## $S \ E \ C \ T \ I \ O \ N \quad 9 \ 0 \ 5 \ -- \ P \ R \ O \ P \ O \ S \ A \ L \quad (CONTINUED)$

I (We) further propose to execute the attached contract agreement (Section 902) as soon as the work is awarded to me (us), and to begin and complete the work within the time limit(s) provided for in the Specifications and Advertisement. I (We) also propose to execute the attached contract bond (Section 903) in an amount not less than one hundred (100) percent of the total of my (our) part, but also to guarantee the excellence of both workmanship and materials until the work is finally accepted.

I (We) enclose a certified check, cashier's check or bid bond for <u>five percent (5%) of total bid</u> and hereby agree that in case of my (our) failure to execute the contract and furnish bond within Ten (10) days after notice of award, the amount of this check (bid bond) will be forfeited to the State of Mississippi as liquidated damages arising out of my (our) failure to execute the contract as proposed. It is understood that in case I am (we are) not awarded the work, the check will be returned as provided in the Specifications.

Bidder acknowledges receipt of and has added to and made a part of the proposal and contract documents the following addendum (addenda):

ADDE	NDUM NO.	1	DATED	5/20/2013	ADDENDUM NO.	DATED	
ADDE	NDUM NO		DATED		ADDENDUM NO.	DATED	
Number 1	Revise Table of	Descri Contents	ption	T Replace	OTAL ADDENDA: <u>1</u> Must agree with total addenda iss	ued prior to opening of bids)	
·	NTB No. 324 Supplement to replace same	242 with NTB No. 4524; Revise to SP Nos. 907-401-2 & 907-403-4, ne; Amendment EBS Download			despectfully Submitted,		
	Required.			Ľ	DATE		
				_	Cont	ractor	
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				Т	TTLE		
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titles and	Our corporation l business addre	n is chart esses of tl	ered under the	e Laws of the are as follows	State of:	and the na	ames,
	Pre	sident			Ado	ress	
	Sec	retary			Ado	ress	
	Trea	asurer			Ado	ress	
The follo	owing is my (ou	ır) itemiz	ed proposal.		• • • • • • • • • • • • • • • • • • •		
Revised (	9/21/2005				MP-6026-66(009) / 3	304811301 Stone Count	y(ies)

## **TABLE OF CONTENTS**

#### **PROJECT:** MP-6026-66(009) / 304811301 – Stone County

901--Advertisement

904Notice to Bidders:	Governing Specifications - # 1
	Final Cleanup - # 3
	Fiber Reinforced Concrete - # 640
	Payroll Requirements - # 883
	Errata & Modifications to 2004 Standard Specifications - # 1405
	Railway-Highway Provision, w/ Supplement - # 1727
	Federal Bridge Formula - # 1928
	Non-Quality Control / Quality Assurance Concrete - # 2818
	Reduced Speed Limit Signs - # 2937
	Alternate Asphalt Mixture Bid Items - # 3039
	Temporary Traffic Paint - # 3131
	Safety Edge - #3585
	Type III Barricade Rails - #3655
	Petroleum Products Base Price - # 3893
	Kansas City Southern Construction Requirements - # 4079
	Standard Drawings - # 4100
	Safety Apparel - # 4214
	Alternate Crushed Stone Base Bid Items - # 4473
	Contract Time - # 4476
	Scope of Work - # 4477
	Questions Regarding Bidding - # 4487
	Warm Mix Asphalt (WMA) - # 4524

- 907-101-4: Definitions
- 907-102-8: Bidding Requirements and Conditions, w/ Supplement
- 907-103-8: Award and Execution of Contract
- 907-104-4: Disposal of Materials
- 907-105-6: Control of Work, <u>w/ Supplement</u>
- 907-107-9: Legal Relations & Responsibility to Public, <u>w/ Supplement</u>
- 907-108-24: Prosecution and Progress, w/ Supplement
- 907-109-5: Measurement and Payment, w/ Supplement
- 907-304-13: Granular Courses
- 907-401-2: Hot Mix Asphalt (HMA), w/ Supplement
- 907-401-6: Warm Mix Asphalt (WMA)
- 907-403-4: Hot Mix Asphalt (HMA), w/ Supplement
- 907-403-12: Warm Mix Asphalt (WMA)
- 907-407-1: Tack Coat
- 907-618-1: Additional Signing Requirements, <u>w/ Supplement</u>

- CONTINUED ON NEXT PAGE -

## Page 2 - PROJECT: MP-6026-66(009) / 304811301 - Stone County

- 907-618-9: Placement of Temporary Traffic Stripe
- 907-626-25: Thermoplastic Traffic Markings
- 907-701-4: Hydraulic Cement
- 907-702-3: Polyphosphoric Acid (PPA) Modification of Petroleum Asphalt Cement
- 907-703-10: Aggregates, <u>w/ Supplement</u>
- 907-711-4: Synthetic Structural Fiber Reinforcement
- 907-713-2: Admixtures for Concrete, w/ Supplement
- 907-714-6: Miscellaneous Materials, <u>w/ Supplement</u>
- 907-720-1: Pavement Marking Materials, <u>w/ Supplement</u>
- 907-804-13: Concrete Bridges and Structures, w/ Supplement
- 907-899-2: Railway-Highway Provisions

SECTION 905 - PROPOSAL, PROPOSAL BID ITEMS

COMBINATION BID PROPOSAL

STATE BOARD OF CONTRACTORS REQUIREMENTS

STATE CERTIFICATION REGARDING NON-COLLUSION, DEBARMENT AND SUSPENSION SECTION 902- CONTRACT FORM, AND SECTION 903 - CONTRACT BOND FORMS

(REVISIONS TO THE ABOVE WILL BE INDICATED ON THE SECOND SHEET OF SECTION 905 AS ADDENDA)

## SECTION 904 - NOTICE TO BIDDERS NO. 4524

CODE: (SP)

DATE: 05/13/2013

## SUBJECT: Warm Mix Asphalt

Bidders are advised that MDOT approved products and processes for the production of Warm Mix Asphalt are available at the following MDOT website.

http://sp.mdot.ms.gov/Materials/Pages/MPL.aspx

## SUPPLEMENT TO SPECIAL PROVISION NO. 907-401-2

DATE: 05/14/2013

## **SUBJECT:** Hot Mix Asphalt (HMA)

Add the following before 907-401.02.6.2 on page 1.

<u>907-401.02.4--Substitution of Mixture</u>. Delete the table in Subsection 401.02.4 on page 242, and substitute the following.

	Single Lift Laying Thickness Inches		
Mixture	Minimum	Maximum	
25 mm	3	4	
19 mm	21/4	31/2	
12.5 mm	11/2	21/2	
9.5 mm	1	11/2	
4.75 mm	1/2	3⁄4	

After Subsection 907-401-02.6.2 on page 2, add the following.

<u>907-401.02.6.4.1--Roadway Density.</u> Delete subparagraphs 1., 2., & 3. on page 251 and substitute the following.

- 1. For all leveling lifts, when full lane width and with a thickness as specified in the table in Subsection 401.02.4, the required lot density shall be 92.0 percent of maximum density.
- 2. For all single lift overlays, with or without leveling and/or milling, the required lot density shall be 92.0 percent of maximum density.
- 3. For all multiple lift overlays of two (2) or more lifts excluding leveling lifts, the required lot density of the bottom lift shall be 92.0 percent of maximum density. The required lot density for all subsequent lifts shall be 93.0 percent of maximum density.
- 4. For all pavements on new construction, the required lot density for all lifts shall be 93.0 percent of maximum density.

Delete Subsections 401.02.6.5 and 401.02.6.6 on pages 253 thru 257 and substitute the following.

## 907-401.02.6.5--Blank.

## 907-401.02.6.6--Blank.

<u>907-401.02.6.7--Surface Correction.</u> Delete the paragraph in Subsection 401.02.6.7 on page 257, and substitute the following.

Corrective work to sections exceeding short continuous interval thresholds reported by ProVal, as described in Subsection 907-403.03.2.1, shall consist of diamond grinding in accordance with these specifications or methods approved by the Engineer. All surface areas corrected by grinding shall be sealed with a sealant approved by the Engineer.

<u>907-401.02.6.8--Acceptance Procedure for Pavement Smoothness Using Mean Roughness</u> <u>Index (MRI).</u> When compaction is completed, the lift shall have a uniform surface and be in reasonably close conformity with the line, grade and cross section shown on the plans.

The smoothness of the surface lift will be determined by using an Inertial Profiling System (IPS) to measure and record roughness data in each designated location. Roughness data for each longitudinal profile will be reported as a Mean Roughness Index (MRI). MRI is calculated by averaging the International Roughness Index (IRI) values from the two individual wheelpath profiles. The surface shall be tested and corrected to a smoothness index as described herein with the exception of those locations or specific projects that are excluded from smoothness testing with an IPS.

The smoothness of the surface lift will be determined for traffic lanes, auxiliary lanes, climbing lane and two-way turn lanes. Areas excluded from a smoothness test with the IPS are acceleration and deceleration lanes, tapered sections, transition sections for width, shoulders, crossovers, ramps, side street returns, etc. The roadway pavement on bridge replacement projects having 1,000 feet or less of pavement on each side of the structure will be excluded from a smoothness test. Pavement on horizontal curves having a radius of less than 1,000 feet at the centerline and pavement within the super elevation transition of such curves are excluded from smoothness testing. Smoothness testing shall terminate 15 feet from each transverse joint that separates the pavement from a bridge deck, bridge approach slab or existing pavement not constructed under the contract.

Initial smoothness measurements shall take place no more than 72 hours following placement of surface and must be performed at the posted speed limit or 50 miles per hour ( $\pm$ 5 mile per hour), whichever is lower. This speed requirement will be waived for all lightweight profilers. Measurements will be made in both wheel paths of exterior and interior lanes. The wheel paths shall be designated as being located three feet (3') and nine feet (9') from centerline or longitudinal joint, respectively. Beginning and ending latitude and longitude coordinates shall be required on each smoothness surface test. Testing will also be required on sections that have been surface corrected. No smoothness testing shall be performed when there is moisture of any kind on the pavement surface. Any additional testing shall meet the requirements of Subsection 907-403.03.2.

The surface lift will be accepted on a continuous basis for pavement smoothness. Continuous reporting is based upon all MRI values for a specified running interval. These values are averaged and presented at the midpoint of the specified running interval. The last 15 feet of a day's lift may not be obtainable until the lift is continued and for this reason may be included in the subsequent section.

Areas of localized roughness exceeding the continuous 25-foot interval thresholds described in Subsection 907-403.03.2.1 shall be corrected regardless of the 528-foot interval MRI value of the section. Surface correction by grinding shall be performed in accordance with Subsection 401.02.6.7. The Contractor shall also make other necessary surface corrections to ensure that the final mean roughness index of the section meets the requirements of Subsection 907-403.03.2.

Continuous sections exceeding the accepted long interval MRI value shall be corrected as specified in Subsection 403.03.4. All such corrections shall be performed at no additional costs to the State. Scheduling and traffic control will be the responsibility of the Contractor with approval of the Engineer. All tests and corrections shall be in accordance with AASHTO R 54-10, Accepting Pavement Ride Quality When Measured Using Inertial Profiling Systems.

## 907-401.02.6.9--High Speed Inertial Profiling System.

<u>907-401.02.6.9.1--General</u>. The IPS, furnished and operated by the Contractor under the supervision of the Engineer or the Engineer's representative, shall meet the requirements of AASHTO M 328-10, Standard Specification for Inertial Profiler.

<u>907-401.02.6.9.2--Mechanical Requirements</u>. The IPS should function independent of vehicle suspension and speed with an operational range of 15-70 mph (for high speed profilers only) and must collect data at a sample interval of no more than three inches (3"). All IPSs, operators, and combinations thereof shall be verified in accordance with AASHTO R 56-10, Standard Practice for Certification of Inertial Profiler Systems and AASHTO R 57-10, Operating Inertial Profiler Systems.

<u>907-401.02.6.9.3--Computer Requirements</u>. The computer measurement program must be menu driven, Windows compatible, and able to produce profiler runs in University of Michigan's Transportation Research Institute's (UMTRI) Engineering Research Division (.erd) file format. The computer shall have the ability to display and print data on sight for verification and shall have the ability to save and transfer data via Universal Serial Bus (USB) flash drive, which shall be provided by the Contractor.

In addition to manufacturers software; the latest version of FHWA's ProVAL software shall be installed on the IPS computer. ProVAL software is available for free download at <u>http://www.roadprofile.com</u>.

<u>907-401.03.1.2--Tack Coat.</u> Delete the three sentences of Subsection 401.03.1.2 on page 259, and substitute the following.

Tack coat shall be applied to previously placed HMA and between lifts, unless otherwise directed by the Engineer. Tack coat shall be applied with a distributor spray bar. A hand wand will only be allowed for applying tack coat on ramp pads, irregular shoulder areas, median crossovers, turnouts, or other irregular areas. Bituminous materials and application rates for tack coat shall be as specified in Table 410-A on page 293. Construction requirements shall be in accordance with Subsection 407.03 of the Standard Specifications.

<u>**907-401.03.1.4--Density.</u>** Delete the first sentence of the first paragraph of Subsection 401.03.1.4 on page 259 and substitute the following.</u>

The lot density for all dense graded pavement lifts, except as provided below for preleveling, wedging [less than fifty percent (50%) of width greater than minimum lift thickness], ramp pads, irregular shoulder areas, median crossovers, turnouts, or other areas where the established rolling pattern cannot be performed, shall not be less than the specified percent (92.0% or 93.0%) of the maximum density based on AASHTO Designation: T 209 for the day's production. For all leveling lifts, when full lane width and with a thickness as specified in the table in Subsection 401.02.4, the required lot density shall be 92.0 percent of maximum density.

<u>907-401.03.9--Material Transfer Equipment</u>. Delete the paragraph in Subsection 401.03.9 on page 264 and substitute the following.

Excluding the areas mentioned below, the material transferred from the hauling unit when placing the top lift, or the top two (2) lifts of a multi-lift HMA pavement with density requirements, shall be remixed prior to being placed in the paver hopper or insert by using an approved Materials Transfer Device. Information on approved devices can be obtained from the State Construction Engineer. Areas excluded from this requirement include: leveling courses, temporary work of short duration, detours, bridge replacement projects having less than 1,000 feet of pavement on each side of the structure, acceleration and deceleration lanes less than 1,000 feet in length, tapered sections, transition sections for width, shoulders less than 10 feet in width, crossovers, ramps, side street returns and other areas designated by the Engineer.

After Subsection 401.03.13 on page 266, add the following.

<u>907-401.03.14--Shoulder Wedge</u>. The Contractor shall attach a device to the screed of the paver that confines the material at the end gate and extrudes the asphalt material in such a way that results in a compacted wedge shape pavement edge of approximately 30 degrees, but not steeper than 35 degrees. The device shall maintain contact between itself and the road shoulder surface and allow for automatic transition to cross roads, driveways, and obstructions. The device shall be used to constrain the asphalt head reducing the area by 10% to 15% increasing the density of the extruded profile. Conventional single plate strike off shall not be used.

The device shall be TransTech Shoulder Wedge Maker, the Advant-Edge, or a similar approved equal device that produces the same wedge consolidation results. Contact information for these wedge shape compaction devices is the following:

- 1. TransTech Systems, Inc. 1594 State Street Schenectady, NY 12304 800-724-6306 www.transtechsys.com
- Advant-Edge Paving Equipment, LLC P.O. Box 9163 Niskayuna, NY 12309-0163 518-280-6090 Contact; Gary D. Antonelli Cell: 518-368-5699 email: garya@nycap.rr.com

Website: www.advantedgepaving.com

Before using a similar device, the Contractor shall provide proof that the device has been used on previous projects with acceptable results, or construct a test section prior to the beginning of work and demonstrate wedge compaction to the satisfaction of the Engineer. Short sections of handwork will be allowed when necessary for transitions and turnouts, or otherwise authorized by the Engineer.

## SUPPLEMENT TO SPECIAL PROVISION NO. 907-403-4

## DATE: 05/15/2013

## **SUBJECT:** Hot Mix Asphalt (HMA)

Before Subsection 907-403.05.2 on page 1, add the following:

#### 907-403.03--Construction Requirements.

<u>907-403.03.2--Smoothness Tolerances.</u> Delete the table, footnotes, and first six paragraphs of Subsection 403.03.2 on page 266 & 267, and substitute the following.

	Lower* &	Lower*	Тор	
	Leveling Lifts	Intermediate Lift	Intermediate Lift	Surface Lift
Maximum deviation from grade and cross section at any point	1/2"	3/8"	1/4"	1/4"
Maximum deviation from A 10 foot straight edge	. 3/8"	1/4"	1/8"	1/8"

- Note: Where more than four (4) lifts of HMA are required, all lifts, excluding the top three (3) lifts, shall meet the requirements of the lower lift.
  - \* When tested longitudinally from a stringline located equidistant above points 50 feet apart, the distance from the stringline to the surface at any two points located 12 1/2 feet apart shall not vary one from the other more than the maximum deviation allowed above from a 10-foot straight edge.

Delete the last paragraph of Subsection 403.03.2 at the bottom of page 268, the table at the top of page 269, and the first, second and third full paragraphs on page 269, and substitute the following.

Sections(s) or portions thereof representing areas excluded from a smoothness test with the High Speed Inertial Profiling System (IPS) shall also be excluded from consideration for a contract price adjustment for rideability.

Any contract price adjustment for rideability will be applied on a continuous basis to the pay tonnage, determined in accordance with Subsections 907-401.02.6.8 and 403.04, for the section(s) or portions thereof for which an adjustment is warranted.

Contract price adjustments for rideability shall only be applicable to the surface lift and furthermore to only the long continuous section(s) or portions of the long continuous section(s) of the surface lift that require smoothness be determined by using a profiling device.

<u>907-403.03.2.1--Smoothness Tolerances for Mean Roughness Index (MRI)</u>. Smoothness tolerances shall be applied to asphalt pavements based on the following pavement categories.

<u>Category A</u> applies to the following pavement constructions:

- New construction
- Construction with three (3) or more lifts
- Mill and two (2) or more lifts

<u>Category B</u> applies to the following pavement constructions:

- Mill and one (1) lift
- Two (2) lift overlays without milling

<u>**Category**</u> C applies to the following pavement constructions:

• Single lift overlay without milling

# **NOTE:** Spot Leveling does not count as a lift. Full width / continuous leveling courses will be considered a lift.

For all projects, the surface lift smoothness data shall be reported by two MRI methods:

- 1. A continuous 528-foot long interval MRI report
- 2. A continuous 25-foot short interval MRI report

**Category A** projects shall have a long interval surface MRI of not more than 60 inches per mile. Areas of the surface lift with localized roughness greater than 130 inches per mile as determined by the continuous short interval report will be identified for correction by the Project Engineer.

**Category B** projects shall have a long interval surface MRI of not more than 70 inches per mile. Areas of the surface lift with localized roughness greater than 140 inches per mile as determined by the continuous short interval report will be identified for correction by the Project Engineer.

**Category C** projects shall have the existing surface profiled at no additional cost to the State. The finished surface lift shall meet the following requirements:

A 50% improvement in MRI from the existing surface or
80 inches per mile long interval surface MRI value whichever value is higher. Additionally, areas of the surface lift with localized roughness greater than 150 inches per mile, as determined by the continuous short interval report, will be identified for correction by the Project Engineer. In the case that 50% of the existing surface MRI is greater than 80 inches per mile, the short continuous threshold shall be increased from 150 inches per mile by the difference between 50% of the existing surface MRI and 80 inches per mile.

No incentive will be allowed if the MRI value from the newly paved surface is greater than the existing surface.

When a project has multiple lifts, all lifts preceding the surface lift shall have a MRI of no more than 10 inches/mile (or one Project Category) more than the surface lift threshold for both long and short continuous intervals. Corrective action must be taken on those segments that do not meet this requirement. No unit price adjustment will be applied on any underlying lift.

For Category A and B projects, a unit price increase will be added when the MRI for the final surface lift, following all required localized roughness (short interval) corrective action, is less than or equal to forty-five inches per mile (45.0 inches / mile) on the long interval report. These Projects will be considered for incentive pay based on the following guidelines for the long interval surface lift MRI.

Mean Roughness Index	Contract Price Adjustment
inches / mile	percent of HMA unit bid price
Less than 30.0	108
30.0 to 35.0	106
35.1 to 40.0	104
40.1 to 45.0	102
45.1 to Required Surface MRI	100

For Category C projects, a unit price increase will be added when the MRI for the final surface lift, following all required localized roughness (short interval) corrective action, is less than or equal to forty-five inches per mile (45.0 inches / mile) on the long interval report. These Projects will be considered for incentive pay based on the following guidelines for the long interval surface lift MRI.

Mean Roughness Index inches / mile	Contract Price Adjustment percent of HMA unit bid price
Less than or equal to 45.0	103
45.1 to Required Surface MRI	100

In addition to the above pay incentive factors, a project may be subject to a disincentive when the Long Continuous Interval MRI for the surface exceeds the allowable tolerance. This applies to all project categories and will correlate to the maximum allowed Long Continuous Interval MRI.

Mean Roughness Index	Contract Price Adjustment
inches / mile	percent of HMA unit bid price
Above 20.0 Over	Remove And Replace
15.1 to 20.0 Over	80
10.1 to 15.0 Over	85
5.1 to 10.0 Over	90
0.1 to 5.0 Over	95
Required Surface MRI	100

Note: All incentives and disincentives will be based on a single smoothness test, following all required localized roughness (short interval) corrective action, of the newly paved surface.

Corrective action must be taken on those sections that exceed the 'Remove and Replace' threshold on the Long Continuous Interval as directed by the Project Engineer. Sections that fall into this requirement may also need corrective action on both the preceding and following 264-foot sections as to conform to a complete 528-foot Long Continuous Interval. The minimum remove and replace length will be 528 feet (0.1 mile). Additional smoothness testing shall be required on sections following replacement and will be required to meet *at least* the maximum surface MRI short of 'Remove and Replace'.

The above pay factors will be applied in conjunction with the Long Continuous Histogram Chart from ProVAL's Smoothness Assurance Module. The price adjustments for rideability will be tabulated in MDOT's Pay Incentive spreadsheet on the basis of a theoretical tonnage of 110 lbs/yd<sup>2</sup>\*inch thickness (pounds per square yard \* inch thickness) and 12-foot travel lanes, determined in accordance with Subsections 401.02.6.5 and 403.04, for the segment(s) or portions thereof for which an adjustment is warranted.

Delete Subsection 403.03.5.5 on page 273 and substitute the following.

<u>907-403.03.5.5--Preliminary Leveling.</u> All irregularities of the existing pavement, such as ruts, cross-slope deficiencies, etc., shall be corrected by spot leveling, skin patching, feather edging or a wedge lift in advance of placing the first overall lift.

**<u>907-403.04--Method of Measurement.</u>** After the first paragraph of Subsection 403.04 on page 274, add the following.

The pay quantities for each individual job mix formula (JMF) will be calculated using the approved JMF maximum specific gravity (Gmm) and the following formulas.

When the composite mixture has a maximum specific gravity of 2.540 or less,

Tp = Tw

When the composite mixture has a maximum specific gravity greater than 2.540,

 $Tp = Tw((100-(((Gmm^*A^*B)-C)/(Gmm^*A^*B))^*100))/100$ 

Where:

Tp = Total tonnage for payment

Tw = Total tonnage weighed, used and accepted

Gmm = Maximum Specific Gravity of the approved composite asphalt mixture

A =  $46.725 \text{ lbs/yd}^2/\text{in}$ B = 0.93 = 93% density

 $C = 110.374 \text{ lbs/yd}^2/\text{in} = \text{Theoretical density at } 2.540 \text{ Gmm}$