

**MIDLAND COUNTY ROAD COMMISSION**  
**BID FORM**

Sealed Proposals will be received at the office of the Board of Road Commissioners, County of Midland, at 2334 N. Meridian Road, Sanford, Michigan, 48657 until:

**DATE: Wednesday, April 15th, 2015 at 2:00 p.m.**

**Item No. 2 – BITUMINOUS PAVING**

HMA 13A	Estimated Quantity <u>10,500</u> Tons	\$ _____/TON
HMA 13A (wedging)	Estimated Quantity <u>1000</u> Tons	\$ _____/TON
HMA 36A	Estimated Quantity <u>7000</u> Tons	\$ _____/TON
Shoulders, Class 2, 3”		\$ _____/SYD

Placement of gravel on shoulders of various roads is required. The shoulders will vary in width (1’-5’) depending on the existing road conditions. The locations for shoulders and the amount of gravel to be used will be determined by the project engineer. Gravel shoulders shall be placed within 5 working days after paving at each specified location. Payment will be made per square yard of material used and will include cost for traffic control, placement, and compaction. All materials used shall meet the requirements as set forth in current MDOT Specifications. Section 501 of the 2012 MDOT specifications shall apply along with Standard Specifications attached.

**All work shall be completed by November 14, 2015.** A safety program shall be required of the successful bidder. The bid price of asphalt may be used for work on MDOT, Village of Sanford, or City of Coleman jurisdictional roadways only if mutually agreed upon by the Contractor and MCRC.

Progress Schedule: begin work when notified by the engineer or otherwise arranged after receiving of Award of Contract.

A certified check, cashier's check, bank money order or bid bond in the amount of 5% of the total bid shall be made payable, without condition, to the Midland County Road Commission. The above price shall include machine paving, aggregate shoulder work, hauling, signs, minor traffic control temporary pavement marking (non-removable 2 foot dash) and all labor and equipment incidental hereto. All joints shall be constructed as butt joints. All quantities are estimated. Projects may be deleted, changed or increased at no change in unit prices.

COMPANY BIDDING \_\_\_\_\_

CONTACT PERSON \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE/FAX \_\_\_\_\_

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AUTHORIZED SIGNATURE TITLE

**INDICATE ON ENVELOPE:** Company Name, Item Number, Bid Item, Time and Date

MIDLAND COUNTY ROAD COMMISSION  
SPECIAL PROVISION  
FOR  
**SAMPLING ASPHALT BINDER ON LOCAL AGENCY PROJECTS**

C&amp;T:MF

1 of 1

C&T:APPR:JAR:JTL:12-19-01  
FHWA:CON. APPR:06-06-11

For informational purposes, original samples of asphalt binder will be taken by the Contractor and delivered to the Engineer prior to incorporation into the mixture. The frequency of sampling shall be determined by the Engineer. The cost of obtaining and delivering the samples to the Engineer will be included in the hot mix asphalt (HMA) pay items.

The Contractor must certify in writing that the materials used in the HMA mixture are from the same source as the materials used in developing the HMA mixture design and the bond coat is from an approved supplier as stated in MDOT's Material Quality Assurance Procedures Manual.

12SP501(AA)

MIDLAND COUNTY ROAD COMMISSION  
SPECIAL PROVISION  
FOR  
**WARM-MIX ASPHALT (WMA) PERMISSIVE USE FOR LOCAL AGENCY PROJECTS**

CFS:CJB

1 of 1

APPR:KPK:DBP:12-21-12  
FHWA APPR:12-21-12

**a. Description.** This work consists of furnishing a WMA mixture using a water-injection foaming device or water foaming additive in lieu of the standard Hot Mix Asphalt (HMA) specified if the Contractor elects to do so. All work must be in accordance with the standard specifications and applicable special provisions, except as modified herein. No deviations to acceptance test methods/procedures will be allowed.

**b. Materials.** Provide materials in accordance with contract for HMA mixtures. Base lab testing temperatures for compaction of samples on the binder suppliers recommended value.

**c. Construction.**

1. Equipment. Provide equipment for the water-foaming additive or water-foaming injection device that is attached to the HMA plant.

2. Placing WMA. The Engineer will reject loads with a temperature either below 225 degrees F or greater than +20 degrees F from the recommended maximum mixing temperature specified by the binder producer at the time of discharge from behind the screed.

**d. Measurement and Payment.** If the Contractor elects to provide a WMA mixture as a substitute for the specified HMA mixture as discussed above, this will be done with the understanding that the pay items in the original contract will not be changed and the WMA will be provided under those original pay items at the bid prices submitted.

12SP501(F)

MIDLAND COUNTY ROAD COMMISSION

SPECIAL PROVISION  
FOR  
MARSHALL HOT MIX ASPHALT MIXTURE

C&T:JWB

1 of 2

C&T:APPR:EHR:CJB:09-25-06

FHWA:APPR:06-06-11

**a. Description.** Furnish hot mix asphalt (HMA) mixture, designed using Marshall Mixture Design Methods, in accordance with the standard specifications except as modified by this special provision.

**b. Mix Design.** Submit the mix design for evaluation in accordance with the Department's HMA Production Manual. Use a 50 blow Marshall hammer when compacting mixtures for developing Marshall mix designs.

**c. Recycled Mixtures.** Substituting reclaimed asphalt pavement (RAP) for a portion of the new material required to produce HMA mixture is allowed provided that the mixture is designed and produced to meet all criteria specified herein, unless otherwise prohibited. RAP materials must be in accordance with the standard specifications.

**d. Materials.** Table 1 provides the mix design criteria and volumetric properties. Table 2 provides the required aggregate properties. Use aggregates of the highest quality available to meet the minimum specifications. Use the mixture designation number shown in the contract item name when determining mix design properties from Tables 1 and 2.

**e. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
HMA(type).....	Ton

**Table 1: Mix Design Criteria and Volumetric Properties**

	Mixture No.				
	2C	3C	4C	13A	36A
Target Air Void, % (a)	3.00	4.00	4.00	4.00	4.00
VMA (min) (b)	11.00	13.00	14.00	14.00	15.00
VFA	65-78	65-78	65-78	65-78	65-78
Fines to Binder Ratio (max) (c)	1.2	1.2	1.2	1.2	1.2
Flow (0.01 inch)	8 -16	8 -16	8 -16	8 -16	8 -16
Stability (min), lbs	1200	1200	1200	900	900
a. Lower target air voids by 1.00% if used in a separate shoulder paving operation. Consider reducing air void targets to 3.00% for lower traffic volume roadways when designing 13A and 36A mixtures for local agency use. b. VMA calculated using Gsb of the combined aggregates. c. Ratio of the weight of aggregate passing the No. 200 sieve to total asphalt binder content by weight; including fines and binder contributed by RAP.					

**Table 2: Aggregate Properties**

	Mixture No.				
	2C	3C	4C	13A	36A
	Percent Passing Indicated Sieve or Property Limit				
1 1/2 inch	100				
1 inch	91-100	100			
3/4 inch	90 max.	91-100	100	100	
1/2 inch	78 max.	90 max.	91-100	75-95	100
3/8 inch	70 max.	77 max.	90 max.	60-90	92-100
No. 4	52 max.	57 max.	67 max.	45-80	65-90
No. 8	15-40	15-45	15-52	30-65	55-75
No. 16	30 max.	33 max.	37 max.	20-50	
No. 30	22 max.	25 max.	27 max.	15-40	25-45
No. 50	17 max.	19 max.	20 max.	10-25	
No. 100	15 max.	15 max.	15 max.	5-15	
No. 200	3-6	3-6	3-6	3-6	3-10
Crushed (min), % (MTM 117)	90	90	90	25	60
Soft Particle (max), % (a)	12.0	12.0	8.0	8.0	8.0
Angularity Index (min) (b)	4.0	4.0	4.0	2.5	3.0
L.A. Abrasion (max), % loss (c)	40	40	40	40	40
Sand Ratio (max) (d)	-	-	-	50	50
<p>a. The sum of the shale, siltstone, structurally weak, and clay-ironstone particles must not exceed 8.0 percent for aggregates used in top course. The sum of the shale, siltstone, structurally weak, and clay-ironstone particles must not exceed 12.0 percent for aggregates used in base and leveling courses.</p> <p>b. The fine aggregate angularity of blended aggregates, determined by MTM 118, must meet the minimum requirement. In mixtures containing RAP, the required minimum fine aggregate angularity must be met by the virgin material. NAA fine aggregate angularity must be reported for information only and must include the fine material contributed by RAP if present in the mixture.</p> <p>c. Los Angeles abrasion maximum loss must be met for the composite mixture, however, each individual aggregate must be less than 50</p> <p>d. Sand ratio for 13A and 36A no more than 50% of the material passing the No. 4 sieve is allowed to pass the No. 30 Sieve.</p>					

MIDLAND COUNTY ROAD COMMISSION

SPECIAL PROVISION  
FOR  
**ACCEPTANCE OF HMA MIXTURE ON LOCAL AGENCY PROJECTS  
USING THE ROLLER METHOD**

(NOT ON THE NATIONAL HIGHWAY SYSTEM)\

DES/LAP:MWH

1 of 3

07/28/11

**a. Description.** This special provision provides acceptance testing requirements for use on local agency projects that do not include the QC/QA special provision. The HMA mixture shall be provided to meet the requirements of the standard specifications for construction except where modified herein.

**b. Materials.** Aggregates, mineral filler (if required), and asphalt binder shall be combined as necessary to produce a mixture proportioned within the master gradation limits shown in the project documents, and meeting the uniformity tolerances listed in Table 1. The master gradation range is to be used for establishing mix design only. Topsoil, clay, or loam shall not be added to aggregates which are to be used in plant mixed HMA mixtures.

**c. Construction.** After the job-mix-formula is established, the aggregate gradation and the binder content of the HMA mixture furnished for the work shall be maintained within the Range 1 uniformity tolerance limits permitted for the job-mix-formula specified in Table 1. However, if deviations are predominantly either below or above the job-mix-formula, the Engineer may order the contractor to bring the mixture into conformance with the job-mix-formula. If two consecutive aggregate gradations on one sieve, or binder contents as determined by the field tests, are outside Range 1 but within Range 2 tolerance limits, the Contractor shall suspend all operations. Contract time will continue during these times when the plant is down. Before resuming any production, the Contractor shall propose, for the Engineer's approval, all necessary alterations to the materials or plant so that the job-mix-formula can be maintained. The Engineer, after evaluating for effects on AWI and mix design properties, will approve or disapprove such alterations.

Acceptance sampling and testing will be performed by the Engineer using the sampling method and testing option selected by the Engineer. Each day of production, a minimum of two samples will be obtained for each mix type. The minimum of one sample shall be tested per day. Acceptance testing will be performed at the frequency specified by the Engineer. No less than three samples shall be obtained for each mix type. Quality control measures to insure job control are the responsibility of the Contractor. Mixture may be accepted by visual inspection up to 500 tons total mixture quantity, with a minimum of 1 sample per mix type, per job.

The crushed particle content of the aggregate used in the HMA mixture shall not be more than 10 percentage points above or below the crushed particle content used in the job-mix-formula nor less than the minimum specified for the aggregate in the project documents.

**Table 1: Uniformity Tolerance Limits for HMA Mixtures**

PARAMETER	TOP & LEVELING COURSE		BASE COURSE	
	* Range 1	Range 2	* Range 1	Range 2
Binder Content	± 0.40	± 0.50	± 0.40	± 0.50
% Passing # 8 and Larger Sieves	± 5.0	± 8.0	± 7.0	± 9.0
% Passing # 30 Sieve	± 4.0	± 6.0	± 6.0	± 9.0
% Passing # 200 Sieve	± 1.0	± 2.0	± 2.0	± 3.0

\*This range allows for normal mixture and testing variations. The mixture shall be proportioned to test as closely as possible to the Job-Mix-Formula.

When the number of roller method is not specified, then the pavement density will be measured by the Engineer with a Nuclear Density Gauge using the Gmm from the Job Mix Formula (JMF) for the density control target. The required in place density of the HMA mixture shall be 92.0 - 96.0% of the density control target. The Contractor is responsible for establishing a rolling pattern that will achieve the required in place density.

**d. Roller Method.** Testing will be at the discretion of the engineer. The Rollers Method shall apply as detailed below.

Number of Rollers Required Based on Placement Rate:

Average Laydown Rate, Square Yards Per Hour	Number of Rollers Required	
	Compaction Rollers	Finish Rollers
Less than 600	1	*1
600 - 1200	1	1
1200 - 2400	2	1
2400 - 3600	3	1
3600 and More	4	1

\*The compaction roller may be used as the finish roller also.

Rolling of the Mixture shall begin as soon after placement as it will bear the roller without undue displacement or cracking. Rolling shall start longitudinally at the extreme sides of the lanes and proceed towards the center of the pavement, overlapping on successive trips by at least half the width of the drum. Each required roller will be 8 tons minimum in weight (or as directed by the engineer). The initial breakdown roller will be capable of vibratory compaction, and in no case will be more than 500' behind the laydown operations. The maximum allowable speed of each roller shall be 3 mph or 4.5'/sec. All compaction rollers will complete a minimum of 2 complete rolling cycles prior to the mat temperature reaching 180 degrees Fahrenheit. Finish rolling shall continue until all roller marks are eliminated and no further compaction is possible. The engineer or representative will verify that the roller pattern has been adhered to and document same on the daily inspection logs.

**e. Construction.** The Engineer shall run and document a density frequency curve for each half day of production to determine the roller pattern and number of passes to achieve the maximum density. A density frequency curve is defined as the measurement and documentation of each pass of the finished roller until the in place density results indicate a decrease in value. The previous recording will be deemed the optimal density. The Engineer shall perform density tests using an approved non-nuclear guage (per the manufacturer's recommended procedures) or a nuclear density gauge in the 60 second mode with the JMF Gmm.

**f. Rejected Mixtures.** If for any one mixture, two consecutive aggregate gradations on one sieve or binder contents as determined by field tests exceed the uniformity tolerance of Range 2 under Table 1, or do not meet the minimum requirements for crushed particle content specified in the project documents, the mixture will be rejected. If such mixtures are placed in a pavement, the remaining portions of the failing field samples (minimum sample size taken shall be 10,000 grams) will be sent to the MDOT Central Laboratory to confirm the field test results. If the Laboratory's results do not confirm the field test results and there are no price adjustments required due to test failures on the asphalt binder, then no price adjustments will be made for the mixture involved. If the Laboratory's results confirm the field test results and if, in the Engineer's judgment, the defective mixture can remain in place and there are no price adjustments required due to test failures on the asphalt binder, the contract unit price for the defective mixture involved, as determined from field tests, will be decreased on the following basis:

The contract unit price for material outside of Range 2 or with a crushed particle content below that specified in the project documents will be decreased 25 percent.

If three consecutive aggregate gradations on one sieve, or bitumen contents as determined by field tests are outside Range 1 but within Range 2 tolerance limits, the mixture produced from the time the third sample was taken until the gradation, or bitumen content is corrected back into Range 1 will be decreased in contract unit price by 10 percent. Field tests indicating that mixtures are subject to the 10 percent penalty will be confirmed in the same manner as mixtures subject to the 25 percent penalty as described herein.