PART ONE - GENERAL

1.1 Description Of Work - This item shall govern the furnishing of all labor, materials, equipment and necessary appurtenances for the cleaning and sealing of cracks and joints in Asphaltic Concrete and Portland Cement Concrete Streets.

PART TWO - PRODUCTS

2.1 SEALANT

2.1.1 The sealant shall be a hot-poured rubber asphalt crack sealing compound suitable for sealing horizontal cracks in concrete slabs and asphalt pavement. The compound shall melt to the proper consistency when heated and shall solidify on cooling to atmospheric and pavement temperatures. The sealant must be compatible with Portland cement and Asphaltic cement. The sealant shall be machine-extruded type. The sealant shall not be tracked by traffic when cooled to road temperature.

The Rubber-Asphalt Crack Sealing Compound shall meet the following requirements:

	MIN.	MAX.
Rubber Content, percent by wt.	22	26
Cone Penetration, 77°F.(ASTM D1191)	15	45
Resilience, 77°F.(ASTM D3407)	30%	
Viscosity @ 375°F.	40 poise min.	
Recommended pour temperature	380°F.	
Safe heating temperature	400°F.	
Softening point	210°F	

Any known and/or suspected incompatibilities or problems that may be experienced during future H.M.A.C Overlays and or Surface Treatments shall be listed and attached to the Bid Proposal Form. Such problems shall include any causes for bumps, humps, adhesion problems, etc. in future overlays and surface treatments. Required or recommended construction methods and materials to eliminate or minimize these problems shall also be provided.

Properties of Rubber used in sealer:

The rubber shall be one (1) of the following types:

TYPE I - Ground tire rubber

TYPE 11 - Mixture of ground tire rubber and high natural reclaimed scrap rubber. The natural rubber content, determined by ASTM D-297, shall be a minimum of 25%.

The ground rubber shall comply with the following gradation requirements when tested by Test Method Tex - 200 F, Part I.

U.S. Standard Sieve Size	PERCENT RETAINED TYPE I	TYPE II
No. 8	0	-
No. 10	0 - 5	0
No. 30	90 - 100	50 - 70
No. 50	95 - 100	75 - 95
No. 100	-	95 - 100

The ground rubber shall be free from fabric, wire, cord or other contaminating materials

2.1.2 Packaging - The rubber asphalt crack sealing compound shall be packaged in boxes which contain the compound in blocks that are packaged in a liner made of polyethylene or material approved by the Engineer. Each box should contain or have attached a label indicating the Name of the product, Type of Product, and Poundage of the contents of the box. Theses labels are to be removed and given to the Engineering Inspector at the time the blocks are placed in the melting kettle.

PART THREE - EXECUTION

3.1 CRACK PREPARATION

3.1.1 Equipment - All equipment used in cleaning joints and cracks shall be capable of delivering a sufficient volume of filtered air, free of oil, water, or other contaminants to remove all loose debris from the joints and cracks to be sealed.

3.1.2 Cleaning and Application - The cracks and joints to be sealed should first be cleaned of all vegetation, soil and debris using the appropriate routing, brushing or blowing operations. The crack faces shall be free of dust and moisture to allow proper sealant bonding with the pavement. Cracks and joints that cannot be effectively cleaned with compressed air or water jet devices will require more extensive work that may include media blasting, routers and hand brushing. In all cases, the engineer shall be the final judge of acceptable crack or joint preparation. The depth of the sealant shall conform to Table I.

The top of the surface of the sealant shall be no higher than 1/4" below the top of the existing pavement for all cracks 1/4" and wider. Cracks less than 1/4" wide shall be filled to the surface and squeegeed. Any cracks and joints sealed and have sealer above the top of the existing pavement in excess of 1/8" after being leveled with a squeegee will be rejected and shall be corrected at the contractor's expense. The band of sealer caused by the squeegeeing operation shall also be no wider than 3" total and should be centered along the crack. On joints sealed between the concrete

curb/gutter and asphalt pavement, care shall be taken to keep all excess sealer off of the concrete curb/gutter. If large amounts of sealer protrude onto the concrete curb/gutter the sealer shall be removed from the concrete at the contractor's expense.

Joint Opening	up to 1″	1″ - 1 7/16″	1 1/2″ - 2″
Depth Of Penetration	1/2″ min.	5/8″ min.	3/4″ min.

TABLE I.
(see Drawing A)

Cracks wider than 2″ and "alligator" cracks shall not be sealed unless approved by Engineer.

The sealant shall be placed in the open crack or joint to the depths required in Table I. The sealant shall be applied uniformly from the bottom of the crack or joint to the top. The crack or joint shall be filled in such a manner that will prevent the entrapment of air. The sealant shall be applied using a pressure feed wand application system. Sealant material shall be heated in accordance with manufacturer's recommendations. The contractor shall employ construction methods or materials required or recommended to eliminate or minimize any known and/or suspected incompatibilities identified as specified in PART TWO of this item.

3.2 Restoration Of The Site - Upon completion of the work covered herein, all unused materials, accumulation of trash, debris and other foreign material shall be completely removed from the site. The surrounding area shall be restored to as good a condition as existing prior to the start of the work.

3.3 Maintenance Of Traffic - Traffic should be detoured around sealing operations for a minimum of one (1) hour or until the sealant can no longer be picked up or tracked by traffic. The contractor shall at all times conduct the work in such a manner as to insure the least possible inconvenience to vehicular traffic. It may, at times be necessary to barricade a street. The contractor shall be responsible for furnishing and placing all necessary barricades, warning signs and flagpersons in accordance with the State Manual on Uniform Traffic Control Devices. This shall be accomplished at no expense to the owner. Prior to barricading a street, the contractor shall notify the Engineering Inspector for approval. The contractor shall be responsible for allowing ingress and egress to residents and businesses at all times.

3.4 Cleaning Of Private Vehicles - If in the event any sealer "sticks" to any private vehicle's tires, wheels, paint, etc. and the vehicle owner complains of any problems, it shall be the Contractor's responsibility to remove all sealer from the vehicle and repair any damages, if any, to the vehicle owner's satisfaction and at the Contractor's expense.

PART FOUR - MEASUREMENT AND PAYMENT

4.1 Measurement - Measurement will be made by the actual, verified pounds of crack sealing compound used for sealing joints and cracks.

4.2 Payment - Payment shall be full compensation for materials, equipment and labor used for herbicide treatments, cleaning, routing, blasting, sealing cracks and joints and for all traffic control, clean-up and other related work. Payment shall only be for those cracks and joints approved for sealing by the Owner.