

CONTRACT DOCUMENTS, PLANS  
AND SPECIFICATIONS



**FARR PARK SEWER IMPROVEMENTS  
SB #1676**



OWNER

**RECREATION AND PARK COMMISSION FOR THE  
PARISH OF EAST BATON ROUGE**



Prepared by:



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**PEC PROJECT NO. 11175**

**ADDENDUM NO. ONE (1)**

DATE ISSUED: Wednesday, August 31, 2016

BID DATE: Thursday, September 8, 2016

BID TIME: 2:00 P.M (Local Time)

This addendum shall be part of the Contract Documents as provided in the Instructions to Bidders.

The following items are issued to add to modify and clarify the Contract Documents. These items shall have full force and effect as the Contract Documents, and the costs involved shall be included in the Bid Prices.

Acknowledge receipt of the Addendum by inserting its number and date on Page BF-1 of the Bid Documents. Failure to do so may subject the Bidder to disqualification.

### **IN THE SPECIFICATIONS**

Remove existing Section 16001, General Electrical/Instrumentation Provisions, and replace with attached Section 16010, Basic Electrical Requirements, Section 16050, Basic Electrical Materials and Methods, and Section 16400, Service and Distribution.

### **IN THE PLANS**

Make the following pen and ink corrections:

- Add E-1 and E-2 (electrical sheets) to title sheet index.
- Insert E-1 and E-2 attached to the plan set.
- Sheet 7 – Modify references to PVC portion of force man in plans and section from “SDR 26/CL 160” to “SDR 21/CL 200.”

**DIVISION 16 - ELECTRICAL**  
**SECTION 16010 - BASIC ELECTRICAL REQUIREMENTS**

**PART 1.00 GENERAL**

1.01 SCOPE

- A. The work to be performed under these specifications shall include the furnishing of all labor, materials, equipment and services required for a complete electrical system as specified herein and as shown by the Drawings. A state of Louisiana licensed Electrical Contractor shall perform the work specified herein. The work includes but is not limited to:
1. Demolition of existing electrical service from main service power panel to existing pump station, including pump station main disconnect switch, control panel and power and control cabling to well.
  2. Furnishing and installing new service rack, for control panel and disconnect switch.
  3. Furnishing and installing a new service to the sewer lift station from existing main service panel to new pump station disconnect switch and control panel.
  4. Furnishing and installing conduits with conduit seals for power and controls to new well.
  5. Installing and connecting pump power and control cables furnished with the control panel, and installation of the control panel.
  6. Furnishing and installing grounding system as shown on the drawings.
  7. Installation of temporary construction power required by the General Contractor and Sub-Contractors during the construction period.

1.02 GENERAL CONDITIONS

- A. The General Conditions and Supplementary General Conditions are a part of this section of these Specifications. The Contractor is cautioned to read and be thoroughly familiar with all provisions of the General Conditions. These conditions shall be complied with in every aspect. The word "shall" where used, is to be understood, as mandatory and the word "should" as advisory. "May" is used in the permissive sense.

1.03 GENERAL REQUIREMENTS

- A. The Contractor is referred to all of the Drawings for building construction as well as the electrical Drawings.
- B. The Contractor shall examine the site and shall verify to his own satisfaction the location of all utilities, and shall adequately inform himself as to their relation to his work before entering into a Contract and he shall base his bid on any conditions, which may be encountered during the progress of the work.

- C. The Contractor shall furnish and install properly all materials, devices, equipment, supports, controls, appurtenances, etc., mentioned or required to make complete or satisfactory installations in working order whether shown or not. All electrical equipment shall be connected in accordance with manufacturer's instructions. All work shall be executed in a workmanlike manner and shall present a neat and mechanical appearance when completed.
- D. Electrical service required for all equipment furnished under this general contract shall be roughed-in and connected by the Contractor. It is the responsibility of the Contractor to obtain correct roughing-in dimensions and requirements for this equipment. Refer to the Mechanical and Structural Sections for these Specifications.

#### 1.04 MINIMUM STANDARDS

- A. Applicable rules of the National Electrical Code apply as a minimum standard for this contract, but do not replace or reduce any specific requirement herein.

#### 1.05 DRAWINGS

- A. Plans and detail sketches are submitted to limit, explain, and define structural conditions, specified requirements, conduit sizes, and manner of erecting work. The Contractor is cautioned to field check and verify all existing conditions before bidding, as no extra compensation will be allowed for conditions found different than represented in the construction drawings and/or specifications. Written approval of the Engineer shall be obtained prior to any alterations or additions to specified work.
- B. Structural or other conditions may require certain modifications from the manner of installation shown, and such deviations are permissible and shall be made as required, but specified sizes and requirements necessary for satisfactory operations shall remain unchanged. Shifting of conduits or equipment shall be referred to the Engineer for approval. Extra charges will not be allowed for these changes without the written approval of Engineer.
- C. The drawings and these specifications are complementary to each other and what is called for by one shall be binding as if called for by both.
- D. General arrangement of work is indicated on plans. Due to the small scale of the drawings, offsets, fittings, and boxes required are not all indicated; provide fittings, boxes, etc., as needed in accordance with codes and accepted practices.

#### 1.06 SUPERVISION

- A. The Contractor shall personally or through an authorized and competent representative, constantly supervise the work from beginning to completion and final acceptance. So far as possible, he shall keep the same foreman and workmen throughout the project duration.
- B. During its progress, the work shall be subject to inspection by representatives of the Architect, at which times the Contractor shall furnish required information.

- C. It is not Engineer's duty to direct or guarantee the work of the Contractor, but to assist the Owner in obtaining a complete building in accordance with plans, specifications and addenda and to furnish engineering services in accordance with recognized practices.

#### 1.07 PRIOR APPROVALS

- A. The Contractor shall base his proposal on materials as specified herein. Any references to a specific manufacturer or trade name is made to establish a standard of quality and to define a type of product and in no way is intended to indicate a preference for a particular manufacturer. It is the intent of these specifications to allow all manufacturers of equipment, products, etc., judged equal to the specified product to bid on a competitive basis.
- B. Requests for substitutions or prior approvals shall be made as indicated in the Instructions to Bidders, General Conditions of the Contract for Construction, Supplementary General Conditions, Special Conditions and/or general requirements.

#### 1.08 MEASUREMENTS

- A. The Contractor shall verify all measurements and shall be responsible for the correctness of same, before ordering any materials or doing any work. No extra charge or compensation will be allowed for any differences between the actual measurements and those indicated on the drawings.

#### 1.09 LAWS, PERMITS AND FEES

- A. The entire electrical work shall comply with the rules and regulations of the City, Parish, and State, including the State Fire Marshal and State Board of Health, whether so shown on plans or not. The Contractor shall pay fees for permits, inspections, etc., and shall arrange with the inspecting authorities all required inspections. The Contractor shall contact utility companies and make arrangements for all service connections, verifying locations with the utility and paying all charges pertaining thereto.

#### 1.10 SITE INSPECTION

- A. The Contractor shall visit the site and familiarize himself with difficulties attendant to the successful execution of the work before bidding. Failure to visit the site shall not relieve the Contractor of the extent or conditions of the work required of him.

### **PART 2.00 PRODUCTS**

#### 2.01 MATERIAL AND EQUIPMENT

- A. All materials, equipment, and accessories installed under this Contract, whether approved or not, shall be new and shall conform to all rules, codes, etc., as recommended or adopted by the National Association(s) governing the manufacture, rating and testing of such materials, equipment, and accessories.

## 2.02 SHOP DRAWINGS

- A. The Contractor shall submit to the Engineer complete descriptive and dimensional data on the following items for review and approval:
  - 1. Disconnect Switch
  - 2. Control Panel

## **PART 3.00 METHODS OF INSTALLATIONS**

### 3.01 CONTRACTOR COORDINATION

- A. The Drawings are diagrammatic in nature. Cooperate with other trades so the interferences of facilities and equipment will be avoided.

### 3.02 OPENINGS, CUTTING AND PATCHING

- A. Cut all openings as required for the electrical work. Patching will be done by the various crafts whose work is involved. Furnish and install all necessary sleeves, thimbles, hangers, inserts, etc., at such times and in such a manner as not to delay or interfere with the work of other Contractors. Caulk, flash or otherwise make weatherproof all penetrations through the roof and exterior walls.

### 3.03 PAINTING

- A. No painting will be required by the Contractor except for touch-up of factory finishes on equipment furnished under this contract.

### 3.04 APPLICABLE GENERAL CODES AND REGULATIONS

- A. All electrical work and equipment, in whole or in part, shall conform to the applicable portions of the following specifications, codes and regulations in effect on that date of invitation for bids, and shall form a part of this specification.
  - 1. National Electrical Code, 2011 Edition
  - 2. National Electrical Manufacturers Association Standards
  - 3. National Fire Protection Association Recommended Practices
  - 4. Local, City and State Codes and Ordinances
  - 5. National Board of Fire Underwriter's Recommended Practices
  - 6. Life Safety Code, 2012 Edition
  - 7. International Building Code
- B. Equipment that has been inspected and approved by the Underwriter's Laboratory shall bear its label or appear on its list of approved apparatus.

### 3.05 TESTS AND INSPECTIONS

- A. The Contractor shall assist in making periodic inspections or tests required by the Architect or Engineer. When requested, the Contractor shall provide the assistance of foremen and qualified craftsmen for reasonable duration of each test, etc.

### 3.06 SAFETY PRECAUTIONS DURING CONSTRUCTION

- A. It shall be the Contractor's responsibility to furnish and install proper guards and instruction signs for prevention of accidents and to provide and maintain for the duration of construction any installations needed for safety of life and property.

### 3.07 SLEEVES, INSERTS AND OPENINGS

- A. This Contractor shall plan work in advance of pouring concrete floors or walls. He shall furnish and install all sleeves or openings through floors or walls required for passage of conduits, pipes, or ducts installed by him. This Contractor shall furnish and install inserts and hangers required to support bus bars, bus ducts, conduit, cables, pull boxes, etc.
- B. Sleeves shall be of 16-gauge galvanized sheet steel, rigidly supported and suitably packed to prevent ingress of wet concrete. If the sleeves, hangers, inserts, etc., are improperly installed, this Contractor shall, at his own expense, do all necessary cutting and patching to rectify the errors.

### 3.08 MOTOR AND CONTROL WIRING

- A. Other Contractors will furnish and install motors and will furnish motor starters except where noted otherwise. The Contractor shall connect motors and shall install and connect starters where called for.

### 3.09 EQUIPMENT NAMEPLATE

- A. Each item of electrical equipment installed by the Contractor shall be provided with an engraved nameplate noting the equipment's function or designation. Nameplates shall be engraved laminated plastic with black letters on a white background. Letters shall be 1/4" high, all caps.

### 3.10 PANELBOARD SCHEDULES

- A. The Contractor shall provide and affix typed panelboard schedules for each panelboard. Schedule will accurately list equipment served by each branch circuit.

### 3.11 COMPLETION

- A. The Contractor shall leave all electrical equipment with proper connections, and in proper working order. He shall test the entire electrical system in the presence of the Engineer or his representative to show that it is properly installed. Contractor shall leave all panels and switches completely fused or complete with circuit breakers.

### 3.12 RECORD DRAWINGS

- A. The Contractor shall furnish one (1) complete set of drawings on which any changes in the work shall be shown. These drawings must be turned over to the Architect prior to final acceptance of the work. In the event unforeseen obstructions occur in the work, the

Contractor shall confer with the Engineer and obtain his written consent before undertaking any deviation from the governing plans.

### 3.13 GUARANTEE

- A. The Contractor shall guarantee to keep the entire electrical system as installed by him or his subcontractors in repair and in perfect working order for one (1) year from the date of the final Certification of Final Acceptance, and shall furnish free of cost to the Owner, all material and labor necessary to comply with the above guarantee; said guarantee shall be based upon defective material and workmanship. In any case where equipment has a factory warranty exceeding this one-year limit, the full extent of the warranty shall apply.

### 3.14 CLEANING

- A. When all work has been finally tested, the Contractor shall clean all fixtures, equipment, conduits, ducts, and all exposed work. All cover plates and other finished products shall be thoroughly cleaned.

### 3.15 INSTRUCTION MANUALS

- A. The Contractor shall provide three (3) operating and maintenance instruction manuals on all systems and equipment installed in the electrical work.

### 3.16 CONTRACTOR SPECIAL NOTE

- A. The Contractor is again cautioned to refer to all parts of these Specifications and all Drawings, not just electrical sections, and the individual cross references made to other standard specifications or details describing any electrical work, which may be required under these other sections. The Contractor is cautioned to note carefully any other sections which may reference electrical work in order for this Contractor to fully understand the wiring requirements and electrical work that is required. Any conflicts found between the electrical sections of these Specifications or Drawings shall be immediately directed to the General Contractor for clarification.
- B. These Specifications and the electrical Drawings size equipment, wire, conduit, etc. based on the horsepower of motors and/or wattages of equipment as shown on the plans or specified herein. The Contractor shall install electrical raceways, conductors, fuses, safety switches, breakers, contactors, starters or any other electrical equipment with the capacities to suit the horsepower and/or wattages of the equipment actually furnished and installed. The Contractor shall not furnish or install any electrical raceways, conductors, safety switches, contactors or motor starters of sizes smaller than those shown on the Drawings or specified herein. The Contractor shall coordinate with the various sections of the Specifications and/or Drawings and with the various Sub-Contractors to provide the properly sized equipment without additional cost to the Owner.
- C. The Contractor will be required to modify existing electrical services and equipment. Contractor shall not disconnect service to any equipment or make any equipment modifications without coordinating all such work with the Owner prior to initiating the work. All existing equipment shall remain in operation during the construction except for the

minimal down time required for the tie-in or modification of the equipment.

- D. The Contractor shall be required to install electrical services underground. Contractor is cautioned to exercise extreme care when digging to not damage any existing utilities or equipment. Contractor shall be required to repair any utilities or equipment he may damage during construction.

- END -

**DIVISION 16 - ELECTRICAL**  
**SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS**

**PART 1.00 GENERAL**

1.01 GENERAL REQUIREMENTS

- A. All material furnished shall be new and shall conform to all rules and codes as recommended or adopted by the National Association governing the manufacture, rating and testing of the material. All electrical equipment shall be UL listed for the intended use.

**PART 2.00 PRODUCTS**

2.01 RACEWAYS AND FITTINGS

- A. Raceways permitted on this project shall be hot dipped galvanized rigid steel conduit; flexible metallic tubing; liquid-tight flexible metal conduit; and rigid polyvinyl chloride (PVC) conduit. All conduits shall be new and shall bear the inspection label of the Underwriter's Laboratories, Inc.
- B. Metallic conduit shall be metalized, or hot-dipped galvanized. Non-metallic conduit shall be schedule 40 PVC.
- C. Fittings for conduit shall be an approved type specially designed and manufactured for their purpose. Rigid metal conduit fittings, bushings, and other components shall be galvanized. Setscrew connector fittings shall not be permitted. All fittings for rigid steel or aluminum conduit shall be threaded and coupled unless specifically approved otherwise by the Engineer.

2.02 EXPOSED CONDUIT

- A. Exposed conduit shall be firmly supported on galvanized hangers; on brackets, hangers, or pipe straps; or by beam clamps. Conduit installed exposed shall be neatly aligned and run at right angles to the building walls or walls of the rooms in which they are installed. All exposed conduit shall be located to avoid all conflicts with architectural or mechanical components.

2.03 FLEXIBLE CONDUIT

- A. Liquid-tight flexible metal conduit shall have a spiral wound, flexible, galvanized steel core and a tough extruded synthetic moisture-tight outer covering. All flexible conduits shall be UL listed.

2.04 GALVANIZED CONDUIT

- A. Galvanized conduit furnished in accordance with these specifications shall be of mild steel piping, galvanized inside and outside, and shall conform in all respects to the American Standard Association rigid Steel Conduit Specification C80.1-1959 and Underwriter's Laboratories Specifications.

- B. The galvanized coat of zinc shall be of uniform thickness applied by the hot-dipped process to not only the inside surfaces of the conduit, but also to the threads of the conduit. It shall be further dipped in a chromic acid bath so as to chemically form a corrosive resistant protective coating of zinc chromate over hot-dipped galvanized surface. Each piece of conduit shall be straight, free from blisters and other debris, cut square and taper reamed, and furnished with coupling in 10 foot length threaded each end. The interior threaded surface of each coupling shall be galvanized to insure 100% galvanic protection on all surfaces. The hot galvanized zinc chromate on the inside and outside surfaces shall be sufficiently elastic to prevent cracking or flaking when sample of finished conduit is bent 90° at a minimum temperature of 60°F, the inner edge of the bend having a radius of six (6) times the inside diameter of the conduit.

## 2.05 RACEWAYS

- A. Lay-in duct, JIC Wireway and troughs shall be NEMA 1 for indoor application and NEMA 3R for out door or applications exposed to weather or water. Raceways shall be sized as noted on Drawings, and shall have hinged or screw covers with captive screws. Finish shall be gray enamel. All components shall be UL listed for steel enclosed wireway or auxiliary gutter.

## 2.06 WIRE (600 VOLT AND BELOW)

- A. All conductors used in the work shall be of soft drawn annealed copper having a conductivity of not less than 98% of that of pure copper. Conductors shall be standard code gauge in size, insulated and shall have insulation rated for use at 600 volts.
- B. Unless noted otherwise or specified, insulation shall be type THW, THWN, or THHN for sizes up to and including No. 2 AWG. Insulation for wire sizes larger than No. 2 AWG shall be type THW, XHHW, or THHN. Lighting fixture wire shall be heat resistant type TF (150°C) with 300-volt insulation minimum. Wires shall be of the single conductor type. Sizes No. 8 AWG and larger shall be stranded. Sizes No. 12 thru No. 14 shall be single strand solid copper.
- C. Throughout the system, all conductors shall be identified as to the phase and voltage of the system by color-coding in accordance with NEC 210.5. Color-coding shall be continuous the full length of the wire with surface printing at regular intervals on all conductors and for neutral conductors.

## 2.07 GROUND RODS

- A. Ground rods shall be continuous rods in length as shown on the Drawings. Rods shall be copperbonded driven rod type. The copper jacket shall be electrolytically bonded to the high strength steel core. Copperbonded ground rods shall meet or exceed requirements of UL Specification No. 467 (ANSI C-33.8-1972).
- B. Connections to ground rods shall be with heavy duty bronze ground rod clamps. Clamp shall have hex head set screw.

## 2.08 CONDUIT SEAL FITTINGS

- A. Conduit seals shall be installed where shown on the drawings. Conduit seals shall be UL listed for use in hazardous locations when Kwiko A Sealing Compound or Crouse-Hinds Chico A Sealing Compound are used to make the seal. Fittings shall be malleable iron construction with galvanized finish, and suitable for use with threaded metal conduit. Fittings shall be installed in accordance with National Electrical Code Article 500 requirements.

## 2.09 PVC CONDUIT

- A. PVC Schedule 40 Conduit shall be used for application underground, encased, or exposed applications in accordance with the National Electrical Code (Article 347). Conduit shall be rated for use with 90° C conductors, UL Listed or approved equal. Material shall comply to NEMA Specification TC-2 (Conduit), TC-3 (Fittings) and UL 651 (Conduit) and 514b (Fittings). Conduit and fittings shall carry a UL label (Conduit - on each 10 foot length; Fittings - stamped or molded on each fitting). Conduit and fittings shall be identified for type and manufacturer and shall be traceable to location of plant and date manufactured. The markings shall be legible and permanent.
- B. The Conduit shall be made from polyvinyl chloride compound (recognized by UL), which includes inert modifiers to improve weatherability and heat distortion. Clean rework material, generated by the manufacturer's own conduit production, may be used by the same manufacturer, provided the end products meet the requirements of this specification. The conduit and fittings shall be homogeneous plastic material free from visible cracks, holes or foreign inclusions. The conduit bore shall be smooth and free of blisters, nicks or other imperfections, which could mar conductors or cables. The same manufacturer to assure system integrity shall produce conduit, fittings, and cement.
- C. Testing and Acceptance Criteria: Conduit and fittings shall be tested in accordance with the testing requirements defined in NEMA TC-2, NEMA TC-3 and UL-651 and 514. The acceptance criteria shall be given in the same standards. All conduit and fittings shall be solvent cemented in applications in accordance with instructions from the manufacturer.
- D. Continuous roll PVC conduits used for boring applications shall be schedule 80.

## **PART 3.00 EXECUTION**

### 3.01 CONDUIT - MATERIALS AND METHODS

- A. Conduit shall be installed as per NEC and NEMA regulations and the manufacturer's recommendations. Conduit shall be as follows:
- B. Rigid Steel Conduit shall be used for all conduits exposed to the weather, and underground conduit except where non-metallic conduit is specified or approved. Underground and under slab runs are to be watertight. All horizontal runs of underground conduit shall utilize rigid steel elbows on vertical risers. Conduits used for receptacles and run under the building slab, shall be hot dipped galvanized rigid steel and shall be 3/4" minimum size.

- C. All conduits routed underground shall not be placed in building slab. Conduits larger than 1" routed under building slab shall be routed below the vapor barrier. Minimum conduit size allowed to be routed underground shall be 3/4". Conduits routed under building slab may be PVC. All conduits rising vertically out of slab or out of ground shall be rigid steel.
- D. Non-metallic conduit, minimum schedule 40 PVC, shall be permitted to be installed underground. Non-metallic conduit shall not be used in any environmental air plenum. If PVC conduit is run, a full sized grounding conductor shall be pulled with the circuit conductors. PVC conduit shall not be run exposed. Where PVC conduit is run underground, it shall be encased in concrete or run minimum 24" below grade, or at the depth below grade shown on the drawings.
- E. Flexible metal conduit or liquid-tight flexible metal conduit shall be used for the final connection of runs to motors. Flexible conduit shall be at least twelve (12) inches, but not more than 48 inches long. Where used, an external grounding conductor shall be run with conduit unless conductor is made as a part of the conduit.

### 3.02 CONDUIT - GENERAL

- A. Fittings for rigid steel conduits shall be hot-dipped galvanized steel and shall be of a type especially designed and manufactured for their purpose. Compression type threadless fittings and setscrew type fittings shall not be used for rigid conduit. Setscrew fittings shall not be used. Fittings for rigid non-metallic conduit shall be solvent welded.
- B. Where they enter boxes or cabinets that do not have threaded hubs, conduits shall be secured in place with galvanized locknuts inside and outside the cabinet and shall have bushings inside. Conduits larger than 1-1/4 inch shall have galvanized locknuts and galvanized bushings.
- C. All conduits shall be installed concealed or as indicated or scheduled on the drawings and shall be of sufficient size to accommodate the required number of insulated conductors including equipment grounding conductor where such grounding conductor is required or specified.
- D. Conduit runs shall be straight; elbows and bends shall be uniform, symmetrical and free from dents or flattening. Exposed conduits shall be installed with runs parallel or perpendicular to walls, ceilings or structural members and shall be located to avoid any conflicts with ceiling inserts.
- E. Pull boxes shall be installed as required to permit proper installation of conductors and expansion fittings installed where conduit runs cross building expansion joints.
- F. Conduit shall be held securely in place by hangers and fasteners of appropriate design and dimensions for the particular application. Support shall be such that no strain will be transmitted to outlet box and pull box supports. Wire shall not be used, with or without spring steel fasteners, clips or clamps, for the support of any conduit. Conduit shall not be supported by or attached to duct work unless specifically allowed otherwise.
- G. All conduits shall be cut square and reamed at the ends. The conduit system shall be

complete and cleaned before any conductors are installed. Open ends of all conduits shall be capped until conductors are installed. A non-metallic fish wire shall be installed in all empty conduits. Empty conduit shall remain capped.

- H. Contractor shall refer to National Electrical Code Appendix C, Conduit and Tubing Fill Tables for Conductors and Fixture Wire of the Same Size. Contractor shall refer to the appropriate table for the conduit and wire condition and shall install wiring in accordance with code requirements.

### 3.03 SUPPORTS AND FITTINGS

- A. The Contractor shall furnish and install all supports for equipment under this contract. Supports shall be spaced at intervals of eight (8) feet maximum for rigid conduit and as necessary to obtain rigid support. Perforated strap supports will not be permitted.
- B. All conduits shall be firmly secured with pipe clamps, conduit straps, or suspension hangers as appropriate. Fasten to steel with screws in tapped holes, to wood with wood screws, and to masonry with expansion anchors. Expansion anchors shall have a minimum pull out load of 1,200 pounds and an ultimate shear load of 1,950 pounds.
- C. Joints shall be made tight with standard galvanized or sheradized couplings; corners turned with fittings, elbows, or long radius bends.

### 3.04 WEATHERPROOF EQUIPMENT

- A. All disconnect switches, starters, and other electrical equipment located on the exterior of the building or exposed to the outside shall be enclosed in a rain-tight enclosure. All lighting fixtures or other devices located on an exterior wall of the building shall be mounted on a flush-mounted, cast outlet box.

### 3.05 UNDERGROUND CONDUIT

- A. Conduit run underground shall be routed at least 24" below top of grade. Conduit shall be securely supported on plastic spacers placed at intervals of 4' maximum and tied in place securely. Maintain 2" separation between conduits. Conduit joints shall be made up watertight to prevent the entrance of moisture. Provide warning tape approximately 12" above buried conduits.
- B. Horizontal portions of conduit installed underground 1" and larger may be schedule 40 PVC plastic. Vertical portions of underground conduit shall be rigid galvanized steel with an approved metallic bushing at point of entry. Termination elbows shall be rigid galvanized steel installed using a plastic-to-metal adapter. A full sized copper, grounding conductor shall be provided for the full length of each non-metallic conduit, terminated with an accessible connection to a ground lug on the cabinet or steel conduit extension.

- END -

**DIVISION 16 - ELECTRICAL**  
**SECTION 16400 - SERVICE AND DISTRIBUTION**

**PART 1.00 GENERAL**

1.01 SYSTEM VOLTAGE

- A. The existing distribution voltage as provided from Entergy is 240 volt, 1-phase, 3-wire, from an existing service panel as described on the drawings.

**PART 2.00 PRODUCTS**

2.01 SAFETY SWITCHES

- A. Furnish and install safety switches as shown on the Drawings. All switches shall be fused NEMA Heavy Duty Type HD and Underwriter's Laboratories listed. All switches shall have blades that are fully visible in the "OFF" position with the door open. Switches shall be dead-front construction with permanently attached arc suppressers. Lugs shall be UL listed for copper and aluminum conductor and front removable. All current carrying parts shall be plated to resist corrosion. Switches shall be quick-make, quick-break type. During operation of the switch, the movable contacts shall not be able to be restrained by the handle once the closing or the opening action of the contacts has been initiated. Switches shall have cover interlocks to prevent opening of the switch door while the switch is in the "ON" position or closing the switch with the door open. Switch shall have padlocking capabilities in the "OFF" position.
- B. Safety switches shall be rated 600 volts for 480 volt service and rated 240 volts for 208 volt service. Switches shall be motor rated when used for motor loads. Switches shall be NEMA 1 enclosed for indoor applications and NEMA 3R for outdoor or wet area locations.
- C. Switches used for service entrance shall be service entrance rated. Safety switches shall be furnished complete with fuses.
- D. Safety switches shall be Square D Heavy Duty Class 3110 type, Cutler-Hammer type DH, or Siemens Heavy Duty Vacu-Break type.

**PART 3.00 EXECUTION**

3.01 COORDINATION

- A. Contractor shall coordinate all service and distribution work with other crafts on the project.

3.02 ARC-FLASH

- A. Contractor shall be responsible for any arc-flash labeling required for new electrical equipment installed.

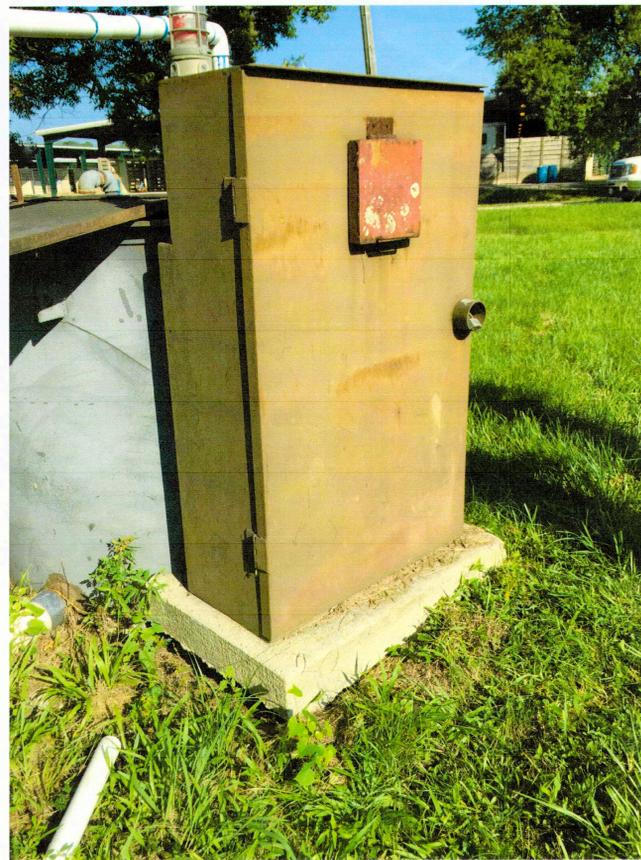
3.03 TEST AND BALANCING

- A. At such times as the Architect directs, the Contractor shall conduct in the Architect's presence operating tests to demonstrate the electrical systems are installed and will operate properly and in accordance with the requirements of the specifications. The Contractor shall furnish instruments and personnel required for such tests. Any work that is found to be defective, or material that are found to vary from the requirements of the drawings or specifications shall be replaced by the Contractor without additional cost of the Owner.

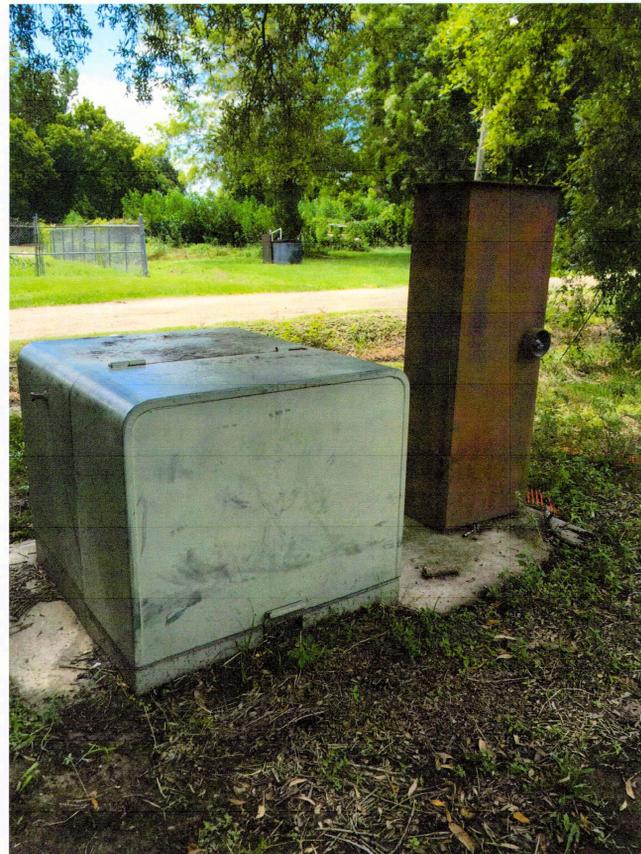
### 3.03 EQUIPMENT FUSING

- A. All equipment shall be furnished complete with fuses as described herein and/or as shown on the Drawings. Contractor shall furnish one set of spare fuses for each size fuse furnished on the project. Fuses shall be delivered to Owner prior to acceptance of project.
- B. Fusing for protective equipment shall be of the type specifically designed for the intended application. Fuses for service entrance rated equipment shall be Class L. Fuses for branch circuit protection shall be Class RK5 unless specified otherwise. Provide protective fuses as specifically required by the equipment manufacturer.

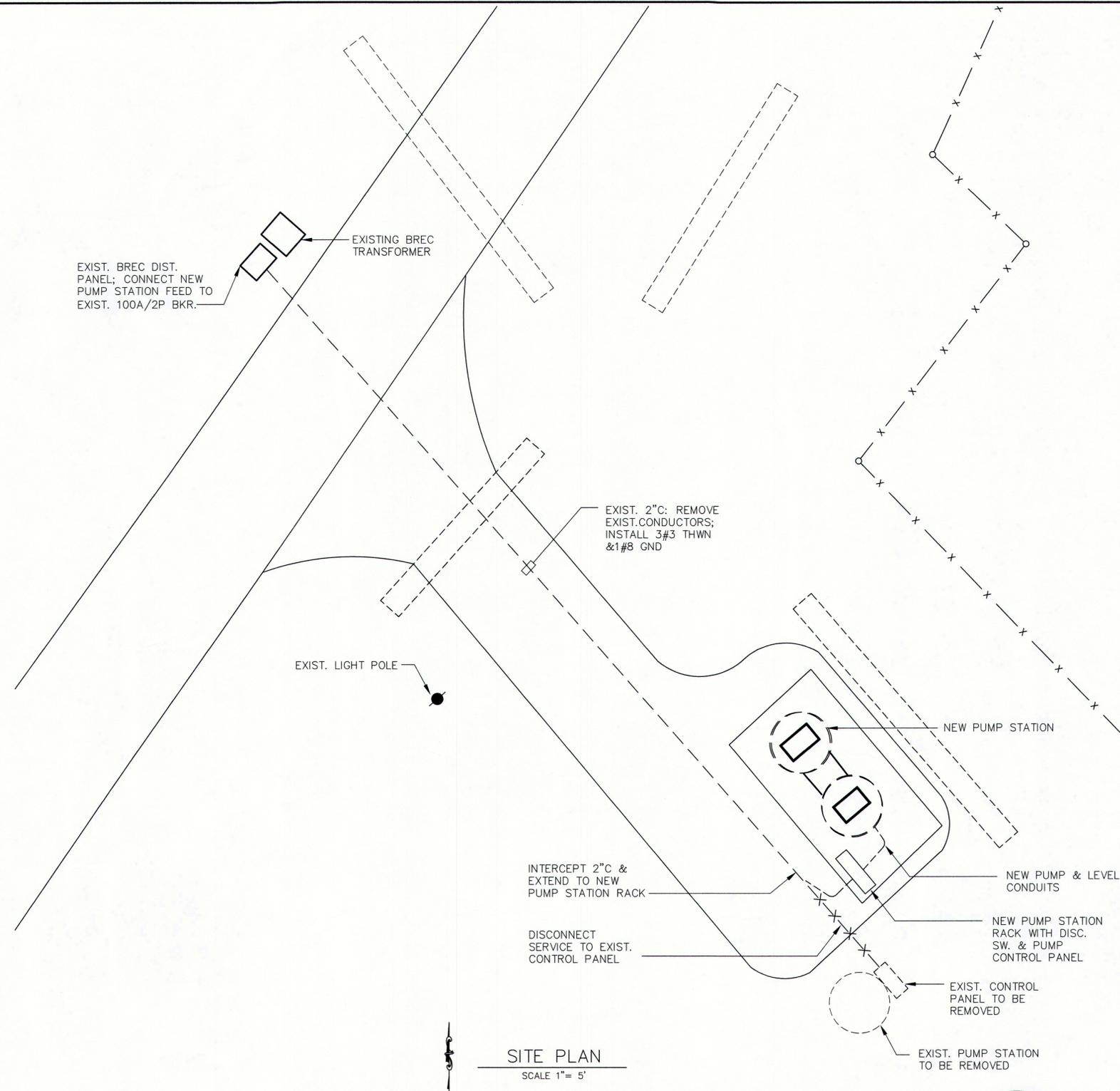
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EXIST. PUMP STATION & CONTROL PANEL TO BE REMOVED



EXIST. BREC TRANSFORMER & DISTRIBUTION PANEL



**UTILITY WARNING**

The Contractor is advised that existing overhead and underground utilities such as (but not limited to) electrical lines and poles, telephone cable, gas lines, water lines, and sanitary sewers exist in the rights-of-way where the proposed improvements are to be installed, all in accordance with the provisions of R.S. 38:2223. It shall be the Contractor's responsibility to protect these existing utilities during the construction of the work to be installed under this Contract and any damage to the existing utilities caused by the negligent acts of the Contractor shall be repaired by the Contractor at his expense. The Contractor shall contact Louisiana One (1) Call (1-800-272-3020) a minimum of 48 hours prior to beginning construction in the work area.



V:\Drawings\PEC\16223 Farr Park Sewer Improvements\Site.dwg [FARR PARK] Aug 22, 2016 - 11:46am by Michael

8/2016	ISSUED FOR BID	TAA			
7/2016	INITIAL OWNER REVIEW	TAA			
DATE	REVISIONS	BY	DATE	REVISIONS	BY

BATON ROUGE RECREATION COMMISSION  
OWNER

FARR PARK SEWER IMPROVEMENTS  
EXISTING PUMP STATION SITE  
TITLE

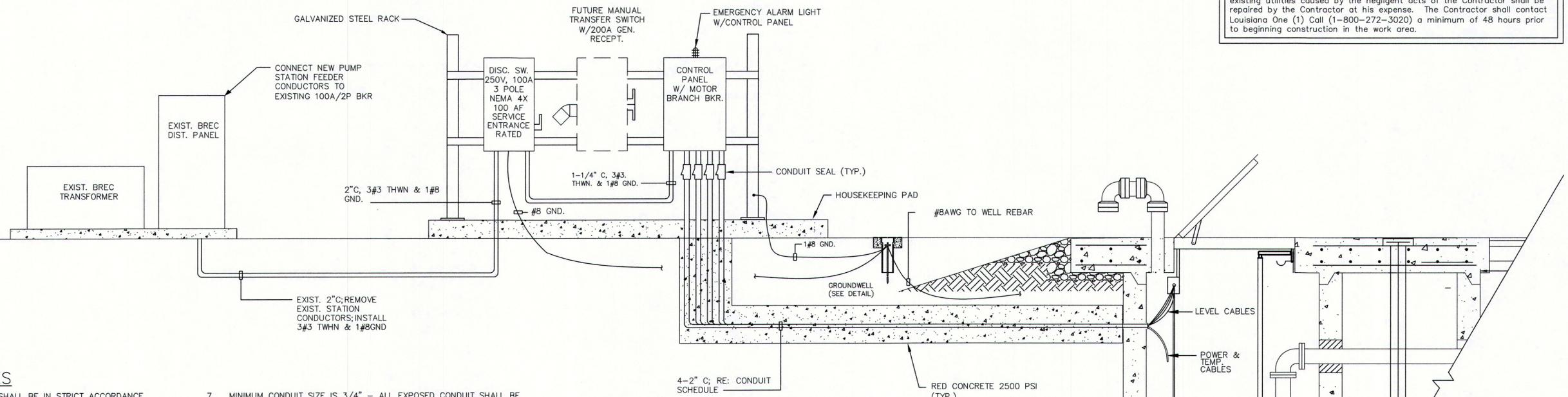
DESIGNED: DTC/MLT	SCALE: 1" = 5'
DRAWN: TP	
CHECKED: DTC	DATE: AUGUST 2016
APPROVED: DTC	

**PEC** PROFESSIONAL ENGINEERING CONSULTANTS CORPORATION  
7600 Innovation Park Dr. | Baton Rouge, LA 70820 | 225.769.2810

PROJECT NO. 11175  
SHEET NO. E-1

**UTILITY WARNING**

The Contractor is advised that existing overhead and underground utilities such as (but not limited to) electrical lines and poles, telephone cable, gas lines, water lines, and sanitary sewers exist in the rights-of-way where the proposed improvements are to be installed, all in accordance with the provisions of R.S. 38:2223. It shall be the Contractor's responsibility to protect these existing utilities during the construction of the work to be installed under this Contract and any damage to the existing utilities caused by the negligent acts of the Contractor shall be repaired by the Contractor at his expense. The Contractor shall contact Louisiana One (1) Call (1-800-272-3020) a minimum of 48 hours prior to beginning construction in the work area.



**GENERAL NOTES**

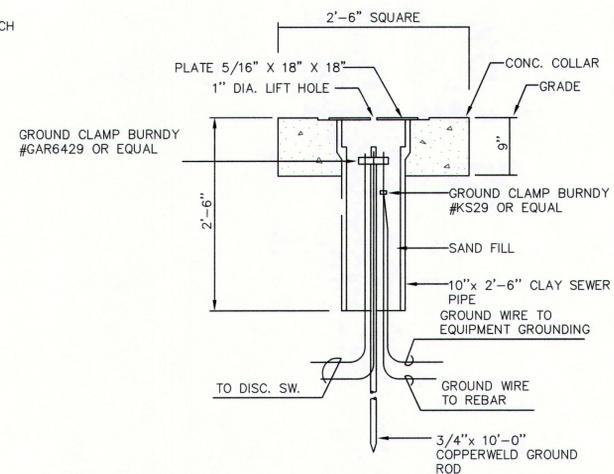
- ALL ELECTRICAL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
- THE CONDUIT SYSTEM, ALL ELECTRICAL EQUIPMENT, ALL STEEL STRUCTURES, MOTOR FRAMES, ETC. SHALL BE CONNECTED TO THE GROUNDING SYSTEM PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
- ALL EQUIPMENT LOCATIONS SHALL BE VERIFIED IN THE FIELD WITH MECHANICAL TRADES. CONDUIT ROUTING AND EQUIPMENT LOCATIONS SHOWN ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION OF ALL EQUIPMENT AND ROUTING OF CABLES AND CONDUITS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION.
- LOCATIONS OF CONDUITS, BOXES, FITTINGS, ETC., ARE DIAGRAMMATIC. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL SIZES, LOCATIONS, REVIEW ALL MECHANICAL SHOP DRAWINGS AND COORDINATE WITH THE MECHANICAL CONTRACTOR, OWNER AND ENGINEER TO INSURE THE TIMELY DELIVERY AND PROPER INSTALLATION OF ALL ELECTRICAL EQUIPMENT, (IE CONTROL PANELS, AREA LIGHTING, ETC.).
- BEFORE INSTALLATION, THE ELECTRICAL CONTRACTOR SHALL SUBMIT DETAILED LAYOUT DRAWINGS TO THE ENGINEER FOR REVIEW COVERING PROPOSED LOCATIONS, MOUNTING, AND ROUTING FOR ALL CONDUITS, SERVICES, FITTINGS, GROUND RODS, AREA LIGHTING, CONTROL PANELS, SUPPORTS, ETC.
- ENCLOSURES, JUNCTION BOXES, RECEPTACLES AND ALL OTHER ELECTRICAL EQUIPMENT USED OUTDOORS SHALL BE OF NEMA 4X (STAINLESS STEEL) CONSTRUCTION UNLESS OTHERWISE NOTED.
- MINIMUM CONDUIT SIZE IS 3/4" - ALL EXPOSED CONDUIT SHALL BE RIGID ALUMINUM AND ALL DUCT BANK CONDUIT SHALL BE SCHEDULE 40PVC UNLESS NOTED OTHERWISE.
- ALL CONDUITS LEAVING THE WET WELL SHALL BE SEALED IN ACCORDANCE WITH ARTICLE 501 OF THE NATIONAL ELECTRICAL CODE FOR CLASS 1 DIVISION 1 LOCATIONS.
- ALL CABLES INSTALLED FROM WET WELL TO SWITCHRACK SHALL BE CONTINUOUS. NO SPLICING WILL BE ALLOWED. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING THE PROPER LENGTHS FOR CONTINUOUS RUN.
- THE WET WELL SHOWN ON THIS DRAWING IS PRESENTED HERE FOR TYPICAL REPRESENTATION. FOR EXACT DETAILS, SEE CIVIL DRAWINGS.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR AND CAREFULLY REVIEW THE MECHANICAL PACKAGES PROPOSED TO BE SUPPLIED. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL WIRE AND CONDUIT NEEDED FOR ELECTRICAL APPURTENANCES, ASSOCIATED WITH MECHANICAL PACKAGES, ARE PROVIDED EVEN IF NOT SPECIFICALLY CALLED FOR IN THE PLANS AND SPECIFICATIONS.
- FACTORY CABLE. CONTRACTOR SHALL VERIFY CONDUIT SIZE BASED ON MANUFACTURER'S SUPPLIED CABLE.
- THERE SHALL BE WARNING LABELS LOCATED ON THE FRONT OF EACH ELECTRICAL ENCLOSURE.

**CONDUIT SCHEDULE**

- 2" C. CABLES FOR FLOAT SWITCHES LS1 & LS2
- 2" C. CABLES FOR FLOAT SWITCHES LS3 & LS4
- 2" C. POWER & TEMP. CABLES FOR PUMP P-01
- 2" C. POWER & TEMP. CABLES FOR PUMP P-02

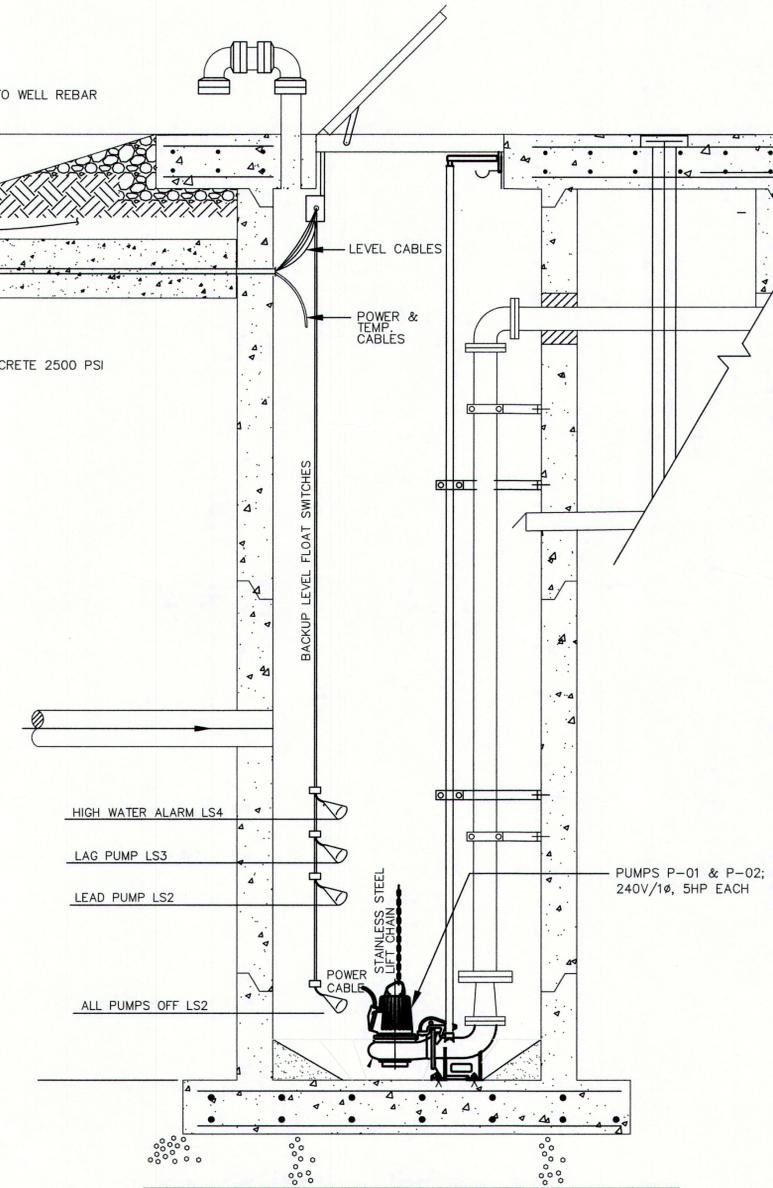
**RISER DIAGRAM**

NOT TO SCALE



**GROUNDWELL**

DETAIL  
NOT TO SCALE



V: Drawings\PEC\16223 Farr Park Sewer Improvements\PUMP STATION.dwg [7] Aug 22, 2016 - 11:46am by Michael

BATON ROUGE  
RECREATIONAL COMMISSION  
OWNER

FARR PARK SEWER IMPROVEMENTS  
PUMP STATION PLAN AND SECTION  
TITLE

DESIGNED: DTC/MLT	SCALE: AS SHOWN
DRAWN: TP	DATE: AUGUST 2016
CHECKED: DTC	
APPROVED: DTC	



PROJECT NO. 11175  
SHEET NO. E-2