



Antrim County Road Commission

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April 17, 2015

REQUEST FOR BIDS - HOT MIX ASPHALT PAVING

Sealed bids will be received until 1:00 PM, Monday, May 11, 2015, at which time they will be publicly opened and read. Bids shall be received at the office of the Antrim County Road Commission, PO Box 308, 319 E. Lincoln St, Mancelona, Michigan 49659-0308. Bids will be tabulated and a recommendation will be made to the Board of County Road Commissioners at their next regular meeting.

The Antrim County Road Commission (ACRC) requests bids for the following:

Staceywood Circle: In Custer Twp, beginning at Lake of the Woods Rd thence around entire circle, approximately 2,570 feet. Scratch course on select areas, est. 200 tons, overlay entire width, approx. 21' wide @ 185 lbs/syd, est. 555 tons

Estimated total quantity: 755 tons

Shumaker Road: In Kearney Twp, beginning at Eddy School Rd (620) thence south to N Graham Rd, approximately 3,750 feet. Overlay existing pavement approx. 23' and 28' (with raised edges) wide @ 165 lbs/syd.

Estimated total quantity: 823 tons

N Fisherman's Paradise Road: In Kearney Twp, beginning at Northlakes Rd thence north to end of public road, approximately 1,610 feet. Overlay existing pavement approx. 20' wide @ 83 lbs/syd using Ultra-Thin HMA.

Estimated total quantity: 150 tons

Chippewa Trail: In Milton Twp, beginning at Cherry Ave thence south to end of pavement, approximately 10,300 feet. Wedge from centerline to outer edge of existing, est. 1,259 tons, overlay entire width approx. 20' wide @ 165 lbs/syd, est. 1,888 tons.

Estimated total quantity: 3,147 tons

Miller Road: In Milton Twp, beginning at Chippewa Trail thence east and north to Cherry Ave, approximately 6,231 feet. Wedge from ¼ crown to outer edge, est. 457 tons, overlay existing pavement approx. 20' wide on 4,831', 32' wide on 650' @ 165 lbs/syd and 20' wide on 750' (at north end) @ 220 lbs/syd est. 1,260.

Estimated total quantity: 1,717 tons

All mix shall be 4E1, PG 58 -28 liquid asphalt that complies with the enclosed Antrim County Road Commission Special Provision for Acceptance of HMA Mixture 4/13/2015. Bid price shall include mixing, hauling, placing and compacting the mix in accordance with the current MDOT Standard Specifications for Construction and the Antrim County Road Commission Special Provision for Acceptance of HMA Mixture 4/13/2015. Bid price shall also include traffic control in accordance with the current Michigan Manual of Uniform Traffic Control Devices.

Paving shall be completed by September 30, 2015 unless otherwise agreed to by the contractor and road commission.

The successful bidder shall enter into a contract with and provided by the road commission.

Label bid "**HMA PAVING BID**" plainly on the outside of a sealed envelope.

Burt R. Thompson, P.E.
Engineer-Manager

encl: Bid Submittal Form
Special Provision for Acceptance of HMA Mixture 4-13-2015
Special Provision for Ultra-Thin Overlay 4-17-2015

**Antrim County Road Commission
2015 Hot Mix Asphalt Paving Bid
Bid Submittal**

Staceywood Circle	755 tons @ \$_____ per ton
Shumaker Road	823 tons @ \$_____ per ton
Chippewa Trail	3,147 tons @ \$_____ per ton
Miller Road	1,717 tons @ \$_____ per ton
N Fisherman's Paradise	150 tons Ultra-Thin HMA @ \$_____ per ton

ACKNOWLEDGMENT

I acknowledge that I have thoroughly read all the pages of this document, including the enclosed special provisions and that if awarded the bid, work will be done in full accordance with same.

_____ Company name	_____ Signature
_____ Printed name	_____ Title
_____ Mailing address	_____ City, State and zip
_____ Date	_____ Phone
_____ Cell phone	_____ Email

ANTRIM COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
ACCEPTANCE OF HMA MIXTURE
(non Federal)

ACRC: BRT

04/13/15

Description.

This special provision provides acceptance-testing requirements for use on this project. The HMA mixture and mixture quality assurance and acceptance shall conform to section 501 of the Michigan Department of Transportation 2012 Standard Specifications for Construction except where modified herein. The MDOT HMA Production Manual, current edition, applies to this work.

Submittals.

Submit a mix design previously approved by MDOT (or equivalent independent verification approved by the Engineer) from within 1 year of the project start date, for the Engineer's review and approval. The Contractor shall not place any HMA without an approved mix design by the Engineer.

Materials.

Aggregates, mineral filler (if required), and asphalt binder shall be combined as necessary to produce a mixture proportioned within the master gradation limits called for in the project and meeting the uniformity tolerances listed in Table 1 and the quality assurance testing tolerances in Table 2 of this special provision. 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.

Asphalt Binder.

Liquid asphalt binder shall be a Performance Graded (PG) binder as specified in the bid requests and/or approved by the road commission.

Air Voids.

Design air voids will be 4.0% and shall be regressed to 3.0% in production by the addition of virgin liquid asphalt.

Recycled Asphalt Pavement.

Recycled asphalt pavement (RAP) percentage that represents the contribution of the RAP binder toward the total binder, by weight, SHALL NOT EXCEED 15%. No binder grade adjustment is required to compensate for the stiffness of the asphalt binder in RAP.

Recycled Asphalt Shingles.

Recycled asphalt shingles will NOT be allowed.

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 alterations in the plant to bring the mixture to 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.

At no time shall the asphalt binder content fall below 5.0% regardless of the tolerance listed.

Random liquid asphalt binder samples will be taken by the Engineer. The Engineer reserves the right to test any or all samples taken.

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.

The Engineer will perform quality assurance sampling and testing, using the sampling and testing option selected by the Engineer. Mixture QA testing will be performed at the Contractor's facility, using the Contractor's equipment, at no additional cost to the Owner. Quality control measures to ensure job control are the responsibility of the Contractor. Quality assurance and acceptance testing will be as follows:

1. Sampling

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, random samples will be obtained for each mix type. Acceptance testing will be performed at a frequency specified by the Engineer.

2. Mixture Testing

Mixture samples will be tested to verify gradation, binder content and volumetric properties.

3. Density

Pavement density may be measured by the Engineer, with a Nuclear Density Gauge or by 6 inch core sampling. The Gmm from the JMF will be used for the density control target. The in place density of the HMA mixture shall be at least 92.0% of the density control target. In place density will be calculated by averaging a minimum of four QA density test locations.

Table 1: Uniformity Tolerance Limits for HMA Mixtures

Parameter	TOP & LEVELING COURSE	
	* Range 1	Range 2
% Passing # 8 and Larger Sieves	± 5.0	± 8.0
% Passing # 30 Sieve	± 4.0	± 6.0
% Passing # 200 Sieve	± 1.0	± 2.0
*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.		

Table 2: HMA Quality Assurance Testing Tolerances (±) from the JMF

Parameter	Double Test per Lot (c)	Lot Average
Air Voids	1.00%	0.60%
Voids in Mineral Aggregate VMA (a)	1.20%	0.75% (b)
Maximum Specific Gravity (G _{mm}) (a)	0.019	0.012
Binder Content (a) (d)	0.50%	0.35%
a. Parameters with target values b. Or less, determined by VMA value in contract documents c. “Double Tests per Lot” refers to any two subplot tests in any one lot d. Binder content shall not fall below 5.0% at any time regardless of the tolerance listed		

Rejected Mixtures.

1. Gradation

If for any one mixture, two consecutive aggregate gradations on one sieve 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 (split sample) will be sent to an independent 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 asphalt binder 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 asphalt binder 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.

If a liquid asphalt binder sample does not meet the required specification, the mix produced from the point of the last liquid asphalt binder sample meeting specification to the failed sample shall be considered defective and shall be replaced at the sole expense of the contractor. This may also result in the termination of the contract and/or the right to bid on any future work.

2. Volumetric Properties

Acceptability tolerance for Air Void, VMA Gmm and Binder Content are shown in Table 2. Material produced outside of Table 2 tolerance limits will be rejected.

3. Pavement Density

A negative 10% adjustment in the HMA mixture unit contract price will be imposed on the lot or subplot if either the lot pavement density (average of all lot gauge readings or core results) is less than 92%, but equal to or greater than 91%; or if 2 or more readings or cores in any given subplot are less than 91%.

A negative 25% adjustment in the HMA mixture unit contract price will be imposed on the lot or subplot if either the lot pavement density (average of all lot gauge readings or core results) is less than 91%, but equal to or greater than 90%; or if 2 or more readings or cores in any given subplot are less than 90%.

If any subplot has an average density of less than 90%, the Contractor shall remove and replace the entire subplot at no cost to the owner.

ANTRIM COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
HMA ULTRA-THIN OVERLAY

ACRC: BRT

04/17/2015

1. **Description.** This special provision provides acceptance testing requirements for use on HMA Ultra-Thin Overlay mixture.
2. **Materials.** The HMA and materials shall meet the following requirements:
 - a. **Bond Coat.** The bond coat material will be an emulsified asphalt conforming to the requirements of Section 904 of the Standard Specifications for Construction, Type SS-1h.
 - b. **HMA Ultra-Thin Overlay.** The Ultra-Thin HMA Overlay shall be composed of a mixture of aggregate, asphalt binder, and if required, mineral filler, as listed in Table 1.

Table 1 - HMA Ultra-Thin Overlay Mixture Requirements

	Medium Volume Comm. ADT
Marshall Air Voids %	4.5
VMA % (min.) based on Gsb	15.5
Fines/Binder % Max.	1.4
Flow (0.01 in.)	8-16
Stability Min. (lbs)	1200

- c. **Aggregate Gradation and Physical Properties.** The combined gradation of the aggregate portion of the mixture, including the mineral filler, shall be within the limits of Table 2. The physical properties of the combined aggregates shall meet the criteria of Table 3.

Table 2 - HMA Ultra-Thin Overlay Aggregate Gradation

Sieve Size	Total Passing Percent by Weight
1/2 inch	100
3/8 inch	99-100
No. 4	75-95
No. 8	55-75
No. 30	25-45
No. 200	3-8

Table 3 - HMA Ultra-Thin Overlay Aggregate Physical Requirements

Parameter	Medium Volume Comm. ADT 380 - 3400
Percent Crush (min.)	75%
Angularity Index (MTM 118) (min.)	3.0
L.A abrasion loss (max.)	35
Aggregate Wear Index (AWI)	260

In addition, the sum of the shale, siltstone, ochre, coal, clay-ironstone and particles which are structurally weak or are found to be non-durable in service shall not exceed 8.0 percent.

- d. Performance Graded (PG) Asphalt Binder shall be 64 -28P. The PG binder shall meet all the requirements in Section 904 of the Standard Specifications for Construction.
- e. Recycled asphalt pavement and recycled asphalt shingles will NOT be allowed in mix.

3. Construction.

- a. Bond Coat Application. The bond coat material will be applied to completely cover the prepared surface at a rate of 0.11 - 0.15 gal/yd².

- b. Mixture Application Rate. The target application rate shall be 83 lb/yd².
 - c. Density. Thoroughly compact the mixture immediately after placement.
 - d. Mix Design. The Contractor shall submit to the Engineer a complete mix design according to the Procedures Manual for Mix Design Processing following the Express Marshall Mix Design Procedures prior to the start of production.
4. **Quality Control (QC).** The Contractor shall provide and follow a QC plan for the Ultra Thin HMA Overlay that will maintain adequate QC for production and construction processes applicable to this specifications and the contract documents. For QC purposes, the Contractor is allowed to take informational cores for density and application rates. The Engineer shall be provided a copy of the QC plan for review, prior to mix production and placement. The elements of the QC plan shall be as listed in Section 503 of the Standard Specifications for Construction.
5. **Payment.** Payment for HMA, Ultra-Thin includes all materials, equipment, labor for preparing the surface, placing temporary pavement markings, placing the HMA Ultra-Thin Overlay mixture and complying with all requirements. The placement includes placement of a single course of mixture for full width coverage as specified.