County Engineer
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Marysville Operations Facility
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Marysville, Ohio 43040
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Richwood Outpost
190 Beatty Avenue
Richwood, Ohio 43344

***Public Service** with integrity*

ADDENDUM #1

FROM: Union County Engineers Office

DATE: April 3, 2025

RE: **2025 Union County Asphalt Materials Quote**

PAGES: 7

This addendum supplements and amends the original Drawings and Specification issued and shall be taken into account in preparing proposals, and shall become a part of the Contract Documents.

1. Additional items were added to the quotation. Please replace Page 3 of the bid packet with Page 3 from addendum #1.

2. Additional Detailed Specifications – Pages 9-12 of the bid packet.

Please note and sign the bottom portion of 4 of the bid packet proposal acknowledging that this Addendum was received.

Jeff Stauch, PE/PS
County Engineer | Environmental Engineer

Sam Cronk, CBO
Chief Building Official

QUOTATION
ASPHALT MATERIALS
Page 3.1 – ADDENDUM #1

The following ASPHALT MATERIALS shall be quoted as delivered prices. Each quotation shall specify the source of supply. Only one QUOTATION will be considered from any single source of supply. Free unloading time and demurrage rates shall be included with each Quotation.

PART B (Surface Treatment)

DESCRIPTION	POLYMER	UNIT	UNIT PRICE
MC-30	N/A	Gallon	_____
RS-2	N/A	Gallon	_____
CM-90	N/A	Gallon	_____
HFRS-2P	(SBS)	Gallon	_____
RS-2P	(SBS)	Gallon	_____
CRS-2P	(SBS)	Gallon	_____
HFRS-2P	(SBR-latex)	Gallon	_____
RS-2P	(SBR-latex)	Gallon	_____
CRS-2P	(SBR-latex)	Gallon	_____
CSS-1HD (50% diluted Fog Seal)		Gallon	_____
Fast Drying Fog Seal *(FasBlack or equivalent)		Gallon	_____
CM-150#	N/A	Gallon	_____
CM-300	N/A	Gallon	_____
Engineered Recycling Emulsion, Cold Central Plant	N/A	Gallon	_____
Mixing Plant Mix		Tons	_____
Mixing Plant Mobilization		Lump	_____
Premium for “Supply Bond”		Lump	_____

*Attach applicable specifications/technical data
See additional detailed specifications provided

Free Unloading Time 2 ½ HOURS

Demurrage Rate_____

NOTE: These blanks must be completed.

Source of supply_____

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Detailed Specifications

I. CM150 Bituminous Material – Bituminous material to be used shall meet the specifications shown in Table 1 or equivalent.

Table 2: Specifications for Multigrade Cold Mix Asphalt	
Method of Test	CM-150
Modified Kopper Vacuum Viscosity, 25ºC, ASTM D 4957	1,000 – 10,000
Flash Point. Tag Flash Point, ASTM D 3143-98	65.5ºC (min)
Water in Petroleum, ASTM D 95-05	1.0% (max)
Cut-Back Distillation, ASTM D 402-02 Distillate, % by Volume of Total Distillate to 360º: to 225ºC to 260ºC to 315.5ºC Residue from Distillation to 360ºC	 0 – 3% by Vol 0 – 3% by Vol 40 – 80% by Vol 85% (min)
Test on Residue from Distillation, ASTM D 402	
Penetration, 25ºC, 100 g, 5 sec. ASTM D 5-05a	150 – 250 dmm
Solubility in Trichloroethylene, ASTM D 2042-01	99.0% (min)
Softening Point, ASTM D 36-95	73.8ºC (min)
Float Test, 60ºC, ASTM D 139-95	1200 sec (min)

The asphalt binder shall be delivered to point of production at a minimum temperature of 250ºF.

2. Cold Constructed Asphalt – Typical application rate of bituminous material shall be approximately 4.5% by weight +/- 5%, depending on the aggregate gradation, moisture content and temperature. The final percent by weight shall be determined by the Project Engineer or owners Representative at the time of production.

The following information shall apply to 1.) Cold Constructed Asphalt, 2.) Cold Central Plant Recycling Material, and 3.) Cold Mix Patching Material.

Mixing Plant; The mixing unit shall have as a minimum two (2) 6-cubic yard capacity hoppers with oversize screening and vibrators on the hopper walls to assist in the free flow of material. The proportioning of materials shall be controlled by means of mechanically adjustable gate valves at the point of discharge to a variable speed belt conveyor, equipped with a belt scale for continuous weighting of the aggregate. The aggregate belt scale shall be coupled/interlocked with two microprocessor controlled systems, complete with two independent pumping systems and spray bars, to regulate the application of bituminous material.

The mixing unit shall be an on-board completely self-contained counter rotating twin shaft pug mill. A metering device shall be capable of automatically adjusting the flow of bituminous material to compensate for any variation in the weight of the aggregate introduced into the pug mill.

Bituminous material shall be metered by weight of aggregate using a mass flow, Coriolis Effect, type meter that will accurately measure the amount to within 0.5 percent of the amount required by the JMF or as adjusted by the Engineer.

Control of the plant shall be fully automatic via the microprocessors. Control functions shall include: batch production, automatic plant startup, monitoring of individual drive systems, warning signals in case of material shortage, monitoring of filling leveling, temperatures and pressures, pre- selection of tonnage, automatic plant shut down. A current setting of the mixing unit shall be continuously displayed.

The Contractor shall be required to assure complete coating of the blended aggregate with the Multigrade Cold Mix Asphalt Binder (or CCPR, Cold Mix Patching Materials) and any remixing through the pug mill or by manipulation of stockpiled material shall be considered acceptable.

Mobilization to stock pile location shall be included in the unit price.

Stock Pile: Marysville Operation Facility, 16400 County Home Road, Marysville, OH 43040

The county engineer will provide two wheeled loaders and employees to load the mixing plant and stockpile the processed material Monday-Thursday 7:00am-4:30pm. The awarded bidder shall contact the Engineer's office to determine the scheduled processing time prior to May 1, 2025 to process the material. **Material shall be processed between this time frame: June 9th, 2025-September 15th, 2025.**

Payment of this item will be tons of material processed based on the gallons of CM-150 used at 12 gallons per ton.

EMLUSION SPECIFICATION FOR

COLD CENTRAL PLANT RECYCLING

General. This work consists of developing a Cold Central Plant Recycling (CCPR) mixture design consisting of reclaimed asphalt pavement (RAP), asphalt emulsion, water, and other additives, producing in a central plant, placing, and compacting the CCPR mixture in accordance with the plans and this and other applicable standards and specifications.

The asphalt emulsion supplier selects the asphalt emulsion for based on the County's mix design in accordance with AASHTO MP31 and Table 1-1. Provide emulsion that is within ±25 dmm of the penetration of the selected design emulsion and no greater than 120 °F.

TABLE 1-1 CCPR EMULSIFIED ASPHALT MATERIAL SPECIFICATION

Test	Procedure	Minimum	Maximum
Viscosity, Saybolt Furol, @77° F (25° C), SFS	AASHTO T 59	20	100
Sieve Test, No. 20 (850 µm), retained on sieve, %	AASHTO T 59		0.10
Storage Stability Test, 24 hr., %	AASHTO T 59		1
Distillation Test, Residue by distillation, %	AASHTO T 59[1]	64.0	
Oil Distillate by volume, %	AASHTO T 59		1
Penetration, 77° F (25° C), 100 g, 5 s, dmm	AASHTO T 59	50	200

[1] Modified AASHTO T 59 – Distillation temperature of 350 ± 9° F (177 ± 5° C) with a 20-minute hold.

Mixture Design. Sample the material to be recycled; roadway, RAP stockpiles, or both, to obtain the material properties and propose a mix design. If utilizing millings from the existing roadway, sample the roadway at a frequency of at least one sample per lane mile.

Use the collected samples of each of the proposed materials for the mix design and all associated testing. Use a design laboratory that is an AASHTO Accredited Laboratory accredited in hot mix asphalt (HMA) and asphalt emulsion to complete the mix design. Perform additional mix designs when the proposed material changes significantly in order to establish representative mixes for the entire job. Ensure the mix design meets the properties of Table 2-1.

TABLE 2-1 25 GYRATION (75 BLOW EQUIVALENT) MARSHALL DESIGN

Property	Criteria
Cured Marshall Stability [1], ASTM D 1559, Part 5, 40°C, lb.	≥1250
Retained Marshall Stability [1] after soaking based on cured stability, %	≥70

[1] Cured stability determined on 60°C curing to constant weight (<72 hours). Retained stability determined after 23-hour water soak at 25°C followed by 40°C soak for one hour.

Portland cement or fly ash may be added to meet the Marshall Stability requirements. If an additive is used, include the type and amount in the submitted mix design.

Ensure a technical representative from the emulsion supplier is on the job site at the beginning of the project including the test strip to verify proper asphalt emulsion performance. Also ensure the technical representative is available to check on the project and make adjustments to the asphalt emulsion formulation as needed.