SECTION 02512

DEWATERING

1.0 GENERAL

A. Description

1. Dewatering shall include, but not necessarily be limited to, designing, furnishing, installing, maintaining, operating, and removing temporary dewatering systems as required to lower and control water levels and hydrostatic pressures during construction; and disposing of pumped water in accordance with the Contract Documents.

2. Dewatering includes lowering the water table and intersecting seepage which would otherwise emerge from the slopes, trench sidewalls, or bottom of the trench or excavation; increasing the stability of excavated slopes; preventing loss of material from beneath the slopes or bottom of the excavation; reducing lateral loads on sheeting and bracing; improving the excavating and hauling characteristics of sandy soil; and preventing rupture or heaving of the bottom of an excavation.

3. The Contractor shall note the date and method(s) of data collection. The interpretation of the data and its applicability to the project are the responsibility of the Contractor and the Contractor is responsible for satisfying himself as to the actual conditions and/or confirming the data provided prior to submitting his bid.

B. Related Work Included Elsewhere

a. Trench Excavation, Backfill and Compaction; Section 02250.

C. Quality Assurance

1. It shall be the Contractor's responsibility to select materials, methods, and equipment, and design a dewatering system which will:

1. Effectively reduce the hydrostatic pressure and lower the groundwater levels below the excavation;

2. Develop a substantially dry and stable subgrade for the prosecution of subsequent operations;

3. Not result in damage to adjacent properties, buildings, structures, utilities, private and public water wells, and other work;

4. Assure that after 12 hours of initial pumping, no soil particles will be present in the discharge.

2. Methods may include sump pumping, single or multiple stage well point systems, eductor and ejector type systems, deep wells, and combinations thereof.

3. Locate dewatering facilities only where they will not interfere with utilities and construction work to be done by others. If observation wells are used, they shall be placed both perpendicularly and longitudinally along the excavation to demonstrate the effectiveness of the dewatering system and its impact on the surrounding unexcavated areas.

4. Modify dewatering procedures which cause, or threaten to cause, damage to new or existing facilities, so as to prevent further damage. The Contractor is responsible for determining the modifications to be made, which shall be implemented at no additional cost to the Commission.

D. Submittals

The Contractor shall, at the preconstruction meeting or a minimum of fourteen days prior to installation of the dewatering system, submit to the Chief Engineer a letter report, including working drawings and/or design data that is required to detail any or all of the following:

1. The proposed type of dewatering system, including relief of hydrostatic head and maintenance of the excavation in a dewatered and in a hydrostatically relieved condition;

2. Arrangement, location, and depths of the components of the system;

3. A complete description of equipment to be used, with installation, operation, and maintenance procedures;

4. Standby equipment and power supply;

5. Location and size of berms, dikes, sumps, and discharge lines, including the relation to water disposal ditches;

6. Types and sizes of filters;

7. Design calculations demonstrating adequacy of the selected system and equipment.

2.0 MATERIALS

Not used.

3.0 EXECUTION

B. General

It shall be the Contractor's responsibility to adequately control both surface drainage and drainage of excavated areas as follows:

1. Surface Drainage: Intercept and divert precipitation, surface water, and groundwater away from excavation through the use of dikes, curb wails, ditches, pipes, sumps, or other means.

2. Drainage of Excavated Areas: Provide and maintain ditches of adequate size to collect surface and seepage water which may enter the excavations. Divert the water into sumps and drain or pump into drainage channels or storm drains. The discharge of flushing or ground water into existing sanitary sewers is strictly prohibited. Discharge all water to a settling basin or other sediment control device with approval of the St. Mary’s County Soil Conservation District to reduce the amount of fine particles which may be carried into the drain. If a storm drain becomes blocked or its capacity restricted due to dewatering operations, the Contractor shall clean the drain at no additional cost to the Commission.

1. Dewatering

1. Organize dewatering operations to lower the groundwater level in excavations as required for prosecution of the work, and to provide a stable, dry subgrade for the prosecution of subsequent operations.

2. Maintain the water level at such lowered elevations until no danger to the structure or facility can occur because of buildup of excessive hydrostatic pressure, and in any event maintain the water level a minimum of 2 feet below the subgrade, unless otherwise permitted by the Chief Engineer.

3. If approved by the Chief Engineer, the extent of dewatering may be reduced, for structures designed to withstand uplift pressure, to maintain the water level a minimum of 5 feet below the prevailing level of backfill as it is being placed, provided such water level

does not result in uplift pressures in excess of 80% of the downward pressure produced by the weight of the structure and backfill in place.

4.0 METHOD OF MEASUREMENT

RESERVED FOR FUTURE USE

5·0 BASIS OF PAYMENT

RESERVED FOR FUTURE USE

****END OF SECTION 02512****