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BITUMINOUS JOINT SAWING AND SEALING (OAKDALE 2400)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Installation of transverse joints in bituminous surfaces which consist of:
      a. Saw cutting
      b. Cleaning
      c. Bond Breaker installation
      d. Sealing

B. Related Sections:
   1. Section 2360 – Plant-Mixed Asphalt Pavement

C. Method of Measurement:
   1. Measure by length in linear feet along completed joint.
   2. Item includes all labor material and equipment required for:
      a. Saw cutting
      b. Cleaning
      c. Bond Breaker installation
      d. Sealing

D. Basis of Payment:
   1. Payment for acceptable quantities of bituminous pavement joint construction shall be at the Contract Unit Price as listed on the Bid Form. All associated work items will be considered incidental.

1.02 REFERENCES

A. MnDOT 3725 – Joint and Crack Sealer, Hot Poured, Extra Low Modulus, Elastic Type.

1.03 SUBMITTALS

A. Manufacturer’s Certificate of Compliance to MnDOT 3725 for the sealant material.

B. Manufacturer’s recommendations for the heating and application of the sealant material.

1.04 PACKAGING

A. Provide sealant in sealed containers.

B. Clearly mark each container with the following:

1. Name of manufacturer
2. Trade name of sealant
3. Manufacturer's batch and lot numbers
4. Pouring temperature
5. Safe heating temperature

1.05 WEATHER REQUIREMENTS

A. Minimum temperature for sealant application: 40 degrees F.
   1. Measure air temperature in the shade away from artificial heat sources.

B. Do not apply sealant during wet or otherwise unfavorable weather or pavement conditions.

C. Limit operations to daylight hours.

PART 2 PRODUCTS

2.01 MATERIALS

A. Joint Sealer: MnDOT 3725, modified as follows:
   1. Run bond strength test at minus 20 degrees F.
   2. Ensure that material can be bent 180 degrees without cracking at minus 30 degrees F.
   3. All sealant shall be the same type from the same manufacturer.
   4. Provide sealant that has been proven acceptable in Minnesota within the past 24 months.

B. Bond Breaker Tape:
   1. Regular masking tape of product designed for use with hot pour sealants.
   2. Tape width: Equal to, but no more than, 1/8 inch narrower than the saw cut.

2.02 EQUIPMENT

A. Heating Kettle:
   1. Double-boiler type.
   2. Fill annual space with oil or similar heat transfer medium.

B. Applicator Wand:
   1. Heated or insulated to maintain sealant pouring temperature during placement.
   2. Pour pots or similar container-type devices are not permitted.

C. Heat Lance:
   1. Air temperature at discharge: Minimum 2,800 degrees F.
   2. Air velocity at discharge: Minimum 2,800 feet/ second.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that weather and pavement conditions are adequate to perform the work.

3.02 CONSTRUCTION REQUIREMENTS

A. General:
   1. Perform saw cutting, cleaning, and sealing as a single, continuous operation.

B. Saw Cutting:
   1. Transverse Joint Locations:
      a. Longitudinal spacing: 30-50 feet
      b. Center on each manhole casting
      c. Connection point to existing bituminous surfacing
      d. Other locations may be determined in the field
      e. Extend joint the full width of the bituminous surface to the face of the concrete curb or gutter.
   2. Either dry or wet sawing is allowed.
   3. Provide blade configuration that will produce the joint reservoir dimensions and shape shown on the drawing details.
   4. Do not use spacers between blade.
   5. Where double cutting of the joint is used, center second cut on the initial cut.
   6. Do not allow traffic to knead together or damage sawed joints.

C. Cleaning:
   1. Dry Sawing:
      a. Thoroughly remove all loose materials from the joint cavity with a 100-psi air blast.
      b. Blow or brush all dry dust and materials from the adjacent pavement surface
   2. Wet Sawing:
      a. Thoroughly remove all loose materials from the joint cavity with a minimum 50-psi water blast.
      b. Dry washed joints with a 100-psi blast.
      c. Repeat process if air blast produces dirt or other residue from the cavity.
      d. Flush all sawing slurry from the adjacent pavement surface.
   3. If cleaning operations interfere with, or impact adjacent traffic, provide protective screening around work area.

D. Sealing:
   1. Comply with manufacturer’s recommendations for heating and application of sealant.
   2. Do not heat sealant above the manufacturer’s safe heating temperature.
   3. Maximum pot life of the sealant at the pouring temperature is 6 hours.
   4. Place bond breaker tape in the bottom of the saw cut prior to sealing.
   5. Dry and warm joints with a hot compressed air heat lance immediately prior to placement of sealer.
   6. Place sealant in amounts such that, after cooling, the sealant level will be within 1/8 inch below the pavement surface,
   7. Do not overfill joints.
   8. Return applicator wand and recirculate sealant after completing each joint.
   9. Use squeegee as required to force sealant into narrow joint shapes.
   10. The final appearance shall present a neat fine line.

3.03 REPAIR

A. Re-saw unsealed joints, which have been subjected to traffic.

B. Workmanship: Sealed joints shall be rejected if there is evidence of poor workmanship or obvious defects, such as, but not limited to the following:

1. Sawed joint not filled completely
2. Lack of bond to the sides of the joint
3. Excessive debris or moisture in the joint
4. Contamination of the sealant
5. Sawed joint not filled flush

Rejected sealed joints shall be repaired, the sealant removed and disposed of in an appropriate manner and the joints resealed as necessary, to the Engineer's satisfaction at no further cost.

3.04 PROTECTION

A. Do not apply sand to completed joints.

B. Do not open work area to traffic until sealant is tack free.

END OF SECTION