

ADVERTISEMENT FOR BIDS

Sealed proposals will be received in the Office of the Procurement Manager, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina 27834 until 2:00 PM (EDST) on October 31, 2024 and immediately thereafter publicly opened and read for the furnishing of Hudson Substation Structures and Equipment.

Instructions for submitting bids and complete specifications will be available in the Office of the Procurement Manager, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina during regular office hours, which are 8:30AM – 5:00PM Monday through Friday.

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

SECTION I

GENERAL INSTRUCTIONS FOR FORMAL BIDS

RELATED TO THE PURCHASE OF APPARATUS, SUPPLIES,

MATERIALS, AND EQUIPMENT

1.0 NOTICE TO BIDDERS

Sealed bids, subject to the conditions made a part hereof, will be received in the Office of the Procurement Manager, Greenville Utilities Commission, 401 S. Greene Street, Greenville, North Carolina 27834 until 2:00 PM (EDST) on September 10, 2024, the day of opening. **Bids submitted in a fax or e-mail in response to this Invitation for Bids will not be acceptable. Late Bids will not be considered.**

2.0 STANDARD FORMS REQUIRED

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

3.0 PREPARATION OF BID

Bids must be in sealed envelopes clearly marked on the outside with the name of the bid and the bid opening date and time. Bid shall be addressed to the Procurement Manager, GREENVILLE UTILITIES COMMISSION, P. O. BOX 1847, 401 S. GREENE STREET, GREENVILLE, NORTH CAROLINA 27835-1847.

4.0 TIME FOR OPENING BIDS

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

5.0 DEPOSIT

A deposit is **NOT** required for this bid.

6.0 NC SALES TAX

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

7.0 FEDERAL EXCISE TAX

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

8.0 EXCEPTIONS TO BE CLEARLY STATED

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

9.0 EVALUATION AND AWARD OF BIDS

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

10.0 PROMPT PAYMENT DISCOUNTS

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

11.0 NUMERICAL ERRORS

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

12.0 BID WITHDRAWAL

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

13.0 MINORITY BUSINESS PARTICIPATION PROGRAM

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

14.0 QUANTITIES

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

15.0 DELIVERY

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

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

Delivery of all equipment, materials, or supplies shall be made Free on Board (FOB), customer's site, Hudsons Substation, Corner of Fox Pen Rd and Blackjack Simpson Rd. 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 4:00 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.

16.0 DELIVERY TIME

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

17.0 CONTRACT PERIOD

TBD.

18.0 MANUFACTURER

Bidder is to specify the manufacturer of items being quoted.

19.0 CONTACT INFORMATION

Questions regarding this bid request should be directed to Cleve Haddock, Procurement Manager, Finance Department at (252) 551-1533, haddockc@guc.com. **All questions must be received via e-mail by or before 5:00pm (EDST) October 22, 2024.**

20.0 TERMS AND CONDITIONS

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

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SECTION II
GREENVILLE UTILITIES COMMISSION
SPECIFICATIONS FOR HUDSON SUBSTATION
STRUCTURES, EQUIPMENT, AND FOUNDATION DESIGN

1.0 GENERAL

1.1 Scope

These specifications are for furnishing FOB job site structures, equipment, and foundation design for Hudson Substation project.

Hudson Substation – NE corner of Blackjack-Simpson Rd. & Fox Pen Rd. Greenville, NC.

The structures and equipment shall be furnished complete and ready for installation, connection, and immediate service and shall include:

- Tubular aluminum bus conductor, cable connectors and accessories
- Bus support insulators
- (2) 115 kV H-frame dead-end structure with 115 kV switch & motor operator
- Four (4) 15 kV equipment bays with center drive through bay
- 15 kV group operated switches and hook stick switches
- (1) 115 kV switch & motor operator on 115 kV bus

Foundation design for the circuit switcher and for all vendor supplied structures will be provided by the vendor.

1.2 Delivery

The equipment shall be delivered FOB to Hudson Substation, NE corner of Blackjack-Simpson Rd. & Fox Pen Rd. Greenville, NC by truck shipment and unloaded by Greenville Utilities. Greenville Utilities shall receive shipping notice at least 48 hours before delivery.

The Contractor shall submit to Greenville Utilities duplicate copies of shipping notices describing each shipment of material or equipment.

The Contractor shall contact John Powell, Substation Engineer at least 72 hours prior to arrival of equipment at the delivery site, to notify Greenville Utilities of the method of shipment and date of arrival. Telephone notification shall be made between 8:00 a.m. and 5:00 p.m., Monday through Friday, telephone 252-551-3388.

The Contractor shall pay all demurrage costs resulting from delays in unloading, if those delays are caused by failure of the Contractor to notify Greenville Utilities of shipment or to schedule shipment as specified above.

1.3 Shipping Requirements

All materials shall be suitably protected to prevent damage and loss during shipment. Special care shall be exercised in loading the members for shipment to assure that members will not be deformed by overburdened loads and that wearing of the galvanized surfaces will not occur during shipment.

The steel structures shall be shipped assembled where shipping conditions permit.

Each bidder shall furnish with his proposals, under the Section PROPOSAL DATA, a list of the structure items that will require field assembly and describe the shipping sections. All small items shall be bagged, identified and shipping in boxes or crates. The contents of all boxes and crates shall be identified with a packing slip.

1.4 Codes and Standards

Except where specifically stated otherwise, all equipment furnished under these specifications shall conform to the latest applicable standards of ASTM, NEMA, NESC, ANSI, IEEE, NEC, and EEI and shall be in accordance with the applicable requirements of the Federal "Occupational Safety and Health Standards."

The requirements of the drawings and the written text of these specifications shall govern in case of conflict between them and any of the referenced codes and standards except the mandatory standards which shall govern in all cases. Any conflict between standards shall be referred to Greenville Utilities to determine which standard shall govern.

1.5 Correction of Manufacturing Errors

Equipment and materials shall be complete in all respects within the limits herein outlined. All manufacturing errors or omissions required to be corrected in the field shall be done by the manufacturer or his duly authorized representative and at the Supplier's expense.

1.6 Arrangement and Ratings

This project is for the construction of a 115 to 13.2 kV substation. The substation will include a new transformer rated 20/26.7/33.3 MVA OA/FA/FA @ 55°C rise (22.4/29.8/37.3 MVA OA/FA/FA @ 65°C rise) with load tap changer (LTC). The 115 kV system will include a 115 kV feed through with three motor operated air break switches. The 115 kV bus will be designed for two transformer taps. The 13.2 kV substation section will include a main and transfer 13.2 kV bus and a five bay distribution structure. Initially four 1200 ampere circuit breakers and one 2000 ampere main bus breaker will be installed. The distribution feeders will exit the substation underground.

The arrangement of the structures is depicted in Appendix B. Section 4.1 lists the equipment details.

1.7 Material to be Furnished

Material and equipment shall be furnished in accordance with the drawings and bill of material as listed in Appendix A, Appendix B and these specifications. The bill of material included in this specification represents GUC's standard substation package. The quantities are not exact. The vendor is responsible to furnish all structures and equipment to ensure a complete substation.

2.0 ENGINEERING DATA

2.1 General

This section covers the requirements for moment and loading data, manufacturer's drawings, instruction manuals, and other engineering data that the Contractor shall submit to Greenville Utilities for design information and review.

2.2 Correspondence

Correspondence forwarding drawings, instruction manuals, and other engineering data shall be addressed as follows:

Electronic	Correspondence	Delivery
John Powell	Greenville Utilities	Greenville Utilities
powelljl@guc.com	PO Box 1847	3355 NC Highway 43
Nick Peaden	Greenville, NC 27835-1847	Greenville, NC 27834
peadennl@guc.com	Attention: Mr. John Powell	Attention: Mr. John Powell

Always include the Manufacturer's order number.

2.3 Drawings, Bills of Material, and Loading Data

- 2.3.1** Shop drawings, bills of material, and loading reaction data covering all fabricated materials furnished under this Specification shall be submitted to Greenville Utilities for approval within **35** days after award of contract. Drawings shall be a maximum of 24 by 36 inches. No work shall be performed in connection with fabrication or manufacture of materials until the drawings and data have been approved.
- 2.3.2** Loading data shall show the worst-case loads at the foundations in the "X", "Y", and "Z" directions, and resulting moments at the foundation surfaces.
- 2.3.3** Drawings and necessary data which show the kind, size, arrangement, weights of each component, and operation of component materials and devices; the external connections, anchorage, and supports required; and the dimensions needed for installation and correlation with other materials and equipment shall be submitted to the Greenville Utilities for review.
- 2.3.4** Approval drawings and reaction data, either preliminary or certified, shall be submitted to Greenville Utilities electronically. Each drawing submitted shall be clearly marked with the name of the project, the order number, the Contractor's name, and references to applicable specification paragraphs. When catalog pages are submitted, the applicable items shall be indicated, and the pages shall be included in the Substation Equipment Manual.
- 2.3.5** Drawings, data, and equipment manuals will be reviewed by Greenville Utilities and returned to the Contractor marked APPROVED, APPROVED AS NOTED, or RETURN FOR CORRECTIONS.
- 2.3.6** When the drawings, data, and equipment manuals are returned marked APPROVED AS NOTED or RETURNED FOR CORRECTIONS, the changes and/or corrections shall be made as noted thereon and corrected copies shall be submitted electronically to Greenville Utilities for final approval and distribution.

2.3.7 When the drawings are returned marked RETURNED FOR CORRECTIONS, the corrections shall be made as noted thereon and as instructed by Greenville Utilities, and shall be submitted electronically.

2.3.8 Greenville Utilities' review of drawings and data will cover only general conformity to the Specifications and the external connections and dimensions. Greenville Utilities' review of drawings returned marked APPROVED will not constitute a blanket approval of all dimensions, quantities, and details of the material, equipment, device, or item shown and does not relieve the Contractor from any responsibility for errors or deviations from the contract requirements. All drawings and data, after final approval by the Greenville Utilities, shall become a part of the contract documents and the work shown or described thereby shall be performed in conformity therewith unless otherwise required by Greenville Utilities. After all drawings have been approved, the Contractor will submit the drawings to Greenville Utilities in AutoCAD format, 2013 version. The Substation Equipment Manual shall be bound in one binder with four copies delivered to Greenville Utilities and one copy sent electronically in Adobe (pdf) format.

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3.0 SUBSTATION STEEL STRUCTURES

3.1 General

This section cover materials and fabrication for substation wide flange steel structures to be incorporated in the **Hudson Substation** in Greenville, North Carolina.

The structures furnished under these specifications shall include all new structures indicated on the drawings listed in Appendix B..

The structures shall be complete with all field connection bolts required for erecting the structures and all bolts required for mounting the equipment furnished under other sections of these specifications. In addition, mounting bolts shall be furnished for mounting other equipment as indicated on the drawings.

All testing and welding specifications required by these specifications shall be performed by an independent testing laboratory retained by the Fabricator and accepted by Greenville Utilities. All testing qualification expenses shall be paid by the Fabricator.

Certain dimensions indicated on Greenville Utilities’ drawings shall be adjusted as required to suit the equipment furnished by the Contractor under other sections of these specifications. The dimensions required for the equipment furnished shall be shown on the Contractor’s detail shop drawings and the materials and fabrication required shall be provided as part of the contract work. There will be no adjustment in price because of these requirements.

The following minimum clearances shall be maintained:

Clearance	115 kV	13.2 kV
Metal-to metal phase spacing (inches)	53"	12"
Vertical break disconnect switch center-to center phase spacing (inches)	84"	24"
Horn gap switch (if used to interrupt transmission line charging currents, loop currents, or transformer magnetizing currents) and expulsion type fuses center-to-center phase spacing (inches)	120"	36"
Phase-to-ground (inches)	47"	10"
Vertical clearance from energized parts or jumpers to grade (feet-inches)	12'-0"	9'-0"
Clearance from unguarded live parts to working platform (feet-inches)		
Vertical	11'-7"	9'-0"
Horizontal	6'-1"	3'-6"
Low bus height above top of foundation (feet)	12'-0"	14'-0"
High bus height above top of foundation (feet)	20'-0"	23'-8"

Detail sealed engineering calculations, shop drawings, foundation drawings and erection drawings shall be prepared, checked, and submitted, to Greenville Utilities in accordance with the requirements of Section 2. Engineers seal on calculations shall be for the State of North Carolina or the state of the Engineers' primary residence.

3.2 Codes and Standards

All material furnished under this section shall conform to the applicable codes or standards of the technical societies or organizations listed in these specifications, to the specific standards mentioned in this section, and the latest edition of North Carolina Building Code.

Reference to technical societies or organizations may be made by abbreviation in accordance with the following list.

AHDGA	-	American Hot-Dip Galvanizers Association
AISC	-	American Institute of Steel Construction
AISI	-	American Iron and Steel Institute
ANSI	-	American National Standards Institute
ASCE	-	American Society of Civil Engineers
ASTM	-	American Society of Testing and Materials
AWS	-	American Welding Society
IEEE	-	Institute of Electrical and Electronic Engineers
NEMA	-	National Electrical Manufacturers Association

Except as otherwise specified or specifically indicated on the drawings, all materials furnished and work performed in connection with substation structure work under this section shall be in conformity with the AISC Manual of Steel Construction, Ninth Edition.

3.3 Structure Loads

The following structure loads shall be considered.

3.3.1 Apparatus Loads

Apparatus loads include the following:

- Weight of equipment
- Conductor and bus weight
- Friction forces, moments, and torque due to mechanical operation of apparatus such as air break switches

3.3.2 Climatological Loading

- Ice Loading: The Ice Loading Condition is 0.5 inch radial ice thickness, at 0 degrees F, with a wind pressure of 2.3 pounds per square foot (psf).
- Extreme Wind: The extreme wind condition shall be a 31 psf horizontal wind pressure, with no ice, at a temperature of 60 degrees F.

3.3.3 Application of Wind Loads and Ice Loads on Structures

The wind pressures for Section 3.3.2 will be applied to the vertical projection of the structural members for the first bent. A bent consists of one or more columns effectively all in on plane, including bracing between the members. For successive bents, the wind pressure will be reduced in proportion to the shade factor K, where K is defined as follows:

$$K = L / 4W$$

L = Distance from front of the first bent to front of the following bent.

W = The least dimension perpendicular to the wind direction.

If L is greater than 4W, then shading is ineffective and full wind pressure is applied to the next bent (K=1).

Shape factors for applying wind force will be applied as follows:

Round shapes	1.0
Octagonal shapes	1.4
Flat shapes	1.6

For lattice towers, lattice box columns and trusses, the exposed area is assumed to be 1.5 times the total exposed area of the component members.

3.4 Allowable Stresses and Deflections

Allowable stresses shall be calculated according to the methods outlined in the latest edition of the AISC Manual of Steel Construction. The following deflection limits shall apply when the structure is under a set of compatible loads without short circuit forces.

3.4.1 Class "A" Structures

Intended for the support of high voltage equipment, i.e., air break switches and other circuit interrupting devices

- Horizontal deflection of vertical members: 1.0% of the vertical height
- Vertical deflection of horizontal members: 0.5% of the span
- Horizontal deflection of horizontal members: 0.5% of the span

3.4.2 Class "B" Structures

Where deflections within the limits do not affect the performance of support equipment, i.e., dead-end structures without switches, bus supports, and miscellaneous equipment supports

- Horizontal deflection of vertical members: 2.0% of the vertical height
- Vertical deflection of horizontal members: 0.5% of the span
- Horizontal deflection of horizontal members: 1.0% of the span

3.5 Materials

All materials shall be new and undamaged and shall conform to pertinent AISC and ASTM standard specifications and the following requirements.

Steel shapes and plates for structures	ASTM A36 steel. Minimum yield point of 36,000 psi including appurtenant materials. Galvanized after fabrication.
Structural tubing members	ASTM 500, Grade B. Minimum yield point of 46,000 psi. ¼ inch minimum wall thickness, galvanized after fabrication.
Welding electrodes	AWS D1.1-80 (as specified in Table 4.1.1 “Matching Filler Metal Requirements”). Low hydrogen types, tensile strength range of 70,000 psi minimum.
Structural members bolted connections	ASTM A325, heavy hex bolts and install high strength threaded fasteners in accordance with AISC “specifications for structural joints using ASTM A325 or A490 bolts.”
Connection bolts and bolts for equipment mounting	ASTM A394; hexagon bolts and nuts, flat or beveled washers, and MacLean-Fogg “M-F Lock Nut #1” locking devices. All bolting materials shall be galvanized.
Galvanizing	ASTM A384, ASTM A385, and ASTM A386
Shapes and plates	ASTM A123
Bolts, nuts, and washers	Galvanized as specified in ASTM A394 and ASTM A153.
Anchor bolts	ASTM A153

3.6 Anchor Bolts

The contractor shall provide detailed design of the anchor bolts. Detailed design calculations and design drawings to verify the anchor bolt design shall be provided to Greenville Utilities for review. Design shall be based on equipment weights and loads, line tensions and climatological design criteria as listed in these specifications.

Anchor bolts shall be fabricated from ASTM A36 steel rods and shall have heavy hexagon nuts conforming to ASTM A307, Grade B. Anchor bolts, nuts and washers shall be hot-dip galvanized after fabrication, threads being undercut to provide a tolerance equal to ANSI Class 2A. Each bolt shall be furnished with two nuts and sufficient threads to permit a nut to be installed on each side of the footr plate.

The Contractor shall provide anchor bolts for columns and stands. Greenville Utilities will provide anchor bolts for the circuit breakers.

3.7 Field Connection Bolts

Field connection bolts, nuts, and washers shall be furnished for all structure field connections and equipment mounting with the overage of five percent plus five bolts of each type, size, and length. The length of bolts shall be determined with sufficient projection for washer, nut, and locknut.

With locknuts in place, bolt projection beyond the locknut shall be from ¼ inch to ½ inch inclusive.

Smooth beveled washers shall be furnished for use when the bearing faces of the bolted parts will have a slope of 1:20 or greater with respect to a plane normal to the bolt axis.

Bolting materials shall be shipped in sturdy kegs or pails which shall be marked with the size, length, count, and other descriptive data as required to fully describe the contents.

3.8 Fabrication

The structures shall be fabricated in conformity with the dimensions, arrangements, sizes, and weights or thicknesses indicated on the drawings or stipulated in the specifications. All members shall be detailed and fabricated in accordance with AISC standards, specifications, and details unless otherwise indicated on the drawings or specified herein and shall have been pre-assembled at the factory prior to shipping to ensure proper fit.

The structures shall be shipped assembled where shipping conditions permit. Each bidder shall furnish with his proposal, under the heading PROPOSAL DATA, a list of the structure items that will require field assembly and describe the shipping sections. When proposals are submitted without statements describing sectional shipments, it will be understood that no field assembly of the structures will be required.

When delivered, members shall be straight, free from warp, unauthorized splices and bends, or local deformations. Holes and other provisions for field connections shall be accurate and shop checked so that when the structure is field assembled, proper fit will be provided. All punching, drilling, and reaming of the holes shall be done in the shop before galvanizing.

All fabricated materials shall conform to the tolerances specified in the AISC Manual and ASTM A6. In additions, the allowable tolerance for sweep shall be no more than 1/8 inch in 10 feet of length regardless of the type of steel section. If necessary, the Contractor shall cull out or straighten materials that do not comply with the specified tolerances. Materials that do not comply with the specified sweep and camber requirements may be rejected.

Baseplates shall also be checked after fabrication and will be rejected if anchor bolt holes are not within 1/32 inch of their specified location with respect to the center of the anchor bolt group or cluster.

Contact surfaces at all column splices and at all other compression joints depending upon contact bearing shall have the bearing surfaces prepared to a common plane by milling, sawing, or other acceptable means. Only milling will be acceptable where milling is specifically indicated on the drawings.

Shearing, flame cutting, and chipping shall be done carefully and accurately. Baseplates, fillers, stiffeners, and connection plates shall be neatly fitted and shall not have ragged edges. Holes shall be cut, drilled, or punched at right angles to the surface and shall not be made or enlarged by burning. Holes shall be clean-cut without torn or

ragged edges, and burrs resulting from drilled or reaming operations shall be removed with the proper tool.

Bolt holes shall be provided for mounting equipment, conduit, and grounding attachments as indicated on the drawings.

Except as otherwise indicated on the drawings or specified herein, shop connections shall be all welded and field connections shall be all bolted. Bolted connections shall be bearing type with all threads excluded from the shear planes of the connected parts.

3.9 Nondestructive Testing

Nondestructive testing shall be provided in accordance with the requirements of Article 6.7 of the referenced AWS code as follows.

Magnetic particle inspection or ultrasonic inspection shall be provided at all circumferential welds and all other critical welds.

Inspection and evaluation of the test data shall be performed by persons fully qualified by training and experience to inspect, evaluate, and accept or reject these welds. Copies of the test reports covering this inspection shall be furnished to Greenville Utilities. Any defective weld shall be removed, rewelded, and re-inspected at the Contractor's expense.

3.10 Identification

All separate structural members and parts shall be plainly marked, as an aid in assembly, with the identifying mark on the member corresponding to the identical mark on the erection drawings. Marks shall be metal stamped into each member in characters not less than ½ inch high. Stamping shall be done before galvanizing, but marks shall be clearly legible after galvanizing. Marks shall also be painted on the galvanized members with nonpermanent paint in characters not less than one inch high. Connection materials shall be packaged in separate containers with durable fade proof and weatherproof markings.

3.11 Galvanizing

All steel materials furnished under this section shall be hot-dip galvanized after fabrication. Materials shall be prepared for galvanizing by being properly cleaned, pickled, rinsed, and dried.

A durable, high quality, relatively smooth coating is required. The Contractor's attention is directed to the requirements of ASTM A384, ASTM A385, and ASTM A386 in this regard. Greenville Utilities may at its option inspect the galvanizing in process. Grounds for rejection of members because of galvanizing defects shall be as listed in Table II of the "Inspection Manual for Hot-dip Galvanized Products" published by the American Zinc Institute except that excessive general roughness, pimples, lumpiness, and runs shall be cause for rejection. Greenville Utilities will determine whether defects are excessive or not.

After all cutting, punching, reaming, welding, drilling, capping, and cleaning have been completed, all steel members shall be degreased, pickled, rinsed, pre-fluxed, and galvanized in accordance with the latest recommendations of AHDGA for compliance with the ASTM specifications.

The galvanizing coating shall cover all interior surfaces of hollow members as well as exterior surfaces, channels, angles, and all other unsymmetrical sections shall be straightened after galvanizing as required to meet the specified tolerance requirements.

Anchor bolts shall be galvanized over their entire length.

4.0 DESCRIPTION OF SUBSTATION EQUIPMENT

4.1 General

This section covers materials and equipment to be supplied by the Contractor and incorporated into the **Hudson Substation**. All material and equipment furnished under this section shall conform to the applicable codes or standards of the technical societies or organizations mentioned in this section.

4.2 Bus Materials

Bus materials furnished shall conform to the following:

The rigid substation bus shall be aluminum alloy 6063-T6 seamless pipe manufactured in accordance with ASTM Specification B-241. Schedule 40 pipe size (IPS) pipe shall be used. Jumper cables shall be provided and sized as shown on the drawings unless otherwise noted.

All shop welding shall be by the inert-gas electric-arc welding method.

End enclosure plugs shall be furnished for all bus pipe.

All aluminum bus sections shall be individually packaged in fiber boxes for shipment.

Current carrying connections to bus tube shall be radial swage compression type manufactured by **Deutsch Metal Components**. Qualified personnel, using manufactures' recommended methods, shall install swage radial compression connections. Welded and bolted connections shall not be used for electrical bus tube connections.

Current carrying connections to AAC and ACSR cable shall be compression terminal type with factory installed corrosion inhibitor. Current carrying connections to copper cable shall be bolted type.

Where aluminum to copper connections are to be made, the contact surfaces will be tinned, or copper lined as appropriate for the metal-to-metal contact. Terminal pad connection bolts, Belleville lock washers, and nuts will be stainless steel or bronze as appropriate and of appropriate length for the connection. A sufficient number including a 5% overage amount shall be provided to make all electrical connections. An ample quantity of recommended electrical joint compound shall be furnished that will be used to prevent oxidation between the dissimilar metals and to prevent possible entrance of contaminants between the contact surfaces.

The Contractor shall provide complete information for tightening of all electrical connections secured with bolts or studs. The information furnished shall include torque wrench settings or complete details of other tightening procedures recommended for bus joints and connector attachments.

Bus received at the job site with scratches, burrs, or abrasions will be returned to the Contractor for repair or replacement. All other blemishes including black marks, scuff marks, etc., shall be repaired in the field under the direction of a manufacturer's

representative. The costs of field repairing the bus, repackaging, and shipping the bus back to the manufacturer shall be borne by the Contractor.

Bus fittings and jumpers shall be individually wrapped and packed in wooden crates. Sawdust or other similar non-deleterious shock absorbing material shall be used as a filler material to further protect the fittings and jumpers during shipping and handling. The sizes of the crates used shall be as large as practical to permit ease of handling by normal handling equipment.

4.3 Insulators

All 115 kV insulators shall be porcelain station post type, NEMA Technical Reference 286, ANSI 70 sky gray color. All 13.2 kV insulators shall be porcelain station post type, NEMA Technical Reference 205, ANSI 70 sky gray color.

4.4 Arrestors

All 115kV arrestors shall be Eaton Cooper Cat. No. UHAA096076A5249A11.

All 15kV arrestors shall be Eaton Cooper Cat. No. UHAA010008A1411A11.

4.5 Disconnect Switches

Switches shall be in accordance with applicable paragraphs of the NEMA, IEEE, and ANSI specifications and shall conform to the following additional conditions.

Insulators shall be as specified in Section 4.3.

Switch bases, operating mechanisms, and operating rods shall be hot-dip galvanized after all machining and threading operations. Operating rods and levers shall be cut to length and all machining operations and threading shall be completed at the factory. The operating mechanisms shall have provisions for grounding and for padlocking in the open and closed positions. All operating mechanisms shall be mounted on the structures. Each switch operator for group operator switches shall be furnished complete with all operating pipes, interphase spaces, pipe couplings, guide bearings, ground braids and offsets required to operate the switch from the ground.

All 15 kV switches shall be furnished with copper live parts.

All group-operated switches shall be furnished with a galvanized steel operator grounding platform with dimensions of 3 feet by 6 feet. Two compression terminals per grounding platform, one on each end of the platform, shall be provided by the Contractor.

Contractor shall provide Burndy Type GG, Anderson Type GC-109, or equivalent ground clamp for attaching ground braids to the operating pipe.

Switch bearings shall be of the sealed greaseless type.

All switches shall be manufactured by Cleveland Price.

4.6 Voltage Transformers

Voltage transformers shall be rated in accordance with the ratings shown on the drawings, applicable paragraphs of the NEMA, IEEE, and ANSI specifications.

4.7 Power Fuses

Power fuses shall be rated in accordance with the ratings shown on the drawings, applicable paragraphs of the NEMA, IEEE, and ANSI specification. Insulators shall be as specified under Section 4.3.

4.8 Ground Conductor and Connectors

No. 2/0 AWG copper ground stingers will be furnished by others for connection of each steel structure column to the below grade ground grid. The Owner shall furnish above grade No. 2/0 AWG copper ground conductor to connect the ground stingers to switch operating handles, switch operating platforms, voltage transformers, and surge arresters.

The Contractor shall provide all above grade ground connectors required for connecting ground stingers and above grade ground conductor to the steel structures. Above grade ground conductors shall be supported by bronze ground clamps at interval not to exceed four feet. Connectors shall be bronze ground clamps, cable-to-flat, type GC as manufactured by Anderson, or equal. Connectors on material listing have been specified for 1/2" thick steel structure. If thickness is other than 1/2", fabricator shall coordinate appropriate change order to specify connectors for correct steel thickness.

All equipment and switch operating platforms shall be bonded at two diagonally separating locations. All equipment shall be grounded with single 2/0 AWG copper except the power transformer shall be grounded with dual 4/0 AWG copper.

The switch platform shall have a continuous ground stinger from the below grade ground grid, to each diagonal corner pad, to the steel column and to the operating mechanism. The operating control pipe shall be bonded with a flexible braid strap. A separate ground stinger shall be bonded to both switch platform pads with the first ground stinger with a parallel groove grounding connector.

The static mast shall be a 2" x 10' galvanized pipe. There shall be a continuous 2/0 AWG copper ground from the static mast to the below grade ground grid. The copper conductor shall be bonded to the steel column every 4 to 6 feet.

4.9 Stranded Conductor Current Carrying Connections

Current carrying connections to AAC and ACSR cable shall be compression terminal type with factory installed corrosion inhibitor. Current carrying connections to copper cable shall be bolted type.

Where aluminum to copper connections are to be made, the contact surfaces will be tinned, or copper lined as appropriate for the metal-to-metal contact. Terminal pad connection bolts, Belleville lock washers, and nuts will be stainless steel or bronze as appropriate and of appropriate length for the connection. A sufficient number including a 5% overage amount shall be provided to make all electrical connections. An ample quantity of recommended electrical joint compound shall be furnished that will be used to prevent oxidation between the dissimilar metals and to prevent possible entrance of contaminants between the contact surfaces.

The Contractor shall provide complete information for tightening of all electrical connections secured with bolts or studs. The information furnished shall include torque wrench settings or complete details of other tightening procedures recommended for bus joints and connector attachments.

4.10 Equipment Details

BUS Dimensions

115 kV main bus
115 kV tap bus
15 kV main bus
15 kV main bus tap
15 kV transfer bus

Bus Size

3" Schedule 40
3" Schedule 40
3" Schedule 40
2" Schedule 40
2" Schedule 40

CONDUCTOR Sizes

Transmission incoming line – 115 kV
Power Transformer High Side – 115 kV
Power Transformer Low Side – 15 kV
Bus Breaker – 15 kV
Feeder Breaker – 15 kV
Distribution outgoing line – 15 kV

Size

1272 AAC
336 ACSR
2-795 AAC
2-795 AAC
1272 AAC
1000 MCM UG

Device Quantities

Power Transformers
115 kV Circuit Switchers
15 kV Source Breakers (2000A)
15 kV Feeder Breakers (1200A)
Potential Transformer Sources
Station Service Transformers

Quantity

1
1
1
4
1
1

Preferred Equipment Manufacturers

Switches
Bus Connectors
Cable Connectors

Manufacturers
Cleveland-Price
Deutsch Power
Products
Hubbell CCLS

4.11 Other Equipment

The Bill of Material Appendix A provides the recommended manufacturer and catalog number. The items provided by Greenville Utilities are identified by "Owner" as the manufacturer. The Contractor shall use the same item number in the developed Bill of Material and drawings. The Bill of Material and drawings can be provided electronically upon request.

5.0 Foundation Design

5.1 General

Vendor shall design foundations for all structures provided by the Vendor.

Vendor shall design foundation for one Owner provided S&C Series 2000 Circuit Switcher Model 2010 Catalog No. 197838AE12H2KMTT2VW1Y. Manufacturer approval

drawings included in Appendix C. Foundation loading per pedestal is included in the manufacturer approval drawings.

5.2 Codes and Standards

All designs furnished under this section shall conform to the applicable codes or standards of the technical societies or organizations listed in these specifications, to the specific standards mentioned in this section, and the latest edition of North Carolina Building Code.

Reference to technical societies or organizations may be made by abbreviation in accordance with the following list.

ACI	-	American Concrete Institute
ANSI	-	American National Standards Institute
ASCE	-	American Society of Civil Engineers
ASTM	-	American Society of Testing and Materials
RUS	-	Rural Utilities Service

5.3 Foundation Design Criteria and Types

All drilled shaft (augered pier) and spread footing foundations shall conform to the standards listed in RUS 1724E-300 Chapter 8 Foundations.

The vendor shall utilize the geotechnical subsurface engineering report is included in this document, Appendix D, in the design of foundations. **Borings B-1 through B-6** included in the report yield the soil conditions at Hudson Substation.

The vendor shall design the foundations to address the allowable load-bearing capacity of the subsurface materials and the allowable deformations permitted upon the structure/foundation under loading.

Drilled shaft foundations are the preferred foundation type. Spread footing foundations will be allowed in lieu of drilled shaft foundations where soil conditions dictate the necessity for spread footings.

Vendor Name: _____

GREENVILLE UTILITIES COMMISSION
PROPOSAL FORM
HUDSON SUBSTATION
STRUCTURES, EQUIPMENT, AND FOUNDATION DESIGN

The undersigned bidder hereby declares that it has carefully examined the enclosed detailed specifications for furnishing GUC with the below listed item(s). The undersigned bidder further agrees, if this proposal is accepted within thirty (30) days from the date of the opening, to furnish any or all of the item(s) upon the quoted price.

ITEM NO.	DESCRIPTION	TOTAL PRICE
I	Steel Structures Weight of Steel _____ lbs.	\$ _____
II	Equipment and Components	\$ _____
III	Foundation Design	\$ _____
	TOTAL	\$ _____
	Delivery Time _____ weeks	

Method of Award: GUC will award this bid as a total bid.

Complete and Check All Math: It is the responsibility of the Bidder to extend bid prices and supply a total for all item(s).

[Balance of page left blank intentionally]

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

Certified check or cash for \$_____na_____ or bid bond for \$_____na_____ attached.

Firm Name _____ Phone (_____) _____

Address _____

City _____ State _____ Zip Code _____

Fax (____) _____ E-Mail _____

Authorized Official _____ Title _____
Typed Name

_____ Date _____
Signature

**Three (3) copies of your proposal should be received no later than
October 31, 2024 at 2:00 PM (EDST).**

NO BIDS CONSIDERED UNLESS SUBMITTED ON THIS FORM(S)

(RETURN ONLY THIS FORM(S) AND EXCEPTION, E-VERIFY)

Vendor Name: _____

GREENVILLE UTILITIES COMMISSION

Exception/Variation Form

Specifications for: Hudson Substation Structures, Equipment, and Foundation Design

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

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

<u>Page #</u>	<u>Exception/Variation</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
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_____	_____
_____	_____
_____	_____
_____	_____

Authorized Signature of Certification: _____
Print Name: _____

Firm Represented: _____
Address: _____

Letter of Compliance to E-Verify for Greenville Utilities Commission

1. I have submitted a bid for contract or desire to enter into a contract with the Greenville Utilities Commission;
2. As part of my duties and responsibilities pursuant to said bid and/or contract, I affirm that I am aware of and in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):
3. ____ After hiring an employee to work in the United States I verify the work authorization of said employee through E-Verify and retain the record of the verification of work authorization while the employee is employed and for one year thereafter; or
4. ____ I employ less than twenty-five (25) employees in the State of North Carolina.
5. As part of my duties and responsibilities pursuant to said bid and/or contract, I affirm that to the best of my knowledge and subcontractors employed as a part of this bid and/or contract, are in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):
6. ____ After hiring an employee to work in the United States the subcontractor verifies the work authorization of said employee through E-Verify and retains the record of the verification of work authorization while the employee is employed and for one year thereafter; or
7. ____ Employ less than twenty-five (25) employees in the State of North Carolina.
Specify subcontractor: _____

_____ (Company Name)

By: _____ (Typed Name)

_____ (Authorized Signatory)

_____ (Title)

_____ (Date)

SECTION III

TERMS AND CONDITIONS FOR SERVICES, CONSTRUCTION OR THE PURCHASE OF APPARATUS, SUPPLIES, MATERIALS, LABOR AND EQUIPMENT

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

1.0 TAXES

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

2.0 INVOICES

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

3.0 PAYMENT TERMS

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

4.0 QUANTITIES

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

5.0 AFFIRMATIVE ACTION

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

6.0 CONDITION AND PACKAGING

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

7.0 SAMPLES

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

8.0 SPECIFICATIONS

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

9.0 INFORMATION AND DESCRIPTIVE LITERATURE

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

10.0 AWARD OF CONTRACT

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

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

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

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

11.0 MEDIATION/BINDING ARBITRATION

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

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

12.0 GOVERNMENT RESTRICTIONS

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

13.0 INSURANCE

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

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

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

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

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

14.0 PATENTS AND COPYRIGHTS

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

15.0 PATENT AND COPYRIGHT INDEMNITY

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

16.0 EXCEPTIONS

All proposals are subject to the terms and conditions outlined herein. All responses will be controlled by such terms and conditions and the submission of other terms and conditions, price catalogs, and other documents as part of a Provider’s response will be waived and have no

effect on this Request for Proposal or any other contract that may be awarded resulting from this solicitation. The submission of any other terms and conditions by a Provider may be grounds for rejection of the Provider's proposal. The Provider specifically agrees to the terms and conditions set forth in this set of Terms and Conditions by affixing its name on the signatory page contained herein.

17.0 CONFIDENTIAL INFORMATION

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

18.0 ASSIGNMENT

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

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

19.0 ACCESS TO PERSON AND RECORDS

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

20.0 INSPECTION AT BIDDER'S SITE

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

21.0 AVAILABILITY OF FUNDS

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

22.0 GOVERNING LAWS

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

23.0 ADMINISTRATIVE CODE

Bids, proposals, and awards are subject to applicable provisions of the North Carolina Administrative Code and General 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 Manager. Do not contact the user directly. **These Terms and Conditions are a complete statement of the parties' agreement and may only be modified in writing signed by Provider and the GUC Procurement Manager.**

26.0 SITUS

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

27.0 TERMINATION OF AGREEMENT

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

28.0 DELIVERY

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

Time is of the essence with respect to all deliveries under this Agreement. Delivery of all equipment, materials, or supplies shall be made Free on Board (FOB) GUC Warehouse, 701 Utility Way, Greenville, North Carolina 27834, unless otherwise specified. The agreed price for such equipment, materials, or supplies shall include all costs of delivery and ownership, and risks of loss shall not be transferred from Provider to GUC until express written acceptance of delivery and inspection by GUC. Delivery hours are between 8:00 AM and 4:30 PM Monday-Friday only. **GUC's purchase order number is to be shown on the packing slip**

or any related documents. GUC reserves the right to refuse or return any delivery with no purchase order number or which is damaged. GUC will not be charged a restocking fee for any delivery which is refused or returned.

29.0 INDEMNITY PROVISION

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

30.0 FORCE MAJEURE

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

31.0 WARRANTY(IES)

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

32.0 INTEGRATED CONTRACT

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

33.0 CONTRACT PROVISIONS

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

34.0 E-VERIFY

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

35.0 IRAN DIVESTMENT ACT CERTIFICATION

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

36.0 UNIFORM GUIDANCE

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

37.0 SAFETY STATEMENTS

Safety Culture Commitment Statement:

At Greenville Utilities, we are committed to a culture of safety that prioritizes the well-being of our employees, contractors, and the communities we serve.

We believe that everyone deserves to work in a safe environment, and we are dedicated to fostering a culture where **safety is a core value, not just a priority.**

Here's what that means to us:

- **Employee and Contractor Safety:** We are committed to providing a safe work environment for all employees and contractors. We will invest in safety training, resources, and equipment to prevent accidents and injuries.
- **Open Communication:** We encourage open and honest communication about safety concerns. We believe everyone has a right and responsibility to speak up about unsafe work practices and potential hazards.
- **Continuous Improvement:** We are committed to continuous improvement in safety performance. We will learn from incidents and near misses, and we will actively seek ways to improve our safety processes and procedures.
- **Accountability:** We hold ourselves and our contractors accountable for safe work practices. This includes providing clear safety expectations, enforcing safety rules, and recognizing safe behavior.
- **Collaboration:** We believe in working collaboratively with employees, contractors, and regulatory agencies to achieve the highest level of safety.

Our commitment to safety extends beyond our employees. We work closely with our contractors to ensure they share our safety values. We expect them to implement robust safety programs, train their workers thoroughly, and adhere to all safety regulations.

We are confident that by working together, we can create a culture of safety where everyone goes home safe and healthy every day.

This commitment statement is a public declaration of our unwavering dedication to safety. We will continue to strive for zero incidents while promoting a positive safety culture that prioritizes the well-being of everyone involved in our utility operations.

Safety Management System Commitment Statement:

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

Our SMS commitment emphasizes:

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

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

38.0 NOTICES

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

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

Vendor Specified on Page 1 of Section III when awarded.

GREENVILLE UTILITIES COMMISSION

By: _____
Anthony C. Cannon

Title: General Manager/CEO
(Authorized Signatory)

Date: _____

Attest: _____

Name (Print): Amy Wade

Title: Executive Secretary

Date: _____

(OFFICIAL SEAL)

COMPANY NAME:

By: _____

Name (Print): _____

Title: _____
(Authorized Signatory)

Date: _____

Attest: _____

Name (Print): _____

Title: Corporate Secretary

Date: _____

(CORP. SEAL)

APPROVED AS TO FORM AND LEGAL CONTENT:

By: _____
Phillip R. Dixon

Title: General Counsel

Date: _____

APPENDIX A

BILL OF MATERIAL				
GREENVILLE UTILITIES COMMISSION				
			PROJECT NO:	FK-2132
ITEM	QTY	MFG	CAT. NO.	DESCRIPTION
1	54896	MID		STEEL STRUCTURES, HOT-DIPPED GALVANIZED AFTER FABRICATION AND ASSEMBLED WITHIN LIMITATIONS OF TRUCKING
1A	4	VAL		H-FRAME POLES, 75' DIRECT EMBEDDED WITH 5' SHIELD SPIKE
2A	144	UNIQUE		ANCHOR BOLT: 1" WITH 2HHN,2FW
2B	32	UNIQUE		ANCHOR BOLT: 3/4" X 12" WITH 2HHN,2FW
2C	56	UNIQUE		ANCHOR BOLT: 3/4" WITH 2HHN,2FW
8	14	AMICO		SWITCH OPERATOR GROUND PLATFORM, 3 X 4'
SA	28	AE	TLS-42-L	GROUND CONN
10	2	CLEV-PRICE	CB-A	SWITCH: 115 KV 1200AMP GROUP OPERATED CENTER BREAK, ALUMINUM LIVE PARTS, MOTOR OPERATED, STANDARD ARCING HORNS,
10	12	SEVES		INSULATOR: 115 KV STATION POST TR-286
11	1	CLEV-PRICE	V2-C	SWITCH: 115 KV 1200 AMP GROUP OPERATED VERTICAL BREAK, COPPER LIVE PARTS, MOTOR OPERATED, STANDARD ARCING HORNS,
11	9	SEVES		INSULATOR: 115 KV STATION POST TR-286
12	9	CLEV-PRICE	CB-CV	SWITCH: 15 KV 2000 AMP GROUP OPERATED CENTER BREAK VEE, COPPER LIVE PARTS, STANDARD ARCING HORNS, SWING HANDLE CONTROL, AND TR-205 INSULATORS
14	2	CLEV-PRICE	CB-CV	SWITCH: 15 KV 1200 AMP GROUP OPERATED CENTER BREAK VEE, COPPER LIVE PARTS, STANDARD ARCING HORNS, SWING HANDLE CONTROL, AND TR-205 INSULATORS
15	12	CLEV-PRICE	LCO-C	SWITCH: 15 KV 2000 AMP HOOKSTICK DISCONNECT, WITH TINED TERM PADS, AND TR-205 INSULATORS
15	48	SEIB	GMB40058	BOLTS: 5/8" X 4" GMB W/HN,LW,WW
16	30	CLEV-PRICE	LCO-C	SWITCH: 15 KV 1200 AMP HOOKSTICK DISCONNECT, WITH TINED TERM PADS, AND TR-205 INSULATORS
16	120	SEIB	GMB40058	BOLTS: 5/8" X 4" GMB W/HN, LW,WW

ITEM	QTY	MFG	CAT. NO.	DESCRIPTION
17	30	CLEV-PRICE	LCO-CT	SWITCH: 15 KV 1200 AMP HOOKSTICK TANDEM DISCONNECT, WITH TINED TERM PADS, AND TR-205 INSULATORS
17	120	SEIB	GMB22558	BOLTS: 5/8" X 2-1/4" GMB W/HN,LW,WW
20	14	S&C	192222R2-E-Z5	FUSED DISCONNECT 15 KV 200 AMP, SMD-20
20	56	SEIB	GMB200	BOLTS: 1/2" X 2" GMB W/HN,LW,FW
20A	8	S&C	702003	FUSE UNIT, 3K
20B	8	GE	9F59UBD251	CURRENT LIMITING COMPANION FUSE
30	22	SEVES		INSULATOR: 115 KV STATION POST TR-286
30	88	SEIB	GCS10058	BOLTS: 5/8" X 1" GCS W/LW,FW
31	81	SEVES		INSULATOR: 15 KV STATION POST TR-205
31	102	SEIB	GCS100	BOLTS: 1/2" X 1" GCS W/LW,FW
31	60	SEIB	GCS200	BOLTS: 1/2" X 2" GCS W/LW,FW
40	6	COOPER	UHAA096076A5249A11	LIGHTNING ARRESTER, 76 KV MCOV STATION CLASS POLYMER
40	18	SEIB	GMB250	BOLTS: 1/2" X 2-1/2" GMB W/HN,LW
41	30	COOPER	UHAA010008A1411A11	LIGHTNING ARRESTER, 8.4 KV MCOV STATION CLASS POLYMER
41	90	SEIB	GMB275	BOLTS: 1/2" X 2-3/4" GMB W/HN,LW
50		BY	OWNER	STATION SERVICE TRANSFORMER
51	6	ABB	7525A91G05	POTENTIAL TRANSFORMER, 7200:120VOLT, VOZ-11M
51	24	SEIB	GMB15038	BOLTS: 3/8" X 1-1/2" GMB W/HN,LW
60		BY	OWNER	CABLE: 1272 AAC
61		BY	OWNER	CABLE: 795 AAC
62		BY	OWNER	CABLE: 336 ACSR 18/1
63	960	TW		BUS: 3" IPS AL 6063-T6 SEAMLESS (24 PIECES AT 40')
64	1440			BUS: 2" IPS AL 6063-T6 SEAMLESS (36 PIECES AT 40')
65		BY	OWNER	CABLE; 2/0 BARE COPPER
66		BY	OWNER	CABLE: #2 BARE COPPER SOLID TINNED
67		BY	OWNER	CABLE: 1/0 ACSR
68		BY	OWNER	CABLE: 7#9 ALUMOWELD STATIC WIRE
70	12	SMI	STCF-1299-D	TEE CONN COMP 1272 AAC TO 4-HOLE PAD

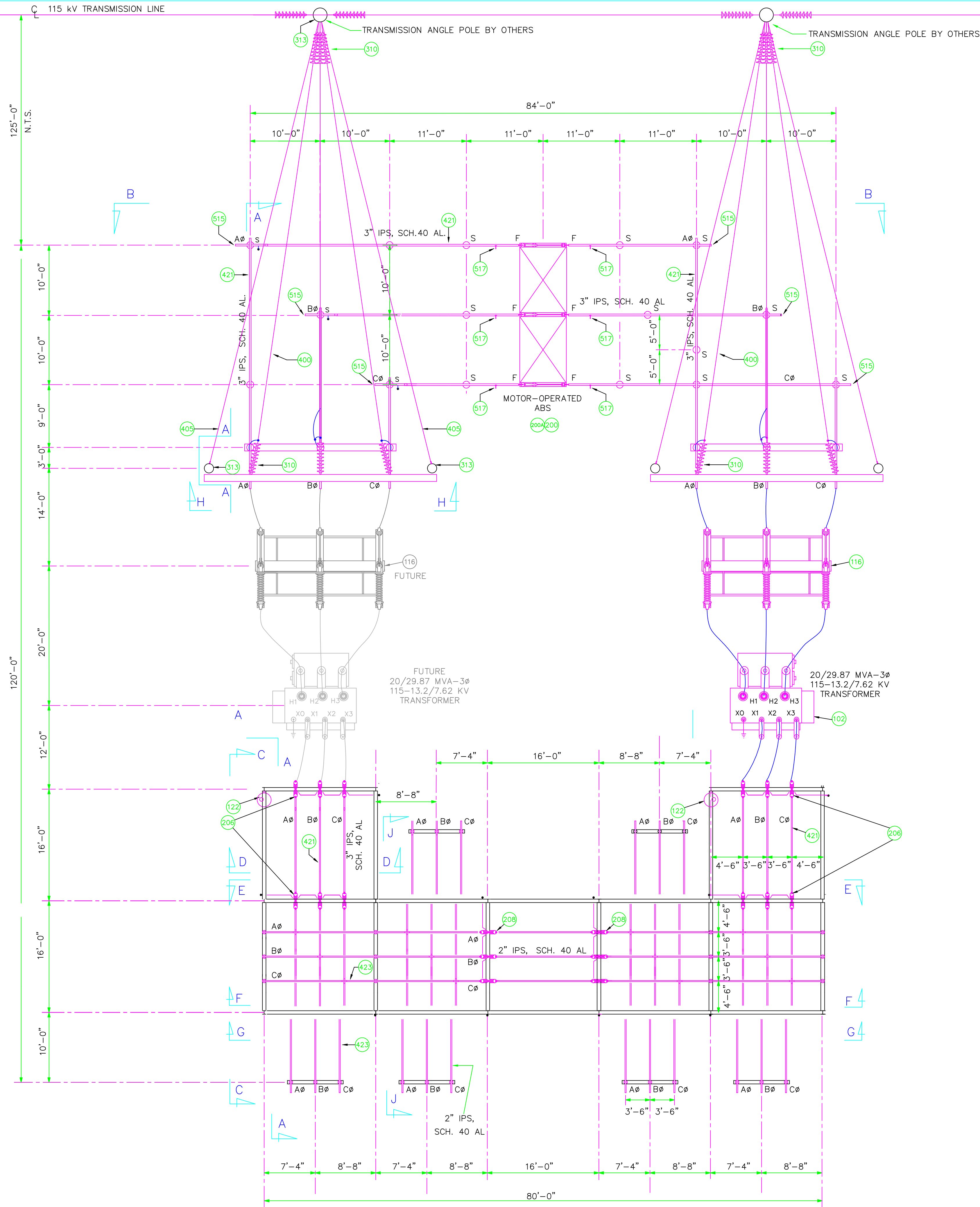
ITEM	QTY	MFG	CAT. NO.	DESCRIPTION
70A	6	DMC	PLK11OOD48E5	TEE CONN COMP 3" ALTO 4-HOLE PAD
70C	24	DMC	PLK1500D4848E1	TEE CONN COMP 3" AL MAIN & TAP
700	42	DMC	PLK1500D3232E1	TEE CONN COMP 2" AL MAIN & TAP
70E	30	DMC	PLK1200D32E1	TEE CONN COMP 2" ALTO 2-HOLE PAD
70F	30	DMC	PLK11OOD32E5	TEE CONN COMP 2" ALTO 4-HOLE PAD
70G	12	DMC	PLK1500D3248E1	TEE CONN COMP 3" ALTO 2" AL TAP
70H	14	DMC	PLK1200D48E1	TEE CONN COMP 3" ALTO 2-HOLE PAD
70J	3	SMI	STCF-684-C	TEE CONN COMP 336 18/1 ACSR TO 4-HOLE PAD
70J	12	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
70K	6	DMC	PLK1600D3248	TEE CONN COMP 3" ALTO (2) 2" AL TAPS AT 15 DEGREES
70L	12	DMC	PLK1500D3248E2	TEE CONN COMP 3" ALTO 2" AL TAPS AT 15 DEGREES
71	12	DMC	PLK1400D48E4	COUPLER 90 DEG COMP 3" AL
71A	36	DMC	PLK1400D32E4	COUPLER 90 DEG COMP 2" AL
71B	2	DMC	PLK1000D48	COUPLER STRAIGHT COMP 3" AL
72	12	Anderson	CCLS-684-C	TERM CONN COMP 336 18/1 ACSR TO 4-HOLE PAD, SHORT BARRELL
72	48	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
72A	108	Anderson	CCLS-1300-D	TERM CONN COMP 1272 AAC TO 4-HOLE PAD, SHORT BARREL
72A	432	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
72C	24	DMC	PLK1850D48A	TERM CONN COMP 3" ALTO 4-HOLE PAD, CENTERFORMED
72C	96	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
72D	18	DMC	CPLK9642D07950 s	TERM CONN COMP (2) 795 AAC TO 4-HOLE PAD
72D	72	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
72E	18	DMC	PLK2600D48E1-90	TERM CONN COMP EXPANSION 3" ALTO 4-HOLE PAD
72E	72	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
72F	18	DMC	PLK1850D48B	TERM CONN COMP 3" ALTO 4-HOLE PAD, CENTERFORMED
72F	72	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW

ITEM	QTY	MFG	CAT. NO.	DESCRIPTION
72G	12	DMC	PLK1870D48B	TERM CONN COMP 3" ALTO 4-HOLE PAD 90 DEG
72G	48	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
72H	6	DMC	PLK2601D48E1	TERM CONN COMP EXPANSION 3" ALTO 4-HOLE PAD, 90 DEG
72H	24	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
72J	42	DMC	PLK1870D32A	TERM CONN COMP 2" ALTO 4-HOLE PAD 90 DEG
72J	168	SEIB	SSB225	BOLTS: 1/2" X 2-1/4" SSB W/HN,BW,2FW
72K	30	DMC	PLK1880D32A	TERM CONN COMP 2" ALTO 4-HOLE PAD
72K	120	SEIB	SSB175	BOLTS: 1/2" X 1-3/4" SSB W/HN,BW,2FW
72L	66	DOSS	DPL13-2N-AA	TERM CONN COMP #2 CU TO 2-HOLE PAD
72L	132	SEIB	SSB200	BOLTS: 1/2" X 2" SSB W/HN,BW,2FW
72M	9	DMC	PLK1850D32A	TERM CONN COMP 2" ALTO 4-HOLE PAD, CENTERFORMED
72M	36	SEIB	SSB200	BOLTS: 1/2" X 2" SSB W/HN,BW,2FW
72N	3	DMC	PLK2600D32E1-90	TERM CONN COMP EXPANSION 2" ALTO 4-HOLE PAD
72N	12	SEIB	SSB200	BOLTS: 1/2" X 2" SSB W/HN,BW,2FW
72O	12	DMC	PLK2601D32E2	TERM CONN COMP EXPANSION 2" ALTO 4-HOLE PAD, 90 DEG
72O	48	SEIB	SSB200	BOLTS: 1/2" X 2" SSB W/HN,BW,2FW
73	22	DOSS	HPS300-5-CH-AA	BUS SUPPORT 3" ALTO 5" B.C., SLIPPED
73A	6	DOSS	HPS300-3-CH-AA	BUS SUPPORT 3" ALTO 3" B.C., SLIPPED
73B	75	DOSS	HPS200-3-CH-AA	BUS SUPPORT 2" ALTO 3" B.C., SLIPPED
76	12	AE	ADS-130-S	STRAIN CLAMP 1272 AAC
76	12	O.B.	511008-1400	SUSPENSION INSULATORS, POLYMER
76	12	AE	HYCE-15-12	Y-CLEVIS EYE EXTENSION
76	12	AE	YBC-30	Y-BALL CLEVIS
76A	B	AE	MDE-46-N	STRAIN CLAMP 7#9 ALUMOWELD
76A	B	SEI		EYE BOLT, 5/B X B"
77	1B	DOSS	CI300-AA	CORONA END CAP 3" AL
77A	36	DOSS	CI200-AA	CORONA END CAP 2" AL
78	24	DMC	PLK1160D4B	GROUND STUD FOR 3" AL
78A	14	SMI	TP-B2	TRANSITION PLATES

ITEM	QTY	MFG	CAT. NO.	DESCRIPTION
79	3	DMC	CL732D07950	CABLE SPACER 795 AAC TO 4-HOLE PAD
79	3	SMI	1AC1	ANGLE CLIP, 3-1/4" UABC
79	24	SEIB	SSB200	BOLTS: 1/2" X 2" SSB W/HN,BW,2FW
79A	9	DMC	CL702D07950	CABLE SPACER 795 AAC
80	75	AE	GC-143A-G2-1/2	GROUND CONN TWO PIECE DOUBLE GROOVE 1/0--4/0 CU TO FLAT
80A	150	AE	GC-141A-G2-1/2	GROUND CONN TWO PIECE SINGLE GROOVE 1/0-4/0 CU TO FLAT
80B	26	DOSS	QLB25S-2N	GROUND CONN TERMINAL 2/0--4/0 CU TO 2-HOLE PAD
80B	52	SEIB	SSB175	BOLTS: 1/2" X 1-3/4" SSB W/HN,BW,2FW
80C	4	DOSS	T2CVH50-4N	GROUND CONN TERMINAL (2) 2/0--500 CU TO 4-HOLE PAD
80E	22	AE	GC-111-6C	GROUND CONN 1-1/2" IPS PIPE TO 2/0 CU
81D	14	DOSS	CF200-5A	BRAIDED SHUNT
82		BY	OWNER	GROUND RODS
83		BY	OWNER	BELOW GRADE CADWELD MOLDS AND WELD METALS
		BF&MAR		BOLTS
		MAR		BOLTS
	1448	SOL	8M89301	1/2" SS BELLEVILLE WASHERS
	36	SOL	8M89301	1/2" SS BELLEVILLE WASHERS

Appendix B
Substation Section Views 1-6

TO G230 SOUTH 115 kV TRANSMISSION LINE TO SIMPSON



#	1
REVISIONS	PRELIMINARY JLP
	PRELIMINARY JLP FROM DAVE BID PACKAGE 3/7/24

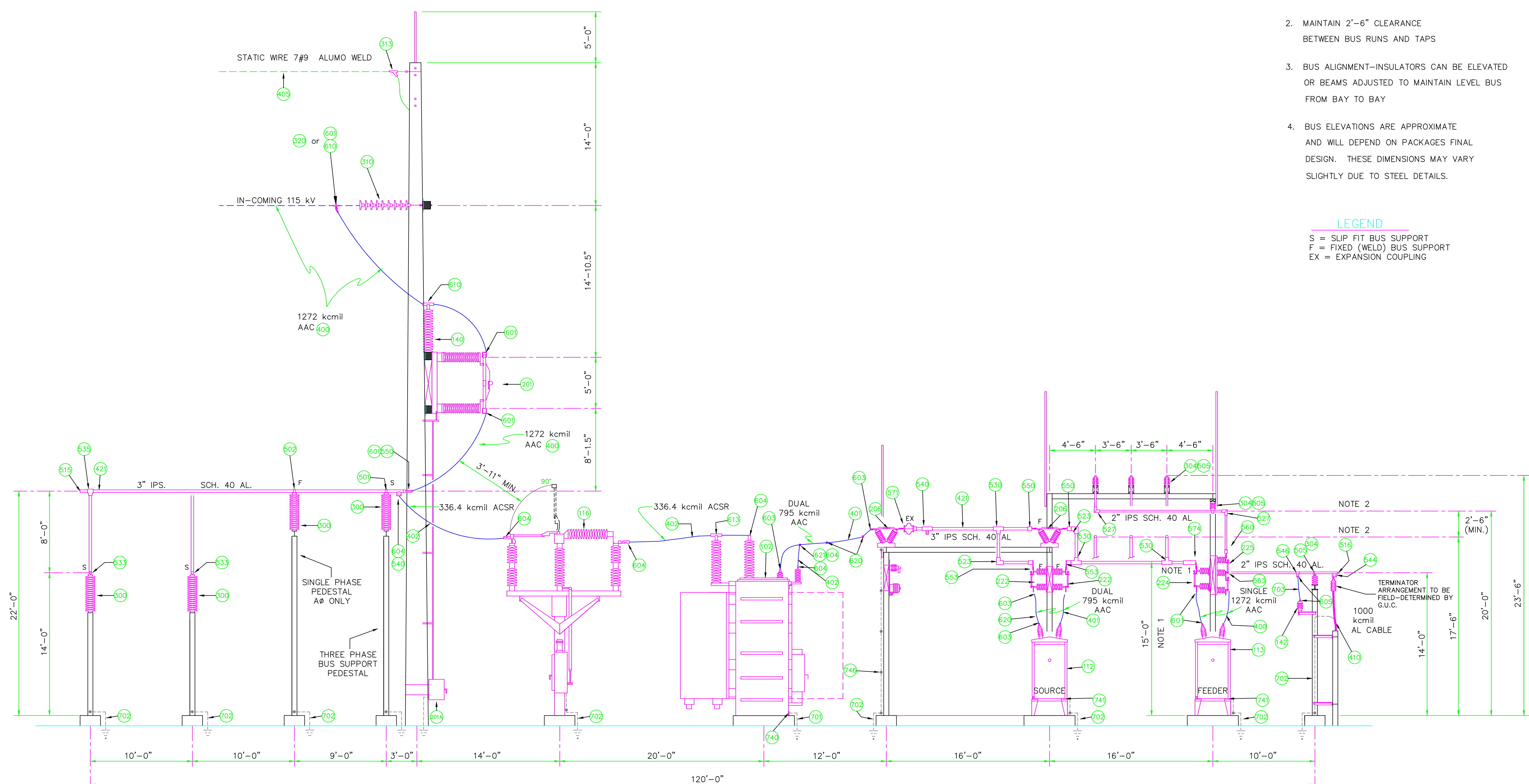
PRELIMINARY



GREENVILLE UTILITIES
Greenville, North Carolina

HUDSON'S CROSSROADS SUBSTATION
115kV TO 15kV SUBSTATION
PLAN

DWN.	DATE	DWG. NO.
CKD.	APPD.	
SCALE: 1/8" = 1'-0"		




- NOTES:**
1. EXPANSION FITTING AND BUS FITTING HAVE DIFFERENT DIMENSIONS FROM BOLT HOLES TO BUS CENTERLINE. PACKAGER TO ADJUST SWITCH MOUNTING TO ACHIEVE LEVEL BUS.
 2. MAINTAIN 2'-6" CLEARANCE BETWEEN BUS RUNS AND TAPS
 3. BUS ALIGNMENT-INSULATORS CAN BE ELEVATED OR BEAMS ADJUSTED TO MAINTAIN LEVEL BUS FROM BAY TO BAY
 4. BUS ELEVATIONS ARE APPROXIMATE AND WILL DEPEND ON PACKAGES FINAL DESIGN. THESE DIMENSIONS MAY VARY SLIGHTLY DUE TO STEEL DETAILS.

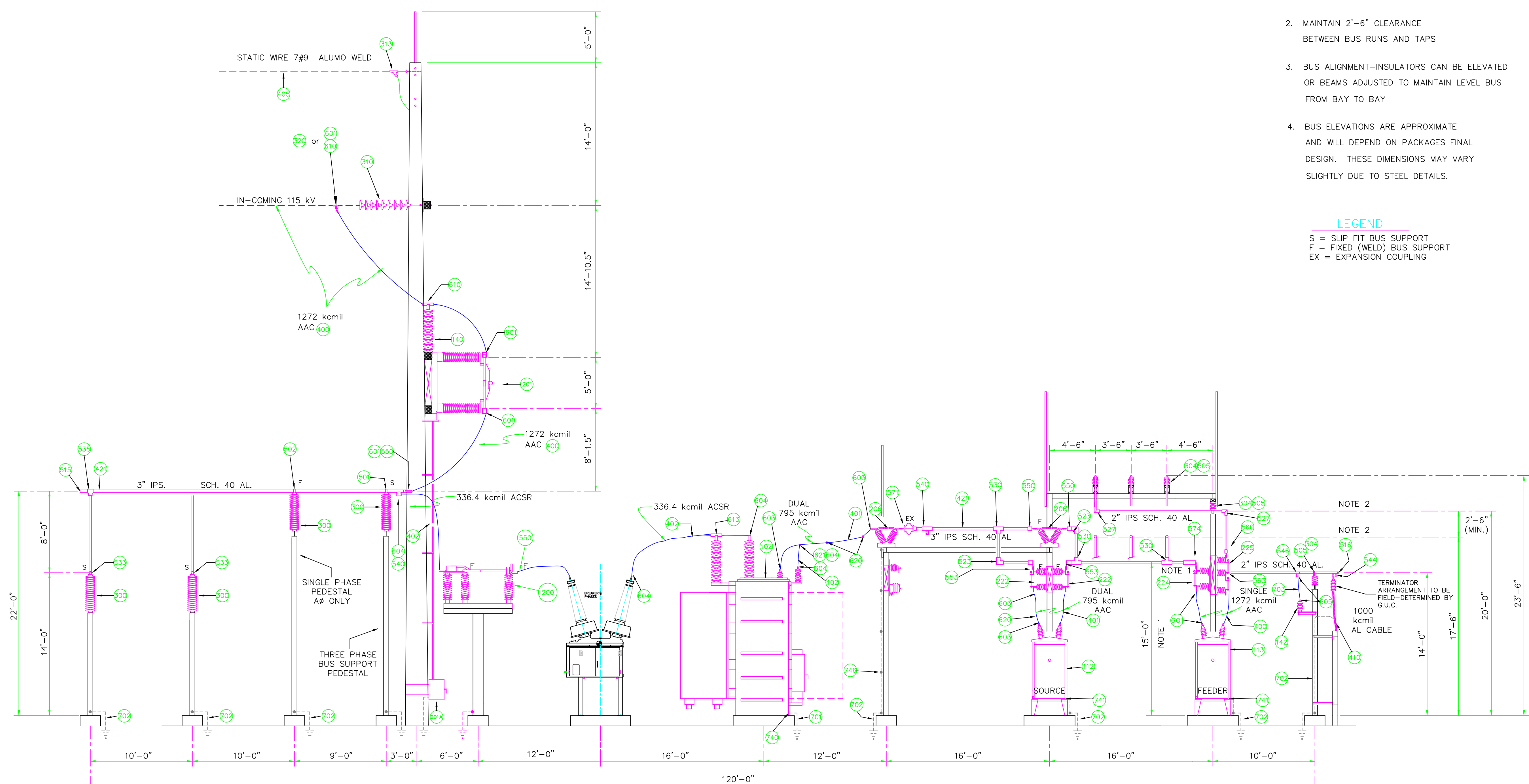
LEGEND
 S = SLIP FIT BUS SUPPORT
 F = FIXED (WELD) BUS SUPPORT
 EX = EXPANSION COUPLING

SECTION A-A
 SCALE: 3/16"=1'-0"

PRELIMINARY

#	1A
REVISIONS	PRELIMINARY DESIGN FROM DAVE BID PACKAGE JGF 3/8/2024

		GREENVILLE UTILITIES Greenville, North Carolina
HUDSON'S CROSSROAD SUBSTATION 115kV TO 15kV SUBSTATION STEEL SECTIONS A-A		
DWN.	DATE	DWG. NO.
CKD.	APPD.	
SCALE: 3/16" = 1'-0"		HUDS_SITE_SSO



SECTION A-A
SCALE: 3/16"=1'-0"

- NOTES:
1. EXPANSION FITTING AND BUS FITTING HAVE DIFFERENT DIMENSIONS FROM BOLT HOLES TO BUS CENTERLINE. PACKAGER TO ADJUST SWITCH MOUNTING TO ACHIEVE LEVEL BUS.
 2. MAINTAIN 2'-6" CLEARANCE BETWEEN BUS RUNS AND TAPS
 3. BUS ALIGNMENT-INSULATORS CAN BE ELEVATED OR BEAMS ADJUSTED TO MAINTAIN LEVEL BUS FROM BAY TO BAY
 4. BUS ELEVATIONS ARE APPROXIMATE AND WILL DEPEND ON PACKAGES FINAL DESIGN. THESE DIMENSIONS MAY VARY SLIGHTLY DUE TO STEEL DETAILS.

LEGEND
S = SLIP FIT BUS SUPPORT
F = FIXED (WELD) BUS SUPPORT
EX = EXPANSION COUPLING

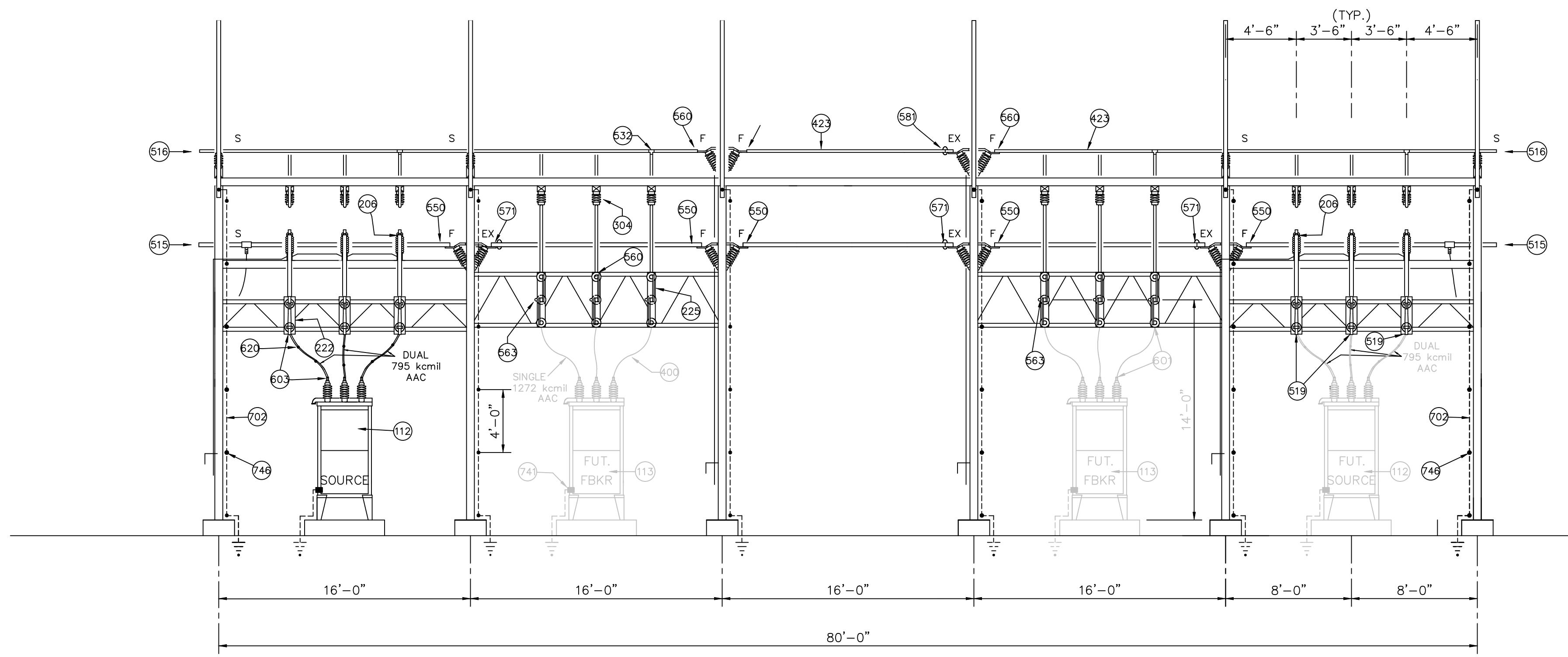
PRELIMINARY



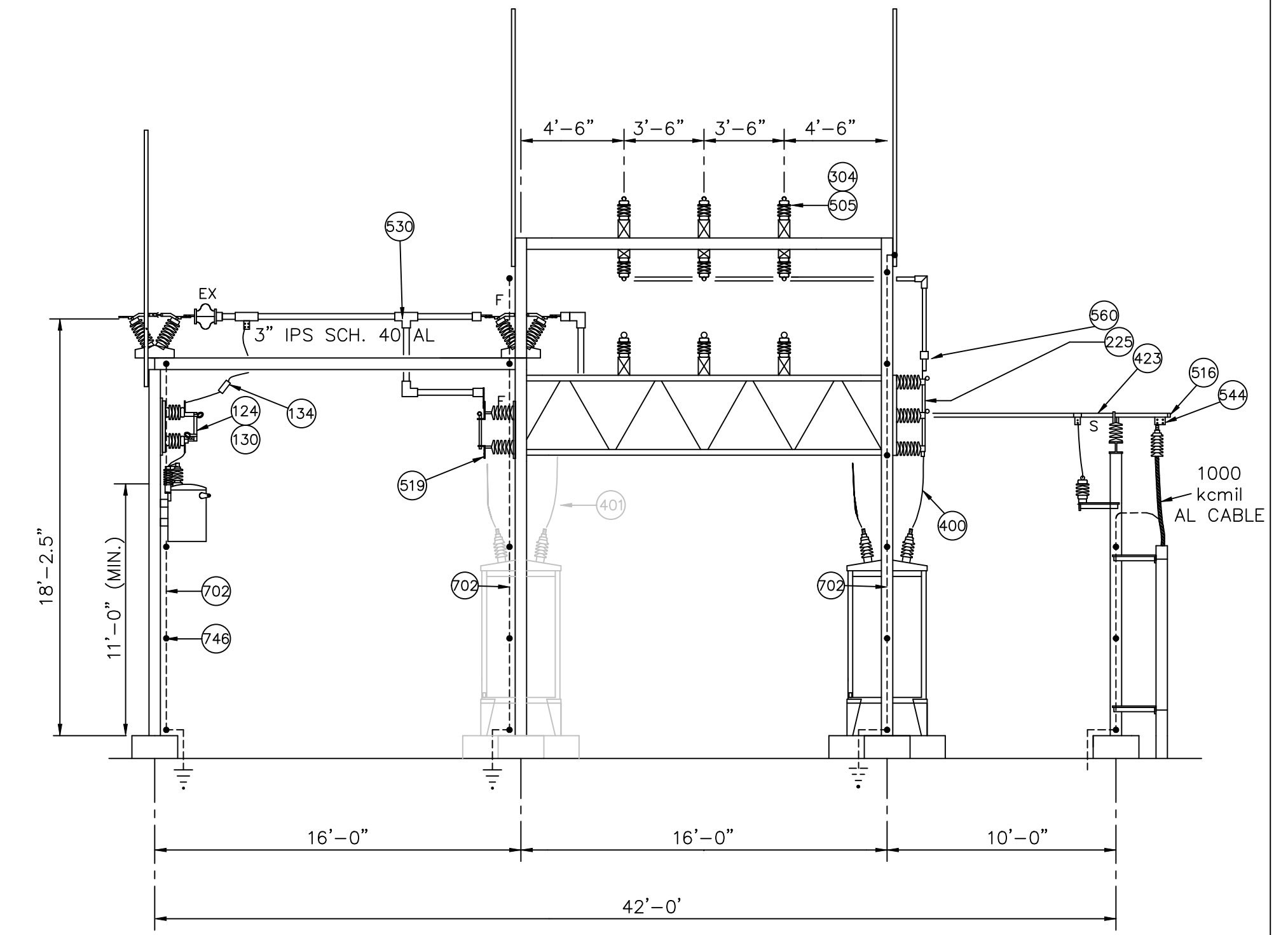
GREENVILLE UTILITIES
Greenville, North Carolina
HUDSON'S CROSSROAD SUBSTATION
115kV TO 15kV SUBSTATION
STEEL SECTIONS A-A
ALTERNATE - 115KV BREAKER

DWN.	DATE	DWG. NO.
CKD.	APPD.	
SCALE: 3/16" = 1'-0"		

#	1A
REVISIONS	PRELIMINARY DESIGN FROM DAVE FROM BID PACKAGE JGF 3/8/2024



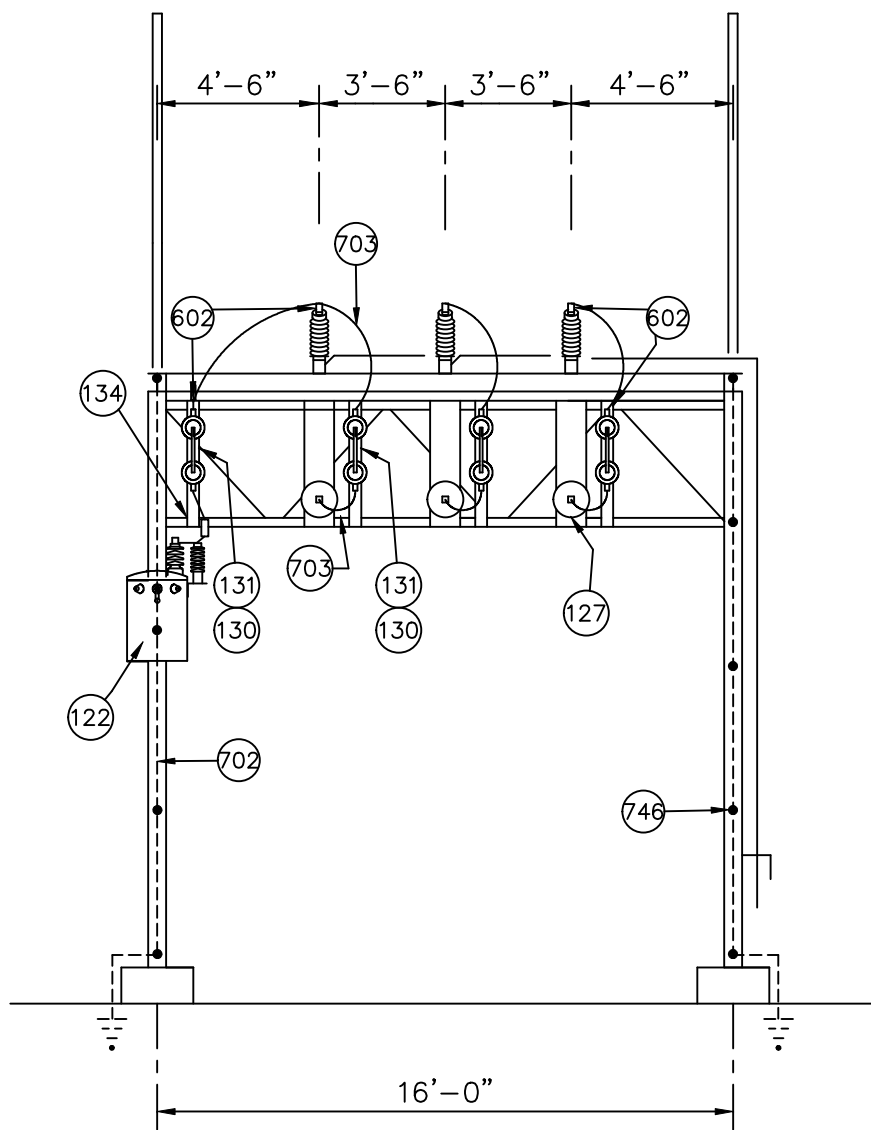
SECTION E-E
SCALE: 3/16"=1'-0"



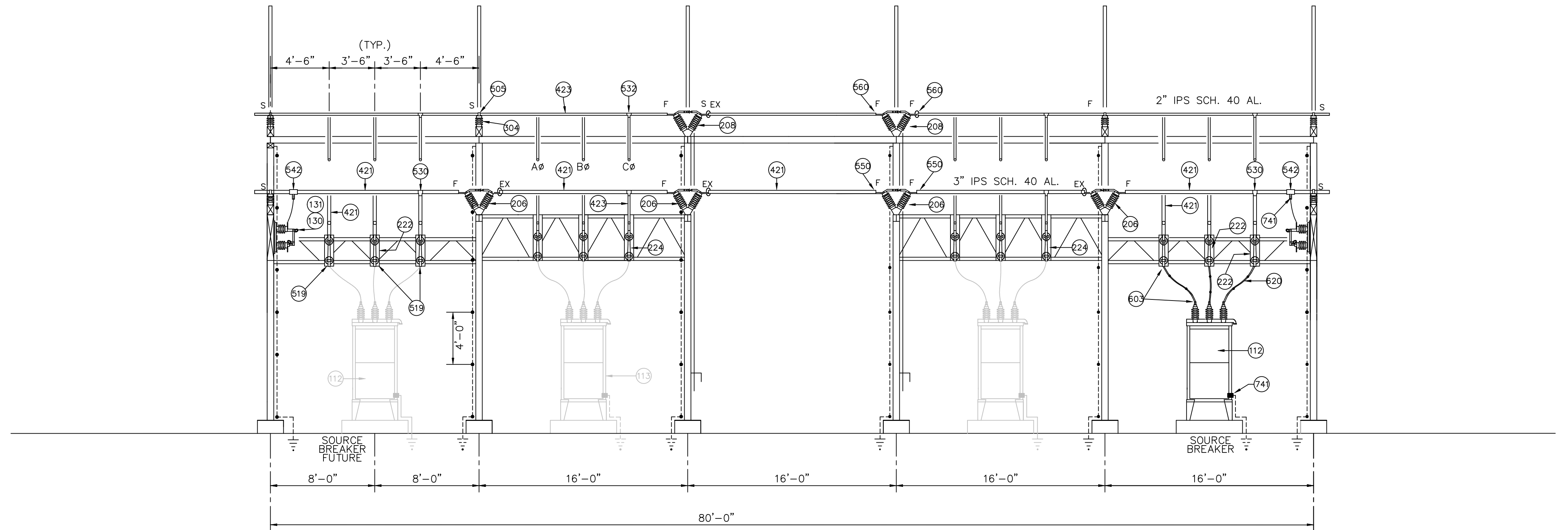
SECTION C-C
SCALE: 3/16"=1'-0"

LEGEND

- S = SLIP FIT BUS SUPPORT
- F = FIXED (WELD) BUS SUPPORT
- EX = EXPANSION COUPLING



SECTION D-D
SCALE: 3/16"=1'-0"



SECTION F-F
SCALE: 3/16"=1'-0"

PRELIMINARY

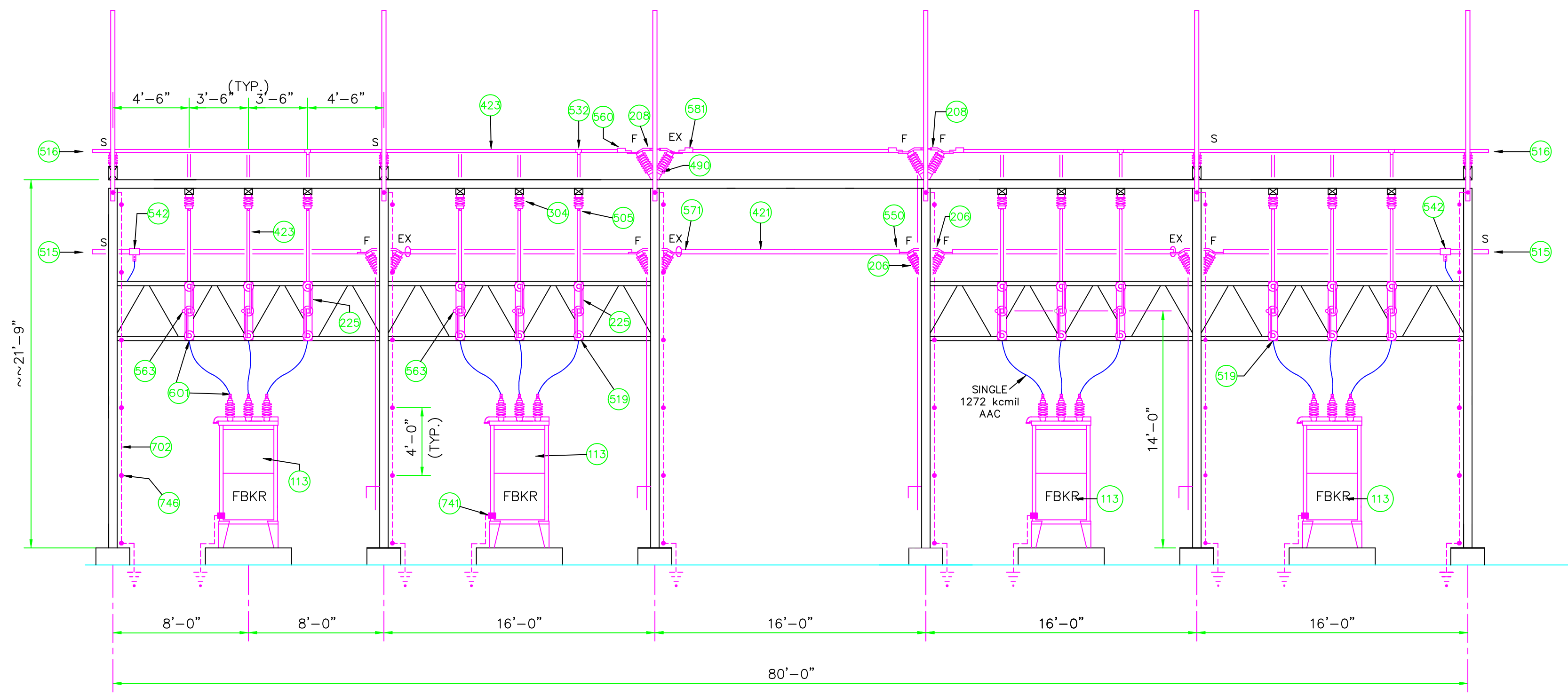


GREENVILLE UTILITIES
Greenville, North Carolina

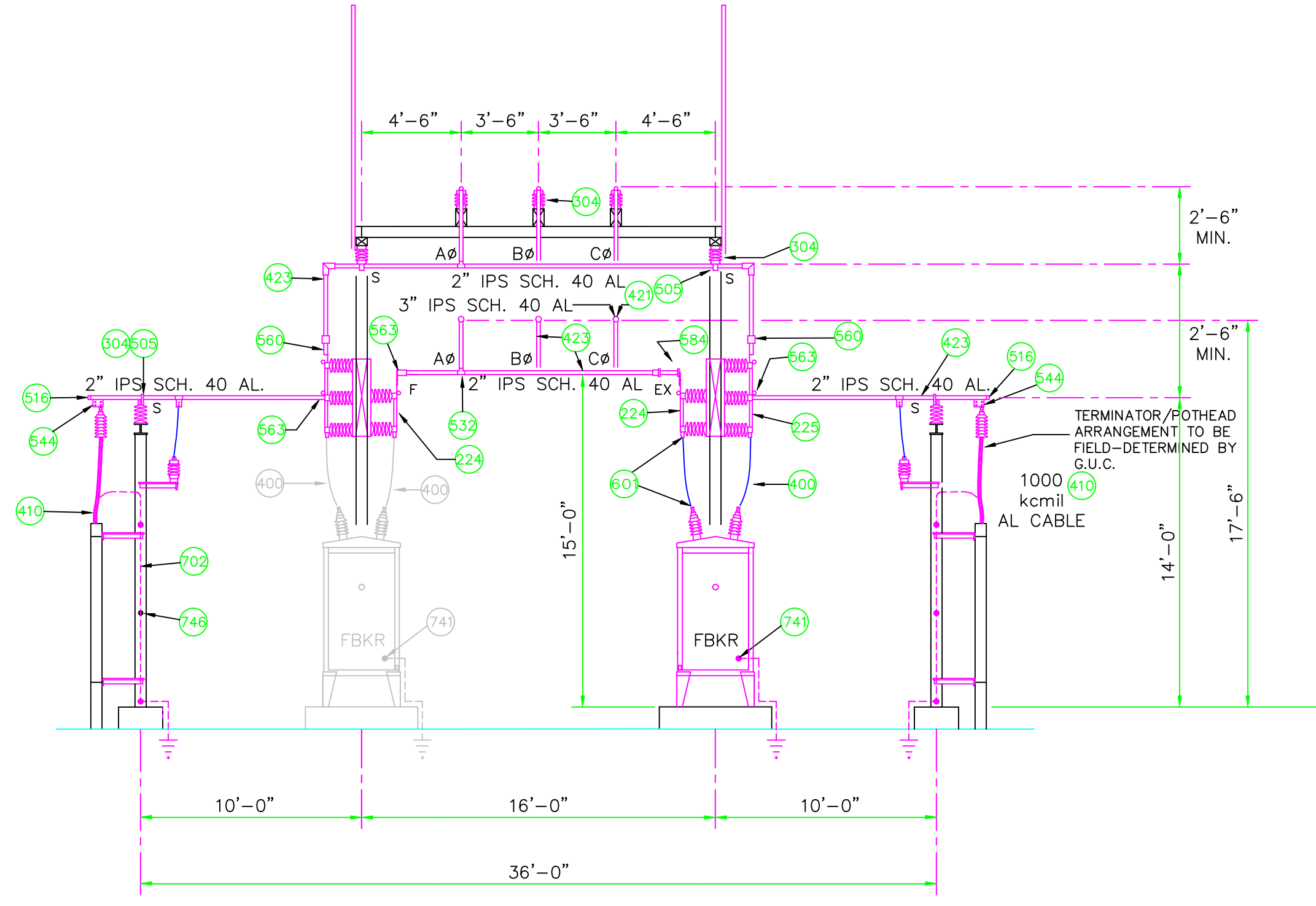
HUDSON'S CROSSROAD SUBSTATION
115kV TO 15kV SUBSTATION
STEEL SECTIONS
C-C, D-D, E-E, F-F

DWN.	DATE	DWG. NO.
CKD.	APPD.	
SCALE: 3/16" = 1'-0"		

#	1A
REVISIONS	PRELIMINARY DESIGN FROM DAVE FROM BID PACKAGE JGF 3/8/2024

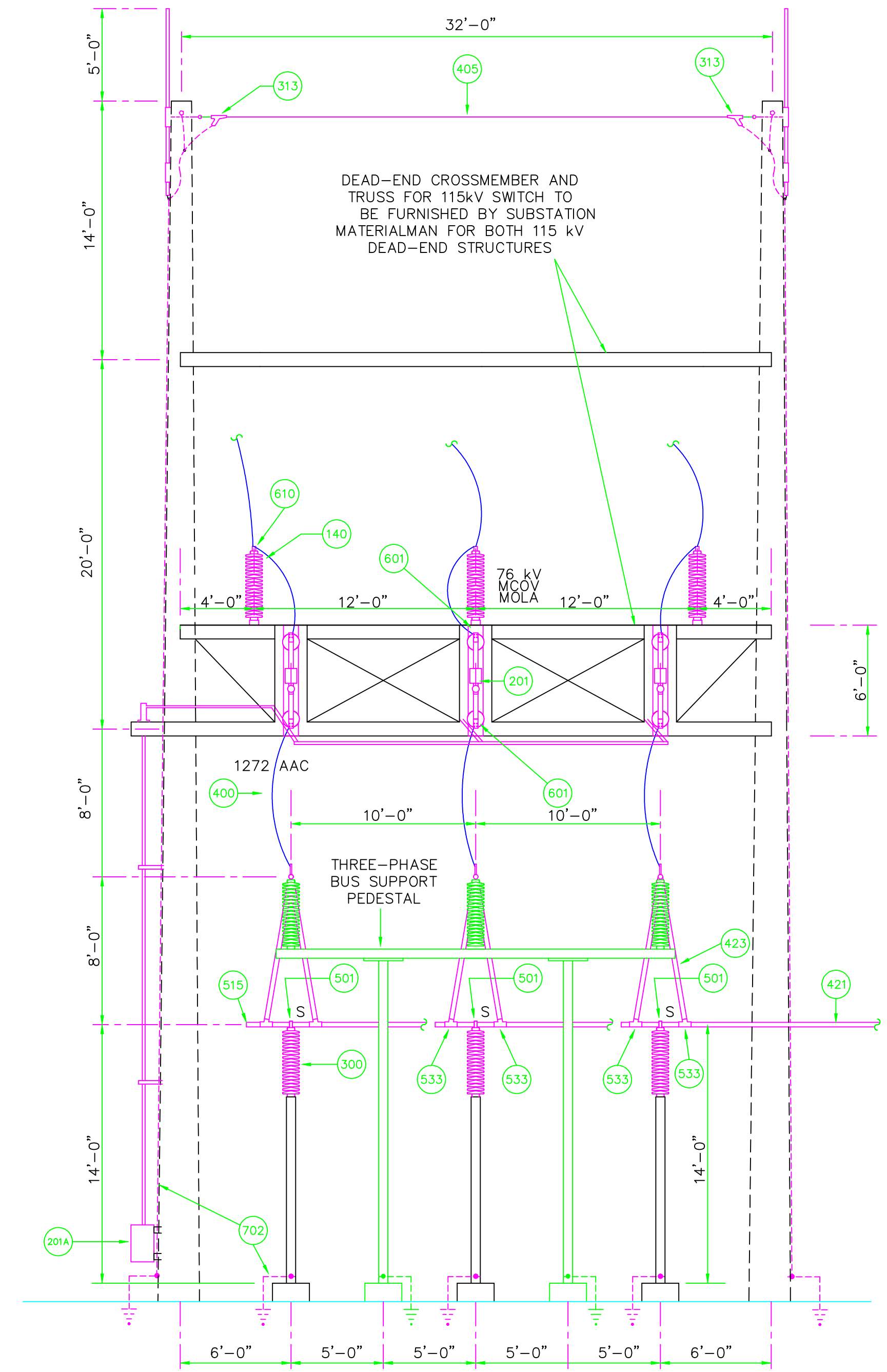


SECTION G-G
SCALE: 3/16"=1'-0"



SECTION J-J
SCALE: 3/16"=1'-0"

LEGEND
 ----- SHADED LINES INDICATE FUTURE INSTALLATION
 ----- DASHED LINES INDICATE NEW INSTALLATION
 S = SLIP FIT BUS SUPPORT
 F = FIXED (WELD) BUS SUPPORT
 EX = EXPANSION COUPLING



SECTION H-H
SCALE: 3/16"=1'-0"

PRELIMINARY

#	1A
REVISIONS	PRELIMINARY DESIGN FROM DAVE BID PACKAGE JGF 3/8/2024

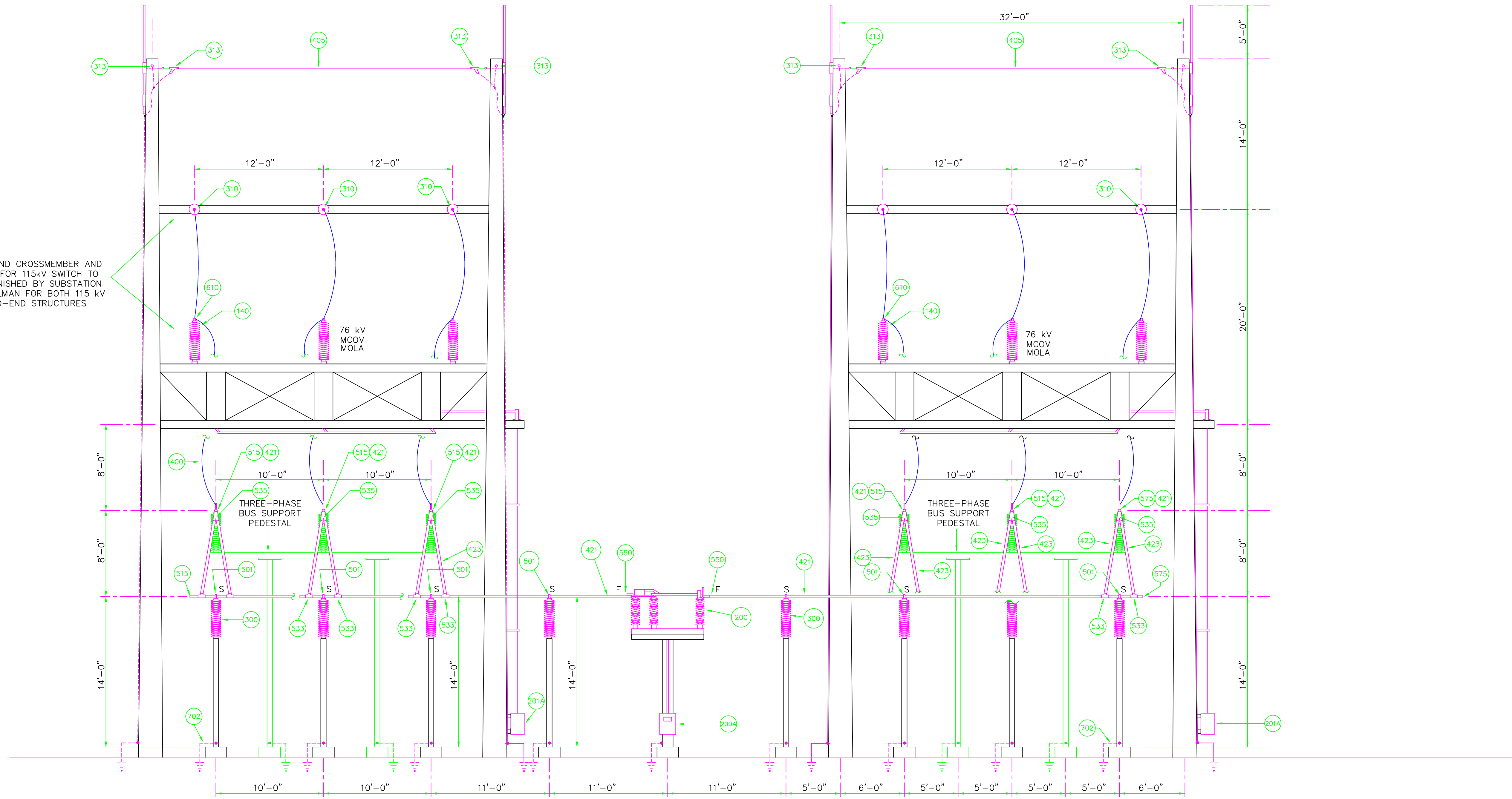
GREENVILLE UTILITIES
Greenville, North Carolina

HUDSON'S CROSSROAD SUBSTATION
115kV TO 15kV SUBSTATION
STEEL SECTIONS
G-G, H-H, J-J

DWN.	DATE	DWG. NO.
CKD.	APPD.	
SCALE: 3/16" = 1'-0"		

HUDS_SITE_SS2.dwg

DEAD-END CROSSMEMBER AND TRUSS FOR 115kV SWITCH TO BE FURNISHED BY SUBSTATION MATERIALMAN FOR BOTH 115 kV DEAD-END STRUCTURES



SECTION B-B
SCALE: 3/16"=1'-0"

LEGEND

----- SHADED LINES INDICATE FUTURE INSTALLATION
 - - - - - DASHED BLACK LINES INDICATE STEEL POLES

S = SLIP FIT BUS SUPPORT
 F = FIXED (WELD) BUS SUPPORT
 EX = EXPANSION COUPLING

#	1A
REVISIONS	PRELIMINARY DESIGN FROM DAVE BID PACKAGE JGF 3/11/2024



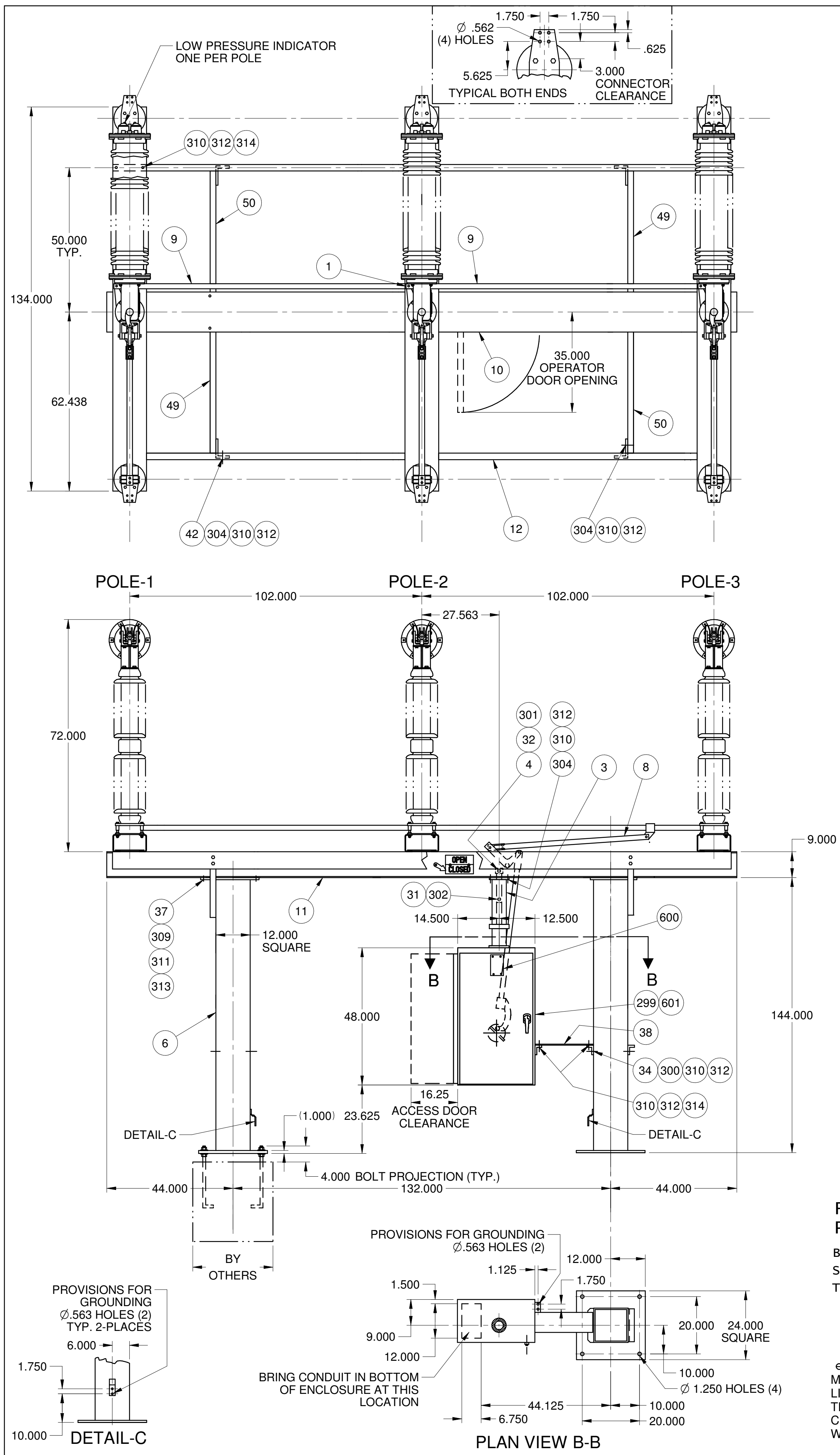
GREENVILLE UTILITIES
Greenville, North Carolina

HUDSON'S CROSSROAD SUBSTATION
115kV TO 15kV SUBSTATION
STEEL SECTIONS B-B

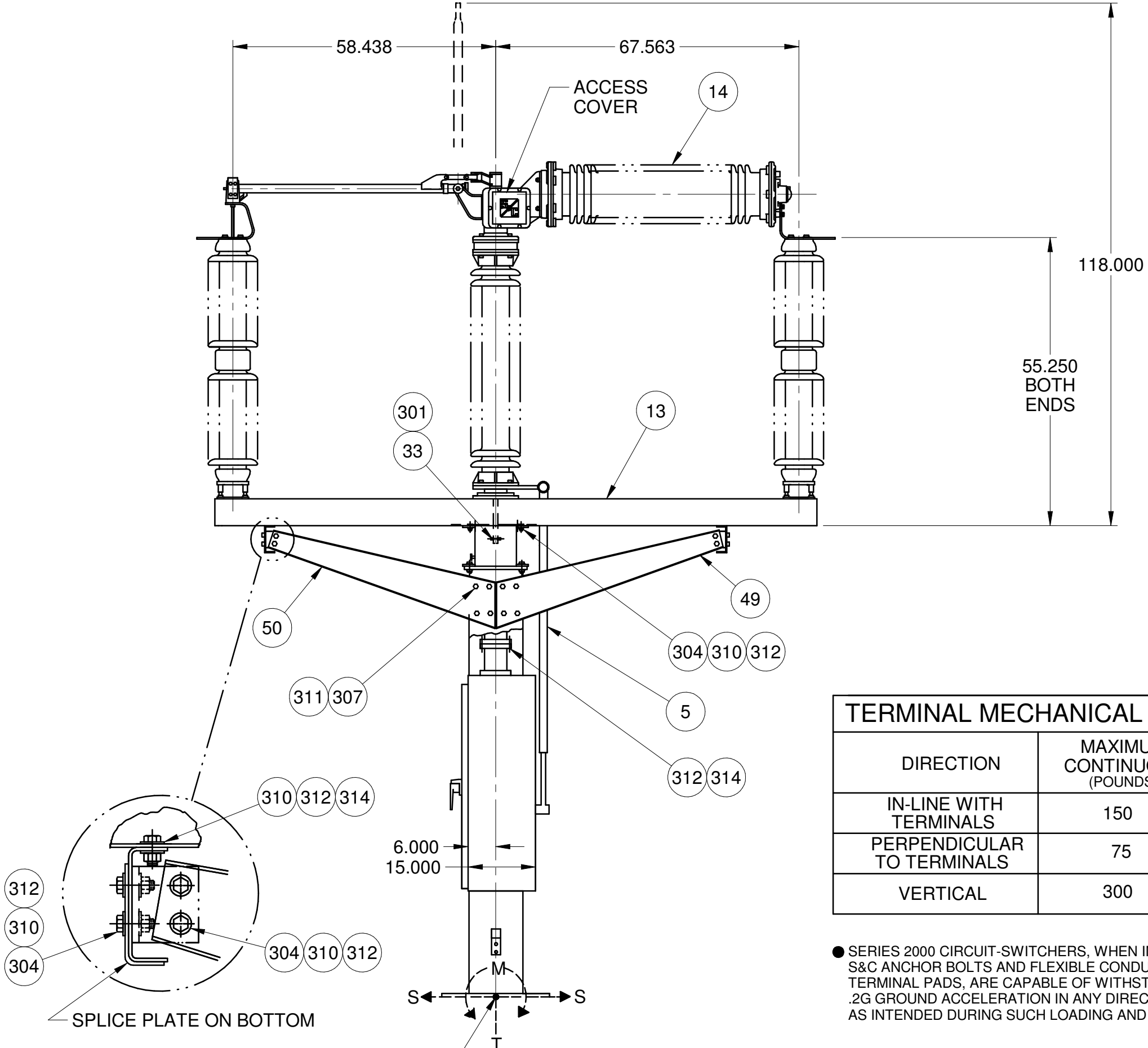
DWN.	DATE	DWG. NO.
CKD.	APPD.	
SCALE: 3/16" = 1'-0"		

Appendix C

S&C Circuit Switcher



- NOTES:**
- TOTAL WEIGHT 7,200 LBS.
 - A TYPICAL BOLT CONNECTION FOR FIELD ASSEMBLY WILL REQUIRE ONE FLATWASHER UNDER THE BOLT AND ONE UNDER THE NUT.
 - MOUNTING ANGLE (ITEM 034) TO BE SHIPPED ATTACHED TO PEDESTAL (ITEM 006).
 - STANDARD FEATURES:
 - A 48-VOLT DC OPERATOR CONTROL VOLTAGE
 - E12 144 INCH PEDESTALS
 - H2 240-VOLT 60 HZ HEATER SUPPLY
 - SWITCH-RELATED OPTIONAL FEATURES:



DIRECTION	MAXIMUM CONTINUOUS (POUNDS)	PERMISSIBLE PEAK (POUNDS)
IN-LINE WITH TERMINALS	150	300
PERPENDICULAR TO TERMINALS	75	150
VERTICAL	300	300

BILL OF MATERIAL			
ITEM	QTY.	PART NUMBER	DESCRIPTION
001	1	SA-42623	PIPE COUPLING ASSEMBLY
002	1	SA-42775	SHIPPING & ALIGNMENT TOOL
003	1	SA-41864-3	TUBE SUPPORT
004	1	SA-41976-2	CONNECTING LINK
005	1	SA-42622-3	VERTICAL OPERATING PIPE ASSEMBLY
006	2	SXA-2110-3	PEDESTAL 12"
008	1	SA-42618-2	LINK ASSEMBLY
009	2	SA-42619-2	INTERPHASE PIPE ASSEMBLY
010	1	SA-41911-2	DRIVE LINKAGE ASSEMBLY
011	1	SA-42631-2	BASE BOTTOM PLATE ASSEMBLY
012	2	SA-43783-2	SUPPORT CHANNEL ASSEMBLY
013	3	SA-41935-2	POLE UNIT MODEL 2010 115 KV 25 KA
014	3	SA-41695	INTERRUPTING UNIT 69-138 KV 25 KA
031	1	S-89674-6	PIN (BOTTOM)
032	1	S-90590-1	PIN (TOP)
033	3	S-91127	PIN
034	2	SX-2201	MOUNTING ANGLE
037	24	S-75173-2	SHIM REV001 DATED 06-11-80
038	1	S-90003-2	PLATE
042	4	S-89415	CLIP ANGLE
049	2	S-89414-1	SUPPORT ARM
050	2	S-89414-2	SUPPORT ARM
300	2	1023-512	1/2-13 X 14 HEXHEAD CAP SCREW GALV
301	5	1340-312	1/8 X 1-3/4 COTTER PIN S.S.
302	1	1340-396	1/8 X 2-1/2 COTTER PIN S.S.
304	32	1023-335	1/2-13 X 1-3/4 HEXHEAD CAP SCREW GALV
307	16	1023-364	5/8-11 X 1-1/2 HEXHEAD CAP SCREW GALV
309	8	1023-368	5/8-11 X 2-1/4 HEXHEAD CAP SCREW GALV
310	57	1040-035	1/2-13 UNI-TORQ HEX NUT GALV
311	34	1040-038	5/8 HARDENED FLATWASHER GALV
312	126	1040-039	1/2 HARDENED FLATWASHER GALV
313	8	9933-113	5/8-11 UNI-TORQ HEX NUT GALV
314	28	1023-332	1/2-13 X 1-1/2 H.H.C.S. GALV
600	1	G-9306	NAMEPLATE REV 001 DATED 8/6/09
601	1	G-5945	CAUTION LABEL REV 005 DATED 12/10/13
999	1	716-590	INSTRUCTION SHEET SEISMIC INSPECTION
999	1	716-60	DATA BULLETIN
999	1	716-501	INSTRUCTION SHEET SERIES 2000 INSTRUCTION
999	1	716-61	DATA BULLETIN
999	1	SA-42002	48 V DC SERIES 2000 SWITCH OPERATOR
		-AH2KMTT2VW1Y	

NAMEPLATE DATA

CATALOG NUMBER 197838-AE12H2KMTT2VW1Y
MODEL 2010
KV, NOMINAL-MAX DESIGN-BIL 115-121-550
OPERATOR CONTROL VOLTAGE 48 VDC
SPACE HEATER VOLTAGE 240 V 60 HZ
AMPERES, RMS, AMPERES PEAK WITHSTAND ONE-SECOND WITHSTAND
CONTINUOUS PEAK 1200 130000 40 000
FAULT-CLOSING, DUTY-CYCLE, ONE-TIME:
AMPERES, RMS, SYMMETRICAL / AMPERES PEAK
40 000 / 104 000
AMPERES, RMS, INTERRUPTING:
PARALLEL OR LINE DROPPING CABLE DROPPING
LOOP CIRCUITS LOAD 1200 1200 400 400
SHUNT CAPACITOR BANKS SHUNT REACTORS
GROUNDED ▲ UNGROUNDED GROUNDED ▲ UNGROUNDED
400 400 600 N/A
TRANSFORMER PRIMARY TRANSFORMER SECONDARY
FAULTS * FAULTS
25 000 4000
CABLE, CAPACITOR OR REACTOR FAULTS * THIS THREE-PHASE CIRCUIT-SWITCHER CONTAINS:
25 000 8.4 LBS SF6 AT 75 PSI
■ SINGLE CAPACITOR BANKS ONLY
▲ APPLIED ON SOLIDLY GROUNDED SYSTEMS ONLY.
* REFER TO S&C SPECIFICATION BULLETIN 716-31

FOUNDATION LOADINGS PER PEDESTAL

BENDING MOMENT (M) --- 30,000 FT-LBS.
SHEAR LOAD (S) --- 2,200 LBS.
THRUST (T)
STATIC --- 4,600 LBS.
DYNAMIC --- 1,500 LBS.
TOTAL --- 6,100 LBS.

● BASED ON MOST-ADVERSE COMBINATION OF MAXIMUM-CONTINUOUS TERMINAL-PAD LOADING LIMITS LISTED ABOVE AND TAKING INTO ACCOUNT THE DEAD-WEIGHT CONTRIBUTION OF THE CIRCUIT-SWITCHER TO THE BENDING MOMENT, AS WELL AS A WIND LOADING OF 90 MILES PER HOUR.

NO.	DATE	BY	DESCRIPTION

PRINT IDENTIFICATION	CUSTOMER: Wesco Clayton, Nc	CUSTOMER ORDER NUMBER: 7884-822770
S&C S.O. NUMBER: 881748	S&C LINE NUMBER: 1.1	
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REMARKS: SERIAL NUMBER-26-27501, Greenville Utilities Commission		

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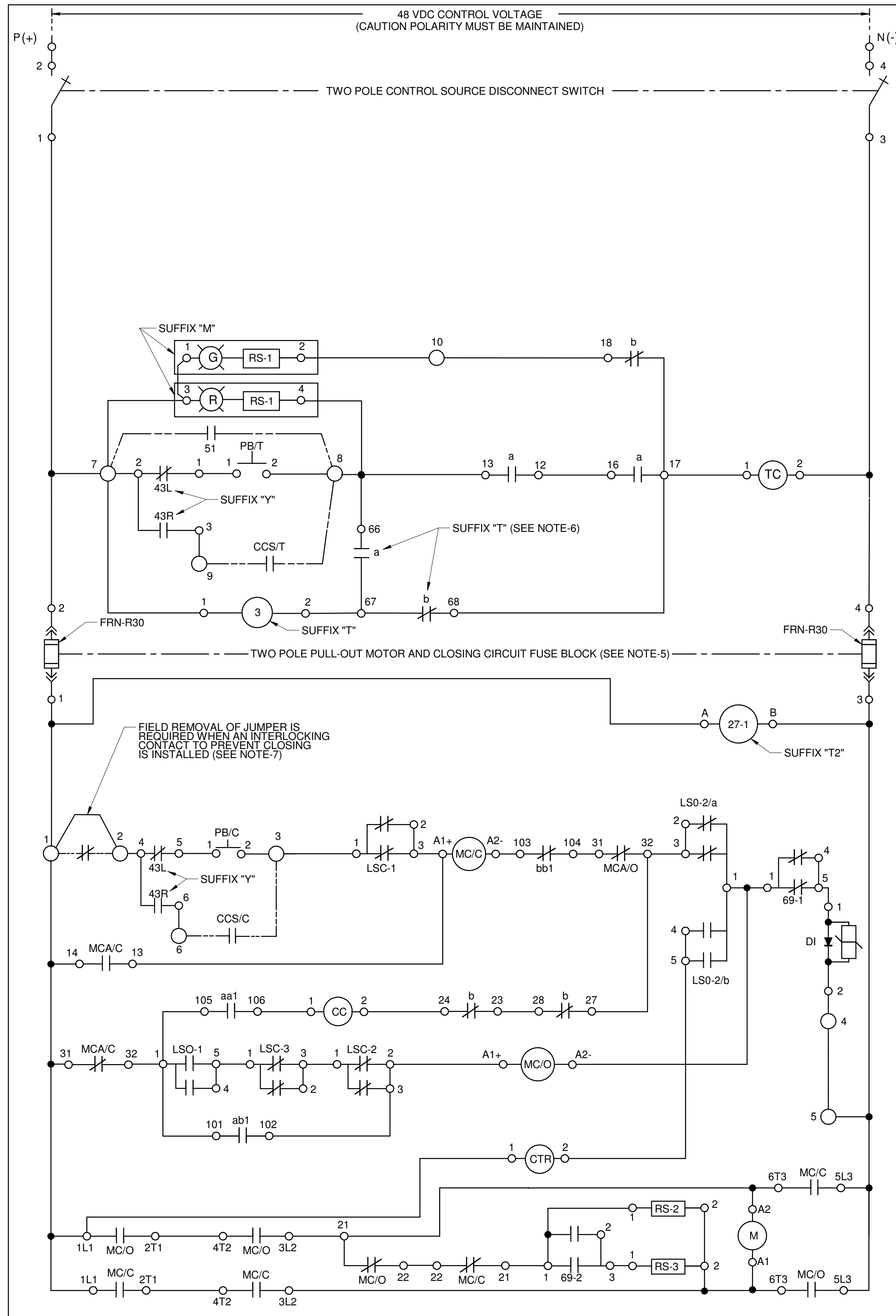
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DRAWING NO. **881748-1.1**
REVISION **000**

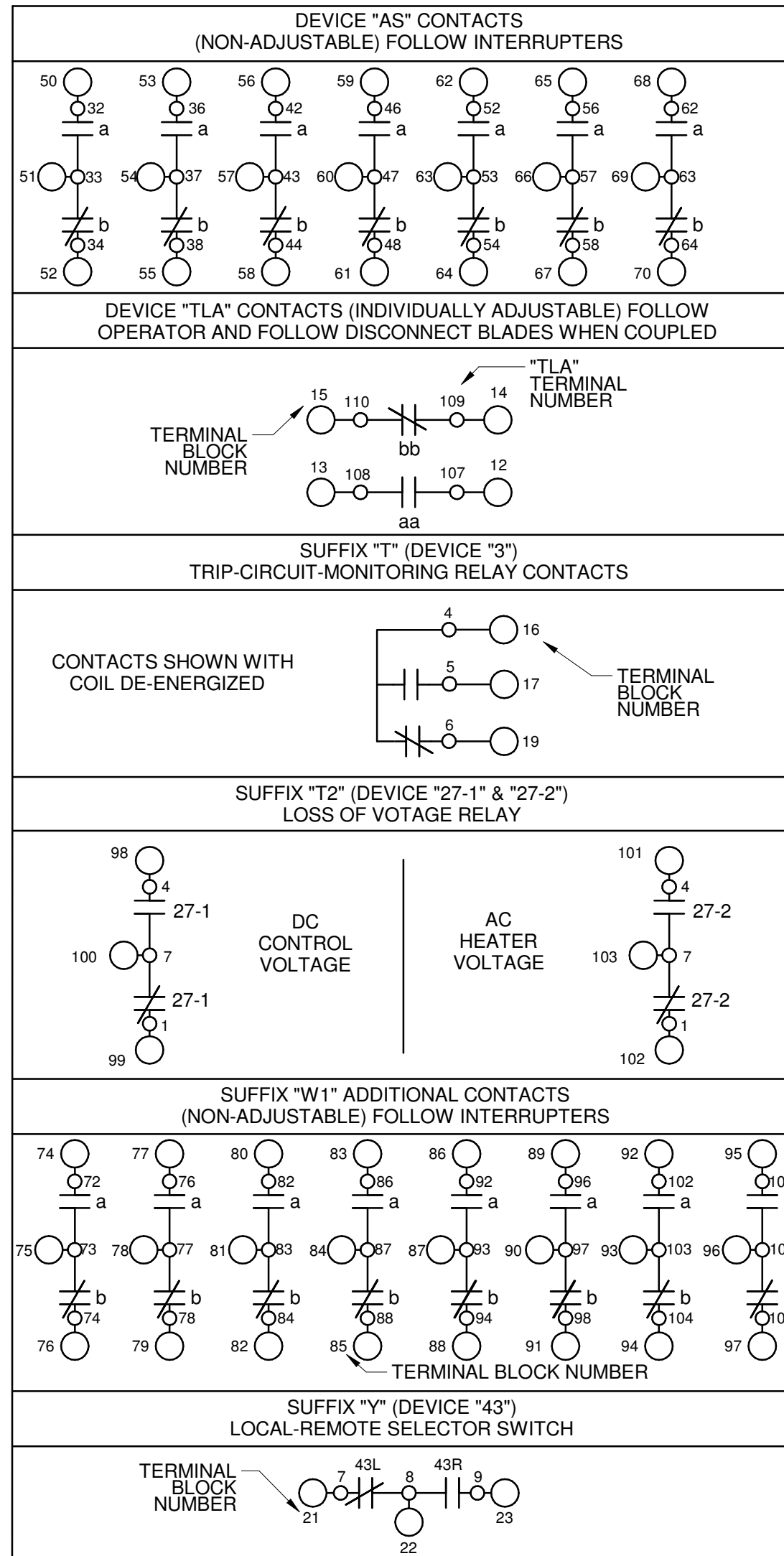
S&C ELECTRIC COMPANY
Excellence Through Innovation

DESCRIPTION: **115 KV 1200 AMPERE CIRCUIT-SWITCHER, SERIES 2000 MODEL 2010 WITH HORIZONTAL INTERRUPTERS AND VERTICAL-BREAK POWER OPERATED DISCONNECT, 102 INCH PHASE SPACING**

SHEET 1 OF 3
CATALOG NO. **197838**
-AE12H2KMTT2VW1Y



CONTACTS FOR CUSTOMER'S USE



CONTACT STATE-POSITION DIAGRAM

OPERATOR AND DISCONNECT BLADE STATUS (WHEN COUPLED)	INTERRUPTER POSITION	CONTACT STATE	CHARGED AND READY	DISCONNECT CLOSING	MECHANISM DIS-CHARGING	DISCONNECT OPENING & MECHANISM CHARGING	CHARGED AND READY
			CLOSED	OPEN	CLOSING	OPENING	CLOSED
CLOSED	CLOSED	ab1	█				
CLOSED	CLOSED	bb1	█				
CLOSED	CLOSED	aa1			█		
CLOSED	CLOSED	aa			█		
CLOSED	CLOSED	bb			█		
CLOSED	CLOSED	a			█		
CLOSED	CLOSED	b			█		
CLOSED	CLOSED	LSO-1			█		
CLOSED	CLOSED	LSO-2/b			█		
CLOSED	CLOSED	LSO-2/a			█		
CLOSED	CLOSED	LSC-1			█		
CLOSED	CLOSED	LSC-2			█		
CLOSED	CLOSED	LSC-3			█		
OPEN	CLOSED	ab1				█	
OPEN	CLOSED	bb1				█	
OPEN	CLOSED	aa1				█	
OPEN	CLOSED	aa				█	
OPEN	CLOSED	bb				█	
OPEN	CLOSED	a				█	
OPEN	CLOSED	b				█	
OPEN	CLOSED	LSO-1				█	
OPEN	CLOSED	LSO-2/b				█	
OPEN	CLOSED	LSO-2/a				█	
OPEN	CLOSED	LSC-1				█	
OPEN	CLOSED	LSC-2				█	
OPEN	CLOSED	LSC-3				█	
OPEN	OPENING	ab1					█
OPEN	OPENING	bb1					█
OPEN	OPENING	aa1					█
OPEN	OPENING	aa					█
OPEN	OPENING	bb					█
OPEN	OPENING	a					█
OPEN	OPENING	b					█
OPEN	OPENING	LSO-1					█
OPEN	OPENING	LSO-2/b					█
OPEN	OPENING	LSO-2/a					█
OPEN	OPENING	LSC-1					█
OPEN	OPENING	LSC-2					█
OPEN	OPENING	LSC-3					█
OPEN	CLOSING	ab1					█
OPEN	CLOSING	bb1					█
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OPEN	CLOSING	bb					█
OPEN	CLOSING	a					█
OPEN	CLOSING	b					█
OPEN	CLOSING	LSO-1					█
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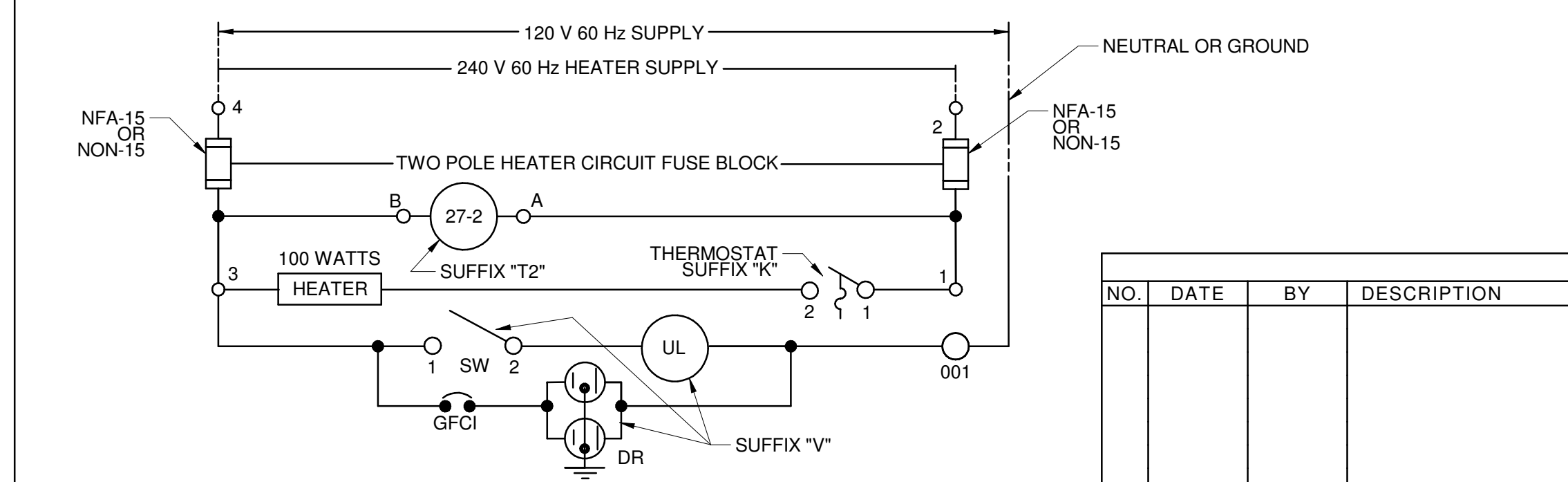
█ DENOTES CLOSED CONTACT

EXPLANATION OF DEVICE DESIGNATIONS

- TERMINAL BLOCK
- TERMINAL POINT ON DEVICE
- TRIP-CIRCUIT MONITORING RELAY (SUFFIX "T")
- 43 LOCAL-REMOTE SELECTOR SWITCH (SUFFIX "Y")
- 51 CUSTOMER'S PROTECTIVE OR CONTROL RELAY CONTACT(S) (51 TYPICAL)
- 69-1 MANUAL CHARGING ELECTRICAL INTERLOCK SWITCHES-CONTACTS SHOWN WITH ACCESS SHUTTER CLOSED
- 69-2
- a CONTACTS ON DEVICE AS
- b
- aa CONTACTS ON DEVICE TLA
- aa1
- ab1
- bb CONTACTS ON DEVICE TLA
- bb1
- AS AUXILIARY SWITCH-CONTACTS FOLLOW INTERRUPTERS
- CC CLOSING COIL (22 AMPERES, 2.2 OHMS)
- CCS/C CUSTOMER'S CONTROL SWITCH, CLOSING
- CCS/T CUSTOMER'S CONTROL SWITCH, TRIP
- CTR OPERATION COUNTER
- DI DIODE AND VARISTOR ASSEMBLY
- DR DUPLEX RECEPTACLE (SUFFIX "V") WITH GROUND FAULT CIRCUIT INTERRUPTER
- G GREEN POSITION-INDICATING LAMP-OPEN (SUFFIX "M")
- LSO-1
- LSO-2
- LSC-1 SPRING MECHANISM LIMIT SWITCHES
- LSC-2
- LSC-3
- M MOTOR (RUNNING CURRENT = 40 AMPERES)
- MC/C MOTOR CONTACTOR, CLOSING (700 OHMS)
- MC/O MOTOR CONTACTOR, OPENING (700 OHMS)
- MCA/C MOTOR CONTACTOR AUXILIARY CONTACTS, CLOSING
- MCA/O MOTOR CONTACTOR AUXILIARY CONTACTS, OPENING
- PB/C CLOSING PUSHBUTTON
- PB/T TRIP PUSHBUTTON
- R RED POSITION-INDICATING LAMP-CLOSED (SUFFIX "M")
- RS-1 RESISTOR (200 OHM)
- RS-2 RESISTOR (10 OHM)
- RS-3 RESISTOR (1 OHM)
- SW CONVENIENCE LIGHT SWITCH (SUFFIX "V")
- TC TRIP COIL (22 AMPERES, 2.2 OHMS)
- TLA TRAVEL LIMIT SWITCH-CONTACTS FOLLOW OPERATOR AND FOLLOW DISCONNECT BLADES WHEN COUPLED
- UL CONVENIENCE LIGHT (SUFFIX "V")
- 27-1 LOSS OF VOLTAGE RELAY DC (SUFFIX "T2")
- 27-2 LOSS OF VOLTAGE RELAY AC (SUFFIX "T2")

NOTES:

1. DIAGRAM IS SHOWN WITH THE INTERRUPTERS OPEN, DISCONNECT BLADES OPEN, AND SPRING MECHANISM CHARGED.
2. — — — INDICATES GANGED OPERATION.
3. — — — INDICATES CUSTOMER'S CONNECTIONS.
4. HARNESS MAY INCLUDE TIED BACK WIRES FOR OPTIONS NOT ORDERED.
5. AFTER THE INSTALLATION HAS BEEN CHECKED AND IS READY TO BE PLACED IN SERVICE, THE MOTOR AND CLOSING CIRCUIT FUSES CAN, AT THE USER'S OPTION, BE REPLACED WITH SLUGS INCLUDED WITH THE OPERATOR. THIS PRACTICE IS RECOMMENDED FOR INCREASED RELIABILITY BECAUSE LOW-VOLTAGE FUSES CAN BE DAMAGED BY THE REPEATED INRUSH CURRENT EXPERIENCED DURING NORMAL CIRCUIT-SWITCHER OPENING AND CLOSING OPERATIONS AND CAN THUS "SNEAK OUT", LEAVING CIRCUIT-SWITCHER INOPERABLE. IF SLUGS ARE USED IN PLACE OF FUSES, THE CONTROL-SOURCE MUST BE ADEQUATELY PROTECTED USING CIRCUIT-BREAKERS.
6. THE TRIP-CIRCUIT-MONITORING RELAY CONTACTS CHANGE STATE 6-10 CYCLES AFTER THE COIL IS DE-ENERGIZED. THIS FEATURE PREVENTS THE RELAY CONTACTS FROM CHANGING STATE DURING TRIPPING.
7. THE DURATION OF THE CLOSING SIGNAL SHOULD NOT EXCEED SIX SECONDS TO PREVENT UNWANTED RE-CLOSING. IF THE CLOSING SIGNAL IS LONGER THAN SIX SECONDS, A NORMALLY CLOSED CONTACT, INTERLOCKED WITH THE TRIP SIGNAL, SHOULD BE INSTALLED BETWEEN TERMINALS 1 AND 2.
8. OPERATOR-RELATED OPTIONAL FEATURES:
 - K SPACE HEATER THERMOSTAT FOR OPERATOR
 - M POSITION-INDICATING LAMPS (ONE RED, ONE GREEN) LOCATED INSIDE OPERATOR ENCLOSURE. LAMPS ARE WIRED IN SERIES WITH TRIP COIL, FOR LOCAL INDICATION OF CIRCUIT-SWITCHER POSITION AND OPERATOR TRIP-CIRCUIT CONTINUITY.
 - T TRIP-CIRCUIT-MONITORING RELAY WIRED IN SERIES WITH OPERATOR TRIP COIL. MONITORS CONTINUITY OF TRIP CIRCUIT. INCLUDES ONE NORMALLY OPEN AND ONE NORMALLY CLOSED CONTACT SUITABLE FOR USE WITH REMOTELY LOCATED INDICATING LAMPS OR ALARMS.
 - T2 LOSS OF VOLTAGE RELAY. PROVIDES APPROPRIATE CONTACTS FOR USE IN, FOR EXAMPLE, A USER-FURNISHED ALARM SYSTEM.
 - V DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER AND CONVENIENCE-LIGHT LAMPHOLDER WITH SWITCH LOCATED INSIDE OPERATOR ENCLOSURE.
 - W1 EIGHT ADDITIONAL NONADJUSTABLE SINGLE-POLE DOUBLE-THROW AUXILIARY SWITCH CONTACTS WHICH FOLLOW THE INTERRUPTERS.
 - Y LOCAL-REMOTE SELECTOR SWITCH. PREVENTS REMOTE OPERATION OF THE OPERATOR WHEN SELECTOR SWITCH IS PLACED IN "LOCAL" MODE AS, FOR EXAMPLE, DURING INSPECTION.



REVISIONS			
NO.	DATE	BY	DESCRIPTION

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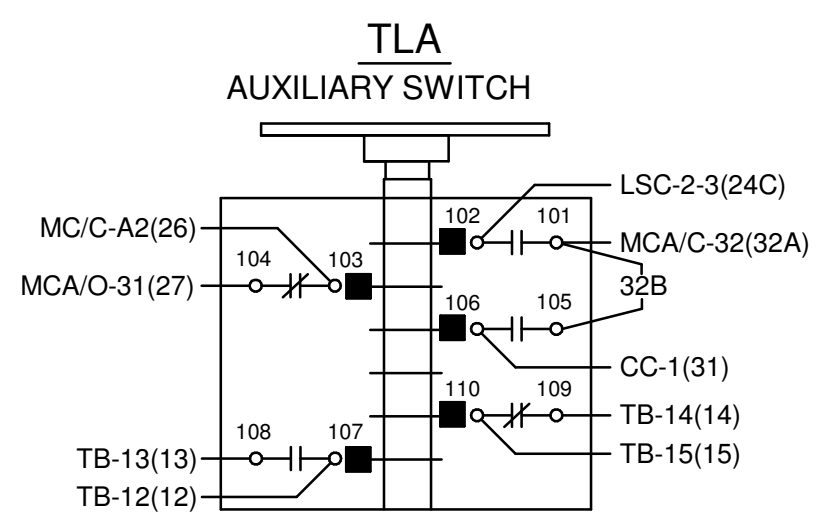
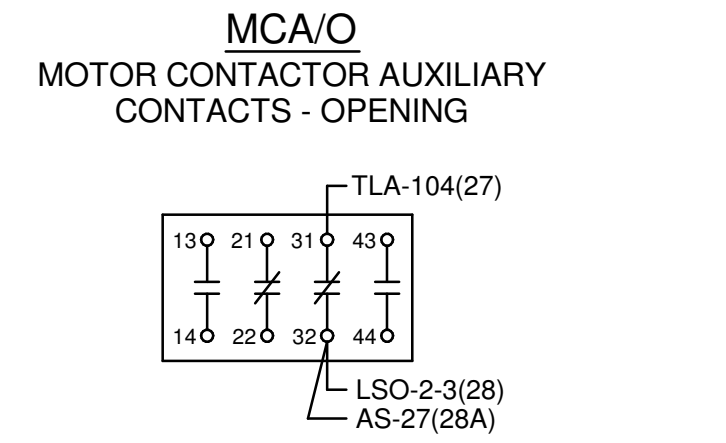
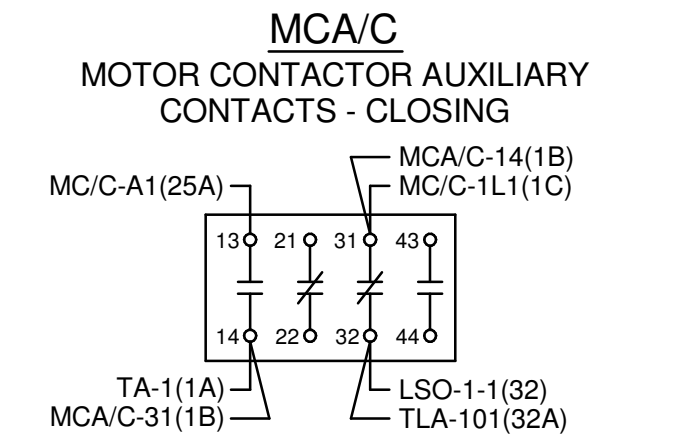
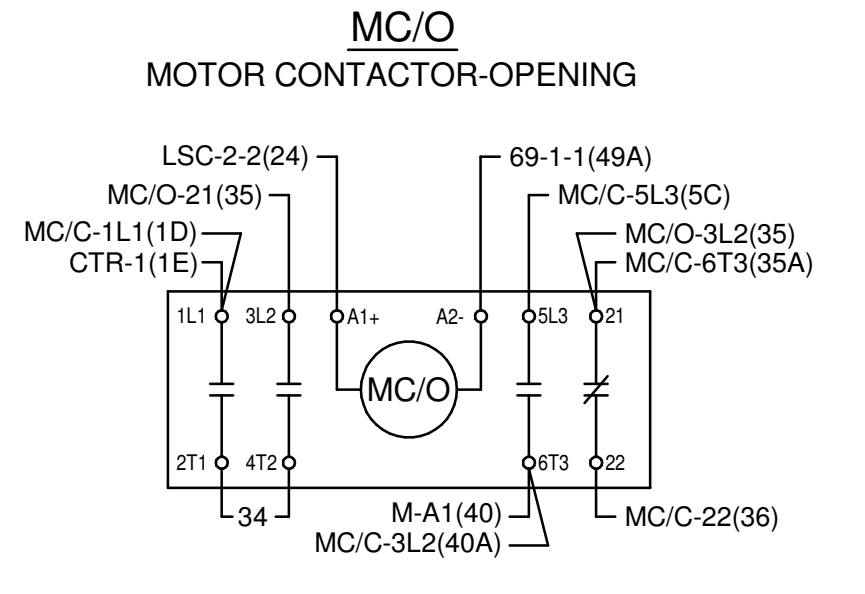
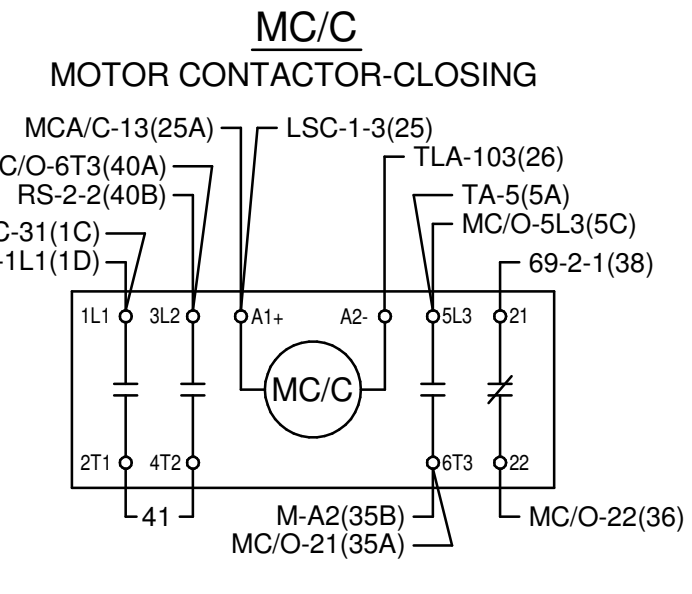
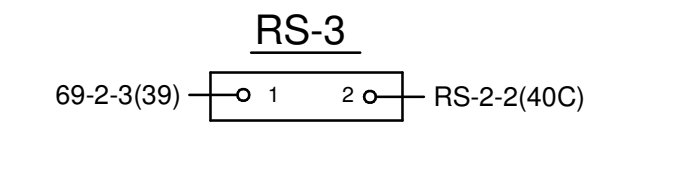
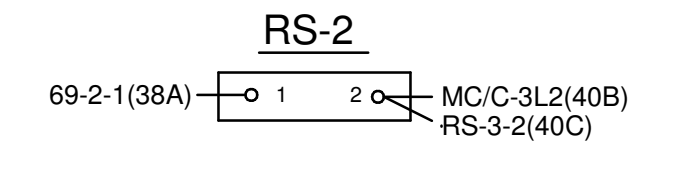
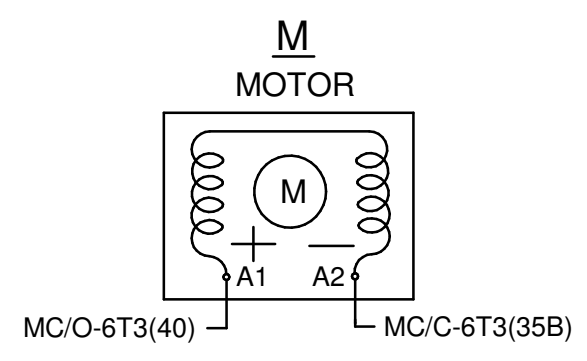
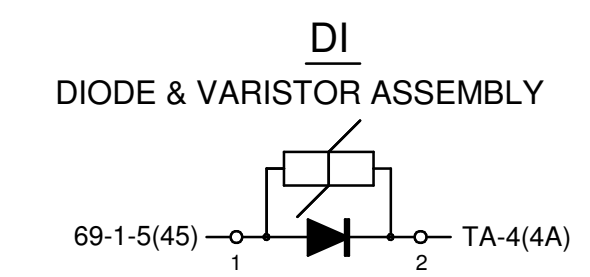
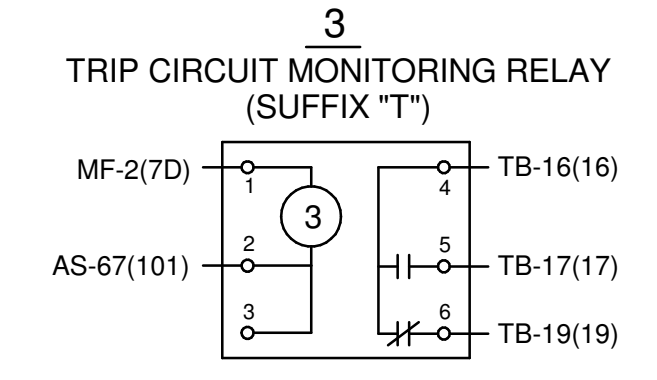
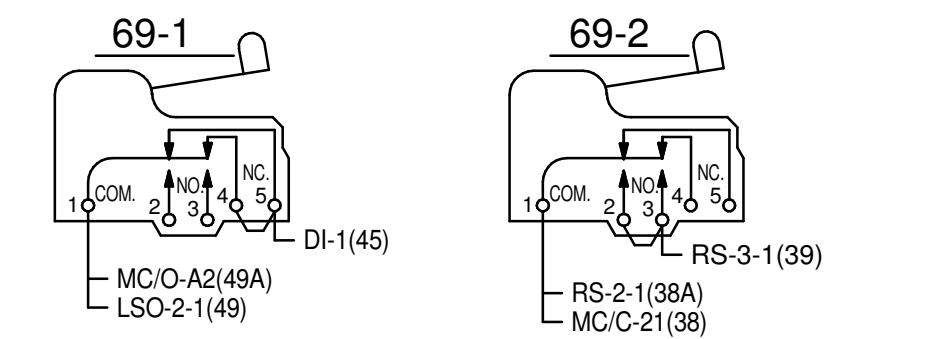
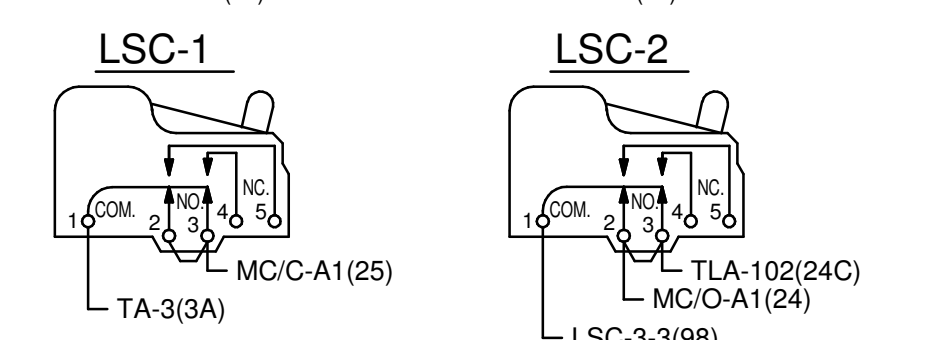
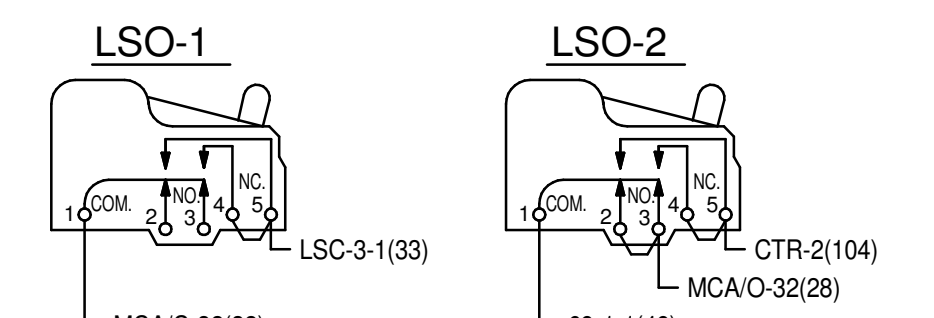
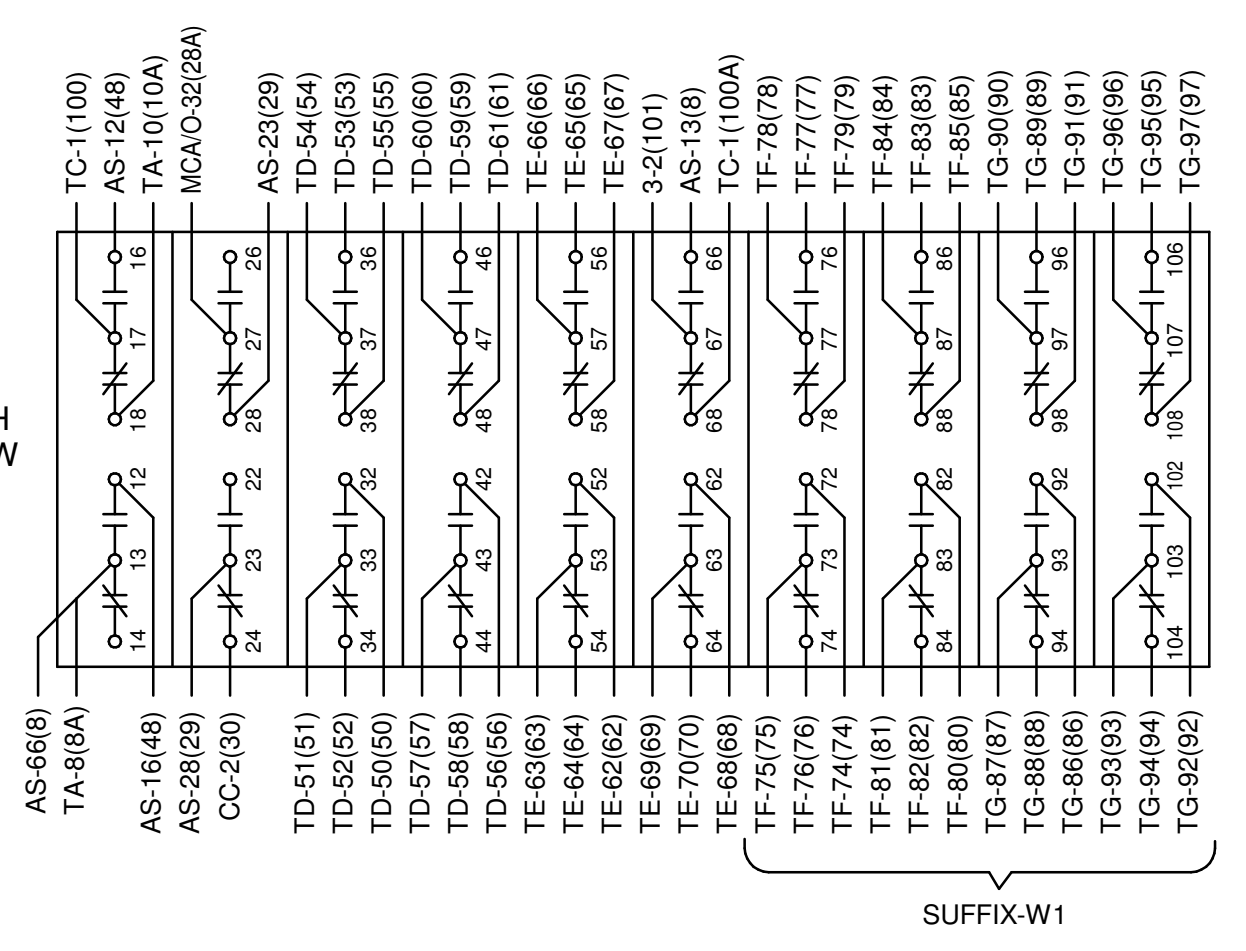
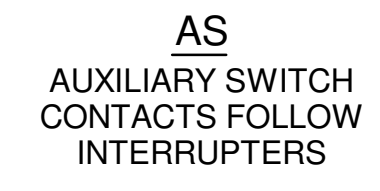
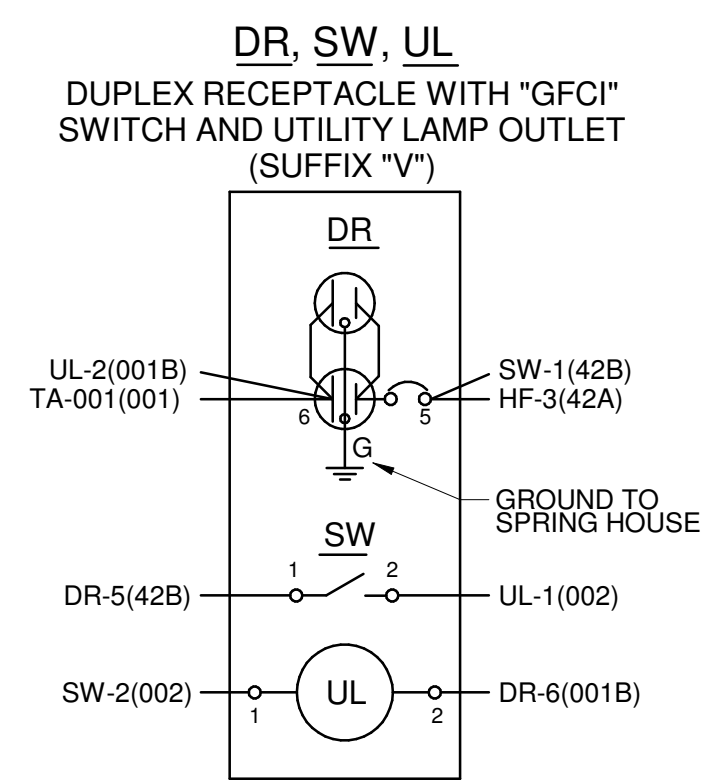
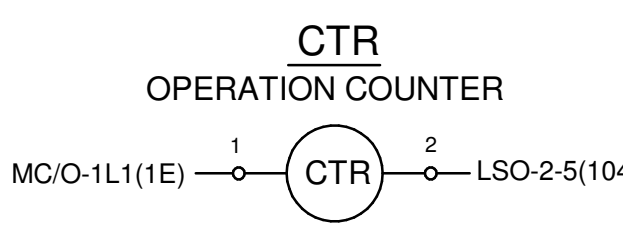
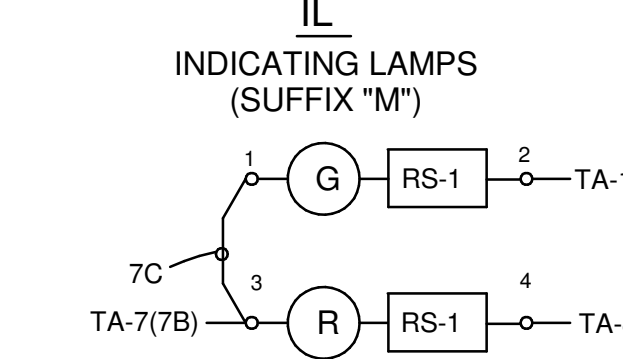
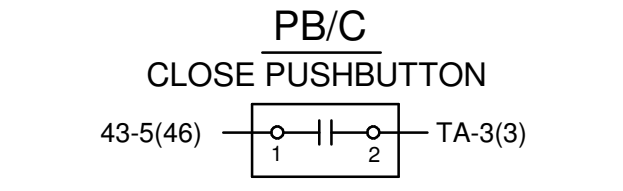
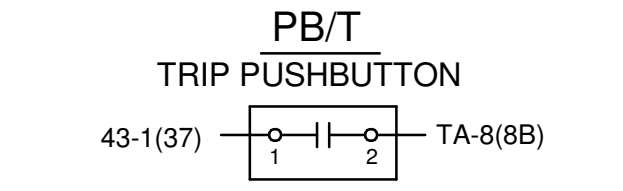
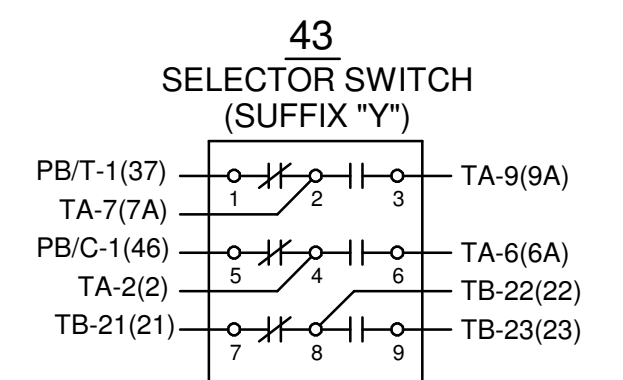
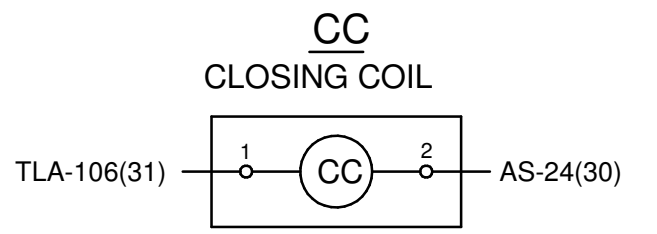
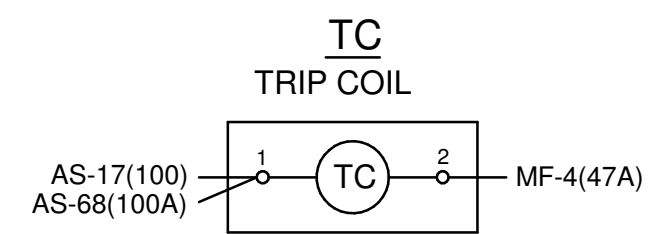
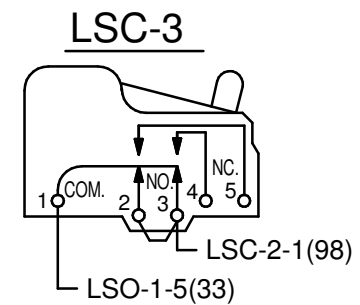
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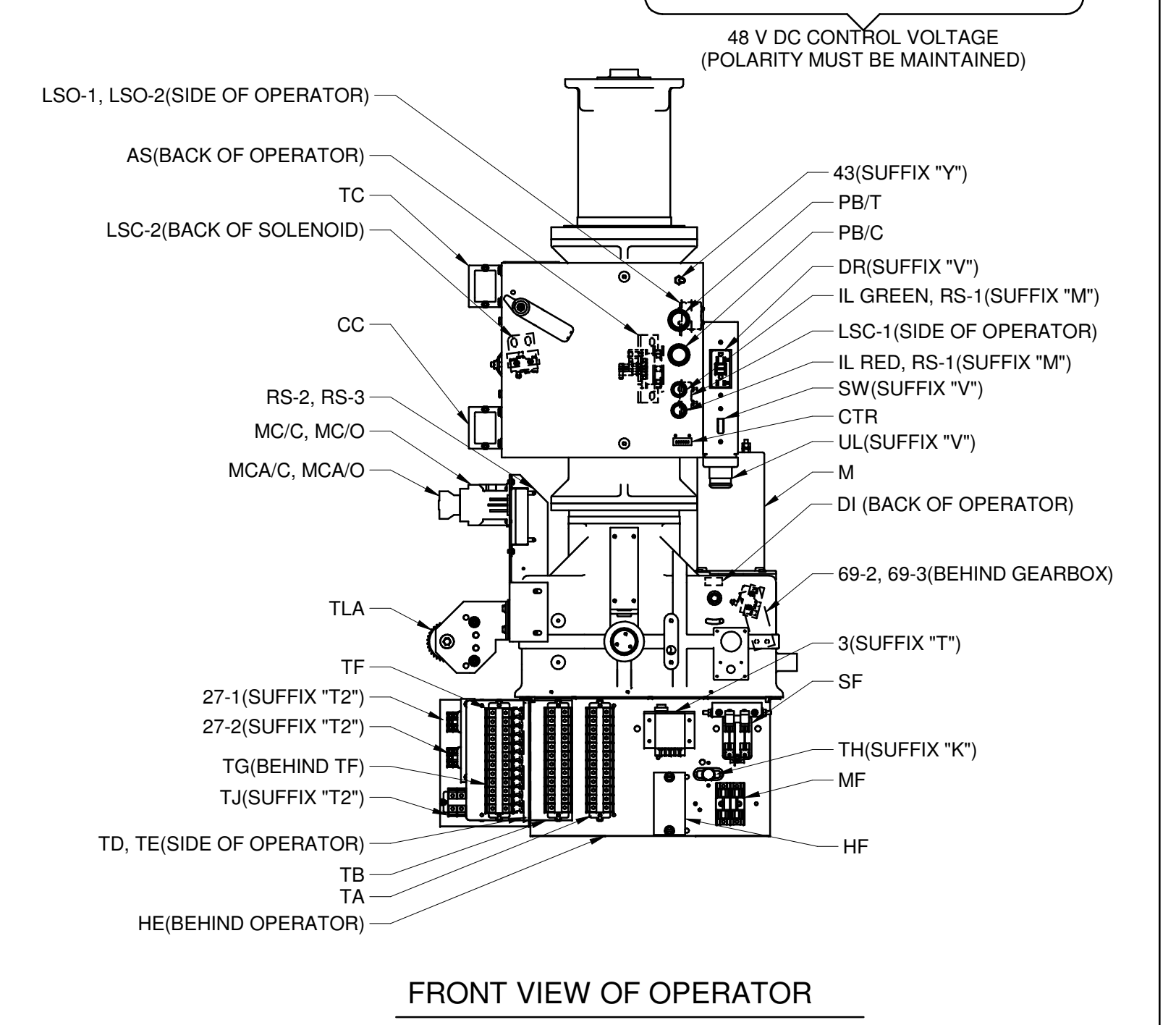
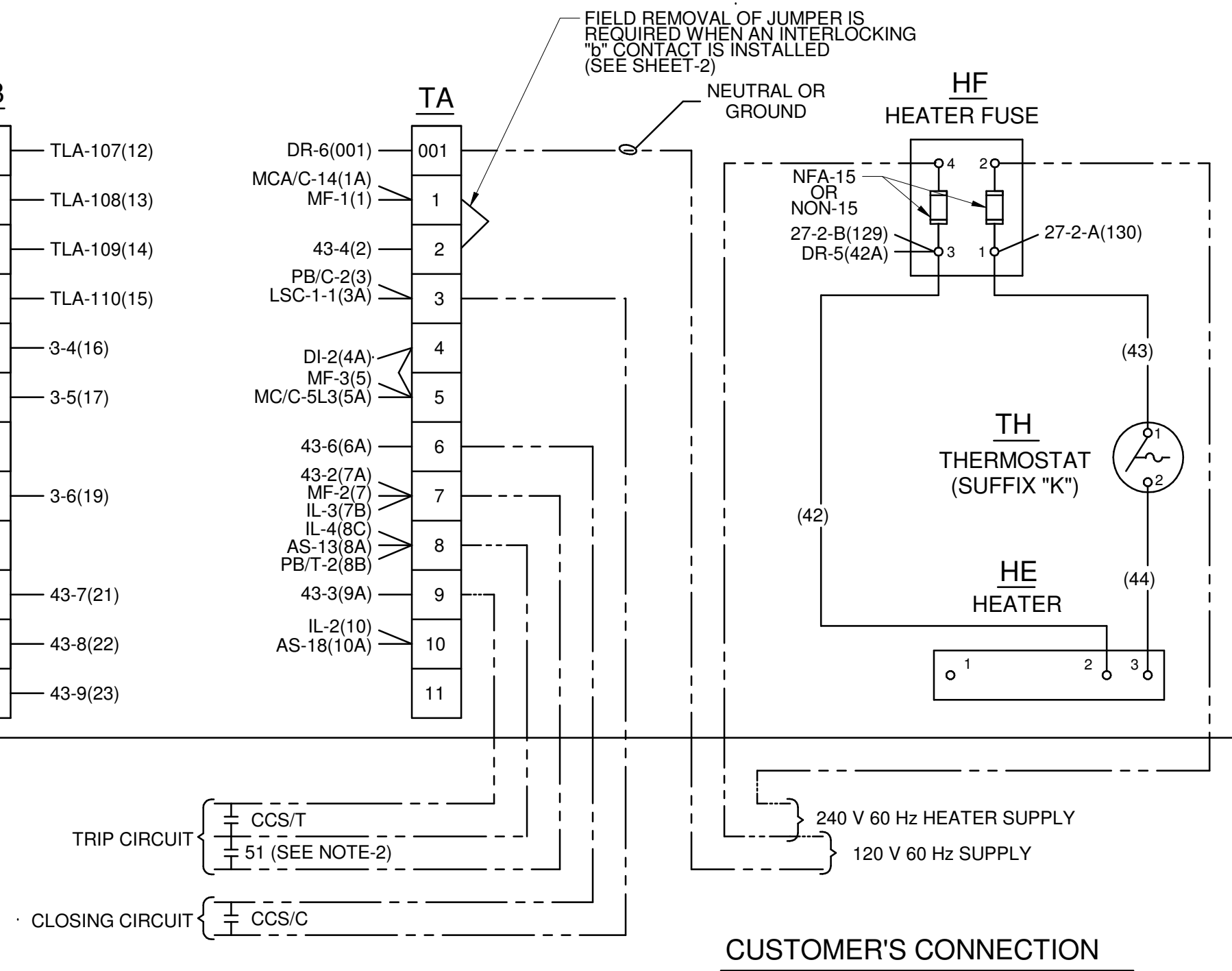
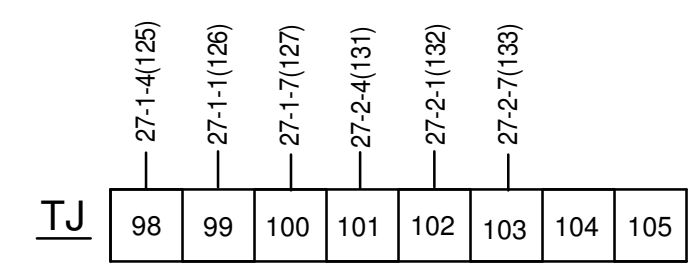
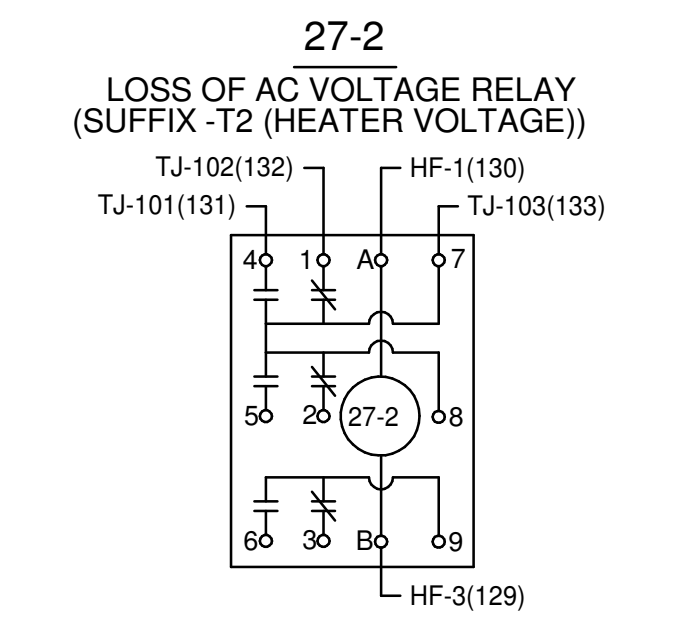
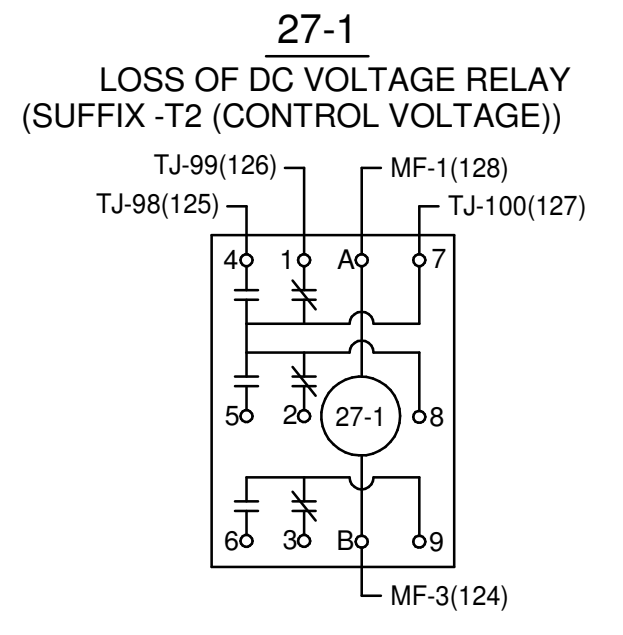
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DESCRIPTION: S&C SERIES 2000 CIRCUIT-SWITCHER SCHEMATIC WIRING DIAGRAM

SHEET 2 OF 3
CATALOG NO. 197838
-AE12H2KMTT2VW1Y



TG	TF	TE	TD	TB
86 AS-92(86)	74 AS-72(74)	62 AS-52(62)	AS-32(50) 50	12 TLA-107(12)
87 AS-93(87)	75 AS-73(75)	63 AS-53(63)	AS-33(51) 51	13 TLA-108(13)
88 AS-94(88)	76 AS-74(76)	64 AS-54(64)	AS-34(52) 52	14 TLA-109(14)
89 AS-96(89)	77 AS-76(77)	65 AS-56(65)	AS-36(53) 53	15 TLA-110(15)
90 AS-97(90)	78 AS-77(78)	66 AS-57(66)	AS-37(54) 54	16 3-4(16)
91 AS-98(91)	79 AS-78(79)	67 AS-58(67)	AS-38(55) 55	17 3-5(17)
92 AS-102(92)	80 AS-82(80)	68 AS-62(68)	AS-42(56) 56	18 3-6(19)
93 AS-103(93)	81 AS-83(81)	69 AS-63(69)	AS-43(57) 57	19 3-6(19)
94 AS-104(94)	82 AS-84(82)	70 AS-64(70)	AS-44(58) 58	20 43-7(21)
95 AS-106(95)	83 AS-86(83)		AS-46(59) 59	21 43-8(22)
96 AS-107(96)	84 AS-87(84)		AS-47(60) 60	22 43-9(23)
97 AS-108(97)	85 AS-88(85)		AS-48(61) 61	23 43-9(23)



NOTES:
 1. CODE EXPLANATION:
 DEVICE IDENTIFICATION
 DEVICE TERMINAL
 WIRE NO.(ALL WIRES WITH SAME NUMERALS ARE COMMON)
 AS-11(1E)

2. CUSTOMER'S PROTECTIVE OR CONTROL RELAY CONTACTS (51 TYPICAL).

REVISIONS			
NO.	DATE	BY	DESCRIPTION

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 OPERATOR DATE: 4/23/2024
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

S&C S.O. NUMBER: 881748 S&C LINE NUMBER: 1.1

S&C ELECTRIC COMPANY
 Excellence Through Innovation

**S&C SERIES 2000 CIRCUIT-SWITCHER
 DETAIL WIRING DIAGRAM**

SHEET 3 OF 3
 CATALOG NO. 197838
 -AE12H2KMTT2VW1Y

Appendix D

Geotechnical Report



314 Beacon Drive
Winterville, North Carolina 28590
P (252) 353-1600
North Carolina Registered Firm: F-0869

Terracon.com

November 28, 2023

Greenville Utilities Commission
PO Box 1847
Greenville, North Carolina 27835

Attn: Mr. Anthony C. Cannon, CEO
P: (252) 551-1501
E: CannonAC@GUC.com

RE: Revised Proposal for Geotechnical Engineering Services
Fox Pen Road Substation
NCSR 1769 & NCSR 1755
Greenville, North Carolina
Terracon Proposal No. P72235120-R1

Dear Mr. Cannon:

We appreciate the opportunity to submit this proposal to Greenville Utilities Commission (GUC) to provide Geotechnical Engineering services for the above-referenced project. The following are exhibits to the attached Agreement for Services.

Exhibit A	Project Understanding
Exhibit B	Scope of Services
Exhibit C	Compensation and Project Schedule
Exhibit D	Site Location and Nearby Geotechnical Data
Exhibit E	Anticipated Exploration Plan

Our base fee to perform the Scope of Services described in this proposal is \$6,500 with an anticipated report delivery date of 6 weeks after signed authorization. Exhibit C includes details of our fees and consideration of additional services as well as a general breakdown of our anticipated schedule.

Your authorization for Terracon to proceed in accordance with this proposal can be issued by signing and returning a copy of the attached Agreement for Services to our office.

Sincerely,
Terracon

Gunnar H. Goslin
Geotechnical Staff Project Manager

Andrew J. Gliniak, PE
Geotechnical Project Engineer

AGREEMENT FOR SERVICES

This **AGREEMENT** is between Greenville Utilities Commission ("Client") and Terracon Consultants, Inc. ("Consultant") for Services to be provided by Consultant for Client on the Fox Pen Road Substation project ("Project"), as described in Consultant's Proposal dated 11/28/2023 ("Proposal"), including but not limited to the Project Information section, unless the Project is otherwise described in Exhibit A to this Agreement (which section or Exhibit is incorporated into this Agreement).

- 1. Scope of Services.** The scope of Consultant's services is described in the Proposal, including but not limited to the Scope of Services section ("Services"), unless Services are otherwise described in Exhibit B to this Agreement (which section or exhibit is incorporated into this Agreement). Portions of the Services may be subcontracted. Consultant's Services do not include the investigation or detection of, nor do recommendations in Consultant's reports address the presence or prevention of biological pollutants (e.g., mold, fungi, bacteria, viruses, or their byproducts) or occupant safety issues, such as vulnerability to natural disasters, terrorism, or violence. If Services include purchase of software, Client will execute a separate software license agreement. Consultant's findings, opinions, and recommendations are based solely upon data and information obtained by and furnished to Consultant at the time of the Services.
- 2. Acceptance/ Termination.** Client agrees that execution of this Agreement is a material element of the consideration Consultant requires to execute the Services, and if Services are initiated by Consultant prior to execution of this Agreement as an accommodation for Client at Client's request, both parties shall consider that commencement of Services constitutes formal acceptance of all terms and conditions of this Agreement. Additional terms and conditions may be added or changed only by written amendment to this Agreement signed by both parties. In the event Client uses a purchase order or other form to administer this Agreement, the use of such form shall be for convenience purposes only and any additional or conflicting terms it contains are stricken. This Agreement shall not be assigned by either party without prior written consent of the other party. Either party may terminate this Agreement or the Services upon written notice to the other. In such case, Consultant shall be paid costs incurred and fees earned to the date of termination plus reasonable costs of closing the Project.
- 3. Change Orders.** Client may request changes to the scope of Services by altering or adding to the Services to be performed. If Client so requests, Consultant will return to Client a statement (or supplemental proposal) of the change setting forth an adjustment to the Services and fees for the requested changes. Following Client's review, Client shall provide written acceptance. If Client does not follow these procedures, but instead directs, authorizes, or permits Consultant to perform changed or additional work, the Services are changed accordingly and Consultant will be paid for this work according to the fees stated or its current fee schedule. If project conditions change materially from those observed at the site or described to Consultant at the time of proposal, Consultant is entitled to a change order equitably adjusting its Services and fee.
- 4. Compensation and Terms of Payment.** Client shall pay compensation for the Services performed at the fees stated in the Proposal, including but not limited to the Compensation section, unless fees are otherwise stated in Exhibit C to this Agreement (which section or Exhibit is incorporated into this Agreement). If not stated in either, fees will be according to Consultant's current fee schedule. Fee schedules are valid for the calendar year in which they are issued. Fees do not include sales tax. Client will pay applicable sales tax as required by law. Consultant may invoice Client at least monthly and payment is due upon receipt of invoice. Client shall notify Consultant in writing, at the address below, within 15 days of the date of the invoice if Client objects to any portion of the charges on the invoice, and shall promptly pay the undisputed portion. Client shall pay a finance fee of 1.5% per month, but not exceeding the maximum rate allowed by law, for all unpaid amounts 30 days or older. Client agrees to pay all collection-related costs that Consultant incurs, including attorney fees. Consultant may suspend Services for lack of timely payment. It is the responsibility of Client to determine whether federal, state, or local prevailing wage requirements apply and to notify Consultant if prevailing wages apply. If it is later determined that prevailing wages apply, and Consultant was not previously notified by Client, Client agrees to pay the prevailing wage from that point forward, as well as a retroactive payment adjustment to bring previously paid amounts in line with prevailing wages. Client also agrees to defend, indemnify, and hold harmless Consultant from any alleged violations made by any governmental agency regulating prevailing wage activity for failing to pay prevailing wages, including the payment of any fines or penalties.
- 5. Third Party Reliance.** This Agreement and the Services provided are for Consultant and Client's sole benefit and exclusive use with no third party beneficiaries intended. Reliance upon the Services and any work product is limited to Client, and is not intended for third parties other than those who have executed Consultant's reliance agreement, subject to the prior approval of Consultant and Client.
- 6. LIMITATION OF LIABILITY. CLIENT AND CONSULTANT HAVE EVALUATED THE RISKS AND REWARDS ASSOCIATED WITH THIS PROJECT, INCLUDING CONSULTANT'S FEE RELATIVE TO THE RISKS ASSUMED, AND AGREE TO ALLOCATE CERTAIN OF THE ASSOCIATED RISKS. TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF CONSULTANT (AND ITS RELATED CORPORATIONS AND EMPLOYEES) TO CLIENT AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE GREATER OF \$50,000 OR CONSULTANT'S FEE, FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF CONSULTANT'S SERVICES OR THIS AGREEMENT. PRIOR TO ACCEPTANCE OF THIS AGREEMENT AND UPON WRITTEN REQUEST FROM CLIENT, CONSULTANT MAY NEGOTIATE A HIGHER LIMITATION FOR ADDITIONAL CONSIDERATION IN THE FORM OF A SURCHARGE TO BE ADDED TO THE AMOUNT STATED IN THE COMPENSATION SECTION OF THE PROPOSAL. THIS LIMITATION SHALL APPLY REGARDLESS OF AVAILABLE PROFESSIONAL LIABILITY INSURANCE COVERAGE, CAUSE(S), OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY. THIS LIMITATION SHALL NOT APPLY TO THE EXTENT THE DAMAGE IS PAID UNDER CONSULTANT'S COMMERCIAL GENERAL LIABILITY POLICY.**
- 7. Indemnity/Statute of Limitations.** Consultant and Client shall indemnify and hold harmless the other and their respective employees from and against legal liability for claims, losses, damages, and expenses to the extent such claims, losses, damages, or expenses are legally determined to be caused by their negligent acts, errors, or omissions. In the event such claims, losses, damages, or expenses are legally determined to be caused by the joint or concurrent negligence of Consultant and Client, they shall be borne by each party in proportion to its own negligence under comparative fault principles. Neither party shall have a duty to defend the other party, and no duty to defend is hereby created by this indemnity provision and such duty is explicitly waived under this Agreement. Causes of action arising out of Consultant's Services or this Agreement regardless of cause(s) or the theory of liability, including negligence, indemnity or other recovery shall be deemed to have accrued and the applicable statute of limitations shall commence to run not later than the date of Consultant's substantial completion of Services on the project.
- 8. Warranty.** Consultant will perform the Services in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. **EXCEPT FOR THE STANDARD OF CARE PREVIOUSLY STATED, CONSULTANT MAKES NO WARRANTIES OR GUARANTEES, EXPRESS OR IMPLIED, RELATING TO CONSULTANT'S SERVICES AND CONSULTANT DISCLAIMS ANY IMPLIED WARRANTIES OR WARRANTIES IMPOSED BY LAW, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
- 9. Insurance.** Consultant represents that it now carries, and will continue to carry: (i) workers' compensation insurance in accordance with the laws of the states having jurisdiction over Consultant's employees who are engaged in the Services, and employer's liability insurance (\$1,000,000); (ii) commercial general liability insurance (\$2,000,000 occ / \$4,000,000 agg); (iii) automobile liability insurance (\$2,000,000 B.I. and P.D. combined single limit); (iv) umbrella liability (\$5,000,000 occ / agg); and (v) professional liability insurance (\$1,000,000 claim / agg). Certificates of insurance will be provided upon request. Client and Consultant shall waive subrogation against the other party on all general liability and property coverage.

- 10. CONSEQUENTIAL DAMAGES. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR LOSS OF PROFITS OR REVENUE; LOSS OF USE OR OPPORTUNITY; LOSS OF GOOD WILL; COST OF SUBSTITUTE FACILITIES, GOODS, OR SERVICES; COST OF CAPITAL; OR FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT, PUNITIVE, OR EXEMPLARY DAMAGES.**
- 11. Dispute Resolution.** Client shall not be entitled to assert a Claim against Consultant based on any theory of professional negligence unless and until Client has obtained the written opinion from a registered, independent, and reputable engineer, architect, or geologist that Consultant has violated the standard of care applicable to Consultant's performance of the Services. Client shall provide this opinion to Consultant and the parties shall endeavor to resolve the dispute within 30 days, after which Client may pursue its remedies at law. This Agreement shall be governed by and construed according to North Carolina law.
- 12. Subsurface Explorations.** Subsurface conditions throughout the site may vary from those depicted on logs of discrete borings, test pits, or other exploratory services. Client understands Consultant's layout of boring and test locations is approximate and that Consultant may deviate a reasonable distance from those locations. Consultant will take reasonable precautions to reduce damage to the site when performing Services; however, Client accepts that invasive services such as drilling or sampling may damage or alter the site. Site restoration is not provided unless specifically included in the Services.
- 13. Testing and Observations.** Client understands that testing and observation are discrete sampling procedures, and that such procedures indicate conditions only at the depths, locations, and times the procedures were performed. Consultant will provide test results and opinions based on tests and field observations only for the work tested. Client understands that testing and observation are not continuous or exhaustive, and are conducted to reduce - not eliminate - project risk. Client shall cause all tests and inspections of the site, materials, and Services performed by Consultant to be timely and properly scheduled in order for the Services to be performed in accordance with the plans, specifications, contract documents, and Consultant's recommendations. No claims for loss or damage or injury shall be brought against Consultant by Client or any third party unless all tests and inspections have been so performed and Consultant's recommendations have been followed. Unless otherwise stated in the Proposal, Client assumes sole responsibility for determining whether the quantity and the nature of Services ordered by Client is adequate and sufficient for Client's intended purpose. Client is responsible (even if delegated to contractor) for requesting services, and notifying and scheduling Consultant so Consultant can perform these Services. Consultant is not responsible for damages caused by Services not performed due to a failure to request or schedule Consultant's Services. Consultant shall not be responsible for the quality and completeness of Client's contractor's work or their adherence to the project documents, and Consultant's performance of testing and observation services shall not relieve Client's contractor in any way from its responsibility for defects discovered in its work, or create a warranty or guarantee. Consultant will not supervise or direct the work performed by Client's contractor or its subcontractors and is not responsible for their means and methods. The extension of unit prices with quantities to establish a total estimated cost does not guarantee a maximum cost to complete the Services. The quantities, when given, are estimates based on contract documents and schedules made available at the time of the Proposal. Since schedule, performance, production, and charges are directed and/or controlled by others, any quantity extensions must be considered as estimated and not a guarantee of maximum cost.
- 14. Sample Disposition, Affected Materials, and Indemnity.** Samples are consumed in testing or disposed of upon completion of the testing procedures (unless stated otherwise in the Services). Client shall furnish or cause to be furnished to Consultant all documents and information known or available to Client that relate to the identity, location, quantity, nature, or characteristic of any hazardous waste, toxic, radioactive, or contaminated materials ("Affected Materials") at or near the site, and shall immediately transmit new, updated, or revised information as it becomes available. Client agrees that Consultant is not responsible for the disposition of Affected Materials unless specifically provided in the Services, and that Client is responsible for directing such disposition. In no event shall Consultant be required to sign a hazardous waste manifest or take title to any Affected Materials. Client shall have the obligation to make all spill or release notifications to appropriate governmental agencies. The Client agrees that Consultant neither created nor contributed to the creation or existence of any Affected Materials conditions at the site and Consultant shall not be responsible for any claims, losses, or damages allegedly arising out of Consultant's performance of Services hereunder, or for any claims against Consultant as a generator, disposer, or arranger of Affected Materials under federal, state, or local law or ordinance.
- 15. Ownership of Documents.** Work product, such as reports, logs, data, notes, or calculations, prepared by Consultant shall remain Consultant's property. Proprietary concepts, systems, and ideas developed during performance of the Services shall remain the sole property of Consultant. Files shall be maintained in general accordance with Consultant's document retention policies and practices.
- 16. Utilities.** Unless otherwise stated in the Proposal, Client shall provide the location and/or arrange for the marking of private utilities and subterranean structures. Consultant shall take reasonable precautions to avoid damage or injury to subterranean structures or utilities. Consultant shall not be responsible for damage to subterranean structures or utilities that are not called to Consultant's attention, are not correctly marked, including by a utility locate service, or are incorrectly shown on the plans furnished to Consultant.
- 17. Site Access and Safety.** Client shall secure all necessary site related approvals, permits, licenses, and consents necessary to commence and complete the Services and will execute any necessary site access agreement. Consultant will be responsible for supervision and site safety measures for its own employees, but shall not be responsible for the supervision or health and safety precautions for any third parties, including Client's contractors, subcontractors, or other parties present at the site. In addition, Consultant retains the right to stop work without penalty at any time Consultant believes it is in the best interests of Consultant's employees or subcontractors to do so in order to reduce the risk of exposure to unsafe site conditions. Client agrees it will respond quickly to all requests for information made by Consultant related to Consultant's pre-task planning and risk assessment processes.

Consultant: **Terracon Consultants, Inc.**
By: _____ Date: **11/28/2023**
Name/Title: **Andrew J. Gliniak, PE / Geotechnical Project Engineer**
Address: **314 Beacon Dr**
Winterville, NC 28590-7956
Phone: **(252) 353-1600** Fax: **(252) 353-0002**
Email: **Drew.Gliniak@terracon.com**

Client: **Greenville Utilities Commission**
By: _____ Date: _____
Name/Title: **Anthony Cannon / General Manager/CEO**
Address: **PO Box 1847**
Greenville, NC 27835-1847
Phone: **(252) 551-1500** Fax: _____
Email: **cannonac@guc.com**



Exhibit A – Project Understanding

Our Scope of Services is based on our understanding of the project as described by GUC, in addition to the expected subsurface conditions as described below. We have not visited the project site to confirm the information provided. Aspects of the project, undefined or assumed, are highlighted as shown below. We request GUC and/or the design team verify all information prior to our initiation of field exploration activities.

Planned Construction

Item	Description
Information Provided	This proposal is based on an email from Mr. Nicholas Peaden with GUC received November 1, 2023. The email included a copy of the site boundary survey with proposed equipment & requested bore locations.
Project Description	The project includes a new substation on a 2-acre site.
Proposed Structure	The project includes a new substation with associated above-ground power lines.
Building Construction	Concrete drilled pier foundations or vibratory driven piles are anticipated for the power lines. Mat foundations for transformers and small equipment pads are assumed.
Finished Ground Elevation	Not provided; boring depths have assumed that finished ground elevations are not planned to be more than 3 feet above existing grades.
Maximum Loads	Anticipated structural loads were not provided. In the absence of information provided by the design team, we will use the following loads in estimating settlement based on our experience with similar projects. <ul style="list-style-type: none"> ■ Equipment: 15 to 150 kips (assumed) ■ Poles: 4,500 kip-feet overturning at ground surface (assumed)
Grading	Approximately 2 feet of cut and 2 feet of fill will be required to develop final grade, excluding foundations, underground utilities, and stormwater system.
Below-Grade Structures	None.
Free-Standing Retaining Walls	Retaining walls are not proposed.



Item	Description
Pavements	We assume gravel pavement sections will be used. Pavements will include drive and equipment laydown areas.
Building Code	2018 North Carolina

Site Location and Anticipated Conditions

Item	Description
Parcel Information	The project is located at NCSR 1769 & NCSR 1755 in Greenville, North Carolina. (See Exhibit D) The project parcel survey presents 2.0 acres in total size.
Past and Existing Improvements	According to information on Google Earth™, the site is an agriculture farm since at least 1993. A structure existed on the parcel’s southeast corner as evident by an image taken in March 1983. The structure appears to be razed sometime before January 1998.
Current Ground Cover	Earthen, vegetated
Existing Topography	According to information obtained from Pitt County GIS website and Google Earth™, average elevation of the site is approximately 55 feet and only varies about 2 feet in elevation across the site.
Site Access	We expect the site, and all exploration locations, are accessible with our track- or ATV-mounted drilling equipment and support vehicles.
Expected Subsurface Conditions	Our experience near the vicinity of the proposed development and review of geologic maps indicates subsurface conditions consist of: <ul style="list-style-type: none"> ■ Geologic Setting = Upper Coastal Plain ■ Existing fill overly sedimentary soils ■ Sedimentary Soils = Stiff Silts, Stiff Clays, Medium Dense Silty Sand, and/or Medium Dense Silty Sand ■ Groundwater at depths of 3 feet to 8 feet



Exhibit B - Scope of Services

Our proposed scope of geotechnical services consists of field exploration, laboratory testing, and engineering/project delivery. These services are described in the following sections.

Subsurface Exploration, Laboratory Testing, Geotechnical Consulting & Report

Exploration Layout and Utility Locate

Site Access: Terracon must be granted access to the site by the property owner. Without information to the contrary, we consider acceptance of this proposal as authorization to access the property for conducting field visits, testing, and exploration in accordance with the Scope of Services. Our proposed fees do not include time to negotiate and coordinate access with landowners or tenants. Terracon will conduct field services during normal business hours (Monday through Friday between 7:00am and 5:00pm). If our field work must take place over a weekend or at night, please contact us so we can adjust our schedule and fee.

CPT Sounding Layout and Elevations: We will use handheld GPS equipment to locate soundings with an estimated horizontal accuracy of +/-20 feet. Field measurements from existing site features may be utilized. If available, approximate elevations will be obtained by interpolation from a site specific, surveyed topographic map. Soundings will be offset to grass-covered or landscaped areas if planned locations are on pavements or sidewalks.

Public Utility Locate: Since exploration efforts require drilling, probing, and/or excavating into the subsurface, Terracon will comply with local regulations to request a utility location service through NC 811. We will consult with the landowner/client regarding potential utilities or other unmarked underground hazards. Based upon the results of this consultation, we will consider the need for alternative subsurface exploration methods as the safety of our field crew is a priority.

Subsurface Exploration

Based on the project information provided to us and our experience with similar projects in the vicinity of the project site, we propose the following field exploration program which is anticipated to be completed with one day of on-site activities.



Number of Tests	Planned Exploration Depth (feet) ¹	Planned Location ²
5	20	B-1 through B-3, B-5, and B-6
1	50	B-4

1. The Although not anticipated based on the geology in the vicinity of the project site, borings would be terminated at shallower depths if refusal is encountered. Refusal conditions include auger refusal or tip resistances typically over 200 tons per square foot
2. The planned CPT sounding locations are shown on the attached **Anticipated Exploration Plan**.

Subsurface Exploration Procedures: We will advance the subsurface exploration with a truck or track-mounted drill rig in general accordance with local standard procedures for standard penetration tests (SPTs) or cone penetration tests (CPTs).

Borings will be advanced by continuous flight augers (solid stem and/or hollow stem, as necessary, depending on soil conditions) and/or rotary wash boring techniques. Four samples will be obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. Soil sampling is typically performed using thin-wall tube and/or split-barrel sampling procedures. The split-barrel samplers are driven in accordance with the standard penetration test (SPT). The samples will be placed in appropriate containers, taken to our soil laboratory for testing, and classified by a Geotechnical Engineer. In addition, we will observe and record groundwater levels during drilling and sampling.

The CPT testing will hydraulically push an instrumented cone through the soil while nearly continuous readings of soil strength and pore pressure are recorded to a portable computer. No soil samples are gathered through this exploration technique. A hand auger and or Macro core will be used to collect select soil samples to a limited depth where CPTs are conducted. In addition, we observe and record groundwater levels during drilling and sampling. Unless otherwise requested, CPT is the preferred method.

Our exploration team will prepare field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials observed during drilling and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent the Geotechnical Engineer's interpretation and include modifications based on observations and laboratory tests.

Safety: Terracon is not aware of environmental concerns at this project site that would create health or safety hazards associated with our exploration program; thus, our Scope considers standard OSHA Level D Personal Protection Equipment (PPE) appropriate. Our Scope of Services does not include environmental site assessment



services, but identification of unusual or unnatural materials observed while drilling will be noted on our logs.

Property Disturbance: Terracon will take reasonable efforts to reduce damage to the property. However, it should be understood that in the normal course of our work some disturbance could occur including rutting of the ground surface and damage to landscaping and/or crops.

Ground disturbance at CPT sounding locations will be minimal and will not require backfilling in most instances because this testing method generates little to no spoils. Please let us know if further restoration is desired based on project requirements and we can make arrangements to backfill the sounding locations. If SPT is performed, we will backfill borings with soil cuttings upon completion. Our services do not include repair of the site after the field exploration beyond backfilling our boreholes. Excess soil cuttings will be dispersed in the general vicinity of the borehole. Because backfill material often settles below the surface after a period, we recommend boreholes to be periodically checked and backfilled, if necessary. We can provide this service, or grout the boreholes for additional fees, at your request.

Laboratory Testing

Geotechnical staff will review field data and assign laboratory tests to understand the engineering properties of various soil strata. Exact types and number of tests cannot be defined until completion of fieldwork, but we anticipate the following laboratory testing may be performed:

- Water content
- Atterberg limits
- Grain size analysis

Our laboratory testing program also includes examination of soil samples by geotechnical staff. Based on the results of our field and laboratory programs, we will describe and classify soil samples in accordance with the Unified Soil Classification System (USCS).

Geotechnical Engineering and Reporting

The results of our field and laboratory programs will be evaluated, and a geotechnical engineering report will be prepared under the supervision of a licensed professional engineer. The geotechnical engineering report will provide the following:

- Exploration logs with field and laboratory data
- Stratification based on visual soil classification or CPT data



- Groundwater levels observed during and after the completion of drilling
- Site Location and Exploration Plans
- Subsurface exploration procedures
- Description of subsurface soil conditions
- Description of groundwater conditions
- Seismic site class on the subsurface exploration (less than 100 feet) and our experience in the area
- Earthwork recommendations including site/subgrade preparation
- Recommended foundation options and engineering design parameters
- Estimated settlement of foundations
- Recommendations for design and construction of floor slabs
- Lateral earth pressure recommendations

- Recommended foundation options and engineering design parameters including an attached spreadsheet with the following parameters/layout:

Soil Type (Clay/Sand)	Strata Thickness (feet)	Density/Effective Unit Weight of Soil (pcf)	Cohesion (psf)	Rankine Earth Pressure Coefficient	Effective Angle of Internal Friction (degrees)
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- Recommended soil subgrade design parameters for assumed gravel pavement materials

In addition to an emailed report, your project will also be delivered using our **Client Portal**. Upon initiation, we provide you and your design team the necessary link and password to access the website (if not previously registered). Each project includes a calendar to track the schedule, an interactive site map, a listing of team members, access to the project documents as they are uploaded to the site, and a collaboration portal. We welcome the opportunity to have project kickoff conversations with the team to discuss key elements of the project and demonstrate features of the portal. The typical delivery process includes the following:

- Project Planning – Proposal information, schedule and anticipated exploration plan
- Site Characterization – Findings of the site exploration and laboratory results
- Geotechnical Engineering Report

When services are complete, we upload a printable version of our completed Geotechnical Engineering report, including the professional engineer’s seal and signature, which documents our services. Previous submittals, collaboration, and the



report are maintained in our system. This allows future reference and integration into subsequent aspects of our services as the project goes through final design and construction.

Additional Geotechnical Services

In addition to the services noted above, the following are often associated with geotechnical engineering services. Fees for services noted above do not include the following:

Private Utility Locator

If the owner/client is unable to accurately locate private utilities, we can subcontract a private utility locating firm and/or utilize geophysical equipment, if necessary. The detection of underground utilities is dependent upon the composition and construction of utility lines. Some utilities are comprised of non-electrically conductive materials and may not be readily detected.

Review of Plans and Specifications

Our geotechnical report and associated verbal and written communications will be used by others in the design team to develop plans and specifications for construction. Review of project plans and specifications is a vital part of our geotechnical engineering services. This consists of review of project plans and specifications related to site preparation, foundation, and pavement construction. Our review will include a written statement conveying our opinions relating to the plans and specifications' consistency with our geotechnical engineering recommendations.

Observation and Testing of Pertinent Construction Materials

Development of our geotechnical engineering recommendations and report relies on an interpretation of soil conditions. Our assessment is based on widely spaced exploration locations and the assumption that construction methods will be performed in a manner sufficient to meet our expectations and consistent with recommendations made at the time the geotechnical engineering report is issued. We should be retained to conduct construction observations, and perform/document associated materials testing, for site preparation, foundation, and pavement construction. These services allow a more comprehensive understanding of subsurface conditions and necessary documentation of construction to confirm and/or modify (when necessary) the assumptions and recommendations made by our engineers.



Exhibit C - Compensation and Project Schedule

Compensation

Based upon our understanding of the site, the project as summarized in Exhibit A, and our planned Scope of Services outlined in Exhibit B, our base fee is shown in the following table:

Task	Lump Sum Fee ²
Subsurface Exploration ¹ , Laboratory Testing, Geotechnical Consulting and Reporting	\$6,500

1. The lump sum fee considers one drill rig mobilization and no unexpected onsite delays. If additional drill rig mobilizations are required, an additional fee of \$1,000 would be invoiced per mobilization. A drill crew standby rate of \$350 per hour would be invoiced for unexpected delays.
2. Proposed fees noted above are effective for 90 days from the date of the proposal.

Additional geotechnical services not part of the base fee include the following:

Additional Services (See Exhibit B)	Fee	Fee Type	Initial for Authorization
Private Utility Locator	\$1,000	Lump Sum	
Review of Plans and Specifications	TBD ¹	TBD ¹	
Observation and Testing of Pertinent Construction Materials	TBD ¹	Time & Materials	

1. TBD = To Be Determined
2. Additional consultation including meetings, consultation, additional document preparation and correspondence, beyond the above effort will be invoiced monthly on a time and materials (T&M). This may include correspondence with the client, regulator, engineers, design team, structural engineer, and/or attorneys
3. Fee schedule for geotechnical services can be provided upon request.

Our Scope of Services does not include services associated with wet ground conditions or repair of/damage to existing landscape or crops. If such services are desired by the owner/client, we should be notified so we can adjust our Scope of Services. If borings are performed when crops are planted, a crop damage agreement should be established between the Client and crop owner prior to subsurface exploration.



Unless instructed otherwise, we will submit our invoice(s) to the address shown at the beginning of this proposal. If conditions are encountered that require Scope of Services revisions and/or result in higher fees, we will contact you for approval, prior to initiating services. A supplemental proposal stating the modified Scope of Services as well as its effect on our fee will be prepared. We will not proceed without your authorization.

Project Schedule

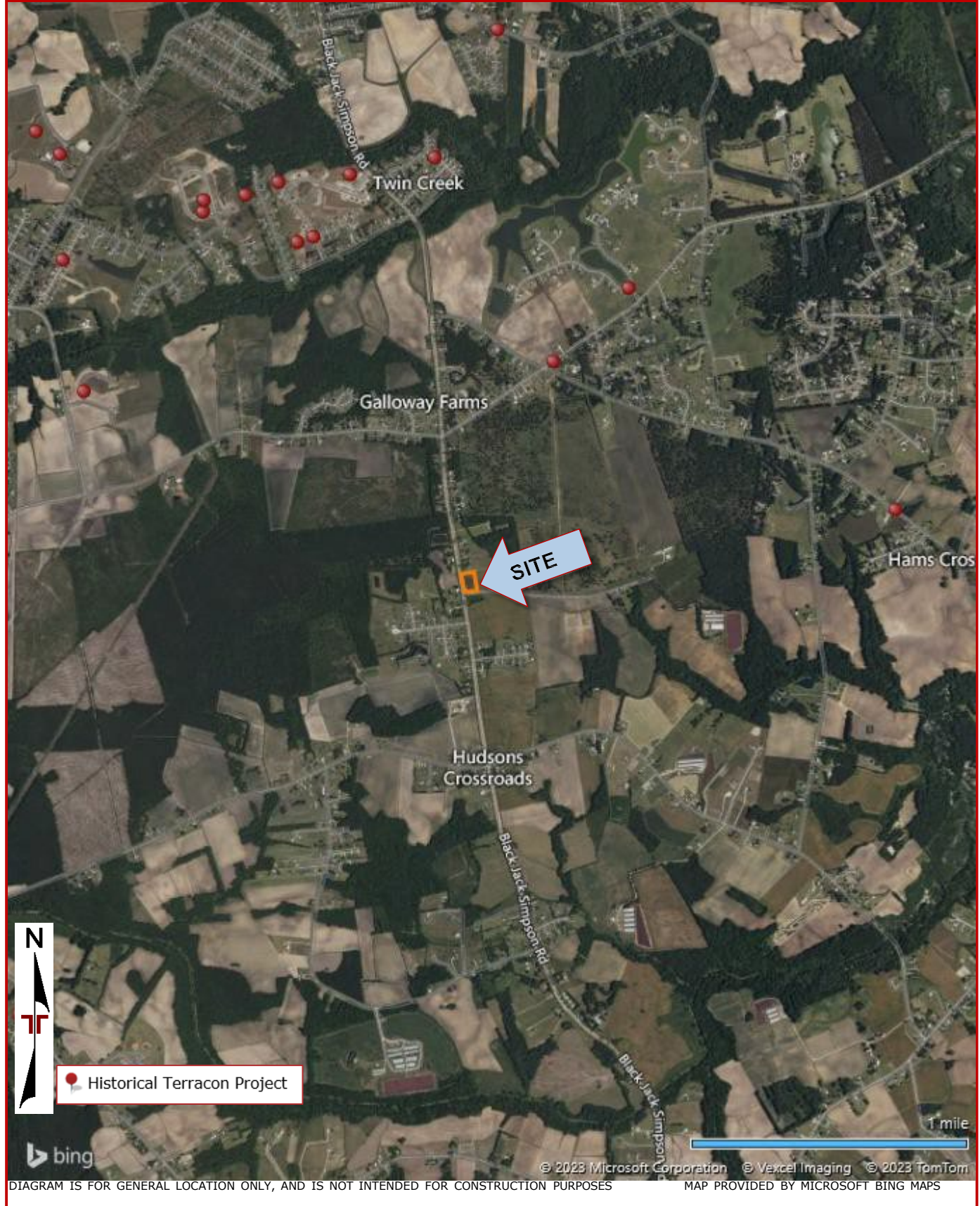
We developed a schedule to complete the Scope of Services based upon our existing availability and understanding of your project schedule. However, our schedule does not account for delays in field exploration beyond our control, such as weather conditions, delays resulting from utility clearance, permit delays, or lack of permission to access the boring locations. In the event the schedule provided is inconsistent with your needs, please contact us so we may consider alternatives.

Delivery on Client Portal	Schedule Completion after Receipt of Signed Agreement ^{1, 2}
Project Planning	1 week (cumulative)
Complete Field Exploration	4 weeks (cumulative)
Laboratory Testing	5 weeks (cumulative)
Geotechnical Engineering	6 weeks (cumulative)

1. Upon receipt of a signed agreement, we will activate the schedule component on **Client Portal** with specific, anticipated dates for the delivery points noted above as well as other pertinent events.
2. We will maintain an activities calendar within our **Client Portal**. The schedule will be updated to maintain a current awareness of our plans for delivery.



Exhibit D – Site Location and Nearby Geotechnical Data



Proposal for Geotechnical Engineering Services

Fox Pen Road Substation | Greenville, North Carolina

November 28, 2023 | Terracon Proposal No. P72235120-R1



Exhibit E – Anticipated Exploration Plan

