**SECTION 401**

**HOT MIX ASPHALT PAVEMENT**

Standard Modification

*Replace Section 401 with the following:*

**401-1.01 DESCRIPTION.**Construct one or more courses of plant-produced Hot Mix Asphalt (HMA) pavement on an approved surface, to the lines, grades, and depths described in the scope of work and shown on the maps at each location.

**MATERIALS**

**401-2.01 ASPHALT BINDER.** Conform to Subsection 702-2.01. If binder performance grade is not specified, use PG 52-28. Asphalt binder may be conditionally accepted at the source if a manufacturer's certification of compliance is provided, according to Subsection 106-1.05, and the applicable requirements of Section 702 are met.

**401-2.02 LIQUID ANTI-STRIP ADDITIVE.** Use anti-strip agents in the proportions determined by ATM 414 and included in the approved Job Mix Design (JMD). At least 70 percent of the aggregate must remain coated when tested according to ATM 414. A minimum of 0.30 percent by weight of asphalt binder is required.

**401-2.03 JOINT ADHESIVE.** Conform to Subsection 702-2.05.

**401-2.04 JOINT SEALANT.** Conform to Subsection 702-2.06.

**401-2.05 WARM MIX ASPHALT.** Conform to Subsection 702-2.07.

**401-2.06 ASPHALT RELEASE AGENT.** Conform to Subsection 702-2.08.

**401-2.07 AGGREGATES.** Conform to Subsection 703-2.04. Use a minimum of three stockpiles of crushed aggregate (coarse, intermediate, and fine). Place blend material, if any, in a fourth pile.

**401-2.08 RECYCLED ASPHALT PAVEMENT.** Recycled asphalt pavement (RAP) may be used in the production of HMA. The RAP may be from pavements removed under the Contract, or from an existing stockpile. Conform to Subsection 703-2.16

**401-2.09 JOB MIX DESIGN.** Provide target values for gradation that satisfy both the broad band gradation limits shown in Table 703-4 and the requirements of Table 401-1, for Type II, Class B HMA.

**TABLE 401-1**

**HMA MARSHALL DESIGN REQUIREMENTS**

|  |  |
| --- | --- |
| **DESIGN PARAMETER** | **CLASS “B”** |
| HMA (including Asphalt Binder) |  |
| Stability, Pounds | 1200 Min |
| Flow, 0.01 Inch | 8 – 16 |
| Voids in Total Mix (VTM), % | 3.0 – 5.0 |
| Compaction, Number of Blows Each Side of Test Specimen | 50 |
| Asphalt Binder |  |
| Voids Filled with Asphalt (VFA), % | 65 – 78 |
| Asphalt Content, Min % | 5.0 |
| Dust-Asphalt Ratio\* | 0.6 – 1.4 |
| Voids in Mineral Aggregate (VMA), %, Min | 12.0 |
| Liquid Anti-Strip Additive\*\*, %, Min | 0.30 |
| RAP, %, Max | 25.0 |

\*Dust-Asphalt ratio is the percent of material passing the No. 200 sieve divided by the percent of effective asphalt binder (calculated by weight).

\*\*By Weight of Asphalt Binder

The Contractor shall provide a JMD following the requirements specified in this section. Submit the JMD to the Engineer at least two working days prior to the pre-paving meeting. Submit samples to the Engineer upon request for JMD verification testing.

All Contractor-furnished JMDs must be sealed by a Professional Engineer registered in the State of Alaska. The Professional Engineer shall certify that the JMD was performed according to the specified procedures, and meets all project specifications.

Changes in the source of asphalt binder, source of aggregates, aggregate quality, aggregate gradation, or blend ratio shall dictate that the Contractor submit a new JMD for approval.

**CONSTRUCTION REQUIREMENTS**

**401-3.01 PRE-PAVING MEETING.** Meet with the Engineer for a pre-paving meeting in the presence of project superintendent and paving supervisor at least five (5) working days before beginning paving operations. Submit a paving plan and pavement inspection plan at the meeting. When directed by the Engineer, make adjustments to the plan and resubmit.

Include the following elements in the paving plan and address these elements at the meeting:

1. Sequence of operations
2. List of equipment that will be used for production, transport, pick-up (if applicable), laydown, and compaction
3. Procedures to produce consistent HMA
4. Procedures to minimize material and thermal segregation
5. Procedures to minimize premature cooling
6. Procedures to achieve HMA density
7. Procedures for joint construction including corrective action for joints that do not meet surface tolerance requirements
8. Quality control testing methods, frequencies, and sample locations for gradation, asphalt binder content, and density, and
9. Any other information or procedures necessary to provide completed HMA construction that meets the contract requirements.

Include the following elements in the pavement inspection plan and address these elements at the meeting:

1. Process for daily inspection, and
2. Means and methods to remove and dispose of project materials.

**401-3.02 CONTRACTOR QUALITY CONTROL.** Perform quality control (QC) of HMA materials in accordance with Subsection 106-1.03. The Contractor shall employ a qualified person or company to perform process control testing.

**401-3.03 WEATHER LIMITATIONS.** Place HMA on a stable and non-yielding roadbed. Do not place HMA when the base material is wet or frozen, or when weather conditions prevent proper handling or finishing of the mix. Do not place HMA leveling course when the roadway surface temperature is colder than 40° F.

**401-3.04 EQUIPMENT, GENERAL.** Use equipment in good working order and free of HMA buildup. Make all equipment available for inspection and demonstration of operation a minimum of 24 hours before placement of HMA and test strip HMA.

**401-3.05 ASPHALT MIXING PLANT.** Meet AASHTO M 156. Use an HMA plant capable of producing at least 100 tons of HMA per hour noted on posted DEC air quality permit, designed to dry aggregates, maintain consistent and accurate temperature control, and accurately proportion asphalt binder and aggregates. Calibrate the HMA plant and furnish copies of the calibration data to the Engineer at least 24 hours before HMA production.

Provide a scalping screen at the asphalt plant to prevent oversize material or debris from being incorporated into the HMA.

Provide a tap on the asphalt binder supply line just before it enters the plant (after the 3-way valve) for sampling asphalt binder. Provide aggregate and asphalt binder sampling locations meeting OSHA safety requirements.

Belt conveyor scales may be used to proportion plant blends and mixtures if the scales meet the general requirements for weighing equipment and are calibrated according to the manufacturer’s instructions.

**401-3.06 HAULING EQUIPMENT.** Haul HMA in trucks with tight, clean, smooth metal beds. Keep beds free of petroleum oils, solvents, or other materials that would adversely affect the mixture. Apply a thin coat of approved asphalt release agent to beds as necessary to prevent mixture adherence. Provide trucks with covers attached and available for use. When directed by the Engineer, cover the HMA in the hauling vehicle(s).

Do not haul HMA on barges.

**401-3.07 ASPHALT PAVERS.** Use self-propelled asphalt pavers with heated vibratory screed assemblies to spread and finish HMA to the specified section widths and thicknesses without introducing thermal or material segregation.

Equip the paver with a receiving hopper having sufficient capacity for a uniform spreading operation and a distribution system to place the HMA uniformly in front of screed. Use a screed assembly that produces a finished surface of the required smoothness, thickness, and texture without tearing, shoving, or displacing the HMA. Heat and vibrate screed extensions. Place auger extensions within 20 inches of the screed extensions or per written manufacturer’s recommendations.

Equip the paver with a means of preventing segregation of the coarse aggregate particles from the remainder of the HMA when carried from the paver hopper back to the augers.

The use of a “Layton Box” or equivalent towed paver is allowed on bike paths, sidewalks, and driveways.

**401-3.08 ROLLERS.** Use both steel-wheel (static or vibratory) and pneumatic-tire rollers. Use rollers designed to compact HMA and capable of reversing without shoving or tearing the mixture. Select rollers that will not crush the aggregate or displace the HMA. Equip vibratory rollers with separate vibration and propulsion controls.

Equip the rollers with an infrared thermometer that measures and displays the surface temperature to the operator. Infrared thermometer may be hand-held or fixed to the roller.

Utilize a pneumatic roller in the complement of rollers to compact the leveling course. Use fully skirted pneumatic-tire roller having a minimum operating weight of 3000 pounds per tire.

**401-3.09 RESERVED.**

**401-3.10 PREPARATION OF EXISTING SURFACE.** Prepare existing surfaces according to the Contract. Prior to placing HMA, clean existing surfaces of loose material and uniformly coat contact surfaces of curbing, gutters, manholes and other structures with tack coat material meeting Section 402. Treat cold joint surfaces according to 401-3.17. Allow tack coat to break before placement of HMA on these surfaces.

Cut existing pavement, as designated by the Engineer, in a neat line with a power driven saw to provide a clean, straight joint. A thin tack coat of asphalt binder shall be sprayed on all cold joints prior to placing any fresh HMA against the joint. Cutting and removing the asphalt and tack coat is subsidiary to 401(1) item.

Before applying tack coat to an existing paved surface, clean and patch the surface. Remove irregularities to provide a reasonably smooth and uniform surface. Remove and replace unstable areas with HMA. Clean the edges of existing pavements, which are to be adjacent to new pavement, to permit the adhesion of asphalt materials. Clean loose material from cracks. Fill the cleaned cracks, wider than 1 inch, with HMA tamped in place. Wash, sweep, or wash and sweep the paved surface clean and free of loose materials.

Preparation of a milled surface:

1. Prelevel remaining ruts, pavement delaminations, and depressions having a depth greater than 1/2 inch with an approved HMA.
2. Notify the Engineer of pavement areas that appear thin or unstable. Where milling operation creates thin or unstable pavement areas, or where it breaks through existing pavement, remove thin and unstable pavement, and 2 inches of existing base material, compact and replace with an approved HMA.

**401-3.11 PREPARATION OF ASPHALT.** Provide a continuous supply of asphalt binder to the asphalt mixing plant at a uniform temperature, within the recommended mixing temperature range.

**401-3.12 PREPARATION OF AGGREGATES.** Dry the aggregate so the moisture content of the HMA, sampled at the point of acceptance for asphalt binder content, does not exceed 0.5 percent (by total weight of mix), as determined by ATM 407.

Heat the aggregate for the HMA to a temperature compatible with the mix requirements specified.

Adjust the burner on the dryer to avoid damage to the aggregate and to prevent the presence of unburned fuel on the aggregate. HMA containing soot or fuel is unacceptable per Subsection 105-1.11.

**401-3.13 MIXING.** Combine the aggregate, asphalt binder, and additives in the mixer in the amounts required by the JMD. Mix to obtain at least 98 percent coated particles when tested according to AASHTO T195.

For batch plants, put the dry aggregate in motion before addition of asphalt binder.

Mix the HMA within the temperature range determined by the JMD.

Upon the Engineer’s request, provide daily burner charts showing start and stop times and temperatures.

**401-3.14 TEMPORARY STORAGE OF HMA.** Silo type storage bins may be used, provided the characteristics of the HMA remain unaltered.

Signs of visible segregation, heat loss, changes from the JMD, change in the characteristics of asphalt binder, lumpiness, and stiffness of the mixture, are causes for rejection.

Do not store HMA on barges.

**401-3.15 PLACING AND SPREADING.** Use asphalt pavers to distribute HMA, including leveling course and temporary HMA. Place the HMA upon the approved surface, spread, strike off, and adjust surface irregularities. The maximum compacted lift thickness allowed is 3 inches.

When multiple lifts are specified in the Contract, do not place the final lift until all lower lifts throughout that section, are placed and accepted.

Do not place HMA abutting curb and gutter until curb and gutter are installed, except as approved by the Engineer.

Do not pave against new Portland cement concrete curbing until it has cured for at least 72 hours.

When practicable, adjust elevation of metal fixtures before paving the final lift, so they will be between 1/4 and 1/2 inch below the top surface of the final lift. Metal fixtures include, but are not limited to manholes, valve boxes, monument cases, hand holes, and drains.

When the section of roadway being paved is open to traffic, pave adjacent traffic lanes to the same elevation within 24 hours. Place approved material against the outside pavement edge when the drop off exceeds 2 inches.

Use hand tools to spread, rake, and lute the HMA in areas where irregularities or unavoidable obstacles make mechanical spreading and finishing equipment impracticable.

Place HMA over bridge deck membranes according to Section 508 and the membrane manufacturer's recommendations.

Do not mix HMA produced from different plants for testing or paving.

**401-3.16 COMPACTION.** Thoroughly and uniformly, compact the HMA by rolling. In areas not accessible to large rollers, compact with mechanical tampers or trench rollers. Compact HMA immediately after it is placed and spread, and as soon as it can be compacted without undue displacement, cracking or shoving. Perform initial breakdown compaction while the HMA surface mixture temperature is greater than 235° F and finish compaction before the surface temperature reaches 150° F.

Prevent indentation in the mat, do not leave rollers or other equipment standing on HMA that has not sufficiently cooled.

The Lower Specification Limit for density is 92.0 percent of the Maximum Specific Gravity (MSG) as determined by ATM 409. The MSG from the approved JMD is used for the first lot of each type of HMA. The MSG for additional lots is determined from the first sublot of each lot.

**401-3.17 JOINTS.** Place and compact the HMA to provide a continuous bond, texture, and smoothness between adjacent sections of the HMA.

Minimize the number of joints. Do not construct longitudinal joints in the driving lanes unless approved by the Engineer in writing at the pre-paving meeting. Offset the longitudinal joints in one layer from the joint in the layer immediately below by at least 6 inches. Align the joints of the top layer at the centerline or lane lines. Where preformed marking tape striping is required, offset the longitudinal joint in the top layer not more than 6 inches from the edge of the stripe.

Form transverse joints by saw-cutting back on the previous run to expose the full depth of the course or by using a removable bulkhead. Skew transverse joints 15 to 25 degrees.

For all joints below the top lift, uniformly coat joint surfaces with tack coat material meeting Section 402.

Uniformly coat the joint face of all top lift joints with a joint adhesive. Follow joint adhesive manufacturer's recommendations for temperatures and application method. Remove joint adhesive applied to the top of pavement surface. If infrared joint heaters are used and passing joint densities are achieved in each of the first three joint densities taken, then joint adhesive is not required.

The Lower Specification Limit for top lift longitudinal joint density is 91.0 percent of the MSG of the panel completing the joint. MSG will be determined according to ATM 409. Top lift longitudinal joints will be evaluated for acceptance according to Subsection 401-4.03.

For top lift panels that have a longitudinal joint density less than 91.0 percent of the MSG, seal the surface of the longitudinal joints with joint sealant. Apply joint sealant according to the manufacturer’s recommendations while the HMA is clean, free of moisture and prior to final traffic marking. Place the sealant at a maximum application rate of 0.15 gallons per square yard, and at least 12 inches wide centered on the longitudinal joint. After surface sealing, inlay by grinding pavement striping into the sealed HMA. Use grooving equipment that grinds a dry cut to groove the width, length, and thickness of the striping within the specified striping tolerances.

Correct improperly formed joints that result in surface irregularities according to a corrective action plan.

Complete all hot lapped joints while the mat temperature is over 230° F as measured by the Engineer, within 3 inches of the joint. Tack coat and joint adhesive are not required for hot lapped joints.

401-3.18 SURFACE REQUIREMENTS AND TOLERANCE. The finished surface of all HMA paving must match dimensions shown in the Contract for horizontal alignment and width, profile grade and elevation, crown slope, and pavement thickness. Water must drain across the pavement surface without ponding. The surface must have a uniform texture, without ridges, puddles, humps, depressions, and roller marks. The surface must not exhibit raveling, cracking, tearing, asphalt bleeding, or aggregate segregation. Leave no foreign material, uncoated aggregate, or oversize aggregate on the HMA surface.

The Engineer will test the finished surface after final rolling at selected locations using a 10-foot straightedge. The Engineer will identify pavement areas that deviate more than 3/16 inch from the straightedge, including joints, as defective work. Perform corrective work by removing and replacing, grinding, cold milling or infrared heating such areas as required. Do not surface patch. After the Contractor performs corrective work, the Engineer will retest the area. Submit correction methods to the Engineer for approval before correction work commences.

Perform corrective actions according to one of the following or by a method approved by the Engineer:

1. Diamond Grinding. If the required pavement thickness is not decreased by more than 1/4 inch, grind to the required surface tolerance and cross section. Remove and dispose of all waste materials. Apply joint sealant and sand to exposed aggregates per the manufacturer's recommendations.
2. Overlaying. Mill or sawcut the existing pavement to provide a vertical transverse joint face to match the overlay to the existing pavement. Apply tack coat on the milled surface and joint adhesive to all vertical joints and overlay the full width of the underlying pavement surface. Use the same approved HMA for overlays. Place a minimum overlay thickness of 2.0 inches.
3. Mill and Fill. Mill the existing pavement to provide a vertical transverse joint face. Apply tack coat to the milled surface and joint adhesive to all vertical joints prior to inlaying new HMA to match the existing pavement. Use the same approved HMA. Place a minimum thickness of 2.0 inches.

**401-3.19 REPAIRING DEFECTIVE AREAS.** Remove HMA that is contaminated with foreign material, is segregated (determined visually or by testing), flushing, or bleeding asphalt. Remove and dispose defective HMA for the full thickness of the course. Cut the pavement so that edges are vertical and the sides are parallel to the direction of traffic. Coat edges with a tack coat according to Section 402. Place and compact fresh HMA so that compaction, grade, and smoothness requirements are met.

**401-3.20 ROADWAY MAINTENANCE.** Inspect daily according to pavement inspection plan. Remove and dispose of project materials incorrectly deposited on existing and new pavement surfaces inside and outside the project area including haul routes.

The Contractor is responsible for damage caused by not removing these materials and any damage to the roadway from the removal method(s).

Repair damage to the existing roadway that results from fugitive materials or their removal.

401-3.21 TEMPERATURE REQUIREMENTS. The Engineer may reject HMA that is mixed, hauled, spread and placed, or compacted at a temperature outside the temperature range determined by either the JMD, by a control test strip, or by the Specifications. Rejected HMA is deemed unacceptable according to Subsection 105-1.11. The Engineer will determine whether the unacceptable HMA shall either be corrected, or removed and replaced.

At the Engineer’s discretion, the Contractor may be allowed to compact HMA that is already placed and spread but is outside the temperature range. If the compacted HMA fails the Engineer’s tests for acceptance, it must be removed and replaced according to Subsection 105-1.11.

**401-3.22 SHOULDERS.** After the paving is complete, if the Engineer determines that the shoulder is too narrow, additional gravel, D-1 material, or both shall be brought in to widen the shoulder. The pavement shall be washed, swept, or both immediately following shoulder work. The haul, placement, and sweeping will be subsidiary to 301(1) item.

All pavement edges shall be backed with base course (D-1), surface course (E-1), or processed material graded flush with the pavement surface. This work shall be accomplished as directed by the Engineer after it is determined that the new HMA has cured sufficiently to avoid damaging the edge. Cul-de-sacs and other areas where a grader cannot reach shall be backed by hand raking. The pavement shall be washed, swept, or both immediately following this work. This work will be subsidiary to 401(1) item.

**401-4.01 METHOD OF MEASUREMENT.** Section 109 and the following:

1. Hot Mix Asphalt. HMA will be measured by the ton in accordance with Section 109, Measurement and Payment. HMA quantities on the bid form include a 10% contingency. Contractor will be required to monitor depth (yield) and waste to not exceed the 10% contingency. Contractor will not be compensated over the HMA amount listed on the bid form unless work is added by a field directive and issued by the Engineer. Asphalt binder, tack coat, and anti-stripping additive will not be measured separately for payment, but are included in the HMA pay item.
2. Leveling Course. By Lane-Station (12-foot width) or by weight. Asphalt binder, tack coat, and anti-stripping additive will not be measured separately for payment, but are included in the Leveling Course pay item.

401-4.02 ACCEPTANCE SAMPLING AND TESTING. HMA will be accepted for payment based on the Engineer’s approval of the JMD, and placement and compaction of the HMA to the specified depth, finished surface requirements and tolerances. The Engineer reserves the right to perform any testing required in order to determine acceptance.

Sampling and testing include the following:

1. Asphalt Binder Content. HMA samples shall be taken randomly by the Contractor in the presence of the Engineer from behind the paver screed before initial compaction, or will be taken randomly by the Engineer from the windrow, according to ATM 402 or ATM 403, at the discretion of the Engineer. The location (behind the paver screed or windrow) will be determined at the pre-paving meeting. Random sampling locations will be determined by the Engineer.

Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. Asphalt binder content will be determined according to ATM 405 or ATM 406, at the discretion of the Engineer.

1. Aggregate Gradation. Aggregates tested for gradation acceptance will have the full tolerances from Table 401-2 applied.
	1. Drum Mix Plants. Samples will be taken from the combined aggregate cold feed conveyor via a diverter device, from the stopped conveyor belt or from the same location as samples for determination of asphalt binder content, at the discretion of the Engineer. Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. The aggregate gradation for samples from the conveyer system will be determined according to ATM 304. For HMA samples, the gradation will be determined according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder. Locate diverter devices for obtaining aggregate samples from drum mix plants on the conveyor system delivering combined aggregates into the drum. Divert aggregate from the full width of the conveyor system and maintain the diverter device to provide a representative sample of aggregate incorporated into the HMA.
	2. Batch Plants. Samples will be taken from dry batched aggregates according to ATM 301 or from the same location as samples for determination of asphalt binder content, at the discretion of the Engineer. Two separate samples will be taken, one for acceptance testing and one held in reserve for retesting if requested. The aggregate gradation for dry batch samples will be determined according to ATM 304. For HMA samples, the gradation will be determined according to ATM 408 from the aggregate remaining after the ignition oven (ATM 406) has burned off the asphalt binder.
2. Density. The Engineer will determine and mark the location(s) where the Contractor takes each core sample.
	1. Mat Cores. The location(s) for taking core samples is determined using a set of random numbers (independent of asphalt binder and aggregate sampling set of random numbers) and the Engineer's judgment. Take no mat cores within 1 foot of a joint or edge. Core samples are not taken on bridge decks.
	2. Longitudinal Joint Cores. The Engineer will mark the location(s) to take the core sample, centered on the visible surface joint, and adjacent to the mat core sample taken in the panel completing the joint.

Take core samples according to ATM 413 in the presence of the Engineer. Cut full depth core samples, centered on the marks and as noted above, from the finished HMA within 24 hours after final rolling. Neatly core drill one six-inch diameter sample at each marked location. Use a core extractor to remove the core - do not damage the core. The Engineer will immediately take possession of the samples. Backfill and compact voids left by coring with new HMA within 24 hours. The Engineer will determine density of samples according to ATM 410.

1. Retest. When test results have failed to meet specifications, retest of acceptance test results for asphalt binder content, gradation, and density may be requested provided the quality control requirements of Subsection 401-3.02 are met. Deliver this request in writing to the Engineer within 7 days of receipt of the final test of the lot. The Engineer will mark the sample location for the density retest within a 2-foot radius of the original core. The original test results are discarded and the retest result is used. Only one retest per sample is allowed. When gradation and asphalt binder content are determined from the same sample, a request for a retest of either gradation or asphalt binder content results in a retest of both.
2. Asphalt Binder Grade. The lot size for asphalt binder is 200 tons. If a project has more than one lot and the remaining asphalt binder quantity is less than 150 tons, it is added to the previous lot and that total quantity will be evaluated as one lot. If the remaining asphalt binder quantity is 150 tons or greater, it is sampled, tested and evaluated as a separate lot.

If the bid quantity of asphalt binder is between 85 – 200 tons, the bid quantity is considered as one lot and sampled, tested, and evaluated according to this subsection. Quantities of asphalt binder less than 85 tons will be accepted based on manufacturer’s certified test reports and certification of compliance.

Sample asphalt binder at the plant from the supply line in the presence of the Engineer according to ATM 401. The Engineer will take immediate possession of the samples. Take three samples from each lot, one for acceptance testing, one for Contractor requested retesting, and one held in reserve for referee testing if requested. Meet Subsection 702 requirements for asphalt binder quality.

1. Asphalt Binder Grade Retest. Retest of acceptance test results may be requested provided the quality control requirements of Subsection 401-3.02 are met. Deliver the request in writing to the Engineer within 7 days of receipt of notice of failing test. The original results are discarded and the retest result is used for acceptance. Only one retest per sample is allowed.

If the contractor challenges the result of the retest, the referee sample held by the Engineer will be sent to a mutually agreed upon independent AASHTO accredited laboratory for testing. The original acceptance test result, the retest acceptance test result, and the referee sample test result will be evaluated according to ASTM D3244 to obtain an Assigned Test Value (ATV). The ATV will be used to determine if the asphalt binder conforms to the contract. The Contractor shall pay for the referee sample test if the ATV confirms the asphalt binder does not meet contract requirements.

401-5.01 BASIS OF PAYMENT.

The following items, unless included as individual Pay Items, are subsidiary to the Section 401 Hot Mix Asphalt Pavement related Pay Items as included in the bid schedule:

* Asphalt binder
* Liquid anti-strip additives
* Tack coat
* Crack sealing
* Crack repair
* Joint adhesive
* Surface sealing of longitudinal joints
* Surface tolerance corrections
* Patching defective areas
* Prelevel for ruts, delaminations, and depressions
* Repair unstable pavement
* Job mix design
* Density profiles, Subsection 401-2.10 Process Quality Control
* Repair work and materials when planing equipment breaks through existing pavement – Subsection 401-3.10 Preparation of Existing Surface
* Work and materials associated with Subsection 401-3.06 Hauling Equipment
* Work and materials associated with Subsection 401-3.20 Roadway Maintenance

Item 401(16) Crack Repair. Cleaning loose material from cracks, asphalt binder, and HMA to fill cracks are subsidiary.

Item 401(17) Prelevel for Ruts, Delaminations, and Depressions. Cleaning loose material, asphalt binder, and HMA are subsidiary.

Item 401(18) Repair Unstable Pavement. Removal of pavement and base course, asphalt binder, and HMA are subsidiary.

Item 401(19) Speed Hump. Saw cuts, removal of pavement, and tack coat are subsidiary.

Item 401(20) Raised Crosswalk. Saw cuts, removal of pavement, tack coat, detectable warning plates, and concrete for detectable warning plates are subsidiary

Payment will be made under:

|  |  |
| --- | --- |
| **Pay Item** | **Pay Unit** |
| 401(1) HMA, Type II; Class B | Ton |
| 401(2) HMA, Leveling Course, Type IV; Class B | Lane-Station |
| 401(3) HMA, Leveling Course, Type IV; Class B | Ton |
| 401(14) Joint Adhesive | Linear Foot |
| 401(16) Crack Repair | Linear Foot |
| 401(17) Prelevel for Ruts, Delaminations, and Depressions | Square Yard |
| 401(18) Repair Unstable Pavement | Square Yard |
| 401(19) Speed Hump | Each |
| 401(20) Raised Crosswalk | Each |

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