MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**SANITARY SEWER SYSTEM MATERIALS AND CONSTRUCTION**

TRV:LCP 1 of 2 APPR:CJD:NJM:12-19-22

**a. Description.** This work consists of installing the following materials as part of the City of Traverse City sanitary system. This work includes trench excavation, sewer and manhole installation, dewatering, sheeting and/or bracing, backfilling, testing of the pipe, disposal of waste materials, connections to existing systems, maintaining sanitary service, and providing as-built plans and any related work necessary to complete the sewer installation. If contaminated groundwater as determined by the Department is encountered during dewatering, the Contractor must follow the Special Provision for Contaminated Groundwater and Treatment.

**b. Submittals.** Submit PDF product data consisting of shop drawings and manufacturer’s literature to the Engineer and Traverse City for approval at least 10 working days prior to construction.

The Contractor must submit a general work plan outlining the procedure and schedule to be used for installation of the sanitary sewer and its appurtenances.

**c. Materials.** Furnish the materials listed below in accordance with *ASTM standards*, the standard specifications, and City of Traverse City specifications. The specific items listed conform to the Traverse City sanitary sewer system requirements and no substitutions are permitted.

1. Pipe. Furnish PVC sanitary sewer pipe meeting the requirements of *ASTM D3034* and having a SDR of 26 in accordance with section 825 of the Standard Specifications for Construction.

2. Pipe Fittings. Furnish connection adaptors used to connect pipes of different diameter or materials of construction in accordance with section 825 of the Standard Specifications for Construction. Ensure the adaptors are constructed of flexible materials clamped onto the pipe with stainless steel bands. Use mastic solvent weld or rubber gasket seals and encase in concrete to prevent displacement. Use flexible transition couplings when connecting a proposed sanitary sewer or proposed sanitary sewer lateral to an existing sanitary sewer main or lateral where a manhole is not utilized at or near the point of connection. Ensure these connections are watertight by use of a manufactured flexible transition coupling designed for such purpose. Ensure flexible transition couplings are in accordance with *ASTM D5926* and *ASTM C1173*. Ensure couplings, fittings, solvents, and lubricants are as recommended by the pipe or fitting manufacturer.

3. Pipe Joints. Furnish pipe joints in accordance with section 825 of the Standard Specifications for Construction and with the following additional City of Traverse City requirements: Ensure joints are bell and spigot type or tongue and groove type utilizing fluoroelastomer (FKM) gaskets in accordance with *ANSI/AWWA C111/A211.11* and Manufacturer’s requirements.

4. Sanitary Structures. Furnish sanitary structures in accordance with section 825 of the Standard Specifications for Construction and with the following additional City of Traverse City requirements: Ensure the precast manholes are manufactured in accordance with *ASTM C478/C478M*. Provide corrosion resistant steps in all manholes and manufactured in accordance with *ASTM C478/C478M*. Ensure steps are not aligned over the sewer pipe. Ensure the rubber gasket seal between manhole sections is in accordance with *ASTM C443*. Join the precast sections by first applying a lubricant as approved by the concrete manufacturer and in accordance with seal manufacturer’s recommendations. The precast sections must then be set evenly to provide a full seating of the seal within the notch or shoulder between the concrete sections. Treat the interior and exterior of joints with a non-shrink cement mortar, with a smooth-brushed finish. Butyl rope in accordance with *ASTM C990* may be used as a joint sealant when jointing sections that do not have rubber gasket seals such as loose bases or flat tops without precast socket and spigot joints. Ensure all pipe to manhole connections are fitted with a waterstop manufactured in accordance with *ASTM C923/C923M*. Ensure waterstops are of a design acceptable to the Engineer and pipe manufacturer. Waterproof exterior of precast manhole with asphalt based, clay emulsion with fibers manufactured in accordance with *ASTM D1187/D1187M*, *Type I* and *ASTM D1227/D1227, Type II, Class 1* for exterior below grade surfaces. Apply emulsion in accordance with manufacturer's recommendations.

**d. Construction.** Ensure construction is in accordance with the current *ASTM* standards, the standard specifications, and as detailed on the plans. Construct sanitary sewer with a minimum of five feet of cover.

The plans show the locations of existing utilities in accordance with available data. Expose utilities shown on the plans to determine the actual locations. Prior to replacing the sanitary sewer laterals, verify the existing lateral invert at the point where the cleanout will be installed. Provide this information to the Engineer. The cost of verifying this information prior to construction of proposed sanitary sewer laterals will be paid for by Exploratory Investigation, Vertical. Notify the Engineer in advance of work so the Engineer may give the municipality 3 working days’ notice.

Provide as-built plans in accordance with the standard specifications and with the additional requirement to record the GPS location of all main and service appurtenances for the as-built records. Ensure that the Engineer for the City of Traverse City is allowed to witness and record the GPS as-built data as it becomes available.

Connection to existing sanitary sewer. Core new sanitary sewer lateral connection taps into the existing sewer main by tapping in accordance with the standard specifications and as shown on the plans. Ensure the connection adaptor is constructed of flexible materials and is clamped onto the pipe with stainless steel bands. Use mastic solvent weld or rubber gasket seals and encase in concrete to prevent displacement. Connection of new laterals to the existing sanitary sewer will not be paid for separately but is considered included in the cost of the Sanitary Sewer, Serv Lead, PVC.

**e. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price in accordance with subsection 825 of the Standard Specifications for Construction.