MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**DEWATERING SYSTEM, EXCAVATION**

BRG:CFO 1 of 2 APPR:DMG:RWS:09-14-21

**a. Description.** This work consists of lowering the groundwater table to facilitate the excavation. This work will require the use of pumps or well points, deep wells, or other measures that are utilized to control and manage groundwater.

**b. Well Points and Deep Wells.** Ensure groundwater control performed by deep well and/or well point pumping systems is done without damage to property or structures and without interference with the rights of the public, owners of private property, pedestrians, vehicular traffic or the work of other contractors. Any pumping methods used for dewatering and control of groundwater and seepage must have properly designed filters to ensure that adjacent soil will not be pumped with the water, thus creating voids underground and around the face of the excavation or under existing structures. Ensure the loss of fines is limited to no more than 5 parts per million by volume in the extracted water. Ensure the filter design is reviewed and approved by the Engineer before placement.

Perform the dewatering operations in a proper and predetermined sequence with the excavation operation such that the perimeter, bottom and face of the excavation are stable. Dewatering well diameter, pumping rate and well spacing must provide adequate drawdown of the water level. Properly locate wells to intercept groundwater that otherwise would enter the excavation and interfere with the work. Install observation wells at key locations for observation of groundwater levels during the excavation. Submit a plan for locations and monitoring frequency of the observation wells to the Engineer a minimum of 7 calendar days in advance of placement of the dewatering system. Add additional wells as needed to dewater to the groundwater to the elevation shown on the plans.

Filters or settling devices may be required before discharge to ensure that storm sewers, sanitary sewer systems or surface waters are not adversely affected by construction debris or increased sediment load.

**c. Storm Sewer, Sanitary Sewer or Surface Water Discharge.** Monitor the volume of water discharged to the storm sewer system, sanitary sewer system or as surface water discharge by using a totalizing turbine type flow meter. Place the flow meter in-line on the dewatering system effluent line, ensure it is designed for high flow applications and has a flow totalizing register that is adequately sealed to eliminate fogging and condensation. Install the type of meter used in accordance with the manufacturer’s instructions and be approved by the Engineer before placement.

Written permission from the wastewater treatment plant authority is required prior to discharge to the sanitary sewer system. Provide a copy of the written authorization to the Engineer prior to discharging any water to the system.

Secure a NPDES permit from the EGLE prior to any discharge to a storm sewer or directly to a surface water body.

Monitor and document the volume of flow being discharged to the storm sewer, sanitary sewer or the surface water daily by reading the register on the flow meter. Provide this information to the Engineer daily or as otherwise approved.

**d. Construction.** Lower the groundwater to the elevation shown on the plans. Determine the methods and materials required to accomplish this work, subject to approval by the Engineer before initiation or installation of the dewatering system.

The Engineer may order corrective actions to the dewatering system at any time due to deficiencies in the system at no additional cost to the contract.

Remove dewatering system and all associated appurtenances when no longer needed and restore the area as directed by the Engineer.

Abandon deep wells and observation wells in accordance with current EGLE requirements when no longer needed.

**e. 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**

Dewatering System, Excavation Each

**Dewatering System, Excavation** will be measured for each excavation area. The unit price includes all labor, equipment, materials, wells, piping, supplies, power, and fuel necessary for the installation, operation, maintenance, removal and the disposal of all surplus materials as described herein. This pay item includes the cost of disposal of all water pumped from below ground to facilitate underground construction.

All costs associated with obtaining an NPDES permit and any locally required permits are included in this pay item.

The installation, maintenance and removal of deep wells and observation wells are included in this pay item.

The cost for treatment of the water at the wastewater treatment plant is included with this pay item. There will be no compensation for idled personnel or equipment due to any system corrections ordered by the Engineer to remedy any deficiencies.