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**LETTER OF TRANSMITTAL**

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 Associated General Contractors  
 Builders Exchange of Tennessee  
 Construct Connect  
 The Blue Book  
 IHC Construction  
 JS Haren Company  
 Cheek Bros Contractors  
 Willow Construction, Inc  
 UWS, Utility & Water Services  
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**FROM:** Ron Key, P.E. Project Manager

**DATE:** August 24, 2018

**PROJ. NO.:** G17005-2

**SUBJECT:** Addendum No. 1  
 Peters Lane Water Booster Station Replacement  
 City of Ringgold

**PAGES:** 16 pages follow

<p><b>PLEASE RESPOND</b></p> <p>→ → → →</p>	<p><b>TO CONFIRM RECEIPT OF THIS ADDENDUM NO. 1          PLEASE SIGN AND EMAIL TO CTI</b></p> <p><a href="mailto:vvisco@ctiengr.com">vvisco@ctiengr.com</a></p>
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ID 557533

## ADDENDUM NO. 1

### PETERS LANE WATER BOOSTER STATION REPLACEMENT CITY OF RINGGOLD, GEORGIA PROJECT NO. G17005-2

The following changes shall be made to the Contract Documents and Specifications

#### I. CONTRACT DOCUMENTS

- A. **Section 00 42 00, Bid Schedule.** DELETE the Bid Schedule in its entirety and SUBSTITUTE therefore the attached Bid Schedule Page 00 42 00-1.1.

#### II. SPECIFICATIONS

- B. **Section 11 21 08, Water Booster Pumping Station.**

1. **Page 11 21 08-1, Part 1.3 B, 1**

Characteristics:

Number of Stages	8
Design Flow	100 gpm at 480 feet TDH
Maximum Discharge Pressure	242 psi
Minimum Pump Efficiency at Design Flows	60 percent
Pump Discharge Pressure	160 psi to 210 psi
Maximum HP	20

2. **Page 11 21 08-4, Part 2.1, A, 2:**

line 1 DELETE "Minimum" and SUBSTITUTE therefor "Maximum."

line 2 ADD "or totally enclosed, fan – cooled."

3. **Page 11 21 08-4, Part 2.2, B,** DELETE "Magnetic across-the-Line" in Line 3.

4. **Page 11 21 08-5, Part 2.2, I, Paragraph 2,** DELETE "With the Aquavar system" and begin sentence with "Function." DELETE "Are" and SUBSTITUTE therefor "May be".

5. **Page 11 21 08-5, Part 2.4, A,** insert the Following: "Ductile Iron Piping shall be epoxy coated inside and outside with an NSF-approved material. Iron body valves shall be powder coated. All FASTENERS shall be Stainless Steel".

6. **Page 11 21 08-5, Part 2.4, B,** DELETE "200 psi" and SUBSTITUTE therefor "250 psi".

7. **Page 11 21 08-5, Part 2.4, C,** INSERT "or globe-style valves" after "valves" on Line 1. and INSERT "And Rated for 250 psi Working Pressure" at the end of the paragraph.

8. **Page 11 21 08-6, Part, 2.6,** Fiberglass Enclosure – The owner will entertain a price for an alternate. Submit this price separately from the base Bid.

9. **Page 11 21 08-6, ADD** Part 2.7 in its entirety.

**C. Section 26 32 13, Diesel Generator Set.**

1. **Page 26 32 13-3 Part 2.2, C, 1**, Change the following in the first sentence to be 100kW.  
“Continuous electrical output power rating for standby operation of not less than 100 kW”
2. **Page 26 32 13-10 Part 2.8, B, 2, a**, Add “Residential type”. at the end of the sentence.  
“Muffler Location: Within enclosure. Residential type.”
3. **Page 26 32 13-11**  
ADD 2.12 SPARE PARTS  
“A. Furnish one (1) set of oil, air, and fuel filters.”

**D. Section 26 36 23, Automatic Transfer Switches.**

1. **Page 26 36 23-1 Part 1.1 A**, third line add “open transfer,” after double throw to read as:  
Each automatic transfer shall consist of an inherently double throw, open transfer, power transfer switch unit and a microprocessor controller, interconnected to provide complete automatic operation.
2. **Page 26 36 23-3 Part 2.3, A**, In the first sentence, NEMA should be type 12 steel.
3. **Page 26 36 23-4 Part 3.4** DELETE A and C. Once deleted B becomes A.

**III. DRAWINGS**

**A. Drawing No. C-3.1 Proposed Site-Plan:**

1. Route discharge piping from pump building out the rear of building and realign inlet piping; ADD two 6-inch gate valves.
2. Plan: Shift skid to the left-hand side of the building, and back 6 inches.

**B. Drawing No. E-1.1 Exhibit 4**, Change 150A to read 200A.

**C. Drawing No. S-1.1 and S-2.0**, Hardware Set 1 is to be used.  
DELETE reference to Hardware Set 7.

Date: August 24, 2018

CITY OF RINGGOLD  
/s/ Dan Wright, City Manager

**BID SCHEDULE  
PETERS LANE WATER BOOSTER STATION REPLACEMENT  
CITY OF RINGGOLD, GEORGIA**

Item No.	Description	Lump Sum Price
<b>SCHEDULE I - LUMP SUM BID</b>		
1	<b>Pump Station</b> , Including excavation, site grading, piping, valves, fittings, pumps, electrical, amd erosion control, block building, etc. For complete installation.	
2	<b>Generator Set</b> , complete installation with generator, automatic transfer switch, full fuel tank after initial start-up, etc.	
3	<b>Lifting Davit</b> , complete in place.	
4	<b>Demolition of Old Pump Facility</b>	
<b>TOTAL BID</b>		\$ _____

The decision to award a contract (if it is awarded) to the responsible and responsive bidder submitting the lowest bid will be at the sole discretion of the Owner.

BIDDER	DATE
BY	(Signature) TITLE
ADDRESS	
CITY	ZIP
TELEPHONE	E-MAIL

## SECTION 11 21 08

### WATER BOOSTER PUMPING STATION

#### PART 1 - GENERAL

##### 1.1 SCOPE

- A. Furnish and install one prefabricated automatic pumping station at the site noted and located on Drawings. The station shall be an aboveground three pump booster system complete with all equipment installed in precast block building or fiberglass enclosure as shown on the Drawings. The system shall include three submersible turbine pumps and motors with variable frequency drives, piping and valves, automatic central control panel with starters and breakers, and all internal wiring.

##### 1.2 ACCEPTABLE MANUFACTURERS AND QUALITY ASSURANCE

- A. The water booster pump station shall be built for aboveground installation as manufactured by ITT Goulds, Patterson, or an approved equal.
- B. All equipment furnished under this section shall be new, unused, and the same as the manufacturer's current production model. The unit must conform to the best practice known to the trade in design, quality of material, and workmanship. Assemblies, sub-assemblies, and component parts shall be standard and completely interchangeable between both units furnished. The equipment must conform with all applicable federal, state, and local regulations.

##### 1.3 OPERATING CONDITIONS

- A. The pumping station shall be capable of delivering the water at the following capacities and heads when operating at 20-psi minimum suction pressure.
- B. The pumps shall be designed to meet or exceed the following requirements:

###### 1. Characteristics

Number of Pumps Operating	1 initially; 2 in future
Number of Stages (max)	8
Design Flow	100 gpm at 480 feet TDH
Maximum Discharge Pressure	242 psi
Minimum Pump Efficiency at Design Flows	60 percent
Pump Discharge Pressure	210 psi (maximum)
Maximum HP	20 hp and non-overloading at all points along curve
Maximum Speed	3,500 rpm
Minimum Suction Pressure	20 psi

2. Each domestic water flow pump shall be close-coupled to a **maximum** 20 hp, 3,450 rpm, 3-phase, 60 hertz, 460-volt open drip proof or **totally enclosed, fan-cooled**, vertical NEMA C face electric motor, with a service factor of 1.15. Motor shall be of such size that it will operate continuously without exceeding its horsepower rating, exclusive of its service factor, at the design conditions.

## 2.2 CONTROL SYSTEM

- A. Mount the power distribution center and electrical controls in a NEMA 4X fabricated fiberglass enclosure. The enclosure shall have a full opening door, mounted on suitable hinges. Provide suitable type latching devices on the door. Neatly arrange starters, breakers, relays, timers and wiring raceway on a removable aluminum back plate. Mount indicating lights on or through die cut openings in the enclosure door. Mount a duplex grounding type convenience outlet in die cut openings on the side of the enclosure, for operation of 115 volt devices.
- B. Provide thermal magnetic circuit breakers for branch disconnect service and over-current protection of all control, motor, and auxiliary circuits. Properly sized starters shall have thermal overload protection and under voltage release for operation and protection of the pump motors. Provide Hand-Off-Automatic switches for each pump motor starter. Starters and HOA switches are not required with the Aquavar system.
- C. Provide an automatic alternator to change the sequence of operation of the pumps upon completion of each pumping cycle to equalize running time on the motors. Provide the alternator with a manual On-Off selector switch. With the Aquavar system, alteration is controlled on an elapsed-time basis.
- D. Provide six digit, non-resettable elapsed time meters to record the running time of each pump motor. Mount these devices in die cut openings in the deadfront inner door. Run times can be accessed in the Aquavar menu.
- E. Provide automatic shutdown control of the booster pumps by adjustable snap action diaphragm-type pressure switches for low suction pressure and high discharge pressures. Set points shall be easily adjusted after removing the NEMA 1 case cover. The repeatability shall be plus or minus 0.5% of range span. Two switches shall be Allen Bradley Model 836C8A, or approved equal, provided for the following operations:
  1. Low suction pressure cut out, 20 to 50 psi.
  2. High discharge pressure, 0 to 500 psi.
- F. Mount two pressure gauges adjacent to the control pressure switches, one for influent pressure and one for discharge pressure. These gauges shall have 4.5-inch dials and be provided with brass snubber type connections to dampen pulsations and stainless steel or bronze isolation valves.
- G. Provide time delay relays for the following functions: low suction pressure cut out timer, pump on timers, pump off timers, high discharge pressure cut out timer.

- H. The time delay relays shall be solid state devices with pin type plug-in bases. Provide each time delay relay with two time ranges. An LED annunciator on the top of the unit shall indicate when the unit is timing.
- I. Hand-Off-Automatic switches shall be oil tight, 2 or 3 position, and grouped conveniently with oil tight, full voltage indicating lights, on the panel door. The following functions shall be identified by indicating lights:
  - 1. Red - Low suction pressure.
  - 2. Red - High discharge pressure
  - 3. Green - Pump No. 1 running. (Lead Pump)
  - 4. Green - Pump No. 2 running. (Lag Pump)

**Function** indicators **may be** located on the face of each drive and the system is controlled by digital pressure transducers linked to each drive.

- J. Control the normal on-off operation of the pumps by pressure on the discharge side of the pump station. Use two Allen Bradley Model 836C8A, or approved equal. Initial factory settings on lead and lag pump shall be as detailed in Paragraph 1.3, Operating Conditions.

## 2.3 FLOOR DRAIN

- A. Provide floor drain and pipe to daylight. Drain shall operate by gravity flow and be properly screened to prevent access by rodents and other undesirable pests.

## 2.4 PIPING AND VALVES

- A. The pipe used in the premanufactured booster station shall be minimum 2-inch brass, ductile, or stainless steel with threaded fittings or flanged fittings manufactured in accordance with the dimensional tolerances and material specifications of current AWWA and ANSI standards for brass pipe and tapped fittings.

**Ductile Iron Piping shall be epoxy coated inside and outside with an NSF-approved Material. Iron body valves shall be powder coated. All FASTENERS shall be Stainless Steel.**

- B. Isolation valves used inside the station shall be threaded or flanged butterfly valves. Valves shall be of all bronze construction, except the handle and nuts. The handle shall be stainless steel which allows for padlocking in either fully open or fully closed positions. The valves shall be rated for a minimum **250** psi working pressure.
- C. Check valves shall be wafer-check valves or **globe-style valves** with threaded or flanged ends, or approved equal, **and rated for 250 psi working pressure.**
- D. Use brass threaded unions in each pump discharge pipe run and as required to enable easy dismantling of station pumps and piping for maintenance and service. Use compression type couplings to connect the pump system to the suction and discharge lines stubbed through the concrete floor. Couplings shall be DRESSER Style 38, or approved equal.

6. Thermostat.
7. Load center.
8. 1500-watt Heater.
9. Fiberglass weather hood with fan/louver.

## 2.7 LIFTING DAVIT

- A. Furnish and install floor-mounted lifting davit with 2,000 pound capacity with quick-mounted winch bracket and manual operator.
  1. Davit shall be similar in all respects to Thern Commander Series CMDR 2000, Model 5PT20, or equal with pedestal base.
- B. Coating - Powder Coat- Red
- C. Winch - Worm gear hand winch with brake, Model M2, 4WM2-K, red enamel, quick disconnect, anchor.
- D. Wire Rope - 0.25-inch-diameter, Galvanized Aircraft Cable WA25-Zons; 20 feet in length.
- E. Accessories
  1. Headache Ball to keep cable taut, painted steel.
  2. Base Anchor Kit - 304 stainless steel.
  3. Roller ball bearing with lock, red powder coating.

## PART 3 - EXECUTION

### 3.1 PAINTING

- A. All castings shall be rubbed down, filled, primed, and painted in the shop before and after assembly with high grade casting primer and paint, as previously described. All prefabricated, preassembled, mechanical systems and equipment shall be shop primed and painted with paint systems.

### 3.2 ELECTRICAL WORK

- A. All electrical control and starting equipment for the pumps shall be located as shown on the plans.
- B. Furnish the pump, motor, and controls and set in place under this item of the Specifications. Furnish and install the control equipment panel and other electrical services in accordance with National Electric Code.

### 3.3 PIPE BLOCKING AND SUPPORTS

- A. Block all pipes to prevent movement and vibration.
- B. All piping inside the pumping station shall be sufficiently supported to prevent pipe loads from being transmitted to the pump volute.
- C. All piping stubbed through the concrete floor shall be braced prior to pouring of the floor and remain in place until concrete has set to ensure easy installation of frame-mounted pump station.



2. Relative Humidity: **0 to 95 percent.**
3. Altitude: Sea level to **1,000 feet (300 m).**

## 1.8 WARRANTY

- A. Base Warranty: Manufacturer shall provide base warranty coverage on the material and workmanship of the generator set for a minimum of twenty-four (24) months for Standby product and twelve (12) months for Prime/Continuous product from registered commissioning and start-up.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Only approved bidders shall supply equipment provided under this contract. Equipment by other named suppliers that meets the requirement of this specification are acceptable if approved not less than 2 weeks before scheduled bid date. Other suppliers are not acceptable.

1. Cummins Power Generation
2. Caterpillar
3. Kohler

### 2.2 ENGINE-GENERATOR SET

- A. Factory-assembled and -tested, engine-generator set.
- B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.
  1. Rigging Information: Indicate location of each lifting attachment, generator-set center of gravity, and total package weight in submittal drawings.
- C. Capacities and Characteristics:
  1. Power Output Ratings: Continuous electrical output power rating for standby operation of not less than **100 kW**, at 80 percent lagging power factor, **480/277** volt, three phase, **4** wire, 60 hertz.
  2. Alternator shall be capable of accepting maximum load in a single step and be capable of recovering to a minimum of 90% of rated no load voltage. Following the application of the specified kVA load at near zero power factor applied to the generator set.
  3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component. The engine-generator nameplate shall include information of the power output rating of the equipment.
- D. Generator-Set Performance:
  1. Steady-State Voltage Operational Bandwidth: 0.5 percent of rated output voltage from no load to full load.
  2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds. On application of a 100% load step the generator set shall recover to stable voltage within 10 seconds.

## 2.8 OUTDOOR GENERATOR-SET ENCLOSURE

- A. Description: Sound Attenuated Steel housing. Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Instruments, control, and battery system shall be mounted within enclosure.
- B. Construction:
  - 1. Hinged Doors: With padlocking provisions. Restraint/Hold back hardware to prevent door to keep door open at 180 degrees during maintenance. Rain lips over all doors.
  - 2. Exhaust System:
    - a. Muffler Location: Within enclosure. Residential type.
  - 3. Hardware: All hardware and hinges shall be stainless steel.
  - 4. Wind Rating: Wind rating shall be 150 mph
  - 5. Mounting Base: Suitable for mounting on subbase fuel tank or housekeeping pad.
  - 6. A weather protective enclosure shall be provided which allows the generator set to operate at full rated load with a static pressure drop equal to or less than 0.5 inches of water.
- C. Engine Cooling Airflow through Enclosure: Housing shall provide ample airflow for engine generator operation at rated load in an ambient temperature of 50 degrees Celsius.
  - 1. Louvers: Fixed-engine, cooling-air inlet and discharge.
- D. Sound Performance: Reduce the average sound level of the engine generator while operating at full rated load to a maximum of 75 dBA measured at 7 meters from the engine generator in a free field environment.
- E. Site Provisions:
  - 1. Lifting: Complete assembly of engine generator, enclosure, and sub base fuel tank (when used) shall be designed to be lifted into place as a single unit.

## 2.9 VIBRATION ISOLATION DEVICES

- A. Vibration Isolation: Generators installed on grade shall be provided with elastomeric isolator pads integral to the generator, unless the engine manufacturer requires use of spring isolation.

## 2.10 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Powder-coated and baked over corrosion-resistant pretreatment and compatible primer. Manufacturer's standard color or as directed on the drawings.

## 2.11 SOURCE QUALITY CONTROL

- A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
  - 1. Tests: Comply with NFPA 110, Level 1 Energy Converters. In addition, the equipment engine, skid, cooling system, and alternator shall have been subjected to actual prototype tests to validate the capability of the design under the abnormal conditions noted in NFPA110. Calculations and testing on similar equipment which are allowed under NFPA110 are not sufficient to meet this requirement.
- B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
  - 1. Test engine generator set manufactured for this Project to demonstrate compatibility and functionality.
  - 2. Full load run.
  - 3. Maximum power.
  - 4. Voltage regulation.
  - 5. Steady-state governing.
  - 6. Single-step load pickup.
  - 7. Simulated safety shutdowns.
  - 8. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.
  - 9. Provide documentation of testing performed to Engineer prior to delivering equipment to site.

## 2.12 SPARE PARTS

- A. Furnish one (1) set of oil, air, and fuel filters.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with packaged engine-generator manufacturers' written installation, application, and alignment instructions and with NFPA 110.

### 3.2 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

### 3.3 INSTALLATION AND CHECKOUT

- A. Install emergency generator system in strict accordance with the Drawings and approved manufacturer's shop drawings and installation instructions. Check couplings for proper alignment and adjust if necessary.
- B. Following installation, a qualified field representative (not a sales representative) of the manufacturer shall thoroughly check out and test the equipment. The manufacturer's representative shall furnish the Engineer with a written certification of satisfactory installation in accordance with the requirements of Section 01 6000, Materials and Equipment.

## SECTION 26 36 23

### AUTOMATIC TRANSFER SWITCHES

#### PART 1 - GENERAL

##### 1.1 SCOPE

- A. Furnish and install automatic transfer switches (ATS) with number of poles, amperage, voltage, and withstand current ratings as shown on the plans. Each automatic transfer shall consist of an inherently double throw, **open transfer**, power transfer switch unit and a microprocessor controller, interconnected to provide complete automatic operation. All transfer switches and control panels shall be the product of the same manufacturer.

##### 1.2 ACCEPTABLE MANUFACTURERS

Automatic transfer switches shall be ASCO Series 300 or approved equal.

##### 1.3 CODES AND STANDARDS

The automatic transfer switches and accessories shall conform to the requirements of:

- A. UL 1008 - Standard for Automatic Transfer Switches
- B. NFPA 70 - National Electrical Code
- C. NFPA 110 - Emergency and Standby Power Systems
- D. IEEE Standard 446 - IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
- E. NEMA Standard ICS10-1993 (formerly ICS2-447) - AC Automatic Transfer Switches
- F. NEC Articles 700, 701, 702
- G. International Standards Organization ISO 9001
- H. UL 891 According to this UL standard the equipment shall be labeled: "Suitable for use only as service equipment."
- I. UL 508 Industrial Control Equipment

#### PART 2 - PRODUCTS

##### 2.1 MECHANICALLY HELD TRANSFER SWITCH

- A. The transfer switch unit shall be electrically operated and mechanically held. The electrical operator shall be a single-solenoid mechanism, momentarily energized. Main operators which include overcurrent disconnect devices will not be accepted. The switch shall be mechanically interlocked to ensure only one of two possible positions, normal or emergency.
- B. The switch shall be positively locked and unaffected by momentary outages so that contact pressure is maintained at a constant value and temperature rise at the contacts is minimized for maximum reliability and operating life.

## 2.3 ENCLOSURE

- A. The ATS shall be furnished in a NEMA type 12 steel enclosure unless otherwise shown on the plans.
- B. Controller shall be flush-mounted display with LED indicators for switch position and source availability. It shall also include test and time delay bypass switches.
- C. The complete assembly shall be degreased, and thoroughly cleaned through a five-stage aqueous process. The finish shall be ANSI-61, light gray, electrostatically-charged polyester powder paint over a phosphate coating, at a minimum of 2.0 mils in density. Finish shall be suitable for indoor and outdoor environments.
- D. A pressure disconnect link shall be provided to disconnect the normal source neutral connection from the emergency and load neutral connections for 4-wire applications. A ground bus shall be provided for connection of the grounding conductor to the grounding electrode. A pressure disconnect link for the neutral to ground bonding jumper shall be provided to connect the normal neutral connection to the ground bus.
- E. Control wiring shall be rated for 600 volt, UL 1015. Wires shall be placed in wire duct or harnessed, and shall be supported to prevent sagging or breakage from weight or vibration. All wiring to hinged doors shall be run through door terminal blocks or connection plugs.

## PART 3 - OPERATION

### 3.1 VOLTAGE AND FREQUENCY SENSING

- A. The voltage of each phase of the normal source shall be monitored, with pickup adjustable to 95% of nominal and dropout adjustable from 70% to 90% of pickup setting.
- B. Single-phase voltage and frequency sensing of the emergency source shall be provided.

### 3.2 TIME DELAYS

- A. An adjustable time delay shall be provided to override momentary normal source outages and delay all transfer and engine starting signals.
- B. An adjustable time delay shall be provided on transfer to emergency, adjustable from 0 to 5 minutes for controlled timing of transfer of loads to emergency.
- C. An adjustable time delay shall be provided on retransfer to normal, adjustable to 30 minutes. Time delay shall be automatically bypassed if emergency source fails and normal source is acceptable.
- D. A 5-minute cooldown time delay shall be provided on shutdown of engine generator.
- E. All adjustable time delays shall be field adjustable without the use of tools.

### 3.3 ADDITIONAL FEATURES

- A. A set of gold-flashed contacts rated 10 amps, 32 VDC shall be provided for a low-voltage engine start signal. The start signal shall prevent dry cranking of the engine by requiring the generator set to reach proper output, and run for the duration of the cool down setting, regardless of whether the normal source restores before the load is transferred.

- B. A push-button type test switch shall be provided to simulate a normal source failure.
- C. A push-button type switch to bypass the time delay on transfer to emergency, the engine exerciser period on the retransfer to normal time delay whichever delay is active at the time the push-button is activated.
- D. Auxiliary contacts, rated 10 amps, 250 VAC shall be provided consisting of one contact, closed when the ATS is connected to the normal source and one contact, closed, when the ATS is connected to the emergency source.
- E. Indicating lights shall be provided, one to indicate when the ATS is connected to the normal source (green) and one to indicate when the ATS is connected to the emergency source (red). Also provide indicating lights for both normal and emergency source availability.
- F. Terminals shall be provided to indicate actual availability of the normal and emergency sources, as determined by the voltage sensing pickup and dropout settings for each source.
- G. Engine Exerciser - An engine generator exercising timer shall be provided, including a selector switch to select exercise with or without load transfer.
- H. Inphase Monitor - An Inphase monitor shall be inherently built into the controls. The monitor shall control transfer so that motor load inrush currents do not exceed normal starting currents, and shall not require external control of power sources. The inphase monitor shall be specifically designed for and be the product of the ATS manufacturer.
- I. Selective Load Disconnect - A double throw contact shall be provided to operate after a time delay, adjustable to 20 seconds prior to transfer and reset 0 to 20 seconds after transfer. This contact can be used to selectively disconnect specific load(s) when the transfer switch is transferred. Output contacts shall be rated 6 amps at 28 VDC or 120 VAC.

### 3.4 OPTIONAL ACCESSORIES

- A. Programmable Engine Exerciser - A seven or fourteen day programmable engine exerciser with digital readout display. Shall include one form C contact for availability of normal and emergency. Include "with or without" load control switch for exerciser period. The exerciser shall be backed up by a permanent battery. (Accessory 11BG).

## PART 4 - ADDITIONAL REQUIREMENTS

### 4.1 WITHSTAND AND CLOSING RATINGS

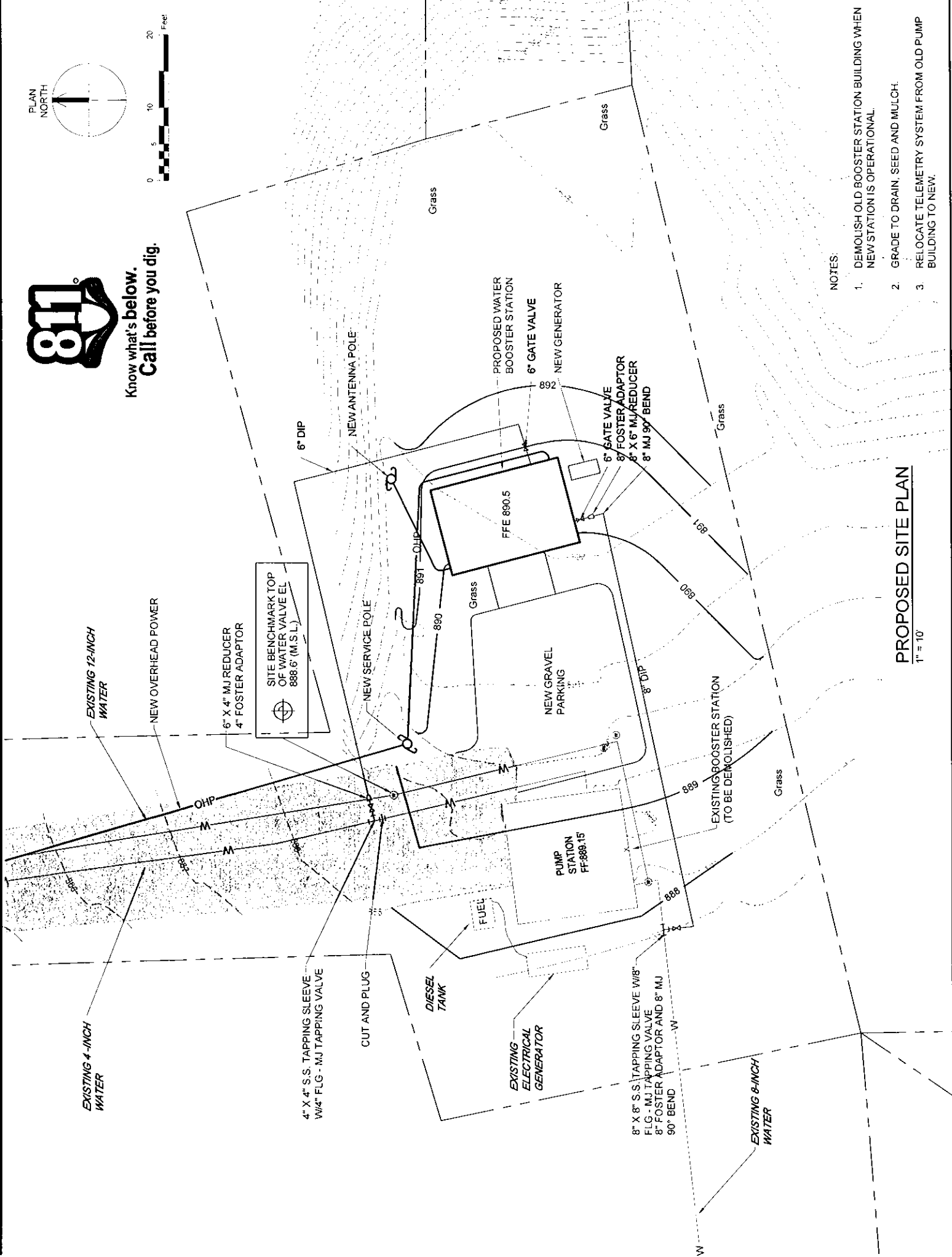
- A. The ATS shall be rated to close on and withstand the available rms symmetrical short circuit current at the ATS terminals with the type of overcurrent protection shown on



Know what's below.  
Call before you dig.



0 5 10 20 Feet

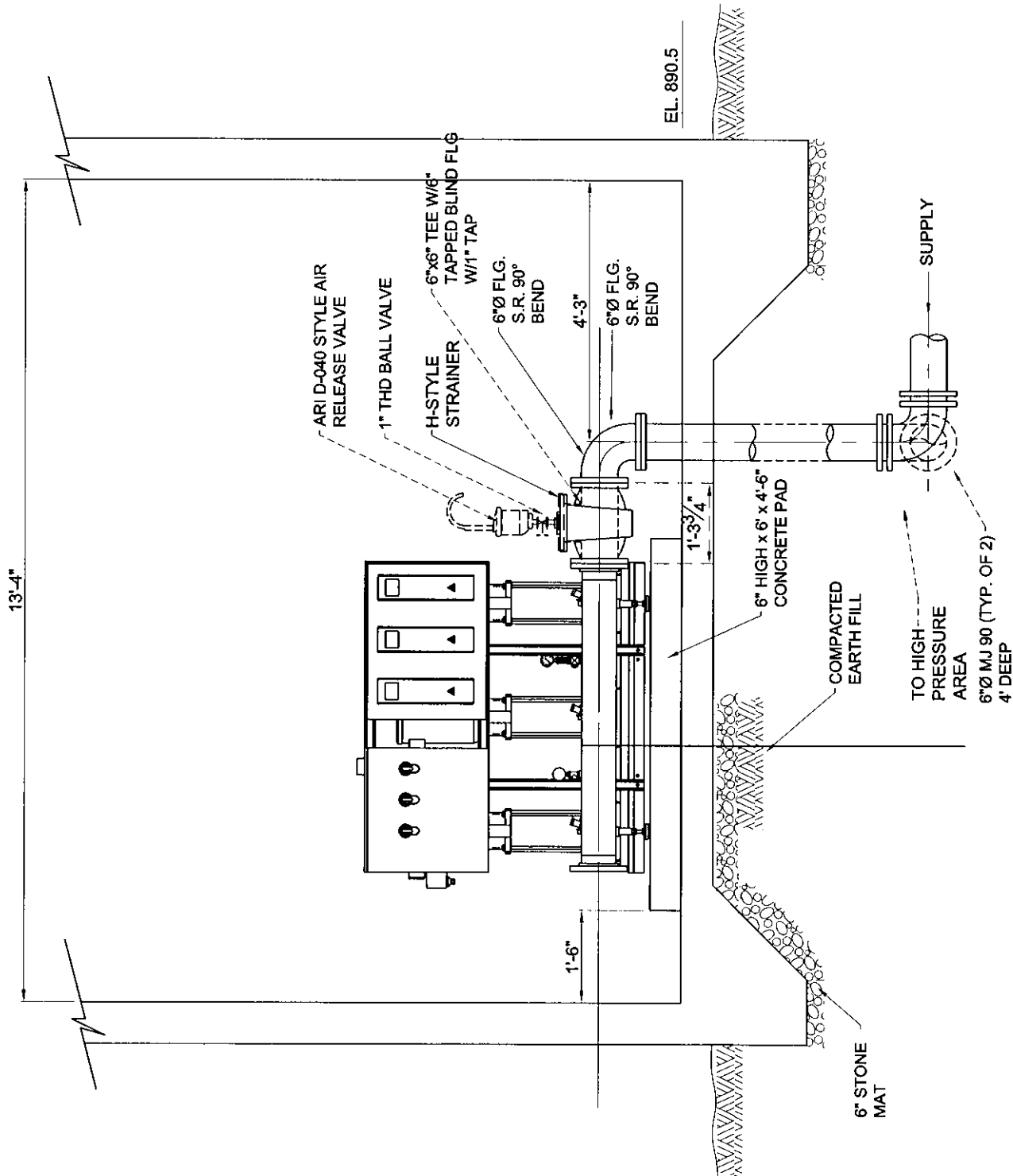


NOTES:

1. DEMOLISH OLD BOOSTER STATION BUILDING WHEN NEW STATION IS OPERATIONAL.
2. GRADE TO DRAIN. SEED AND MULCH.
3. RELOCATE TELEMETRY SYSTEM FROM OLD PUMP BUILDING TO NEW.

PROPOSED SITE PLAN

1" = 10'

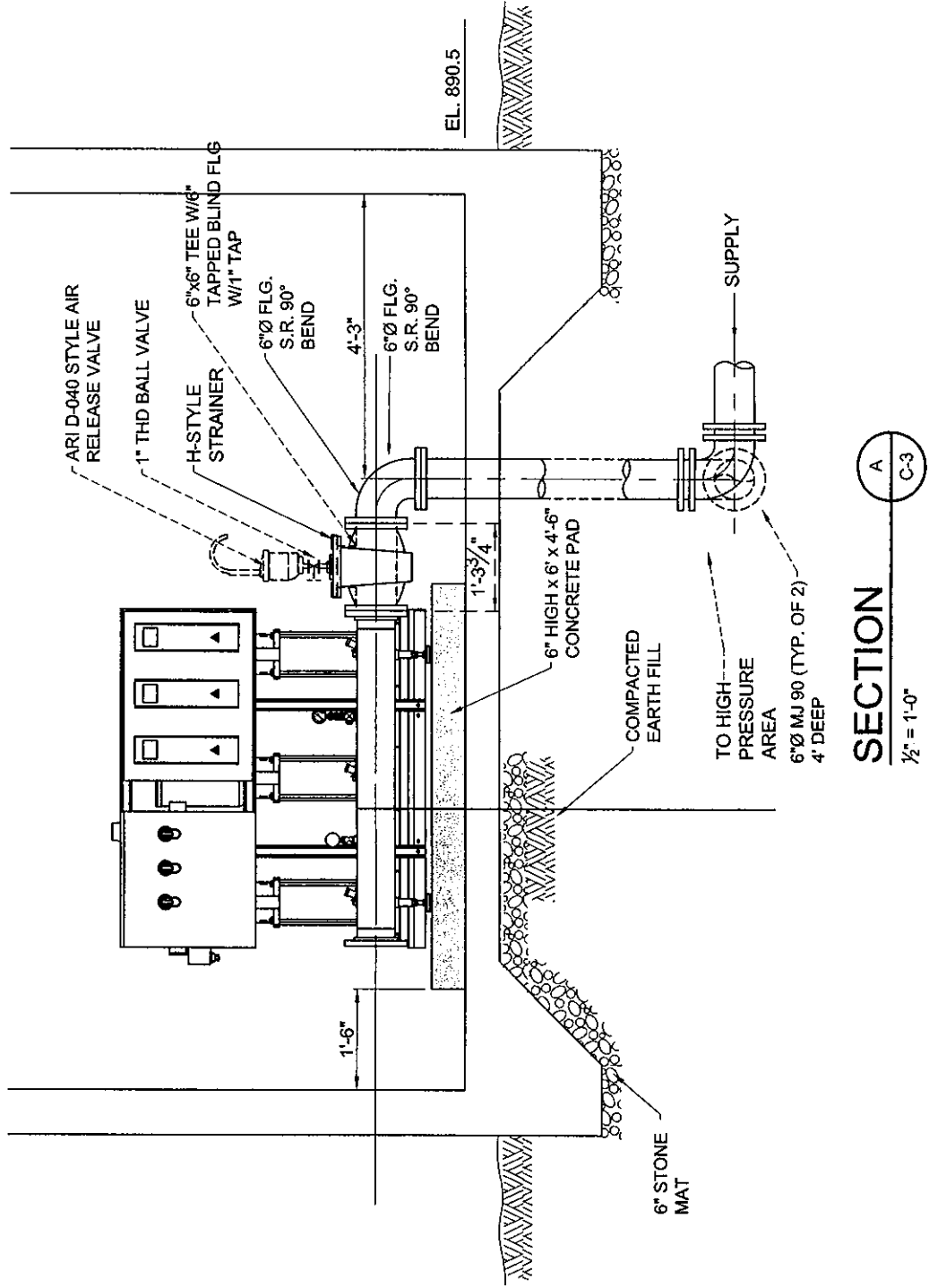


**SECTION**

A  
C-3

1/2" = 1'-0"





A  
C-3

**SECTION**  
1/2" = 1'-0"