

Add the following Section:

**SECTION 1151
ASPHALT CONCRETE PAVEMENT**

1151-1 DESCRIPTION: The work consists of furnishing and constructing one or more courses of asphaltic concrete mixture applied hot in conformance with lines, grades, thicknesses and typical cross sections shown on the plans or established by the Engineer.

The Contractor shall comply with the requirements of Subsection 7-5.2.

The Contractor and the Engineer will cooperate in notifying affected residents of this project, and both parties will make a concerted effort to have parked vehicles removed from the construction area.

1151-2 MATERIALS: Materials shall conform to the following Sections and Subsections.

Asphalt Concrete	1004
Asphalt Tack Coat	1003

Tack coat shall be emulsified asphalt (grade CRS-2 or SS-1).

1151-3 EQUIPMENT: All equipment, asphalt plant, paver, rollers, trucks, etc., used on City-Parish projects, shall be certified in accordance with current Louisiana Department of Transportation and Development procedures.

Material Transfer Vehicle (MTV): When required in the Quantities Table, a material transfer vehicle will be required to deliver mixtures from the hauling equipment to the paving equipment. The MTV shall perform additional mixing of the asphaltic concrete mixtures and then deposit the mixture in the paving equipment hopper to reduce segregation. The MTV shall be approved prior to use.

As a minimum the MTV shall have a high capacity truck unloading system which will receive mixtures from the hauling equipment; a storage bin in the MTV with a minimum capacity of 25 tons of mixture; an auger system in the MTV to continuously mix the mixture prior to discharge to a conveyor system; a discharge conveyor, with the ability to swivel, to deliver the mixture to a paving equipment hopper while allowing the MTV to operate from an adjacent lane; and a paver insert hopper with a minimum capacity of 18 tons which can be inserted into conventional paving equipment hoppers.

1151-4 PROJECT STREET LOCATIONS, CONSTRUCTION LIMITS AND REQUIRED ASPHALT THICKNESS: The locations of the various streets to be overlaid under this contract are shown in the Drawings. Unless otherwise approved by the Engineer in writing, the average compacted wearing surface thickness shall be applied at the rate shown in the Drawings.

1151-5 CONSTRUCTION:

1151-5.1 Maintenance Work: All required grass stripping; vegetation sterilization; pulling of roadway shoulders; pavement base restoration, and other maintenance work shall be done by the Contractor on this project.

1151-5.2 Weather Conditions: Asphaltic concrete mixtures shall not be applied on a wet surface or when the ambient temperature is below 50 degrees Fahrenheit, except that material in transit or in surge bins at the time plant operation is discontinued may be laid; however, mixtures laid shall perform satisfactorily and meet specification requirements.

If materials are placed in thicknesses of 2- ½” or greater, these temperature limitations shall not apply provided all other specification requirements are met.

1151-5.3 Surface Preparation: The surface to be covered shall be approved by the Engineer prior to placing mixtures. The Contractor shall maintain the surface until covered.

- a. **Cleaning:** The surface to be covered shall be swept clean of dust, dirt, caked clay and loose material by municipal type street sweepers capable of picking up all swept material and equipped with an adequate water system for dust suppression, supplemented with hand equipment as directed. The use of rotary brooms will not be permitted. When mixtures are to be placed on Portland cement concrete pavement or overlaid Portland cement concrete pavement, the Contractor shall remove excess joint filler from the surface by an approved burning method. The contractor shall remove any existing raised pavement markers prior to asphaltic concrete overlay operation. All areas to be paved that have vegetation encroachment will be sterilized with an approved soil sterilizer, a minimum of seven (7) days prior to the commencement of laydown operations.
- b. **Applying liquid asphaltic materials:**
 1. **Existing pavement surfaces:** Before constructing each course, an approved asphaltic tack coat shall be applied. The Contractor shall protect the tack coat and spot patch as required.
 2. **Raw aggregate base course and Raw Embankment Surfaces:** The Contractor shall apply prime coat to unprimed surfaces, or protect in-place prime coat and spot patch as required with asphaltic prime coat.
 3. **Cement and lime stabilized or Treated Embankment and Base Course Surfaces:** The Contractor shall apply curing membrane if none is in place, or protect the in place curing membrane and spot patch as required, with asphaltic material.
 4. **Other Surfaces:** Contact surfaces of curbs, gutters, manholes, longitudinal edges and joints, and other structures shall be painted with a uniform coating of asphaltic tack coat before placing asphaltic mixtures.
 5. Tack coat shall be applied on the same day that the asphalt mixture is placed, at a minimum temperature of 160°F for grade CRS-2, and 70°F for grade SS-1.
- c. **Restoration of Existing Pavement Surface and/or Base:** All irregularities, depressions or failures in the existing pavement surface and/or base shall be repaired prior to the placement of any hot-mix asphaltic concrete wearing surface. In general, surface defects shall be repaired by removing all loose or defective material to sound pavement, and replacing with approved hot-mix asphaltic concrete patching material conforming to Table 10-9. The hot-mix leveling mixture shall be thoroughly compacted to produce a tight surface conforming to the adjacent pavement area.

Whenever the existing surface is in such a condition that the Engineer deems it necessary to apply a leveling course he shall direct the Contractor to do so. The leveling course shall be placed as directed and will be paid for at the contract price per ton for asphalt overlay. The leveling course shall be placed, spread, and compacted as directed by the Engineer.

When directed by the Engineer all base failures in the existing pavement base shall be repaired prior to the placement of any hot-mix asphaltic concrete wearing surface.

1151-5.4 Joint Construction: Longitudinal joints shall be constructed by overlapping the paver approximately 2" onto the adjacent pass. Prior to rolling, the overlapped mix shall be pushed back, without scattering loose material over the uncompacted mat, to form a vertical edge above the joint. The vertical edge shall then be compacted by rolling to form a smooth, sealed joint. Longitudinal joints in one layer shall offset those in the layer below by approximately 3"; however, the joint in the top layer shall be offset 3" to 6" from the centerline of pavement or from lane lines.

Transverse joints shall be butt joints formed by cutting back on the previously placed mixture to expose the full depth of the course. Transverse joints in succeeding courses shall be offset at least 2 feet. Asphaltic tack coat shall be placed on contact surfaces of transverse joints before mixture is placed against them.

1151-5.5 Hauling, Spreading and Finishing: Mixtures shall be transported from plant to paver at a temperature no cooler than 10 degrees Fahrenheit below the lower limit of the approved job mix formula. No loads shall be sent out so late in the day as to prevent completion of spreading and compaction of the mixture during daylight, unless artificial lighting has been approved.

Each course of asphaltic mixture shall be placed in accordance with the specified lift thickness. If no lift thickness is specified, binder and wearing course mixtures shall be placed in lifts not exceeding 2" thick, or as directed by the Engineer. Base course mixtures shall be placed in lifts of such thickness that all specification requirements are met.

With the Engineer's approval, blade graders may be used to fill isolated depressions in the initial layer.

- a. **Coordination of Production:** The contractor shall coordinate and manage plant production, transportation of mix and laying operations to achieve a high quality pavement and shall have sufficient hauling vehicles to insure reasonably continuous plant and roadway operations. Then Engineer may order a halt to operations if sufficient hauling vehicles are not available. If less than the optimum number of hauling vehicles are available and it is determined that satisfactory quality can be obtained, the Contractor will be permitted to work provided plant production and hauling vehicles are coordinated to minimize the adverse effect of idle time between loads.
- b. **Paving operations:** Transfer of mixture from haul truck to pavement may be made by direct unloading into the spreader hopper or by use of approved mechanical loading devices. Delivery of material to the paver shall be at a uniform rate and in an amount within the capacity of paving and compacting equipment. Equipment shall be so designed and operated that the finishing machine will place mixtures to required line, grade and surface finish without resorting to hand finishing. Equipment which leaves tracks or indented areas which cannot be corrected in normal operations or fails to produce a satisfactory surface shall not be used. Operation of equipment resulting in accumulation of material and subsequent shedding of accumulated materials into the mixture will not be permitted.

All mixtures shall flow through the spreader hopper. Mixtures dropped in front of the spreader shall be either lifted into the hopper or rejected and cast aside.

Longitudinal joints and edges shall be constructed along lines established by the Engineer, and stringlines or other devices shall be placed by the Contractor for the paver to follow. The paver shall be positioned and operated to closely follow the established line. Irregularities in alignment shall be corrected by trimming directly behind the paver. After the 1st load of material has been spread, the texture of the unrolled surface shall be checked to determine its uniformity. The adjustment of

screed, tamping bars, feed screws, hopper feed, etc. shall be checked frequently and adjusted as required to assure uniform spreading of the mix to proper line and grade and adequate compaction. If segregation of materials occurs, spreading operations shall be suspended until the cause is determined and corrected.

Surface irregularities shall be corrected directly behind the paver. Excess material forming high spots shall be removed. Indented areas shall be filled and finished smooth. Hand placement for surface repair will be permitted. Material shall not be cast over the surface.

If spreading and finishing operations are interrupted to such extent that the mixture remaining in trucks, paver, spreader hopper or on the roadway cools to such extent that it cannot be laid, finished or compacted to the same degree of smoothness and with the same texture and density as the uncooled mixture, the cooled mixture shall be removed and replaced at the Contractor's expense.

Mechanical pavers shall be equipped with automatic screed and slope control devices for use with an approved traveling reference plane or erected stringline, as directed. The following requirements shall apply:

1. **30 foot (minimum) Traveling Referenced Plane:** The initial paving strip of each layer of mixture shall be constructed using the traveling referenced plane and automatic slope control method; however, if permitted, the portion of mixtures required to level isolated depressions in the initial layer may be placed without automatic screed control. After the initial paving strip of each layer is finished and compacted, adjacent paving strips shall be laid to the grade of the initial paving strip using a shoe device or traveling referenced plane to control grade and a slope control device to control cross slope.

On multi-lane pavements, the sequence of lane construction will be subject to approval.

When both outside edges of the paving strip being placed are flush with previously placed material, the slope control device shall not be used. A grade sensor is required for each side of the paver.

In superelevated curves, the cross slope shall be changed from that specified for tangents to that specified for superelevation in gradual increments as the paver is in motion so a smooth transition in grade is obtained. The change in cross slope shall be accomplished within the transition distance specified.

This is the minimum acceptable method and the contractor must meet or exceed current surface tolerance specifications.

2. **Erected Stringline:** An erected stringline shall consist of a piano wire stretched between stakes set at maximum 25-foot intervals tensioned between supports so that there is less than 0.1" variance between supports when the sensor is in place. The initial paving strip of the 1st lift shall be constructed using an erected stringline referenced to established grade. Mixtures used to level isolated depressions may be placed without automatic screed control. Subsequent lifts may be constructed with the traveling reference plane, provided surface and grade tolerances are met on the previous lift.

Only 1 grade sensor and the slope control device are necessary for roadways with normal crown on tangent alignment. Superelevated curves will require the use of 2 grade sensors and 2 erected stringlines to obtain proper grade and

slope; however, if the automatic screed control device is equipped with a dial or other device which can change the cross slope in small increments, superelevated curves may be constructed using this device and 1 erected stringline.

After the initial paving strip of the 1st lift is finished and compacted, adjacent paving strips shall be placed using a minimum 30-foot traveling reference plane.

3. Without automatic Screed Control: When permitted, pavers without automatic screed control may be used for pavement patching, pavement widening, paved drives, turnouts, and irregular areas.
 - c. **Hand Placement**: Where the use of mechanical finishing equipment is not practical, the mix may be spread and finished by hand to the satisfaction of the Engineer. No casting of the mixture will be permitted. During spreading operations, material shall be thoroughly loose and uniformly distributed. Material that has formed into lumps and does not break down readily will be rejected. The surface shall be checked before rolling and irregularities corrected.
 - d. **Curb and Gutter and Integral Curb**: On streets having curb and gutter or integral curb where the Asphaltic concrete is to extend to the curb, the cross slope shall be broken to provide an additional ½" drop at the curb line. The break point shall occur between 2 and 4 feet from the curb line. The exact break point shall be agreed upon by the Engineer and the contractor, considering the capabilities of the type of equipment to be used for laydown.

1151-5.6 Compaction: After placement, mixtures shall be uniformly compacted by rolling while still hot to an average density of at least 95% of maximum density determined by DOTD TR304.

When polymer asphalt cement is not specified in the mixture, a pneumatic tire roller may be used for intermediate rolling; however, when the ambient temperature is below 60 degrees Fahrenheit, it must be used. With polymer asphalt pneumatic rollers will not be permitted. The use of rollers which results in excessive crushing of aggregate will not be permitted.

The rolling pattern established by the Contractor shall be conducted by experienced operators in consistent sequences and by uniform methods that will obtain specified density and smoothness. Individual roller passes shall uniformly overlap preceding passes to ensure complete coverage of the paving area. The speed operation of rollers shall be such that no displacement or tearing of the mat occurs. Non-vibrating steel wheel rollers shall be operated with drive wheels toward the paver. Any displacement or tearing of the mat shall be immediately corrected. Finish rolling shall be accomplished with a non-vibrating steel wheel roller until roller marks have been eliminated.

To prevent adhesion of mixture, wheels of steel wheel rollers shall be kept properly moistened, but excess water will not be permitted. Pneumatic tire rollers shall be operated in such manner that tires will retain adequate heat to prevent mix from adhering to tires. The pneumatic tire roller shall be operated at a contact pressure which will result in a uniform, tightly knit surface. The pneumatic tire roller shall be kept approximately 6" from unsupported edges of the paving strip; however, when more than 1 paving strip is down, the adjacent paving strip shall be overlapped approximately 6 inches.

If continuous roller operation is discontinued, rollers shall be moved to cooled areas of the mat, where they will not leave surface indentations.

Vibratory rollers may be used provided they do not impair the stability of the pavement structures of underlying layers. If mix is placed on newly constructed cement or lime stabilized or treated base,

sub-base or working table, vibratory rollers shall not be used for at least 7 days after such stabilization or treatment.

Along forms, curbs, headers, walls and at other places inaccessible to rollers, mixtures shall be uniformly compacted to the satisfaction of the Engineer with hot hand tampers, mechanical tampers, or other approved methods.

Surface of mixtures after compaction shall be smooth and true to cross slope and grade within the tolerances specified. Mixtures that become loose, broken, contaminated or otherwise defective shall be removed and replaced with fresh hot mixture compacted to conform with the surrounding mixture.

Newly finished pavements shall be protected from traffic until they have sufficiently hardened.

Newly finished pavements, after finish rolling, shall have uniform tightly knit surface free of cracks, tears or other deficiencies. Ripples in the mat surface will not be accepted. All deficiencies shall be corrected at the Contractor's expense and the Contractor shall adjust his operations to correct the problem. This may require the Contractor to adjust the mix or furnish additional or different equipment.

1151-5.7 Surface Finish Requirements: Testing for surface tolerances as specified in Table 1151-1 of this Section will be the responsibility of the City-Parish. The contractor shall furnish the Engineer assistance, as directed, in pulling the rolling straightedge. Control checks will be the responsibility of the Contractor. The Contractor shall furnish a 10 foot rolling straightedge for longitudinal testing and a 10 foot metal static straightedge for transverse testing, both of which shall be acceptable to the Engineer. The rolling straightedge shall be calibrated and used in accordance with DOTD TR-603 and TR-618.

For the purpose of surface finish requirement, the wearing course is defined as the last course placed and the binder course is defined as the last course placed prior to the wearing course. When only one course is placed, the surface finish requirements for Binder (as shown in Table 1151-1) shall apply.

- a. Longitudinal Surface Finish: The finished surface will be tested by the Engineer in the longitudinal direction for conformance to surface finish requirements in Table 1151-1. One path in each lane will be selected at random and tested.

Longitudinal variations in binder course surfaces shall be subject to the provisions of Table 1151-1. Any surface finish deficiency that exceeds 3/8" shall be corrected in accordance with Subsection 1151-5.7 (e). Longitudinal variations in the final wearing surface will be subject to provisions of Subsection 1151-7 (B) (2) (iv). Surface finish deficiencies exceeding 1/4" shall be corrected in accordance with Subsection 1151-5.7 (e). After corrections have been made, the mix laid that day will be subject to the provisions of Subsection 1151-7 (B) (2) (iv).

- b. Transverse Surface Finish: the transverse surface finish shall be so controlled that the values shown in Table 1151-1 will not be exceeded. The surface for binder and wearing courses will be tested at selected locations by the Engineer in the transverse direction for conformance to the surface finish requirements of Table 1151-1. Corrections shall be made as directed in accordance with Subsection 1151-5.7 (e).
- c. Cross Slope: When the plans require the section to be constructed to a specified cross slope, test shall be run at selected locations, using a stringline, slope board or other comparable method. The cross slope shall be so controlled that the values shown in Table 1151-1 will not be exceeded. Cross slope variations allowed in Table 1151-1 shall apply to each lane constructed.

- d. **Grade:** When the plans require the pavement to be constructed to a grade, tests for conformance shall be run at selected locations, using a stringline or other comparable method. Grade variations shall be so controlled that the tolerance shown in Table 1151-1 will not be exceeded.

If the pavement is consistently above or below the established grade for a reasonably long segment, the Engineer may, for the purpose of determining conformance to the tolerance, use a new grade approximately parallel to the established grade; in which case, any required transition in grade or vertical curve at each extremity of the segment shall be in accordance with the base design requirements. Grade tolerances shall apply to only one longitudinal line, such as the centerline or outside edge of pavement. Corrections shall be made in accordance with Subsection 1151-5.7 (e).

- e. **Correction of Deficient Areas:** Deficiencies to be corrected in the final wearing course shall be corrected by milling, removing and replacing or furnishing and placing a supplemental layer of wearing course mixture at least 1- ½" thick for the full width of roadway; all in a satisfactory manner at the Contractor's expense. Deficiencies to be corrected in binder courses shall be corrected in a satisfactory manner at the Contractor's expense. Corrections shall be made before subsequent courses are constructed.

With the written permission of the Project Engineer, deficiencies in Longitudinal and/or Transverse Surface Finish may be corrected by heating and re-rolling the surface. Devices used to heat asphaltic concrete shall not expose the surface to open flame.

1151-5.8 Dimensional Requirements: Mixtures that are specified for payment on a cubic yard or square yard basis shall conform to the following dimensional requirements. Overthickness and overwidth will be waived at no additional cost to the City-Parish.

- a. **Thickness:** Thickness of mixtures will be determined by random coring. Underthickness shall not exceed ¼". For all mixtures except the final surface course, areas with underthickness in excess of the ¼" shall be corrected to plan thickness at the Contractor's expense by furnishing and placing additional mixture. For the final surface course, areas with underthickness in excess of the ¼" shall be corrected to plan thickness at the Contractor's expense by furnishing and placing a supplemental layer of wearing course mixture at least 1- ½" thick over the entire area for the full width of the roadway.
- b. **Width:** The width of completed courses will be determined in accordance with DOTD TR-602. Underwidths shall be corrected to plan width at the contractor's expense by furnishing and placing additional mixture.

1151-5.9 Manhole and Inlet Adjustment: It is contemplated that some streets may have manholes or grate type inlets in them which will require adjusting to accommodate the new asphaltic concrete pavement. The contractor shall make such adjustment as specified in Section 806. When using raising rings to make the required adjustment, the contractor shall utilize the existing manhole covers and shall install the raising ring just before new asphalt concrete pavement is placed.

1151-5.10 Driveways, Paved Shoulders, Parking Areas, Etc.: When paved driveways, paved shoulders not to be overlaid, paved parking areas etc. about the area to be overlaid, additional asphaltic concrete shall be placed outside the normal limits of the asphaltic concrete to provide a smooth vertical transition and/or to facilitate drainage. The limits of such additional asphaltic concrete shall be as directed by the Engineer, but shall not extend beyond the limits of the right-of-

way. Methods of placement and compaction shall be as approved by the Engineer. Surface tolerances shall not apply, but the area shall be finished to the satisfaction of the Engineer.

1151-5.11 Utility Trench Cuts for Sanitary Sewer, Storm Drains, Etc.: Backfill and compact utility trench in accordance with specifications and standard plans for the relative type of utility. Existing base shall be replaced with a minimum 7" thickness Type B PG64-22 asphalt base course and minimum 2" thickness of asphalt wearing course in accordance with Table 1004-1. Asphalt shall be placed and compacted in 3" maximum lifts. The limits of the pavement repair shall be as shown on the Contract Documents. Unless otherwise approved by the Engineer, pavement repair outside of the established limits shall be at no additional cost to the Owner. Methods of placement and compaction shall be as approved by the Engineer. On short patches or road crossings, the distance at any point from a ten (10) foot straight edge to the surface shall not exceed one-half (1/2) inch in any direction. Lumps or depressions exceeding this tolerance shall be corrected in accordance with 1151-5.7e. For longer or larger patches surface tolerances shall be in accordance with subsection 1151-5.7.

1151-6 PAVEMENT SAMPLES: The contractor shall furnish samples cut from the completed work. The removed pavement shall be replaced with new mixture and refinished within 24 hours. No additional compensation will be allowed for furnishing test samples and replacing the areas with new pavement. Samples shall be taken by the contractor in the presence of the Engineer's representative from areas selected by the Engineer. The location of the area to be cored will be determined by the use of "random number tables" transversely and longitudinally in each subsection of each lot. The procedure used will be in accordance with Louisiana Department of Transportation & Development publication entitled, "Application of End Result Specifications for Asphaltic Concrete."

Samples shall be cores approximately 4" in diameter taken by an approved core drill. Cores less than 1-1-2" thick shall not be used to determine pavement density.

Core holes must be filled the next work day after being cut. Core holes must be dry and tack coat applied prior to filling. The mix used for filling must be the same as where the core was made. The core hole will be overfilled and then rodded 25 times. The mix in the hole will be shaped and crowned ¼" higher than the roadway surface. The mix in the core hole will then be compacted with a 10 lb. hammer. After compactions, the core hole top must be equal to or slightly higher than the roadway surface.

In the event that the Contractor fails to satisfactorily fill and refinish test sample holes within 24 hours, the Engineer may suspend all other operations on the Project, and any other City-Parish project under contract to the contractor, until such time shall not be interrupted by such suspension of their operations and shall continue to run.

1151-7 ACCEPTANCE REQUIREMENTS: All inspection procedures, including sampling and testing, form the basis for acceptance of the asphaltic concrete. Sampling and testing shall be accomplished following a stratified sampling plan: times and locations shall be set by the Engineer.

Any section of pavement that is obviously deficient shall be satisfactorily corrected or replaced.

Acceptance testing for Marshall stability and aggregate gradation will be conducted on the mix laid each day on the project. Also acceptance testing for pavement density, surface tolerance and dimensional tolerances will be conducted on mix produced and laid for the City Parish each day.

Pavement density and surface tolerance requirements will not be applied for short irregular sections, such as drives, aprons and turnouts; however, mix shall be placed in such manner as to provide a neat, uniform appearance and shall be compacted by satisfactory methods.

For all projects, 1 sample shall be taken from Marshall properties testing for each 250 tons or portion thereof produced and 1 sample taken for extracted gradation testing for each 500 tons or portion thereof produced. Five (5) samples shall be taken for determination of pavement density, with the sampling distribution to be determined by the Engineer.

- a. Inspection: Mix exhibiting deficiencies before placement, such as segregation, contamination, lumps non-uniform coating, excessive temperature variations or other deficiencies, apparent on visual inspection, shall not be placed.

Mix exhibiting deficiencies during placement, such as segregation, contamination, alignment deviations, variations in surface texture and appearance or other deficiencies, apparent on visual inspections, will not be accepted. Poor construction practices such as handwork, improper truck exchanges, improper joint construction, or other deficiencies, apparent on visual inspection, will not be accepted.

Deficiencies revealed by visual inspection after placement and before final acceptance shall be corrected at the Contractor's expense.

If requested by the Contractor, the acceptability of mixtures or work rejected by visual inspection of the inspector will be evaluated by tests, measurements and/or visual inspection by the Engineer.

- b. Sampling and Testing:

1. Without Payment Adjustments: The City-Parish will take samples or perform test outlined in these specifications to ensure that the asphaltic concrete conforms to City-Parish standards, which include mix design limits, typical sections, material values, surface deviations and verification of control testing. Deviations from specified tolerances will not be accepted. If a sample or test indicates a deviation from a specified tolerance, the contractor shall take immediate corrective action, or operations shall be discontinued.

2. With Payment Adjustments: If the mix does not meet requirements in the areas listed in this Section, the payment adjustments schedules shown in Table 1151-2 of this Section will be applied. Production of mix that is not eligible for 100% payment will not be allowed on a continuous basis. If test results demonstrate that payment adjustments are necessary, satisfactory control adjustments shall be made or production shall be discontinued.

- i. Marshal Stability: When individual tests or the average of tests representing the mix produced and laid for the City-Parish is outside acceptance limits shown in Table 10-9 of Section 1004, an adjustment in unit price for the mix will be made in accordance with Table 1151-2 of this Section.

- ii. Aggregate Gradation: Testing for aggregate gradation will be conducted by the contractor's technician. Gradation testing shall be performed for each 500 tons or portion thereof produced per day.

If test results are outside the job mix control limits for aggregate gradation given in Table 10-9 of Section 1004, an adjustment in unit price for that mix will be made in accordance with Table 1151-2 of this Section. This adjustment in unit price is determined by percent deviation from job mix control limits for the No.'s 4, 40 and 80 sieves, and only the sieve with the greatest adjustment in unit price will be used. Deviations for gradation will be calculated for each test and the deviations will be averaged for determination of adjustment in unit price.

- iii. Pavement Density: Upon completion of compaction, 5 pavement samples shall be obtained in accordance with Subsection 1151-6 within 24 hours after placement. If this falls on the day the Contractor's crews are not working, sampling will be done the following work day. If the Contractor does not obtain the roadway samples as outlined, the Engineer may deduct 5% of the contract price of asphaltic concrete for the day or days run, where samples are late or lacking.

The density requirement for the average of 5 samples will be as shown in Table 1151-1 of this Section, determined in accordance with DOTD TR-304. Payment will be made in accordance with Table 1151-2 of this Section.

- iv. Surface Smoothness: Testing for surface smoothness will be required on the final wearing surface. The surface will be tested longitudinally with a 10-foot rolling straightedge as prescribed in Subsection 1151-5.7. The rolling straightedge shall be furnished by the Contractor. Surface corrections shall be made in accordance with Subsection 1151-5.7.

The requirements for surface smoothness shall be as shown in Table 1151-1.

- v. Anti-Strip Additive: Failure to add anti-strip additive shall result in a payment adjustment in accordance with Table 1151-2.

1151-8 MEASUREMENT: Asphaltic tack coat, prime coat or curing membrane required will not be measured for payment.

- a. Weight Measurement: Asphaltic concrete will be measured by the ton of 2,000 pound from printed weights.

Stamped printer tickets will be issued for each truckload of material delivered. Material lost, wasted, rejected or applied contrary to specifications will not be measured for payment. Contractor shall provide a copy of the stamped printer ticket to the Inspector for each truckload of material delivered.

Estimated quantities of asphaltic concrete shown on the plans are based on 110 lbs./sq. yd./inch thickness (115 lbs/sq. yd./inch for Granite Fines Mixes). The theoretical specific gravity of the job mix shall not exceed 2.51.

- b. Area Measurement: Measurement for restoring asphalt concrete pavement and base for utility trenching limits shall be the number of square yards restored within the limits shown in the Contract Documents and as approved by the Engineer.

1151-9 PAYMENT: Asphaltic concrete will be paid for at the contract unit price. When the mix does not conform to acceptance requirements, payment will be made at an adjusted price per unit of measurement in accordance with Table 1151-2.

- a. General: Payment for asphaltic concrete will include furnishing all required material, producing the mixtures preparing the surfaces on which the mixtures are placed, hauling the mixtures to the work site, and placing and compacting the mixtures.
- b. Wearing Course Mixes: The lowest percentage of contract price will be used for final adjustment in unit price for deficiencies in Marshall stability, pavement density, aggregate gradation, and anti-strip additive.

- c. Binder and Base: The lowest percentage of contract price will be used for final adjustment in unit price for deficiencies in Marshall stability, pavement density, aggregate gradation, and anti-strip additive.

Payment for restoring asphalt concrete pavement and base for utility trenching will be full compensation for furnishing all labor, materials, equipment, and incidentals required to restore full depth asphalt concrete pavement, complete as specified on the Contract Documents; cleaning the surface upon which the asphalt is placed, providing headers, prime coats and tack coats, and all else incidental thereto for which separate payment is not provided under other items in the Bid Form.

1151-10 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
1151100	Asphaltic Concrete Pavement	Ton
1151200	Polymerized Asphalt Concrete Pavement	Ton
1151210	Polymerized Asphalt Concrete Pavement (Granite Fines)	Ton
1151300	Restore Asphalt Concrete Pavement and Base	Square Yard

TABLE 1.151-1

Pavement Requirements

Density
All Mixes 95%

Surface Finish Variation (inches)

	Longitudinal	Transverse	Cross Slope	(Grade When Required)
Wearing Course	1/8	1/8	3/8	1/2
Binder	1/4	1/4	1/2	1/2

Note: Longitudinal measure based on a 10-foot rolling straightedge
Cross slope based on 10 feet.

Aggregate for all mixes shall be crushed gravel, slag, stone or stone approved for wearing course. At the contractor's option, a maximum 20% limestone screenings that have a minimum of Number 4 skid rating may be used in all mixes.

If the Contractor starts a project using a certain aggregate, he must complete the project using that aggregate. The Engineer may waive this requirement if requested by the Contractor.

TABLE 1151-2

PAYMENT ADJUSTMENT SCHEDULE

Percent of Contract Unit Price

	100 -	98	95	80	50 or remove (Engr. Option)
<u>Marshall Stab.</u>					
<u>Type C</u>					
Average	1000+		900-999	800-899	-800
Indiv. Test	800+	-800			
<u>Type B, BP, BP (GF) (Wearing Course)</u>					
Average	1500+		1400-1499	1250-1399	-1250
Indiv. Test	1300+	-1300			
<u>Type B, and BP (Binder Course)</u>					
Average	1400+		1300-1399	1150-1299	-1150
Indiv. Test	1200+	-1200			
<u>Type B, and BP (Base Course)</u>					
Average	1000+		900-999	800-899	-800
Indiv. Test	800+	-800			
<u>Type A (Wearing Course)</u>					
Average	2200+		1900-1999	1750-1899	-1750
Indiv. Test	1800+	-1800			
<u>Pavement Density</u>					
Ave. of 5 Samples (% Lab. Density)	95.0+		94.0-94.9	92.0-93.9	-92
<u>Surface Smoothness</u>					
Lin. % of Pavement Exceeding 1/8" Surface Tol.	0.0-0.5	0.6-1.0	1.1-1.5	1.6-2.5	+2.5
<u>Agg. Gradation</u>					
Dev. from Job Mix Formula Limits for Ext. Aggregate -					
No.4 Sieve	0-1.0	1.1-4.0	4.1-8.0		+8.0
No.40 & No.80 Sieve	0-1.0	1.1-3.0	3.1-6.0		+6.0
<u>Anti-Strip Additive</u>				Failure to add	