

CITY OF ROCKWALL, TEXAS
EASTSIDE PUMP STATION
REPLACEMENT OF PUMP NOS. 1 AND 2

ADDENDUM NO. 1
April 13, 1999

Plans and specifications for the Eastside Pump Station - Replacement of Pump Nos. 1 and 2 project, for the City of Rockwall, Texas, on which bids are to be received until 10:00 a.m., April 16, 1999, are hereby modified as follows:

TECHNICAL SPECIFICATIONS:

- Refer to Section 1.01 - General, Item B. - Approval of Equipment. Add the following sentence after the 1st sentence of the 6th paragraph of this section:
"The pump suppliers proposal shall also include the necessary adapter, fittings and connectors required to properly mate the proposed pumps to the existing pump can flanges (Piping Schedule Item B, Sheet No. 5 of the Construction Plans)."
- Refer to Section 1.01 - General, Item E. - Factory Test. In order to expedite the delivery time of the pumps and motors for this project, the factory test for the pumps are hereby waived. Therefore, delete Item E, paragraph 2 in its entirety and do not replace.
- Refer to Section 1.02 - Product, Item B. - Motor, 1) - General. Add Marathon Electric to the approved motors for this project.
- Refer to Section 4.6 - Miscellaneous Electrical, page 4-22. Replace Paragraph D, and add Paragraphs J and K, as provided below:
D. Provide and install 480V-3Ø room air conditioner to replace existing window unit. Unit shall be rated at 3½ tons with 115° air on outdoor coil. Unit shall have a SEER rating of 10 or higher. York single package slab on ground with insulated and weather protected outdoor duct and distribution through existing door. Unit will be cooling only. Provide thermostat and all controls. Paint indoor duct to match. Provide York model DEB04Z or equal.
J. Upgrade PLC as required to provide all necessary input, output and control as indicated on the drawings. Replace the existing micro controller with a larger version that will accommodate the required inputs, outputs and logic. Provide services to transfer the existing PLC logic to the new PLC and to program the new PLC to accommodate the additional logic for the generator, automatic transfer switch and pumping changes. This work will include modifications to the City of Rockwall Central Monitoring Control PLC, computer programming, MMI and display pages at the Service Center located at 1600 Airport Rd. and the addition of new display pages for pump 4 (alternate) and the generator and automatic transfer switch. The existing software is Wonderware. Work shall be performed by Mid-Tex Controls, Lewisville, Texas. Contact Mr. Jerry Hawn at 972-436-9024. Contractor shall obtain pricing for this work before bid and include it in his price. No separate payment shall be made for work under this section, but all such work shall be considered incidental to the project and the payments made under specific Pay Items shall be considered as full compensation for these requirements.
K. Provide 3Ø, 480V lightning arresters for each pump motor. Provide Delta LA603.

- Refer to Section 4.7 - Emergency Generator, page 4-22. Change all references to "Emergency Generator" to "Standby Generator".
- Refer to Section 4.7 - Emergency Generator, page 4-22, Item B. Add:
13) Remote Display Unit (Remote Annunciator).
14) Remote Fault Signal Dry Contact Relay Package.
- Refer to Section 4.7 - Emergency Generator, page 4-23, Item E, second paragraph. Change "200kW" to "500kW".
- Refer to Section 4.7 - Emergency Generator, page 4-24, Item G, second paragraph, third sentence. Change "150 amp" to "250 amp".
- Refer to Section 4.7 - Emergency Generator, page 4-26, Item I. Strike the last sentence.
- Refer to Section 4.8 - Automatic Transfer Switch, page 4-27, Item A. Add the following sentence to the second paragraph:
"Transfer switch load terminals and round terminals shall have adequate space to terminate all conductors as shown on the drawings."
- Refer to Section 4.8 - Automatic Transfer Switch, page 4-28, Item D, third paragraph, last sentence. Replace "35000 amp" with "65000 amp".
- Refer to Section 4.8 - Automatic Transfer Switch, page 4-29, Item F.
 - 1st paragraph, 2nd sentence. Change "three steps" to "four steps"
 - 4th sentence. Change "step two and three" to "steps two through four"
 - Last sentence. Change "step two and three" to "steps two through four"
 - Last paragraph. Replace the last paragraph in its entirety.
- Refer to Section 4 - ELECTRICAL. Add the following Subsection:
4.9 LOW VOLTAGE MOTOR CONTROLLERS

A. Scope

The Contractor shall furnish and install the low-voltage motor controllers as specified herein and as shown on the contract drawings.

The motor controllers shall be designed, manufactured and tested in accordance with the latest applicable standards of NEMA, ANSI and UL.

The following information shall be submitted to the Engineer:

- Master drawing index
- Dimensioned outline drawings
- Conduit entry/exit locations
- Cable terminal sizes
- Wiring diagrams

- Nameplate schedule
- Ratings including:
 - Voltage
 - Horsepower and/or continuous current.

Submit six (6) copies of the above information.

When requested by the Engineer the following product information shall be submitted:

- Descriptive bulletins
 - Product data sheet.
- The following information shall be submitted for record purposes:
- Final as-built drawings and information for items listed in section 1.04
 - Wiring diagrams.

Submit six (6) copies of the above information.

B. Qualifications

For the equipment specified herein, the manufacturer shall be ISO 9000, 9001 or 9000 certified.

The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

The motor controller shall be suitable for and certified to meet all applicable seismic requirements of Uniform Building Code (UBC) for zone 4 application. Guidelines for the installation consistent with these requirements shall be provided by the motor controller manufacturer and be based upon testing of representative equipment. The test response spectrum shall be based upon a 5% minimum damping factor, UBC: a peak of 0.75g, and a ZPA of 0.38g. The tests shall fully envelope this response spectrum for all equipment natural frequencies up to at least 35 Hz.

C. Equipment Storage and Handling

Equipment shall be handled and stored in accordance with manufacturer's instructions. The (1) copy of these instructions shall be included with the equipment at time of shipment.

D. Manufacturers

- Cutler-Hammer
- Benshaw
- Square D

E. Starters

- Magnetic starters through NEMA Size 9 shall be equipped with double-break silver alloy contacts. The starter must have straight-through wiring.
- Coils shall be of molded construction through NEMA Size 9. All coils to be color coded through size 5 and permanently marked with voltage, frequency and part number.

- Overload relays shall be an ambient compensated bimetallic type with interchangeable heater packs. Overload to have (+/-) 24% adjustability, single-phase sensitivity, an isolated alarm contact, and manual or automatic reset.
 - NEMA Size 00 through 2 starters shall be suitable for the addition of at least six (6) external auxiliary contacts of any arrangement normally open or normally closed. Size 3 through 8 starters shall be suitable for the addition of up to eight (8) external auxiliary contacts of any arrangement normally open or normally closed.
 - Each starter shall have one auxiliary contact as required by the drawings.
 - Overload relays shall be ambient compensated bimetallic-type with interchangeable heaters, calibrated for 1.0 and 1.15 service factor motors. Electrically isolated NO and NC contacts shall be provided on the relay. Visual trip indication shall be standard. A test trip feature shall be provided for ease of troubleshooting and shall be conveniently operable without removing components or the motor starter. Overload to have (+/-) 24% adjustability, single-phase sensitivity, an isolated alarm contact and manual or automatic reset.
 - Control circuit transformers, where specified, shall be encapsulated. Primary and secondary fusing shall be provided. Unless otherwise specified, the secondary shall be 120 Vac.
 - Pilot devices, where specified, shall be oiltight and mounted in the flange. Pilot lights shall be transformer-type for extended lamp life. Pilot device nameplates shall be engraved phenolic or aluminum.
 - The operating mechanism shall be mounted on the flange and shall have positive, non-teasing ON/OFF action. The handle shall be color-coded: red for ON and black for OFF.
 - The operating handle shall have a means to lock the handle in the OFF position with a minimum of three (3) standard padlocks having 1/4-inch diameter shackles.
 - Where specified, a disconnect switch with double break, rotary blades and quick-make/quick-break action shall be provided.
 - A removable line shield with test probe holes for inspection shall be provided.
 - The switch shall have readily visible blades in the open (OFF) position.
 - The fusible disconnect switch (through 100A) shall have built-in fuse pullers to make it easier to remove fuses.
 - Where specified, an adjustable instantaneous trip, magnetic-only circuit breaker shall be provided (HMCP). A manual push-to-trip button shall be provided to exercise the trip unit.
 - Combination starters with adjustable instantaneous trip, magnetic-only circuit breakers shall be UL listed for 65,000 amperes fault, through 480 volts.
- F. Reduced Voltage Bypass Motor Starter
- All solid-state reduced-voltage starters shall be UL and CUL listed and consist of an SCR based power section, logic board and paralleling bypass contactor.
 - The SCR based power section shall consist of six (6) back-to-back SCRs and shall be rated for a minimum peak inverse voltage rating of 1500 volts PIV.

- Units using triacs or SCR/diode combinations shall not be acceptable.
- Resistor/capacitor snubber networks shall be used to prevent false firing of SCRs due to dv/dt effects.
- The logic board shall be mounted for ease of testing, service and replacement. It shall have quick disconnect plug-in connectors for current transformer inputs, line and load voltage inputs and SCR gate firing output circuits.
- The logic board shall be identical through all ampere ratings and voltage classes and shall be conformably coated to protect environmental concerns.
- The paralleling bypass contactor shall energize when the motor reaches full speed and close/open under one (1) times motor current.
- The contactor shall be fully rated for across-the-line starting duty should this be desired.
- The overload protection shall be electronic and be based on an inverse time current algorithm.
- Overload protection shall be adjusted via logic board.
- Class 10 or 20 overload characteristic shall be selectable.
- Provide class 20 bi-metal overload relays in addition to the electronic overload relay
- Over-temperature protection (on heat sink) shall be standard.
- The solid-state logic shall be phase sensitive, and shall inhibit starting on incorrect rotation.
- Improper phase rotation shall be indicated on the starter logic board.
- Starters shall protect against a phase loss/imbalance condition shutting down if a 35% current differential between any two phases is encountered.
- A normally open (NO) contact shall annunciate fault conditions, with contact ratings of 60 VA (resistive load) and 20 VA (inductive load). In addition, an LED display on the logic board shall indicate type of fault (current trip, phase loss, phase rotation).
- The following logic board adjustments are required:
 - Ramp Time; 1 to 45 seconds, on a hexadecimal switch
 - Initial Torque; 100 to 200% current, on a hexadecimal switch
 - Current limit; 100 to 500% current, on a hexadecimal switch
 - FLA of motor; 4 to 1 range of starter, on a dipswitch.
- Optional smooth stopping shall provide a linear voltage deceleration should the load require it. It is to be adjustable from 1 to 75 seconds.
- Enclosed units shall include a thermal magnetic circuit breaker or HMCP for short-circuit protection and quick disconnect means.
- Starters and breakers/HMCPs are to be rated per UL 508D for a withstand rating of 65 kAIC RMS.

- Units enclosed in motor control centers shall be of the same manufacturer as that of the motor control center for coordination and design issues.
 - The manufacturer of the solid-state starter shall employ a field-based factory service organization for the purpose of start-up and repair of units. Third party service contractors are not acceptable.
 - Maximum continuous operation shall be at 115% of continuous ampere rating.
- G. Factory Testing
- The following standard factory tests shall be performed on the equipment provided under this section. All tests shall be in accordance with the latest version of UL and NEMA standards.
- All printed circuit boards shall be functionally tested via faultfinder bench equipment prior to unit installation.
 - All final assemblies shall be load tested.
- The manufacturer shall provide three (3) certified copies of factory test reports.
- H. Installation
- Provide the services of a qualified factory-trained manufacturer's representative to assist the Contractor in installation and start-up of the equipment specified under this section. The manufacturer's representative shall provide technical direction and assistance to the Contractor in general assembly of the equipment, connections and adjustments, and testing of the assembly and components contained herein.
- The following minimum work shall be performed by the Contractor under the technical direction of the manufacturer's service representative.
- Inspection and final adjustments
 - Operational and functional checks of controllers/starters and spare parts.
- The Contractor shall provide three (3) copies of the manufacturer's field start-up report.
- I. Manufacturer's Certification
- A qualified factory-trained manufacturer's representative shall certify in writing that the equipment has been installed, adjusted and tested in accordance with the manufacturer's recommendations.
- The Contractor shall provide three (3) copies of the manufacturer's representative's certification.
- J. Training
- The Contractor shall provide a training session for up to two owner's representatives for two normal workdays at a jobsite location determined by the owner.
- The training representative shall be conducted by a manufacturer's qualified representative.
- The training program shall consist of the following:
- Instructions on the proper maintenance and operation of the equipment.

DRAWINGS

- Refer to Drawing E1, Sheet 7. Revise One Line Diagram as follows:
 - Add Note 5. Provide a sign at Service Entrance Panel indicating the location of Both Sources of Power.
 - Make the A/C Unit Circuit Breaker 15 Amps.
 - Add a Heavy Duty 480 Volt, 30 Amp, Non-fused Safety switch to the A/C Unit One Line Drawing.
- Refer to Drawing E2, Sheet 8.
 - Add the following notes to this sheet:
Note 1: Ground Generator Frame with #4/0 AWG in Dust Bank. Do not ground Generator Neutral at the Generator.
Note 2: Obtain Manufacturers drawings and accurately locate voids in generator foundation for all conduit stubups.
Note 3: Ground Rod to Generator with #4 AWG Conductor.
 - Delete A/C location on plan. Refer to attached Air Conditioning Sheets for A/C Unit Location and details.
- Refer to Drawing E3, Sheet 9.
 - Add the Thermostat near EF-4 to control the Exhaust Fan when the motor control selector switch is in the auto position.
 - Move all three valve closed position switches (ZS P1, P2 and P3) to the pump discharge valves.
 - Add Note 2: Contractor shall demolish existing unused pump control valve wiring to Pump Nos. 1 and 2.
- Refer to Drawing E4, Sheet 10 - Schematic C-H 125 Soft Starters. Change contact labeled "RUN" to "M".
- Refer to Drawing E5, Sheet 11.
 - Detail 01, Note 2. Change #1/0 EGC to #4/0 EGC. Delete Note 3.
 - Add the following Notes:
Note 4: Width and Length of Slab will be "M" + 12" on each side. Slab shall be 24" thick.
Note 5: 3000 PSI Concrete Pad, Reinforced with #6 Rebars @ 12" O.C.B.W. Top and Bottom. 1" Chamfer all around Top. Exposed Concrete Surfaces shall be rubbed smooth. Compact Soil under Pad to Proctor 90.
- Conduit & Cable Schedule:
 - Tag "E" #3/12, #12 G, 3/4" C.
 - Tab "T" Add #14 for thermostat control conductors.
 - Tab "M" 25#14, 1" C.

- Refer to Drawing E6, Sheet 12.
 - Show Pump Control Check Valve Limit Switch on Elevation Pump No. 1.
 - RTU Schedule: Change to RTU I/O Schedule.
 - ZS-P1, P2 and P4 Field Device: Change "Dump" to "Pump".
 - P1 ON: Add a Discrete Input
 - Add four Permissive Start "Discrete Inputs" from the Automatic Transfer Switch. This tells the RTU that the load has transferred and then allows sequential re-start to the active pump motors. Four motors may run on utility power but only three are allowed on Generator Power.
- Bidders shall acknowledge receipt of Addendum No. 1 in the space provided in the Proposal, on the outer envelope of their bid, and by faxing back the "Transmittal of Addendum Acknowledgment Sheet" to Shimek, Jacobs & Finklea, L.L.P. at (214) 361-0204.

SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
DALLAS, TEXAS

This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawing that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Conway, L.L.P.

BY G.C.H. DATE 05/06/09

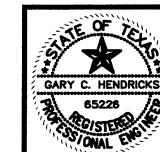
These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Shimek, Jacobs & Finklea.

CITY OF ROCKWALL, TEXAS

EASTSIDE PUMP STATION
ADDENDUM NO. 1

SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: G.C.H. PROJECT: 98192 SHEET NO. 1A
DRAWN BY: S.J. & F. DATE: APRIL 1999 OF 12 SHEETS



G.C.H.
04/08/1999