

# Special Specification 4180

## Well Pointing



### 1. DESCRIPTION

This Item will govern for the temporary dewatering of trenches and embankments. Work, in general will include:

- designing, furnishing, installing, testing, operating, monitoring and maintaining a system to control ground water and surface water as required to comply with the performance requirements specified,
- controlling and removing seepage and surface water from the excavation, including excavation slope erosion control,
- prevention of surface water from entering the trench and diverting the surface water away from the site,
- removal of the temporary dewatering system after completion of the specified portion of work, and
- removal of ground water and surface water from all remaining excavation, after removal of the temporary dewatering system, until construction has reached finished grades.

### 2. WORK METHODS

The dewatering system work will be performed by a firm that has at least 5 yr. of successful experience in the field of dewatering.

The Contractor or well pointing firm must engage a qualified surveyor, to perform all layouts and measurements. The surveyor must layout the work to the lines and grades required before installation and must determine the location of each well point, piezometer and other data, as required.

The surveyor will record and maintain all information pertinent to each well point and piezometer.

The temporary dewatering system, as specified in these specifications, must be the minimum system required for controlling groundwater, regardless of source. The installed system must be capable of lowering and maintaining the groundwater to at least 3ft. below the bottom of the excavation and until the required work is complete. Within these limits, the Contractor must be responsible for the design of the entire temporary dewatering system and make whatever modifications and additions to the system as may be required for the system to fulfill its requirements.

#### 2.1. Performance Requirements. The Contractor must:

- design, furnish, install, test, operate, monitor and maintain the minimum well point system as specified, including all discharge piping and connections at the point of discharge, sufficient to lower the ground water level or hydrostatic head below the bottom of the excavation, or lower, to prevent seepage of water into the excavation and permit proposed work to be completed "in the dry,"
- design, furnish and install, test, operate, monitor and maintain whatever additional system that may be necessary to supplement the minimum well point system as specified, and maintain the excavation free of groundwater seepage and surface water, regardless of source,
- periphery of the entire excavation must be suitably diked and the dikes maintained to prevent surface water from entering the excavation,
- water seeping, falling or running into the excavation as it is dug, and until the temporary dewatering system is removed as specified, must be promptly pumped out,

- dispose of all seepage and surface water removed from the project, regardless of source, by methods approve by the Engineer, and
- take appropriate and approved measures to prevent erosion of the excavated soils and ramp slopes.

2.1.1. **Maintenance.** Contractor must provide system maintenance including, but not limited to, at least daily supervision by someone skilled in the operation, maintenance, and replacement of system components and must provide one spare (connected) diesel powered pump; and all other equipment and work required to maintain the excavation in a dewatered and hydrostatically relieved condition. Dewatering and pressure relief must be a continuous operation and interruptions due to power outages, or any other reason, will not be permitted. A responsible operator capable of starting, finishing and maintaining the dewatering system and starting standby equipment must be on duty at all times. A designated responsible person must continuously monitor the dewatering and surface water central systems, until the Contractor has received approval that he may discontinue dewatering controls.

2.1.1.1. **Correction of Work.** Contractor must be fully responsible for the failure of all components of the temporary dewatering work and for all damages to work in the excavation area caused by the failure to provide, maintain, and operate the temporary dewatering system, as specified. Contractor must restore all damaged work, including failed components of the work in this Specification to a condition as good as or better than existed before failure of components.

2.1.1.2. **Job Conditions.** Contractor must provide protection of persons and property by at least:

- barricading open excavations occurring as part of this work and post with warning lights,
- operate warning lights during the hours from dusk to dawn, each day,
- all barricades, signs and other types of devices must be installed in accordance with the "Texas Manual on Uniform Traffic Control Devices," and
- protect structures, utilities, sidewalks, pavements and other facilities from caused by settlement, lateral movement, undermining, washout and other hazards created by temporary dewatering system installation and operation.

Contractor must restore all streets, driveways, curbs, sidewalks and other existing items to a condition as good or better than existed before work was commenced, at no additional cost to the Department.

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### 3. MEASUREMENT

Well point systems or dewatering systems must be measured by the linear foot of trench being dewatered. The measurement will be taken along the centerline of the trench.

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### 4. PAYMENT

Payment will be made at the Contract unit price bid for "well pointing" measured as provided under "Measurement." Such payment will be full compensation for all materials, equipment and labor necessary to furnish, install, operate and maintain the well point system. Including any necessary traffic warning systems or any work necessary to restore the site to its original condition, including any damaged facilities