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 2:00 PM (EST) on December 18, 2025 and immediately thereafter publicly opened and read for the furnishing of Precast Concrete Relay Control House for the Boviet 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.**

SECTION I

GENERAL INSTRUCTIONS FOR FORMAL BIDS

RELATED TO THE PURCHASE OF APPARATUS, SUPPLIES,

MATERIALS, AND EQUIPMENT

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 2:00 PM (EST) on December 18, 2025, the day of opening. **Bids submitted in a fax or e-mail in response to this Invitation for Bids will not be acceptable. Late Bids will not be considered.**

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 the Procurement Manager, GREENVILLE UTILITIES COMMISSION, P. O. BOX 1847, 401 S. GREENE STREET, GREENVILLE, NORTH CAROLINA 27835-1847.

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 DEPOSIT

A deposit is NOT required for this bid.

6.0 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.

7.0 FEDERAL EXCISE TAX

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

8.0 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.

9.0 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.

10.0 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.

11.0 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.

12.0 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.

13.0 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.

14.0 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.

15.0 DELIVERY

Shipments will be made to GUC only upon releases from a purchase order issued by GUC in accordance with its 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), customer's foundation pad, Boviet Substation 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.

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16.0 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..

17.0 CONTRACT PERIOD

NA.

18.0 MANUFACTURER

Bidder is to specify the manufacturer of items being quoted.

19.0 CONTACT INFORMATION

Questions regarding this bid request should be directed to Cleve Haddock, Procurement Manager, Finance Department at (252) 551-1533, haddocgc@guc.com. **All questions must be received via e-mail by or before 5:00pm (EST) December 10, 2025.**

20.0 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
BOVIET SUBSTATION

TECHNICAL SPECIFICATIONS

1. Scope

The scope of this project is the construction and installation of a 30' x 14' x 10' LxWxH precast concrete control house for the Boviet 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, 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. The future substation site is available via an access road. A site visit is encouraged to coordinate shipping. Contact Nicholas Peaden at (252) 551-1580 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. Greenville Utilities will provide and maintain a temporary toilet for use of workmen and locate toilet where directed.

2.6. 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.

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

2.8. Modification to General Conditions.

2.8.1. Permits, Fees, Etc.

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

2.8.2. 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.

2.9. 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.

2.10. 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.

2.11. 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**.

2.12. 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.

2.12.1. Preliminary Drawings. Submit shop drawings that include the following details:

2.12.1.1. interior layout, including reflected ceiling plan

2.12.1.2. load path or whole concrete shelter section that describes frame and sheathing materials, and structural fasteners

2.12.1.3. one-line electrical diagram that describes service and feeder power wiring in the concrete shelters

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

2.12.2. 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
CLHS-AR2	Control House Cable Tray Plan
CLHS-AR3	Control House Elevations
BOVT-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 2018.

4.2. All Drawings and documentation are to be forwarded to Greenville Utilities,

3355 NC Highway 43, Greenville, North Carolina, 27834, Attention: Mr. Nicholas Peaden

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 (LED Lighting may be submitted as an exception)
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 (LED lighting may be substituted as an exception)
Exterior Lighting: 35 W, high pressure sodium (LED Lighting may be submitted as an exception)
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, & 3: 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 Y: 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.

PT Panel No. 1, 2, & 3: 120/208 VAC, three-phase 4-wire with neutral; minimum interrupting 10 kA symmetrical, 225 amperes main bus rating, 42 branch circuit poles, NEMA Type 1 indoor surface mounted box and trim; Cutler Hammer PRL1X Panelboard series using Type BAB 30A feed-in breaker and 20A distribution breakers or equivalent. PT panels will wired entirely by owner.

Isolation Transformer - Outdoor Lighting: Indoor dry-type isolation transformer, minimum rating of 7.5 kVA, 60 Hz, single phase, 120x240 VAC primary, to 120x240 VAC secondary. GE, 9T21B1002GO4 or equivalent

DC Service Panel No. 1, 2, & 3: 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: -10°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, PTAC, industry standard size) 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 standard light gray, ANSI No. 70 and standard light gray, ANSI No. 70 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 ARCH 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 owner's 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

GREENVILLE UTILITIES COMMISSION

PROPOSAL FORM

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, including shipping, delivery, off-loading, setting on pad, and dress out/tie down		$_____
II	1	Foundation Design		$_____
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]

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).

Certified check or cash for $____NA____ or bid bond for $____NA____ attached.

Firm Name _____ Phone (_____)_____

Address_____

City _____ State _____ Zip Code _____

Fax (____) _____ E-Mail _____

Authorized Official _____ Title _____
Typed Name

_____ Date _____
Signature

<u>Two (2) copies</u> of your proposal should be received no later than December 18, 2025 at 2:00 PM (EST).

<u>NO BIDS CONSIDERED UNLESS SUBMITTED ON THIS FORM(S)</u>

<u>RETURN ONLY THIS FORM(S)</u>

GREENVILLE UTILITIES COMMISSION

EXCEPTION/VARIATION FORM

PRECAST CONCRETE RELAY CONTROL HOUSE FOR THE BOVIET SUBSTATION

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: _____
Title: _____

Firm Represented: _____
Address: _____
_____

Date: _____

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 twenty-five (25) 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 twenty-five (25) 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, LABOR AND EQUIPMENT

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.

13.1.4 Cyber –The Vendor shall maintain Cyber Liability Insurance with limits of $3,000,000 per occurrence, providing protection against liability for: (1) privacy breaches (including liability arising from the loss or disclosure of confidential information no matter how it occurs); (2) system breach; (3) denial or loss of service; (4) introduction, implantation, or spread of malicious software code; and (5) unauthorized access to or use of computer systems. Cyber Liability Insurance shall not include any exclusion or restriction for unencrypted portable devices or other media. Vendor shall provide evidence of continuation or renewal for a period of two (2) years following termination of the Agreement.

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, 701 Utility Way, Greenville, North Carolina 27834, 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 SAFETY STATEMENTS

Safety Culture Commitment Statement:
At Greenville Utilities, we are committed to a culture of safety that prioritizes the well-being of our employees, contractors, and the communities we serve.
We believe that everyone deserves to work in a safe environment, and we are dedicated to fostering a culture where **safety is a core value, not just a priority**.
Here's what that means to us:

- **Employee and Contractor Safety:** We are committed to providing a safe work environment for all employees and contractors. We will invest in safety training, resources, and equipment to prevent accidents and injuries.
- **Open Communication:** We encourage open and honest communication about safety concerns. We believe everyone has a right and responsibility to speak up about unsafe work practices and potential hazards.

- **Continuous Improvement:** We are committed to continuous improvement in safety performance. We will learn from incidents and near misses, and we will actively seek ways to improve our safety processes and procedures.
- **Accountability:** We hold ourselves and our contractors accountable for safe work practices. This includes providing clear safety expectations, enforcing safety rules, and recognizing safe behavior.
- **Collaboration:** We believe in working collaboratively with employees, contractors, and regulatory agencies to achieve the highest level of safety.

Our commitment to safety extends beyond our employees. We work closely with our contractors to ensure they share our safety values. We expect them to implement robust safety programs, train their workers thoroughly, and adhere to all safety regulations.
We are confident that by working together, we can create a culture of safety where everyone goes home safe and healthy every day.
This commitment statement is a public declaration of our unwavering dedication to safety. We will continue to strive for zero incidents while promoting a positive safety culture that prioritizes the well-being of everyone involved in our utility operations.

Safety Management System Commitment Statement:
At Greenville Utilities, we are unwavering in our commitment to delivering safe and reliable utility service through a robust Safety Management System (SMS). This system forms the foundation of our safety culture, ensuring the well-being of our employees, contractors, and the communities we serve.
Our SMS commitment emphasizes:

- **Zero Incidents:** We believe all incidents are preventable. We strive for zero incidents by proactively managing risks and continuously improving our safety practices.
- **Empowered Workforce:** We foster a culture where safety is everyone's responsibility. This includes providing comprehensive safety training for both employees and contractors, empowering them to identify and report hazards.
- **Data-Driven Decisions:** We utilize data from inspections, incident investigations, and performance metrics to make informed decisions for risk mitigation and continuous improvement of our SMS.
- **Leadership Engagement:** Our leadership team actively demonstrates a commitment to safety by participating in safety reviews, audits, and promoting safety as a core value.
- **Contractor Collaboration:** We extend our safety commitment to our contractors. We require contractors working on our system to adhere to SMS principles, participate in safety briefings, and maintain strong safety programs within their own organizations.
- **Transparent Communication:** We believe in open communication about safety. We encourage employees and contractors to report concerns without fear of reprisal. We also maintain transparent communication with stakeholders about SMS performance.

This SMS commitment is a continuous journey, not a destination. We are dedicated to regularly reviewing and updating our system to reflect best practices and emerging technologies. Through continuous improvement and a commitment to a positive safety culture, we aim to remain an industry leader in safe and reliable utility service.

38.0 INFORMATION TECHNOLOGY

All Contracts are subject to Greenville Utilities Commission Information Technology Contract Provisions. These may be viewed at www.guc.com/doing-business-us.

39.0 NOTICES

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

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

Vendor Specified on Page 1 of Section III when awarded.

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: _____

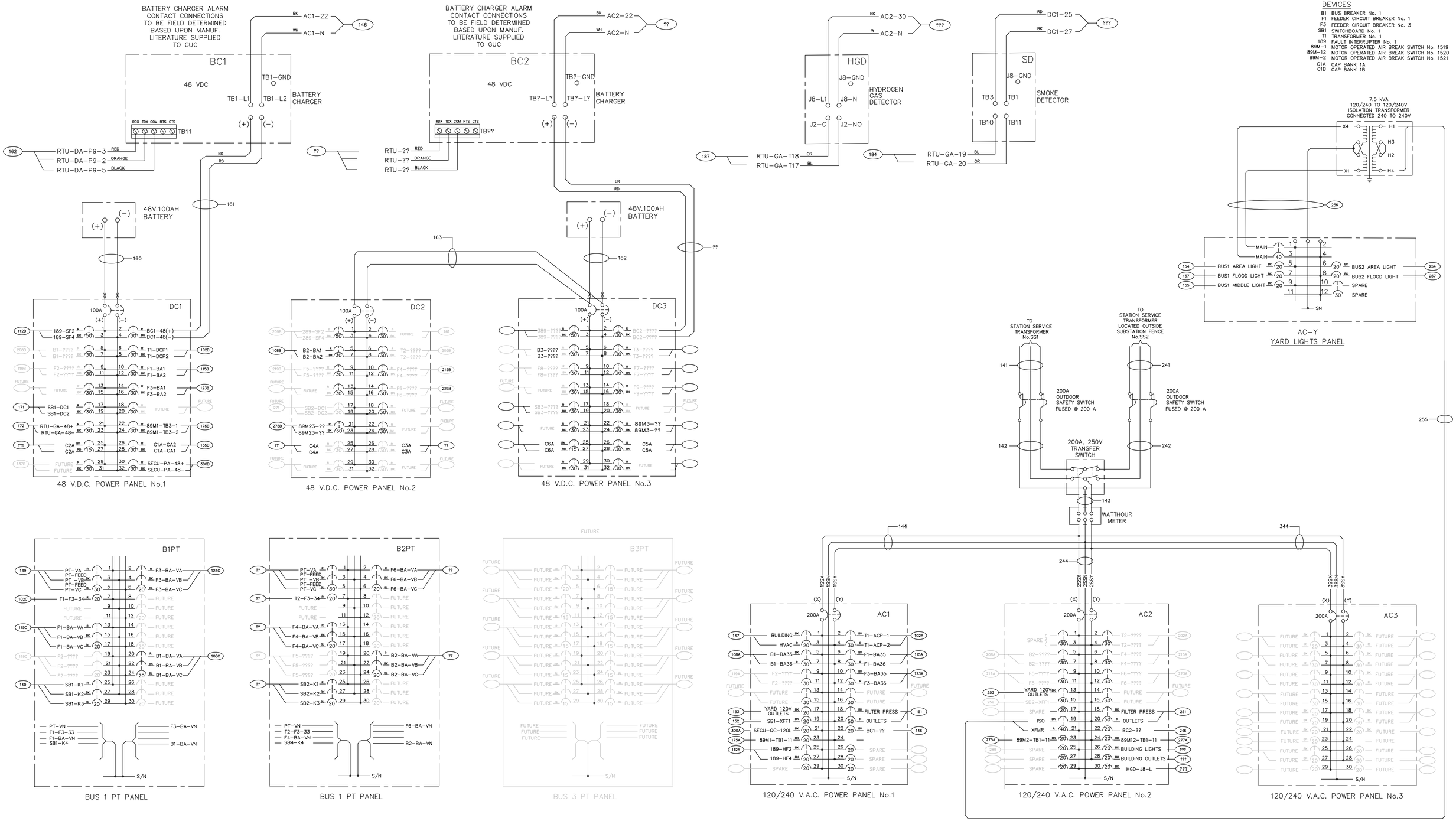
(CORP. SEAL)

APPROVED AS TO FORM AND LEGAL CONTENT:

By: _____
Phillip R. Dixon

Title: General Counsel

Date: _____



REVISIONS		
1A	PRELIMINARY DESIGN FOR BID PACKAGE RMC 11/20/2025	

PRELIMINARY

GREENVILLE UTILITIES
Greenville, North Carolina

BOVIET SUBSTATION
115 TO 15 kV
STATION SERVICE
INTERCONNECTION DIAGRAM No.1

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

BOVT_STSV_IN1_R1.dwg XX

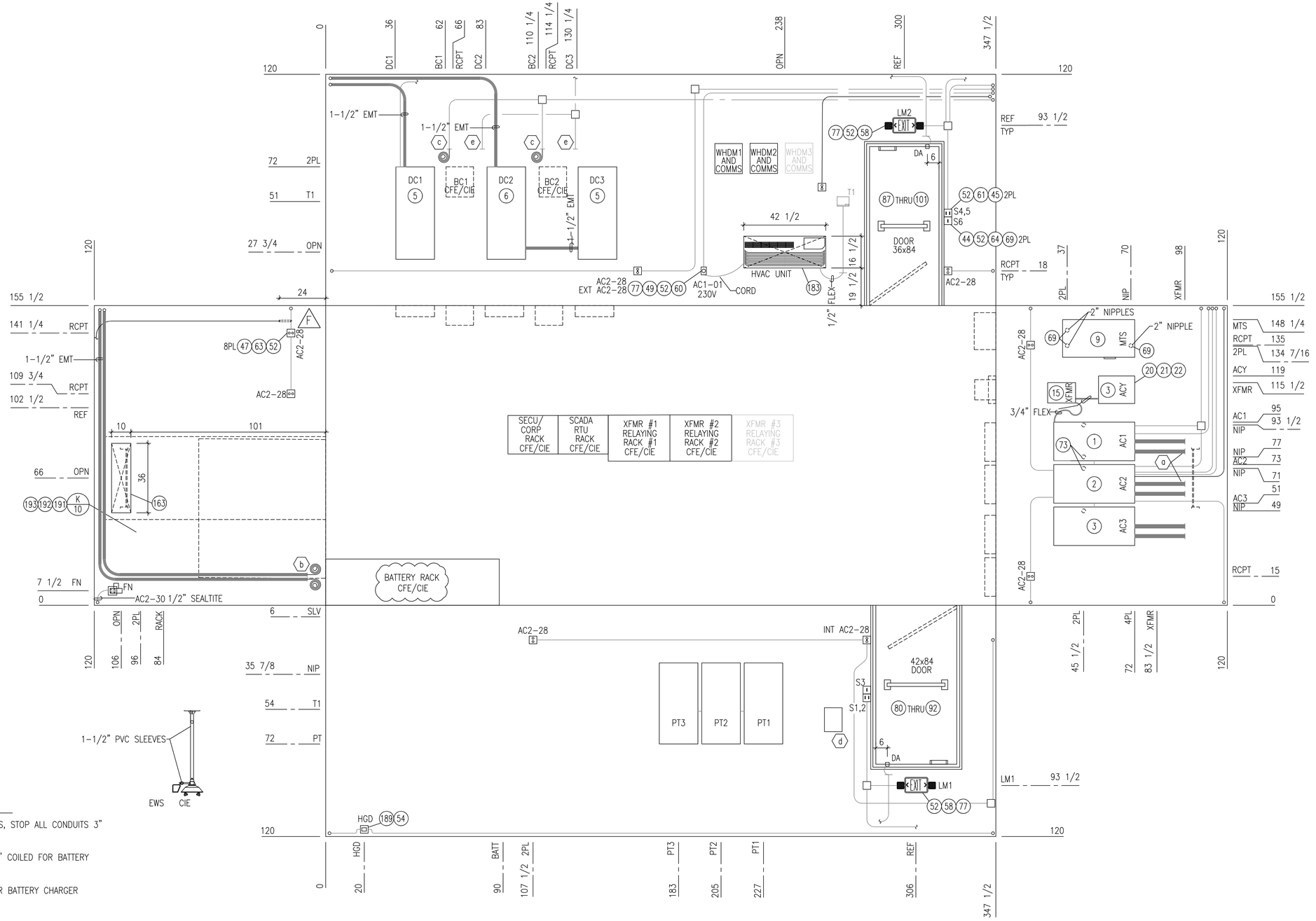
TOLERANCES

ALL DIMENSIONS ARE IN INCHES
UNLESS SPECIFIED OTHERWISE

STANDARD:
FRACTIONS ± 1/2"
DECIMALS ± 0.5"
ANGLES ± 3°

IF NOTED WITH SYMBOL:
▲ FRACTIONS ± 1/4"
DECIMALS ± 0.25"
ANGLES ± 1°

IF NOTED WITH SYMBOL:
⬢ FRACTIONS ± 1"
DECIMALS ± 1.0"
ANGLES ± 5°



NOTES

ⓐ RUN THE MAXIMUM NUMBER OF 2" CONDUITS, STOP ALL CONDUITS 3" FROM THE BOTTOM OF CABLE TRAY.

ⓑ 1 EACH BLACK AND 1 EACH RED, 1AWG, 15' COILED FOR BATTERY CONNECTION (BY OTHERS).

ⓒ COIL 12AWG THHN, BLK, WHT, GRN 6FT. FOR BATTERY CHARGER (CONNECTION BY OTHERS).

ⓓ LOCATION OF STATE LABEL AND DATA PLATE.

ⓔ EMPTY CONDUIT FOR FUTURE BATTERY CHARGER ALARMS (BY OTHERS).

ⓕ EMPTY CONDUIT FOR FUTURE BATTERY CHARGER.

INTERIOR FOLDOUT

NO.	REVISIONS
1.A	PRELIMINARY DESIGN FROM SUGG BID PACKAGE RMC 11/20/2025

PRELIMINARY

GREENVILLE UTILITIES
Greenville, North Carolina

TYPICAL SUBSTATION
115 TO 15 kV
CONTROL
ARRANGEMENY No.1

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

CTHS_AR1_R1

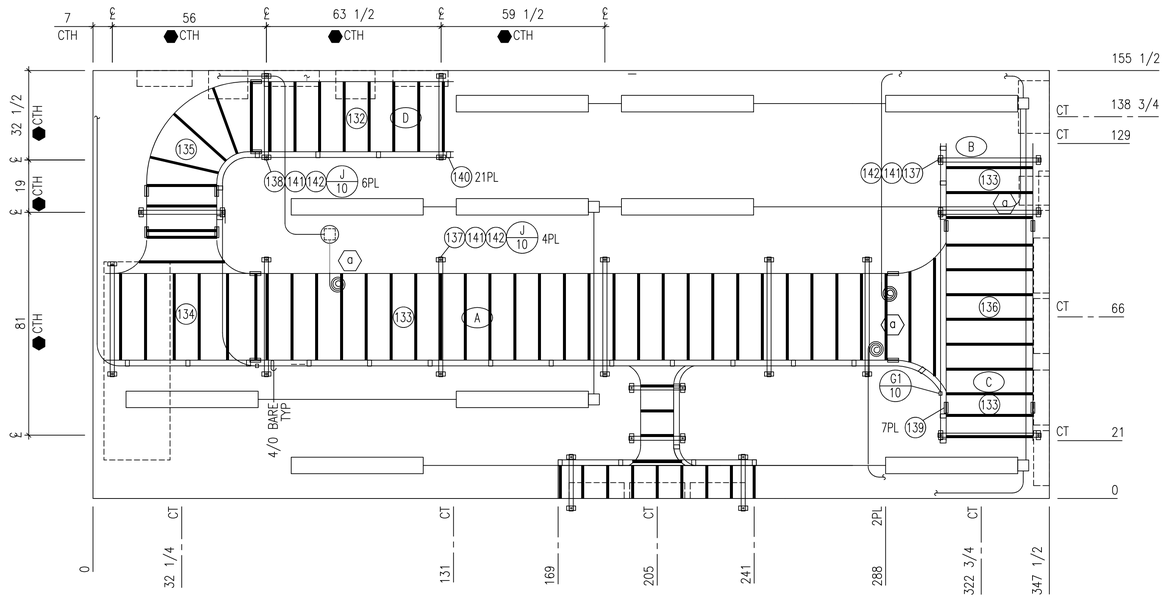
TOLERANCES

ALL DIMENSIONS ARE IN INCHES
UNLESS SPECIFIED OTHERWISE

STANDARD:
FRACTIONS ± 1/2"
DECIMALS ± 0.5"
ANGLES ± 3°

IF NOTED WITH SYMBOL:
▲ FRACTIONS ± 1/4"
DECIMALS ± 0.25"
ANGLES ± 1°

IF NOTED WITH SYMBOL:
⬣ FRACTIONS ± 1"
DECIMALS ± 1.0"
ANGLES ± 5°



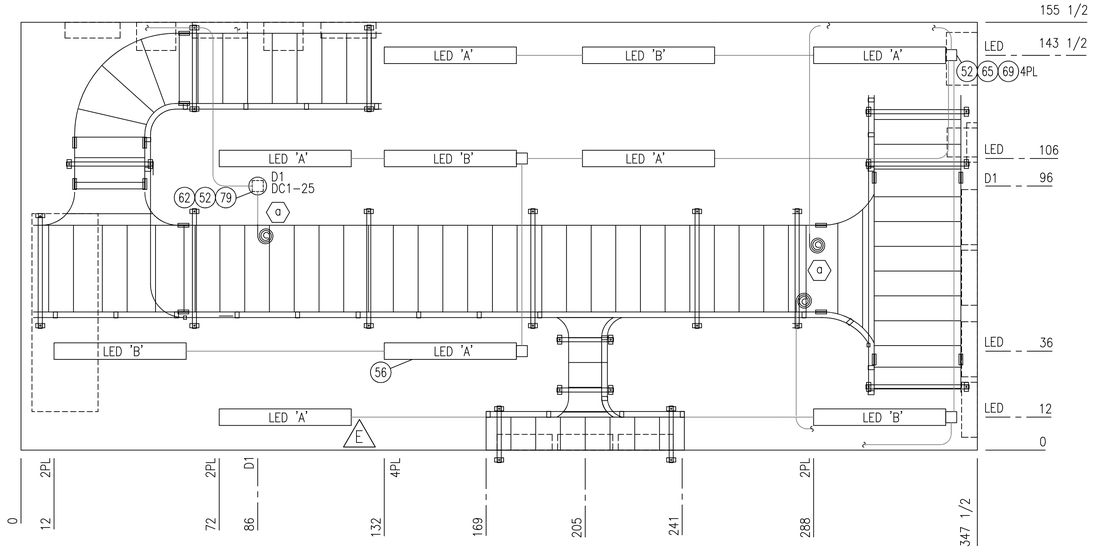
REFLECTED CEILING

CABLE TRAY CUT LEGEND

24A09-30-144	CUT 1@ 135-3/4"	A
24A09-30-144	CUT 1@ 30"	B
24A09-30-144	CUT 1@ 12"	C
24A09-24-144	CUT 1@ 71-3/4"	D

LEGEND

AC1,2 – AC LOAD CENTER (200A)
AR – AS REQUIRED
CFE – CUSTOMER FURNISHED EQUIPMENT
CIE – CUSTOMER INSTALLED EQUIPMENT
CT – CABLE TRAY
CTH – CABLE TRAY HANGER
D1 – SMOKE DETECTOR
DC1,2 – DC LOAD CENTER (100A)
EXT – EXTERIOR
HGD – HYDROGEN DETECTOR
HP – HEAT PUMP
INT – INTERIOR
LE – EXTERIOR LIGHT (LED)
LED A,B – LIGHT FIXTURE LED (4' LED)
LM1,2 – EMERGENCY/EXIT LIGHT 1,2
MTS – MANUAL TRANSFER SWITCH
NIP – NIPPLE
PC – PHOTOCELL
PL – PLACES
RCPT – RECEPTACLE
REF – REFERENCE
S1,2,4,5 – SWITCH, 1,2,4,5, INTERIOR LIGHTS, 3 WAY
S3,6 – SWITCH 3,6, LIGHT, EXTERIOR
T1 – THERMOSTAT, SET @ 72°(HP)
TYP – TYPICAL
WR – WEATHER RESISTANT RECEPTACLE
□ – JUNCTION BOX, 4 X 4
(nn) – REF PART LIST ITEM NUMBER
⟨n⟩ – REF DWG NOTE
– RCPT., DUPLEX
– RCPT., DUPLEX, GFCI
XFMR – 7.5KVA TRANSFORMER
A – REVISION



REFLECTED CEILING

NOTES

⟨a⟩ COIL & TAG 10' of 18 AWG ALARM WIRE

NO.	REVISIONS
1-A	PRELIMINARY DESIGN FROM SUGG BID PACKAGE RMC 11/20/2025

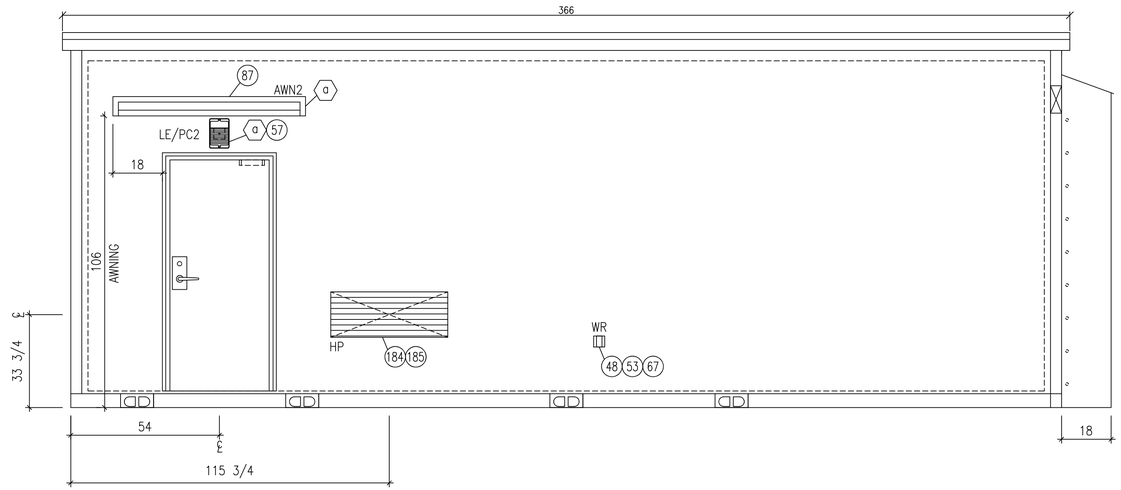
PRELIMINARY

GREENVILLE UTILITIES
Greenville, North Carolina

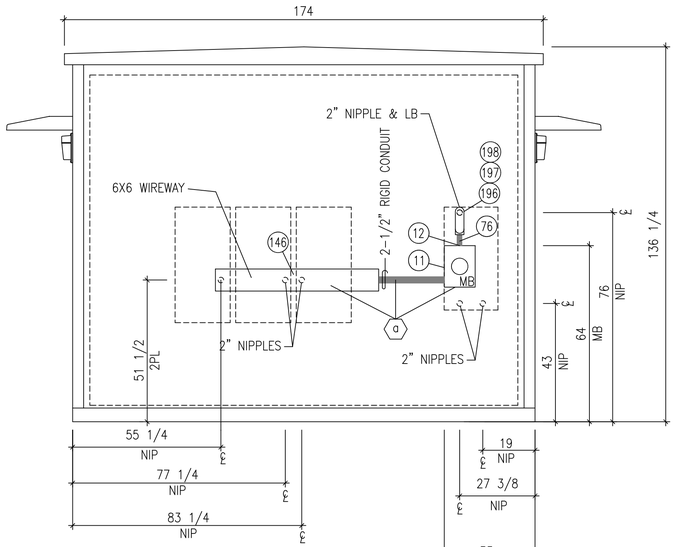
TYPICAL SUBSTATION
115 TO 15 kV
CONTROL
ARRANGEMENY No.2

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

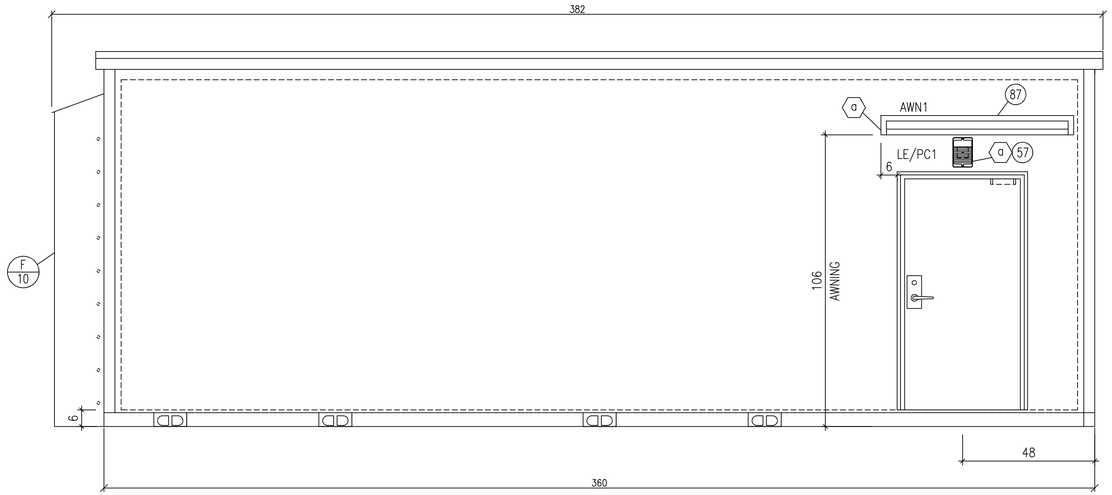
CTHS_AR2_R1



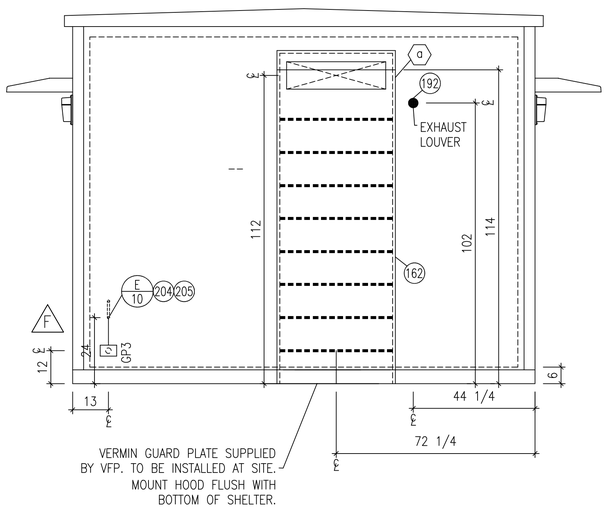
REAR WALL – ELEVATION C



LEFT WALL – ELEVATION D



FRONT WALL – ELEVATION A



RIGHT WALL – ELEVATION B

NOTES

a PRE-INSTALL AND REMOVE FOR SHIPPING. DO NOT CAULK. LABEL COMPONENTS ON BACK SIDE IN PERMANENT MARKER WITH WALL DESIGNATION & DRAWING LABEL (EXAMPLE: A-WALL-FN1)

EXTERIOR ELEVATIONS

TOLERANCES

ALL DIMENSIONS ARE IN INCHES
UNLESS SPECIFIED OTHERWISE

STANDARD:
- FRACTIONS ± 1/2"
- DECIMALS ± 0.5"
- ANGLES ± 3°

IF NOTED WITH SYMBOL:
▲
- FRACTIONS ± 1/4"
- DECIMALS ± 0.25"
- ANGLES ± 1°

IF NOTED WITH SYMBOL:
⬢
- FRACTIONS ± 1"
- DECIMALS ± 1.0"
- ANGLES ± 5°

WARNING

ALL PENETRATIONS, AND (OR) ELECTRICAL DIMENSIONS SHOWN ARE TO BE CONSIDERED FOR REFERENCE ONLY.
THE MEASUREMENTS MAY DIFFER AS A RESULT OF PROPER EQUIPMENT INSTALLATION.
PLEASE CONTACT VFP, INC. ENGINEERING FOR PRECISE LOCATIONS

* ALL PENETRATIONS FOR CIE/CFE EQUIPMENT NEEDED IN THE FIELD WILL BE THE RESPONSIBILITY OF OTHERS.

NO.	REVISIONS
1.-A	PRELIMINARY DESIGN FROM BID PACKAGE RMC 11/20/2025

PRELIMINARY

GREENVILLE UTILITIES
Greenville, North Carolina

TYPICAL SUBSTATION
115 TO 15 kV
CONTROL
ARRANGEMENY No.3

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

CTHS_AR3_R1

SOLID GROUND
NC

REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL SERVICES
BOVIET SOLAR SUBSTATION
MARTIN LUTHER KING JR HIGHWAY
GREENVILLE, PITT COUNTY, NORTH CAROLINA

PREPARED FOR:
BOVIET SOLAR
1125 SUGG PARKWAY
GREENVILLE NORTH CAROLINA 27834

SOLID GROUND NC PROJECT NO. NC25-0130
MAY 29, 2025

Solid Ground Engineering NC, PLLC • 3714 Alliance Drive, Suite 400 • Greensboro, North Carolina 27407
Office: 919-800-9093 • website: www.solidgroundnc.co • NC License No. P-3004

SOLID GROUND
NC

May 29, 2025

Eunice Weng
Program Office, Manager
Boviet Solar
1125 Sugg Parkway
Greenville North Carolina 27834

RE: Report of Subsurface Exploration and Geotechnical Services
Boviet Solar Substation
Martin Luther King Jr Highway
Greenville, Pitt County, North Carolina
Solid Ground Project: NC24-0130

Dear Ms. Weng:

As authorized, Solid Ground Engineering NC, PLLC (Solid Ground NC) has completed the subsurface exploration and geotechnical analysis for the above referenced project.

This report presents the findings of our subsurface exploration and our evaluations, as well as recommendations regarding geotechnical-related design and construction considerations for the site.

Thank you for the opportunity to work with you on this project. Should you have any questions or if we could be of further assistance, please do not hesitate to contact us at 919-800-9093 or aric@solidgroundnc.com.

Sincerely,
Solid Ground Engineering NC, PLLC
NC Firm License No. P3004

Aric V. Geda, P.E.
Principal Engineer

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Solid Ground NC, PLLC (Solid Ground NC) has completed the report of subsurface exploration and geotechnical engineering services for the Boviet Solar Substation to be located along the north side of MLK Jr. Boulevard, west of the existing Boviet Solar facility located at 1125 Sugg Parkway, Greenville, Pitt County, North Carolina. This summary should not be considered apart from the entire text of the report with all the qualifications and conditions mentioned herein.

We understand that the development consists of an electrical substation structure approximately 112,500 SF in size, 115,000 SF storage area, and drive lanes. We have not been provided loading information; however, we anticipate maximum column and wall loads will be on the order of 200 kips and 5 kips per linear foot, respectively. While a grading plan has not been provided for the site, we anticipate fill placement across the site.

Topsoil containing silty organic soil was encountered in each of the borings. Topsoil ranged from approximately 3 to 8 inches in thickness. Root mat in wooded and brush areas likely extend to a significantly deeper depth. Below the topsoil is the natural residual soil which contains an upper layer of medium stiff to stiff sandy clay extending to a depth of three to eight feet below ground surface. The upper clays transition into medium dense clayey sands, followed by clean fine sands which extend to the terminal depths of the borings.

Groundwater was encountered in several borings at varying depths between 2 and 4 feet below ground surface. It is anticipated that dewatering measures such as trenching, ditching, sumping, and pumping may be used to control surface water, however some dewatering may be required for deeper utilities.

Provided the recommendations presented in this report are followed, the proposed structures may be supported on conventional shallow footing foundations and ground-supported floor slab. Based on maximum anticipated column loads of 200 kips and wall loads of 5 kips per lineal foot, a design soil bearing pressure of 2000 PSF can generally be achieved immediately below surfacing materials and any softened clays across the site. This design pressure can also be used for any footings placed on newly placed engineered fill.

Based on results of soil test borings, past experience, and information provided in Section 1615 of the building code, it is our opinion it is our opinion that the subsurface characteristics reflect those of Seismic Site Classification D.

The recommended pavement sections are presented as follows:

Material Designation	Medium Duty Asphalt Pavement	Heavy Duty Asphalt Pavement	Rigid Concrete Pavement
Asphalt Surface Course (SF9.5A)	3.0 inches	1.5 inches	-
Asphalt Intermediate Course (I19.0B)	-	2.5 inches	-
Portland Cement Concrete	-	-	7.0 inches
Aggregate Base Course (NCDOT)	6.0 inches	10.0 inches	6.0 inches

1.0 PROJECT OVERVIEW

1.1 Project Description and Scope of Work

This report presents the results of the subsurface exploration and geotechnical engineering services for the Boviet Solar Substation to be located along the north side of MLK Jr. Boulevard, west of the existing facility located at 1125 Sugg Parkway, Greenville, Pitt County, North Carolina. A site location map is shown as Figure 1 in Appendix A. The explored area is a portion of the approximately 44-acre Blount Parcel and generally appears as undeveloped woodland.

The site was explored by eight (8) soil test borings (Borings B-101 through B-108) and sampling the soils to depths of up to 20 feet below existing site grades. The boring locations were located in the field by Solid Ground NC personnel using GPS and from known site features. The locations shown should be considered approximate given the methods used. A boring location plan is provided as Figure 2 in Appendix A of this report.

This report was prepared based upon the results of the boring and laboratory data. The purpose of this exploration is to describe the soil and groundwater conditions that were encountered in the test borings, to analyze and evaluate the test data obtained, and to submit preliminary recommendations regarding foundations, slabs, pavements, earthwork, construction, and other geotechnical-related considerations of design and construction.

1.2 Proposed Construction

We understand that the development consists of an electrical substation structure approximately 112,500 SF in size, 115,000 SF storage area, and drive lanes. We have not been provided loading information; however, we anticipate maximum column and wall loads will be on the order of 200 kips and 5 kips per linear foot, respectively. While a grading plan has not been provided for the site, we anticipate fill placement across the site.

2.0 FIELD EXPLORATION

2.1 Exploration Procedures

The soil borings were performed with a CME 550 ATV auger drilling rig, which utilized hollow stem augers to advance the boreholes. Drilling fluid was not used to advance the borings.

Representative soil samples were obtained by means of the split-barrel sampling procedure in general accordance with ASTM Specification D-1586. In this procedure, a 2-inch O. D. split-barrel sampler is driven into the soil a distance of 18 inches by a 140-pound hammer with a free fall of 30 inches. The number of blows required to drive the sampler through the final 12-inch interval is termed the Standard Penetration Test (SPT) N-value and is indicated for each sample on the boring logs.

The SPT N-value can be used to provide a qualitative indication of the in-place relative density of cohesionless soils. In a less reliable way, SPT N-values provide an indication of consistency for cohesive soils. These indications of relative density and consistency are qualitative, since many factors can significantly affect the SPT N-value and prevent a direct correlation between drill crews, drill rigs, drilling procedures, and hammer-rod-sampler assemblies.

Field logs of the soils encountered in the borings were maintained by a Solid Ground NC engineer. The soil samples obtained from the drilling operations were sealed and were brought to our laboratory for further examination.

3.0 EXPLORATION RESULTS

3.1 Site Conditions

The parcel is currently primarily woodland. The property is surrounded by undeveloped woodland to the north, with Catalent Pharma Solutions and Boviet Solar facilities to the east. Martin Luther King Jr Highway appears south of the subject property, beyond which is Gregory Pool Lift Systems, Coca-Cola Bottling Co Cons Manufacturer, and undeveloped woodland. The subject property is bound to the west by a power easement, beyond which is Avient Protective Materials LLC manufacturing complex. The site is accessed from Martin Luther King Jr Highway through the power easement west of the site.

3.2 Site 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 the 1985 Geologic Map of North Carolina, the site is mapped within the Yorktown and Duplin Formation, Undivided.

3.3 Subsurface Conditions

The specific soil conditions at each boring location are noted on the individual boring logs. A general description is also provided below. Subsurface conditions may vary between boring locations.

Surface Materials (Topsoil): Topsoil containing clayey organic soil was encountered in each of the borings. Topsoil ranged from approximately 3 to 8 inches in thickness. Root mat in the wooded areas likely extend to a significantly deeper depth.

Fill Soils: No fill soils were encountered at the site.

Natural Soil: Below the topsoil is the natural residual soil which contains an upper layer of medium stiff to stiff sandy clay extending to a depth of three to eight feet below ground surface. The upper clays transition into medium dense clayey sands, followed by clean fine sands which extend to the terminal depths of the borings.

3.4 Groundwater

Groundwater was encountered in each of the borings at varying depths between 2 and 4 feet below ground surface. It is anticipated that dewatering measures such as trenching, ditching, sumping, and pumping may be used to control surface water if construction is performed in the rainy portion of the year.

4.0 ANALYSIS AND RECOMMENDATIONS

The following preliminary design and construction recommendations are based on our above-stated understanding of the proposed construction and on the data obtained from the field exploration and visual soil classification. The following recommendations are for design purposes and may require modification if loads or building locations change.

4.1 Foundations

Provided the recommendations presented in this report are followed, the proposed structures may be supported on conventional shallow footing foundations and ground-supported floor slab.

Based on maximum anticipated column loads of 200 kips and wall loads of 5 kips per lineal foot, a design soil bearing pressure of 2000 PSF can generally be achieved immediately below surfacing materials and any softened clays across the site. This design pressure can also be used for any footings placed on newly placed engineered fill.

In order to provide adequate frost cover protection and embedment for bearing capacity, we recommend that footings be located at minimum depths of 18 inches below finished exterior grades. In order to prevent disproportionately small footing sizes, we recommend that strip footings have a minimum width of 18 inches and that isolated column footings have a minimum lateral dimension of 24 inches. The minimum dimension sizes, as recommended above, are utilized to reduce foundation difficulties as a result of local shear or "punching" action.

A representative of the geotechnical engineer should observe the foundation subgrade to verify that conditions exposed at the subgrade are suitable for the design bearing pressures. If unsuitable materials are encountered, it may be necessary to lower the base of the footing through the unsuitable materials or to undercut the unsuitable soils and to restore original bearing levels by placing engineered fill materials, NCDOT No. 57 or No. 67 stone or lean concrete.

4.2 Settlement

We anticipate that foundations designed according to the above recommendations should experience total settlements of less than 1 inch for footings designed and constructed as previously recommended. In our opinion, this should limit differential settlements between similarly loaded adjacent columns to magnitudes of ½ inch. Sufficient time should be allowed for any newly-placed fill settlements to stabilize prior to beginning foundation construction.

4.3 Floor Slabs

The floor slab subgrade should consist of new engineered fill or approved existing soils and should include a minimum 4-inch-thick layer of washed stone (NCDOT #57). For point loading conditions, the slab may be designed based on a 100 psi/in value for the modulus of subgrade reaction.

We recommend that a capillary cutoff layer be provided under the floor slabs to prevent the rise of water through the slab. The capillary layer should consist, at a minimum, of a 4-inch thick clean, crushed stone or washed gravel layer, having a maximum size of 1.5 inches with a maximum of 2 percent passing the No. 200 sieve. A vapor retarder should be considered beneath concrete slabs on grade that will be covered with wood, tile, carpet or other moisture sensitive or impervious coverings. The slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

4.4 Seismic Conditions

Per Section 1615 of the North Carolina Building Code, the design of a structure must consider dynamic forces resulting from seismic events, regardless of their likelihood of occurrence. As part of a generalized procedure to estimate seismic forces, the code assigns a Seismic Site Classification (letter designation of Class A through F) based on the subgrade soil/rock conditions within the upper 100 feet of the ground surface at the subject site. Based on results of soil test borings, past experience, and information provided in Section 1615, it is our opinion it is our opinion that the subsurface characteristics reflect those of Site Class D.

If the design and construction cost savings associated with an improved Site Class are favorable, it may be prudent to perform Shear Wave Velocity measurements at the site to determine if the more favorable Site Class is available. We would be pleased to further discuss these options with the client and design team, if warranted.

Liquefaction is not expected based on its fines content and the relatively low level of ground motions projected for a seismic event.

4.5 Site Drainage

We recommend the ground surface be sloped away from the foundations and building pad for a minimum distance of at least 10 feet, and that all downspouts be connected to tightline drains that discharge to a suitable location downslope of the foundations. Paved areas should also have positive drainage.

4.6 Groundwater Control

Based on the results of the borings, we anticipate that some dewatering may be necessary during construction of deeper utility lines. For most shallow excavations, we expect groundwater can be controlled through the use of ditches, sumps, and pumps.

If water collects in foundation excavations, it will be necessary to remove the water from the excavation, remove the saturated soils, and re-test the adequacy of the bearing surface to support the design bearing pressure prior to concrete placement. Establishing a system of drainage ditches to carry surface and shallow groundwater away from building sites and roadways should reduce grading costs.

4.7 Excavation Considerations

Most of the upper 15 to 20 feet of on-site soils are OSHA Type C soils for the purpose of temporary excavation support. Excavations should be constructed in compliance with current OSHA standards for excavation and trenching safety. Excavations should be observed by a “competent person”, as defined by OSHA, who should evaluate the specific soil type and other conditions, which may control the excavation side slopes or the need for shoring or bracing.

4.8 Pavement

Pavement subgrades should be prepared as outlined in Sections 5.1 and 5.2 of this report. We were not provided with details regarding traffic conditions at the site. Pavement section alternatives have been provided below. Medium duty pavement sections are recommended for areas that will be subjected to passenger cars and pickup truck traffic. Heavy duty areas are recommended for areas that will experience truck traffic. For our heavy-duty design, we have assumed 500,000 equivalent single axle loads (ESALs) over a 20-year design life.

The recommended pavement sections are presented below:

Material Designation	Medium Duty Asphalt Pavement	Heavy Duty Asphalt Pavement	Rigid Concrete Pavement
Asphalt Surface Course (SF9.5A)	3.0 inches	1.5 inches	-
Asphalt Intermediate Course (I19.0B)	-	2.5 inches	-
Portland Cement Concrete	-	-	7.0 inches
Aggregate Base Course (NCDOT)	6.0 inches	10.0 inches	6.0 inches

The base course materials beneath pavements should be compacted to at least 100 percent of their modified Proctor maximum dry density (ASTM D 1557). The asphalt concrete and the crushed stone materials should conform to the current North Carolina Department of Transportation Standard Specifications. If concrete pavement sections are incorporated into the site design, Rigid sections should consist of 4,000 psi compressive strength concrete or greater.

Regardless of the section and type of construction utilized, saturation of the subgrade materials will result in a softening of the subgrade materials and shortened life span for the pavement. Risk of subgrade softening can be reduced by means of quickly removing surface and subsurface water, resulting in an increased likelihood of improved pavement performance. Therefore, we recommend that both the surface and subsurface materials for the pavement be properly graded to enhance surface and subgrade drainage. In addition, placement of ½-inch diameter holes drilled through catch basins at or slightly above the subgrade elevation will facilitate base course drainage into the catch basin.

Gravel Yards / Fire Lanes

A stable subgrade is a priority to gravel pavement performance. Immediately prior to paving, the subgrade should be proof rolled and any unstable areas that are not firm and unyielding be repaired. A 6” ABC gravel course should be compacted to at least 100% of the maximum dry density, as determined by the Modified Proctor Compaction Test (ASTM D1557). To document that the base course has been uniformly compacted, in-place field density tests should be performed by Solid Ground and the area should be methodically proof rolled under the engineer’s observation.

The performance of gravel pavements will be dependent upon a number of factors, including subgrade conditions at the time of paving, rainwater runoff, and traffic. With the near surface soils onsite consisting of silts, they are susceptible to softening when exposed to moisture and excessive construction traffic. Rainwater runoff should not be allowed to seep below pavements from adjacent areas. Therefore, drainage swales should be designed around the paved area. We recommend that the parking lot be shaped with a minimum of 3% slope to the swales to allow for proper drainage.

5.0 CONSTRUCTION CONSIDERATIONS

5.1 Site Preparation and Clearing

The site should be cleared of topsoil, vegetation, root mat, and other deleterious materials. We recommend that any soft or unsuitable material be removed from the proposed construction area. Areas that are being rough graded and used as staging areas or left for more than a few weeks should be crowned and left 12 inches above the final subgrade elevation to help protect the finished subgrade from disturbance. Leaving the subgrade high may reduce the disturbance and saturation of the subgrade that would normally require undercutting.

Once the site is stripped, cleared and prepared as outlined above, and prior to placing any new fill to raise the grade, the site should be proofrolled using a loaded dump truck, having an axle weight of at least 10 tons, and observed by an experienced geotechnical engineer, or his representative, at the time of construction to aid in identifying any areas with soft or unsuitable materials. Probing may be used at this time to aid in identifying areas of soft or unsuitable material. Any soft or unsuitable materials encountered during this proofrolling should be removed and replaced with an approved backfill compacted to the criteria given in Section 5.2 *Fill Placement and Soil Compaction*.

Grading operations at this site will be more economical if performed during the drier periods of the year (typically April to November). However, during the wetter periods of the year, wet soils probably can be dried by using discing or other drying procedures, such as lime or cement stabilization, to achieve moisture contents necessary to achieve adequate degrees of compaction. The site should be graded to enhance surface water runoff to reduce the ponding of water. Ponding of water often results in softening of the near-surface soils. When rainfall is anticipated during grading operations, we recommend areas of disturbed soil be rolled with a smooth drum roller and that the grading activities cease until the site has had a chance to dry.

5.2 Fill Placement and Soil Compaction

Soils used as fill should be approved materials, free of organics, debris, frozen and foreign material, and generally having a maximum Liquid Limit of 50 and a maximum Plasticity Index of 20. Most of the on-site low plasticity soils (SP and SM) can be used as backfill material for this project provided their moisture contents are within acceptable range outlined in this report. The maximum particle size in the fill should be less than ½ the thickness of the compacted lift.

Any fill or backfill placed in footing, slab, and pavement areas should be compacted to a minimum of 95 percent of the maximum dry density obtained in accordance with ASTM Specification D-698, Standard Proctor Method. However, the upper 18 inches of fill below any structural or pavement areas should be compacted to 98 percent of the maximum dry density. Any fill or backfill placed in utility trench and sidewalk areas should be compacted to a minimum of 95 percent of the maximum dry density obtained in accordance with ASTM Specification D-698, Standard Proctor Method. Fill should be placed in lifts of approximately 8 to 10 inches in loose thickness with fill operations continuing until the subgrade elevations are achieved. To aid in achieving compaction, we recommend that the moisture content of the fill materials at the time of placement be within +/- 3 percentage points of the optimum moisture content established by the above referenced laboratory compaction tests.

Any fill or backfill placed in landscaped areas should be compacted to a minimum of 90 percent of the maximum dry density obtained in accordance with ASTM Specification D-698, Standard Proctor Method.

We recommend that the placement of compacted structural fill and recompaction of the subgrade soils in the construction area be observed by a representative of the geotechnical engineer to determine if proper compaction is being achieved. In-place density tests made in accordance with ASTM Designation D-1556, D-6938, or equivalent should be used to verify compaction. We recommend a minimum of one test per lift for every 5,000 square foot area, or fraction thereof, for the building pad area and every 10,000 square foot area, or fraction thereof, elsewhere. We also recommend at least one test per lift for every 100 linear feet of utility trench backfill, or fraction thereof.

6.0 GENERAL COMMENTS

This report has been prepared in order to aid in the evaluation of this property and to assist the architect and/or engineers in the preliminary design of this project. The scope is limited to the specific project and locations described herein and our description of the project represents our understanding of the significant aspects relative to soil and foundation characteristics. In the event that any changes in the nature or location of the proposed construction outlined in this report are planned, we should be informed so that the changes can be reviewed and the conclusions of this report modified or approved in writing by the geotechnical engineer. It is recommended that all construction operations dealing with earthwork and foundations are reviewed by an experienced geotechnical engineer to provide information as to whether the design requirements are fulfilled in the actual construction. We would welcome the opportunity to provide field construction services for you during construction.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings and tests performed at the locations as indicated on the Boring Location Diagram and other information referenced in this report. This report does not reflect any variations which may occur between the borings. In the performance of the subsurface exploration, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in soil conditions exist on most sites between boring locations and also such situations as groundwater levels vary from time to time. The nature and extent of variations may not become evident until during the course of construction. If site conditions vary from those identified during the subsurface exploration, the recommendations contained in this report may require revision. Once final layouts are established, additional subsurface explorations need to be performed.

APPENDIX A

Figures

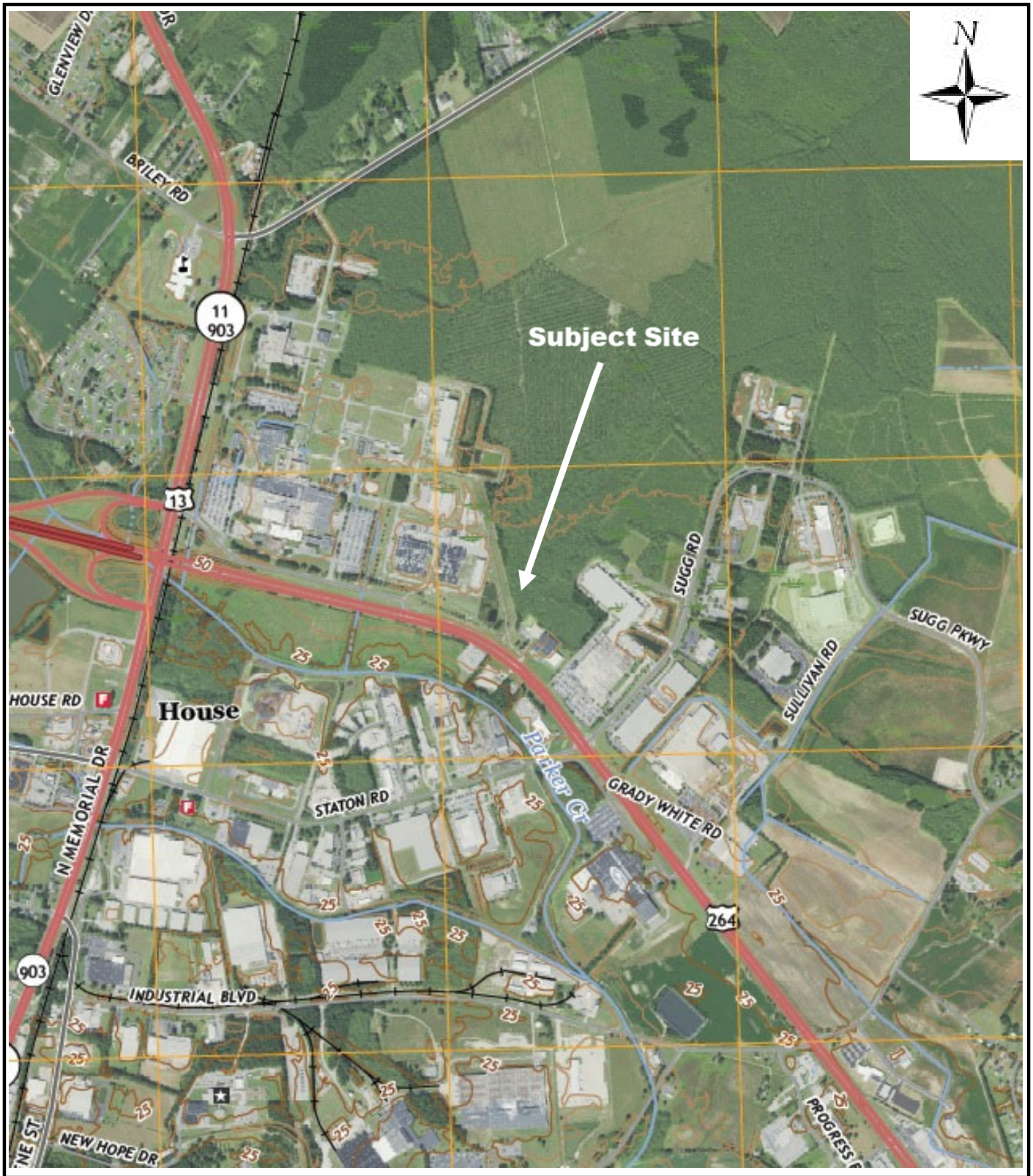


FIGURE 1- SUBJECT PROPERTY LOCATION MAP

Boviet Solar Substation Martin Luther King Jr Highway Greenville, North Carolina	SOLID GROUND NC 3714 Alliance Drive, Suite 400 Greensboro, North Carolina 27407 (919) 800-9093	Project No: NC25-0130 May 2025 Map Source: USGS 2022

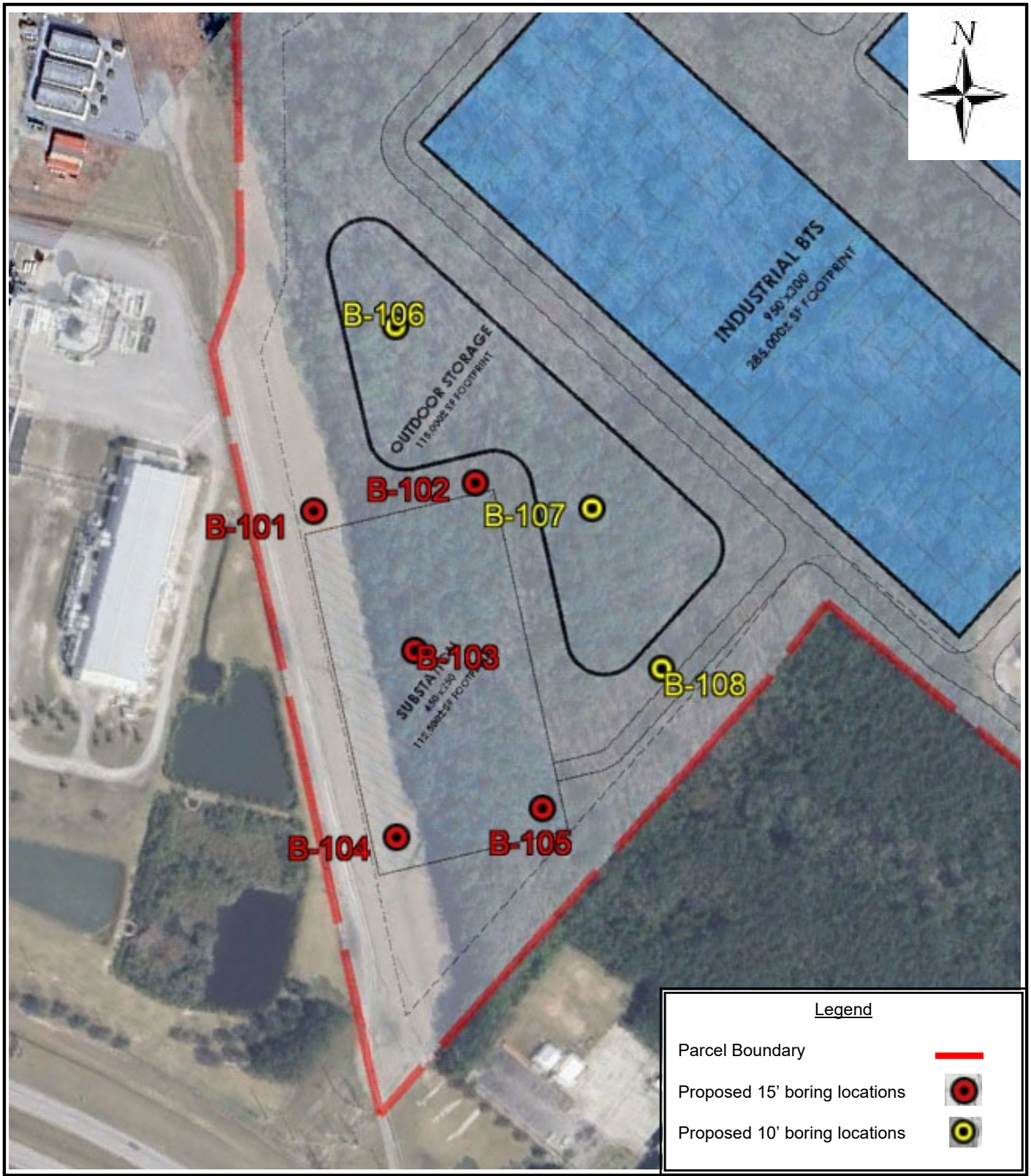


FIGURE 2- BORING LOCATIONS ON CONCEPTUAL PLAN

Boviet Solar Substation
Martin Luther King Jr Highway
Greenville, North Carolina

SOLID GROUND NC
3714 Alliance Drive, Suite 400
Greensboro, North Carolina 27407
(919) 800-9093

Project No: NC25-0130

May 2025
Map Source: ARCO

APPENDIX B

Boring Logs

Project:	Project Number:	Client:	Boring No.
Boviet Solar Substation	**NC25-0130**	**Boviet Solar**	**B-101**
Address, City, State		Drilling Contractor:	Drill Rig Type:
MLK JR HWY		**J&L**	**CME 550**
Logged By:	Date — Started:	Bit Type:	Diameter:
Geda	**5/23/25**	**HS**	**2-1/4"**
Drill Crew:	Date — Completed:	Hammer Type:	
Casey	**5/23/25**	**Safety**	
Ticket Number:	Date — Backfilled:	Hammer Weight:	Hammer Drop:
	Cuttings	**140#**	**30"**

Surface Elev.	GW Depth	GW Elevation	Total Depth of Boring:
33.0	**3.8**	**29.2**	**20 feet**

Depth (feet)	Sample Type	Sample Number	N-value (blows/foot)	Graphic Log	Lithology	Groundwater	Moisture Content (%)	Unconfined Compression (tsf)
					Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors **Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.			
					3" Clayey Topsoil			
2	SS	1	7		Sandy CLAY, tan-gray, moist, medium stiff (CL)			
4	SS	2	6			▼		
6	SS	3	11		Clayey fine SAND, tan-gray, wet, loose (SC)			
8	SS	4	12		Sandy CLAY, gray, moist, stiff (CL)			
10								
12								
14	SS	5	12					
16					Fine SAND, gray, wet, medium dense (SP)			
18								
20	SS	6	15		End of Boring-20'			
22								
24								

Modulus, PLLC

Boring Log: Sheet 1 of 1

SS- Standard Penetration Slit Spoon Sampler (SPT)

WR- Weathered Rock

California Sampler

▼ Stabllized Ground water

Shelby Tube

▽ Groundwater At time of Drilling

CPP Sampler

Bulk/ Bag Sample

Project:	Project Number:	Client:	Boring No.
Boviet Solar Substation	**NC25-0130**	**Boviet Solar**	**B-102**
Address, City, State		Drilling Contractor:	Drill Rig Type:
MLK JR HWY		**J&L**	**CME 550**
Logged By:	Date — Started:	Bit Type:	Diameter:
Geda	**5/23/25**	**HS**	**2-1/4"**
Drill Crew:	Date — Completed:	Hammer Type:	
Casey	**5/23/25**	**Safety**	
Ticket Number:	Backfilled:	Hammer Weight:	Hammer Drop:
	Cuttings	**140#**	**30"**

Surface Elev.	GW Depth	GW Elevation	Total Depth of Boring:
33.0	**3.5**	**29.5**	**20 feet**

Depth (feet)	Sample Type	Sample Number	N-value (blows/foot)	Graphic Log	Lithology	Groundwater	Moisture Content (%)	Unconfined Compression (tsf)
					Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors **Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.			
					4" Clayey Topsoil			
2	SS	1	9		Sandy CLAY, brown-gray, moist, stiff (CL)			
4	SS	2	10		Clayey fine SAND, brown-gray, wet, medium dense (SC)	▼		
6	SS	3	13					
8	SS	4	15					
10								
12								
14	SS	5	8		Fine SAND, gray, wet, loose (SP)			
16								
18								
20	SS	6	5					
					End of Boring-20'			
22								
24								

Modulus, PLLC

Boring Log: Sheet 1 of 1

SS- Standard Penetration Slit Spoon Sampler (SPT)

California Sampler

Shelby Tube

CPP Sampler

Bulk/ Bag Sample

WR- Weathered Rock

▼ Stabllized Ground water

▽ Groundwater At time of Drilling

Project:	Project Number:	Client:	Boring No.
Boviet Solar Substation	**NC25-0130**	**Boviet Solar**	**B-103**
Address, City, State		Drilling Contractor:	Drill Rig Type:
MLK JR HWY		**J&L**	**CME 550**
Logged By:	Date — Started:	Bit Type:	Diameter:
Geda	**5/23/25**	**HS**	**2-1/4"**
Drill Crew:	Date — Completed:	Hammer Type:	
Casey	**5/23/25**	**Safety**	
Ticket Number:	Backfilled:	Hammer Weight:	Hammer Drop:
	Cuttings	**140#**	**30"**

Surface Elev.	GW Depth	GW Elevation	Total Depth of Boring:
32.0	**3.2**	**28.8**	**20 feet**

Depth (feet)	Sample Type	Sample Number	N-value (blows/foot)	Graphic Log	Lithology	Groundwater	Moisture Content (%)	Unconfined Compression (tsf)
0					3" Clayey Topsoil			
2	SS	1	6		Sandy CLAY, tan-gray, moist, medium stiff (CL)	▼		
4	SS	2	6					
6	SS	3	8					
8					Clayey fine SAND, tan-gray, wet, loose (SC)			
10	SS	4	5					
12								
14	SS	5	5					
16					Fine SAND, gray, wet, loose (SP)			
18								
20	SS	6	5		End of Boring-20'			
22								
24								

Lithology

Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors

Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Modulus, PLLC

Boring Log: Sheet 1 of 1

SS- Standard Penetration Slit Spoon Sampler (SPT)

WR- Weathered Rock

California Sampler

▼ Stabllized Ground water

Shelby Tube

▽ Groundwater At time of Drilling

CPP Sampler

Bulk/ Bag Sample

Project:	Project Number:	Client:	Boring No.
Boviet Solar Substation	**NC25-0130**	**Boviet Solar**	**B-104**
Address, City, State		Drilling Contractor:	Drill Rig Type:
MLK JR HWY		**J&L**	**CME 550**
Logged By:	Date — Started:	Bit Type:	Diameter:
Geda	**5/23/25**	**HS**	**2-1/4"**
Drill Crew:	Date — Completed:	Hammer Type:	
Casey	**5/23/25**	**Safety**	
Ticket Number:	Date — Backfilled:	Hammer Weight:	Hammer Drop:
	Cuttings	**140#**	**30"**
	Surface Elev. / GW Depth	GW Elevation	Total Depth of Boring:
	31.0 / **2.3**	**28.7**	**20 feet**

Depth (feet)	Sample Type	Sample Number	N-value (blows/foot)	Graphic Log	Lithology	Groundwater	Moisture Content (%)	Unconfined Compression (tsf)
					Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors **Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.			
2	SS	1	6		4" Clayey Topsoil Sandy CLAY, tan-gray, moist, medium stiff (CL)	▼		
4	SS	2	6					
6	SS	3	14		Clayey fine SAND, tan-gray, wet, medium dense (SC)			
8								
10	SS	4	20		Sandy CLAY, gray, moist, very stiff (CL)			
12					Fine SAND, gray, wet, medium dense (SP)			
14	SS	5	25					
16								
18								
20	SS	6	18					
					End of Boring-20'			
22								
24								

Modulus, PLLC

Boring Log: Sheet 1 of 1

SS- Standard Penetration Slit Spoon Sampler (SPT)

California Sampler

Shelby Tube

CPP Sampler

Bulk/ Bag Sample

WR- Weathered Rock

▼ Stabllized Ground water

▽ Groundwater At time of Drilling

Project:	Project Number:	Client:	Boring No.
Boviet Solar Substation	**NC25-0130**	**Boviet Solar**	**B-105**
Address, City, State		Drilling Contractor:	Drill Rig Type:
MLK JR HWY		**J&L**	**CME 550**
Logged By:	Date — Started:	Bit Type:	Diameter:
Geda	**5/23/25**	**HS**	**2-1/4"**
Drill Crew:	Date — Completed:	Hammer Type:	
Casey	**5/23/25**	**Safety**	
Ticket Number:	Date — Backfilled:	Hammer Weight:	Hammer Drop:
	Cuttings	**140#**	**30"**
	Surface Elev. / GW Depth	GW Elevation	Total Depth of Boring:
	31.0 / **2.5**	**28.5**	**20 feet**

Depth (feet)	Sample Type	Sample Number	N-value (blows/foot)	Graphic Log	Lithology	Groundwater	Moisture Content (%)	Unconfined Compression (tsf)
					3" Clayey Topsoil			
2	SS	1	6		Sandy CLAY, tan-gray, moist, medium stiff (CL)	▼		
4	SS	2	7					
6	SS	3	5					
8					Clayey fine SAND, tan-gray, wet, medium dense (SC)			
10	SS	4	10					
12								
14	SS	5	16					
16					Fine SAND, gray, wet, medium dense (SP)			
18								
20	SS	6	19		End of Boring-20'			
22								
24								

Lithology

Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors

Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Modulus, PLLC

Boring Log: Sheet 1 of 1

SS- Standard Penetration Slit Spoon Sampler (SPT)

California Sampler

Shelby Tube

CPP Sampler

Bulk/ Bag Sample

WR- Weathered Rock

▼ Stabllized Ground water

▽ Groundwater At time of Drilling

Project:	Project Number:	Client:	Boring No.
Boviet Solar Substation	**NC25-0130**	**Boviet Solar**	**B-106**
Address, City, State		Drilling Contractor:	Drill Rig Type:
MLK JR HWY		**J&L**	**CME 550**
Logged By:	Date — Started:	Bit Type:	Diameter:
Geda	**5/23/25**	**HS**	**2-1/4"**
Drill Crew:	Completed:	Hammer Type:	
Casey	**5/23/25**	**Safety**	
Ticket Number:	Backfilled:	Hammer Weight:	Hammer Drop:
	Cuttings	**140#**	**30"**
	Surface Elev. / GW Depth	GW Elevation	Total Depth of Boring:
	34.0 / **3.9**	**30.1**	**10 feet**

Depth (feet)	Sample Type	Sample Number	N-value (blows/foot)	Graphic Log	Lithology	Groundwater	Moisture Content (%)	Unconfined Compression (tsf)
					8" Clayey Topsoil			
2	SS	1	4		Sandy CLAY, gray, moist, medium stiff (CL)			
4	SS	2	11		Clayey fine SAND, gray, wet, medium dense (SC)	▼		
6	SS	3	26					
8								
10	SS	4	12		End of Boring-10'			
12								
14								
16								
18								
20								
22								
24								

Lithology

Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors

Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Modulus, PLLC

Boring Log: Sheet 1 of 1

SS- Standard Penetration Slit Spoon Sampler (SPT)

California Sampler

Shelby Tube

CPP Sampler

Bulk/ Bag Sample

WR- Weathered Rock

▼ Stabllized Ground water

▽ Groundwater At time of Drilling

Project:	Project Number:	Client:	Boring No.
Boviet Solar Substation	**NC25-0130**	**Boviet Solar**	**B-107**
Address, City, State		Drilling Contractor:	Drill Rig Type:
MLK JR HWY		**J&L**	**CME 550**
Logged By:	Date — Started:	Bit Type:	Diameter:
Geda	**5/23/25**	**HS**	**2-1/4"**
Drill Crew:	Date — Completed:	Hammer Type:	
Casey	**5/23/25**	**Safety**	
Ticket Number:	Backfilled:	Hammer Weight:	Hammer Drop:
	Cuttings	**140#**	**30"**
	Surface Elev. / GW Depth	GW Elevation	Total Depth of Boring:
	33.0 / **3.9**	**29.1**	**10 feet**

Depth (feet)	Sample Type	Sample Number	N-value (blows/foot)	Graphic Log	Lithology	Groundwater	Moisture Content (%)	Unconfined Compression (tsf)
					Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors **Rock Description:** modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.			
					4" Clayey Topsoil			
2	SS	1	8		Sandy CLAY, gray, moist, stiff (CL)			
4	SS	2	21		Clayey fine SAND, gray, wet, medium dense (SC)	▼		
6	SS	3	22					
8	SS	4	15					
10					End of Boring-10'			
12								
14								
16								
18								
20								
22								
24								

Modulus, PLLC

Boring Log: Sheet 1 of 1

SS- Standard Penetration Slit Spoon Sampler (SPT)

California Sampler

Shelby Tube

CPP Sampler

Bulk/ Bag Sample

WR- Weathered Rock

▼ Stabllized Ground water

▽ Groundwater At time of Drilling

Project:	Project Number:	Client:	Boring No.
Boviet Solar Substation	**NC25-0130**	**Boviet Solar**	**B-108**
Address, City, State		Drilling Contractor:	Drill Rig Type:
MLK JR HWY		**J&L**	**CME 550**
Logged By:	Date — Started:	Bit Type:	Diameter:
Geda	**5/23/25**	**HS**	**2-1/4"**
Drill Crew:	Date — Completed:	Hammer Type:	
Casey	**5/23/25**	**Safety**	
Ticket Number:	Backfilled:	Hammer Weight:	Hammer Drop:
	Cuttings	**140#**	**30"**
	Surface Elev. / GW Depth	GW Elevation	Total Depth of Boring:
	32.0 / **3.2**	**28.8**	**10 feet**

Depth (feet)	Sample Type	Sample Number	N-value (blows/foot)	Graphic Log	Lithology	Groundwater	Moisture Content (%)	Unconfined Compression (tsf)
					7" Clayey Topsoil			
2	SS	1	10		Sandy CLAY, tan-gray, moist, stiff to medium stiff (CL)	▼		
4	SS	2	7					
6	SS	3	6					
8					Clayey fine SAND, tan-gray, wet, loose (SC)			
10	SS	4	6		End of Boring-10'			
12								
14								
16								
18								
20								
22								
24								

Lithology

Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors

Rock Description: modifierm color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Modulus, PLLC

Boring Log: Sheet 1 of 1

SS- Standard Penetration Slit Spoon Sampler (SPT)

California Sampler

Shelby Tube

CPP Sampler

Bulk/ Bag Sample

WR- Weathered Rock

▼ Stabllized Ground water

▽ Groundwater At time of Drilling

APPENDIX C

GENERAL CONDITIONS

The analysis, conclusions, and recommendations submitted in this report are based on the exploration previously outlined and the data collected at the points shown on the attached location plan. This report does not reflect specific variations that may occur between test locations. The borings were located where site conditions permitted and where it is believed representative conditions occur, but the full nature and extent of variations between borings and of subsurface conditions not encountered by any boring may not become evident until the course of construction. If variations become evident at any time before or during the course of construction, it will be necessary to make a re-evaluation of the conclusions and recommendations of this report and further exploration, observation, and/or testing may be required.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and makes no other warranties, either express or implied, as to the professional advice under the terms of our agreement and included in this report. The recommendations contained herein are made with the understanding that the contract documents between the owner and foundation or earthwork contractor or between the owner and the general contractor and the caisson, foundation, excavating and earthwork subcontractors, if any, shall require that the contractor certify that all work in connection with foundations, piles, caissons, compacted fills and other elements of the foundation or other support components are in place at the locations, with proper dimensions and plumb, as shown on the plans and specifications for the project.

Further, it is understood the contract documents will specify that the contractor will, upon becoming aware of apparent or latent subsurface conditions differing from those disclosed by the original soil exploration work, promptly notify the owner, both verbally to permit immediate verification of the change, and in writing, as to the nature and extent of the differing conditions and that no claim by the contractor for any conditions differing from those anticipated in the plans and specifications and disclosed by the soil explorations will be allowed under the contract unless the contractor has so notified the owner both verbally and in writing, as required above, of such changed conditions. The owner will, in turn, promptly notify this firm of the existence of such unanticipated conditions and will authorize such further exploration as may be required to properly evaluate these conditions.

Further, it is understood that any specific recommendations made in this report as to on-site construction review by this firm will be authorized and funds and facilities for such review will be provided at the times recommended if we are to be held responsible for the design recommendations.

APPENDIX D

PROCEDURES REGARDING FIELD LOGS, LABORATORY DATA SHEETS, AND SAMPLES

In the process of obtaining and testing samples and preparing this report, procedures are followed that represent reasonable and accepted practice in the field of soil and foundation engineering.

Specifically, field logs are prepared during performance of the drilling and sampling operations which are intended to portray essentially field occurrences, sampling locations, and other information.

Samples obtained in the field are frequently subjected to additional testing and reclassification in the laboratory by more experienced soil engineers, and differences between the field logs and the final logs exist.

The engineer preparing the report reviews the field and laboratory logs, classifications and test data, and his judgment in interpreting this data, may make further changes.

Samples are taken in the field, some of which are later subjected to laboratory tests, are retained in our laboratory for sixty days and are then discarded unless special disposition is requested by our client. Samples retained over a long period of time, even if sealed in jars, are subject to moisture loss which changes the apparent strength of cohesive soil generally increasing the strength from what was originally encountered in the field. Since they are then no longer representative of the moisture conditions initially encountered, an inspection of these samples should recognize this factor.