

## SECTION 31 23 19 - DEWATERING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes construction dewatering.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades. Control of surface and subsurface water, ice and snow are part of dewatering requirements.
- B. Contractor shall reduce hydrostatic head in the water-bearing strata below structure foundations, drains, sewers and other excavations to extent that water level and piezometric water levels in construction areas are below prevailing excavation surface.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Provide temporary grading to facilitate dewatering and control of surface water.
- B. Protect and maintain temporary erosion and sedimentation controls, which are specified in Section 31 10 00 Site Clearing, during dewatering operations.
- C. Contractor shall, prior to excavation below groundwater level, place system into operation to lower water levels as required and then operate it continuously 24 hour a day, 7 days a week until water mains, sewers and structures have been constructed, including placement of fill materials, and until dewatering is no longer needed.
- D. Contractor shall dispose of water removed from excavations in a manner to avoid endangering public health, property, and portions of the work under construction or completed, including work being performed by adjacent project(s). Dispose of water in a manner to avoid inconvenience to others engaged on the site, including work being performed by adjacent project(s). Provide sumps, sedimentation tanks, and other flow control devices as necessary. Effluent water from dewatering methods shall be sediment free or be discharged through a sediment entrapment basin approved by the contracting officer.
- E. Contractor shall provide standby equipment on site, installed and available, for immediate operation if required to maintain dewatering on a continuous basis in event any part of the system becomes inadequate or fails. If dewatering requirements are not satisfied due to

inadequacy or failure of dewatering system, perform work as may be required to restore damaged structures and foundations soils at no additional expense.

### 3.2 INSTALLATION

- A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.
  - 1. Space well points or wells at intervals required to provide sufficient dewatering.
  - 2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.
- B. Place dewatering system into operation to lower water to specified levels before excavating below ground-water level.
- C. Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails.

### 3.3 OPERATION

- A. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewatering is no longer required.
- B. Operate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
  - 1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.
  - 2. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
  - 3. Maintain piezometric water level a minimum of 24 inches below bottom of excavation.
- C. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches below overlying construction.

### 3.4 FIELD QUALITY CONTROL

- A. Survey Work Benchmarks: Resurvey benchmarks regularly during dewatering and maintain an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

END OF SECTION 31 23 19