



# Antrim County Road Commission

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February 13, 2020

## REQUEST FOR BIDS – BUNKER HILL ROAD RESURFACING

Sealed bids will be received until 1:00 PM, Thursday, March 5, 2020, 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:

**Bunker Hill Road:** In Echo Township, beginning at Muckle Road thence east approximately 7,400' to Six Mile Lake Road. Project description: crush and shape existing pavement from Muckle east 3,970', place 4E1 HMA leveling course at 165 lbs/syd (est. 800 tons) and place 5E1 HMA top course at 165 lbs/syd (est. 800 tons). Also place 5E1 HMA overlay at 165 lbs/syd on several areas between crush and shape section and Six Mile Lake Road (est. 430 tons).

All mix shall contain PG 58 -28 liquid asphalt that complies with the enclosed Antrim County Road Commission Special Provision for Acceptance of HMA Mixture on Non-Federal Aid Projects 02/09/18. All traffic control shall be in accordance with the current MMUTCD part 6.

Bids must be submitted on the attached Itemized Bid Sheet.

Paving shall be completed by September 30, 2020 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 "**BUNKER HILL ROAD BID**" plainly on the outside of a sealed envelope.

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

encl: Schedule of Items (Itemized Bid Sheet)  
SP for Acceptance of HMA Mixture on Non-Federal Aid Projects 02/09/18

## Schedule of Items (Itemized Bid Sheet)

Letting Date: Thursday, March 05, 2020 1:00 PM

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**Contract ID:** 2020-1  
**Location:** Bunker Hill Road  
**Description:** Crush and shape, repave

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<b>Project Number:</b> 2020-1	<b>Project Engineer:</b> Burt Thompson
<b>Estimate Number:</b> 1	<b>Date Created:</b> 7/3/2019
<b>Project Type:</b> Miscellaneous	<b>Fed/State #:</b>
<b>Location:</b> Bunker Hill Road	<b>Fed Item:</b>
	<b>Control Section:</b>

**Description:** Crush and shape, repave

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**Instructions to Bidders:** IMPORTANT NOTICE:  
If the proposal establishes a maximum price for any of the following work items, and if you bid a price higher than that maximum price, your bid will be considered to have quoted the maximum price and your bid total will be adjusted to reflect that maximum price.

If the proposal provides a specified price for any of the following work items, and if you bid a price higher or lower than that specified price, your bid will be adjusted to reflect that specified price.

If your bid is the lowest accepted bid, and if you refuse to accept the award of the contract due to the change in what you quoted as a maximum or specified price, you will forfeit your proposal guaranty.

Pay Item	Description	Quantity	Units	Unit Price		Bid Amount		
				Dollars	Cts	Dollars	Cts	
1500001	Mobilization, Max \$20,000	1	LSUM					
3050002	HMA Base Crushing and Shaping	9,261	Syd					
3070021	Approach, CI II	25	Ton					
5010050	HMA, 4E1	800	Ton					
5010056	HMA, 5E1	1,230	Ton					
8120140	Lighted Arrow, Type C, Furn	2	Ea					
8120141	Lighted Arrow, Type C, Oper	2	Ea					
8120170	Minor Traf Devices	1	LSUM					
8120350	Sign, Type B, Temp, Prismatic, Furn	400	Sft					
8120351	Sign, Type B, Temp, Prismatic, Oper	400	Sft					
8120370	Traf Regulator Control	1	LSUM					
8140010	Paved Ditch, HMA	40	Syd					
<b>Total Bid:</b>								

**Contractor:** \_\_\_\_\_

\_\_\_\_\_  
 (Signature) (Date)

ANTRIM COUNTY ROAD COMMISSION

SPECIAL PROVISION  
FOR  
**ACCEPTANCE OF HOT MIX ASPHALT MIXTURE ON NON-FEDERAL AID  
PROJECTS**

ACRC:BRT

1 of 4

02/09/18

- a. 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.
- b. Submittals.** The contractor shall submit the following:
1. Job Mix Formula (JMF) (MDOT Form 1911 or equivalent) for the project for review and approval by the Engineer. The JMF shall be designed in accordance with Table A. The Contractor shall not place any HMA without an approved JMF. Below are specific values that are required on the JMF (in addition to the normal requirements).
    - i. Fine Aggregate Angularity
    - ii. Fines to Asphalt Ratio (based on Effective Asphalt Content)
  2. Quality Control Plan.
  3. A copy of all Contractor Quality Control Tests submitted within 7 working days of project completion.
  4. A copy of the Bill of Lading or Delivery Ticket for the Asphalt Binder for the project. The Bill of Lading must include the type of material that was previously hauled in the delivery tank.
- c. Materials.** Aggregates, mineral filler (if required), and asphalt binder shall be combined as necessary to produce a mixture proportioned within the master gradation limits and meeting the uniformity tolerances listed 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 used in plant produced HMA mixtures.

**Table A: HMA Mixture Targets and Parameters**

HMA Mix Type	VMA Minimum on any given Test (a,c)	VMA Target (c)	Asphalt Binder Content Minimum on JMF	Asphalt Binder Content Minimum on any given Test (a)	Fines to Asphalt Ratio Maximum on JMF (b)
4E1	14.0	Based on mix design parameter, the contractor shall establish & state their VMA Target on their mix design JMF, and shall adhere to the VMA Min. requirements	5.80	5.50	1.10
5E1	15.0		6.10	5.80	1.10
a. The HMA parameter minimum is per any given QC/QA test, regardless of Tolerances listed in Table 2 of this Special Provision. b. Value based on Pbe (Effective Asphalt Percent) for each given mix and JMF. c. VMA values are based on the Gsb (Bulk Specific Gravity) of the given HMA mixture not the Gse (Effective Specific Gravity).					

- d. Asphalt Binder.** Liquid Asphalt Binder shall be a Performance Graded (PG) binder as specified in the bid documents and/or approved by the Road Commission.

- e. **Air Voids.** Design Air Voids shall be 4.0% and shall be regressed to 3.0% in production by the addition of virgin liquid asphalt.
- f. **Recycled Asphalt Materials.** Recycled Asphalt Pavement (RAP) is allowed in the HMA mixtures. Recycled asphalt pavement (RAP) percentage that represents the contribution of the RAP binder toward the total binder, by weight, shall not exceed 17%. No binder grade adjustment is required to compensate for the stiffness of the asphalt binder in RAP.
- g. **Recycled Asphalt Shingles.** Recycled Asphalt Shingles (RAS) will not be allowed in the HMA.
- h. **Construction.** After the Job Mix Formula is established, the aggregate gradation 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 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.

Random Liquid Asphalt Binder samples will be witnessed by the Engineer or Consulting Firm. 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.

Quality Assurance and Acceptance testing will be as follows:

1. **Asphalt Mixture Sampling.** Acceptance sampling and testing will be performed by the Engineer using the sampling method and testing option agreed upon by the Engineer and Contractor. 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.

For each given day of production, if the daily mix tonnage per HMA mix type is under 500 tons, the Engineer reserves the right to test one sample and obtain a second sample for future testing if necessary. If the daily mix tonnage per HMA mix type is over 500 tons, the Engineer reserves the right to test one sample. If the first sample meets the Range 1 tolerances in Table 1 and Table 2, the Engineer can obtain a second sample and perform any of the following actions:

- a) Perform Full Quality Assurance testing
  - b) Perform Volumetric Testing Only (Ignition, Extracted, or Calculated AC/Gmm, Air Voids, VMA)
  - c) Retain custody of the sample for future testing if necessary
2. **Asphalt Binder Sampling.** The Contractor shall obtain the asphalt binder sample, correctly label the sample container, and complete a Sample Identification (Bituminous Material Form 1923B). The form must be filled out correctly and completely, and signed before the sample is given to the Engineer. The daily asphalt binder sample must be taken from a sampling spigot located on the pipeline supplying asphalt binder to the plant, in a position between the asphalt binder pump and the point where the asphalt binder is introduced to the aggregate mixture. Personnel safety is critical in selection the position of the sampling spigot. Give the binder sample and completed Form 1923B to the Engineer.

Daily Asphalt Binder Sample are to be in 1 pint (16 ounce), slip top, seamless ointment tins. The tin must be at least three quarters full. All containers must be labeled in a legible format with the following information provided:

- a. Project Name and Number
- b. Binder Grade
- c. Binder Supplier Certification Number
- d. Supplier Name, City, and State
- e. Date Sampled
- f. Mixture Type

The Engineer may request to witness the sampling of the asphalt binder upon visit to the HMA Plant. The Engineer will complete the 1923B Form for the witness sample. The witness sample will be recorded as the daily asphalt binder sample. Any other asphalt binder samples from that same day will be discarded.

The Engineer may request a copy of the MDOT Binder Certification Documents. These copies must be presented to the Engineer when the respective daily binder samples and the 1923B Forms are picked up at the plant. The Engineer will review these documents and communicate any problems that may arise.

- 3. **Mixture Testing.** Mixture samples will be tested to verify gradation, binder content, and volumetric properties per Table 1 and Table 2 listed below.

If the Engineer elects not to perform Quality Assurance testing on a given day or a given project. The Contractor is required to still perform testing in accordance with Table 1 and Table 2 below. The Contractor's Quality Control test results shall be sent to the Engineer within 2 working days of each day's productions for a given HMA mixture.

**Table 1: Quality Assurance/Control Tolerance Limits for HMA Mixtures**

Parameter	Action Limits (Range 1)	Suspension Limits (Range 2)
% Passing the #8 and Larger Sieves	+/- 5.0%	+/- 8.0%
% Passing the #30 Sieve	+/- 4.0%	+/- 6.0%
% Passing #200 Sieve	+/- 1.0%	+/- 2.0%

**Table 2: Quality Assurance/Control Testing Tolerance from JMF or Target Values**

Parameter	Action Limits (Range 1)	Suspension Limits (Range 2)
Binder Content (a)	+/- 0.30% (a)	+/- 0.50% (a)
Maximum Specific Gravity (Gmm)	+/- 0.013	+/- 0.020
Voids in Mineral Aggregate VMA (a, b)	+/- 0.75% (a, b)	+/- 0.80% (a, b)
Air Voids (c)	+/- 0.60%	+/- 0.90%
Fines to Effective Asphalt Ratio	0.65-1.20	0.60-1.25
<ul style="list-style-type: none"> <li>a. Refer to minimum parameters in Table A of this special provision.</li> <li>b. These given limits are (+/-) from given targets in Table A of this special provision.</li> <li>c. Limits are (+/-) from those values listed in Section e. of this special provision.</li> </ul>		

4. **Density.** Pavement density will be measured by the Engineer with either a nuclear or non-nuclear density gauge, using the Gmm from the JMF for the density control target. The in-place density of the HMA mixture shall be at least 92.0% to 98.0% of the density control target. The Engineer may cut cores for determining density, density verification and/or gauge calibration. Density testing and frequency will be determined by the Engineer. Density testing may be waived by the Engineer.

a) **Rejected Materials**

1. **Gradation.** Action Limits - Range of values established in Table 1 – Quality Assurance/Control Tolerance Limits for HMA Mixtures. If exceeded on two consecutive tests, Contractor is required to take corrective action to bring the mixture produced into conformance with the specifications.

Suspension Limits – Range of values established in Table 1 – Quality Assurance/Control Tolerance Limits for HMA Mixtures. If exceeded on a single test, Contractor is required to suspend operations and determine, document, and correct the cause before resuming production. Prior to resuming production, the Engineer must be notified of the findings and approve correction action prior to resuming production.

2. **Asphalt Binder.** 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.
3. **Volumetric Properties.** The acceptable tolerance for Binder Content, Gmm, VMA, Air Voids, and Fines to Pbe are listed in Table 2 above. Any HMA Mixture produced outside of these tolerances or any HMA Mixture that does not meet the requirements listed in the sub notes of Table 2 above will be subject to a negative adjustment or rejected. The resulting penalty will be a negative adjustment of 10% to 50% or remove/replace, to be determined by the Engineer.
4. **Pavement Density.** A negative 10% adjustment in the HMA Mixture contract price will be imposed if the pavement density (average of all gauge readings) is less than 92%, but equal to or greater than 91%; or if 2 or more readings are less than 91%.

A negative 25% adjustment in the HMA Mixture contract price will be imposed if the pavement density (average of all gauge readings) is less than 91%, but equal to or greater than 90%; or if 2 or more readings are less than 90%.

If the average density is less than 90% (for all gauge readings), the Contractor shall remove and replace the pavement at no cost to the Owner.