



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

JOHN ELIAS BALDACCI
GOVERNOR

DAVID A. COLE
COMMISSIONER

April 6, 2007
Subject: **Brunswick-Topsham**
Project No's IM-295-1293(000)E & IM-
1296(400)E
Pin No's 12930.00 & 12964.00
Amendment No. 2

Dear Sir/Ms:

Please make the following changes to the Bid Documents.

In the Bid Book, REMOVE the existing: "Special Provision, Section 107, Time, (Scheduling of Work-Projected Payment Schedule)" dated March 8, 2007 one page total and REPLACE with the attached updated: "Special Provision, Section 107, Time, (Scheduling of Work-Projected Payment Schedule)" dated April 5, 2007 one page total.

REMOVE the amended "Special Provision, Section 462, Gap-Graded HMA, (ultra thin bonded wearing course)" dated April 4, 2007 four pages total and REPLACE it with the attached updated "Special Provision, Section 462, Gap-Graded HMA, (ultra thin bonded wearing course)" dated April 6, 2007 four pages total.

Consider these changes prior to submitting your bid on April 11, 2007.

Sincerely,

Scott Bickford
Contracts & Specifications Engineer



PRINTED ON RECYCLED PAPER

SPECIAL PROVISION

SECTION 107

TIME

(Scheduling of Work – Projected Payment Schedule)

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

SPECIAL PROVISION
SECTION 462
GAP-GRADED HMA
(Ultra Thin Bonded Wearing Course)

April 6, 2007

DESCRIPTION The Ultra thin Bonded Wearing Course consists of a warm polymer modified asphalt emulsion tack coat followed immediately with an ultra-thin hot mix asphalt wearing course. The tack coat is spray applied immediately prior to the application of the wearing course to produce a durable wearing surface that can be opened to traffic. The finished surface treatment has a minimum thickness of 12.5mm, (1/2”), for Type A and 16mm, (5/8”), for Type B and Type C.

MATERIALS

The contractor shall formulate and submit to the Department, a job mix formula (JMF) that satisfies the design general limits listed in Table 1 – Mixture requirements. The production tolerances customarily used by the Department for HMA shall apply. The JMF range shall not fall outside the general design limits.

Table 1 – Composite Gradation

AASHTO Standard Sieve Sizes		Total % Passing by Weight		
METRIC	US	Type A 1/4”	Type B 3/8”	Type C 1/2”
19 mm	3/4”	-	-	100
12.5 mm	1/2”	-	100	85-100
9.5 mm	3/8”	100	85-100	45-85
6.3 mm	1/4”	70-100	30-50	30-50
4.75 mm	#4	40-60	24-41	24-41
2.36 mm	#8	21-33	21-33	21-33
1.18 mm	#16	15-26	15-26	15-26
0.60 mm	#30	11-20	11-20	11-20
0.30 mm	#50	8-16	8-16	8-16
0.15 mm	#100	5-10	5-10	5-10
0.075 mm	#200	4-7	4-7	4-7
%PGB		4.9 – 5.4	4.8 – 5.3	4.8 – 5.3

*Note: All aggregate percentages are based on the total weight of the aggregate. The composite gradation for each individual Type of mixture shall meet the gradation requirements of table 1.

COARSE AGGREGATE

The single size coarse aggregate shall be nominal 6.3 mm (1/4") for Type A, 9.5 mm (3/8") for Type B, and 12.5 mm (1/2") for Type C. These are recommended requirements only listed in Table 2 – Coarse Aggregate Gradations.

Table 2 – Coarse Aggregate Gradations

Screen Size	Total % Passing by Weight		
	A	B	C
12.5 mm, (1/2")		100	85-100
9.5 mm, (3/8")	100	85-100	25-80
6.3 mm, (1/4")	60-100	0-15	0-15
4.75 mm, (#4)	10-45	0-3	0-3
2.36 mm, (#8)	0-3		
1.18 mm, (#16)			

Coarse aggregates used shall be from an approved source. Where coarse aggregates for these mixes are from more than one source or of more than one type of material, they shall be proportioned and blended to provide a uniform mixture.

FINE AGGREGATE

The fine aggregate shall be 100% crushed. These are recommended requirements only listed in Table 3 – Fine Aggregate Gradations.

Table 3 – Fine Aggregate Gradation

Screen Size	% Passing
4.75 mm, (#4)	95-100
2.36 mm, (#8)	70-90
1.18 mm, (#16)	50-70
0.60 mm, (#30)	35-55
0.30 mm, (#50)	25-40
0.15 mm, (#100)	15-28
0.075 mm, (#200)	10-17

AGGREGATES

Aggregates used shall be from an approved source and shall meet the requirements of section 703.07 for 3.0 to < 10 million ESALs except the changes or additions made by 1 through 7.

1. The Micro-Deval value shall 18 or less.
2. Absorption by AAHSTO T 85 shall be less than 2.0%.
3. It shall have a minimum sand equivalent of 45, (AASHTO T 176), and the fine aggregate shall be 100% crushed.
4. 95 % of the aggregate shall have at least a single face crushed and 85% shall have 2 or more crushed.
5. Aggregate shall have a maximum LA Abrasion of 35.
6. Percent by weight of Flat and Elongated particles shall be (5:1 ratio) with 10% maximum.
7. Soundness (AASHTO T 104-94) Magnesium Sulfate 18% maximum or Sodium Sulfate 12 % maximum.

MINERAL FILLER Hydrated lime, fly ash, baghouse fines and cement are acceptable as mineral filler.

Typical acceptable gradation: 100% passing 0.60 mm, (#30)
75-100% passing 0.075 mm, (#200).

ASPHALT BINDER Use PG 64-28.

TACK COAT Use grade CRS-2 asphalt emulsion modified with latex, natural or synthetic, and shall be certified as meeting the requirements of ASTM D2397 except as modified in Table 5 – Tack Coat Material Properties. It is required that the latex be co-milled at the bulk emulsion facility, to ensure complete and balanced blending.

Table 5 – Tack Coat Material Properties

Property	Method	Minimum	Maximum
Latex Content, % Mass of Total Residue		3.0	
Viscosity at 25 degrees C, (Sec.)	ASTM D244	20	100
Setting Time, Minutes	Observation	3	7
Demulsibility, % by wt. Residue	ASTM D244	40	

EQUIPMENT

PAVING The self-priming paver must be capable of spraying the tack coat, applying the hot asphalt overlay and smoothing the surface of the mat in one pass at the rate of 10-30 meters, (33-98 feet), per minute. The self-priming paver must incorporate a receiving hopper, feed conveyor, insulated storage tank for emulsion, metered tack coat spray bar and a variable width, heated, ironing type screed. The screed must have the ability to be crowned at the center both positively and negatively and have vertically adjustable extensions to accommodate the desired pavement profile.

COMPACTION Use steel wheeled double drum roller weighing at least 7.25 to 9 metric tons, (8 to 10 ton), that are equipped with functioning water systems and scrapers to prevent the fresh mix from adhering to the roller drums.

CONSTRUCTION DETAILS

SURFACE PREPARATION Contractor shall remove the striping and sweep the roadway as needed prior to surface the treatment.

APPLICATION The minimum pavement surface temperature for application of the tack coat and placement of the wearing course is 15° C, (60° F.). Apply the tack coat at a temperature of 60° - 70° C, (140° - 160° F.). Provide a uniform application across the entire width to be overlaid, at a rate of 0.68 – 1.13 liters per square meter, (.15 - .25 gallons per square yard). Continuously monitor the rate of spray. No equipment shall come in contact with the tack seal coat before the hot mix asphalt concrete wearing course is applied. Immediately after applying the tack coat, apply the hot mix asphalt overlay across the full width of the tack coat at a temperature of 150° – 165° C., (300° - 325° F.).

COMPACTION Begin compaction immediately after the application of wearing course. Use a minimum of two passes. The roller(s) will not be allowed to stop on the freshly placed wearing course. Use an adequate number of rollers to complete compaction before the pavement temperature falls below 85° C., (185° F.). Protect the wearing course from traffic until the rolling operation is complete and the material has cooled sufficiently to resist damage.

METHOD OF MEASUREMENT The Ultra Thin Bonded Wearing Course shall be measured by the square meter [square yard].

BASIS OF PAYMENT The accepted quantity of Ultra Thin Bonded Wearing Course will be paid for at the contract unit price per square meter [square yard], complete in-place which price will be full compensation for furnishing all equipment, material, labor and all incidentals necessary to complete the work.

Payments will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
462.30 - Ultra Thin Bonded Wearing Course	Square Meter [yd ²]