TOWN OF LINN

WALWORTH COUNTY

2024

Notice to bidders for Pavement Maintenance

The Town of Linn will accept pavement maintenance bids until 12:00 pm on Friday, March 29, 2024. Bids must be received by the Town Clerk Alyson Morris, W3728 Franklin Walsh Street, P.O. box 130 Zenda, WI 53195. A performance Bond is required.

The Town Board has the right to accept or reject any and all bids and accept the bid most advantageous to the Town.

For further information and project specifications contact Matt Wittum, Highway Superintendent, Town of Linn at (262) 275-6300 ex. 17 or linnhighway@townoflinn.wi.gov

TOWN OF LINN

WALWORTH COUNTY

2024
Pavement Maintenance Bid

South Lakeshore ____________________________

Basswood Dr.______________________________

Hardwood Dr.______________________________

Academy Rd._______________________________

Sunset Hills Subdivision_____________________

TOTAL____________________________________

Town of Linn
Road Maintenance 2024
Roadways:

Road	**Start**	**Stop**	**Crack Fill**	**GSB88**	**Flex**	**Chipseal**	**Spray Patch**	**Notes:**
South Lakeshore	Linton/Willow INT	END/Bigfoot Beach	x		x	x	x	Will need to be re-striped
Basswood			x	x				
Hardwood			x	x				
Academy Road	County B/Linton	South Lakeshore	x		x	x	x	Will need to be re-striped
SUNSET HILLS SUBDV								
Chapin			x	x				
Main			x	x				
Shady Side			x	x				
East			x	x				
Ravine			x	x				
Sunset			x	x				

SPECIFICATIONS

Leveling Cupped Cracks with Spray Injection Pre-coated stone

I. APPLICATION

A. Surface and cracks to be treated shall be cleaned with approved cleaning equipment. Areas of repair shall be free of all foreign material, vegetation, and moisture. Routing may or may not be required.

B. Surface and/or cracks shall be sealed with a polyester fiber flex-patch sealant. Upon application of the sealant through the wand, the sealant must be hand squeegeed to insure proper coverage. Sealant shall be applied to both fill cracks as needed and provide coverage for surface usage on cupped cracked depressions (transverse cross cracks) and minor alligator areas . Squeegee range from 12 inches to 48 inches wide will be required pending severity of depressed area.

C. A pre-coated, heated cover aggregate material shall be pneumatically sprayed on top of the sealant while still hot to insure stone penetration in the rubber. Traffic shall not be allowed on the material until it is cured or it has been blotted to prevent tracking.

II. MATERIAL

A. Sealant fortified with polyester fibers shall be applied per manufacturer's specifications.

B. Cover aggregate shall be fractured Class A stone with 100% passing a 3/8" sieve, 95-100% passing a ¼" sieve and be pre-coated with 1% 120-150 asphalt cement.

III. EQUIPMENT

A. Crack cleaning equipment shall consist of an air compressor capable of delivering a minimum of 250c.f.m. and capable of emitting air through the nozzle within the range of 70 to 150p.s.i. The compressor's air shall be free of moisture.

B. A heat lance shall be used which is capable of drying out the crack. Temperature at discharge shall be a minimum of 2,200°F and a discharge velocity of 3,000 ft/sec.

C. The kettle used for heating the sealant must be an oil jacketed double boiler type-melting unit, which is, equipped with both agitation and recirculation systems. It must have separate temperature thermometers for both the oil bath and melting vat to insure proper temperature for the sealant. It must be equipped with a pump to pressure fill cracks with a wand applicator. Pour pots are not acceptable.

D. Spray Patching Truck: The spray injection equipment must be a self-contained unit and have a heated hopper capacity of 5 cubic yards minimum.

E. Squeegee size is to be 12 to 48 inches wide.

-FA 2 chip

SPECIFICATION

BITUMINOUS SEAL COATING WITH FA2 WASHED CHIP COVER AGGREGATE

Scope of Work: This work shall consist of furnishing all materials, equipment, and labor necessary for the application of Bituminous Seal Coating as directed.

Description: The work shall consist of bituminous seal coating with stone cover aggregate. The work shall be done in accordance with Section 475, State of Wisconsin Department of Transportation "2017 Standard Specifications for Highway and Structure Construction" with the special provisions for aggregate below.

Materials: Materials furnished and used in the work shall conform to the requirements of Section 475. Aggregate must be a washed fractured granite stone classified as a Class A aggregate. Aggregate to be medium gray in color. Limestone, pea stone and boiler slag are not permitted.

A. **Asphaltic Material Seal Coat.**
Asphaltic material to be CRS-2P at the following:

Rate of application: 0.30 +/- .03 gallons/SY

Supplement 455.2.4.3 (1) of the standard specifications with the following:
Furnish material conforming, before dilution, to the following:

I. Polymer Modified cationic emulsified asphalt...... AASHTO M 316

B. **Cover Aggregate**: The cover aggregate shall meet the requirements of The sieve specifications, and conform to the following sieve size.

Sieve Size	Percent Passing
½ inch	100 %
3/8 inch	100 %
¼ inch	100 %
No. 4	0- 100 %
No. 8	0 – 45 %
No. 16	0 – 15 %
No. 50	0 – 7 %
No. 100	0 – 4 %
No. 200	0 – 2 %

The aggregate shall be applied at the rate of 20 +/- 3 pounds per square yard. The Contractor shall take all precautions to minimize contamination of the aggregate.

Equipment: The contractor shall have available and maintain in good working order the equipment and tools necessary to perform the work. The requirements for the equipment for heating the asphaltic material and for the distributors shall be as set forth in subsection 475.3.4. The equipment to be used shall include dragging equipment and aggregate spreading equipment that can be adjusted to spread accurately the quantities specified per square yard, and a minimum of two self-propelled, pneumatic-tire rollers meeting the requirements of Subsection 475.3.5.

Construction Methods:

A. Surface Preparations: Immediately prior to applying the asphaltic materials, the Contractor shall thoroughly clean the existing surface of all loose material, silt spots, vegetation, and other objectionable material. Dust and other loose material in depressions or other places not reached by mechanical sweepers shall be swept with hand brooms or by blowers or flushers. Particular care shall be taken to thoroughly clean the outer edges of the area to be sealed. All costs associated with preparing existing surfaces as described above shall be included in the bid price for Construct Chip Seal Surface.
B. Applying Asphaltic Materials: A pressure distributor shall be used for applying the asphalt material. It shall have a ground speed control device interconnected with the asphalt emulsion pump such that specified application rate will be supplied at any speed. The pressure distributor shall be capable of maintaining the asphalt emulsion at the specified temperature. The spray bar nozzles shall produce a uniform fan spray, and the shutoff shall be instantaneous, with no dripping. Each pressure distributor shall be capable of maintaining the specified application rate. Means shall be provided for accurately indicating the temperature of the asphalt material at all times. The thermometer well shall not be in contact with a heating tube. Application will be with full width equipment capable of applying 24' without a center seam. A hose and spray nozzle attachment shall be provided for applying asphalt material to patches and areas inaccessible to the spray bar. The distributor shall be provided with heaters that can be used to bring the asphalt material to spray application temperature.
C. Applying Sealcoat Aggregate: After application of the asphaltic material and when the desired stage of tackiness is attained, aggregate for seal coat cover shall be spread uniformly over the treated surface by approved self-propelled mechanical full width spreader capable of applying aggregate 24' without a seam.
D. Rolling of Aggregate: Roll surface immediately after spreading the aggregate. Rolling shall start at the edges and continue to the center, lapping one-half the roller width on each successive trip. Rolling shall be accomplished with two pneumatic-tire rollers. The speed and reversing of direction of rollers shall be regulated as to avoid displacement or loosening of the cover material or damage to the asphaltic material. Rolling shall be continued until the aggregate for the seal coat cover is thoroughly embedded and the surface is smooth and uniform in texture.
E. Loose aggregate to be swept 24 to 48 hours after application.

Traffic Control: The contractor shall proceed in such manner as to interfere with traffic as little as possible. The Contractor shall provide flagmen to direct traffic on streets where travel will be restricted.

Insurance: No Contractor shall commence work under this contract until he has obtained all insurance required under this paragraph.

Worker's Compensation and Employer's Liability
- **A.** $100,000 each accident
- **B.** $500,000 Disease-Policy limit
- **C.** $100,000 Disease-each employee

General Liability
- **A.** $2,000,000 General Aggregate
- **B.** $2,000,000 Products
- **C.** $1,000,000 Personal and Advertising
- **D.** $1,000,000 Each Occurrence

Automobile Liability
- A. $1,000,000 Combined Single Limit

Excess Liability
- **A.** $4,000,000 Umbrella Form

Method of Payment: Payment for Construct Chip Seal Surface will be made per accepted square yard in place. The bid price for Constructing Chip Seal Surface shall include all costs associated with furnishing, preparing, hauling, mixing, and applying all materials.

- 6313 80

GSB-88 EMULSIFIED SEALER/BINDER

SPECIFICATION

Product Description:
GSB-88® Emulsified Sealer/Binder is a chemically engineered asphalt pavement sealer/binder comprised of a cationic emulsion of Gilsonite Ore, and specially selected plasticizers. This chemical colloid stabilized emulsion has been specifically formulated for sealing asphalt parking lots, city streets, county roads, airport taxiways, and airport parking aprons. GSB-88® provides a durable, yet flexible top coat, while special plasticizers and oils penetrate and rejuvenate asphalt pavements. The result is an emulsified sealer/binder that restores vital components to asphalt pavements lost during the aging and oxidation process. The gilsonite seal provides a long wearing anti-oxidative seal for the surface of the asphalt pavement. GSB-88® beautifies asphalt pavements by drying to an absolute black color.

Specifications:
GSB-88® is available in either a concentrate or ready to use form. The concentrate form allows large shipments via tank truck or railroad tank car. The concentrate form must be diluted with water prior to application.

Specifications for GSB-88® Concentrate are as follows:

Saybolt Viscosity at 77°F (25°C) ASTM D-244. . . . . . . 20 to 100 seconds

Residue by Distillation, or Evaporation. 57% min.

Sieve test ASTM D-244 (two tenths of one %) 0.2%

5 day Settlement test ASTM D-244. . . . . 5.0% max.

Particle charge (1) ASTM D-244 . . . . Positive

Specifications for GSB-88® Ready-to-Apply:

Saybolt Viscosity at 77°F (25°C) ASTM D-244 . . . . 10 to 50 sec.

Residue by Distillation, or Evaporation. . . . . 28% to 42%

Pumping Stability test (2). . . . . Pass

Tests on Residue from Distillation, or Evaporation:

Viscosity astm 275°F (135°C) ASTM D-4402 . . . . 1750 cps max.

Solubility in 1,1,1 trichloroethylene ASTM D-2042 . . . . 97.5% min.

Penetration ASTM D-5 . . . . 50 dmm max.

Asphaltenes ASTM D-2007. . . . . 15% min.

Saturates ASTM D-2007. . . . . 15% max.

Polar Compounds ASTM D-2007 . . . . 25% min.

Aromatics ASTM D-2007 . . . . 15% min.

- (1) pH may be used in lieu of the particle charge test which is sometimes inconclusive in slow setting, bituminous emulsions.
- (2) Pumping stability is tested by pumping 1 pint, (475 ml) of GSB-88® diluted 1 part concentrate to 1 part water, at 77°F (25°C), through a 1/4inch gear pump operating 1750 rpm for 10 minutes with no significant separation or coagulation.

Storage and Handling Instructions
GSB-88® may be stored and handled like any standard asphalt emulsion. Vertical storage tanks are recommended. The storage tank should be equipped with a slow revolution mechanical agitator. Hot water heating coils, or electrical coils, or electrical heaters are required in colder climates to prevent the emulsion from freezing. Positive displacement gear pumps should be used to transfer and apply GSB-88® materials. Storage and handling temperature are 50°F (10°C) to 160°F (71° C). GSB-88® should be protected from freezing, or whenever outside temperature drops below 40°F (4°C) for prolonged time periods.

Application Instructions

Equipment:
GSB-88® may be applied with standard bituminous distributors. The equipment must be in good working order, and contain no contaminants or diluents in the tank. Spreader bar tips must be clean, free of burrs, and adjusted for regulated flow. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process. The equipment should be tested under pressure for leaks and to insure it is in working order before use. No special mixing equipment is necessary since GSB-88® concentrate may be diluted in the spreader tank.

Mini-Distributor:
In areas where a standard Distributor can not fit or can cause problems to asphalt due to weight a Mini-Distributor will be required. The Mini-Distributor must be in good working order, and contain no contaminants or diluents in the tank. Spreader bar tips must be at least 6' in length, clean, free of burrs, and adjusted for regulated flow. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process. The equipment should be tested under pressure for leaks and to insure it is in working order before use. This Equipment must also feature a way to keep GSB-88® up to recommended temperature for application and feature a hand spraying unit that can be shut off and turned on by hand to properly spray all radius and hard to get areas. This piece of equipment must also be able to apply sand at the correct application rate for Project.

Dilution Equipment:
When diluting GSB-88® on site, Make sure you have proper storage tanks to keep GSB-88 heated. A tank or water source will also be required so hot water can be mixed on top of the GSB-88 Concentrate in your standard bituminous distributor.

Dilution:
GSB-88® Concentrate must be diluted with heated water prior to application to asphalt pavements. Always add water to the concentrate emulsion; never add concentrate emulsion to the water. Two dilution rates are recommended as follows:

- 2 parts GSB-88® to 1 part water for use on hills where run off may be of concern, or on very rough surface textured pavements.
- 1 part GSB-88® to 1 part water for most applications is recommended.

Use dilution rate stated in Job description for this Project.

Rate of Spread:
Rate of spread is normally determined by the texture, porosity, and age of the asphalt pavement to be sealed. Application rate can vary from 0.08 to 0.15 gallons per square yard.

- For 2:1 dilution 0.08 to 0.12 gallons per square yard is recommended.
- For 1: 1 dilution 0.10 to 0.15 gallons per square yard is recommended.

Exceeding recommended application rates is not recommended without consulting with a responsible manufacturer's representative. Application rates will be stated in job description for this project.

Cure Time:
Under normal conditions, cure time for GSB-88® is 2 to 8 hours. Sheltered or shady areas may require longer cure times.

Application Precautions:
GSB-88® should not be applied to wet or damp pavement surfaces. Do not apply during rainy or damp weather, or when rain is anticipated within 8 hours after application is completed. Pavement surface temperatures should be 65°F (18°C) and rising before application of GSB-88® is initiated. At least three hours of daylight should remain after completion of the application. Material temperature will be applied at 130°F or above, but not to exceed 160°F during application. GSB-88® should not be applied on extremely windy days. Consult the Material Safety Data Sheet for GSB-88® fire and explosion data, health hazard data, first aid procedures, reactivity data, spill or leak procedures, waste disposal and use of personal protective equipment. Additional copies of the Material Safety Data Sheet can be obtained by calling ASI, toll free, at 1-800-972-2757.

Preparation of Pavement Surfaces:
Repair and patch all major pavement defects. All cracks, other than hairline cracks, should be filled with a suitable bituminous crack-filler. Scrape all oil spots to remove excess oil and dirt. Just before applying GSB-88® clean the asphalt surface of all loose dust, dirt, and other debris.

Addition of other materials:
GSB-88® has been chemically engineered to provide a premium asphalt sealer without the requirement of other materials or additives. Asphalt Systems, Inc., assumes no responsibility for problems resulting from mixing additives or other materials with GSB-88®.

Latex Addition:
Various synthetic and rubber latex additives may be used with GSB-88® at varying quantities. If this addition is specified in project material description than make sure all additives are added by a professional at one of ASI's plants.

Sanding:
Sanding should be done at the same time GSB-88® is applied. Hard, highly fractured Blackjack or Black Diamond Sand should be used. Because there are regional differences in sand characteristics, a knowledgeable local pavement maintenance representative should be consulted to insure that the appropriate amount and type of sand is chosen to regain any lost skid resistance. Sanding is applied at approximately 0.20 to 0.50 pounds of sand per square yard (typical application) or more if necessary during the spreading process.

Clean up:
GSB-88® that has not dried may be cleaned up with water. Dried GSB-88® may be removed with degreasing solvents.

MICRO SURFACING SPECIFICATIONS

DESCRIPTION OF WORK

Transverse Leveling:
If required on project, Slurry Leveling may be applied in areas where recessed joints (dips) in a road caused by deterioration underneath the pavement surface occur. Slurry Leveling is applied to improve a road's ride and seals large cracks in the surface of the pavement. Contractor must furnish all labor, equipment, material, supplies, signage, traffic control, and other incidentals necessary to provide Transverse Leveling. Material for Transverse Leveling shall consist of a TYPE II mixture, containing CSS-1hlm emulsion, mineral aggregate, water, and specified additives, proportioned, mixed and uniformly spread over a properly prepared asphalt surface.

Micro Surfacing Scratch Course:
If required on project, Scratch Course may be used to pre-level uneven areas, fill minor ruts, and fill minor cracking. Contractor must furnish all labor, equipment, material, supplies, signage, traffic control, and other incidentals necessary to provide Micro Surfacing Scratch Course. Scratch Course shall consist of a TYPE II mixture containing CSS-1hlm emulsion, mineral aggregate, water, and specified additives, proportioned, mixed and uniformly applied over a properly prepared asphalt surface. The completed Scratch Course shall adhere firmly to the prepared surface, and have a skid-resistant surface texture.

Micro Surfacing Finish Course:
Contractor must furnish all labor, equipment, material, supplies, signage, traffic control, and other incidentals necessary to provide Micro Surfacing. Micro Surfacing shall consist of an ISSA TYPE II mixture containing a mixture of polymer-modified emulsified asphalt, mineral aggregate, water, and specified additives, proportioned, mixed and uniformly applied ***at a rate of 18 to 22 LBS/SY*** spread over a properly prepared asphalt surface. The completed Micro Surfacing shall leave a homogeneous mat, adhere firmly to the prepared surface, and have a skid-resistant surface texture throughout its service life.

MATERIALS

Emulsified Asphalt Material:
The emulsion for Micro Surfacing shall be polymer modified emulsion (Css-1hLM). The polymer material shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process. In general, the modified emulsion shall contain a minimum of 3% polymer, SBR latex, or natural latex by weight. The emulsified asphalt, and emulsified asphalt residue, shall meet the requirements of AASHTO M 208 or ASTM D 2397 for CSS-1h, with the following exceptions:

TEST	TEST METHOD AASHTO	TEST METHOD ASTM	SPECIFICATION
Settlement and storage stability of Emulsified Asphalts, 24-h	T 59	D 6930	1% Maximum
Distillation of Emulsified Asphalt[1]	T 59	D 6997	62% Minimum

Test on Emulsified Asphalt Residue

Softening Point of Bitumen (Ring-and-Ball Apparatus)	T 53	D 36	135°F (57°C) Minimum
Penetration of Bituminous Materials at 77°F (25°C)	T 49	D 5	40-90[2]

[1]The temperature for this should be held at 350°F (177°C) for 20 minutes.
[2]The climatic conditions should be considered when establishing this range.

*Each Load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to indicate that the emulsion meets specification.

AGGREGATE:
The aggregate mix shall consist primarily of crushed granite, quartzite, trap rock, or steel slag. Limestone may be utilized as a portion of the blend in order to control aggregate reactivity. Coal slag shall not be utilized as an aggregate. All aggregate must be clean and free from organic matter, other deleterious substances.

Gradation Table – Aggregate (percent passing)
Table: Plus or Minus 5%

3/8"	No.4	No.8	No. 16	No. 30	No. 50	No. 100	No. 200
100	90-100	65-90	45-70	30-50	18-30	10-21	5-15

Resistance to Degradation	(ASTM C131grading D)	20% maximum loss
Soundness of Aggregate	(ASTM C88)	15% maximum loss
Sand Equivalent Value	(ASTM D2419A)	55 minimum
LA Abrasion	(AASHTO T96)	20% maximum loss

Mineral Filler:
Hydrated lime, cement, or other approved filler meeting the requirements of ASTM D242 shall be used if required by the mix design. They shall be considered as part of the dry aggregate.

Water:
All water used shall originate from a potable source and be free of dissolved materials which may affect the mix characteristics or finished characteristics of the product..

Additives
Additives may be used to accelerate or retard the break-set of the Micro Surfacing or to improve the resulting finished surface.

Micro Surfacing Mix Design Specifications:
Before work begins, the Contractor shall submit a mix design covering the specific materials to be used on the project. This design must be performed by a certified laboratory with experience in designing micro mix designs. After the mix design has been approved, no material substitution will be permitted unless approved. (ISSA can provide a list of laboratories experienced in micro surfacing design.)

*The Micro Surfacing mixture shall meet the following specifications:

TEST	ISSA TEST NO.	SPECIFICATION
Mix Time @ 77°F (25°C)	TB 113	Controllable to 120 seconds Minimum.
Wet Cohesion @ 30 Minutes Minimum (Set) @ 60 Min. Minimum(Traffic)	TB 139	12 kg-cm Minimum 20 kg-cm or Near Spin Minimum
Wet Stripping	TB 114	Pass (90% Minimum)
Wet-Track Abrasion Loss One-hour Soak Six-day Soak	TB 100	50 g/ft² (538 g/m²) Maximum 75 g/ft² (807 g/m²) Maximum
Lateral Displacement Specific Gravity after 1,000 Cycles of 125 lb. (56.71 kg)	TB 147	5% Maximum 2.10 Maximum
Excess Asphalt by LWT Sand Adhesion	TB 109	50 g/ft² (538 g/m²) Maximum
Classification Compatibility	TB 144	11 Grade Points Minimum (AAA, BAA)

Composition of mixture:
The owner shall approve the design mix and all Micro Surfacing materials and methods prior to use and shall designate the proportions to be used within the following limits:

Residual Asphalt:	**5.5% to 12% by dry weight of aggregate**
Mineral Filler:	**0% to 3% by dry weight of aggregate**
Polymer Based Modifier:	**Shall be a minimum of 3% solids content**
Water (Potable):	**As required to provide proper consistency**

Equipment:
The material shall be mixed by a continuous run or continuous flow machine. If a Continuous flow machine is being used then you must have 3 machines at minimum to keep production up and joints workable. These machines need to be able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, and water to a revolving multi-blade pug mill and discharge the mix on a continuous flow basis. The machine shall have at least a 10 ton storage capacity for aggregate, emulsified asphalt, mineral filler, and water to maintain an adequate supply to the proportioning controls. Each material control device shall feature sensors to monitor the calibrated rate of material flow. If Material flow changes from calibrated rates then the sensors must be able to detect the error and give warning to the operator. Aggregate fed to

the mixer shall also be equipped with a revolution sensor. All sensors should keep track of aggregate, emulsion asphalt, mineral filler, and water amounts on the fly for the operator to view by monitor or by similar device. The mixing machine must also be equipped with a water pressure system and nozzle type spray bar to provide a water spray immediately ahead and outside of the spreader box.

Spreading Equipment:
The mixture shall be agitated and spread uniformly in the surfacing box by means of twin shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved and a free flow of material is provided to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry.

Calibration:
Each mixing unit to be used in the performance of the work shall be calibrated prior to the start of the project. Material calibration settings need to be set based on mix design for project. The documentation for each units calibration shall include an individual calibration of each material at various settings that can be related to the machine sensor devices. Any component replacement affecting material proportioning requires that the machine be recalibrated. No machine will be allowed to work on the project until the calibration has been completed and/or accepted. ISSA Inspector's Manual describes a method of machine calibration. ISSA contractors and/or machine manufacturers may also provide methods of machine calibration.

Lines:
Care shall be taken to insure straight lines along curbs and shoulders.

Handwork:
Hand squeegees may be used to spread Micro Surfacing in areas not accessible to the Micro Surfacing spreader box.

Curing:
Areas receiving Micro Surfacing will be allowed to cure from one to three hours or until the treated pavement will not be damaged by traffic. The Contractor will protect the area with suitable barricades or markers for the full curing period.

Surface Preparation:
Immediately prior to applying the Micro Surfacing, the surface shall be cleared of all loose material, oil spots, vegetation and other objectionable material. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before Micro Surfacing. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the Micro Surfacing by a suitable method. The Project Manager shall approve the surface preparation prior to surfacing.

Weather Limitations:
Micro surfacing shall not be applied if either the pavement or air temperature is below 50°F (10°C) and falling, but may be applied when both pavement and air temperatures are above 45°F (7°C) and rising. No Micro Surfacing shall be applied when there is the possibility of freezing temperatures at the project location within 24 hours after application. The Micro Surfacing shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time.

Notification:
All homeowners and businesses affected by the paving shall be notified 24 hours in advance of the surfacing. Suitable tow-away signs may be posted prior to the surfacing. Should work not occur on the specified day, a new notification will be distributed. The notification shall be in a form of written posting, stating the time and date that the surfacing will take place.

Traffic Control:
Suitable methods shall be used by the contractor to protect the Micro-Surfacing from damage from all types of vehicular traffic. Opening to traffic does not constitute acceptance of the work. The Project Manager shall be notified of the methods to be used. In areas that are subject to an increased rate of sharp-turning vehicles, additional time may be required for a more complete cure of the Micro Surfacing mat to prevent damage. Slight tire marks may be evident in these areas after opening but will diminish over time with rolling traffic. If these areas are not severely rutted, they should be considered as normal characteristics of a Micro Surfacing.

Clean Up:
All areas, such as man-ways, gutters and intersections, shall have the Micro Surfacing removed as specified by the Project Manager. The Contractor shall remove any debris associated with the performance of the work on a daily basis.

PAYMENT
The Micro Surfacing shall be measured and paid for by the square yards on the work completed and accepted by the buyer. The price shall be full compensation for furnishing all materials; for preparation, mixing and applying these materials; and for all labor, equipment, tools, test design, cleanup and incidentals necessary to complete and warrant the job as specified herein.

Example Line Items: (DEPENDING ON PROJECT):

- **MOBILIZATION:__________________.**
- **TRAFFIC CONTROL:________________.**
- **LINEAL FOOT AMOUNT OF TRANSVERSE LEVELING:__________________.**
- **PRICE PER LINEAL FOOT OF TRANSVERSE LEVING:__________________.**
- **SQUARE YARD AMOUNT OF TACK COAT:__________________.**
- **PRICE PER SQUARE YARD OF TACK COAT:__________________.**
- **SQUARE YARD AMOUNT OF SCRATCH COURSE:__________________.**
- **PRICE PER SQUARE YARD OF SCRATCH COURSE:__________________.**
- **SQUARE YARD AMOUNT OF FINAL COURSE:__________________.**
- **PRICE PER SQUARE YARD OF FINAL COURSE:__________________.**

- spray patch -

SPECIFICATION

SPRAY INJECTION PATCHING

SCOPE OF WORK: This work shall consist of furnishing all materials, equipment and labor necessary for the application of spray injector patching.

DESCRIPTION: The work shall consist of repairing pavement distressed areas. (potholes-low pavements-cracks)

MATERIALS: **A.** Oil shall be CRS-2 Asphalt Emulsion
B. Aggregate shall be 3/16" 100% Fractured Granite

EQUIPMENT: The spray injection equipment must be a self-contained unit with a minimum 300-gallon heated emulsion tank. The aggregate hopper will be truck mounted and the capacity should be a minimum of 5 cubic yards. The unit must be adjustable to calibrate to the emulsion applied. The oil shall be pumped to the injector nozzle by compressed air and mixed in an injector ring that coats 100% of the aggregate before it leaves the spray nozzle.

CONSTRUCTION METHOD:

A. Clean area, using air from the injection blower.

B. Spray a layer of emulsion as a tack coat on the sides and bottom of the distressed area.

C. Spray a combination of emulsion and aggregate into the area until filled.

D. Cover the patched area with aggregate only.

E. Open the repair as soon as the crew and equipment are out of the way.

INSURANCE:

No contractor shall commence work under this contract until he has obtained all insurance required under this paragraph.

Worker's Compensation and Employers' Liability
A. $100,000 each accident
B. $500,000 Disease-Policy limit
C. $100,000 Disease-each employee

General Liability
A. $2,000,000 General Aggregate
B. $2,000,000 Products
C. $1,000,000 Personal and Advertising
D. $1,000,000 Each Occurrence

Automobile Liability (Any Auto)
A. $1,000,000 Combined Single Limit

Excess Liability
A. $4,000,000 Umbrella Form

METHOD OF PAYMENT:

A. Labor and Equipment:	Price per Hour
B. CRS-2 Emulsion:	Price per Gallon
C. 3/16" Fractured Aggregate:	Price per Ton

REFERENCES: Contractor must have 3 references where work was performed over 2 winters.

Word/carol/spec/Spray Injection Patching

Specifications

Joint and Crack Sealant

Scope of Work

This work shall consist of furnishing all materials, equipment and labor necessary for the application of the Hot Pour Rubberized Joint Sealant as directed.

Description

The work shall consist of routing, cleaning, and sealing of random cracks and existing transverse and longitudinal joints.

Material

A. The material used must be a premium quality Rubber Asphalt joint Sealer. The sealer must **exceed the minimum ASTM D 6690 specification** for Hot Pour Rubber Asphalt Joint Sealants and contain a minimum of 38% rubber content.

B. The Sealant shall be in manufacturer's original sealed containers. Each container shall have the manufacturer's name, batch number, and manufacturer's recommendation for melting and application.

Equipment

A. A minimum of two dustless routers will be required, the routers must be a minimum of 24 H.P. using star wheel carbide tipped router blades attached to a main cutting head. It must have in-line wheels and cutting head capable of following random cracks. It must have an automatic depth control to insure consistent and accurate routing depths.

B. Two (2) air compressors will be required. They must be of sufficient size to maintain air pressure of 120 PSI and provide moisture and oil free compressed air. One (1) compressor shall be used with an air wand to blow out the crack and clean off the road. The second shall be used with the heat lance. Note that one compressor is not of sufficient size to run both air wand and heat lance at the same time.

C. The kettle used for heating the sealant must be an oil jacketed double boiler type melting unit, which is, equipped with both agitation and recirculation systems. It must have separate temperature thermometers for both the oil bath and melting vat to insure proper temperature for the sealant. It must be equipped with a pump to pressure fill cracks with a wand applicator.

Construction Method

All cracks and joints must be routed to a minimum of a ¾" x ¾" width versus depth. Cracks shall be blown out with 120 PSI compressed air. Immediately following routing, the contractor shall vacuum sweep up any debris on the roadway. Using air compressors to consolidate the debris is not allowed.

Using the second compressor the cracks shall be blown out using a heat lance. All cracks shall be pressure filled by a wand applicator from the bottom up. They shall be slightly over-filled and squeeged to create an overband 1" wide on each side of the routed reservoir. The cracks will then be protected with single ply toilet paper or detach to prevent any material from tracking.

Debris Removal

Debris from the routing, sawing, crack preparation, and crack filling work shall be removed from the pavement surface by brooming, blowing with compressed air, or other methods satisfactory to the city representative. The work area shall be left in a broom clean condition at the end of the day.

Traffic Control

This project shall be kept open to traffic at all times. The contractor shall conduct his operations in a manner that will cause the least interference to traffic movements. The minimum number of vehicles of the contractor, his suppliers and his employees necessary for the prosection of the work shall be permitted to park at the various work sites for the minimum time necessary for the performance of the work.

During nighttime hours, no equipment shall be parked or stored with twelve (12) feet of the near edge of the shoulder of the traveled roadway unless approved by the local municipality. Equipment not being used during the actual performance of the work shall not be parked or stored within the right of way unless otherwise approved by the local municipality.

Insurance

No contractor shall commence work under this contract until he has obtained all insurance required under this paragraph.

Worker's Compensation and Employers' Liability

- **A.** $100,000 each accident
- **B.** $500,000 Disease-Policy limit
- **C.** $100,000 Disease-each employee

General Liability

- **A.** $2,000,000 General aggregate
- **B.** $2,000,000 Products

C. $1,000,000 Personal and Advertising
D. $1,000,000 Each Occurrence

Automobile Liability (Any Auto)
A. $1,000,000 Combined Single Limit

Excess Liability
A. $4,000,000 Umbrella Form

Method of Payment

Payment for crack sealing will be made by per pound. The price shall be full compensation for furnishing all materials. For all preparation, delivering and placing of these materials, and for all labor, equipment, tools and incidentals necessary to complete the work per specifications.

Qualification or Contractor

Contractor shall have been routing, cleaning, and sealing cracks per specification for a minimum of five (5) years. Contractor must be bonded and insured per owner's specifications.

Performance Qualifications

Contractor must have a minimum of five years experience in township cracksealing. Work must be within 25 miles for inspection and performance qualification.

Pre-Qualifications

All bidders must submit a list of five (5) previously completed crack sealing projects.
All bidders must submit a list of equipment and operators to be used on project.
All bidders must submit technical data stating why their material exceeds Federal Specification ASTM D3405.

Reference Projects Must Meet the Following Criteria

A. Each project must have been in place for a minimum of three (3) winters.
B. All cracks on sample project must have been routed prior to sealing, with polymeric sealant.
C. Only projects completed on asphalt pavement involving public roads or streets and amounting to at least one-half (1/2) mile each will qualify. Parking lots will not qualify.
D. Reference projects must be within 25 miles radius of the Township.

- Crack Fill -

Specifications

Joint and Crack Sealant

Scope of Work

This work shall consist of furnishing all materials, equipment and labor necessary for the application of the Hot Pour Rubberized Joint Sealant as directed.

Description

The work shall consist of routing, cleaning, and sealing of random cracks and existing transverse and longitudinal joints.

Material

A. The material used must be a premium quality Rubber Asphalt joint Sealer. The sealer must **exceed the minimum ASTM D 6690 specification** for Hot Pour Rubber Asphalt Joint Sealants and contain a minimum of 38% rubber content.

B. The Sealant shall be in manufacturer's original sealed containers. Each container shall have the manufacturer's name, batch number, and manufacturer's recommendation for melting and application.

Equipment

A. A minimum of two dustless routers will be required, the routers must be a minimum of 24 H.P. using star wheel carbide tipped router blades attached to a main cutting head. It must have in-line wheels and cutting head capable of following random cracks. It must have an automatic depth control to insure consistent and accurate routing depths.

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Construction Method

All cracks and joints must be routed to a minimum of a ¾" x ¾" width versus depth. Cracks shall be blown out with 120 PSI compressed air. Immediately following routing, the contractor shall vacuum sweep up any debris on the roadway. Using air compressors to consolidate the debris is not allowed.

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Traffic Control

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Insurance

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Worker's Compensation and Employers' Liability

- **A.** $100,000 each accident
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- **C.** $100,000 Disease-each employee

General Liability

- **A.** $2,000,000 General aggregate
- **B.** $2,000,000 Products

C. $1,000,000 Personal and Advertising
D. $1,000,000 Each Occurrence

Automobile Liability (Any Auto)
A. $1,000,000 Combined Single Limit

Excess Liability
A. $4,000,000 Umbrella Form

Method of Payment

Payment for crack sealing will be made by per pound. The price shall be full compensation for furnishing all materials. For all preparation, delivering and placing of these materials, and for all labor, equipment, tools and incidentals necessary to complete the work per specifications.

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