SP- 154062
(New)

SPECIAL PROVISIONS FOR DEWATERING

Pottawattamie County
STBG-SWAP-1642(686)--SG-78

Effective Date
December 20, 2022

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

154062.01 - GENERAL

1.01 DESCRIPTION OF WORK

A. The work of this section includes site dewatering necessary to lower and control groundwater levels and hydrostatic pressure to permit excavation and construction to be performed properly under dry conditions.
   1. The groundwater shall be lowered and maintained to an absolute minimum of 3 feet or lower below the lowest excavation made for the trench as required to place pipe bedding and manhole bedding.

B. Dewatering operations shall be adequate to assure the integrity of the finished project. The responsibility for conducting the dewatering operation in a manner which will protect adjacent structures and facilities rests solely with the Contractor. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the Contractor.

C. The Contractor shall bear the sole responsibility for the design, installation, operation, monitoring, and removal of the dewatering system to comply with the requirements of this section and any applicable regulatory agencies. The Contractor shall be required to install additional dewatering equipment as may be required throughout the duration of the project to maintain groundwater level as described in Article 154062.01, 1.01, A, 1.

D. The Contractor shall be responsible for submitting the applications and obtaining the required permits for the well construction including obtaining approval from the Pottawattamie County Office of Planning and Development. Copies of these guidelines and blank forms are available from the Pottawattamie County Office of Planning and Development. The Contractor shall also be responsible for filing a Field Office Notification (FON) with the Iowa DNR and developing a Well Water Pollution Prevention Plan for the discharge of wastewater from well construction activities per the Iowa IDNR NPDES General Permit #6. Copies of these guidelines and blank forms are available from the Iowa DNR.

E. The Contracting Authority will notify the Contractor of any demands brought upon the project by the Iowa DNR. The Contractor shall cooperate with the Contracting Authority in its efforts to comply with the site-specific guidelines provided by the Iowa DNR, including the possibility of adjusting the dewatering system if the discharge exceeds limits imposed by the Iowa DNR. The Contracting Authority will be responsible for the costs of sampling and laboratory analysis if required by the Iowa DNR.

1.02 SCHDEDULE AND PLAN

A. Prior to commencement of construction, the Contractor shall submit a detailed dewatering plan including: dewatering method, a list of equipment, estimated pumping rates and a schedule of values.

B. Geotechnical information collected for the project is provided in the contract documents. Fluctuations of the groundwater level can occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were completed. The geotechnical information was prepared for design purposes only and may not be adequate for a Contractor to evaluate construction conditions or design the dewatering system. The Contractor should independently interpret the soil/groundwater conditions taking into consideration their intended means and methods of construction, and the Contractor may perform additional exploration at their own expense as necessary for design of the dewatering system.
   1. Due to possible variations of soil conditions and groundwater levels between soil bore locations the Contractor shall be responsible for changing or modifying the dewatering system to accommodate such variations.

1.03 CONTROL AND OBSERVATION

A. Adequate control shall be maintained by the Contractor to ensure that the stability of excavated slopes are not adversely affected by water, that erosion is controlled and that flooding of excavation or damage to structures does not occur. The Contractor is solely responsible for site excavation safety and compliance with OSHA regulations, in particular Standard 29 CFR, part number 1926. The Engineer assumes no responsibility for site safety; the above information is provided for consideration by the Contractor only.

B. The Contracting Authority reserves the right to install piezometers, at its own expense, to observe the groundwater levels and monitor the performance of the system.

C. When directed by the Engineer, the Contractor will be required to excavate a pothole to determine if the groundwater is at the acceptable absolute minimum level or lower as defined in Article 154062.01, 1.01, A, 1.

1. When observation of the groundwater level is complete the pothole shall be backfilled with clean 3 inch crushed limestone per Pay Item “TRENCH FOUNDATION”, and the Contractor shall be paid for the quantity used based on the contract unit price.
2. The Contractor will be required to excavate a pothole, disturbing the smallest footprint possible, to the elevation as described in Article 154062.01, 1.01, A, 1, for each reach of piping requiring dewatering. Said pothole excavation shall be made with the following minimum frequency:
   (a) At the beginning of any day where any trench has not been completely backfilled.
   (b) At every 150 lineal feet of trench along the length of the pipe run.
   (c) At the end of every day. (The pothole made at the end of the day shall be left open and shall be used as the pothole for the beginning of the next day of construction.)

   The cost of said pothole excavations, excluding 3 inch foundation rock backfill, shall be considered incidental to the item Dewatering. If any additional pothole excavations are requested by the Engineer, the cost of said pothole excavations, excluding 3 inch foundation rock backfill, shall be considered incidental to the item Dewatering. If the additional potholes are needed as a direct result of the Contractor’s actions or negligence they will be done at the sole expense of the Contractor.

1.04 INSPECTION

A. During or after any trench excavation. If Contractor observes sufficient soil instability present that may prevent proper installation of pipe bedding, pipelines, backfill and compaction, then Contractor shall call for inspection of conditions by the Engineer. The Engineer shall inspect the conditions and determine if they are unacceptable for pipe installation.

B. If after dewatering has lowered the groundwater level as specified and unacceptable trench conditions are found by the Engineer, then the Contractor may be directed to increase dewatering pumping rates or install additional wells to lower the groundwater to an acceptable level lower than that defined in Article 154062.01, 1.01, A, 1. If more extensive dewatering is required the Contractor must achieve the revised acceptable groundwater level before construction may continue.

1.05 EXECUTION

A. The Contractor shall furnish, install, and operate pumps, pipes, appliances, and equipment of sufficient capability to maintain the absolute minimum or lower groundwater elevation described in Article 154062.01, 1.01, A, 1, within the trench excavation limits until the trench is backfilled, unless otherwise authorized by the Engineer.

B. The Contractor shall provide any temporary ground surface piping necessary to convey dewatering well water discharge to an acceptable storm sewer intake with the capacity to convey said discharge. Any rerouting of temporary ground surface piping, necessary to complete the project, will be provided by the Contractor. Discharge directly onto the ground surface shall not be allowed unless approved by the Engineer. The Contractor shall supply a clean tapping device at each well location to allow easy discharge water sampling by the Engineer.

C. An adequate system shall be designed, installed and maintained to lower and control the groundwater elevations as described in Article 154062.01, 1.01, A, 1, to permit excavation, construction of structures, and placement of fill materials to be performed under dry conditions.

D. The system shall be placed into operation, prior to beginning excavating below the natural groundwater level, to lower the groundwater to the elevation as described in Article 154062.01, 1.01, A, 1, and shall be operated continuously 24 hours a day, 7 days a week until sewers have been constructed and backfill materials have been placed to the top of the trench.
   1. If the dewatering system shuts down or if pumping is suspended, the groundwater levels will need to be lowered to the required level, as described in Article 154062.01, 1.01, A, 1, and verified by the Engineer before continuing any construction, including excavation or backfilling. The Engineer will also require any compaction, moisture and/or other soils testing, as determined necessary, of any backfill that is prematurely subjected to groundwater to verify said soils stability prior to placement of additional backfill. If said soils are determined to be unacceptable the Contractor will be required to remove and replace damaged soils at their own expense.

E. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of subgrade soils at the bottom of the proposed excavation.

F. Diversion ditches and dikes shall be used, where necessary, to prevent surface water from entering the excavation.

1.06 METHOD OF MEASUREMENT AND PAYMENT

A. The measurement and payment for all work covered under this section will be made at the contract lump sum price for Dewatering which shall constitute full compensation for obtaining any necessary permits and furnishing all equipment, labor, and materials to install, operate, maintain, and remove the dewatering system in accordance with all applicable regulations.
   1. No payment shall be made to the Contractor until copies of the permits are supplied to the Contracting Authority.
   2. The Contractor shall be required to submit a schedule of values to the Engineer to explain the breakdown of the lump sum price. This schedule of values will only be used to determine the appropriate amount of the lump sum to be attributed to each progress payment. The following list contains items that should be used, at a minimum, for the schedule of values:
      (a) Obtaining permits and complying with permit requirements
      (b) Drilling the wells
      (c) Installing the pumps
      (d) Installing power supply
      (e) Discharge and/or manifold piping
      (f) Removal