

## SPECIFICATIONS FOR SAND SEAL

### 1.0 DEFINITIONS

The term Director [Superintendent, etc.] shall mean the Director of Public Works of the awarding authority.

The term Designee shall mean an employee of the awarding authority, designated by the Director.

The term Contractor shall mean a professional company contracted by the awarding authority to perform work under this agreement.

### 2.0 DESCRIPTION

Work under this contract shall consist of the Contractor furnishing and applying liquid asphalt and sand on properly prepared bituminous streets. Bid quantities are approximate only; payment shall be for actual quantities applied to streets. Streets to be sand sealed shall be selected by the Contractor and the Director or his/her Designee.

### 3.0 MATERIALS

#### 3.1 Liquid Asphalt:

Liquid asphalt grades shall be MC-800, MC-3000, HFMS-2S, or CMS-2S conforming to AASHTO specifications M82, M140, or M208.

#### 3.2 Sand:

Sand shall consist of fine granular material, composed of hard, durable particles, and shall be clean of organic matter. Sand shall meet the following gradation as tested by AASHTO T27.

Sieve Size	% Passing
3/8" (9.5 mm)	95 – 100
#4 (4.75 mm)	70 – 100
#8 (2.36 mm)	50 – 90
#50 (0.297 mm)	0 – 20
#200 (0.075 mm)	0 – 2*

### 4.0 MATERIAL QUANTITIES

The quantity of asphalt material to be used shall be in the range of 0.20 to 0.30 gallons per square yard. Cover aggregate shall be spread in the range of 12 to 25 pounds per square yard. The Contractor will use lab tests to design specific material quantities to meet existing field

conditions. Variations in material quantities will be made without adjustment to contract unit price.

## **5.0 EQUIPMENT**

The equipment used by the Contractor shall include, but not be limited to, one or more of the following:

### **5.1 Asphalt Distributor:**

The asphalt distributor shall contain suitable mechanical circulating and heating mechanisms to provide a uniform approved temperature of the entire mass of material. The distributor shall be equipped with a radar type sensor used to measure ground speed, and feed a Digital Volumetric Accumulator capable of measuring gallons applied and distance traveled. It shall be capable of applying asphalt material in accurately measured quantities at any rate between 0.1 to 2.0 gallons per square yard, of roadway surface, at any length of spray bar up to 16 feet. The distributor shall be capable of maintaining a uniform rate of distribution of asphalt material regardless of change in grade, width or direction of the road. It shall be equipped with an electronic control for setting asphalt pump discharge rate and on/off switching of spray for nozzles in one (1) foot, increments which shall be located in the truck cab. The spray nozzles and pressure system shall provide a sufficient and uniform fan-shaped spray of asphalt material throughout the entire length of the spray bar at all times while operating. The spray shall completely cover the roadway surface receiving the treatment.

### **5.2 Aggregate Spreader:**

The aggregate spreader shall be hydrostatically driven and self-propelled. It may be equipped with a hydraulically controlled variable adjustable head that is capable of spreading sand in widths from 4.5 to 18 feet. The spreader shall be mounted on pneumatic tires, and shall apply the sand on the road surface in a manner that ensures that the tires do not contact the road surface until after the sand has been applied. The unit shall be equipped with an electronic radar type sensor used to measure ground speed and will automatically adjust the sand application rate depending on width of application and the speed of chip spreader. It shall have the ability to apply sand on any grade from 0 - 6%. The spreader shall be equipped with an integral hopper with a minimum capacity of 5 tons, of sand which shall be filled by trucks in a manner which ensures that the truck tires never come in contact with the asphalt-treated road surfaces until the sand has been properly applied. To maintain constant sand application, a self-locking truck hitch will permit towing of aggregate trucks without stopping the chip spreader. It will be capable of maintaining positive engagement over irregular terrain. Live bottom, truck-mounted sanders shall be permitted as an alternative aggregate spreader.

### **5.3 Rollers:**

At least one (1) rubber tired roller shall be used on each treated surface immediately after the sand has been applied. Roller shall have a compacting width of not less than 5 feet. Each roller shall have a gross weight of not less than 7 tons.

5.4 Trucks (if an aggregate spreader is being used):

Rear discharge conveyor-fed trucks in sufficient number and size must be used to deliver sand to the spreader.

**6.0 CONSTRUCTION PROCEDURES**

6.1 Streets to be Treated:

The Contractor and the Director shall mutually determine the streets which shall receive sand seal treatment. Measurements of streets to be treated shall be made by the Contractor and the Director or his/her Designee, and the Contractor shall prepare a cost estimate for each street prior to beginning work.

6.2 Surface Preparation:

Surface preparation, which may include pothole patching, truing and leveling, adjusting of street irons (valve covers, manhole covers, drop inlet gratings), etc., will be the responsibility of the awarding authority and will be completed before the contractor moves onto the job.

Immediately prior to the application of asphalt materials awarding authority personnel shall remove small branches and other debris, and use a mechanical street sweeper to clean any loose material from the pavement surface.

The awarding authority shall protect manhole covers, drop inlets, catch basins, curbs, and any other structures within the shoulder areas against the application of the surface treatment materials.

6.3 Weather Limitations:

No work shall be completed during rainy conditions. The ambient temperature must be 40°F and rising.

6.4 Aggregate Storage:

The awarding authority shall be responsible for providing the Contractor with an aggregate storage area near the job site.

6.5 Asphalt and Aggregate Application:

The liquid asphalt and aggregate shall be applied at the material quantities as designated in Section 4.

6.6 Rolling:

Initial rolling shall be done immediately following the application of sand. Roller shall be operated at a speed that will not displace aggregate.

6.7 Traffic Control:

Traffic control is the sole responsibility of the awarding authority. Unless otherwise specified, the roadway shall be kept open to traffic at all times, with traffic discontinued on the lane being

surface treated. Controlled traffic may be permitted as soon as the final layer is applied and rolled. A recommended maximum speed of 20 mph, should be maintained for a period of two (2) hours.

**6.8 Surplus Aggregate:**

Surplus aggregate shall be swept off of the road surfaces by the awarding authority, and shall be the property of the awarding authority. Sweeping will be done after sand seal has properly cured, and care will be taken not to dislodge imbedded aggregate or damage the surface.

**7.0 PERFORMANCE**

The awarding authority will not award this contract unless the Contractor furnished satisfactory evidence of his/her ability and experience to perform this work, and that he/she has sufficient capital and equipment to enable him/her to prosecute the work successfully and to complete it within the time named in the contract. The Contractor shall not sublet any portion of this contract, and will own all equipment used to complete such contract. As part of the bid, the Contractor must submit a list of six similar and successfully completed jobs, whose relevance to the proposed job shall be deemed by the awarding authority. The name, address, and telephone number of a contact person involved with each of these projects must be included so they can be investigated prior to the award of the contract. It will be the responsibility of each bidder to visit the job site with the Director. The awarding authority can reject any bid of a contractor who has not visited the work site.

**8.0 METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Payment for work under this agreement shall be made at the contract unit price per square yard times the number of square yards, measured by the Contractor and the Director or his/her designee, of road surface treated. Price per square yard shall be for complete in place quantities. Upon completion of work, and acceptance by the Director, the Contractor shall submit a payment request to the Director. Payment shall be net thirty (30) days.

**9.0 GUARANTEE**

Any material or workmanship found to be defective for up to one (1) year from the date of acceptance by the Director shall be replaced by the Contractor at no cost to the awarding authority. Upon notification of defective material or workmanship, the Contractor shall immediately replace such defective areas.

## PRICE ADJUSTEMENT

A fluctuating price will be required for this bid to allow for price adjustments based on the period price of asphalt cement in the awarding authority's state. The price adjustment will be based on the variance in price for the asphalt cement component only from the Base Price to the Period Price. Base price for this bid will be \$\_\_\_\_\_ per ton of asphalt cement.

**"Base Price"** = the price of PG binder liquid per ton that exists on the bid opening date, listed above.

**"Period Price"** = the price of PG binder liquid per ton on the date the stabilization work is performed.

### **Sand Seal:**

Current Price minus Base Price divide by 238 (Gal. in ton emulsion) x .66 (asphalt in Gal. emulsion) x .25 Gal. / SY (application rate) =Adjustment per square yard.

**BID FORM**

**BASE BID: SAND SEAL** applied to town prepared roadways in accordance with the attached specifications.

Price per Square Yard \$ \_\_\_\_\_

Bidder: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_ Fax: \_\_\_\_\_

\_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_

Date: \_\_\_\_\_

**REFERENCE LIST FOR SAND SEAL**

Please list six similar projects that have been completed.

Owner:  
Address:  
City, State, Zip:  
Contact:  
Phone:  
Contract Amount:

Owner:  
Address:  
City, State, Zip:  
Contact:  
Phone:  
Contract Amount:

Owner:  
Address:  
City, State, Zip:  
Contact:  
Phone:  
Contract Amount:

Owner:  
Address:  
City, State, Zip:  
Contact:  
Phone:  
Contract Amount:

Owner:  
Address:  
City, State, Zip:  
Contact:  
Phone:  
Contract Amount:

Owner:  
Address:  
City, State, Zip:  
Contact:  
Phone:  
Contract Amount: