
CRACK AND SEAT EXISTING PCC PAVEMENT**PART 1 - GENERAL****1.01 SECTION INCLUDES**

Crack and seat of existing PCC pavement prior to overlay.

1.02 DESCRIPTION OF WORK

Full-depth saw cut along curbs and in the area of fixtures; cracking of existing PCC pavement; seating of the cracked pavement. Associated work could include subdrain installation; removal and replacement of curb and gutter; removal of existing asphalt overlay or large partial depth patches; vibration monitoring; installing crack control fabric between the leveling course and surface lifts over all full-depth saw cuts; milling of notches along the curb and at the ends of the project.

1.03 SUBMITTALS

Comply with Division 1 - General Provisions and Covenants.

1.04 SUBSTITUTIONS

Comply with Division 1 - General Provisions and Covenants.

1.05 DELIVERY, STORAGE, AND HANDLING

Comply with Division 1 - General Provisions and Covenants.

1.06 SCHEDULING AND CONFLICTS

Comply with Division 1 - General Provisions and Covenants.

1.07 SPECIAL REQUIREMENTS

Notify all nearby affected parties 24 hours in advance that vibration generating activities will begin when the pavement cracking operation is ongoing. Report any specific concerns raised by adjacent parties to the Engineer.

1.08 MEASUREMENT AND PAYMENT**A. Crack and Seat of PCC Pavement:**

1. **Measurement:** Measurement will be in square yards for the area cracked and seated.
2. **Payment:** Payment will be at the unit price per square yard of roadway cracked and seated.
3. **Includes:** Unit price includes, but is not limited to, notifying adjacent properties, providing traffic control and no parking signs; vibration monitoring if specified; cracking and seating of the designated PCC pavement to the specified pattern; watering to verify crack pattern; protecting existing fixtures; cleaning of slab prior to overlay; and final project site cleanup.

1.08 MEASUREMENT AND PAYMENT (Continued)**B. Remove and Replace Curb and Gutter:**

1. **Measurement:** Measurement will be in linear feet along the face of the curb for each type and size of curb and gutter replaced.
2. **Payment:** Payment will be at the unit price per linear foot of curb and gutter removed and replaced.
3. **Includes:** Unit price include, but is not limited to full depth sawing; removing and disposing removed materials; furnishing and compacting subgrade material to bring to the proper elevation; all form work required; concrete; placing new curb and gutter; and final cleanup and backfill placement behind the new curb.

C. Full Depth Saw Cut:

1. **Measurement:** Measurement will be in linear feet for the length of full depth saw cut.
2. **Payment:** Payment will be made at the unit price per linear foot of full depth saw cut.
3. **Includes:** Unit price includes, but is not limited to, providing a concrete saw or other cutting device that will result in a full depth vertical edge and severing all tie or reinforcing steel.

D. Milling: Comply with [Section 7040](#).**E. Subdrains:** Comply with [Section 4040](#).**F. Fixture Adjustment:** Comply with [Section 6010](#) for adjustment of manholes (major and minor) and intakes (minor) and [Section 5020](#) for adjustment of water valves.**G. Intake Adjustment, Major:**

1. **Measurement:** Each existing intake adjusted to grade by removal of the boxout including any grate assembly and re-setting the grate or adjusting the open throat elevation of the intake will be counted.
2. **Payment:** Payment will be made at the unit price for each major intake adjustment.
3. **Includes:** Unit price includes, but is not limited to, sawing all three sides of the boxout; removing and replacing the boxout; furnishing and installing a new grate assembly or, if specified, removing and re-setting the existing grate assembly; removing existing open-throat intake grate; adjusting intake walls; furnishing and installing new intake grate or, if specified, re-setting existing intake grate; and furnishing, placing, and compacting backfill.

H. Joint Control Fabric:

1. **Measurement:** Measurement will be in linear feet of 12 inch wide joint control fabric placed.
2. **Payment:** Payment will be made at the unit price per linear foot of joint control fabric placed.
3. **Includes:** Unit price includes, but is not limited to, cleaning and preparing the surface, furnishing, placing, and adhering joint control fabric prior to placing surface lift.

1.08 MEASUREMENT AND PAYMENT (Continued)**I. Partial Depth Patch Removal:**

1. **Measurement:** Measurement will be in square feet of partial depth patch removed.
2. **Payment:** Payment will be at the unit price per square feet of partial depth patches removed.
3. **Includes:** Unit price includes but is not limited to provide equipment and removing all designated partial depth patches down to the base PCC, cleaning of the former patch area; and disposal of the patch material.

J. Rock Interlayer:

1. **Measurement:** Measurement will be in tons of rock interlayer.
2. **Payment:** Payment will be at the unit price per ton of rock interlayer.
3. **Includes:** Includes but is not limited to furnishing and placing the rock interlayer to the thickness specified.

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. Joint Control Fabric:** Supply a polypropylene, needle punched, non-woven fabric coated with asphalt adhesive on one side and asphalt tack coat on the other meeting the following average roll values.

Property	Test Method	Unit	Minimum Value
Strip Tensile Strength	ASTM D882 ¹	lbs/inch	45
Puncture Resistance	ASTM E154	lbs	175
Pliability	ASTM D146 ²	----	No cracks

¹ Use 12 in/min test speed and a 1 inch initial distance between grips

² Use 180° bend on 1/4 inch mandrel at -25°F

- B. Rock Interlayer:** Meet the requirements of [Iowa DOT Section 4120](#) for Class A crushed stone.

PART 3 - EXECUTION**3.01 EQUIPMENT****A. Equipment:**

1. **Cracking Equipment:** Provide a segmental type breaker capable of controlled forward and transverse movement and of fracturing the pavement to the full depth of the slab while maintaining the fractured face interlock of the aggregate. Do not use equipment that punches holes in the pavement or results in excessive spalling.
2. **Seating Equipment:** Use a pneumatic rubber tire roller with a minimum weight of 30 tons.

3.02 PREPARATION

Prior to initiating the crack and seat process, undertake the following tasks:

- A. Identify and protect all affected utilities.
- B. Set up all traffic control including parking restrictions.
- C. Install subdrains if specified in the contract documents.
- D. Remove all asphalt overlays.
- E. Notify adjacent property owners.

3.03 FULL DEPTH SAW CUTS

Prior to initiating the crack and seat operation:

- A. Complete full depth saw cuts along the curb line as shown the contract documents.
- B. Complete full depth saw cuts at the edges of all manhole and intake boxouts. If manhole boxouts are not present, saw a 5 feet by 5 feet diamond shape around the manhole casting.
- C. At water valves and other fixtures, complete a full depth saw cut in a square shape a minimum of 6 inches from the edge of the fixture.

3.04 PARTIAL DEPTH PATCHES

Remove partial depth patches that are not solid or sound and larger than 4 square feet according to [Section 7040](#).

3.05 INTAKE ADJUSTMENT, MAJOR

- A. **Grate Type:** Saw and remove existing boxout and intake grate assembly. If minor adjustments using adjustment rings is not possible, rebuild intake walls according to [Section 6010](#) to the proper elevation and set new grate assembly. Existing intake grate assembly may be used when specified in the contract documents. Replace boxout to meet new elevations.
- B. **Open-throat Type:** Saw and remove existing boxout and intake top. Adjust intake walls according to [Section 6010](#) to meet new elevations and install new intake grate. Existing intake grate may be reused when specified in the contract documents. Replace boxout to meet new elevations.

3.06 TEST SECTION

At the start of cracking operations, the Engineer will designate a 100 foot test section. Utilize varying energy and crack spacing until a satisfactory spacing is established. Furnish and apply water to the test section to allow visual verification of the cracking pattern. Apply water to the cracked sections at least once per day or when pavement depth changes to verify crack pattern is being maintained. If conditions change, the Engineer may order the development of a new test section.

3.07 CRACKING

- A. Crack the existing pavement to produce full depth transverse hairline cracks with a spacing of 18 to 36 inches.
- B. Do not induce cracking within 2 feet of an existing transverse joint or crack.
- C. Prevent the formation of continuous longitudinal cracks.
- D. Do not destabilize the subgrade.
- E. Do not damage utility fixtures.

3.08 SEATING

- A. Seat the cracked pavement with a minimum of two passes of the 30 ton pneumatic roller. If two passes are not sufficient, continue rolling until the Engineer determines seating is adequate.
- B. Complete seating of all areas cracked each work day.

3.09 MILLING

If specified in the contract documents, complete notch and runout milling according to Figure 7021.101.

3.10 REMOVAL OF MATERIAL

Following the crack and seat process remove dirt, debris, and loose materials prior to opening the roadway to local traffic and again prior to placing the leveling course and surface lift.

3.11 JOINT CONTROL FABRIC

Install joint control fabric over full depth saw cuts prior to final overlay lift according to the manufacturer's recommendations.

END OF SECTION