



# TOWN OF OCEAN CITY

The White Marlin Capital of the World

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## ADDENDUM # 1 Annual Street Paving

Date of Addendum: 10/07/21

### NOTICE TO ALL BIDDERS AND PLANHOLDERS

The Bid Documents for the above-referenced Project are modified as set forth in this Addendum. The original Bid Documents and any previously issued addenda remain in full force and effect, except as modified by this Addendum, which is hereby made part of the Bid Documents. Vendors will take this Addendum into consideration when preparing and submitting a bid, and will acknowledge receipt of this Addendum in the space provided in the Bid Documents.

### BID SUBMITTAL DEADLINE

The bid submittal time has not been changed.

### 1.0 – QUESTIONS AND ANSWERS

The following questions and answers are provided as a matter of information to clarify issues raised about the Bid Documents.

Item	Questions and Answers
1.1	Is any type of bid security required (i.e. bid bond)? <b>No</b>
1.2	Will the awarded Contractor be required to provide a performance and payment bond? <b>No</b>
1.3	The Base Bid quantities listed on the Form of Bid do not match the Base Bid quantities listed in the Scope of Work Section, page 35. Please clarify. <b>The units are correct on the Form of Bid. The Scope of Work Sub-section 4.1 is corrected as stated below:</b> <b>4. PROPOSED FY2022 STREET PAVING:</b> <b>4.1. The Base Bid is based on these quantities listed below. These proposed tonnages, milling, and crack sealing numbers reflect a normal semi-annual mobilization, i.e., Fall Mobilization and Spring Mobilization.</b> <b>4.1.1. Surface Course - Hot Mix Asphalt Pavement - 2" – 7,000 Tons</b> <b>4.1.2. Milling of Hot Mix Asphalt – 10,000 Square Yard / Inches</b> <b>4.1.3. Filling Cracks in Hot Mix Asphalt – 15,000 Lineal Feet</b> <b>• These quantities may increase 25% once the streets are selected.</b>
1.4	The current Form of Bid states that there is an allowance of thirty (30) calendar days to complete the work. This does not seem adequate considering the current quantities listed in the Bid Form; also, not knowing any of the proposed locations, exact quantities, and number of mobilizations. Please advise. <b>The Work will be required to be completed in thirty calendar day unless otherwise agreed to by both parties.</b>
1.5	Just to clarify the Scope of Work, note 4.1: Should we anticipate two (2) total mobilizations per year and each mobilization to consist of roughly 2,000 tons asphalt, 7,000 square

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	yard/inches milling, and 9,000 lineal feet crack filling? <b>Mobilizations will be kept to a minimum on a fiscal year basis but will be contingent upon funding and scope of work.</b>
1.7	The MSHA Standard Specification, Section 510 – Filling Cracks in Hot Mix is not the most current standard specification. It is also very broad in its scope of work which creates a lot of guesswork for bidding. Would it be possible for the Town to replace it's specification with the newest specification for Section 510, effective July 1 <sup>st</sup> , 2021? Can the Town provide some scope of work details typically required under this item? <b>Revised documents are attached.</b>
1.8	Are there any anticipated know locations per mobilization at this time? This information would benefit the Contractor in accurately pricing up the items. <b>Please see attached. The attached is not a guarantee that all streets will be completed in the first contract year.</b>
1.9	Under Scope of Work, 6.1 it states the contract goes from January 01, 2022 to December 31, 2027. Is this considered the Initial Contract Term? <b>This is considered the Contract Term as this is a six-year contract.</b> If so, would the Town consider changing the Initial Contract Term to January 01, 2022 to December 31, 2022? <b>No</b>
2.0	Will the Town provide flaggers? <b>No</b>
2.1	Is wedging at the same unit of measure? <b>Yes</b>
2.2	Will Maryland SHA escalation be included? <b>Yes</b>
2.3	Is the 7000 tons over the six-year contract? <b>Yes</b>
2.4	Is the Town requiring a traffic control manager? <b>No</b>
2.5	Is the Town requiring certified flaggers? <b>Yes</b>
2.6	Why is the unit price a repeat of the base price? <b>This is for additional work that may not be included in the base price.</b>
2.7	Is the wedge course 9.5? <b>Yes</b>
2.8	<b>The Town is deleting clause 28 Change in Contract Price in Section II General Information</b>
2.9	<b>The Town is adding the following language to clause 8 Changes in Contract Price in Section III General Conditions</b> <b>8.1.5. The Town will allow one pricing increase per year of the Contract not to exceed 5% and will be supported by either the Consumer Pricing Index or Producing Price Index.</b>

**END OF ADDENDUM**

# FY 2022 Paving Schedule - (Oct. 2021 - May 2022)

#	Inspection Date	SHA #	Street	From	To	Maintenance	Width	Length	SFT
0	5/16/07	1020	Worcester Street 3	Philadelphia Ave	Bay	Rebuild	40	480	19,200
5	5/16/07	760	Somerset Street 2 (**)	Baltimore Ave	Philadelphia Ave	Rebuild	40	300	12,000
5	5/16/07	190	Caroline Street 1	Boardwalk	Baltimore Ave	Rebuild	40	300	12,000
6	5/16/07	9010	1st Street 3	Philadelphia Ave	St. Louis Ave	Overlay	40	275	11,000
46	2/11/08	9085	14th Street 4	St. Louis Ave	Jacqueline	Overlay	40	725	29,000
51	2/11/08	400	Jacqueline Ave	14th Street	15th Street	Overlay	50	300	15,000
54	2/11/08	730	Shad Row	15th Street	Dead End	Overlay	40	550	22,000
22	2/12/08	420	Judlee Avenue 1(**)	26th Street	Bayshore Drive	Overlay	40	185	7,400
52	5/20/08		Washington Lane 20	31st Street	32nd Street	Rebuild	16	300	4,800
36	5/20/08	9290	54th Street	Beach	Coastal Highway	Overlay	40	510	20,400
37	5/20/08	9350	66th Street 2(**)	Coastal Highway	Bay	Overlay	40	445	17,800
01	5/20/08	9366	69th Street 2	Coastal Highway	Bay	Overlay	40	675	27,000
51	10/6/08	9425	81st Street 1	Beach	Coastal Highway	Overlay	40	445	17,800
78	11/13/08	9530	123rd Street 2	Coastal Highway	Bay	Rebuild	40	1350	54,000
36	11/13/08	405	Jamaica Avenue	123rd Street	125th Street	Overlay	40	690	27,600
21	12/31/08	683	Sandy Hill Drive	S. Ocean Drive	Bahia	Rebuild	40	2223	88,900
23	12/31/08	495	Nautical Lane	S. Ocean Drive	Bahia	Rebuild	40	11500	46,200
24	12/31/08	55	Bahia Drive	Harbour	Oyster	Rebuild	40	1090	43,600
25	12/31/2008	OP411+371	Harbour Drive	S. Ocean Drive	Gulf Stream	Rebuild	40	2310	92,400
26	12/31/2008	369	Gulf Stream Drive	Harbour	End	Rebuild	40	2320	92,800
51	12/31/08	250	Constitutional Ave 1	Colonial Ave	Melson	Overlay	40	615	24,600
52	12/31/08	250	Constitutional Ave 1	Melson	Peach Tree Rd.	Overlay	40	755	30,200
57	12/31/08	580	Pine Tree Road	Atlantic Blvd.	End	Overlay	40	2198	87,920
51	12/31/08	367	Fountain Road	136th Street	Sand Dune	Asphalt	40	1550	62,000

\* Street also requires water main/multiple lateral work

\* Street will require conduit work to establish "future" DPL light poles @ 3rd points



STATE HIGHWAY  
ADMINISTRATION

*Maryland Department of Transportation*  
*State Highway Administration*

**STANDARD SPECIFICATIONS**  
**for**  
**CONSTRUCTION**  
**and**  
**MATERIALS**

**July, 2020**

## CATEGORY 500 PAVING

### SECTION 504 — ASPHALT PAVEMENT

#### 504.01 DESCRIPTION

Construct Asphalt Pavement.

#### 504.02 MATERIALS

Performance Graded Asphalt Binders	904.02
Tack Coat	904.03
Asphalt Mixes	904.04
Crack Filler	911.01
Production Plants	Section 915

#### 504.03 CONSTRUCTION

**Quality Control Plan.** Submit a Plant Quality Control Plan and a Field Quality Control Plan (QCP) at least 30 days prior to placement of any asphalt pavement. Submit the Plant QCP to the Office of Materials Technology (OMT) for approval. Submit the Field QCP to the District Engineer for approval. The Plans shall contain a statistically based procedure of random sampling and show methods proposed to control the equipment, materials, production, and paving operations. Discuss the QCP requirements in the pre-construction, pre-pave and progress meetings.

The Plant and Field QCP shall contain:

- (a) Name and location of asphalt production plants,
- (b) Laboratory and field personnel qualifications,
- (c) Inspection and record keeping methods, and
- (d) Minimum frequencies of sampling and testing.

Use the Quality Control Plans for Plants Template to address all requirements necessary for plant quality control and plant approval.

- (d) Directing the sampling of mixes at the plant site,
- (e) Directing the sampling of cores taken from the compacted pavement,
- (f) Monitoring conformance with the approved QCP(s), and
- (g) Quality control sampling and testing procedures and quality control sampling and testing equipment will be evaluated according to the Independent Assurance (IA) program.

**504.03.01 Equipment.** All production and paving equipment will be subject to approval. Ensure the plant is ready for inspection as specified in 915.01.02.

**Hauling Units.** Refer to 915.02(f).

**Pavers.** Pavers shall be equipped with a means of preventing the segregation of the coarse aggregate particles when moving the mix to the paver augers. The means and methods used may consist of chain curtains, deflector plates, or other such devices, or any combination of these according to the manufacturer's recommendations. Demonstrate that modifications to the paving equipment have been implemented on all pavers prior to use on the project.

Use a self-contained, self-propelled unit for mainline paving. Inspection and approval will be based upon the manufacturer's recommendations. The paver shall:

- (a) Produce a finished surface of the required smoothness and texture without tearing, shoving, or gouging the mix.
- (b) Be operated in a manner which delivers a homogeneous mix the full width of the pavement.
- (c) Have automatic controls capable of maintaining the grade and transverse slope within the required tolerances set forth in the contract documents.
- (d) Use auger extensions to maintain a distance no greater than 18 in. from the end of the auger to the end gate when screed extensions are used.

Provide reference lines or other approved markings to control the horizontal alignment.

Manual operation will be permitted to make grade changes for constructing irregularly shaped and minor areas.

The equipment may be operated manually for the remainder of the workday if a malfunction of any automatic control occurs, as directed.

**Safety Edge Magnetic Protractor.** Safety edge magnetic protractor shall have increments of 0 degrees to 90 degrees in four quadrants, with a minimum 4 in. lens diameter and two level vials.

**504.03.05 Non-Tracking Tack Coat (NTTC).** The Manufacturer shall supply a QCP for the NTTC detailing the handling and application procedures according to PP71-11, and test results from an independent, accredited laboratory for shear and tensile strength.

- (a) Sample the NTTC as directed and submit to OMT's Asphalt Technology Division. All samples will be tested against the manufacturer's specifications. Material out of compliance will not be accepted for use.
- (b) Use equipment to heat and apply the NTTC at an application temperature range that conforms to the manufacturer's recommendations. Apply the NTTC in accordance with 504.03.02 and as directed.
- (c) Apply the NTTC uniformly with a pressure distributor. Use hand spraying equipment only in areas inaccessible to the pressure distributor. Apply the NTTC using an application rate of 0.05 gal/yd<sup>2</sup> to 0.10 gal/yd<sup>2</sup> and do not dilute with water. The quantity, rate of application, temperature, and areas to be tacked shall be approved prior to application.
- (d) Do not clean or discharge the tack coat distributor into ditches, onto shoulders or along the right of way. Park the distributor so the spray bar will not drip NTTC onto the surface of the traveled pavement.
- (e) Exclude all traffic from sections treated with NTTC until the tack has cured and will no longer track onto adjacent non-treated areas. Adjacent pavement surfaces shall show minimal visible evidence and pavement markings shall show no visible evidence of tracking.

**504.03.06 Asphalt Placement.** Delivery and placement of the asphalt should be continuous. Place the asphalt while the temperature is at least 225 F, or as specified in the Field QCP. Place the asphalt with a paver that conforms to 504.03.01. Do not broadcast loose mix over the new surface.

**504.03.07 Compaction.** Roll the asphalt immediately after placement and compact to the proper in-place density and ride smoothness. Incentive or disincentive price adjustment for density will be as specified in 504.04.02. Use steel wheel rollers for the first rolling of all joints and edges, the initial breakdown rolling, and the finish rolling. Use a power driven trench roller when base widening is too narrow to permit the use of conventional rollers.

Construct an earth berm or shoulder against the loose asphalt as soon as it is placed. The trench must be excavated wider than the proposed width. Roll and compact the two materials simultaneously.

No traffic is permitted on the pavement after rolling until it has cooled to less than 140 F. Roller marks shall not be visible after rolling operations.

**504.03.08 Joints.** Construct joints as directed and as follows:

- (c) Construct temporary tie-ins before traffic is allowed to cross the transverse joint.
- (d) Construct temporary tie-ins 10 ft or greater using a paver meeting 504.03.01.
- (e) Remove a transverse portion of the existing pavement at the final tie-in point to maintain the design thickness of the final surface course.
- (f) Construct the final tie-in to a length equal to the posted speed per 1 in. depth of the design thickness of the final course, with a length of at least 25 ft per 1 in. depth and a maximum length of 50 ft per 1 in. depth.

**504.03.11 Mix Sampling & Testing.** Mix sampling and testing for Quality Control (QC) is the responsibility of the Producer or Contractor. Identify the QC sampling locations in the Field QC Plan (plant or project site). Perform Quality Assurance (QA) sampling as directed and witnessed by the Administration. Obtain QA samples from behind the paver prior to compaction. The Administration will perform all QA testing.

- (a) **QC Sampling at the Plant.** Refer to MSMT 457. The Engineer will retain all random sampling documentation. The producer shall sample the mix at the plant. The sample shall be obtained or witnessed by the certified technician. QC plant mix sample results shall not be used in the pay factor calculation. Submit the results to the Administration and identify as Plant samples.
- (b) **QC Sampling at the Project Site.** Refer to MSMT 457. QC and QA samples shall not be split samples. The certified technician shall sample the mix at the project site. Sampling will be witnessed by the Administration.
  - (1) A mix lot constitutes all sublots of a mix created during the production of required tonnage for a lot.
  - (2) A mix subplot size should not exceed 1000 tons.
  - (3) A subplot size up to 200 tons can be combined with the previous 1000 ton subplot placed on the same day.
  - (4) A new lot number for a mix will be given when there is a change in the approved job mix formula.
  - (5) QC project site mix sample results may be used in the pay factor calculation.
- (c) **QA Sampling at the Project Site.** Refer to MSMT 457. Sample mixes at the project site as specified.
  - (1) Obtain the samples from behind the paver prior to compaction. Documentation of random sampling shall be retained by the Engineer.



The maximum specific gravity will be determined in accordance with T 209 and the core's percent density will be expressed to the nearest 0.1 percent.

If more than one mix sample is obtained per day's placement, an average of all maximum specific gravity tests for the day will be used for the determination of percent density of each core sample. The QC Laboratory will make results of individual days paving available to the Engineer and the Contractor no later than the next working day. Retain core samples until notified of the results of the F & t test.

- (b) **Quality Assurance for Density.** The Engineer will take possession of the core samples and deliver the cores to the Administration's Laboratory for testing. The density of the core samples will be expressed as a percentage of the maximum specific gravity of the mixture for each lot's placement. The maximum specific gravity will be determined in accordance with T 209 and the core's percent density will be expressed to the nearest 0.1 percent.
- (c) If more than one mix sample is obtained per day's placement, an average of all maximum specific gravity tests for the day will be used for the determination of percent density of each core sample. The Laboratory will make results of individual days paving available to the Engineer and the asphalt Producer within five working days.
- (d) **Acceptance.** Each asphalt density lot will be evaluated for compliance using the Engineer's quality assurance test data and the Contractor's QC data. The QC and QA core specific gravity data will be analyzed in conformance with MSMT-733 (F-test and t-test method).
- (1) If test results are determined to be from the same population, QC and QA subplot results will be averaged to calculate the density pay factor in accordance with 504.04.02.
  - (2) If results are determined not to be from the same population, the pay factor will be calculated using QA subplot results only. The average QC maximum specific gravity test results and the average project site behind the paver QA maximum specific gravity test results shall be compared.
  - (3) If QC results and QA results compare within 0.026, the average of the combined QC and QA results shall be used to calculate each core density. If they do not compare within 0.026, QA maximum specific gravity results shall be used to determine each core density.
  - (4) Pay reduction or incentive for the pavement compaction lot will be calculated in conformance with 504.04.02. Statistical outliers will be determined according to MSMT-734.

- (g) Wedge/Level courses placed at variable thicknesses and any area greater than 3/4 in. shall be tested and accepted in accordance with this Thin Lift specification. Density incentives are not applicable for Thin Lift or Wedge/Level Courses. Apply mix pay factors as determined by the Engineer and the Contractor at the Pre-pave meeting.

**504.03.14 Control Strip.** When mixes are not determined to be Thin Lifts as specified in 504.03.13, use the option of constructing a control strip for guidance in determining roller patterns. Construct the control strip on the first workday in which asphalt is placed between 400 ft and 500 ft in length. Remove any control strip, if necessary and as determined at no additional cost.

The construction of a control strip may be required at any time during placement of asphalt based on the evaluation of compaction results, as determined.

**504.03.15 Pavement Surface Checks.** Ensure an approved 10 ft straightedge is available at all times. The surface of each pavement course shall be true to the established line and grade after final compaction of each course. The surface shall also be sufficiently smooth so that the surface does not deviate more than 1/8 in. when the straightedge is placed parallel to the centerline. The transverse slope of the finished surface of each course shall not deviate more than 3/16 in. when the straightedge is placed perpendicular to the centerline.

Check transverse joints using the straightedge immediately after the initial rolling. When the surface of each course varies more than 1/8 in. from true, make immediate corrections so the finished joint surface is within tolerance.

Areas that are tested and reported in accordance with Section 535 - Pavement Surface Profile in the Contract Documents are not applicable to 504.03.14.

**504.03.16 Curbs, Gutters, Etc.** Construct permanent curbs, gutters, edges, and other supports as shown and as specified, then backfill prior to placing the asphalt.

**504.03.17 Shoulders.** Construct shoulders as specified. Shoulders abutting the asphalt surface course of any two-lane pavement being used by traffic shall be completed as soon as possible after placement of the surface course on that lane.

**504.03.18 Pavement Profile.** Refer to Section 535 in the Contract Documents.

**504.03.19 Safety Edge.** Construct a sloped edge on the pavement shoulder of open section roadways using a device attached to the paver that constrains the asphalt head to produce a compacted profile. The device shall adjust to accommodate varying paving thicknesses. The device shall be capable of being detached or raised when not in use.

Construct a safety edge when the individual thickness is at least 1.5 in. or greater. The target range of the slope shall not be greater than 45 degrees when measured from the horizontal axis. Construct the sloped edge of multiple lifts on the top two pavement lifts when specified. Construct the entire sloped edge on underlying pavement.

The PA will be made when the index price for the month of placement increases or decreases more than 5 percent of the prevailing base index price. Computations will be as follows:

$$\text{Percent Change} = ((P_p - P_b) / P_b) \times 100$$

$$PA = T \times Q \times ((P_p - (D \times P_b)))$$

Where:

PA = Price Adjustment for the current month

T = Design target asphalt content expressed as a decimal

Q = Quantity of asphalt placed for the current month

$P_p$  = Index price for PG 64-22(PG64S-22) asphalt binder per ton for the month of placement

D = 1.05 for increases over 5 percent; 0.95 for decreases over 5 percent

$P_b$  = Prevailing base index price for PG 64-22 (PG64S-22) asphalt binder per ton

PA resulting in increased payment to the contractor will be paid under the item Price Adjustment for Asphalt Binder. The item amount will be established by the Administration and shall not be revised by the Contractor. PA resulting in a decreased payment will be deducted from monies owed the Contractor.

**504.04.02 Payment Adjustments for Asphalt Mix and Pavement Density.** Payment adjustments for pavement density will be based on individual subplot core test data for a given lot and the lot average density as specified in this section and Table 504A. Payment reductions for density and for mix will be made by adjusting the payment for Asphalt. Incentive payments will be made using the Contract items for Asphalt Mix and Pavement Density. The item amounts established by the Administration shall not be revised. Payment reductions for density will be waived for portions of the pavement where a poor foundation is determined as the cause for inadequate density.

**Note 3:** When the Contractor's core specific gravity data does not compare with the Administration's core specific gravity data, only the Administration's single subplot values and lot average value will be used in acceptance decision.

**Note 4:** The average subplot values and the lot average will be used in acceptance decision.

Lots in conformance will be accepted as specified in Sections 904 and 915, and MSMT 735. A composite pay factor (CPF) for Asphalt content and gradation will be based on the total estimated percent of the lot that is within specification limits using the quality level analysis.

Payment adjustments will be computed as follows:

$$\text{Density Lot Payment Adjustment} = (DF - 1) \times (AP) \times (TL)$$

$$\text{Mix Design Lot Payment Adjustment} = (MF - 1) \times (AP) \times (TL)$$

Where:

MF = Mixture pay factor  $[0.55 + (0.5 \times \text{CMPWSL})]$

Refer to MSMT 735 for CMPWSL.

DF = Density pay factor from Table 504A.

AP = Adjusted/applicable unit price as specified in 504.04.01.

TL = Applicable tonnage per lot.

- (a) A lot containing material with a pay factor of less than 1000 may be accepted at the reduced pay factor if the pay factor is at least 0.800 and there are no isolated defects.
- (b) A lot containing material with a pay factor of less than 1000 may be accepted at the reduced pay factor provided the composite pay factor for asphalt content and grading is at least 0.750, and there are no isolated defects.
- (c) An in-place density lot containing nonconforming material that fails to obtain at least a 0.800 pay factor and a mixture lot containing nonconforming material that fails to obtain at least a 0.750 pay factor for asphalt content and gradation will be evaluated to determine acceptance. Lots that are rejected shall be replaced.
- (d) Lots with less than five Quality Control or Quality Assurance samples per in-place density lot will not be evaluated for incentive payment.
- (e) When less than three mix samples have been obtained at the time of the acceptance sampling or at the time a lot is terminated, the Engineer will determine if the material in a shortened lot will be considered a part of the previous lot or whether it will be accepted based on the individual test data.

## CATEGORY 500

### PAVING

#### SECTION 510 — FILLING AND SEALING CRACKS AND JOINTS IN ASPHALT PAVEMENTS

##### 510.01 DESCRIPTION

Clean then fill or seal cracks between 1/8 in. and of 1 in. wide. Repair cracks 1 in. or larger with asphalt repair mastic. Do not fill or seal cracks less than 1/8 in. wide. Repair distressed areas as specified and as directed.

##### 510.02 MATERIALS

Crack Filler	911.01
Crack Sealer	911.01
Asphalt Repair Mastic	911.01.02

##### 510.03 CONSTRUCTION

**510.03.01 Equipment.** All equipment shall be subject to approval. Ensure all equipment is maintained in satisfactory working condition at all times.

- (a) **Air Compressor.** Air compressors shall be portable, oil-free and capable of furnishing air a minimum of 100 cfm with a minimum blast flow of 150 cfm. The compressor shall have a 3/4 in. diameter nozzle.
- (b) **Hot Air Lance.** The Hot Air Lance shall produce a minimum temperature of 750 F at a minimum velocity of 650 fps. The Hot Air Lance shall be designed so that the flame does not come in contact with the pavement.
- (c) **Melting Kettle.** The Melting Kettle shall be a self-contained double boiler capable of heating the sealant to 400 F using oil as a heat transfer medium. The kettle shall be equipped with an automatic temperature control unit capable of achieving and maintaining a predetermined sealant temperature. The temperature control unit should not allow the heat transfer oil to exceed 525 F. The unit shall be capable of reading the temperature of the sealant within the melting vessel and within the discharge plumbing. The kettle shall also have a means to strongly and continuously agitate the sealant and apply the sealant to the pavement under pressure supplied by a gear pump with a direct connecting applicator tip. Do not use direct-fired kettles.

- (b) **Crack Sealing.** Identify working cracks within the wheel path 1/8 in. to 1 in. wide at the pavement surface, including transverse reflective cracks. Identify longitudinal cracks outside of wheel path areas.
- (c) **Asphalt Repair Mastic.** Identify cracks of at least 1 in. width, potholes and other vertically uneven roadway elements as directed.

#### **510.03.05 Cleaning and Preparation.**

**Cleaning.** All surfaces shall be dry and free of all dirt, dust, grease, and loose material prior to application of the filler. The cracks shall be cleaned by the use of compressed air produced from an air-compressor. The use of portable handheld or backpack blowers is not allowed. Direct the compressed air cleaning away from the passing traffic and do not blow debris into an already cleaned crack. Alternative methods of cleaning are subject to review and approval.

**Drying.** Dry the crack using a hot air lance prior to filler placement. The use of direct flame dryers is not permitted. Do not overheat pavement surfaces.

**Crack Routing.** For crack sealing, route cracks to be sealed by forming a reservoir with a width between 0.5 in. to 1.5 in and a depth of 3/4 in. Perform routing in such a way that the pavement does not spall. Do not perform routing on longitudinal joint cracks unless otherwise directed.

**510.03.06 Weather Restrictions.** Perform crack filling or sealing when the ambient and pavement surface temperatures are least 45 F and rising, unless otherwise recommended by the manufacturer and as approved. Do not place sealant material if the pavement is wet. Should rain fall before the sealant has properly cured, remove and replace at no additional cost.

**510.03.07 Installation.** Heat the filler or sealant to recommended application temperature. Fill the crack using the flush fill method. Using the overband method is not permitted. Perform material handling and installation in accordance with the manufacturer's instructions. Level and smooth the material to the desired level immediately after placement using a straight metal or rubber squeegee.

**Traffic Restrictions.** Apply sand or the manufacturer's recommended blotter material to minimize tracking and remove excess material before opening to traffic.

**Acceptance.** Filler that pulls loose within 96 hours after opening the pavement to traffic shall be repaired at no additional cost.

## CATEGORY 500

### PAVING

#### SECTION 511 — OPEN GRADED FRICTION COURSE

##### 511.01 DESCRIPTION

Construct Open Graded Friction Course (OGFC) according to Section 504 except as specified.

##### 511.02 MATERIALS

Open Graded Friction Course	Section 927
Performance Graded Asphalt Binders	Section 904
Production Plants	Section 915

##### 511.03 CONSTRUCTION

**511.03.01 Demonstration.** Construct a demonstration strip of at least 100 tons outside the project limits to demonstrate that a satisfactory OGFC mix can be produced and placed before proceeding with the actual work. Construct a new strip if a project carries over to a new season or whenever there is a change in the mix design. Use pavers and rollers that conform to 504.03.01. A material transfer vehicle may be used to construct the demonstration strip.

The demonstration strip may be waived for projects less than 200 tons or as directed. Material not meeting specification requirements may be subject to penalty or removal and replacement.

**511.03.02 Hauling Units.** Dry soap powder may be used with the release agent specified in 915.02(f). Raise truck beds to drain excess water and/or release agent before loading with OGFC.

The time between plant mixing and shipment shall not exceed one hour. Stored material shall be of no less quality than mixtures discharged directly into hauling vehicles. Each load shall be completely covered with a securely fastened full tarp containing no holes or rips.

**511.03.03 Weather Restrictions.** Place OGFC only when the ambient and surface temperatures are at least 50 F and in accordance with polymer-modified materials as specified in 504.03.02. Do not place OGFC if the existing surface is wet or frozen.

**511.03.04 Material Transfer Vehicle (MTV).** Use a material transfer vehicle (MTV) when placing OGFC. The MTV shall perform additional mixing of the OGFC material and then deposit the mixture into the paver at a uniform temperature and consistency. An MTV may be used when placing OGFC for a permeable pavement system but is not required.

(6) Determine the Composite Mixture PWSL (CMPWSL) for each lot:

$$\text{CMPWSL} = \frac{f_1 * \text{PWSL}_1 + f_2 * \text{PWSL}_2 + f_3 * \text{PWSL}_3 + f_4 * \text{PWSL}_4 + f_5 * \text{PWSL}_5}{\sum f}$$

PWSL1 = Asphalt content

PWSL2 = Aggregate passing the 3/8" (9.5mm) Sieve

PWSL3 = Aggregate passing the #4 (4.75mm) Sieve

PWSL4 = Aggregate passing the #8 (2.36mm) Sieve

PWSL5 = Aggregate passing the 200 (75µm) Sieve

∑f = Sum of price adjustment factors

Determine the PWSL for each property from MSMT 735, Table 1.

(7) Use the following table with the price adjustment factors (f) to compute CMPWSL:

Properties	Factor (f)
Asphalt content	64
Aggregate passing the 3/8" Sieve	9
Aggregate passing the #4 Sieve	9
Aggregate passing the #8 Sieve	9
Aggregate passing the 200 Sieve	9

Report the CMPWSL and PWSLs to the nearest whole number.

(8) Use the CMPWSL determined in Steps 6 and 7 for the Mixture Pay Factor.

#### 511.04.02 Dispute Resolution. 915.02.03