MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**BRIDGE DECK DRAINAGE SYSTEM**

BRG:AJM 1 of 2 APPR:REL:SCK:08-08-22

**a. Description.** This work consists of designing, furnishing, and installing a bridge deck drainage system as shown on the plans including all piping, fittings, expansion devices, clean outs, support brackets, inserts and bolts. The standard specifications apply, except as modified herein.

**b. Materials.** Use materials meeting the requirements of subsection 717.02 of the Standard Specifications for Construction and as described herein:

Punch the holes in the half-round steel pipes and bottom pans to the pattern shown on the plans. Use a minimum gauge as shown on the plans, and a minimum zinc coating weight of two ounces per square foot for the half-round corrugated steel pipes, bottom pans, end plates, outlet drops and reducer sections. Galvanize and uniformly coat with asphalt all parts of the drainage system, inside and outside as specified in *AASHTO M190*. Blow open Type A holes in the perforated pipe and bottom pans after the coating with asphalt is complete.

Furnish asphalt for mopping in accordance with *ASTM D449/D449M, Type II*.

Furnish steel pipe in accordance with *ASTM A53/A53M, Schedule 80*, galvanized inside and outside in accordance with *ASTM A123/A123M.*

Furnish anchor bolts in accordance with subsection 908.14.D of the Standard Specifications for Construction. Use other connection hardware in accordance with subsection 906.07 of the Standard Specifications for Construction. Furnish expansion anchor bolts in accordance with subsection 712.03.K of the Standard Specifications for Construction.

Furnish steel plate for supports, brackets, and other shapes in accordance with *ASTM A36/A36M* and galvanized in accordance with *ASTM A123/A123M*. Ensure expansion joint is for steel pipe expansion fitting that is capable of the thermal expansion required by the horizontal pipe length.

Deliver materials to the job site in manufacturer’s original, unopened packages, clearly marked with the manufacturer’s name, brand name and description of contents. Store membrane and adhesives in clean, dry areas. Storage temperature for adhesives must be between 60 °F and 80 °F.

**c. Construction.** Weld the 8 inch diameter half-round pipe to the bottom pan in accordance with the 20SP-707A - Structural Steel and Aluminum Construction. Secure the 6 inch diameter pipe to the back of the abutment using expansion anchor bolts, and installed in accordance with the manufacturer’s recommendations. Connect the 6 inch diameter corrugated steel pipe to the foundation underdrain as shown on the plans. Protect the top end of the 6 inch diameter corrugated steel pipe with a temporary wood cover.

Set the deck drains after the waterproofing membrane has cured. Set the drains carefully to avoid gaps between the sections.

Ensure shop drawings of the complete bridge deck drainage system are approved by the Engineer prior to fabricating the drainage system or starting the work.

Support the runs of pipe at a spacing not to exceed those recommended by the manufacturer of the pipe or as noted on the plans.

Handle and install all pipe, fittings, and expansion joints in accordance with guidelines and procedures recommended by the manufacturer or supplier of the material.

**d. Measurement and Payment.** The completed work, as described, will be measured as a lump sum and paid for at the contract price using the following pay item:

**Pay Item Pay Unit**

Bridge Deck Drainage System (Structure Identification) Lump Sum

**Bridge Deck Drainage System (Structure Identification)** includes installing the 8 inch half round perforated and coated steel pipe, including connections; furnishing and installing the 6 inch corrugated steel pipe, including all material and labor required to secure it to the 8 inch half round pipe and the substructure with expansion anchors, and tapping into the foundation underdrain, coating the drainage system as required herein, furnishing, applying and setting the 8 inch corrugated half round pipe and pan and temporarily protecting, bulkheading, and maintaining the deck drainage system until the project is complete.

All other work will be measured and paid for in accordance with the standard specifications for the associated items of work.