



**INVITATION FOR BID**

**PWC2526085**

**RELAY CONTROL SWITCHBOARDS**

**Date of Issue: April 16, 2026**

**Date of Opening: May 7, 2026  
2:00 P.M.**

**Direct all inquiries concerning this IFB to:**

**Lacoma Jones  
Procurement Advisor  
[procurement@faypwc.com](mailto:procurement@faypwc.com)**

## Contents

<b>ADVERTISEMENT FOR BID</b> .....	3
<b>INSTRUCTIONS TO BIDDERS</b> .....	4
<b>PURPOSE AND BACKGROUND</b> .....	4
<b>OBJECTIVE OF THE REQUEST</b> .....	4
<b>IFB SCHEDULE</b> .....	4
<b>QUESTIONS</b> .....	4
<b>OPTIONAL PRE-BID MEETING</b> .....	5
<b>ECONOMIC IMPACT (EI) PROGRAM PARTICIPATION</b> .....	5
<b>REFERENCES</b> .....	5
<b>VENDOR REGISTRATION VIA ISUPPLIER</b> .....	6
<b>SUBMISSION INSTRUCTIONS</b> .....	6
<b>QUANTITIES AND PRICING</b> .....	7
<b>EVALUATION AND AWARD</b> .....	8
<b>DELIVERY AND PAYMENT</b> .....	9
<b>ATTACHMENT A: TECHNICAL SPECIFICATIONS</b> .....	10
<b>ATTACHMENT B: BID PRICING FORM</b> .....	48
<b>ATTACHMENT C: TARIFF PRICE ADJUSTMENTS</b> .....	51
<b>ATTACHMENT D: CERTIFICATION OF PRIMARY PARTICIPANT REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS</b> .....	53
<b>ATTACHMENT E: AT A GLANCE</b> .....	54
<b>ATTACHMENT F: PWC SALE OF GOOD AGREEMENT</b> .....	55
<b>ATTACHMENT G: FORM OF EXCEPTIONS – TECHNICAL SPECIFICATIONS</b> .....	62
<b>ATTACHMENT H: FORM OF EXCEPTIONS – SALE OF GOODS AGREEMENT</b> .....	63
<b>ATTACHMENT I: SMALL AND DISADVANTAGED BUSINESS (SDBE), SMALL LOCAL SUPPLIER (SLS), AND LOCAL BUSINESS DISCLOSURE FORM</b> .....	64
<b>ATTACHMENT J: BID SUBMITTAL CHECKLIST</b> .....	65

**ADVERTISEMENT FOR BID  
FAYETTEVILLE PUBLIC WORKS COMMISSION  
RELAY CONTROL SWITCHBOARDS**

**Cumberland County  
North Carolina**

Pursuant to N.C.G.S 143-129, sealed Bids are solicited and will be received at Fayetteville Public Works Commission, Administration Building, Conference Room 107, 955 Old Wilmington Road, Fayetteville, NC 28301, until **2:00 p.m., EST Thursday, May 7, 2026**, for the **RELAY CONTROL SWITCHBOARDS**.

Fayetteville Public Works Commission (PWC) intends to solicit bid from qualified vendors to furnish, and deliver all materials and equipment (except materials and equipment specified to be furnished by the Owner) complete and conforming to the specifications for the Relay Control Switchboards for the Railroad Street 69 to 15 x 25 kV, Yadkin Road 69 to 15 kV, and Cliffdale Road 69 to 15kV, Industrial Park 69 to 15 kV Yadkin Road 69 to 25 kV, Cliffdale Road 69 to 25 kV substations all as set forth in the Bid Schedules.

Enclosed are the Instructions to Bidders, Technical/Material Specifications, and Bid Pricing Form. Bidders must submit the completed Bid Pricing Form, Attachment B, Attachment C, Attachment D, Small and Disadvantaged Business (SDBE), Small Local Supplier (SLS), and Local Business Discloser Form, and any required addendum acknowledgments. Submissions must be made using the provided forms or exact copies thereof, as specified in the IFB documents. Unsolicited bid samples or descriptive literature may not be examined or tested, will not be used to determine responsiveness, and will not be deemed to vary any of the provisions of the IFB. Failure to comply with these requirements shall constitute sufficient cause to reject a bid without further consideration.

Questions regarding this bid must be submitted in writing to the attention of **Lacoma Jones**, at [procurement@faypwc.com](mailto:procurement@faypwc.com) no later than **5:00 p.m., EST Tuesday, April 28, 2026**, in order to be considered for a response.

Mailed bids must be addressed to **Lacoma Jones**, Procurement Advisor, Fayetteville Public Works Commission, 955 Old Wilmington Road, Fayetteville, North Carolina 28301. The outside of the envelope must be marked **IFB: PWC2526085 – RELAY CONTROL SWITCHBOARDS** and shall indicate the name and address of the bidder. Late bids will not be considered.

Fayetteville Public Works Commission reserves the right to accept or reject any or all bids, to waive minor informalities or technicalities as permitted by law, to disregard nonconforming or nonresponsive bids, and to re-advertise for bids if deemed in the best interest of PWC. The bid tabulation and announcement of the apparent low bidder at the bid opening do not constitute a binding contract with PWC. No contract will be considered awarded until a formal written Agreement is executed by both PWC and the successful bidder. The award of a contract, if made, will be to the lowest responsive, responsible bidder whose qualifications indicate the award will be in the best interest of PWC.

**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
Nikole Bohannon  
Procurement Manager

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**PWC2526085 - RELAY CONTROL SWITCHBOARDS**

**INSTRUCTIONS TO BIDDERS  
FAYETTEVILLE PUBLIC WORKS COMMISSION  
RELAY CONTROL SWITCHBOARDS**

**PURPOSE AND BACKGROUND**

PWC intends to solicit bid from qualified vendors to furnish and deliver all materials and equipment (except materials and equipment specified to be furnished by the Owner) complete and conforming to the specifications for the Relay Control Switchboards for the Railroad Street 69 to 15 x 25 kV, Yadkin Road 69 to 15 kV, and Cliffdale Road 69 to 15kV, Industrial Park 69 to 15 kV Yadkin Road 69 to 25 kV, Cliffdale Road 69 to 25 kV substations all as set forth in the Bid Schedules.

**OBJECTIVE OF THE REQUEST**

It is the intent of this bid invitation to obtain pricing for **RELAY CONTROL SWITCHBOARDS** within the technical specifications section of this Invitation for Bid (IFB). You are requested to submit your bid on the enclosed **Attachment B: Bid Pricing Form**.

**IFB SCHEDULE**

The following table shows the schedule of events to prepare your organization’s response. The key deadlines and targeted dates for this process are as follows:

Action	Responsibility	Date/Time
Pre-Bid	PWC & Bidders	Thursday, April 23, 2026 @ 10:00 A.M.
Submit Written Questions	Bidders	Tuesday, April 28, 2026 @5:00 P.M.
Provide Response to Questions	PWC	Thursday, April 30, 2026 @ 5:00 P.M.
Submit IFB	Bidders	Thursday, May 7, 2026 @ 2:00 P.M.
Target Commission Date	PWC	Wednesday, May 27, 2026
Target Council Date	PWC	Monday, June 8, 2026
Award /Sale of Goods Agreement	PWC	June 2026
Preferred Delivery	Awarded Bidder	June 2026

**QUESTIONS**

Written questions shall be e-mailed to [procurement@faypwc.com](mailto:procurement@faypwc.com) by the date and time specified in the IFB schedule. Bidders will enter “IFB PWC2526085– Questions” as the subject of the email.

Questions received prior to the submission deadline date, the Procurement Advisor’s response, and any additional information deemed necessary by PWC will be posted in the form of an addendum to the PWC website and shall become an Addendum to this IFB. No information, instruction, or advice provided orally or informally by any PWC personnel, whether made in response to a question or otherwise concerning this IFB, shall be considered authoritative or binding. Bidders shall rely only on the written material contained in an Addendum to this IFB.

Inquiries should be submitted no later than the date and time noted in the IFB schedule. Questions answered verbally will be followed up by written addenda as deemed necessary; oral

**PWC2526085 - RELAY CONTROL SWITCHBOARDS**



interpretations shall have no effect.

**Bidders are expressly prohibited from contacting any PWC official or employee associated with this IFB or project, except through the Procurement Advisor identified on the IFB cover page and only in the manner described above.**

## **OPTIONAL PRE-BID MEETING**

**Instructions:** It is **Optional** for each bidder representative to attend a pre-bid meeting. Bidders should refer to the **IFB Schedule** for the confirmed date and time of the meeting.

The purpose of this meeting is for prospective bidders to familiarize themselves with conditions and requirements that may affect the work outlined in this IFB. Bidders are expected to remain for the entire pre-bid meeting.

Bidders should note that any information shared during the pre-bid meeting must be confirmed by a written addendum to be considered part of the official IFB.

To receive an invitation to the virtual pre-bid meeting, bidders must email Lacoma Jones at [procurement@faypwc.com](mailto:procurement@faypwc.com) by the date and time specified in the IFB Schedule. The subject line must read: "IFB PWC2526085 – Pre-Bid Meeting."

## **ECONOMIC IMPACT (EI) PROGRAM PARTICIPATION**

Fayetteville PWC supports fair and open competition in all procurement activities and encourages participation from qualified businesses of all sizes. For the purposes of PWC procurements, a qualified business is one that demonstrates the capacity, capability, and resources to perform in accordance with the specifications, terms, and conditions of the solicitation. PWC also recognizes the value that small and locally based suppliers bring to the community and to the efficiency of its operations.

While no specific business certification is required for award, bidders that are certified as a North Carolina Historically Underutilized Business (HUB), Disadvantaged Business Enterprise (DBE), Small Business Administration (SBA)-certified firm, or PWC Small Local Supplier (SLS) are encouraged to participate and, when applicable, to indicate that status on the SDBE/SLS/Local Disclosure Form included in this solicitation.

## **REFERENCES**

Bidders are encouraged to provide up to three (3) references where the company has supplied equipment or services within the energy and power generation industry, when the model or equipment differs from that noted in **Attachment A: Technical/Material Specifications** or **Attachment B: Bid Pricing Form**. PWC may contact these references to assess whether the bidder's performance was satisfactory and aligned with industry standards. The information obtained may be considered in the evaluation of the bid. If PWC is listed as a reference, it may be included as one of the three (3) optional references.

COMPANY NAME	CONTACT NAME	TELEPHONE NUMBER	EMAIL
Fayetteville Public Works Commission, if applicable			

### VENDOR REGISTRATION VIA ISUPPLIER

- 1) All vendors interested in doing business with PWC must register as a vendor through the iSupplier Portal using the link below. The iSupplier self-service portal enables vendors to have real-time access to information regarding purchase orders, invoices, and payments through a secure environment. Attach a copy of your W9 to your online registration.

<https://www.faypwc.com/isupplier-doing-business-with-pwc/>

### SUBMISSION INSTRUCTIONS

- 1) Bids should be complete and carefully worded and should convey all the information requested in the IFB. Bids should be prepared simply and economically, providing a straightforward, concise description of the bidder's capabilities to satisfy the requirements of the IFB. Emphasis should be on completeness and clarity of content. Any proposed deviation, exception, clarification, or variation to the Technical Specifications or the Sale of Goods Agreement must be clearly identified and submitted only on the applicable Form of Exceptions (Attachment G and/or Attachment H). Deviations, conditions, or bidder standard terms included elsewhere in the bid, including in cover letters, pricing notes, appendices, or other materials, shall not modify the requirements of this IFB and may render the bid nonresponsive.
- 2) Unsolicited bid samples or descriptive literature may not be examined or tested, will not be used to determine responsiveness, and will not vary any of the provisions of the IFB. PWC reserves the right to accept or reject any or all bids, to waive minor informalities or technicalities as permitted by law, to disregard nonconforming or nonresponsive bids, and to re-advertise for bids if deemed in the best interest of PWC. The bid tabulation and announcement of the apparent low bidder at the bid opening do not constitute a binding contract with PWC. No contract will be considered awarded until a formal written Agreement is executed by both PWC and the successful bidder. The award of a contract, if made, will be to the lowest responsible, responsive bidder whose qualifications indicate the award will be in the best interest of PWC.
- 3) Bids may be withdrawn by the bidder only in writing and if receipt of such withdrawal is acknowledged by PWC prior to the time for the bid submittal deadline identified in the Advertisement for Bidders (or such later date included in an Addendum). Written withdrawal requests shall be submitted on the bidder's letterhead and signed by an official of the bidder

duly authorized to make such request. Any withdrawal request made after the bid submittal deadline shall be allowed only if the price bid was based upon a mistake that constituted a substantial error, provided the bid was submitted in good faith, and then only pursuant to the terms of N.C.G.S. § 143-129.1.

- 4) Bids must be submitted in an envelope clearly marked with “**IFB: PWC2526085 RELAY CONTROL SWITCHBOARDS**” along with the bidder's name and address. **Even if this envelope is placed inside a courier's envelope, the courier envelope itself must also be properly marked to ensure the bid can be identified without opening it.** This is critical for proper sorting and handling, as multiple bids are received daily for different Procurement Advisors. Any bid received without proper labeling on the courier envelope will be returned to the sender and will not be considered for award. All bids must be delivered to the Fayetteville Public Works Commission, Administration Building, Procurement Department, at 955 Old Wilmington Road, Fayetteville, NC 28301, by the specified deadline. Late bids will not be considered.
- 5) Bids will be examined promptly after the due date, and an award will be made at the earliest possible date. Bids must be held firm for PWC for a period of sixty (60) days after the bid due date. A purchase order will be issued to the awarded bidder.
- 6) Bidders shall submit bids only on the Bid Pricing Forms provided herein, or exact copies thereof (**See Attachment B: Bid Pricing Form**). Failure to provide full and complete Bid Pricing Forms using the form provided herein will result in a bid being deemed non-responsive.
- 7) All bids must be signed by an authorized official of the bidder. Bids may be rejected for any omission, alteration of form, additions not called for, conditional bid, or any irregularities of any kind.
- 8) Do not submit alternate bids unless specifically called for.

## **QUANTITIES AND PRICING**

- 1) All bidders are advised to include all costs incurred by the bidder in delivering the **Relay Control Switchboards** to the **vendor responsible for the related control houses** in their bid submittal, including but not limited to materials, labor, overhead, profit, freight, handling, duties, tariffs, and other import-related charges, unless expressly authorized otherwise in this IFB.
- 2) Known tariffs, duties, and import-related charges effective as of the bid due date shall be included in the bid price. Pricing that excludes such costs or conditions included upon shipment date, import date, or future determination may be deemed nonresponsive.
- 3) The invoice submitted for payment shall not reflect any additional or separate charges (including fuel surcharges, tolls, or tariffs), except as expressly permitted under **Attachment C: Tariff Price Adjustments**. PWC is not tax-exempt.
- 4) Post-award price increases related to tariffs are not permitted unless expressly authorized and approved in accordance with **Attachment C: Tariff Price Adjustments**. No other price adjustment methodology, index, escalation formula, exchange rate adjustment, or conditional

pricing related to tariffs shall apply.

- 5) If price adjustments are permitted for non-tariff cost changes during the Agreement term, such adjustments shall be expressly identified in this IFB, limited to the specific indices listed, and applied only at the intervals stated. Any permitted price adjustment shall be based solely on the identified index or indices and shall not include or duplicate tariff-related costs, which are governed exclusively by **Attachment C: Tariff Price Adjustments**.

## **EVALUATION AND AWARD**

- 1) An award of a contract is subject to the approval by the Board of Commissioners of PWC and the Fayetteville, North Carolina City Council.
- 2) PWC reserves the right to inspect, at a reasonable time, the equipment, item, plant, or other facilities of a prospective Bidder prior to award, and during the Sale of Goods Agreement term, as PWC deems necessary to determine that such equipment, item, plant, or other facilities conform with the specifications/requirements and are adequate and suitable for the proper and effective performance of the Sale of Goods Agreement.
- 3) PWC reserves the right to request additional information from bidders to aid in the evaluation process. This information may include but is not limited to, financial statements, a reference list of contracts of similar size, etc.
- 4) PWC reserves the right to make a single award for all items or may award separate contracts to multiple bidders for various items to the lowest responsive, responsible bidder or bidders, taking into consideration product quality, performance to PWC, and conformity with the specifications in these bid documents. PWC may also consider, among other things, the Bidder's past performance conduct on other contracts, and other information as PWC deems necessary to assist in the evaluation of any bid.
- 5) A Sale of Goods Agreement will be executed in connection with this award. For one-time purchases, the Sale of Goods Agreement will cover the anticipated delivery timeframe required to fulfill the purchase. The Sale of Goods Agreement will govern applicable pricing, delivery, and contractual terms for the applicable purchase type.
- 6) Following award approval, PWC will provide the Sale of Goods Agreement to the successful bidder for signature. The successful bidder shall execute and return the Agreement within thirty (30) calendar days of receipt. If the Agreement is not fully executed within thirty (30) calendar days, including situations involving proposed revisions that materially alter the terms of the IFB, PWC reserves the right, at its sole discretion, to rescind the award and proceed to the next lowest responsive, responsible bidder without further obligation to the initially selected bidder.
- 7) The successful bidder shall not assign, transfer, or convey any part of the agreement, including rights or obligations, to a third party without obtaining prior written approval from PWC. This includes the assignment of payments that may become due under the agreement. Any unauthorized assignment may result in disqualification or termination of the agreement. Approved assignments do not relieve the successful bidder of their responsibilities under the

terms of the agreement unless explicitly stated in writing by PWC.

- 8) The successful bidder must promptly notify PWC in writing of any legal actions, investigations, or issues arising during the agreement period that may impact their ability to perform their obligations under the agreement. Failure to provide timely notification may result in termination of the agreement. As outlined in **Attachment D: Certification of Primary Participant Regarding Debarment, Suspension, and Other Responsibility Matters**, the successful bidder must also certify that no such legal impediments exist at the time of bid submission. If circumstances change after submission or during the agreement period, the bidder is required to immediately inform PWC, providing full details of the situation.

## **DELIVERY AND PAYMENT**

- 1) Delivery to be made F.O.B. Public Works Commission **1097 Public Works Dr. Fayetteville, NC 28301.**
- 2) **SEE TECHNICAL SPECIFICATIONS FOR MORE INFORMATION REGARDING DELIVERY LOCATION.**
- 3) Deliveries shall be made between the hours of **9:00 a.m. and 3:00 p.m., Monday through Friday**, within the time frame specified on the Bid Pricing Form.
- 4) Payment for equipment, material, supplies, etc. purchased pursuant to this bid shall be made by Public Works Commission approximately thirty days after the same has been delivered, inspected, approved and the invoice received in the PWC Accounts Payable Office, P.O. Box 1089, Fayetteville, North Carolina 28302.

## **ATTACHMENT A: TECHNICAL SPECIFICATIONS & DRAWINGS**

# **TECHNICAL SPECIFICATIONS**

**PUBLIC WORKS COMMISSION  
OF THE CITY OF FAYETTEVILLE, NORTH CAROLINA**

**RELAY CONTROL SWITCHBOARDS FOR THE  
RAILROAD STREET, YADKIN ROAD, CLIFFDALE  
ROAD, AND INDUSTRIAL PARK SUBSTATIONS**

<b>TECHNICAL SPECIFICATIONS</b>
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**1.0 Scope**

These Specifications cover the design, manufacture, and delivery in good order for one (6) Transformer Relay and Control Switchboard, two (12) Feeder Relay and Control Switchboards, one (6) SCADA and Communications Switchboard and one (4) Termination Cabinet, as specified herein and as required for the operation of the Railroad Street 69 to 15 x 25 kV, Yadkin Road 69 to 15 kV, and Cliffdale Road 69 to 15kV, Industrial Park 69 to 15 kV Yadkin Road 69 to 25 kV, Cliffdale Road 69 to 25 kV substations.

**2.0 General Conditions**

- 2.1 All materials and equipment shall be new.
- 2.2 These Specifications describe the type, size, and characteristics of the various materials, and equipment required to be furnished. The Drawings indicate general arrangement, equipment location, and equipment spacing.
- 2.3 Strict adherence to these general Specifications and Drawings is requested to facilitate checking and consideration of the Proposal.
- 2.4 Proposals shall include the following:
  - 2.4.1 A complete bill of materials, identifying each item by catalog number, manufacturer, ratings, characteristics, types, sizes, etc., of all materials and equipment included. A simple statement that all necessary materials and equipment will be provided is not acceptable.
  - 2.4.2 The Bidder shall state Exceptions in his Proposal for any variations to the specified manner in which the switchboards will be shipped.
- 2.5 Prices shall include the cost of delivery to the control house manufacturer – to be determined.
- 2.6 All construction shall be performed in a workmanlike manner and shall conform to the Drawings and Specifications. The installation shall conform to the latest editions of the National Electric Code.
- 2.7 The Drawings and Specifications are complementary, one to the other. That which is shown on the Drawings or called for in the Specifications shall be as binding as if both were called for and shown. The intention of the Drawings and Specifications is to include all labor, materials, transportation, equipment, and any other items necessary to do a complete job.

**3.0 Special Conditions**

- 3.1 Defective Materials, Equipment, and Workmanship
  - 3.1.1 All materials and equipment furnished hereunder shall be subject to the inspection, tests, and approval of the Owner, and the Bidder shall furnish all information required concerning the nature or source of any materials and equipment and provide adequate facilities for testing and inspecting the materials and equipment at the plant of the Bidder.
  - 3.1.2 The materials and equipment furnished hereunder shall become the property of the Owner when delivered at the point to which shipment is to be made, provided, however, that the Owner may reject any such materials and equipment as does not comply with the Specifications for materials and equipment and warranties of the Bidder and manufacturers. Recognition and subsequent rejection of any defective materials and equipment may occur either before or after incorporation of such



materials and equipment into the facilities; provided such rejection is made within one (1) year from date of delivery of the materials and equipment. Upon any such rejection, the Bidder shall replace the rejected materials and equipment with materials and equipment complying with the Specifications for materials and equipment and warranties, F.O.B. truck at a suitable destination. The Owner shall return the rejected materials F.O.B. truck at the same destination. In the event of the failure of the Bidder to so replace rejected materials and equipment, the Owner may make such replacement and the cost and expense thereof shall be paid by and recoverable from the Bidder.

### 3.2 Miscellaneous

The Bidder shall hold harmless and indemnify the Owner, its agents and employees, from any and all claims, suits and proceedings for infringement of any patent or patents covering materials and equipment purchased hereunder. The Bidder shall defend any suit or proceeding brought against the Owner, its agents or employees, based upon a claim that the materials and equipment or any part thereof constitutes an infringement of any patent, or if the Bidder shall fail to defend such suit or proceeding, the Owner may do so and the Bidder shall make reimbursement for the expense of such litigation. If the materials and equipment, or any part thereof is enjoined, the Bidder shall, at its own expense; either procure for the Owner the right to continue to use the materials and equipment, or such part thereof, or shall replace the materials and equipment, or such part thereof, with non-infringing materials and equipment.

## 4.0 Standards

All equipment and materials covered by these Specifications and all tests applied thereto shall, unless otherwise stated herein, be in accordance with the applicable provisions of the latest editions of the Standards of the ASTM, ANSI, AEIC, NEMA, NESC, and IEEE.

Where the term "Standards" is used in the Specifications, it shall be understood to refer to the above Standards.

## 5.0 Drawings

The Bidder shall provide adequate documentation to fully describe the equipment being furnished. Each set of Approval and Final Drawings and documentation shall include, but not be limited to, the following information. Booth will provide ac / dc schematics and point-to-point wiring diagrams.

- 5.1 Control Switchboard Arrangement Drawings including steel fabrication if equipment furnished does not agree with the Engineer's Drawings.
- 5.2 List of Material which shall include a complete description of all items furnished including quantity, catalog numbers, ratings, and manufacturer.
- 5.3 Control switch contact development(s) with escutcheon engraving, each on an 8-1/2" x 11" Drawing, complete with switch manufacturer's catalog number.
- 5.4 Drawings Furnished by Manufacturer

### 5.4.1 Approval Drawings

Before proceeding with fabrication, the manufacturer shall submit, for review and approval to the Owner sufficient Drawings to demonstrate that all parts conform to the requirements and intent of these Specifications and Drawings. Each set of Drawings shall include those Drawings as outlined in Section 5.0.

For Drawing approval, the manufacturer shall submit four (4) sets each of the Drawings, hard copy and electronically.

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

Receipt of Approval Drawings by the manufacturer constitutes authorization for

manufacture, based upon the corrections found thereon.

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

#### 5.4.2 Final Drawings

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

- 1) One (1) complete set of all Drawings, revised to "as-built" status.
- 2) Two (2) complete sets of all Drawings, revised to "as-built" status, released on separate CD-ROM's, compatible with AutoCAD 2004.
- 3) The specified number of copies of applicable bound instruction books, including one (1) print each of all Drawings representing physical and electrical details as furnished per paragraph 5.0 plus one (1) copy each of renewal parts catalog.
- 4) Two (2) copies of bound Instruction Books and Drawings shall be furnished for each control house.
- 5) Two (2) copies of certified test reports corresponding to functional performance measurements after final assembly.
- 6) All Drawings are to be certified correct and supplied within a reasonable length of time prior to shipment of the equipment.
- 7) Complete set of all documentation in .PDF format on CD ROM.

### 6.0 Shipping

- 6.1 Equipment shall be shipped upright to Public Works Commission 1097 Public Works Drive, Fayetteville, NC 28301 in an open-top truck so as to facilitate crane or fork truck unloading.
- 6.2 Before shipment, the control switchboards shall be completely assembled, wired, and tested to perform the functions required.
- 6.3 The method of packing and loading shall be such as to protect all parts from dampness, corrosion, breakage, or vibration damage that might be reasonably encountered in transportation and handling.
- 6.4 Release for shipment is to be granted based upon the manufacturer's compliance with the following:
  - 6.4.1 Forty-eight (48) hours notification of factory testing so the Owner may have a representative present to witness the testing.
  - 6.4.2 Furnishing of the required number of copies of the Final Drawings, test reports, and instruction books as called for in the Specifications.
  - 6.4.3 Coordination of manufacture and delivery with the Owner's construction schedule as may be noted in the Specifications.
  - 6.4.4 Thirty (30) days notification of tentative shipping schedule and forty-eight (48) hours notification prior to delivery.

### 7.0 Switchboard and Panel Construction

The switchboards and panel shall be manufactured by those regularly engaged in the design and manufacture of control switchboards for electric utilities and shall be completely familiar with metering, relaying, and control of utility system Substations.

## 7.1 Cabinetry

The switchboard cabinets shall be a separate freestanding indoor enclosure manufactured per Booth & Associates, LLC Relay Standard Dual Panel Details and featuring:

- 7.1.1 A front panel for flush and semi-flush mounting of relays, meters, indication lamps, controls switches, nameplates, and similar instrumentation and control.
- 7.1.2 Nineteen-inch (19") rack rails with EIA standard RS-310-D screw spacing **welded** to the front panel are required for all panels. Rack-mount relays and plates shall be mounted to the rack rails using 10-32 size screws designed for rack mounting. These are typically pan-head screws with non-marring washers ("beauty rings") to protect the front of the relays and plates.
- 7.1.3 Fully enclosed left and right side panels complete with wiring troughs and with mounting provisions for terminal blocks, fuse blocks, and auxiliary relays, transducers, and service equipment.
- 7.1.4 Fully brace top with lifting angle and open for top entry cableways with mounting provisions for wireways and convenience lighting.
- 7.1.5 Provisions for anchoring the enclosure to the concrete floor.
- 7.1.6 Overhead interior lighting system consisting of LED lamp, light switch, and fused ac service wiring for 120 volts ac.
- 7.1.7 Provisions for bolting together one control switchboard to another using bolts at standard heights per Booth & Associates, LLC Relay Standard Dual Panel Details, Sheet S2.
- 7.1.8 All sheet steel panels shall be constructed from 11-gauge (0.125 inch) stretcher steel per U.S. Standard Sheet and Plate. All bends shall be made using proper tooling to present sharp, square, and smooth bends. The front panel shall be punched and drilled for mounting of semi-flush instruments, relays, and equipment. The top sheet shall be cut as shown on the Drawing and shall have edges rolled to protect the cables entering the cabinet.
- 7.1.9 The switchboards shall be properly constructed with provisions for bolting to a floor. Flush type drop-in anchors with one-half inch ( $\frac{1}{2}$ " ) stainless steel anchor bolts shall be furnished for bolting the switchboards to a concrete floor.
- 7.1.10 A copper ground bus shall be mounted on stand-off brackets on the inside of the front switchboards with provisions for connecting to the ground bus in an adjacent switchboard.
- 7.1.11 All surface areas and all edges of the switchboard which are exposed to wiring are to be finished to present a smooth surface to wiring insulation. Finished surface of switchboard is of critical importance. Switchboard exterior edges, corners, and welds are to be ground smooth to provide a good appearance and present evidence of high quality workmanship. Panel interior must present a smooth surface for wire insulation. All corners, edges, welds, drilled or punched holes, threaded holes with or without screws installed, and any other similar areas must be ground or filed smooth. Failure to comply with this requirement will result in the Owner requiring the Bidder to travel to the Owner's location at the Bidder's expense to grind or file and finish rough or sharp areas on the switchboards.

Each part of the switchboards shall be painted inside and outside with one (1) coat of rust resistant primer prior to assembly. Welded areas are to be touched up with primer. After assembly, the interior and exterior of the switchboards shall be painted with two (2) coats of medium gray low sheen acrylic paint, ANSI-61, Code IC-0702 on the exterior and two (2) coats of white on the interior. Switchboards shall not be painted with relays and equipment mounted.

## 7.2 Relaying and Metering Equipment

- 7.2.1 All electrical components including relays, meters, indicating instruments, control switches, indicating lights and circuit breakers shall be furnished and installed and wired in the cabinet. The equipment to be furnished is listed and described in the Drawings. Materials and components are identified by Item Numbers, which correspond to the Control Switchboard Arrangement Drawings.
- 7.2.2 Each piece of equipment shall be identified on the front and rear panels using engraved, white lettering on black background, laminated phenolic nameplates per the Nameplate Engraving Schedule Drawing for each panel. Nameplates shall be one inch by three inch (1" x 3") and one inch by one and one-half inch (1" x 1½") as specified and shall be bonded to the panels using stainless steel screws. Two (2) two inch by six inch (2" x 6") panel identification nameplates shall be similarly affixed to the upper center of the front and rear panels.
- 7.2.3 SEL-351S relays, on each panel where used, shall have the configurable nametag inserts for the pushbuttons prepared and installed per the Nameplate Engraving Schedule Drawing.
- 7.2.4 Terminal blocks shall be mounted as shown on the Drawings and in a manner to give clear access to all terminals for making wire connections. **White marking strips on terminal blocks shall be labeled with the signal name shown on the Switchboard Interconnection Drawing.**
- 7.2.5 Each panel shall be equipped with a 120 Vac, 15 ampere duplex outlet completely wired, protected by a fuse. Each panel shall also be equipped with an overhead interior LED light, complete with light switch and wiring, protected by a fuse.

## 7.3 Wiring

- 7.3.1 All devices within the switchboards shall be completely wired, connected, identified, dressed neatly and tied.
- 7.3.2 All conductors for current transformer circuits shall be sized No. 10 AWG. These conductors shall be 600 volt insulation, Type SIS, 105 strand.
- 7.3.3 Ground wires from current transformer circuit ground terminal points to the panel ground bus bar shall be Green, 600 volt insulation, No.10 AWG.
- 7.3.4 The cases of all solid-state relays, meters, and instruments shall be grounded directly to the relay ground bus with at least No. 12 AWG, Green, stranded copper wire.
- 7.3.5 All conductors for low-level signal outputs from transducers shall be sized No. 18 AWG. Conductors shall be 600 volt insulation, twisted, shielded pairs, stranded, with copper drain wire, PVC insulation, and PVC jacket.
- 7.3.6 All conductors for relay, control, and metering functions not otherwise specified above shall be sized No. 14 AWG. Conductors shall be 600 volt insulation, Type SIS, 41 strand.
- 7.3.7 All wiring shall be continuous from device terminal to device terminal; no splices shall be permitted. **All wiring shall be connected using ring-type terminals; spade-type terminals shall not be used. All connections shall be made using silicon bronze lock washers unless the terminating device is equipped with another inherently locking-type connector.**
- 7.3.8 All wiring shall be tagged with permanent labels at each end using the device identifications and device terminal numbers shown on the Drawings to be issued to the Successful Bidder. The wire markers shall indicate the destination of the wire, not the origin. For example, the end terminated on Device 50/5, Terminal 2, whose other end is on Device 87T, Terminal 2, shall be labeled 87T-2.

7.3.9 Wiring shall be done in an orderly manner to permit the addition of Owner's wiring and for troubleshooting wire tracing. Wiring from terminal boards to devices shall be run in the wireway to the locations adjacent to the devices. No more than two wires per terminal shall be used.

#### 7.4 Device Identification Letters

7.4.1 Identification letters shall be used to define and locate devices of a panel in agreement with the interconnection/ wiring diagrams. Decals with the device identification letter(s) shall be affixed adjacent to device locations or on the rear of devices when viewing the panel from the rear as shown on the wiring diagram, but not on removable covers. **Identification letters shall be of at least ¼ inch high with black text on a yellow or white background.**

7.4.2 Letter designations shall be as assigned as follows:

- 1) Terminal Blocks: Single letter designations are used for terminal blocks (outside row) or the same letter repeated (ex. "C" or "AA") (inside row).
- 2) Other Devices: Shall be labeled per the wiring diagrams.

### 8.0 Protective Relaying and Control Switchboard

#### 8.1 General

Described herein are one (3) Transformer Relay and Control Switchboard, two (6) Feeder Relay and Control Switchboards, one (3) SCADA and Communication Cabinet and one (2) Termination Cabinet as listed below complete with relay and control equipment and accessories for installation in a substation control house. Equipment requirements are specified in the sections indicated:

##### **Cliffdale 15kV Substation:**

Switchboard No. 1- 69/15 x 25kV Bank No.1 Relay & Control  
Switchboard Nos. 2 & 3- Bank No. 1 Feeder Relay & Control Switchboard  
Switchboard No. 4- SCADA and Communications

##### **Cliffdale 25kV Substation:**

Switchboard No. 1- 69/15 x 25kV Bank No.1 Relay & Control  
Switchboard Nos. 2 & 3- Bank No. 1 Feeder Relay & Control Switchboard  
Switchboard No. 4- SCADA and Communication

##### **Yadkin Road 15kV Substation:**

Switchboard No. 1- 69/15 x 25kV Bank No.1 Relay & Control  
Switchboard Nos. 2 & 3- Bank No. 1 Feeder Relay & Control Switchboard  
Switchboard No. 4- SCADA and Communications

##### **Yadkin Road 25kV Substation:**

Switchboard No. 1- 69/15 x 25kV Bank No.1 Relay & Control  
Switchboard Nos. 2 & 3- Bank No. 1 Feeder Relay & Control Switchboard  
Switchboard No. 4- SCADA and Communications

##### **Railroad Street Substation:**

Switchboard No. 1- 69/15 x 25kV Bank No.1 Relay & Control  
Switchboard Nos. 2 & 3- Bank No. 1 Feeder Relay & Control  
Switchboard Switchboard No. 4- SCADA and Communications

##### **Industrial Park Substation:**

Switchboard No. 1- 69/15 x 25kV Bank No.1 Relay & Control  
Switchboard Nos. 2 & 3- Bank No. 1 Feeder Relay & Control  
Switchboard Switchboard No. 4- SCADA and Communication

#### 8.2 Service Conditions and Nominal Ratings

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

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

Frequency:	60 Hz
Station Service Voltage:	120/240 Vac, 1-phase
PT Nominal Secondary Voltage:	115 Vac phase-to-ground
CT Nominal Secondary Current:	5 amps
Dc Voltage:	48 Vdc

8.3 The AC power for the switchboard will be provided by the Contractor at the substation site. The DC power to the switchboard shall be provided from batteries installed in the control house by the Contractor. Power supply requirements for all protective equipment shall be taken from the DC service. Power supply requirements for all electronic meters and other electronic equipment shall be taken from the AC station service. Electronic power supplies shall not be connected to substation metering voltage transformers.

8.4 The detailed BOM for all Relay Panels is located on the Drawings.

## 9.0 **Spare Parts**

The Bidder shall provide prices for spare relays and devices as listed below as a separate line item on the Bidder's Proposal, page P-4.

9.1 One (3) of each type Lockout Relays as specified on Drawings. PN: 78PA06CH-001.

9.2 One (3) of each type control switch as specified on Drawings. PN: 24PA202PN.

9.3 Five (15) each size (10 amp, 20 amp, 30 amp). Spare fuses as used in the panel requirements above. PN: Gould A2K-R or Reliance NCLR-R.

9.4 Spare 48/125V DC LED bulbs for Electro-switch lighted nameplates as used in the panel requirements above; two (6) each color. Color RED: PN: 658-402-1; Color WHITE: PN: 658-405-1.

9.5 One (3) SecuControl STSA10002BA configured [VVVVVVVVVVV].

9.6 One (3) SecuControl STSA10028AA configured [TTTTTTTTTTT].

9.7 One (3) SecuControl STSA10008AO configured [C-C C-C C-C C-C VV].

## 10.0 **Production Tests**

The following tests shall be made to verify that the switchboard is manufactured to Specifications. The Owner reserves the right to be in attendance at such testing.

### 10.1 **Control Wiring Dielectric Test**

Tests made to verify that switchboard wiring has an adequate insulation level to ground include the following three alternatives:

- A test voltage two (2) times rated circuit voltage plus 1000 V (minimum 1500 V), 60 Hz to ground for one minute.
- A test voltage 20% higher than the one (1) minute value (minimum 1800 V), 60 Hz to ground for one (1) second.
- An insulation-resistance test using a dc voltage level no less than the ac level listed in (1) above times 1.414 for not more than 1 min with a minimum measured insulation resistance of 1 MΩ.

The procedure is based on the type of circuits and devices on the switchboard. Devices that have been individually tested may be disconnected during the test. Some devices, such as transducers and electronic meters, must be disconnected because the applicable industry standard involves a lower or different permissible dielectric test. Equipment and circuits that operate at 50 V or less, unless otherwise specified, shall be tested in the same manner as above using a test voltage of 500 V, 60 Hz for one (1) minute (Test and Test Procedures, ANSI/NEMA ICS1-1983[6]).



## 10.2 Electrical Operation, Sequence, and Wiring Tests

Tests shall be made to verify the correctness (including polarities) of the wiring in a switchboard. Verification shall be made preferably by actual electric operation of the circuit and devices to ensure that the devices function in the proper and intended sequence (functional test) or by individual circuit continuity checks (ring-out).

Instruments shall be tested to ensure that pointers move in proper direction. This does not require tests using primary voltage and current.

## 11.0 Installation

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

**APPENDICES:**

- 1. Booth & Associates, LLC  
Drawing List**



**1**

**Drawing List**

**Booth & Associates, LLC**

**PUBLIC WORKS COMMISSION  
FAYETTEVILLE, NORTH CAROLINA**

**PO HOFFER, CUMBERLAND ROAD, AND  
COLLEGE LAKES SUBSTATIONS**

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

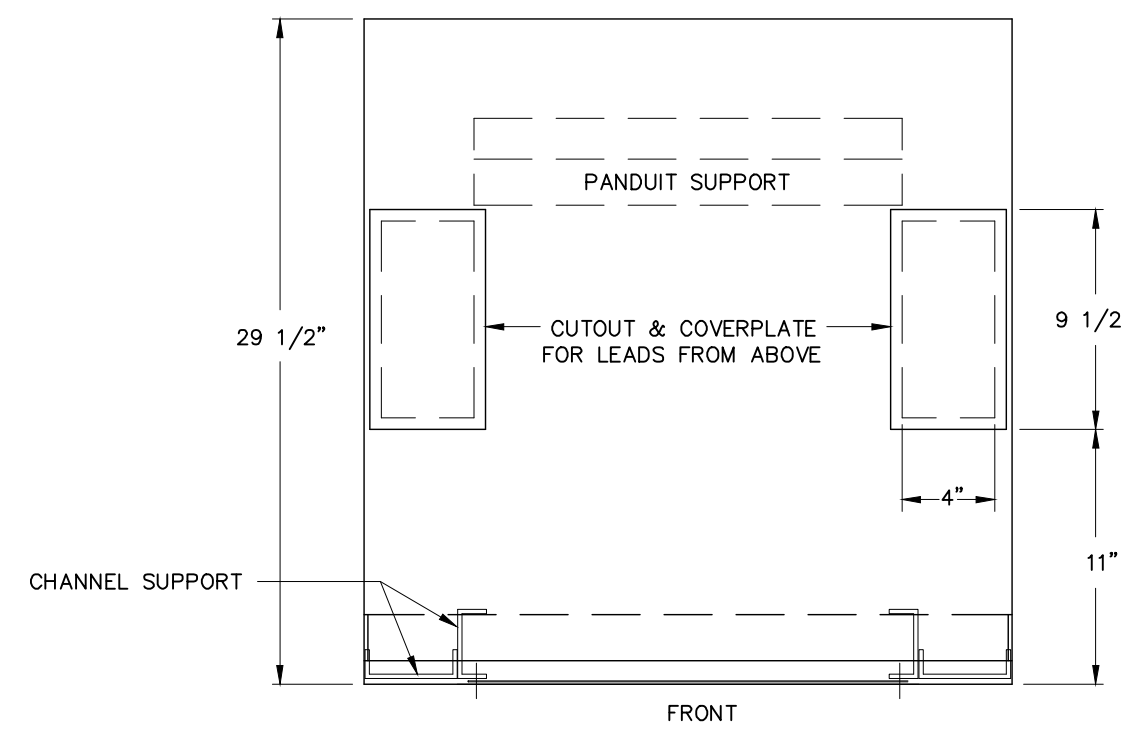
**RELAY CONTROL PANEL AND SCADA**

Sheet No.	Title
E06	Switchboard No. 1 Arrangement & Details
E07	Switchboard No. 1 NP Engraving Schedule and BOM
E08	Switchboard No. 2 Arrangement & Details
E09	Switchboard No. 2 NP Engraving Schedule and BOM
E10	Switchboard No. 3 Arrangement & Details
E11	Switchboard No. 3 NP Engraving Schedule and BOM
E12	Switchboard No. 4 Arrangement & Details
E13	Switchboard No. 4 Bill of Material
E14	Termination Cabinet Panel
E37	AC-1, AC-2 Panels Interconnection Diagram
E38	DC-1 Panel Interconnection Diagram
E39	Switchboard No. 1 Interconnection Diagram
E40	Switchboard No. 2 Interconnection Diagram
E41	Switchboard No. 3 Interconnection Diagram
E42	Switchboard No. 4 Interconnection Diagram
E52	Termination Cabinet Interconnection Diagram

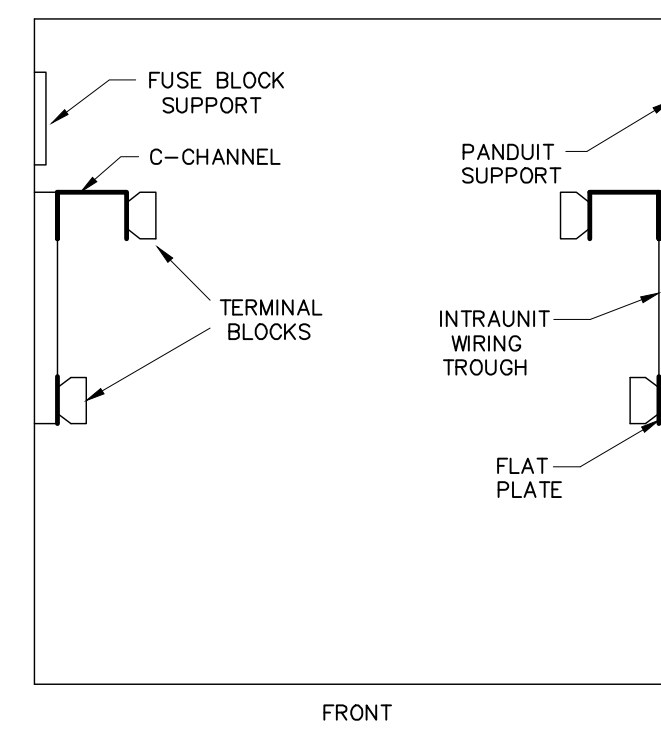
Standard Booth & Associates, LLC Drawings pertaining to the steel fabrication of the relay panel are:

<u>Sheet No.</u>	<u>Title</u>
S1 - S8	Relay Standard Dual Panel Details

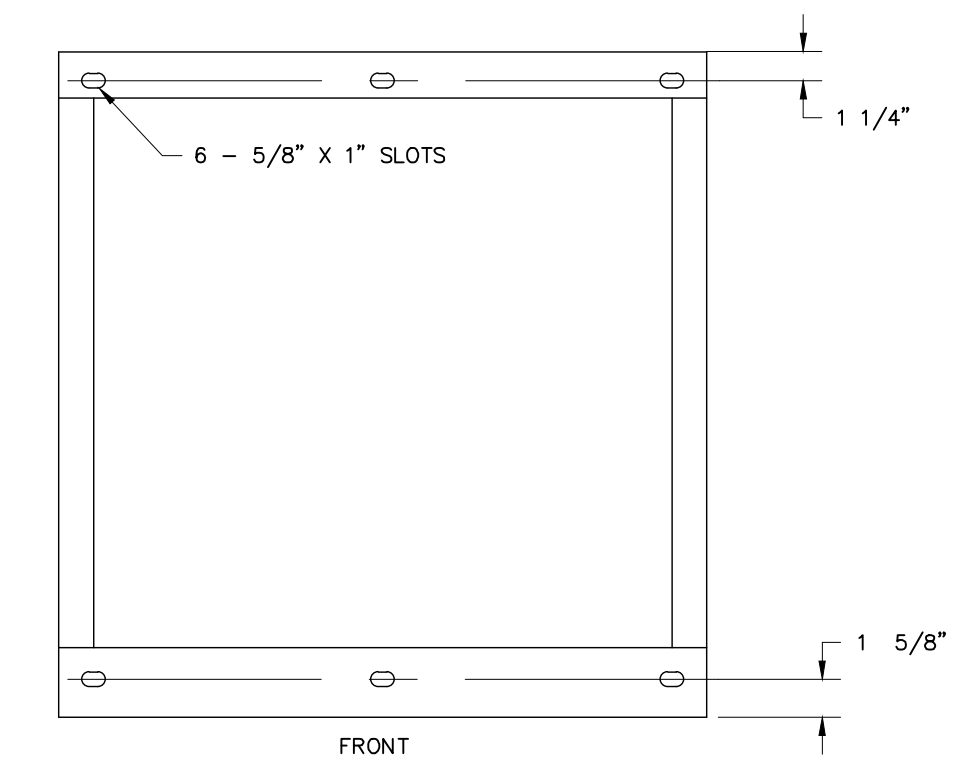
These are standard Drawings prepared to show the maximum design of the stations and do not represent the number of components required by this Specification. The quantities of equipment to be furnished by this Specification are described in the material list of this Specification.



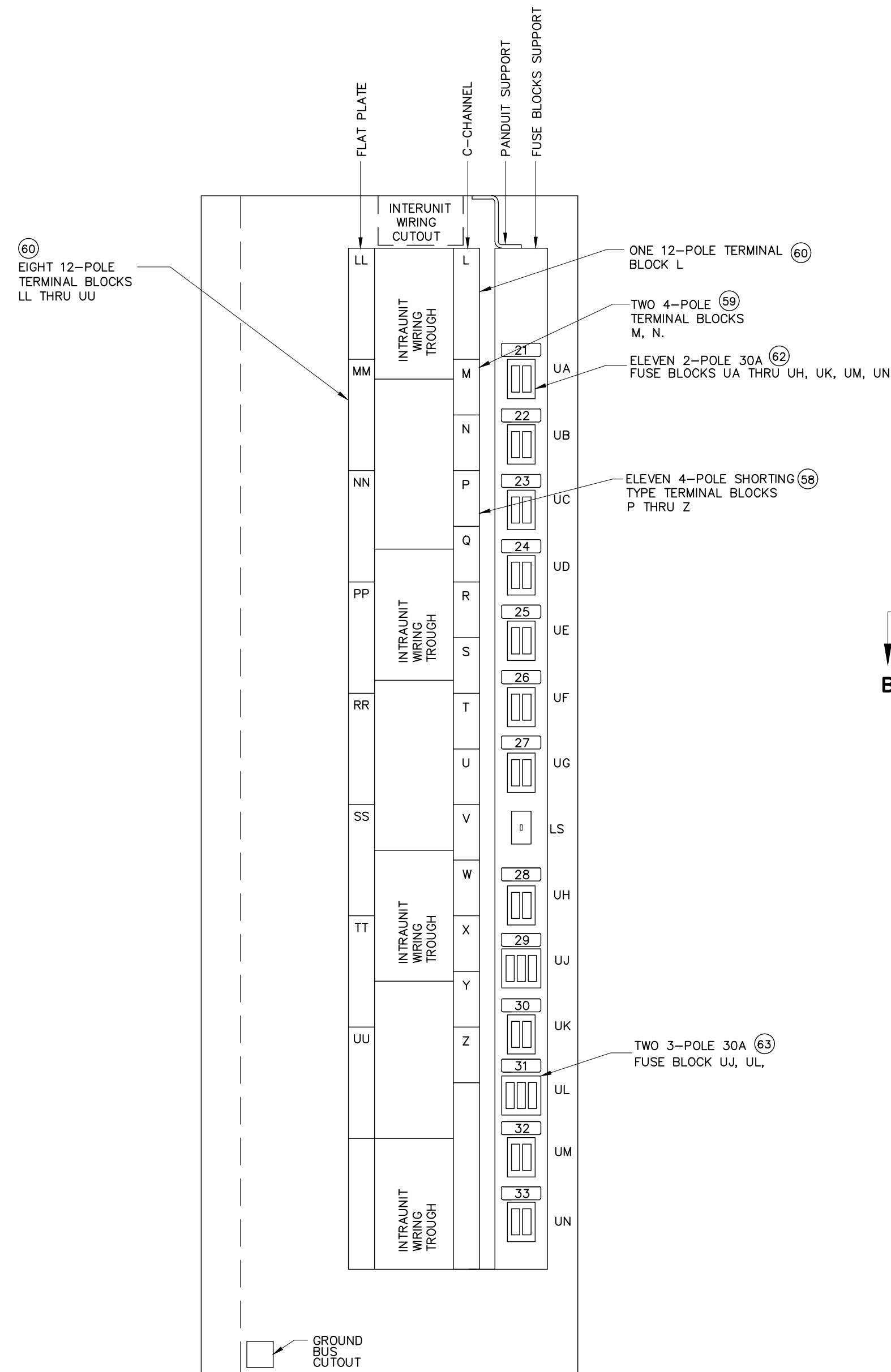
SECTION A-A



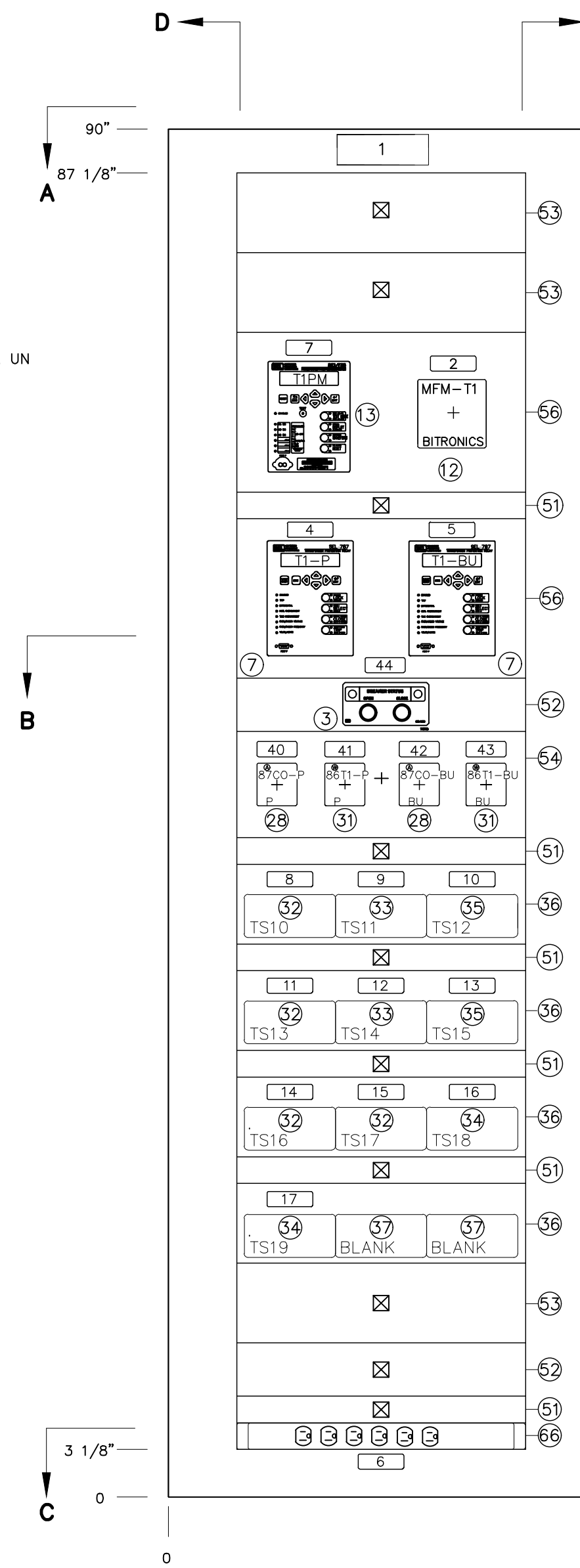
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

NOTES:

1.) ① INDICATES MATERIAL ITEM NUMBER

\*There will be a total of 5 switchboards with this design

**PRELIMINARY**

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

© 03/2022

NO.	ISSUED FOR	REVISIONS	ENG.	DATE
A	FOR BID		BMJ	09/24/2023

PROJECT NAME:  
**CUMBERLAND ROAD  
69 TO 15 X 25 KV SUBSTATION**

DRAWING TITLE:  
**SWITCHBOARD NO.1  
ARRANGEMENT AND DETAILS**

DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NONE
FILE NUMBER:	12510
SHEET:	





SWITCHBOARD No. 1						
NAMEPLATE ENGRAVING SCHEDULE						
Name Plate No.	Size	Text Size	First Line	Second Line	Third Line	Qty.
1	2" x 6"	1/4"	SWITCHBOARD No. 1	TRANSFORMER No. 1	RELAY AND CONTROL	2
2	1" x 3"	1/8"	MFM	TRANSFORMER No. 1	15 kV METERING	1
4	1" x 3"	1/8"	T1-P	XFMR DIFFERENTIAL	PRIMARY RELAY	1
5	1" x 3"	1/8"	T1-BU	XFMR DIFFERENTIAL	BACKUP RELAY	1
6	1" x 3"	1/8"	RECEPTACLE No. 1			1
7	1" x 3"	1/8"	T1PM	TRANSFORMER No. 1	POWER METER	1
8	1" x 3"	1/8"	TS10	T1-P HIGH-SIDE	CURRENTS	1
9	1" x 3"	1/8"	TS11	T1-P LOW-SIDE	CURRENTS	1
10	1" x 3"	1/8"	TS12	T1-P	TRIPS/CLOSE	1
11	1" x 3"	1/8"	TS13	T1-BU HIGH-SIDE	CURRENTS	1
12	1" x 3"	1/8"	TS14	T1-BU LOW-SIDE	CURRENTS	1
13	1" x 3"	1/8"	TS15	T1-BU	TRIPS	1
14	1" x 3"	1/8"	TS16	TRANSFORMER No. 1	POWER METER	1
15	1" x 3"	1/8"	TS17	TRANSFORMER No. 1	MULTIFUNCTION METER	1
16	1" x 3"	1/8"	TS18	86T1-P LOCKOUT	TRIPS	1
17	1" x 3"	1/8"	TS19	86T1-BU LOCKOUT	TRIPS	1
21	1" x 3"	1/8"	POWER METER	(UA) 48 Vdc	P-10A N-10A	1
22	1" x 3"	1/8"	SPARE	(UB) 48 Vdc	P-10A N-10A	1
23	1" x 3"	1/8"	T1-P XFMR RELAY	(UC) 48 Vdc	P-10A N-10A	1
24	1" x 3"	1/8"	86T1 PRIMARY L.O.	(UD) 48 Vdc	P-30A N-30A	1
25	1" x 3"	1/8"	T1-BU XFMR RELAY	(UE) 48 Vdc	P-10A N-10A	1
26	1" x 3"	1/8"	86T1 BACKUP L.O.	(UF) 48 Vdc	P-30A N-30A	1
27	1" x 3"	1/8"	SPARE	(UG)		1
28	1" x 3"	1/8"	LIGHT & RECEPTACLE	(UH) 120 Vac	X-15A	1
29	1" x 3"	1/8"	SPARE	(UJ)		1
30	1" x 3"	1/8"	SPARE	(UK)		1
31	1" x 3"	1/8"	LOW-SIDE BUS POTENTIAL	(UL) 120 Vac	A-15A B-15A C-15A	1
32	1" x 3"	1/8"	MFM	(UM) 48 Vdc	P-10A N-10A	1
33	1" x 3"	1/8"	SPARE	(UN)		1
40	1" x 3"	1/8"	87CO-P	PRIMARY	DIFF CUT-OFF	1
41	1" x 3"	1/8"	86T1-P	PRIMARY	LOCKOUT	1
42	1" x 3"	1/8"	87CO-BU	BACKUP	DIFF CUT-OFF	1
43	1" x 3"	1/8"	86T1-BU	BACKUP	LOCKOUT	1
44	1" x 3"	1/8"	69kV BREAKER 52-T1	CONTROL		1


Item	Quantity	MFR Part Number	Description	Remarks
3*	1 each	SEL 9510 Model No. 951021B2	SEL-9510 Control Switch Module, 48VDC LED voltage, Open=Green, Closed=Red, with Pushbutton Guards, with Configurable Labels.	<b>PURCHASED BY COMMISSION</b>
7*	2 each	SEL 787 Model No. 0787EX2CCCC75850620	SEL-787 Transformer Protection Relay Firmware: Standard with REF plus Voltage Sensing, VHz Element, Over/Under Voltage and Frequency, and Power Elements; Slot A Power Supply 24-48 Vdc (SElect PSIO / 2 DI / 3 DO); 48 Vdc/Vac Digital Input; Slot B: Processor Board (SElect CPU/COM); All Slot B options include EIA-232 Front, IIRG-B, Fiber Optic Serial Multimode ST, SEL ASCII, Compressed ASCII, Fast Meter, Fast Operate, Fast Message, Mirrored Bk, and Modbus RTU; Slot B: Ethernet/Rear Serial Options; Dual 10/100Base-T Ethernet, EIA-232 Rear; Slot B: Protocols: Standard plus DNP3; Slot C: 4 Digital Input / 4 Digital Output (SElect 4 DI / 4 DO); 48 Vdc/Vac DI, Fast High Current Interrupting DO; Slot D: 4 Digital Input / 4 Digital Output (SElect 4 DI / 4 DO); 48 Vdc/Vac DI, Fast High Current Interrupting DO; Slot E: Neutral AC Current Input / 3-Phase AC Voltage (300 Vac) Input (SElect 1 ACI / 3 AVI); 5 Amp Neutral; Slot Z: 6 AC Current Input (SElect 6 ACI); 5 Amp Winding 1, 5 Amp Winding 2	T1-P, T1-BU <b>PURCHASED BY COMMISSION</b>
12	1 each	Bitronics Model No. M850M3P511	Multifunction Advanced 3-phase, Alphanumeric Meter, 48-250VDC/55-240VAC power (with monitoring), Signal Input Range: 120 VAC, 0-5A. Serial (Programmable RS-232/RS-485), Ethernet RJ45 10/100 Mb protocols enabled.	MFA-T1
13*	1 each	SEL 735 Model No. 0735BX20922CFB2XX16101XX Key Code: 1029	Power Quality and Revenue Meter, Chassis Vertical Panel Mount, EIA-232 Port, Power Quality and Recording Option Advanced PQ and Recording* Meter Form Form 9 (Four-Wire Wye, 3 PTs, 3 CTs); Slot A: Power Supply 24/48 Vdc; Slot A: Control Input Voltage 48 Vdc or Vac, 3 Contact Outputs, 2 Inputs; Main Board Communications Two EIA-232 Ports and One 10/100BASE-T Ethernet Port*; Slot D: Boards 4 Electromechanical Outputs, 4 Inputs; Slot D: Control Input Voltage 48 Vdc or Vac; Slot Z: Current and Voltage Inputs Current Class CL2/10/20, Optimized for Low-End Accuracy; System Frequency 60 Hz; Communications Protocol SEL ASCII, SEL LMD, SEL Fast Meter, SEL Compressed ASCII, MV 90 Translation™, Modbus® RTU/TCP, MIRRORRED BITSO Communications, Telnet, DNP3 Level 2 Outstation and LAN/WAN(3), and Synchrophasors(3), Standard Communications Protocols Front-Panel Labeling ANSI Labeling	T1PM <b>PURCHASED BY COMMISSION</b>
14*	1 each	SEL PN: 926073	SEL 735 Label Kit - vertical & horizontal 3 sheets	<b>PURCHASED BY COMMISSION</b>
15*	1 each	SEL PN: PM735-01	SEL 735 Printed Instruction Manual	<b>PURCHASED BY COMMISSION</b>
28	2 each	Electroswitch Cat. No. 24PA202PN	Electroswitch Series 24 Control Switch, two (2) decks. Nameplate Code No. 150D-2D24, 1="NORMAL", 2="CUT OFF", title engraved "DIFFERENTIAL", lighted nameplate, one (1) LED light: Amber.	87CO-P, 87CO-BU
31	2 each	Electroswitch Cat. No. 78PA06C-001	Electroswitch Lockout Relay (LOR), hand reset Electroswitch LOR lockout relay, 48 Vdc trip coil "C", six (6) decks with two (2) N.C. and two (2) contacts per deck, hand reset, nameplate engraved "LOCKOUT RELAY", with lighted nameplate (one LED, White)	86T1-BU, 86T1-P
32	4 each	SecuControl Part Number: STSA10004AE	SecuControl Safety Test Switch with banana jacks Screw connections and status windows with transparent lids trip/potential/current pole configuration of: [C-C-C-C-V-V-V-V]	TS10, TS13, TS16, TS17
33	2 each	SecuControl Part Number: STSA10008AO	SecuControl Safety Test Switch with banana jacks Screw connections and status windows with transparent lids trip/potential/current pole configuration of: [C-C-C-C-C-V-V]	TS11, TS14
34	2 each	SecuControl Part Number: STSA10028AA	SecuControl Safety Test Switch with banana jacks Screw connections and status windows with transparent lids trip/potential/current pole configuration of: [T-T-T-T-T-T-T-T]	TS18, TS19
35	2 each	SecuControl Part Number: STSA10073AD	SecuControl Safety Test Switch with banana jacks Screw connections and status windows with transparent lids trip/potential/current pole configuration of: [T-T-T-T-T-T-V-V]	TS12, TS15
36	4 each	SecuControl Part Number: FTx3UA101010AG	Safety Test Switch 19" Rack Plates 3RU, standard 19" rack plates, 2mm thick with standard cutouts; cutout for three 10-pole ST Switches, Color: ANSI-grey #61	
37	2 each	SecuControl Part Number: FTBC10AG	Covers for 19" Safety Test Switch Rack Plate Cutouts 10-pole cover; Color: ANSI-grey #61	
51	6 each	Hoffman P19RP1UP or equivalent	19-inch rack cover plates - 1-rack unit 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
52	2 each	Hoffman P19RP2UP or equivalent	19-inch rack cover plates - 2-rack unit 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
53	3 each	Hoffman P19RP3UP or equivalent	19-inch rack cover plates - 3-rack unit 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
54	1 each	Hoffman P19RP4UP or equivalent	19-inch rack cover plates - 4-rack unit 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
56	2 each	Hoffman P19RP6UP or equivalent	19-inch rack cover plates - 6-rack unit 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
58	11 each	Marathon Cat. No. 1504SC	Shorting Terminal Block, 4P, 600V, barrier-type with screw type terminals	
59	2 each	Marathon Cat. No. 1504	Terminal Block, 4P, 600V, white marking strip, barrier type, with screw type terminals	
60	25 each	Marathon Cat. No. 1512	Terminal Block, 12P, 600V, white marking strip barrier type, with screw type terminals	
62	11 each	Marathon Cat. No. RF30A2S or equivalent	Fuse Block, 2P, 30A, 250V, Class H with screw type terminals and spring reinforcing clips. Ceramic blocks are not acceptable	
63	2 each	Marathon Cat. No. RF30A3S or equivalent	Fuse Block, 3P, 30A, 250V, Class H with screw type terminals and spring reinforcing clips, ceramic blocks are not acceptable	
66	1 each	Tripp Lite Model No. RS-1215	Power Strip, Rackmount (1RU), 120VAC 15 Amperes (12 Outlets 6 front and back)	
---	1 each		Overhead Interior Lighting System, 120Vac overhead interior lighting system complete with LED lamp, light switch, and fused ac service wiring for 120 volts ac.	1 for each panel
---	1 lot		Engraved Nameplates as required, all 1" x 3" except top panel plate on front & rear which shall be 2" x 6"	As required for each panel
---	4 each	Hilti Drop-In Item No. 00336433, description HDI (SS303) 2	Hilti Drop-In anchors, flush-type Four (4) Hilti Drop-In anchors flush, type with 5/8" x 2" stainless steel bolt	4 for each panel
---	1 each		Ground bus bar, copper, 1/4" x 1" x 25"	
---	TBD by Vendor	Gould A2K-R or Bussmann KTN-R	Fuse blocks shall be supplied with non-renewable type fiberglass body cartridge fuses. See drawing for quantities and sizes. Five(5) spare fuses of each size are to be included.	5 spares for each panel of each size

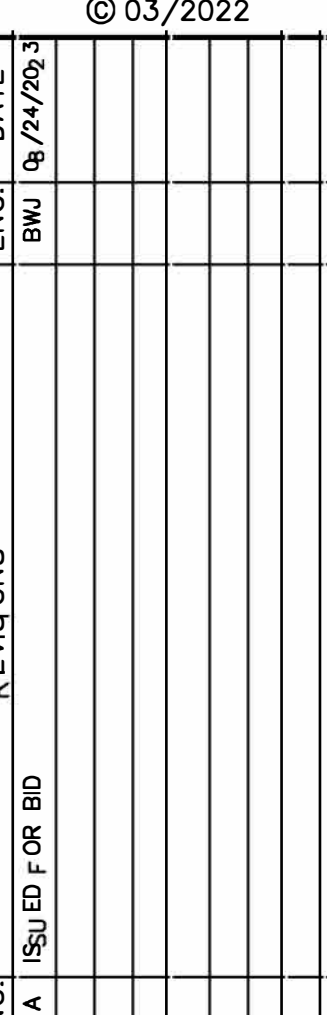
\*Items 3, 7, 13, 14, and 15 will be purchased by PWC and shipped to winning panel manufacturer

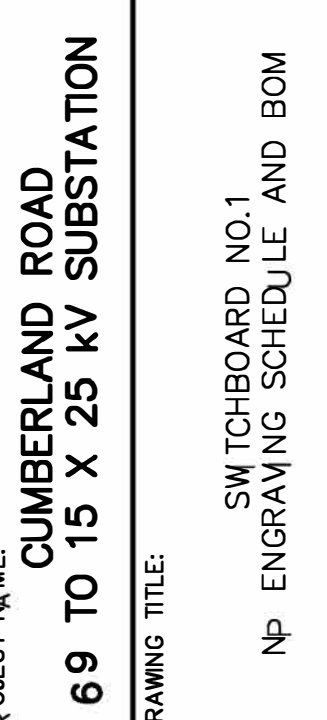
1.) QUANTITIES ARE PER SWITCHBOARD  
2.) There will be a total of 6 switchboards with this NP Engraving Schedule and BOM











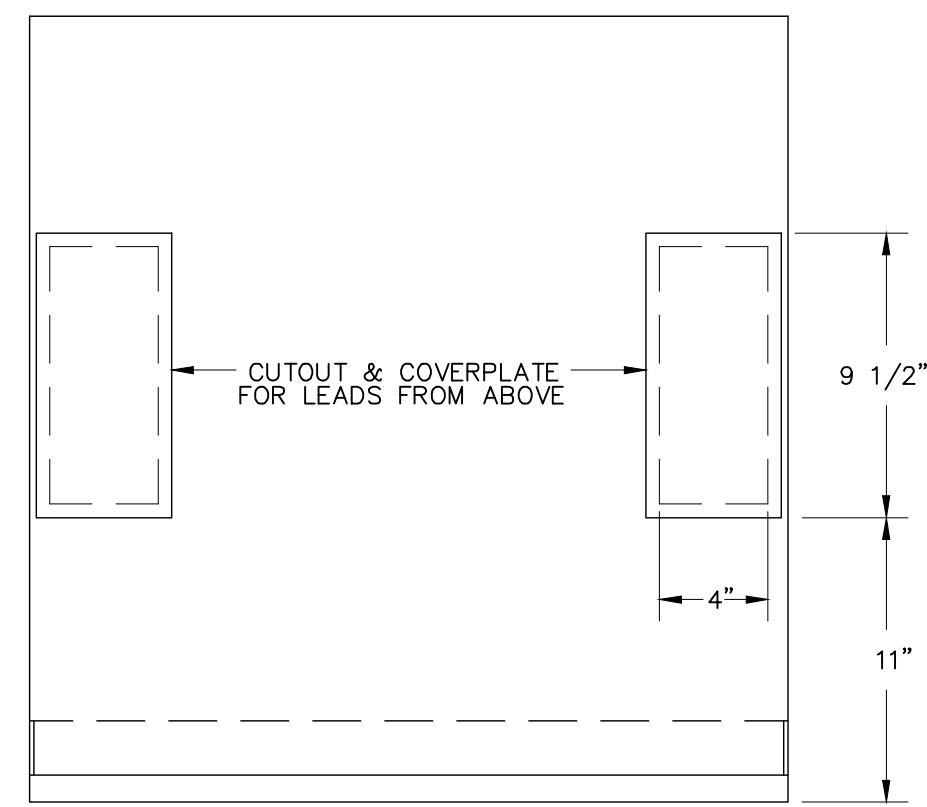
PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION  
DRAWING TITLE: SWITCHBOARD NO.1 NP ENGRAVING SCHEDULE AND BOM

DATE: 3/16/2022  
SCALE: NTS  
FILE NUMBER: 12510  
SHEET:

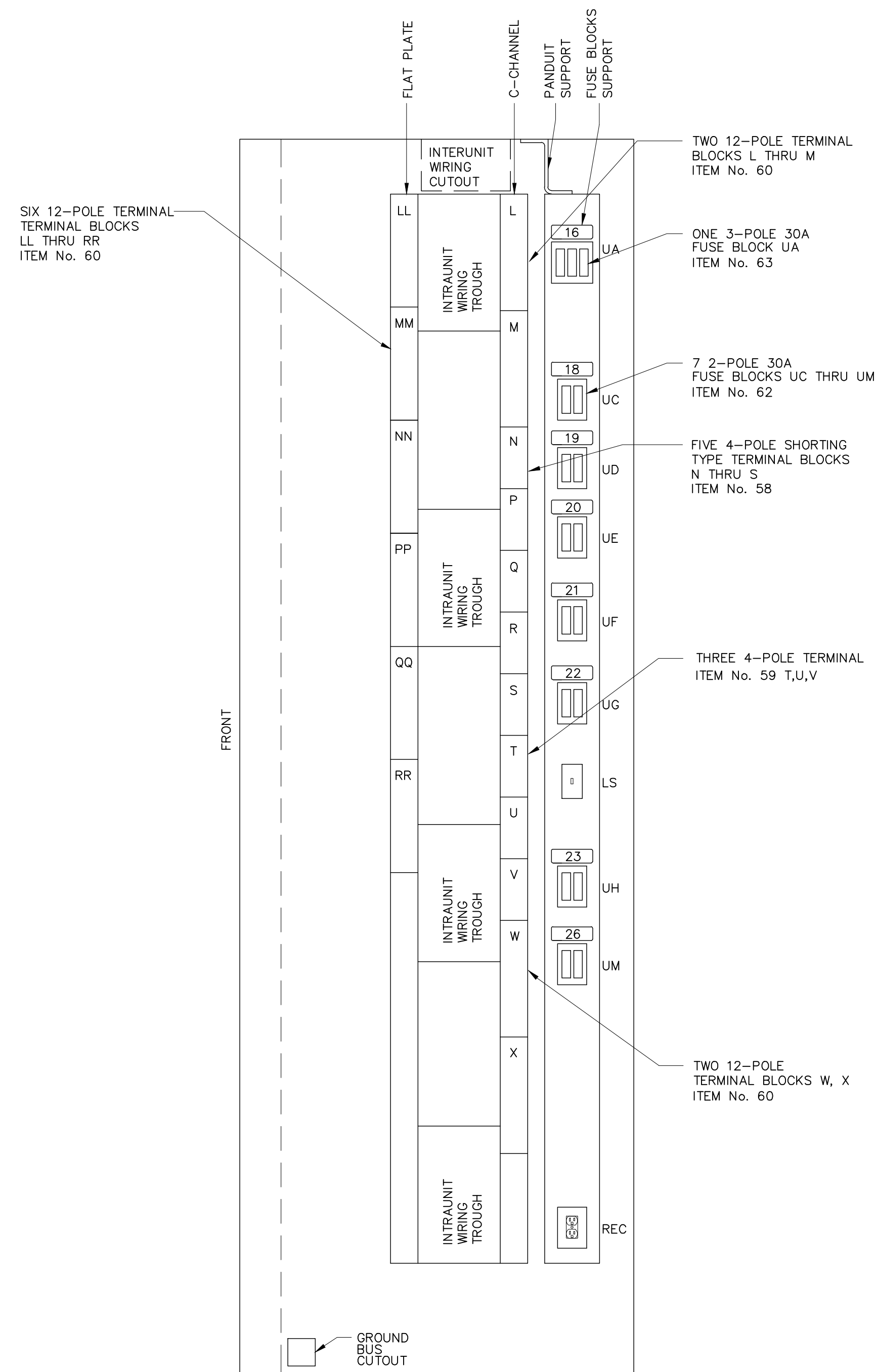
DRAWN BY: JRT  
CHECKED BY: DAW  
APPROVED BY: MJW  
DATE: 3/16/2022  
SCALE: NTS  
FILE NUMBER: 12510  
SHEET:

E07

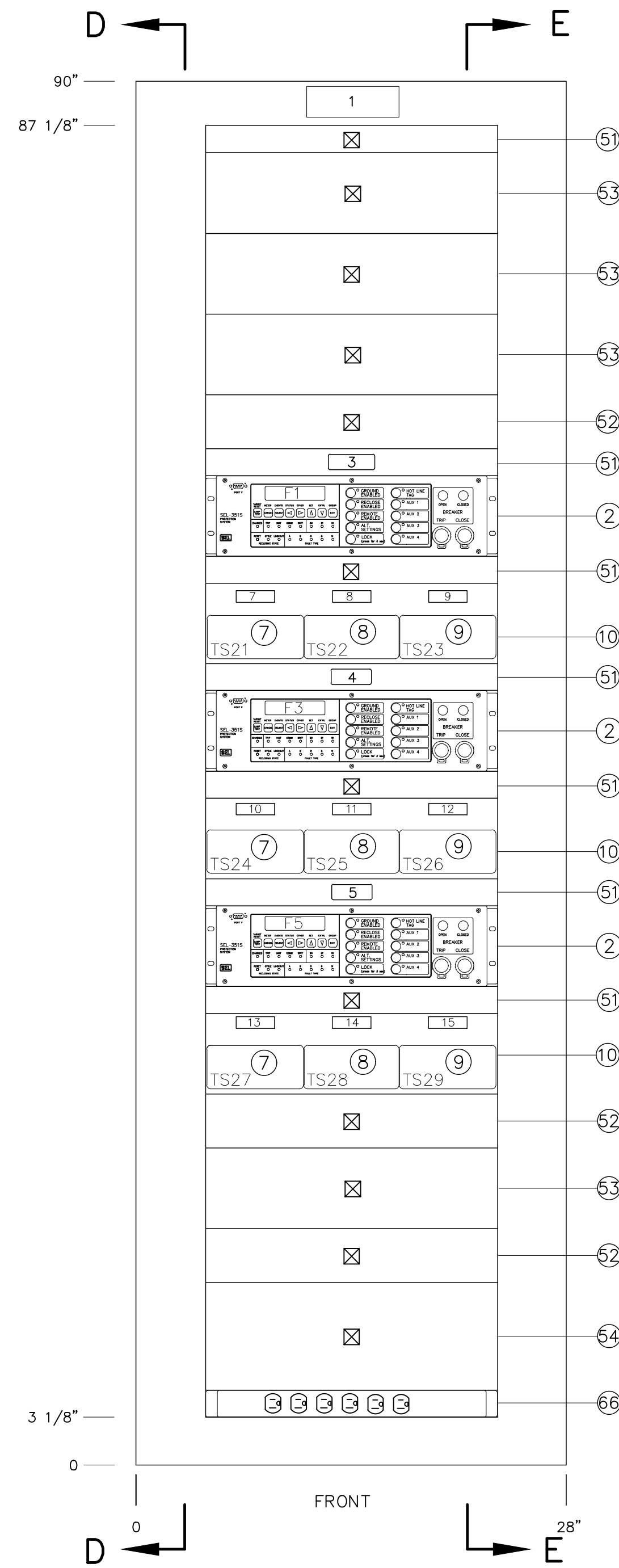




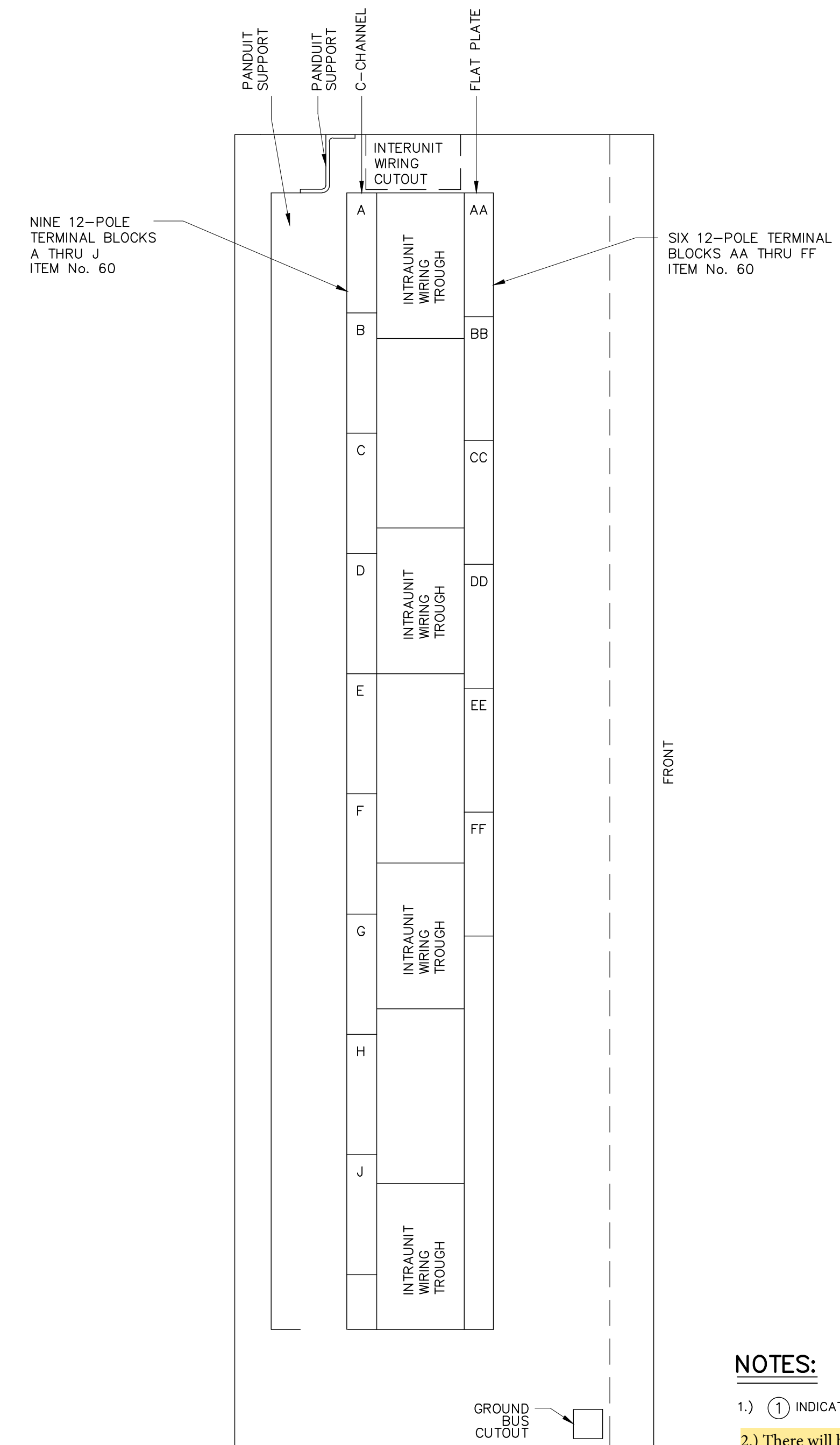
FRONT  
**PANEL TOP**



**SECTION D-D**



FRONT



**SECTION E-E**

**NOTES:**

- 1.) ① INDICATES MATERIAL ITEM NUMBER
- 2.) There will be a total of 6 switchboards with this design

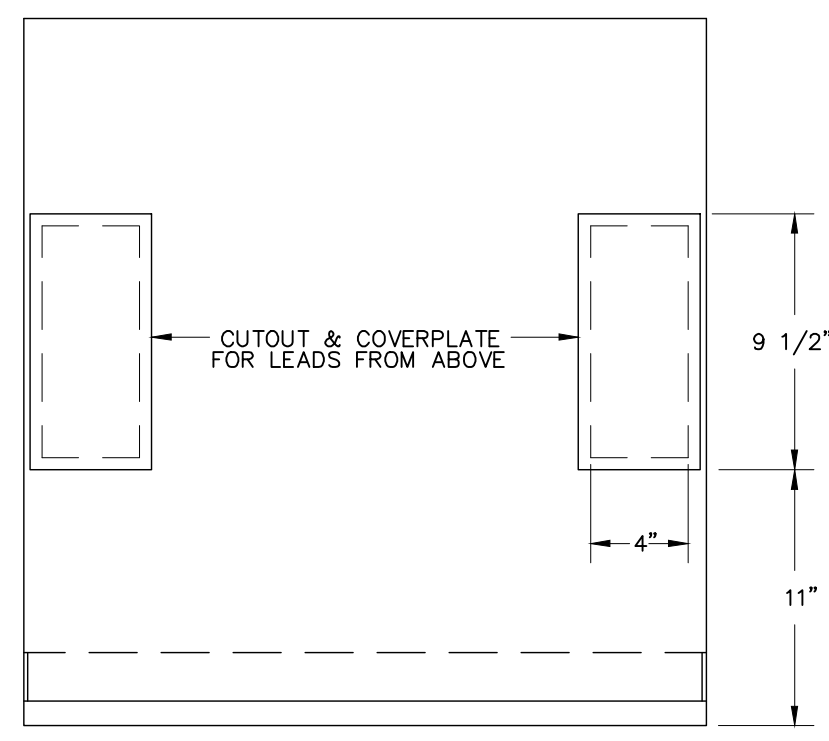
NO.	ISSUED FOR BID	REVISIONS	ENG.	DATE
A			BMJ	09/24/2023

PROJECT NAME:	CUMBERLAND ROAD 69 TO 15 X 25 KV SUBSTATION
DRAWING TITLE:	SWITCHBOARD NO.2 ARRANGEMENTS AND DETAILS
DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12510
SHEET:	

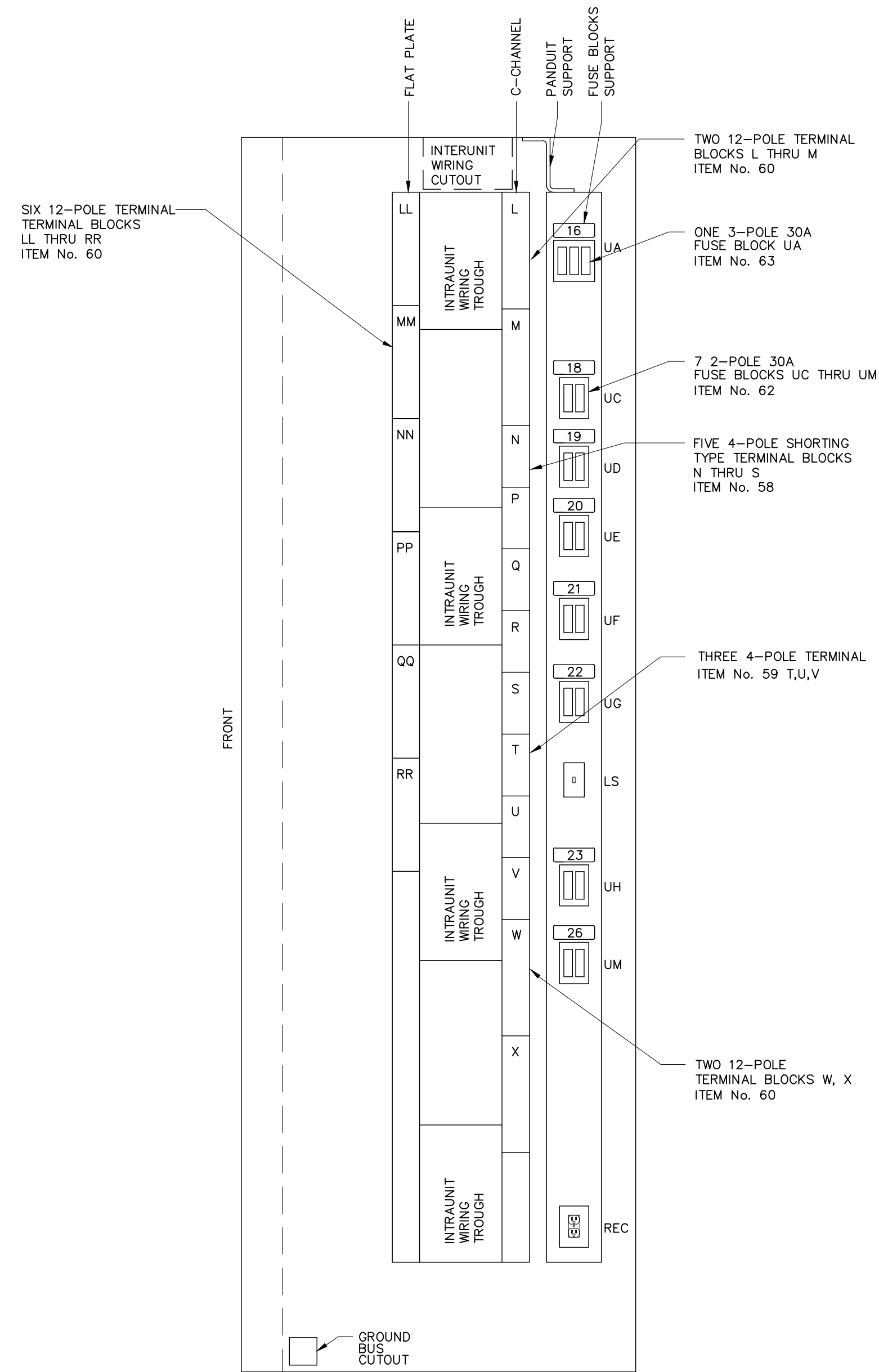




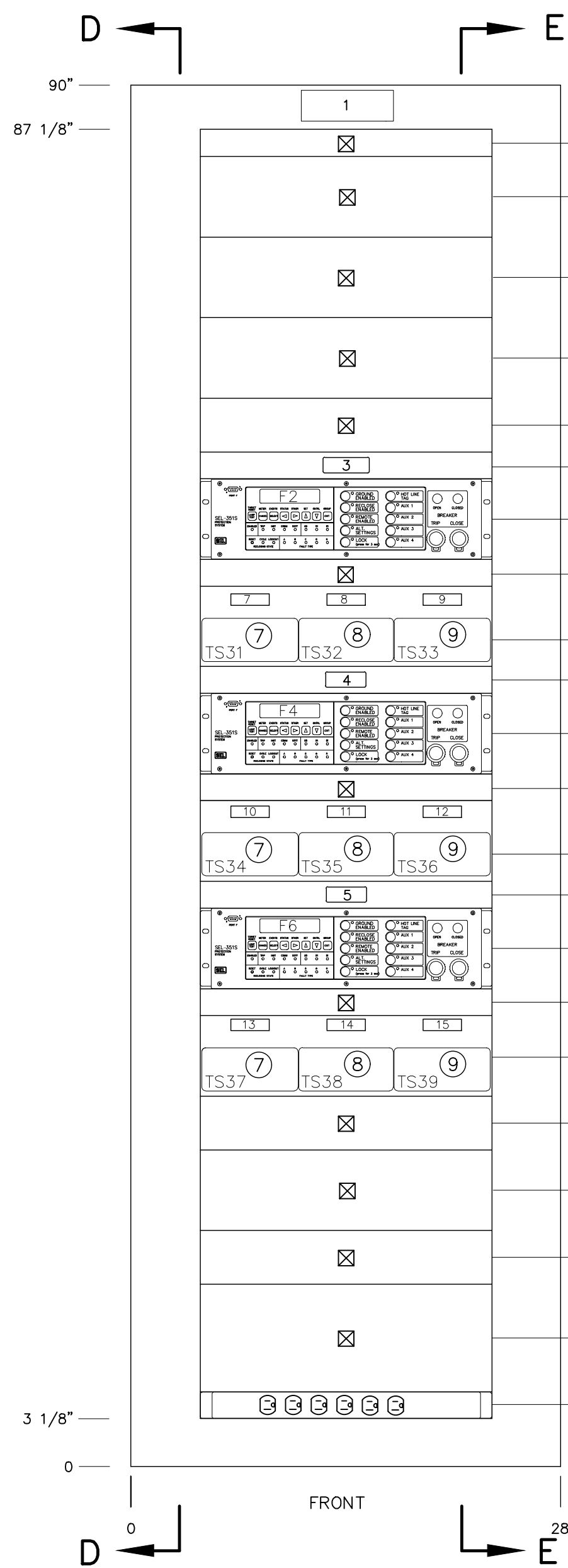




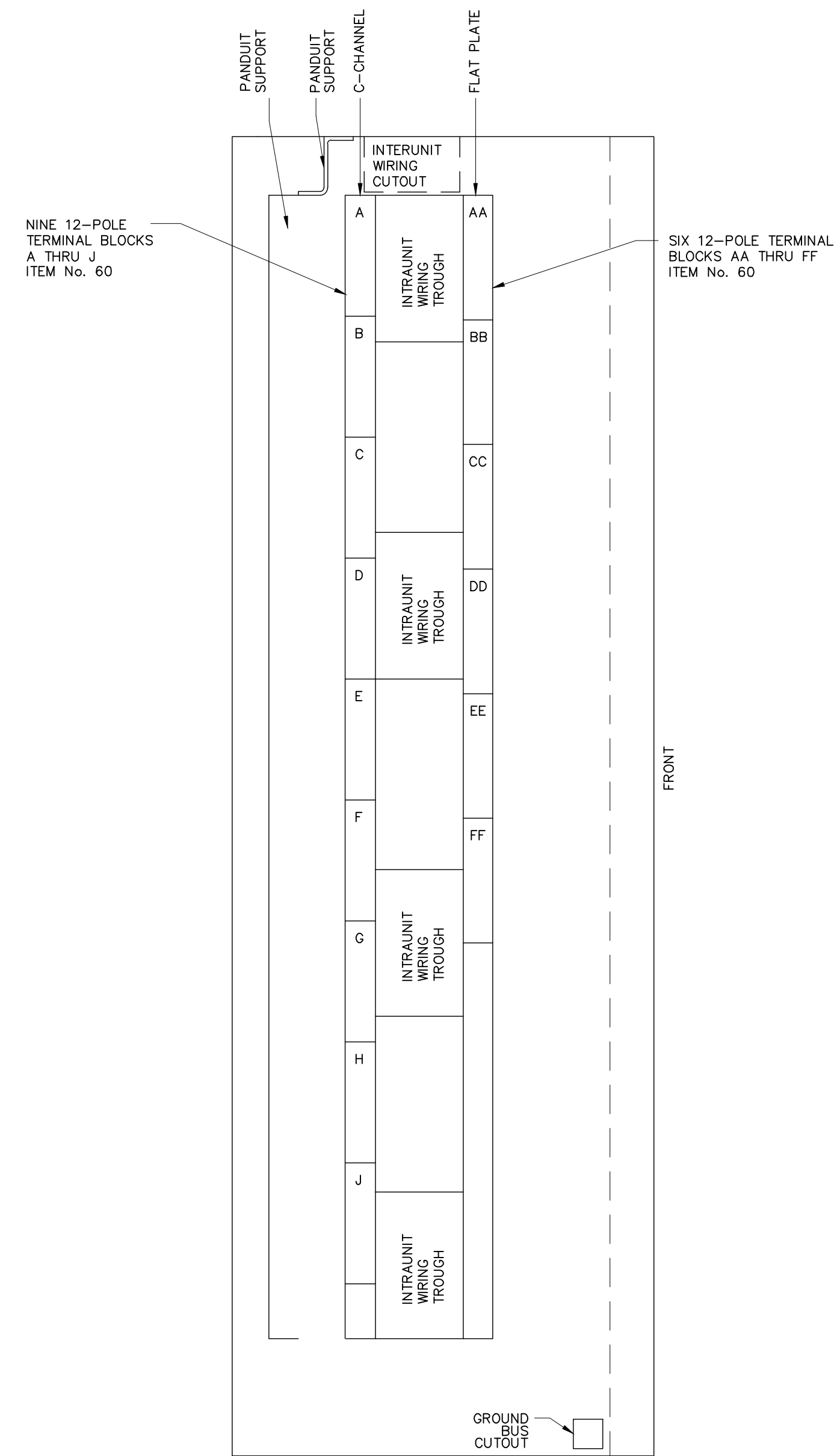
PANEL TOP



SECTION D-D



FRONT



SECTION E-E

NOTES:

- 1.) ① INDICATES MATERIAL ITEM NUMBER
- 2.) There will be 6 switchboards with this design



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NO.	ISSUED FOR	REVISIONS	ENG.	DATE
A	FOR BID		EWJ	09/24/2023

PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION  
 DRAWING TITLE: SWITCHBOARD NO.3 ARRANGEMENTS AND DETAILS

DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12510
SHEET:	





SWITCHBOARD No. 3							
NAMEPLATE ENGRAVING SCHEDULE							
Name Plate No.	Size	Text Size	First Line	Second Line	Third Line	Qty.	Remarks
1	2" x 6"	1/4"	FEEDERS No. 2, 4, 6	SWITCHBOARD No. 3	RELAY AND CONTROL	2	
2							
3	1" x 3"	3/16"	FEEDER BREAKER No. 2	PROTECTION	RELAY	1	
4	1" x 3"	3/16"	FEEDER BREAKER No. 4	PROTECTION	RELAY	1	
5	1" x 3"	3/16"	FEEDER BREAKER No. 6	PROTECTION	RELAY	1	
6							
7	1" x 3"	3/16"	F2 FEEDER RELAY	TEST SWITCH	TS31	1	
8	1" x 3"	3/16"	F2 FEEDER RELAY	TEST SWITCH	TS32	1	
9	1" x 3"	3/16"	F2 FEEDER RELAY	TEST SWITCH	TS33	1	
10	1" x 3"	3/16"	F4 FEEDER RELAY	TEST SWITCH	TS34	1	
11	1" x 3"	3/16"	F4 FEEDER RELAY	TEST SWITCH	TS35	1	
12	1" x 3"	3/16"	F4 FEEDER RELAY	TEST SWITCH	TS36	1	
13	1" x 3"	3/16"	F6 FEEDER RELAY	TEST SWITCH	TS37	1	
14	1" x 3"	3/16"	F6 FEEDER RELAY	TEST SWITCH	TS38	1	
15	1" x 3"	3/16"	F6 FEEDER RELAY	TEST SWITCH	TS39	1	
16	1" x 3"	3/16"	LOW-SIDE BUS POTENTIAL	UA 120V PHASE - GROUND	A-15A B-15A C-15A	1	
17							
18	1" x 3"	3/16"	FEEDER No. 2 RELAY	UC 48VDC	P-10A N-10A	1	
19	1" x 3"	3/16"	FEEDER No. 4 RELAY	UD 48VDC	P-10A N-10A	1	
20	1" x 3"	3/16"	FEEDER No. 6 RELAY	UE 48VDC	P-10A N-10A	1	
21	1" x 3"	3/16"	SPARE	UF 48VDC	P-10A N-10A	1	
22	1" x 3"	3/16"	SPARE	UG 48VDC	P-10A N-10A	1	
23	1" x 3"	3/16"	SPARE	UH 48VDC	P-10A N-10A	1	
24							
25	1" x 3"	3/16"	PANEL AC	UM 120VAC	X-15A X-15A	1	
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							

Item	Quantity	MFR Part Number	Description	Remarks
2*	3 each	SEL 351S Model No. 0351S7XHD3E5221	<b>Protection and Breaker Control Relay</b> , Standard plus Power Elements, Voltage Sag/Swell/Interruption, additional I/O board with twelve (12) standard outputs and eight (8) inputs, horizontal rack mounting, Standard Interface including USB plus Indoor SafeLock Trip/Close Pushbuttons and Configurable Labels; 48/125 Vdc or 120 Vac power supply, 48Vdc Control Input Voltage, 5 amp phase and neutral secondary input currents, Two (2) 10/100 Base-T, EIA-485, standard communications protocol	F2, F4, F6
7	3 each	SecuControl Part Number: STSA10002BA	<b>SecuControl Safety Test Switch with banana jacks</b> Screw connections and status windows with transparent lids trip/potential/current pole configuration of: [V V V V V V V V V V]	TS31, TS34, TS37
8	3 each	SecuControl Part Number: STSA10028AA	<b>SecuControl Safety Test Switch with banana jacks</b> Screw connections and status windows with transparent lids trip/potential/current pole configuration of: [T T T T T T T T T T]	TS32, TS35, TS38
9	3 each	SecuControl Part Number: STSA10008AO	<b>SecuControl Safety Test Switch with banana jacks</b> Screw connections and status windows with transparent lids trip/potential/current pole configuration of: [C-C-C-C-C-C-C V V]	TS33, TS36, TS39
10	3 each	SecuControl Part Number: FTx3UA101010AG	<b>Safety Test Switch 19" Rack Plates</b> 3RU, standard 19" rack plates, 2mm thick with standard cutouts; cutout for three 10-pole ST Switches; Color: ANSI-grey #61	
51	7 each	Hoffman P19RP1UP or equivalent	<b>19-inch rack cover plates – 1-rack unit</b> 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
52	3 each	Hoffman P19RP2UP or equivalent	<b>19-inch rack cover plates – 2-rack unit</b> 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
53	4 each	Hoffman P19RP3UP or equivalent	<b>19-inch rack cover plates – 3-rack unit</b> 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
54	1 each	Hoffman P19RP4UP or equivalent	<b>19-inch rack cover plates – 4-rack unit</b> 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
55	0 each	Hoffman P19RP5UP or equivalent	<b>19-inch rack cover plates – 5-rack unit</b> 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
56	0 each	Hoffman P19RP6UP or equivalent	<b>19-inch rack cover plates – 6-rack unit</b> 12-gauge steel, light gray (match panel paint color), EIA standard RS-310-D screw spacing	
58	5 each	Marathon Cat. No. 1504SC	<b>Shorting Terminal Block, 4P, 600V</b> , barrier-type with screw type terminals	
59	3 each	Marathon Cat.No. 1504	<b>Terminal Block, 4P, 600V</b> , white marking strip, barrier type, with screw type terminals	
60	25 each	Marathon Cat. No. 1512	<b>Terminal Block, 12P, 600V</b> , white marking strip barrier type, with screw type terminals	
62	7 each	Marathon Cat. No. RF30A2S or equivalent	<b>Fuse Block, 2P, 30A, 250V, Class H</b> with screw type terminals and spring reinforcing clips. Ceramic blocks are not acceptable.	
63	1 each	Marathon Cat. No. RF30A3S or equivalent	<b>Fuse Block, 3P, 30A, 250V, Class H</b> with screw type terminals and spring reinforcing clips, ceramic blocks are not acceptable	
66	1	Tripp Lite Model No. RS-1215	<b>Power Strip</b> , Rackmount (1RU), 120VAC 15 Amperes (12 Outlets 6 front and back)	
---	TBD by Vendor	Gould A2K-R or Bussmann KTN-R	<b>Fuse blocks</b> shall be supplied with non-renewable type fiberglass body cartridge fuses. See drawings for quantities and sizes. Four (4) spare fuses of each size are to be included.	4 spares for each panel of each size
---	1 each		<b>Receptacle, Duplex, 120 Vac, 15A</b>	1 for each panel
---	1 each		<b>Overhead Interior Lighting System, 120Vac</b> overhead interior lighting system complete with LED lamp, light switch, and fused ac service wiring for 120 volts ac.	1 for each panel
---	1 lot		<b>Engraved Nameplates</b> as required, all 1" x 3" except top panel plate on front & rear which shall be 2" x 6".	As required for each panel
---	4 each	Hilti Drop-In Item No. 00336433, description HDI (SS303) 2	<b>Hilti Drop-In anchors</b> , flush-type Four (4) Hilti Drop-In anchors flush-type with 5/8" x 2" stainless steel bolt	4 for each panel
---	1 each		<b>Ground bus bar</b> , copper, 1/4" x 1" x 25"	

\*Item 2 will be purchased by PWC and shipped to winning panel manufacturer

1.) THERE WILL BE 6 SWITCHBOARDS WITH THIS DESIGN  
2.) QUANTITIES ARE PER SWITCHBOARD





2020 Reawood Drive Suite 300, Raleigh, NC 27607  
NC P-021

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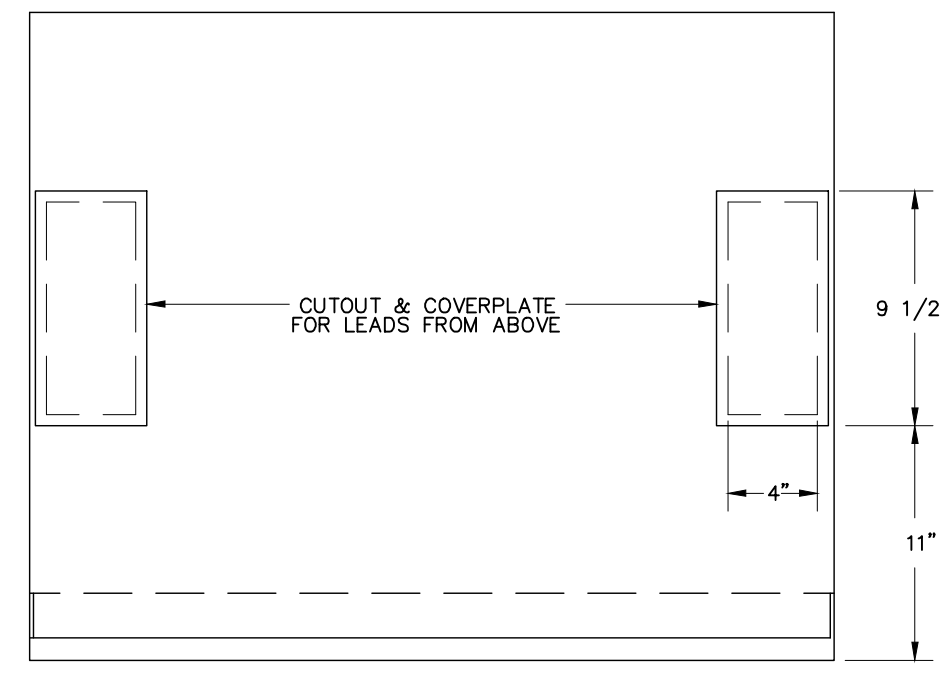
NO.	ISSUED FOR	REVISIONS	ENG.	DATE
A			BWJ	03/24/2023

PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 KV SUBSTATION  
DRAWING TITLE: SWITCHBOARD NO.3 NP ENGRAVING SCHEDULE AND BOM

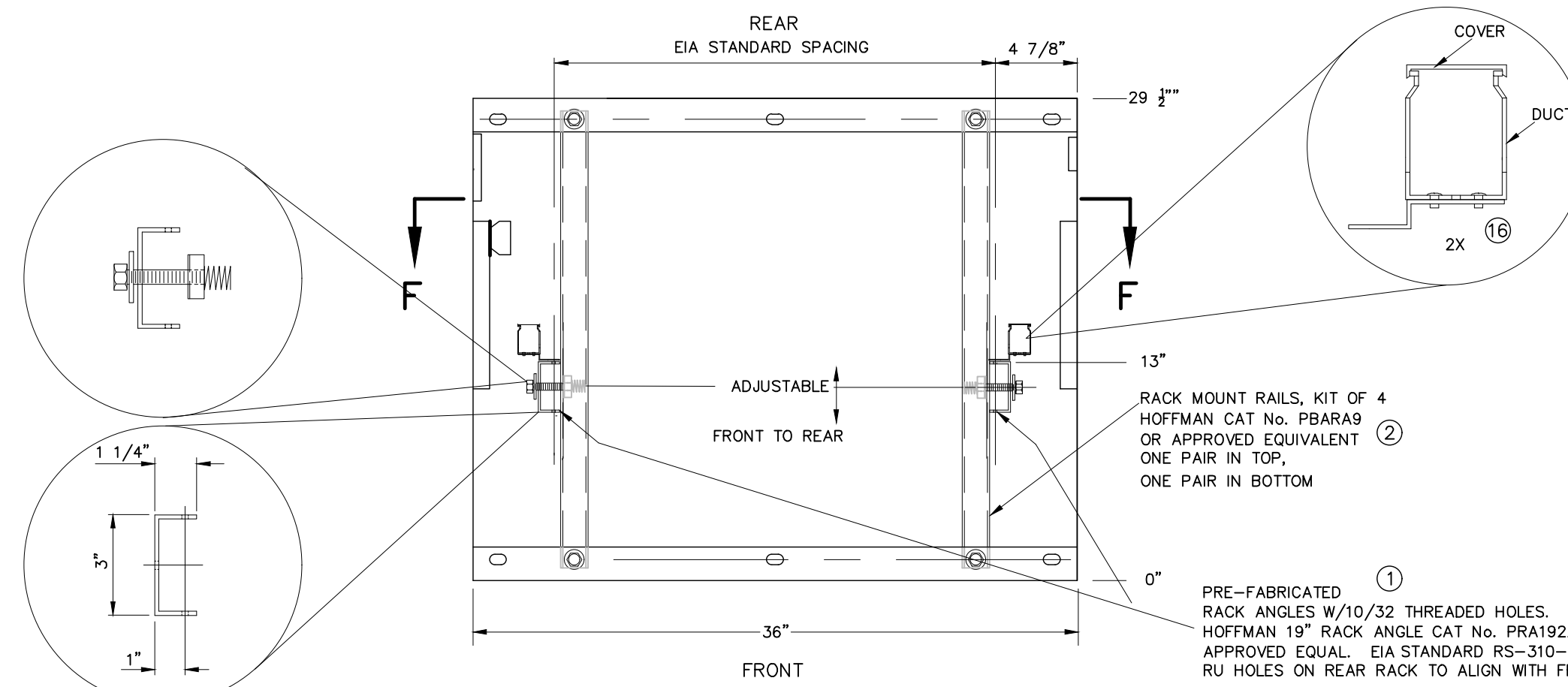
DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12510
SHEET:	

E11



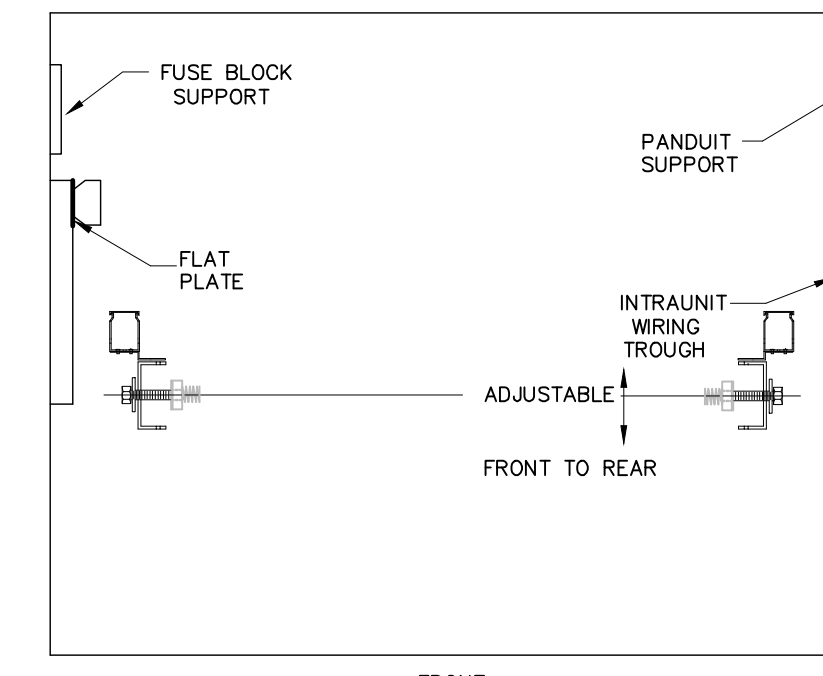


PANEL TOP

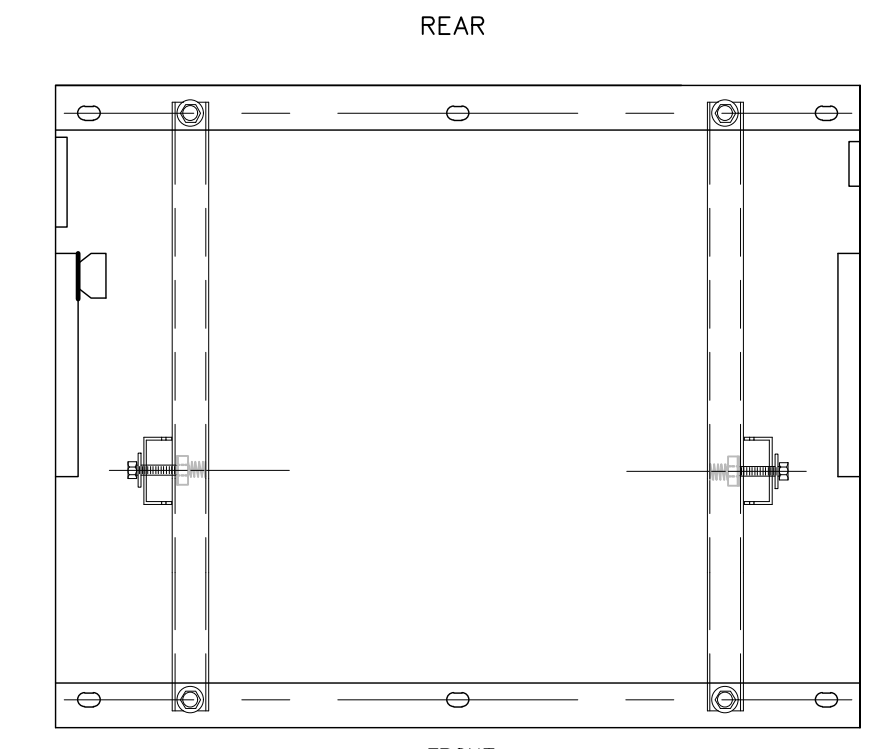


SECTION A-A

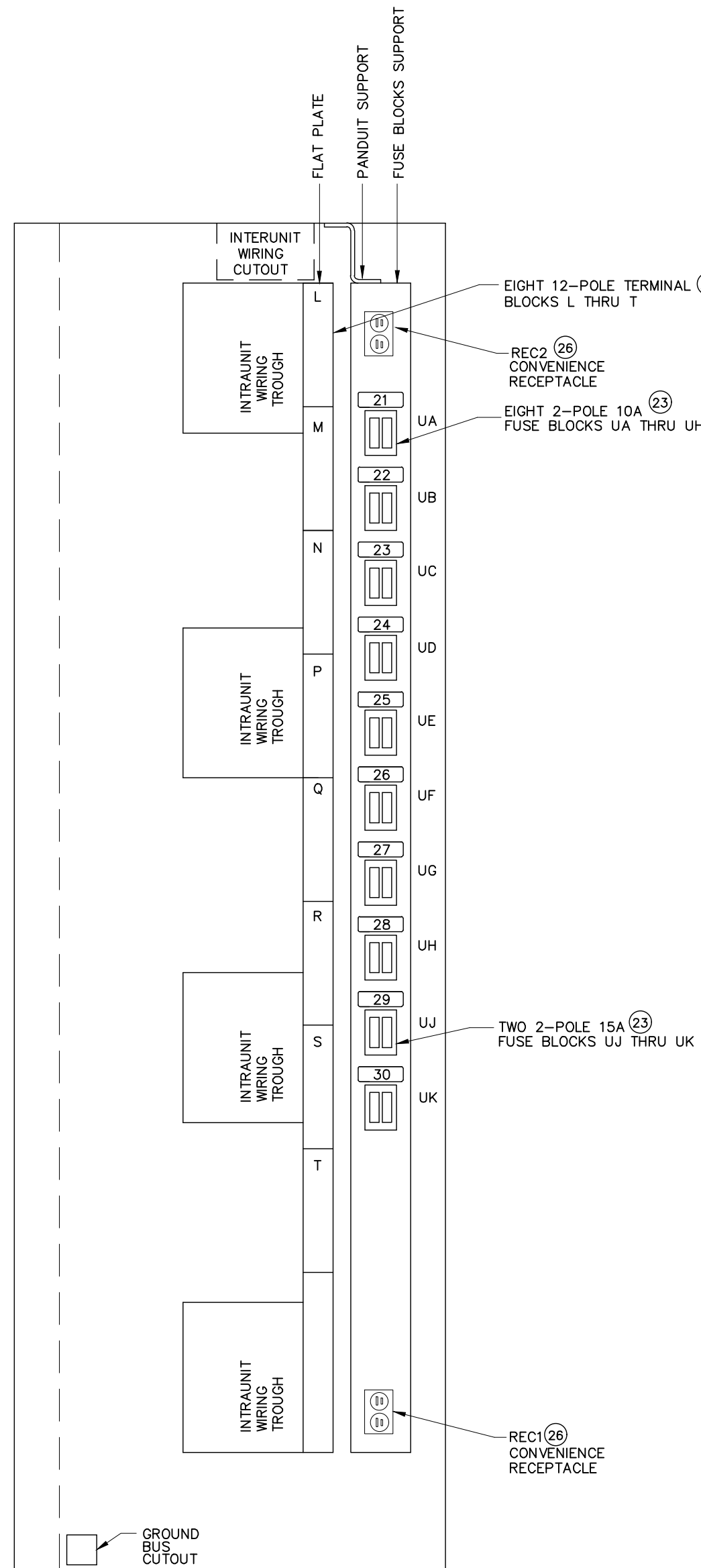
ANGLE DETAIL ①  
N.T.S.



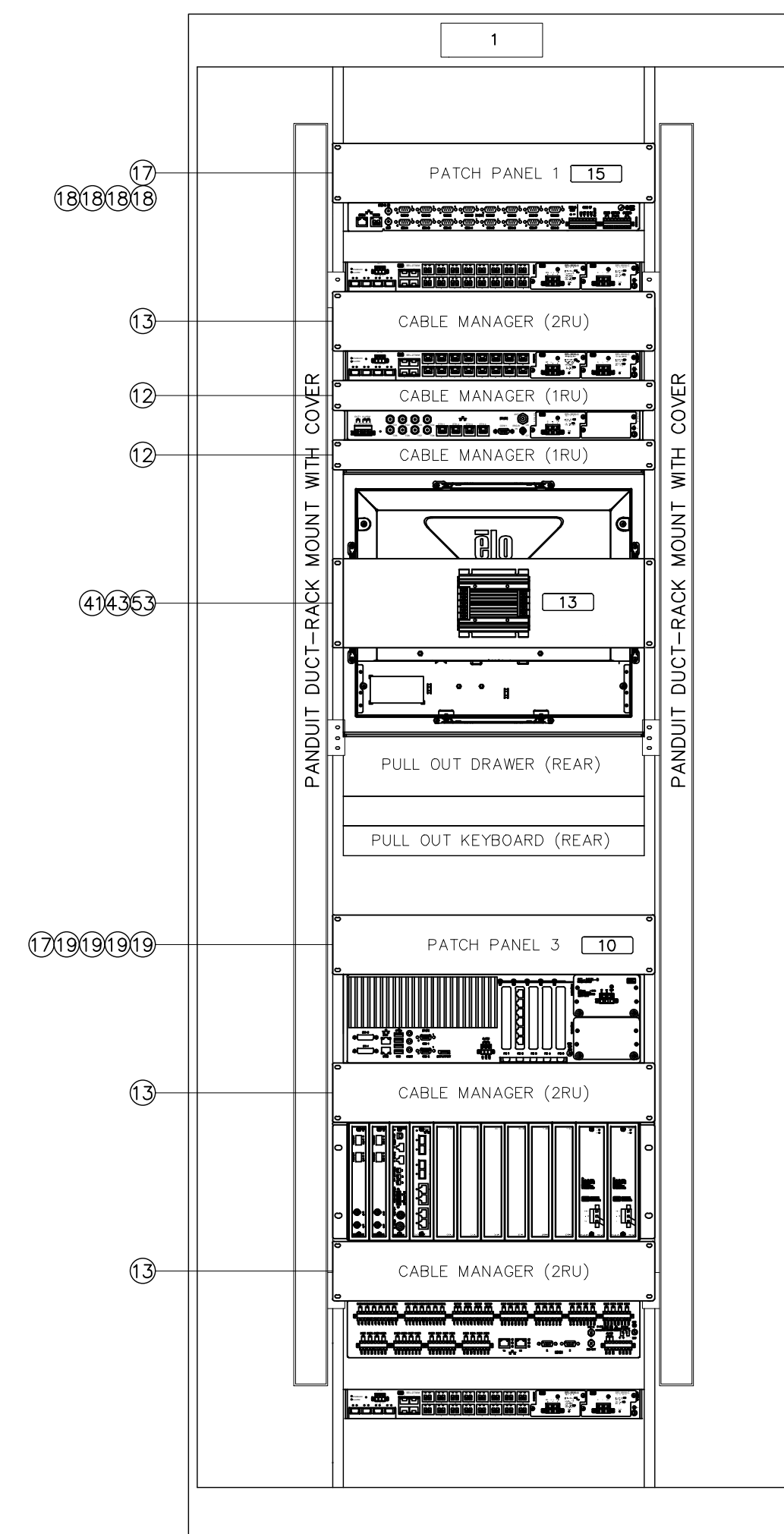
SECTION B-B



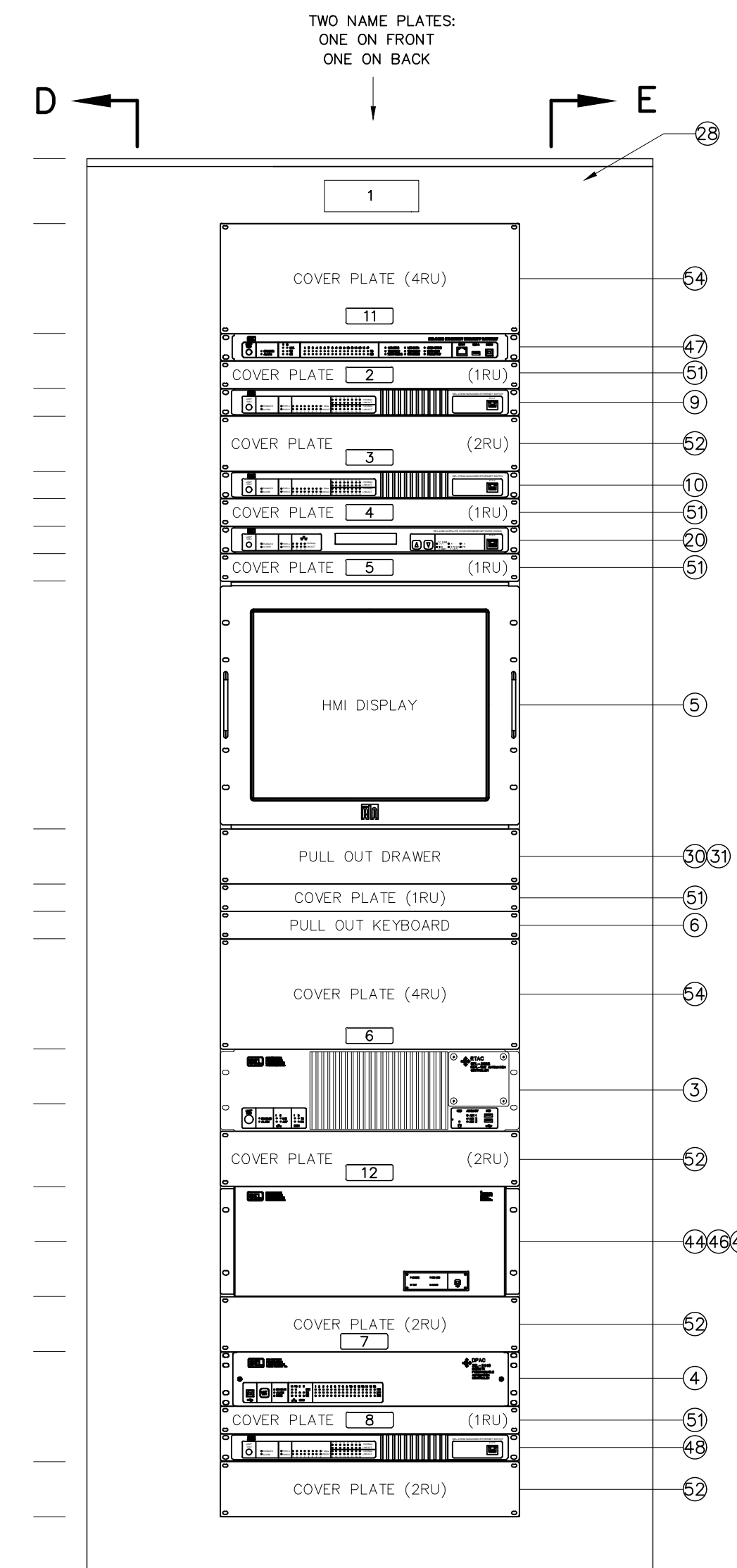
SECTION C-C



SECTION D-D



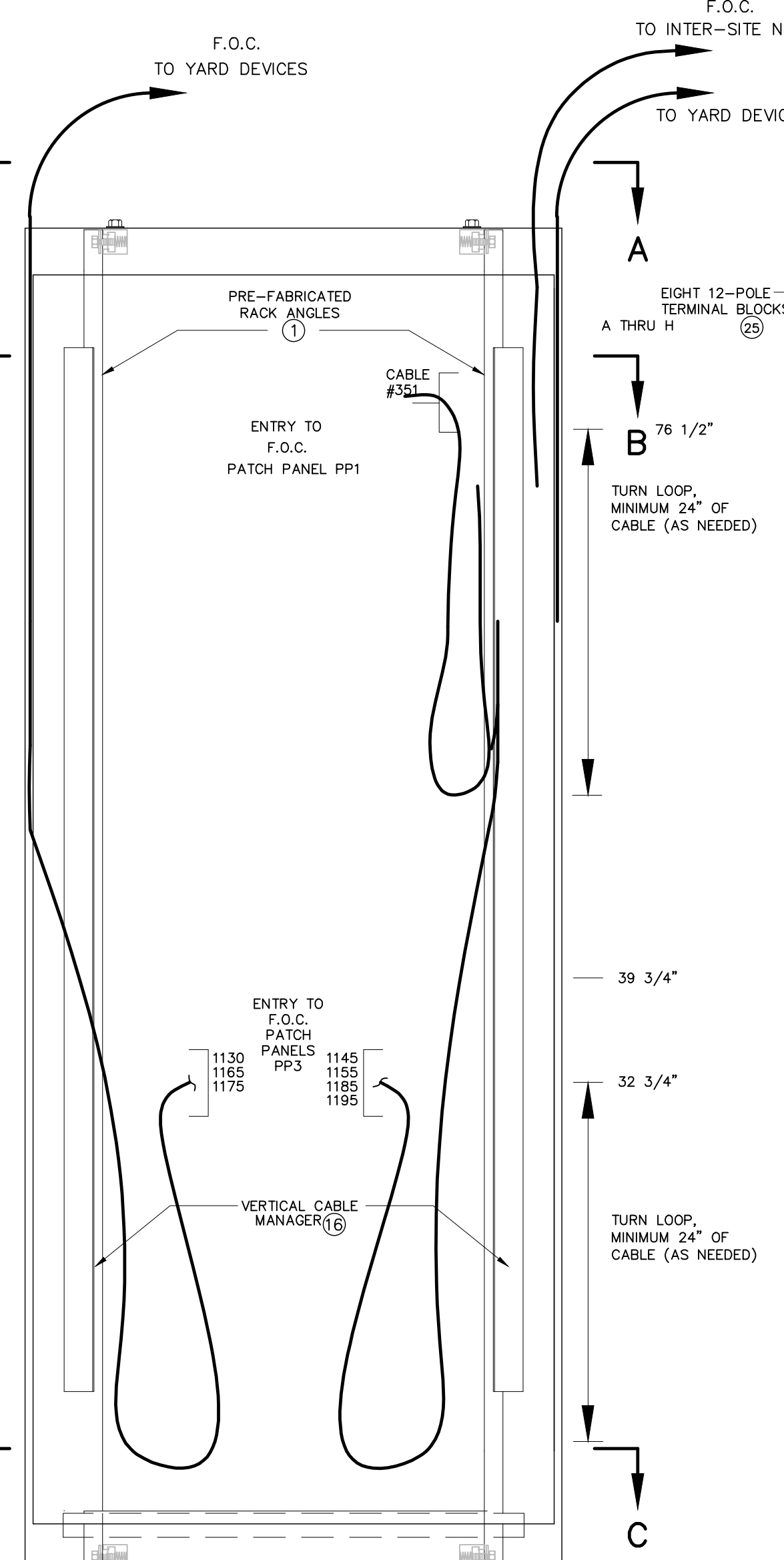
REAR



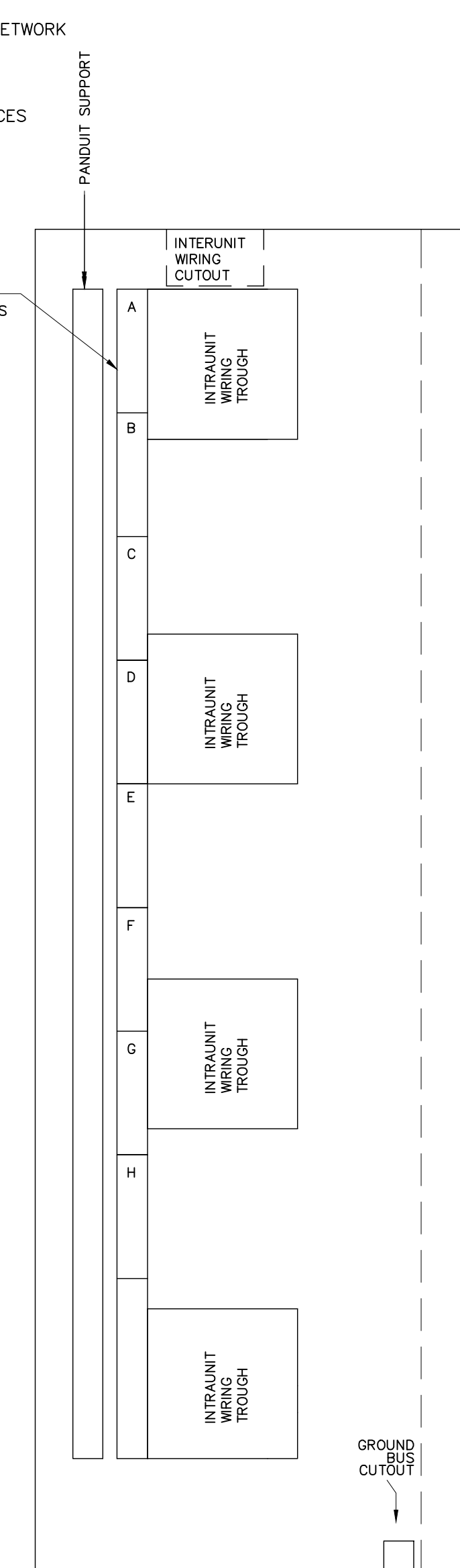
FRONT

**LEGEND**  
F.O.C. FIBER OPTIC CABLE

**NOTES:**  
1.) REMOVE DUCT FINGERS (SIDE OF DUCT ADJACENT TO DEVICES) ON LEFT & RIGHT SIDES OF RACK AS NEEDED.  
2.) THERE WILL BE 6 SWITCHBOARDS WITH THIS DESIGN



SECTION F-F



SECTION E-E

NO.	ISSUED FOR	DATE	REVISIONS
A	FOR BID	09/24/2023	

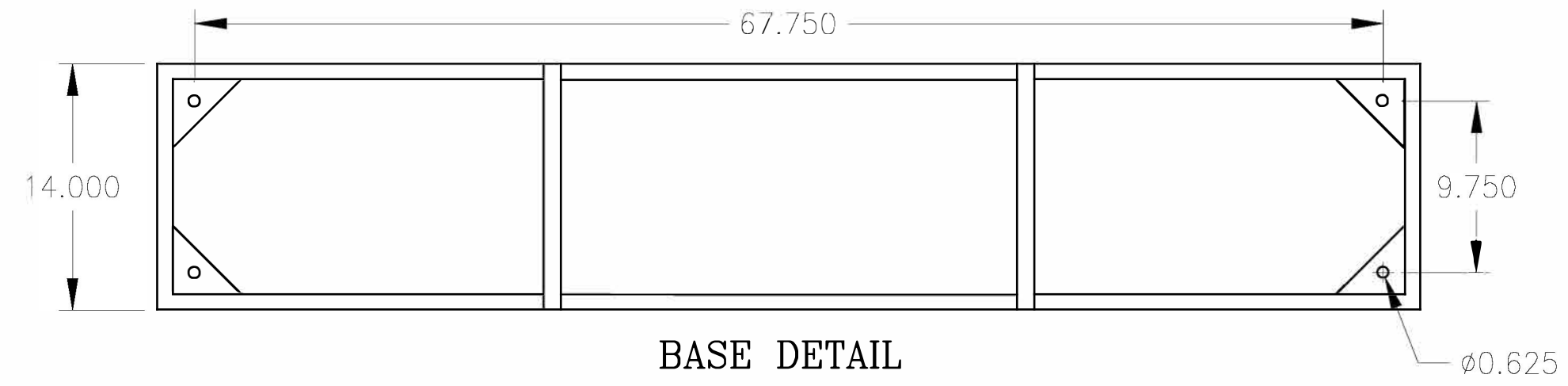
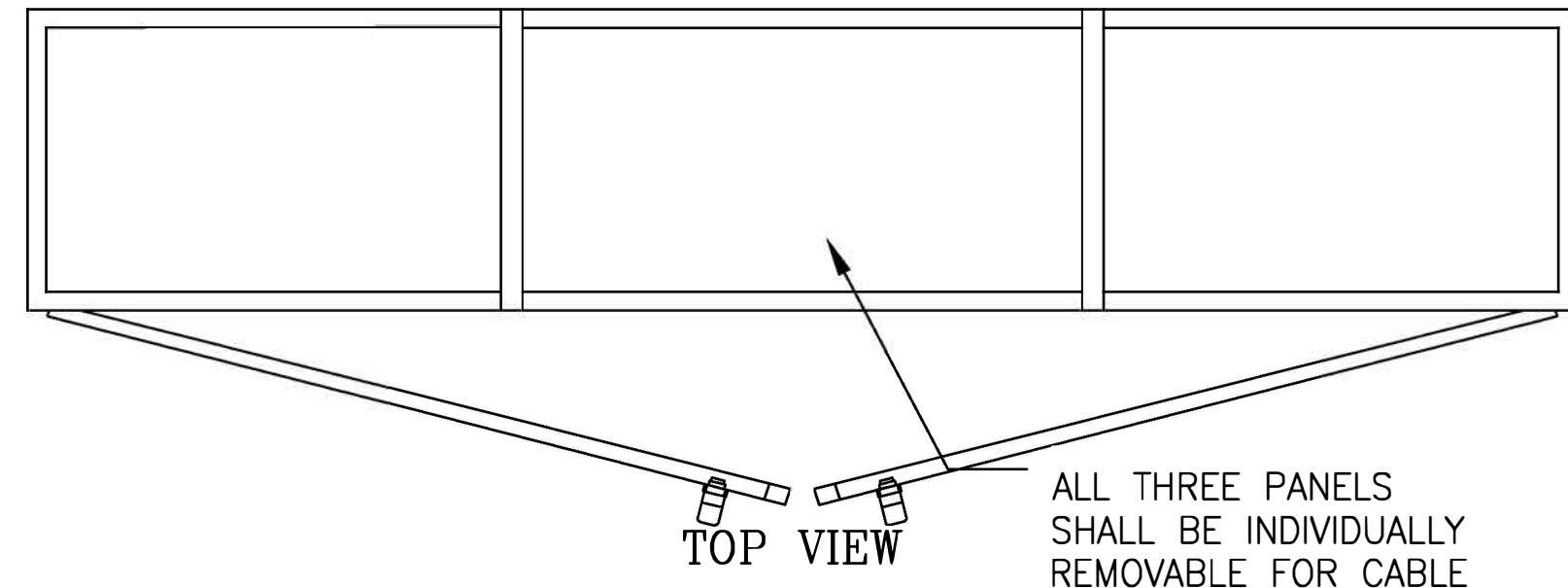
PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 KV SUBSTATION  
DRAWING TITLE: SWITCHBOARD NO.4 ARRANGEMENTS AND DETAILS

DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12510
SHEET:	





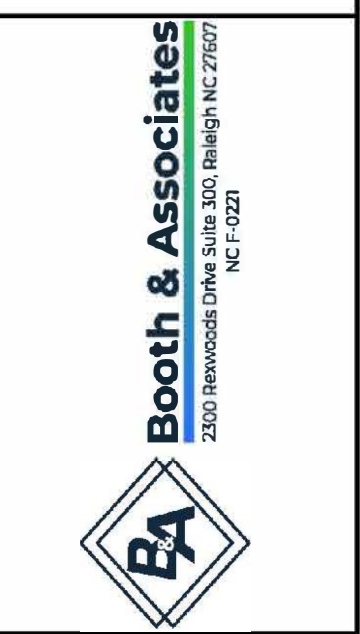
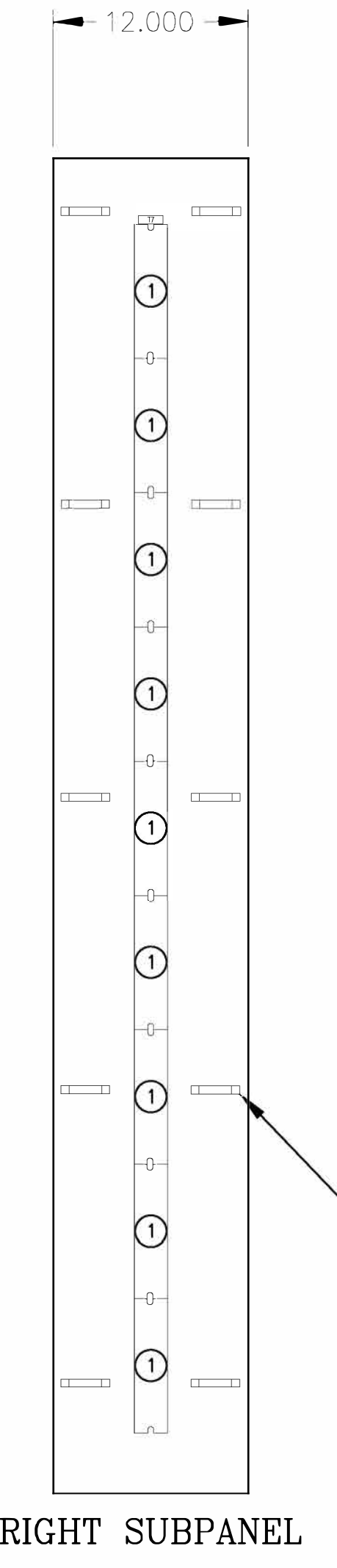
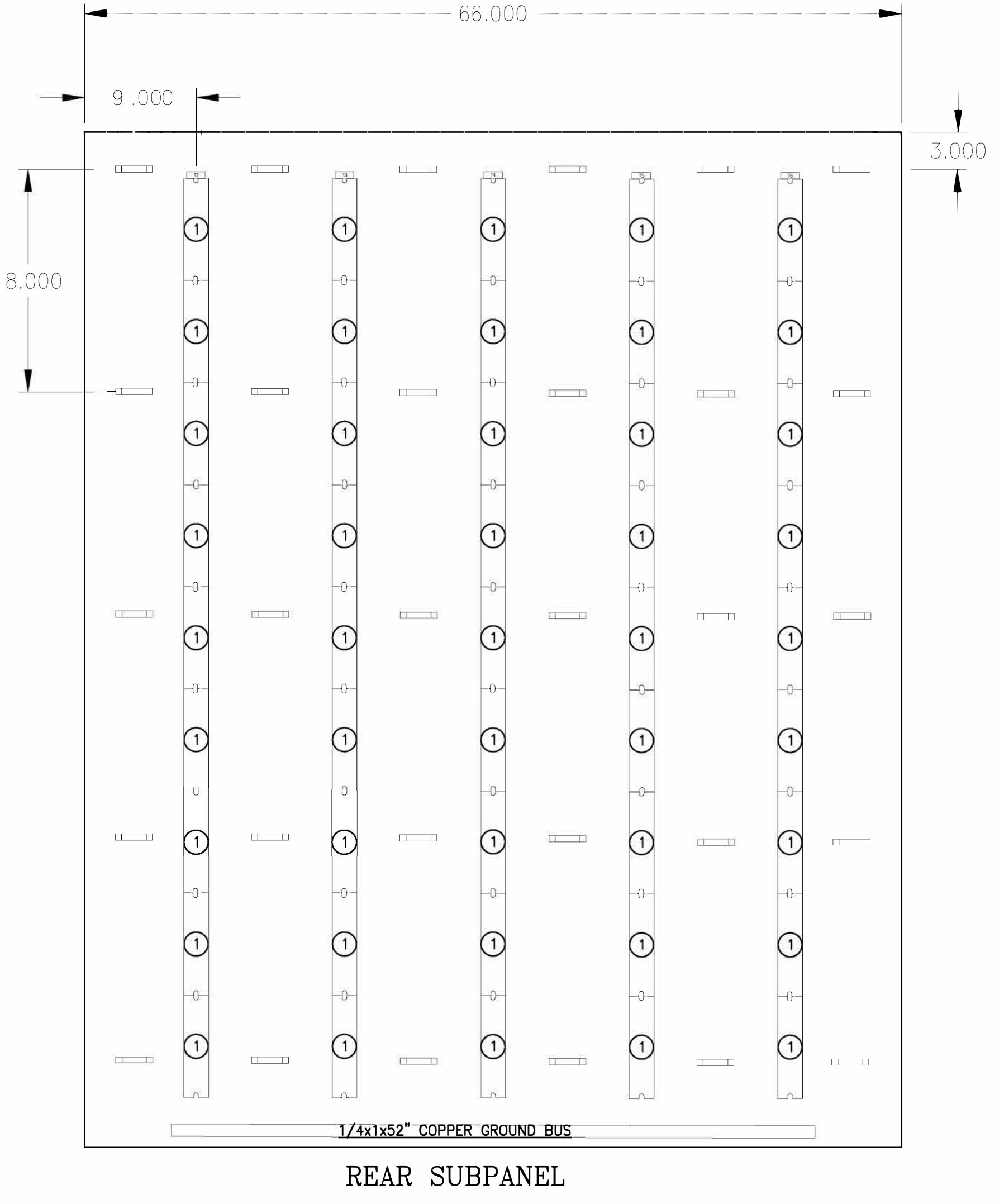
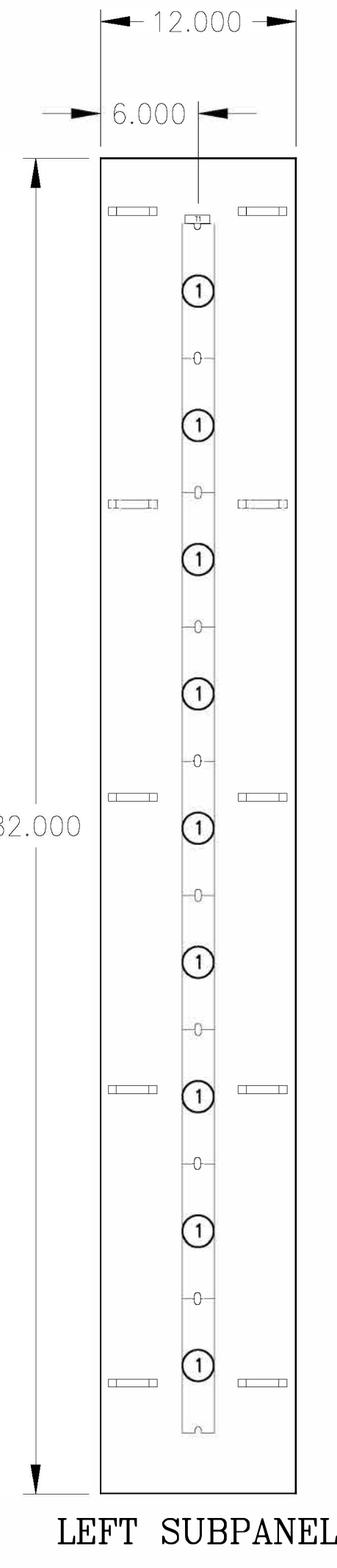
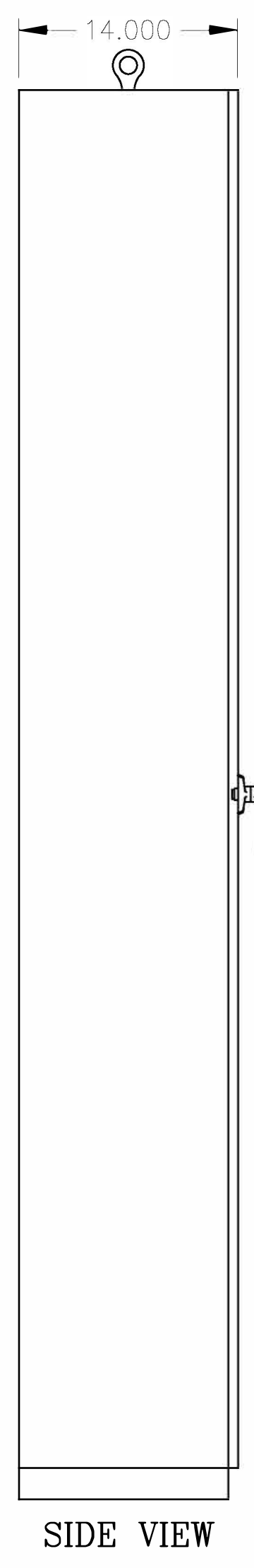
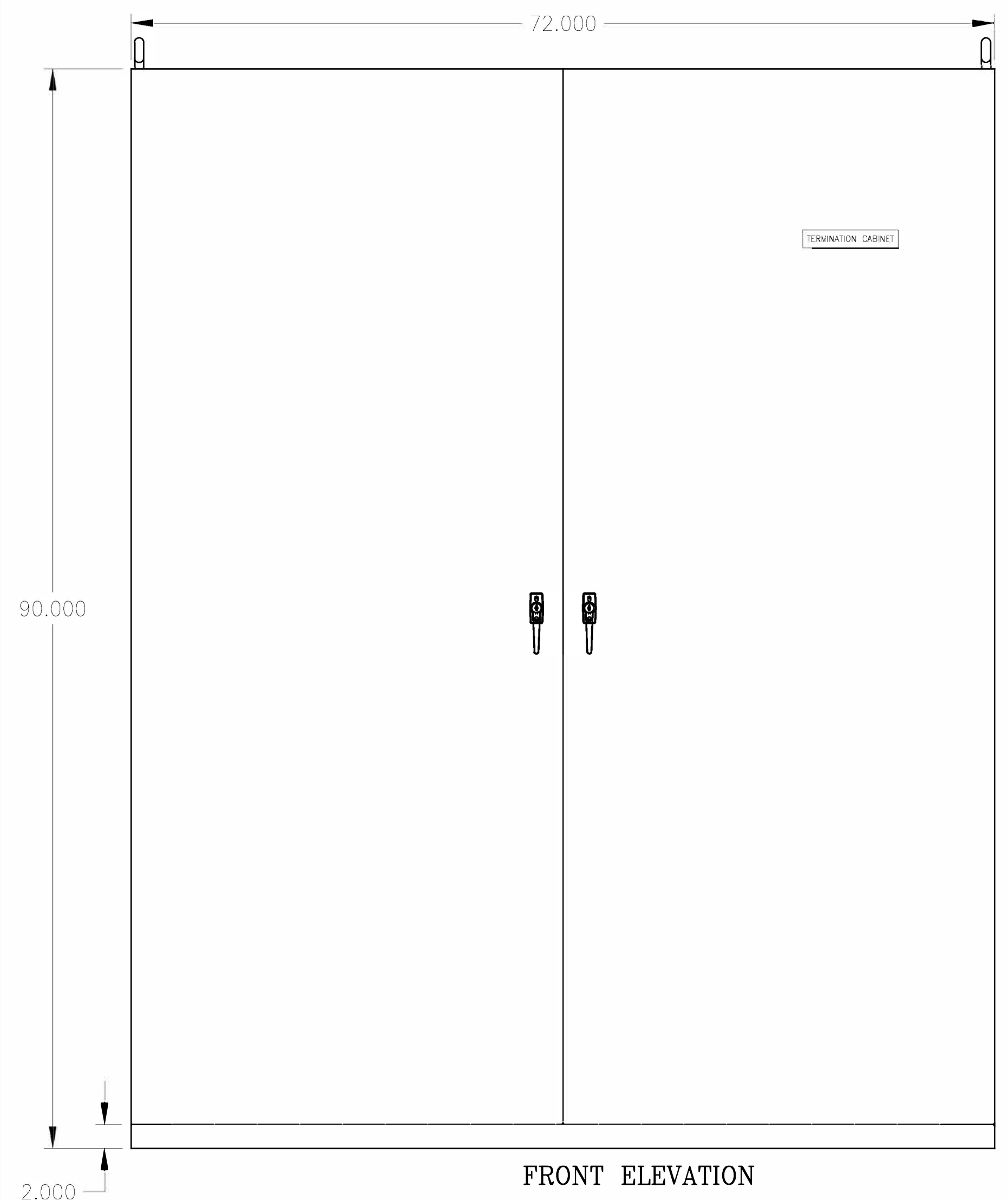




BILL OF MATERIAL				
ITEM NO.	QTY.	MANUF.	PART NO.	DESCRIPTION
1	63	GE	EB25B12	12 POINT TERMINAL BLOCK

NAMEPLATE LEGEND				
NPLT NO.	LINE 1	LINE 2	LINE 3	SIZE
TERMINATION CABINET				8 X 1.5
T1, T2, T3, T4, T5, T6, T7				0.5 X 1.5

- NOTES:**
1. NAMEPLATES ARE ---- BLACK WITH WHITE LETTERS.
  2. PROVIDE NAMEPLATES FOR FUSE BLOCKS, TERMINAL BLOCKS AND ANY OTHER INTERIOR DEVICE IDENTIFICATIONS.



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NO.	ISSUED FOR	REVISIONS	ENG.	DATE
A			BMJ	09/24/2023

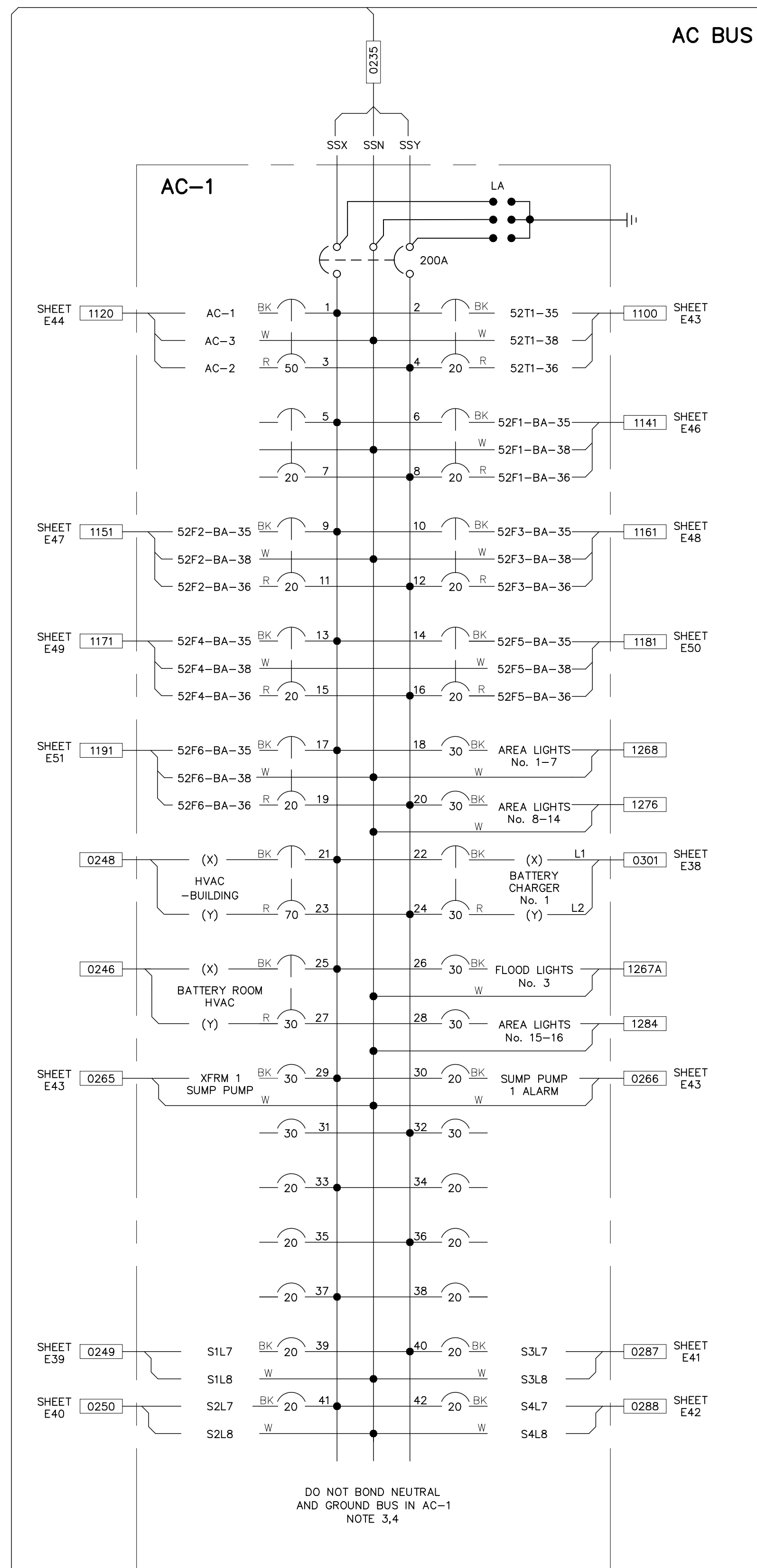
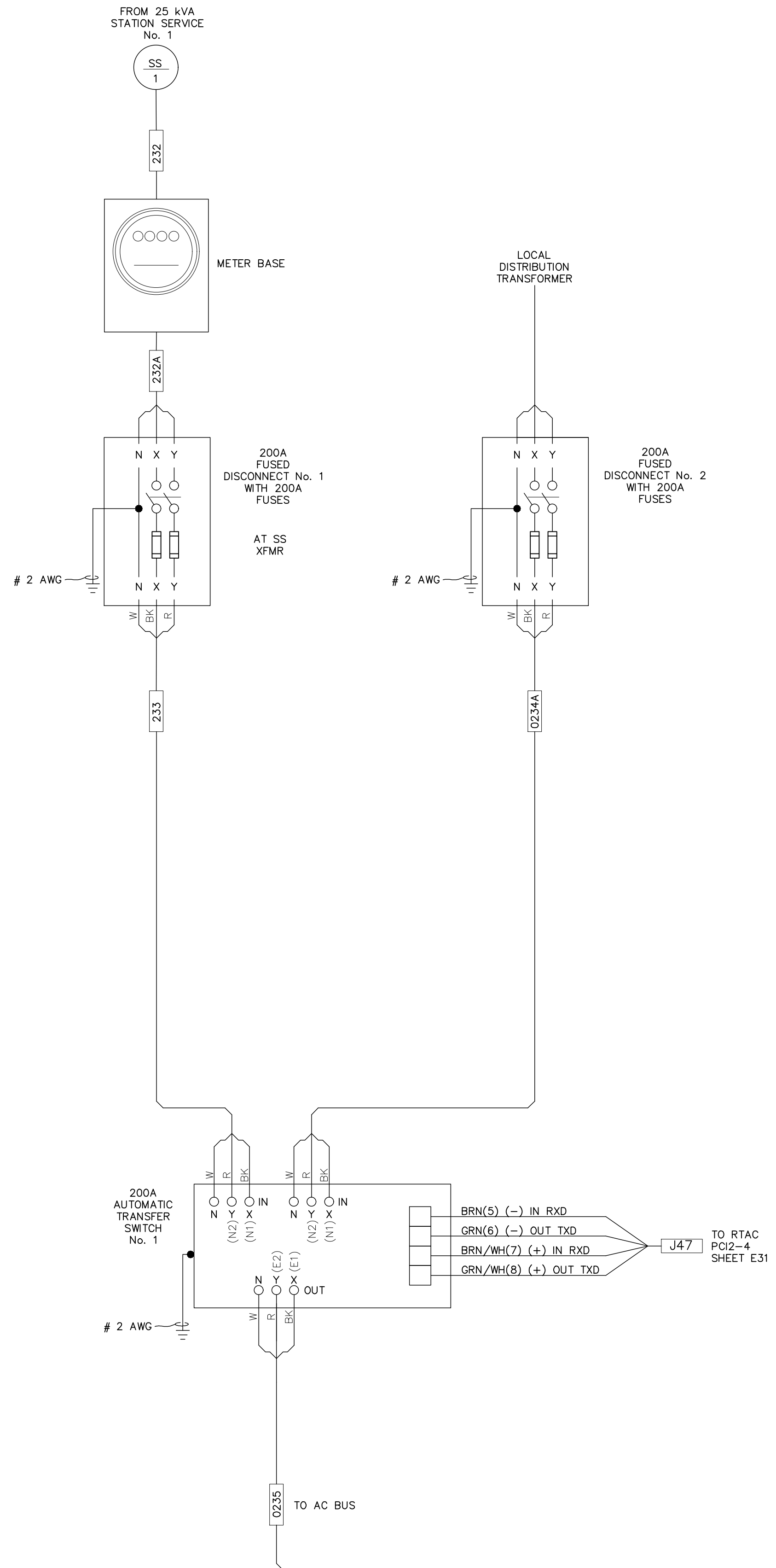
PROJECT NAME:	CUMBERLAND ROAD 69 TO 15 X 25 KV SUBSTATION
DRAWING TITLE:	TERMINATION CABINET OUTLINE
DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12510
SHEET:	E14

**THERE WILL BE 4 SWITCHBOARDS WITH THIS DESIGN**

NO.	ISSUED FOR	REVISIONS	ENG.	DATE
A	ISSUED FOR BID		BMJ	09/24/2023

PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 KV SUBSTATION  
 DRAWING TITLE: AC-1 & AC-2 PANELS INTERCONNECTION DIAGRAM

DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12510
SHEET:	



NOTES:

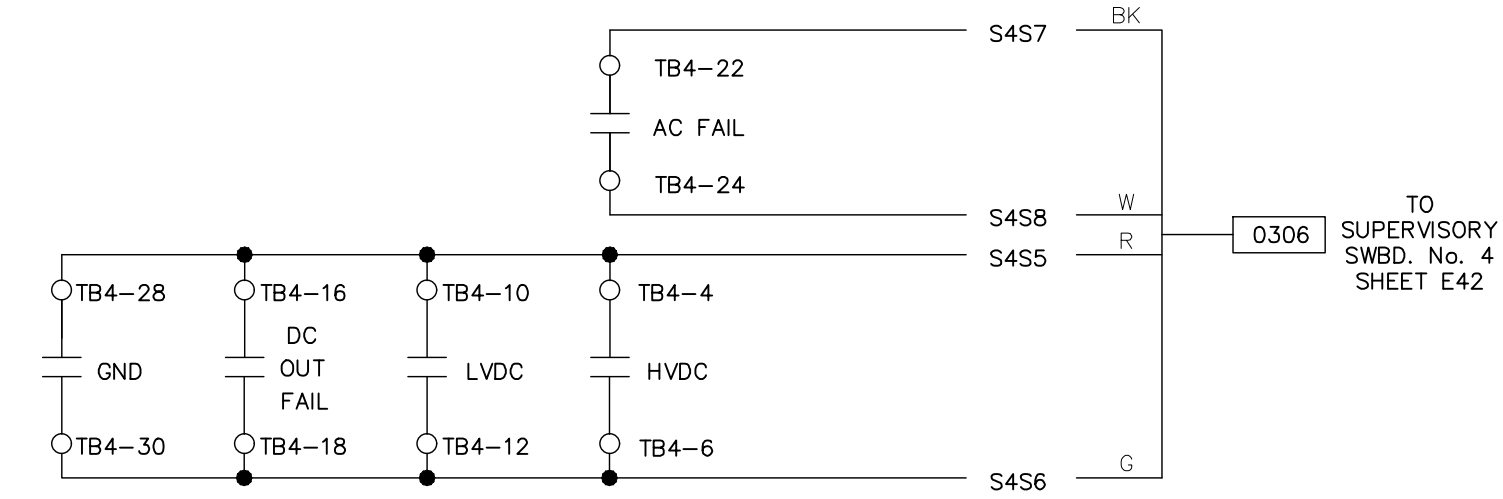
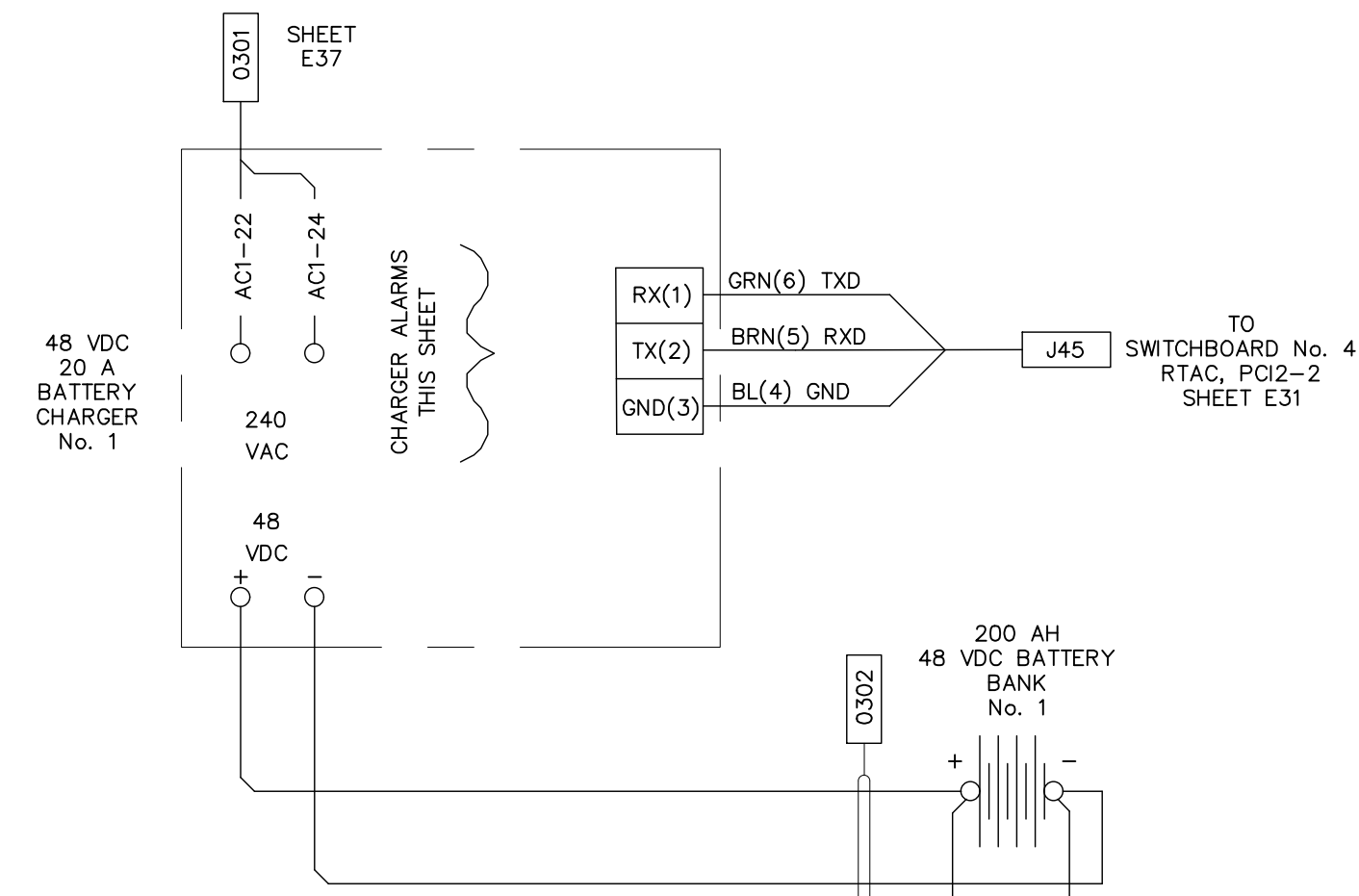
- ALL AC BRANCH FEEDERS SHALL OBSERVE THE FOLLOWING COLOR CODE:  
X-BLACK Y-RED N-WHITE G-GREEN
- CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR INSTALLATION OF METER SOCKET. METER UNIT WILL BE INSTALLED BY OWNER.
- GROUND WIRES ARE USED BUT NOT SHOWN.
- NEUTRAL TO BE GROUNDED ONCE AT STATION SERVICE DISCONNECT AND ONCE AT DISTRIBUTION TRANSFORMER DISCONNECT.

DEVICE CODES

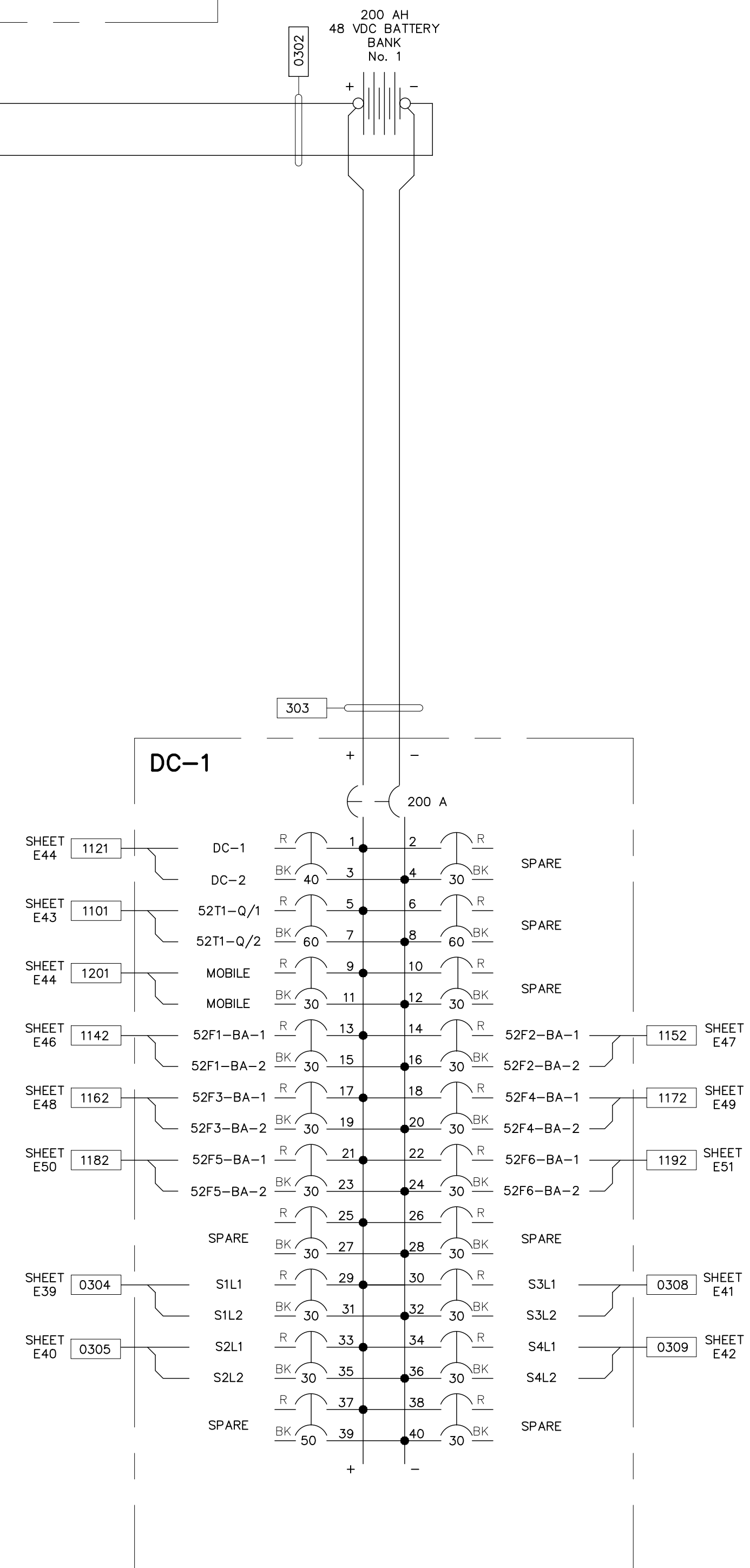
- AC-X AC SERVICE BREAKER PANEL No. x  
 SX SWITCHBOARD No. x  
 TX TRANSFORMER No. x  
 52-X BREAKER No. x

PRELIMINARY





CHARGER No. 1 ALARM CONTACTS



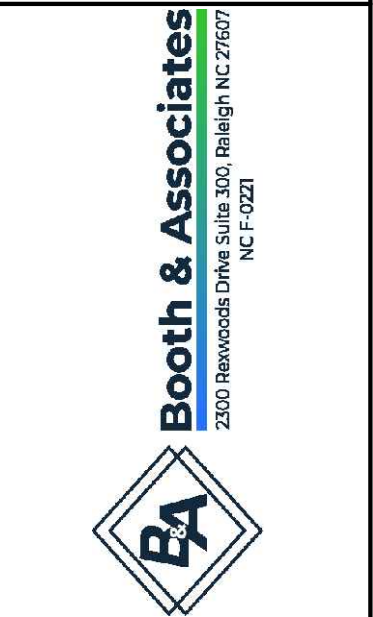
225 AMP, 42 CKT PANEL

**NOTES:**

1. ALL METALLIC JUNCTION BOXES, RACEWAYS, CABLE TRAYS, PANELS AND ENCLOSURES SHALL BE BONDED TO THE SUBSTATION GRID.
2. ALL DC BRANCH FEEDERS SHALL OBSERVE THE FOLLOWING COLOR CODE:  
POSITIVE (+) - RED    NEGATIVE (-) - BLACK

**DEVICE CODES**

- DC-X    DC PANEL No. x  
SX      SWITCHBOARD No. x  
TX      TRANSFORMER No. x  
52-X    BREAKER No. x



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CONSTRUCTION

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NO.	ISSUED FOR	REVISED	ENG.	DATE
1	A		EWJ	09/24/2023

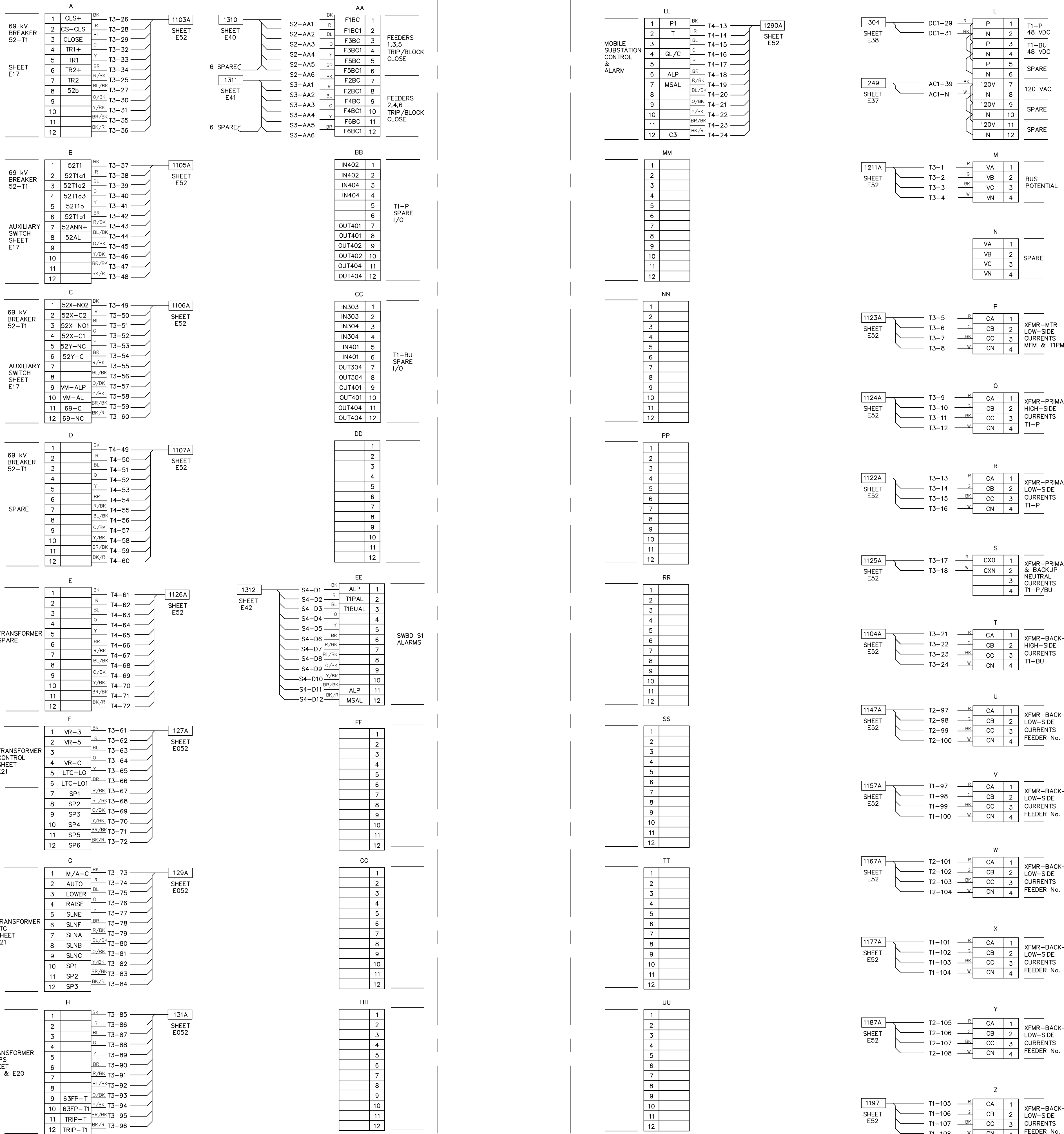
PROJECT NAME:	CUMBERLAND ROAD 69 TO 15 X 25 KV SUBSTATION
DRAWING TITLE:	DC BREAKER PANEL INTERCONNECTION DIAGRAM
DRAWN BY:	JRT
CHECKED BY:	DAW
APPROVED BY:	MJW
DATE:	3/16/2022
SCALE:	NTS
FILE NUMBER:	12510
SHEET:	E38

SWITCHBOARD No. 1 – S1

69 kV LINE No. 1

LEFT SIDE

RIGHT SIDE



FRONT

LEFT SIDE

RIGHT SIDE

SWITCHBOARD No. 1 – S1  
PANEL REAR VIEW

**PRELIMINARY**

**CONTROL AND INDICATION**

1	BK
2	R
3	BL
4	O
5	Y
6	BR
7	R/BK
8	BL/BK
9	O/BK
10	Y/BK
11	BR/BK
12	BK/R

**CT & PT**

A	R
B	G
C	BK
N	W

**AC**

X	BK
Y	R
N	W
G	G

**DC**

POS	R
NEG	BK

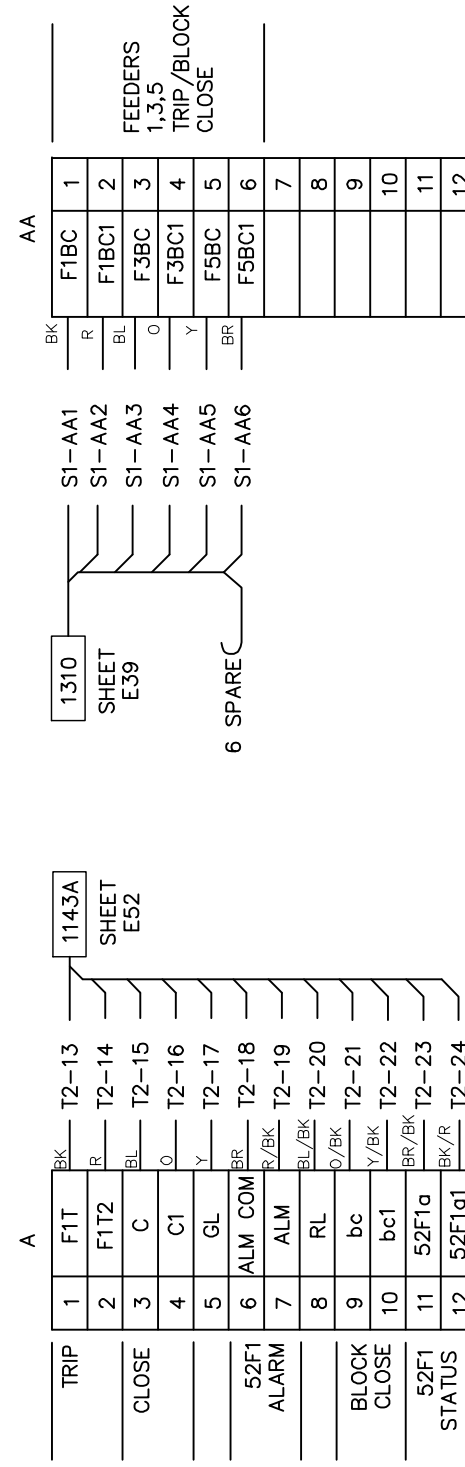
WIRE COLOR CODE

PROJECT NAME: <b>CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION</b>	NO.	REVISIONS	ENG.	DATE
	A	ISSUED FOR BID	BWJ	08/24/2023
DRAWING TITLE: SWITCHBOARD NO.1 INTERCONNECTION DIAGRAM	© 03/2022			
	PRELIMINARY - DO NOT USE FOR CONSTRUCTION			
DRAWN BY: JRT CHECKED BY: DAW APPROVED BY: MWW DATE: 3/16/2022 SCALE: NTS FILE NUMBER: 12510 SHEET: E39	PROJECT NAME: <b>CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION</b>		DRAWING TITLE: SWITCHBOARD NO.1 INTERCONNECTION DIAGRAM	
Booth & Associates 2300 Reewoods Drive Suite 300, Raleigh NC 27607 NC F-0221		PWC Fayetteville's HOME TOWN UTILITY		

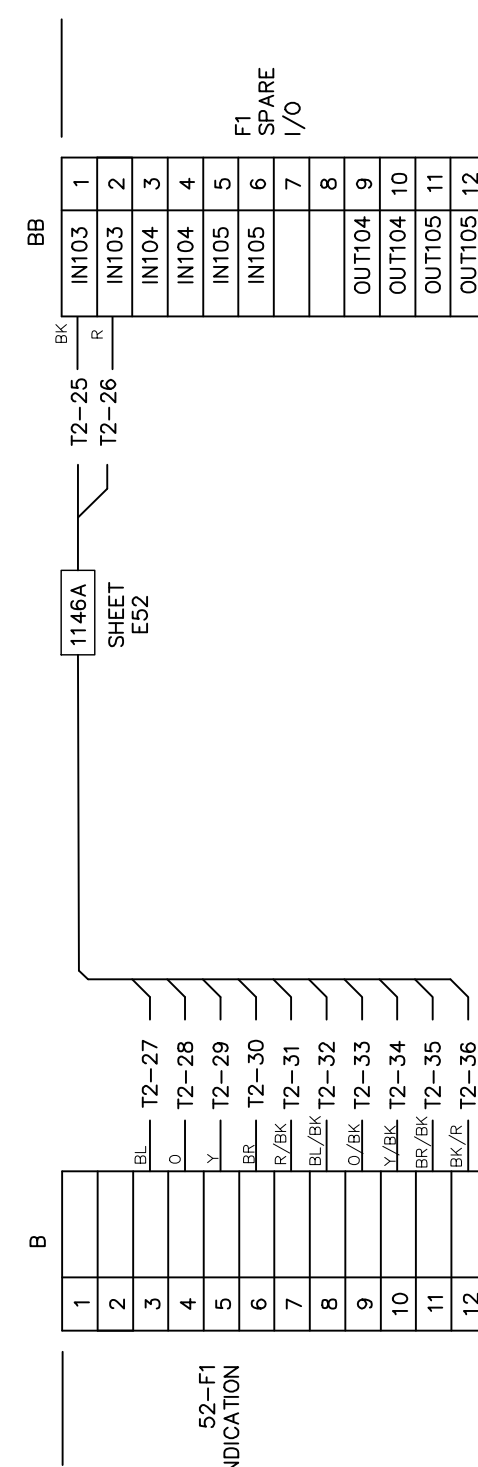


SWITCHBOARD No. 2 - S2  
15 kV FEEDERS No. 1, 3, 5

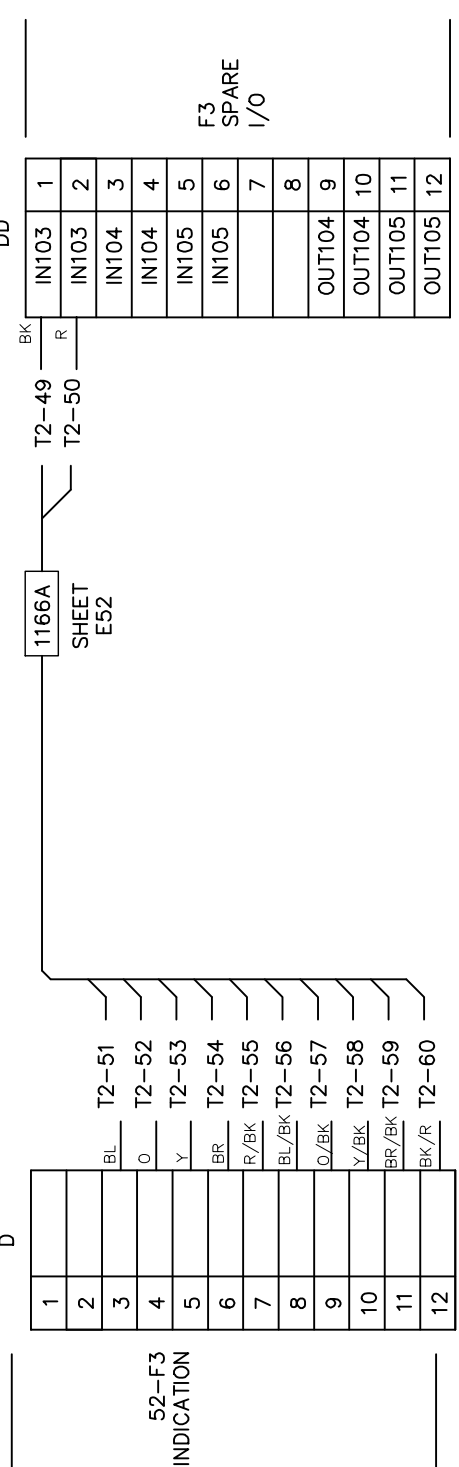
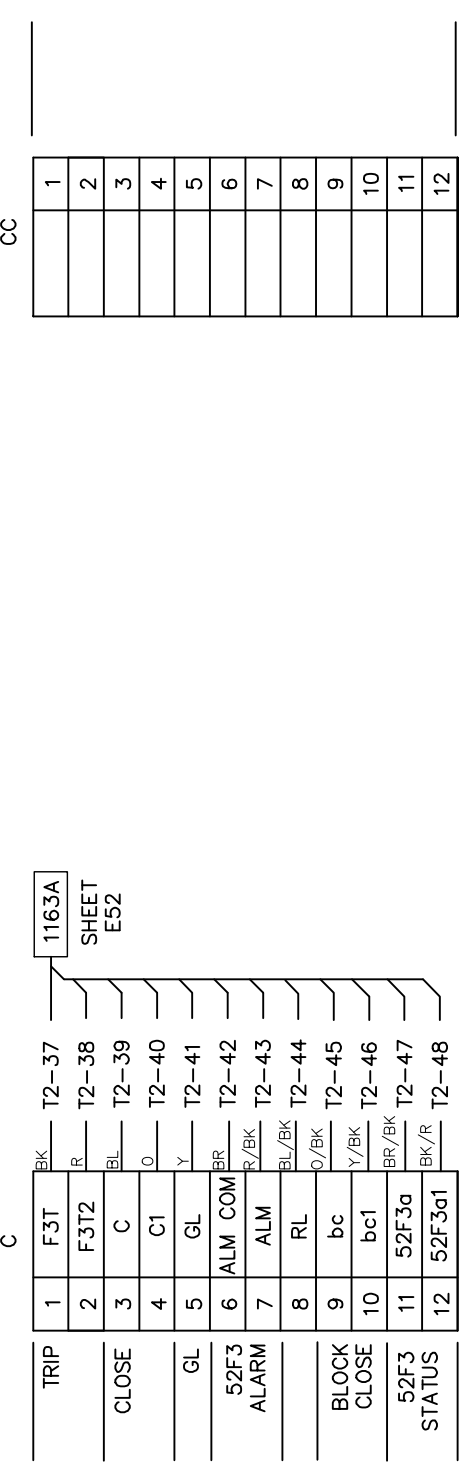
LEFT SIDE



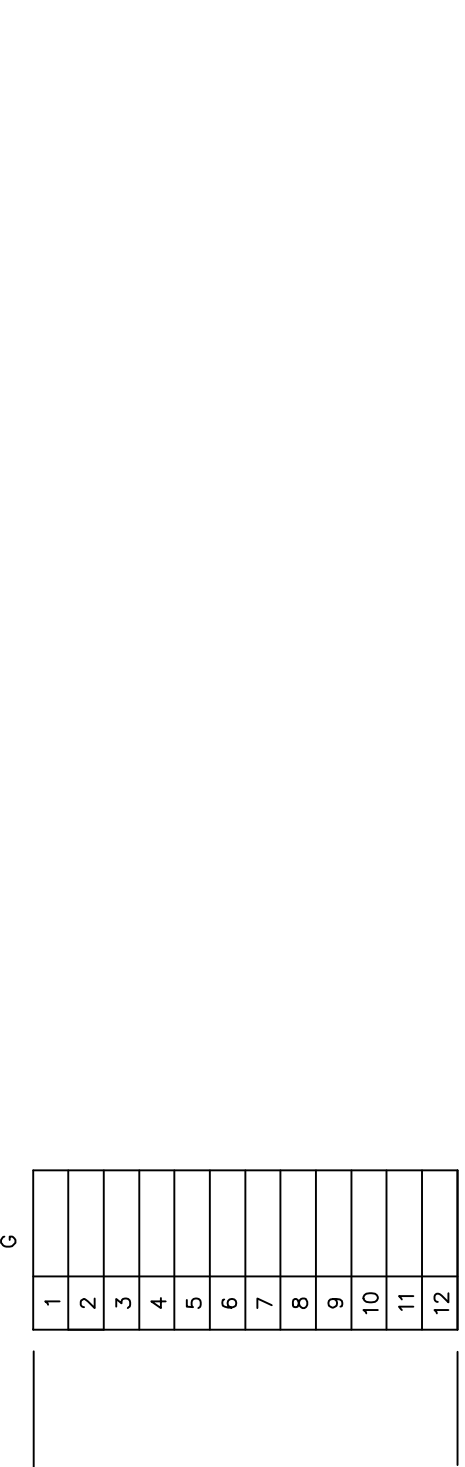
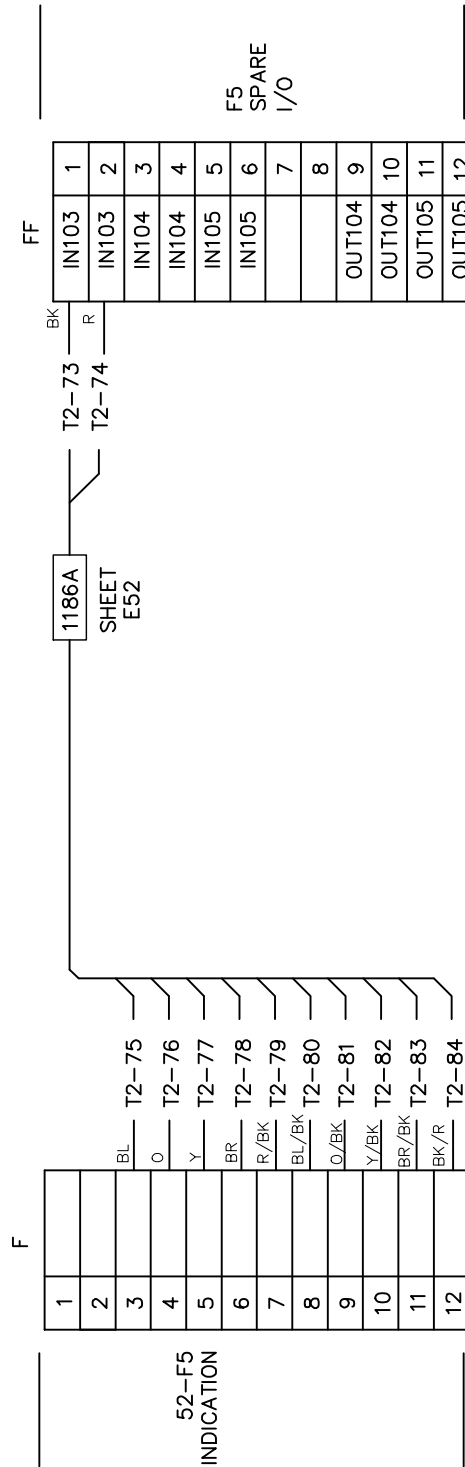
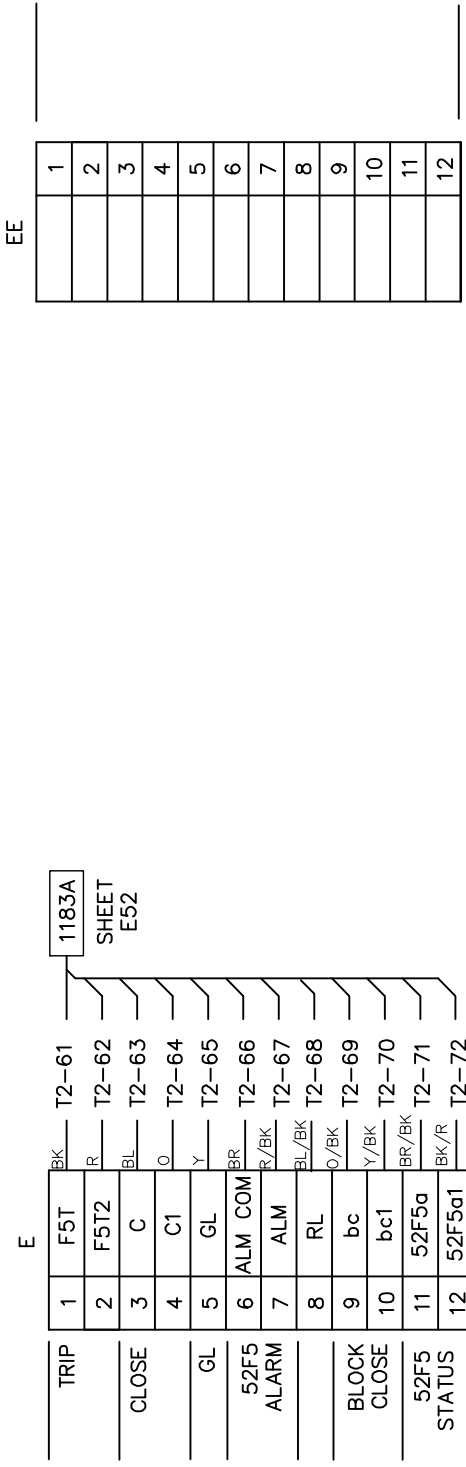
BKR No. 52F1



BKR No. 52F3

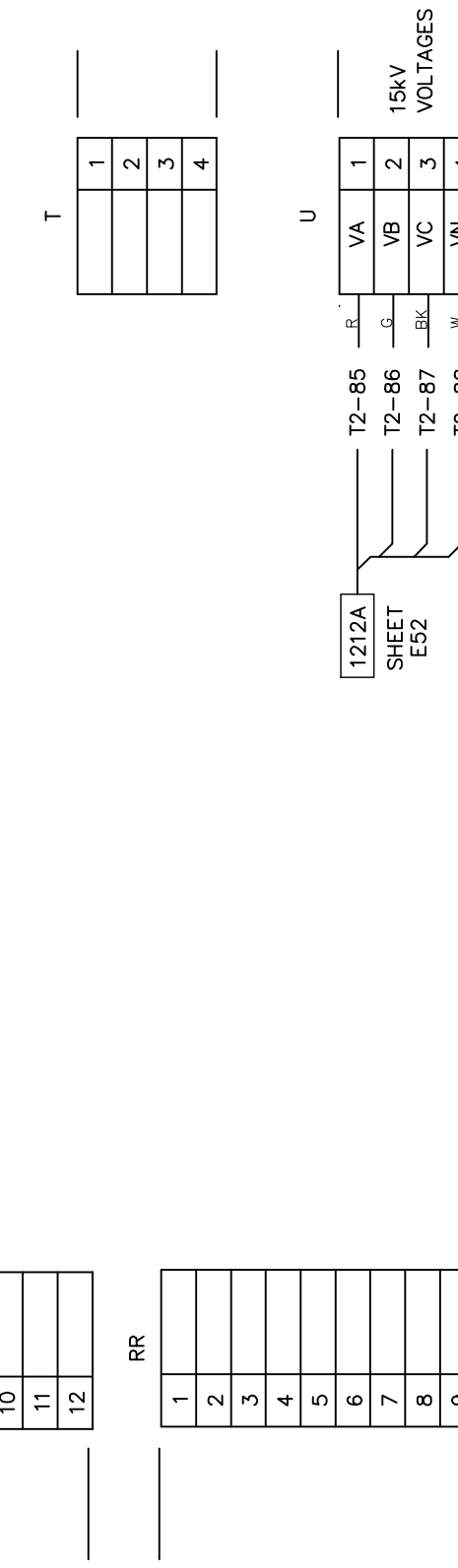
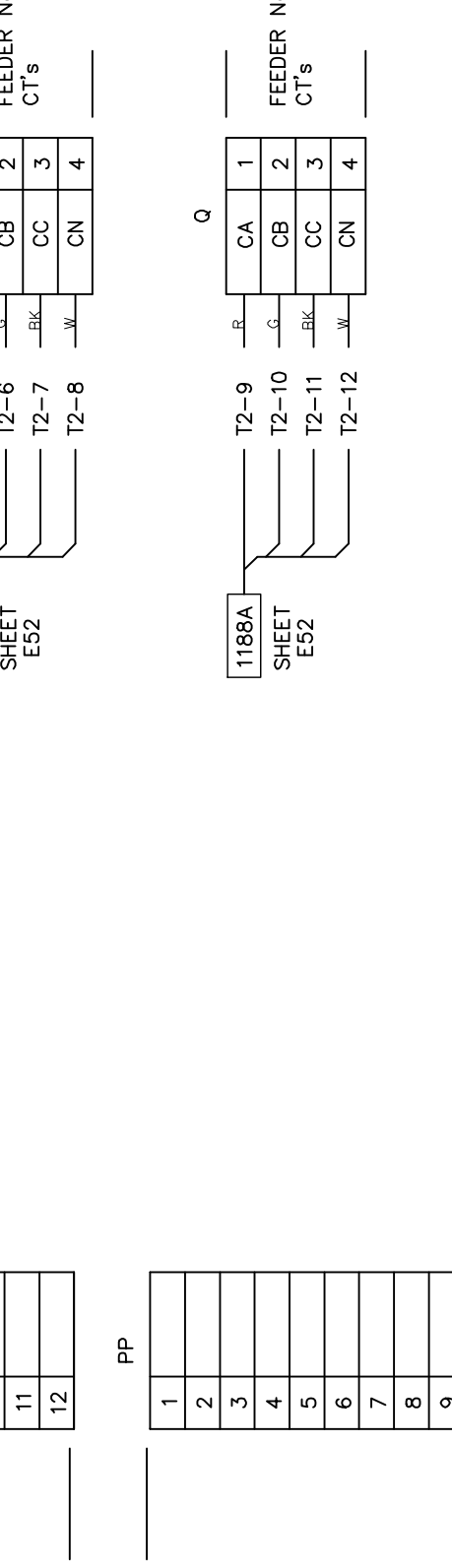
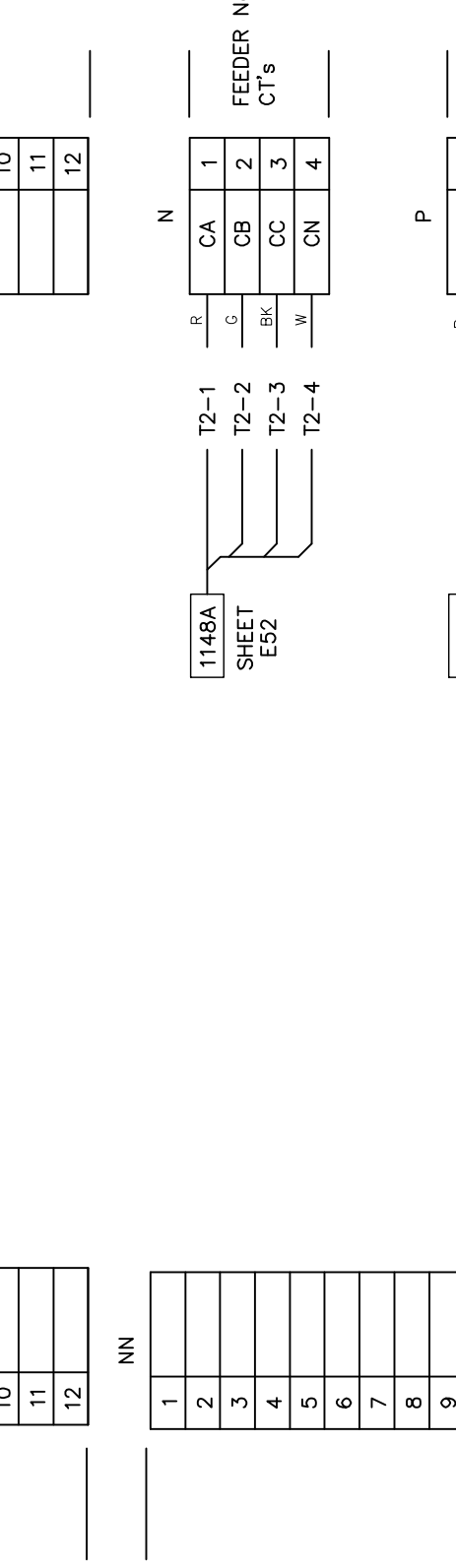
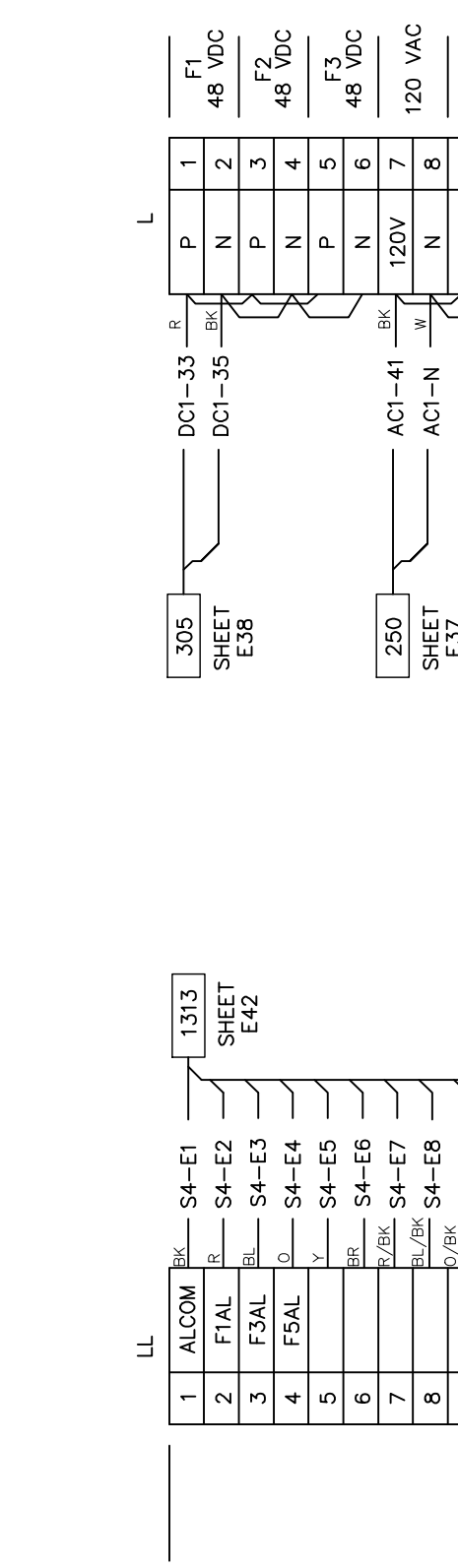


BKR No. 52F5



**PRELIMINARY**

RIGHT SIDE



LEFT SIDE

FRONT

RIGHT SIDE

SWITCHBOARD No. 2 - S2  
PANEL REAR VIEW

CONTROL AND INDICATION

1	BR
2	R
3	BL
4	O
5	Y
6	BR
7	R/BR
8	BU/BR
9	O/BR
10	V/BR
11	BU/BR
12	BR/R

CT & PT

A	R
B	O
C	BR
N	W
N	W

AC

X	BR
Y	R
N	W
G	G

DC

POS	R
NEG	BR

WIRE COLOR CODE

ENG. DATE

NO. ISSUED FOR BID

REVISIONS

PROJECT NAME:

DRAWING TITLE:

ENG. DATE

NO. ISSUED FOR BID

REVISIONS

PROJECT NAME:

DRAWING TITLE:



PRELIMINARY - DO NOT USE FOR CONSTRUCTION

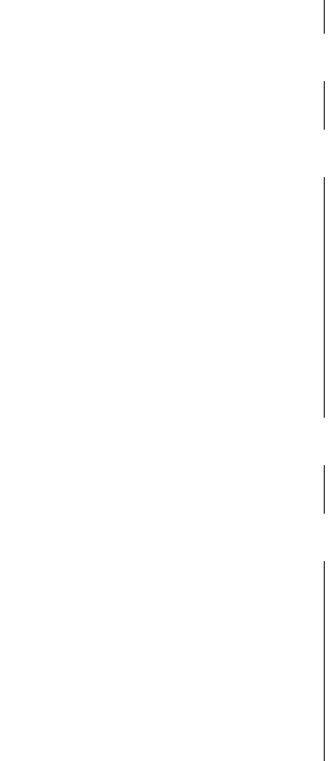
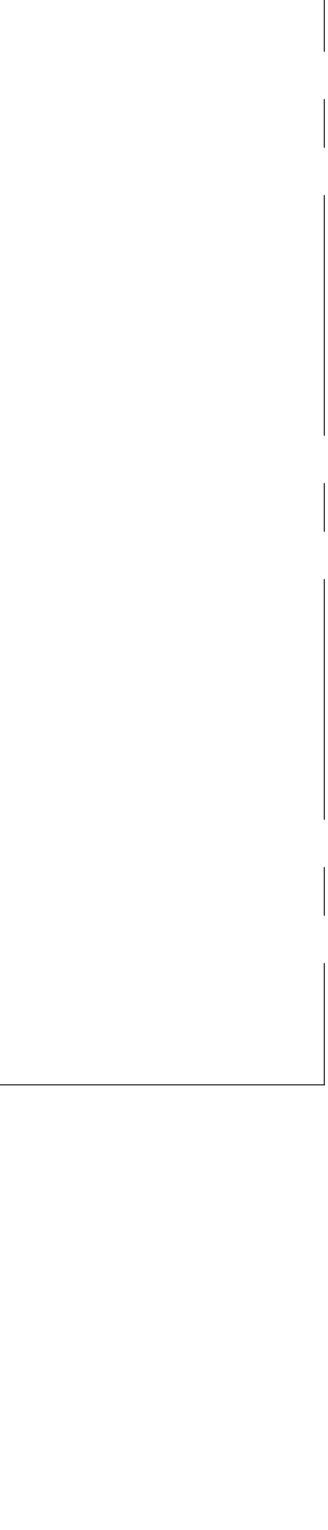
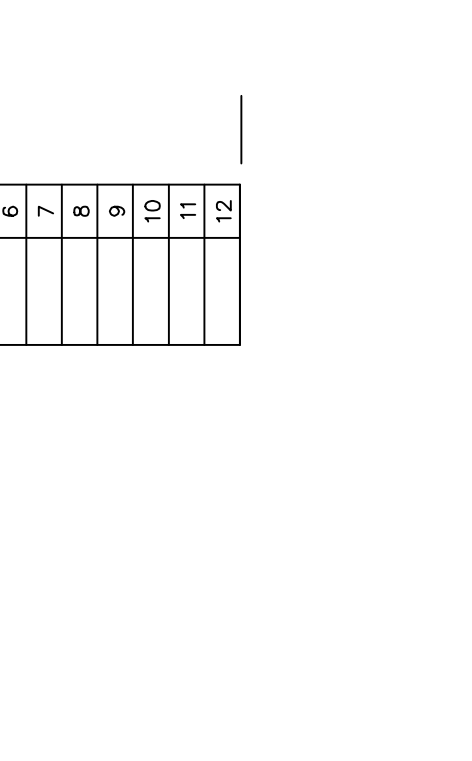
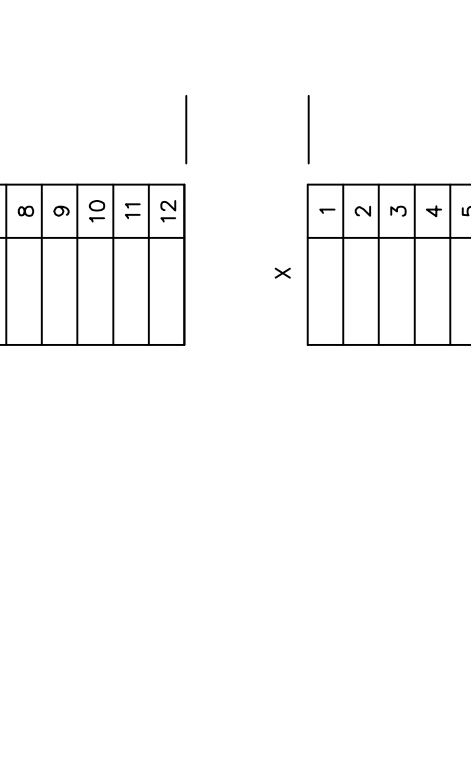
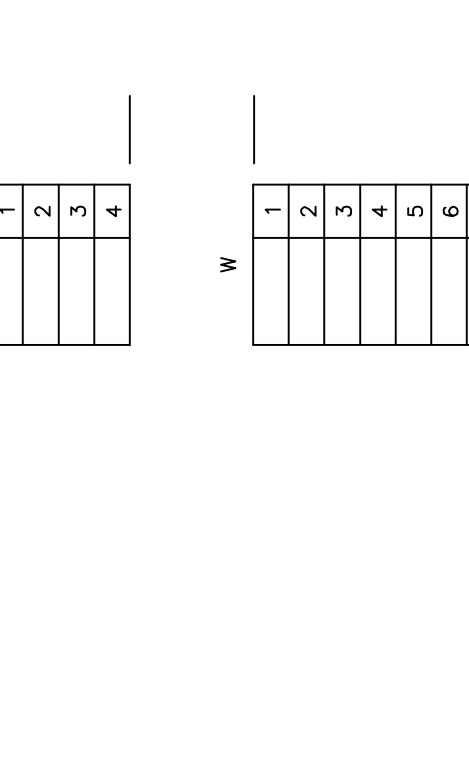
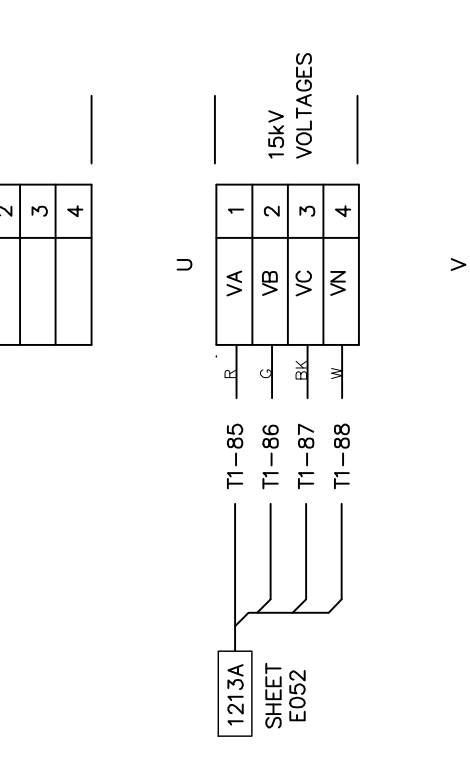
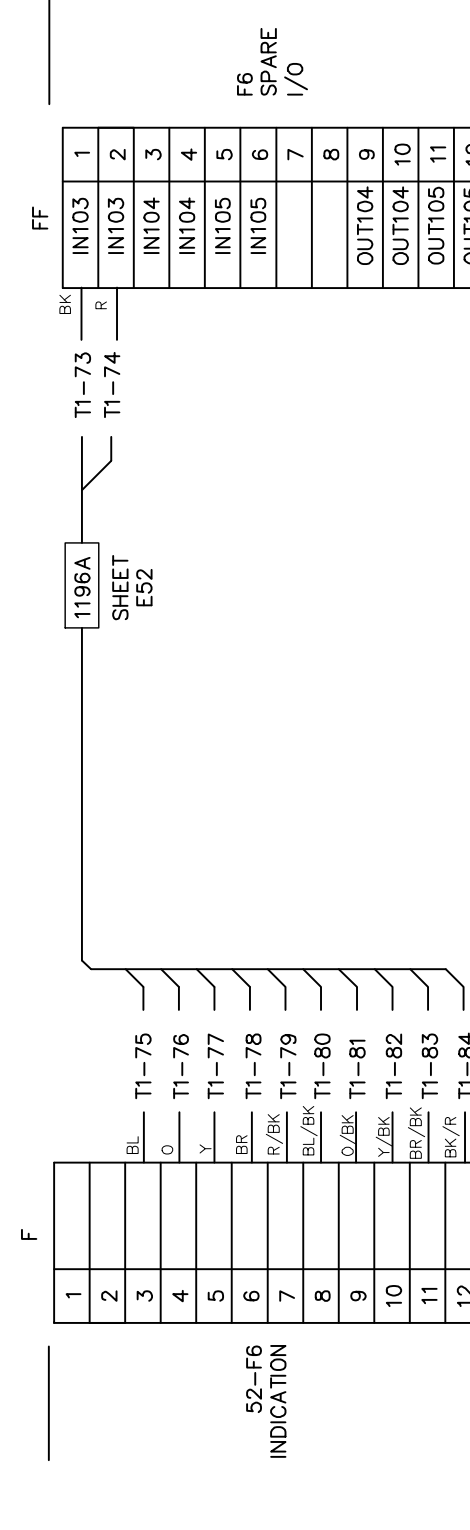
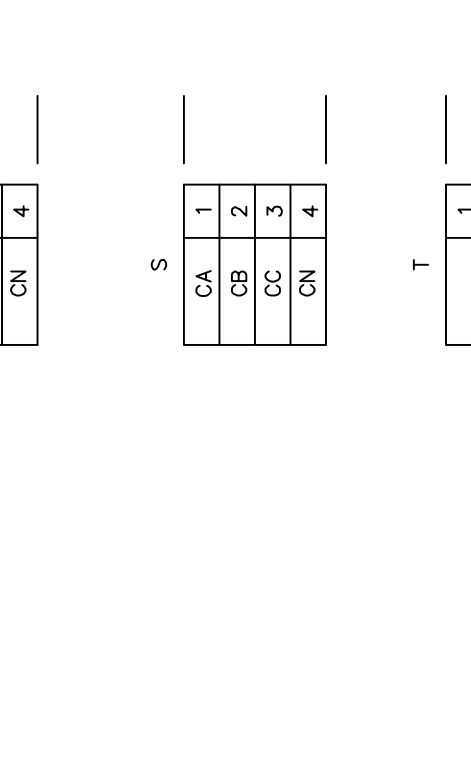
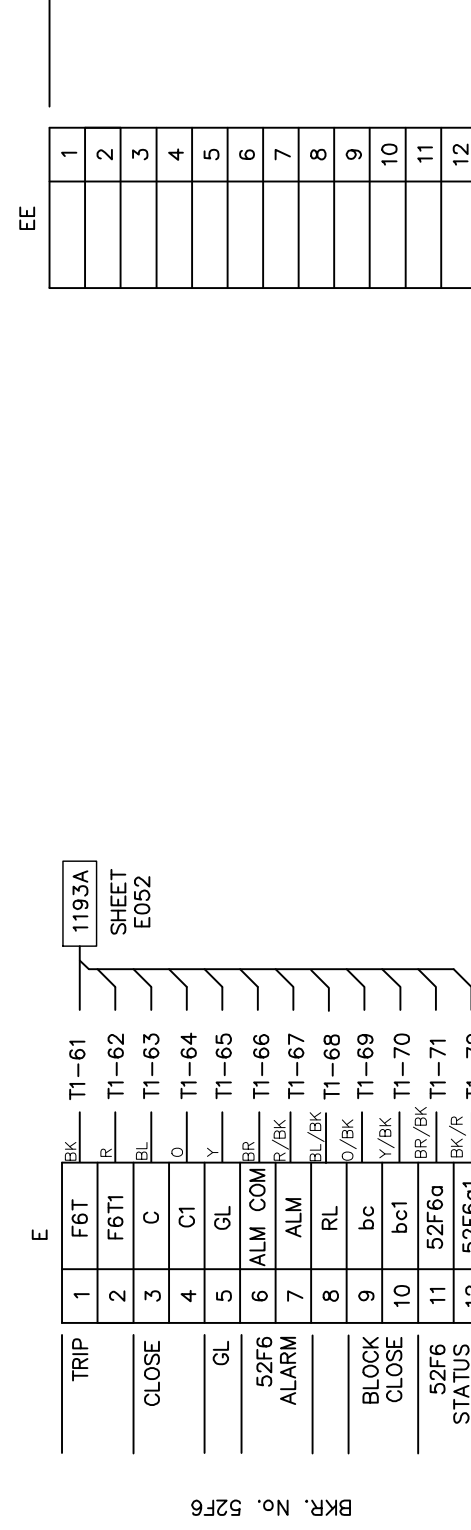
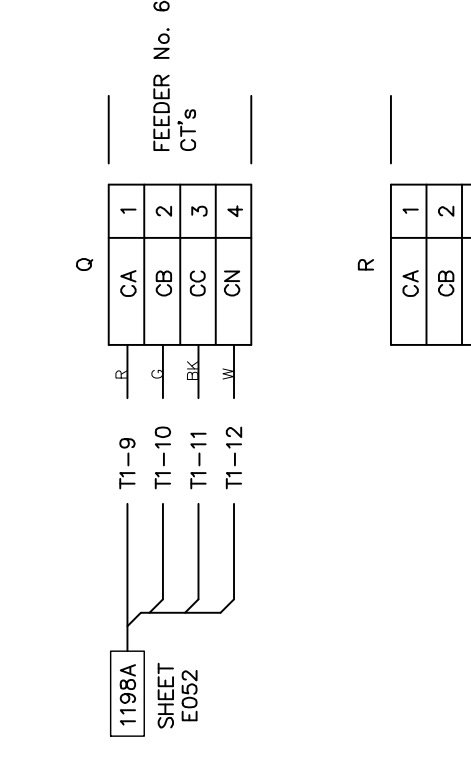
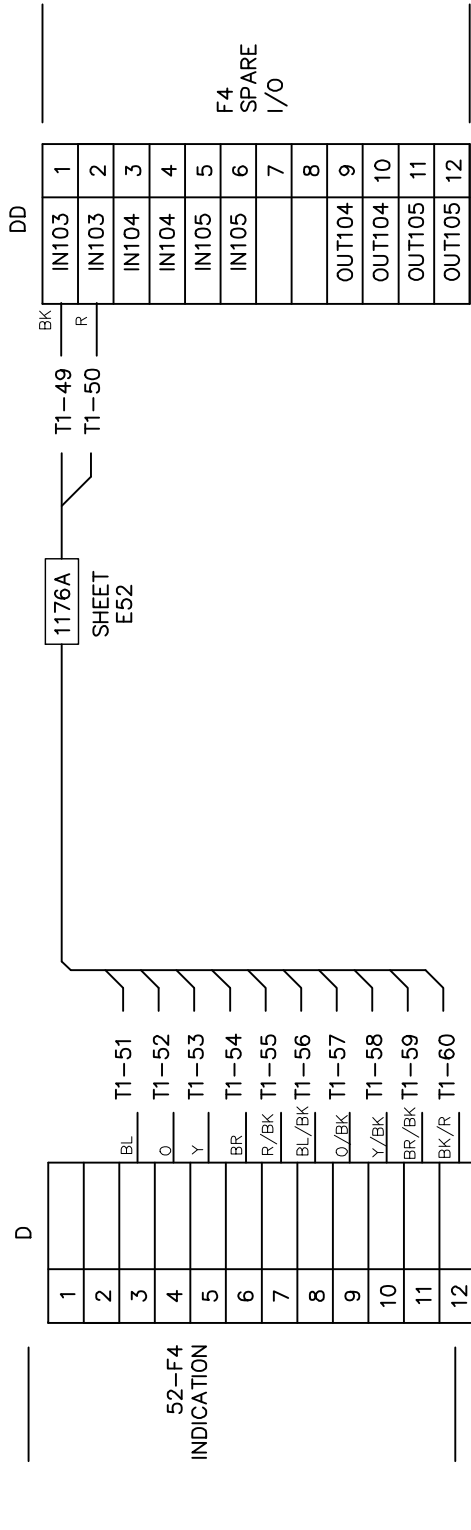
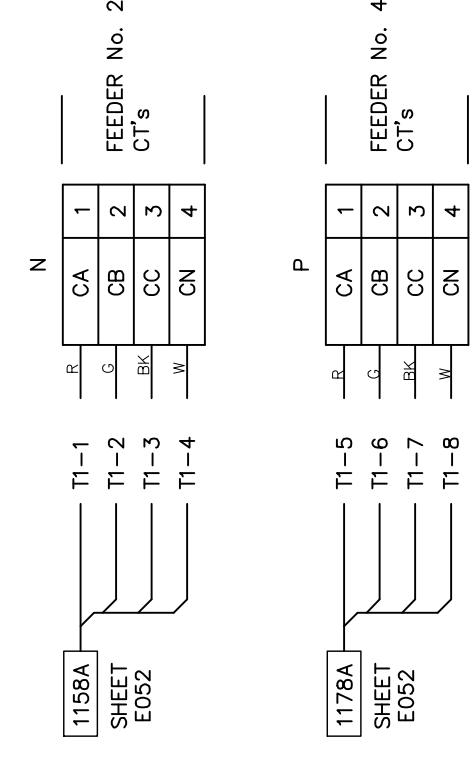
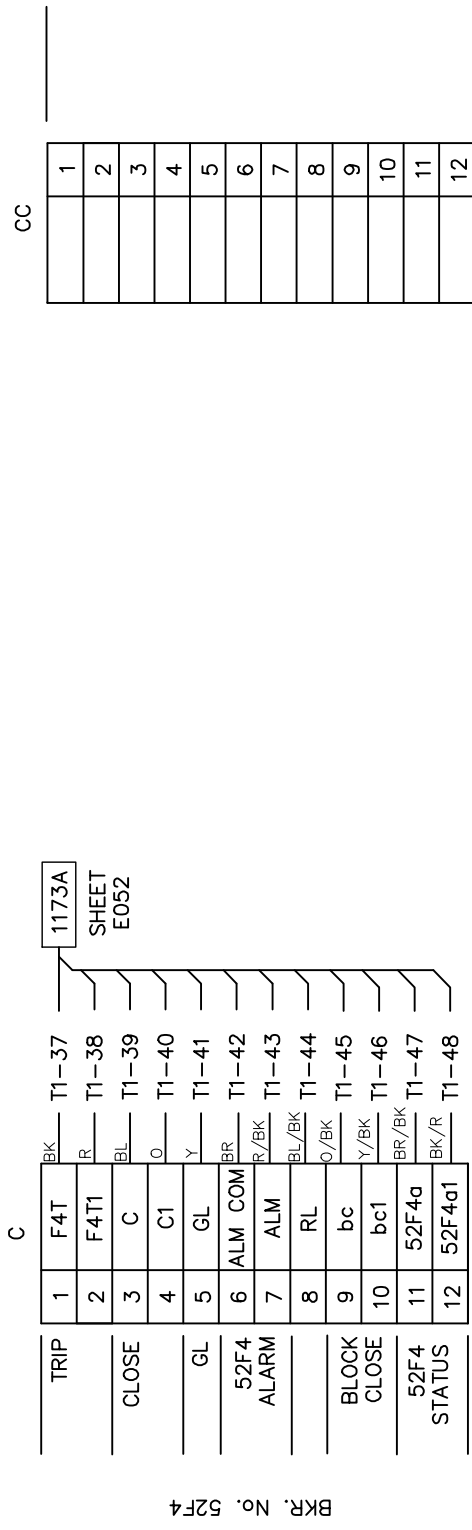
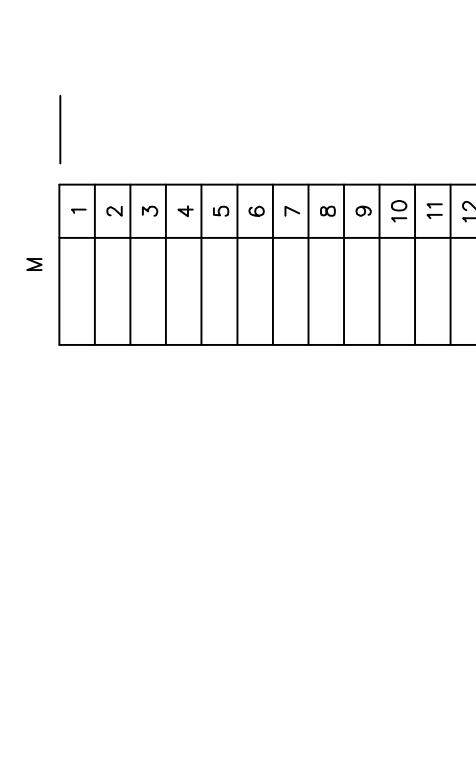
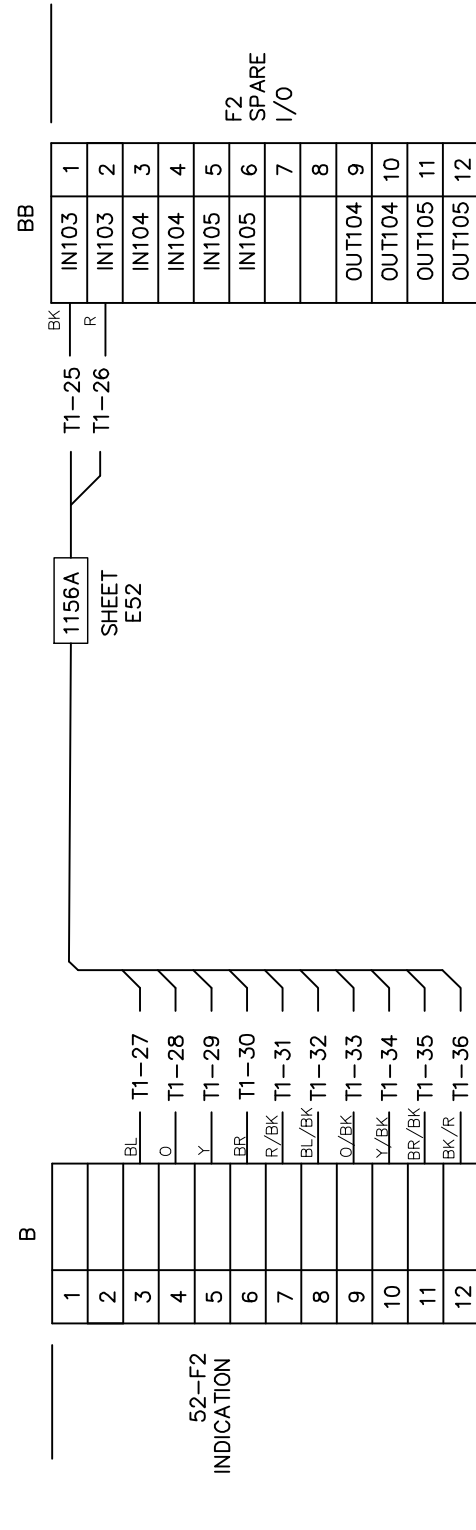
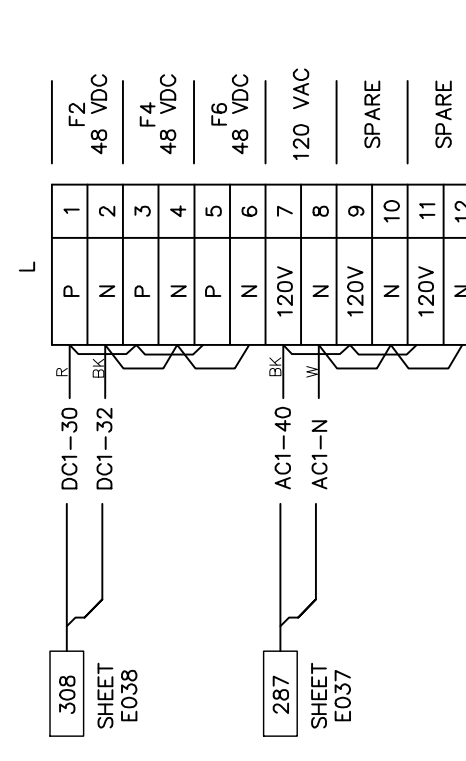
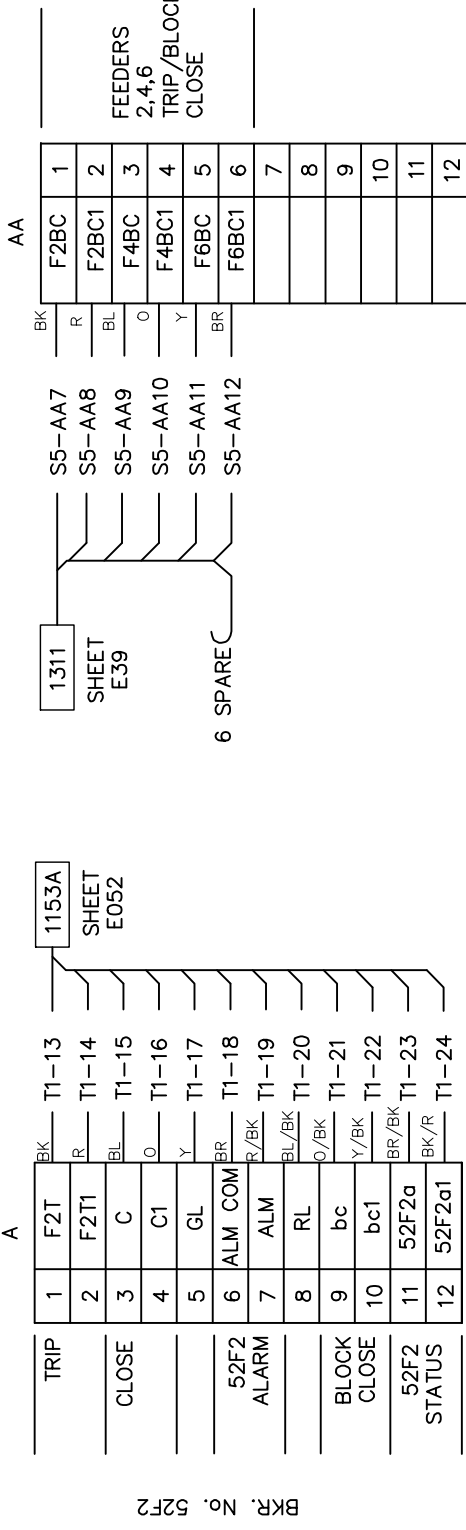
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NO.	ISSUED FOR BID	REVISIONS	ENG. DATE
A			09/24/2023

PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION  
DRAWING TITLE: SWITCHBOARD NO.2 INTERCONNECTION DIAGRAM  
DRAWN BY: JRT  
CHECKED BY: DAW  
APPROVED BY: MJW  
DATE: 3/16/2022  
SCALE: NTS  
FILE NUMBER: 12510  
SHEET:

SWITCHBOARD No. 3 - S3  
15 KV FEEDERS No. 2, 4, 6

LEFT SIDE



PRELIMINARY

LEFT SIDE

FRONT

RIGHT SIDE

SWITCHBOARD No. 3 - S3  
PANEL REAR VIEW

CONTROL AND INDICATION

1	BLK
2	R
3	BLU
4	WHT
5	Y
6	BRN
7	P/BLK
8	BU/BLK
9	Y/BLK
10	V/BLK
11	BR/BLK
12	BLK/R

CT & PT

A	R
B	G
C	BLK
N	W

AC

X	R
Y	R
N	R
G	G

DC

POS	R
NEG	BLK

WIRE COLOR CODE

NO. ENG. DATE

A ISSUED FOR BID BWU 09/24/2023

REVISIONS

NO. DATE

PROJECT NAME:  
CUMBERLAND ROAD  
69 TO 15 X 25 KV SUBSTATION

DRAWING TITLE:  
SWITCHBOARD NO.3  
INTERCONNECTION DIAGRAM

DRAWN BY: JRT  
CHECKED BY: DAW  
APPROVED BY: MJW  
DATE: 3/16/2022  
SCALE: NTS  
FILE NUMBER: 12510  
SHEET:



PRELIMINARY -  
DO NOT USE FOR  
CONSTRUCTION

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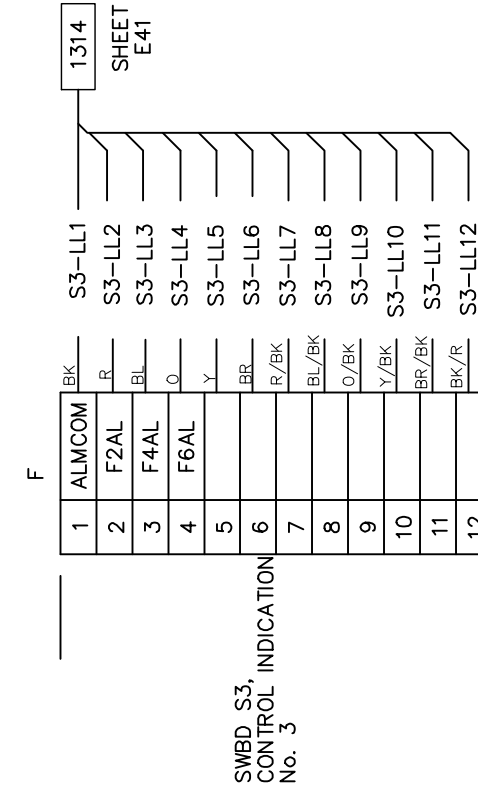
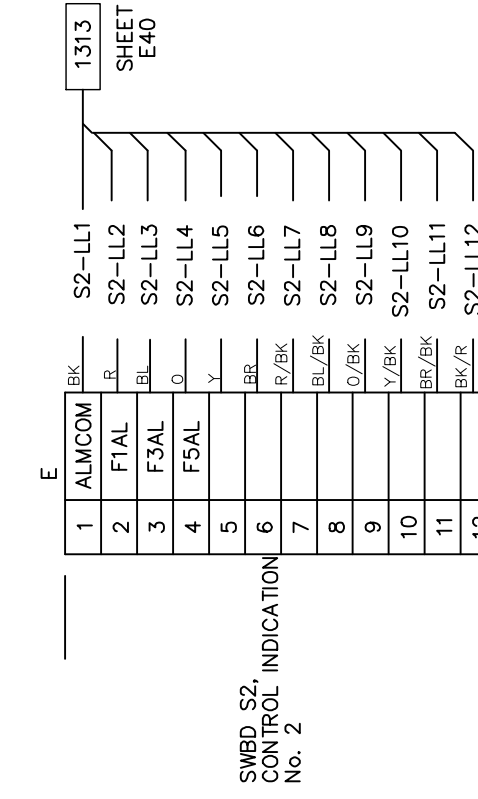
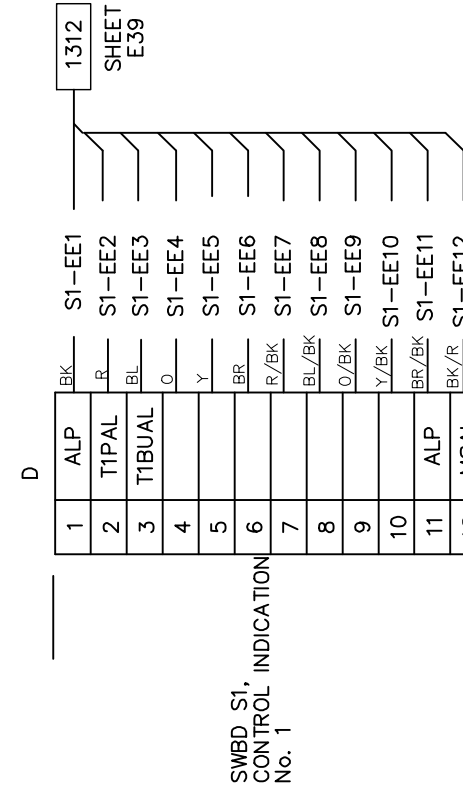
SWITCHBOARD No. 4 - S4  
INTEGRATION & COMMUNICATIONS

LEFT SIDE

1	
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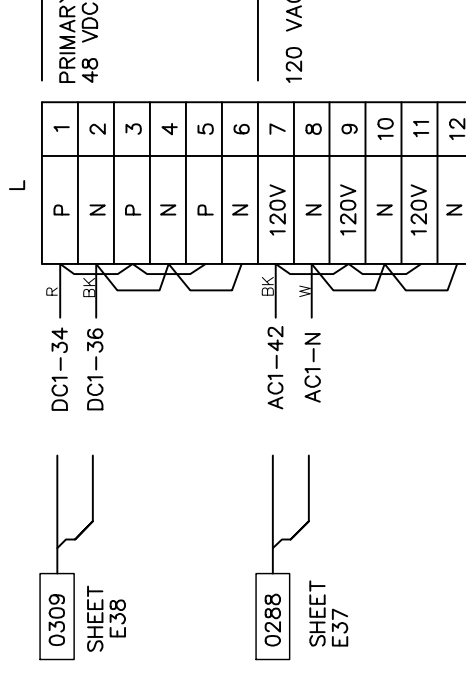
1	
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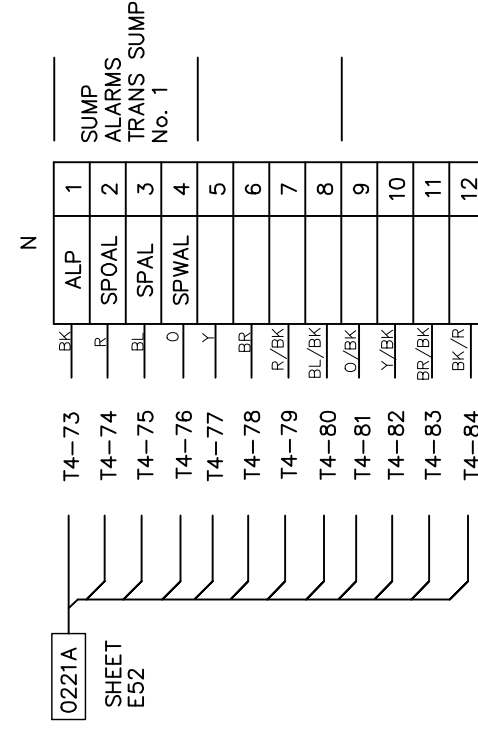
1	
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1	OUT04
2	OUT04b
3	OUT05
4	OUT05b
5	OUT06
6	OUT06b
7	ALP
8	IN312
9	
10	
11	
12	

RIGHT SIDE



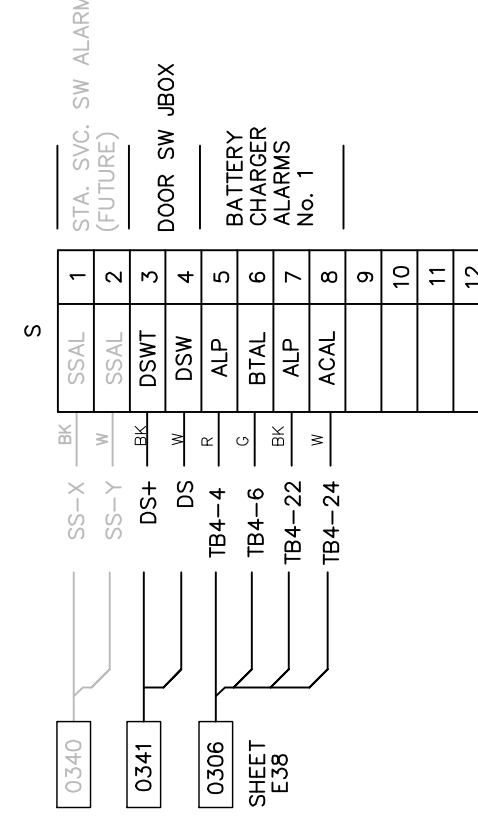
1	
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3	
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12	

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10	
11	
12	

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	



1	OUT01
2	OUT01b
3	OUT02
4	OUT02b
5	OUT03
6	OUT03b
7	DPAC
8	DPAC
9	DPAC
10	DPAC
11	DPAC
12	DPAC

LEFT SIDE

FRONT

RIGHT SIDE

SWITCHBOARD No. 4 - S4  
PANEL REAR VIEW

PRELIMINARY

CONTROL AND INDICATION

1	BK
2	R
3	BL
4	O
5	Y
6	BK
7	R/BK
8	BL/RBK
9	O/RBK
10	Y/RBK
11	BR/RBK
12	BR/R

CT & PT

A	R
B	G
C	BK
N	W

AC

X	BK
Y	R
N	W
G	C

DC

POS	R
NEG	BK

WIRE COLOR CODE

PROJECT NAME:  
CUMBERLAND ROAD  
69 TO 15 X 25 KV SUBSTATION

DRAWING TITLE:  
SWITCHBOARD NO.4  
INTERCONNECTION DIAGRAM

DRAWN BY: JRT  
CHECKED BY: DAW  
APPROVED BY: MIW  
DATE: 3/16/2022  
SCALE: NTS  
FILE NUMBER: 12510  
SHEET:

NO.	ISSUED FOR	REVISIONS	ENG.	DATE
A	ISSUED FOR BID		BMJ	09/24/2023

PRELIMINARY -  
DO NOT USE FOR  
CONSTRUCTION



Booth & Associates  
2200 Remondos Drive Suite 300, Raleigh, NC 27607  
NC F-021

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INTERIOR LEFT  
SUBPANEL

1158	SHEET E47	52F2-BD-5Y2	R 1	CA	R	S3-N1	1158A
		52F2-BD-3Y2	G 2	CB	R	S3-N2	
		52F2-BD-1Y2	3	CC	R	S3-N3	
		52F2-BD-1Y4	4	CN	R	S3-N4	
1178	SHEET E49	52F4-BD-5Y2	R 5	CA	R	S3-P1	1178A
		52F4-BD-3Y2	6	CB	R	S3-P2	
		52F4-BD-1Y2	7	CC	R	S3-P3	
		52F4-BD-1Y4	8	CN	R	S3-P4	
1198	SHEET E51	52F6-BD-5Y2	R 9	CA	R	S3-O1	1198A
		52F6-BD-3Y2	10	CB	R	S3-O2	
		52F6-BD-1Y2	11	CC	R	S3-O3	
		52F6-BD-1Y4	12	CN	R	S3-O4	

1153	SHEET E47	52F2-BA-39	R 13	F2T	R	S3-A1	1153A
		52F2-BA-7A	R 14	F2T1	R	S3-A2	
		52F2-BA-5	R 15	C	R	S3-A3	
		52F2-TB1	O 16	C1	O	S3-A4	
		52F2-CE-74	Y 17	GL	Y	S3-A5	
		52F2-CE-AL6	R 18	ALM COM	R	S3-A6	
		52F2-CE-AL5	R 19	ALM	R	S3-A7	
		52F2-CE-76	R 20	RL	R	S3-A8	
		52F2-BA-3	O 21	bc	O	S3-A9	
		52F2-BA-4	Y 22	bc1	Y	S3-A10	
		52F2-CE-63	R 23	52F2a	R	S3-A11	
		52F2-CE-64	R 24	52F2a1	R	S3-A12	

1156	SHEET E47	52-F2-CE119	R 25		R	S3-BB1	1156A
		52-F2-CE120	R 26		R	S3-BB2	
		52-F2	O 27		O	S3-BB3	
		52-F2	O 28		O	S3-BB4	
		52-F2	Y 29		Y	S3-BB5	
		52-F2	R 30		R	S3-BB6	
		52-F2	R 31		R	S3-BB7	
		52-F2	R 32		R	S3-BB8	
		52-F2	R 33		R	S3-BB9	
		52-F2	Y 34		Y	S3-BB10	
		52-F2	R 35		R	S3-BB11	
		52-F2	R 36		R	S3-BB12	

1173	SHEET E48	52F4-BA-39	R 37	F4T	R	S3-C1	1173A
		52F4-BA-7A	R 38	F4T1	R	S3-C2	
		52F4-BA-5	R 39	C	R	S3-C3	
		52F4-TB1-2	O 40	C1	O	S3-C4	
		52F4-CE-74	Y 41	GL	Y	S3-C5	
		52F4-CE-AL6	R 42	ALM COM	R	S3-C6	
		52F4-CE-AL5	R 43	ALM	R	S3-C7	
		52F4-CE-76	R 44	RL	R	S3-C8	
		52F4-BA-3	O 45	bc	O	S3-C9	
		52F4-BA-4	Y 46	bc1	Y	S3-C10	
		52F4-CE-63	R 47	52F4a	R	S3-C11	
		52F4-CE-64	R 48	52F4a1	R	S3-C12	

1176	SHEET E49	52-F4-CE119	R 49		R	S3-DD1	1176A
		52-F4-CE120	R 50		R	S3-DD2	
		52-F4	O 51		O	S3-D3	
		52-F4	O 52		O	S3-D4	
		52-F4	Y 53		Y	S3-D5	
		52-F4	R 54		R	S3-D6	
		52-F4	R 55		R	S3-D7	
		52-F4	R 56		R	S3-D8	
		52-F4	O 57		O	S3-D9	
		52-F4	Y 58		Y	S3-D10	
		52-F4	R 59		R	S3-D11	
		52-F4	R 60		R	S3-D12	

1193	SHEET E51	52F6-BA-39	R 61	F6T	R	S3-E1	1193A
		52F6-BA-7A	R 62	F6T1	R	S3-E2	
		52F6-BA-5	R 63	C	R	S3-E3	
		52F6-TB1-2	O 64	C1	O	S3-E4	
		52F6-CE-74	Y 65	GL	Y	S3-E5	
		52F6-CE-AL6	R 66	ALM COM	R	S3-E6	
		52F6-CE-AL5	R 67	ALM	R	S3-E7	
		52F6-CE-76	R 68	RL	R	S3-E8	
		52F6-BA-3	O 69	bc	O	S3-E9	
		52F6-BA-4	Y 70	bc1	Y	S3-E10	
		52F6-CE-63	R 71	52F6a	R	S3-E11	
		52F6-CE-64	R 72	52F6a1	R	S3-E12	

1196	SHEET E51	52-F6-CE119	R 73		R	S3-FF1	1196A
		52-F6-CE120	R 74		R	S3-FF2	
		52-F6	O 75		O	S3-F3	
		52-F6	O 76		O	S3-F4	
		52-F6	Y 77		Y	S3-F5	
		52-F6	R 78		R	S3-F6	
		52-F6	R 79		R	S3-F7	
		52-F6	R 80		R	S3-F8	
		52-F6	O 81		O	S3-F9	
		52-F6	Y 82		Y	S3-F10	
		52-F6	R 83		R	S3-F11	
		52-F6	R 84		R	S3-F12	

1213	SHEET E45	VT1-UK1	R 85	VA	R	S3-U1	1213A
		VT1-UK3	G 86	VB	R	S3-U2	
		VT1-UK5	R 87	VC	R	S3-U3	
		VT1-TB1-10	W 88	VN	W	S3-U4	
			89				
			90				
			91				
			92				
			93				
			94				
			95				
			96				

1157	SHEET E47	52F2-BE-6X1	R 97	CA	R	S1-V1	1157A
		52F2-BE-4X1	G 98	CB	R	S1-V2	
		52F2-BE-2X1	99	CC	R	S1-V3	
		52F2-BE-2X5	100	CN	R	S1-V4	
1177	SHEET E49	52F4-BE-6X1	R 101	CA	R	S1-X1	1177A
		52F4-BE-4X1	G 102	CB	R	S1-X2	
		52F4-BE-2X1	103	CC	R	S1-X3	
		52F4-BE-2X5	104	CN	R	S1-X4	
1197	SHEET E51	52F6-BE-6X1	R 105	CA	R	S1-Z1	1197A
		52F6-BE-4X1	G 106	CB	R	S1-Z2	
		52F6-BE-2X1	107	CC	R	S1-Z3	
		52F6-BE-2X5	108	CN	R	S1-Z4	

1147	SHEET E46	52F1-BE-2X1	R 97	CA	R	S1-U1	1147A
		52F1-BE-4X1	G 98	CB	R	S1-U2	
		52F1-BE-6X1	99	CC	R	S1-U3	
		52F1-BE-2X5	100	CN	R	S1-U4	
1167	SHEET E48	52F3-BE-2X1	R 101	CA	R	S1-W1	1167A
		52F3-BE-4X1	G 102	CB	R	S1-W2	
		52F3-BE-6X1	103	CC	R	S1-W3	
		52F3-BE-2X5	104	CN	R	S1-W4	
1187	SHEET E50	52F5-BE-2X1	R 105	CA	R	S1-Y1	1187A
		52F5-BE-4X1	G 106	CB	R	S1-Y2	
		52F5-BE-6X1	107	CC	R	S1-Y3	
		52F5-BE-2X5	108	CN	R	S1-Y4	

1148	SHEET E46	52F1-BD-1Y2	R 1	CA	R	S2-N1	1148A
		52F1-BD-3Y2	G 2	CB	R	S2-N2	
		52F1-BD-5Y2	3	CC	R	S2-N3	
		52F1-BD-1Y4	4	CN	R	S2-N4	
1168	SHEET E48	52F3-BD-1Y2	R 5	CA	R	S2-P1	1168A
		52F3-BD-3Y2	6	CB	R	S2-P2	
		52F3-BD-5Y2	7	CC	R	S2-P3	
		52F3-BD-1Y4	8	CN	R	S2-P4	
1188	SHEET E50	52F5-BD-1Y2	R 9	CA	R	S2-Q1	1188A
		52F5-BD-3Y2	10	CB	R	S2-Q2	
		52F5-BD-5Y2	11	CC	R	S2-Q3	
		52F5-BD-1Y4	12	CN	R	S2-Q4	

1143	SHEET E46	52F1-BA-39	R 13	F1T	R	S2-A1	1143A
		52F1-BA-7A	R 14	F1T1	R	S2-A2	
		52F1-BA-5	R 15	C	R	S2-A3	
		52F1-TB1-2	O 16	C1	O	S2-A4	
		52F1-CE-74	Y 17	GL	Y	S2-A5	
		52F1-CE-AL6	R 18	ALM COM	R	S2-A6	
		52F1-CE-AL5	R 19	ALM	R	S2-A7	
		52F1-CE-76	R 20	RL	R	S2-A8	
		52F1-BA-3	O 21	bc	O	S2-A9	
		52F1-BA-4	Y 22	bc1	Y	S2-A10	
		52F1-CE-63	R 23	52F1a	R	S2-A11	
		52F1-CE-64	R 24	52F1a1	R	S2-A12	

1146	SHEET E46	52-F1-CE119	R 25		R	S2-BB1	1146A
		52-F1-CE120	R 26		R	S2-BB2	
		52-F1	O 27		O	S2-BB3	
		52-F1	O 28		O	S2-BB4	
		52-F1	Y 29		Y	S2-BB5	
		52-F1	R 30		R	S2-BB6	
		52-F1	R 31		R	S2-BB7	
		52-F1	R 32		R	S2-BB8	
		52-F1	R 33		R	S2-BB9	
		52-F1	Y 34		Y	S2-BB10	
		52-F1	R 35		R	S2-BB11	
		52-F1	R 36		R	S2-BB12	

1163	SHEET E48	52F3-BA-39	R 37	F3T	R	S2-C1	1163A
		52F3-BA-7A	R 38	F3T1	R	S2-C2	
		52F3-BA-5	R 39	C	R	S2-C3	
		52F3-TB1-2	O 40	C1	O	S2-C4	
		52F3-CE-74	Y 41	GL	Y	S2-C5	
		52F3-CE-AL6	R 42	ALM COM	R	S2-C6	
		52F3-CE-AL5	R 43	ALM	R	S2-C7	
		52F3-CE-76	R 44	RL	R	S2-C8	
		52F3-BA-3	O 45	bc	O	S2-C9	
		52F3-BA-4	Y 46	bc1	Y	S2-C10	
		52F3-CE-63	R 47	52F3a	R	S2-C11	
		52F3-CE-64	R 48	52F3a1	R	S2-C12	

1166	SHEET E48	52-F3-CE119	R 49		R	S2-DD1	1166A
		52-F3-CE120	R 50		R	S2-DD2	
		52-F3	O 51		O	S2-D3	
		52-F3	O 52		O	S2-D4	
		52-F3	Y 53		Y	S2-D5	
		52-F3	R 54		R	S2-D6	
		52-F3	R 55		R	S2-D7	
		52-F3	R 56		R	S2-D8	
		52-F3	O 57		O	S2-D9	
		52-F3	Y 58		Y	S2-D10	
		52-F3	R 59		R	S2-D11	
		52-F3	R 60		R	S2-D12	

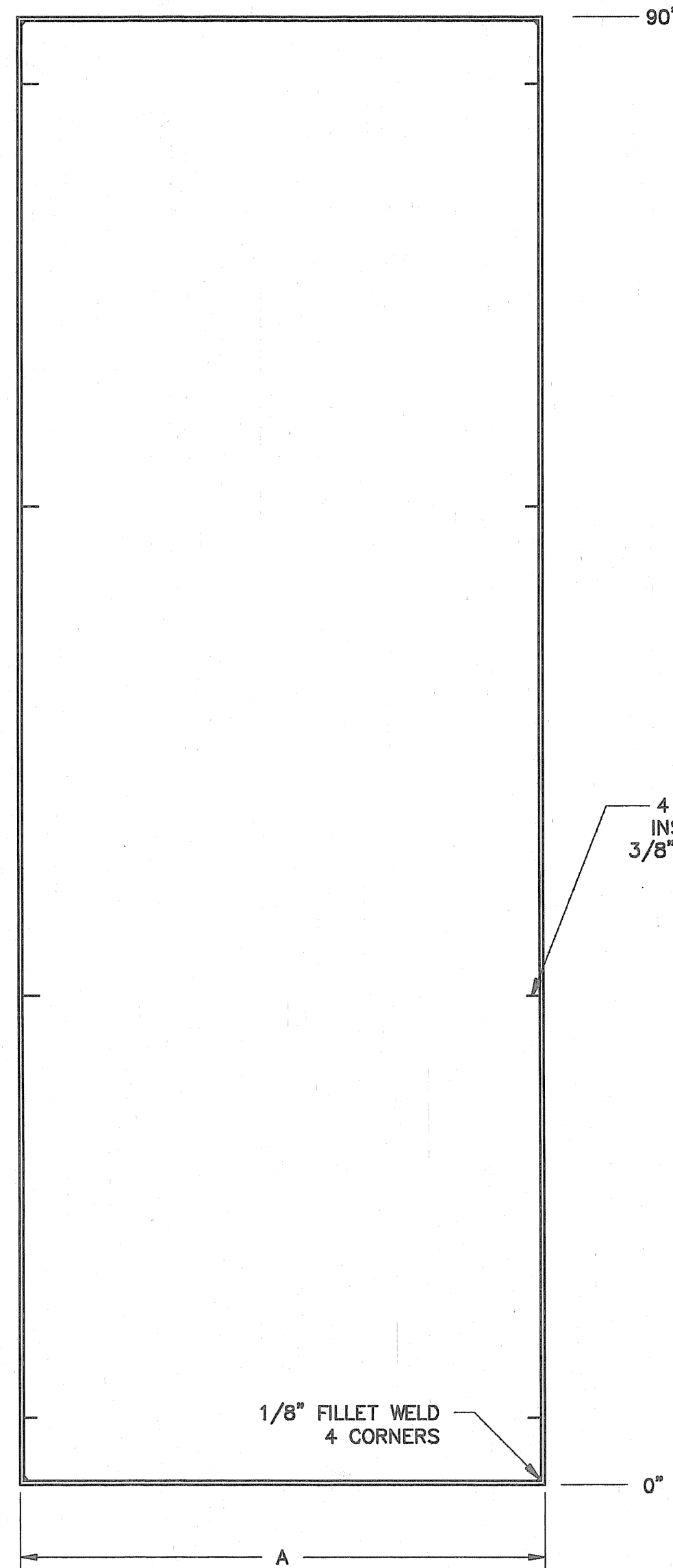
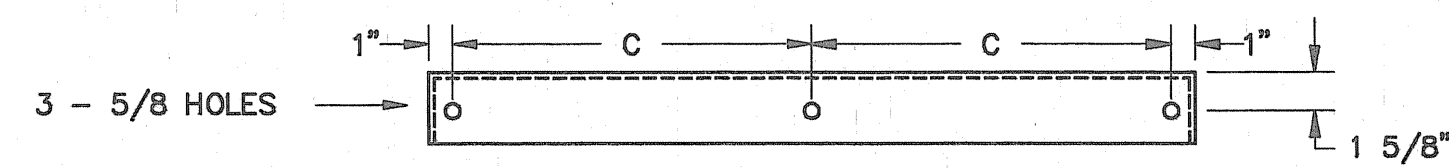
1183	SHEET E50	52F5-BA-39	R 61	F5T	R	S2-E1	1183A
		52F5-BA-7A	R 62	F5T1	R	S2-E2	
		52F5-BA-5	R 63	C	R	S2-E3	
		52F5-TB1-2	O 64	C1	O	S2-E4	
		52F5-CE-74	Y 65	GL	Y	S2-E5	
		52F5-CE-AL6	R 66	ALM COM	R	S2-E6	
		52F5-CE-AL5	R 67	ALM	R	S2-E7	
		52F5-CE-76	R 68	RL	R	S2-E8	
		52F5-BA-3	O 69	bc	O	S2-E9	
		52F5-BA-4	Y 70	bc1	Y	S2-E10	
		52F5-CE-63	R 71	52F5a	R	S2-E11	
		52F5-CE-64	R 72	52F5a1	R	S2-E12	

1186	SHEET E50	52-F5-CE119	R 73		R	S2-FF1	1186A
		52-F5-CE120	R 74		R	S2-FF2	
		52-F5	O 75		O	S2-F4	
		52-F5	O 76		O	S2-F5	
		52-F5	Y 77		Y	S2-F6	
		52-F5	R 78		R	S2-F7	
		52-F5	R 79		R	S2-F8	
		52-F5	O 80		O	S2-F9	
		52-F5	Y 81</				





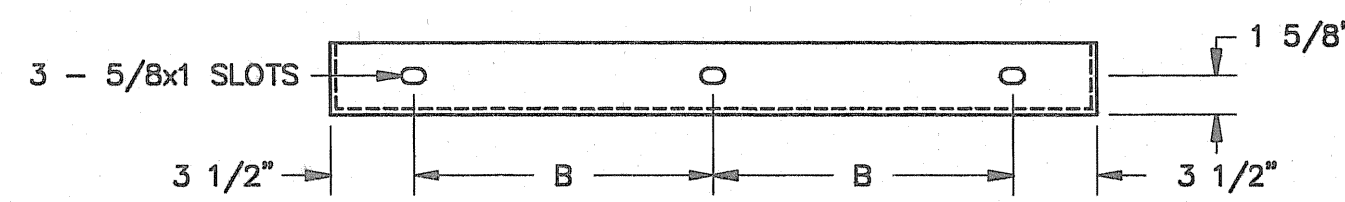
UNIT FRONT PANEL - 11 GA. STEEL



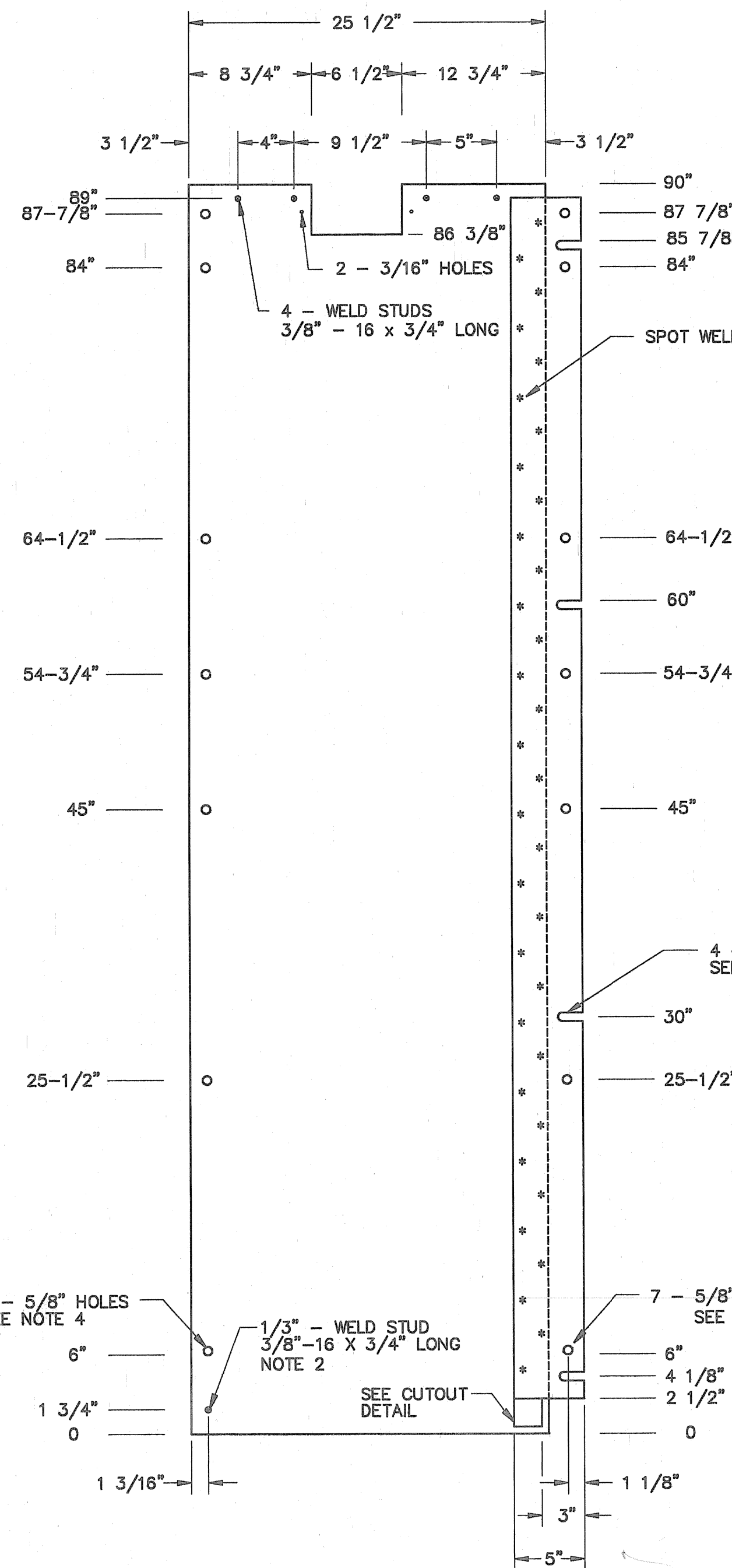
1/8" FILLET WELD  
4 CORNERS

4 - WELD STUDS  
INSIDE - EACH SIDE  
3/8" - 16 x 3/4" LONG

7 - 7/16" SQ. HOLES  
EACH SIDE

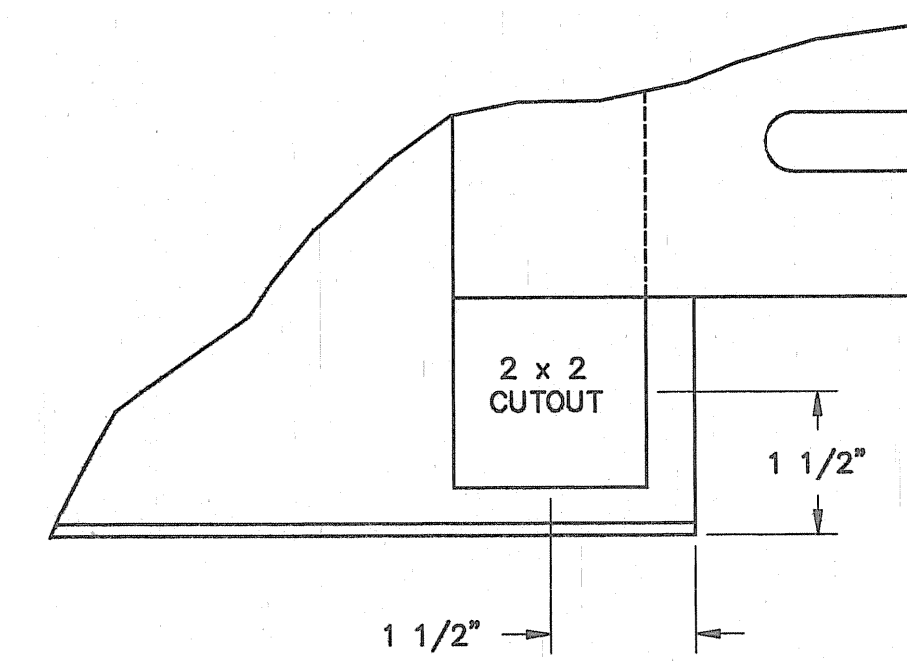


SIDE SHEET - 11 GA. STEEL



UNIT WIDTH		DIMENSION	
"A"	"B"	"C"	
28"	10 1/2"	13"	
32"	12 1/2"	15"	

- NOTE 1 ASSEMBLE WITH FOUR 3/8"-16 NUTS, FLAT WASHER AND LOCK WASHER - EACH SIDE.
- NOTE 2 ASSEMBLE WITH ONE 3/8"-16 NUT, FLAT WASHER AND LOCK WASHER - EACH SIDE.
- NOTE 3 ASSEMBLE WITH SEVEN 3/8"-16 x 1 1/4" CARRIAGE BOLT, NUT, FLAT WASHER AND LOCK WASHER - EACH SIDE.
- NOTE 4 ASSEMBLE WITH SEVEN 3/8"-16 x 1 1/2" BOLT, NUT, FLAT WASHER AND LOCK WASHER - EACH SIDE.



GROUND BUS DETAIL CUTOUT DETAIL  
NTS

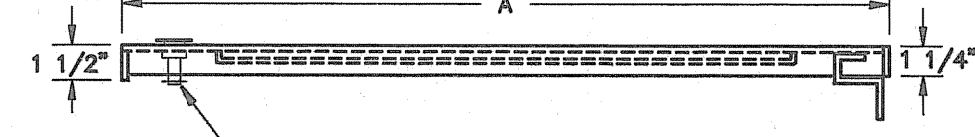
NOTE:  
INSIDE VIEW OF RIGHT HAND SIDE SHEET SHOWN. LEFT HAND SIDE SHEET TO BE SAME BUT OPPOSITE HAND.

NO.		REVISIONS	DATE	RELAY STANDARD	
				DUAL PANEL DETAILS (UNWIRED SWBD PANELS) FRONT SHEET, SIDE SHEET	
				BOOTH & ASSOCIATES, INC.	
				RALEIGH, N.C.	
CONSULTING ENGINEERS					
DWN. AWD	DATE	1/25/91	DWG. NO.		
CKD. RNS	APPD. RGR		S2 OF 8		
SCALE 1/8"=1"					

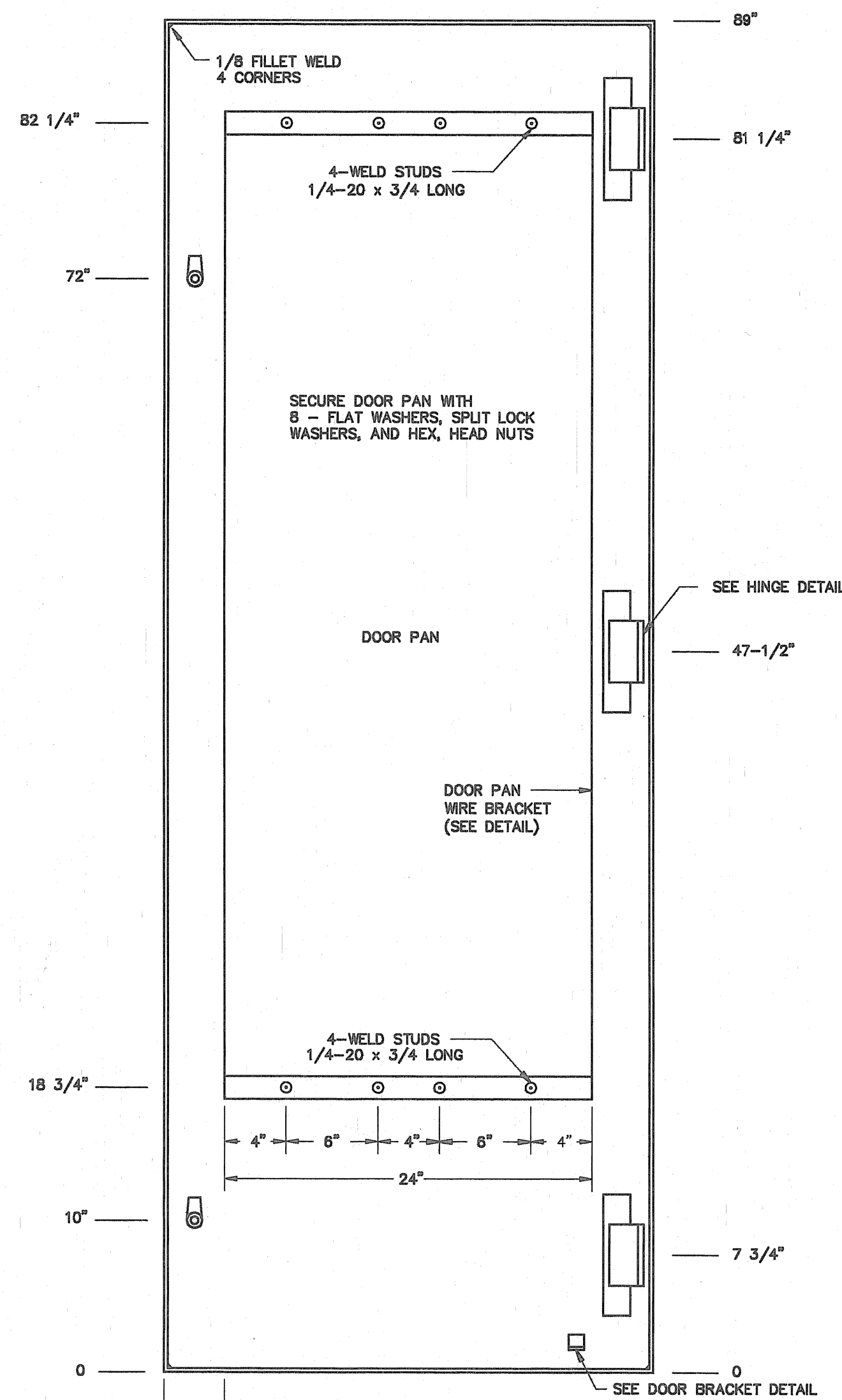


UNIT WIDTH		DIMENSION		
28"	32"	"A"	"B"	"C"
		27 3/4"	20"	2"
		31 3/4"	24"	4"

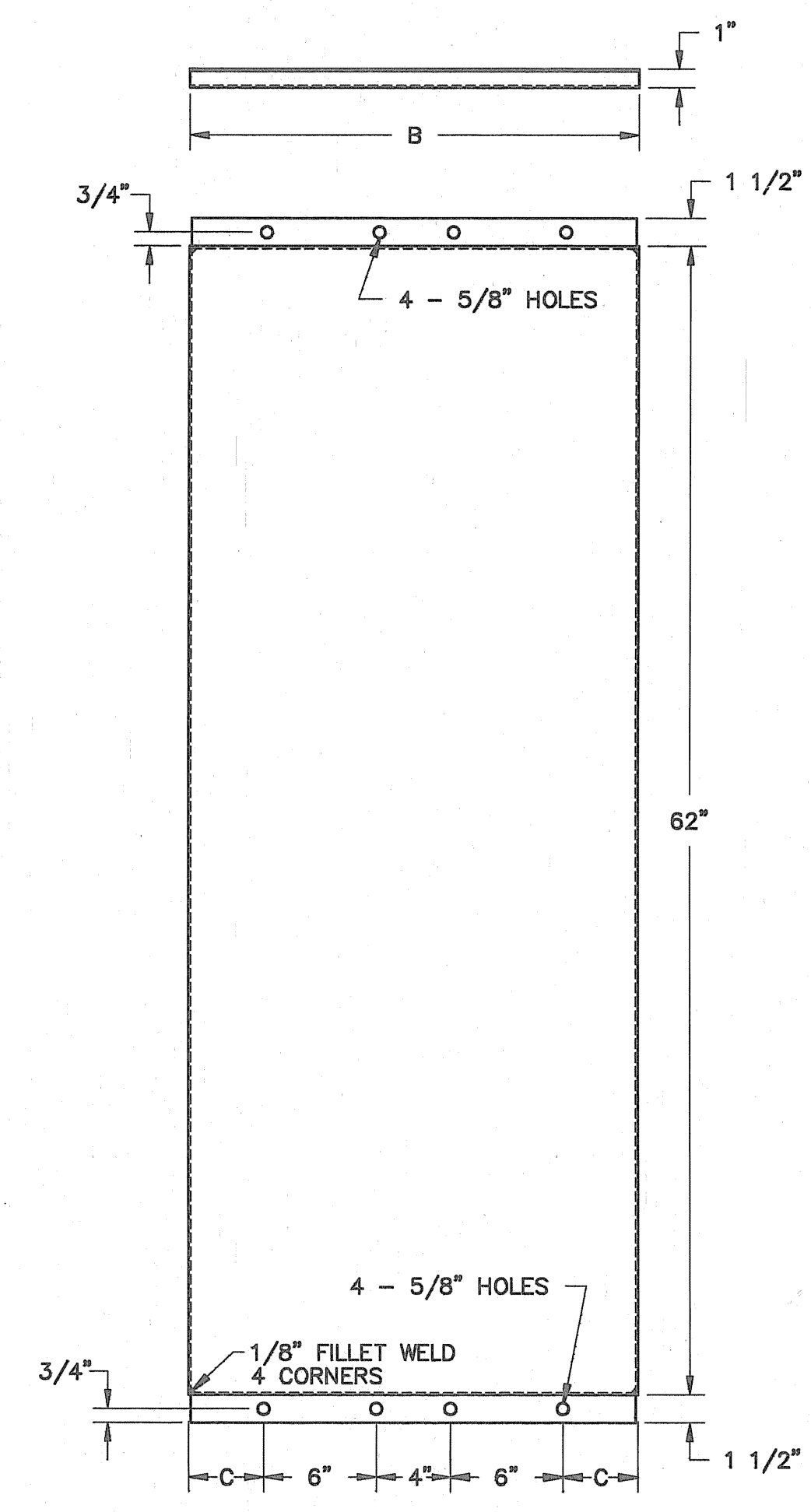
**UNIT REAR DOOR - 11 GA. STEEL**



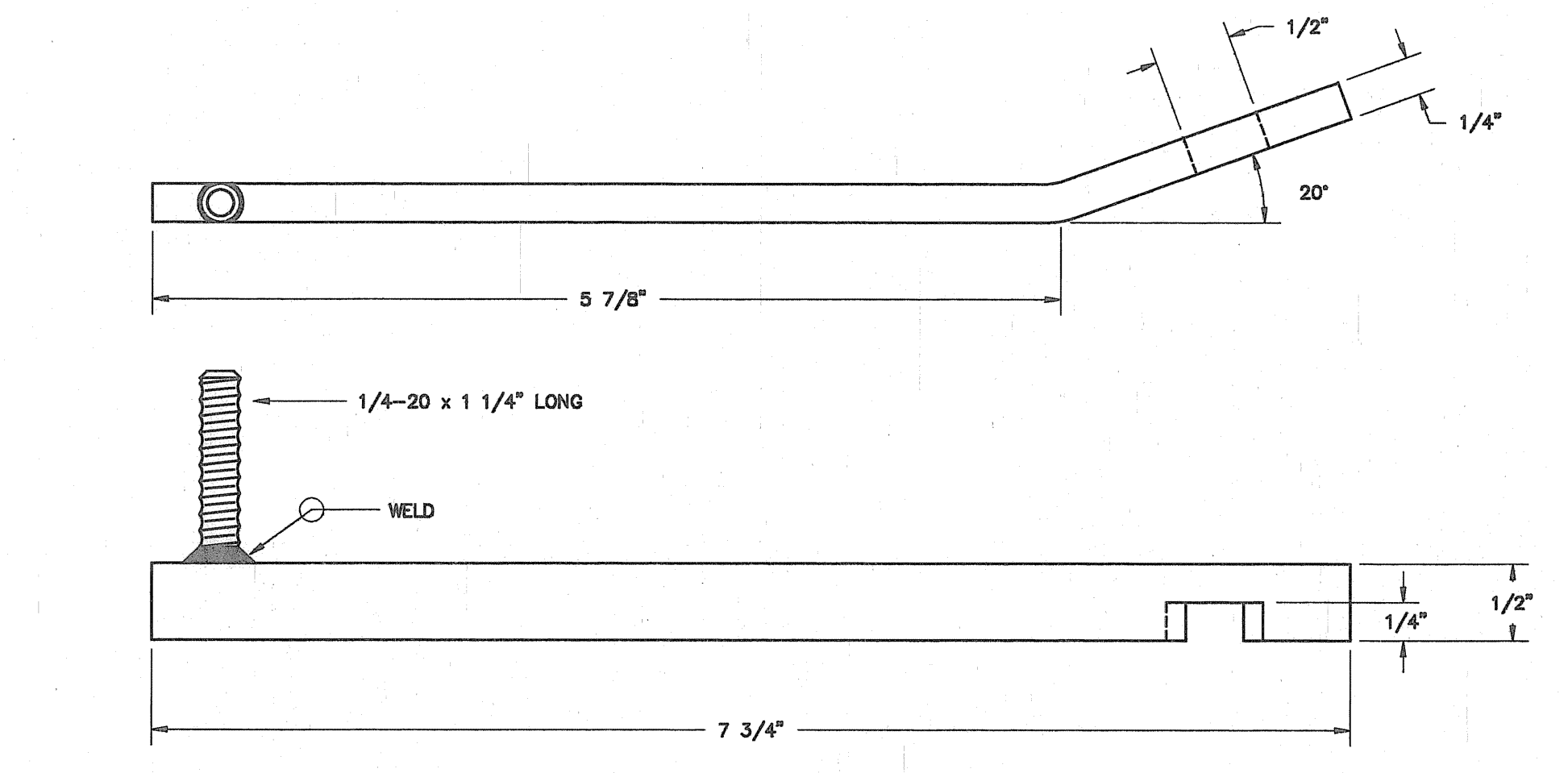
PIEDMONT EQUIPMENT CO.  
 1" HANDLE NON-LOCKING  
 No. 245000177(1001A-35 SATIN CHROME RH)  
 3-1/2 THREADED SHAFT WITH  
 No. 245000021 (RIZZINO) CAM AND  
 No. 245000031 (H3ZINC) HOLDING PLATE  
 2 REQUIRED



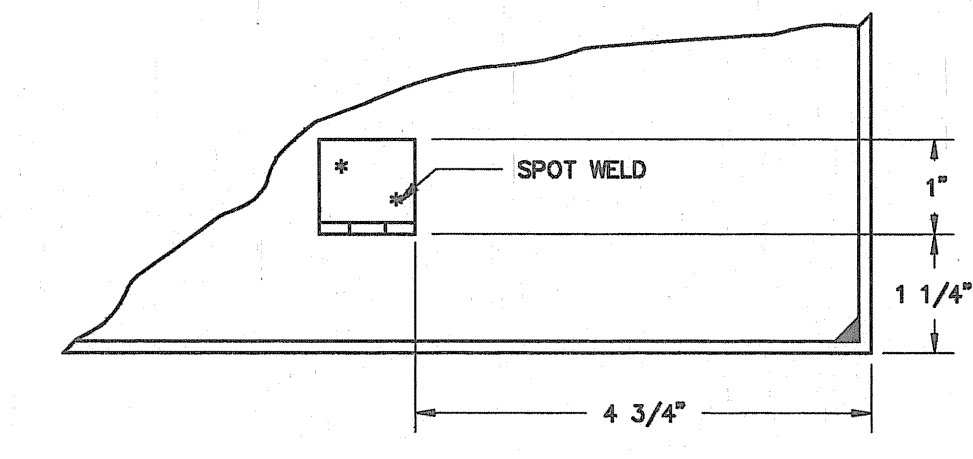
**INSIDE VIEW**  
 (SCALE: 1/8"=1")



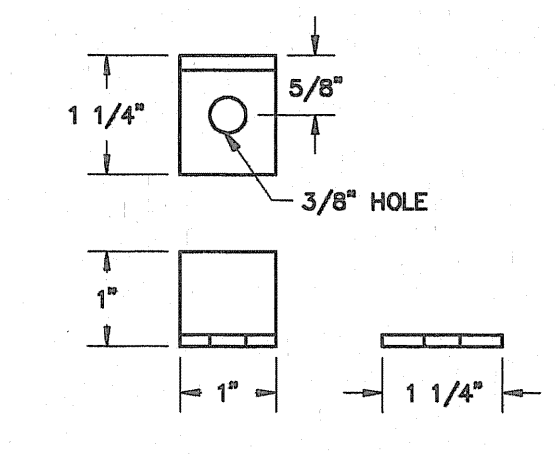
**DOOR PAN**  
 11 GA. STEEL  
 (SCALE: 1/8"=1")



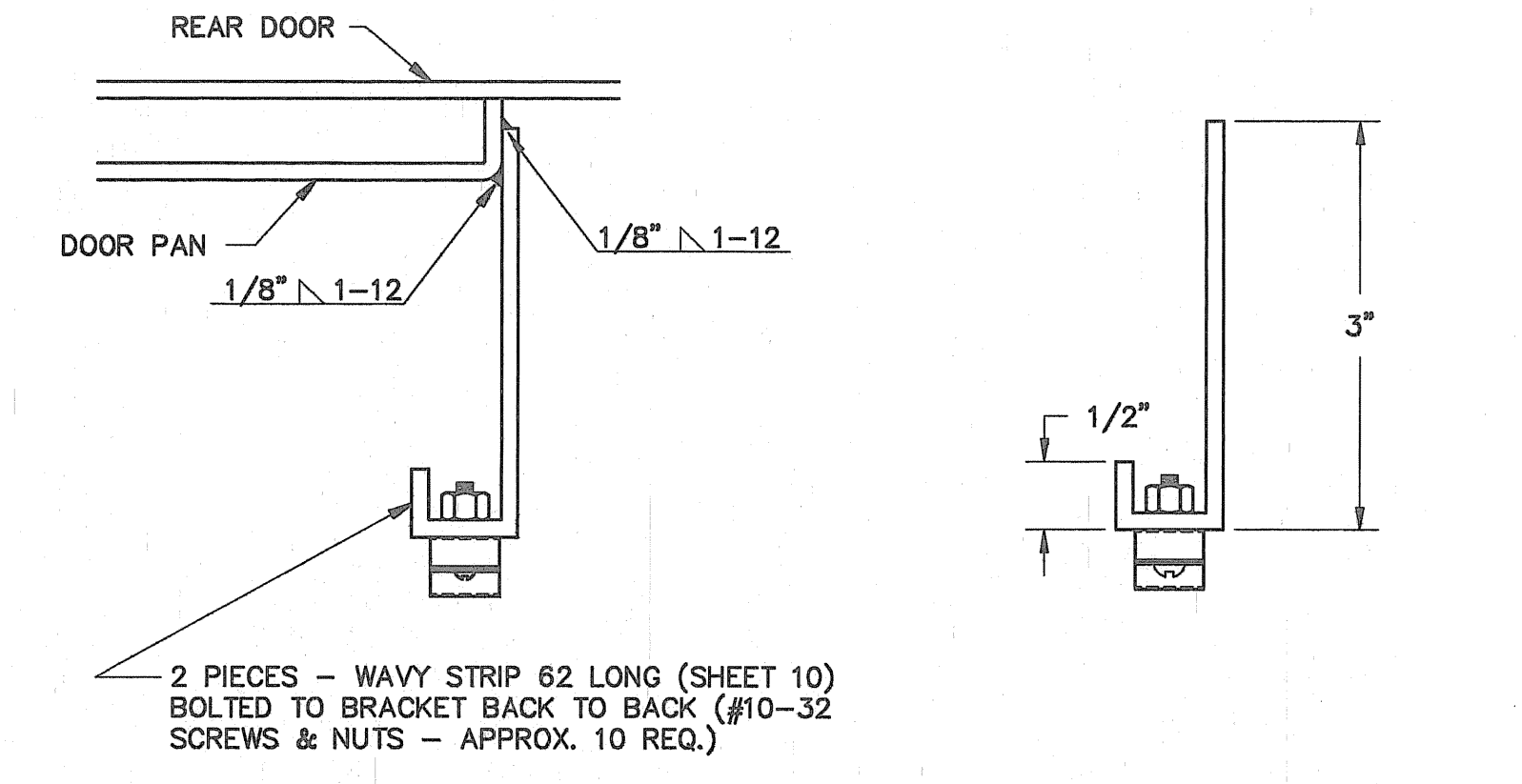
**DOOR STOP PAW**  
 1/4" x 1 1/2" BAR STOCK  
 SECURE PAW IN BRACKET WITH STOP NUT (1 REQ)  
 (SCALE: FULL)



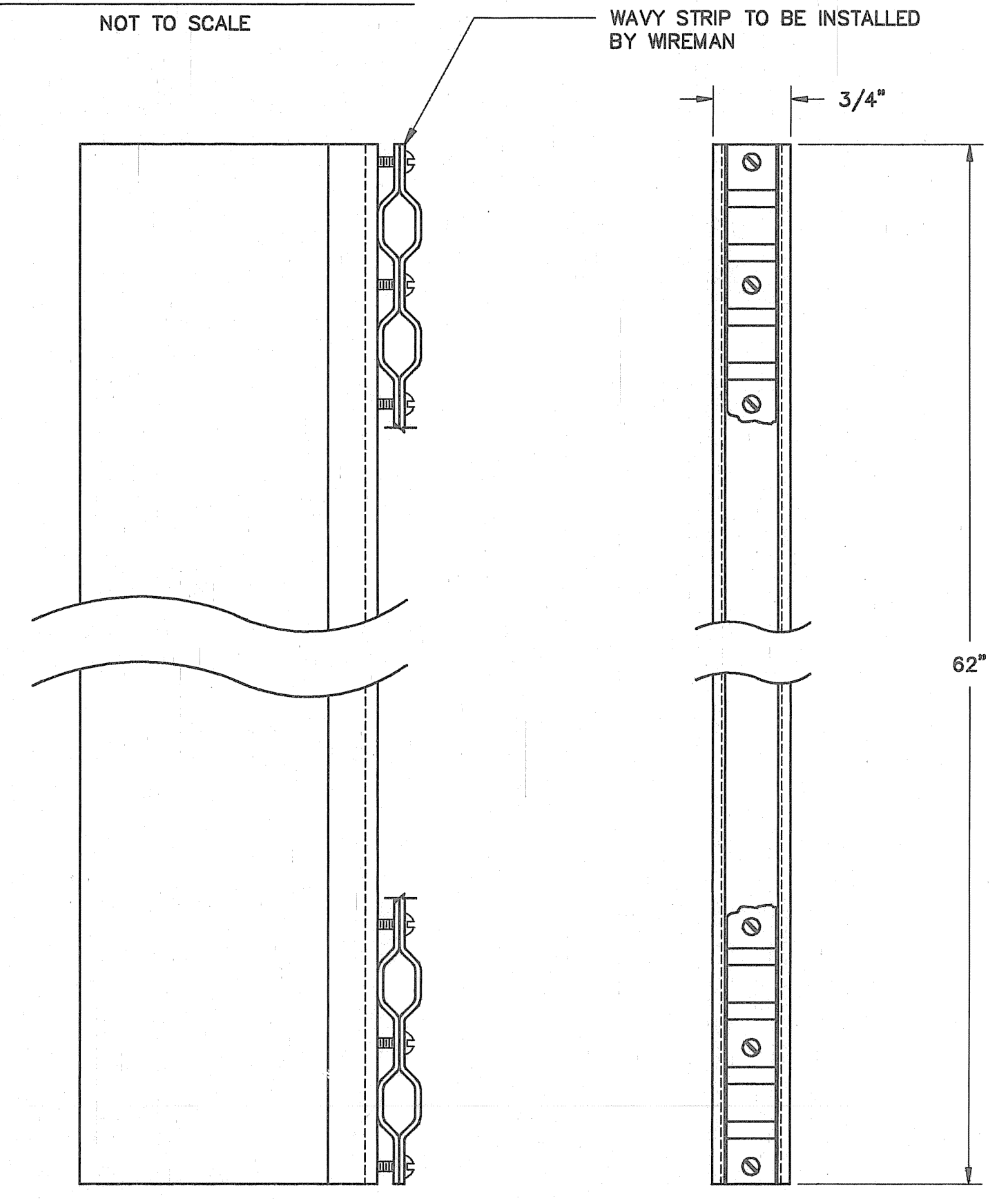
**DOOR STOP BRACKET DETAIL**  
 (SCALE: 1/2"=1")



**DOOR STOP BRACKET**  
 11 GA. STEEL  
 (SCALE: 1/2"=1")

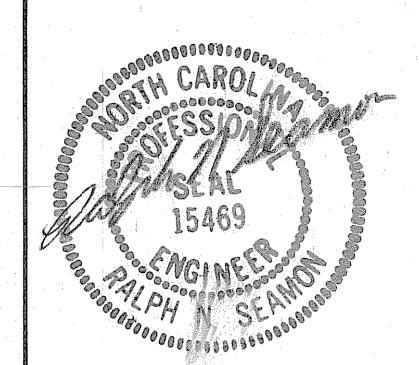


**DOOR PAN - WIRE BRACKET DETAIL**  
 NOT TO SCALE



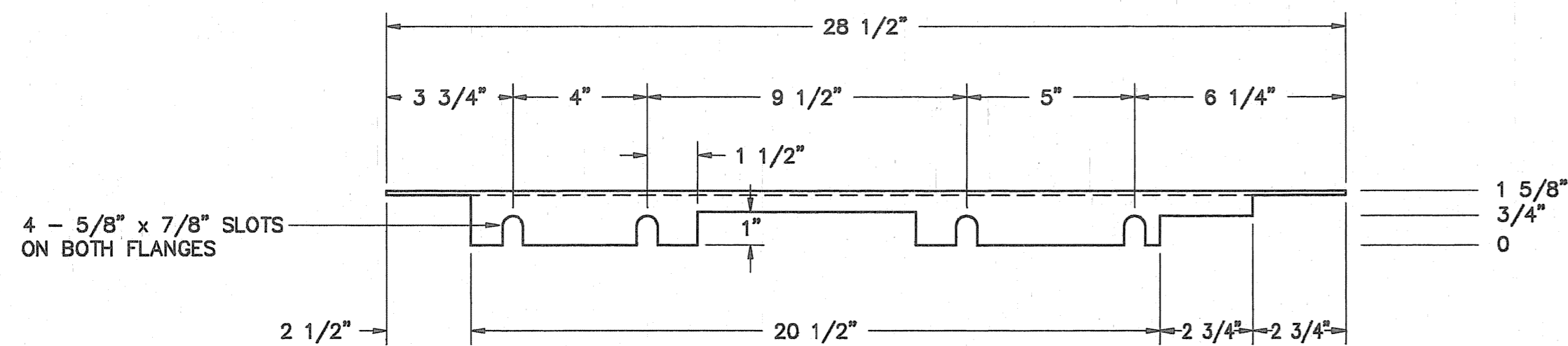
**DOOR PAN WIRE BRACKET**  
 11 GA. STEEL  
 (SCALE: 3/4"=1")

NO.	REVISIONS	DATE	RELAY STANDARD	
			DUAL PANEL DETAILS (UNWIRED SWBD PANELS) DOOR, DOOR PAN	
			BOOTH C. ASSOCIATES, INC.	
			CONSULTING ENGINEERS RALEIGH, N.C.	
DWN. AWD	DATE	1/31/91	DWG. NO.	
CKD. RNS	APPD. RCR		S3 OF 8	
SCALE AS NOTED				



3/8/91

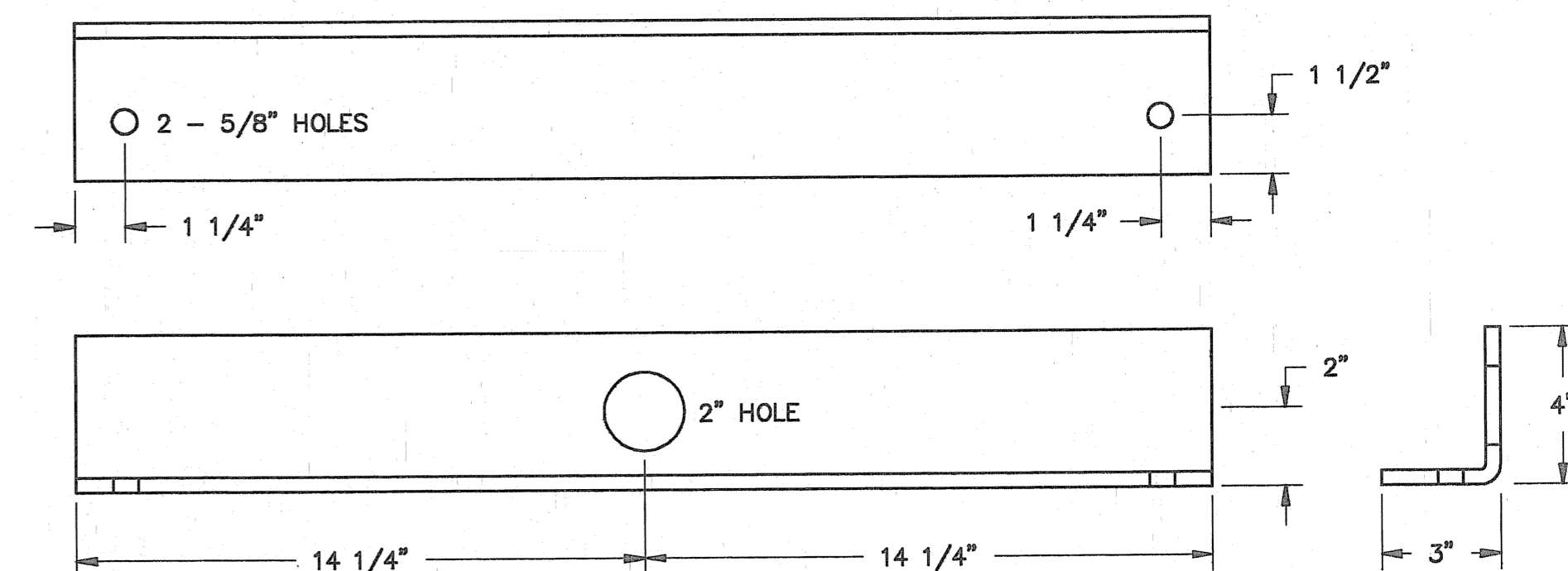
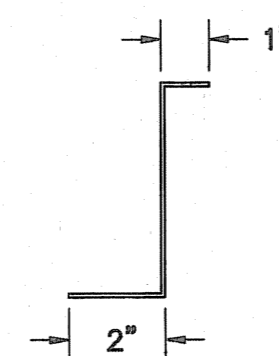
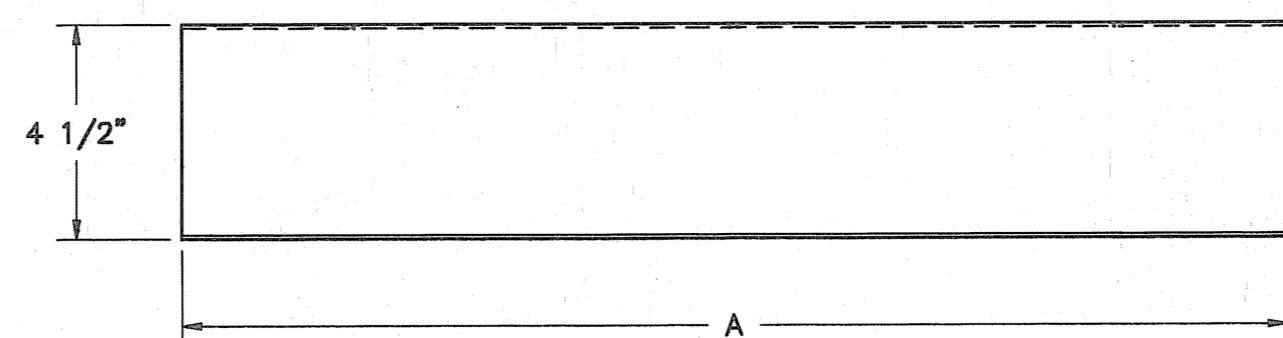
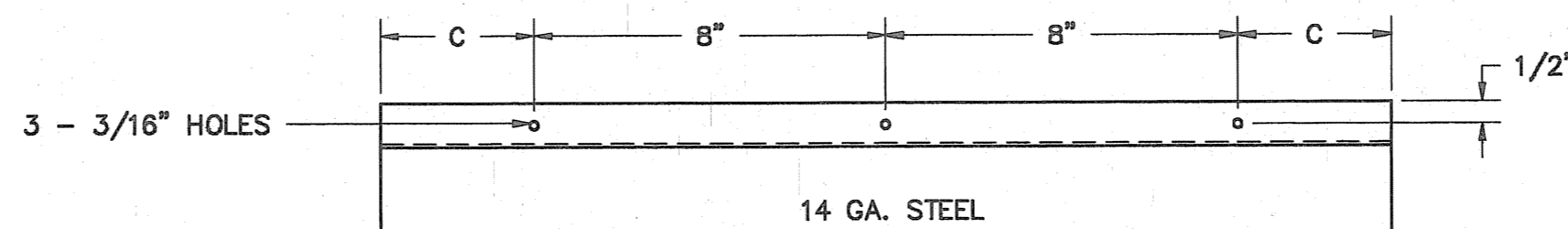
UNIT COVER - 11 GA. STEEL



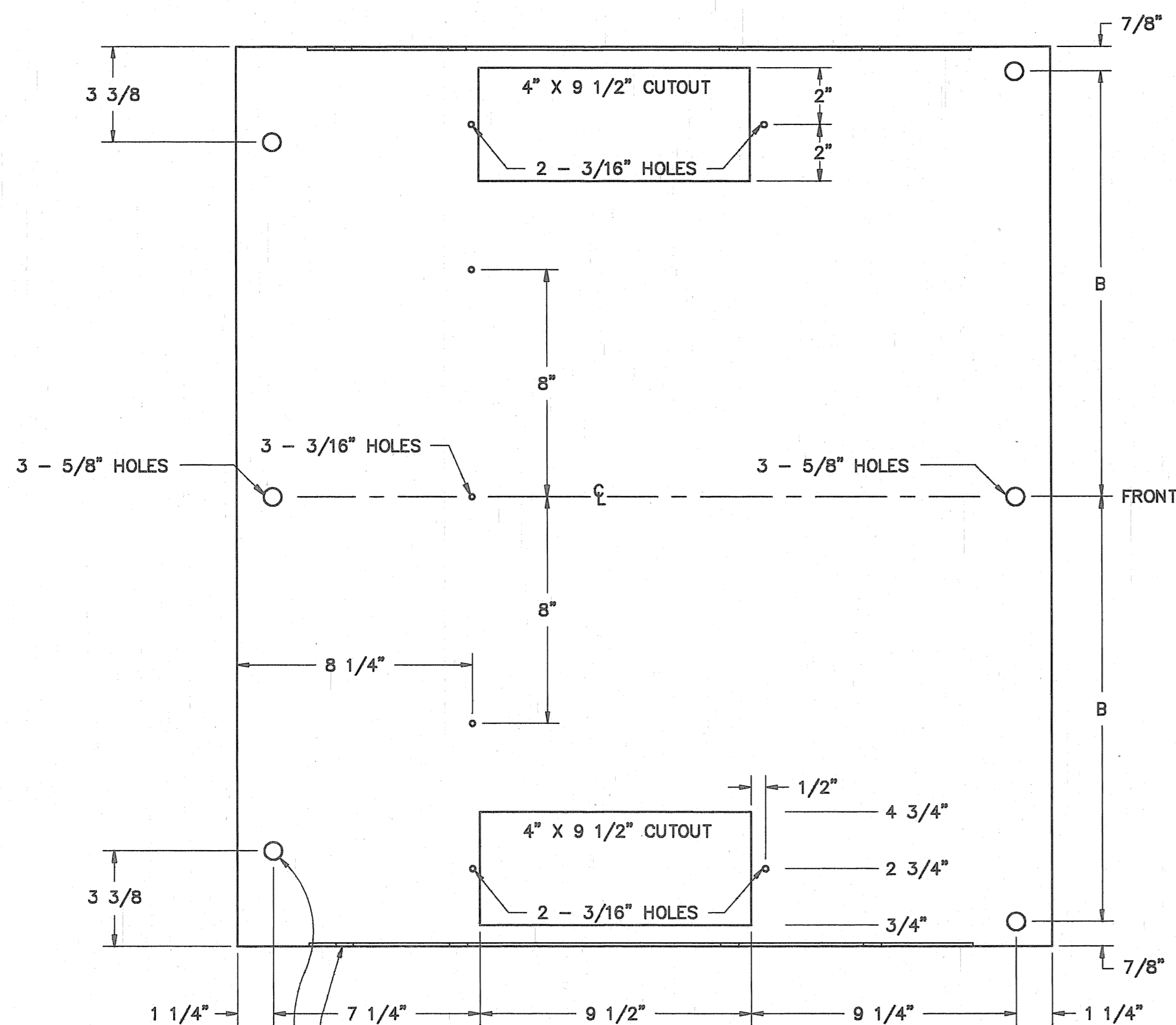
4 - 5/8" x 7/8" SLOTS ON BOTH FLANGES

1 5/8" / 3/4" / 0

UNIT WIDTH	DIMENSION		
	"A"	"B"	"C"
28"	19"	13"	1 1/2"
32"	23"	15"	3 1/2"



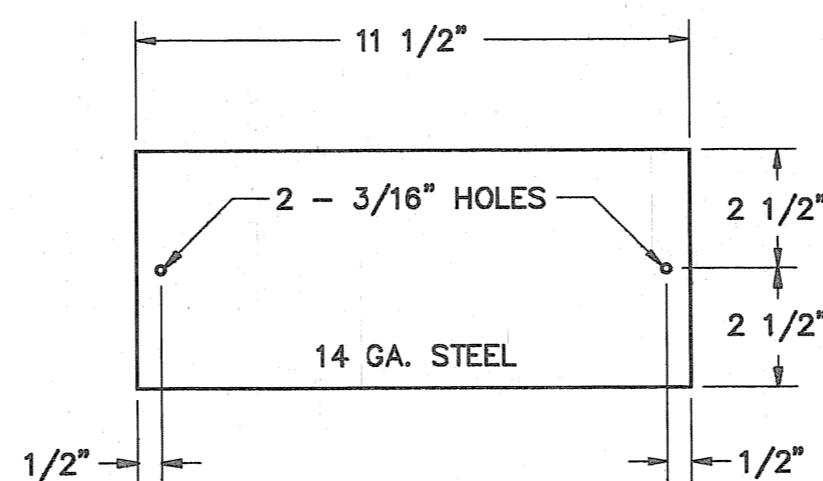
LIFTING ANGLE - 3/8" STEEL  
1 REQ'D  
(SCALE: 1/4" = 1")



FURNISH ASSEMBLED WITH EIGHT 3/8"-16 NUTS, FLAT WASHER AND LOCK WASHER

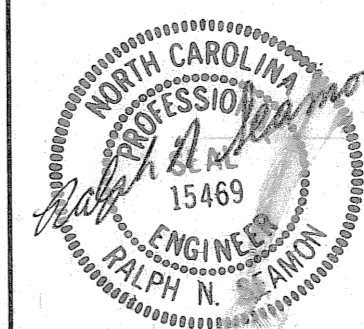
FURNISH ASSEMBLED WITH SIX 3/8"-16 x 1 1/4" BOLTS, NUTS, FLAT WASHERS AND LOCK WASHERS

PANDUIT SUPPORT - 1 REQ.  
SECURE TO COVER WITH (3) 10-32 MACH. SCREWS, LOCK WASHERS AND NUTS



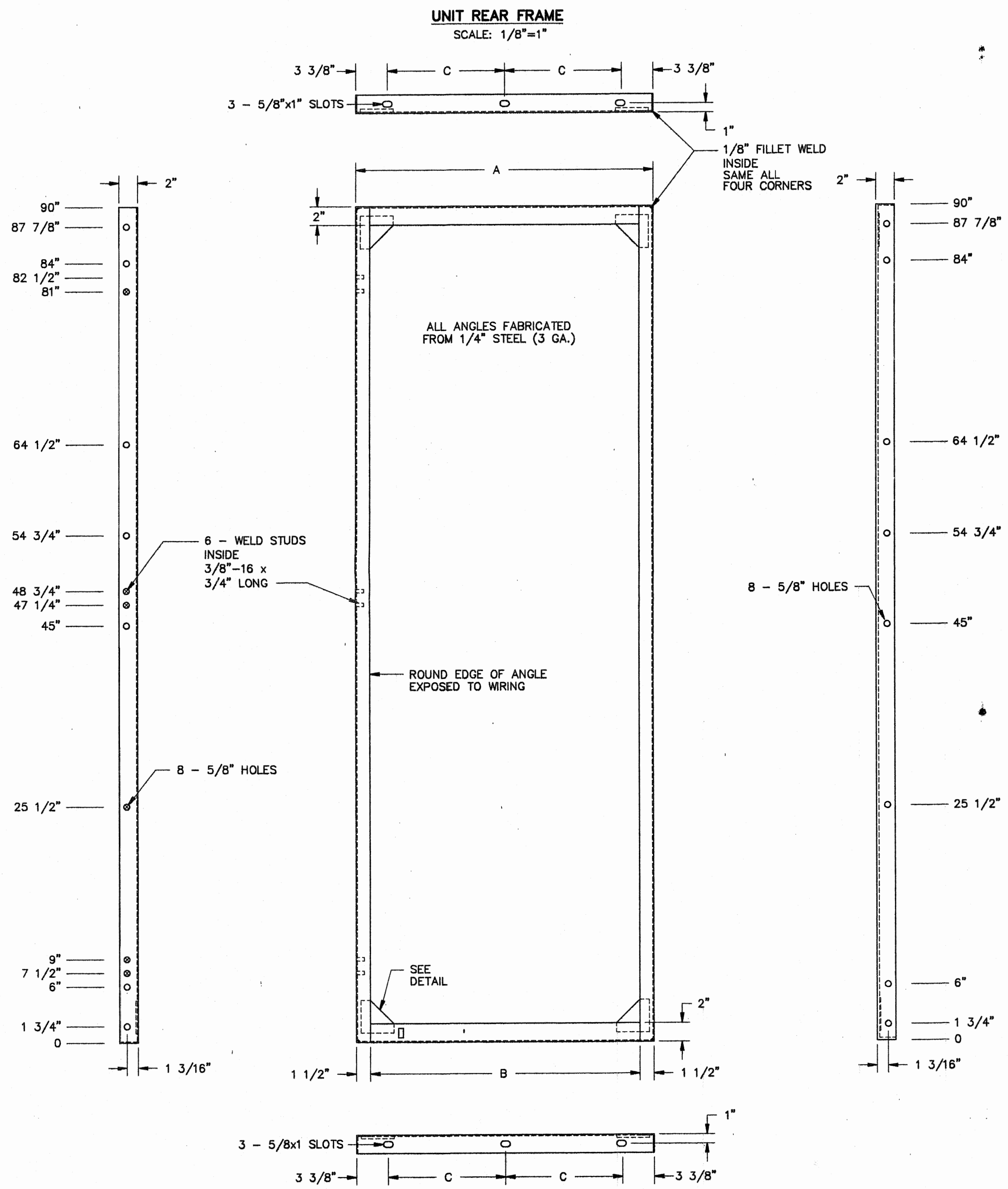
CUTOUT COVER - 2 REQ.  
SECURE WITH (2) 10-32 MACH. SCREWS AND NUTS PER PLATE

NO.	REVISIONS	DATE	RELAY STANDARD	
			DUAL PANEL DETAILS (UNWIRED SWBD PANELS) TOP, LIFTING ANGLE	
			BOOTH & ASSOCIATES, INC. RALEIGH, N.C.	
			CONSULTING ENGINEERS	
			DWN. AWD DATE 1/31/91	DWG. NO.
			CKD. RNS APPD. RGR	S4 OF 8
			SCALE 1/4"=1"	

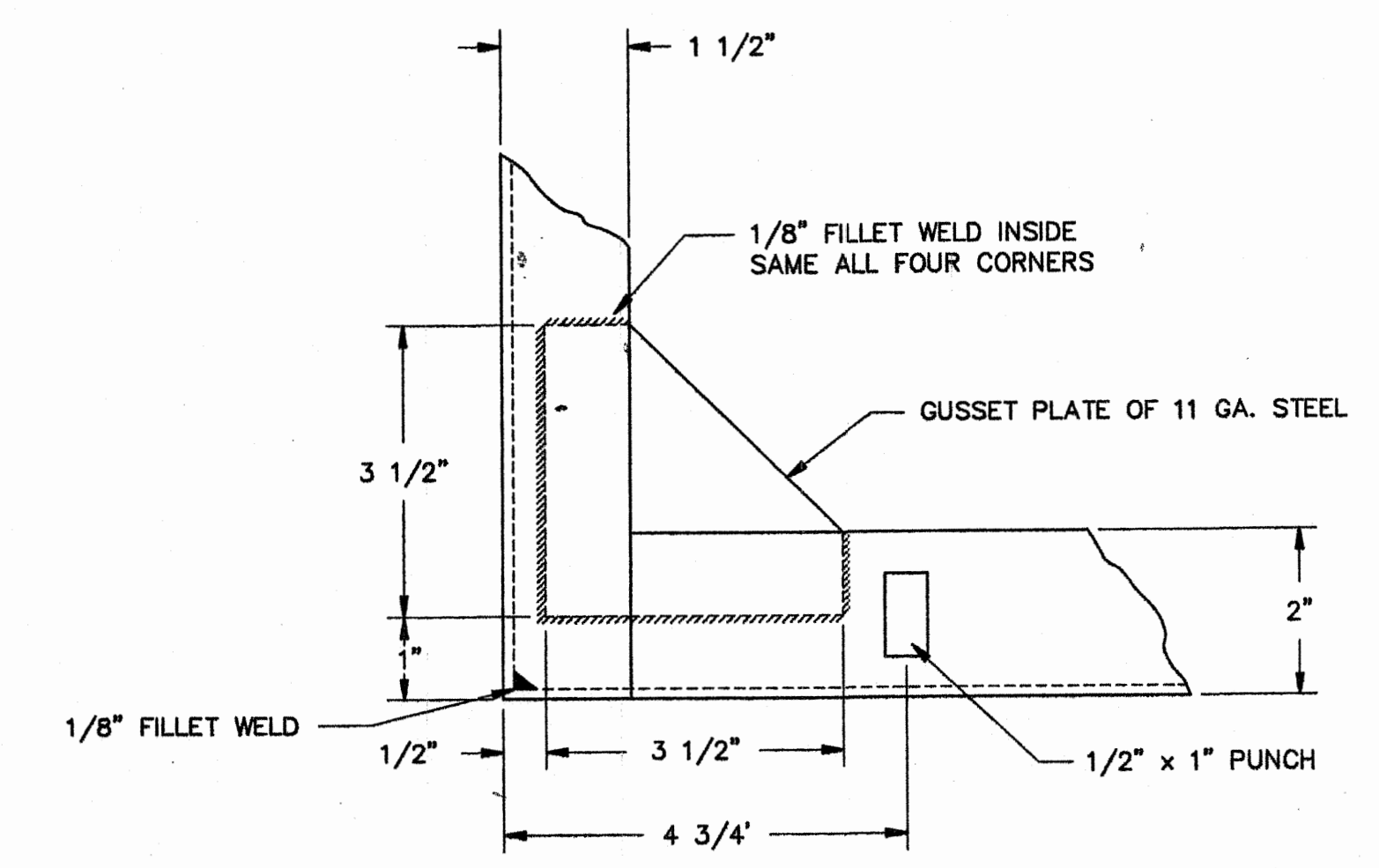


3/8/91



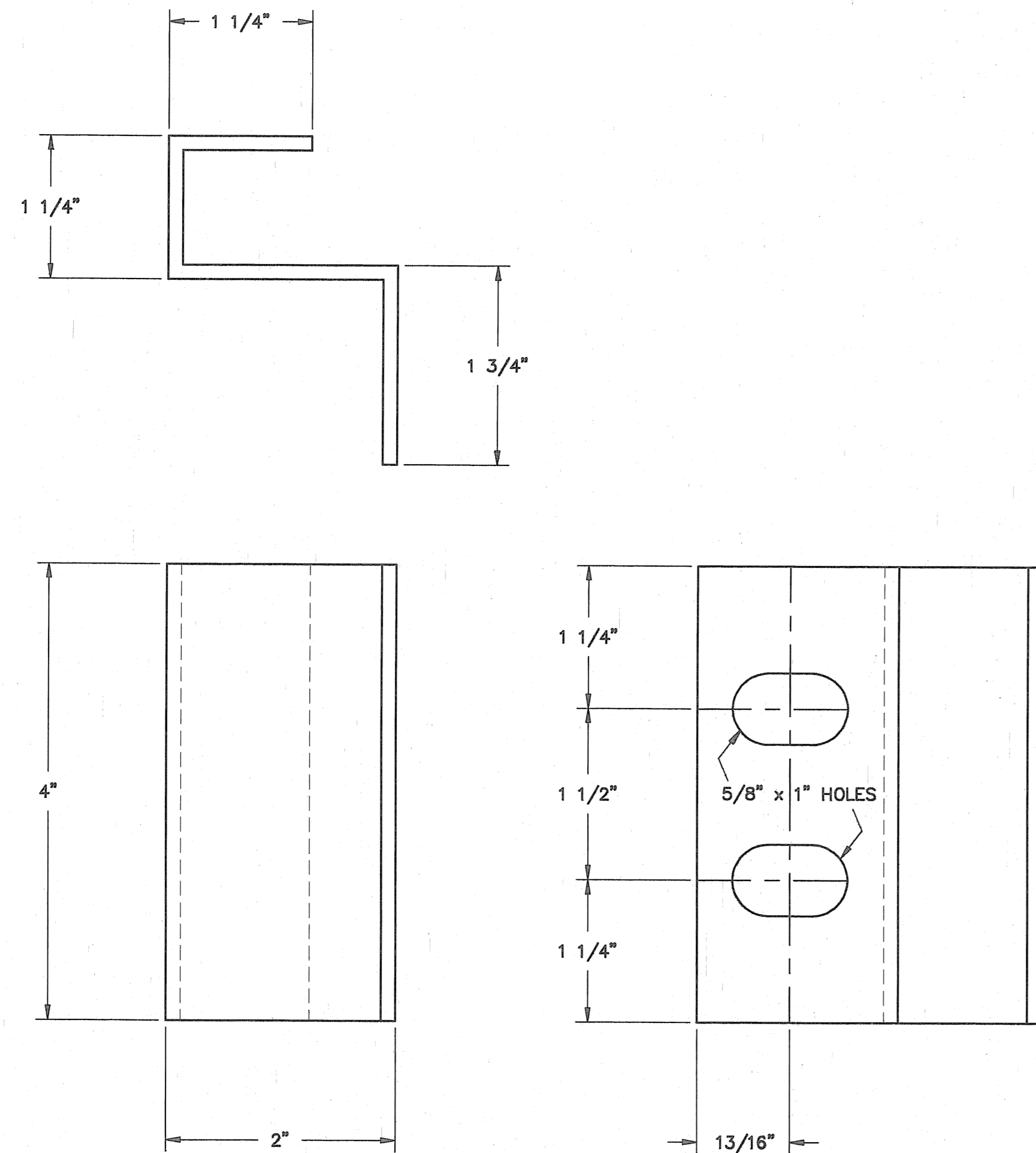


UNIT WIDTH	DIMENSIONS		
	"A"	"B"	"C"
28"	27 3/4"	24 3/4"	10 1/2"
32"	31 3/4"	28 3/4"	12 1/2"



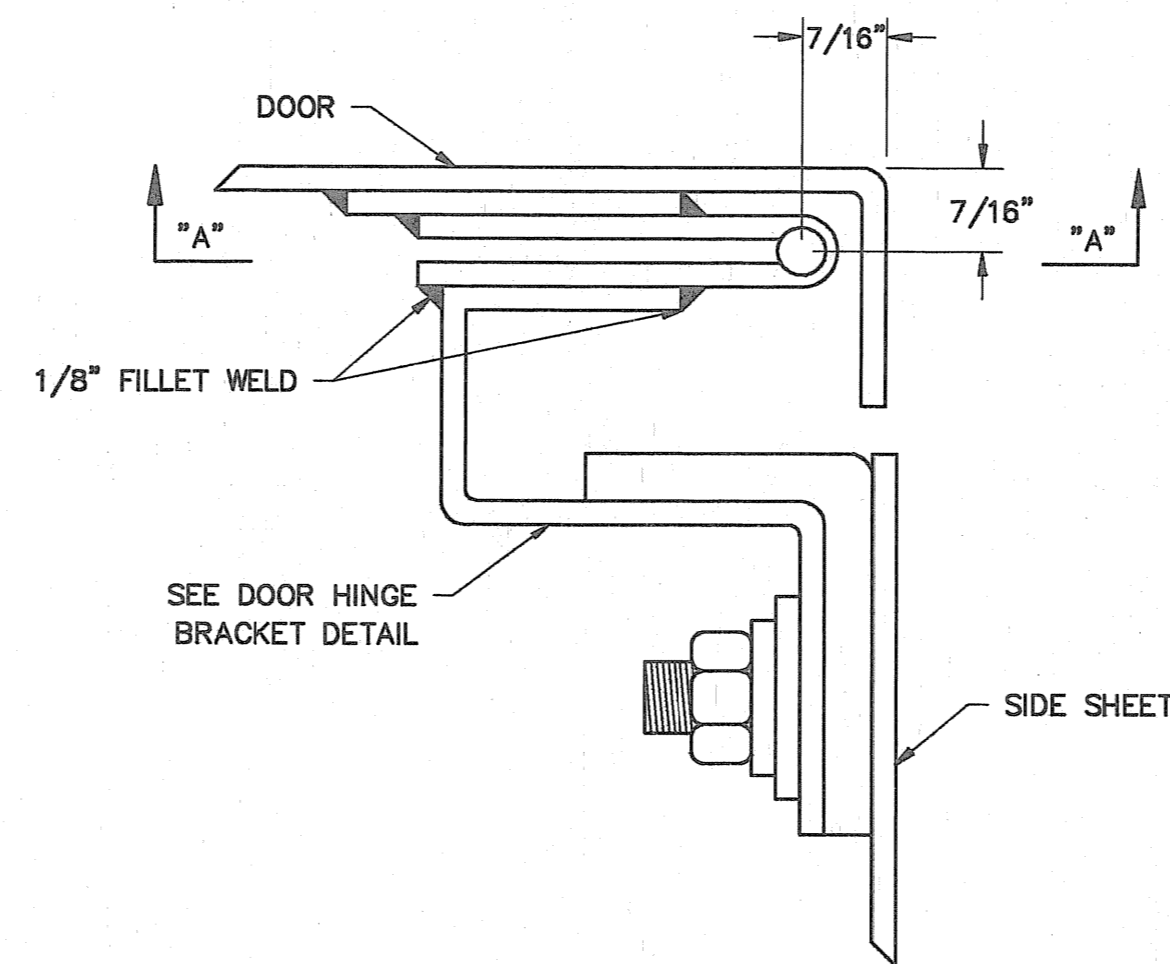
**GUSSET PLATE & DOOR STOP PUNCH DETAIL**  
(SCALE: 1/2"=1")

	NO.	REVISIONS	DATE	<b>RELAY STANDARD</b>  <b>DUAL PANEL DETAILS</b> <b>(UNWIRED SWBD PANELS)</b> <b>REAR FRAME</b>  BOOTH & ASSOCIATES, INC. <small>CONSULTING ENGINEERS RALEIGH, N.C.</small>
DWN. AWD CKD. RNS SCALE AS NOTED	DATE 2/1/91 APPD. RCR	DWG. NO. S5 OF 8	3/8/91	



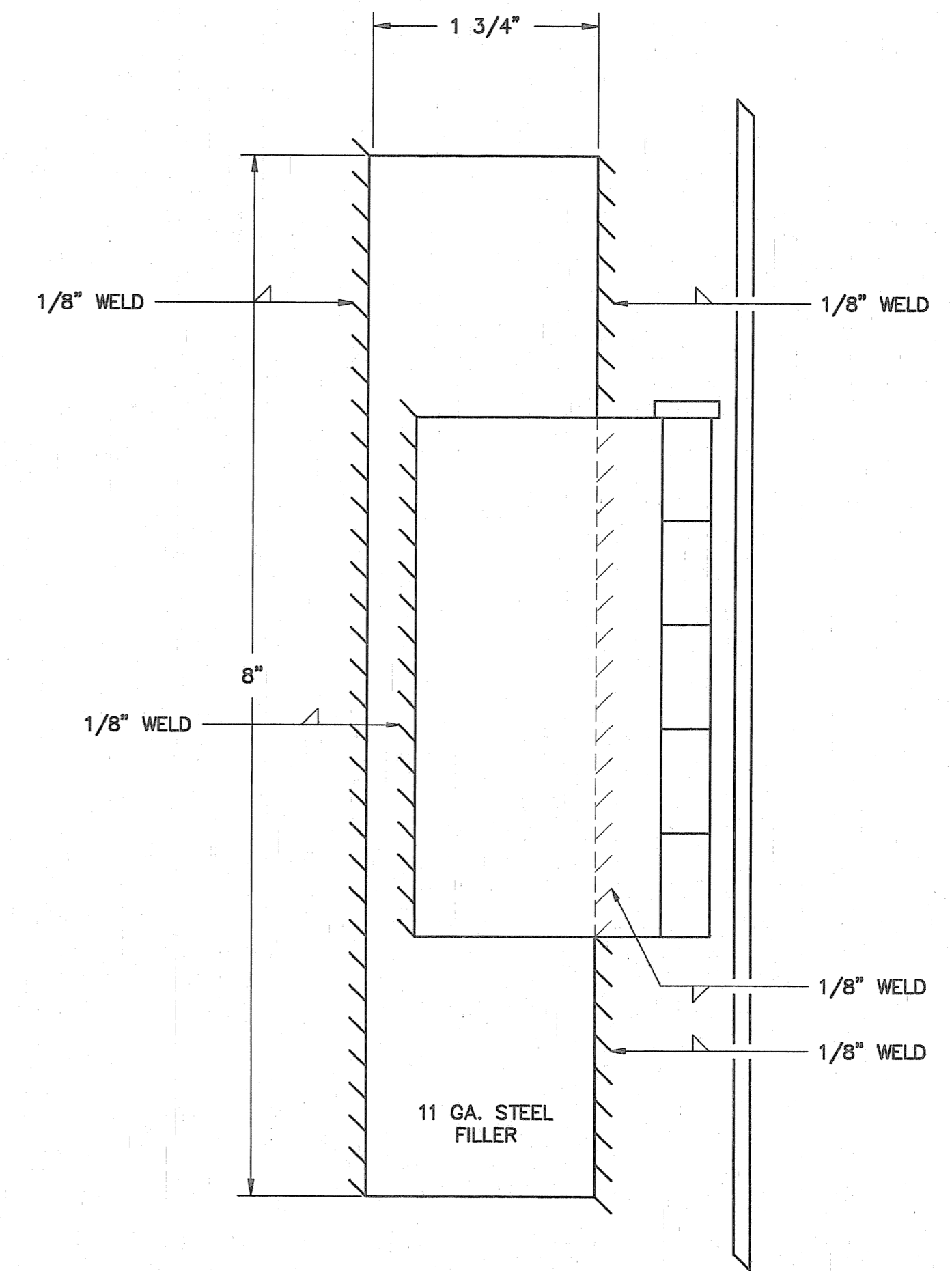
**DOOR HINGE BRACKET - 11 GA. STEEL**

3-REQ'D.  
SCALE: 1"=1"



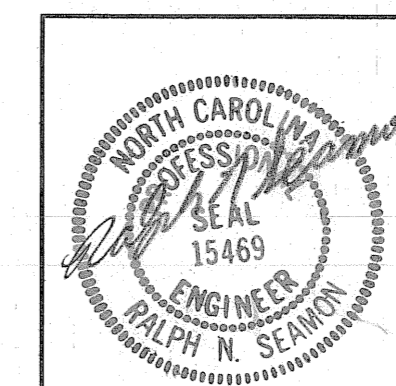
**DOOR HINGE DETAIL**

SCALE: 1"=1"



**HINGE SECTION "A-A"**

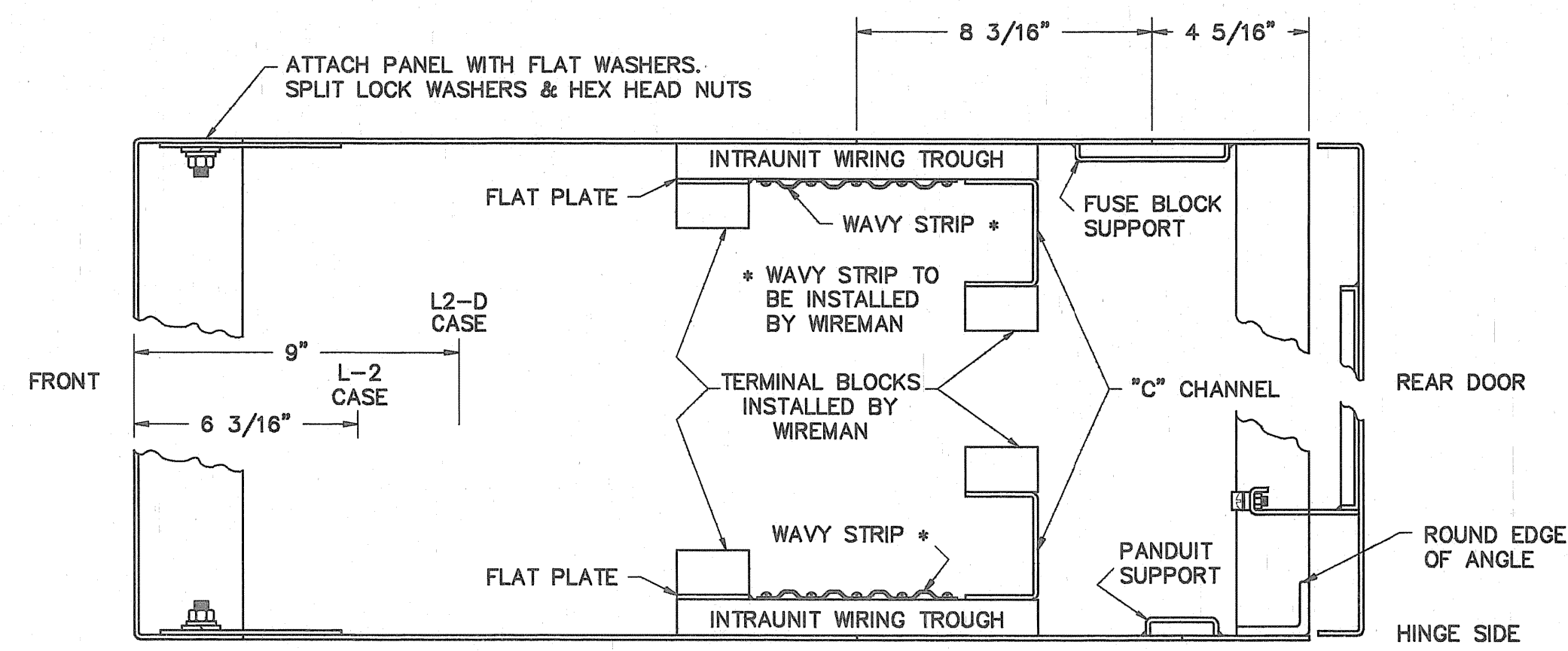
SCALE: 1"=1"



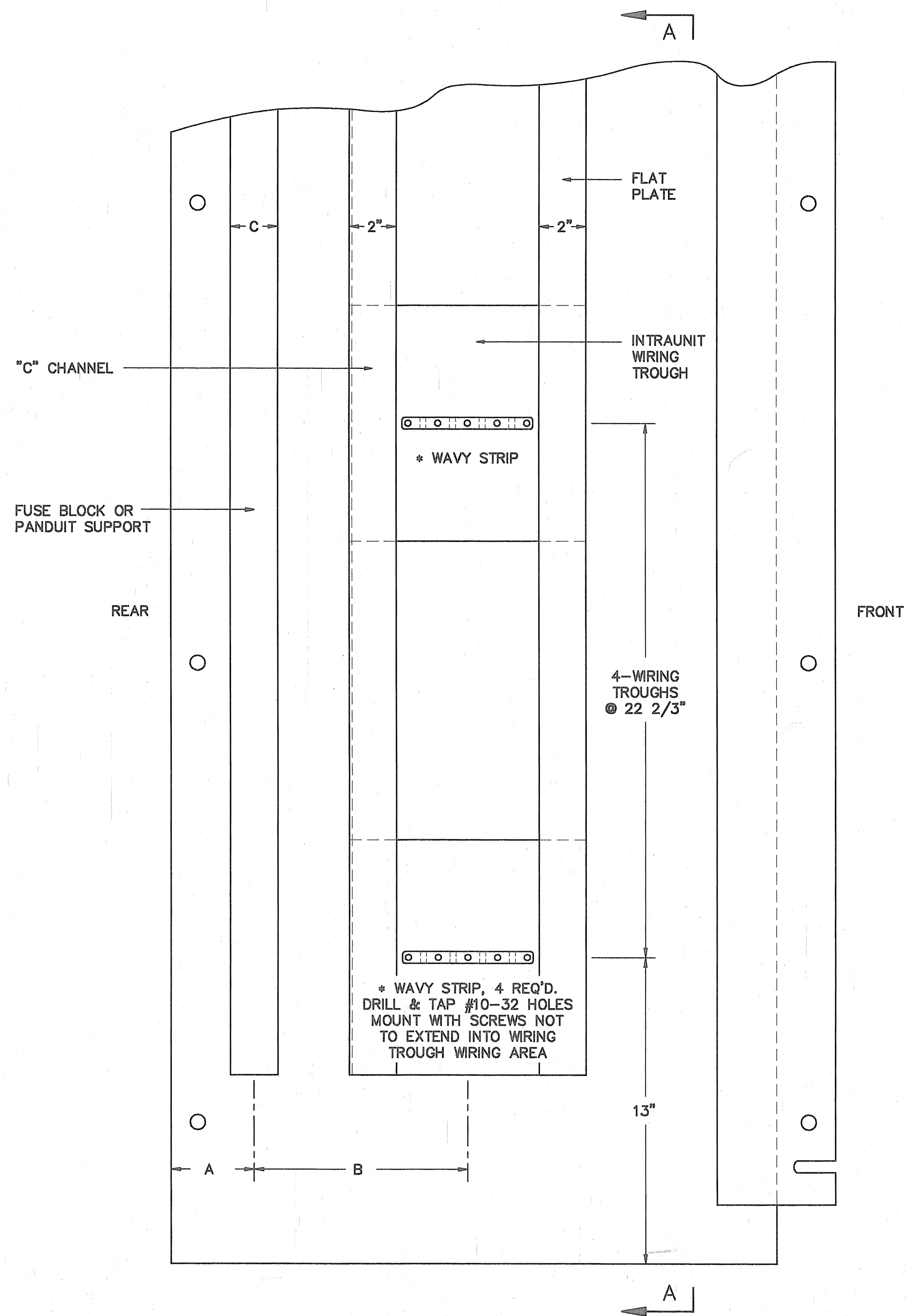
3/8/91

NO.	REVISIONS	DATE	RELAY STANDARD	
			DUAL PANEL DETAILS	
			UNWIRED SWBD PANELS	
			HINGE	
			BOOTH-C ASSOCIATES, INC.	
			CONSULTING ENGINEERS	RALIGH, N.C.
	DWN. B.A.B.	DATE 3/7/91	DWG. NO.	
	CKD. R.N.S.	APPD.		
	SCALE 1"=1"		S6 OF 8	





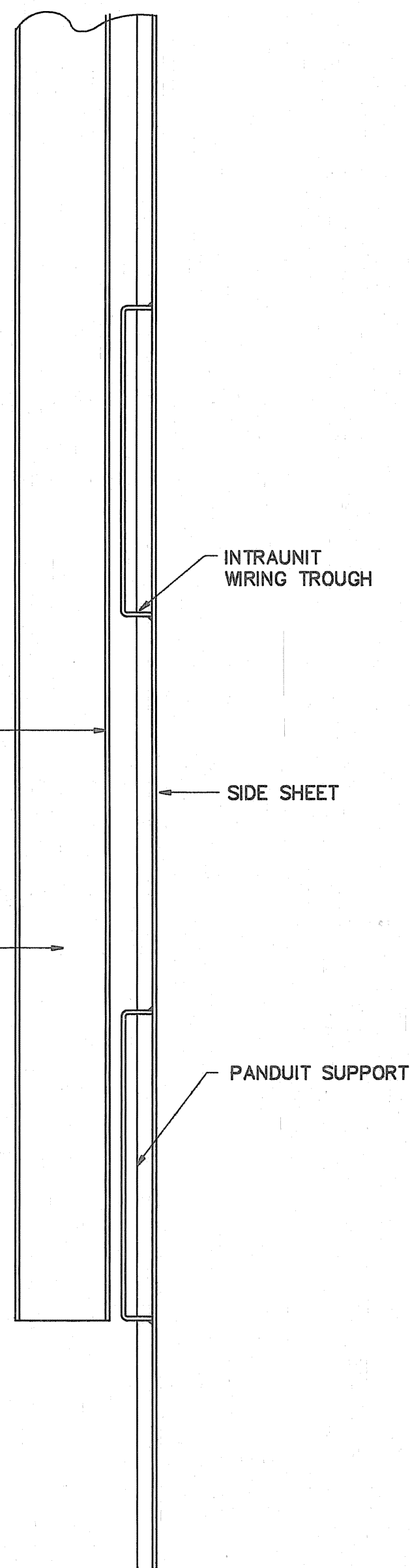
**UNIT SECTIONAL VIEW**  
SCALE: 1/4"=1"



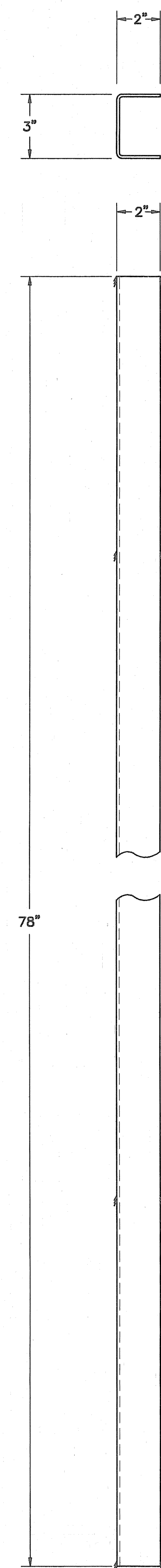
**SIDE SHEET DETAILS**  
SCALE: 1/4"=1"

NOTE:  
INSIDE VIEW OF RIGHT HAND SIDE SHEET SHOWN;  
LEFT HAND SIDE SHEET TO BE SIMILAR BUT  
OPPOSITE HAND.

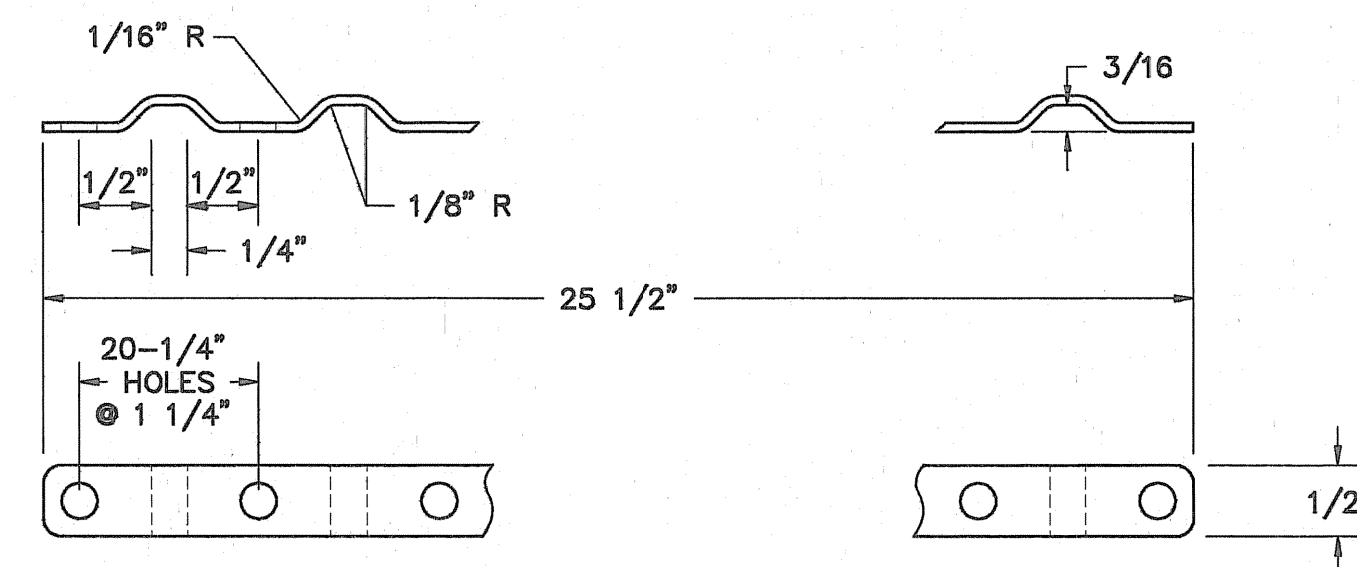
SIDE SHEET	DIMENSION		
	"A"	"B"	"C"
RIGHT	3 1/2"	9"	2"
LEFT	4 5/16"	8 3/16"	4 1/4"



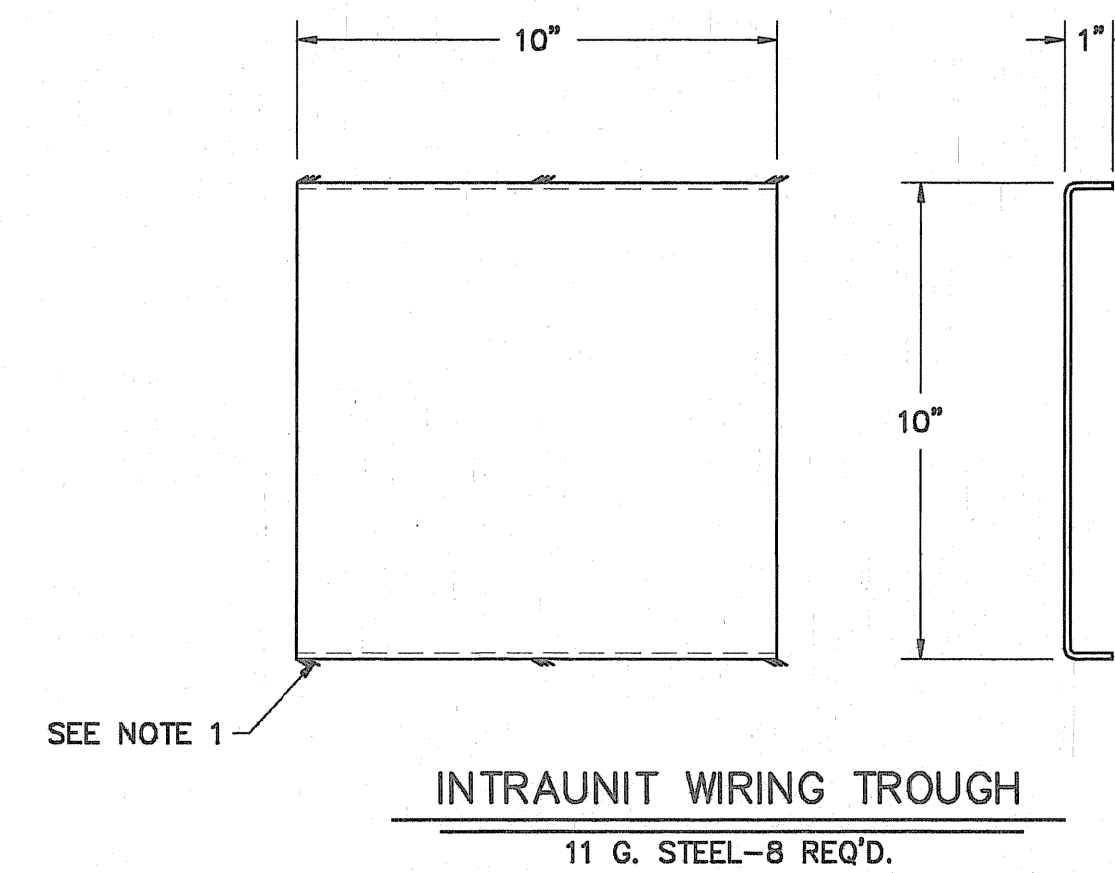
**SECTION A-A**  
SCALE: 1/4"=1"



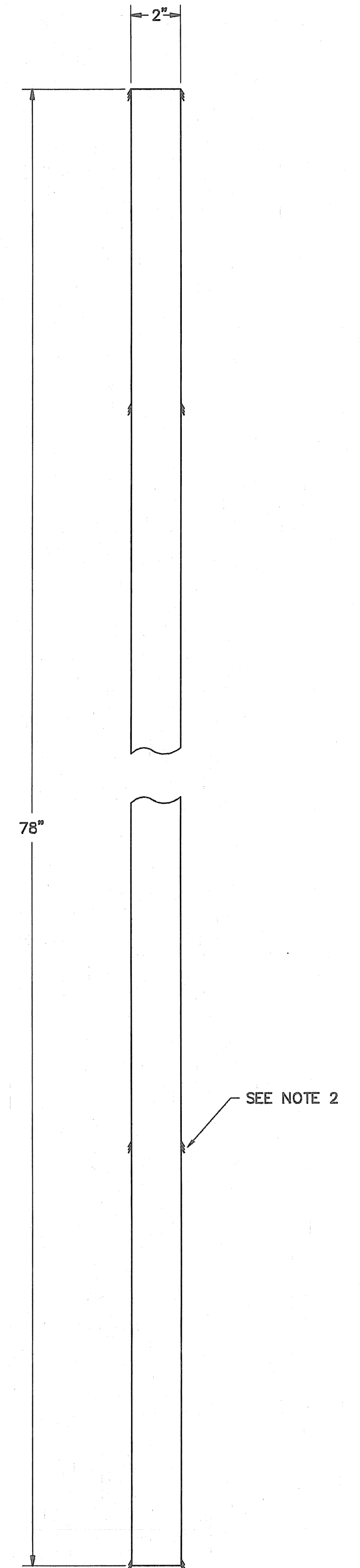
**"C" CHANNEL**  
11 GA. STEEL-2 REQ'D.  
SCALE: 1/4"=1"



**WAVY STRIP**  
SCALE: 3/4"=1"  
1/16" x 1/2" ROUNDED STEEL BAR  
13 PIECES REQUIRED



**INTRAUNIT WIRING TROUGH**  
11 G. STEEL-8 REQ'D.

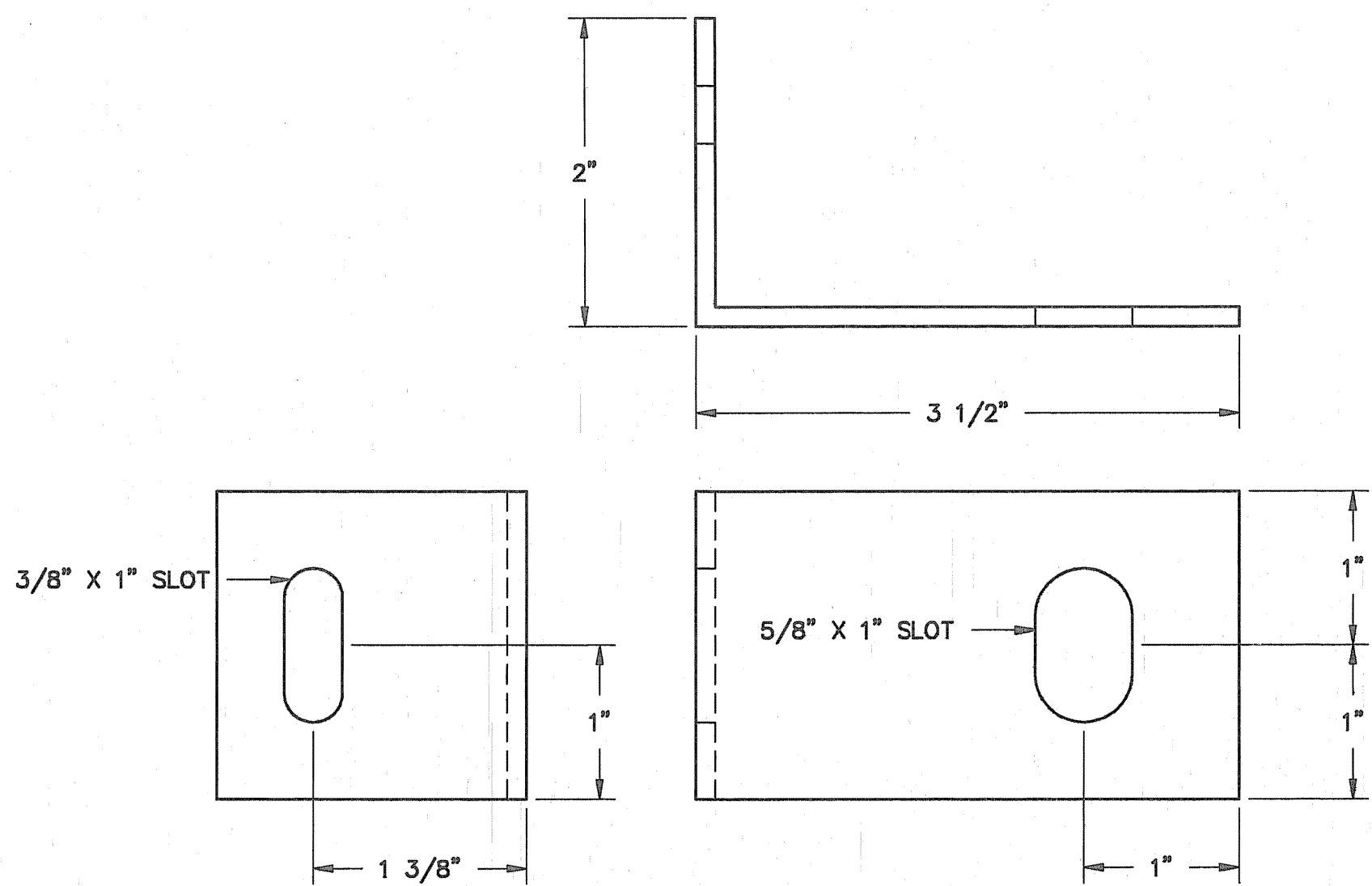
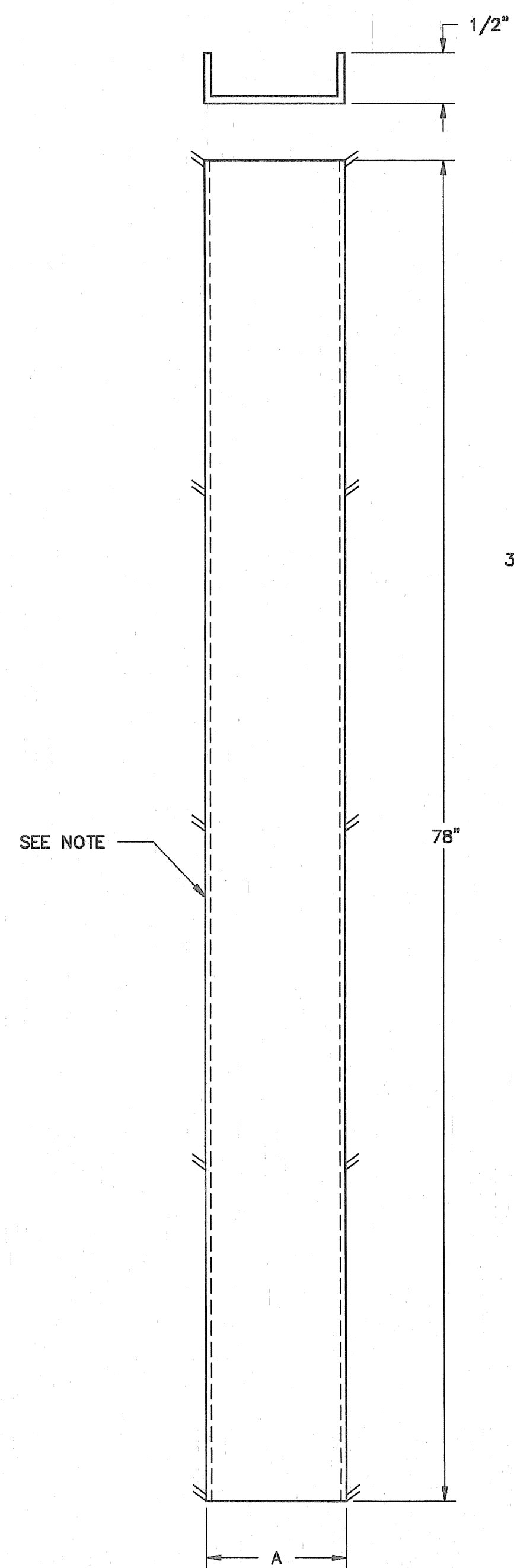


**FLAT PLATE**  
11 GA. STEEL-2 REQ'D.  
SCALE: 1/4"=1"

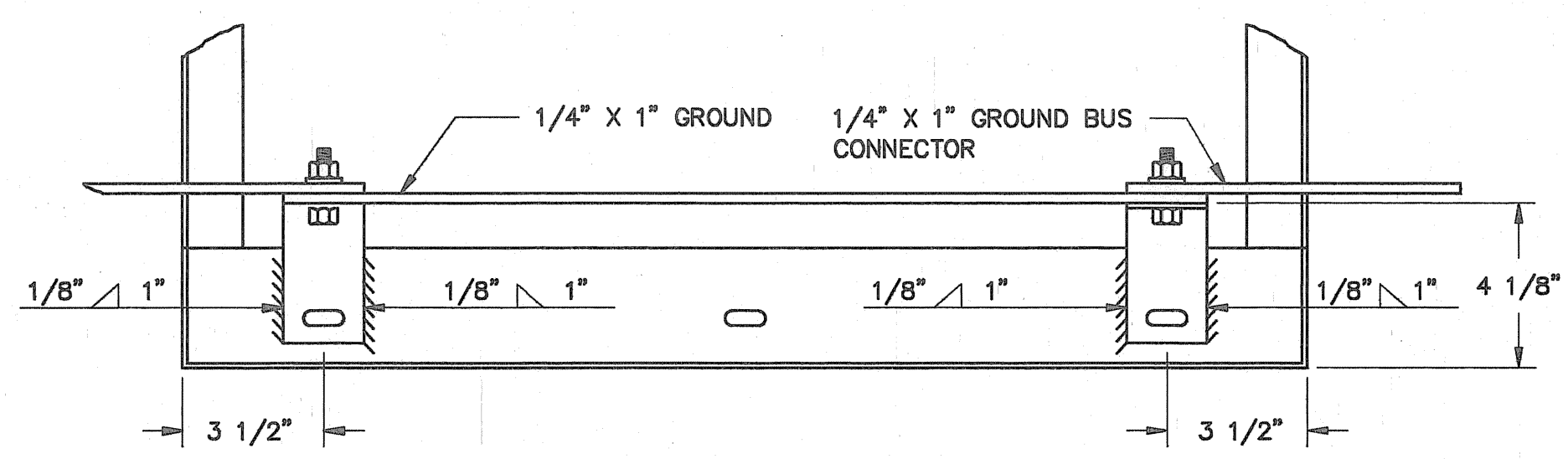
**NOTES:**

1. WIRING TROUGHS ATTACHED TO SIDE SHEET BY FILLET WELDS AT 6 LOCATIONS PER TROUGH. EACH 1" LONG.
2. CHANNEL & PLATE ATTACHED TO WIRING TROUGHS BY FILLET WELDS AT 16 LOCATIONS. EACH 1" LONG.
3. ALL EXPOSED AREAS TO HAVE BROKEN SHARP EDGES.

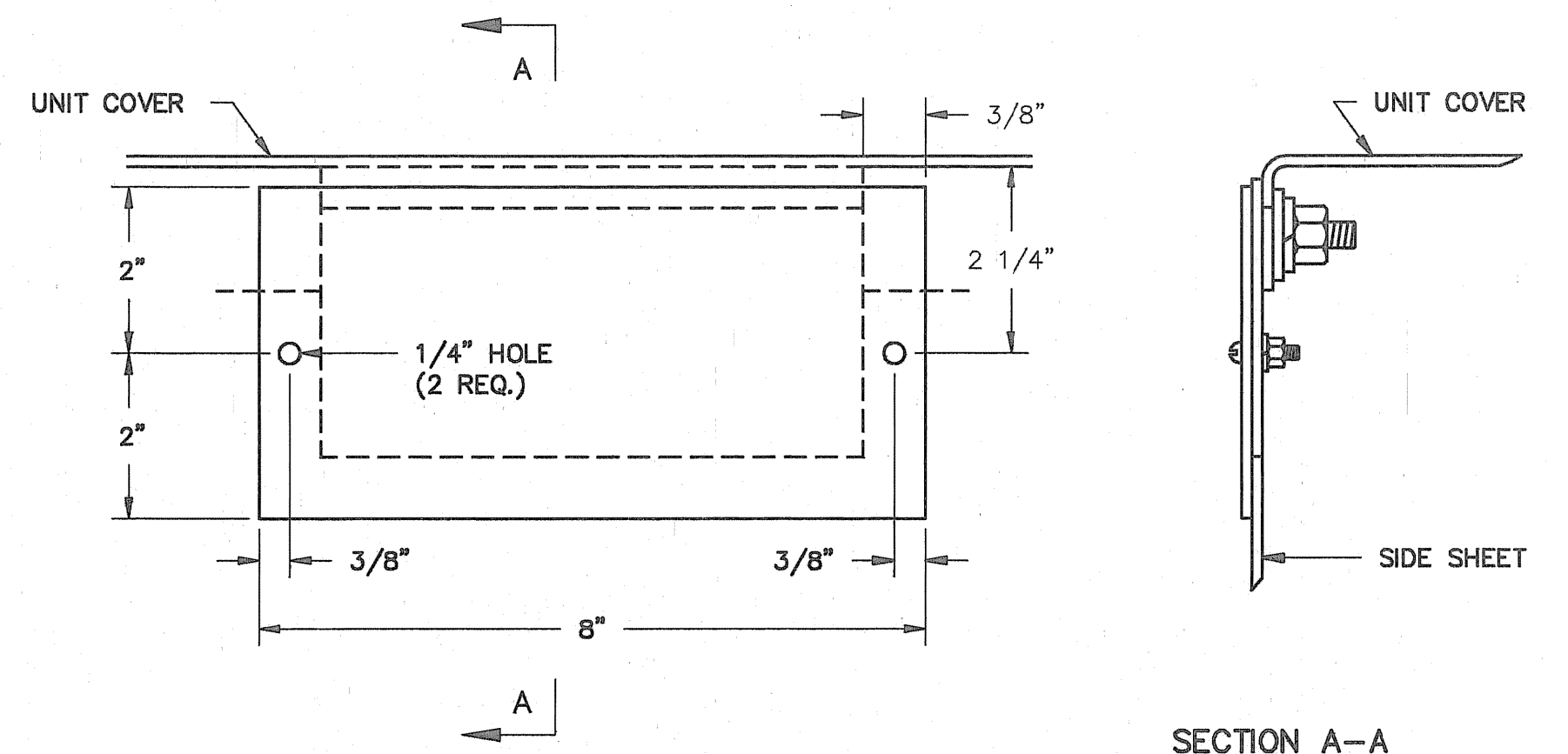
	NO.	REVISIONS	DATE	<b>RELAY STANDARD</b>  DUAL PANEL DETAILS (UNWIRED SWBD PANELS) SIDE SHEET ASSEMBLY T.B. MOUNTING PLATES-WAVY STRIP  BOOTH & ASSOCIATES, INC. CONSULTING ENGINEERS RALEIGH, N.C.	
	3/8/91				
	DWN. B.A.B.	DATE	3/7/91	DWG. NO.	S7 OF 8
	CKD. R.N.S.	APPD.		SCALE AS NOTED	



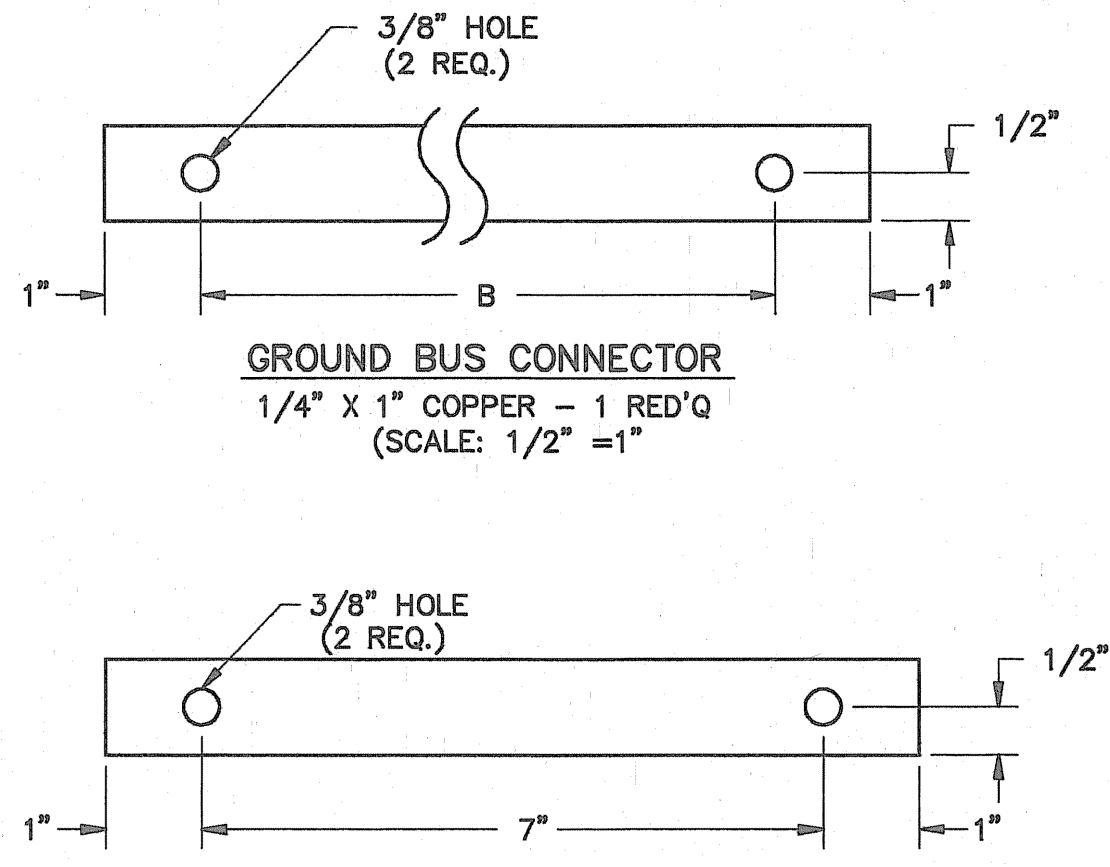
**GROUND BUS SUPPORT BRACKET**  
11 GA. - 2 REQ'D  
(FULL SCALE)



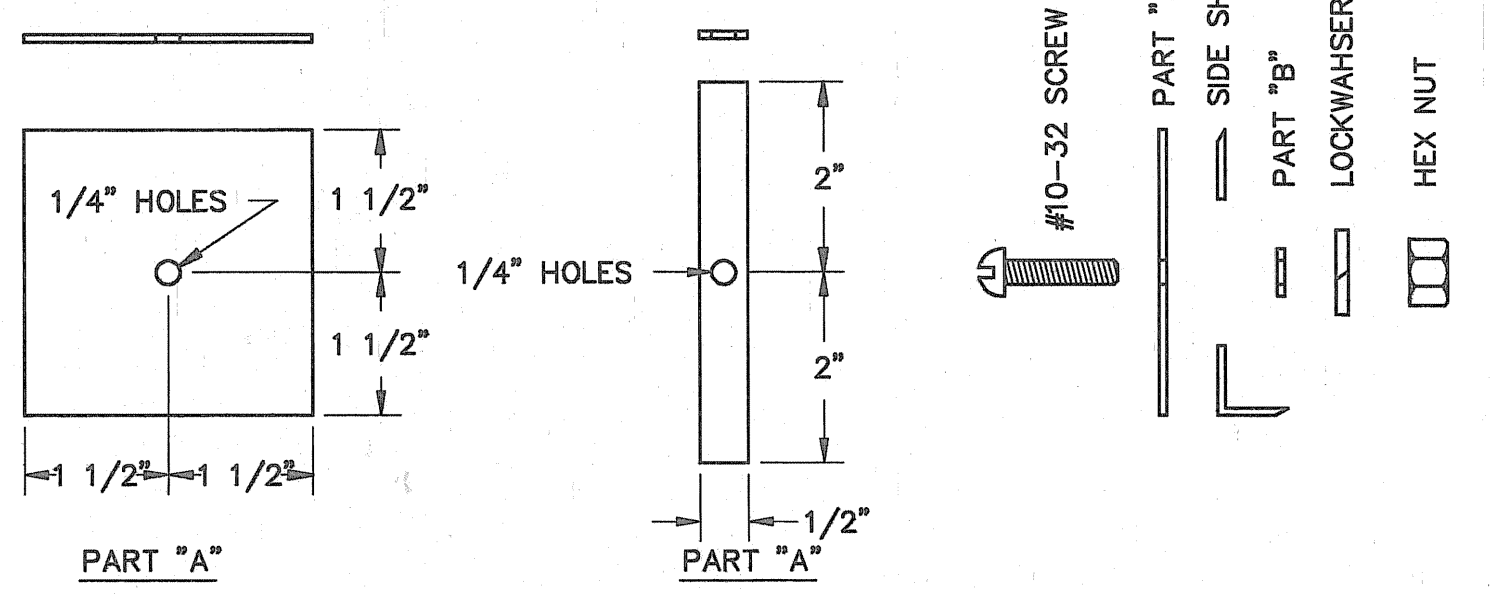
**GROUND BUS LOCATION DETAIL**  
(SCALE: 1/4" = 1")



**INTERUNIT WIRING CUTOUT COVER PLATE DETAIL - 14 GA. STEEL**  
SECURE COVER PLATE WITH 2, #10-32 MACHINE SCREWS, LOCKWASHERS & HEX. HEAD NUTS  
(SCALE: 1/2" = 1")



**GROUND BUS CONNECTOR**  
1/4" X 1" COPPER - 1 REQ'D  
(SCALE: 1/2" = 1")



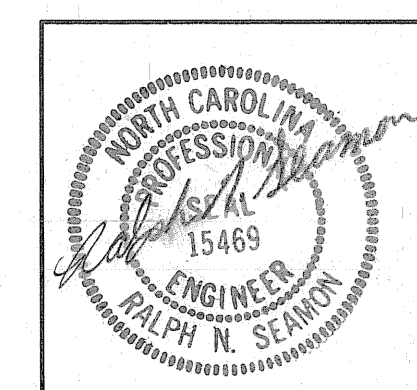
**GROUND BUS SIDE SHEET CUTOUT COVER**  
14 GA. STEEL  
(SCALE: 1/2" = 1")

**FUSE BLOCK & PANDUIT SUPPORT**  
11 GA. STEEL  
(NOT TO SCALE)

FUSE BLOCK SUPPORT "A" = 4 1/4"  
PANDUIT SUPPORT "A" = 2"

**NOTE:**  
SUPPORTS ATTACHED TO SIDE SHEETS BY FILLET WELDS AT 10 LOCATIONS, EACH 1" LONG

UNIT WIDTH	DIMENSIONS
28"	"B" 21"
32"	25"



3/8/91

NO.	REVISIONS	DATE	RELAY STANDARD	
			DUAL PANEL DETAILS (UNWIRED SWBD PANELS) GROUND BUS & COVER PLATE	
			BODDH & ASSOCIATES, INC. CONSULTING ENGINEERS RALEIGH, N.C.	
			DWN. AWD	DATE 2/1/91
			CKD. RNS	APPD. RCR
				DWG. NO. SB OF 8

## **ATTACHMENT A: TECHNICAL SPECIFICATIONS**

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### **Suitability for Intended Use**

Bidders are requested to offer only comparable items that will provide the equivalent capabilities, features, and diversity called for herein. The PWC reserves the right to evaluate all bids for suitability for the required use and to award the one best meeting requirements and is considered to be in PWC's best interest.

### **Descriptive Literature**

Each bid shall be accompanied by complete descriptive literature, specifications, and all other pertinent data necessary for a thorough evaluation of the item(s) bid and sufficient to determine compliance of the item(s) with the specifications. Failure to include such information shall be a sufficient basis for rejection of the bid.

### **Deviations**

The nature of all proposed deviations or variations from the detailed Technical/Material Specifications listed herein shall be clearly and completely described by the bidder on the applicable Form of Exceptions – Technical Specifications.

Failure to identify a deviation or variation shall be interpreted as the bidder's confirmation that the items offered are in full and strict compliance with the Technical Specifications, and the successful bidder shall be held responsible for supplying conforming goods.

**Deviations shall be explained in sufficient detail to permit evaluation. No implication is made or intended by PWC that any deviation or variation will be acceptable, and material deviations or variations may result in the bid being deemed nonresponsive.**

## ATTACHMENT B: BID PRICING FORM

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### **Bidder Information:**

**Name of Company**

**Company Location**

**Phone Number**

**Email Address**

**Is the company an N.C.  
Certified HUB or DBE  
Printed Name**

**Title**

**Authorized Signature**

**Date**

Bidders shall submit pricing exclusively on the Bid Pricing Form provided in this IFB, fully completed and properly executed. A complete submission includes bidder and manufacturer information, required line-item pricing (including part numbers, lead times, unit and extended prices), required tariff disclosures, acknowledgment of all issued addenda, and the signature of an authorized representative. All pricing must include all known tariffs, duties, and import-related charges effective as of the bid due date, remain firm for a minimum of sixty (60) calendar days from bid opening, be F.O.B. Destination, and shall not be conditioned upon shipment date, import date, regulatory change, exchange rate fluctuation, or any other post-bid variable except as expressly permitted under **Attachment C: Tariff Price Adjustments**.

### **Furnish And Deliver:**

Item #	QTY.	UOM	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
1	6	E.A.	SCADA and Communications Switchboard	\$	\$
2	4	E.A.	Termination Cabinet	\$	\$
3	6	E.A.	Transformer Relay and Control Switchboard	\$	\$

4	12	E.A.	Feeder Relay and Control Switchboard	\$	\$
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**TOTAL EXTENDED BID** \$ \_\_\_\_\_

<b>Spare Parts:</b>		\$ _____
<b>Delivery Schedule (Days*)</b>		
Approval Drawings		
Final Drawings		
Delivery		
<b>Field Service Engineering (Per Day Rate)</b>		
Per Day Rate (including expenses) for field service engineering for additional days	\$ _____	

**Tariff Disclosure Section:**

- Are any tariffs included in the Bid Price?  
 Yes  No
- If yes, complete the table below for each tariff-impacted line item or component included in this bid:

Line Item / Component			
Country of Origin			
Base Cost of Affected Component (Included in Bid)			
Tariff % Applied at Bid			
Tariff Cost Included in Bid			

- Percentage of total bid price attributable to tariffs: \_\_\_\_\_%
- Total tariff cost included in this bid: \$ \_\_\_\_\_
- The Bidder certifies that the tariff values identified above reflect the tariff cost included in the bid price as of the bid due date and shall serve as the baseline for any future tariff adjustment request under **Attachment C: Tariff Price Adjustments**.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Company Name: \_\_\_\_\_

**Addendum Acknowledgment Section:**

The Bidder has received, acknowledged, and used the following addenda in completing the Bid.  
(Initial and Date as appropriate).

Addendum No. 1	Date _____
Addendum No. 2	Date _____
Addendum No. 3	Date _____
Addendum No. 4	Date _____
Addendum No. 5	Date _____
Addendum No. 6	Date _____
Addendum No. 7	Date _____



## **ATTACHMENT C: TARIFF PRICE ADJUSTMENTS**

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1. **Tariff Defined.** For purposes of this Bid, “Tariff” means any new, increased, or modified import duty, tax, or levy imposed by the United States federal government under the Harmonized Tariff Schedule of the United States (HTSUS) after the effective date of this Bid.
2. **Eligibility to Request Price Adjustment.** If Tariffs change during the term of this Bid and directly impact the cost of products, goods, materials, or a clearly defined component part thereof required for performance of this Bid, the Bidder may request a price adjustment if the net change in cost attributable solely to such Tariff change exceeds five percent (5%) of the total material impacted. The Bidder is limited to one price adjustment per quarter.
3. **Bidder’s Request for Price Adjustment.** If the Bidder is requesting a price adjustment, it must submit (1) a written request to the Procurement Manager and (2) evidence of: (i) the unit price paid by Bidder as of the date of award for the good or raw material used to furnish the goods to the Unit under this Bid, (ii) the applicability of the Tariff to the specific good or raw material, and (iii) Bidder’s payment of the increased Tariff (either directly or through an increase to the cost paid for the good or raw material). The evidence submitted shall be sufficient to allow PWC to verify that the Tariff is the cause of the price change. The PWC may request, and the Bidder shall provide, additional documentation reasonably necessary to verify the Bidder’s request.
4. **Calculation of Price Adjustments, Increased.** If approved by PWC, the amount of any adjustment shall equal the difference between the actual material cost incurred and 105% of the baseline cost. Adjustments shall be limited to the affected materials and shall not exceed fifteen percent (15%) of the initial Bid price.
5. **Calculation of Price Adjustments, Decreased.** If the Tariff is repealed or reduced prior to termination of this Bid, the increase in the Unit’s Bid price shall be reduced by the same amount and adjusted accordingly within 30 calendar days.
6. **Right of Termination.** If the cumulative Tariff impact exceeds fifteen percent (15%) of the Bid price, either party may request termination of the Bid without penalty.
7. **Illustrative Example (For Clarification Purposes Only):**

The following example is provided solely to demonstrate the application of this Tariff Price Adjustment provision and does not modify its terms. Assume the following:

Total contract price for one unit of equipment: \$110,000

An imported component (e.g., vacuum interrupter assembly) represents \$20,000 of the material cost included in the bid.

Tariff in effect at the bid due date and contract execution: 10%

Tariff cost included in the bid price: \$2,000 (10% of \$20,000)

After contract execution, the applicable tariff increases to 18%, resulting in a new tariff cost of:

$$18\% \times \$20,000 = \$3,600$$

The total increase in tariff cost attributable to the affected component is:

$$\$3,600 - \$2,000 = \$1,600 \text{ increase}$$

If the Agreement requires the bidder to absorb the first five percent (5%) of the affected material cost, the bidder would absorb:

$$5\% \times \$20,000 = \$1,000$$

The amount eligible for adjustment would therefore be:

$$\$1,600 - \$1,000 = \$600$$

If approved by PWC and within the maximum cumulative adjustment cap set forth in this Attachment, the contract price would be adjusted as follows:

Original Contract Price: \$110,000  
Approved Tariff Adjustment: +\$600  
Revised Contract Price: \$110,600

Adjustments apply only to the documented cost of the specific tariff-impacted component. No adjustment shall be permitted for unaffected portions of the product, labor, overhead, profit, freight, exchange rate fluctuation, or other cost elements not directly attributable to the documented tariff increase. Known tariffs effective as of the bid due date must be included in the original bid price.



**ATTACHMENT D: CERTIFICATION OF PRIMARY PARTICIPANT REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS**

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The Primary Participant, \_\_\_\_\_ (major third party contractor), certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(If the primary participant is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.)

THE PRIMARY PARTICIPANT \_\_\_\_\_ CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET. SEQ. ARE APPLICABLE THERETO.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

# PWC at a Glance



## Customers



- In operation since 1905
- Provides Electric, Water & Wastewater Services to more than 250,000 people
- Total Customers: 123,017
- Number of Services: 275,382
  - Electric: 83,918
  - Water: 98,439
  - Wastewater: 93,004
  - Irrigation: 6,426
- Customers with 2+ services: 75%

## Customer Service



- Annual Customer Contacts: 443,258
- Average Monthly Calls: 33,657
- Annual Bills Generated: 1.5 Million
- Customer Incentive Programs: 14
- Annual Water Leak Notifications: 20,772 (24 million gal)

## Employees



- Number of Employees: 690
- Average Tenure of Employees: 10 years
- Average Age: 45
- Annual Turnover: 6.0%\*
- Annual Hours Worked: 1.3 Million

\*non retirement

## Facilities



- Butler-Warner Generation Plant (268 MW)
  - Electric Service Area: 147 Sq. miles
- P.O. Hoffer Water Treatment Facility (39.5 MGD)
- Glenville Lake Water Treatment Facility (18.0 MGD)
  - Drinking Water Service Area: 116 Sq. miles
- Cross Creek Water Reclamation Facility (25 MGD)
- Rockfish Creek Water Reclamation Facility (21 MGD)
  - Wastewater Service Area: 109 Sq. miles

## Electric Operations



- Purchase Wholesale Power from Duke Energy
- Only NC municipal system to own/operate a generation plant (Dispatched for use by Duke Energy)
- Generation Capacity: 265 MW
- Annual MWH Sold: 2 million
- System Peak: 499 MW (Feb. 20, 2015)
- Solar Generation Capacity: 2.9 MW
- Annual Solar Generation: 1,454,371 KWH
- Battery Storage: 2 MW
- Electric Distribution Substations: 32
- Distribution Lines: 1,364 miles
- Transmission Lines: 123 miles
- Streetlights/Area Lights: 38,023

## Water/Wastewater Operations



- Population Served: 225,000+
- Drinking Water Treated: 10.645 Billion Gallons/Year
- 100% Compliant for all EPA Drinking Water Standards
- Daily Water Treatment Capacity: 50 MG/Day
- Daily Wastewater Treatment Capacity: 46 MG/Day
- Water/Wastewater Infrastructure: 2,979 miles
- Hydrants: 8,780
- Sanitary Sewer Lift Stations: 79
- Manholes: 34,430

## Financial



- FY24 Annual Operating Budget: \$450 Million
- Total Assets: \$1.89 Billion
- Bond Rating: Aa2(Moody's), AA (Standard & Poor's), AA (Fitch)
- Operations & Maintenance Expense per Customer: \$570 (\$618 National Median)
- Annual Cash Contributions to the City of Fayetteville in Lieu of Taxes: \$12.06 Million
- Annual Streetlight Services: \$4.14 Million
- Annual Annexation Construction Costs: \$8.49 Million
- Total Value of Annual Contributions to the City of Fayetteville: \$30.81 Million

Visit [www.FayPWC.com](http://www.FayPWC.com) to learn more about PWC



## SALE OF GOODS AGREEMENT

This Sale of Goods Agreement (“Agreement”) is made by and between the City of Fayetteville (the “City”), by and through the Fayetteville Public Works Commission (“PWC”), a North Carolina public authority, and \_\_\_\_\_ [insert seller’s full legal name] (“Seller”), a \_\_\_\_\_ [identify the legal entity and State in which formation was accomplished] (each of PWC and Seller is a “Party” and both are collectively the “Parties”) as of the date of execution last written below (the “Effective Date”). In consideration of the mutual covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, The Parties agree as follows:

1. Sale of Goods. Seller shall sell to PWC and PWC shall purchase from Seller the following [Identify the goods specifically] (the “Goods”). PWC may issue a purchase order for the Goods that specifies any additional applicable terms and conditions set forth for the purchase (a “Purchase Order”), but such Purchase Order is subject to the terms of this Agreement. In the event of a conflict between the provisions of this Agreement and the provisions of any Contract Documents, attachment, exhibit or Purchase Order made pursuant to this Agreement, the terms of this Agreement shall govern.

2. Contract Documents. “Contract Documents” means, collectively, the following documents that were either made available to Seller by PWC during the bid solicitation process (including Drawings) or executed by the Parties, or both, which are all incorporated by reference herein:

- a. This Agreement
- b. Notice to Prospective Bidders
- c. Definitions
- d. Instructions to Bidders
- e. General Conditions
- f. Materialman’s Proposal
- g. Bid Bond
- h. Technical Specifications
- i. Purchase Order(s)
- j. Addenda

3. Delivery of Goods. Seller shall deliver the Goods [EITHER: “on or before \_\_\_\_\_” OR “as specified in the Contract Documents or an applicable Purchase Order issued by PWC” OR “as otherwise agreed in writing by the Parties”] (the “Delivery Date”). Timely delivery of the Goods is of the essence. If Seller fails to deliver the Goods on or before the Delivery Date, PWC may, without any liability to Seller, terminate this Agreement immediately by providing written notice to Seller. Unless otherwise specified in an applicable Purchase Order or the Contract Documents, excluding this Agreement, all Goods shall be delivered to PWC’s Warehouse at 955 Old Wilmington Road, Fayetteville, North Carolina 28301 (the “Delivery Point”) during PWC’s normal business hours. Delivery shall be made FOB Delivery Point.

4. Title and Risk of Loss. Title of the Goods passes to PWC upon delivery of the Goods to the Delivery Point. Seller bears all risk of loss or damage to the Goods until delivery of the Goods to the Delivery Point.

5. Packaging. Seller shall properly pack, mark, and ship the Goods as instructed by PWC and otherwise in accordance with applicable law and industry standards and shall provide PWC with all shipment documentation showing the quantity of pieces in shipment, the number of cartons or containers in shipment, Seller's name, the airway bill or bill of lading number, and the state of origin.

6. Inspection and Rejection of Nonconforming Goods. PWC has the right to inspect the Goods on or after the Delivery Date. PWC, at its sole option, may inspect all or a sample of the Goods, and may reject all or any portion of the Goods if it determines the Goods are nonconforming or defective. If PWC rejects any portion of the Goods, PWC has the right, effective upon written notice to Seller, to: (a) terminate this Agreement in its entirety and require Seller to remove the Goods in a commercially reasonable time period or pay the full cost and expense to have the rejected Goods returned to Seller; or (b) reject the Goods and require replacement of the rejected Goods at Seller's sole expense. If PWC requires replacement of the Goods, Seller shall, at its sole expense and in the lesser of ninety (90) days or the number of days between any applicable Purchase Order of PWC and the Delivery Date, replace the nonconforming Goods and pay for all related expenses, including, but not limited to, transportation charges for the return of the defective goods and the delivery of replacement Goods. Any inspection or other action by PWC under this Section shall not reduce or otherwise affect Seller's obligations under this Agreement, including Seller's warranties, and PWC shall have the right to conduct further inspections after Seller has carried out its remedial actions.

7. Price. PWC shall purchase the Goods from Seller in the total amount of \$\_\_\_\_\_ ("Price"). The Price includes all packaging, transportation costs to the Delivery Location, insurance, fees, and applicable taxes, including, but not limited to, all sales, use, or excise taxes. No increase in the Price is effective, whether due to increased material, labor, transportation costs or otherwise, without the prior written consent of PWC.

8. Billing and Payment. Seller shall invoice PWC within thirty (30) days after the completion of the delivery of the Goods. PWC shall pay the undisputed portion of the invoice within forty-five (45) calendar days after PWC's receipt of the invoice. All payments from PWC to Seller shall be transferred electronically to Seller's designated financial institution, and Seller shall, prior to delivery of its invoice to PWC, supply the name of Seller's financial institution, routing number, and account number on the form available from PWC and provide to PWC a completed and signed IRS Form W-9. Seller has the right to impose a late payment charge of one percent (1%) per month for amounts unpaid by PWC by the date due.

Provider shall comply with all of the following requirements so that PWC may recover the full amount of sales and use tax under North Carolina law permitted under the law:

- a. Furnish PWC documentary evidence showing the material used, sales tax paid, and County paid (County of sale). The documentary evidence shall include Provider's certified statement showing total purchases of materials from each separate vendor and total sales taxes charged to PWC and paid by Provider. The documentary evidence shall also include Provider's certified statement as to the amount paid by PWC for sales tax on the Goods. A certified form is required even if no sales tax was paid for the pay request period. Materials used from Provider's warehouse stock shall be shown in a certified statement at warehouse stock prices and amount of County of Use Tax charged to PWC and paid by Provider;

- b. Provider shall furnish to PWC invoices or copies of invoices for all materials purchased for said work within pay request period, and such invoices shall state the amount of North Carolina Sales Tax, if any, paid for the Goods. Provider shall also furnish to PWC invoices identifying the amount paid for the sales and use tax on Services that are subject to such taxation under North Carolina law; and
- c. Provider shall not include any tax paid on supplies, tools, and equipment that Provider uses to perform its obligations under this Agreement.

9. Warranties. Seller warrants to PWC that for a period of twenty-four (24) months from the Delivery Date, all Goods will: (a) be free from any defects in workmanship, material and design; (b) conform to applicable specifications, drawings, designs, samples and other requirements set forth in the Contract Documents or as specified by PWC and agreed to by Seller; (c) be fit for their intended purpose and operate as intended; (d) be free and clear of all liens, security interests, or other encumbrances; and (e) not infringe or misappropriate any third party's patent or other intellectual property rights. These warranties survive any delivery, inspection, acceptance or payment of or for the Goods by PWC. These warranties are cumulative and in addition to any other warranty provided by law or equity. Any applicable statute of limitations runs from the date of PWC's discovery of the noncompliance of the Goods with the foregoing warranties. If PWC gives Seller notice of noncompliance with this Section 9, Seller shall, at its own cost and expense, within thirty (30) days replace or repair the defective or nonconforming Goods and pay for all related expenses, including, but not limited to, transportation charges for the return of the defective or nonconforming goods to Seller and the delivery of repaired or replacement Goods to PWC.

10. Termination. Notwithstanding any other or additional remedies that may be provided under this Agreement, PWC may terminate this Agreement with immediate effect upon written notice to the Seller, either before or after the acceptance of the Goods, if: (a) Seller repudiates, or threatens to repudiate, any of its obligations under this Agreement; (b) Seller is in breach of, or threatens to breach, any representation, warranty, or covenant of Seller under this Agreement and either the breach cannot be cured or, if the breach can be cured, it is not cured by Seller within a commercially reasonable period of time under the circumstances, in no case exceeding seven (7) days following Seller's receipt of Notice of such breach; (c) Seller fails to, or threatens to fail to, timely deliver Goods conforming to the requirements of, and otherwise in accordance with, the terms and conditions of this Agreement; or (d) Seller becomes insolvent, files a petition for bankruptcy, or commences or has commenced against it proceedings relating to bankruptcy, receivership, reorganization, or assignment for the benefit of creditors. PWC shall be obligated to pay Seller only for work performed and reasonable expenses incurred until delivery of the notice of termination.

11. Insurance. During the term of this Agreement and for a period of three (3) years after the date of this Agreement, Seller shall, at its own expense, maintain and carry insurance in full force and effect that includes, but is not limited to, commercial general liability (including product liability) with limits no less than \$1,000,000 for each occurrence and \$3,000,000 in the aggregate and umbrella liability in a sum no less than \$5,000,000, which insurance shall be placed with insurance companies authorized to do business in the State of North Carolina and rated A minus VII or better by the current edition of Best's Key Rating Guide or otherwise approved in writing by PWC. Prior to delivering any Goods, Seller shall deliver to PWC certificates of insurance confirming each such coverage, and Seller shall direct its insurers to provide annually to PWC certificates confirming each such coverage during the coverage

period. PWC shall be named as an additional insured in the insurance policy. Seller shall not reduce or allow the required insurance coverages to lapse without PWC's prior written approval. All policies for insurance must be endorsed to contain a provision giving PWC a thirty (30) calendar day prior written notice by certified mail of any cancellation of that policy or material reduction in coverage. Should a notice of cancellation be issued for non-payment of premiums or any part thereof, or should Seller fail to provide and maintain certificates as set forth herein, PWC shall have the right, but not the obligation, to pay such premium to the insurance company or to obtain such coverage and to deduct such payment from any sums that may be due or become due to Seller, or to seek reimbursement for said payments from Seller. Any such sums paid by PWC shall be due and payable immediately by Seller upon notice from PWC. The insurance provisions of this Agreement shall not be construed as a limitation on Seller's responsibilities and liabilities pursuant to the terms and conditions of this Agreement.

12. Indemnification. Seller shall indemnify, defend, and hold harmless PWC and its Commissioners, officers, employees, agents, and representatives (collectively, "Indemnitees") from and against all claims, actions, liabilities, damages, losses, costs, and expenses (including, without limitation, injury to or death of any persons and damage to property, economic and consequential damages and attorneys' fees) asserted by one or more third parties against one or more of the Indemnitees arising out of negligent or willful acts, violations of law, infringement of any patent, trademark, trade secret, copyright, or other intellectual property right of a third party, or omissions or breach of the obligations set forth in this Agreement by Seller or any of its employees, agents, representatives, and subcontractors. Seller's obligation to indemnify, defend, and hold harmless the Indemnitees shall survive the termination of this Agreement and shall include the duty to pay for the reasonable attorney's fees and costs associated with defending the Indemnitee(s) by the legal counsel of each Indemnitee's choice.

13. Notices. Any notice which either Party is required or desires to give the other shall be deemed sufficiently given if, in writing, it is delivered personally, or sent by certified U.S. mail, return-receipt requested, postage prepaid, to the addresses listed hereinbelow, or such other address as either Party shall give to the other Party by written notice in accordance herewith. Any notice given herein by personal delivery shall be deemed delivered when received. Any properly addressed notice given herein by certified mail shall be deemed delivered on the third Business Day after the same is deposited in an official United States Post Office, postage prepaid, or if sooner upon the date when the return receipt therefor is signed, or refusal to accept the mailing by the addressee is noted thereon by the postal authorities.

To PWC:  
Fayetteville Public Works Commission  
Attn: Timothy Bryant, CEO/General Manager  
PO Box 1089  
Fayetteville, NC 28302

To Seller:  
[INSERT MAILING ADDRESS]

14. Compliance. Seller hereby acknowledges that "E-Verify" is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. Seller further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North

Carolina General Statutes, must use E-Verify and after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS §64-26(a). Seller hereby pledges, attests, and warrants through execution of this Agreement that Seller complies with the requirements of Article 2, Chapter 64 of the North Carolina General Statutes and further pledges, attests, and warrants that all subcontractors currently employed by or subsequently hired by Seller to provide services for PWC shall comply with all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Agreement. Seller hereby further acknowledges that the execution and delivery of this Agreement constitutes Seller's certification to PWC and to the North Carolina State Treasurer that, as of the Effective Date, Seller is not listed on (a) the Final Divestment List created and maintained by the North Carolina Department of State Treasurer pursuant to the Iran Divestment Act of 2015, Chapter 147, Article 6E of the General Statutes of North Carolina (the "Iran Divestment Act"); or (b) the list of companies that the North Carolina State Treasurer determines to be engaged in a boycott of Israel in accordance with Article 6G of Chapter 147 of the General Statutes of North Carolina. Seller represents and warrants to Commission that Seller, and all persons and entities owning (directly or indirectly) an ownership interest in it: (i) are not, and will not become, a person or entity with whom a party is restricted from doing business with under regulations of the Office of Foreign Asset Control ("OFAC") of the Department of the Treasury (including, but not limited to, those named on OFAC's Specially Designated and Blocked Persons list) or under any statute, executive order (including, but not limited to, the September 24, 2001, Executive Order 13224 Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism), or other governmental action; and (ii) are not knowingly engaged in, and will not knowingly engage in, any dealings or transactions or be otherwise associated with such persons or entities described in clause (i) above. Seller also shall at all times during the term of this Agreement comply with Executive Order 11246, including but not limited to the Equal Opportunity Clause requirements set forth in 41 C.F.R. § 60-1.4. Seller shall abide by the requirements of 41 CFR 60-300.5(a) and 60-741.5(a) prohibiting discrimination against qualified individuals on the basis of protected veteran status or disability and requiring affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans and individuals with disabilities.

15. Cumulative Remedies. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either Party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law or in equity.

16. Miscellaneous Provisions. Seller is and shall remain an independent contractor. Nothing contained in this Agreement shall be deemed or construed to create the relationship of principal and agent or of partnership or of joint venture or of any association whatsoever between the Parties. No breach or non-performance of any term of this Agreement shall be deemed to be waived by either Party unless said breach or non-performance is waived in writing and signed by the Parties. No waiver of any breach or non-performance under this Agreement shall be deemed to constitute a waiver of any subsequent breach or non-performance, and for any such breach or non-performance each Party shall be entitled to such remedies as provided by law. No consent or waiver by a Party shall be effective unless it is in writing and then only to the extent specifically stated. The invalidity, illegality, or un-enforceability of any portion or provision of this Agreement shall in no way affect the validity, legality, and/or enforceability of any other portion or provision of this Agreement. Any invalid, illegal, or unenforceable provision of this Agreement shall be deemed severed from this Agreement, and the balance of the



Agreement shall be construed and enforced the same as if the Agreement had not contained any portion or provision which was invalid, illegal, or unenforceable; provided, however, severability shall not prevent this entire Agreement from being void in the event any portion or provision of this Agreement that is of the essence of this Agreement shall be void. This is the entire agreement of the Parties on the subject matter hereof, and all prior negotiations, representations, proposals, letters, agreements, understandings, or other communications between the Parties, whether written or oral, are hereby merged into the Agreement and superseded by this Agreement. This Agreement shall not be modified unless such modifications are evidenced in writing, signed by both Parties. Nothing herein shall be construed to give any right or benefits hereunder to anyone other than the Parties. This Agreement shall be governed by the laws of the State of North Carolina without the application of the laws of any other state. The exclusive venue for all mediations and litigation and any other legal proceedings regarding this Agreement shall be the State and Federal Courts serving Cumberland County, North Carolina, and Seller consents to personal jurisdiction in such courts. Seller irrevocably waives, to the fullest extent permitted by law, any objection that it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in any such court serving Cumberland County or that any such suit, action or proceeding brought in any such court serving Cumberland County has been brought in an inconvenient forum. This Agreement may be executed in counterparts with the same effect as if the signatures to each counterpart were upon a single instrument, and all such counterparts together shall be deemed an original of this Agreement. For purposes of this Agreement, a facsimile copy or scanned copy or photocopy of a party's signature shall be sufficient to bind such party. This Agreement shall be subject to execution by electronic means in accordance with Article 40 of Chapter 66 of the North Carolina General Statutes. The titles of the paragraphs throughout this Agreement are for convenience only and the words contained therein shall in no way be held to explain, modify, amplify, or aid in the interpretation, construction, or meaning of the provisions of this instrument.

17. Assignment. Seller shall not assign, transfer, or convey any part of the Agreement, including rights or obligations, to a third party without obtaining the prior written approval of PWC in its discretion. The prohibition on assignment includes an assignment of payments that may become due under the Agreement. Any unauthorized assignment shall be deemed to be a material breach of this Agreement. An approved assignment shall not relieve Seller of its responsibilities under the terms hereof unless explicitly stated in writing by PWC.

18. Conflicts. Except with PWC's knowledge and prior written consent, Seller shall not engage in any activity or accept any employment, interest or contribution that would reasonably appear to compromise Seller's professional judgment with respect to the Goods. Seller shall disclose to PWC any business or personal relationship with any Commissioner, officer, director, manager, or supervisor of PWC.

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized representatives as of the Effective Date.

Fayetteville Public Works Commission

[INSERT SELLER'S FULL LEGAL NAME]

By: \_\_\_\_\_  
Timothy Bryant, CEO/General Manager

By: \_\_\_\_\_  
\_\_\_\_\_, \_\_\_\_\_  
(Printed Name) (Title)



Date: \_\_\_\_\_

Date: \_\_\_\_\_

**This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act (N.C. Gen. Stat. § 159-1 et seq.).**

**By: \_\_\_\_\_  
Rhonda Graham, Chief Financial Officer**

**Approved as to form:**

\_\_\_\_\_  
**Legal Dept.**

**ATTACHMENT G: FORM OF EXCEPTIONS – TECHNICAL SPECIFICATIONS**

---

**BIDDER:** \_\_\_\_\_

**MANUFACTURER:** \_\_\_\_\_

**INSTRUCTIONS:** The following is a list of exceptions to the Technical Specifications pertaining to the furnishing of the subject materials. Bidders shall identify each exception by page and paragraph number on this form. The omission of exceptions shall be interpreted as the bidder's confirmation of full compliance with the Technical Specifications.

PAGE NO. AND PARAGRAPH	EXCEPTION/VARIATION

If, in submitting this bid, the bidder has made any exceptions to bid documents, the bidder understands that PWC will evaluate the effect of such exceptions or variations in determining responsiveness and award eligibility. Material exceptions or variations will not be considered and may result in the bid being deemed nonresponsive.

**ATTACHMENT H: FORM OF EXCEPTIONS – SALE OF GOODS AGREEMENT**

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**BIDDER:** \_\_\_\_\_

**MANUFACTURER:** \_\_\_\_\_

**INSTRUCTIONS:** The following is a list of exceptions to the Sale of Goods Agreement pertaining to the furnishing of the subject materials. Bidders shall identify each exception by page and paragraph number on this form. The omission of exceptions shall be interpreted as the bidder's confirmation of full compliance with the Sale of Goods Agreement.

PAGE NO. AND PARAGRAPH	EXCEPTION/VARIATION

If, in submitting this bid, the bidder has made any exceptions to bid documents, the bidder understands that PWC will evaluate the effect of such exceptions or variations in determining responsiveness and award eligibility. Material exceptions or variations will not be considered and may result in the bid being deemed nonresponsive.

**ATTACHMENT I: SMALL AND DISADVANTAGED BUSINESS (SDBE), SMALL LOCAL SUPPLIER (SLS), AND LOCAL BUSINESS DISCLOSURE FORM**

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Company Name: \_\_\_\_\_  
 Address & Phone: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Pay Application # \_\_\_\_\_

Please complete the form below by providing the necessary information for the payments made to each subcontractor, vendor, or supplier for the work associated with the identified contractor application for payment. This form must be fully completed and attached to each contractor application for payment.

<b>Firm Name</b>	<b>SDBE, SLS, or Local</b>	<b>Construction Trade or Supplies</b>	<b>Payment Amount</b>
<i>Ex. ABC Company</i>	<i>SDBE – NC HUB M</i>	<i>Hauling</i>	<i>\$25,000.00</i>
<i>Ex. DEF Enterprise</i>	<i>SLS – PWC</i>	<i>Paint</i>	<i>\$600.00</i>
<i>Ex. GHI Incorporated</i>	<i>Local – Fayetteville</i>	<i>Tire Repair</i>	<i>\$2,000.00</i>

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Printed Name Title

\_\_\_\_\_  
 Date



## **ATTACHMENT J: BID SUBMITTAL CHECKLIST**

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To ensure your bid is considered for evaluation and potential award, the following forms and required information must be submitted in full. Each item on this checklist must be completed and provided with your bid response. Failure to submit any required documentation or information may result in disqualification. Please carefully review the checklist to confirm all required materials are included before submitting your bid.

- 1. Properly Marked Sealed Mailed Bid (Submission Instructions paragraph 4)
- 2. Attachment A Drawings, Descriptive Literature, etc. (completed and provided)  
  
REQUIRED: Manufacturer's technical datasheet must be submitted for each item. The datasheet should clearly identify the proposed part number and allow us to verify compliance with PWC's published specifications.
- 3. Attachment B Company Name, Company Location, Phone Number, and Email Address (completed and signed)
- 4. Attachment B Manufacturer Name and Location (provided)
- 5. Attachment B NC HUB or NC DBE classification, if applicable (provided)
- 6. Attachment B Printed Name, Title, Signature, and Signature Date (provided)
- 7. Attachment B Part Number & Lead Time (provided)
- 8. Attachment B Unit Price & Extended Price (provided)
- 9. Attachment B Addenda Acknowledgement (initialed and dated)
- 10. Attachment D (completed and signed) or Explanation (provided)
- 11. Attachment G Form of Exceptions – Technical Specifications (completed and provided, if applicable)
- 12. Attachment H Form of Exceptions – Sale of Goods Agreement (completed and provided, if applicable)
- 13. Attachment I Small and Disadvantaged Business (SDBE), Small Local Supplier (SLS), and Local Business Disclosure Form