

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**SPECIFICATIONS AND BID DOCUMENTS FOR
CONTROL SWITCHBOARDS FOR
GREENVILLE SOUTH 230KV POD NO. 3**

ISSUED FOR BIDS



4/13/16

**Booth & Associates, LLC
Consulting Engineers
5811 Glenwood Avenue, Suite 109
Raleigh, North Carolina 27612
Firm License No. F-0221**

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**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

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NOTICE TO PROSPECTIVE BIDDERS

Sealed Proposals for the furnishing and delivery of all materials and equipment (except materials and equipment specified to be furnished by the Owner) complete and conforming to the bid documents for Control Switchboards for Greenville South 230kV POD No. 3, as set forth in the Bid Schedules, will be received by Greenville Utilities Commission of Greenville, North Carolina (hereinafter referred to as the Owner) at the offices of the Buyer II, Greenville Utilities commission, 401 S. Greene Street, Greenville, North Carolina 27834, on or before **2:00 PM, local time, Wednesday, May 4, 2016**, at which time the Proposals will be opened and read. Any Proposal received subsequent to that time will be promptly returned to the Bidder unopened. Bids submitted in a fax or e-mail in response to this Invitation for Bids will not be acceptable. All questions concerning this bid must be received by Wednesday, April 27, 2016.

Instructions for submitting bids and complete specifications will be available in the Office of the Buyer II, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina during regular office hours, which are 8:30 AM – 5:00 PM Monday through Friday. Greenville Utilities Commission reserves the right to reject any or all bids.

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.**

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 BUYER II, GREENVILLE UTILITIES COMMISSION, 401 S. GREENE STREET, GREENVILLE, NORTH CAROLINA 27834.

Bids will be opened promptly and read at the hour and on the date set forth in the advertisement in the Office of the Buyer II, Greenville Utilities Main Office, 401 S. Greene Street, Greenville, North Carolina 27834. Bidders or their authorized agents are invited to be present.

Prior to the submission of the Proposal, the Bidder shall make and shall be deemed to have made a careful examination of the bid documents on file with the Owner and with the Engineer and of all other matters that may affect the cost and the time of the work.

The name and address of the Bidder, its license number (if a license is required by the State), and the following description must appear on the envelope in with the Proposal is submitted **"BID FOR THE CONTROL SWITCHBOARDS FOR GREENVILLE SOUTH 230KV POD NO. 3 NOT TO BE OPENED UNTIL 2:00 PM, WEDNESDAY, MAY 4, 2016"**.

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

The Owner reserves the rights to (1) waive minor irregularities or minor errors in any Proposal if it appears to the Owner that such irregularities or errors were made through inadvertence. Any such irregularities or errors so waived must be corrected on the Proposal prior to its acceptance by the Owner; (2) reject any or all Proposals and to hold any or all Proposals for a period of sixty (60) days from the date of opening thereof; (3) accept the bid, in its opinion, that represents the lowest responsible, responsive bid from the standpoint of quality, performance, delivery and price; and (4) award Purchase Order(s) to Bidder(s) for any Schedule(s) individually or collectively from the Bid Schedules.

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

By: Anthony C. Cannon Date: _____
General Manager / CEO

DEFINITIONS

Whenever the following terms or pronoun in place of them are used in these "Instructions to Bidders", "Form of Proposal", "Technical Specifications", "Contract", bond, etc., the intent and meaning shall be interpreted as follows:

Owner	Greenville Utilities Commission Greenville, North Carolina
General Manager / CEO	Anthony C. Cannon
Consulting Engineer	Booth & Associates, LLC
Observer	An authorized representative of the Owner assigned to make any or all necessary observations of work performed and equipment and/or apparatus furnished by the Bidder
Bidder	Any individual, firm, or corporation submitting a Proposal for the work contemplated, acting directly or through a duly authorized representative; or party of the second part of the Contract, acting directly or through a duly authorized representative
Subcontractor	An individual, firm, or corporation who contracts with the Bidder to perform part of the latter's Contract
Surety	The body, corporate or individual, approved by the Owner, which is bound with and for the Bidder who is primarily liable and which engages to be responsible for his acceptable performance of the work for which he has contracted
Form of Proposal, Proposal	The approved, prepared form on which the Bidder is to submit or has submitted his Proposal for the work contemplated
Bid Security	To all bids there shall be attached cash, cashier's check, or certified check from the Bidder upon a bank or trust company insured by the Federal Deposit Insurance Corporation or the Savings Associates Insurance Fund, or in lieu thereof, a Bid Bond
Plans, Drawings	All Drawings or reproductions of Drawings pertaining to the construction under the Contract
Technical Specifications	The directions, provisions, and requirements contained herein pertaining to the method and manner of performing the work or to the quantities and qualities of materials to be furnished under the Contract
Purchase Order	The agreement covering the furnishing of equipment and/or apparatus and the performance of the work. The Purchase Order shall include the "Instructions to Bidders", "General Conditions", "Form of Proposal", "Plans", "Technical Specifications", and Acknowledgments

Contract	The agreement covering the furnishing of equipment and/or apparatus and the performance of the work. The Contract shall include the "Instructions to Bidders", "General Conditions", "Form of Proposal", "Plans", "Technical Specifications", and Acknowledgments
Performance Bond (Not Required)	The approved form of security to be approved by the Owner furnished by the Bidder and his Surety as a guarantee of good faith on the part of the Bidder to accept the work in accordance with the terms of the Specifications and Contract
Payment Bond (Not Required)	The approved form of security to be approved by the Owner furnished by the Bidder and his Surety as a guarantee for payment of all Subcontractors on the part of the Bidder in acceptance of the work in accordance with the terms of the Specifications and Contract
Work	The performance of the project covered by the Specifications or the furnishing of labor, machinery, equipment, tools, or any other article or item being purchased by the Owner
Emergency	A temporary unforeseen occurrence or combination of circumstances which endangers life and property and calls for immediate action or remedy
Work at Site of Project	Work to be performed, including work normally done on the location of the project
Bid Documents	Include all sections of the Request for Bids, Form of Proposal, Technical Specifications and Appendices, Addendum/Clarifications/Bulletins, and Drawings

The subheadings in these Specifications are intended for convenience or reference only and shall not be considered as having any bearing on the interpretations thereof.

INSTRUCTIONS TO BIDDERS

1.0 Bidder Qualification

- 1.1 Bids will be accepted only from Bidders deemed by the Owner or the Engineer to be qualified to provide the materials, equipment, and services described by these Specifications. The experience of Bidders in providing the same or similar materials, equipment, and services will be a major factor in determining qualification. The Bidder shall include information to establish qualifications.
- 1.2 Prospective Bidders who wish to submit a bid, but are not presently qualified, may receive consideration by submitting a completed Bidder's Qualification Form, which requires product line and user list, to the Engineer at least ten (10) days prior to the specified bid opening date and time. The Bidder's Qualification Form may be obtained from the Engineer.

2.0 Proposals

- 2.1 To warrant consideration, Proposals must comply with these instructions. Strict adherence to these specifications and drawings is requested to facilitate review and consideration of the proposal.
- 2.2 Bids not received on Booth & Associates, LLC *Form of Proposal* contained herein will be considered unresponsive. The forms shall be filled out complete; any omissions may cause the entire Proposal to be rejected.
- 2.3 Proposals must be made on the *Form of Proposal* provided herein and must not be altered, erased, or interlined in any manner. The Bidder shall fill in the *Form of Proposal* as detailed in the Terms and Conditions. The Bidder may retain one (1) copy, but the original, fully executed, must be inserted in or attached to the Bid Documents. Also, one (1) additional copy of all executed forms and supporting information shall be supplied.
- 2.4 The Bidder shall furnish certain information, as required by the Bid Documents regarding the equipment on which he is bidding. Two (2) copies of the information, together with the manufacturer's literature setting forth the guarantees and describing the equipment on which he is bidding shall be included as part of the Proposal. If one manufacturer is bidding through two or more agents or representatives, descriptive literature, guarantees, etc., may be submitted in duplicate in one sealed envelope, which will be considered and treated as though it contained a sealed bid. This envelope shall contain a list of the names of Bidders to whom the information applies. Each sealed Bid Proposal without this information shall state the name of the manufacturer who is furnishing the information. Additional sets of the Specifications may be obtained upon a payment of Fifty Dollars (\$50) non-refundable deposit by approved Bidders.
- 2.5 Bids may be modified by the Bidder's removal of his original and the submittal of a completely revised bid package in full compliance with the Bid Documents if received prior to the time of opening bids and if included in the public reading of such bids. No oral or telephonic Proposals will be considered.
- 2.6 Proposals shall include a Form of Exceptions utilizing forms provided which shall itemize each and every exception from the Bid Documents. The Form of Exceptions shall state the section, subsection, and paragraph designations from the part of the Specifications to which exception is taken and explain in detail the nature of the exception. A copy of this Form of Exceptions is included in the *Form of Proposal*. Exceptions will not necessarily eliminate a Bidder from consideration, even if bids without exceptions are received from others. The treatment of exceptions will be based entirely on the overall best interests of the Owner.
- 2.7 Should the Bidder find discrepancies in the documents or fail to understand their meaning, he shall immediately notify the Engineer, who will send written instructions to all Bidders. Neither the Owner nor the Engineer will be responsible for any oral instructions.

- 2.8 The Bidder shall be the manufacturer of the equipment, or the Bidder shall submit with the *Form of Proposal* a notarized statement that the Bidder is authorized by the manufacturer to tender the Proposal as submitted and that the manufacturer will guarantee the suitability and adequacy of the equipment proposed, and will be bound by the Specifications, as though the manufacturer had submitted the Proposal.
- 2.9 In the event that the Bidder proposes any change or deviation from the Engineer's Plans and Specifications, such Proposal changes or deviations must be submitted at the time bids are opened. The Owner reserves the right to reject any such proposed changes or deviations. All exceptions must be stated on the Form of Exceptions. Failure to submit a Form of Exceptions will imply strict adherence to the Plans and Specifications.
- 2.10 No Bid Proposal may be withdrawn after the scheduled closing time for the receipt of bids for a period of sixty (60) days pending the purchase order by the successful Bidder. Should the successful Bidder default and not accept a purchase order, then the purchase order may be offered to the next lowest responsible, responsive Bidder whose Proposal is evaluated as acceptable
- 2.11 Prior to submission of the Proposal, the Bidder shall make and shall be deemed to have made a careful examination of the Plans and Specifications on file with the Owner and with the Engineer and all other matters that may affect the cost and the time of completion of the work.
- 2.12 The Purchase Order, when accepted, shall be deemed to include the Specifications for the equipment, and the Bidder shall not claim any modification thereof resulting from any representative or promise made at any time by an officer, agent, or employee of the Owner or by any other person.
- 2.13 Firm quotations should be based upon placement of an order within sixty (60) days from bid date.
- 2.14 The Owner reserves the right to accept any schedule, combination of schedules, or any portion of a schedule.

3.0 Bid Security

- 3.1 Each Proposal shall be accompanied by a cash deposit, cashier's check, or certified check drawn on a bank or trust company insured by the Federal Deposit Insurance Corporation or Savings Association Insurance Fund, or a Bid Bond in an amount not less than five percent (5%) of the Proposal. The Owner will retain said deposit as liquidated damages in the event of failure of the Successful Bidder to execute the Purchase Order within ten (10) days after the award.
- 3.2 Bid Bond shall be conditioned that the Surety will, upon demand, forthwith make payment to the Obligee upon said Bond if the Bidder fails to accept a purchase order in accordance with the Bid Bond, and that upon failure to forthwith make payment, the Surety shall pay to the Obligee an amount equal to double the amount of said Bond.
- 3.3 Only one (1) Bid Bond is required, the amount of which shall be based on the total amount of the bid. The value for the Bid Bond shall be based on the Bid Schedule of maximum total amount.

4.0 Performance Bond/Payment Bond

A Performance Bond/Payment Bond is not required for this project.

5.0 Bulletins and Addenda

Any bulletins or addenda to the Specifications issued during the time of bidding are to be considered covered in the Proposal, and in accepting a purchase order, they will become a part thereof. Receipt of addenda shall be acknowledged by the Bidder on the *Form of Proposal*.

6.0 Shipment and Delivery

- 6.1 The Control Switchboards shall be shipped FOB, point of delivery, to the site with unloading by the Owner. See the vicinity maps located in the appendices for site locations.
- 6.2 Units are to be shipped utilizing an open-top truck to facilitate unloading with a crane or fork truck. Units are to be shipped direct from the manufacturing site, with no intermediate transfers. Shipping with the manufacturer's own trucks is preferred.
- 6.3 Method of packing and loading shall be such as to protect all parts from dampness, corrosion, breakage, or vibration injury that might reasonably be encountered in transportation, storage and handling.
- 6.4 A Delivery Schedule is provided as part of the Proposal on which the Bidder shall indicate the delivery schedule for his materials and equipment. Strict adherence to the quoted delivery schedule is expected. Special attention should be given to the stipulations for delivery outlined in the General Conditions. Furthermore, the Bidder shall match his scheduled deliveries to the schedule preferred by the Owner, if noted in the *Form of Proposal*.
- 6.5 Release for shipment is to be granted by the Owner or the Engineer based upon the manufacturer's compliance with the following:
 - 6.5.1 Furnishing of the requisite number of copies of the Final Drawings as called for in the Specifications.
 - 6.5.2 Coordination of manufacturing and delivery with Owner's construction schedule as may be noted in these Specifications.
 - 6.5.3 Thirty (30) days notification of tentative shipping schedule and forty-eight (48) hours notification prior to all deliveries.
- 6.6 Delivery of all items of equipment shall be made at such time as to permit unloading between the hours of 9:00 a.m. and 3:00 p.m., Monday through Thursday, holidays excluded. The Owner will furnish escort to the substation site. Ultimate delivery shall be at the discretion of the Owner.
- 6.7 In the event that delays occur, the Bidder shall be responsible for all shipping demurrage unless such delays are caused solely by the Owner.
- 6.8 Owner will be responsible for unloading equipment upon arrival.

7.0 Purchase Order

- 7.1 The issue of a purchase order will be made to the lowest responsible, responsive Bidder as soon as practical, provided that in the selection of materials and equipment a purchase order may be awarded to a responsible Bidder other than the lowest in the interest of standardization, or ultimate economy if the advantage of such standardization or ultimate economy is clearly evident. The Owner reserves the right to reject any and all bids.
- 7.2 The Owner reserves the right to waive minor irregularities or minor errors in any Proposal if it appears to the Owner that such irregularities or errors were made through inadvertence. The Bidder must correct any such irregularities or errors so waived on the Proposal prior to its acceptance.
- 7.3 In estimating the lowest cost to the Owner as one of the factors in deciding the Award of the purchase order, the Owner will consider, in addition to the prices quoted in the Proposal, the following:
 - a. Equipment delivery (days),
 - b. Adherence to the Plans and *Technical Specifications*,
 - c. Evaluation of equipment suitability to the system as noted and submitted by the Bidder,

- d. The Bidder's intended method of shipment of the materials and equipment, and
- e. Firm prices.

8.0 Drawings and Documentation

8.1 Approval Drawings

Receipt of Approval Drawings by the Bidder constitutes authorization for manufacture predicated upon the Drawings and corrections found thereon. After the return of Approval Drawings, release for shipment is to be granted by either the Owner or its Engineer.

8.2 Drawings

8.2.1 Drawings to be produced by the manufacturer are anticipated to be point- to-point type wiring diagrams for each Control Switchboard based on panel fabrication drawings, panel layout drawings, and control schematics furnished to the manufacturer by the Owner's engineer, Booth & Associates, LLC.

8.2.2 All Drawings submitted shall be submitted electronically compatible with AutoCad 2010. If paper copies are used for approval drawings, they shall be a minimum of a "D" (24" x 36") size print. Submittal of Drawings smaller than "D" size will be immediately returned stamped "not approved" and proper size Drawings will have to be submitted. All dimensions shall be stated in inches or feet and inches.

8.2.3 All drawings shall include three (3) copies of each control wiring diagram.

8.2.4 Approval of Drawings shall not be held to relieve the manufacturer of obligations to meet all requirements to the Specifications, of responsibility for correctness of the Drawings, or of responsibility to meet original shipping promise on the basis of Owner being allowed two (2) weeks for approval.

8.2.5 The Owner may require a second submittal of Approval Drawings if, in the opinion of the Owner, such is required due to the extent of changes required on the first submittal. If an extension of time is required due to a protracted drawing approval process, the price will remain as quoted for the quoted delivery.

8.2.6 Receipt of Approval Drawings by the Bidder constitutes authorization for manufacture only, based upon the corrections found thereon.

8.2.7 Approval Drawings shall be submitted directly to Booth & Associates, LLC, 5811 Glenwood Avenue, Suite 109, Raleigh, NC 27612, Attention: Michael L. Clements, PE or electronically to clementsml@booth-assoc.com.

8.3 Final Drawings

8.3.1 Contingent upon Approval Drawing review and product manufacture, the Bidder shall issue final documentation for the materials as follows:

- a. One (1) complete set of all Drawings, revised to "as-built" status, released on paper media.
- b. Two (2) separate CD-ROMs each containing of all Drawings, revised to "as-built" status and compatible with AutoCad®, Release 2010 or newer.
- c. Instruction books/ manuals as specified in Appendix 3.
- d. All Drawings are to be certified correct and supplied within a reasonable length of time prior to shipment of the equipment. Each set of Drawings and documentation shall include the drawings listed in the *Technical Specifications* section of these bid documents.

9.0 Payment

9.1 Payment by the Owner of ninety (90) percent of the purchase price shall be made to the

Successful Bidder in a lump sum after delivery.

- 9.2 There shall be a ten-percent (10%) retainage on invoices until all equipment, with proper instruction books per Specifications, have been approved and accepted by the Owner and the Engineer. The Owner reserves the right to hold this retainage for a period of up to ninety (90) days without penalty to verify completeness of delivery. A ten-percent (10%) Performance Bond may be provided in lieu of retainage provisions. Deviation from the foregoing payment provisions will be considered less than responsive.
- 9.3 Invoices shall be submitted in triplicate to the Engineer for review and approval. The address for submittal of all invoices is: Booth & Associates, LLC, 5811 Glenwood Avenue, Suite 109, Raleigh, North Carolina 27612; Attention: Michael L. Clements, PE.

GENERAL CONDITIONS

1.0 Drawings and Specifications

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 it were both called for and shown. The intention of the Drawings and Specifications is to include all labor, materials, transportation, equipment, and any and all other things necessary to do a complete job, which may include manufactured items and field service assistance. In case of discrepancy or disagreement in the Purchase Order, the order of precedence shall be: Purchase Order, Specifications, Drawings.

2.0 Clarifications and Detail Drawings

In such cases where the nature of the work requires clarification by the Engineer, such clarification shall be furnished by the Engineer with reasonable promptness by means of written instructions or Detail Drawings or both. Clarifications and Drawings shall be consistent with the intent of Bidding Documents, and shall become a part thereof.

3.0 Copies of Drawings and Specifications

The Engineer will furnish free of charge to the Bidder one (1) copy of the Drawings and Specifications. Additional sets of these Specifications may be obtained upon request and a non-refundable deposit of Fifty Dollars (\$50.00) by approved Bidders.

4.0 Ownership of Drawings and Specifications

All Drawings and Specifications are instruments of service and remain the property of the Engineer whose name appears thereon. The use of these instruments on work other than these Bid Documents without permission is prohibited. All copies of Drawings and Specifications other than final copies shall be returned to the Engineer upon request after completion of the work.

5.0 Royalties, Licenses, and Patents

It is the intention of the Bidding Documents that the work covered herein will not constitute in any way an infringement on patents. The Bidder shall protect and save harmless the Owner against suit on account of alleged or actual infringement. The Bidder shall pay all royalties and/or license fees required on account of patented articles or processes, whether or not the patent rights are evidenced hereinafter.

6.0 Uncorrected Faulty Work

The Bidder shall be notified of faulty or damaged work and shall have the option to respond in a reasonable period of time. Should the correction of faulty or damaged work be considered inadvisable or inexpedient by the Owner or the Engineer, the Owner shall be reimbursed by the Bidder for the same by a deduction in the Purchase Order prices arrived at by a fair estimate of the probable cost of correction, approved by the Engineer.

7.0 Liquidated Damages

The Bidder shall commence manufacture upon issuance of a Purchase Order from the Owner, and shall fully complete delivery as per the Delivery Schedule in the *Form of Proposal*. For each day in excess of the proposed dates, the Bidder shall make payable to the Owner the sum of five hundred dollars (\$500.00) as liquidated damages (and not as a penalty), reasonably estimated in advance to cover the losses to be incurred by the Owner by reason of failure of said Bidder to complete delivery within the time specified, such time being in the essence of this Purchase Order and material consideration thereof.

8.0 Delays and Extension of Time

8.1 The time to be allowed for delivery is stated in the *Form of Proposal*. The Bidder, upon notice of award of the Purchase Order, shall prepare a delivery schedule based on the

allowed time and submit such schedule to the Engineer for approval.

8.2 If Bidder is delayed at any time in the progress of the work by any act of negligence by the Owner or the Engineer, by any separate Bidder employed by the Owner, or by changes ordered in the work, then the time of completion shall be extended for such reasonable time as the Engineer may decide.

8.3 No extension of time for completion will be made for ordinary delays and accidents. Extensions may be granted for delays ordered by the Engineer if the request has been made in writing within forty-eight (48) hours after the order to cease work has been given.

9.0 Assignments

The Bidder shall not assign any portion of this Purchase Order nor subcontract in its entirety except as fully explained in the *Form of Proposal* and accepted by the Owner. No funds or sums of money due or to become due to the Bidder under this Purchase Order may be assigned.

10.0 Guarantee

The Bidder shall guarantee his materials and workmanship against defect due to faulty materials, faulty workmanship, or negligence for a period of one (1) full year from date of energization and/or eighteen (18) months from date of delivery, whichever applies. He shall make good such defective materials or workmanship and any damages resulting therefrom without cost to the Owner. Each class of equipment shall carry a full one (1) year warranty against defects from the date of energization.

11.0 Change In Drawings and/or Specifications

The Owner, or the Engineer on behalf of the Owner, may make changes to Drawings and/or Specifications after award of the Purchase Order or while fabrication is in progress. The compensation for such changes shall be agreed upon in writing between the Bidder and the Owner prior to commencement of work involving the change. No payment shall be made to the Bidder for correcting work not in compliance with Specifications.

12.0 Insurance

During the term of the Contract, the Bidder at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably associated with the Contract. As a minimum, the Bidder shall provide and maintain the following coverage and limits:

12.1 Worker's Compensation - The Bidder shall provide and maintain Worker's Compensation Insurance, as required by the laws of North Carolina, as well as employer's liability coverage with minimum limits of \$1,000,000.00, covering all of Bidder's employees who are engaged in any work under the Contract. If any work is sublet, the Bidder shall require the subcontractor to provide the same coverage for any of his employees engaged in any work under the Contract.

12.2 Commercial General Liability - General Liability Coverage on a Comprehensive Broad Form on an occurrence basis in the minimum amount of \$1,000,000.00 Combined Single Limit. (Defense cost shall be in excess of the limit of the liability.)

12.3 Automobile - Automobile Liability Insurance, to include liability coverage, covering all owned, hired, and non-owned vehicles, used in connection with the Contract. The minimum combined single limit shall be \$150,000.00 uninsured/under insured motorist; and \$1,000.00 medical payment.

- Public Liability Insurance for bodily injury or death \$1,000,000 for one person, and \$2,000,000 for each accident.
- Property Damage Insurance \$2,000,000 for each accident and \$2,000,000 aggregate for accidents during the policy period.

- 12.4 Motor Vehicle Liability Insurance shall be for not less than the following amounts:
- Bodily injury or death \$1,000,000 for one person and \$2,000,000 for each accident.
 - Property damage is \$2,000,000 for each accident.
- 12.5 Copies of Certificates of Insurance for all aforementioned policies shall be furnished by the Bidder and shall be attached to the respective pages of the Contract Agreement at the time of signing.
- 12.6 It shall be understood that the above-required insurance 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 Buyer II.

BUYER II:
Greenville Utilities Commission.
401 South Greene Street
Greenville, North Carolina 27835

- 12.7 Each certificate must not terminate before the contract completion date.

Requirements - Providing and maintaining adequate insurance coverage is a material obligation of the Bidder and is of the essence of this Contract. 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 by the Commissioner of Insurance to do business in North Carolina. The Bidder shall at all times comply with terms of such insurance policies, and all requirements of the insurer under any 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 Bidder shall not be interpreted as limiting the Bidder's liability and obligations under the Contract.

13.0 Inspection at Bidder's Site

The Owner reserves the right to inspect, at a reasonable time, the equipment/item, plant or other facilities of a prospective Bidder prior to Contract award, and during the Contract term as necessary for the Owner's determination that such equipment/item, plant or other facilities conform with the specifications/requirements and are adequate and suitable for the proper and effective performance of the Contract.

14.0 Advertising

Bidder agrees not to use the existence of this Contract or the name of the Owner as part of any commercial advertisement.

15.0 Access to Persons and Records

An independent auditor shall have access to persons and records as a result of all Contracts or grants entered into by the Owner in accordance with General Statue 147-64.7 insofar as they relate to transactions with the Owner.

16.0 Equal Employment Opportunity, Minority Business Participation Program

During the performance of this work, the Bidder agrees as follows:

- 16.1 The Bidder will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, political affiliation or belief, age, or physical handicap. The Bidder will take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or physical handicap. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or

termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. The Bidder agrees to post in conspicuous places available to employees and applicants for employment notices setting forth the provisions of the nondiscrimination clause.

- 16.2 The Bidder, in all solicitations or advertisements for employees placed by or on behalf of the Bidder, will state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or physical handicap.
- 16.3 The Bidder will send to each labor union or representative of workers with which he has a collective bargaining agreement or other Purchase Order or understanding, a notice advising the labor union or workers' representative of the Bidder's commitments under the Equal Employment Opportunity Section of this Specification and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- 16.4 In the event of the Bidder's noncompliance with the nondiscrimination clauses of this Specification or with any of such rules, regulations, or orders, the Purchase Order may be canceled, terminated, or suspended in whole or in part and the Bidder may be declared ineligible for further Owner contracts.
- 16.5 The Bidder will include the provisions of this section in every Subcontract or Purchase Order unless exempted by rules, regulations, or orders of the Owner, so that such provisions will be binding upon each Subcontractor.
- 16.6 The Owner 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.

17.0 Indemnification

Bidder agrees to indemnify and save GUC 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 Third Party claims, actions, costs, expenses, including reasonable attorney fees, judgments, or other damages resulting from injury to any person (including injury resulting in death), or damage (including loss or destruction) to third party tangible property arising out of the negligent performance of the terms of this Contract by Bidder; including, but not limited to, Bidder's employees, agents, subcontractors, and others designated by Bidder to perform work or services in, about, or attendant to, the work and services under the terms of this Contract. Bidder shall not be held responsible for any losses, expenses, claims, subrogation, actions, costs, judgments, or other damages, directly 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 Bidder 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 the Bidder.

18.0 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.

19.0 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 Bidder to notify the GUC Buyer II, 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

20.0 Patents And Copyrights

The Bidder 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.

21.0 Patent And Copyright Indemnity

The Bidder 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 Bidder shall be notified promptly in writing by GUC of any such claim; (2) that Bidder 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 Bidder 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 Bidder or from the use of combination of products provided by the Bidder with products provided by GUC or by others; and (5) should such product(s) become, or in the Bidder's opinion likely to become, the subject of such claim of infringement, then GUC shall permit Bidder, at Bidder'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.

22.0 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 Bidder'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 Bidder may be grounds for rejection of the Bidder's proposal. The Bidder 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.

23.0 Confidential Information

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

24.0 Assignment

No assignment of the Bidder's obligations or the Bidder'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 Buyer II, solely as a convenience to the Bidder, GUC may:

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

25.0 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.

26.0 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.

27.0 Administrative Code

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

28.0 Execution

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

29.0 Clarifications/Interpretations

Any and all questions regarding these Terms and Conditions must be addressed to the GUC Buyer II. 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 Bidder and the GUC Buyer II.**

30.0 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.

31.0 Termination of Agreement

GUC or Bidder may terminate this Agreement for just cause at any time. Bidder 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) Bidder's persistent failure to perform in accordance with the Terms and Conditions, (2) Bidder's disregard of laws and regulations related to this transaction, and/or (3) Bidder's substantial violation of the provisions of the Terms and Conditions.

32.0 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.

33.0 Integrated Contract

These Terms and Conditions, Instructions to Bidders, Specifications, and the selected Bidder'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.

34.0 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.

35.0 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.

36.0 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

37.0 Notices

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

Mr. Cleve Haddock
Purchasing, Buyer II
Greenville Utilities Commission
P.O. Box 1847
Greenville, NC 27835-1847

CONTRACT AGREEMENT

THIS CONTRACT, made this _____ day _____, 2016, by _____, hereinafter called Bidder, and GREENVILLE UTILITIES COMMISSION (GUC) OF THE CITY OF GREENVILLE, PITT COUNTY, NORTH CAROLINA, a corporation, hereinafter called the Owner.

WITNESSETH

THAT WHEREAS, a Contract for

**CONTROL SWITCHBOARDS FOR
GREENVILLE SOUTH 230KV POD NO. 3**

has recently been awarded to Bidder by the Owner at and for a total price of _____ (\$ _____) named in the Bidder's Proposal attached hereto;

AND WHEREAS, it was provided in said award that a formal Contract would be executed by and between Bidder and Owner, evidencing the terms of said award, and that Bidder would commence the work to be performed under this agreement on a date to be specified in a written order of Owner, and would fully complete all work thereunder no later than ____ days from the date of contract.

NOW, THEREFORE, Bidder doth hereby covenant and agree with Owner that it will well and faithfully perform and execute such work and furnish such work and furnish such materials and equipment in accordance with each and every one of the conditions, covenants, stipulations, terms, and provisions contained in said Specifications in accordance with the Plans, at the total price named therefore in the Bidder's Proposal attached hereto, and will well and faithfully comply with and perform each and every obligation imposed upon it by said Plans and Specifications and the terms of said award.

Bidder shall promptly make payments to all laborers and others employed thereon.

Bidder shall be responsible for all damages to the property of the Owner that may be consequent upon the normal procedure of its work or that may be caused by or result from the negligence of Bidder, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. Bidder must restore all property so injured to a condition as good as it was when Bidder entered upon the work.

By execution of this Contract, both parties acknowledge the following conditions as a part of their respective obligations:

- a) Governing Law - This Contract shall be construed and enforced in accordance with the laws of the State of North Carolina. All parties agree to the jurisdiction of the Courts of North Carolina with respect to any action or dispute arising between the parties.
- b) Further Assurances - The parties hereto agree to execute and deliver any and all papers and documents which may be necessary to carry out the terms of this Contract.
- c) Entire Contract - This Contract (including materials incorporated herein by reference) constitutes the entire agreement between the parties hereto and there are no agreements, representations, or warranties which are not set forth herein. All prior negotiations, agreements, and understandings are superseded hereby. This Contract may not be amended or revised except by a writing signed by all parties hereto. This Contract shall be construed and interpreted without any presumption either for or against the party who caused its preparation.

- d) Binding Effect - This Contract shall be binding upon an inure to the benefit of the heirs, legal representatives, successors and assigns of the respective parties hereto, provided that this Contract and all rights hereunder may not be assigned by any party hereto without the written consent of the other party.
- e) Time of Performance - Time is of the essence with regard to the performance of this Contract.
- f) Survivability - The terms of this Contract shall survive execution and delivery of any deeds or bills of sale called for hereunder.
- g) Headings - The headings in the paragraphs of this Contract are inserted for convenience only and do not constitute a part hereof.

Bidder shall furthermore be responsible for and required to make good at its expense any and all damages of whatever nature to persons or property arising during the period of the Contract caused by carelessness, neglect, or want of due precaution on the part of Bidder, its agents, employees, or workmen. Bidder shall also indemnify and save harmless the Owner, and the officers and agents thereof, from all third party claims, suits, and proceedings of every name and description which may be brought against the Owner, or the officers and agents thereof, for or on account of any injuries or damages to persons or property received or sustained by any person or persons, firm, or corporation, by or in consequence of any materials used in said work, to the extent caused by the negligence of Bidder, its agents, employees, servants, or workmen.

It is agreed and understood that the Notice to Prospective Bidders, Definitions, Instructions to Bidders, and Technical Specifications, the accepted Bidder's Proposal, and the enumerated addenda are incorporated in this Contract by reference and are an integral part thereof as set forth herein.

And the Owner doth hereby covenant and agree with Bidder that it will pay to Bidder, when due and payable under the terms of said Specifications and said award, the above-mentioned sum; and that it will well and faithfully comply with and perform each and every obligation imposed upon it by said Specifications and the terms of said award.

Bidder shall, upon completion of all work awarded under this Contract, furnish to the Owner invoices or copies of invoices for all materials purchased for said work; and such invoices shall state the amount of North Carolina sales tax paid for said materials. Bidder shall also furnish the Owner an affidavit certifying the total costs of materials purchased for all work performed under the Contract and the total amount of state sales tax paid for said materials.

Whenever used herein, the singular shall include the plural, the plural the singular, and the use of any genders shall be applicable to all genders as the context may require.

PROVIDE CURRENT LIABILITY INSURANCE CERTIFICATE(S)

General Conditions, 12.0 Insurance

COVERAGES:

1. Workmen's Compensation Insurance shall include all of the Bidder's employees employed at the site of the project under his Contract. In case any class of employees engaged in hazardous work under this Contract at the site of the project is not protected under the Workmen's Compensation Statute, the Bidder shall provide adequate coverage for the protection of his employees not otherwise protected.
2. Public Liability and Property Damage Insurance shall be in such amounts as to adequately protect the Owner and the Bidder from claims for damages for personal injury, including accidental death, as well as from claims for property damages which may arise from operations under this Contract, whether such operations be by himself or by anyone directly or indirectly employed by him. The amount of such insurance shall be for the following:

Public Liability Insurance for bodily injury or death \$1,000,000 for one person, and \$2,000,000 for each accident.

Property Damage Insurance \$2,000,000 for each accident and \$2,000,000 aggregate for accidents during the policy period.

3. Motor Vehicle Liability Insurance shall be for the following amounts:

Bodily injury or death \$1,000,000 for one person and \$2,000,000 for each accident.

Property damage is \$2,000,000 for each accident.

Copies of Certificates of Insurance for all aforementioned policies shall be furnished by the Bidder and shall be attached to the respective pages of the Contract Agreement at the time of signing.

It shall be understood that the above-required insurance 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 the certificate holder.

CERTIFICATE HOLDER:

Greenville Utilities Commission
401 South Green Street
Greenville, NC 27835-1847
Contact: Mr. Cleve Haddock
Phone: 252-551-1533

EXPIRATION:

Each certificate must not terminate before the contract completion date.

IN TESTIMONY WHEREOF, Bidder and Owner have duly signed and sealed this Contract.

BIDDER:

(Imprint Corporate Seal _____(SEAL)
Below this line)

By _____(SEAL)

Title _____ President _____

ATTEST:

By: _____

Title: _____ Secretary _____

**GREENVILLE UTILITIES COMMISSION (GUC)
OF THE CITY OF GREENVILLE, PITT COUNTY,
NORTH CAROLINA**

By _____
Anthony C. Cannon

Title: _____ General Manager / CEO _____

APPROVED AS TO FORM AND LEGALITY:

By: _____
Phillip R. Dixon

Title: _____ General Counsel _____

ATTEST:

By: _____
Amy Carson Quinn

Title: _____ Executive Secretary _____

CONTRACT INSTRUCTIONS

INSTRUCTIONS FOR PROPER SIGNING

If Bidder is an individual, sign on first line only and designate trade name below first line, thus:

_____ John Jones _____ (SEAL)
Trading as Jones Paving Company

If Bidder is a partnership, sign partnership name on first line; have at least one general (not limited) partner sign on second line, and put his designation as partner on third line, thus:

_____ JONES PAVING COMPANY _____ (SEAL)
By _____ John Jones _____ (SEAL)
Title _____ General Partner _____

If Bidder is a corporation, sign corporate name on first line (exactly) as such appears on the corporate seal, have the President or a Vice President sign on second line, put his title on third line, have the Secretary or Assistant Secretary sign on the left "Attest" line (adding the word "Assistant" before the word "Secretary" if the Assistant Secretary is signing), and imprint corporate seal above the word "Attest", thus:

_____ JONES PAVING COMPANY, INC. _____ (SEAL)
By _____ John Jones _____ (SEAL)
Title _____ President _____

ATTEST:

_____ Thomas Jones _____
Assistant Secretary

CERTIFICATE OF ATTORNEY

**GREENVILLE UTILITIES COMMISSION (GUC)
OF THE CITY OF GREENVILLE,
PITT COUNTY, NORTH CAROLINA**

This is to certify I have examined the attached Contract Documents, and after such examination I am of the opinion that such Documents conform to the laws of the State of North Carolina, the execution of the Contract is in due and proper form, the representatives of the respective contracting parties have full power and authority to execute such Contract on behalf of the respective contracting parties, and the foregoing agreements constitute valid and binding obligations on such parties.

By: _____
Phillip R. Dixon

Title: _____
General Counsel

Date: _____

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

By: _____
Jeff W. McCauley

Title: _____
Chief Financial Officer

Date: _____

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**CONTROL SWITCHBOARDS FOR
GREENVILLE SOUTH 230KV POD NO. 3**

FORM OF PROPOSAL
*(Provide **one** original and **one** copy)*

Respectfully submitted this ____ day of _____, 2016

OWNER:	BIDDER:
Greenville Utilities Commission 401 South Greene Street Greenville, North Carolina 27834 P.O. Box 1847 Greenville, North Carolina 27835 Mr. Cleve Haddock Purchasing, Buyer II Office: 252-551-1533 Cell: 252-551-3302	NAME
	TITLE
	STREET ADDRESS
	CITY/STATE/ZIP
	PHONE:
	FAX:
	E-MAIL:
SIGNATURE	
SUPPLIER OF PROPOSED EQUIPMENT	
MANUFACTURER	
STREET ADDRESS	
CITY / STATE / ZIP	

TERMS AND CONDITIONS

1. The undersigned (hereinafter called the "Bidder") hereby proposes to sell and deliver to the Owner upon the terms and conditions herein stated, the materials, equipment, and services (hereinafter called the "Material") specified in the Bid Schedule(s) attached hereto, and by this reference made a part hereof, for the Materials for the Owner, and:
 - a. These bid documents that include *Notice to Prospective Bidders, Instructions to Bidders, General Conditions, and Technical Specifications* for the Control Switchboards.
 - b. Manufacturer's specifications, both as set forth herein and in Manufacturer's literature (two [2] sets) attached hereto, or furnished separately as provided for in the *Instructions to Bidders*;
 - c. Legal negotiations, with low bidder only, after bids are opened, for budgetary compliance.
2. The prices as quoted herein:
 - a. Are firm unless otherwise stated,
 - b. Are FOB to the location(s), as outlined in the *Instructions to Bidders*,
 - c. Do include the cost of delivery to the site at the Bidder's Risk, assuming unloading by Others, and
 - d. Have state sales tax shown as a separate item, if applicable.
3. Invoice shall list the appropriate state sales tax as a separate item
4. The Bidder further declares that he has examined the site of the work and informed himself fully regarding all conditions pertaining to the location where the Material is to be delivered; that he has examined the *Technical Specifications* for the work and Bid Documents relative thereto; has read all special provisions furnished prior to the opening of the bids; and that he has satisfied himself relative to the work to be performed.
5. The Bidder proposes and agrees if the following Bid Schedule(s) in this Proposal is accepted, to contract with the Owner, in the form of a purchase order specified, to furnish all necessary equipment and materials, except materials and equipment specified to be furnished by the Owner, complete in accordance with the Bid Documents, to the full and entire satisfaction of the Owner, with a definite understanding that no money will be allowed for extra work except as set forth in the *General Conditions*, and as filed on Change Order Forms.
6. The materials will conform to the *Technical Specifications* attached hereto and made a part hereof.
7. The Material prices set forth herein do not include any sums which are or may be payable by the Bidder on account of State Sales Tax upon the sale, purchase or use of the material. If any such tax is applicable to the sale, purchase or use of the material hereunder, the amount thereof shall be added to the purchase price and paid by the Owner after the Bidder has ascertained the actual sales tax to be included in the purchase order price.
8. The Owner reserves the right to accept any schedule, combination of schedules, or any portion of a schedule.
9. A *Form of Exceptions* to the *Technical Specifications*, prepared in accordance with the *Instructions to Bidders*, is attached hereto. The Bidder shall document any exceptions with deviation from the bid documents and specifications in the *Form of Proposal*. Otherwise, the complete compliance is assumed.
10. Proposals shall include a complete bill of materials, identifying each item by catalog number, manufacturer, ratings, characteristics, types, sizes, etc., of all materials and equipment required for a complete and coordinated substation. A simple statement that all necessary materials and equipment will be provided is not acceptable.
11. Title to the materials shall pass to the Owner upon delivery to the location(s) specified in the *Instructions to Bidders*.

12. The Bidder warrants that the Materials will conform to the performance data and guarantees which are attached hereto and by this reference made a part thereof.
13. The Bidder warrants the accuracy of all statements contained in the Bidders Qualifications, if any shall be submitted, and agrees that the Owner shall rely upon such accuracy as a condition of the Purchase Order in the event that this Proposal is accepted.
14. By the submission of this bid, the Bidder certifies that:
 - a. The bid has been arrived at by the Bidder independently and has been submitted without collusion with any other Bidder of materials, supplies, or equipment of the type described in the *Notice to Prospective Bidders* or the *Technical Specifications*, and
 - b. The contents of the bid have not been communicated by the Bidder, nor, to its best knowledge and belief, by any of its employees or agents, to any person not an employee or agent of the Bidder or its Surety on any Bond furnished herewith, and will not be communicated to any person prior to the official opening of the bid.
15. The Bidder further agrees that in case of failure on his part to accept said purchase order within ten (10) consecutive calendar days after written notice has been given of the award of the Purchase Order, the Bid Security accompanying this bid, and the monies payable thereon, shall be paid into the funds of the Owner account set aside for this project, as liquidated damages for such failure; otherwise the check or cash accompanying the *Form of Proposal* shall be returned to the Bidder.
16. If, in submitting this Proposal, the Bidder has made any change in the *Form of Proposal*, the Bidder understands that the Owner may evaluate the effect of such change as they see fit or they may exclude the Proposal from consideration in determining the issue of Purchase Order.

BID SCHEDULES

BID SCHEDULE NO. 1 – Relay Control Switchboards

Each panel complete with all associated equipment, all as per Specifications. Drawings and associated documentation to be included with each panel as outlined in bid documents.

<u>Description</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
Greenville South 230kV POD No.3:			
Panel No. 1- 115kV Circuit No.'s 61 & 62	1 each	\$ _____	\$ _____
Panel No. 2- 115kV Bus No.6	1 each	\$ _____	\$ _____
Panel No. 3- 230/115kV Bank No.6	1 each	\$ _____	\$ _____
Subtotal:		\$ _____	\$ _____
North Carolina Sales Tax (If Applicable)		\$ _____	\$ _____
TOTAL BID:		\$ _____	\$ _____

BID SCHEDULE NO. 1 – Delivery Schedule

The prices of the materials and equipment set forth herein shall include the cost of delivery to the site at the Bidder's risk. The time of delivery shall be as follows:

<u>Item</u>	<u>Delivery Schedule (Days) *</u>
Submittal of Approval Drawings	_____
Submittal of Final Drawings**	_____
Delivery of Materials ^{1**}	_____

- * After the receipt of the written order of the Owner in consecutive calendar days
- ** Allow two (2) weeks for Engineer's review and turnaround for all Drawing submittals

¹Equipment is to be delivered **BETWEEN** the dates of November 1, 2016 and November 30, 2016.

The time for delivery shall be extended for the period of any reasonable delay due exclusively to causes beyond the control and without fault of the Bidder, including acts of God, fires, floods, strikes, and delays in transportation.

Delivery of all items of equipment to the Owner's designated delivery point shall be made to permit unloading between the hours of 9:00 a.m. and 3:00 p.m., Monday through Thursday, holidays excluded.

AFFIDAVIT OF BIDDER

The final payment of retained amount due the Bidder on account of the Purchase Order shall not become due until the Bidder has furnished to the Owner through the Engineer an affidavit signed, sworn, and notarized to the effect that all payments for Material, services, or any other reason in connection with this Purchase Order have been satisfied and that no claims or liens exist against the Bidder in connection with this Purchase Order. In the event that the Bidder cannot obtain similar affidavits from Subcontractors to protect the Bidder and the Owner from possible liens or claims against the Subcontractor, the Bidder shall state in his affidavit that no claims or liens exist against any Subcontractor, and if any liens or claims appear afterward, the Bidder shall save the Owner harmless on account thereof.

Bidder: _____

By: _____

Date: _____

BID BOND

KNOW ALL MEN BY THESE PRESENT, THAT WE _____

as Principal, and _____
as Surety, who is duly licensed to act as Surety in North Carolina, are held and firmly bound unto the Greenville Utilities Commission of Greenville, North Carolina, as Obligee, in the penal sum of _____
_____ DOLLARS (\$ _____
_____) (5% Bid Bond), lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these present.

SIGNED, Sealed and dated this _____ day of _____, 2016.

WHEREAS, the said Principal is herewith submitting a Proposal for

**CONTROL SWITCHBOARDS
FOR GREENVILLE SOUTH 230KV POD NO. 3**

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

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

Principal

By _____ (SEAL)

Corporate Surety

By _____ (SEAL)

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):
 - a. ____ 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
 - b. ____ I employ less than twenty-five (25) employees in the State of North Carolina.
3. 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):
 - a. ____ 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
 - b. ____ Employ less than twenty-five (25) employees in the State of North Carolina.

Specify subcontractor: _____

_____ (Company Name)

By: _____ (Typed Name)

_____ (Authorized Signatory)

_____ (Title)

_____ (Date)

GREENVILLE UTILITIES COMMISSION

By: _____
Anthony C. Cannon

Title: General Manager/CEO
(Authorized Signatory)

Date: _____

Attest: _____

Name (Print): Amy Carson Quinn

Title: Executive Secretary

Date: _____

(OFFICIAL SEAL)

COMPANY NAME:

By: _____

Name (Print): _____

Title: _____
(Authorized Signatory)

Date: _____

Attest: _____

Name (Print): _____

Title: Secretary

Date: _____

(OFFICAL SEAL)

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

By: _____
Jeff W. McCauley

Title: Chief Financial Officer

Date: _____

APPROVED AS TO FORM AND LEGAL CONTENT:

By: _____
Phillip R. Dixon

Title: General Counsel

Date: _____

**LETTER OF COMPLIANCE TO THE
IRAN DIVESTMENT ACT CERTIFICATION**

Name of Vendor or Bidder: _____

**IRAN DIVESTMENT ACT CERTIFICATION
REQUIRED BY N.C.G.S. 143C-6A-5(a)**

As of the date listed below, the vendor or bidder listed above is not listed on the Final Divestment List created by the State Treasurer pursuant to N.C.G.S. 143-6A-4.

The undersigned hereby certifies that he or she is authorized by the vendor or bidder listed above to make the foregoing statement.

Signature _____ Date _____

Printed Name _____ Title _____

INSERT

ADDENDA / CLARIFICATIONS / BULLETINS

Instructions to Bidders, 5. Bulletins and Addenda

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA
CONTROL SWITCHBOARDS FOR
GREENVILLE SOUTH 230KV POD NO. 3**

TECHNICAL SPECIFICATIONS

1.0 Scope

- 1.1 Greenville Utilities Commission of Greenville, North Carolina, is procuring three (3) Control Switchboards for Greenville South 230kV POD No. 3 to use as needed on their electrical system. These *Technical Specifications* describe the Control Switchboards required for the substation.
- 1.2 The Bidder's work shall include furnishing all equipment and materials so represented by these *Technical Specifications*, and as set forth in the Bid Schedule(s). The Owner reserves the right to select any combination of alternate schedules as may be allowed. The Owner also reserves the right to reject any or all bids.
- 1.3 Quotations for the Control Switchboards shall include the Bidder's risk of delivery, as described in the *Instructions to Bidders*.

2.0 General Conditions

- 2.1 All materials and equipment shall be new, manufactured in the United States or Mexico, in compliance with RUS Information Publication 202-1, "List of Acceptable Material for RUS Systems."
- 2.2 These Specifications describe the type, size, and characteristics of the various materials and equipment required to be furnished. The Drawings indicate general arrangement, equipment location, and spacing.
- 2.3 Strict adherence to these general Specifications and Drawings is requested to facilitate checking and consideration of the Proposal.
- 2.4 It is the intent of these Specifications that the specified equipment shall be complete and fully operable. Any details not mentioned in the Specifications but required for satisfactory operation shall be furnished and installed by the Bidder.
- 2.5 Station power available at the substation will be 120/240 volts, 60 Hz, single-phase. Control dc voltage at the substations will be 125 volts. All equipment shall coordinate with these voltages as appropriate.
- 2.6 Proposals shall include the following:
 - 2.6.1 A complete bill of materials, identifying each item by catalog number, manufacturer, ratings, characteristics, types, sizes, etc., of all materials and equipment included. A simple statement that all necessary materials and equipment will be provided is not satisfactory.
 - 2.6.2 The Bidder shall state on the Form of Exceptions in his Proposal any variations to the specified manner in which the switchboard(s) will be shipped.
 - 2.6.3 Prices shall include the cost of delivery to the substation site with unloading performed by the Owner, in accordance with the *Instructions to Bidders*.

3.0 Special Conditions

- 3.1 All materials and equipment furnished hereunder shall be subject to the inspection, tests, and approval of the Owner; and the Bidder shall furnish all information required concerning the nature or source of any materials and equipment and provide adequate facilities for testing and inspecting the materials and equipment at the plant of the Bidder.

- 3.2 The materials and equipment furnished hereunder shall become the property of the Owner when delivered at the point to which shipment is to be made; provided, however, that the Owner may reject any such materials and equipment which does not comply with the Specifications for materials and equipment and/or warranties of the Bidder and manufacturers. Recognition and subsequent rejection of any defective materials and equipment may occur either before or after incorporation of such materials and equipment into the facilities, provided such rejection is made within one (1) year of date of delivery of the materials and equipment. Upon any such rejection, the Bidder shall replace the rejected materials and equipment with materials and equipment complying with the Specifications for materials and equipment and warranties FOB truck at suitable destination. The Owner shall return the rejected materials FOB truck at the same destination. In the event of the failure of the Bidder to so replace rejected materials and equipment, the Owner may make such replacement; the cost and expense thereof shall be paid by and recoverable from the Bidder.
- 3.3 The switchboard(s) to be provided herein shall include a full warranty on the complete units together with all parts. This warranty shall extend for not less than twelve (12) months from date of initial energization, or up to eighteen (18) months from date of delivery, whichever is acceptable.
- 3.4 The Bidder shall hold harmless and indemnify the Owner, its agents, and employees from any and all claims, suits, and proceedings for infringement of any patent or patents covering materials and equipment purchased hereunder. The Bidder shall defend any suit or proceeding brought against the Owner, its agents, or employees based upon a claim that the materials and equipment or any part thereof constitute an infringement of any patent; or if the Bidder shall fail to defend such suit or proceeding, the Owner may do so and the Bidder shall make reimbursement for the expense of such litigation. If the materials and equipment, or any part thereof, are held to constitute infringement and the use thereof is enjoined, the Bidder shall, at its own expense, either procure for the Owner the right to continue to use the materials and equipment, or such part thereof, or shall replace the materials and equipment, or such part thereof, with non-infringing materials and equipment.

4.0 Standards

All equipment and materials covered by these Specifications and all test applied thereto shall, unless otherwise stated herein, be in accordance with the applicable provisions of the latest editions of the Standards of the ASTM, ANSI, AEIC, NEMA, NESC, IEEE, and OSHA. Where the term "Standards" is used in the Specifications, it shall be understood to refer to the above Standards.

5.0 Drawings and Documentation

All Drawings and documentation shall be labeled with GREENVILLE UTILITIES COMMISSION and the appropriate substation name, and submitted directly to the Owner's Engineer, Booth & Associates, LLC, 5811 Glenwood Avenue, Suite 109, Raleigh, North Carolina 27612, Attention: Michael L. Clements, PE.

- 5.1 The Materialman shall provide adequate documentation to fully describe the equipment being furnished. Each set of Approval and Final Drawings and documentation shall include, but not be limited to, the following information.

- 5.1.1 Control Switchboard Arrangement Drawings including steel fabrication if equipment furnished does not agree with the Engineer's Drawings. Desired panel arrangement drawings and preferred panel construction steel details are provided to the vendor for each panel by Booth & Associates.

- 5.1.2 Wiring diagrams (point-to-point) showing exact connections for all components furnished based on schematics provided to the vendor for each panel by Booth & Associates. Separate wiring lists or tables are not acceptable. **NOTE device identification requirements, section 7.5.**
 - 5.1.3 List of Material which shall include a complete description of all items furnished including quantity, catalog numbers, ratings, and manufacturer.
 - 5.1.4 Approval of Drawings shall not be held to relieve the manufacturer of obligations to meet all requirements to the Specifications, of responsibility for correctness of the Drawings, or of responsibility to meet original shipping promise on the basis of Owner being allowed two (2) weeks for approval.
 - 5.1.5 The Owner may require a second submittal of Approval Drawings if, in the opinion of the Owner's Engineer, such is required due to the extent of changes required on the first submittal. If an extension of time is required due to a protracted drawing approval process, the price will remain as quoted for the quoted delivery.
 - 5.1.6 Receipt of Approval Drawings by the Bidder constitutes authorization for manufacture only, based upon the corrections found thereon.
 - 5.1.7 Approval drawings may be submitted electronically in AutoCad® 2010 format or newer in lieu of paper copies.
 - 5.1.8 All drawings shall be labeled with GREENVILLE UTILITIES COMMISSION and the appropriate substation name.
 - 5.1.9 Dimensional information shown on all Drawings shall be stated in inches.
- 5.2 Drawings Furnished by Manufacturer
- 5.2.1 Approval Drawings
 - a. Before proceeding with fabrication, the manufacturer shall submit, for review and approval to the Engineer sufficient Drawings to demonstrate that all parts conform to the requirements and intent of these Specifications and Drawings. Each set of Drawings shall include those Drawings as outlined in Section 5.1.
 - b. For drawing approval, the manufacturer shall submit two (2) sets each of the Drawings or reproducible drawing files, compatible with AutoCAD 2010.
 - c. Approval of Drawings shall not be held to relieve the manufacturer of obligations to meet all requirements in the Specifications, of responsibility for correctness of the Drawings, or of responsibility to meet original shipping promise on the basis of the Owner being allowed the specified time for approval (see Bid Schedules/ Delivery Schedule).
 - d. Receipt of Approval Drawings by the manufacturer constitutes authorization for manufacture, based upon the corrections found thereon.
 - e. The Owner's Engineer may require a second submittal of Shop Drawings if, in the opinion of the Engineer, such is required due to the extent of changes required on the first submittal. If an extension of time is required due to a protracted drawing approval process, the price will remain as quoted for the quoted delivery.
 - 5.2.2 Final Drawings
 - a. One (1) complete set of all Drawings, revised to "as-built" status.

- b. Two (2) complete sets of all Drawings, revised to "as-built" status, released on separate CD-ROM's, compatible with AutoCAD 2010.
- c. All Drawings are to be certified correct and supplied within a reasonable length of time **prior** to shipment of the equipment.

6.0 Shipping and Delivery

- 6.1 Equipment shall be shipped to the designated site as outlined in the *Instructions to Bidders*. The Bidder shall ship via open-top truck or open trailer for ease of unloading by Owner's personnel using a crane or derrick truck.
- 6.2 Method of packing and loading shall be such as to protect all parts from dampness, corrosion, breakage, or vibration injury that might reasonably be encountered in transportation, storage and handling.
- 6.3 Release for shipment is to be granted by either the Owner or the Owner's Engineer based upon the manufacturer's compliance with the following:
 - 6.3.1 Furnishing of the requisite number of copies of the final drawings as called for in the *Technical Specifications*.
 - 6.3.2 Coordination of manufacturing and delivery with Owner's construction schedule as may be noted in these Specifications.
 - 6.3.3 **Thirty (30) days notification of tentative shipping schedule and forty-eight (48) hours notification prior to all deliveries.**
 - 6.3.4 **Under no circumstances** will the Owner accept deliveries arriving on Saturdays, Sundays, or nationally observed holidays. The Bidder shall take precautions as necessary to avoid scheduling such deliveries. Deliveries will be received between 9:00 a.m. and 3:00 p.m., Monday through Thursday only.

7.0 Switchboard and Panel Construction

- 7.1 The switchboard and panel shall be manufactured by those regularly engaged in the design and manufacture of control switchboards for electric utilities and shall be completely familiar with metering, relaying, and control of utility system substations.
- 7.2 Cabinetry
 - 7.2.1 Preferred panel construction steel details are provided by Booth & Associates on the steel details drawings furnished with this specification.
 - 7.2.2 All sheet steel panels shall be constructed from 11-gauge (0.125 inch) stretcher steel per U.S. Standard Sheet and Plate. All bends shall be made using proper tooling to present sharp, square, and smooth bends.
 - 7.2.3 Panel shall have a cubicle type construction with a rear hinged door per the steel details provided. The panels shall have provisions for cable entry from the top of the panel.
 - 7.2.4 Nineteen-inch (19") rack rails with EIA standard RS-310-C screw spacing **welded** to the front panel are required for all panels. Rack-mount relays and plates shall be mounted to the rack rails using 10-32 size screws designed for rack mounting. These are typically pan-head screws with non-marring washers ("beauty rings") to protect the front of the relays and plates.
 - 7.2.5 Fully enclosed left and right side panels complete with wiring troughs and with mounting provisions for terminal blocks, fuse blocks, and auxiliary relays, transducers, and service equipment.

- 7.2.6 Fully enclosed and braced top cover with provisions for a lifting angle and provisions for top entry cableways and with mounting provisions for wireways and convenience lighting.
- 7.2.7 Overhead interior lighting system consisting of a lamp, light switch, and fused AC service wiring for 120 volts AC per the schematics provided.
- 7.2.8 Provisions for bolting together adjacent switchboards using bolts at standard heights per the steel details provided.
- 7.2.9 The switchboard shall be properly constructed with provisions for bolting to a floor. Flush type drop-in anchors with one-half inch (1/2") stainless steel anchor bolts shall be furnished for bolting the switchboard to a concrete floor.
- 7.2.10 A copper ground bus shall be mounted on stand-off brackets on the inside of the front switchboards with provisions for connecting to the ground bus in an adjacent switchboard.
- 7.2.11 All surface areas and all edges of the switchboards that are exposed to wiring are to be finished to present a smooth surface to wiring insulation. Finished surface of switchboard is of critical importance. Switchboard exterior edges, corners, and welds are to be ground smooth to provide a good appearance and present evidence of high quality workmanship. Panel interior must present a smooth surface for wire insulation. All corners, edges, welds, drilled or punched holes, threaded holes with or without screws installed, and any other similar areas must be ground or filed smooth. Failure to comply with this requirement will result in the Owner requiring the Bidder to travel to the Owner's location at the Bidder's expense to grind or file and finish rough or sharp areas on the switchboards.
- 7.2.12 Each part of the individual switchboards shall be painted inside and outside with one (1) coat of rust resistant primer prior to assembly. Welded areas are to be touched up with primer. After assembly, the interior and exterior of the switchboard shall be painted with two (2) coats of medium gray low sheen acrylic paint, ANSI-61, Code IC-0702 on the exterior and two (2) coats of white on the interior. Switchboard shall not be painted with relays and equipment mounted.

7.3 Relaying Equipment

- 7.3.1 All electrical components including relays, meters, indicating instruments, control switches, indicating lights and circuit breakers shall be furnished and installed and wired in the cabinet. The equipment to be furnished is listed and described in appendices of these Specifications. Materials and components are identified by Item Numbers.
- 7.3.2 Each piece of equipment shall be identified per the Panel Front View drawings using engraved, white lettering on black background, laminated phenolic nameplates. A complete list of nameplates is shown on the Panel Front View drawings to be supplied to the Successful Bidder. Device nameplates shall be one inch by three inch (1" x 3") and shall be bonded to the panels using durable adhesive or stainless steel screws. Two inch by six inch (2" x 6") panel identification nameplates shall be similarly affixed to the upper center of the front panel.
- 7.3.3 Terminal blocks shall be mounted as shown on the Drawings and in a manner to give clear access to all terminals for making wire connections.

7.4 Wiring

- 7.4.1 All devices within the switchboards shall be completely wired, connected, identified, dressed neatly and tied.

- 7.4.2 Ground wires from current transformer circuit ground terminal points to the panel ground bus bar shall be Green, 600-volt insulation, No.10 AWG.
- 7.4.3 The cases of all solid-state relays, meters, and instruments shall be grounded directly to the relay ground bus with at least No. 12 AWG, Green, stranded copper wire.
- 7.4.4 All conductors for low-level signal outputs from transducers shall be sized No. 18 AWG. Conductors shall be 600-volt insulation, twisted, shielded pairs, stranded, with copper drain wire, PVC insulation, and PVC jacket.
- 7.4.5 All conductors for current transformer circuits shall be sized No. 12 AWG. These conductors shall be 600-volt insulation, Type SIS, 65 strand.
- 7.4.6 All conductors for relay, control, and metering functions not otherwise specified above shall be sized No. 14 AWG. Conductors shall be 600-volt insulation, Type SIS, 41 strand.
- 7.4.7 All wiring shall be continuous from device terminal to device terminal; no splices shall be permitted. **All wiring shall be connected using AMP type PIDG or equivalent (pre-insulated, closed-barrel) ring terminals; spade-type terminals shall not be used. All connections shall be made using silicon bronze lock washers unless the terminating device is equipped with another inherently locking-type connector (e.g., screws with a ringed contact surface or captive square lockwashers).**
- 7.4.8 All wiring shall be tagged with permanent markers at each end using the device identifications and device terminal numbers shown on the Drawings to be issued to the Successful Bidder. The wire markers shall indicate the destination of the wire, not the origin. For example, the end of the wire terminated on Device "PA", Terminal "B01", whose other end is on Device "PB", Terminal "2", shall be labeled "PB2".
- 7.4.9 Wiring shall be done in an orderly manner to permit the addition of Owner's wiring and for troubleshooting wire tracing. Wiring from terminal boards to devices shall be run in Panduit wire-way to the locations adjacent to the devices. No more than two (2) wires per terminal shall be used.

7.5 Device Identification Letters

- 7.5.1 Identification letters shall be used to define and locate devices of a panel in agreement with the interconnection/ wiring diagrams. Decals with the device identification letter(s) shall be affixed adjacent to device locations or on the rear of devices when viewing the panel from the rear as shown on the wiring diagram, but not on removable covers. **Identification letters shall be of at least ¼ inch high with black text on a yellow or white background.**
- 7.5.2 Letter designations shall be as assigned as follows:
 - a. Terminal Blocks: Single letter designations are used for terminal blocks (outside row) or the same letter repeated (ex. "C" or "AA") (inside row). Terminal blocks to be labelled as shown on panel interconnection drawings provided.

Other Devices: Double letters are used for other devices where the two letters are unlike (ex. "AB" or "BA"). For two letter designations, the first letter is "U" for fuse blocks, "R" for resistors and rectifiers, "C" for capacitors, "X" for fiber optic converters, and "T" for auxiliary

transformers. The second letter must be different than the first. The letters “I”, “O”, “Q”, and “U” are not used. **Devices are not to be labeled with 3-letter designations (ex. “AAA” or “BAA”) or with the same letter repeated (ex. “AA” or “BB”).**

- b. **Devices are to be labeled per the Device codes indicated on the Booth drawings provided.**

8.0 Protective Relaying and Control Switchboards

8.1 Material requirements for the specified control switchboards are detailed in the Appendices of this document.

8.2 Service Conditions and Nominal Ratings

8.2.1 The switchboards will be installed in a heated and cooled substation control house.

8.2.2 Nominal voltage, current, and frequency ratings for the switchboards are listed as follows:

Voltage (V)		Nominal Secondary Currents (A rms)	Frequency (Hz)
ac (rms)	dc		
120	125Vdc	5	60

8.2.3 Ac power for the switchboard will be provided by the Owner at the substation site. Dc power to the switchboard shall be provided from batteries installed in the control house by the Owner. Power supply requirements for all protective equipment shall be taken from the dc service. Power supply requirements for all other electronic equipment shall be taken from the ac station service. Electronic power supplies shall not be connected to substation metering voltage transformers.

8.2.4 Panel layouts are provided for the purpose of bidding. The panel electrical schematics for each panel will be provided following award of project.

9.0 Spare Parts

9.1 Spare parts are not part of this specification.

9.2 One (1) can of touch-up spray paint to match the original panel finish shall be provided.

10.0 Production Tests

10.1 Sufficient tests to verify panels are accurately wired per the panel schematics and approved wiring diagrams shall be performed. All connections and wiring terminal installations are to be verified tight and reliable.

11.0 Installation

11.1 All equipment and materials included in these Specifications are for installation in the substation by others. Installation is not included in these Specifications.

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**CONTROL SWITCHBOARDS FOR
GREENVILLE SOUTH 230KV POD NO. 3**

LIST OF DRAWINGS

The work shall conform to the following Booth and Associates, Inc. Drawings, all of which form a part of these Specifications. The Bidder is responsible for contacting the Engineer if any drawings not indicated to be furnished at a later date are missing from their bid documents. If the Bidder does not contact the Engineer regarding any drawings, their bid will be considered based on all Drawings and Specifications, as issued for bids.

Schematics are to be provided by Booth & Associates, Inc. prior to panel manufacturing; bidder should not expect availability of "For Construction" drawings until **July 1, 2016**.

Sheet No.	Title	Reference
GREENVILLE SOUTH 230KV POD NO. 3		
	Relay Panel Steel Details	14022-E005A thru – E005H
	Panel No. 1 - 115kV Circuit No.'s 61 & 62- Front Panel View	14022-E021
	Panel No. 2 - 115kV Bus No.6- Front Panel View	14022-E022
	Panel No. 3 - 230/115kV Bank No.6- Front Panel View	14022-E023
	Panel No. 1 - AC Elementary Diagram	14022-E031
	Panel No. 2 - AC Elementary Diagram	14022-E032, -E033
	Panel No. 3 - AC Elementary Diagram	14022-E034, -E035
	Panel No. 1 - DC Elementary Diagrams	14022-E041 thru-E048, E051- E053 (final sheet count to be determined)
	Panel No. 2 - DC Elementary Diagrams	14022-E061 thru-E068 (final sheet count to be determined)
	Panel No. 3 - DC Elementary Diagrams	14022-E071 thru-E078 (final sheet count to be determined)
	Panel No. 1 - 115kV Circuit No.'s 61 & 62 - Interconnection Diagram	14022-E101
	Panel No. 2 - 115kV Bus No.6 - Interconnection Diagram	14022-E102
	Panel No. 3 - 230/115kV Bank No.6 - Interconnection Diagram	14022-E103

**GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA**

CONTROL SWITCHBOARDS FOR GREENVILLE SOUTH 230KV POD #3

EQUIPMENT REQUIREMENTS

Panel No.1: 115kV Circuit No.'s 61 & 62

Item	Qty.	Description	Remarks
100	1	Steel Panel For description of each item in this subsection, refer to Appendix 3.	Cable Entry from top of Panel
101	2	Relay, Overcurrent/Control, SEL-351S	R61P, R62P
102	2	Relay, Overcurrent, SEL-351A	R61BU, R62BU
103	2	Relay, Lockout, LOR, Hand Reset, 5-Deck	86BF61, 86BF62
104	4	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 173-330-036	For SEL-351 relays
105	1	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 036-036-036	For 86BF & MISC Trips
106	3	Fuse Block, 2P, 30A, 250V	
107	8	Fuse Block, 3P, 30A, 250V	
108	15	Fuse, 15A	Includes spares
109	6	Fuse, 30A	Includes spares
110	23	Terminal Block, 12P, 30A	
111	4	Terminal Block, 4P, 30A	
112	6	Terminal Block, 4P, 30A, Shorting	
113	2	Receptacle, Duplex, 120 VAC	
114	1	Light Switch, 1-Pole, 120 VAC	
115	1	Fluorescent Light, 120 VAC	
116	1	Bus, Ground, Copper	
117	4	Anchors, Hilti Drop-In	
118	4	Cover Plate, Blank, 1 Rack Units	
119	2	Cover Plate, Blank, 3 Rack Unit	One plate cutout for lockout relays, one plate cutout for receptacle
120	2	Cover Plate, Blank, 4 Rack Unit	

Item	Qty.	Description	Remarks
121	1	Cover Plate, Blank, 5 Rack Unit	

Panel No.2: 115kV Bus No.6 & Breaker No.60

Item	Qty.	Description	Remarks
200	1	Steel Panel For description of each item in this subsection, refer to Appendix 3.	Cable Entry from top of Panel
201	1	Relay, Bus, SEL-587Z	B6P
202	1	Relay, Overcurrent/Control, SEL-351S	R60P
200	1	Relay, Lockout, LOR, Hand Reset, 5-Deck	86BF60
201	1	Relay, Lockout, LOR, Hand Reset, 8-Deck	86B6
202	1	Synchronizing Switch	SS
203	1	Synchronizing Switch Handle	
204	1	Control Switch, #24PA903LC	87B6/CO
205	1	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 173-330-036	For SEL-351S
206	1	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 183-036-036	For SEL-587Z
207	1	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 036-036-036	For 86BF60 & 86B6
208	2	Voltmeters	VM/INC VM/RUN
209	1	Synchroscope	SYN
210	6	Fuse Block, 2P, 30A, 250V	
211	3	Fuse Block, 3P, 30A, 250V	
212	12	Fuse, 15A	Includes spares
213	6	Fuse, 30A	Includes spares
214	23	Terminal Block, 12P, 30A	
215	4	Terminal Block, 4P, 30 A	
216	3	Terminal Block, 4P, 30A, Shorting	
217	1	Receptacle, Duplex, 120 VAC	
218	1	Light Switch, 1-Pole, 120 VAC	
219	1	Fluorescent Light, 120 VAC	
220	1	Bus, Ground, Copper	
221	4	Anchors, Hilti Drop-In	
222	2	Cover Plate, Blank, 1 Rack Units	

Item	Qty.	Description	Remarks
223	4	Cover Plate, Blank, 3 Rack Unit	One plate cutout for lockout relays, one plate cutout for receptacle, one plate cutout for sync. switch
224	1	Cover Plate, Blank, 4 Rack Unit	
225	3	Cover Plate, Blank, 5 Rack Unit	One plate cutout for meters

Panel No. 3: 230/115kV Bank No.6 & Breaker No.6

Item	Qty.	Description	Remarks
300	1	Steel Panel For description of each item in this subsection, refer to Appendix 3.	Cable Entry from top of Panel
301	1	Relay, Transformer, SEL-387E, with additional I/O	T6P
302	1	Relay, Transformer, SEL-387E, without additional I/O	T6BU
303	1	Relay, Overcurrent/Control, SEL-351S	R6P
304	1	Metering IED, Bitronics M871	MFM6
305	1	Relay, Lockout, LOR, Hand Reset, 5-Deck	86BF6
306	1	Relay, Lockout, LOR, Hand Reset, 5-Deck	86T6
307	1	Synchronizing Switch	SS
308	1	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 173-330-036	For SEL-351S
309	2	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 171-173-036	For SEL-387E
310	1	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 036-171-036	For 86BF6, 86T6, & MFM6
311	1	Switch, Test, ABB Flexitest™, Type FT-19R Switch Codes: 036-036-036	For Misc. I/O
312	7	Fuse Block, 2P, 30A, 250V	
313	3	Fuse Block, 3P, 30A, 250V	
314	15	Fuse, 15A	Includes spares
315	6	Fuse, 30A	Includes spares
316	23	Block, Terminal, 12P, 30A	
317	4	Block, Terminal, 4P, 30 A	
318	8	Block, Terminal, 4P, 30A, Shorting	
319	1	Receptacle, Duplex, 120 VAC	
320	1	Light Switch, 1-Pole, 120 VAC	
321	1	Fluorescent Light, 120 VAC	
322	1	Bus, Ground, Copper	
323	4	Anchors, Hilti Drop-In	
324	4	Cover Plate, Blank, 1 Rack Units	

Item	Qty.	Description	Remarks
325	2	Cover Plate, Blank, 3 Rack Units	One plate cutout for lockout relays, one plate cutout for receptacle
326	1	Cover Plate, Blank, 4 Rack Units	
327	2	Cover Plate, Blank, 5 Rack Units	

**GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA**

CONTROL SWITCHBOARDS FOR GREENVILLE SOUTH 230KV POD #3

EQUIPMENT DESCRIPTIONS

Equipment for use in Panels

Description	Remarks
<p>Steel Panel Self-supporting, 28" wide x 90" tall x 30" deep with 19" rack-mount front; with side and top covers; with rear hinged door. Steel Details per Booth & Associates drawings: 14022-E005, sheets A-H</p>	
<p>Relay, Current Differential & Voltage Protection, SEL-387E</p> <p>Firmware: Standard. Standard: 8 Outputs & 6 Inputs, Conventional Terminal Blocks. I/O Board; Chassis: Additional 12 Standard Outputs, 8 Inputs, 3 rack-unit chassis. Power Supply: 48/125Vdc or 125 Vac. Secondary Input Voltage: 300Vac Maximum (standard). Secondary Input Current: 5 Amp Phase. Mounting: 3RU Horizontal Rack Mount. Conformal Coat: None. Control Input Voltage: 125VDC. Communications Protocols: Serial Protocols (SEL-ASCII, SEL Fast Message, optional DNP3 Level 2 Slave) with Two 10/100BASE-T Ethernet Ports & SEL ASCII Via Telnet.</p> <p>Schweitzer model 0387E013X5H2X42</p> <p>Instruction Manuals: Furnish one hard- copy instruction manual (as published by SEL) per project. Instruction manual CD ROM's as shipped with relay are to be furnished to customer.</p>	TxP

Description	Remarks
<p>Relay, Current Differential & Voltage Protection, SEL-387E</p> <p>Firmware: Standard. Standard: 8 Outputs & 6 Inputs, Conventional Terminal Blocks. I/O Board; Chassis: No additional I/O, 3 rack-unit chassis. Power Supply: 48/125Vdc or 125 Vac. Secondary Input Voltage: 300Vac Maximum (standard). Secondary Input Current: 5 Amp Phase. Mounting: 3RU Horizontal Rack Mount. Conformal Coat: None. Control Input Voltage: 125VDC. Communications Protocols: Serial Protocols (SEL-ASCII, SEL Fast Message, optional DNP3 Level 2 Slave) with Two 10/100BASE-T Ethernet Ports & SEL ASCII Via Telnet. Conformal Coat: None.</p> <p>Schweitzer model 0387E013X5HXX42</p> <p>Instruction Manuals: Instruction manual CD ROM's as shipped with relay are to be furnished to customer.</p>	TxBU
<p>Relay, Overcurrent/Control, SEL-351S-7</p> <p>Standard: 8 Outputs & 6 Inputs, Conventional Terminal Blocks. Firmware: Standard (includes Mirrored Bits and Load Profile), Plus Power Elements & Voltage Sag/ Swell/ Interruption. Chassis & Mounting: 3RU Horizontal Rack Mount. User Interface: Standard (Operator Controls & LCD) plus SafeLock Trip/Close Pushbuttons and Configurable Labels and USB. Power Supply: 48/125Vdc or 125 Vac. Communications Interface: One 10/100BASE-T Ethernet Port. Secondary Input Voltage: 300Vac Maximum (standard). Secondary Input Current: 5 Amp Phase, 5 Amp Neutral. Control Input Voltage: 125VDC. I/O Board: Additional 12 Standard Outputs, 8 Inputs, 3 rack-unit chassis. Communications Protocols: Standard (Ethernet, IEEE C37.118 Synchrophasor Measurement, DNP3 Outstation, Modbus TCP/RTU, Telnet, FTP, Web Server, SNTP).</p> <p>Schweitzer model 0351S7XHD3A5421</p> <p>Instruction Manuals: Furnish one hard- copy instruction manual (as published by SEL) per project. Instruction manual CD ROM's as shipped with relay are to be furnished to customer.</p>	RxP

Description	Remarks
<p>Relay, Overcurrent/Control, SEL-351A</p> <p>Standard: 8 Outputs & 6 Inputs, Conventional Terminal Blocks. Firmware: Standard. Chassis & Mounting: 2RU Horizontal Rack Mount. User Interface: Standard (Operator Controls & LCD) plus USB. Power Supply: 48/125Vdc or 125 Vac. Communications Interface: One 10/100BASE-T Ethernet Port. Secondary Input Voltage: 300Vac Maximum (standard). Secondary Input Current: 5 Amp Phase, 5 Amp Neutral. Control Input Voltage: 125VDC. Communications Protocols: Standard (Ethernet, IEEE C37.118 Synchrophasor Measurement, DNP3 Outstation, Modbus TCP/RTU, Telnet, FTP, Web Server, SNMP).</p> <p>Schweitzer model 0351A0H2X3A54X1</p> <p>Instruction Manuals: Furnish one hard- copy instruction manual (as published by SEL) per project. Instruction manual CD ROM's as shipped with relay are to be furnished to customer.</p>	<p>RxBU</p>
<p>Relay, Bus Differential, SEL-587Z</p> <p>Standard: 5 Outputs & 2 Inputs, Conventional Terminal Blocks. Firmware: Standard. Chassis & Mounting: 3RU Horizontal Rack Mount. Power Supply: 48/125Vdc or 125 Vac. Energy- Clamping MOV's: 2 MOV's- 5000J, 2000V. Communications Interface: EIA-232 Front & Rear Port. Secondary Input Current: 5 Amp Phase. Control Input Voltage: 125VDC. Communications Protocols: Standard plus Modbus RTU.</p> <p>Schweitzer model 0587Z0X325H12XX</p> <p>Instruction Manuals: Furnish one hard- copy instruction manual (as published by SEL) per project. Instruction manual CD ROM's as shipped with relay are to be furnished to customer.</p>	<p>BxP</p>

Description	Remarks
<p>Relay, Lockout, Electroswitch LOR One (1) Electroswitch LOR lockout relay with lighted nameplate Type: Manual reset Coil: 125 Vdc trip coil "D" Decks/ Contacts: Five (5) decks with ten (10) N.C. and ten (10) N.O. contacts Nameplate: Nameplate Code 102C-2L22 (engraved "LOCKOUT RELAY". Reset Position text is "NORMAL"; Tripped position text is "LOCKOUT"). Lighted Nameplate: Two 48/125VDC LED's; Left position color White (DC/ trip coil monitor; Right position Red (Trip signal active).</p> <p>Electroswitch Catalog No. 78PB05LF. Instruction Manuals: Furnish three hard- copy instruction manuals (as published by Electroswitch) per project.</p>	86Tx 86BFx
<p>Relay, Lockout, Electroswitch LOR One (1) Electroswitch LOR lockout relay with lighted nameplate Type: Manual reset Coil: 125 Vdc trip coil "D" Decks/ Contacts: Eight (8) decks with ten (10) N.C. and ten (10) N.O. contacts Nameplate: Nameplate Code 102C-2L22 (engraved "LOCKOUT RELAY". Reset Position text is "NORMAL"; Tripped position text is "LOCKOUT"). Lighted Nameplate: Two 48/125VDC LED's; Left position color White (DC/ trip coil monitor; Right position Red (Trip signal active).</p> <p>Electroswitch Catalog No. 78PB08LA.</p>	86Bx
<p>Control Switch, Bus Differential Bypass/ Cutoff, Electroswitch Electroswitch control switch with lighted nameplate Type: Series 24P Decks/ Contacts: Three (3) decks with six (6) N.C. and six (6) N.O. contacts Nameplate: Nameplate Code 151D-2D17E (engraved "DIFFERENTIAL". Position 1 text is "ON"; Position 2 text is "OFF"). Lighted Nameplate: One 48/125VDC LED; color Amber. With MOLEX connector.</p> <p>Electroswitch Catalog No. 24PA903LC Instruction Manuals: Furnish three hard- copy instruction manuals (as published by Electroswitch) per project.</p>	87B6 CO

Description	Remarks
<p>Switch, Test, ABB Flexitest™, Type FT-19R ABB type FT-19R Flexitest switch assembly, 19” rack-mount test device: Panel Height: 3 rack-unit, switches mounted low (3RU Lo). Material: Steel (STL). Finish: Ansi 61 Gray FT-1 Switches: Position A: Code 171, Style R774B430G20 (C-C, C-C, C-C, P, P, P, P) Position B: Code 173, Style R774B430G22 (C-C, C-C, C-C, C-C, T, T) Position C: Code 036, Style R129A539G01 (T, T, T, T, T, T, T, T, T, T) Terminals: Screw Terminal Depth: Standard Depth Cover: Full Clear Other Features: Flat Panel</p> <p>Style No. FRXG-171-173-036-NF</p>	<p>Use with SEL-387E</p>
<p>Switch, Test, ABB Flexitest™, Type FT-19R ABB type FT-19R Flexitest switch assembly, 19” rack-mount test device: Panel Height: 3 rack-unit, switches mounted low (3RU Lo). Material: Steel (STL). Finish: Ansi 61 Gray FT-1 Switches: Position A: Code 173, Style R774B430G22 (C-C, C-C, C-C, C-C, T, T) Position B: Code 330, Style 9672A71G01 (P, P, P, P, P, P, T, T, T, T) Position C: Code 036, Style 129A (T, T, T, T, T, T, T, T, T, T) Terminals: Screw Terminal Depth: Standard Depth Cover: Full Clear Other Features: Flat Panel</p> <p>Style No. FRXG-173-330-036-NF</p>	<p>Use with SEL-351S SEL-351A</p>

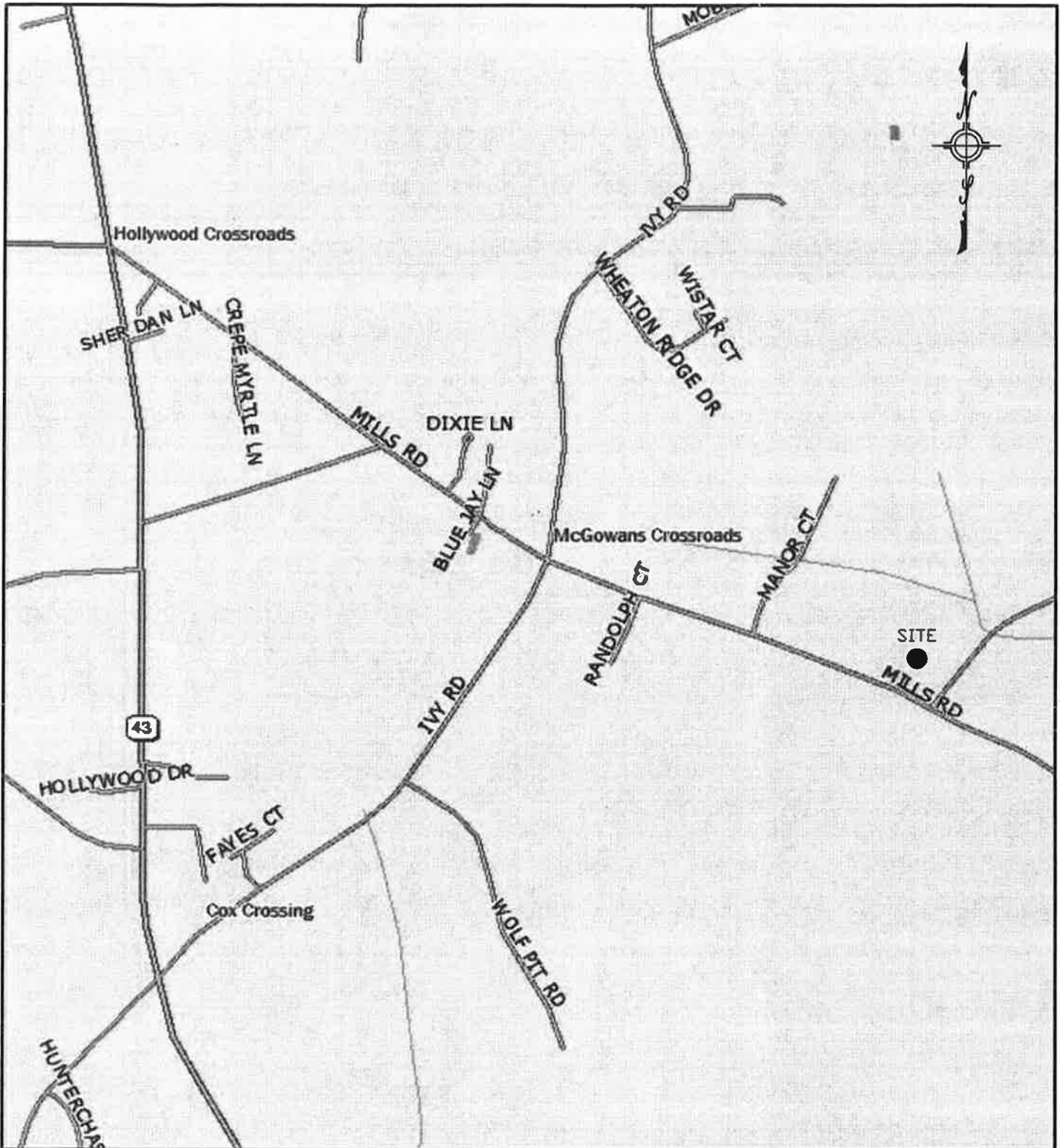
Description	Remarks
<p>Switch, Test, ABB Flexitest™, Type FT-19R ABB type FT-19R Flexitest switch assembly, 19” rack-mount test device: Panel Height: 3 rack-unit, switches mounted low (3RU Lo). Material: Steel (STL). Finish: Ansi 61 Gray FT-1 Switches: Position A: Code 183, Style R774B430G24 (C-C, C-C, C-C, T, T, T, T) Position B: Code 036, Style 129A (T, T, T, T, T, T, T, T, T,T) Position C: Code 036, Style 129A (T, T, T, T, T, T, T, T, T,T) Terminals: Screw Terminal Depth: Standard Depth Cover: Full Clear Other Features: Flat Panel</p> <p>Style No. FRXG-183-036-036-NF</p>	<p>Use with SEL-587Z</p>
<p>Switch, Test, ABB Flexitest™, Type FT-19R ABB type FT-19R Flexitest switch assembly, 19” rack-mount test device: Panel Height: 3 rack-unit, switches mounted low (3RU Lo). Material: Steel (STL). Finish: Ansi 61 Gray FT-1 Switches: Position A: Code 036, Style R129A539G01 (T, T, T, T, T, T, T, T, T, T) Position B: Code 171, Style R774B430G20 (C-C, C-C, C-C, P, P, P, P) Position C: Code 036, Style R129A539G01 (T, T, T, T, T, T, T, T, T, T) Terminals: Screw Terminal Depth: Standard Depth Cover: Full Clear Other Features: Flat Panel</p> <p>Style No. FRXG-036-171-036-NF</p>	<p>Use with 86BF6/ 86T6/ MFM6 on Panel 3</p>

Description	Remarks
<p>Switch, Test, ABB Flexitest™, Type FT-19R ABB type FT-19R Flexitest switch assembly, 19” rack-mount test device: Panel Height: 3 rack-unit, switches mounted low (3RU Lo). Material: Steel (STL). Finish: Ansi 61 Gray FT-1 Switches: Position A: Code 036, Style R129A539G01 (T, T, T, T, T, T, T, T, T, T) Position B: Code 036, Style R129A539G01 (T, T, T, T, T, T, T, T, T, T) Position C: Code 036, Style R129A539G01 (T, T, T, T, T, T, T, T, T, T) Terminals: Screw Terminal Depth: Standard Depth Cover: Full Clear Other Features: Flat Panel</p> <p>Style No. FRXG-036-036-036-NF</p>	<p>Use with MISC I/O</p>
<p>Synchroscope, AB-40 Yokogawa/GE Type AB-40, Model 50- 106452AAAA, “SLOW-FAST” Scale, 120 Volt, 60HZ</p>	<p>SYN</p>
<p>Voltmeter, AB-40, 0-150 Volts Yokogawa/GE Type AB-40, Model 50-103021PZPZ, 0-150 Volt Scale, 60HZ</p>	<p>VM/INC VM/RUN</p>
<p>Synchronizing Switch, Electros witch Electros witch control switch. Type: Series 24. Decks/ Contacts: Two (2) decks with four (4) N.O. contacts Nameplate: Nameplate Code 11D-2S17 (engraved "SYNCHROSCOPE". Position 1 text is “OFF”; Position 2 text is “ON”). Handle: Removable oval handle. Electros witch Catalog No. 2424E</p>	<p>SS</p>

Description	Remarks
<p>Metering IED, NovaTech/ Bitronics, M871</p> <p>Base Model: M871, IED, Modular, Single Line, Dual Bus, C07A5 Chassis. Bay1, Power Supply: V10, 20- 300 VDC, 55- 285 VAC. Bay2, cPCI Slot: C00, Blank Cover. Bay3, cPCI Slot: P30A, Digital I/O, 8 point set for 300 VDC. Bay4, cPCI Slot: Open. Bay5, cPCI Slot, Host: H12M1GBE1, Host Processor, 1 GB, with E1 Ethernet (RJ45 10/100 Mb). Bay6, cPCI Slot, DSP: A10, Analog Processor. Bay7, Signal Input: S10, 5 A Nominal, Linear to 100 Amp, UL/CSA. Firmware Level: X, Latest Firmware Version.</p> <p>NovaTech Catalog No. M871208YD11X Instruction Manuals: Furnish three hard- copy instruction manuals (as published by NovaTech) per project.</p>	MFM6
<p>Fuse Block, 2P, 30A, 250V</p> <p>Marathon type Fuse blocks, two-pole,30 amp, 250 volt, Class H, with screw type terminals and lockwashers, with spring reinforcing clips.</p> <p>Marathon Catalog No. RF30A2S or equivalent.</p>	
<p>Fuse Block, 3P, 30A, 250V</p> <p>Marathon type Fuse blocks ,Three-pole, 30 amp, 250 volt, Class H, with screw type terminals and lockwashers, with spring reinforcing clips.</p> <p>Marathon Catalog No. RF30A3S or equivalent.</p>	
<p>Fuse, 15A</p> <p>Fuse, Class RK1, 15A non-renewable type fiberglass body cartridge fuses</p> <p>Gould A2K-R or Bussman KTN-R.</p>	
<p>Fuse, 30A</p> <p>Fuse, Class RK1, 30A non-renewable type fiberglass body cartridge fuses</p> <p>Gould A2K-R or Bussman KTN-R.</p>	
<p>Terminal Block, 12 Pole</p> <p>Twelve-pole terminal block, 600 volt, 30 amp, white marking strip, barrier type, with screw type terminals and slotted (not Philips-slot) screws.</p> <p>Marathon Catalog No. 1512STD</p>	

Description	Remarks
<p>Terminal Block, 4 Pole Four-pole terminal block, 600 volt, 30 amp, white marking strip, barrier type, with screw type terminals and slotted (not Philips-slot) screws.</p> <p>Marathon Catalog No. 1504STD</p>	
<p>Terminal Block, 4 Pole Shorting Four-pole terminal block, Shorting Type, 600 volt, 30 amp, white marking strip, barrier type, with screw type terminals and slotted (not Philips-slot) screws.</p> <p>Marathon Catalog No. 1504SC</p>	
<p>Receptacle, Duplex, 120 VAC Duplex 120VAC, 15A receptacle with ground plugs; mounted in 1-gang receptacle box with cover.</p>	
<p>Light Switch, 1-Pole, 120 VAC 1-pole 120VAC light switch; mounted in 1-gang switch box with cover.</p>	
<p>Fluorescent Light, 120 VAC Fluorescent light fixture, 24", with cover suitable for mounting to inside top of relay panel. Hoffman #LF120V15 with #FGT5/CW bulb, or equivalent.</p>	
<p>Bus, Ground, Copper Copper ground bus ¼"x 1"x25"</p>	
<p>Anchors, Hilti Drop-In Anchors with ½" stainless steel bolt. HDI 1/2 (SS303)</p> <p>Hilti model 00336432.</p>	
<p>Cover Plate, Blank, 1 Rack Units Blank plate for a 19" rack panel, 1 rack units high, 12 gauge steel, light gray, EIA standard RS-310-D spacing.</p> <p>Hoffman P19RP1UP or equivalent.</p>	
<p>Cover Plate, Blank, 2 Rack Units Blank plate for a 19" rack panel, 2 rack units high, 12 gauge steel, light gray, EIA standard RS-310-D spacing.</p> <p>Hoffman P19RP2UP or equivalent.</p>	

Description	Remarks
<p>Cover Plate, Blank, 3 Rack Units Blank plate for a 19" rack panel, 3 rack units high, 12 gauge steel, light gray, EIA standard RS-310-D spacing.</p> <p>Hoffman P19RP3UP or equivalent.</p>	
<p>Cover Plate, Blank, 4 Rack Unit Blank plate for a 19" rack panel, 4 rack units high, 12 gauge steel, light gray, EIA standard RS-310-D spacing.</p> <p>Hoffman P19RP4UP or equivalent.</p>	
<p>Cover Plate, Blank, 5 Rack Unit Blank plate for a 19" rack panel, 5 rack units high, 12 gauge steel, light gray, EIA standard RS-310-D spacing.</p> <p>Hoffman P19RP5UP or equivalent.</p>	



SITE ADDRESS:
2670 MILLS ROAD, GREENVILLE, NC

GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

POD No. 3 230 TO 115kV
VICINITY MAP

Booth & Associates, LLC

811 Claywood Avenue | Raleigh, NC 27612 | CONSULTING ENGINEERS NO. F-0321

DWN.	AAI	DATE:	12/22/15
CKD.	BDE	APPD.	RSY
SCALE: 1" = 1000'		FILE:	14020VM
JOB NO.	147796	DATE	REVISION
	© 12/15		

DWG. NO.
VM-1