SECTION 419
CONCRETE JOINT REHABILITATION

419.01. DESCRIPTION.

This work shall consist of sawing, cleaning, and sealing joints in existing portland cement concrete pavement in reasonably close conformity with the details shown on the Plans or as approved by the Engineer.

419.02. MATERIALS.

Materials shall meet the requirements of Subsection 701.08 for the type joint filler or sealer shown on the Plans or designated in the Proposal.

419.03. EQUIPMENT.

Furnish all necessary equipment in accordance with the requirements of Subsection 108.06. The minimum requirements for construction equipment as required to complete the work are specified herein:

Concrete Saw. Sawing equipment adequate in size and power to complete the sawing of concrete joints to the required dimensions.

High Pressure Water Pumping System. High pressure water pumping system capable of delivering sufficient pressure and volume of water to thoroughly flush concrete slurry from sawed joints.

Sand Blasting Unit. Compressed air pressure type sand blasting equipment of proper size and capacity to clean joint surfaces as specified. The unit shall be equipped with suitable traps for removal of all free water and oil from the compressed air.

Air Compressors. Air compressors capable of delivering compressed air having a pressure in excess of 90 psi (620 kPa) and equipped with suitable traps for removal of all free water and oil from the compressed air.

Extrusion Pump. Air-powered extrusion pumps as required for applying joint sealer with an output capable of delivering a sufficient volume of material to the joint.

Injection Tool. A mechanical injection device as required for applying the sealer into the joint.

Joint Sealer Kettle. When the joint sealant requires heating, the kettle shall be a double bottom oil bath indirect flame type, adequate in size and power to mix, heat, deliver and maintain the desired temperature.

419.04. CONSTRUCTION METHODS.

(a) **Sawing Joints.** Cut the joints to the width and depth shown on the Plans. Perform sawing in such a manner as to produce a new joint that has a cut face on both sides and is uniform in width along its full length.

(b) **Flushing Joints.** After sawing, remove the resulting slurry from the joint area by flushing with a high-pressure water system and any other equipment necessary to thoroughly remove the slurry.

(c) **Cleaning Joint Faces**

(1) General. Thoroughly clean the cut faces of the joints of all foreign materials—including old sealant or any residue from water flushing operations by sandblasting—as required for proper installation and bonding of the joint sealer or filler.

NOTE: The use of portable hand saws will not be permitted for cleaning joint faces.

Thoroughly air dry the cut faces of the joint for a minimum of 48 hours after flushing them with water.

NOTE: Blow drying of the joints with compressed air will not be permitted.

(2) Sandblasting. After the joint is completely dry, sandblast both joint faces. Attach the sandblaster nozzle to a mechanical aiming device so as to direct the sandblast at approximately a 45-degree angle and at a maximum of 2 inches (50 mm) from the faces of the joint.

After sandblasting, blow out the joints using filtered oil-free and moisture-free air at a minimum of 90 psi (620 kPa) and 120 cfm (3.4 m^3/min). Use a blow tube which will fit into the joint. After blowing, check the joint for any residual dust or coating. If any is found repeat the sandblasting and blowing operations until the joint is cleaned.

Seal the cleaned joints the same day as they are cleaned. If joints are left open overnight, reclean them prior to sealing.

(3) Joint Contamination. In the event the open joints prepared for installation of joint-sealing materials become contaminated by traffic or as result of weather conditions, reclean them as specified above or as approved by the Engineer.

(d) **Backer Rod.** When shown on the plans or recommended by the sealant manufacturer, install a backer rod prior to applying the joint sealant. Use a backer rod of the type recommended by the manufacturer of the sealant material, and install it in a manner that will produce the dimensions (width and depth) described on the Plans.

(e) **Sealing Joints.**

(1) Approval of Joints for Sealing. The Department's inspectors will examine joints prepared for sealing just prior to installation of the joint filler or sealer. Joints will not be approved for sealing if contaminated or not adequately dry as required for bonding of sealing materials.

(2) Installation of Joint Sealers and Fillers. A representative of the joint filler and/or joint sealer manufacturer shall be on the job site at the beginning of the joint-sealing operation to demonstrate to the Contractor and to the Department's inspectors the manufacturer's acceptable standards for installation of the joint sealant materials.

(3) Application of Joint Sealers. Apply the joint sealer using a mechanical injection tool approved by the Engineer.

NOTE: Application of the joint sealer will not be permitted when the joint temperature is less than 40°F (4° C), and joints shall not be sealed unless they are thoroughly clean and dry.

Sealers to fill the joint shall be injected into the joint and applied in a manner which causes it to bond to the joint face surfaces. For surfaces of sealers that require tooling, use an approved mechanical device to produce a slightly concave surface approximately 1/4 to 1/2

inch (6mm to 12 mm) below the pavement surface. Complete the tooling before a skin forms on the surface of the sealer. Do not use soap or oil as a tooling aid.

NOTE: Tooling will not be required if the sealer is self-leveling.

(4) Bonding Failures. Failure of the sealant to bond to sawed surfaces of the concrete joint will be cause for rejection,and repair shall be at the Contractor's expense.

(f) **Traffic.** Do not allow traffic on the freshly applied sealant until it becomes tack free.

419.05. METHOD OF MEASUREMENT.

Concrete joint rehabilitation will be measured by the linear foot (meter) after the joint sealant is in place.

419.06. BASIS OF PAYMENT.

The accepted quantities, measured as provided above, will be paid for at the contract unit price as follows:

CONCRETE JOINT REHABILITATION ..... LINEAR FOOT (METER)

Such payment shall be full compensation for furnishing all materials, equipment, labor and incidentals to complete the work as specified.

SECTION 420
FABRIC REINFORCEMENT FOR ASPHALT CONCRETE PAVEMENT

420.01. DESCRIPTION.

This work shall consist of the application of reinforcement fabric for plant mix asphalt concrete pavement in accordance with these Specifications and in reasonably close conformity with the locations and dimensions shown on the Plans or established by the Engineer.

420.02. MATERIALS.

Materials shall meet the requirements specified in the following Subsections of Section 700 - Materials:

Reinforcement Fabric	712.01
Asphalt Cement	708.03

420.03. EQUIPMENT.

(a) **General.** Furnish equipment and tools necessary for performing all parts of the work in conformance with Subsection 108.06.

(b) **Distributors.** Distributors shall meet the requirements of Subsection 401.03 and be equipped with a hand spray with a single nozzle and positive shut off valve.