



CITY OF TAMPA

Bob Buckhorn, Mayor

CONTRACT ADMINISTRATION DEPARTMENT

David L. Vaughn, AIA, Director

ADDENDUM NO. 2

DATE: July 29, 2011

Contract 11-C-00050; TPD Headquarters – Domestic Water System Improvements

Bidders on the above referenced project are hereby notified that the following addendum is made to the Contract Documents. BIDS TO BE SUBMITTED SHALL CONFORM TO THIS NOTICE.

Item 1: Insert the attached Section 15160 – Pumps.

All other provisions of the Contract Documents and Specifications not in conflict with this Addendum shall remain in full force and effect. Questions are to be e-mailed to ContractAdministration@tampagov.net.

Jim Greiner

Jim Greiner, P.E., Contract Manager

SECTION 15160 – PUMPS

PART 1 - GENERAL

WORK INCLUDED:

Water booster pumps.

Pump controls where self-contained.

SEE DRAWINGS FOR FURTHER CONDITIONS, REQUIREMENTS & SCHEDULES

SUBMITTALS

See Division 1 for information on Submittals.

PART 2 - PRODUCTS:

GENERAL

Statically and dynamically balance rotating parts.

Pumps to operate at 3450 rpm maximum unless specified otherwise.

Pump package shall be factory tested and pre-set to site conditions as well as hydrostatically tested.

DOMESTIC WATER BOOSTER PUMP – MULTI STAGE:

Provide a unitary pre-packaged domestic Water Pressure Booster Pumping System per engineering data flow, and head requirements. System design is based on QuantumFlo, Inc.

Pumps shall be, multi-stage, close-coupled, vertically mounted, 304 stainless steel diffuser pumps with high-thrust motors and viton/ceramic mechanical seals in accordance with schedule shown on plane.

APPROVED MANUFACTURERS:

QuantumFlo, Inc.
Aurora/Pentair Pump Group
ITT/Bell & Gossett, Div.

Motors shall be; High Efficiency, Class F insulated, electric motors designed for inverter duty application. The motors shall be suitable for the voltage, frequency, phasing and enclosure as indicated in the pump schedule on the project plan set.

Pumps and Motors: Refer to plumbing drawings for additional information.

STRUCTURAL ELEMENTS:

The entire system shall be factory skid mounted on a minimum 304 stainless-steel structural square tube support frame, with in shear molded rubber vibration isolators.

VALVES:

All valves shall be full port bronze ball valves with S.S. ball and stem design for valve sizes 2-1/2" and smaller, and cast iron, epoxy coated lever operated, grooved end type butterfly valves, with stainless steel disc, and

stainless steel shaft, for valve sizes 3" and larger. Valves must be rated for maximum pressure service for the system.

CONTROL PANEL:

The pumping system control panel shall incorporate the following elements, and criteria:

The pump controller and all its components shall be housed in a NEMA 1, UL listed, ventilated, control enclosure. The controller shall have a main power disconnect switch, with enclosure door interlock, which shall require opening the disconnect switch before the control cabinet may be opened. The system shall provide for a single point electrical connection, with all power, both primary, and secondary to be de-activated with opening the main disconnect switch.

The entire controller shall be UL 508A listed INDUSTRIAL CONTROL PANELS, and have all UL listed devices of Touch Safe design, which shall eliminate any bare handed shock hazard. All primary and secondary power circuits shall utilize molded case circuit breakers, no fuses are acceptable. All secondary control circuit wiring shall be 24 volts, AC/DC, or less, to include all pilot lights, selector switches, panel meters, and alarm devices. The Primary motor branch circuits shall have thermal magnetic circuit breaker protection, (primary fuses shall not be acceptable). There shall be no part of the interior of the control enclosure, which shall produce a bare handed shock hazard even with the controller powered up. There shall be no exceptions to this requirement.

The controller shall utilize a programmable 24 volt EEPROM control module, with removable memory card, which shall provide all pump staging, and timing functions. Low Suction and High System alarm conditions shall have audible, and visual indicators, with timed delayed proof of condition automatic reset. The EEPROM Module shall provide for automatic alternation between equal pumps. Pressure-based pump sequencing is unacceptable since a change in suction pressure can skew the sequencing point. Pump sequencing must be accomplished through electronic means either by measuring KW, amperage or frequency as a reference to pump flow. A spare EEPROM control card shall be provided with control sequence pre-programmed, and turned over to the owner. There shall be no failure of any one system component which will render the system incapable of maintaining system flow to the building. All controls must be 100% fail-safe including failure of the PLC.

The controller panel shall have the following features.

System interface shall be 4.5", 256 color touch screen HMI interface providing all system data such as pressure, pump speed, amperage, run-time per pump, system temperature and timing functions without the need to open the panel door.

Provide three phase lightning protection for entire control panel.

Main power un-fused, door interlocked disconnect switch.

Individual, glycerin filled, panel mounted, stainless steel suction and system pressure gauges.

Low suction condition shall be initiated via a separate exclusive pressure switch (for pressure feed systems), or a liquid level float switch, (for break tank operation).

Automatic pump alternation between equal split pumps.

Low suction condition shall be initiated via a separate exclusive pressure switch (for pressure feed systems), or a liquid level float switch, (for break tank operation).

All control components shall be UL Listed, or recognized devices.

The controller shall be constructed in accordance with the National Electrical Code, (NEC).

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Note: All components shall be of standard manufacture, and not be of proprietary sole source. All components shall bear the manufacturer's original nameplate data, and source, such that repair parts may be readily available at reasonable cost to the owner.

PUMP SEQUENCING:

All pump sequencing shall be initiated, and controlled via the EEPROM Control Module. Upon pressure drop, the Lead pump shall initiate via the EEPROM control module, and run to attempt to satisfy demand. In the event the pressure set point is not satisfied after a variable time delay, the Lag pump shall initiate to assist the lead pump in meeting demand. After the pressure set point is reached, the pumps shall continue to run for a variable Off Delay period to allow for motor winding cool down, and to prevent short cycling of the pumps. Upon signal from an electronic thermal switch the system shall revert to the stand-by mode (no flow shutdown).

PUMP THERMAL RELIEF:

Provide secondary, emergency, non-electric, thermal, and pressure relief valve to prevent pumps from overheating due to dead heading condition. The protective device shall relieve at 145 degrees F and pressure setting shall be based on system pressure + 15 PSI for systems over 80 PSIG and 85 PSIG for systems below.

BLADDER TANK:

No bladder tank is recommended, or required for this type system.

Pressure: Unless otherwise specified, all components must be of pressure class and rating to be recommended for operation at the maximum allowable non-shock pressure of 200 psig.

PRESSURE REGULATION:

Pressure regulation is provided via the variable frequency drive controllers, with PID control. No other pressure regulators are required. In the event of any drive failure, next drive in sequence shall start automatically and the failed drive shall indicate a fault condition. In the event of a loss of transducer signal, the system shall be pre-programmed to a "fail-safe mode" which will ramp pumps to a safe-speed and maintain positive pressure on the system piping without shutting the system down. There will be no failure of the major control components which will compromise the building pipe pressure ratings.

FABRICATION:

All headers, nipples, and welded attachments to the headers shall be type 304 stainless steel materials.

All welding shall be in accordance with section IX of the ASME Boiler and Pressure Vessel code, and shall be performed by welders qualified under that standard.

The completed system shall be hydrostatically tested after all appurtenances have been installed to a minimum of 1.5 times the specified system working pressure.

Each pump shall have an individual resilient seated non-slam type check valve on each pump immediately downstream of the pump discharge.

All pumps shall be mounted utilizing in-shear rubber vibration isolators mounted to the motor bases.

All stainless steel surfaces shall be brushed or polished.

START UP:

Initial factory start-up and owner training shall be performed by a qualified factory trained technician. A factory certified start-up report must be provide to the owner, dated and signed by the factory technician.

PARTS:

A complete listing of all parts and equipment for the system shall be listed using the original manufacturer's model, and serial numbers, and source information.

OWNER TRAINING:

The owner instruction and training shall include, but not be limited to the following:

Training in the replacement of the motor, mechanical seals and pump impeller.

Safe replacement of the Control Module EEPROM chip, fuses, and pilot lamps.

Proper operation of the system, troubleshooting, alarm, and reset features

ON SITE FACTORY WARRANTY:

Provide 3-year extended warranties for all equipment servicing common areas. Warranty shall be a "Factory On-Site" Warranty which includes both time and materials in the event of a failure. Warranty will be performed by the manufacturer or a properly trained factory representative.

PART 3 – EXECUTION:

INSTALLATION:

Install pumps complete with all accessories as shown or described on the construction documents.

Install pumps with adequate working clearance around all components and accessories.

Notify the Architect or Engineer of any conflicts between the manufacturer's recommendations and construction documents.

END OF SECTION 15160