be allowed. On roadways with adjoining lanes carrying traffic, the Contractor shall place each course per the conditions in Table 5, unless otherwise noted by the Department in Section 403 - Hot Mix Asphalt Pavement.

TABLE 5: PLACEMENT CONDITIONS FOR ADJOINING LANES

Depth (at centerline)	Placement Conditions
Vertical Longitudinal Joint	
¾" and less (incl. shim)	The Contractor may place the HMA course over the full single travel lane width for each production day.
1" to 1 ¼"	The Contractor may place the HMA course over the full single travel lane width for each production day and will be required to place a matching course of HMA over the adjacent section of travel lane before weekend or holiday suspension.
1 ½" to 2"	The Contractor may place the HMA course over the full single travel lane width for each production day and will be required to place a matching course of HMA over the adjacent section of travel lane before the end of the following calendar day.
Greater than 2"	The Contractor shall place each course over the full width of the traveled way section being paved that day.
Notched-Wedge Longitudinal Joint	
1 ½" to 2"	The Contractor may place the HMA course over the full single travel lane width for each production day and will be required to place a matching course of HMA over the adjacent section of travel lane before weekend or holiday suspension. A maximum unmatched centerline joint length of 0.5 miles will be permitted over the weekend.
Greater than 2"	The Contractor may place the HMA course over the full single travel lane width for each production day and will be required to place a matching course of HMA over the adjacent section of travel lane before the end of the following calendar day.

The Contractor shall place the specified course over the full width of the mainline traveled way being paved, regardless of use, depth, or longitudinal joint type prior to Memorial Day, July 4th, Labor Day, paving suspensions exceeding three days, or other dates as specified by special provision.

The Contractor shall install additional warning signage that clearly defines the centerline elevation differential hazard. Unless otherwise addressed in the contract, the Contractor shall install additional centerline delineation such as a double application of raised pavement markers at 100 foot intervals, or temporary painted line. For any exposed vertical edge between the shoulder and traveled way, at a minimum, the use of temporary painted line, or RPMs placed along the edge of traveled way at 200 foot intervals is required. The Traffic Control Plan shall be amended to include this option and the additional requirements. All signs and traffic control devices will conform to Section 719.01, and Section 652, and will be installed prior to the work, at a maximum spacing of 0.50 mile for the entire length of effected roadway section. If this option is utilized, all additional signing, labor, traffic control devices, or incidentals will not be paid for directly, will be considered incidental to the appropriate 652 items.

401.14 Hot Mix Asphalt Placement on Bridge Decks Hot mix asphalt pavement placed on bridges shall also conform to Section 508.04 and the following requirements.

- a. The minimum production and placement temperature for the Hot Mix Asphalt placed over membrane shall conform to the manufacturer's recommendations.
- b. The bottom course shall be placed with an approved rubber mounted 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, unless otherwise directed by Special Provision.
- e. After the top course has been placed, the shoulder areas shall be sealed 3 ft wide with two applications of an emulsified bituminous sealer meeting the requirements of Section 612.03 – Sealing and 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. The furnishing and applying of the required quantity of sealer for the bridge shoulder areas shall be incidental to placing the hot mix asphalt pavement.
- f. The area between the edge of the membrane and the vertical surface shall be completely sealed with hot-applied rubberized asphalt material, meeting the requirements of Type 4 crack seal; shall be applied to form a complete seal between the membrane and the vertical surface and shall extend up the vertical surface to within ½ inch of the top of the HMA wearing surface. This work shall be considered incidental to the contract pavement items unless 508 membrane items are included in the contract.

401.15 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.

For all items requiring pavement density testing, the Contractor shall cut 6-inch diameter cores at no additional cost to the Department by the end of the working day following paving. Cores shall be cut such that the nearest edge at least 9 inches from any joint. Pre-testing of the cores will not be allowed. If the Contractor and the Department mutually determine that a core is damaged, the Contractor shall cut new core(s) at the same offset and within 3 ft of the initial sample. The Contractor and the Department will mutually determine if underlying material is adhered to the core and if so will mark the core at the point where sawing is needed. The Department will place the cores in a secure container and the Contractor shall transport the cores to the designated MaineDOT lab. The cores will be saw cut by the Department to remove underlying layers. No recuts are allowed at a test location after the core has been tested.

On all sections of overlay with wearing courses designed to be 1 in or less in thickness, there shall be no pay adjustment for density otherwise noted in Section 403 - Hot Mix Asphalt Pavement. For overlays designed to be 1 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 adjustment 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 Mix Asphalt 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.

401.16 Joints The Contractor shall construct wearing course transverse and longitudinal joints in such a manner that minimum tolerances shown in Section 401.11 - Surface Tolerances are met when measured with a straightedge. The paver screed 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 Contractor shall apply a coating of emulsified asphalt immediately before paving all joints to the vertical face and 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. 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 may utilize an approved notched wedge joint device on all HMA layers 1 ½ inches in depth or greater. A notched wedge joint shall be constructed as shown in Figure 1 using a device that is attached to the paver screed and is capable of independently adjusting the top and bottom vertical notches.

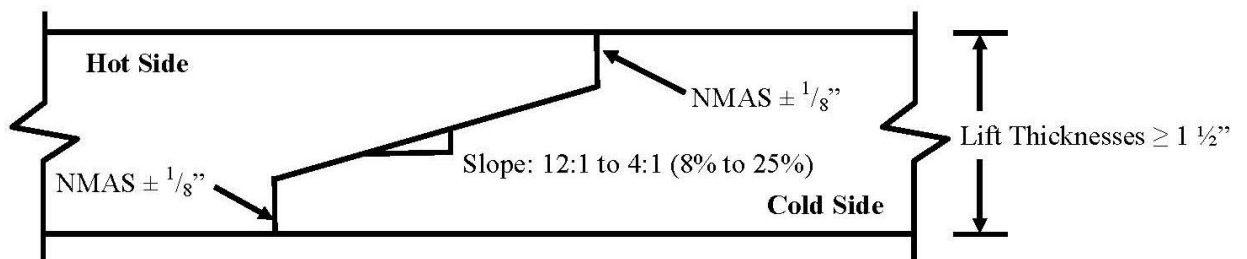


FIGURE 1: Notched Wedge Joint

Notes

1. An emulsified tack coat shall be applied to the vertical edges and the wedge surface so that the total rate is 0.05 G/SY plus the normal specified rate prior to placing the adjacent layer. The Contractor may elect to apply the emulsified tack coat in one or multiple passes.
2. Dimensions shown are compacted depths (after rolling is complete).

The Department reserves the right to have centerline cores cut by the Contractor's QC personnel for informational purposes to monitor the density along the joint. Informational cores at the centerline joint will be taken centered over the tapered part of the wedge joint.

Any notched wedge joint constructed areas that become cracked or broken shall be trimmed back to the limits affected prior to placing the adjoining lane. Any materials that become unbound or separated from the wedge or tapered joint section, or contaminated by materials determined by the Department as being detrimental to the construction of a sound construction joint, shall be removed by sweeping, compressed air and lance, or by hand tools as required. This work, if necessary, will not be paid for directly, but shall be considered incidental to the related contract items.

The Contractor shall apply a coating of emulsified asphalt on the vertical and tapered surface of the longitudinal centerline joint immediately before paving if the notched wedge joint device is used.

The total rate of application shall be 0.050 G/SY plus the normal specified tack coat rate. 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.

401.17 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. All delivery slips shall conform to the requirements of 401.078.

401.18 Prepave Meeting 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 density 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 personnel of the Department and the Contractor who have significant information relevant to the paving items shall attend, including the responsible onsite paving supervisor for the Contractor. The Resident will prepare minutes of the conference and distribute them to all attendees. Any requests to revise the minutes must be made to the Resident within 7 Days of Receipt. These minutes will constitute the final record of the Pre-paving conference. On the first day of paving and whenever there is a change in the onsite paving foreman or paving inspector, the Department and the Contractor shall hold an informal onsite meeting to review the minutes of the Pre-paving conference, Project Specific QCP, Plans, Typical, Special Provisions and communication process. This meeting shall be held prior to placing any mix. The onsite paving supervisor, QCT, Superintendent, Resident and/or paving inspector shall attend.

401.19 Contractor Quality Control – Method A, B, C & D

The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The Contractor shall not begin paving operations until the Department approves the QCP in writing.

401.191 Quality Control The QCP shall meet the requirements of Section 106.6 - Acceptance and this Section. The QCP shall address any items that affect the quality of the Hot Mix Asphalt Pavement, and shall include the following personnel meeting these minimum requirements:

- a. QCP Administrator - 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 their designee in the QCP Administrator's absence) shall be available to communicate with the Department at all times.
 - For items accepted under Methods A and B, the QCP Administrator shall be certified as a Quality Assurance Technologist (QAT) by NETTCP.
 - For items accepted under Methods C and D, the QCP Administrator shall be certified by NETTCP as a Quality Assurance Technologist (QAT), Plant Technician, or Paving Inspector.
- 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, and that delivery slips and plant recordation accurately reflects the mix being produced with all the required information. 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 QCP shall address any items that affect the quality of the Hot Mix Asphalt Pavement including, but not limited to, the following:

a. General Requirements:

- Job Mix Formulas (JMFs)
- Name of QCP Administrator, and certification number
- Description of corrective action process
- Disposition of defective material
- A procedure to take immediate possession of acceptance samples once released by MaineDOT and deliver said samples to the designated acceptance laboratory.

b. Process Control Requirements: Each Hot Mix Asphalt plant shall have a Plant Specific Process Control Plan. At minimum the plan shall include:

- Name of Plant Specific Process Control Technician(s) and certification number(s)
- Hot mix asphalt plant details
- Stockpile Management
- Mixing & transportation
- Silo management and details
- A detailed description of RAP processing, stockpiling and introduction into the plant
- PG Binder management:
 - Tanks and storage (including polymer modified binders if applicable)
 - Binder temperature
 - Sample points
 - Method to ensure mixture contains the specified binder grade
 - Additive introduction details if introduced at the plant
- Testing and inspection plan for control of aggregates and RAP
- Mix Testing and inspection plan

c. Quality Control Requirements – Method A & B

- Name of Quality Control Technicians(s) and certification number(s)
- Laydown operations
- Longitudinal joint construction including the tacking of all joints.
- Procedures for avoiding paving in inclement weather
- Compaction of shoulders
- Methods to ensure that segregation is minimized
- Procedures to determine the maximum rolling and paving speeds based on best engineering practices and past experience in achieving acceptable pavement smoothness.
- Sequence for paving around drainage structures, under guard rail, around curb, at bridges, intersections, drives and minor approaches to ensure proper compaction, finish, and drainage.
- Type of release agent to be used on haul units, tools and rollers.

d. Quality Control Requirements – Method C and D

- Name of QCP Administrator and certification number(s) as specified in Section 401.19.
- Name of Process Control Technicians(s) and certification number(s).
- Name of Quality Control Technicians(s) and certification number(s).
- Anticipated Compaction Temperature Zones for each roller pass during placement.
- Mix TMD to be used for density gauge setting for method spec density work
- Procedures for avoiding paving in inclement weather.
- Type of release agent to be used on haul units, tools and rollers.
- A note stating that the use of petroleum-based fuel oils, such as diesel or kerosene, or asphalt stripping solvents will not be permitted.
-

The Contractor shall also supply a Laydown Operation Plan that addresses sequence of work, layout of work, longitudinal joint construction, compaction of shoulders, methods to minimize segregation, and procedures to achieve acceptable pavement smoothness.

For each production day, a summary of each day's results, including a daily paving report, summarizing the mixture type, mixture temperature, equipment used, environmental conditions, and the number of roller passes, shall be recorded and signed by the QCT and presented to the Department's representative by 1 PM the following working day.

Unless otherwise noted in Section 403 - Hot Mix Asphalt Pavement, 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 for Items covered under the Plan. All mix designs (JMF) shall be approved and verified by MaineDOT prior to use.

A QCP, certified QC personnel, and a Prepave Meeting shall not be required for Item 403.209 - Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals) accepted under visual or Method D. An approved JMF shall be provided to the Resident prior to placement.

The Contractor shall certify the mix and the test results for each item by a Certificate of Compliance.

The Contractor shall have a testing lab at the plant site, equipped with all testing equipment necessary to complete the tests in Table 6. The Contractor shall generate QC sampling random numbers for each approved mix design. A copy of the random numbers shall be emailed to the QC.mainedot@maine.gov email address and remain on-file (in print) and be available for inspection at the QC laboratory. The Contractor shall sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with the minimum frequencies per each approved mix design:

TABLE 6: 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 (In-Place Density - Surface)	1 per 125 ton	AASHTO T 355 or AASHTO T 343
%TMD (In-Place Density - Base)	1 per 250 ton	AASHTO T 355 or AASHTO T 343
Fines / Effective Binder	1 per 500 ton	AASHTO T 312*
Gradation	1 per 500 ton	AASHTO T 30
PGAB Content	1 per 500 ton	AASHTO T 164 or AASHTO T 308
Voids at N_{design}	1 per 500 ton	AASHTO T 312*
VMA at N_{design}	1 per 500 ton	AASHTO T 312*
Rice Specific Gravity	1 per 500 ton	AASHTO T 209
Percent Fractured Particles	1 per 5,000 ton	AASHTO T 335
Flat and Elongated Particles	1 Per 5,000 ton	ASTM D4791
Fine Aggregate Angularity	1 Per 5,000 ton	AASHTO T 304

*Method A and B only

The Contractor shall monitor plant production on each approved mix design using running average of three control charts as specified in Section 106 - Quality. Control limits shall be as noted in Table 7 below. The UCL and LCL, shall not exceed the allowable gradation control points for the particular type of mixture as outlined in Table 1 of Section 703.09.

TABLE 7: CONTROL LIMITS

Property	UCL and LCL
Percent Passing 4.75 mm and larger sieves	Target +/- 4.0
Percent Passing 2.36 mm sieve	Target +/- 2.5
Percent Passing 0.075 mm sieve	Target +/- 1.0
PGAB Content	Target +/- 0.25
VMA at N_{design}	LCL = LSL + 0.2
Voids at N_{design}	JMF Target +/- 1.2
Theoretical Maximum Specific Gravity	JMF Target +/- 0.020

The Contractor shall submit all QC test and inspection reports and updated control charts to the Resident and QC.mainedot@maine.gov by email. The reports and updated control charts shall be signed by the appropriate technician and be submitted to the Department by 1:00 P.M. on the next working day, except when otherwise noted in the QCP and approved by the Department.

The Contractor shall also retain splits of the previous 5 QC tests, with QC results enclosed for random selection and testing by the Department. Test results of splits that do not meet the Dispute Resolution

Variance Limits in Table 18 shall trigger an investigation by the MaineDOT Independent Assurance Unit and may result in that lab losing NETTCP certification and the ability to request a dispute [Section 401.50 - Process for Dispute Resolution].

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 summarizing the mixture type, mixture temperature, equipment used, environmental conditions, and the number of roller passes, shall be recorded and signed by the QCT and provided to the QC.mainedot@maine.gov email address and Resident in writing by 1:00 p.m. the next working day. 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. The Contractor may only cut additional cores for verification of the densometer, at a rate not to exceed 3 per day or 2 per 1000 ton placed.

If the Contractor's control chart shows the process for a given mix design 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 7: Control Limits, the Contractor shall notify the Resident of all affected projects in writing of the corrective action by 1:00 PM the next working day. The written description shall detail what action is being taken by the Contractor to bring the property in question back within control limits. Subsequent quality control results are expected to demonstrate an improvement and regression towards the aim. The Department reserves the right to take action, to include cessation of production, in the case of repeated results outside the Table 7 control chart control limits.

On a daily basis, or whenever equipment type or sequence is modified, the Contractor shall perform density testing across the mat being placed, prior to being compacted by equipment at 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.

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

- a. The quality level for density using all quality control tests for the current Lot is less than 60 PWL.
- b. The Coarse Aggregate Angularity or Fine Aggregate Angularity value falls below the requirements of Section 703.07, Table 3: Aggregate Consensus Properties Criteria for the design traffic level.
- c. The Flat and Elongated Particles value exceeds 10% by ASTM D4791.
- d. There is any visible damage to the aggregate due to over-densification other than on variable depth shim courses.
- e. 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 corrective action, by the end of the workday. Failure to do so will be treated as a second incident under 106.4.6 QCP Non-compliance. The Department will only allow the continuation of paving operations when it is satisfied the corrective action will result in an improvement in results. The Department may require the submittal of a passing verification sample to allow further production. 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.

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.

401.192 Quality Control for Method D, (sidewalks, drives, islands & incidentals) and visual acceptance items

A QCP, certified QC personnel, or Prepave Meeting shall not be required for Item 403.209 - Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals) accepted under visual or Method D. An approved JMF shall be provided to the Resident prior to placement.

401.20 Acceptance Method A & C These methods utilize 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 Acceptance Properties as outlined in Table 8:

TABLE 8: ACCEPTANCE PROPERTIES – METHOD A & C

Properties	Point of Sampling	Test Method
Gradation	Paver Hopper	AASHTO T 30
PGAB Content	Paver Hopper	AASHTO T 308
% TMD (In-Place Density)	Mat behind all Rollers	AASHTO T 269
Voids at N_{design}	Paver Hopper	AASHTO T 312
VMA at N_{design}	Paver Hopper	AASHTO T 312
Fines to Effective Binder	Paver Hopper	AASHTO T 312
VFB	Paver Hopper	AASHTO T 312

The Department will obtain samples of Hot Mix Asphalt Pavement in conformance with AASHTO R 97, Sampling Asphalt Mixtures, and the MaineDOT Policies and Procedures for HMA Sampling and Testing. The Contractor shall transport the samples in containers provided by the Department to the designated MaineDOT Laboratory within 48 hours except when otherwise noted in the project specific QCP or as 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.

Target values shall be as specified in the JMF. 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 being evaluated under quality level analysis, where there is a minimum of four sublots, results shall be examined for statistical outliers, as stated in Section 106.7.2 - Statistical Outliers.

Lot sizes and subplot sizes shall be determined as outlined in Table 9.

TABLE 9: LOT AND SUBLOT SIZES – METHOD A & C

Lot Size*	Entire production per item per contract up to 6000 ton
Maximum Sublot Size – Mix	750 ton
Maximum Sublot Size – Density	Surface Layers – 250 ton Base / Intermediate Layers – 500 ton
Minimum Number of Samples – Mix	Four
Minimum Number of Samples – Density	Five

*Unless otherwise agreed upon at the Prepave Meeting

If there is less than one-half of a subplot remaining at the end, then it shall be combined with the previous subplot. If there is more than one-half subplot remaining at the end, then it shall constitute the last subplot

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. Unanticipated over-runs of up to 1500 ton shall be rolled into the last lot. Cases where the lot is terminated prior to reaching completion shall be handled in accordance with Section 106.7.3 Early Termination of Lots. In cases where density incentive/disincentive provision apply, additional cores shall be taken to attain a minimum of three for the Lot.

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, a change in process 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 for Method A, 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 150 ft.

TABLE 10: ACCEPTANCE LIMITS – METHOD A & C

Property	USL and LSL	
	Method A	Method C
Percent Passing 4.75 mm and larger sieves	Target +/- 7%	Target +/- 7%
Percent Passing 2.36 mm to 1.18 mm sieves	Target +/- 4%	Target +/- 5%
Percent Passing 0.60 mm sieve	Target +/- 3%	Target +/- 4%
Percent Passing 0.30 mm to 0.075 mm sieve	Target +/- 2%	Target +/- 2%
PGAB Content	Target +/- 0.4%	Target +/- 0.4%
Voids at N_{design}	4.0% +/- 1.5%	N/A
Fines to Effective Binder	0.9 +/- 0.3	N/A
VMA at N_{design}	LSL from Table 1	N/A
VFB	Table 1 plus a 4% production tolerance for USL	N/A
% TMD (In-place Density)	94.5% +/- 2.5%	94.5% +/- 2.5%

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

TABLE 11: CEASE PRODUCTION – METHOD A & C

Property	Percent Within Limits (PWL)	
	Method A	Method C
Percent Passing NMAS sieve*	<60 PWL	<60 PWL
Percent Passing 2.36 mm sieve*		
Percent Passing 0.30 mm sieve*		
Percent Passing 0.075 mm sieve*		
PGAB Content		N/A
Voids at N_{design}		
Fines to Effective Binder*		
VMA at N_{design}		
VFB		
% TMD (In-place Density)		<60 PWL

*Paving operations shall not be required to cease if the mean test value is equal to the LSL or USL and $s = 0$.

In cases where the Contractor is to cease paving operations based upon an Acceptance result or payfactor, the Contractor will submit a corrective action plan to the Department. The Department will only allow the continuation of paving operations when it is satisfied the corrective action will result in an improvement in results. The Department may require the submittal of a passing verification sample to allow further production.

401.201 Pay Adjustment - Method A & C The Department will use the following criteria for pay adjustment at the completion of the Lot using the pay adjustment factors under Section 106.7 - Quality Level Analysis:

Density Upon conclusion of each lot, density results shall be examined for statistical outliers as stated in Section 106.7.2. If the pay factor for Density falls below 0.80, 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, the entire Lot shall be removed and replaced with material meeting the specifications at no additional cost to the Department, except that the Department may, when it appears that there is a distinct pattern of defective material, isolate any defective material by investigating each mix sample sublot and require removal of defective mix sample sublots only, leaving any acceptable material in place if it is found to be free of defective material. Pay factors equal to or greater than the reject level will be paid accordingly.

Mix Properties The Department will determine a pay factor (PF) using the applicable Acceptance Limits. If all three pay factors for PGAB Content, VMA at N_{design} , and Voids at N_{design} fall below 0.80 for Method A, then the composite pay factor for PGAB Content, VMA at N_{design} , and Voids at N_{design} shall be 0.50.

The following variables will be used for pay adjustment:

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

The Department will determine a pay adjustment using Table 12: Pay Adjustment Calculations as follows:

TABLE 12: PAY ADJUSTMENT CALCULATIONS – METHOD A & C

Acceptance Method	Mix Properties / Gradation	Density
Method A	$PA = (\text{Voids @ } N_d \text{ PF} - 1.0)(Q)(P) \times 0.20 + (\text{VMA @ } N_d - 1.0)(Q)(P) \times 0.20 + (\text{PGAB Content PF} - 1.0)(Q)(P) \times 0.10$	$PA = (\text{density PF} - 1.0)(Q)(P) \times 0.50$
Method C	$PA = (\% \text{ Passing Nom. Max PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing 2.36 mm PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing 0.30 mm PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing 0.075 mm PF} - 1.0)(Q)(P) \times 0.10 + (\text{PGAB Content PF} - 1.0)(Q)(P) \times 0.25$	$PA = (\text{density PF} - 1.0)(Q)(P) \times 0.50$

In addition, for 9.5 mm NMAS mixtures the following pay adjustment shall also apply:

The average percent passing for the 0.075 mm sieve shall be evaluated for each Lot. If the average is greater than 6.5%, a pay adjustment according to Table 13 below shall apply in addition to the other pay adjustments for the given method of testing.

TABLE 13: 0.075 MM SIEVE PAY ADJUSTMENT

Average Percent Passing 0.075 mm Sieve	Pay Adjustment
6.6% - 7.0%	-5%
> 7.0%	-10%

The Department shall notify the Contractor whenever the average of at least three samples in a given Lot is greater than 6.5%.

401.21 Acceptance Method B & D Unless otherwise stated in the 403 special provision, the Lot shall be the entire mix quantity per item per contract. The Department will sample once per subplot per pay item on a statistically random basis, test, and evaluate in accordance with the Acceptance Properties in Table 14. The Department will obtain samples of Hot Mix Asphalt Pavement in conformance with AASHTO R 97, Sampling Asphalt Mixtures, and the MaineDOT Policies and Procedures for HMA Sampling and Testing. The Contractor shall transport the samples in containers provided by the Department to the designated MaineDOT Laboratory within 48 hours except when otherwise noted in the project specific QCP or as 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. Target values shall be as specified in the JMF. 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.

TABLE 14: ACCEPTANCE PROPERTIES – METHOD B & D

Properties	Point of Sampling		Test Method
	Method B	Method D	
Gradation	Paver Hopper	Paver Hopper or Truck	AASHTO T 30
PGAB Content	Paver Hopper	Paver Hopper or Truck	AASHTO T 308
% TMD (In-Place Density)	Mat behind all Rollers	Mat behind all Rollers	AASHTO T 269
Voids at N_{design}	Paver Hopper	N/A	AASHTO T 312
VMA at N_{design}	Paver Hopper	N/A	AASHTO T 312
Fines to Effective Binder	Paver Hopper	N/A	AASHTO T 312
VFB	Paver Hopper	N/A	AASHTO T 312

TABLE 15: LOT AND SUBLOT SIZES – METHOD B & D

Lot Size*	Entire mix quantity per item per contract	
Maximum Sublot Size – Mix	(Lot size $\leq$ 1000 tons)	(Lot size $>$ 1000 tons)
	250 ton	750 ton
Sublot Size – Density	125 ton (Max 5 Sublots)	250 ton

*General – Lot and Sublot size may be adjusted to accommodate the work scope and schedule, or as otherwise agreed upon at the Prepave Meeting

TABLE 16: ACCEPTANCE LIMITS – METHOD B & D

Property	USL and LSL	
	Method B	Method D
Percent Passing 4.75 mm and larger	Target +/- 7%	Target +/- 7%
Percent Passing 2.36 mm sieve	Target +/- 5%	Target +/- 7%
Percent Passing 1.18 mm sieve	Target +/- 5%	Target +/- 5%
Percent Passing 0.60 mm sieve	Target +/- 4%	Target +/- 4%
Percent Passing 0.30 mm sieve	Target +/- 3%	Target +/- 3%
Percent Passing 0.075 mm sieve	Target +/- 3%	Target +/- 3%
PGAB Content	Target +/- 0.5%	Target +/- 0.5%
Voids at N_{design}	4.0% +/- 2.0%	N/A
Fines to Effective Binder	0.9 +/- 0.3	N/A
VMA at N_{design}	LSL from Table 1	N/A
VFB	Table 1 plus a 4% production tolerance for USL	N/A
% TMD (In-place Density)	94.5% +/- 2.5%	LSL of 92.0%

The Contractor shall cease paving operations whenever two consecutive Method B or D tests fall outside specification limits on the same property. The Contractor will submit a corrective action plan to the Department. The Department will only allow the continuation of paving operations when it is satisfied the corrective action will result in an improvement in results. The Department may require the submittal of a passing verification sample to allow further production.

401.211 Pay Adjustment - Method B & D For items accepted under Method B or D, if the mix is within the tolerances listed in Table 16, the Department will pay the contract unit price, otherwise pay adjustments as shown in Table 17 shall be applied to the quantity of mix represented by the test. The Contractor shall cut one 6 in core per subplot unless otherwise noted in Section 403 - Hot Mix Asphalt Pavement. If the density result is not within the specified limits the disincentive shall apply. If the subplot density is less than 88.5 percent or greater than 99.0 percent of the subplot TMD, two additional cores shall be cut at random locations determined by the Department. If either of the additional cores has a density less than 88.5 percent or greater than 99.0 percent of the subplot TMD, the subplot shall be removed and replaced at no cost to the Department; otherwise, the average of the three cores will be used to determine the subplot pay adjustment.

TABLE 17: PAY ADJUSTMENTS – METHOD B & D

Property	Method B		Method D	
Percent Passing 2.36 mm sieve	N/A		-2.0%	
Percent Passing 0.30 mm sieve	N/A		-1.0%	
Percent Passing 0.075 mm sieve	-2.0%		-2.0%	
PGAB Content	-5.0%		-5.0%	
Voids at N_{design}	-3.0%		N/A	
% TMD (In-place Density)	91.5% - 91.9% or 97.1% - 97.5%	-5.0%	91.5% - 91.9%	-5.0%
	90.5% - 91.4% or 97.6% - 98.5%	-10.0%	90.5% - 91.4%	-10.0%
	89.5% - 90.4% or 98.6% - 99.0%	-20.0%	89.5% - 90.4%	-20.0%
	88.5% - 89.4%	-30.0%	88.5% - 89.4%	-30.0%
	<88.5% or >99.0%	Reject	<88.5% or >99.0%	Reject

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

401.40 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 401.12, 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 in Section 401.20 Acceptance Method A & B or 401.21 Acceptance Method C & D.

401.50 Process for Dispute Resolution 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 in accordance with applicable AASHTO procedure and accepted supplemental practice as described in the Department's HMA Sampling and Testing Policies and Procedures manual. The Contractor shall report their results to the Resident, with a copy to Contractor.mainedot@maine.gov 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 at least two weeks after it has been reported, or until the sample is tested. The properties eligible for dispute and the respective variances are shown in Table 18.

The Contractor may dispute the Department's Acceptance results and request that the dispute resolution split sample be tested by notifying the Department's Resident and QA Engineer in writing within two working days after the results of the Acceptance test are reported. 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 MaineDOT) of their split of the Acceptance sample indicating that the variances in Table 18 for the specific test result(s) or property(ies) were exceeded.

TABLE 18: DISPUTE RESOLUTION VARIANCE LIMITS

Property	Method A & B	Method C & D*	Variance Limits
PGAB Content	Yes	Yes	+/- 0.4%
G_{mb}	Yes	No	+/- 0.030
G_{mm}	Yes	No	+/- 0.020
Voids at N_{design}	Only if G_{mb} or G_{mm} is not disputable	No	+/- 0.8%
VMA at N_{design}	Only if G_{mb} or G_{mm} is not disputable	No	+/- 0.8%
Percent Passing 4.75 mm and larger sieves	No	Yes	+/- 4.0%
Percent Passing 2.36 mm to 0.60 mm sieves	No	Yes	+/- 3.0%
Percent Passing 0.30 mm to 0.15 mm sieves	No	Yes	+/- 2.0 %
0.075 mm sieve	Only for 9.5 mm NMA mixtures	Yes	+/- 0.8%

*Disputes will not be allowed on Item 403.209

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.

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 - Hot Mix Asphalt Pavement.

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 3000 lane-feet. A subplot will consist of 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 100 ft of bridge joints)
- Acceleration and deceleration lanes
- Shoulders and ramps
- Side streets and roads
- Within 100 ft of transverse joints at the beginning and end of the project
- Within 100 ft of railroad crossings
- Urban areas with speed limits of 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.

TABLE 1: ACCEPTANCE LIMITS

Level	USL
I	55 in/mile
II	65 in/mile
III	75 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 401.11 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 MIX ASPHALT PAVEMENT

403.01 Description This work shall consist of constructing one or more courses of Hot Mix Asphalt 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 HMA pavement shall be composed of a mixture of aggregate, filler if required, and asphalt 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.

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

403.05 Basis of Payment The accepted quantities of hot mix asphalt pavement will be paid for at the contract unit price per ton for the mixtures, including hot mix asphalt 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 Mix Asphalt 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	Ton
403.206 Hot Mix Asphalt, 25 mm Nominal Maximum Size	Ton
403.207 Hot Mix Asphalt, 19.0 mm Nominal Maximum Size	Ton
403.2071 Hot Mix Asphalt, 19.0 mm Nominal Maximum Size (Polymer Modified)	Ton
403.2072 Asphalt Rich Hot Mix Asphalt, 19.0 mm Nominal Maximum Size (Asphalt Rich Base and Intermediate course)	Ton
403.208 Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	Ton
403.2081 Hot Mix Asphalt - 12.5 mm Nominal Maximum Size (Polymer Modified)	Ton
403.209 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Sidewalks, Drives, Islands & Incidentals)	Ton
403.210 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size	Ton
403.2101 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Polymer Modified)	Ton
403.2104 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Thin Lift Surface Treatment)	Ton
403.211 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Shimming)	Ton
403.2111 Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Shimming, Polymer Modified))	Ton
403.212 Hot Mix Asphalt, 4.75 mm Nominal Maximum Size	Ton
403.213 Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	Ton
403.2131 Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course, Polymer Modified)	Ton
403.2132 Asphalt Rich Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	Ton
403.214 Hot Mix Asphalt, 4.75 Nominal Maximum Size (5/8" Surface Treatment)	Ton

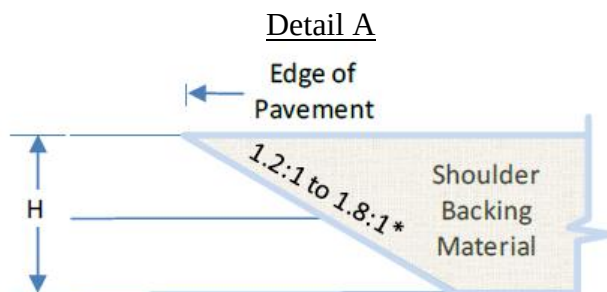
SPECIAL PROVISION
DIVISION 400
PAVEMENTS

SECTION 401 - HOT MIX ASPHALT PAVEMENT
(Pavement Safety Edge)

Special Provision 400, Section 401 – Hot Mix Asphalt Pavement, subsection 401.13 – Spreading and Finishing, has been modified with the following revisions: All sections not revised by this Special Provision shall be as outlined in the Special Provision 400 Pavements, Section 401 – Hot Mix Asphalt Pavement. References to Standard Specifications, Special Provisions, or other documents, shall be determined as the most current version available at the time of bid, or as amended. All costs associated with this Item will not be paid for directly, but shall be considered included in the associated contract items.

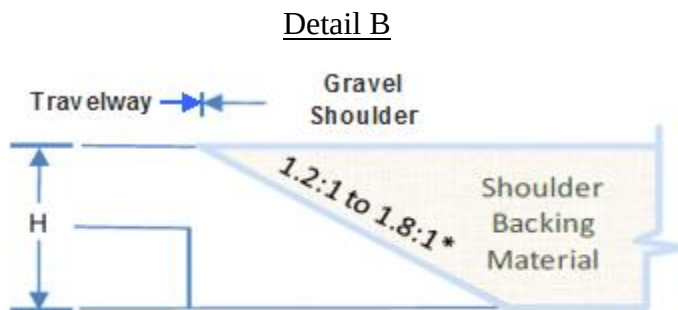
401.13 – Spreading and Finishing The section has been amended as follows:

A manufactured Safety Edge device shall be used to form the edge of travel way or shoulder pavement surface to the dimensions shown in this special provision and at locations designated in the contract documents. The finished shape of the Safety Edge shall conform to the cross-section drawings shown in Detail A for newly constructed pavement sections, and Detail B for overlay sections.



For $H \leq 5$ in. Configuration 1

Newly constructed pavements - Top 3 to 4 inch surface
and intermediate pavement course



For $H \leq 5$ in. Configuration 2

Overlay of existing pavement - surface course only

Equipment The Contractor shall use an approved longitudinal shoulder wedge system to create a sloped edge profile onto the roadway shoulder. The Contractor shall use a shoulder wedge system that compacts the HMA and provides a sloped wedge equal to 32° plus or minus 5° , measured from the pavement surface cross slope extended. The use of a single plate strike off is not allowed.

The Contractor will utilize a shoulder wedge system that is adjustable, or can adjust to accommodate varying paving thicknesses.

All shoulder wedge systems to be used for the purpose of creating a Safety Edge must meet the approval of the Department. The Resident may require documentation that the system has been used on previous projects with acceptable results or may require a test section constructed prior to the beginning of work to demonstrate wedge shape and compaction to the satisfaction of the Engineer.

Construction Prior to placing hot mix asphalt pavement, the Contractor will prepare the shoulder material where the Safety Edge will be placed to provide support for the placement of the Safety Edge. This work will be in accordance with the Department's standard practice.

The pavement used to construct the Safety Edge shall be compacted utilizing the standard roller train used for HMA pavements and overlays. A pneumatic roller shall be used to seal the upper edge of the formed edge, without rolling off the edge. Pavement adjacent to the formed wedge shall be compacted in accordance with the owner agency construction joint specification.

In areas where it is not possible to place the Safety Edge in conjunction with mainline paving but the Safety Edge is designated (e.g., transitions at driveways, intersections, interchanges, etc.,) the Department may allow handwork for short sections.

Measurement and Payment The purchase of equipment, use of approved equipment, and construction of the Safety Edge will not be paid for directly, but shall be considered included in the contract per ton unit price for the related pavement item.

SPECIAL PROVISION
SECTION 403
HOT MIX ASPHALT

Desc. Of Course	Grad Design.	Item Number	Total Thickness	No. Of Layers	Comp. Notes
<u>4" HMA Overlay Areas - Full Construction</u>					
<u>Travelway & Shoulders (As Indicated in Typical)</u>					
Wearing	12.5 mm	403.208	1 ½"	1	4,10,24,30,31
Base	12.5 mm	403.213	2 ½"	1	4,10,24,30,31
<u>Spot Shims (As Directed)</u>					
Shim	9.5 mm	403.211	Variable	1/more	3,10,20,30

COMPLEMENTARY NOTES

3. The design traffic level for mix placed shall be <3 million ESALS. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **65 gyrations**.
4. The aggregate qualities shall meet the design traffic level of 3 to <10 million ESALS for mix placed under this contract. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **65 gyrations**.
10. Section 106.6 Acceptance, (2) **Method D** as specified Section 401.21 - Quality Assurance Methods B and D.
20. The combined aggregate gradation required for this item shall be classified as a 9.5mm Thin Lift Mixture (TLM) mixture, using the Aggregate Gradation Control Points as defined in 703.09.
24. See Special Provision 401 - Pavement Safety Edge for project specifics.
30. The incentive/disincentive provisions for density shall not apply. Rollers shall meet the requirements of this special provision. The use of an oscillating steel roller shall be required to compact all mixtures pavements placed on bridge decks.
31. Compaction of the new Hot Mix Asphalt Pavement will be obtained using a minimal roller train consisting of a **10 ton** vibratory, **12 ton** pneumatic, and a **10 ton** finish roller for roadway work. A **Quality Control Technician (QCT)** shall be required for all roadway mixtures placed under this contract. A daily paving report, summarizing the mixture type, mixture temperature, equipment used, environmental conditions, and number of roller passes, shall be recorded and signed by the QCT and presented to the Department's representative by the **end of the working day**.

Tack Coat

A tack coat of emulsified asphalt, RS-1, RS-1h, CRS-1 or CRS-1h, Item 409.15 shall be applied to any existing pavement at a rate of approximately 0.030 gal/yd², and on milled pavement approximately 0.05 gal/yd² prior to placing a new course. A fog coat of emulsified asphalt shall be applied between shim /base courses and surface course as well as to any bridge membrane prior to the placement of HMA layers at a rate not to exceed 0.030 gal/yd². Tack used will be **paid for at the contract unit price** for Item 409.15 Bituminous Tack Coat.

SPECIAL PROVISION
SECTION 603
PIPE CULVERTS AND STORM DRAINS

603.12 Basis of Payment: This section shall be amended with the addition of the following:

<u>Pay Item</u>	<u>Pay Unit</u>
603.4076 112" x 75" Polymer Coated Pipe Arch	Linear Foot

SPECIAL PROVISION
SECTION 610
STONE FILL, RIPRAP, STONE BLANKET, AND STONE DITCH PROTECTION
(Stream Channel Rock)

610.01 Description This work shall consist of furnishing and placing stone and aggregate to form banklines inside and outside of a culvert as part of constructing a nature-like streambed.

610.02 Materials Material for stream channel rock shall consist of a well graded mix of hard, sound, durable stone and aggregate to fill voids. Stone for stream channel rock may be obtained by screening oversized rock from earth borrow pits or from quarries.

Stream channel rock shall conform to the following requirements:

- a. 15-inch angular stone - shall meet the requirements of the Standard Specifications Subsection 703.26 – Plain and Hand Laid Riprap, except that the mix shall also include approximately 30 larger stones with an average dimension of up to 15 inches.
- b. Void-fill material - shall be aggregate meeting the requirements of Type D gravel as described in Special Fill - Section 203.02.a, or other suitable material approved by the Resident.
- c. Mix Proportions: Stream channel rock shall be mixed in the following proportions:

15-inch angular stone	Void-fill material
2 parts	1 part

Mix proportions and material gradations shall be within the above limits or as otherwise adjusted by the Resident to obtain a mix that has adequate material to fill voids without reducing the stability of the stone.

- d. Inspection - The Contractor shall identify the source and proposed mix for inspection at least 10 working days prior to the start of stream channel construction. The grading of stone for Stream Channel Rock shall be determined by the Resident by visual inspection in accordance with the Standard Specifications, Section 610.032.d Inspection.

Stream channel rock shall conform to the gradation requirements at the time it is placed to form the banklines.

610.03 Construction Requirements

1. Place stream channel rock within the culvert to form banklines with the shape as shown on the plans or as directed by the Resident. The banklines shall extend upstream and downstream from the culvert and match into the existing streambanks as directed.
2. Stream channel rock shall be thoroughly pre-mixed and be placed in a manner that does not damage the culvert or the protective coating, and that minimizes segregation of the stone and aggregate. Larger stones shall be placed within the banklines as directed. The material shall be placed by machine or by hand as required to achieve the specified shape and height of the banklines.
3. All stones shall be firmly embedded and securely interlocked with aggregate between and below larger stones to fill voids. may protrude above the average surface but shall be well embedded in the mix. Placement of only void-fill material to achieve the specified height of the banklines will not be permitted.
4. Stream channel rock shall be thoroughly washed-in with water immediately after placement. After washing-in, the minimum height of the banklines shall be as shown on the plans with an allowable increase of up to 6 inches.
5. If voids remain in the stream channel rock after the initial washing-in, additional void-fill material shall be placed as required to fill remaining voids. The material shall be washed-in with water until the voids are filled and there is minimal piping of water through the stone.
6. Prior to exposure to natural flow conditions the banklines shall be at the specified height and slope, thoroughly wetted and compacted with voids filled, checked and approved by the Resident.

610.04 Method of Measurement Stream channel rock will be measured in place by the cubic yard.

610.05 Basis of Payment The accepted quantity of stream channel rock will be paid for at the contract price per cubic yard complete in place. Payment shall be full compensation for furnishing all materials, equipment, and labor and washing-in with water.

Pay Item

Pay Unit

610.210 Stream Channel Rock

CY

SPECIAL PROVISION
SECTION 610
STONE FILL, RIPRAP, STONE BLANKET, AND STONE DITCH PROTECTION
(Streambed Rock Features)

610.01 Description This work consists of furnishing and placing large stones in the streambed inside and outside of a culvert to simulate naturally occurring features.

610.02 Materials Material for streambed rock features shall consist of hard, sound durable rock that will not disintegrate by exposure to water or weather. Stone for streambed rock features shall be subangular to subrounded and may be obtained by screening oversized stone from earth borrow pits or as fieldstone. Unwashed stone, and stone with naturally fractured faces will be allowed. The maximum allowable length to width ratio will be 3:1.

Material for streambed rock features shall conform to the following:

a. 12-inch boulders - shall be a well graded mix of stones with a minimum size of 4 inches and a maximum size of 12 inches average dimension. Approximately fifty percent of the stones shall have an average dimension greater than 6 inches, and at least seventy five percent of the material shall be within the specified minimum and maximum sizes.

b. Inspection - The Contractor shall identify the source and proposed stones for inspection at least 10 working days prior to the start of the stream channel construction. The grading of stone shall be determined by the Resident by visual inspection in accordance with the Standard Specifications, Section 610.032.d Inspection.

610.03 Construction Requirements

1. Place stones to form rock bands in the locations shown on the plans or as directed by the Resident. Individual stones shall be rearranged by machine or handwork as required to achieve the specified shape and thickness.

2. Stones for rock bands shall be placed in a compact mass laterally across the width of the culvert on a firm layer of streambed material as described in Special Provision Section 203 – Special Fill. The stones shall be placed in close contact and securely interlocked with all stones firmly embedded in the special fill and the voids filled.

3. Stones for rock features shall be placed individually or in groups of two to three stones throughout the culvert and in the upstream and downstream channel as shown on the plans or as directed by the Resident.

4. Place and spread special fill around the stones and wash-in with water as needed to fill voids and prevent piping between the stones.

5. The top of the stones may protrude above the flowline or the average surface up to 3 inches but all stones shall be firmly embedded. Loose or excessively protruding stones shall be embedded, reoriented or replaced as directed.

610.04 Method of Measurement Streambed rock features will be measured by the cubic yard, complete in place.

610.05 Basis of Payment The accepted quantity of streambed rock features will be paid for at the contract unit price per cubic yard complete in place Payment shall be full compensation for furnishing all materials, equipment, and labor and washing-in with water.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
610.212 Streambed Rock Features	CY

SPECIAL PROVISION
SECTION 620 – GEOTEXTILES
(Reinforcement Geogrid)

Amend Standard Specification 620 – GEOTEXTILES to include the following:

620.01 Description This work shall consist of furnishing and installing Reinforcement Geogrid within the Culvert Bedding Stone in accordance with these specifications and in reasonably close conformity with the lines, grades, and dimensions shown on the plans or as directed by the Resident.

620.02 Material Reinforcement Geogrid shall consist of a regular network of integrally connected, polymeric tensile elements with aperture geometry sufficient to permit significant mechanical interlock with the surrounding soil, aggregate or other material. The Reinforcement Geogrid structure shall be dimensionally stable to retain its geometry under construction stresses and shall have high resistance to damage during construction, ultraviolet degradation, and all forms of chemical and biological degradation encountered in the soil being reinforced.

The Reinforcement Geogrid shall meet or exceed the Minimum Average Roll Values (MARV) of the properties in Table 1. Acceptable manufacturers for Reinforcement Geogrids must be approved by the Resident.

Table 1 - Physical Property Requirements
(Biaxial Reinforcement Geogrid)

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

¹ Values are minimum average roll values determined in accordance with ASTM D 4759

A biaxial Reinforcement Geogrid shall be used in this application.

620.03 Placement Reinforcement Geogrid shall be installed, in accordance with the manufacturer's recommendations, unless otherwise modified by this Special Provision. The Reinforcement Geogrid shall be placed within the layers of Crushed Stone Bedding at the proper elevation and alignment as shown on the Plans or as directed by the Resident.

1. The Reinforcement Geogrid shall be placed in continuous longitudinal strips. Splicing along the length will not be allowed. Reinforcement Geogrid shall be oriented such that the roll length runs either parallel or perpendicular to the construction centerline. The Contractor shall verify correct orientation of the Reinforcement Geogrid.

2. Reinforcement Geogrid may be temporarily secured in-place with staples, pins, sand bags or backfill as required by fill properties, fill placement procedures, or weather conditions, or as directed by the Resident.

3. Coverage of less than 100 percent shall not be allowed.
4. The Reinforcement Geogrid shall be lightly anchored and pulled taut to reduce any slack as directed by the Resident.
5. Fill shall not be dumped directly onto the Reinforcement Geogrid. It shall be dumped at the edge of the Reinforcement Geogrid or on a previous course of fill with a minimum compacted depth of 8 inches.
6. The Reinforcement Geogrid shall be covered with fill materials within 7 days of placement to protect against unnecessary exposure.
7. Fill may then be pushed onto the Reinforcement Geogrid using a track mounted bulldozer. At no time shall construction equipment be allowed directly onto the Reinforcement Geogrid. Track mounted equipment shall be allowed on previous courses of fill with a minimum compacted depth of 8 inches. Smooth drum roller compaction equipment shall be allowed on previous courses of fill with a minimum compacted depth of 8 inches and spread fill with a minimum depth of 12 inches, loose measure. At no time shall rubber tired or sheeps-foot rollers be allowed onto the reinforced fill. Turning of vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the Reinforcement Geogrid. Sudden breaking and sharp turning shall be avoided. Equipment speeds over 10 MPH shall not be allowed.
8. Placement, spreading, and compaction of soil on top of the Reinforcement Geogrid shall advance from one end of the Reinforcement Geogrid and move towards the other. Care shall be taken to minimize the development of wrinkles and to ensure that the Reinforcement Geogrid doesn't move from its position during fill placement. A spotter shall observe all fill placement operations to ensure the Reinforcement Geogrid does not slip, achieves the minimum coverage specified on the Plans, and is not damaged by the work.
9. Fill shall be compacted as specified in (1) the Standard Specifications or (2) to at least 90 percent of the maximum dry density determined in accordance with AASHTO T-180, whichever is greater. Density testing shall be made at a minimum frequency of one (1) test per lift or as otherwise specified in the Standard Specifications. Care shall be taken not to drive test apparatus through the Reinforcement Geogrid tensile elements.
10. All rutting formed during construction shall be filled with new Culvert Bedding Stone. In no case shall rutting be filled by blading down

620.04 Overlap Adjacent rolls of Reinforcement Geogrid shall be overlapped a minimum of 1 foot.

620.05 Seams Seams along adjacent lengths of Reinforcement Geogrid shall be tied together with hog rings or cable ties every 3 to 6 feet.

620.06 Certification Prior to construction the Contractor shall submit to the Resident the Manufacturer's certification that the Reinforcement Geogrid supplied has been evaluated in full compliance with this Specification and is fit for long-term, critical soil reinforcement applications.

The Contractor's submittal package shall include, but not be limited to, actual tests for tension/creep, durability/aging, construction damage, and quality control tensile testing.

620.08 Shipment, Storage, Protection, and Repair of Fabric The Contractor shall check the Reinforcement Geogrid upon delivery to ensure that the proper material has been received. Each Reinforcement Geogrid roll shall be shipped in a protective bag and clearly marked with roll number, lot number, geogrid style and principle strength direction. During all periods of shipment and storage, the Reinforcement Geogrid shall be protected from temperatures greater than 140°F and all deleterious materials that might otherwise become affixed to the Reinforcement Geogrid and effect its performance. The manufacturer's recommendations shall be followed with regard to protection from direct sunlight. The Reinforcement Geogrid shall be stored off the ground in a clean, dry environment out of the pathway of construction equipment.

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

620.09 Method of Measurement Reinforcement Geogrid will be measured by the number of Square Yards of surface area installed. Overlaps for connections, splices, patches, and repairs of damaged Reinforcement Geogrid, etc. are incidental to this Pay Item.

620.10 Basis of Payment Reinforcement Geogrid placement will be paid for per Square Yard in-place which shall be full compensation for all off-loading, inspection, storage, labor, materials, equipment, tools and any incidentals to complete the installation.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
620.65 Reinforcement Geogrid	Square Yard

SPECIAL PROVISION
SECTION 631
EQUIPMENT RENTAL
EQUIPMENT REQUIREMENTS

Amend Section 631 by adding the following to the noted subsections:

631.03 General

Equipment shall be capable of grinding small areas of pavement up to 6” in depth in accordance with Section 202, per plans, or as directed by the Resident.

631.08 Basis of Payment

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
631.212 Small Pavement Grinder (Including Operator)	Hour

**Special Provisions
Temporary Traffic Signal
Item 643**

The Contractor shall install and maintain a temporary traffic signal for the project duration.

Signal heads at each end of the bridge work area shall be mounted on a temporary structure supplied by the Contractor and approved by the Resident. Two heads shall face traffic on each approach. All signal heads shall have 12" R-Y-G circular LED indications with 5" backplates and yellow retroreflective tape along all borders.

Stop bar detection shall be provided on each approach. The Contractor shall determine the method of detection with the Resident's approval.

Ø 1 must always be followed by Ø2 to allow enough red clearance time to clear the bridge. Ø3 must always be followed by Ø 4 to allow enough red clearance time to clear the bridge.

No Right turn on Red signs shall be placed at each approach.

The Contractor shall program the signal controller with the following phasing and timing (in seconds):

	Ø1	Ø2	Ø3	Ø4
Min Green	5	5	5	5
Extension	4	4	4	4
Max Green	20	20	20	20
Yellow Cl.	3	3	3	3
All Red	2	10	2	10
Recall	none	none	none	none

Ø1 Brisse Culotte Road (include MUTCD R10-11 sign, "NO TURN ON RED" at this location, see figure below)

Ø2 Northbound Cleveland Road

Ø3 Guerrete Road (include MUTCD R10-11 sign, "NO TURN ON RED" at this location, see figure below)

Ø4 Westbound Cleveland Road



643.18 Method of Measurement

As per *STATE OF MAINE, Department of Transportation, Standard Specifications, Revision of March 2020.*

643.19 Basis of Payment

As per *STATE OF MAINE, Department of Transportation, Standard Specifications, Revision of March 2020.*

Payment will be made under:

<i>Pay Item</i>	<i>Description</i>	<i>Pay Unit</i>
643.72	Temporary Traffic Signal at:	Lump Sum

Clearance time calculations were based on a vehicle speed of 20 mph for 280 feet.

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
(Staged Construction and Traffic Control)

Description This work shall consist of furnishing, installing, maintaining, and removing traffic control devices and staged construction items necessary to maintain the temporary travelway as specified in the Contract Documents and Standard Specifications.

Materials All materials utilized shall meet the appropriate requirements of the Standard Specification and the Contract Documents.

Geometric and Approach Requirements

A. Horizontal Alignment Horizontal curve radii shall not be less than 200 feet at the centerline of the temporary roadway.

B. Vertical Alignment Grades shall not exceed 10% and all grade changes will accommodate all legal highway vehicle components and attached loads.

Construction Requirements At or before the preconstruction meeting the Contractor shall submit a Staged Construction and Traffic Control Plan (SCTCP) to the Department. The Department will review the SCTCP for completeness and conformity with Federal requirements, Contract provisions, the current edition of the MUTCD, and Department policies and procedures. The Department will review and provide comments to the Contractor within 14 days of receipt of the SCTCP. No review or comment by the Department, or any failure to review or comment, shall operate to absolve the Contractor of its responsibility to design and implement the plan in accordance with the Contract, or to shift any responsibility to the Department. If the SCTCP is determined by the Department to be operationally ineffective, the Contractor shall submit modifications of the SCTCP to the Department for review, and shall implement these changes at no additional cost to the Contract. Nothing in this Section shall negate the Contractor's obligations set forth in Section 110 - Indemnification, Bonding, and Insurance. The creation and modifications of the SCTCP shall be considered incidental to the related 652 items.

The plan shall address:

- Construction staging and phasing
- Maintenance of the required travelway width and impacts to vehicle movement
- Traffic Control items to be utilized
- Any shoring, excavation, fill or other items not included in the plan set design

- Removal of any materials placed outside the final limits of impacts and beyond the neat lines of the Plans
- Sections of the plan dealing with shoring and/or horizontal/vertical design shall be stamped by a professional engineer licensed in the state of Maine.

The Contractor is ultimately responsible for all costs associated with obtaining all additional and required permits and/or property rights required by their plan. Certain rights and permits must be acquired by the Department. The contractor shall factor the time and cost for these acquisitions into their plan.

Method of Measurement Staged Construction and Traffic Control will be measured and paid as one lump sum

Basis of Payment The lump sum price will be full compensation for the design of the Staged Construction and Traffic Control Plan and for all items not included in the Bid Documents and utilized as depicted. All 652 items utilized by the SCTCP and included in the Schedule of Items shall be paid for separately. All additional shoring, excavating, placement of fill, piles, permits, rights, and any other work associated with this item shall be considered incidental.

Incremental payment will be made on the following schedule:

- | | |
|--------------------------------------|-----|
| - Approval of SCTCP | 25% |
| - Installation of SCTCP items | 25% |
| - Removal of SCTCP items | 25% |
| - All work related to SCTCP complete | 25% |

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
652.61 Staged Construction and Traffic Control	Lump Sum

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC

Approaches. Approach signing shall include the following signs at 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 (Ahead)
End Road Work

Work Areas. At each work site, signs and channelizing devices shall be used as directed by the Resident.

Signs include:

Road Work xxxx¹.
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.

Unless otherwise defined in Special Provision 105/107 or submitted and approved in the Traffic Control Plan, the following shall apply:

- The Contractor shall conduct their operations in such a manner that the roadway will not be restricted to one lane for more than 2,500 feet at each work area and no more than 4,000 feet for paving and milling work areas.
- Where more than one work area restricts traffic to one lane operation, these work areas shall be separated by at least 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.

¹ "Road Work Ahead" to be used in short duration operations and "Road Work xx feet" to be used in stationary operations as directed by the Resident.

SPECIAL PROVISION
SECTION 717
 ROADSIDE IMPROVEMENT MATERIALS
 (Seed)

717.03 Seed Revise this Sub Section by removing the material property tables for “Method #1 - Park Mixture” and “Method #2 - Roadside Mixture #2” and replace with the following:

Seed Mixtures shall consist of seed proportioned percent by weight as follows:

Method #1 – Park Mixture	
Specification	Property
Turf Type Tall Fescue	40% +/- 2%
85/80 Kentucky Bluegrass	25% +/-2%
Perennial Rye Grass	20% +/-2%
Annual Ryegrass	15% +/- 2%

Method #2 – Roadside Mixture #2	
Specification	Property
Turf Type Tall Fescue	60% +/-2%
White Clover	5% +/-2%
Perennial Rye Grass	15% +/-2%
Annual Ryegrass	20% +/-2%

This special provision is temporary while supplies are limited and may be Modified to the Seed Mix in the March 2020 Standard Specification Book when supplies are available again.

2020 STANDARD DETAIL UPDATES

Standard Details and Standard Detail updates are available at:
<http://maine.gov/mdot/contractors/publications/standarddetail/>

<u>Detail #</u>	<u>Description</u>	<u>Revision Date</u>
507(20)	Steel Approach Railing 3-Bar	2/11/2021
507(21)	Steel Approach Railing 3-Bar	2/11/2021
507(22)	Steel Approach Railing 3-Bar	2/11/2021
507(23)	Steel Approach Railing 3-Bar	2/11/2021
507(27)	Steel Approach Railing	2/11/2021
526(01)	Portable Concrete Barrier	1/14/2021
526(01A)	Portable Concrete Barrier	1/14/2021
526(01B)	Portable Concrete Barrier	1/14/2021
526(02)	Portable Concrete Barrier	1/14/2021
526(02A)	Portable Concrete Barrier	1/14/2021
526(03)	Portable Concrete Barrier	1/14/2021
526(04)	Portable Concrete Barrier	1/14/2021
526(04A)	Portable Concrete Barrier	1/14/2021
526(04B)	Portable Concrete Barrier	1/14/2021
603(10)	Concrete Pipe Ties	6/10/2021
605(01)	Underdrain	8/13/2021
606(23)	Standard Bridge Transition – Type “1”	2/11/2021
606(24)	Standard Bridge Transition – Type “1A”	2/11/2021
608(02)	Detectable Warnings	6/10/2021
609(09)	Precast Concrete Vertical Curb	2/11/2021
643(11)	ATCC Cabinet	12/14/2020
801(11)	Pedestrian Ramp Notes	6/10/2021
801(12)	Pedestrian Ramp Requirements	8/13/2021
801(13)	Ramp Length Table	6/10/2021
801(14)	Parallel Pedestrian Ramp	6/10/2021
801(15)	Perpendicular Pedestrian Ramp – Option 1	6/10/2021
801(16)	Parallel Pedestrian Ramp – Option 2A	6/10/2021
801(17)	Perpendicular Pedestrian Ramp – Option 2A	6/10/2021
801(18)	Parallel Pedestrian Ramp – Option 2B	6/10/2021

801(19)	Perpendicular Pedestrian Ramp – Option 2B	6/10/2021
801(20)	Parallel Pedestrian Ramp – Option 3	6/10/2021
801(21)	Perpendicular Pedestrian Ramp – Option 3	6/10/2021
801(22)	Side Street Pedestrian Ramp	6/10/2021
801(23)	Parallel Pedestrian Ramp – Esplanade	6/10/2021
801(24)	Perpendicular Pedestrian Ramp – Esplanade	6/10/2021
801(25)	Island Crossings	6/10/2021
801(26)	Blended Transition	6/10/2021
801(27)	Pedestrian Ramp Adjacent to Driveway or Entrance	6/10/2021
802(05)	Roadway Culvert End Slope Treatment	1/03/2017

SUPPLEMENTAL SPECIFICATIONS
(Corrections, Additions, & Revisions to Standard Specifications – March 2020)

SECTION 101
CONTRACT INTERPRETATION

101.2 Definitions

Holidays Amend this paragraph by adding “**Juneteenth**” between ‘Memorial Day’ and ‘Independence Day’.

SECTION 102
BIDDING

102.11 Bid Responsiveness Revise the paragraph that states
“The Bid is not signed by a duly authorized representative of the Bidder.” So that it reads:

“The Bid is not signed by a duly authorized representative of the Bidder.

- **Properly submitted electronic bids meet this requirement.**
- **Paper bids must include at least one signed copy of the Contract Agreement Offer & Award form.”**

SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES

104.2.1 Furnishing of Right-of-Way Revise the last sentence in the first paragraph by removing “105.4.5 – Special Detours” and replacing it with “**105.4.5 – Maintenance of Existing Structures.**”.

SECTION 106
QUALITY

106.6 Acceptance Revise this Subsection by replacing the paragraph beginning with “Acceptance of Hot Mix Asphalt Pavement will be based” with:

“Acceptance of Hot Mix Asphalt Pavement will be based on Method A or C Statistical Acceptance, or Method B or D Acceptance as specified. The method of acceptance for each item is defined in Special Provision, Section 403, Hot Mix Asphalt Pavement. When items of Hot Mix Asphalt Pavement are not so designated, Method A will be utilized whenever there are more than 1000 tons per Hot Mix Asphalt Pavement item, and Method B will be utilized when there are less than or equal to 1000 tons per Hot Mix Asphalt Pavement item.”

Revise Subsection “B” by removing it and replacing it with:

“B. Items not designated for Statistical Acceptance will utilize Method B or D Acceptance testing to validate the quality of the material incorporated into the Project. For material paid under Item 403.209 – Method D, or designated to be visually accepted, the Contractor shall provide the Department with a Certification Letter that indicates that the material supplied complies with the Specifications. Test results representative of the certified material shall be attached to the letter.

The Department will randomly sample and test the certified Material for properties noted in Table 1 of Section 502 - Structural Concrete or Table 14 of Section –401.21 Acceptance Method B & D. Material will be subject to rejection as noted in Structural Concrete Section 502.195 - Quality Assurance Method C Concrete or Hot Mix Asphalt, Section 401.2022 Pay Adjustment – Method B & D.”

106.7.1 Standard Deviation Method Revise 106.7.1, subsection H by removing the following from the first paragraph:

“Method B: $PF = [70 + (Quality\ Level * 0.33)] * 0.01$ ”

SECTION 107 TIME

107.3.1 General Amend this paragraph by adding “**Juneteenth**” between ‘Patriot’s Day’ and ‘the Friday after Thanksgiving’.

SECTION 110 INDEMNIFICATION, BONDING, AND INSURANCE

110.3.9 Administrative & General Provisions Amend this subsection by adding “**Automobile Liability**” under letter A) Additional Insured to the list of exceptions.

SECTION 206 STRUCTURAL EXCAVATION

206.01 Description – *Structural Earth Excavation, Below Grade* delete the entire sentence and replace with “**shall consist of the removal of excavation required for unknown or unanticipated subsurface condition. See 206.04 – Method of Measurement for pay limits.**”

206.04 Method of Measurement – Drainage and Minor Structures Paragraph 1, sentence 2, delete the remainder of the sentence beginning with “....provided the maximum allowable...”

And replace with: “**....in accordance with the following limits:**”

- **Vertical pay limits:**
 - o **Below a plane parallel with and 12 inches below the bottom of the drainage or minor structure or**

- **Below the excavation limits shown in the Bid Documents; whichever is greater.**
- **Horizontal pay limits – The maximum allowable horizontal dimensions shall not exceed those bounded by vertical surfaces 18 inches outside the base, or extreme limits of, the structure, and to the vertical neat lines of underdrain trenches, as shown in the Contract Documents.**

SECTION 401 HOT MIX ASPHALT PAVEMENT

401.19 Contractor Quality Control Amend this Section by adding the following to the end:
“Failure to comply with the approved QCP will result in work suspension and pay reductions as outlined in Section 106.4.6. The Quality Control Plan Value shall be the total bid value for all items covered by the QCP as identified in Special Provision 403.”

SECTION 502 STRUCTURAL CONCRETE

502.09 Forms and Falsework Amend this subsection by adding the subsection title **“502.10 Placing Concrete”** after section “D” Removal of Forms and False work” and after the paragraph beginning with “2. Forms and False work, including blocking...”. So that a new subsection starts and reads:

“502.10 Placing Concrete

A. **General Concrete shall not be placed until forms”**

502.1701 Quality Control, Method A and B Revise this Section so that the first paragraph and the first sentence of the second paragraph read:

“502.17 Quality Control The Contractor shall control the quality of the concrete through testing, inspection, and practices which shall be described in the QCP, sufficient to assure a product meeting the Contract requirements. The QCP shall meet the requirements of Section 106, Quality, and this specification. No work under this item shall proceed until the QCP is submitted to and approved by the Department. Failure to comply with the approved QCP will result in work suspension and pay reductions as outlined in Section 106.4.6. The Quality Control Plan Value shall be the total bid value for all cast-in-place items covered by the QCP, using the P value listed in Special Provision 502. If no P value is listed, a value of \$350, or bid value per cubic yard, whichever is less, shall be used.

502.1701 Quality Control, Method A and B The QCP shall address all elements that affect the quality of the structural concrete including, but not limited to, the following: “

502.18, Method of Measurement, Revise Subsection ‘F’ by removing the word ‘transverse’ so that it reads: **“Saw cut grooving of concrete wearing surfaces, complete and accepted, will be measured for payment as one lump sum.”**

502.19, Basis of Payment, Revise the third paragraph by removing the word ‘transverse’ so that it reads: **“Saw cut grooving of concrete wearing surfaces will be paid for at the Contract Lump Sum Price, which shall be payment for furnishing all materials, labor, and equipment, including depth gauges and all incidentals, to satisfactorily complete the work.”**

(Also see 535.24 and 535.25 for related changes)

SECTION 506 SHOP APPLIED PROTECTIVE COATING – STEEL

506.13 Surface Preparation Amend this section by adding this paragraph to the end:

“Steel shall meet the requirements of SSPC SP8 Pickling prior to being immersed in the zinc tanks. Verification of the surface preparation shall be included in the QC documentation.”

SECTION 523 BEARINGS

523.22 Fabrication Amend this subsection by adding the following: **“Elastomeric Bearings shall be fabricated in accordance with AASHTO M251.”**

SECTION 526 CONCRETE BARRIER

Amend this section by deleting it in its entirety and replacing it with:

“526.01 Description This work shall consist of the furnishing, constructing, erecting, setting, resetting, and removal of concrete barrier and associated elements in accordance with these specifications, the Standard Details, and the lines and grades shown on the Plans or established by the Resident.

The types of concrete barrier are designated as follows:

Portable Concrete Barrier Type I Double faced removable barrier in accordance with the Standard Details.

Permanent Concrete Barrier Type II Double faced barrier as shown on the Plans.

Permanent Concrete Barrier Type IIIa Single faced barrier 32 inches high in accordance with the Standard Details or as shown on the Plans.

Permanent Concrete Barrier Type IIIb Single faced barrier 42 inches high in accordance with the Standard Details or as shown on the Plans.

Permanent Concrete Transition Barrier Barrier of various heights joining steel bridge rail to steel guardrail in accordance with the Standard Details or as shown on the Plans.

Permanent Texas Classic Rail Barrier Traffic rail or sidewalk rail, in accordance with the Standard Details or as shown on the Plans.

526.02 Materials

a. **Concrete** Concrete for barriers, both permanent and portable, shall have a design strength of 5,000 psi.

For cast-in-place barrier: The concrete shall be Class LP, in accordance with Standard Specification Section 502, Structural Concrete.

For precast barrier: The concrete shall meet the requirements of Standard Specification 712.061, Structural Precast Concrete Units, except that the stripping strength for precast barriers is 4,000 psi.

b. **Reinforcing Steel** Reinforcing steel shall meet the requirements of Section 503, Reinforcing Steel.

c. **Structural Steel** Plates and barrier connections shall meet the requirements specified in Standard Specification 504 - Structural Steel and shall be hot dip galvanized after fabrication in accordance with Standard Specification 506, Shop Applied Protective Coating – Steel

d. **Bolts** Bolts shall meet the requirements specified in Section 713.02, High Strength Bolts.

e. **Connecting Pins for Portable Concrete Barrier** Portable concrete barriers must be connected using a 1- inch diameter pin. The connecting pin must be smooth, not deformed, i.e., reinforcing bar may not be used, and shall meet the strength requirements of ASTM A449 steel. Materials with greater strength may be used with the approval of the Department.

f. **Anchor Pins for Portable Concrete Barrier** Anchoring to concrete or asphalt will be required when specified on the Plans. When required, portable concrete barriers must be anchored using a 1 ½ - inch diameter anchor pin. The anchor pin must be smooth, not deformed, i.e., reinforcing bar may not be used, and shall meet the strength requirements of ASTM A36 steel. Materials with greater strength may be used with the approval of the Department.

g. **Device Crashworthiness** MaineDOT is transitioning to MASH2016 criteria for Portable Concrete Barrier on the following schedule:

New Portable Concrete Barrier shall be crash tested and/or evaluated to MASH2016 criteria.

Current Portable Concrete Barrier in useful serviceable condition that is successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029.

Other current Portable Concrete Barrier that is deemed acceptable by the Department may be utilized on projects off the National Highway System through December 31, 2024.

526.03 Construction Requirements

Cast-in-place barriers shall be fabricated in accordance with Standard Specification Section 502, Structural Concrete. Precast barriers shall be fabricated in accordance with Standard Specification 534, Precast Structural Concrete.

Concrete finish for permanent barrier shall be rubbed as defined in Standard Specification Section 502, Structural Concrete, 502.13 D2 or an approved equal.

Portable concrete barrier shall be generally free from fins and porous areas and shall present a neat and uniform appearance.

Permanent barrier shall have a protective coating applied in accordance with Standard Specification Section 515, Protective Coating for Concrete Surfaces.

Reflective delineators for concrete median barrier shall meet the requirements of Special Provision 645, Highway Signing.

Preformed Joint Filler shall meet the requirements specified in Subsection 705.01, Preformed Expansion Joint Filler.

Permissible dimensional tolerances for all concrete barriers shall be as follows:

- a. Cross-sectional dimensions shall not vary from design dimensions by more than ¼ inch. The vertical centerline shall not be out of plumb by more than ¼ inch.**
 - b. Longitudinal dimensions shall not vary from the design dimensions by more than ¼ inch per 10 feet of barrier section and shall not exceed ¾ inches per section.**
 - c. Location of anchoring holes shall not vary by more than ½ inch from the dimensions shown in the concrete barrier details on the Plans.**
 - d. Surface straightness shall not vary more than ¼ inch under a 10-foot straightedge.**
 - e. The barrier shall have no significant cracking. Significant cracking is defined as fractures or cracks passing through the section, or any continuous crack extending for a length of 12 inches or more, regardless of position in the section.**
- 526.04 Method of**

Measurement Permanent Concrete Barrier Type II, IIIa, IIIb, Texas Classic Rail, and Precast Median Barrier will be measured for payment by lump sum, complete in place.

Portable concrete barrier, both anchored and unanchored will be measured for payment by lump sum. Lump sum measurement will include verification of the installation and removal of all portable concrete at the completion of the Contractor's operations.

The Contractor shall replace sections of portable concrete barrier, including anchored barrier damaged by the traveling public when directed by the Resident. Replacement sections will be measured for payment in accordance with Standard Specification 109.7, Equitable Adjustments to Compensation and Time.

Transition barrier will be measured by each, complete in place.

526.05 Basis of Payment The accepted quantities of Concrete Barrier Type II, IIIa, IIIb, Texas Classic Rail, and Precast Median Barrier will be paid for at the Contract lump sum price for the type specified, complete in place.

The accepted quantities of Portable Concrete Barrier Type I, both anchored and unanchored will be paid for at the Contract lump sum price. Such payment shall be full compensation for furnishing all materials, assembling, moving, resetting, transporting, temporarily storing, removing barrier, furnishing new parts as necessary, and all incidentals necessary to complete the work.

Portable barrier shall become the property of the Contractor upon completion of the use of the barrier on the project and shall be removed from the project site by the Contractor.

Transition barrier will be paid for at the Contract price each, complete in place.

The accepted quantity of all types of concrete barrier, whether portable or permanent, will be paid for at the lump sum or per each price, as applicable, which payment shall be full compensation for all materials, including reinforcing steel, protective coating, reflective delineators, steel plates and hardware, equipment, labor and incidentals required, as necessary, to complete the work.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
526.301	Portable Concrete Barrier, Type I	Lump Sum
526.304	Portable Concrete Barrier, Anchored Type I	Lump Sum
526.312	Permanent Concrete Barrier Type II	Lump Sum
526.321	Permanent Concrete Barrier Type IIIa	Lump Sum
526.323	Texas Classic Rail	Lump Sum
526.331	Permanent Concrete Barrier Type IIIb	Lump Sum

526.34	Permanent Concrete Transition Barrier	Each
526.502	Precast Concrete Median Barrier	Lump Sum”

SECTION 527 ENERGY ABSORBING UNIT

527.02 Materials Amend this section by deleting it in its entirety and replacing it with:

“MaineDOT is transitioning to MASH2016 criteria for Work Zone Traffic Control Devices on the following schedule:

Portable Crash Cushions will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2030. Current Category 3 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029.

Work Zone Crash Cushions shall be selected from the Department’s Qualified Products List of Crash Cushions/Impact Attenuators or approved equal.”

SECTION 535 PRECAST, PRESTRESSED CONCRETE SUPESTRUCTURE

535.24, Installation of Slabs, Beams, and Girders Revise the 5th paragraph by replacing “6.0 and 9.0” to “5.0 and 8.0” so it reads: **“Ready mixed grout shall achieve a design compressive strength of 6,000 psi at 28 days, have an entrained air content of between 5.0 and 8.0 percent, be non-shrink, flowable, and contain a non-shrink additive listed on the Department QPL for expansive cements.”**

535.25, Installation of Precast/Prestressed Deck Panels Revise the 2nd paragraph by replacing “6.0 and 9.0” to “5.0 and 8.0” so it reads: **“Ready mixed grout shall achieve a design compressive strength of 6,000 psi at 28 days, have an entrained air content of between 5.0 and 8.0 percent, be non-shrink, flowable, and contain a non-shrink additive listed on the Department QPL for expansive cements.”**

SECTION 606 GUARDRAIL

Amend this section by replacing it with the following:

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

31” W-Beam Guardrail - Mid-Way Splice

Galvanized steel w-beam, 8" wood or composite offset blocks, galvanized steel posts

Thrie Beam

Galvanized steel thrie beam, 8" wood or composite offset blocks, galvanized steel posts

Median guardrail shall consist of two beams of the above types, mounted on single posts.

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

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

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

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

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

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

Posts for underdrain delineators shall be "U" channel steel, 8 ft long, 2 ½ lb/ft minimum and have 3/8-inch round holes, 1-inch center to center for a minimum distance of 2 ft from the top of the post.

Reflectorized Flexible Guardrail Markers shall be mounted on all guardrails. A marker shall be mounted onto guardrail posts at the flared guardrail terminal end point and tangent point, both at the leading and trailing ends of each run of guardrail. The marker's flexible posts shall be gray with either silver-white or yellow reflectors (to match the edge line striping) at the tangents, red at leading ends, and green at trailing ends. Whenever the guardrail terminal is not flared, markers will only be required at the terminal end point. These shall be red or green as appropriate. Markers shall be

installed on the protected side of guardrail posts unless otherwise approved by the Resident. Reflectorized flexible guardrail markers shall be from the Department's Qualified Products List of Delineators. The marker shall be gray, flexible, durable, and of a non-discoloring material to which 3-inch by 9-inch reflectors shall be applied, and capable of recovering from repeated impacts and meeting MASH 16 requirements. Reflective material shall meet the requirements of Section 719.01 for ASTM D 4956 Type III reflective sheeting. The marker shall be secured to the guardrail post with two fasteners, as shown in the Standard Details.

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

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

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

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

Acceptable multiple mailbox assemblies shall be listed on the Department's Qualified Products List and shall be MASH 16 tested and approved.

Flared and Tangent w-beam guardrail terminals and guardrail offset blocks shall be from the Department's Qualified Products List. Flared terminals shall be installed with a 4 ft offset as shown in the Manufacturer's installation instructions.

Anchorage assemblies used to anchor trailing ends, radius guardrail, or other ends not exposed to traffic shall meet the applicable standards of "A Guide to Standardized Highway Barrier Hardware" prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee, Task Force 13 Report, Drawing SEW02a.

Existing materials damaged or lost during adjusting, removing and resetting, or removing, modifying, and resetting, shall be replaced by the Contractor without additional compensation. Existing guardrail posts and guardrail beams found to be unfit for reuse shall be replaced when directed by the Resident.

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

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

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

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

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

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

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

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

All bolts shall be of sufficient length to extend beyond the nuts but not more than ½ inch. Nuts shall be drawn tight.

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

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

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

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

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

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

Guardrail terminal, reflectorized flexible guardrail marker, terminal end, anchorage assembly, bridge transition, bridge connection, multiple mailbox post, and single post will be measured by each unit of the kind specified and installed.

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

Excavation in solid rock for placement of posts will be paid under force account unless otherwise indicated in the Bid Documents.

606.09 Basis of Payment The accepted quantities of guardrail will be paid for at the contract unit price per linear foot for the type specified, complete in place. Reflectorized beam guardrail ("butterfly"-type) delineators will not be paid for directly but will be considered incidental to guardrail items. Reflectorized flexible guardrail marker, terminal end, anchorage assembly, bridge transition, bridge connection, multiple mailbox post, and single post will be paid for at the contract unit price each for the kind specified complete in place.

Guardrail terminals will be paid for at the contract price each, complete in place which price shall be full payment for furnishing and installing all components including the terminal section, posts, offset blocks, "w" beam, cable foundation posts, plates and for all incidentals necessary to complete the installation within the limits as shown on the Standard Details or the Manufacturer's installation instructions. Pay limits for a flared terminal will be 37.5 feet. Pay limits for a tangent terminal will be 50 feet. Each guardrail terminal will be clearly marked with the Manufacturer's name and model number to facilitate any future needed repair. Such payment shall also be full compensation for furnishing all material, excavating, backfilling holes, assembling, and all incidentals necessary to complete the work, except that for excavation for posts or anchorages in solid ledge rock, payment will be made under 109.7.5 – Force Account. Type III Retroreflective Adhesive Sheeting shall be applied to the approach buffer end sections and sized to substantially cover the end section. On all roadways, the ends shall be marked with alternating black and retroreflective yellow stripes. The stripes shall be 3 in wide and sloped down at an angle of 45 degrees toward the side on which traffic is to pass the end section. Guardrail terminals shall also include a set of installation drawings supplied to the Resident.

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

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

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

Adjust guardrail will be paid for at the contract unit price per linear foot and will be full compensation for adjusting to grade. Payment shall also include adjusting guardrail terminals where required.

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

Remove and Reset guardrail will be paid for at the contract unit price per linear foot and will be full compensation for removing, transporting, storing, reassembling all parts, necessary cutting, furnishing new parts when necessary, reinstalling at the new location, and all other incidentals necessary to complete the work. Payment shall also include removing and resetting guardrail terminals when required.

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

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

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

No payment will be made for guardrail removed, but not reset and all costs for such removal shall be considered incidental to the various contract pay items.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
606.1301	31" W-Beam Guardrail - Mid-Way Splice – Single Faced	Linear Foot
606.1302	31" W-Beam Guardrail - Mid-Way Splice – Double Faced	Linear Foot
606.1303	31" W-Beam Guardrail - Mid-Way Splice, 15' Radius and Less	Linear Foot
606.1304	31" W-Beam Guardrail - Mid-Way Splice, Over 15' Radius	Linear Foot
606.1305	31" W-Beam Guardrail - Mid-Way Splice Flared Terminal	Each
606.1306	31" W-Beam Guardrail - Mid-Way Splice Tangent Terminal	Each
606.1307	Bridge Transition (Asymmetrical) – Type IA	Each
606.1721	Bridge Transition - Type I	Each
606.1722	Bridge Transition - Type II	Each
606.1731	Bridge Connection - Type I	Each
606.1732	Bridge Connection - Type II	Each
606.178	Guardrail Beam	Linear Foot
606.25	Terminal Connector	Each
606.257	Terminal Connector - Thrie Beam	Each
606.259	Anchorage Assembly	Each
606.265	Terminal End-Single Rail - Galvanized Steel	Each
606.266	Terminal End-Single Rail - Corrosion Resistant Steel	Each
606.275	Terminal End-Double Rail - Galvanized Steel	Each
606.276	Terminal End-Double Rail - Corrosion Resistant Steel	Each
606.353	Reflectorized Flexible Guardrail Marker	Each
606.354	Remove and Reset Reflectorized Flexible Guardrail Marker	Each
606.356	Underdrain Delineator Post	Each
606.358	Guardrail, Modify	Linear Foot
606.362	Guardrail, Adjust	Linear Foot
606.365	Guardrail, Remove, Modify, and Reset	Linear Foot
606.366	Guardrail, Remove and Reset	Linear Foot
606.367	Replace Unusable Existing Guardrail Posts	Each
606.47	Single Wood Post	Each
606.48	Single Galvanized Steel Post	Each
606.50	Single Steel Pipe Post	Each
606.51	Multiple Mailbox Support	Each
606.568	Guardrail, Modify - Double Rail	Linear Foot
606.63	Thrie Beam Rail Beam	Linear Foot
606.64	Guardrail Thrie Beam - Double Rail	Linear Foot
606.65	Guardrail Thrie Beam - Single Rail	Linear Foot
606.66	Terminal End Thrie Beam	Each
606.70	Transition Section - Thrie Beam	Each
606.71	Guardrail Thrie Beam - 15 ft radius and less	Linear Foot
606.72	Guardrail Thrie Beam - over 15 ft radius	Linear Foot
606.73	Guardrail Thrie Beam - Single Rail Bridge Mounted	Linear Foot
606.74	Guardrail - Single Rail Bridge Mounted	Linear Foot
606.753	Widen Shoulder for Low Volume Guardrail End	Each
606.754	Widen Shoulder for Flared Guardrail Terminal	Each
606.78	Low Volume Guardrail End	Each
606.80	Buried-in-Slope Guardrail End	Each

SECTION 609 CURB

609.02 Materials Revise the paragraph beginning “The Contractor shall submit a concrete mix...” so that it reads:

“The Contractor shall submit a concrete mix design for the Portland Cement Concrete to the Resident, with a minimum designed compressive strength of 3000 psi concrete fill.”

609.03 Vertical Stone Curb, Terminal Section and Transition Sections and Portland Cement Concrete Curb, Terminal Sections and Transition Sections Revise this section by underlining the section number and title so that it reads in the spec book as:

“609.03 Vertical Stone Curb, Terminal Section and Transition Sections and Portland Cement Concrete Curb, Terminal Sections and Transition Sections”

Revise the last paragraph beginning with “The Contractor may elect...” so that it reads:

“The Contractor may elect to substitute concrete to backfill Stone Curbing or Stone Edging at their option. If the concrete backfill option is elected, the Concrete Fill shall meet the requirements of 609.02.”

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

610.02 Materials Amend this subsection by adding the following to the end of the material list:
“Stone Ditch Protection 703.29”

SECTION 618 SEEDING

618.08 Mulching Revise this Section so that the third sentence reads: “Mulch for Seeding Method Number 1 shall only be cellulous fiber mulch Section 619.04 (b) or straw mulch Section 619.04 (a).”

SECTION 619 MULCH

619.03 General Amend this Section by adding the following sentence to the end: **“Straw mulch shall be used in all wetland areas.”**

SECTION 626
FOUNDATIONS, CONDUIT, AND JUNCTION BOXES FOR HIGHWAY
SIGNING, LIGHTING, AND SIGNALS

626.034 Concrete Foundations Revise this Section by changing ‘626.037’ to ‘**626.036**’ in the Second Paragraph which begins with “Foundations shall consist of cast-in-place...”.

Revise the 10th paragraph beginning with “Before placing concrete, the required elbows...” by removing “...**in accordance with Standard Specification 633.**”

626.036 Precast Foundations Revise the last sentence of paragraph one so that it reads: **“Construction of precast foundations shall conform to the Standard Details and all requirements of 712.061.”**

SECTION 627
PAVEMENT MARKINGS

627.06 Application Revise this subsection by replacing the paragraph beginning with “ On other final pavement markings...” with the following:

“On other final pavement markings and on curb, where the paint is applied by hand painting or spraying, application shall be one uniform covering coat at least 16 mils thick. Before the paint has dried, the glass beads shall be applied by a pressure system that will force the glass beads onto the undried paint as uniformly as possible.

Painted lines and markings shall be applied in accordance with the manufacturer’s published recommendations. These recommendations will be supplied to the Resident prior to installation.”

SECTION 643
TRAFFIC SIGNALS

643.021 Materials Amend this subsection by adding the following at the end:

“MaineDOT is transitioning to MASH2016 criteria for Work Zone Traffic Control Devices on the following schedule:

Temporary Traffic Control Signals will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2030. Current Category 4 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029.”

643.09 Service Connection Revise this subsection by removing the paragraph that begins with “Traffic signal services shall have...”.

And by removing the paragraphs beginning with “ A service ground rod shall be installed...” and “A total of 4, 10’ service...” and replace them with “**A total of 4, 10’ service ground rods shall be installed and properly connected together on the outside of the cabinet foundation. One ground rod shall be located at each corner and shall be either flush or slightly below finished grade. The connection between the ground rod and the ground wire shall be an exothermic connection such as a Cadweld. The ground wire from the interconnected ground rods shall be routed through a conduit in the foundation and into the base of the cabinet**”.

SECTION 645 HIGHWAY SIGNING

Section 645.023 Sign Support Structures. Under letter “c.”, revise the fifth paragraph beginning with “In addition to the required details...” by removing the words “**and foundation**” from the 5th sentence.

Section 645.08 Method of Measurement. Revise the second paragraph beginning with “Bridge-type, cantilever and...” by removing the words “**including the foundation**” .

Section 645.09 Basis of Payment. Revise the third paragraph beginning with “The accepted bridge-type, cantilever and...” by removing the word “**foundation**” from the second sentence. Add the following sentence to the end of the paragraph “**Conduits, Junction Boxes, and Foundations will be paid for under Section 626.**”

SECTION 652 MAINTENANCE OF TRAFFIC

Amend this Section by adding the following new subsection:

“652.2.6 Device Crashworthiness MaineDOT is transitioning to MASH2016 criteria for Work Zone Traffic Control Devices on the following schedule:

Category 1 (Cones, Drums, Tubular Markers, Flexible Delineators, and similar devices that have little chance of causing windshield penetration, tire damage, or other significant effect on the control or trajectory of a vehicle) – All Category 1 devices will be manufacturer self-certified as MASH2016 by January 1, 2025. Current Category 1 devices in useful serviceable condition that are not self-certified as MASH2016 compliant may be utilized through December 31, 2024.

Category 2 (Barricades, Portable Sign Supports, Category 1 devices with attachments, and similar devices that are not expected to produce significant vehicular velocity change but may be otherwise hazardous) – All Category 2 devices will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2025. Current Category 2 devices in useful serviceable

condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2024.

Category 3 (Portable Concrete Barrier, Portable Crash Cushions, Truck Mounted Attenuators, Category 2 devices weighing more than 100 pounds, and similar devices that are expected to produce significant vehicular velocity change or other harmful reactions) – All Category 3 devices will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2030. Current Category 3 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029. (See Standard Specification 526 for additional Portable Concrete Barrier information).

Category 4 (Trailer Mounted Devices: Arrow Boards, Temporary Traffic Control Signals, Area Lighting, Portable Changeable Message Sign, and other similar devices.) – All Category 4 devices will be crash tested and/or evaluated to MASH2016 criteria by January 1, 2030. Current Category 4 devices in useful serviceable condition that are successfully tested to NCHRP Report 350 or MASH2009 criteria may be utilized through December 31, 2029.’’

652.4 Flaggers Revise the first paragraph of this section so that it reads:

“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.”

SECTION 681

PRECAST AGGREGATE-FILLED, CONCRETE BLOCK GRAVITY WALL

681.08 Basis of Payment Amend this section by adding the Item Number “**681.10**” in front of the item “Precast Aggregate-Filled Concrete Block Gravity Wall” at the end of the section.

SECTION 703

AGGREGATES

Add the following to Section 703 - Aggregates

703.01 Fine Aggregate for Concrete Fine aggregate for concrete shall consist of natural sand or, when approved by the Resident, other inert materials with similar characteristics or combinations thereof, having strong, durable particles. Fine aggregate from different sources of supply shall not be mixed or stored in the same pile nor used alternately in the same class of construction or mix without permission of the Resident.

All fine aggregate shall be free from injurious amounts of organic impurities. Should the fine aggregate, when subjected to the colorimetric test for organic impurities, AASHTO T 21, produce a color darker than the reference standard color solution (laboratory designation Plate III), the fine aggregate shall be rejected.

Fine aggregate shall have a sand equivalent value of not less than 75 when tested in accordance with AASHTO T 176.

Fine aggregate sources shall meet the Alkali Silica Reactivity (ASR) requirements of Section 703.0201.

The fineness modulus shall not be less than 2.26 or more than 3.14. If this value is exceeded, the fine aggregate will be rejected unless suitable adjustments are made in proportions of coarse and fine aggregate. The fineness modulus of fine aggregate shall be determined by adding the cumulative percentages of material by weight retained on the following sieves: Nos. 4, 8, 16, 30, 50, 100 and dividing by 100.

Fine aggregate, from an individual source when tested for absorption as specified in AASHTO T 84, shall show an absorption of not more than 2.3 percent.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
$\frac{3}{8}$ inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10
No. 200	0-5.0

703.02 Coarse Aggregate for Concrete Coarse aggregate for concrete shall consist of crushed stone or gravel having hard, strong, durable pieces, free from adherent coatings and of which the composite blend retained on the $\frac{3}{8}$ inch sieve shall contain no more than 15 percent, by weight of flat and elongated particles when performed in accordance with test method ASTM D 4791, Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate, using a dimensional ratio of 1:5.

The coarse aggregate from an individual source shall have an absorption no greater than 2.0 percent by weight determined in accordance with AASHTO T 85 modified for weight of sample.

The composite blend shall have a Micro-Deval value of 18.0 percent or less as determined by AASHTO T 327 or not exceed 40 percent loss as determined by AASHTO T 96.

Coarse aggregate sources shall meet the Alkali Silica Reactivity (ASR) requirements of Section 703.0201.

Coarse aggregate shall conform to the requirements of the following table for the size or sizes designated and shall be well graded between the limits specified.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves			
Grading	A	AA	S	LATEX
Aggregate Size	1 inch	$\frac{3}{4}$ inch	$1\frac{1}{2}$ inch	$\frac{1}{2}$ inch
2 inch			100	
$1\frac{1}{2}$ inch	100		95-100	
1 inch	95-100	100	-	
$\frac{3}{4}$ inch	-	90-100	35-70	100
$\frac{1}{2}$ inch	25-60	-	-	90-100
$\frac{3}{8}$ inch	-	20-55	10-30	40-70
No. 4	0-10	0-10	0-5	0-15
No. 8	0-5	0-5	-	0-5
No. 16	-	-	-	-
No. 50	-	-	-	-
No. 200	0 - 1.5	0 - 1.5	0 - 1.5	0 - 1.5

703.0201 Alkali Silica Reactive Aggregates All coarse and fine aggregates proposed for use in concrete shall be tested for Alkali Silica Reactivity (ASR) potential under AASHTO T 303 (ASTM C 1260), Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction, prior to being accepted for use. Acceptance will be based on testing performed by an accredited independent lab submitted to the Department. Aggregate submittals will be required on a 5-year cycle, unless the source or character of the aggregate in question has changed within 5 years from the last test date.

As per AASHTO T 303 (ASTM C 1260): Use of a particular coarse or fine aggregate will be allowed with no restrictions when the mortar bars made with this aggregate expand less than or equal to 0.10 percent at 30 days from casting. Use of a particular coarse or fine aggregate will be classified as potentially reactive when the mortar bars made with this aggregate expand greater than 0.10 percent at 30 days from casting. Use of this aggregate will only be allowed with the use of cement-pozzolan blends and/or chemical admixtures that result in mortar bar expansion of less than 0.10 percent at 30 days from casting as tested under ASTM C 1567.

Acceptable pozzolans and chemical admixtures that may be used when an aggregate is classified as potentially reactive include, but are not limited to the following:

- Class F Coal Fly Ash meeting the requirements of AASHTO M 295
- Ground Granulated Blast Furnace Slag (Grade 100 or 120) meeting the requirements of AASHTO M 302
- Densified Silica Fume meeting the requirements of AASHTO M 307
- Lithium-based admixtures
- Metakaolin

Pozzolans or chemical admixtures required to offset the effects of potentially reactive aggregates will be incorporated into the concrete at no additional cost to the Department.

703.05 Aggregate for Sand Leveling Aggregate for sand leveling shall be sand of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The aggregate shall meet the grading requirements of the following table.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
3/8 inch	85-100
No. 200	0-5.0

703.06 Aggregate for Base and Subbase The following shall apply to Sections (a.) and (c.) below. The material shall have a Micro-Deval value of 25.0 or less as determined by AASHTO T 327. If the Micro-Deval value exceeds 25.0, the Washington State Degradation DOT Test Method T113, Method of Test for Determination of Degradation Value (January 2009 version) shall be performed, except that the test shall be performed on the portion of the sample that passes the 1/2 inch sieve and is retained on the No. 10 sieve. If the material has a Washington Degradation value of less than 15, the material shall be rejected. The material used in Section (b.) below shall have a Micro-Deval value of 25.0 or less as determined by AASHTO T 327. If the Micro-Deval value exceeds 25.0 the material may be used if it does not exceed 25 percent loss on AASHTO T 96, Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

Recycled Asphalt Pavement (RAP) shall not be used for or blended with aggregate base or subbase.

- a. Aggregate for base, Type A and B shall be crushed ledge or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3 inch sieve shall meet the grading requirements of the following table:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Type A	Type B
1/2 inch	45-70	35-75
1/4 inch	30-55	25-60
No. 40	0-20	0-25
No. 200	0-6.0	0-6.0

At least 50 percent by weight of the material retained on the No. 4 sieve shall have at least one fractured face as tested by AASHTO T 335.

Type A aggregate for base shall only contain particles of rock that will pass the 2 inch square mesh sieve.

Type B aggregate for base shall only contain particles of rock that will pass the 4 inch square mesh sieve.

- b. Aggregate for base, Type C shall be crushed ledge or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The material shall meet the grading requirements of the following table:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
	Type C
4 inches	100
3 inches	90-100
2 inches	75-100
1 inch	50-80
½ inch	30-60
No. 4	15-40
No. 200	0-6.0

At least 50 percent by weight of the material coarser than the No. 4 sieve shall have at least one fractured face as tested by AASHTO T 335.

- c. Aggregate for subbase shall be sand or gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3 inch sieve shall meet the grading requirements of the following table:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Type D	Type E
½ in	35-80	
¼ inch	25-65	25-100
No. 40	0-30	0-50
No. 200	0-7.0	0-7.0

Type D aggregate for subbase gravel may contain up to 50 percent by weight Recycled Concrete Aggregate (RCA). When RCA is used, the portion of the resulting blend of gravel and RCA retained on a ½" square mesh sieve shall contain a total of no more than 5 percent by weight of other recycled materials such as brick, concrete masonry block, or asphalt pavement as determined by visual inspection.

RCA shall be substantially free of wood, metal, plaster, and gypsum board as defined in Note 9 in Section 7.4 of AASHTO M 319. RCA shall also be free of all substances that fall under the category of solid waste or hazardous materials.

Aggregate for subbase shall not contain particles of rock which will not pass the 6 inch square mesh sieve.

703.08 Recycled Asphalt Pavement Recycled asphalt pavement shall consist of salvaged asphalt materials from milled pavements or production waste that has been processed before use to meet the requirements of the job mix formula. It shall be free of winter sand, granular fill, construction debris, or other materials not generally considered asphalt pavement.

703.081 RAP for Asphalt Pavement Recycled Asphalt Pavement (RAP) may be introduced into hot-mix asphalt pavement at percentages approved by the Department according to the MaineDOT Policies and Procedures for HMA Sampling and Testing.

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.

The maximum allowable percent of RAP shall be determined by the asphalt content, the percent passing the 0.075 mm sieve, the ratio between the percent passing the 0.075 mm sieve and the asphalt content, and Coarse Micro-Deval loss values as tested by the Department.

The maximum percentage of RAP allowable shall be the lowest percentage as determined according to Table 4 below:

Classification	Maximum RAP Percentage Allowed	Asphalt content standard deviation	Percent passing 0.075 mm sieve standard deviation	Percent passing 0.075 mm sieve / asphalt content ratio	Residual aggregate M-D loss value
Class III	10%	≤ 1.0	N/A	≤ 4.0	≤ 18
Class II	20%	≤ 0.5	≤ 1.0	≤ 2.8	
Class I	30%	≤ 0.3	≤ 0.5	≤ 1.8	

Table 4: Maximum Percent RAP According to Test Results

The Department will monitor RAP asphalt content and gradation during production by testing samples from the stockpile at approximately 15,000 T intervals (in terms of mix production). The allowable variance limits (from the numerical average values used for mix designs) for this testing are determined based upon the maximum allowable RAP percentage and are shown below in Table 5.

Table 5: RAP Verification Limits

Classification	Asphalt content (compared to aim)	Percent passing 0.075 mm sieve (compared to aim)
Class III	± 1.5	± 2.0
Class II	± 1.0	± 1.5
Class I	± 0.5	± 0.7

For specification purposes, RAP will be categorized as follows:

Class III – A maximum of 10.0 percent of Class III RAP may be used in any base, intermediate base, surface, or shim mixture. A maximum of 20.0 percent of Class III RAP may be used in hand-placed mixes for item 403.209.

Class II – A maximum of 20.0 percent Class II RAP in any base, binder, surface, or shim course.

Class I – A maximum of 20.0 percent Class I RAP may be used in any base, intermediate base, surface, or shim mixture without requiring a change to the specified asphalt binder. A maximum of 30.0 percent Class I RAP may be used in in any base or intermediate base mixture provided that a PG 58-28 or PG 58-34 asphalt binder is used. A maximum of 30.0 percent Class I RAP may be used in any surface or shim mixture provided that PG 58-34 asphalt binder is used. Mixtures exceeding 20.0 percent Class I RAP must be evaluated and approved by the Department.

The Contractor may use up to two different RAP sources in any one mix design. The total RAP percentage of the mix shall not exceed the maximum allowed for the highest classification RAP source used (i.e. if a Class I & Class III used, total RAP must not exceed 30.0%). The blended RAP material must meet all the requirements of the classification for which the RAP is entered (i.e. 10% Class III with 20% Class I, blend must meet Class I criteria). The Department may take belt cuts of the blended RAP to verify the material meets these requirements. If the Contractor elects to use more than one RAP source in a design, the Contractor shall provide an acceptable point of sampling blended RAP material from the feed belt.

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.

SECTION 710 FENCE AND GUARDRAIL

710.06 Fence Posts and Braces Revise the first Paragraph so that it reads:

“Wood posts shall be of cedar, white oak, or tamarack or other AWPAs approved species, of the diameter or section and length shown on the plans.”

Remove the fourth paragraph which starts “ That portion of wood posts...”.

Revise the paragraph beginning with “Braces shall be of spruce, eastern hemlock ... so that it now reads:

“Braces shall be of spruce, eastern hemlock, Norway pine, pitch pine, or tamarack timbers or other AWPAs approved species, or spruce, cedar, tamarack or other AWPAs approved species round posts of sufficient length to make a diagonal brace between adjacent posts. All wood posts and braces shall be pressure-treated in accordance with AASHTO M 133 and AWPAs U1, UC4A Commodity Specification B: Posts. “

710.07 Guardrail Posts Revise this section so that the first sentence of section a. reads:

“a. Wood posts shall be of Norway pine, southern yellow pine, pitch pine, Douglas fir, red pine, white pine, or eastern hemlock or other AWPAs approved species.”

Revise the next paragraph so that it reads:

Wood posts and offset brackets shall be preservative treated in accordance with the requirements of AASHTO M 133 and AWPAs U1, UC4A Commodity Specification B: Posts.

SECTION 712 MISCELLANEOUS HIGHWAY MATERIAL

712.061 Structural Precast Units Amend this section by adding the following sentence to the end of the first paragraph of the Construction subsection:

“Facilities certified by NPCA or PCI shall provide to the Fabrication Engineer a copy of their annual audit to include deficiency reports and corrective actions.”

Revise this section by changing the letter “b” of ASTM C1611 of the Concrete Testing subsection so that it reads:

“b. Air content shall be 5.0% to 8.0%.”

SECTION 718 TRAFFIC SIGNALS MATERIAL

718.03 Signal Mounting Amend the paragraph beginning with “All trunions, brackets and...” by adding **“For polycarbonate signal heads with more than 3 sections or requiring mounting extensions greater than 12 inches in length, reinforcing plates shall be used to reinforce the housings at the point of attachment.”** to the end of the paragraph.

718.08 Controller Cabinet Revise this subsection by replacing the paragraph beginning with “The cabinet shall be supplied with LED light panels...” on or about page 7-66 with **“The cabinet shall be supplied with white LED light panels which shall automatically illuminate via a door open switch whenever one of the four main cabinet doors are opened for the ground mount cabinet or two main doors for the side of pole cabinet. The ground mounted cabinet shall contain four LED light panels per side totaling eight panels for the cabinet; one panel each at the top and bottom portion of the front side and back side on the Control side and Power/Auxiliary side of the cabinet. Each light panel shall produce a minimum of 250 lumens for a total minimum lumen output of 2000 lumens with all eight panels illuminated. The minimum output per side would be 1000 lumens. The LED panels shall be protected by a clear shatterproof shield. The side of pole mounted cabinet shall contain four light panels; one at the top of the rack assembly and one at the bottom rack assembly on each side of the cabinet. A second door open status switch per door shall activate a controller input to log a report event that one of the doors was opened. All door open status switches shall be connected to the same controller input. For the ground mount cabinet, there shall be two switches on each of the four main doors. For the side-of-pole mount cabinet, there shall be two switches on each of the two main doors.”**

Revise this subsection by replacing the paragraph beginning with “The cabinet shall be supplied with a generator panel ...” on or about page 7-68 with:

“The cabinet shall be supplied with a generator panel. The generator panel shall consist of a manual transfer switch and a twist-lock connector for generator hookup. The transfer switch knob and twist-lock connector shall be located inside a stainless steel enclosure with a separate lockable door accessed with a Corbin #2 key. The unit shall be mounted on the left, exterior of the control side wall of the ground mount cabinet a minimum of 36” above the surrounding grade and on the lower left side of the pole mounted cabinet. The generator transfer switch shall be a Reliance C30A1N Signa Series or approved equal. “

Revise this subsection by removing the following from the paragraph beginning with “The ground mounted cabinet shall be supplied and installed with an electric service meter socket trim and electrical service disconnect switch ...” on or about page 7-69: **“(removed: thus preventing that space from being used either by equipment supplied as part of the project, or future equipment that would be installed in the rack system. Joe indicated that he would add this language to the detail so it is covered.)”**.

Revise this subsection by replacing the following in the paragraph beginning with “The Contractor shall reconfigure the default user name...” on or around page 7-70; “MaineDOT IT” with **“MaineDOT Traffic Division”**.

In the paragraph beginning with “Tests shall be conducted by the contractor...” on or around page 7-73, amend this subsection by removing “**in the state of Maine and**” after “The facility shall be”.

Amend this Section by adding the following subsection:

718.13 Field Monitoring Unit (FMU) This item of work shall conform to this specification. This item shall consist of furnishing and installing a Field Monitoring Unit (FMU) and software, as well as all needed accessories required for a full and complete installation, including but not limited to power adapters, Ethernet cables, and interface cables, as described herein.

Where applicable, communications from MaineDOT’s cloud-based Central Management System (CMS) to the on-street traffic signal controllers shall be made through fiber optic interconnect cable connected back to existing internet connections and/or the Field Monitoring Unit (FMU). The Contractor shall furnish and install all materials necessary for a complete and operational fiber optic interconnection to all project intersections as shown on the plans. All connections to the CMS cloud-based system shall be via a secure VPN network.

The FMU shall be the only remote connection device used by isolated intersections to connect to the cloud-based system. All connections shall be encrypted VPN tunnels. The Contractor shall coordinate all configuration settings with MaineDOT IT and the Engineer.

The FMU central web based interface shall be a separate element from the CMS.

MATERIALS: The materials for this work shall conform to the following requirements:

1. The work under this item specifies the requirements for the FMU. The FMU shall operate independent of the brand/type of intersection controller deployed in the ATC traffic cabinet.
2. The FMU shall conform to the following requirements:
 - 2.1 The FMU shall function correctly between -34 degrees C and +74 degrees C.
 - 2.2 The FMU shall be provided with appropriately rated connectors that allows the FMU to be exchanged by unplugging connectors, without tools.
 - 2.3 The FMU shall monitor and log all ATC Controller and ATC cabinet faults and or alarms.
 - 2.4 The FMU shall be wired directly to the ATC cabinet.
 - 2.5 The FMU shall have an internal cellular modem running at 4G LTE.
 - 2.5.1 The Cellular modem shall be designed to be replaced / upgraded to 5G service when available.
 - 2.6 The FMU shall incorporate an integrated GPS and cell modem.
 - 2.7 The configuration of the FMU shall be accomplished by accessing the internal web server with a browser. It shall be possible to configure the FMU without any special software.

- 2.8 The FMU shall be powered via a standard 120V input power.
- 2.9 The FMU shall allow for the routing of the controller configuration packets to and from the controller (either by Ethernet or serial communications) for any type of controller utilized by the MaineDOT. In this way it shall be possible to configure the controller and utilize the controller specific software to interrogate the controller, and the FMU shall provide the communications pipe which allows this to be accomplished.
- 2.10 The FMU shall, within the size limitations above, include a battery and battery charging/monitoring circuit, to allow the FMU to function correctly even when all power to the intersection has failed. The battery shall continue to power the FMU for a minimum of 5 hours after all power has failed to the intersection.
- 2.11 The FMU shall incorporate an integrated GPS which will allow the FMU to geo-locate itself on the FMU management software map, without configuration.
- 2.12 The FMU shall operate without requiring a static IP address. The only configuration required at the FMU is to enter the URL of where the FMU management software is hosted.
- 2.13 In the event that the cell service is interrupted or is not available, the FMU shall store any events that occur in internal memory and forward these events automatically to the FMU management software when the cell service is restored. In this way, a complete record of events at the device can be maintained even if cell service is interrupted for a period. The system will store 5000 events.
- 2.14 The FMU shall utilize HTTP and HTTPS protocols, and XML data structures, for communication with the FMU management software. In this way the data will be open for future expansion and competition. The use of secret proprietary protocols is not permitted.
- 2.15 The FMU shall include Ethernet communications via an Ethernet Port with RJ45 connector.
- 2.16 The FMU shall include weather proof antennas.

3. Map Display FMU Management Software

- 3.1 The FMU shall include a scrollable, zoomable map display, with the intersections and other monitored devices shown as representative icons on the map. The map shall include the ability to see the intersections using Google Streetview.
- 3.2 The alarm status of the intersection shall be clearly indicated on the icon on the map, so that the user can see at a glance which intersections are in alarm.
- 3.3 The map display shall also include a list of intersections, with the number and priority of alarms indicated on the list. Intersections in high priority alarm shall be moved to the top

of the list, followed by medium priority, low priority and then finally by intersections not in alarm.

3.4 The icons shall change to be able to clearly indicate if an intersection is offline.

3.5 Clicking on the icon on the map shall expose a box with the current parameters of the intersection shown.

3.6 The default map display position and zoom shall be configurable by user, so that the user's view will default to show the intersections that the user is responsible for managing.

3.7 The map view shall have the ability to show Google traffic overlays on the map.

4. Intersection Detail Display FMU Management Software

4.1 It shall be possible to drill down, either from the map icon or from the list, to a device level detail for the intersection, which as a minimum shall display the following parameters:

4.1.1 The alarm status, with priority indicated, and a text description of the alarm (if an alarm is present for this device).

4.1.2 The time since the last communication with the device

4.1.3 The following parameters (real time now values, minimum for the day values, maximum for the day values, and average for the day values)

4.1.3.1 The AC mains voltage (value)

4.1.3.2 The battery back-up voltage (value)

4.1.3.3 The cabinet temperature (value)

4.1.3.4 The cabinet humidity (value)

4.1.3.5 The presence of AC power (OK or Fail)

4.1.3.6 The flashing status of the intersection (OK or Flashing)

4.1.3.7 Stop Time status (OK or Stop Time Active)

4.1.3.8 The cabinet door status (Open or Closed)

4.1.3.9 The intersection fan status (Fan On or Fan off)

4.1.4 It shall be possible to view graphs of each of the value parameters in graphical form, over the recent two-week period. This includes real time graphs of:

4.1.4.1 The AC mains voltage

4.1.4.2 The battery back-up voltage

4.1.4.3 The cabinet temperature

4.1.4.4 The cabinet humidity

5. **Diagnostics and Log Display FMU Management Software**

- 5.1 From the device level detail within the FMU management software, it shall be possible to drill down to get the raw data; the error logs; and the communications logs to allow a technician to fault-find problems.
- 5.2 It shall be possible to filter the logs by Device; by Device Type and/or by Group as well as between dates.
- 5.3 It shall be possible to print these selected logs to a local printer or a PDF file.
- 5.4 It shall be possible to export these logs to Excel on the local computer for further analysis.

6. **Alarms FMU Management Software**

- 6.1 The FMU management software shall have a comprehensive alarm generation capability
- 6.2 It shall be possible to configure alarms to be generated on any parameter becoming out of tolerance, including analog values, digital values and enumerated values.
- 6.3 Alarms shall be configurable to be of Low, High or Critical Priority.
- 6.4 The alarm priority shall be displayed throughout the FMU management software, on all displays, using color codes such as red-critical; yellow – high; and amber-low to indicate the priority of the alarm.
- 6.5 The current active alarms shall be accessible for view via an expandable window, to see which alarms are active and when the alarm occurred. The highest priority alarms shall rise to the top of the list.

7. **Alerts FMU Management Software**

- 7.1 The FMU management software shall have comprehensive alerting capability, to enable the response personnel to be notified when an abnormal situation has occurred.
- 7.2 It shall be possible to configure alerts to one or more personnel for each alarm. This will cause, as selected, an SMS and/or an email to be sent to the person when an alarm occurs.
- 7.3 The alert shall be configurable to optionally send via email and/or via SMS a message when an alarm clears.
- 7.4 The intention is that the FMU management software provides the alerts to the user in near real time. The SMS and email shall be issued within 30 seconds of the occurrence of event which results in an alert being issued.

8. Hosting and Connectivity and Service FMU / FMU Management Software

8.1 The contractor shall supply the FMU with the FMU manufacturers 10 year options for Connectivity and Service, as part of the purchase price. The Connectivity and Service agreement shall include at a minimum:

- 8.1.1 Cellular Connectivity
- 8.1.2 No cellular overage charges
- 8.1.3 Extended warranty on the hardware for the period of the Connectivity and Service Agreement
- 8.1.4 Over-the-air software updates
- 8.1.5 Over-the-air security updates
- 8.1.6 Future Connected Vehicles Service

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

720.12 Wood Sign Posts Revise the first sentence so that it reads:

Wood sign posts shall be rectangular, straight and sound timber, cut from live growing native spruce, red pine, hemlock, cedar trees or other AWPAs approved species, free from loose knots or other structurally weakening defects of importance, such as shake or holes or heart rot.

Revise the third paragraph that starts with “When pressure treated...” so that it reads:

All sign posts shall be pressure-treated in accordance with AASHTO M 133 and AWPAs Standard U1, UC4A, Commodity Specification A: Sawn Products.



Environmental Summary Sheet

WIN: 21830.00
Town: St. Agatha
CPD Team Leader: Audie Arbo
ENV Field Contact: Jamey Reitmeyer

Date Submitted: 3/17/2021

NEPA Complete: Federal nexus due to ACOE permit, NEPA completed by ACOE

☒ **Section 106**
No Effect

☒ **Section 4(f) and 6(f)**
Section 4(f) No Federal funds
6F No takes

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

☒ **Section 7**
Species of Concern: Northern long-eared bat- NLAA 4(d) Rule
Canada lynx- No Effect

☒ **Essential Fish Habitat (EFH)**
Not in mapped EFH

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

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

☒ **Maine Department of Environmental Protection**
Exempt per MRSA 480 Q
**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.**
Maine General Permit 22 - Corps Permit #NAE-2020-03169
-Special Conditions apply. See Special Provision 105
**Applicable Standards and Permits are included with the contract*

☐ **Stormwater Review**
Not Applicable – less than 1 acre of new impervious area, not MS4

☒ Special Provisions Required		
Special Provision 105-Environmental Requirements	N/A ☐	Applicable ☒
Standard Specification 656-Erosion Control Plan	N/A ☐	Applicable ☒
Special Provision 203-Dredge Spec	N/A ☐	Applicable ☒
Special Provision 203- Special Fill	N/A ☐	Applicable ☒
Special Provision 610-Stream Channel Rock	N/A ☐	Applicable ☒
Special Provision 610-Streambed Rock Features	N/A ☐	Applicable ☒

**All permits and approvals based on plans/scope as of: 11/2020*