

**SECTION 00745 - HOT MIXED ASPHALT CONCRETE (HMAC)**

*(Follow all instructions. If there are no instructions above a subsection, paragraph, sentence, or bullet, then include them in the project but make necessary modifications to only include project specific specifications. Delete specifications that do not apply to the project.)*

Comply with Section 00745 of the Standard Specifications modified as follows:

*(Use the following subsection .00 when lime treatment of aggregates is specified in the pavement design report.)*

**00745.00 Scope** - Add the following paragraph to the end of this subsection:

Lime treatment of new aggregate is required on this Project.

**00745.03 Reclaimed Asphalt Pavement (RAP) Material** - In the paragraph that begins "The amount of...", replace the sentence that begins "The amount of..." with the following sentence:

The amount of asphalt cement in the RAP shall be established in the mixture design phase according to ODOT TM 319 and the ODOT Contractor Mix Design Guidelines for Asphalt Concrete or other method if approved by the Engineer.

Add the following subsection:

**00745.04 Reclaimed Asphalt Shingles (RAS)** - Reclaimed asphalt shingles (RAS) used in the production of new HMAC is optional. Either manufacturer waste (post-manufacturer) RAS or tear-off (post-consumer) RAS may be used. Manufacturer waste RAS is processed asphalt shingle material derived from manufacturer's shingle scrap. Tear-off RAS is processed asphalt shingle material derived from shingle scrap removed from structures. All percentages are based upon dry weights for calculations.

Process the RAS by grinding at ambient temperature so that 100% of the shredded pieces are less than 1/2 inch in any dimension and that 90% are less than 3/8 inch in any dimension when sampled according to AASHTO T 2 and tested according to AASHTO T 27. Sample and test the processed RAS for gradation at a frequency of one test for every 50 tons of RAS processed. Certify that the RAS does not contain asbestos fibers according to the policies and procedures established by the Department of Environmental Quality. Test deleterious materials according to ODOT TM 226 at a frequency of one test for every 50 tons of deleterious material. The percentage of deleterious materials shall be limited to 3.0%. Test wood particle according to ODOT TM 225 at a frequency of one test for every 50 tons of RAS processed. If fine aggregate will be added as an anti-clumping agent, sample and test processed RAS before adding the fine aggregates.

Fine aggregate meeting the requirements of 00745.10(c) may be added to the RAS in a quantity not to exceed 4% by weight of RAS to keep the material workable and to prevent conglomeration of the shingle particles in the stockpile. Any added fine aggregate for these

purposes shall be taken into account in the mix design. Stockpiled RAS shall not be contaminated by dirt or other foreign materials

No more than 5.0% RAS by total weight of mixture will be allowed in HMAC mixtures. In addition, the maximum allowable percentage of asphalt binder replacement shall be restricted to 20.0% for base courses and 15.0% for wearing courses in HMAC containing only RAS.

When RAS is used in conjunction with RAP, no more than 20.0% reclaimed materials by total weight of mixture will be allowed in Level 1, Level 2, and Level 3 HMAC, and no more than 15.0% will be allowed in Level 4 HMAC. In addition, the maximum allowable percentage of binder replacement shall be restricted to 30.0% for base courses and 25.0% for wearing courses.

For HMAC mixtures containing RAS or a combination of RAP and RAS, test the reclaimed materials according to ODOT TM 319 to establish the asphalt content of the reclaimed materials. Develop mixture designs according to the ODOT Contractor Mix Design Guidelines for Asphalt Concrete.

**00745.10 Aggregate** - In the paragraph that begins "Provide and stockpile...", remove the words "and RAP aggregates".

**00745.10(b-3) Grading** - Replace the tolerance list with the following tolerance list:

Sieve Size	Separated Sizes			
	1 1/4" - 3/4"	3/4" - No. 4	3/4" - 1/2"	1/2" - No. 4
	Percent Passing (by Weight)			
	T	T	T	T
1 1/2"	- 1	-	-	-
1 1/4"	± 5	-	-	-
1"	± 10	- 1	- 1	-
3/4"	± 5	± 5	± 7	- 1
1/2"	-	± 8	± 8	± 5
3/8"*	-	-	-	-
No. 4	± 3	± 8	± 8	± 8
No. 8	-	± 5	± 5	± 5
No. 16*	-	-	-	-
No. 30	± 1	± 3	± 3	± 3
No. 50*	-	-	-	-
No 100*	-	-	-	-
No 200	-	± 1.0	± 1.0	± 1.0

\* Report percent passing sieve when no tolerance is listed

**00745.10(c-3) Grading** - Replace the tolerance list with the following tolerance list:

Sieve Size	Separated Sizes	
	No. 4 - 0	No. 4 - No. 8
No. 8 - 0		

Sieve Size	Percent Passing (by Weight)		
	T	T	T
3/8"	- 1	- 1	-
No. 4	± 7	± 10	- 1
No. 8	± 7	± 7	± 10
No. 16*	-	-	-
No. 30	± 7	± 5	± 8
No. 50*	-	-	-
No. 100*	-	-	-
No. 200	± 3.0	± 2.0	± 4.0

\* Report percent passing sieve when no tolerance is listed

**00745.10(c-4) Combination of Fine Aggregate for Testing** - Replace this subsection, except for the subsection number and title, with the following:

Blend together fine aggregate produced in two separate sizes at a 1:1 ratio when testing for sand equivalent.

**00745.10(d) RAP Aggregate** - Replace this subsection with the following subsection:

**00745.10(d) RAP and RAS Aggregate** - Blend the RAP, RAS, or combined RAP and RAS material with new aggregate to provide a mixture conforming to the JMF within the tolerances specified.

**00745.11(b) Asphalt Cement Additives** - Replace this subsection, except for the subsection number and title, with the following:

Use standard recognized asphalt cement additive products of known value for the intended purpose and approved for use on the basis of laboratory tests. Asphalt cement additives shall have no deleterious effect on the asphalt material and be completely miscible. Do not use silicones as an additive. Add the following asphalt cement additives when required by the JMF:

- Anti-stripping asphalt cement additives to prevent stripping or separation of asphalt coatings from aggregates to satisfy the TSR specified in 00745.13.
- Asphalt cement admixtures used to aid in the mixing or use of asphalt mixes or for experimental purposes.

**00745.11(c) Aggregate Treatment** - In the paragraph, replace the words "RAP materials" with the words "RAP, RAS, or combined RAP and RAS materials".

*(Use the following Option 1 subsection .11(d) when latex polymer treatment of aggregate is listed as an option in the pavement design report.)*

*[ Begin Option 1 of .11(d) ]*

Add the following subsection:

**00745.11(d) Aggregate Treatment - Latex Polymer** - A latex polymer aggregate treatment material may be used to treat new crushed aggregates instead of lime if Tensile Strength Ratio test results on the mixture with the latex polymer treatment at the JMF meet the minimum criteria in 00745.13(b).

**(1) General:**

- a. Provide a system to automatically meter the latex emulsion at the proper rate and apply the emulsion uniformly to the aggregate prior to the addition of the asphalt cement. Follow manufacturer's recommendations to set up, adjust and calibrate the equipment.
- b. Demonstrate to the Engineer's satisfaction that the required application rate of latex solids is being met. If it is not, take corrective action. Document and notify the Engineer of the corrective action.

**(2) Material** - Use latex polymer emulsion concentrate meeting the following:

	<b>Minimum</b>	<b>Maximum</b>	<b>Test Method</b>
Solids Percent	65.0	—	ASTM D 1417
pH	9.0	11.0	ASTM D 1417
Brookfield Viscosity Spindle 3, 20 RPM, cPs	500	3000	ASTM D 1417

Provide a quality compliance certificate for the polymer latex emulsion concentrate to the Engineer according to 00165.35.

**(3) Application Rate** - Apply the latex emulsion to achieve a minimum of 0.75 pounds of latex solids per ton of new aggregate (0.0375%) for dense graded mixtures and a minimum of 0.50 pounds of latex solids per ton of aggregate (0.025%) for open-graded mixtures. Higher application rates may be required to meet minimum TSR limits. Determine application rate during mix design testing.

**(4) Treatment During HMA Production:**

- a. Adjust aggregate moisture content to meet manufacturer's recommendation for emulsion application. Apply the latex emulsion at the minimum rate specified above or at a higher rate if TSR testing indicates a higher rate is required.
- b. Apply the latex emulsion to the aggregate just prior to entry into dryer drum. Mix aggregate with the emulsion in a pugmill or in the dryer drum prior to application of asphalt cement. Heat aggregates to at least 250 °F after treatment and prior to addition of asphalt cement.

*[ End Option 1 of .11(d) ]*

*(Use the following Option 2 subsection .11(d) when fibers in open-graded HMA are specified in the pavement design report.)*

**[ Begin Option 2 of .11(d) ]**

Add the following subsection:

**00745.11(d) Fiber Stabilizing Additive** - Add one of the following fiber types to the open-graded HMAC:

**(1) Mineral Fibers** - Mineral fiber shall be made from virgin basalt, diabase, or slag. The fiber shall be added at a rate of 0.3% to 0.4% by weight of the total mix. Mineral fibers shall meet the following:

**Size Analysis:**

- Average Fiber Length <sup>1</sup> 1/4 inch maximum
- Maximum Fiber Thickness <sup>2</sup> 0.0002 inch
- Minimum Fiber Thickness 0.00002 inch

**Shot Content (ASTM C612 and ASTM C1335) <sup>3</sup>:**

- Retained on No. 60 sieve 15% maximum by weight
- Retained on No. 230 sieve 35% maximum by weight

<sup>1</sup> The fiber length is determined according to the Bauer McNett fractionation.

<sup>2</sup> The fiber diameter is determined by measuring at least 200 fibers in a phase contrast microscope.

<sup>3</sup> Shot content is a measure of non-fibrous material. Shot is material that cannot be brushed or mechanically shaken through the specified sieves. Test according to ASTM C 1335 using the sieves specified above.

**(2) Cellulose Fibers** - Cellulose fibers shall be added at a rate of 0.3% to 0.4% by weight of the total mix. Cellulose fibers shall meet the following properties:

**Sieve Analysis:**

**Method A - Alpine Sieve <sup>1</sup> Analysis:**

- Fiber Length 1/4 inch maximum
- Passing No. 100 sieve 60 - 80%

**Method B - Mesh Screen <sup>2</sup> Analysis:**

- Fiber Length 1/4 inch maximum
- Passing No. 20 sieve 80 - 95%
- Passing No. 40 sieve 55 - 75%
- Passing No. 140 sieve 20 - 40%

**Ash Content <sup>3</sup>** 13 - 23% non-volatiles

**pH <sup>4</sup>** 6.5 - 8.5

**Oil Absorption** <sup>5</sup> 4.0 - 6.0 times fiber weight

**Moisture Content** <sup>6</sup> 5.0% maximum

- <sup>1</sup> This test is performed using an Alpine Air Jet Sieve (Type 200LS). A representative five gram sample of fiber is sieved for 14 minutes at a controlled vacuum of 75 Pa of water. The portion remaining on the screen is weighed.
- <sup>2</sup> This test is performed using standard No. 20, No. 40, No. 60, No. 80, No. 00, No 40 sieves, nylon brushes and a shaker. A representative 10 gram sample of fiber is sieved, using a shaker and two nylon brushes on each screen. The amount retained on each sieve is weighed and the percentage passing calculated.
- <sup>3</sup> A representative 2 - 3 gram sample is placed in a tared crucible and heated between 1,100 °F and 1,200 °F for not less than two hours. The crucible and ash are cooled in a desiccator and weighed.
- <sup>4</sup> Five grams of fiber is added to 100 ml of distilled water, stirred and let sit for 30 minutes. The pH is determined with a probe calibrated with pH 7.0 buffer.
- <sup>5</sup> Five grams of fiber is accurately weighed and suspended in an excess of mineral spirits for not less than five minutes to ensure total saturation. It is then placed in a screen mesh strainer (approximately 0.5 square millimeter hole size) and shaken on a wrist action shaker for ten minutes (approximately 1 1/4 inch motion at 240 shakes per minute). The shaken mass is then transferred without touching, to a tared container and weighed. Results reported as the amount (number of times its own weight) the fibers are able to absorb.
- <sup>6</sup> Ten grams of fiber is weighed and placed in a 250 °F forced air oven for two hours. The sample is then reweighed upon removal from the oven.

**[ End Option 2 of .11(d) ]**

**00745.14 Tolerances and Limits** - Replace the tolerance list with the following tolerance list:

Gradation Constituent	Dense-Graded HMAC Type				Open-Graded HMAC TYPE		
	1"	3/4"	1/2"	3/8"	3/4"	1/2"	ATPB
1 1/2"	JMF ± 5%*						
1"	90 - 100%	JMF ± 5%*			99 - 100%		99 - 100%
3/4"	JMF ± 5%	90 - 100%	JMF ± 5%*		85 - 96%	99 - 100%	85 - 95%
1/2"	JMF ± 5%	JMF ± 5%	90 - 100%	JMF ± 5%*	55 - 71%	90 - 98%	35 - 68%
3/8***	—	—	—	90 - 100%	—	—	—
No. 4	JMF ± 5%	JMF ± 5%	JMF ± 5%	JMF ± 5%	JMF ± 5%	JMF ± 5%	JMF ± 5%
No. 8	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%
No. 16**	—	—	—	—	—	—	—
No. 30	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	—
No. 50**	—	—	—	—	—	—	—
No. 100**	—	—	—	—	—	—	—

No. 200 | JMF ± 2.0% JMF ± 2.0% JMF ± 2.0% JMF ± 2.0% | JMF ± 2.0% JMF ± 2.0% JMF ± 2.0%

\* Maximum not to exceed 100%

\*\* Report percent passing sieve when no tolerance is listed

Under the "Constituent of Mixture/HMAC All Types" list, add the following after "RAP Content...":

RAS Content - ODOT TM 321	JMF ± 1.0%
RAP/RAS Content - ODOT TM 321	JMF ± 2.0%

Add the following sentence to the of the paragraph that begins "When a JMF...":

Full tolerance will be given for RAS or combined RAP and RAS content even if it exceeds the limits established in 00745.04.

In the paragraph that begins "Take corrective action...", replace the words, "RAP content", in two places with the words "RAP, RAS, or combined RAP and RAS content" in both places.

**00745.16(a-1) Personnel Requirements** - Add the following bullet to the end of the bullet list:

- Providing at least one CAT-1 full-time at each plant site when producing mixture for the Project.

**00745.16(a-4) Testing Frequency** - Delete the paragraph that begins "After the Mix Design...".

Add the following subsection:

**00745.16(a-5) Plant Calibration** - Calibrate all meters and belt scales at the HMAC mixing plant according to ODOT TM 322 prior to beginning production.

**00745.16(b-1) MDV Quality Control** - Replace this subsection with the following subsection:

**(1) MDV Quality Control:**

**a. General** - Perform MDV testing on projects with Level 2, Level 3, or Level 4 dense graded HMAC. Perform MDV tests on every subplot and as required at start up according to 00745.16(b-1-c) and the MFTP. Perform gradation and asphalt content testing with each MDV test. Calculate the following values for each MDV test.

- Air Voids
- Voids in Mineral Aggregate (VMA)
- Voids Filled with Asphalt (VFA)
- P No. 200/Effective AC (Pbe) Ratio

The running averages of four MDV results shall be within the limits given below:

	<b>Average of</b>	<b>Limit</b>
Air Voids	4 samples	JMF Target $\pm$ 1.0%
VMA	4 samples	11.5 - 17.0 (1" Mix)
		12.5 - 17.0 (3/4" Mix)
		13.5 - 17.0 (1/2" Mix)
		14.5 - 17.0 (3/8" Mix)
VFA	4 samples	65 - 75 (3/4" and 1/2" Mix in Level 2, 3 and 4)
		65 - 78 (3/8" Mix in Level 2, 3 and 4)
		70 - 80 (1/2" and 3/8" Mix in Level 1)
Passing No. 200/Pbe	4 samples	0.8 - 1.6

The CDT shall provide the results from the initial control strip to the CAT II for evaluation and comparison with the MDV results. If the MDV and density test results are contradictory, initiate an investigation. The CAT II shall recommend a plan to the Engineer for resolving the discrepancy based on the results of the investigation.

Take corrective action when required by the MDV start-up process of 00745.16(b-1-c). After the requirements of 00745.16(b-1-c) have been met, take corrective action if the MDV test results show that two consecutive running average of four samples are outside the above limits for air voids, VMA, VFA, or P No. 200/Pbe ratio. Document the corrective action and notify the Engineer. If test results continue to be outside the tolerance, stop production and make adjustments. Restart production only after the Engineer has approved the proposed adjustments. If the MDV test results are outside tolerance, but the mixture meets the current requirements for gradation and asphalt content, an adjustment to the JMF targets is required. Do not start a new lot as a result of the adjustment.

A request for an adjustment to the JMF targets may be made to the Engineer by the Contractor's CAT-II. The requested change will be reviewed and documented by the Engineer. If acceptable, a revised JMF will be allowed. Clearly document the subplot test for which the adjusted targets are in effect. Adjustments for gradation shall not exceed the tolerances specified for the original JMF limits. Adjustments for AC content shall be within 0.5% of the original JMF. The JMF asphalt content may only be reduced if the production VMA meets or exceeds the above requirements. Adjustments for RAP or RAP/RAS combination shall be within 5% of the original JMF blend percentage, but shall not exceed the requirements of 00745.03 or 00745.04. Adjusting proportions of the combined RAP and RAS will not be allowed during production of the mixture. Adjustments for RAS content shall be within 1% of the original JMF, but shall not exceed the requirements of 00745.04. Regardless of these tolerances, the adjusted JMF shall be within the mixture specification control points of 00745.12. If a redesign of the mixture becomes necessary, submit a new JMF according to the requirements of these specifications.

Perform a Tensile Strength Ratio (TSR) test (AASHTO T 283) on a sample obtained during the first two days of production after QC test results verify that HMAC constituents with a weighting factor greater than one according to 00745.95 are in

tolerance. Provide test results to the Engineer within four working days of obtaining the sample. Stop production and make adjustments if the TSR is less than 70. Restart production only after the Engineer has approved the proposed adjustments.

**b. Laboratory Compactor Selection** - Use a Gyratory compactor for MDV when a Gyratory compactor is used to develop the JMF. For all other cases, use a Gyratory compactor or Marshall compactor, as selected by the Contractor.

**c. MDV Requirements at Start-Up** - Perform MDV testing at the start-up of the JMF production according to the following process:

1. Obtain a sample during the first 100 tons of production and immediately perform MDV testing.
2. If air voids and VMA are within tolerance, then continue remaining MDV testing at the established random QC subplot interval. If not, then go to step "3".
3. If air voids and/or VMA are out of tolerance according to 00745.16(b-1-a), then make adjustments and immediately obtain another sample and perform MDV testing. Go to step "4".
4. If air voids and VMA from the MDV testing in step "3" are within tolerance, then continue remaining MDV testing at the established random QC subplot interval. If not, go to step "5".
5. If air voids from step "3" are more than  $\pm 1.5\%$  from the target, then stop production immediately and make adjustments. If they are not, then go to step "6". Obtain approval of the Engineer before restarting production. Begin MDV testing again at step "1".
6. If air voids from step "3" are out of tolerance and 1.5% or less from the target, or the VMA from step "3" is out of tolerance, then make adjustments and immediately obtain another sample and perform MDV testing. Go to step "4".

The initial MDV sample shall be used as the first random QC subplot test. Subsequent MDV samples required due to failure of start-up criteria will be used for a subplot QC test if the sample is taken within 100 tons of the scheduled random QC sample location. If not, the MDV testing shall be performed separate from, and not included in, the random QC testing program. Any required MDV testing will be completed at the Contractor's expense.

Add the following subsection:

**00745.16(b-3) MDV for Open Graded HMA** - Adjust asphalt content and gradation targets for open graded HMA during production as directed. The Engineer will document the subplot test for which the adjusted targets are in effect.

**00745.21(c) Vibratory Scalping Devices** - In the paragraph, replace the word "RAP" with the words "RAP, RAS, or combined RAP and RAS".

**00745.24(a) Steel-Wheeled Rollers** - Replace this subsection with the following subsection:

**(a) Steel-Wheeled Rollers** - Provide steel-wheeled rollers with a minimum gross static weight as follows:

	<b>Level 1 and Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
Breakdown and Intermediate	8 ton	10 ton	12 ton
Finish	6 ton	8 ton	10 ton

**00745.40 Season and Temperature Limitations** In the table, for Surface Temperature of Dense Graded Mixes 2 inches to 2 1/2 inches, replace "50 °F" with 40 °F".

*(Use the following subsection .46 on all projects except "inlay only" projects. Delete the words in parentheses if there is Contractor Surveying.)*

**00745.46 Control of Line and Grade** - Add the following paragraphs to the end of this subsection:

(The Engineer will) Establish references at reasonable intervals for line and grade control of placement operations for the following:

- Before placing each leveling lift.
- Before placing the top base course for new construction.

Line and grade for the top base course of new construction and top leveling lift shall be within 1/2 inch of design line and grade.

*(Use the following subsection .48(b) when required by the pavement design report.)*

**00745.48(b) Depositing** - Replace the paragraph that begins "Deposit HMAC from..." with the following paragraph:

Deposit HMAC from the hauling vehicles so segregation is prevented. Do not deliver the HMAC directly into the paving machine for wearing courses where the continuous length of the panel is greater than 500 feet. Deliver the HMAC to the paving machine by either a windrow pick-up machine or an end-dump transfer machine.

**00745.49(b-1) General** - In the paragraph that begins "Compliance with the density...", replace the sentence that begins "Use the MAMD method..." with the following sentence:

Use the MAMD method of compaction measurement.

Replace the paragraph that begins "For Level 3 and Level 4..." with the following two paragraphs:

For Level 2, Level 3, and Level 4 mixes, construct a control strip at the beginning of work on each JMF on the project according to ODOT TM 306. The purpose of the control strip is to determine the maximum density that can be achieved for the JMF, paving conditions, and

equipment on the project. Additional control strips are necessary when there is a change in compaction equipment or when JMF targets are adjusted according to 00745.16(b-1-a). The Engineer may waive the control strip for irregular areas or areas too small to establish a reasonable roller pattern.

Stop paving if three consecutive control strips fail to achieve the specified density. Take all actions necessary to resolve compaction problems. Do not resume paving until allowed by the Engineer.

**00745.49(b-3) Moving Average Maximum Density (MAMD) Method** - Replace the MAMD list with the following list:

<b>Course of Construction</b>	<b>HMAC</b>
First HMAC lift less than 3 inches placed on aggregate base	91.0
All other	92.0

**00745.49(b-4) Control Strip Method** - Delete this subsection.

**00745.49(b-5) Test Results** - Renumber this subsection to b-4.

*(Obtain the specific gravity for the project from the Designer.)*

**00745.80 Measurement** - The quantities of HMAC shown in the Contract Schedule of Items were computed on the basis of aggregates having a Specific Gravity of \_\_\_\_\_ .

*(Use the following two paragraphs when no separate measurement will be made for the liquid asphalt. Do NOT use on NHS projects or on projects that have more than 150 tons of liquid asphalt.)*

*[ Begin "two paragraphs" ]*

Replace the paragraph that begins "The quantities of HMAC..." with the following paragraph:

The quantities of HMAC will be measured on the weight basis. No separate measurement will be made for asphalt cement used in the mixture. No deduction will be made for lime or any other additive used in the mixture.

*[ End "two paragraphs" ]*

Replace the paragraph that begins "When RAP materials are used..." with the following paragraph:

When RAP, RAS, or combined RAP and RAS materials are used, measurement of the total asphalt quantity will be based on quality control tests averaged to the nearest 0.01%. For mixtures not containing RAP, RAS or combined RAP and RAS materials, measurement of the total asphalt quantity will be based on quality control tests averaged to the nearest 0.01% when the Engineer determines that payment by invoice and tank sticking is impractical.

**00745.90 Payment** - In the paragraph that begins "In item (b)..." replace the word "RAP" with the words "RAP, RAS, or combined RAP and RAS".

*(Use the following paragraphs when no separate payment will be made for the liquid asphalt. Do NOT use on NHS projects or on projects that have more than 150 tons of liquid asphalt.)*

Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for asphalt cement used in the mixture.

**00745.93 Other Items** - Delete the bullet that begins "anti-stripping...".

*(Use the following lead-in paragraph and bullet when latex polymer treatment of aggregate is listed as an option in the pavement design report.)*

Add the following bullet to the bulleted list:

- aggregate treatment - latex polymer

Add the following paragraph to the end of this subsection:

Anti-stripping asphalt cement additives will be paid for at the Contractor's actual documented costs with no percentage allowance or markup allowed. No additional payment will be made for anti-stripping additives or treatments that are not anti-stripping asphalt cement additives.