

City of Torrington

ENGINEERING DEPARTMENT
(860) 489-2234



140 Main Street • City Hall
Torrington, CT 06790-5245
Fax: (860) 489-2550

ADDENDUM No. 1

DATE ISSUED: August 17, 2023

RE: SURFACE TREATMENTS FOR VARIOUS ROADS

BID #STV-027-082323

All bidders are hereby advised of the following amendments to the Contract Bid Documents, which are hereby made an integral part of the specifications for the subject project, prepared by The City of Torrington, to the same extent as all other documents. All work shall conform to the standards and provisions of same.

Bids submitted shall be deemed to include the Contract Document information as shown in Addendum No. 1. General bidders shall notify sub-bidders that may be affected by this addendum as applicable. Bidders shall be required to acknowledge receipt of this Addendum in the space provided on the Bid Proposal Section 3 (E). Failure to acknowledge this Addendum by the Bidder may result in the rejection of their bid. Bidders are directed to review changes to all portions of the work as changes to one portion may affect the work of another.

- 1. REPLACE SECTION 4 – CONTRACT BID PRICE OF PART C SECTION II - BID PROPOSAL WITH THE ATTACHED REVISED SECTION 4 – CONTRACT BID PRICE OF PART C SECTION II - BID PROPOSAL AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023**
- 2. REPLACE SECTION 1.04 – SCOPE OF WORK OF PART E – SPECIAL PROVISIONS (1 PAGE) WITH THE ATTACHED REVISED SECTION 1.04 – SCOPE OF WORK OF PART E – SPECIAL PROVISIONS (4 PAGES) AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.**

- 3. REPLACE SPECIAL PROVISION *CHIP AND FOG SEAL* (7 PAGES) WITH THE ATTACHED REVISED SPECIAL PROVISION *CHIP AND FOG SEAL* (7 PAGES) AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.**
- 4. REPLACE SPECIAL PROVISION ITEM NO. 0939001A *STREET POWER SWEEPING* (1 PAGE) WITH THE ATTACHED REVISED SPECIAL PROVISION ITEM NO. 0939001A *STREET POWER SWEEPING* (1 PAGE) AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.**
- 5. REPLACE *SECTION 1.05 METHOD OF MEASUREMENT AND BASIS OF PAYMENT OF THE SPECIAL PROVISION ITEM 0406901A MICRO-SURFACING (Highly Polymer Modified Asphalt Type II)* WITH THE ATTACHED REVISED *SECTION 1.05 METHOD OF MEASUREMENT AND BASIS OF PAYMENT OF THE SPECIAL PROVISION ITEM 0406901A MICRO-SURFACING (Highly Polymer Modified Asphalt Type II)* AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.**
- 6. REPLACE SECTION 6 - METHOD OF MEASUREMENT OF THE SPECIAL PROVISION ITEM #0406194A - CRACK SEALING OF BITUMINOUS CONCRETE PAVEMENT – PCRM WITH FIBERS WITH THE ATTACHED REVISED SECTION 6 - METHOD OF MEASUREMENT OF THE SPECIAL PROVISION ITEM #0406194A - CRACK SEALING OF BITUMINOUS CONCRETE PAVEMENT – PCRM WITH FIBERS AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.**
- 7. QUESTIONS RECEIVED BY EMAIL TUESDAY, AUGUST 15, 2023 9:51 AM**
 - Q1. How many square yards are going to be done each year? This is necessary for bidding and bonding.**
 - A1. REFER TO REVISED SECTION 4 – CONTRACT BID PRICE OF PART C SECTION II - BID PROPOSAL AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023**
 - Q2. Can we use our Insurance Company’s payment and performance bond forms? Forms specific to Torrington were not included.**
 - A2. REFER TO SECTION “BONDS AND INSURANCE” OF PART B- INFORMATION FOR BIDDERS**
 - Q3. Can the bonding be done each year so it can correspond to that specific year’s program?**
 - A3. PAYMENT AND PERFORMANCE BONDS WILL BE REQUIRED FOR EACH YEAR OF THE CONTRACT AND SHALL BE BASED ON THE YEARLY TOTAL VALUE OF WORK.**
 - Q4. Can a list of roads being treated be included? The bid calls for possible thermoplastic striping protection, removal of thermoplastic striping. It also calls for possible fog sealing over patches, establishment of traffic patterns and traffic control. These are all specific issues to each road. To bid with accuracy, it would help the contractor to be able to familiarize themselves with the specific roads being treated.**
 - A4. REFER TO ADDENDUM NO.1 DOCUMENTS**

Q5. Will certified flaggers be accepted or will we be required to hire Torrington police? They are different price points.

A5. ONLY THE ITEMS OF WORK LISTED IN THE BID FORMS ARE TO BE PROVIDED.

Q6. Is post chip seal sweeping included or separate? Page 97 says it is included and page 102 requests an hourly rate for this item.

A6. REFER TO ATTACHED REVISED SPECIAL PROVISION CHIP AND FOG SEAL (7 PAGES) AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.

Q7. Will the town be keeping the excess aggregate that will be swept or is it the responsibility of the Contractor to dispose of it?

A7. REFER TO ATTACHED REVISED SPECIAL PROVISION CHIP AND FOG SEAL (7 PAGES) AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.

Q8. Page 92, Part 1 General calls for Thermoplastic crosswalks to be protected and page 96 Part 3 – Construction methods calls for all thermoplastic striping and legends to be removed. Which method is to be used?

A8. REFER TO ATTACHED REVISED SPECIAL PROVISION CHIP AND FOG SEAL (7 PAGES) AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.

Q9. Is structure protection required for fog seal portion?

A9. REFER TO ATTACHED REVISED SPECIAL PROVISION CHIP AND FOG SEAL (7 PAGES) AS NOTED ADDENDUM NO.1 – ISSUED 8-17-2023.

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END OF ADDENDUM No. 1

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BID #STV-027-082323

PART C - BID PROPOSAL, FORMS, EXHIBITS and DOCUMENTS

II. BID PROPOSAL

4. CONTRACT BID PRICE

The BIDDER agrees to complete the Work in accordance with the Contract documents for the unit prices as shown in Exhibit 'A' (Bid Form schedule of unit prices).

This is a unit price contract. This contract bid price is determined from the bid item unit prices as shown in Exhibit 'A' (Bid Form schedule of unit prices) herein. The bidder understands that the Contract shall be awarded on the basis of the lowest unit prices for each section. The contract unit prices provided for each bid items and the actual quantities as supplied, installed, measured, verified and approved by the CITY will be used as the basis for payment during the construction of the project. **SEE EXHIBIT "A" FOR SECTIONS A, B AND C UNIT PRICES**

The City of Torrington has historically budgeted certain funding amounts per year for each type of surface treatments. These amounts including traffic control and asphalt price adjustment are listed below:

Crack Sealing ----- \$100,000 (approximate quantity of 7,500 GAL)

Chip and Fog Sealing - \$200,000 (approximate quantity of 65,000 square yards)

Micro Surfacing ----- \$300,000 (approximate quantity of 55,000 square yards)

BIDDERS shall base their unit bid prices on the above total amounts per year with one mobilization trip to Torrington. Should the City increase or decrease the total quantity of work per year, bid unit prices will be adjusted in accordance with Section 1.04 - Scope of Work.

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SECTION 1.04 - SCOPE OF WORK

1.04.01 - GENERAL

1.01 CONTRACT DOCUMENT

The general provisions of the CONTRACT, including General and Supplementary Conditions and General Requirements, apply to the work specified in this sub-section.

1.02 SPECIFICATION ARRANGEMENT

Titles to and arrangements of sections and paragraphs in these specifications are used merely for convenience and shall not be taken as a correct or complete segregation of the several categories of materials, equipment and labor, nor as an attempt to outline or define jurisdictional procedures.

1.03 INTENT

The entire work provided for in the Technical Specifications and on the Drawings shall be constructed and finished in every respect in a good, workmanlike and substantial manner. All parts necessary for the proper and complete execution of the Work whether the same may have been specifically mentioned or not, or indicated in a manner corresponding with the rest of the Work as if the same were particularly described and specially provided for herein. It is not intended that the Drawings shall show every detailed piece of material or equipment, but such parts and pieces as may be in accordance with the best practices and regulatory requirements, even though not shown, shall be furnished and installed. All materials and equipment shall be new unless specifically stated otherwise in these CONTRACT DOCUMENTS.

1.04 SCOPE

The work required by these specifications shall include furnishing all labor, skill, supervision, tools, construction plant, equipment and materials and performing all operations necessary for the properly completed CONTRACT work as shown on the specification drawings, as mentioned in these Specifications and as required, to the complete satisfaction of the CITY and their authorized representatives.

1.05 PROJECT DESCRIPTION

The work involves the construction of the following:

The project work is comprised of furnishing all equipment, labor, material, plant, and superintendence to perform all work necessary for the supply and installation of various types of surface treatments including Crack sealing, Chip seal, Fog seal and Micro-surfacing on various City streets.

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1.04.02—CHANGES IN QUANTITIES OF PAY ITEMS, INCLUDING ELIMINATION OF SUCH ITEMS:

The term “quantities” herein this section shall refer to the estimated quantities listed in revised Section 4 of the Bid Proposal as issued for Addendum 1 – 8-16-23.

The quantities given in the bid proposal or original Contract for Contract pay items are only estimates of the quantities of those items that may be required for Project completion. (The quantities for given pay items in the bid proposal or original Contract are referred to herein as the “estimated quantities” or “original quantities.”) A change in the original quantity of a Contract pay item (whether an increase or decrease of the quantity) shall be deemed to have occurred when the Engineer explicitly orders said change of quantity or when the change of quantity has been necessitated by a construction order or other written direction issued by the Engineer to the Contractor.

The provisions of 1.04.03 herein shall govern changes in compensation related to a “significant change” in Contract work (as such changes are defined in 1.04.03) necessitated by a written order of the Engineer.

The provisions of 1.04.04 herein shall govern changes in compensation related to any differing site condition encountered by the Contractor that affects its performance of Contract work. The provisions of 1.04.03 or 1.04.04 shall govern in any case in which they conflict with another provision of the Contract.

If the Engineer and the Contractor together determine that a particular change in compensation to the Contractor should be made due to a change in a Contract pay item quantity (including an item’s complete elimination), they may make that change in compensation by a written agreement to do so.

Changes in Quantities:

(a) Quantity Increases of More Than 25% over Original Quantity: If the actual quantity of work authorized and accepted by the Engineer under a Contract pay item exceeds the item’s original quantity by 25%, the City will pay for the quantity in excess of 125% of the original quantity in one of the following three ways. (One-time fixed costs for which the City has already reimbursed the Contractor in paying for 125% of the original quantity shall not be included in a calculation of the actual cost of the excess units.)

- (1) Pay for the aggregate excess units on a cost-plus basis as provided in 1.09.04.
- (2) Adjust the unit price by the increase or decrease in the unit price for the excess units, which shall be the difference between the original Contract unit price and the actual unit cost (calculated on a cost-plus basis as provided in 1.09.04) of the excess units, said difference to be calculated as of the time when work under the item was completed.
- (3) Pay for the units in any other manner agreed on in writing by the Engineer and the Contractor. If, however, the aggregate payment for the units in excess of 125% is less than \$25,000 (using the original Contract unit price for the calculation) the Engineer will not

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adjust that unit price.

(b) Quantity Decreases of More Than 25% below Original Quantity: If the actual quantity of a Contract pay item authorized and accepted by the Engineer is less than 75% of the item's original quantity, the Engineer will not adjust the original Contract unit price for said item unless the Contractor makes a written request to the Engineer for such adjustment and the Engineer grants it in writing. If the Engineer grants such a request, the Engineer will adjust the price for each accepted unit of said item performed or provided in one of the following three ways:

- (1) Pay for the total item units actually performed or provided in the aggregate units on a cost-plus basis as provided in 1.09.04.
- (2) Adjust the unit price by any increase in the unit price for the deficit units, which shall be the difference between the original Contract unit price and the actual unit cost (calculated on a cost-plus basis as provided in 1.09.04) of the total units performed or provided, said difference to be calculated as of the time when work under the item was completed.
- (3) Pay for the item units performed or provided in any manner agreed on in writing by the Engineer and the Contractor.

In no instance however, shall the unit price paid for the number of units performed or provided, when their quantity has been decreased by more than 25% of the original quantity, be less than their original unit price; and in no instance shall the aggregate payment for such a decreased quantity of items be more than the Engineer would have paid for the performance or provision of 75% of the original quantity at the original unit price.

1.04.03—Changes in Quantities and Significant Changes in the Character of Work:

- (i) The Engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the Project. Such changes in quantities and alterations shall not invalidate the Contract nor release the surety, and the Contractor agrees to perform the work as altered.
- (ii) If the alterations or changes in quantities significantly change the character of the work under the Contract, whether such alterations or changes are in themselves significant changes to the character of the work or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding anticipated profit, will be made to the Contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Engineer may determine to be fair and equitable.
- (iii) If the alterations or changes in quantities do not significantly change the character of the work to be performed under the Contract, the altered work will be paid for as provided elsewhere in the Contract.
- (iv) The term "significant change" shall be construed to apply only to the following circumstances:
 - (A) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or
 - (B) When an Item of work, as defined elsewhere in the Contract, is increased in excess of 125% or decreased below 75% of the original Contract quantity. Any allowance for an

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increase in quantity shall apply only to that portion in excess of 125% of original Contract item quantity, or in case of a decrease below 75%, to the actual amount of work performed.

1.04.04—Differing Site Conditions:

- (i) During the progress of the work, if subsurface or latent physical conditions are encountered at the Site differing materially from those indicated in the Contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract, are encountered at the Site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the Site is disturbed and before the affected work is performed.
- (ii) Upon written notification, the Engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding anticipated profits, will be made and the Contract modified in writing accordingly. The Engineer will notify the Contractor of the determination whether or not an adjustment of the Contract is warranted.
- (iii) No Contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.
- (iv) No Contract adjustment will be allowed under this clause for any effects caused on unchanged work.

END OF SECTION

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CHIP SEAL and FOG SEAL

ITEM NO. 0406134A CHIP SEAL (PASS CR & 1/4" STONE)

ITEM NO. 0406135A CHIP SEAL (PASS CR & 3/8" STONE)

ITEM NO. 0406704A EMULSIFIED ASPHALT FOG SEALING

ITEM NO. 0939001A STREET POWER SWEEPING

ITEM NO. 0406134A CHIP SEAL (PASS CR & 1/4" STONE)

ITEM NO. 0406135A CHIP SEAL (PASS CR & 3/8" STONE)

PART 1 – GENERAL

The work shall consist of, but not limited to, furnishing all labor, stone aggregate, materials, equipment and transportation for and the application of the Polymer Modified Asphalt Surface Sealer. This will include taking precautionary measures including but not limited to ~~protecting thermoplastic impressed crosswalks and~~ the cleaning of any spillages or overspray's.

Application of aggregate to conform with State of Connecticut Department of Transportation Standard Specifications and these Special Provisions unless otherwise specified herein.

The work shall be done in the following order: Protecting catch-basins, manhole covers, sewer covers or any other cover that may need to be accessed in the future. Preparing the pavement surface; applying the Polymer Modified Asphalt Surface Sealer and applying stone aggregate, rolling the aggregate; and sweeping up and disposing of excess aggregate off of the job site and cleaning of any overspray and aggregate.

~~Application of stone aggregate to conform with State of Connecticut Department of Transportation Standard Specifications and these Special Provisions unless otherwise specified herein. The work shall be done in the following order: Preparing the pavement surface; applying the Polymer Modified Asphalt Surface Sealer and applying aggregate, rolling the aggregate; and sweeping up and disposing of excess aggregate off of the job site.~~

PART 2 – MATERIALS

Polymer Asphalt Surface Sealer (PASS® CR)

The asphalt emulsion shall be a polymer modified rejuvenating Emulsion with a latex polymer, rejuvenating agent and asphalt and shall meet the following specifications. The polymer shall be PA-AS-1 a product of Polymer Science of America or equivalent.

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<u>Test on Emulsion</u>	Method	Specification
Viscosity @ 122°F (SFS)	ASTM D244	50 - 400
Residue, w%, minimum.	ASTM D244	65
pH	ASTM E70	2.0-5.0
Sieve, w%, max.	ASTM D244	0.1
Oil distillate, w%, max.	ASTM D244	0.5
Specific Gravity of residue of recovered latex min.	WE-EM – 100-2 ⁽⁵⁾	1.15
<u>Test on Residue</u> ⁽¹⁾		
Viscosity @ 140°F, (P), maximum.	ASTM D2171	5000
Penetration @ 39.2°Minimum.	ASTM D5	40
Elastic Recovery on residue by distillation, %, minimum.	AASHTO T59, T301 ^(1,2)	45
<u>Test on Latex:</u>		
Specific Gravity (minimum)	ASTM 1475	1.08
Tensile strength, die C dumbbell, psi, minimum	ASTM D412 ⁽³⁾	500
Swelling in rejuvenating agent, % maximum; 48 hours exposure @ 104°F	ASTM D471 ⁽⁴⁾ Modified	40% intact film
<u>Test on rejuvenating agent:</u>		
Flash point, COC , °F	ASTM D92	> 380
Hot Mix Recycling Agent Classification	ASTM D4552	See Section II

Section I. Product Specification:

PASS patent #5180428, patent #7357594, other patents pending

⁽¹⁾ Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350° F plus or minus 10° F. Maintain at this temperature for 20 minutes. Complete total distillation in 60 plus or minus 5 minutes from first application of heat.

⁽²⁾ Elastic Recovery @ 10° C (50° F): Hour glass sides, pull 20 cm, hold 5 minutes then cut, let sit 1 hour.

⁽³⁾ Tensile Strength Determination: Samples for testing for tensile strength in accordance with ASTM D412 shall be cut using a die dumbbell at a crosshead speed of 20 in/min.

⁽⁴⁾ Latex Testing: Suitable substrate for film formation shall be polyethylene boards, silicone rubber sheeting, glass, or any substrate which produces a cured film of uniform cross-section. Polymer film shall be prepared from latex as follows:

Resistance to Swelling: Polymer films shall be formed by using a 50 mil drawdown bar and drawing down 50 mils of the latex on polyethylene boards.

Films shall be cured for 14 days at 75°F and 50% humidity. Samples for resistance to swelling in rejuvenating agent shall be 1” by 2” rectangles cut from the cured film. Cut at least 3 specimens for each sample to be tested for swelling. Fill 3- 8 oz ointment tins with at least a ½” deep of rejuvenating agent.

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Swelling samples shall be weighed and then placed in the ointment tins on top of the rejuvenating agent. Then, add at least another ½” deep of rejuvenating agent over each of the latex samples. The ointment tins shall be covered and placed in an oven at 104°F for the specified 48 hours +/- 15 minutes. The ointment tins are allowed to cool to 75°F and then the latex films are removed from the tins. Unabsorbed rejuvenating agent is removed from the intact latex film by scraping with a rubber policeman and blotting with paper towels. If the latex film does not remain intact during removal from the tins or while removing the unabsorbed rejuvenating agent the sample shall be rejected. After the rejuvenating agent is removed from the samples they are then weighed. Percent swelling is reported as weight increase of the polymer film; report mass increase as a percent by weight of the original latex film mass upon exposure of films to the recycling agent.

⁽⁵⁾ See Exhibit B WE-EM – 100-2

Section II - Recycling Agent

The recycling agent shall meet the following specification:

Test	Specification
Viscosity, 140F, CST	50-175
Flash Point, F, COC	380 Min.
Saturate, % by wt.	30 Max
Asphaltenes	1.0 Max.
Test on Residue	
Weight Change, %	6.5 Max.
Viscosity Ratio	3 Max

Section III- Material Certifications and Testing

The emulsion manufacturer, through the contractor, shall submit to the agency certification that the emulsion meets the specification. The latex manufacturer, Polymer Science of America, through the contractor, shall submit to the agency test results from an accredited laboratory, certification that the latex is compatible in a cationic, meets the required specifications and that it is supplying the latex for this contract. The agency will not accept test results dated more than 90 days from the date of bid opening.

The refinery supplying the recycling agent, through emulsion supplier and the contractor, shall submit to the agency test results on the recycling agent and certification that the recycling agent meets the required specifications.

Polymer films required for testing must be prepared in accordance with this specification by a laboratory with an IAS ISO 17025 accreditation. The polymer films used for testing shall be derived from the same 1 quart sample received from the manufacture of the latex. The swell test,

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tensile test and specific gravity test shall be performed and certified by the same laboratory. The refinery manufacturing the recycling agent shall submit to the laboratory testing the latex a one quart sample of the recycling agent for use in the swell test.

Certifications and test results on the latex and the recycling agent shall be submitted and if the municipality deems necessary.

Certifications and test results on the emulsion must be submitted to the agency and approved by the agency 5 days prior to supplying material.

Prior to and during the project the agency may require one-quart samples of both the finished emulsion and the latex used in the emulsion. The agency will be allowed to withdraw samples from the supplier’s storage tanks and submit to the agency designated laboratory for testing. All testing shall be at the Agency’s expense.

Aggregate:

The Aggregate shall conform to the following requirements prior to placing on the roadway.

*** Aggregates – shown by Grading Type and % passing**

Grading		A	B	C
		<u>1/4 X #10</u>	<u>5/16 X #8</u>	<u>3/8 X #6</u>
1/2	(12.5 mm)	100	100	100
3/8	(9.5 mm)	100	100	90 - 100
#4	(4.75mm)	60 - 80	35 – 55	5 - 20
#8	(2.36mm)	0 - 15	0 -10	0 - 7
#16	(1.18mm)	0 - 5	0 – 5	0 - 5
#30	(600 um)	0 - 4	0 – 4	0 - 4
#200	(75 um)	0 - 3	0 – 3	0 - 3

** Grading Type shall be that specified in the Bid Schedule*

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PART 3 —CONSTRUCTION METHODS:

Prior to the Chip sealing operation the City will cut back or remove any vegetation within the limits of the chipseal areas by a method of the City's discretion.

~~Prior to the Chip Seal operation, the Contractor shall remove all existing thermoplastic striping, thermoplastic legends and raised pavement markers within the chip seal limits. When removing the raised pavement markers, the Contractor shall remove excessive adhesive left on pavement caused from the removal of raised pavement markers. Removal shall be done to the satisfaction of the Engineer.~~

Prior to the Chip Seal operation, all manhole covers, drain inlet covers, monument covers, and all other utility covers shall be protected from chip seal operations by applying a sheet of plastic, cut to fit, or placing a plastic bag over the exposed facilities or other methods approved by the Engineer. All traces of plastic, residual emulsion and chips shall be removed from all personnel covers, drain inlet covers, monument covers, and all other utility covers as quickly as possible, after the application of the chip seal and/or prior to final acceptance of the project.

Immediately prior to the chip sealing operations, the Contractor shall sweep the entire surface with vacuum assisted power brooms on city streets and kick brooms on county and state highways when approved by the Engineer. ~~Areas that have been patched may need to receive a fog seal at the discretion of the engineer.~~ Power Street Sweeping shall be performed in accordance with Item No. 0939001A Street Power Sweeping.

Contractor shall work with Municipality to schedule the work, dates on which individual streets or locations are to be closed to traffic for surfacing. The Contractor shall adhere diligently to work schedule in the prosecution of the work.

At least 48 hours prior to the beginning of chip seal operations, the Municipality shall post all streets that are to be worked upon with approved "No Parking – Tow Away" signs at one hundred (100) feet intervals. These signs shall also state the day of the week and hours of no parking. If the work is not completed on the day scheduled, the Municipality shall re-notify and re-post the affected streets as stated above.

Application

The application of Polymer Modified Asphalt Surface Sealer shall be applied when ambient temperature is above forty (40) degrees Fahrenheit and rising. The polymer modified asphaltic rejuvenating emulsion shall not be placed if the ambient temperature during the twenty-four-curing period (24) hours is expected to be below twenty-five (25) degrees Fahrenheit. The termination time of application shall be determined by the Engineer.

The areas to be chip sealed shall have the Polymer Modified Asphalt Surface Sealer applied with a distributor truck to the pavement surface at a rate of 0.20 to 0.50 gallons per square yard. For cul-de-sacs, turnout pockets, elbows and curve returns the use of the hand hose may be required. The actual emulsion sealer application rate required will be determined by the pavement surface condition and aggregate to be used.

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*Recommended application rate ranges for both aggregate and emulsion are shown in **Table 1** below. The actual application of the emulsion sealer shall be determined by the manufacturer's representative and / or the Engineer.*

The Polymer Modified Asphalt Surface Sealer temperature when applied shall be at a minimum of 110 degrees Fahrenheit.

The aggregate shall be spread evenly by a computerized mechanical chip spreader. Machine shall be manned by two trained contractor employees. Chip Spreader Needs to be capable of spreading aggregate in 1-foot increments. The Chip Spreader shall be able to spread up to 20 feet in a single pass.

The aggregates screenings rate of application and corresponding emulsion spread rates shall conform to the following as shown in Table 1 below.

Table 1

<u>Aggregate Application Rate</u>	<u>Emulsion Spread Rate</u>
For Grading A = 18 – 24 lbs / sy	.23 gals / sy - .26 gals / sy
For Grading B = 23– 27 lbs / sy	.26 gals / sy - .31 gals / sy
For Grading C = 25 – 31 lbs / sy	.29 gals / sy - .42 gals / sy

Stone should be trap rock and sieve analysis need to be provided. For example:

<u>Aggregate Size</u>	<u>Emulsion Spread Rate</u>
1/4 inch trap rock	0.23 - 0.35 gallons per square yard
3/8 inch trap rock	0.33 - 0.40 gallons per square yard

Compaction:

Compaction will be done by 2 self-propelled 25,000 lbs. pneumatic-tired roller. The pneumatic-tired roller shall always be in good working condition and actively rolling during the chip seal operation. The pneumatic-tired roller shall be operated in such a manner to prevent the dislodging of newly applied aggregate.

Power Sweeping:

Power sweeping shall be done before chip seal operation to remove road debris and after chip seal operation to remove excess loose aggregate in accordance with Item No. 0939001A Street Power Sweeping.

The Contractor shall wait a minimum of one day after the chip seal application before applying other surface treatments as specified.

Stockpile Sites and Construction Zone

The sites for stockpiling shall be clean and free of objectionable materials and shall be located outside the street right-of-way. Arrangements for these sites shall be the responsibility of the Contractor.

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Equipment

The following equipment to be used for the chip seal shall be as follows

- A. An asphalt distributor for application of the emulsion sealer shall have a full circulation spray bar that is adjustable to at least sixteen (16) feet wide in one (1) feet increments and capable of heating and circulating the emulsion simultaneously. It must have computerized rate control for adjusting and controlling the application from the cab that is adjusting by .01 gallons per square yard increments. The distributor shall also be equipped with a volume measuring device and a thermometer for measuring the emulsion temperature in the tank.
- B. A self-propelled aggregate spreader with front discharge that can evenly distribute aggregate.
- C. A minimum of two (2) pneumatic roller weighing at least five (5) tons each.

PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The furnished and applied chip sealing surface shall be measured by the square yard and shall be the actual number of square yards applied onto the road surface.

The calculation of area of the linear section of road in square yards shall be based on the linear center line length of the road from start to the end before the cul-de-sac widening, multiplied by the average width measured perpendicular to the centerline at 100 feet intervals.

The calculation of area of the cul-de-sac or wider turning area in square yards shall be based on the linear center line length from the start of the road widening to the end of the of the road multiplied by the average width measured perpendicular to the centerline at 10 feet intervals.

The total area for each road shall be the sum of the linear section area plus the cul-de-sac widening area.

The price per square yard shall be full compensation for full compensation for furnishing labor, materials, equipment, tools, water requirements, test designs, cleaning, and incidentals, pre-sweeping, post-sweeping, including cleaning of the surface, mixing and applying the emulsion sealer on the pavement necessary to complete the work in accordance with these specifications.

SURFACE TREATMENTS FOR VARIOUS ROADS

BID #STV-027-082323

ITEM NO. 0939001A STREET POWER SWEEPING

9.39.01—Description: This item shall consist of furnishing a pickup sweeper and accessory equipment and utilizing it for the removal of earth, leaves, dust and other debris materials from paved surfaces for the purpose of **cleaning the road surface in preparation for all various types of surface treatment application**. This debris material shall be disposed of off site by the contractor at a location arranged by the contractor at the contractor’s expense.

The item shall also consist of removing loose aggregate from the chip sealed surface after the chip seal process and transporting it to a location determined by the City within the City limits.

9.39.03—Construction Methods: The Contractor shall have available and maintain in an operable condition equipment capable of efficiently sweeping up earth and other materials from paved surfaces. This equipment shall include suitable provisions for the application of water ahead of the sweeping brooms to prevent dusting, for the pickup, internal storage and removal of sweepings, and for the cleaning of areas of heavy accumulation beyond the capacity of the sweeper. The sweeping operations shall be under the control of the Engineer at all times. Sweeping shall take place at locations and times directed by the Engineer. The disposal of all sweepings shall meet with the approval of the Engineer. Surface treatments shall not be applied until the road has been cleaned to the satisfaction of the Engineer and without approval from the Engineer.

9.39.04—Method of Measurement: Sweeping will be measured for payment by the number of hours of actual sweeping activity by the pickup sweeper or other mechanized equipment necessary for the removal of loose aggregate from the chip sealed surface after the chip seal process and transporting it to a location determined by the City within the City limits. Stand by time or travel time to and from the project area will not be measured for payment.

Sweeping of earth or dust producing materials from paved surfaces as directed by the Engineer or in the Contract as required prior to the chip sealing process will not be measured for payment and all the costs for this work shall be included in other contract bid items.

Only the hours as clearly shown on daily ticket slips showing an authorized signature by the Engineer or City Inspector or authorized representative will be accepted and considered for payment. All tickets shall be collected by the site inspector on a daily basis. Tickets submitted by the Contractor to the City at a later dates other than on the current work date, will NOT be accepted.

9.39.05—Basis of Payment: Sweeping will be paid for at the Contract unit price per hour for "Power Street Sweeping" which price shall include the furnishing of all equipment, water, tools, labor and work incidental thereto. This price shall also include the maintenance of the pickup sweeper for the life of the Contract.

<u>Pay Item</u>	<u>Pay Unit</u>
Street Power Sweeping	Hour

SURFACE TREATMENTS FOR VARIOUS ROADS

BID #STV-027-082323

PART E – SPECIAL PROVISIONS

0406901A MICRO-SURFACING (Highly Polymer Modified Asphalt Type II)

1.05 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The furnished and applied micro surfacing surface shall be measured by the square yard and shall be the actual number of square yards applied onto the road surface.

The calculation of area of the linear section of road in square yards shall be based on the linear center line length of the road from start to the end before the cul-de-sac widening, multiplied by the average width measured perpendicular to the centerline at 100 feet intervals.

The calculation of area of the cul-de-sac or wider turning area in square yards shall be based on the linear center line length from the start of the road widening to the end of the of the road multiplied by the average width measured perpendicular to the centerline at 10 feet intervals.

The total area for each road shall be the sum of the linear section area plus the cul-de-sac widening area.

The price per square yard shall be full compensation for furnishing, mixing and applying all materials, labor, equipment and tools, water requirements, test designs, cleaning, and incidentals necessary to complete the work in accordance with these specifications.

END OF SECTION

SURFACE TREATMENTS FOR VARIOUS ROADS

BID #STV-027-082323

PART E – SPECIAL PROVISIONS

CRACK SEALING

**ITEM #0406194A - CRACK SEALING OF BITUMINOUS CONCRETE PAVEMENT –
PCRM WITH FIBERS**

6. Method of Measurement: This work shall be measured by the number of GALLONS of crack seal placed by the Contractor and measured by the Engineer. The amount of crack seal placed shall be measured and accepted by the Engineer by volume of material with tickets showing the amount of product in gallons at the start of the day and the amount of product in gallons at the end of the day. The amount of crack seal measured for payment shall be the net amount placed each day as calculated by the difference of the starting and ending volumes for each day.

An itemized breakdown of gallons per street location shall also be shown on daily production report tickets and the sum of which shall correspond to the net amount.

END OF SECTION