

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 24 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 notification of project specific bid amendments must fill out the online 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.

Interested parties are responsible for reviewing and retrieving the Bid Amendments from our website, acknowledging receipt, and incorporating those Bid Amendments in their bids using the Acknowledgement of Bid Amendment form.

Downloading a bid package from the MDOT website is not the same as providing an electronic bid. Electronic bids must be submitted via <https://bidx.com>. For information about electronic bidding, contact Rebecca Snowden at rebecca.snowden@maine.gov or Guy Berthiaume at guy.berthiaume@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.

VENDOR REGISTRATION

A Bidder must register as a vendor with the Maine Department of Administrative & Financial Services if the Bidder is awarded a contract. A Contractor cannot receive payment without being registered. Contractors can find information and register using the following link –

<https://www.maine.gov/dafs/bbm/procurementservices/vendors>

**STATE OF MAINE DEPARTMENT OF TRANSPORTATION
NOTICE TO CONTRACTORS**

Sealed bids from contractors addressed to the Maine Department of Transportation, Augusta, Maine 04333 and endorsed on the wrapper "**Bids for Heavy Haul Road, Portland**" will be accepted at MaineDOT Headquarters, Capitol Street, Augusta, Maine, until 11:00 a.m. (prevailing time) on **April 12, 2023**, and at that time and place publicly opened and read. Bids will be accepted from all bidders. The lowest responsive bidder must have completed, or must successfully complete, a **highway prequalification** or a project specific prequalification to be considered for the award of this contract.

MaineDOT accepts electronic bids for bid packages posted on the bidx.com website. Electronic bids do not have to be accompanied by paper bids. **MaineDOT will accept a facsimile of the bid bond, but the original bid bond must be received at the MaineDOT Contracts 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: 022809.50.

Location: In Cumberland County, the project is located off Commercial Street in the city of Portland.

Outline of Work: Construction of a heavy haul road at the Portland International Marine Terminal.

A mandatory pre-bid meeting will be held at 10:00 a.m. **April 4, 2023**. Meeting location will be the Maine Port Authority office building, at 460 Commercial Street in Portland.

Project-specific questions submitted using the electronic RFI form should be faxed to (207) 624-3431, attention **Project Manager Aurele Gorneau II**, or emailed to RFI-Contracts.MDOT@maine.gov. Project name and identification number must be in the subject line. Questions received after 12:00 noon of the Monday before the bid date will not be answered. For general information about bidding and contracting, call George Macdougall at (207) 624-3410. Bidders shall not contact other MaineDOT staff for clarification of Contract provisions, and MaineDOT will not be responsible for any interpretations so obtained. TTY users call Maine Relay 711.

Digital bid documents are available online at no cost: <https://www.maine.gov/mdot/contractors/>. Paper bid documents may be purchased from 7:00 a.m. to 3:30 p.m. M-F by cash, Visa/Mastercard or check payable to "Treasurer, State of Maine" sent to the Maine Department of Transportation, Attn.: Mailroom, 24 Child St., Augusta, ME 04333-0016. They may be purchased by phone at (207) 624-3536 from 7:00 a.m. to 3:30 p.m. M-F, as follows: full-size plans are **\$33.00** (\$36.50 by mail); half-size plans are **\$16.50** (\$19.25 by mail); bid book is \$10 (\$13 by mail); single sheets are \$2.00 – payment in advance, all non-refundable.

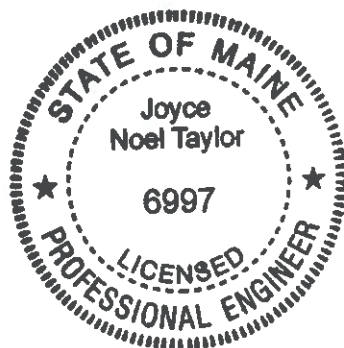
Each Bid must be made upon blank forms provided by MaineDOT and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of 5% of the bid amount, payable to Treasurer, State of Maine as a Bid guarantee. A Contract Performance Surety Bond and a Contract Payment Surety Bond, each in the amount of 100% 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 from 7:00 a.m. to 3:30 p.m. weekdays. *Standard Detail* updates can be found at <http://www.maine.gov/mdot/contractors/publications/>.

MaineDOT hereby reserves the right to reject any or all bids.

Augusta, Maine
March 22, 2023



A handwritten signature in blue ink that reads "Joyce Noel Taylor".

JOYCE NOEL TAYLOR, P.E.
CHIEF ENGINEER

TOWN: _____

WIN: _____

**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 _____ . It is the responsibility of the Bidder to determine if there are Amendments, to download them, to incorporate them into its Bid Package, and to reference the Amendment number and the date on the form below. The Municipality 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)

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Proposal Schedule of Items

Proposal ID: 022809.50

Project(s): 022809.50

SECTION: 1 INITIAL GROUP

AI 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	202.121 REMOVING EXISTING CONCRETE	LUMP SUM	LUMP SUM			
0020	203.20 COMMON EXCAVATION	2,350.000 CY				
0030	203.2312 HEALTH AND SAFETY PLAN	LUMP SUM	LUMP SUM			
0040	203.2341 DISPOSAL OF CONTAMINATED SOIL	4,750.000 T				
0050	203.25 GRANULAR BORROW	300.000 CY				
0060	304.14 AGGREGATE BASE COURSE - TYPE A	50.000 CY				
0070	403.2071 19 MM POLYMER MODIFIED HOT MIX ASPHALT	1,500.000 T				
0080	403.2081 12.5 MM POLYMER MODIFIED HOT MIX ASPHALT	490.000 T				
0090	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	9.000 T				
0100	409.15 BITUMINOUS TACK COAT - APPLIED	270.000 G				
0110	502.45 STRUCTURAL CONCRETE APPROACH SLABS	45.000 CY				
0120	503.14 EPOXY-COATED REINFORCING STEEL, FABRICATED AND DELIVERED	6,100.000 LB				

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Project(s): 022809.50

SECTION: 1 INITIAL GROUP

AI Set ID: Alt Mbr ID:

Contractor: _____

Proposal Line Number	Ite ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cen s	Dollars	Cents
0130	503.15 EPOXY-COATED REINFORCING STEEL, PLACING	6,100.000 LB	_____	 _____	_____	 _____
0140	515.20 PROTECTIVE COATING FOR CONCRETE SURFACES	120.000 SY	_____	 _____	_____	 _____
0150	604.09 CATCH BASIN TYPE B1	1.000 EA	_____	 _____	_____	 _____
0160	604.16 ALTERING CATCH BASIN TO MANHOLES	1.000 EA	_____	 _____	_____	 _____
0170	604.18 ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	2.000 EA	_____	 _____	_____	 _____
0180	604.242 CATCH BASIN TYPE F3	1.000 EA	_____	 _____	_____	 _____
0190	604.244 CATCH BASIN TYPE F4	1.000 EA	_____	 _____	_____	 _____
0200	604.246 CATCH BASIN TYPE F5	1.000 EA	_____	 _____	_____	 _____
0210	605.09 6 INCH UNDERDRAIN TYPE B	1,350.000 LF	_____	 _____	_____	 _____
0220	605.11 12 INCH UNDERDRAIN TYPE C	1,150.000 LF	_____	 _____	_____	 _____
0230	607.156 SWING GATE - 20 FOOT	1.000 EA	_____	 _____	_____	 _____
0240	607.24 REMOVE AND RESET FENCE	5.000 LF	_____	 _____	_____	 _____

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Proposal Schedule of Items

Proposal ID: 022809.50

Project(s): 022809.50

SECTION: 1 INITIAL GROUP

AI 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	607.4931 NON-MOTORIZED GATE - REMOVE AND RESET	1.000 EA	_____	 _____	_____	 _____
0260	610.08 PLAIN RIPRAP	77.000 CY	_____	 _____	_____	 _____
0270	613.319 EROSION CONTROL BLANKET	1,600.000 SY	_____	 _____	_____	 _____
0280	614.301 GEOCELL LOAD SUPPORT SYSTEM	43,000.000 SF	_____	 _____	_____	 _____
0290	615.07 LOAM	150.000 CY	_____	 _____	_____	 _____
0300	618.14 SEEDING METHOD NUMBER 2	25.000 UN	_____	 _____	_____	 _____
0310	619.12 MULCH	25.000 UN	_____	 _____	_____	 _____
0320	626.111 PRECAST CONCRETE JUNCTION BOX 36 INCH	14.000 EA	_____	 _____	_____	 _____
0330	626.21 METALLIC CONDUIT	540.000 LF	_____	 _____	_____	 _____
0340	626.22 NON-METALLIC CONDUIT	5,050.000 LF	_____	 _____	_____	 _____
0350	626.221 NON-METALLIC CONDUIT CONCRETE ENCASED	350.000 LF	_____	 _____	_____	 _____
0360	626.744 FIBER OPTIC CABLE	LUMP SUM	_____	 LUMP SUM	_____	 _____

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Proposal Schedule of Items

Proposal ID: 022809.50

Project(s): 022809.50

SECTION: 1 INITIAL GROUP

AI Set ID: Alt Mbr ID:

Contractor: _____

Proposal Line Number	I e ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cen s	Dollars	Cents
0370	629.05 HAND LABOR, STRAIGHT TIME	20.000 HR	_____	 _____	_____	 _____
0380	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	10.000 HR	_____	 _____	_____	 _____
0390	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	10.000 HR	_____	 _____	_____	 _____
0400	631.32 CULVERT CLEANER (INCLUDING OPERATOR)	10.000 HR	_____	 _____	_____	 _____
0410	634.311 #1 AWG COPPER WIRE	3,200.000 LF	_____	 _____	_____	 _____
0420	634.3121 #2/0 AWG COPPER WIRE	6,400.000 LF	_____	 _____	_____	 _____
0430	639.19 FIELD OFFICE TYPE B	1.000 EA	_____	 _____	_____	 _____
0440	643.972 WOOD POLE	2.000 EA	_____	 _____	_____	 _____
0450	645.106 DEMOUNT REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	4.000 EA	_____	 _____	_____	 _____
0460	645.108 DEMOUNT POLE	2.000 EA	_____	 _____	_____	 _____
0470	645.116 REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	4.000 EA	_____	 _____	_____	 _____

Proposal Schedule of Items

Proposal ID: 022809.50

Project(s): 022809.50

SECTION: 1 INITIAL GROUP

AI Set ID: Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0480	645.118 REINSTALL POLE	2.000 EA	_____	 _____	_____	 _____
0490	645.292 REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS TYPE II	16.000 SF	_____	 _____	_____	 _____
0500	648.312 BALLAST	350.000 T	_____	 _____	_____	 _____
0510	652.33 DRUM	25.000 EA	_____	 _____	_____	 _____
0520	652.34 CONE	25.000 EA	_____	 _____	_____	 _____
0530	652.35 CONSTRUCTION SIGNS	120.000 SF	_____	 _____	_____	 _____
0540	652.361 MAINTENANCE OF TRAFFIC CONTROL DEVICES	LUMP SUM	LUMP SUM		_____	 _____
0550	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP SUM	LUMP SUM		_____	 _____
0560	659.10 MOBILIZATION	LUMP SUM	LUMP SUM		_____	 _____
Section: 1			Total:		_____	 _____
			Total Bid:		_____	 _____

CONTRACT AGREEMENT, OFFER & AWARD

This AGREEMENT is made on the date last signed below, by and between the State of Maine, acting through 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 of 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 022809.50** for **construction of a heavy haul road at the International Marine Terminal in the City of Portland**, County of Cumberland, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall furnish 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 for warranty work, on or before **September 30, 2023**. Furthermore, the Department may deduct from money 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 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* as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of **WIN 022809.50 - heavy haul road at the International Marine Terminal - in City of Portland**, State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" does 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.

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

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: Bruce A. Van Note, Commissioner

Witness

CONTRACT AGREEMENT, OFFER & AWARD

This AGREEMENT is made on the date last signed below, by and between the State of Maine, acting through 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 of 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 022809.50** for **construction of a heavy haul road at the International Marine Terminal in the City of Portland**, County of Cumberland, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall furnish 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 for warranty work, on or before **September 30, 2023**. Furthermore, the Department may deduct from money 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 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* as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of **WIN 022809.50 - heavy haul road at the International Marine Terminal - in City of Portland**, State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" does 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.

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

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.0112345.00, 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.

CONTRACTOR
(Sign Here)

(Signature of Legally Authorized Representative
of the Contractor)

(Witness Sign Here)

Witness

(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:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY:

Signature

.....

Print Name Legibly

Print Name Legibly

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

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

ADDRESS
.....
.....

TELEPHONE.....

.....

BOND # _____

CONTRACT PAYMENT BOND
(Surety Company Form)

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

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

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

Signed and sealed this day of, 20

WITNESS:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

.....

ADDRESS

.....

.....

TELEPHONE

.....

**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.

**2023 Fair Minimum Wage Rates
Highway & Earth Cumberland County**

<u>Occupational Title</u>	<u>Minimum Wage</u>	<u>Minimum Benefit</u>	<u>Total</u>
Bulldozer Operator	\$28.86	\$6.92	\$35.78
Carpenter	\$31.00	\$6.30	\$37.30
Cement Masons And Concrete Finisher	\$24.00	\$3.34	\$27.34
Coating Painting And Spraying Machine Operators	\$22.00	\$0.00	\$22.00
Construction And Maintenance Painters	\$23.00	\$1.02	\$24.02
Construction Laborer	\$23.00	\$1.16	\$24.16
Control And Valve Installers And Repairers - Except Mechanical Door	\$31.00	\$9.86	\$40.86
Crane And Tower Operators	\$32.63	\$8.06	\$40.69
Crushing Grinding And Polishing Machine Operators	\$25.51	\$7.55	\$33.06
Electrical Power - Line Installer And Repairers	\$40.16	\$10.82	\$50.98
Electricians	\$41.00	\$16.50	\$57.50
Excavating And Loading Machine And Dragline Operators	\$28.60	\$5.01	\$33.61
Excavator Operator	\$32.50	\$5.61	\$38.11
Fence Erectors	\$19.50	\$1.45	\$20.95
Flaggers	\$19.50	\$0.00	\$19.50
Grader/Scraper Operator	\$24.76	\$3.96	\$28.72
Heavy And Tractor - Trailer Truck Drivers	\$24.00	\$3.90	\$27.90
Highway Maintenance Workers	\$25.83	\$2.30	\$28.13
Industrial Machinery Mechanics	\$33.43	\$2.38	\$35.81
Industrial Truck And Tractor Operators	\$21.00	\$3.08	\$24.08
Light Truck Or Delivery Services Drivers	\$22.00	\$3.17	\$25.17
Millwrights	\$32.00	\$8.71	\$40.71
Mixing And Blending Machine Operators	\$25.51	\$13.80	\$39.31
Mobile Heavy Equipment Mechanics - Except Engines	\$26.39	\$4.23	\$30.62
Operating Engineers And Other Equipment Operators	\$26.01	\$7.17	\$33.18
Paver Operator	\$25.51	\$7.42	\$32.93
Pile-Driver Operators	\$30.96	\$6.86	\$37.82
Pipelayers	\$24.23	\$3.88	\$28.11
Plumbers Pipe Fitters And Steamfitters	\$31.97	\$3.93	\$35.90
Reclaimer Operator	\$25.51	\$10.78	\$36.29
Reinforcing Iron And Rebar Workers	\$29.75	\$10.87	\$40.62
Screed/Wheelman	\$28.00	\$3.96	\$31.96
Structural Iron And Steel Workers	\$26.93	\$8.12	\$35.05

Welders are classified as the trade to which welding is incidental (e.g. welding structural steel is Structural Iron and Steel Worker)


Apprentices – The minimum wage rates for registered apprentices are the rates recognized in the sponsorship agreement for registered apprentices working in the pertinent classification.

For any other specific trade on this project not listed above, contact the Bureau of Labor Standards for further clarification.

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
Wage & Hour Director
Bureau of Labor Standards**

NOTICE TO CONTRACTORS - PREFERRED EMPLOYEES

Sec. 1303. Public Works; minimum wage

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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

PORTLAND INTERNATIONAL MARINE TERMINAL

HEAVY HAUL ROAD

Portland, Maine
WIN 022809.50

PROJECT DESCRIPTION

All work shall be governed by the Maine Department of Transportation Standard Specifications, March 2020 Edition, except for the modifications, additions, and deletions contained herein.

General Description of Work

The objective of this project is to provide additional roadway access for the Portland International Marine Terminal (IMT) within the existing MaineDOT railroad corridor. A general description of the work is as follows:

The Work includes 0.52 miles of roadway construction between the west side of the concrete loading slab and Cassidy Point Drive with drainage improvements.

Plans

The Contract Drawings are hereby incorporated into this project and are referred to as the Plans. They bear the general title "Portland International Marine Terminal, Heavy Haul Road," MaineDOT WIN 022809.50.

SPECIAL PROVISION
SECTION 101
CONTRACT INTERPRETATION
(Definitions)

101.2 Definitions

This Subsection is added by inclusion of the following:

- Terminal Manager: Maine Port Authority. Contact: David Arnold, 207-200-2400
- New Yard, LLC: An 18-acre parcel along the Fore River that is bisected by the MaineDOT's railroad corridor.
- MaineDOT Railroad Corridor:
A 5-acre parcel approximately 52 feet wide connecting the IMT Chassis Yard to CSX rail lines at Cassidy Point Road.
- Domestic Container Storage Area and Chassis Yard:
A 12-acre parcel beneath and west of the Casco Bay Bridge used by the Maine Port Authority for cross-dock operations at the RUBB Building and for storing chassis and containers.
- Port Operation Area: The existing 8-acre site beneath and east of the Casco Bay Bridge and defined by the existing 8-foot high barbed-wire security fence. This area, also known as the Terminal, is designated as an MTSA 105 regulated site under the jurisdiction of Homeland Security. Workers entering this area must have TWIC credentials or must be escorted by someone with TWIC credentials.

SPECIAL PROVISION
SECTION 102
BIDDING
(Pre-Bid Meeting)

The following Subsection is added:

102.3.1 Pre-Bid Meeting

A mandatory pre-bid meeting will be held at 10:00 a.m. on **April 4, 2023**. The meeting will be held at the Maine Port Authority office building, located at 460 Commercial Street, Portland, where the project will be presented to all Bidders. A walk-through of the project site will be provided.

The meeting is mandatory to ensure that all Bidders understand the specifics of the project. Only the General Contractors (GC) who are present at the pre-bid meeting will be allowed to bid on the project. Subcontractors do not need to be present at the pre-bid meeting to provide bids to the GC.

**SPECIAL PROVISION
 SECTION 104
 GENERAL RIGHTS AND RESPONSIBILITIES
 (Utility Coordination)**

UTILITY COORDINATION

The Contractor has primary responsibility for coordinating the 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 Preconstruction Utility Conference **is not** required unless requested by the Contractor.

GENERAL INFORMATION

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

Utilities have been notified and will be furnished a project specification.

Overview:

Utility/Railroad	Aboveground	Underground
Central Maine Power Company	X	
Charter Communications	X	
CSX Railroad (formerly Pan Am)	X	

Central Maine Power Co.	Mark Buxton	207-233-6477	mark.buxton@cmpco.com
Charter Communications	Mark Pelletier	207-253-2324	mark.pelletier@charter.com
CSX Transportation, Inc.	Ted Krug	978-663-1129	edwin_krug@csx.com
CSX Transportation, Inc.	Shawn Higgins	978-663-1127	shawn_higgins@csx.com

Temporary utility adjustments are not anticipated.

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/railroad unless otherwise specified herein.

Utility working days are Monday through Friday. Times are estimated based on a single crew for each utility. Times and dates represent **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.

AERIAL

Summary:

Utility	Pole Set	New Wires/Cables	Trans. Wires/Cables	Remove Poles	Estimated Working Days
Central Maine Power	X	X	X	X	2

Utility Specific Issues:

Central Maine Power (CMP)

Central Maine Power has a push brace pole supporting pole #91 that will be removed. A new support pole will be installed as pole #91S as shown on the plans.

The Contractor shall notify CMP once the pole is staked. **CMP will require 30 days to schedule its work after notice is received.** CMP estimates **2 working days to complete the work**, once scheduled. CMP will remove the old pole once the stub pole is in place.

The Contractor will be working close to 3-phase wires on the Cassidy Point end of the project and care should be taken for safety clearances in that area.

SUBSURFACE

No subsurface utility conflicts are anticipated. Should any arise, the utility must be contacted as soon as possible.

There may be underground utilities and drainage pipes throughout the project. These consist of gas, water, sewer, communication cables and storm drains. The Contractor shall, through the Digsafe process, determine where these utilities currently exist prior to the start of the project.

RAILROAD

CSX Transportation, Inc. (formerly Pan Am) operates the rail line from Cassidy Point to the current load out facility. The Contractor shall be aware that the project site, known as Yard 8, will be used for railroad activities during the project. See Special Provision 104.4.8 for Specific Coordination with Railroads.

The Contractor shall supply and install a portable derail device on the track on the west side of Cassidy Point Road for Contractor safety. The Contractor shall coordinate directly with CSX Transportation, Inc. (CSX) at the start of the project to notify the railroad of this installation. CSX must approve the detail type and location of the derail device. The portable derail device will remain in place for the duration of the project, except for periodic rail deliveries when the Contractor will be required to pause construction work and remove and reinstall the derail device. The Contractor shall coordinate these efforts with CSX and the Maine Port Authority (MPA) as described in Special Provision 104.4.8. The Contractor shall check the derail device daily to confirm its presence. The portable derail device will not be paid for separately; supplying, installing, maintaining, and periodic removal and reinstallation of the portable derail device shall be considered incidental to the Contract.

The Contractor shall notify CSX, the MaineDOT, and MPA of any changes or proposed changes to the presence of the derail device.

UTILITY LOCATION MARKINGS

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

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
(Staging Area)

104.3.15 Contractor's General Authority and Responsibilities

This Subsection is added by inclusion of the following:

Contractor staging areas shall be located within the MaineDOT railroad corridor and within designated areas of the Chassis Yard immediately west of the existing Terminal as shown on the Contract Drawings. Additional staging areas may be available at the approval of the Resident but must not interfere with or obstruct the Commercial Street driveway (at Beech Street Intersection), the Unitil building, the MaineDOT Bridge Maintenance Building access way, or the existing New Yard entrances. Contractor staging areas within the railroad tracks shall not foul the tracks or impede train operations by CSX Railways. Other sites along the corridor may also be designated as Contractor staging areas by the Resident. The Resident shall coordinate with the Terminal Manager prior to approving additional staging areas.

The staging area shall also accommodate the Contractor's field office without adversely affecting the aforementioned access ways. The Contractor shall coordinate with the Terminal Manager and receive approval from the Resident to ensure that the staging area location is large enough to accommodate all field offices, equipment, and delivered materials.

Located along the southern side of the railroad tracks is a berm of contaminated material from previous projects that must remain on site. This berm area shall not be disturbed or used for material storage.

The Contractor shall not store materials or operate equipment on the railroad tracks unless the equipment is rail-mounted and the Contractor has received prior approval to do so from the Department and the Port Authority.

SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES
(Specific Coordination with Railroads)

104.4.8 Coordination with Railroads

This Subsection is amended by the addition of the following:

MaineDOT tracks in the Project Area are presently operated in freight service on a daily basis by CSX Transportation, Inc. (CSX). Work will need to be coordinated and planned as follows to maintain the existing railroad operation.

At the start of each workday and before Contractor forces occupy the right-of-way, the Contractor's superintendent will contact CSX (or the MaineDOT's designated railroad coordinator, listed below) and discuss proposed Contractor operations and anticipated train activity. At no time shall any existing rail be disturbed so that it cannot be used safely in the evenings.

MaineDOT may have a designated coordinator assigned to oversee and coordinate the activities of the Contractor. The Contractor likewise shall designate a superintendent to be the point of contact with MaineDOT and be responsible for coordinating all Contractor activities with MaineDOT and the railroad.

The Contractor and its employees and subcontractors and their employees shall adhere to the FRA Roadway Worker Safety Rules, which are made a part of these specifications and shall constitute express contract requirements during this work. Any unauthorized occupancy of the right-of-way or fouling of the track by the Contractor's employees, sub-contractors, agents or others acting on behalf of the Contractor, or failure to clear after audible warning from flagman/watchman, shall be sufficient cause to permit MaineDOT to bar such Contractor employees or others from the job.

At the end of each workday, the MaineDOT coordinator shall inspect the work area to determine if the project area is safe for the passage of trains. The Contractor shall keep sufficient personnel, materials and equipment at the site to correct any situation deemed necessary for safe train passage by the MaineDOT coordinator. If, in the opinion of MaineDOT, the site is not suitable for train operations due to conditions caused by the Contractor, the Contractor shall correct the conditions as directed by MaineDOT at no additional cost to MaineDOT; if MaineDOT takes corrective action, the Contractor shall reimburse MaineDOT for such cost.

The Contractor shall maintain at all times the operation of all through right-of-way systems, including but not limited to grade crossing warning systems, grade crossings, utility crossings and drainage systems.

It will be very important that the Contractor work and make contact directly for scheduling of its work. The contact for the **CSX Transportation, Inc.** is **Shawn Higgins** at (978) 663-1127.

The contact for the **MaineDOT** is **Nate Howard** at (207) 624-3310.

Special Note: Whereas this rail is owned by the MaineDOT and operated by CSX on demand by the Maine Port Authority (MPA), no railroad flagging will apply if the Contractor meets all the above requirements. The Contractor shall install a portable derail device at the onset of the project with proper coordination through CSX so that the Contractor may work safely within the railroad corridor and track envelope. The portable derail device shall be located near Cassidy Point Road. The Contractor shall be responsible for checking the derail device on a daily basis and notifying the MPA, MaineDOT and CSX immediately of any changes in condition.

All Railroad Flagger costs required by contractor operations shall be at the contractor's expense and shall not result in any cost to the project, the Department or the Port Authority.

SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES
(Coordination with Terminal Manger)

104.4.11 Coordination with Terminal Manager

This Subsection is amended by the addition of the following:

The Portland International Marine Terminal (IMT) is an active container terminal with various container movements occurring on a weekly basis. Successful completion of the proposed project will require coordination between the Contractor and the Terminal Manager via weekly project meetings held on-site. At these meetings, the Contractor shall provide an update on the progress of the project and make requests to work within the railroad corridor and the Chassis Yard. Similarly, the Terminal Manager will provide the Contractor with a weekly train schedule and will advise when the existing railroad corridor is not available.

The Contractor also is advised that while there is little vacant space available for Contractor storage within the Port Operations area, a small portion of the Chassis Storage Area and the available area within the MaineDOT Railroad Corridor may be possible locations for Contractor storage. Within the Terminal, the Contractor will require special access through the use of TWIC cards as described in Section 105 of these Special Provisions.

Construction Schedule:

The Contractor shall submit a detailed written construction schedule. The schedule will be monitored closely and shall be updated during the weekly construction meetings. When the Contractor is prepared to start work on site, the Contractor also shall provide a regular, written day-by-day summary of the construction activities that will occur for the upcoming three-week period. This summary shall highlight activities that will have an impact on the use of facilities in the construction and adjacent areas.

Pollution Control:

All operations carried out by the Contractor shall comply with provisions and regulations for the control of air and noise pollution. The Contractor shall make all applications and notices and comply with all appropriate provisions of the rules and regulations of Federal, State, and Local Agencies. The Contractor also shall closely monitor debris and trash that is generated on site and ensure that it is properly contained and maintained. Trash must be removed regularly, at least weekly.

Construction Management Plan:

The Contractor shall submit a Construction Management Plan to the Resident for review and approval. The Resident will forward the Plan to the City of Portland for its files. The Contractor shall anticipate modifications to the Construction Management Plan based on comments from either the Resident or the City of Portland.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Contractor Access to Restricted Areas)

105.11.1 Contractor Access to Restricted Areas

This Subsection is amended by the addition of the following:

The Contractor is advised that the Terminal is identified as a Marine Transportation Security Act (MTSA) 105 site defined by Homeland Security and essentially comprises two separate container storage areas with different levels of restricted access. The first area is designated the International Container Storage Area and comprises approximately 8 acres of the terminal site on the east side of the terminal. The second area is designated the Domestic Container Storage Area and Chassis Yard and comprises approximately 12 acres of the Terminal site on the west side of the Terminal.

Upon commencement of the project, the Contractor will establish its working areas within the newly acquired Project Site, which lies immediately west of the existing Terminal. Once the Project Site is established, the Contractor will not be allowed to breach the Terminal's existing fencing perimeter at will in order to work in the restricted zones. Work by the Contractor in the restricted zone, namely the Port Operation Area, will be possible by the Contractor only on a scheduled basis and by employees with the proper security clearance, such as with TWIC Cards (Transportation Worker Identification Credential). Scheduling by the Contractor should be made on a weekly basis to ensure that access can be readily granted by the Terminal Manager. Similarly, the Terminal Manager will notify the Contractor on a weekly basis of scheduled vessel activity so that both container operations and construction work can occur simultaneously and without interruption.

The following activities may occur within the Port Operation Areas, which will require that the Contractor plan its efforts accordingly:

- Access to Contractor Storage Area(s), if provided by the Maine Port Authority.

The Contractor must obtain proper Port Security clearance for employees and subcontractors who will be required to enter the Port Operations Area, whether to access a contractor storage area or a field office. To ensure compliance with MTSA 105, the Contractor shall assume that all of its intended employees who will work on the project will be required to have security clearance to be present within these otherwise restricted zones, and will maintain on its person at all times the Port Security badges it receives from the Port Authority (at the discretion of the Authority). Employees will be required to keep badges on their person at all times and will be required to return the temporary badges upon completion of the project or the completion of their portion of the work. Employees shall adhere to the restrictions placed on such temporary access and will be required to acknowledge a basic understanding of these requirements upon completion of a 15-minute presentation by the Terminal Manager. While the presentation is routine in nature, the importance of site security at an international waterfront facility will be emphasized. Contact information for TWIC cards and Port Authority badges will be provide to the Contractor upon commencement of the project.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Traffic Control and Management)

Section 105 of the Standard Specifications, General Scope of Work, is amended as follows:

105.3 Traffic Control and Management

Add the following to the end of the subsection:

The Contractor shall not allow traffic to queue back into the intersection of West Commercial Street and Cassidy Point Drive.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Submittal Requirements)

105.7.4 Submittal Requirements

This Subsection is amended by the addition of the following:

At the start of the project, the Contractor shall provide to the Resident a submittal log, which identifies the manner by which all submittals will be organized and referenced throughout the project. The Contractor shall update the submittal log on a weekly basis or to the satisfaction of the Resident. RFIs and other correspondence may be organized in a similar manner at the discretion of the Resident.

The Contractor shall make all submittals, including but not limited to RFIs, Designs, Shop Drawings, and Working Drawings by email and in PDF file format. All submittals shall be accompanied by a cover sheet that identifies the submittal number, subject, and date. Revisions to submittals should maintain the original submittal number but receive a designation indicating that the submittal has been revised.

Submittals that require review by the Engineer of Record will be reviewed in electronic format using red-line markups to identify comments, corrections, or revisions. Submittal reviews will be returned in electronic format only. If the Contractor will need hard copies, the Contractor must print them for its own use.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Summary of Project Requirements)

105.11.2 Summary of Project Requirements

This Subsection is amended by the addition of the following:

The Contractor is advised that this project occurs within a secured/restricted facility as determined by Homeland Security and contains security equipment for the Terminal and City of Portland that must remain functional at all times. The manner by which the project requirements shall be addressed by the Contractor are presented in each special provision contained herein, but other approaches may be suggested by the Contractor, subject to review and approval by the Owner.

A summary of the project requirements is summarized below:

Concrete Loading Slab Area

- The concrete loading slab is a locked area with perimeter fencing. During removal and installation of fence and gates, the Contractor shall ensure that the area remains secure after work hours.

Cooperation with Local Residents and Businesses

- Residents within 1,000 feet of the Railroad Corridor shall be notified by the Contractor at the onset of the project. The Contractor shall notify each resident by US Mail at least four weeks in advance of construction activities along the Railroad Corridor.
- Businesses within 100 feet of the Railroad Corridor (e.g., New Yard LLC) shall be notified by the Contractor at the onset of the project. The Contractor shall notify New Yard LLC via US Mail at least four weeks in advance of construction activities along the Railroad Corridor.

SPECIAL PROVISION
SECTION 107
TIME

107.1 Contract Time and Contract Completion Date

This Subsection is amended by the addition of the following:

The Contractor will be allowed to start work once all plans required under this contract have been submitted and approved, and a pre-construction meeting has been held.

The completion date for this contract is **September 30, 2023**.

107.3.2 Night Work

This Subsection is amended by the addition of the following:

The Contractor shall be aware of the close proximity of local residences. The Contractor shall conduct its operations so as not to generate noises greater than 80 decibels within 500 feet of any residential building from 10:00 p.m. to 7:00 a.m. each day, unless otherwise approved. Local requirements may impose additional restrictions on noise and must be complied with by the Contractor. See Section 17 - 18 of the City of Portland Ordinance.

107.4.6 Prosecution of Work

The following activities must be performed by the Contractor in accordance with the dates specified:

N/A

107.4.7 Limitations of Operations

The Contractor shall maintain access to the drive entrances of New Yard LLC, located on Commercial Street, for the duration of the project.

The cost of these limits of operations shall be considered incidental to the Contract and no additional compensation will be made.

107.9 Project Closeout

The following is in addition to the requirements of Section 107.9:

The Contractor shall maintain at the site a set of Contract Plans and these Special Provisions, upon which shall be recorded accurately as the work progresses the actual dimensions and locations of all work, indicating all variations from the Contract Documents. The record shall include the work of all Subcontractors. Record drawings shall be reviewed by the Resident, and the Contractor shall make all necessary changes according to the Resident's review.

Prior to final acceptance of the Work, the Contractor shall transfer all recorded data to a complete set of reproducible record specifications of the Contract Drawings showing "As-Built" conditions. The As-Built drawings shall be presented using neatly color-coded markups to identify changes, modifications, or deletions to the proposed work.

The additional project closeout requirements noted in this special provision shall be considered incidental to the contract and no separate payment will be made.

**SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT**

All work and materials shall conform to the Contract Drawings and the provisions of the State of Maine Department of Transportation Standard Specifications, March 2020 Edition, SECTION 203 – EXCAVATION AND EMBANKMENT, with the following modifications:

203.09 Preparation of the Embankment Area

Add the following sentence to the beginning of Subsection 203.09:

Preparation of the subgrade in earthwork areas of the project shall be in accordance with Subsection 203.17 of this Special Provision.

203.17 Preparation and Protection of the Subgrade

Add the following paragraphs to the beginning of Subsection 203.17:

Unsuitable subgrade soils observed in the earthwork areas shall be over-excavated and replaced using granular material that meets the material specifications for Granular Borrow for Underwater Backfill (MaineDOT Standard Specification 703.19) as authorized and/or directed by the Resident. The subgrade soils shall be proof-rolled using a self-propelled static roller. Loose or yielding areas shall also be over-excavated and replaced using Granular Borrow for Underwater Backfill. Fill material shall be placed in loose lifts not to exceed 12 inches and compacted to 95 percent of the material's maximum dry density as determined by AASHTO T-180. Special placement and compaction methods may be warranted in wet areas. Crushed stone wrapped in geotextile fabric is typically used to fill depressions in wet areas.

**SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(Soil Management)**

General: The work under this specification shall be performed in conformance with all the procedures and requirements described herein for the following activities: contaminated soil handling, reuse, temporary stockpiling, transportation, storage and disposal, and contaminated water handling, storage, treatment, and disposal. This specification also addresses contaminated soil location, identification, and classification. The intent of this specification is to ensure that any contaminated soil and/or groundwater encountered during construction will be managed in a manner that protects worker health and safety, public welfare, and the environment.

Environmental Site Conditions: The Maine Department of Transportation (MaineDOT) has conducted an environmental assessment related to the planned work at the International Marine Terminal expansion project. The environmental assessment was completed to obtain a general understanding of the environmental conditions along the project corridor. The assessment included a review of relevant Maine Department of Environmental Protection's (MDEP's) and Environmental Protection Agency's (EPA's) databases and field reconnaissance of the project area. During this work, it was noted that the southwestern and western portions of the project area (former Unutil site) have a variety of subsurface environmental concerns. These concerns are associated with the historical operation of a coal degasification facility; contaminants consist primarily of oil-like-materials (OLM) and other coal-gasification-related-materials (CGRM). Existing data also indicate that shallow soils in the remaining area of the project have been affected by heavy metals and polyaromatic hydrocarbons (PAHs). It appears that these soils have been influenced by historical railroad operations. The results of the environmental assessment are available for review from MaineDOT's Environmental Office in Augusta (207-624-3000). A copy of the Soil Management Plan (SMP) (Haley & Aldrich, Inc. – March 2015) is provided in this package directly following this Special Provision document. The SMP shall be utilized in combination with this Special Provision as a guide for handling impacted soil / groundwater - identification, classification, and management.

Identified Area of Contamination: MaineDOT's environmental assessment identified the project area as having shallow and deep soil contamination. Analytical laboratory results of samples taken from the borings associated with previous work by others on the project site indicate varying levels of OLM, CGRM, PAHs and metals are present in soils. These concentrations define the soils as Special Waste per State remedial guidelines.

Identifying and Screening Contaminated Soil and Groundwater: Excavated soils will be considered contaminated and will need to be either reused on site or taken to an MDEP approved facility for proper management.

Handling and Disposition of Soil Materials: In general, soils excavated during construction shall be handled as follows:

- Soils shall not be excavated without prior approval by the Resident.
- The Contractor shall make every attempt to reuse the soils onsite. If possible, the soil should be placed back into the area of excavation. However, it may also be reused elsewhere on site if the material is covered with a cap. The Contractor is responsible for complying with the SMP. The SMP document is located in this package following this Special Provision.
- If soils cannot be reused on-site, the Contractor shall arrange and undertake disposal of all impacted soil at a landfill or treatment facility licensed to accept contaminated soil. The Contractor is responsible for all additional testing required by the receiving facility. If the Contractor proposes other disposal or treatment options, the Contractor is solely responsible for obtaining the associated permits and approvals from all relevant Municipal, State, and Federal agencies at no additional cost to the State.

The Resident is responsible for signing any manifests or bills of lading required to transport and dispose of the impacted soil. The Resident will send all manifests and bills of lading to MaineDOT, Environmental Office, Station 16, Augusta, Maine 04333.

Health and Safety/Right-to-Know: Contractors and subcontractors are required to notify their workers of the history of the site and contamination that may be present and to be alert for evidence of contaminated soil and groundwater. The Contractor shall notify the Resident at least three business days prior to commencing any excavation.

The Contractor shall prepare a site-specific Health and Safety Plan (HASP) for its workers and subcontractors who may work in the contaminated areas of the site. A Qualified Health and Safety Professional shall complete the HASP. The Qualified Health and Safety Professional will be an expert in field implementation of the following federal regulations:

- 29 CFR 1910.120 or Hazardous Waste Operations and
- 29 CFR 1926.65 Emergency Response
- 29 CFR 1910.134 Respiratory Protection
- 29 CFR 1926.650 Subpart D - Excavations
- 29 CFR 1926.651 General Requirements
- 29 CFR 1926.652 Requirements for Protective Systems

MaineDOT is voluntarily ameliorating the soil contamination associated with this initiative. Given that this is a voluntary cleanup effort approved by a regulatory agency, OSHA requirements as defined in 29 CFR 1910.120 apply. These requirements mandate that workers

and any subcontractors working in the contaminated area shall comply with all OSHA regulations for Hazardous Waste Operations and Emergency Response, including a 40-hour initial hazardous waste operations certification [OSHA 1910.120(e)], annual 8-hour refresher course within the last 12 months and medical surveillance [OSHA 1910.120(f)] within the last 12 months.

The Contractor shall designate a person to provide direct on-site supervision of the work in the contaminated areas. This person shall have the training under OSHA 1910.120 (e) as noted above and in addition be qualified as a construction Competent Person. It is the responsibility of the Competent Person to make those inspections necessary to identify situations that could result in hazardous conditions (e.g., possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions), and then to ensure that corrective measures are taken.

Submittals: The Contractor shall submit a site-specific Health and Safety Plan (HASP) to the Resident at least two weeks in advance of any excavation work on the project. The Contractor shall not proceed with work until MaineDOT has reviewed the plan and notified the Contractor that it is acceptable.

Health and Safety Monitoring: Within the identified contaminated area of the project, the Contractor's designated on-site person shall monitor the work zone for those constituents specified in the Contractor's HASP. The Contractor shall provide all required health and safety monitoring equipment.

Dewatering: Groundwater may be encountered and its removal necessary to complete the work. It will be treated as "contaminated" water. The Contractor shall inform the Resident before any dewatering commences. The "contaminated" water shall be pumped into a temporary holding tank(s). The Contractor will be responsible for the procurement of any holding tank(s). Any testing, treatment and/or disposal of the stored, contaminated water shall be undertaken by the Contractor in accordance with applicable Federal, State, and local regulatory requirements.

On-Site Water Storage Tanks – Materials: If dewatering within the identified contaminated area becomes necessary, the holding tanks utilized for temporary storage of contaminated water pumped from excavations shall be contamination free and have a minimum capacity of 2,000 gallons.

Dust Control: The Contractor shall employ dust control measures in the contaminated area to minimize the creation of airborne dust during the construction process. As a minimum, standard dust control techniques shall be employed where heavy equipment and the public will be traveling. These may include techniques such as watering-down the site or spreading hygroscopic salts.

Unanticipated Contamination: If the Contractor encounters previously undiscovered soil / groundwater impacts or potentially hazardous conditions related to contamination, the Contractor shall immediately suspend work and secure the area. The Contractor will then notify the Resident immediately. These potentially hazardous conditions include, but are not limited to,

buried containers, drums, tanks, “oil saturated soils”, strong odors, or the presence of petroleum sufficient to cause a sheen on the groundwater. The area of potential hazard(s) shall be secured to minimize health risks to workers and the public, and to prevent a release of contaminants into the environment. The source of any suspected contamination shall be evaluated by the Resident (or MaineDOT’s Environmental Office). As appropriate, the Resident will notify the MDEP’s Response Services Unit in Portland and MaineDOT’s Environmental Office. The Portland Fire Department must also be notified prior to removal of buried storage tanks and associated piping. The Contractor will evaluate the impact of the hazard on construction, amend the HASP if necessary, and with the Resident’s approval, recommence work in accordance with the procedures of this Special Provision.

Method of Measurement: There will be no measurement for environmental screening and identification of contaminated soil material as all soil is considered as contaminated.

Measurement for the development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel shall be by lump sum.

Measurement for the off-site disposal of impacted soil will be by the ton – Disposal of Contaminated Soil.

There will be no measurement for additional laboratory testing of contaminated soil that is required by the landfill or treatment facility. Testing is incidental to the Disposal of Contaminated Soil.

Measurement for the following items shall be according to Subsection 109:04 (“Change Order”/Force Account): any necessary contaminated water holding tank(s); and treatment or disposal of any contaminated groundwater.

Basis of Payment: There will be no payment for environmental screening and identification of contaminated soil material as all soil is considered as contaminated.

Payment for the development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel shall be by the lump sum

Payment for off-site disposal of impacted soils at a regulatory approved facility shall be by the ton – Disposal of Contaminated Soil.

Payment for the following items shall be according to Subsection 109:04 (“Change Order”/Force Account): any necessary contaminated water holding tank(s); and treatment or disposal of any contaminated groundwater.

Pay Item

203.2312 Health and Safety Plan (HASP)
203.2341 Disposal of Contaminated Soil

Pay Unit

Lump Sum
Ton

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 antistripping 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						65-80*	0.6-1.2
3 to <10	≤89.0			13.0	14.0	15.0	16.0	16.0		
≥ 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 +/- ¼ 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 ¼ 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.

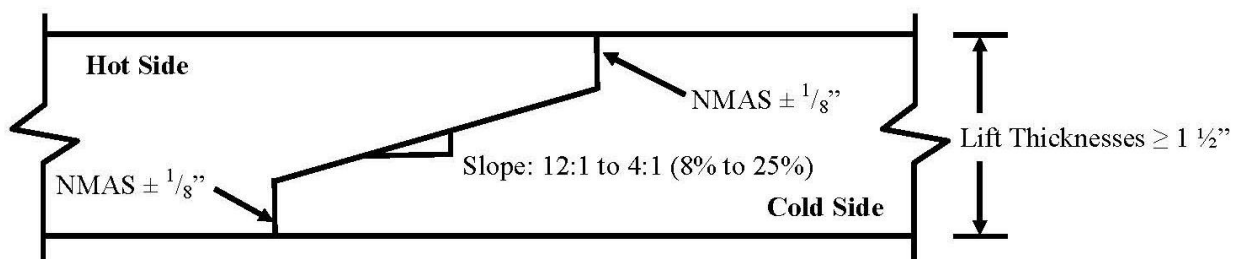


FIGURE 1: Notched Wedge Joint

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, Typicals, 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		
Voids at N_{design}		N/A
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 subplot and require removal of defective mix sample sublots only, leaving any acceptable material in place if it is found to be free of defective material. Pay factors equal to or greater than the reject level will be paid accordingly.

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	$PA = (\% \text{ Passing Nom. Max PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing } 2.36 \text{ mm PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing } 0.30 \text{ mm PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing } 0.075 \text{ mm PF} - 1.0)(Q)(P) \times 0.10 + (\text{PGAB Content PF} - 1.0)(Q)(P) \times 0.25$	$PA = (\text{density PF} - 1.0)(Q)(P) \times 0.50$

In addition, for 9.5 mm NMA 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	
	(Lot size \leq 1000 tons)	(Lot size $>$ 1000 tons)
Maximum Sublot Size – Mix	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 mixes	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
SECTION 403
HOT MIX ASPHALT

Desc. Of Course	Grad Design.	Item Number	Total Thick	No. Of Layers	Comp. Notes
<u>Full Construction Areas - 8" HMA Overlay</u>					
<u>Heavy Haul Road with Passing Lane (As Indicated in Typicals)</u>					
Wearing	12.5 mm	403.2081	2"	1	1,5,7,30,40,44
Intermediate	19.0 mm	403.2071	3"	1	1,5,7,30,40,44
Base	19.0 mm	403.2071	3"	1	1,5,7,30,40,44
<u>Drives, Misc. (As Indicated or as Directed)</u>					
Wearing	9.5 mm	403.209	2 - 3"	1/more	3,10,20,30,32

COMPLEMENTARY NOTES

1. The required PGAB shall be a storage-stable, homogeneous, polymer modified asphalt binder that meets **PG 64E-28** grading requirements in AASHTO M 332. All polymer modified asphalt grades utilized on the Project shall be treated with an approved liquid anti-strip. PG binders shall be treated either at the asphalt source terminal with the required dose rate on the delivery documentation, or at the hot mix asphalt plant utilizing a system integrated with the plants controls that will introduce a minimum 0.50 percent anti-strip by weight of asphalt binder used unless a rate is otherwise recommended by the anti-strip manufacturer. The PGAB and anti-strip blend shall meet the **PG 64E-28** requirements. The Contractor shall provide supporting test data showing the PGAB and anti-strip blend meet the required criteria.
3. The aggregate qualities shall meet the design traffic level of <3 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**.
5. The aggregate qualities shall meet the design traffic level of >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**.
7. Section 106.6 Acceptance, (1) **Method A** as specified Section 401.20 - Quality Assurance Methods A and C.
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.
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**.
32. Compaction of the new Hot Mix Asphalt Pavement will be obtained using a minimal roller train consisting of a **3-5 ton** vibratory roller. Areas less than 2 feet wide shall be compacted with a minimum of a **150 pound** plate compactor. An approved release agent is required to ensure the mixture does not adhere to hand tools, rollers, pavers, and truck bodies. The use of petroleum based fuel oils, or asphalt stripping solvents will not be permitted.

40. The entire roadway (from edge to edge, including the passing lane) shall be considered mainline travelway for density testing purposes according to the specified testing method.
44. The Contractor shall plan its construction sequencing so that any longitudinal joints constructed will be a minimum of 14 foot offset from the established base line. Station 21+75 to station 23+00 shall consist of a 14 foot travelway and an 8 foot passing lane.

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 502
STRUCTURAL CONCRETE
(QC/QA Acceptance Methods)

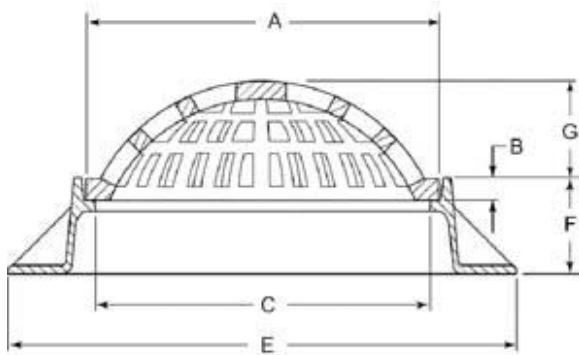
CLASS OF CONCRETE	ITEM NUMBER	DESCRIPTION	P	METHOD
Fill	626.221	Non-Metallic Conduit, Concrete Encased	\$0	C
A	607.156, 607.4931	Swing Gate 20 Foot, Non-Motorized Gate – Remove and Reset (Post Foundation)	\$0	C
LP	502.45	Structural Concrete Approach Slab	\$0	C

P values listed above reflect the price per cubic yard (yd³) for all pay adjustment purposes.

**SPECIAL PROVISION
 SECTION 604
 MANHOLES AND CATCH BASINS**

This section is amended by the addition of the following:

Description: The beehive frame and grate shall be installed on catch basins as shown on the Plans or as directed by the Resident and in accordance with these specifications. The frame and grate shall meet the dimensions and requirements of the Neenah Foundry Beehive Grate number shown below or an approved equal.



Illustrating R-2560-E

CATALOG NUMBER	A	B	C	E	F	G
R-2560-D	22"	1 1/2"	20"	35"	9"	4 1/2"

Basis of Payment: Frames, grates, and covers for new or rebuilt catch basins or manholes shall be considered part of the structure and no separate payment will be made.

SPECIAL PROVISION
SECTION 607
FENCES
(Swing Gate 20 Foot)
(Remove and Reset Fence)
(Non-Motorized Gate – Remove and Reset)

All work and materials shall conform to the Plans and the provisions of the State of Maine Department of Transportation Standard Specifications, March 2020 Edition, Section 607 (Fences), with the following modifications:

607.01 Description

The following paragraphs are added:

This work shall also consist of installing a swing gate in close conformity with the lines and grades as shown on the Plans and as approved by the Resident.

This work shall also consist of removing a section of fence to be stockpiled.

This work shall also include modifications to the existing non-motorized gate.

The installation shall include the assembly and erection of all parts and materials complete at the locations as shown on the Plans or as approved by the Resident.

607.02 Materials

The following sentences are added:

The swing gate width is designated on the Plans.

Swing gate and associated hardware shall be of galvanized steel as specified in AASHTO M181 and shall be galvanized in accordance with the applicable requirements of ASTM A153.

Replace the fifth paragraph with the following:

Concrete for anchoring metal posts shall be Class A.

607.03 General

Add the following paragraphs:

Modify the non-motorized gate by adding a 7-foot leaf to the existing 24-foot leaf and a set of wheels to the 24-foot leaf. The leaf shall be connected via hinged attachment on one side. On the other side, install a latch mechanism with pin.

A 3-foot long HDG Industrial Chain for padlocking by owner shall be provided for each gate, whether new or removed and reset. Chains shall be considered incidental to the associated gate items.

Concrete foundations shall be in accordance with MaineDOT Standard Details for fence posts.

Metal fence posts sizes shall be in accordance with MaineDOT Standard Details for fence posts.

Add the following sentences:

- a. Gate Wheels: Gate wheels shall be installed 18 feet from gate post on each side of the 24-foot chain link swing gate. Gate wheels shall be heavy-duty with spring suspension and able to support gates weighing up to 400 pounds. Acceptable products include: Northern Tool and Equipment Model # GW-400FF or Approved Equal.
- b. Fences: The existing 7-foot impasse fence section shall be removed and shall become the property of the Maine Port Authority. The fence shall be stockpiled carefully in a location determined by the Resident. If the stockpiled fence is damaged, the Contractor shall provide a replacement fence at no additional cost. The existing 5-foot fence section to be removed shall be reinstalled as shown on the plans.
- c. Chain Link Gate: The existing 24-foot chain link gate shall be removed and reinstalled. A 7-foot chain link gate shall be added to the existing 24-foot gate to form a 31-foot bi-fold swing gate. The 7-foot chain link gate shall include barbed-wire at the top (3-strands) and a vertical pin that locks into the concrete foundation.

Contractor shall submit shop drawing of the modified double-leaf chain link swing gate with gate wheel details for review and approval.

607.06 Method of Measurement

Add the following paragraphs:

Swing Gate 20 Foot will be measured by each unit of the kind specified and installed.

Non-Motorized Gate – Remove and Reset will be measured by the unit as specified and installed.

607.07 Basis of Payment

Add the following paragraphs:

Swing Gate 20 Foot will be paid for at the Contract price each, complete in place. Payment shall be full compensation for furnishing and installing all hardware, excavation, concrete, and 3-foot industrial chain, and for all incidentals necessary to complete the work.

Non-Motorized Gate – Remove and Reset shall be paid by the Contract price installed to the satisfaction of the Resident. Payment will be full compensation for furnishing and assembling all materials; installing posts, foundations and gate wheels; anchoring posts to the concrete loading slab; removing and reinstalling existing 24-foot swing gate, additional 7-foot chain link gate, 3-foot industrial chain, posts and foundation; and for all incidentals necessary to complete the work.

Payment will be made under the following Pay Items:

<u>Pay Item</u>		<u>Pay Unit</u>
607.156	Swing Gate 20 Foot	Each
607.4931	Non-Motorized Gate – Remove and Reset	Each

SPECIAL PROVISION
SECTION 614
GEOCELL SLOPE PROTECTION
(Geocell Load Support System)

All work and materials shall conform to the Contract Drawings and the provisions of the State of Maine Department of Transportation Standard Specifications, March 2020 Edition, SECTION 614 – Geocell Slope Protection, with the following modifications:

614.01 Description

Replace Subsection 614.01 with the following:

This work shall consist of furnishing and installing a Geocell Load Support System as part of the Pavement Section in reasonably close conformity with the lines and grades shown on the Plans, as specified herein and as directed by the Resident. The Geocell Load Support System consists of non-woven separation geotextile placement over prepared subgrade; bedding material placement; geocell deployment and installation, including anchors and connectors; infill material placement; and cover material placement, grading, and compaction in preparation for HMA placement. Subgrade preparation and placing and compacting Granular Borrow to the required Geocell Load Support System subgrade elevation as needed shall be in accordance with Special Provision 203 – Excavation and Embankment.

614.02 Submittals

Replace Subsection 614.02.A – Product Data with the following:

Submit manufacturer's product data for the separation geotextile, geocell, and geocell accessories including, but not limited to anchors and connectors.

Replace Subsection 614.02.B – Supplier Design with the following:

Submit manufacturer's project-specific design recommendations or engineering design for panel layout, type and layout for connectors for adjacent panels, anchor type, anchor length, and anchor spacing. The project-specific design shall be prepared, checked, and sealed by a Professional Engineer licensed in the State of Maine.

Replace Subsection 614.02.E – Material Certification with the following:

Manufacturer shall supply certificate of analysis containing the following test results for the geocell material used for project: base resin lot number(s), resin density per ASTM-1505, production lot number(s), material thickness, short term seam peel strength, percentage of carbon black, and environmental stress crack resistance.

Add Subsection 614.02.F – Manufacturer's Field Representative as follows:

Submit qualifications of manufacturer's field representative certifying the field representative is experienced in the installation of the specified products for the intended application, specifically to support heavy haul loads in a pavement application.

614.031 Geocell Sections

Replace the first paragraph with the following:

The geocell sections shall be a high-density polyethylene sheet strip assembly connected by a series of offset, full depth, ultrasonic welded seams aligned perpendicular to the longitudinal axis of the strips, which, when expanded, form walls of a flexible 3-dimensional, cellular engineered soil confinement

system. When expanded, the cell walls shall be of adequate height to retain a minimum 6-inch depth of infill material. The geocell material shall be manufactured by Presto Products Company, Appleton, Wisconsin (Geoweb GW30V); Hanes Geo Components, Winston Salem, North Carolina (TerraCell 140); or an approved equal. Sections shall be in conformance with manufacturers design recommendations or engineering design for this project.

Modify the following four sections as follows:

1. Geocell base material
 - a. Density, ASTM D 1505: 58-60.5 pcf
 - b. Environmental stress crack resistance (ESCR) ASTM D 1693: 5,000 hours
2. Geocell strip properties and assembly
 - a. Perforated Strip/Geocell:
 - ii. Textured sheet thickness: 60 mil +/- 6 mil
3. Geocell properties
 - b. Individual cell dimensions (+/- 10%):
 - i. Length: 11.3 inches
 - ii. Width: 12.6 inches
 - iii. Nominal area: 71.3 in²
 - iv. Nominal depth: 6 inches
4. Geocell Seam Strength Tests
 - b. Short term seam peel strength test:
 - ii. 480 lbf (for 6-inch depth)

614.032 Integral Components

Modify this section with the following:

Adjacent sheets (edge to edge and end to end) shall be connected using high-strength polyethylene ATRA, or an approved equal, connector. Connectors shall be used to connect sections together at each interleaf or end-to-end connection. Metal staples or zip ties shall not be allowed. Location and connection detail shall be in accordance with the geocell manufacturer's recommendations and the project-specific design.

The anchoring system shall consist of straight No. 4 steel reinforcing rods with an ATRA clip, or an approved equal, as end cap. Length shall be as specified in the manufacturer's recommendations or the project-specific design.

614.033 Granular Borrow

Delete this section.

614.034 Geocell Bedding, Infill, and Cover Material

Replace this section with the following:

Geocell bedding, infill, and cover material shall be as shown on the Plans and shall meet the requirements of MaineDOT Section 703.06 – Aggregate for Base and Subbase, Type A.

614.035 Surface Treatment

Replace this section with the following:

The HMA section specified on the Plans shall be placed over the untreated aggregate surface course

material that covers the in-filled geocell material.

614.036 Separation Geotextile

Add the following to this section:

The separation geotextile placed over the prepared subgrade shall be a Class 1, nonwoven geotextile that meets the requirements of MaineDOT Section 722.04 and has a minimum (MARV) weight greater than or equal to 6 oz/sy.

614.04 Construction Requirements

Replace Subsection 614.04 in its entirety with the following:

Geocell Load Support System shall be constructed as part of the pavement section to the full limits depicted on the Plans. The Geocell Load Support System shall have the following construction requirements:

1. General

- a. Prepare subgrade and install load support system in accordance with manufacturer's instructions.
- b. On-site time for installation assistance by the manufacturer's field representative shall be 1 day with one trip. All labor and expense costs for the geocell manufacturer's field representative installation assistance shall be incidental to the contract price

2. Subgrade Preparation

- a. Subgrade preparation and placing and compacting Granular Borrow to the required Geocell Load Support System subgrade elevation as needed shall be in accordance with Special Provision 203 – Excavation and Embankment.
- b. Install separation geotextile over prepared surfaces ensuring required overlaps are maintained and outer edges of the geotextile are buried a minimum of 6 in. below subgrade.

3. Bedding Layer Placement

- a. Place Bedding Material over the Separation Geotextile to the depth and grades depicted on the Plans. Use care not to damage or otherwise wrinkle or displace the Separation Geotextile.
- b. Grade using low ground pressure equipment and lightly compact Bedding Material using a static roller to provide a firm and stable surface upon which to deploy the geocell.

4. Placing, Anchoring, and Connecting Geocell Sections

- a. Anchor and connect geocell sections per the project-specific design, shop drawings and manufacturer's recommendations. Use types and frequency of connectors and anchors as indicated on the shop drawings.
- b. Expand geocell sections in the work direction. Confirm each geocell section is expanded uniformly to the required dimensions and the outer cells of each section are correctly aligned.
- c. Interleaf edges of adjacent sections. Ensure that the upper surface of adjoining geocell sections are flush at the joint and adjoining cells are fully aligned at the cell wall slot.
- d. Anchor with specified anchors in prescribed pattern throughout the road surface.
- e. Connect the sections with connectors manufactured by the geocell manufacturer. Connectors shall be placed at each interleaf and end to end connection. Insert the connectors in accordance with the manufacturer's recommendations.

5. Placing Infill and Cover Material

- a. Place infill and cover material in the expanded cells with suitable material handling equipment, such as a backhoe or front-end loader. A bulldozer or grader shall not be used. Limit drop height to a maximum of 3 feet. Avoid displacement of the geocell sections by infilling in the direction of work. Spotters shall be used whenever infill and cover material is being placed and spread.
- b. Infill and cover material shall be free-flowing and not frozen when placed and spread.
- c. Evenly spread infill and cover material to ensure the infill fills and is flush against the cell walls.
- d. Overfill and compact material to infill the geocells and achieve the required depth of cover over the top of the geocells in one operation. Lightly compact the cover material surface with a static roller.
- e. Compaction is complete when the geocells are full and no longer accept infill material when traversed by a static roller.
- f. Use plastic shovels to spot check that the cells are adequately filled and that the integrity of the geocell was maintained. This shall be done at locations selected by the Resident and in the presence of the Resident or Inspector.
- g. Limit grading of the cover material surface prior to HMA placement. Place the HMA wearing course as soon as possible after the placement of the geocell infill and cover material is complete.

614.06 Method of Measurement

Add the following:

The Geocell Load Support System measurement will be by the square foot of material installed.

614.07 Basis of Payment

Add the following:

Geocell Load Support System will be paid for at the contract unit price per square foot which shall be full compensation for design; all labor and materials to furnish and install the separation geotextile, geocell material and accessories, including connectors and anchors, bedding, infill, and cover material, and preparation of the cover material surface for HMA placement. Compensation for subgrade preparation and placing and compacting granular borrow to achieve subgrade shall be under Special Provision 203 – Excavation and Embankment. All labor and expense costs for the geocell manufacturer's field representative installation assistance shall be incidental to the contract price.

Payment will be made under the following Pay Item:

<u>Pay Item</u>		<u>Pay Unit</u>
614.301	Geocell Load Support System	Square Foot

SPECIAL PROVISION
SECTION 626
ELECTRICAL
(Fiber Optic Cable)

626.01 Description

This task shall include the providing and installation of Corning ALTOS (006TUC-T4100D20) or approved equal OM3 50/125-micron multimode fiber optic cable as shown on the Plan drawings and described herein. The following Specifications for the selection and installation of fiber-optic cable and associated hardware are intended to ensure a reliable and consistent fiber optic media infrastructure for the IMT. All fiber optic cable termination and the fiber optic patch panels will be provided by the Contractor. Fiber optic patch panels shall be Corning Pretium or approved equal. All fiber termination and testing shall be completed by a technician certified to perform this work.

Cable: 6-Fiber multi-mode OM3, 50/125 Microns, Outdoor Riser Rater, ST (Male) Connection, as approved:

Specifications: Fiber installed must meet or exceed the following Specifications:

- Multimode fiber installed cable shall be 50/125micron core/cladding, armored, enhanced grade, multimode (OM3), and graded index glass fiber. All materials in the cable shall be dielectric.
- Installed fiber must meet or exceed the following performance Specifications:

Wavelength (nm)	Max. Attn.(dB/Km)	Min. Bandwidth (Mhz*Km)
850	3.0	1500
1,300	1.0	500

- Plenum rated cable shall be used for all interior installations. Plenum rated cable shall be:
 - Tight buffered
 - Mechanical strippable Teflon (for plenum applications)
 - EIA/TIA -598 color coding for fiber optic cable
 - Capable of supporting a short-term tensile load of 600 lbf
 - Capable of min bend radii of 200 mm for installation and 125 mm for operation.

All cable is to be fully supported throughout its entire run.

At no time shall more than 300 pounds of tension be placed on any fiber cable while it is being pulled through tray or conduit. It is preferred that all fiber cable be pulled with hand power only. If power winches or mechanical advantage devices are used to pull cable, a tensionometer must be used to ensure that maximum tension is not exceeded. Alternatively, a "mechanical fuse" rated at 300 pounds may be included in the linkage. Torsion shall be avoided by the use of a swivel at the cable end. While under tension, a minimum bend radius of 200 mm will be maintained through the use of pulleys and sheaves where required. After pulling, no bend may have a radius, at rest, of less than 125 mm.

Each cable is to be permanently labeled at each end with a unique cable number. In addition, labels shall be affixed to the cable at every transition of a vault, hand hole, riser closet, or major pull box.

Each fiber optic strand shall be labeled with a unique identifier at the coupler.

Fiber ends are to be terminated in ST-type connectors. No splices will be permitted. The cable shall be continuous run from cabinet to cabinet.

At each end of the cable, sufficient slack (10' to 25') shall be left to facilitate reasonable future relocation of the fiber switch. Slack shall be mounted on walls of cabinets.

Testing: Contractor shall test all long reels with an Optical Time Domain Reflectometry (OTDR) for length and transmission anomalies while on the reel prior to installation. It is suggested that each individual fiber in a cable regardless of length be tested with an OTDR for length and transmission anomalies while on the reel before installation.

All multimode fiber strands shall be tested end-to-end for bi-directional attenuation, 850 nm/1300 nm for multimode. Tests should be conducted in compliance with EIA/TIA-526-14 or OFSTP 14, Method B, according to the manufacturer's instructions for the test set being utilized.

Tests must ensure that the measured link loss for each strand does not exceed the "worst case" allowable loss defined as the sum of the connector loss (based on the number of mated connector pairs at the EIA/TIA-568 B maximum allowable loss of 0.75 dB per mated pair) and the optical loss (based on the performance standard above, 2.1.1 and 2.2.1).

After termination, each fiber shall be tested with an ODTR for length, transmission anomalies, and end-to-end attenuation. Results are to be recorded and supplied to IMT in the form of hard-copy printouts or photographs of screen traces.

After termination each terminated fiber is to be tested for end-to-end loss with a power meter/light source. As above, results are to be recorded and supplied to IMT.

The Contractor shall review all end faces of field terminated connectors with a fiber inspection scope following the final polish. Connector end faces with hackles, scratches, cracks, chips and or surface pitting shall be rejected and repolished or replaced if repolishing will not remove the end face surface defects. The recommended minimum viewing magnifications for connector ends are 100X for multimode fiber.

626.02 Basis of Payment

Measurement and payment for the installation of the fiber optic cable will be Lump Sum. It shall include the furnishing, installation, termination, testing and routing of the cable, as well as installation of fiber optic patch panels.

Payment will be made under the following Pay Item:

<u>Pay Item</u>		<u>Pay Unit</u>
626.744	Fiber Optic Cable	Lump Sum

SPECIAL PROVISION
SECTION 626
FOUNDATIONS, CONDUIT, AND JUNCTION BOXES FOR HIGHWAY SIGNING,
LIGHTING AND SIGNALS
(Precast Concrete Junction Box)

626.02 Description

The following paragraph is added:

Junction boxes for the electrical and communication conduit associated with the closed-circuit television (CCTV) equipment shall be precast concrete in accordance with the MaineDOT Standard Specifications, March 2020 Edition. The boxes shall be 36" x 24" and 21" deep. The words ELECTRICAL and COMMUNICATION shall be stamped on the cover. The boxes shall have a load rating of 22,000 pounds.

Payment will be made under the following Pay Item:

<u>Pay Item</u>		<u>Pay Unit</u>
626.111	Precast Concrete Junction Box 36 inch	Each

SPECIAL PROVISION
SECTION 634
HIGHWAY LIGHTING
(AWG Copper Wiring)

Description

This work shall consist of furnishing and installing the AWG copper wire, as described herein for power wiring, and for grounding wires as called for in the Plans and Specifications. All wire shall be installed in conduit and must be suitable for underground conduit installation for wet locations - XHHW.

Basis of Payment

Measurement and payment for the AWG copper wire will be per foot, to the nearest 10-foot interval per run. It shall include the furnishing, installation, routing, termination, and connection of the wire.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
634.311	#1 AWG Copper Wiring	Linear Foot
634.3121	#2/0 AWG Copper Wiring	Linear Foot

SPECIAL PROVISION
SECTION 643
WOOD POLE
(Wood Pole)

643.01 Description

This work shall consist of installation of new wood poles, NEMA 4X CCTV Cabinet, and 2” conduit riser with weatherhead for CCTV installation.

643.02 Materials

Wood poles shall be 40 feet long and shall be Class 4, corresponding to Section 720.10 of MaineDOT’s 2020 Standard Specifications.

The proposed CCTV cabinet shall match existing NEMA 4X CCTV cabinets (Model UU606030 or approved equal).

Conduit riser shall be 2-inch galvanized ridged metal conduit (GRMC) and shall extend from the bottom of the CCTV cabinet to a height of 20 feet above the top of the CCTV cabinet and terminate with a weatherhead.

643.03 Wood Pole Installations

Wood poles shall be placed in the ground to a depth of 20 percent of their overall length, with a maximum deviation from the vertical of one-quarter of an inch in 5 feet.

If needed, poles shall be back-guyed using a 10-inch expanding anchor with a 3/4-inch by 96-inch anchor rod. Thimble eyes of anchor rods shall extend 12 inches above finish ground. Cable used for back-guying shall be attached to the anchor rod by a short bail automatic type grip and to the guy hook on the pole by a preformed type grip. The pole shall be drilled 14 inches from top and a 5/8 inch oval eyebolt installed with one square flat washer and square nut on the messenger side and one square washer, square nut and guy hook on the opposite side. Guy cable shall be a minimum seven strand, 5/16 inch diameter wire with a breaking strength of 8,000 pounds, double galvanized in accordance with AASHTO M 111.

The CCTV Cabinet shall be installed on the wood pole with the top of the cabinet at a max height of 6 feet above ground. The cabinet shall be mounted to the pole with stainless steel banding or bolted to stainless steel Unistrut frame and securing it to the pole with stainless steel lag bolts. The cabinet door shall face away from roadway.

Riser conduit shall exit the cabinet from the bottom via a sealed GRMC conduit body and transition into 2” GRMC running 20 feet up the pole above the cabinet and terminating in a GRMC weatherhead.

643.04 Method of Measurement

Wood Poles will be measured by each pole installed, guyed, and accepted. The pole mounted NEMA 4X CCTV controller cabinets, GRMC riser and weatherhead, along with all mounting hardware, couplings, brackets and conduit bodies shall be incidental to the wood pole item.

643.05 Basis of Payment

The accepted quantity of wood poles will be paid for at the contract unit price for each pole. Payment shall be full compensation for furnishing, installing the poles, guys wire, NEMA 4X CCTV controller cabinet, mounting hardware, GRMC riser, weatherhead, and all other materials, equipment and labor necessary to install Wood Poles and Cabinets.

Payment will be made under the following Pay Items:

<u>Pay Item</u>		<u>Pay Unit</u>
643.972	Wood Pole	Each

SPECIAL PROVISION
SECTION 648
RAILROAD TRACK CONSTRUCTION
(Ballast)

Description. This work shall consist of furnishing, placing and shaping ballast to the lines and grades as shown on the Plans.

MATERIALS

New ballast shall consist of crushed, quarried and washed stone that meets the requirements specified in Section 703.33 (Stone Ballast).

CONSTRUCTION REQUIREMENTS

Method of Measurement. Ballast shall be measured by the ton. Weigh slips shall be provided for each load delivered and incorporated into the project.

Basis of Payment. Ballast shall be paid for by the ton in place and measured.

Pay Item
648.312 Ballast

Pay Unit
Ton

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.

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>
502(19)	Bridge Drains	12/08/2021
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(17)	Midway Splice Guardrail Transition	6/10/2022
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
627(07)	Crosswalk	2/22/2022
627(08)	Crosswalk	2/22/2022
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’.

Plans Revise this paragraph by removing “**Standard Details, Supplemental Standard Details**” from the first sentence.

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 105
GENERAL SCOPE OF WORK

105.10.2 Requirements Applicable to All Contracts Under section A, number 2, in the first sentence of the first paragraph, revise this Section by replacing the word “handicap” in two places with the word “disability” so it now reads:

“2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, State that all qualified applicants will receive consideration for employment without regard to race, color, sexual orientation, religious creed, sex, national origin, ancestry, age, physical disability, or mental disability.”

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 108
PAYMENT

108.3 Retainage Revise the third paragraph of this section so that it reads:

“Upon Final Acceptance, and determination by the department that there are no claims either by or on the Contractor or Subcontractors; no over payments by the department; no LDs due; and no disincentives due, the Department will reduce Retent to 1% of the original Contract Award amount, or \$100,000, whichever is less, as it deems desirable and prudent.”

108.4.1 Price Adjustment for Hot Mix Asphalt Revise the first paragraph of this section by replacing the first sentence with the following:

“For each Contract, a price adjustment for performance graded binder will be made for the following pay items, when the total quantity of Hot Mix Asphalt included in these items is in excess of 500 tons, based on the estimated quantities of these items at the time of bid.”

Amend this section by adding “**Item 461.2101 Polymer Modified 9.5 mm**” to the list of Pay Items that are eligible for a price adjustment. Also add “**Item 461.2101 - 6.4%**” to the list of Asphalt percentages.

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 501 FOUNDATION PILES

501.05 Method of Measurement

c. Piles in Place Revise the third paragraph by replacing the “10” with “20” so that it reads:

Unused pile cutoffs **20** feet or more in length, except those required to accommodate the Contractor’s construction method, as discussed herein, will remain the property of the Department and will be stored at a bridge maintenance yard nearest the project. Hauling and unloading of piles will be done by the Contractor or by the Department, depending upon availability of services.

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: “

Section 502.1701, Quality Control, Revise Table 4 of this Subsection by removing it in its entirety and replacing it with:

TABLE 4
METHOD A & B MINIMUM QUALITY CONTROL TESTING REQUIREMENTS *

TEST	TEST METHOD	SAMPLING LOCATION	FREQUENCY
Gradation	AASHTO T-27 & T-11	Stockpile	One set per proposed grading before production. One set every 100 yd ³ (Min. 1 set per month)
Organic Impurities	AASHTO T-21	Stockpile	Once per fine aggregate per year **
% Absorption	AASHTO T-84 & T-85	Stockpile	Once per aggregate per year
Specific Gravity	AASHTO T-84 & T-85	Stockpile	Once per aggregate per year
Total Moisture in Aggregate	AASHTO T-255	Stockpile	One set per day's production
Free Water and Aggregate Wt.	N/A		One per day's production
% Entrained Air	AASHTO T-152	On Project	On first two loads and every third load thereafter provided consistent results are achieved
Compressive Strength	AASHTO T-22	On Project	One set per subplot
Compressive Strength	AASHTO T-22 @ 7days	On Project	One set per subplot

* Additional QC testing will be required any time a process change occurs during a placement, including changes in type or dosage of admixture. Additional testing shall include, but is not limited to, entrained air testing.

** **If the color produced is a laboratory designation Plate III, then the fine aggregate shall be tested once per month.**

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 503 REINFORCING STEEL

Section 503.07 Splicing Revise this section by removing the table and following footnote and replacing them with:

Minimum Lap Splice Length (inches)									
Bar Type	Bar Size								
	#3	#4	#5	#6	#7	#8	#9	#10	#11
Plain or Galvanized	16	20	24	29	38	47	59	72	85
Epoxy or Dual Coated	17	24	36	43	56	71	88	107	128
Stainless	19	24	30	36	47	59	73	89	107
Low-carbon Chromium	24	32	39	47	63	78	97	119	142

“The minimum lap splice lengths in the table above are based on the parameters below. When any of these parameters are altered, appropriate minimum lap splice lengths will be as shown on the Plans.

- Normal weight concrete
- Minimum 28-day concrete compressive strength from 4,000 psi to 10,000 psi
- Class B tension lap splice
- Minimum center-to-center spacing between bars of 6 inches
- Minimum clear cover of 2 inches
- Nominal reinforcing steel yield strengths
 - Low-carbon Chromium = 100 ksi
 - Stainless = 75 ksi
 - All others = 60 ksi
- Reinforcement with yield strengths greater than 75 ksi shall have beam transverse reinforcement and column ties provided over the required lap splice length in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications

When lap splices are placed horizontally in an element where the concrete depth below the splice will be 12 inches, or more, the indicated lap splice lengths shall be multiplied by a factor of 1.3.”

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

523.051 Protective Coating Revise this subsection by removing the paragraph beginning with “Anchor rods shall be galvanized...” and replacing with:

“Anchor rods shall be galvanized. When anchor rods are designated to secure bare unpainted steel or painted steel, a dielectric coating (epoxy or bituminous type coatings are acceptable) shall be applied to the anchor rod and/or adjacent steel to prevent contact between galvanized surfaces and painted or unpainted steel.”

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 $\frac{1}{4}$ inch. The vertical centerline shall not be out of plumb by more than $\frac{1}{4}$ inch.**
- b. Longitudinal dimensions shall not vary from the design dimensions by more than $\frac{1}{4}$ inch per 10 feet of barrier section and shall not exceed $\frac{3}{4}$ inches per section.**
- c. Location of anchoring holes shall not vary by more than $\frac{1}{2}$ inch from the dimensions shown in the concrete barrier details on the Plans.**
- d. Surface straightness shall not vary more than $\frac{1}{4}$ 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 SUPERSTRUCTURE

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 reflectors shall be mounted on all "w" beam guardrail and shall be either the "butterfly" type or linear delineation system panels. "Butterfly" or linear delineation panels shall be installed at approximately 62.5 foot intervals on tangents (after every tenth post) and 31.25 feet on curves (after every fifth post), and shall be centered on the guardrail beam. On Divided highways, the left-hand delineators shall be yellow and the right-hand delineators shall be silver/ white. On two-way directional highways, the right-hand side will have silver / white reflectors and no reflectorized delineator used on the left. Delineators shall have reflective sheeting that meets or exceeds the requirements of Section 719.01.

"Butterfly" reflectors shall be fabricated from high-impact, ultraviolet & weather resistant thermoplastic. Aluminum, galvanized metal or other materials shall not be used. Reflective sheeting will be applied to only one side of the delineator facing the direction of traffic and shall be centered vertically on the guardrail beam as shown in the Standard Detail 606(7).

Linear delineation system panels shall be 1.5 inches wide by approximately 11 inches nominal length, with a minimum of 5 raised lateral ridges spaced at approximately 2.25 inches. The height of each ridge shall be 0.34 inches with a 45 degree profile and a 0.28 inches radius at the top. Sheeting shall be laminated to thin gauge aluminum with a pre-applied adhesive tape on the back. Panels shall not be installed over seams or bolt heads and shall be centered horizontally on the guardrail beam; linear delineation panels shall be attached to only one guardrail beam. The guardrail beam surface shall be cleaned and prepared according to the manufacturer's instructions. Air temperature and guardrail surface temperature must be a minimum of 50 degrees F (10 C) with rising temperature at the time of installation.

Exact locations of the either the “butterfly” type or the linear delineation panels shall be approved by the Resident prior to installation.

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.

Reflectorized beam guardrail reflectors (“butterfly” type or linear delineation system panels) when identified by pay item, will be measured for payment by each.

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.

Reflectorized beam guardrail reflectors (“butterfly” type and the linear delineation panels) will not be paid for directly but will be considered incidental to all new guardrail items. The Contractor shall furnish and install either the “butterfly” type or linear delineation panels, at its discretion, for new guardrail items.

Reflectorized beam guardrail reflectors (either “butterfly” type or linear delineation system panels) will be paid for under the applicable pay items for installation in conjunction with Adjust, Modify, Remove and Reset, Remove Modify and Reset guardrail items. The accepted quantity of “butterfly” type or linear delineation system panels will be paid for at the contract unit price each for all work and materials furnished to install, complete in place, including all incidentals necessary to complete the work.

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
606.352	Reflectorized Beam Guardrail Delineators (“Butterfly” type)	Each
606.3521	Linear Delineation System Panel	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
606.3671	Replace Unusable Offset Blocks	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 608
SIDEWALKS

Section 608.022 Detectable Warning Materials Standard Revise this section by removing the last sentence of this section beginning with “Concrete...” and replacing it with “**Concrete shall meet the requirements of Section 608.021, Sidewalk Materials, of this specification or may be a prepackaged concrete mix from the Department’s Qualified Products List (QPL).**”

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. The Contractor shall submit a concrete design for the Portland Cement Concrete, with a minimum designated compressive strength of 3000 PSI meeting the requirements of Class S or Class Fill Concrete. The Contractor may elect to choose a Prepackaged Concrete Mix from the Department’s Qualified Products list (QPL). Concrete backfill shall be completed in conformance with a Department supplied concrete backfill detail.”

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

Section 626.021 Miscellaneous Materials Revise this section by removing the fourth paragraph beginning with “ All Concrete for concrete encasement...” and replace it with “**All concrete for concrete encasement of conduit shall be Class S or Class Fill concrete in accordance with the applicable requirements of Section 502 – Structural Concrete, or a Prepackaged Concrete Mix from the Department’s Qualified Products List (QPL).**”

Section 626.031 Conduit Revise the fifth paragraph beginning with “After the trench has been...” by removing the last sentence beginning with “Where concrete encasement...” and replacing it with “**Where concrete encasement is required around the conduit, the concrete shall meet Class S, Class Fill in accordance with the applicable requirements of Section 502 – Structural Concrete, or a Prepackaged Concrete Mix from the Department’s Qualified Products List (QPL).**”

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.”

Revise this subsection by replacing the paragraph beginning with “ If the final reflectivity values are less...” with the following:

The final reflectivity will be acceptable if 90 percent or more of the painted pavement lines and markings meet the specified minimum value. If less than 90 percent of the painted pavement lines and markings meet the specified minimum final reflectivity values, the Contractor shall repaint those areas not meeting required reflectivity at no cost to the Department.

If, after repainting, analysis of the final reflectivity values results in the need for a second repainting, the Contractor will submit in writing a plan of action to meet the reflectivity minimums prior to continuing any work. Once the plan has been reviewed and approved by the Department, the Contractor shall reapply at no cost to the Department.

SECTION 637
DUST CONTROL

Revise this section by removing it in its entirety.

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.”

643.023 Traffic Signal Structures Remove the third paragraph and replace it with the following:

“Traffic signal support structures shall be classified as Fatigue Category III if they are located on roads with a speed limit of 35 mph or less, Fatigue Category II if they are located on roads with a speed limit of greater than 35 mph, and Fatigue Category I if noted on the Contract Plans. Fatigue Importance Factors shall be as specified in Table 11.6-1 (Fatigue Importance Factors). Fatigue analyses are not required for span-wire (strain) pole traffic signal support structures with heights of 55 feet or less unless required by the current edition of AASHTO “LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals”.

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 if 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 701
STRUCTURAL CONCRETE RELATED MATERIAL

701.01 Portland Cement and Portland Pozzolan Cement Amend the first sentence of Paragraph 3 by adding “**or Type 1L Portland Limestone cement**” so that it reads:
“**A Type IP (MS) Portland-pozzolan cement (blended hydraulic cement with moderate sulfate resistance) or Type 1L Portland Limestone cement meeting the requirements of AASHTO M 240, may be used instead of Type II or where Type I Portland cement, meeting the requirements of AASHTO M 85, is allowed.**”

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
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 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			
	A	AA	S	LATEX
Grading	A	AA	S	LATEX
Aggregate Size	1 inch	3/4 inch	1 1/2 inch	1/2 inch
2 inch			100	
1 1/2 inch	100		95-100	
1 inch	95-100	100	-	
3/4 inch	-	90-100	35-70	100
1/2 inch	25-60	-	-	90-100
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:

- a. Class F Coal Fly Ash meeting the requirements of AASHTO M 295
- b. Ground Granulated Blast Furnace Slag (Grade 100 or 120) meeting the requirements of AASHTO M 302
- c. Densified Silica Fume meeting the requirements of AASHTO M 307
- d. Lithium-based admixtures
- e. 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
¾ 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 ½ in 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
½ inch	45-70	35-75
¼ 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 709 REINFORCING STEEL AND WELDED STEEL WIRE FABRIC

709.01 Reinforcing Steel Remove the second paragraph of Section 709.01 of the standard specification beginning with “Low-Carbon, Chromium,...” and replace with the following:

“ Low-carbon, chromium, reinforcing steel shall be deformed bars conforming to the requirements of ASTM A1035. Bars shall be Grade 100 and alloy Type CS unless otherwise specified on the Plans. “

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.

710.08 Guardrail Hardware Revise this subsection by replacing “AASHTO M 298” with “ASTM B695”

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 713
STRUCTURAL STEEL AND RELATED MATERIAL

Section 713.02 High Strength Bolts

Revise the second sentence of this subsection so that it reads “**Nuts shall meet the requirement of ASTM A563**”. Revise the third sentence of this subsection so that it reads “**Circular and beveled washers shall conform to the requirement of ASTM F436**”.

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.

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT BY RULE NOTIFICATION FORM**

(For use with DEP Regulation, Natural Resources Protection Act - Permit by Rule Standards, Chapter 305)

APPLICANT INFORMATION (Owner)				AGENT INFORMATION (If Applying on Behalf of Owner)			
Name:	Maine DOT c/o Danielle Tetreau			Name:			
Mailing Address:	WIN# 22809.50			Mailing Address:			
Mailing Address:	16 State House Station			Mailing Address:			
Town/State/Zip:	Augusta, ME 04333			Town/State/Zip:			
Daytime Phone #:	(207) 592-2358	Ext:		Daytime Phone #:		Ext:	
Email Address:	danielle.tetreau@maine.gov			Email Address:			
PROJECT INFORMATION							
Part of a larger project? (check 1):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	After the Fact? (check 1):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Project involves work below mean low water? (check 1):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Name of waterbody:	Fore River adjacent to Project
Project Town:	Portland	Town Email Address:	planning@portlandmaine.gov		Map and Lot Number:	071 F002 & 060 F001	
Brief Project Description:	This is a resubmission of PBR 70019, which expired. Construction of a 0.52 mile roadway to connect the International Marine Terminal to the Merrill Terminal along Commercial St and avoids wide and heavy loads on Commercial St. See attached for more information.						
Project Location & Brief Directions to Site:	Located at 460 Commercial Street in downtown Portland. See attached for more information.						

PERMIT BY RULE (PBR) SECTIONS (Check at least one): I am filing notice of my intent to carry out work that meets the requirements for Permit-by-Rule (PBR) under DEP Rules, [Chapter 305](#). I and my agent(s), if any, have read and will comply with all of the standards in the Sections checked below.

- | | | |
|---|---|---|
| <input type="checkbox"/> Sec. (2) Act. Adj. to Prot. Natural Res. | <input type="checkbox"/> Sec. (9) Utility Crossing | <input type="checkbox"/> Sec. (16) Coastal Sand Dune Projects |
| <input type="checkbox"/> Sec. (3) Intake Pipes | <input type="checkbox"/> Sec. (10) Stream Crossing | <input type="checkbox"/> Sec. (17) Transfer/Permit Extension |
| <input type="checkbox"/> Sec. (4) Replacement of Structures | <input checked="" type="checkbox"/> Sec. (11) State Transportation Facilities | <input type="checkbox"/> Sec. (18) Maintenance Dredging |
| <input type="checkbox"/> Sec. (6) Movement of Rocks or Veg. | <input type="checkbox"/> Sec. (12) Restoration of Natural Areas | <input type="checkbox"/> Sec. (19) Act. Near SVP Habitat |
| <input type="checkbox"/> Sec. (7) Outfall Pipes | <input type="checkbox"/> Sec. (13) F&W Creat./Water Qual. Improv. | <input type="checkbox"/> Sec. (20) Act. Near Waterfowl/Bird Habitat |
| <input type="checkbox"/> Sec. (8) Shoreline Stabilization | <input type="checkbox"/> Sec. (15) Public Boat Ramps | |

NOTE: Municipal permits also may be required. Contact your local code enforcement office for information. Federal permits may be required for stream crossings and for projects involving wetland fill. Contact the Army Corps of Engineers at the Maine Project Office for information.

NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS AND FEE

- Attach** all required submissions for the PBR Section(s) checked above. The required submissions for each PBR Section are outlined in Chapter 305 and may differ depending on the Section you are submitting under.
- Attach** a location map that clearly identifies the site (U.S.G.S. topo map, Maine Atlas & Gazetteer, or similar).
- Attach** Proof of Legal Name if applicant is a corporation, LLC, or other legal entity. Provide a copy of Secretary of State's registration information (available at <http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x>). Individuals and municipalities are not required to provide any proof of identity.

FEE: Pay by credit card at the [Payment Portal](#). The Permit-by-Rule fee may be found here <https://www.maine.gov/dep/feeschedule.pdf> and is currently \$256.


- Attach** payment confirmation from the Payment Portal when filing this notification form.

Direct Billing

Signature & Certification:

- I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules.
- I understand that this PBR becomes effective 14 calendar days after receipt by the Department of this completed form, the required submissions, and fee, *unless the Department approves or denies the PBR prior to that date.*

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in Chapter 305 rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant (may be typed):		Date:	12/01/2022
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Keep a copy as a record of permit. Email this completed form with attachments to DEP at: DEP.PBRNotification@maine.gov
DEP will send a copy to the Town Office as evidence of DEP's receipt of notification. No further authorization will be issued by DEP after receipt of notice. A PBR is valid for two years, except Section 4, "Replacement of Structures," are valid for three years. **Work carried out in violation of the Natural Resources Protection Act or any provision in Chapter 305 is subject to enforcement.**

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT BY RULE NOTIFICATION FORM
 (For use with DEP Regulation, Natural Resources Protection Act- Permit by Rule Standards, Chapter 305)
 PLEASE TYPE OR PRINT IN **BLACK INK ONLY**

APPLICANT INFORMATION (Owner)		AGENT INFORMATION (If Applying on Behalf of Owner)	
Name:	MaineDOT c/o Danielle Tetreau	Name:	HNTB c/o Judy Gates
Mailing Address:	16 State House Station	Mailing Address:	340 County Road, Suite 6C
Town:	Augusta	Town:	Westbrook
State and Zip Code:	Maine, 04333	State and Zip Code:	Maine, 04092
Daytime Phone #:	207-592-2358	Daytime Phone #:	207-228-0933
Email Address:	Danielle.Tetreau@maine.gov	Email Address:	JUGates@hntb.com

PROJECT INFORMATION							
Part of a larger project? (check one):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	After the Fact? (check one):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Project involves work below mean low water? (check one):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Name of waterbody:	Fore River adjacent to project site
Project Town:	Portland		Town Email Address:	Planning@portlandmaine.gov		Map and Lot Number:	071 F002 & 060F001
Brief Project Description:	Construction of a 0.52 mile roadway to connect the International Marine Terminal to the Merrill Terminal along Commercial Street in Portland Maine. The purpose of this roadway is to transport heavy and wide loads between the two facilities. Currently, these heavy and wide loads travel on Commercial Street. This requires special overweight/oversize permits, causes traffic interruptions and puts heavy wear on Commercial Street.						
Project Location & Brief Directions to Site:	Take Exit 5 on I-295 in Portland. Take Fore River Parkway to the east. At the intersection with the Veteran's Memorial Bridge, take a left turn to continue onto Fore River Parkway, which will become Commercial Street. The project site is the International Marine Terminal located at 460 Commercial Street.						

PERMIT BY RULE (PBR) SECTIONS (Check at least one): I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Rules, Chapter 305. I and my agents, if any, **have read and will comply with all of the standards in the Sections checked below.**

- | | | |
|---|---|--|
| <input type="checkbox"/> Sec. (2) Act. Adj. to Protected Natural Res. | <input type="checkbox"/> Sec.(10) Stream Crossing | <input type="checkbox"/> Sec. (17) Transfers/Permit Extension |
| <input type="checkbox"/> Sec. (3) Intake Pipes | <input checked="" type="checkbox"/> Sec. (11) State Transportation Facil. | <input type="checkbox"/> Sec. (18) Maintenance Dredging |
| <input type="checkbox"/> Sec. (4) Replacement of Structures | <input type="checkbox"/> Sec. (12) Restoration of Natural Areas | <input type="checkbox"/> Sec. (19) Activities in/on/over significant vernal pool habitat |
| <input type="checkbox"/> Sec. (5) REPEALED | <input type="checkbox"/> Sec. (13) F&W Creation/Enhance/Water Quality Improvement | <input type="checkbox"/> Sec. (20) Activities located in/on/over high or moderate value inland waterfowl & wading bird habitat or shorebird feeding & roosting areas |
| <input type="checkbox"/> Sec. (6) Movement of Rocks or Vegetation | <input type="checkbox"/> Sec. (14) REPEALED | |
| <input type="checkbox"/> Sec. (7) Outfall Pipes | <input type="checkbox"/> Sec. (15) Public Boat Ramps | |
| <input type="checkbox"/> Sec. (8) Shoreline stabilization | <input type="checkbox"/> Sec. (16) Coastal Sand Dune Projects | |
| <input type="checkbox"/> Sec. (9) Utility Crossing | | |

NOTE: Municipal permits may also be required. Contact your local code enforcement office for more information. Federal permits may be required for stream crossings and for projects involving wetland fill. Contact the Army Corps of Engineers at the Maine Project Office for more information.


NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS

- ✓ **Attach** all required submissions for the PBR Section(s) checked above. The required submissions for each PBR Section are outlined in Chapter 305 and may differ depending on the Section you are submitting under.
 - ✓ **Attach** a check for the correct fee made payable to: "Treasurer, State of Maine". The current fee for NRPA PBR Notifications can be found at the Department's website: <http://www.maine.gov/dep/feeschedule.pdf>
 - ✓ **Attach** a location map that clearly identifies the site (U.S.G.S. topo map, Maine Atlas & Gazetteer, or similar).
 - ✓ **Attach Proof of Legal Name** if applicant is a corporation, LLC, or other legal entity. Provide a copy of Secretary of State's registration information (available at <http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x>)
- Individuals and municipalities are **not** required to provide any proof of identity.

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules.

I also understand that this PBR becomes effective 14 calendar days after receipt by the Department *unless the Department approves or denies the PBR prior to that date.*

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in the rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant:		Date:	June 1, 2020
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Keep a copy as a record of per its via certified mail or hand deliver to the Maine Dept. of Environmental Protection at the appropriate regional office listed below. The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. **Work carried out in violation of any standard is subject to enforcement action.**

AUGUSTA DEP
17 STATE HOUSE STATION
AUGUSTA, ME 04333-0017
(207)287-7688

PORTLAND DEP 312
CANCO ROAD
PORTLAND, ME 04103
(207)822-6300

BANGOR DEP 106
HOGAN ROAD
BANGOR, ME 04401
(207)941-4570

PRESQUE ISLE DEP 1235
CENTRAL DRIVE
PRESQUE ISLE, ME 04769
(207)764-0477

OFFICE USE ONLY	Ck.#	Date	Staff	Staff	137 After Photos
PBR #	FP		Acc. Date	Def. Date	

11. State transportation facilities

A. Applicability

- (1) This section applies to the maintenance, repair, reconstruction, rehabilitation, replacement or minor construction of a State Transportation Facility carried out by, or under the authority of, the Maine Department of Transportation (MaineDOT) or the Maine Turnpike Authority, including any testing or preconstruction engineering, and associated technical support services.
- (2) This section does not apply to an activity within a coastal sand dune system.

NOTE: The construction of a transportation facility other than roads and associated facilities may be subject to the Storm Water Management Law, 38 M.R.S.A. Section 420-D.

B. Standards

- (1) Photographs of the area to be altered by the activity must be taken before work on the site begins. The photographs must be kept on file and be made available at the request of the DEP.
- (2) The activity must be reviewed by the Department of Inland Fisheries and Wildlife and the Department of Marine Resources, as applicable. The applicant must coordinate with the reviewing agencies and incorporate any recommendations from those agencies into the performance of the activity.
- (3) All construction activities undertaken must be detailed in a site-specific Soil Erosion and Water Pollution Control Plan and conducted in accordance with MaineDOT's Best Management Practices for Erosion and Sediment Control, dated January 2000, and Standard Specifications, dated December 2002.
- (4) Alignment changes may not exceed a distance of 200 feet between the old and new center lines in any natural resource.
- (5) The activity may not alter more than 300 feet of shoreline (both shores added together) within a mile stretch of any river, stream or brook, including any bridge width or length of culvert.
- (6) The activity may not alter more than 150 feet of shoreline (both shores added together) within a mile stretch of any outstanding river segment identified in 38 M.R.S.A. 480-P, including any bridge width or length of culvert.
- (7) The activity must minimize wetland intrusion. The activity is exempt from the provisions of Chapter 310, the Wetland and Waterbodies Protection Rules, if the activity alters less than 15,000 square feet of natural resources per mile of roadway (centerline measurement) provided that the following impacts are not exceeded within the 15,000 square foot area:
 - (a) 1,000 square feet of coastal wetland consisting of salt tolerant vegetation or shellfish habitat; or

- (b) 5,000 square feet of coastal wetland not containing salt tolerant vegetation or shellfish habitat; or
- (c) 1,000 square feet of a great pond.

All other activities must be performed in compliance with all sections of Chapter 310, the Wetland Protection Rules, except 310.2(C), 5(A), 9(A), 9(B) and 9(C).

- (8) The activity may not permanently block any fish passage in any watercourse containing fish. The applicant must coordinate with the reviewing agencies listed in paragraph 2 above to improve fish passage and incorporate any recommendations from those agencies into the performance of the activity.

NOTE: For guidance on meeting the design objectives for fish passage, including peak flow, maximum velocity, mining depth and gradient, see the MaineDOT Waterbody and Wildlife Crossing Policy and Design Guide (July 2008), developed in conjunction with state and federal resource and regulatory agencies.

- (9) Rocks may not be removed from below the normal high water line of any coastal wetland, freshwater wetland, great pond, river, stream or brook except to the minimum extent necessary for completion of work within the limits of construction.
- (10) If work is performed in a river, stream or brook that is less than three feet deep at the time and location of the activity, the applicant must isolate the work area from the resource and divert stream flows around the work area, maintaining downstream flows while work is in progress.
- (11) Wheeled or tracked equipment may not operate in the water. Equipment operating on the shore may reach into the water with a bucket or similar extension. Equipment may cross streams on rock, gravel or ledge bottom. If avoiding the operation of wheeled or tracked equipment in the water is not possible, the applicant must explain the need to operate in the water. Approval from the DEP to operate in the water must be in writing, and any recommendations from the DEP must be incorporated into the performance of the activity.
- (12) All wheeled or tracked equipment that must travel or work in a vegetated wetland area must travel and work on mats or platforms.
- (13) Any debris or excavated material must be stockpiled either outside the wetland or on mats or platforms. Erosion and sediment control best management practices must be used, where necessary, to prevent sedimentation. Any debris generated during the activity must be prevented from washing downstream and must be removed from the wetland or water body. Disposal of debris must be in conformance with the Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Section 1301 *et seq.*
- (14) Work below the normal high water line of a great pond, river, stream or brook must be done at low water except for emergency work or work agreed to by the resource agencies listed in paragraph 2 above.
- (15) Perimeter controls must be installed before the work starts. Disturbance of natural resources beyond the construction limits shown on the plans is not allowed under this rule.

NOTE: Guidance on the location of construction limits can be obtained from the on site Construction Manager.

- (16) The use of untreated lumber is preferred. Lumber pressure treated with chromated copper arsenate (CCA) may be used only if necessary and only if use is allowed under federal law and not prohibited from sale under 38 M.R.S.A. 1682, and provided it is cured on dry land in a manner that exposes all surfaces to the air for a period of at least 21 days prior to construction. Wood treated with creosote or pentachlorophenol may not be used where it will contact water.
- (17) A temporary road for equipment access must be constructed of crushed stone, blasted ledge, or similar materials that will not cause sedimentation or restrict fish passage. Such roads must be completely removed at the completion of the activity. In addition, any such temporary roads which are in rivers, streams or brooks, must allow for a passage of stormwater flows associated with a 10-year storm.
- (18) Non-native species may not be planted in restored areas.
- (19) Disposal of debris must be in conformance with Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Sections 1301 *et seq.*
- (20) Disturbance of vegetation must be avoided, if possible. Where vegetation is disturbed outside of the area covered by any road or structure construction, it must be reestablished immediately upon completion of the activity and must be maintained.
- (21) A vegetated area at least 25 feet wide must be established and maintained between any new stormwater outfall structure and the high water line of any open water body. A velocity reducing structure must be constructed at the outlet of the stormwater outfall that will create sheet flow of stormwater, and prevent erosion of soil within the vegetated buffer. If the 25 foot vegetated buffer is not practicable, the applicant must explain the reason for a lesser setback in writing. Approval from the DEP must be in writing and any recommendations must be incorporated into the activity.

C. Definitions. The following terms, as used in this chapter, have the following meanings, unless the context indicates otherwise:

- (1) Diversion. The rerouting of a river, stream or brook around a construction site and then back to the downstream channel.
- (2) Fill. a. (verb) To put into or upon, supply to, or allow to enter a water body or wetland any earth, rock, gravel, sand, silt, clay, peat, or debris; b. (noun) Material, other than structures, placed in or immediately adjacent to a wetland or water body.
- (3) Floodplain wetlands. Freshwater wetlands that are inundated with flood water during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Agency or other site specific information.
- (4) Riprap. Heavy, irregularly shaped rocks that are fit into place, without mortar, on a slope as defined in the MaineDOT Standard Specifications, dated **November 2014**.

**SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(Soil Management)**

General: The work under this specification shall be performed in conformance with all the procedures and requirements described herein for the following activities: contaminated soil handling, reuse, temporary stockpiling, transportation, storage and disposal, and contaminated water handling, storage, treatment, and disposal. This specification also addresses contaminated soil location, identification, and classification. The intent of this specification is to ensure that any contaminated soil and/or groundwater encountered during construction will be managed in a manner that protects worker health and safety, public welfare, and the environment.

Environmental Site Conditions: The Maine Department of Transportation (MaineDOT) has conducted an environmental assessment related to the planned work at the International Marine Terminal expansion project. The environmental assessment for the project area was completed to obtain a general understanding of the environmental conditions along the project corridor. The assessment included a review of relevant Maine Department of Environmental Protection's (MDEP's) and Environmental Protection Agency's (EPA's) databases and field reconnaissance of the project area. During this work it was noted that the southwestern and western portions of the project area (former Unitol site) have a variety of subsurface environmental concerns. These concerns are associated with the historical operation of a coal degasification facility; contaminants consist primarily of oil-like-materials (OLM) and other coal-gasification-related-materials (CGRM). Existing data also indicate that shallow soils in the remaining area of the project have been affected by heavy metals and polyaromatic hydrocarbons (PAHs). It appears that these soils have been influenced by historical railroad operations. The results of the environmental assessment are available for review from MaineDOT's Environmental Office in Augusta (207-624-3000). A copy of the Soil Management Plan (SMP) (Haley & Aldrich, Inc. – March 2015) is provided in this package directly following this Special Provision document. The SMP shall be utilized in combination with this Special Provision as a guide for handling impacted soil / groundwater - identification, classification, and management.

Identified Area of Contamination: MaineDOT's environmental assessment identified the project area as having shallow and deep soil contamination. Analytical laboratory results of samples taken from the borings associated with previous work by others on the project site indicate varying levels of OLM, CGRM, PAHs and metals are present in soils. These concentrations define the soils as Special Waste per State remedial guidelines.

Identifying and Screening Contaminated Soil and Groundwater: Excavated soils will be considered contaminated and will need to be either reused on site or taken to an MDEP approved facility for proper management.

Handling and Disposition of Soil Materials: In general, soils excavated during construction shall be handled as follows:

- Soils shall not be excavated without prior approval by the Resident.
- The Contractor shall make every attempt to reuse the soils onsite. If possible, the soil should be placed back into the area of excavation. However, it may also be reused elsewhere on site if the material is covered with a cap. The Contractor is responsible for complying with the SMP. The SMP document is located in this package following this Special Provision.
- If soils cannot be reused on-site, the Contractor shall arrange and undertake disposal of all impacted soil at a landfill or treatment facility licensed to accept contaminated soil. The Contractor is responsible for all additional testing required by the receiving facility. If the Contractor proposes other disposal or treatment options, the Contractor is solely responsible for obtaining the associated permits and approvals from all relevant Municipal, State, and Federal agencies at no additional cost to the State.

The Resident is responsible for signing any manifests or bills of lading required to transport and dispose of the impacted soil. The Resident will send all manifests and bills of lading to MaineDOT, Environmental Office, Station 16, Augusta, Maine 04333.

Health and Safety/Right-to-Know: Contractors and subcontractors are required to notify their workers of the history of the site and contamination that may be present and to be alert for evidence of contaminated soil and groundwater. The Contractor shall notify the Resident at least three business days prior to commencing any excavation.

The Contractor shall prepare a site-specific Health and Safety Plan (HASP) for its workers and subcontractors who may work in the contaminated areas of the site. A Qualified Health and Safety Professional shall complete the HASP. The Qualified Health and Safety Professional will be an expert in field implementation of the following federal regulations:

- 29 CFR 1910.120 or Hazardous Waste Operations and
- 29 CFR 1926.65 Emergency Response
- 29 CFR 1910.134 Respiratory Protection
- 29 CFR 1926.650 Subpart D - Excavations
- 29 CFR 1926.651 General Requirements
- 29 CFR 1926.652 Requirements for Protective Systems

MaineDOT is voluntarily ameliorating the soil contamination associated with this initiative. Given that this is a voluntary cleanup effort approved by a regulatory agency, OSHA requirements as defined in 29 CFR 1910.120 apply. These requirements mandate that workers

and any subcontractors working in the contaminated area shall comply with all OSHA regulations for Hazardous Waste Operations and Emergency Response, including a 40-hour initial hazardous waste operations certification [OSHA 1910.120(e)], annual 8-hour refresher course within the last 12 months and medical surveillance [OSHA 1910.120(f)] within the last 12 months.

The Contractor shall designate a person to provide direct on-site supervision of the work in the contaminated areas. This person shall have the training under OSHA 1910.120 (e) as noted above and in addition be qualified as a construction Competent Person. It is the responsibility of the Competent Person to make those inspections necessary to identify situations that could result in hazardous conditions (e.g., possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions), and then to ensure that corrective measures are taken.

Submittals: The Contractor shall submit a site-specific Health and Safety Plan (HASP) to the Resident at least two weeks in advance of any excavation work on the project. The Contractor shall not proceed with work until MaineDOT has reviewed the plan and notified the Contractor that it is acceptable.

Health and Safety Monitoring: Within the identified contaminated area of the project, the Contractor's designated on-site person shall monitor the work zone for those constituents specified in the Contractor's HASP. The Contractor shall provide all required health and safety monitoring equipment.

Dewatering: Groundwater may be encountered and its removal necessary to complete the work. It will be treated as "contaminated" water. The Contractor shall inform the Resident before any dewatering commences. The "contaminated" water shall be pumped into a temporary holding tank(s). The Contractor will be responsible for the procurement of any holding tank(s). Any testing, treatment and/or disposal of the stored, contaminated water shall be undertaken by the Contractor in accordance with applicable Federal, State, and local regulatory requirements.

On-Site Water Storage Tanks – Materials: If dewatering within the identified contaminated area becomes necessary, the holding tanks utilized for temporary storage of contaminated water pumped from excavations shall be contamination free and have a minimum capacity of 2,000 gallons.

Dust Control: The Contractor shall employ dust control measures in the contaminated area to minimize the creation of airborne dust during the construction process. As a minimum, standard dust control techniques shall be employed where heavy equipment and the public will be traveling. These may include techniques such as watering-down the site or spreading hygroscopic salts.

Unanticipated Contamination: If the Contractor encounters previously undiscovered soil / groundwater impacts or potentially hazardous conditions related to contamination, the Contractor shall immediately suspend work and secure the area. The Contractor will then notify the Resident immediately. These potentially hazardous conditions include, but are not limited to,

buried containers, drums, tanks, “oil saturated soils”, strong odors, or the presence of petroleum sufficient to cause a sheen on the groundwater. The area of potential hazard(s) shall be secured to minimize health risks to workers and the public, and to prevent a release of contaminants into the environment. The source of any suspected contamination shall be evaluated by the Resident (or MaineDOT’s Environmental Office). As appropriate, the Resident will notify the MDEP’s Response Services Unit in Portland and MaineDOT’s Environmental Office. The Portland Fire Department must also be notified prior to removal of buried storage tanks and associated piping. The Contractor will evaluate the impact of the hazard on construction, amend the HASP if necessary, and with the Resident’s approval, recommence work in accordance with the procedures of this Special Provision.

Method of Measurement: There will be no measurement for environmental screening and identification of contaminated soil material as all soil is considered as contaminated.

Measurement for the development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel shall be by lump sum.

Measurement for the off-site disposal of impacted soil will be by the ton of Special Excavation.

There will be no measurement for additional laboratory testing of contaminated soil that is required by the landfill or treatment facility. Testing is incidental to the disposal of Special Excavation.

Measurement for the following items shall be according to Subsection 109:04 (“Change Order”/Force Account): any necessary contaminated water holding tank(s); and treatment or disposal of any contaminated groundwater.

Basis of Payment: There will be no payment for environmental screening and identification of contaminated soil material as all soil is considered as contaminated.

Payment for the development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel shall be by the lump sum

Payment for off-site disposal of impacted soils at a regulatory approved facility shall be by the ton of Special Excavation.

Payment for the following items shall be according to Subsection 109:04 (“Change Order”/Force Account): any necessary contaminated water holding tank(s); and treatment or disposal of any contaminated groundwater.

<u>Pay Item</u>	<u>Pay Unit</u>
203.2312 Health and Safety Plan (HASP)	Lump Sum
203.233 Disposal of Special Excavation	Ton

SOIL MANAGEMENT PLAN
International Marine Terminal Site
West Commercial Street
Portland, Maine

Prepared for:
MaineDOT
Augusta, Maine

Amended by:
Haley & Aldrich, Inc.
Portland, Maine

Revision	Date	Description
0	Mar 2015	MaineDOT Ownership – Initial Issue

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List of Acronyms and Abbreviations

AMEC	AMEC Environment & Infrastructure, Inc.
CGRM	coal gasification-related material
HAZWOPER	Hazardous Waste Operations and Emergency Response Standard
IMT	International Marine Terminal
MaineDOT	Maine Department of Transportation
MEDEP	Maine Department of Environmental Protection
MGP	manufactured gas plant
NAPL	Non-Aqueous Phase Liquid
NGL	NGL Energy Partners LP
NU	Northern Utilities, Inc. d/b/a Unitil
O&M	Operations and Maintenance
OSHA	U.S. Occupational Safety & Health Administration
Property	Former Unitil and Pan Am parcels – West Commercial Street
RAG	Remedial Action Guidelines
SMP	Soil Management Plan
SSHSP	Site Specific Health and Safety Plan
SVOC	semi-volatile organic compounds
VRAP	Voluntary Response Action Program
ESA	Environmental Site Assessment

1. Introduction

The Maine Department of Transportation (MaineDOT) is currently expanding the existing International Marine Terminal (IMT) along the Fore River in Portland, Maine (see Figure 1, Project Locus). The proposed expansion plans consisted of the acquisition of properties located to the west of the existing IMT facility that included parcels formerly operated by Northern Utilities, Inc., d/b/a Unitil (Unitil) and properties formerly owned by New Yard, LLC and Pan Am Railroad. The acquired Unitil parcel was historically occupied and utilized by the Portland Gas Works operations that resulted in several environmental conditions and concerns that were effectively addressed through Unitil's participation in MEDEP's Voluntary Response Action Program (VRAP). The remedial approach implemented at the Unitil property was outlined in a MEDEP issued VRAP No Action Assurance letter dated 1 June 2012 and incorporated into the amended Soil Management Plan (SMP).

The recently acquired property from New Yard is located immediately west of the IMT facility and bisects the former Unitil parcel; the former Pan-Am parcel is located to the west of the new boat yard facility being constructed along the Fore River adjacent to the western portion of the former Unitil property. Previously completed investigations on the former New Yard and Pan Am parcels did not identify significant environmental issues related to the former manufactured gas plant (MGP) operations. However, completed analytical soil testing collected from near surface samples identified soil impacts from historical railroad operations resulting in slightly elevated levels of semi-volatile organic compounds (PAHs) and select metals; similar to the detected soil impacts addressed by the Unitil VRAP. Due to the similarly encountered environmental conditions and to ensure consistency, MaineDOT requested MEDEP approval to utilize the remedial actions presented in the 1 June 2012 No Action Assurance letter for construction activities associated with the former New Yard and Pan Am property. In a letter dated 19 September 2014, MEDEP granted approval that the proposed remedial actions previously outlined for the Unitil property in the 1 June 2012 VRAP No Action Assurance letter is appropriate for similar conditions encountered on the acquired Pan Am parcels.

This Soil Management Plan (SMP) was prepared by Haley & Aldrich for MaineDOT to recognize the change in the property owner and incorporate the former New Yard and Pan Am properties as part of the Site. To ensure consistency, MaineDOT used information contained in the SMP originally developed by Unitil for this plan. As previously indicated, this SMP is intended for construction and maintenance activities associated with excavations on all the parcels associated with the IMT Expansion project.

1.1 SITE DESCRIPTION AND BACKGROUND

The IMT property expansion/acquisition consists of approximately 17.9 acres that includes two separate parcels acquired from Unitil located in the eastern area of the site property and two parcels acquired from Pan Am (see Figure 2). The two former Unitil properties, separated by former Pan Am property, consist of a northern triangular-shaped parcel (Inland Parcel) that includes the existing propane storage/distribution facility and a southern irregular shaped parcel along the Fore River (Shoreline Parcel). The northern parcel acquired from Unitil currently includes the propane storage/distribution facility occupying the western portion of this parcel.

The acquired eastern Pan Am property extends from the Casco Bay Bridge with two finger-like extensions to the west; the southern extension includes the property between the two Unitil parcels; and the northern finger extending from the northern boundary of the Inland Unitil parcel to West Commercial Street continuing in a westerly direction to the northwest corner of the New Yard, LLC property (see Figure 2). The acquired western Pan Am parcel is approximately 50 to 100 ft in width extending from the intersection of Cassidy Point Drive and West Commercial Street to the west, traversing in an easterly direction parallel to West Commercial Street extending to the western boundary of the New Yard LLC property and the above-mentioned Pan Am parcel (see Figure 2).

1.1.1 Former Unitil Parcels

This portion of the site property consists of two parcels of land, formerly identified as being located at 40 West Commercial Street in Portland, Maine. These include the Inland and Shoreline parcels and are the location of a former manufactured gas plant operated by Portland Gas Works, which began operations in the mid-Nineteenth Century. In the mid-1960's, soon after the formation of Northern Utilities (NU), natural gas was introduced to the area and the plant ceased operation. The facility was subsequently decommissioned and demolished.

A portion of this property is currently occupied by an active propane storage facility and a regulator station housed in one of two remaining MGP buildings within the Inland parcel. Access to the parcel is controlled by a series of perimeter fences.

NU applied for, and in early 1999, was granted entry to the Voluntary Remedial Action Program (VRAP) for the former Portland Gas Works site. This program allows the owner to voluntarily investigate and correct environmental conditions at a site in cooperation with Maine Department of Environmental Protection (MEDEP). NU completed a Phase I Site Investigation of environmental conditions at the Property in 1999. NU met with MEDEP in September 1999 and reported the results of the Phase I Site Investigation indicated the presence of gas-manufacturing by-products. It was agreed that further site characterization was warranted. At that time, NU recommended, and MEDEP concurred, that the site be fenced to prevent further trespassing. In 2000, NU obtained permission from Guilford Transportation (Pan Am) to erect a security fence around the Property and to conduct a supplemental investigation on the abutter's property to determine whether coal gas residues may have migrated onto its parcel.

The fieldwork for NU's Phase II Site Investigation was completed in 2002 and a report was submitted to MEDEP in November 2002. MEDEP reviewed the report and some limited supplemental field data collection activities were implemented during 2003 to address MEDEP comments.

Based on the results of investigations conducted at the Property between 1999 and 2003, six primary source areas of coal gasification-related material (CGRM) were identified. These source areas included:

- A gravel mound underlain by CGRM;
- A subsurface Non-Aqueous Phase Liquid (NAPL)/seep area;
- A former tar well/gas holder;

- A former tar processing area;
- Tar scabs along the shoreline of the Fore River; and
- Purifier box waste.

The results of the investigations, characterization, conceptual model, and risk evaluation were summarized in an Investigation Summary Report dated April 2003. The Gravel Mound was addressed in a study dated May 12, 2004 and under went remediation in June 2004. To address the remediation of the other five areas, technologies were identified and remedies were selected based on the findings of a Focused Feasibility Study/Response Action Plan dated July 2004.

Remediation activities were executed on four of the source areas during the winter of 2006/2007. These activities included:

- Containment and minimization of NAPL migration from the upgradient source area to the seep area and groundwater by installing a NAPL collection and storage system;
- Removal of 400 tons of liquid tar from the tar well and subsequent backfill and stabilization of the well;
- Removal of shoreline tar scabs and debris and installation of a rip-rap revetment on the shoreline;
- Removal of the gravel mound; and
- Removal of approximately 5,700 tons of tar impacted soil and debris in the tar processing area.

Property ownership changed in December 2008 when Unitil acquired Northern Utilities, Inc. from NiSource – the then parent company of NU - in a common stock sale.

Further remediation of the seep area and the purifier box waste area were to be addressed in future remedial actions under the VRAP program. These were subsequently noted in the current No Action Assurance letter issued by the MEDEP in May 2012.

Additional investigations related to contamination in the former gravel mound, purifier box waste area, the inland parcel tar scab area, and shoreline parcel seep area were conducted in 2012. The information from these investigations was used to:

- Confirm that the gravel mound contaminated soil had been removed and have a certificate of completion issued for that portion of the former inland parcel,
- Develop remedial design plans for the excavation and removal of the former purifier box waste area the construction for which was completed in January 2014, and

- Develop remedial designs plans for the shoreline seep area, the construction for which will be completed in Fall of 2015.

1.1.2 Former Pan Am Railroad Properties

The western portion of the existing site property that was previously owned and operated by Pan Am consisted of undeveloped overgrown areas that included a primary rail line, a parallel rail line spur and an existing gravel roadway that was also likely a former rail line. The primary rail line was most recently used to service the adjacent Northern Utilities/Unitil propane/natural gas facility located to the east.

As part of the redevelopment of this area, Haley & Aldrich completed a Phase I and II Environmental Site Assessment (ESA) of a portion of the Pan Am property for MaineDOT in 2013. The portion of the Pan Am property entailing the ESA included the entire western parcel extending from West Commercial Street to the Fore River, to the north and south, respectively; to the intersection of West Commercial Street and Cassidy Point to the west; and to the southern boundary of the New Yard and eastern Pan Am parcel boundaries. The results of the ESA are included in a report to MaineDOT dated 13 December 2013.

Historically, the site property was developed for railroad related purposes in the 1850s. This railroad property is currently referred to as a portion of the Yard 8 Property formerly operated by the Portland Terminal Company since the early 1900s. The Portland Terminal Company was a terminal railroad notable for its control of switching activity for the Maine Central Railroad and Boston & Maine railroads for Portland, South Portland and Westbrook. Portland Terminal Company was acquired by Guilford Transportation Industries in 1981 and continued as a subsidiary of Pan Am to the present. Additional details related to historical site and vicinity operations and uses are included in the 13 December 2013 ESA report.

As part of the Phase II ESA, a series of test pit excavations were performed to investigate subsurface conditions beneath this portion of the Pan Am property. The thirty-six completed test pit excavations, designated TP-101 through TP-136, are shown on Figure 3 (2 sheets). The purpose of the test pits was to assess the degree and extent of anticipated fill material and potential environmental impacts associated with past railroad operations and adjoining property uses. In addition, selected soil samples collected from the excavations were submitted for chemical analyses.

Encountered subsurface conditions for each of the test pit excavations are summarized in Table 1. The excavations were completed to depths ranging from approximately 6.5 to 12.0 ft below ground surface (BGS). Encountered soils included two distinct units of fill material, typically overlain by a thin layer of vegetative cover material soils described as follows:

- Rail Yard Fill – Fill material related to former rail yard operations was encountered in almost all of the completed excavations at a uniform depth extending to approximately 2.0 ft BGS. The encountered rail yard fill material consisted primarily of gray to black ash, cinders, clinkers and coal pieces intermixed with a medium to fine SAND with silt and occasional ballast material.

- Tidal Area Fill – Fill material related to the historic filling of the tidal area for the development of the waterfront area adjacent to the Fore River consisted of a mixture of granular soils and marine deposits consisting of fine sands, silt and clay. The granular fill material typically overlain the finer grained marine deposits, likely for additional bearing capacity related to the railroad operations. The thickness of the tidal fill material could not be determined due to the presence of tidally influenced groundwater in the excavations and cave-ins of the excavation sidewalls. It is likely that the placed tidal fill material may have extended to depths greater than the completed test pit excavations and/or was similar material and indistinguishable (>12 ft BGS).

Nine collected soil samples were submitted for chemical analyses. Four of the samples tested were collected within the rail yard fill materials (i.e., from TP-101, TP-107, TP-117 and TP-112), one of the samples was collected near the location of the existing crane structure (from TP-129A), and four samples were collected within the tidal fill materials (from TP-133 through TP-136; adjacent to the New Yard LLC property and not a portion of the Pan Am acquired property). The rail yard fill samples were analyzed for semi-volatile organic compounds (SVOCs), PCBs and RCRA metals. The tidal fill samples were analyzed for VOCs, SVOCs and RCRA metals. The soil testing results are summarized on Table 2, and are compared to MDEP Remedial Action Guidelines (RAGs). The results are summarized as follows:

Rail Yard Fill Samples – PCBs were not detected in any of the samples. Detected metals in each of the samples included arsenic, barium, chromium and lead; mercury was detected in each of the samples with the exception of TP-117. The detected metals concentrations in all of the samples were within the common range typically found in soils. With the exception of arsenic, all detected metals were below MDEP Remedial Action Guidelines (RAGs). The detected arsenic concentrations were within a similar range and likely represent background concentrations. With the exception of the sample from TP-117, several SVOCs (PAHs) were detected in the rail yard fill samples exceeding the Residential, Park User and Commercial Worker RAGs. The detected concentration of benzo(a)pyrene in the sample from TP-101 exceeded the Residential and Park User RAGs. The remaining detected SVOCs in the rail yard fill samples were detected at concentrations below the RAGs.

Crane Structure Sample – No VOCs, SVOCs or PCBs were detected in the sample from TP-129A. Detected metals included arsenic, barium, chromium and lead at concentrations within the typically range of metals, and with the exception of arsenic, below the RAGs. Similar to the rail yard samples, the detected arsenic concentration likely is representative of background arsenic concentrations.

Tidal Fill Samples from the Eastern Portion of the Site – No VOCs were detected in any of the eastern area samples. Detected metals included arsenic, barium, chromium and lead at concentrations within the typically range of metals, and with the exception of arsenic which likely represents background, below the RAGs. No SVOCs were detected in TP-135 or TP-136. In samples TP-133 and TP-134 several SVOCs were detected above the Residential and/or the Park User RAGs. Field observations indicated that detected SVOCs in TP-133 and TP-134 were likely attributed to the migration of upgradient CGRM impacted groundwater.

1.2 POINTS OF CONTACT

For construction related questions associated with the IMT expansion project contact:

MaineDOT Multimodal Program Office
Phone (207) 624-3420

For environmental related concerns call:

MaineDOT Office of Safety and Compliance
Phone (207) 624-3004

Maine Department of Environmental Protection
VRAP Program – Mr. Nick Hodgkins – Project Manager
Phone (207) 287-4854

2. Excavation and Segregation

The primary goal of excavation and segregation activities is to return stockpiled impacted soil back into the excavation, as close as possible to the point of origin. Criteria for soil segregation at the point of excavation are based on depth and visual inspection. Details of the excavation and segregation criteria are described below.

This SMP focuses only on the requirements of handling site soil, and does not address other worker safety requirements. A SSHSP must be prepared and implemented, as needed, to address applicable state and federal regulatory requirements.

Excavations completed on the former Unutil parcels may encounter soil containing tar and/or oily debris, and may include, but is not limited to, the following:

- excavated material containing a greater percentage of tar than soil;
- pooling of oily material within, or draining from, the stockpile; or
- tar or oily material flowing into the excavation from the sidewalls.

If this type of impacted soil is temporarily stockpiled for off-site treatment and disposal at a licensed facility, the soils must be managed in accordance with applicable state and federal regulations. If such conditions are encountered, the appropriate points of contact should be immediately notified (see Section 1.3 above).

Excavations completed on the former Pan Am railway property will encounter rail yard fill material containing ash, cinders, clinkers and coal pieces intermixed with sand, silt and ballast material from the ground surface to approximately 2.0 ft BGS. Rail yard fill material encountered during excavation activities will be segregated and stockpiled for use as backfill material in the completed excavation. Excess rail yard fill material will be stockpiled and covered for potential on-site re-use and/or off-site treatment or disposal at a licensed facility.

At depths below approximately 2.0 ft BGS, tidal area fill consisting of granular native material at thicknesses ranging from approximately 6 to 8 ft is anticipated. Based on previous analytical results, excess tidal area fill can be removed from the site by the contractor for uses approved by the MEDEP. However, if any rail operations related material, (i.e., ash, demolition debris, etc.) is observed the MaineDOT Site Manager will be notified and upon direction this material will be segregated for on-site reuse or sampled for analytical analysis and the disposition will be determined based on the comparison of the results to MEDEP Remedial Action Guidelines.

Although not observed in previously completed subsurface investigations, there is the potential that petroleum impacted conditions may be encountered from former railroad related operations that would

require notification of the appropriate points of contact. In addition, any tar and/or oily material encountered beneath the adjacent former Pan Am property, likely at depths below the water table and downgradient from the former MGP operations shall also require site contact notification.

2.1 EXCAVATION PROTOCOL

If the excavation occurs in an area of pavement or crushed rock, this material is first removed and stockpiled for reuse. Soil removed from the excavation shall be initially-separated based on visual inspection of the soil. Soil removed from the ground surface to a depth where soils are visually impacted with MGP materials shall be placed to one side of the excavation. Rail yard fill material impacted soils excavated from the point of visual staining to the bottom of the excavation shall be placed on the opposite side of the excavation (see Figure 4).

Tidal fill material that visually displays no impacts will be side cast for future reuse or for off-site management.

Site workers shall employ dust control measures, as needed, to minimize the creation of airborne dust during the excavation process.

2.2 SEGREGATION ACTIVITIES

To the extent necessary and possible, excavated material associated with the Project shall be grouped into one of four categories: (1) Visually clean soil material, (2) soil containing ash and clinkers; (3) soil containing visible tar or oily debris; and (4) oversized debris. Each is described in more detail below.

2.2.1 Visually Clean Soil

Soil material designated as clean through observation shall be stockpiled in areas separate for other soil storage locations. This material may be reused at any on-site location or may be taken off-site for reuse as approved by the MEDEP and after appropriate characterization.

2.2.2 Soil Containing Ash and Clinkers

Shallow soils across the project area, including the tidal area fill material, excavated above the water table at the site is expected to be visually clean, or mixed with ash and/or clinkers (rail yard fill). This type of soil may be temporarily stockpiled right next to the excavation. These soils can be returned to any depth in the excavation, but should be reserved for backfilling the upper 24 inches.

2.2.3 Soil Containing Tar, Oil, and/or Wood Chips

Soil containing limited amounts of tar, oily debris, and/or wood chips can be temporarily stockpiled near the excavation, as long as it will be returned to the excavation. To the extent feasible, soil containing limited amounts of tar and/or oily debris should be stockpiled away from the cleaner material described above.

If the excavation ceases because heavy tar and/or oil are found in the soil (free-product and/or saturated soils), stockpiled material should be immediately returned to the excavation. If it is not feasible to return this material to the excavation, the stockpiled material must be secured to the extent feasible (to minimize exposure to this material). The disposition of this encountered material will be determined in consultation with the MEDEP.

2.2.4 Oversized Debris

Oversized debris includes material such as pieces of concrete, refractory, abandoned piping, or lumber, which may be coated with tar or oily debris. If a large amount of oversized debris coated with such material is excavated and cannot be returned to the excavation, the material must be moved to a short-term storage area and secured to the extent feasible (to minimize exposure to this material).

2.3 BACKFILLING

Visually-impacted soil (e.g., tar, oil, wood chips) shall be returned to the deeper portions of the excavation, and lesser impacted material may be reused as backfill at any depth in the excavation. Visually 'clean' soil as described in Section 2.2.1 may be returned to the upper portion of the excavation (see Figure 3) or it may be taken off site for reuse.

3. Storage and Stockpiling

This section describes storage and stockpiling requirements for the Property. Stockpiling shall be conducted in a manner to prevent rain infiltration, erosion, and dust generation.

3.1 GENERAL REQUIREMENTS

Excavated soils at the IMT Expansion Project shall be handled and stored as follows:

- Soil containing MGP residuals shall be stored in a secure manner to prevent exposure to humans and the environment, immediately adjacent to the excavation, where possible.
- Soil will be covered, as necessary, to minimize infiltration of precipitation, to limit dust, to control odors, and/or to prevent erosion of the stockpile. Covered materials shall be properly secured and possess the necessary physical strength to resist tearing by the wind.
- As needed during periods of heavy rain, erosion control procedures shall be used to prevent erosion of materials to nearby catch basins or other stormwater drainage structures.

3.2 TEMPORARY STOCKPILING

During excavation, soil shall be placed next to the excavation. For most excavations it is expected that the material will be returned to the excavation. Rail yard fill material, in addition to soil containing limited amounts of tar and oily debris or oversized debris affected by tar and oil, can also be stored adjacent to the excavation, provided it is returned to the excavation.

3.3 INTERIM STOCKPILING

Interim storage procedures shall be used when excavated soil is held outside of the excavation for an extended period of time. Interim storage may be located adjacent to or near the excavation. Erosion control procedures shall be employed on the stockpiles to prevent runoff, if necessary. In addition, any tidal area fill material segregated due to the presence of observed non-native debris shall be stored in accordance with these guidelines.

3.4 ON-SITE STORAGE

On-site storage is only required for excess soil that cannot be returned to the excavation or spread out at the ground surface adjacent to the excavation areas. The VRAP for the properties allows for the on-site storage of impacted material in “landscape berms.” These berms will be strategically located on the site property and will be constructed to minimize potential long term impacts to the environment or human health.

4. On-Site Reuse or Off-Site Disposal

Excavated soil will either be reused on-site or transported off-site for management. Soil reused on-site may be managed by site workers. Activities associated with off-site management must be conducted and approved by MaineDOT in accordance with this SMP.

4.1 ON-SITE REUSE

Excess soil that is visibly clean (i.e., contains no staining, tar, or oily material) may be appropriate for on-site reuse or taken off-site for reuse. Impacted soils may be placed back into the excavation, taken off site for disposal or placed into landscape berms on the property. The location and dimensions of several proposed landscape berms, designated 1A, 1B, 2A, 2B, 2C and 2D, are summarized on the table and figures included in Appendix B. Other locations may be defined on site as the project progresses.

4.2 OFF-SITE DISPOSAL

Excess soil containing tar, oil, and/or wood chips that cannot be placed back into the excavation of origin or stored on-site in landscape berms requires off-site disposal. This material must be characterized in accordance with state and federal regulations and requirements of the receiving facility.

Segregated tidal fill material containing non-native material will only be removed from the site upon review of associated analytical results of collected composite soil samples. The off-site disposal location will be determined based on the visual characteristics of the material and the comparison of the analytical results to applicable MEDEP soil guidelines.

5. New Condition Discovery

Excavation activities at the Property may expose subsurface conditions, such as the presence of oily liquids or the discovery of a buried structure containing MGP wastes. If such conditions are discovered, the related work shall stop, as necessary, and the appropriate points of contact shall be notified of the finding.

6. Updating the Soil Management Plan

This SMP will be updated as necessary based on changes at the site such as remedial actions or changes in ownership. Revisions to the plan shall be noted on the cover page.

TABLES

TABLE 1
SUMMARY OF TEST PIT EXPLORATIONS
PAN AM PROPERTY - WEST COMMERCIAL STREET
PORTLAND, MAINE

Test Pit Designation	Depth (feet)	Description	Notes
TP-101	0.0-0.2	Vegetative cover - brownish-gray, dry, sandy SILT with rootlets	
	0.2-2.1	Gray to dark gray, dry, ash and cinders with clinkers and coal pieces	S1 1.0-2.0 ft BGS
	2.1-9.0	Brown, moist to wet, gravelly medium to fine sand, little coarse sand, trace silt	Water @ 9.0 ft BGS
	9.0-11.5	Gray, wet, fine sandy SILT, with occasional gravel fragments <i>Bottom of exploration at 11.5 ft, no refusal. No elevated PID readings detected.</i>	
TP-102	0.0-0.5	Vegetative cover - brownish-gray, dry, sandy SILT with rootlets, cinders and ballast material	
	0.5-2.2	Dark gray, dry, coarse to fine SAND, little silt, with ash, cinders, coal pieces and clinkers	
	2.2-4.0	Brown, moist, gravelly coarse to fine SAND, intermixed with grayish-brown fine sandy SILT	Water seeping in at 4.0 ft BGS
	4.0-6.0	Brownish-gray, moist, clayey SILT, trace fine sand, with mottling and blocky texture	
	6.0-8.5	Gray, wet, silty CLAY <i>Bottom of exploration at 8.5 ft, no refusal. No elevated PID readings detected.</i>	
TP-103	0.0-0.2	Vegetative cover - rootlets and ballast material	
	0.2-2.0	Dark gray, dry, ash, cinders, coal pieces and clinkers intermixed with coarse to fine SAND, little silt	
	2.0-7.0	Brown, moist, silty fine SAND, trace medium sand, intermixed with gray-brown gravelly medium to fine SAND, trace coarse sand and silt, with brick pieces	S-1 2.5-3.0 ft BGS
	7.0-12.0	Brown, damp to wet, coarse to fine SAND, trace gravel <i>Bottom of exploration at 12.0 ft, no refusal. No elevated PID readings detected.</i>	Water @ 10.5 ft BGS
TP-104	0.0-0.5	Vegetative cover - rootlets and ballast material and clinkers	
	0.5-2.0	Dark gray to black, dry, ash, cinders, coal and clinker pieces	
	2.0-5.0	Brown, moist, gravelly coarse to fine SAND, intermixed with grayish-brown, silty medium to fine SAND, with occasional boulders	
	5.0-5.5	Brownish-gray, moist to damp, fine sandy SILT to clayey SILT	
	5.5-11.0	Brown, wet, gravelly coarse to fine SAND, with boulders <i>Bottom of exploration at 11.0 ft, no refusal. No elevated PID readings detected.</i>	Water at 8.5 ft BGS
TP-105	0.0-0.4	Vegetative cover - rootlets and ballast material and cinders	
	0.4-1.9	Dark gray to black, dry, ash, cinders with clinkers and coal pieces	
	1.9-4.0	Rusty brown, dry to moist, coarse to fine SAND, intermixed with grayish-brown, silty fine SAND	S1 2.5-3.0 ft BGS
	4.0-11.5	Brown, damp to wet, coarse to fine SAND, trace gravel <i>Bottom of exploration at 11.5 ft, no refusal. No elevated PID readings detected.</i>	Water at 10.0 ft BGS
TP-106	0.0-0.2	Vegetative cover - rootlets and ballast material	
	0.2-2.1	Dark gray to black, dry, ash, cinders with clinkers and coal pieces	
	2.1-8.5	Brown to rusty brown, moist to damp, coarse to fine SAND, little gravel, with cobbles, intermixed with silty fine SAND with brick fragments	
	8.5-11.0	Gray, wet, silty CLAY to clayey SILT, intermixed with brown, coarse to fine SAND, little gravel <i>Bottom of exploration at 11.0 ft, no refusal. No elevated PID readings detected.</i>	Water at 9.0 ft BGS

TABLE 1
SUMMARY OF TEST PIT EXPLORATIONS
PAN AM PROPERTY - WEST COMMERCIAL STREET
PORTLAND, MAINE

Test Pit Designation	Depth (feet)	Description	Notes
TP-107	0.0-0.5	Vegetative cover - rootlets and ballast material	
	0.5-2.1	Dark gray to black, dry, ash, cinders with ballast, clinkers and coal pieces	S1 1.0-2.0 ft BGS
	2.1-7.0	Rusty brown to brown, moist to damp, medium to fine SAND, little gravel, trace coarse sand and silt, intermixed with gray-brown fine sandy SILT	
	7.0-9.0	Brownish-gray, damp to wet, fine sandy SILT to clayey SILT	
<i>Bottom of exploration at 9.0 ft, no refusal. No elevated PID readings detected.</i>			
TP-108	0.0-0.5	Vegetative cover - rootlets and ballast material	
	0.5-1.8	Dark gray to black, dry, ash, cinders, clinkers and coal pieces intermixed with medium to fine SAND	
	1.8-2.3	Brown, dry to moist, coarse to fine SAND, little gravel, trace silt	
	2.3-5.0	Gray, damp to wet, silty CLAY (CL), mottling to 6.5 ft BGS	
	5.0-10.0	Gray, damp to wet, clayey SILT, trace fine sand	
<i>Bottom of exploration at 10.0 ft, no refusal. No elevated PID readings detected.</i>			
TP-109	0.0-2.1	Dark gray to black, dry, ash, cinders with ballast, clinkers and coal pieces	
	2.1-6.5	Grayish-brown, moist to damp, medium to fine SAND, little gravel, trace coarse sand and silt grading to a grayish-brown silty medium to fine SAND, trace gravel	
<i>Bottom of exploration at 6.5 ft, no refusal. No elevated PID readings detected.</i>			
TP-110	0.0-0.4	Vegetative cover - rootlets with ash, cinders and ballast material	
	0.4-2.0	Dark gray to black, dry, ash, cinders/clinkers and coal pieces with ballast material	
	2.0-4.2	Brown, dry to moist, gravelly medium to fine SAND, little coarse sand, trace silt	
	4.2-6.5	Grayish-brown, damp to moist, clayey SILT, trace fine sand, with mottling	
<i>Bottom of exploration at 6.5 ft, no refusal. No elevated PID readings detected.</i>			
TP-111	0.0-0.4	Vegetative cover - rootlets and black ash material and cinders	
	0.4-1.8	Dark gray to black, dry, ash, cinders with ballast, clinkers and coal pieces	
	1.8-4.5	Rusty brown to brown, moist, coarse to fine sandy GRAVEL, with brick pieces	S1 2.0-3.0 ft BGS
	4.5-8.5	Brownish-gray, moist to wet, medium to fine SAND intermixed with gray clayey SILT	
<i>Bottom of exploration at 8.5 ft, no refusal. No elevated PID readings detected.</i>			
TP-112	0.0-0.2	Vegetative cover - rootlets and black ash, cinders and ballast material	
	0.2-1.7	Dark gray to black, dry, ash, cinders with ballast, clinkers and coal pieces	
	1.7-4.5	Light brown to rusty brown, moist, coarse to fine SAND, little gravel, with cobbles and boulders	
	4.5-8.0	Gray, moist to damp, clayey SILT, trace fine sand	
<i>Bottom of exploration at 8.0 ft, no refusal. No elevated PID readings detected.</i>			
TP-113	0.0-0.2	Vegetative cover - rootlets and black ash, cinders and ballast material	
	0.2-0.5	Dark gray to black, dry, ash, cinders with clinkers and coal pieces	
	0.5-3.0	Grayish-brown, moist, coarse to fine sandy GRAVEL, with cobbles	S1 0.6-0.9 ft BGS
	3.0-7.0	Light brown, moist, medium to fine SAND, trace gravel and silt, with cobbles	
	7.0-9.0	Brownish-gray, wet, fine sandy SILT, grading to a gray clayey SILT	
<i>Bottom of exploration at 9.0 ft, no refusal. No elevated PID readings detected.</i>			

TABLE 1
SUMMARY OF TEST PIT EXPLORATIONS
PAN AM PROPERTY - WEST COMMERCIAL STREET
PORTLAND, MAINE

Geoprobe Number	Depth (feet)	Description	Notes
TP-114	0.0-0.8	Vegetative cover - rootlets and black ash, cinders, clinkers and coal pieces	
	0.8-5.5	Light brown to brown, dry to moist, gravelly coarse to fine SAND	
	5.5-10.5	Gray, damp to wet, clayey SILT, trace fine sand, grading to a gray silty CLAY <i>Bottom of exploration at 10.5 ft, no refusal. No elevated PID readings detected.</i>	
TP-115	0.0-2.2	Dark gray to black, dry, ash, cinders, clinkers and coal pieces, mixed with glass fragments and metal pieces, with an a layer of apparent white ash material	<i>S1-white ash layer from 1.8-2.2 ft BGS</i>
	2.2-6.5	Brown, moist to damp, medium to fine SAND, trace gravel with cobbles	
	6.5-8.0	Gray, damp to wet, fine sandy SILT to clayey SILT <i>Bottom of exploration at 8.0 ft, no refusal. No elevated PID readings detected.</i>	
TP-116	0.0-0.5	Dark brown, dry, silty SAND with ash, cinders, clinkers and coal pieces	
	0.5-1.5	Light brown, dry to moist, coarse to fine sandy GRAVEL	
	1.5-3.0	Dark gray, moist, ash, cinders with clinkers, coal and brick pieces, in a fine sandy SILT matrix	
	3.0-8.0	Cobble and boulder sized granite pieces <i>Bottom of exploration at 8.0 ft, no refusal. No elevated PID readings detected.</i>	<i>Water at 7.5 ft BGS</i>
TP-117	0.0-0.3	Vegetative cover - rootlets and black ash, cinders, clinkers and coal pieces	
	0.3-2.0	Dark gray to black, dry, ash, cinders, coal pieces and clinkers	
	2.0-2.5	Light brown, moist, coarse to fine SAND, trace gravel	<i>S1 2.0-2.5 ft BGS</i>
	2.5-8.0	Grayish-brown, damp to wet, fine SAND to a clayey SILT	
	8.0-9.5	Brown, wet, coarse to fine SAND, trace gravel <i>Bottom of exploration at 9.5 ft, no refusal. No elevated PID readings detected.</i>	<i>Water at 8.0 ft BGS</i>
TP-118	0.0-0.2	Vegetative cover - dark brown silty fine SAND with rootlets	
	0.2-1.2	Light gray, dry to moist, sandy GRAVEL, trace silt, with ash, cinders and clinkers	
	1.2-2.5	Dark gray to black, dry, ash, cinders, coal pieces and clinkers	
	2.5-5.0	Grayish-brown, moist, silty fine SAND, with occasional gravel pieces	
	5.0-6.5	Cobbles and boulders in a dark brown, silty fine SAND matrix <i>Bottom of exploration at 6.5 ft, no refusal. No elevated PID readings detected.</i>	
TP-119	0.0-0.5	Vegetative cover - rootlets and black ash, cinders, clinkers and coal pieces	
	0.5-2.0	Dark gray to black, dry, ash, cinders, coal pieces and clinkers	<i>S1 1.5-2.0 ft BGS</i>
	2.0-10.0	Light brown to brown, gravelly coarse to fine SAND with cobbles and boulders <i>Bottom of exploration at 10.0 ft, no refusal. No elevated PID readings detected.</i>	<i>Water at 8.5 ft BGS</i>

TABLE 1
SUMMARY OF TEST PIT EXPLORATIONS
PAN AM PROPERTY - WEST COMMERCIAL STREET
PORTLAND, MAINE

Geoprobe Number	Depth (feet)	Description	Notes
TP-120	0.0-0.5	Vegetative cover - rootlets and ash, cinders, clinkers and coal pieces, with ballast	
	0.5-1.8	Dark gray to black, dry, ash, cinders, coal pieces and clinkers	
	1.8-3.3	Light brown, moist, gravelly coarse to fine SAND, with cobbles	
	3.3-4.1	Layer of black peastone-sized coal and clinker pieces	
	4.1-8.0	Granular fill material consisting of granite boulders and brick pieces	bricks from 5-7 ft BGS
	8.0-10.5	Gray, wet, silty fine SAND, little gravel with shell fragments <i>Bottom of exploration at 10.5 ft, no refusal. No elevated PID readings detected.</i>	water @ 8.5 ft BGS
TP-121	0.0-0.2	Vegetative cover - brown loamy SAND with rootlets and ballast material	
	0.2-2.2	Dark gray to brown, dry, ash, cinders, coal pieces and clinkers	
	2.2-2.8	Brown, moist, gravelly medium to fine sand	
	2.8-6.5	Grayish-brown, moist to wet, ash, cinders, clinkers and coal pieces in a coarse to fine SAND matrix with glass fragments	S1 3.0-4.0 ft BGS
	6.5-8.5	Sand and gravel, significant groundwater infiltration <i>Bottom of exploration at 8.5 ft, no refusal. No elevated PID readings detected.</i>	water at 6.5 ft BGS
TP-122	0.0-0.3	Vegetative cover - rootlets and ash, cinders, clinkers and coal pieces, with ballast	
	0.3-1.5	Dark gray to black, dry, ash, cinders, coal and clinkers with ballast material	
	1.5-3.5	Brown to rusty brown, damp, coarse to fine SAND, little gravel	
	3.5-6.5	Gray, moist, clayey SILT to silty CLAY, trace fine sand, with blocky texture	
	6.5-10.0	Brown, wet, coarse to fine SAND, little silt, trace gravel <i>Bottom of exploration at 10.0 ft, no refusal. No elevated PID readings detected.</i>	water at 7.0 ft BGS
TP-123	0.0-0.4	Vegetative cover - rootlets and dark gray ash, cinders and coal pieces	
	0.4-1.5	Dark gray to black, dry, ash, cinders, coal and clinkers with ballast material	
	1.5-1.8	Light gray, moist, ash, cinders and coal pieces	S1 1.5-1.8 ft BGS
	1.8-10.5	Brown, moist to damp, coarse to fine SAND, with cobbles and boulders <i>Bottom of exploration at 10.5 ft, no refusal. No elevated PID readings detected.</i>	cave-ins
TP-124	0.0-0.2	Vegetative cover - rootlets with ash, cinders and coal pieces	
	0.2-1.0	Dark gray to black, dry, ash, cinders, coal and clinkers with ballast material	
	1.0-12.0	Light brown, moist to wet, medium to fine SAND, trace gravel and coarse sand <i>Bottom of exploration at 12.0 ft, no refusal. No elevated PID readings detected.</i>	Water at 11.0 ft BGS
TP-125	0.0-1.0	Light brown, dry to moist, silty fine SAND with rootlets	Adj. to former structure
	1.0-6.5	Light brown, moist, coarse to fine SAND, little gravel	
	6.5-8.5	Gray, moist to damp, silty fine SAND (collapsing side-walls) <i>Bottom of exploration at 8.5 ft, no refusal. No elevated PID readings detected.</i>	cave-ins
TP-126	0.0-0.2	Vegetative cover - ash, cinders, clinkers and ballast material	Adj. to former structure
	0.2-2.2	Dark gray to black, dry, ash, cinders with clinkers, coal and brick pieces	
	2.2-2.6	Light gray, moist, ash material with clinkers and coal pieces	S1 2.2-2.6 ft BGS
	2.6-6.5	Mixture of ash, cinders, clinkers, coal and brick pieces, with granite pieces and miscellaneous wire remnants	
	6.5-11.0	Gray, damp to wet, clayey SILT to silty CLAY, with vertical wooden piles <i>Bottom of exploration at 11.0 ft, no refusal. No elevated PID readings detected.</i>	Water at 10.5 ft BGS

TABLE 1
SUMMARY OF TEST PIT EXPLORATIONS
PAN AM PROPERTY - WEST COMMERCIAL STREET
PORTLAND, MAINE

Test Pit Designation	Depth (feet)	Description	Notes
TP-127	0.0-0.3	Vegetative cover - brownish-gray, rootlets within ash, cinders, coal and loamy fine SAND	
	0.3-2.4	Light gray, dry, ash and cinders with clinkers, coal and brick pieces	<i>S1 1.4-2.4 ft BGS</i>
	2.4-5.5	Dark gray to black, moist, ash, cinders with clinkers, coal and ballast material	
	5.5-10.5	Brown to gray, damp to wet, medium to fine SAND, little silt and gravel mixed with fine sandy SILT and silty CLAY <i>Bottom of exploration at 10.5 ft, no refusal. No elevated PID readings detected.</i>	
TP-128	0.0-0.8	Gray, dry, ash and cinders mixed with ballast material	<i>Adj. to crane structure</i>
	0.8-1.3	Light brown, dry, medium to fine SAND	
	1.3-1.5	Dark gray to black, dry, ash, cinders, clinkers and coal pieces	
	1.5-3.8	Brown, moist, gravelly coarse to fine SAND	
	3.8-9.0	Grayish-brown, moist to damp, silty medium to fine SAND, little gravel, trace coarse sand (encountered footing of former crane structure) <i>Bottom of exploration at 9.0 ft, no refusal. No elevated PID readings detected.</i>	<i>water from structure encountered at 9.0 ft BGS</i>
TP-129	0.0-0.7	Dark gray to black, dry, ash, cinders, coal and clinker pieces	<i>Adj. to crane structure</i>
	0.7-8.0	Brown, moist, coarse to fine SAND, little gravel, with cobbles and boulders	<i>concrete foundation extends to 8 ft BGS</i>
	8.0-11.5	Gray, damp to wet, silty CLAY <i>Bottom of exploration at 11.5 ft, no refusal. No elevated PID readings detected. Completed adjacent excavation, designated TP-129A for collection of soil samples.</i>	<i>Cave-ins</i>
TP-130	0.0-0.8	Dark gray to black, dry, ash, cinders, coal and clinker pieces with ballast	
	0.8-3.5	Brown, moist, medium to fine SAND, trace silt, with cobbles and bricks	<i>brick foundation wall encountered</i>
	3.5-4.5	Grayish-brown, moist, fine sandy SILT with brick pieces	
	4.5-12.0	Light brown to gray, moist to wet, coarse to fine SAND, trace gravel <i>Bottom of exploration at 12.0 ft, no refusal. No elevated PID readings detected.</i>	<i>Water at 10.0 ft BGS</i>
TP-131	0.0-1.8	Dark gray to black, dry, ash, cinders with clinkers and coal pieces	
	1.8-11.0	Brown, damp to wet, medium to fine SAND, trace silt intermixed with grayish-brown fine sandy SILT, with gravel pieces <i>Bottom of exploration at 11.0 ft, no refusal. No elevated PID readings detected.</i>	<i>timber pile @ 8 ft BGS</i>
TP-132	0.0-2.5	Dark gray to black, dry, ash, cinders with clinkers and coal pieces, with rootlets	
	2.5-12.0	Rusty brown to gray, moist to wet, medium to fine SAND, little gravel, trace coarse sand and silt <i>Bottom of exploration at 12.0 ft, no refusal. No elevated PID readings detected.</i>	<i>water @ 10 ft BGS</i>

TABLE 1
SUMMARY OF TEST PIT EXPLORATIONS
PAN AM PROPERTY - WEST COMMERCIAL STREET
PORTLAND, MAINE

Test Pit Designation	Depth (feet)	Description	Notes
TP-133	0.0-0.3	Vegetative cover - rootlets with ash, cinders, clinkers and coal pieces	
	0.3-2.2	Gray to dark gray, dry, ash and cinders with clinkers, coal pieces and ballast	
	2.2-3.2	Light brown, moist, coarse to fine SAND, trace gravel	S1 2.2-3.2 ft BGS
	3.2-7.5	Grayish-brown, moist to damp, silty fine SAND, with mottling	water at 7.5 ft BGS
	7.5-10.0	Gray, wet, clayey SILT intermixed with coarse to fine SAND, trace gravel, with black staining and oil-like material (OLM), with naphtha-like odor <i>Bottom of exploration at 11.5 ft, no refusal. No elevated PID readings detected from soils between 0 to 7.5 ft BGS.</i>	S2 8.0-9.0 ft BGS PID=15 ppm
TP-134	0.0-1.5	Gray to dark gray, dry, ash and cinders with clinkers, coal pieces and brick pieces	
	1.5-6.5	Brown, moist to damp, gravelly coarse to fine SAND, trace silt	
	6.5-9.0	Dark gray, damp to wet, gravelly coarse to fine SAND, mixed with fine sandy SILT, with black staining and OLM, with naphtha-like odor <i>Bottom of exploration at 9.0 ft, no refusal. No elevated PID readings detected from soils between 0 to 7.5 ft BGS.</i>	water at 7.5 ft BGS S1 7.5-8.5 ft BGS PID=24 ppm
TP-135	0.0-3.0	Gray to dark gray, dry, ash and cinders with clinkers, coal pieces and brick pieces	
	3.0-6.0	Grayish-brown, moist to damp, medium to fine SAND, with bricks and granite pieces	vertical wooden piles encountered
	6.0-10.0	Brown to gray, damp to wet, coarse to fine SAND, little gravel, mixed with gray clayey SILT, trace fine sand, with organics <i>Bottom of exploration at 10.0 ft, no refusal. No elevated PID readings detected.</i>	S-1 7.5-8.5 ft BGS Water @ 8.5 ft BGS
TP-136	0.0-1.2	Gray to dark gray, dry to moist, ash and cinders with clinkers, coal and brick pieces	
	1.2-6.0	Brown, moist to damp, coarse to fine SAND	
	6.0-9.0	Gray, damp to wet, medium to fine SAND, trace gravel, mixed with fine sandy SILT <i>Bottom of exploration at 9.0 ft, no refusal. No elevated PID readings detected.</i>	Water at 7.5 ft BGS S1 7.5-8.5 ft BGS

NOTES:

1. Test pit explorations were completed between 19 and 23 August 2013 by Mackenzie Landscaping of Winslow, Maine and were monitored by Haley & Aldrich personnel.
2. Soil samples were screened for VOCs with a MiniRAE PID.
3. Refer to Figure 3 for locations of completed test pit excavations.

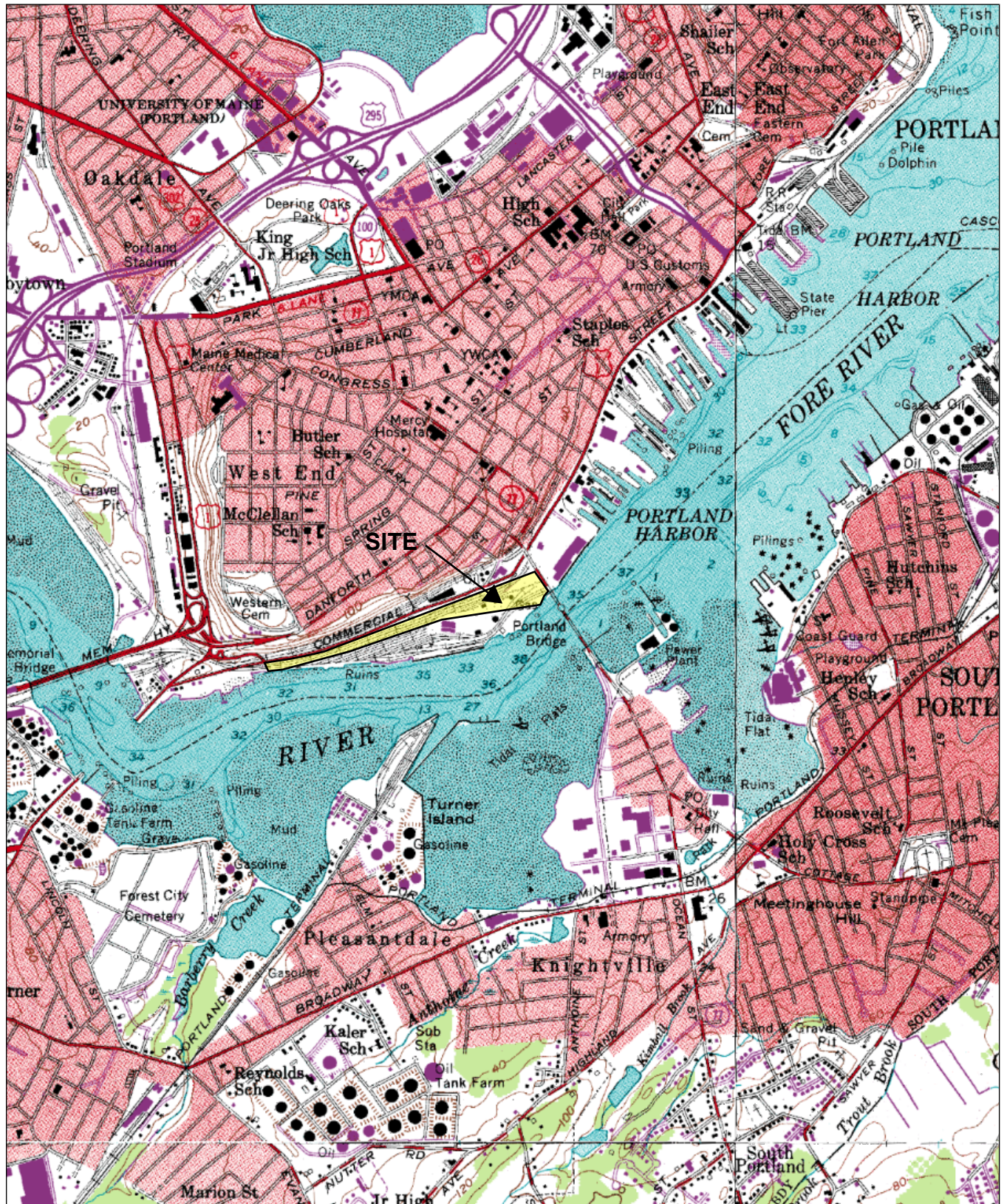
**TABLE 2
SUMMARY OF SOIL TESTING RESULTS
PAN AM PROPERTY - WEST COMMERCIAL STREET
PORTLAND, MAINE**

Parameter ⁽¹⁾	Sample Location Depth (ft BGS)										Maine Remedial Action Guidelines		
	TP-101 1.0-2.0	TP-107 1.0-2.0	TP-117 2.0-2.5	TP-121 3.0-4.0	TP-129A 8.0-9.0	TP-133 8.0-9.0	TP-134 7.5-8.5	TP-135 8.0-9.0	TP-136 7.5-8.5	Residential	Park User	Commercial Worker	Construction Worker
Volatile Organic Compounds													
Semi-Volatile Organic Compounds⁽⁶⁾													
Phenanthrene	0.64	0.43	ND	14.00	ND	77.0	320.0	ND	ND	NA	NA	NA	NA
Fluoranthene	1.60	0.39	ND	14.00	ND	76.0	83.0	ND	ND	3,700	6,200	10,000	10,000
Pyrene	2.00	ND	ND	12.00	ND	47.0	55.0	ND	ND	5,000	8,300	10,000	10,000
Benzo(a)anthracene	1.00	ND	ND	6.10	ND	9.40	12.0	ND	ND	2.6	4.4	35	430
Chrysene	1.30	0.36	ND	6.30	ND	8.20	12.0	ND	ND	260	440	3,500	10,000
Benzo(b)fluoranthene	1.80	0.38	ND	6.10	ND	3.40	ND>7.2	ND	ND	2.6	4.4	35	430.0
Benzo(k)fluoranthene	0.72	ND	ND	2.40	ND	2.10	ND>7.2	ND	ND	26	44	350	4,300
Benzo(a)pyrene	1.10	ND	ND	4.20	ND	2.40	ND>7.2	ND	ND	0.26	0.44	3.5	43
Indeno(1,2,3-cd)pyrene	0.90	ND	ND	2.30	ND	ND	ND>7.2	ND	ND	2.6	4.4	35	430
Benzo(g,h,i)perylene	0.55	ND	ND	1.30	ND	ND	ND>7.2	ND	ND	3,700	6,200	10,000	10,000
Acenaphthene	ND	ND	ND	1.30	ND	4.50	7.90	ND	ND	7,500	10,000	10,000	9,800
Fluorene	ND	ND	ND	1.40	ND	27.0	67.0	ND	ND	5,000	8,300	10,000	10,000
Anthracene	ND	ND	ND	3.00	ND	93.0	72.0	ND	ND	10,000	10,000	10,000	3,800
Dibenzo(a,h)anthracene	ND	ND	ND	0.70	ND	ND	ND>7.2	ND	ND	0.26	0.44	3.5	43.0
PCBs	ND	ND	ND	ND	ND	--	--	--	--	NA	NA	NA	NA
Metals⁽⁶⁾	Common Range⁽⁴⁾												
Arsenic	1.0-50.0	13.0	3.5	11.0	7.0	14.0	7.9	10.3	4.8	1.4	2.3	4.2	42
Barium	100-3,000	82.8	14.8	96.7	42.8	47.4	21.1	47.1	27.9	10,000	10,000	10,000	10,000
Chromium	1.0-1,000	19.8	7.01	19.1	22.2	25.2	14.0	28.7	17.1	10,000	10,000	10,000	10,000
Lead	2.0-200.0	79.9	48.3	157.0	6.7	6.8	7.2	10.8	3.9	340	530	1,100	950
Mercury	0.01-0.3	0.437	ND	1.66	ND	ND	ND	ND	ND	51	85	510	930



- NOTES:**
- Results, guidelines and ranges are listed in parts per million (ppm or mg/kg). Refer to Figure 2 of this report for locations of samples collected by Haley & Aldrich from test pit excavations performed on 19-23 August 2013.
 - Source of Information: Appendix 2 - Maine Remedial Action Guidelines for Soil for Multiple Contaminants; Maine Department of Environmental Protection, Revised May 8, 2013.
 - Common Range of Metals in Soil. Source of Information: Table 6.46 - Trace Element Content of Soils, W.L. Lindsay, Chemical Equilibria in Soils, John Wiley & Sons, New York, 1979.
 - Only detected metals and compounds are listed.
NA - No known guideline or common range or not applicable
-- Sample not analyzed for this parameter
ND - Compound or metal not detected

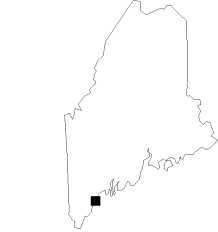
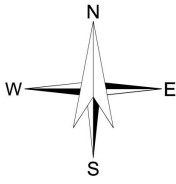
FIGURES



SITE COORDINATES: 43°38'42"N, 70°15'43"W

**HALEY
ALDRICH**

INTERNATIONAL MARINE TERMINAL
WEST COMMERCIAL STREET
PORTLAND, MAINE



U.S.G.S. QUADRANGLE: PORTLAND WEST, ME

PROJECT LOCUS

SCALE: 1:24,000
FEBRUARY 2015

FIGURE 1



NOTES:

1. BASE PLAN OBTAINED FROM GOOGLE EARTH, US DEPT. OF STATE GEOGRAPHER, 2013 GOOGLE.
2. DESIGNATED PROPERTY BOUNDARIES WERE DETERMINED FROM "BOUNDARY & TOPOGRAPHIC SURVEY, WEST COMMERCIAL STREET," DATED 4 APRIL 2014 PREPARED BY OWEN HESKELL, INC. FOR HNTB & MAINE DOT.

LEGEND:

- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY FOR NEW YARD, LLC
- A INLAND PARCEL - FORMER UNITIL PROPERTY
- B SHORELINE PARCEL - FORMER UNITIL PROPERTY
- C EXISTING UNITIL PROPANE STORAGE/DISTRIBUTION FACILITY
- D FORMER PAN AM PROPERTY



NOTES:

1. BASE PLAN OBTAINED FROM GOOGLE EARTH, US DEPT. OF STATE GEOGRAPHER, 2013 GOOGLE.
2. TEST PIT EXCAVATIONS WERE PERFORMED BY MACKENZIE CONSTRUCTION OF WINSLOW, MAINE BETWEEN '19 AND 23 AUGUST 2013. ALL EXPLORATIONS WERE MONITORED BY HALEY & ALDRICH PERSONNEL.
3. TEST PIT LOCATIONS ARE APPROXIMATE AND WERE DETERMINED BY TAPING/PACING DISTANCES FROM EXISTING SITE FEATURES.
4. DESIGNATED PROPERTY BOUNDARIES WERE DETERMINED FROM "BOUNDARY & TOPOGRAPHIC SURVEY, WEST COMMERCIAL STREET," DATED 4 APRIL 2014 PREPARED BY OWEN HESKELL, INC. FOR HNTB & MAINE DOT.

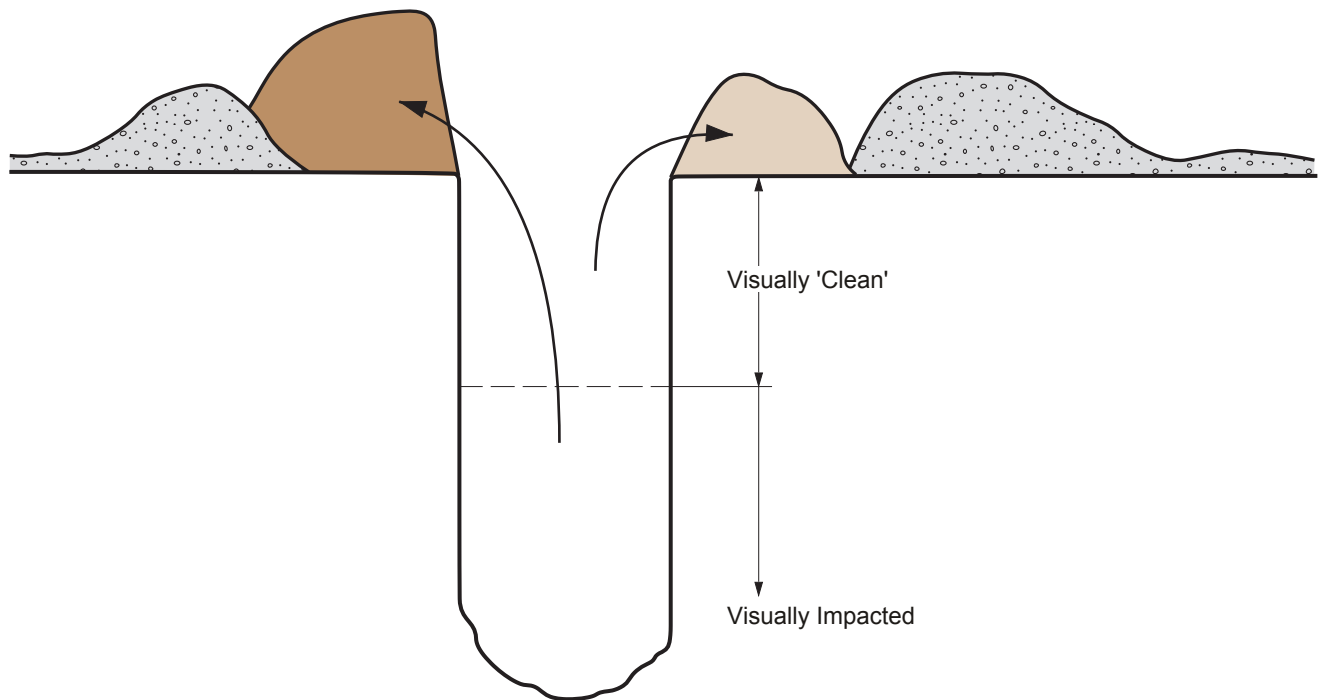
LEGEND:

- TP-114 [Symbol: Box with 'X'] DESIGNATION AND APPROXIMATE LOCATION OF COMPLETED TEST PIT EXCAVATION
- [Symbol: Blue dashed line] APPROXIMATE SITE PROPERTY BOUNDARY
- [Symbol: Red dashed line] APPROXIMATE PROPERTY BOUNDARY FOR NEW YARD, LLC



- LEGEND:**
- TP-114 [Symbol: rectangle with 'X'] DESIGNATION AND APPROXIMATE LOCATION OF COMPLETED TEST PIT EXCAVATION
 - [Symbol: blue dashed line] APPROXIMATE SITE PROPERTY BOUNDARY
 - [Symbol: red dashed line] APPROXIMATE PROPERTY BOUNDARY FOR NEW YARD, LLC

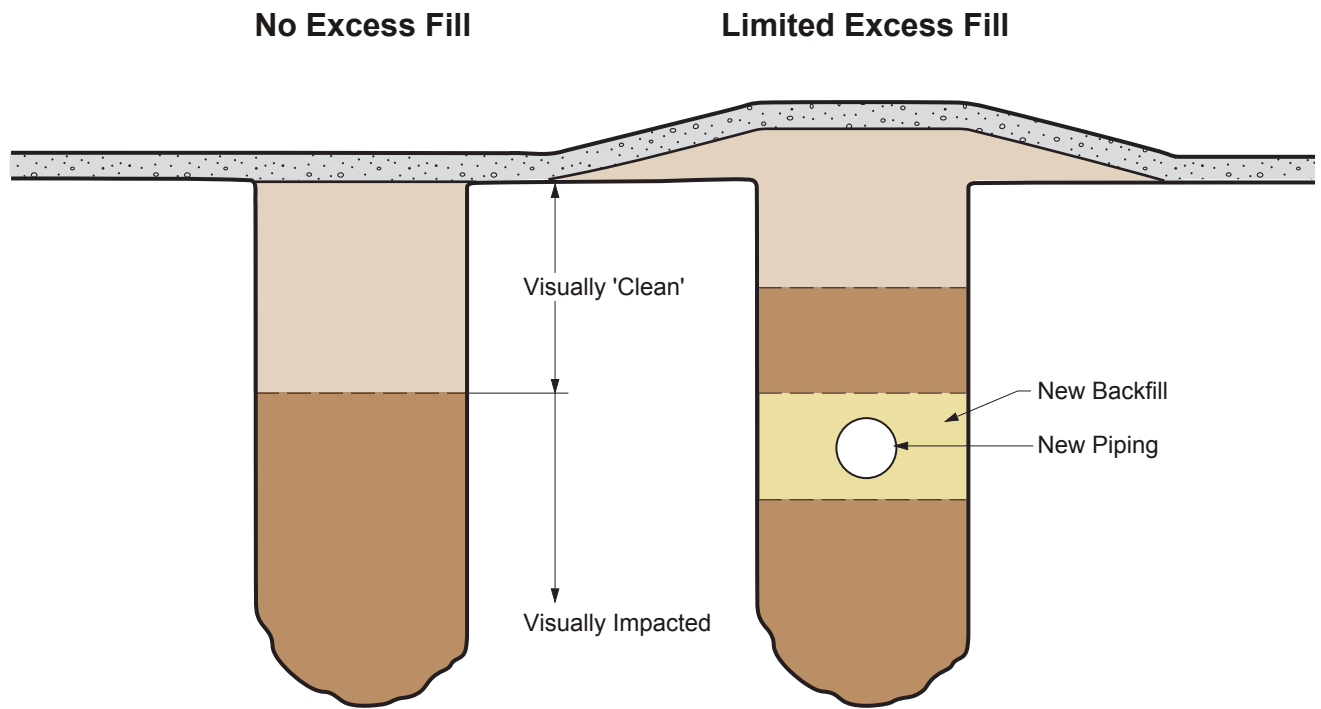
- NOTES:**
1. BASE PLAN OBTAINED FROM GOOGLE EARTH, US DEPT. OF STATE GEOGRAPHER, 2013 GOOGLE.
 2. TEST PIT EXCAVATIONS WERE PERFORMED BY MACKENZIE CONSTRUCTION OF WINSLOW, MAINE BETWEEN '19 AND 23 AUGUST 2013. ALL EXPLORATIONS WERE MONITORED BY HALEY & ALDRICH PERSONNEL.
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LEGEND

- Visually 'Clean' Soil
- Visually Impacted ('stained') Soil
- Gravel Cover Material

Figure 4
 Excavation Protocol
 MaineDOT
 International Marine Terminal
 Portland, ME



LEGEND

- Visually 'Clean' Soil
- Visually Impacted ('stained') Soil
- Imported Backfill
- Gravel Cover Material

Figure 5
 Backfilling Protocol
 MaineDOT
 International Marine Terminal
 Portland, ME

Haley & Aldrich

APPENDIX A

On-Site Material Storage Information

Common Excavation On-Site Material Storage

General Information

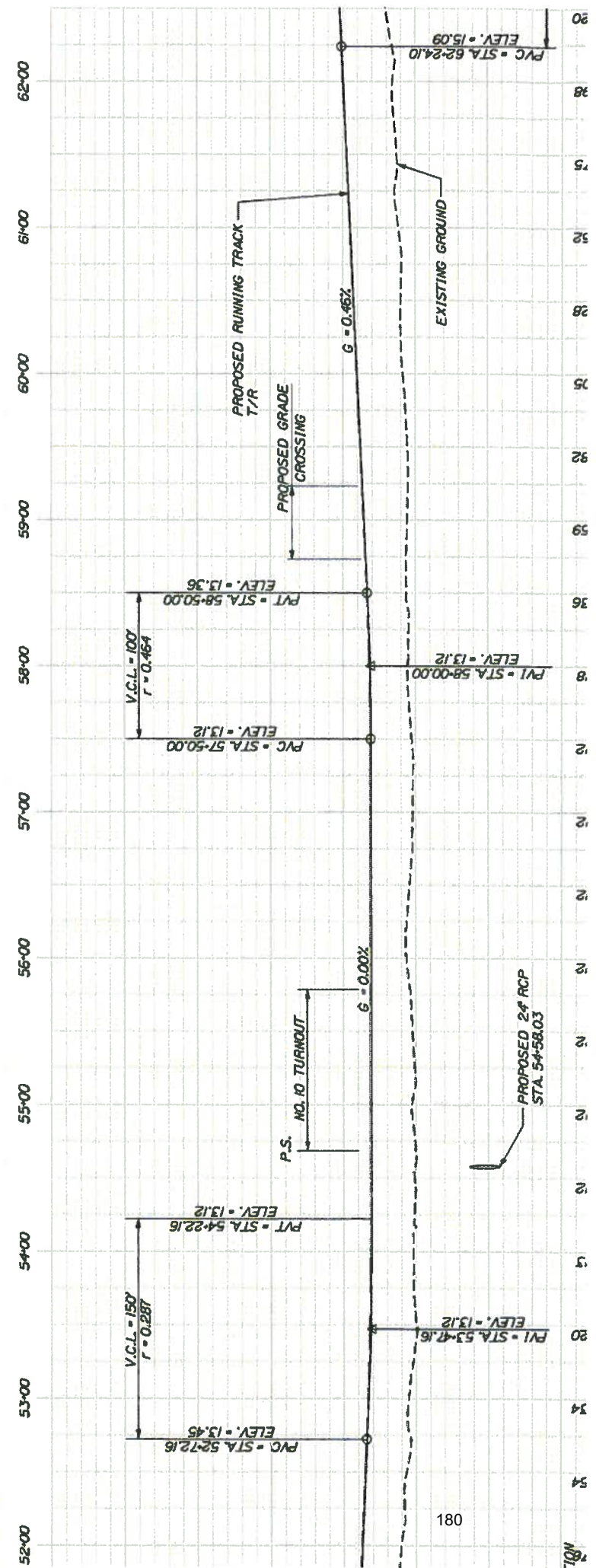
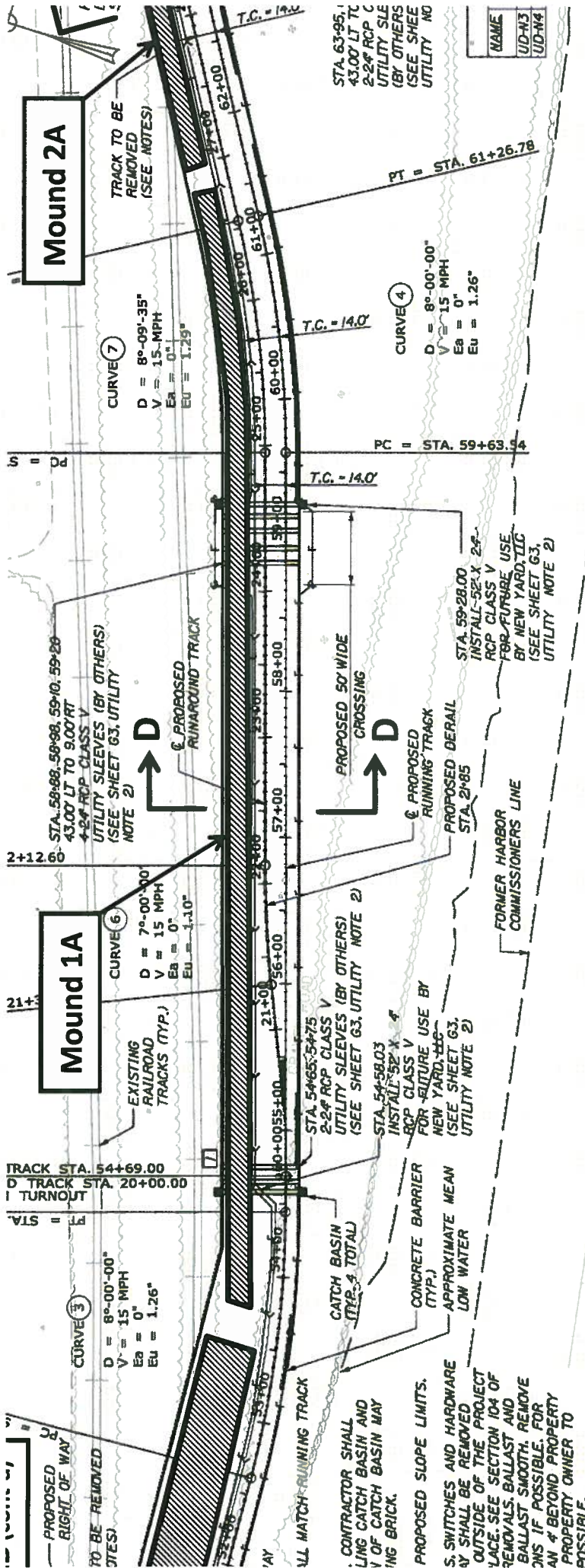
1. Assume the material must be stored on-site in mounds along the railroad corridor.
2. Temporary storage of the material (prior to mounding) may be achieved within the MaineDOT property outside of New Yard access ways.
3. Mounds shall be treated with a surficial application of mulch and/or wild flower seed mix as directed by the MaineDOT.

Revision: REV 01
Updated: July 30, 2014

Mound (Location)	Order of Work	Section View <small>(see graphics)</small>	Sta. - Sta.	Height <small>(ft., approx.)</small>	Side Slopes	Storage Volume <small>(cy, est.)</small>	Surface Area <small>(sy, est.)</small>	Notes
1A	1	D	53+70 to 61+50	4	2:1	2,400	1,900	(1), (3)
1B	2	A	40+00 to 43+00	6	2:1	4,000	3,000	(1), (4)
2A	3	E	61+70 to 65+00	4	2:1	900	850	(2)
2B	4	C	49+20 to 53+50	6	2:1	4,000	2,750	(2)
2C	5	B	45+25 to 49+00	6	2:1	1,400	1,700	(2)
2D	6	B	43+50 to 49+00	4	2:1	1,800	1,600	(2)
TOTALS						14,500	11,800	

Notes:

1. No schedule restrictions. The mound may be constructed at any time during the project.
2. Schedule restricted. The mound may only be constructed once new track is in service and existing railroad tracks are removed.
3. At proposed 50-ft wide crossing, the mound shall be discontinued in favor of the design materials and dimensions of the crossing.
4. The beginning station extends westward along the Cassidy Point Rd property line as shown on the plan view.





Environmental Summary Sheet

WIN: 22809.50

Date Submitted: 10/14/2020

Town: Portland

CPD Team Leader: Danielle Tetreau

ENV Field Contact: Val Derosier

NEPA Complete: No federal funding, no federal nexus; NEPA not applicable

Section 106
No federal nexus

Section 4(f) and 6(f)
Section 4(f)
Not Applicable- no FHWA funds
Section 6(f)
No takes

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

Section 7
Species of Concern: no federal nexus

Essential Fish Habitat
Not Applicable- no in water work, no federal nexus.

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

Maine Land Use Regulation Commission
Not Applicable

Maine Department of Environmental Protection
Permit by Rule (PBR) -Section 11 PBR # 70019 for work within 75' of HAT line

**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.
No work in jurisdictional resources

Stormwater Review
Not Applicable

<input checked="" type="checkbox"/> Special Provisions Required		
Special Provision 105-Environmental Requirements	N/A <input type="checkbox"/>	Applicable <input checked="" type="checkbox"/>
Special Provision 203-Hazardous Waste	N/A <input type="checkbox"/>	Applicable <input checked="" type="checkbox"/>
Standard Specification 656-Erosion Control Plan	N/A <input type="checkbox"/>	Applicable <input checked="" type="checkbox"/>
Special Provision 656-Minor Soil Disturbance	N/A <input checked="" type="checkbox"/>	Applicable <input type="checkbox"/>

**All permits and approvals based on plans/scope as of: 4/23/2020*