

## NOTICE TO BIDDERS

Faulkner County will be accepting sealed bids for resurfacing roads with a 2-part process. Step 1: rejuvenating mass crack treatment, and Step 2: type 3 high polymer micro surfacing, on various county roads.

Bid specifications and Submittal forms may be obtained from the Faulkner County Judge's Office or online at <https://www.faulknercounty.org/business/rfp>.

Bids will be accepted until **9:00 a.m. on Wednesday, May 15, 2024**, at which time the Bids will be opened and read in the County Judges office, 801 Locust Street, Conway Arkansas 72034.

Faulkner County reserves the right to accept or reject any or all bids placed and waive formalities.

Direct questions and requests for clarifications related to this bid to Ashlie West at (501) 450-4900.

Sealed Bids may be mailed or hand delivered to:

Faulkner County Judge's Office  
Attn: **2024 Cape Seal Project Bid**  
801 Locust Street  
Conway AR, 72034

The Faulkner County Road Department paid \$\_\_\_\_\_ for this publication.

BID INFORMATION AND BID SPECIFICATIONS

FOR

CONTRACTOR BIDDING PROJECT

THIS BID PACKET CONTAINS INFORMATION

CONCERNING PROJECT FOR

FAULKNER COUNTY, ARKANSAS

COUNTY JUDGE ALLEN DODSON

2024 Cape Seal Project

May 1, 2024

Offers by telephone, fax, or electronic mail will not be accepted.

Sealed Bids may be mailed or hand delivered to:

Faulkner County Judges Office  
Attn: **2024 Cape Seal Project Bid**  
801 Locust Street  
Conway, AR 72034

It is the responsibility of the bidder to read and comply with all conditions listed in this bid packet.

**DATE ISSUED:** May 1, 2024

**DATE & TIME OF BID OPENING:** Wednesday, May 15, 2024, at 9:00 am

Faulkner County is requesting competitive sealed bids to establish a contract for cape seal road resurfacing for the unincorporated area of Faulkner County in accordance with the following conditions and specifications.

It is solely and strictly the responsibility of the bidder to ensure that the bid is received by the Faulkner County Judge's Office on or before the specified date and time. The County will in no way be responsible for delays caused by any occurrence. The bid time will be and must be scrupulously observed. Under no circumstances will bids delivered after the opening date and time be considered. Offers by telephone, fax, or electronic mail will not be accepted. Bidders will not be allowed to withdraw or modify their bids after the opening date and time.

Award of this bid is contingent upon the appropriation of funds by the Faulkner County Quorum Court.

Direct questions and requests for clarifications related to this bid to Ashlie West at (501) 450-4900.

References: Provide a list of at least three (3) government and or commercial clients for which the Company has performed/provided similar services within the past two years. Include the company name, address, phone number, e-mail and a brief description of the contractual relationship.

**Mandatory Pre-Construction Conference/Site Visit:**

Faulkner County Will require a mandatory Pre-Construction Conference at 801 Locust, Conway, AR., 72034, no more than (30) Calendar days prior to the start of construction.

## **DESCRIPTION OF WORK:**

There are approximately 24.7 road miles, 289,571 square yards, 6 individual roads to be resurfaced using the Arkansas Department of Transportation Special Provision Specifications. A (2) two-part process:

- Step 1: Rejuvenating Mass Crack Treatment
- Step 2: Type 3 High Polymer Micro Resurfacing.

All quantities are estimated. Aggregate is estimated at 20 lbs. per square yard on step 1. Aggregate is estimated at 25 lbs. per square yard on step 2. Faulkner County reserves the right to lower quantities if excess amount of aggregate is having to be reclaimed.

The Rejuvenating Mass Crack Treatment must be allowed to cure for a minimum of (5) five consecutive days prior to applying the Type 3 High Polymer Micro Resurfacing.

The Type 3 High Polymer Micro Resurfacing must be applied within a maximum of (15) fifteen consecutive days after the Rejuvenating Mass Crack Treatment.

All work, mixes, applications, and compactions must conform to ARDOT specifications (attachments A&B) **and attachment C which amends table 4 of ARDOT Special Provision High Polymer Microsurfacing.**

Prior to any construction the contractor must provide Faulkner County with a complete Mix Design Specification covering the specific materials used on the projects. After approval, NO substitutions will be permitted, unless approved by Faulkner County.

Faulkner County will inspect all construction, any weekend or holiday day work shall require prior approval.

Traffic control and signage is the responsibility of the contractor and must conform to the Manual of Uniform Traffic Control Devices (M.U.T.C.D.) and subject to review by Faulkner County. One (1) lane of traffic shall be maintained at all times.

All prep work, for example, shoulder cutting, clipping, leveling shall be the responsibility of the contractor.

Contractor will be responsible for marking the center line of any marked roads with temporary marking tape. 4" x 12" foil backed yellow marking tape every 30' of resurfaced roadway. Faulkner County will be responsible for striping all **permanent** pavement markings.

Contractor will be responsible for cleaning up all excess aggregate on resurfaced roads, to include, the extent of the right of way. Spoils shall not be left on shoulders or ditches. Contractor may retain spoils or coordinate with Faulkner County for disposal.

All sub-contractors must be approved by Faulkner County.

Contractor shall distribute notifications such as "door hangers" to each resident living on each road under construction, at least 24 hours prior to start of construction.

Faulkner County reserves the right to stop construction if any of the above-mentioned agreements are not fulfilled.

## TERMS AND STANDARD CONDITIONS

### PLEASE READ CAREFULLY

1. When submitting an "Invitation to Bid", the bidder warrants that the commodities covered by the bid shall be free from defects in material and workmanship under normal use and service. In addition, the bidder must deliver new commodities of the latest design, unless otherwise specified in the "Invitation to Bid".
2. Sales or use tax is not to be shown in the bid price but is to be added by the vendor to the invoice billing to the County. The County is not exempt from Arkansas Sales and Use Tax. Vendors are to register and pay tax directly to the Arkansas State Revenue Department.
3. Discounts offered will be taken when the County qualifies for such. The beginning date for computing discounts will be the date of the invoice or the date of delivery and acceptance, whichever is later.
4. In the event of two or more identical low bids, Arkansas Code Annotated Section 14-22-111 shall apply.
5. Specifications furnished with this "Invitation to Bid" are intended to establish a desired quality or performance level, or other minimum dimensions and capacities, which will provide the best product available at the lowest possible price.
6. Samples of items when required, must be furnished free and, if not called for within 30 days of the date of the bid opening, will become the property of Faulkner County.
7. Prices quoted shall be "Free on Board" (F.O.B.) to destination at designated facility within Faulkner County. Charges may not be added after the bid is opened.
8. In the event a contract is entered into pursuant to the "Invitation to Bid", the bidder shall not discriminate against any qualified employee or applicant for employment because of race, sex, color, creed, national origin, or ancestry.
9. The bidder must include in any and all subcontracts a provision similar to the above.
10. The Purchasing Department reserves the right to award items, all or none, or by line item(s).
11. Quality, time and probability of performance may be factors in making an award.
12. Guarantees and warranties should be submitted with the bid, as they may be a consideration in making an award.
13. Any ambiguity in any bid as the result of omission, error, lack of clarity or noncompliance by the bidder with specification, instructions and all conditions of bidding shall be construed in the light most favorable to the County.
14. All terms and conditions stated herein shall constitute a complete and integrated document and the covenants contained herein shall not be altered or modified by parol evidence unless such modifying term, conditions or covenants are in writing and are signed by the vendor and the agent of Faulkner County.

15. **CONSTRUCTION:**

- a. When noted, the Contractor is to supply Faulkner County with evidence of having and maintaining proper and complete insurance, specifically Worker's Compensation in accordance with the laws of the State of Arkansas, public liability and property damage. All premiums and costs shall be paid by the Contractor. In no way will the County be responsible in case of accident.
- b. A certified check or bank draft payable to the order of Faulkner County negotiable U.S. Government bonds (at par value), or satisfactory bid bond executed by the bidder and an acceptable surety in an amount of equal to five (5%) of the total of bid shall be submitted with each bid.
- c. All bids must contain a letter of intent from a bonding company authorized to do business in the State of Arkansas stating its willingness to bond the Contractor pursuant to the terms of any contract resulting from the ITB. The Contractor shall procure and maintain, at the Contractor's expense, a Performance Bond for the period of the contract project, including any warranty period. Certificates evidencing the effective dates and amounts of such bond must be provided to the County. This information shall be provided to Faulkner County, not later than fifteen workdays, from the date of award of the term contract.
- d. Successful bidder must furnish a 100% performance and 100% payment bond written and approved by a surety company holding a permit from the State of Arkansas to act as surety, or other surety or sureties acceptable to the Owner. The bonds shall be accompanied by duly authenticated or certified documents, in duplicate and must be furnished at the time of Contract execution. The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract, or to the work to be performed under the Contract shall in any way affect its obligation on this bond, except as provided herein, and waives notice of any change, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

16. **LIQUIDATED DAMAGES:** Liquidated damages shall be assessed beginning on the first day following the maximum delivery or completion time entered on the bid form and/or provided for by the plans and specifications. If Contractor fails to meet this delivery date, liquidated damages in the amount of \$1,500.00 per day will be imposed on the first day following the maximum delivery and/or Faulkner County will have the option to go to the next lowest responsive bidder for completion of the project. If this delivery schedule cannot be met, the bidder must state the number of days they require to place commodity in Faulkner County's designated locations. Failure to state delivery time obligates bidder to complete delivery within Faulkner County's requested timeframe. Should the successful bidder not meet delivery requirements, the County will move to the next lowest contractor's responsive bid.

17. Whenever a bid is sought seeking a source of supply for a specified period of time for materials and/or services, the quantities of usage shown is estimated ONLY. No guarantee or warranty is given or implied by the participants as to the total amount that may or may not be purchased from any resulting contracts. These quantities are for the bidders' information ONLY and will be used for tabulation and presentation of the bid and the participant reserves the right to increase or decrease quantities as required. Bidder agrees to this condition upon the signing of this document.
18. Faulkner County reserves the right to reject any and all bids, to accept in whole or in part, to waive any informalities or technicalities in bids received, to accept bids on materials or equipment with variations from specifications in those cases where efficiency of operation will not be impaired and unless otherwise specified by the bidder, to accept any item in the bid. If unit prices and extensions thereof do not coincide, Faulkner County may accept the bid for the lesser amount whether reflected by the extension or by the correct multiple of the unit price.
19. As required by Arkansas State Law, an Arkansas State Contractors License is required for any work bid over \$50,000.00.
20. **EQUAL OPPORTUNITY IN EMPLOYMENT:** All qualified bidders will receive consideration without regard to race, color, religion, sex, age, disability or national origin. Pursuant to Arkansas Code Annotated 22-9-203: Faulkner County encourages all qualified small, minority and women business enterprises to propose on and receive contracts for goods, services, and construction.
21. **STANDARD OF PERFORMANCE:** The Company shall perform according to the terms and conditions as stated herein, and according to the highest standards and commercial practices. Poor performance will be deemed a breach of the specifications of the Invitation to Bid and shall be grounds for immediate termination of the contract. Faulkner County retains the absolute right to assess whether and when performance is subsequently acceptable and not acceptable by the County.
22. **INDEMNIFICATION:** The Company hereby agrees to assume all risks and responsibilities inherent in performing the contracted services and does hereby agree to defend, hold harmless, indemnify, release and forever discharge Faulkner County Government and any of its officers, agents, employees, volunteers and servants from and against any and all claims, demands, and actions, causes of action, losses liabilities, or expenditures of any kind, including court cost and expenses, accruing or resulting from any suits or damages of any character resulting from injuries, damages, or death sustained by any person or persons, or property, by virtue of the performance of this agreement either directly or indirectly.
23. **TERM:** The term of the contract shall be for one (1) year and subject to four (4) one-year annual extensions, with any extension to be mutually agreed upon by Faulkner County and the contractor. No contract shall be automatically renewed and written confirmation shall be required.

24. **NON-APPROPRIATION CLAUSE:** Notwithstanding anything contained in this Agreement to the contrary, if the Faulkner County Quorum Court fails to appropriate funds for subsequent period within the term of this Agreement, the County shall not be obligated to make payments beyond the then current fiscal appropriations period provided that Company shall have received a written notification of the occurrence of the following events:
- a. Funds are not appropriated for a subsequent period during the Term of this Agreement for the acquisition of services and functions which, in whole or in part, are essentially the same services and functions for the performance of which the services and functions were purchased.
  - b. County has exhausted all funds legally available for all payments due under this Agreement; and
  - c. Such non-appropriation did not result from any act or failure to act of County.

Then, Company's only remedy shall be to terminate this Agreement at the end of the period which notice is given and take possession of any equipment owned by the Company. Company shall be entitled, however, to any payments and other payments due and owing during any previous period.

25. **INSURANCE:** All proposals must contain a letter of intent from an insurance company authorized to do business in the State of Arkansas stating its willingness to insure the Company pursuant to the terms of any contract resulting from the RFP. The Company shall procure and maintain, at the Company's expense, the following insurance coverage for the period of the Contract. Certificates evidencing the effective dates and amounts of such insurance must be provided to Faulkner County:
- a. Workers Compensation: As required by the State of Arkansas.
  - b. Comprehensive General Liability (Broad Form) Coverage in amounts specified under the contract for work at the facility prior to the signing of the contract.
  - c. Minimum shall be the total amount of contract.
26. **COMPLETION DATE:** Faulkner County will require the Contractor to submit in writing the projected dates work will begin, and projected completion dates in accordance with the ARDOT Standard Specifications provided. Once the Contractor has submitted the projected dates, Faulkner County will issue a Notice to Proceed. The Contractor will be expected to begin work within (10) calendar days of the Notice to Proceed. Faulkner County understands that completion of work is weather permitting and limitation of placement between the dates of April 01, 2024 through October 15, 2024, as specified by the ARDOT Standard Specifications.



27. **QUANTITIES:** Quantities set forth in this Invitation to Bid are estimates. Faulkner County reserves the right to increase or decrease these quantities during the term of the agreement. Supplier must furnish the quantity ordered whether more or less than the estimate.

	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Total</b>
1	CLASS 4 AGGREGATE	Tons	2,400		
2	CMS-1PC (ASPHALT EMULSION)	Gallons	70,400		
3	TYPE 3 HIGH POLYMER MICRO SURFACE	Sq Yard	289,571		
5	MOBILIZATION	Lump			
6	TRAFFIC CONTROL AND SIGNAGE	Lump			
7	SITE PREP	Lump			

**BID SHEET**  
**FAULKNER COUNTY, ARKANSAS**

Bids should be submitted in total, for the price to be paid by Faulkner County F.O.B. Conway,  
Arkansas.

BID AMOUNT: \_\_\_\_\_

WRITTEN BID AMOUNT: \_\_\_\_\_

\_\_\_\_\_

**EXECUTION OF BID**

Upon signing this Bid, the bidder certifies that he/she has read and agrees to the requirements set forth in this bid proposal including specifications, conditions and pertinent information regarding the articles being bid on and agrees to furnish these articles at the prices stated. Unsigned bids will be rejected - no exceptions.

COMPANY:

PHONE NUMBER:

\_\_\_\_\_

COMPANY ADDRESS:

\_\_\_\_\_

SIGNATURE OF AUTHORIZED PERSON:

DATE:

\_\_\_\_\_

\_\_\_\_\_

PRINTED NAME:

TITLE:

\_\_\_\_\_

\_\_\_\_\_

ARKANSAS SALES OR USE TAX NUMBER: \_\_\_\_\_

STATE CONTRACTORS LICENSE NUMBER: \_\_\_\_\_

\_\_\_\_\_  
Company

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Company Address

**References:**

\_\_\_\_\_  
Name \_\_\_\_\_ Address  
\_\_\_\_\_  
\_\_\_\_\_  
Phone Number  
\_\_\_\_\_  
Email

Brief description of contractual relationship: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Name \_\_\_\_\_ Address  
\_\_\_\_\_  
\_\_\_\_\_  
Phone Number  
\_\_\_\_\_  
Email

Brief description of contractual relationship: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Name \_\_\_\_\_ Address  
\_\_\_\_\_  
\_\_\_\_\_  
Phone Number  
\_\_\_\_\_  
Email

Brief description of contractual relationship: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Contract(s) Lost:**

List all contracts which were canceled or not renewed during the past five (5) years and the reasons for cancellation or non-renewal. This list shall include the name and telephone number of the primary contact of each contract.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

01-17-19  
10-28-19 Rev.  
01-09-20 Rev.

**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**  
**JOB NO.**  
**REJUVENATING MASS CRACK TREATMENT**

**Description:**

This item shall consist of the application of a polymer modified asphalt rejuvenating mass crack treatment, as specified, according to these specifications, and in reasonably close conformity with the plans or as directed.

The treatment consists of furnishing properly distributed rejuvenating asphalt emulsion scrubbed into the cracks and voids followed by a uniform application of aggregate for building a riding surface, improving the surface friction of a roadway, sealing cracks in the roadway, reducing the rate of oxidation of a surface mixture, or as an interlayer to delay or reduce the occurrence of reflective cracking.

**Materials:**

- (a) **Asphalt Emulsion.** The asphalt emulsion for rejuvenating mass crack treatment shall meet the requirements of the following table and shall be composed of a polymer modifier, a petroleum based rejuvenating agent, and asphalt. The emulsion supplier shall receive quarterly certificates of analysis (COA) for both the polymer and rejuvenating agency manufacturers. The COAs shall be provided to the Department upon request.

Property	Test Procedure (AASHTO)	Specification	
		(min)	(max)
<b>Emulsion Properties</b>			
Viscosity, Saybolt-Furol, @ 77°F, SFS	T59	50	350
Storage, 24 hour, %	T59	-	1
Oil Distillate, %	T59	-	0.5
Sieve Test, %	T59	-	0.1
Residue by Distillation <sup>(1)</sup> @ 350°F, %	T59	60	-
<b>Residue Properties From Distillation</b>			
	T59		
Penetration @ 4°C, 200g weight, 60 sec	T49	30	-
<b>Residue Properties From Low Temp Evaporation</b>			
	R78, Procedure B		
MSCR @ 52°C, J <sub>nr</sub> @ 3.2/kPa	ASTM D7405	-	4.0
<b>Polymer Properties<sup>(2)</sup></b>			
Tests on Modifier Mass Change, %	ASTM D471 (modified)		50%
<b>Test on Rejuvenating Agent</b>			
Flash Point, COC, °F	ASTM D92	380	-
Viscosity, 140°F, cSt	ASTM D2170	50	175
Saturate, % by wt	ASTM D2007	-	30
Asphaltenes	ASTM D2007	-	1.0
<b>Test on Residue from RTFO</b>			
Weight change, %	ASTM D2872	-	6.5
Viscosity Ratio	ASTM D2170	-	3

**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**  
**JOB NO.**  
**REJUVENATING MASS CRACK TREATMENT**

1. Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350°F plus or minus 10°F. Maintain this temperature for 20 minutes. Complete the total distillation in 60 plus or minus 5 minutes.
  2. Modify ASTM D471 as follows:
    - a. Place 0.8g of modifier into an 18-mm silicone rubber DSR mold.
    - b. If necessary, dry at ambient lab conditions for 72 hr.
    - c. Remove the modifier from the mold and place the sample into a forced draft oven on release paper for 48 hr at 40°C.
    - d. After 48 hr, cool and weigh the sample to the nearest 0.0001 g. Record the weight.
    - e. Pour 30 g of rejuvenating agent in a 90-ml metal container.
    - f. Place modifier sample in the container and add another 30 g of rejuvenating agent. Ensure the modifier sample is completely covered; add more rejuvenating agent if necessary.
    - g. Cover the container with a metal lid and place it into a 40°C oven for 48 hr.
    - h. Remove the sample from the container. Use a paper towel to blot the surface of the sample to remove excess rejuvenator. Allow sample to cool to room temperature and weigh to the nearest 0.0001 g.
    - i. Calculate the mass change, expressed in Equation 1. Mass change will be positive.
      - i.  $Mass\ Change\ (\%) = \frac{M_2 - M_1}{M_1} \times 100$
      - ii. Where:
      - iii.  $M_1$  = Mass of modifier sample before being conditioned in the rejuvenating agent (g); and
      - iv.  $M_2$  = Mass of modifier sample after conditioning in the rejuvenating agent (g).
- (b) Rejuvenating Agent.** The manufacturer of the rejuvenating agent, through the emulsion supplier and the contractor, shall submit to the Department test results certifying that the material meets the specification shown in the table above. The Department shall not accept test results dated more than 120 calendar days from the date of the project start. At any time during the project, the Department may obtain, and have tested at Department expense, samples of the rejuvenating agent being used in manufacturing of emulsion delivered to the project.
- (c) Latex Polymer.** The manufacturer of the latex polymer, through the emulsion supplier and the contractor, shall submit to the Department test results certifying that the material meets the specification shown in the table above. The Department shall not accept test results dated more than 120 calendar days from the date of the project start. At any time during the project, the Department may obtain, and have tested at Department expense, samples of the latex polymer being used in manufacturing of emulsion delivered to the project.
- (d) Aggregate.** Unless otherwise noted, the aggregate material shall be crushed stone listed in and meeting the requirements of Subsection 403.01 and having a gradation of Class 4 Mineral Aggregate as indicated in Subsection 403.02. When a Rejuvenating Mass Crack Treatment is to be used as an interlayer a Class 1 Mineral Aggregate as indicated in Subsection 403.02 may be used. It shall be stated in the plans if the Class 1 Mineral aggregate is required.

**Equipment:**

- (a) Pressure Distributor.** An approved mechanical pressure distributor shall meet the requirements of Section 403.

**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**  
**JOB NO.**  
**REJUVENATING MASS CRACK TREATMENT**

**(b) Broom Sled.** A broom sled as described herein shall be used to force the emulsion into cracks and voids after application of the emulsion from a pressurized distributor and before the application of aggregate.

The broom sled frame shall be constructed of metal and equipped with means to be attached to and pulled by the distributor truck.

The broom sled must be equipped with a means of raising and lowering the broom sled when desired. It shall be towable in the elevated position. The height of the broom sled assembly shall be adjustable related to the amount of emulsion carried by the broom heads themselves such that, regardless of application rate, the broom sled carries an excess of emulsion in front of the broom heads across the width of the area to be treated while containing the emulsion inside of the broom sled frame and not outside of the intended width of the treatment.

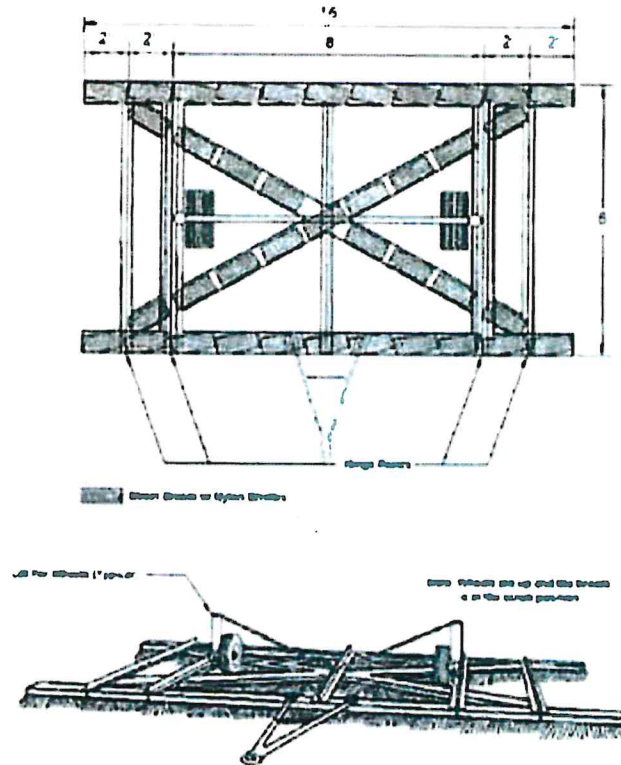
The main body of the broom sled shall have an overall frame size similar to the one shown in the drawing below. The nearest and furthest members, paralleling the back of the distributor truck, and diagonal members shall be equipped with street brooms. The leading member and the trailing member shall have broom heads angled at approximately 10 to 15 degrees off the centerline of the supporting member. The diagonal members shall have broom heads attached in line with the centerline of the supporting member. Each individual street broom attached to the broom sled assembly shall have a density of bristles to sufficiently push the emulsion evenly within the desired area of application. The stiffness of the bristles shall not bend excessively during application and spreading of the emulsion.

The broom sled shall be equipped with hinged wing assemblies attached to the main body not to exceed 4.5 feet per side, with diagonals and equipped with the identical street brooms as described herein.

The purpose of the maximum rigid frame width and the hinged wing extensions is not only for maximum width of 16 feet but to maintain the scrubbing process evenly as contours and cross-sections change across the existing road surface. A means or method of controlling the broom sled, causing it to track evenly behind the distributor in curves and on cross slopes, is required.

All broom sled designs shall be submitted to the Department for approval. Demonstration that the broom sled design is capable of filling the cracks with emulsion shall be performed prior to the Engineer approving the broom sled design. Demonstration of the broom sled may be performed on the test strip. An example broom sled design diagram is included in this document.

**ARKANSAS DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION  
JOB NO.  
REJUVENATING MASS CRACK TREATMENT**



**Scrub Broom**

(c) **Aggregate Spreader.** The mechanical aggregate spreader shall meet the requirements of Subsection 403.07.

(d) **Rollers.** Rollers shall meet the requirements of Subsection 403.08.

(e) **Rotary Broom.** The Rotary Broom shall be capable of removing debris and loose mineral aggregate from the surface as needed and based on the specifications herein.

**Test Strip:**

Prior to the beginning of the project, the contractor shall be required to perform a test strip with a minimum length of 100 feet to assure the materials, contractor personnel and equipment are suitable to produce a satisfactory Rejuvenating Mass Crack Treatment. The test strip may be conducted as part of the calibration procedure. The test strip may be in a suitable area such as a parking lot or staging area. The contractor may also elect to use the project site for the test strip. If the test strip is placed within the project limits the contractor shall correct any deficiencies before opening to traffic as directed by the Engineer at no additional cost to the Department. The location for the test strip shall be approved by the Engineer prior to placement of the test strip.

**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**  
**JOB NO.**  
**REJUVENATING MASS CRACK TREATMENT**

**Construction Requirements:**

**(a) General.** The methods employed in performing the work, and all equipment, tools, and machinery used in handling material and executing any part of the work shall be subject to the approval of the Engineer before the work is started and whenever found unsatisfactory shall be changed or improved as required. Equipment, tools, and machinery used must be maintained in a satisfactory condition, and must conform to the requirements provided in Section 403.

The surfaces of all structures shall be protected by some satisfactory method to prevent their being disfigured by the application of asphalt material. Objectionable asphalt discoloration, caused by the Contractor's operations, shall be removed from all roadway and bridge structures at no cost to the Department.

Asphalt material shall not be applied on a surface having excess moisture or when weather conditions are unsuitable. The Contractor shall monitor local weather conditions to avoid placing material on the road ahead of adverse weather that could subsequently damage the material. In the event materials are damaged by adverse weather, they shall be replaced or repaired at no additional cost to the Department.

Special precautions shall be taken to ensure that the equipment is operated in a manner that distributes the asphalt and aggregate evenly and uniformly. Deposits of asphalt and aggregate material upon the road surface in excess of the quantity specified, caused by stopping or starting the distributing machine, overflow, leakage, or other mechanical or human errors, shall be removed.

Prior to performing the actual work, all equipment shall be adjusted and calibrated according to Section 403 and applicable manufacturer's requirements.

The surface section shall be constructed in half widths for each application.

**(b) Preparation of Existing Surface.** Potholes and surface depressions will be repaired by the Department prior to the Rejuvenating Mass Crack Treatment work unless shown otherwise on the plans. Immediately prior to application of the asphalt material, clean and de-grass existing pavements over the full width to be treated and all raised pavement markers shall be removed.

Manholes, valve boxes, drop inlets and other service entrances shall be protected from the asphalt emulsion by a suitable method.

**(c) Sweeping and Cleaning.** Before the asphalt material is applied, the surface shall be thoroughly cleaned and swept with a rotary power broom to remove all dust, dirt, mud, and loose or foreign material. A blower may be used to assist in the cleaning operation. The sweeping and cleaning operations shall be carried only far enough in advance of the application of the asphalt material to ensure that the surface is maintained in the proper condition at the time of application. Clean areas not reached by the power broom or blower by hand brooming or blowing.

**(d) Application of Asphalt Material.** After the surface to be treated has been prepared as specified above, the asphalt material for the surface treatment shall be sprayed uniformly over the surface by means of an approved mechanical pressure distributor,



**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**  
**JOB NO.**  
**REJUVENATING MASS CRACK TREATMENT**

meeting the requirements of Section 403, shown on the plans and at the designated rate of application as shown on the plans.

The optimum application rate of asphalt material is dependent on the mineral aggregate gradation as well as the condition of the pavement in which the Rejuvenating Mass Crack Treatment is to be applied. The application rate of the asphalt material may be adjusted by the Engineer based on field conditions at the time of construction.

The asphalt material shall be applied at the temperature between 140 - 180°F. The Contractor shall ensure uniformity of distribution at junctions of distributor loads by use of building paper or other approved methods.

After asphalt material is applied and broomed to force material into cracks and voids, no equipment or traffic will be permitted on the surface until the aggregate is applied and rolled.

**(e) Application of Mineral Aggregate.** The mineral aggregate shall not contain excessive free moisture and shall be spread immediately following the application of the asphalt material. Operations shall not proceed or continue when the asphalt material is allowed to chill, set up, dry, or otherwise impair retention of the mineral aggregate. The mineral aggregate shall be spread with a mechanical spreader meeting the requirements of Section 403. The mineral aggregate shall be distributed over the asphalt material and at the rate of application shown in the plans. The use of an approved chip box to distribute the mineral aggregate will be permitted on detour construction and other areas approved by the Engineer where the use of a mechanical spreader is impractical. Spreading shall be accomplished in such manner that the tires of the trucks or aggregate spreader at no time contact the uncovered and freshly applied asphalt material. Portions of the surface not covered by mechanical spreaders shall be hand spotted so that the entire surface will be uniformly covered. Light hand brooming may be necessary to distribute excess aggregate.

**(f) Rolling and Brooming.** A minimum of two pneumatic rollers, along with one rotary power broom shall be used with each aggregate spreader being used. A steel wheel roller will be allowed as a finish roller with approval by the Engineer.

Rolling shall begin immediately behind the spreader. Each surface treatment shall be completely rolled a minimum of three times.

After the final set of asphalt has occurred and no more than 48 hours after application, the surface shall be lightly broomed to remove excess aggregate. Generally, the brooming shall be confined to the cooler hours of the day and shall be conducted so as not to displace embedded material.

**(g) Second and Successive Applications.** If the work involves two or more applications of asphalt material and mineral aggregate, the rates of application for this material will be those specified on the plans or as designated by the Engineer. The method of construction will be the same as for an asphalt surface treatment meeting the requirements of Section 402. If a second seal is to be constructed, the emulsion shall conform to Subsection 403.03(d) or Subsection 403.03(e). Each application shall be placed only after the preceding application has been satisfactorily completed and cured. Further, the asphalt

**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**  
**JOB NO.**

**REJUVENATING MASS CRACK TREATMENT**

material shall be firmly set and the aggregate firmly embedded so as not to be displaced by brooming. Before application, the surface shall be thoroughly swept with a rotary power broom so that no dust or loose aggregate is left that might cause a plane of cleavage.

**Traffic Control:**

During the application of the asphalt material and aggregate, and during the rolling operation, traffic will not be allowed on the new surface. When traffic must use the lane adjacent to the lane under construction, the Contractor shall regulate the flow of vehicles past the surfacing operation at a speed not to exceed 25 miles per hour (40 km/h). The Engineer may require the use of a pilot vehicle.

Until the asphalt has set and the cover aggregate is firmly embedded, traffic shall not exceed 25 miles per hour (40 km/h). The vehicle speeds shall be controlled by the use of one or a combination of barricades, flaggers, signs, or pilot vehicles that will minimize the loss of cover aggregate. The method used for speed control shall be approved by the Engineer and will be subject to change or modification should the selected method of control prove unsatisfactory.

The Contractor shall route the aggregate haul trucks to and from the work area so that they will not have to turn on the freshly placed surface treatment.

**Temperature and Seasonal Limitations:**

Asphalt material shall not be applied when the ambient and surface temperature including shaded areas is below 60°F (15°C). In addition, asphalt surface treatments shall not be applied outside the following seasonal limitations:

Traveled Lanes	April 15 to September 30
Shoulders	April 1 to October 31

No deviation from the above limitations will be allowed except by written permission from the Engineer.

**Method of Measurement:**

- (a) Mineral aggregate in surface treatments will be measured either by the cubic yard (cubic meter) or by the ton (metric ton).
- (b) Rejuvenating Mass Crack will be measured by the gallon (liter).

**Basis of Payment:**

Work completed and accepted and measured as provided above will be paid for as follows:

- (a) Mineral aggregate will be paid for at the contract unit price bid per ton (metric ton) or per cubic yard (cubic meter) for Mineral Aggregate in Asphalt Surface Treatment.

In cases where the combined specific gravity of the material used for Mineral Aggregate in Rejuvenating Mass Crack Treatment exceeds 2.80 and the method of measurement is by the ton (metric ton), the quantity of material will be adjusted for payment by multiplying the quantity of the material used by the specific gravity of 2.80 and dividing by the higher specific gravity.

**ARKANSAS DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION**

**JOB NO.**

**REJUVENATING MASS CRACK TREATMENT**

(b) Asphalt material will be paid for at the contract unit price bid per gallon (liter) for Rejuvenating Emulsified Asphalt (CMS-1PC).

The above contract unit price shall be full compensation for surface preparation including the removal of the raised pavement; furnishing, loading, heating, hauling, placing, and applying materials; for cleaning, sweeping, brooming, rolling; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Mineral Aggregate in Asphalt Surface Treatment (Class ____)	Cubic Yard (Cubic Meter) or Ton (Metric Ton)
Rejuvenating Emulsified Asphalt (CMS-1PC)	Gallon (Liter)

**ARKANSAS DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION**

**HIGH POLYMER MICROSURFACING**

**Description:**

The special provision herein replaces Section 418 of the Arkansas Department of Transportation's Standard Specifications. This section covers the materials, equipment, construction, and application procedures for placing High Polymer Microsurfacing material for filling ruts and for surfacing existing paved surfaces. The High Polymer Microsurfacing shall be a mixture of a polymer-modified asphalt emulsion, 100% crushed mineral aggregate, mineral filler, water, and other additives for control of set time in the field. All ingredients shall be properly proportioned, mixed, and spread on the paved surface in accordance with the specification herein and as directed by the Engineer.

High Polymer Microsurfacing is a quick-traffic system that allows traffic to return shortly after placement. Normally, these systems are required to accept straight, rolling traffic on a 0.5-inch thick surface within one hour after placement in specific application conditions. Stopping and starting traffic may require additional curing time.

**Materials:**

**(a) Cationic Asphalt Emulsion.** The emulsified asphalt shall be a cationic type CSS-1EP meeting the following requirements:

**Table 1. Cationic asphalt emulsion requirements.**

Property	Test Procedure (AASHTO)	Specification	
		Min	Max
<b>Asphalt Base Properties</b>			
ODSR, kPa ( $G^*/\sin \delta$ , 10 rad./sec) @ 76°C	T315	1.0	
<b>Emulsion Properties</b>			
Viscosity, Saybolt-Furol, @ 122°F, SFS	T59	15	150
Sieve Test, %	T59		0.1
Residue by Evaporation, %	T59	62	
<b>Residue Properties from Low Temperature Evaporation</b>			
<b>AASHTO R-78<sup>1</sup></b>			
MSCR @ 70°C, Recovery @ 3.2 kPa, %	T350	80	
MSCR @ 70°C, $J_{nr}$ @ 3.2, 1/kPa	T350		0.5

<sup>1</sup> After recovering the residue from AASHTO R78, the sample may be annealed prior to testing to remove any excess moisture and provide for a consistent sample. The annealing can be accomplished by placing 20 grams of residue in a 6 oz. metal container (approximately 3-inch diameter) and heating to 163 °C for no more than 15 minutes. The sample should be stirred with a spatula every 5 minutes. The sample can then be poured directly into a 25mm DSR silicone mold for evaluation.

- (1) The 24-hour (1-day) storage stability test may be used but does not predict that the 5-day settlement test will pass.
- (2) The test requirement for settlement may be waived when the emulsified asphalt is used in less than five days from the date shown on the load ticket.
- (3) The residue from the emulsified asphalt shall be obtained in accordance with AASHTO T59 except that the temperature shall be held at 350°F for 20 minutes.
- (4) Solubility test shall be performed on the base asphalt used for emulsion manufacture.

**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**

**HIGH POLYMER MICROSURFACING**

**(b) Mineral Aggregate.** Coarse mineral aggregate from a Limestone, Dolostone, or other carbonate aggregates from an approved source shall have a 60 percent maximum allowable content of carbonate aggregates with the remaining 40 percent from an approved source which is crushed sandstone, crushed siliceous gravel, syenite, novaculite, crushed steel slag, or mineral aggregate which has an insoluble residue not less than 85% when tested in a 1:1 solution of hydrochloric acid and water according to ASTM D3042. All aggregate shall be screened directly into the support vehicles prior to delivery to the application equipment. The aggregate shall meet the following quality tests and gradation requirements herein:

**Table 2. Aggregate gradation requirements.**

Sieve Size, (mm)	Type II Percent Passing	Type III Percent Passing
3/8", (9.5)	100	100
#4, (4.75)	90 – 100	70 – 90
#8, (2.36)	65 – 90	45 – 70
#16, (1.18)	45 – 70	28 – 50
#30, (0.600)	30 – 50	19 – 34
#50, (0.300)	18 – 30	12 – 25
#100, (0.150)	10 – 21	7 – 18
#200, (0.075)	5 – 15	5 – 15

**Table 3. Aggregate quality tests.**

Test	Test Method		Specification
	AASHTO	ASTM	
Sand Equivalent Value of Soils and Fine Aggregate	T 176	D2419	65 Min
Soundness of Aggregates by Use of Sodium Sulfate	T 104	C88	15% Max
Resistance to Degradation of Small-Size Coarse Aggregate Abrasion and Impact in the LA Machine	T 96	C131	30% Max

**(c) Mineral Filler.** Mineral filler, if used, shall be Portland Cement or Hydrated Lime meeting the requirements of AASHTO M 17.

**(d) Water.** Water shall be potable and free of harmful soluble salts.

**(e) Other Additives.** Additives supplied by the emulsion manufacturer may be added to the High Polymer Microsurfacing mix to provide control of the set time in the field.

**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**

**HIGH POLYMER MICROSURFACING**

**Mix Design:**

The design of the High Polymer Microsurfacing shall be submitted a minimum of two weeks prior to the start of work. The mix design shall meet or exceed the criteria herein as well as the ISSA A-143 Recommended Performance Guideline. The laboratory report shall also provide the following information, which shall be within the test parameters given.

The gradation and percent residual asphalt as shown on the High Polymer Microsurfacing design or as established by the Engineer shall be maintained within the listed Mixture Control Tolerances as per ISSA A-143. Additionally, the aggregate shall remain within the master gradation band. Mineral filler shall not be used to satisfy the requirements as set forth in Table 4. Should these tolerances fail to be met, immediate adjustments will be made to bring the gradation and percent residual asphalt back within tolerances or the work will not be allowed to continue.

**Table 4. Mix design requirements.**

<b>Test</b>	<b>Test Method</b>	<b>Specification</b>
Mixing Time Test, Seconds @ 77°F,	ISSA TB 113	120 min
Set Time Test, 30 minutes	ISSA TB 139	12kg-cm min
Early Rolling Traffic Time, 60 minutes	ISSA TB 139	20kg-cm min
Water Resistance Test, 30 minutes	ISSA TB 102	No Discoloration
Wet Stripping Test, % Coating	ISSA TB 114	90 min
Wet Track Abrasion Loss	ISSA TB 100	50 g/ft <sup>2</sup> (1hr soak) max
		75 g/ft <sup>2</sup> (6 day soak) max
Excess Asphalt by LWT	ISSA TB 109	50 g/ft <sup>2</sup> max
Classification Compatibility	ISSA TB 144	11 grade pts min.
Range for Residual Asphalt % <sup>1</sup>	-	6.0-9.0
Range for Mineral Filler, % <sup>1</sup>	-	0.5-3.0
Cantabro Mass Loss <sup>2</sup> , % Maximum	TX 245-F	2.0
Indirect Tensile Stiffness Modulus <sup>2</sup> , MPa, Minimum	EN 12697-26 Annex C	10,000

Note 1: Percent residual asphalt and percent mineral filler shall be based on weight of dry aggregate.

Note 2: Samples to be prepared by ISSA TB 148 Marshall Compaction only (30 blows/side) and tested in dry condition at 25°C.

ARKANSAS DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION

HIGH POLYMER MICROSURFACING

**Equipment:**

All equipment used for materials handling, mixing, and placing of mixture shall be maintained in good repair and operating condition and subject to the approval of the Engineer. Any equipment found to be defective with a potential for affecting the quality of the paving mixture will be rejected by the Engineer and must be replaced or repaired before its use or continued use.

**(a) Mixing Equipment.** The paving mixture shall be blended by a self-propelled, positive, non-slipping aggregate delivery system (belt over chain) High Polymer Microsurfacing mixing machine which shall be a continuous flow mixing unit able to accurately deliver and proportion the aggregate, LRA-modified emulsion, mineral filler, field control additives and water to a revolving multi-blade, twin shafted mixer and discharge the mixed product on a continuous flow basis. The mixture shall be thoroughly blended so that no uncoated aggregate is visible upon discharge from the mixing unit. The machine shall be equipped with self-loading devices which provide for the loading of all materials while continuing to lay High Polymer Microsurfacing, thereby minimizing construction joints. The machine shall be equipped with opposite side driving stations to optimize longitudinal alignment. The machine shall be equipped to allow the operator to have full hydrostatic control of the forward and reverse speed during the application of the High Polymer Microsurfacing material. Continuous-run equipment will be required to ensure continuity of mix and reduction of construction joints.

With the Engineer's approval, truck mounted units may be used for irregular areas measuring 300 yd<sup>2</sup> or less or in cases where the roadway is too narrow for standard application. If truck mounted units are allowed, they shall be equipped with a positive, non-slipping aggregate delivery system (belt over chain) and have the capability of applying a minimum of 10 tons of aggregate without recharging the aggregate bin.

**(1) Water Pressure System.** The mixing machine shall be equipped with a water pressure system and nozzle type spray bar to provide a water spray ahead of and outside the spreader box when required.

**(2) Calibration and Proportioning Devices.** The machine shall be equipped with individual volume or mass controls or other gauging devices for measuring and proportioning each material added to the mix. Each material control device shall be calibrated, properly marked, and positively interlocked. The aggregate feed to the mixer shall be equipped with a revolution counter or similar device so that the amount of asphalt emulsion, aggregate and mineral filler used may be determined at any time. Each mixing unit shall be calibrated prior to commencement of the work. The calibrations shall be performed and verified in the presence of the Engineer or the Engineer's representative. Once calibrated, the aggregate and emulsion flows shall not be changed without the approval of the Engineer. The water and additive may be adjusted in the field to control the mix properties and to produce an acceptable mix. With the Engineer's approval, previous calibration documentation covering the exact materials to be used may be acceptable provided they were made within the last three (3) months.

**(3) Emulsion Pump.** The emulsion pump shall be a heated, positive displacement type pump.

**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**

**HIGH POLYMER MICROSURFACING**

**(b) Spreader Box.** Attached to the machine shall be a hydraulically adjustable (adjustable while applying mixture) type spreader box with a positive screed adjustment for yield control. The box shall be attached to the mixer, equipped with ribbon flights mounted on an adjustable shaft to continually agitate and distribute the material throughout the box. The box will be equipped with curb bumpers and replaceable runners with a minimum of 5-foot long end runners. The box shall be equipped with a sufficient walkway to provide access to either side of the spreader box without walking through the freshly applied material. The box must be capable of laying mix to a width of 14 feet. The equipment shall provide sufficient turbulence to prevent the mix from setting in the box or causing excessive build-up or lumps. To prevent the loss of mixture from the box, the Contractor shall attach flexible seals, front and rear, in contact with the road. The full width application box shall be equipped with a secondary strike-off located approximately 2 to 3 feet behind the primary strike-off to minimize transverse corrugations. The secondary strike-off shall have elevation and width adjustments similar to the primary strike-off. It shall have a pivot point where it can be tilted for texturing or raised completely off of the surface. The use of burlap drags or other drags necessary to obtain the desired surface texture shall require approval by the Engineer. Drags having excessive build-up shall be replaced. Drags shall be kept in a completely flexible condition at all times.

**Stockpiling And Storage:**

**(a) Aggregate Storage.** If the mineral aggregates are stored or stockpiled, they shall be handled in such a manner as to prevent segregation, mixing of the various materials or sizes, or contamination with foreign materials. The grading of aggregates supplied to the mixing plant shall be uniform. Suitable equipment of acceptable size shall be furnished by the Contractor to work the stockpiles and prevent segregation of the aggregates.

**(b) Storage and Heating of Asphalt Materials.** The asphalt emulsion storage shall be ample to meet the requirements of the project. Asphalt emulsion shall not be heated to a temperature in excess of 120°F (49°C). All equipment used in the storage and handling of asphalt emulsion shall be kept in clean conditions at all times and shall be operated in such manner that there will be no contamination by foreign matter.

**Construction Requirements:**

It shall be the responsibility of the Contractor to produce, transport, and place the specified materials in accordance with these specifications and as approved by the Engineer. The finished High Polymer Microsurfacing shall have a uniform texture free from excessive scratch marks, tears, or other surface irregularities. The cured mixture shall adhere fully to the underlying surface. Based upon a visual examination or test results, the Engineer may reject any work due to poor workmanship, loss of texture, raveling, or apparent instability.



**ARKANSAS DEPARTMENT OF TRANSPORTATION**  
**SPECIAL PROVISION**

**HIGH POLYMER MICROSURFACING**

**(a) Seasonal Limitations.** No High Polymer Microsurfacing shall be placed after October 15 or before April 1 without prior approval by the Engineer. The High Polymer Microsurfacing mixture shall be spread only when both the pavement surface and the ambient temperature is at least 50°F and rising and the weather is not foggy or rainy and there is no forecast of temperatures below 32°F within 48 hours from the time of placement.

**(b) Surface Preparation.** The area to be resurfaced shall be thoroughly cleaned of all vegetation, loose aggregate, and soil. Utility entrances within the area to be resurfaced shall be protected from the High Polymer Microsurfacing by the use of plastic coverings or other methods approved by the Engineer. All utility entrances shall be uncovered before the surface is reopened to traffic. When conditions require, water shall be used to pre-wet the surface ahead of and outside the spreader box at a rate which will dampen the entire surface without any free flowing water ahead of the spreader box.

**(c) Tack Coat.** The application of tack coat may be directed by the Engineer if the surface to be covered is extremely dry and raveled or is concrete or brick. The tack coat, if required, shall follow Section 401 of Standard Specification for Highway Construction with the exception that the High Polymer Microsurfacing emulsion may be utilized with a dilution rate of 3:1 water to emulsion. The tack coat shall be allowed to set sufficiently before the application of High Polymer Microsurfacing. If a tack coat is to be required, it must be noted in the project plans.

**(d) Traffic Control.** It shall be Contractor's responsibility to provide adequate traffic control measures (such as barricades, cones, advance warning signs, flagmen, pilot vehicles, etc.) to protect the uncured High Polymer Microsurfacing from all types of traffic and to provide traffic safety in the construction area. The Contractor shall provide a traffic control plan to the Engineer at the pre-construction conference.

Opening the roadway surface to traffic does not constitute acceptance of the work. Any damage to the uncured High Polymer Microsurfacing material will be the responsibility of the Contractor and the damaged surface shall be repaired to the satisfaction of the Engineer. Interim pavement marking shall be provided according to Subsection 604.03(f).

**(e) Aggregate Application Rate.** The target spread rate for all full width High Polymer Microsurfacing not intended as a leveling course shall be controlled to within plus or minus two pounds per square yard of spread rate and shall be based on the weight of dry aggregate. Unless otherwise approved by the Engineer, the full width spread rate shall be 18 pounds (for Type II) and 25 pounds (for Type III) per square yard. A five-percent (5%) reduction in unit price will be applied for each pound of aggregate per square yard outside the spread rate tolerances established above for each day's placement of material. In lieu of pay reduction, the Contractor may elect to overlay the deficient area with additional High Polymer Microsurfacing at no additional cost to the Department. Continued operation and placement of materials outside the spread rate tolerances shall not be allowed. The Contractor shall make adjustments as necessary in the placement operation to maintain production within the tolerances given. The Contractor shall perform a minimum of four spread rate checks a day.

ARKANSAS DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION

**HIGH POLYMER MICROSURFACING**

- (f) **Rut Filling and Leveling Course.** When required in the plans, before the final High Polymer Microsurfacing course is placed, preliminary High Polymer Microsurfacing materials shall be required to fill ruts, utility cuts, depressions in the existing surface, etc. Ruts greater than 1/2" in depth shall be filled independently with a specifically designed rut filling spreader box either 5-foot or 6-foot in width. For irregular or shallow rutting 1/2" or less in depth, a leveling course may be used as directed by the Engineer. The spreader box used for the leveling course shall be the same as used for the surface course; however, a steel or high density strike-off shall be used in lieu of a flexible rubber. Using a rut fill spreader box, each individual rut fill shall be crowned to compensate for traffic compaction at a rate of 1/8" per 1" of rut depth. Rut filling shall be placed and opened to traffic a minimum of 24 hours prior to final surfacing. All materials, mixture composition, equipment, and construction procedures and requirements shall be as specified above.
- (g) **Quality Control/Quality Assurance Plan.** The Contractor shall provide the Engineer with a quality control/quality assurance plan ten (10) days prior to the start of work for approval. This plan shall include, at minimum, one test per 500 tons aggregate.

**Workmanship:**

No excessive buildup, uncovered areas, or unsightly appearance will be permitted at longitudinal or transverse joints. Longitudinal joints shall be placed at lane lines. Excessive overlap will not be permitted. Care shall be taken to ensure straight lines along the roadway centerline, lane lines, shoulder, or curb lines. Lines at intersections shall be kept straight to provide a good appearance. Care shall be exercised in areas that require hand work so that the finished surface is uniform in texture, density, and of overall appearance comparable to that produced by the spreader box. Areas of non-uniform texture, density, or appearance will be patched as directed. Patching shall be done using the same process and equipment that originally surfaced the area. Hand working of patches will not be permitted, except as authorized by the Engineer. The Contractor shall supervise and direct the work, using their best skill and attention. High Polymer Microsurfacing material required to repair deficiencies due to unsatisfactory workmanship shall not be paid for but shall be entirely at the Contractor's expense.

- (1) **Finished Surface.** The finished High Polymer Microsurfacing shall have a uniform texture free from excessive scratch marks, tears, or other surface irregularities. Excessive tear marks are considered as four marks that are >1/2" in width and >6" in length per 100 square yards, or any marks >1" in width or >4" in length. The edges of the High Polymer Microsurfacing shall be neat in appearance and longitudinal alignment shall be parallel to the roadway centerline.
- (2) **Joints and Seams.** The longitudinal and transverse joints shall be neat in appearance and uniform. Transverse joints shall be constructed as butt-type joints. No excessive buildup, uncovered areas or unsightly appearance will be permitted on longitudinal or transverse joints. Longitudinal joints shall be placed on lane lines when possible. Gaps between applications shall not be permitted. Joints will be considered acceptable if no more than a 1/2" vertical space exists

**ARKANSAS DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION**

**HIGH POLYMER MICROSURFACING**

between the pavement surface and a 4-foot straight edge placed perpendicular on the longitudinal joint, and no more than 1/4" for a transverse joint.

(3) Irregular Areas. Areas which cannot be reached with the mixing machine shall be surfaced using hand tools to provide complete and uniform coverage. The area to be hand worked shall be cleaned and lightly dampened prior to mix placement. Care shall be exercised in areas that require handwork so that the finished surface is uniform in texture, dense and of overall neat appearance comparable to that produced by the spreader box. When transitions are included as part of the work, then these areas are to be surfaced prior to application of the main line. This shall include intersections, turnouts, radii, ramps, etc.

**Method Of Measurement:**

High Polymer Microsurfacing shall be measured by the square yards in place as completed and accepted. Tack coat shall be measured and paid for by the gallon in its undiluted state. Additives when used shall be considered subsidiary to High Polymer Microsurfacing and shall be included in the price bid for High Polymer Microsurfacing.

**Basis Of Payment:**

Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per square yard for High Polymer Microsurfacing. Price shall be full compensation for furnishing materials; for designing the mixture, including trial mixtures required; for performing quality control and acceptance sampling and testing; for preparation of the surface; field control additives, for heating, mixing, hauling, placing, and finishing; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Tack coat, if used, will be measured and paid for in accordance with Section 401 of Standard Specification for Highway Construction.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
High Polymer Microsurfacing	Square Yard

Test	Mixture Control Tolerance	Types II and III
Range for Residual Asphalt, % <sup>(1)</sup>	+/-0.5%	6.0-9.0
Range for Mineral Filler, % <sup>(1)</sup>	+/-0.5%	0.5-3.0
Test	Method ISSA TB # <sup>(2)</sup>	Value
Wet Track Abrasion Loss, 1 Hour Soak, g/ft <sup>2</sup> , Maximum	TB 100	38
Wet Track Abrasion Loss, 6 Day Soak, g/ft <sup>2</sup> , Maximum	TB 100	60
Lateral Displacement, %, Maximum	TB 147	5
Excess Asphalt by LWT, g/ft <sup>2</sup> , Maximum	TB 109	50
System Compatibility, Minimum Grade	TB 144	11 points
Mixing Time, Seconds, 77°F, Minimum	TB 113	120
Set Time, 30 Minutes, kg-cm, Minimum	TB 139	12
Early Rolling Traffic Time, 60 Minutes, kg-cm, Minimum	TB 139	20
Water Resistance, 30 Minutes	TB 102	No Discoloration
Wet Stripping Test, % Coating, Minimum	TB114	90
System Compatibility	TB 115	Pass
<b>To be Conducted at Recommended Job Mix Formula</b>		
Cantabro Mass Loss, %, Maximum <sup>(3)</sup>	TX 245-F	2.0
Bulk Specific Gravity <sup>(3)</sup>	AASHTO T166	2.100-2.400
Ideal CT, peak load, lb-force, Minimum <sup>(4)</sup>	ASTM D 8225	2000
Ideal CT, Index, Minimum <sup>(4)</sup>	ASTM D 8225	100

Percent residual asphalt and percent mineral filler shall be based on weight of dry aggregate.

Reference to ISSA TB means International Slurry Surfacing Association Technical Bulletin.

Samples to be prepared by ISSA TB 148 Marshall Compaction only (30 blows/side) and tested in dry condition at 25°C

- A compaction temperature of 154C has been found to be sufficient.
- Four hours of total heating time ( $\pm$  5 minutes) has been found to be sufficient to reach the compaction temperature.
- Allow to cool and measure Bulk Specific Gravity.
- Perform Tex T245-f once the samples have dried to constant mass in front of a fan at room temperature.

Prepare samples for ASTM D 8225:

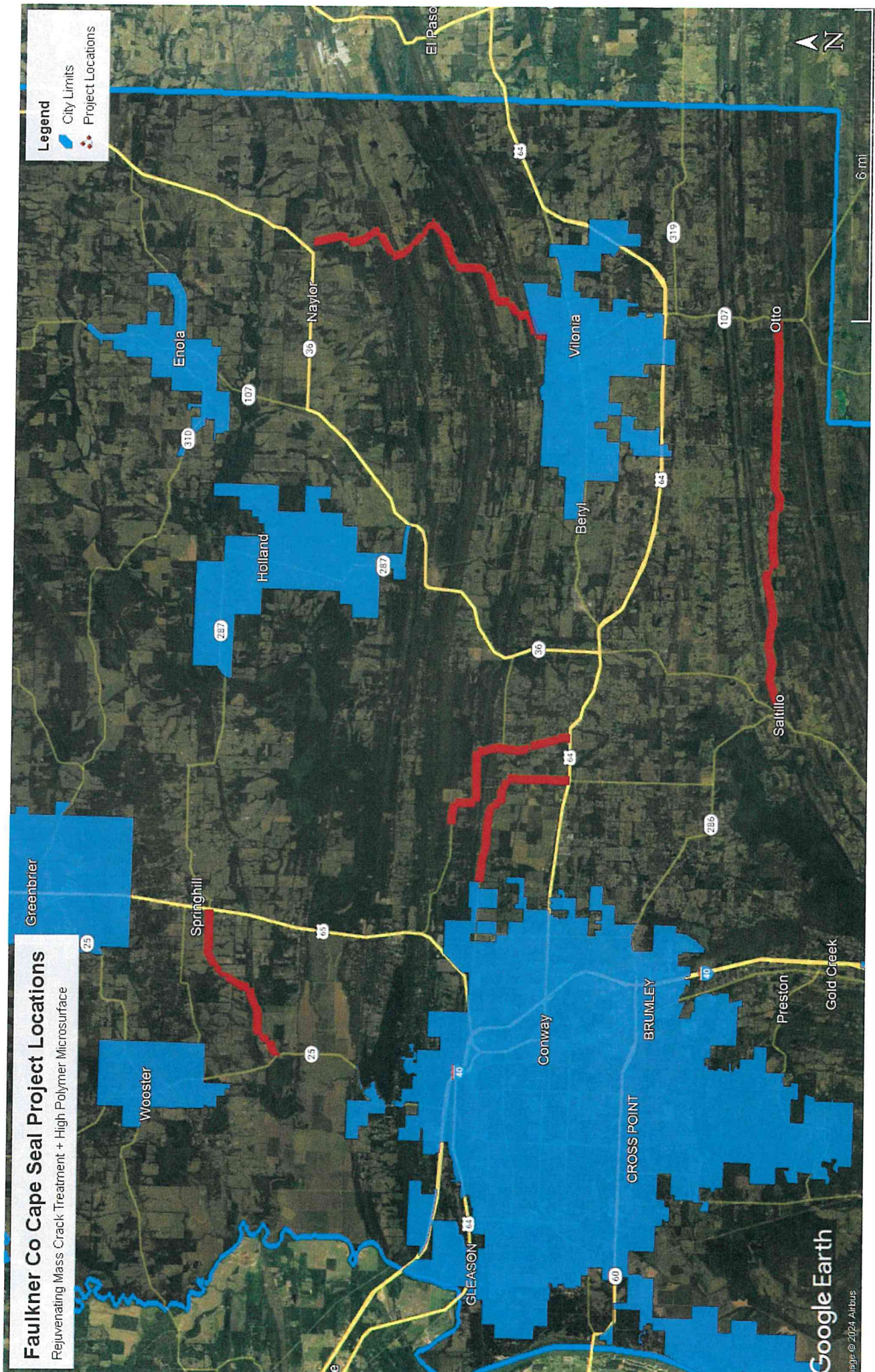
- Mix component materials and spread them approximately 2 inches thick on release paper. Allow the mixture to cure at 60C for 16 hours.
- Proportion the material to yield proper dimensions for the test.
- Heat the mixture to 154C for four hours (+/- 5 minutes) and compact to a minimum of 2.200 g/mL with a Superpave Gyrotory Compactor (30 gyrations).
- Allow to cool and measure Bulk Specific Gravity.
- Perform ASTM D 8225 at least 16 hours after testing Bulk Density.

# Faulkner Co Cape Seal Project Locations

Rejuvenating Mass Crack Treatment + High Polymer Microsurface

**Legend**

- City Limits
- Project Locations



# Cape Seal Projects Summary & Estimated Quantities, 2024

<u>Road Name</u>	<u>Treatment</u>	<u>Length (feet)</u>	<u>Width (ft)</u>	<u>Sq Yd</u>	<u>Class 4 Tons</u>	<u>CMS-1PC Gallons</u>	<u>Microsurface Sq Yards</u>
<b>Naylor Rd</b>	Cape Seal- Scrub/Micro	34,359	20	76,352	764	22,906	76,352
<b>Elliott Rd</b>	Cape Seal- Scrub/Micro	18,037	20	40,082	401	12,025	40,082
<b>Sunny Gap Rd</b>	Cape Seal- Scrub/Micro	16,791	20	37,313	373	11,194	37,313
<b>Lower Ridge Rd</b>	Cape Seal- Scrub/Micro	17,653	20	39,228	392	11,768	39,228
<b>Otto Rd</b>	Cape Seal- Scrub/Micro	41,281	20	91,736	917	27,521	91,736
<b>Pickles Gap Rd</b>	Cape Seal- Scrub/Micro	2,187	20	4,860	49	1,458	4,860
		<b>130,307</b>		<b>289,571</b>	<b>2,896</b>	<b>86,871</b>	<b>289,571</b>
		Miles:					
						24.7	