ADVERTISEMENT FOR BIDS

Sealed proposals will be received in the Office of the Procurement Manager, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina 27834 until 3:00 PM (EDST) on September 9, 2020 and immediately thereafter publicly opened and read for the furnishing of a Precast Concrete Relay Control House for the Sugg Parkway Substation. Instructions for submitting bids and complete specifications will be available in the Office of the Procurement Manager, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina during regular office hours, which are 8:30AM – 5:00PM Monday through Friday.

Greenville Utilities Commission reserves the right to reject any or all bids. **Late bids will not be considered.**

Notice to Bidders:

Greenville Utilities Commission is committed to the health and safety of our customers and employees. We are taking the spread of COVID-19 very seriously and continue to monitor the latest Local, State, and Federal guidance. We are presently closed to the public. We are receiving FedEx, UPS, US Mail.

We are requesting that you also send a scanned copy of your bid or electronic copy via e-mail to my attention at: haddocgc@guc.com

Please note to send the scanned copy of your bid or electronic copy via e-mail on September 10, by 3:00 pm. Do not send before September 10, 2020.

We must still receive your sealed proposal/bid (paper hardcopy) by 3:00 pm (EDST) on September 9, 2020 per the bid instructions for your sealed proposal/bid to be considered.

SECTION I

GENERAL INSTRUCTIONS FOR FORMAL BIDS

RELATED TO THE PURCHASE OF APPARATUS, SUPPLIES,

MATERIALS, EQUIPMENT AND BUILD

1.0 NOTICE TO BIDDERS

Sealed bids, subject to the conditions made a part hereof, will be received in the Office of the Procurement Manager, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina 27834 until 3:00 PM (EDST) on September 9, 2020, the day of opening. Bids submitted in a fax or e-mail in response to this Invitation for Bids **will not be acceptable.**

2.0 STANDARD FORMS REQUIRED

Each bidder must submit a proposal on the enclosed bid forms. **The bid must be signed by an authorized official of the firm. Return only the attached Proposal Form. Do not return the Advertisement for Bids, Instructions to Bidders or Specifications.**

3.0 PREPARATION OF BID

Bids must be in sealed envelopes clearly marked on the outside with the name of the bid and the bid opening date and time. Bid shall be addressed to PROCUREMENT MANAGER, GREENVILLE UTILITIES COMMISSION, 401 S. GREENE STREET, GREENVILLE, NORTH CAROLINA 27834.

4.0 TIME FOR OPENING BIDS

Bids will be opened promptly and read at the hour and on the date set forth in the advertisement in the Office of the Procurement Manager, Greenville Utilities Main Office, 401 S. Greene Street, Greenville, North Carolina. Bidders or their authorized agents are invited to be present.

5.0 BID SECURITY

Each Proposal shall be accompanied by cash, cashier's check, or certified check drawn on a bank insured with the Federal Deposit Insurance Corporation or the Savings Association Insurance Fund, payable to the Owner, in an amount not less than five percent (5%) of the total bid as a guarantee that a Purchase Order, if awarded, will be accepted. In lieu thereof, a Bid Bond may be submitted by the Bidder in an amount not less than five percent (5%) of the total bid.

7.0 NC SALES TAX

Do **not** include NC sales taxes in bid figure; however, Greenville Utilities Commission (GUC) does pay sales tax. Sales tax should be added to the invoice as a separate item.

8.0 FEDERAL EXCISE TAX

GUC is exempt from Federal Excise Tax and will issue a Federal Exemption Certificate upon request to the successful bidder.

9.0 EXCEPTIONS TO BE CLEARLY STATED

If bid is not in strict accordance with Section II, "Specifications," bidder must list or note all exceptions **on the Request for Proposal Form**, otherwise, it is fully understood that the successful bidder will furnish equipment and/or materials exactly as specified. GUC reserves the right to accept or reject bids with noted minor deviations from specifications and to determine the lowest responsible, responsive bid from the standpoint of quality, performance, and price.

10.0 EVALUATION AND AWARD OF BIDS

GUC reserves the right to reject any and all bids, to waive any and all informalities, and to disregard all nonconforming or conditional bids or counter proposals. In evaluating bids, GUC shall consider whether the bids comply with the prescribed requirements, plus all alternates or options requested. GUC reserves the right to include or exclude any option or alternative in GUC's opinion is in GUC's best interests. If a bid is to be awarded, it will be awarded to the lowest responsible, responsive bidder whose evaluation by GUC indicates that the award will be in GUC's best interests. Only firm prices will be considered for award of this bid.

11.0 PROMPT PAYMENT DISCOUNTS

Bidders are urged to compute all discounts into the price offered. If a prompt payment discount is offered, it may be considered in the award of the contract.

12.0 NUMERICAL ERRORS

In the case of a discrepancy between a unit price and the extension (the unit price multiplied by the number of units), the unit price governs. In the case where numerical bids are stated both in numbers and in words, the words govern.

13.0 BID WITHDRAWAL

A bidder must notify GUC in writing of its request to withdraw a bid within seventy-two (72) hours after the bid opening, not including Saturdays, Sundays, or holidays. In order to justify withdrawal, the bidder must demonstrate that a substantial error exists and that the bid was submitted in good faith.

14.0 MINORITY BUSINESS PARTICIPATION PROGRAM

GUC has adopted an Affirmative Action and Minority and Women Business Enterprise Plan (M/WBE) Program. Firms submitting a proposal are attesting that they also have taken affirmative action to ensure equality of opportunity in all aspects of employment, and to utilize M/WBE suppliers of materials and/or labor.

15.0 DELIVERY TIME

Delivery time is to be stated and will be considered in the evaluation of bids. Failure by the successful bidder to meet quoted delivery shall be interpreted as non-compliance with these specifications and may be deemed sufficient cause for removal of the manufacturer and/or distributor from our lists as acceptable manufacturers or bidders.

16.0 DELIVERY

Shipments will be made only upon individual releases from a blanket purchase order issued by GUC in accordance with GUC's current needs. Time is of the essence with respect to all deliveries under this Agreement. Delivery of all equipment, materials, or supplies shall be made Free on Board (FOB) 1390 Sugg Parkway, Greenville, North Carolina, unless otherwise specified. The agreed price for such equipment, materials, or supplies shall include all costs of delivery and ownership, and risks of loss shall not be transferred from Provider to GUC until express written acceptance of delivery and inspection by GUC. Delivery hours are between 8:00 AM and 4:30 PM Monday-Friday only. **GUC's purchase order number is to be shown on the packing slip or any related documents.** GUC reserves the right to refuse or return any delivery with no purchase order number or which is damaged. GUC will not be charged a restocking fee for any delivery which is refused or returned.

17.0 CONTRACT PERIOD
NA

18.0 MANUFACTURER

Bidder is to specify the manufacturer of items being quoted if applicable.

19.0 QUANTITIES

Quantities specified are only estimates of GUC's requirements. GUC reserves the right to purchase more or less than the stated quantities at prices indicated in the submitted Proposal Form based on our actual needs.

20.0 CONTACT INFORMATION

Questions regarding this bid request should be directed to Cleve Haddock, CLGPO, Procurement Manager, at (252) 551-1533, haddocgc@guc.com.

21.0 TERMS AND CONDITIONS

The attached Terms and Conditions apply to all purchases made by Greenville Utilities Commission (GUC) and must be considered as part of the bid proposal.

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GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

SPECIFICATIONS AND BID DOCUMENTS
FOR A
PRECAST CONCRETE RELAY CONTROL HOUSE
FOR THE
SUGG PARKWAY SUBSTATION

TECHNICAL SPECIFICATIONS

1. Scope

The scope of this project is the construction and installation of a 22' x 14' x 10' height precast concrete control house for the Sugg Parkway Substation.

The work shall include furnishing all labor, materials, equipment, and supplies, except materials and equipment to be furnished by others, necessary for the complete installation of a Precast Concrete Relay Control House, primary and secondary structural framing members, connecting bolts, windows, doors, flashing, closures, sealer, insulation, supporting structural steel, concrete floor pad, concrete foundations, and other miscellaneous items as shown or called for in the Drawings or Specifications. The building is to be used as a substation relay control house upon their completion.

2. General

2.1. Site visits are encouraged. Contact Ken Wade at 252-551-1570 to schedule a site visit.

2.2. All construction shall be performed in a workmanlike manner and shall conform to the Drawings and Specifications.

2.3. All material shall be new.

2.4. The Drawings and Specifications are complementary, one to the other. That which is shown on the Drawings or called for in the Specifications shall be as binding as if both were called for and shown. The intention of the Drawings and Specifications is to include all labor, materials, transportation, equipment, and any other items necessary to do a complete job.

2.5. Electric service is available at the site.

2.6. Greenville Utilities will provide and maintain a temporary toilet for use of workmen and locate toilet where directed.

2.7. Contractor shall be responsible for laying out work. The Contractor shall, immediately upon entering project site for purpose of beginning work, locate all general reference points and take such action as is necessary to prevent their destruction, lay out his own work, and be responsible for any error resulting from his failure to exercise such precaution.

2.8. The installation shall conform to the latest editions of the National Electric Code and North Carolina Building Code.

2.9. Modification to General Conditions.

2.9.1. Permits, Fees, Etc.
The Contractor shall be responsible for obtaining and paying for all permits, licenses, certificates, inspections, etc., required, both permanent and temporary.

2.9.2. Cleaning Up
The Contractor shall be individually responsible for cleaning smears, labels, spots, and discoloration from each piece of equipment. All building materials shall be left clean and in new condition.

2.10. The Contractor shall provide such temporary structures as are required for the proper storage of materials and equipment. The Contractor shall, if necessary, provide temporary heat during construction at his own expense.

2.11. The Contractor shall leave all holes, chases, or openings straight, true, and of proper size as may be necessary for the proper installation of the work. Contractors shall consult the Engineer and other Contractors regarding size and location of different chases, etc., required.

2.12. The building manufacturer shall furnish complete Erection Drawings showing foundation details, anchor bolt settings, sidewall, under wall and roof framing, transverse cross-sections, covering and flashing details, and accessory installation details to clearly indicate proper assembly of all building parts. **Two (2) complete sets** of Drawings shall be sent to **Greenville Utilities prior to actual construction for review of the proposed building design**.

2.13. Submit the information specified in this subsection to GUC and have approved before start of concrete shelter fabrication. Include clear explanations where drawings and data deviate from drawings or this specification.

2.13.1. Preliminary Drawings. Submit shop drawings that include the following details:
2.13.1.1. interior layout, including reflected ceiling plan
2.13.1.2. load path or whole concrete shelter section that describes frame and sheathing materials, and structural fasteners
2.13.1.3. one-line electrical diagram that describes service and feeder power

wiring in the concrete shelters

2.13.1.4. circuit breaker panel schedule that identifies rating & location of circuits furnished with concrete shelter

2.13.2. Foundation Drawing. Submit foundation plan drawing showing slab plan dimensions and concrete shelter tie-down details. Soil-bearing data is attached with this order, also furnish foundation structural details, such as concrete strength and reinforcing steel.

3. **Drawings**

The building design construction shall conform to Greenville Utilities' Drawings all of which form a part of these Specifications. Use additional attached drawings for reference only.

Sheet	Title
CLHS-AR1	Control House Control Panels & Cable Tray Plan
CLHS-AR2	Control House Interior & Exterior Elevations
DAVE-STSV-IN	Control House Electrical Interconnection

4. **Shop Drawings**

4.1. Approval of Shop Drawings and Bill of Materials will be required. The Contractor shall supply two (2) copies of all Shop Drawings and Bill of Materials to the Greenville Utilities so they may ascertain that all materials and equipment being furnished by the Contractor meet the Specifications.

4.1.1. Final Drawings, Reaction Calculations, and final Bill of Materials shall be furnished by the Contractor for installation of the Control House.

4.1.2. General Arrangement Drawings, Erection Diagrams, Steel (or Aluminum) Details, and Other Details shall be provided.

4.1.3. One (1) CD-ROM or electronic file transfer containing Drawing files of all Drawings. Drawing files shall be compatible for use with AutoCAD 2019.

4.2. All Drawings and documentation are to be forwarded to Greenville Utilities, 801 Mumford Road, Greenville, North Carolina, 27834, Attention: Mr. Ken Wade

5. APPLICABLE DOCUMENTS

The following documents, of issue in effect at time of invitation-for-bid or request-for-proposal, form a part of this specification to the extent specified herein. At time of publication, editions indicated were valid.

In event of conflict between drawing and this specification, the drawing shall take precedence. In event of conflict between this specification and other documents specified herein, this specification shall take precedence.
All standards are subject to revision. Manufacturer is encouraged to investigate applying the most recent editions of standards indicated below:

5.1. Documents

ACI 304: Guide for Measuring, Mixing, Transporting, and Placing Concrete
ACI 305: Hot Weather Concreting
ACI 306: Cold Weather Concreting
ACI 308: Standard Practice for Curing Concrete
ACI 309: Guide for Consolidation of Concrete
ACI 318: Building Code Requirements for Structural Concrete
ARI 210/240: Standard for Unitary Air Conditioning and Air Source Heat Pump Equipment
ASCE 7: Minimum Design Loads for Buildings and Other Structures
ASHRAE 90.1: Energy Efficient Design of New Buildings
ASTM A36: Standard Specification for Structural Steel
ASTM A185: Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
ASTM A615: Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM C31: Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C33: Standard Specification for Concrete Aggregate
ASTM C39: Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C150: Standard Specification for Portland Cement
ASTM C172: Standard Method of Sampling Freshly Mixed Concrete
ASTM C260: Standard Specification for Air-Entraining Admixtures in Concrete
ASTM C330: Standard Specification for Lightweight Aggregate for Structural Concrete
ASTM C494: Standard Specification for Chemical Admixtures in Concrete
ASTM E84: Test Method for Surface Burning Characteristics of Building Materials [fire retardant]
ASTM E119: Test Methods for Fire Tests or Building Construction and Materials [fire resistance]
ASTM E136: Test Method for Behavior of Materials in a Vertical Tube Furnace [non-combustibility]
ASTM E152: Methods of Fire Tests of Door Assemblies
AWS D1.1: Structural Welding Code-Steel
AWS D1.4: Structural Welding Code-Reinforcing Steel
EIA 222: Structural Standards for Steel Antenna Towers and Antenna Supporting Structures
IBC: International Building Code, International Code Council (ICC)
NBC: National Building Code, Building Official Code Association (BOCA)
NFPA-70: National Electric Code, National Fire Protection Association

SBC: Standard Building Code, Southern Building Code Conference International (SBCCI)
UBC: Uniform Building Code, International Conference of Building Officials (ICBO)
UL 752: Bullet Resisting Equipment
UL 1449: 2nd Ed., Transient Voltage Surge Suppressor

6. REQUIREMENTS

Engineer, design, and fabricate concrete shelter to conform to performance requirements specified, herein. Requirements are categorized by discipline as structural, electrical, mechanical, and architectural. Ancillary equipment and systems not classified as above are specified as a miscellaneous requirement.

6.1. Structural Requirements

6.1.1. Design Loads. Design concrete shelter to resist loads from wind, gravity, structural movement including thermally induced, and to withstand in-service use (e.g. weather) without failure.

Provide floor panel with integral and flush lifting provisions that permit crane lift without use separate bolt-on devices, but make use of readily available crane hardware, e.g., hooks, shackles, or D-rings. Design lifting provision for concrete shelter tie-down. Tie-down hardware in wall not permitted.

Unless otherwise indicated on drawing, design loads are:

200 psf uniform floor live load per ASCE 7 while on foundation
125 psf uniform floor live load per ASCE 7 during lifting and transport
Concentrated floor load of 2,000 pounds over any 2.5 square foot area
100 psf uniform roof live load per ASCE 7
155 mph wind load per ASCE 7, exposure C
Seismic: importance factor 1.0, use group I, spectral response coefficients – SDS = 0.47 & SD1 = 0.19, site class D
2-hour fire resistance per ASTM E119 on exterior walls
Level 4 high rifle bullet resistance when tested in accordance with UL 752

In addition, concrete shelter shall be capable of certification under the following model code influences and construction classifications when classed as **S2** occupancy:

UBC [ICBO] …..……..V_N
SBC [SBCCI] …..…….IV_U
NBC [BOCA] …..……5B
IBC [ICC]……..… 5B

6.1.1 Materials. Furnish required materials and components in the process necessary for structural system.

6.1.2 Concrete. Use concrete formulation with no less than 4000-psi compressive strength at 28 days and a density less than 100 pcf.

Cement: Type I or II Portland cement per ASTM C150

Aggregate: lightweight sand per ASTM C33 and lightweight coarse per ASTM C330; use coarse aggregate no larger than ¾ inches nominal.

Admixtures: air entraining admixtures per ASTM C260 and water reducing admixtures per ASTM C494.

Water: clean and free of oils, acids, solids, salts, organic materials, or other substances harmful to concrete or reinforcing steel. Use no non-potable water.

6.1.3 Steel. Use embedded reinforcing and other structural steel components that conform to the following:

Rebar: use grade 60 deformed reinforcing bar per ASTM A615

Welded wire fabric: use f_y=60 ksi wire fabric reinforcement per ASTM A185

Other steel: use ASTM A36 steel, or better, for other steel components, e.g. weld plates, lifting and tie-down hardware

6.1.4 Installation.

6.1.4.1 Panel Fabrication. Construct floor, walls, and roof into pre-cast reinforced concrete panels in conformance with ACI 318 with a minimum thickness of 6" on floors and 4" on roof and wall panels. Cast reinforced steel plates in floor, walls, and roof panels to provide for welded panel-to-panel connections. Also:

Measure, mix, and transport concrete per ACI 304

Collect concrete samples for strength testing per ASTM C172, mold into cylinders per ASTM C31, and test for compressive strength per ASTM C39.

Cure concrete in forms and protect from moisture loss, excessive heat, and freezing until removal from form; conform to ACI 305 and ACI 306 as required for hot and cold concreting

Consolidate concrete per ACI 309

Mold or screed minimum ¼" per foot slope on roof in two directions for proper water drainage

Mold steel door frames into cast panel walls where required; herein; include step-joint threshold to prevent water from entering concrete shelter

Mold keyed or step-joint edges into fabricated panels to enhance moisture protection and water runoff; mold roof/wall so that joint is not exposed

Treat wall panels with retarders as required to permit exposure of coarse aggregate for exterior finish; "seeding" of exterior surface with coarse aggregate is not permitted

6.1.4.2 Concrete Shelter Assembly. Install weatherproofing features as concrete panels are assembled. Weld finished panels together to form rigid concrete shell. Also:

Dust and waterproofing herein

Welding: use certified welders and conform to applicable provisions of AWS D1.1 and D1.4

6.2 Electrical Requirements

6.2.1 Electrical Performance.

Electric Power & Lighting. Engineer, design, and furnish electrical system compatible with applicable electrical details on drawing [Attached] and NFPA 70, the National Electrical Code.

General interior lighting: 40 W florescent fixtures with rapid start ballasts, lamps, and acrylic lens cover. minimum of 50 fc at the work plane, 30" above finished floor

Emergency interior lighting: 50 W DC output for 90 minutes, 12-volt DC, operation on loss of 120 VAC single phase 60 Hz power input: dual glass sealed beam lamps with maintenance-free lead calcium battery pack self-contained unit

Exterior Lighting: 35 W, high pressure sodium

Service AIC rating: 10,000 amps minimum

Provide 15-amp duplex convenience receptacles around room perimeter

6.2.2 Hydrogen Monitoring. Detector can operate exhaust fans and building alarms / SCADA systems:

Warning Settings: Should the concentration of hydrogen gas in the air surrounding the sensor reach 1% by volume, the "1% Warning" yellow LED will light up on the main control of the unit. In addition, the 1% internal relay will energize and can be used to activate an external exhaust fan or a building management/alarm system (via SCADA).

Alarm Settings: Should the hydrogen gas concentration reach 2% by volume, the "2% Alarm" red LED will light up, the strobe will flash and an audible alarm will sound. In addition, the 2% internal relay will energize and can be used to activate a building management/alarm system (via SCADA).

6.2.3 Fire/Smoke Alarm System. Smoke detectors will have audible alarms, visual alarms (LEDs) and output alarm contacts. Detectors will provide sensors to sense the following conditions and provide stated alarm, and provide wired control contacts for field connection to monitor:

Alarm: if any detector in any zone senses positive, sound horn or siren and close "alarm" contacts

Trouble alarm: if power should fail, or supervised circuit be opened or shorted, close "trouble alarm" contact

Wire detector and audible alarms as supervised circuits to detect inadvertent circuit damage or disruption.

6.2.4 Materials. Furnish materials, components, and devices that are new and of highest quality. Ensure that, where applicable, electric materials are listed or recognized by Underwriters Laboratories. See reference drawing for specific components and systems, as well as circuit ratings and sizes. Conform to the following:

Heating and Air Conditioning: Commercial grade through the wall heat pump unit which shall be removeable from its mounted wall sleeve from inside of control house to provide self-contained heating and cooling systems for temperature and humidity control. Shall provide supply and return ventilation grilles with a replaceable high efficiency filter on the return side.

AC Service Enclosure - Main Terminal Box: 120/240 VAC, Single Phase, 3 wire plus ground. Lugs shall be rated for 200 amperes and accept conductor range of #6 AWG to 600 kcmil copper. Cutler Hammer,3MTB400R Series or equivalent

Indoor Manual AC Service Transfer Switch: Dual source to single load, heavy-duty Double Throw, non-fusible, 240 VAC, 200 amperes, 2-pole, single phase, 15 HP AC rating, load break rated, UL listed per File No. E5239, Cutler Hammer, DT Series or equivalent

AC Service Meter Socket Base: Single meter base, single phase 3-wire, rated 600 VAC, 200 amperes, 10,000 amperes RMS symmetrical, outdoor surface mount enclosure, socket lugs shall accept No. 8 AWG to 250 MCM conductor range.

AC Service Panel No. 1 & 2: 120/240 VAC, single phase 3-wire with neutral; minimum interrupting 22 kA symmetrical, 225 amperes main bus rating, 32 branch circuit poles, NEMA Type 1 indoor surface mounted box and trim; Cutler Hammer PRL1a Panelboard series using Type ED main breaker and Type QBHW branch breakers or equivalent.

AC Service Panel No. 3: Used to isolate circuits serving outdoor mast-mounted lighting, 120/240 VAC, single phase, 3-wire with neutral, MLO main lug only, 22 kA symmetrical interrupting, UL listed E8741, sized to accommodate 8 branch circuit poles with top or bottom service entrance to main breaker, NEMA Type 1 indoor surface mounted box and trim. Cutler Hammer BR Load center Type BRH branch breakers or equivalent.

Isolation Transformer - Outdoor Lighting: Indoor dry-type isolation transformer, minimum rating of 5 kVA, 60 Hz, single phase, 120x240 VAC primary, to 120x240 VAC secondary. GE, 9T21B1001GO4 or equivalent

DC Service Panel Cutler Hammer PRL2a Panelboard series Type FD breakers or equivalent. 125/250 VDC, single phase 2-wire without neutral; minimum interrupting 14 kA symmetrical, 100 ampere main bus rating, fifteen (12) 2-pole branch circuit poles, NEMA Type 1 indoor surface mounted box and trim.

Cable Tray: B-Line series 14 6063-T6 alloy composite, ladder type, 4-inch nominal side rail height, 30-inch and 18-inch nominal tray widths with 9-inch rung spacing with the field cabling exiting through the wall at cable tray elevation

SBS-H2 Hydrogen Detector: Power inputs 48 Vdc
Sensor status indicator LEDs on the main control
Modular design for optimal placement of sensor(s)
NRTL/C Certified: UL Std. No 61010-1
Wall or 2-gang junction box mountable
Warning 1 % relay, 10 A @ 28 Vdc
Alarm 2% relay, 0.5 A resistive @ 28 Vdc
Indicator LEDs can be tested by pushing “TEST” button

OSD308 Smoke Detector: Power inputs 48 Vdc
Sensor status indicator LEDs on the main control
Modular design for optimal placement of sensor(s)
Smoke detectors and fire alarm systems that support NFPA 72 must produce an audible alarm signal that is different from all other audible signals
Wall or 2-gang junction box mountable
Alarm relay, 10 A @ 48Vdc
Trouble Alarm 2% relay, 10 A @ 48 Vdc
Indicator LEDs can be tested by pushing “TEST” button

Power wiring: 600V THHN or THWN wire sized in accordance with NFPA-70; use size 12 awg minimum
Control wiring: 250V TFFN solid wire sized in accordance with manufacturer or listing instructions for class 2 thermostat, generator, or fire detection systems; use #18 awg minimum
Alarm wiring: 250V solid shielded, twisted cable assemblies; use #22 awg minimum
Flexible raceway; use liquidtite conduit on exterior and flexible metal conduit on interior of concrete shelter

Branch circuit breakers: thermal magnetic circuit breakers; rate breakers that supply lighting circuits as "SWD" and motor loads as "HACR"
Light fixtures: 2-tube, 4-foot surface-mounted fluorescent fixtures with CBM-rated ballast, prismatic wrap-around diffuser, and in-line RFI filters for noise suppression
Wiring devices: use UL listed quiet-type lighting toggle switches and grounded receptacles
Service Disconnects: Fused disconnects or enclosed circuit breakers labeled as "suitable for use as service equipment"

6.2.5 Installation. Perform all wiring in accordance with best commercial practice in accordance with NFPA-70.

Install wiring in surface mount EMT conduit; where flexible conduit is required by code between equipment and final junction box in circuit, use flexible metal conduit on interior and liquidtite conduit on concrete shelter's exterior
Where required, use properly sized and insulated wire nuts for conductor splices; locate no splices except in outlet or junction boxes.
Install exterior door light with vandal-resistant lens and, when required by drawing, a photocell and switched override
Coordinate location of interior light fixtures to maximize illumination between rows of equipment
Center duplex receptacles 18 inches above finished floor and locate so that no point along room perimeter is greater than six feet from a receptacle
Insofar as practical, enclose class 2 signal circuits in raceway

6.3 Mechanical Requirements

6.3.1 Performance. Furnish and install mechanical systems as specified in this section.

6.3.1.1 HVAC System. Design and equip concrete shelter for heating, ventilation, and air conditioner system that will maintain interior temperature under specified operating conditions. Calculate heating and cooling based on heat load of concrete shelter manufacturer's installed equipment and concrete shelter conduction losses and solar loading.

Ambient temperature: -30°F (-35°C) thru 110°F (40°C)
Interior temperature: 60°F (18°C) minimum at minimum ambient, and 80°F (30°C) maximum at maximum ambient temperature,
Ambient humidity: 5-95%

6.3.2 Materials. Except where alternate approval is permitted, furnish only UL-listed equipment; also:

air conditioners: Thru wall (hotel style) units with SEER rating no less than 10.0 and capacity rated using ARI 210/240; equip each

unit with low ambient control, anti-cycle relay, integral circuit breaker disconnect, and washable filter
heater: built-in to air conditioner, smallest standard rating available for the air conditioner required
fire detection system: see separate specification
fire extinguisher: class ABC Halon 1211 or class BC CO_2; each extinguisher fully charged to capacity with 9lb minimum
vent louvers: aluminum gravity shutters for fan intake and exhaust; add motor operator where fire suppression system is specified
vent fan: ac powered, single speed with built-in or separate overload
thermostats: vent and air conditioner control over range of 50°-90°F; provide air conditioner control for integral heat and control to continuously run evaporator fan

6.3.3 Installation.

6.3.3.1 Heating and Air Conditioner. Install commercial grade through the wall heat pump unit which shall be removeable from its mounted wall sleeve from inside of control house for transport as well as operation. Use stainless steel fastening hardware for mounting air conditioners. Seal exterior with UV-resistant caulk and install drip edge over top of each unit to prevent water entry. Locate units for maximum circulation and behind no equipment obstructions.

6.4 Architectural Requirements

Construct concrete shelter with standard interior and exterior finish and weather resistance consistent with environment of the continental United States.

6.4.1 Performance. Provide necessary weatherproofing to prevent moisture and dust infiltration. Provide panel insulation to reduce heat loss from conduction. Add insulation to floor, wall, and roof construction to ensure that total concrete shelter U_0 factor is less than 0.09 btu/hr/ft^2/°F when calculated per ASHRAE 90.1.

6.4.2 Materials. Furnish components and materials that conform to architectural requirements of this specification. Also:

Concrete floor to be sealed prior to installation of vinyl tile
Dust seal: precompressed, self-expanding polyurethane joint sealant to be installed around the perimeter of the floor
Bearing pad to be installed around the perimeter of the floor in the step-joint
Water seal: two layers of butyl tape to be installed at all wall-to-wall and wall-to-roof joints
Roof finish: white mastic coating made with elastomeric acrylic
Exterior wall coating: clear, non-yellowing and UV resistant acrylic sealer
Exterior trim (concrete surfaces): high build, textured, water based, acrylic paint for masonry and concrete.

Exterior door: heavy duty steel, fully welded with continuous aluminum tamperproof hinge
Insulation walls/roof: use polyisocyanurate or other insulation with equivalent K-factor
Insulation floor: use polystyrene or other insulation with equivalent K-factor

6.4.3 Installation.

6.4.3.1 Interior Finish. Finish interior walls and ceiling with white laminated sheathing board and vinyl trim. Finish floor with light colored commercial-grade vinyl.

6.4.3.2 Exterior Finish. Finish exterior with medium colored exposed aggregate finish sealed with UV-resistant clear coat and painted trim. Finish roof with seamless UV-resistant elastomeric coating.

6.4.3.3 Weatherproofing. Add dust and waterproofing to fabricated concrete panels before assembly:
Waterproofing: double-seal all wall-to-wall and roof-to-wall joints with butyl sealant; to permit water runoff, use no waterproofing on wall-to-floor joints
Dust proofing: seal exterior exposure of wall-to-wall and floor-to-wall joints with a dust seal

7 QUALITY ASSURANCE

Concrete shelter manufacturer must maintain an aggressive quality assurance program that ensures delivered units meet highest standards of workmanship and materials, and that these specifications are satisfied.

7.1 Organization

Provide for separate quality assurance organization where authority and responsibility are clearly defined in writing. This organization shall have:
Clear authority to withhold items that do not meet quality standards.
Direct access to top management at each facility so that quality problems can be efficiently resolved
Quality assurance manual with current approval by nationally recognized third-party agency

Records on each deliverable unit relative to item acceptance and rejection, plus disposition of rejected items

7.2 Material Control

Provide for program to ensure materials and components meet requirements specified herein and manufacturer's own specifications, and that nonconforming materials will not be used. This program shall include:

Receiving inspection program where receiving inspectors have ready access to appropriate drawings, engineering orders, specifications, vendor catalogs, purchase orders, etc.

Area with controlled access for adequate storage and security of materials furnished by customers

Material aging program to control use of materials with limited shelf life

Documented system for handling nonconforming materials, including means of removing nonconforming materials from process

7.3 Test Equipment

Provide for controlled program that maintains calibration of measuring devices, gauges, and test equipment. This includes:

Procedures that call for periodic inspection of tools used for inspection in production process and means of removing nonconforming tools and test equipment

Written working standards of accuracy for test equipment and periodic calibration program to primary standards traceable to National Bureau of Standards

Program to stamp test equipment with most recent calibration date and due date of next calibration

7.4 In-Process Inspection

Provide for program to ensure work-in-process and finished goods meet applicable codes & standards, manufacturer's standards, and requirements specified herein. This program shall provide for means to:

Prevent unauthorized use of nonconforming or uninspected materials

Inspect finished items to ensure that contract requirements are met using drawing and other documents that reflect latest changes

Compile and maintain inspection log of in-process and final inspections of deliverable units

Identify inspection status of in-process work

Track disposition of rejected items, including reworked items

8 DOCUMENTATION

8.1 Engineering Drawings

Submit one (1) complete set of engineering drawings with each delivered concrete shelter unit. Do not include preliminary drawings already submitted. Include the following in each set:

Final dimensioned foundation, interior layout, including wall orientation and ceiling plan showing all installed components and surface raceway

Exterior elevations on all four (4) main views

Electric feeder diagram, including electric service information panel schedules

Control wiring diagrams and schedule of manufacturer-installed concrete shelter alarms

Schedule of key allowable stresses, including wind, live floor, and live roof loads, and seismic shear coefficient; also list construction and occupancy classification

Schedule of fire resistance ratings

Shipping and foundation information, including approximate shipping weight

Total concrete shelter section that identifies all structural components and connections, sheathings and finishes; identify total load path from top of roof to foundation connection

Provide drawings on paper format no smaller than OCE D+ size, 24" x 36"; also make final engineering drawings available on AutoCAD .DWG format.

8.2 Calculations

Where required for certification submit one (1) set of complete engineering calculations as required:

Structural: justify concrete shelter construction with structural design loads

Electrical: justify service size using loads of all known equipment

Lighting: justify furnished lighting with illumination level required using zonal cavity method

Energy: justify concrete shelter construction and insulation with overall concrete shelter energy efficiency required in using system performance method of ASHRAE 90.1; when required for state certification, also justify per code having jurisdiction

Air conditioner; justify air conditioner size using actual air conditioner performance with concrete shelter conduction loss, solar loading, lighting loss, vent loss, and equipment load

Fire-suppression: justify agent tank fill with concrete shelter internal area using appropriate specific volume

8.3 Service Manual

Provide one (1) operations and maintenance manual with each delivered concrete shelter unit. Assemble manual in bound format with table of contents to identify major divisions. Compile manual to include:

Model and serial numbers for concrete shelter and major components (e.g. air conditioner, engine-generator, etc)

Building statement of warranty

Warranty information on components with transferable warranty

Manufacturer data on electrical and mechanical systems, and electrical components where available

Concrete shelter start-up information

preventive maintenance procedures and schedule

Concrete shelter repair procedures

8.4 Warranty

Furnish, with each delivered unit, statement of warranty that includes all systems furnished and installed by manufacturer for period of not less than one (1) year and to commence no sooner than manufacturer's final invoice date. Items to include in statement of warranty:

assignments of warranties of any systems, materials or components that exceed the one (1) year concrete shelter warranty period

clear instruction on activating warranty

clear instructions on submitting claims for service under warranty, including 24-hour phone contact

9 SITEWORKS

9.1 Transportation to Site

Deliver prefabricated concrete shelter to disclosed site without damage or deformity. Encase delicate exterior components and cover openings for protection against transportation damage. Use tractor-trailer combination designed for proper over width, over height, and overweight load per DOT regulations. Use trailer with air-ride suspension.

9.2 Off Loading

When specified on purchase order, furnish crane to off load concrete shelter on [client name]-furnished foundation. Provide detailed offloading drawings that describe recommended rigging requirements. Furnish and install tie-down hardware.

9.3 On-Site Services

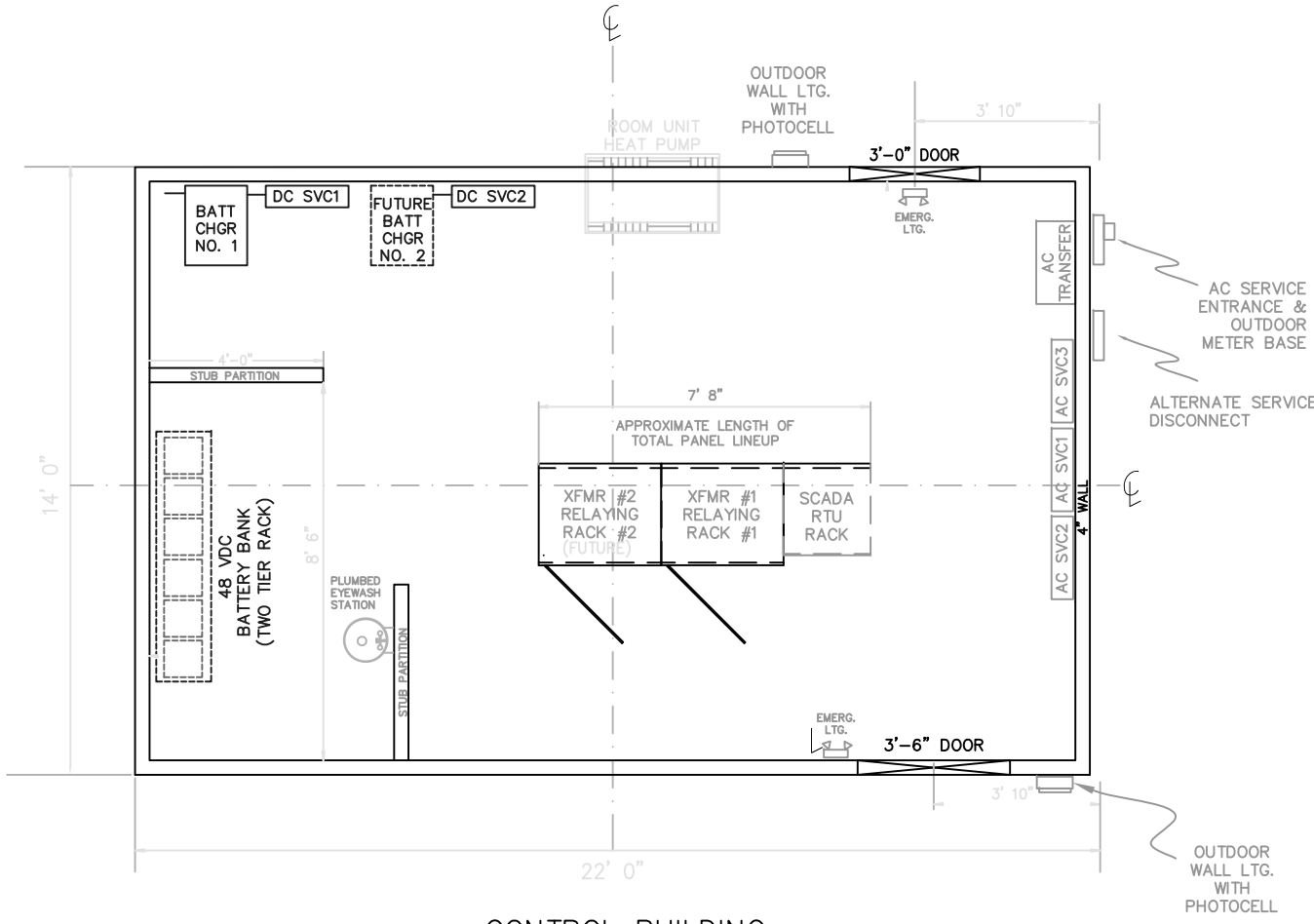
Install all items removed for transportation; this includes, but is not limited to drip caps, hoods, air conditioner and exterior lights.

9.4 Certifications

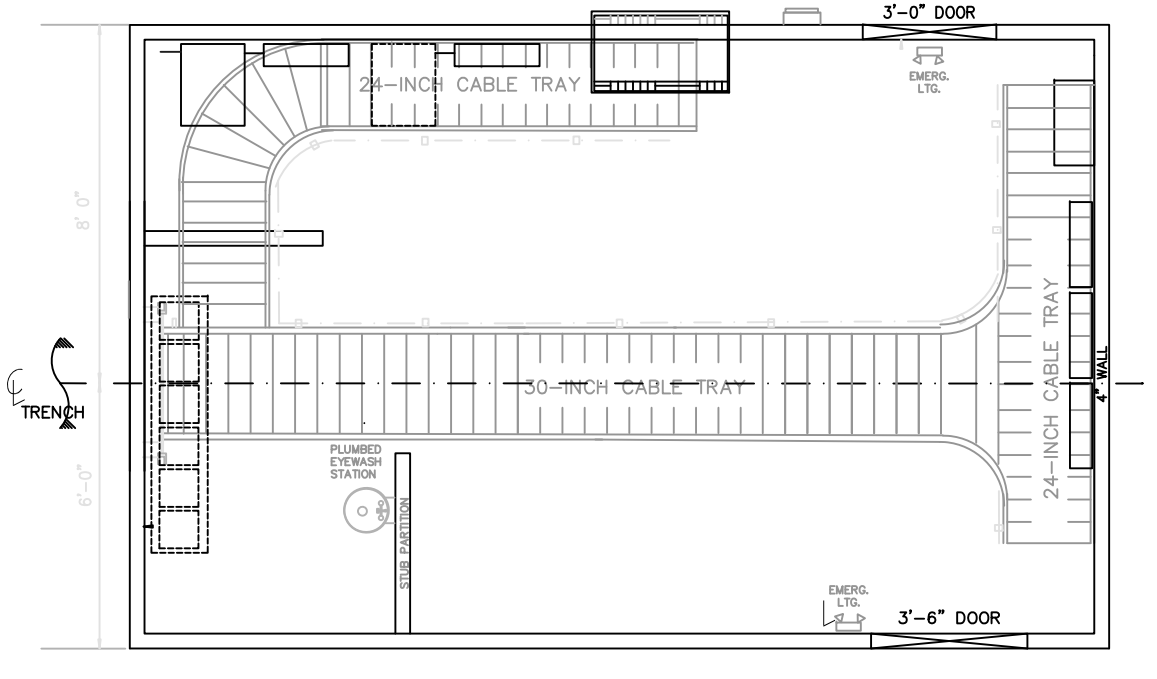
Furnish GUC up to four (4) sets of plans prepared and signed by a professional engineer

legally authorized to practice in jurisdiction where concrete shelter will be delivered, verifying that structure meets indicated loading requirements and codes of authorities having jurisdiction. GUC will disclose site location at time of order. Also provide state certification (decal, insignia, letter, etc.) as required to legally deliver and place manufactured concrete shelter on disclosed site.

SUBMIT BIDS ON ATTACHED PROPOSAL FORM



CONTROL BUILDING
CONTROL PANEL ARRANGEMENT



CONTROL BUILDING
CABLE TRAY ARRANGEMENT

NOTES:

1. INSTALL WALL-MOUNTED AND CEILING-SUSPENDED CONDUITS TO CROSS AT LEAST 12 INCHES ABOVE TOP ELEVATION OF THE CABLE TRAY.

2. ALL DIMENSIONS ASSUME A NOMINAL 4-INCH WALL THICKNESS INCLUDING AN INTEGRAL INSULATED WALL PANEL SYSTEM. SOME DIMENSIONS ARE SUBJECT TO REVISION IF WALL SYSTEM IS OTHERWISE.

3. ALL ELECTRICAL CONDUITS, CABLE TRAY, AND CONDUCTIVE EQUIPMENT ENCLOSURES ARE TO BE SOLIDLY BONDED TO THE SUBSTATION GROUND GRID.

4. ALL CABLE TRAY SECTIONS SHALL BE CONTINUOUSLY BONDED TO THE GROUND GRID VIA 2/0 AWG CU. CONDUCTOR AS ILLUSTRATED IN THE PLAN VIEW AND DETAILS.

PRELIMINARY

#	REVISIONS
1	PRELIMINARY LAYOUT EVS 06/16/20

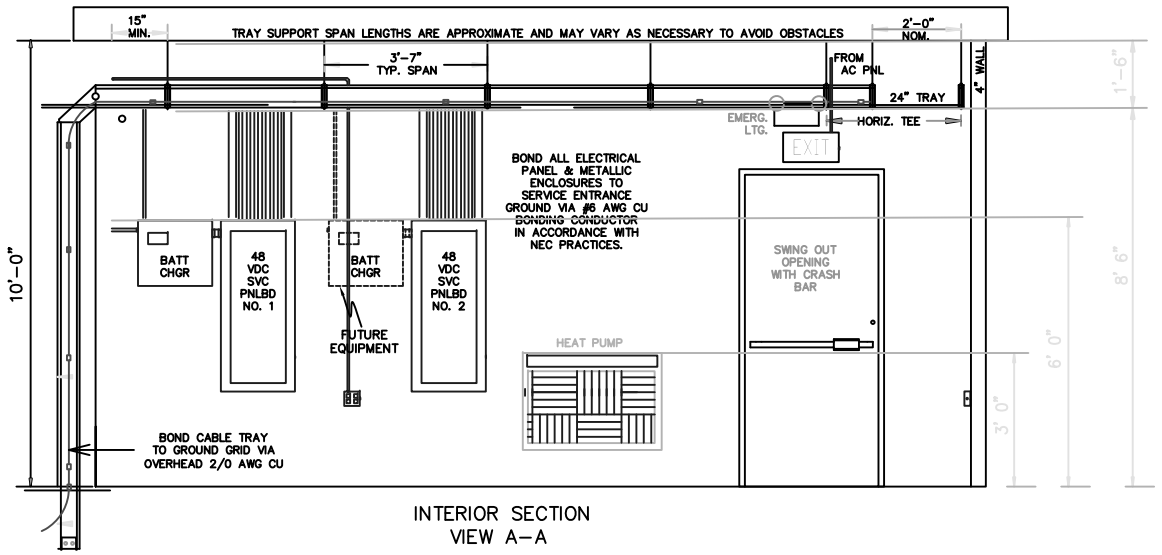
Greenville Utilities

GREENVILLE UTILITIES
Greenville, North Carolina

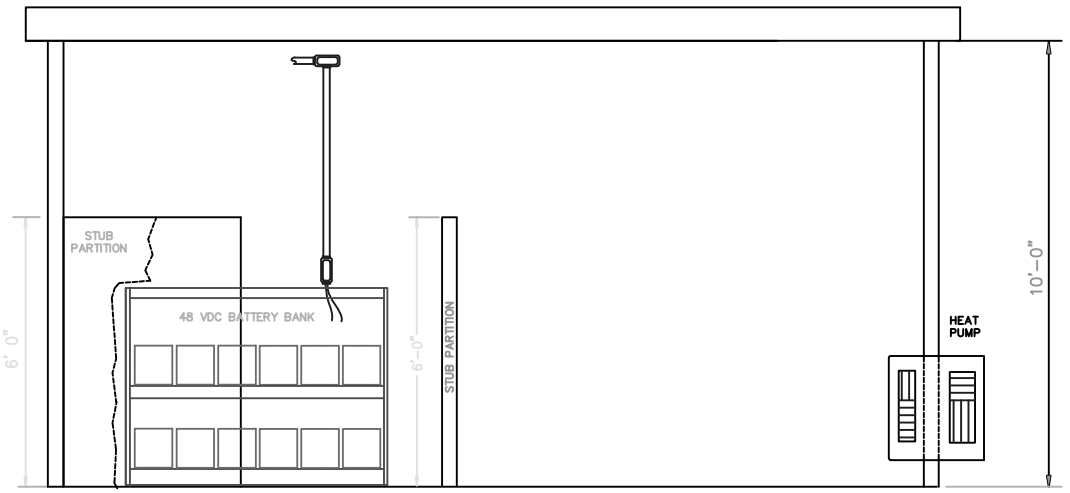
TYPICAL SUBSTATION
CONTROL HOUSE
CONTROL PANEL FLOOR AND CABLE TRAY PLAN ARRANGEMENT

DWN.	DATE	DWG. NO.
CKD.	APPD.	
SCALE: 1/2" = 1'-0"		

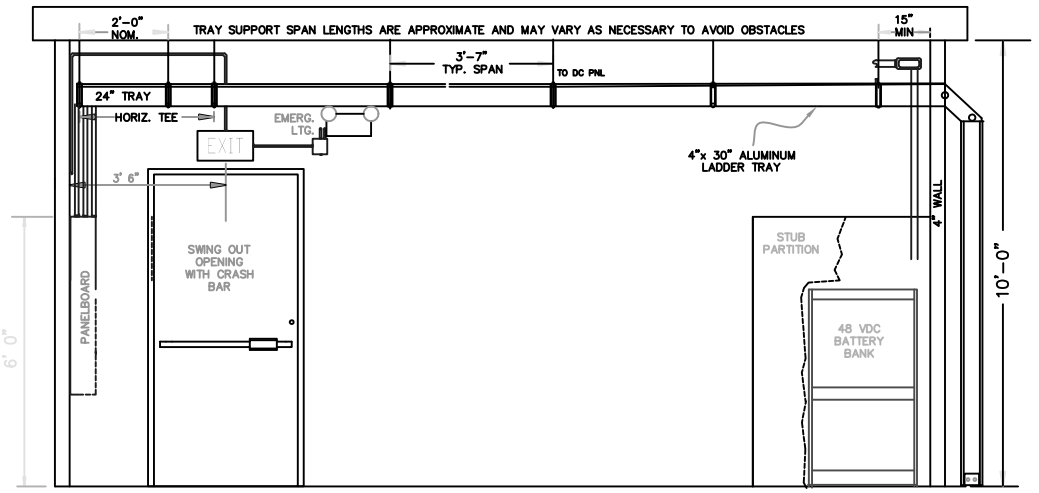
CLHS-AR.dwg



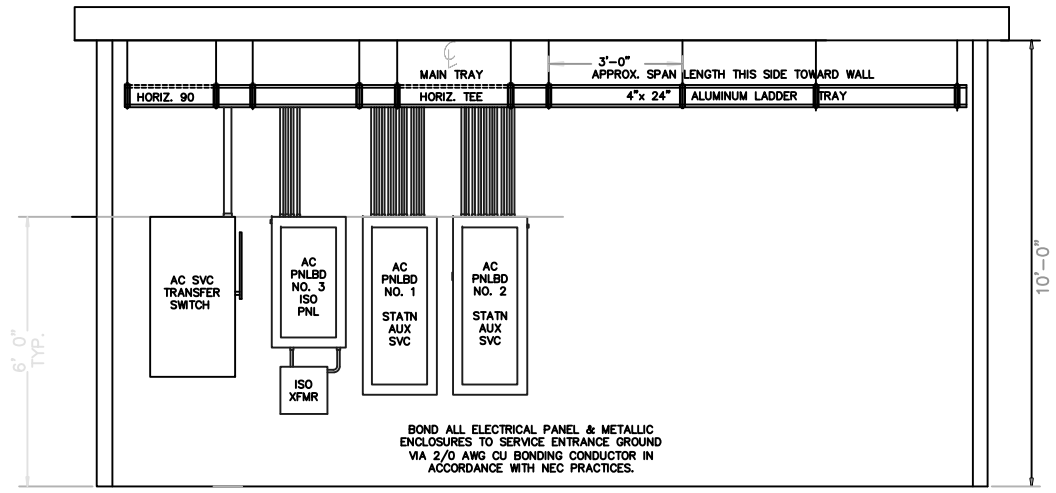
INTERIOR SECTION
VIEW A–A



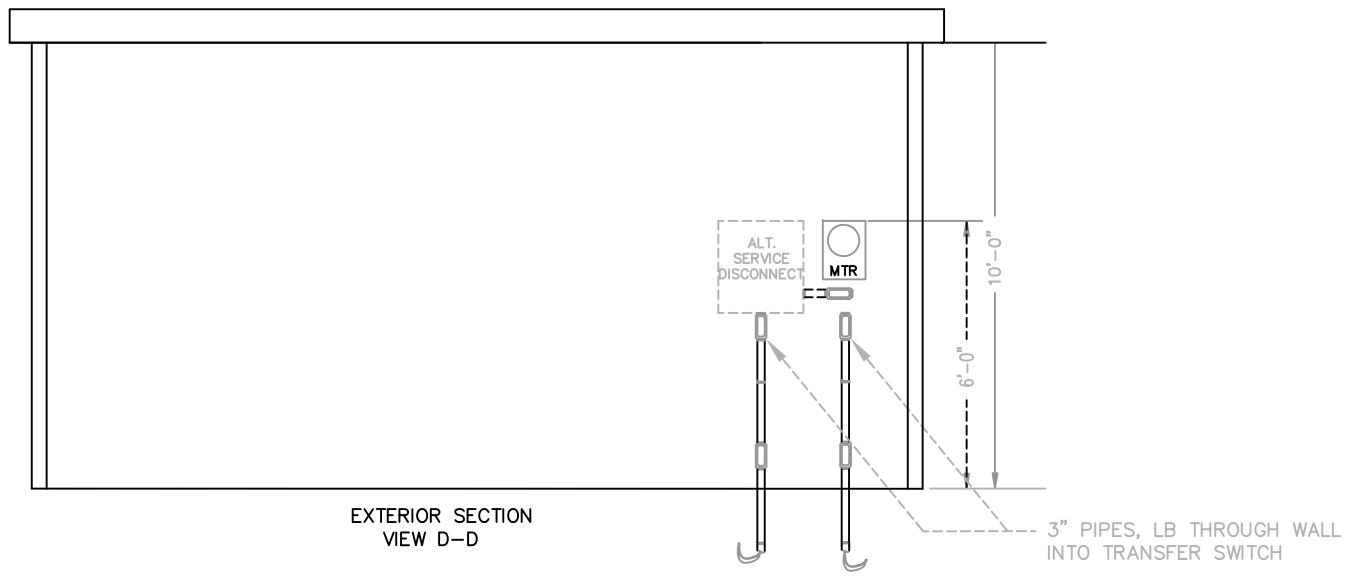
INTERIOR SECTION
VIEW C–C



INTERIOR SECTION
VIEW B–B



INTERIOR SECTION



EXTERIOR SECTION
VIEW D–D

PRELIMINARY

#	REVISIONS
1	PRELIMINARY LAYOUT EVS 06/16/20

Greenville Utilities

GREENVILLE UTILITIES
Greenville, North Carolina

TYPICIAL SUBSTATION
CONTROL HOUSE
INTERIOR & EXTERIOR ELEVATIONS
ARRANGEMENT No.2

DWN.	DATE	DWG. NO.
CKD.	APPD.	
SCALE: NONE		

CLHS–AR2.dwg 01

REVISIONS	
#	
1	FOR CONSTRUCTION JLP 09/30/09 REVISED PER K. WADE ELW 02/11/10 AS BUILT ELW 07/16/10

AS-BUILT DATE: 07-16-10

Greenville Utilities

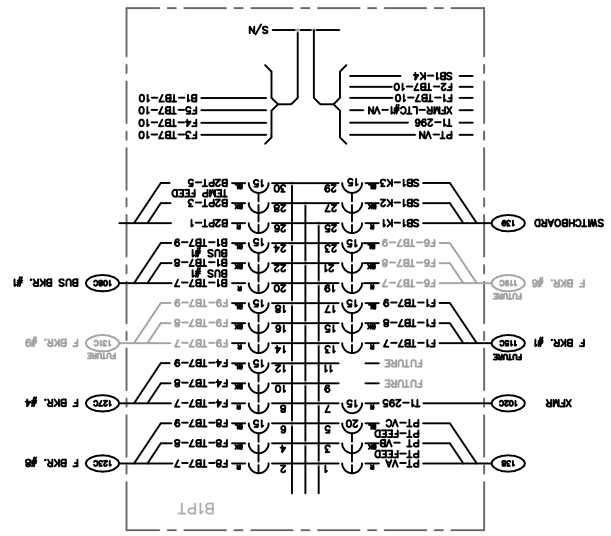
GREENVILLE UTILITIES
Greenville, North Carolina

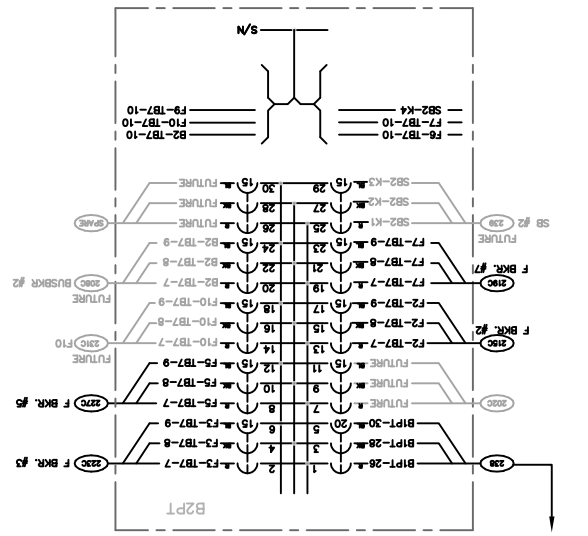
DICKINSON AVENUE SUBSTATION
115 TO 15KV SUBSTATION
STATION SERVICE
INTERCONNECTION DIAGRAM

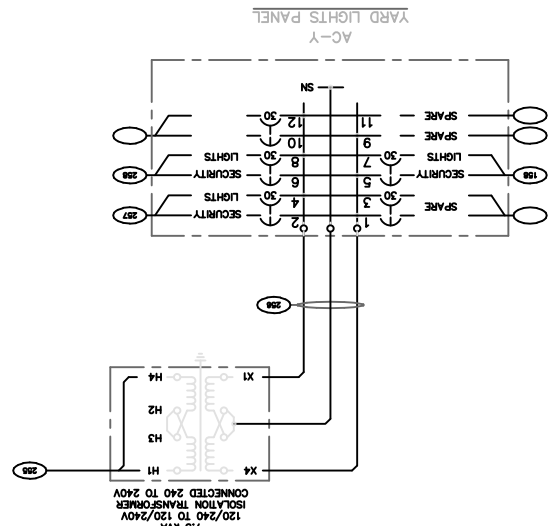
DWN. RAW	DATE 02-16-09
CKD. JPL	APPD. JTR
SCALE: NONE	

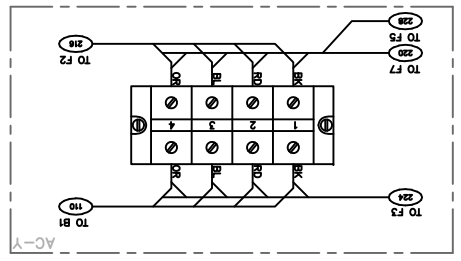
DWG. NO.

DAVE11-STSV-IN.dwg 1 1



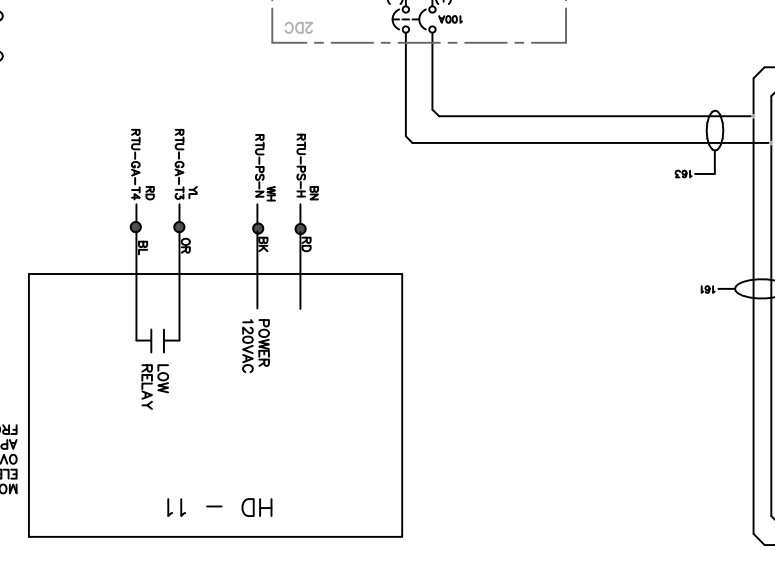


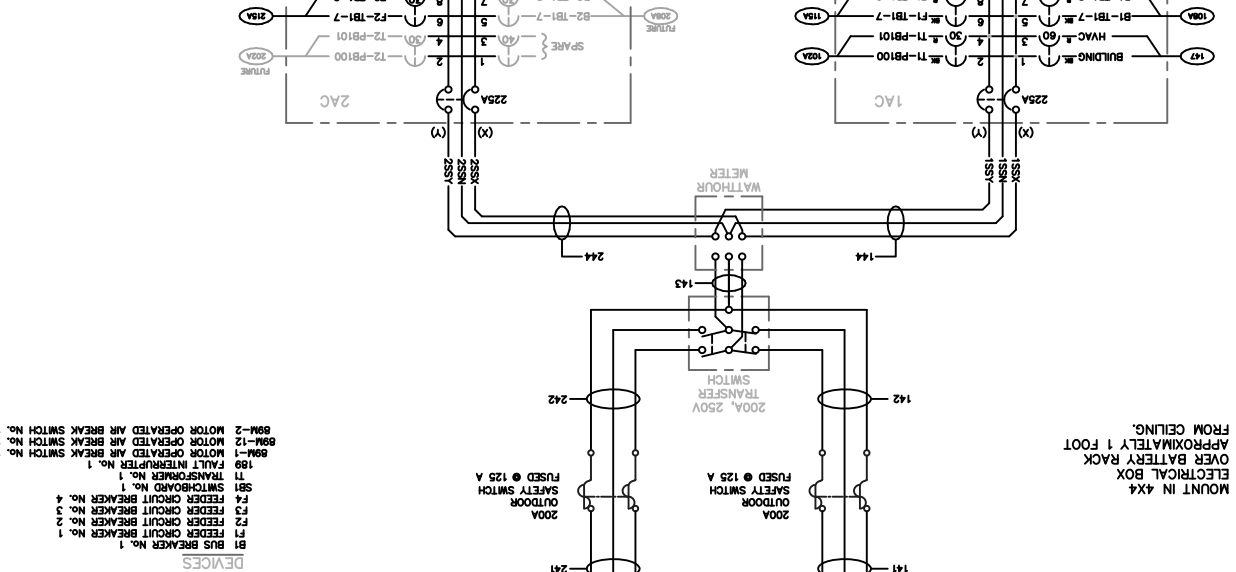




BBKR#2 JUNCTION BOX

TERMINAL	BREAKER	#8 TERM.	COLOR	CABLE
TB6-14	B1	B2-#8-1	BK	110
TB11-7		B2-#8-2	RD	
TB9-11		B2-#8-3	BL	
TB11-11		B2-#8-4	OR	
TB6-7	F2	B2-#8-1	BK	216
TB6-8		B2-#8-2	RD	
TB9-9		B2-#8-3	BL	
TB6-10		B2-#8-4	OR	
TB6-7	F7	B2-#8-1	BK	220
TB6-8		B2-#8-2	RD	
TB6-9		B2-#8-3	BL	
TB6-10		B2-#8-4	OR	
TB6-7	F3	B2-#8-1	BK	224
TB6-8		B2-#8-2	RD	
TB6-9		B2-#8-3	BL	
TB6-10		B2-#8-4	OR	
TB6-7	F5	B2-#8-1	BK	228
TB6-8		B2-#8-2	RD	
TB6-9		B2-#8-3	BL	
TB6-10		B2-#8-4	OR	





DEVICES

B1 BUS BREAKER No. 1
F1 FEEDER CIRCUIT BREAKER No. 1
F2 FEEDER CIRCUIT BREAKER No. 2
F4 FEEDER CIRCUIT BREAKER No. 4
SB1 SWITCHBOARD No. 1
T1 TRANSFORMER No. 1
189 FAULT INTERRUPTER No. 1
89M-1 MOTOR OPERATED AIR BREAK SWITCH No. 1619
89M-12 MOTOR OPERATED AIR BREAK SWITCH No. 1620
89M-2 MOTOR OPERATED AIR BREAK SWITCH No. 1621

Geotechnical Engineering Report

Sugg Parkway Substation
Greenville, Pitt County, NC
October 15, 2019
Terracon Project No. 72195082

Prepared for:
Greenville Utilities Commission
Greenville, NC

Prepared by:
Terracon Consultants, Inc.
Winterville, NC

October 15, 2019

Greenville Utilities Commission
PO Box 1847
Greenville, NC 27835

Attn: Mr. Ken Wade – Substation and Controls Engineer
P: (252) 551-1570
E: wadekr@guc.com

Re: Geotechnical Engineering Report
Sugg Parkway Substation
Sugg Parkway and Old Creek Road
Greenville, Pitt County, NC
Terracon Project No. 72195082

Dear Mr. Wade:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P72195082 dated September 6, 2019. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Seth A. Bowman
Staff Professional
Geotechnical Services

Andrew J. Gliniak, PE
Geotechnical Project Engineer
Registered NC 042183

Reviewed by: Kevin Sohrabnia, PE

REPORT TOPICS

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the ***GeoReport*** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

Note: Refer to each individual Attachment for a listing of contents.

REPORT SUMMARY

Topic [1]	Overview Statement [2]
Project Description	The project includes a new substation with associated above-ground power lines off Sugg parkway and Old Creek Road in Greenville, NC.
Geotechnical Characterization	The borings encountered very loose to medium dense sand underlain by denser sand. Groundwater is anticipated at a depth of 3 to 4 feet below the existing ground surface.
Earthwork	After stripping topsoil, the substation footprint should be densified in place using a medium weight vibratory roller. The purpose of the vibratory rolling is to densify the loose, near surface disturbed soils and potentially improve foundation support.
Substation Mat Foundations	Shallow foundations will be sufficient Allowable bearing pressure = 1,000 psf Expected settlements: < 1-inch total, < 1/2-inch differential
Pole Deep Foundations	The poles to be supported by drilled piers installed with the slurry method of drilling to help prevent blow out. Design parameters for the lateral resistance and end bearing capacity of drilled piers are presented in this report.
General Comments	This section contains important information about the limitations of this geotechnical engineering report.

1. If the reader is reviewing this report as a pdf, the topics above can be used to access the appropriate section of the report by simply clicking on the topic itself.
2. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.

Geotechnical Engineering Report

Sugg Parkway Substation
Sugg Parkway and Old Creek Road
Greenville, Pitt County, NC

Terracon Project No. 72195082
October 15, 2019

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed substation and poles to be located at Sugg Parkway and Old Creek Road in Greenville, Pitt County, NC. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Foundation design and construction
- Seismic site classification per IBC

The geotechnical engineering Scope of Services for this project included the advancement of four test borings to a depth of approximately 30 feet below existing site grades.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located along Sugg Parkway and Old Creek Road in Greenville, Pitt County, NC. Coordinates: 35.6523°N, 77.3334°W (approximate) See **Site Location**
Existing Improvements	Undeveloped fields near existing above-ground power lines.
Current Ground Cover	Grass and cultivated soils
Existing Topography	Relatively level

Item	Description
Geology	The subject site is located in the Coastal Plain Physiographic Province. The Coastal Plain soils consist mainly of marine sediments that were deposited during successive periods of fluctuating sea level and moving shoreline. The soils include sands, silts, and clays with irregular deposits of shells, which are typical of those lain down in a shallow sloping sea bottom. Recent alluvial sands, silts, and clays are typically present near rivers and creeks. According to USGS Mineral Resources On-Line Spatial Data based on the 1998 digital equivalent of the 1985 Geologic Map of North Carolina updated in 1998, the site is mapped within the Yorktown Formation and Duplin Formation, Undivided (Tertiary)

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	Email communication with requested boring locations on August 29, 2019.
Proposed Structures	The project includes a new substation with associated above-ground power lines off Sugg parkway and Old Creek Road in Greenville, NC.
Building Construction	Concrete drilled pier foundations or vibratory driven piles are anticipated for the power lines. Mat foundations for transformers and small equipment pads are assumed.
Maximum Loads	■ Substation: 15 to 100 kips (assumed) ■ Poles: 4,500 ft-kips overturning at the ground surface (assumed)
Grading/Slopes	Up to 2 feet of cut and/or fill placement
Estimated Start of Construction	Early 2020

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** section and the GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Looser Sand**	Very loose to loose Clayey Sand (SC) and Silty Clayey Sand (SC-SM)
2	**Loose to Medium Dense Sand**	Generally Silty Sand (SM) and Poorly Graded Sand (SP)
3	**Medium Dense to Dense Sand**	Poorly Graded Sand (SP), Clayey Sand (SC), Silty Sand (SM)

Groundwater

Groundwater was measured at depths of 3.5 to 4 feet during drilling using hollow stem augers. Based on the moisture condition of the soil samples, groundwater is anticipated at depths of 3 to 4 feet below the existing ground surface.

The groundwater level can change due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

GEOTECHNICAL OVERVIEW

The borings in the substation area encountered very loose to loose sand underlain by relatively denser sand. The borings along the proposed alignment encountered loose to medium dense sand underlain by relatively denser sand.

After stripping top soil, the substation footprint should be densified in place using a medium weight vibratory roller. The purpose of the vibratory rolling is to densify the loose, near surface disturbed soils and potentially improve foundation support.

We understand drilled piers are proposed as foundations for the poles. Shallow groundwater and sandy soils as encountered in the borings are conditions where caving of the sidewalls or “blow out” of the bottom can occur in the pier excavation. The “blow out” is caused by hydrostatic pressures causing water to flow upward into the excavation and lift soil from the bottom. Excavation for the piers utilizing slurry drilling techniques will reduce the potential blow out by counter-balancing the hydrostatic pressure.

The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

Earthwork is anticipated to include site preparation, excavations, and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations.

Site Preparation

Site preparation should begin with the complete removal of the surface vegetation and topsoil in the proposed substation area. Based on site observations during the drilling process, topsoil should be stripped up to a depth of approximately 3 inches. A Terracon representative should field verify the stripping depth during construction. Topsoil may be reused in areas of the site to be landscaped but should not be used for fill.

After stripping, the exposed subgrade soils in the substation footprint should be densified in place using a medium weight vibratory roller. The purpose of the vibratory rolling is to densify the exposed subgrade soils to potentially improve the foundation bearing soils. The roller should make at least six passes across the site, with the second set of three passes perpendicular to the first set of three passes. If water is brought to the surface by the vibratory rolling, the operation should be discontinued until the water subsides. Vibratory rolling should be completed during dry weather.

After the vibratory rolling, pore pressures should be allowed to dissipate for a minimum of 16 hours. After the waiting period, proofrolling should be performed on the exposed subgrade soils in areas to receive fill or at the subgrade elevation with a fully loaded, tandem-axle dump truck (20-ton minimum) or similar rubber-tired construction equipment. Proofrolling is recommended as a means of detecting areas of soft or unstable subgrade soils. The proofrolling should be performed during a period of dry weather to avoid degrading an otherwise suitable subgrade. The proofrolling operations should be observed by a representative of the geotechnical engineer. Subgrade soils that exhibit excessive rutting or deflection during proofrolling should be repaired as directed by the field representative. Typical repairs include overexcavation followed by replacement with either properly compacted fill or by a subgrade stabilization fabric in conjunction with a sand fill or crushed stone.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below, or within 5 feet of structures, pavements or constructed slopes. General fill is material used to achieve grade outside of these areas. Earthen materials used for structural and general fill should meet the following material property requirements:

Soil Type [1]	USCS Classification	Acceptable Parameters (for Structural Fill)
Imported Soil	SC, SM, SP	All location and elevations.
On-Site Soils	SC, SM, SP	On site soils that meet these soil classifications are generally suitable for fill if properly moisture conditioned.

1. Controlled, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the geotechnical engineer for evaluation.

On-site near surface clays, if encountered, are not recommended for use as structural fill due to their high fines content and moisture sensitivity relative to sandy soils available. Near surface clay could be considered for use as general fill.

Fill Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill	General Fill
Maximum Lift Thickness	9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used	Same as Structural fill
Minimum Compaction Requirements [1, 2]	95% of max. above and below foundations	92% of max.
Water Content Range [1]	-2% to +2% of optimum	As required to achieve min. compaction requirements

1. Fill should be tested for moisture content and compaction during placement. If in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the tests should be reworked and retested as required until the specified moisture and compaction requirements are achieved.
2. It is not necessary to achieve 95% compaction on the existing ground prior to placing fill or beginning construction. However, the subgrade should be evaluated by a representative of the geotechnical engineer prior to placing fill or beginning construction.

It is important to note that the use of rubber-tired traffic, such as lulls, may impact the prepared subgrade soils leading to re-grading. We recommend that the use of rubber-tired traffic be limited on the prepared subgrades or that the stabilized area be prepared for their travel.

Grading and Drainage

During construction, grades should be sloped to promote runoff away from the construction area. Final surrounding grades should be sloped away from the structure on all sides to prevent ponding of water.

Earthwork Construction Considerations

Shallow excavations for the proposed structures are anticipated to be accomplished with conventional construction equipment. Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over or adjacent to construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted prior to construction.

The groundwater table could affect excavations, especially for the deeper excavations for utilities. A temporary dewatering system consisting of sumps with pumps could be necessary to achieve the anticipated depths of excavation. The actual dewatering system should be selected and designed by a specialty contractor.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, “Excavations” and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of vegetation and topsoil, proofrolling, and mitigation of areas delineated by the proofroll to require mitigation.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas. One density and water content test should be performed for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SUBSTATION MAT FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for the substation mat foundations.

DESCRIPTION	VALUE
Maximum Net allowable bearing pressure	1,000 psf
The required embedment below lowest adjacent finished grade for frost protection and protective embedment [1]	12 inches
Modulus of subgrade reaction	8 pounds per square inch per inch (psi/in)
Estimated approximate total settlement [2]	Up to 1 inch
Estimated differential settlement [2]	Up to ½ inch
Ultimate coefficient of sliding friction	0.35
Uplift Resistance	Weight of foundation concrete.

1. For frost protection and to reduce effects of seasonal moisture variations in subgrade soils.
2. The actual magnitude of settlement that will occur beneath the foundations will depend upon the variations within the subsurface soil profile, the structural loading conditions and the quality of the foundation excavation. The estimated total and differential settlements listed assume that the foundation-related earthwork and the foundation design are completed in accordance with our recommendations.

Construction Considerations

The mat foundation subgrade should be free of water and loose soil prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Should the subgrade soils become excessively disturbed or saturated, the affected soil should be removed prior to placing concrete.

DRILLED PIER FOUNDATIONS

Drilled Pier Design Parameters

The upper 3 feet of surficial material should be ignored due to the potential effects of frost action and construction disturbance. To avoid a reduction in uplift and lateral resistance caused by variable soil depths and quality, we recommend that a minimum pier length be stated on the design drawings.

The poles are to be supported by drilled piers installed with the slurry method of drilling to help prevent blow out. Design parameters for the lateral resistance and end bearing capacity of drilled piers are presented in **Design Soil Parameters for Drilled Piers**.

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC). Based on the soil properties encountered at the site and as described on the exploration logs and results, it is our professional opinion that the **Seismic Site Classification is D**. Subsurface explorations at this site were extended to a maximum depth of 30 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

LIQUEFACTION

Based on the results of the borings, liquefaction is not expected based on the relatively low level of ground motions associated with the design earthquake and density of the soils.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we

can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

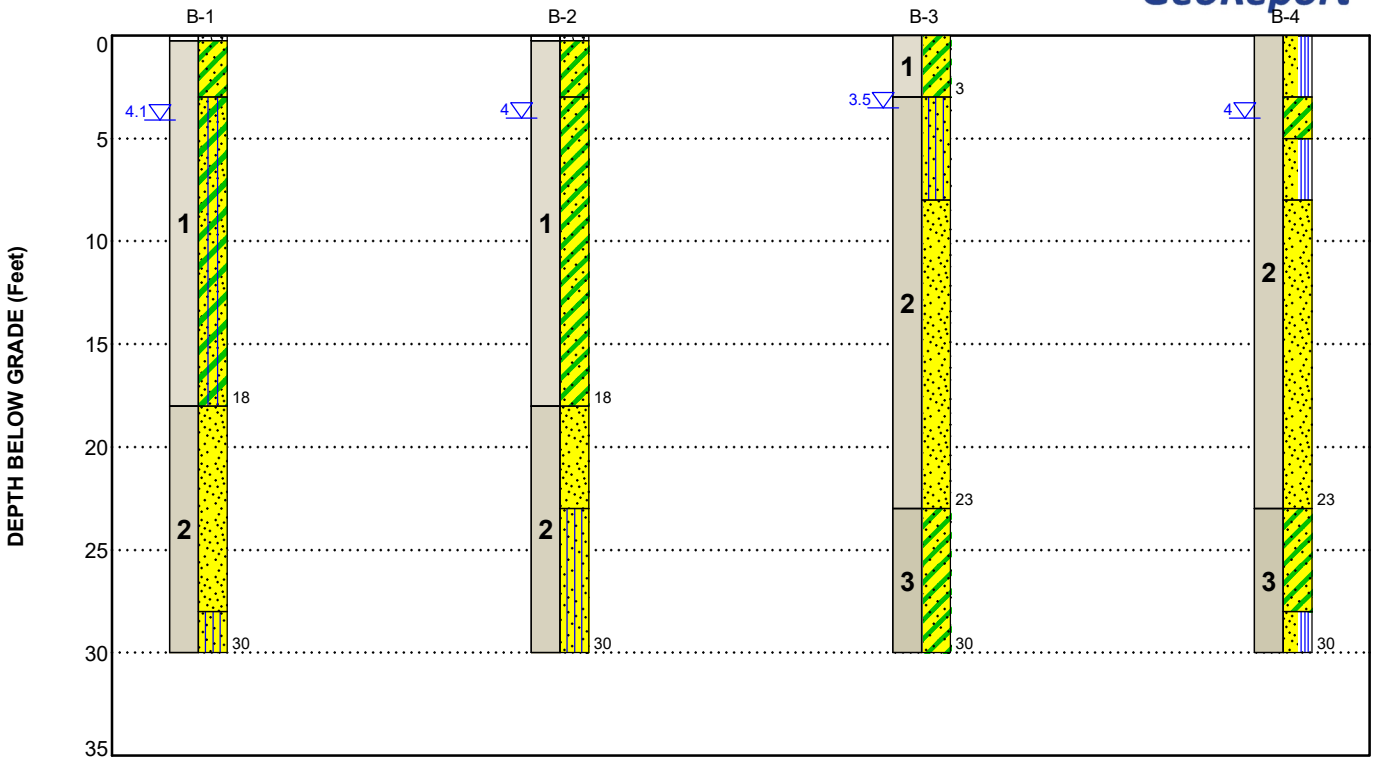
FIGURES

Contents:

Note: All attachments are one page unless noted above.

GEOMODEL

Sugg Parkway Substation ■ Greenville, NC
Terracon Project No. 72195082



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Looser Sand	Very loose to loose Clayey Sand (SC) and Silty Clayey Sand (SC-SM)
2	Loose to Medium Dense Sand	Generally Silty Sand (SM) and Poorly Graded Sand (SP)
3	Medium Dense to Dense Sand	Poorly Graded Sand (SP), Clayey Sand (SC), Silty Sand (SM)

LEGEND

- Topsoil
- Clayey Sand
- Silty Clayey Sand
- Poorly-graded Sand
- Silty Sand
- Poorly-graded Sand with Silt

▽ First Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Borings	Boring Depth (feet)	Location
Two	30	New Substation and requested boring locations

Boring Layout and Elevations: Boring locations were marked in the field by the client. The location of the borings should be considered accurate only to the degree implied by the means and methods used to define it.

Subsurface Exploration Procedures: We advanced the borings with a track-mounted rotary drill rig using hollow stem auger and mud rotary drilling techniques. Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. We observed and recorded groundwater levels during drilling and sampling. For safety purposes, all borings were backfilled with soil cuttings after their completion.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Method of Determination of Water Content of Soil and Rock by Mass
- ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- ASTM D2488 Standard Practice of Description and Identification of Soils (Visual Manual Method)
- ASTM D422 Standard Test Method for Particle Size Analysis of Soils
- ASTM D1140 Standard Test Methods for Determining the Amount of Material Finer than No. 200 Sieve in Soils by Washing
- ASTM D4318 Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils

The laboratory testing program often included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

SITE LOCATION AND EXPLORATION PLANS

Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless noted above.

SITE LOCATION

Sugg Parkway Substation ■ Greenville, NC
October 15, 2019 ■ Terracon Project No. 72195082

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: GREENVILLE NE, NC (1/1/1998) and GREENVILLE SE, NC (1/1/1998).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

Contents:

Note: All attachments are one page unless noted above.

BORING LOG NO. B-1

PROJECT: Sugg Parkway Substation

CLIENT: Greenville Utilities Commission
Greenville, NC

SITE: Sugg Parkway and Old Creek Road
Greenville, NC

LOCATION See Exploration Plan

Latitude: 35.6523° Longitude: -77.3333°

MODEL LAYER	DEPTH		WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1	0.3	**TOPSOIL**						
		CLAYEY SAND (SC), light brown and light gray, loose			3-3-3 N=6	19	26-15-11	34
	3.0	**SILTY CLAYEY SAND (SC-SM)**, trace organics, light brown, light gray, and gray, very loose to loose	▽		3-4-4 N=8	19		
					4-3-3 N=6			
					0-1-1 N=2	34	21-17-4	19
					1-2-1 N=3			
	18.0							
2		**POORLY GRADED SAND (SP)**, gray, medium dense	▨		8-8-9 N=17	18		
					6-5-7 N=12			
	28.0							
		SILTY SAND (SM), gray, loose			5-4-5 N=9	29		
	30.0							
		Boring Terminated at 30 Feet						

DEPTH (Ft.): 5, 10, 15, 20, 25, 30

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
2.25-inch hollow stem augers

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

▨ *Cave in depth*

Terracon
314 Beacon Dr
Winterville, NC

Boring Started: 09-20-2019 | Boring Completed: 09-20-2019

Drill Rig: Truck | Driller: RS

Project No.: 72195082

BORING LOG NO. B-2

PROJECT: Sugg Parkway Substation

CLIENT: Greenville Utilities Commission
Greenville, NC

SITE: Sugg Parkway and Old Creek Road
Greenville, NC

LOCATION See Exploration Plan

Latitude: 35.6521° Longitude: -77.3334°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.3 **TOPSOIL**							
		CLAYEY SAND (SC), light brown and light gray, loose				2-3-3 N=6			
		3.0 **CLAYEY SAND (SC)**, light brown, light gray, and gray, very loose to loose		▽		3-3-4 N=7			
			5			4-4-3 N=7			
						1-1-2 N=3			
			10						
						2-2-2 N=4			
			15						
		18.0 **POORLY GRADED SAND (SP)**, gray, loose				10-5-4 N=9			
			20	▨					
2		23.0 **SILTY SAND (SM)**, gray, loose to medium dense				6-6-5 N=11			
			25						
						5-4-4 N=8			
		30.0	30						
		Boring Terminated at 30 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
2.25-inch hollow stem augers

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

▨ *Cave in depth*

Terracon
314 Beacon Dr
Winterville, NC

Boring Started: 09-20-2019	Boring Completed: 09-20-2019
Drill Rig: Truck	Driller: RS
Project No.: 72195082	

BORING LOG NO. B-3

PROJECT: Sugg Parkway Substation

CLIENT: Greenville Utilities Commission
Greenville, NC

SITE: Sugg Parkway and Old Creek Road
Greenville, NC

LOCATION See Exploration Plan

Latitude: 35.6511° Longitude: -77.332°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**CLAYEY SAND (SC)**, gray and tan, loose				0-3-3 N=6			
		3.0		▽					
		SILTY SAND (SM), gray and tan, medium dense	5			3-6-6 N=12			
						7-8-8 N=16			
		8.0							
2		**POORLY GRADED SAND (SP)**, light brown and tan, loose to medium dense	10			6-5-8 N=13			
			15			4-5-5 N=10			
			20			7-5-4 N=9			
		23.0							
3		**CLAYEY SAND (SC)**, trace shell fragments, dark gray, medium dense to dense	25			3-5-13 N=18			
						11-15-22 N=37			
		30.0	30						
		Boring Terminated at 30 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
2.25-inch hollow stem augers to 8 feet followed by mud rotary

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *On 9/21/19*

Terracon
314 Beacon Dr
Winterville, NC

Boring Started: 09-21-2019 | Boring Completed: 10-07-2019

Drill Rig: Truck | Driller: RS

Project No.: 72195082

BORING LOG NO. B-4

PROJECT: Sugg Parkway Substation

CLIENT: Greenville Utilities Commission
Greenville, NC

SITE: Sugg Parkway and Old Creek Road
Greenville, NC

LOCATION See Exploration Plan

Latitude: 35.644° Longitude: -77.3381°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2		**POORLY GRADED SAND WITH SILT (SP-SM)**, light brown and tan, loose							
		3.0			X	3-3-4 N=7	7		
		CLAYEY SAND (SC), light gray with brown and tan, loose		▽					
		5.0	5		X	3-4-5 N=9	13		
		POORLY GRADED SAND WITH SILT (SP-SM), reddish brown and tan, medium dense							
		8.0			X	6-6-5 N=11	18		
		POORLY GRADED SAND (SP), gray and tan, medium dense							
					X	5-5-7 N=12	24	NP	2
			10						
					X	4-4-6 N=10	25		
			15						
					X	6-6-5 N=11	22		
			20						
3		**CLAYEY SAND (SC)**, trace shell fragments, dark gray, medium dense			X	4-6-10 N=16	20		
		28.0	25						
		POORLY GRADED SAND WITH SILT (SP-SM), trace shell fragments, dark gray, dense			X	10-12-18 N=30	22		
		30.0	30						
		Boring Terminated at 30 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
2.25-inch hollow stem augers to 8 feet followed by mud rotary

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *On 9/21/19*

Terracon
314 Beacon Dr
Winterville, NC

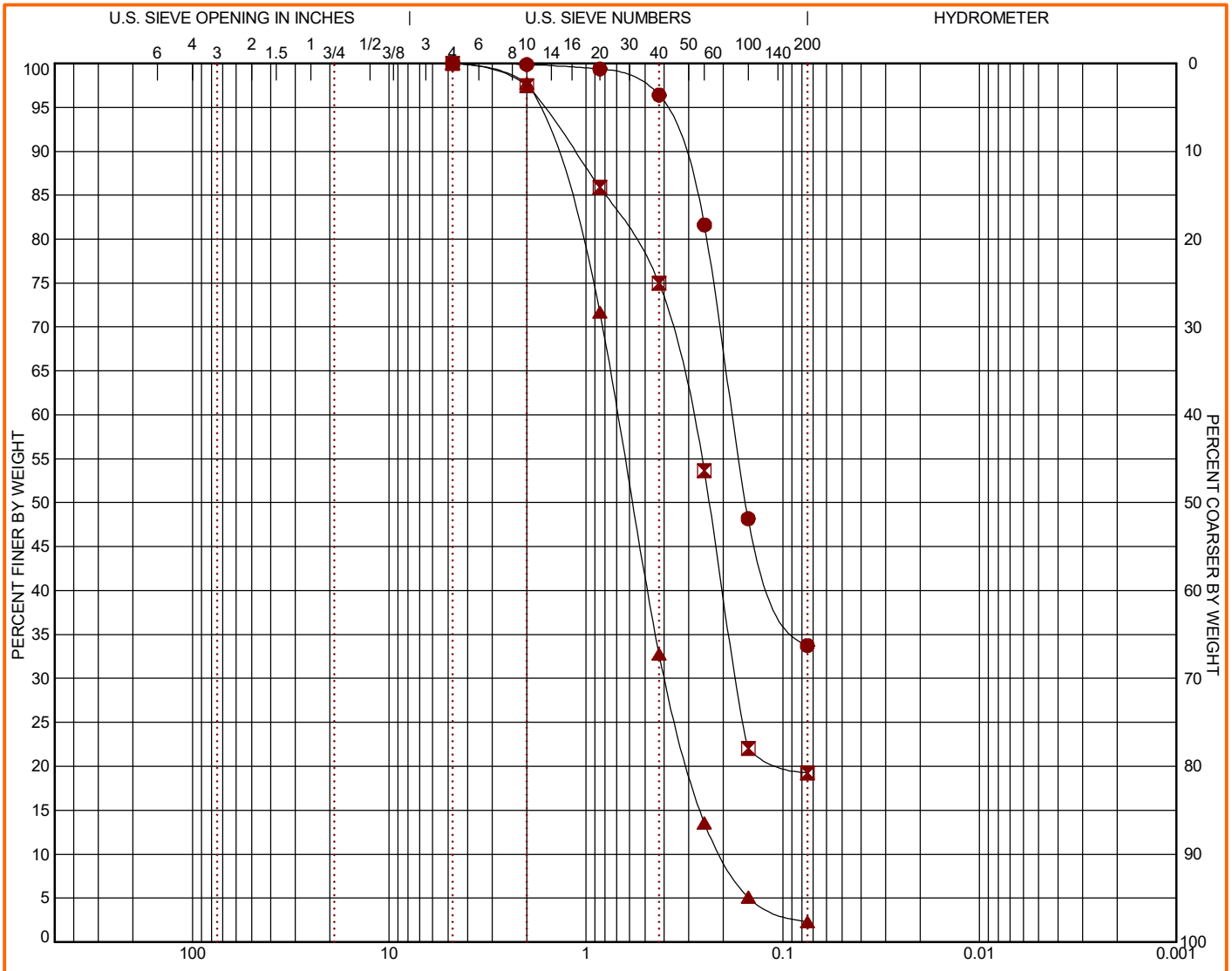
Boring Started: 09-21-2019 | Boring Completed: 10-07-2019

Drill Rig: Truck | Driller: RS

Project No.: 72195082

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
●	B-1	1 - 2.5	0.0	0.0	66.3		33.7		SC
⊠	B-1	8.5 - 10	0.0	0.0	80.8		19.2		SC-SM
▲	B-4	8.5 - 10	0.0	0.0	97.7		2.3		SP

GRAIN SIZE	●	⊠	▲
D_{60}	0.18	0.293	0.69
D_{30}		0.171	0.394
D_{10}			0.202

COEFFICIENTS	●	⊠	▲
C_C			1.11
C_U			3.42

●		⊠		▲	
Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
#4	100.0	#4	100.0	#4	100.0
#10	99.87	#10	97.46	#10	97.74
#20	99.36	#20	85.89	#20	71.69
#40	96.4	#40	74.96	#40	32.77
#60	81.62	#60	53.63	#60	13.54
#100	48.18	#100	22.01	#100	5.1
#200	33.73	#200	19.24	#200	2.29

SOIL DESCRIPTION	
●	CLAYEY SAND (SC)
⊠	SILTY, CLAYEY SAND (SC-SM)
▲	POORLY GRADED SAND (SP)

REMARKS	
●	
⊠	8.5 to 10 feet
▲	

PROJECT: Sugg Parkway Substation

PROJECT NUMBER: 72195082

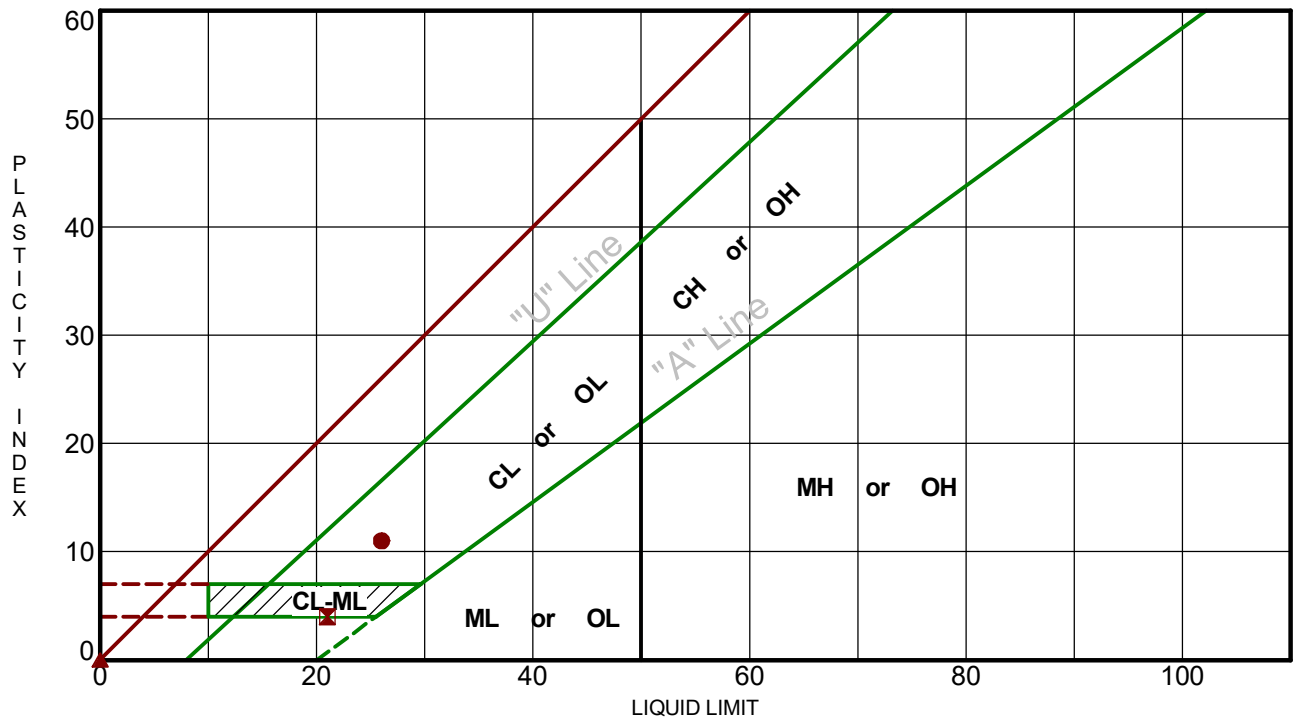
SITE: Sugg Parkway and Old Creek Road
Greenville, NC

Terracon
314 Beacon Dr
Winterville, NC

CLIENT: Greenville Utilities Commission
Greenville, NC

ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID		Depth	LL	PL	PI	Fines	USCS	Description
●	B-1	1 - 2.5	26	15	11	33.7	SC	CLAYEY SAND
⊠	B-1	8.5 - 10	21	17	4	19.2	SC-SM	SILTY, CLAYEY SAND
▲	B-4	8.5 - 10	NP	NP	NP	2.3	SP	POORLY GRADED SAND

PROJECT: Sugg Parkway Substation

PROJECT NUMBER: 72195082

SITE: Sugg Parkway and Old Creek Road
Greenville, NC

Terracon
314 Beacon Dr
Winterville, NC

CLIENT: Greenville Utilities Commission
Greenville, NC

DESIGN SOIL PARAMETERS FOR DRILLED PIERS

LANDSCAPE Applicable to the following tables:

- The thickness of the bottom layer is undetermined due to the boring termination depth.
- Soil classifications are based on visual examination of soil samples.
- Soil parameters are ultimate values, appropriate safety factors should be applied by the designer.
- We have considered groundwater at a depth of 3 to 4 feet.
- The upper 3 feet of soil profile should be ignored due to surface disturbance and frost action.
- Only LRFD design values with a resistance factor (factored loads) have been provided for use with the design.
- The noted bearing pressure should be considered applicable to a depth 25 feet below the existing ground surface. this allows for 5 feet of data below the maximum tip depth of the shaft assuming shaft diameters of approximately 36 inches. Should it be necessary to extend the pile bottom below that depth or increase the diameter of the shaft at a depth of 25 feet, we recommend that a supplemental exploration be performed to collect deeper soil data.

Boring B-1

Layer (feet)		Soil Type (Clay/Sand)	Effective Unit Weight of Soil (pcf)	Cohesion (psf)	Coefficient of Horizontal Soil Stress (K)	Friction Angle (degrees)	LPile k-value (pci)	Factored Skin Friction (psf)	Factored End Bearing Pressure (psf)
Top	Bottom								
0	4	Sand	112	---	---	---	---	---	---
4	8	Sand	50.6	---	1.76	29	35	260	4,800
8	18	Sand	42.6	---	0.98	28	20	230	1,800
18	23	Sand	57.6	---	1.62	32	75	540	10,000
23	30	Sand	52.6	---	1.24	31	60	520	7,200

1. General notes applicable to the above values are included at the beginning of this section.

Boring B-2

Layer (feet)		Soil Type (Clay/Sand)	Effective Unit Weight of Soil (pcf)	Cohesion (psf)	Coefficient of Horizontal Soil Stress (K)	Friction Angle (degrees)	LPile k-value (pci)	Factored Skin Friction (psf)	Factored End Bearing Pressure (psf)
Top -	Bottom								
0	4	Sand	112	---	---	---	---	---	---
4	8	Sand	50.6	---	1.67	29	35	250	4,200
8	18	Sand	43.6	---	1.08	28	20	260	2,400
18	30	Sand	52.6	---	1.22	30	50	470	6,000

1. General notes applicable to the above values are included at the beginning of this section.

Boring B-3

Layer (feet)		Soil Type (Clay/Sand)	Effective Unit Weight of Soil (pcf)	Cohesion (psf)	Coefficient of Horizontal Soil Stress (K)	Friction Angle (degrees)	LPile k-value (pci)	Factored Skin Friction (psf)	Factored End Bearing Pressure (psf)
Top	Bottom								
0	3	Sand	112	---	---	---	---	---	---
3	13	Sand	53.6	---	2.80	31	60	340	7,800
13	23	Sand	52.6	---	2.08	30	50	420	6,000
23	28	Sand	57.6	---	1.35	32	75	620	10,000
28	30	Sand	67.6	---	1.47	35	100	890	10,000

1. General notes applicable to the above values are included at the beginning of this section.

Boring B-4

Layer (feet)		Soil Type (Clay/Sand)	Effective Unit Weight of Soil (pcf)	Cohesion (psf)	Coefficient of Horizontal Soil Stress (K)	Friction Angle (degrees)	LPile k-value (pci)	Factored Skin Friction (psf)	Factored End Bearing Pressure (psf)
Top	Bottom								
0	3	Sand	113	---	---	---	---	---	---
3	23	Sand	52.6	---	1.76	31	60	370	6,000
23	28	Sand	57.6	---	0.98	32	75	590	9,600
28	30	Sand	67.6	---	1.62	35	100	510	10,000

1. General notes applicable to the above values are included at the beginning of this section.

SUPPORTING INFORMATION

Contents:

General Notes
Unified Soil Classification System

Note: All attachments are one page unless noted above.

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

Sugg Parkway Substation ■ Greenville, NC

Terracon Project No. 72195082

Terracon GeoReport

SAMPLING	WATER LEVEL	FIELD TESTS
Split Spoon	**Water Initially Encountered** **Water Level After a Specified Period of Time** **Water Level After a Specified Period of Time** Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	**N** Standard Penetration Test Resistance (Blows/Ft.) **(HP)** Hand Penetrometer **(T)** Torvane **(DCP)** Dynamic Cone Penetrometer **UC** Unconfined Compressive Strength **(PID)** Photo-Ionization Detector **(OVA)** Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (tsf)**	**Standard Penetration or N-Value Blows/Ft.**
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

RELATIVE PROPORTIONS OF SAND AND GRAVEL		RELATIVE PROPORTIONS OF FINES	
Descriptive Term(s) of other constituents	Percent of Dry Weight	**Descriptive Term(s) of other constituents**	**Percent of Dry Weight**
Trace	<15	Trace	<5
With	15-29	With	5-12
Modifier	>30	Modifier	>12

GRAIN SIZE TERMINOLOGY		PLASTICITY DESCRIPTION	
Major Component of Sample	**Particle Size**	**Term**	**Plasticity Index**
Boulders	Over 12 in. (300 mm)	Non-plastic	0
Cobbles	12 in. to 3 in. (300mm to 75mm)	Low	1 - 10
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)	Medium	11 - 30
Sand	#4 to #200 sieve (4.75mm to 0.075mm	High	> 30
Silt or Clay	Passing #200 sieve (0.075mm)		

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu ³ 4 and 1 £ Cc £ 3 [E]		GW	Well-graded gravel [F]
			Cu < 4 and/or [Cc<1 or Cc>3.0] [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu ³ 6 and 1 £ Cc £ 3 [E]		SW	Well-graded sand [I]
			Cu < 6 and/or [Cc<1 or Cc>3.0] [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above “A”		CL	Lean clay [K, L, M]
			PI < 4 or plots below “A” line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above “A” line		CH	Fat clay [K, L, M]
			PI plots below “A” line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
			Liquid limit - not dried			Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add “with cobbles or boulders, or both” to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ³ 15% sand, add “with sand” to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add “with organic fines” to group name.

[I] If soil contains ³ 15% gravel, add “with gravel” to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add “with sand” or “with gravel,” whichever is predominant.

[L] If soil contains ³ 30% plus No. 200 predominantly sand, add “sandy” to group name.

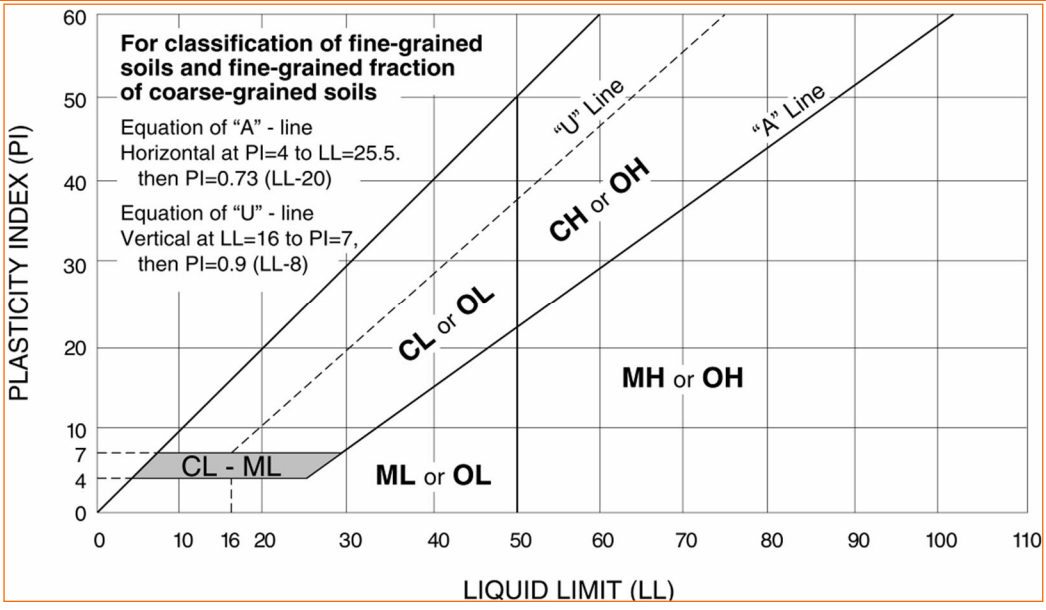
[M] If soil contains ³ 30% plus No. 200, predominantly gravel, add “gravelly” to group name.

[N] PI ³ 4 and plots on or above “A” line.

[O] PI < 4 or plots below “A” line.

[P] PI plots on or above “A” line.

[Q] PI plots below “A” line.



SUBMIT BIDS ON ATTACHED REQUEST FOR PROPOSAL FORM(S)

Vendor Name: _____

GREENVILLE UTILITIES COMMISSION

PROPOSAL FORM

PRECAST CONCRETE RELAY CONTROL HOUSE

The undersigned bidder hereby declares that he has carefully examined the enclosed detailed specifications for the furnishing of Greenville Utilities with the items listed below. The undersigned bidder further agrees, if this proposal is accepted within sixty (60) days from the date of the opening, to furnish any or all of the items upon which prices are quoted at the price set opposite each item. Delivery shall be FOB Greenville, North Carolina, within the time indicated below:

ITEM NO.	QUANTITIES	DESCRIPTION	DELIVERY TIME DAYS	PRICE	
I	1	Precast Concrete Relay Control House		$_____	
II	1	Foundation Design and Installation		$_____	
III	1	Materials per Tech Spec. Section 6.2		$_____	
	Complete and Check All Math: It is the responsibility of the Bidder to extend unit prices and supply a total for all items.		**Total**	$_____	

Method of Award: Items/Project will be awarded as a total bid.

Complete and Check All Math: It is the responsibility of the Bidder to extend bid prices and supply a total for all items. It is certified that this proposal is made in good faith and without collusion or connection with any other person bidding on the same above listed items. It is also certified that this proposal is made in good faith and without collusion or connection with any GUC employee(s).

[Balance of page left blank intentionally]

Vendor Name: _____

GREENVILLE UTILITIES COMMISION

Exception/Variation Form

Specifications for: Precast Concrete Relay Control House

Provider's Certification: This is to certify that it is our intent to furnish equipment, material, services, etc. in absolute compliance with the bid specification except where expressly noted below.

Instructions: List all exceptions or variations to these bid specifications. Providers shall identify each exception or variation by specification page. The omission of exception or variation information shall be deemed by the Commission as the Provider's intent to absolutely comply with the bid specification. If additional space is required, Provider may reproduce this form as necessary.

Page #	Exception/Variation
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Authorized Signature of Certification: _____
Print Name: _____

Firm Represented: _____
Address: _____
_____

It is certified that this proposal is made in good faith and without collusion or connection with any other person bidding on the same above listed items. It is also certified that this proposal is made in good faith and without collusion or connection with any GUC employee(s).

Each Proposal shall be accompanied by cash, cashier's check, or certified check drawn on a bank insured with the Federal Deposit Insurance Corporation or the Savings Association Insurance Fund, payable to the Owner, in an amount not less than five percent (5%) of the total bid as a guarantee that a Purchase Order, if awarded, will be accepted. In lieu thereof, a Bid Bond may be submitted by the Bidder in an amount not less than five percent (5%) of the total bid (see attached Bid Bond form). The total bid price for which the five percent (5%) applies shall be the total of all schedules.

Certified check or cash for $_____or bid bond for $_____attached.

Firm Name _____ Phone (_____)_____

Address_____

City _____ State _____ Zip Code _____

Fax (____) _____ E-Mail _____

Authorized Official _____ Title _____
Typed Name

_____ Date _____
Signature

BID BOND

KNOW ALL MEN BY THESE PRESENT, THAT WE _____

as Principal, and_____

as Surety, who is duly licensed to act as Surety in North Carolina, are held and firmly bound unto the Greenville Utilities Commission, Greenville, NC, as Obligee, in the penal sum of _____

_____DOLLARS ($_____) (5% Bid Bond), lawful money of

the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these present.

SIGNED, Sealed and dated this_____ day of_____, 2020.

WHEREAS, the said Principal is herewith submitting a Proposal for

_____

and the Principal desires to file this Bid Bond in lieu of making the cash deposit as required by the bidding documents contained herein;

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION is such that if the principal shall

be awarded the Purchase Order for which the bid is submitted and shall accept the Purchase Order within ten (10) days after the award of same to the principal, then this obligation shall be null and void; but if the principal fails to so accept such Purchase Order as required by the bidding documents contained herein, the Surety shall, upon demand, forthwith pay to the Obligee the amount set forth in the first paragraph hereof, and upon failure to forthwith make such payment, the Surety shall pay the Obligee an amount equal to double the amount of this Bid Bond as set forth in the first paragraph hereof. Power of Attorney from the Surety to its Attorney-in-Fact is attached hereto.

_____

Principal

By_____ (SEAL)

_____

Corporate Surety

By _____(SEAL)

PERFORMANCE BOND/PAYMENT BOND

Date of Execution: _____

Name of Principal: _____

(Contractor) _____

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project: _____

KNOW ALL THESE MEN BY THESE PRESENT, That We, the Principal and Surety above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these present.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal entered into a certain Contract with the Contracting Body, identified as shown above and hereto attached.

NOW, THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term of said Contract and any extensions there of that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the Contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument under the several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed, and these present duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in five (5) counterparts.

Witness:

_____
(Proprietorship or Partnership)

ATTEST:

By: _____

Title: _____
(Corporate Secretary or
Assistant Secretary Only)

CONTRACTOR:

_____
(Trade or Corporate Name)

By: _____

Title: _____

(CORPORATE SEAL)

Witness:

_____

Countersigned:

_____

_____
N.C. Licensed Resident Agent

_____

_____
(Name and Address – Surety Agent)

_____

_____
Surety Company Name and N.C.
Regional or Branch Office Address

SURETY COMPANY:

_____

By: _____

Title: _____
(Attorney-in-Fact)

(SURETY SEAL)

SPACE FOR ATTACHING POWER OF ATTORNEY

(BID BOND/PERFORMANCE AND PAYMENT BOND)

Special Instructions to Bidders

City of Greenville/Greenville Utilities Commission
Minority and/or Women Business Enterprise (M/WBE) Program

GUC
Construction Guidelines and Affidavits
$100,000 and above

These instructions shall be included with each bid solicitation.

City of Greenville/Greenville Utilities Commission
Minority and/or Women Business Enterprise Program

$100,000 and Construction Guidelines for M/WBE Participants

Policy Statement
It is the policy of the City of Greenville and Greenville Utilities Commission to provide minorities and women equal opportunity for participating in all aspects of the City's and Utilities' contracting and procurement programs, including but not limited to, construction projects, supplies and materials purchases, and professional and personal service contracts.

Goals and Good Faith Efforts
Bidders responding to this solicitation shall comply with the M/WBE program by making Good Faith Efforts to achieve the following aspiration goals for participation.

	GUC	
	MBE	**WBE**
Construction This goal includes Construction Manager at Risk.	7%	4%

Bidders shall submit M/WBE information with their bids on the forms provided. This information will be subject to verification by GUC prior to contract award. **As of July 1, 2009, contractors, subcontractors, suppliers, service providers, or M/WBE members of joint ventures intended to satisfy GUC M/WBE goals shall be certified by the NC Office of Historically Underutilized Businesses (NC HUB) only.** Firms qualifying as "WBE" for GUC's goals must be designated as a "women-owned business" by the HUB Office. Firms qualifying as "MBE" for the GUC's goals must be certified in one of the other categories (i.e.: Black, Hispanic, Asian American, American Indian, Disabled, or Socially and Economically Disadvantaged). Those firms who are certified as both a "WBE" and "MBE" may only satisfy the "MBE" requirement. A complete database of NC HUB certified firms may be found at http://www.doa.nc.gov/hub/. An internal database of firms who have expressed interest to do business with the City and GUC is available at www.greenvillencmwbe.org. However, the HUB status of these firms must be verified by the HUB database. GUC shall accept NCDOT certified firms on federally funded projects only. Please note: A contractor may utilize any firm desired. However, for participation purposes, all M/WBE vendors who wish to do business *as a minority or a female* must be certified by NC HUB.

The Bidder shall make good faith efforts to encourage participation of M/WBEs prior to submission of bids in order to be considered as a responsive bidder. Bidders are cautioned that even though their submittal indicates they will meet the M/WBE goal, they should document their good faith efforts and be prepared to submit this information, if requested.

The M/WBE's listed by the Contractor on the **Identification of Minority/Women Business Participation** which are determined by the GUC to be certified shall perform the work and supply the materials for which they are listed unless the Contractors receive prior authorization from the GUC to perform the work with other forces or to obtain materials from other sources. If a contractor is proposing to perform all elements of the work with his own forces, he must be prepared to document evidence satisfactory to the owner of similar government contracts where he has self-performed.

The Contractor shall enter into and supply copies of fully executed subcontracts with each M/WBE or supply signed Letter(s) of Intent to the Project Manager after award of contract and prior to Notice to Proceed. Any amendments to subcontracts shall be submitted to the Project Manager prior to execution.

Instructions

The Bidder shall provide with the bid the following documentation:

☐ Identification of Minority/Women Business Participation
(if participation is zero, please mark zero—Blank forms will be considered nonresponsive)

☐ Affidavit A (if subcontracting)

OR

☐ Identification of Minority/Women Business Participation
(if participation is zero, please mark zero—Blank forms will be considered nonresponsive)

☐ Affidavit B (if self-performing; must attest that bidder does not customarily subcontract work on this type of project—includes supplies and materials)

Within 72 hours or 3 business days after notification of being the apparent low bidder who is subcontracting anything must provide the following information:

☐ Affidavit C (if aspirational goals are met or are exceeded)

OR

☐ Affidavit D (if aspirational goals are not met)

After award of contract and prior to issuance of notice to proceed:

☐ Letter(s) of Intent or Executed Contracts

****With each pay request, the prime contractors will submit the Proof of Payment Certification, listing payments made to M/WBE subcontractors.**

*****If a change is needed in M/WBE Participation, submit a Request to Change M/WBE Participation Form. Good Faith Efforts to substitute with another M/WBE contractor must be demonstrated.**

Minimum Compliance Requirements:

All written statements, affidavits, or intentions made by the Bidder shall become a part of the agreement between the Contractor and the GUC for performance of contracts. Failure to comply with any of these statements, affidavits or intentions or with the minority business guidelines shall constitute a breach of the contract. A finding by the GUC that any information submitted (either prior to award of the contract or during the performance of the contract) is inaccurate, false, or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the GUC whether to terminate the contract for breach or not. In determining whether a contractor has made Good Faith Efforts, the GUC will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts.

Identification of Minority/Women Business Participation

I,_____.
(Name of Bidder)

do hereby certify that on this project, we will use the following minority/women business enterprises as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work type	*M/WBE Category

*M/WBE categories: Black, African American (**B**), Hispanic, Latino (**L**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**S**) Disabled (**D**)

If you will not be utilizing M/WBE contractors, please certify by entering zero "0"

The total value of MBE business contracting will be ($)_____.

The total value of WBE business contracting will be ($)_____.

MBForms 2002-
Revised July 2010

Greenville Utilities Commission AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of_____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- ❑ **1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- ❑ **2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- ❑ **3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- ❑ **4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- ❑ **5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- ❑ **6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- ❑ **7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- ❑ **8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- ❑ **9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- ❑ **10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority/Women Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority/women business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of_____, County of_____

Subscribed and sworn to before me this _____day of _____20____

Notary Public_____

My commission expires _____

MBForms 2002-
Revised July 2010

Greenville Utilities Commission --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____

_____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____

SEAL

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20___

Notary Public _____

My commission expires _____

MBForms 2002-
Revised July 2010

Greenville Utilities Commission - AFFIDAVIT C - Portion of the Work to be Performed by M/WBE Firms

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by M/WBE businesses as defined in GS143-128.2(g) and the COG/GUC M/WBE Plan sec. III is equal to or greater than 11% of the bidders total contract price, then the bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

_____
(Project Name)

Project ID#_____ Amount of Bid $_____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises and a minimum of _____% of the total dollar amount of the contract with women business enterprises. Minority/women businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*M/WBE Category	Work description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic or Latino (**L**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**S**) Disabled (**D**)

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with M/WBE Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____ Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of _____, County of _____

Subscribed and sworn to before me this _____day of _____20____

Notary Public_____

My commission expires_____

MBForms 2002-
Revised July 2010

Greenville Utilities Commission AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 11% participation by minority/women business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

_____
(Project Name)

Project ID#_____ Amount of Bid $_____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises and a minimum of _____% of the total dollar amount of the contract with women business enterprises. Minority/women businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*M/WBE Category	Work description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic or Latino (**L**), Asian American (**A**) American Indian (**I**),Female (**F**) Socially and Economically Disadvantaged (**S**) Disabled (**D**)

Examples of documentation required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.

B. Copies of quotes or responses received from each firm responding to the solicitation.

C. A telephone log of follow-up calls to each firm sent a solicitation.

D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.

E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.

F. Copy of pre-bid roster.

G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.

H. Letter detailing reasons for rejection of minority business due to lack of qualification.

I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with M/WBE Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of _____, County of _____

Subscribed and sworn to before me this _____day of _____20____

Notary Public_____

My commission expires _____

LETTER OF INTENT
M/WBE Subcontractor Performance

Please submit this form or executed subcontracts with M/WBE firms after award of contract and prior to issuance of notice to proceed.

PROJECT: _____
(Project Name)

TO: _____
(Name of Prime Bidder/Architect)

The undersigned intends to perform work in connection with the above project as a:

____Minority Business Enterprise _____Women Business Enterprise

The M/WBE status of the undersigned is certified the NC Office of Historically Underutilized Businesses (required). ___ Yes ___ No

The undersigned is prepared to perform the following described work or provide materials or services in connection with the above project at the following dollar amount:

Work/Materials/Service Provided	Dollar Amount of Contract	Projected Start Date	Projected End Date

_____
(Date)

_____ _____
(Address) (Name & Phone No. of M/WBE Firm)

_____ _____
(Name & Title of Authorized Representative of M/WBE) (Signature of Authorized Representative of M/WBE)

REQUEST TO CHANGE M/WBE PARTICIPATION

(Submit changes only if notified as apparent lowest bidder, continuing through project completion)

Project: _____

Bidder or Prime Contractor: _____

Name & Title of Authorized Representative: _____

Address: _____ **Phone #:** _____

_____ **Email Address:** _____

Total Contract Amount (including approved change orders or amendments): $_____

Name of subcontractor: _____

Good or service provided: _____

Proposed Action:

___Replace subcontractor
___Perform work with own forces

For the above actions, you must provide one of the following reasons (Please check applicable reason):

___ The listed MBE/WBE, after having had a reasonable opportunity to do so, fails or refuses to execute a written contract.

___The listed MBE/WBE is bankrupt or insolvent.

___The listed MBE/WBE fails or refuses to perform his/her subcontract or furnish the listed materials.

___The work performed by the listed subcontractor is unsatisfactory according to industry standards and is not in accordance with the plans and specifications; or the subcontractor is substantially delaying or disrupting the progress of the work.

If replacing subcontractor:

Name of replacement subcontractor: _____

The M/WBE status of the contractor is certified by the NC Office of Historically Underutilized Businesses (required). ___Yes ___No

Dollar amount of original contract $_____

Dollar amount of amended contract $ _____

Other Proposed Action:

___Increase total dollar amount of work
___Decrease total dollar amount of work
___Add additional subcontractor
___Other

Please describe reason for requested action: _____

_____

If adding additional subcontractor:*

The M/WBE status of the contractor is certified by the NC Office of Historically Underutilized Businesses (required).___Yes ___No

**Please attach Letter of Intent or executed contract document*

Dollar amount of original contract $_____

Dollar amount of amended contract $ _____

Interoffice Use Only:

Approval __Y __N

Date_____

Signature_____

Pay Application No. _____

Purchase Order No. _____

Proof of Payment Certification

M/WBE Contractors, Suppliers, Service Providers

Project Name: _____

Prime Contractor: _____

Current Contract Amount (including change orders): $_____

Requested Payment Amount for this Period: $_____

Is this the final payment? ___Yes ___No

Firm Name	M/WBE Category*	Total Amount Paid from this Pay Request	Total Contract Amount (including changes)	Total Amount Remaining

*Minority categories: Black, African American (**B**), Hispanic or Latino (**L**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**S**) Disabled (**D**)

Date:_____

Certified By: _____
Name

_____
Title

_____
Signature

Two (2) copies of your proposal should be received no later than

SEPTEMBER 9, 2020 at 3:00 PM (EDST).

NO BIDS CONSIDERED UNLESS SUBMITTED ON THIS FORM(S) RETURN BID SECURITY, THIS FORM, COST FORM(S), EXCEPTION FORM(S), E-VERIFY FORM AND ALL PROPOSAL AND PRICING FORM(S)

[Balance of page left blank intentionally]

GREENVILLE UTILITIES COMMISSION

EXCEPTION/VARIATION FORM FOR

PRECAST CONCRETE RELAY CONTROL HOUSE

Provider's Certification: This is to certify that it is our intent to furnish equipment, material, services, etc. in absolute compliance with the bid specification except where expressly noted below.

Instructions: List all exceptions or variations to these bid specifications. Providers shall identify each exception or variation by specification page. The omission of exception or variation information shall be deemed by the Commission as the Provider's intent to absolutely comply with the bid specification. If additional space is required, Provider may reproduce this form as necessary.

Page #	Exception/Variation
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Authorized Signature of Certification: _____
Print Name: _____

Firm Represented: _____
Address: _____
_____

Letter of Compliance to E-Verify for Greenville Utilities Commission

1. I have submitted a bid for contract or desire to enter into a contract with the Greenville Utilities Commission;
2. As part of my duties and responsibilities pursuant to said bid and/or contract, I affirm that I am aware of and in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):

3. ____ After hiring an employee to work in the United States I verify the work authorization of said employee through E-Verify and retain the record of the verification of work authorization while the employee is employed and for one year thereafter; or
4. ____ I employ less than fifteen (15) employees in the State of North Carolina.

5. As part of my duties and responsibilities pursuant to said bid and/or contract, I affirm that to the best of my knowledge and subcontractors employed as a part of this bid and/or contract, are in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):

6. ____ After hiring an employee to work in the United States the subcontractor verifies the work authorization of said employee through E-Verify and retains the record of the verification of work authorization while the employee is employed and for one year thereafter; or

7. ____ Employ less than fifteen (15) employees in the State of North Carolina.

Specify subcontractor: _____

_____ (Company Name)

By: _____ (Typed Name)

_____ (Authorized Signatory)

_____ (Title)

_____ (Date)

SECTION III

TERMS AND CONDITIONS FOR THE PURCHASE OF

APPARATUS, SUPPLIES, MATERIALS, EQUIPMENT AND BUILD

These Terms and Conditions, made and entered into on this the _____ day of _____, by and between GREENVILLE UTILITIES COMMISSION OF THE CITY OF GREENVILLE, PITT COUNTY, NORTH CAROLINA, with one of its principal offices and places of business at 401 S. Greene Street, Post Office Box 1847, Greenville, Pitt County, North Carolina 27835-1847, hereinafter referred to as "GUC" and _____, a _____ organized and existing under and by virtue of the laws of the State of _____, with one of its principal offices and places of business at _____, hereinafter referred to as "PROVIDER";

1.0 TAXES

No taxes shall be included in any bid prices. GUC is exempt from Federal Excise Tax. GUC is not exempt from North Carolina state sales and use tax or, if applicable, Pitt County sales and use tax. Such taxes shall be shown as a separate item on the invoice.

2.0 INVOICES

It is understood and agreed that orders will be shipped at the established contract prices and quantities in effect on dates orders are placed. Invoicing at variance with this provision may subject the contract to cancellation. Applicable North Carolina sales tax shall be invoiced as a separate line item. All invoices must bear the GUC purchase order number. Mail all invoices to Greenville Utilities Commission, Finance Department, P. O. Box 1847, Greenville, NC 27835-1847.

3.0 PAYMENT TERMS

Payments for equipment, materials, or supplies will be made after the receipt and acceptance of the equipment, materials, supplies or services and after submission of a proper invoice. GUC's normal payment policy is thirty (30) days. GUC will not be responsible for any goods delivered without a purchase order having been issued. Payment will be made in U. S. currency only.

4.0 QUANTITIES

Quantities specified are only estimates of GUC's requirements. GUC reserves the right to purchase more or less than the stated quantities at prices indicated in the submitted Proposal Form based on our actual needs.

5.0 AFFIRMATIVE ACTION

The Provider will take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, without discrimination by reason of race, color, religion, sex, national origin, or physical handicap.

6.0 CONDITION AND PACKAGING

Unless otherwise indicated in the bid, it is understood and agreed that any item offered or shipped shall be new and in first class condition, that all containers shall be new and suitable for storage or shipment, and that prices include standard commercial packaging.

7.0 SAMPLES

Samples of items, if required, must be furnished free of expense to GUC, and if not destroyed, will, upon request, be returned at the Provider's expense. Request for the return of samples must be made at the bid opening, otherwise, the samples will become GUC's property. Each individual sample must be labeled with Provider's name.

8.0 SPECIFICATIONS

Any deviation from specifications must be clearly pointed out, otherwise, it will be considered that items offered are in strict compliance with specifications, and the Provider will be held responsible. Deviations must be explained in detail. **The Provider shall not construe this paragraph as inviting deviation or implying that any deviation will be acceptable.**

9.0 INFORMATION AND DESCRIPTIVE LITERATURE

Providers are to furnish all information requested. Further, as may be specified elsewhere, each Provider must submit with its proposal: cuts, sketches, descriptive literature, and/or complete specifications covering the products offered. Reference to literature submitted with a previous bid does not satisfy this provision. Bids which do not comply with these requirements will be subject to rejection.

10.0 AWARD OF CONTRACT

As directed by statute, qualified bids will be evaluated and acceptance made of the lowest responsible, responsive bid most advantageous to GUC as determined upon consideration of such factors as prices offered, the quality of the article(s) offered, the general reputation and performance capabilities of the Provider, substantial conformity with the specifications and other conditions set forth in the bid, the suitability of the article(s) for the intended use, the related services needed, the date(s) of delivery and performance, and such other factors deemed by GUC to be pertinent or peculiar to the purchase in question.

Acceptance of the order includes acceptance of all terms, conditions, prices, delivery instructions, and specifications as shown on this set of Terms and Conditions and in this order or attached to and made a part of this order.

The conditions of this order cannot be modified except by written amendment in the form of "Amended Purchase Order," which has been approved by GUC's Procurement Manager.

In the event of a Provider's failure to deliver or perform as specified, GUC reserves the right to cancel the order or any part thereof, without prejudice to GUC's other rights. The Provider agrees that GUC may return part of or all of any shipment at Provider's expense. GUC may charge the Provider with all reasonable expenses resulting from such failure to deliver or perform.

11.0 MEDIATION/BINDING ARBITRATION

In the event of any dispute between the Parties, the Parties agree to submit any dispute to non-binding mediation before a mutually agreeable Mediator prior to initiating litigation. If the Parties are unable to agree upon a Mediator within thirty (30) days after demand therefore, either Party may petition a Court of competent jurisdiction for the designation of a qualified Mediator for these purposes. Each Party shall bear its own costs and expenses of participating in the mediation (including, without limitation, reasonable attorneys' fees), and each Party shall bear one-half (1/2) of the costs and expenses of the Mediator. Unless otherwise agreed, the Parties will hold the mediation in Greenville, North Carolina. The matters discussed or revealed in the mediation session shall not be disclosed in any subsequent litigation.

In the event the matter is not resolved in mediation, either Party may request arbitration. The parties shall jointly select an Arbitrator, and shall be bound by the decision of the Arbitrator with respect to any dispute between the parties with respect to this Agreement. If the parties are unable to mutually agree upon an Arbitrator, the Parties shall each select an Arbitrator, and the two Arbitrators so selected shall select a third Arbitrator, and the decision of the majority of the Arbitrators shall be conclusive and binding upon the Parties. The Parties at all times agree to equally split the costs of any Arbitrator(s) selected in an effort to resolve the dispute between the Parties. Any party desiring to resolve a dispute under the terms of this Agreement shall notify the other Party in writing, and the Parties shall seek to agree upon a mutually agreed-upon Arbitrator within a period of ten (10) days from the date of such written demand. If the Parties are unable to agree within such ten (10) day period, the Parties shall each select an Arbitrator, and the two (2) Arbitrators so selected shall select a third Arbitrator within fifteen (15) days from the date of the written demand for arbitration, and a decision shall be rendered by the Arbitrator(s) so selected within five (5) days after such Arbitrator(s) is selected.

12.0 GOVERNMENT RESTRICTIONS

In the event any Governmental restrictions may be imposed which would necessitate alteration of the material, quality, workmanship, or performance of the items offered on this bid prior to their delivery, it shall be the responsibility of the successful Provider to notify the GUC Procurement Manager, at once, indicating in its letter the specific regulation which required such alterations. GUC reserves the right to accept any such alterations, including any price adjustments occasioned thereby, or, in the sole discretion of GUC, to cancel the contract.

13.0 INSURANCE

13.1 Coverage – During the term of the contract, the Provider at its sole cost and expense shall provide commercial insurance of such type and with the following coverage and limits:

13.1.1 Workers' Compensation – The Provider shall provide and maintain Workers' Compensation Insurance, as required by the laws of North Carolina, as well as employer's liability coverage with minimum limits of $1,000,000 each accident, covering all Provider's employees who are engaged in any work under the contract. If any work is sublet, the Provider shall require the subcontractor to provide the same coverage for any of its employees engaged in any work under the contract.

13.1.2 General Liability – Commercial Liability Coverage written on an "occurrence" basis in the minimum amount of $1,000,000 per occurrence.

13.1.3 Automobile – Automobile Liability Insurance, to include coverage for all owned, hired, and non-owned vehicles used in connection with the contract with a minimum combined single limit of $1,000,000 per accident.

13.2 Requirements - Providing and maintaining adequate insurance coverage is a material obligation of the Provider. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized to do business in North Carolina by the Commissioner of Insurance. The Provider shall at all times comply with the terms of such insurance policies and all requirements of the insurer under any of such insurance policies, except as they may conflict with existing North Carolina laws or this contract. The limits of coverage under each insurance policy maintained by the Provider shall not be interpreted as limiting the Provider's liability and obligations under the contract. It is agreed that the coverage as stated shall not be canceled or changed until thirty (30) days after written notice of such termination or alteration has been sent by registered mail to GUC's Procurement Manager.

14.0 PATENTS AND COPYRIGHTS

The Provider shall hold and save GUC, its officers, agents, and employees, harmless from liability of any kind, including costs and expenses, including reasonable attorney fees, on account of any copyrighted articles or any patented or unpatented invention, device or appliance manufactured or used in the performance of this contract.

15.0 PATENT AND COPYRIGHT INDEMNITY

The Provider will defend or settle, at its own expense, any action brought against GUC to the extent that it is based on a claim that the product(s) provided pursuant to this agreement infringe any U.S. copyright or patent; and will pay those costs, damages, and attorney fees finally awarded against GUC in any such action attributable to any such claim, but such defense, settlements, and payments are conditioned on the following: (1) that Provider shall be notified promptly in writing by GUC of any such claim; (2) that Provider shall have sole control of the defense of any action on such claim and of all negotiations for its settlement or compromise; (3) that GUC shall cooperate with Provider in a reasonable way to facilitate the settlement of defense of such claim; (4) that such claim does not arise from GUC modifications not authorized by the Provider or from the use of combination of products provided by the Provider with products provided by GUC or by others; and (5) should such product(s) become, or in the Provider's opinion likely to become, the subject of such claim of infringement, then GUC shall permit Provider, at Provider's option and expense, either to procure for GUC the right to continue using the product(s), or replace or modify the same so that it becomes non-infringing and performs in a substantially similar manner to the original product.

16.0 EXCEPTIONS

All proposals are subject to the terms and conditions outlined herein. All responses will be controlled by such terms and conditions and the submission of other terms and conditions, price catalogs, and other documents as part of a Provider's response will be waived and have no effect on this Request for Proposal or any other contract that may be awarded resulting from this solicitation. The submission of any other terms and conditions by a Provider may be grounds for rejection of the Provider's proposal. The Provider specifically agrees to the terms and

conditions set forth in this set of Terms and Conditions by affixing its name on the signatory page contained herein.

17.0 CONFIDENTIAL INFORMATION

Except as provided by statute and rule of law, GUC will keep trade secrets which the Provider does not wish disclosed confidential. Each page shall be identified in boldface at the top and bottom as "CONFIDENTIAL" by the Provider. Cost information shall not be deemed confidential. The determination of whether a matter is confidential will be determined by North Carolina law.

18.0 ASSIGNMENT

No assignment of the Provider's obligations or the Provider's right to receive payment hereunder shall be permitted without the express written consent of GUC, provided however, upon written request approved by the GUC Procurement Manager, solely as a convenience to the Provider, GUC may:

- Forward the Provider's payment check directly to any person or entity designated by the Provider, and
- Include any person or entity designated by Provider as a joint payee on the Provider's payment check.
- In no event shall such approval and action obligate GUC to anyone other than the Provider, and the Provider shall remain responsible for fulfillment of all contract obligations.

19.0 ACCESS TO PERSON AND RECORDS

GUC shall have reasonable access to persons and records of Provider as a result of all contracts entered into by GUC.

20.0 INSPECTION AT BIDDER'S SITE

GUC reserves the right to inspect, at a reasonable time, the item, plant, or other facilities of a prospective Provider prior to contract award and during the contract term as necessary for GUC's determination that such item, plant, or other facilities conform with the specifications/requirements and are adequate and suitable for the proper and effective performance of the contract. Provider may limit GUC's access to restricted areas.

21.0 AVAILABILITY OF FUNDS

Any and all payments of compensation of this specific transaction and any continuation or any renewal or extension are dependent upon and subject to the allocation of GUC funds for the purpose set forth in this Agreement.

22.0 GOVERNING LAWS

All contracts, transactions, agreements, etc., are made under and shall be governed by and construed in accordance with the laws of the State of North Carolina.

23.0 ADMINISTRATIVE CODE

Bids, proposals, and awards are subject to applicable provisions of the North Carolina Administrative Code and General Statues and Laws of the State of North Carolina.

24.0 EXECUTION

In the discretion of GUC, failure of a duly authorized official of Provider to sign the Signatory Page may render the bid invalid.

25.0 CLARIFICATIONS/INTERPRETATIONS

Any and all questions regarding these Terms and Conditions must be addressed to the GUC Procurement Manager. Do not contact the user directly. **These Terms and Conditions are a complete statement of the parties' agreement and may only be modified in writing signed by Provider and the GUC Procurement Manager.**

26.0 SITUS

The place of all contracts, transactions, agreements, their situs and forum, shall be North Carolina, where all matters, whether in contract or tort, relating to the validity, construction, interpretation, and enforcement shall be determined.

27.0 TERMINATION OF AGREEMENT

GUC or Provider may terminate this Agreement for just cause at any time. Provider will be paid for all time and expenses incurred as of the termination date. Termination for just cause by either party shall be by certified letter and shall be effective thirty (30) days after signed and acknowledged receipt of said letter. Just cause shall be based on reasonable grounds, and there must be a fair and honest cause or reason for such action. The causes for termination, include, but are not limited to: (1) Provider's persistent failure to perform in accordance with the Terms and Conditions, (2) Provider's disregard of laws and regulations related to this transaction, and/or (3) Provider's substantial violation of the provisions of the Terms and Conditions.

28.0 DELIVERY

Shipments will be made only upon releases from a purchase order issued by GUC in accordance with GUC's current needs.
Time is of the essence with respect to all deliveries under this Agreement.
Delivery of all equipment, materials, or supplies shall be made Free on Board (FOB) GUC Warehouse, 1390 Sugg Parkway, Greenville, North Carolina, unless otherwise specified. The agreed price for such equipment, materials, or supplies shall include all costs of delivery and ownership, and risks of loss shall not be transferred from Provider to GUC until express written acceptance of delivery and inspection by GUC. Delivery hours are between 8:00 AM and 4:30 PM Monday-Friday only. **GUC's purchase order number is to be shown on the packing slip or any related documents.** GUC reserves the right to refuse or return any delivery with no purchase order number or which is damaged. GUC will not be charged a restocking fee for any delivery which is refused or returned.

29.0 INDEMNITY PROVISION

Provider agrees to indemnify and save GREENVILLE UTILITIES COMMISSION of the City of Greenville, Pitt County, North Carolina, and the City of Greenville, North Carolina, its co-owners, joint venturers, agents, employees, and insurance carriers harmless from any and all losses, claims, actions, costs, expenses including reasonable attorney fees, judgments, subrogations, or other damages resulting from injury to any person (including injury resulting in death), or damage (including loss or destruction) to property of whatsoever nature of any person arising out of or incident to the performance of the terms of this Contract by Provider, including, but not limited to, Provider's employees, agents, subcontractors, and others designated by Provider to perform work or services in, about, or attendant to, the work and services under the terms of this Contract. Provider shall not be held responsible for any losses, expenses, claims, subrogations, actions, costs, judgments, or other damages, directly, solely, and proximately caused by the negligence of Greenville Utilities Commission of the City of Greenville, Pitt County, North Carolina. Insurance covering this indemnity agreement by the Provider in favor of Greenville Utilities Commission of the City of Greenville, Pitt County, North Carolina, and the City of Greenville, North Carolina, shall be provided by Provider.

30.0 FORCE MAJEURE

Neither party shall be considered in default in the performance of its obligations hereunder to the extent that the performance of any such obligation is prevented or delayed by any cause, existing or future, which is beyond the reasonable control of such party. In any such event of force majeure, the parties shall advise each other of such event, and the parties shall negotiate an equitable adjustment to their respective obligations under this Agreement.

31.0 WARRANTY(IES)

The Provider hereby includes all warranties, whether expressed or implied, including, but not limited to, the Implied Warranty of Merchantability and the Implied Warranty of Fitness for a Particular Purpose.

32.0 INTEGRATED CONTRACT

These Terms and Conditions, Instructions to Bidders, Specifications, and the selected Provider's bid represents the entire contract between the Parties. No verbal or other written agreement(s) shall be held to vary the provisions of this Agreement.

33.0 CONTRACT PROVISIONS

Each of the provisions of these Terms and Conditions shall apply to the full extent permitted by law, and the invalidity in whole or in part of any provision shall not affect the remainder of such provision or any other provisions.

34.0 E-VERIFY

E-Verify - I understand that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25 et seq. I am aware of and in compliance with the requirements of E-Verify and Article 2 of Chapter 64 of the North Carolina General Statutes. To the best of my knowledge, any subcontractors employed by me as a part of this contract are in

compliance with the requirements of E-Verify and Article 2 of Chapter 64 of the North Carolina General Statutes.

35.0 IRAN DIVESTMENT ACT CERTIFICATION

By acceptance of this purchase order, Vendor/Contractor certifies that, as of the date of the purchase order or contract, it is not on the Final Divestment List as created by the State Treasurer pursuant to N.C.G.S. § 143-6A-4. In compliance with the requirements of the Iran Divestment Act and N.C.G.S. § 143C-6A-5(b), Vendor/Contractor shall not utilize in the performance of the contract any subcontractor that is identified on the Final Divestment List.

36.0 UNIFORM GUIDANCE

Contracts funded with federal grant or loan funds must be procured in a manner that conforms with all applicable federal laws, policies, and standards, including those under the Uniform Guidance (2 C.F.R. Part 200).

37.0 NOTICES

Notices to the Parties should be sent to the names and addresses specified below:

Cleve Haddock, CLGPO
Procurement Manager
Greenville Utilities Commission
P.O. Box 1847
Greenville, NC 27835-1847

Vendor Specified on Page 1 of Section III when awarded.

[Balance of page left blank intentionally]

GREENVILLE UTILITIES COMMISSION

By: _____
Anthony C. Cannon

Title: General Manager/CEO
(Authorized Signatory)

Date: _____

Attest: _____

Name (Print): Amy Wade

Title: Executive Secretary

Date: _____

(OFFICIAL SEAL)

COMPANY NAME

By: _____

Name (Print): _____

Title: _____
(Authorized Signatory)

Date: _____

Attest: _____

Name (Print): _____

Title: Corporate Secretary

Date: _____

(CORP. SEAL)

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

By: _____
Jeff W. McCauley

Title: Chief Financial Officer

Date: _____

APPROVED AS TO FORM AND LEGAL CONTENT:

By: _____
Phillip R. Dixon

Title: General Counsel

Date: _____