MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**LIQUID-TIGHT FLEXIBLE METAL CONDUIT**

BWB:DWS 1 of 3 APPR:BMB:KSH:02-15-22

**a. Description.** This work consists of furnishing and installing liquid-tight flexible metal conduit (LFMC) with all liquid-tight fittings required for a complete installation. The conduit lengths are shown on the plans.

**b.** **Materials.** Furnish all materials for this project that are new, free from damage and meet the requirements of section 918 of the Standard Specifications for Construction and the *NEC*. Ensure the conduit and fittings are *UL Listed* for all sizes shown on the plans.

1. Product Description. Ensure this conduit and all associated fittings are for outdoor use and sunlight resistant. Ensure the Type LFMC are formed from a zinc-coated galvanized low carbon steel strip having a uniform width and thickness and constructed with a fully interlocked “S” profile bonding strip. Ensure a moisture, oil, and sunlight resistant PVC jacket is applied directly over the flexible metal conduit with a wall thickness in accordance with *Table 4.1 of UL 360*. The jacket color is to be gray.

2. Submittals.

A. Submit project data to the Engineer prior to purchasing and installation. The data must include, but not limited to, the following:

(1) Furnish complete descriptive literature, performance, test and rating data for conduits and fittings.

(2) A Manufacturer’s Installation Manual.

(3) *UL* Listing Number.

B. Shop Drawings.

(1) Submit shop drawings and samples in accordance with the contract and supplementary requirements as stated under each section of the specifications.

(2) Shop drawings must include manufacturer’s name, catalog numbers, cuts, schedules and other such descriptive data specifically prepared for the work by the Contractor, sub-contractor and/or manufacturer to illustrate that the materials, equipment or system conforms to the contract requirements.

(3) Any listed materials that are not in accordance with the contract requirements will be rejected for use in this contract.

3. Manufacturer Qualifications. Company specializing in manufacturing products specified in this section with minimum 3 years’ experience.

4. Delivery, Storage, and Handling.

A. Store in clean, dry space. Maintain factory wrapping or provide additional canvas or plastic cover to protect units from dirt, water, construction debris and traffic.

B. Handle in accordance with manufacturer’s written instructions. Handle carefully to avoid damage to conduit.

5. References.

A. Potential manufacturers:

(1) Atkore AFC Cable Systems.

(2) Southwire.

(3) Electri-Flex Company.

B. *NEMA.* *NEMA RV 3* - Application and Installation Guidelines for Flexible and Liquidtight Flexible Metal and Nonmetallic Conduit.

C. *NFPA 70 NEC*. *-* *NEC Articles 230, 250, 350*.

D. *UL*.

(1) *UL 360 - Standard for Liquid-tight Flexible Metal Conduit*.

(2) *UL 514B - Standard for Safety Conduit, Tubing and Cable Fittings*.

LFMC furnished for this project must comply with the requirements of the Buy America Act. The conduit must also meet Title 23, CFR 635.410.

**c. Construction.**

1. Source quality control.

A. Ensure the LFMC is manufactured and tested in accordance with *UL 360*.

B. Ensure the finished Type LFMC dimensions are in accordance with *Table 5.1 of UL 360*.

C. Permanent circuit ground protection is to be provided by the continuous bonding strip built into the conduit core for all sizes up to 1¼ inch diameter unless otherwise shown on the plans. A separate grounding wire is required for conduit sizes 1½ inch or greater in diameter.

2. Examination.

A. Verify mounting supports are properly sized, located and of type of material specified herein and on the plans in accordance with the *NEC*.

B. Examine areas and conditions under which the conduit, is to be installed and notify the Engineer in writing of conditions detrimental to the proper completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Engineer.

3. Installation. Install the LFMC in accordance with *NEC Articles 350 and 250.118 (6)*.

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

**Pay Item Pay Unit**

Conduit, Liquid-Tight Flexible Metal, 1 inch Foot

Conduit, Liquid-Tight Flexible Metal, 2 inch Foot

Conduit, Liquid-Tight Flexible Metal, 3 inch Foot

1. **Conduit, Liquid-Tight Flexible Metal, 1 inch** will be measured along the centerline of each conduit run excluding junction boxes and includes the flexible conduit and all fittings necessary to provide a water-tight line between the junction box and the luminaire poles.

2. **Conduit, Liquid-Tight Flexible Metal, 2 inch** will be measured along the centerline of each conduit run excluding junction boxes and includes the flexible conduit and all fittings necessary to provide a water-tight line between the junction box and the luminaire poles.

3. **Conduit, Liquid-Tight Flexible Metal, 3 inch** will be measured along the centerline of each conduit run excluding junction boxes and includes the flexible conduit and all fittings necessary to provide a water-tight line between the junction box and the luminaire poles.