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

JOHN ELIAS BALDACCI
GOVERNOR

DAVID A. COLE
COMMISSIONER

April 22, 2008
Subject: **Brunswick – Gardiner I-295**
Project No.IM-1511(400) E
Pin No.015114.00
Amendment No. 4

Dear Sir/Ms:

Please make the following change to the bid document:

In the Bid Book, **REMOVE**: "SECTION 401, HOT MIX ASPHALT PAVEMENT, High Performance Rubberized Asphalt Pavement", pages 94 – 104 (11 pages dated March 26, 2008) and **REPLACE** with the new attached "SECTION 401, HOT MIX ASPHALT PAVEMENT, High Performance Rubberized Asphalt Pavement" (11 pages dated April 22, 2008).

The following questions have been received:

Question: Item 606.48, single galvanized steel posts. Can you tell us where these parts will be used?

Response: Undetermined locations in the guardrail – remove, modify & reset areas.

Question: Will a steel sign cabinet be acceptable for the Dynamic Message Signs?

Response: Yes

Consider this change and information prior to submitting your bid on **April 23, 2008.**

Sincerely,

Scott Bickford
Contracts & Specifications Engineer

SECTION 401
HOT MIX ASPHALT PAVEMENT
High Performance Rubberized Asphalt Pavement

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

401.01 Description. The Contractor shall furnish and place one or more courses of High Performance Rubberized Asphalt Pavement surface, or base, in accordance with the contract documents and in reasonably close conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established by the Resident.

This Special Provision requires the Contractor to design, produce, and install a High Performance Rubberized Asphalt Pavement course system that will serve as a waterproofing layer, as well as a base course / wearing course over the bridge deck surfaces.

The Department will accept this work under Quality Assurance provisions, in accordance with these specifications and the requirements of Section 106 - Quality.

Contractor Option – The contractor shall utilize one of the following materials and processes to design and produce a High Performance Rubberized Asphalt Pavement.

Rubber Modifier Additive 401.021 - Must meet the requirements of ASTM D6114-Type 2

Option A – The High Performance Rubberized Asphalt Pavement shall be modified with a polymer modifier packaged in 10.1kg (22.5 pound) units in meltable polyethylene bags, with a minimum of 45 pounds of polymer modifier per ton of mix. The meltable bags shall be introduced into the pug mill without opening, and will melt to disperse the additive through the normal mixing action of the pug mill. The exact rubber modifier content shall be determined by the mix design submitted by the Contractor and modifier supplier based on laboratory testing. The final blend will be in accordance with the rubber modifier manufacturer requirements and approved by the Engineer. The modifier shall be a concentrated thermoplastic virgin polymeric material that is waterproof, has a melting point of 250 degrees Fahrenheit and an embrittlement point of -34 degrees Fahrenheit.

Or

Option B - The granulated rubber shall be vulcanized rubber product from the ambient temperature processing of scrap, pneumatic tires. The granulated rubber shall meet the following gradations:

Sieve Size	% Passing
2.00 mm, (#10)	100
1.18 mm, (#16)	90 – 100
0.60 mm, (#30)	25 – 100
0.18 mm, (#80)	0 - 20

The use of rubber of multiple types from multiple sources is acceptable provided that the overall blend of rubber meets the gradation requirements. The length of the individual rubber particles shall not exceed 3 mm, (1/8"). The rubber shall be accepted by certification from the rubber supplier.

The percent of rubber shall be a minimum of 15% by weight of total asphalt-rubber mixture. The exact granulated rubber content shall be determined by the mix design submitted by the Contractor and granulated rubber supplier based on laboratory testing.

The temperature of the asphalt shall be between 177°C and 218°C, (350°F and 425°F), at the time of addition of the granulated reclaimed rubber. The asphalt and rubber shall be combined and mixed together in a blender unit and reacted for a minimum of one hour. The temperature of the asphalt-rubber mixture shall be above 163°C, (325°F), during the reaction period.

A mechanical blender for proper proportioning and thorough mixing of the asphalt-cement and granulated rubber is required. This unit shall be equipped with: an asphalt totaling meter (liters or gallons); a flow rate meter (liters per minute or gallons per minute); a positive displacement auger to feed the rubber properly to mixing chamber at the specified rate; and a static motionless mixer. Blender will have a separate asphalt cement feed pump and finished product pump to maximize production. Blender shall be capable of providing 100% proportional mix at any given time during the blending cycle and documentation from the manufacturer shall be submitted to the Maine DOT.

401.03 Composition of Mixtures; revised as follows:

The Contractor shall compose the High Performance Rubberized Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), mineral filler if required and crumb rubber concentrate. The final job mix design will be according to the crumb rubber modifier manufacturer's requirements and approved by the Department. The High Performance Rubberized Asphalt Pavement shall be designed and tested according to AASHTO T312 and the design criteria listed below. 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).

Design Criteria

PGAB Content	6.5 – 10.0
Air Void	2.0 +/- 1.5%
Rubber Additive	As recommended by the Manufacturer.

GRADATION REQUIREMENTS

	Option A		Option B
Sieve Size	Percent Passing		Percent Passing
19.0mm [3/4 inch]	100		100
12.5 mm [1/2 inch]	100		95-100
9.5 mm [3/8 inch]	75-100		78-92
4.75 mm [No. 4]	55-85		28-42
2.36 mm [No. 8]	48-65		15-25
1.18 mm [No. 16]	28-40		-
0.600 mm [No. 30]	15-25		5-15
0.300 mm [No. 50]	10-18		-
0.075 mm [No. 200]	2-6.0		2-6.0

The construction of a test strip will be required prior to production of the High Performance Rubberized Asphalt Pavement.

401.031 Test Strip A test strip shall be constructed prior to the placement of High Performance Rubberized Asphalt Pavement on the bridge decks. The test strip will be constructed offsite to establish the proper production, placement, and compaction procedures for this contract prior to full plant production.

The test strip is to be constructed off site, and shall consist of a 20 ton minimum quantity. The Contractor shall notify the Department within 48 hours prior to their intent to construct the strip. The Contractor shall provide the Department with two mix samples from the test strip produced material for mix verification. The samples shall be tested for asphalt content and gradation against the JMF and other contract requirements before further production. A minimum of three cores will be sampled from the test strip, and the average density of the three is required to be above the LSL of 93.0 %. If the average density of the three cores is less than the LSL of 93.0, the test strip will be rejected and a new test strip will be required before further production. There will be no separate payment for material placed in a offsite test strip, but shall be considered incidental to the 403.325 High Performance Rubberized Asphalt Pavement , 9.5 mm item.

Modified bituminous concrete surface course production will not resume unless the Department is confident material meeting the contract requirements can be produced.

401.04 Temperature Requirements This section has been modified with the addition of the following:

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

At the Plant – Additive manufactures recommended mix temp. ± 10°C [20°F]
At the Paver – Additive manufactures recommended compaction temp. ± 10°C [20°F]

The JMF, and the mix subsequently produced, shall meet the requirements of the design criteria and Section 703.07. Under no circumstances will the Department accept HMA (unless the binder has been modified) that has been heated to temperatures exceeding the manufactures recommendations. The Department will have a full time inspector in the plant during all production of the High Performance Rubberized Asphalt Pavement. The Contractor shall notify the Department within 48 hours prior to producing the High Performance Rubberized Asphalt Pavement.

401.05 Performance Graded Asphalt Binder This section has been modified with the addition of the following:

Unless otherwise noted in Special Provision 403 - Hot Bituminous Pavement, the PGAB shall be 64-28, or 70-28, The use of Recycled Asphalt Pavement (RAP) will not be permitted. The PGAB shall meet the applicable requirements of AASHTO M320 - Standard Specification for PGAB. The Contractor shall provide the Department with an approved copy of the Quality Control Plan for PGAB in accordance with AASHTO R 26-01 Certifying Suppliers of PGAB.

401.08 Hauling Equipment This section has been modified with the addition of the following:

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

401.10 Rollers This section has been modified with the addition of the following:

Full compaction of the High Performance Rubberized Asphalt Pavement is required and shall be achieved by utilizing steel double drum drive rollers used in the static mode. One roller will be required for break down, and one for finish rolling. A third roller, the same as the two being utilized to do the work, will be on the job to cover any breakdowns. The rollers' water system must be in reliable working order, and apply even water coverage to the asphalt mat. High Performance Rubberized Asphalt Pavement may be temperatures are higher than conventional mixes and require more water to keep the material from sticking to the steel rolls. Pneumatic rollers are not required on the High Performance Rubberized Asphalt Pavement.

The contractor may use other compaction means in areas where the specified roller train can't access. The use of an asphalt vibratory whacker may be allowed as long as it is in good working order and the watering system works reliably. Breakdown rolling will be done immediately behind the spreading operation. The finish roller will follow breakdown and used to remove imperfections in the mat. The rolling pattern will be straight with the paving direction, with minimal turning. The Department will work with the Contractor to control the rolling pattern and the frequency of passes in required. Any changes to the paving and rolling procedures must be approved by the Resident and included in a modified QCP.

If methods of compaction other than the conventional the rolling train is required, additional manpower shall be provided by the Contractor to ensure that the areas not accessible by rollers

is compacted before the material cools below breakdown compaction temperatures. Areas found to be deficient due to lack of observed compactive effort, or tested to be below the minimum density requirement, will be corrected in accordance with this Special Provision's Section, 401.20 – Acceptance: Correction of Deficiencies.

401.11 Preparation of Existing Surface This section has been modified with the addition of the following:

(Deck Preparation) Following any required deck patching and prior to placement of the High Performance Rubberized Asphalt Pavement, the concrete deck shall be prepared as follows:

The work under this Item shall consist of cleaning the surface of the concrete deck to remove any milled material or debris which would reduce or prevent bonding, furnishing and applying Edge Sealer and Tack Coat as recommended by the manufacturer, furnishing and placing on the cleaned and tack coated bridge deck, a hot-mix asphalt waterproofing course to the lines, grades, width and depth as indicated on the plans, and saw cutting and filling any construction joints with rubberized joint sealer, all in accordance with the specifications and as directed by the Engineer.

High Performance Rubberized Asphalt Pavement shall not be placed until the moisture content of the surface it is to be placed on is at or below 6%. The moisture content will be checked with a "Sovereign Potable Electronic Moisture master" meter or an approved equal. The moisture content shall be checked in a minimum of one location in each span. High Performance Rubberized Asphalt Pavement shall not be placed until the new concrete has been in place a minimum of 7 days. The entire deck shall be shot blasted to achieve an anchor profile which is clean of foreign materials, such as oil or grease, and any sharp protrusions removed and free of laitance. The Contractor shall have a copy of Technical Guideline No. 03732 (Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays) published by the International Concrete Repair Institute. The final concrete surface profile shall range between a CSP 1 and CSP 5 as defined by this guideline. Areas where rapid setting patching materials have been placed shall be cured for a minimum of 72 hours or longer when recommended by the product manufacturer prior to applying the High Performance Rubberized Asphalt Pavement. All surfaces shall then be swept and cleaned by brooms and compressed air as directed by the Resident before the modified bituminous concrete surface course is placed.

The deck must be clean and free of any loose debris and moisture. A 100-150 mm (4-6 inch) application of Edge Sealer specified by the manufacturer, and at a rate specified by the manufacturer, to be used to seal all edges of the planned day's placement of the High Performance Rubberized Asphalt Pavement. Particular attention shall be given to vertical edges of headers, drains, scuppers, expansion joints or wherever compaction may be difficult to achieve. Where vertical edges exist, apply Edge Sealer 100-150 mm (4-6 inch) out from curb scuppers, joints, etc., on the horizontal and up to the top of the proposed finished surface grade. When practical, this should be done the day before or as early as possible to maximize drying time.

The Tack Coat shall be applied to the existing horizontal concrete bridge deck surfaces in a uniform coating at the rate specified by the manufacturer.

Butt joints made during paving operations must have Edge Sealer applied to the butt surface before the joining asphalt lift. Construction joints shall be saw cut to a 12.7 mm (½ inch) width and filled to within 3 mm (1/8 inch) of the surface with the rubberized asphalt joint sealer previously specified. Extreme care shall be taken so as not to overfill these sawed joints since excess joint sealer material will cause ripples in the surface course necessitating corrective work by the Contractor.

Edge Sealer shall be applied to all terminations of the paved asphalt, including curb lines and deck joints, as soon as possible after the pavement has cooled.

The Contractor shall thoroughly clean the surface of all objectionable material upon which modified bituminous concrete surface course is to be placed.

401.15 Spreading and Finishing This section has been modified with the addition of the following:

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 High Performance Rubberized Asphalt Pavement with hand tools to provide the required compacted thickness.
On roads opened to two-way traffic, the Contractor shall place each course over the full width of the traveled way section being paved that day, unless otherwise noted by the Department in Section 403 - Hot Bituminous Pavement.

All pavements shall be placed on surfaces that have a Tack Coat applied, as specified by the manufacturer, and allowed to cure for a minimum period of 40 minutes. An approved Tack Coat shall be applied to the existing concrete deck, and to the first layer of pavement in accordance with the manufacturer's recommendations if required. The film thickness of the Tack Coat shall be 0.04 to 0.15 gallons per square yard, or as otherwise specified by the manufacturer. The Tack Coat shall be allowed to break or dry prior to placement of the modified bituminous concrete surface course. A Tack Coat is not required between the pavement layers if the base and surface layers of pavement are placed the same working day, or unless the base layer surface becomes contaminated with materials that would reduce bond between layers.
The material shall be placed at temperatures specified by the manufacturer.

401.16 Compaction This section has been modified with the addition of the following:

Immediately after the High Performance Rubberized Asphalt Pavement has been spread, struck off, and any surface irregularities adjusted, the Contractor shall thoroughly and uniformly compact the modified bituminous concrete surface course 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 High Performance Rubberized Asphalt Pavement to the rollers or vibrating compactors without the use of fuel oil or other petroleum based release agents.

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 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 High Performance Rubberized Asphalt Pavement 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. If methods of compaction other than the conventional the rolling train is required, additional manpower shall be provided by the Contractor to ensure that the areas not accessible by rollers is compacted before the material cools below breakdown compaction temperatures. Areas found to be deficient due to lack of observed compactive effort, or tested to be below the minimum density requirement, will be corrected in accordance with this Special Provision's Section, 401.20 – Acceptance: Correction of Deficiencies.

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

401.17 Joints This section has been modified with the addition of the following:

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

The paver shall always maintain a uniform head of High Performance Rubberized Asphalt Pavement during the joint construction. The High Performance Rubberized Asphalt Pavement shall be free of segregation and meet temperature requirements. 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.

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

The edges of the pavement shall be sealed by applying Edge Sealer on all vertical faces which will be in contact with the High Performance Rubberized Asphalt Pavement. The material shall be applied so the entire edge of the layer, and a few inches onto the deck surface, is coated.

A Tack Coat shall be applied to the existing concrete deck, and the first layer of pavement in accordance with the manufacturer's recommendations. The film thickness of the tack coat shall be 0.04 to 0.15 gallons per square yard, or as otherwise specified by the manufacturer. The Tack Coat shall be allowed to break or dry prior to placement of the High Performance Rubberized Asphalt Pavement. A Tack Coat is not required between the pavement layers if the base and surface layers of pavement are placed the same working day, or unless the base layer surface becomes contaminated with materials that would reduce bond between layers.

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 High Performance Rubberized Asphalt 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.

The Contractor shall fill all holes in the pavement resulting from cutting cores acceptable mixture no later than the following working day. The Contractor shall carefully clean the holes and apply a coating of Edge sealer. On surface courses, cores shall not be cut except for Quality Assurance.

Contractor shall monitor plant production using running average of three control charts as specified in Section 106 - Quality. Control limits shall be as noted in Table 3 below.

The Resident may at any time, notwithstanding previous sampling and certification, notify and stop the Contractor, reject and require the Contractor to dispose of any batch of bituminous mix which is rendered unfit for use due to temperature, oxidation, contamination, segregation or incomplete coating of aggregate. Such rejection may be based on visual inspection alone.

401.20 Acceptance This section has been modified with the addition of the following:

Pavement Density The Department will High Performance Rubberized Asphalt Pavement density using core samples tested according to AASHTO T-166. The Department will randomly determine core locations. The Contractor shall cut 150 mm [6 in] diameter cores at no additional cost to the Department by the end of the working day following the day the pavement is placed, and immediately give them to the Department. The cores will be placed in a transport container provided by the Department and transported by the Contractor to the designated MDOT Lab as directed by the Department. Pre-testing of the cores will not be allowed. At the time of sampling, the Contractor and the Department shall mutually determine if a core is damaged. If it is determined that the core(s) is damaged, the Contractor shall cut new core(s) at the same offset and within 1 m [3 ft] of the initial sample. At the time the core is cut, the Contractor and the Department will mutually determine if saw cutting of the core is needed, and will mark the core at the point where sawing is needed. The core may be saw cut by the MaineDOT Lab, without disturbing the layer being tested to remove lower layers of Hot Mix

Asphalt Pavement, gravel, or RAP. No recuts are allowed at a test location after the core has been tested. Upon conclusion of each lot, density results shall be examined for statistical outliers as stated in Section 106.7.2.

401.203 Acceptance Testing This section has been modified with the addition of the following:

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 4050 Mg [4500 tons], with unanticipated over-runs of up to 1350 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 675 Mg [750 ton] for mixture properties, 450 Mg [500 ton] for base or binder densities and 225 Mg [250 ton] for surface densities. The minimum number of sublots for mixture properties shall be 4, and the minimum number of sublots for density shall be five.

TABLE 7: 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	2.0% +/-1.5%
Fines to Effective Binder	N/A
Voids in the Mineral Aggregate	N/A
Voids Filled with Binder	N/A
% TMD (In place density)	96.0% +/- 2.5%

Correction of Deficiencies In the event of any portions of pavement fails to comply with specified quality requirements, the Contractor shall replace or repair deficient pavements as directed by the Resident. Corrections shall be made as work progresses and not reserved for a separate operation at some later date**.**

1. For thickness deficiencies, the only acceptable repair methods are removal and replacement, or placement of an overlay layer. Corrective work shall begin and end at the repair, and feather edging will not be permitted.
2. Where more than 6 mm (¼ inch) above the required grade, correct deficiency by removal as necessary to comply with the specifications, except where an approved contour pattern satisfying riding quality and drainage as shown on the Contract Drawings has been established.
3. For deficiency in smoothness tolerance, correct any deficiency by means approved by the Resident and subject to all other provisions hereof. The area for correction of deficiencies in surface smoothness and surface grade tolerance shall be those areas, which fail to satisfy quality requirements. Existing pavement shall be removed as necessary to provide square joints for the full depth of the course.
4. For deficiency of in-place voids, remove and replace deficient pavement in accordance with all requirements specified herein. The area replaced for deficiency

of in-place voids shall be the total area paved with-in the deficient paving lot. Existing pavement shall be removed as necessary to provide square joints for the full depth of the course.

5. For deficiency involving a porous surface in the mat at longitudinal joints, or at construction joints, the surface shall be sealed with an asphalt filler/sealer material submitted to and approved by the Resident.

401.222 Pay Factor (PF) This section has been modified with the addition of the following:

The Department will use the following criteria for pay adjustment using the pay adjustment factors under Section 106.7 - Quality Level Analysis:

Density If the pay factor for Density falls below 0.80 all of the cores will be randomly recut by Sublot. A new pay factor will be calculated that combines all initial and retest results. If the resulting pay factor is below 0.80, the entire Lot shall be removed and replaced with material meeting the specifications at no additional cost to the Department, except that the Department may, when it appears that there is a distinct pattern of defective material, isolate any defective material by investigating each mix sample sublot and require removal of defective mix sample sublots only, leaving any acceptable material in place if it is found to be free of defective material. Pay factors equal to or greater than the reject level will be paid accordingly.

TABLE 9: TABLE OF GRADATION COMPOSITE " f " FACTORS
(Methods A and B)

Constituent		"f" Factor			
		19 mm	12.5 mm	9.5 mm	4.75 mm
Gradation	25 mm	-	-	-	-
	19 mm	4	-	-	-
	12.5 mm		4	4	-
	9.50 mm				4
	2.36 mm	6	6	6	8
	1.18 mm				
	0.60 mm	2	2	2	2
	0.30 mm	2	2	2	2
	0.075 mm	6	6	6	8

For HMA evaluated under this specification, the Department will determine a pay factor using acceptance limits from Table **7**: Acceptance Limits.

VMA, Air Voids, VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using the applicable Acceptance Limits.

The following variables will be used for pay adjustment:

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

Pay Adjustment This section has been modified with the addition of the following:

The Department will use density, Performance Graded Asphalt Binder content, and the screen sizes listed in Table **7** for the type of HMA represented in the JMF. If any pay factor for any single property falls below 0.85, the Contractor shall shut down the HMA plant. If the PGAB content falls below 0.80, then the PGAB pay factor shall be 0.55. If the percent passing the nominal maximum sieve, the 2.36 mm sieve, the 0.300 mm sieve or the 0.075 mm sieve falls below 0.80, then the composite pay factor for the four sieves shall be 0.55.

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

PA = (density PF- 1.0)(Q)(P)x0.50

PGAB Content and Gradation The Department will determine a pay factor using Table **7**: Acceptance Limits. The Department will calculate the price adjustment for Mixture Properties as follows:

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

VMA, Air Voids, VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using Table 7: Acceptance Limits. The Department will not make price adjustments for VMA, Air Voids, VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

Method of Measurement. High Performance Rubberized Asphalt Pavement will be measured by the ton, complete and in place.

Basis of Payment. High Performance Rubberized Asphalt Pavement (HPRA) will be paid for at the contract unit price per ton. Such payment shall be full compensation for obtaining and furnishing all aggregate, additives, and bituminous material including tack and edge sealer, for processing, heating, mixing, weighing, trucking, placing, and rolling; for furnishing the test strip, all labor, equipment, tools and all incidentals necessary to complete the work. Price adjustments will be made in accordance to the designated testing method.

Payment will be made under:

Pay Item	Pay Unit
403.325 High Performance Rubberized Asphalt Pavement, 9.5 mm	Ton