

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**SPECIFICATIONS AND BID DOCUMENTS FOR
CONTROL SWITCHBOARDS FOR
GREENVILLE WEST 230KV SUBSTATION**

ISSUED FOR BIDS

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**SPECIFICATIONS AND BID DOCUMENTS FOR
CONTROL SWITCHBOARDS FOR
GREENVILLE WEST 230KV SUBSTATION**

ISSUED FOR BIDS



10/25/2018

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

© September 2018

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**SPECIFICATIONS AND BID DOCUMENTS FOR
CONTROL SWITCHBOARDS FOR
GREENVILLE WEST 230 KV SUBSTATION**

TABLE OF CONTENTS

REQUEST FOR PROPOSAL

Notice to Prospective Bidders	N-1
Definitions	D-1
Instructions to Bidders	IB-1
General Conditions	GC-1

FORM OF PROPOSAL

Terms and Conditions.....	P-2
Bid Schedules	P-10
Affidavit of Bidder	P-11
Form of Exceptions.....	P-12
Bid Bond.....	P-13
E-Verify Compliance.....	P-14
Addenda / Clarifications / Bulletins.....	P-17

TECHNICAL SPECIFICATIONS

1.0	Scope	S-1
2.0	General Conditions	S-1
3.0	Special Conditions.....	S-1
4.0	Standards	S-2
5.0	Drawings and Documentation	S-2
6.0	Shipping and Delivery	S-4
7.0	Switchboard and Panel Construction.....	S-4
8.0	Protective Relaying and Control Switchboard	S-7
9.0	Spare Parts.....	S-8
10.0	Production Tests	S-8
11.0	Installation	S-8

APPENDICES

1 – List of Drawings	
2 – List of Equipment Requirements	
Panel No. 7- 115kV Bus No.5 & Breaker No.54.....	2-1
Panel No. 8- 230/115kV Bank No.5 & Breaker No.50	2-8
3 – Vicinity Map	

REQUEST FOR PROPOSAL

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 West 230 kV Substation, 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 Procurement Coordinator, Greenville Utilities commission, 401 S. Greene Street, Greenville, North Carolina 27834, on or before **2:00 PM, local time, Thursday, November 29, 2018**, 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 via email to Cleve Haddock, Haddockgc@guc.com by **Wednesday, November 7, 2018**.

Instructions for submitting bids and complete specifications will be available in the Office of the Procurement Coordinator, 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 Cleve Haddock, CLGPO Procurement Coordinator, 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 Procurement Coordinator, 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 WEST 230 KV SUBSTATION NOT TO BE OPENED UNTIL 2:00 PM, THURSDAY, November 29 , 2018"**.

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: October 25, 2018
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 map located in the appendices for site location.
- 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 **Outline 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: Brian C. Winger, PE or electronically to WinglerBC@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 2.
- 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.

10.0 Payment

- 10.1** 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.
- 10.2** There shall be a ten-percent (10%) retainage on invoices until all equipment, with proper instruction books per Specifications, and certified test reports 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.
- 10.3** 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 Procurement Coordinator.

Procurement Coordinator:
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 Statute 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 Procurement Coordinator, 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 Procurement Coordinator, 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 Procurement Coordinator. 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 Procurement Coordinator.**

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 Minority Business Participation Program

GUC has adopted an Affirmative Action and Minority and Women Business Enterprise (MWBE) 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 MWBE suppliers of materials and/or labs.

37.0 Uniform Guidance

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

38.0 Notices

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

Mr. Cleve Haddock, CLGPO
Procurement Coordinator
Greenville Utilities Commission
P.O. Box 1847
Greenville,

NC

27835-1847

FORM OF PROPOSAL

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**CONTROL SWITCHBOARDS FOR
GREENVILLE WEST 230 KV SUBSTATION**

FORM OF PROPOSAL

*(Provide **one** original and **one** copy)*

Respectfully submitted this ____ day of _____, 2018

OWNER:	BIDDER:	
Greenville Utilities Commission 401 South Greene Street Greenville, North Carolina 27834 P.O. Box 1847 Greenville, North Carolina 27835 Mr. Cleve Haddock, CLGPO Procurement Coordinator Office: 252-551-1533 Email: Haddocgc@guc.com		
	NAME	TITLE
	STREET ADDRESS	
	CITY/STATE/ZIP	
	PHONE:	
	FAX:	
	E-MAIL:	
SIGNATURE		
SUPPLIER OF PROPOSED EQUIPMENT		
MANUFACTURER		
STREET ADDRESS		
CITY / STATE / ZIP		

SECTION III

TERMS AND CONDITIONS FOR THE PURCHASE OF APPARATUS, SUPPLIES, MATERIALS, AND EQUIPMENT

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

1.0 TAXES

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

2.0 INVOICES

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

3.0 PAYMENT TERMS

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

4.0 QUANTITIES

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

5.0 AFFIRMATIVE ACTION

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

6.0 CONDITION AND PACKAGING

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

7.0 SAMPLES

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

8.0 SPECIFICATIONS

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

9.0 INFORMATION AND DESCRIPTIVE LITERATURE

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

10.0 AWARD OF CONTRACT

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

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

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

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

11.0 MEDIATION/BINDING ARBITRATION

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

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

12.0 GOVERNMENT RESTRICTIONS

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

13.0 INSURANCE

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

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

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

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

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

14.0 PATENTS AND COPYRIGHTS

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

15.0 PATENT AND COPYRIGHT INDEMNITY

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

16.0 EXCEPTIONS

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

17.0 CONFIDENTIAL INFORMATION

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

18.0 ASSIGNMENT

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

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

19.0 ACCESS TO PERSON AND RECORDS

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

20.0 INSPECTION AT BIDDER'S SITE

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

21.0 AVAILABILITY OF FUNDS

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

22.0 GOVERNING LAWS

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

23.0 ADMINISTRATIVE CODE

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

24.0 EXECUTION

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

25.0 CLARIFICATIONS/INTERPRETATIONS

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

26.0 SITUS

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

27.0 TERMINATION OF AGREEMENT

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

28.0 DELIVERY

Shipments will be made only upon releases from a purchase order issued by GUC in accordance with GUC's current needs.

Time is of the essence with respect to all deliveries under this Agreement.

Delivery of all equipment, materials, or supplies shall be made Free on Board (FOB) GUC Warehouse, 801 Mumford Road, Greenville, North Carolina 27834, unless otherwise specified.

The agreed price for such equipment, materials, or supplies shall include all costs of delivery and ownership, and risks of loss shall not be transferred from Provider to GUC until express written acceptance of delivery and inspection by GUC. Delivery hours are between 8:00 AM and 4:30 PM Monday-Friday only. **GUC's purchase order number is to be shown on the packing slip or any related documents.** GUC reserves the right to refuse or return any delivery with no purchase order number or which is damaged. GUC will not be charged a restocking fee for any delivery which is refused or returned.

29.0 INDEMNITY PROVISION

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

30.0 FORCE MAJEURE

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

31.0 WARRANTY(IES)

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

32.0 INTEGRATED CONTRACT

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

33.0 CONTRACT PROVISIONS

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

34.0 E-VERIFY

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

35.0 IRAN DIVESTMENT ACT CERTIFICATION

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

36.0 UNIFORM GUIDANCE

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

37.0 NOTICES

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

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

Vendor Specified on Page 1 of Section III when awarded.

BID SCHEDULE

BID SCHEDULE NO. 1 – 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 West 230kV Substation:			
Panel No. 7- 115kV Bus No.5	1 each	\$ _____	\$ _____
Panel No. 8- 230/115kV Bank No.5	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 required no later than **April 1, 2019**

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: _____

FORM OF EXCEPTIONS

Instructions to Bidders, Paragraph 2.6 and Section 7. Purchase Order

BIDDER: _____
GREENVILLE UTILITIES COMMISSION
OWNER: _____
GREENVILLE, NORTH CAROLINA
PROJECT _____
DESCRIPTION CONTROL SWITCHBOARDS
FOR GREENVILLE WEST 230 KV SUBSTATION

INSTRUCTIONS: The following is a list of exceptions to the Bidding Documents and/or *Technical Specifications* pertaining to the furnishing of the subject materials. Bidders shall identify each exception by Specification page and paragraph number on this form. The omission of exception implies complete compliance with Plans and Specifications.

**BID DOCUMENT/
SPECIFICATION
PAGE NO. AND
PARAGRAPH**

EXCEPTION/VARIATION

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

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 _____, 2018.

WHEREAS, the said Principal is herewith submitting a Proposal for

**CONTROL SWITCHBOARDS
FOR GREENVILLE WEST 230 KV SUBSTATION**

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):

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

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

6. ____ After hiring an employee to work in the United States the subcontractor verifies the work authorization of said employee through E-Verify and retains the record of the verification of work authorization while the employee is employed and for one year thereafter; or
7. ____ Employ less than fifteen (15) employees in the State of North Carolina.

Specify subcontractor: _____

_____ (Company Name)

By: _____ (Typed Name)

_____ (Authorized Signatory)

_____ (Title)

_____ (Date)

GREENVILLE UTILITIES COMMISSION

By: _____
Anthony C. Cannon

Title: General Manager/CEO
(Authorized Signatory)

Date: _____

Attest: _____

Name (Print): Amy Wade

Title: Executive Secretary

Date: _____

(OFFICIAL SEAL)

(Insert Vendor Name)

By: _____

Name (Print): _____

Title: _____
(Authorized Signatory)

Date: _____

Attest: _____

Name (Print): _____

Title: Corporate Secretary

Date: _____

(OFFICIAL 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: _____

CHANGE ORDER

GREENVILLE UTILITIES COMMISSION PROJECT CHANGE ORDER			
			Assigned by Finance Change Order Number: CO-_____
Department: _____	Date: _____	Capital Project Number: _____	
Project Name: _____	Vendor Name: _____		
Initiated By: _____	Vendor Address: _____		
Name	Vendor Contact: _____		
<input type="checkbox"/> Owner	<input type="checkbox"/> Engineer	<input type="checkbox"/> Contractor	
<input type="checkbox"/> Other _____			
<p>1. <u>TYPE OF CHANGE:</u> <input type="checkbox"/> Design <input type="checkbox"/> Engineering <input type="checkbox"/> Scope <input type="checkbox"/> Other _____</p> <p>2. <u>REASON FOR CHANGE:</u> <input type="checkbox"/> Owner <input type="checkbox"/> Vendor <input type="checkbox"/> Safety <input type="checkbox"/> Construction</p> <p style="margin-left: 100px;"><input type="checkbox"/> Cost <input type="checkbox"/> Schedule</p> <p>3. <u>CHANGE ORDER DESCRIPTION:</u> _____</p> <p style="margin-left: 40px;"><i>Change Order Justification - _____</i></p>			
4. <u>ACCOUNT NUMBER:</u> _____			
5. <u>SCHEDULE IMPACT:</u> <input type="checkbox"/> No Impact <input type="checkbox"/> Schedule Impact			
6. Project Delay Of: <input type="checkbox"/> Days <input type="checkbox"/> Weeks <input type="checkbox"/> Months Check One			
Start Date: _____		Finish Date: _____	
		Total Time Delay: _____	
7. <u>ESTIMATED COST:</u>			
Project Mgmt	_____	<input type="checkbox"/> Add	<input type="checkbox"/> Deduct
Engr/Design	_____	<input type="checkbox"/> Add	<input type="checkbox"/> Deduct
Construction	_____	<input type="checkbox"/> Add	<input type="checkbox"/> Deduct
Labor	_____	<input type="checkbox"/> Add	<input type="checkbox"/> Deduct
Materials	_____	<input type="checkbox"/> Add	<input type="checkbox"/> Deduct
Other Direct	_____	<input type="checkbox"/> Add	<input type="checkbox"/> Deduct
Indirect	_____	<input type="checkbox"/> Add	<input type="checkbox"/> Deduct
Total Change Order Amount:	_____	<input type="checkbox"/> Add	<input type="checkbox"/> Deduct
8. <u>REVISED CAPITAL PROJECT COST:</u> Original Budget: \$ _____ Revised Estimate to Complete: \$ _____			
APPROVED <input type="checkbox"/> DISAPPROVED <input type="checkbox"/> _____			
		Project Manager	Date
APPROVED <input type="checkbox"/> DISAPPROVED <input type="checkbox"/> _____			
		Department Head	Date
APPROVED <input type="checkbox"/> DISAPPROVED <input type="checkbox"/> _____			
		Assistant General Manager/Chief Operating Officer	Date
APPROVED <input type="checkbox"/> DISAPPROVED <input type="checkbox"/> _____			
		General Manager/Chief Executive Officer	Date

RETURN TO FINANCE AFTER GM/CEO SIGNATURE

INSERT

ADDENDA / CLARIFICATIONS / BULLETINS

Instructions to Bidders, 5. Bulletins and Addenda

TECHNICAL SPECIFICATIONS

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**CONTROL SWITCHBOARDS FOR
GREENVILLE WEST 230 KV SUBSTATION**

TECHNICAL SPECIFICATIONS

1.0 Scope

- 1.1 Greenville Utilities Commission of Greenville, North Carolina, is procuring two (2) Control Switchboards for Greenville West 230 kV Substation 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 substations 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 sites 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: Brian C. Wingler, 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.

APPENDICES

- 1 – List of Drawings
- 2 – Equipment Requirements
- 3 – Vicinity Map

APPENDIX 1
List of Drawings

**GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA**

**CONTROL SWITCHBOARDS FOR
GREENVILLE WEST 230KV SUBSTATION**

LIST OF DRAWINGS

The work shall conform to the following Booth and Associates, LLC. 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, LLC prior to panel manufacturing; bidder should not expect availability of “For Construction” drawings until January 15, 2019.

Sheet No.	Title	Reference
GREENVILLE WEST 230KV SUBSTATION		
	Relay Panel Steel Details	14020-E045A thru – E045H
	Panel No. 7 - 115kV Bus No.5- Front Panel View	14020-E046
	Panel No. 8 - 230/115kV Bank No.5- Front Panel View	14020-E047
	Panel No. 7 - AC Elementary Diagram	14020-E048
	Panel No. 8- AC Elementary Diagram	14020-E049, -E050
	Panel No. 7 - DC Elementary Diagrams	14020-E051- E056
	Panel No. 8 - DC Elementary Diagrams	14020-E061 thru- E069
	Panel No. 7 - 115kV Bus No.5 - Interconnection Diagram	14020-E71
	Panel No. 8 - 230/115kV Bank No.5 - Interconnection Diagram	14020-E72

APPENDIX 2
Equipment Requirements

**GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA**

CONTROL SWITCHBOARDS FOR GREENVILLE WEST 230KV POD #2

EQUIPMENT REQUIREMENTS

Panel No.7: 115kV Bus No.5 & Breaker No.54

Item	Qty.	Description	Remarks
100	1	<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: 14020-E045, sheets A-H</p>	Cable Entry from top of Panel
101	1	<p>Relay, Bus, SEL-587Z 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>	B5P

Item	Qty.	Description	Remarks
102	1	<p>Relay, Overcurrent/Control, SEL-351S 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 120 Vac. Communications Interface: Two 10/100BASE-T Ethernet Ports. 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, SNMP). Schweitzer model 0351S7XHD3E5421 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>	R54P
103	1	<p>Relay, Lockout, LOR, Hand Reset, 5-Deck One (1) Electros witch 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). Electros witch Catalog No. 78PB05LF. Instruction Manuals: Furnish three hard- copy instruction manuals (as published by Electros witch) per project.</p>	86BF54

Item	Qty.	Description	Remarks
104	1	<p>Relay, Lockout, LOR, Hand Reset, 8-Deck 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). Electroswitch Catalog No. 78PB08LA. Instruction Manuals: Furnish three hard- copy instruction manuals (as published by Electroswitch) per project.</p>	86B5
105	1	<p>Synchronizing Switch, Electroswitch Electroswitch 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: With removable oval handle. Electroswitch Catalog No. 2424E</p>	SS
106	1	<p>Control Switch, #24PA903LC 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. Electroswitch Catalog No. 24PA903LC Instruction Manuals: Furnish three hard- copy instruction manuals (as published by Electroswitch) per project.</p>	87B5/CO

Item	Qty.	Description	Remarks
107	1	<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 R9672A71G01 (P, P, P, P, P, P, 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-173-330-036-NF</p>	For SEL-351S
108	1	<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 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-183-036-036-NF</p>	For SEL-587Z

Item	Qty.	Description	Remarks
109	1	<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>	For 86BF54 & 86B5
110	6	<p>Fuse Block, 2P, 30A, 250V 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.</p>	
111	3	<p>Fuse Block, 3P, 30A, 250V 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.</p>	
112	12	<p>Fuse, 15A Fuse, Class RK1, 15A non-renewable type fiberglass body cartridge fuses</p> <p>Gould A2K-R or Bussman KTN-R.</p>	Includes spares
113	6	<p>Fuse, 30A Fuse, Class RK1, 30A non-renewable type fiberglass body cartridge fuses</p> <p>Gould A2K-R or Bussman KTN-R.</p>	Includes spares

Item	Qty.	Description	Remarks
114	24	Terminal Block, 12P, 30A Twelve-pole terminal block, 600 volt, 30 amp, white marking strip, barrier type, with screw type terminals and slotted (not Philips-slot) screws. Marathon Catalog No. 1512STD	
115	4	Terminal Block, 4P, 30 A Four-pole terminal block, 600 volt, 30 amp, white marking strip, barrier type, with screw type terminals and slotted (not Philips-slot) screws. Marathon Catalog No. 1504STD	
116	3	Terminal Block, 4P, 30A, 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. Marathon Catalog No. 1504SC	
117	1	Receptacle Strip, 120 VAC AC Power outlet, rack- mount, 12 outlets, 15 amps. Tripplite model RS-1215	
118	1	Light Switch, 1-Pole, 120 VAC 1-pole 120VAC light switch; mounted in 1-gang switch box with cover.	
119	1	LED Light, 120 VAC LED light kit suitable for mounting to inside top of relay panel. Screw-mount, 90- 260 VAC power, on/ off switch. Pentair Catalog No. LEDA1S35 or equivalent	
120	1	Bus, Ground, Copper Copper ground bus ¼"x 1"x25"	
121	4	Anchors, Hilti Drop-In Anchors with ½" stainless steel bolt. HDI 1/2 (SS303) Hilti model 00336432.	
122	2	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. Hoffman P19RP1UP or equivalent.	

Item	Qty.	Description	Remarks
123	1	<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>	
124	3	<p>Cover Plate, Blank, 3 Rack Unit 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>	One plate cutout for lockout relays, one plate cutout for sync. switch
125	1	<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>	
126	3	<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>	

Panel No. 8: 230/115kV Bank No.5 & Breaker No.50

Item	Qty.	Description	Remarks
200	1	<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: 14020-E045, sheets A-H</p>	Cable Entry from top of Panel
201	1	<p>Relay, Transformer, SEL-387E, with additional I/O 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. Schweitzer model 0387E013X5H2X42 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>	T5P

Item	Qty.	Description	Remarks
202	1	<p>Relay, Current Differential & Voltage Protection, SEL-387E 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 Instruction Manuals: Instruction manual CD ROM's as shipped with relay are to be furnished to customer.</p>	T5BU
203	1	<p>Relay, Overcurrent/Control, SEL-351S 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 120 Vac. Communications Interface: Two 10/100BASE-T Ethernet Ports. 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 0351S7XHD3E5421 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>	R50P

Item	Qty.	Description	Remarks
204	1	<p>Control Switch Module, SEL-9510 LED Input Voltage: (3) 125 Vdc. LED/ Button Color Combination: (1) Open = Green, Close = Red. Pushbutton Guards: (B) With Guards. Configurable Labels: (2) With Configurable Labels.</p> <p>Schweitzer model 951031B2</p>	589CS
205	1	<p>Metering IED, Bitronics M871 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>	MFM5
206	2	<p>Relay, Lockout, LOR, Hand Reset, 5-Deck 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>	86BF50 86T5

Item	Qty.	Description	Remarks
207	1	<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: With removable oval handle. Electros witch Catalog No. 2424E</p>	SS
208	1	<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 R9672A71G01 (P, P, P, P,P,P,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 Style No. FRXG-173-330-036-NF</p>	For SEL-351S

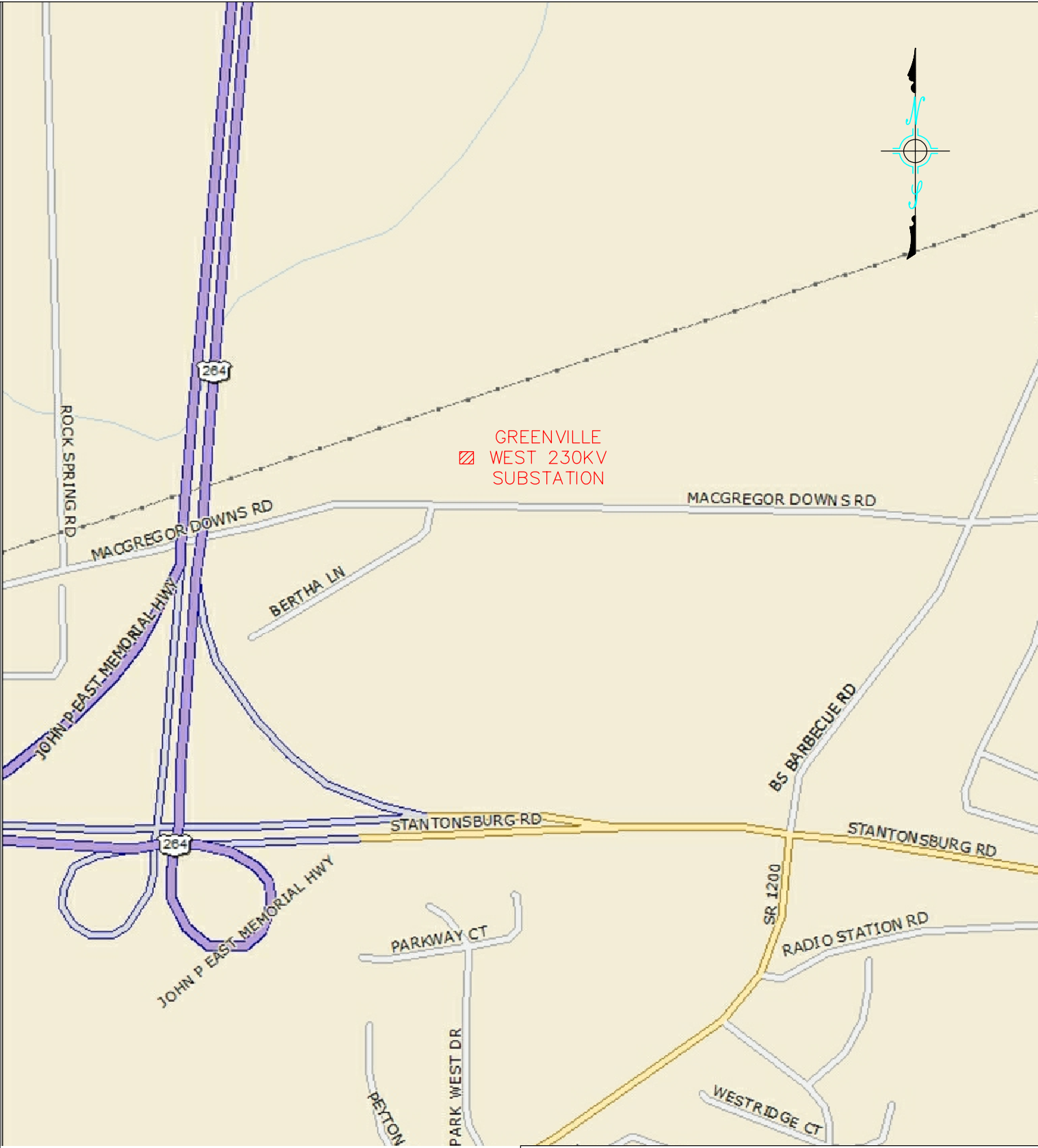
Item	Qty.	Description	Remarks
209	2	<p>Switch, Test, ABB Flexitest™, Type FT-19R ABB type FT-19R Flexitest switch assembly, 19” rack-mount test device: Panel Height: 3 rack-unit, switches mounted low (3RU Lo). Material: Steel (STL). Finish: Ansi 61 Gray FT-1 Switches: Position A: Code 171, Style R774B430G20 (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) Terminals: Screw Terminal Depth: Standard Depth Cover: Full Clear Other Features: Flat Panel</p> <p>Style No. FRXG-171-173-036-NF</p>	For SEL-387E
210	1	<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) 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) Terminals: Screw Terminal Depth: Standard Depth Cover: Full Clear Other Features: Flat Panel</p> <p>Style No. FRXG-036-171-036-NF</p>	For 86BF50, 86T5, & MFM5

Item	Qty.	Description	Remarks
211	1	<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) Position B: Code 036, Style R129A539G01 (T,T,T,T,T,T,T,T,T) Position C: Code 036, Style R129A539G01 (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>	For Misc. I/O
212	8	<p>Fuse Block, 2P, 30A, 250V 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>	
213	3	<p>Fuse Block, 3P, 30A, 250V 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>	
214	18	<p>Fuse, 15A Fuse, Class RK1, 15A non-renewable type fiberglass body cartridge fuses</p> <p>Gould A2K-R or Bussman KTN-R.</p>	Includes spares
215	6	<p>Fuse, 30A Fuse, Class RK1, 30A non-renewable type fiberglass body cartridge fuses</p> <p>Gould A2K-R or Bussman KTN-R.</p>	Includes spares

Item	Qty.	Description	Remarks
216	25	Block, Terminal, 12P, 30A Twelve-pole terminal block, 600 volt, 30 amp, white marking strip, barrier type, with screw type terminals and slotted (not Philips-slot) screws. Marathon Catalog No. 1512STD	
217	4	Block, Terminal, 4P, 30 A Four-pole terminal block, 600 volt, 30 amp, white marking strip, barrier type, with screw type terminals and slotted (not Philips-slot) screws. Marathon Catalog No. 1504STD	
218	8	Block, Terminal, 4P, 30A, 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. Marathon Catalog No. 1504SC	
219	1	Receptacle Strip, 120 VAC AC Power outlet, rack- mount, 12 outlets, 15 amps. Tripplite model RS-1215	
220	1	Light Switch, 1-Pole, 120 VAC 1-pole 120VAC light switch; mounted in 1-gang switch box with cover.	
221	1	LED Light, 120 VAC LED light kit suitable for mounting to inside top of relay panel. Screw- mount, 90- 260 VAC power, on/ off switch. Pentair Catalog No. LEDA1S35 or equivalent	
222	1	Bus, Ground, Copper Copper ground bus ¼"x 1"x25"	
223	4	Anchors, Hilti Drop-In Anchors with ½" stainless steel bolt. HDI 1/2 (SS303) Hilti model 00336432.	

Item	Qty.	Description	Remarks
224	3	<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>	
225	1	<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>	
226	3	<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>	Two plates cutout for lockout relays and switches
227	1	<p>Cover Plate, Blank, 4 Rack Units 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>	
228	1	<p>Cover Plate, Blank, 5 Rack Units 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>	

APPENDIX 3
Vicinity Map



Greenville West 230kV Substation (POD #2)
 3280 MacGregor Downs Rd.
 Greenville, NC 27834

GREENVILLE UTILITIES
 GREENVILLE, NORTH CAROLINA

GREENVILLE WEST 230KV SUBSTATION (POD No.2)
 VICINITY MAP

Booth & Associates, LLC
5811 Glenwood Avenue | Raleigh, NC 27612 CONSULTING ENGINEERS NC F-0221

DWN. AAI	DATE: 01/23/17	DWG. NO. VM-1
CKD. BDE	APPD. RSY	
SCALE: 1"=2000'	FILE: 14020VM	
JOB NO. -	DATE	REVISION
© 01/17		