ITEM 436

WELL POINTING

436.1 Description. This item shall govern for the temporary dewatering of trenches for the installation of utilities. Work, in general shall include:

A. 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.

B. Controlling and removing seepage and surface water from the excavation, including excavation slope erosion control.

C. Prevention of surface water from entering the trench and diverting the surface water away from the site.

D. Removal of the temporary dewatering system after completion of the specified portion of work.

E. Removal of ground water and surface water from all remaining excavation, after removal of the temporary dewatering system, until construction has reached finished grades.

436.2 Quality Assurance. The dewatering system work shall be performed by a firm which has at least five (5) years of successful experience in the field of dewatering.

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

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

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

436.3 Performance Requirements. The Contractor shall:

A. Design, furnish, install, test, operate, monitor and maintain the minimum well point system as specified herein, including all discharge piping and connections at point of discharge, sufficient to lower the ground water level or hydrostatic head below the bottom of the excavation, or lower, so as to prevent seepage of water into the excavation and permit installation of all utilities "in the dry".

B. 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 herein, and to maintain the excavation free of groundwater seepage and surface water, regardless of source.

C. The periphery of the entire excavation shall be suitably diked and the dikes maintained to prevent surface water from entering the excavation.

D. All water seeping, falling or running into the excavation as it is dug, and until the temporary dewatering system is removed as specified, shall be promptly pumped out.

E. Dispose of all seepage and surface water removed from the project, regardless of source, by methods approved by the Engineer.

F. Take appropriate and approved measures to prevent erosion of the excavated soils and ramp slopes.

436.4 Maintenance. The Contractor shall 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 shall provide one (1) spare (connected) diesel powered pump; and all other equipment and work required by the Engineer to maintain the excavation in a dewatered and hydrostatically relieved condition. Dewatering and pressure relief shall be a continuous operation and interruptions due to power outages, or any other reason, shall not be permitted. A responsible operator capable of starting, finishing and maintaining the dewatering system and starting standby equipment shall be on duty at all times. Some responsible person shall continuously monitor the dewatering and surface water central systems, until the Contractor has received approval from the Engineer that he may discontinue surface and/or groundwater control.

436.5 Correction of Work. The Contractor shall 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 shall restore all damaged work, including failed components of the work in this

specification to a condition as good as or better than existed prior to failure of components.

436.6 Job Conditions. The Contractor shall provide protection of persons and property by at least:

A. 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 shall be installed in accordance with the "Texas Manual on Uniform Traffic Control Devices".

B. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by temporary dewatering system installation and operation.

The Contractor shall restore all streets, driveways, curbs, sidewalks and other existing items to a condition as good as or better than existed before work was commenced, at no additional cost to the City of Deer Park.

436.7 Measurement. Well point systems or dewatering systems shall be measured by the **linear foot** of trench being dewatered. The measurement shall be taken along the centerline of the trench.

436.8 Payment. Shall be made at the contract unit price bid for "well-pointing" measured as outlined in the preceding section. Such payment shall 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.

END OF ITEM 436