



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

August 3, 2020
Subject: Highway Reconstruction
State WIN: 17280.01
Location: **Fryeburg**
Amendment No. 1

Dear Sir/Ms.:

Please make the following changes to the Bid Documents:

In the Bid Book:

REMOVE page 60, SPECIAL PROVISION - SECTION 105 – GENERAL SCOPE OF WORK – (Limitations of Operations), 1 page, dated November 14, 2019, and **REPLACE** with the attached, revised SPECIAL PROVISION - SECTION 105 – GENERAL SCOPE OF WORK – (Limitations of Operations), 1 page, dated July 28, 2020.

ADD the attached SPECIAL PROVISION – DIVISION 400 – PAVEMENTS - SECTION 401 - HOT MIX ASPHALT PAVEMENT – (HMA Hamburg Wheel Tracker Specification), 2 pages, dated December 15, 2019.

ADD the attached SPECIAL PROVISION – SECTION 401 – HOT MIX ASPHALT PAVEMENT – (Material Transfer Vehicle by the Ton), 1 page, dated December 3, 2014.

ADD the attached SPECIAL PROVISION – SECTION 401 – HOT MIX ASPHALT PAVEMENT – 401 HOT MIX ASPHALT LONGITUDINAL JOINT DENSITY, 2 pages, dated November 6, 2019.

ADD the attached SPECIAL PROVISION - DIVISION 401 - HOT MIX ASPHALT PAVEMENTS - (Asphalt Rich Base Mixture), 2 pages, dated January 19, 2019.

DELETE on page 82, SPECIAL PROVISION – SECTION 403 – HOT MIX ASPHALT, the entire “1 ½” HMA Overlay Areas” section. Make this change in pen and ink.

The following questions have been received:

Question: How will butt joints be paid for in the 1.5" overlay areas and the 2" overlay areas (sidewalks & drives) be paid for?

Response: All pavement butt joints and/or saw cutting to match existing drives, sidewalks, or side roads, excluding Portland Street (State Route 5/113) & Main Street (State Route 5), shall be constructed as per section 105.4.1 of the 2020 Standard Specifications. US Route 302, Portland Street (Route 5/113), and Main Street (State Route 5) shall be butted in accordance with Note 31 of the 403 Special Provision.

Question: Please confirm that the only paved walks for the project are the ones listed on sheet 12 of plans. If there are more, please clarify the location of the additional walks.

Response: Yes, all paved walks within the project area have been identified. Concrete walks are noted also.

Question: Is the curb for Item 609.31 to bituminous or slipform concrete?

Response: Item 609.31 is Curb Type 3 which is bituminous curbing per Standard Specification section 609.01

Question: With regards to Item 810, ID 643.62 Rectangular Rapid Flashing Beacon, what are the specs are far as operation? Will this be a Solar/battery or AC powered system?

Response: The Rectangular Rapid Flashing Beacon will be solar power with battery as noted in the Materials section of the Special Provision 643 (Rectangular Rapid Flashing Beacon) page 105.

Question: In Special Provision 403 there is a section of 1.5" overlay called out. Please clarify where this overlay section is located?

Response: Please disregard the 1.5" overlay section as this is an error. This section has been removed from the 403 Special Provision.

Question: Can you please clarify section 105 limitations of operations that reads the beginning of the project from 79+00 to 111+50, 1000' single lane closures from 8am to 6pm, while station 111+50 to the end of the project 144+53.54, 2500' lane closures from 6pm to 8am. Does this mean any closures greater than 1000' from 79+00 to 111+50 would require night work? Then any less than 2500' from station 111+50 to 144+53.54 could be done during the day? Just trying to understand if and how much night work would be required, thank you.

Response: See the attached, revised SPECIAL PROVISION - SECTION 105 - GENERAL SCOPE OF WORK - (Limitations of Operations).

Question: Would the Department consider waiving density on the 403.2081 item in the parking stall areas due to limited access with a full roller train?

Response: The parking stalls shall remain density eligible as per the 403 Specification.

Question: The Special Provisions 403 note 26 and note 28 refer to Special Provision 401, Longitudinal Joint Density and HMA Hamburg Wheel Tracker but are not in the bid documents, what are the Joint Density and Hamburg requirements?

Response: See changes to the Contract Bid Book. The Special Provisions for Longitudinal Joint Density and HMA Hamburg Wheel Tracker have been added.

Question: The 19mm Base (403.2072) is called out in the 403 but no special provision is provided, will the Asphalt Rich Base special provision be added to the contract?

Response: See the attached SPECIAL PROVISION - DIVISION 401 - HOT MIX ASPHALT PAVEMENTS - (Asphalt Rich Base Mixture).

Consider these changes and information prior to submitting your bid on **August 5, 2020**.

Sincerely,



George M. A. Macdougall P.E.
Contracts & Specifications Engineer

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Limitations of Operations)

1. The contractor will be allowed the following maximum single-lane alternating traffic work zones during construction:

Beginning of Project to Station 111+50

- 1,000' between the hours of 8:00am and 6:00pm

Station 111+50 to End of Project

- 1,000' between the hours of 8:00am and 6:00pm
- 2,500' between the hours of 6:00pm and 8:00am

2. Two lanes of traffic will be maintained during the Fryeburg Fair
From sunrise on Sunday October 3rd, 2021 to sunrise on Monday, October 10th, 2021
3. The Contractor shall not work within the project limits during the Fryeburg Fair
From sunrise on Sunday October 3rd, 2021 to sunrise on Monday, October 10th, 2021
4. Absences must be requested at least 72 hours in advance and are subject to Department approval based on existing roadway condition, paving deadlines, adherence to schedule, traffic restrictions, detours, etc. The Contractor must assure that the roadway surface and signage are maintained for safe passage of the traveling public during any approved absences. The Contract Completion Date will not be modified due to approved absences.
5. Under any circumstances where the Contractor fails to meet the requirements described in this Special Provision, the Contractor shall be charged Supplemental Liquidated Damages as outlined in Special Provision 105 (Supplemental Liquidated Damages).

SPECIAL PROVISION
DIVISION 400
PAVEMENTS

SECTION 401 - HOT MIX ASPHALT PAVEMENT
(HMA Hamburg Wheel Tracker Specification)

401.03 Composition of Mixtures The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. HMA shall be designed and tested according to AASHTO R35 and the volumetric criteria in Table 1. The Contractor shall size, uniformly grade, and combine the aggregate fractions in proportions that provide a mixture meeting the grading requirements of the Job Mix Formula (JMF). 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	19	12.5	9.5	4.75		
<0.3	≤91.5	96.0	≤98.0	13.0	14.0	15.0	16.0	16.0	70-80	0.6-1.2
0.3 to <3	≤90.5								65-80	
3 to <10	≤89.0								65-80*	
10 to <30										
≥ 30										

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

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

The Contractor shall submit for Department approval a JMF to the Asphalt Pavement Engineer 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.

Before the start of paving, the Contractor shall provide the Department with eight boxes of plant produced HMA. The Contractor shall test its split of the sample and determine if the results meet the requirements of the Department's written policy for mix design verification (See MaineDOT Policies and Procedures for HMA

Sampling and Testing). If the results are found to be acceptable, the Contractor will forward their results to the Department's Lab, which will test the Department's split of the sample. The results of the two split samples will be compared and shared between the Department and the Contractor. If the HMA meets the requirements for mix design verification, the mixture will be tested for rutting and moisture sensitivity in the Hamburg Wheel Tracker according to AASHTO T324, "Hamburg Wheel-Track Testing of Hot Mix Asphalt (HMA)." The sample will be required to meet the applicable requirements of Table 1A below for approval, depending on the PG binder grade required by the 403 Special Provision. If the sample meets the requirements of Table 1A, an approved JMF will be forwarded to the Contractor and paving may commence. The Department will have five business days from receipt of the sample at the Central Laboratory to process, test, and report the Hamburg Wheel Tracker sample. 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.

TABLE 1A: HAMBURG WHEEL TRACKER REQUIREMENTS

Specified PG Binder Grade	Test Temperature (°C)	Maximum Rut Depth (mm)	Minimum Number of Passes	Minimum Allowable SIP*
PG 64-28	45	12.5	20,000	15,000
PG 64E-28	48	12.5	20,000	15,000
PG 70E-28	50	12.5	20,000	15,000

* As calculated by the most recently published version of the MaineDOT HWT worksheet, which is available online at <http://www.maine.gov/mdot/contractors/publications/>

401.191 Quality Control - Method A, B & C The following language has been added to Section 401.191:

The project specific QCP shall address the sampling, transport, and testing of Hamburg Wheel Tracker QC samples and what potential steps will be taken if QC samples do not meet the requirements in Table 1A. The project-specific QCP shall also contain a sample Hamburg Wheel Tracker test report for approval. The Contractor shall sample and test HMA Pavement in the Hamburg Wheel Tracker according to AASHTO T324 in accordance with the following minimum frequencies:

TABLE 2A: MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Hamburg Wheel Tracker	1 per 4,000 ton and at least once per Acceptance Lot	AASHTO T 324

The Contractor shall sample the HMA on the first day of production and test the sample in the Hamburg Wheel Tracker according to AASHTO T324. This sample will not count towards the minimum quality control frequency specified in Table 2A. The Contractor shall submit all Hamburg Wheel Tracker test reports in writing, signed by the appropriate technician and present them to the Department within ten working days of initial sampling, except when otherwise noted in the project specific QCP due to local restrictions. The Contractor shall make the raw Hamburg Wheel Tracker data from QC samples available to the Department upon request. If a QC sample fails to meet the criteria in Table 1A, the Contractor will be required to submit a corrective action letter to the Resident, Materials Engineer, Pavement Quality Manager, and Pavement Quality Engineer by the end of the following working day with the proposed changes to bring the mixture back into compliance. The Department will respond and either accept or reject the Contractor's proposed corrective action by the end of the following working day from when the letter was received.

The Department will sample and test the HMA during production to verify compliance with the Hamburg Wheel Tracker Requirements. If a verification sample fails to meet the criteria in Table 1A, the Contractor will be required to submit a corrective action letter to the Resident, Materials Engineer, Pavement Quality Manager, and Pavement Quality Engineer by the end of the following working day with the proposed changes to bring the mixture back into compliance. The Department will respond and either accept or reject the Contractor's proposed corrective action by the end of the following working day from when the letter was received.

SPECIAL PROVISION
SECTION 401
HOT MIX ASPHALT PAVEMENT
(Material Transfer Vehicle by the Ton)

Description The hot mix asphalt pavement for all leveling, base, binder and wearing courses shall be transferred to the paver by a material transfer vehicle (MTV) on mainline travelways, shoulders, and ramps as denoted in Special Provision 403 - Hot Mix Asphalt Pavement.

The MTV shall operate as an independent unit not attached to the paver. It shall be a commercially manufactured unit specifically designed to transfer the hot mix from haul trucks to the paver without depositing the mix on the roadway. A separate hopper with a capacity of 14 ton shall be inserted into the regular paver hopper. The MTV or the hopper insert shall be designed so that the mix receives additional internal mixing action either in the MTV unit or the paver hopper.

Method of Measurement Hot mix asphalt pavement transferred by the material transfer vehicle and hopper insert will be measured by the ton.

Basis of Payment The accepted quantities of hot mix asphalt pavement transferred by the material transfer vehicle and hopper insert will be paid for at the contract unit price per ton.

Payments will be made under:

<u>Pay Item:</u>	<u>Pay Unit:</u>
403.40 Material Transfer Vehicle (MTV)	Ton

SPECIAL PROVISION
SECTION 401
HOT MIX ASPHALT PAVEMENT

401 HOT MIX ASPHALT LONGITUDINAL JOINT DENSITY

401.30 Description The Department will measure the pavement density of longitudinal joints constructed between adjoining travel lanes; turn lanes, truck (climbing) lanes, and passing lanes will be considered travel lanes for longitudinal joint density testing unless otherwise noted in Section 403 – Hot Mix Asphalt Pavement. Core samples shall be tested according to AASHTO T-166. The Contractor shall cut 6-inch diameter cores at no additional cost to the Department by the end of the working day following paving. Pre-testing of the acceptance 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.

For vertical longitudinal joints, cores shall be taken directly centered over the construction joint. For notch-wedge longitudinal joints, the cores shall be cut directly over the center of the tapered portion of the wedge.

As part of the project specific QCP, the Contractor shall include details as to methods of construction, rolling and compaction efforts, and action plan to adjust methods or equipment should the Quality level fall below 50 percent within limits. The Contractor shall be required to measure the joint density at randomly selected locations with a minimum frequency of one measurement per 750 linear feet. The Contractor shall have the option to cut calibration/verification cores at a rate not to exceed 1 per day.

If the Quality level for density falls below 50 percent within limits, the Contractor shall cease placement operations and submit a corrective action letter to the Department before proceeding with the Lot or before starting a new Lot. The Department will respond and either accept or reject the Contractor's proposed corrective action. If the Department accepts the corrective action, three stratified verification cores will be taken from the first 1500 foot section of longitudinal joint constructed for the purpose of evaluating the corrective action. These cores will be in addition to any Acceptance cores that may be designated in this area. The results from these cores shall be combined with the cores from the Lot in progress. Should the combined Quality level for density show an improvement, the Department will accept the corrective action and normal Acceptance sampling frequency shall resume. If an improvement has not been made to the combined Quality level for density, the Contractor shall cease production and submit an additional corrective action letter for consideration.

401.31 Acceptance This method utilizes Quality Level Analysis and pay factor specifications as described in Section 106. For Hot Mix Asphalt Pavement designated for acceptance under

Quality Assurance provisions, the Department will sample once per subplot on a statistically random basis, test, and evaluate in accordance with the following Acceptance Properties:

Lot size will be the entire length of longitudinal joint for the given HMA layer for the project, or equal Lots of a size agreed upon at the Pre-paving conference. The maximum subplot size shall be 2000 linear feet of longitudinal joint for density and the minimum number of sublots for any Lot shall be five. The Lot will be divided up into sublots of equal length. There shall be a separate Lot for each lift of HMA pavement, and Lots shall not be comprised of results from more than one HMA layer.

The Department will determine a pay factor using acceptance limits from Table 1.

TABLE 1: LONGITUDNAL JOINT DENSITY ACCEPTANCE LIMITS

PROPERTY	LSL
% TMD (In-Place Density)*	91.0%

* The Theoretical Maximum Density will be determined from the average of the G_{mm} values used to determine the percent compaction of the nearest acceptance cores on either side of the Longitudinal Joint Core from each adjacent mat.

The Department will calculate the Pay Adjustment for Longitudinal Joint Density as follows:

$$\text{PA} = (\text{joint density PF} - 1.0)(Q)(P) \times 0.40$$

Where

$$\begin{aligned} \text{PA} &= \text{Pay Adjustment} \\ Q &= \text{Quantity of traveled way pavement represented by PF in tons} \\ P &= \text{Contract price per ton} \\ \text{PF} &= \text{Pay Factor} \end{aligned}$$

If the joint density Pay Factor is less than 0.88, the Pay Adjustment shall be:

$$\text{PA} = (-0.05)(Q)(P)$$

SPECIAL PROVISION
DIVISION 401
HOT MIX ASPHALT PAVEMENTS
(Asphalt Rich Base Mixture)

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

Description The Contractor shall furnish and place one or more courses of Asphalt Rich Base Hot Mix Asphalt 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.

MATERIALS

401.02 Materials The Asphalt Rich Base HMA shall be designed for an Air Void Target of 2.5 % at 65 Gyration.

401.03 Composition of Mixtures The Asphalt Rich Base HMA shall meet the following design criteria:

The mixture shall be based upon a MaineDOT approved and active 9.5 mm, 12.5 mm, or 19.0 mm 65 gyration JMF. The gradation aims of the design shall exactly match the aims of the base approved design it is based upon. No aim changes shall be permitted to the asphalt-rich design unless they exactly match those applied to the base design. Asphalt-rich designs shall only be permitted to be carried over from year to year if the base JMF from which it was generated is carried over as well and the gradation aims remain identical. If the base JMF is terminated for any reason, the asphalt-rich design shall be terminated as well.

Before the start of paving, the Contractor and the Department shall split a production sample for evaluation. The Contractor shall test its split of the sample and determine if the results meet the following requirements for verification:

ASPHALT-RICH VERIFICATION CRITERIA

Property	Criteria
PGAB Content	Design Value ± 0.3%
Air Voids at N _d	2.5% ± 0.5%
Voids in the Mineral Aggregate	See Section 401.03 Composition of Mixtures <u>Table 1</u>
Voids Filled with Binder	74% - 88%
Fines/Eff. Binder Ratio	0.4-1.2
Gradation	Passing 4.75 mm and larger sieves: Target ±7% Passing 2.36 mm to 1.18 mm sieve: Target ±4% Passing 0.60 mm: Target ±3% Passing 0.30 mm to 0.075 mm sieve: Target ±2%
Passing NMAS sieve minimum	90.0%
Average G _{mm}	Design Value ± 0.02

If the results are found to be acceptable, the Contractor will forward their results to the Department's Lab, which will test the Department's split of the sample. The results of the two split samples will be compared and shared between the Department and the Contractor. If the Department finds the mixture acceptable, an approved JMF will be forwarded to the Contractor and paving may commence.

401.15 Compaction The Contractor shall be responsible for any rutting or flushing of the asphalt-rich base mixture during placement or after opening to traffic. The asphalt-rich base layer shall be protected from damage due to traffic or environmental factors.

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

TABLE 7: METHOD A ACCEPTANCE LIMITS

Property	USL and LSL
Passing 4.75 mm and larger sieves	Target +/-7%
Passing 2.36 mm to 1.18 mm sieves	Target +/-4%
Passing 0.60 mm	Target +/-3%
Passing 0.30 mm to 0.075 mm sieve	Target +/-2%
PGAB Content	Target +/-0.4%
Air Voids	2.5% +/-1.5%
Fines to Effective Binder	0.4 to 1.2
Voids in the Mineral Aggregate	LSL Only from Table 1
Voids Filled with Binder	74% – 93%
% TMD (In place density)	96.0% +/- 2.5%

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
403.2102 – 9.5mm Asphalt Rich Base HMA	Ton
403.2132 – 12.5mm Asphalt Rich Base HMA	Ton
403.2072 – 19.0mm Asphalt Rich Base HMA	Ton