

SECTION 11252

PUMPING EQUIPMENT

PART 1 GENERAL

WORK INCLUDED

The work includes providing all operating equipment and special materials complete with all accessories and appurtenances required for complete pumping systems, including the control system, starters, enclosures, and other equipment.

SUBMITTALS

Shop drawings, catalog data sheets, pump curves, diagrams, design calculations, and other such data necessary to describe completely and to substantiate compliance with the drawings and specifications shall be submitted for all materials, equipment and accessories specified in this section, in accordance with the procedure set forth in the Section 01340. Complete operation and maintenance instructions for all equipment shall be submitted with the shop drawings. No shop drawing will be considered complete until the operation and maintenance instructions and manuals have been approved by the Engineer.

ELECTRICAL EQUIPMENT

Complete starting equipment suitable for motor control indicated shall be provided in the Motor Control Center as specified. Horsepower indicated and/or specified is approximate only and shall be adjusted to provide the specified capacities. All equipment shall be protected by surge protectors and by lightning protectors.

EQUIPMENT INSTALLATION

The installation of all equipment including setting anchor bolts and grouting base plates shall be as recommended by the manufacturer to conform to the particular application involved, in accordance with the details shown on the drawings. All anchor bolts shall be plated steel. Installation of equipment and connections to equipment shall be completed in every detail in a first-class workmanlike manner. All bearings shall be properly lubricated. Necessary supports for all equipment shall be provided as required. Shop drawings for supports shall be submitted. Prior to acceptance of all or any part of the work test each pump and furnish written certification that it has been installed in accordance with the manufacturer's requirements and is ready to begin operation.

MANUFACTURER'S REPRESENTATIVES

Require, as part of the work under this contract, and at no additional cost to the Owner, that the approved pump manufacturers and control manufacturers provide the services of competent and experienced representatives to instruct the Contractor as required for the proper installation and start up of the equipment and to instruct the Owner-designated employees in the operation and maintenance of the installation.

QUALITY ASSURANCE

All materials and workmanship shall be of first class quality, and shall be used for the purpose for which they were manufactured. Pumps shall comply with OSHA requirements. Each pump manufacturer shall warrant the equipment provided against defects in materials and workmanship for a period of twelve (12) months from start-up, under the use, operation and service of this project. The warranty shall be written.

GENERAL PUMP REQUIREMENTS

The pumps shall be designed and constructed in accordance with Standards of the Hydraulic Institute. The efficiency of the pump when operating under conditions of the specified capacities and heads shall be as near its peak efficiency as practicable. The pumps shall be factory tested, hydraulically and dynamically balanced and shipped completely assembled. Certified factory performance curves for each pump, except sump pumps, shall be submitted to the Engineer for review. No pump will be approved until the performance curve is approved. Each pump shall be field tested under actual operating conditions. If any defect or fault is found during the test, the Contractor shall make all repairs or replacements and do whatever is necessary to remedy the defect or fault and shall retest the equipment to the satisfaction of the Engineer. All costs of repairs and replacement and retesting shall be at the Contractor's expense.

All pump motors and controls shall be suitable for operation at 40 degrees C ambient temperature unless indicated or specified otherwise. The pumps shall be capable of 24 hour per day operation, 7 days per week.

No spare parts for storage, required by this section, shall be delivered until such time as the Building is ready for occupancy by the Owner.

WELL PUMP

General:

Contractor shall furnish and install a quantity of one (1) Crown, 8H, 4 stage, water lubricated, vertical turbine pump bowl assembly. Pump shall be a vertical turbine pump with submerged 100 horsepower motor. The impeller shall be trimmed to meet the exact head/discharge requirements. Each unit shall include a bowl assembly (strainer), 6" riser pipe, and an 8" pitless adapter. The pump shall be set at a depth of 235' from the top of the well casing.

Conditions of Operation:

Capacity 780 U.S. Gallons per minute, Total Head 375' TDH. Additionally, the pump shall have the capability of having two of its stages easily removed such that it can pump 780 U.S. Gallons per minute at 178' TDH. Additionally, the pump shall be capable of operating at the following hydraulic design conditions.

The total length of the pipe shall be 235 feet. The column pipe shall be not less than 6 inches inside diameter and weight not less than 18.97 pounds per foot. The pipe shall be furnished in interchangeable sections not over ten feet in length, and shall be connected with threaded, sleeve-type couplings. The joints are to be butted to insure perfect column alignment after assembly.

PART 3 EXECUTION

EQUIPMENT INSTALLATION

The installation of all shall be as recommended by the manufacturer to conform to the particular application involved, in accordance with the detail shown on the drawings. All anchor bolts shall be plated steel. Installation of equipment and connections to equipment shall be completed in every detail in a first-class workmanlike manner. All bearings shall be properly lubricated. Necessary supports for all equipment shall be provided as required.

Install the various pump systems in strict accordance with the respective manufacturer's instructions. Units shall be plumb and all joints shall be tight and non-leaking. Prior to acceptance of all or any part of the work, test each pump and furnish written certification that it has been installed in accordance with the manufacturer's requirements and is ready to begin operation.

START UP

No form of energy shall be turned on to any part of the system prior to the receipt by the Engineer of a Certified Statement of Approval of the Installation from the System Manufacturer.

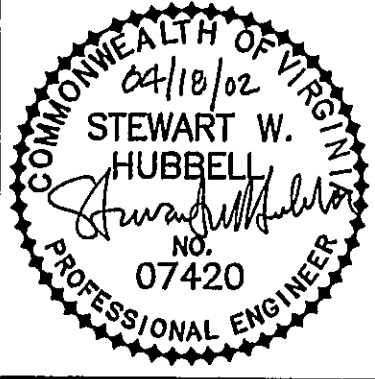
Upon completion of the system start up, the System Manufacturer shall provide three (3) sets of complete Operation and Maintenance manuals. The manuals shall contain complete operation and maintenance instruction on each of the types of equipment provided. Additionally, complete as-built wiring and interconnecting diagrams shall provide and updated to include any and all changes that may have occurred during installation.

DISINFECTION EQUIPMENT

Disinfection of raw water shall be accomplished by the introduction of sodium hypochlorite solution. The hypochlorite pump shall have the capacity to provide hypochlorite at a normal operating rate of 1 part per million and a sustained emergency rate of 8.5 parts per million, at a water discharge rate of 780 gpm.


Two hypochlorite pumps shall be provided. One for normal use and the other for backup.

END OF SECTION



Date									

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MUSE WELL
TEMPORARY FACILITY
SPECIFICATIONS

CITY OF ROANOKE, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
N/A

Commission Number:
1869

Sheet No.:
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