

PAVEMENT REPAIR AND REHABILITATION**PART 1 - GENERAL****1.01 SECTION INCLUDES**

- A. Portland Cement Concrete (PCC) - Partial and Full Depth Patches
- B. Hot Mix Asphalt (HMA) - Partial and Full Depth Patches
- C. Pavement Surface Repair (Diamond Grinding)
- D. Pavement Scarification/Milling for Resurfacing

1.02 DESCRIPTION OF WORK

- A. Includes the requirements for the construction of partial and full depth patches with either PCC or HMA materials.
- B. The work shall include all labor, equipment, and materials necessary to remove pavement, restore subbase and subgrade, restore parking area, and provide a new finished traffic surface.
- C. Includes grinding an existing PCC pavement surface for profile improvement using a diamond grinder.

1.03 SUBMITTALS

Follow the General Provisions (Requirements) and Covenants, as well as the following:

- A. PCC mix design (Class C or Class M, Iowa DOT [Section 2301](#), See [Section 7010](#)).
- B. HMA mix design (Type A surface and binder, Type B surface and binder, and Type B Base, Iowa DOT [Section 2303](#), See [Section 7020](#)).

1.04 SUBSTITUTIONS

Follow the General Provisions (Requirements) and Covenants.

1.05 DELIVERY, STORAGE, HANDLING, AND SALVAGING

Follow the General Provisions (Requirements) and Covenants, as well as the following:

- A. PCC (See [Section 7010](#)).
- B. HMA (See [Section 7020](#)).

1.06 SCHEDULING AND CONFLICTS

Follow the General Provisions (Requirements) and Covenants, as well as the following:

Complete elements of the work that can affect line and grade in advance of other open cut construction unless noted on plans.

1.07 RESTRICTIONS ON OPERATIONS

- A. PCC (See [Section 7010](#)).
- B. HMA (See [Section 7020](#)). When HMA is not available, a winter premix shall be approved by the Engineer prior to placement. The winter mix is considered temporary and must be replaced with hot mix when conditions permit unless written approval is given by the Engineer.
- C. With approval of Engineer on narrow and deep utility cuts in inclement weather or wet or frozen material, the trench may be backfilled with 3/4 inch Class A crushed stone to the top of the pavement. The surface of the crushed stone backfill will be replaced within 72 hours with permanent pavement to the depth of the adjacent pavement.
- D. No pavement shall be disturbed for either full depth or surface patching unless the patch can be completed before the end of the working day.
- E. Full depth patches in PCC pavement shall be PCC even though the pavement may have been resurfaced with HMA; however, if all other full depth patching has been completed on the project and the Engineer designates an additional area for patching, HMA may be used.
- F. When repairing flexible-type surfaces, the old pavement in areas designated by the Engineer shall be removed and replaced full depth with HMA.

1.08 MEASUREMENT FOR PAYMENT

The quantity of the various items of work involved in construction of utility cuts and pavement repairs shall be measured in accordance with the following provisions. If required, sampling and testing are considered incidental.

- A. Full Depth PCC:** Patch price shall be full compensation for removal and disposal of old pavement; restoring the subgrade or subbase; furnishing and installing tie bars and dowel bars; furnishing and placing the patch material; curing, joint sealing and backfilling and sodding the disturbed area. Patch shall be measured and paid in square yards, or as indicated in the contract documents.
- B. Full Depth HMA:** Patch price shall be full compensation for removal and disposal of old pavement; restoring the subgrade or subbase; furnishing tack coat; furnishing and placing the patch material; curing, backfilling, and sodding the disturbed areas. Patch shall be measured and paid in square yards or as indicated in the contract documents except that each patch which is less than 2 sq. yds. in area will be counted as 2 sq. yds.
- C. Patches by Count:** In addition to the measurements described in paragraphs A & B, the Engineer shall count the total number of patches placed full depth and partial depth. Patches in each traffic lane shall be individually counted unless placed as one patch.
- D. Full Depth Composite Sections:** Patch price shall be full compensation for removal and disposal of old pavement; restoring the subgrade or subbase; furnishing tack coat; furnishing and placing the patch material; curing joint sealing and backfilling and sodding the disturbed areas. Patch will be measured and paid in square yards or as indicated in the contract documents. Scheduling work to allow for proper curing of both PCC and HMA portions of patch which will require a minimum of two trips to the site.

1.08 MEASUREMENT FOR PAYMENT (Continued)**E. Partial Depth Patches:**

1. **PCC:** Patch price shall be full compensation for removal to the depth specified and disposal of old pavement; furnishing bonding agent (if specified); furnishing and placing the patch material; curing; joint sealing; and backfilling and sodding the disturbed area. Patch will be measured and paid in square yards or as indicated in the contract documents.
2. **HMA:** Patch price shall be full compensation for removal and disposal of old pavement; furnishing tack coat; furnishing and placing the patch material; curing, backfilling, and sodding the disturbed areas. Patch shall be measured and paid in square yards or as indicated in the contract documents.

F. Surface Patches: Surface patches shall be measured in tons. The measurement for payment will be computed by truck weight tickets and deleting amount wasted or not used.

G. Joint and Crack Sealing: Joint and crack sealing shall be measured and paid for by the lineal foot. Price shall be full compensation for sawing, widening, cleaning, and sealing joints or cracks

H. Partial Depth Curb Replacement: Partial depth curb replacement shall be measured and paid for by the lineal foot. Price shall be full compensation for excavation and backfill as necessary, sawcutting, removal and disposal of existing curb, cleaning interface of existing pavement, drilling and epoxying steel in place, and placement of new curb.

I. Curb and Gutter Replacement: Curb and gutter replacement shall be measured and paid for by the lineal foot. Price shall be full compensation for excavation and backfill as necessary, sawcutting, removal of existing curb and gutter, drilling and epoxying steel in place, and placement of new curb and gutter.

J. Cross Stitching: Cross stitching shall be measured and paid for by the lineal foot. Price shall be full compensation for drilling holes for steel tie bar, cleaning holes, and epoxying steel tie bar in place.

K. Pavement Surface Repair (Diamond Grinding): The area of pavement satisfactorily ground will be measured and paid for by the square yard. The square yards measured will be the final textured surface area regardless of the number of passes required to achieve acceptable results. Payment shall be full compensation for furnishing all equipment, labor and materials to grind the pavement and test for smoothness with a profilograph if required by the contract documents.

L. Pavement Scarification/Milling for Resurfacing: Measurement and payment will be in square yards.

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. PCC:** Materials shall conform to [Section 7010](#), however, Type IP, I (PM), IS, and I (SM) cements shall not be used in patching unless the cements meeting Iowa DOT Materials [I.M. 401](#) requirements.
- B. PCC Mix:** PCC mix shall meet the requirements of [Section 7010](#).
- C. HMA:** Materials shall conform to [Section 7020](#).
- D. HMA Mix:** HMA mix shall meet the requirements of [Section 7020](#).
- E. Joint Sealing Material:** Joint sealing material shall meet the requirements of [Section 7010](#).
- F. Primer or Tack-Coat Bitumen:** Primer or tack-coat bitumen shall meet the requirements of [Section 7020](#).
- G. Epoxy for Bonding Dowels and Deformed Bars:** Epoxy shall meet the requirements of [Section 7010](#).
- H. Epoxy Coated Dowels and Deformed Bars:** All dowels and deformed bars shall be epoxy coated in accordance with [Section 7010](#).

2.02 EQUIPMENT

- A. Diamond Grinding Equipment:** Iowa DOT [Article 2532.03, A](#).

PART 3 - EXECUTION**3.01 PAVEMENT REMOVAL (See Figures 7040.1 through 7040.5)**

- A. Saw cuts shall be either parallel or perpendicular to center line.
- B. Remove all materials not designated for salvage and dispose of at sites approved for such purposes.
- C. Full Depth PCC Patches, with Dowels: This method applies to PCC patches for PCC pavement, including composite sections of resurfaced PCC pavement.
 - 1. Isolate the adjacent concrete by sawing full depth around the perimeter of the patch.
 - 2. Place a second, partial depth (T/4), sawcut, 8 inches outside of the full depth sawcut to provide a buffer zone to prevent spalling and undercut during removal operations.
 - 3. Begin breaking operations in the center of the removal area, and move toward the outside.
 - 4. Do not use breaking equipment on the buffer area between the full and partial depth sawcuts.
 - 5. Remove buffer area by chipping with equipment no heavier than 15 pound air chisels taking care not to undercut pavement. Protect existing steel reinforcing for continuously reinforced pavements.
 - 6. If jackhammers are used exclusively in lieu of breaking equipment, the partial depth cut may be eliminated.
 - 7. Chipping of the buffer zone may be eliminated if, in lieu of the partial depth sawcut, an additional full depth sawcut is placed.
- D. Partial Depth PCC Patches:
 - 1. All patches are to be square or rectangular in shape.
 - 2. Saw cut to a depth of 1 1/2 inches at the removal limits.
 - 3. Remove deteriorated concrete by a 30 pound maximum size pneumatic hammer down to sound concrete.
 - 4. In lieu of the above method, contractor may mill the designated patch area to the prescribed depth with carbide tipped cold milling equipment.
 - 5. Minimum removal depth shall be 1 1/2 inches and the maximum shall be 1/3 of the pavement thickness. If the required depth to sound concrete exceeds 1/3 of the pavement thickness, a full depth patch shall be constructed and payment shall be for full depth patch.
 - 6. The patches will meet the dimensions shown on the plans and detailed drawings or as marked by the Engineer in the field.
 - 7. Do not operate heavy equipment adjacent to new concrete until the specified curing is completed. Any pavement damaged beyond the removal limits by the Contractor shall be patched in accordance with these specifications at the Contractor's expense.

3.01 PAVEMENT REMOVAL (See [Figures 7040.1-5](#)) (Continued)**E. Full Depth HMA Patches:**

1. Sever the edge of the patch by sawing full depth of the pavement or 10 inches, whichever is less.
2. After severance is made, a drop hammer, hydrohammer, or other heavy equipment may be used to break bond. Do not damage pavement that is to remain.
3. Patches will have minimum dimensions as shown on the standard detail drawings unless otherwise noted on the plans or as marked in the field.
4. When repairing flexible pavement, excavation will be required only for the depth of the patch, and if required, for the granular subbase.

F. Partial Depth HMA Patches:

1. All patches are square or rectangular in shape.
2. Saw cut to a depth of 1 1/2 inches at the removal limits.
3. Remove deteriorated asphalt by a 30 pound maximum size pneumatic hammer down to sound asphalt.
4. Minimum removal depth shall be 1 1/2 inches. If the required depth to sound asphalt exceeds 1/2 T, a full depth patch shall be constructed. Payment shall be for full depth patch.
5. The patches will meet the dimensions shown on the plans and detailed drawings or as marked by the Engineer in the field.

3.02 SUBGRADE AND TRENCH COMPACTION**A. Core Out Excavation for Pavement Repair: ([Section 2010 1.08 F](#))**

1. When unstable material or excessive moisture is encountered in the subgrade, the Engineer may order subgrade to be removed and replaced with new material. This material shall be clay, sandy clay, or 3/4 inch or less Class A crushed stone to a minimum depth of 9 inches, all compacted to 95% Standard Proctor with vibratory tamper, at or near the optimum moisture content compacted in 6 inch lifts. This work shall be paid as subgrade replacement.
2. Other patches, remove up to 2 inches below the bottom of the patch and replace with the patching mixture; if greater than 2 inches, new soil material described above shall be placed and compacted, at the Contractor's expense.
3. On all patches not over excavated trenches, the exposed subgrade or subbase shall be compacted by a minimum of four complete coverages with a plate- type vibratory compactor with a minimum force rating of 3,500 pounds.

B. Trench and Backfill: Trench excavation backfill shall meet requirements of [Section 3010](#). When the Contractor or utility agency is required to provide compaction testing, the Jurisdiction may conduct audit testing of the density of the subgrade to ensure compliance with the specifications. The Jurisdiction requirements on material use for trench and backfill will be followed. The Jurisdiction may require use of CLSM per [Section 3010, 2.05](#).

3.03 REINFORCEMENT FOR PCC PATCHES

- A. Existing tie bars not cut by sawing operation may be cut off except for longitudinal steel in continuously reinforced pavement.
- B. New tie bars and dowels shall be placed in pre-drilled holes using epoxy grout.
 - 1. The hole to receive the grout shall be of the dimensions and spacing shown on the plans.
 - 2. When not shown on the plans, the hole shall be of a nominal maximum diameter 1/8 inch larger than the outside diameter of the dowel or bar or as recommended by the epoxy manufacturer.
 - 3. Immediately prior to placing the grout, the hole shall be blown clean with compressed air.
- C. Place so the bars are in a horizontal plane, T/2, to a tolerance of plus or minus 1/2 inch.
- D. Load-transfer dowel bars shall not exceed 1/4 inch from being parallel to line and grade.
- E. When there is a common line for patching, a bent bar may be placed in a keyway and later straightened.
- F. The epoxy grout shall be pressure injected into the rear of the hole. Sufficient grout shall be used so that there will be an excess of grout forced out the front of the hole when positioning the bar.
 - 1. Dip the bar in the epoxy material and rotate in the insertion process.
 - 2. Hand-mixing of epoxy will not be allowed.
- G. Control drilling alignment by a jig, designed for that purpose.
- H. The dowels shall be epoxy-coated, and the tie bars shall be cut from reinforcing bars which are epoxy coated.
- I. The dowels extending into the patch area shall be coated with a bond breaker. Reinforcing bars shall not be so coated.
- J. For continuously reinforced pavements, new steel tie bars shall be placed across the length of the patch and attached to existing exposed steel by means of a mechanical couple.

3.04 PLACING FULL-DEPTH PCC PATCHES**A. Forms:**

- 1. Use forms on all exposed edges and also along the center line for patches that extend into an adjacent lane unless the street is closed to traffic in which case full-width patches may be constructed.
- 2. Wood forms may be used in lieu of steel by using 2 inch lumber the full depth of concrete including curb.
- 3. Forms along the center line may be 1 inch lumber for patches up to 7 feet and 2 inch lumber for patches longer than 7 feet.
- 4. All wood forms shall be staked sufficiently to hold the forms in place and in proper alignment.

3.04 PLACING FULL-DEPTH PCC PATCHES (Continued)**B. Placing, Consolidation, Finishing, and Curing of the Concrete:**

1. The subbase or subgrade shall be moistened or covered with a single layer of polyethylene film lapped at 12 inches for large areas.
2. Placement shall be continuous until the patch is completed, except for preplanned joints.
3. When a delay of 45 minutes cannot be avoided, an appropriate day's work ('DW') joint shall be constructed.
4. Place concrete into the patch areas so as to avoid segregation, spread into place, vibrate with a mechanical vibrator, smooth, and finish to the elevation of the adjacent PCC surface. Excessive vibrating shall be avoided.
5. Full-lane width patches over 25 feet in length and to be finished flush with adjacent pavement shall be finished with a suitable finishing machine that has at least one vibrating screed. Finish patches flush with adjacent pavement with a straight-edge.
6. Texture by finishing with a burlap, carpet drag, or wire broom or comb ([Section 7010, 3.02, H](#)) to match adjacent surface.
7. Before the concrete has set correct surface defects of high or low spots of 1/8 inches or more.

C. Finish All Unsawn PCC Edges:

1. Patches not to be covered with HMA shall have the edge constructed to a depth of approximately 1 1/8 inch, leaving an opening of at least 3/8 inch in width to provide a reservoir for joint sealer. The reservoir may be constructed by hand methods or may be sawn.
2. Curing:
 - a. Immediately after the concrete has been finished and the surface water has disappeared, the concrete shall be cured. Exposed vertical edges shall also be cured.
 - b. Patches not to be covered with HMA shall be covered with white-pigmented curing compound, see [Section 7010, 3.04](#).
 - c. Patches to be covered with HMA shall be cured with a dark-colored compound, see [Section 7010, 3.04](#).
 - d. Cure a minimum of 48 hours before opening to traffic or surfacing with HMA. If concrete other than M-4 is allowed, it shall be cured for 7 calendar days. For earlier openings, a cylinder must be taken and minimum 3,000 psi strength shall be obtained.
 - e. Patches damaged during the curing period shall be replaced by the Contractor at his expense.
3. Joints: Saw and seal all joints continuing existing joint pattern unless otherwise directed by Engineer.
4. Surfacing with HMA:
 - a. Tack lightly the patch area and edges.
 - b. Place hot mix in the remaining depth and compact while hot.

3.05 PCC JOINT CROSS STITCHING - 8" TO 9" PCC PAVEMENT THICKNESS ONLY (See [Figure 7040.6](#))

PCC joint stitching shall be as per the Standard Detail Plate. This work applies to tying existing pavement slabs along an existing longitudinal joint.

- A. Tie will be made by drilling a hole at a 35 degree angle from the first slab, through the longitudinal joint and into the second slab. The hole shall be air blown clean and the tie bar epoxied into the hole.
- B. Make tie hole by using a hydraulic machine held drill. Guide holes may be drilled by hand.
- C. Bars shall be installed alternately from either side of the joint at 24 inch centers.
- D. No bar shall be installed within 9 inches of a transverse joint.

3.06 PLACING PARTIAL DEPTH PCC PATCHES (See [Figure 7040.5](#))

- A. Clean by sandblasting, followed by airblasting, until the area is clean and dry. The compressed air used for cleaning shall be oil and moisture free.
- B. Expansion joint board shall be placed along the alignment of existing joints.
- C. Concrete shall be deposited in the patch and finished. Finish patches from center, out toward edge.
- D. Seal perimeter edges by brushing on a grout with a 1-to-1 ratio cement water.
- E. Saw and seal all joints continuing existing joint pattern unless otherwise directed by the Engineer.
- F. Concrete shall be placed the same day as the sandblasting is done.
- G. The patch texture shall conform to the existing adjacent pavement.
- H. All patches shall be cured, see [Section 7010](#).

3.07 PLACING FULL-DEPTH HMA PATCHES

- A. After removal of the old pavement, the edges of the old pavement shall be tacked.
- B. Place HMA patch mixture in layers; the upper 5 inches shall be deposited in at least two layers the top layer not exceeding 2 inches in thickness, when compacted.
- C. Compact each layer while hot, by rolling or compacting with a vibratory compactor. Succeeding layers may be placed as soon as the preceding layer has been properly compacted. The final layer shall also be smoothed with a steel-tired finish roller suitable for this type of operation.
- D. Patch material shall not extend beyond the edge of the pavement; if so constructed, the material shall be cut off.
- E. Do not open to traffic until the mixture has cooled sufficiently to provide stability.
- F. If the patch becomes seriously distorted for any reason, the contractor shall smooth the surface the next working day, by blading, scraping, filling, or other approved means

3.08 PLACING PARTIAL DEPTH HMA PATCHES (See Figure 7040.5)

- A. Depressions Less Than 1/2 inch:** The surface shall be heated with surface heaters, then loosened and covered with hot, fresh mixture from which the coarse particles have been removed and raked to the proper elevation and rolled to proper density.
- B. Depressions of 1/2 inch to 1 inch:** The surface course over the entire area below the required elevation for the pavement surface shall be removed and replaced with fresh mixture, smoothed and compacted in layers to the density required to provide a surface at the correct elevation.
- C. Depression Coating:**
1. In areas where spalled concrete or bituminous patching material is removed for a depth greater than one inch but less than the total thickness of the old pavement, the depressions shall be given a tack coat and filled with HMA.
 2. The mixture shall be deposited in layers which, after compaction, will not exceed 3 inches in thickness.
- D. Compaction:**
1. Each layer shall be thoroughly compacted while hot, by rolling with an adequately weighted pneumatic tire roller or by tamping with a mechanical tamper until it has attained density. Succeeding layers may be placed as soon as the preceding layer has been properly compacted.
 2. The final compacted surface shall be level with, or not more than, 1/4 inch above the surrounding pavement and shall have a smooth riding surface.
- E. Open to Traffic:** The patch shall not be opened to traffic until the mixture has cooled sufficiently to provide stability. If the patch becomes seriously distorted for any reason, the Contractor shall smooth the surface the next working day, by blading, scraping, filling, or by other approved means

3.09 PAVEMENT SURFACE REPAIR (DIAMOND GRINDING)

- A.** The pavement shall be ground and textured until the pavement surface on both sides of transverse joints and all cracks are in the same plane and meet the smoothness required.
- B.** Except at joints and cracks, grinding shall not exceed 1/2 inch in depth. At joints and cracks, grinding shall not exceed 3/4 inch in depth.
- C.** Grind entire surface of pavement in the longitudinal direction against normal traffic flow unless specified by the Engineer.
- D.** Grinding shall begin and end at lines normal to the pavement centerline within any one ground area and at the project limits.
- E.** Grinding operations should normally proceed from the centerline (or lane line) across the lane to the pavement edge with each pass cut at least as deep as the previous pass, in order to provide transverse drainage.
- F.** For multiple passes, the equipment shall be carefully controlled to minimize overlap. Overlaps shall not exceed approximately 1 inch.
- G.** When more than one grinding machine is used in the same travel lane, the blade segment thickness, blade spacing, and blade diameter shall be similar so that the texture of the ground surface is reasonable uniform across the lane.

3.09 PAVEMENT SURFACE REPAIR (DIAMOND GRINDING) (Continued)

- H. The grinding head should be assembled and adjusted as necessary during the project to produce the following tolerances on pavements with the indicated coarse aggregates. Both the land area and the texture depth must be within the specified range to be in compliance.

	<u>Limestone</u>	<u>Gravel</u>
Blade Segment Thickness	0.130" Maximum	0.130" Maximum
Land Area between Grooves*	0.100" to 0.125"	0.080" to 0.110"
Texture Depth**	Target of 1/16" with average between 1/32" to 3/32"	

*Based on an average of a minimum of ten measurements across the ground width for one pass.

**Based on an average of a minimum of six measurements across the ground width for one pass.

- I. Prior to enforcement of the tolerances listed above, a 5,000 square yard test area will be allowed for a new head that that has been restacked, provided a surface texture in reasonable conformance with the specification is being produced.
- J. The transverse slope of the ground pavement shall be uniform to a degree that there are no depressions or misalignment of slope greater than 1/4 inch in 12 feet when tested by stringline or straightedge placed perpendicular to the centerline.
- K. Smoothness: When pavement smoothness testing is specified in the contract documents, it shall be measured with a 25 foot California type profilograph, which produces a profilogram (profile trace) of the surface tested, in accordance with Iowa DOT Materials I.M. 341 and the following requirements:
1. Prior to performing any grinding work, the Contractor shall provide a control profilogram for each lane and/or segment, over 50 feet in length, that is to be ground. Pavement shall be relatively clean and free of debris prior to establishing the control profilogram.
 2. Each segment of the finished ground surface shall have a final profile index less than or equal to 35% of the control profilograph trace or 10 inches per mile, whichever is greater, and shall not include any bumps exceeding 0.5 inches in 25 feet.
 3. Depressed pavement areas due to subsidence or other localized causes, and areas where the maximum cut restricts further grinding will be excluded from testing with the profilograph when approved by the Engineer.

3.10 PAVEMENT SCARIFICATION/MILLING FOR RESURFACING

- A. Conditions:** This work consists of scarifying/milling the surface of asphalt or PCC pavement to improve the surface profile and cross-section in preparation for resurfacing.

B. Construction:

1. Scarify/mill the pavement to the depth designated on the plans. In all areas designated for scarification, make sufficient passes, or cuts, such that all irregularities or high spots are eliminated to the satisfaction of the Engineer.
2. Provide scarification/milling for a smooth profile and cross-section whenever possible. For scarifying/milling in a longitudinal direction, use a maximum tolerance of 1/4 inch under a 10 foot straightedge and 3/8 inch under an 8 foot straightedge in a transverse direction.
3. Load cuttings directly into dump trucks and remove the remaining small cuttings and debris from the street. All materials removed shall be the property of the Contractor, unless otherwise specified.

3.10 PAVEMENT SCARIFICATION/MILLING FOR RESURFACING (Continued)

4. Do not drive on city streets, other than those streets being scarified/milled, with metal track equipment.
5. Take adequate precaution to ensure excessive dust does not become airborne during construction. The Engineer may request additional water at any time for dust control.
6. Mill/scarify around manholes and utility valves. Any damage to manholes or valves by the scarifying/milling operation shall be the responsibility of the Contractor to correct at the Contractor's expense.
7. Do not leave a vertical drop off (2 inches or greater) at the centerline or lane line overnight. Taper the ends of scarified/milled sections subject to traffic to provide a uniform and gradual transition.

3.11 SEALING EXISTING JOINTS AND CRACKS (PCC)

- A. Joints and cracks less than one-half inch in width shall be widened and/or cleaned by sawing with a 1/2 inch wide blade.
- B. Cracks wider than 1/2 inch shall be sawn or routed to a uniform width.
- C. Clean joints or cracks by airblasting. High-pressure water blast may be used to aid the cleaning process.

D. Joint Sealer:

1. Joint sealer shall be prepared and installed in the joint and to the proper level as shown in the contract documents and as recommended by the manufacturer.
2. Hot-poured sealers shall be heated in a thermostatically controlled heating kettle; the material shall be heated to the temperature required for use, but not above that recommended by the manufacturer. After sealing, excess sealer shall be removed from the pavement surface.
3. Joint sealer shall be placed only when the pavement and ambient air temperatures are 40° or higher. When near this minimum, additional air blasting or drying time or both may be necessary to assure a satisfactory bond to the joint surfaces.

3.12 OPENING TO TRAFFIC

Open to traffic as per [Sections 7010](#) and [7020](#).

3.13 RESTORATION

The excavated parking area along the outside pavement edge shall be filled with topsoil, graded, thoroughly compacted, and sodded.

3.14 TRAFFIC CONTROL

Unless the road is closed, traffic shall be permitted to use the pavement during construction operations. All operations shall be conducted as to provide a minimum of inconvenience to traffic. Operations shall be confined to one traffic lane, except for minor encroachment in the adjacent lane, such as for sawing and installing forms, in which case a flagger will be required in accordance with Manual of Uniform Traffic Control Devices (MUTCD).

END OF SECTION